DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY
FITCHBURG, WISCONSIN 53719

ARCHITECT:
PRAIRIE FORGE GROUP
300 CARDINAL DRIVE, SUITE 160
ST CHARLES, IL 60175
630-221-0671

LANDSCAPE ARCHITECT:
GARY R. WEBER ASSOCIATES, INC
402 W. LIBERTY DRIVE
WHEATON, IL 60187
630-668-7197

LOW VOLTAGE CONSULTANT:
SENTINEL TECHNOLOGIES, INC
2550 WARRENVILLE ROAD
DOWNERS GROVE, IL 60515
630-769-4300

CIVIL, STRUCTURAL & MEP ENGINEERS:
W-T ENGINEERING, LLC
2675 PRATUM AVENUE
HOFFMAN ESTATES, IL 60192
224-293-6333

STATEMENT OF COMPLIANCE

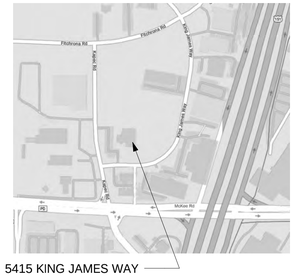
I , THOMAS M. TRISTANO, LICENSED ARCHITECT IN THE STATE OF WISCONSIN, LICENSE NO. 8625 - 5, AS PART OF WILLIAMS DEVELOPMENT, LTD, A PROFESSIONAL DESIGN FIRM ARCHITECT CORPORATION REGISTERED IN THE STATE OF ILLINOIS, LICENSE NO. 184.006333, ACKNOWLEDGE THAT I HAVE, TO THE BEST OF MY ABILITY, SUPERVISED THE PREPARATION OF THESE ARCHITECTURAL DRAWINGS TO ABIDE BY THE BUILDING CODE OF THE CITY OF FITCHBURG AND DANE COUNTY, WISCONSIN, AND FURTHER STATE THAT, TO THE BEST OF MY CONTRACTUAL OBLIGATION, THE DRAWINGS ARE IN COMPLIANCE WITH ANSI/ICC A117.1 ACCESSIBLE AND USEABLE BUILDINGS AND FACILITIES (2009).

THOMAS M TRISTANO
LICENSED WI ARCHITECT
8625-5

31-JUL-2022

SIGNATURE	DATE	EXPIRATION
Williams Development, Ltd.; DBA: Prairie Forge Group		30-APR-2023
		EXPIRATION

LOCATION MAP / SITE PLAN



5415 KING JAMES WAY

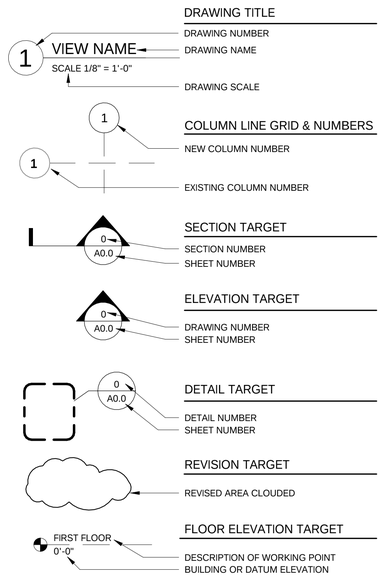
DRAWING NUMBER SYSTEM

ARCHITECTURAL DRAWINGS ARE DIVIDED INTO TEN SPECIFIC GROUPS (G 1, AD 1, AS 1, A 1-7); THE GROUP NUMBER WILL ALWAYS REMAIN THE SAME NO MATTER HOW LARGE OR SMALL THE PROJECT. ADDITIONAL DRAWINGS MAY BE ADDED TO THE GROUPS WITHOUT INTERRUPTING THE ALPHANUMERIC ORDER

G 1	TITLE SHEET/PROJECT DATA/CODE SUMMARY
AS 1	SITE PLAN & SITE DETAILS
AD 1	EXISTING CONDITIONS & DEMOLITION PLANS
A 1	PLANS
A 2	ELEVATIONS
A 3	SECTIONS & DETAILS
A 4	ENLARGED PLANS & INTERIOR ELEVATIONS
A 5	CEILING PLANS
A 6	SCHEDULES
A 7	FINISHES

DISCIPLINE PREFIX → A 3.1
GROUP NUMBER
SHEET NUMBER

SYMBOLS



ABBREVIATIONS

A

A.B	ANCHOR BOLT
ABV	ABOVE
AC	AIR CONDITIONING
ACFL	ACCESS FLOOR
ACT	ACOUSTICAL TILE
ADDL	ADDITIONAL
ADJ	ADJUSTABLE
ADMIN	ADMINISTRATION
A.F.F.	ABOVE FINISH FLOOR
AGG	AGGREGATE
ATL	ALTERNATE
ALUM	ALUMINUM
ANCH	ANCHOR,ANCHORAGE
A.P.	ACCESS PANEL
A.P.C.	ARCH PRECAST CONCRETE
APPD	APPROVED
APPROX	APPROXIMATE
ARCH	ARCHITECT, ARCHITECTURE
AUTO	AUTOMATIC
AVG	AVERAGE
&	AND
@	AT

B

BD	BOARD
BEL	BELOW
BEV	BEVEL
BFF	BELOW FINISH FLOOR
BH	BULKHEAD
BIT	BITUMINOUS
BLK	BLOCK, BLOCKING
BLDG	BUILDING
BM	BEAM
B.O.	BOTTOM OF
BOT	BOTTOM
BRG	BEARING
BRK	BRICK
BSMT	BASEMENT
B.T.U.	BRITISH THERMAL UNIT
BTWN	BETWEEN
B.U.R.	BUILT UP ROOF

C

CAB	CABINET
CAP	CAPACITY
C.B.	CONCRETE BLOCK
CEM	CEMENT
CER	CERAMIC
C.F.	CUBIC FOOT, FEET
C.G.	CORNER GUARD
CHAM	CHAMFER
CHAN	CHANNEL
CIR	CIRCLE
C.I.P.	CAST IN PLACE
C.J.	CONTROL JOINT
CK	CAULK, CAULKING
CLG	CEILING
CLO	CLOSET
CLR	CLEAR
CLS	CLEAR, CLEARANCE
C.M.U	CONCRETE MASONRY UNIT
C.O.	CLEAN OUT
COEF	COEFFICIENT
COL	COLUMN
COMB	COMBINATION
COMP	COMPOSITE
CONC	CONCRETE
CONF	CONFERENCE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUE, CONTINUOUS
CONT'D	CONTINUED
CONTR	CONTRACTOR
COORD	COORDINATE
CORR	CORRIDOR
CPT	CARPET, CARPETED
CPCI	CONTRACTOR PROVIDED CONTRACTOR INSTALLED
CS	COUNTERSINK
CSMT	CASEMENT
C.T.	CERAMIC TILE
CTR	CENTER
C.W.	COLD WATER
C.Y.	CUBIC YARD, YARDS

D

D	DEEP, DEPTH
DB	DECIBEL, DECIBELS
DBL	DOUBLE
DEG	DEGREE, DEGREES
DEMO	DEMOLISH, DEMOLITION
DEPR	DEPRESS, DEPRESSED
DEPT	DEPARTMENT
DET	DETAIL
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DISP	DISPENSER
DIV	DIVISION
D.L.	DEAD LOAD
DN	DOWN
DO	DITTO
DR	DOOR
D.S.	DOWN SPOUT
DWG	DRAWING
DWL	DOWEL

E

E	EAST
EA	EACH
E.J.	EXPANSION JOINT
E.I.F.S.	EXTERIOR INSULATION AND FINISH SYSTEM
EL	ELEVATION
ELEC	ELECTRIC, ELECTRICAL
ELEV	ELEVATOR
EMER	EMERGENCY
ENCL	ENCLOSE, ENCLOSURE
ENG	ENGINEER
E.P.D.M	ETHYLENE PROPYLENE DIENE MONOMER
EQ	EQUAL
EQUIP	EQUIPMENT
EST	ESTIMATE
E.W.C	ELECTRIC WATER COOLER
EXH	EXHAUST
EXG	EXISTING
EX	EXISTING
EXP	EXPANSION
EXT	EXTERIOR

F

FAB	FABRICATE, FABRICATION
F.B.	FACE BRICK
F.D.	FLOOR DRAIN
FDN	FOUNDATION
F.E.	FIRE EXTINGUISHER
F.E.C	FIRE EXTINGUISHER CABINET
F.F.E.	FINISHED FLOOR ELEVATION
F.H.C.	FIRE HOSE CABINET
FIN	FINISH, FINISHED
FL	FLOOR
FLASH	FLASHING
FLEX	FLEXIBLE
FLG	FLANGE
FLUOR	FLUORESCENT
F.P.	FIRE PROTECTION
FR	FRAME, FRAMED, FRAMING
F.R.T.	FIRE RESISTANT TREATED
F.S.	FAR SIDE
FT	FOOT, FEET
FTG	FOOTING
FUR	FURRED, FURRING
FUT	FUTURE
F.V.C.	FIRE VALVE CABINET

G

GA	GAUGE
GALV	GALVANIZED
G.C.	GENERAL CONTRACTOR
GD	GRADE, GRADING
GL	GLASS, GLAZING
G.M.U.	GLASS MASONRY UNIT
GR	GRADE
GWB	GYPSUM WALL BOARD

H

H	HEIGHT
H.B.	HOSE BIB
H.C.	HOLLOW CORE
HD	HEAD
HDW	HARDWARE
H.M.	HOLLOW METAL
HORIZ	HORIZONTAL
H.P.	HIGH POINT
HR	HOUR
H.S.	HEADED STUDS
HT	HEIGHT
HTG	HEATING
HVAC	HEATING/VENTING AIR CONDITIONING
H.W.	HOT WATER
HWD	HARD WOOD

I

I.F.	INSIDE FACE
IN	INCH, INCHES
INFO	INFORMATION
INSUL	INSULATION
INT	INTERIOR
ISO	POLYISOCYANURATE

J

JAN	JANITOR
JST	JOIST
JT	JOINT

K

KIT	KITCHEN
K.O.	KNOCK OUT

L

L	LENGTH
LAB	LABORATORY
LAM	LAMINATE, LAMINATED
LAT	LATERAL
LAV	LAVATORY
LB	POUND, POUNDS
L.H.	LEFT HAND
L.L.	LIVE LOAD
LOC	LOCATE, LOCATION
L.P.	LOW POINT
LT	LIGHT
LTG	LIGHTING
LTL	LINTEL
LVR	LOUVER

M

MATL	MATERIAL
MAN	MANUAL
MAS	MASONRY
MAX	MAXIMUM
MECH	MECHANICAL
MED	MEDIUM
MEMB	MEMBRANE
MEZZ	MEZZANINE
MFR	MANUFACTURER
M.H.	MAN HOLE
MIL	MILLIMETERS
MIN	MINIMUM
MISC	MISCELLANEOUS
M.L.	MATCH LINE
M.P.E	MECH, PLUMB, & ELEC
M.O.	MASONRY OPENING
MTD	MOUNTED
MTL	METAL
MULL	MULLION

N

N	NORTH
N/A	NOT APPLICABLE
N.I.C	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
N.T.S	NOT TO SCALE

O

O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
O.F.	OUTSIDE FACE
OFF	OFFICE
O.H.	OVERHEAD
OPCI	OWNER PROVIDED CONTRACTOR INSTALLED
OPNG	OPENING
OPOI	OWNER PROVIDED OWNER INSTALLED
OPP	OPPOSITE
O.R.D	OVERFLOW ROOF DRAIN
O.S.B	ORIENTED STRAND BOARD
OZ	OUNCE, OUNCES

P

PAR	PARALLEL
PBD	PARTICLE BOARD
P.C.	PRECAST CONCRETE
PERF	PERFORATED
PERIM	PERIMETER
PERP	PERPENDICULAR
PL	PLATE
P.L.	PROPERTY LINE
PLAM	PLASTIC LAMINATE
PLAS	PLASTER
PLBG	PLUMBING
P.L.F	POUNDS PER LINEAL FEET
PLWD	PLYWOOD
PNL	PANEL
PNT	PAINT
POLY	POLYETHYLENE
PR	PAIR
PRELIM	PRELIMINARY
PREFAB	PREFABRICATED
PREP	PREPARE, PREPARATION
PSF	POUND PER SQUARE FEET
PSI	POUND PER SQUARE YARD
PT	POINT
PVC	POLYVINYL CHLORIDE
P.T.	PRESSURE TREATED
P.T.M.E	PATCH TO MATCH EXISTING
PTN	PARTITION
PVC	POLYVINYL CHLORIDE

Q

Q.T.	QUARRY TILE
QTY	QUANTITY

R

R	RISER, RISERS
RAD	RADIUS
R.C.P.	REFLECTED CEILING PLAN
R.D.	ROOF DRAIN
REV	REVISED, REVISION
RECP	RECEPTACLE
REF	REFERENCE
REFL	REFLECT, REFLECTED
REINF	REINFORCE, REINFORCING
REQD	REQUIRED
R.H.	RIGHT HAND
RM	ROOM
R.O.	ROUGH OPENING
R.T.U	ROOF TOP UNIT
R.W.C	RAINWATER CONDUCTOR

S

S	SOUTH
SA	SELF ADHERING
SAN	SANITARY
SCHED	SCHEDULE
SECT	SECTION
S.F.	SQUAREFOOT, FEET
SHT	SHEET
STG	SHEATHING
SIM	SIMILAR
S.O.G.	SLAB ON GRADE
SPEC	SPECIFICATION
SQ	SQUARE
STD	STANDARD
STL	STEEL
STOR	STORAGE
STRUCT	STRUCTURAL
SUSP	SUSPEND, SUSPENDED
S.Y.	SQUARE YARDS
SYM	SYMMETRICAL

T

T	TREAD
T.B.E.	TOP OF BEAM ELEVATION
T.D.E	TOP OF DECK ELEVATION
TEL	TELEPHONE
TERM	TERMINATE, TERMINAL
TEMP	TEMPORARY
T.F.E	TOP OF FOOTING ELEVATION
T&G	TONGUE AND GROOVE
THK	THICK
THRU	THROUGH
T.L.	TOTAL LOAD
T.M.E.	TO MATCH EXISTING
T.S.	TUBE STEEL
T.S.E.	TOP OF SLAB ELEVATION
TV	TELEVISION
TYP	TYPICAL

U

U.L.	UNDERWRITERS LABORATORY
UNEXC	UNEXCAVATED
UNFIN	UNFINISHED
U.N.O.	UNLESS NOTED OTHERWISE
UTUIL	UTILITY

V

VAPB	VAPOR BARRIER
V.B.	VINYL BASE
V.C.T.	VINYL COMPOSITION TILE
V.I.F.	VERIFY IN FIELD
VERT	VERTICAL
VEST	VESTIBULE
VTR	VENT THROUGH ROOF
V.W.C	VINYL WALL COVER

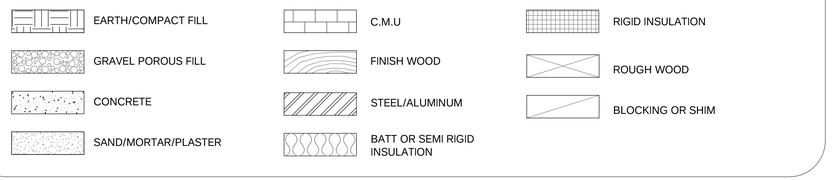
W

W	WEST
W	WIDTH
W/	WITH
WD	WOOD
WDW	WINDOW
WH	WATER HEATER
W/O	WITHOUT
W.W.F	WELDED WIRE FABRIC

Y

YD	YARD
YR	YEAR

MATERIAL INDICATIONS



ISSUE RECORD

ISSUE	DATE	REV	DESCRIPTION	DISCIPLINES
DD	08/04/20		DESIGN DEVELOPMENT SET	GENERAL, ARCHITECTURAL, STRUCTURAL, MEP
ADR	10/20/20 11/10/20	1	CITY OF FITCHBURG ARCHITECTURAL DESIGN REVIEW	CIVIL, LANDSCAPE, ARCH. SITE, ELEC. SITE
CD	02/11/21		98% CD REVIEW SET	ALL
CD	04/30/21		HVAC REDESIGN REVIEW SET	ALL
BD	06/08/21		ISSUE FOR BID SET	ALL

DRAWING INDEX

GENERAL DRAWINGS

Sheet Number	Sheet Name
G 1.1	TITLE SHEET
G 1.2	CODE ANALYSIS

CIVIL DRAWINGS

Sheet Number	Sheet Name
C 1.0	SITE DEMOLITION PLAN
C 2.0	SITE GEOMETRIC PLAN
C 3.0	SITE DEVELOPMENT PLAN
C 3.1	SITE DEVELOPMENT DETAILS
C 3.2	SITE DEVELOPMENT DETAILS
C 4.0	SITE GRADING PLAN
C 5.0	SITE UTILITY PLAN
C 5.1	SITE UTILITY DETAILS
C 5.2	SITE UTILITY DETAILS
C 5.3	SITE UTILITY DETAILS
C 6.0	STORMWATER POLLUTION PREVENTION PLAN
C 6.1	STORMWATER POLLUTION PREVENTION DETAILS
C 7.0	PROJECT SPECIFICATIONS
C 7.1	PROJECT SPECIFICATIONS
C 7.2	PROJECT SPECIFICATIONS
C 7.3	PROJECT SPECIFICATIONS
C 7.4	PROJECT SPECIFICATIONS
SUR - 1	BOUNDARY AND TOPOGRAPHIC SURVEY

LANDSCAPE DRAWINGS

Sheet Number	Sheet Name
L-1	LANDSCAPE PLAN

ARCHITECTURAL DRAWINGS

Sheet Number	Sheet Name
AS 1.1	SITE PLAN
AS 1.2	SITE DETAILS
AD 1.1	BASEMENT + FIRST FLOOR DEMOLITION PLAN
AD 1.2	MEZZANINE + ROOF DEMOLITION PLAN
A 1.1	BASEMENT PLAN
A 1.2	FIRST FLOOR PLAN
A 1.3	MEZZANINE + ROOF PLAN
A 1.4	EQUIPMENT + FURNITURE PLAN
A 2.1	BUILDING ELEVATIONS
A 3.1	BUILDING SECTIONS
A 3.2	MEZZANINE SECTIONS + DETAILS
A 3.3	BUILDING DETAILS
A 3.4	BUILDING DETAILS
A 3.5	ROOF DETAILS
A 3.6	ROOF DETAILS
A 4.1	INTERIOR ELEVATIONS
A 4.2	ENLARGED FLOOR PLAN + INTERIOR ELEVATIONS
A 4.3	ENLARGED FLOOR PLAN + INTERIOR ELEVATIONS
A 4.4	ENLARGED FLOOR PLAN + INTERIOR ELEVATIONS
A 4.5	ENLARGED FLOOR PLAN + INTERIOR ELEVATIONS
A 4.6	MILLWORK DETAILS
A 5.1	BASEMENT REFLECTED CEILING PLAN
A 5.2	FIRST FLOOR REFLECTED CEILING PLAN
A 5.3	CEILING DETAILS
A 6.1	DOOR + FRAME SCHEDULE
A 6.2	WALL TYPES + PLAN DETAILS
A 7.1	FLOOR FINISH PLAN + SCHEDULE
PL-1	EXG. PRECAST PLANK LAYOUT

STRUCTURAL DRAWINGS

Sheet Number	Sheet Name
DS-1.0	BASEMENT DEMOLITION PLAN
DS 1.1	1ST FLOOR DEMOLITION PLAN
DS-1.2	FRAMING DEMOLITION PLAN
S-0.0	STRUCTURAL NOTES
S-0.1	STRUCTURAL NOTES
S-1.0	BASEMENT PLAN
S-1.1	FIRST FLOOR PLAN
S-2.0	LOWER ROOF FRAMING PLAN
S-2.1	MEZZANINE AND UPPER ROOF PLANS
S-3.0	FOUNDATION DETAILS
S-4.0	FRAMING DETAILS
S-4.1	FRAMING DETAILS
S-4.2	FRAMING DETAILS

DRAWING INDEX (CONT'D.)

MECHANICAL DRAWINGS

Sheet Number	Sheet Name
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MD 1.1	MECHANICAL PLAN - DEMOLITION
MD 1.2	MECHANICAL ROOF PLAN - DEMOLITION
M 1.0	MECHANICAL BASEMENT PLAN - NEW WORK
M 1.1	MECHANICAL PLAN - NEW WORK
MP 1.1	MECHANICAL PIPING PLAN - NEW WORK
M 1.15	MECHANICAL MEZZANINE PLAN - DEMO + NEW WORK
M 1.2	MECHANICAL ROOF PLAN - NEW WORK
M 2.0	MECHANICAL SCHEDULES, DETAILS AND NOTES
M 2.1	MECHANICAL SCHEDULES, DETAILS AND NOTES
M 2.2	MECHANICAL SCHEDULES, DETAILS AND NOTES
M 3.0	UNDERFLOOR AIR SUPPLY SYSTEM SPECIFICATIONS

PLUMBING DRAWINGS

Sheet Number	Sheet Name
PD 1.0	BASEMENT PLUMBING DEMOLITION PLAN
PD 1.1	FIRST FLOOR PLUMBING DEMOLITION PLAN
P 1.0	BASEMENT PLUMBING PLAN
P 1.1	FIRST FLOOR PLUMBING PLAN
P 1.2	MEZZANINE PLUMBING PLAN
P 1.3	ROOF PLUMBING PLAN
P 2.1	PLUMBING SYMBOLS, SCHEDULES, AND DETAILS
P 2.2	PLUMBING DETAILS + DIAGRAMS

ELECTRICAL DRAWINGS

Sheet Number	Sheet Name
ES 1.0	ELECTRICAL SITE PLAN
ED 1.0	ELECTRICAL BASEMENT DEMOLITION PLAN
ED 1.1	ELECTRICAL FIRST FLOOR DEMOLITION PLAN
ED 1.2	ELECTRICAL ROOF DEMOLITION PLAN
E 1.0	ELECTRICAL BASEMENT POWER PLAN
E 1.1	ELECTRICAL FIRST FLOOR POWER PLAN
E 1.2	ELECTRICAL MEZZANINE POWER PLAN
E 1.3	ELECTRICAL ROOF POWER PLAN
E 2.0	ELECTRICAL BASEMENT LIGHTING PLAN
E 2.1	ELECTRICAL FIRST FLOOR LIGHTING PLAN
E 2.2	ELECTRICAL MEZZANINE LIGHTING PLAN
E 3.0	ELECTRICAL BASEMENT FIRE ALARM PLAN
E 3.1	ELECTRICAL FIRST FLOOR FIRE ALARM PLAN
E 3.2	ELECTRICAL MEZZANINE FIRE ALARM PLAN
E 3.3	ELECTRICAL ROOF FIRE ALARM PLAN
E 4.0	ELECTRICAL RISER DIAGRAM & PANEL SCHEDULES
E 4.1	ELECTRICAL PANEL SCHEDULES
E 4.2	ELECTRICAL SYMBOLS, SCHEDULES & DETAILS
E 4.3	ELECTRICAL SYMBOLS, SCHEDULES & DETAILS

LOW VOLTAGE DRAWINGS

Sheet Number	Sheet Name
T 0.0	LEGEND AND GENERAL NOTES
T 0.1	TELECOM REQUIREMENTS 1
T 0.2	TELECOM REQUIREMENTS 2
T 1.0	FIRST FLOOR COMMUNICATIONS PLAN
T 1.1	BASEMENT AND MEZZANINE COMMUNICATION PLAN
T 2.0	FIRST FLOOR COMMUNICATIONS REFLECTED CEILING PLAN
T 3.0	TECHNOLOGY DETAILS
AV 0.0	LEGEND AND GENERAL NOTES
AV 0.1	AUDIO VISUAL REQUIREMENTS 1
AV 0.2	AUDIO VISUAL REQUIREMENTS 2
AV 0.3	AUDIO VISUAL REQUIREMENTS 3
AV 0.4	AUDIO VISUAL REQUIREMENTS 4
AV 0.5	AUDIO VISUAL REQUIREMENTS 5
AV 1.0	FIRST FLOOR AUDIO VISUAL PLAN
AV 2.0	E.O.C. AUDIO VISUAL LAYOUT
AV 3.0	STREAMING MEDIA NETWORK
AV 4.1	SCHEMATIC AUDIO VISUAL CONNECTIONS 1
AV 4.2	SCHEMATIC AUDIO VISUAL CONNECTIONS 2
SS 0.0	LEGEND AND GENERAL NOTES
SS 0.1	SECURITY REQUIREMENTS 1
SS 0.2	SECURITY REQUIREMENTS 2
SS 1.0	FIRST FLOOR SECURITY PLAN
SS 1.1	BASEMENT AND MEZZANINE SECURITY PLAN
SS 2.0	ACCESS CONTROL DETAILS
SS 2.1	VIDEO SURVELLANCE DETAILS 1
SS 2.2	VIDEO SURVELLANCE DETAILS 2

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COUNTY of DANE WISCONSIN 1839

DANE COUNTY EMERGENCY MANAGEMENT REMODEL
5415 KING JAMES WAY
FITCHBURG, WISCONSIN

NOT FOR CONSTRUCTION

CLIENT APPROVAL

- ☐ APPROVED
- ☐ APPROVED AS NOTED

APPROVED BY / DATE:

ISSUE RECORD

DD SET	08/04/20
CD CHECK SET	11/20/20
98% CD REVIEW	02/11/21
HVAC REDESIGN	04/30/21
ISSUE FOR BID	06/08/21

PROJECT ARCHITECT	RBS
DRAWN BY	LMB
DATE	6/3/2021 12:51:15 PM
PROJECT NUMBER	2020-001

TITLE SHEET

G 1.1

BUILDING CODE ANALYSIS

PROJECT DESCRIPTION

EXISTING BUILDING AT 5415 KING JAMES WAY, FITCHBURG, WISCONSIN, CONSTRUCTED IN 1993 AS A FIRE STATION. RENOVATION TO RE-PURPOSE THE BUILDING FOR USE BY THE DANE COUNTY EMERGENCY MANAGEMENT DEPARTMENT WITH THE PRIMARY OCCUPANCY CLASSIFICATION OF CIVIC ADMINISTRATION (B: BUSINESS) AND SECONDARY OCCUPANCY OF EMERGENCY VEHICLE STORAGE (S-1: MEDIUM HAZARD STORAGE).
THE EXISTING BUILDING AREA IS: 12,520 SF FIRST FLOOR; 3,598 SF BASEMENT; 802 SF MEZZANINE FOR A TOTAL BUILDING OF 16,920 GSF. EXISTING BUILDING IS CONSTRUCTION TYPE IIB (NONCOMBUSTIBLE, UNPROTECTED, FULLY SPRINKLERED). POURED-IN-PLACE CONCRETE FOUNDATION FOOTINGS AND FLOOR SLAB, PRECAST CONCRETE PLANK FLOOR SYSTEM OVER BASEMENT AND AT MEZZANINE, CONCRETE MASONRY UNIT EXTERIOR AND INTERIOR BEARING WALLS, NON-FIRE RATED BAR-JOIST ROOF FRAMING, AND LIGHT-GAGE METAL STUD FRAMING INTERIOR WALLS. THE RENOVATION ENCOMPASSES DEMOLITION OF ROOF, INTERIOR NON-LOAD-BEARING WALLS, ALL INTERIOR FINISHES, PLUMBING FIXTURES, LIGHTING FIXTURES, AND HVAC SYSTEM. THE INTERIOR SPACE IS BEING RECONFIGURED FOR EMERGENCY MANAGEMENT OFFICES, AN EMERGENCY OPERATION CENTER, AND FLEET STORAGE. NEW WORK INCLUDES A NEW ROOF, NEW MAIN ENTRY AND CANOPY, INTERIOR WALLS AND DOORS, INTERIOR FINISHES, CABINETRY, AND ALL NEW PLUMBING FIXTURES, LIGHTING AND CONTROLS, NEW GENERATOR, AND NEW HVAC SYSTEM. SITE WORK INCLUDES THE RENOVATION OF THE EXISTING PARKING LOT, DRIVES, AND WALKWAYS, SITE REGRADING, NEW LANDSCAPING, AND NEW EXTERIOR LIGHTING.

APPLICABLE CODES

THE FOLLOWING STATE AND NATIONAL CODES WERE ADOPTED AS LAW, OR AS REQUIRED BY LAW, WITH AMENDMENTS AS LISTED IN DIVISION 3, SECTIONS 35-77 OF CHAPTER 35 - BUILDINGS AND BUILDING REGULATIONS OF THE CITY OF FITCHBURG, WISCONSIN CODE OF ORDINANCES.

BUILDING	WIS. ADMIN. CODE SPS 361-365 AND INTERNATIONAL BUILDING CODE 2015 WIS. ADMIN. CODE SPS 366 & INTERNATIONAL EXISTING BUILDING CODE 2015
ENERGY	INTERNATIONAL ENERGY CONSERVATION CODE 2015
MECHANICAL	INTERNATIONAL MECHANICAL CODE 2015 INTERNATIONAL FUEL GAS CODE 2015
ELECTRICAL	WIS. ADMIN. CODE SPS 316 ELECTRICAL CODE
PLUMBING	WIS. ADMIN. CODE SPS 381-387 PLUMBING CODE
FIRE/LIFE SAFETY	ADOPTED PORTIONS OF INTERNATIONAL FIRE CODE 2015
ACCESSIBILITY	ICC A117.1 (2009) STANDARD FOR ACCESSIBLE & USABLE BLDGS & FACILITIES

International Existing Building Code Section 403.1 Except as provided by Section 401.2 or this section, *alterations* to any building or structure shall comply with the requirements of the *International Building Code* for new construction. *Alterations* shall be such that the *existing building* or structure is no less conforming to the provisions of the *International Building Code* than the *existing building* or structure was prior to the *alteration.*

CHAPTER 3 - OCCUPANCY CLASSIFICATION

CODE SECT.	GROUP	DESCRIPTION OF OCCUPANCY	GROSS SQUARE FOOTAGE (GSF)
303.4	A-3, ASSEMBLY	OPEN OFFICE/ CIVIC CENTER	3,665 GSF
304.1	B, BUSINESS	OFFICES	3,890 GSF
311.2	S-1, MEDIUM-HAZARD STORAGE	EM. VEHICLE FLEET STORAGE	5,767 GSF
311.2	S-1, MEDIUM-HAZARD STORAGE	BASEMENT	3,598 GSF
		BUILDING TOTAL	16,920 GSF

CHAPTER 5 - GENERAL BUILDING HEIGHTS AND AREAS

			SECTION 504		SECTION 506	TOTAL ALLOWABLE AREA (for 1 story)
			Table 504.3	Table 504.4	Table 506.2	
USE GROUP	CONST. TYPE	S	HEIGHT in feet	STORIES	(S1) AREA in square feet	
ALLOWED						
A-3	II-B	sprinkler	75	3	38,000	38,000 SF
B	II-B	sprinkler	75	4	92,000	92,000 SF
S-1	II-B	sprinkler	75	3	70,000	70,000 SF
					MOST STRINGENT:	38,000 SF
ACTUAL						
A-3	II-B	sprinkler	17	1	3,665	
B	II-B	sprinkler	17	1	3,890	
S-1	II-B	sprinkler	24	1	5,767	
					1 STORY:	13,322 SF

International Existing Building Code Section 508.3 Buildings or portions of buildings that comply with the provisions of this section shall be considered as nonseparated occupancies.

CHAPTER 6 CONSTRUCTION TYPES/ REQUIREMENTS

SECTION	TYPE	REQUIREMENTS	RATING
TABLE 601	II-B	STRUCTURAL FRAME BEARING WALLS - EXTERIOR BEARING WALLS - INTERIOR NON-BEARING WALLS - EXTERIOR FLOORS ROOF	0 HR 0 HR 0 HR 0 HR 0 HR 0 HR
708.1; 1020.1		PARTITIONS (CORRIDORS for Use Groups B, S)	0 HR (W/ SPRINKLER)

SECTION 602 CONSTRUCTION CLASSIFICATION
TABLE 602 FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE

FIRE SEPARATION DISTANCE = X (feet)	TYPE OF CONSTRUCTION	OCCUPANCY GROUP B, S-2[a]
X ≥ 30	ALL	0

BUILDING CODE ANALYSIS

SECTION 423: STORM SHELTERS

423.3 CRITICAL EMERGENCY OPERATIONS.
SPS 362.0423 STORM SHELTERS. THE REQUIREMENTS IN IBC SECTIONS 423.3 AND 423.4 ARE NOT INCLUDED AS PART OF CHS. SPS 361 TO 366.

SECTION 8 INTERIOR FINISHES
803.1.1 INTERIOR WALL AND CEILING FINISH MATERIALS. INTERIOR WALL AND CEILING FINISH MATERIALS SHALL BE CLASSIFIED IN ACCORDANCE WITH ASTM E84 OR UL 723.
CLASS A: = FLAME SPREAD INDEX 0-25; SMOKE-DEVELOPED INDEX 0-450.
CLASS B: = FLAME SPREAD INDEX 26-75; SMOKE-DEVELOPED INDEX 0-450.
CLASS C: = FLAME SPREAD INDEX 76-200; SMOKE-DEVELOPED INDEX 0-450.

TABLE 803.11 INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY

GROUP	INTERIOR EXIT STAIRWAYS AND RAMPS AND EXIT PASSAGEWAYS (SPRINKLERED)	CORRIDORS & ENCLOSURE FOR EXIT ACCESS STAIRWAYS & RAMPS (SPRINKLERED)	ROOMS AND ENCLOSED SPACES (SPRINKLERED)
A-3	B	B	C
B	B	C	C
S	C	C	C

CHAPTER 10- MEANS OF EGRESS

SECTION 1004 OCCUPANT LOAD

AREAS	OCCUPANCY	USE	GROSS SF	OCC LOAD FACTOR (TBL. 1004.1.2)	OCCUPANTS
FIRST FLOOR	A-3	OPEN OFFICE SPACE, BREAK-OUT SPACES, ACCESSORY SPACES	3,665	100	103
FIRST FLOOR	B	BUSINESS (OFFICES, RECEPTION, MEETING RMS, TLTS, OTHER ACCESSORY)	3,890	100	39
FLEET STORAGE	S-1	VEHICLE STORAGE, MECHANICAL EQUIPMENT	5,767	300	20
BASEMENT	S-1	ACCESSORY STORAGE, MECHANICAL EQUIPMENT	3,598	300	12
				TOTAL BUILDING	174

SECTION 1005.3.2 - MEANS OF EGRESS SIZING

	MAX. OCCUPANT LOAD	WIDTH/ OCCUPANT (INCHES)	TOTAL WIDTH REQ'D (INCHES)	TOTAL WIDTH PROVIDED
EXIT DOORS & OTHER COMPONENTS	72	.2	14.4 (1010.1) DOOR MIN. 32 (1020.2) CORRIDOR MIN. 44	SEE PLANS
EXIT STAIRS	12	.3	3.6 (1011.2) MIN. 36	SEE PLANS

SECTION 1006 NUMBER OF EXITS AND EXIT ACCESS DOORWAYS

		TABLE 1006.2.1: COMMON PATH OF EGRESS TRAVEL Maximum common path of egress travel distances	TABLE 1017.2 EXIT ACCESS TRAVEL DISTANCE Maximum Exit access travel distances
OCCUPANCY	MAX OCCUPANT LOAD OF SPACE WITH 1 EXIT	WITH AUTOMATIC SPRINKLER SYSTEM (FEET)	
A+B	49	100	300
S	29	100	250 (1017.2.2) S-1 INCREASE:400

CHAPTER 16 - STRUCTURAL DESIGN

1604.5 RISK CATEGORY.
EACH BUILDING AND STRUCTURE SHALL BE ASSIGNED A *RISK CATEGORY* IN ACCORDANCE WITH TABLE 1604.5. WHERE A REFERENCED STANDARD SPECIFIES AN OCCUPANCY CATEGORY, THE *RISK CATEGORY* SHALL NOT BE TAKEN AS LOWER THAN THE OCCUPANCY CATEGORY SPECIFIED THEREIN.

TABLE 1604.5 RISK CATEGORY OF BUILDINGS AND OTHER STRUCTURES

RISK CATEGORY	NATURE OF OCCUPANCY
IV	BUILDINGS AND OTHER STRUCTURES DESIGNATED AS ESSENTIAL FACILITIES: DESIGNATED EMERGENCY PREPAREDNESS, COMMUNICATIONS AND OPERATIONS CENTERS AND OTHER FACILITIES REQUIRED FOR EMERGENCY RESPONSE.

CHAPTER 29 - PLUMBING SYSTEMS

TABLE 2902.1 - MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES

CLASSIFICATION	OCCUPANTS	WC M	WC F	LAVATORIES M	LAVATORIES F	SHOWERS	DRINKING FOUNTAIN	SERVICE SINK
A-3 ASSEMBLY	103	1	1	1	1	-	.2	1
B BUSINESS	39	2		1		-	.4	1
S-1 STORAGE	32	1		1		-	.1	1
TOTAL REQ'D.		5		4		0	1	1 SHARED
TOTAL PROVIDED	174	5		5		1	2	2 SHARED

ENERGY CONSERVATION CODE RQMTS.

TABLE 402.1.3 - OPAQUE THERMAL ENVELOPE INSULATION MINIMUM REQUIREMENTS, R-VALUE

INSULATION ENTIRELY ABOVE ROOF DECK	R-30ci

TABLE 402.1.4 - OPAQUE THERMAL ENVELOPE INSULATION MAXIMUM REQUIREMENTS, U-FACTOR

SWINGING OPAQUE DOOR	0.37

TABLE 402.4 - BUILDING ENVELOPE FENESTRATION MAXIMUM U-FACTOR + SHGC REQUIREMENTS

U-FACTOR MAX.	
FIXED FENESTRATION	0.36
ENTRANCE DOORS	0.77
SKYLIGHTS	0.50
SHGC MAX.	
ORIENTATION - SOUTH, EAST, WEST	0.40
ORIENTATION - NORTH	0.53
SKYLIGHTS	0.40

WINDOW DAYLIGHTING AREA

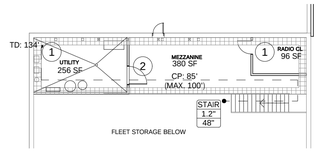
LOCATION	ALLOWED	ACTUAL
VERTICAL FENESTRATION	30% MAX.	6%
SKYLIGHTS	3% MAX.	0.2%

LIFE SAFETY PLAN KEY

0 — OCCUPANT LOAD THROUGH A GIVEN EXIT
0 — OCCUPANT LOAD IN A GIVEN ROOM OR AREA
0 — OCCUPANT LOAD IN A GIVEN ROOM ACCOUNTED FOR IN OTHER SPACES

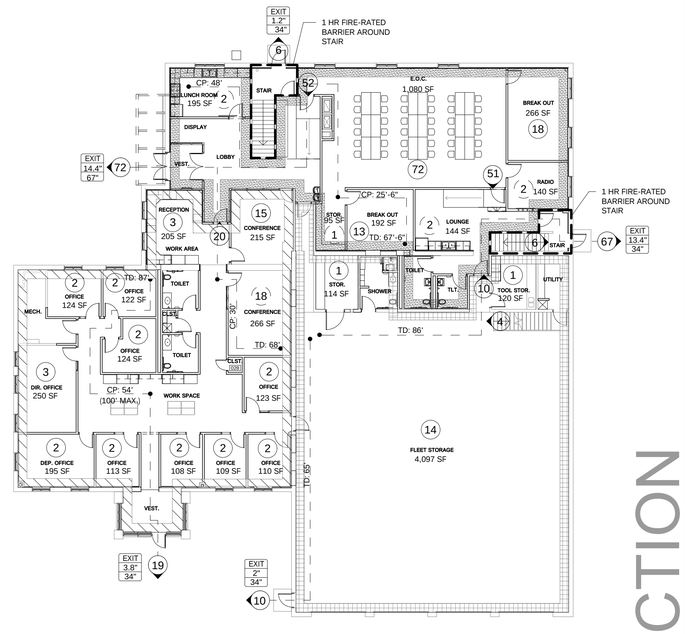
EXIT — COMPONENT
0.0" — REQUIRED WIDTH
0.0" — PROVIDED WIDTH

A-3 - ASSEMBLY OCCUPANCY
B - BUSINESS OCCUPANCY
S-1 - STORAGE OCCUPANCY
1-HR. RATED FIRE BARRIER
CP: — COMMON PATH OF EGRESS
TD: — EXIT TRAVEL DISTANCE



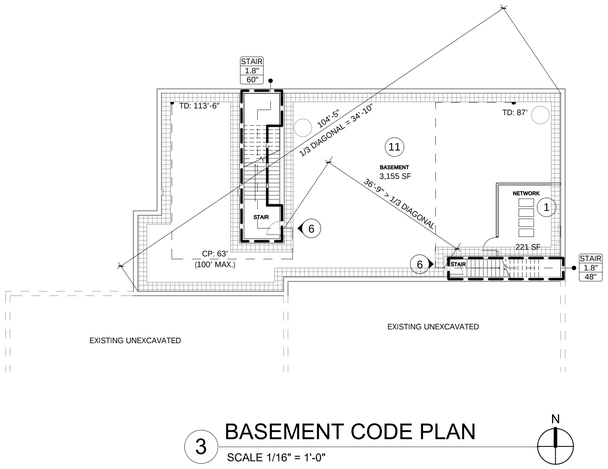
1 MEZZANINE CODE PLAN

SCALE 1/16" = 1'-0"



2 FIRST FLOOR CODE PLAN

SCALE 1/16" = 1'-0"



3 BASEMENT CODE PLAN

SCALE 1/16" = 1'-0"

NOT FOR CONSTRUCTION

PRAIRIE FORGE GROUP
300 CARDINAL DRIVE
SUITE 160
SAINT CHARLES IL 60175
630.221.0671 | P
630.221.0718 | F
www.prairieforgegroup.com

DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY
FITCHBURG, WISCONSIN

CLIENT APPROVAL
☐ APPROVED
☐ APPROVED AS NOTED
APPROVED BY / DATE:

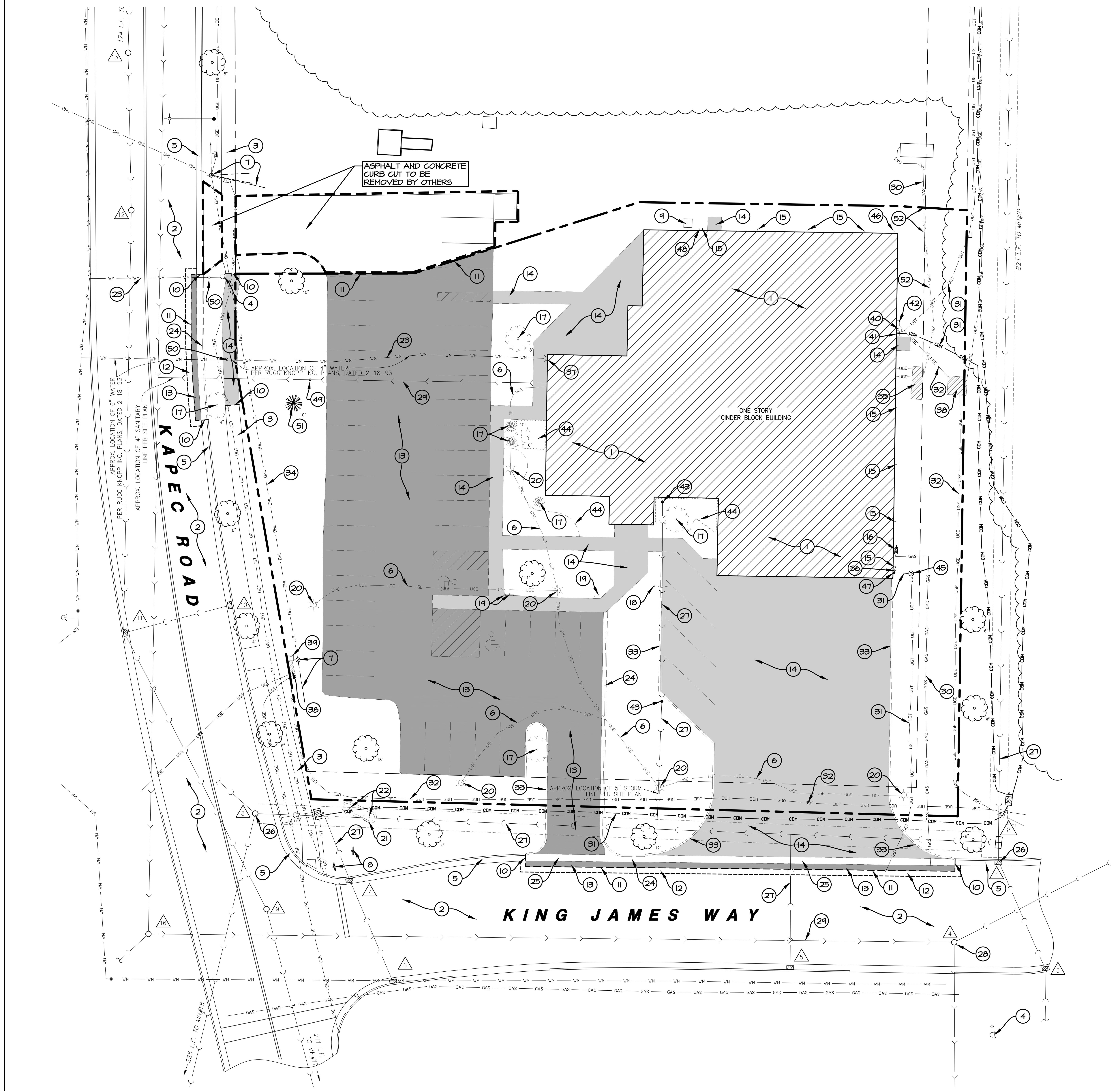
ISSUE RECORD

DD SET	08/04/20
CD CHECK SET	11/20/20
98% CD REVIEW	02/11/21
HVAC REDESIGN	04/30/21
ISSUE FOR BID	06/08/21

PROJECT ARCHITECT
RBS
DRAWN BY
LMB
DATE
6/3/2021 12:51:19 PM
PROJECT NUMBER
2020-001

CODE ANALYSIS

G 1.2



1 SITE DEMOLITION PLAN
SCALE 1" = 20'

SITE DEMOLITION NOTES:

A. CONTRACTOR SHALL PERFORM ALL DEMOLITION WORK IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REQUIREMENTS.
B. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY DEMOLITION PERMITS AND COORDINATE ALL DEMOLITION WITH THE MUNICIPALITY AND OWNERS REPRESENTATIVE TO ENSURE PROTECTION AND MAINTENANCE OF SANITARY AND WATER UTILITIES AS NECESSARY AND TO PROVIDE STORM WATER CONVEYANCE UNTIL NEW FACILITIES ARE CONSTRUCTED, TESTED, AND PLACED IN OPERATION.
C. CONTRACTOR SHALL DEVELOP AND IMPLEMENT A DAILY PROGRAM OF DUST CONTROL PROCEDURES PRIOR TO DEMOLITION OF ANY STRUCTURES. MODIFICATION OF DUST CONTROL PROCEDURES SHALL BE PERFORMED BY THE CONTRACTOR TO THE SATISFACTION OF THE MUNICIPALITY AND COMPLY WITH THE NPDES II REQUIREMENTS OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY AND THE INDIVIDUAL STORM WATER POLLUTION PREVENTION PLAN FOR THIS PROJECT.
D. ALL EXISTING TREES, BRUSH AND MISCELLANEOUS VEGETATION TO BE REMOVED OR DEMOLISHED SHALL BE REMOVED FROM THE SITE AND LEGALLY DISPOSED OF BY THE CONTRACTOR.
E. VOIDS LEFT BY ANY ITEM REMOVED UNDER ANY PROPOSED BUILDING, PAVEMENT, OR WALK OR WITHIN 24" THEREOF SHALL BE BACKFILLED WITH ENGINEERED FILL ACCORDING TO THE GEOTECHNICAL REPORT.
F. ALL EXISTING BUILDINGS, FOUNDATIONS, CONCRETE OR ASPHALT PAVEMENT OR WALKS, CURB AND GUTTER AND MISCELLANEOUS STRUCTURES (INCLUDING, BUT NOT LIMITED TO FENCES, POLES, YARD LIGHTS, ELECTRICAL PANELS, AND MISCELLANEOUS DEBRIS) INDICATED TO BE DEMOLISHED SHALL BE REMOVED OR DEMOLISHED AND REMOVED FROM THE SITE AND DISPOSED OF LEGALLY BY THE CONTRACTOR.
G. LOCATION OF EXISTING GAS SERVICES ARE UNKNOWN. CONTACT GAS COMPANY PRIOR TO DEMOLITION.
H. ALL EXISTING TREES SHALL REMAIN UNLESS OTHERWISE NOTED. PROTECT DURING CONSTRUCTION.
I. ALL EXISTING UTILITIES SHALL REMAIN UNLESS OTHERWISE NOTED.
J. CONTRACTOR SHALL HIRE A PRIVATE UTILITY LOCATOR TO LOCATE UTILITIES PRIOR TO CONSTRUCTION AND SHALL CONTACT THE SITE ENGINEER IF A CONFLICT EXISTS.
K. CONTRACTOR SHALL PROVIDE REMOVAL AND REPLACEMENT AND SHORING AS NECESSARY TO MEET OSHA AND LOCAL CODE, AS WELL AS MANUFACTURER'S REQUIREMENTS.
L. ALL FOUNDATIONS FOR ALL FENCES, SIGNS, ETC. NOTED FOR REMOVAL SHALL BE REMOVED AND LEGALLY DISPOSED OF OFFSITE.
M. PROOF-ROLLING SHALL BE PERFORMED FOR ALL SUBGRADE PRIOR TO CONSTRUCTION OF NEW PAVEMENT. ALL SUBGRADE PROOF-ROLLING SHALL BE WITNESSED AND APPROVED BY A MATERIALS TESTING AGENCY TO BE HIRED BY THE OWNER. CONTRACTOR TO COORDINATE ALL PROOF-ROLLING WITH THE MATERIALS TESTING AGENCY. CONTACT THE ENGINEER AND MATERIAL TESTING AGENCY SO THAT THEY MAY WITNESS THE PROOF ROLL. PROOF ROLL SHALL BE PROVIDED FOR ALL PAVEMENT AREAS SPECIFIED FOR FULL DEPTH REMOVAL AND REPLACEMENT.
N. EXISTING CONDITIONS AND TOPOGRAPHY SHOWN REPRESENTS SITE CONDITIONS PER THE BOUNDARY AND TOPOGRAPHIC SURVEY LAST DATED 2-3-21, PREPARED BY WT GROUP. CONTRACTOR SHALL FIELD VERIFY EXISTING ELEVATIONS AND CONDITIONS (INCLUDING BUT NOT LIMITED TO VERIFICATION OF CONTROL AND ALL UTILITIES WHETHER DEPICTED OR NOT) PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
O. SEE SHEET SUR-1 "BOUNDARY AND TOPOGRAPHIC SURVEY" FOR ALL EXISTING LOCATED UTILITY DATA.
P. CLEAR SITE AS NECESSARY TO CONSTRUCT PROPOSED IMPROVEMENTS.
Q. ALL ITEMS MARKED "EXISTING" OR "EXISTING TO REMAIN" TO BE PROTECTED FROM DAMAGE FOR THE DURATION OF CONSTRUCTION.
R. CONTRACTOR TO PROVIDE SOIL TESTING SERVICES FOR COMPLETION OF THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES FORMS AS PART OF THEIR CONTRACT.
S. PREPARE SUBGRADE AS SPECIFIED WITHIN THE GEOTECHNICAL EXPLORATION REPORT DATED AUGUST 17, 2020 PREPARED BY CONSTRUCTION GEOTECHNICAL CONSULTANTS, INC. (CGC).
T. ALL TOPSOIL BENEATH PROPOSED STRUCTURES AND PAVEMENT SHALL BE REMOVED. REFER TO THE GEOTECHNICAL EXPLORATION REPORT DATED AUGUST 17, 2020 PREPARED BY CONSTRUCTION GEOTECHNICAL CONSULTANTS, INC. (CGC) FOR EXISTING TOPSOIL DEPTHS.

EXISTING UTILITY DATA

1. RIM=997.22' (STORM) 36"x18" CONCRETE STRUCTURE INV=993.85' (18" RCP N/SSE)
2. RIM=997.95' (STORM) 12'x12' CONCRETE STRUCTURE INV=991.80' (48"x76" RCP N) ELLIPTICAL PIPE INV=993.55' (18" RCP S) INV=991.80' (53"x83" RCP W) ELLIPTICAL PIPE
3. RIM=997.10' (STORM) 36"x18" CONCRETE STRUCTURE INV=994.79' (18" RCP NNW) INV=994.79' (15" PVC S)
4. RIM=998.34' (SANITARY) 48" CONCRETE STRUCTURE INV=993.34' (12" RCP NE/S) INV=993.66' (8" PVC W)
5. RIM=997.65' (STORM) 36"x18" CONCRETE STRUCTURE INV=992.90' (18" RCP N)
6. RIM=997.26' (STORM) 36"x18" CONCRETE STRUCTURE INV=993.61' (12" RCP NNW)
7. RIM=997.31' (STORM) 36"x18" CONCRETE STRUCTURE INV=992.54' (12" RCP NNW/SSE)
8. RIM=998.05' (STORM) CONCRETE STRUCTURE UNABLE TO DETERMINE SIZE INV=988.55' (53"x83" RCP E) ELLIPTICAL PIPE INV=988.55' (66" RCP SW) INV=988.65' (36" RCP NW)
9. RIM=997.87' (STORM) 60" CONCRETE STRUCTURE INV=980.45' (42" RCP SSE/NW)
10. RIM=998.51' (STORM) 36"x18" CONCRETE STRUCTURE INV=992.68' (18" RCP WSW)
11. RIM=998.42' (STORM) 72" CONCRETE STRUCTURE INV=990.23' (30" RCP N) INV=990.47' (18" RCP ENE) INV=981.23' (42" RCP SE)
12. RIM=1000.57' (STORM) 48" CONCRETE STRUCTURE INV=995.85' (30" RCP N) INV=993.23' (30" RCP S)
13. RIM=1001.59' (STORM) 48" CONCRETE STRUCTURE INV=997.28' (30" RCP N/S)
14. RIM=1002.81' (SANITARY) 48" CONCRETE STRUCTURE INV=996.35' (8" PVC N/S)
15. RIM=1005.42' (STORM) 60" CONCRETE STRUCTURE INV=999.57' (30" RCP N/S) INV=999.72' (18" RCP E) INV=999.87' (18" RCP W)
16. RIM=998.11' (SANITARY) 48" CONCRETE STRUCTURE INV=994.67' (8" PVC N/E/SW)
17. RIM=995.13' (STORM) 84" CONCRETE STRUCTURE INV=987.18' (36" RCP ENE) INV=979.93' (42" RCP SSE/NNW)
18. RIM=996.01' (STORM) CONCRETE STRUCTURE UNABLE TOP DETERMINE SIZE INV=987.46' (66" RCP NE/SW) INV=989.21' (24" RCP ESE CAPPED)
19. RIM=997.33' (SANITARY) 48" CONCRETE STRUCTURE INV=992.28' (15" PVC E) INV=992.28' (12" RCP N)
20. RIM=999.10' (SANITARY) 48" CONCRETE STRUCTURE INV=994.46' (12" RCP NNE/SW) INV=995.72' (4" PVC E)
21. RIM=1010.75' (STORM) 84" CONCRETE STRUCTURE INV=996.20' (48" RCP N) INV=996.20' (48"x76" RCP S)* * ELLIPTICAL PIPE

HATCH LEGEND

- EXISTING CONCRETE PAVEMENT TO BE REMOVED FULL DEPTH
- EXISTING ASPHALT PAVEMENT TO BE REMOVED FULL DEPTH

DEMOLITION LEGEND

- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- WM — EXISTING WATER MAIN
- OHL — EXISTING OVERHEAD LINES
- GAS — EXISTING GAS LINE
- UGE — EXISTING UNDERGROUND ELECTRIC LINE
- UGT — EXISTING UNDERGROUND TELCO LINE
- COM — EXISTING UNDERGROUND COMMUNICATION LINE
- EXISTING CLOSED MANHOLE
- EXISTING OPEN GRATE MANHOLE
- EXISTING BEEHIVE GRATE MANHOLE
- EXISTING CURB INLET
- EXISTING FIRE HYDRANT
- EXISTING B-BOX
- EXISTING AREA LIGHT
- EXISTING TELCO PEDESTAL
- EM — EXISTING ELECTRIC METER
- GM — EXISTING GAS METER
- EXISTING SIGN
- EXISTING TREE/SHRUB

PROJECT NOTES:

1. EXISTING BUILDING TO REMAIN.
2. EXISTING ASPHALT PAVEMENT TO REMAIN.
3. EXISTING CONCRETE TO REMAIN.
4. EXISTING HYDRANT AND ASSOCIATED PIPING TO REMAIN.
5. EXISTING CURB AND GUTTER TO REMAIN. EXCEPT AS NOTED.
6. EXISTING UNDERGROUND ELECTRIC TO BE REMOVED. SEE ELECTRICAL PLANS FOR DETAILS.
7. EXISTING UTILITY POLE, GUY WIRE AND ASSOCIATED WIRING TO REMAIN.
8. EXISTING SIGN TO REMAIN.
9. EXISTING CONCRETE PAD WITH RADIO TOWER TO REMAIN. PROTECT DURING CONSTRUCTION.
10. NEW FULL DEPTH SAWCUT OF EXISTING CURB/CONCRETE TO PROVIDE CLEAN CONSTRUCTION BREAK.
11. NEW FULL DEPTH SAWCUT OF EXISTING ASPHALT PAVEMENT TO PROVIDE CLEAN CONSTRUCTION BREAK.
12. NEW 2' BUTT JOINT.
13. EXISTING ASPHALT PAVEMENT TO BE REMOVED FULL DEPTH TO MEET THE BOTTOM OF THE NEW PAVEMENT CROSS SECTIONS (NEW SUBGRADE ELEVATION). SEE THE SITE GRADING PLAN FOR NEW FINISHED ELEVATIONS AND DETAIL SHEETS FOR NEW PAVEMENT CROSS SECTIONS.
14. EXISTING CONCRETE TO BE REMOVED FULL DEPTH TO MEET THE BOTTOM OF THE NEW PAVEMENT CROSS SECTIONS (NEW SUBGRADE ELEVATION). SEE THE SITE GRADING PLAN FOR NEW FINISHED ELEVATIONS AND DETAIL SHEETS FOR NEW PAVEMENT CROSS SECTIONS.
15. EXISTING DOWNSPOUT TO BE REMOVED. SEE PLUMBING AND ARCHITECTURAL PLANS FOR DETAILS.
16. EXISTING GAS METER TO REMAIN.
17. EXISTING TREE TO BE REMOVED.
18. EXISTING FLAG POLE AND ASSOCIATED FOUNDATION TO BE REMOVED.
19. EXISTING SIGN TO BE REMOVED.
20. EXISTING AREA LIGHT TO BE REMOVED. SEE ELECTRICAL PLANS FOR DETAILS.
21. EXISTING BLOCK WALL TO BE REMOVED.
22. EXISTING MONUMENT SIGN TO BE REMOVED.
23. EXISTING WATER MAIN / WATER SERVICE TO REMAIN.
24. EXISTING CURB AND GUTTER TO BE REMOVED.
25. EXISTING DEPRESSED CURB TO BE REMOVED.
26. EXISTING STORM STRUCTURE AND ASSOCIATED PIPING TO REMAIN.
27. EXISTING STORM SEWER TO REMAIN.
28. EXISTING SANITARY STRUCTURE AND ASSOCIATED PIPING TO REMAIN.
29. EXISTING SANITARY SEWER TO REMAIN.
30. EXISTING GAS LINE TO REMAIN.
31. EXISTING UNDERGROUND TELCO TO REMAIN.
32. EXISTING UNDERGROUND ELECTRIC TO REMAIN.
33. EXISTING BARRIER CURB TO BE REMOVED.
34. EXISTING OVERHEAD LINE TO REMAIN.
35. EXISTING GENERATOR, GAS SERVICE AND CONCRETE PAD TO BE REMOVED.
36. EXISTING ROOF OVERFLOW DRAIN OUTLET TO REMAIN.
37. EXISTING FIRE DEPARTMENT CONNECTION TO REMAIN.
38. EXISTING TRANSFORMER TO REMAIN.
39. EXISTING TELCO PEDESTAL TO REMAIN.
40. EXISTING ELECTRIC METER TO REMAIN.
41. EXISTING TELCO BOX TO REMAIN.
42. EXISTING ELECTRIC BOX TO REMAIN.
43. EXISTING CLEANOUT TO REMAIN. ADJUST TO NEW GRADE.
44. EXISTING VEGETATION AND GRAVEL TO BE REMOVED.
45. EXISTING TELCO MANHOLE TO REMAIN.
46. EXISTING PVC SUMP DISCHARGE PIPE TO BE REMOVED. SEE PLUMBING PLANS FOR DETAILS.
47. EXISTING TELCO BUILDING CONNECTION TO REMAIN.
48. EXISTING ROOF OVERFLOW TO BE REMOVED. SEE ARCHITECTURAL / PLUMBING PLANS FOR DETAILS
49. EXISTING CLEAN OUT TO REMAIN. SHOWN PER RECORDS, CONTRACTOR TO VERIFY IN FIELD EXACT LOCATION. ADJUST TO NEW GRADE.
50. EXISTING B-BOX TO REMAIN. ADJUST TO NEW GRADE.
51. EXISTING TREE TO REMAIN. TRIM LIMBS AS NECESSARY TO PROVIDE CLEARANCE FOR PEDESTRIANS USING PROPOSED SIDEWALK.
52. PORTION OF EXISTING GAS LINE BETWEEN GENERATOR AND PROPERTY LINE TO BE PROPERLY DISCONNECTED, CAPPED AND REMOVED. CONTRACTOR TO COORDINATE WITH UTILITY PROVIDER FOR ALL REQUIREMENTS PRIOR TO DISCONNECTION AND REMOVAL.

WT JOB NUMBER - 2002139C

WT Group
Engineering • Design • Consulting
Structural | Mechanical/Electrical/Plumbing
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Accessibility Consulting | Design & Program Management
Engineering with Precision, Pace & Passion.
2675 Pratum Avenue | Hoffman Estates, IL 60192
P: 224.293.6333 | F: 224.293.6444
wtengineering.com
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SUITE 160
SAINT CHARLES IL 60175
630.221.0671 | P
630.221.0118 | F
www.prairieforgegroup.com

DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY
FITCHBURG, WISCONSIN 53719

CLIENT APPROVAL
☐ APPROVED
☐ APPROVED AS NOTED
APPROVED BY / DATE:

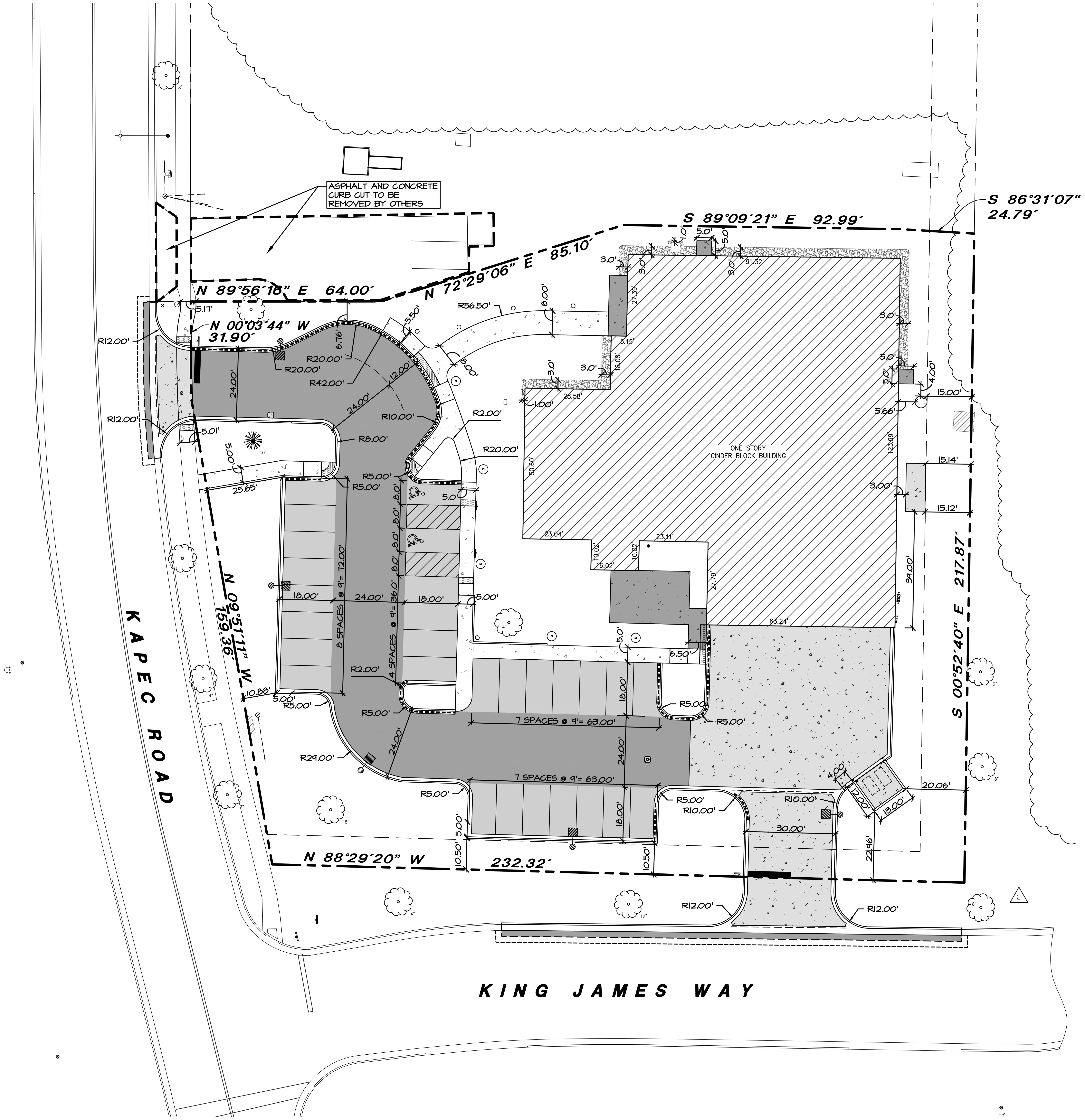
ISSUE RECORD

DD SET	08/04/20
CD CHECK SET	11/20/20
98% CD REVIEW	02/11/21
HVAC REDESIGN	04/30/21
ISSUE FOR BID	06/08/21

CHECKED BY
JEG
DRAWN BY
BRA
DATE
5/24/2021 5:10:02 PM
PROJECT NUMBER
2020-001

SITE DEMOLITION PLAN

C-1.0



1 SITE GEOMETRIC PLAN

SCALE 1" = 20'

HATCH LEGEND

NEW CONCRETE SIDEWALK
5" PORTLAND CEMENT CONCRETE
4" CRUSHED AGGREGATE BASE COURSE (CABC), DOT DENSE GRADED 3/4" PER SECTION 305 WISDOT SPECIFICATIONS

NEW CONCRETE PAVEMENT / CONCRETE PAD
8" PORTLAND CEMENT CONCRETE
8" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" IS 1-1/4" DENSE GRADED BASE (DGB), BOTTOM PART OF THE LAYER CAN CONSIST OF 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS

NEW CONCRETE STOOP / CONCRETE PATIO
8" PORTLAND CEMENT CONCRETE
8" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" IS 1-1/4" DENSE GRADED BASE (DGB), BOTTOM PART OF THE LAYER CAN CONSIST OF 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS

NEW FULL DEPTH LIGHT DUTY ASPHALT PAVEMENT
1-3/4" HMA SURFACE COURSE
2" HMA BINDER COURSE
8" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" IS 1-1/4" DENSE GRADED BASE (DGB), BOTTOM PART OF THE LAYER CAN CONSIST OF 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS

NEW FULL DEPTH MEDIUM DUTY ASPHALT PAVEMENT
1-3/4" HMA SURFACE COURSE
2-1/4" HMA BINDER COURSE
10" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" IS 1-1/4" DENSE GRADED BASE (DGB), BOTTOM PART OF THE LAYER CAN CONSIST OF 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS

NEW GRAVEL TRENCH DRAIN SYSTEM

SITE GEOMETRIC NOTES:

A. EXISTING CONDITIONS AND TOPOGRAPHY SHOWN REPRESENTS SITE CONDITIONS PER THE BOUNDARY AND TOPOGRAPHIC SURVEY LAST DATED 2-3-21, PREPARED BY WT GROUP. CONTRACTOR SHALL FIELD VERIFY EXISTING ELEVATIONS AND CONDITIONS (INCLUDING BUT NOT LIMITED TO VERIFICATION OF CONTROL AND ALL UTILITIES WHETHER DEPICTED OR NOT) PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
B. ALL DIMENSIONS SHOWN ARE MEASURED FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT OR FACE OF CURB UNLESS OTHERWISE NOTED.
C. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES WITH THE ARCHITECTURAL PLANS.
D. SEE THE ARCHITECTURAL PLANS FOR THE DESIGN OF ALL BUILDING ENTRIES.
E. CONSTRUCTION SURVEY AND STAKEOUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
F. CONTRACTOR SHALL HIRE A PRIVATE UTILITY LOCATOR TO LOCATE UTILITIES PRIOR TO CONSTRUCTION AND SHALL CONTACT THE SITE ENGINEER IF A CONFLICT EXISTS.
G. CONTRACTOR SHALL CONTACT DIGGERS HOTLINE: WISCONSIN ONE-CALL CENTER (811 OR 1-800-242-8511) AND PRIVATE LOCATING SERVICE TO LOCATE ALL UNDERGROUND UTILITY LINES PRIOR TO STARTING ANY DEMOLITION AND/OR EXCAVATION. EXACT LOCATIONS OF ANY EXISTING ELECTRIC, GAS, TELEPHONE, ETC. LINES ARE UNKNOWN.
H. ASPHALT PAVEMENT MARKINGS SHALL BE MADE WITH HIGH QUALITY PAINT CONFORMING TO THE WISCONSIN DOT STANDARD SPECIFICATIONS.
I. ALL PAINTED CURB ON SITE TO BE REPAINTED FOLLOWING RESURFACING OF THE PARKING LOT. MATCH EXISTING COLOR, REPAINT WITH HIGH QUALITY PAINT CONFORMING TO DOT.

PARKING STALL COUNTS			
	STANDARD	ADA	TOTAL
PROPOSED	26	2	28

IMPERVIOUS SURFACE RATIO (ISR) = 62.23%

NOT FOR CONSTRUCTION

WT JOB NUMBER - 2002139C

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COUNTY of DANE 1839 WISCONSIN

DANE COUNTY EMERGENCY MANAGEMENT REMODEL
5415 KING JAMES WAY
FITCHBURG, WISCONSIN 53719

CLIENT APPROVAL
☐ APPROVED
☐ APPROVED AS NOTED
APPROVED BY / DATE:

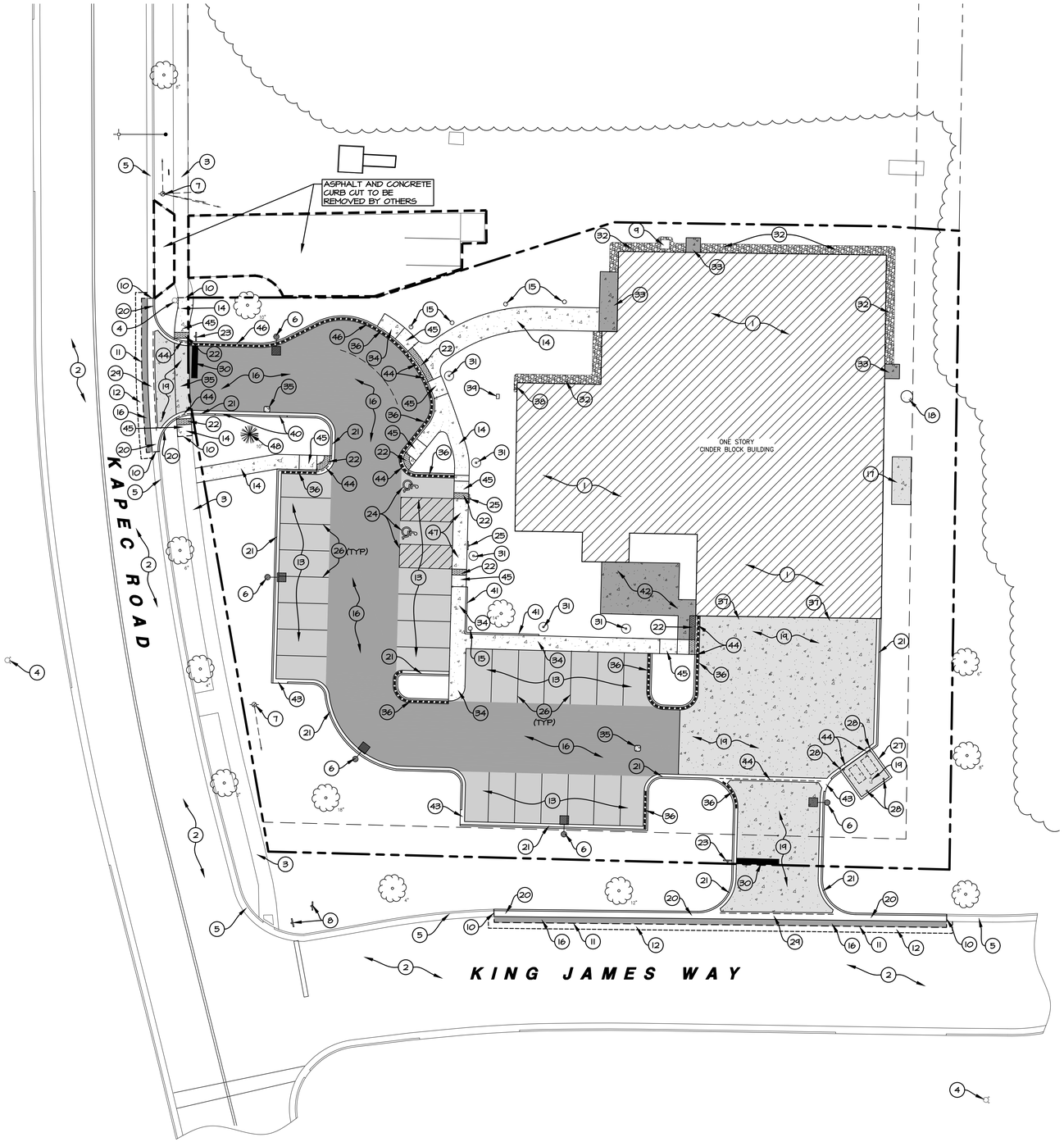
ISSUE RECORD

	DD SET	08/04/20
	CD CHECK SET	11/20/20
	98% CD REVIEW	02/11/21
	HVAC REDESIGN	04/30/21
	ISSUE FOR BID	06/08/21

CHECKED BY
JEG
DRAWN BY
BRA
DATE
5/24/2021 3:13:37 PM
PROJECT NUMBER
2020-001

SITE GEOMETRIC PLAN

C-2.0



1 SITE DEVELOPMENT PLAN
SCALE 1" = 20'

N

HATCH LEGEND

- NEW CONCRETE SIDEWALK
  5" PORTLAND CEMENT CONCRETE
  4" CRUSHED AGGREGATE BASE COURSE (CABC), DOT DENSE GRADED 3/4" PER SECTION 305 WISDOT SPECIFICATIONS
- NEW CONCRETE PAVEMENT / CONCRETE PAD
  8" PORTLAND CEMENT CONCRETE
  8" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" IS 1-1/4" DENSE GRADED BASE (DGB), BOTTOM PART OF THE LAYER CAN CONSIST OF 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS
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- NEW FULL DEPTH MEDIUM DUTY ASPHALT PAVEMENT
  1-3/4" HMA SURFACE COURSE
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  10" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" IS 1-1/4" DENSE GRADED BASE (DGB), BOTTOM PART OF THE LAYER CAN CONSIST OF 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS
- NEW GRAVEL TRENCH DRAIN SYSTEM

SITE DEVELOPMENT NOTES:

A. EXISTING CONDITIONS AND TOPOGRAPHY SHOWN REPRESENTS SITE CONDITIONS PER THE BOUNDARY AND TOPOGRAPHIC SURVEY LAST DATED 2-3-21 PREPARED BY WT GROUP. CONTRACTOR SHALL FIELD VERIFY EXISTING ELEVATIONS AND CONDITIONS (INCLUDING BUT NOT LIMITED TO VERIFICATION OF CONTROL AND ALL UTILITIES WHETHER DEPICTED OR NOT) PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
B. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES WITH THE ARCHITECTURAL PLANS.
C. SEE THE ARCHITECTURAL PLANS FOR THE DESIGN OF ALL BUILDING ENTRIES.
D. CONTRACTOR SHALL COORDINATE ALL LANDSCAPING IMPROVEMENTS WITH LANDSCAPE PLANS.
E. CONSTRUCTION SURVEY AND STAKEOUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
F. ALL EXISTING TREES SHOWN ARE TO REMAIN UNLESS OTHERWISE NOTED.
G. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS OUTSIDE OF CONSTRUCTION LIMITS TO ORIGINAL CONDITION OR BETTER.
H. ASPHALT PAVEMENT MARKINGS SHALL BE MADE WITH HIGH QUALITY PAINT CONFORMING TO WISDOT SPECIFICATIONS.
I. CONTRACTOR SHALL RESTORE ALL DISTURBED GREEN SPACES WITH 6" OF TOPSOIL, SEED, AND EROSION CONTROL BLANKET.
J. CONTRACTOR SHALL REPAIR AT HIS EXPENSE ANY DAMAGE TO EXISTING ASPHALT , CONCRETE, CURBS, SIDEWALKS, ETC. RESULTING FROM CONSTRUCTION TRAFFIC AND/OR OPERATIONS. REPAIRS SHALL BE MADE TO THE SATISFACTION OF THE OWNER AND/OR ENGINEER.
K. CONTRACTOR SHALL RE-STRIPE ALL STRIPING DISTURBED WITHIN THE EXISTING ROADWAYS/PARKING LOT TO MATCH EXISTING.
L. CONTRACTOR SHALL HIRE A PRIVATE UTILITY LOCATOR TO LOCATE UTILITIES PRIOR TO CONSTRUCTION AND SHALL CONTACT THE SITE ENGINEER IF A CONFLICT EXISTS.
M. ALL ITEMS MARKED "EXISTING" SHALL BE PROTECTED FROM DAMAGE FOR THE DURATION OF CONSTRUCTION.
N. ALL EXISTING SUBGRADE TO BE SCARIFIED (DISKED) TO A DEPTH OF 12" AND RE-COMPACTED, AND THEN TESTED USING A DYNAMIC CONE PENETROMETER. SEE GEOTECHNICAL REPORT FOR ADDITIONAL REQUIREMENTS.

PROJECT NOTES:

1. EXISTING BUILDING TO REMAIN.
2. EXISTING ASPHALT PAVEMENT TO REMAIN.
3. EXISTING CONCRETE TO REMAIN.
4. EXISTING HYDRANT AND ASSOCIATED PIPING TO REMAIN.
5. EXISTING CURB AND GUTTER TO REMAIN.
6. NEW AREA LIGHT. SEE ELECTRICAL PLAN FOR MORE DETAILS.
7. EXISTING UTILITY POLE, GUY WIRE AND ASSOCIATED WIRING TO REMAIN.
8. EXISTING SIGN TO REMAIN.
9. EXISTING CONCRETE PAD AND RADIO TOWER TO REMAIN. PROTECT DURING CONSTRUCTION.
10. NEW FULL DEPTH SAWCUT OF EXISTING CURB/CONCRETE TO PROVIDE CLEAN CONSTRUCTION BREAK.
11. NEW FULL DEPTH SAWCUT OF EXISTING ASPHALT PAVEMENT TO PROVIDE CLEAN CONSTRUCTION BREAK.
12. NEW 2' BUTT JOINT.
13. NEW LIGHT DUTY ASPHALT PAVEMENT.
14. NEW CONCRETE SIDEWALK.
15. NEW BOLLARD LIGHT. SEE ELECTRICAL PLAN FOR MORE DETAILS.
16. NEW MEDIUM DUTY ASPHALT PAVEMENT.
17. NEW 8" CONCRETE PAD.
18. NEW CONCRETE TOWER FOUNDATION. SEE TELECOMMUNICATION PLANS FOR DETAILS.
19. NEW CONCRETE PAVEMENT.
20. NEW 30" CONCRETE CURB AND GUTTER.
21. NEW 18" CONCRETE CURB AND GUTTER.
22. NEW DETECTABLE WARNING PLATE.
23. NEW "STOP" SIGN.
24. NEW ACCESSIBLE PARKING SPACE STRIPING AND SYMBOL.
25. NEW ACCESSIBLE PARKING SIGN.
26. NEW 4" WIDE, YELLOW PAINTED PAVEMENT STRIPING.
27. NEW TRASH ENCLOSURE. SEE ARCHITECTURAL PLANS FOR DETAILS.
28. NEW BOLLARD.
29. NEW 36" DEPRESSED CURB.
30. NEW 24" WIDE, WHITE PAINTED STOP BAR.
31. NEW TOP POST AREA LIGHT. SEE ELECTRICAL PLAN FOR MORE DETAILS.
32. NEW WATERPROOFING FOUNDATION / STONE STRIP TRENCH SYSTEM. SEE ARCHITECTURAL, PLUMBING AND LANDSCAPING PLANS FOR MORE DETAILS.
33. NEW 8" CONCRETE STOOP, DOWELLED TO THE BUILDING. SEE STRUCTURAL PLANS FOR ALL DETAILS.
34. NEW MONOLITHIC CONCRETE CURB AND SIDEWALK.
35. NEW CONCRETE COLLAR.
36. NEW 18" CONCRETE CURB AND GUTTER WITH REVERSE GUTTER PITCH SECTION.
37. NEW 8" CONCRETE PAVEMENT, DOWELLED TO THE BUILDING. SEE STRUCTURAL PLANS FOR ALL DETAILS.
38. EXISTING FIRE DEPARTMENT CONNECTION TO REMAIN.
39. NEW FLOOD LIGHT. SEE ELECTRICAL PLAN FOR MORE DETAILS.
40. VARIABLE HEIGHT CONCRETE CURB WITH GUTTER.
41. NEW RETAINING CURB.
42. NEW 8" CONCRETE PATIO, DOWELLED TO THE BUILDING. SEE STRUCTURAL PLANS FOR ALL DETAILS.
43. NEW CONCRETE CURB CUT.
44. NEW 24" DEPRESSED CONCRETE CURB AND GUTTER.
45. NEW ADA CONCRETE CURB RAMP.
46. NEW CONCRETE RETAINING CURB AND GUTTER WITH REVERSE GUTTER PITCH SECTION.
47. NEW CONCRETE SIDEWALK TO BE FLUSH WITH ADJACENT ASPHALT.
48. EXISTING TREE TO REMAIN. LIMBS TO BE TRIMMED TO PROVIDE CLEARANCE FOR PEDESTRIANS USING PROPOSED SIDEWALK.

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NOT FOR CONSTRUCTION

CLIENT APPROVAL
- ☐ APPROVED
- ☐ APPROVED AS NOTED

APPROVED BY / DATE:

ISSUE RECORD

	DD SET	08/04/20
	CD CHECK SET	11/20/20
	98% CD REVIEW	02/11/21
	HVAC REDESIGN	04/30/21
	ISSUE FOR BID	06/08/21

CHECKED BY
JEG
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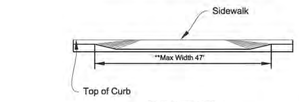
BRA
DATE
5/24/2021 5:09:40 PM
PROJECT NUMBER
2020-001

SITE DEVELOPMENT PLAN

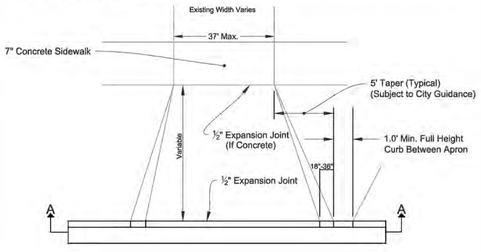
C-3.0

Commercial Driveway Detail

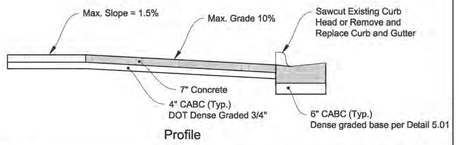


Section A-A

**Applicant may request an administrative variance for a commercial or industrial curb opening (excluding tapers) that is greater than 37' in width by providing documentation per City Ordinance 27-402 (b).



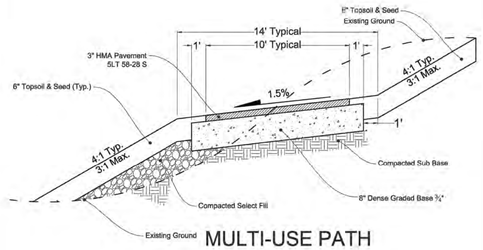
Plan



Profile

THE CITY OF Fitchburg PUBLIC WORKS

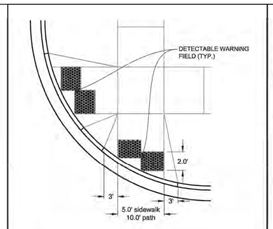
COMMERCIAL DRIVEWAY	DATE: 2/1/2017
STANDARD DETAIL DRAWING	SHEET NO.: 4.03

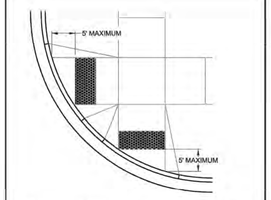


MULTI-USE PATH

THE CITY OF Fitchburg PUBLIC WORKS

PATHS	DATE: 2/1/2017
STANDARD DETAIL DRAWING	SHEET NO.: 4.02

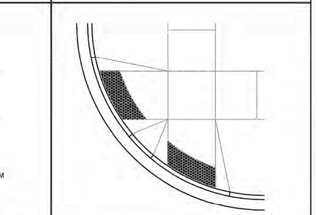




WHERE THE GRADE BREAK DISTANCE EXCEEDS 5 FEET, RADIAL DETECTABLE WARNING FIELDS ARE NECESSARY. RADIAL PLATES PROVIDE FULL DETECTABLE COVERAGE IMMEDIATELY AT BACK OF CURB.

GENERAL NOTES FOR ALL SIDEWALK RAMPS

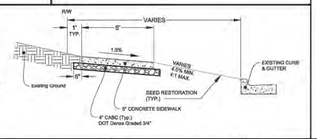
1. *Install curb cuts at sidewalk ramps with either full removal and replacement or by "sawcutting" the curb head.*
2. *Curb tapers at curb cuts shall be 18" unless otherwise directed by the Engineer.*
3. *The width of the flat bottom of the ramp at the curb shall be 60" minimum.*
4. *The maximum slope of the ramp between the back of the curb and the front of the detectable warning field shall not exceed 2%. The maximum slope of the ramp between the front of the detectable warning field and the sidewalk shall not exceed 7%.*
5. *All handicap ramps shall include detectable warning fields with truncated domes.*
6. *Detectable warning field shall be oriented in a manner that it is parallel to the direction of pedestrian traffic. When curb is perpendicular to direction of pedestrian traffic, install detectable warning field tight to back of curb. When curb is not perpendicular to the direction of pedestrian traffic, stager detectable warning field panels to minimize space between detectable warning field panels and back of curb.*
7. *For a sidewalk ramp, detectable warnings shall be a minimum of 5' x 2'. For a bike path ramp, detectable warnings shall be a minimum of 10' x 2'.*
8. *When conditions require more information, refer to "UFAS" (Uniform Federal Accessability Standards).*



RADIAL PLATES TO BE USED IF GRADE BREAK EXCEEDS 5

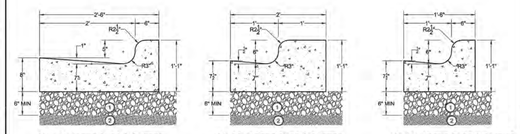
GENERAL NOTES FOR ALL SIDEWALK

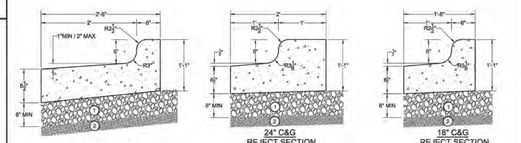
1. *Sidewalk thickness shall be 7-inches through driveways, 7-inches at ramps, and 5-inches for all public sidewalk.*
2. *Sidewalk cross-slope shall be 1.5% and not exceed 2.0%.*
3. *Provide a 1/2" expansion joint at all ramp locations, through driveways, against the curb and gutter, at radii, and every 200' of the sidewalk.*
4. *Construction forms shall be equal to or greater than the sidewalk thickness.*

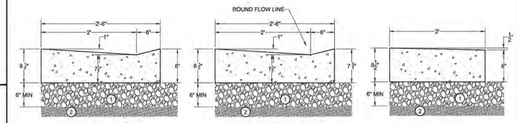


THE CITY OF Fitchburg PUBLIC WORKS

SIDEWALK & RAMPS	DATE: 2/1/2017
STANDARD DETAIL DRAWING	SHEET NO.: 4.02



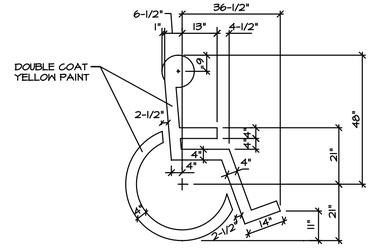




1 Dense Graded Base Per Detail 5.01, Shall be provided 12-inches beyond the back of curb
2 Compacted Sub Base

THE CITY OF Fitchburg PUBLIC WORKS

CONCRETE CURB AND GUTTER	DATE: 1/24/2014
STANDARD DETAIL DRAWING	SHEET NO.: 4.01

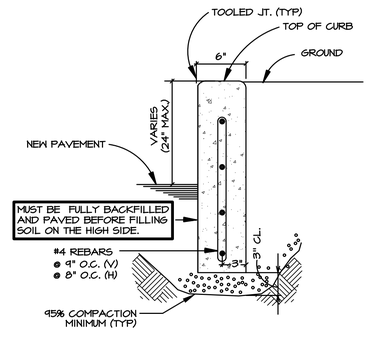


NOTES:

1. SYMBOL TO BE CENTERED ON WIDTH OF PARKING STALL.

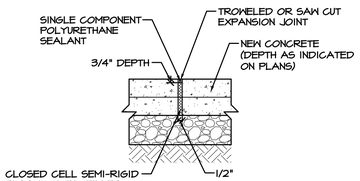
DETAIL - ACCESSIBLE SYMBOL

NOT TO SCALE



DETAIL - RETAINING CURB

NOT TO SCALE

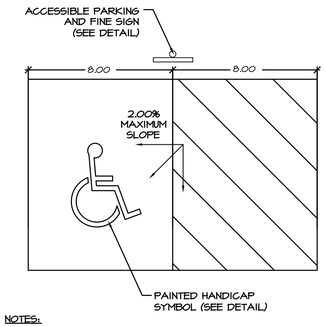


NOTES:

1. EXPANSION JOINTS TO BE INSTALLED AT EDGES OF ALL CASTINGS ADJACENT TO CONCRETE.

DETAIL - CONCRETE EXPANSION JOINT

NOT TO SCALE

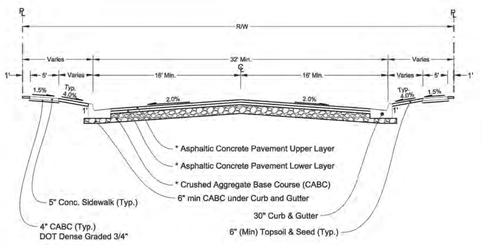


NOTES:

1. ALL PAVEMENT STRIPING SHALL BE YELLOW.
2. MAXIMUM SLOPE WITHIN ALL ACCESSIBLE PARKING STALLS SHALL NOT EXCEED 2.00% IN ANY DIRECTION.

DETAIL - ACCESSIBLE PARKING STALL

NOT TO SCALE



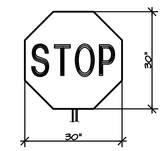
* City of Fitchburg Minimum New Pavement Design

Type	Crushed Aggregate Base Course		Asphaltic Concrete Pavement				
	Lower Layer	Upper Layer	Lower Layer		Upper Layer		Asphalt
	Dense 3"	Dense 1 ¼"	Type	Thickness	Type	Thickness	Material
Residential	7"-8"	4"-5"	LT	2 ¼"	LT	1 ¾"	58-28
Collector	7"-8"	4"-5"	LT	2 ¾"	LT	1 ¾"	58-28
Arterial	7"-8"	4"-5"	MT	3"	MT	2 ¼"	58-28

*Note: All cul-de-sac bulbs shall increase binder and surface by 1/4"

THE CITY OF Fitchburg PUBLIC WORKS

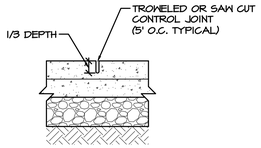
STREET TYPES	DATE: 2/1/2017
STANDARD DETAIL DRAWING	SHEET NO.: 5.01



MUTCD R1-1

DETAIL - STOP SIGN

NOT TO SCALE



DETAIL - CONCRETE CONTROL JOINT

NOT TO SCALE

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COUNTY of DANE WISCONSIN 1839

DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY
FITCHBURG, WISCONSIN 53719

NOT FOR CONSTRUCTION

CLIENT APPROVAL
☐ APPROVED
☐ APPROVED AS NOTED
APPROVED BY / DATE:

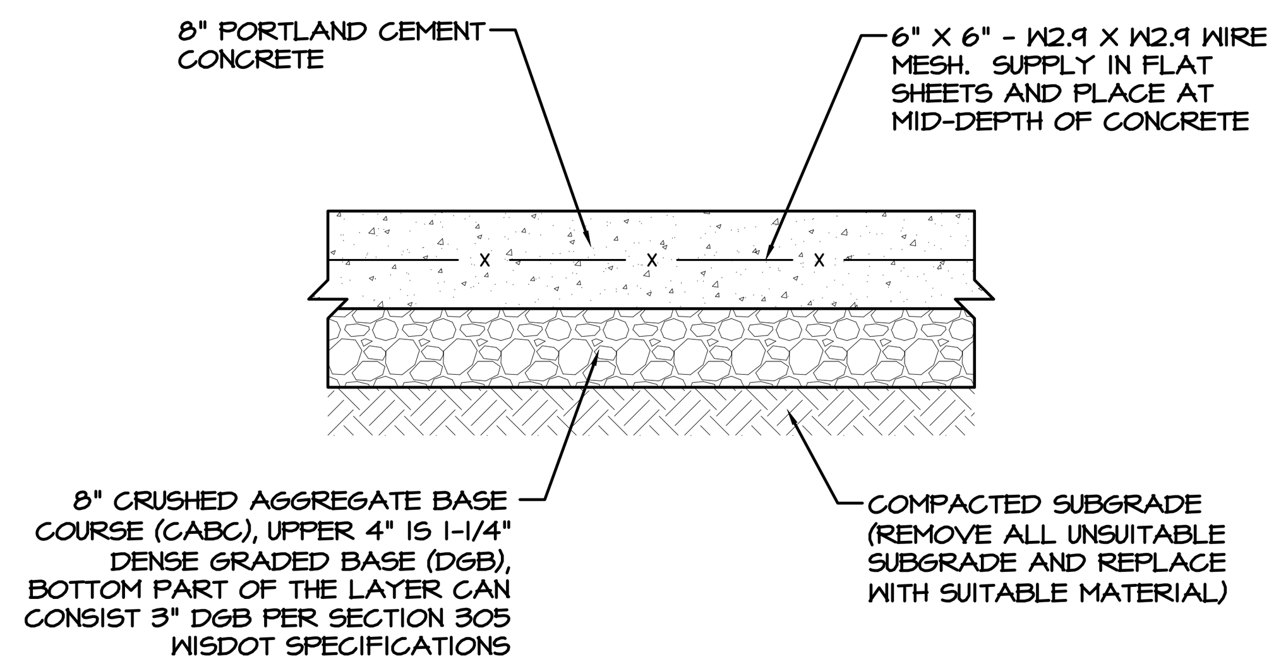
ISSUE RECORD

DD SET	08/04/20
CD CHECK SET	11/20/20
98% CD REVIEW	02/11/21
HVAC REDESIGN	04/30/21
ISSUE FOR BID	06/08/21

CHECKED BY	JEG
DRAWN BY	BRA
DATE	5/24/2021 3:29:40 PM
PROJECT NUMBER	2020-001

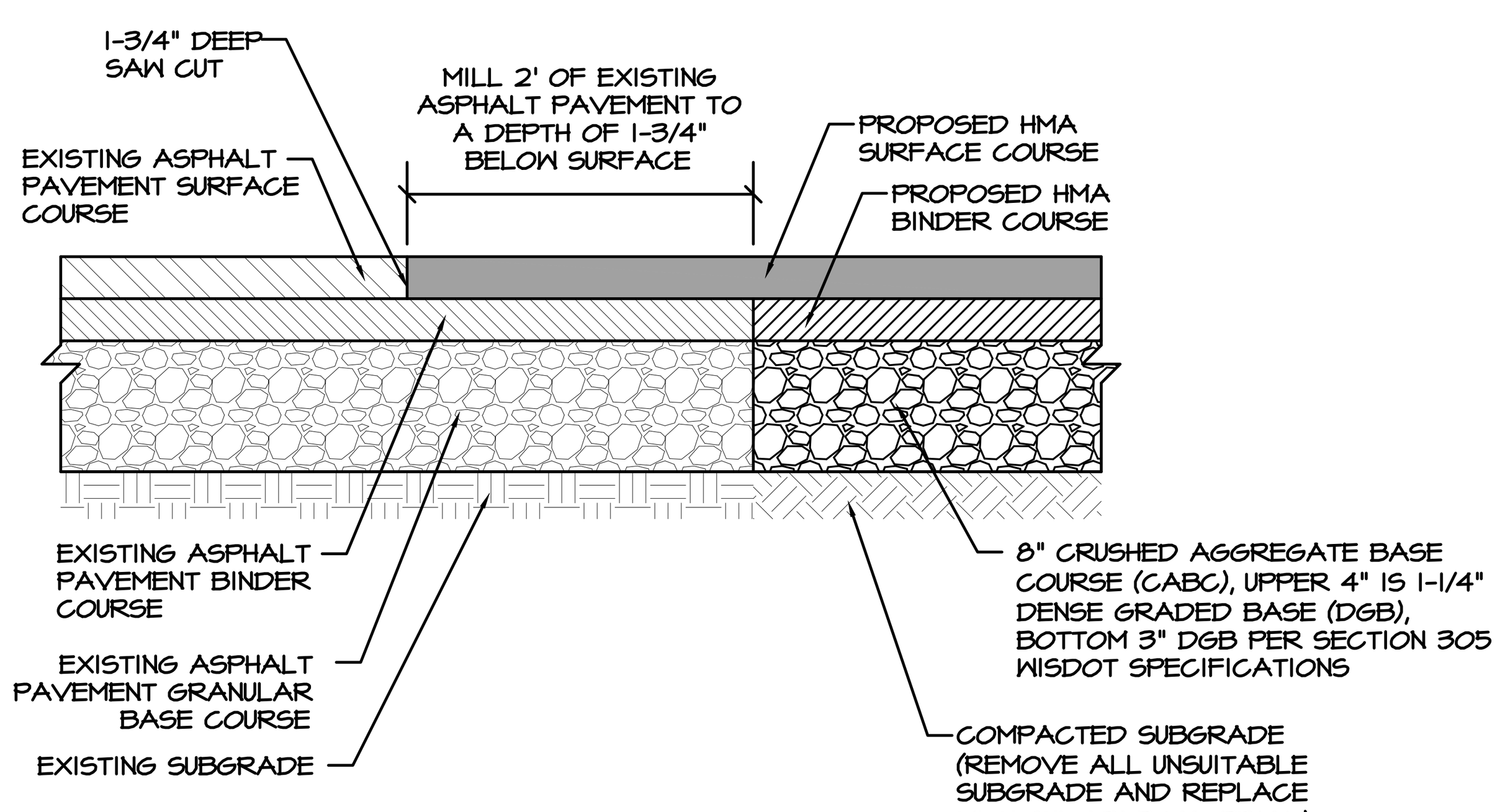
SITE DEVELOPMENT DETAILS

C-3.1



DETAIL - CONCRETE PAVEMENT

NOT TO SCALE

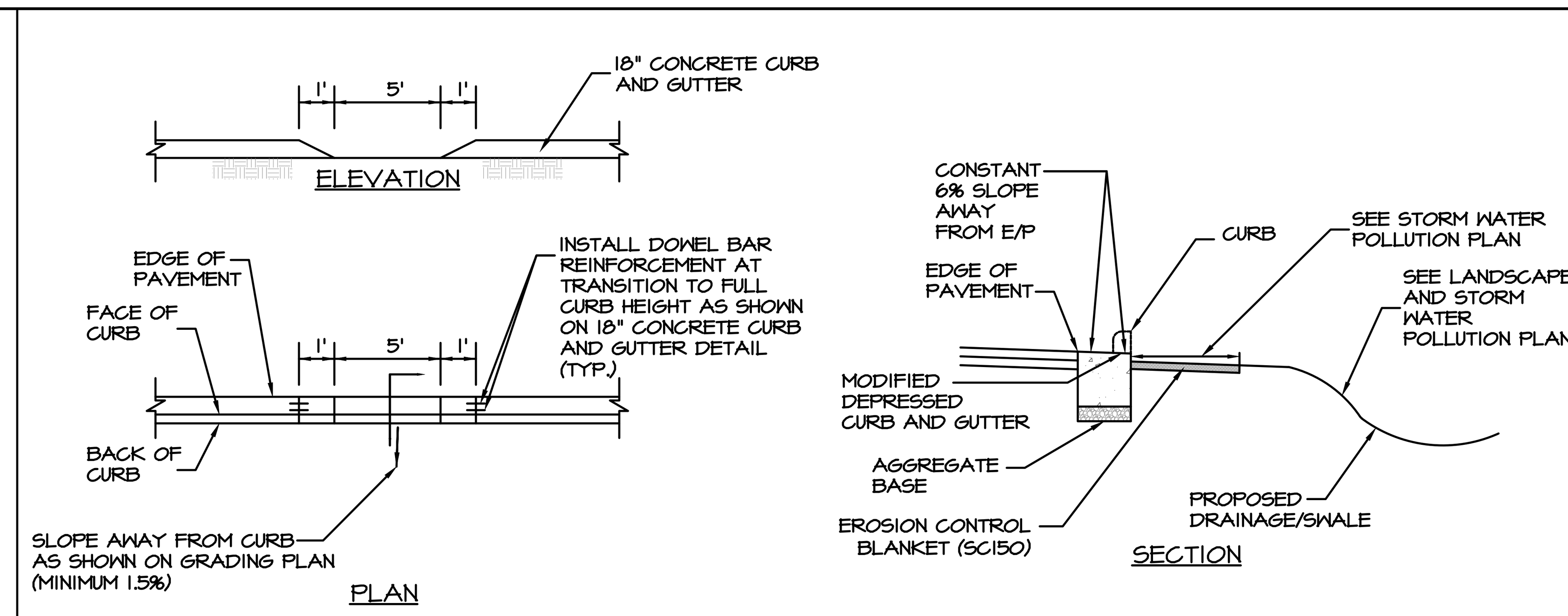


NOTES:

1. EXISTING PAVEMENT SECTION IS SHOWN FOR REFERENCE ONLY.
2. ALL ASPHALT PAVEMENT MILLINGS SHALL BE DISPOSED OF BY THE CONTRACTOR.
3. BITUMINOUS TACK COAT SHALL BE APPLIED AT A RATE OF 0.1 GALLONS PER SQUARE YARD TO BOTH THE EXISTING AND PROPOSED ASPHALT BINDER COURSE PRIOR TO NEW HMA SURFACE COURSE INSTALLATION.

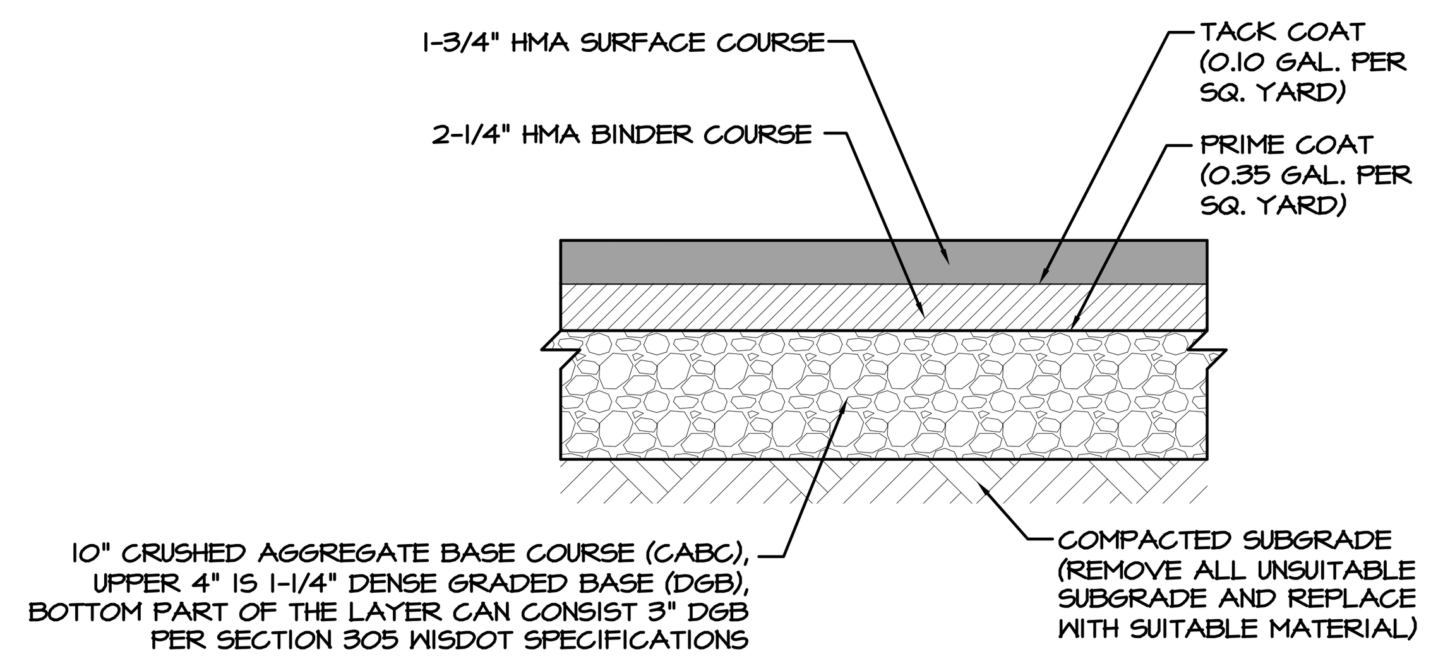
DETAIL - BUTT JOINT

NOT TO SCALE



DETAIL - CURB CUT OUTLET

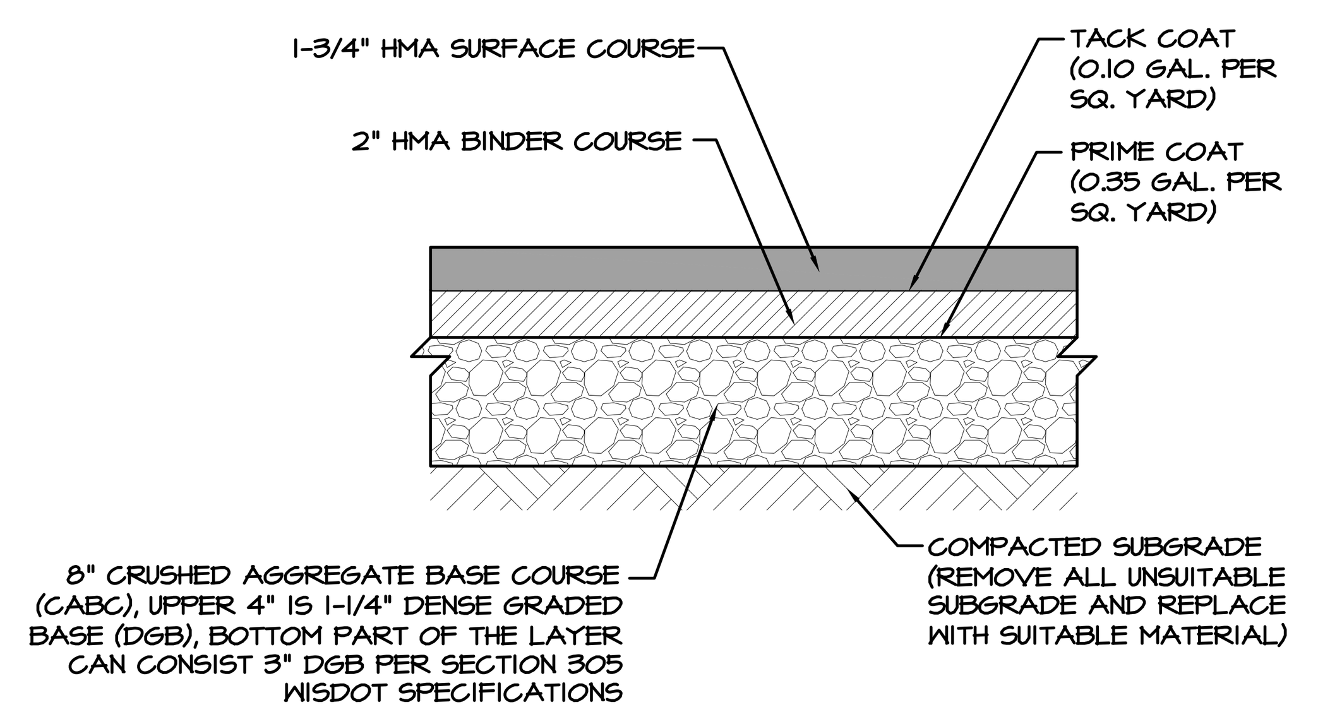
NOT TO SCALE



NOTES:
1. WISCONSIN DOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION, INCLUDING SUPPLEMENTAL SPECIFICATIONS, AND WISCONSIN ASPHALT PAVEMENT ASSOCIATION 2018 ASPHALT PAVEMENT DESIGN GUIDE.
2. COMPACTION REQUIREMENTS:
- BITUMINOUS CONCRETE: REFER TO SECTION 460-3.
- BASE COURSE: REFER TO SECTION 301.3.4.2, STANDARD COMPACTION

DETAIL - MEDIUM DUTY ASPHALT PAVEMENT

NOT TO SCALE



NOTES:
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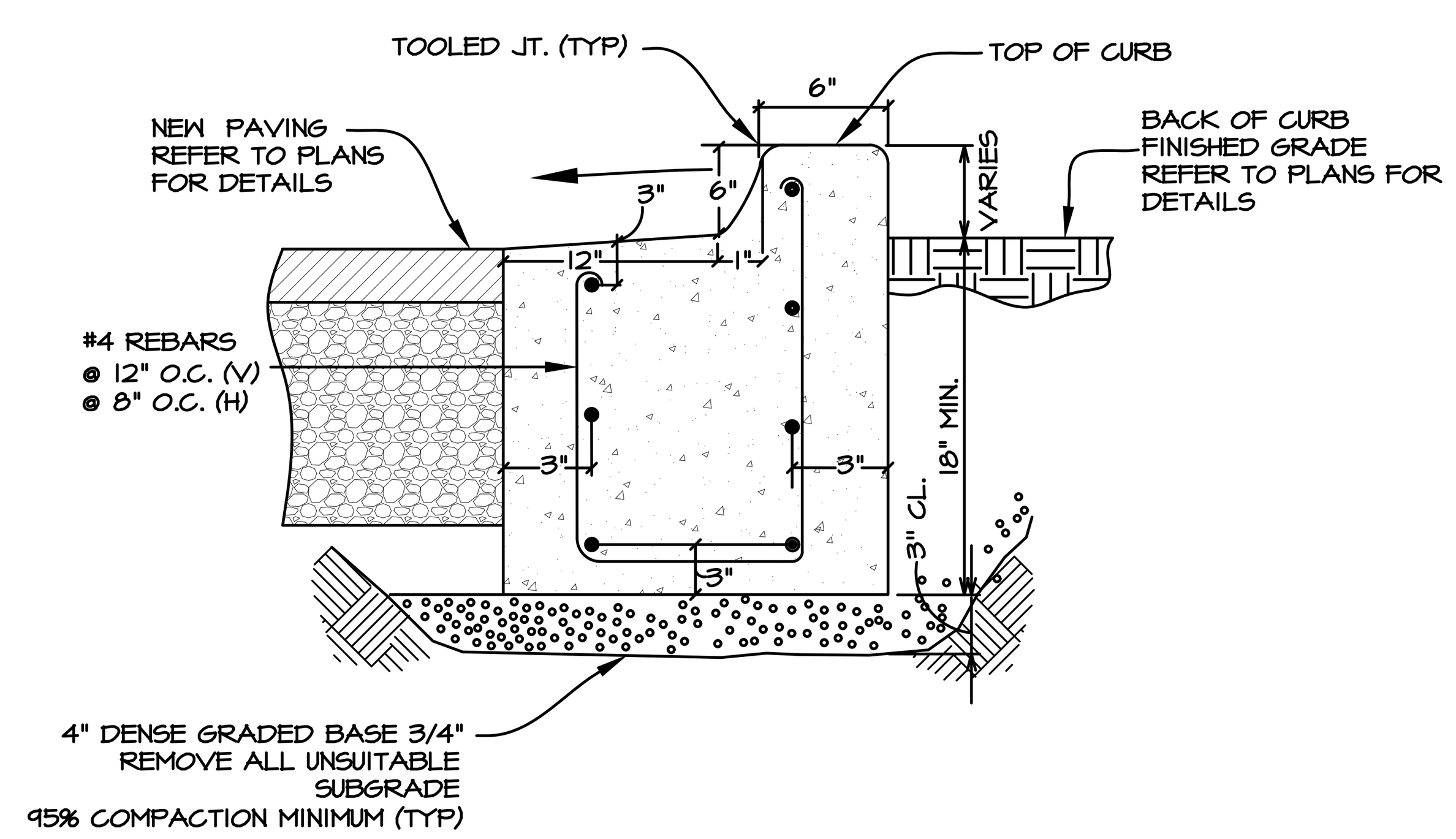
2. COMPACTION REQUIREMENTS:
- BITUMINOUS CONCRETE: REFER TO SECTION 460-3.
- BASE COURSE: REFER TO SECTION 301.3.4.2, STANDARD COMPACTION

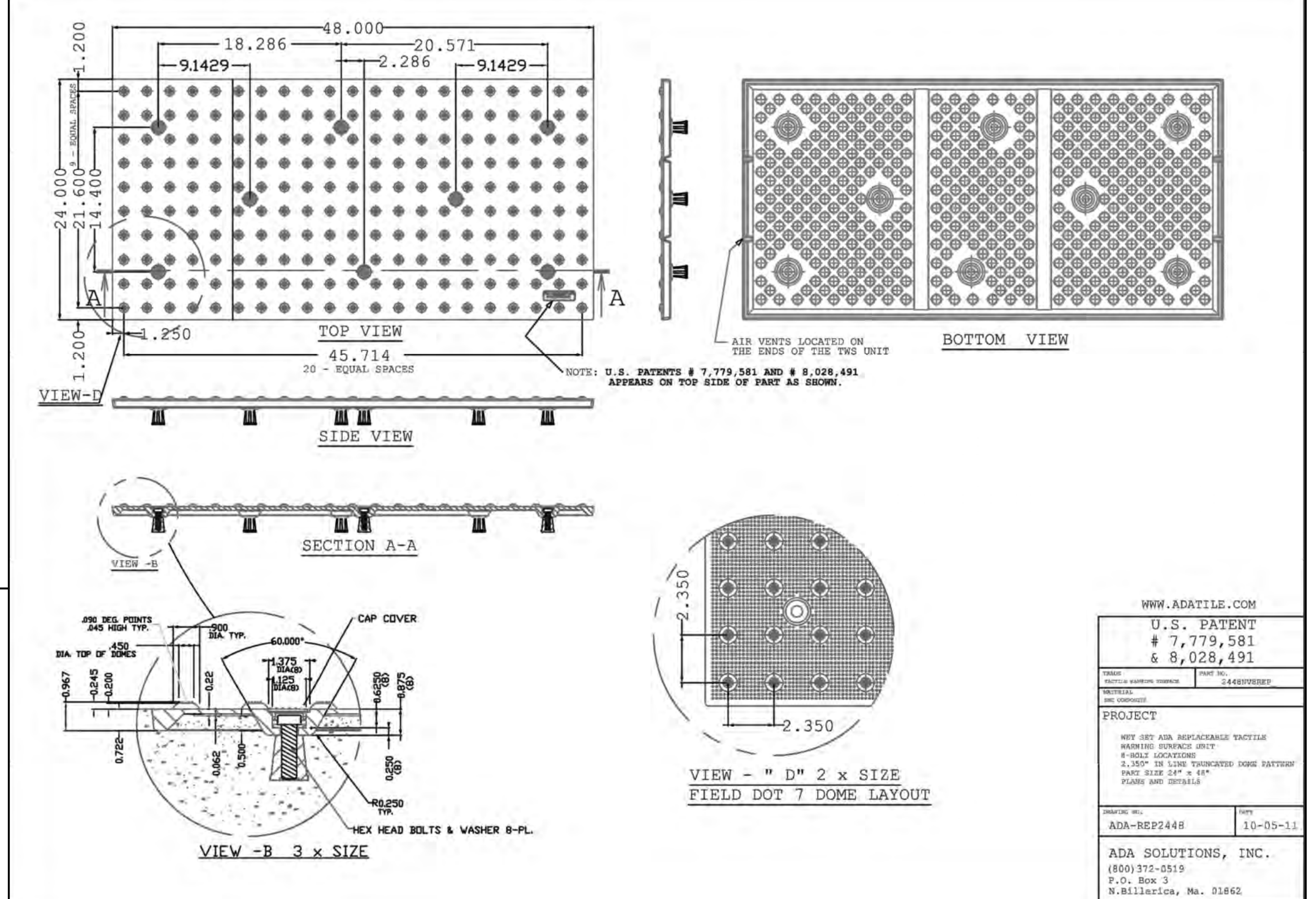
DETAIL - LIGHT DUTY ASPHALT PAVEMENT

NOT TO SCALE



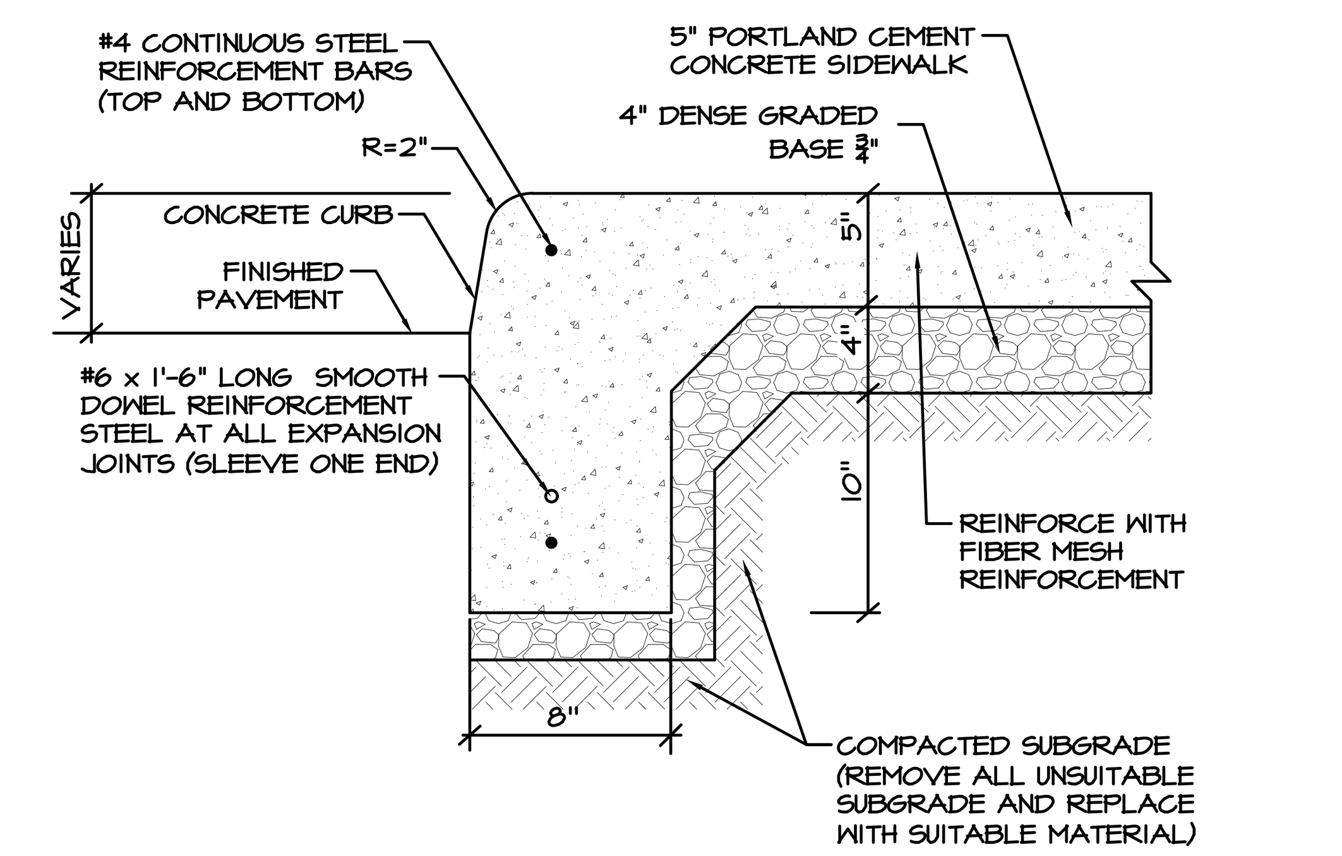
DETAIL - RETAINING CURB WITH GUTTER REVERSE GUTTER PITCH SECTION.

NOT TO SCALE



DETAIL - DETECTABLE WARNING PLATE

NOT TO SCALE



NOTES:

1. 1" THICK PREFORMED EXPANSION JOINTS SHALL BE INSTALLED AT A MINIMUM OF 50 FOOT INTERVALS AND AT ALL CURB PC'S AND PT'S, CURB RETURNS, ENDS OF CONSTRUCTION AND 5 FEET ON EACH SIDE OF ANY UTILITY STRUCTURE CASTING THAT FALLS WITHIN THE CURB LINE. PROVIDE 1-1" Φ x 18" SMOOTH EPOXY COATED DOWEL BARS AT EXPANSION JOINTS WITH DOWEL BAR AND PINCH CAP.
2. CONTROL JOINTS SHALL BE SAWED PER DETAIL, TO A MINIMUM DEPTH OF 2" AND PLACED AT 10 FOOT INTERVALS. SAW CUTS SHALL BE SAWED NO SOONER THAN 6 HOURS AND NO LATER THAN 24 HOURS AFTER PLACEMENT OF CONCRETE.
3. 2 CONTINUOUS NO. 4 BARS SHALL BE INSTALLED AND CENTERED OVER ALL TRENCH CROSSINGS SO BARS EXTEND 5 FEET BEYOND THE TRENCH ON ALL SIDES.
4. DOWEL BARS AT EXPANSION JOINTS MUST BE DRILLED AND NOT PUSHED THRU EXPANSION MATERIAL.

DETAIL - MONOLITHIC CONCRETE SIDEWALK

NOT TO SCALE

WT JOB NUMBER - 2002139C

WT Group
Engineering • Design • Consulting
Structural | Mechanical/Electrical/Plumbing
Civil | Land Survey | Telecommunication | Aquatic
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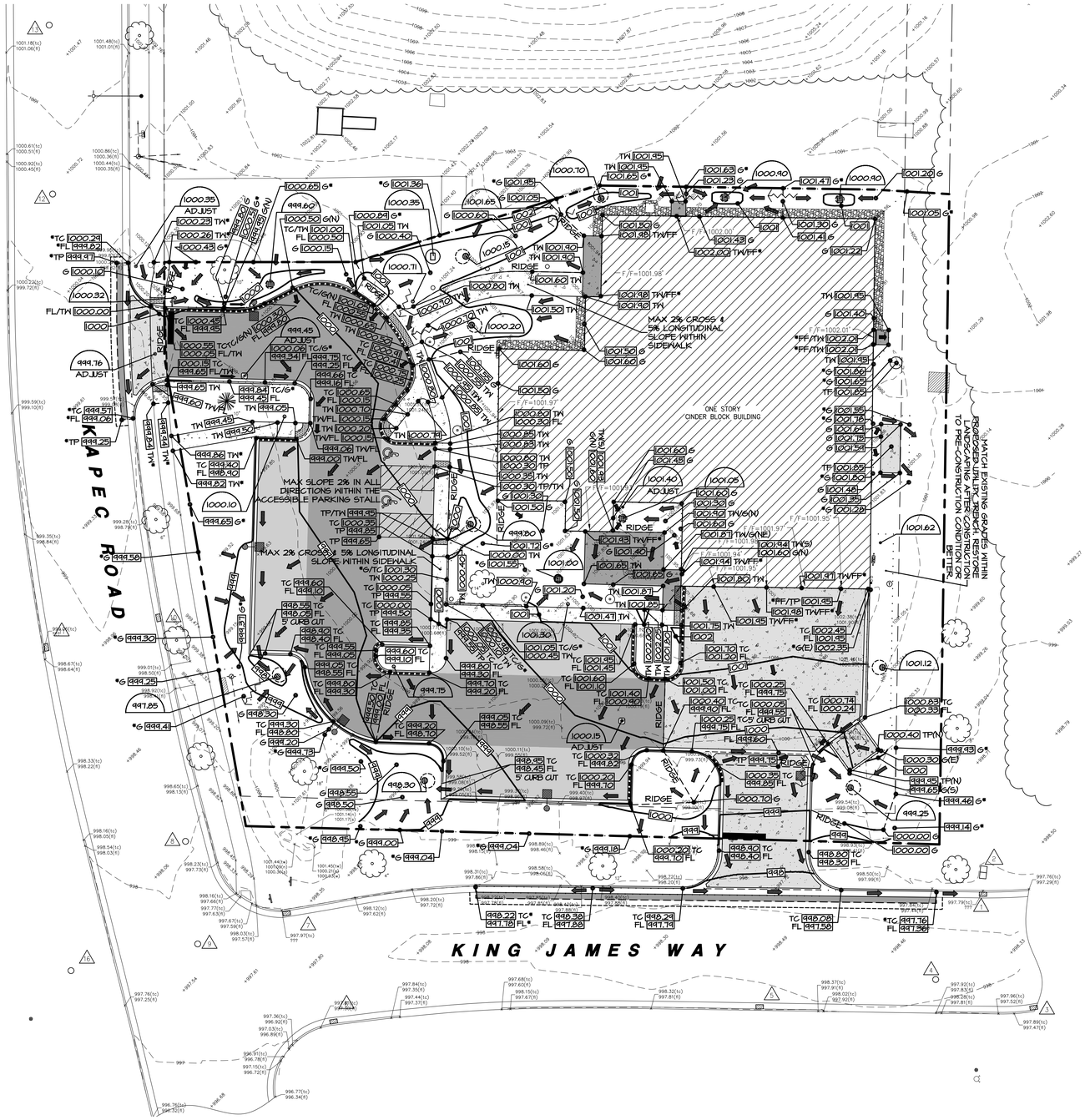

1 SITE GRADING PLAN
SCALE 1" = 20'

N

GRADING LEGEND

- EXISTING SPOT GRADE
- PROPOSED SPOT GRADE
- INTERPOLATED SPOT GRADE
- PROPOSED RIM ELEVATION
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- OVERLAND FLOW ARROW
- 100 YEAR OVERLAND FLOW ROUTE
- EMERGENCY OVERFLOW ARROW
- TP — TOP OF PAVEMENT ELEVATION
- TW — TOP OF SIDEWALK ELEVATION
- G — FINISHED GRADE ELEVATION
- FF — FINISHED FLOOR ELEVATION
- TC — TOP OF CURB ELEVATION
- FL — FLOW LINE ELEVATION
- ADJUST — ADJUST EXISTING RIM ELEVATION
- TF — TOP OF FOUNDATION ELEVATION
- EXISTING CLOSED MANHOLE
- EXISTING OPEN GRATE MANHOLE
- EXISTING BEEHIVE GRATE MANHOLE
- EXISTING CURB INLET
- EXISTING FIRE HYDRANT
- EXISTING VALVE VAULT
- EXISTING B-BOX
- PROPOSED INLET
- PROPOSED OPEN LID MANHOLE / CATCH BASIN
- PROPOSED CLOSED LID MANHOLE

EXISTING UTILITY DATA

1. RIM=997.22' (STORM)
36"x18" CONCRETE STRUCTURE
INV=993.85' (18" RCP N/SSE)

2. RIM=997.95' (STORM)
12'x12' CONCRETE STRUCTURE
INV=991.80' (48"x76" RCP N)
ELLIPTICAL PIPE
INV=993.55' (18" RCP S)
INV=991.80' (53"x83" RCP W)
ELLIPTICAL PIPE

3. RIM=997.10' (STORM)
36"x18" CONCRETE STRUCTURE
INV=994.79' (18" RCP NNW)
INV=994.79' (15" PVC S)

4. RIM=998.34' (SANITARY)
48" CONCRETE STRUCTURE
INV=993.34' (12" RCP NE/S)
INV=993.66' (8" PVC W)

5. RIM=997.65' (STORM)
36"x18" CONCRETE STRUCTURE
INV=992.90' (18" RCP N)

6. RIM=997.26' (STORM)
36"x18" CONCRETE STRUCTURE
INV=993.61' (12" RCP NNW)

7. RIM=997.31' (STORM)
36"x18" CONCRETE STRUCTURE
INV=992.54' (12" RCP NNW/SSE)

8. RIM=998.05' (STORM)
CONCRETE STRUCTURE
UNABLE TO DETERMINE SIZE
INV=988.55' (53"x83" RCP E)
ELLIPTICAL PIPE
INV=988.55' (66" RCP SW)
INV=988.65' (36" RCP NW)

9. RIM=997.87' (STORM)
60" CONCRETE STRUCTURE
INV=980.45' (42" RCP SSE/NW)

10. RIM=998.51' (STORM)
36"x18" CONCRETE STRUCTURE
INV=992.68' (18" RCP WSW)

11. RIM=998.42' (STORM)
72" CONCRETE STRUCTURE
INV=990.23' (30" RCP N)
INV=990.47' (18" RCP ENE)
INV=981.23' (42" RCP SE)

12. RIM=1000.57' (STORM)
48" CONCRETE STRUCTURE
INV=995.85' (30" RCP N)
INV=993.23' (30" RCP S)

13. RIM=1001.59' (STORM)
48" CONCRETE STRUCTURE
INV=997.28' (30" RCP N/S)

14. RIM=1002.81' (SANITARY)
48" CONCRETE STRUCTURE
INV=996.35' (8" PVC N/S)

15. RIM=1005.42' (STORM)
60" CONCRETE STRUCTURE
INV=999.57' (30" RCP N/S)
INV=999.72' (18" RCP E)
INV=999.87' (18" RCP W)

16. RIM=998.11' (SANITARY)
48" CONCRETE STRUCTURE
INV=994.67' (8" PVC N/E/SW)

17. RIM=995.13' (STORM)
84" CONCRETE STRUCTURE
INV=987.18' (36" RCP ENE)
INV=979.93' (42" RCP SSE/NNW)

18. RIM=996.01' (STORM)
CONCRETE STRUCTURE
UNABLE TOP DETERMINE SIZE
INV=987.46' (66" RCP NE/SW)
INV=989.21' (24" RCP ESE CAPPED)

19. RIM=997.33' (SANITARY)
48" CONCRETE STRUCTURE
INV=992.28' (15" PVC E)
INV=992.28' (12" RCP N)

20. RIM=999.10' (SANITARY)
48" CONCRETE STRUCTURE
INV=994.46' (12" RCP NNE/SW)
INV=995.72' (4" PVC E)

21. RIM=1010.75' (STORM)
84" CONCRETE STRUCTURE
INV=996.20' (48" RCP N)
INV=996.20' (48"x76" RCP S)*
* ELLIPTICAL PIPE

HATCH LEGEND

NEW CONCRETE SIDEWALK
5" PORTLAND CEMENT CONCRETE
4" CRUSHED AGGREGATE BASE COURSE (CABC), DOT DENSE GRADED 3/4" PER SECTION 305 WISDOT SPECIFICATIONS

NEW CONCRETE PAVEMENT / CONCRETE PAD
8" PORTLAND CEMENT CONCRETE
8" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" IS 1-1/4" DENSE GRADED BASE (DGB), BOTTOM PART OF THE LAYER CAN CONSIST OF 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS

NEW CONCRETE STOOP / CONCRETE PATIO
8" PORTLAND CEMENT CONCRETE
8" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" IS 1-1/4" DENSE GRADED BASE (DGB), BOTTOM PART OF THE LAYER CAN CONSIST OF 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS

NEW FULL DEPTH LIGHT DUTY ASPHALT PAVEMENT
1-3/4" HMA SURFACE COURSE
2" HMA BINDER COURSE
8" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" IS 1-1/4" DENSE GRADED BASE (DGB), BOTTOM PART OF THE LAYER CAN CONSIST OF 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS

NEW FULL DEPTH MEDIUM DUTY ASPHALT PAVEMENT
1-3/4" HMA SURFACE COURSE
2-1/4" HMA BINDER COURSE
10" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" IS 1-1/4" DENSE GRADED BASE (DGB), BOTTOM PART OF THE LAYER CAN CONSIST OF 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS

NEW GRAVEL TRENCH DRAIN SYSTEM

SITE GRADING NOTES:

A. EXISTING CONDITIONS AND TOPOGRAPHY SHOWN REPRESENTS SITE CONDITIONS PER THE BOUNDARY AND TOPOGRAPHIC SURVEY LAST DATED 2-3-21 PREPARED BY WT GROUP. CONTRACTOR SHALL FIELD VERIFY EXISTING ELEVATIONS AND CONDITIONS (INCLUDING BUT NOT LIMITED TO VERIFICATION OF CONTROL AND ALL UTILITIES WHETHER DEPICTED OR NOT) PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
B. ALL PROPOSED GRADES ARE GIVEN TO FINISHED GRADE, I.E. TOP OF PROPOSED ASPHALT, CONCRETE, TOP OF PROPOSED CURB, ETC. SEE DETAILS FOR PAVEMENT THICKNESS.
C. CONTRACTOR SHALL CONTACT DIGGERS HOTLINE (811 OR 1-800 242-8511) AND PRIVATE LOCATING SERVICE TO LOCATE ALL UNDERGROUND UTILITY LINES PRIOR TO STARTING ANY DEMOLITION AND/OR EXCAVATION. EXACT LOCATIONS OF ANY EXISTING ELECTRIC, GAS, TELEPHONE, ETC. LINES ARE UNKNOWN.
D. CONTRACTOR SHALL ENSURE POSITIVE SITE DRAINAGE AT THE END OF EACH WORKING DAY DURING CONSTRUCTION OPERATIONS. FAILURE TO PROVIDE ADEQUATE DRAINAGE WILL PRECLUDE THE CONTRACTOR FROM ANY POSSIBLE COMPENSATION REQUESTED DUE TO DELAYS OR UNSUITABLE MATERIALS CREATED AS A RESULT.
E. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS OUTSIDE OF CONSTRUCTION LIMITS TO ORIGINAL CONDITION OR BETTER.
F. CONTRACTOR SHALL REPAIR AT HIS EXPENSE ANY DAMAGE TO EXISTING ASPHALT, CONCRETE, CURBS, SIDEWALKS, ETC. RESULTING FROM CONSTRUCTION TRAFFIC AND/OR OPERATIONS. REPAIRS SHALL BE MADE TO THE SATISFACTION OF THE OWNER AND/OR ENGINEER.
G. CONTRACTOR TO UTILIZE CARE WHEN WORKING NEAR EXISTING UTILITIES TO REMAIN. ANY DAMAGE TO EXISTING UTILITIES NOT NOTED TO BE REMOVED SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER AND/OR ENGINEER.
H. ALL EXISTING TREES SHOWN ARE TO REMAIN UNLESS OTHERWISE NOTED.
I. ALL HANDICAP ACCESSIBLE ROUTES (SIDEWALKS, WALKWAYS, PAVEMENTS, ETC.) SHALL MAINTAIN A MAXIMUM CROSS SLOPE OF 2.00% AND A MAXIMUM LONGITUDINAL SLOPE OF 5.00%. ACCESSIBLE PARKING STALLS SHALL MAINTAIN A MAXIMUM SLOPE OF 2.00% IN ALL DIRECTIONS.
J. VOIDS LEFT BY ANY ITEM REMOVED UNDER ANY PROPOSED BUILDING, PAVEMENT, OR WALK OR WITHIN 24" THEREOF SHALL BE BACKFILLED WITH ENGINEERED FILL ACCORDING TO THE GEOTECHNICAL REPORT.
K. ALL FIRE ACCESS LANES WITHIN THE PROJECT AREA SHALL REMAIN IN SERVICE, CLEAN OF DEBRIS, AND ACCESSIBLE FOR USE BY EMERGENCY VEHICLES.
L. CONSTRUCTION ACCESS POINTS TO THE SITE SHALL BE PROTECTED IN SUCH A WAY AS TO PREVENT TRACKING OF MUD OR SOIL ONTO PUBLIC THOROUGHFARES. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
M. ALL EXISTING SUBGRADE TO BE SCARIFIED (DISKED) TO A DEPTH OF 12" AND RE-COMPACTED, AND THEN TESTED USING A DYNAMIC CONE PENETROMETER. SEE GEOTECHNICAL REPORT FOR ADDITIONAL REQUIREMENTS.
N. ALL EXCESS SOILS THAT CANNOT BE USED AS SUITABLE FILL SHALL BE HAULED FROM THE SITE AND LEGALLY DISPOSED OF.
O. CONTRACTOR TO PROVIDE SOIL TESTING SERVICES FOR COMPLETION OF THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES FORMS AS PART OF THEIR CONTRACT.
P. PREPARE SUBGRADE AS SPECIFIED WITHIN THE GEOTECHNICAL EXPLORATION REPORT DATED AUGUST 17, 2020 PREPARED BY CONSTRUCTION GEOTECHNICAL CONSULTANTS, INC. (CGC).
Q. ALL TOPSOIL BENEATH PROPOSED STRUCTURES AND PAVEMENT SHALL BE REMOVED. REFER TO THE GEOTECHNICAL EXPLORATION REPORT DATED AUGUST 17, 2020 PREPARED BY CONSTRUCTION GEOTECHNICAL CONSULTANTS, INC. (CGC) FOR EXISTING TOPSOIL DEPTHS.
R. PROOFROLL OF SUBGRADE AND STONE PER GEOTECHNICAL EXPLORATION REPORT DATED AUGUST 17, 2020 PREPARED BY CONSTRUCTION GEOTECHNICAL CONSULTANTS, INC. (CGC).
S. PROOFROLL OF SURBGRADE AND STONE PER GEOTECH REPORT.

WT JOB NUMBER - 2002139C

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SITE GRADING PLAN

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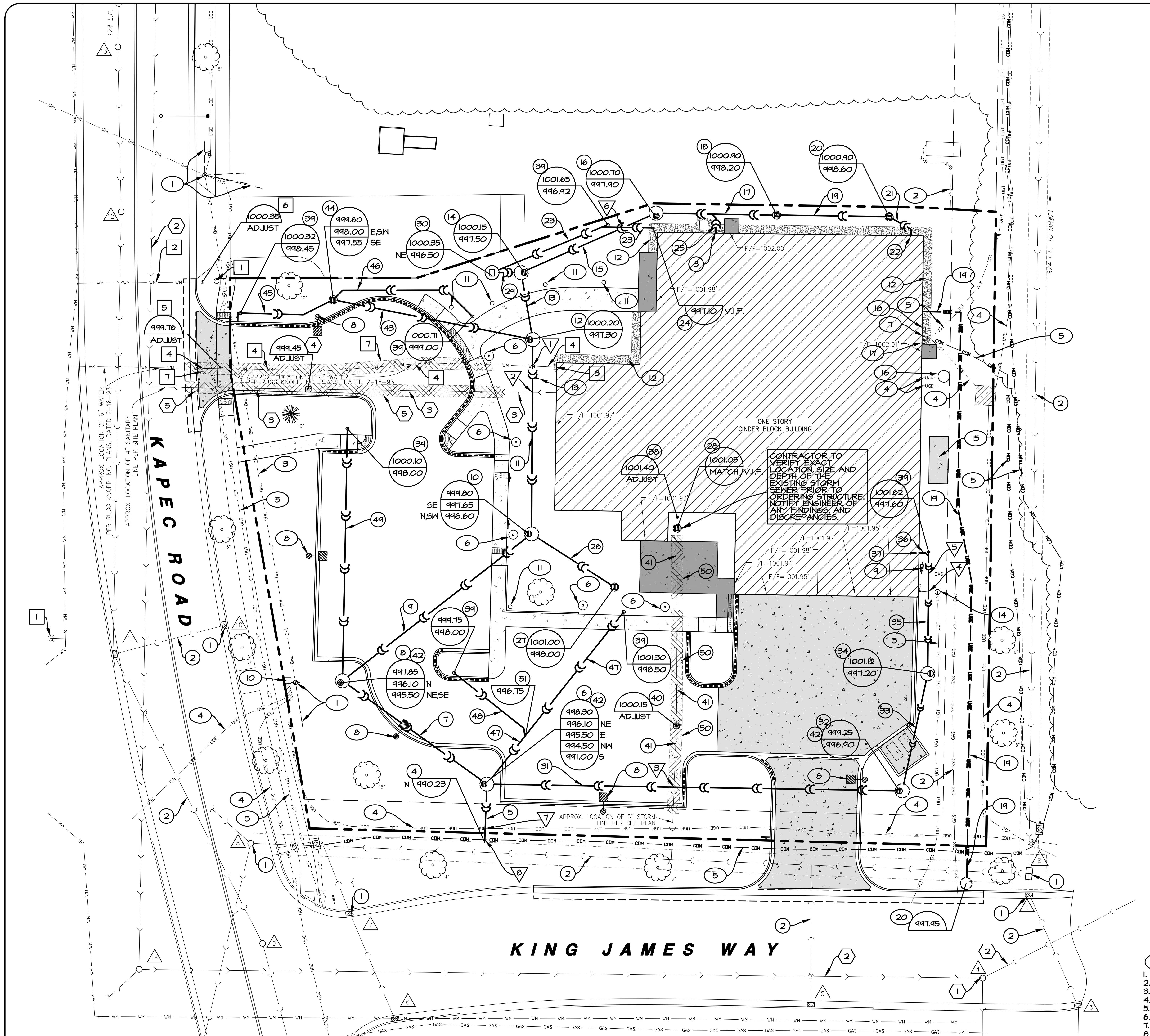

1 SITE UTILITY PLAN

SCALE 1" = 20'

UTILITY LEGEND

- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATER MAIN
- EXISTING GAS LINE
- EXISTING OVERHEAD LINES
- EXISTING UNDERGROUND ELECTRIC LINE
- EXISTING UNDERGROUND TELCO LINE
- EXISTING UNDERGROUND COMMUNICATION LINE
- 000.00 — PROPOSED RIM ELEVATION
- 000.00 — PROPOSED INVERT ELEVATION
- EXISTING UTILITY BACKFILL TRENCH
- V.I.F. — VERIFY IN FIELD
- FF — FINISHED FLOOR ELEVATION
- ADJUST — ADJUST EXISTING RIM ELEVATION
- EXISTING CLOSED MANHOLE
- EXISTING OPEN GRATE MANHOLE
- EXISTING BEEHIVE GRATE MANHOLE
- EXISTING CURB INLET
- EXISTING FIRE HYDRANT
- EXISTING B-BOX
- NEW AREA LIGHT
- NEW TOP POST AREA LIGHT
- NEW FLOOD LIGHT
- NEW BOLLARD LIGHT
- PROPOSED INLET
- PROPOSED OPEN LID MANHOLE / CATCH BASIN
- PROPOSED CLOSED LID MANHOLE
- PROPOSED LIFT STATION STRUCTURE

EXISTING UTILITY DATA

1. RIM=997.22' (STORM) 36"x18" CONCRETE STRUCTURE INV=993.85' (18" RCP N/SSE)
2. RIM=997.95' (STORM) 12'x12' CONCRETE STRUCTURE INV=991.80' (48"x76" RCP N) ELLIPTICAL PIPE INV=993.55' (18" RCP S) INV=991.80' (53"x83" RCP W) ELLIPTICAL PIPE
3. RIM=997.10' (STORM) 36"x18" CONCRETE STRUCTURE INV=994.79' (18" RCP NNW) INV=994.79' (15" PVC S)
4. RIM=998.34' (SANITARY) 48" CONCRETE STRUCTURE INV=993.34' (12" RCP NE/S) INV=993.66' (8" PVC W)
5. RIM=997.65' (STORM) 36"x18" CONCRETE STRUCTURE INV=992.90' (18" RCP N)
6. RIM=997.26' (STORM) 36"x18" CONCRETE STRUCTURE INV=993.61' (12" RCP NNW)
7. RIM=997.31' (STORM) 36"x18" CONCRETE STRUCTURE INV=992.54' (12" RCP NNW/SSE)
8. RIM=998.05' (STORM) CONCRETE STRUCTURE UNABLE TO DETERMINE SIZE INV=988.55' (53"x83" RCP E) ELLIPTICAL PIPE INV=988.55' (66" RCP SW) INV=988.65' (36" RCP NW)
9. RIM=997.87' (STORM) 60" CONCRETE STRUCTURE INV=980.45' (42" RCP SSE/NW)
10. RIM=998.51' (STORM) 36"x18" CONCRETE STRUCTURE INV=992.68' (18" RCP WSW)
11. RIM=998.42' (STORM) 72" CONCRETE STRUCTURE INV=990.23' (30" RCP N) INV=990.47' (18" RCP ENE) INV=981.23' (42" RCP SE)
12. RIM=1000.57' (STORM) 48" CONCRETE STRUCTURE INV=995.85' (30" RCP N) INV=993.23' (30" RCP S)
13. RIM=1001.59' (STORM) 48" CONCRETE STRUCTURE INV=997.28' (30" RCP N/S)
14. RIM=1002.81' (SANITARY) 48" CONCRETE STRUCTURE INV=996.35' (8" PVC N/S)
15. RIM=1005.42' (STORM) 60" CONCRETE STRUCTURE INV=999.57' (30" RCP N/S) INV=999.72' (18" RCP E) INV=999.87' (18" RCP W)
16. RIM=998.11' (SANITARY) 48" CONCRETE STRUCTURE INV=994.67' (8" PVC N/E/SW)
17. RIM=995.13' (STORM) 84" CONCRETE STRUCTURE INV=987.18' (36" RCP ENE) INV=979.93' (42" RCP SSE/NNW)
18. RIM=996.01' (STORM) CONCRETE STRUCTURE UNABLE TOP DETERMINE SIZE INV=987.46' (66" RCP NE/SW) INV=989.21' (24" RCP ESE CAPPED)
19. RIM=997.33' (SANITARY) 48" CONCRETE STRUCTURE INV=992.28' (15" PVC E) INV=992.28' (12" RCP N)
20. RIM=999.10' (SANITARY) 48" CONCRETE STRUCTURE INV=994.46' (12" RCP NNE/SW) INV=995.72' (4" PVC E)
21. RIM=1010.75' (STORM) 84" CONCRETE STRUCTURE INV=996.20' (48" RCP N) INV=996.20' (48"x76" RCP S)*
   * ELLIPTICAL PIPE

SITE UTILITY NOTES:

A. CONTRACTOR SHALL CONTACT DIGGERS HOTLINE: WISCONSIN ONE-CALL CENTER (811 OR 1-800-242-8511) AND PRIVATE LOCATING SERVICE TO LOCATE ALL UNDERGROUND UTILITY LINES PRIOR TO STARTING ANY DEMOLITION AND/OR EXCAVATION. EXACT LOCATIONS OF ANY EXISTING ELECTRIC, GAS, TELEPHONE, ETC. LINES ARE UNKNOWN.
B. CONTRACTOR TO UTILIZE CARE WHEN WORKING NEAR EXISTING UTILITIES TO REMAIN. ANY DAMAGE TO EXISTING UTILITIES NOT NOTED TO BE REMOVED SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE OWNER AND/OR ENGINEER.
C. CONTRACTOR SHALL EXCAVATE AND VERIFY IN FIELD ALL EXISTING UTILITY LOCATIONS, SIZES, CONDITIONS AND ELEVATIONS AT PROPOSED POINTS OF CONNECTION PRIOR TO ANY UNDERGROUND CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO PROCEEDING WITH CONSTRUCTION.
D. REFER TO THE GENERAL NOTES AND SPECIFICATION SHEETS FOR ALL PIPE MATERIAL AND JOINT SPECIFICATIONS.
E. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS OUTSIDE OF CONSTRUCTION LIMITS TO ORIGINAL CONDITION OR BETTER.
F. CONTRACTOR SHALL VERIFY IN FIELD EXACT SIZE, MATERIAL, INVERT, PIPE ROUTING, AND SLOPE OF ALL EXISTING UTILITIES AND NOTIFY THE OWNER AND ENGINEER OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO CONSTRUCTION.
G. THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF UTILITY TRENCHES DURING CONSTRUCTION AND SHALL PROVIDE TEMPORARY SHORING AND BRACING AS NECESSARY TO MAINTAIN STABILITY UNTIL CONSTRUCTION OF THE UTILITY IS COMPLETE IN ORDER TO MEET OSHA AND LOCAL CODES, AS WELL AS MANUFACTURER'S REQUIREMENTS.
H. ALL RCP STORM SEWER PIPE SHALL BE REINFORCED CONCRETE PIPE, CLASS IV, PER ASTM C-76 WITH FLEXIBLE (O-RING) GASKET JOINTS IN CONFORMANCE WITH ASTM C-443.
I. TRENCH BACKFILL MATERIAL SHALL BE PLACED AND COMPACTED TO A MINIMUM OF 95% MODIFIED PROCTOR DENSITY (ASTM D-1557) OVER ALL UNDERGROUND UTILITIES WHICH ARE CONSTRUCTED UNDER OR WITHIN 2 FEET OF ANY PROPOSED OR EXISTING PAVEMENT OR SIDEWALKS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
J. ADJUST RIM ELEVATIONS OF EXISTING STRUCTURES IN PAVEMENT AS NECESSARY TO MEET PROPOSED FINISHED GRADE.
K. CONTRACTOR TO COORDINATE ALL CONNECTIONS TO CITY UTILITIES AND STORM SEWERS WITH THE PUBLIC WORKS DEPARTMENT.
L. CONTRACTOR TO USE CAUTION WHEN EXCAVATING AT EXISTING UTILITY LINES.
M. ALL STORM MANHOLES SHALL HAVE OPEN LIDS UNLESS OTHERWISE SPECIFIED.
N. ALL EXISTING UTILITIES TO BE ABANDONED IN PLACE SHALL BE CAPPED WITH 2' LONG (MIN.) NON-SHRINK CONCRETE MORTAR PLUGS AT BOTH ENDS.
O. CONTRACTOR SHALL PROVIDE AN ALLOWANCE FOR RODDING AND TELEVISING EXISTING ONSITE STORM AND SANITARY SEWERS.

STORM SEWER

1. EXISTING STORM STRUCTURE AND ASSOCIATED PIPES TO REMAIN.
2. EXISTING STORM SEWER TO REMAIN.
3. NEW 6" ROOF DRAIN CONNECTION WITH ALL FITTINGS REQUIRED. SEE PLUMBING PLANS FOR CONTINUATION AND MORE DETAILS.
4. NEW BLIND CONNECTION PIPE #5 TO EXISTING HORIZONTAL ORIENTED ELLIPTICAL PIPE WITH ALL FITTINGS REQUIRED. CONTRACTOR TO MATCH THE SPRING LINES OF BOTH PIPES. CONTRACTOR TO VERIFY IN FIELD EXACT LOCATION, AND INVERT ELEVATION PRIOR TO CONSTRUCTION.
5. NEW 18" R.C.P., 21 L.F., @ 3.67% SLOPE.
6. NEW 48" DIA. PRECAST CONCRETE CATCH BASIN WITH DRAINTILE.
7. NEW 15" R.C.P., 61 L.F., @ 1.64% SLOPE.
8. NEW 48" DIA. PRECAST CONCRETE CATCH BASIN WITH DRAINTILE.
9. NEW 18" R.C.P., 82 L.F., @ 1.34% SLOPE.
10. NEW 48" DIA. PRECAST CONCRETE CATCH BASIN WITH DRAINTILE.
11. NEW 16" P.V.C. C900 (WATER MAIN QUALITY), 67 L.F., @ 1.04% SLOPE.
12. NEW 48" DIA. PRECAST CONCRETE CATCH BASIN WITH DRAINTILE.
13. NEW 15" H.D.P.E., 23 L.F., @ 0.87% SLOPE.
14. NEW 48" DIA. PRECAST CONCRETE CATCH BASIN WITH DRAINTILE.
15. NEW 15" H.D.P.E., 49 L.F., @ 0.82% SLOPE.
16. NEW 48" DIA. PRECAST CONCRETE CATCH BASIN WITH DRAINTILE.
17. NEW 15" H.D.P.E., 42 L.F., @ 0.71% SLOPE.
18. NEW 24" DIA. PRECAST CONCRETE INLET WITH DRAINTILE.
19. NEW 6" H.D.P.E., 39 L.F., @ 1.03% SLOPE.
20. NEW 24" DIA. PRECAST CONCRETE INLET WITH DRAINTILE.
21. NEW 4" SDR 26 P.V.C. PIPE, 12 LF @ MINIMUM 1.00% SLOPE, WITH ALL FITTINGS REQUIRED, BURIED MINIMUM 12".
22. NEW BUILDING CONNECTION. SEE PLUMBING PLANS FOR MORE INFORMATION AND CONTINUATION.
23. NEW 8" SDR 26 P.V.C. PIPE, 58 LF @ MINIMUM 1.00% SLOPE, WITH ALL FITTINGS REQUIRED.
24. CONNECT PIPE #23 TO FOOTING UNDERDRAIN SYSTEM. CONTRACTOR TO COORDINATE INSTALLATION, INVERT ELEVATIONS WITH STONE STRIP TRENCH SYSTEM, TO AVOID ANY CONFLICTS. SEE PLUMBING AND STRUCTURAL PLANS FOR MORE DETAILS AND CONTINUATION.
25. NEW 6" SDR 26 P.V.C. PIPE, 6 LF @ MINIMUM 1.00% SLOPE, WITH ALL FITTINGS REQUIRED. BLIND CONNECT DOWNSTREAM END TO 15" PIPE #17, MATCH SPRING LINE OF BOTH PIPES. CONTRACTOR TO COORDINATE INSTALLATION WITH STONE STRIP TRENCH SYSTEM, TO AVOID CONFLICTS.
26. NEW 12" H.D.P.E., 34 L.F., @ 1.03% SLOPE.
27. NEW 24" DIA. PRECAST CONCRETE INLET WITH DRAINTILE.
28. NEW 24" DIA. PRECAST CONCRETE INLET WITH DRAINTILE. CONSTRUCT OVER EXISTING STORM PIPE, CONNECT EXISTING PIPES TO THE SOUTH AND NORTH SIDES OF THE STRUCTURE, MATCH INVERT ELEVATION. CONTRACTOR TO VERIFY IN FIELD EXACT LOCATION, SIZE, MATERIAL AND INVERT ELEVATION OF EXISTING PIPE AT CONNECTION POINT PRIOR TO CONSTRUCTION, NOTIFY ENGINEER OF ANY DISCREPANCIES.
29. NEW 3" P.V.C., 10 L.F., @ MIN. 1.00% SLOPE. COORDINATE INVERT ELEVATION WITH LIFT STATION MANUFACTURER.
30. NEW 48" DIA. PRECAST CONCRETE STRUCTURE WITH DUPLEX STORM WATER LIFT STATION. SEE DETAIL ON SHEET C-5.2.
31. NEW 12" R.C.P., 143 L.F., @ 0.98% SLOPE.
32. NEW 48" DIA. PRECAST CONCRETE CATCH BASIN WITH DRAINTILE.
33. NEW 12" R.C.P., 41 L.F., @ 0.73% SLOPE.
34. NEW 48" DIA. PRECAST CONCRETE CATCH BASIN WITH DRAINTILE.
35. NEW 8" SDR 26 P.V.C. PIPE, 42 L.F., @ 0.95% SLOPE.
36. NEW 8" SDR 26 P.V.C. PIPE, 3 LF @ MINIMUM 1.00% SLOPE, WITH ALL FITTINGS REQUIRED. BLIND CONNECT DOWNSTREAM END TO 12" PIPE #35, MATCH SPRING LINE OF BOTH PIPES.
37. NEW 8" ROOF DRAIN CONNECTION WITH ALL FITTINGS REQUIRED. SEE PLUMBING PLANS FOR CONTINUATION AND MORE DETAILS.
38. EXISTING CLEAN OUT TO REMAIN. ADJUST RIM ELEVATION TO MATCH PROPOSED GRADE. REPLACE CLEAN OUT LID WITH HEAVY DUTY TYPE.
39. NEW CLEAN OUT. TOTAL 7.
40. EXISTING CLEAN OUT TO REMAIN. ADJUST RIM ELEVATION TO MATCH PROPOSED GRADE. REPLACE CLEAN OUT LID WITH HEAVY DUTY TYPE.
41. EXISTING STORM SEWER TO REMAIN, SHOWN PER RECORDS. CONTRACTOR SHALL PERFORM INVESTIGATION, INCLUDING BUT NOT LIMITED TO TRACING, TEST HOLES, VACUUM EXCAVATION IN ORDER TO CONFIRM EXISTENCE, EXACT LOCATION, SIZE, INVERT ELEVATION AND CONDITION PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF ANY FINDINGS, AND DISCREPANCIES.
42. INSTALL PERMANENT FLEXSTORM PC+ SHORT (12") FILTER BAG, WITH HYDROCARBON BOOM, ONCE TEMPORARY INLET PROTECTION DEVICES HAVE BEEN REMOVED FROM STRUCTURES FOLLOWING CONSTRUCTION. TOTAL 3.
43. NEW 12" H.D.P.E., 70 L.F., @ 0.36% SLOPE.
44. NEW 24" DIA. PRECAST CONCRETE INLET WITH DRAINTILE.
45. NEW 4" PERFORATED P.V.C. UNDERDRAINAGE SYSTEM, 33 LF, @ 1.36% SLOPE, WITH ALL FITTINGS REQUIRED. SEE "DETAIL - 4" PERFORATED P.V.C. UNDERDRAINAGE SYSTEM" ON SHEET C-5.1.
46. NEW 4" PERFORATED P.V.C. UNDERDRAINAGE SYSTEM, 53 LF, @ 1.89% SLOPE, WITH ALL FITTINGS REQUIRED. SEE "DETAIL - 4" PERFORATED P.V.C. UNDERDRAINAGE SYSTEM" ON SHEET C-5.1.
47. NEW 4" PERFORATED P.V.C. UNDERDRAINAGE SYSTEM, 76 LF, @ 3.16% SLOPE, WITH ALL FITTINGS REQUIRED. SEE "DETAIL - 4" PERFORATED P.V.C. UNDERDRAINAGE SYSTEM" ON SHEET C-5.1.
48. NEW 4" PERFORATED P.V.C. UNDERDRAINAGE SYSTEM, 33 LF, @ 3.79% SLOPE, WITH ALL FITTINGS REQUIRED. SEE "DETAIL - 4" PERFORATED P.V.C. UNDERDRAINAGE SYSTEM" ON SHEET C-5.1.
49. NEW 4" PERFORATED P.V.C. UNDERDRAINAGE SYSTEM, 87 LF, @ 2.18% SLOPE, WITH ALL FITTINGS REQUIRED. SEE "DETAIL - 4" PERFORATED P.V.C. UNDERDRAINAGE SYSTEM" ON SHEET C-5.1.
50. EXCAVATE TO EXISTING STORM SEWER AND BACKFILL TRENCH AS SPECIFIED ON THE TRENCH DETAIL, FOR THE LOCATIONS WHICH PAVEMENT CROSSES OVER THE STORM SEWER. PROTECT THE STORM SEWER DURING CONSTRUCTION.
51. NEW BLIND CONNECTION WITH ALL FITTINGS REQUIRED. MATCH SPRING LINE OF THE BOTH PIPES.

PIPE CROSSING INFORMATION

CONTRACTOR TO FIELD VERIFY CROSSINGS. IF FIELD CONDITIONS PROHIBIT 18" OF CLEARANCE BETWEEN PROPOSED STORM SEWER AND EXISTING WATER MAIN, NOTIFY ENGINEER PRIOR TO PROCEEDING. FOLLOW EPA WATER-SEWER SEPARATION REQUIREMENTS.
(V.I.F. - VERIFY IN FIELD)

1. GRADE ELEV. 1001.5 +/-
   BOT OF 15" STORM = 997.2 +/-
   TOP OF 4" WATER = 995.6 +/- V.I.F.
2. GRADE ELEV. 1001.3 +/-
   BOT OF 15" STORM = 997.1 +/-
   TOP OF 4" SANITARY = 996.9 +/- V.I.F.
3. GRADE ELEV. 999.6 +/-
   BOT OF 12" STORM = 996.0 +/-
   TOP OF 5" STORM = 993.0 +/- V.I.F.
4. GRADE ELEV. 1001.7 +/-
   BOT OF TELCO LINE = 999.0 +/- V.I.F.
   TOP OF 8" STORM = 998.2 +/-
5. GRADE ELEV. 1001.7 +/-
   BOT OF GAS = 999.0 +/- V.I.F.
   TOP OF 8" STORM = 998.1 +/-
6. GRADE ELEV. 1001.0 +/-
   BOT OF 15" STORM = 997.7 +/-
   TOP OF 8" STORM = 997.4 +/- V.I.F.
7. GRADE ELEV. 999.1 +/-
   BOT OF ELECTRIC = 997.1 +/- V.I.F.
   TOP OF 18" STORM = 995.1 +/-
8. GRADE ELEV. 999.0 +/-
   BOT OF TELCO LINE = 997.0 +/- V.I.F.
   TOP OF 18" STORM = 995.0 +/-

SANITARY

1. EXISTING SANITARY STRUCTURE AND ASSOCIATED PIPES TO REMAIN.
2. EXISTING SANITARY SEWER TO REMAIN.
3. EXISTING SANITARY SEWER TO REMAIN, SHOWN PER RECORDS. CONTRACTOR SHALL PERFORM INVESTIGATION, INCLUDING BUT NOT LIMITED TO TRACING, TEST HOLES, VACUUM EXCAVATION IN ORDER TO CONFIRM EXISTENCE, EXACT LOCATION, SIZE, INVERT ELEVATION AND CONDITION PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF ANY FINDINGS, AND DISCREPANCIES.
4. EXISTING CLEAN OUT TO REMAIN. SHOWN PER RECORDS, CONTRACTOR TO VERIFY IN FIELD EXACT LOCATION. ADJUST RIM ELEVATION TO MATCH PROPOSED GRADE. REPLACE CLEAN OUT LID WITH HEAVY DUTY TYPE.
5. EXCAVATE TO EXISTING SANITARY SEWER AND BACKFILL TRENCH AS SPECIFIED ON THE TRENCH DETAIL, FOR THE LOCATIONS WHICH PAVEMENT CROSSES OVER THE SANITARY SEWER. PROTECT THE SANITARY SEWER LINE DURING CONSTRUCTION.

WATER

GENERAL WATER NOTES:
- ALL FITTINGS SHALL HAVE MECHANICAL JOINTS RESTRAINED BY MEGALUG GLANDS.
- CONTRACTOR SHALL COORDINATE WATER TAPS WITH THE VILLAGE PUBLIC WORKS DEPARTMENT PRIOR THE CONSTRUCTION.

1. EXISTING HYDRANT TO REMAIN.
2. EXISTING WATERMAIN TO REMAIN.
3. EXISTING FIRE DEPARTMENT CONNECTION TO REMAIN.
4. EXISTING WATER SERVICE LINE TO REMAIN, SHOWN PER RECORDS. CONTRACTOR SHALL PERFORM INVESTIGATION, INCLUDING BUT NOT LIMITED TO TRACING, TEST HOLES, VACUUM EXCAVATION IN ORDER TO CONFIRM EXISTENCE, EXACT LOCATION, SIZE, INVERT ELEVATION AND CONDITION PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF ANY FINDINGS, AND DISCREPANCIES.
5. EXISTING B-BOX TO REMAIN. ADJUST RIM ELEVATION TO MATCH PROPOSED GRADE. REPLACE B-BOX LID WITH HEAVY DUTY TYPE.
6. EXISTING B-BOX TO REMAIN. ADJUST RIM ELEVATION TO MATCH PROPOSED GRADE. REPLACE B-BOX LID WITH HEAVY DUTY TYPE.
7. EXCAVATE TO EXISTING WATER MAIN AND BACKFILL TRENCH AS SPECIFIED ON THE TRENCH DETAIL, FOR THE LOCATIONS WHICH PAVEMENT CROSSES OVER THE WATER SERVICE. PROTECT THE WATER SERVICE DURING CONSTRUCTION.

MISC. UTILITY

1. EXISTING UTILITY POLE, GUY WIRE AND ASSOCIATED OVERHEAD LINES TO REMAIN.
2. EXISTING GAS LINE TO REMAIN.
3. EXISTING OVERHEAD LINES TO REMAIN.
4. EXISTING UNDERGROUND ELECTRIC TO REMAIN.
5. EXISTING UNDERGROUND TELCO TO REMAIN.
6. NEW TOP POST AREA LIGHT. SEE ELECTRICAL PLAN FOR MORE DETAILS
7. EXISTING ELECTRIC METER TO REMAIN.
8. NEW AREA LIGHT. SEE ELECTRICAL PLAN FOR MORE DETAILS.
9. EXISTING GAS METER TO REMAIN.
10. EXISTING TELCO PEDESTAL TO REMAIN.
11. NEW BOLLARD LIGHT. SEE ELECTRICAL PLAN FOR MORE DETAILS.
12. NEW WATERPROOFING FOUNDATION / STONE STRIP TRENCH SYSTEM. SEE LANDSCAPE, ARCHITECTURAL AND PLUMBING PLANS FOR MORE DETAILS.
13. NEW FLOOD LIGHT. SEE ELECTRICAL PLAN FOR MORE DETAILS.
14. EXISTING TELECOMMUNICATION MANHOLE TO REMAIN. CONTRACTOR TO VERIFY IN FIELD, AND COORDINATE WITH UTILITY OWNER IF THIS STRUCTURE AND RELATED TELECOMMUNICATION LINES IS ACTIVE AND SERVING THE EXISTING BUILDING.
15. NEW GENERATOR PAD. SEE ELECTRICAL PLANS FOR GENERATOR DETAILS AND REQUIREMENTS.
16. NEW CONCRETE TOWER FOUNDATION. SEE TELECOMMUNICATION PLANS FOR ALL DETAILS AND REQUIREMENTS. CONTRACTOR TO COORDINATE INSTALLATION WITH EXISTING UTILITIES IN THE AREA.
17. EXISTING TELECOMMUNICATION PANEL TO REMAIN.
18. EXISTING ELECTRICAL PANEL TO REMAIN.
19. NEW CONDUIT AND FIBER OPTIC. SEE ELECTRICAL PLANS FOR ALL DETAILS.
20. NEW HANDHOLE BY FIBER CONTRACTOR. SEE ELECTRICAL PLANS FOR ALL DETAILS. CONTRACTOR TO CONFIRM LOCATION PRIOR TO CONSTRUCTION.

WT JOB NUMBER - 2002139C

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COUNTY of DANE 1839 WISCONSIN

DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY
FITCHBURG, WISCONSIN 53719

CLIENT APPROVAL
☐ APPROVED
☐ APPROVED AS NOTED
APPROVED BY / DATE:

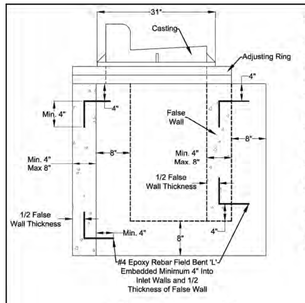
ISSUE RECORD

DD SET	08/04/20
CD CHECK SET	11/20/20
98% CD REVIEW	02/11/21
HVAC REDESIGN	04/30/21
ISSUE FOR BID	06/08/21

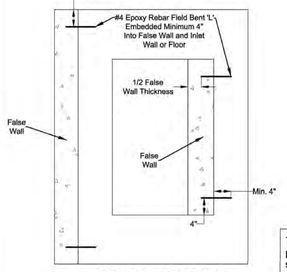
CHECKED BY
JEG
DRAWN BY
BRA
DATE
5/28/2021 12:34:20 PM
PROJECT NUMBER
2020-001

SITE UTILITY PLAN

C-5.0



Offset Using False Wall
Inlet Side View



Offset Using False Wall
Inlet Top View

Note:

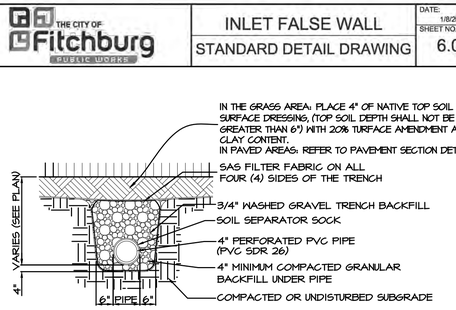
To insure the inlet casting is aligned correctly with the curb and gutter, an offset of the inlet casting may be required. The acceptable inlet casting offsets are shown and the guidelines are as follows:

(1) If adjustment is required the inlet casting offset shall be obtained by the construction of two false walls with equal wall thickness varying from four to eight inches (4"-8") depending on the offset required. The placement and anchoring shall be constructed in the manner shown.

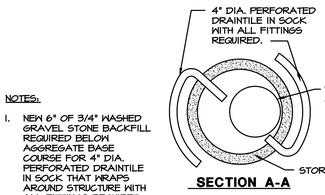
(2) If the adjustment required is greater than eight inches (8"), the inlet shall be repositioned or reconstructed to reduce the offset.

These specifications are applicable for both poured-in-place and precast inlets. The detail shows a poured-in-place inlet. A precast inlet would only differ with a wall thickness of 5".

THE CITY OF Fitchburg PUBLIC WORKS	INLET FALSE WALL	DATE: 1/8/2015
	STANDARD DETAIL DRAWING	SHEET NO.: 6.04



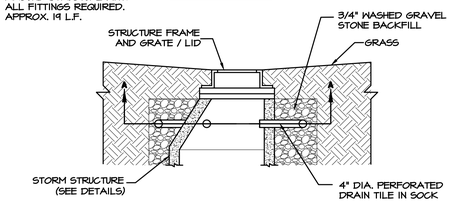
DETAIL - 4" PERFORATED P.V.C.
UNDERDRAINAGE SYSTEM
NOT TO SCALE



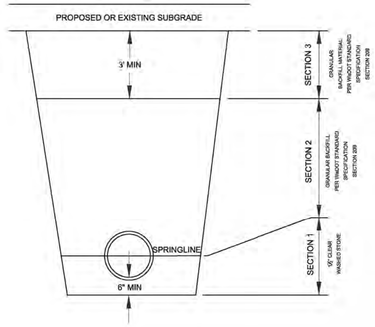
NOTES:

1. NEW 6" OF 3/4" WASHED GRAVEL STONE BACKFILL REQUIRED BELOW AGGREGATE BASE COURSE FOR 4" DIA. PERFORATED DRAINTILE IN SOCK THAT WRAPS AROUND STRUCTURE WITH ALL FITTINGS REQUIRED. APPROX. 19 L.F.

SECTION A-A



DETAIL - STORM STRUCTURE WITH DRAINTILE
FOR ALL NEW STORM STRUCTURES
NOT TO SCALE



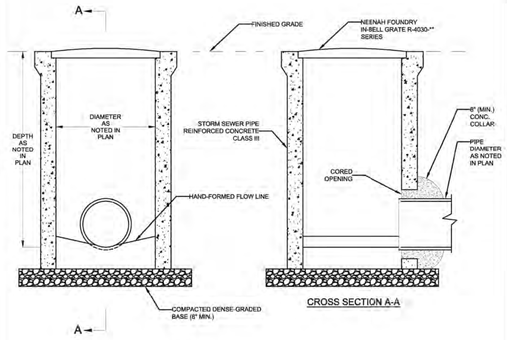
STANDARD TRENCH COMPACTION
ALL BACKFILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 12" BEFORE COMPACTION UNLESS AUTHORIZED BY THE ENGINEER DUE TO THE CHARACTER OF THE MATERIAL AND THE COMPACTING EQUIPMENT. EACH LIFT SHALL BE MECHANICALLY COMPACTED TO THE REQUIRED DENSITY PRIOR TO PLACING SUCCEEDING LIFTS OF BACKFILL MATERIAL.

SECTION 1:
MECHANICALLY COMPACTED BEDDING AS REQUIRED BY THE SPECIFICATIONS. COMPACTION ACHIEVED WITH SMALLER PLATE COMPACTOR.

SECTION 2:
MINIMUM COMPACTION 90% MAXIMUM DENSITY. COMPACTION OF BACKFILL WITH BOMAG OR HOE-PAC SHALL NOT BEGIN UNTIL THE DEPTH OF BACKFILL MATERIAL IS TWO (2) FEET ABOVE THE TOP OF PIPE.

SECTION 3:
MINIMUM COMPACTION 95% MAXIMUM DENSITY.

THE CITY OF Fitchburg PUBLIC WORKS	STORM SEWER TRENCH	DATE: 2/1/2017
	STANDARD DETAIL DRAWING	SHEET NO.: 6.01

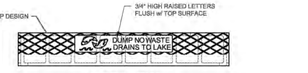


CROSS SECTION A-A

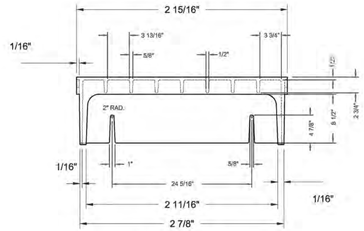
THE CITY OF Fitchburg PUBLIC WORKS	CLASS III REINFORCED CONCRETE INLET	DATE: 1/29/2018
	STANDARD DETAIL DRAWING	SHEET NO.: 6.07

NOTE: ALL DIMENSIONS SHOWN ARE IN ENGLISH
MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
FINISH: NO PAINT
WEIGHT: 128#

SIDE VIEW

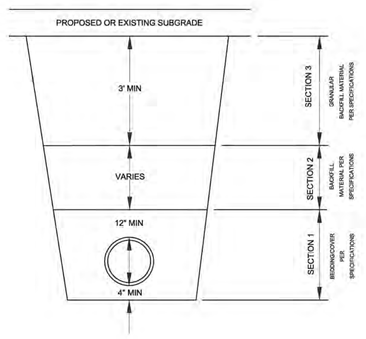


TOP VIEW



FRONT VIEW

THE CITY OF Fitchburg PUBLIC WORKS	CURB BOX	DATE: 1/24/2014
	STANDARD DETAIL DRAWING	SHEET NO.: 6.02



STANDARD TRENCH COMPACTION
ALL BACKFILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 12" BEFORE COMPACTION UNLESS AUTHORIZED BY THE ENGINEER DUE TO THE CHARACTER OF THE MATERIAL AND THE COMPACTING EQUIPMENT. EACH LIFT SHALL BE MECHANICALLY COMPACTED TO THE REQUIRED DENSITY PRIOR TO PLACING SUCCEEDING LIFTS OF BACKFILL MATERIAL.

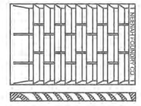
SECTION 1:
MECHANICALLY COMPACTED BEDDING AS REQUIRED BY THE SPECIFICATIONS. COMPACTION ACHIEVED WITH SMALLER PLATE COMPACTOR.

SECTION 2:
MINIMUM COMPACTION 90% MAXIMUM DENSITY. COMPACTION OF BACKFILL WITH BOMAG OR HOE-PAC SHALL NOT BEGIN UNTIL THE DEPTH OF BACKFILL MATERIAL IS TWO (2) FEET ABOVE THE TOP OF PIPE.

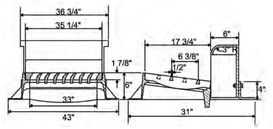
SECTION 3:
MINIMUM COMPACTION 95% MAXIMUM DENSITY.

THE CITY OF Fitchburg PUBLIC WORKS	SANITARY SEWER & WATER MAIN TRENCH	DATE: 1/24/2014
	STANDARD DETAIL DRAWING	SHEET NO.: 7.01

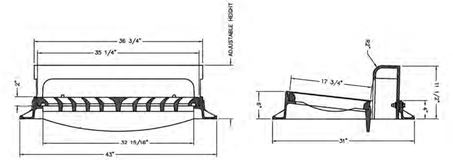
Type L Grate



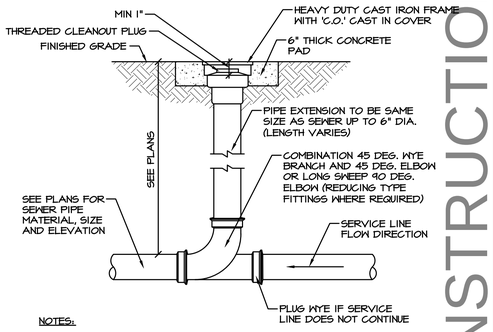
Vane Grate Openings



Type VB Grate



THE CITY OF Fitchburg PUBLIC WORKS	INLET COVERS, TYPE H	DATE: 1/31/2019
	STANDARD DETAIL DRAWING	SHEET NO.: 6.03



NOTES:

1. SEE APPLICABLE DETAIL FOR BEDDING AND BACKFILL REQUIREMENTS.

DETAIL - CLEAN OUT
NOT TO SCALE

WT JOB NUMBER - 2002139C

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COUNTY of DANE WISCONSIN 1839

DANE COUNTY EMERGENCY MANAGEMENT REMODEL
5415 KING JAMES WAY
FITCHBURG, WISCONSIN 53719

NOT FOR CONSTRUCTION

CLIENT APPROVAL
☐ APPROVED
☐ APPROVED AS NOTED
APPROVED BY / DATE:

ISSUE RECORD

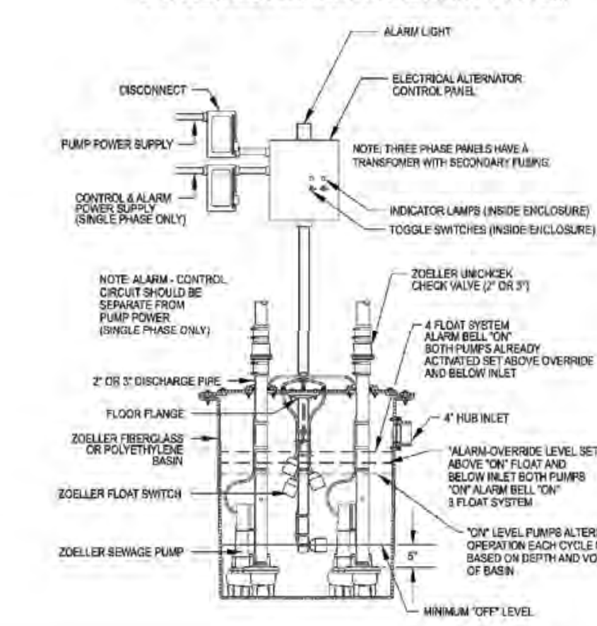
DD SET	08/04/20
CD CHECK SET	11/20/20
98% CD REVIEW	02/11/21
HVAC REDESIGN	04/30/21
ISSUE FOR BID	06/08/21

CHECKED BY	JEG
DRAWN BY	BRA
DATE	5/24/2021 4:43:10 PM
PROJECT NUMBER	2020-001

SITE UTILITY DETAILS

C-5.1

DUPLEX ELECTRICAL ALTERNATING SYSTEM



Sequence of Operation for Duplex Panel

1. Operation can begin after the following:
   - Correct voltage is supplied to Panel
   - Panel is properly grounded
   - Pumps are connected correctly to Panel
   - Panel Circuit Breakers are closed
   - Floats are installed properly
   - Overload Protection is adjusted to Pump nameplate amps
   - Pump HOA Switches are set to "Auto"
   - Control On/Off Switch is set to "On"
2. When the "Stop" and "Lead" floats are closed Pump 1 will energize and the Pump 1 Pump Run Light will illuminate. Pump 1 will remain operational until the "Stop" float opens.
3. The next time the "Stop" and "Lead" floats are closed the Alternating Circuit will energize Pump 2 and the Pump 2 Pump Run Light will illuminate. Pump 2 will remain operational until the "Stop" float opens. This cycle will repeat each time the fluid level rises and falls.
4. If the fluid level continues to rise after the first pump has been energized the "Lag" float will close. When the "Lag" float has closed the second Pump will Energize. Both Pumps will remain operational until the "Stop" float opens.
5. In a three float system when the "Lag" float is closed the following will also occur:
   - The External High Water Light will illuminate
   - The Audible High Water Horn will sound
   - The Auxiliary Dry Contacts will close
6. In a four float system, the alarm float should be the third float causing an alarm to sound when the lead pump fails to operate or the rate of in flow into the basin exceeds the capacity of one pump. When the alarm float is closed the following will occur.
   - The External High Water Light will illuminate
   - The Audible High Water Alarm will sound
   - The Auxiliary Dry Contacts will close

   As the liquid level continues to rise the fourth float will close, energizing the lag pump. The lag pump and the lead pump will remain energized until the "Stop" float opens.

   NOTE: In Duplex systems where it is considered normal for two pumps to operate in tandem during peak flow conditions, the third and fourth float may be reversed.
7. The Audible High Water Horn can be silenced by pressing the Alarm Silence Button. When the "Alarm" float opens the External High Water Light, Audible High Water Horn and Dry Auxiliary Contacts will be reset.

⚠ WARNING All electrical systems must be installed by a qualified licensed electrician and according to the National Electrical Code. (See section 430-71 through 430-113 plus any others that apply)

Refer to FM0712 for correct selection of Electrical Alternator.

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ZOELLER PUMP COMPANY
Zoeller Family of Water Solutions

SECTION: 2.50.040
FM0486
0414
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0910

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ELECTRICAL ALTERNATOR CONTROL PANEL - FOR DUPLEX INSTALLATIONS

An Electrical Alternator is used on a Duplex pump application where automatic alternation of the pumps is desired for added protection in residential or commercial applications. With one pump operating to handle normal flow, a second pump becomes operational in the event the water level continues to rise. The built-in alarm system, a standard feature, can be connected to sound when the second pump becomes operational (3-float switch system) or independently (4-float switch system). All electrical systems must be installed by a qualified electrician and according to the National Electrical Code. (See Section 430-71 though 430-113, plus any others that apply.)

Control Panel Features:

- Hand-Off-Auto Toggle Switch for each pump
- Green pump run pilot light for each pump
- Alarm test and silence switches
- Red pilot light (Nema 1 Only) and audible alarm with 83 to 85 decibel rating for a high water condition
- Red Alarm Beacon included with Nema 4X enclosure
- Auxiliary Dry Contact
- High Water Alarm
- On Single Phase - Circuit breaker for each pump
- On Three Phase - Motor protective switch with overload protection
- Magnetic starter for each pump
- Alternating mechanism
- Numbered terminal strip for connecting pumps and variable level float switches
- Nema 1 - general purpose or
  Nema 4X - Watertight enclosures available
- Integral auxiliary terminal board connections (dry contact) for remote alarm devices
- 3 or 4 variable level float switch control operation
- Three 20' float switches included with single phase panels
- 2 Year Warranty
- The use of off-the-shelf components provide for relatively easy field maintenance and repair
- Float switches not included with three phase panels (See FM0526)

Products may not be exactly as illustrated

CONTROL PANEL USED WITH SINGLE PHASE PUMPS

NEMA 1 ENCLUSURE WITH 20' FLOAT SWITCH			
Order No.	Dimensions H x W x D	Volts	Amp Range
10-1039 10-1040	12" x 10" x 6" 12" x 10" x 6"	115 115	7-15 15-20
10-0092	12" x 10" x 6"	115/200/230	0-20

QTY. (1)

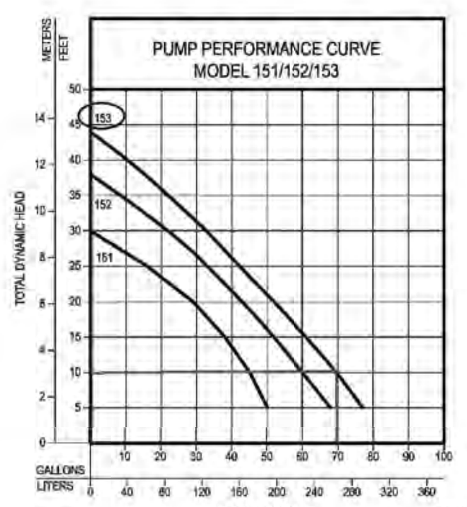
NEMA 4X ENCLOSURE WITH 20' FLOAT SWITCH			
Order No.	Dimensions H x W x D	Volts	Amp Range
10-1041 10-1042	12" x 10" x 6" 12" x 10" x 6"	115 115	7-15 15-20
10-1043 10-1044 10-1045 10-1046	12" x 10" x 6" 12" x 10" x 6" 12" x 10" x 6" 12" x 10" x 6"	115/200/230 115/200/230 115/200/230 115/200/230	0-7 7-15 15-20 20-30
10-0093	12" x 10" x 6"	115/200/230	0-20

* Branch circuit protection provided by installing electrician.

NOTE: 600 and X600 Series single phase pumps require special panels that include start components. See Selection Guide FM0712 for correct panel selection.
NOTE: All variable level float switches in this section are mechanically activated and do not contain mercury.

TOTAL DYNAMIC HEAD FLOW PER MINUTE

MODEL		151		152		153	
Feet	Meters	Gal.	Liters	Gal.	Liters	Gal.	Liters
5	1.5	50	189	69	261	77	291
10	3.0	45	170	61	231	70	265
15	4.6	38	144	53	201	61	231
20	6.1	29	110	44	167	52	197
25	7.6	16	61	34	129	42	159
30	9.1	–	–	23	87	33	125
35	10.7	–	–	–	–	22	85
40	12.2	–	–	–	–	11	42
Shut-off Head:		30 ft. (9.1m)		38 ft. (11.6m)		44 ft. (13.4m)	



QTY. (2)

Model	MODEL COMPARISON										
	Seal	Mode	Volts	Ph	Amps	HP	Hz	Lbs	Kg	Simplex	Duplex
N151	Single	Non	115	1	6.0	1/3	60	32	15	1	2 or 3
E151	Single	Non	230	1	3.0	1/3	60	32	15	1	2 or 3
BN151	Single	Auto	115	1	6.0	1/3	60	33	15	*	2 or 3
BE151	Single	Auto	230	1	3.0	1/3	60	33	15	*	2 or 3
N152	Single	Non	115	1	8.5	4/10	60	37	17	1	2 or 3
E152	Single	Non	230	1	4.3	4/10	60	37	17	1	2 or 3
BN152	Single	Auto	115	1	8.5	4/10	60	39	18	*	2 or 3
BE152	Single	Non	230	1	4.3	4/10	60	39	18	*	2 or 3
N153	Single	Non	115	1	10.5	1/2	60	37	17		
BN153	Single	Auto	115	1	10.5	1/2	60	39	18	*	2 or 3
E153	Single	Non	230	1	5.3	1/2	60	37	17	1	2 or 3
BE153	Single	Non	230	1	5.3	1/2	60	39	18	*	2 or 3

*BN and BE models include a 20' (6 m) piggyback variable level pump switch. Additional cord lengths are available in 25' (8 m) and 35' (11 m). 50' (15 m) cords are available for 230 V units only.

NOTE: Model 151 has a plastic base. Models 152 & 153 have a cast iron base.

SELECTION GUIDE

1. For automatic, use single piggyback variable level float switch or double piggyback variable level float switch. Refer to FM0477.
2. See FM1228 for correct model of simplex control panel.
3. See FM0712 for correct model of duplex control panel.

OPTIONAL PUMP STAND P/N 10-2421

- Reduces potential clogging by debris
- Replaces rocks or bricks under the pump
- Made of durable, noncorrosive ABS
- Raises pump 2" (5 cm) off bottom of basin
- Provides the ability to raise intake by adding sections of 1½" or 2" (DN40 or DN50) PVC piping
- Attaches securely to pump
- Accommodates sump, dewatering and effluent applications

NOTE: Make sure float is free from obstruction.

⚠ CAUTION All installation of controls, protection devices and wiring should be done by a qualified licensed electrician. All electrical and safety codes should be followed including the most recent National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).

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Trusted. Tested. Tough.™

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ZOELLER PUMP COMPANY

SECTION: 2.15.080
FM2784
1017
Supersedes
0315

TECHNICAL DATA SHEET
DOSE-MATE SERIES
Models 151, 152, 153 Effluent Pumps

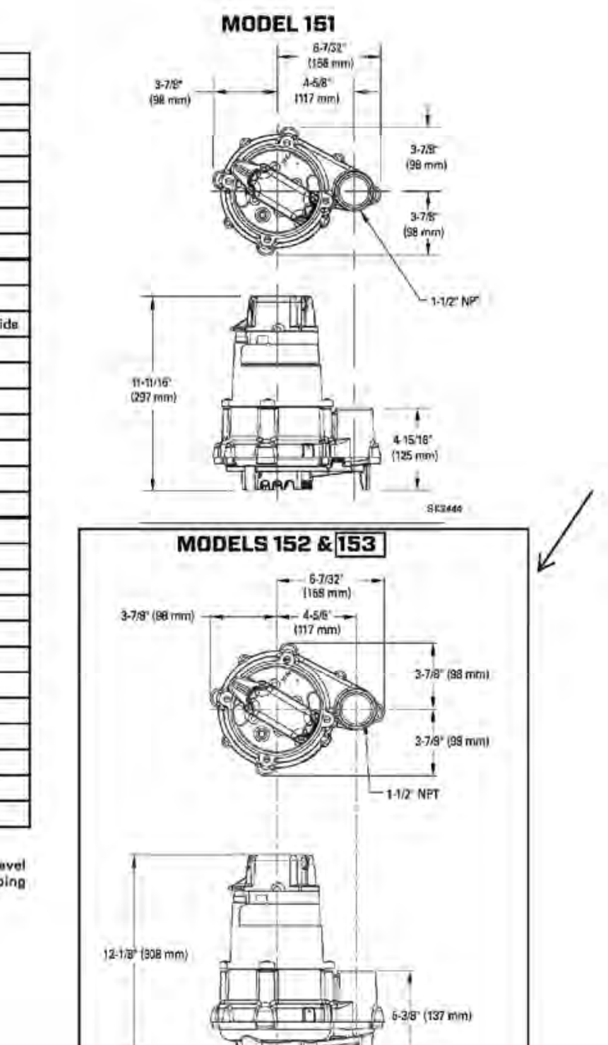
PRODUCT SPECIFICATIONS

MOTOR	Horse Power	1/3 (151), 4/10 (152), 1/2 (153)
	Voltage	115 or 230
	Phase	1 Ph
	Hertz	60 Hz
	RPM	3450
	Type	Permanent split capacitor
	Insulation	Class B
	Amps	3.0 - 10.5
PUMP	Operation	Automatic or nonautomatic
	Discharge Size	1-1/2" NPT
	Solids Handling	1/2" (12 mm), 3/4" (19 mm) spherical solids
	Cord Length	20' (6 m)
	Cord Type	UL listed power cord
	Max. Head	44' (13.4 m)
	Max. Flow Rate	77 GPM (291 LPM)
	Max. Operating Temp.	130 °F (54 °C)
	Cooling	Oil filled
	Motor Protection	Auto reset thermal overload
MATERIALS	Cap	Cast iron
	Motor Housing	Cast iron
	Pump Housing	Cast iron
	Base	Plastic or cast iron
	Upper Bearing	Sleeve bearing
	Lower Bearing	Ball bearing
	Mechanical Seals	Carbon and ceramic
	Impeller Type	Non-clogging vortex
	Impeller	Engineered thermoplastic
	Hardware	Stainless steel
	Motor Shaft	AISI 1215 steel
	Gasket	Neoprene

NOTE: The sizing of effluent systems normally requires variable level float(s) controls and properly sized basins to achieve required pumping cycles or dosing timers with nonautomatic pumps.

NOTE: See model comparison chart for specific details.

Tested to UL Standard UL778 and Certified to CSA Standard C22.2 No. 108



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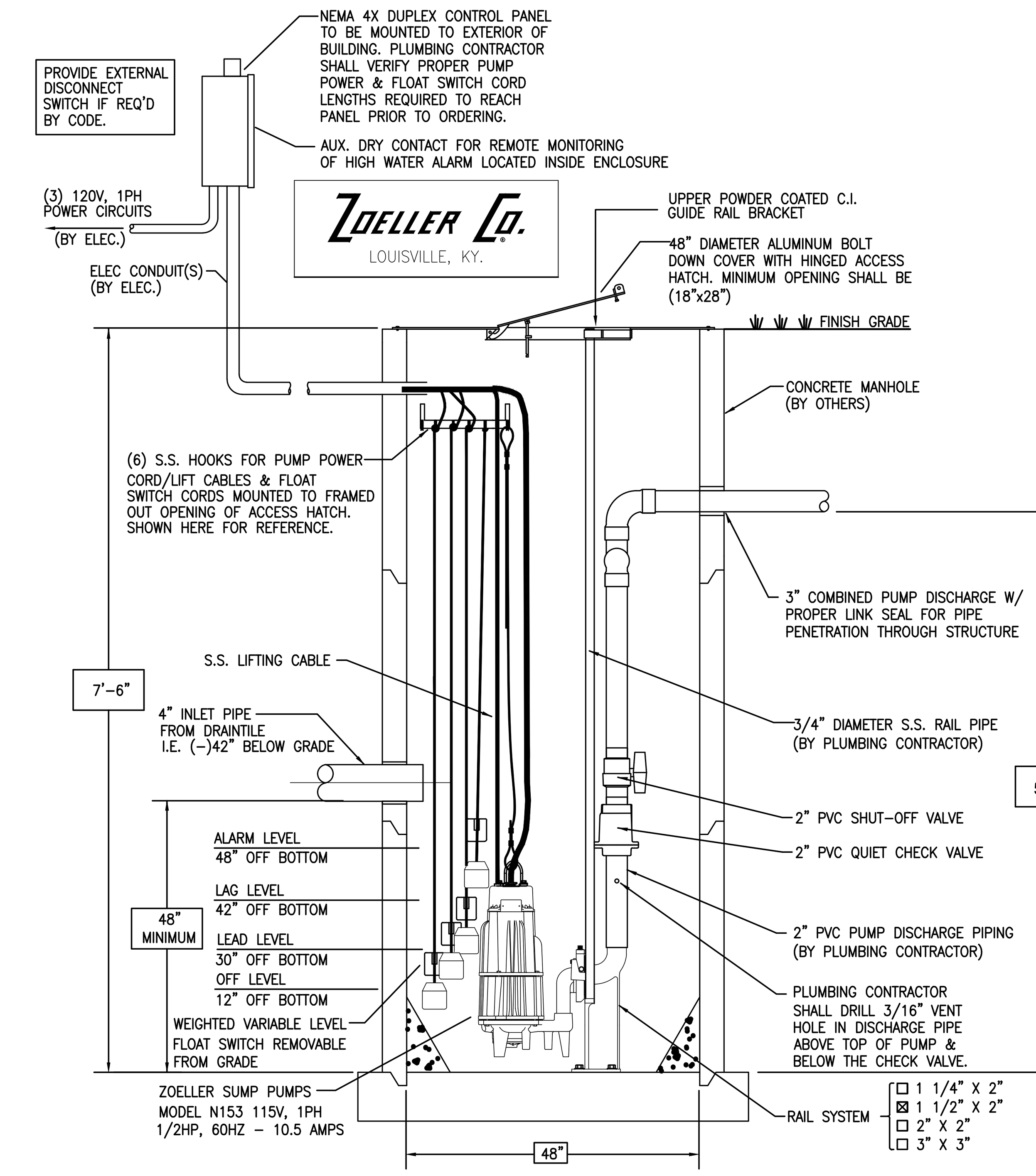
HART, TRAVERS & ASSOCIATES, INC.

ZOELLER PUMP COMPANY

DUPLEX SUBMERSIBLE STORM WATER LIFT STATION SPECS – (DSP-1)
PROJECT: 5415 KING JAMES WAY - FITCHBURG, WI
ENGINEER: JASON GREEN – W-T CIVIL ENGINEERING, INC.

FURNISH (2) ZOELLER NON-AUTOMATIC, OIL-FILLED, SUBMERSIBLE SUMP PUMPS, MODEL #N153 SINGLE SEAL WITH AN ELECTRICAL ALTERNATING SYSTEM. PUMPS SHALL HAVE A CAPACITY OF AT LEAST 70 GPM AGAINST A TOTAL DYNAMIC HEAD OF 10 FEET. NON-OVERLOADING MOTOR SPECIFICATION: 120 VOLT, 60 CYCLE, 1 PHASE, 1/2 HP, 10.5 AMPS AND SHALL HAVE A 50' LONG POWER CORD. ELECTRICIAN SHALL REMOVE ALL PLUGS FROM PUMP POWER CORDS AND HARD WIRE DIRECTLY INTO CONTROL PANEL. PLUMBING CONTRACTOR SHALL VERIFY REQUIRED CORD LENGTHS TO REACH THE CONTROL PANEL AND REQUIRED PUMP VOLTAGE/PHASE PRIOR TO BID AND BEFORE ORDERING PUMP SYSTEM. DISCHARGE TO BE 1-1/2" NPT CONVERTED TO 2" (VIA RAIL SYSTEM). PUMP SHALL BE MOUNTED ON RAIL SYSTEM WITH 1-1/2"x 2" NPT DISCHARGE. PUMPS WILL PASS 3/4" SOLIDS AND SHALL BE UL LISTED. FURNISH (1) ZOELLER #10-1041 NEMA 4X ELECTRICAL ALTERNATOR PANEL SHALL BE UL LISTED AND SHALL INCLUDE AN ALTERNATING CIRCUIT, SEPARATE CONTACT RELAYS, RUN LIGHTS, CIRCUIT BREAKERS AND H-O-A SWITCHES FOR EACH PUMP. A NUMBERED TERMINAL STRIP, HIGH WATER AUDIBLE ALARM, VISUAL LIGHT AND DRY AUXILLARY CONTACTS FOR REMOTE MONITORING OF THE HIGH \-WATER ALARM SHALL ALSO BE INCLUDED. PLUMBING CONTRACTOR SHALL VERIFY EXACT PUMP POWER CORD AND FLOAT SWITCH CORD LENGTHS REQUIRED TO REACH THE CONTROL PANEL PRIOR TO BID. ELECTRICIAN SHALL FURNISH (3) SEPARATE POWER CIRCUITS, (1) FOR PUMP #1 (10.5 AMPS), (1) FOR PUMP #2 (10.5 AMPS) AND (1) FOR THE CONTROLS AND ALL REQUIRED ELECTRICAL CONDUIT, CORD GRIPS, CODE REQUIRED EXTERNAL DISCONNECTS, ETC. ELECTRICIAN SHALL LAND ALL PUMP POWER CORDS AND FLOAT SWITCH CORDS ON PROPER TERMINALS INSIDE CONTROL PANEL. FURNISH (4) ZOELLER #10-1883 VARIABLE LEVEL, MECHANICAL FLOAT SWITCHES WITH 50' CORDS WITH ADJUSTABLE WEIGHTS. FURNISH (2) ZOELLER #30-0048 2" WHITE, PVC PLASTIC "QUIET" CHECK VALVE AND QUARTER TURN BALL VALVE SHUT-OFF. CHECK VAVE SHALL HAVE SOLVENT WELD UNION ENDS. FURNISH (2) ZOELLER "Z-RAIL" #39-0131 (1-1/2"V BY 2"V) POWDER COATED DUCTILE IRON GUIDE RAIL SYSTEM WITH 2" NPT DISCONNECT FITTING WITH POSITIVE MACHINE FIT AND O-RING SEAL, GUIDE RAIL PLATE AND UPPER RAIL SUPPORT BRACKET. ¾" DIAMETER SCHEDULE 40 STAINLESS STEEL GUIDE RAIL PIPING SHALL BE FURNISHED BY PLUMBING CONTRACTOR. FURNISH (2) ZOELLER #10-3560 LIFTING BAILS (TO BALANCE PUMP & RAIL PLATE EVENLY). FURNISH (2) ZOELLER #39-0031 8'-0" LONG STAINLESS-STEEL LIFTING CABLES. FURNISH (1) ZOELLER #10-0438 WALL OR ACCESS FRAME MOUNTED STAINLESS STEEL FLOAT SWITCH BRACKET WITH (6) STAINLESS STEEL "J" HOOKS FOR PUMP POWER CORDS, FLOAT SWITCH CORDS AND LIFT CABLES. CONCRETE WET WELL SHALL BE 36" INSIDE DIAMTER MINIMUM BY 7'-6" DEEP MINIMUM AND SHALL NOT HAVE A SMOKESTACK TOP. FURNISH (1) AK INDUSTRIES #LB-A36HDC (OR ZOELLER EQUAL) 36" DIAMETER (40" ACTUAL DIAMETER) ¼" THICK ALUMINUM BOLT DOWN COVER WITH HINGED ACCESS HATCH WITH 18" BY 28" MINIMUM OPENING ALLOWING EASY REMOVAL OF THE PUMPS. PLUMBING CONTRACTOR SHALL VERIFY REQUIRED HATCH OPENING SIZE FOR THE PUMPS BEING USED PRIOR TO ORDERING FROM ZOELLER/AK INDUSTRIES. PROVIDE PROPER LINK SEAL FOR 3" PUMP DISCHARGE PIPE PENETRATION THROUGH SIDEWALL OF MANHOLE STRUCTURE. ELECTRICIAN SHALL PROVIDE PROPERLY SIZED AND SEALED CONDUIT(S) FROM CONTROL PANEL LOCATION AT EXTERIOR BUILDING WALL UNDER SLAB TO PUMP STATION – SIZE FOR (2) PUMP POWER CORDS & (4) FLOAT SWITCH CORDS. RECOMMENDED FLOAT SPACING: "OFF" FLOAT – 12" OFF BOTTOM OF BASIN, "LEAD" FLOAT – 30" OFF BOTTOM OF BASIN, "LAG" FLOAT – 42" OFF BOTTOM OF BASIN AND "ALARM" FLOAT – 48" OFF BOTTOM OF BASIN (OR JUST BELOW LOWEST INLET PIPE AT APPROX 42" BELOW GRADE). START-UP SERVICES SHALL BE REQUIRED AND PERFORMED AT THE JOB SITE BY AN AUTHORIZED REPRESENTATIVE OF ZOELLER PUMP COMPANY. THE START-UP REPORT SHALL BE COMPLETED IN THE PRESENCE OF THE INSTALLERS AND RETURNED TO ZOELLER PUMP COMPANY. PLEASE CONTACT HART, TRAVERS & ASSOCIATES, INC. @ 630.261.1166 TO ARRANGE SYSTEM START-UP.

www.zoellerpumps.com



DUPLEX STORM WATER LIFT STATION – (DSP-1)
N.T.S.

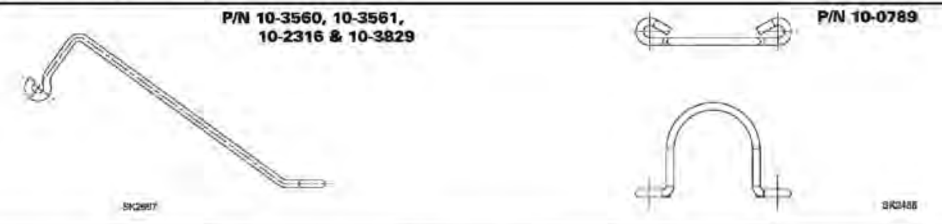
Z-RAIL® DISCONNECT SYSTEMS (1-1/4" - 3" NPT Discharge Pumps)

2" Z-Rail® Disconnect System

FEATURES

- Sewage, storm water and effluent pump systems
- For concrete, steel, or fiberglass tanks
- Allows for removal of pumps from ground level
- No confined space entry to service pump
- No pull rods or hold down rods
- Disconnect fitting with positive machine fit and o-ring seal provides a reliable seal.
- Seals up to 160 psi, supports a weight up to 300 lbs.
- Guide rails direct the pump to and from the disconnect fitting. Systems are supplied complete with disconnect fitting, guide plate, rail guide, and upper rail support bracket.
- All systems use 3/4" schedule 40 pipe rails (not included).

P/N 10-3560, 10-3561, 10-2316 & 10-3829 — P/N 10-0789



QTY. (2)

SPECIFICATIONS					
Rail System	Pump Discharge	Rail System Discharge	Materials of Construction*	Weight	Type
39-0134	1-1/4" V	2" V	powder coated, ductile iron	41	Z-Rail®
39-0135	1-1/4" V	2" V	powder coated, ductile iron w/ SS upper rail support bracket	43	Z-Rail®
39-0136	1-1/4" V	2" V	powder coated, ductile iron w/ brass for non-sparking	44	Z-Rail®
39-0143	1-1/4" V	2" V	powder coated, ductile iron w/ SS upper rail support/ brass for non-sparking	44	Z-Rail®
39-0137	1-1/4" H	1-1/4" V	powder coated, ductile iron (810/815 only)	41	Z-Rail®
39-0138	1-1/4" H	1-1/4" V	powder coated, ductile iron w/ SS upper rail support bracket (810/815 only)	43	Z-Rail®
39-0131	1-1/2" V	2" V	powder coated, ductile iron	41	Z-Rail®
39-0132	1-1/2" V	2" V	powder coated, ductile iron w/ SS upper rail support bracket	43	Z-Rail®
39-0133	1-1/2" V	2" V	powder coated, ductile iron w/ brass for non-sparking	44	Z-Rail®
39-0142	1-1/2" V	2" V	powder coated, ductile iron w/ SS upper rail support/ brass for non-sparking	43	Z-Rail®
39-0128	2" V	2" V	powder coated, ductile iron	42	Z-Rail®
39-0129	2" V	2" V	powder coated, ductile iron w/ SS upper rail support bracket	43	Z-Rail®
39-0130	2" V	2" V	powder coated, ductile iron w/ brass for non-sparking	45	Z-Rail®
39-0141	2" V	2" V	powder coated, ductile iron w/ SS upper rail support/ brass for non-sparking	44	Z-Rail®
39-0122	3" V	3" V	powder coated, ductile iron	47	Z-Rail®
39-0123	3" V	3" V	powder coated, ductile iron w/ SS upper rail support bracket	47	Z-Rail®
39-0124	3" V	3" V	powder coated, ductile iron / brass for non-sparking	47	Z-Rail®
39-0125	3" V	3" V	powder coated, ductile iron w/ SS upper rail support/ brass for non-sparking	47	Z-Rail®
ACCESSORIES — Intermediate rail brackets are required for each 12' of basin depth.					
39-0139	intermediate rail bracket 1-1/4", 1-1/2" and 2" discharge - SS			4	Z-Rail®
39-0140	intermediate stabilizer, SS, for 3" system			4	Z-Rail®
** 10-3560	SS lifting bail for 50, 90 & 150 series			1	Z-Rail®
** 10-3561	SS lifting bail for 140 series			1	Z-Rail®
** 10-2316	SS lifting bail for 130, 260 & 270 series			1	Z-Rail®
** 10-3829	SS lifting bail for 803, 805 & 807 series			1	Z-Rail®
** 10-0789	SS lifting bail for 160, 180, 280, 290, 810/815 and 818/819/820 series (See above)			1	Z-Rail®

QTY. (2)

* Disconnect fitting, guide rail plate, rail guide and upper rail support bracket. SS lifting bail for 160, 180, 280, 290, 810/815 and 818/819/820 series
** Lifting bails are required on these models to balance pump and rail plate evenly. Other models already include proper lifting device.

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SECTION: 4.10.160
FM1936
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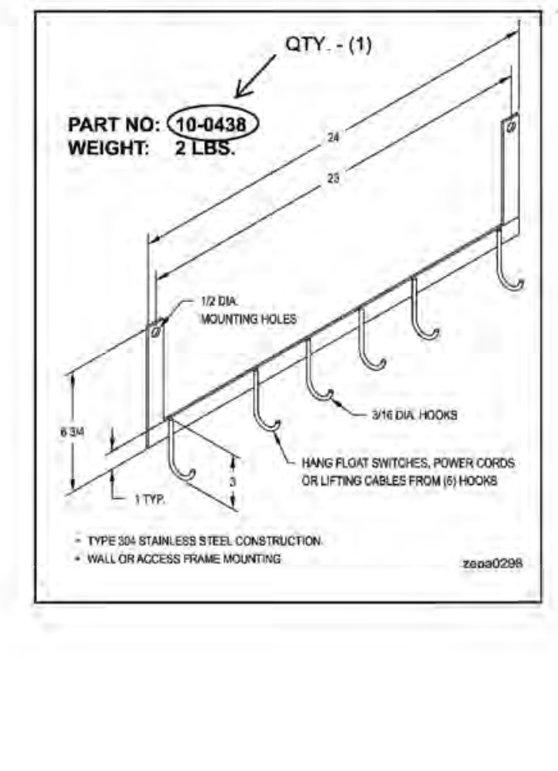
Submersible Wastewater Pump Association SWPA MEMBER

FLOAT SWITCH BRACKETS
(For Use with Weighted Floats)

Also see FM0526 for Float Tree Assemblies for floats that use clamp type hangers.

QTY. - (1)
PART NO: 10-0438
WEIGHT: 2 LBS.



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COMPARE THESE FEATURES

- Float is constructed of durable PVC/polypropylene encasing variable level switch
- Standard mechanical variable level control switches are rated for 115/230 V, 5 Amps
- Low current mechanical variable level control switches are rated for 125 VAC/30 VDC, 0.1 Amps
- 18/2 Type SJOW CPE cord standard
- Cords are available in 15-25-35-50 foot lengths
- Temperature rating of 140°F (60°C)
- Approximately 1.5" liquid level differential in switching action

Variable Level Control Switch is normally open when hanging vertically above liquid level. Switch closes when it reaches a few degrees above the horizontal position.

APPLICATIONS

- Switch for simplex or duplex pump control and high level alarm on electrical alternating control panel systems for dewatering, effluent and sewage applications.
- Switch for APak® (use low current models)
- High level alarm switch

ADJUSTABLE WEIGHT: (P/N 10-0689) provides an accurate pivot point for suspended float switches.

- Gripper teeth on clip and weight channel securely lock float cable into place.
- Cable weight can be adjusted without the use of tools.

HOUSING: 1lb 12oz. (0.8 kg) 2.8" x 3.3" (7.1 cm x 8.4 cm) Impact-resistant & non-corrodible, PVC housing for liquids up to 140° F (60° C)
CLIP: injection-molded acetal plastic
WIRE/CABLE ACCOMODATED: SJOW, SJTW, 18/2, 18/3, 16/3, 14/2, 14/3
SHIP WEIGHT: 2 lbs. (32 oz)

VARIABLE LEVEL CONTROL SWITCHES

May not be exactly as pictured. See back for application drawings.

QTY. (4)

FLOAT SWITCHES			
Mechanical		Cord Length	Mounting Method
Standard P/N*	Low Current P/N**		
10-0743	10-2060	15	Clamp
10-0744	10-2061	20	Clamp
10-1877	10-2062	25	Clamp
10-1878	10-2063	35	Clamp
10-1879	10-2064	50	Clamp
10-1880	10-2065	15	Adjustable Weight
10-1881	10-2066	25	Adjustable Weight
10-1882	10-2067	35	Adjustable Weight
10-1883	10-2068	50	Adjustable Weight

FLOAT SWITCH TREES			
Mechanical		Cord Length	Mounting Method
Standard P/N*	Intrinsically Safe P/N**		
10-1456	10-1456	—	Tree Only
10-1886	10-2069	15	(3) 15' Floats & Tree
10-1887	10-2070	15	(4) 15' Floats & Tree

* Do not use with intrinsically safe control systems.
** For use with intrinsically safe control systems only.

Your Peace of Mind is Our Top Priority®

Product information presented here reflects conditions at time of publication. Consult factory regarding discrepancies or inconsistencies.

ZOELLER PUMP COMPANY
Zoeller Family of Water Solutions

SECTION: 2.60.020
FM1709
0113
Supersedes
0812

MAIL TO: P.O. BOX 16347 • Louisville, KY 40256-0347
SHIP TO: 3649 Cane Run Road • Louisville, KY 40211-1961
(502) 778-2731 • 1 (800) 928-PUMP • FAX (502) 774-3624

visit our web site: www.zoeller.com

PVC PLASTIC TYPE UNICHECKS

COMPARE THESE FEATURES

THE "QUIET CHECK" PVC SOLVENT WELD WITH UNION CHECK VALVE

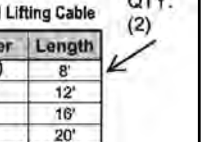
ITEM NUMBER	PIPE SIZE	VALVE BODY	WEIGHT EACH	LENGTH	CARTON QUANTITY
30-0040	1½ inch	White	2 lbs.	9.50 inches	12
30-0041	1½ inch	Clear*	2 lbs.	9.50 inches	12
30-0042	2 inches	White	3 lbs.	10.50 inches	12
30-0043	2 inches	Clear*	3 lbs.	10.50 inches	12
30-0044	3 inches	White	3 lbs.	9.50 inches	8
30-0045	3 inches	Clear*	3 lbs.	9.50 inches	8
30-0241	1½ inches	White	1.2 lbs.	10.50 inches	12
30-0242	1½ inches	Clear*	1.2 lbs.	10.50 inches	12
30-0243	2 inches	White	1.8 lbs.	11.50 inches	12
30-0244	2 inches	Clear*	1.8 lbs.	11.50 inches	12
QUIET CHECKS WITH QUARTER TURN BALL VALVES					
30-0046	1½ inch	White	3 lbs.	14.75 inches	12
30-0047	1½ inch	Clear*	3 lbs.	14.75 inches	12
30-0048	2 inches	White	4 lbs.	16 inches	12
30-0049	2 inches	Clear*	4 lbs.	16 inches	12

QTY. (2)

* Clear check valve body allows easy viewing of conditions inside the valve.

P/N	Service Part
152294	1½" union assembly
152293	2.0" union assembly

- 1/2 lb. spring "magically" eliminates water hammer
- Reduces motor and pump noise from plumbing system
- Designed for both horizontal and vertical usage
- Full flow, non-clog design installation
- Durably constructed PVC check body and compression and fittings
- Solvent weld ends allow for easy installation
- 30-0044 and 30-0045, no unions, solvent weld only
- No threading of pipe required
- ***Pressure rated at 50 PSI (115')***
  40 PSI (92') for P/N 30-0241 & 30-0242
  30 PSI (69') for P/N 30-0243 & 30-0244
- ***Consult factory if use over 130° F required***
- ***Suitable for installation below basin cover***



Stainless Steel Lifting Cable

QTY. (2)

Part Number	Length
39-0031	8'
39-0032	12'
39-0033	16'
39-0034	20'
39-0035	24'

WT JOB NUMBER - 2002139C

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wtengineering.com

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COUNTY of DANE WISCONSIN 1839

DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY
FITCHBURG, WISCONSIN 53719

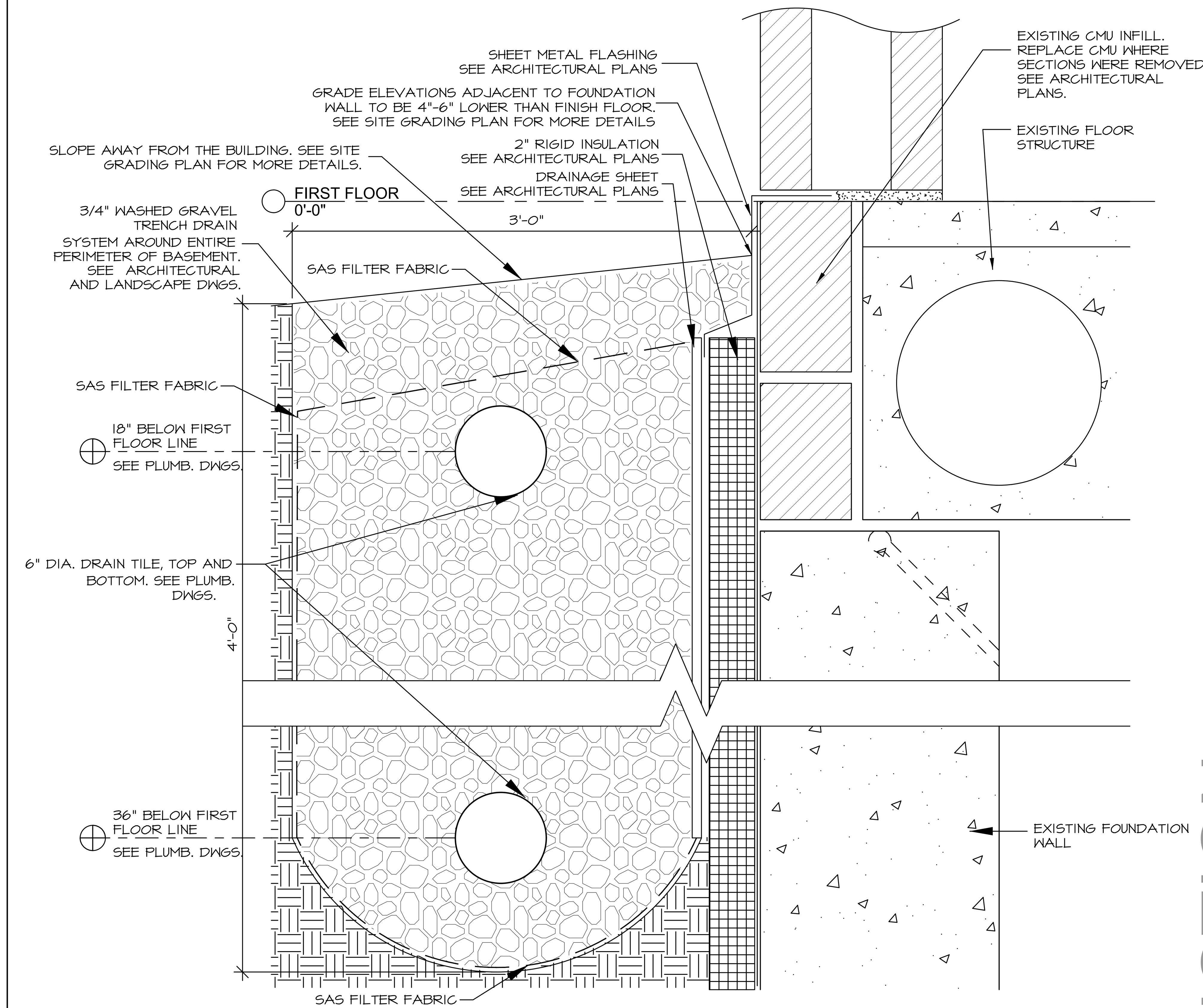
CLIENT APPROVAL
☐ APPROVED
☐ APPROVED AS NOTED
APPROVED BY / DATE:

ISSUE RECORD		
	DD SET	08/04/20
	CD CHECK SET	11/20/20
	98% CD REVIEW	02/11/21
	HVAC REDESIGN	04/30/21
	ISSUE FOR BID	06/08/21

CHECKED BY
JEG
DRAWN BY
BRA
DATE
5/24/2021 4:43:10 PM
PROJECT NUMBER
2020-001

SITE UTILITY DETAILS

C-5.2



DETAIL - WATERPROOFING FOUNDATION / STONE STRIP TRENCH SYSTEM

(SEE WATERPROOFING DETAIL ON ARCHITECTURAL SHEET A-3.3 FOR MORE INFORMATION)

NOT TO SCALE

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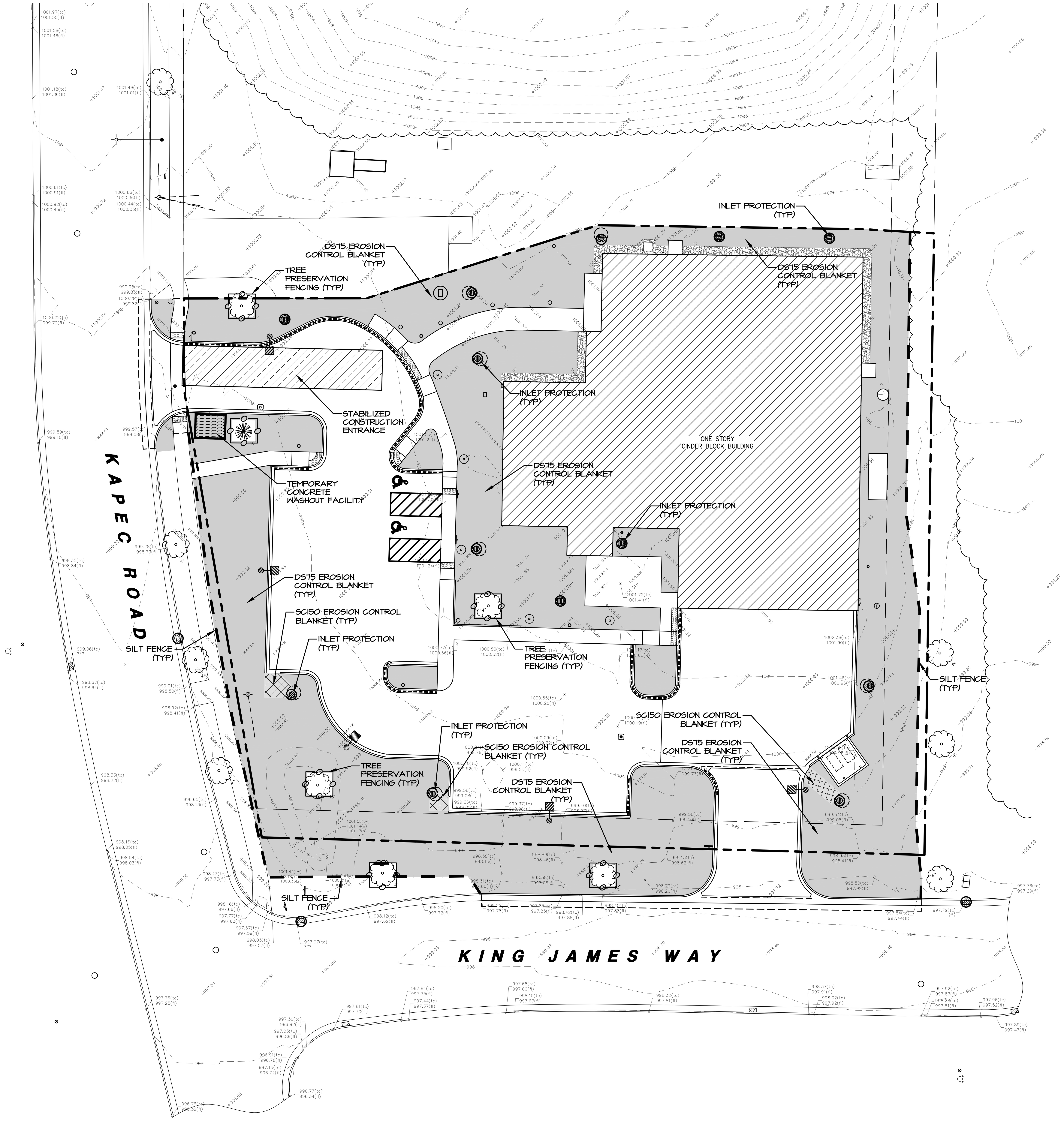
SITE UTILITY DETAILS

C-5.3



STORM WATER POLLUTION PREVENTION PLAN

1 SCALE 1" = 20'

SWPPP NOTES:

A. ALL DISTURBED GREEN SPACES ON THE SITE SHALL BE RESTORED ACCORDING TO THE SEED BED PREPARATION SPECIFICATIONS BELOW AND BLANKETED OR MATTED AS SHOWN ON THE PLANS.
B. TEMPORARY OR PERMANENT STABILIZATION SHALL OCCUR IMMEDIATELY WHENEVER EARTH DISTURBING ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE. TEMPORARY STABILIZATION SHALL CONSIST OF THE INSTALLATION OF TEMPORARY SEEDING.
C. CONTRACTOR TO INSTALL TEMPORARY CONSTRUCTION ENTRANCES AS NECESSARY TO EXCAVATE AREAS AND HAUL SOILS ON-SITE. TRACKING OF DEBRIS ON SITE WILL NOT BE TOLERATED. ANY DEBRIS LEFT OUTSIDE OF THE PROJECT LIMITS MUST BE CLEANED IMMEDIATELY.
D. EROSION CONTROL BLANKETS AND TURF REINFORCEMENT MATS SHALL BE INSTALLED USING 6" BIO-STAKES AS MANUFACTURED BY NORTH AMERICAN GREEN. METAL STAKES AND STAPLES ARE PROHIBITED.
E. CONTRACTOR SHALL PROVIDE ALL NECESSARY MAINTENANCE FOR THE SEDIMENT AND EROSION CONTROL MEASURES FOR THE DURATION OF THE PROJECT.
F. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL STORMWATER POLLUTION PREVENTION PLAN (SWPPP) INSPECTIONS, INSPECTION REPORTS, CORRECTIVE ACTION FORMS, SWPPP AMENDMENT LOGS, SUBCONTRACTOR CERTIFICATIONS/AGREEMENTS, GRADING AND STABILIZATION ACTIVITIES LOGS, SWPPP TRAINING LOGS, AND DELEGATION OF AUTHORITY FORMS FOR THE DURATION OF THE PROJECT.
G. CONTRACTOR SHALL PROVIDE COPIES OF ALL SWPPP REPORTS, FORMS, AND LOGS TO THE WT GROUP ONCE THE SITE HAS BEEN STABILIZED. THE CONTRACTOR SHALL MAINTAIN THESE DOCUMENTS FOR A PERIOD OF 3 YEARS FROM THE FINAL STABILIZATION OF THE SITE.
H. FOLLOWING THE REMOVAL OF THE SILT FENCE, THE CONTRACTOR SHALL RESTORE THE THE SILT FENCE TRENCH WITH SOD.
I. CONTRACTOR SHALL INITIATE STABILIZATION OF ALL DISTURBED AREAS WITHIN ONE CALENDAR DAY.

SWPPP LEGEND

+000.00	EXISTING SPOT GRADE
	EXISTING CONTOUR LINE
	PROPOSED CONTOUR LINE
ADJUST	ADJUST EXISTING RIM ELEVATION
	EXISTING CLOSED MANHOLE
	EXISTING OPEN GRATE MANHOLE
	EXISTING BEEHIVE GRATE MANHOLE
	EXISTING CURB INLET
	EXISTING FIRE HYDRANT
	EXISTING B-BOX
	PROPOSED INLET
	PROPOSED OPEN LID MANHOLE / CATCH BASIN
	PROPOSED CLOSED LID MANHOLE
	SILT FENCE
	FLEXSTORM CATCH-IT INLET PROTECTION
	RIP RAP
	FINE GRADE, FERTILIZE, AND SEED. INSTALL DS75 EROSION CONTROL BLANKET WITH 6" BIO-STAKES AS MANUFACTURED BY NORTH AMERICAN GREEN. FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.
	TEMPORARY CONCRETE WASHOUT FACILITY
	STABILIZED CONSTRUCTION ENTRANCE
	FINE GRADE, FERTILIZE, AND SEED. INSTALL SC150 EROSION CONTROL BLANKET WITH 6" BIO-STAKES AS MANUFACTURED BY NORTH AMERICAN GREEN. FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.
	TREE PRESERVATION FENCING

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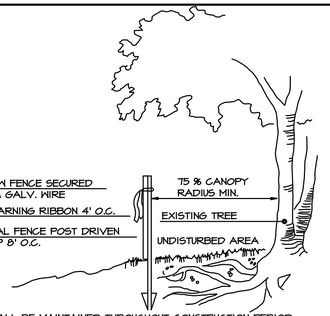
PROJECT NUMBER
2020-001

STORMWATER POLLUTION PREVENTION PLAN

C-6.0



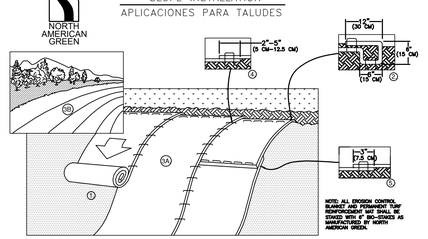
SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION PERIOD
FINAL PLACEMENT APPROVED BY OWNERS REPRESENTATIVE

DETAIL - ROOT ZONE PROTECTION FENCE

NOT TO SCALE

NORTH AMERICAN GREEN

SLOPE INSTALLATION
APLICACIONES PARA TALUDES

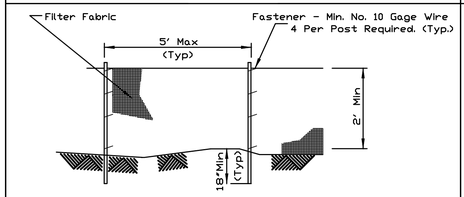


1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM™, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" – 5" (5 CM – 12.5 CM) OVERLAP DEPENDING ON BLANKET TYPE.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE BLANKET WIDTH.
NOTE:
*IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

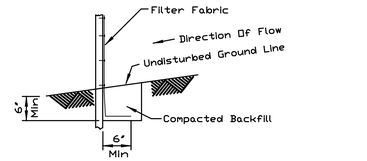
DETAIL - EROSION CONTROL BLANKET

NOT TO SCALE

SILT FENCE PLAN



ELEVATION

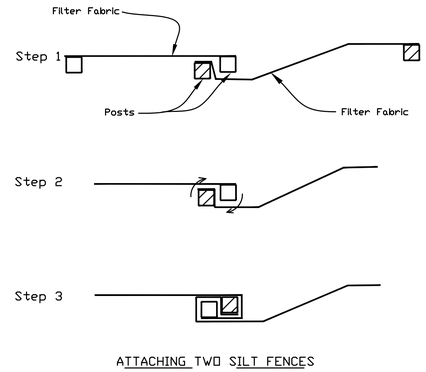


FABRIC ANCHOR DETAIL

NOTES:
1. Temporary sediment fence shall be installed prior to any grading work in the area to be protected. They shall be maintained throughout the construction period and removed in conjunction with the final grading and site stabilization.
2. Filter fabric shall meet the requirements of material specification 592 Geotextile Table 1 or 2, Class I with equivalent opening size of at least 30 for nonwoven and 40 for woven.
3. Fence posts shall be either standard steel post or wood post with a minimum cross-sectional area of 3.0 sq. in.

REFERENCE		STANDARD DWG. NO.
Project		IUM-620A
Designed ____ Date ____		SHEET 1 OF 2
Checked ____ Date ____		DATE 3-16-12
Approved ____ Date ____		

SILT FENCE - SPLICING TWO FENCES



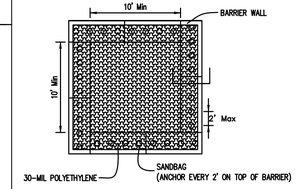
ATTACHING TWO SILT FENCES

1. Place the end post of the second fence inside the end post of the first fence.
2. Rotate both posts at least 180 degrees in a clockwise direction to create a tight seal with the fabric material.
3. Cut the fabric near the bottom of the stakes to accommodate the 6" flap.
4. Drive both posts a minimum of 18 inches into the ground and bury the flap.
5. Compact backfill (particularly at splices) completely to prevent stormwater piping.

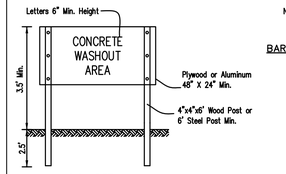
REFERENCE		STANDARD DWG. NO.
Project		IUM-620B(W)
Designed ____ Date ____		SHEET 1 OF 1
Checked ____ Date ____		DATE 2-06-2012
Approved ____ Date ____		

DETAIL - SILT FENCE

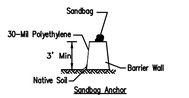
NOT TO SCALE



PLAN VIEW



SIGN DETAIL

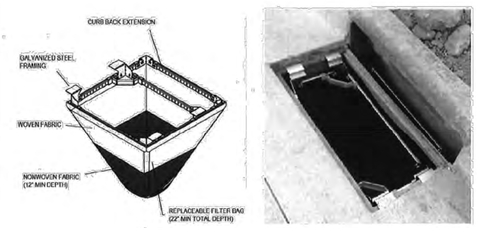


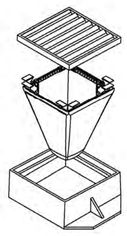
BARRIER WALL ANCHOR SECTION

NOTES:
1. Maintaining temporary concrete washout facilities shall include removing and disposing of hardend concrete and/or slurry and returning the facilities to a functional condition.
2. Facility shall be cleaned or reconstructed in a new area once washout becomes two-thirds full.

		TEMPORARY CONCRETE WASHOUT FACILITY – BARRIER WALL	Designed ____ Date ____
			Drawn B. JOHNSON 5/05
			Checked ____
			Approved ____

CONCRETE WASHOUT FACILITY

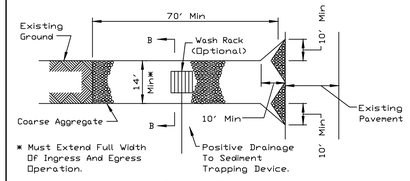




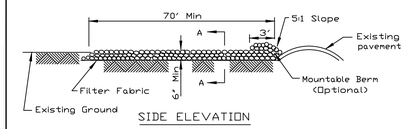
INSTALLATION:
1. REMOVE GRATE.
2. DROP INLET FILTER UNTIL LOAD BEARING LIP OF CASTING OR CONCRETE STRUCTURE.
3. REPLACE GRATE.

THE CITY OF Fitchburg PUBLIC WORKS	FRAMED INLET PROTECTION	DATE: 2/8/2019
	STANDARD DETAIL DRAWING	SHEET NO.: 2.01

STABILIZED CONSTRUCTION ENTRANCE PLAN



PLAN VIEW

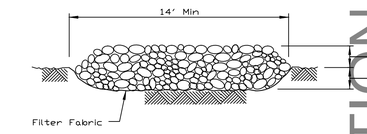


SIDE ELEVATION

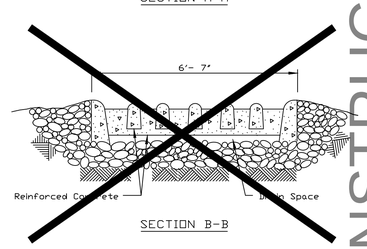
NOTES:
1. Filter fabric shall meet the requirements of material specification 592 GEOTEXTILE, Table I or 2, Class I, II or IV and shall be placed over the cleared area prior to the placing of rock.
2. Rock or reclaimed concrete shall meet one of the following IDOT coarse aggregate gradation, CA-1, CA-2, CA-3 or CA-4 and be placed according to construction specification 25 ROCKFILL using placement Method 1 and Class III compaction.
3. Any drainage facilities required because of washing shall be constructed according to manufacturers specifications.
4. If wash racks are used they shall be installed according to the manufactures specifications.

REFERENCE		STANDARD DWG. NO.
Project	U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE ILLINOIS	IL-630
Designed ____ Date ____		SHEET 1 OF 2
Checked ____ Date ____		DATE 8-18-94
Approved ____ Date ____		

STABILIZED CONSTRUCTION ENTRANCE PLAN



SECTION A-A



SECTION B-B

REFERENCE		STANDARD DWG. NO.
Project	U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE ILLINOIS	IL-630
Designed ____ Date ____		SHEET 2 OF 2
Checked ____ Date ____		DATE 8-18-94
Approved ____ Date ____		

DETAIL - STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

WT JOB NUMBER - 2002139C

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COUNTY of DANE WISCONSIN 1839

DANE COUNTY EMERGENCY MANAGEMENT REMODEL

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CLIENT APPROVAL
- ☐ APPROVED
- ☐ APPROVED AS NOTED

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STORMWATER POLLUTION PREVENTION DETAILS

C-6.1

CITY OF FITCHBURG STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

SECTION 1 - GENERAL REQUIREMENTS

1.1 DEFINITIONS AND TERMS

CITY. THE CITY OF FITCHBURG, WISCONSIN.
CITY CONTRACT. THE WRITTEN AGREEMENT BETWEEN THE CITY AND THE CONTRACTOR SETTING FORTH THE OBLIGATION OF THE PARTIES THEREUNDER, INCLUDING, BUT NOT LIMITED TO; THE PERFORMANCE OF THE WORK TO BE DONE, THE FURNISHING OF LABOR AND MATERIALS, THE BASIS OF PAYMENT, AND CONTRACT TIME. OTHER CONTRACT DOCUMENTS ARE INCORPORATED INTO THE AGREEMENT.

CONTRACTOR. THE INDIVIDUAL OR ENTITY WITH WHOM THE OWNER HAS ENTERED INTO THE AGREEMENT.

DEPARTMENT. THE CITY OF FITCHBURG PUBLIC WORKS DEPARTMENT.

DEVELOPER. THE INDIVIDUAL, PARTNERSHIP, JOINT VENTURE, CORPORATION OR AGENCY UNDERTAKING PUBLIC IMPROVEMENTS UNDER THE TERMS OF THE SUB-DIVIDER'S AGREEMENT AND ACTING DIRECTLY OR THROUGH A DULY AUTHORIZED REPRESENTATIVE.

SUB-DIVIDER'S AGREEMENT. THE AGREEMENT BETWEEN THE CITY OF FITCHBURG AND THE DEVELOPER SETTING FORTH THE OBLIGATION OF THE PARTIES THEREUNDER FOR PUBLIC IMPROVEMENTS.

SUB-DIVIDER'S ENGINEER. THE CONSULTING ENGINEER RETAINED BY THE DEVELOPER AND ACTING AS THE SUB-DIVIDER'S REPRESENTATIVE.

ENGINEER. THE CITY ENGINEER OF THE CITY OF FITCHBURG ACTING PERSONALLY OR THROUGH A DULY AUTHORIZED REPRESENTATIVE.

INSPECTOR. A REPRESENTATIVE OF THE ENGINEER ASSIGNED AND AUTHORIZED TO MAKE DETAILED INSPECTION OF ANY AND ALL PORTIONS OF THE WORK OR MATERIALS.

MATERIALS. ANY SUBSTANCE SPECIFIED FOR USE IN THE CONSTRUCTION OF THE PROJECT AND ITS APPURTENANCES.

OWNER. A PARTY WHO AWARDS A CONTRACT FOR A PROJECT AND UNDERTAKES TO PAY THE CONTRACTOR.

PLANS. THE APPROVED PLANS, PROFILES, TYPICAL CROSS SECTIONS, AND OTHER DRAWINGS IDENTIFIED IN THE CONTRACT DOCUMENTS, WHICH SHOW THE LOCATION, CHARACTER, DIMENSIONS, AND DETAILS OF THE WORK TO BE DONE.

PROJECT. THE TOTAL CONSTRUCTION OF WHICH THE WORK TO BE PERFORMED UNDER THE CONTRACT DOCUMENTS MAY BE THE WHOLE, OR A PART.

PROJECT AREA. THE LOCATION OF THE CONSTRUCTION TO BE PERFORMED UNDER THE CONTRACT.

SHOP DRAWINGS. ALL DRAWINGS, DIAGRAMS, ILLUSTRATIONS, SCHEDULES, AND OTHER DATA OR INFORMATION WHICH ARE SPECIFICALLY PREPARED OR ASSEMBLED BY OR FOR CONTRACTOR AND SUBMITTED BY CONTRACTOR TO ILLUSTRATE SOME PORTION OF THE WORK.

SPECIAL PROVISIONS. SPECIAL DIRECTIONS, PROVISIONS, OR REQUIREMENTS PECULIAR TO THE PROJECT UNDER CONSIDERATION AND NOT OTHERWISE DETAILED OR SET FORTH IN THE STANDARD SPECIFICATIONS.

SPECIFICATIONS. THE DIRECTIONS, PROVISIONS, AND REQUIREMENTS CONTAINED AND REFERENCED HEREIN, TOGETHER WITH WRITTEN AGREEMENTS AND DOCUMENTS INCORPORATED IN THE CONTRACT DOCUMENTS, PERTAINING TO THE METHOD OR MANNER OF PERFORMING THE WORK, THE QUANTITIES, AND THE QUALITY OF MATERIALS TO BE FURNISHED UNDER THE CONTRACT.
STANDARD SPECIFICATIONS. THAT PART OF THE CONTRACT DOCUMENTS CONSISTING OF WRITTEN REQUIREMENTS FOR MATERIALS, EQUIPMENT, SYSTEMS, STANDARDS AND WORKMANSHIP AS APPLIED TO THE WORK, AND CERTAIN ADMINISTRATIVE REQUIREMENTS AND PROCEDURAL MATTERS APPLICABLE THERETO.

SUBCONTRACTOR. AN INDIVIDUAL OR ENTITY HAVING A DIRECT CONTRACT WITH CONTRACTOR OR WITH ANY OTHER SUBCONTRACTOR FOR THE PERFORMANCE OF A PART OF THE WORK AT THE SITE.

SUPPLEMENTAL SPECIFICATIONS. SPECIFICATION ADOPTED SUBSEQUENT TO THE PUBLICATION OF THESE SPECIFICATIONS.

UNDISTRIBUTED QUANTITY. A CERTAIN ESTIMATED AMOUNT OF AN ITEM OF WORK WHERE THE LOCATION IS NOT YET DETERMINED. THE WORK COULD TAKE PLACE ANYWHERE WITHIN THE CITY OF FITCHBURG MUNICIPAL BOUNDARY.

WORK. THE ENTIRE CONSTRUCTION OR THE VARIOUS SEPARATELY IDENTIFIABLE PARTS THEREOF REQUIRED TO BE PROVIDED UNDER THE CONTRACT DOCUMENTS. WORK INCLUDES AND IS THE RESULT OF PERFORMING OR PROVIDING ALL LABOR, SERVICES, AND DOCUMENTATION NECESSARY TO PRODUCE SUCH CONSTRUCTION, AND FURNISHING, INSTALLING, AND INCORPORATING ALL MATERIALS AND EQUIPMENT INTO SUCH CONSTRUCTION, ALL AS REQUIRED BY THE CONTRACT DOCUMENTS.

1.2 GENERAL REQUIREMENTS

1.2.01 RELATED DOCUMENTS

SPECIFICATIONS SHALL CONSIST OF THE CITY OF FITCHBURG STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION LATEST EDITION (HEREINAFTER REFERRED TO AS @FITCHBURG SPECIFICATIONSΔ) AND THE STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION LATEST EDITION (HEREINAFTER REFERRED TO AS @WISDOT SPECIFICATIONSΔ), EXCEPT AS MODIFIED HEREIN. WHERE THERE IS CONFLICT BETWEEN THE FITCHBURG SPECIFICATIONS AND THE WISDOT SPECIFICATIONS, THE FITCHBURG SPECIFICATIONS SHALL GOVERN.

STANDARD SPECIFICATIONS SHALL REFERENCE THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION, (HEREINAFTER "WUCA SPECIFICATIONS") EXCEPT AS MODIFIED HEREIN. WHERE THERE IS A CONFLICT BETWEEN FITCHBURG SPECIFICATIONS AND THE WUCA SPECIFICATIONS, FITCHBURG SPECIFICATIONS SHALL GOVERN.

1.2.02 PRE-CONSTRUCTION CONFERENCE

A PRE-CONSTRUCTION CONFERENCE FOR THE REPRESENTATIVES OF THE CONTRACTOR AND THE CITY SHALL BE HELD BEFORE THE CONTRACTOR PROCEEDS WITH THE CONSTRUCTION. THE CONFERENCE SHALL BE ARRANGED BY THE CONTRACTOR AND SHALL BE HELD AT FITCHBURG CITY HALL TO DISCUSS THE PROJECT SCHEDULE AND POTENTIAL CONCERNS OF THE CITY RESIDENTS.

1.2.03 PERMITS

ALL EQUIPMENT, MATERIALS AND WORK SHALL BE IN FULL ACCORDANCE WITH THE PROVISIONS OF THE @OCCUPATIONAL SAFETY AND HEALTH ACT.Δ ANY SPECIFICATION OR REQUIREMENT HEREIN IS IN ADDITION TO OSHA REQUIREMENTS. IF ANY SPECIFICATION OR REQUIREMENT CONFLICTS WITH OSHA REQUIREMENTS, THE OSHA REQUIREMENT SHALL SUPERSEDE.

1.2.04 PERMITS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS NEEDED FOR CONSTRUCTION. THESE PERMITS MAY INCLUDE, BUT SHALL NOT BE LIMITED TO: STREET OPENING PERMIT, STREET OCCUPANCY PERMIT, EROSION CONTROL AND STORM WATER MANAGEMENT PERMIT (ECSWM),
DRIVEWAY PERMIT, BULK WATER USE PERMIT, AND FLUSHING PERMIT. THESE PERMITS MAY BE OBTAINED ON THE 3RD FLOOR AT FITCHBURG CITY HALL, FROM THE PUBLIC WORKS DEPARTMENT. THE WORK ASSOCIATED WITH THESE PERMITS SHALL BE COMPLETED IN ACCORDANCE WITH ALL APPLICABLE STATUTES, ORDINANCES, RULES AND REGULATION OF THE STATE AND THE CITY.

1.2.05 SHOP DRAWINGS

ALL DRAWINGS, DIAGRAMS, ILLUSTRATIONS, SCHEDULES, AND OTHER DATA OR INFORMATION WHICH ARE SPECIFICALLY PREPARED BY OR FOR THE CONTRACTOR OR SUB-DIVIDER'S ENGINEER, OR BY SUBCONTRACTOR, MANUFACTURER, FABRICATOR, OR SUPPLIER, WHICH THE CONTRACTOR IS REQUIRED TO SUBMIT TO THE ENGINEER FOR APPROVAL.

1.2.06 PROTECTION OF PROPERTY IRONS AND MONUMENTS

PRIOR TO COMMENCING WORK, ALL EXISTING PROPERTY IRONS WITHIN THE DEVELOPMENT SHALL BE MARKED WITH STEEL FENCE POSTS. STEEL FENCE POSTS SHALL EXTEND FIVE FEET (5') ABOVE GROUND SURFACE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING AND PRESERVING ALL PROPERTY IRONS AND MONUMENTS DURING CONSTRUCTION. AT THE COMPLETION OF THE PROJECT, THE CITY WILL HIRE A PROFESSIONAL LAND SURVEYOR (PLS) TO RESET ALL LOST IRONS AND MONUMENTS NOT REPLACED BY THE CONTRACTOR'S PLS. THE ENGINEER SHALL DETERMINE WHICH IRONS AND MONUMENTS WERE LOST DUE TO THE CONTRACTOR'S (OR CONTRACTOR'S SUBCONTRACTOR'S) WORK, AND SHALL, IN ADDITION TO WITHHOLD UP TO $1,000 FOR EACH LOST OR DAMAGED IRON AND $2,000 FOR EACH LOST OR DAMAGED MONUMENT FROM THE CONTRACTOR'S PAYMENT AS A DEPOSIT IN ADDITION TO ANY OTHER PENALTIES UNDER LAW. ONCE THE ACTUAL COSTS OF REPAIR AND/OR REPLACEMENT ARE DETERMINED, THE ACTUAL COSTS SHALL BE DEDUCTED FROM THE CONTRACTOR'S FINAL PAYMENT. UNDER CIRCUMSTANCES WHERE THE CONTRACTOR IS PERFORMING WORK AS PART OF A SUB-DIVIDER'S AGREEMENT, THE ACTUAL COSTS SHALL BE INVOICED TO THE OWNER.

ALL NEW PROPERTY IRONS WITHIN THE DEVELOPMENT SHALL BE MARKED WITH STEEL FENCE POSTS. STEEL FENCE POSTS SHALL EXTEND FIVE FEET (5') ABOVE GROUND SURFACE.

1.2.07 DRAWING SUBMISSIONS

ONE SET OF 24" X 36" MYLAR COPIES AND A DIGITAL FILE OF THE RECORD DRAWINGS ON A FLASH DRIVE SHALL BE DELIVERED TO THE ENGINEER WITHIN THREE (3) MONTHS OF ACCEPTANCE OF THE WORK. ONE SET OF 11Δ X 17Δ DRAINAGE DRAWINGS THAT SHOW RECORD ELEVATIONS IN ENOUGH DETAIL TO SHOW DRAINAGE PATTERNS MATCH THE DESIGN, TO BE SUBMITTED AS A DIGITAL FILE BY FLASH DRIVE OR ELECTRONIC TRANSFER. ALL COORDINATES SHALL BE IN THE DANE COUNTY COORDINATE SYSTEM, NAD 1983 (2011) WISCRS DANE COUNTY US SURVEY FEET. ALL ELEVATIONS SHALL BE REFERENCED TO NAVD 88, FEET. ELEVATIONS BASED ON THE CITY OF MADISON, LAKE MENDOTA DATUM WILL NOT BE ACCEPTED. THE DIGITAL FILE OF THE RECORD DRAWINGS SHALL BE IN AUTOCAD FORMAT AND SHALL INCLUDE A PLAN LAYOUT OF THE ENTIRE PROJECT AND PLAN AND PROFILE LAYOUTS UTILIZING THE DANE COUNTY COORDINATE SYSTEM. ALL LAYERS IN THE DIGITAL FILE SHALL HAVE NAMES CONSISTENT WITH THE NATIONAL CAD STANDARD. AN AUTOCAD TEMPLATE DRAWING IS AVAILABLE FROM THE PUBLIC WORKS DEPARTMENT. ALONG WITH THE ABOVE SUBMITTALS PROVIDE TWO POINTS, AT OPPOSITE CORNERS OF THE PROJECT, IN DANE COUNTY COORDINATES AND IN UNIVERSAL TRANSVERSE MERCATOR COORDINATES OF AN EXISTING, EASILY RECOGNIZABLE, AND IMMOBILE OBJECT (FIRE HYDRANT, STREET LIGHT, ETC.). IN THE EVENT THAT ACCURATE RECORD DRAWINGS ARE NOT SUBMITTED IN A TIMELY FASHION, THE ENGINEER RESERVES THE RIGHT TO RESTRICT COMMENCEMENT OF SUBSEQUENT PROJECT PHASES AND/OR ASSESS THE DEVELOPER FOR ACTUAL EXPENSES INCURRED FOR CREATION OF SUCH DRAWINGS.

CONTRACTOR'S CONSTRUCTION NOTES, AS WELL AS TELEVISED SEWER AND SURVEY INFORMATION SHALL BE INCORPORATED INTO THE RECORD DRAWINGS. THE CONTRACTOR SHALL MAINTAIN IN A SAFE PLACE ONE (1) COPY OF ALL DRAWINGS WITH CONSTRUCTION NOTES, FOR THE USE OF GENERATING RECORD DRAWINGS, WHICH
INCLUDE THE MEASUREMENTS LISTED BELOW. SEWER LATERAL LOCATIONS AT THE MAIN, AS INDICATED ON THE SEWER TELEVISING REPORT, SHALL BE INCORPORATED INTO THE RECORD DRAWINGS. ALL EXPOSED UTILITIES, PROPERTY PINS, AND ALL VISIBLE CHANGES MADE TO CITY INFRASTRUCTURE DURING CONSTRUCTION SHALL BE RE-SURVEYED. THE RE-SURVEYED RECORD DRAWING INFORMATION FOR ALL UTILITIES SHALL INCLUDE THE LOCATION, ELEVATIONS, AND ADJUSTED PIPE SLOPES, IF APPLICABLE, FOR ALL UTILITY INFRASTRUCTURE. APPLICABLE ELEVATIONS INCLUDE, BUT ARE NOT LIMITED TO, RIM ELEVATIONS, PIPE INVERT ELEVATIONS, AND TOP HYDRANT NUT ELEVATIONS.

CONTRACTOR'S CONSTRUCTION NOTES SHALL INCLUDE ALL CHANGES MADE DURING CONSTRUCTION, LOCATIONS AND DEPTH OF ANY ABANDONMENTS, AND THE MEASUREMENTS LISTED BELOW. FAILURE OF CONTRACTOR TO PROVIDE REQUIRED CONSTRUCTION NOTES SHALL RESULT IN A 5% DEDUCTION IN CONTRACT PRICE FOR THE INSTALLATION AND MATERIALS OF EACH UTILITY CONSTRUCTION NOTES ARE NOT PROVIDED FOR.

A. STORM SEWER. A COMPLETE AND ACCURATE TABULATION OF LENGTH AND DEPTHS OF ALL STORM SEWERS SHALL BE KEPT BY CONTRACTOR. DEPTHS OF ALL STORM SEWER PIPE INVERTS AT EACH
STRUCTURE SHALL BE RECORDED (DISTANCE BETWEEN INVERT OF EACH PIPE AND TOP OF CURB OR RIM IF IN THE ROADWAY).
B. WATER MAIN. A COMPLETE AND ACCURATE TABULATION OF THE LENGTH, DEPTH AND LOCATION OF ALL WATER MAIN FITTINGS, LATERALS, CORPORATIONS AND CURB STOPS SHALL BE KEPT BY CONTRACTOR. ALL BURIED UTILITY FITTINGS SHALL BE TIED TO TWO PERMANENT LANDMARKS SUCH AS VALVES, MANHOLE CASTINGS, PROPERTY IRONS, ETC. FOR WATER SERVICES THE DISTANCE FROM MAIN TO CURB STOP AND THE CURB STOP TO END OF THE SERVICE SHALL BE RECORDED.
C. SANITARY SEWER. A COMPLETE AND ACCURATE TABULATION OF LENGTH, DEPTH AND LOCATION OF ALL SEWER BRANCHES, RISERS, LATERALS, AND WYES SHALL BE KEPT BY CONTRACTOR. MEASUREMENT SHALL BE MADE FROM THE NEAREST DOWNSTREAM MANHOLE, OR EQUIVALENT PERMANENT LANDMARK.

THE FOLLOWING INFORMATION FOR EACH LISTED ITEM SHALL BE PLACED IN A DBASE IV OR ASCII TABLE AND PROVIDED TO THE CITY WITHIN THREE (3) MONTHS OF ACCEPTANCE. ALL COORDINATES SHALL BE IN THE DANE COUNTY COORDINATE SYSTEM, NAD 83(1991), US SURVEY FEET. ALL ELEVATIONS SHALL BE REFERENCED TO NAVD 88, FEET. ELEVATIONS BASED ON THE CITY OF MADISON, LAKE MENDOTA DATUM

Item	Dbase IV or ASCII Table Information
Sanitary Sewer Structures	Feature Number, Type of Feature, Year of Installation, Street, Easting, Northing, Rim Elevation, Invert Elevation
Sanitary Sewer Pipe	Feature Number, Type of Feature, Year of Installation, Street, Invert Elevation, Pipe Material, Pipe Size, Pipe Length, Slope, Up Stream Manhole
Sanitary Sewer Lateral	Feature Number, Type of Feature, Year of Installation, Street, Invert Elevation, Pipe Material, Pipe Size, Pipe Length, Slope, Up Stream Manhole, Distance from upstream manhole to lateral
Storm Manholes	Feature Number, Type of Feature, Year of Installation, Street, Easting, Northing, Rim Elevation, Invert Elevation
Storm Pipe	Feature Number, Type of Feature (box culvert, feeder, main, etc.), Year of Installation, Street, Invert Elevation, Pipe Material, Pipe Size, Pipe Length, Slope, Up Stream Manhole
Storm Outfalls	Feature Number, Type of Feature, Year of Installation, Street or nearest street, Easting, Northing, Invert Elevation, Size, Material, Endwall (Y/N), Grate (Y/N), Treatment (Riprap, Grass Swale, Gabion, etc.)
Storm Inlets	Feature Number, Type of Feature (H, Beehive, Field, Driveway, etc.) Year of Installation, Street, Easting, Northing, Rim Elevation, Invert Elevation
Water Valves	Feature Number, Type of Feature (Gate, Butterfly, Service, etc.) Year of Installation, Street, Easting, Northing, Rim Elevation, Cover (Valve Box, Manhole, Curb Stop), Purpose (Main, Service, Hydrant), Size, Material
Water Main Pipe	Feature Number, Type of Feature, Year of Installation, Street, Start and Ending x-y Coordinates, Pipe Material, Pipe Size, Pipe Length
Water Main Bends	Feature Number, Type of Feature, Year of Installation, Street, Easting, Northing, Invert Elevation, Pipe Material, Pipe Size, Pipe Length, Degree, Orientation (Horizontal or Vertical)
Fire Hydrants	Feature Number, Type of Feature, Year of Manufacture, Street, Easting, Northing, Top Nut Elevation, Address (if known)
Water Service Laterals	Feature Number, Type of Feature, Year of Installation, Street, Invert Elevation, Lateral Material, Lateral Size, Lateral Length (Main to Service Valve), Address (if known)
Benchmarks	Benchmark Number, Location of Benchmark, Type of Benchmark, Year of Benchmark, Elevation
Street Signs	MUTCD sign code, Label
Street Lights	Fixture Type, Pole Type, Arm, Transformer Base, P.C. Sensor, Lamp Type
Pavement Marking Lines	Material, Color, Width, Type
Pavement Marking Symbols	Material, Color, Type, Size
Pavement Marking Area	Material, Color, Type

1.2.08 PLANT VALUES SUBMISSIONS

A COPY OF THE FINAL CONSTRUCTION COSTS, BROKEN DOWN PER ITEM, SHALL BE SUBMITTED TO THE ENGINEER BY DECEMBER 15 OF THE YEAR IN WHICH THE CONSTRUCTION IS COMPLETED.

1.2.09 ACCEPTANCE OF IMPROVEMENTS

WHEN THE CONTRACTOR CONSIDERS THE ENTIRE WORK COMPLETED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING THAT THE WORK IS COMPLETE AND REQUEST THAT THE ENGINEER CONDUCT AN INSPECTION OF THE WORK. WITHIN A REASONABLE TIME THEREAFTER, THE CONTRACTOR AND THE ENGINEER SHALL MAKE AN INSPECTION OF THE WORK TO DETERMINE THE STATUS OR COMPLETION. IF THE ENGINEER DOES NOT CONSIDER THE WORK TO BE COMPLETE OR SATISFACTORY IN ANY WAY, THE ENGINEER WILL NOTIFY THE CONTRACTOR IN WRITING OF THE REASONS. AT THAT TIME, ANY DEFECTS OR IMPERFECTIONS THAT APPEAR IN THE WHOLE OR ANY PART OF THE WORK, WHICH ARE CAUSED BY OR DUE TO ANY FAULT OR NEGLIGENCE OF THE CONTRACTOR, SHALL BE CORRECTED BEFORE THE WORK IS ACCEPTED. UPON COMPLETION OF THE WORK TO REPAIR THE DEFECTS AND/OR IMPERFECTIONS OF THE CONTRACTOR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING THAT THE WORK HAS BEEN COMPLETED. IF, UPON INSPECTION, THE WORK IS FOUND TO BE SATISFACTORY AND COMPLETE BY THE ENGINEER, AND THE OTHER REQUIREMENTS LISTED HEREIN HAVE BEEN MET, THE PROJECT WILL BE CONSIDERED ACCEPTED. AT THE DISCRETION OF THE ENGINEER, CONDITIONAL ACCEPTANCE MAY BE GRANTED PRIOR TO THE COMPLETION OF THE ASPHALTIC SURFACE COURSE.

NO PROJECT SHALL BE ACCEPTED PRIOR TO SUBMISSION OF DOCUMENTATION DEMONSTRATING THAT THE AS-
BUILT STORMWATER TREATMENT FACILITIES (E.G., PONDS, INFILTRATION BASINS, BIORETENTION BASINS, ETC.) MEET THE STORMWATER REQUIREMENTS AS DOCUMENTED IN THE STORMWATER REPORT.

NO PROJECT SHALL BE ACCEPTED PRIOR TO CONTRACTOR'S SUBMISSION OF FINAL LIEN WAIVERS FOR CONTRACTOR AND CONTRACTOR'S SUBCONTRACTORS AND PROOF OF STREET LIGHT WARRANTIES. NO PROJECT SHALL BE DEEMED COMPLETE UNTIL ALL EXCESS MUD, BITUMINOUS MATERIAL, AND OTHER OBJECTIONABLE MATERIAL ARE REMOVED FROM THE SIDEWALK, TERRACE, GUTTER, AND PAVEMENT; INLETS AND STORM SEWERS CLEANED, AND EROSION CONTROL MEASURES IN PLACE.

1.2.10 GUARANTEE OF WORK

UNLESS OTHERWISE STATED IN THE SPECIAL PROVISIONS, THE CONTRACTOR SHALL GUARANTEE THE WORK RELATED TO ALL PUBLIC IMPROVEMENTS FOR A MINIMUM PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE. FOR CITY LET PROJECTS, THE CONTRACTOR SHALL ALSO GUARANTEE ANY REPLACEMENT OR REPAIR WORK, AS REQUIRED FOR ANY DEFECTIVE IMPROVEMENTS FOR A MINIMUM PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE REPLACEMENT OR REPAIR WORK.

1.2.11 TRAFFIC CONTROL

WHEN THE PROJECT WORK IS ON OR ADJACENT TO AN ACTIVE ROADWAY, VEHICULAR AND PEDESTRIAN TRAFFIC SHALL BE MAINTAINED AT ALL TIMES, UNLESS SPECIFICALLY PERMITTED BY THE ENGINEER. THE CONTRACTOR SHALL NOTIFY THE FITCHBURG-PUBLIC WORKS DEPARTMENT (270-4260) A MINIMUM OF FIVE (5) BUSINESS DAYS IN ADVANCE OF ANY PLANNED DETOURS OR OTHER ROADWAY WORK THAT MAY IMPEDE THE MOVEMENT OF EMERGENCY VEHICLES. THE CONTRACTOR SHALL PROVIDE A TIMELINE FOR ALL CLOSURES AND GIVE 72 HOURS NOTICE OF ACTUAL CLOSURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ANY AFFECTED BUSINESSES OR RESIDENTS. ALL WORK SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE APPROPRIATE SUPPLEMENTS FOR ITS USE IN THE STATE OF WISCONSIN, AND
THESE SPECIFICATIONS. THIS MANUAL IS AVAILABLE AT HTTP://MUTCD.FHWA.DOT.GOV/.

ALL TRAFFIC CONTROL BARRICADES SHALL BE WEIGHTED DOWN WITH SAND BAGS OR OTHER APPROVED METHODS. $200 PER DAY SHALL BE DEDUCTED FROM CONTRACTOR'S TOTAL CONTRACT PRICE FOR TRAFFIC CONTROL THAT IS NOT MAINTAINED PER MUTCD REQUIREMENTS.

CONTRACTOR IS RESPONSIBLE FOR MAINTAINING VISIBLE STOP SIGNS DURING ALL CONSTRUCTION PHASES.

CONTRACTOR SHALL INSTALL TEMPORARY NO PARKING SIGNS AND SUBMIT PHOTOS OF ALL INSTALLED SIGNS TO ENGINEER A MINIMUM OF 48 HOURS PRIOR TO PARKING RESTRICTIONS. CONTRACTOR SHALL LABEL TEMPORARY NO PARKING SIGNS FOR ONLY THE DURATION PARKING NEEDS TO BE RESTRICTED TO ACCOMMODATE THE WORK. CONTRACTOR SHALL REMOVE TEMPORARY NO PARKING SIGNS WITHIN 48 HOURS OF RESTRICTION. NO PARKING SIGNS SHALL BE OBTAINED FROM THE CITY.

1.2.12 STREET CLOSING NOTIFICATONS

ALL CONTRACTORS PERFORMING WORK ON CITY CONTRACTS OR AS A PART OF A SUB-DIVIDER'S AGREEMENT SHALL GIVE THE ENGINEER NOTICE OF THEIR INTENT TO BEGIN WORK ON ANY CITY STREET A MINIMUM OF 48 HOURS IN ADVANCE OF COMMENCING OPERATIONS. IF IT IS DEEMED NECESSARY BY THE CONTRACTOR THAT A DETOUR BE USED DURING THE DURATION OF THE PROJECT, THE ENGINEER SHALL BE GIVEN AT LEAST FIVE (5) BUSINESS DAYS NOTICE. SATURDAYS, SUNDAYS, AND LEGAL HOLIDAYS SHALL NOT BE INCLUDED IN THE MEASUREMENT OF NOTICE TIME. FURTHER NOTICE SHALL BE GIVEN OF ANY MAJOR CHANGE IN PROJECT SCHEDULING FOLLOWING THE ORIGINAL NOTIFICATION. THE CONTRACTOR SHALL PROVIDE A TIMELINE FOR ALL CLOSURES AND GIVE 72 HOURS NOTICE OF ACTUAL CLOSURE.

THE CONTRACTOR SHALL NOT IN ANY MANNER UNNECESSARILY OBSTRUCT THE STREETS OR CROSSING, AND SHALL, UNDER ALL CIRCUMSTANCES, PROVIDE SAFE AND SUFFICIENT MEANS OF TRAVEL FOR PEDESTRIANS AND VEHICLES.

THE CONTRACTOR SHALL NOT, AT ANY TIME, CLOSE ANY STREET TO THE PUBLIC EXCEPT BY EXPRESS PERMISSION OF THE ENGINEER. WHEN CLOSURE OF THE ROADWAY HAS BEEN PERMITTED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT THE EARLIEST POSSIBLE DATE OR A MINIMUM OF FIVE (5) BUSINESS DAYS SO THAT ARRANGEMENT MAY BE MADE FOR CLOSING THE STREET AND PROVIDING DETOURS IF POSSIBLE.

1.2.13 TESTING AND SAMPLING

ALL MATERIALS SHALL BE SUBJECT TO TESTING, AND SHALL BE TESTED IF SO ORDERED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH WITHOUT CHARGE ALL SAMPLES AND SUCH FACILITIES NECESSARY FOR THE COLLECTION AND FORWARDING OF SUCH SAMPLES. UNLESS OTHERWISE SPECIFIED ELSEWHERE HEREIN, ALL TESTING SHALL BE COMPLETED BY THE CITY'S SUBCONTRACTOR. WHEN APPLICABLE, THE CONTRACTOR SHALL USE THE CITY'S STANDARD TESTING FORMS.

1.2.14 MATERIALS

ALL MATERIALS USED IN CONSTRUCTION SHALL BE NEW MATERIALS (I.E. MANUFACTURED WITHIN THE LAST 18 MONTHS) UNLESS OTHERWISE APPROVED BY THE ENGINEER. ANY DISCOLORATION, CORROSION, CRACKING, FADING, OR ANY OTHER DEFECT IS UNACCEPTABLE. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL MATERIALS ON SITE MEET CITY STANDARDS.

1.2.15 CONSTRUCTION STAKING

GLOBAL POSITION SYSTEM (GPS) IS NOT ALLOWED FOR STAKING ELEVATIONS OF MUNICIPAL SANITARY SEWER, STORM SEWER, WATER MAIN, SIDEWALK, AND CURB AND GUTTER, UNLESS AUTHORIZED BY THE ENGINEER. CONTRACTOR IS REQUIRED TO PROVIDE FIELD VERIFICATION OF ANY HORIZONTAL STAKING COMPLETED WITH GPS EQUIPMENT. VERIFICATION SHALL CONSIST OF TYING STAKING SURVEY TO TWO KNOWN CONTROL POINTS AND ESTABLISHING ACCURATE HORIZONTAL POSITIONING.

1.2.16 TREE PROTECTION
THESE SPECIFICATIONS SHALL BE APPLICABLE TO ALL CONTRACTORS WORKING IN THE PUBLIC RIGHT OF WAY, WHETHER BY PERMIT, PUBLIC WORKS CONTRACT, SUB-DIVIDER'S AGREEMENT OR ANY OTHER PERMISSION TO WORK WITHIN THE PUBLIC RIGHT OF WAY. FOR THE PURPOSES OF THESE SPECIFICATIONS, @PUBLIC RIGHT OF WAYΔ SHALL INCLUDE ANY PROPERTY THAT THE CITY OF FITCHBURG HAS AN OWNERSHIP INTEREST IN, INCLUDING, WITHOUT LIMITATION, HIGHWAYS AND HIGHWAY RIGHT-OF-WAYS, PUBLIC WALKWAYS AND BIKE PATHS, PARKS, GREENWAYS AND STORMWATER MANAGEMENT AREAS.

DAMAGE CAN BE PREVENTED OR MINIMIZED BY FOLLOWING THE SPECIFICATIONS BELOW AND PROPERLY EDUCATING CONSTRUCTION STAFF OF THESE SPECIFICATIONS AND USE OF CARE WHEN WORKING AROUND TREES DURING THE CONSTRUCTION PROCESS. IF THE CITY DETERMINES THAT A TREE HAS BEEN DAMAGED DUE TO FAILURE TO FOLLOW THESE SPECIFICATIONS, OR NEGLIGENCE OF THE CONTRACTOR OR SUBCONTRACTOR, A FINE OR LIQUIDATED DAMAGES SHALL BE ASSESSED TO THE CONTRACTOR OR PERMIT HOLDER.

THE CONTRACTOR SHALL NOT GRADE, EXCAVATE, OR OTHERWISE DISTURB THE AREA WITHIN TEN FEET (10') OF ANY TREE AS MEASURED FROM THE OUTSIDE EDGE OF THE TREE TRUNK OR VISIBLE ABOVEGROUND PORTION OF THE ROOT SYSTEM.

ALL ROOTS OVER ONE (1) INCH IN DIAMETER THAT ARE DAMAGED SHALL BE CLEANLY CUT IMMEDIATELY IN BACK OF THE DAMAGED SECTION ON THE SAME DAY OF THE EXCAVATION. CUTS MAY BE MADE WITH LOPPING SHEARS, CHAINSAW, STUMP GRINDER, OR OTHER MEANS WHICH WILL PRODUCE A CLEAN CUT. EXPOSED ROOTS SHOULD BE COVERED AS SOON AS EXCAVATION AND INSTALLATION ARE COMPLETE. THE CONTRACTOR SHALL NOT RIP OR PULL ROOTS OUT TOWARDS THE TRUNK OF A TREE WHILE EXCAVATING WITH A BACKHOE. THE USE OF A BACKHOE TO CUT ROOTS IS NOT ACCEPTABLE.

CONTRACTOR SHALL TAKE PRECAUTIONS DURING CONSTRUCTION NOT TO DISFIGURE, SCAR, OR IMPAIR THE HEALTH OF ANY TREE ON PUBLIC OR PRIVATE PROPERTY. ALL PRUNING SHALL BE DONE ACCORDING TO ANSI A300 TREE PRUNING SPECIFICATIONS.

CONTRACTOR SHALL NOTIFY CITY STAFF THE SAME DAY OF ANY DAMAGE TO TREES RESULTING FROM CONSTRUCTION ACTIVITIES.

NO EQUIPMENT OR MATERIALS WILL BE ALLOWED TO BE PARKED ON, DRIVEN OVER, OR BE PILED ON AREAS WITHIN TEN FEET (10') OF A TREE AS MEASURED FROM THE OUTSIDE EDGE OF THE TREE TRUNK OR VISIBLE ABOVEGROUND PORTION OF THE ROOT SYSTEM.

WHERE CONSTRUCTION DAMAGE OCCURS OR RESULTS IN REMOVAL OF THE TREE. THE CONTRACTOR IS RESPONSIBLE FOR ANY REPAIRS OR REPLACEMENT OF THE TREE PER THE CITY FORESTER.

SECTION 2 - EROSION CONTROL

2.1 GENERAL

2.1.01 RELATED DOCUMENTS

WISCONSIN DOT EROSION CONTROL PRODUCT ACCEPTABILITY LIST (PAL), LATEST EDITION AVAILABLE AT
HTTP://WISCONSINDOT.GOV/PAGES/DOING-BUS/ENG-CONSULTANTS/CNSLT-RSRCES/TOOLS/PAL/DEFAULT.ASPX

DANE COUNTY EROSION CONTROL & STORMWATER MANAGEMENT MANUAL AVAILABLE AT
HTTP://WWW.DANEWATERS.COM/PDF/MANUAL/ECSM_MANUAL.PDF AND THE WISCONSIN DNR TECHNICAL STANDARDS AVAILABLE AT
HTTP://DNR.WI.GOV/TOPIC/STORMWATER/STANDARDS/CONST_STANDARDS.HTML

CITY OF FITCHBURG EROSION CONTROL AND STORMWATER MANAGEMENT PERMIT APPLICATION AVAILABLE AT
WWW.FITCHBURGWI.GOV/316/PERMITS-APPLICATIONS

2.1.02 DESCRIPTION OF WORK

THERE ARE A VARIETY OF STRATEGIES FOR MINIMIZING SOIL LOSS FROM CONSTRUCTION SITES. THESE INCLUDE PREVENTING SOIL DETACHMENT, DIVERTING RUNOFF AROUND DISTURBED AREAS, AND TRAPPING SEDIMENT CARRIED BY RUNOFF BEFORE IT LEAVES THE SITE. THE MOST IMPORTANT STRATEGY FOR CONTROLLING CONSTRUCTION SITE EROSION IS PREVENTING SOIL PARTICLE DETACHMENT THROUGH SOIL STABILIZATION. VEGETATION SHALL BE REESTABLISHED AS SOON AS POSSIBLE AFTER LAND IS DISTURBED. IN THE MEANTIME, OTHER EROSION CONTROL PRACTICES, SUCH AS POLYMER APPLICATION, EROSION MATTING, AND MULCHING, MUST BE IN PLACE. A SECOND LINE OF DEFENSE IS TO PREVENT RUNOFF FROM CONTACTING DETACHED SOIL PARTICLES BY DIVERTING RUNOFF AROUND DISTURBED AREAS. DIVERSIONS MINIMIZE THE OPPORTUNITY FOR RUNOFF TO ENTRAIN DETACHED SOIL PARTICLES AND CARRY THEM OFFSITE. FINALLY, WHEN SOIL PARTICLES ARE DETACHED AND CARRIED BY RUNOFF, PRACTICES THAT SLOW AND/OR TRAP SEDIMENT MUST BE INSTALLED TO PREVENT SUSPENDED SEDIMENT FROM LEAVING THE SITE AND ENTERING WATER BODIES.

2.2 MATERIALS

2.2.01 EROSION CONTROL MATERIALS EROSION CONTROL MATERIALS SHALL CONFORM TO THE WISDOT PAL OR AS SPECIFIED IN THE DANE COUNTY EROSION CONTROL AND STORMWATER MANAGEMENT MANUAL UNLESS OTHERWISE APPROVED IN WRITING BY THE DEPARTMENT.
2.2.02 INLET PROTECTION

FRAMED INLET PROTECTION SHALL MEET ASTM STANDARD D8057-17 REQUIREMENTS INCLUDING:
A. BYPASS OVERFLOW THAT MEETS OR EXCEEDS INLET DESIGN FLOW
B. FRAME AND BAGS STRONG ENOUGH TO HANDLE FULL SEDIMENT LOAD

FRAMED INLET GRATES SHALL BE INSTALLED IN ALL INLETS UNLESS APPROVED OTHERWISE BY ENGINEER. FIELD INLETS SHALL BE PROTECTED AS APPROVED BY ENGINEER. ONCE INSTALLED, NO PORTION OF THE INLET PROTECTION (FABRIC BAG) SHALL PROJECT ABOVE GRATE.

2.3 EXECUTION

2.3.01 EROSION CONTROL PERMIT REQUIRED ON SITE

CONTRACTOR SHALL MAINTAIN A COPY OF THE APPROVED EROSION CONTROL AND STORMWATER MANAGEMENT PERMIT ON-SITE AT ALL TIMES UNTIL FINAL STABILIZATION OF THE PROJECT IS ACHIEVED.

2.3.02 EROSION CONTROL INSTALLATION, MONITORING, MAINTENANCE, & REMOVAL

THE INSTALLATION, MONITORING, MAINTENANCE, AND REMOVAL OF EROSION CONTROL SHALL CONFORM TO THE DANE COUNTY EROSION CONTROL AND STORMWATER MANAGEMENT MANUAL UNLESS OTHERWISE APPROVED BY THE DEPARTMENT.

SECTION 3 - EARTHWORK AND RESTORATION

3.1 GENERAL

3.1.01 RELATED DOCUMENTS

WISDOT SPECIFICATIONS, LATEST REVISION AVAILABLE AT
HTTP://ROADWAYSTANDARDS.DOT.WI.GOV/STANDARDS/STNDSPEC/INDEX.HTM

CITY OF FITCHBURG TREE PROTECTION AND PRUNING GUIDELINES AVAILABLE AT HTTP://WWW.FITCHBURGWI.GOV/674/
TREE-PROTECTION-PRESERVATION

3.1.02 DESCRIPTION OF WORK

EARTHWORK INCLUDES CLEARING AND GRUBBING, EXCAVATION, FILL, COMPACTION, AND GRADING OF MATERIAL TO MEET THE SUBGRADE ELEVATIONS INDICATED AND SUBSEQUENT DISPOSAL OF SURPLUS MATERIALS FROM THE PROJECT. RESTORATION INCLUDES THE PROVISION AND PLACEMENT OF TOPSOIL, SEED, FERTILIZER, AND MULCH FOR THE DISTURBED AREAS WITHIN THE PROJECT.

3.1.03 SITE CONDITIONS

A. EXISTING UTILITIES. LOCATE EXISTING UNDERGROUND UTILITIES IN AREAS OF WORK. IF UTILITIES ARE TO REMAIN IN PLACE, PROVIDE ADEQUATE MEANS OF SUPPORT AND PROTECTION DURING EARTHWORK OPERATIONS.

SHOULD UNCHARTED, OR INCORRECTLY CHARTED, PIPING OR OTHER UTILITIES BE ENCOUNTERED DURING EXCAVATION, CONSULT UTILITY OWNER IMMEDIATELY FOR DIRECTIONS. COOPERATE WITH OWNER AND UTILITY COMPANIES IN KEEPING RESPECTIVE SERVICES AND FACILITIES IN OPERATION. REPAIR DAMAGED UTILITIES TO SATISFACTION OF UTILITY OWNER.

B. PROTECTION OF EXISTING TREES AND VEGETATION. PROTECT EXISTING TREES AND OTHER VEGETATION INDICATED TO REMAIN IN PLACE, AGAINST UNNECESSARY CUTTING, BREAKING OR SKINNING OF ROOTS, SKINNING AND BRUISING OF BARK, SMOTHERING OF TREES BY STOCKPILING CONSTRUCTION MATERIALS OR EXCAVATED MATERIALS WITHIN DRIP LINE, EXCESS FOOT OR VEHICULAR TRAFFIC, OR PARKING OF VEHICLES WITHIN DRIP LINE.

WHERE INDICATED ON DRAWINGS, CONTRACTOR SHALL PROVIDE TEMPORARY MEASURES TO PROTECT TREES AND VEGETATION TO BE LEFT STANDING. TEMPORARY MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION. ALL UNIDENTIFIED TREES WITH DRIP LINES IN THE CONSTRUCTION ZONE SHALL BE REPORTED TO THE CITY PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL FOLLOW THE CITY OF FITCHBURG TREE PROTECTION AND PRUNING GUIDELINES, SEE SECTION 3.1.01 RELATED DOCUMENTS.

C. PROTECTION OF PERSONS AND PROPERTY. BARRICADE OPEN EXCAVATIONS OCCURRING AS PART OF THIS WORK AND POST WARNING LIGHTS. OPERATE WARNING LIGHTS AS RECOMMENDED BY AUTHORITIES HAVING JURISDICTION. PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, WASHOUT AND OTHER HAZARDS CREATED BY EARTHWORK OPERATIONS.

3.2 MATERIALS

3.2.01 BACKFILL AND FILL

ENGINEER APPROVED SOIL MATERIALS FREE OF TOPSOIL, ROCK OR GRAVEL LARGER THAN TWO INCHES (2Δ) IN ANY DIMENSION, DEBRIS, WOOD, WASTE, FROZEN MATERIALS, AND ORGANIC MATTER. MATERIALS SHALL BE PROVIDED THAT WILL MEET THE COMPACTION REQUIREMENTS SET FORTH IN SECTION 3.3.05 COMPACTION. RECYCLED MATERIALS AND ROCKS LARGER THAN TWO INCHES (2Δ) IN ANY DIMENSION MUST BE APPROVED BY THE ENGINEER PRIOR TO PLACEMENT.

3.2.02 SELECT FILL

PROCESSED OR SELECTED NATURAL MATERIALS CONSISTING OF SAND, A MIXTURE OF SAND WITH GRAVEL,
OR CRUSHED STONE, , MORE GENERALLY IDENTIFIED AS PIT RUN SAND, PIT RUN SAND AND GRAVEL, AND CRUSHED STONE BASE COURSE, THE GRADATION OF THE MATERIAL SHALL MEET THE FOLLOWING LIMITS:

SELECT FILL GRADATION

Sieve Size	Percentage Passing by Weight
6-inch	100
3-inch	85
No. 4	25

3.2.03 GEOTEXTILES

A. BENEATH PAVEMENT. CONSTRUCTION FABRIC SHALL BE A PERVIOUS SHEET OF WOVEN FABRIC INTO A UNIFORM PATTERN WITH DISTINCT AND MEASURABLE OPENINGS. GEOTEXTILE SHALL BE MIRAFI 600X OR EQUAL. ANY ALTERNATIVE FABRIC MUST HAVE THE ENGINEER'S APPROVAL PRIOR TO USE.

B. BENEATH RIPRAP. GEOTEXTILE FABRIC SHALL BE NON-WOVEN TYPE R AND SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 645 OF THE WISDOT SPECIFICATIONS.

3.2.04 RIPRAP

UNLESS NOTED OTHERWISE ON PLANS, MEDIUM RIPRAP SHALL BE PROVIDED AND SHALL BE UNDERLINED WITH A GEOTEXTILE FABRIC. FURNISH A DURABLE FIELD OR LIMESTONE THAT IS ANGULAR, SOUND, DENSE AND RESISTANT TO WEATHERING. THE MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 606 OF THE WISDOT SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER. ARTICULATED CONCRETE BLOCK SYSTEMS MAY ALSO BE USED AS APPROPRIATE.

3.2.05 TOPSOIL

HUMUS BEARING SOIL, COMMONLY KNOWN AS BLACK DIRT, FREE OF SUBSOIL, CLAY, LUMPS, STONES, AND OTHER OBJECTS OVER TWO INCHES (2Δ) IN DIAMETER, AND WITHOUT WEEDS, ROOTS, AND OTHER OBJECTIONABLE MATERIALS.

3.2.06 SEED

A. TURF GRASS SEED MIX FOR SUNNY TO PARTIAL SHADE AREAS. SEED MIXTURE SHALL MATCH THE FOLLOWING CHART OR APPROVED EQUAL AND BE SEEDED AT A RATE OF 5 LBS./1000S.F.

WT JOB NUMBER - 2002139C

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5415 KING JAMES WAY
FITCHBURG, WISCONSIN 53719

CLIENT APPROVAL
☐ APPROVED
☐ APPROVED AS NOTED
APPROVED BY / DATE:

ISSUE RECORD

	DD SET	08/04/20
	CD CHECK SET	11/20/20
	98% CD REVIEW	02/11/21
	HVAC REDESIGN	04/30/21
	ISSUE FOR BID	06/08/21

CHECKED BY
JEG
DRAWN BY
BRA
DATE
5/28/2021 11:20:36 AM
PROJECT NUMBER
2020-001

CITY OF FITCHBURG PROJECT SPECIFICATIONS

C-7.0

Common Name	% by weight
Grasses	
Creeping Red Fescue	25.0%
Turf-Type Perennial Ryegrass	25.0%
Kentucky Bluegrass	50.0%
	100.00%

B. TURF GRASS SEED MIX FOR SHADY AREAS. SEED MIXTURE SHALL MATCH THE FOLLOWING CHART OR APPROVED EQUAL AND BE SEEDED AT A RATE OF 5 LBS./1000S.F.

Common Name	% by weight
Grasses	
Creeping Red Fescue	20.0%
Turf-Type Perennial Ryegrass	20.0%
Hard Fescue	20.0%
Chewings Fescue	20.0%
Kentucky Bluegrass	20.0%
	100.00%

C. DITCHES.
SEED MIXTURE SHALL BE NO. 40 PER SECTION 630.2 OF THE WISDOT SPECIFICATIONS.

D. PONDS, SWALES, AND BIORETENTION FACILITIES. SEED MIXTURE SHALL BE NATIVE VEGETATION AS SPECIFIED IN THE SPECIAL PROVISIONS.

3.2.07 FERTILIZER

FERTILIZER SHALL BE TYPE B PER SECTION 629 OF THE WISDOT SPECIFICATIONS.

3.2.08 MULCH

A. CELLULOSE MULCH. MULCH SHALL BE CELLULOSE HYDRAULIC FIBER MULCH AS APPROVED BY ENGINEER.

B. LOOSE STRAW MULCH. LOOSE STRAW MULCH SHALL BE DERIVED FROM WHEAT, OATS, RICE, OR BARLEY AND SHALL BE WEED-FREE. WEED-FREE HAY DERIVED FROM NATIVE GRASSES IS ALSO ACCEPTABLE. USE OF HAY DERIVED FROM ALFALFA IS NOT ALLOWED.

3.2.09 EROSION MAT

EROSION MAT SHALL MEET TYPE I, URBAN, CLASS A (EXCEL SR-1 ALL NATURAL OR APPROVED EQUAL) FOR NON-CHANNEL AREAS AND TYPE II, CLASS C (ROLANKA'S BIOD-MAT 70 OR APPROVED EQUAL) FOR CHANNEL AREAS. EROSION MAT FOR NON-CHANNEL AREAS SHALL BE SECURED WITH A BIODEGRADABLE PLASTIC EROSION MAT STAKES A MINIMUM OF FOUR (4") INCHES IN LENGTH WITH A BARBED HEAD.
EROSION MAT FOR CHANNEL AREAS SHALL BE SECURED USING ROUND TOP METAL STAPLE WITH A MINIMUM OF EIGHT (8") INCHES IN LENGTH AND 11 GA.

3.2.10 RETAINING WALLS

A. BOULDER WALL. THE BOULDERS SHALL BE ROUND FIELDSTONE. THE STONE SHALL CONSIST OF VARYING SIZES AND WEIGHTS. THE MINIMUM WEIGHT SHALL BE 250 POUNDS.

B. MODULAR BLOCK WALL.

1. MASONRY UNITS SHALL BE KEYSTONE RETAINING UNITS, OR EQUAL, AS MANUFACTURED BY MADISON BLOCK AND STONE IN ACCORDANCE WITH ASTM C90 AND ASTM C140.

2. MASONRY UNITS SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI.
THE CONCRETE SHALL HAVE A MAXIMUM MOISTURE ABSORPTION OF 8%.

3. STANDARD UNITS SHALL BE CLASSIC STRAIGHT SPLIT FACE, 8 INCHES HIGH BY 18 INCHES WIDE. TOP ROW OF UNITS SHALL HAVE A SMOOTH FACE. COLOR OF UNITS TO BE SELECTED BY OWNER.

4. CONNECTING PINS SHALL BE 1/2-INCH DIAMETER THERMOSET ISOPTHALIC POLYESTER RESIN-
POLTRUDED FIBERGLASS REINFORCEMENT RODS. PINS SHALL HAVE A MINIMUM FLEXURAL STRENGTH OF 128,000 PSI AND SHORT BEAM SHEAR OF 6,400 POUNDS PER ASTM D4475.

5. BASE LEVELLING PAD MATERIAL SHALL BE 6 INCHES OF COMPACTED CRUSHED STONE, 3/8 INCH
TO 3/4 INCH. PEA GRAVEL SHALL NOT BE ALLOWED.

6. UNIT FILL SHALL BE FREE DRAINING, WELL GRADED CRUSHED STONE, 3/8 INCH TO 3/4 INCH, WITH NO MORE THAN 5% PASSING THE NO. 200 SIEVE.

3.3 EXECUTION

3.3.01 SITE CLEARING

A. GENERAL. REMOVE TREE, SHRUBS, GRASS AND OTHER VEGETATION, IMPROVEMENTS, OR OBSTRUCTIONS INTERFERING WITH INSTALLATION OF NEW CONSTRUCTION. REMOVE SUCH ITEMS ELSEWHERE ON SITE OR PREMISES AS SPECIFICALLY INDICATED. REMOVE AND LEGALLY DISPOSE OF ALL STUMPS AND ROOTS THAT ARE NOT SUITABLE FOR BACKFILL MATERIAL WITHIN THE RIGHT-OF-WAY.

WHEN REMOVING TREES, SPECIAL CARE SHALL BE TAKEN SO AS NOT TO DAMAGE SURROUNDING PRIVATE PROPERTY.

TREES AND SHRUBS MARKED FOR REMOVAL ON THE PLANS SHALL NOT BE REPLACED. CONTRACTOR SHALL REPLACE ALL OTHER REMOVED AND DAMAGED TREES, BUSHES AND SHRUBS WITHIN THE PROJECT LIMITS WITH NEW STOCK AT CONTRACTOR'S EXPENSE. NEW TREES SHALL BE LOCATED AS REQUESTED BY ENGINEER. IF THE BUSH OR SHRUB IS DAMAGED, OR DIES AFTER RESTORING,
CONTRACTOR SHALL REPLACE IT WITH ONE OF SAME KIND AND SIZE UP TO A HEIGHT OF FOUR FEET (4'). BUSHES AND SHRUBS BEYOND THIS HEIGHT SHALL BE REPLACED WITH ONE OF SAME KIND AND HEIGHT OF FOUR FEET (4').

B. TREE PROTECTION. CAREFULLY AND CLEANLY CUT ROOTS AND BRANCHES OF TREES INDICATED TO BE
LEFT STANDING, WHERE SUCH ROOTS AND BRANCHES OBSTRUCT NEW CONSTRUCTION SEE SECTION 1.2.15 TREE PROTECTION.

TREES WHICH ARE DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED. CONTRACTOR SHALL RETAIN THE SERVICES OF A PROFESSIONAL NURSERYMAN WHO IS A MEMBER OF THE NATIONAL ARBORIST ASSOCIATION TO DIRECT THEM ON THE PROPER REPAIR OF DAMAGED TREES. DAMAGED LIMBS AND ROOTS SHALL BE PRUNED OR DRESSED ACCORDING TO RECOMMENDATIONS OF THE NURSERYMAN.
BACKFILL SHALL BE REPLACED AS SOON AS POSSIBLE TO REDUCE EXPOSURE OF ROOTS TO AIR. SCARFED AREAS ON TREES SHALL BE SUITABLY DRESSED.

C. TOPSOIL STRIPPING. STRIP TOPSOIL TO WHATEVER DEPTHS ENCOUNTERED IN A MANNER TO PREVENT INTERMINGLING WITH UNDERLYING SUBSOIL OR OTHER OBJECTIONABLE MATERIAL.

1. REMOVE HEAVY GROWTHS OF GRASS FROM AREAS BEFORE STRIPPING.

2. WHERE TREES ARE INDICATED TO BE LEFT STANDING, STOP TOPSOIL STRIPPING AT DRIP LINE OF TREE TO PREVENT DAMAGE TO MAIN ROOT SYSTEM UNLESS DIRECTED OTHERWISE BY THE ENGINEER.

STOCKPILE TOPSOIL IN STORAGE PILES IN AREAS SHOWN, OR WHERE DIRECTED. CONSTRUCT STORAGE PILES TO FREELY DRAIN SURFACE WATER. COVER STORAGE PILES IF REQUIRED TO PREVENT WIND-BLOWN DUST.

3.3.02 EXCAVATION

UNLESS OTHERWISE SPECIFIED WITH APPROPRIATE BID ITEMS, EXCAVATION IS UNCLASSIFIED, AND INCLUDES EXCAVATION TO SUBGRADE ELEVATIONS INDICATED, REGARDLESS OF CHARACTER OF MATERIALS AND OBSTRUCTIONS ENCOUNTERED.

WHEN EXCAVATION HAS REACHED REQUIRED SUBGRADE ELEVATIONS AND ALL UTILITY CROSSINGS HAVE BEEN INSTALLED, NOTIFY THE ENGINEER WHO WILL MAKE INSPECTIONS OF CONDITIONS. ENGINEER SHALL CHECK SUBGRADE ELEVATIONS AND VERIFY ALL UTILITY CROSSINGS HAVE BEEN INSTALLED. ONCE SUBGRADE ELEVATIONS ARE CORRECT AND ALL CROSSING HAVE BEEN INSTALLED, ENGINEER SHALL PERFORM A TEST ROLL PRIOR TO PLACEMENT OF BASE COURSE. IF UNSUITABLE BEARING MATERIALS ARE ENCOUNTERED AT REQUIRED SUBGRADE ELEVATIONS, CONTRACTOR SHALL CARRY EXCAVATIONS DEEPER AND REPLACE EXCAVATED MATERIAL AS DIRECTED BY ENGINEER.

BASE COURSE PLACED ON UNSTABLE FOUNDATION SHALL BE REMOVED AND REPLACED FOLLOWING UNDERCUT OF THE AFFECTED AREA, ALL AT CONTRACTOR'S EXPENSE.

UNDERCUT AREAS SHALL BE BACKFILLED WITH BREAKER RUN MATERIAL PER SECTION 5 - PAVEMENTS AND, WHERE REQUESTED BY ENGINEER IN THE FIELD, SHALL BE LINED WITH GEOTEXTILE MATERIAL. 1:1 TAPERED EDGES SHALL BE PROVIDED FOR ALL UNDERCUT AREAS AS DIRECTED BY ENGINEER. UNDERCUT SHALL BE CARRIED THROUGH UTILITY TRENCH WHEN DIRECTED BY THE ENGINEER. SLOPE SIDES OF EXCAVATIONS SHALL COMPLY WITH LOCAL CODES AND ORDINANCES HAVING JURISDICTION. SHORE AND BRACE WHERE SLOPING IS NOT POSSIBLE BECAUSE OF SPACE RESTRICTIONS OR STABILITY OF MATERIAL EXCAVATED.

MAINTAIN SIDES AND SLOPES OF EXCAVATIONS IN SAFE CONDITION UNTIL COMPLETION OF BACKFILLING.

STOCKPILE SATISFACTORY EXCAVATED MATERIALS WHERE DIRECTED UNTIL REQUIRED FOR BACKFILL OR FILL. PLACE, GRADE AND SHAPE STOCKPILES FOR PROPER DRAINAGE.

ALL ABANDONED PRIVATE UTILITY PIPES THAT ARE EXPOSED DURING EXCAVATION SHALL BE PLUGGED WITH CONCRETE, UNLESS DIRECTED OTHERWISE BY THE PRIVATE UTILITY OWNER. CONTRACTOR SHALL NOTIFY ENGINEER AND OBTAIN APPROVAL OF ABANDONMENT PRIOR TO BACKFILLING.

LOCATE AND RETAIN SOIL MATERIAL AWAY FROM EDGE OF EXCAVATIONS. DO NOT STORE WITHIN DRIP LINE OF TREES INDICATED TO REMAIN.

A. EXCAVATION FOR STRUCTURES. CONFORM TO ELEVATIONS AND DIMENSIONS SHOWN WITHIN A TOLERANCE OF PLUS OR MINUS 0.10', AND EXTENDING A SUFFICIENT DISTANCE FROM FOOTINGS AND FOUNDATIONS TO PERMIT PLACING AND REMOVAL OF CONCRETE FORM WORK INSTALLATION OF SERVICES, OTHER CONSTRUCTION, AND FOR INSPECTION.

B. EXCAVATION FOR FOOTINGS AND FOUNDATIONS. IN EXCAVATING FOR FOOTINGS AND FOUNDATIONS, TAKE CARE NOT TO DISTURB BOTTOM OF EXCAVATION. EXCAVATE BY HAND TO FINAL GRADE JUST BEFORE CONCRETE REINFORCEMENT IS PLACED. TRIM BOTTOMS TO REQUIRED LINES AND GRADES TO LEAVE SOLID BASE TO RECEIVE OTHER WORK.

C. PULVERIZE PAVEMENT. CONTRACTOR SHALL PULVERIZE THE FULL-DEPTH EXISTING ASPHALT SURFACE. THE PULVERIZED MATERIAL SHALL BE USED AS PART OF THE ROAD BASE. ANY SURPLUS GRINDINGS SHALL BE HAULED TO A CITY DESIGNATED SITE, BY THE CONTRACTOR. ALL LIMITS FOR THE PULVERIZED AREA SHALL BE SAWCUT TO PROVIDE BUTT JOINTS AT INTERSECTING STREETS AND DRIVEWAYS.

3.3.03 DISPOSAL OF WASTE MATERIALS

REMOVE WASTE MATERIALS AND UNSUITABLE AND EXCESS TOPSOIL FROM OWNER'S PROPERTY AND DISPOSE OF OFF-SITE IN A LEGAL MANNER. BURNING ON OWNER'S PROPERTY IS NOT PERMITTED, UNLESS APPROVED BY THE CITY.

3.3.04 BACKFILL AND FILL

PLACE ACCEPTABLE SOIL MATERIAL LAYERS TO REQUIRED SUBGRADE ELEVATIONS, FOR EACH AREA CLASSIFICATION LISTED BELOW. CONTRACTOR SHALL BACKFILL EXCAVATIONS AS PROMPTLY AS WORK PERMITS.

A. IN EXCAVATIONS, USE SATISFACTORY EXCAVATED OR BORROW MATERIAL.

B. UNDER GRASSED AREAS, USE SATISFACTORY EXCAVATED OR BORROW MATERIAL.

C. UNDER WALKS, PAVEMENTS AND RIGHT-OF-WAY, SELECT FILL FOR THE FIRST THREE FEET (3') BELOW PAVEMENT SURFACE AND SATISFACTORY EXCAVATED OR BORROW MATERIAL BELOW THE FIRST THREE FEET (3') THAT WILL MEET THE COMPACTION REQUIREMENTS.

D. UNDER BUILDING SLABS, USE SELECT FILL MATERIAL.

3.3.05 COMPACTION

CONTROL SOIL COMPACTION DURING CONSTRUCTION PROVIDING MINIMUM PERCENTAGE OF DENSITY SPECIFIED FOR EACH AREA CLASSIFICATION.

COMPACT SOIL TO NOT LESS THAN THE FOLLOWING PERCENTAGES OF MAXIMUM DRY DENSITY FOR SOILS WHICH EXHIBIT A WELL-DEFINED MOISTURE DENSITY RELATIONSHIP (COHESIVE SOILS) DETERMINED IN ACCORDANCE WITH ASTM D 1557; AND NOT LESS THAN THE FOLLOWING PERCENTAGE OF MAXIMUM DRY DENSITY, DETERMINED IN ACCORDANCE WITH ASTM D 2049, FOR SOILS WHICH WILL NOT EXHIBIT A WELL-DEFINED MOISTURE-DENSITY RELATIONSHIP (COHESION LESS SOILS).

A. STRUCTURES, WALKWAYS AND PAVEMENTS. COMPACT TOP THREE FEET (3') OF BACKFILL OR FILL MATERIAL AT 95% MAXIMUM DRY DENSITY AND ALL LAYERS BELOW THREE FEET (3') AT 90% MAXIMUM DRY DENSITY.

B. LAWN OR UNPAVED AREAS. COMPACT TOP SIX INCHES (6") OF SUBGRADE AND EACH LAYER OF BACKFILL OR FILL MATERIAL AT 85% MAXIMUM DRY DENSITY FOR COHESIVE SOILS AND 90% MAXIMUM DRY DENSITY FOR COHESIONLESS SOILS.

C. PULVERIZED PAVEMENT. TO ACHIEVE COMPACTION, CONTRACTOR SHALL WATER AND ROLL THE PULVERIZED MATERIAL USING A VIBRATING ROLLER.

WHERE SUBGRADE OR LAYER OF SOIL MATERIAL MUST BE MOISTURE CONDITIONED BEFORE COMPACTION, UNIFORMLY APPLY WATER TO SURFACE OF SUBGRADE, OR LAYER OF SOIL MATERIAL. APPLY WATER IN MANNER TO PREVENT FREE WATER APPEARING ON SURFACE DURING OR SUBSEQUENT TO COMPACTION OPERATIONS.

WHERE SUBGRADE OR LAYER OF SOIL MATERIAL IS TOO MOIST REMOVE AND REPLACE, OR SCARIFY AND AIR DRY, TO PERMIT COMPACTION TO SPECIFIED DENSITY. SOIL MATERIAL THAT HAS BEEN REMOVED BECAUSE IT IS TOO WET TO PERMIT COMPACTION MAY BE STOCKPILED OR SPREAD AND ALLOWED TO DRY. ASSIST DRYING BY DISKING, HARROWING OR PULVERIZING UNTIL MOISTURE CONTENT IS REDUCED TO A SATISFACTORY VALUE.

3.3.06 GEOTEXTILES

GEOTEXTILES SHALL BE PLACED AS REQUESTED BY THE ENGINEER TO STABILIZE SUBGRADE AREAS.
CONSTRUCTION FABRIC SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

3.3.07 DEEP TILLING

PRIOR TO FINAL LANDSCAPING, THE SOIL STRUCTURE OF ALL AREAS THAT HAVE BEEN COMPACTED BY CONSTRUCTION EQUIPMENT SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITIONS BY DEEP TILLING WITH A RIPPER OR SIMILAR TOOL FOLLOWED BY CHISEL PLOWING OR SIMILAR METHODS. THE CUTS SHALL BE MADE ON THE CONTOURS, PERPENDICULAR TO THE DIRECTION OF SURFACE WATER FLOW. THE DEPTH OF TILLING SHALL BE AT LEAST 2 INCHES BELOW THE HARDPAN LAYER OR COMPACTED ZONE, AS DETERMINED BY A SOIL PROBE OR SOIL PENETROMETER, UP TO A MAXIMUM DEPTH OF 36 INCHES. THE MAXIMUM SPACING OF THE RIPPER CUTS SHALL BE 5 FEET. RIPPING SHALL BE FOLLOWED BY CHISEL PLOWING TO A DEPTH OF 12 INCHES. IN CASES WHERE THE DEPTH OF THE HARDPAN LAYER OR COMPACTED ZONE IS LESS THAN 10 INCHES, CHISEL PLOWING ALONE MAY BE USED WITHOUT PRIOR RIPPING.

3.3.08 TOPSOIL

TOPSOIL SHALL BE PLACED AND SPREAD AT A UNIFORM DEPTH. IF NO DEPTH IS SHOWN, PLACE AND SPREAD TOPSOIL TO A MINIMUM DEPTH OF SIX INCHES (6").

3.3.09 FINE GRADING

UNIFORMLY GRADE AREAS THAT ARE CALLED OUT FOR RESTORATION. BREAK DOWN ALL CLODS AND LUMPS WITHIN THE TOPSOIL, USING THE APPROPRIATE EQUIPMENT, TO PROVIDE A UNIFORMLY TEXTURED SOIL. A SMOOTH FINISHED SURFACE SHALL BE PROVIDED WITHIN A TOLERANCE OF PLUS OR MINUS ONE-HALF INCH (+/- ½").

3.3.10 SEED RESTORATION

ALL AREAS DISTURBED BY GRADING, STREET, UTILITY, CURB AND GUTTER, AND SIDEWALK CONSTRUCTION, SHALL BE RESTORED. BACKSLOPES ADJACENT TO THE SIDEWALK SHALL BE SEEDED TO THE SLOPE INTERCEPT.

SEEDING SHALL BE PERFORMED IN ACCORDANCE WITH METHOD A OR A MODIFIED METHOD B OF SECTION 630 OF THE WISDOT SPECIFICATIONS AND APPLIED AT A RATE OF 5 LB./1000 SF.

HYDROMULCHING SHALL BE PERFORMED IN ACCORDANCE WITH METHOD B, OF SECTION 630 OF THE
WISDOT SPECIFICATIONS, MODIFIED TO INCLUDE A MULCHING MATERIAL. .
MULCH SHALL BE APPLIED IN AT LEAST TWO DIRECTIONS AT A RATE OF 2,000 POUNDS PER ACRE.

FOR RESTORATION OF AREAS UNDER 50 SQUARE FEET, LOOSE STRAW MAY BE HAND SCATTERED UNIFORMLY OVER THE SEEDED AREA IN LIEU OF HYDROMULCHING.

3.3.11 EROSION MAT

ALL EROSION MAT SHALL BE SECURED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR THE FOLLOWING,
WHICHEVER IS MORE RESTRICTIVE. CLASS I, URBAN TYPE A EROSION MAT SHALL BE SECURED WITH A MINIMUM 1.75 STAPLES PER SQUARE YARD. SPACING OF ANY SINGLE STAPLE SHALL NOT BE MORE THAN THREE FEET (3') FROM AN ADJOINING STAPLE. CLASS II, TYPE C MAT SHALL BE SECURED A MINIMUM 3.5 STAPLES PER SQUARE YARD. SPACING SHALL NOT BE MORE THAN TWO FEET (2') FROM AN ADJOINING STAPLE. EROSION MAT IS NECESSARY FOR ALL SLOPES STEEPER THAN 5:1 WITH CLASS OF MAT SPECIFIED BY ENGINEER.

3.3.12 INFILTRATIVE PRACTICES

INFILTRATIVE PRACTICES (SUCH AS BIORETENTION BASINS AND INFILTRATION BASINS) SHALL BE CONSTRUCTED IN ACCORDANCE WITH DANE COUNTY / GREEN TIER'S “INFILTRATION PRACTICE CONSTRUCTION GUIDANCE” DOCUMENT, AVAILABLE AT: HTTPS://WRED-LWRD.COUNTYOFDANE.COM/DOCUMENTS/STORMWATER/INFILTRATION-PRACTICE-CONSTRUCTION-GUIDANCE.PDF.

A GEOTECHNICAL ENGINEER SHALL BE ON SITE DURING CONSTRUCTION OF INFILTRATION PRACTICES TO VERIFY CONSTRUCTION OF PRACTICE, ALL MATERIALS USED, AND NATIVE SOILS. DOCUMENTATION FROM THIS PROFESSIONAL SHALL BE REQUIRED AS PART OF THE AS-BUILT CERTIFICATION.

DEEP TILL NATIVE SOILS PRIOR TO PLACING IMPORTED MATERIALS ON TOP, IF APPLICABLE. AFTER FINAL GRADING OF INFILTRATION PRACTICE, DEEP TILL THE ENTIRE PRACTICE PRIOR TO RESTORATION UPON ENGINEER'S DISCRETION.

3.3.13 RETAINING WALLS

A. BOULDER WALL. IN AREAS AS GENERALLY SHOWN ON THE DRAWINGS AND AS SPECIFICALLY NOTED IN THE FIELD BY THE ENGINEER, CONTRACTOR SHALL CONSTRUCT BOULDER RETAINING WALLS. THE STONE SHALL BE PLACED RANDOMLY. THE LARGER STONE SHALL BE PLACED AT THE BOTTOM. THE MINIMUM BATTER SHALL BE THREE INCHES (3") IN ONE VERTICAL FOOT UNLESS OTHERWISE ALLOWED BY ENGINEER. GEOTEXTILE FABRIC SHALL BE INSTALLED BEHIND THE WALL TO PREVENT THE BACKFILL FROM ERODING THROUGH THE JOINTS AND COURSES. BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 209 OF THE WISDOT SPECIFICATIONS. THE LAYOUT OF THE WALL SHALL BE APPROVED BY ENGINEER PRIOR TO CONSTRUCTION OF THE WALL. A SUITABLE FOUNDATION, AS APPROVED BY ENGINEER, SHALL BE PROVIDED TO PRECLUDE SETTLEMENT. THE WALL MAY BE CONSTRUCTED IN CONJUNCTION WITH THE NEW EMBANKMENT. SOME CHINKING MAY BE REQUIRED TO SECURE STABILITY OF THE STONES.

B. MODULAR BLOCK RETAINING WALL. MODULAR WALL UNITS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING STANDARDS:

- ASTM C90 - LOAD BEARING CONCRETE MASONRY UNITS.
- ASTM C140 - SAMPLING AND TESTING CONCRETE MASONRY UNITS.
- ASTM D4475 - APPARENT HORIZONTAL SHEAR STRENGTH OF PULTRUDED REINFORCED PLASTIC RODS BY THE SHORT-BEAM METHOD.
- ASTM D2339 - STRENGTH PROPERTIES ADHESIVES IN TWO-PLY WOOD CONSTRUCTION IN SHEAR BY TENSION LOADING.

THE FIRST COURSE OF WALL UNITS SHALL BE PLACED ON THE BASE LEVELLING PAD. THE UNITS SHALL BE CHECKED FOR LEVEL AND ALIGNMENT. BOTTOM OF WALL SHALL BE A MINIMUM OF 12 INCHES BELOW FINISHED GRADE.

UNITS SHALL BE PLACED SIDE BY SIDE FOR FULL LENGTH OF WALL ALIGNMENT. ALIGNMENT MAY BE DONE BY A STRING OFFSET OR OFFSET FROM SIDEWALK.

UNITS SHALL BE INTERLOCKED WITH NONCORROSIVE FIBERGLASS PINS. PINS SHALL PROTRUDE INTO ADJOINING COURSES ABOVE A MINIMUM OF ONE INCH (1"). TWO PINS REQUIRE PER UNIT.

UNIT FILL SHALL BE PLACED DIRECTLY BEHIND THE WALL TO A MINIMUM WIDTH OF 12 INCHES.

ALL VOIDS INSIDE AND BETWEEN UNITS AND DRAINAGE ZONE BEHIND UNITS SHALL BE FILLED WITH TAMPED UNIT FILL MATERIAL.

ALL CAPSTONE BLOCK SHALL BE ATTACHED WITH THE ADHESIVE PER THE MANUFACTURER'S INSTRUCTIONS.

3.3.14 MAINTENANCE

PROTECT NEWLY GRADED AREAS FROM TRAFFIC AND EROSION. KEEP FREE OF TRASH AND DEBRIS. REPAIR AND RE-ESTABLISH GRADES IN SETTLED, ERODED, AND RUTTED AREAS TO SPECIFIED TOLERANCES.

WHERE SETTLING IS MEASURABLE OR OBSERVABLE AT EXCAVATED AREAS DURING GENERAL PROJECT WARRANTY PERIOD, REMOVE SURFACE (PAVEMENT, LAWN OR OTHER FINISH), ADD BACKFILL MATERIAL, COMPACT, AND REPLACE SURFACE TREATMENT. RESTORE APPEARANCE, QUALITY, AND CONDITION OF SURFACE OR FINISH TO MATCH ADJACENT WORK, AND ELIMINATE EVIDENCE OF RESTORATION TO GREATEST EXTENT POSSIBLE.

3.3.15 RIPRAP

RIPRAP SHALL BE UNDERLINED WITH A GEOTEXTILE FABRIC AND SHALL BE PLACED AT THE ENDS OF PIPE OUTFALLS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH SECTION 606 OF THE WISDOT SPECIFICATIONS. GEOTEXTILE FABRIC SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS AND IN ACCORDANCE WITH SECTION 645 OF THE WISDOT SPECIFICATIONS. GEOTEXTILE FABRIC SHALL EXTEND A MINIMUM OF TWO FEET (2') UNDER APRON ENDWALLS. RIPRAP SHALL EXTEND TO THE SPRING LINE OF THE ENDWALL. SUBSTITUTION OF RECYCLED CONCRETE FOR RIPRAP IS PROHIBITED. SEE STANDARD DETAIL DRAWING 6.06.

3.3.16 UTILITY LINE OPENINGS (ULO'S)

THIS WORK CONSISTS OF EXCAVATING TO UNCOVER UTILITIES FOR THE PURPOSE OF DETERMINING ELEVATION AND POTENTIAL CONFLICT AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN THE FIELD. THE EXCAVATION SHALL BE DONE IN SUCH A MANNER THAT THE UTILITY IN QUESTION IS NOT DAMAGED, AND THE SAFETY OF THE WORKERS IS NOT COMPROMISED. THE UTILITY LINE OPENINGS SHALL BE PERFORMED AS SOON AS POSSIBLE AND AT LEAST THREE (3) DAYS IN ADVANCE OF PROPOSED UTILITY OR STREET CONSTRUCTION TO ALLOW ANY CONFLICTS TO BE RESOLVED WITH MINIMAL DISRUPTION ALL UTILITY LINE OPENINGS SHALL BE APPROVED AND COORDINATED WITH THE ENGINEER. STEPS FOR BASIC POTHOLING:

A) SAW CUT PAVEMENT FULL-DEPTH WITH A BIT 12" TO 16" IN DIAMETER RESULTING IN A "CORE".
B) REMOVE CORE AND SAVE FOR REUSE IF STRUCTURALLY SOUND.
C) PLACE A PROTECTIVE STEEL RING TO PROTECT THE EDGE OF THE OPENING FROM DAMAGE.
D) USE VACUUM EQUIPMENT TO EXCAVATE COMPACTED MATERIAL FROM THE BOTTOM OF BASE COURSE TO BENEATH THE UTILITY FACILITY.
E) PERFORM UTILITY WORK (E.G., WATCH BORE HEAD, LEAK REPAIR, SERVICE CONNECTION).
F) PROTECT UTILITY FACILITY WITH FINE MATERIAL.
G) PLACE SELF-MIXING FLOWABLE FILL MATERIAL FROM THE TOP OF THE FINE MATERIAL TO BOTTOM OF THE BASE COURSE (FILL IS DESIGNED TO BE TRAFFIC-BEARING IN ~90 MINUTES).
H) PLACE NON-SHRINK GROUT (GROUT IS DESIGNED TO BE TRAFFIC-BEARING IN ~90 MINUTES).
I) PLACE THE REMOVED CORE (OR A GENERIC EQUIVALENT REPLACEMENT CORE) IN THE REMAINING OPENING (ORIGINAL ALIGNMENT AND ORIENTATION IS MAINTAINED IF REMOVED CORE IS USED) FORCING THE GROUT TO THE SURFACE TO FILL THE ANNULAR SPACE AND CORE EXTRACTION HOLE.
J) SEAL THE RESTORED OPENING END

SECTION 4 - CONCRETE AND CONCRTE STRUTURES

4.1 GENERAL

4.1.01 RELATED DOCUMENTS WISDOT SPECIFICATIONS, LATEST REVISION AVAILABLE AT HTTP://ROADWAYSTANDARDS.DOT.WI.GOV/STANDARDS/STNDSPEC/INDEX.HTM

4.1.02 DESCRIPTION OF WORK

THIS SECTION INCLUDES THE PROVISION AND PLACEMENT OF CONCRETE FOR CURB AND GUTTER, TRAFFIC MEDIANS, SIDEWALK, CONCRETE DRIVEWAYS AND RELATED APPURTENANCES INCLUDING DETECTABLE WARNING FIELDS.

4.2 MATERIALS

4.2.01 CONCRETE

CONCRETE MATERIALS SHALL BE PROVIDED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 501 OF THE WISDOT SPECIFICATIONS.

THE CONCRETE SHALL BE SIX (6) BAG, AIR-ENTRAINED CONCRETE AS SUPPLIED BY A REPUTABLE READY-MIX SUPPLIER AND BE DESIGNED TO OBTAIN 4,000 PSI IN 28 DAYS.

ALL CONCRETE SHALL BE AIR-ENTRAINED AND SHALL CONTAIN SEVEN (7) PERCENT AIR BY VOLUME, PLUS OR MINUS 1.5%.

SPECIAL HIGH EARLY STRENGTH (SHES) CONCRETE SHALL CONFORM TO SECTION 416 OF THE WISDOT SPECIFICATIONS.

ADDITION OF WATER TO CONCRETE ON SITE IS PROHIBITED.

MIX DESIGN ADJUSTMENTS MAY BE REQUESTED BY CONTRACTOR WHEN CHARACTERISTICS OF MATERIALS, JOB CONDITIONS, WEATHER, TEST RESULTS, OR OTHER CIRCUMSTANCES WARRANT; AT NO ADDITIONAL COST TO OWNER AND AS ACCEPTED BY ENGINEER. LABORATORY TEST DATA FOR REVISED MIX DESIGN AND STRENGTH RESULTS MUST BE SUBMITTED TO AND ACCEPTED BY ENGINEER BEFORE USING IN WORK.

COLORED CONCRETE:
A) CONCRETE COLOR FOR CYCLE TRACKS SHALL BE "DCS GREEN W/ GREY CEMENT #100" OR AS APPROVED BY ENGINEER.
B) CONCRETE COLOR FOR MEDIANS AND DECORATIVE TERRACES SHALL BE "RED BRICK" OR AS APPROVED BY ENGINEER. STAMP SHALL BE 4" X 8" RUNNING BOND PATTERN PERPENDICULAR TO CURB.
C) CONCRETE COLOR FOR ROUNDABOUTS SHALL BE "DOT RED" OR AS APPROVED BY ENGINEER.

4.2.02 EXPANSION JOINT FILLER MATERIAL

ONE-HALF INCH (1/2") EXPANSION JOINT FILLER SHALL BE FURNISHED IN LENGTHS EQUAL TO THE JOINT WIDTH AND TO THE THICKNESS AND HEIGHT THAT IS REQUIRED. USE OF MULTIPLE FILLER SECTIONS AT A JOINT, STREET LIGHT BASE, VALVE BOX, OR MANHOLE TO ACHIEVE REQUIRED LENGTH, HEIGHT, AND/OR THICKNESS IS PROHIBITED.

EXPANDED POLYOLEFIN (EPOFOAM) JOINT FILLER TO BE USED AROUND ALL VALVE BOXES, LIGHT BASES, MANHOLES AND HYDRANTS IN THE CONCRETE. SEAL THE TOP ¼" WITH MANUFACTURER SPECIFIED NP-1 SONOELASTIC CAULK.

4.2.03 DETECTABLE WARNING FIELDS

DETECTABLE WARNING FIELDS SHALL BE NEENAH FOUNDRY'S DETECTABLE WARNING PLATE R-4984, NATURAL FINISH OR APPROVED EQUAL CAST IRON PLATE. THE DETECTABLE WARNING FIELDS SHALL CONSIST OF A COMBINATION OF PANELS TO MEET THE SPECIFIED LENGTH AND WIDTH FOR THE WARNING FIELD AREA. THE COLOR OF THE DETECTABLE WARNING FIELDS SHALL BE NATURAL PATINA UNLESS OTHERWISE SPECIFIED IN PLANS.

RADIAL PLATES SHALL BE FROM THE WIDOT MANUFACTURER'S APPROVED LIST. THE CONTRACTOR SHALL SELECT THE APPROPRIATE RADIAL PLATE RADIUS THAT MATCHES THE INTERSECTION RADIUS DESIGN.

4.2.04 SIGN BASE
ALL SIGNS IN CONCRETE SHALL UTILIZE AN EIGHT INCH (8") V-LOC (23-VR1) AND WEDGE FOR A 2-3/8" GALVANIZED STEEL POST FOR THE BASE.

4.3 EXECUTION

4.3.01 GENERAL CONCRETE

PLACEMENT OF CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 415 OF THE WISDOT SPECIFICATIONS.

DEPOSIT AND CONSOLIDATE CONCRETE SLABS IN A CONTINUOUS OPERATION, WITHIN LIMITS OF CONSTRUCTION JOINTS, UNTIL THE PLACING OF A PANEL OR SECTION IS COMPLETED.

CONSOLIDATE CONCRETE DURING PLACING OPERATIONS SO THAT CONCRETE IS THOROUGHLY WORKED AROUND REINFORCEMENT AND OTHER EMBEDDED ITEMS AND INTO CORNERS.

BRING SLAB SURFACES TO CORRECT LEVEL WITH STRAIGHTEDGE AND STRIKE OFF. USE BULL FLOATS OR DARBIES TO SMOOTH SURFACE, FREE OF HUMPS OR HOLLOWS. DO NOT DISTURB SLAB SURFACES PRIOR TO BEGINNING FINISHING OPERATIONS.

ALL EXPOSED NON-COLORED CONCRETE SURFACES SHALL BE PROTECTED DURING CURING WITH A WHITE PIGMENTED CURING COMPOUND. ALL COLORED CONCRETE SURFACES SHALL BE PROTECTED DURING CURING WITH CLEAR CURING COMPOUND.

CONCRETE TO BE REMOVED AND REPLACED SHALL BE SAWCUT AT THE NEAREST EXISTING JOINTS. INSTALL TWO (2) #4 EPOXY COATED TIE BARS, 12 INCHES (12") IN LENGTH, EXTENDING SIX INCHES (6") INTO THE EXISTING AND THE NEW CONCRETE AT THE JOINTS UNLESS DIRECTED BY THE ENGINEER.

NO CONCRETE WORK MAY TAKE PLACE WHILE IT IS RAINING. ALL CONCRETE POURED DURING RAIN EVENTS SHALL BE REMOVED AND REPLACED AT CONTRACTOR'S EXPENSE. ALTERING VISUALLY DAMAGED CONCRETE IS NOT ACCEPTABLE I.E. BRUSHING.

USE OF CONTRACTOR NAME STAMP TO MARK CONCRETE FOR PERMANENT IDENTIFICATION IS PROHIBITED.

24 HOURS PRIOR TO WORKING CONTRACTOR SHALL NOTIFY ADJACENT PROPERTY OWNERS OF CONCRETE OPERATIONS.

ALL CONCRETE WASHOUTS SHALL BE CONDUCTED IN THE DESIGNATED LOCATION, OR AT LOCATION APPROVED BY ENGINEER.

VALVE BOX TOP SECTION, PER SECTION 7, WITH TWO 8"X8"X2" CONCRETE BLOCK SUPPORTS, ONE ON EACH SIDE OF THE VALVE BOX TOP SECTION, SHALL BE INSTALLED OVER CURB STOPS WITHIN CONCRETE SURFACES. CURB STOP BOX SHALL BE SET TWO INCHES BELOW TOP OF VALVE BOX.

4.3.02 CURB AND GUTTER

MINIMUM BASE COURSE DEPTH BENEATH CURB AND GUTTER SHALL BE SIX INCHES (6").

THE TOP OF THE CURB SHALL BE MARKED WHERE THE SANITARY SEWER LATERAL, WATER SERVICE, AND CITY OWNED FIBER OPTIC AND ELECTRICAL CONDUIT CROSS THE CURB AND GUTTER. THE MARK MAY BE MADE BY STAMPING. THE DEPTH SHALL BE A MINIMUM OF ONE-SIXTEENTH (1/16") INCH DEEP. A "W" SHALL BE STAMPED OVER EACH WATER SERVICE CROSSING, AN "S" SHALL BE STAMPED OVER EACH SANITARY LATERAL CROSSING, AN "F" SHALL BE STAMPED OVER EACH FIBER OPTIC CROSSING, AND AN “E” SHALL BE STAMPED OVER EACH ELECTRIC CONDUIT CROSSING.

BEGINNING THREE FEET (3') ON BOTH SIDES OF INLETS, CURB AND GUTTER SHALL BE POURED MANUALLY WITH AN EIGHT INCH (8") FLOW LINE DEPRESSION FROM THE TOP OF CURB ALONG THE INLET TAPERED FROM THE TYPICAL SIX INCH (6") FLOW LINE. CONCRETE SHALL BE POURED BEHIND THE INLET CASTING SO AS TO COVER THE BOLT HOLES. PLACE A SEVEN FOOT (7') LONG EPOXY COATED #4 REINFORCING ROD IN CONCRETE GUTTER IN FRONT OF INLET AS DIRECTED BY ENGINEER.

PROVIDE ONE-HALF INCH (1/2") EXPANSION JOINT FILLER EVERYWHERE THAT A TANGENT AND RADIAL CURB AND GUTTER MEET; ON EACH SIDE OF EVERY INLET 3 FEET FROM THE INLET, BUT NO CLOSER THAN 6 FEET
FROM ANOTHER JOINT; AND ON TANGENT SECTIONS PLACE BETWEEN 6 FEET AND 300 FEET.

WHEN PLACING CURB AND GUTTER ADJACENT TO SIDEWALKS AND DRIVEWAYS INSTALL ONE-HALF INCH (1/2") EXPANSION JOINT FILLER BETWEEN THE TWO STRUCTURES FOR THE ENTIRE LENGTH AND DEPTH.

AFTER CURB AND GUTTER IS POURED, BACKFILL MATERIAL SHALL BE PLACED AND COMPACTED BEHIND CURB PRIOR TO PLACEMENT OF ADDITIONAL BASE COURSE ONCE CONCRETE HAS ACHIEVED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

PERMANENT PLOW RAMPS SHALL TAPER OVER SIX FEET (6') IN LENGTH WHEN CURB AND GUTTER ENDS. ALL STUB STREETS SHALL HAVE THREE FOOT (3') PLOW RAMPS.

4.3.03 INTEGRAL ISLAND NOSE

ALL MEDIAN ISLAND NOSES SHALL BE POURED INTEGRAL WITH THE CURB AND GUTTER. NOSES SHALL BE A MINIMUM OF SIX FEET (6') IN LENGTH FROM FRONT OF CURB TO BACK OF NOSE.

WHERE IDENTIFIED ON THE PLANS OR DIRECTED BY THE ENGINEER, MEDIAN NOSES SHALL INCLUDE A V-
LOC AND WEDGE FOR A 2-3/8" GALVANIZED STEEL POST TO BE PLACED INTO THE CONCRETE NOSE. V-LOC SHALL BE FLUSH WITH CONCRETE, UNLESS AUTHORIZED BY THE ENGINEER.

4.3.04 SIDEWALK

TOPSOIL SHALL BE STRIPPED PRIOR TO PLACEMENT OF THE BASE MATERIAL FOR THE SIDEWALK.

BASE FOR CONCRETE SIDEWALK SHALL CONSIST OF A MINIMUM OF FOUR INCHES (4") OF ¾-INCH DENSE GRADED CRUSHED STONE OR GRAVEL AS SPECIFIED IN SECTION 5 - PAVEMENTS AND BASE COURSE.

EXPANDED POLYOLEFIN JOINT FILLER SHALL BE PLACED AROUND ALL STREET LIGHT BASES, VALVE BOXES, HYDRANTS AND MANHOLES LOCATED WITHIN CONCRETE SIDEWALK SURFACES. SEAL THE TOP ¼" WITH MANUFACTURER SPECIFIED NP-1 SONOELASTIC CAULK.

PROVIDE HALF-INCH (1/2") EXPANSION JOINT FILLERS AT ALL RAMP LOCATIONS, BETWEEN SIDEWALK AND DRIVEWAY APRONS, BETWEEN SIDEWALK AND ABUTTING PARALLEL CURB AND GUTTER, BETWEEN SIDEWALK AND BUILDINGS OR OTHER RIGID STRUCTURES, AND AT ALL RADII.. TRANSVERSE EXPANSION JOINT FILLER SHALL BE PLACED THROUGH THE SIDEWALK AT UNIFORM INTERVALS OF NOT MORE THAN 96 FEET.

GENERALLY, CONCRETE THICKNESS FOR PUBLIC SIDEWALKS SHALL BE FIVE INCHES (5"). CONCRETE THICKNESS FOR PUBLIC HANDICAP RAMPS AND DRIVEWAY OPENINGS SHALL BE SEVEN INCHES (7").

FORMS SHALL BE EQUAL TO OR GREATER THAN THE SIDEWALK THICKNESS. THE ENGINEER MAY MAKE EXCEPTIONS TO THIS AT A RADIUS. METAL FORMS SHALL BE USED AS OFTEN AS PRACTICAL.

SEE STANDARD DETAIL DRAWING 4.02 SIDEWALKS AND PATHS.

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CITY OF FITCHBURG PROJECT SPECIFICATIONS

C-7.1

4.3.05 CYCLE TRACK

CYCLE TRACKS SHALL BE INSTALLED PER SIDEWALK REQUIREMENTS. CYCLE TRACK JOINTS SHALL BE SAWCUT AT 1/8 INCH IN WIDTH AND, WHERE APPLICABLE, LINE UP WITH ADJACENT CURB JOINTS.

4.3.06 DETECTABLE WARNING FIELDS

DETECTABLE WARNING FIELDS ARE REQUIRED WHERE A SIDEWALK OR BIKE PATH CROSSES A VEHICULAR WAY (EXCLUDING DRIVEWAYS), WHERE A RAIL SYSTEM CROSSES PEDESTRIAN FACILITIES THAT ARE NOT SHARED WITH VEHICULAR WAYS, AT REFLECTING POOLS WITHIN THE PUBLIC RIGHT-OF-WAY, WHICH DO NOT HAVE CURB OR RIM PROTRUDING ABOVE THE WALKING SURFACE, AT ISLANDS AND MEDIANS THAT ARE CUT THROUGH LEVEL WITH THE ROADWAY, AND AT ANY OTHER LOCATION REQUIRED BY ENGINEER.

DETECTABLE WARNING FIELDS FOR SIDEWALK AND BIKE PATH RAMPS SHALL EXTEND 24 INCHES IN THE DIRECTION OF THE PEDESTRIAN TRAVEL AND SHALL EXTEND THE FULL LENGTH OF THE CURB RAMP OR FLUSH SURFACE, A MINIMUM OF FIVE FEET (5') FOR SIDEWALK RAMPS AND A MINIMUM OF TEN FEET (10') FOR BIKE PATH RAMPS. WHEN POSSIBLE DETECTABLE WARNING FIELDS SHALL BE FLUSH TO THE FELT ON THE BACK OF CURB FOR STRAIGHT APPROACHES.

VOIDS MAY NOT EXIST BETWEEN THE DETECTABLE WARNING FIELD AND CONCRETE. IN THE EVENT VOIDS EXIST, THE WARNING PLATE AND CONCRETE SHALL BE REMOVED AND REPLACED. SLURRY OR CAULK REPAIRS ARE NOT PERMITTED.

SEE DETAILS FOR GUIDANCE ON WHEN TO USE RADIAL FIELD PLATES. WHEN SELECTING RADIAL PLATES, SLIGHT VARIANCE OF UP TO 3 FEET BETWEEN THE RADII OF THE DETECTABLE WARNING FIELD AND THE BACK OF CURB WILL PROVIDE A UNIFORM CONCRETE BORDER BETWEEN BACK OF CURB AND RADIAL FIELD. A MAXIMUM 3-INCH CONCRETE BORDER IS ALLOWABLE BETWEEN THE BACK OF CURB AND RADIAL DETECTABLE WARNING FIELD, WITH THE CONCRETE BORDER WIDTH VARIABLE UP TO 1 INCH.

WHEN RADIAL DETECTABLE WARNING FIELDS ARE USED, THE OUTERMOST RADIAL PLATES WILL NOT COINCIDE WITH THE CURB RAMP EDGES. THE OUTERMOST RADIAL PLATES WILL NEED TO BE FIELD CUT TO MATCH THE CURB RAMP EDGES. DEVELOP CONSTRUCTION DETAILS OF EACH CURB RAMP, INCLUDING THE LAYOUT OF INDIVIDUAL FULL-SIZE RADIAL PLATES AS WELL AS FLANKING CUT RADIAL PLATES. FIELD-CUT PLATES CANNOT BE SHORTER THAN 6 INCHES ALONG ANY CUT EDGE. DEPICT FULL-SIZE RADIAL PLATES WITHIN THE INTERIOR OF THE CURB RAMP LAYOUT, AS INTERMEDIATE JOINTS WITHIN THE WARNING FIELD MUST NOT BE FIELD CUT. THE RADIAL PLATE FINAL FIELD PLACEMENT MAY VARY, AS THE CONTRACTOR WILL DETERMINE THE FINAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS.

4.3.07 DRIVEWAYS

ALL COMMERCIAL DRIVEWAYS LOCATED ALONG A ROADWAY WITH CURB AND GUTTER SHALL CONFORM TO THESE SPECIFICATIONS UNLESS SPECIFICALLY PERMITTED OTHERWISE BY THE ENGINEER.

CONCRETE THICKNESS FOR DRIVEWAY APRONS SHALL BE SEVEN INCHES (7") AND THE CRUSHED AGGREGATE BASE THICKNESS SHALL BE A MINIMUM OF FOUR INCHES (4").

PROVIDE ONE-HALF INCH (1/2") EXPANSION JOINT FILLER AGAINST SIDEWALKS AND CURB AND GUTTER.

FOR RESIDENTIAL AND COMMERCIAL DRIVEWAY OPENINGS ALONG STREETS WITH EXISTING CURB AND GUTTER, THE CONTRACTOR SHALL EITHER REMOVE AND REPLACE EXISTING CURB AND GUTTER AT THE DRIVEWAY OPENING PER SPECIFICATIONS OR MAKE A 'PROFILE CURB CUT' IN WHICH THE CURB HEAD IS CUT WITH A CONCRETE SAW SPECIFICALLY DESIGNED FOR THIS TYPE OF WORK.

4.3.08 PROTECTION OF CONCRETE

A. GENERAL. CONTRACTOR SHALL ERECT AND MAINTAIN SUITABLE BARRICADES TO PROTECT THE NEW CONCRETE. WHERE IT IS NECESSARY TO PROVIDE FOR PEDESTRIAN TRAFFIC, THE CONTRACTOR SHALL, AT HIS THEIR OWN COST, CONSTRUCT ADEQUATE CROSSINGS AS SHOWN ON THE DRAWINGS OR AS SPECIFIED. CROSSING CONSTRUCTION SHALL BE SUCH THAT NO LOAD IS TRANSMITTED TO THE NEW CONCRETE.

ANY PART OF THE WORK DAMAGED, UNDERMINED, OR VANDALIZED PRIOR TO FINAL ACCEPTANCE SHALL BE REPAIRED OR REPLACED AT THE EXPENSE OF THE CONTRACTOR.

APPLY CURING COMPOUND AS SOON AS THE CONCRETE IS DRY TO THE TOUCH AND WILL NOT BE MARRED FROM STEPPING ON IT. IF CURING COMPOUND IS NOT APPLIED, CONCRETE MUST BE CURED WITH PLASTIC UNTIL STRENGTH OF 3,000 PSI IS ACHIEVED OR FOR SEVEN (7) DAYS, WHICHEVER COMES FIRST. REMOVAL OF PLASTIC, WHETHER TEMPORARY OR PERMANENT, DURING THIS TIME, IS PROHIBITED.

CONSTRUCTION ACTIVITIES AND VEHICULAR TRAFFIC SHALL NOT BE PERMITTED ADJACENT TO OR OVER NEWLY PLACED CONCRETE UNTIL A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI HAS BEEN ACHIEVED.

B. COLD WEATHER PROTECTION. PROTECT CONCRETE WORK FROM PHYSICAL DAMAGE OR REDUCED STRENGTH WHICH COULD BE CAUSED BY FROST, FREEZING ACTIONS, OR LOW TEMPERATURES, IN COMPLIANCE WITH ACI 306, WISDOT SPECIFICATIONS, AND AS HEREIN SPECIFIED.

AT ANY TIME OF THE YEAR, IF THE NATIONAL WEATHER SERVICE FORECAST FOR THE CONSTRUCTION AREA PREDICTS FREEZING TEMPERATURES WITHIN THE NEXT 24 HOURS, OR WHEN FREEZING TEMPERATURES ACTUALLY OCCUR, PROVIDE THE MINIMUM LEVEL OF THERMAL PROTECTION SPECIFIED BELOW FOR CONCRETE THAT HAS YET TO CONFORM TO THE OPENING CRITERIA SPECIFIED IN WISDOT 415.3.15.

Predicted or Actual Air Temperature Minimum Equivalent Level of Protection
22 to <28 F single layer of polyethylene
17 to <22 F double layer of polyethylene
<17 F 6" of loose, dry straw or hay between two layers of polyethylene

UNLESS WRITTEN APPROVAL IS PROVIDED BY THE ENGINEER, SUSPEND CONCRETING OPERATIONS IF THE DESCENDING AIR TEMPERATURE IN THE SHADE AND AWAY FROM ARTIFICIAL HEAT FALLS BELOW 35 DEGREES FAHRENHEIT. DO NOT RESUME CONCRETING OPERATIONS UNLESS TEMPERATURES IN THE SHADE AND AWAY FROM ARTIFICIAL HEAT REACHES 32 DEGREES FAHRENHEIT AND IS RISING. AT ALL TIMES THE CONCRETE TEMPERATURE AT THE POINT OF PLACEMENT SHALL BE ABOVE 50 DEGREES FAHRENHEIT.

CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE CONCRETE PLACED. ANY CONCRETE DAMAGED BY FREEZING OR FROST ACTION DURING THE FIRST SEVEN (7) DAYS FOLLOWING ITS PLACEMENT SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT CONTRACTOR'S EXPENSE.

CALCIUM CHLORIDE, SALT AND OTHER MATERIALS CONTAINING ANTIFREEZE AGENTS OR CHEMICAL ACCELERATORS SHALL NOT BE USED, UNLESS OTHERWISE ACCEPTED IN MIX DESIGNS.

C. HOT WEATHER PROTECTION. WHEN HOT WEATHER CONDITIONS EXIST THAT WOULD SERIOUSLY IMPAIR QUALITY AND STRENGTH OF CONCRETE, PLACE CONCRETE IN COMPLIANCE WITH AMERICAN CONCRETE INSTITUTE ACI 305.

4.4 FIELD QUALITY CONTROL AND TESTING

4.4.01 TESTING

OWNER WILL BE RESPONSIBLE FOR CONCRETE TESTING. CONTRACTOR SHALL COORDINATE TESTING WITH THE OWNER.

MATERIALS AND INSTALLED WORK MAY REQUIRE TESTING AND RETESTING AT ANY TIME DURING PROGRESS OF WORK. TESTS, INCLUDING RETESTING OF REJECTED MATERIALS AND INSTALLED WORK, SHALL BE DONE AT CONTRACTOR'S EXPENSE.

SECTION 5 - PAVEMENTS AND BASE COURSE

5.1 GENERAL

5.1.01 RELATED DOCUMENTS WISDOT SPECIFICATION, LATEST REVISION AVAILABLE AT
HTTP://ROADWAYSTANDARDS.DOT.WI.GOV/STANDARDS/STNDSPEC/INDEX.HTM

OMIT THE FOLLOWING SECTIONS

- SECTION 440 RIDE QUALITY REQUIREMENTS AND TESTING
- SECTION 455.2.2 AND 455.2.3 PG ASPHALT BINDER AND TACK COAT SAMPLING AND TESTING
- SECTION 450.3.2.1 COLD WEATHER PAVING
- SECTION 450.3.2.11 SAFETY EDGE
- SECTION 460.2.8 QMP SAMPLING AND TESTING
- SECTION 460.3.3 NUCLEAR DENSITY TESTING

5.1.02 DESCRIPTION OF WORK

THIS SECTION INCLUDES REQUIREMENTS FOR THE PROVISION AND PLACEMENT OF BASE COURSE, ASPHALTIC PAVEMENT, AND PAVEMENT MARKINGS.

5.1.03 SCHEDULE

UNLESS SPECIFIED DIFFERENTLY, ALL UPPER LAYER PAVING SHALL BE COMPLETE BY SEPTEMBER 15 AND ALL LOWER LAYER PAVING SHALL BE COMPLETED BY OCTOBER 31. ONLY PATCHING WILL BE ALLOWED AFTER THESE DATES AS APPROVED BY THE ENGINEER.

5.1.04 SUBMITTALS

PRIOR TO PAVING THE FOLLOWING ITEMS, SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL.

- HMA MIX DESIGN MEETING THE SPECIFICATIONS OF SECTION 1.2.04 SHOP DRAWINGS FOR EACH APPLICABLE ROADWAY/PAVEMENT TYPE
- REGRESSION OF AIR VOIDS DOCUMENTATION, ALONG WITH NEWLY CALCULATED %AC, VMA, VFB, AND GMB
- RAS STOCKPILE PRODUCTION SAMPLES, IF RAS IS USED IN THE MIX DESIGN

5.2 MATERIALS

5.2.01 CRUSHED AGGREGATE BASE COURSE

THE AGGREGATES SHALL CONSIST OF HARD, DURABLE PARTICLES OF CRUSHED STONE RESULTING FROM THE ARTIFICIAL CRUSHING OF ROCK, BOULDERS, OR LARGE COBBLESTONES SUBSTANTIALLY ALL FACES OF WHICH HAVE RESULTED FROM THE CRUSHING OPERATION. THE MATERIAL SHALL BE FREE FROM DIRT, ASPHALT, DEBRIS, FROZEN MATERIALS, ORGANIC MATTER, SHALE AND LUMPS OR BALLS OF CLAY.

THE DETERMINATION OF THE ACCEPTABILITY OF THE AGGREGATES WILL BE MADE BY VISUAL OBSERVATION AND/OR LABORATORY TEST. THE ENGINEER RESERVES THE RIGHT TO PROHIBIT THE USE OF MATERIAL FROM ANY SOURCE, PLANT, PIT, QUARRY OR DEPOSIT WHERE THE CHARACTER OF THE MATERIAL OR METHOD OF OPERATION IS NOT FURNISHING AGGREGATE THAT CONFORMS TO THE REQUIREMENTS OF THESE SPECIFICATION, UNLESS SATISFACTORY EVIDENCE IS SHOWN THAT MATERIAL CONFORMING TO THE SPECIFICATION REQUIREMENTS IS PRODUCED. NOTE: THE CITY SHALL BE NOTIFIED 24 HOURS PRIOR TO THE PLACEMENT OF BASE COURSE. IN GIVING THIS NOTICE, THE CONTRACTOR SHALL INDICATE THE SOURCE FOR THE BASE COURSE. IF DURING ROCKING OPERATIONS THE SOURCE CHANGES, THE CITY MUST BE NOTIFIED. THE CONTRACTOR TAKES ON THE FINANCIAL RESPONSIBILITY OF PLACEMENT OF THE BASE COURSE FROM THE NEW SOURCE IF THE MATERIAL IS UNSUITABLE.

UNLESS SPECIFIED DIFFERENTLY, BASE COURSE THICKNESS SHALL BE TWELVE-INCHES (12") CONSISTING OF THREE-INCH (3") DENSE IN THE BOTTOM SEVEN TO EIGHT INCHES (7"-8") AND ONE AND ONE-QUARTER INCH (1-1/4") DENSE IN THE TOP FOUR TO FIVE INCHES (4"-5"). GRADATIONS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 305 WISDOT SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.

5.2.02 UNSCREENED BREAKER RUN STONE THE MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 311 WISDOT SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.

5.2.03 BREAKER RUN MATERIAL THE MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 311 WISDOT SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER. ENGINEER RESERVES THE RIGHT TO REQUIRE MODIFICATIONS TO THE MATERIAL, IF MATERIAL DOES NOT CONTAIN SUFFICIENT GRADATION TO ELIMINATE VOIDS, DOES NOT PROVIDE ADEQUATE 5" TO 6" MATERIAL TO PROVIDE STRUCTURAL SUPPORT, AND/OR CONTAINS TOO MANY FINES. THE MATERIAL SHALL BE FREE FROM DIRT, ASPHALT, CONCRETE, DEBRIS, FROZEN MATERIALS, ORGANIC MATTER, SHALE AND LUMPS OR BALLS OF CLAY.

5.2.04 FLOWABLE FILL FLOWABLE FILL SHALL BE EXCAVATABLE, HAVING STRENGTH GREATER THAN 200 PSI BUT NOT EXCEEDING 300 PSI. THE FOLLOWING FLOWABLE FILL MIX DESIGN IS RECOMMENDED.

FLOWABLE FILL MIX DESIGN		
Material	Unit	Quantity
Sand	lb.	3000
Water	Gal.	43
Fly Ash	lb.	200
Air Content	%	25 - 30
Cement	lb.	50

5.2.05 ASPHALTIC PAVEMENT

HMA MIX DESIGN:
REFER TO WISDOT SPECIFICATIONS, SECTIONS 460.2.1 – 460.2.7 AND 460.3.2 EXCEPT WHEREIN MODIFIED OR APPENDED:

ASPHALT MIX DESIGN SHALL BE THE FOLLOWING UNLESS OTHERWISE SPECIFIED IN THE SPECIAL PROVISIONS.

ASPHALT MIX TYPES		
HMA Type	Asphalt Material	Roadway Type
MT	58-28	Arterial
MT or LT	58-28H	Roundabouts & Turn Lanes*
LT	58-28	Collector & Residential
LT	58-28	Shared-use paths
LT	58-28H	Tennis Court / Basketball Court

*Surface Only			
ASPHALT MIX THICKNESS			
Nominal Maximum Aggregate Size (NMAS)	Use	Minimum Layer Thickness (in)	Maximum Layer Thickness (in)
3	Lower Layer	2.25	4.0
4	Lower Layer	1.75	3.0
5	Upper Layer	1.5	3.0
5	Basketball / Tennis Courts/ Shared-use Path	1.5	3.0

460.2.2.3 AGGREGATE GRADATION MASTER RANGE
LOWER LAYER SHALL BE ASPHALT MIX GRADATION 4 AND UPPER LAYER SHALL BE ASPHALT MIX GRADATION 5. THE LOWER LAYER MAY BE ASPHALT MIX GRADATION 3 WHERE THE LOWER AND UPPER LAYERS ARE APPLIED IN THE SAME CALENDAR YEAR.

460.2.7 HMA MIX DESIGN (ROADWAY, ARTERIAL, COLLECTOR, RESIDENTIAL AND SHARED USE PATHS) ALL HMA MIX DESIGNS FOR ARTERIAL, COLLECTOR, RESIDENTIAL AND SHARED USE PATHS SHALL HAVE A TARGET OF 3.0% AIR VOIDS. THIS SHALL BE ACCOMPLISHED BY TAKING AN EXISTING MIX DESIGN THAT TARGETS 4.0% AIR VOIDS, AND INCREASING THE ASPHALT CONTENT TO ACHIEVE 3.0% AIR VOIDS. NEW VMA, VFA AND GMB JMF TARGETS WILL BE RECALCULATED WITH THE NEW ASPHALT CONTENT.

5.2.06 ADJUSTING RINGS

NON-ROCKING NEENAH CAST IRON ADJUSTING RINGS OR APPROVED EQUAL. NEENAH REFERENCE NO. 1550-7151 FOR 1-1/2" ADJUSTING RINGS AND NO. 1550-7201 FOR TWO INCH (2") ADJUSTING RINGS.

5.2.07 TACK COAT

TYPE MS-2, SS-1, SS-1H, CSS-1, CSS-1H, OR AN APPROVED MODIFIED EMULSIFIED ASPHALT. TACK NEEDS TO BREAK BEFORE PAVING COMMENCES.

5.2.08 PAVEMENT MARKINGS

PAVEMENT MARKINGS SHALL BE EPOXY PAINT UNLESS OTHERWISE DIRECTED BY ENGINEER.

5.2.09 CYCLE TRACK

GENERAL: FOR AREAS WHERE CYCLE TRACK TRANSITIONS TO ASPHALT PAVEMENT, INSTALL HIGH FRICTION COLORED SURFACE IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS. USE COLOR-SAFE PAVEMENT MARKING WITH ANTI-SKID SURFACE BY TRANSPO INDUSTRIES OR AN APPROVED EQUAL. USE AN MMA BASED SYSTEM CAPABLE OF RETAINING AN AGGREGATE TOPPING UNDER VEHICULAR TRAFFIC CONDITIONS.

THE MMA BASED RESIN SYSTEM SHALL COMPLY WITH CHROMACITY REQUIREMENTS IN ACCORDANCE WITH MUTCD INTERIM APPROVAL FOR OPTIONAL USE OF GREEN COLORED PAVEMENT FOR BIKE LANES.

MMA BASED RESIN SYSTEM: THE MMA BASED RESIN SYSTEM SHALL MEET THE FOLLOWING REQUIREMENTS:

Property	Value	Test Method
Tensile Strength @ 7 days, psi, minimum	1000	ASTM D 638
Hardness, Shore D, minimum	80	ASTM D 2240
Gel Time, minutes, minimum	10	ASTM D 2471
Cure Rate, hours, maximum	3	Film @ 75°F
Water Absorption @ 24 hours, max	0.25%	ASTM D 570

Aggregate: The aggregate shall be high friction crushed Bauxite, Granite, or gravel. The aggregate will be delivered to the construction site in clearly labeled bags or sacks. The aggregate shall be clean, dry and free from foreign matter. The aggregate shall meet the following requirements:

Property	Value	Test Method
Aggregate Abrasion Value,	maximum 20	LA Abrasion
Aggregate Grading,		
No 6 Sieve Size,	minimum passing, 95%	
No 16 Sieve Size,	maximum passing, 5%	
Aggregate Color	Green	

Certification: Finished surface shall have a minimum 60 FN40R in accordance with ASTM E274 of aggregate bonded to a vehicular bearing surface using the modified epoxy binder.

5.3 EXECUTION

5.3.01 BASE COURSE

PRIOR TO PLACEMENT OF THE BASE COURSE, THE SUBBASE SHALL BE TEST ROLLED WITHIN THE PRESENCE OF THE ENGINEER. GIVE A MINIMUM OF 24-HOURS NOTICE TO THE ENGINEER PRIOR TO TEST ROLLING. BASE COURSE GRADE SHALL BE SET TO ALLOW THICKNESS OF ASPHALTIC PAVEMENT SUCH THAT NEW ASPHALT IS ¼" ABOVE CURB AND GUTTER.

DEPTH OF BASE COURSE SHALL MATCH EXISTING, TWELVE-INCH (12") MINIMUM.

EACH LAYER OF BASE COURSE SHALL BE WETTED AND ROLLED TO PROVIDE MAXIMUM COMPACTION IN ACCORDANCE WITH SECTION 301 OF THE WISDOT SPECIFICATIONS.

THE FINISHED BASE COURSE SHALL BE FINE GRADED IN PREPARATION FOR PAVING.

AFTER FINAL GRADING, CONTRACTOR SHALL MAINTAIN THE BASE COURSE UNTIL ASPHALTIC PAVING WORK HAS BEEN COMPLETED. ALL GRAVEL SURFACES DAMAGED DURING CONSTRUCTION SHALL BE REPLACED.

5.3.02 FLOWABLE FILL

FLOWABLE FILL IS REQUIRED AT ALL LOCATIONS WHERE STREETS CURB AND GUTTER, SIDEWALKS AND PAVEMENTS HAVE BEEN UNDERMINED.

5.3.03 FINISHING ROADWAY

THE FINISHED BASE COURSE SHALL BE FINE GRADED IN PREPARATION FOR ASPHALTIC PAVING. BASE COURSE RAMPS AT ALL EXISTING PAVEMENT SHALL BE REMOVED TO PROVIDE A FULL DEPTH BUTT JOINT.

IF CONTRACTOR CHOOSES TO USE ASPHALTIC RAMPS AT BUTT JOINTS DURING PAVING. RAMPS MUST BE REMOVED PRIOR TO PLACING BINDER.

5.3.04 NEW ROADWAYS

NEWLY CONSTRUCTED ROADWAYS SHALL, UNLESS OTHERWISE DIRECTED BY THE ENGINEER, RECEIVE LOWER LAYER ONLY NMAS 4 (12.5MM). PLACEMENT OF THE UPPER LAYER(S) NMAS 5 (9.5MM) SHALL BE POSTPONED AS DEEMED NECESSARY BY THE ENGINEER SO AS TO MINIMIZE DAMAGE CAUSED BY CONSTRUCTION TRAFFIC.

MANHOLE CASTINGS AND VALVE BOXES IN ROADWAYS TEMPORARILY RECEIVING THE LOWER LAYER ONLY SHALL BE SET TO LOWER LAYER GRADE. MANHOLE CASTINGS AND VALVE BOXES SHALL BE SET ONE-QUARTER INCH (¼") BELOW FINAL GRADE IN ALL OTHER AREAS UNLESS OTHERWISE DIRECTED BY ENGINEER. "SCAB" AND MONOLITHIC RAMPING IS PROHIBITED.

IMMEDIATELY PRIOR TO PLACEMENT OF UPPER LAYER(S), CONTRACTOR SHALL INSTALL NON-ROCKING CAST IRON ADJUSTING RINGS ON ALL MANHOLES LOCATED WITHIN THE AREA TO BE PAVED AND RAISE ALL VALVE BOXES TO ONE-QUARTER INCH (¼") BELOW FINAL GRADE.

5.3.05 ASPHALTIC PAVING

PRIOR TO COMMENCEMENT OF PAVING OPERATIONS, CONTRACTOR SHALL EXAMINE THE FINISHED ROAD BED. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY AREAS OF SUSPECTED INSTABILITY. THE ENGINEER MAY REQUIRE AN ADDITIONAL TEST ROLL IF THERE IS A RAIN EVENT BEFORE PAVING COMMENCES. THE PAVEMENT STRUCTURE FOR NEW ROADS SHALL BE DETERMINED FROM THE STANDARD CROSS-SECTIONS ENCOUNTERED IN THE FIELD. 24 HOURS PRIOR TO PAVING CONTRACTOR SHALL NOTIFY ADJACENT PROPERTY OWNERS OF PAVING OPERATIONS.

ENGINEER SHALL CHECK GRADE OF BASE AND STRUCTURE ADJUSTMENTS PRIOR TO PAVING. 48-HOURS NOTICE SHALL BE PROVIDE TO ENGINEER PRIOR TO PAVING AFTER GRADING AND ADJUSTMENTS ARE COMPLETE.

ALL ADJACENT CONCRETE SURFACES SHALL BE INSTALLED AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI PRIOR TO PAVING.

CONTRACTOR SHALL NOT PAVE DURING RAIN EVENTS. CONTRACTOR SHALL OBTAIN APPROVAL FROM ENGINEER BEFORE COMMENCING PAVING ACTIVITIES AFTER RAIN EVENTS.

NEW FINISHED ASPHALTIC UPPER LAYER SHALL BE ONE-QUARTER INCH (¼") ABOVE FLAG OF ADJACENT CURB AND GUTTER.

ALL MANHOLE CASTINGS AND VALVE BOXES WITHIN THE PAVING LIMITS OF THE STREET SHALL BE ADJUSTED TO A ONE-QUARTER INCH (¼") BELOW THE FINISHED ASPHALTIC UPPER LAYER. FAILURE TO MEET THIS TOLERANCE MAY REQUIRE REMOVAL AND REPLACEMENT OF THE PAVEMENT, TO LIMITS DETERMINED BY ENGINEER, AT CONTRACTOR'S EXPENSE.

BASE COURSE AROUND MANHOLE CASTINGS AND VALVE BOXES SHALL BE HAND TRIMMED AND COMPACTED WITH A VIBRATORY PLATE COMPACTOR.

THE FITCHBURG UTILITY DEPARTMENT SHALL INSPECT THEIR VALVE BOXES AND MANHOLES PRIOR TO PAVING. CONTRACTOR SHALL PROVIDE TWO (2) DAYS NOTICE PRIOR TO PAVING TO COORDINATE THE INSPECTION OF THE WATER VALVES. FOR CITY OF FITCHBURG UTILITY, CALL (608)270-4270.

CONTRACTOR SHALL FURNISH CLASS I BARRICADES WITH FLASHERS ON ALL ADJUSTED CASTINGS UNTIL PAVING HAS BEEN COMPLETED. TOPS OF CASTINGS AND VALVE BOXES SHALL BE OILED, OR PROTECTED BY OTHER METHODS TO PREVENT SEALING OF LIDS AND FILLING OF LIFT HOLES DURING PAVING. UPON COMPLETION OF PAVING OPERATIONS, CONTRACTOR SHALL CHECK ALL CASTINGS AND VALVE BOXES TO INSURE THAT THE LIDS ARE CLEAN AND OPERATIONAL.

THE THICKNESS OF LOWER AND/OR UPPER COURSE MIXTURE SHALL BE INSTALLED IN ONE COURSE EACH. THE MIXTURE SHALL BE LAID AND COMPACTED SO THAT THE AVERAGE YIELDS IN POUNDS PER SQUARE YARD CONFORM TO THE FOLLOWING CHART:

SURFACE & BINDER YIELD - # / S.Y.		
Thickness	Min.	Max.
1"	112	118
1 ½"	168	177
1 3/4"	196	206.5
2"	224	236
2 1/4"	252	265.5
2 ½"	280	295
3"	336	354

WHENEVER THE YIELDS FALL BELOW THE MINIMUM ALLOWABLE YIELDS SPECIFIED ABOVE, THE ENGINEER SHALL DETERMINE THE CORRECTIVE ACTION TO BE TAKEN. THE CORRECTIVE ACTION MAY INCLUDE REMOVAL AND REPLACEMENT OF THE AREA OF DEFICIENT THICKNESS, AN OVERLAY WITH APPROVED MATERIAL OF THE AREA OF DEFICIENT THICKNESS, OR SUCH OTHER ACTION AS THE ENGINEER SHALL DETERMINE. THE AREA OF DEFICIENT THICKNESS SHALL BE DETERMINED ON THE BASIS OF STREET AREA, OR AREA COVERED IN ONE DAY'S OPERATION, WHICHEVER IS LESS. THE ENGINEER'S DETERMINATION WILL BE BASED ON THE CIRCUMSTANCES OF THE AREA INVOLVED, AND WILL INCLUDE A DETERMINATION OF THE DISTRIBUTION OF COSTS OF THE CORRECTIVE WORK REQUIRED.

WHEN THE AVERAGE YIELD ON A PROJECT EXCEEDS THE MAXIMUM ALLOWABLE YIELD, ALL EXCESS MATERIAL SHALL BE PAID FOR AT THE RATE OF ONE-HALF, THE CONTRACT UNIT PRICE FOR THE TYPE OF MATERIAL INVOLVED. THE AVERAGE YIELD FOR THIS PURPOSE SHALL BE COMPUTED ON A DAILY BASIS, OR A STREET AREA, WHICHEVER COVERS THE SMALLEST AREA OF PAVING.

PLACE ASPHALT MIXTURE ON PREPARED SURFACE, SPREAD AND STRIKE-OFF. PLACE INACCESSIBLE AND SMALL AREAS BY HAND. PLACE EACH COURSE TO REQUIRED GRADE, CROSS-SECTION, AND COMPACTED THICKNESS.

PLACE ASPHALT IN STRIPS NOT LESS THAN TEN FEET (10') WIDE, UNLESS OTHERWISE ACCEPTABLE TO THE ENGINEER. COMPLETE LOWER COURSE FOR A SECTION BEFORE PLACING UPPER LAYER COURSE.

COLD WEATHER PAVING

CONTRACTOR SHALL NOT PLACE ASPHALTIC MIXTURE WHEN THE AIR TEMPERATURE APPROXIMATELY 3 FEET ABOVE GRADE, IN SHADE, AND AWAY FROM ARTIFICIAL HEAT SOURCE IS LESS THAN 40 DEGREES F UNLESS AN ENGINEER APPROVED COLD WEATHER PAVING PLAN IS IN EFFECT.

A COLD WEATHER PAVING PLAN SHALL BE SUBMITTED ANY TIME THE NATIONAL WEATHER SERVICE WEATHER FORECAST PREDICTS AMBIENT AIR TEMPERATURE LESS THAN 40 DEGREES F AT THE TIME OF PAVING. COLD WEATHER PAVING PLAN NEEDS TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF PAVING DURING COLD WEATHER CONDITIONS.

COLD WEATHER PAVING PLAN SHALL INCLUDE CHANGES TO MIX DESIGN, AND ANY OPERATIONAL AND EQUIPMENT CHANGES PLANNED TO DEAL WITH COLD WEATHER CONDITIONS.

ENGINEER APPROVAL OR ACCEPTANCE OF COLD WEATHER PAVING PLAN DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR THE QUALITY OF HMA PAVEMENT PLACED IN COLD WEATHER UNDER ANY CIRCUMSTANCES.

IF CONTRACTOR FAILS TO FOLLOW APPROVED COLD WEATHER PAVING PLAN, PAVING OPERATIONS WILL BE TERMINATED AND ALL MATERIAL PLACED WITHOUT FOLLOWING APPROVED COLD WEATHER PAVING PLAN MAY BE REMOVED AT THE CONTRACTOR'S EXPENSE.

CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH COLD WEATHER PAVING PLAN AND NO ADDITIONAL COMPENSATION FOR SUCH SHALL BE CONSIDERED.

NO ASPHALT PAVEMENT SHALL BE PLACED UNLESS THE AIR TEMPERATURE IS 40 DEGREES F AND RISING FOR UPPER LAYER AND 34 DEGREES F AND RISING FOR LOWER LAYERS. AIR TEMPERATURE SHALL BE MEASURED 3 FEET ABOVE GRADE, IN SHADE, AND AWAY FROM ARTIFICIAL HEAT SOURCE.

5.3.06 ROLLING

BEGIN ROLLING WHEN MIXTURE WILL BEAR ROLLER WEIGHT WITHOUT EXCESSIVE DISPLACEMENT. TWO OPERATIONAL ROLLERS MUST BE ON SITE AT ALL TIMES. IN THE EVENT A ROLLER DOES NOT WORK, THE PAVING OPERATION MUST CEASE IMMEDIATELY.

COMPACT MIXTURE WITH HOT HAND TAMPERS OR VIBRATING PLATE COMPACTORS IN AREAS INACCESSIBLE TO ROLLERS.

PERFORM FINISH ROLLING WHILE MIXTURE IS STILL WARM ENOUGH FOR REMOVAL OF ROLLER MARKS. CONTINUE ROLLING UNTIL ROLLER MARKS ARE ELIMINATED AND ASPHALT HAS ATTAINED THE MAXIMUM DENSITY.

5.3.07 JOINTS

JOINTS BETWEEN OLD AND NEW PAVEMENTS OR BETWEEN SUCCESSIVE DAY'S WORK SHALL BE CONSTRUCTED AND TREATED AS TO ENSURE THOROUGH AND CONTINUOUS BOND BETWEEN THE OLD AND NEW MIXTURES.

A. TRANSVERSE JOINTS. TRANSVERSE JOINTS SHALL BE CONSTRUCTED BY CUTTING THE MATERIAL BACK FOR ITS FULL DEPTH SO AS TO EXPOSE THE FULL DEPTH OF THE COURSE. WHERE A HEADER IS USED, THE CUTTING MAY BE OMITTED PROVIDED THE JOINT CONFORMS TO THE SPECIFIED THICKNESS. THESE JOINTS SHALL BE TREATED WITH TACK COAT MATERIAL.

B. LONGITUDINAL JOINT. THE LONGITUDINAL JOINT SHALL BE MADE BY OVERLAPPING THE SCREED ON THE PREVIOUSLY LAID MATERIAL FOR A WIDTH OF NOT MORE THAN TWO INCHES (2"), AND DEPOSITING A SUFFICIENT AMOUNT OF ASPHALTIC MIXTURE SO THAT THE FINISHED JOINT WILL BE SMOOTH AND TIGHT.

LONGITUDINAL JOINTS IN THE UPPER LAYER COURSE SHALL AT NO TIME BE PLACED IMMEDIATELY OVER SIMILAR JOINTS IN THE LOWER LAYER COURSE BENEATH. A MINIMUM DISTANCE OF TWELVE INCHES (12") SHALL BE PERMITTED BETWEEN THE LOCATION OF THE JOINTS IN THE LOWER LAYER COURSE AND THE LOCATION OF SIMILAR JOINTS IN THE UPPER LAYER COURSE ABOVE. THESE JOINTS SHALL BE TREATED WITH TACK COAT MATERIAL TO FULLY COAT THE JOINT SURFACE.

5.3.08 PRIME AND TACK COAT

IF ASPHALTIC UPPER LAYER COURSE IS APPLIED TO AN EXISTING STREET, THE EXISTING STREET OR LOWER COURSE SURFACE SHALL BE TACK COATED PRIOR TO UPPER LAYER PAVING.

PRIOR TO PLACEMENT OF TACK COAT, THE STREETS SHALL BE THOROUGHLY CLEANED AND BROOMED.

TACK COAT SHALL BE APPLIED IMMEDIATELY PRIOR TO PLACEMENT OF ASPHALTIC UPPER LAYER COURSE AND MUST BREAK PRIOR. THE RATE OF APPLICATION SHALL BE BETWEEN 0.05 AND 0.07 GALLONS PER SQUARE YARD AFTER DILUTION, AT A 50 PERCENT OR GREATER RESIDUAL ASPHALT CONTENT. THE ENGINEER RESERVES THE RIGHT TO TAKE A FIELD SAMPLE TO DETERMINE COMPLIANCE.

5.3.09 PAVEMENT MARKINGS

PAVEMENT MARKINGS SHALL BE APPLIED PER MANUFACTURER'S RECOMMENDATIONS AND WHEN THE OUTSIDE AIR TEMPERATURE IS 450F AND RISING. IF HIGHER TEMPERATURES ARE REQUIRED BY THE MANUFACTURER FOR THE SPECIFIED PAINT, THE MANUFACTURER'S RECOMMENDATIONS SHALL GOVERN.

5.3.10 PAVEMENT PATCHES AND REPAIRS

FULL DEPTH ASPHALT PATCH THICKNESS SHALL BE ONE INCH (1") THICKER THAN EXISTING. THE CITY MAY REQUIRE ADDITIONAL MILLING OF UPPER LAYERS TO IMPROVE JOINTS OR TO AVOID JOINTS IN THE DRIVE LANE.

PAVEMENT INDENTATIONS IN UPPER AND LOWER COURSES SHALL BE HEAT REPAIRED, VERSES REMOVED AND REPLACED, WHEN DIRECTED BY ENGINEER.

5.4 FIELD QUALITY CONTROL AND TESTING

5.4.01 TESTING

REFER TO WISDOT SPECIFICATIONS, SECTIONS 460.2.8.3 – 460.3.3.1 EXCEPT WHEREIN MODIFIED OR APPENDED:

THE CONTRACTOR SHALL ALLOW ACCESS BY THE ENGINEER TO OBSERVE CONTRACTOR SAMPLING, TESTING, AND MATERIAL PRODUCTION. THE CONTRACTOR SHALL ALLOW ACCESS BY THE CITY'S THIRD PARTY CONSULTANT LABORATORY TO SAMPLE PRODUCTION MATERIAL AT THE PLANT.

DENSITY TESTING:

PAVEMENT DENSITIES SHALL BE DETERMINED USING THE CITY OF FITCHBURG'S THIRD PARTY CONSULTANT. THE USE OF NUCLEAR DENSITY TESTING EQUIPMENT SHALL COMPLY WITH WISDOT AND THE DEPARTMENT OF HEALTH AND SAFETY PERTAINING TO THE USE OF THE NUCLEAR DENSITY EQUIPMENT.

DENSITY LOTS SHALL BE CALCULATED UNDER THE "NOMINAL" SYSTEM (UP TO SEVEN (7) TESTS PER 750 TON PER LAYER) ACCORDING THE WISDOT CONSTRUCTION MATERIALS MANUAL SECTION 8-15-10.2, FOR ALL PAVEMENT LENGTHS. ALL DENSITY TEST LOCATIONS SHALL BE RANDOMLY LOCATED THROUGHOUT THE LOT.

IT IS ENCOURAGED TO HAVE THE CONTRACTOR AND CITY SET UP A COMMON REFERENCE BLOCK, LOCATION DETERMINED AT THE CITY'S DISCRETION, FOR DAILY CHECKS OF NUCLEAR GAUGES.

WT JOB NUMBER - 2002139C

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COUNTY of DANE WISCONSIN 1839

DANE COUNTY EMERGENCY MANAGEMENT REMODEL
5415 KING JAMES WAY
FITCHBURG, WISCONSIN 53719

CLIENT APPROVAL
☐ APPROVED
☐ APPROVED AS NOTED
APPROVED BY / DATE:

ISSUE RECORD		
	DD SET	08/04/20
	CD CHECK SET	11/20/20
	98% CD REVIEW	02/11/21
	HVAC REDESIGN	04/30/21
	ISSUE FOR BID	06/08/21

CHECKED BY
JEG
DRAWN BY
BRA
DATE
5/28/2021 11:20:36 AM
PROJECT NUMBER
2020-001

CITY OF FITCHBURG PROJECT SPECIFICATIONS

C-7.2

HMA Pavement Densities shall conform to the following:

HMA PAVEMENT MINIMUM DENSITIES		
MINIMUM %DENSITY REQUIREMENT	UPPER LAYER	LOWER LAYER
Roadways	93.0	91.0
Basketball/Tennis Court/Shared-use Path	92%	92%

At the Engineer's discretion, if the average lot density falls below the minimum densities listed above, the material payment will be reduced based on the payment schedule below:

PAYMENT FACTORS	
PERCENT LOT DENSITY BELOW SPECIFIED MINIMUM	PAYMENT FACTOR (%t of contract price)
From 0.0 to 0.5	98
From 0.6 – 1.5	95
From 1.6 to 3.0	85
Greater than 3.0	Remove & Replace at Contractor's expense

ASSESSED TONNAGE MAY INCLUDE UP TO THE TOTAL DAY'S PRODUCTION. ALL AVAILABLE TEST DATA WILL BE REVIEWED BY THE CITY AND TAKEN INTO CONSIDERATION. THE FINAL ASSESSED TONNAGE WILL BE DETERMINED BY THE CITY AT THE CITY'S SOLE DISCRETION.

HMA MIXTURE TESTING:

THE CITY SHALL USE A THIRD PARTY CONSULTANT WISDOT QUALIFIED LABORATORY FOR VERIFICATION OF HMA SAMPLES. THE TESTING MAY INCLUDE ANY OF THE FOLLOWING:

1. GRADATION
2. ASPHALT CONTENT (AASHTO T-164)
3. AIR VOIDS
4. VMA

ALL TEST RESULTS WILL BE MADE AVAILABLE TO THE CONTRACTOR.

Individual tests of the HMA pavement properties must conform to the requirements below as compared to the submitted mix design:

HMA VERIFICATION PRODUCTION TESTING	
HMA PROPERTY	ALLOWABLE JMF TOLERANCE
#200 (0.075mm)	+/- 2.0%
%Va	+/- 1.3%
Asphalt Content (AASHTO T-164)	- 0.3%
Minimum % VMA	- 0.5%

At the Engineer's discretion, if the individual HMA property falls out of specification, the material payment will be reduced based on the payment schedule below.

HMA PAVEMENT REDUCTION OF PAYMENT SCHEDULE	
HMA PROPERTY	PAYMENT FACTOR (percent of contract price)
#200 (0.075mm)	95
Asphalt Content (AC) (AASHTO T-164)	90
%Va or %VMA	90

ASSESSED TONNAGE MAY INCLUDE UP TO THE TOTAL DAY'S PRODUCTION. ALL AVAILABLE TEST DATA WILL BE REVIEWED BY THE CITY AND TAKEN INTO CONSIDERATION. THE FINAL ASSESSED TONNAGE WILL BE DETERMINED BY THE CITY AT THE CITY'S SOLE DISCRETION.

IF MULTIPLE PAY FACTORS EXIST FOR THE SAME TONNAGE, THE ASSESSED PENALTY WILL USE THE LOWEST OF THE PAYMENT FACTORS. IT IS NOT INTENDED TO PENALIZE THE SAME MATERIAL TWICE.

THE CONTRACTOR MAY DISPUTE THE CITY'S QUALITY VERIFICATION TEST RESULTS BY HAVING THEIR RETAINED SAMPLE TESTED IN A SEPARATE, THIRD PARTY, WISDOT QUALIFIED LABORATORY. THE TEST RESULTS FROM THE CITY'S THIRD PARTY CONSULTANT LABORATORY AND THE CONTACTOR'S THIRD PARTY LABORATORY WILL BE AVERAGED FOR PAY ADJUSTMENTS.

SECTION 6 - STORM SEWER

6.1 GENERAL

6.1.01 RELATED DOCUMENTS

WISDOT SPECIFICATIONS, LATEST REVISION AVAILABLE AT HTTP://ROADWAYSTANDARDS.DOT.WI.GOV/STANDARDS/STNDSPEC/INDEX.HTM

CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION, AVAILABLE AT: HTTP://WWW.CITYOFMADISON.COM/BUSINESS/PW/SPECS.CFM

ASTM C76-90 –REINFORCED CONCRETE CULVERT, STORM DRAIN, AND SEWER PIPE

AASHTO M-198 – JOINTS FOR CIRCULAR CONCRETE SEWER AND CULVERT PIPE USING FLEXIBLE WATER TIGHT GASKETS

6.2 MATERIALS

6.2.01 BEDDING AND COVER

BEDDING AND COVER MATERIAL SHALL BE WASHED STONE, ALL OF WHICH PASSES A 1-1/2" SIEVE.

6.2.02 GRANULAR BACKFILL

GRANULAR BACKFILL FOR STORM SEWER SHALL BE GRADE 1 OR GRADE 2 AS SPECIFIED IN SECTION 209 OF THE WISDOT SPECIFICATIONS. USE OF SCREENINGS FOR GRANULAR BACKFILL MATERIAL IS PROHIBITED. NO CLAY LUMPS AND/OR FROZEN MATERIAL SHALL BE PRESENT.

6.2.03 STORM SEWER PIPE

REINFORCED CONCRETE PIPE SHALL BE THE ONLY STORM SEWER MATERIAL APPROVED FOR USE WITHIN PUBLIC RIGHTS OF WAY WITHOUT SPECIFIC WRITTEN PERMISSION FROM THE DEPARTMENT.

REINFORCED CONCRETE PIPE SHALL MEET THE STANDARD SPECIFICATIONS FOR REINFORCED CONCRETE CULVERT, STORM DRAIN, AND SEWER PIPE OF THE AMERICAN SOCIETY FOR TESTING MATERIALS, SERIAL DESIGNATION C76 FOR CIRCULAR PIPE, SERIAL DESIGNATION C507 FOR ELLIPTICAL PIPE. PROVIDE CLASS III UNLESS INDICATED OTHERWISE IN THE SPECIFICATIONS OR ON THE DRAWINGS.

JOINTS FOR CIRCULAR PIPE SHALL BE TONGUE AND GROOVE MEETING REQUIREMENTS OF ASTM C443.

6.2.04 APRON ENDWALLS REINFORCED CONCRETE PIPE APRON ENDWALLS SHALL BE THE ONLY ENDWALLS APPROVED FOR USE WITHIN PUBLIC RIGHTS OF WAY WITHOUT SPECIFIC WRITTEN PERMISSION FROM THE DEPARTMENT. PIPE CLASS SHALL MATCH THE ADJACENT PIPE MATERIAL UNLESS OTHERWISE APPROVED BY THE DEPARTMENT.

CUTOFF WALLS SHALL BE INSTALLED ON APRON ENDWALLS LOCATED ON THE DOWNSTREAM END OF PIPES THAT ARE 24ʺ OR GREATER, OR IF THE APRON ENDWALL IS LOCATED WITHIN THREE INCHES OF THE PERMANENT POOL ELEVATION.

6.2.05 PIPE GATES

PIPE GATES FOR REINFORCED CONCRETE PIPE APRON ENDWALLS SHALL BE PROVIDED IN ACCORDANCE WITH THE CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION, FOR ALL PIPES 15" IN DIAMETER AND LARGER THAT ARE UPSTREAM OR DOWNSTREAM OF A CLOSED
SYSTEM. REFER TO THE CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION FOR THE SPECIFICATIONS AND STANDARD DETAIL DRAWINGS.

6.2.06 STORM SEWER STRUCTURES

STORM SEWER STRUCTURES LESS THAN OR EQUAL TO 6-FT IN DIAMETER SHALL BE PRECAST REINFORCED CONCRETE WITH CORED, NON-SCORED, SMOOTH-FORMED OPENINGS. ALL PRECAST STORM SEWER STRUCTURES LIDS SHALL BE TONGUE AND GROOVE. STORM SEWER STRUCTURES GREATER THAN 6-FT IN DIAMETER SHALL BE FIELD POURED. IN LIEU OF CORED OPENINGS, STRUCTURES MAY ALSO HAVE FORMED OPENINGS AND/OR BE POURED IN PLACE.

2' X 3' INLETS SHALL CONFORM TO WISDOT TYPE 2X3-FT INLETS. FOUR (4), FIVE (5), AND SIX (6) FOOT DIAMETER MANHOLES SHALL CONFORM TO WISDOT TYPE 4-FT DIAMETER, 5-FT DIAMETER, AND 6-FT DIAMETER MANHOLES, RESPECTIVELY.

MANHOLES SHALL BE REINFORCED CONCRETE CONFORMING TO THE STANDARD SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS OF ASTM C478.

THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE CITY OF INLETS THAT MAY REQUIRE FALSE WALLS. FALSE WALLS SHALL FOLLOW STANDARD DETAIL DRAWING 6.04 AND MUST BE POURED PRIOR TO PLACEMENT OF CURB AND GUTTER.

ADJUSTING RINGS SHALL BE LADTECH© HDPE ADJUSTING RINGS OR APPROVED EQUAL. THE FIRST ADJUSTING RING SHALL BE SEALED TO THE CONE AND THE LAST ADJUSTING RING SHALL BE SEALED TO THE CASTING USING PRE-COMPRESSED BUTYL RUBBER 3/8" X 3.5". AN APPROVED BUTYL SEALANT OR A 3/8ʺ ROUND BUTYL SEALANT ROPE SHALL BE PLACED IN THE ANNULAR SPACE BETWEEN THE REMAINING RINGS. USE OF SHIMS TO ADJUST HDPE ADJUSTING RINGS IS PROHIBITED.

6.2.07 CASTINGS
CASTINGS FOR VARIOUS STRUCTURE TYPES SHALL BE PROVIDED AS FOLLOWS. CONTRACTOR SHALL CORRECTLY ORIENT THE INLET GRATES RELATIVE TO THE DIRECTION OF FLOW AS DIRECTED BY THE ENGINEER. INLET CURB BOX HEADS SHALL READ ©DUMP NO WASTE DRAINS TO LAKEʺ PER STANDARD DETAIL DRAWING 6.02.

Structure Type	Neenah Casting Designator
Type 2x3-FT Inlet (Continuous Grade)	R-3067-7004-L (vane grate)
Type 2x3-FT Inlet (Low Point, single)	R-3067-7004-VB (two-way vane grate)
Type 2x3-FT Inlet (Low Point, twin)	R-3067-7004-L (vane grate)
Type 2x3-FT Inlet (Driveway)	R-3246-1 (grate as noted for conditions above)
Manhole	R-1550 (self seal, non-rock)

Non-rocking cast iron adjusting rings shall be as specified in SECTION 5 – PAVEMENTS.

6.3 EXECUTION

6.3.01 GENERAL

BEFORE THE START OF CONSTRUCTION, THE CONTRACTOR SHALL VERIFY EXISTING STORM SEWERS ELEVATIONS WITH PROPOSED PLAN ELEVATIONS. ALL SIGNIFICANT DIFFERENCES BETWEEN EXISTING STORM SEWER INVERTS AND PLAN INVERTS (GREATER THAN 0.1") SHALL BE REPORTED TO THE ENGINEER.

STORM SEWER SHALL BE INSTALLED TO AN ELEVATION TOLERANCE OF PLUS OR MINUS 0.1 FEET OF THE PLAN ELEVATION OR ELEVATION PROVIDED ON THE GRADE SHEET AT ANY POINT ALONG THE MAIN.

WHEN A SEWER CROSSES UNDER A WATER MAIN, PROVIDE A MINIMUM OF SIX INCHES (6ʺ) SEPARATION BETWEEN THE BOTTOM OF THE WATER MAIN AND THE TOP OF THE SEWER. WHEN A SEWER CROSSES OVER A WATER MAIN, PROVIDE A MINIMUM OF 18 INCHES SEPARATION BETWEEN THE TOP OF THE WATER MAIN AND THE BOTTOM OF THE STORM SEWER.

6.3.02 HANDLING OF MATERIALS

HANDLE MATERIALS WITH CARE TO AVOID DAMAGE. DO NOT DUMP OR DROP MATERIALS. REMOVE ALL DAMAGED OR FLAWED MATERIALS FROM THE SITE.

ARRANGE FOR SUITABLE SITES FOR MATERIAL STORAGE.

6.3.03 LAYING OF PIPE

THE TRENCH SHALL BE EXCAVATED TO AN ELEVATION AT LEAST SIX INCHES (6") BELOW THE ELEVATION ESTABLISHED FOR THE BOTTOM OF THE PIPE. THIS DEPTH SHALL BE BACKFILLED WITH BEDDING MATERIAL. BEDDING AND COVER MATERIAL SHALL BE USED FOR THE FULL CROSS SECTION OF THE EXCAVATED TRENCH TO THE SPRINGLINE OF THE PIPE BEING INSTALLED. GRANULAR MATERIAL SHALL BE PROVIDED FROM THE SPRINGLINE OF THE PIPE TO THE PROPOSED PAVEMENT SUBGRADE.

COMPACTION OF GRANULAR BACKFILL MATERIAL SHALL MEET 95% MODIFIED PROCTOR, THE STANDARD SPECIFICATION OF ASTM D-1557, WITHIN THREE VERTICAL FEET (3') OF THE PAVEMENT SUBGRADE. COMPACTION OF GRANULAR BACKFILL MATERIAL SHALL MEET 90% MODIFIED PROCTOR, THE STANDARD SPECIFICATION OF ASTM D-1557, IN THE CROSS-SECTIONAL AREA OF THE TRENCH BETWEEN THE SPRINGLINE OF THE PIPE AND THE PLANE THREE VERTICAL FEET (3') FROM THE PROPOSED PAVEMENT SUBGRADE.

NOT MORE THAN 200 FEET OF TRENCH SHALL BE OPENED AT ANY ONE TIME. NOT MORE THAN 100 FEET OF TRENCH MAY BE OPENED IN ADVANCE OF THE COMPLETED PIPE LAYING OPERATIONS; AND NOT MORE THAN ONE STREET CROSSING MAY BE OBSTRUCTED BY THE SAME TRENCH AT ANY ONE TIME.

LAY PIPE UNIFORMLY TO LINE AND GRADE SO THAT THE FINISHED SEWER PRESENTS A UNIFORM BORE. NOTICEABLE VARIATIONS FROM TRUE ALIGNMENT AND GRADE WILL BE SUFFICIENT CAUSE FOR REJECTION OF THE WORK.

COMMENCE AT THE LOWEST POINT AND PROCEED TO THE UPPER END. LAY PIPE WITH BELL-END POINTING UP-GRADE.

ALL STORM SEWER PIPE MUST EXTEND THROUGH THE ENTIRE STRUCTURE WALL PLUS TWO INCHES (2ʺ) BEYOND.

WHEN WORK HAS STOPPED FOR ANY REASON, SECURELY PLUG THE END OF THE PIPE.

PIPE JOINTING: ASSEMBLE JOINTS IN ACCORDANCE WITH THE PIPE MANUFACTURER'S INSTRUCTIONS.

CONCRETE PIPE PICK HOLES SHALL BE TAR SEALED WITH A FORMED CONCRETE PLUG, OR PLUGGED WITH A POPIT PLASTIC PLUG OR APPROVED ALTERNATIVE.

6.3.04 BEDDING AND COVER

PROVIDE A MINIMUM OF SIX INCHES (6ʺ) OF BEDDING MATERIAL UNDER THE PIPE BARREL AND FOUR INCHES (4ʺ) UNDER THE BELL. SPADE OR SHOVEL-SLICE THE MATERIAL SO THAT IT FILLS AND SUPPORTS THE HAUNCH AREA AND ENCASES THE PIPE. IF EXCAVATION IS CARRIED DEEPER THAN SIX INCHES (6ʺ) BELOW THE PIPE BARREL, BACKFILL THE EXCESS DEPTH WITH BEDDING MATERIAL. AFTER THE PIPE HAS BEEN LAID AND JOINTED, PLACE COVER MATERIAL BY HAND OR EQUALLY CAREFUL MEANS TO THE SPRINGLINE OF THE PIPE. COMPACT COVER MATERIAL USING TAMPING BARS AND/OR MECHANICAL TAMPERS.

SEE STANDARD DETAIL DRAWING 6.01 STORM SEWER TRENCH.

6.3.05 APRON ENDWALLS

JOINT TIES SHALL BE INSTALLED AT THE LAST UPSTREAM AND DOWNSTREAM TWO (2) JOINTS ON ANY PIPE RUN ENDING IN AN APRON ENDWALL CONSTRUCTED WITH REINFORCED CONCRETE PIPE OR HORIZONTAL ELLIPTICAL REINFORCED CONCRETE PIPE OF ANY SIZE. RIPRAP, UNDERLINED WITH GEOTEXTILE FABRIC,
SHALL BE PROVIDED AT THE ENDS OF THE APRON ENDWALL AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. PLACEMENT SHALL BE IN ACCORDANCE WITH SECTION 606 OF THE WISDOT SPECIFICATIONS. GEOTEXTILE FABRIC SHALL EXTEND A MINIMUM OF TWO FEET (2') UNDER THE APRON ENDWALL. SEE STANDARD DETAIL DRAWING 6.06 RIP RAP AND ENDWALL INSTALLATION.

PICK HOLES SHALL BE SEALED WITH CONCRETE ON THE INSIDE AND THE OUTSIDE OF THE STRUCTURE PRIOR TO BACKFILLING.

6.3.06 PIPE GATES

PIPE GATES FOR REINFORCED CONCRETE APRON ENDWALLS SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION.

6.3.07 STORM SEWER STRUCTURES

STORM SEWER STRUCTURES SHALL HAVE A MINIMUM OF THREE INCHES (3") AND A MAXIMUM OF NINE INCHES (9ʺ) OF ADJUSTING RINGS. ADJUSTING RINGS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND AS HEREIN SPECIFIED. PRIOR TO INSTALLATION OF ADJUSTING RINGS, CLEAN TOP OF CONCRETE STRUCTURE OF DEBRIS. CREATE A FLAT SEALABLE SURFACE USING NON-SHRINK MORTAR (4,000 PSI) IF THE TOP OF THE CONCRETE STRUCTURE IS TOO BADLY CHIPPED TO INSTALL THE RINGS CORRECTLY. FOR STORM SEWER MANHOLE STRUCTURES INSTALL PRE-COMPRESSED BUTYL RUBBER 3/8ʺ X 3.5ʺBETWEEN STRUCTURE AND FIRST RING WHERE THE FLAT AREA OF THE RING WILL BE IN CONTACT WITH THE STRUCTURE FOR THE ENTIRE 360 DEGREES, ONE (1) ¼" BEAD OF SEALANT OR 3/8" ROUND BUTYL SEALANT ROPE ON THE ENTIRE 360 DEGREES OF EACH RINGS MALE LIP, AND INSTALL PRE-COMPRESSED BUTYL RUBBER 3/8" X 3.5" ON TOP OF THE UPPER RING IN A LOCATION SO THAT IT CONTACTS THE COVER FRAME THE FULL 360 DEGREES. MAKE SURE ALL LOOSE RUST IS REMOVED FROM THE CASTING BEFORE IT IS PLACED ON THE ADJUSTING RINGS.

STORM SEWER 2'X3' INLETS, INSTALL PRE-COMPRESSED BUTYL RUBBER 3/8" X 3.5" BETWEEN STRUCTURE AND FIRST RING AND THE TOP RING AND THE CASTING. WRAP OUTSIDE OF THE ADJUSTING RINGS ON INLETS WITH MINIMUM FOUR (4) OUNCE NON-WOVEN FILTER FABRIC. LAP FILTER FABRIC OVER INLET STRUCTURE AND CASTING BY FOUR INCHES (4") AND ITSELF BY ONE FOOT (1'). FASTEN FILTER FABRIC IN PLACE DURING BACKFILL OPERATIONS. ALL ADJUSTMENT FOR MATCHING ROAD GRADE SHALL BE MADE BY UTILIZING A MOLDED AND INDEXED SLOPE RING. USE OF MORTAR OR SHIMS, OR MODIFYING ADJUSTING RINGS

TO MATCH ROAD GRADES IS PROHIBITED. A FALSE WALL MUST BE POURED IF A HORIZONTAL ADJUSTMENT IS NECESSARY, SEE STANDARD DETAIL DRAWING 6.04 INLET FALSE WALL.

STORM SEWER MANHOLE RIMS MAY NEED ADJUSTMENT FROM THE PLAN ELEVATION TO MEET FIELD CONDITIONS. THE COST OF THIS WORK SHALL BE INCIDENTAL TO THE CONTRACT.

POURED CONCRETE COLLARS SHALL BE VIBRATED AND TROWEL FINISHED. COLLAR SHALL BE EIGHT INCH BY EIGHT INCH (8ʺX8ʺ) ON THE EXTERIOR AND EXTEND AROUND THE ENTIRE PIPE ON BOTH SIDES. THE INSIDE AND OUTSIDE OF THE COLLARS SHALL BE COMPLETED AT THE SAME TIME. CONCRETE COLLARS SHALL CURE FOR 24 HOURS AND BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO BACKFILLING. ALL STORM SEWER STRUCTURES SHALL HAVE A FIELD POURED BENCH WITH A POSITIVE FLOW CHANNEL AND BENCH. CONCRETE SHALL BE PER SECTION 4.2.01 – CONCRETE.

PICK HOLES SHALL BE SEALED WITH CONCRETE ON THE INSIDE AND THE OUTSIDE OF THE STRUCTURE PRIOR TO BACKFILLING.

6.3.08 CASTINGS

INLET CASTINGS SHALL BE SET TO FINAL GRADE WITH ADJUSTING RINGS PER SECTION 6.3.08 –STORM SEWER STRUCTURES PRIOR TO AND SEPARATE FROM POURING THE CURB AND GUTTER. INLET CASTINGS SHALL BE SET WITH AN EIGHT INCH (8ʺ) FLOW LINE DEPRESSION FROM THE TOP OF CURB. CONCRETE SHALL BE POURED BEHIND THE INLET CASTING SO AS TO COVER THE BOLT HOLES.

MANHOLE CASTINGS IN ROADWAYS TEMPORARILY RECEIVING LOWER COURSE ONLY, SHALL BE SET TO BINDER GRADE. MANHOLE CASTINGS SHALL BE SET ONE-QUARTER INCH (¼ʺ) BELOW FINAL GRADE IN ALL OTHER AREAS UNLESS OTHERWISE DIRECTED BY ENGINEER. "SCAB" AND MONOLITHIC RAMPING IS PROHIBITED.

MANHOLE CASTINGS SET TO BINDER GRADE, SHALL BE BROUGHT TO ONE-QUARTER INCH (¼ʺ) BELOW SURFACE GRADE IMMEDIATELY PRIOR TO PLACEMENT OF SURFACE COARSE, WITH NON-ROCKING CAST IRON ADJUSTMENT RINGS PER SECTION 5.2.06 –ADJUSTING RINGS .

6.3.09 EXISTING STORM SEWER CONNECTIONS

ALL STORM SEWER CONNECTIONS TO EXISTING STRUCTURES SHALL BE MADE BY USING A CORING MACHINE WITH A POURED CONCRETE COLLAR. THE INSIDE AND OUTSIDE OF THE POURED CONCRETE COLLAR SHALL BE COMPLETED AT THE SAME TIME. CONCRETE COLLAR SHALL BE VIBRATED AND TROWEL FINISHED. POURED CONCRETE COLLARS SHALL CURE FOR 24 HOURS AND BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO BACKFILLING. FOR CONNECTIONS, THE CONTRACTOR SHALL HAVE THE OPTION OF USING AN APPROVED WATERTIGHT ADAPTOR FOR THE JOINT.

A POURED CONCRETE COLLAR MAY BE REQUIRED AT THE JUNCTION OF A NEW RCP PIPE TO AN EXISTING RCP PIPE WHEN IDENTIFIED ON THE PLANS OR DIRECTED BY ENGINEER. THE JUNCTION SHALL BE CLEAN CUT WITH NO GAP. CONCRETE COLLAR SHALL HAVE A MINIMUM WIDTH EXTENDING ONE FOOT (1') IN EITHER DIRECTION OF THE JOINT AND A MINIMUM THICKNESS AROUND THE PIPE OF EIGHT INCHES (8ʺ). CONCRETE COLLAR SHALL BE VIBRATED AND TROWEL FINISHED. POURED CONCRETE COLLARS SHALL CURE FOR 24 HOURS AND BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO BACKFILLING.

6.3.10 ABANDONMENT A. STRUCTURES. THE CASTING, ALL ADJUSTING RINGS, AND THE TOP THREE FEET (3') OF THE STRUCTURE SHALL BE REMOVED. CASTINGS ARE THE PROPERTY OF THE CITY. A HOLE SHALL BE CUT INTO THE BOTTOM OF THE STRUCTURE TO ACCOMMODATE DRAINAGE THROUGH THE STRUCTURE. ALL OPENINGS WITHIN THE STRUCTURE SHALL BE PLUGGED WITH CONCRETE. THE ENTIRE STRUCTURE SHALL BE COMPLETELY FILLED IN WITH GRANULAR MATERIAL OR CELLULAR CONCRETE. ALL DISTURBED AREAS SHALL BE BACKFILLED WITH THE REQUIRED BACKFILL MATERIAL.

B. PIPE. THE APRON ENDWALL SHALL BE REMOVED. THE PIPE END SHALL BE PLUGGED WITH CONCRETE.

6.3.11 DEWATERING

IF CONDITIONS WARRANT, CONTRACTOR SHALL FURNISH AND INSTALL WELL POINT SYSTEMS OR DEEP WELLS. SPACING AND DEPTH OF WELL POINTS OR DEEP WELLS SHALL BE ADEQUATE TO LOWER THE GROUND WATER TABLE BELOW THE TRENCH BOTTOM. NO EXTRA PAYMENT WILL BE MADE FOR DEWATERING OF THE TRENCH WHETHER ACCOMPLISHED BY THE USE OF SUMPS AND PUMPS, WELL POINT SYSTEMS OR DEEP WELLS.

CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS DURING THE DEWATERING OPERATION TO PROTECT ADJACENT STRUCTURES AGAINST SUBSIDENCE, FLOODING OR OTHER DAMAGE.

IN AREAS WHERE CONTINUOUS OPERATION OF DEWATERING PUMPS IS NECESSARY, CONTRACTOR SHALL AVOID NOISE DISTURBANCE TO NEARBY RESIDENCES TO THE GREATEST EXTENT POSSIBLE BY USING ELECTRIC DRIVEN PUMPS, INTAKE AND EXHAUST SILENCERS OR HOUSING TO MINIMIZE NOISE.

UPON COMPLETION OF THE DEWATERING PROJECT, ALL DEWATERING WELLS SHALL BE PERMANENTLY ABANDONED. IF DEWATERING WELLS ARE LESS THAN 25 FEET DEEP THEY SHALL BE PERMANENTLY ABANDONED BY REMOVING THE WELL CASING AND SCREENS AND FILLING THE BOREHOLE WITH BENTONITE. IF DEWATERING WELLS ARE 25 FEET DEEP OR GREATER, THEY SHALL BE ABANDONED PER NR 812.26.

6.3.12 FROST CLEARANCES

STORM SEWERS OR CULVERTS, WHICH CROSS AN ACTIVE SEWER, WATER MAIN OR LATERAL SHALL HAVE A MINIMUM CLEAR VERTICAL CLEARANCE OF THREE FEET (3'). CROSSINGS WITH LESSER VERTICAL CLEARANCE SHALL BE PROTECTED FROM FROST DAMAGE BY PLACEMENT OF TWO SHEETS (4'X8') OF TWO-INCH THICK R-10, 25 PSI, EXTRUDED POLYSTYRENE BOARD INSULATION (FOUR INCHES (4ʺ) TOTAL) STAGGERED AS DIRECTED BY THE ENGINEER.

6.4 FIELD QUALITY CONTROL AND TESTING

6.4.01 TELEVISING

ALL STORM SEWERS, PIPES AND STRUCTURES, SHALL BE TELEVISED.

CLOSED CIRCUIT TELEVISION SHALL BE UTILIZED FOR INSPECTING THE INTERIOR OF ALL COMPLETED SECTIONS OF THE MAINS. TELEVISING SHALL TAKE PLACE AFTER ALL UTILITIES ARE INSTALLED, BACKFILLED AND COMPACTED, ALL STORM SEWER HAS BEEN CLEANED, ALL ROAD UNDERCUTS ARE COMPLETE, AND PRIOR TO PLACEMENT OF ANY HARD SURFACE. FLASH DRIVE RECORDINGS OF THESE INSPECTIONS AND WRITTEN AND PDF LOGS OF SAME SHALL BE SUBMITTED TO AND REVIEWED BY THE ENGINEER FIVE BUSINESS DAYS PRIOR TO THE PLACEMENT OF ANY HARD SURFACE. FLASH DRIVE RECORDINGS AND WRITTEN AND PDF LOGS SUBMITTED TO THE ENGINEER SHALL EXCLUSIVELY BE FOR STORM SEWER, OR FLASH DRIVE RECORDINGS AND WRITTEN AND PDF LOGS FOR SANITARY SEWER SHALL BE SUBMITTED SEPARATELY. INSPECTION RECORDS SHALL BE OF SUITABLE FORMAT, AND SHALL INCLUDE, BUT NOT NECESSARILY BE LIMITED TO, THE FOLLOWING DATA:

PROJECT TITLE, OWNER NAME
DATE OF INSPECTION, TYPE OF PIPE AND SIZE
WEATHER
NAMES OF INSPECTORS AND TECHNICIANS
LOCATION OF LINE
MANHOLE NUMBERS, SECTION LENGTH
DIRECTION OF INSPECTION AND MEASUREMENTS
LOCATION, SIZE, AND DIRECTION OF ALL LATERALS, INCLUDING LATERALS EXTENDING FROM MANHOLES
GENERAL CONDITION OF LINE
DEFLECTIONS (VERTICAL AND HORIZONTAL)
JOINT CONDITIONS
POINTS OF INFILTRATION, LOCATIONS OF OBSTRUCTIONS

THE TELEVISION CAMERA USED SHALL BE SPECIFICALLY DESIGNED AND CONSTRUCTED FOR SEWER INSPECTION AND SHALL TAKE PICTURE IN COLOR. BLACK AND WHITE IMAGERY SHALL NOT BE ACCEPTED. LIGHTING FOR THE CAMERA SHALL BE OPERATIVE IN 100 PERCENT HUMIDITY CONDITIONS. THE CAMERA SHALL HAVE A MINIMUM OF 720X480 RESOLUTION. PICTURE QUALITY AND DEFINITION SHALL BE TO THE COMPLETE SATISFACTION OF THE OWNER. THE IMPROVEMENTS SHALL NOT BE ELIGIBLE FOR ACCEPTANCE PRIOR TO CONTRACTOR'S SUBMISSION OF TELEVISING RECORDS WHICH ARE DEEMED SATISFACTORY BY THE OWNER.

THE CONTRACTOR SHALL, PRIOR TO TELEVISING, DEPOSIT INTO THE NEW SEWER MAINS AND SERVICES A MINIMUM AMOUNT OF WATER AS DIRECTED BY THE ENGINEER TO ALLOW FOR INDICATION OF SAGS IN THE PIPE.

FLASH DRIVE RECORDS SHALL BE MADE OF ALL SECTIONS OF THE NEW SEWER MAIN. THE VIDEO SHALL BE MADE CONTINUOUSLY AS THE CAMERA IS PULLED OR DRIVEN THROUGH THE LINE AND SHALL INCLUDE A PANORAMA VIEW OF EACH MANHOLE, AS WELL AS CONFIRMATION THAT A PLUG HAS BEEN INSTALLED ON THE PIPE EACH RECORDING SHALL BE IN FLASH DRIVE FORMAT AND SHALL BE NUMBERED AND DATED. A LIST SHALL BE PROVIDED ON THE CONTAINER FOR EACH FLASH DRIVE INDICATING THE FLASH DRIVE NUMBER, PROJECT NAME AND SECTIONS OF SEWER INCLUDED. ALL RECORDINGS SHALL BE MADE ON NEW FLASH DRIVES AND THE FLASH DRIVES SHALL BECOME THE PROPERTY OF THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING ALL SAFETY EQUIPMENT NECESSARY TO COMPLETE THE WORK IN COMPLIANCE WITH APPLICABLE OSHA AND DCOM STANDARDS.

SECTION 7 - WATER MAINS, HYDRANTS, AND SERVICE LATERALS

7.1 GENERAL

7.1.01 RELATED DOCUMENTS

WUCA SPECIFICATIONS, LATEST EDITION

AMERICAN WATER WORKS ASSOCIATION STANDARDS (AWWA), LATEST EDITION

WISDOT SPECIFICATIONS, LATEST REVISION AVAILABLE AT HTTP://ROADWAYSTANDARDS.DOT.WI.GOV/STANDARDS/STNDSPEC/INDEX.HTM

7.1.02 DESCRIPTION OF WORK

THIS SECTION INCLUDES REQUIREMENTS FOR THE PROVISION AND INSTALLATION OF WATER MAINS, FIRE HYDRANTS, WATER SERVICES, AND RELATED FITTINGS.

7.2 MATERIALS

7.2.01 BEDDING AND COVER

BEDDING AND COVER MATERIAL FOR WATER MAIN, VALVES, HYDRANTS, HYDRANT LEADS, WATER SERVICES, AND RELATED FITTINGS, SHALL BE APPROVED BEDDING SAND WITH 100% OF MATERIAL PASSING A 3/8ʺ SIEVE. NO NATIVE MATERIAL FROM TRENCH SHALL BE USED FOR BEDDING OR COVER MATERIAL. UNWASHED BANK RUN SAND AND CRUSHED BANK RUN GRAVEL WILL BE CONSIDERED GENERALLY ACCEPTABLE COVER MATERIAL.

7.2.02 GRANULAR BACKFILL

GRANULAR BACKFILL FOR WATER MAIN SHALL BE GRADE 1 OR GRADE 2 AS SPECIFIED IN SECTION 209 OF THE WISDOT SPECIFICATIONS. USE OF SCREENINGS FOR GRANULAR BACKFILL MATERIAL IS PROHIBITED. NO CLAY LUMPS AND/OR FROZEN MATERIAL SHALL BE PRESENT.

7.2.03 BACKFILL MATERIAL

WHEN THE TYPE OF BACKFILL MATERIAL IS NOT SPECIFIED, EXCAVATED BACKFILL MATERIAL MAY BE USED PROVIDED, THAT SUCH MATERIAL CONSISTS OF LOAM CLAY, SAND, GRAVEL, OR OTHER MATERIALS, WHICH, IN THE OPINION OF THE ENGINEER, ARE SUITABLE FOR BACKFILLING. ALL BACKFILL MATERIALS SHALL BE FREE FROM CINDERS, ASHES, REFUSE, ORGANIC MATTER, BOULDERS, ROCKS OR STONE, FROZEN LUMPS OR OTHER SUCH DELETERIOUS, UNSUITABLE MATERIAL.

7.2.04 WATER MAIN PIPE, FITTINGS, AND ACCESSORIES

ALL WATER MAIN PIPE, FITTINGS AND SPECIALS SHALL BE DUCTILE IRON CONFORMING TO AWWA C151 AND SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA (U.S.) AND LABELED AS SUCH. ALL WATER MAIN PIPE AND FITTING MANUFACTURERS SHALL BE U.S. COMPANIES WITH THEIR HEADQUARTERS LOCATED IN THE U.S. USE OF FOREIGN MATERIALS IS PROHIBITED. THICKNESS CLASS AND JOINT STYLE SHALL BE AS SPECIFIED BELOW FOR TYPE OF INSTALLATION. USE OF POLYVINYL CHLORIDE WATER PIPE OR OTHER COMPOSITE MATERIALS IS NOT ALLOWED.

A. PIPE. ALL BURIED WATER MAIN PIPE SHALL BE PUSH-ON OR MECHANICAL JOINT AND MINIMUM SPECIAL THICKNESS CLASS 52 WITH A MINIMUM RATED WORKING PRESSURE OF 350 PSI. PIPE WALL THICKNESS SHALL ALSO MEET THE REQUIREMENTS OF AWWA C150 FOR BURIED PIPING WITH DEPTH AND COVER AS SHOWN IN FIGURE 1 FOR LAYING CONDITION TYPE 5 WITH THE ADDITION OF ONE FOOT (1') OF COVER OVER TOP OF PIPE. THE WORDS ©DUCTILE IRONʺ OR ©DIʺ ALONG WITH THE WEIGHT AND THICKNESS CLASS OF PIPE SHALL BE PLAINLY MARKED ON THE EXTERIOR OF EACH WATER MAIN PIPE.

ALL PIPE SHALL BE FURNISHED WITH CABLE BOND CONDUCTOR OR ELECTROBOND CONDUCTIVITY STRIPS. THERMITE WELDED STRAPS ARE ALLOWED PROVIDED WELD POINTS ARE THOROUGHLY COATED WITH BITUMASTIC MATERIAL.

INNER SURFACES OF ALL DUCTILE IRON PIPING SHALL BE CEMENT MORTAR LINED AND COATED PER AWWA C104. ALL BURIED DUCTILE IRON PIPING SHALL BE COATED ON THE OUTSIDE PER AWWA C104.

ALL EXPOSED WATER MAIN, INTERIOR PIPING, AND PIPING IN PITS OR MANHOLES SHALL BE FLANGED JOINT AND MINIMUM SPECIAL THICKNESS CLASS 53 WITH A MINIMUM RATED WORKING PRESSURE OF 350 PSI. PIPE WALL THICKNESS SHALL ALSO MEET THE REQUIREMENTS OF AWWA C115 FOR FLANGED JOINT.

EXPOSED INTERIOR PIPING SHALL BE FURNISHED WITH OUTSIDE SURFACES PREPARED IN ACCORDANCE WITH NEAR WHITE GRADE NAPF 500-03, REMOVING ALL DIRT, RUST SCALE, AND FOREIGN MATERIALS. CLEANED SURFACES SHALL BE SHOP PRIMED. SHOP PRIMING SHALL BE WITH ONE COAT OF TNEMEC 69-1255 HI-BUILD EPOXOLINE PRIMER, OR EQUAL, APPLIED TO A MINIMUM OF 5.0MILS DRY THICKNESS. PRIMER USED SHALL BE COMPATIBLE WITH PROPOSED FINISH COATS; CONTRACTOR TO VERIFY. ALL PIPING, SUPPORTS, AND APPURTENANCES SHALL BE FURNISHED SHOP PRIMED, CLEAN, AND READY TO ACCEPT FINISH PAINTING BY CONTRACTOR, WITH A MINIMAL AMOUNT OF SURFACE PREPARATION.

IN CASES WHERE CORPORATION STOPS ARE TO BE TAPPED INTO MAINS, PIPE WALL THICKNESS SHALL BE FURNISHED AS SPECIFIED IN AWWA C151. PIPE SADDLES MAY BE FURNISHED IN LIEU OF PIPE THICKNESS AS APPROVED BY UTILITY.

B. GASKETS. MECHANICAL JOINTS OR PUSH-ON JOINTS SHALL UTILIZE VULCANIZED SYNTHETIC RUBBER GASKETS AND SHALL CONFORM TO AWWA C111. BOLTS ON THE EXTERIOR JOINTS SHALL BE HIGH-STRENGTH LOW-ALLOW STEEL (CORTEN OR EQUAL) CONFORMING TO AWWA C111. CERTIFICATE TO THE EFFECT SHALL BE PROVIDED.

ALL VALVES, HYDRANTS, AND FITTINGS REQUIRE ARMOR TIPPED GASKETS AT MECHANICAL JOINTS. LEAD TIPPED CONDUCTIVITY GASKETS AND BRONZE WEDGES ARE PROHIBITED.

USE RESTRAINED JOINT LOCKING GASKETS WHEN ELECTING TO OR ARE OTHERWISE REQUIRED TO MEET THRUST-RESTRAINT REQUIREMENTS. RESTRAINED-JOINT LOCKING GASKETS MUST BE CERTIFIED AS COMPLIANT FOR USE WITH THE FURNISHED PIPE MATERIAL BY THE PIPE MANUFACTURER.

IF CONTAMINATED SOILS ARE ENCOUNTERED GASKETS SHALL BE AS RECOMMENDED BY ENGINEER.

C. POLYETHYLENE ENCASEMENT. ALL BURIED DUCTILE IRON WATER MAIN PIPING AND FITTINGS SHALL BE POLYETHYLENE ENCASED IN ACCORDANCE WITH AWWA C105. POLYETHYLENE ENCASEMENT SHALL BE A MINIMUM 8MIL THICKNESS AND INSTALLED IN ACCORDANCE WITH AWWA C105.

D. RESTRAINTS. MEGALUG GLANDS SHALL BE EBAA IRON INC. SERIES 1100, OR APPROVED EQUAL. THREADED RODS FOR RESTRAINT SHALL BE ¾-INCH 304 STAINLESS STEEL THREADED RODS WITH STAINLESS STEEL NUTS AND WASHERS.

WT JOB NUMBER - 2002139C

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DD SET	08/04/20
CD CHECK SET	11/20/20
98% CD REVIEW	02/11/21
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CITY OF FITCHBURG PROJECT SPECIFICATIONS

C-7.3

E. FITTINGS. ALL WATER MAIN FITTINGS SHALL BE DUCTILE IRON CONFORMING TO AWWA C153 OR AWWA C110.

SLIP JOINT FITTINGS ARE PROHIBITED.

INNER SURFACES OF ALL DUCTILE IRON PIPE FITTINGS SHALL BE CEMENT MORTAR LINED AND COATED PER AWWA C104. ALL BURIED DUCTILE IRON PIPE FITTINGS SHALL BE COATED ON THE OUTSIDE PER AWWA C104.

WATER MAIN PLUGS; IN THE ABSENCE OF A FLUSHING HYDRANT, CONTRACTOR SHALL FURNISH AND INSTALL MECHANICAL JOINT CAPS WITH A ¾" CORPORATION STOP IN ALL PLUGGED DEAD ENDS. CARE SHALL BE TAKEN IN PLACING CONCRETE FOR THRUST BLOCKS TO PROTECT THE CORPORATION AND RETAIN OPERABILITY. ALL ENDS SHALL BE MARKED WITH A 10-FOOT, 4X4" PLACED AT THE INVERT AND PAINTED BLUE.

TAPPING SLEEVES SHALL BE SMITH BLAIR 622, EPOXY COATED CARBON STEEL SLEEVE WITH MECHANICAL JOINT OUTLET AND STAINLESS STEEL BOLTS, OR APPROVED EQUAL.

7.2.05 VALVES AND VALVE BOXES

RESILIENT WEDGE GATE VALVES: ALL VALVES 16" OR SMALLER SHALL BE RESILIENT SEAT GATE VALVES MEETING THE REQUIREMENTS OF AWWA C509. GATE VALVES SHALL HAVE DUCTILE IRON BODY,
RESILIENT WEDGE, NON-RISING STEM AND O-RING PACKING BOX, AND RATED FOR 250-PSI WORKING PRESSURE. ALL WATER MAIN GATE VALVES SHALL HAVE MECHANICAL JOINT ENDS UNLESS OTHERWISE SPECIFIED. VALVES SHALL BE AMERICAN FLOW CONTROL RESILIENT WEDGE GATE VALVES OR APPROVED EQUAL. OPERATORS ON WATER MAIN VALVES SHALL BE 2-INCH SQUARE NUT. STAINLESS STEEL BOLTS SHALL BE USED FOR CONNECTION OF VALVE TO WATER MAIN PIPE.

BURIED VALVES SHALL BE EPOXY COATED IN ACCORDANCE WITH AWWA C550.

VALVE BOX STABILIZER SHALL BE ADAPTOR, INC., OR APPROVED EQUAL. DETERMINATION OF SPECIFIC MODEL SHALL BE AS RECOMMENDED BY THE MANUFACTURER.

VALVE BOXES SHALL BE TYLER MODEL NO. 6860DD, OR EQUAL, WITH NO. 6 BASE, THREE (3) PIECE SCREW TYPE BOW, 5-1/4 INCH SHAFT AND STAY-PUT COVER MARKED "WATER". VALVE BOXES SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA AND LABELED AS SUCH. USE OF FOREIGN MATERIALS IS PROHIBITED.

A MINIMUM OF 10 GAUGE COATED COPPER WIRE OR EQUIVALENT SHALL BE USED TO PROVIDE CONTINUITY ACROSS VALVE.

RUBBER-SEATED BUTTERFLY VALVES: ALL VALVES 20" OR LARGER SHALL BE RUBBER-SEATED BUTTERFLY VALVES MEETING THE REQUIREMENTS OF AWWA C504. JOINT STYLE SHALL BE AS SPECIFIED FOR PIPING INSTALLATION. BUTTERFLY VALVES SHALL BE OPEN LEFT, MUELLER 3211-20 OR APPROVED EQUAL.

7.2.06 FIRE HYDRANTS

ALL FIRE HYDRANTS, PRIVATE AND PUBLIC, SHALL CONFORM TO AWWA C502 WITH 5-1/4 INCH MAIN VALVE OPENING, 6-INCH MECHANICAL JOINT INLET, TWO (2) 2-1/2 INCH NATIONAL STANDARD HOSE CONNECTIONS, ONE 4-1/2 INCH NATIONAL STANDARD PUMPER CONNECTION, 1-1/2 INCH PENTAGON OPERATING NUT AND CAPS, OPEN LEFT. NO WEATHER SHIELD SHALL BE PROVIDED ON TOP OPERATING NUT. HYDRANT SHALL HAVE BRONZE SEAT RING AND SEAT INSERT, AND DUCTILE IRON STAND PIPE, NOZZLE SECTION, BOTTOM AND CROSS ARM. HYDRANT SHALL BE WATEROUS WB-67, SEVEN FOOT (7') BURY, WITH BREAKAWAY FLANGE AND PAINTED RED. ALL AREAS OF HYDRANT WITH PAINT DEFECTS SHALL BE REPAINTED WITH WATEROUS TOUCH-UP KIT OR APPROVED EQUAL. STAINLESS STEEL BOLTS SHALL BE USED FOR CONNECTION OF HYDRANT TO WATER MAIN PIPE.

FIRE HYDRANT MARKERS SHALL BE 36-INCH, ORANGE, SLIMLINE FH FIRE HYDRANT MARKER MANUFACTURED BY FLEXSTAKE, INC., MODEL NO. SFH-3.

FIRE HYDRANT LEADS SHALL BE CLASS 52 DUCTILE IRON AND ALL JOINTS IN THE LEAD SHALL BE MECHANICAL JOINTS WITH MEGALUG GLANDS, RODDING, OR AN APPROVED LOCKING JOINT CONFORMING TO THE REQUIREMENTS IN 7.2.04 WATER MAIN PIPE FITTINGS AND ACCESSORIES. ALL PUBLIC FIRE HYDRANT LEADS SHALL BE SIX INCH (6") IN DIAMETER UNLESS OTHERWISE SPECIFIED. ALL PRIVATE MAINS BETWEEN A MUNICIPAL MAIN AND A PRIVATE FIRE HYDRANT SHALL BE EIGHT INCH (8") IN DIAMETER.

FIRE HYDRANT AUXILIARY VALVES SHALL BE GATE VALVES CONFORMING TO THE REQUIREMENTS IN 7.2.05 VALVES AND VALVE BOXES.

A MINIMUM OF 10 GAUGE COATED COPPER WIRE OR EQUIVALENT SHALL BE USED TO PROVIDE CONTINUITY ACROSS HYDRANT FOOT VALVE.

7.2.07 WATER SERVICES

MATERIALS FOR WATER SERVICES FOUR INCHES (4") AND LARGER SHALL BE AS SPECIFIED ABOVE IN 7.2.04 WATER MAIN PIPE FITTINGS AND ACCESSORIES AND IN 7.2.05 VALVES AND VALVE BOXES.

WATER SERVICE PIPING FOR SERVICES SMALLER THAN FOUR INCHES (4") SHALL BE TYPE K SOFT COPPER CONFORMING ASTM B88. USE OF PVC WATER SERVICE PIPING OR OTHER COMPOSITE MATERIALS IS NOT ALLOWED. CORPORATIONS, CURB STOP VALVES, AND CURB BOXES SHALL BE AS FOLLOWS:

A. 3/4-INCH AND 1-INCH SERVICES. CORPORATIONS SHALL BE MUELLER H-15008N, COMPRESSION FITTING CONNECTION. CURB STOP VALVES SHALL BE MUELLER 11 ORISEAL H-15209N, COMPRESSION FITTING CONNECTION.

B. 1-1/2-INCH AND 2-INCH SERVICES. SADDLES SHALL BE A MUELLER DOUBLE-STRAP BRONZE SERVICE SADDLES OR APPROVED EQUAL. CORPORATIONS SHALL BE MUELLER H-15013N, COMPRESSION FITTING CONNECTION. CURB STOP VALVES SHALL BE MUELLER 11 ORISEAL H-15209N, COMPRESSION FITTING CONNECTION.

C. CURB BOXES. CURB BOXES SHALL BE MUELLER H-10385 OR H-10386, AS APPLICABLE, ARCH STYLE, COMPLETE WITH LID AND 4-FOOT STATIONARY ROD, MUELLER 84154 OR 58055. LIDS SHALL BE MARKED "WATER" AND SET TO FINAL GRADE.

D. CONNECTION. UNION SHALL BE MUELLER H-15403N, THREE-PIECE COMPRESSION UNION FOR SPLICING COPPER. SPLICING WILL ONLY BE ALLOWED IF SERVICE RUN IS LONGER THAN AVAILABLE LENGTHS OF SERVICE MATERIAL.

7.2.08 ABANDONMENT

WATER MAINS ENDS TO BE ABANDONED AND TO BE LEFT IN SERVICE SHALL BE SEALED WITH MECHANICAL JOINT PLUGS AND CAPS. MECHANICAL JOINT PLUGS AND CAPS SHALL BE DUCTILE IRON CONFORMING TO AWWA C153 OR AWWA C110.

ROUGH BRASS PLUGS SHALL BE INSTALLED WITH MUELLER H-15451N 110 COMPRESSION FITTING, AT THE ENDS OF ALL COPPER WATER SERVICES TO BE ABANDONED.

7.2.09 INSULATION

INSULATE WITH TWO SHEETS (4'X8') OF TWO-INCH (2") THICK R-10, 25 PSI, EXTRUDED POLYSTYRENE BOARD INSULATION (FOUR INCHES (4") TOTAL).

7.3 EXECUTION

7.3.01 GENERAL

BEFORE THE START OF CONSTRUCTION, THE CONTRACTOR SHALL VERIFY EXISTING WATER MAIN LOCATION AND ELEVATIONS WITH PROPOSED PLANS. ALL SIGNIFICANT DIFFERENCES BETWEEN EXISTING WATER MAIN LOCATIONS (GREATER THAN ONE FOOT (1')) AND ELEVATIONS (GREATER THAN SIX INCHES (6")) SHALL BE REPORTED TO THE ENGINEER.

WATER MAIN SHALL BE INSTALLED TO AN ELEVATION TOLERANCE OF PLUS OR MINUS 0.1 FEET OF THE PLAN ELEVATION OR ELEVATION PROVIDED ON THE GRADE SHEET AT ANY POINT ALONG THE MAIN.

WHEN A SEWER CROSSES UNDER A WATER MAIN, PROVIDE A MINIMUM OF SIX INCHES (6") OF SEPARATION BETWEEN THE BOTTOM OF THE WATER MAIN AND THE TOP OF THE SEWER. WHEN A SEWER CROSSES OVER A WATER MAIN, PROVIDE A MINIMUM OF 18 INCHES SEPARATION BETWEEN THE TOP OF THE WATER MAIN AND THE BOTTOM OF THE SEWER.

7.3.02 HANDLING OF MATERIALS

HANDLE MATERIALS WITH CARE TO AVOID DAMAGE. DO NOT DUMP OR DROP MATERIALS. REMOVE ALL DAMAGED OR FLAWED MATERIALS FROM THE SITE.

7.3.03 TRENCH

THE WIDTH OF TRENCH BELOW THE OUTSIDE TOP OF THE PIPE SHALL BE AS SHOWN IN THE FOLLOWING TABLE FOR THE SIZES LISTED. A MINIMUM CLEARANCE OF EIGHT INCHES BETWEEN THE OUTSIDE OF THE PIPE BARREL AND THE TRENCH WALL AT THE PIPE SPRING LINE SHALL BE MAINTAINED. IF SHEETING IS USED, THE TRENCH WIDTH SHALL BE MEASURED AS THE CLEAR DISTANCE BETWEEN INSIDE FACES OF THE SHEETING.

MAXIMUM WIDTH OF TRENCH BELOW TOP OF PIPE

Internal Pipe Diameter (inches)	Trench Width (inches)
4 -6	30
8 – 12	36
16	39
20 or larger	42

NOT MORE THAN 200 FEET OF TRENCH SHALL BE OPENED AT ANY ONE TIME. NOT MORE THAN 100 FEET
OF TRENCH MAY BE OPENED IN ADVANCE OF THE COMPLETED PIPE LAYING OPERATIONS; AND NOT MORE THAN ONE STREET CROSSING MAY BE OBSTRUCTED BY THE SAME TRENCH AT ANY ONE TIME.

7.3.04 BEDDING AND COVER

BEDDING AND COVER MATERIAL SHALL BE PROVIDED FOR ALL WATER MAIN, VALVES, HYDRANTS, HYDRANT LEADS, WATER SERVICES, AND RELATED FITTINGS.

BEDDING SHALL BE A MINIMUM OF SIX INCHES (6") THICK. BEDDING SHALL EXTEND TO THE FULL WIDTH OF THE TRENCH. CONTRACTOR SHALL PERFORM ALL NECESSARY EXCAVATION AND SHALL FURNISH ALL REQUIRED MATERIAL TO PROVIDE THIS BEDDING. IF EXCAVATION IS CARRIED DEEPER THAN THE REQUIRED BEDDING THICKNESS, THE EXCESS DEPTH SHALL BE BACKFILLED WITH BEDDING MATERIAL. BEDDING MATERIAL SHALL BE COMPACTED USING TAMPING BARS AND/OR MECHANICAL TAMPERS. MAXIMUM WIDTH OF TRENCH BELOW TOP OF PIPE INTERNAL PIPE DIAMETER (INCHES) TRENCH WIDTH (INCHES) 4 -6 30 8 -12 36 16 39 20 OR LARGER 42

ALL TRENCHES SHALL BE BACKFILLED TO ONE FOOT (1') ABOVE THE TOP OF THE PIPE WITH APPROVED COVER MATERIAL. COVER MATERIAL SHALL BE DEPOSITED IN THE TRENCH FOR ITS FULL WIDTH ON EACH SIDE OF THE PIPE, FITTINGS AND APPURTENANCES SIMULTANEOUSLY AND SHALL BE COMPACTED USING HAND TAMPING BARS AND/OR MECHANICAL TAMPERS.

7.3.05 GRANULAR BACKFILL

GRANULAR BACKFILL SHALL EXTEND FROM ONE FOOT (1') ABOVE THE PIPE TO THE PROPOSED PAVEMENT OR HARD SURFACE SUBGRADE AND WITHIN THE SURFACES ZONE OF INFLUENCE. COMPACTION OF GRANULAR BACKFILL MATERIAL SHALL MEET 95% MODIFIED PROCTOR, THE STANDARD SPECIFICATION OF ASTM D-1557, WITHIN THREE FEET (3') OF THE PAVEMENT OR HARD SURFACE SUBGRADE. COMPACTION OF GRANULAR BACKFILL MATERIAL SHALL MEET 90% MODIFIED PROCTOR, THE STANDARD SPECIFICATION OF ASTM D-1557, IN THE CROSS-SECTIONAL AREA OF THE TRENCH BETWEEN ONE FOOT (1') ABOVE THE PIPE AND THE PLANE THREE VERTICAL FEET (3') FROM THE PROPOSED PAVEMENT OR HARD SURFACE SUBGRADE.

7.3.06 BACKFILL

WHEN THE TYPE OF BACKFILL MATERIAL IS NOT OTHERWISE SPECIFIED, EXCAVATED MATERIAL MAY BE
USED FOR BACKFILL MATERIAL AS LONG AS IT MEETS THE REQUIREMENTS OF 7.2.03 BACKFILL MATERIAL. COMPACTION OF BACKFILL MATERIAL SHALL MEET 90 % MODIFIED PROCTOR, THE STANDARD SPECIFICATION OF ASTM D-1557.

7.3.07 WATER MAIN PIPE, FITTINGS, AND ACCESSORIES

ALL PIPE AND FITTINGS SHALL BE INSTALLED TO A MINIMUM DEPTH OF COVER OF SIX AND ONE HALF FEET (6.5'). INSTALLATIONS, WHICH CANNOT MEET THIS REQUIREMENT, WILL REQUIRE INSULATION AS REQUIRED AND APPROVED BY THE ENGINEER.

ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE ENCASED IN POLYETHYLENE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. ANY RIPS OR PUNCTURES SHALL BE COVERED WITH POLYETHYLENE AND SEALED.

THRUST RESTRAINT SHALL BE DESIGNED AND PROVIDED IN ACCORDANCE WITH AWWA M41, MANUAL OF WATER SUPPLY PRACTICES. CONCRETE THRUST BLOCKING IS ALSO REQUIRED FOR HYDRANTS, TEES, AND BENDS. THRUST BLOCKING FOR MAINS 12-INCHES AND LARGER AS WELL AS AREAS WITH HIGH PRESSURE AND/OR FLOWS SHALL BE POURED IN PLACE. CONCRETE THRUST BLOCKS SHALL BE PLACED TO PERMIT FULL ACCESS TO PIPE AND ACCESSORIES.

MEGALUG GLANDS OR STEEL RODDING SHALL BE USED AT ALL HORIZONTAL AND VERTICAL BENDS, TEES, REDUCERS, HYDRANT LEADS, VALVES, AND ANY JOINT FIFTEEN FEET (15') OR LESS FROM A HORIZONTAL OR VERTICAL BEND, REDUCER, CAP/PLUG, OR BRANCH SECTION OF TEE. RESTRAINED-JOINT LOCKING GASKETS MAY BE USED AT PIPE JOINTS.

WHEN WORK IS STOPPED FOR ANY REASON, SECURELY PLUG THE END OF THE PIPE WITH A WATERTIGHT PLUG OR CAP.

WATER MAIN WITH LESS THAN THREE FEET (3') OF VERTICAL CLEARANCE AT A STORM SEWER OR CULVERT CROSSING, OR WITH LESS THAN SIX AND ONE-HALF FEET (6.5') OF COVER FROM SURFACE ELEVATION, SHALL BE PROTECTED FROM FROST DAMAGE BY INSTALLING TWO (2) 4'X8' SHEETS OF TWO INCH (2") THICK INSULATION BOARD (FOUR INCH (4") TOTAL THICKNESS) WITHIN SIX INCHES (6") OF THE MAIN ON EVEN COVER MATERIAL. JOINTS SHALL BE STAGGERED AND TAPED AS DIRECTED BY ENGINEER.

7.3.08 VALVES AND VALVE BOXES

VALVES SHALL BE SET ON SOLID BEARING GROUND. JUMP VALVES WITH COATED COPPER WIRE OR EQUIVALENT TO ADJACENT PIPES AS NECESSARY TO PROVIDE FULL CONTINUITY ACROSS VALVE. INSTALL VALVE BOX STABILIZERS ON ALL GATE VALVES FOUR INCHES (4") AND LARGER. SET VALVE BOX ON VALVE BOX STABILIZER, PLUMB OVER VALVE. VALVE BOXES SHALL BE SET TO BINDER GRADE UNLESS OTHERWISE DIRECTED BY ENGINEER. VALVE BOXES MUST BE STRAIGHT AND CENTERED OVER VALVE OPERATING NUT. VALVE WRENCH SHALL NOT TOUCH SIDES OF BOX WHEN OPERATING.

AN OPERATOR NUT EXTENSION SHALL BE INSTALLED BY THE CONTRACTOR WHEN THE VERTICAL DISTANCE BETWEEN THE TOP OF THE NUT TO THE FINISHED PAVEMENT SURFACE EXCEEDS EIGHT FEET (8'). OPERATOR NUT EXTENSIONS WILL BE SUPPLIED BY THE CITY AT NO COST TO THE CONTRACTOR.

7.3.09 FIRE HYDRANTS THE FIRE HYDRANT SHALL BE CONNECTED TO THE AUXILIARY VALVE WITH A TWO FOOT (2') LENGTH OF PIPE.
ALL JOINTS ON THE FIRE HYDRANT LEADS, INCLUDING VALVE JOINTS, SHALL BE MADE USING MEGALUG GLANDS, RODDING, OR AN APPROVED LOCKING JOINT. REACTION BACKING SHALL BE PROVIDED FOR ALL HYDRANTS. ABOUT ONE-HALF CUBIC YARD OF 1-1/2" CLEAR (WASHED) STONE SHALL BE PLACED FROM THE BOTTOM OF THE TRENCH AROUND THE HYDRANT ELBOW AND UP THE HYDRANT BARREL. THE CLEAR STONE SHALL BE COVERED WITH 8MIL PLASTIC TO PREVENT THE MIXING OF FINES FROM THE BACKFILL.

THRUST RESTRAINT SHALL BE DESIGNED AND PROVIDED IN ACCORDANCE WITH AWWA M41, MANUAL OF WATER SUPPLY PRACTICES. ALL THRUST BLOCKING FOR HYDRANTS SHALL BE CONCRETE. CONCRETE THRUST BLOCKS SHALL BE PLACED TO PERMIT FULL ACCESS TO PIPE, DRAIN HOLES, AND ACCESSORIES.

CONTRACTOR SHALL FURNISH ALL NECESSARY FITTINGS IN THE FIRE HYDRANT LEAD IN ORDER TO INSTALL THE FIRE HYDRANT IN A PLUMB CONDITION AT LOCATIONS SHOWN ON THE DRAWINGS AND AT THE SPECIFIED DEPTH OF BURY. THE PUMPER NOZZLE OF ALL FIRE HYDRANTS SHALL BE INSTALLED WITH THE NOZZLE POINTING TOWARD THE STREET OR OTHER ACCESSIBLE HARD SURFACE WITH CENTER AT 24" ABOVE THE GROUND. FIRE HYDRANT AUXILIARY VALVES SHALL BE INSTALLED BEHIND THE CURB, UNLESS OTHERWISE DIRECTED BY ENGINEER. ENGINEER RESERVES THE RIGHT TO ALTER THE LOCATION OF FIRE HYDRANTS FROM THAT SHOWN ON THE DRAWINGS.

HYDRANTS AND HYDRANT AUXILIARY VALVES SHALL BE JUMPED WITH COPPER WIRE OR EQUIVALENT TO ADJACENT PIPES AS NECESSARY TO PROVIDE FULL CONTINUITY ACROSS HYDRANT AND VALVE.

HYDRANT LEADS WITH LESS THAN THREE FEET (3') OF VERTICAL CLEARANCE AT A STORM SEWER OR CULVERT CROSSING, OR WITH LESS THAN SIX AND ONE-HALF FEET (6.5') OF COVER FROM SURFACE ELEVATION, SHALL BE PROTECTED FROM FROST DAMAGE BY INSTALLING TWO (2) 4'X8' SHEETS OF TWO INCH (2") THICK INSULATION BOARD (FOUR INCH (4") TOTAL THICKNESS) WITHIN SIX INCHES (6") OF THE LEAD ON EVEN COVER MATERIAL. JOINTS SHALL BE STAGGERED AND TAPPED AS DIRECTED BY ENGINEER.

THE BASE OF THE HYDRANT MAY NOT EXCEED A DEPTH OF NINE FEET (9') BELOW FINISH GRADE.

ENSURE THAT THE HYDRANT IS SET SO THE BURY-LINE IS NOT BELOW FINISH GRADE AND NOT MORE THAN TWO INCHES (2") ABOVE FINISH GRADE.

NO MORE THAN ONE (1) HYDRANT EXTENSION WILL BE PERMITTED PER HYDRANT INSTALLATION. NOTIFY THE ENGINEER AT LEAST TWO (2) WORKING DAYS PRIOR TO INSTALLING AN EXTENSION. ENGINEER MUST
BE PRESENT DURING EXTENSION INSTALLATION.

7.3.10 WATER SERVICES

ALL SERVICES SHALL BE INSTALLED TO A MINIMUM DEPTH OF COVER OF SIX AND ONE-HALF FEET (6.5'). INSTALLATIONS, WHICH CANNOT MEET THIS REQUIREMENT, WILL REQUIRE INSULATION AS REQUIRED AND APPROVED BY ENGINEER.

LATERALS SHALL BE EXTENDED 10 FEET BEYOND THE RIGHT-OF-WAY OR EASEMENT LINE, WHICHEVER IS FURTHER FROM THE ROADWAY CENTERLINE.

WATER SERVICES LESS THAN FOUR INCHES (4") IN DIAMETER SHALL INCLUDE A CORPORATION STOP, COPPER TUBING, CURB STOP, CURB BOX, COUPLINGS, AND ALL OTHER APPURTENANCES NECESSARY FOR COMPLETE INSTALLATION. ALL CORPORATIONS SHALL BE PRESSURE TAPPED. CURB BOXES SHALL BE PLACED ON A MINIMUM 8"X12"X2" THICK SOLID CONCRETE BLOCKS LYING ON SOLID BEARING GROUND.
CURB STOP BOXES SHALL BE ADJUSTED TO GRADE BY USING THE EXTENSION WITHIN THE BOX. NO
ADDITIONAL EXTENSIONS ARE ALLOWED, UNLESS DIRECTED BY ENGINEER.

WATER SERVICES FOUR INCHES (4") AND LARGER SHALL BE INSTALLED PER SECTION 7.3.07 WATER MAIN PIPE FITTINGS AND ACCESSORIES. WATER SERVICE VALVES FOR SERVICES FOUR INCHES (4") AND LARGER SHALL BE INSTALLED PER 7.3.08 VALVES AND VALVE BOXES WITH THE EXCEPTION THAT VALVE BOX SHALL BE SET TO FINAL GRADE IF NOT LOCATED WITHIN THE PAVEMENT. WATER SERVICE CURB BOXES AND VALVE BOXES SHALL BE MARKED WITH A 2"X4" WOOD POST, PLACED VERTICALLY TWO FEET (2') UNDER THE SURFACE AND EXTENDING TWO FEET (2') ABOVE GROUND. ALL CURB BOX/VALVE BOX MARKERS SHALL BE PAINTED BLUE. ALL WATER SERVICE STUBS SHALL BE MARKED WITH A 4"X4" WOOD POST, PLACED VERTICALLY AT THEIR INVERT AND EXTENDING TWO FEET (2') ABOVE GROUND. ALL WATER SERVICE MARKERS SHALL BE PAINTED
BLUE.

WATER SERVICES TWO INCHES (2") OR LESS IN DIAMETER SHALL BE INSTALLED MORE THAN FIVE FEET (5') FROM A SEWER (CLEAR DISTANCE) AND/OR A MINIMUM OF 12 INCHES ABOVE SEWER (CLEAR DISTANCE). WATER SERVICES LARGER THAN TWO INCHES (2") IN DIAMETER SHALL BE INSTALLED A MINIMUM OF EIGHT FEET (8') FROM A SEWER (CENTER OF PIPE TO CENTER OF PIPE).

WATER LATERALS WITH LESS THAN THREE FEET (3') OF VERTICAL CLEARANCE AT A STORM SEWER OR CULVERT
CROSSING, OR WITH LESS THAN SIX AND ONE-HALF FEET (6.5') OF COVER FROM SURFACE ELEVATION, SHALL BE PROTECTED FROM FROST DAMAGE BY INSTALLING TWO (2) 4'X8' SHEETS OF TWO INCH (2") THICK INSULATION BOARD (FOUR INCH (4") TOTAL THICKNESS) WITHIN SIX INCHES (6") OF THE LATERAL ON EVEN COVER MATERIAL. JOINTS SHALL BE STAGGERED AND TAPED AS DIRECTED BY ENGINEER.

7.3.11 ABANDONMENT

WATER MAINS AND WATER SERVICE LATERALS SHALL BE ABANDONED IN ACCORDANCE WITH WUCA SPECIFICATIONS ACCEPT AS HEREIN MODIFIED.

WHEN ABANDONING EXISTING WATER MAIN, MECHANICAL JOINT PLUGS SHALL BE INSTALLED INTO EXISTING FITTINGS AND MECHANICAL JOINT CAPS SHALL BE INSTALLED OVER EXISTING PIPE ENDS OF WATER MAIN TO BE ABANDONED AND WATER MAIN THAT WILL REMAIN IN SERVICE. PLUGS, CAPS, AND ALL JOINTS WITHIN FIFTEEN FEET (15') OF THE CAP OR PLUG OF MAIN TO REMAIN IN SERVICE SHALL HAVE MEGALUG GLANDS, RODDING, OR AN APPROVED RESTRAINED-JOINT LOCKING GASKET. THE ENDS OF EXISTING PIPE AND ANY DISTURBED FITTINGS TO REMAIN IN SERVICE SHALL BE THRUST BLOCKED. WHEN VALVES ARE TO BE ABANDONED, THE ENTIRE VALVE BOX SHALL BE REMOVED. ALL DISTURBED AREAS SHALL BE BACKFILLED WITH THE REQUIRED BACKFILL MATERIAL.

ALL WATER SERVICE LATERALS, TO BE ABANDONED, SHALL BE ABANDONED AT THE CORPORATION UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THE COPPER PIPE SHALL BE CUT TWO FEET (2') FROM THE CORPORATION AND ROUGH BRASS PLUGS SHALL BE INSTALLED WITH MUELLER H-15451N 110 COMPRESSION FITTING, AT THE ENDS OF ALL COPPER WATER SERVICES TO BE ABANDONED. THE ENTIRE CURB/VALVE BOX SHALL BE REMOVED AND ALL DISTURBED AREAS SHALL BE BACKFILLED WITH THE REQUIRED BACKFILL MATERIAL.

7.4 FIELD QUALITY CONTROL AND TESTING

7.4.01 DISINFECTION AND STERILIZATION

CONTRACTOR SHALL DISINFECT AND STERILIZE ALL NEW AND OLD MAINS WHERE IT IS NECESSARY TO CUT INTO THEM. THE DISINFECTION SHALL BE DONE IN ACCORDANCE WITH AWWA C651. ALL MATERIALS AND EQUIPMENT NEEDED FOR DISINFECTION OF MAINS SHALL BE FURNISHED BY CONTRACTOR. HEAVILY CHLORINATED WATER, USED FOR THE PURPOSE OF DISINFECTING THE MAINS, SHALL NOT REMAIN IN THE WATER MAINS FOR MORE THAN FIVE (5) DAYS. CONTRACTOR SHALL BE RESPONSIBLE FOR FLUSHING OF MAINS. CONTRACTOR SHALL FILL OUT A FLUSHING PERMIT 24 HOURS PRIOR TO ANY FLUSHING. FLUSHING PROCEDURES SHALL BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO FLUSHING. NO FLUSHING SHALL BE PERMITTED ON FRIDAYS. HEAVY CHLORINATED WATER SHALL BE FLUSHED DOWN SANITARY SEWER UNLESS DIRECTED OTHERWISE BY UTILITY. CONTRACTOR SHALL BE REQUIRED TO OBTAIN ALL SAFE WATER SAMPLES FOR ENTIRE SYSTEM BEING INSTALLED PRIOR TO HYDROSTATIC AND LEAKAGE TEST. CONTRACTOR SHALL OBTAIN WATER SAMPLE BOTTLES FROM THE UTILITY AND DELIVER THEM TO THE STATE LAB OF HYGIENE. ALL TESTING SHALL BE UNDER THE DIRECTION OF THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY NECESSARY WATER MAIN REPAIRS, PERMITS FOR FLUSHING, FLUSHING AND RE-SAMPLING UNTIL SAFE SAMPLES ARE RECEIVED. THE UTILITY WILL OPEN THE TESTED MAIN TO THE SYSTEM.

WATER MAINS SHALL BE FLUSHED PRIOR TO INSTALLATION OF COPPER WATER SERVICES. TWO (2) SETS OF SAFE WATER SAMPLES SHALL BE OBTAINED; ONE (1) SET PRIOR TO INSTALLATION OF WATER SERVICES AND A SECOND SET AFTER INSTALLATION OF WATER SERVICES. BOTH SETS OF SAFE SAMPLES SHALL BE OBTAINED PRIOR TO HYDROSTATIC AND LEAKAGE TEST.

7.4.02 TESTING

A COMBINED HYDROSTATIC PRESSURE AND LEAKAGE TEST SHALL BE PERFORMED ON ALL PIPE, FITTINGS, SERVICES AND JOINTS IN ACCORDANCE WITH AWWA C600 AFTER SERVICE LATERALS AND STORM SEWER ARE INSTALLED, AND PRIOR TO PLACEMENT OF BASE COURSE. DURING PERFORMANCE OF TEST, WATER MAIN SHALL BE PRESSURIZED TO 150% OF MAXIMUM OPERATING PRESSURE, 150 PSI MINIMUM. ALL AIR SHALL BE REMOVED FROM THE MAINS PRIOR TO TESTING BY FLUSHING AND, AS NECESSARY, BY INSTALLING CORPORATIONS AT HIGH POINTS. TEST SHALL MEET REQUIREMENTS OF AWWA C600 FOR A MINIMUM OF TWO (2) CONSECUTIVE HOURS. PRIOR TO CONDUCTING THE COMBINED PRESSURE AND LEAKAGE TEST, CONTRACTOR SHALL BACKFILL THE TRENCH FOR ITS FULL DEPTH. ALL BENDS, SERVICES AND SPECIAL CONNECTIONS TO THE MAIN SHALL BE ADEQUATELY BLOCKED AND TIED PRIOR TO THE TEST. ANY DAMAGE CAUSED TO THE WATER MAIN, OR ITS APPURTENANCES DURING PERFORMANCE OF THESE TESTS SHALL BE CORRECTED BY CONTRACTOR AT THE CONTRACTOR'S EXPENSE. USE OF HYDRANTS TO PRESSURE TEST MAINS SHALL BE AT CONTRACTOR'S RISK. IF THE BRONZE DRAINAGE TUBE IN A HYDRANT IS THE CAUSE OF A FAILED LEAKAGE TEST, CONTRACTOR SHALL REPLACE BRONZE DRAINAGE TUBE WITH A PLASTIC DRAINAGE TUBE AND RETEST AT THEIR EXPENSE.

CONTRACTOR SHALL KEEP A RECORD OF ALL TESTS PERFORMED. THESE RECORDS SHALL SHOW THE INDIVIDUAL LENGTHS OF MAIN TESTED AND TEST RESULTS.

WHERE CONNECTIONS ARE MADE TO EXISTING MAINS, IT SHALL BE THE RESPONSIBILITY OF CONTRACTOR TO PROVIDE
THE NECESSARY HYDROSTATIC TEST ON ALL NEW MAINS INSTALLED. THIS MAY REQUIRE, BUT IS NOT LIMITED TO, THE INSTALLATION OF TEMPORARY VALVES TO ISOLATE THE NEW SYSTEM FROM THE EXISTING SYSTEM. ALL MATERIALS, WORK AND EQUIPMENT NECESSARY FOR THIS WORK SHALL BE FURNISHED BY CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

TAPPING SLEEVES SHALL BE PRESSURIZED TO 150PSI FOR 10 MINUTES. CONTINUITY TESTS: CONTRACTOR SHALL FURNISH ALL EQUIPMENT, LABOR AND MISCELLANEOUS ITEMS NECESSARY TO PERFORM ELECTRICAL CONTINUITY TEST ON ALL NEW WATER MAIN INSTALLED. THREE (3) METHODS ARE ACCEPTABLE FOR TESTING CONTINUITY. METHOD 1TESTS SHALL BE PERFORMED USING AN OHMMETER TO ASSURE THAT ELECTRICAL CONTINUITY EXISTS ACROSS ALL JOINTS. METHOD 2 TESTS SHALL BE PERFORMED USING A REACTIVITY TESTER. METHOD 3 TESTS SHALL BE PERFORMED THROUGH THE USE OF AN ENERGIZED UNDERGROUND UTILITY LOCATING DEVICE. CONTRACTOR SHALL MAKE ALL NECESSARY REPAIRS TO ESTABLISH CONTINUITY ACROSS JOINTS. END

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WT JOB NUMBER - 2002139C

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COUNTY of DANE WISCONSIN 1839

DANE COUNTY EMERGENCY MANAGEMENT REMODEL
5415 KING JAMES WAY
FITCHBURG, WISCONSIN 53719

CLIENT APPROVAL
☐ APPROVED
☐ APPROVED AS NOTED
APPROVED BY / DATE:

ISSUE RECORD

	DD SET	08/04/20
	CD CHECK SET	11/20/20
	98% CD REVIEW	02/11/21
	HVAC REDESIGN	04/30/21
	ISSUE FOR BID	06/08/21

CHECKED BY
JEG
DRAWN BY
BRA
DATE
5/28/2021 11:20:36 AM
PROJECT NUMBER
2020-001

CITY OF FITCHBURG PROJECT SPECIFICATIONS
C-7.4

BOUNDARY & TOPOGRAPHIC SURVEY

LOTS ONE OF CERTIFIED SURVEY MAP NO. 15368, RECORDED IN THE DANE COUNTY REGISTER OF DEEDS OFFICE IN VOLUME 110 OF CERTIFIED SURVEY MAPS, PAGES 86–88, AS DOCUMENT NO. 5567984, IN THE CIYT OF FITCHBURG, DANE COUNTY, WISCONSIN.

LOCATION MAP

1 RIM=997.22' (STORM)
36"x18" CONCRETE STRUCTURE
INV=993.85' (18" RCP N/SSE)

2 RIM=997.95' (STORM)
12'x12' CONCRETE STRUCTURE
INV=991.80' (48"x76" RCP N)
INV=993.55' (18" RCP S)
INV=991.80' (53"x83" RCP W)

3 RIM=997.10' (STORM)
36"x18" CONCRETE STRUCTURE
INV=994.79' (18" RCP NW)
INV=994.79' (15" PVC S)

4 RIM=998.34' (SANITARY)
48" CONCRETE STRUCTURE
INV=993.34' (12" RCP NE/S)
INV=993.66' (8" PVC W)

5 RIM=997.65' (STORM)
36"x18" CONCRETE STRUCTURE
INV=992.90' (18" RCP N)

6 RIM=997.26' (STORM)
36"x18" CONCRETE STRUCTURE
INV=993.61' (12" RCP NW)

7 RIM=997.31' (STORM)
36"x18" CONCRETE STRUCTURE
INV=992.54' (12" RCP NNW/SSE)

8 RIM=998.05' (STORM)
CONCRETE STRUCTURE
UNABLE TO DETERMINE SIZE
INV=988.55' (53"x83" RCP E)
INV=988.55' (66" RCP SW)
INV=988.65' (36" RCP NW CAPPED)

9 RIM=997.87' (STORM)
60" CONCRETE STRUCTURE
INV=980.45' (42" RCP SSE/NW)

10 RIM=998.51' (STORM)
36"x18" CONCRETE STRUCTURE
INV=992.68' (18" RCP WSW)

11 RIM=998.42' (STORM)
72" CONCRETE STRUCTURE
INV=990.23' (30" RCP N)
INV=990.47' (18" RCP ENE)
INV=981.23' (42" RCP SE)

12 RIM=1000.57' (STORM)
48" CONCRETE STRUCTURE
INV=995.85' (30" RCP N)
INV=993.23' (30" RCP S)

13 RIM=1001.59' (STORM)
48" CONCRETE STRUCTURE
INV=997.28' (30" RCP N/S)

14 RIM=1002.81' (SANITARY)
48" CONCRETE STRUCTURE
INV=996.35' (8" PVC N/S)

15 RIM=1005.42' (STORM)
60" CONCRETE STRUCTURE
INV=999.57' (30" RCP N/S)
INV=999.72' (18" RCP E)
INV=999.87' (18" RCP W)

16 RIM=998.11' (SANITARY)
48" CONCRETE STRUCTURE
INV=994.67' (8" PVC N/E/SW)

17 RIM=995.13' (STORM)
84" CONCRETE STRUCTURE
INV=987.18' (36" RCP ENE)
INV=979.93' (42" RCP SSE/NNW)

18 RIM=996.01' (STORM)
CONCRETE STRUCTURE
UNABLE TOP DETERMINE SIZE
INV=987.46' (66" RCP NE/SW)
INV=989.21' (24" RCP ESE CAPPED)

19 RIM=997.33' (SANITARY)
48" CONCRETE STRUCTURE
INV=992.28' (15" PVC E)
INV=992.28' (12" RCP N)

20 RIM=999.10' (SANITARY)
48" CONCRETE STRUCTURE
INV=994.46' (12" RCP NNE/SW)
INV=995.72' (4" PVC E)

21 RIM=1010.75' (STORM)
84" CONCRETE STRUCTURE
INV=996.20' (48" RCP N)
INV=996.20' (48"x76" RCP S)

NOTES:

1. BENCHMARK #1 – SET CROSS ON HYDRANT ON THE EAST SIDE OF KAPEC ROAD, 8' SOUTH OF THE ENTRANCE AS SHOWN. ELEVATION=1001.46' (NAVD88)

2. BENCHMARK #2 – TAG BOLT ON HYDRANT ON THE SOUTH SIDE OF KING JAMES WAY, 91' SOUTHEAST OF LIGHT POLE ON THE EAST SIDE OF EAST ENTRANCE & 30' SOUTHWEST OF EXISTING MH#3 . ELEVATION=1000.80' (NAVD88)

3. PARCEL NUMBER: 060906399652

4. THE LOCATION OF UNDERGROUND UTILITIES WAS DETERMINED BY FIELD OBSERVATION AND VISIBLE MARKINGS ONLY.

5. FIELD WORK COMPLETED ON SEPTEMBER 11TH, 2020.

6. SURVEY PREPARED WITHOUT THE AID OF A TITLE REPORT, REFER TO A CURRENT TITLE REPORT, DEED AND LOCAL CODES FOR ANY EASEMENT, BUILDING SETBACKS AND OTHER LOCAL RESTRICTIONS NOT SHOWN HERON. DESCRIPTION PER WARRANTY DEED DOC.#5569234

7. SURVEY PREPARED FOR: PRAIRIE FORGE GROUP

8. BASIS OF BEARINGS IS TRUE NORTH BASED ON ILLINOIS STATE PLANE COORDINATE SYSTEM, WISCONSIN SOUTH 4803 ZONE.

9. ANY DISCREPANCIES FOUND WITHIN THIS DOCUMENT NEED TO BE REPORTED TO THE SURVEYOR AS SOON AS POSSIBLE.

STATE OF ILLINOIS)
SS
COUNTY OF COOK)

WE THE W–T GROUP DO HEREBY DECLARE THAT WE HAVE SURVEYED THE ABOVE DESCRIBED PROPERTY AND THAT THIS PLAT IS A CORRECT REPRESENTATION OF SAID SURVEY. THIS PROFESSIONAL SERVICE CONFORMS TO THE CURRENT WISCONSIN MINIMUM STANDARDS FOR A PROPERTY AND TOPOGRAPHIC SURVEY.

GIVEN UNDER OUR HAND AND SEAL THIS 3rd DAY OF FEBRUARY, 2021.
AT HOFFMAN ESTATES, ILLINOIS.

THE W–T GROUP, LLC

FRANJO I. MATICIC – #S–2933–008 EXPIRES 01/31/2022
WISCONSIN PROFESSIONAL LAND SURVEYOR

WISCONSIN FRANJO I. MATICIC S-2933-008 HOFFMAN ESTATES ILLINOIS LAND SURVEYOR

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AQUATIC \ CIVIL \ MECHANICAL \ ELECTRICAL \ PLUMBING \ TELECOMMUNICATION \ STRUCTURAL \ ACCESSIBILITY CONSULTING \ DESIGN & PROGRAM MANAGEMENT \ LAND SURVEY

EMERGENCY MANAGEMENT FACILITY
5415 KING JAMES WAY
FITCHBURG, WISCONSIN

ISSUE

TO	DATE
CLIENT	9/15/20
CLIENT	9/17/20
CLIENT	9/23/20
CLIENT	10/7/20
CLIENT	2/3/21

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mail@wtgroup.com

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JOB: 2002193S

SUR-1
SHEET 1 OF 1
BOUNDARY & TOPOGRAPHIC SURVEY

LEGEND

- PROPERTY LINE
- CENTER LINE
- EASEMENT LINE
- BUILDING SETBACK
- (xxx) RECORD DATA
- TOP OF (CURB,WALL, ETC.) / SPOT GRADE / BOTTOM OF (GROUND, GUTTER,ETC.)
- CONCRETE
- EVERGREEN/DECIDUOUS WITH SIZE IN INCHES
- SHRUB/SHRUB LINE
- MONITOR WELL
- GAS VALVE
- TYPICAL SIGN
- FLARED END SECTION
- CLOSED MANHOLE
- OPEN GRATE MANHOLE
- BEEHIVE GRATE MANHOLE
- TEL/ELEC MANHOLE
- GUTTER FRAME MANHOLE
- VALVE VAULT
- FIRE HYDRANT
- B-BOX / SERVICE VALVE
- POST LIGHT/GROUND LIGHT
- AREA LIGHT/LIGHT POLE
- STREET LIGHT
- TRAFFIC SIGNAL
- MAST ARM SIGNAL
- HANDHOLE (electric\traffic)
- GAS METER
- ELECTRIC METER
- PEDESTAL(tel,elec,cable)
- UTILITY MARKINGS (cable,elec,fiber) (tel,water,gas)
- UTILITY POLE
- MAILBOX
- T/F T/T TOP FOUNDATION/THRESHOLD
- SB SOIL BORING
- GUARDRAIL
- GUY WIRE ANCHOR
- 773 CONTOUR LINE
- TREE LINE / HEDGE LINE
- EDGE GRAVEL/STONE
- FENCE LINE
- STORM SEWER
- SANITARY SEWER
- COMBO SEWER
- WS WATER SERVICE LINE
- WM WATER MAIN
- OHL OVERHEAD LINE
- COM U.G. COMMUNICATION LINE
- G GAS LINE
- UGT U.G. TELCO LINE
- UGE U.G. ELECTRIC LINE

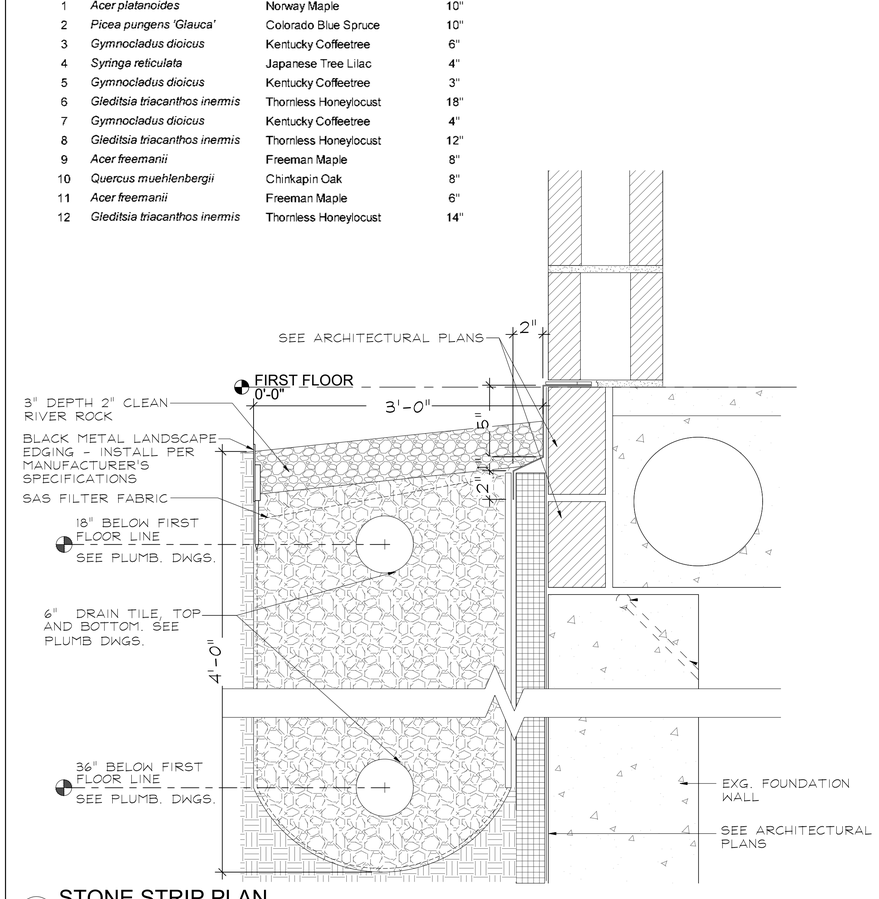
PROPOSED PLANT LIST

Key	Qty	Botanical/Common Name	Size	Remarks
		SHADE TREES		
AF	2	Acer x freemanii 'Marmo' MARMO FREEMAN MAPLE	2 1/2" Cal.	
QR	2	Quercus rubra RED OAK	2 1/2" Cal.	
TC	2	Tilia cordata 'Greenspire' GREENSPIRE LITTLELEAF LINDEN	2 1/2" Cal.	
		ORNAMENTAL TREES		
AG	2	Amelanchier x grandiflora APPLE SERVICEBERRY	8' Ht.	Multi-Stem
CC	3	Cercis canadensis EASTERN REDBUD	8' Ht.	Clump Form
CM	1	Cornus mas CORNELIANCHERRY DOGWOOD	2" Cal.	Tree Form
		EVERGREEN TREES		
PS	2	Picea strobus EASTERN WHITE PINE	8' Ht.	
TO	3	Thuja occidentalis 'Techny' TECHNY ARBORVITAE	6' Ht.	
		DECIDUOUS SHRUBS		
CS	17	Cornus sericea 'Farrow' ARCTIC FIRE REDTWIG DOGWOOD	24" Tall	3' O.C.
PO	22	Physocarpus opulifolius 'Donna May' LITTLE DEVIL NINEBARK	24" Tall	3' O.C.
VJ	1	Viburnum x juddii JUDD VIBURNUM	36" Tall	4' O.C.
		EVERGREEN SHRUBS		
JK	5	Juniperus chinensis 'Kallays Compact' KALLAYS COMPACT PFITZER JUNIPER	24" Wide	4' O.C.
JB	22	Juniperus conferta 'Blue Pacific' BLUE PACIFIC JUNIPER	24" Wide	4' O.C.

Key	Qty	Botanical/Common Name	Size	Remarks
		ORNAMENTAL GRASSES		
PH	9	Panicum virgatum 'Heavy Metal' HEAVY METAL SWITCHGRASS	#1	30" O.C.
PV	11	Panicum virgatum 'Shenandoah' SHENANDOAH RED SWITCHGRASS	#1	30" O.C.
SS	23	Schizachyrium scoparium LITTLE BLUESTEM	#1	30" O.C.
SH	80	Sporobolus heterolepis PRAIRIE DROPSEED	#1	30" O.C.
		PERENNIALS		
AB	160	Allium 'Summer Beauty' SUMMER BEAUTY ONION	#1	18" O.C.
EC	74	Echinacea 'CBG Gone 2' PIXIE MEADOWBRITE CONEFLOWER	#1	18" O.C.
IS	40	Iris sibirica SIBERIAN IRIS	#1	18" O.C.
MD	18	Monarda didyma 'Raspberry Wine' RASPBERRY WINE BEEBALM	#1	24" O.C.
		GROUNDCOVERS		
CF	160	Carex flacca BLUE SEDGE	#SP4	12" O.C.
LS	90	Liriope spicata CREEPING LILYTURF	#SP4	12" O.C.
		MISC. MATERIALS		
	18	SHREDDED HARDWOOD MULCH	C.Y.	
	1,755	SOD	S.Y.	
	10	2" CLEAN RIVER ROCK	C.Y.	
	198	BLACK METAL LANDSCAPE EDGING	L.F.	

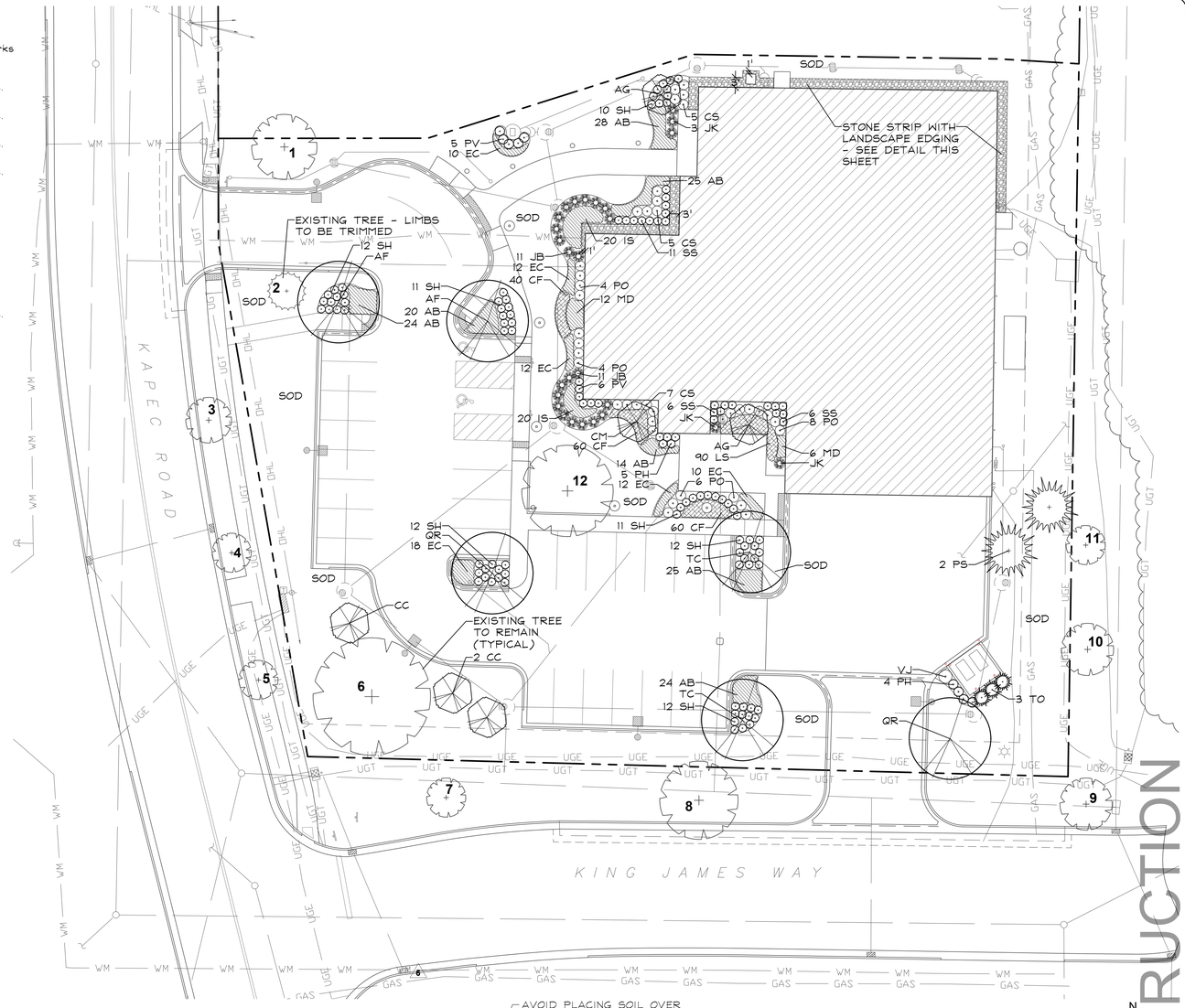
EXISTING PLANT LIST

Tree #	Botanic Name	Common Name	Size (DBH)
1	*Acer platanoides*	Norway Maple	10"
2	*Picea pungens 'Glauca'*	Colorado Blue Spruce	10"
3	*Gymnocladus dioicus*	Kentucky Coffeetree	6"
4	*Syringa reticulata*	Japanese Tree Lilac	4"
5	*Gymnocladus dioicus*	Kentucky Coffeetree	3"
6	*Gleditsia triacanthos inermis*	Thornless Honeylocust	18"
7	*Gymnocladus dioicus*	Kentucky Coffeetree	4"
8	*Gleditsia triacanthos inermis*	Thornless Honeylocust	12"
9	*Acer freemanii*	Freeman Maple	8"
10	*Quercus muehlenbergii*	Chinkapin Oak	8"
11	*Acer freemanii*	Freeman Maple	6"
12	*Gleditsia triacanthos inermis*	Thornless Honeylocust	14"



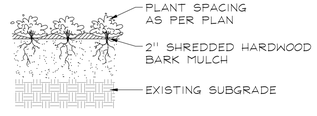
2 STONE STRIP PLAN

NOT TO SCALE



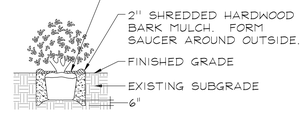
1 LANDSCAPE PLAN

SCALE 1/8" = 1'-0"



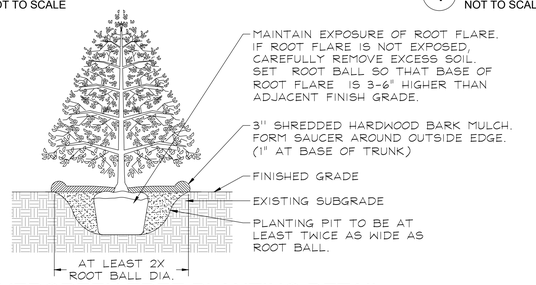
3 PERENNIALS & GROUNDCOVERS PLANTING DETAIL

NOT TO SCALE



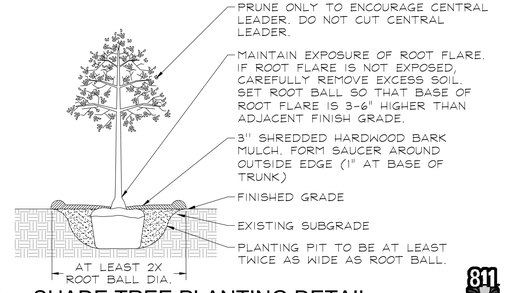
4 DECIDUOUS & EVERGREEN SHRUBS PLANTING DETAIL

NOT TO SCALE



5 EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE



6 SHADE TREE PLANTING DETAIL

NOT TO SCALE

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630.221.0118 | F
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COUNTY of DANE WISCONSIN 1839

DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY
FITCHBURG, WISCONSIN

NOT FOR CONSTRUCTION

CLIENT APPROVAL

- ☐ APPROVED
- ☐ APPROVED AS NOTED

APPROVED BY / DATE:

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CHECKED BY
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DRAWN BY
TRC
DATE
6/1/2021 3:08:47 PM
PROJECT NUMBER
2020-001

LANDSCAPE PLAN

L-1

GARY R. WEBER ASSOCIATES, INC.
LAND PLANNING
ECOLOGICAL CONSULTING
LANDSCAPE ARCHITECTURE
402 W. LIBERTY DRIVE
WHEATON, ILLINOIS 60187
PHONE: 630.668.7197

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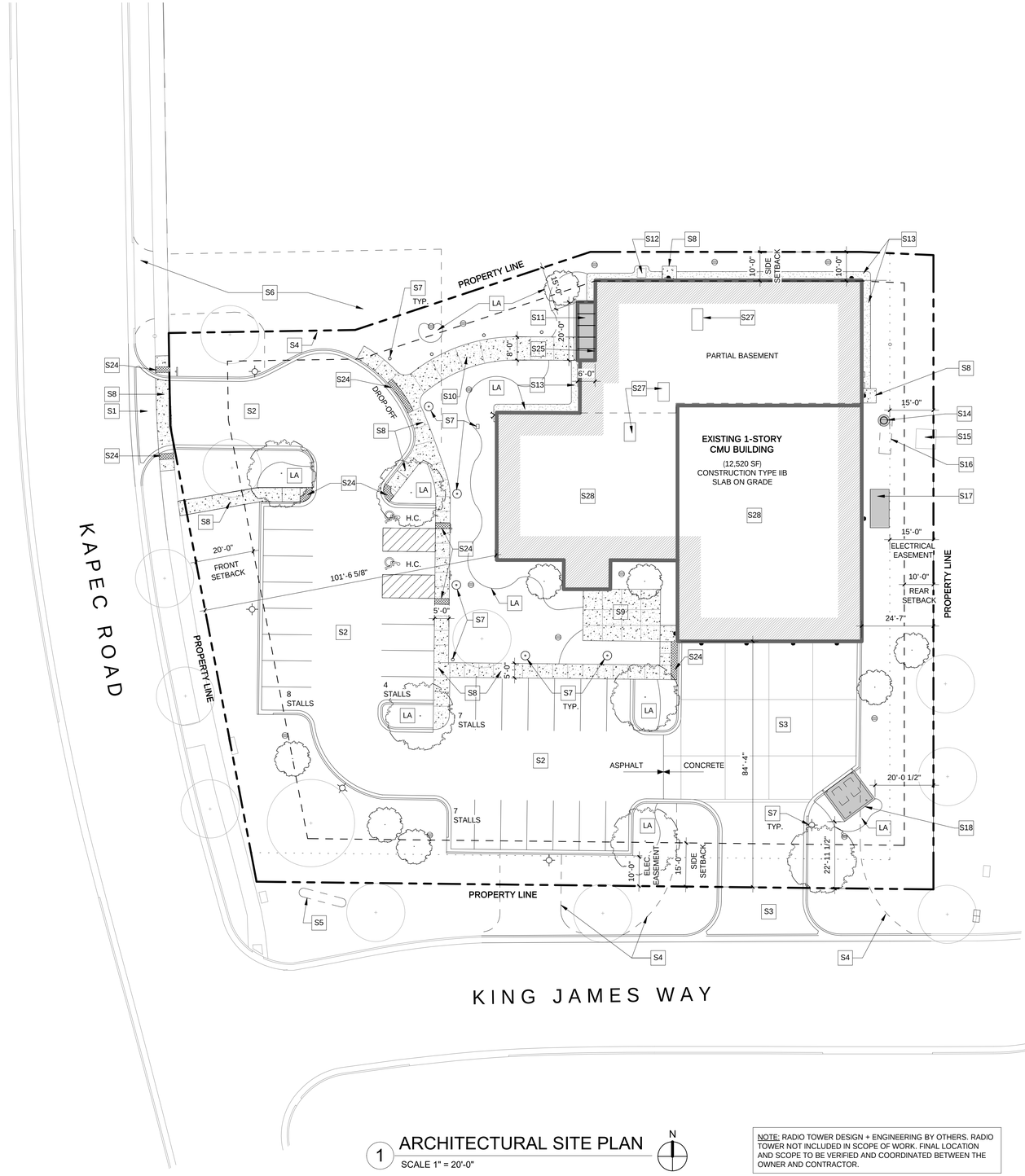
811 Know what's below. Call before you dig.



1 ARCHITECTURAL SITE PLAN
SCALE 1" = 20'-0"

N

NOTE: RADIO TOWER DESIGN + ENGINEERING BY OTHERS. RADIO TOWER NOT INCLUDED IN SCOPE OF WORK. FINAL LOCATION AND SCOPE TO BE VERIFIED AND COORDINATED BETWEEN THE OWNER AND CONTRACTOR.

SITE PLAN LEGEND

- EXISTING TREE TO REMAIN
- NEW TREE, SEE LANDSCAPE PLAN
- NEW CONCRETE SIDEWALK
- EXISTING LIGHT POLE
- NEW LIGHT FIXTURE - 20' POLE
- NEW LIGHT FIXTURE - 10' POLE
- NEW LIGHT FIXTURE - BOLLARD TYPE
- NEW BUILDING MOUNTED LIGHT FIXTURE
- EXISTING FIRE DEPARTMENT CONNECTION
- NEW DRAINAGE STRUCTURE - SEE CIVIL DRAWINGS

DIGGERS HOTLINE: WISCONSIN'S ONE-CALL CENTER
CALL 811 OR (800) 242-8511
(262) 432-7910
(877) 500-9592 (EMERGENCY ONLY)

WARNING
CALL BEFORE YOU DIG

CONTRACTOR MUST LOCATE PRIVATE UTILITIES IN AREA OF CONSTRUCTION PRIOR TO PROCEEDING WITH WORK

SITE PLAN GENERAL NOTES

1. REFER TO CIVIL DRAWINGS FOR ALL SITE/CIVIL INFORMATION.
2. REFER TO LANDSCAPE DRAWINGS FOR ALL LANDSCAPE INFORMATION.
3. EXISTING VEGETATION AND LANDSCAPING TO REMAIN WHEREVER POSSIBLE. COORDINATE WITH OWNER.
4. PROTECT EXISTING TREES UNLESS NOTED OTHERWISE. SEE CIVIL + LANDSCAPE DWGS.

SITE PLAN KEY NOTES

S1	NEW CONCRETE APRON + CURB CUT - SEE CIVIL DWGS.
S2	NEW ASPHALT DRIVE + PARKING LOT (26 STALLS + 2 ADA STALLS) SEE CIVIL DWGS.
S3	NEW CONCRETE DRIVE - SEE CIVIL DWGS.
S4	EXISTING DRIVEWAYS AND CURB CUTS TO BE REMOVED - SEE CIVIL DWGS.
S5	EXISTING MONUMENTAL SIGN + MASONRY BASE TO BE REMOVED.
S6	EXISTING CURB CUT AND DRIVEWAY TO BE REMOVED BY OTHERS.
S7	NEW SITE LIGHTING, SEE ELECTRICAL DRAWINGS.
S8	NEW CONCRETE SIDEWALKS / STOOPS, SEE STRUCT. DWGS.
S9	NEW CONCRETE PATIO.
S10	NEW CONCRETE ACCESSIBLE MAIN ENTRY WALKWAY.
S11	NEW GLASS + METAL ENTRY CANOPY.
S12	EXISTING RADIO TOWER AND CONCRETE PAD TO REMAIN.
S13	STONE PERIMETER EDGING - SEE CIVIL + LANDSCAPE DWGS.
S14	PROPOSED RADIO TOWER - BY OWNER.
S15	EXISTING TRANSFORMER.
S16	EXISTING GENERATOR + CONC. PAD TO BE REMOVED.
S17	NEW GENERATOR + CONC. PAD, SEE ELEC. DWGS.
S18	NEW TRASH ENCLOSURE, SEE DWGS. ON AS 1.2
S24	DETECTABLE WARNING WALKWAY - SEE CIVIL DWGS.
S25	ACCESSIBLE BUILDING ENTRANCE.
S26	NOT USED
S27	NEW ROOF TOP AIR HANDLING UNIT, SEE MECH. DWGS.
S28	NEW ROOFING. MODIFIED BITUMINOUS MEMBRANE.
LA	SEE LANDSCAPE PLAN FOR PLANTING AND TREE DETAILS.

ZONING ANALYSIS

REQUIREMENTS		PROPOSED	
EXISTING ADDRESS:	5415 KING JAMES WAY	ADDRESS:	TBD___ KAPEC ROAD
ZONE:	B-G GENERAL BUSINESS	USE:	GOVERNMENT OFFICES
MIN. LOT AREA:	8,000 SQUARE FEET	EXISTING LOT AREA:	51,836 SQUARE FEET (1.19 ACRE)
MIN. LOT WIDTH:	60 FEET	EXISTING LOT WIDTH:	191.26 FEET
MIN. FRONT SETBACK:	20 FEET	EXG. FRONT SETBACK:	101.55 FEET
MIN. SIDE SETBACK:	10 FEET	EXG. SIDE SETBACK:	10 FEET
MIN. SIDE STREET S.B.:	15 FEET	SIDE STREET S.B.:	22.96 FEET
MIN. REAR SETBACK:	10 FEET	REAR SETBACK:	20.06 FEET
MAX. BUILDING HEIGHT:	42 FEET, OR 3 STORIES	EXG. BUILDING HEIGHT:	22.75 FEET, 1 STORY
MIN. OPEN SPACE:	25%	OPEN SPACE:	38.12 %
		IMPERVIOUS SURFACE RATIO:	62.23 %
PARKING REQUIREMENT:	OFFICE = 1 STALL PER 300 GSF OF BUILDING AREA	PARKING REQUIREMENT:	OFFICE AREA = 7,360 GSF / 300 = 24.5 = 25 PARKING STALLS

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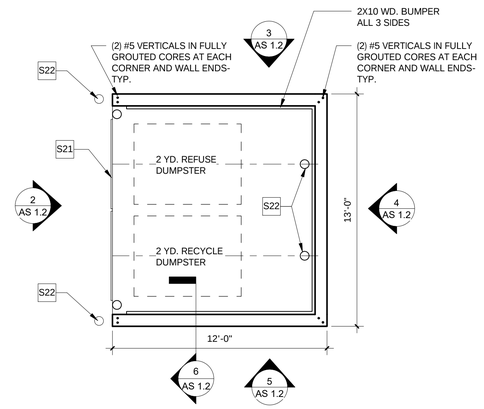
SITE PLAN

AS 1.1

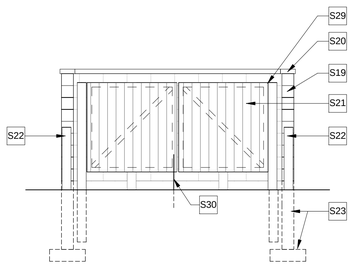


1 TRASH ENCLOSURE PLAN

SCALE 1/4" = 1'-0"

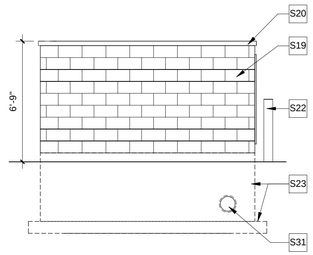
TRASH ENCLOSURE KEY NOTES

S19	CONCRETE MASONRY UNIT WALL - COLOR + PATTERN TO MATCH EXISTING BUILDING. PAINT INTERIOR SURFACE OF CMU.
S20	METAL COPING - COLOR TO MATCH METAL FASCIA OF BUILDING.
S21	VINYL PLANK GATE ON GALVANIZED STEEL FRAME. SEE DETAIL 9/AS1.2
S22	STEEL BOLLARD - CONCRETE FILLED. SEE DETAIL 8/AS1.2
S23	CONCRETE FOUNDATION AND FOOTING.
S29	HEAVY DUTY BALL BEARING HINGES WELDED TO FRAME AND POST.
S30	GATE ANCHOR PIN
S31	PROVIDE SLEEVE FOR NEW STORM SEWER LINE - SEE CIVIL



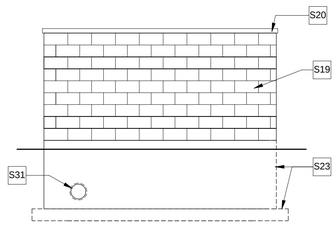
2 TRASH ENCLOSURE - NORTH

SCALE 1/4" = 1'-0"



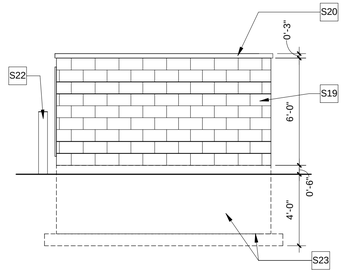
3 TRASH ENCLOSURE - EAST

SCALE 1/4" = 1'-0"



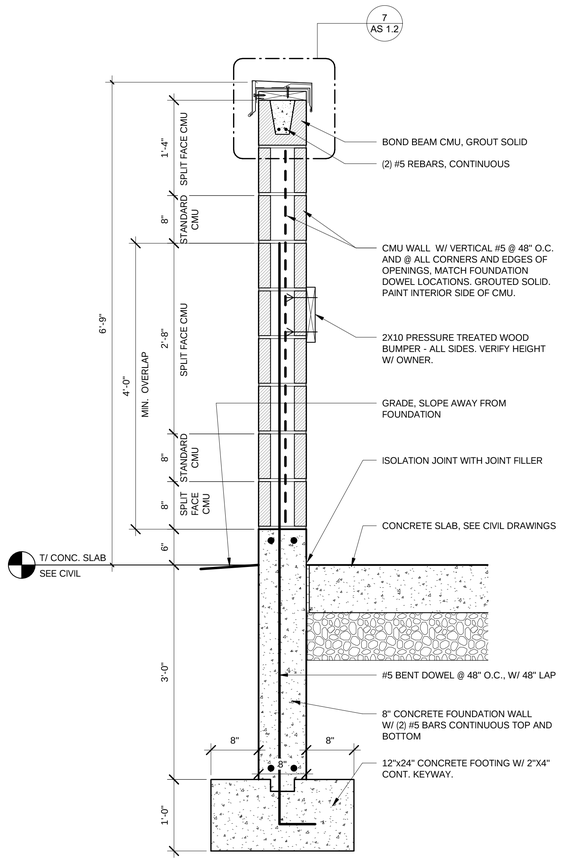
4 TRASH ENCLOSURE - SOUTH

SCALE 1/4" = 1'-0"



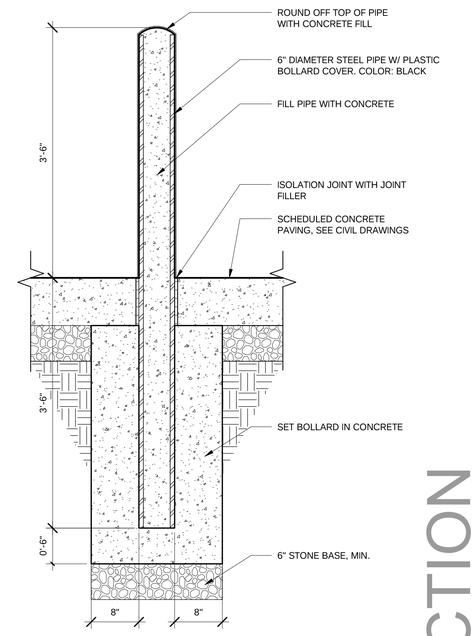
5 TRASH ENCLOSURE - WEST

SCALE 1/4" = 1'-0"



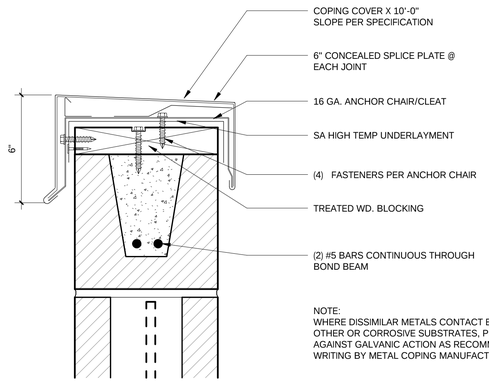
6 TRASH ENCLOSURE SECTION

SCALE 1" = 1'-0"



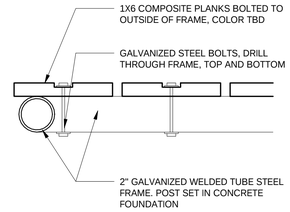
8 PIPE BOLLARD DETAIL

SCALE 1" = 1'-0"



7 METAL COPING DETAIL

SCALE 3" = 1'-0"



9 TRASH ENCLOSURE GATE DETAIL

SCALE 3" = 1'-0"

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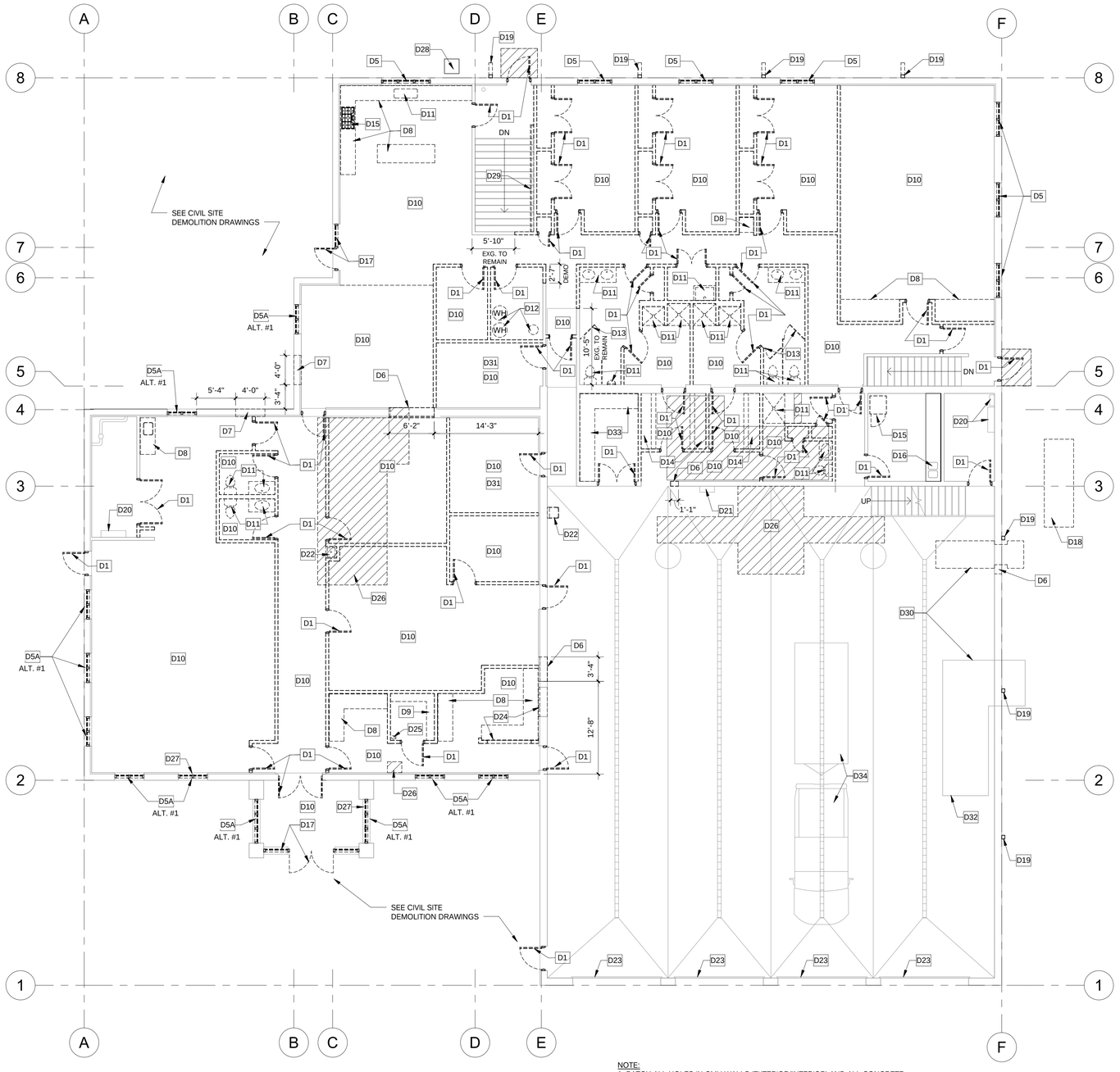
SITE DETAILS

AS 1.2



NOTE:
1. PATCH ALL HOLES IN CMU WALLS (EXTERIOR/INTERIOR) AND ALL CONCRETE PLANK FLOORING AND SLAB EDGES (P.T.M.E.).

2. PATCH ALL HOLES IN GWB THAT REMAINS IN PLACE, INCLUDE ALL INSULATION AND FRAMING AS REQUIRED FOR A COMPLETE INSTALLATION (P.T.M.E.).

1 FIRST FLOOR DEMOLITION PLAN

SCALE 1/8" = 1'-0"

DEMOLITION LEGEND

- EXISTING CONSTRUCTION TO REMAIN
- EXISTING WALL (SHEATHING & FRAMING) TO BE REMOVED
- EXISTING DOOR AND FRAME TO REMAIN
- EXISTING DOOR AND FRAME TO BE REMOVED
- AREA OF EXISTING CONCRETE SLAB TO BE REMOVED

DEMOLITION GENERAL NOTES

1. COORDINATE ALL DEMOLITION WORK. REFER TO THE MECHANICAL, ELECTRICAL, PLUMBING, AND CIVIL DRAWINGS:
   a. ELECTRICAL: REMOVE / CAP EXISTING ELECTRICAL EQUIPMENT, CONDUIT, BOXES AND WIRES AS REQUIRED.
   b. COMPLETELY REMOVE EXISTING FIRE ALARM SYSTEM AND ALL EQUIPMENT.
   c. PLUMBING: REMOVE AND CAP BELOW ADJACENT FINISHED SURFACES ALL EXISTING PIPING TO BE DEMOLISHED OR REVISED, TO MEET CURRENT CODE.
2. PERFORM ALL DEMOLITION WORK AS NECESSARY TO ACCOMPLISH THE WORK, INCLUDING THE REMOVAL, DISPOSAL, STORAGE AND/OR RE-USE OF ITEMS AS INDICATED AND REQUIRED.
3. PROVIDE TEMPORARY SUPPORT AND BRACING OF EXISTING STRUCTURE AS NECESSARY UNTIL CONSTRUCTION IS COMPLETE.
4. COORDINATE THE DEMOLITION WORK TO ACCOMMODATE SCHEDULING OF NEW WORK.
5. PREPARE SUBSTRATES AND SURFACES AS REQUIRED FOR NEW CONSTRUCTION.
6. VERIFY ALL EXISTING DIMENSIONS, ITEMS, AND CONDITIONS IN FIELD.
7. PATCH EXISTING SURFACES AFFECTED BY THE WORK TO MATCH SURFACES & SUBSTRATES.
8. PROVIDE DAILY CLEAN UP OF OWNER'S EQUIPMENT AND REMOVE CONSTRUCTION DEBRIS.
9. PROVIDE DUST CONTROL BETWEEN AREAS OF DEMOLITION AND OWNER'S EQUIPMENT.
10. ITEMS NOT SHOWN DOTTED ON THE DEMOLITION DRAWING YET WHICH ARE VISIBLE OR COULD BE ANTICIPATED TO REQUIRE REMOVAL IN ORDER TO COMPLETE THE WORK ARE INCLUDED AS A PART OF THE DEMOLITION WORK.
11. IT IS THE OWNER'S RESPONSIBILITY TO REMOVE ANY MATERIALS CONTAINING ASBESTOS. PRIOR TO THE COMMENCEMENT OF THE WORK, THE OWNER'S ASBESTOS ABATEMENT CONTRACTOR WILL REMOVE EXISTING MATERIALS CONTAINING ASBESTOS. THE CONTRACTOR SHALL NOTIFY THE OWNER WHEN HE ENCOUNTERS MATERIALS WHICH HE BELIEVES MAY CONTAIN ASBESTOS.
12. A LIMITED AMOUNT OF CUTTING AND PROBING IN CMU WALLS AND THE PRECAST PLANK FLOOR SYSTEM HAS BEEN PERFORMED. CONTRACTOR IS RESPONSIBLE TO LOCATE AND PATCH THESE AREAS AND MATCH EXISTING CONSTRUCTION (P.T.M.E.).
13. PROTECT EXISTING TRAILER AND VEHICLE FROM DAMAGE. COORDINATE RELOCATION WITH OWNER THROUGHOUT CONSTRUCTION.

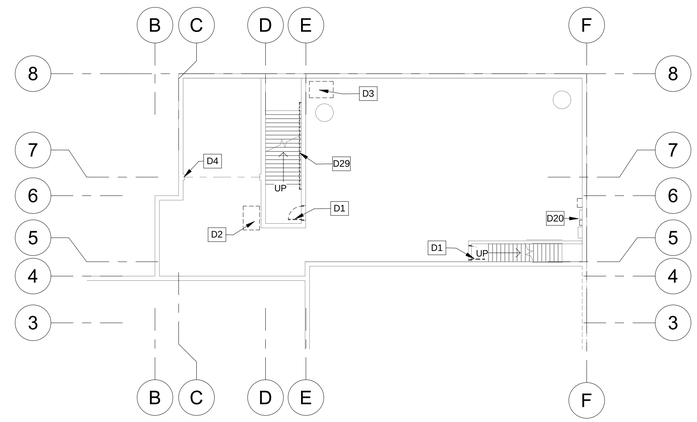
DEMOLITION KEY NOTES

BASEMENT

- D1 REMOVE EXISTING DOOR AND FRAME.
- D2 REMOVE EXISTING FURNACE, SEE MEP DRAWINGS.
- D3 REMOVE EXISTING GREASE INTERCEPTOR, SEE PLUMBING DRAWINGS.
- D4 REMOVE AND REPLACE THE BEAM END BEARING PLATE FOR BEAM REPAIR, SEE STRUCTURAL DRAWINGS.

FIRST FLOOR

- D1 REMOVE EXISTING DOOR AND FRAME.
- D5 REMOVE EXISTING WINDOW AND PREPARE FOR NEW, TYPICAL ALL WINDOWS.
- D5A REMOVE EXISTING WINDOW AND PREPARE FOR NEW, IF ALTERNATE #1 IS ACCEPTED. IF ALTERNATE #1 IS NOT ACCEPTED SEE ALLOWANCE #6.
- D6 REMOVE EXISTING PORTION OF CMU BEARING WALL AND PREPARE FOR NEW OPENING. SEE STRUCTURAL DWGS. FOR NEW LINTEL.
- D7 REMOVE EXISTING PORTION OF CMU WALL FOR NEW WINDOW. SALVAGE BLOCK FOR RELOCATION, IF POSSIBLE.
- D8 REMOVE EXISTING COUNTER AND CASEWORK.
- D9 REMOVE EXISTING SHELVING.
- D10 REMOVE EXISTING FLOORING.
- D11 REMOVE EXISTING PLUMBING FIXTURE AND ALL RELATED PIPING, SEE PLUMBING DWGS.
- D12 REMOVE EXISTING WATER HEATERS/ WATER SOFTENER.
- D13 REMOVE EXISTING TOILET PARTIONS.
- D14 REMOVE EXISTING LOCKERS AND BENCH. SALVAGE LOCKERS FOR REINSTALLATION.
- D15 REMOVE EXISTING APPLIANCE AND ALL RELATED WIRING AND PIPING, SEE MEP DWGS.
- D16 EXISTING STAINLESS STEEL SINK AND COUNTER TO REMAIN. PROTECT DURING DEMOLITION.
- D17 REMOVE EXISTING STOREFRONT DOORS AND WINDOWS, AND PREPARE FOR NEW.
- D18 REMOVE EXISTING GENERATOR AND PAD.
- D19 REMOVE EXISTING DOWNSPOUTS AND RECEPTORS. P.T.M.E. METAL FASCIA.
- D20 EXISTING POWER PANELS. SEE ELECTRICAL DEMOLITION DWGS FOR SCOPE.
- D21 EXISTING TOX ALERT TO REMAIN. PROTECT DURING DEMOLITION. SEE MECH. DWGS.
- D22 REMOVE EXISTING WATER COOLER AND ALL RELATED PIPING SEE PLUMBING DWGS.
- D23 EXISTING OVERHEAD DOOR TO REMAIN, PREP. FOR PAINT. ALLOWANCE FOR REPAIRS.
- D24 REMOVE EXISTING GLAZING AND HOLLOW METAL FRAME.
- D25 EXISTING ROOF DRAIN PIPING TO BE REMOVED AND RE-PIPED. SEE FLOOR PLAN FOR NEW LOCATION.
- D26 REMOVE PORTION OF EXISTING CONCRETE FLOOR SLAB FOR NEW UNDERGROUND PLUMBING. SEE PLUMBING DRAWINGS.
- D27 REMOVE EXISTING P.LAM. WINDOW SILLS AND PREPARE SURFACE FOR NEW SOLID SURFACE SILLS. TYPICAL ALL WINDOWS.
- D28 EXISTING RADIO TOWER TO REMAIN. PROTECT FROM DAMAGE DURING CONSTRUCTION.
- D29 REMOVE STEEL TUBE HANDRAIL AND SALVAGE FOR REINSTALLATION.
- D30 SEE MECHANICAL DWGS. FOR SCOPE OF WORK.
- D31 SEE ELEC. DWGS. FOR NEW FLOOR MOUNTED RECEPTACLES (P.T.M.E.).
- D32 MAU SYSTEM TO REMAIN. PROTECT DURING CONSTRUCTION. SEE MECH. DWGS.
- D33 EXG. STAINLESS STEEL COUNTERTOP TO BE REMOVED AND SALVAGED FOR MODIFICATION/REUSE. REMOVE EXG. CABINETS.
- D34 EXG. OWNER VEHICLES TO BE PROTECTED AND MOVED AS REQ'D.



2 BASEMENT DEMOLITION PLAN

SCALE 1/16" = 1'-0"

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BASEMENT + FIRST FLOOR DEMOLITION PLAN

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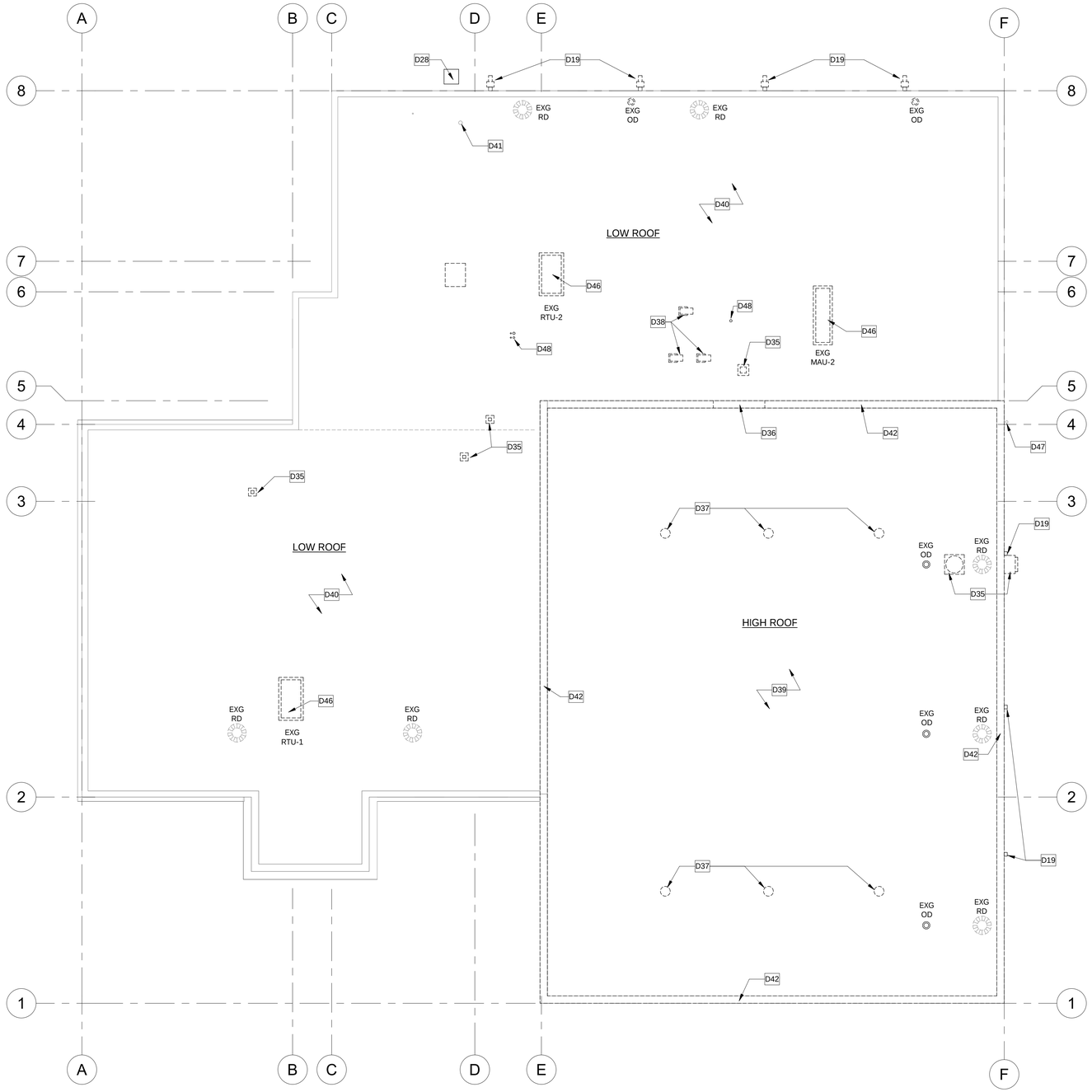


1 ROOF DEMOLITION PLAN

SCALE 1/8" = 1'-0"

N

DEMOLITION LEGEND

	EXISTING CONSTRUCTION TO REMAIN
	EXISTING ROOF CONSTRUCTION TO BE REMOVED
EXG. RD	EXISTING ROOF DRAIN TO BE REMOVED AND REPLACED
EXG. OD	EXISTING ROOF OVERFLOW DRAIN TO BE REMOVED AND REPLACED.
EXG. OD	EXISTING ROOF OVERFLOW DRAIN TO BE COMPLETELY REMOVED. P.T.M.E. ROOF STRUCTURE

DEMOLITION GENERAL NOTES

1. COORDINATE ALL DEMOLITION WORK. REFER TO THE MECHANICAL, ELECTRICAL, PLUMBING, AND CIVIL DRAWINGS:
   a. ELECTRICAL: REMOVE / CAP EXISTING ELECTRICAL EQUIPMENT, CONDUIT, BOXES AND WIRES AS REQUIRED.
   b. COMPLETELY REMOVE EXISTING FIRE ALARM SYSTEM AND ALL EQUIPMENT.
   c. PLUMBING: REMOVE AND CAP BELOW ADJACENT FINISHED SURFACES ALL EXISTING PIPING TO BE DEMOLISHED OR REVISED, TO MEET CURRENT CODE.
2. PERFORM ALL DEMOLITION WORK AS NECESSARY TO ACCOMPLISH THE WORK, INCLUDING THE REMOVAL, DISPOSAL, STORAGE AND/OR RE-USE OF ITEMS AS INDICATED AND REQUIRED.
3. PROVIDE TEMPORARY SUPPORT AND BRACING OF EXISTING STRUCTURE AS NECESSARY UNTIL CONSTRUCTION IS COMPLETE.
4. COORDINATE THE DEMOLITION WORK TO ACCOMMODATE SCHEDULING OF NEW WORK.
5. PREPARE SUBSTRATES AND SURFACES AS REQUIRED FOR NEW CONSTRUCTION.
6. VERIFY ALL EXISTING DIMENSIONS, ITEMS, AND CONDITIONS IN FIELD.
7. PATCH EXISTING SURFACES AFFECTED BY THE WORK TO MATCH SURFACES & SUBSTRATES.
8. PROVIDE DAILY CLEAN UP OF OWNER'S EQUIPMENT AND REMOVE CONSTRUCTION DEBRIS.
9. PROVIDE DUST CONTROL BETWEEN AREAS OF DEMOLITION AND OWNER'S EQUIPMENT.
10. ITEMS NOT SHOWN DOTTED ON THE DEMOLITION DRAWING YET WHICH ARE VISIBLE OR COULD BE ANTICIPATED TO REQUIRE REMOVAL IN ORDER TO COMPLETE THE WORK ARE INCLUDED AS A PART OF THE DEMOLITION WORK.
11. IT IS THE OWNER'S RESPONSIBILITY TO REMOVE ANY MATERIALS CONTAINING ASBESTOS. PRIOR TO THE COMMENCEMENT OF THE WORK, THE OWNER'S ASBESTOS ABATEMENT CONTRACTOR WILL REMOVE EXISTING MATERIALS CONTAINING ASBESTOS. THE CONTRACTOR SHALL NOTIFY THE OWNER WHEN HE ENCOUNTERS MATERIALS WHICH HE BELIEVES MAY CONTAIN ASBESTOS.
12. A LIMITED AMOUNT OF CUTTING AND PROBING IN CMU WALLS AND THE PRECAST PLANK FLOOR SYSTEM HAS BEEN PERFORMED. CONTRACTOR IS RESPONSIBLE TO LOCATE AND PATCH THESE AREAS AND MATCH EXISTING CONSTRUCTION (P.T.M.E.).
13. PROTECT EXISTING TRAILER AND VEHICLE FROM DAMAGE. COORDINATE RELOCATION WITH OWNER THROUGHOUT CONSTRUCTION.

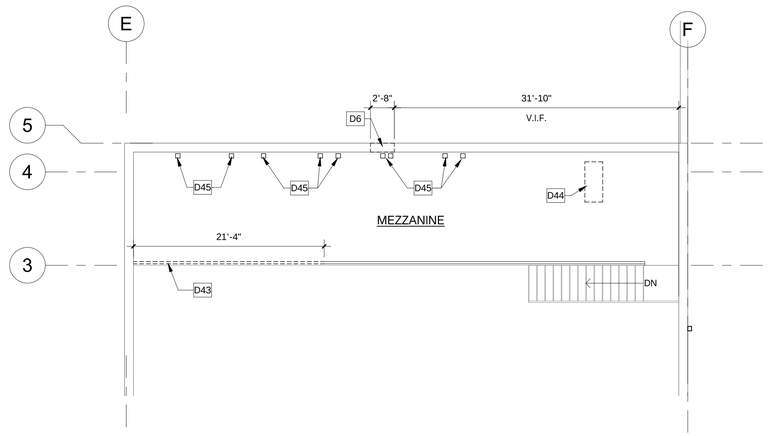
DEMOLITION KEY NOTES

MEZZANINE

D6	REMOVE EXISTING PORTION OF CMU BEARING WALL AND PREPARE FOR NEW OPENING. SEE STRUCTURAL DWGS. FOR NEW LINTEL.
D43	REMOVE PORTION OF METAL GUARDRAIL FOR NEW WALL CONSTRUCTION.
D44	REMOVE EXISTING AIR COMPRESSOR AND SALVAGE FOR REINSTALLATION. SEE MECHANICAL DWGS.
D45	REMOVE EXISTING DUCTWORK. SEE MECHANICAL DRAWINGS.

ROOF PLAN

D19	REMOVE EXISTING DOWNSPOUTS AND RECEPTORS. P.T.M.E. METAL FASCIA.
D28	EXISTING RADIO TOWER TO REMAIN. PROTECT FROM DAMAGE DURING CONSTRUCTION.
D35	REMOVE EXISTING EXHAUST FAN AND RELATED DUCT WORK. P.T.M.E. METAL DECK/FASTENERS/ FRAME. SEE STRUCT. DWGS.
D36	REMOVE PORTION OF EXISTING METAL FASCIA FOR NEW ROOF ACCESS DOOR AND ROOF LADDER.
D37	EXG. VENT STACK TO BE REMOVED. SEE MECH. DWGS.
D38	REMOVE EXISTING GOOSENECK AND RELATED DUCTWORK.
D39	REMOVE EXISTING BALLASTED EPDM ROOF MEMBRANE AND POLYISOCYANURATE INSULATION. EXISTING 1/2" FIBERBOARD TO REMAIN. PROTECT ALL EXISTING CONSTRUCTION DURING DEMOLITION AND CONSTRUCTION.
D40	REMOVE EXISTING TPO ROOF MEMBRANE, 1/2" FIBERBOARD, POLYISOCYANURATE INSULATION, AND EPS INSULATION.
D41	EXISTING ELEC. SLEEVE TO REMAIN.
D42	CUT AND REMOVE SECTION (TOP HORIZONTAL ONLY) OF FASCIA CAP. SEE DETAIL 1/A3.5
D46	REMOVE EXISTING ROOFTOP MECH UNIT AND CURB. P.T.M.E. METAL DECK/FASTENERS/ FRAME. SEE STRUCT. DWGS.
D47	REMOVE EXG. PVC PIPE FROM FASCIA AND WALL. P.T.M.E. OPENING IN CMU WALL.
D48	REMOVE EXG. PLUMBING VENT. P.T.M.E. METAL DECK/FASTENERS/FRAME.



2 MEZZANINE DEMOLITION PLAN

SCALE 1/8" = 1'-0"

N

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MEZZANINE + ROOF DEMOLITION PLAN

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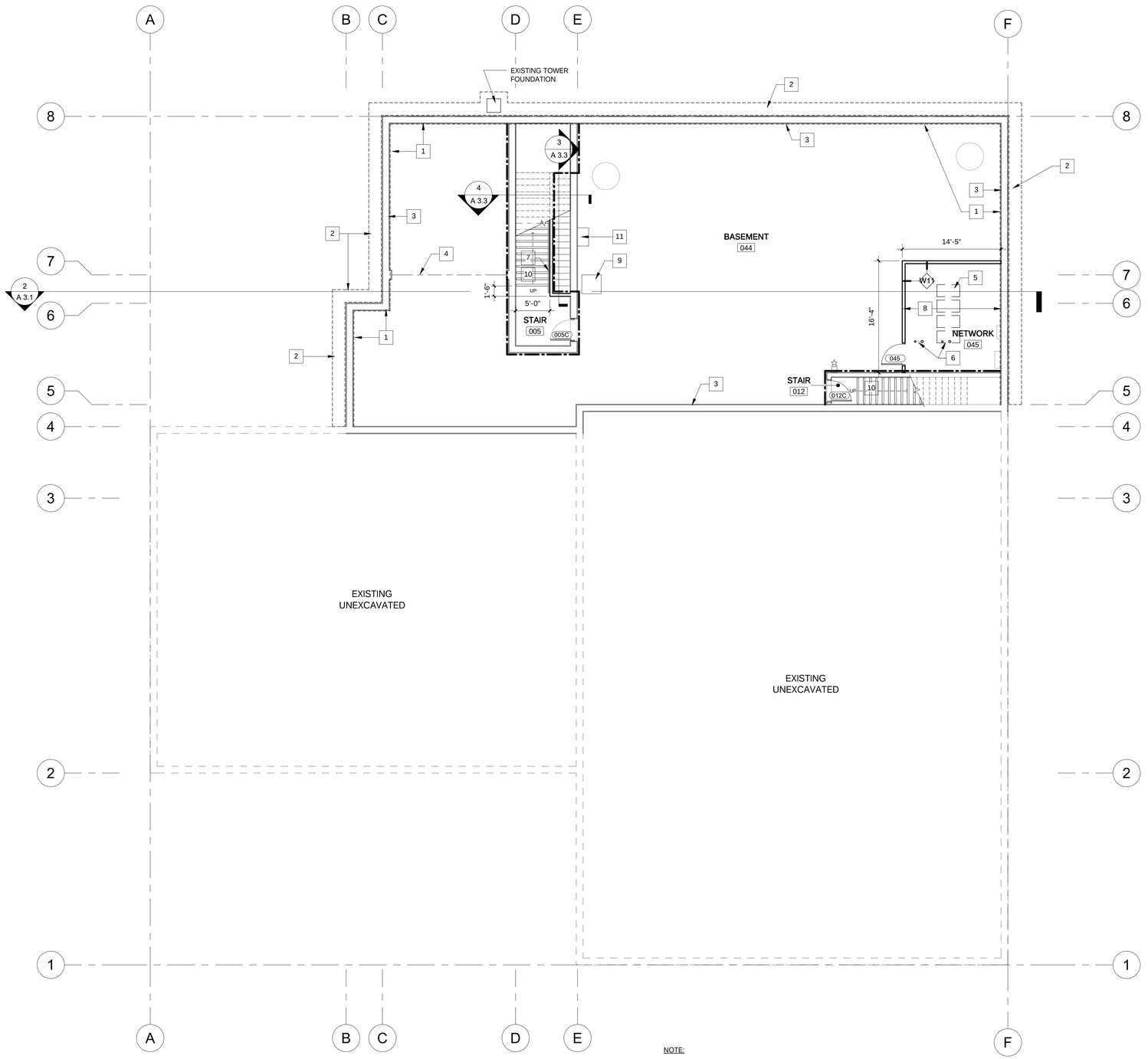

NOTE:

1. PATCH ALL HOLES IN GWB THAT REMAINS IN PLACE, INCLUDE ALL INSULATION AND FRAMING AS REQUIRED FOR A COMPLETE INSTALLATION (P.T.M.E.).

1 BASEMENT PLAN

SCALE 1/8" = 1'-0"

N

FLOOR PLAN LEGEND

- EXISTING WALL TO REMAIN
- NEW WALL
- EXISTING DOOR AND FRAME TO REMAIN
- NEW DOOR AND FRAME
- 001A — DOOR NUMBER
- FIRE EXTINGUISHER
- SEMI-RECESSED FIRE EXTINGUISHER CABINET
- W1 — WALL TAG, SEE WALL TYPES SHEET A 6.2
- A — WINDOW TAG, SEE SHEET A2.1
- 1 HOUR FIRE-RATED WALL

FLOOR PLAN GENERAL NOTES

1. ALL DIMENSIONS SHALL BE VERIFIED AND COORDINATED WITH ALL OF THE WORK OF ALL TRADES.
2. WHEN UNDIMENSIONED PARTITIONS APPEAR IN CONJUNCTION WITH DOOR OPENINGS, THE DOOR WIDTH AND DOOR FRAME DETAILS DETERMINE THE LOCATION OF ADJACENT WALLS AND FRAMES.
3. DOOR OPENINGS THAT ARE NOT DIMENSIONALLY LOCATED ARE TO BE CENTERED BETWEEN WALLS OR POSITIONED WITH THE HINGED JAMB 3" AWAY FROM AN ADJACENT WALL OR COLUMN AS SHOWN ON THE PLANS AND/OR DETERMINED BY THE DETAILS.
4. NOTIFY ARCHITECT IMMEDIATELY OF DISCREPANCIES.
5. PARTITIONS ARE DIMENSIONED TO THE FACE OF THE WALL UNLESS NOTED OTHERWISE.
6. TYPICAL THICKNESS OF WALLS ARE NOMINALLY 5" UNLESS NOTED OTHERWISE.
7. ALL WOOD FRAMING MEMBERS THAT REST OR ARE ATTACHED TO CONCRETE OR MASONRY SHALL BE PRESSURE TREATED OR DECAY RESISTANT IN ACCORDANCE WITH IBC SECTION 2304.11.
8. ALL EXISTING AND NEW EXPOSED STEEL TO BE PAINTED SHALL BE WIRE BRUSHED AND CLEANED PRIOR TO PAINTING. REFER TO ROOM FINISH SCHEDULE FOR PAINT COLORS.
9. PROVIDE FLASHING, TYPICAL AT ALL NEW WINDOWS, DOORS, AND OTHER OPENINGS, ETC.
10. CONTRACTOR SHALL REMOVE ALL ADHESIVES, REPAIR, PATCH, AND LEVEL FLOOR SLAB IN PREPARATION FOR NEW FLOOR FINISHES.
11. PROTECT EXISTING TRAILER AND VEHICLE FROM DAMAGE. COORDINATE RELOCATION WITH OWNER THROUGHOUT CONSTRUCTION.
12. CONTRACTOR TO FURNISH AND INSTALL ALL WOOD BLOCKING AND MOUNTING BRACKETS FOR ALL TVS, CABINETS, GLASSBOARDS, SHELVING, COUNTERTOPS, BRACKETS, AND OTHER WALL MOUNTED FIXTURES, EQUIPMENT, AND DEVICES. COORDINATE ALL LOCATIONS WITH OWNER PRIOR TO INSTALLATION.
13. CONTRACTOR TO VERIFY AND CONFIRM ALL SIZES AND LOCATIONS OF OWNER FURNISHED EQUIPMENT WITH THE OWNER PRIOR TO CONSTRUCTION OF WALLS.
14. CONTRACTOR TO VERIFY AND CONFIRM ALL WATER, POWER, AND GAS CONNECTIONS OF OWNER FURNISHED EQUIPMENT WITH THE OWNER PRIOR TO ROUGH-IN OF ALL UTILITIES.
15. CONTRACTOR SHALL PROVIDE ALL FIRE SAFING, SEALANT, FLASHINGS, FRAMES, ESCUTCHEONS AND TRIM FOR ALL EXISTING OPENINGS TO BE RE-USED OR REMAINING AND FOR ALL NEW OPENINGS.

BASEMENT PLAN KEY NOTES

1. DRILL + INJECT URETHANE JOINT FILLER AT CONC. FOUNDATION WALL + MASONRY WALL SEE DETAIL 1/A 3.3.
2. NEW WATERPROOFING SYSTEM. SEE DETAIL 1/A 3.3.
3. SEE STRUCTURAL DRAWINGS FOR FOUNDATION CRACK REPAIR.
4. CLEAN, PRIME, AND FINISH PAINT STEEL BEAM AND NEW BASE PLATE. SEE STRUCTURAL DWGS.
5. OWNER "IT" RACK LOCATIONS FOR REFERENCE ONLY. COORDINATE WITH OWNER AND LOW VOLTAGE TECHNOLOGY DWGS.
6. NEW ELECTRICAL SLEEVES THROUGH PRECAST PLANK FLOOR FOR NETWORK CABLING. SEE PL-1, STRUCT., ELEC. AND LOW VOLTAGE TECH. DWGS. VERIFY SIZE AND LOCATIONS W/ OWNER PRIOR TO FINAL LAYOUT AND SUBMISSION OF SHOP DWGS.
7. CLEAN, PAINT, AND REINSTALL EXG. WALL MOUNTED HANDRAIL. REINSTALLATION TO MEET CURRENT CODE (HEIGHT, LENGTH, AND DIAMETER).
8. 3/4" FIRE-RATED PLYWOOD SHEATHING ON ALL WALLS. SEE LOW VOLTAGE DRAWING T3.0 FOR FURTHER INFORMATION.
9. 4" HIGH CONC. MAINTENANCE PAD FOR NEW FURNACE. DOWEL INTO SLAB. COORD. SIZE AND LOCATION W/ MECH. DWGS.
10. INSTALL STAIR TREAD NOSING (ST-1). SEE FINISH LEGEND, SHEET A7.1
11. INSTALL 32"X20" SHELF FOR HUMIDIFIER, COORDINATE WITH MECHANICAL.

PRECAST CONCRETE PLANK NOTES

SEE SHEET PL-1 FOR EXISTING PRECAST CONCRETE PLANK REQUIREMENTS

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COUNTY of DANE WISCONSIN 1839

DANE COUNTY EMERGENCY MANAGEMENT

5415 KING JAMES WAY
FITCHBURG, WISCONSIN

CLIENT APPROVAL

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BASEMENT PLAN

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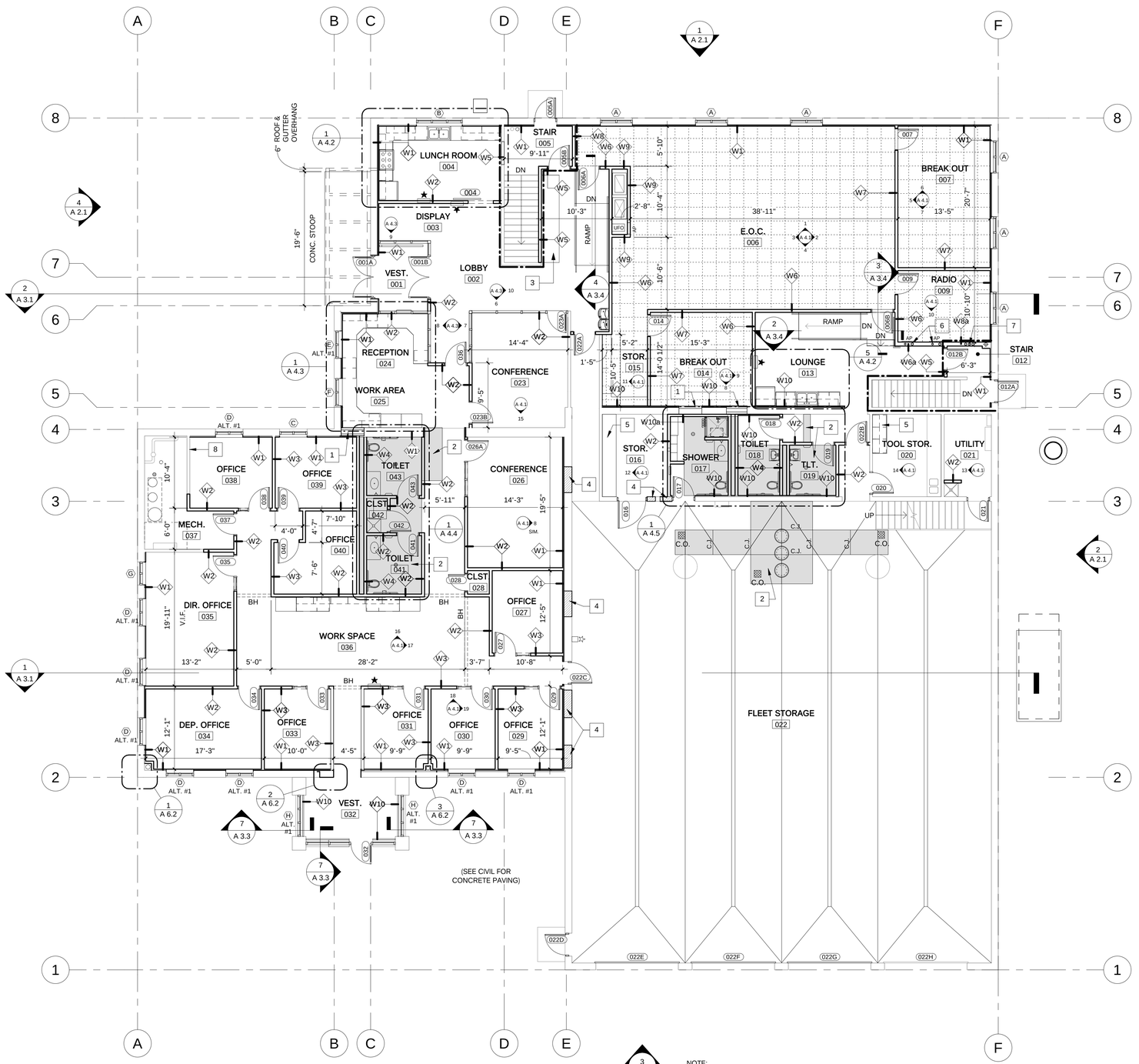

1 FIRST FLOOR PLAN

SCALE 1/8" = 1'-0"

N

NOTE:

1. PATCH ALL HOLES IN CMU WALLS (EXTERIOR/INTERIOR) AND ALL CONCRETE PLANK FLOORING AND SLAB EDGES (P.T.M.E.).

2. PATCH ALL HOLES IN GWB THAT REMAINS IN PLACE, INCLUDE ALL INSULATION AND FRAMING AS REQUIRED FOR A COMPLETE INSTALLATION (P.T.M.E.).

3. BACK TO BACK J-BOXES ARE NOT ALLOWED. ALL J-BOXES IN OFFICES, CONFERENCE ROOMS, AND BREAK-OUT ROOMS SHALL BE SEALED AND CAULKED TO REDUCE SOUND TRANSMISSION THROUGHOUT THE FACILITY.

4. PROVIDE WALL MOUNTED APs (ACCESS DOORS/PANELS) AS NOTED AND AS REQUIRED BY OWNER.

FLOOR PLAN LEGEND

- EXISTING WALL TO REMAIN
- NEW WALL
- EXISTING DOOR AND FRAME TO REMAIN
- NEW DOOR AND FRAME
- 001A — DOOR NUMBER, SEE SHEET A 6.1
- FIRE EXTINGUISHER
- SEMI-RECESSED FIRE EXTINGUISHER CABINET
- W1 — WALL TAG, SEE SHEET A 6.2
- A — WINDOW TAG, SEE SHEET A 2.1
- 1 HOUR FIRE-RATED WALL
- RAISED ACCESS FLOOR
- INDICATES AREA OF NEW CONCRETE FLOOR SLAB INFILL. SEE STRUCTURAL DRAWINGS.

FLOOR PLAN GENERAL NOTES

1. ALL DIMENSIONS SHALL BE VERIFIED AND COORDINATED WITH ALL OF THE WORK OF ALL TRADES.
2. WHEN UNDIMENSIONED PARTITIONS APPEAR IN CONJUNCTION WITH DOOR OPENINGS, THE DOOR WIDTH AND DOOR FRAME DETAILS DETERMINE THE LOCATION OF ADJACENT WALLS AND FRAMES.
3. DOOR OPENINGS THAT ARE NOT DIMENSIONALLY LOCATED ARE TO BE CENTERED BETWEEN WALLS OR POSITIONED WITH THE HINGED JAMB 3" AWAY FROM AN ADJACENT WALL OR COLUMN AS SHOWN ON THE PLANS AND/OR DETERMINED BY THE DETAILS.
4. NOTIFY ARCHITECT IMMEDIATELY OF DISCREPANCIES.
5. PARTITIONS ARE DIMENSIONED TO THE FACE OF THE WALL UNLESS NOTED OTHERWISE.
6. TYPICAL THICKNESS OF WALLS ARE NOMINALLY 5" UNLESS NOTED OTHERWISE.
7. ALL WOOD FRAMING MEMBERS THAT REST OR ARE ATTACHED TO CONCRETE OR MASONRY SHALL BE PRESSURE TREATED OR DECAY RESISTANT IN ACCORDANCE WITH IBC SECTION 2304.11.
8. ALL EXISTING AND NEW EXPOSED STEEL TO BE PAINTED SHALL BE WIRE BRUSHED AND CLEANED PRIOR TO PAINTING. REFER TO ROOM FINISH SCHEDULE FOR PAINT COLORS.
9. PROVIDE FLASHING, TYPICAL AT ALL NEW WINDOWS, DOORS, AND OTHER OPENINGS, ETC.
10. CONTRACTOR SHALL REMOVE ALL ADHESIVES, REPAIR, PATCH, AND LEVEL FLOOR SLAB IN PREPARATION FOR NEW FLOOR FINISHES.
11. PROTECT EXISTING TRAILER AND VEHICLE FROM DAMAGE. COORDINATE RELOCATION WITH OWNER THROUGHOUT CONSTRUCTION.
12. CONTRACTOR TO FURNISH AND INSTALL ALL WOOD BLOCKING AND MOUNTING BRACKETS FOR ALL TVS, CABINETS, GLASSBOARDS, SHELVING, COUNTERTOP BRACKETS, AND OTHER WALL MOUNTED FIXTURES, EQUIPMENT, AND DEVICES. COORDINATE ALL LOCATIONS WITH OWNER PRIOR TO INSTALLATION.
13. CONTRACTOR TO VERIFY AND CONFIRM ALL SIZES AND LOCATIONS OF OWNER FURNISHED EQUIPMENT WITH THE OWNER PRIOR TO CONSTRUCTION OF WALLS.
14. CONTRACTOR TO VERIFY AND CONFIRM ALL WATER, POWER, AND GAS CONNECTIONS OF OWNER FURNISHED EQUIPMENT WITH THE OWNER PRIOR TO ROUGH-IN OF ALL UTILITIES.
15. CONTRACTOR SHALL PROVIDE ALL FIRE SAFING, SEALANT, FLASHINGS, FRAMES, ESCUTCHEONS AND TRIM FOR ALL EXISTING OPENINGS TO BE RE-USED OR REMAINING AND FOR ALL NEW OPENINGS.

FIRST FLOOR PLAN KEY NOTES

1. INFILL DOOR OPENING W/ 3-5/8" 20 GAUGE MTL STUDS, 5/8" GWB., AND SOUND ATTENUATION BATTS.
2. AREA OF NEW CONCRETE SLAB INFILL - SEE STRUCT. DWGS.
3. NEW FLOOR, SEE STRUCTURAL DRAWINGS.
4. CMU INFILL AT DOOR/WINDOW OPENING, SEE STRUCT. DWG. DETAIL 9/S4.1
5. MODIFIED S.S. COUNTER TOP. PROVIDE ALL CUTTING, WELDING, POLISHING, ATTACHMENTS, ETC. AS REQ'D.
6. NEW ELECTRICAL SLEEVES THROUGH PRECAST PLANK FLOOR FOR NETWORK CABLING. SEE PL-1, STRUCT., ELEC. AND LOW VOLTAGE TECH. DWGS. VERIFY SIZE AND LOCATIONS W/ OWNER PRIOR TO FINAL LAYOUT AND SUBMISSION OF SHOP DWGS.
7. (3) 4" CONDUIT IN WALL FOR RADIO WIRING (RUN FROM MEZZANINE RADIO CLOSET TO RAISED ACCESS FLOOR). VERIFY SIZE & LOCATION W/ OWNER PRIOR TO FINAL LAYOUT & SUBMISSION OF SHOP DWGS.
8. ADD SOUND ATT. BATT AND GWB UP TO ROOF DECK TO EXG. WALL

PRECAST CONCRETE PLANK NOTES

SEE SHEET PL-1 FOR EXISTING PRECAST CONCRETE PLANK REQUIREMENTS

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FIRST FLOOR PLAN

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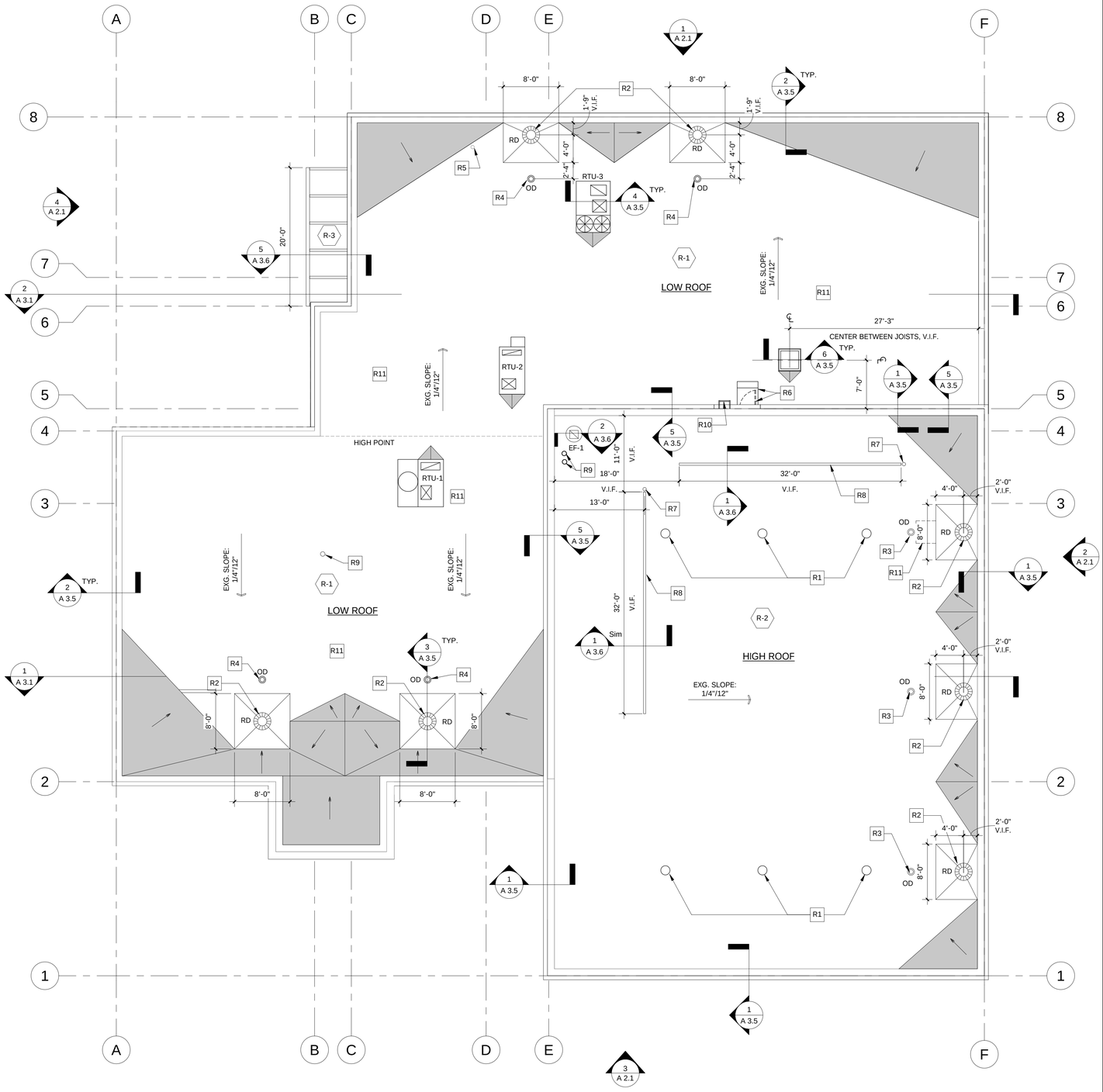


2 ROOF PLAN

SCALE 1/8" = 1'-0"

ROOF LEGEND

- ROOF INSULATION CRICKET
- RD — ROOF DRAIN (RD)
- OD — ROOF OVERFLOW DRAIN (OD)
- INDICATES DOWNWARD SLOPE OF ROOF STRUCTURE
- INDICATES DOWNWARD SLOPE TAPERED INSULATION
- VENT STACK, PIPE OR CONDUIT
- SKYLIGHT
- AIR HANDLING UNIT

ROOF TYPES

R-1 — NEW ASSEMBLY:
- MODIFIED BITUMINOUS MEMBRANE
- 1/4" DENSDECK RECOVERY BOARD
- TWO (2) LAYERS OF 2.6" POLYISOCYANURATE INSULATION, MECHANICALLY FASTENED

R-2 — NEW ASSEMBLY:
- MODIFIED BITUMINOUS MEMBRANE
- 1/4" DENSDECK RECOVERY BOARD
- TWO (2) LAYERS OF 2.6" POLYISOCYANURATE INSULATION, MECHANICALLY FASTENED

INSTALL OVER EXISTING 1/2" WOOD FIBER BOARD

R-3 — GLASS CANOPY, SEE SECTION DETAIL 4/A3.6 AND STRUCTURAL DWGS.

ROOF PLAN KEY NOTES

- R1 — NEW INFRARED HEATER VENT STACK IN EXG. LOCATION. FLASH AND SEAL PER DRAWING DETAIL 3/A3.6.
- R2 — NEW ROOF DRAIN. RE-WORK PIPING PER PLUMBING DRAWINGS.
- R3 — NEW OVERFLOW ROOF DRAIN. RE-WORK PIPING PER PLUMBING DRAWINGS.
- R4 — NEW OVERFLOW ROOF DRAIN. SEE PLUMBING DRAWINGS.
- R5 — EXISTING ELECTRICAL SLEEVE TO REMAIN. PROVIDE WEATHER GUARD/ SERVICE CAP. FLASH AND SEAL PER DRAWING DETAIL.
- R6 — ROOF ACCESS WITH P.T. WOOD LANDING AND STEP.
- R7 — NEW 6" ELECTRICAL SLEEVE. PROVIDE WEATHER GUARD/ SERVICE CAP. CONFIRM SIZE, HEIGHT, AND LOCATION WITH OWNER
- R8 — NEW EQUIPMENT (ANTENNA) SUPPORT RAIL, CONFIRM AND VERIFY FINAL SIZE, LOCATION, AND HEIGHT WITH OWNER, SEE STRUCT. DWGS.
- R9 — NEW EXHAUST FAN GOOSENECK, SEE MECH. DWGS.
- R10 — UPPER ROOF ACCESS LADDER. SEE DETAIL 4/A 3.6
- R11 — FILL IN VOID/ OPENING WITH METAL DECK, P.T.M.E. SEE STRUCTURAL DWGS.

ROOF PLAN GENERAL NOTES

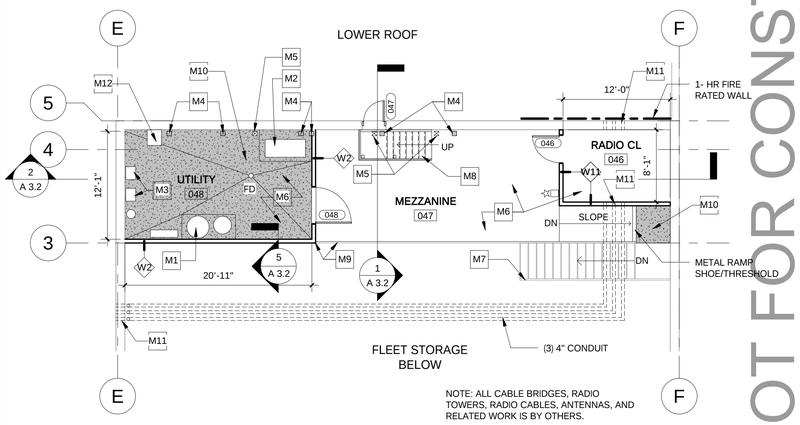
1. TAPERED ROOF INSULATION SHALL SLOPE AT 1/4" PER 1'-0".
2. SHOP DRAWING DESIGN AND INSTALLATION OF TAPERED INSULATION MUST ACCOUNT FOR CAMBER IN STRUCTURE TO ENSURE THAT THE ROOF DRAINS AS DESIGNED.
3. AT MECHANICAL OPENINGS AND CURBS ON ROOF, PROVIDE CRICKETS AS REQUIRED FOR POSITIVE DRAINAGE.
4. MECHANICAL LOCATIONS ARE SHOWN FOR REFERENCE ONLY. REFER TO MECHANICAL DRAWINGS FOR EXTENT OF MECHANICAL EQUIPMENT, SIZE AND LOCATION OF ALL ROOF TOP PENETRATIONS.
5. ALL MECHANICAL AND ELECTRICAL ROOFTOP EQUIPMENT, PIPING, CONDUIT, ETC. TO BE PRIME AND FINISH PAINTED.
6. COORDINATE ROOF AND OVERFLOW DRAIN LOCATIONS WITH STRUCTURAL COMPONENTS TO AVOID LOCATING ROOF AND OVERFLOW DRAINS OVER TOP OF BEAMS OR JOISTS.
7. ALL ROOFING WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS.
8. ALL EXISTING SPLICE PLATES OF THE METAL FASCIA/COPING SYSTEM SHALL BE REMOVED. INSTALL NEW SPLICE PLATES, ANCHORS, AND CAULKING. PAINT TO MATCH FASCIA SYSTEM.

MEZZANINE PLAN KEY NOTES

- M1 — R.O. SYSTEM ON 4" CONC. PAD. SEE MEP DWGS.
- M2 — REINSTALL EXISTING COMPRESSOR ON NEW 4" CONC. PAD. SEE MECH. DWGS.
- M3 — WALL MOUNTED TANKLESS WATER HEATERS. SEE MEP DWGS.
- M4 — INFILL EXG. HOLES IN PRECAST FLOOR PLANKS. SEE SHEET PL-1, DETAIL 4.
- M5 — NEW DUCTWORK THROUGH EXG. FLOOR HOLES. SEE MECH. DWGS.
- M6 — 2" CONC. TOPPING. SLOPE TO DRAIN IN UTILITY ROOM. SEE STRUCT. DWGS.
- M7 — MODIFY EXISTING HANDRAIL TO MEET CURRENT CODE. SEE DETAIL 6/A3.2
- M8 — NEW WELDED ALUMINUM PREFAB STAIRWAY, LANDING, AND RAILING, FSI INDUSTRIES (S3668-AL) W/ 36" LANDING AND I-BAR GRATING TREADS, OR APPROVED EQUAL.
- M9 — MODIFY EXISTING GUARDRAIL AND ATTACH TO NEW WALL. VERIFY HEIGHT MEETS CODE AFTER CONC. FLOOR TOPPING IS INSTALLED. SEE DETAIL 7/A 3.2
- M10 — EPOXY FLOOR FINISH, ERF-1/EB-1/UTILITY RM), SEE ROOM FINISH LEGEND. WATERPROOF MEMBRANE (Laticrete: HydroBan OR EQUAL) UNDER CONCRETE TOPPING IN UTILITY ROOM.
- M11 — (3) 4" SLEEVES THROUGH WALLS. CONFIRM AND VERIFY FINAL SIZE, QUANTITY, AND LOCATION W/ OWNER PRIOR TO INSTALLATION.
- M12 — WALL MOUNTED BOILER. SEE MEP DRAWINGS.

PRECAST CONCRETE PLANK NOTES

SEE SHEET PL-1 FOR EXISTING PRECAST CONCRETE PLANK REQUIREMENTS



NOTE: ALL CABLE BRIDGES, RADIO TOWERS, RADIO CABLES, ANTENNAS, AND RELATED WORK IS BY OTHERS.

1 MEZZANINE PLAN

SCALE 1/8" = 1'-0"

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MEZZANINE + ROOF PLAN

A 1.3

1 EQUIPMENT + FURNITURE PLAN

SCALE 1/8" = 1'-0"

EQUIPMENT PLAN GENERAL NOTES

1. CONTRACTOR TO FURNISH AND INSTALL ALL WOOD BLOCKING AND MOUNTING BRACKETS FOR ALL TVS, CABINETS, GLASSBOARDS, SHELVING, COUNTERTOP BRACKETS, AND OTHER WALL MOUNTED FIXTURES, EQUIPMENT, AND DEVICES. COORDINATE WITH OWNER PRIOR TO INSTALLATION.
2. CONTRACTOR TO VERIFY AND CONFIRM ALL SIZES AND LOCATIONS OF OWNER FURNISHED EQUIPMENT WITH THE OWNER PRIOR TO CONSTRUCTION OF WALLS.
3. CONTRACTOR TO VERIFY AND CONFIRM ALL WATER, POWER, AND GAS CONNECTIONS OF OWNER FURNISHED EQUIPMENT WITH THE OWNER PRIOR TO ROUGH-IN OF ALL UTILITIES.

FURNITURE PLAN FOR REFERENCE ONLY

CONTRACTOR TO VERIFY AND CONFIRM THE OWNER'S FINAL FURNITURE LAYOUT AND DETAILS W/ THE OWNER PRIOR TO EACH CONSTRUCTION PHASE.

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EQUIPMENT + FURNITURE PLAN

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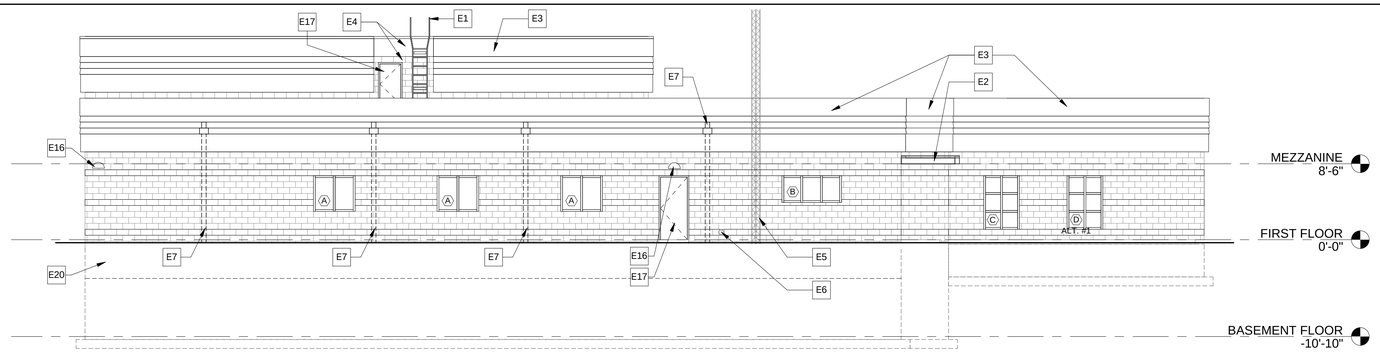
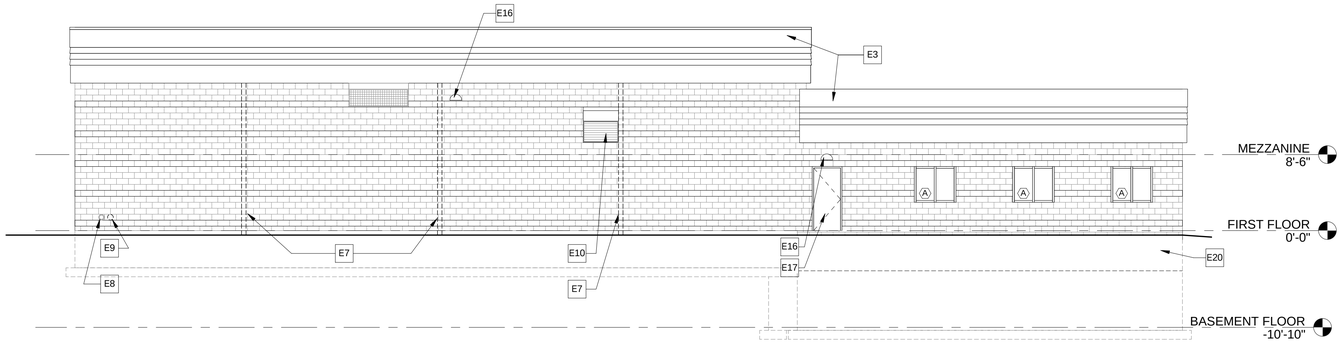


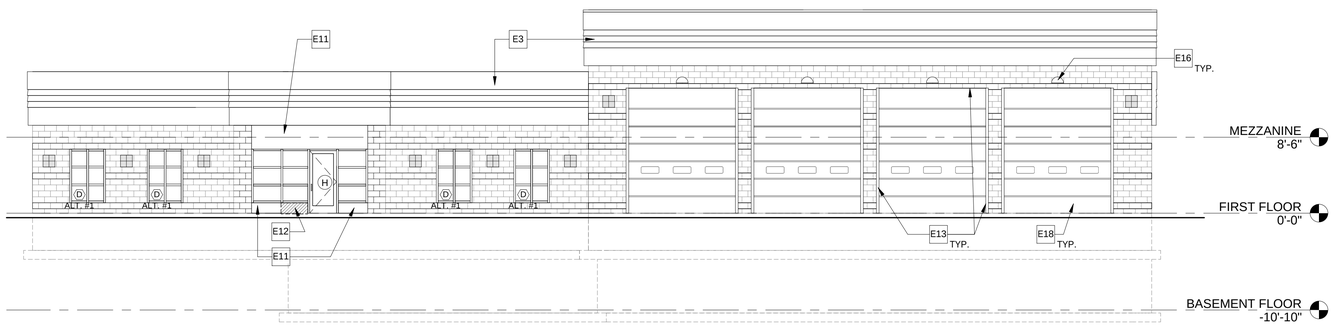
1 NORTH ELEVATION

SCALE 1/8" = 1'-0"



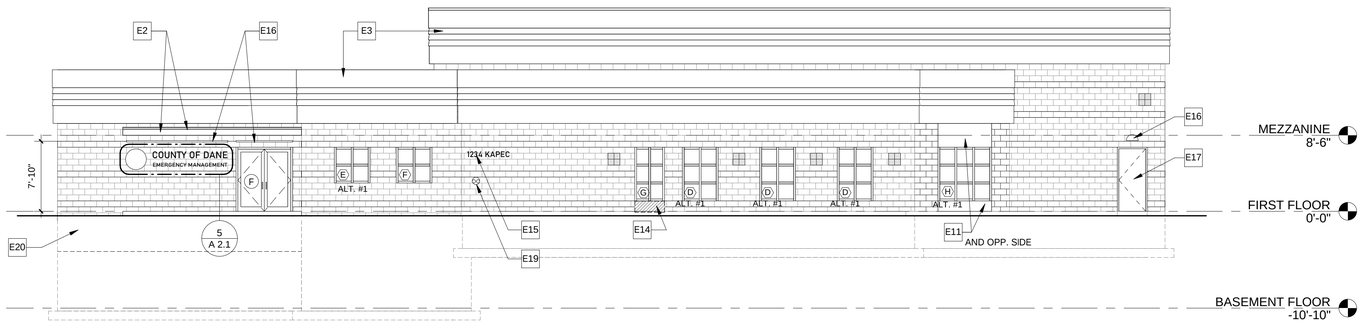
2 EAST ELEVATION

SCALE 1/8" = 1'-0"



3 SOUTH ELEVATION

SCALE 1/8" = 1'-0"



4 WEST ELEVATION

SCALE 1/8" = 1'-0"

EXTERIOR ELEVATION KEY NOTES

- E1 NEW ROOF ACCESS LADDER, SEE DETAIL 4/A3.6
- E2 NEW STEEL STRUCTURE (COLOR: BLACK) AND TEMPERED/LAMINATED GLASS CANOPY. SEE DETAIL 5/A3.6 AND STRUCT. DWGS.
- E3 EXISTING METAL FASCIA, PAINTED (TYP. ALL). COLOR: SW7076 CYBERSPACE.
- E4 REMOVE EXG. METAL FASCIA @ DOOR + LADDER LOCATION. PROVIDE NEW METAL FASCIA INFILL ABOVE. EPOXY PAINT EXG. CMU BEHIND REMOVED FASCIA. COLOR: SW7076 CYBERSPACE.
- E5 EXISTING RADIO TOWER TO REMAIN.
- E6 EXG. ROOF DRAIN NOZZLE/SCUPPER TO REMAIN. TIE NEW OVERFLOW DRAINS TO OPENING. SEE PLUMBING DWGS.
- E7 REMOVE EXISTING DOWNSPOUTS AND SCUPPERS. PATCH OPENINGS IN METAL FASCIA, P.T.M.E.
- E8 EXG. ROOF OVERFLOW DRAIN NOZZLE TO REMAIN. SEE PLUMBING DWGS.
- E9 REMOVE EXG. ROOF DRAIN NOZZLE/SCUPPER. FILL HOLE WITH NEW CMU TO MATCH EXG.
- E10 EXISTING EXHAUST HOOD REMOVED AND REPLACED WITH NEW FAN. SEE MECH. & STRUCTURAL DRAWINGS. P.T.M.E.
- E11 EXISTING COLORED TILE TO BE COVERED WITH HARDIE PANEL BOARD. SEE DETAIL 7/A3.3. COLOR: SW7026 GRIFFIN.
- E12 INFILL AREA WITH MATCHING CMU WHERE EXG. DOOR HAS BEEN REMOVED. HARDIE PANEL SHEATHING PER DETAIL 7/A3.3
- E13 SCRAPE, PRIME, AND PAINT EXISTING O.H. DOOR STEEL JAMBS + HEAD. COLOR: SW7026 GRIFFIN.
- E14 INFILL AREA WITH MATCHING CMU WHERE EXG. DOOR HAS BEEN REMOVED, P.T.M.E.
- E15 BLACK ALUMINUM STAND-OFF ADDRESS, FONT: BAHNSCHRIFT , 7" HEIGHT. VERIFY ADDRESS WITH OWNER.
- E16 NEW BUILDING MOUNTED EXTERIOR LIGHTING, SEE ELEC. DWGS.
- E17 NEW H.M. FRAME & INSULATED METAL DOOR, PAINTED. COLOR: SW7026 GRIFFIN.
- E18 EXISTING OVERHEAD DOORS. CLEAN, PRIME, AND PAINT. COLOR: SW7026 GRIFFIN.
- E19 EXG. FIRE DEPT. CONNECTION TO REMAIN.
- E20 NEW BELOW GRADE WATERPROOF SYSTEM. SEE DETAIL 1/A 3.3

EXTERIOR ELEVATION GENERAL NOTES

1. COMPLETELY CLEAN EXTERIOR CMU BLOCK WALLS AND REMOVE ALL STAINS, EFFLORESCENCE, AND RUST FROM ALL SURFACES. — ALT. #2
2. REPLACE ALL CRACKED, CHIPPED, AND MISSING CMU BLOCK, P.T.M.E.
3. RAKE-OUT/REPOINT ALL DETERIORATED, MISSING, AND/OR CRACKED MORTAR JOINTS, P.T.M.E.
4. REMOVE ALL EXTERIOR SEALANT JOINTS AND INSTALL NEW BACKER ROD AND JOINT SEALANTS.
5. PROVIDE NEW WATER REPELLENT COATING AT ALL EXTERIOR CMU SURFACES. — ALT. #3
6. PROVIDE NEW WEEP SYSTEM PER DETAILS 1&2/A3.3
7. CONTRACTOR TO VERIFY AND COORDINATE RADIO TOWER INSTALLATION WITH OWNER AND CONFIRM FINAL LOCATIONS OF ALL ASSOCIATED EQUIPMENT AT ALL ROOFS, WALLS, AND SITE AREAS.
8. ALL CABLE BRIDGES, RADIO TOWERS, RADIO CABLES, ANTENNAS, AND RELATED WORK IS BY OTHERS.

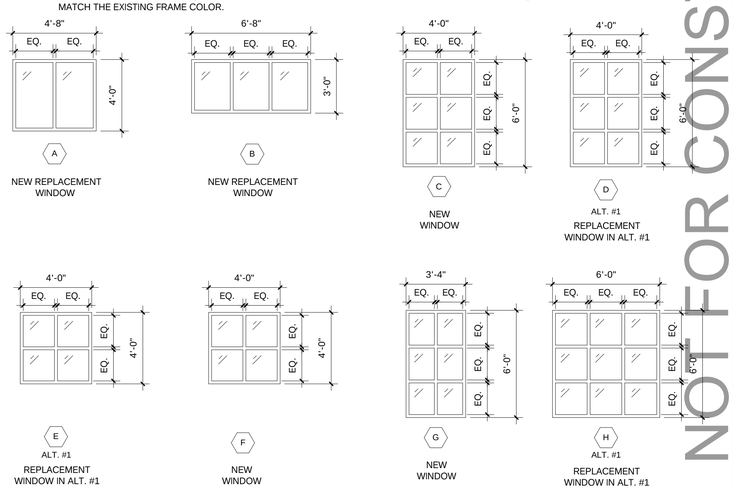
5 EXTERIOR SIGNAGE DETAIL

SCALE 1/2" = 1'-0"

ALUMINUM STOREFRONT WINDOW TYPES

NOTES:

1. ALL WINDOWS SHALL BE STOREFRONT SYSTEM A; FIXED ALUMINUM STOREFRONT, BASIS OF DESIGN: EFCO XTHERM SERIES 526 (T), SHEAR BLOCK W/ SILL STARTER W/ END DAMS. GLASS SHALL BE LOW-E COATED, CLEAR INSULATING LAMINATED (GL-5). VERIFY FRAME COLOR WITH ARCHITECT AFTER ACCEPTANCE OR REJECTION OF ALTERNATE #1.
2. ALL DIMENSIONS OF REPLACEMENT WINDOWS SHALL BE VERIFIED IN FIELD BY CONTRACTOR.
3. IF ALTERNATE #1 IS ACCEPTED, FRAMES SHALL ALL BE BLACK FINISH. IF ALTERNATE #1 IS NOT ACCEPTED, THE FRAMES SHALL MATCH THE EXISTING FRAME COLOR.



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BUILDING ELEVATIONS

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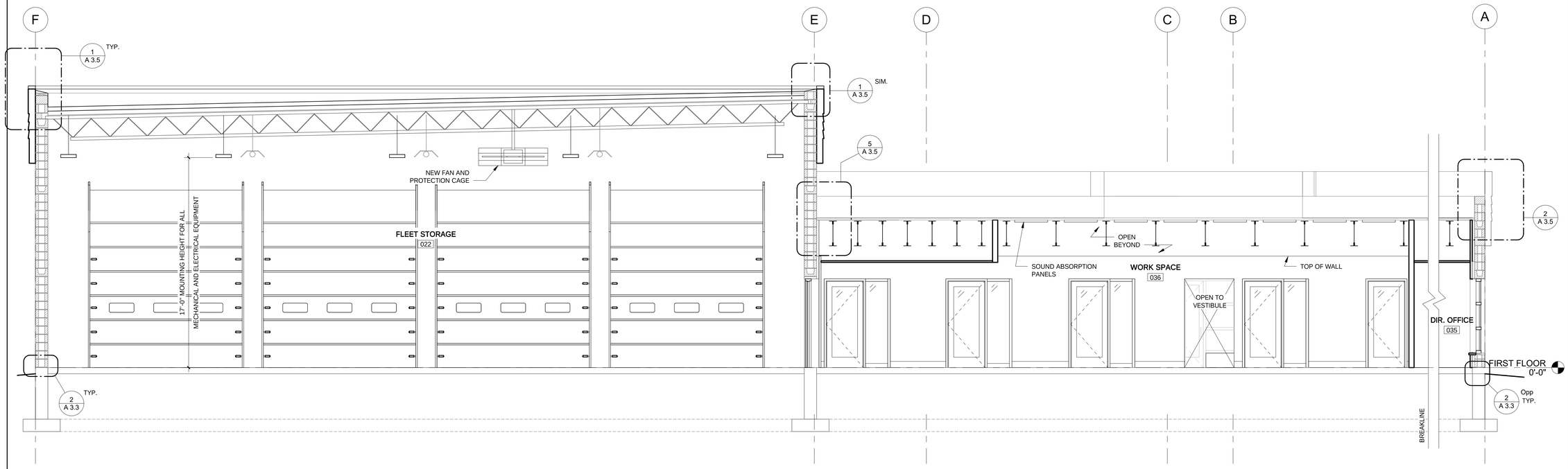
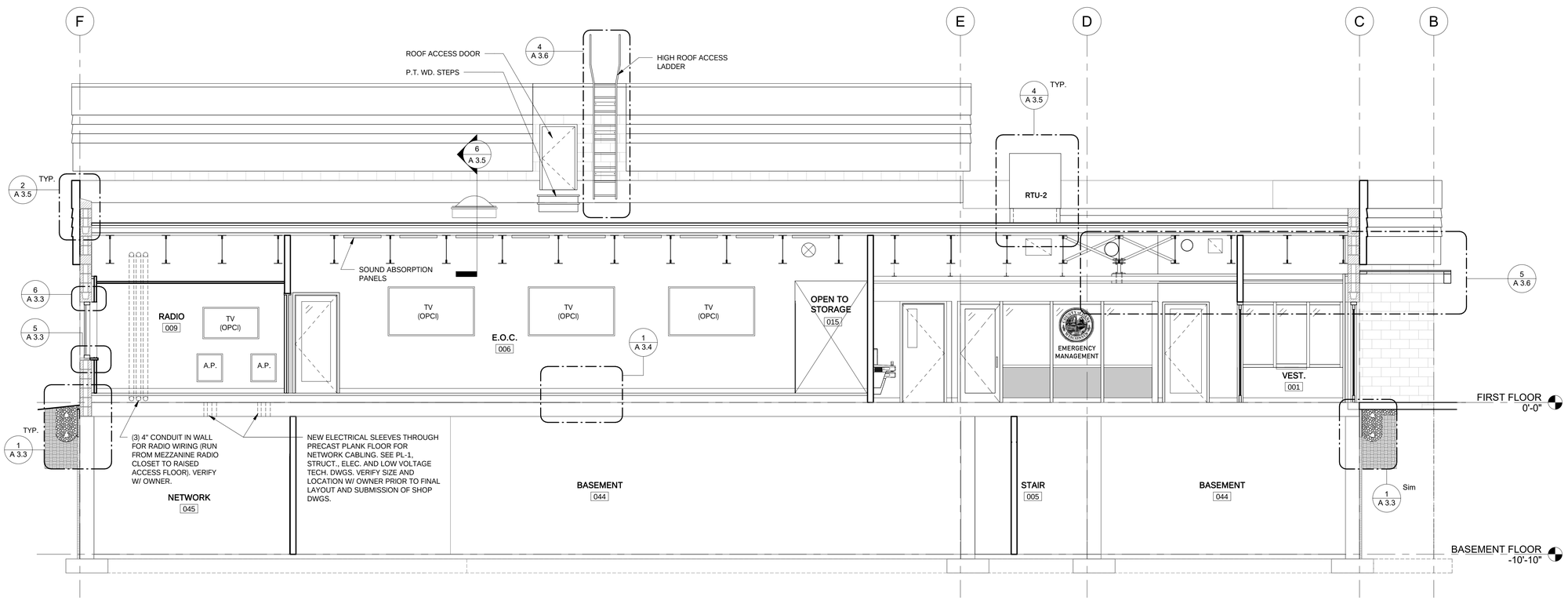


1 BUILDING SECTION - FLEET/WORK SPACE

SCALE 1/4" = 1'-0"



2 BUILDING SECTION - E.O.C./ ENTRY

SCALE 1/4" = 1'-0"

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COUNTY of DANE WISCONSIN 1839

DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY
FITCHBURG, WISCONSIN

CLIENT APPROVAL
- ☐ APPROVED
- ☐ APPROVED AS NOTED

APPROVED BY / DATE:

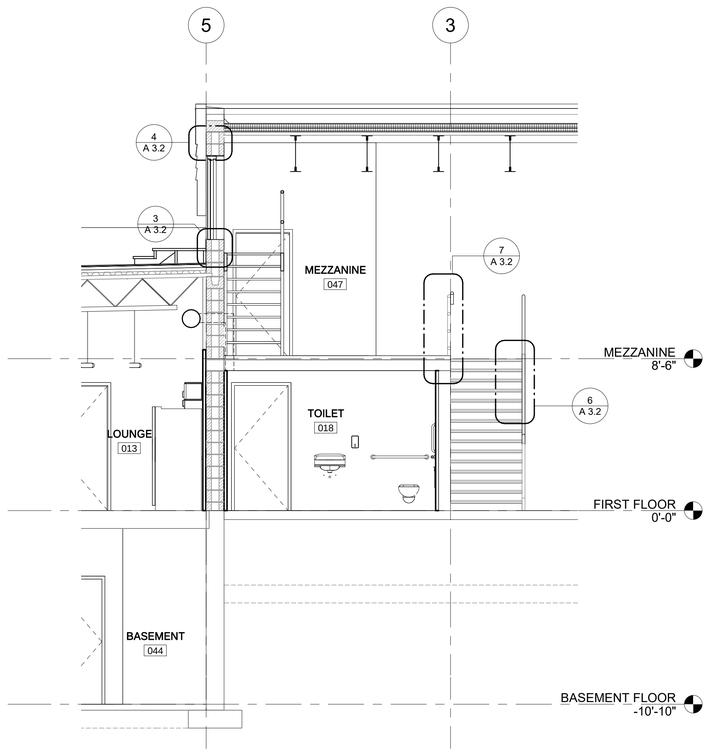
ISSUE RECORD

DD SET	08/04/20
CD CHECK SET	11/20/20
98% CD REVIEW	02/11/21
HVAC REDESIGN	04/30/21
ISSUE FOR BID	06/08/21

PROJECT ARCHITECT
RBS
DRAWN BY
LMB
DATE
6/3/2021 12:50:21 PM
PROJECT NUMBER
2020-001

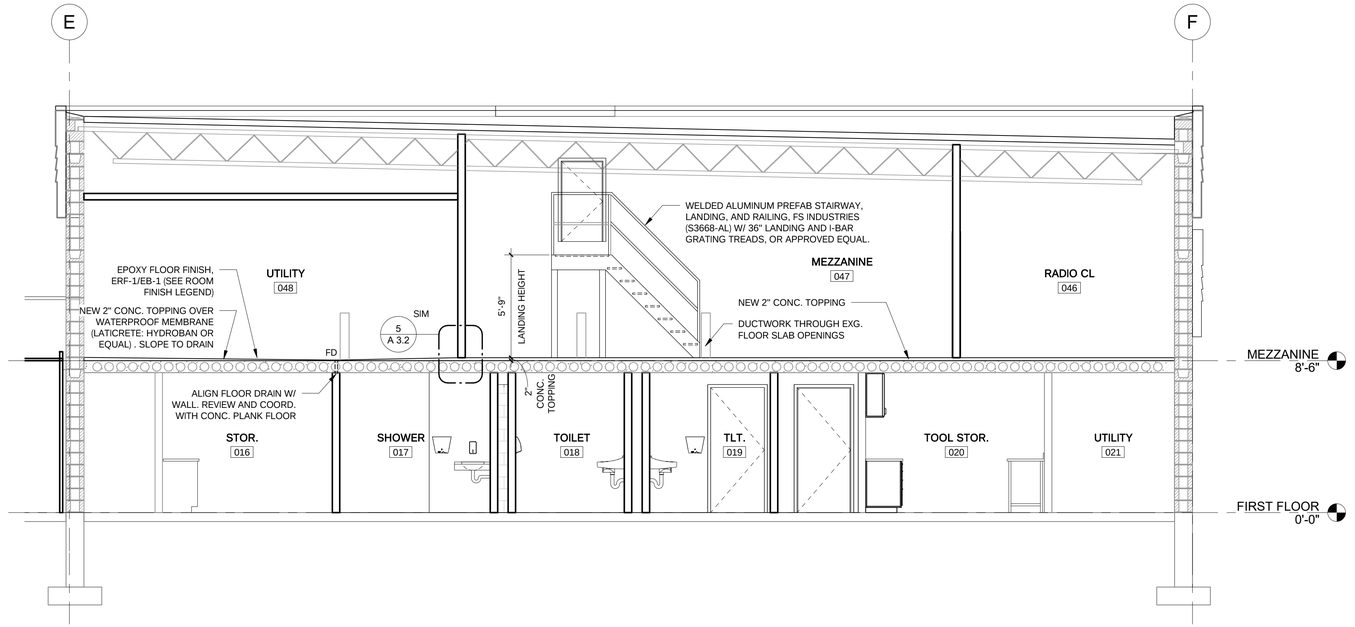
BUILDING SECTIONS

A 3.1



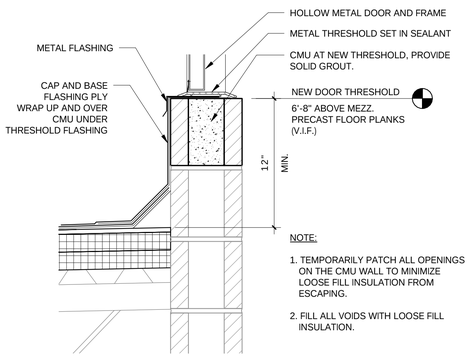
1 MEZZANINE SECTION 1

SCALE 1/4" = 1'-0"



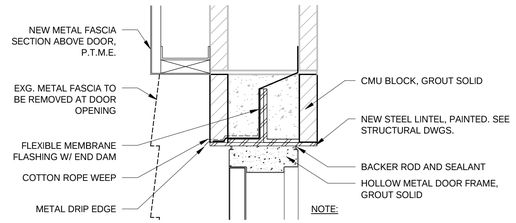
2 MEZZANINE SECTION 2

SCALE 1/4" = 1'-0"



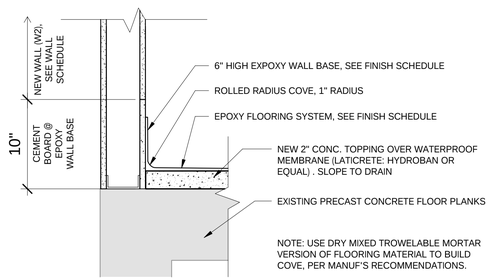
3 ROOF ACCESS DOOR THRESHOLD

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



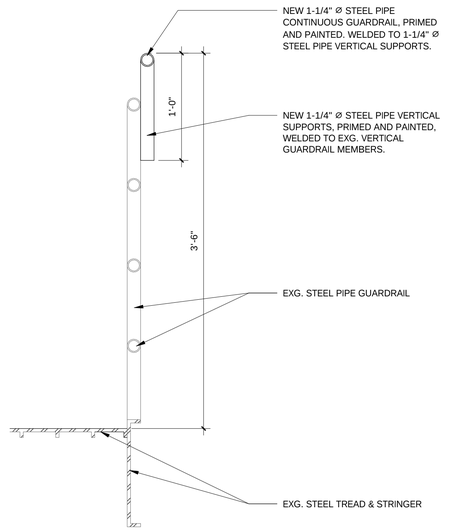
4 TYP. FLASHING DETAIL FOR NEW LINTELS/ ROOF ACCESS DOOR HEAD DETAIL

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



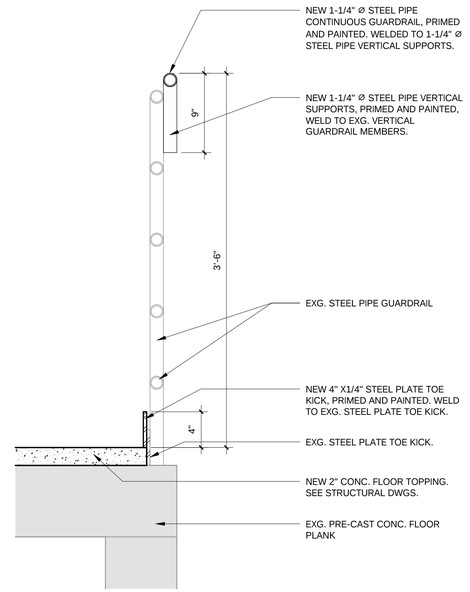
5 EPOXY COVE BASE DETAIL

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



6 STAIR GUARDRAIL EXTENSION DETAIL

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



7 MEZZ. GUARDRAIL EXTENSION DETAIL

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

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DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY
FITCHBURG, WISCONSIN

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PROJECT ARCHITECT
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LMB

DATE
6/3/2021 12:50:24 PM

PROJECT NUMBER
2020-001

MEZZANINE SECTIONS + DETAILS

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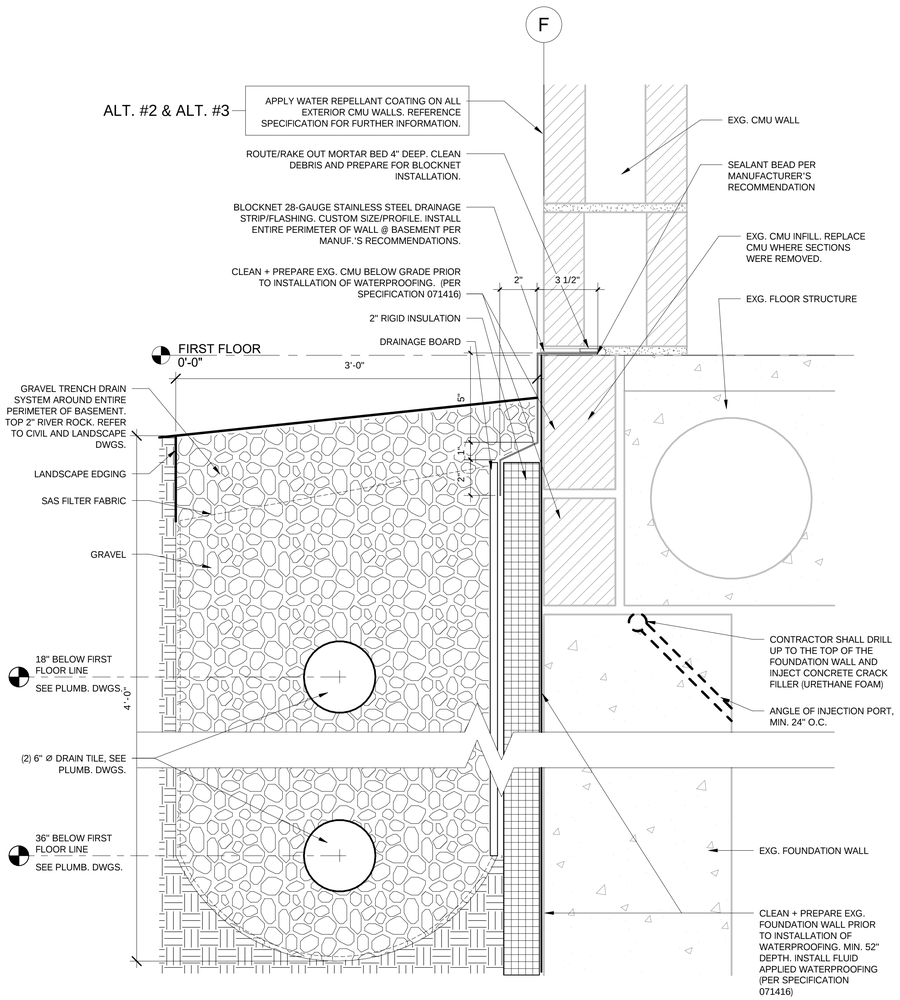
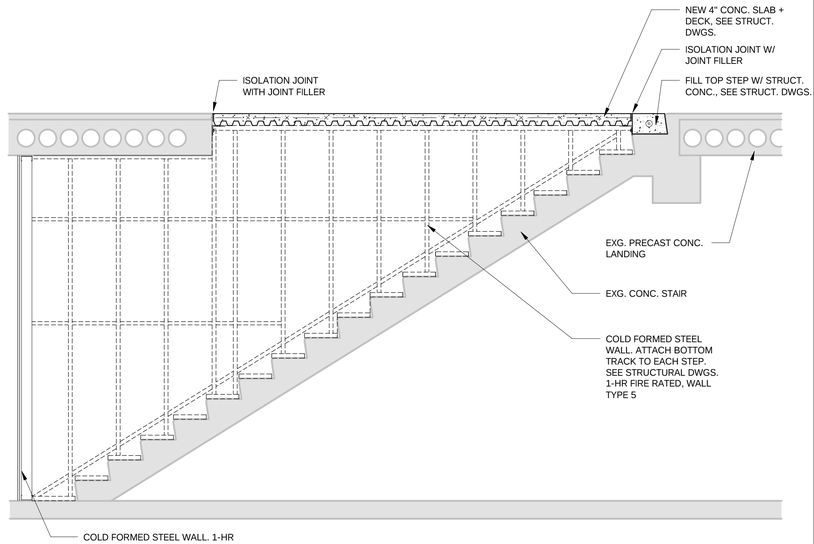


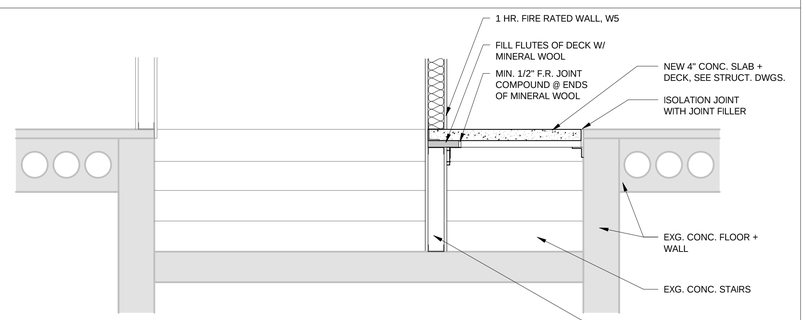
1 WATERPROOFING DETAIL @ BASEMENT

SCALE 3" = 1'-0"



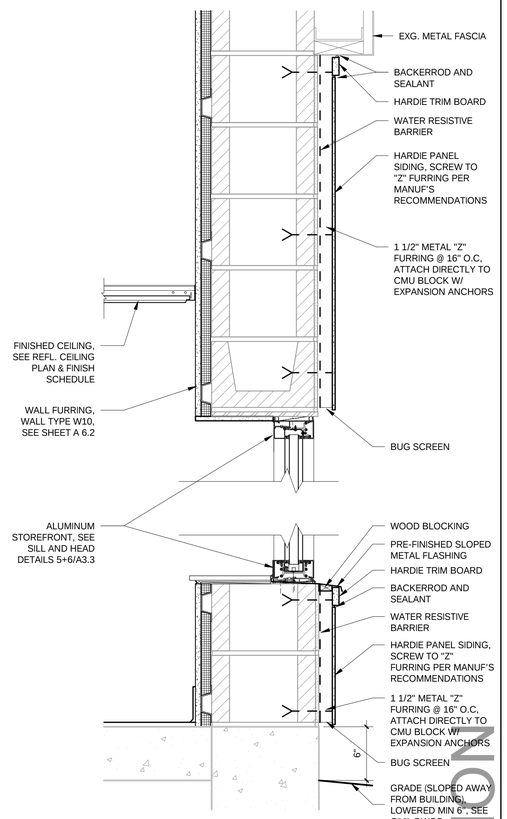
3 FLOOR INFILL SECTION

SCALE 1/2" = 1'-0"



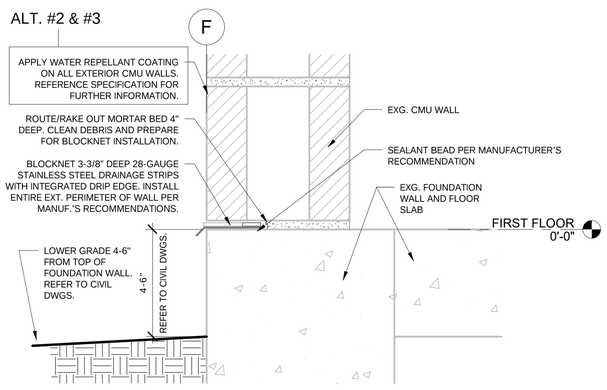
4 FLOOR INFILL DETAIL

SCALE 3/4" = 1'-0"



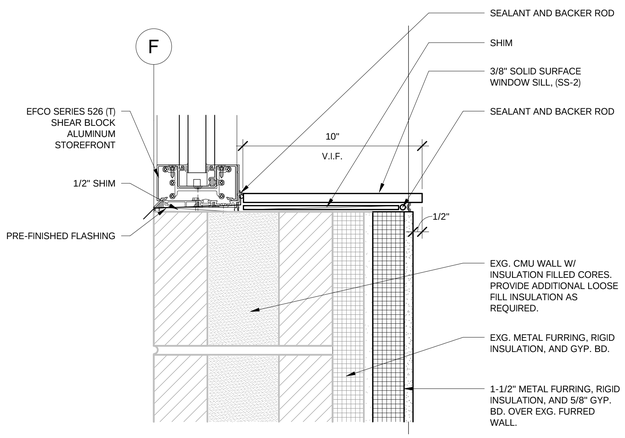
7 VEST. 032 WALL SHEATHING DETAIL

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



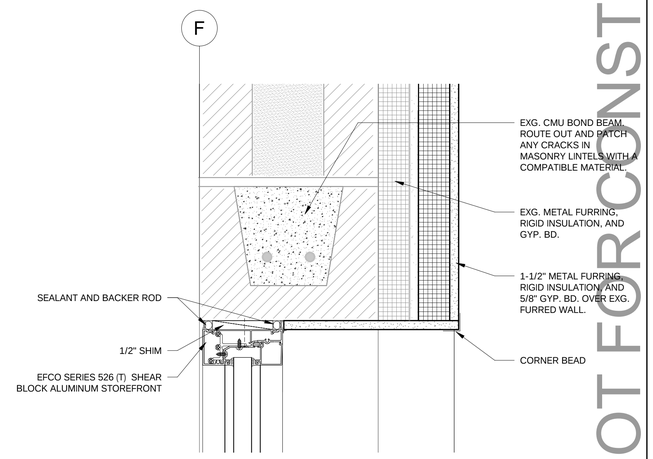
2 MASONRY WEEP DETAIL @ SLAB ON GRADE

SCALE 3" = 1'-0"



5 WINDOW SILL DETAIL

SCALE 3" = 1'-0"



6 WINDOW HEAD DETAIL

SCALE 3" = 1'-0"

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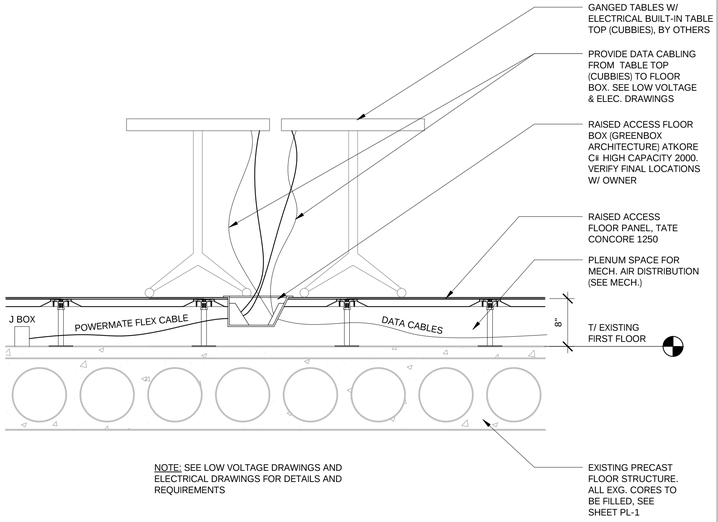
DRAWN BY	LMB
DATE	6/3/2021 12:50:27 PM
PROJECT NUMBER	2020-001

BUILDING DETAILS

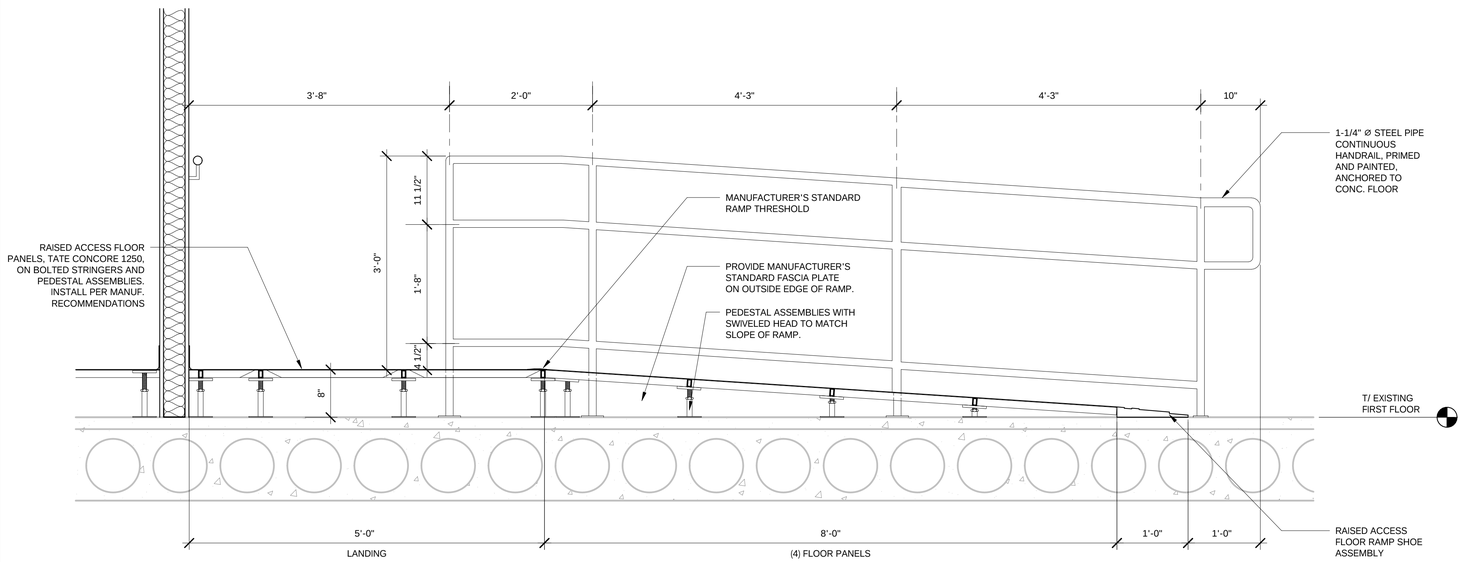
A 3.3



NOTE: SEE LOW VOLTAGE DRAWINGS AND ELECTRICAL DRAWINGS FOR DETAILS AND REQUIREMENTS

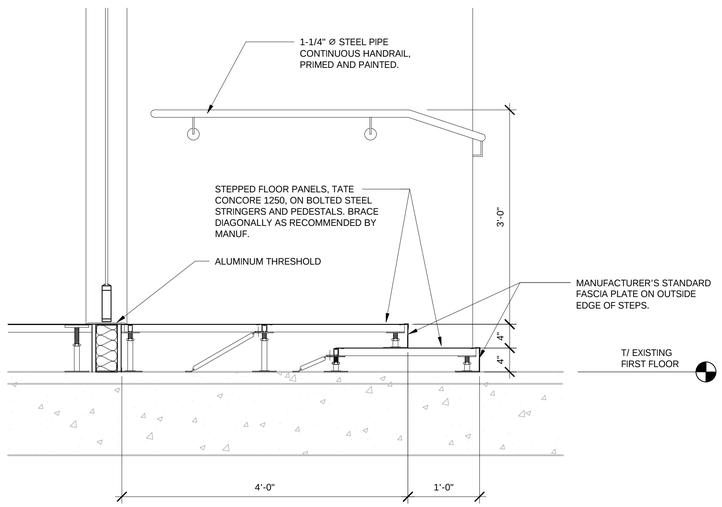
1 RAISED FLOOR DETAIL

SCALE 1" = 1'-0"



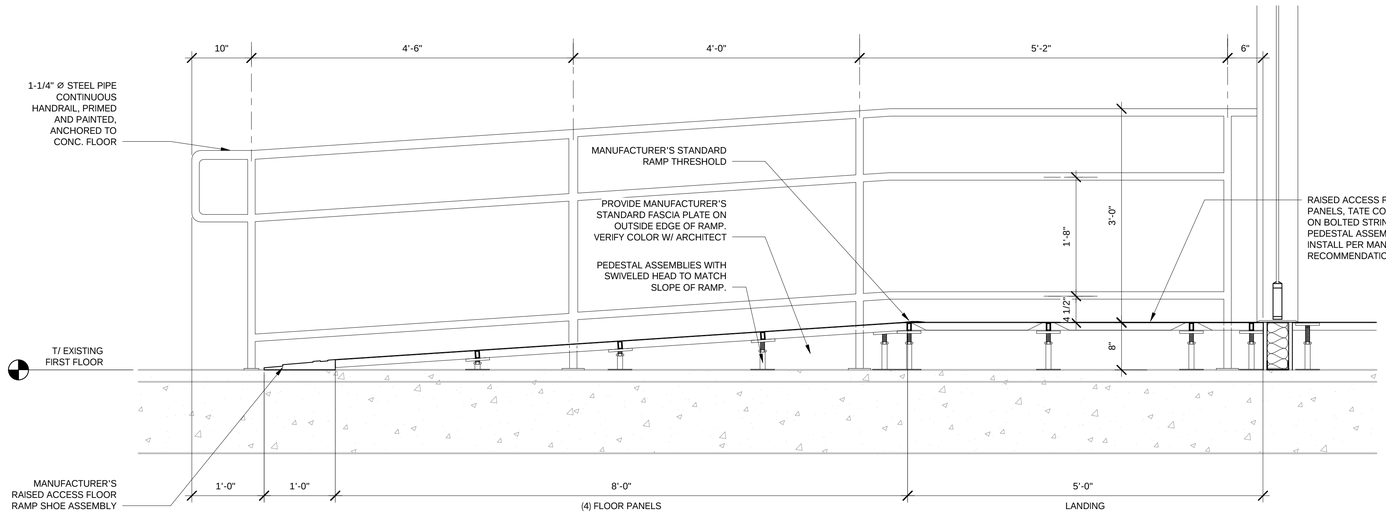
2 RAISED FLOOR RAMP 1 DETAIL

SCALE 1" = 1'-0"



3 RAISED FLOOR STAIR DETAIL

SCALE 1" = 1'-0"



4 RAISED FLOOR RAMP 2 DETAIL

SCALE 1" = 1'-0"

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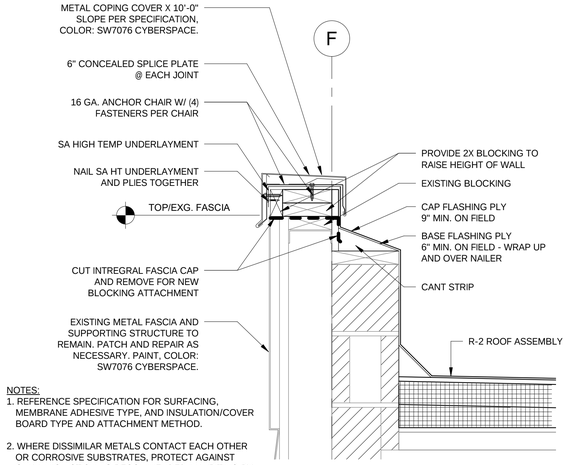
DATE	6/7/2021 2:01:31 PM
PROJECT NUMBER	2020-001

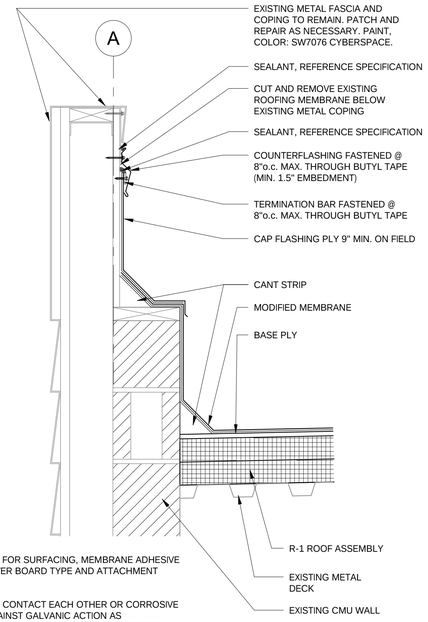
BUILDING DETAILS

A 3.4



NOTES:
1. REFERENCE SPECIFICATION FOR SURFACING, MEMBRANE ADHESIVE TYPE, AND INSULATION/COVER BOARD TYPE AND ATTACHMENT METHOD.
2. WHERE DISSIMILAR METALS CONTACT EACH OTHER OR CORROSIVE SUBSTRATES, PROTECT AGAINST GALVANIC ACTION AS RECOMMENDED IN WRITING BY METAL COPING MANUFACTURER.
3. ALL EXISTING SPLICE PLATES OF THE METAL FASCIA/COPING SYSTEM SHALL BE REMOVED. INSTALL NEW SPLICE PLATES, ANCHORS, AND CAULKING. PAINT TO MATCH FASCIA SYSTEM.

1 BUILT-UP COPING DETAIL - HIGH ROOF
SCALE 1 1/2" = 1'-0"



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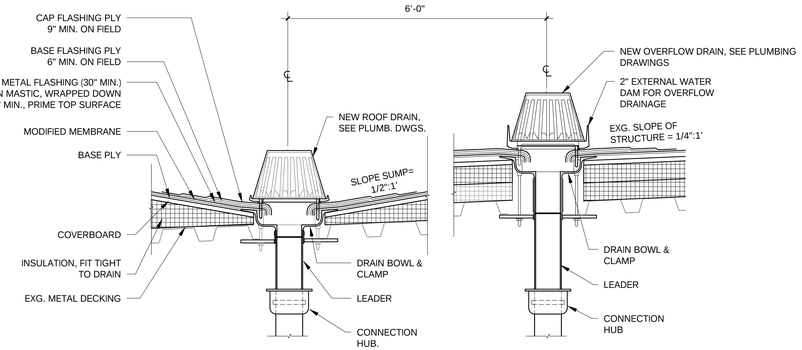
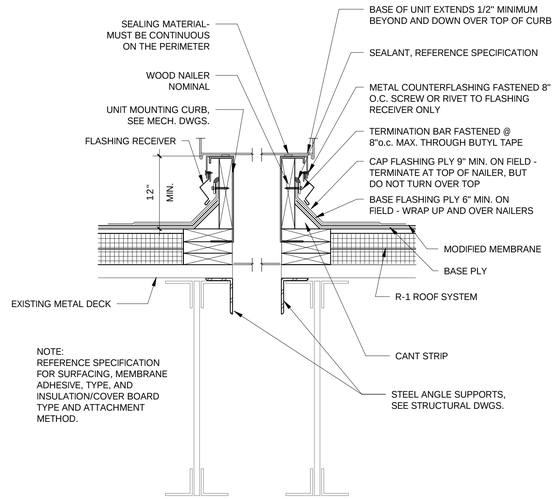
1. REFERENCE SPECIFICATION FOR SURFACING, MEMBRANE ADHESIVE TYPE, AND INSULATION/COVER BOARD TYPE AND ATTACHMENT METHOD.
2. WHERE DISSIMILAR METALS CONTACT EACH OTHER OR CORROSIVE SUBSTRATES, PROTECT AGAINST GALVANIC ACTION AS RECOMMENDED IN WRITING BY METAL COPING MANUFACTURER.
3. ALL EXISTING SPLICE PLATES OF THE METAL FASCIA/COPING SYSTEM SHALL BE REMOVED. INSTALL NEW SPLICE PLATES, ANCHORS, AND CAULKING. PAINT TO MATCH FASCIA SYSTEM.

2 EXISTING COPING DETAIL - LOW ROOF
SCALE 1 1/2" = 1'-0"



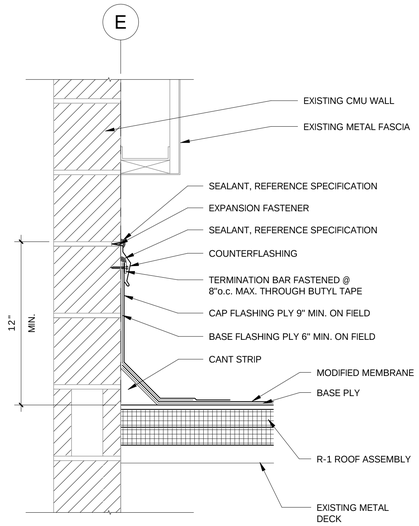
NOTE:
REPLACE ANY DAMAGED OR DEFICIENT COMPONENTS OF EXISTING ROOF DRAIN SYSTEM.

3 ROOF DRAIN + OVERFLOW DRAIN
SCALE 1 1/2" = 1'-0"

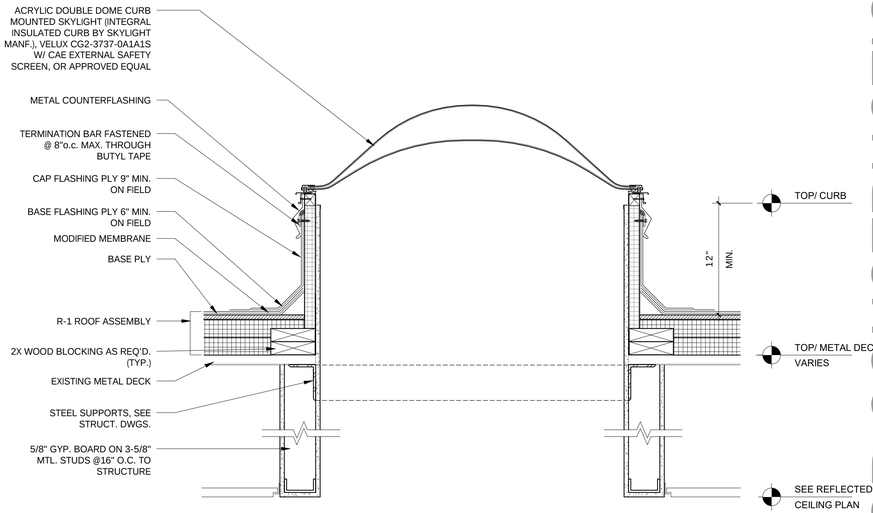


NOTE:
REFERENCE SPECIFICATION FOR SURFACING, MEMBRANE ADHESIVE, TYPE, AND INSULATION/COVER BOARD TYPE AND ATTACHMENT METHOD.

4 MECH. ROOF CURB DETAIL
SCALE 1 1/2" = 1'-0"



5 ROOF FLASHING DETAIL
SCALE 1 1/2" = 1'-0"



6 SKYLIGHT DETAIL
SCALE 1 1/2" = 1'-0"

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5415 KING JAMES WAY
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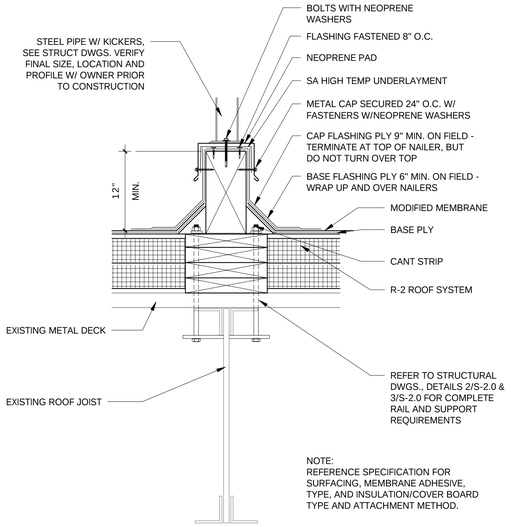
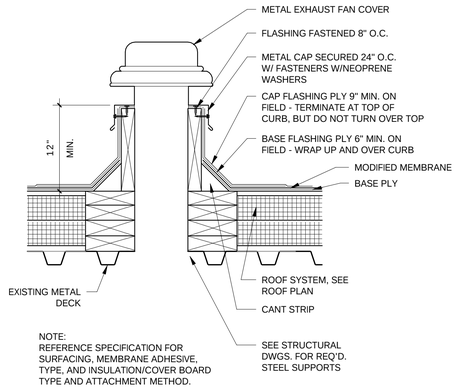
ROOF DETAILS

A 3.5



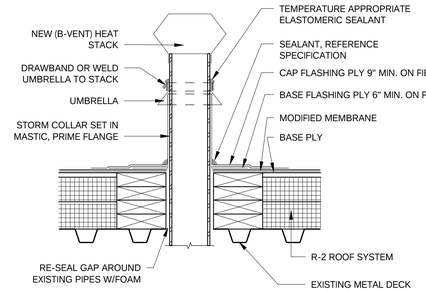
1 EQUIPMENT SUPPORT ROOF DETAIL

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



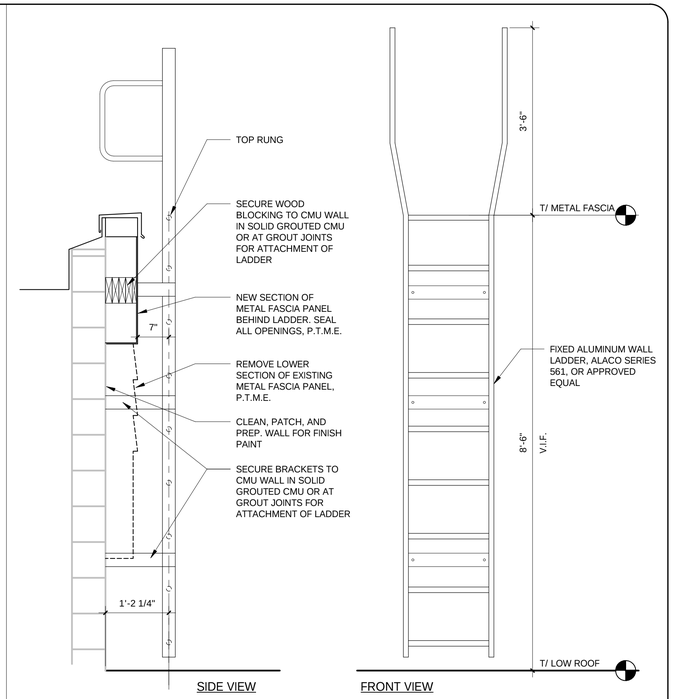
2 EXHAUST FAN ROOF DETAIL

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



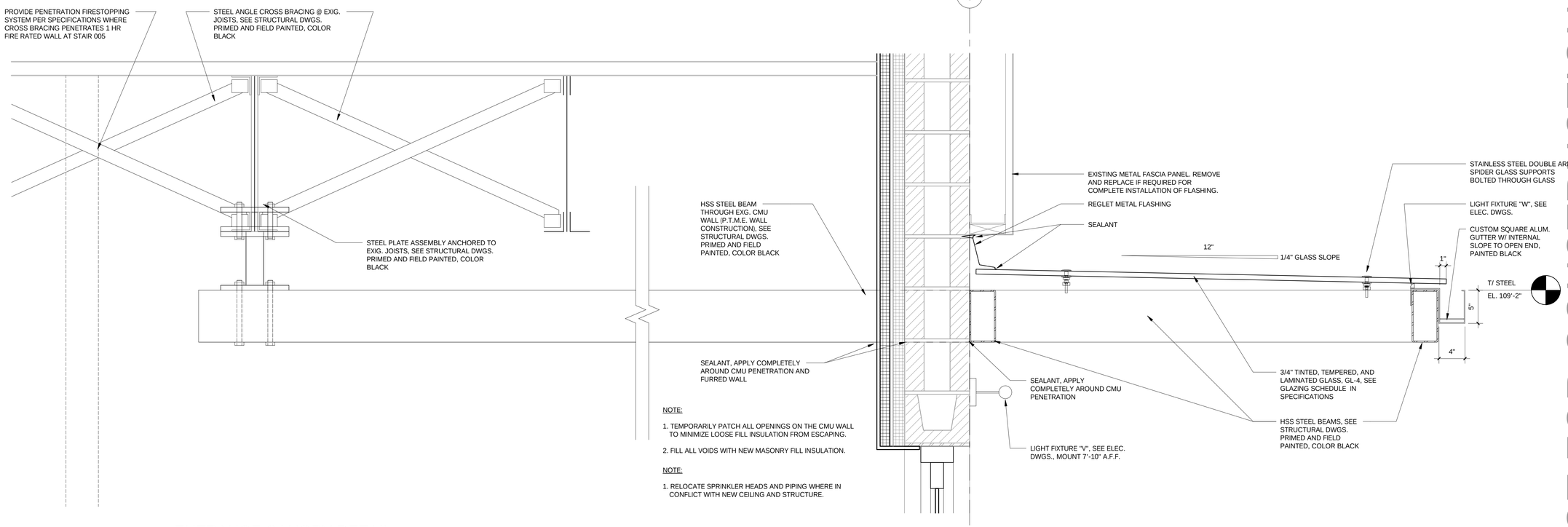
3 HEAT STACK ROOF DETAIL

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



4 ROOF LADDER DETAIL

SCALE 3/4" = 1'-0"



5 ENTRANCE CANOPY DETAIL

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

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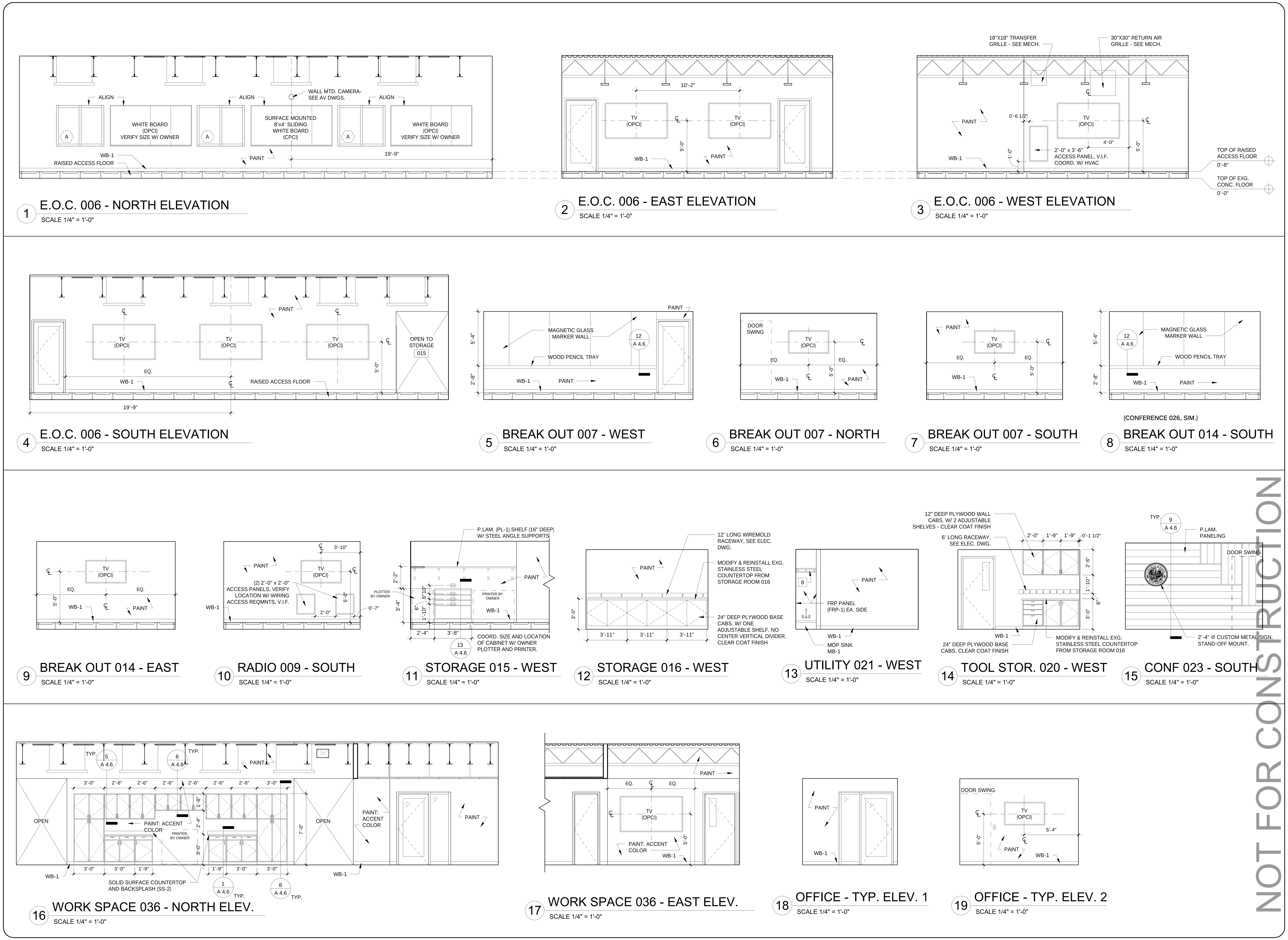
PROJECT NUMBER	2020-001

ROOF DETAILS

A 3.6



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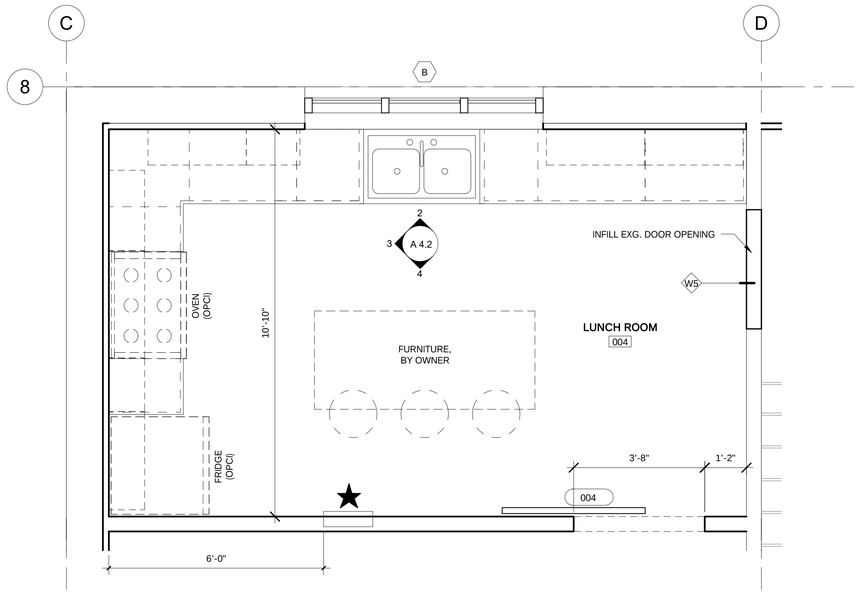
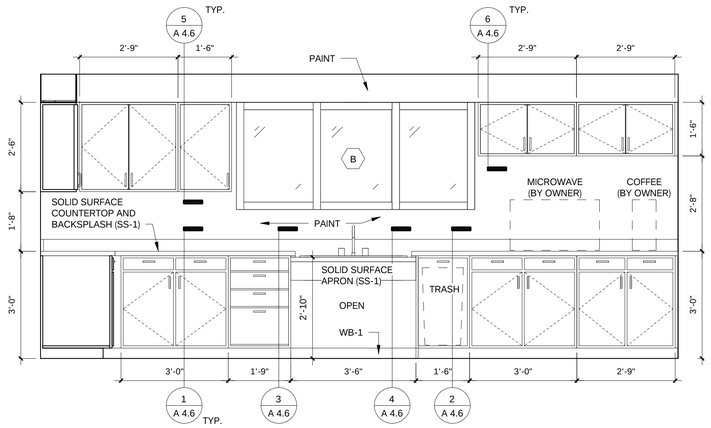
INTERIOR ELEVATIONS

A 4.1



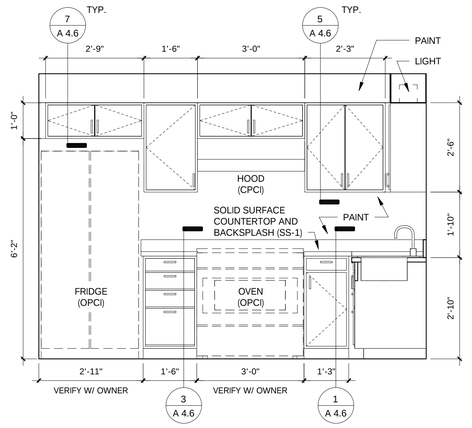
1 ENLARGED KITCHEN PLAN

SCALE 1/2" = 1'-0"



2 LUNCH RM 004 - NORTH ELEVATION

SCALE 1/2" = 1'-0"



3 LUNCH RM 004 - WEST ELEVATION

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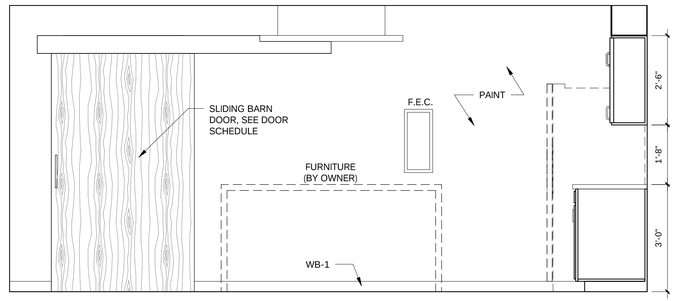
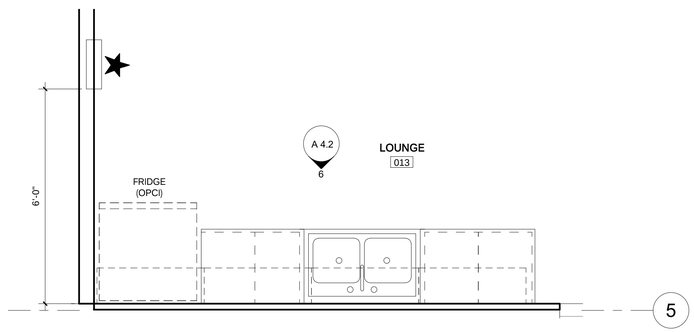


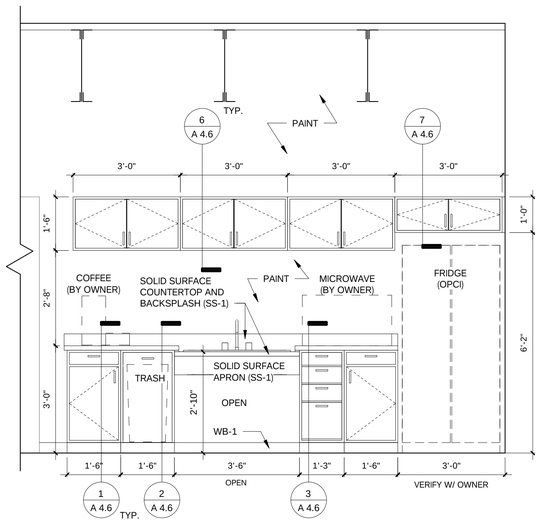
4 LUNCH RM 004 - SOUTH ELEVATION

SCALE 1/2" = 1'-0"



5 ENLARGED LOUNGE PLAN

SCALE 1/2" = 1'-0"



6 LOUNGE 013 - SOUTH ELEVATION

SCALE 1/2" = 1'-0"

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PROJECT ARCHITECT
RBS
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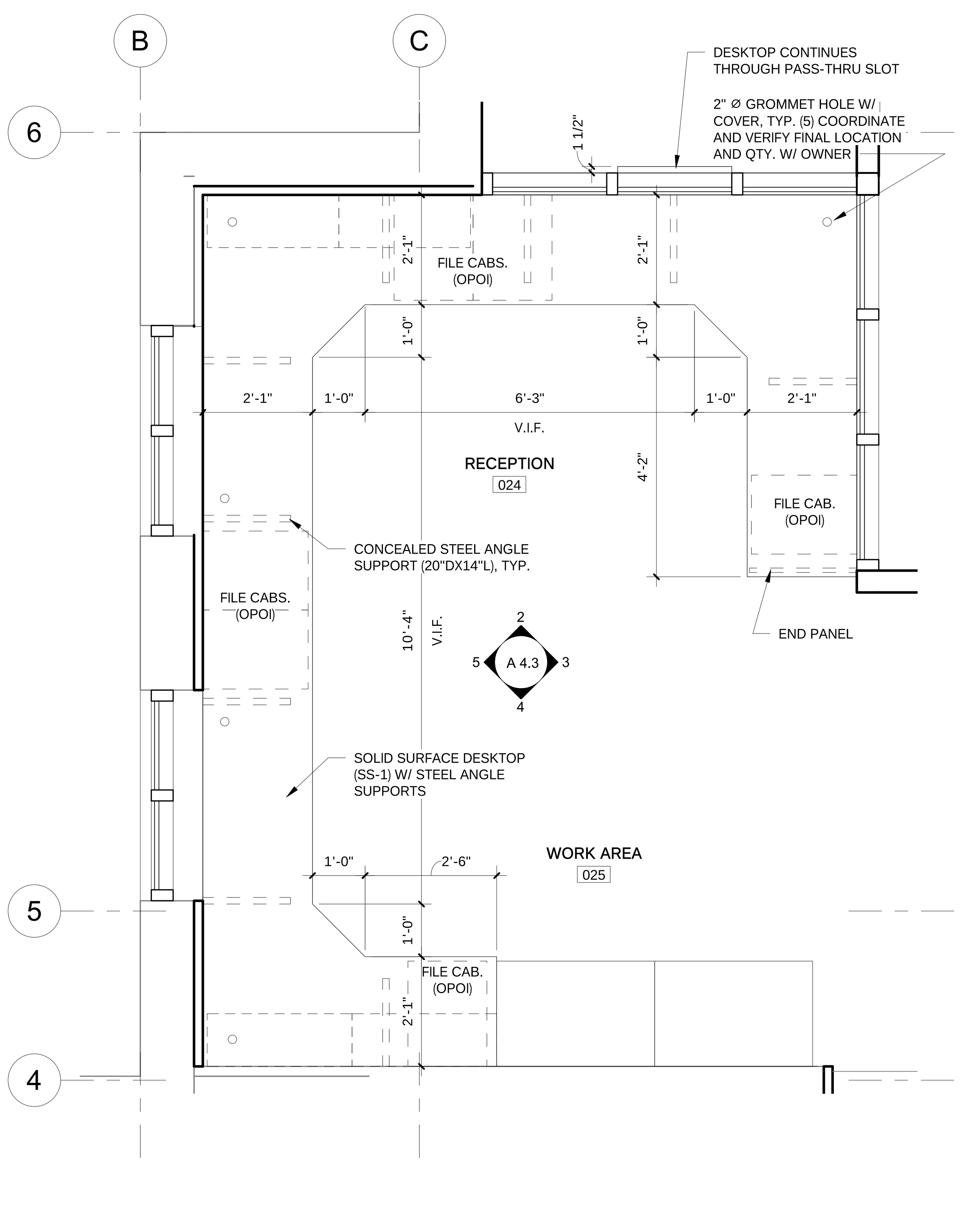
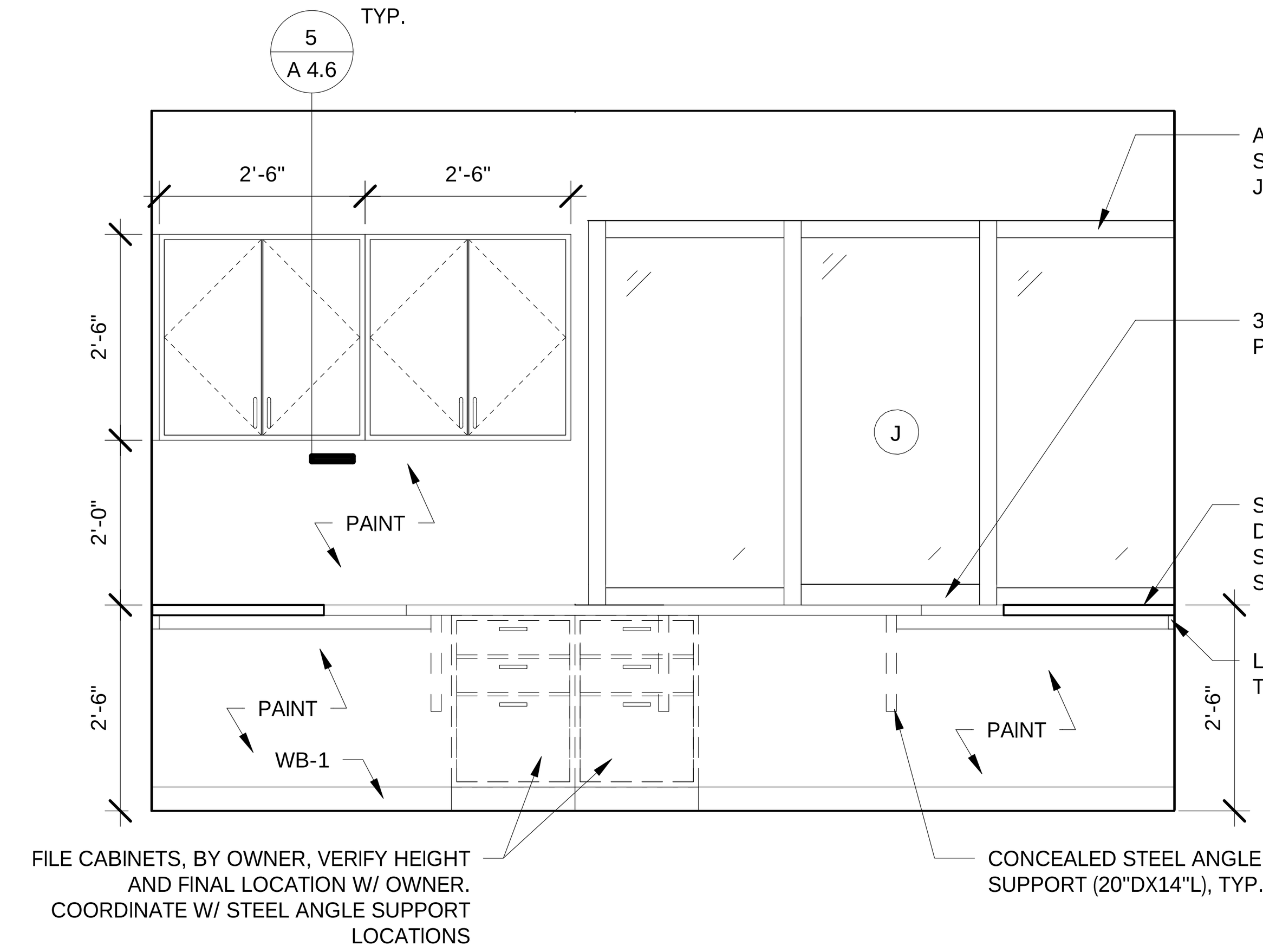
DATE
6/3/2021 12:50:39 PM
PROJECT NUMBER
2020-001

ENLARGED FLOOR PLAN + INTERIOR ELEVATIONS

A 4.2



1 ENLARGED RECEPTION PLAN
SCALE 1/2" = 1'-0"



2 RECEPTION 024 - NORTH ELEVATION
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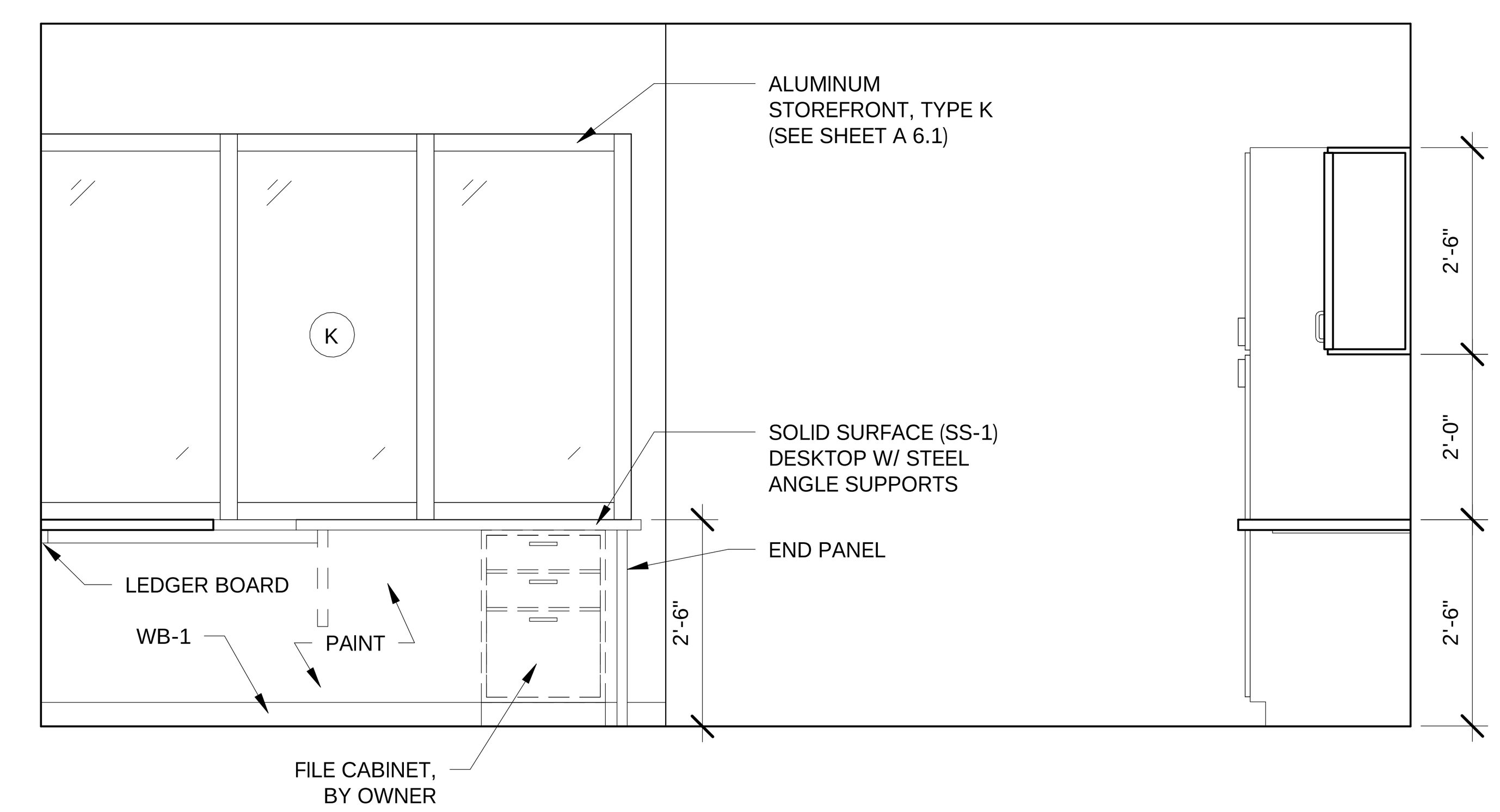
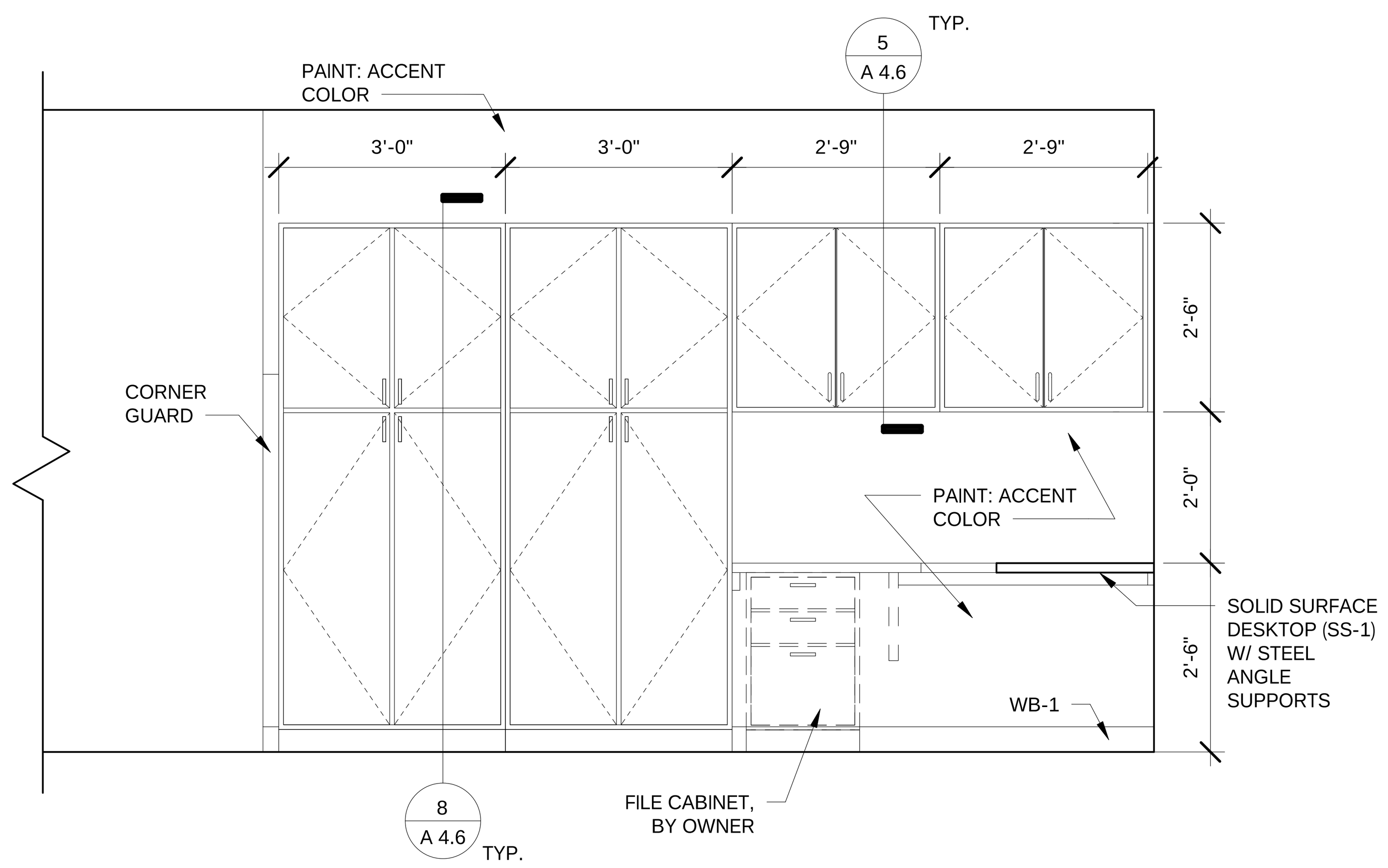
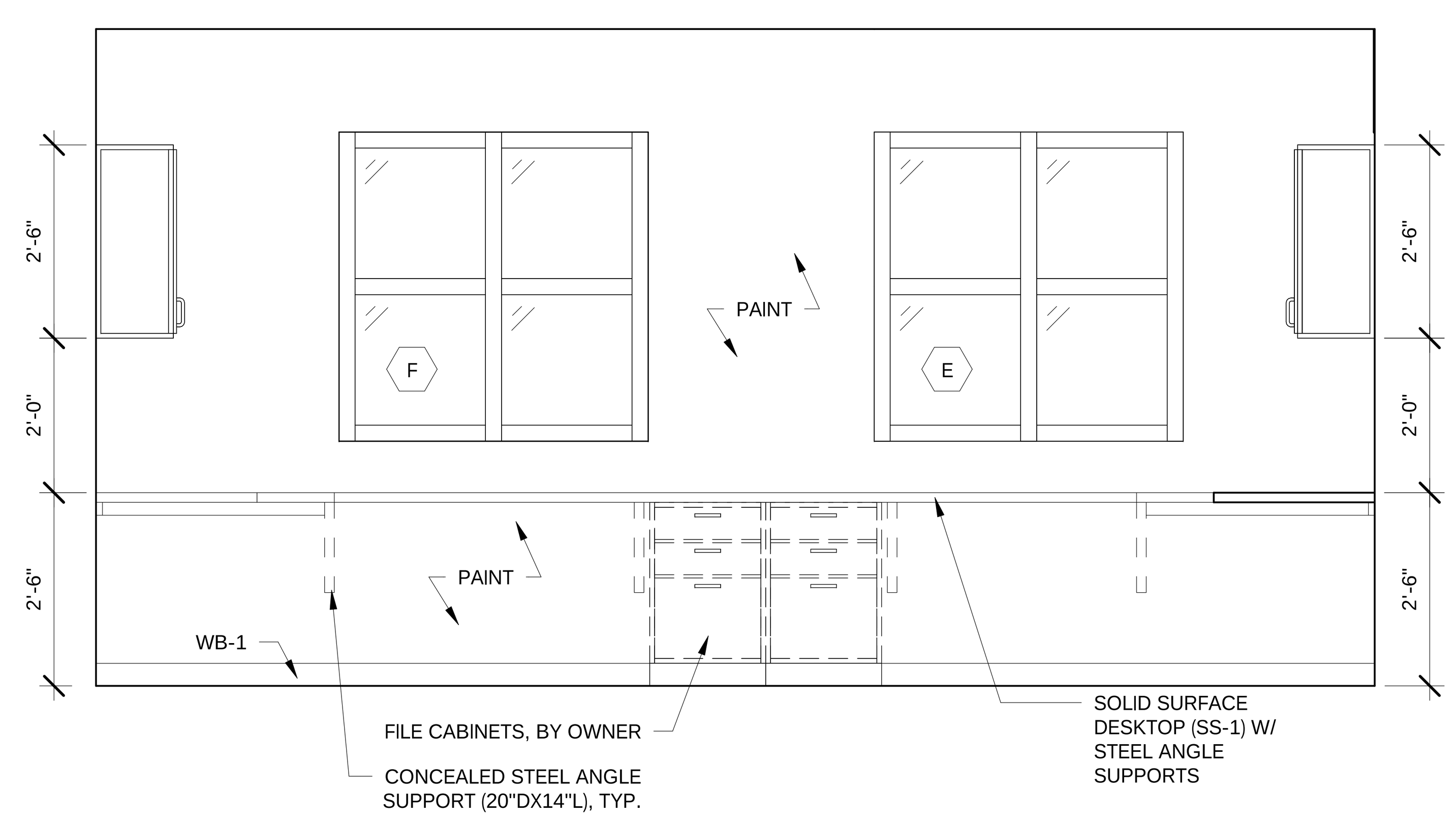


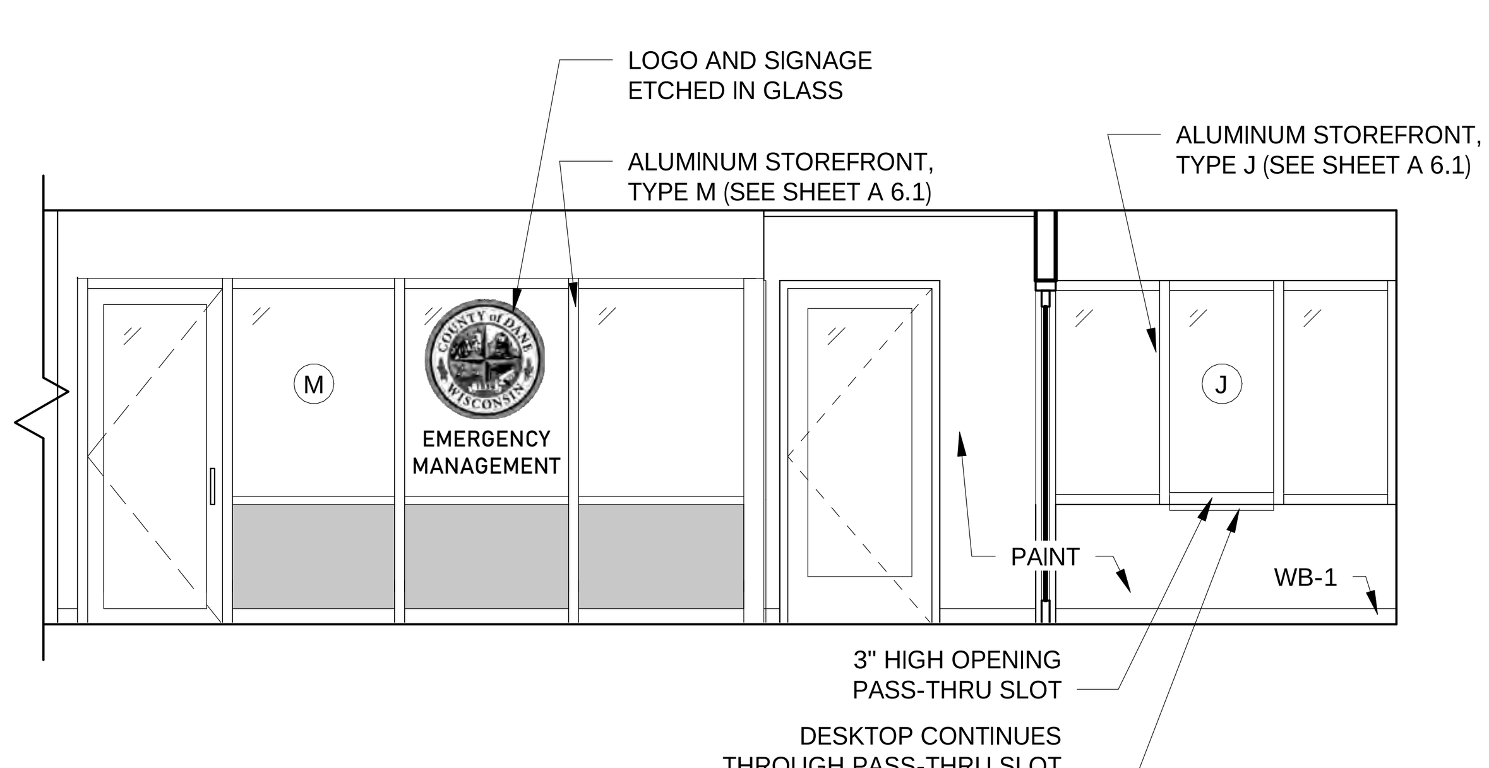
3 RECEPTION 024 - EAST ELEVATION
SCALE 1/2" = 1'-0"



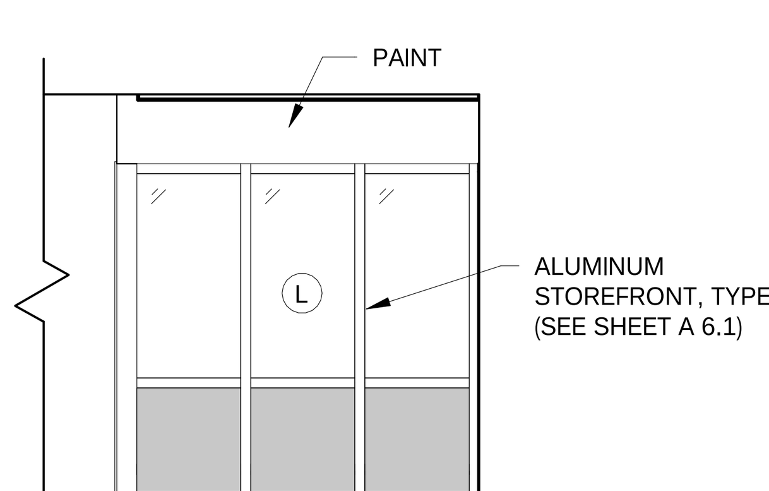
4 WORK AREA 025 - SOUTH ELEVATION
SCALE 1/2" = 1'-0"



5 WORK AREA 025 - WEST ELEVATION
SCALE 1/2" = 1'-0"



6 LOBBY 002 - SOUTH
SCALE 1/4" = 1'-0"



7 LOBBY 002 - EAST 1
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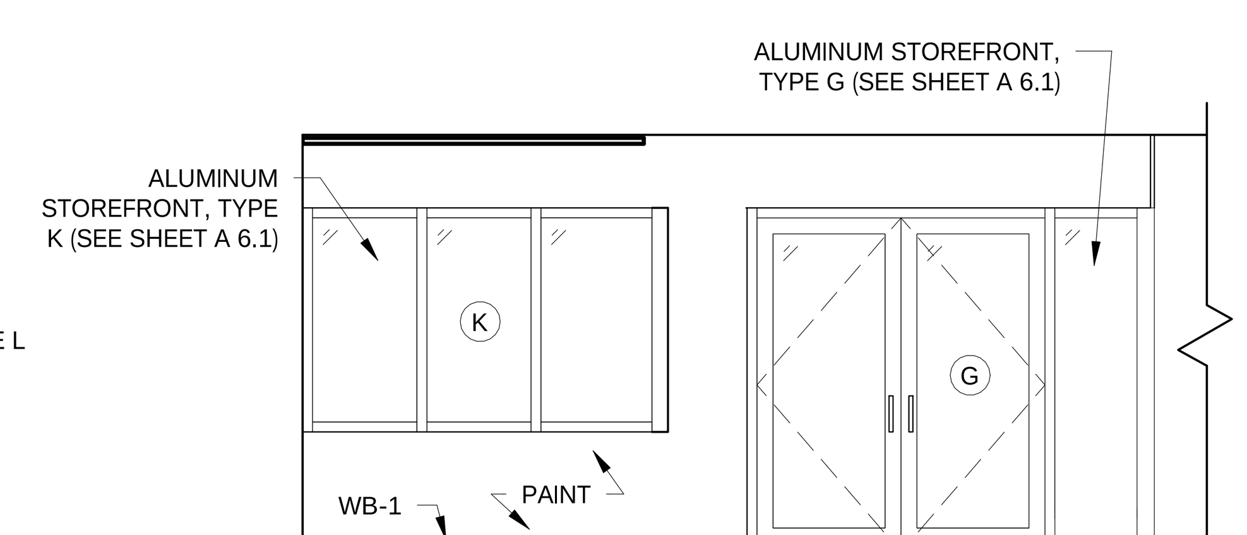
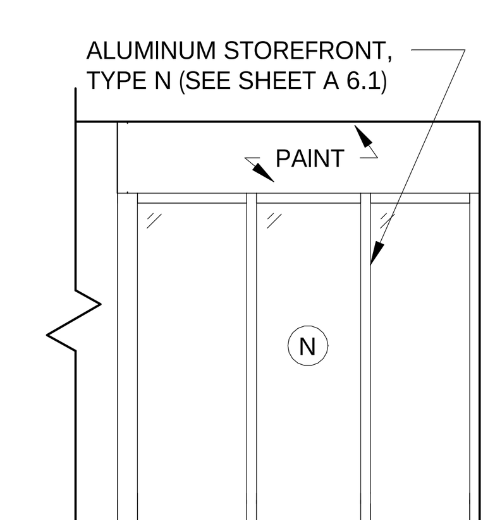
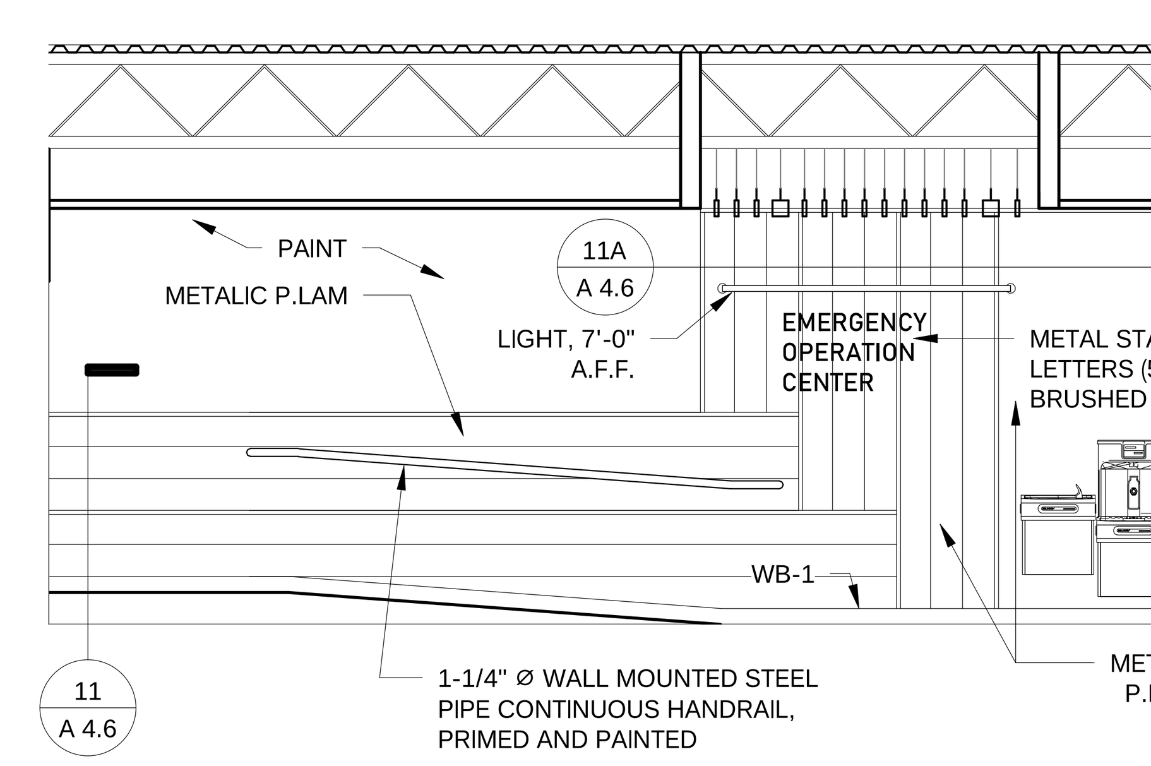


8 LOBBY 002 - WEST
SCALE 1/4" = 1'-0"



9 DISPLAY 003 - SOUTH
SCALE 1/4" = 1'-0"



10 LOBBY 002 - EAST 2
SCALE 1/4" = 1'-0"

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DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY
FITCHBURG, WISCONSIN

CLIENT APPROVAL
- [ ] APPROVED
- [ ] APPROVED AS NOTED

APPROVED BY / DATE:

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2020-001

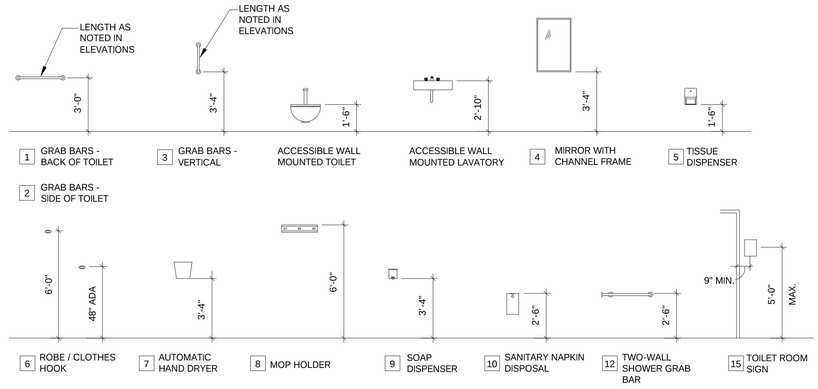
ENLARGED FLOOR PLAN + INTERIOR ELEVATIONS

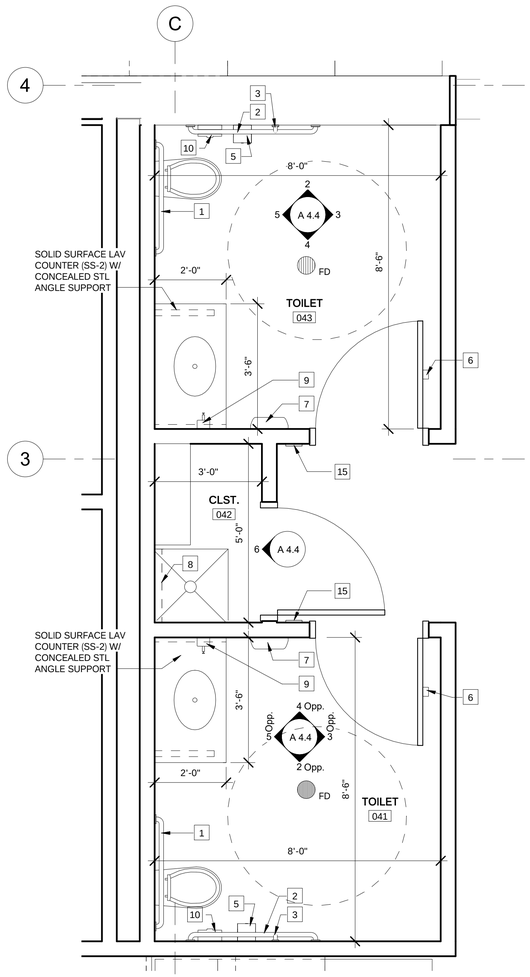
A 4.3

TOILET ACCESSORIES SCHEDULE

MARK	DESCRIPTION	EQUAL TO BOBRICK	HORIZONTAL MOUNTING LOCATION	FINISH	COMMENTS
1	GRAB BARS - BACK OF TOILET	B-5806 X 36"	6" FROM SIDE WALL TO END OF BAR	SATIN STAINLESS STEEL	
2	GRAB BARS - SIDE OF TOILET	B-5806 X 42"	12" FROM SIDE WALL TO END OF BAR	SATIN STAINLESS STEEL	
3	GRAB BARS - VERTICAL	B-5806 X 18"	SEE DRAWINGS	SATIN STAINLESS STEEL	
4	MIRROR WITH CHANNEL FRAME	B-165 2436	CENTERLINE OF LAVATORY	SATIN STAINLESS STEEL	
5	TISSUE DISPENSER	B-2888	7" FROM CENTERLINE OF UNIT TO FRONT OF TOILET	SATIN STAINLESS STEEL	
6	ROBE / CLOTHES HOOK	B-7672	CENTERLINE OF PARTITION DOOR, U.N.O.	SATIN STAINLESS STEEL	
7	AUTOMATIC HAND DRYER	B-7125	SEE DRAWINGS	SATIN STAINLESS STEEL	
8	MOP HOLDER	B-223	SEE DRAWINGS	SATIN STAINLESS STEEL	
9	SOAP DISPENSER	B-2111	SEE DRAWINGS		
10	SANITARY NAPKIN DISPOSAL	B-270	SEE DRAWINGS	SATIN STAINLESS STEEL	
11	UNDER LAVATORY GUARD	SEE PLUMBING DRAWINGS			
12	TWO-WALL SHOWER GRAB BAR	B-6861		SATIN STAINLESS STEEL	
13	FOLDING SHOWER SEAT	B-5192			
14	SHOWER CURTAIN AND ROD	B-6107X36 / B-204-2		SATIN STAINLESS STEEL	
15	TOILET ROOM SIGN		9" MIN. CENTER OF SIGN TO EDGE OF DR, SEE DWGS.	PLASTIC	VERIFY STYLE & COLOR W/ OWNER

TOILET ACCESSORIES HEIGHTS





1 ENLARGED TOILET ROOMS PLAN
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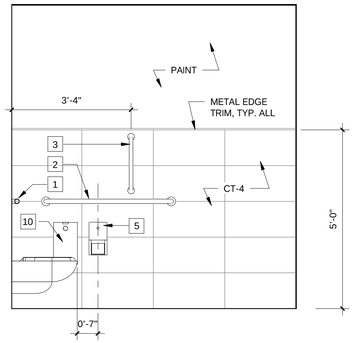
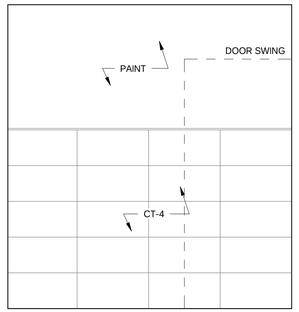
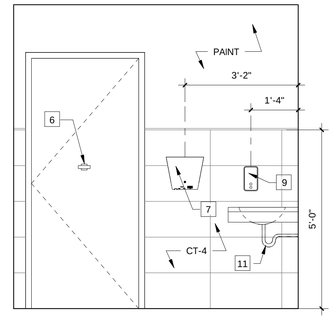


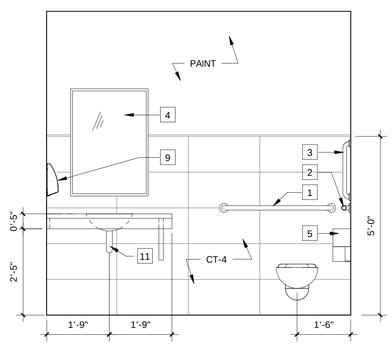
2 TOILET 043 - NORTH ELEVATION / 041 OPP.
SCALE 1/2" = 1'-0"



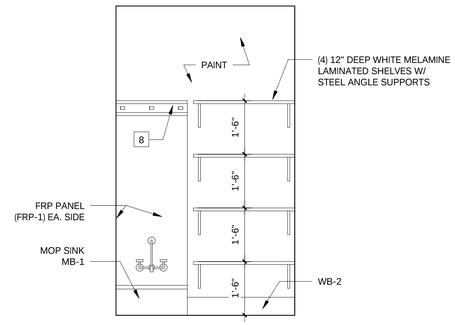
3 TOILET 043 - EAST ELEVATION / 041 OPP.
SCALE 1/2" = 1'-0"



4 TOILET 043 - SOUTH ELEVATION / 041 OPP.
SCALE 1/2" = 1'-0"



5 TOILET 043 - WEST ELEVATION / 041 OPP.
SCALE 1/2" = 1'-0"



6 CLOSET 042 - WEST
SCALE 1/2" = 1'-0"

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COUNTY of DANE WISCONSIN 1839

DANE COUNTY EMERGENCY MANAGEMENT REMODEL

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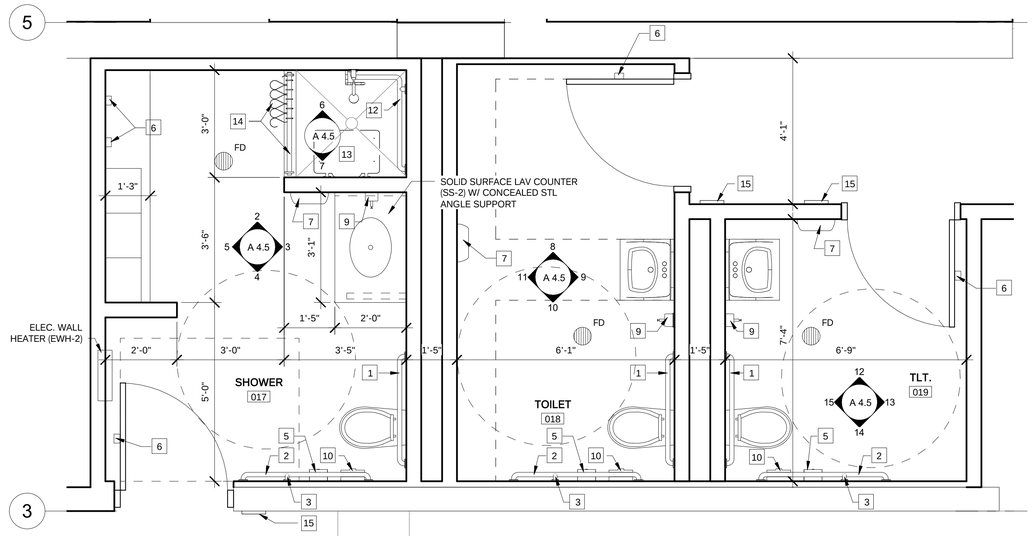
ENLARGED FLOOR PLAN + INTERIOR ELEVATIONS

A 4.4



1 ENLARGED E.O.C. TOILET RMS. PLAN
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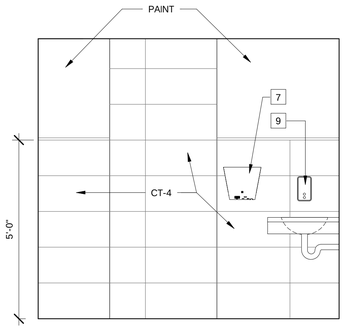
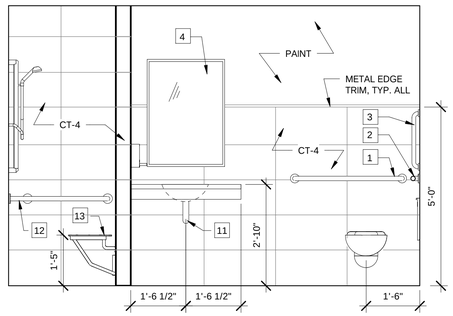
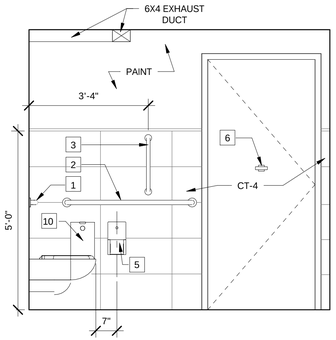


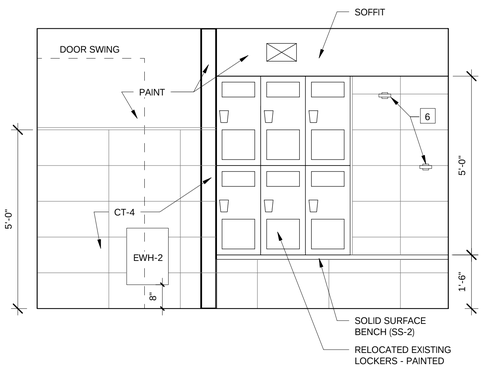
2 SHOWER 017 - NORTH ELEV.
SCALE 1/2" = 1'-0"



3 SHOWER 017 - EAST ELEV.
SCALE 1/2" = 1'-0"



4 SHOWER 017 - SOUTH
SCALE 1/2" = 1'-0"



5 SHOWER 017 - WEST 2
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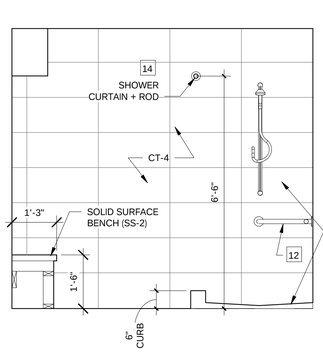

6 SHOWER 017 - NORTH 2
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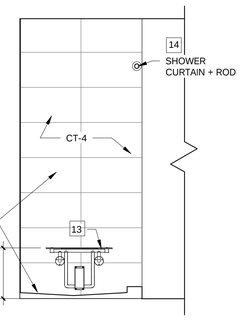
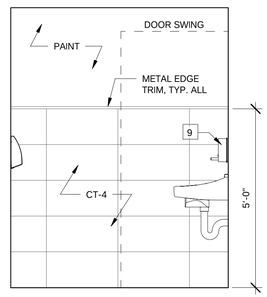
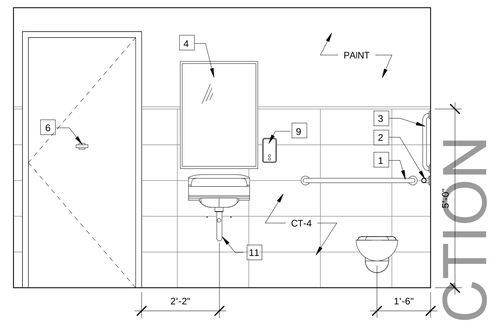


7 SHOWER 017 - SOUTH 2
SCALE 1/2" = 1'-0"



8 TOILET 018 - NORTH 2
SCALE 1/2" = 1'-0"



9 TOILET 018 - EAST ELEVATION
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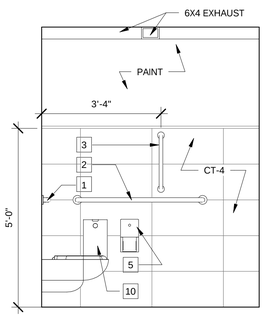
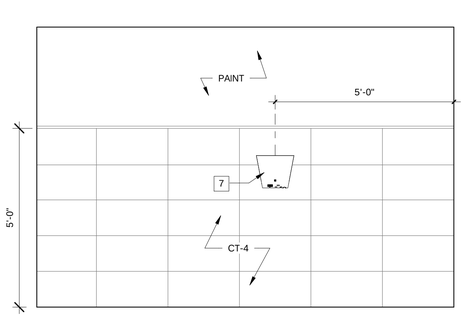


10 TOILET 018 - SOUTH ELEV.
SCALE 1/2" = 1'-0"



11 TOILET 018 - WEST ELEVATION
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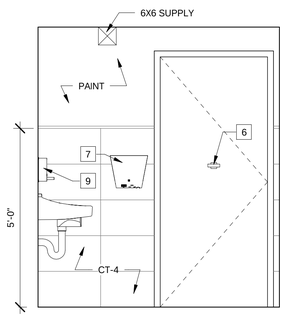
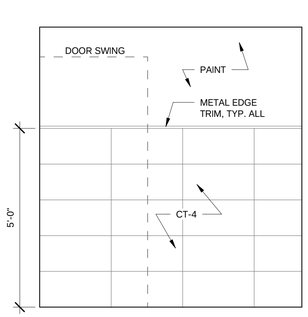


12 TOILET 019 - NORTH ELEV.
SCALE 1/2" = 1'-0"



13 TOILET 019 - EAST ELEV.
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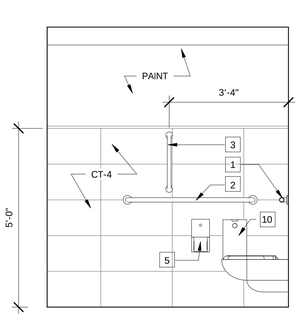

14 TOILET 019 - SOUTH ELEV.
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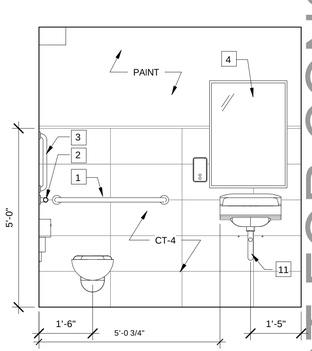

15 TOILET 019 - WEST ELEV.
SCALE 1/2" = 1'-0"

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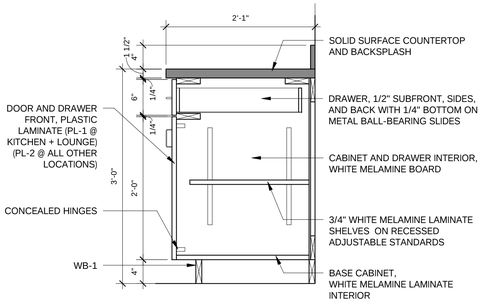
ENLARGED FLOOR PLAN + INTERIOR ELEVATIONS

A 4.5



1 TYPICAL BASE CABINET MILLWORK DETAIL
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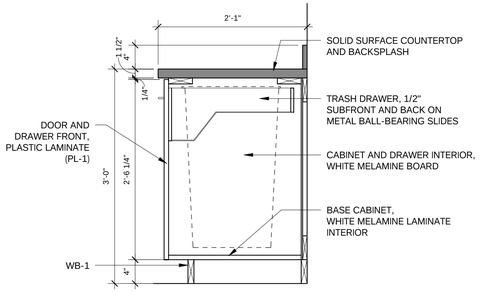
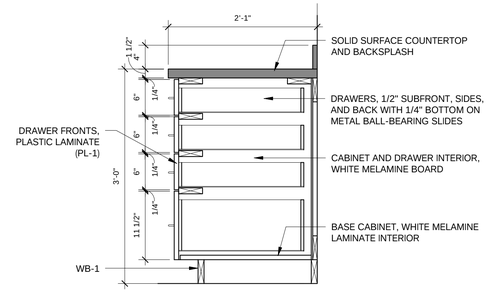
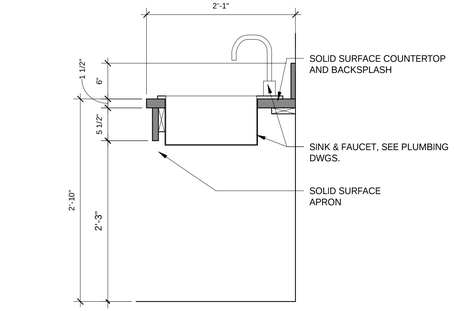


2 BASE TRASH CABINET MILLWORK DETAIL
SCALE 1" = 1'-0"



3 DRAWER BASE CABINET MILLWORK DETAIL
SCALE 1" = 1'-0"



4 SINK MILLWORK DETAIL
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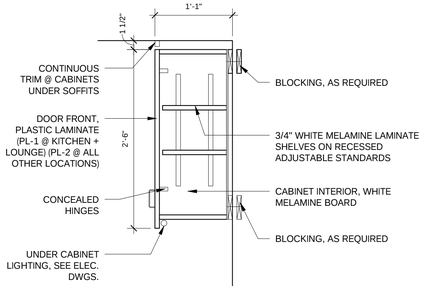
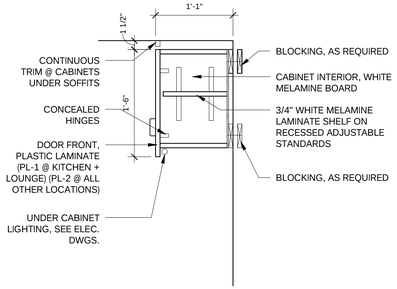


5 UPPER CABINET MILLWORK DETAIL 1
SCALE 1" = 1'-0"



6 UPPER CABINET MILLWORK DETAIL 2
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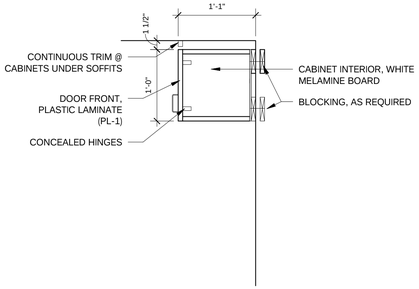

7 UPPER CABINET MILLWORK DETAIL 3
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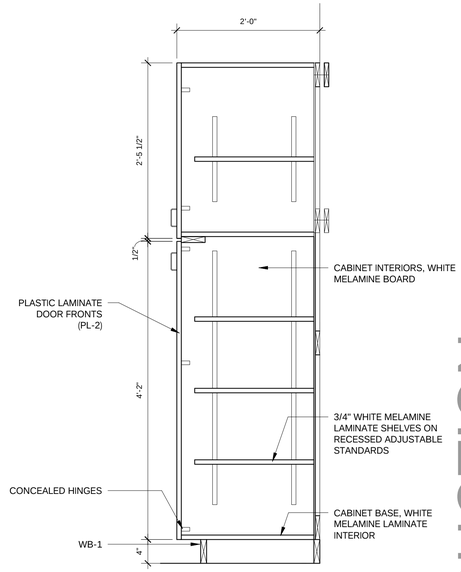

8 TALL CABINET MILLWORK DETAIL
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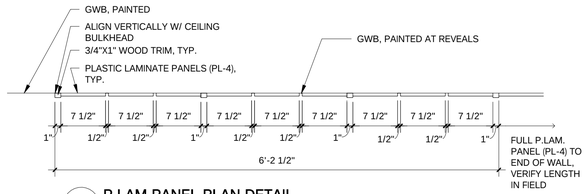
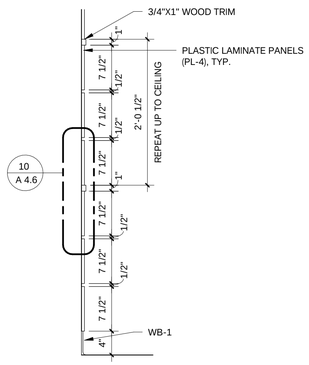
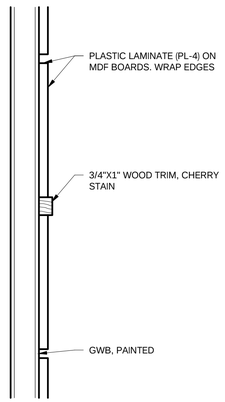


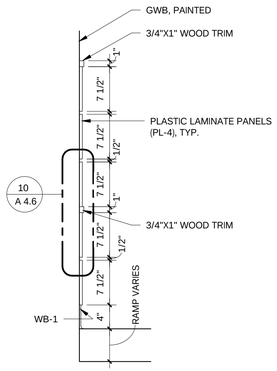
11A P.LAM PANEL PLAN DETAIL
SCALE 1" = 1'-0"



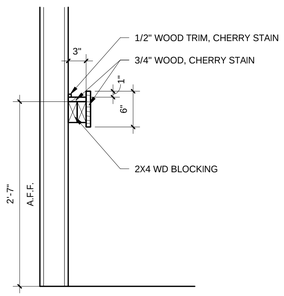
9 P.LAM PANEL SECTION
SCALE 1" = 1'-0"



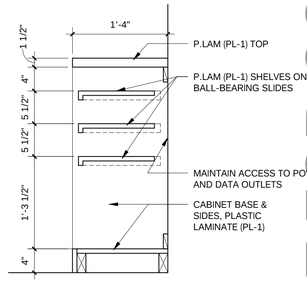
10 P.LAM PANEL DETAIL
SCALE 3" = 1'-0"



11 P.LAM PANEL SECTION
SCALE 1" = 1'-0"



12 PENCIL TRAY DETAIL
SCALE 1" = 1'-0"



13 COMPUTER CABINET MILLWORK DETAIL
SCALE 1" = 1'-0"

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COUNTY of DANE WISCONSIN 1839

DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY
FITCHBURG, WISCONSIN

CLIENT APPROVAL
☐ APPROVED
☐ APPROVED AS NOTED
APPROVED BY / DATE:

ISSUE RECORD

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	98% CD REVIEW	02/11/21
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PROJECT ARCHITECT
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PROJECT NUMBER
2020-001

MILLWORK DETAILS

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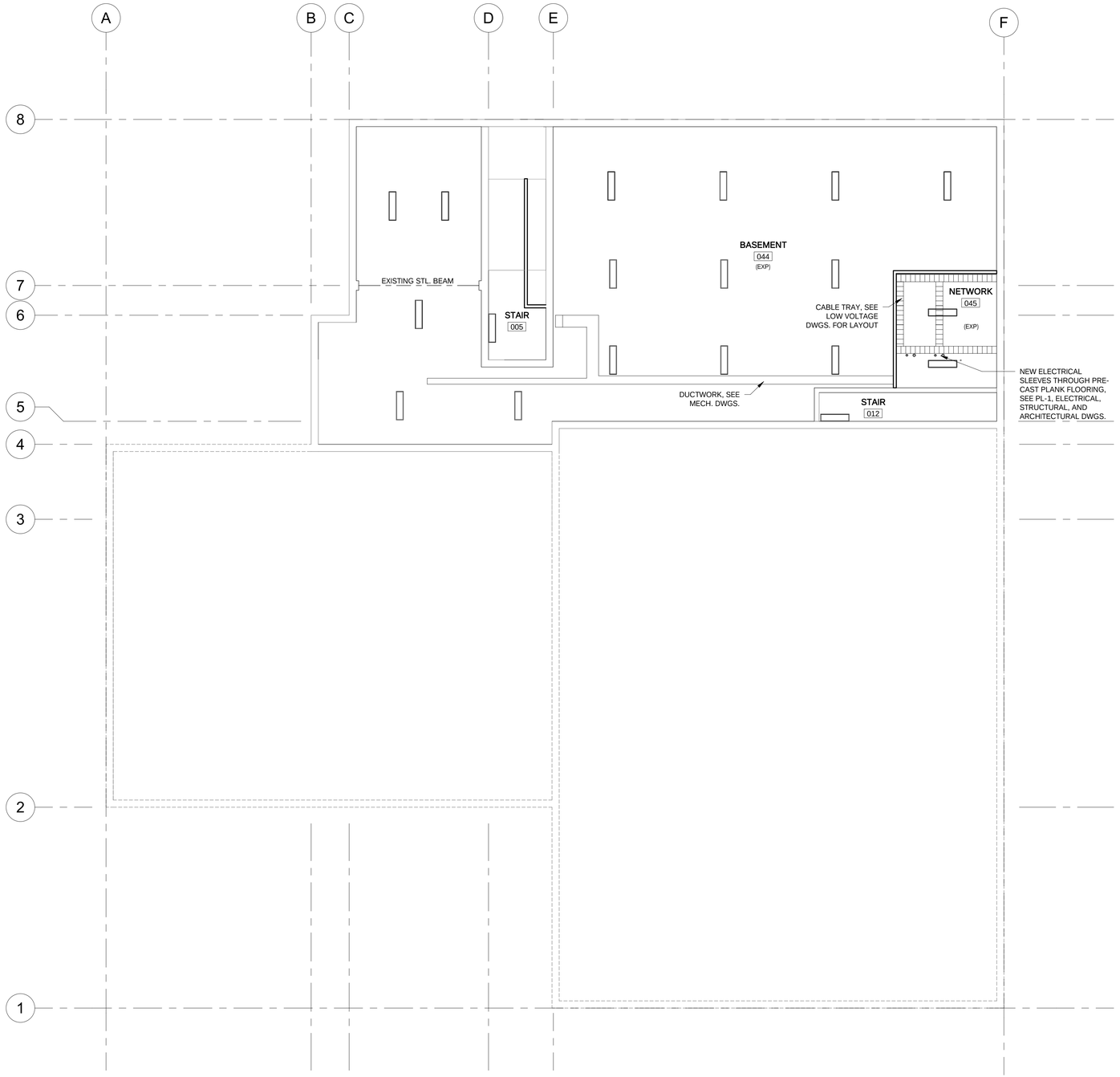

1 BASEMENT REFLECTED CEILING PLAN

SCALE 1/8" = 1'-0"

N

CEILING LEGEND

- GYPSUM BOARD CEILING
- 2X2 LAY-IN ACOUSTICAL PANEL CEILING TILE ON SUSPENDED METAL GRID
- 2X2 LAY-IN TRANSLUCENT PANEL CEILING TILE ON SUSPENDED METAL GRID, ARMSTRONG "INFUSIONS"
- 2X4 LAY-IN LIGHT FIXTURE, SEE ELECTRICAL DWGS.
- 2X2 LAY-IN LIGHT FIXTURE, SEE ELECTRICAL DWGS.
- 4' PENDANT LIGHT, SEE ELECTRICAL DWGS.
- 6" RECESSED CAN LIGHT, SEE ELECTRICAL DWGS.
- 1X4 SURFACE MOUNTED LIGHT FIXTURE, SEE ELECTRICAL DWGS.
- WALL MOUNTED LIGHT FIXTURE, SEE ELECTRICAL DWGS.
- PENDANT MOUNTED CELING FAN W/ WIRE GUARD, SEE ELECTRICAL DWGS.
- 2X2 SUPPLY DIFFUSER, SEE MECHANICAL DWGS.
- 2X2 RETURN GRILL, SEE MECHANICAL DWGS.
- EXHAUST FAN, SEE MECHANICAL DWGS.
- CONCEALED PENDANT SPRINKLER HEAD
- 2'X4' ACCOUSTICAL CEILING PANEL, MOUNTED TO DECK, ARMSTRONG TECTUM FINALE

GENERAL NOTES

1. REFERENCE MECHANICAL DRAWINGS FOR LOCATIONS OF MECHANICAL SUPPLY AND RETURN GRILLES.
2. REFERENCE FIRE PROTECTION DRAWINGS FOR LOCATION OF SPRINKLER HEADS. LOCATE HEADS IN CENTER OF CEILING TILE WHERE THERE IS LAY-IN CEILING.
3. CONTRACTOR TO FIELD VERIFY AND COORDINATE OBSTRUCTIONS BEFORE FINALIZING CEILING HEIGHTS. ANY CHANGES FROM DOCUMENTS TO BE PRESENTED TO ARCHITECT FOR REVIEW.
4. COORDINATE AND FIELD VERIFY ALL LIGHT FIXTURES, SPRINKLER HEADS, AND DUCTWORK LOCATIONS PRIOR TO INSTALLATION. NOTIFY ARCHITECT IF ANY DISCREPANCIES OCCUR IMMEDIATELY.
5. COORDINATE AND REVIEW ALL EXPOSED PIPING LAYOUTS IN ANY OPEN/EXPOSED CEILING W/ ARCHITECT PRIOR TO INSTALLTION.

PRECAST CONCRETE PLANK NOTES

SEE SHEET PL-1 FOR EXISTING PRECAST CONCRETE PLANK REQUIREMENTS

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PROJECT NUMBER
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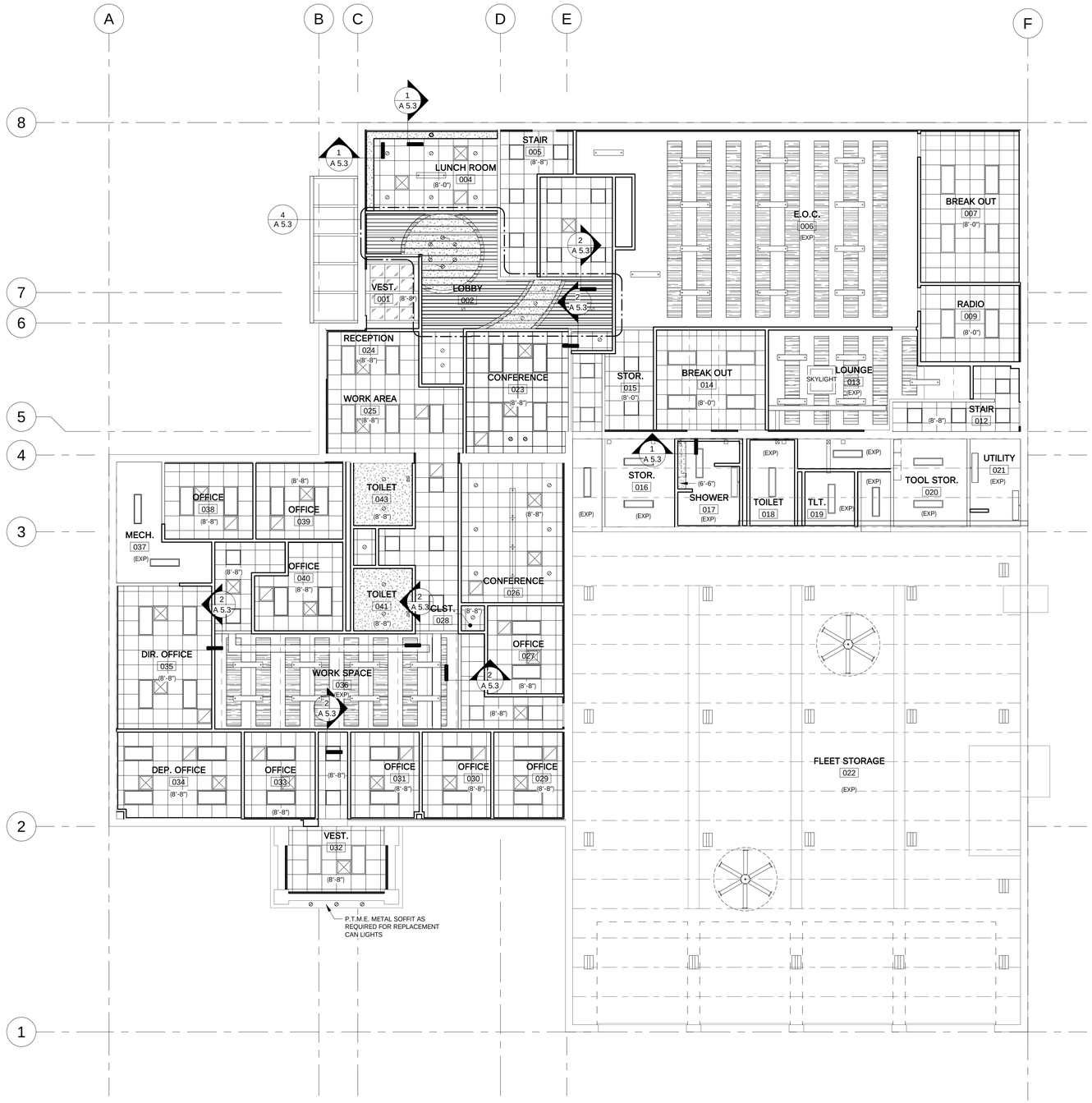
BASEMENT REFLECTED CEILING PLAN

A 5.1



1 FIRST FLOOR REFLECTED CEIL. PLAN

SCALE 1/8" = 1'-0"

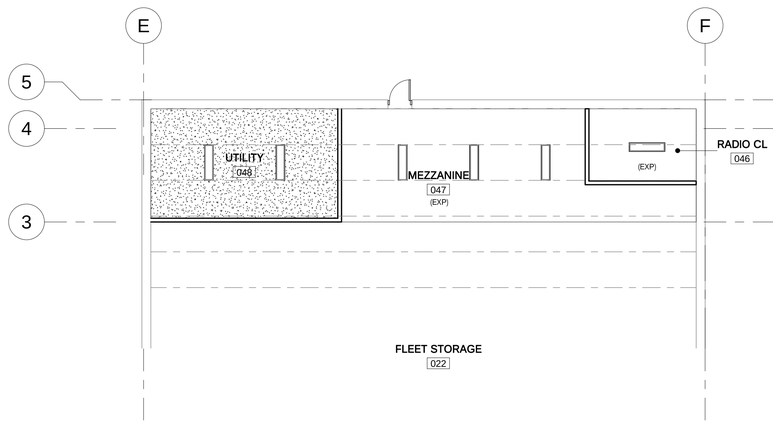
N

CEILING LEGEND

- GYPSUM BOARD CEILING
- 2X2 LAY-IN ACOUSTICAL PANEL CEILING TILE ON SUSPENDED METAL GRID
- 2X2 LAY-IN TRANSLUCENT PANEL CEILING TILE ON SUSPENDED METAL GRID, ARMSTRONG "INFUSIONS"
- 2X4 LAY-IN LIGHT FIXTURE, SEE ELECTRICAL DWGS.
- 2X2 LAY-IN LIGHT FIXTURE, SEE ELECTRICAL DWGS.
- 4' PENDANT LIGHT, SEE ELECTRICAL DWGS.
- 6" RECESSED CAN LIGHT, SEE ELECTRICAL DWGS.
- 1X4 SURFACE MOUNTED LIGHT FIXTURE, SEE ELECTRICAL DWGS.
- WALL MOUNTED LIGHT FIXTURE, SEE ELECTRICAL DWGS.
- PENDANT MOUNTED CELING FAN W/ WIRE GUARD, SEE ELECTRICAL DWGS.
- 2X2 SUPPLY DIFFUSER, SEE MECHANICAL DWGS.
- 2X2 RETURN GRILL, SEE MECHANICAL DWGS.
- EXHAUST FAN, SEE MECHANICAL DWGS.
- CONCEALED PENDANT SPRINKLER HEAD
- 2'X4' ACCOUSTICAL CEILING PANEL, MOUNTED TO DECK, ARMSTRONG TECTUM FINALE

GENERAL NOTES

1. REFERENCE MECHANICAL DRAWINGS FOR LOCATIONS OF MECHANICAL SUPPLY AND RETURN GRILLES.
2. REFERENCE FIRE PROTECTION DRAWINGS FOR LOCATION OF SPRINKLER HEADS. LOCATE HEADS IN CENTER OF CEILING TILE WHERE THERE IS LAY-IN CEILING.
3. CONTRACTOR TO FIELD VERIFY AND COORDINATE OBSTRUCTIONS BEFORE FINALIZING CEILING HEIGHTS. ANY CHANGES FROM DOCUMENTS TO BE PRESENTED TO ARCHITECT FOR REVIEW.
4. COORDINATE AND FIELD VERIFY ALL LIGHT FIXTURES, SPRINKLER HEADS, AND DUCTWORK LOCATIONS PRIOR TO INSTALLATION. NOTIFY ARCHITECT IF ANY DISCREPANCIES OCCUR IMMEDIATELY.
5. COORDINATE AND REVIEW ALL EXPOSED PIPING LAYOUTS IN ANY OPEN/EXPOSED CEILING W/ ARCHITECT PRIOR TO INSTALLATION.
6. PROVIDE ACCESS DOORS/PANELS WHEN REQUIRED BY OWNER IN ALL GYPSUM BOARD CEILINGS.



2 MEZZANINE REFLECTED CEILING PLAN

SCALE 1/8" = 1'-0"

N

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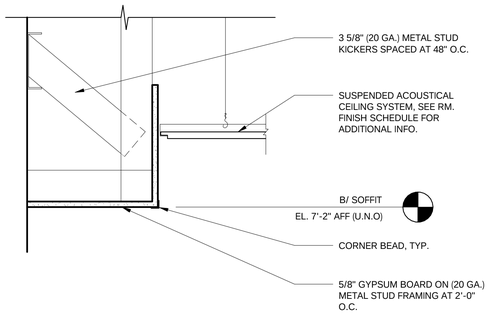
DATE	6/7/2021 2:03:29 PM
PROJECT NUMBER	2020-001

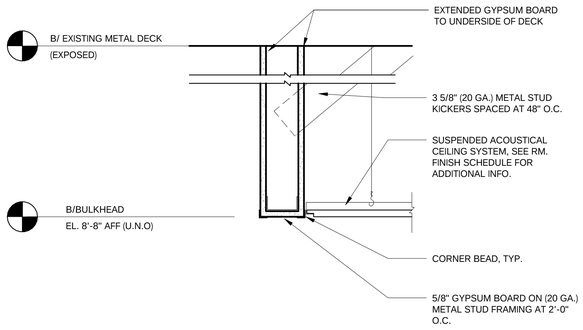
FIRST FLOOR REFLECTED CEILING PLAN

A 5.2



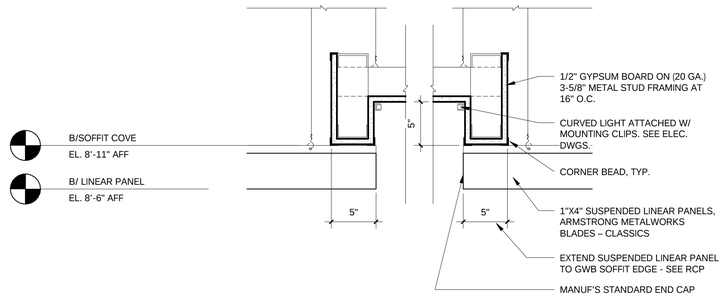
1 CEILING SOFFIT DETAIL

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



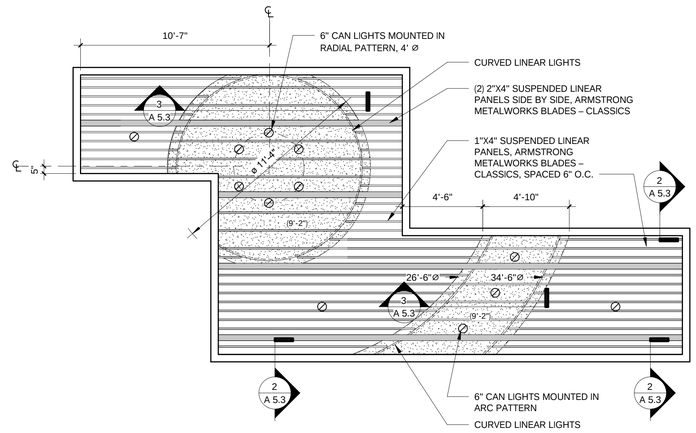
2 CEILING BULKHEAD (BH) DETAIL

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



3 LOBBY CEILING DETAIL

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



4 LOBBY CEILING LAYOUT

SCALE 1/4" = 1'-0"

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2020-001

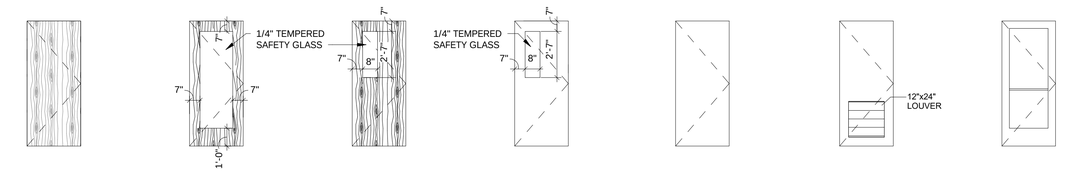
CEILING DETAILS

A 5.3

DOOR AND FRAME SCHEDULE

Door No.	Room Name	DOOR Width	DOOR Height	DOOR Leaf	DOOR Type	DOOR Material	FRAME Type	FRAME Material	FRAME Jamb Detail	Hardware Set No.	Fire Rating	Comments
001A	VESTIBULE	6'-0"	7'-0"	2	7	ALUM.	F	ALUM.		006A		VERIFY EXISTING MASONRY OPENING. CARD READER ACCESS. INSULATED LAMINATED GLASS.
001B	VESTIBULE	6'-0"	7'-0"	2	7	ALUM.	G	ALUM.		006C		CARD READER ACCESS. LAMINATED GLASS.
004	LUNCH ROOM	4'-0"	7'-0"		1	WD.	-	-	-	007		SLIDING BARN DOOR
005A	STAIR	3'-0"	7'-0"	1	5	H.M.	A	H.M.	J2	005G		VERIFY EXISTING MASONRY OPENING. PREP FOR FUTURE CARD READER ACCESS.
005B	STAIR	3'-0"	7'-0"	1	1	WD.	B	H.M.	J1	001	1 HR	
005C	STAIR	3'-0"	7'-0"	1	5	H.M.	A	H.M.	J3	005H	1 HR	VERIFY EXISTING MASONRY OPENING.
006A	E.O.C.	3'-0"	7'-0"	1	2	WD.	B	H.M.	J1	005A		CARD READER ACCESS.
006B	E.O.C.	3'-0"	7'-0"	1	2	WD.	B	H.M.	J1	001B		
007	BREAK OUT	3'-0"	7'-0"	1	2	WD.	B	H.M.	J1	001C		
009	RADIO	3'-0"	7'-0"	1	2	WD.	B	H.M.	J1	004A		CARD READER ACCESS.
012A	STAIR	3'-0"	7'-0"	1	5	H.M.	A	H.M.	J2	005J		VERIFY EXISTING MASONRY OPENING. PREP FOR FUTURE CARD READER ACCESS.
012B	STAIR	3'-0"	7'-0"	1	1	WD.	B	H.M.	J1	005K	1 HR	CARD ACCESS READER BOTH SIDES.
012C	STAIR	3'-0"	7'-0"	1	5	H.M.	A	H.M.	J3	005H	1 HR	VERIFY EXISTING MASONRY OPENING.
014	BREAK OUT	3'-0"	7'-0"	1	3	WD.	B	H.M.	J1	001C		
016	STORAGE	4'-0"	7'-0"	1	5	H.M.	A	H.M.	J3	005F		CARD READER / KEY PAD ACCESS.
017	SHOWER	3'-0"	7'-0"	1	5	H.M.	A	H.M.	J3	002A		PREP FOR FUTURE CARD READER ACCESS.
018	TOILET	3'-0"	7'-0"	1	1	WD.	B	H.M.	J1	002A		
019	TOILET	3'-0"	7'-0"	1	1	WD.	B	H.M.	J1	002A		
020	TOOL STORAGE	3'-0" V.I.F.	7'-0" V.I.F.	1	4	H.M.	A	H.M.	J1	005		VERIFY EXISTING OPENING. CARD READER ACCESS.
021	UTILITY	3'-0" V.I.F.	7'-0" V.I.F.	1	5	H.M.	A	H.M.	J3	005		VERIFY EXISTING MASONRY OPENING. CARD READER ACCESS.
022A	FLEET STORAGE	3'-0"	7'-0"	1	4	H.M.	A	H.M.	J1	002		CARD ACCESS READER BOTH SIDES.
022B	FLEET STORAGE	3'-0"	7'-0"	1	4	H.M.	A	H.M.	J1	001E		CARD ACCESS READER BOTH SIDES. ELECTROMAGNETIC EMERGENCY EGRESS.
022C	FLEET STORAGE	3'-0"	7'-0"	1	4	H.M.	A	H.M.	J2	005B		CARD READER / KEY PAD ACCESS.
022D	FLEET STORAGE	3'-0"	7'-0"	1	5	H.M.	A	H.M.	J3	005I		CARD READER / KEY PAD ACCESS.
022E	FLEET STORAGE	EXG.	EXG.	-	EXG.	EXG.	-	EXG.	-			EXG. DR. TO REMAIN. SEE ALLOWANCE #5. PROVIDE (6) REMOTES THAT CONTROL ALL (4) O.H. DRS. ON EA. REMOTE
022F	FLEET STORAGE	EXG.	EXG.	-	EXG.	EXG.	-	EXG.	-			EXG. DR. TO REMAIN. SEE ALLOWANCE #5. PROVIDE (6) REMOTES THAT CONTROL ALL (4) O.H. DRS. ON EA. REMOTE
022G	FLEET STORAGE	EXG.	EXG.	-	EXG.	EXG.	-	EXG.	-			EXG. DR. TO REMAIN. SEE ALLOWANCE #5. PROVIDE (6) REMOTES THAT CONTROL ALL (4) O.H. DRS. ON EA. REMOTE
022H	FLEET STORAGE	EXG.	EXG.	-	EXG.	EXG.	-	EXG.	-			EXG. DR. TO REMAIN. SEE ALLOWANCE #5. PROVIDE (6) REMOTES THAT CONTROL ALL (4) O.H. DRS. ON EA. REMOTE
023A	CONFERENCE	3'-0"	7'-0"	1	7	ALUM.	M	ALUM.	J4	006B		
023B	CONFERENCE	3'-0"	7'-0"	1	3	WD.	B	H.M.	J1	002		CARD READER ACCESS. BOTH SIDES.
026A	CONFERENCE	3'-0"	7'-0"	1	2	WD.	E	H.M.	J4	001C		
027	OFFICE	3'-0"	7'-0"	1	2	WD.	C	H.M.	J1	004		
028	CLOSET	2'-4"	7'-0"	1	1	WD.	B	H.M.	J1	001A		
029	OFFICE	3'-0"	7'-0"	1	2	WD.	C	H.M.	J1	004		
030	OFFICE	3'-0"	7'-0"	1	2	WD.	C	H.M.	J1	004		
031	OFFICE	3'-0"	7'-0"	1	2	WD.	C	H.M.	J1	004		
032	VESTIBULE	3'-0"	7'-0"	1	7	ALUM.	H	ALUM.		006		CARD READER ACCESS. INSULATED LAMINATED GLASS.
033	OFFICE	3'-0"	7'-0"	1	2	WD.	C	H.M.	J1	004		
034	DEPUTY OFFICE	3'-0"	7'-0"	1	2	WD.	C	H.M.	J1	004		
035	DIRECTOR'S OFFICE	3'-0"	7'-0"	1	2	WD.	C	H.M.	J1	004A		CARD READER ACCESS.
036	WORK SPACE	3'-0"	7'-0"	1	2	WD.	B	H.M.	J1	005B		CARD READER ACCESS.
037	MECHANICAL	3'-0"	7'-0"	1	1	WD.	B	H.M.	J1	005C		
038	OFFICE	3'-0"	7'-0"	1	2	WD.	D	H.M.	J1	004		
039	OFFICE	3'-0"	7'-0"	1	2	WD.	B	H.M.	J1	004		
040	OFFICE	3'-0"	7'-0"	1	2	WD.	B	H.M.	J1	004		
041	TOILET	3'-0"	7'-0"	1	1	WD.	B	H.M.	J1	002A		
042	CLOSET	3'-0"	7'-0"	1	1	WD.	B	H.M.	J1	001D		
043	TOILET	3'-0"	7'-0"	1	1	WD.	B	H.M.	J1	002A		
045	NETWORK	3'-0"	7'-0"	1	4	H.M.	A	H.M.	J1	005		CARD READER ACCESS.
046	RADIO CLOSET	3'-0"	7'-0"	1	5	H.M.	A	H.M.	J1	005		CARD READER ACCESS.
047	MEZZANINE	2'-4"	5'-0"	1	5	H.M.	A	H.M.	J3	008		ROOF ACCESS.
048	UTILITY	4'-0"	7'-0"	1	6	H.M.	A	H.M.	J1	005D		

DOOR TYPES



1 S.C. WOOD FULL FLUSH DOOR PRE-FINISHED

2 S.C. WOOD FLUSH DOOR FULL GLASS PRE-FINISHED

3 S.C. WOOD FLUSH DOOR NARROW HALF LITE PRE-FINISHED

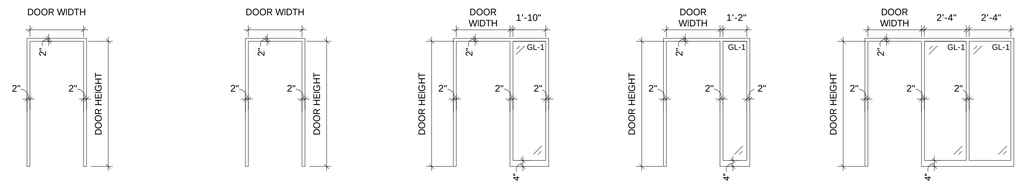
4 GALVANIZED H.M. NARROW HALF GLASS INSULATED STEEL STIFFENED WELDED SEAMS FACTORY PRIMED

5 GALVANIZED H.M. INSULATED STEEL STIFFENED WELDED SEAMS FACTORY PRIMED

6 GALVANIZED H.M. INSULATED STEEL STIFFENED WELDED SEAMS FACTORY PRIMED

7 COLOR ANODIZED ALUM. THERMAL STOREFRONT DOOR MEDIUM STILE INSULATED LAMINATED GLASS

FRAME TYPES



A GALVANIZED H.M. WELDED FRAME (FACTORY PRIMED)

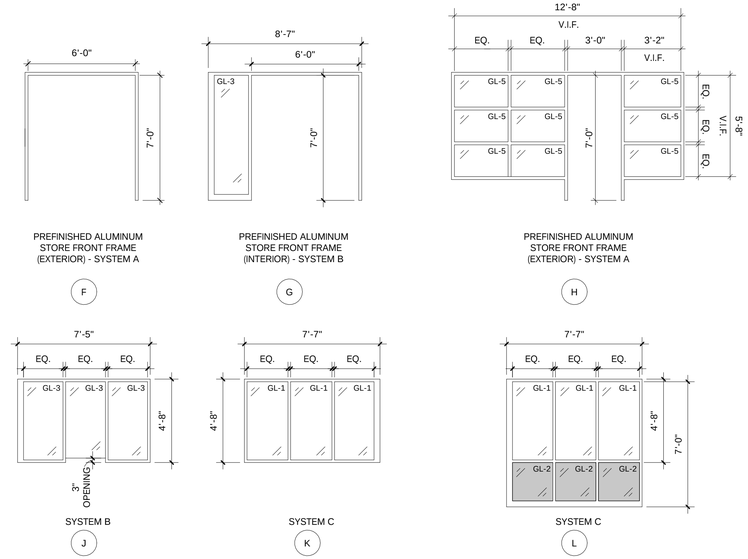
B H.M. WELDED FRAME (FACTORY PRIMED)

C H.M. WELDED FRAME (FACTORY PRIMED)

D H.M. WELDED FRAME (FACTORY PRIMED)

E H.M. WELDED FRAME (FACTORY PRIMED)

ALUMINUM STOREFRONT FRAME TYPES



F PREFINISHED ALUMINUM STORE FRONT FRAME (EXTERIOR) - SYSTEM A

G PREFINISHED ALUMINUM STORE FRONT FRAME (INTERIOR) - SYSTEM B

H PREFINISHED ALUMINUM STORE FRONT FRAME (EXTERIOR) - SYSTEM A

J SYSTEM B

K SYSTEM C

L SYSTEM C

M SYSTEM C

N SYSTEM B

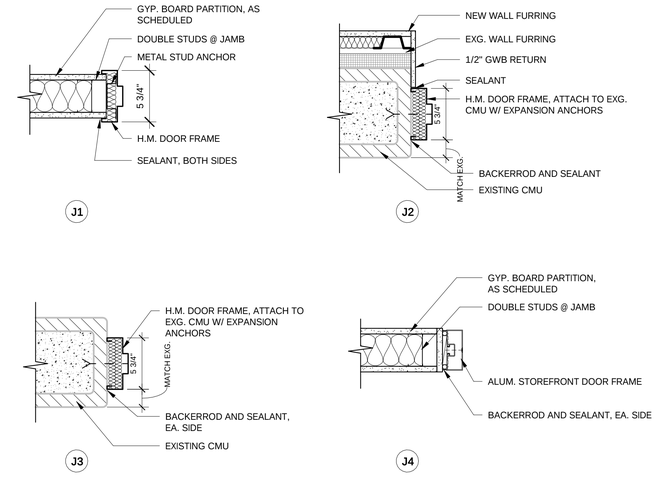
STOREFRONT SYSTEM LEGEND:

SYSTEM A = EXTERIOR SECURITY (+ ALL WINDOWS)
SYSTEM B = INTERIOR SECURITY
SYSTEM C = INTERIOR

GLAZING LEGEND

GL-1	1/4" UNCOATED CLEAR TEMPERED SAFETY GLASS
GL-2	1/4" COATED TEMPERED SAFETY GLASS
GL-3	3/8" LAMINATED GLASS
GL-4	LAMINATED CANOPY GLASS
GL-5	1-3/16" LOW-E INSULATED, LAMINATED GLASS

DOOR JAMB DETAILS



J1

J2

J3

J4

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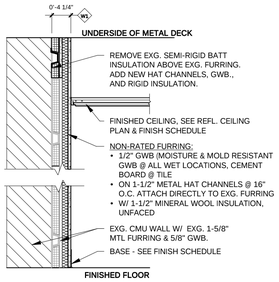
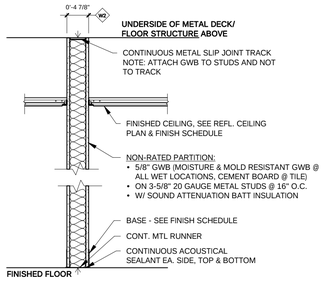
DOOR + FRAME SCHEDULE

A 6.1

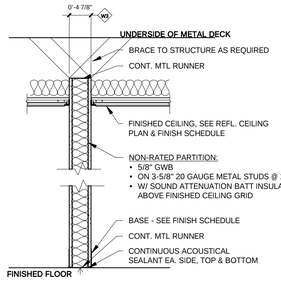
WALL TYPES



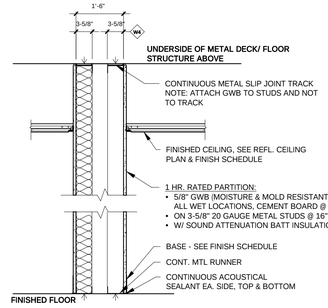
W1 NON-RATED FURRING PARTITION
SCALE: 3/4"=1'-0"



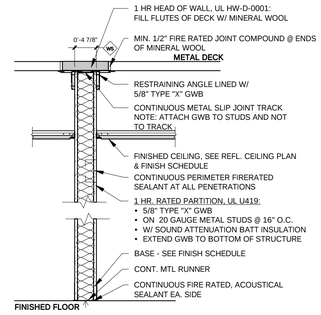
W2 NON - RATED FULL HEIGHT ACOUSTICAL PARTITION
SCALE: 3/4"=1'-0"



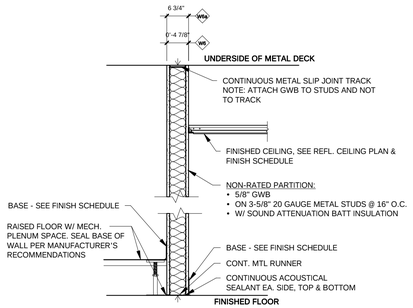
W3 NON - RATED ACOUSTICAL PARTITION
SCALE: 3/4"=1'-0"



W4 NON - RATED FULL HEIGHT CHASE PARTITION
SCALE: 3/4"=1'-0"

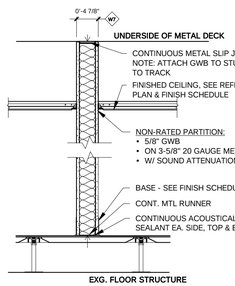


W5 1 HR. - RATED FULL HEIGHT PARTITION
SCALE: 3/4"=1'-0"

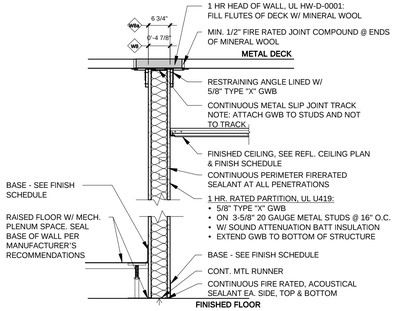


W6 NON - RATED FULL HEIGHT ACOUSTICAL PARTITION @ RAISED ACCESS FLOOR
SCALE: 3/4"=1'-0"

W6a 5-1/2" STUD

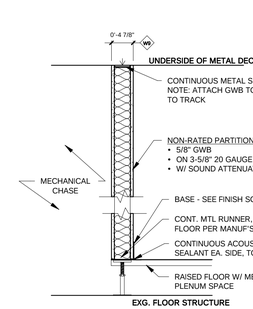


W7 NON - RATED FULL HEIGHT ACOUSTICAL PARTITION @ RAISED ACCESS FLOOR
SCALE: 3/4"=1'-0"

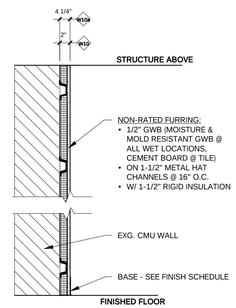


W8 1 HR. - RATED FULL HEIGHT ACOUSTICAL PARTITION @ RAISED ACCESS FLOOR
SCALE: 3/4"=1'-0"

W8a 5-1/2" STUD

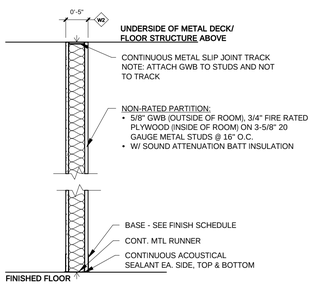


W9 NON - RATED FULL HEIGHT ACOUSTICAL CHASE PARTITION @ RAISED ACCESS FLOOR
SCALE: 3/4"=1'-0"

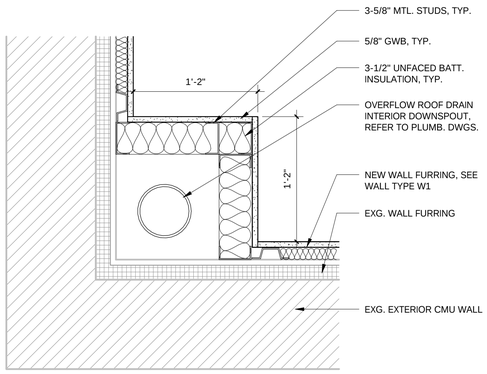


W10 NON-RATED FURRING PARTITION
SCALE: 3/4"=1'-0"

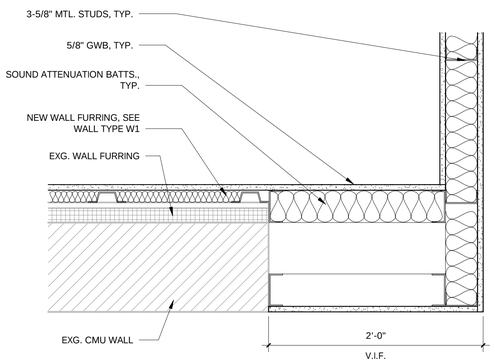
W10a 3-5/8" STUD



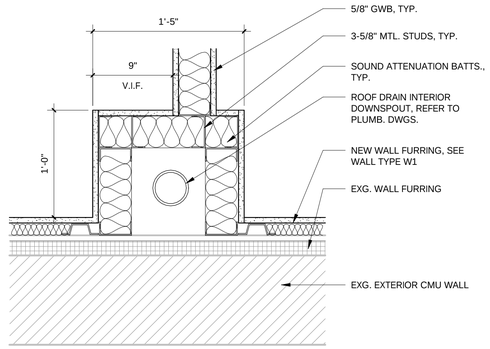
W11 NON - RATED FULL HEIGHT ACOUSTICAL PARTITION
SCALE: 3/4"=1'-0"



1 PLAN DETAIL 1
SCALE 1 1/2" = 1'-0"



2 PLAN DETAIL 2
SCALE 1 1/2" = 1'-0"



3 PLAN DETAIL 3
SCALE 1 1/2" = 1'-0"

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DANE COUNTY EMERGENCY MANAGEMENT
5415 KING JAMES WAY
FITCHBURG, WISCONSIN

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WALL TYPES + PLAN DETAILS

A 6.2

1 FIRST FLOOR FINISH PLAN

SCALE 1/8" = 1'-0"

ROOM FINISH SCHEDULE

Name	Number	Base Finish	Floor Finish	Ceiling Finish	East Wall	North Wall	South Wall	West Wall
VEST.	001	WB-1	CPT-1	C-1, PT-5	PT-1	PT-1	PT-1	PT-1
LOBBY	002	WB-1	LVT-1	C-2, PT-5	PL-4, PT-1	PT-1	PT-1	PT-1
DISPLAY	003	WB-1	LVT-1	C-2, PT-5	PT-1	PT-1	PT-1	PT-1
LUNCH ROOM	004	WB-1	LVT-1	AC-1	PT-1	PT-1	PT-1	PT-1
STAIR	005	WB-2	EXG. CONC./ ST-1	AC-1	PT-1	PT-1	PT-1	PT-1
E.O.C.	006	WB-1	CPT-2	PT-4, AP-1	PT-1	PT-1	PT-1	PT-1
BREAK OUT	007	WB-1	CPT-2	AC-1	PT-1	PT-1	PT-1	PT-1
RADIO	009	WB-1	CPT-2	AC-1	PT-1	PT-1	PT-1	PT-1
STAIR	012	WB-2	EXG. CONC./ ST-1	AC-1	PT-1	PT-1	PT-1	PT-1
LOUNGE	013	WB-1	LVT-1	PT-4, AP-1	PT-1	PT-1	PT-1	PT-1
BREAK OUT	014	WB-1	CPT-2	AC-1	PT-1	PT-1	PT-1	PT-1
STOR.	015	WB-1	CPT-2	AC-1	PT-1	PT-1	PT-1	PT-1
STOR.	016	WB-1	EXG. CONC.	PT-6	PT-1	PT-1	PT-1	PT-1
SHOWER	017	-	CT-1, CT-2	PT-6	CT-4, PT-1	CT-4, PT-1	CT-4, PT-1	CT-4, PT-1
TOILET	018	-	CT-3	PT-6	CT-4, PT-1	CT-4, PT-1	CT-4, PT-1	CT-4, PT-1
TLT.	019	-	CT-3	PT-6	CT-4, PT-1	CT-4, PT-1	CT-4, PT-1	CT-4, PT-1
TOOL STOR.	020	WB-2	EXG. TILE	PT-6	PT-1	PT-1	PT-1	PT-1
UTILITY	021	WB-2	EXG. CONC.	PT-6	PT-1	PT-1	PT-1	PT-1/ FRP-1
FLEET STORAGE	022	WB-1	EXG. CONC.	-	-	-	-	-
CONFERENCE	023	WB-1	CPT-3	AC-1	PT-1	PT-1	PL-4	PT-1
RECEPTION	024	WB-1	CPT-3	AC-1	PT-1	PT-1	PT-1	PT-1
WORK AREA	025	WB-1	CPT-3	AC-1	PT-1	PT-1	PT-1, PT-2	PT-1
CONFERENCE	026	WB-1	CPT-3	AC-1	PT-1	PT-1	PT-1	PT-1
OFFICE	027	WB-1	CPT-3	AC-1	PT-1	PT-1	PT-1	PT-1
CLST.	028	WB-1	CPT-3	AC-1	PT-1	PT-1	PT-1	PT-1
OFFICE	029	WB-1	CPT-3	AC-1	PT-1	PT-1	PT-1	PT-1
OFFICE	030	WB-1	CPT-3	AC-1	PT-1	PT-1	PT-1	PT-1
OFFICE	031	WB-1	CPT-3	AC-1	PT-1	PT-1	PT-1	PT-1
VEST.	032	WB-1	CPT-3	AC-1	PT-1	PT-1	PT-1	PT-1
OFFICE	033	WB-1	CPT-3	AC-1	PT-1	PT-1	PT-1	PT-1
DEP. OFFICE	034	WB-1	CPT-3	AC-1	PT-1	PT-1	PT-1	PT-1
DIR. OFFICE	035	WB-1	CPT-3	AC-1	PT-1	PT-1	PT-1	PT-1
WORK SPACE	036	WB-1	CPT-3	PT-4, AP-1	PT-1, PT-2	PT-1, PT-2	PT-1	PT-1
MECH.	037	WB-2	EXG. CONC.	-	PT-1	PT-1	PT-1	PT-1
OFFICE	038	WB-1	CPT-3	AC-1	PT-1	PT-1	PT-1	PT-1
OFFICE	039	WB-1	CPT-3	AC-1	PT-1	PT-1	PT-1	PT-1
OFFICE	040	WB-1	CPT-3	AC-1	PT-1	PT-1	PT-1	PT-1
TOILET	041	-	CT-3	PT-7	CT-4, PT-1	CT-4, PT-1	CT-4, PT-1	CT-4, PT-1
CLST.	042	WB-2	EXG. CONC.	AC-1	PT-1	PT-1	PT-1	PT-1, FRP-1
TOILET	043	-	CT-3	PT-7	CT-4, PT-1	CT-4, PT-1	CT-4, PT-1	CT-4, PT-1
BASEMENT	044	-	EXG. CONC.	-	-	-	-	-
NETWORK	045	WB-2	CONC., SEAL	-	PLWD/PT-1	PLWD/PT-1	PLWD/PT-1	PLWD/PT-1
RADIO CL	046	WB-2	SEAL CONC.	-	PT-1	PT-1	PLWD/PT-1	PLWD/PT-1
MEZZANINE	047	WB-2	SEAL CONC.	-	PT-1	PT-1	PT-1	PT-1
UTILITY	048	EB-1	ERF-1	PT-7	PT-1	PT-1	PT-1	PT-1

ROOM FINISH SCHEDULE GENERAL NOTES:

1. SEE COVER SHEET FOR ABBREVIATIONS.
2. DISCREPANCIES BETWEEN THE ROOM FINISH SCHEDULE AND DRAWINGS SHALL BE REPORTED TO THE ARCHITECT FOR FINISH DETERMINATION.
3. ON WALLS THAT ARE COVERED WITH MILLWORK, A FINISH SHALL NOT BE APPLIED TO THE WALL BEHIND EXCEPT FOR LOCATIONS WHICH MAY BE EXPOSED (I.E. SPACE BETWEEN MILL WORK AND ADJACENT PERPENDICULAR WALL.)
4. SEE INTERIOR ELEVATION AND DETAILS FOR TILE PATTERN.

ROOM FINISH LEGEND

PAINT

- PT-1 SHERWIN WILLIAMS, CHATROOM, SW6171
- PT-2 SHERWIN WILLIAMS, RIVERWAY, SW6222
- PT-3 SHERWIN WILLIAMS, CYBERSPACE, SW7076
- PT-4 SHERWIN WILLIAMS, TONY TAUPE, SW7038
- PT-5 EXPOSED STRUCTURE PAINT, TBD
- PT-6 CONC. PLANK CEILING PAINT, TBD
- PT-7 WHITE CEILING PAINT

CARPET

- CPT-1 SHAW CONTRACT, ENTRYWAY SYSTEMS, WELCOME II TILE 5T031, COLOR: BLUE 31400
- CPT-2 SHAW CONTRACT, HYBRID TILE, STYLE NO. 59580, COLOR – STIPPLE 64505, W/ POSITILE ATTACHMENT TO RAISED ACCESS FLOOR PANELS.
- CPT-3 SHAW CONTRACT, CATALYST TILE, STYLE NO. 59579, COLOR – SEASON 64330

CEILINGS

- C-1 2X2 LAY-IN TRANSLUCENT PANEL CEILING TILE ON SUSPENDED METAL GRID, ARMSTRONG "INFUSIONS"
- C-2 SUSPENDED LINEAR PANELS, ARMSTRONG METALWORKS BLADES – CLASSICS
- AC-1 2X2 LAY-IN ACOUSTICAL PANEL CEILING TILE ON SUSPENDED METAL GRID
- AP-1 2'X4' ACCOUSTICAL CEILING PANEL, ARMSTRONG TECTUM FINALE

CORNER GUARDS + WALL PANELS

CG

- CG-1 INPRO 168BN BLUNOSE SURFACE MOUNT, 5' HEIGHT, COLOR TBD
- FRP-1 FIBERGLASS RESIN PANEL, WHITE PEBBLE FINISH
- PLWD 3/4" THICK FIRE RATED A-C PLYWOOD

PLASTIC LAMINATE

- PL-1 FORMICA, MATTE FINISH, COGNAC MAPLE, NO. 7738-58
- PL-2 FORMICA, SCULPTED FINISH, STORM SOLIDZ, NO. 3505-SP
- PL-3 NOT USED
- PL-4 CHEMETAL, FUGUE ALUMINUM, 621

SOLID SURFACE

- SS-1 CORIAN, DOESKIN
- SS-2 CORIAN, ELEGANT GRAY

FLOOR AND WALL TILE

- CT-1 MIRAGE, HUB DESIGN CORE, COLOR- BRIGHT UB 10, 2" X 2" MOSAICO 36T (12"X12"SHEET) NAT NATURAL FINISH
- CT-2 MIRAGE, HUB DESIGN CORE, COLOR- BRIGHT UB 10, 24"X24", BC BOCCIARDATA FINISH
- CT-3 MIRAGE, HUB DESIGN CORE, COLOR- BRIGHT UB 10, 12" X 24", NAT NATURAL FINISH
- CT-4 MIRAGE, COTTON WW01, 12" X 24"

WALL BASE AND FLOORING

- WB-1 JOHNSONITE, TA4 GATEWAY WG, 4"
- WB-2 JOHNSONITE, 6"
- LVT-1 SHAW, COMPOUND 5.0MM, STYLE NO. 4077V, COLOR-BERYL, COLOR NO. 77429, 24" X 24"
- ERF-1 EPOXY RESINOUS FLOORING TNEMEC DECO TREAD, IC-222-Q206 IC 284-000 DECO CLEAR. INSTALL WATERPROOF MEMBRANE AS A PART OF THE SYSTEM INSTALLATION.
- EB-1 EPOXY RESINOUS BASE (6"), SEE DETAIL 5/3.2
- ST-1 GRIT-COATED STEP COVERS, SURE-FOOT 31AP26 (48" WIDE STEP) & 31AP27 (60" WIDE STEP)

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COUNTY of DANE WISCONSIN 1839

DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY
FITCHBURG, WISCONSIN

CLIENT APPROVAL

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- ☐ APPROVED AS NOTED

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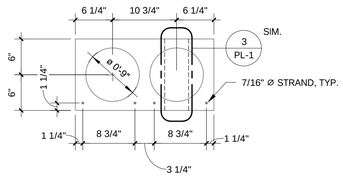
FLOOR FINISH PLAN + SCHEDULE

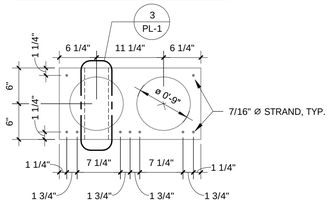
A 7.1

12" PLANK (SHORT SPAN - WEST SIDE)



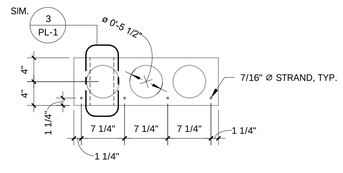
V.I.F.

12" PLANK (LONG SPAN - EAST SIDE)



V.I.F.

8" PLANK (MEZZANINE)

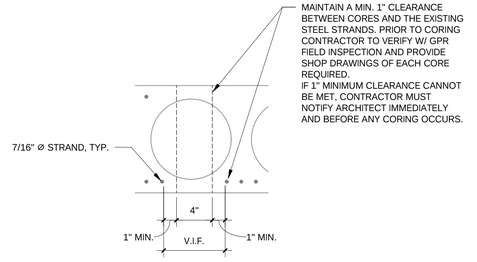


V.I.F.

NOTES:
1. DIMENSIONS MAY VARY IN THE FIELD AND MUST BE VERIFIED BEFORE ANY CORING OCCURS.
2. IT IS IMPERATIVE THAT ANY NEW CORES DO NOT CUT OR DAMAGE EXISTING STRANDS.

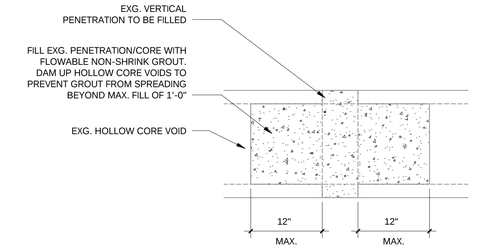
2 EXISTING CONCRETE PLANK DETAILS

SCALE 1" = 1'-0"



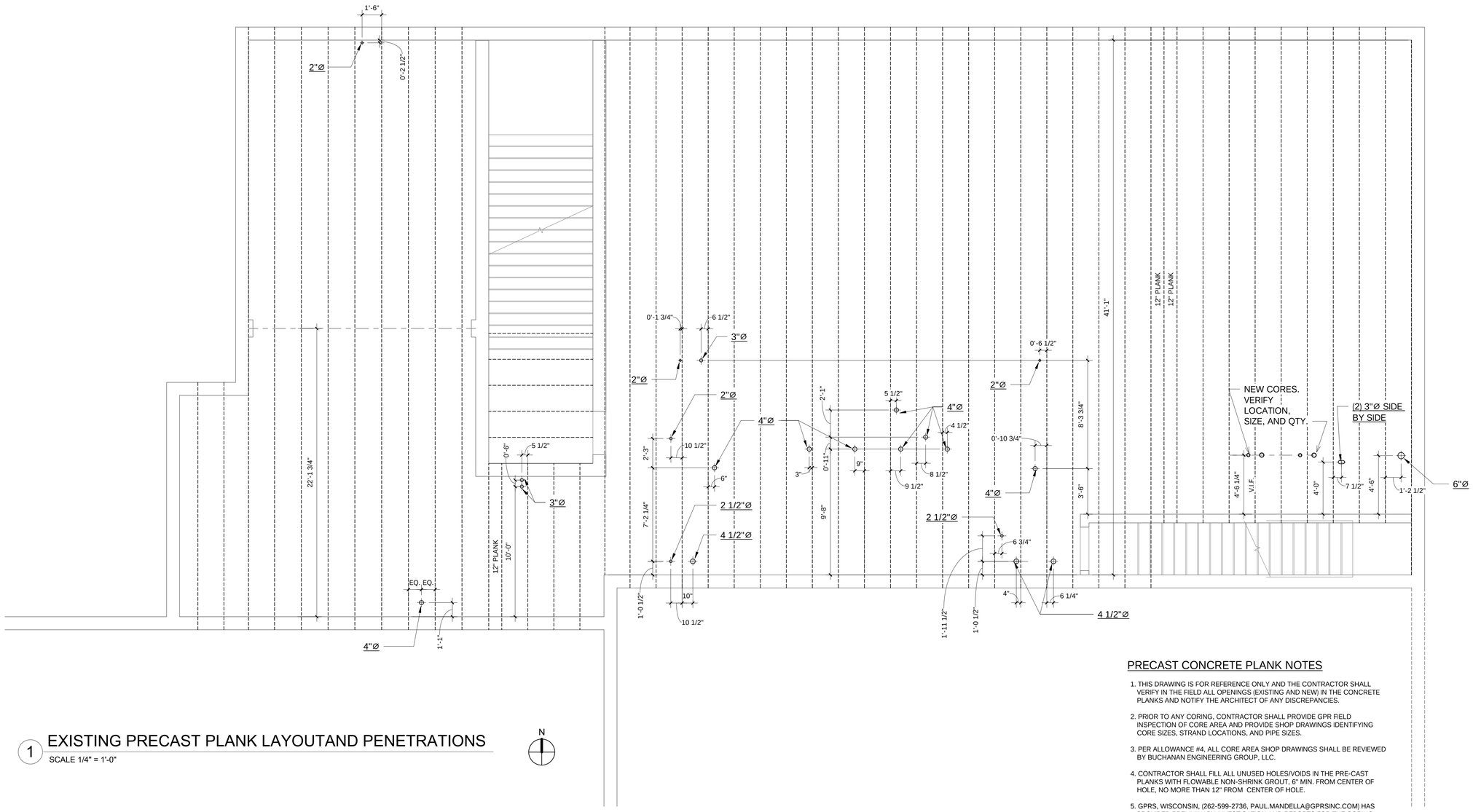
3 TYPICAL CONC. PLANK NEW CORE DETAIL

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



4 TYPICAL CONC. PLANK EXG. CORE INFILL

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



1 EXISTING PRECAST PLANK LAYOUTAND PENETRATIONS

SCALE 1/4" = 1'-0"

N

PRECAST CONCRETE PLANK NOTES

1. THIS DRAWING IS FOR REFERENCE ONLY AND THE CONTRACTOR SHALL VERIFY IN THE FIELD ALL OPENINGS (EXISTING AND NEW) IN THE CONCRETE PLANKS AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.
2. PRIOR TO ANY CORING, CONTRACTOR SHALL PROVIDE GPR FIELD INSPECTION OF CORE AREA AND PROVIDE SHOP DRAWINGS IDENTIFYING CORE SIZES, STRAND LOCATIONS, AND PIPE SIZES.
3. PER ALLOWANCE #4, ALL CORE AREA SHOP DRAWINGS SHALL BE REVIEWED BY BUCHANAN ENGINEERING GROUP, LLC.
4. CONTRACTOR SHALL FILL ALL UNUSED HOLES/VOIDS IN THE PRE-CAST PLANKS WITH FLOWABLE NON-SHRINK GROUT, 6" MIN. FROM CENTER OF HOLE, NO MORE THAN 12" FROM CENTER OF HOLE.
5. GPRS, WISCONSIN, (262-599-2736, PAUL.MANDELLA@GPRSINC.COM) HAS PROVIDED PRELIMINARY INVESTIGATION AND REPORTS FOR THE CORING. SEE PROJECT MANUAL FOR PREVIEW REPORTS.

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COUNTY of DANE 1839 WISCONSIN

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FITCHBURG, WISCONSIN

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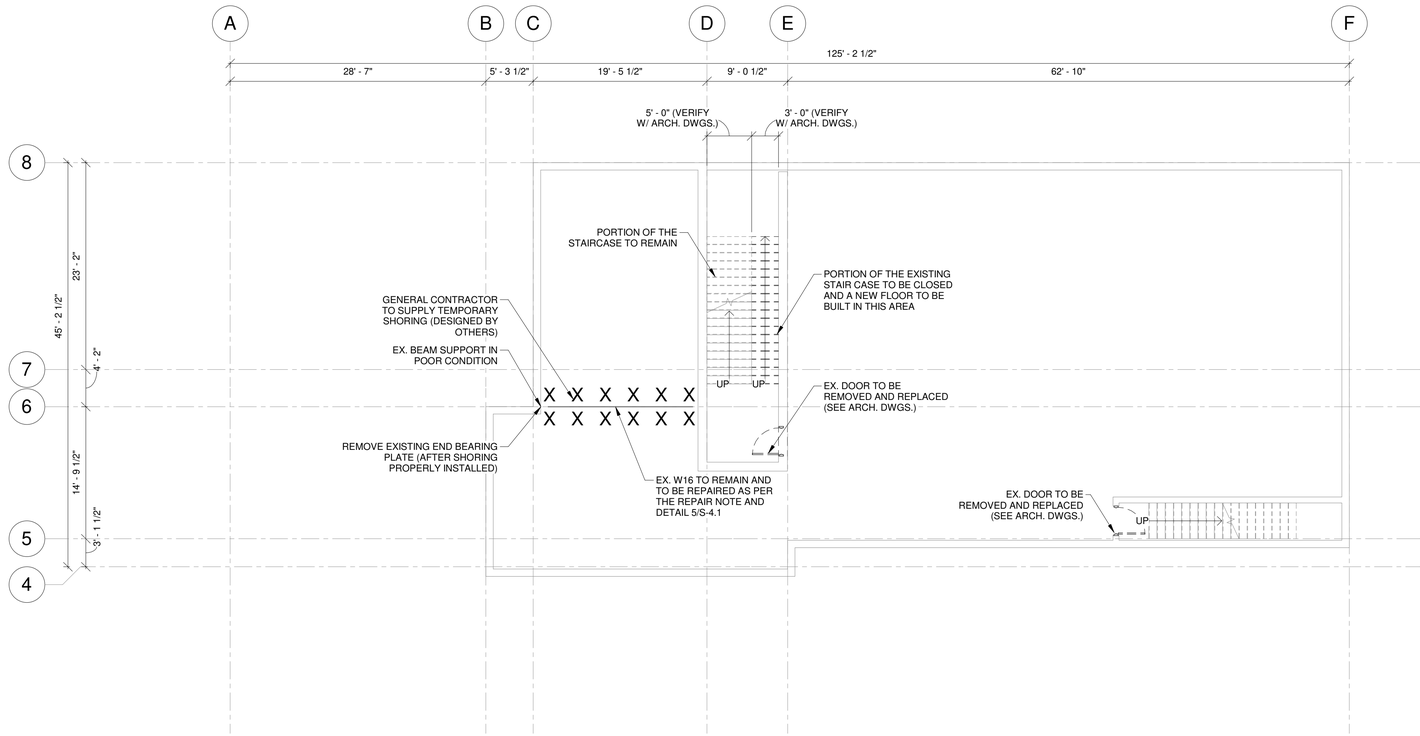
EXG. PRECAST PLANK LAYOUT

PL-1



STEEL BEAM REPAIR NOTES:

- CONTRACTOR TO PROVIDE TEMPORARY SHORING AT THE STEEL BEAM AREA (TO BE DESIGNED BY OTHERS).
- STEEL BEARING PLATES TO BE REMOVED AND THE CONCRETE SURFACES OF THE BEAM SEATS TO BE CLEANED AND LEVELED.
- NEW STEEL ANGLE W/ ANCHOR RODS TO BE INSTALLED, SEE DETAIL 5/S-4.1.
- EXISTING W16 BEAM TO BE CLEANED AND SURFACE RUST COMPLETELY REMOVED. PRIME AND FINISH PAINT (COORDINATE WITH ARCHITECTURAL DRAWINGS)

1 BASEMENT DEMOLITION PLAN

1/8" = 1'-0"

N

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DANE COUNTY EMERGENCY MANAGEMENT REMODEL

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FITCHBURG, WISCONSIN

CLIENT APPROVAL

☐ APPROVED
☐ APPROVED AS NOTED

APPROVED BY / DATE:

ISSUE RECORD

1	ADR	08/04/20
2	90% SET	11/20/20
3	100% FOR REVIEW	01/06/21
4	HVAC REDESIGN	04/30/21
5	ISSUE FOR BID	06/08/21

CHECKED BY
JSG

DRAWN BY
CJS

DATE
6/6/2021 11:47:05 AM

PROJECT NUMBER
2000765M

BASEMENT DEMOLITION PLAN

DS-1.0

WISCONSIN
JEFF S. GUTOWSKY
35509-006
HOFFMAN ESTATES, IL
PROFESSIONAL ENGINEER
SIGNED: 06/08/2021
EXP.: 07/31/2022

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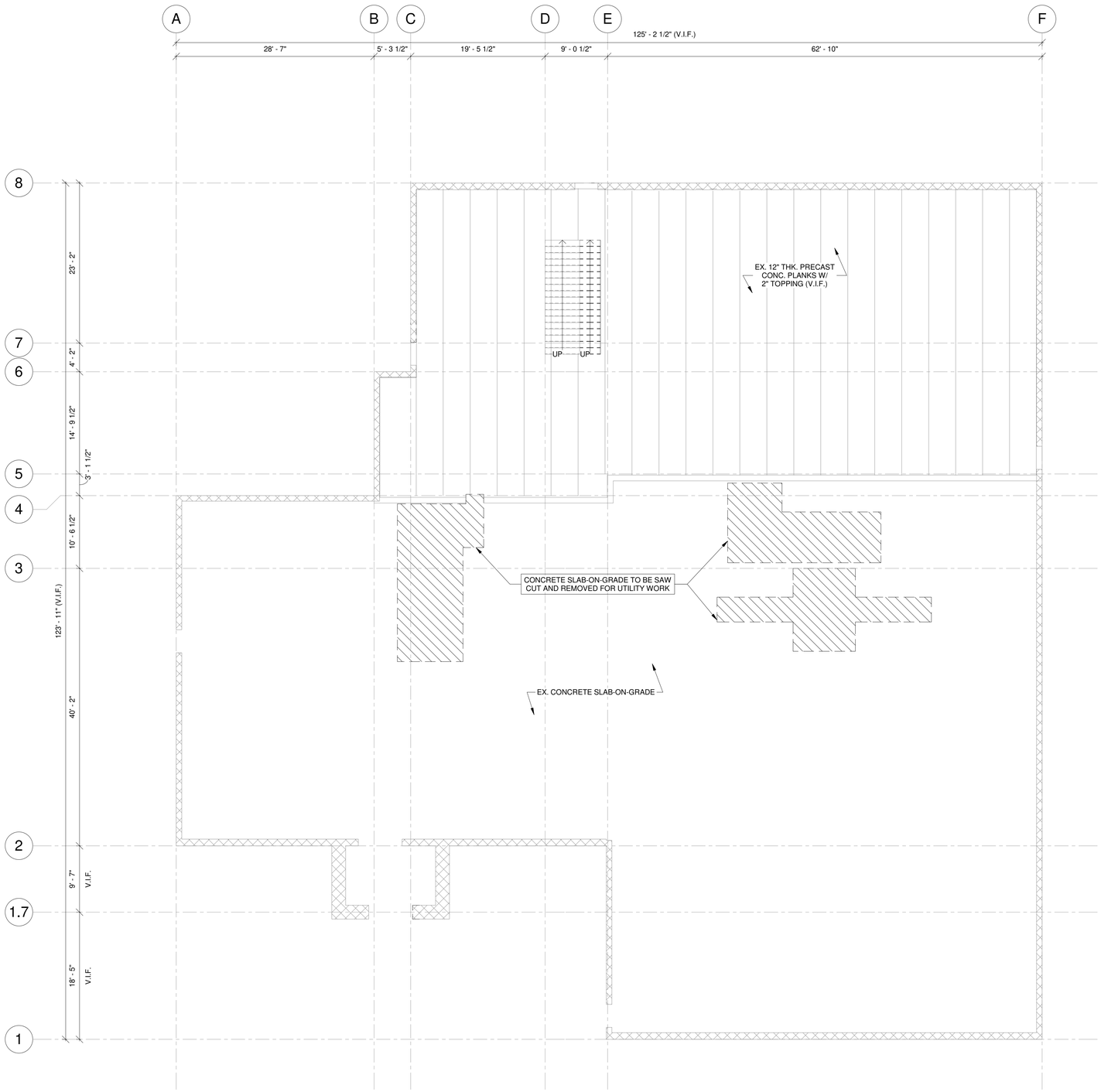

1 1ST FLOOR DEMOLITION PLAN
1/8" = 1'-0"

N

NOT FOR CONSTRUCTION

PRAIRIE FORGE GROUP
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DANE COUNTY EMERGENCY MANAGEMENT REMODEL
5415 KING JAMES WAY
FITCHBURG, WISCONSIN

CLIENT APPROVAL
☐ APPROVED
☐ APPROVED AS NOTED
APPROVED BY / DATE:

ISSUE RECORD

1	ADR	08/04/20
2	90% SET	11/20/20
3	100% FOR REVIEW	01/06/21
4	HVAC REDESIGN	04/30/21
5	ISSUE FOR BID	06/08/21

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JSG
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DATE
6/6/2021 11:47:06 AM
PROJECT NUMBER
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WISCONSIN JEFF S. GUTOWSKY 35509-006 HOFFMAN ESTATES, IL PROFESSIONAL ENGINEER
SIGNED: 06/08/2021
EXP.: 07/31/2022

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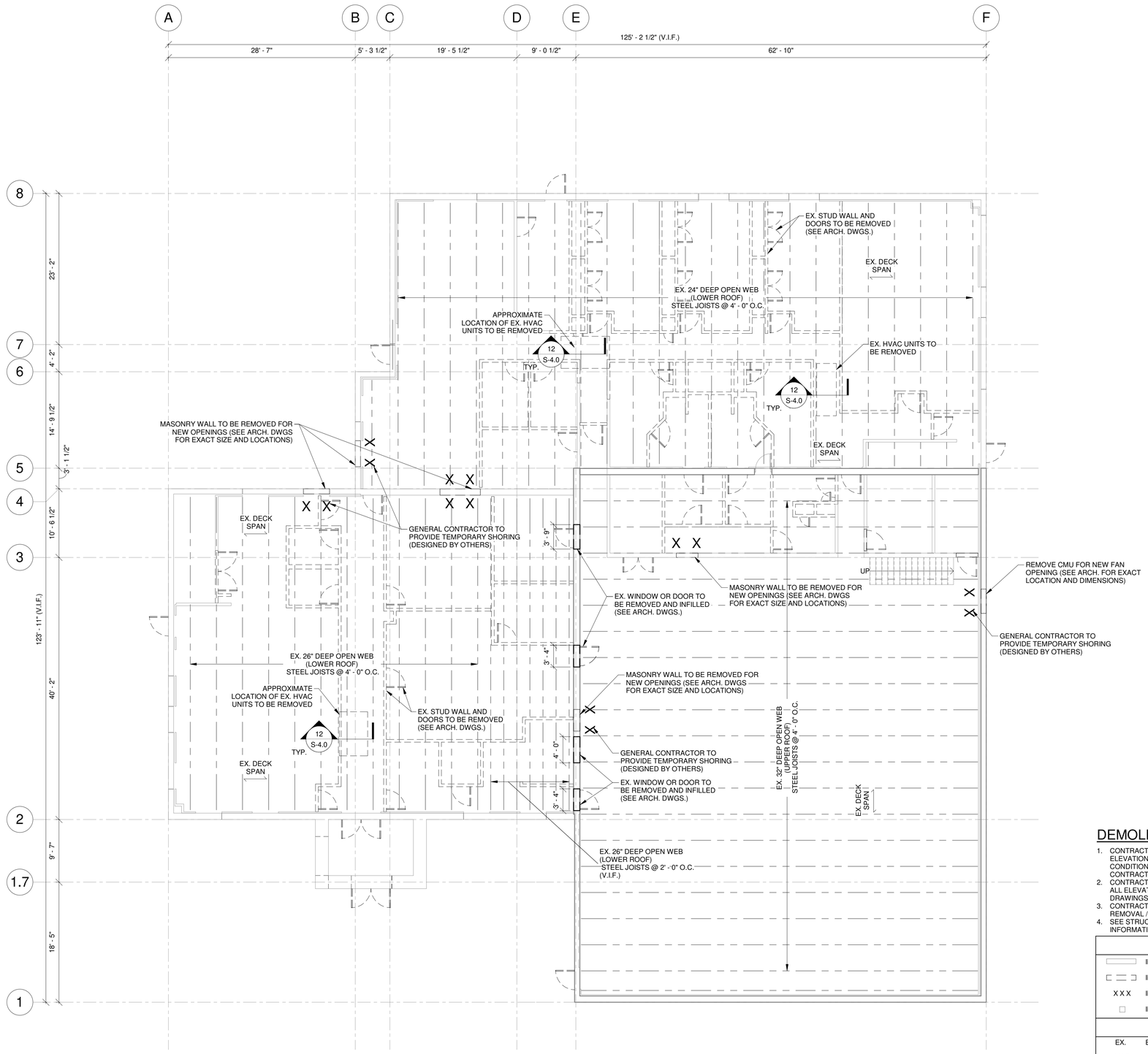
1ST FLOOR DEMOLITION PLAN

DS-1.1



1 ROOF AND FIRST FLOOR WALL DEMOLITION PLAN
1/8" = 1'-0"

DEMOLITION PLAN NOTES

1. CONTRACTOR TO VERIFY IN THE FIELD ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE DRAWINGS. IF EXISTING FIELD CONDITIONS DIFFER / VARY FROM THESE DRAWINGS, CONTRACTOR TO NOTIFY STRUCTURAL ENGINEER.
2. CONTRACTOR TO VERIFY WITH ARCHITECTURAL DRAWINGS ALL ELEVATIONS AND DIMENSIONS. SEE ARCHITECTURAL DRAWINGS FOR ELEVATIONS AND DIMENSIONS NOT SHOWN.
3. CONTRACTOR TO PROVIDE TEMPORARY SHORING BEFORE REMOVAL / DEMOLITION OF EXISTING STRUCTURAL ELEMENTS.
4. SEE STRUCTURAL NOTES ON S-0.0 FOR ADDITIONAL INFORMATION.

KEY

	INDICATE EX. WALL
	INDICATE EX. WALL TO BE REMOVED
X X X	INDICATES TEMPORARY SHORING
	INDICATES EX. STEEL COLUMN

ABBREVIATIONS

EX.	EXISTING
V.I.F.	VERIFY IN FIELD
EL.	ELEVATION

N

JEFF S. GUTOWSKY
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FRAMING DEMOLITION PLAN

DS-1.2

GENERAL STRUCTURAL NOTES

1. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE PROPOSED BUILDING STRUCTURAL RENOVATIONS ARE FULLY COMPLETED. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ERECTION PROCEDURES AND SEQUENCE, AND TO ENSURE THE STABILITY OF THE BUILDING AND ITS COMPONENT PARTS, AND THE ADEQUACY OF TEMPORARY OR INCOMPLETE CONNECTIONS, DURING ERECTION. THIS INCLUDES THE ADDITION OF ANY SHORING, SHEETING, TEMPORARY GUYS, BRACING, OR TIE-DOWNS THAT MIGHT BE NECESSARY. SUCH MATERIAL IS NOT SHOWN ON THE DRAWINGS. IF APPLIED, THEY SHALL BE REMOVED AS CONDITIONS PERMIT, AND SHALL REMAIN THE CONTRACTOR'S PROPERTY. THE ENGINEER HAS NO EXPERIENCE IN AND TAKES NO RESPONSIBILITY FOR CONSTRUCTION MEANS AND METHODS OR JOB SITE SAFETY DURING CONSTRUCTION. PROCESSING AND / OR APPROVING SUBMITTALS MADE BY THE CONTRACTOR WHICH MAY CONTAIN INFORMATION RELATED TO CONSTRUCTION METHODS OR SAFETY ISSUES, OR PARTICIPATION IN MEETINGS WHERE SUCH ISSUES MIGHT BE DISCUSSED, SHALL NOT BE CONSTRUCTED AS VOLUNTARY ASSUMPTION BY THE ENGINEER OF ANY RESPONSIBILITY FOR SAFETY PROCEDURES.

2. IT IS SOLELY THE RESPONSIBILITY OF EACH CONTRACTOR TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION. THE ENGINEER IS NOT ENGAGED IN, AND DOES NOT SUPERVISE CONSTRUCTION.

3. EQUIPMENT FRAMING LOADS, OPENINGS AND STRUCTURE IN ANY WAY RELATED TO HVAC, PLUMBING, OR ELECTRICAL REQUIREMENTS ARE SHOWN FOR BIDDING PURPOSES ONLY. CONTRACTORS SHALL COORDINATE THIS INFORMATION WITH THE INVOLVED VARIATIONS WITH TRADES BEFORE PROCEEDING WITH SUCH PORTION OF THE WORK. ADDITIONAL COST RELATED TO VARIATION IN THESE REQUIREMENTS SHALL BE BORNE BY THE CONTRACTOR.

4. SHOULD ANY OF THE DETAILED INSTRUCTIONS SHOWN ON THE PLANS CONFLICT WITH THESE STRUCTURAL NOTES, OR WITH EACH OTHER, THE STRICTEST PROVISION SHALL GOVERN.

5. GOVERNING CODE: WISCONSIN ADMINISTRATIVE CODE SPS 361-365 (INTERNATIONAL BUILDING CODE 2015)

6. DESIGN LOADS:
   DEAD LOADS USED IN DESIGN ARE AS FOLLOWS:
   A. ROOF DEAD LOAD = 15 PSF
   B. FLOOR SUPERIMPOSED LOAD (OVER PRECAST CONCRETE PANELS) = 30 PSF
   C. FLOOR DEAD LOAD (SLAB-ON-GRADE) = 75 PSF
   D. EQUIPMENT LOAD ON MEZZANINE FLOOR = 15 PSF
   E. RAISED FLOOR OVER EXISTING 12" PRECAST PLANKS = 10 PSF

   NOTE: THE SELF WEIGHT OF THE PRECAST CONCRETE PANELS ARE NOT INCLUDED IN THE ABOVE DESIGN LOADS.

   LIVE LOADS USED IN DESIGN ARE AS FOLLOWS:
   A. ROOF LIVE LOAD = 20 PSF
   B. FLOOR LIVE LOAD = 100 PSF
   C. LIVE LOAD AT ASSEMBLY AREAS = 100 PSF

   SNOW LOADS USED IN DESIGN ARE AS FOLLOWS
   A. GROUND SNOW LOAD = 30 PSF
   B. ROOF SNOW LOAD
      - FLAT ROOF SNOW LOAD = 24 PSF
      - ROOF SNOW DRIFT LOAD = 37 PSF

   WIND LOADS USED IN DESIGN ARE AS FOLLOWS:
   A. BASIC WIND SPEED (3 SECOND GUST) = 120 MPH
   B. BUILDING OCCUPANCY CATEGORY = IV
   C. WIND EXPOSURE = C
   D. DIRECTIONAL DESIGN WIND PRESSURE (WALLS) = 25 PSF
   E. DIRECTIONAL DESIGN WIND PRESSURE (ROOFS) = 30 PSF
   F. COMPONENTS & CLADDING = 35 PSF

   SEISMIC LOADS USED IN DESIGN ARE AS FOLLOWS:
   A. LATERAL FORCE RESISTING SYSTEM = ORDINARY REINFORCED MASONRY SHEAR WALL (R = 2.0)
   B. BASE SHEAR LOAD = Cs X W = 0.0694 X W
   W = WEIGHT OF STRUCTURE

EXISTING CONDITION NOTES

1. EXISTING BUILDING INFORMATION SHOWN IS DIAGRAMMATIC AND SHOULD BE COORDINATED WITH EXISTING STRUCTURAL DRAWINGS PREPARED BY "RUGG KNOPP, INC." DATED 02/18/1993 AND EXISTING PRECAST CONCRETE HOLLOW CORE PLANK REPORT BY BUCHANAN ENGINEERING GROUP, LLC DATED DECEMBER 21, 2020. CONTRACTOR SHALL FIELD VERIFY THAT THE EXISTING CONSTRUCTION ADJACENT TO THIS CONSTRUCTION, OR TO WHICH THIS CONSTRUCTION SHALL BE CONNECTED, IS AS INDICATED ON THESE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL MEASUREMENTS ON SITE PRIOR TO ORDERING ANY MATERIALS OR PERFORMING ANY WORK. NO EXTRA CHARGE OR COMPENSATION SHALL BE ALLOWED DUE TO DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDICATED ON THE CONSTRUCTION DRAWINGS. ANY SUCH DISCREPANCY IN DIMENSION WHICH MAY INADVERTENTLY OCCUR SHALL BE SUBMITTED TO THE ARCHITECT FOR CONSIDERATION BEFORE THE CONTRACTOR PROCEEDS WITH THE WORK IN THE AFFECTED AREA.

2. BEFORE PROCEEDING WITH ANY WORK WITHIN THE EXISTING FACILITY, THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH EXISTING STRUCTURAL AND OTHER CONDITIONS. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROVIDE ALL NECESSARY BRACING, SHORING AND OTHER SAFEGUARDS TO MAINTAIN ALL PARTS OF THE EXISTING WORK IN A SAFE CONDITION DURING THE PROCESS OF DEMOLITION AND CONSTRUCTION AND TO PROTECT FROM DAMAGE THOSE PORTIONS OF THE EXISTING WORK WHICH ARE TO REMAIN.

3. PRIOR TO THE SUBMISSIONS OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE SITE TO FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE STRUCTURAL DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE CONTRACTOR, IF AWARDED THE CONTRACT, WILL NOT BE ALLOWED ANY EXTRA COMPENSATION BY REASON OF THE CONTRACTOR NOT HAVING FULLY INFORMED HIMSELF PRIOR TO BIDDING.

4. EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED IN FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION. IF SIGNIFICANT DEVIATIONS OR DETERIORATION ARE ENCOUNTERED AT THE TIME OF CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY.

5. ALL EXISTING MEMBER SIZES ARE BASED ON ORIGINAL DRAWINGS PREPARED BY "RUGG KNOPP, INC." DATED 02/18/1993. ALL DIMENSIONS, MEMBER SIZES, AND CONNECTIONS TO BE VERIFIED IN FIELD BY CONTRACTOR PRIOR TO DEMOLITION. CONTACT STRUCTURAL ENGINEER OF RECORD IF CONDITIONS DO NOT MATCH STRUCTURAL DRAWINGS.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND ERECTION OF ALL SHORING NECESSARY TO SAFEGUARD THE EXISTING STRUCTURE. THE SHORING SHOWN IS A PARTIAL AND SCHEMATIC REPRESENTATION OF THAT REQUIRED.

GENERAL FOUNDATION NOTES

1. SUBGRADE UNDERCUT AND SOIL PREPARATION SHALL BE PERFORMED AS REQUIRED TO ACHIEVE MIN. NET ALLOWABLE SOIL BEARING PRESSURE. ALL FOOTINGS SHALL BE CONSTRUCTED UPON ENGINEERED FILL WITH A MINIMUM NET ALLOWABLE BEARING CAPACITY OF 3000 PSF BASED ON GEOTECHNICAL REPORT PROVIDED BY "CONSTRUCTION GEOTECHNICAL CONSULTING ENGINEERING/TESTING" DATED 08/17/2020.

2. THE SOIL SUBGRADE FOR ALL FOOTINGS AND SLABS SHALL BE INSPECTED AND APPROVED BY THE OWNER'S TESTING AGENCY IMMEDIATELY PRIOR TO PLACING FOUNDATION CONCRETE OR CONCRETE MUD SLABS.

3. THE UPPER 12" OF ALL SLAB SUBGRADES, INCLUDING PIT SLABS, SHALL BE COMPACTED TO 95 PERCENT OF FOUNDATION ELEMENTS, FOOTINGS, WALLS, AND PITS SHALL BE PLACED IN LAYERS NOT TO EXCEED 8" IN THICKNESS AND SHALL BE COMPACTED TO 90 PERCENT OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT (ASTM D1557) TO WITHIN 12" OF THE SLAB SUBGRADE.

4. ALL ORGANIC AND / OR OTHER UNSUITABLE MATERIAL SHALL BE REMOVED FROM FOUNDATION AND SLAB SUBGRADE AND BACKFILL AREAS, AND THEN BACKFILLED WITH ACCEPTABLE GRANULAR FILL COMPACTED TO 95 PERCENT OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT (ASTM D1557).

5. NO MUD SLABS, FOOTINGS, OR STRUCTURAL SLABS SHALL BE PLACED INTO OR AGAINST SUBGRADES CONTAINING FREE WATER, FROST, OR ICE. SHOULD WATER OR FROST ENTER A FOOTING/MUD SLAB/STRUCTURAL SLAB EXCAVATION AFTER SUBGRADE APPROVAL, THE SUBGRADE SHALL BE REINSPECTED BY THE OWNER'S SOIL TESTING LABORATORY AFTER REMOVAL OF WATER, FROST, OR ICE.

6. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MEASURES TO PREVENT ANY WATER, FROST, OR ICE FROM PENETRATING ANY FOOTING OR STRUCTURAL/MUD SLAB SUBGRADE BEFORE AND AFTER PLACING OF CONCRETE, AND UNTIL SUCH SUBGRADES ARE FULLY PROTECTED BY THE PERMANENT BUILDING STRUCTURE.

7. ALL SLAB AND FOOTING MUD SLABS SHALL BE THOROUGHLY CLEANED IMMEDIATELY PRIOR TO CONCRETE PLACEMENT.

8. THE CONCRETE FOR EACH ISOLATED FOOTING SHALL BE PLACED IN ONE (1) CONTINUOUS POUR.

9. ALL SLABS-ON-GRADE SHALL BE PLACED OVER A CONTINUOUS VAPOR BARRIER PER THE ARCHITECTURAL DRAWINGS, OVER A MINIMUM OF 6" COMPACTED GRANULAR MATERIAL, OVER A COMPACTED SOIL SUBGRADE. MINIMUM REINFORCEMENT SHALL BE 6X6 - W1.4XW1.4 UNLESS NOTED OTHERWISE.

10. ALL PERIMETER WALL AND COLUMN FOOTINGS SHALL BEAR A MINIMUM OF 4'-0" BELOW THE FINISHED GRADES SHOWN ON THE CIVIL DRAWINGS.

11. SEE PLUMBING DRAWINGS FOR PERIMETER WALL AND INTERIOR FLOOR DRAINAGE SYSTEMS, AND SPECIAL GRANULAR FILL MATERIAL FOR SUCH DRAINAGE SYSTEMS.

STRUCTURAL STEEL NOTES

1. ALL STRUCTURAL STEEL W SHAPES SHALL BE ASTM 992 (Fy = 50 KSI), ALL STRUCTURAL STEEL HSS TUBES SHALL BE ASTM 500 Gr.C (Fy = 50 KSI), ALL HSS ROUND TUBE SHALL BE ASTM 500 Gr.C (Fy = 46 KSI), ALL ROUND BARS SHALL BE ASTM A572 (Fy=50 KSI), ALL STRUCTURAL ANGLES & PLATES SHALL BE A36 (Fy = 36 KSI), UNLESS NOTED OTHERWISE.

2. ALL BOLTS, NUTS, AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325 OR A490. ALL BOLT HOLES SHALL BE FULLY TORQUED FOR BOTH FRICTION AND BEARING TYPE CONNECTIONS. ALL BOLT HOLES SHALL BE "STANDARD SIZE" UNLESS NOTED OTHERWISE.

3. ALL WELDING ELECTRODES SHALL BE E70XX.

4. ALL DETAILING, FABRICATION AND ERECTION SHALL CONFORM TO AISC SPECIFICATIONS AND CODES, LATEST EDITION.

5. ALL WELDING WORK SHALL CONFORM TO THE AWS "CODE FOR ARC AND GAS WELDING IN BUILDING CONSTRUCTION", LATEST EDITION, AND SHALL BE PERFORMED BY AWS QUALIFIED WELDERS.

6. THE CONTRACTOR SHALL SUBMIT DETAILED, COORDINATED AND CHECKED SHOP DRAWINGS FOR ALL STRUCTURAL STEEL TO THE ENGINEER FOR REVIEW PRIOR TO THE START OF FABRICATION AND / OR ERECTION.

7. ALL CONNECTIONS SHALL BE DESIGNED AND DETAILED BY THE FABRICATOR. DETAILING SHALL BE PERFORMED USING RATIONAL ENGINEERING DESIGN AND STANDARD PRACTICE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE GENERAL DETAILS SHOWN ON THE DRAWINGS ARE CONCEPTUAL ONLY AND DO NOT INDICATE THE REQUIRED NUMBER OF BOLTS OR WELD SIZES. ALL CONNECTIONS SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW AND SHALL INCLUDE ENGINEERING CALCULATIONS ALONG WITH CONNECTION DETAIL DRAWINGS, PRIOR TO THE SUBMITTAL OF STRUCTURAL STEEL SHOP DRAWINGS. THE DESIGN CALCULATIONS SHALL BE PREPARED AND SEALED BY A QUALIFIED STRUCTURAL ENGINEER REGISTERED IN THE STATE OF WISCONSIN.

8. ALL CONNECTIONS, UNLESS NOTED OTHERWISE, SHALL BE SIMPLE SHEAR CONNECTIONS UTILIZING HIGH-STRENGTH BOLTS IN BEARING-TYPE CONNECTIONS, WITH THREADS INCLUDED IN THE SHEAR PLANE. THE CAPACITIES SHALL BE AS SHOWN BELOW UNLESS NOTED OTHERWISE.

9. BEAM TO COLUMN CONNECTIONS SHALL BE MOMENT CONNECTED WHERE AND AS SHOWN. THE WEB SHEAR CONNECTION FOR THESE MOMENT CONNECTIONS SHALL UTILIZE SINGLE SHEAR PLATE CONNECTIONS WITH HIGH-STRENGTH BOLTS IN FRICTION TYPE CONNECTIONS WITH THREADS INCLUDED IN THE SHEAR PLANE, FOR THE CAPACITIES SHOWN BELOW, UNLESS NOTED OTHERWISE. IN ADDITION, ALL SIMPLE SHEAR CONNECTIONS SHALL BE DESIGNED FOR THE CAPACITIES SHOWN BELOW UNLESS NOTED OTHERWISE

10. MINIMUM SHEAR AND MOMENT CAPACITIES AT BEAM ENDS:

STEEL FRAMING MINIMUM BEAM END DESIGN VALUES (SERVICE LOADS)		
BEAM TYPE	MINIMUM SHEAR VALUES	MINIMUM MOMENT VALUES
HSS8X4X5/16	4.7 KIPS	17 KIP-FT
HSS8X4X3/16	3.5 KIPS	17 KIP-FT
W8X15	5 KIPS	--
LL6X4X3/8	3 KIPS	--

11. THE MINIMUM NUMBER OF BOLTS PER CONNECTION SHALL BE TWO (2) - 3/4" DIAMETER A325N BOLTS (U.N.O.)

12. MINIMUM FILLET WELD SIZE SHALL COMPLY WITH THE AISC SPECIFICATION REQUIREMENTS, BUT SHALL NOT BE LESS THAN 1/4" INCH, UNLESS OTHERWISE NOTED.

13. ALL SIMPLE SHEAR CONNECTIONS SHALL BE CAPABLE OF END ROTATION AS PER THE REQUIREMENTS OF THE AISC SPECIFICATION, SECTION ON UNRESTRAINED MEMBERS.

14. SHOP AND FIELD, TESTING AND INSPECTION, OF STRUCTURAL STEEL FABRICATION AND ERECTION WORK, INCLUDING WELDED AND BOLTED CONNECTIONS SHALL BE AS FOLLOWS:
    A. ALL STRUCTURAL STEEL FABRICATION AND ERECTION SHALL BE VISUALLY INSPECTED.
    B. ALL WELDERS SHALL BE AWS QUALIFIED.
    C. ALL WELDS SHALL BE AWS/ AISC PREQUALIFIED.
    D. ALL WELD SHALL BE VISUALLY INSPECTED PER AWS D1.1 WELD MEASUREMENTS SHALL BE PERFORMED FOR 15 PERCENT OF ALL WELDS ON A RANDOM BASIS.
    E. ALL BOLTED CONNECTIONS SHALL BE VISUALLY INSPECTED, AND A CALIBRATED TORQUE WRENCH USED TO VERIFY A MINIMUM OF 25 PERCENT OF BOLTS IN EACH CONNECTIONS, BUT NOT LESS THAN 2 BOLTS IN EACH CONNECTION.
    F. THE REQUIRED CONTACT SURFACE CONDITION OF ALL SHEAR CONNECTIONS SHALL BE VISUALLY INSPECTED IMMEDIATELY PRIOR TO BOLT TIGHTENING. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REMEDIAL WORK TO CONTACT SURFACES.
    G. THE OWNER'S STRUCTURAL STEEL TESTING LABORATORY SHALL PERFORM ALL FIELD INSPECTION AND TESTING AS OUTLINED ABOVE AND MONITOR THE CONTRACTOR'S INSPECTION AND TESTING AS OUTLINED ABOVE FOR ALL SHOP WORK. IF THE CONTRACTOR'S QUALITY CONTROL PROGRAM IS NOT AISC CERTIFIED, THE OWNER'S STRUCTURAL STEEL TESTING LABORATORY SHALL ALSO PERFORM ALLS SHOP TESTING AND INSPECTION WORK.
    H. THE STRUCTURAL STEEL FABRICATOR AND ERECTION SHALL SCHEDULE ALL WORK TO ALLOW THE ABOVE INSPECTION AND TESTING REQUIREMENTS TO BE COMPLETED.

15. ALL BEAMS, JOISTS, AND TRUSSES SHALL BE FABRICATED WITH THE NATURAL CAMBER UP. PROVIDE ADDITIONAL CAMBERS AS INDICATED ON THE STRUCTURAL DRAWINGS.

16. AFTER FABRICATION, ALL UNEXPOSED STRUCTURAL STEEL SHALL BE CLEANED OF ALL RUST, LOOSE MILL SCALE AND OTHER FOREIGN MATERIALS. IMMEDIATELY AFTER CLEANING SURFACES, APPLY ONE COAT OF ALKYD PRIMER, MINIMUM 1.5 MIL DRY FILM THICKNESS. SPECIAL PROVISIONS FOR SHOP CLEANING AND PAINTING OF EXPOSED STRUCTURAL STEEL ARE INDICATED ON THE ARCHITECTURAL DRAWINGS.

17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF ALL ERECTION PROCEDURES AND SEQUENCES ESPECIALLY WITH RELATION TO TEMPERATURE DIFFERENTIALS AND ERECTION TOLERANCES.

18. THERE SHALL BE NO FIELD CUTTING OF STRUCTURAL STEEL MEMBERS, FOR THE WORK OF OTHER TRADES, WITHOUT THE PRIOR REVIEW OF THE ARCHITECT.

19. SPECIFICATION: WELDING PERSONNEL AND PROCEDURES SHALL BE QUALIFIED PER AWS D1.1 UNLESS SPECIFICALLY SHOWN OTHERWISE, DESIGN, FABRICATION AND ERECTION TO BE GOVERNED BY:
    A. AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (JUNE 22, 2010).
    B. AISC CODE OF STANDARD PRACTICE (APRIL 14, 2010).
    C. STRUCTURAL WELDING CODE, AWS D1.1-06 OF THE AMERICAN WELDING SOCIETY.
    D. SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.

20. PAINT: DO NOT PAINT STEEL OR ANCHOR BOLTS WHICH ARE GALVANIZED, ENCASED IN CONCRETE, OR ANY STEEL NOT EXPOSED TO VIEW IN THE FINISHED STRUCTURE, EXCEPT COLUMNS AND PORTIONS OF BEAMS EMBEDDED IN OR BUILT WITHIN EXTERIOR WALLS WHICH SHALL BE PAINTED WITH TWO (2) COATS OF PRIMER.

21. ALL ADDITIONAL STEEL REQUIRED BY THE CONTRACTOR FOR ERECTION PURPOSES AND SITE ACCESS OF STOCKPILED MATERIALS SHALL BE PROVIDED AT NO COST TO THE OWNER. ALL SUCH ADDITIONAL STEEL SHALL BE REMOVED BY THE CONTRACTOR UNLESS APPROVED BY THE OWNER IN WRITING.

22. THE STEEL FRAME AS DESIGNED IS A NON SELF-SUPPORTING STEEL FRAME AS DEFINED BY THE AISC CODE OF STANDARD PRACTICE, COORDINATE THE ERECTION WITH THE INSULATION OF OTHER BUILDING ELEMENTS REQUIRED FOR THE STRUCTURE'S STABILITY. THESE ELEMENTS INCLUDE SLABS, WALLS, OPEN-WEB TRUSSES, AND LIGHT FRAMED WOOD PANELS.

23. CONNECTIONS: ALL FIELD CONNECTIONS TO BE BOLTED. SHOP CONNECTIONS TO BE WELDED OR BOLTED. CONNECTIONS TO BE DESIGNED BY THE FABRICATOR TO DEVELOP THE FULL UNIFORM LOAD CAPACITY OF THE MEMBER OR FORCES SHOWN ON PLANS, WHICHEVER IS GREATER. UNLESS INDICATED OTHERWISE, ALL CONNECTIONS MAY BE DOUBLE ANGLE CONNECTIONS OR SINGLE PLATE SHEAR CONNECTIONS (DESIGNED FOR A FLEXIBLE SUPPORT CONDITION). FOLLOW INSTRUCTIONS ON DRAWINGS FOR GENERAL ARRANGEMENT OR PARTICULAR DETAILS.

24. GALVANIZING: ALL SHELF ANGLES, ALL LINTELS IN EXTERIOR WALLS, ALL EXTERIOR STEEL EXPOSED TO THE ELEMENTS, AND ALL ITEMS INDICATED ON THE DRAWINGS AS "GALVANIZED" SHALL BE HOT-DIPPED GALVANIZED. EXTERIOR STEEL EXPOSED TO THE ELEMENTS THAT IS TO BE FIELD WELDED SHALL BE HOT DIPPED GALVANIZED WITH A COLD GALVANIZING COMPOUND APPLIED TO THE ENTIRE EXPOSED FIELD WELDED SURFACE WITHIN 24 HOURS OF FIELD WELDING. COLD GALVANIZED COMPOUND SHALL BE APPLIED WITH A BRUSH PER MANUFACTURER'S RECOMMENDATIONS, INTERIOR STEEL LINTELS TO BE PRIMED AND PAINTED.

25. MISCELLANEOUS:
    A. ANCHOR BOLTS AT STEEL COLUMN BASES ARE NOT DESIGNED TO PROVIDE, AND WILL NOT PROVIDE STABILITY FOR THE STEEL FRAME DURING ERECTION. FOR SAFETY CONSIDERATIONS DURING ERECTION, PROVIDE TEMPORARY SHORING.
    B. PROVIDE HOLES FOR OTHERS. IF OPENING IS NOT SHOWN ON THE STRUCTURAL DRAWINGS OBTAIN PRIOR APPROVAL.
    C. STEEL BELOW GRADE SHALL BE PROTECTED BY A MINIMUM OF 3 INCHES OF CONCRETE.
    D. PROVIDE SHOP WELDED ANCHORS FOR ATTACHMENT OF MASONRY. SPACING TO BE 16 INCHES ON COLUMNS AND BEAMS.
    E. PROVIDE WASHER AND HEAVY NUT AT ALL ANCHOR BOLTS (BOTH ENDS)
    F. FINISH ENDS OF ALL COLUMNS, STIFFENERS, AND ALL OTHER MEMBERS IN DIRECT BEARING.
    G. EMBEDMENT LENGTH OF EXPANSION BOLTS INTO SOLID MASONRY OR CONCRETE SHALL BE AS FOLLOWS:
       - 1/2 INCH DIAMETER BOLTS --- 3-1/2 INCHES EMBEDMENT
       - 3/4 INCH DIAMETER BOLTS --- 5 INCHES EMBEDMENT
       -

26. ALL STRUCTURAL STEEL FOR EXISTING STEEL JOISTS ARE ASSUMED Fy = 50 KSI FOR TOP AND BOTTOM CHORD MEMBERS AND Fy = 36 KSI FOR WEB MEMBERS.

MASONRY NOTES

1. SPECIFICATIONS:
   A. MASONRY CONSTRUCTION AND MATERIALS SHALL CONFORM TO ALL REQUIREMENTS OF "SPECIFICATIONS FOR MASONRY STRUCTURES (ACI 530.1-LATEST VERSION)" PUBLISHED BY THE AMERICAN CONCRETE INSTITUTE, DETROIT, MICHIGAN, EXCEPT AS MODIFIED BY THE REQUIREMENTS OF THESE CONTRACT DOCUMENTS.

2. MATERIALS:
   A. CONCRETE BLOCK: ASTM C90. MINIMUM NET AREA COMPRESSIVE STRENGTH OF C.M.U. = 2800 PSI.
   B. MORTAR: ASTM C270 (USING THE PROPERTY SPECIFICATION METHOD, PARAGRAPH 3.2), TYPE "S", MINIMUM COMPRESSIVE STRENGTH = 2000 PSI.
   C. BOND BEAM AND CORE FILL: ASTM C476, COARSE OR FINE TYPE, PLACED PER ACI 530. TABLE 5.
   D. JOINT REINFORCING: HOT DIPPED GALVANIZED FINISH, 9 GAUGE MINIMUM SIDE WIRES AND CROSS WIRES.
   E. BAR REINFORCING: ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE.
   F. WIRE TIES AND ANCHORS: RECTANGULAR TYPE, 3/16" DIAMETER WIRE TIES (HOT DIPPED GALVANIZED).
   G. f'm OF MASONRY SHALL MEET OR EXCEED 2250 PSI.

3. TESTING:
   A. NOT LESS THAN FIVE PRISMS SHALL BE BUILT AND TESTED IN ADVANCE OF CONSTRUCTION OF EACH TYPE OF WALL CONSTRUCTION WITH THE SAME BONDING, MOISTURE CONTENT, MORTAR CONSISTENCY AND THICKNESS OF MORTAR AS WILL BE USED IN STRUCTURE.
   B. ALL PRISMS SHALL NOT BE LESS THAN 16" IN HEIGHT AND SHALL HAVE A HEIGHT-TO-THICKNESS RATIO OF NOT LESS THAN TWO NOR MORE THAN FIVE.
   C. THE ENDS OF EACH PRISM SHALL BE CAPPED WITH A SUITABLE MATERIAL TO PROVIDE BEARING SURFACES PLANE IN 0.003" AND APPROXIMATELY PERPENDICULAR TO THE AXIS OF THE PRISM.
   D. A MINIMUM OF ONE FIELD TEST SPECIMEN SHALL BE MADE DURING CONSTRUCTION FOR EACH 2000 SQ. FT. OF WALL.
   E. PRISMS SHALL BE STORED IN AIR AT A TEMPERATURE NOT LESS THAN 65 DEGREES AND SHALL BE TESTED AFTER PLANE IN 0.003" AND APPROXIMATELY PERPENDICULAR TO THE AXIS OF THE PRISM. RELEVANT PROVISIONS OF STANDARD METHODS OF TEST FOR COMPRESSIVE STRENGTH OF MOLDED CONCRETE CYLINDERS ASTM C39-68.

4. CONSTRUCTION:
   A. LAY MASONRY PLUMB AND TRUE TO LINES.
   B. LAY WITH COMPLETELY FILLED MORTAR JOINTS.
   C. DO NOT FURROW BED JOINTS.
   D. BUTTER ENDS OF MASONRY WITH SUFFICIENT MORTAR TO FILL HEAD JOINTS.
   E. FILL VERTICAL, LONGITUDINAL, JOINTS BY PARGING OR SHOVING (DO NOT SLUSH JOINTS).
   F. PROVIDE 100% SOLID BEARING 2'-0" HIGH X 1'-4" LONG (MIN.) UNDER ALL LINTEL BEARING ENDS.
   G. USE CONTINUOUS PREFABRICATED JOINT REINFORCEMENT TO BOND WYTHES; SPACED NOT MORE THAN 16" VERTICALLY.
   H. ALL BOND BEAMS SHALL BE CONCRETE FILLED ACCORDING TO THESE NOTES AND SHALL HAVE A MIN. OF 2-#5 CONTINUOUS REINFORCING CONFORMING TO ASTM A615 GRADE 60. A BOND BEAM SHALL BE PLACED AT ALL SILLS AND TOP OF WALLS.
   I. ALL STEEL LINTELS IN EXTERIOR WALLS SHALL BE HOT DIPPED GALVANIZED.
   J. ALL LINTELS AND STEEL CONSTRUCTION ADJACENT TO OR ABUTTING MASONRY SHALL BE PROVIDED WITH GALVANIZED MASONRY TIES AT 16" O.C.
   K. ALL MASONRY WALL OPENINGS SHALL HAVE A LINTEL PER THE LINTEL SCHEDULE WITH A MINIMUM BEARING LENGTH OF 8" U.N.O.

5. REINFORCING:
   A. EXTENT OF EACH TYPE OF REINFORCED UNIT MASONRY WORK IS INDICATED ON DRAWINGS AND IN SCHEDULES.
   B. PROVIDE GRADE 60 FOR BARS NO. 3 TO NO. 18, EXCEPT AS OTHERWISE INDICATED.
   C. CLEAN REINFORCEMENT LOOSE RUST, MILL SCALE, EARTH, ICE OR OTHER MATERIALS WHICH WILL REDUCE BOND TO MORTAR OR GROUT.
   D. POSITION REINFORCING ACCURATELY AT THE SPACING INDICATED. SUPPORT SECURE VERTICAL BARS AGAINST DISPLACEMENT. HORIZONTAL REINFORCING MAY BE PLACED AS THE MASONRY WORK PROGRESSES.
   E. PROVIDE LAPPED SPLICES, UNLESS OTHERWISE INDICATED. IN SPLICING VERTICAL BARS OR ATTACHING TO DOWELS, LAP END, PLACE IN CONTACT AND WIRE TIE.
   F. EMBED PREFABRICATED HORIZONTAL JOINT REINFORCEMENT AS THE WORK PROGRESSES, WITH A MINIMUM COVER OF 5/8" ON EXTERIOR FACE OF WALLS AND 1/2" AT OTHER LOCATIONS.
   G. USE LOW-LIFT GROUTING TECHNIQUE WITH "FINE GROUT" PER ASTM C 476 FOR THE FOLLOWING.
   H. CONSTRUCT LOW-LIFT MASONRY BY PLACING REINFORCEMENT, LAYING MASONRY UNITS AND POURING GROUT AS THE WORK PROGRESSES.
   I. PLACE VERTICAL REINFORCEMENT BARS AND SUPPORTS PRIOR TO LAYING OF MASONRY UNITS. EXTEND ABOVE ELEVATION OF MAXIMUM POUT HEIGHT AS REQUIRED TO ALLOW FOR SPLICING.
   J. LAY MASONRY UNITS PRIOR TO EACH GROUT POUR, BUT DO NOT CONSTRUCT MORE THAN 12" ABOVE MAXIMUM GROUT POUR HEIGHT.
   K. POUR GROUT USING CONTAINER WITH SPOUT AND CONSOLIDATE IMMEDIATELY BY ROTTING OR PUDDLING; DO NOT USE TROWELS. PLACE GROUT CONTINUOUSLY; DO NOT INTERRUPT POURING OF GROUT FOR MORE THAN ONE HOUR. TERMINATE POUR 1-1/2" BELOW TOP OF HIGHEST COURSE IN POUR.
   L. BOND BEAMS: STOP GROUT IN VERTICAL CELLS 1-1/2" BELOW BOND BEAM COURSE. PLACE HORIZONTAL REINFORCING IN BOND BEAMS; LAP AT CORNERS AND INTERSECTIONS AS SHOWN. PLACE GROUT IN BOND EACH COURSE BEFORE FILLING VERTICAL CORES ABOVE BOND BEAM.
   M. PREPARATION OF GROUT SPACES: PRIOR TO GROUTING, INSPECT AND CLEAN GROUT SPACES. REMOVE DUST, DIRT, MORTAR DROPPINGS, LOOSE PIECES OF MASONRY AND OTHER FOREIGN MATERIALS FROM GROUT SPACES. CLEAN REINFORCING AND ADJUST TO PROPER POSITION.
   N. A MINIMUM OF 2 - #5 VERTICAL BARS SHALL BE PLACED AT WALL ENDS, EACH SIDE OF OPENINGS AND EACH SIDE OF CONTROL JOINTS.
   O. PROVIDE STANDARD GALVANIZED 9 GAUGE HORIZONTAL REINFORCING AT 16" O.C. IN ALL WALLS. PROVIDE TRUSS TYPE JOINT REINFORCEMENT FOR ALL CONCRETE MASONRY. UNLESS OTHERWISE NOTED, STOP ALL HORIZONTAL JOINT REINFORCING AT CONTROL JOINTS.
   P. REINFORCED MASONRY: WHERE VERTICAL BARS ARE TO BE GROUTED INTO CORES, THE FOLLOWING REQUIREMENTS APPLY:
      - PROVIDE DOWELS FROM FOOTING, SAME SIZE AND SPACING AS WALL BARS. LAP 12 INCHES MINIMUM WITH WALL BAR. EMBED INTO FOOTING MIN. 9 INCHES.
      - PROVIDE A CONTINUOUS VERTICAL CAVITY, AT LEAST 3" X 4" IN SIZE, FREE OF MOTOR DROPPINGS
      - PROVIDE REBAR ALIGNMENT DEVICES AT A MAXIMUM SPACING OF 96 BAR DIAMETERS (MINIMUM OF 2 PER BAR).
      - AT SPLICES IN VERTICAL BARS, PROVIDE 48 BAR DIAMETER LAP.
      - ALL REINFORCEMENT MUST BE INSTALLED AND SECURELY ANCHORED PRIOR TO PLACEMENT OF GROUT.
      - WIRE TIES AND ANCHORS: RECTANGULAR TYPE, 3/16" DIAMETER WIRE TIES (HOT-DIPPED GALVANIZED).
   Q. MISCELLANEOUS:
      - VERTICAL COLLAR JOINTS SHALL BE FILLED SOLID WITH MORTAR OR GROUT.
      - FILL CORE SOLID AROUND ANCHOR BOLTS.
      - PROVIDE 100% SOLID BLOCKS OR SOLIDLY-FILLED HOLLOW BLOCKS FOR AT LEAST 4" ALL AROUND ALL EXPOSED BOLTS.
      - HOLLOW MASONRY UNITS SHALL BE LAID WITH FULL MORTAR COVERAGE ON HORIZONTAL AND VERTICAL FACE SHELLS. WEBS SHALL ALSO BE BEDDED IN THE STARTING COURSE ON FOOTINGS, AND WHEN ADJACENT TO CELLS OR CAVITIES TO BE REINFORCED OR FILLED WITH CONCRETE OR GROUT. SOLID UNITS TO BE LAID WITH FULL HEAD AND BED JOINTS.
      - PROVIDE JOINT REINFORCING AT 16 INCHES, EXCEPT AS NOTED.
      - LAP JOINT REINFORCING 6 INCHES.
      - WHERE MASONRY UNITS ARE USED ABOVE HOLLOW UNITS OF A DIFFERENT THICKNESS, PROVIDE A CONTINUOUS COURSE OF 100% SOLID MASONRY AT LEAST 8 INCHES HIGH BELOW TRANSITION.
      - MAXIMUM SPACING OF VERTICAL CONTROL JOINTS SHALL NOT EXCEED 20'.

REPAIRS AND REPLACEMENTS NOTES

1. IN THE EVENT OF DAMAGE, THE CONTRACTOR SHALL PROMPTLY MAKE ALL REPLACEMENTS AND REPAIRS AT NO ADDITIONAL COST TO THE CLIENT AND/OR BUILDING OWNER.

2. EXISTING INTERIOR OR EXTERIOR FACADES REMOVED FOR WALL OPENINGS OR ANY OTHER REMODELING WORK SHALL BE REPLACED TO MATCH THE EXISTING CONDITIONS.

3. CUTTING AND PATCHING: WHERE EXISTING ELEMENTS OF THE BUILDING ARE REQUIRED TO BE CUT TO FIT, ALTERED OR REMOVED. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO OTHER PORTIONS OF THE EXISTING BUILDING, INCLUDING, BUT NOT LIMITED TO, THE SHORING, BRACING AND SUPPORT REQUIRED TO MAINTAIN STRUCTURAL INTEGRITY. UPON COMPLETION OF THE WORK, ALL EXISTING MATERIALS, SYSTEMS AND ASSEMBLIES SHALL BE REPLACED, REPAIRED, OR REFIT TO MATCH OR EXCEED THE FIT, FINISH AND PERFORMANCE OF PREVIOUS CONDITIONS. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS WHICH AFFECT SAFETY, STRUCTURAL INTEGRITY OR WATER TIGHTNESS OF THE BUILDING ARE CORRECTED.

4. PROTECTIONS: PROTECT WITH TEMPORARY BARRICADES, COVERINGS, OR OTHER PROTECTIONS TO PREVENT INJURY OR DAMAGE TO PERSONS OR PROPERTY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE CAUSED BY HIS/HER OPERATIONS.

5. CONTRACTOR TO IDENTIFY AND REPORT ANY VISIBLE CRACKS ON THE CONCRETE PLANK SURFACES TO STRUCTURAL ENGINEER PRIOR TO POURING 2" CONCRETE TOPPING.

6. EXISTING SURFACES SHALL BE CLEANED FROM ANY LOOSE MATERIALS, OIL STAINS, DIRT AND DEBRIS, THEN A BONDING AGENT SHALL BE USED TO HELP BONDING OF THE CONCRETE TOPPING TO THE CONCRETE PLANK SURFACE.

7. SURFACES OF THE NEW CONCRETE TOPPING SHALL BE TROWELED FINISH AT THE EQUIPMENT AREA AND BROOMED FINISH AT THE RADIO EQUIPMENT AREA (COORDINATE WITH ARCHITECTURAL DRAWINGS).

PRECAST HOLLOW CORE PLANK NOTES

1. ALL NON-SHRINK GROUT SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 8000 PSI (FLUID) 12500 PSI (FLOWABLE), 14000 PSI (PLASTIC) AND SHALL CONFORM TO ASTM C 1107.

2. ALL CONCRETE TOPPINGS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI, UNLESS OTHERWISE REQUIRED BY THE H/C MANUFACTURER. CONCRETE TOPPING SHALL HAVE A MAXIMUM AGGREGATE SIZE OF 1/4".

3. THE FIBERMESH 150 INDICATED ON THE DRAWINGS IS INTENDED FOR CRACK CONTROL PURPOSES ONLY.

4. OPENINGS FOR MECHANICAL AND ELECTRICAL ITEMS SHALL BE CORE DRILLED THROUGH HOLLOW CELLS ONLY, IN ACCORDANCE WITH THE H/C MANUFACTURER'S RECOMMENDATIONS. ADDITIONAL REINFORCEMENT SHALL BE PROVIDED AS REQUIRED BY THE H/C MANUFACTURER.

5. THE CONTRACTOR SHALL PREVENT ANY WATER ACCUMULATION WITHIN THE HOLLOW CORES TO OCCUR DURING CONSTRUCTION.

6. CONTRACTOR TO USE DRAWING SHEET PL-1 AS REFERENCE TO EXISTING PRECAST CONCRETE PLANK REPAIR, CORE DRILLED OR MODIFIED.

7. EXISTING PRECAST CONCRETE HOLLOW CORE PLANK REPORT BY BUCHANAN ENGINEERING GROUP, LLC DATED DECEMBER 21, 2020.

EXISTING STEEL BAR JOIST NOTES

1. BASED ON THE EXISTING BUILDING DRAWINGS PREPARED BY "RK, INC." DATED 1993. THE EXISTING ROOF STEEL BAR JOISTS AT THE LOCATION OF THE PROPOSED CANTILEVERED CANOPY TO THE WEST SIDE OF THE BUILDING, ARE 24 INCH DEEP JOISTS SPACED AT 4'-0" O.C. OUR STRUCTURAL ANALYSIS IS BASED ON THE FOLLOWING DATA:
   A. THE ASSUMED STEEL PROPERTIES OF THE EXISTING STEEL BAR JOISTS ARE AS FOLLOWS:
      a. TOP AND BOTTOM CHORDS OF THE EXISTING K-SERIES JOISTS ARE Fy = 50 KSI STEEL.
      b. ALL OTHER MEMBERS, DIAGONALS AND VERTICALS ARE Fy = 36 KSI STEEL.
      c. THE ABOVE INFORMATION IS DERIVED BASED ON THE HISTORICAL STEEL BAR JOISTS BUILT IN SOUTHWEST WISCONSIN AROUND 1993 AND PER SJI MANUAL.

BUILDING OWNER RESPONSIBILITIES

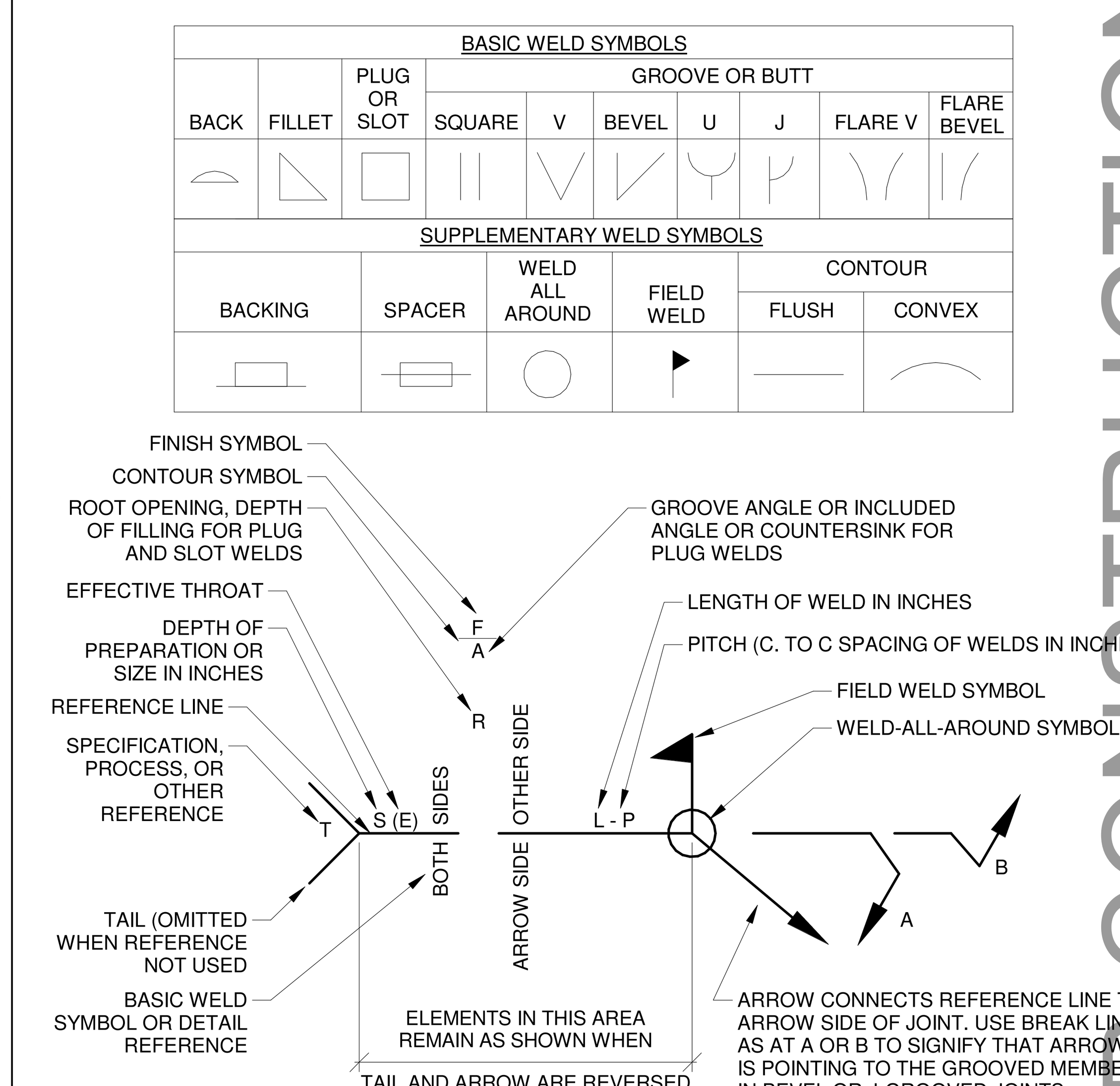
1. ROOF DRAINAGE SYSTEMS (GUTTERS, DOWNSPOUTS, ROOF DRAINS, ETC.) MUST BE FREE OF ANY OBSTRUCTION TO ENSURE SMOOTH OPERATION AT ANY GIVEN TIME.

2. PROVIDE PERIODIC INSPECTION OF TOP SIDE AND UNDER SIDE OF ROOF DECK AND REMOVE / REPLACE / REALIGN ANY DAMAGED / MISALIGNED STEEL PLATES, ANGLES, RODS, BRACES, WELDS OR SCREWS, OR MISC. DEBRIS.

3. THE ROOF MUST BE CLEARED OF SNOW WHEN THE MAXIMUM SNOW DEPTH IS REACHED. THE MAXIMUM SNOW DEPTH CAN BE ESTIMATED BASED ON THE DESIGN SNOW LOAD AND THE DENSITY OF SNOW AND / OR ICE BUILDUP (SEE TABLE BELOW)

ROOF DESIGN SNOW LOAD (IN PSF)	EQUIVALENT SNOW DEPTH AT ROOF (IN INCHES)	SNOW DEPTH WHEN SNOW REMOVAL MUST START (IN INCHES)
24	16	12

WELD JOINT STANDARD SYMBOLS



NOTE:
SIZE, WELD SYMBOL / LENGTH OF WELD, AND SPACING MUST READ IN THAT ORDER, FROM LEFT TO RIGHT, ALONG THE REFERENCE LINE. NEITHER ORIENTATION OR REFERENCE NOR LOCATION OF THE ARROW ALTERS THIS RULE.

THE PERPENDICULAR LEG OF ◺, V, P, K, WELD SYMBOLS MUST BE AT LEFT.

DIMENSIONS OF FILLET WELDS MUST BE SHOWN ON BOTH THE ARROW SIDE AND THE OTHER SIDE. SYMBOLS APPLY BETWEEN ABRUPT CHANGES IN DIRECTION OF WELDING UNLESS GOVERNED BY THE "ALL AROUND" SYMBOL OR OTHERWISE DIMENSIONED.
THESE SYMBOLS DO NOT EXPLICITLY PROVIDE FOR THE CASE THAT FREQUENTLY OCCURS IN STRUCTURAL WORK, WHERE DUPLICATE MATERIAL (SUCH AS STIFFENERS) OCCURS ON THE FAR SIDE OF A WEB OR GUSSET PLATE. THE FABRICATING INDUSTRY HAS ADOPTED THIS CONVENTION: THAT WHEN THE BILLING OF THE DETAIL MATERIAL DISCLOSES THE EXISTENCE OF A MEMBER ON THE FAR SIDE AS WELL AS ON THE NEAR SIDE, THE WELDING SHOWN FOR THE NEAR SIDE SHALL BE DUPLICATED ON THE FAR SIDE.

NOT FOR CONSTRUCTION

WISCONSIN JEFF S. GUTOWSKY 35509-006 HOFFMAN ESTATES, IL PROFESSIONAL ENGINEER
SIGNED: 06/08/2021
EXP.: 07/31/2022

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5415 KING JAMES WAY
FITCHBURG, WISCONSIN

CLIENT APPROVAL
☐ APPROVED
☐ APPROVED AS NOTED
APPROVED BY / DATE:

ISSUE RECORD

1	ADR	08/04/20
2	90% SET	11/20/20
3	100% FOR REVIEW	01/06/21
4	HVAC REDESIGN	04/30/21
5	ISSUE FOR BID	06/08/21

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JSG
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CJS
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PROJECT NUMBER
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STRUCTURAL NOTES

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REINFORCED CONCRETE NOTES

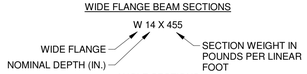
1. ALL CAST-IN-PLACE CONCRETE SHALL BE OF THE TYPES AND HAVING MINIMUM 28-DAY COMPRESSIVE STRENGTHS AS FOLLOWS:
   - FOOTINGS AND FOUNDATION WALLS: 4,000 PSI
   - SLABS-ON-GRADES: 4,000 PSI
   - MISCELLANEOUS FILLS AND PADS: 3,000 PSI
2. ALL CONCRETE SHALL CONTAIN AN APPROVED WATER REDUCING PLASTICIZING ADMIXTURE. APPROVED, HIGH-RANGE, WATER REDUCING ADMIXTURES MAY BE UTILIZED. ALL CONCRETE FOR PERIMETER FOUNDATION WALLS AND OTHER EXTERIOR EXPOSED CONCRETE SHALL ALSO CONTAIN AN APPROVED AIR-ENTRAINING ADMIXTURE.
3. ALL REINFORCING BARS SHALL BE NEW BILLET STEEL CONFORMING TO THE STANDARDS OF ASTM A615, GRADE 60 (Fy = 60,000 PSI) OR ASTM A775, GRADE 60 EPOXY COATED REBAR.
4. ALL WELDED WIRE FABRIC SHALL CONFORM TO THE STANDARDS OF ASTM A185.
5. ALL CONCRETE REINFORCEMENT SHALL BE DETAILED, FABRICATED, LABELED, SUPPORTED, SPACED IN FORMS, AND SECURED IN PLACE IN ACCORDANCE WITH THE PROCEDURES AND REQUIREMENTS OUTLINED IN THE LATEST EDITION OF THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE," ACI 318, AND THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES," ACI 315.
6. THE CONTRACTOR SHALL SUBMIT CHECKED SHOP DRAWINGS SHOWING REINFORCING DETAILS. INCLUDING STEEL SIZES, SPACING, PLACEMENT, AND SUPPORT DETAILS TO THE ARCHITECT FOR REVIEW PRIOR TO FABRICATION.
7. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS SHOWING THE LOCATION OF ALL CONSTRUCTION JOINTS, CURBS, SLAB DEPRESSIONS, SLEEVES, OPENINGS, AND EMBEDMENTS TO THE ARCHITECT FOR REVIEW PRIOR TO CONCRETE PLACEMENT.
8. ALL REINFORCING SPLICES SHALL CONFORM TO THE REQUIREMENTS OF ACI 318, BUT IN NO CASE SHALL BE LESS THAN 48 BAR DIAMETERS, UNLESS NOTED OTHERWISE.
9. ALL WELDED WIRE FABRIC SHALL BE LAPPED TWO (2) FULL MESH PANELS AND TIED SECURELY.
10. WHERE REQUIRED, DOWELS SHALL MATCH THE SIZE AND NUMBER OF MAIN REINFORCING, UNLESS NOTED OTHERWISE.
11. ALL WALLS AND STRUCTURAL SLABS SHALL BE REINFORCED WITH MINIMUM NO. 4 AT 12" O.C. EACH WAY, EACH FACE, UNLESS NOTED OTHERWISE. ALL SLABS-ON-GRADE SHALL BE REINFORCED WITH AT LEAST ONE (1) LAYER OF 6X6 - W2.9XW2.9 W.W.F., UNLESS NOTED OTHERWISE. PROVIDE ONE (1) LAYER OF 6X6 - W1.4XW1.4 W.W.F. CONTINUOUS IN ALL CONCRETE FILLS ABOVE THE STRUCTURAL SLAB. ALL MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT PADS SHALL BE REINFORCED WITH AT LEAST ONE (1) LAYER OF 6X6 W.W.F. (SEE HVAC, PLUMBING, AND ELECTRICAL DRAWINGS FOR ADDITIONAL REINFORCING REQUIREMENTS FOR PADS.) ADDITIONAL BARS SHALL BE PROVIDED AROUND ALL FLOOR AND WALL OPENINGS, AS SHOWN ON DETAILS.
12. ADDITIONAL BARS SHALL BE PROVIDED AROUND ALL FLOOR AND WALL OPENINGS, AS SHOWN ON DETAILS.
13. CONSTRUCTION JOINTS IN ALL WALLS SHALL NOT BE FURTHER APART THAN 60 FEET IN ANY DIRECTION.
14. ALL CONSTRUCTION JOINTS SHALL BE WIRE BRUSHED, CLEANED AND MOISTENED IMMEDIATELY PRIOR TO PLACING NEW CONCRETE.
15. PLACE ALL SLABS-ON-GRADE IN A CHECKERBOARD FASHION BETWEEN CONSTRUCTION JOINTS ALONG COLUMN CENTERLINES WITH A MINIMUM OF 24 HOURS BETWEEN ADJACENT POURS OR BE IN STRIP POURS OF MAXIMUM THIRTY (30) TIMES THE SLAB THICKNESS. STRIP POURED SLABS SHALL HAVE SAWCUT CENTRAL JOINTS AS SHOWN ON FOUNDATION PLAN.
16. NO CALCIUM CHLORIDE SHALL BE USED IN ANY CONCRETE.
17. ALL BAR SUPPORTS SHALL BE GALVANIZED. BAR SUPPORTS IN CONTACT WITH EXPOSED SURFACES SHALL ALSO BE PLASTIC TIPPED.
18. FOOTINGS AND WALLS SHALL NOT BE SLEEVED OR BOXED-OUT OR HAVE THE REINFORCING INTERRUPTED, EXCEPT AS SHOWN ON THE STRUCTURAL DRAWINGS.
19. SEE ARCHITECTURAL DRAWINGS FOR TYPE AND LOCATION OF ALL FLOOR FINISHES, FLOOR DEPRESSIONS AND CURBS.
20. SEE ARCHITECTURAL, HVAC, ELECTRICAL, AND PLUMBING DRAWINGS FOR ADDITIONAL WALL/SLAB OPENINGS.
21. PROVIDE APPROVED CURING COMPOUND AND SEALER FOR THE TOP SURFACE OF ALL SLAB WORK, UNLESS NOTED OTHERWISE.
22. OPENINGS:
   A. OPENING SHOWN ARE FOR BIDDING PURPOSES ONLY. COORDINATE THE EXACT SIZE AND LOCATIONS WITH HVAC, PLUMBING, AND OTHER APPLICABLE TRADES BEFORE PROCEEDING WITH WORK.
   B. IF ANY OPENING NOT SHOWN ON THE PLAN IS REQUIRED, SECURE APPROVAL OF THE STRUCTURAL ENGINEER BEFORE PROCEEDING.
   C. PROVIDE TWO #5 BARS AROUND ALL SLAB AND WALL OPENINGS, EXTENDING 2 FEET BEYOND OPENING IN EVERY DIRECTION, U.N.O.; OPENINGS NOT EXCEEDING 16 INCHES X 16 INCHES MAY BE SLEEVED AS REQUIRED BY WORKING THE REINFORCING STEEL AROUND THEM.
23. FOOTINGS AND PIERS:
   A. PROVIDE DOWELS IN FOOTINGS TO MATCH VERTICAL PIER OR WALL REINFORCING, U.N.O.
   B. PROVIDE CORNER BARS AT WALL CORNERS TO MATCH HORIZONTAL REINFORCING. MINIMUM LAP LENGTH WITH HORIZONTAL REINFORCEMENT - 48 BAR DIAMETERS.
   C. CAST IN CONTINUOUS DOVETAIL ANCHOR SLOTS ON VERTICAL SURFACES WHERE MASONRY ABUTS, 16 INCHES O.C. PARALLEL SURFACES AT CENTERLINE OF MASONRY FOR PERPENDICULAR SURFACES.
   D. PROVIDE LEAN CONCRETE (CLASS IV) UNDER FOUNDATIONS FOR ACCIDENTAL OVER-EXCAVATION, SOFT SPOTS AND TRENCHES.
24. SPLICES - UNLESS NOTED OTHERWISE, MINIMUM LAB SPLICE LENGTHS SHALL BE AS FOLLOWS:
   A. VERTICAL BARS IN PIERS, (INCLUDING DOWELS): 48 BAR DIAMETERS
   B. HORIZONTAL BARS IN SLABS & FOOTINGS: 48 BAR DIAMETERS
25. CONSTRUCTION JOINTS:
   A. CONSTRUCTION JOINTS ARE PERMITTED ONLY WHERE SHOWN ON THE CONTRACT DRAWINGS OR AS APPROVED BY THE STRUCTURAL ENGINEER. ALL CONSTRUCTION JOINTS SHALL BE KEYED. KEYWAYS SHALL BE 1-1/2 INCHES DEEP X 1/3 MEMBER THICKNESS.
26. CONCRETE COVER: UNLESS NOTED OTHERWISE, DETAIL REINFORCING TO PROVIDE CONCRETE COVER AS FOLLOWS:
   A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3 INCHES
   B. CONCRETE EXPOSED TO EARTH OR WEATHER:
      - #6 BARS THROUGH #18 BARS: 2 INCHES
      - #5 BARS AND SMALLER OTHERS: 1-1/2 INCHES
   C. SLABS, JOINTS, AND WALLS NOT EXPOSED TO EARTH OR WEATHER:
      - #14 BARS AND #18 BARS: 1-1/2 INCHES
      - #11 BARS AND SMALLER: 3/4 INCH
   D. BEAMS, COLUMNS, PEDESTALS, AND TENSION TIES NOT EXPOSED TO EARTH OR WEATHER: 1-1/2 INCHES
27. MISCELLANEOUS:
   A. GROUT UNDER BEARING PLATES, SETTING PLATES, AND COLUMN BASE PLATES SHALL BE NON-SHRINKING TYPE. GROUT BELOW BEARING PLATES, SETTING PLATES, AND COLUMN BASE PLATES SHALL BE INSTALLED ONLY AFTER THE STEEL IS PLUMBED.
28. CONCRETE CUTTING AND CORING:
   A. CONCRETE CUTTING AND CORING METHODS ARE "WAYS AND MEANS" OF CONSTRUCTION AND SHALL BE DETERMINED BY THE CONTRACTOR.

ABBREVIATIONS

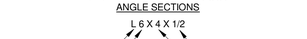
∠	ANGLE	FD	FLOOR DRAIN	PERP	PERPENDICULAR
AB	ANCHOR BOLT	FDN	FOUNDATION	PLWD	PLYWOOD
ADDL	ADDITIONAL	FIN	FINISH	PP	PARTIAL PENETRATION
ALT	ALTERNATE	FLR	FLOOR	PREFAB	PREFABRICATED
ARCH	ARCHITECTURAL	FRP	FIBERGLASS REINFORCED PLASTIC	PSF	POUNDS PER SQUARE FOOT
B OR BOT	BOTTOM			PSI	POUNDS PER SQUARE INCH
B/	BOTTOM OF	FTG	FOOTING		
BLDG	BUILDING	F/	FACE OF	PSL	PARALLEL STRAND LUMBER
BLKG	BLOCKING	GA	GAGE		
BMU	BRICK MASONRY UNIT	GALV	GALVANIZED	PT	PRESSURE TREATED
BP	BASEPLATE	GEOTECH	GEOTECHNICAL	P-T	POST-TENSIONED
BRB	BUCKLING RESISTING BRACED	GL	GLUE LAMINATED TIMBER	R	RADIUS
		GWB	GYPSUM WALL BOARD	RD	ROOF DECK
BRG	BEARING	H	HEADER	REF	REFER / REFERENCE
BTWN	BETWEEN	HF	HEM-FIR	REINF	REINFORCING
℄	CENTERLINE	HGR	HANGER	REQD	REQUIRED
C	CAMBER	HD	HOLD-DOWN	RET	RETAINING
CB	CASTELLATED BEAM	HORIZ	HORIZONTAL	RTU	ROOF TOP UNIT
CIP	CAST IN PLACE	HP	HIGH POINT	SC	STEEL COLUMN
C.J.	CONSTRUCTION OR CONTROL JOINT	HSS	= TS (HOLLOW STRUCTURAL SECTION)	SCB	SPECIAL CONCENTRIC BRACED
CJP	COMPLETE JOINT PENETRATION	IBC	INTERNATIONAL BUILDING CODE	SCHED	SCHEDULE
CLR	CLEAR	ID	INSIDE DIAMETER	SHTHG	SHEATHING
CMU	CONCRETE MASONRY UNIT	IE	INVERT ELEVATION	SIM	SIMILAR
		IF	INSIDE FACE	SMF	SPECIAL MOMENT FRAME
COL	COLUMN	INT	INTERIOR	SOG	SLAB ON GRADE
CONC	CONCRETE	k	KIPS	SPEC	SPECIFICATION
CONN	CONNECTION	KSF	KIPS PER SQUARE FOOT	SQ	SQUARE
CONST	CONSTRUCTION	L	LINTEL	SR	STUDRAIL
CONT	CONTINUOUS	LF	LINEAL FOOT	SF	SQUARE FOOT
CP	CONCRETE PEDESTAL	LL	LIVE LOAD	SST	STAINLESS STEEL
C'SINK	COUNTERSINK	LLH	LONG LEG HORIZONTAL	STAGG	STAGGER / STAGGERED
CTRD	CENTERED DIAMETER	LLV	LONG LEG VERTICAL	STD	STANDARD
CFS	COLD FORMED STEEL	LP	LOW POINT	STIFF	STIFFENER
∅	DIAMETER	LONGIT	LONGITUDINAL	STL	STEEL
DB	DROP BEAM	LSL	LAMINATED STRAND LUMBER	STRUCT	STRUCTURAL
DBA	DEFORMED BAR ANCHOR	LVL	LAMINATED VENEER LUMBER	SWWJ	SOLID WEB WOOD JOIST
				SYM	SYMMETRICAL
DBL	DOUBLE			T	TOP
DEMO	DEMOLISH	MAS	MASONRY	T/	TOP OF
DEV	DEVELOPMENT	MAX	MAXIMUM	T&B	TOP & BOTTOM
DF	DOUGLAS FIR	MECH	MECHANICAL	TC AX LD	TOP CHORD AXIAL LOAD
DIAG	DIAGONAL	MEZZ	MEZZANINE	TCX	TOP CHORD EXTENSION
DIST	DISTRIBUTED	MFR	MANUFACTURER	TDS	TIE DOWN SYSTEM
DL	DEAD LOAD	MIN	MINIMUM	T&G	TONGUE & GROOVE
DN	DOWN	MISC	MISCELLANEOUS	THKND	THICKENED
DO	DITTO	MSW	MASONRY SHEAR WALL	THRD	THREADED
DP	DEPTH/DEEP	MW	MASONRY WALL	THRU	THROUGH
DWG	DRAWING	NIC	NOT IN CONTRACT	TRANSV	TRANSVERSE
(E)	EXISTING	NTS	NOT TO SCALE	TYP	TYPICAL
EA	EACH	OC	ON CENTER	UBC	UNIFORM BUILDING CODE
EF	EACH FACE	OCB	ORDINARY CONCENTRIC BRACED	UNO	UNLESS NOTED OTHERWISE
EL	ELEVATION				
ELEC	ELECTRICAL	OD	OUTSIDE DIAMETER	URM	UNREINFORCED MASONRY UNIT
ELEV	ELEVATOR	OF	OUTSIDE FACE		
EMBED	EMBEDMENT	OPNG	OPENING	VERT	VERTICAL
EQ	EQUAL	OPP	OPPOSITE	W	WIDE
EQUIP	EQUIPMENT	OWSJ	OPEN WEB STEEL JOIST	W/	WITH
EW	EACH WAY	OWWJ	OPEN WEB WOOD JOIST	W/O	WITHOUT
EXP	EXPANSION	P	PLATE	WF	WALL FOOTING
EXP JT	EXPANSION JOINT	PAF	POWDER ACTUATED FASTENER	WHS	WELDED HEADED STUD
EXT	EXTERIOR			WP	WORKING POINT
F	FOOTING	PC	PRECAST	WWF	WELDED WIRE FABRIC
				±	PLUS OR MINUS

STEEL FRAMING NOTATION

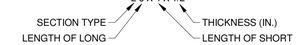
WIDE FLANGE BEAM SECTIONS



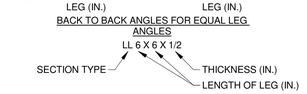
ANGLE SECTIONS



BACK TO BACK ANGLES FOR EQUAL LEG ANGLES



BACK TO BACK TIES



HOLLOW STRUCTURAL SECTIONS (RECTANGULAR)

SPECIAL INSPECTION AND TESTING (IBC 2015 - 1704-1706)

1. ALL TESTS AND INSPECTIONS SHALL BE PERFORMED BY AN INDEPENDENT TESTING AND INSPECTION AGENCY. THE SPECIAL INSPECTOR FROM THIS TESTING AGENCY SHALL OBSERVE THE WORK FOR CONFORMANCE TO THE DESIGN DRAWINGS AND SPECIFICATIONS.
2. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, THE ENGINEER AND ARCHITECT OF RECORD, AND ALL OTHER DESIGNATED INDIVIDUALS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN TO THE PROPER DESIGN AUTHORITY AND TO THE BUILDING OFFICIAL, IF NOT CORRECTED.
3. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED DESIGN DRAWINGS, SPECIFICATIONS, SOILS REPORT, AND APPLICABLE WORKMANSHIP PROVISIONS OF THE INTERNATIONAL BUILDING CODE.
4. JOB SITE VISITS BY THE STRUCTURAL ENGINEER OF RECORD DOES NOT CONSTITUTE AN OFFICIAL SPECIAL INSPECTION.
5. THE FOLLOWING ITEMS MARKED "X" REQUIRE SPECIAL INSPECTIONS: (REFER TO IBC DESIGNATED ABOVE FOR FURTHER INFORMATION)

			VERIFICATION AND INSPECTION	INSPECTION FREQUENCY	
				CONTINUOUS	PERIODIC
A			STRUCTURAL STEEL - 1705.2.1		
	1		PRIOR TO WELDING:		
		a	WELDING PROCEDURE SPECIFICATIONS (WPS) ARE AVAILABLE	X	
		b	MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES ARE AVAILABLE		X
		c	MATERIAL IDENTIFICATION (TYPE/GRADE)		X
		d	WELDER IDENTIFICATION SYSTEM		X
		e	FIT-UP GROOVE WELDS (INCLUDING JOINT GEOMETRY)		X
		f	CONFIGURATION AND FINISH OF ACCESS HOLES		X
		g	FIT-UP FILLET WELDS		X
		h	CHECK WELDING EQUIPMENT		X
	2		DURING WELDING:		
		a	USE OF QUALIFIED WELDERS		X
		b	CONTROL AND HANDLING OF WELDING CONSUMABLES		X
		c	NO WELDING OVER CRACKED TACK WELDS		X
		d	ENVIRONMENTAL CONDITIONS		X
		e	WPS FOLLOWED		X
		f	WELDING TECHNIQUES		X
	3		AFTER WELDING:		
		a	WELDS CLEANED		X
		b	SIZE, LENGTH, AND LOCATIONS OF WELDS	X	
		c	WELDS MEET VISUAL ACCEPTANCE CRITERIA	X	
		d	ARC STRIKES	X	
		e	k-AREA	X	
		f	BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)	X	
		g	REPAIR ACTIVITIES	X	
		h	DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	X	
	4		NON-DESTRUCTIVE TESTING:		
		a	CJP WELDS (VARIES PER RISK CATEGORY)		X
		b	ACCESS HOLES (FLANGE > 2")		X
		c	WELDED JOINTS SUBJECT TO FATIGUE		X
		d	K-AREA NDT	X	
		e	BASE METAL NDT FOR LAMELLAR TEARING AND LAMINATIONS		X
		f	BEAM COPE AND ACCESS HOLE		X
		g	REDUCED BEAM SECTION REPAIR		X
		h	WELD TAB REMOVAL SITES		X
	5		PRIOR TO BOLTING:		
		a	MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	X	
		b	FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS		X
		c	PROPER FASTENERS SELECTED FOR JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE)		X
		d	PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL		X
		e	CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS		X
		f	PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED		X
		g	PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS, AND OTHER FASTENER COMPONENTS		X
	6		DURING BOLTING:		
		a	FASTENER ASSEMBLIES, OF SUITABLE CONDITION, PLACED IN ALL HOLES AND WASHERS (IF REQUIRED) ARE POSITIONED AS REQUIRED		X
		b	JOINT BROUGHT TO SNUG TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION		X
		c	FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING		X
		d	FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH A METHOD APPROVED BY RCSC AND PROGRESSING SYSTEMATICALLY FROM MOST RIGID POINT TOWARD FREE EDGES		X
	7		AFTER BOLTING:		
		a	DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	X	X
	8		OTHER STEEL INSPECTIONS:		
		a	ANCHOR RODS AND OTHER EMBEDMENTS SUPPORTING STRUCTURAL STEEL	X	
		b	FABRICATED STEEL OR ERECTED STEEL FRAME		X
		c	REDUCED BEAM SECTIONS (RBS)	X	
		d	PROTECTED ZONES	X	
		e	H-PILES	X	
	9		STEEL ELEMENTS OF COMPOSITE CONSTRUCTION PRIOR TO CONCRETE PLACEMENT:		
		a	PLACEMENT AND INSTALLATION OF STEEL DECK	X	
		b	PLACEMENT AND INSTALLATION OF STEEL HEADED STUD ANCHORS	X	
		c	DOCUMENT ACCEPTANCE OR REJECTION OF STEEL ELEMENTS	X	
	10		COMPOSITE STRUCTURES PRIOR TO CONCRETE PLACEMENT:		
		a	MATERIAL IDENTIFICATION OF REINFORCING STEEL (TYPE/GRADE)		X
		b	DETERMINATION OF CARBON EQUIVALENT FOR REINFORCING STEEL OTHER THAN ASTM A706		X
		c	PROPER REINFORCING STEEL SIZE, SPACING AND ORIENTAION		X
		d	REINFORCING STEEL HAS BEEN TIED AND SUPPORTED AS REQUIRED		X
		e	REQUIRED REINFORCING STEEL CLEARANCE HAVE BEEN PROVIDED		X
		f	COMPOSITE MEMBER HAS REQUIRED SIZE		X
	11		COMPOSITE STRUCTURES DURING CONCRETE PLACEMENT:		
		a	CONCRETE: MATERIAL IDENTIFICATION (MIX DESIGN, COMPRESSIVE STRENGTH, MAXIMUM LARGE AGGREGATE SIZE, MAXIMUM SLUMP)		X
		b	LIMITS ON WATER ADDED AT THE TRUCK OR PUMP		X
		c	PROPER PLACEMENT TECHNIQUES TO LIMIT SEGREGATION		X
B			COLD-FORMED STEEL DECK - 1705.2.2		
	1		STEEL ROOF AND FLOOR DECKS:		
		a	MATERIAL VERIFICATION OF COLD-FORMED STEEL DECK		X
		b	FLOOR AND ROOF DECK WELDS		X
	2		WELDING AT REINFORCING STEEL:		
		a	VERIFACTION OF WELDABILITY		X
		b	REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE OR SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL STRUCTURAL WALLS	X	
		c	SHEAR REINFORCEMENT	X	
		d	OTHER REINFORCING STEEL		X
	3		COLD-FORMED STEEL:		
		a	TRUSSES SPANNING 60-FEET OR GREATER		X
		b	COLD-FORMED STEEL LIGHT-FRAME CONSTRUCTION WELDED CONNECTIONS		X
		c	COLD-FORMED STEEL LIGHT-FRAME CONSTRUCTION MECHANICAL CONNECTIONS		X
		d	COLD-FORMED STEEL CONNECTIONS		X

			VERIFICATION AND INSPECTION	INSPECTION FREQUENCY	
				CONTINUOUS	PERIODIC
E			MASONRY CONSTRUCTION - LEVEL B - 1705.4		
	1		PRIOR TO CONSTRUCTION:		
		a	REVIEW MATERIAL CERTIFACTES, MIX DESIGNS, TEST RESULTS AND CONSTRUCTION PROCEDURES		X
	2		AS CONSTRUCTION BEGINS:		
		a	PROPORTIONS OF SITE-PREPARED MORTAR		X
		b	CONSTRUCTION OF MORTAR JOINTS		X
		c	GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES		X
		d	LOCATION OF REINFORCEMENT, CONNECTORS, AND PRESTRESSING TENDONS AND ANCHORAGES		X
		e	PRESTRESSING TECHNIQUE		X
		f	PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY	X	X
	3		PRIOR TO GROUTING:		
		a	GROUT SPACE		X
		b	GRADE, TYPE, AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS, AND PRESTRESSING TENDONS AND ANCHORAGES		X
		c	PLACEMENT OF REINFORCEMENT, CONNECTORS, AND PRESTRESSING TENDONS AND ANCHORAGES		X
		d	PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS		X
		e	CONSTRUCTION OF MORTAR JOINTS		X
	4		DURING MASONRY CONSTRUCTION:		
		a	SIZE AND LOCATION OF STRUCTURAL ELEMENTS		X
		b	TYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION		X
		c	WELDING OF REINFORCEMENT	X	
		d	PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (<40°F) OR HOT WEATHER (>90°F)		X
		e	APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE	X	
		f	PLACEMENT OF GROUT FOR BONDED TENDONS IS IN COMPLIANCE	X	
		g	PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN-BED MORTAR JOINTS	X	X
		h	OBSERVATION OF GROUT SPECIMENS, MORTAR SPECIFMENS, AND/OR PRISMS		X
	5		MINIMUM TESTING:		
		a	VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) FOR SELF-CONSOLIDATING GROUT		
		b	VERIFICATION OF f'm AND f'AAC		

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DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY
FITCHBURG, WISCONSIN

CLIENT APPROVAL

☐ APPROVED
☐ APPROVED AS NOTED

APPROVED BY / DATE:

ISSUE RECORD

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3	100% FOR REVIEW	01/06/21
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5	ISSUE FOR BID	06/08/21

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JSG
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PROJECT NUMBER
2000765M

STRUCTURAL NOTES

S-0.1

WISCONSIN
JEFF S. GUTOWSKY
35509-006
HOFFMAN ESTATES, IL
PROFESSIONAL ENGINEER
SIGNED: 06/08/2021
EXP.: 07/31/2022

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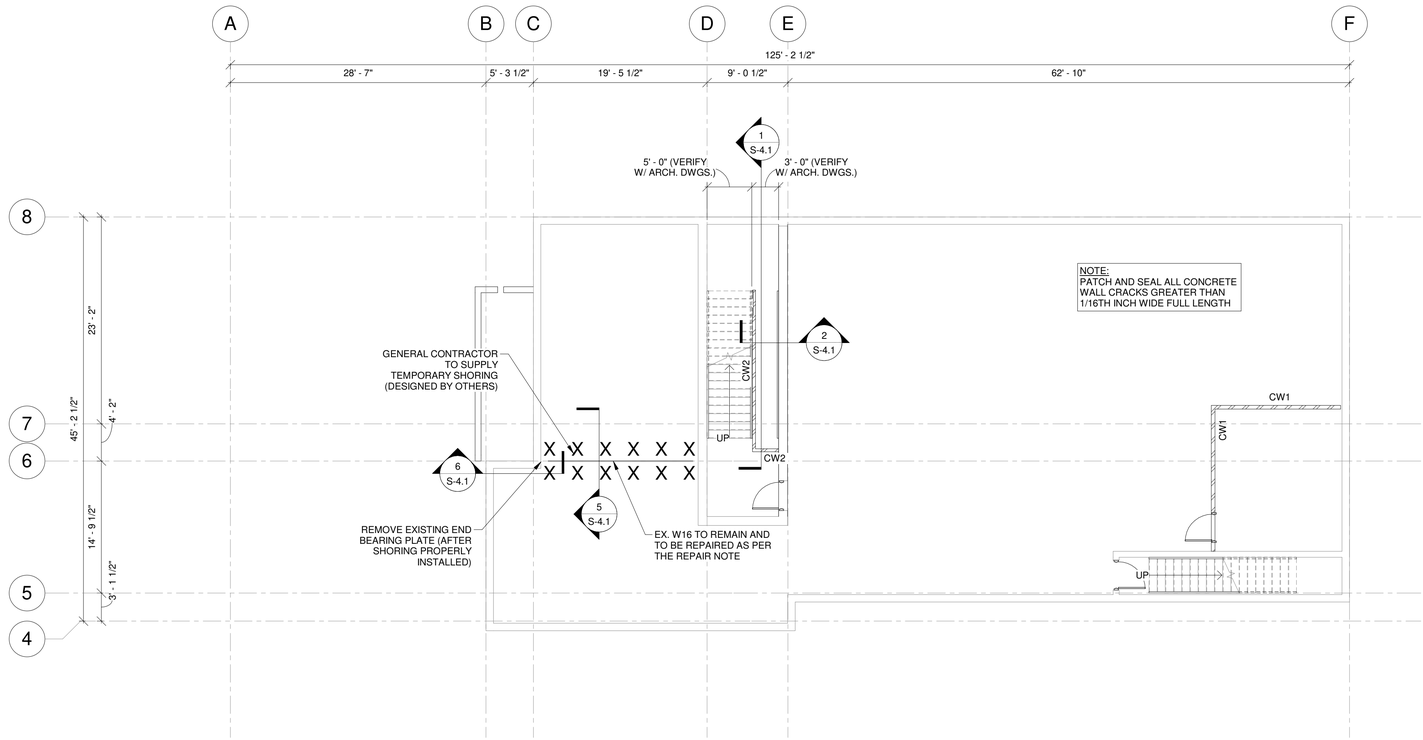

STEEL BEAM REPAIR NOTES:

- CONTRACTOR TO PROVIDE TEMPORARY SHORING AT THE STEEL BEAM AREA (TO BE DESIGNED BY OTHERS).
- STEEL BEARING PLATES TO BE REMOVED AND THE CONCRETE SURFACES OF THE BEAM SEATS TO BE CLEANED AND LEVELED.
- NEW STEEL ANGLE W/ ANCHOR RODS TO BE INSTALLED, SEE DETAIL 5/S-4.1.
- EXISTING W16 BEAM TO BE CLEANED AND SURFACE RUST COMPLETELY REMOVED, PRIME AND FINISH PAINT (COORDINATE WITH ARCHITECTURAL DRAWINGS)

1 BASEMENT PLAN

1/8" = 1'-0"

N

COLD-FORMED STEEL WALL SCHEDULE (SEE DETAIL 5/S-4.0)

MK.	STUD SIZE	BOTTOM TRACK	SILL ANCHORAGE	SHEATHING MATERIAL	TOP TRACK	REMARKS
CW1	400S125-68 CFS STUDS @ 16" O.C.	CONT. 400T125-33	3/8" DIA. SIMPSON TITEN-HD SCREW ANCHOR @ 48" O.C. MAX., W/ MIN. 2 1/2" EMBEDMENT	5/8" GYPSUM BOARD	CONT. 400T200-33	SEE ARCH. FOR WALL FINISH
CW2	400S162-68 CFS STUDS @ 16" O.C.	CONT. 400T125-33	3/8" DIA. SIMPSON TITEN-HD SCREW ANCHOR @ 48" O.C. MAX., W/ MIN. 2 1/2" EMBEDMENT	5/8" GYPSUM BOARD	CONT. 400T200-33	SEE ARCH. FOR WALL FINISH
CW3	550S162-68 CFS STUDS @ 16" O.C.	CONT. 550T200-43	3/8" DIA. SIMPSON TITEN-HD SCREW ANCHOR @ 48" O.C. MAX., W/ MIN. 2 1/2" EMBEDMENT	5/8" GYPSUM BOARD	CONT. 550T200-43	SEE ARCH. FOR WALL FINISH

WISCONSIN
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PROFESSIONAL ENGINEER
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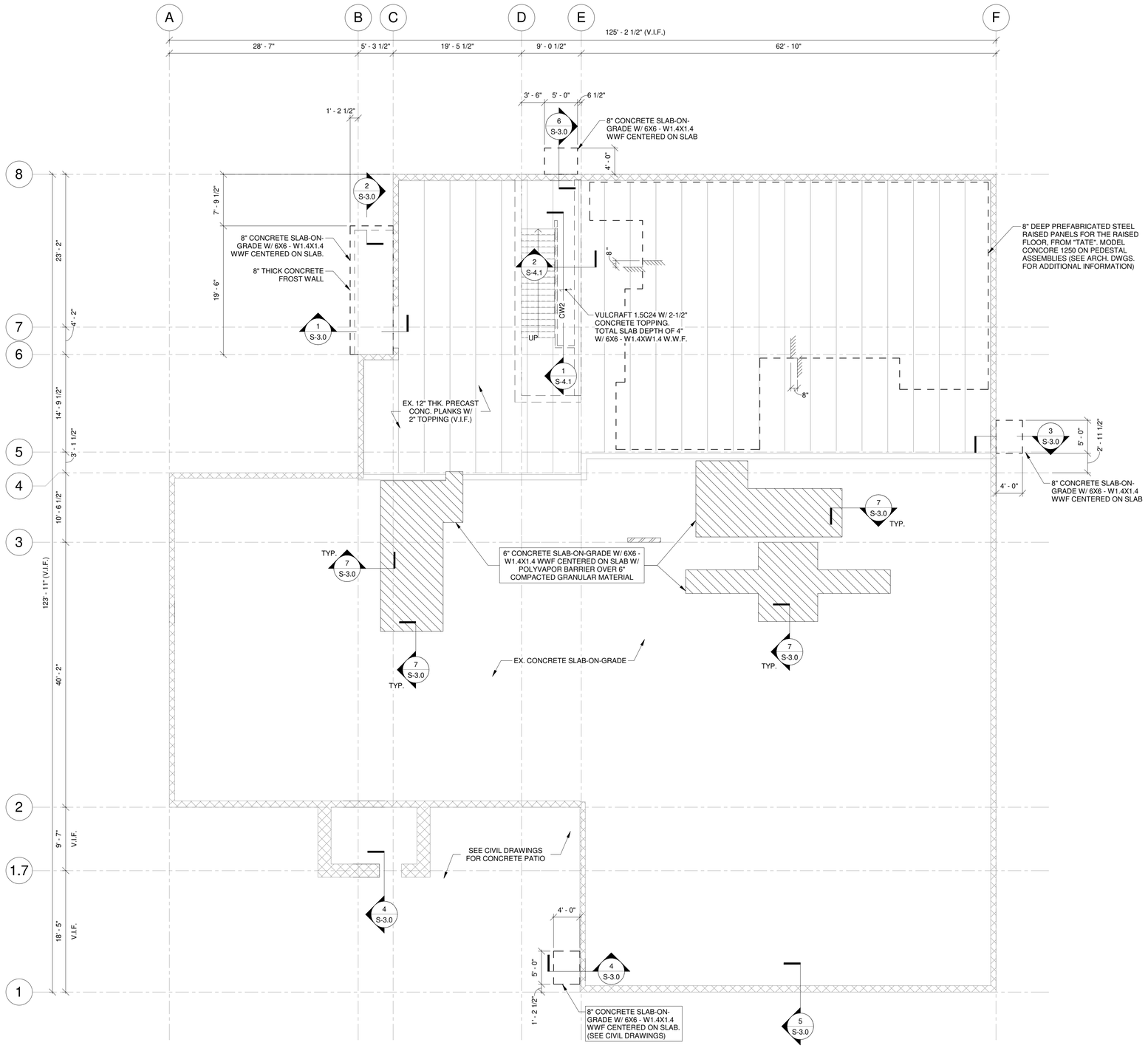
BASEMENT PLAN

S-1.0



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

NOTE:
1. CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE EXISTING CABLE STRANDS IN THE FLOOR PLANKS AND NOTIFY THE PRECAST CONCRETE STRUCTURAL ENGINEER PRIOR TO ANY CORING OR CUTTING OF THE PRECAST CONCRETE PLANKS.
2. CONTRACTOR TO REFER TO DRAWING SHEET PL-1 FOR ANY EXISTING PRECAST CONCRETE PLANK REPAIR, CORE-DRILLED OR MODIFIED.

N

JEFF S. GUTOWSKY 35509-006 HOFFMAN ESTATES, IL PROFESSIONAL ENGINEER
SIGNED: 06/08/2021
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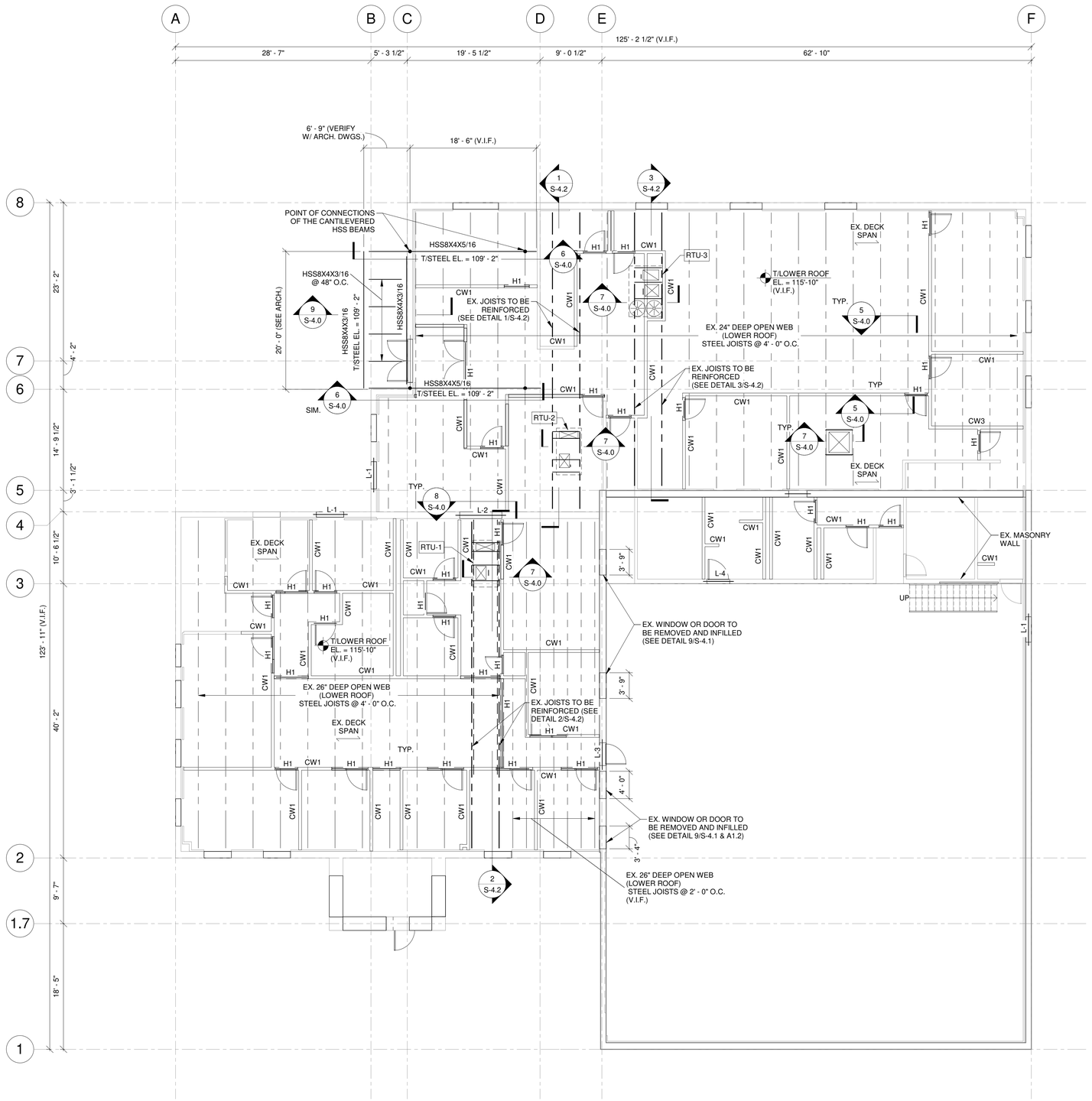
FIRST FLOOR PLAN

S-1.1



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

N

ROOF TOP EQUIPMENT SCHEDULE (SEE DETAIL 7/S-4.0)

NOTE: VERIFY ROOF TOP EQUIPMENT WEIGHTS AND LOCATIONS WITH ARCHITECTURAL AND M.E.P. DRAWINGS

MK.	LENGTH	WIDTH	RTU WEIGHT (LBS.) + CURB
RTU-1	6' - 10"	3' - 7"	1245 + 225 = 1470
RTU-2	6' - 10"	3' - 7"	960 + 180 = 1140
RTU-3	7' - 5"	4' - 11"	1395 + 235 = 1630

LINTEL SCHEDULE (SEE DETAIL 8/S-4.0)

MK.	SIZE	OPENING LENGTH	LINTEL PLATE	LINTEL PLATE CONNECTION	BEARING PLATE	BEARING PLATE CONNECTION	WALL BEARING EA. END	SECTION
L-1	2L6X4X3/8LLBB	6' - 0" MAX.	10" X 3/8" X OPENING LENGTH	1/4" FILLET WELD 2" LONG @ 12" O.C.	9 1/2" X 8" X 5/16"	1/4" FILLET WELD (8" LONG)	8" MIN. EA. END	
L-2	W8X15	12' - 0" MAX.	10" X 3/8" X OPENING LENGTH	1/4" FILLET WELD 2" LONG @ 12" O.C.	9 1/2" X 8" X 5/16"	1/4" FILLET WELD (8" LONG)	8" MIN. EA. END	
L-3	2L6X4X3/8LLBB	6' - 0" MAX.	12" X 3/8" X OPENING LENGTH	1/4" FILLET WELD 2" LONG @ 12" O.C.	9 1/2" X 8" X 5/16"	1/4" FILLET WELD (8" LONG)	8" MIN. EA. END	
L-4	2L6X4X3/8LLBB	6' - 0" MAX.	8" X 3/8" X OPENING LENGTH	1/4" FILLET WELD 2" LONG @ 12" O.C.	7 1/2" X 8" X 5/16"	1/4" FILLET WELD (8" LONG)	8" MIN. EA. END	

COLD-FORMED STEEL HEADER SCHEDULE (SEE DETAIL 3&4/S-4.0)

MK.	SIZE AND MATERIAL	OPENING SILL	INTERCONNECTION SPACING	SUPPORTS: FULL HEIGHT KING STUD	SUPPORTS: JACK STUD	BOTTOM TRACK	TOP TRACK	SECTION
H1	400T200-43 (33 KSI)	400T200-33	--	(2) 400S125-33 BACK-TO-BACK	--	--	--	

COLD-FORMED STEEL WALL SCHEDULE (SEE DETAIL 5/S-4.0)

MK.	STUD SIZE	BOTTOM TRACK	SILL ANCHORAGE	SHEATHING MATERIAL	TOP TRACK	REMARKS
CW1	400S125-68 CFS STUDS @ 16" O.C.	CONT. 400T125-33	3/8" DIA. SIMPSON TITEN-HD SCREW ANCHOR @ 48" O.C. MAX., W/ MIN. 2 1/2" EMBEDMENT	5/8" GYPSUM BOARD	CONT. 400T200-33	SEE ARCH. FOR WALL FINISH
CW2	400S162-68 CFS STUDS @ 16" O.C.	CONT. 400T125-33	3/8" DIA. SIMPSON TITEN-HD SCREW ANCHOR @ 48" O.C. MAX., W/ MIN. 2 1/2" EMBEDMENT	5/8" GYPSUM BOARD	CONT. 400T200-33	SEE ARCH. FOR WALL FINISH
CW3	550S162-68 CFS STUDS @ 16" O.C.	CONT. 550T200-43	3/8" DIA. SIMPSON TITEN-HD SCREW ANCHOR @ 48" O.C. MAX., W/ MIN. 2 1/2" EMBEDMENT	5/8" GYPSUM BOARD	CONT. 550T200-43	SEE ARCH. FOR WALL FINISH

ROOF FRAMING PLAN NOTES

1. T/ROOF EL. = VARIES (SEE ARCH. DWGS.)
2. CONTRACTOR TO VERIFY WITH ARCHITECTURAL DRAWINGS ALL ELEVATIONS AND DIMENSIONS. SEE ARCHITECTURAL DRAWINGS FOR ELEVATIONS, OPENINGS AND DIMENSIONS NOT SHOWN.
3. CONTRACTOR TO VERIFY ALL DIMENSIONS PRIOR TO FABRICATION, CONSTRUCTION OR ERECTION. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ANY DISCREPANCIES.
4. CONTRACTOR TO COORDINATE WITH ARCHITECTURAL AND MECHANICAL PLANS FOR ROOF DRAINS AND ROOF TOP UNIT EXACT LOCATIONS AND DETAILS. GC TO NOTIFY ARCHITECT/ENGINEER OF RECORD IF LOADS TO EXCEED THOSE SHOWN IN ROOF TOP EQUIPMENT SCHEDULE.
5. CONTRACTOR TO COORDINATE SIZE AND LOCATION OF ALL MECHANICAL/ELECTRICAL OPENINGS THAT REQUIRE FRAMING (WHETHER SPECIFIED OR NOT). ALL FRAMING MUST BE APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION.
6. VERIFY ALL ROOF OPENINGS WITH ARCHITECTURAL DRAWINGS.
7. VERIFY ALL MECHANICAL OPENINGS WITH M.E.P. DRAWINGS.
8. THE CONTRACTOR SHALL REPLACE ANY ITEMS DAMAGED DURING CONSTRUCTION.
9. WEIGHTS OF ALL ROOFTOP UNITS SHALL BE VERIFIED PRIOR TO FABRICATION OF STEEL.
10. SEE S-0.0 FOR GENERAL STRUCTURAL NOTES AND ADDITIONAL INFORMATION.
11. SEE DRAWINGS SHEETS S-4.0, S-4.1, AND S-4.2 FOR ADDITIONAL INFORMATION.

KEY

- INDICATES EX. WALL
- INDICATES NEW WALL
- INDICATES LINTEL OR HEADER
- INDICATES STEEL COLUMN
- INDICATES WOOD COLUMN
- INDICATES STEEL TRUSS
- INDICATES OPENING

ABBREVIATIONS

EL.	ELEVATION
L	LINTEL
T/	TOP OF
B/	BOTTOM OF
EA.	EACH
TYP.	TYPICAL
CFS	COLD-FORMED STEEL
CW	COLD-FORMED STEEL WALL
P	BEARING PLATE
RD	ROOF DECK
H	HEADER
SC	STEEL COLUMN
MK.	MARK
RT	ROOF TOP UNIT
W/	WITH

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FITCHBURG, WISCONSIN

NOT FOR CONSTRUCTION

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- ☐ APPROVED AS NOTED

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LOWER ROOF FRAMING PLAN

S-2.0

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35509-006
HOFFMAN ESTATES, IL
PROFESSIONAL ENGINEER
SIGNED: 06/08/2021
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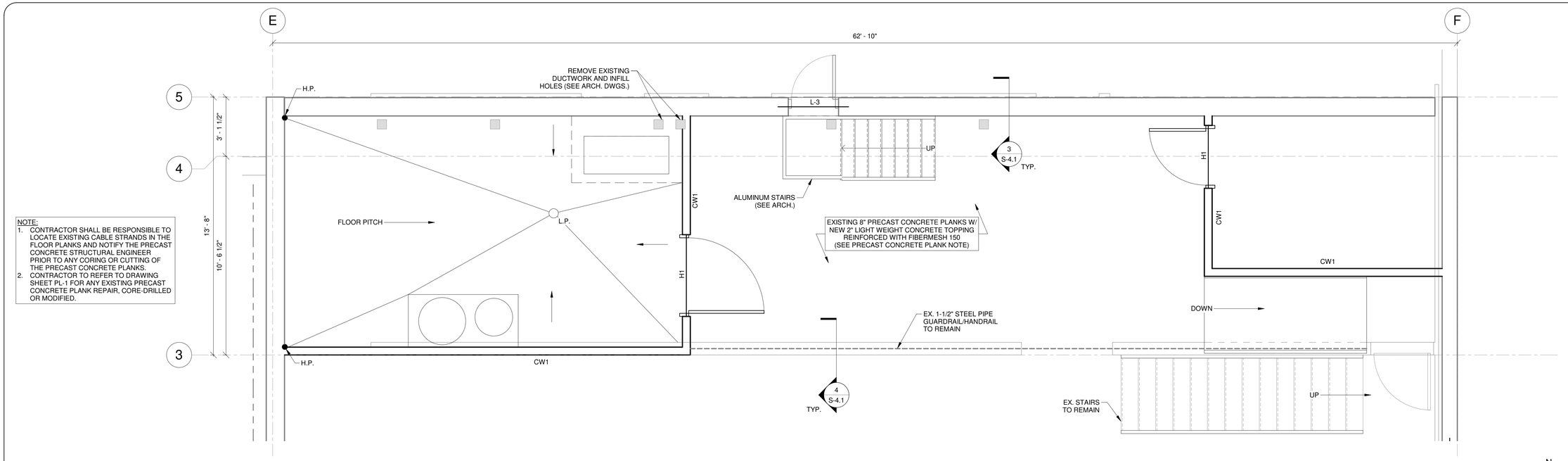
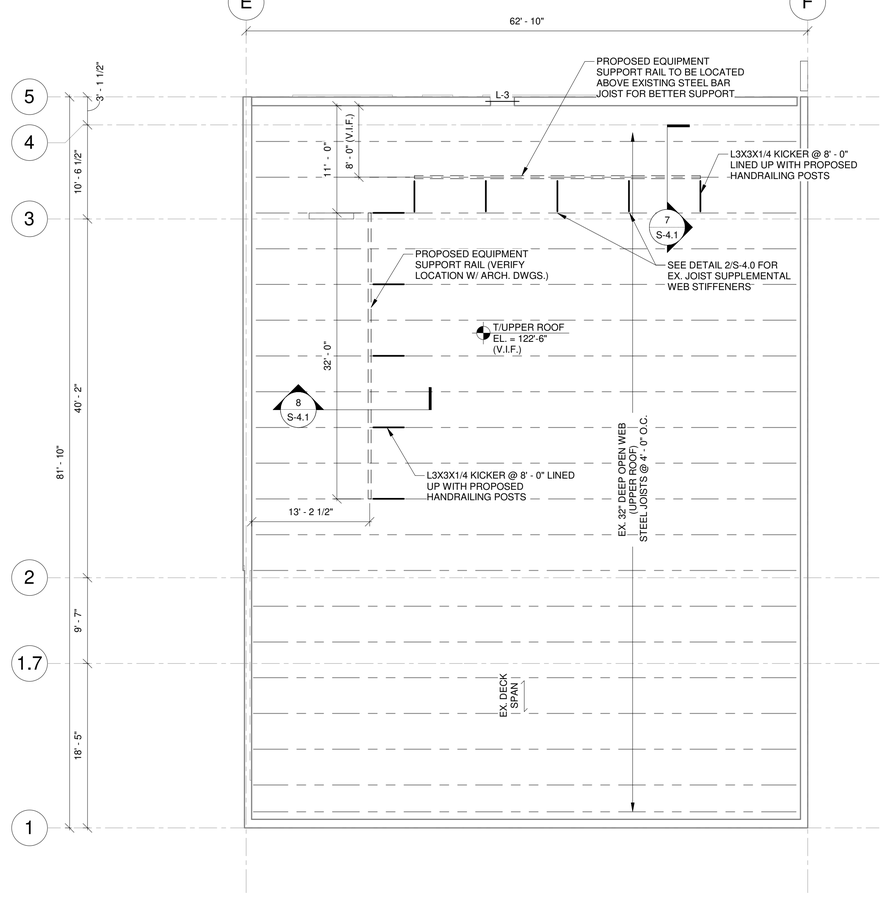


NOTE:
1. CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE EXISTING CABLE STRANDS IN THE FLOOR PLANKS AND NOTIFY THE PRECAST CONCRETE STRUCTURAL ENGINEER PRIOR TO ANY CORING OR CUTTING OF THE PRECAST CONCRETE PLANKS.
2. CONTRACTOR TO REFER TO DRAWING SHEET PL-1 FOR ANY EXISTING PRECAST CONCRETE PLANK REPAIR, CORE-DRILLED OR MODIFIED.

1 MEZZANINE PLAN
3/8" = 1'-0"



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

N

LINTEL SCHEDULE (SEE DETAIL 8/S-4.0)

MK.	SIZE	OPENING LENGTH	LINTEL PLATE	LINTEL PLATE CONNECTION	BEARING PLATE	BEARING PLATE CONNECTION	WALL BEARING EA. END	SECTION
L-1	2L6X4X3/8LLBB	6' - 0" MAX.	10" X 3/8" X OPENING LENGTH	1/4" FILLET WELD 2" LONG @ 12" O.C.	9 1/2" X 8" X 5/16"	1/4" FILLET WELD (8" LONG)	8" MIN. EA. END	
L-2	W8X15	12' - 0" MAX.	10" X 3/8" X OPENING LENGTH	1/4" FILLET WELD 2" LONG @ 12" O.C.	9 1/2" X 8" X 5/16"	1/4" FILLET WELD (8" LONG)	8" MIN. EA. END	
L-3	2L6X4X3/8LLBB	6' - 0" MAX.	12" X 3/8" X OPENING LENGTH	1/4" FILLET WELD 2" LONG @ 12" O.C.	9 1/2" X 8" X 5/16"	1/4" FILLET WELD (8" LONG)	8" MIN. EA. END	
L-4	2L6X4X3/8LLBB	6' - 0" MAX.	8" X 3/8" X OPENING LENGTH	1/4" FILLET WELD 2" LONG @ 12" O.C.	7 1/2" X 8" X 5/16"	1/4" FILLET WELD (8" LONG)	8" MIN. EA. END	

CONTRACTOR SHALL CONFIRM AND VERIFY FINAL SIZE, LOCATION, AND HEIGHT OF EQUIPMENT SUPPORT RAIL WITH OWNER PRIOR TO INSTALLATION.

PRECAST CONCRETE PLANK NOTE:

THE NEW CORE-DRILLED OPENINGS ON EXISTING PRECAST CONCRETE PLANKS FOR 3" DIA. AND 4" DIA. DRAIN PIPES AND CONDUIT SLEEVES, SHALL BE PERFORMED AFTER A NON-DESTRUCTIVE EXISTING (GPR / X-RAY) IS PERFORMED AND THE EXISTING STRAND LOCATIONS ARE VERIFIED, NOT TO EXPOSE, CUT OR DAMAGE ANY EXISTING PRECAST PLANK STRAND REINFORCEMENTS AND PRECAST CONCRETE STRUCTURAL ENGINEER IS NOTIFIED PRIOR TO ANY CORING OPERATIONS.

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COUNTY of DANE WISCONSIN 1839

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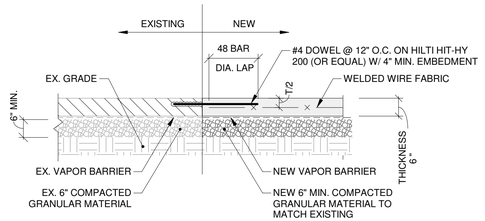
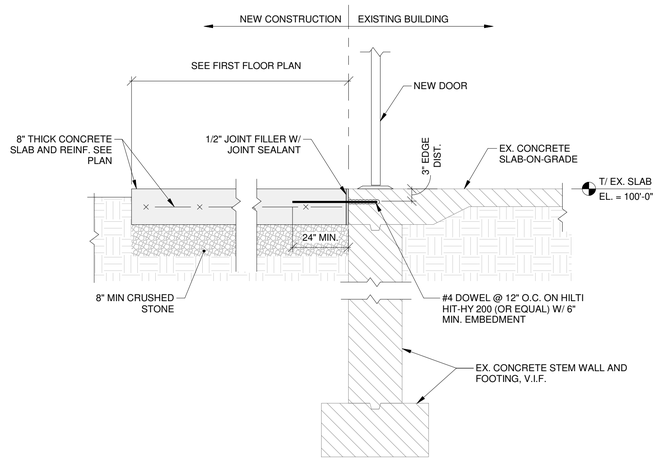
MEZZANINE AND UPPER ROOF PLANS

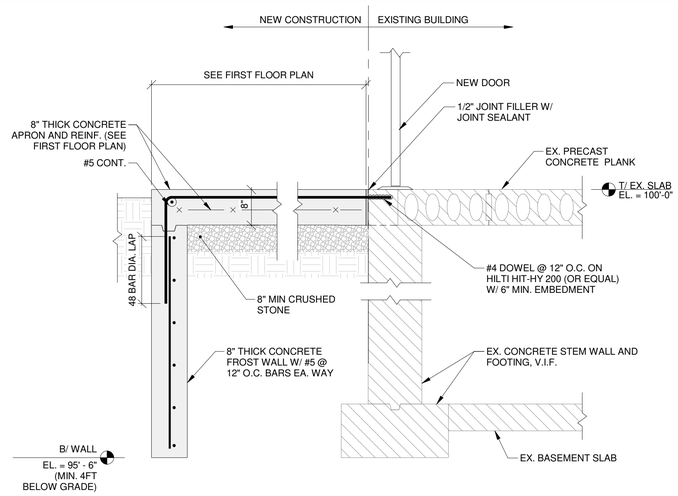
S-2.1



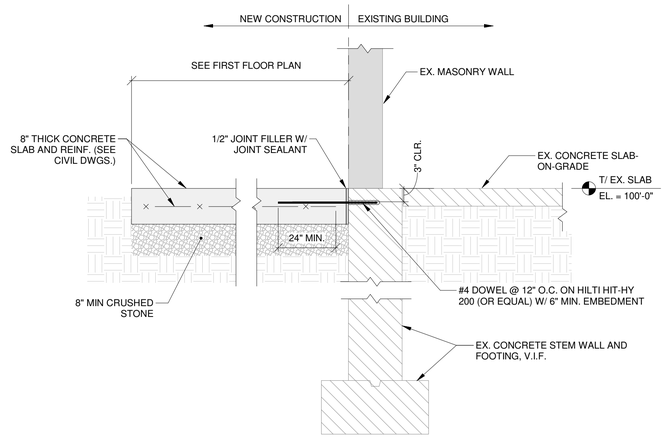
7 TYP. SLAB INFILL DETAIL
3/4" = 1'-0"



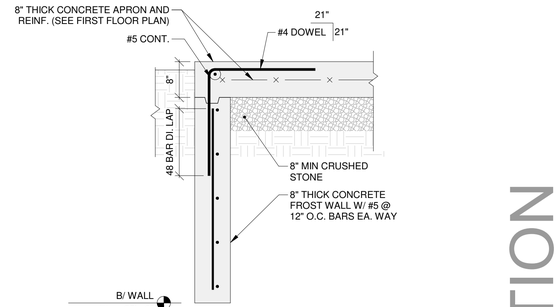
4 EXTERIOR SLAB ON GRADE @ EX. FOUNDATION W/ DOOR
3/4" = 1'-0"



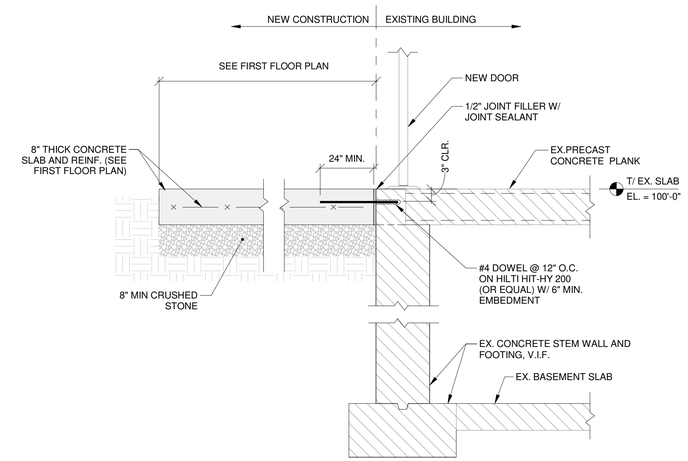
1 EXTERIOR SLAB @ FROST WALL
3/4" = 1'-0"



5 EXTERIOR SLAB ON GRADE @ EX. FOUNDATION
3/4" = 1'-0"



2 TYP. FROST WALL DETAIL
3/4" = 1'-0"



6 SLAB ON GRADE @ HOLLOWCORE PANELS
3/4" = 1'-0"

3 SLAB ON GRADE PARALLEL TO HOLLOWCORE PANELS
3/4" = 1'-0"

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FOUNDATION DETAILS

S-3.0

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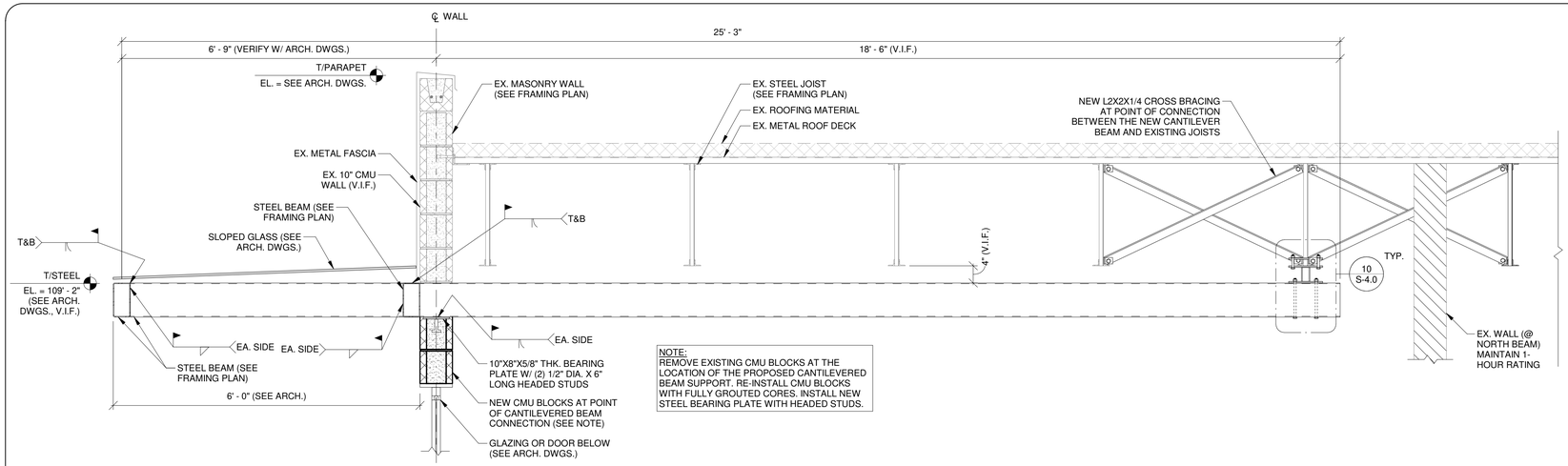
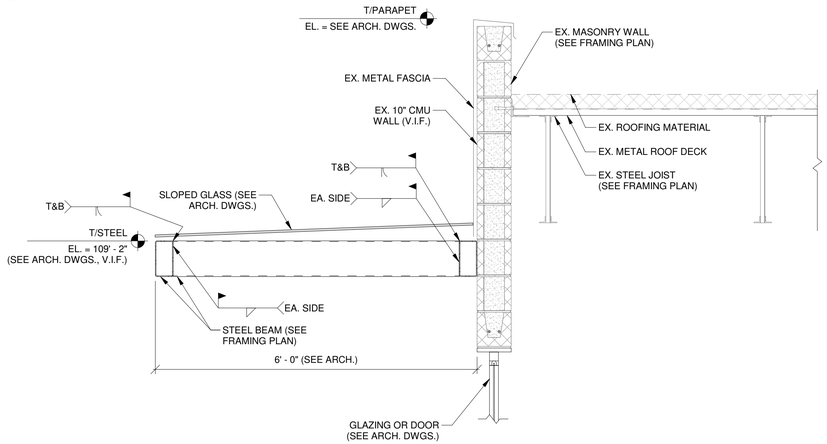
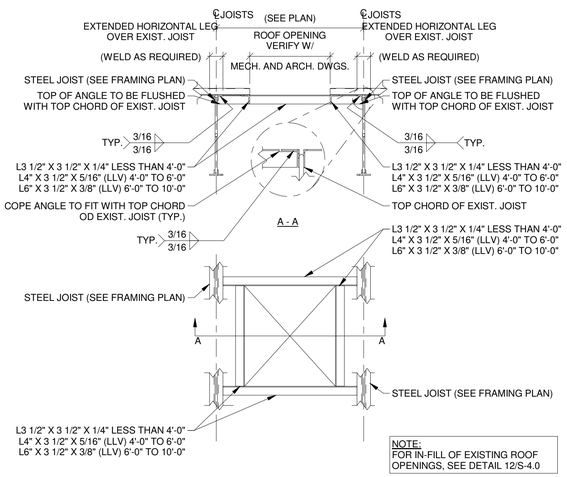


NOTE:
REMOVE EXISTING CMU BLOCKS AT THE LOCATION OF THE PROPOSED CANTILEVERED BEAM SUPPORT. RE-INSTALL CMU BLOCKS WITH FULLY GROUTED CORES. INSTALL NEW STEEL BEARING PLATE WITH HEADED STUDS.

6 NEW CANOPY TO EX. STEEL JOISTS @ MASONRY WALL
3/4" = 1'-0"





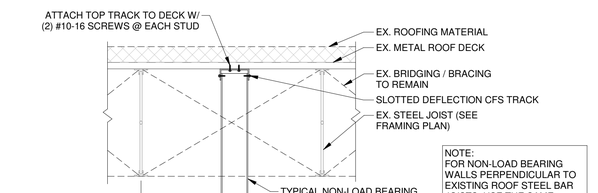
NOTE:
FOR IN-FILL OF EXISTING ROOF OPENINGS, SEE DETAIL 12/S-4.0

7 TYP. RTU SUPPORT AT PROPOSED ROOF OPENING
3/4" = 1'-0"

NOTE:
PROVIDE TEMPORARY SHORING PRIOR TO SAWCUTTING AND WALL REMOVAL

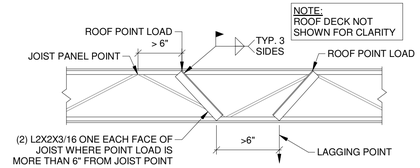
SECTION A - A

8 TYP. LINTEL DETAIL
1/2" = 1'-0"



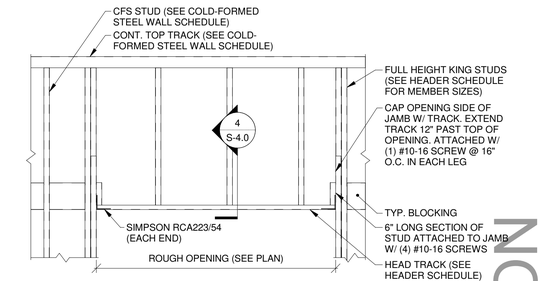
NOTE:
FOR NON-LOAD BEARING WALLS PERPENDICULAR TO EXISTING ROOF STEEL BAR JOISTS, USE THE SAME DETAIL. THESE WALLS SHALL BE "NOTCHED" AROUND EXISTING STEEL BAR JOISTS.

1 TYP. STEEL DECK OVER STEEL JOISTS @ FULL HGT. WALLS
3/4" = 1'-0"

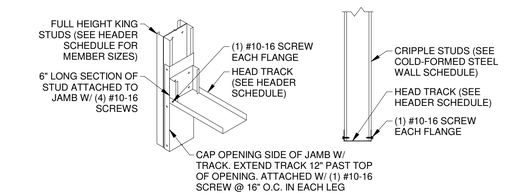


NOTE:
ROOF DECK NOT SHOWN FOR CLARITY

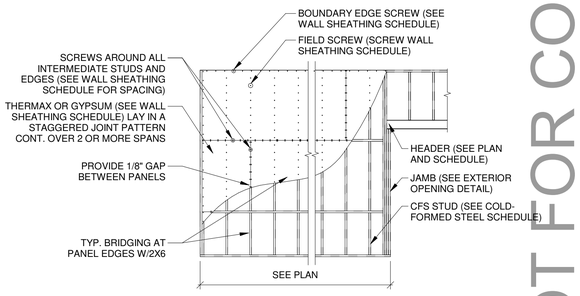
2 TYP. REINFORCEMENT DETAIL AT JOIST POINT LOAD
3/4" = 1'-0"



3 TYP. CFS NON-LOAD BEARING HEADER DETAIL
3/4" = 1'-0"

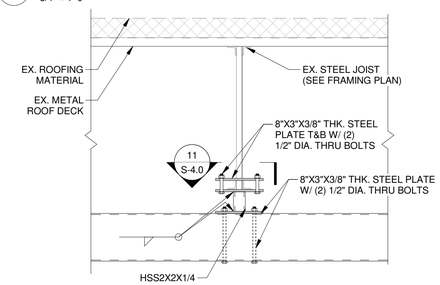


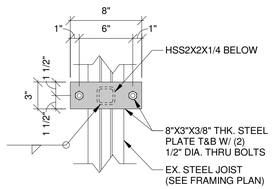
4 TYP. CFS HEADER TRACK CONNECTION
3/4" = 1'-0"



5 TYP. CFS SHEATHING ATTACHMENT
1/4" = 1'-0"

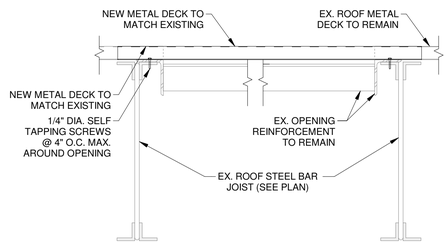
9 NEW CANOPY TO EX. STEEL JOISTS @ MASONRY WALL SECTION
3/4" = 1'-0"





10 EX. STEEL JOIST TO NEW STEEL BEAM DETAIL
1" = 1'-0"

11 BEAM SUPPORT CONNECTION DETAIL
1 1/2" = 1'-0"



12 NEW DECK OVER EXISTING ROOF OPENING
1 1/2" = 1'-0"

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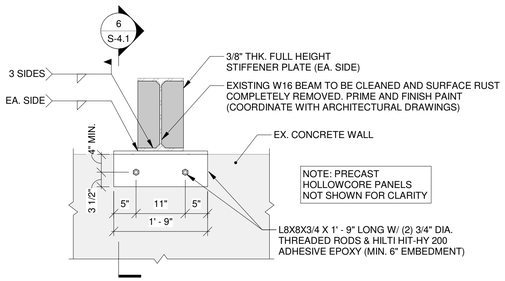
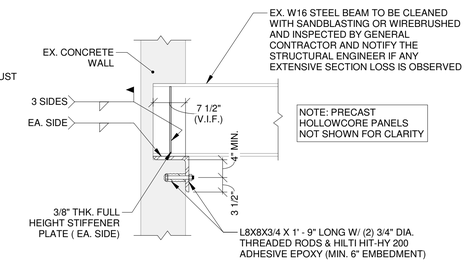
FRAMING DETAILS

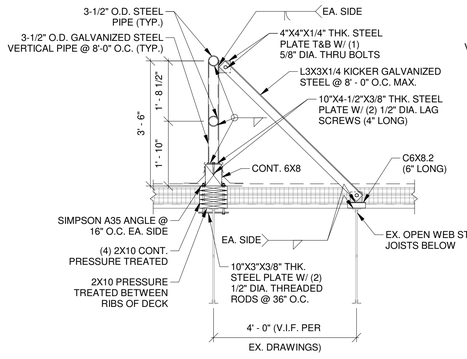
S-4.0

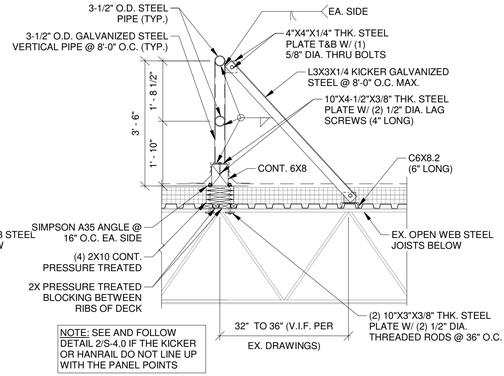


5 EX. STEEL BEAM TO CONCRETE WALL
3/4" = 1'-0"



6 EX. STEEL BEAM TO CONCRETE WALL SECTION
3/4" = 1'-0"

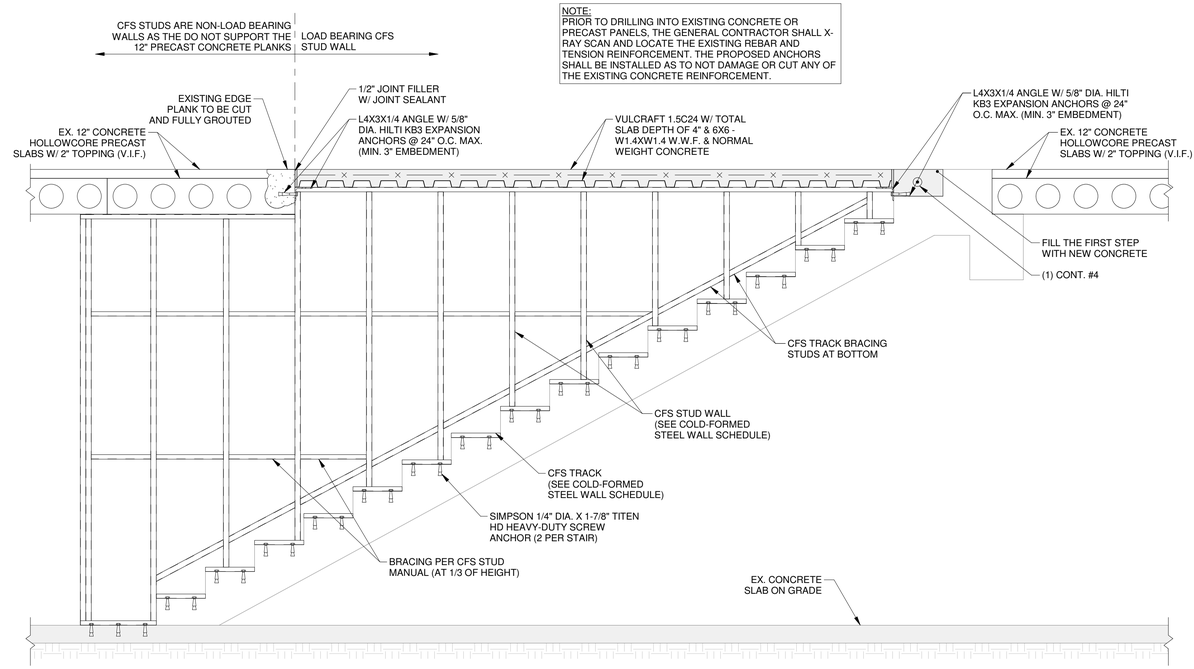




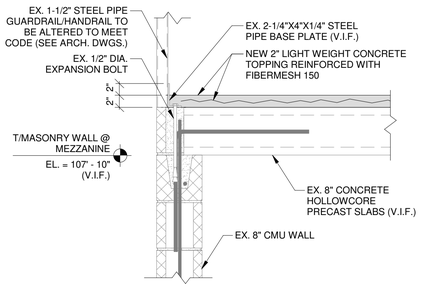
NOTE: SEE AND FOLLOW DETAIL 2/S-4.0 IF THE KICKER OR HANRAIL DO NOT LINE UP WITH THE PANEL POINTS

7 EQUIPMENT SUPPORT RAIL DETAIL 1
1/2" = 1'-0"

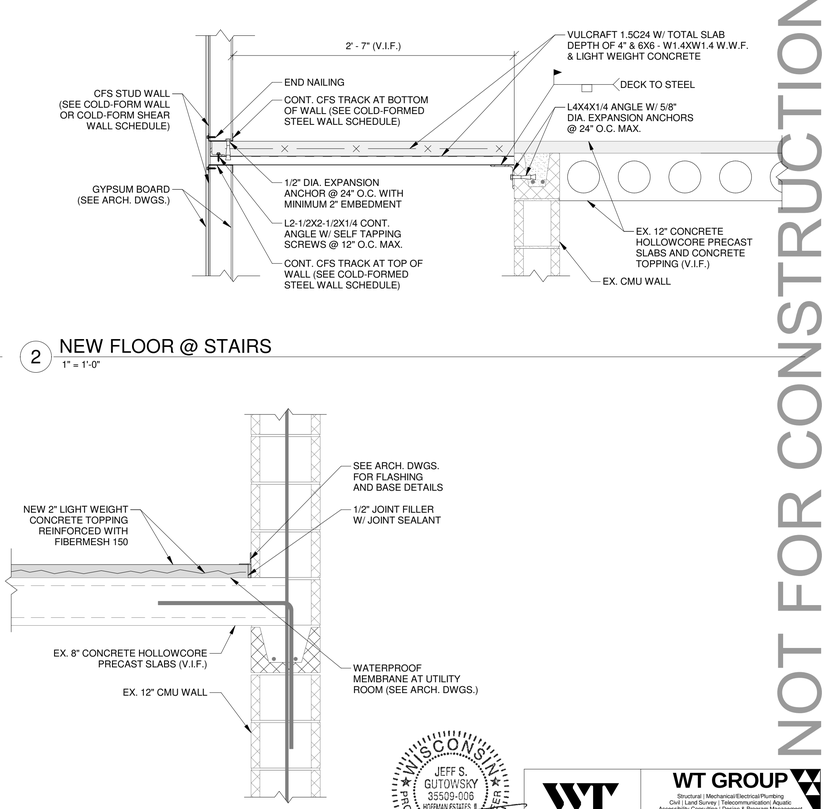
8 EQUIPMENT SUPPORT RAIL DETAIL 2
1/2" = 1'-0"



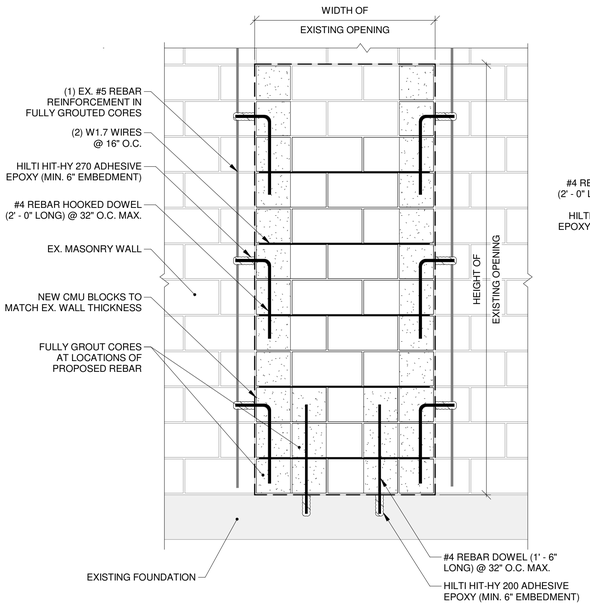
1 WALL SUPPORTED ON STAIRS ELEVATION
3/4" = 1'-0"



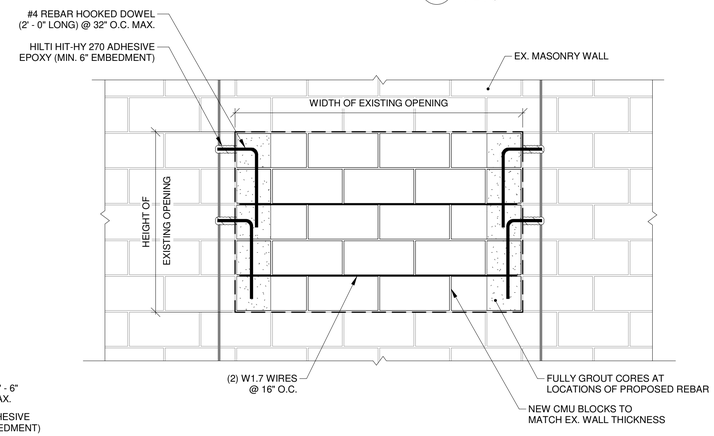
4 NEW CONC. ON 8" PANELS @ MEZZANINE
1" = 1'-0"



2 NEW FLOOR @ STAIRS
1" = 1'-0"



9 EXISTING CMU WALL OPENING INFILL DETAIL
3/4" = 1'-0"



3 NEW TOPPING ON 8" PANELS @ MEZZANINE
1" = 1'-0"

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ISSUE RECORD

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5	ISSUE FOR BID	06/08/21

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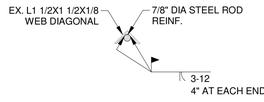
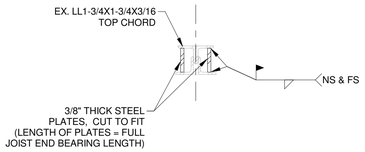
PROJECT NUMBER
2000765M

FRAMING DETAILS

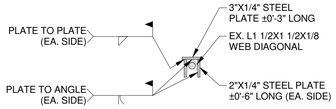
S-4.1



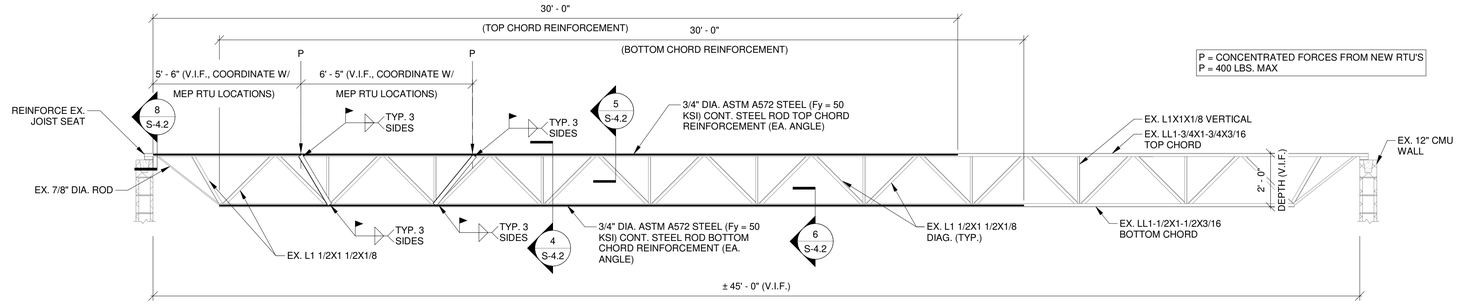
7 TYPICAL ANGLE WEB REINFORCEMENT
1 1/2" = 1'-0"



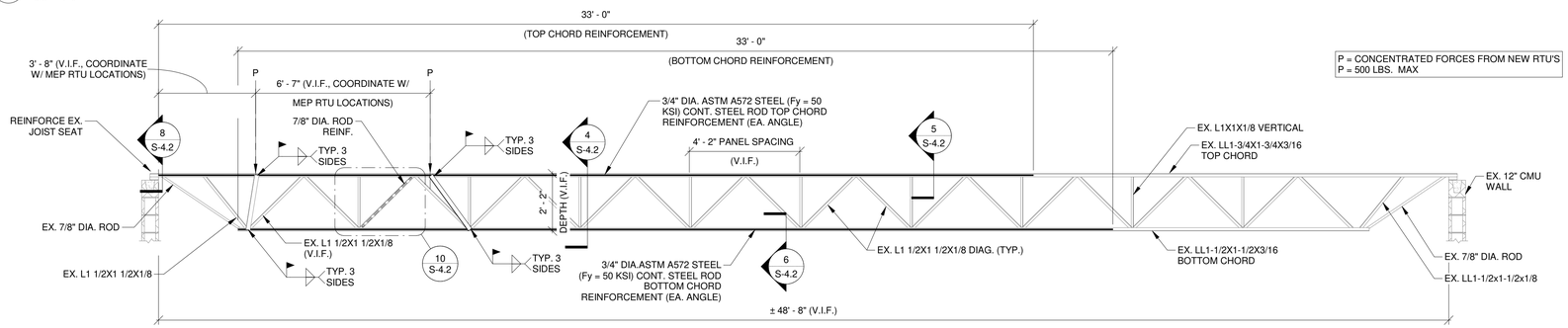
8 JOIST SEAT REINFORCEMENT
1 1/2" = 1'-0"



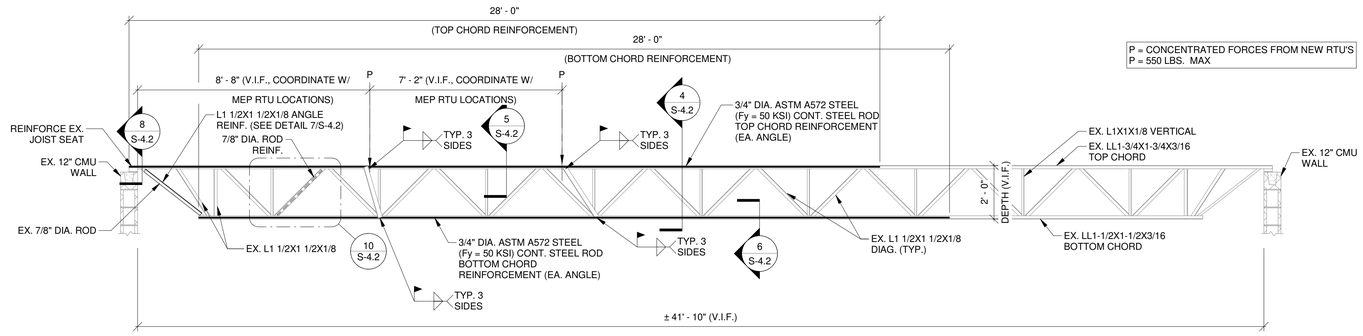
9 TYP. WEB CONNECTION REINFORCEMENT
1 1/2" = 1'-0"



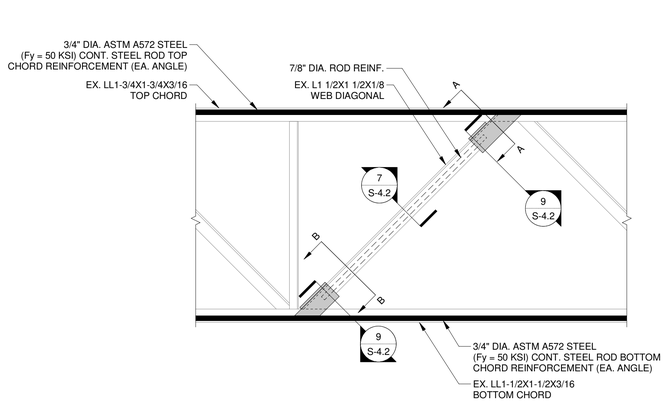
1 EX. OPEN WEB STEEL JOIST 24" DEEP (±45' - 0")
3/8" = 1'-0"



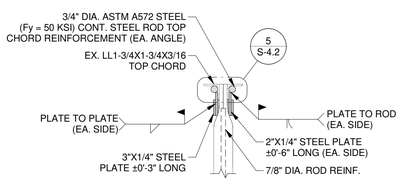
2 EX. OPEN WEB STEEL JOIST 26" DEEP (±48' - 8")
3/8" = 1'-0"



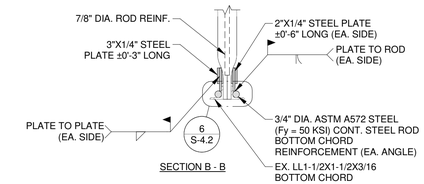
3 EX. OPEN WEB STEEL JOIST 24" DEEP (±42' - 0")
3/8" = 1'-0"



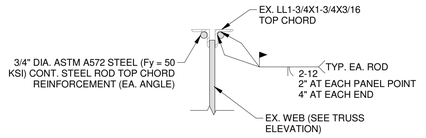
10 TYPICAL ANGLE WEB REINFORCEMENT ELEVATION VIEW
1 1/2" = 1'-0"



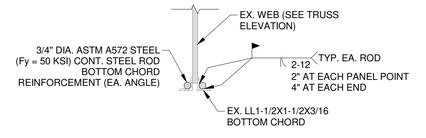
SECTION A - A



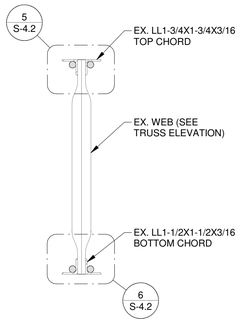
SECTION B - B



5 STEEL OPEN WEB JOIST TOP CHORD REINF.
1 1/2" = 1'-0"



6 STEEL OPEN WEB JOIST BOTTOM CHORD REINF.
1 1/2" = 1'-0"



4 STEEL OPEN WEB JOIST REINFORCEMENT
1 1/2" = 1'-0"

JEFF S. GUTOWSKY 35509-006 PROFESSIONAL ENGINEER WISCONSIN
SIGNED: 06/08/2021
EXP.: 07/31/2022

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FITCHBURG, WISCONSIN

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4
S-4.2

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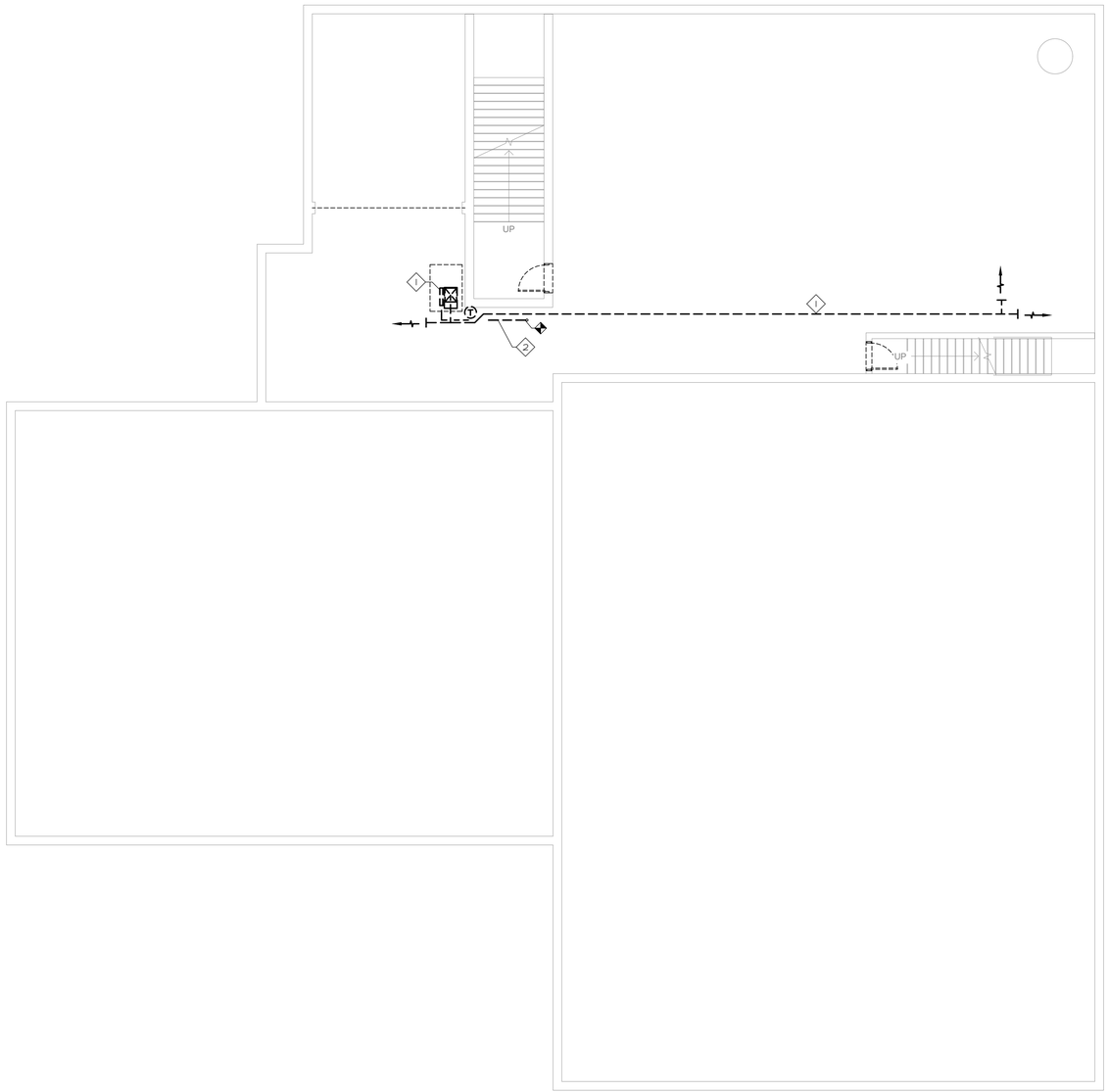

DEMOLITION KEYED NOTES

1. REMOVE EXISTING FURNACE AND ALL ASSOCIATED DUCTWORK, HANGERS AND REFRIGERANT AND DRAIN PIPING. REMOVE THERMOSTAT AND WIRING.
2. REMOVE GAS PIPING TO FURNACE. LEAVE STUB AT CEILING FOR NEW GAS CONNECTION. SEE NEW WORK PLANS.

1 MECHANICAL BASEMENT PLAN - DEMOLITION

SCALE 1/8" = 1'-0"

N

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MECHANICAL BASEMENT PLAN - DEMOLITION

MD1.0

WISCONSIN
MARK VENTRELLI
E-41380-6
HOFFMAN ESTATES
PROFESSIONAL ENGINEER

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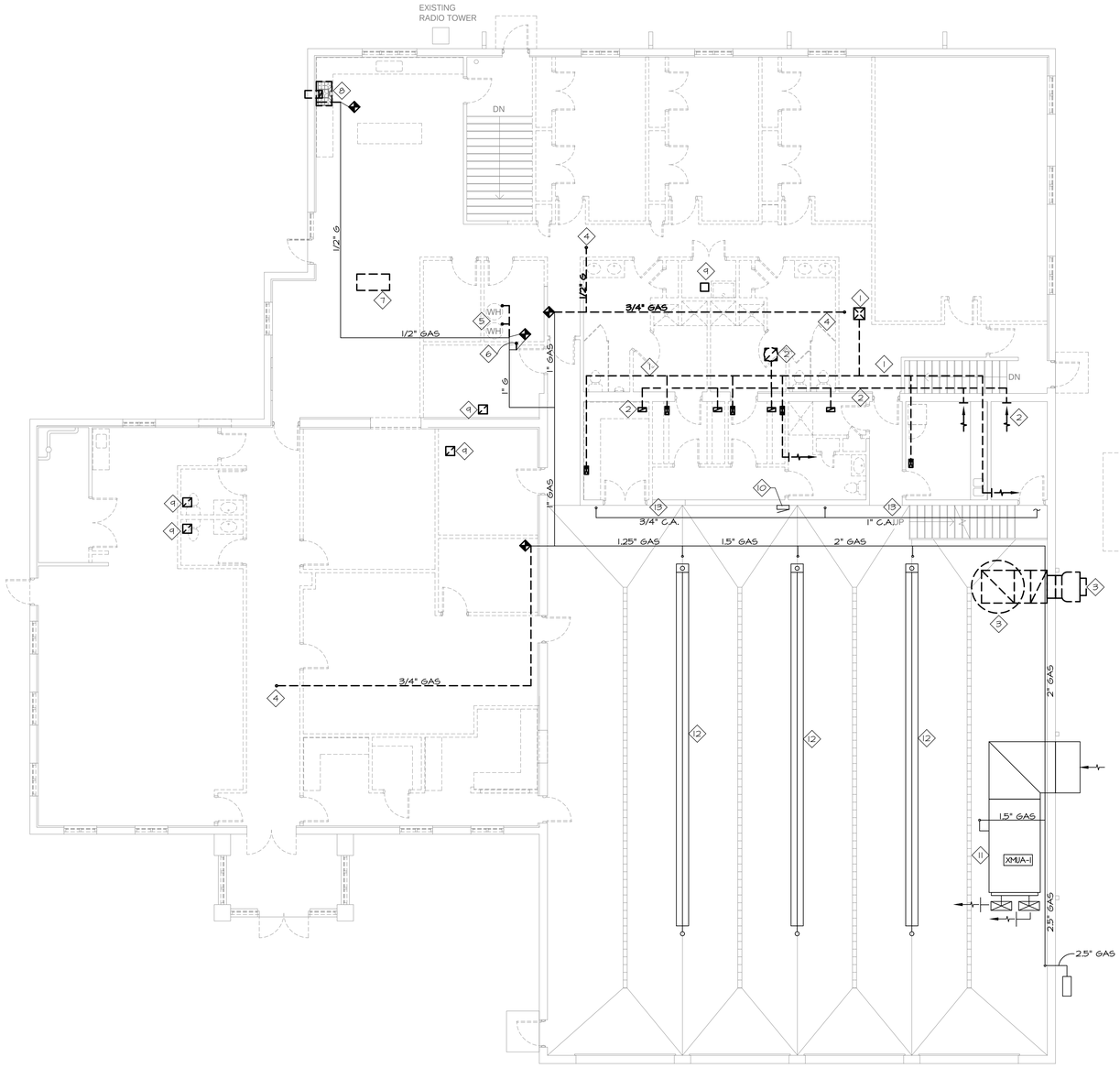

GENERAL DEMOLITION NOTES:

1. PATCH SURFACES TO MATCH EXISTING IN ALL WALLS, FLOORS, CEILINGS AND ROOF WHERE EXISTING EQUIPMENT, DUCTWORK AND PIPING IS REMOVED

DEMOLITION KEYED NOTES

1. COMPLETELY REMOVE ALL EXISTING SUPPLY AIR DUCTWORK AND ASSOCIATED AIR DEVICES.
2. REMOVE EXISTING EXHAUST AIR DUCTWORK AND ASSOCIATED AIR DEVICES.
3. REMOVE EXISTING ROOF MOUNTED AND WALL MOUNTED EXHAUST FANS AND ASSOCIATED DUCTWORK.
4. REMOVE SECTION OF GAS PIPING UP TO RTU.
5. REMOVE GAS PIPING FROM WATER HEATERS BACK TO MAIN AND CAP.
6. COMPLETELY REMOVE GAS PIPING DOWN IN WALL TO BASEMENT.
7. COMPLETELY REMOVE EXISTING CEILING MOUNTED AIR CLEANER UNIT.
8. REMOVE EXISTING RANGE HOOD AND ASSOCIATED DUCTWORK. REMOVE GAS PIPING TO RANGE BACK TO LOCATION SHOWN. SEE NEW WORK PLAN FOR RECONNECTION TO NEW RANGE.
9. REMOVE EXISTING CEILING MOUNTED EXHAUST FAN AND ALL ASSOCIATED DUCTWORK.
10. EXISTING GAS DETECTION CONTROL PANEL AND SYSTEM TO REMAIN. CONTRACTOR SHALL VERIFY PROPER OPERATION OF ALL COMPONENTS AND REPORT ANY DEFICIENCIES TO OWNER FOR DIRECTION.
11. EXISTING MAKE-UP AIR UNIT TO REMAIN. CONTRACTOR SHALL VERIFY PROPER OPERATION OF ALL COMPONENTS AND REPORT ANY DEFICIENCIES TO OWNER FOR DIRECTION.
12. EXISTING GAS FIRED RADIANT HEATERS TO REMAIN. CONTRACTOR SHALL VERIFY PROPER OPERATION OF ALL COMPONENTS AND REPORT ANY DEFICIENCIES TO OWNER FOR DIRECTION.
13. EXISTING COMPRESSED AIR PIPING AND DROPS TO REMAIN. SEE NEW WORK PLAN FOR RECONNECTION OF PIPING TO RELOCATED AIR COMPRESSOR.

1 MECHANICAL PLAN - DEMOLITION

SCALE 1/8" = 1'-0"

N

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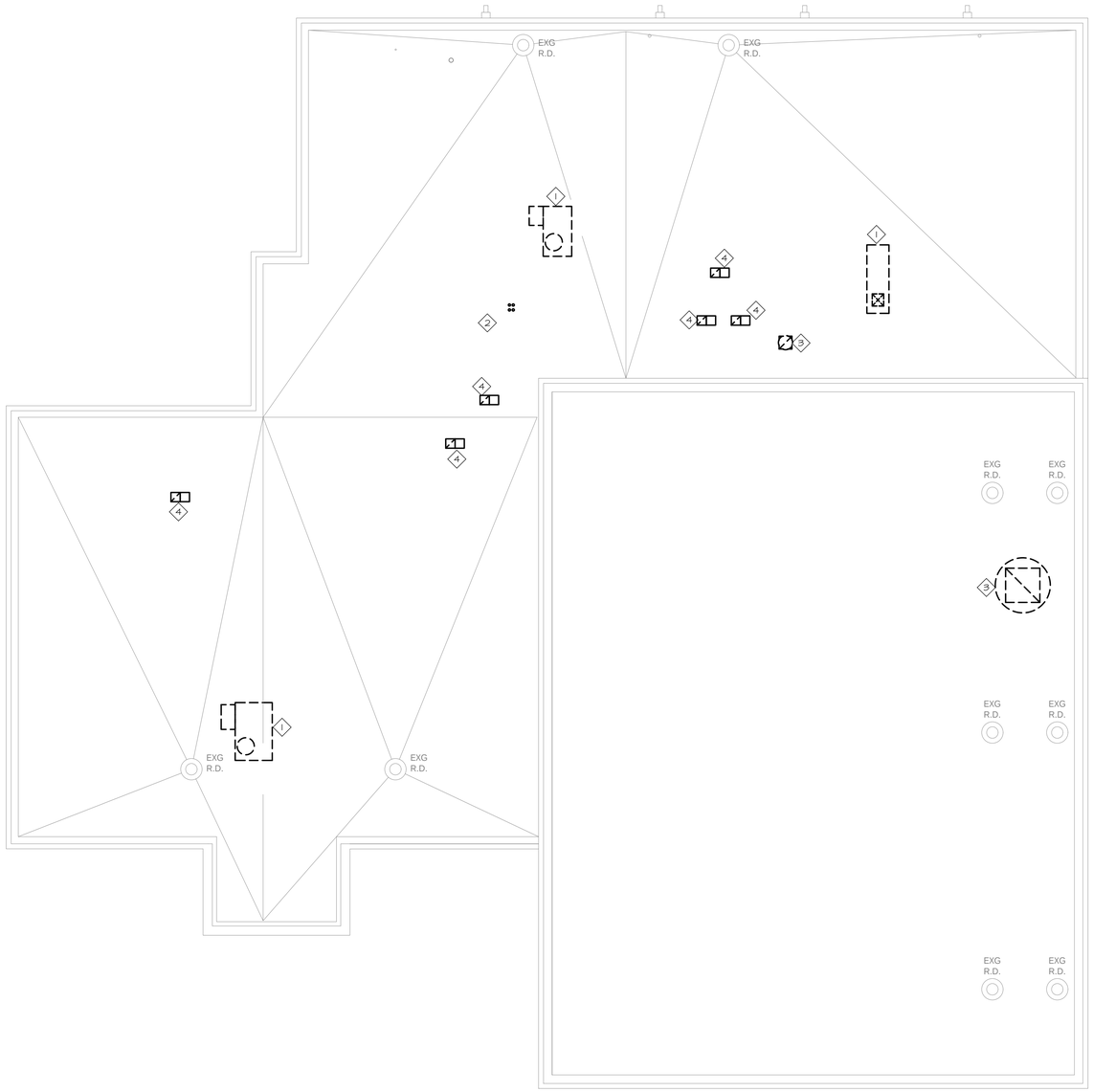
MECHANICAL PLAN - DEMOLITION

MD1.1



DEMOLITION KEYED NOTES

1. COMPLETELY REMOVE EXISTING ROOFTOP UNITS AND ALL ASSOCIATED DUCTWORK, GAS PIPING AND CONTROLS.
2. REMOVE PVC VENTING FROM WATER HEATER AND FURNACE.
3. REMOVE EXISTING EXHAUST FAN AND ASSOCIATED DUCTWORK.
4. REMOVE EXISTING GOOSENECK AND ASSOCIATED DUCTWORK.

1 MECHANICAL ROOF PLAN - DEMOLITION
SCALE 1/8" = 1'-0"

N

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MECHANICAL ROOF PLAN - DEMOLITION

MD1.2

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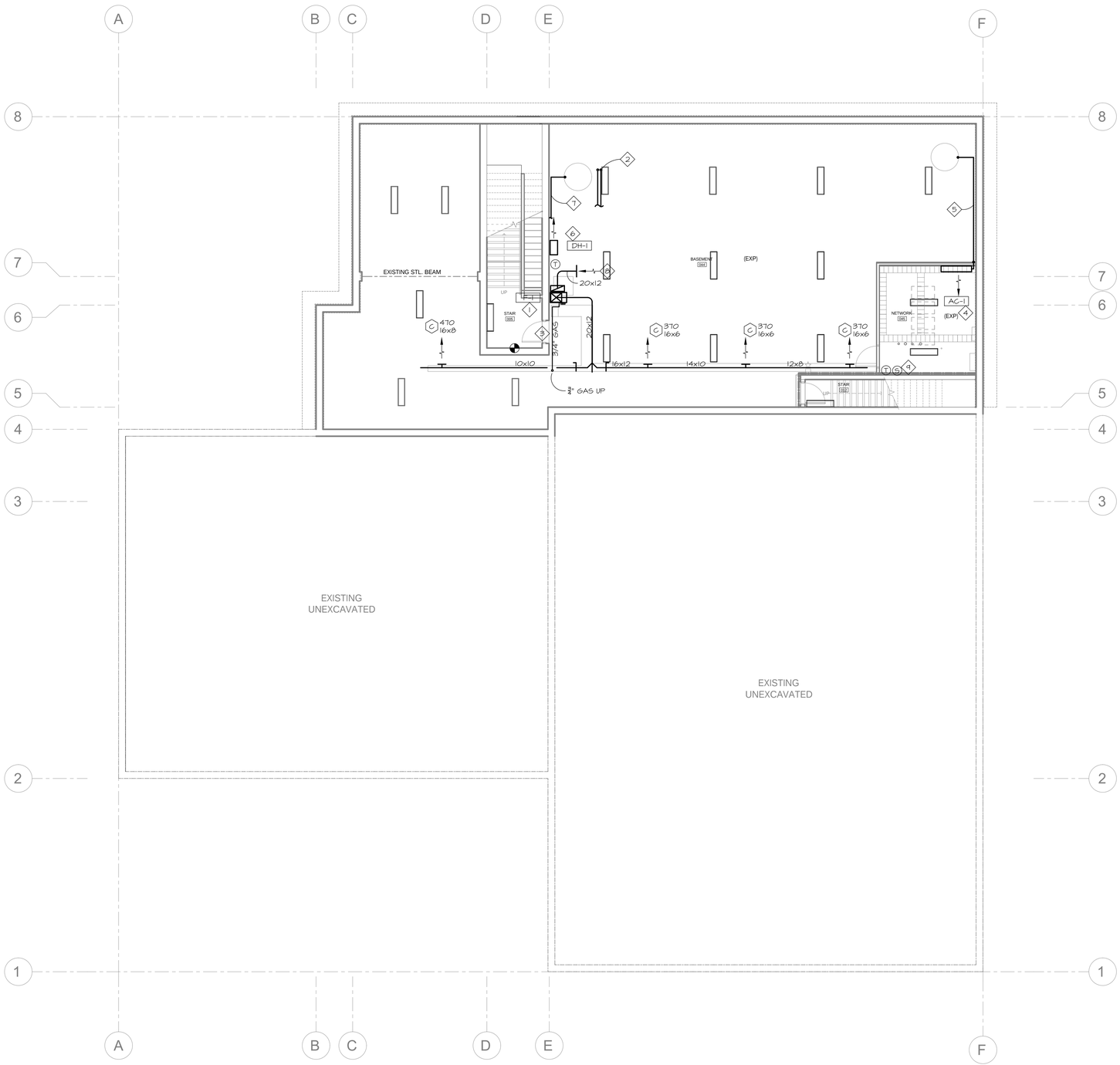

1 MECHANICAL BASEMENT PLAN - NEW WORK
SCALE 1/8" = 1'-0"

N

SEE SYMBOL LIST ON SHEET M2.1 FOR ABBREVIATIONS AND EQUIPMENT TAGGING
SEE AIR DEVICE SCHEDULE ON SHEET M2.0

NEW WORK KEYED NOTES

1. SET NEW FURNACE ON CONCRETE MAINTENANCE PAD WITH VIBRATION ISOLATION PADS. PROVIDE EXPOSED SUPPLY AND RETURN DUCTWORK ROUTED AS HIGH AS POSSIBLE.
2. PROVIDE PVC VENT AND INTAKE PIPING FROM NEW FURNACE AND ROUTE UP IN CHASE ON FLOOR ABOVE.
3. PROVIDE NEW GAS PIPING TO FURNACE FROM NEW GAS RISER AT CEILING. PROVIDE REGULATOR, GAS COCK, UNION AND DRIP LEG.
4. MOUNT DUCTLESS SPLIT INDOOR UNIT ON WALL AT 72" A.F.F. COORDINATE EXACT LOCATION WITH DATA EQUIPMENT TRAYS.
5. PROVIDE ¾" PVC DRAIN PIPING FROM AC-1 AND ROUTE TO SUMP PIT. ROUTE DOWN TO FLOOR OUTSIDE OF DATA ROOM.
6. PROVIDE 32"x20" SHELF FOR DEHUMIDIFIER AT 72" A.F.F. MAINTAIN MFR. REQUIRED CLEARANCES FOR AIRFLOW AND MAINTENANCE.
7. PROVIDE ¾" PVC DRAIN PIPING FROM FURNACE AND DEHUMIDIFIER, ROUTE TIGHT ALONG WALL TO SUMP PIT.
8. PROVIDE OPEN ENDED DUCT WITH WIRE MESH SCREEN.
9. PROVIDE TEMPERATURE SENSOR WIRED TO BAS TO MONITOR SPACE TEMPERATURE.

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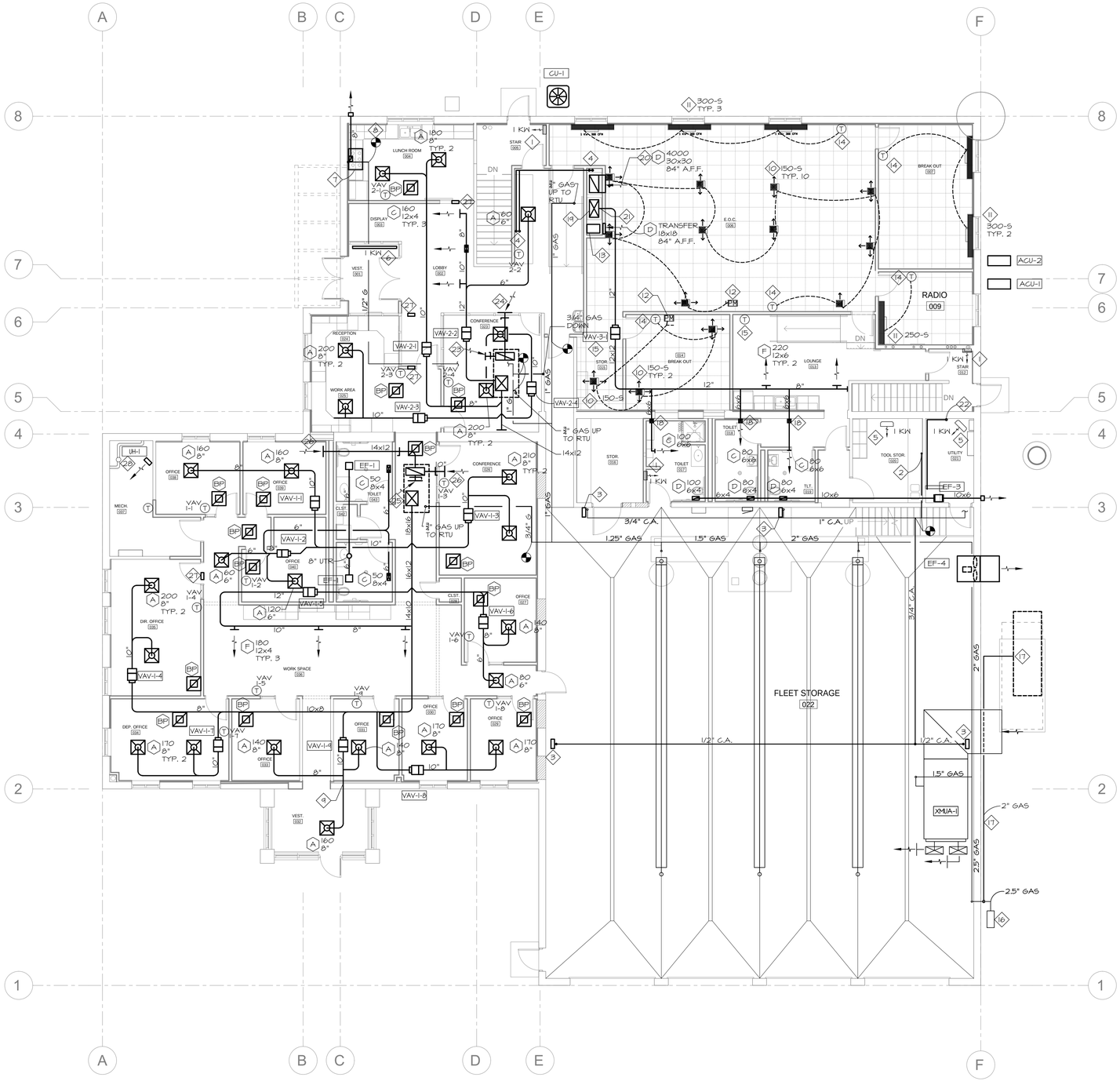
MECHANICAL BASEMENT PLAN - NEW WORK

M1.0



1 MECHANICAL PLAN - NEW WORK

SCALE 1/8" = 1'-0"

N

SEE SYMBOL LIST ON SHEET M2.1 FOR ABBREVIATIONS AND EQUIPMENT TAGGING

SEE AIR DEVICE SCHEDULE ON SHEET M2.0

NEW WORK KEYED NOTES

1. ELECTRIC WALL HEATER FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
2. PROVIDE ½" COMPRESSED AIR DROP WITH SHUT-OFF VALVE AND QUICK CONNECT FITTING. PROVIDE AN ADJUSTABLE PRESSURE REGULATOR NEAR TERMINATION OF DROP.
3. PROVIDE HOSE REEL EQUAL TO "REELCRAFT" SERIES 5005 WITH 50 FT. OF ⅜" HOSE AND QUICK DISCONNECT. PROVIDE ½" COMPRESSED AIR PIPING TO HOSE REEL. VERIFY EXACT LOCATION OF COMPRESSED AIR REELS IN FIELD WITH THE OWNER. PROVIDE AN ADJUSTABLE PRESSURE REGULATOR AT CONNECTION TO HOSE REEL.
4. FURNACE PVC VENT AND INTAKE PIPING UP AND DOWN, OFFSET AT CEILING AND ROUTE UP THRU ROOF.
5. ELECTRIC UNIT HEATER FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
6. ELECTRIC PEDESTAL HEATER FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
7. PROVIDE 36" WIDE RANGE HOOD EQUAL TO BROAN MODEL BCSD1, 250 CFM, 2 SPEED FAN WITH LIGHTS. 1.4 AMP, 120-1-60. PROVIDE EXHAUST DUCT FROM HOOD CONNECTION TO WALL CAP.
8. PROVIDE ½" GAS PIPING FROM EXISTING TO NEW RANGE. PROVIDE REGULATOR, GAS COCK, DRIP LEG AND FLEX CONNECTOR.
9. REUSE EXISTING OPENING THRU MASONRY WALL. VERIFY EXACT SIZE AND LOCATION OF EXISTING OPENING IN FIELD.
10. PROVIDE 10" VAV UNDERFLOOR AIR TERMINAL EQUAL TO AIRFIXTURE TYPE MIT3-CSH, 10"x10" VAV DIFFUSERS RATED FOR 24V. PROVIDE THE APPROPRIATE INTERCONNECTING WIRING WITH AIRFIXTURE PROVIDED PLUG & PLAY CABLE AND POWER MODULES. REFER TO DETAIL ON SHEET M3.0. BALANCE TO AIRFLOW SHOWN.
11. PROVIDE VAV UNDERFLOOR AIR DISTRIBUTION LINEAR TERMINAL UNIT EQUAL TO AIRFIXTURE TYPE CLEMIT, MODEL CLE-08-072-08-40-12-10-1VL. TERMINAL UNIT RATED FOR 120V. PROVIDE WITH 1 KW ELECTRIC ELEMENT (120-1-60). FLANGED LINEAR GRILLE, 72"Lx8"Wx8"H. PROVIDE THE APPROPRIATE INTERCONNECTING WIRING WITH AIRFIXTURE PROVIDED PLUG & PLAY CABLE AND POWER MODULES. REFER TO DETAIL ON SHEET M3.0. BALANCE TO AIRFLOW SHOWN ON PLAN.
12. UNDERFLOOR POWER MODULE JUNCTION BOX. EQUAL TO AIRFIXTURE MODEL PM-4. REFER TO DETAIL ON SHEET M3.0.
13. PROVIDE UNDERFLOOR FAN TERMINAL UNIT (COOLING ONLY) EQUAL TO AIRFIXTURE MODEL UFO-15-5-EC-12-000, 15" HIGH, 1200 CFM, VARIABLE SPEED EC MOTOR, 120 VOLT. INTERLOCK WITH RT-4 OPERATION.
14. THERMOSTAT ZONE CONTROLLER EQUAL TO AIRFIXTURE MODEL TEC-3622. TOUCHSCREEN DISPLAY. BACNET COMPATIBLE. PROPORTIONAL POSITION CONTROL.
15. PROVIDE VAV BOX IN SUPPLY DUCT. DAMPER AND REHEAT COIL SHALL BE CONTROLLED BY BAS THRU THE THERMOSTAT.
16. APPROXIMATE LOCATION OF EXISTING GAS METER. CONTRACTOR SHALL CONTACT THE LOCAL GAS PROVIDER TO DETERMINE IF THE EXISTING METER HAS SUFFICIENT CAPACITY FOR THE NEW GAS LOAD. THE CONTRACTOR SHALL ORDER A NEW METER IF REQUIRED AND PROVIDE ALL REQUIRED DOCUMENTS. THE GAS METER SHALL PROVIDE 2 PSIG PRESSURE. THE CONTRACTOR SHALL PROVIDE ALL NEW DOWNSTREAM PIPING INCLUDING ALL VALVES, REGULATORS, SUPPORTS, HANGERS AND ANY ASSOCIATED APPARATUS.
17. PROVIDE NEW GAS PIPING TO NEW GENERATOR FROM EXISTING HEADER AT GAS METER. ROUTE ALONG EXTERIOR WALL. PROVIDE NEW "SENSUS" REGULATOR SIZED FOR GENERATOR FLOW RATE AND REQUIRED INLET PRESSURE. PROVIDE GAS COCK, UNION AND DRIP LEG. INSTALL GAS PIPING PER GENERATOR MFR. RECOMMENDATIONS. (3400 CFH)
18. ROUTE DUCT THRU MEZZANINE. RE-USE EXISTING OPENINGS THRU MASONRY WALL AND CONCRETE PLANK FLOOR OF MEZZANINE. SEE MEZZANINE PLAN.
19. ROUTE 30x16 SUPPLY RISER DOWN TO FLOOR AND ELBOW TOWARDS CENTER OF E.O.C. OPEN ENDED DUCT WITH WIRE MESH SCREEN
20. 30x16 RETURN AIR RISER FROM RTU. PROVIDE DUCTING TO RETURN AIR GRILLE. VERIFY EXACT ELEVATION OF RETURN GRILLE WITH ARCHITECTURAL PLANS.
21. PROVIDE BRANCH TAKE-OFF WITH SCOOP DAMPER.
22. ¾" DRAIN FROM AC UNIT ABOVE. ROUTE TO MOP SINK.
23. PROVIDE A 10x10 RETURN DUCT STUB WITH MVD ABOVE CONFERENCE ROOM CEILING. PROVIDE WIRE MESH SCREEN.
24. PROVIDE 16x12 RETURN DUCT FROM RTU RISER. ROUTE THRU WALL AND PROVIDE A 22x14 TYPE D WALL GRILLE.
25. PROVIDE A 24x14 RETURN DUCT STUB FROM RISER WITH MVD ABOVE CEILING. PROVIDE WIRE MESH SCREEN ON INLET.
26. PROVIDE OPEN ENDED RETURN DUCT STUB WITH MVD ABOVE CEILING. PROVIDE WIRE MESH SCREEN ON INLET.
27. PROVIDE 12x12 TRANSFER OPENING THRU WALL AS HIGH AS POSSIBLE. PROVIDE WIRE MESH SCREEN ON BOTH SIDES.
28. HOT WATER UNIT HEATER. SEE HOT WATER PIPING PLAN AND PIPING DETAIL.

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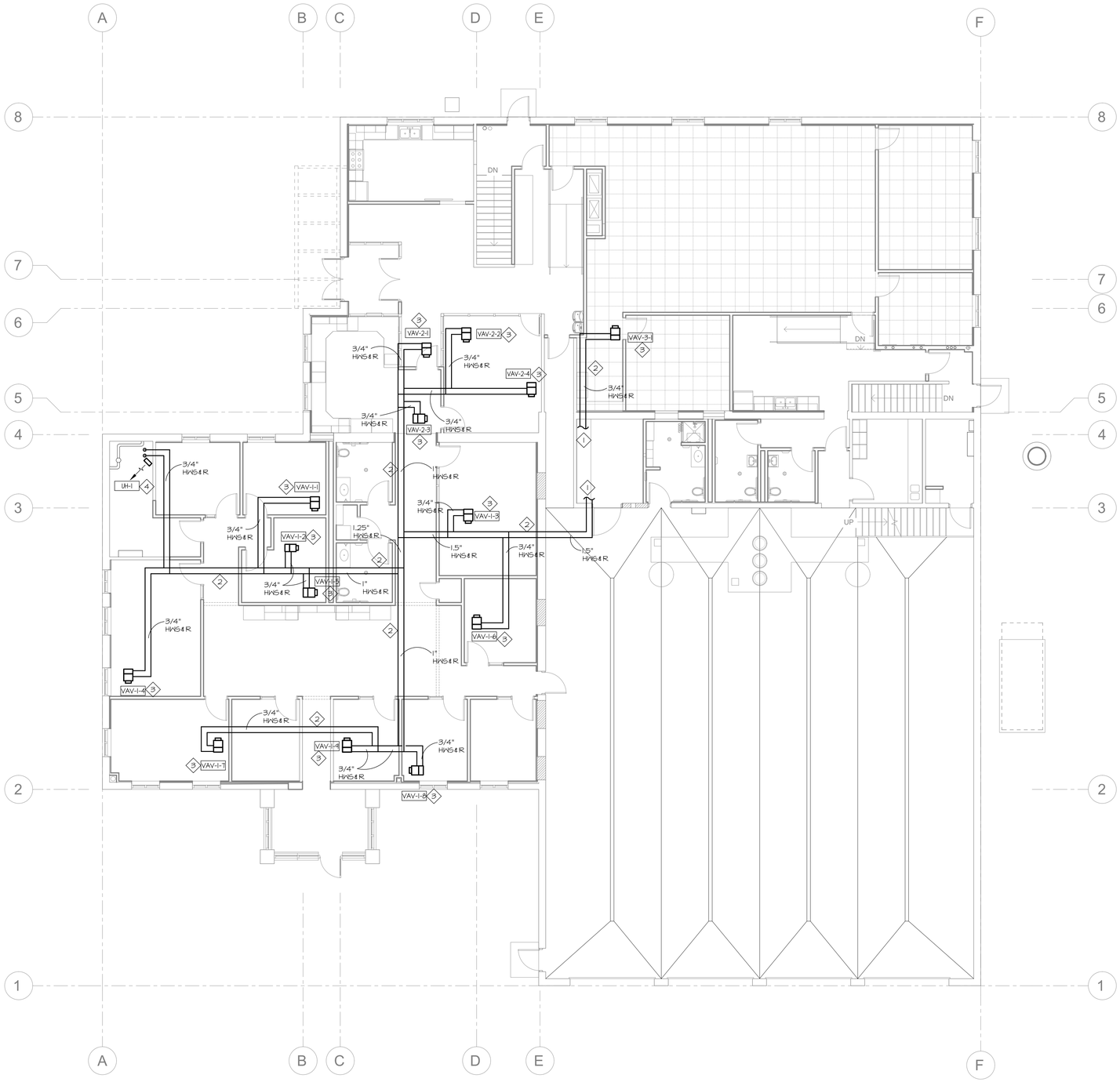
MECHANICAL PLAN - NEW WORK

M1.1



1 MECHANICAL PIPING PLAN - NEW WORK

SCALE 1/8" = 1'-0"

N

CONTRACTOR SHALL COORDINATE ALL NEW AND EXISTING DUCTWORK, PIPING, AND OTHER EQUIPMENT WITH ALL OTHER TRADES AND BUILDING SYSTEMS

NEW WORK KEYED NOTES

1. PIPING FROM BOILER ON MEZZANINE. SEE MEZZANINE PLAN FOR LOCATION OF BOILER AND ASSOCIATED PUMPS.
2. ROUTE HOT WATER PIPING IN JOIST SPACE.
3. PROVIDE PIPING TO VAV BOX PER DETAIL ON SHEET M2.2
4. PROVIDE PIPING TO UNIT HEATER PER DETAIL ON SHEET M2.2

NOT FOR CONSTRUCTION

DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY
FITCHBURG, WISCONSIN

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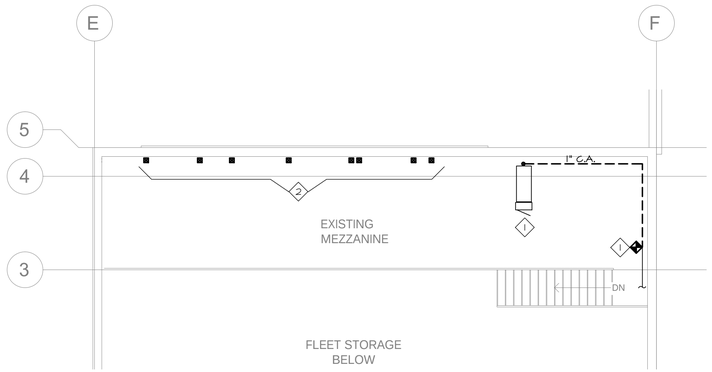
MECHANICAL PIPING PLAN - NEW WORK

M1.2

DEMOLITION KEYED NOTES

1. RELOCATE EXISTING AIR COMPRESSOR TO NEW UTILITY ROOM. SEE SHEET M1.3. REMOVE COMPRESSED AIR PIPING AT UNIT BACK TO MAIN AT CEILING.
2. REMOVE EXISTING DUCTWORK PENETRATING MEZZANINE WALL AND FLOOR SLAB. SEE STRUCTURAL AND ARCHITECTURAL DRAWINGS FOR PATCHING OF WALL AND FLOOR OPENINGS.



1 MECHANICAL MEZZANINE PLAN - DEMOLITION

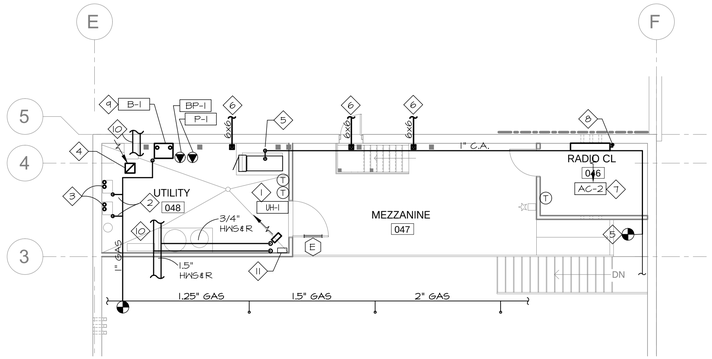
SCALE 1/8" = 1'-0"

N

SEE SYMBOL LIST ON SHEET M2.1 FOR ABBREVIATIONS AND EQUIPMENT TAGGING
SEE AIR DEVICE SCHEDULE ON SHEET M2.0

NEW WORK KEYED NOTES

1. HOT WATER UNIT HEATER. SEE HOT WATER PIPING PLAN AND PIPING DETAIL.
2. PROVIDE ¾" GAS PIPING TO WATER HEATER WITH REGULATOR, GAS COCK, UNION AND DRIP LEG.
3. PROVIDE VENT AND INTAKE FROM WATER HEATER AND ROUTE UP THRU ROOF. PROVIDE CONCENTRIC TERMINATION PER MFR. RECOMMENDATIONS.
4. OPEN ENDED DUCT FROM EF ON ROOF. PROVIDE WIRE MESH SCREEN ON INLET.
5. RELOCATED AIR COMPRESSOR. PROVIDE NEW COMPRESSED AIR PIPING TO EXISTING MAIN. VERIFY EXACT SIZE AND LOCATION OF CONNECTION AT COMPRESSOR AND EXISTING MAIN IN FIELD.
6. ROUTE SUPPLY DUCTWORK FROM RTU-3 BELOW NEW STAIR AND DOWN THRU FLOOR. SEE 1ST FLOOR PLAN FOR CONTINUATION. SEE SECTION ON THIS SHEET.
7. MOUNT DUCTLESS SPLIT INDOOR UNIT ON WALL AT 72" A.F.F. COORDINATE EXACT LOCATION WITH OTHER WALL MOUNTED EQUIPMENT.
8. PROVIDE ¾" PVC DRAIN PIPING FROM AC UNIT AND ROUTE DOWN THRU FLOOR. SEE SHEET M1.1 FOR CONTINUATION.
9. PROVIDE ¾" GAS PIPING TO BOILER WITH REGULATOR, GAS COCK, UNION AND DRIP LEG. PROVIDE VENT AND INTAKE FROM BOILER AND ROUTE UP THRU ROOF. PROVIDE CONCENTRIC TERMINATION PER MFR. RECOMMENDATIONS.
10. HOT WATER PIPING TO VAV BOXES. SEE SHEET MP1.1 FOR CONTINUATION.
11. LOCATE BAS PANEL IN UTILITY ROOM. COORDINATE EXACT LOCATION WITH OTHER TRADES.



2 MECHANICAL MEZZANINE PLAN - NEW WORK

SCALE 1/8" = 1'-0"

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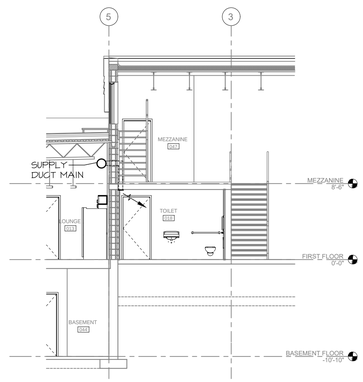

3 SECTION

SCALE 1/8" = 1'-0"

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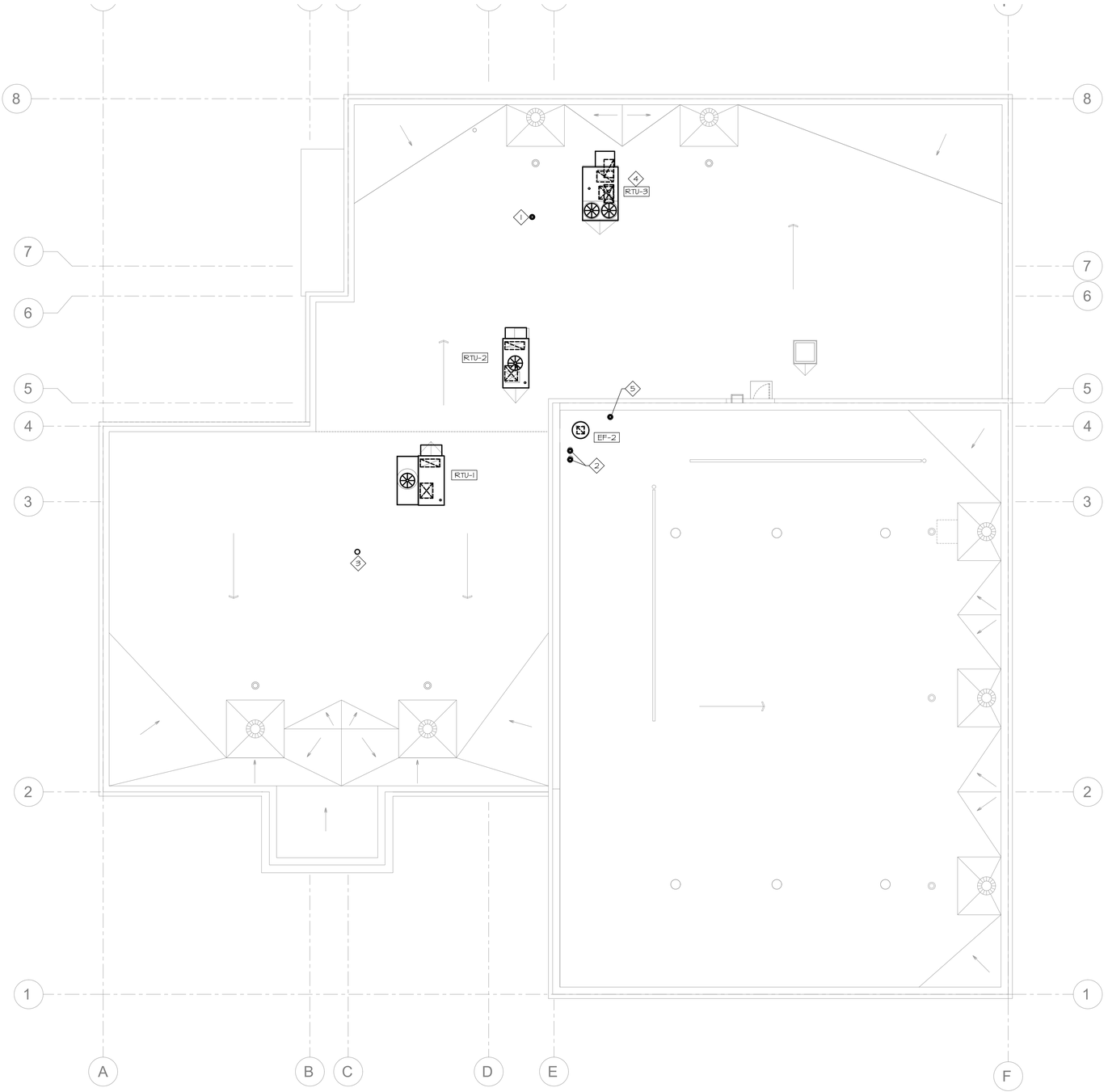
MEZZANINE PLAN - DEMO AND NEW WORK

M1.3



NEW WORK KEYED NOTES

1. CONCENTRIC VENT TERMINATION FROM FURNACE
2. CONCENTRIC VENT TERMINATION FROM WATER HEATER
3. GOOSENECK EXHAUST TERMINATION. SEE DETAIL 1/M2.1.
4. PROVIDE ADAPTER CURB TO ALLOW SUPPLY AND RETURN RISER TO DROP DIRECTLY DOWN IN CHASE BELOW. SEE SHEET M1.1.
5. CONCENTRIC VENT TERMINATION FROM BOILER

1 MECHANICAL ROOF PLAN - NEW WORK

SCALE 1/8" = 1'-0"

N

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MECHANICAL ROOF PLAN - NEW WORK

M1.4

PACKAGED GAS HEATING / ELECTRIC COOLING ROOFTOP UNIT SCHEDULE

ITEM TAG	MANUFACTURER AND MODEL NUMBER	NOMINAL TONS	ARI SEER/EER	BLOWER SECTION				COOLING CAPACITY				HEATING CAP.		ELECTRICAL DATA				AREA SERVING	UNIT WEIGHT (LBS)	REMARKS
				SUPPLY CFM	MIN. O.A. CFM	ESP	HP	REFRIG. TYPE	REFRIG. LBS	SENS. MBH	TOTAL MBH	INPUT MBH	OUTPUT MBH	VOLT-PH-HZ	INT. C.O.	MCA	MOCP			
RTU-1	"AAON" RN-008-2-0-EB0A-3K9;A000-D0B-DCD-000-0IEAA0D-00-0000000VB	8.0	13.9 / 11.9	3000	750	0.85"	2.0	R-410A	18.0	77.34	95.6	150	120	208-3-60	NO	45	60	SOUTH OFFICES	1470	1-14, 17, 18, 19
RTU-2	"AAON" RQ-004-8-V-EB0A-334;A000-D0B-QJD-000-0IEAA0D-00-0000000VB	4.0	15.9 / 13.6	1600	400	0.8"	2.0	R-410A	10.0	41.0	50.8	100	81	208-3-60	NO	30	45	LOBBY, KITCHEN, RECEPTION	1140	1-14, 17, 18, 19
RTU-3	"YORK" #ZR120518	10.0	12.1 / 11.2	4,000	800	0.75"	3.0	R-410A	8.12 7.8	94.9	123.1	180	144	208-3-60	NO	51.7	60	EOC	1630	1-16, 18

REMARKS:

1. VERIFY EXACT VOLTAGE IN THE FIELD AND WITH ELECTRICAL CONTRACTOR PRIOR TO ORDERING.
2. MAINTAIN MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES.
3. OUTSIDE AIR INTAKE SHALL BE A MINIMUM OF 10'-0" AWAY FROM ANY EXHAUST DISCHARGE.
4. PROVIDE PREFABRICATED INSULATED FULL PERIMETER ROOF CURB LEVELED 14" HIGH. SEE PLANS FOR ADAPTER CURB REQUIREMENTS.
5. PROVIDE FLEXIBLE CANVAS CONNECTIONS AT SUPPLY AND RETURN DUCT CONNECTIONS.
6. PROVIDE GAS PIPING TO UNIT WITH REGULATOR, UNION, GAS COCK AND DIRT LEG.
7. PROVIDE FILTER TRAY WITH 2" THICK THROW AWAY FILTERS, 5.5. DRAIN PAN.
8. PROVIDE DIRECT DRIVE EVAPORATOR FAN MOTOR WITH VFD.
9. PROVIDE WITH ADJUSTABLE TEMPERATURE SENSORS TIED INTO THE BUILDING AUTOMATION SYSTEM.
10. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL FIELD MOUNTED DISCONNECT SWITCH. DISCONNECT SHALL NOT BE MOUNTED ON UNIT NAMEPLATE.
11. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL CONVENIENCE OUTLETS. REFER TO ELECTRICAL PLANS FOR LOCATIONS OF OUTLETS.
12. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL A RETURN DUCT MOUNTED SMOKE DETECTOR. DETECTOR SHALL BE WIRED AS REQUIRED BY LOCAL CODES.
13. PROVIDE FULLY MODULATING MOTORIZED ECONOMIZER WITH O.A. TEMP SENSORS AND BAROMETRIC RELIEF DAMPER. INTERLOCK ECONOMIZER WITH THERMOSTAT OCCUPIED/UNOCCUPIED SETTING. ECONOMIZER DAMPER SHALL CLOSE WHEN THERMOSTAT IS IN UNOCCUPIED MODE. PROVIDE WITH LOW LEAK DAMPERS, FAULT DETECTION AND DIAGNOSTICS. ALL ECONOMIZER INPUTS AND OUTPUTS SHALL BE CONTROLLED THRU THE BAS. SEE TEMPERATURE CONTROLS SPECIFICATION.
14. PROVIDE HAIL GUARDS.
15. PROVIDE 2 STAGE COOLING AND HEATING. PROVIDE VFD ON SUPPLY MOTOR FOR SINGLE ZONE VAV OPERATION. PROVIDE WITH DISCHARGE AIR, RETURN AIR AND OUTDOOR AIR TEMP. SENSORS.
16. PROVIDE UNIT WITH ADAPTIVE DEHUMIDIFICATION SYSTEM.
17. PROVIDE WITH MODULATING GAS MODULE AND HOT GAS REHEAT.
18. PROVIDE UNIT WITH TERMINAL STRIP FOR FULL CONTROL TO THE BAS. TEMPERATURE CONTROL CONTRACTOR SHALL PROVIDE ALL WIRING, COMPONENTS AND PROGRAMMING FOR A FULLY OPERATIONAL UNIT. SEE TEMPERATURE CONTROLS SPECIFICATIONS.
19. PROVIDE WITH MULTI-ZONE VAV CONFIGURATION. PROVIDE WITH MODULATING VARIABLE CAPACITY COMPRESSOR.

AIR DEVICE SCHEDULE

ITEM TAG	MANUFACTURER AND MODEL NUMBER	TYPE	DESCRIPTION	REMARKS
A	"PRICE" #SPD	24"x24" LAYIN DIFFUSER	PLAQUE FACE SUPPLY CEILING DIFFUSER	1, 2, 3
B	"PRICE" #PDDR	24"x24" LAYIN RETURN	PERFORATED RETURN CEILING DIFFUSER FOR DUCTED RETURN	1, 2, 3
BP	"PRICE" #PFRF	24"x24" LAYIN RETURN PANEL	PERFORATED RETURN CEILING DIFFUSER FOR NON-DUCTED RETURN	3
C	"PRICE" #520	SUPPLY REGISTER	DOUBLE DEFLECTION ADJUSTABLE BLADE, ALUMINUM	1, 2, 3
D	"PRICE" #530	RETURN / EXHAUST GRILLE	SINGLE DEFLECTION ANGLED FIXED 45 DEG BLADE, ALUMINUM	1, 2, 3
E	"PRICE" #ATG1	DOOR GRILLE	DOUBLE SIDE FLANGE, NON-VISION, ALUMINUM 24"x12"	-
F	"PRICE" #SDG	SPIRAL DUCT MOUNTED GRILLE	DOUBLE DEFLECTION ADJUSTABLE BLADE WITH AIR SCOOP DAMPER/EXTRACTOR	-

REMARKS:

1. PROVIDE OPPOSED BLADE DAMPERS.
2. PROVIDE ADAPTER BOOTS AND INSULATED PLENUM BOXES AS REQUIRED.
3. PROVIDE MATTE WHITE FINISH IN LAY-IN AND DRYWALL AREAS. COORDINATE FINISH WITH ARCHITECT.

GAS FIRED FURNACE SCHEDULE

ITEM TAG	MANUFACTURER AND MODEL NUMBER	CFM	ESP	INPUT (BTUH)	OUTPUT (BTUH)	ELECTRICAL DATA				AREA SERVING	VENT SIZES	UNIT WEIGHT (LBS)	REMARKS
						VOLT-PH-HZ	HP	MAX AMPS	FUSE				
F-1	"YORK" #TM1E080C16MP12	1580	0.50"	80,000	76000	115-1-60	1/2	8.4	15	BASEMENT	2" V 2" CA	184	ALL

REMARKS:

1. PROVIDE 3/4" GAS PIPE CONNECTION WITH REGULATOR, UNION, 6" MIN. DIRT LEG, AND SHUT-OFF VALVE.
2. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL DISCONNECT SWITCH.
3. PROVIDE FLEXIBLE CANVAS CONNECTION AT INLET AND DISCHARGE DUCT CONNECTIONS TO UNIT.
4. PROVIDE PVC VENT PIPING AND CONCENTRIC TERMINATION KIT INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
5. PROVIDE 1" THROW AWAY FILTER AND SIDE RACK.
6. PROVIDE BACNET PROGRAMMABLE THERMOSTAT. INTEGRATE TO BAS.
7. MOUNT UNIT ON 4" HIGH CONCRETE HOUSEKEEPING PAD.

DUCT FREE SPLIT SYSTEM HIGH WALL INDOOR UNIT

ITEM TAG	MANUFACTURER AND MODEL NUMBER	NOMINAL TONS	CFM	REFRIG. TYPE	ELECTRICAL DATA			PARTNER CONDENSING UNIT TAG	AREA SERVING	UNIT WEIGHT (LBS)	REMARKS
					VOLT-PH-HZ	FLA	MOCP				
AC-1	"YORK" #DHP36NNB21S	3.0	730	R-410A	208-1-60	0.6	15	ACU-1	NETWORK 045	52	ALL
AC-2	"YORK" #DHP24NNB21S	2.0	650	R-410A	208-1-60	0.6	15	ACU-2	RADIO ROOM 046	40	ALL

REMARKS:

1. VERIFY EXACT VOLTAGE IN FIELD PRIOR TO ORDERING.
2. PROVIDE BACNET TEMPERATURE SENSOR AND INTEGRATE TO BAS..
3. PROVIDE UNIT WITH WALL MOUNTED THERMOSTAT WITH CLEAR LOCKABLE COVER.
4. PROVIDE CONDENSATE PUMP AS REQUIRED.
5. UNIT SHALL BE POWERED FROM ASSOCIATED OUTDOOR UNIT'S POWER SOURCE. REFER TO MANUFACTURER'S WIRING DIAGRAMS.

DUCT FREE SPLIT SYSTEM OUTDOOR CONDENSING UNIT

ITEM TAG	MANUFACTURER AND MODEL NUMBER	NOMINAL TONS	BTUH	REFRIG. TYPE	ELECTRICAL DATA			PARTNER CONDENSING UNIT TAG	AREA SERVING	UNIT WEIGHT (LBS)	REMARKS
					VOLT-PH-HZ	MCA	MOCP				
ACU-1	"YORK" #DHP36CSB21S	3.0	33,600	R-410A	208-1-60	24	40	AC-1	NETWORK ROOM	180	ALL
ACU-2	"YORK" #DHP24CSB21S	2.0	22,000	R-410A	208-1-60	16	25	AC-2	RADIO ROOM 046	115	ALL

REMARKS:

1. VERIFY EXACT VOLTAGE IN FIELD PRIOR TO ORDERING.
2. INTERLOCK WITH ASSOCIATED SPLIT SYSTEM INDOOR UNIT.
3. MOUNT UNIT LEVEL ON 4" DEEP CONCRETE PAD.
4. INSTALL UNIT PER MANUFACTURER'S RECOMMENDATIONS AND MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES.
5. PROVIDE DX LIQUID AND SUCTION REFRIGERANT PIPING TO INDOOR UNIT, SIZE FOR ACTUAL FIELD CONDITIONS AND MANUFACTURER'S RECOMMENDATIONS.
6. PROVIDE REFRIGERANT SAFETY RELIEF VALVE IN ACCORDANCE WITH LOCAL CODES.

OUTDOOR CONDENSING UNIT SCHEDULE

ITEM TAG	MANUFACTURER AND MODEL NUMBER	SEER	NOMINAL TONS	REFRIG.	REFRIG. CHARGE (LBS)	COOLING CAPACITY (BTUH)	UNIT SERVING	ELECTRICAL DATA					UNIT WEIGHT (LBS)	REMARKS
								VOLT-PH-HZ	COMP RLA	COND FLA	MCA	MAX FUSE		
CU-1	"YORK" #TCD48B3I5	15.25	4.0	R-410A	4.9	48,000	F-1	208-3-60	13.7	1.3	18.4	30	200	ALL

REMARKS:

1. VERIFY ELECTRICAL REQUIREMENT WITH ELECTRICAL CONTRACTOR PRIOR TO ORDERING.
2. PROVIDE TIMED LOCK-OUT, SERVICE VALVES, AND DRYER.
3. PROVIDE UNIT WITH CASED N-COIL TYPE EVAPORATOR COIL WITH REFRIGERANT SPECIFIC TXV.
4. MOUNT UNIT LEVEL ON GRADE ON 4" DEEP CONCRETE PAD. COORDINATE WITH GENERAL CONTRACTOR.
5. ELECTRICAL CONTRACTOR SHALL PROVIDE WEATHER PROOF DISCONNECT SWITCH.
6. PROVIDE DX LIQUID AND SUCTION REFRIGERANT PIPING SIZED FOR ACTUAL FIELD CONDITIONS AND MANUFACTURER'S RECOMMENDATIONS.
7. PROVIDE REFRIGERANT SAFETY RELIEF VALVE IN ACCORDANCE WITH LOCAL CODES.

EXHAUST FAN SCHEDULE

ITEM TAG	MANUFACTURER AND MODEL NUMBER	CFM	ESP	ELECTRICAL DATA			CONTROLLED VIA	DAMPER TYPE	AREA SERVING	UNIT WEIGHT (LBS)	REMARKS
				VOLT-PH-HZ	HP OR NOTED	RPM					
EF-1	"GREENHECK" #SP-A80	80	0.15"	120-1-60	0.34 AMPS	900	LIGHT SWITCH	BACKDRAFT	TOILETS	12	1-3
EF-2	"GREENHECK" #SQ-080-VG	200	0.5"	120-1-60	1/6 HP	1515	THERMOSTAT	GRAVITY	COMPRESSOR ROOM	40	1, 2, 4
EF-3	"GREENHECK" #SQ-70-VG	260	0.25"	120-1-60	1/6 HP	1725	TIMECLOCK	BACKDRAFT	EOC TOILETS	40	1, 2, 5
EF-4	"GREENHECK" #AER-E36C-315-B-VGD20	16,000	0.10"	208-3-60	2 HP	1160	GAS DETECTION SYSTEM	BACKDRAFT	GARAGE	440	1, 2, 6, 7

REMARKS:

1. VERIFY EXACT VOLTAGE PRIOR TO ORDERING EQUIPMENT.
2. ELECTRICAL CONTRACTOR SHALL PROVIDE DISCONNECT SWITCH AND LINE WIRING.
3. PROVIDE HOODED WALL CAP, BRICK VENT, PITCHED ROOF CAP, OR FLAT ROOF CAP AS REQUIRED.
4. PROVIDE FULL PERIMETER INSULATED ROOF CURB WITH BIRDSCREEN.
5. INLINE FAN. SUSPEND UNIT FROM STRUCTURE WITH VIBRATION ISOLATION HANGERS. PROVIDE FLEX DUCT AT UNIT CONNECTIONS.
6. WALL PROP FAN. PROVIDE WITH WEATHER HOOD, GRAVITY BACKDRAFT DAMPER, WALL HOUSING AND INLET GUARD.
7. PROVIDE WITH "VARI-GREEN" VFD DRIVE 100+ DIGITAL INPUT SIGNAL. MOTOR SHALL OPERATE IN LOW SPEED AT 3600 CFM. LOW SPEED OPERATION SHALL BE INTERLOCKED WITH EXISTING MAU-1. MOTOR SHALL OPERATE IN HIGH SPEED AT 16,000 CFM. HIGH SPEED OPERATION SHALL BE INTERLOCKED WITH THE EXISTING GAS DETECTION SYSTEM AND MAU-1.

UNIT HEATER (HOT WATER) SCHEDULE

TAG	MANUFACTURER AND MODEL NUMBER	TYPE	MBH	E.A.T. (F)	E.A.T. (F)	GPM	WATER P.D.	AIR TEMP. RISE	FAN CFM	ELECTRICAL DATA				AREA SERVING	UNIT WEIGHT (LBS)	REMARKS
										VOLT-PH-HZ	HP	MCA	MOCP			
UH-1	MODINE #HC-18	WALL / CEILING MOUNT UNIT HEATER	8.1	60	150	2.0	0.2	25	340	120-60-1	1/60	0.7	15	SEE PLANS	25	ALL

REMARKS

1. VERIFY EXACT VOLTAGE PRIOR TO ORDERING EQUIPMENT.
2. FACTORY MOUNTED DISCONNECT SWITCH.
3. UNIT TO BE PROVIDED BY MECHANICAL CONTRACTOR AND WIRED BY ELECTRICAL CONTRACTOR.
4. PROVIDE WITH WALL OR CEILING MOUNTING BRACKETS AS REQUIRED.
5. PROVIDE BALANCING VALVE DOWNSTREAM OF THE UNIT ON THE RETURN BRANCH PIPE SERVING THE UNIT.
6. PROVIDE REMOTE WALL-MOUNTED BACNET COMPATIBLE TEMPERATURE SENSOR CONNECTED TO BAS.

DEHUMIDIFIER SCHEDULE

DH-1

JOHNSON CONTROLS MODEL SI-CVDI30T01A
130 PINTS/DAY CAPACITY, 300 CFM
120-1-60, 8.3 AMPS, PLUG TYPE POWER CORD.
113 LBS
WASHABLE MERV 9 FILTER, 1" CABINET INSULATION
BUILT-IN DIGITAL DISPLAY WITH SELF DIAGNOSTICS
10" ROUND INLET AND OUTLET
3/4" PVC DRAIN CONNECTION
5 YEAR WARRANTY
SET UP FOR UNDUCTED / FREESTANDING OPERATION
PROVIDE WITH BACNET INTERFACE AND INTEGRATE TO BAS.

THE EQUIPMENT MANUFACTURERS LISTED IN THESE SCHEDULES ARE INTENDED TO SET STANDARD; THE INTENTION IS "OR EQUAL" PENDING APPROVAL.

THE OWNER HAS PROVIDED MAINTENANCE SERVICE AND VERIFIED OPERATIONS OF THE FOLLOWING EXISTING EQUIPMENT:

- MAKE UP AIR UNIT - XMUA-1 SERVING THE APPARATUS BAY.
- THE TOX-ALERT CONTROL SYSTEM SERVING FLEET STORAGE 022.
- THE INFRARED RADIANT HEATERS SERVING FLEET STORAGE 022.
- AIR COMPRESSOR SERVING FLEET STORAGE 022.

THE CONTRACTOR SHALL PROVIDE SERVICING AND START-UP SERVICES UPON COMPLETION OF THE PROJECT OF ALL THE EXISTING EQUIPMENT NOTED ABOVE BY A TRAINED SERVICE TECHNICIAN. SERVICING AND START-UP SERVICES SHALL INCLUDE FULL COMMISSIONING OF ALL FUNCTIONS TO VERIFY ALL COMPONENTS ARE WORKING PROPERLY, INCLUDING FAN BELTS, BEARINGS, MOTORS, CONTROLLERS, AND BURNERS. THE SERVICING SHALL ALSO INCLUDE RE-CALIBRATION OF ALL CONTROL SENSORS. PARTS TO REMAIN SHOULD BE CLEANED AND RECONDITIONED.

THE CONTRACTOR SHALL PROVIDE SERVICING AND START-UP SERVICES OF THE INFRARED RADIANT HEATING SYSTEM THAT SHALL INCLUDE INSPECTION OF ALL TUBING FOR CORROSION, BURNER CONTROLS, BLOWER MOTORS, SAFETIES, SHIELDS, AND ALL OTHER DEVICES. PARTS TO REMAIN SHOULD BE CLEANED AND RECONDITIONED.

THE CONTRACTOR SHALL PROVIDE SERVICING AND START-UP SERVICES OF THE AIR COMPRESSOR THAT SHALL INCLUDE THE BELTS, BEARINGS, SEALS, OIL, VALVES AND MOTORS AS REQUIRED. PARTS TO REMAIN SHOULD BE CLEANED AND RECONDITIONED.

THE CONTRACTOR SHALL PROVIDE OPERATION AND MAINTENANCE TRAINING TO OWNER ON ALL SYSTEMS AT COMPLETION OF PROJECT.

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DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY
FITCHBURG, WISCONSIN

CLIENT APPROVAL

- ☐ APPROVED
- ☐ APPROVED AS NOTED

APPROVED BY / DATE:

ISSUE RECORD

DD SET	08/04/20
CD CHECK SET	11/20/20
98% CD REVIEW	02/11/21
HVAC REDESIGN	04/30/21
ISSUE FOR BID	06/08/21

CHECKED BY
MOV
DRAWN BY
JAT,KJS,MOV
DATE
6/7/2021 8:30:39 AM
PROJECT NUMBER
2020-001

MECHANICAL SCHEDULES, DETAILS AND NOTES

M2.0

WISCONSIN MARK VENTRELLI E-41380-6 HOFFMAN ESTATES PROFESSIONAL ENGINEER

WT Group
Engineering • Design • Consulting
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IL License No: 184.007570-0015 | Exp: 04.30.2023

VENTILATION SCHEDULE

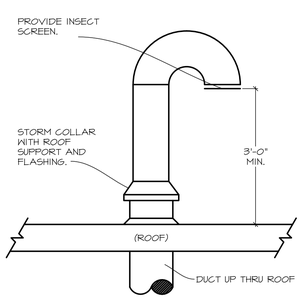
ROOM TAG	ROOM NAME OCCUPANCY CLASSIFICATION	ROOM AREA (SQFT)	NUMBER OF OCCUPANTS OR FIXTURES	TABLE REQUIREMENTS		ZONE AIR DIST. EFFECT.	REQUIRED SPACE VENTILATION		ACTUAL SPACE VENTILATION			SERVED BY		REMARKS
				(CFM / OCC.)	(CFM / SQFT)		O.A. (CFM)	EXHAUST (CFM)	SUPPLY (CFM)	O.A. (CFM)	EXHAUST (CFM)	SUPPLY	EXHAUST	
001	VESTIBULE	72	0	0	0.00	0.8	0	0	0	0	0		-	
002	LOBBY / DISPLAY	351	4	5	0.06	0.8	51	0	480	96	0	RTU-2	-	
004	LUNCH ROOM	198	2	5	0.06	0.8	27	0	360	72	0	RTU-2	-	
006	E.O.C.	1,074	36	5	0.06	1.0	244	0	2,500	500	0	RTU-3	-	
007	BREAK OUT	275	14	5	0.06	1.0	87	0	600	120	0	RTU-3	-	
009	RADIO	131	3	5	0.06	1.0	23	0	250	50	0	RTU-3	-	
013	LOUNGE & CORR.	298	4	5	0.06	1.0	38	0	440	88	0	RTU-3	-	
014	BREAK OUT	202	6	5	0.06	1.0	42	0	300	60	0	RTU-3	-	
015	STORAGE	88	0	0	0.00	1.0	0	0	150	30	0	RTU-3	-	
016	STORAGE	114	0	0	0.00	1.0	0	0	0	0	0		-	
017	SHOWER / TOILET	97	1	0	0.00	1.0	0	70	0	0	100		EF-7	
018	TOILET	72	1	0	0.00	1.0	0	50	80	16	80	RTU-3	EF-7	
019	TOILET	53	1	0	0.00	1.0	0	50	80	16	80	RTU-3	EF-7	
020	TOOL STORAGE	120	0	0	0.00	1.0	0	0	0	0	0		-	
021	UTILITY	82	0	0	0.00	1.0	0	0	0	0	0			
022	FLEET STORAGE	4,097	0	0	0.75	1.0	3,073	3,073	16,000	16,000	16,000	XMUA-1	EF-9	
023	CONFERENCE	231	8	5	0.06	0.8	67	0	400	80	0	RTU-2	-	
024	RECEPTION	100	1	5	0.06	0.8	14	0	200	40	0	RTU-2		
025	WORK AREA	160	2	5	0.06	0.8	25	0	200	40	0	RTU-2	-	
026	CONFERENCE	269	10	5	0.06	0.8	83	0	420	84	0	RTU-1	-	
027	OFFICE	125	1	5	0.06	0.8	16	0	140	28	0	RTU-1	-	
029	OFFICE	107	1	5	0.06	0.8	14	0	170	34	0	RTU-1	-	
030	OFFICE	112	1	5	0.06	0.8	15	0	170	34	0	RTU-1	-	
031	OFFICE	110	1	5	0.06	0.8	15	0	140	28	0	RTU-1	-	
032	VESTIBULE	125	0	0	0.00	0.8	0	0	160	32	0	RTU-1	-	
033	OFFICE	118	1	5	0.06	0.8	15	0	140	28	0	RTU-1	-	
034	DEP. OFFICE	201	2	5	0.06	0.8	28	0	340	68	0	RTU-1	-	
035	DIR. OFFICE	253	2	5	0.06	0.8	31	0	400	80	0	RTU-1	-	
036	WORK SPACE	481	6	5	0.06	0.8	74	0	540	108	0	RTU-2	-	
037	MECHANICAL	135	0	0	0.00	0.8	0	0	0	0	0			
038	OFFICE	126	1	5	0.06	0.8	16	0	160	32	0	RTU-1	-	
039	OFFICE	148	1	5	0.06	0.8	17	0	160	32	0	RTU-1	-	
040	OFFICE	109	1	5	0.06	0.8	14	0	120	24	0	RTU-1	-	
041	TOILET	68	1	0	0	0.8	0	70	50	10	80	RTU-1	TE-1	
043	TOILET	68	1	0	0	0.8	0	70	50	10	80	RTU-1	TE-1	
044	BASEMENT	3050	0	0	0.00	0.8	0	0	1,580	0	0	F-1		
045	NETWORK	240	0	0	0.00	0.8	0	0	730	0	0	AC-1		

MECHANICAL LEGEND

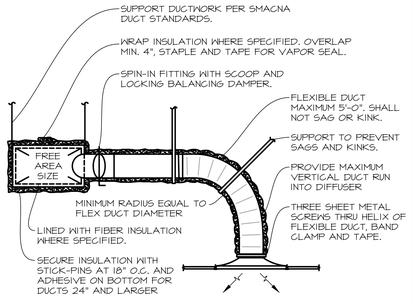
- NEW DUCTWORK AND AIR DEVICES TO MATCH EXISTING.
- EXISTING DUCTWORK AND AIR DEVICES TO REMAIN, CLEAN AND RECONDITION AS REQUIRED.
- EXISTING DUCTWORK AND AIR DEVICES TO BE REMOVED.
- T — THERMOSTAT
- S — SENSOR (REMOTE TEMPERATURE SENSOR UNLESS OTHERWISE NOTED)
- TAKEOFF WITH MANUAL VOLUME DAMPER
- LOCKABLE MANUAL VOLUME DAMPER (MVD)
- FD — FIRE DAMPER
- A.F.F. — ABOVE FINISHED FLOOR
- B.F.C. — BELOW FINISHED CEILING
- C.A. — COMPRESSED AIR
- M.V.D. — LOCKABLE MANUAL VOLUME DAMPER
- W.C. — INCHES OF WATER COLUMN
- U.C. — UNDER CUT DOOR, ¾"
- U.T.R. — UP THROUGH ROOF
- WMS — WIRE MESH SCREEN
- NEW TO EXISTING CONNECTION
- DEMO BREAK POINT. DEMO BACK TO THIS POINT
- RTU-1 — EQUIPMENT TAG
- A (CFM) (SIZE) — NEW AIR DEVICE TAG

MECHANICAL GENERAL NOTES

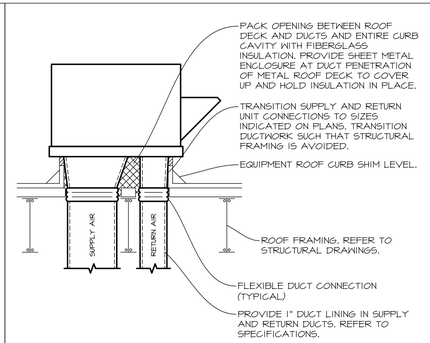
1. ALL ROOFTOP EQUIPMENT LOCATIONS SHALL BE COORDINATED WITH ROOF DRAINS. REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR EXACT LOCATIONS OF EQUIPMENT.
2. THE INSTALLING CONTRACTOR SHALL PROVIDE ROOF CURBS AND LEVELING CURBS TO MATCH THE ROOF PITCH IF REQUIRED. THE ROOFING CONTRACTOR SHALL FLASH ALL CURBS INTO ROOF.
3. ALL STRUCTURAL DUCT OPENINGS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO CUTTING. INDICATE ON 1/4" SCALE SHOP DRAWINGS EXACT LOCATION OF OPENINGS COORDINATED WITH STRUCTURAL TRADES. PROVIDE DUCT ROOF CURBS AT ALL DUCT PENETRATIONS THRU ROOF.
4. ALL VENTS AND EXHAUSTS SHALL BE LOCATED A MINIMUM OF 10'-0" FROM ANY FRESH AIR INTAKES PER LOCAL CODES. PLUMBING VENTS SHALL BE A MINIMUM OF 10'-0" FROM ANY FRESH AIR INTAKE. EXTEND TERMINATION HEIGHT TO PROVIDE A 10'-0" GROSS SECTION CLEARANCE FROM PLUMBING VENTS WHERE NEEDED.
5. ALL ROOFTOP EQUIPMENT SHALL BE SET ON EQUIPMENT CURBS OR RAILS. ALL PIPE AND DUCT PENETRATIONS THROUGH THE ROOF SHALL HAVE A WEATHERPROOF CURB OR FLASHING. ALL ROOF FLASHING SHALL BE PERFORMED BY THE ROOFING CONTRACTOR.
6. ALL GAS FIRED APPLIANCES MUST CONFORM TO INTERNATIONAL FUEL GAS CODE. ALL GAS PIPING MUST BE SIZED IN ACCORDANCE WITH INTERNATIONAL FUEL GAS CODE. FUEL GAS PIPING INSTALLATION MUST CONFORM WITH INTERNATIONAL FUEL GAS CODE.
7. MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL FIRE DAMPERS IN DUCTWORK AND FIRESTOP ALL PIPE PENETRATIONS THRU RATED FLOORS, CEILINGS AND WALLS. VERIFY LOCATIONS OF ALL RATED ASSEMBLIES WITH ARCHITECTURAL PLANS. FIRE DAMPERS SHALL BE IN ACCORDANCE WITH UL 555. MECHANICAL PLANS MAY NOT SHOW LOCATIONS OF ALL REQUIRED FIRE DAMPERS.
8. SEAL ALL PENETRATIONS THRU EXTERIOR WALLS WATER AND WEATHER TIGHT. ALL ROOF FLASHING SHALL BE BY THE ROOFING CONTRACTOR.
9. UNLESS SHOWN OTHERWISE ON PLANS, ALL BRANCH TAKE-OFFS TO DIFFUSERS SHALL BE SAME SIZE AS DIFFUSER NECK CONNECTION.
10. PROVIDE MANUAL VOLUME DAMPERS AT ALL BRANCH TAKE-OFFS TO AIR DEVICES.
11. UNLESS SHOWN OTHERWISE ON PLANS, PROVIDE SPIRAL DUCTWORK IN ALL EXPOSED CEILING AREAS.
12. FOR 2 PSIG GAS SUPPLY PRESSURE FROM THE METER PROVIDE GAS PRESSURE REGULATORS AT ALL FUEL BURNING APPLIANCES. SIZE REGULATORS FOR THE MFR. REQUIRED FLOW AND INLET AND OUTLET PRESSURES. PROVIDE VENT PIPING FROM REGULATOR RELIEF PORT TO OUTDOORS PER CODE REQUIREMENTS.
13. ALL NEW GAS PIPING INSTALLED OUTSIDE SHALL BE PAINTED WITH YELLOW EPOXY PAINT FOR CORROSION PROTECTION. FOR PIPING ROUTED ACROSS GRADE OR ROOF, PROVIDE GAS PIPING SUPPORTS EQUAL TO "DURA-BLOK" BY COOPER INDUSTRIES. MAX. SUPPORT SPACING SHALL FOLLOW THE REQUIREMENTS OF THE INTERNATIONAL FUEL GAS CODE.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE SITE AND VERIFYING ALL EXISTING FIELD CONDITIONS PRIOR TO SUBMISSION OF HIS BID. THE CONTRACT DOCUMENTS INDICATE APPROXIMATE LOCATIONS AND SIZES OF EXISTING AND NEW DUCTWORK AND PIPING AND ARE DIAGRAMMATIC IN NATURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE ACTUAL LOCATION, SIZE AND ROUTING OF ALL EXISTING AND NEW DUCTS AND PIPING.
15. CONTRACTOR IS RESPONSIBLE FOR COORDINATING HIS WORK WITH THE WORK OF ALL OTHER TRADES AND MAKING ANY NECESSARY MODIFICATIONS TO HIS WORK AT NO ADDITIONAL COST, INCLUDING ALL OFFSETS.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR RELOCATION OF ANY EXISTING MINOR INTERFERENCES, INCLUDING STRUCTURAL COMPONENTS (AS REVIEWED AND APPROVED BY THE STRUCTURAL ENGINEER), CONDUIT, HANGERS, SPRINKLER PIPING AND SPRINKLER HEADS AT NO ADDITIONAL COST.
17. CONTRACTOR SHALL INCLUDE ALL MISCELLANEOUS ITEMS REQUIRED TO COMPLETE THE WORK, INCLUDING MOVING AND RIGGING OF MATERIAL AND EQUIPMENT, ALL HANGER, SUPPORTS, ANCHORS, EXPANSION MEANS, FITTINGS AND SLEEVES.
18. HVAC CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING OF BUILDING MATERIALS AS REQUIRED FOR INSTALLATION OF HIS WORK AND PROVIDE ALL HOLES AND SLEEVES FOR INSTALLATION OF MECHANICAL WORK.
19. PROVIDE ACCESS PANELS FOR CONCEALED EQUIPMENT, VOLUME DAMPERS, SENSORS, ETC FOR MAINTENANCE AND BALANCING. ACCESS PANELS SHALL COMPLY WITH UL AND LOCAL CODES.
20. NEW GAS PIPING SHALL BE STEEL PIPE. ASTM A 53/A 53M, BLACK STEEL, SCHEDULE 40, TYPE E OR S, GRADE B, MALLEABLE-IRON THREADED FITTINGS. ASME B16.3, CLASS 150, STANDARD PATTERN.
21. NEW BELOW GROUND GAS PIPING SHALL BE ASTM D 2513, SDR-11 YELLOW POLYETHYLENE. PROVIDE WITH METALLIC TRACER WIRE, TRANSITION ADAPTERS, ANODELESS SERVICE RISERS. BURY PIPING AT LEAST 18" DEEP
22. ALL SUPPLY AND RETURN DUCTWORK IS TO BE RIGID GALVANIZED STEEL UNLESS NOTED OTHERWISE. FINAL 5'-0" OF CONNECTION TO DIFFUSER MAY BE FLEXIBLE DUCTWORK WITH INTEGRAL INSULATION IF DUCTWORK IS CONCEALED ABOVE CEILINGS.
23. ALL DUCTWORK AND PIPING IS TO BE EXTERNALLY INSULATED WHEN CONCEALED FROM VIEW BY OCCUPANTS. ALL EXPOSED DUCTWORK SHALL BE UNINSULATED. INSULATION R VALUE SHALL MEET OR EXCEED ENERGY CODE MINIMUM REQUIREMENTS.
24. FOR EXISTING DUCTWORK TO REMAIN, COVER OPENINGS IN DUCTWORK WITH PLASTIC FILM DURING CONSTRUCTION TO PREVENT DUST INFILTRATION. REPAINT DUCTWORK TO MATCH STRUCTURE AS REQUIRED.
25. FOR EXISTING TO REMAIN EQUIPMENT, INSPECT AND PROVIDE ESTIMATED LABOR AND MATERIAL PRICING FOR REFURBISHING EQUIPMENT TO FULL OPERATIONAL CAPACITY. PROVIDE ALTERNATE PRICING FOR REPLACEMENT OF EQUIPMENT WITH EQUIVALENT.
26. CONTRACTOR SHALL PROVIDE ALL FIRE SAFING, SEALANT, FLASHING, FRAMES, ESCUTCHEONS AND TRIM FOR ALL EXISTING OPENINGS TO BE RE-USED OR REMAINING AND FOR ALL NEW OPENINGS.
27. CONTRACTOR SHALL CHANGE ALL EQUIPMENT AIR FILTERS DURING CONSTRUCTION AND AGAIN AT PROJECT COMPLETION.
28. TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE "BELIMO" VALVE ACTUATORS AND ASSOCIATED WIRING. M.C. SHALL INSTALL ACTUATORS.
29. TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE "DISTECH" VAV DAMPER CONTROLLERS AND ASSOCIATED WIRING.
30. FOR TEMPERATURE CONTROLS PRICING CONTACT JOSH PETERSON AT J.F. AHERN, PHONE: 920-574-3144.



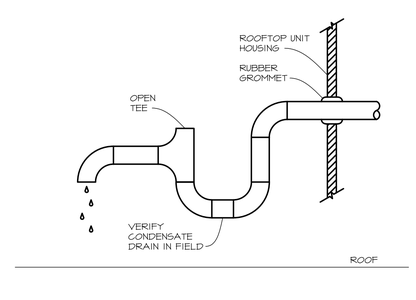
1 DETAIL – GOOSENECK THRU ROOF
SCALE: NONE



2 DETAIL – DUCTWORK TAKE-OFF
SCALE: NONE



ROOFTOP UNIT ROOF
3 DETAIL – PENETRATION DETAIL
SCALE: NONE



CONDENSATE DRAIN
4 DETAIL – P-TRAP PIPING DETAIL
SCALE: NONE

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MECHANICAL SCHEDULES, DETAILS AND NOTES

M2.1

HOT–WATER VAV TERMINAL BOX SCHEDULE

TAG	MFR. MODEL NUMBER	MAXIMUM COOLING CFM	MINIMUM COOLING CFM	HEATING CFM	INLET SIZE	HEAT. COIL TEMP. RISE (DEG. F)	COIL ROWS	GPM	COIL PD FT. H2O	HTG. MBH	SERVING	REMARKS
VAV-1-1	PRICE #SDVS	320	110	240	6"	40	2	0.9	.08	10.4	RTU-1	ALL
VAV-1-2	PRICE #SDVS	280	90	210	6"	40	2	0.7	.05	9.1	RTU-1	ALL
VAV-1-3	PRICE #SDVS	420	130	300	6"	40	2	1.2	.18	13.0	RTU-1	ALL
VAV-1-4	PRICE #SDVS	400	130	300	6"	40	2	1.2	.18	13.0	RTU-1	ALL
VAV-1-5	PRICE #SDVS	540	180	410	8"	40	2	1.7	.4	17.9	RTU-1	ALL
VAV-1-6	PRICE #SDVS	220	70	170	5"	40	2	0.5	.03	7.5	RTU-1	ALL
VAV-1-7	PRICE #SDVS	340	120	270	6"	40	2	1.0	.12	11.7	RTU-1	ALL
VAV-1-8	PRICE #SDVS	340	120	270	6"	40	2	1.0	.12	11.7	RTU-1	ALL
VAV-1-9	PRICE #SDVS	440	140	330	6"	40	2	1.3	.20	14.0	RTU-1	ALL
VAV-2-1	PRICE #SDVS	360	120	270	6"	40	2	1.0	.12	11.7	RTU-2	ALL
VAV-2-2	PRICE #SDVS	540	180	410	8"	40	2	1.6	.4	17.7	RTU-2	ALL
VAV-2-3	PRICE #SDVS	400	130	300	6"	40	2	1.2	.18	13.0	RTU-2	ALL
VAV-2-4	PRICE #SDVS	400	130	300	6"	40	2	1.2	.18	13.0	RTU-2	ALL
VAV-3-1	PRICE #SDVS	700	210	480	10"	40	2	2.5	.82	20.7	RTU-3	ALL

REMARKS:

1. SELECTIONS BASED ON 150 DEG. F ENT AND 120 DEG. F LVT
2. PROVIDE FLANGED OUTLET CONNECTIONS
3. PROVIDE DDC CONTROLLER, N.C. CONTROL VALVE, CIRCUIT SETTER, SERVICE VALVES AND BOTTOM HW INLET ON COIL.
4. REFER TO PLANS FOR LEFT OR RIGHT SIDE ACCESS. MAINTAIN REQUIRED SERVICE CLEARANCES.
5. CONTROLLED THRU BAS, REFER TO SEQUENCE OF OPERATION.
6. ELECTRICAL CONTRACTOR SHALL PROVIDE ONE 120V, 15A JUNCTION BOX FOR EACH VAV ROOFTOP UNIT FOR USE BY TEMPERATURE CONTROL CONTRACTOR.
7. TEMPERATURE CONTROL CONTRACTOR SHALL PROVIDE VAV BOX TRANSFORMERS AND CONTROL WIRING. SEE TEMPERATURE CONTROL SPECIFICATION FOR SEQUENCE OF OPERATION.
8. PROVIDE WITH 3-WAY CONTROL VALVE
9. BRANCH DUCT TO VAV BOXES SHALL BE SAME SIZE AS BOX CONNECTION. UNLESS SHOWN OTHERWISE ON PLANS.
10. MOUNT VAV BOX AS HIGH AS POSSIBLE BETWEEN ROOF JOIST. MAINTAIN REQUIRED SERVICE CLEARANCES.

BOILER SCHEDULE

ITEM TAG	MANUFACTURER AND MODEL NUMBER	MBH INPUT	MBH OUTPUT	EWT	LWT	VENT SIZE	INTAKE SIZE	VOLTAGE	MOCP (AMPS)	UNIT WEIGHT (LBS)	REMARKS
B-1	"NTI" TRINITY TFT 340	340	324	120°F	150°F	4"Φ	4"Φ	120-1-60	15	250	ALL

REMARKS:

1. PROVIDE WALL MOUNTING KIT.
2. ASME "H" STAMPED BOILER, STAINLESS STEEL HEAT EXCHANGER.
3. DIRECT SPARK IGNITION.
4. PROVIDE 30 PSI ASME PRESSURE RELIEF VALVE, PRESSURE / TEMPERATURE GAUGES.
5. PROVIDE INTEGRAL MICROPROCESSOR SAFETY CONTROL, OUTDOOR RESET, WARM WEATHER SHUT-DOWN.
6. PROVIDE INTEGRATED MODBUS FOR CONNECTION TO BAS.
7. PROVIDE NATURAL GAS VALVE TRAIN, FULL MODULATION WITH 8 TO 1 TURNDOWN.
8. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
9. BOILER SHALL BE ENABLED AND MONITORED THRU THE BAS, SEE TEMPERATURE CONTROL SPECIFICATION.
10. PROVIDE TEMPERATURE SENSOR IN SUPPLY AND RETURN HEADERS AND OUTDOOR AIR SENSOR. TIE SENSORS TO BAS.
11. PROVIDE NEUTRALIZATION KIT FOR DRAIN PIPING.

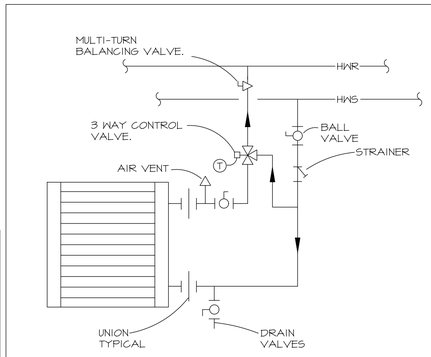
PUMP SCHEDULE

TAG	MANUFACTURER AND MODEL NO.	IMPELLER DIAMETER	SERVING	TOTAL GPM	HEAD PRESS	ELECTRICAL DATA			REMARKS
						HP	RPM	VOLTAGE	
P-1	BELL & GOSSETT PL-55	PL-55	VAV LOOP	22	25'	2/5	3250	120-1-60	1-4
P-2	BELL & GOSSETT PL-45	PL-45	BOILER B-1	20	20'	1/6	3300	120-1-60	1-3, 5

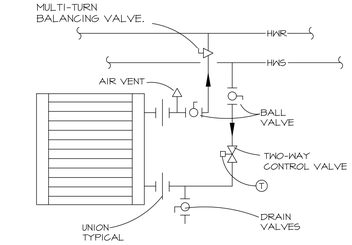
REMARKS:

1. LABEL ALL PUMPS. DISCONNECT SWITCH AND FIELD WIRING BY ELECTRICAL CONTRACTOR.
2. CONTRACTOR SHALL VERIFY FINAL HEAD PRESSURE AND PUMP SELECTION WITH ACTUAL FIELD CONDITIONS.
3. INLINE CONFIGURATION, SEE DETAIL.
4. PUMP SHALL BE CONTROLLED THRU THE BAS.
5. PUMP SHALL BE CONTROLLED THRU THE BOILER CONTROL PANEL.

THE EQUIPMENT MANUFACTURERS LISTED IN THESE SCHEDULES ARE INTENDED TO SET STANDARD; THE INTENTION IS "OR EQUAL" PENDING APPROVAL.



1 DETAIL – VAV REHEAT COIL
SCALE: NONE



5 DETAIL – CABINET UNIT HEATER
SCALE: NONE

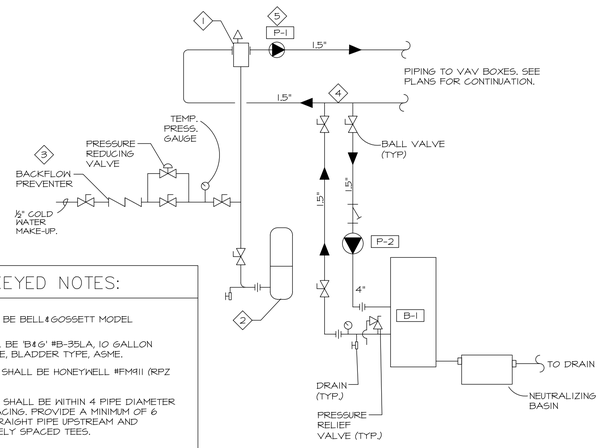
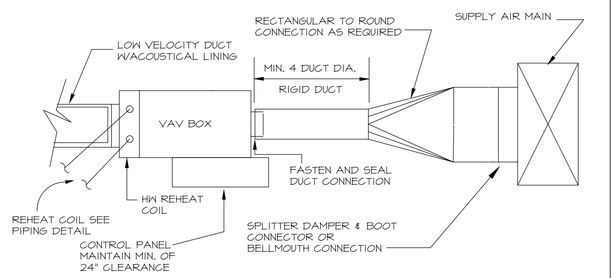


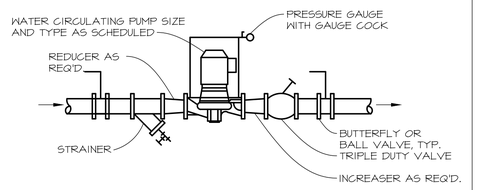
DIAGRAM KEYED NOTES:

1. AIR SEPARATOR SHALL BE BELL&GOSSETT MODEL EASB-JR-1.5".
2. EXPANSION TANK SHALL BE 'B16' #B-35LA, 10 GALLON TANK, FULL ACCEPTANCE, BLADDER TYPE, ASME.
3. BACKFLOW PREVENTER SHALL BE HONEYWELL #FM911 (RPZ STILL NECESSARY).
4. CLOSELY SPACED TEES SHALL BE WITHIN 4 PIPE DIAMETER CENTER TO CENTER SPACING. PROVIDE A MINIMUM OF 6 PIPE DIAMETERS OF STRAIGHT PIPE UPSTREAM AND DOWNSTREAM OF CLOSELY SPACED TEES.
5. DISTRIBUTION PUMP SHALL BE CONTROLLED BY BAS

2 BOILER PIPING DIAGRAM – VAV HEATING
NOT TO SCALE



3 DETAIL – VAV BOX CONNECTION
SCALE: NONE



4 DIAGRAM – IN LINE PUMP
SCALE: NONE

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MECHANICAL SCHEDULES, DETAILS AND NOTES

M2.2

DATA SHEET

Underfloor Air Terminal (Variable Volume)

MODEL: **MIT3 - CSH**

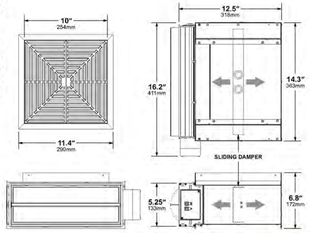
DESCRIPTION:

MIT3-CSH (Modular Integrated Terminal) is an adjustable variable volume diffuser for use in raised floor air systems. The underfloor terminal features 20 gauge (1mm) galvanized steel construction, pre-painted flat black.

The air valve uses time modulation to vary total air supplied to a conditioned space. Air velocity is constant any time the valve is open; the short time duration between open/close cycles produces the effect of contiuous air delivered to the occupied space. It is rated for 24V (18-30VAC) operation; one (1) PAP-1 Plug & Play Cable is included.

Air flow output can be manually adjusted by removing the grille and moving the Sliding Damper by hand to the desired CFM position.

The nominal 10" x 10" (254mm x 254mm) cast aluminum diffuser grille includes two separate inserts, which can be configured to create alternate air throw patterns. Ten (10) standard colors are available; custom colors and finishes can be provided to match architectural design (specify on order).



ALL DIMENSIONS NOMINAL +/- 0.1" (2.5mm)

FEATURES:

- Robust cast aluminum grille frame
- DC synchronized magnetic motor
- Manual air flow adjustment with Sliding Damper
- Riveted pre-painted galvanized steel
- Multi-function circuit board for varying control strategies

SPECIFICATIONS:

Application:	Underfloor Cooling | Raised Access Floors 8" (203mm) +
Grille Dimensions: LxW (Nominal)	Diffuser: 10" x 10" (254mm x 254mm) | Face: 11.4" x 11.4" (290mm x 290mm) Installation Cut-Out: 10.5" x 10.5" [+.125/-.00] (267mm x 267mm [+3.175/-.00])
Grille Rating:	Cast Aluminum | Conforms to NFPA 90a | 1250 lbs. (567 Kg) Load Strength
Supply Press. / Temp.:	0.02–0.1 in. w.c. (5–25 Pa) | 40–120°F (4–49°C)
Capacity: (Nominal)	Maximum: 150 cfm @ 0.05 in. w.c. (255 m^3/hr @ 12.5 Pa) Minimum (Sliding Damper Closed): 20 cfm @ 0.05 in. w.c. (34 m^3/hr @ 12.5 Pa)
Noise Criterion:	≤ NC-17 (All Flow Conditions)

DATA SHEET

Underfloor Power Module Junction Box

MODEL: **PM - 4**

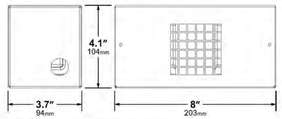
DESCRIPTION:

PM-4 (Power Module) is a 20 gauge (1mm) galvanized steel junction box for use in under floor air systems.

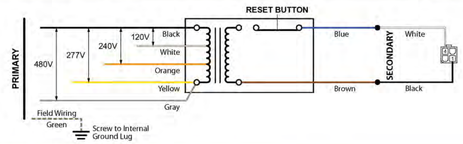
The control transformer installed in the junction box is rated at 96VA 120/277VAC to 24VAC. It is rated for supply air temperature from 45–120°F (7–49°C). A molex connection provides power chaining to under floor devices.

The transformer includes a built-in circuit breaker (4-Amp) to protect the circuit from overloading. This reset button is located on the exterior of the transformer, accessible through an opening in the steel housing.

The PM-4 is ETL Listed, fully certified to UL standards and approved for plenum use in UFAD application.



ALL DIMENSIONS NOMINAL +/- 0.1" (2.5mm)



SPECIFICATIONS:

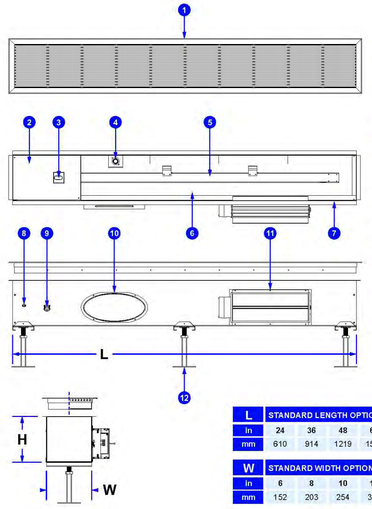
Application:	Underfloor Power Supply | Raised Access Floors 6" (152mm) +
Dimensions: LxWxH (Nominal)	8" x 3.7" x 4.1" (203mm x 94mm x 104mm)

DATA SHEET

Underfloor Air Distribution Linear Terminal

MODEL: **CLEMIT**

UNIT DETAIL:



1. Linear grille (optional extruded aluminum or stainless steel; specify on order)
2. Controls housing
3. Disconnect switch
4. Thermistor / thermal cutout
5. Sheathed electric heating element
6. 20 guage (1mm) galvanized steel casing, pre-painted black
7. 3/4" (19mm) support flanges (optional; specify on order)
8. Plug & play control cable molex connection
9. Line power connection clamp
10. Duct connections (optional; specify on order)
11. VAV air valves (optional; specify on order)
12. Support pedestals / brackets on nominal 36" (914mm) centers (optional; specify on order)

L	STANDARD LENGTH OPTIONS								
in	24	36	48	60	72	84	96	108	120
mm	610	914	1219	1524	1829	2134	2438	2743	3048

W	STANDARD WIDTH OPTIONS				H	STANDARD HEIGHT OPTIONS			
in	6	8	10	12	in	6	8	10	12
mm	152	203	254	305	mm	152	203	254	305

ALL DIMENSIONS NOMINAL ± 0.1" (2.5mm)

DATA SHEET

Plug & Play Modular Cables (Molex Connections)

MODEL: **PAP**

DESCRIPTION:

PAP (Plug And Play) cables are to be used with 24 VAC control systems to connect AirFixture devices. Cable is Type E116871 CMP/CL3P/FPLP. Connectors are UL 94-V0. The assemblies are suitable for application in an environmental airway at supply air temperatures from 45–120°F (7–49°C).

MOLEX CONNECTION DESCRIPTIONS:

1. Molex 39-01-2045 4-Pin Dual Row Plug (female receptacle connections)
2. Molex 39-01-3049 4-Pin Dual Row Socket (male pin connections)
3. Heat Shrink Strain Relief (minimum 1" bond to cable jacket)

STANDARD PAP CABLE DESCRIPTIONS:

1. **PAP-1:** Power & Control Cable
2. **PAP-1J:** Power & Control Chainingg Cable
3: **PAP-C:** Coupling Cable
4: **PAP-2:** Controller Cable
5: **PAP-3:** Power & Control Extension Cable
6: **PAP-5:** Power-Only Cable
7: **PAP-6:** Heating/Chaining Cable
8: **PAP-7B:** TEC Controller Cable

STANDARD CONFIGURATIONS:

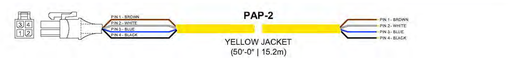
ADDITIONAL PAP CONFIGURATIONS ON NEXT PAGE

DATA SHEET

Plug & Play Modular Cables (Molex Connections)

MODEL: **PAP**

STANDARD CONFIGURATIONS (CONTINUED):



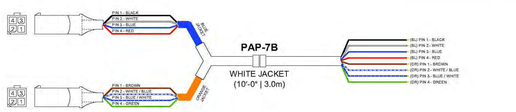
ADDITIONAL PAP CONFIGURATIONS ON NEXT PAGE

DATA SHEET

Plug & Play Modular Cables (Molex Connections)

MODEL: **PAP**

STANDARD CONFIGURATIONS (CONTINUED):



THE EQUIPMENT MANUFACTURERS LISTED IN THESE SCHEDULES ARE INTENDED TO SET STANDARD; THE INTENTION IS "OR EQUAL." PENDING APPROVAL.

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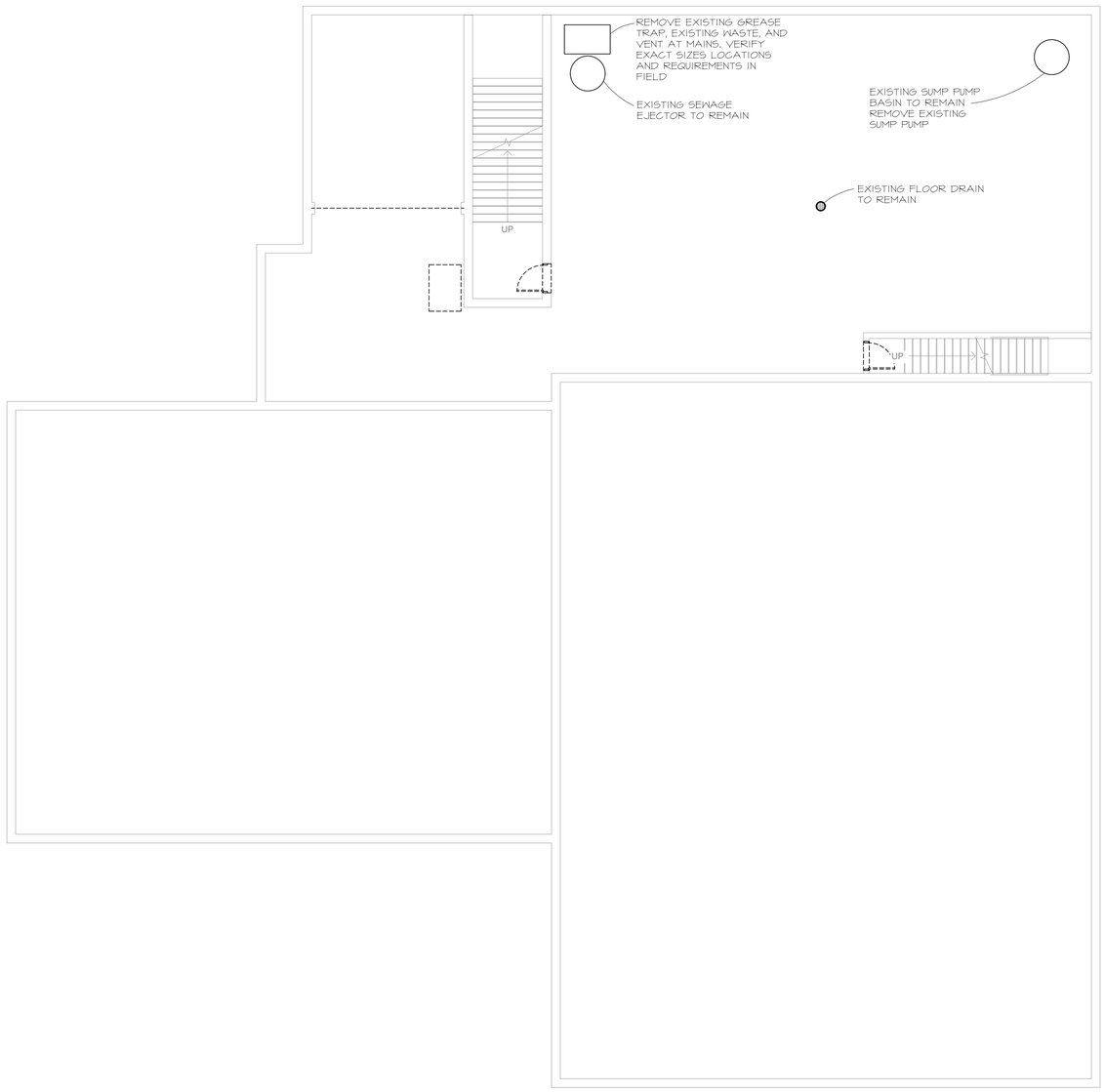
UNDERFLOOR AIR SUPPLY SYSTEM DETAILS
M3.0



1 BASEMENT PLUMBING DEMOLITION PLAN

SCALE 1/8" = 1'-0"

N

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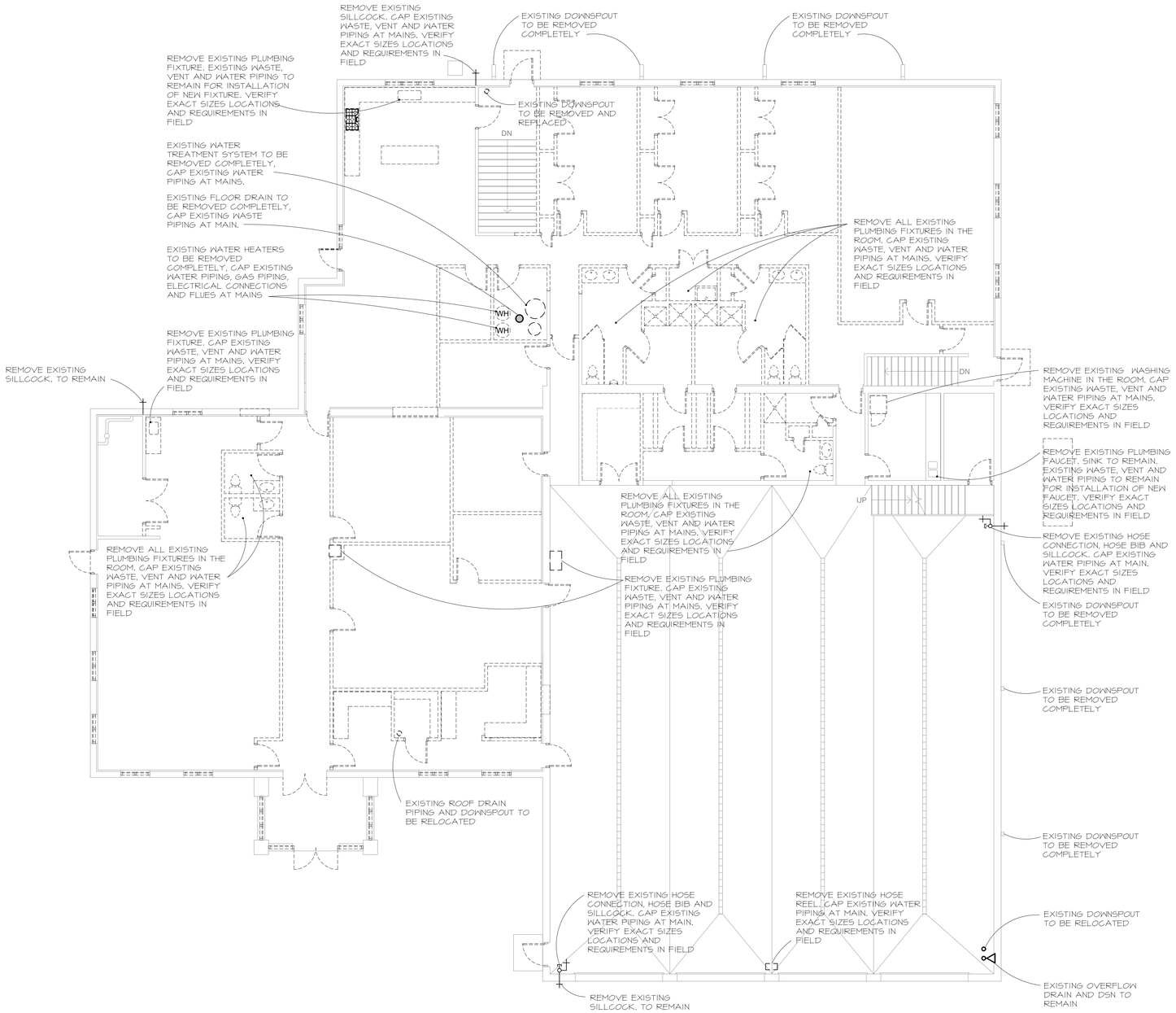
BASEMENT PLUMBING DEMOLITION PLAN

PD1.0



1 FIRST FLOOR PLUMBING DEMOLITION PLAN

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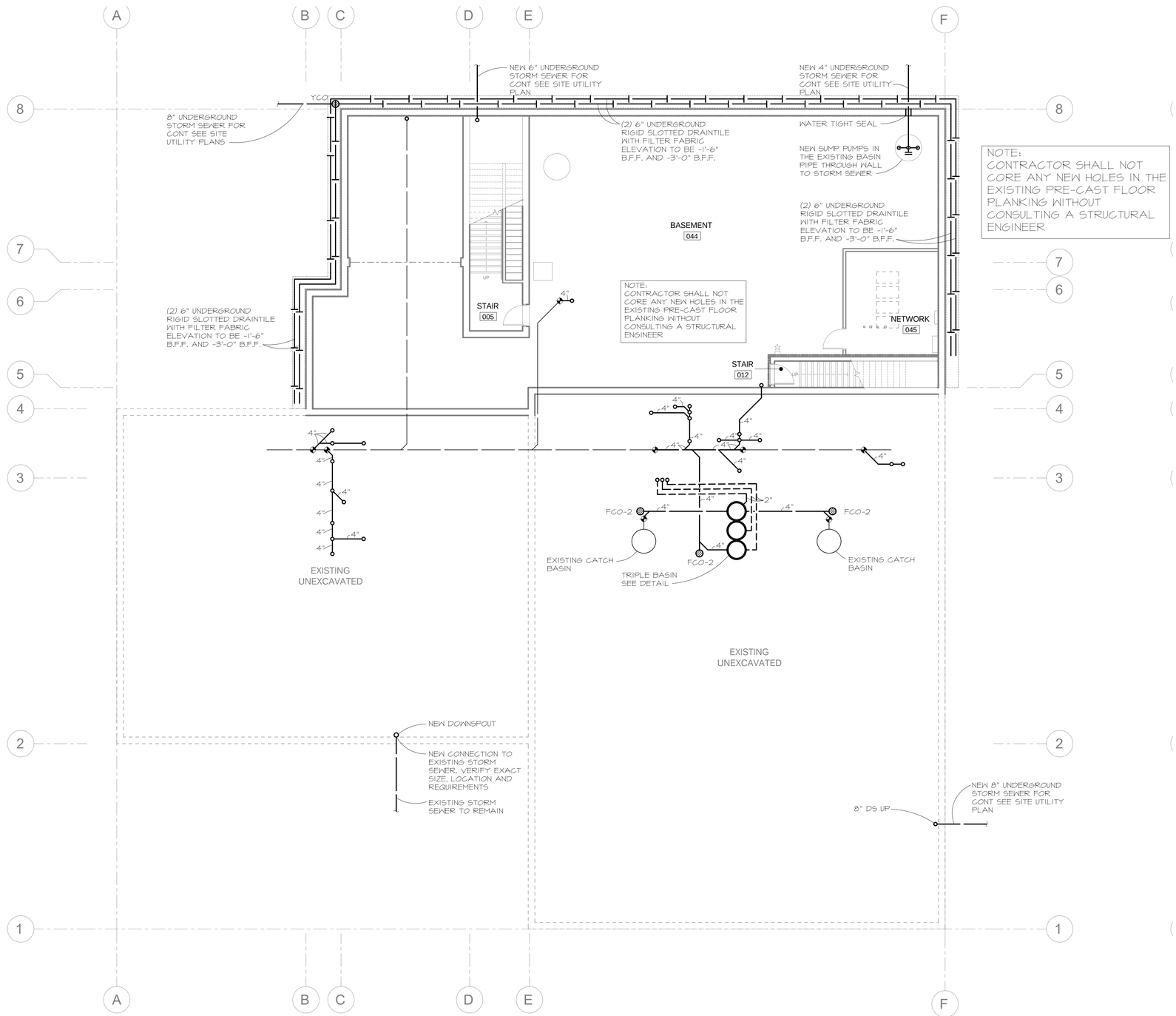
PD1.1



NOTE:
CONTRACTOR SHALL NOT CORE ANY NEW HOLES IN THE EXISTING PRE-CAST FLOOR PLANKING WITHOUT CONSULTING A STRUCTURAL ENGINEER

1 BASEMENT PLUMBING PLAN

SCALE 1/8" = 1'-0"

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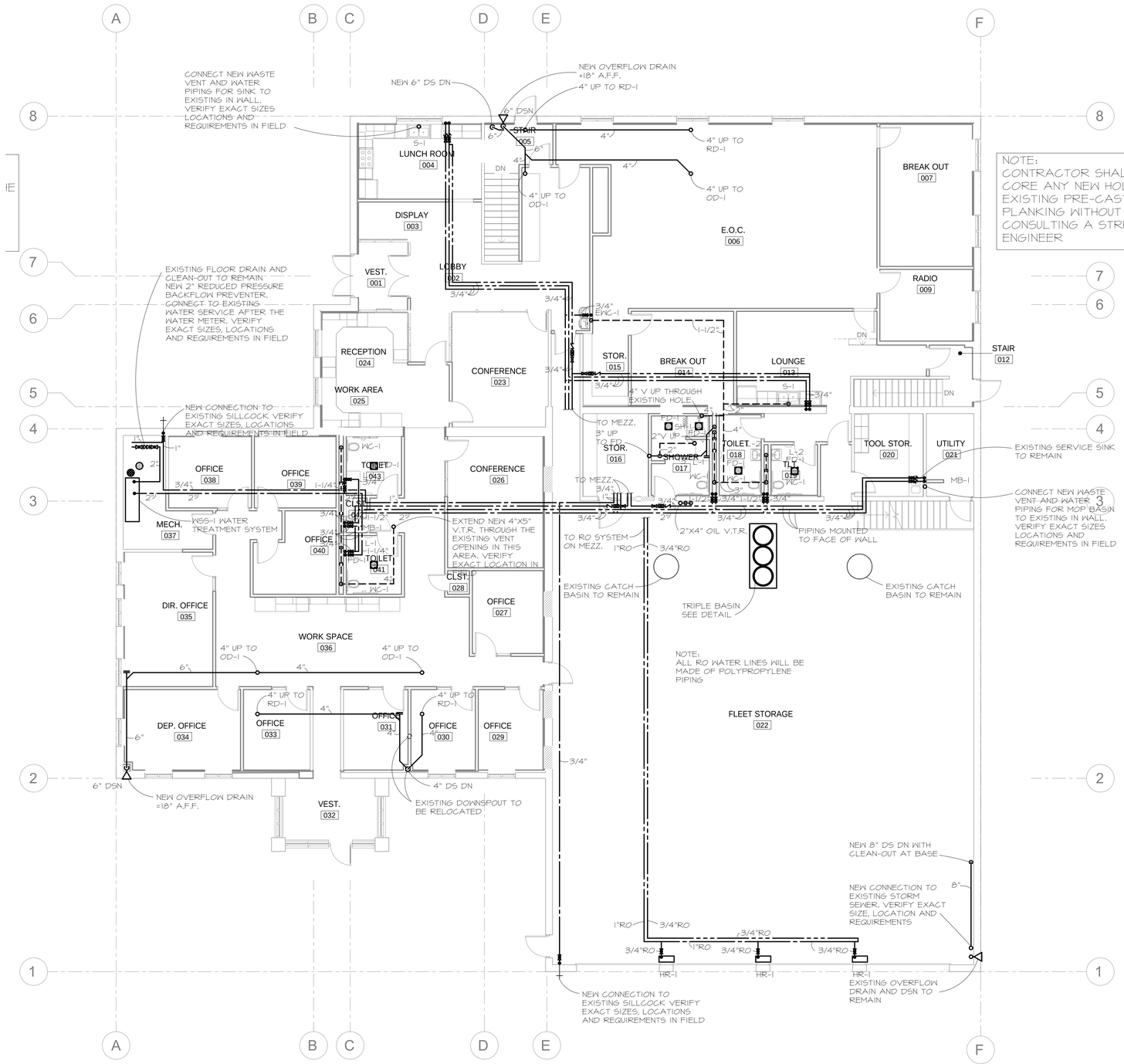
P1.0



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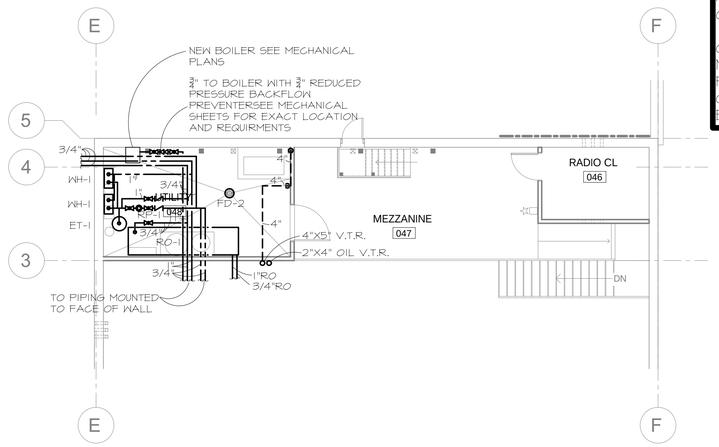

NOTE:
ALL RO WATER LINES WILL BE MADE OF POLYPROPYLENE (PP) PIPING

CONTRACTOR SHALL NOT CORE ANY NEW HOLES IN THE EXISTING PRE-CAST FLOOR PLANKING WITHOUT CONSULTING A STRUCTURAL ENGINEER

1 MEZZANINE PLUMBING PLAN

SCALE 1/8" = 1'-0"

N

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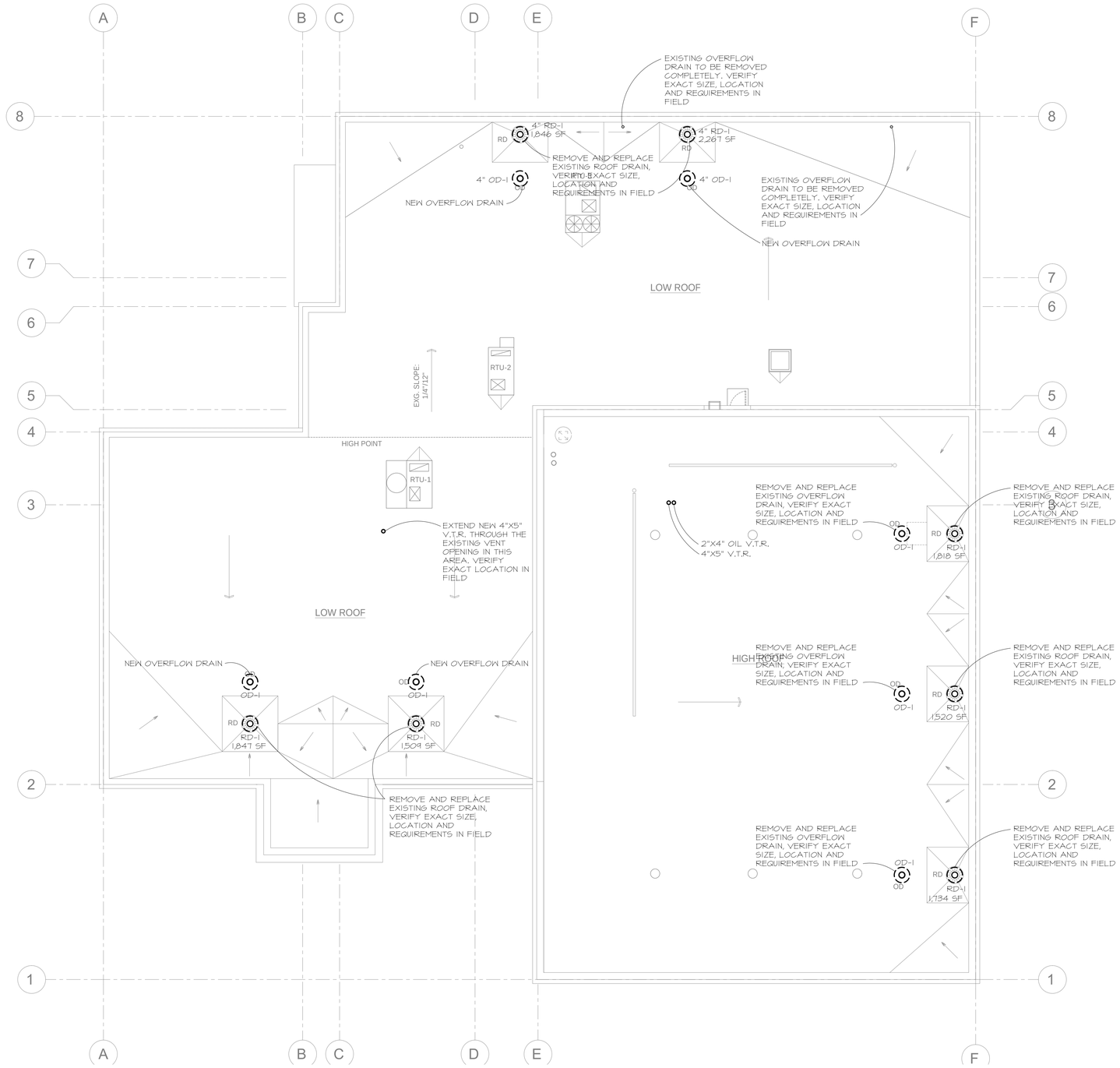
MEZZANINE PLUMBING PLAN

P1.2



1 ROOF PLUMBING PLAN

SCALE 1/8" = 1'-0"

N

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ROOF PLUMBING PLAN

P1.3

SPRINKLER NOTES

THE GENERAL CONDITIONS AND SUPPLEMENTAL GENERAL CONDITIONS ISSUED BY THE ARCHITECT SHALL GOVERN WHERE APPLICABLE.

THIS CONTRACTOR SHALL VERIFY EXISTING SITE CONDITIONS AT THE JOB SITE BEFORE SUBMITTING BID. FAILURE TO RECOGNIZE WORK REQUIRED SHALL BE AT THE EXPENSE OF THIS CONTRACTOR. NO CONSIDERATION SHALL BE GIVEN FOR ADDITIONAL COMPENSATION AFTER THE LETTING OF BIDS.

ENTIRE INSTALLATION SHALL BE PERFORMED IN A FIRST-CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEMS SHALL BE FULLY OPERATIONAL; ACCEPTANCE BY THE OWNER SHALL BE A CONDITION WITH OTHER TRADES IN ORDER TO AVOID INTERFERENCES, PRESERVE MAXIMUM HEADROOM AND AVOID OMISSIONS.

CONTRACTOR TO MAKE ALL NECESSARY TAPS, AS CALLED FOR ON THE DRAWINGS.

CONTRACTOR TO MAKE ALL NECESSARY TAPS, AS CALLED FOR ON THE DRAWINGS.

THIS CONTRACTOR SHALL REMOVE ALL DEBRIS ON COMPLETION OF THE JOB AND CLEAN ALL FIXTURES.

IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO START-UP, ADJUST AND CHECK FOR PROPER OPERATION, ALL EQUIPMENT INSTALLED UNDER THIS CONTRACT.

THIS CONTRACTOR SHALL ALLOW IN HIS INITIAL BID THE COST OF SERVICE ON ALL EQUIPMENT INSTALLED UNDER HIS CONTRACT FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL INSPECTION OF THE WORK.

THIS CONTRACTOR SHALL SUBMIT TO THE ARCHITECT/ ENGINEER, OWNERS INSURANCE UNDERWRITER, AND LOCAL FIRE DEPARTMENT FOR APPROVAL COMPLETE INSTALLATION AND DESIGN DRAWINGS SHOWING THE SPRINKLER SYSTEM LAYOUTS. THE LAYOUT SHALL INDICATE ALL OF THE SPRINKLER PIPING, SPRINKLER HEAD LOCATIONS AND DETAILS OF ANCHORS AND SUPPORTS AS REQUIRED.

THE SPRINKLER SYSTEM SHALL BE LAID OUT TO ELIMINATE ALL CONFLICTS BETWEEN THE SPRINKLER SYSTEM AND THE STRUCTURE INCLUDING THE MECHANICAL AND ELECTRICAL SYSTEMS AS THEY ARE SHOWN ON THE CONTRACT DRAWINGS.

THE LAYOUT SHALL INDICATE COORDINATION BETWEEN SUCH ITEMS AS DUCTWORK, LIGHTS, STRUCTURAL MEMBERS, ETC. PIPE FOR ABOVE GRADE SHALL BE NEW SCHEDULE 40 FOR BRANCHES AND SCHEDULE 10 FOR MAINS, STANDARD WEIGHT STEEL DESIGNED FOR 175 LB. WORKING PRESSURE, CONFORMING TO A.S.A. B36.10 MANUFACTURED IN THE U.S.

FITTINGS SHALL BE NEW 125 LB. CAST IRON SCREWED OR FLANGED CONFORMING TO A.S.A. B16.4, MANUFACTURED IN THE U.S. AND APPROVED FOR FIRE PROTECTION SPRINKLER SYSTEMS.

THE SPRINKLER RISERS, MAINS AND BRANCH PIPING SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE, USING APPROVED TYPE STEEL HANGERS, BRACKETS, ANCHORS AND STUDS, OF SIZE AND NUMBER IN ACCORDANCE WITH N.F.P.A. #13.

THE SPRINKLER SYSTEM SHALL BE INSTALLED IN CONFORMANCE WITH PAMPHLET 13 OF THE NATIONAL FIRE PROTECTION ASSOCIATION AND ALL REQUIREMENTS OF THE LOCAL FIRE DEPARTMENT AND OWNER'S INSURANCE UNDERWRITER.

ALL PIPING ABOVE GRADE SHALL BE HYDROSTATICALLY TESTED AT 200 PSIG FOR A TWO-HOUR PERIOD IN ACCORDANCE WITH N.F.P.A. #24.

CONTRACTOR IS RESPONSIBLE FOR SPACING, PIPE SIZE, OFFSETS, CLEARANCES, VALVES, ELBOWS, HANGERS, ALL ACCESSORIES AND QUANTITIES FOR ALL..

THIS CONTRACTOR SHALL DESIGN AND INSTALL A COMPLETE SPRINKLER SYSTEM PER NFPA AND LOCAL CODES

OVERHANGS TO BE PROTECTED BY DRY SIDEWALL HEADS WHEN THEY EXCEED 4'-0"

THE CONTRACTOR SHALL RELOCATE ANY MAINS BRANCHES, OR SUPPLY PIPING TO ACCOMMODATE THE NEW WORK

TRIPLE BASIN CALCULATIONS FOR SERVICE SPACE

TOTAL SQUARE FEET OF GARAGE AREA= 4097 SF

-500 SQUARE FEET=6 CUBIC FEET

3597 SF DIVIDED BY 500= 7.2 CUBIC FEET

CUBIC FEET OF STORAGE REQUIRED= 13.2 CUBIC FEET

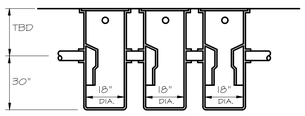
CUBIC FEET MULTIPLIED BY 7.5 GALLONS= 99

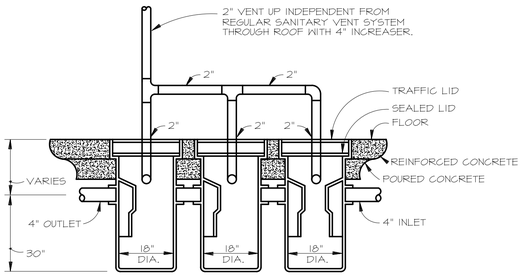
TOTAL GALLONS DIVIDED BY 3= 33 GALLONS STORAGE EACH BASIN REQUIRED

VOLUME IN GALLONS PER FOOT OF WATER

18" DIA=13.5/FT	30" DIA=36/FT
24" DIA=23.5/FT	48" DIA=94/FT
36" DIA=52.9/FT	72" DIA=211.5/FT
60" DIA=147/FT	

18" DIA BASIN X 30" DEEP= 33.75 GALLONS EACH
TOTAL STORAGE= 101.25 GALLONS





NOTE:
PROVIDE HEAVY DUTY TRAFFIC RATED COVERS

DETAIL– TRIPLE GARAGE BASIN

PLUMBING NOTES

THE GENERAL CONDITIONS AND SUPPLEMENTAL GENERAL CONDITIONS ISSUED BY THE ARCHITECT SHALL GOVERN WHERE APPLICABLE.

THIS CONTRACTOR SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH THE PLANS AND SHALL VERIFY EXISTING SITE CONDITIONS AT THE JOB SITE BEFORE SUBMITTING BID. FAILURE TO RECOGNIZE WORK REQUIRED SHALL BE AT THE EXPENSE OF THIS CONTRACTOR. NO CONSIDERATION SHALL BE GIVEN FOR ADDITIONAL COMPENSATION AFTER THE LETTING OF BIDS.

ENTIRE INSTALLATION SHALL BE PERFORMED IN A FIRST-CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEMS SHALL BE FULLY OPERATIONAL; ACCEPTANCE BY THE OWNER SHALL BE A CONDITION OF THE CONTRACT. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES IN ORDER TO AVOID INTERFERENCES, PRESERVE MAXIMUM HEADROOM, AND AVOID OMISSIONS.

CONTRACTOR TO MAKE ALL NECESSARY TAPS, AS CALLED FOR ON THE DRAWINGS.

THIS CONTRACTOR SHALL REMOVE ALL DEBRIS ON A REGULAR BASIS AND UPON COMPLETION OF THE JOB AND CLEAN ALL FIXTURES.

COVER ALL HOT AND COLD LINES, ROOF DRAINS AND HORIZONTAL DOWNSPOUT PIPING. PIPE COVERING TO BE SHALL BE 3 1/2 LB. DENSITY FIBERGLASS WITH MOLDED FITTINGS AND BUTT JOINTS AND VAPOR BARRIER.

IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO START UP, AND ADJUST AND CHECK FOR PROPER OPERATION ALL EQUIPMENT INSTALLED UNDER HIS CONTRACT.

THIS CONTRACTOR SHALL ALLOW IN HIS INITIAL BID THE COST OF SERVICE ON ALL EQUIPMENT INSTALLED UNDER HIS CONTRACT FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE OF THE WORK.

ALL WATER PIPING SHALL BE TESTED WITH WATER UNDER PRESSURE OF 100 PSI FOR 10 MINUTES, AND MADE TIGHT AT THIS PRESSURE.

ALL SOIL, WASTE AND VENT PIPING SHALL BE SUBJECTED TO A HYDROSTATIC TEST OF NOT LESS THAN 10 FEET OF WATER COLUMN FOR 15 MINUTES BEFORE INSPECTION STARTS AND PROVEN TIGHT.

BEFORE TURNING PLUMBING SYSTEM OVER TO THE OWNER, CHLORINATE ALL DOMESTIC WATER PIPING FOR A PERIOD OF 24 HOURS. AFTER CHLORINATION HAS BEEN COMPLETED, FLUSH ALL PIPING UNTIL WATER RUNS CLEAR AND IS RESIDUAL CHLORINE FREE.

ALL BELOW GROUND WASTE, VENT AND STORM SEWER PIPING SHALL BE SERVICE WEIGHT CAST-IRON. ALL ABOVE GROUND WASTE, VENT AND STORM SEWER PIPING 3" AND LARGER SHALL BE SERVICE WEIGHT CAST-IRON, ALL WASTE VENT AND STORM SEWER PIPING 2" AND SMALLER SHALL BE GALVANIZED OR TYPE "M" COPPER. (SCHEDULE 40 PVC MAY BE USED ABOVE GRADE IF APPROVED BY THE THE LOCAL AUTHORITY) ALL BELOW GROUND WATER PIPING 3" AND LARGER SHALL BE DUCTILE-IRON, ALL BELOW GROUND WATER PIPING 2" AND SMALLER SHALL BE TYPE "K" COPPER, ALL ABOVE GROUND WATER PIPING SHALL BE TYPE "L" COPPER. ALL RO WATER LINES WILL BE MADE OF POLYPROPYLENE (PP) PIPING

THE PLUMBING SYSTEM SHALL BE INSTALLED IN CONFORMANCE WITH STATE OF WISCONSIN PLUMBING CODE

EQUIPMENT SCHEDULE

WH-1 SYSTEM SHALL CONSIST OF (2) NAVIEN NPE240A COMMERCIAL TANKLESS WATER HEATERS WITH STAINLESS STEEL HEAT EXCHANGERS AND INTERNAL PIPING. HEATERS SHALL HAVE A MINIMUM THERMAL EFFICIENCY OF 91%. COMPLETE SYSTEM TO INCLUDE CASCADE COMMUNICATION CABLES, NEUTRALIZATION KIT, ISOLATION VALVE KITS, PVC VENTING, PIPING AND VALVES FOR AN AUTOMATIC, CASCADING SYSTEM.

HEAT EXCHANGERS

NAVIEN UTILIZES DUAL STAINLESS STEEL HEAT EXCHANGERS, PROVIDING 3.8 TO 4.5 TIMES LONGER LIFE-EXPECTANCY AND EROSION RESISTANCE OVER THE COPPER HEAT EXCHANGERS USED IN OTHER BRANDS. NAVIEN'S STAINLESS STEEL HEAT EXCHANGER OPERATES WITH RELATIVELY LOW WATER TEMPERATURE, MINIMIZING DAMAGE FROM HARD WATER CONDITIONS WHILE MAINTAINING EFFICIENCY LEVELS.

VENTING

THE HIGHER EFFICIENCY AND LOWER EXHAUST TEMPERATURES ALLOW THE USE OF SCHEDULE 40 PVC. THE COMMON VENT SIZE SHALL BE 6" WITH A MAXIMUM OF 6 ELBOWS.

INTERFACE CONTROL

ADVANCED WATER HEATER DIAGNOSIS CAPABILITY AND ERROR FEEDBACK. TOUCH ACTIVATED BACKLIGHT FUNCTION AND EASY-TO-USE BUTTON TYPE CONTROL. BUILT-IN RECIRCULATION TIMER FOR WATER AND ENERGY SAVINGS KEY-PAD LOCK BUTTON PREVENTS INADVERTENT TEMPERATURE CHANGES TEMPERATURE ADJUSTMENT IN 1\|8F INCREMENTS BETWEEN 98-120F, 120-140F IN 5F INCREMENTS, 140-180F IN 10F INCREMENTS, 180-185F IN FINAL 5F INCREMENT.

CASCADE

UNITS SHALL BE LINKED TOGETHER, EASY WIRING CONNECTION; SIMPLE WIRING LINK WITHOUT COMPLICATED COMMUNICATION CONTROLS. FULL MODULATION SYSTEM, ENTIRE CASCADE SYSTEM ACTS LIKE ONE SYSTEM WITH COMPLETE SYSTEM MODULATION.

BUILT IN RECIRCULATION

DELIVERS HOT WATER TO FIXTURES QUICKLY RESULTING IN ENERGY CONSERVATION. NO MINIMUM FLOW RATE. MINIMIZES HOT/COLD/HOT STACKING, THE SO CALLED "COLD WATER SANDWICH" BUILT-IN RECIRCULATION TIMER FOR WATER AND ENERGY SAVINGS.

ET-1 EXPANSION TANK "AMTROL" #ST-12-C

RP-1 RECIRCULATION PUMP "B4G" SERIES PR 1/6 H.P., 120V, 1 PHASE, 10 GPM AT 8' HEAD.

RO-1 REVERSE OSMOSIS SYSTEM "CULIGAN" # GI-2F , 2.78 GPM 0.75 HP PUMP WITH CONTROL PANEL

PRESSURE BOOSTING TANK "WELLMATE" # WM-25WB MAXIMUM OPERATING PRESSURE 125 PSI

HORIZONTAL END SUCTION PUMP "GROUDFOS" # CM 3-3 A-S-G-E-AQQE B-A-A-N

HORIZONTAL END SUCTION PUMP "GROUDFOS" # CM 3-3 A-S-G-E-AQQE B-A-A-N

HOLDING TANK "PLASTIC-MART" 130 GALLON VERTICAL TANK WITH 8" LID

WSS-1 WATER SOFTENER SYSTEM "CULLIGAN" # CTM-90-PF, ONE BRINE TANK, 2 SOFTENER TANKS.

HR-1 HOSE REEL "REELCRAFT" # 82100 OLP SERIES 80000 WITH HOSE, 100' HOSE LENGTH, HOSE I.D. 1/2",

FIXTURE SCHEDULE

WC-1 "AMERICAN STANDARD" MODEL# 3351.128 AFWALL FLOWISE TOILET. WALL-MOUNTED FLUSH VALVE TOILET, VITREOUS CHINA, HIGH-EFFICIENCY (1.28 GPF), EVERGLEAN SURFACE INHIBITS THE GROWTH OF BACTERIA, MOLD AND MILDEW, CONDENSATION CHANNEL, ELONGATED BOWL, POWERFUL DIRECT-FED SIPHON JET ACTION, 1-1/2" TOP SPUD, FULLY-GLAZED 2-1/8" TRAPWAY. (MOUNT RIM 17" AFF)

"SLOAN" MODEL #8111-1.28 OPTIMA FLUSHOMETER, BATTERY OPERATED, EXPOSED, HIGH-EFFICIENCY (1.28 GPF) FOR TOP-SPUD BOWLS.

"JAY R SMITH" MODEL #210-R/L WATER CLOSET SUPPORT.

"BEMIS" MODEL #2155CT WATER CLOSET SEAT. SEAT SHALL CONTAIN DURAGUARD, AN ANTIMICROBIAL AGENT. SEAT SHALL BE HEAVY WEIGHT AND INJECTION MOLDED OF SOLID PLASTIC. SEAT SHALL BE OPEN FRONT LESS COVER FOR ELONGATED BOWL AND FEATURE LARGE MOLDED-IN BUMPERS. EXTERNAL CHECK HINGES TO FEATURE 300 SERIES STAINLESS STEEL POSTS THAT STOP SEAT 11 DEGREES BEYOND VERTICAL.

L-1 "AMERICAN STANDARD" MODEL# 0482000.020 OVALYN LAVATORY UNDERMOUNT, VITREOUS CHINA, FRONT OVERFLOW, OVAL-SHAPED BOWL.

"SLOAN" MODEL #EBF-650-4-BDT CHROME PLATED BRASS, SENSOR ACTIVATED, 4" CENTER-SET ELECTRONIC HAND WASHING FAUCET AND THERMOSTATIC MIXING VALVE. (SET TEMPERATURE SHALL NOT EXCEED 110 DEGREES F)

"MCGUIRE" MODEL #PN2125WCPRO SEAMLESS PRE-WRAPPED ADJUSTABLE CAST BRASS P-TRAP KIT WITH PRE-WRAPPED PRO-DRAIN OFFSET GRID STRAINER. KIT ALSO INCLUDES SUPPLY COVERS.

PROVIDE CHROME-PLATED ANGLES STOPS, ESCUTCHEONS AND RISER TUBES.

L-2 "AMERICAN STANDARD" MODEL# 0355.012 LUCERNE LAVATORY, WALL-HUNG, VITREOUS CHINA, FRONT OVERFLOW, D-SHAPED BOWL, SELF-DRAINING DECK AREA WITH CONTOURED BACK AND SIDE SPLASH SHIELDS, FAUCET LEDGE, FAUCET HOLES ON 4" CENTERS AND WALL HANGER. (MOUNT RIM 34" AFF)

"JAY R SMITH" MODEL #0700 LAVATORY SUPPORT.

"SLOAN" MODEL #EBF-650-4-BDT CHROME PLATED BRASS, SENSOR ACTIVATED, 4" CENTER-SET ELECTRONIC HAND WASHING FAUCET AND THERMOSTATIC MIXING VALVE. (SET TEMPERATURE SHALL NOT EXCEED 110 DEGREES F)

"MCGUIRE" MODEL #PN2125WCPRO SEAMLESS PRE-WRAPPED ADJUSTABLE CAST BRASS P-TRAP KIT WITH PRE-WRAPPED PRO-DRAIN OFFSET GRID STRAINER. KIT ALSO INCLUDES SUPPLY COVERS.

PROVIDE CHROME-PLATED ANGLES STOPS, ESCUTCHEONS AND RISER TUBES.

SH-1 "SYMMONS" MODEL #C-96-500-B30-V-X SHOWER/HAND SHOWER TEMPTROL PRESSURE BALANCING SHOWER VALVE WITH DIVERTER WALL/HAND SHOWER WITH FLEXIBLE METAL HOSE W/ QUICK DISCONNECT, IN-LINE VACUUM BREAKER, WALL CONNECTION AND FLANGE, 30" SLIDE BAR FOR HAND SHOWER MOUNTING. (2 GPM)

S-1 "ELKAY" MODEL #LRAD332265PD DUAL BOWL STAINLESS STEEL SINK. IS SEAMLESSLY DRAWN OF #18 GAUGE, TYPE 304 STAINLESS STEEL.

"SYMMONS" MODEL #S-23-1.5 SYMMETRIX SINGLE LEVER KITCHEN FAUCET WITH CERAMIC CONTROL COMPONENTS AND HANDLE LIMIT STOP. 8-1/2" SWING SPOUT WITH AERATOR, 3/8" SUPPLIES, 8" CENTERS, POLISHED CHROME FINISH.

PROVIDE CHROME-PLATED ANGLE STOPS, RISER TUBES, P-TRAP AND TAILPIECES.

S-2 "CHICAGO FAUCETS" MODEL #1100-L9-317ABCP ADA DUAL LEVER FAUCET, 8" FIXED CENTERS, 9-1/2" L-TYPE SWING SPOUT,

MB-1 "FIAT" # MSB-2424 MOLDED STONE BASIN WITH INTEGRAL DRAIN BODY.

"FIAT" 830-AA SERVICE FAUCET FITTING WITH INTEGRAL VACUUM BREAKER, HOSE THREAD SPOUT AND INTEGRAL STOPS.

EWC-1 "ELKAY" MODEL #EZSTL8WSLK BI-LEVEL WATER COOLER WITH BOTTLE FILLING STATION.

PROVIDE CHROME-PLATED ANGLES STOPS, ESCUTCHEONS AND RISER TUBES.

PLUMBING SYMBOLS

NOT ALL SYMBOLS MAY APPLY

- EXISTING COLD WATER PIPING
- EXISTING HOT WATER PIPING
- EXISTING HOT WATER RETURN PIPING
- EXISTING UNDERGROUND SEWER
- EXISTING SUSPENDED SEWER
- EXISTING VENT PIPING
- COLD WATER PIPING (INSULATED)
- HOT WATER PIPING (INSULATED)
- HOT WATER RETURN PIPING (INSULATED)
- TMS — TEMPERED WATER PIPING (INSULATED)
- TMR — TEMPERED WATER RETURN PIPING (INSULATED)
- UNDERGROUND SEWER
- SUSPENDED SEWER
- DRAIN TILE
- VENT PIPING
- UNION
- CO — CLEANOUT PLUG
- WCO — WALL CLEANOUT PLUG ("MI-FAB" #C1430-RD)
- FCO-1 — FLOOR CLEANOUT ("MI-FAB" #C1200-C-5-3)
- FCO-2 — FLOOR CLEANOUT ("MIFAB" #C1000-R-3)
- YCO — YARD CLEANOUT ("MI-FAB" #C1100-XR)
- FD-1 — FLOOR DRAIN ("MI-FAB" #F1100X-C-5-3)
- FD-2 — FLOOR DRAIN ("MI-FAB" #F1320-TFB-4)
- OSD — OPEN SITE DRAIN
- AD — AREA DRAIN ("MI-FAB" #F1820-81)
- RD-1 — ROOF DRAIN ("MI-FAB" #R1200-M-U-12)
- OD-1 — OVERFLOW ROOF DRAIN ("MI-FAB" #R1200-W-12)
- DSN — DOWNSPOUT NOZZLE ("MI-FAB" #R1940-83-1)
- GV — GATE VALVE ("NIBCO" #T-131)
- BV — BALL VALVE ("NIBCO" #580-70)
- BV — BALANCING VALVE ("NIBCO" #5171O)
- CV — CHECK VALVE ("NIBCO" #433)
- BFP — BACKFLOW PREVENTER ("WATTS" SERIES SD-3)
- SC — FROSTPROOF SILLCOCK ("WOODFORD" #B67)
- HB — HOSE BIBB ("WOODFORD" #24P)
- RSC-1 — ROOF FROSTPROOF SILLCOCK ("WOODFORD" #SRH-MS)
- YH-1 — YARD HYDRANT ("WOODFORD" #54H-5'-0")
- HR-1 — HOSE REEL ("REELCRAFT" #83050 OLP - 3/4"X50'-0" L WATER REEL WITH HOSE
- (P) — STACK OR RISER DESIGNATION
- NEW CONNECTION BETWEEN NEW AND EXISTING PIPING, VERIFY EXACT LOCATION, SIZE, AND RETIREMENTS IN FIELD

RO - REVERSE OSMOSIS
HS - HAND SINK
TMV - THERMOSTATIC MIXING VALVE
ET - EXPANSION TANK
WH - WATER HEATER
MB - MOP BASIN
WSS - WATER SOFTENER
WC - WATER CLOSET
L - LAVATORY
UR - URINAL
RPZ - REDUCED PRESSURE ZONE BACKFLOW PREVENTOR
GI - GREASE INTERCEPTOR
SOFT - SOFT WATER
HARD - HARD WATER
WSFU - WATER SERVICE FIXTURE UNIT
NPCW - NON POTABLE COLD WATER
W&V - WASTE & VENT
BFP - BACKFLOW PREVENTER

CI - CAST IRON
CW - COLD WATER
DFU - DRAINAGE FIXTURE UNIT
DN - DOWN
DS - DOWNSPOUT
GPM - GALLONS PER MINUTE
HW - HOT WATER
HWR - HOT WATER RETURN
ISO - ISOLATION
SAN - SANITARY
KW - KITCHEN GREASE WASTE
OW - OIL WASTE
SS - SERVICE SINK
ST - STORM
V - VENT
VTR - VENT THROUGH ROOF
VIF - VERIFY IN FIELD

NOT FOR CONSTRUCTION

PRAIRIE FORGE GROUP
300 CARDINAL DRIVE
SUITE 160
SAINT CHARLES IL 60175
630.221.0671 | P
630.221.0778 | F
www.prairieforgegroup.com

DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY
FITCHBURG, WISCONSIN

CLIENT APPROVAL

- ☐ APPROVED
- ☐ APPROVED AS NOTED

APPROVED BY / DATE:

ISSUE RECORD

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	CD CHECK SET	11/20/20
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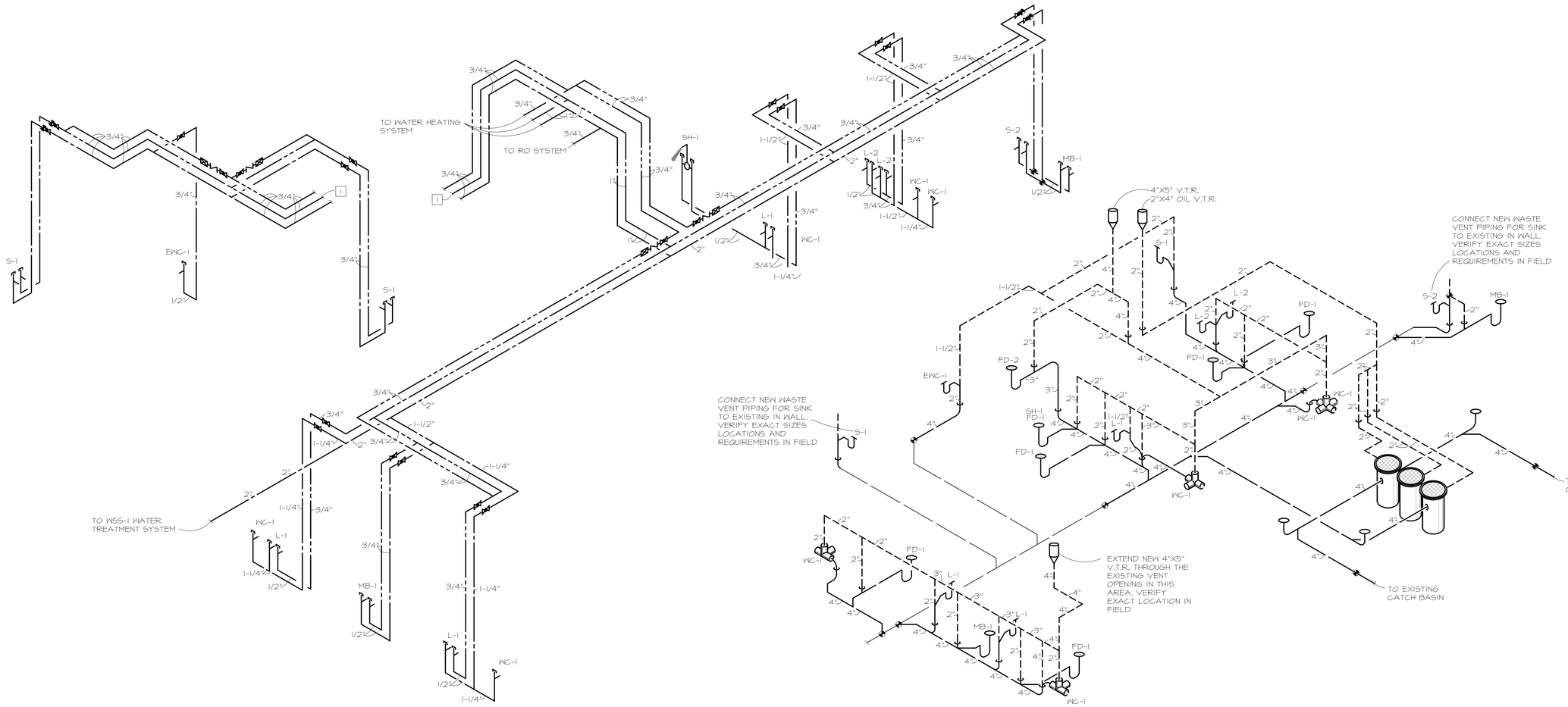
JAT,KJS,MOV
DATE
6/7/2021 8:47:06 AM
PROJECT NUMBER
2020-001

PLUMBING SYMBOLS, SCHEDULES AND DETAILS

P2.1

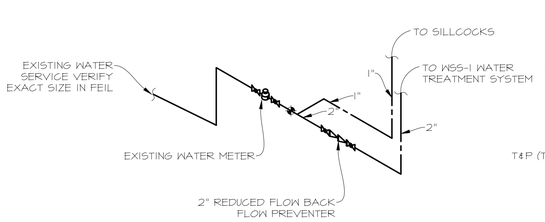
WISCONSIN MARK VENTRELLI E-41380-6 HOFFMAN ESTATES PROFESSIONAL ENGINEER

WT Group
Engineering • Design • Consulting
Structural | Mechanical/Electrical/Plumbing
Civil | Land Survey | Telecommunication | Aquatic
Accessibility Consulting | Design & Program Management
Engineering with Precision, Pace & Passion.
2675 Pratum Avenue | Hoffman Estates, IL 60192
P: 224.293.6333 | F: 224.293.6444
wtengineering.com
IL License No: 184.007570-0015 | Exp: 04.30.2023

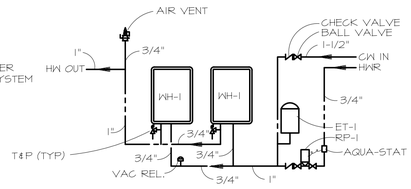


1 DIAGRAM WATER PIPING

2 DIAGRAM2 WASTE AND VENT PIPING



3 WATER SERVICE DETAIL



NOTE:
1. PROVIDE VACUUM RELIEF VALVE ON ALL ELEVATED AND BOTTOM FED WATER HEATERS.
2. SEE MECHANICAL SHEETS FOR FLUE AND GAS PIPING.
3. MOUNT AT 60" ABOVE FINISHED FLOOR.

4 DETAIL GAS FIRED TANKLESS WATER HEATER (WH-1)
N.T.S.

NOT FOR CONSTRUCTION

PRAIRIE FORGE GROUP
300 CARDINAL DRIVE
SUITE 160
SAINT CHARLES IL 60175
630.221.0671 | P
630.221.0118 | F
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DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY
FITCHBURG, WISCONSIN

CLIENT APPROVAL
- ☐ APPROVED
- ☐ APPROVED AS NOTED

APPROVED BY / DATE:

ISSUE RECORD

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JAT,KJS,MOV
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6/7/2021 8:47:06 AM
PROJECT NUMBER
2020-001

WISCONSIN MARK VENTRELLI E-41380-6 HOFFMAN ESTATES PROFESSIONAL ENGINEER

WT Group
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Structural | Mechanical/Electrical/Plumbing
Civil | Land Survey | Telecommunication | Aquatic
Accessibility Consulting | Design & Program Management
Engineering with Precision, Pace & Passion.
2675 Pratum Avenue | Hoffman Estates, IL 60192
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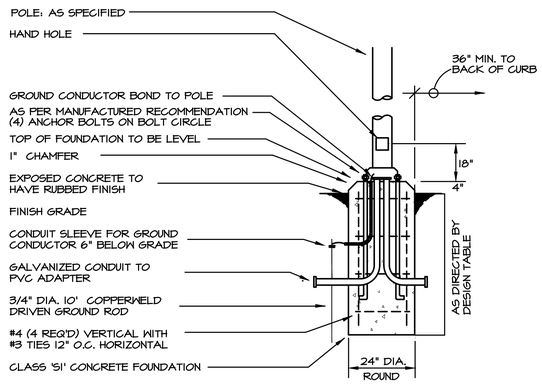
wtengineering.com
IL License No: 184.007570-0015 | Exp: 04.30.2023

PLUMBING DETAILS AND DIAGRAMS

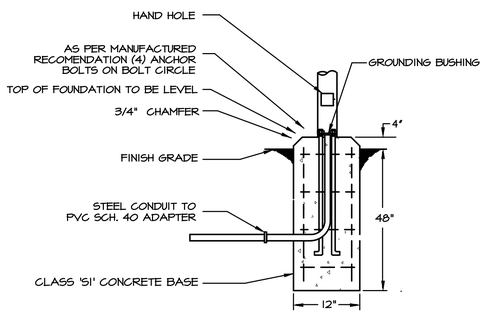
P2.2



TYPE SA & SB POLE BASE DETAIL

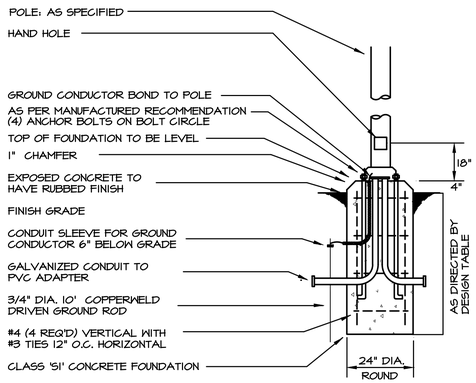
NOT TO SCALE

TYPE OF SOIL		DESIGN DEPTH OF FOUNDATION (IN FEET)
DESCRIPTIONS	STANDARDS	20' POLE
1. SOFT CLAY	QU.=0.25-0.5 TSF	14.0
2. MED. STIFF CLAY	QU.=0.5-1.0 TSF	9.5
3. STIFF CLAY	QU.=1.0-2.0 TSF	7.5



TYPE SD BOLLARD BASE DETAIL

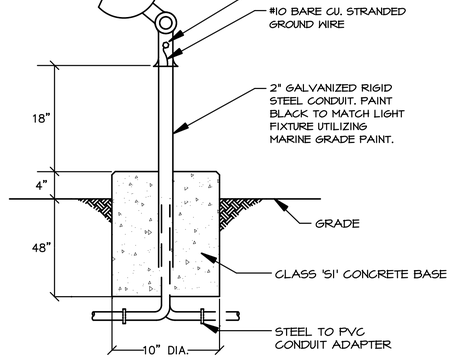
NOT TO SCALE



TYPE SC POLE BASE DETAIL

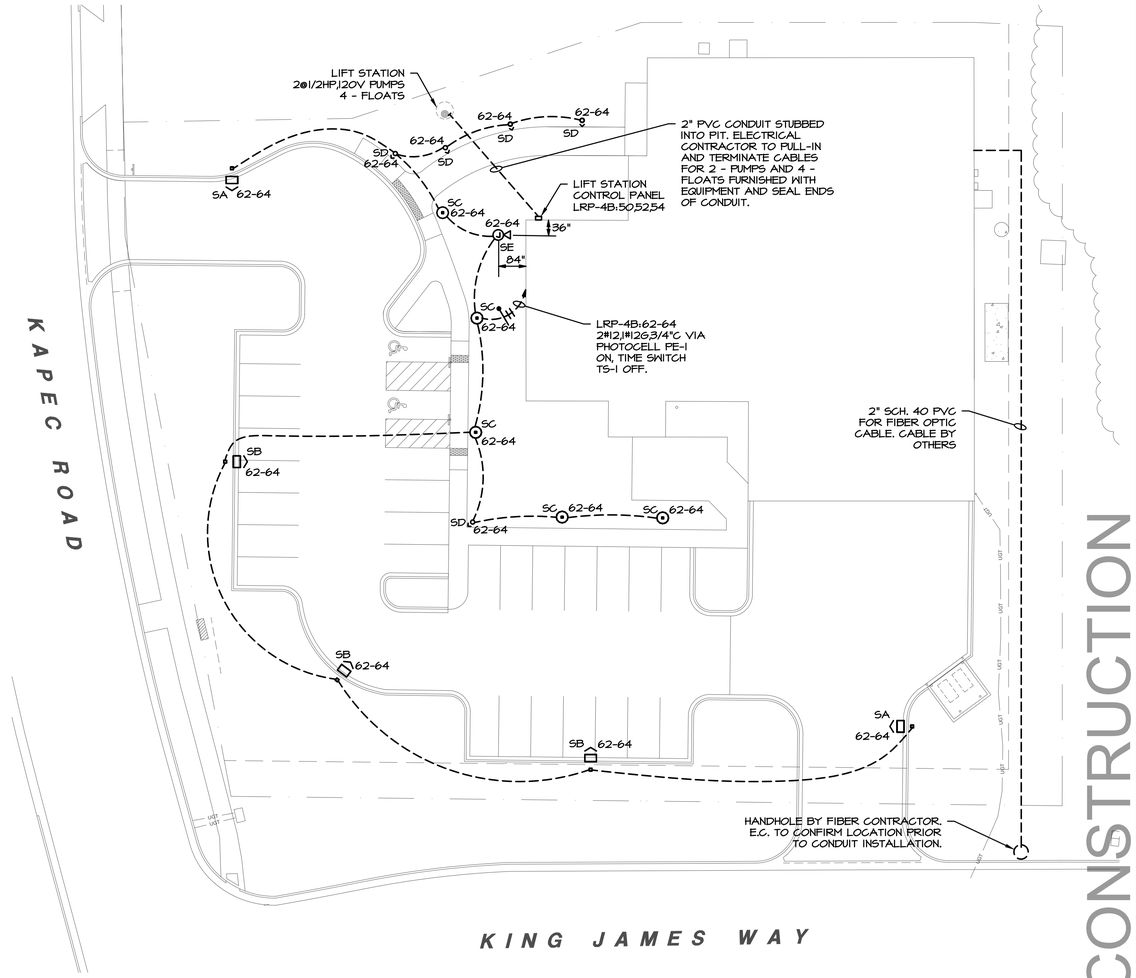
NOT TO SCALE

TYPE OF SOIL		DESIGN DEPTH OF FOUNDATION (IN FEET)
DESCRIPTIONS	STANDARDS	10' POLE
1. SOFT CLAY	QU.=0.25-0.5 TSF	12.0
2. MED. STIFF CLAY	QU.=0.5-1.0 TSF	8.5
3. STIFF CLAY	QU.=1.0-2.0 TSF	6.5



DETAIL - TYPE SE FLOOD LIGHT

NOT TO SCALE



1 ELECTRICAL SITE PLAN

SCALE: 1" = 20'-0"

N

SITE LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION & FEATURES	LAMPS TYPE	MOUNTING CLG./POLE-TYPE	VOLT	SPECIFIED MANUFACTURER AND CATALOG NUMBER
SA	POLE MOUNTED LUMINAIRE	71W LED	20'-0" POLE	208	LITHONIA #DSXO-LED-P3-40K-T3M-
					MVOLT-RPA-HS-DBLXD W/ #RSS-20-
					4B-DM19AS-DBLXD POLE
SB	POLE MOUNTED LUMINAIRE	92W LED	20'-0" POLE	208	LITHONIA #DSXO-LED-P4-40K-TFTM-
					MVOLT-RPA-HS-DBLXD W/ #RSS-20-
					4B-DM19AS-DBLXD POLE
SC	POLE MOUNTED LUMINAIRE	25W LED	10'-0" POLE	208	LITHONIA #RADPT-LED-P1-30K-SYM-
					MVOLT-RADPT20-DBLXD W/
					#RSS-10-4B-T20-DBLXD POLE
SD	41.5"H BOLLARD	19W LED	BASE	208	RADB-LED-P4-30K-ASY-MVOLT-
					BTSDBLXD-BCCDBLXD-DBLXD
SE	FLOODLIGHT	21W LED	2" GRS/BASE	208	LITHONIA #DSXF1-LED-P1-40K-NFR-
					MVOLT-15-BDLXD

NOTES:

1. VERIFY TYPE OF MOUNTING FOR ALL LIGHTING FIXTURES PRIOR TO ORDERING.
2. PROVIDE ALL ADDITIONAL HARDWARE FOR FIXTURE MOUNTING AS REQUIRED AT NO EXTRA COST.
3. THE FIXTURE SCHEDULE DOES NOT NECESSARILY LIST ALL ACCESSORIES AND HARDWARE NECESSARY FOR THE COMPLETION OF INSTALLATION, NOR DOES IT DETAIL THE CEILING CONSTRUCTION TO BE ENCOUNTERED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROPERLY DETERMINE AND PROVIDE CORRECT COMPONENTS, ACCESSORIES, AND HARDWARE AS REQUIRED FOR THE INSTALLATION.
4. CONTRACTOR SHALL COORDINATE WITH ARCHITECTURAL DRAWINGS AND CIVIL CONTRACTOR FOR EXACT LIGHTING FIXTURE LOCATIONS AND HEIGHTS.
5. ALL LAMPS SHALL BE 4000K, UNLESS OTHERWISE INDICATED.

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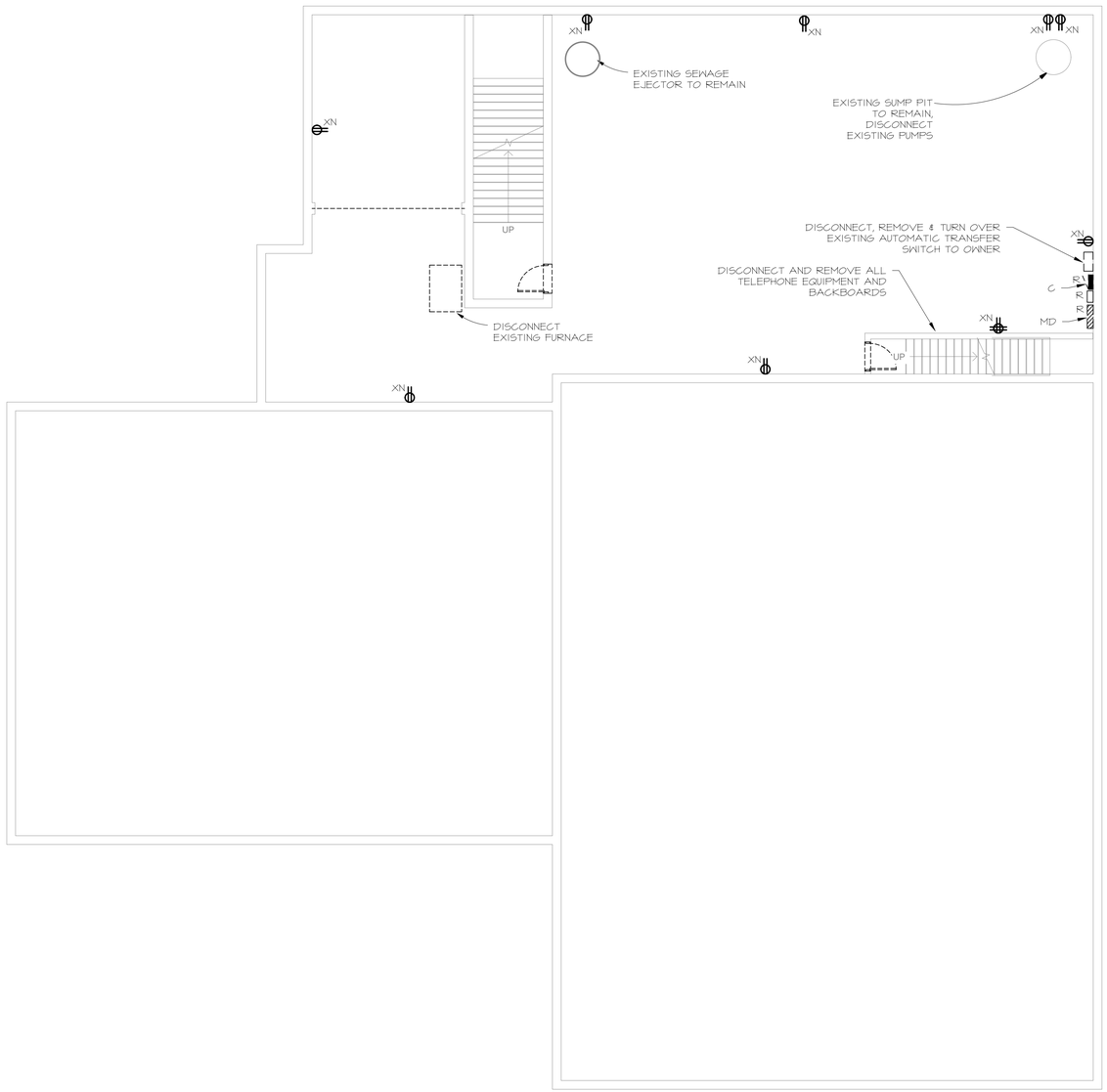
ELECTRICAL SITE PLAN

ES1.0



1 ELECTRICAL BASEMENT DEMOLITION PLAN

SCALE 1/8" = 1'-0"

N

DEMOLITION LEGEND

X - EXISTING TO REMAIN
R - EXISTING TO BE REMOVED
XN - EXISTING DEVICE REPLACED WITH NEW

DEMOLITION NOTES

1. ELECTRICAL CONTRACTOR SHALL DISCONNECT, REMOVE AND DISPOSE OF ALL EXISTING LIGHTING FIXTURES.
2. ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE ALL EXISTING BRANCH CIRCUIT WIRING. ALL WIRING SHALL BE NEW.
3. ELECTRICAL CONTRACTOR MAY REUSE IF FEASIBLE, EXISTING BRANCH CIRCUIT CONDUIT PENDING CONTRACTORS FIELD INSPECTION OF PROPER SUPPORTS AND TIGHT FITTINGS. ANY CONDUIT THAT IS NOT RE-USED SHALL BE REMOVED IN ITS ENTIRETY.
4. ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE ALL EXISTING RECEPTACLES THAT ARE NOT SHOWN TO BE REPLACED WITH NEW.
5. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH MECHANICAL CONTRACTOR DISCONNECTION AND RECONNECTION OF EXISTING GAS DETECTION SYSTEM, AIR COMPRESSOR, CO-RAY-VAC SYSTEM, AND ETC.

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ELECTRICAL BASEMENT DEMOLITION PLAN

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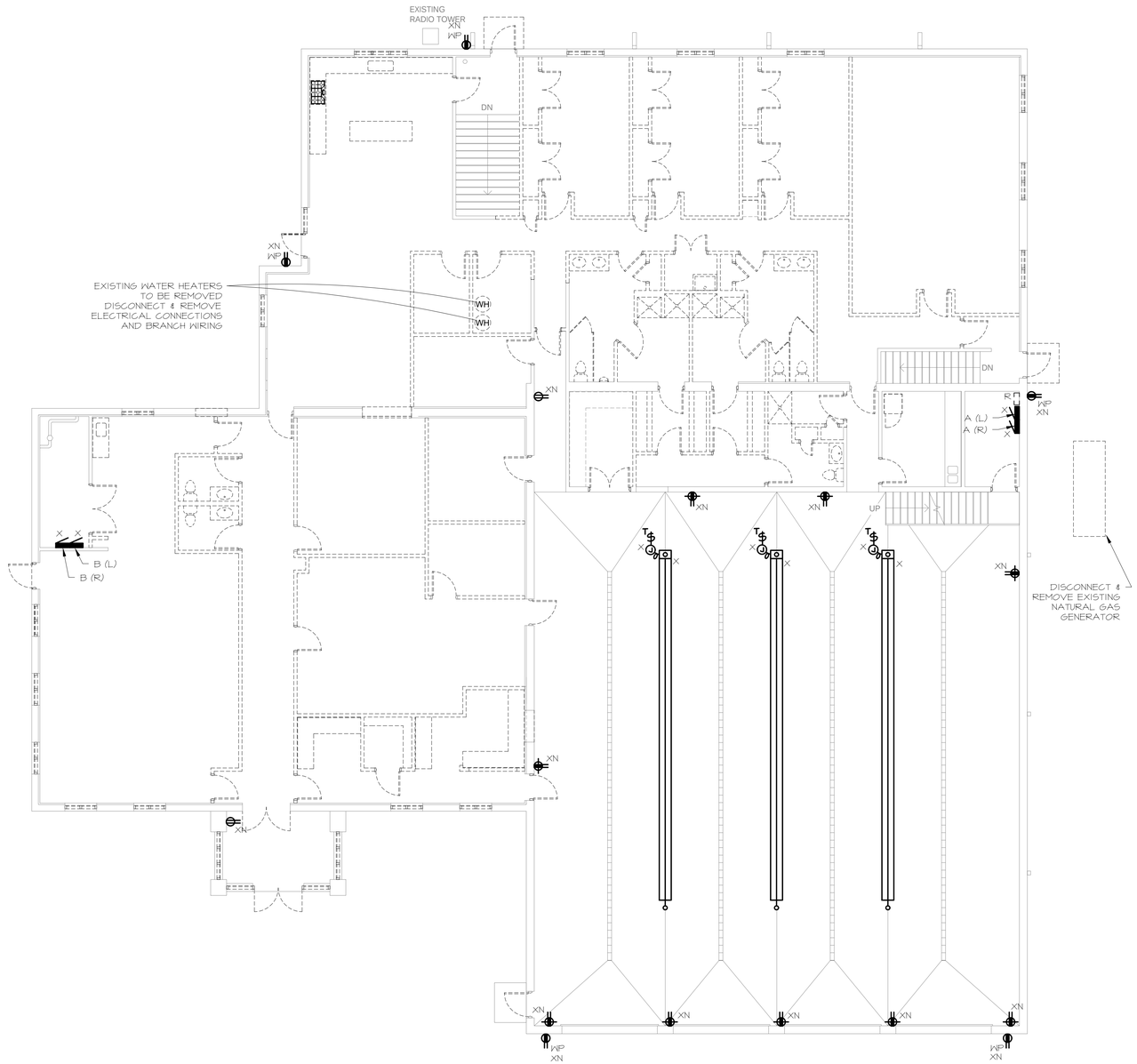

1 ELECTRICAL FIRST FLOOR DEMOLITION PLAN

SCALE 1/8" = 1'-0"

N

DEMOLITION LEGEND

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R - EXISTING TO BE REMOVED
XN - EXISTING DEVICE REPLACED WITH NEW

DEMOLITION NOTES

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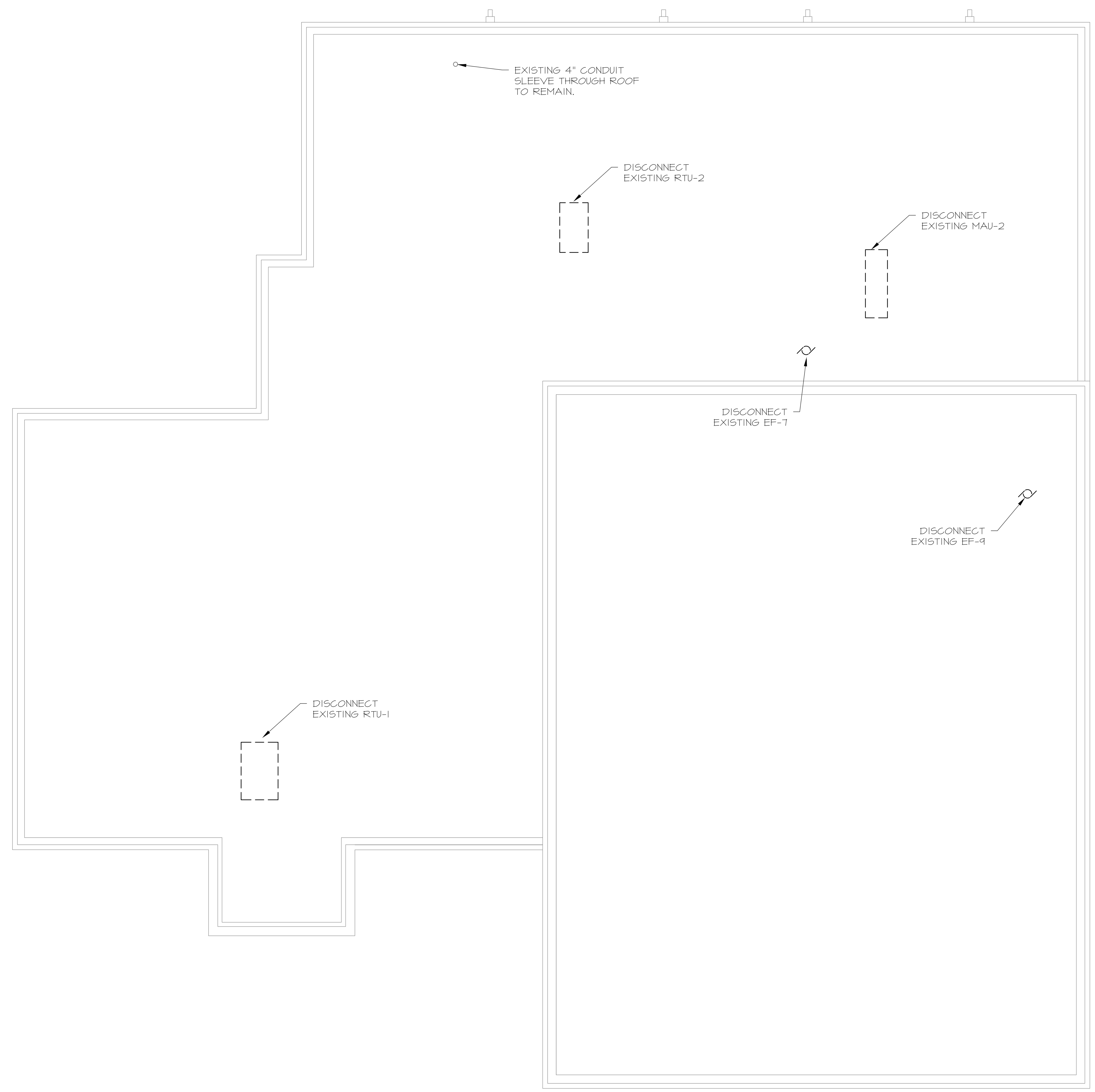
ELECTRICAL FIRST FLOOR DEMOLITION PLAN

ED1.1



1 ELECTRICAL ROOF DEMOLITION PLAN
SCALE 1/8" = 1'-0"

N

DEMOLITION LEGEND

X - EXISTING TO REMAIN
R - EXISTING TO BE REMOVED
XN - EXISTING DEVICE REPLACED WITH NEW

DEMOLITION NOTES

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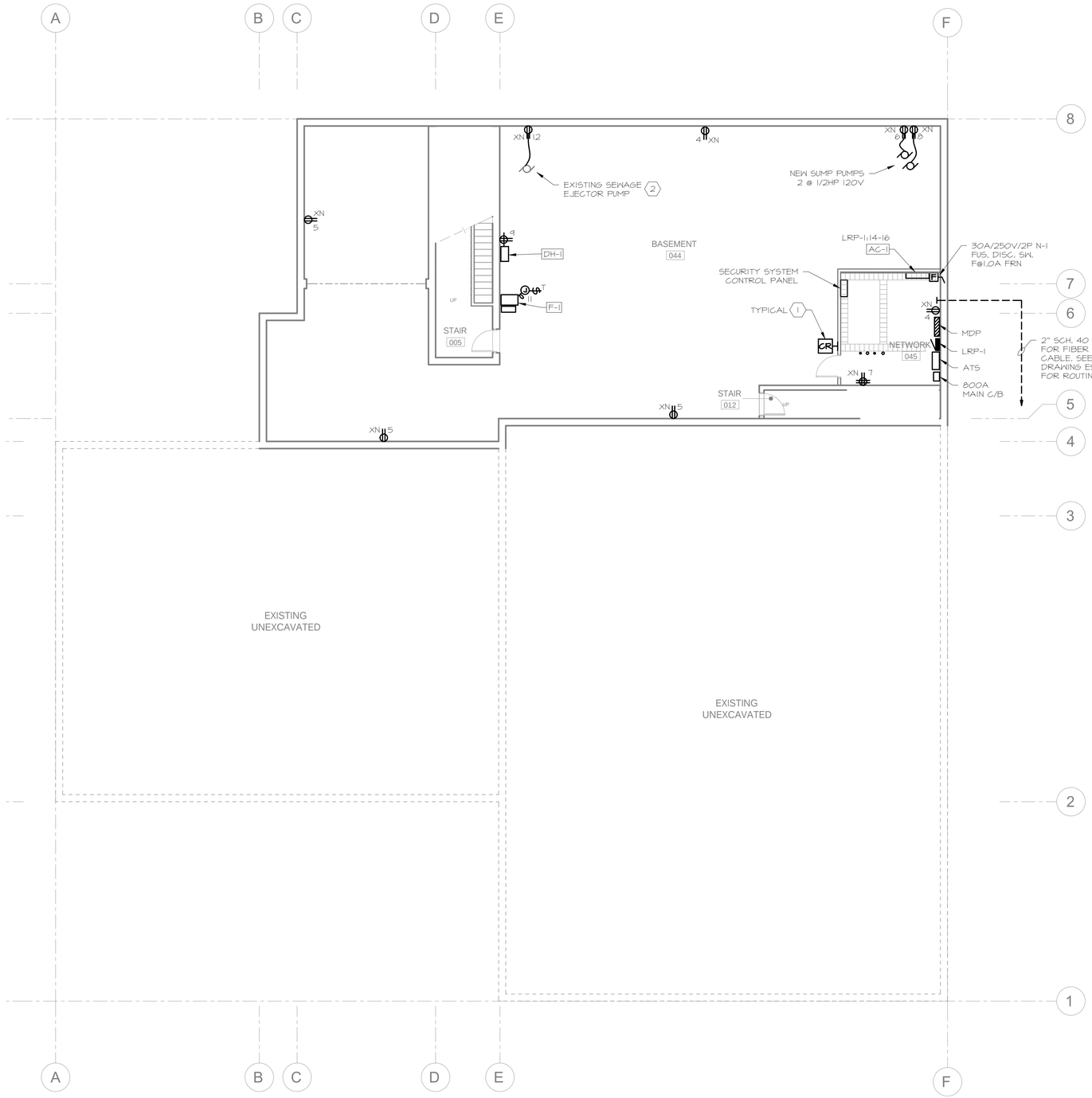
ELECTRICAL ROOF DEMOLITION PLAN
ED1.2



1 ELECTRICAL BASEMENT POWER PLAN

SCALE 1/8" = 1'-0"

N

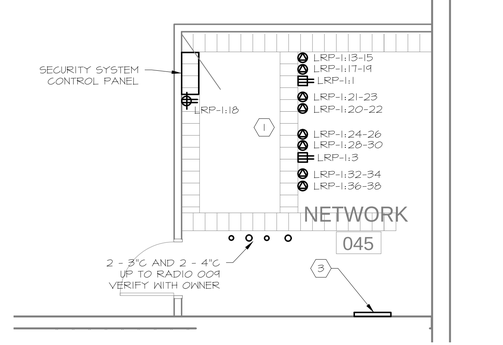
DEMOLITION LEGEND

X - EXISTING TO REMAIN
R - EXISTING TO BE REMOVED
XN - EXISTING DEVICE REPLACED WITH NEW

KEYED NOTES

1. ELECTRICAL CONTRACTOR SHALL REFER TO COMMUNICATIONS "T", AUDIOVISUAL "AV" AND SECURITY "S5" DRAWINGS FOR ADDITIONAL REQUIRED JUNCTION BOX LOCATIONS AND CONDUIT REQUIREMENTS.
2. ALL EXISTING SYSTEMS TO REMAIN SHALL BE TESTED FOR OPERATION AND FUNCTIONALITY.
3. ELECTRICAL CONTRACTOR TO FURNISH AND INSTALL 100% CU GROUND BUS, 1/4" X 4" X 24" WITH STANDOFFS @ +96" A.F.F. SEE GROUNDING DETAIL ON DRAWING E4.0.

NOTE: ELECTRICAL CONTRACTOR SHALL NOT CORE ANY NEW HOLES IN THE EXISTING PRE-CAST FLOOR PLANKING WITHOUT CONSULTING THE STRUCTURAL ENGINEER.



2 ENLARGED NETWORK ROOM PLAN

SCALE 1/4" = 1'-0"

N

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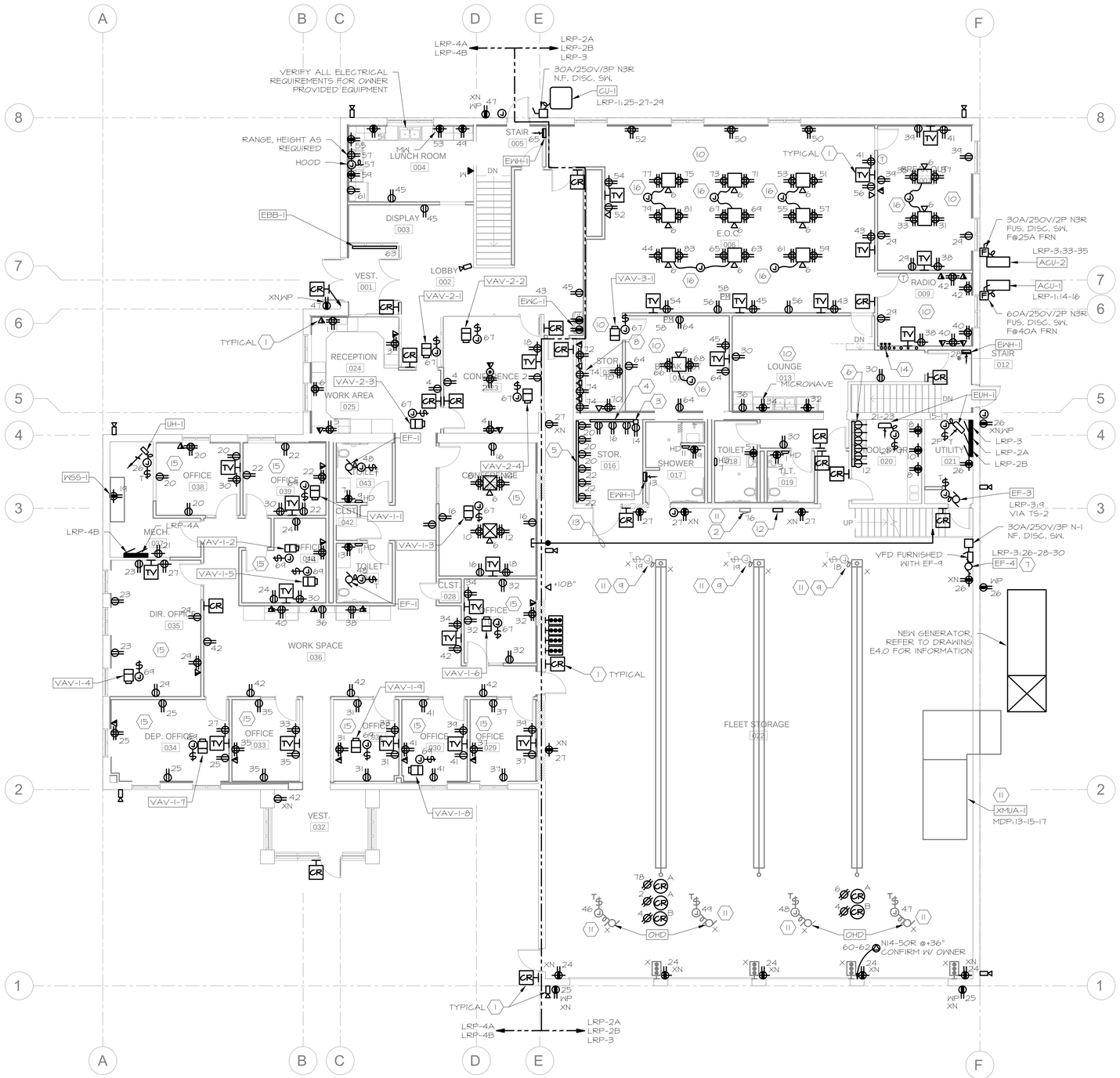
ELECTRICAL BASEMENT POWER PLAN

E1.0



1 ELECTRICAL FIRST FLOOR POWER PLAN

SCALE 1/8" = 1'-0"

DEMOLITION LEGEND

X - EXISTING TO REMAIN
R - EXISTING TO BE REMOVED
XN - EXISTING DEVICE REPLACED WITH NEW

KEYED NOTES

1. ELECTRICAL CONTRACTOR SHALL REFER TO COMMUNICATIONS "T", AUDIOVISUAL "AV" AND SECURITY "SS" DRAWINGS FOR ADDITIONAL REQUIRED JUNCTION BOX LOCATIONS AND CONDUIT REQUIREMENTS.
2. EXISTING GAS DETECTION CONTROL PANEL.
3. 6'-0" LONG WIREMOLD #V3000 BASE, COVER, DEVICE BRACKET, DUPLEX COVER, END FEED, ETC. MOUNTED VERTICALLY @ 1'-0" AFF. WITH THREE (3) 20A DUPLEX RECEPTACLES EVENLY SPACED.
4. 6'-0" LONG WIREMOLD #V3000 BASE, COVER, DEVICE BRACKET, DUPLEX COVER, END FEED, ETC. MOUNTED HORIZONTALLY WITH THREE (3) 20A DUPLEX RECEPTACLES EVENLY SPACED. CONFIRM MOUNTING HEIGHT WITH OWNER.
5. 11'-0" LONG WIREMOLD #V3000 BASE, COVER, DEVICE BRACKET, DUPLEX COVER, END FEED, ETC. MOUNTED HORIZONTALLY WITH SIX (6) 20A DUPLEX RECEPTACLES EVENLY SPACED MOUNTED 6" ABOVE COUNTER.
6. 6'-0" LONG WIREMOLD PLUGMOLD #V206B60A WITH SIX (6) SINGLE RECEPTACLES SPACED AT 4" ON CENTER MOUNTED 6" ABOVE COUNTER TO CENTER LINE OF WIREMOLD.
7. INTERLOCK NEW EF-9 WITH EXISTING XMUA-1 AND EXISTING GAS DETECTION SYSTEM. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
8. THREE (3) DUPLEX RECEPTACLES AND THREE (3) DATA OUTLETS MOUNTED AT LOCATIONS / HEIGHTS AS NOTED ON ARCHITECTURAL DRAWING A4.1 / ELEVATION 11. CONFIRM WITH OWNER PRIOR TO INSTALLATION.
9. RECONNECT EXISTING CO-RAY-VAC TO NEW CIRCUITS AS INDICATED.
10. THERE SHALL BE NO BACK-TO-BACK DEVICES INSTALLED IN THE FOLLOWING ROOMS RELATED TO THE E.O.C., ROOM NUMBERS 006, 007, 009, 013, 014, & 015. ALL DEVICE BOXES INSTALLED IN WALLS SHALL UTILIZE FIRE RATED ACOUSTIC PUDDY PADS.
11. ALL EXISTING SYSTEMS TO REMAIN SHALL BE TESTED FOR OPERATION AND FUNCTIONALITY.
12. GENERATOR REMOTE ANNUNCIATOR PANEL.
13. THREE (3) - 4" EMT CONDUITS ROUTED FROM CEILING SPACE OF CONFERENCE 026 TO RADIO CLOSET 046. SEE DRAWING E1.2 FOR CONTINUATION TO RADIO CLOSET. ELECTRICAL CONTRACTOR SHALL UTILIZE 90 DEG. ELBOW TO TURN DOWN WALL AND MOGUL "LB" UNILET W/ COVER FOR PENETRATION THROUGH WALL INTO CONFERENCE 026 CEILING SPACE. VERIFY FINAL QUANTITIES, SIZES AND LOCATIONS WITH OWNER PRIOR TO INSTALLATION.
14. THREE (3) - 4" EMT CONDUITS ROUTED FROM RADIO CLOSET 046. SEE DRAWING E1.2 FOR CONTINUATION. STUB CONDUITS INTO EOC RAISED FLOOR. VERIFY FINAL QUANTITIES, SIZES AND LOCATIONS WITH OWNER PRIOR TO INSTALLATIONS.
15. THERE SHALL BE NO BACK-TO-BACK DEVICES INSTALLED IN THE FOLLOWING ROOMS, ROOM NUMBERS 026, 027, 029, 030, 031, 032, 034, 035, 036, 038 039, AND 040.
16. PROVIDE POWERMATE FLEXIBLE CABLES FROM EACH FLOOR BOX IN THE RAISED ACCESS FLOOR TO EACH JUNCTION BOX FOR POWER DISTRIBUTION AND BRANCH CIRCUIT TERMINATIONS. THE CABLE LENGTHS SHALL BE BETWEEN 8'-0" AND 15'-0", TO ACCOMMODATE COMPLETE ACCESS OF POWER THROUGHOUT EACH ROOM. COORDINATE AND VERIFY THE QUANTITIES OF FLOOR BOXES, JUNCTION BOXES AND THE POWERMATE FLEXIBLE CABLE LENGTHS WITH THE ACCESS FLOOR CONTRACTOR.

NOTE: ELECTRICAL CONTRACTOR SHALL NOT CORE ANY NEW HOLES IN THE EXISTING PRE-CAST FLOOR PLANKING WITHOUT CONSULTING THE STRUCTURAL ENGINEER.

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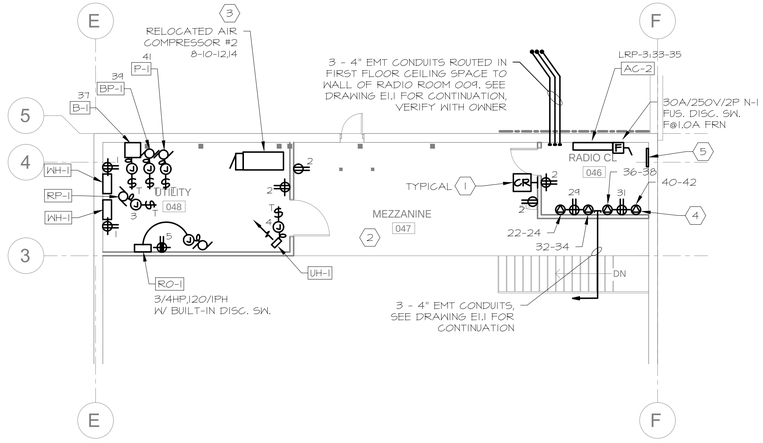
ELECTRICAL FIRST FLOOR POWER PLAN

E1.1



1 ELECTRICAL MEZZANINE POWER PLAN

SCALE 1/8" = 1'-0"

N

KEYED NOTES

1. ELECTRICAL CONTRACTOR SHALL REFER TO COMMUNICATIONS "T", AUDIOVISUAL "AV" AND SECURITY "SS" DRAWINGS FOR ADDITIONAL REQUIRED JUNCTION BOX LOCATIONS AND CONDUIT REQUIREMENTS.
2. ALL CIRCUITS INDICATED ON MEZZANINE ORIGINATE FROM PANEL LRP-3 UNLESS NOTED OTHERWISE.
3. ALL EXISTING SYSTEMS TO REMAIN SHALL BE TESTED FOR OPERATION AND FUNCTIONALITY.
4. ELECTRICAL CONTRACTOR TO FIELD VERIFY RECEPTACLE LOCATIONS WITH OWNER PRIOR TO INSTALLATION.
5. ELECTRICAL CONTRACTOR TO FURNISH AND INSTALL 100% CU GROUND BUS, 1/4" X 4" X 24" WITH STANDOFFS @ +96" A.F.F. SEE GROUNDING DETAIL ON DRAWING E4.0.

NOTE: ELECTRICAL CONTRACTOR SHALL NOT CORE ANY NEW HOLES IN THE EXISTING PRE-CAST FLOOR PLANKING WITHOUT CONSULTING THE STRUCTURAL ENGINEER.

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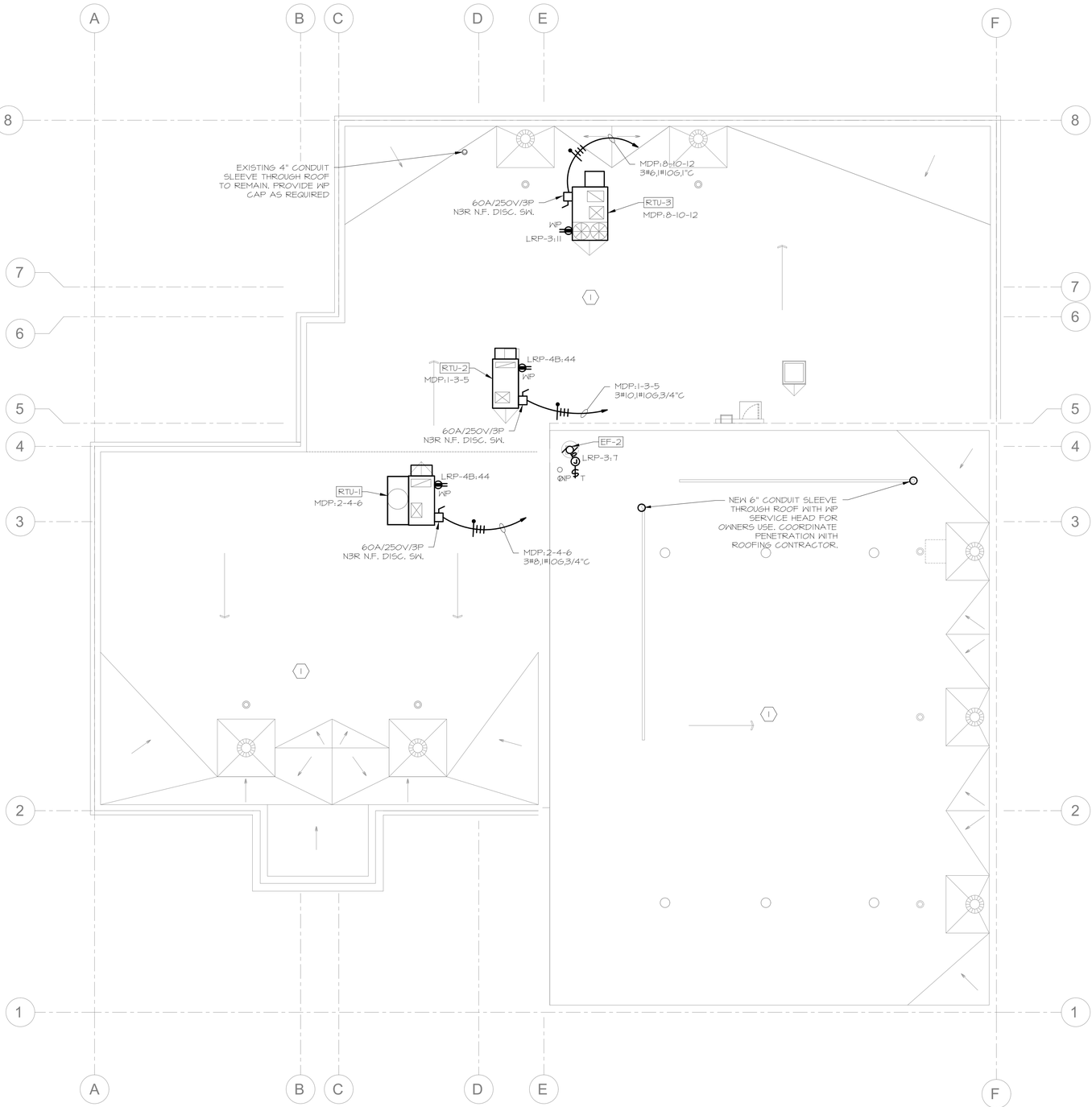
ELECTRICAL MEZZANINE POWER PLAN

E1.2



KEYED NOTES

1. ELECTRICAL CONTRACTOR TO PROVIDE AN ADD ALTERNATE PRICE TO DESIGN, ENGINEER, FURNISH AND INSTALL A UL APPROVED BUILDING LIGHTNING PROTECTION SYSTEM.

1 ELECTRICAL ROOF POWER PLAN

SCALE 1/8" = 1'-0"

N

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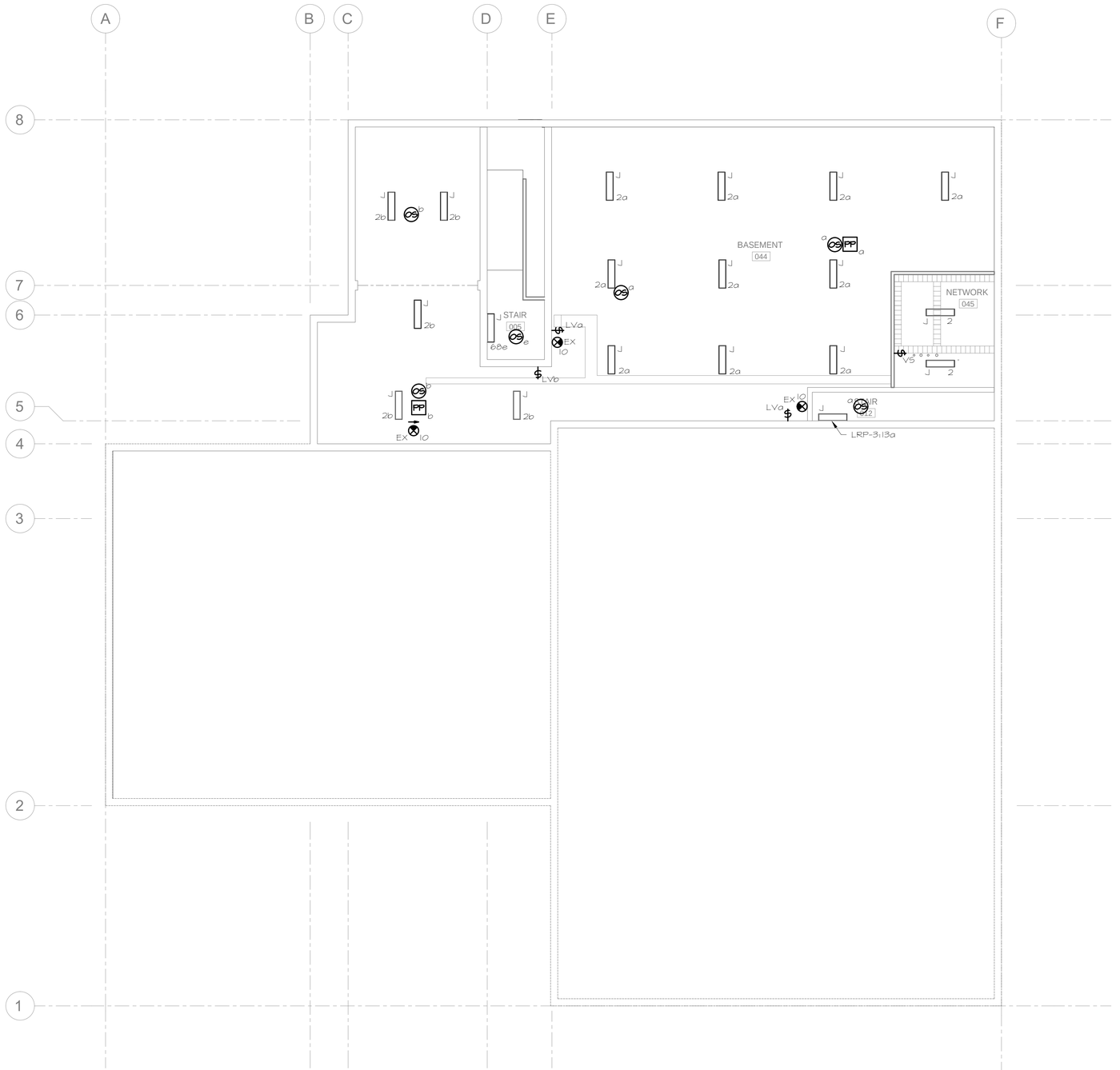
ELECTRICAL ROOF POWER PLAN

E1.3



DRAWINGS NOTES

1. ELECTRICAL CONTRACTOR TO REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR LIGHT FIXTURE LOCATIONS AND HEIGHTS.

1 ELECTRICAL BASEMENT LIGHTING PLAN

SCALE 1/8" = 1'-0"

N

NOT FOR CONSTRUCTION

PRAIRIE FORGE GROUP
300 CARDINAL DRIVE
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DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY
FITCHBURG, WISCONSIN

CLIENT APPROVAL

- ☐ APPROVED
- ☐ APPROVED AS NOTED

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WISCONSIN
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E-41380-6
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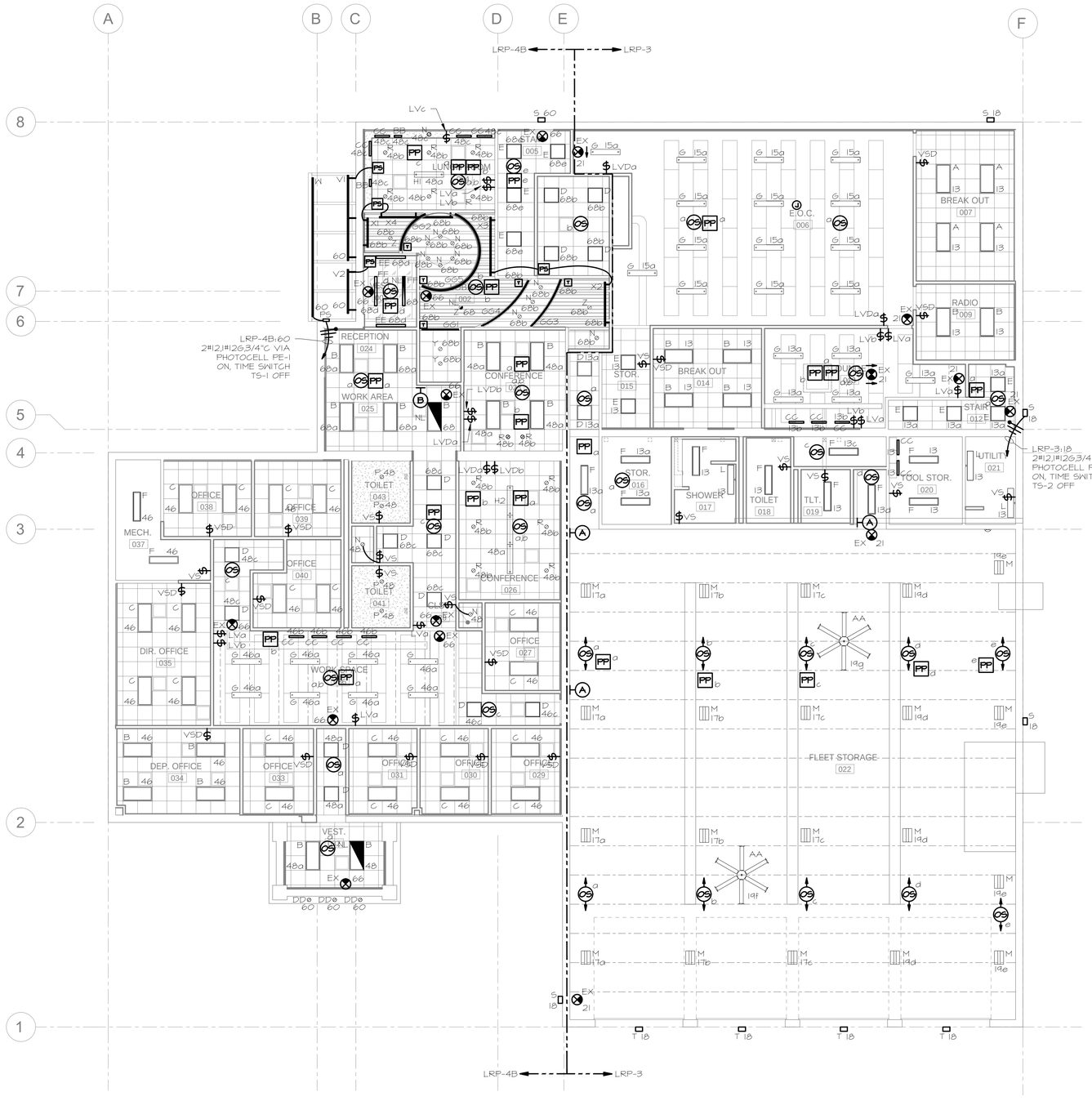
ELECTRICAL BASEMENT LIGHTING PLAN

E2.0



1 ELECTRICAL FIRST FLOOR LIGHTING PLAN

SCALE 1/8" = 1'-0"

N

SWITCHBANK DETAIL (A)H

a b c d e FSf FSg

$ $ $ $ $ $ $

TAG	DESCRIPTION
a	LOW VOLTAGE MOMENTARY CONTACT SWITCH
b	LOW VOLTAGE MOMENTARY CONTACT SWITCH
c	LOW VOLTAGE MOMENTARY CONTACT SWITCH
d	LOW VOLTAGE MOMENTARY CONTACT SWITCH
e	LOW VOLTAGE MOMENTARY CONTACT SWITCH
FSf	REMOTE FAN SWITCH FURNISHED WITH FAN
FSg	REMOTE FAN SWITCH FURNISHED WITH FAN

SWITCHBANK DETAIL (B)H

a b c d

$ $ $ $

TAG	DESCRIPTION
a	LOW VOLTAGE MOMENTARY CONTACT SWITCH
b	LOW VOLTAGE MOMENTARY CONTACT SWITCH
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d	LOW VOLTAGE MOMENTARY CONTACT SWITCH

DRAWINGS NOTES

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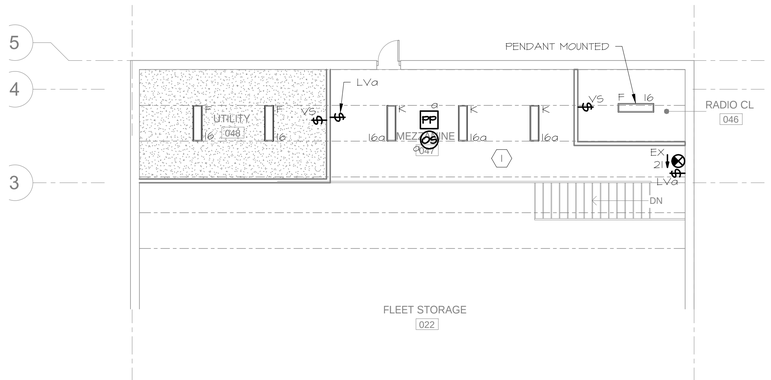
E2.1



1 ELECTRICAL MEZZANINE LIGHTING PLAN

SCALE 1/8" = 1'-0"

N

KEYED NOTES

1. ALL CIRCUITS INDICATED ON MEZZANINE ORIGINATE FROM PANEL LRP-3 UNLESS NOTED OTHERWISE.

DRAWINGS NOTES

1. ELECTRICAL CONTRACTOR TO REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR LIGHT FIXTURE LOCATIONS AND HEIGHTS.

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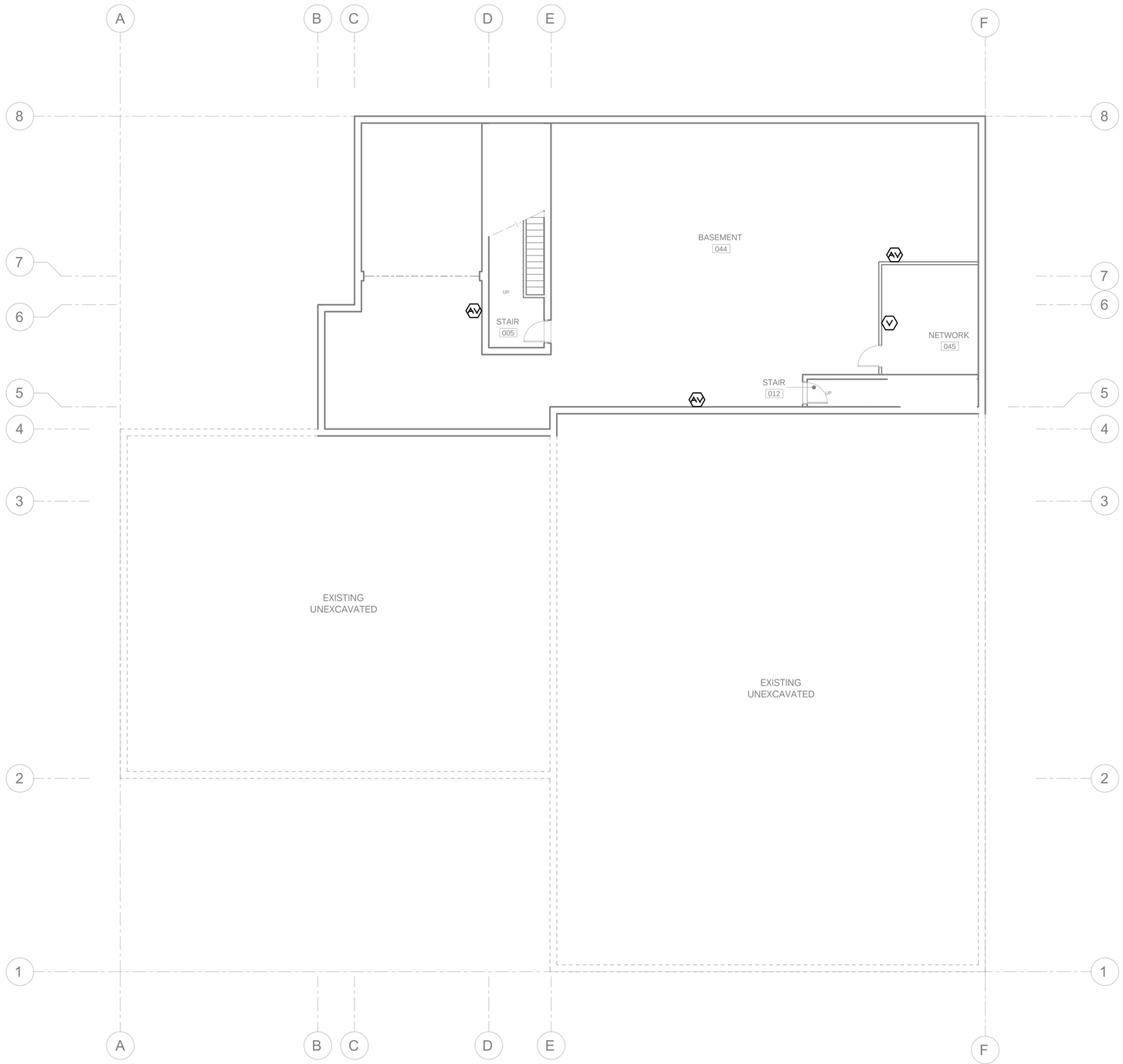
ELECTRICAL MEZZANINE LIGHTING PLAN

E2.2



FIRE ALARM SYMBOLS

FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL WITH REMOTE 24 HOUR TELEPHONE MONITORING
FAAP	FIRE ALARM ANNUNCIATOR PANEL
S	FIRE ALARM SYSTEM DUAL ACTION PULL STATION (+48"AFF, MOUNT WITHIN 5 FT. OF DOOR)
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1 ELECTRICAL BASEMENT FIRE ALARM PLAN
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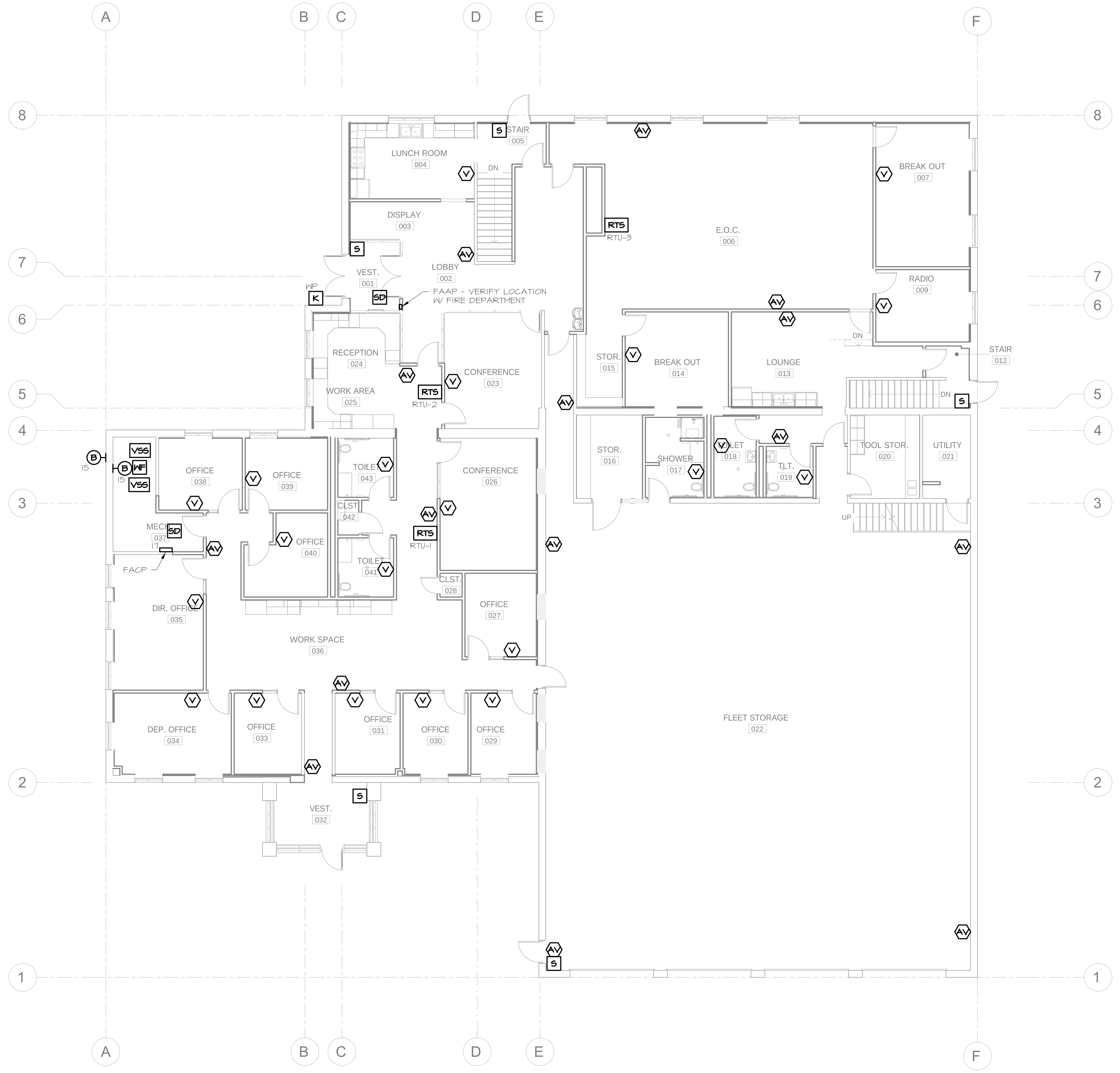
ELECTRICAL BASEMENT FIRE ALARM PLAN

E3.0



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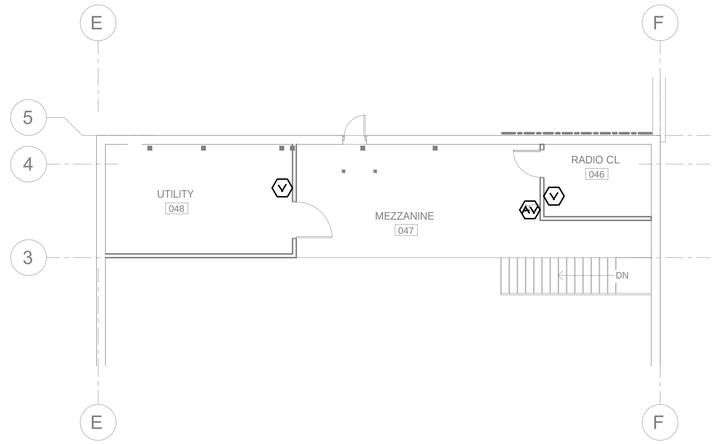
E3.1



1 ELECTRICAL MEZZANINE FIRE ALARM PLAN
SCALE 1/8" = 1'-0"

N

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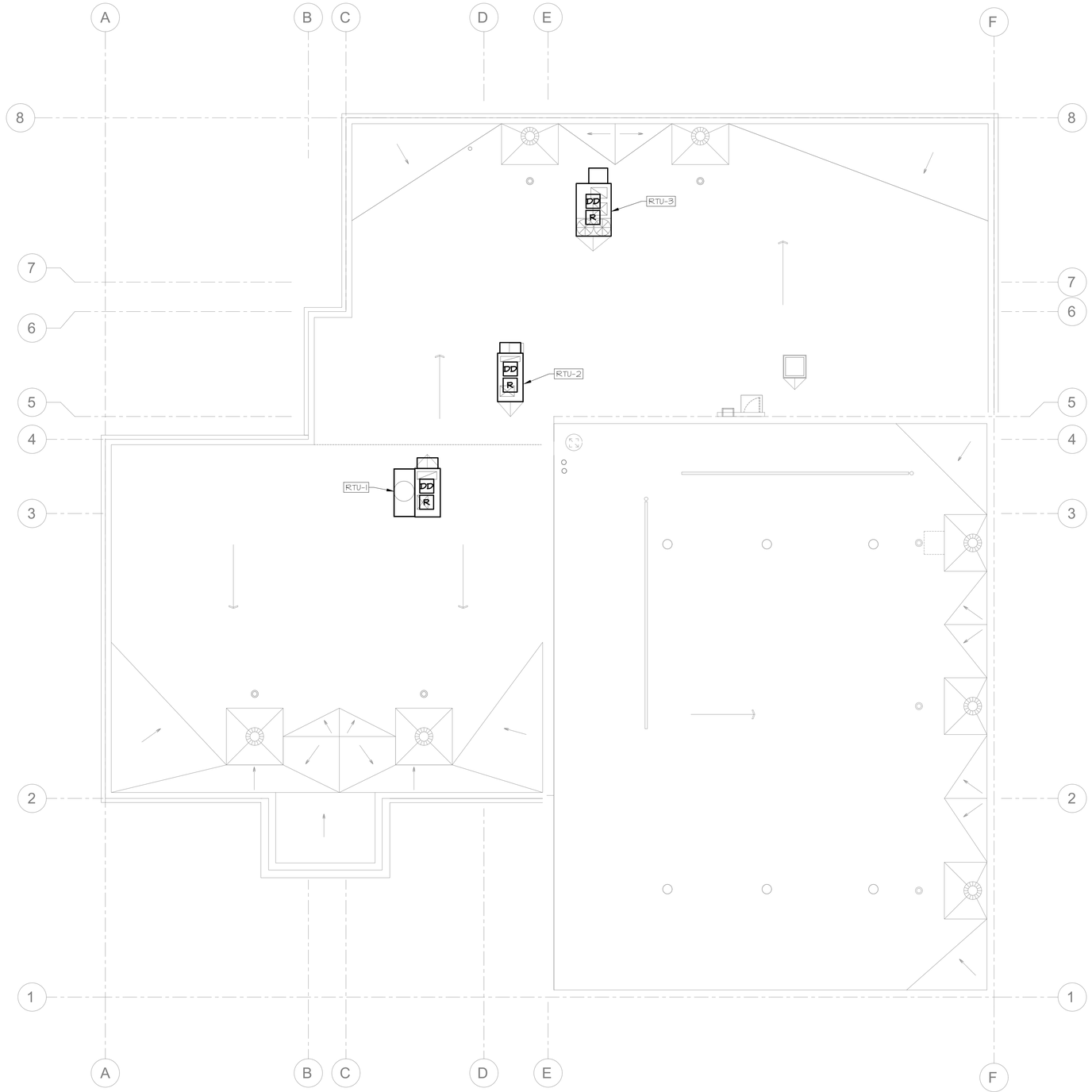
E3.2



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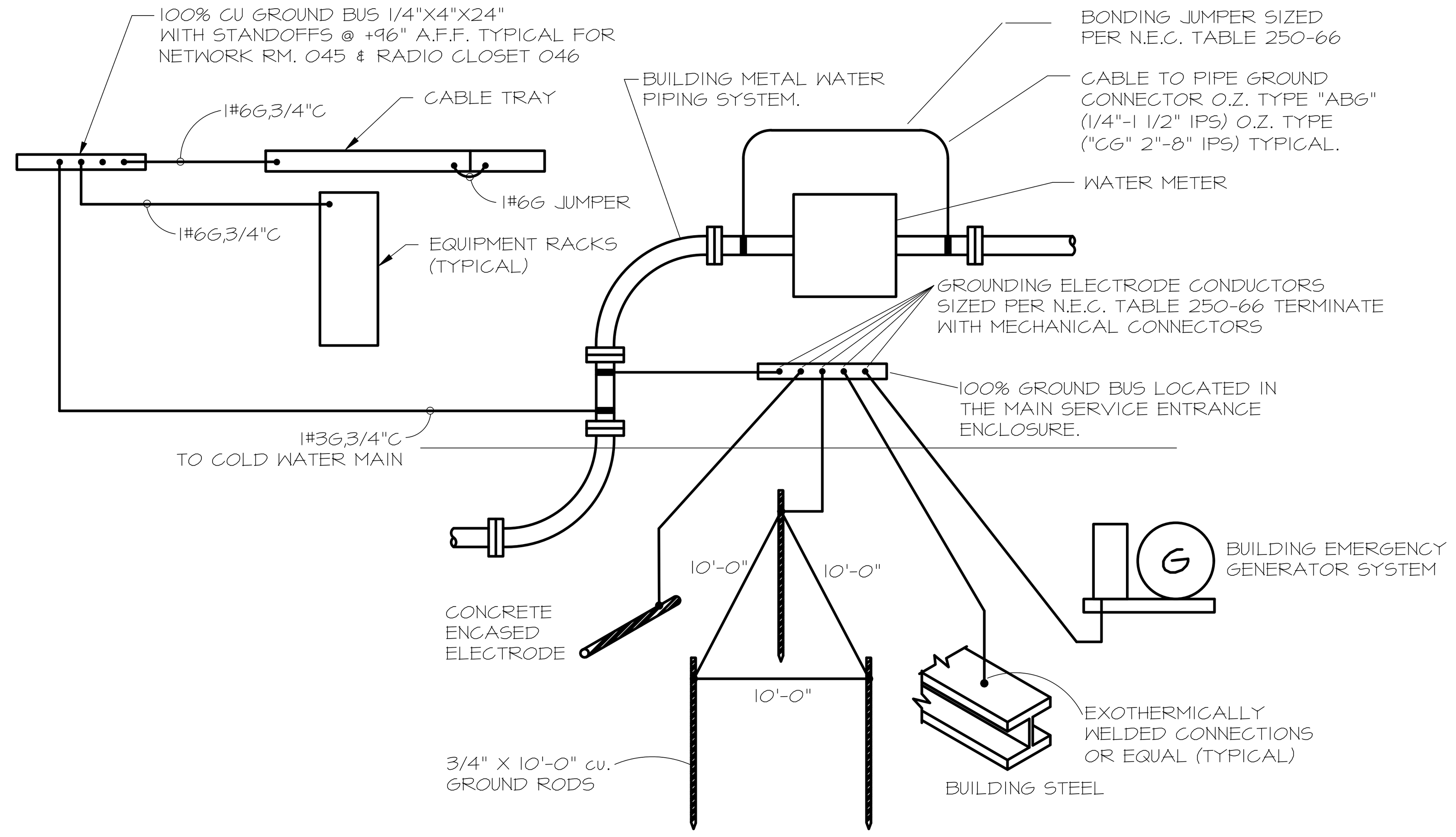
ELECTRICAL ROOF FIRE ALARM PLAN

E3.3



DETAIL – GROUNDING ELECTRODE SYSTEM

NO SCALE

NOTE: THIS DETAIL IS NOT A SUBSTITUTE FOR AN UNDERSTANDING OF THE GROUNDING AND BONDING REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AND THE REQUIREMENTS OF THE JURISDICTION HAVING AUTHORITY IN THE AREA THE WORK IS TAKING PLACE. ELECTRICAL CONTRACTOR SHALL NOTE THAT SOME COMPONENTS OF THE EXISTING BUILDING GROUNDING SYSTEM MAY BE REUSABLE; CONCRETE ENCASED ELECTRODE & BUILDING STEEL, CONFIRM WITH LOCAL JHA.

ELECTRICAL DEMAND CALCULATION

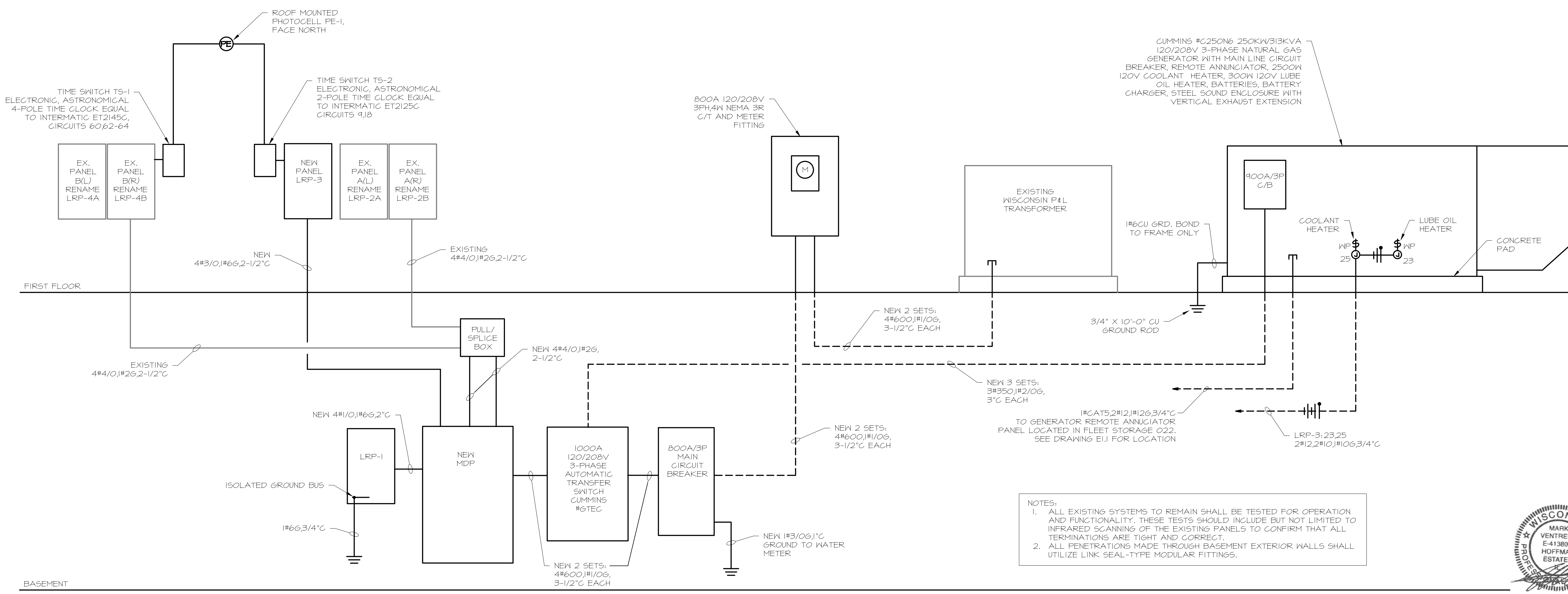
GENERAL LIGHTING LOAD: 9330VA @ 125% =	11,663VA
GENERAL RECEPTACLE LOAD: 146770VA	
1ST 10KVA @ 100% =	10,000VA
REMAINDER @ 50% =	68,385VA
ELECTRIC HEAT LOAD: 5990VA @ 0% =	0VA
HVAC: COOLING LOAD @ 100% =	94,402VA
GENERAL/PUMP/MOTOR LOAD @ 100% =	8,648VA
OVERHEAD DOORS: 3456VA @ 50% =	1,728VA
HAND DRYERS: 7250VA @ 70% =	5,075VA
MISCELLANEOUS LOAD @ 100% =	6,600VA
TOTAL CONDUCTOR LOAD =	206,501VA
TOTAL CONDUCTOR AMPS =	573.6 AMPS

PANEL: NEW PANEL MDP — VOLTS: 120/208 — PHASE: 3Φ,4W
AMPS: 800 — MAIN: MLO — A.I.C.: 65,000
LOCATION: - — MOUNTING: SURFACE

CIRCUIT	POLE	TRIP	DESCRIPTION	Aφ (VA)		Bφ (VA)		Cφ (VA)		DESCRIPTION	TRIP	POLE	CIRCUIT
1			RTU-2	3600	5400					RTU-1			2
3	3	45	3#10,1#10G,3/4"C			3600	5400			3#8,1#10G,3/4"C	60	3	4
5								3600	5400				6
7			SPACE	-	6204					RTU-3			8
9	3					-	6204			3#6,1#10G,1"C	60	3	10
11								-	6204				12
13			EX. MAKE-UP-AIR UNIT XMUA-1	3840	30435					RENAMED PANELS LRP-2A,2B			14
15	3	50	3#8,1#10G,3/4"C			3840	25158			4#4/0,1#2G,2-1/2"C	225	3	16
17								3840	30260				18
19			NEW PANEL LRP-1	15007	21832					RENAMED PANELS LRP-4A,4B			20
21	3	150	4#1/0,1#6G,2"C			12237	19216			4#4/0,1#2G,2-1/2"C	225	3	22
23								12265	18757				24
25			NEW PANEL LRP-3	13916	-					SPACE			26
27	3	200	4#3/0,1#6G,2-1/2"C			12824	-					3	28
29								13407	-				30
31			SPACE	-	-					SPACE			32
33	3					-	-					3	34
35								-	-				36
37			SPACE	-	-					SPACE			38
39	3					-	-					3	40
41								-	-				42
			PHASE TOTAL =	100294		88479		93733		TOTAL VA =	282506		
										TOTAL AMPS =	573.6		

NOTES:

1. ALL CIRCUIT BREAKERS SERVING HVAC EQUIPMENT SHALL BE HACR RATED.
2. ALL CIRCUIT BREAKERS SERVING EM/NL LIGHTING SHALL HAVE LOCK-ON DEVICE.
3. ALL CIRCUIT BREAKERS USED FOR SWITCHING OF LIGHTS SHALL BE SWITCH DUTY RATED.
4. ALL SINGLE POLE CIRCUIT BREAKERS USED FOR MULTIWIRE BRANCH CIRCUITS SHARING A NEUTRAL SHALL BE PROVIDED WITH AN IDENTIFIED HANDLE TIE TO SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS. (NEC 210.4(B))



NOTES:
1. ALL EXISTING SYSTEMS TO REMAIN SHALL BE TESTED FOR OPERATION AND FUNCTIONALITY. THESE TESTS SHOULD INCLUDE BUT NOT LIMITED TO INFRARED SCANNING OF THE EXISTING PANELS TO CONFIRM THAT ALL TERMINATIONS ARE TIGHT AND CORRECT.
2. ALL PENETRATIONS MADE THROUGH BASEMENT EXTERIOR WALLS SHALL UTILIZE LINK SEAL-TYPE MODULAR FITTINGS.

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DANE COUNTY EMERGENCY MANAGEMENT REMODEL
5415 KING JAMES WAY
FITCHBURG, WISCONSIN

CLIENT APPROVAL
☐ APPROVED
☐ APPROVED AS NOTED
APPROVED BY / DATE:

ISSUE RECORD	
DD SET	08/04/20
CD CHECK SET	11/20/20
98% CD REVIEW	02/11/21
HVAC REDESIGN	04/30/21
ISSUE FOR BID	06/08/21

CHECKED BY
MOV
DRAWN BY
JAT,KJS,MOV
DATE
6/7/2021 10:29:24 AM
PROJECT NUMBER
2020-001

ELEC. RISER DIAGRAM & PANEL SCHEDULES

E4.0

PANEL: EX. PANEL B(L), RENAME LRP-4A — VOLTS: 120/208 — PHASE: 3Φ,4W
AMPS: 225 — MAIN: MLO — A.I.C.: V.I.F.
LOCATION: MECHANICAL 037 — MOUNTING: SURFACE

CIRCUIT	POLE	TRIP	DESCRIPTION	AΦ (VA)		BΦ (VA)		CΦ (VA)		DESCRIPTION	TRIP	POLE	CIRCUIT
1	1	20	024 RECEPTACLES	600	540					023 RECEPTACLES	20	1	2
3	1	20	024 RECEPTACLES			600	720			023,025 RECEPTACLES	20	1	4
5	1	20	025 RECEPTACLES					600	360	025 RECEPTACLES	20	1	6
7	1	20	043 RECEPTACLES	1500	1000					026 FLOOR RECEPTACLE	20	1	8
✱9	1	20	043 - HAND DRYER			1450	1000			026 FLOOR RECEPTACLE	20	1	10
✱11	1	20	041 - HAND DRYER					1450	1000	026 FLOOR RECEPTACLE	20	1	12
13	1	20	041 RECEPTACLES	1500	1000					026 FLOOR RECEPTACLE	20	1	14
15	1	20	SPRINKLER ALARM			200	720			026 RECEPTACLES	20	1	16
17	1	20	FACP					600	1000	023,026 - TV	20	1	18
19	1	20	037 - WSS-1	600	900					038 RECEPTACLES	20	1	20
21	1	20	037 RECEPTACLE			180	900			039 RECEPTACLES	20	1	22
23	1	20	035 RECEPTACLES					540	720	040 RECEPTACLES	20	1	24
25	1	20	034 RECEPTACLES	900	84					037 - UH-1	15	1	26
27	1	20	034,035 - TV			1000	-			SPARE	20	1	28
29	1	20	035 RECEPTACLES					720	1500	038,039,040 - TV	20	1	30
31	1	20	031 RECEPTACLES	900	900					027 RECEPTACLES	20	1	32
33	1	20	031,033 - TV			1000	1000			027,036 - TV	20	1	34
35	1	20	033 RECEPTACLES					900	1500	036 - PRINTER	20	1	36
37	1	20	029 RECEPTACLES	900	1000					036 COUNTER RECEPTACLE	20	1	38
39	1	20	029,030 - TV			1000	1000			036 COUNTER RECEPTACLE	20	1	40
41	1	20	030 RECEPTACLES					900	1080	033 RECEPTACLES	20	1	42
			PHASE TOTAL =	13240		11770		12870		TOTAL VA =	58805		
										TOTAL DEMAND AMPS =	117.6		

✱ GFCI CIRCUIT BREAKER

PANEL: EX. PANEL A(R), RENAME LRP-2B — VOLTS: 120/208 — PHASE: 3Φ,4W
AMPS: 225 — MAIN: MLO — A.I.C.: V.I.F.
LOCATION: UTILITY 021 — MOUNTING: SURFACE

CIRCUIT	POLE	TRIP	DESCRIPTION	AΦ (VA)		BΦ (VA)		CΦ (VA)		DESCRIPTION	TRIP	POLE	CIRCUIT
43	1	20	006 - TV	1000	1000					006 FLOOR RECEPTACLES	20	1	44
45	1	20	006,014 - TV			1000	864			OVERHEAD DOOR	20	1	46
47	1	20	OVERHEAD DOOR					864	864	OVERHEAD DOOR	20	1	48
49	1	20	OVERHEAD DOOR	864	720					006 RECEPTACLES	20	1	50
51	1	20	006 FLOOR RECEPTACLES			1000	540			006 RECEPTACLES	20	1	52
53	1	20	006 FLOOR RECEPTACLES					1000	1000	006 - TV	20	1	54
55	1	20	006 FLOOR RECEPTACLES	1000	540					006 RECEPTACLES	20	1	56
57	1	20	006 FLOOR RECEPTACLES			1000	200			006,014 - POWER MODULE	20	1	58
59	1	20	006 FLOOR RECEPTACLES					1000	4000	022 RECEPTACLE	50	2	60
61	1	20	006 FLOOR RECEPTACLES	1000	4000								62
63	1	20	006 FLOOR RECEPTACLES			1000	720			014 RECEPTACLES	20	1	64
65	1	20	006 FLOOR RECEPTACLES					1000	1000	014 FLOOR RECEPTACLES	20	1	66
67	1	20	006 FLOOR RECEPTACLES	1000	1000					014 FLOOR RECEPTACLES	20	1	68
69	1	20	006 FLOOR RECEPTACLES			1000	1000			015 RECEPTACLES	20	1	70
71	1	20	006 FLOOR RECEPTACLES					1000	500	015 RECEPTACLES	20	1	72
73	1	20	006 FLOOR RECEPTACLES	1000	1200					015 - PLUGMOLD	20	1	74
75	1	20	006 FLOOR RECEPTACLES			1000	1000			022 - EX. GAS DETECTION PANEL	20	1	76
77	1	20	006 FLOOR RECEPTACLES					1000	1500	022 - CORD REEL "A"	20	1	78
79	1	20	006 FLOOR RECEPTACLES	1000	-					SPACE		1	80
81	1	20	006 FLOOR RECEPTACLES			1000	-			SPACE		1	82
83	1	20	006 FLOOR RECEPTACLES					1000	-	SPACE		1	84
			PHASE TOTAL =	15324		11324		15728		TOTAL VA =	42376		
										TOTAL DEMAND AMPS =	74.4		

PANEL: NEW PANEL LRP-1 — VOLTS: 120/208 — PHASE: 3Φ,4W + ISO GRND.
AMPS: 200 — MAIN: MLO — A.I.C.: V.I.F.
LOCATION: NETWORK 045 — MOUNTING: SURFACE

CIRCUIT	POLE	TRIP	DESCRIPTION	AΦ (VA)		BΦ (VA)		CΦ (VA)		DESCRIPTION	TRIP	POLE	CIRCUIT
1	1	20	045 - I.G. RECEPTACLE	1200	697					044,045 LIGHTS	20	1	2
3	1	20	045 - I.G. RECEPTACLE			1200	360			RECEPTACLES	20	1	4
5	1	20	RECEPTACLES					540	1176	SUMP PUMP	20	1	6
7	1	20	TELEPHONE BOARD RECEPTACLES	1200	1176					SUMP PUMP	20	1	8
9	1	20	DH-1			996	20			BASEMENT EXIT SIGNS	20	1	10
11	1	15	F-1					1008	1176	EX. SEWAGE EJECTOR PUMP	20	1	12
13	2	30	045 - L6-30R RECEPTACLE	1073	2496					ACU-1,AC-1	40	2	14
15			2#10,1#10G,3/4"C			1073	2496			2#10,1#10G,3/4"C			16
17	2	30	045 - L6-30R RECEPTACLE					1073	1200	045 - SECURITY SYSTEM C.P.	20	1	18
19			2#10,1#10G,3/4"C	1073	1073					045 - L6-30R RECEPTACLE	30	2	20
21	2	30	045 - L6-30R RECEPTACLE			1073	1073			2#10,1#10G,3/4"C			22
23			2#10,1#10G,3/4"C					1073	1073	045 - L6-30R RECEPTACLE	30	2	24
25	3	30	CU-1	1800	1073					2#10,1#10G,3/4"C			26
27			3#10,1#10G,3/4"C			1800	1073			045 - L6-30R RECEPTACLE	30	2	28
29								1800	1073	2#10,1#10G,3/4"C			30
31	1	20	SPARE	-	1073					045 - L6-30R RECEPTACLE	30	2	32
33	1	20	SPARE			-	1073			2#10,1#10G,3/4"C			34
35	1	20	SPARE					-	1073	045 - L6-30R RECEPTACLE	30	2	36
37	1		SPACE	-	1073					2#10,1#10G,3/4"C			38
39	1		SPACE			-	-			SPARE	20	1	40
41	1		SPACE					-	-	SPARE	20	1	42
			PHASE TOTAL =	15007		12237		12265		TOTAL KVA =	39509		
										TOTAL AMPS =	93.6		

PANEL: EX. PANEL B(R), RENAME LRP-4B — VOLTS: 120/208 — PHASE: 3Φ,4W
AMPS: 225 — MAIN: MLO — A.I.C.: V.I.F.
LOCATION: MECHANICAL 037 — MOUNTING: SURFACE

CIRCUIT	POLE	TRIP	DESCRIPTION	AΦ (VA)		BΦ (VA)		CΦ (VA)		DESCRIPTION	TRIP	POLE	CIRCUIT
43	1	15	002 - EWC-1	600	540					RTU-1,RTU-2,RTU-3 RECEPTACLES	20	1	44
45	1	20	002,004 RECEPTACLES			540	1383			027,029,030,031,033,034,035,036, 037,038,039,040 LIGHTS	20	1	46
47	1	20	EXTERIOR RECEPTACLES					360	908	004,023,026,028,032,041,042, 043,CORRIDORS LIGHTS	20	1	48
49	1	20	004 COUNTER RECEPTACLE	1500	1260					LIFT STATION PUMP	20	1	50
51	1	20	004 COFFEE MAKER			1575	1260			LIFT STATION PUMP	20	1	52
53	1	20	004 MICROWAVE					1500	200	LIFT STATION CONTROLS	20	1	54
55	1	20	004 COUNTER RECEPTACLE	1500	-					SPARE	20	1	56
57	1	20	004 RANGE/HOOD			768	-			SPARE	20	1	58
59	1	20	004 COUNTER RECEPTACLE					1500	369	EXTERIOR BUILDING LIGHTS	20	1	60
61	1	20	004 REFRIGERATOR	1200	330					SITE LIGHTING	15	2	62
63	1	20	001 - EBB-1			990	330						64
65	1	20	005 - EWH-1					1000	50	EXIT SIGNS	15	1	66
67	1	15	VAV BOX CONTROL	700	962					001,002,005,024,025 LIGHTS	20	1	68
69	1	15	VAV BOX CONTROL			600	-			SPACE		1	70
71	1		SPACE					-	-	SPACE		1	72
73	1		SPACE	-	-					SPACE		1	74
75	1		SPACE			-	-			SPACE		1	76
77	1		SPACE					-	-	SPACE		1	78
79	1		SPACE	-	-					SPACE		1	80
81	1		SPACE			-	-			SPACE		1	82
83	1		SPACE					-	-	SPACE		1	84
			PHASE TOTAL =	8592		7446		5887		TOTAL VA =	21925		
										TOTAL DEMAND AMPS =	58.7		

PANEL: NEW PANEL LRP-3 — VOLTS: 120/208 — PHASE: 3Φ,4W
AMPS: 200 — MAIN: 200A/3P M.C.B. — A.I.C.: 10,000
LOCATION: UTILITY 021 — MOUNTING: SURFACE

CIRCUIT	POLE	TRIP	DESCRIPTION	AΦ (VA)		BΦ (VA)		CΦ (VA)		DESCRIPTION	TRIP	POLE	CIRCUIT
1	1	20	048 - (2) WH-1	960	720					046,047,048 RECEPTACLES	20	1	2
3	1	15	048 - RP-1			528	84			048 - UH-1	15	1	4
5	1	20	048 - RO-1					912	-	SPARE	20	1	6
7	1	15	EF-2	250	2096					EX. RELOCATED AIR COMPRESSOR	30	3	8
9	1	15	EF-3 VIA TS-2			200	2096			3#10,1#10G,3/4"C			10
11	1	20	RT-4 RECEPTACLE					180	2096				12
13	1	20	007,009,012,013,014,015,016,017,018, 019,020,021,CORRIDOR LIGHTS	1184	500					AIR COMPRESSOR CONTROL CCT.	20	1	14
15	1	20	006 LIGHTS			574	282			046,047,048 LIGHTS	20	1	16
17	1	20	022 LIGHTS					996	376	EXTERIOR BUILDING LIGHTS	15	1	18
19	1	20	022 LIGHTS, CEILING FANS	724	100					PHOTOCELL CONTROL	20	1	20
21	1	15	EXIT SIGNS			45	1073			046 - L6-30R RECEPTACLE	30	2	22
23	1	15	GENERATOR LUBE OIL HEATER					300	1073	2#10,1#10G,3/4"C			24
25	1	30	GENERATOR COOLANT HEATER	2500	936					EF-4	15	3	26
27	1	20	GENERATOR BATTERY CHARGER			1200	936						28
29	1	20	046 - DUPLEX RECEPTACLE					1200	936				30
31	1	20	046 - DUPLEX RECEPTACLE	1200	1073					046 - L6-30R RECEPTACLE	30	2	32
33	2	25	AC-2,ACCU-2			1664	1073			2#10,1#10G,3/4"C			34
35								1664	1073	046 - L6-30R RECEPTACLE	30	2	36
37	1	15	048 - B1	600	1073					2#10,1#10G,3/4"C			38
39	1	20	048 - BP-1			1080	1073			046 - L6-30R RECEPTACLE	30	2	40
41	1	15	048 - P-1					528	1073	2#10,1#10G,3/4"C			42
43	1	20	SPARE	-	-					SPACE		1	44
45	1	20	SPARE			-	-			SPACE		1	46
47	1	20	SPARE					-	-	SPACE		1	48
49	1		SPACE	-	-					SPACE		1	50
51	1		SPACE			-	-			SPACE		1	52
53	1		SPACE					-	-	SPACE		1	54
			PHASE TOTAL =	13916		12824		13407		TOTAL KVA =	40147		
										TOTAL AMPS =	103.3		

PANEL: EX. PANEL A(L), RENAME LRP-2A — VOLTS: 120/208 — PHASE: 3Φ,4W
AMPS: 225 — MAIN: MLO — A.I.C.: V.I.F.
LOCATION: UTILITY 021 — MOUNTING: SURFACE

CIRCUIT	POLE	TRIP	DESCRIPTION	AΦ (VA)		BΦ (VA)		CΦ (VA)		DESCRIPTION	TRIP	POLE	CIRCUIT
✱1	1	20	019 - HAND DRYER	1450	1500					022 - CORD REEL "A"	20	1	2
3	1	20	019 RECEPTACLE			1500	20			022 - (2) CORD REELS "B"	20	1	4
5	1	20	018 RECEPTACLE					1500	1500	022 - CORD REEL "A"	20	1	6
✱7	1	20	018 - HAND DRYER	1450	1500					020 COUNTER RECEPTACLES	20	1	8
9	1	20	017 RECEPTACLE			1500	1500			020 COUNTER RECEPTACLE	20	1	10
✱11	1	20	017 - HAND DRYER					1450	1200	020 - PLUGMOLD	20	1	12
13	1	20	017 - EWH-1	1000	600					016 - (3) WIREMOLD RECEPTACLES	20	1	14
15	2	15	021 - EUH-1			937	600			016 - (3) WIREMOLD RECEPTACLES	20	1	16
17								937	348	022 - EX. INFRARED HEAT	20	1	18
19	1	20	022 - EX. INFRARED HEAT	696	600					016 - (3) WIREMOLD RECEPTACLES	20	1	20
21	2	15	020 - EUH-1			937	600			016 - (3) WIREMOLD RECEPTACLES	20	1	22
23								937	1200	022 RECEPTACLES	20	1	24
25	1	20	022,EXTERIOR - RECEPTACLES	1200	540					021,022,EXTERIOR RECEPTACLES	20	1	26
27	1	20	022 RECEPTACLES			1200	1000			012 - EWH-1	20	1	28
29	1	20	007,009 RECEPTACLES					720	540	013 RECEPTACLES	20	1	30
31	1	20	007 FLOOR RECEPTACLES	1000	1575					013 COFFEE MAKER	20	1	32
33	1	20	007 FLOOR RECEPTACLES			1000	1500			013 MICROWAVE	20	1	34
35	1	20	007 FLOOR RECEPTACLES					1000	1200	013 REFRIGERATOR	20	1	36
37	1	20	007 FLOOR RECEPTACLES	1000	1000					007,009 - TV	20	1	38
39	1	20	007 RECEPTACLES			540	1000			009 RECEPTACLES	20	1	40
41	1	20	006,007 - TV					1000	1000	009 RECEPTACLES	20	1	42
			PHASE TOTAL =	15111		13834		14532		TOTAL VA =	85853		
										TOTAL DEMAND AMPS =	146.7		

✱ GFCI CIRCUIT BREAKER

NOTES:

1. ALL CIRCUIT BREAKERS SERVING HVAC EQUIPMENT SHALL BE HACR RATED.
2. ALL CIRCUIT BREAKERS SERVING EM/NL LIGHTING SHALL HAVE LOCK-ON DEVICE.
3. ALL CIRCUIT BREAKERS USED FOR SWITCHING OF LIGHTS SHALL BE SWITCH DUTY RATED.
4. ALL SINGLE POLE CIRCUIT BREAKERS USED FOR MULTIWIRE BRANCH CIRCUITS SHARING A NEUTRAL SHALL BE PROVIDED WITH AN IDENTIFIED HANDLE TIE TO SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS. (NEC 210.4(B))

WISCONSIN PROFESSIONAL ENGINEER
MARK VENTRELLI
E-41380-6
HOFFMAN ESTATES

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COUNTY of DANE 1839 WISCONSIN

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ELECTRICAL PANEL SCHEDULES

E4.1

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION & FEATURES	LAMPS QUANTITY/TYPE	MOUNTING CLG./POLE-TYPE	VOLT	SPECIFIED MANUFACTURER AND CATALOG NUMBER
A	2'X4' LED LOW PROFILE VOLUMETRIC	23W LED	RECESSED	120	LITHONIA #2BLT4-30L-ADSM-MVOLT-
	LAY-IN				GZ10-LP835
B	2'X4' LED LOW PROFILE VOLUMETRIC	31W LED	RECESSED	120	LITHONIA #2BLT4-40L-ADSM-MVOLT-
	LAY-IN				GZ10-LP835
C	2'X4' LED LOW PROFILE VOLUMETRIC	38W LED	RECESSED	120	LITHONIA #2BLT4-48L-ADSM-MVOLT-
	LAY-IN				GZ10-LP835
D	2'X2' LED LOW PROFILE VOLUMETRIC	30W LED	RECESSED	120	LITHONIA #2BLT2-33L-ADSM-MVOLT-
	LAY-IN				GZ10-LP835
E	2'X2' LED FLAT PANEL	31W LED	RECESSED	120	LITHONIA #EPANL-2X2-3400LM-
					80CRI-35K-MINI0-ZT-MVOLT
F	4'-0" LED LOW PROFILE WRAPAROUND	35W LED	SURFACE/	120	LITHONIA #BLWP4-40L-ADSM-MVOLT-
			PENDANT		GZ10-LP835
G	4'-0" LED INDIRECT/DIRECT PENDANT	41W LED	PENDANT	120	PEERLESS #SPM9L-4FT-MSL4-80CRI-
			9'-0" AFF.		35K-1D1100LMF-40/60-DARK-ZT-
					120-SCT-F2/24A-C032-DU
H1	4'-0" LED INDIRECT/DIRECT PENDANT	34W LED	PENDANT	120	PEERLESS #OPM4-L5L-4FT-M5L4-
			7'-6" AFF.		80CRI-35K-1610LMF-510LMF-DARK-
					ZT-120-SCT-F1/12F-C041-5CN-DU-SEP
H2	8'-0" LED INDIRECT/DIRECT PENDANT	69W LED	PENDANT	120	PEERLESS #OPM4-L5L-8FT-M5L8-
			7'-8" AFF.		80CRI-35K-1610LMF-510LMF-DARK-
					ZT-120-SCT-F1/12F-C041-5CN-DU-SEP
J	4'-0" LED STRIP	41W LED	SURFACE	120	LITHONIA #ZLID-L48-5000LM-FST-
					MVOLT-35K-80CRI-WH
K	4'-0" LED STRIP	54W LED	SURFACE/	120	LITHONIA #ZLID-L48-7000LM-FST-
			PENDANT		MVOLT-35K-80CRI-WH
L	4'-0" LED LOW PROFILE WRAPAROUND	25W LED	SURFACE/	120	LITHONIA #BLWP4-30L-ADSM-MVOLT-
			WALL		GZ10-LP835
M	2'-0" LED HIGH BAY W/ LENS	83W LED	SURFACE/	120	LITHONIA #IBE-L24-12000LM-ATC-
			PENDANT		MD-MVOLT-GZ10-40K-80CRI-DWH
N	6" DIA. LED DOWNLIGHT	9.6W LED	RECESSED	120	GOTHAM #EVO6-35/10-AR-MD-LSS-
					MVOLT-GZ10-TRW
P	6" DIA. LED DOWNLIGHT	14.7W LED	RECESSED	120	GOTHAM #EVO6-35/15-AR-MD-LSS-
					MVOLT-GZ10-TRW
R	6" DIA. LED DOWNLIGHT	19.7W LED	RECESSED	120	GOTHAM #EVO6-35/20-AR-MD-LSS-
					MVOLT-GZ10-TRW
S	ARCHITECTURAL WALL SCONCE	20W LED	SURFACE	120	LITHONIA #WSQ-LED-P1-SR2-40K-
					MVOLT-DBLXD
T	ARCHITECTURAL WALL SCONCE	20W LED	SURFACE	120	LITHONIA #WSQ-LED-P1-SR4-40K-
					MVOLT-DBLXD
V1	140"L ARCHITECTURAL ADJUSTABLE	115W LED	SURFACE	120/	ALCON #11704-140-40K-12-BZ-C-ND
	WALL WASHER, WET LISTED			24VDC	W/ REMOTE POWER SUPPLY
V2	72"L ARCHITECTURAL ADJUSTABLE	60W LED	SURFACE	120/	ALCON #11704-72-40K-12-BZ-C-ND
	WALL WASHER, WET LISTED			24VDC	W/ REMOTE POWER SUPPLY

TYPE	DESCRIPTION & FEATURES	LAMPS QUANTITY/TYPE	MOUNTING CLG./POLE-TYPE	VOLT	SPECIFIED MANUFACTURER AND CATALOG NUMBER
W	19'L WET LISTED ANGLED EXTRUSION	112W LED	SURFACE	120	LLI #LLI-ANG-SF-T5.9IN-65-42K-24V-
	WITH LED TAPE LIGHT & LENS				228IN-72INSLEF W/ #LLI-PS-DEC-
					200W-24V-KO POWER SUPPLY
X1	48"L ARCHITECTURAL ADJUSTABLE	17.6W LED	SURFACE	120/	ALCON #11703-4M-35K-6-5-
	WALL WASHER			24VDC	010-96W-WH
X2	72"L ARCHITECTURAL ADJUSTABLE	26.4W LED	SURFACE	120/	ALCON #11703-6M-35K-6-5-
	WALL WASHER			24VDC	010-96W-WH
X3	96"L ARCHITECTURAL ADJUSTABLE	35.2W LED	SURFACE	120/	ALCON #11703-8M-35K-6-5-WH
	WALL WASHER			24VDC	
X4	120"L ARCHITECTURAL ADJUSTABLE	44W LED	SURFACE	120/	ALCON #11703-10M-35K-6-5-WH
	WALL WASHER			24VDC	
Y	6" DIA. LED CYLINDER	9.6W LED	SURFACE	120	GOTHAM #EVO6SC-35/10-AR-MD-
					LSS-MVOLT-GZ10-DWHG
Z	6" DIA. LED CYLINDER	14.7W LED	SURFACE	120	GOTHAM #EVO6SC-35/15-AR-MD-LSS-
					MVOLT-GZ10-DWHG
AA	60" DIA. REVERSIBLE COMMERCIAL	-	PENDANT	120	HUNTER "FRAK" 60", BLACK, 120V
	GRADE CEILING FAN W/ WIRE GUARD		DOWNROD AS		WITH WALL CONTROL, LED BLANK &
			REQUIRED		MARLEY 28001 WIRE GUARD
BB	12"L LED UNDERCABINET LIGHT	5.8W LED	SURFACE	120	LITHONIA #UCEL-12IN-30K-90CRI-WH
CC	24"L LED UNDERCABINET LIGHT	10.2W LED	SURFACE	120	LITHONIA #UCEL-24IN-30K-90CRI-WH
DD	6" DIA. LED DOWNLIGHT	19.7W LED	RECESSED	120	GOTHAM #EVO6-40/20-AR-MD-LSS-
					MVOLT-GZ10-TRW
EE	4'-0" LED LINEAR WALL MOUNT	20W LED	SURFACE WALL	120	LITHONIA #CLX-L48-3000LM-SEF-
			+9'-8" AFF.		FDL-MVOLT-GZ10-35K-80CRI-WH
FF	4'-0" LED LINEAR SURFACE MOUNT	20W LED	SURFACE CEILING	120	LITHONIA #CLX-L48-3000LM-SEF-
			+11'-8" AFF.		WDL-MVOLT-GZ10-35K-80CRI-WH
GG1	5'-0"L, 137 LM/FT, 3500K FLEXIBLE	3.4 W/FT LED	SURFACE	120/	BARRON #WAVE-WP-5-24V W/
	BORDER TUBE			24V	XFMR-24-20, WAVE-LCR-24V-FIM,
					WAVE-EC-F, WAVE-MC
GG2	6'-6"L, 137 LM/FT, 3500K FLEXIBLE	3.4 W/FT LED	SURFACE	120/	BARRON #WAVE-WP-6'-6"-24V W/
	BORDER TUBE			24V	XFMR-24-35, WAVE-LCL-24V-FIM,
					WAVE-EC-F, WAVE-MC
GG3	7'-6"L, 137 LM/FT, 3500K FLEXIBLE	3.4 W/FT LED	SURFACE	120/	BARRON #WAVE-WP-7'-6"-24V W/
	BORDER TUBE			24V	XFMR-24-35, WAVE-LCL-24V-FIM,
					WAVE-EC-F, WAVE-MC
GG4	9'-0"L, 137 LM/FT, 3500K FLEXIBLE	3.4 W/FT LED	SURFACE	120/	BARRON #WAVE-WP-9-24V W/
	BORDER TUBE			24V	XFMR-24-35, WAVE-LCR-24V-FIM,
					WAVE-EC-F, WAVE-MC
GG5	17'-0"L, 137 LM/FT, 3500K FLEXIBLE	3.4 W/FT LED	SURFACE	120/	BARRON #WAVE-WP-17-24V W/
	BORDER TUBE			24V	XFMR-24-60, WAVE-LCR-24V-FIM,
					WAVE-EC-F, WAVE-MC
EX	LED EXIT SIGN	LED	HIGH WALL	120	LITHONIA #LQM-S-W-3-R-120/277

NOTES:

1. VERIFY TYPE OF CEILING OR WALL FOR ALL RECESSED LIGHTING FIXTURES PRIOR TO ORDERING.
2. PROVIDE ALL ADDITIONAL HARDWARE FOR FIXTURE MOUNTING AS REQUIRED AT NO EXTRA COST.
3. MINIMUM LENS THICKNESS TO BE .125 INCHES, WHERE LENSES ARE USED.
4. THE FIXTURE SCHEDULE DOES NOT NECESSARILY LIST ALL ACCESSORIES AND HARDWARE NECESSARY FOR THE COMPLETION OF INSTALLATION, NOR DOES IT DETAIL THE CEILING CONSTRUCTION TO BE ENCOUNTERED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROPERLY DETERMINE AND PROVIDE CORRECT COMPONENTS, ACCESSORIES, AND HARDWARE AS REQUIRED FOR THE INSTALLATION.
5. CONTRACTOR SHALL COORDINATE WITH ARCHITECTURAL DRAWINGS AND CEILING CONTRACTOR FOR EXACT LIGHTING FIXTURE LOCATION.

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MARK VENTRELLI
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COUNTY of DANE WISCONSIN 1839

DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY
FITCHBURG, WISCONSIN

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ELECTRICAL SYMBOLS, SCHEDULES & DETAILS

E4.2

FIRE ALARM SYMBOLS

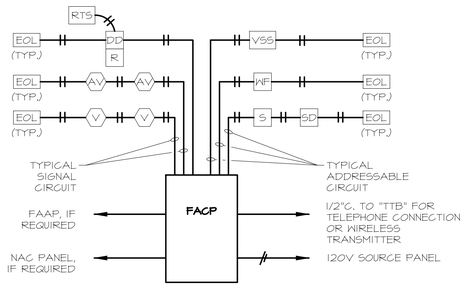
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL WITH REMOTE 24 HOUR TELEPHONE MONITORING
FAAP	FIRE ALARM ANNUNCIATOR PANEL
S	FIRE ALARM SYSTEM DUAL ACTION PULL STATION (+48"AFF, MOUNT WITHIN 5 FT. OF DOOR)
AV	FIRE ALARM SYSTEM HORN & STROBE LIGHT (AUDIO-VISUAL ALARM, +80"AFF, CANDELA RATING BY OTHERS)
V	VISUAL STROBE LIGHT (+80"AFF, CANDELA RATING BY OTHERS)
SD	SMOKE DETECTOR, MINIMUM 3FT. FROM SUPPLY VENT
D	HEAT DETECTOR, 135° DEGREE FIXED TEMP/RATE OF RISE
DD	HVAC DUCT TYPE SMOKE DETECTOR
RTS	REMOTE INDICATING LIGHT WITH KEY-OPERATED TEST SWITCH. VERIFY LOCATION OF LIGHT AND KEY SWITCH WITH INSPECTOR.
R	FAN SHUT DOWN RELAY
K	KNOX BOX (WEATHER PROOF)
NAC	NOTIFICATION APPLIANCE CIRCUIT EXPANSION PANEL
B	SPRINKLER ALARM BELL
WF	SPRINKLER ALARM FLOW SWITCH, BY DIVISION 23, WIRED BY E.C.
VSS	SPRINKLER ALARM TAMPER SWITCH, BY DIVISION 23, WIRED BY E.C.

NOTE: FIRE ALARM SYSTEM SHALL BE AN ADDRESSABLE TYPE ZONED PER NFPA CODE, NON-CODED, CONTINUOUS SOUNDING, UL LISTED, WITH SERIES BATTERIES. MINIMUM WIRE TWO CONDUCTOR INSULATED #14 AWG. TWISTED PAIR, PROVIDE BACKBOXES WITH MINIMUM 1/2" CONDUIT STUBBED INTO ACCESSIBLE CEILING SPACE FOR EACH DEVICE. PROVIDE CONDUIT IN NON-ACCESSIBLE CEILING SPACES. FIRE ALARM CABLE SHALL BE ROUTED FREE-AIR UNLESS A FULL CONDUIT SYSTEM IS REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION.

DEVICE LAYOUT IS REPRESENTATIVE ONLY. PROVIDE ACTUAL QUANTITY OF DEVICES PER NFPA 72, NFPA 101, IBC, NEC, IFC, AND PER LOCAL AUTHORITY HAVING JURISDICTION REQUIREMENTS. ELECTRICAL CONTRACTOR SHALL VERIFY EXACT QUANTITY OF FIRE ALARM DEVICES PRIOR TO BIDDING.

ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE FIRE ALARM PERMIT AND CONSTRUCTION DOCUMENTS. SUBMIT SHOP DRAWINGS TO ENGINEER AND PERMITTING AUTHORITY FOR REVIEW PRIOR TO INSTALLATION AND RESUBMIT BASED ON COMMENTS, AS REQUIRED. PROVIDE BATTERY AND VOLTAGE DROP CALCULATIONS.

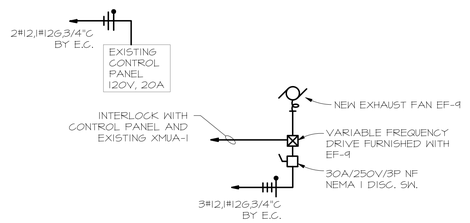
FIRE ALARM DEVICES WIRED TO FACP SHALL BE ADDRESSABLE (DUCT SMOKE DETECTORS, PULL STATIONS, HORNS, VISUALS, FLOW SWITCHES, TAMPER SWITCHES, AND BELLS). VERIFY AND COORDINATE IN FIELD. FACP SHALL BE CONNECTED TO TELEPHONE TERMINAL CABINET OR WIRELESS TRANSMITTER.



FIRE ALARM RISER DIAGRAM
NOT TO SCALE

ELECTRICAL SYMBOLS

A / 2a	LIGHT FIXTURE. CAPITAL LETTER DENOTES FIXTURE TYPE, NUMERAL INDICATES CIRCUIT ASSIGNMENT, AND SUBSCRIPT LETTER DENOTES SWITCH LEG. SHADING OF ANY FIXTURE, AS SHOWN, INDICATES FIXTURE SHALL BE CIRCUITED TO EMERGENCY / UNSWITCHED NIGHT LIGHT CIRCUIT. SEE "LIGHTING FIXTURE SCHEDULE" FOR ADDITIONAL INFORMATION.
	EXIT SIGN UNIVERSAL MOUNT SHADED AREA INDICATES FACE, ARROWS AS REQUIRED. SEE "LIGHTING FIXTURE SCHEDULE."
$a	SINGLE POLE TOGGLE SWITCH, 48"AFF, SUBSCRIPT LETTER DENOTES SWITCH LEG, 20 AMP, 120 VOLT
$T	MANUAL SINGLE PHASE MOTOR STARTER WITH THERMAL OVERLOAD PROTECTION. 48"AFF UNLESS INDICATED OTHERWISE
$FS	FAN SPEED SWITCH, 48"AFF
$VS	WALL MOUNTED VACANCY SENSOR SWITCH "MANUAL ON / AUTO OFF" 48"AFF
$VSD	WALL MOUNTED VACANCY SENSOR DIMMER SWITCH "MANUAL ON / DIM / AUTO OFF" 48"AFF
$OS	WALL MOUNTED OCCUPANCY SENSOR SWITCH "AUTO ON / AUTO OFF" 48"AFF
$LV	LOW VOLTAGE MOMENTARY CONTACT SWITCH, 48"AFF
$LVD	LOW VOLTAGE MOMENTARY CONTACT DIMMER SWITCH, 48"AFF
$P	SWITCH FURNISHED WITH PILOT LIGHT.
	NON-FUSED DISCONNECT SWITCH (NFDS) RATED AS INDICATED
F	FUSED DISCONNECT SWITCH (FDS) WITH SWITCH AND FUSE RATED AS INDICATED.
	3-PHASE COMBINATION MAGNETIC STARTER WITH NEMA SIZE INDICATED BY E.C.
	DUPLEX RECEPTACLE, NEMA 5-20R, 15"A.F.F.
	ISOLATED GROUND RECEPTACLE, NEMA 5-20R, 15"AFF
	RECEPTACLE CROSS LINE DENOTES 6" ABOVE COUNTER OR BACKSPLASH. RECEPTACLES AT TV'S TO BE AT +60" AFF.
	RECEPTACLE SHADING DENOTES GROUND FAULT CIRCUIT INTERRUPTER "GFCI". NEMA 5-20R
	DOUBLE DUPLEX (QUAD) RECEPTACLE
	RECEPTACLE SHADING DENOTES SWITCHED OUTLET
	DUPLEX RECEPTACLE WITH TWO (2) USB PORTS
	CEILING-MOUNTED RECEPTACLE
	SPECIAL PURPOSE RECEPTACLE NEMA CONFIGURATION AS REQUIRED BY MANUFACTURERS EQUIPMENT. VERIFY CONDUIT, CONDUCTOR AND DISCONNECT/CIRCUIT BREAKER REQUIREMENTS PRIOR TO ROUGH-IN
	6" DIAMETER POWER/TEL/DATA POKE-THRU DEVICE, DEVICES OR HARD-WIRED CONNECTION AS INDICATED ON DRAWINGS
	RAISED FLOOR BOX, ATKORE CII HIGH CAPACITY 2000 W/ 4-DUPLEX RECEPTACLES AND 6 - DATA CONNECTIONS. PROVIDE POWERMATE FLEXIBLE CABLES FROM EACH FLOOR BOX IN THE RAISED ACCESS FLOOR TO EACH JUNCTION BOX FOR POWER DISTRIBUTION AND BRANCH CIRCUIT TERMINATIONS. THE CABLE LENGTHS SHALL BE BETWEEN 8'-0" AND 15'-0", TO ACCOMMODATE COMPLETE ACCESS OF POWER THROUGHOUT EACH ROOM. COORDINATE AND VERIFY THE QUANTITIES OF FLOOR BOXES, JUNCTION BOXES AND THE POWERMATE FLEXIBLE CABLE LENGTHS WITH THE ACCESS FLOOR CONTRACTOR. SEE COMMUNICATION DRAWINGS FOR DATA REQUIREMENTS. COVER FINISH AS SELECTED BY ARCHITECT.
	CONCRETE FLOOR BOX, LEGRAND #RFB11-OG & #RFB119BTG W/ 4-DUPLEX RECEPTACLES AND 6 - DATA CONNECTIONS. SEE COMMUNICATION DRAWINGS FOR DATA REQUIREMENTS. COVER FINISH AS SELECTED BY ARCHITECT.



DETAIL – VEHICLE EXHAUST DETECTION
SCALE: NONE

CR A	CORD REEL TYPE "A", 20A, 125V W/ 45'-0" 12/3 CORD & CONNECTOR. HUBBELL #HBL145123C20Y
CR B	CORD REEL TYPE "B", 10A, 125V W/ 45'-0" 16/3 CORD & LED LAMP. HUBBELL #HBL145163LEDY
	LIGHTING AND/OR POWER PANEL
	DISTRIBUTION PANEL
	MOTOR
PE	PHOTO ELECTRIC CONTROL, ROOF MOUNTED, 120V OPERATION, 20A RATED
	CONDUIT ROUTED CONCEALED IN CEILING OR WALL CONSTRUCTION. (CROSS LINES DENOTE NUMBER OF WIRES.)
	CONDUIT ROUTED EXPOSED, PARALLEL OR PERPENDICULAR TO WALLS.
	CONDUIT ROUTED CONCEALED IN CONCRETE FLOOR SLAB OR UNDERGROUND.
J J	AUXILIARY JUNCTION BOX
	FLEXIBLE CONDUIT CONNECTION
	HOME RUN TO PANELBOARD
	CONDUIT
	PHASE CONDUCTORS
	NEUTRAL CONDUCTOR
	EQUIPMENT GROUND
	ISOLATED GROUND
	TELEPHONE OUTLET, WITH 3/4" CONDUIT STUB ABOVE ACCESSIBLE CEILING. SEE LOW VOLTAGE DRAWINGS.
	DATA SYSTEM OUTLET WITH 3/4" CONDUIT STUB ABOVE ACCESSIBLE CEILING. SEE LOW VOLTAGE DRAWINGS.
	DATA AND TELEPHONE OUTLET, WITH 3/4" CONDUIT STUB ABOVE ACCESSIBLE CEILING. SEE LOW VOLTAGE DRAWINGS.
TV	TV OUTLET @ +60" AFF., WITH 3/4" CONDUIT STUB ABOVE ACCESSIBLE CEILING. SEE LOW VOLTAGE DRAWINGS.
OS	CEILING MOUNTED OCCUPANCY SENSOR "AUTO ON / AUTO OFF"
VS	CEILING MOUNTED VACANCY SENSOR "MANUAL ON / AUTO OFF"
DS	CEILING MOUNTED DAYLIGHT SENSOR
PP	LIGHTING POWER PACK
CR	CARD READER, SEE LOW VOLTAGE DRAWINGS
	SECURITY CAMERA, SEE LOW VOLTAGE DRAWINGS
	OVERHEAD DOOR OPERATOR
HD	HAND DRYER - REFER TO ARCHITECTURAL DRAWINGS FOR SPECIFICATION.
ATS	AUTOMATIC TRANSFER SWITCH
C/B	CIRCUIT BREAKER

ELECTRIC HEAT SCHEDULE

EWH-1	RECESSED ELECTRICAL WALL HEATER "MARKEL" #E3322TD-RP 1.0 KW, 120V, 1PH WITH RECESSED MOUNTING BOX
EUH-1	ELECTRICAL UNIT HEATER "MARKEL" #HF5705T 1874W, 208V, 1PH WITH T-STAT AND MOUNTING BRACKET
EBB-1	PEDESTAL MOUNTED ELECTRICAL DRAFT BARRIER HEATER "MARKEL" #E4172-165-1TS-PD, 6'-0" LONG, 990W, 120V, 1PH

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COUNTY of DANE WISCONSIN 1839

DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY
FITCHBURG, WISCONSIN

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ELECTRICAL SYMBOLS, SCHEDULES & DETAILS

E4.3

COMMUNICATIONS & LOW VOLTAGE CONDUIT REQUIREMENTS:

ALL CONDUIT RUNS SHALL BE 3/4" EMT, UNLESS NOTED OTHERWISE.

ALL BOXES SHALL BE A MINIMUM OF 4-11/16" x 4-11/16" x 2-1/8" DEEP BOX WITH A SINGLE GANG TRIM RING MOUNTED FLUSH TO THE WALL SURFACE, UNLESS NOTED OTHERWISE.

ALL MOUNTING HEIGHTS ARE TO THE CENTERLINE OF THE BACKBOX UNLESS NOTED OTHERWISE.

ALL CONDUIT SHALL BE ROUTED ABOVE CEILINGS, BELOW FLOORS, OR STUBBED UP WITHIN WALLS; NO CONDUIT SHALL BE EXPOSED UNLESS APPROVED BY THE ARCHITECT OR OWNER.

ALL CONDUITS IN WALLS SHALL STUB UP AT LEAST 6-INCHES ABOVE THE FINISHED CEILING. ALL STUBS SHALL BE REAMED AND BUSHED AT BOTH ENDS.

ALL CONDUIT PENETRATIONS THROUGH FIRE-RATED PARTITIONS SHALL BE SEALED AS REQUIRED BY CODE. ALL BACKBOXES MOUNTED WITHIN FIRE-RATED PARTITIONS SHALL MEET THE FIRE RATING OF THE PARTITION AS REQUIRED BY CODE.

PROVIDE PULL STRINGS IN ALL CONDUIT RUNS LONGER THAN 10-FEET.

PROVIDE PULL BOXES EVERY 100 LINEAR FEET OR AFTER TWO SUCCESSIVE 90° BENDS.

ALL JUNCTION AND PULL BOXES SHALL BE FURNISHED WITH ACCOMPANYING BLANK COVER PLATE.

ALL BOXES IN EXTERIOR LOCATIONS SHALL BE WEATHERPROOF AND WATERPROOF.

INSTRUCTIONS SHOWN IN DIMENSION LINES, DETAILS, ELEVATIONS, AND PLANS (IN THIS ORDER) TAKE PRECEDENCE OVER INSTRUCTIONS SHOWN IN LEGENDS.

CONDUIT AND CABLE ROUTING SHOWN IS SCHEMATIC AND IS NOT INTENDED TO REPRESENT INSTALLATION PATHS OR DISTANCES. ACTUAL ROUTING AND BOX LOCATIONS SHALL BE FIELD-VERIFIED FOR FEASIBILITY AND COORDINATED WITH OTHER DISCIPLINES BY THE INSTALLATION CONTRACTOR.

HORIZONTAL CONDUITS INTO EACH TECHNOLOGY AREA FROM THE EXTERIOR CEILING PLENUM ARE REQUIRED FOR CABLE ACCESS INTO THE ROOM FROM ALL LOCATIONS THROUGHOUT THE SPACE. THE ENDS OF THE CONDUITS SHALL BE REAMED AND BUSHED, AND EXTEND A MINIMUM OF 2-INCHES INTO THE ROOM.

CABLE	CONDUIT TRADE SIZE AND MAXIMUM QUANTITIES OF CABLES OF THAT O.D.						
O.D. (")	3/4"	1"	1-1/4"	1-1/2"	2"	3"	4"
0.16	10	19	33	46	75	200	333
0.18	8	13	23	32	52	139	231
0.20	6	11	19	25	42	112	187
0.25	4	6	12	16	27	71	120
0.27	3	6	10	14	22	60	102
0.30	2	4	8	10	18	48	82
0.33	1	4	6	8	14	40	68
0.35	1	3	6	8	12	36	60
0.38	1	2	5	7	10	30	50
0.40	1	2	4	6	10	28	46
0.45	1	1	3	5	8	22	38
0.50	1	1	2	4	6	16	30
0.55	1	1	1	3	5	14	24
0.60	N/A	1	1	2	4	12	20
0.67	N/A	1	1	1	3	10	16
0.70	N/A	1	1	1	3	8	14
0.75	N/A	N/A	1	1	2	7	12

NUMBER AND SIZE OF OF CONDUITS	PULL BOX SIZE (W x L x H IN INCHES)	FOR EACH ADDITIONAL CONDUIT ENTERING THE PULL BOX, INCREASE THE WIDTH
ONE 1-INCH	4 X 16 X 3	2 INCHES
ONE 1-1/4-INCH	6 X 20 X 3	3 INCHES
ONE 1-1/2-INCH	8 X 27 X 4	4 INCHES
ONE 2-INCH	8 X 36 X 4	5 INCHES
ONE 4-INCH	15 X 60 X 8	8 INCHES

CONDUIT DIAMETER	MINIMUM BEND RADIUS
1-INCH	4 INCHES
1-1/4-INCH	8 INCHES
1-1/2-INCH	9 INCHES
2-INCH	12 INCHES
4-INCH	40 INCHES

TELECOMMUNICATIONS GROUNDING NOTES:

1. REFER TO E-SERIES DRAWINGS FOR PANEL SCHEDULING INFORMATION AND GROUNDING ELECTRODE SYSTEM DATA.
2. A SINGLE GROUND SOURCE SHALL BE PROVIDED FOR GROUNDING ALL RACKS, TRAYS AND METAL FRAMES IN THE MAIN DISTRIBUTION FRAME. A TELECOMMUNICATIONS MAIN GROUNDING BUSBAR (TMGB) SHALL BE PROVIDED AND INSTALLED ON THE MAIN CROSS-CONNECT WALL AT A HEIGHT OF 8-FEET AFF. THE TMGB SHALL CONSIST AT A MINIMUM OF A PREDRILLED COPPER BUSBAR WITH HOLES FOR USE WITH STANDARD-SIZED LUGS, AND HAVE MINIMUM DIMENSIONS OF 1/4-INCH THICK BY 4-INCHES WIDE WITH A MINIMUM OF FORTY-EIGHT (48) CONNECTION POINTS. THE TMGB SHALL BE DIRECTLY BONDED TO THE ELECTRICAL SERVICE GROUND AND TO THE BUILDING STEEL.
3. A TELECOMMUNICATIONS GROUNDING BUSBAR (TGB) SHALL BE INSTALLED IN ANY/ALL TELECOM ROOMS. THE TGB SHALL BE MOUNTED ON THE HORIZONTAL CROSS-CONNECT WALL AT A HEIGHT OF 8-FEET AFF. THE TGB SHALL CONSIST OF A PREDRILLED COPPER BUSBAR WITH HOLES FOR USE WITH STANDARD-SIZED LUGS, AND HAVE MINIMUM DIMENSIONS OF 1/4-INCH THICK BY 2-INCHES WIDE WITH A MINIMUM OF TWELVE (12) CONNECTION POINTS.
4. A GROUND CABLE FROM THE TMGB TO EACH TGB SHALL BE INSTALLED TO CREATE A FORMAL TELECOMMUNICATIONS BONDING BACKBONE (TBB). THE TBB MAY NOT BE DAISY-CHAINED, BUT CAN BE TAPPED-OFF USING A SHORT BONDING CONDUCTOR. BARE COPPER CABLING IS ACCEPTABLE. THE TBB SHALL BE SIZED BASED ON THE LENGTH OF THE CABLE RUN.
5. THE CONTRACTOR SHALL PROVIDE AND INSTALL A MINIMUM #6 AWG GROUND WIRE FROM EACH OPEN RELAY RACK AND CABLE TRAY TO THE MAIN TELECOMMUNICATIONS GROUNDING BUSBAR OR TELECOMMUNICATIONS GROUNDING BUSBAR.
6. ANY PENETRATION THROUGH A FIRE-RATED WALL SHALL BE PROPERLY FIRE-STOPPED BY THE CONTRACTOR WITH THE APPROPRIATE FIRE-STOP MATERIAL PER APPLICABLE BUILDING AND ELECTRICAL CODES.
7. THE CONTRACTOR SHALL COORDINATE GROUND CABLE INSTALLATION WITH THE ARCHITECTS, MEP ENGINEERS AND THE OTHER TRADES ON THE PROJECT.
8. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ANY DAMAGE TO ANY COMPONENT OF THE TELECOMMUNICATIONS GROUNDING SYSTEM DURNING INSTALLATION.
9. THE CONTRACTOR SHALL VERIFY THAT THE SIZE OF THE TMGB AND THE TGB ARE ADEQUATE TO SUPPORT THE TELECOMMUNICATIONS GROUNDING REQUIREMENTS FOR THE PROJECT.

ANSI/TIA-607-B CONDUCTOR SIZES	
LENGTH IN FEET	CONDUCTOR SIZE (AWG)
LESS THAN 13	6
14 - 20	4
21 - 26	3
27 - 33	2
34 - 41	1
42 - 52	1/0
53 - 66	2/0
67 - 84	3/0
85 - 105	4/0
106 - 125	250 KCMIL
126 - 150	300 KCMIL
151 - 175	350 KCMIL
176 - 250	500 KCMIL
251 - 300	600 KCMIL
GREATER THAN 301	750 KCMIL

ABBREVIATIONS USED IN THESE DRAWINGS:

AVIC = AUDIOVISUAL CABLING CONTRACTOR
LVI = LOW VOLTAGE INSTALLER
EC = ELECTRICAL INSTALLATION CONTRACTOR
PIC = PAGING INSTALLATION CONTRACTOR
SIC = SECURITY INSTALLATION CONTRACTOR

NOTE: THE INSTALLATION CONTRACTOR SHALL COORDINATE WITH THE OWNER, ARCHITECT AND GENERAL CONTRACTOR FOR EXACT MOUNTING LOCATIONS PRIOR TO INSTALLATION OF ANY COMPONENTS.

NOTE: ALL RADIO TOWER, RADIO ANTENNA, AND RELATED CABLING BY OWNER.

NOTE: THE GENERAL CONTRACTOR SHALL SCHEDULE A SITE MEETING WITH THE OWNER AND THE RESPECTIVE LOW VOLTAGE AND ELECTRICAL CONTRACTORS TO REVIEW ALL LOCATIONS OF JUNCTION BOXES PRIOR TO INSTALLATION

NOTE: ALL COMMUNICATION PATCH CORD QUANTITIES, LENGTHS, COLORS AT BOTH ENDS ARE BY OWNER.

▲ X — MOUNTING INFORMATION, WHERE *X* =

- A ABOVE CEILING
- D TO THE DESK
- F FLUSH-MOUNTED
- H HIDDEN UNDER WORKSURFACE
- M TO THE MULLION
- R TO THE RACK ITSELF
- S PLACED ON THE WORKSURFACE

AV X — MOUNTING INFORMATION, WHERE *X* =

- A ABOVE CEILING
- D TO THE DESK
- F FLUSH-MOUNTED
- H HIDDEN UNDER WORKSURFACE
- M TO THE MULLION
- P TO THE PODIUM
- R TO THE RACK ITSELF
- S PLACED ON THE WORKSURFACE
- TX TRANSMITTER
- RX RECEIVER

COMMUNICATIONS LEGEND:

▲ W +48" — WALLPHONE LOCATION. LVI TO FURNISH AND INSTALL ONE (1) CATEGORY 6 CABLE AND ONE (1) CATEGORY 6 8P8C (RJ45) JACK IN A FACEPLATE WITH WALLPHONE MOUNTING LUGS. REFER TO THE REQUIREMENTS DRAWING FOR CABLE AND JACK REQUIREMENTS. LVI TO COORDINATE FACEPLATE FINISH AND HEIGHT WITH ARCHITECTS.

▲ 1 — ONE (1) CABLE AND ONE (1) JACK LOCATION. LVI TO FURNISH AND INSTALL ONE (1) CATEGORY 6 CABLE AND ONE (1) CATEGORY 6 8P8C (RJ45) JACK AT THIS LOCATION. REFER TO THE REQUIREMENTS DRAWINGS FOR CABLE AND JACK REQUIREMENTS. LVI TO COORDINATE FACEPLATE FINISH AND HEIGHT WITH ARCHITECTS.

▲ 2 — TWO (2) CABLE AND TWO (2) JACK LOCATION. LVI TO FURNISH AND INSTALL TWO (2) CATEGORY 6 CABLES AND TWO (2) CATEGORY 6 8P8C (RJ45) JACKS AT THIS LOCATION. REFER TO THE REQUIREMENTS DRAWINGS FOR CABLE AND JACK REQUIREMENTS. LVI TO COORDINATE FACEPLATE FINISH AND HEIGHT WITH ARCHITECTS.

▲ 3 — THREE (3) CABLE AND THREE (3) JACK LOCATION. LVI TO FURNISH AND INSTALL THREE (3) CATEGORY 6 CABLES AND THREE (3) CATEGORY 6 8P8C (RJ45) JACKS AT THIS LOCATION. REFER TO THE REQUIREMENTS DRAWINGS FOR CABLE AND JACK REQUIREMENTS. LVI TO COORDINATE FACEPLATE FINISH AND HEIGHT WITH ARCHITECTS.

▲ 4 — FOUR (4) CABLE AND FOUR (4) JACK LOCATION. LVI TO FURNISH AND INSTALL FOUR (4) CATEGORY 6 CABLES AND FOUR (4) CATEGORY 6 8P8C (RJ45) JACKS AT THIS LOCATION. REFER TO THE REQUIREMENTS DRAWINGS FOR CABLE AND JACK REQUIREMENTS. LVI TO COORDINATE FACEPLATE FINISH AND HEIGHT WITH ARCHITECTS.

▲ R — FOUR (4) CABLE AND FOUR (4) JACK LOCATION. LVI TO FURNISH AND INSTALL FOUR (4) CATEGORY 6 CABLES AND FOUR (4) CATEGORY 6 8P8C (RJ45) JACKS AT THIS LOCATION. REFER TO THE REQUIREMENTS DRAWINGS FOR CABLE AND JACK REQUIREMENTS. LVI TO COORDINATE FACEPLATE FINISH AND HEIGHT WITH ARCHITECTS. USED IN RADIO ROOM 009. REFER TO T3.0 FOR DETAILS ON JACK CONFIGURATION.

▲ WAP — CEILING DATA LOCATION CONSISTING OF TWO (2) CATEGORY 6A 8P8C (RJ45) JACKS AND TWO (2) CATEGORY 6A CABLES TO SUPPORT CUSTOMER PROVIDED AND LVI INSTALLED WIRELESS ACCESS POINTS. LVI TO FURNISH AND INSTALL TWO (2) CATEGORY 6A CABLES AND TWO (2) CATEGORY 6A 8P8C (RJ45) JACKS WITH A 25-FOOT SERVICE LOOP AT THIS LOCATION. LVI SHALL FURNISH AND INSTALL A PLENUM-RATED TWO-JACK RJ-45 (8P8C) HUBBELL ISB2WP (OR EQUIVALENT) MODULE AT END OF THE 25-FOOT SERVICE LOOP COIL. REFER TO THE REQUIREMENTS DRAWINGS FOR CABLE AND JACK REQUIREMENTS.

▲ C — CEILING DATA LOCATION CONSISTING OF ONE (1) CATEGORY 6 CABLE TO SUPPORT SIC FURNISHED AND INSTALLED SURVEILLANCE CAMERA. LVI TO FURNISH AND INSTALL ONE (1) CATEGORY 6 CABLE TERMINATED WITH A CATEGORY 6 8P8C (RJ45) MODULAR PLUG WITH A 25-FOOT SERVICE LOOP AT THIS LOCATION. REFER TO THE REQUIREMENTS DRAWINGS FOR CABLE REQUIREMENTS.

▲ TV — TELEVISION LOCATION. LVI TO FURNISH AND INSTALL TWO (2) CATEGORY 6 CABLES, ONE (1) COAXIAL CABLE, TWO (2) CATEGORY 6 8P8C (RJ45) JACKS, AND ONE (1) F-TYPE CONNECTOR AT THIS LOCATION. REFER TO THE REQUIREMENTS DRAWINGS FOR CABLE AND JACK REQUIREMENTS. LVI TO COORDINATE FACEPLATE FINISH AND HEIGHT WITH ARCHITECTS.

▲ 2 — TWO (2) CABLE AND TWO (2) JACK LOCATION. LVI TO FURNISH AND INSTALL TWO (2) CATEGORY 6 CABLES AND TWO (2) CATEGORY 6 8P8C (RJ45) JACKS AT THIS LOCATION ALONG WITH APPROPRIATE INSERTS FOR FLOOR BOX, POKE-THRU DEVICE, OR TABLE TOP BOX THAT IS PROVIDED BY THE EC. REFER TO THE REQUIREMENTS DRAWINGS FOR CABLE AND JACK REQUIREMENTS. LVI TO COORDINATE FACEPLATE FINISH WITH ARCHITECTS.

▲ 4 — FOUR (4) CABLE AND FOUR (4) JACK LOCATION. LVI TO FURNISH AND INSTALL FOUR (4) CATEGORY 6 CABLES AND FOUR (4) CATEGORY 6 8P8C (RJ45) JACKS AT THIS LOCATION ALONG WITH APPROPRIATE INSERTS FOR FLOOR BOX, POKE-THRU DEVICE, OR TABLE TOP BOX THAT IS PROVIDED BY THE EC. REFER TO THE REQUIREMENTS DRAWINGS FOR CABLE AND JACK REQUIREMENTS. LVI TO COORDINATE FACEPLATE FINISH WITH ARCHITECTS. ALL FOUR JACKS TO BE "BLUE" IN COLOR.

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LEGEND AND GENERAL NOTES

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GENERAL SCOPE REQUIREMENTS:

1. ALL CABLE, ASSOCIATED MATERIALS AND LABOR REQUIRED FOR A COMPLETE INSTALLATION OF THE COMMUNICATIONS CABLING SYSTEM SHALL BE PROVIDED BY THE LVI UNLESS OTHERWISE STATED IN THE DRAWINGS.
2. WHERE APPLICABLE, THE LVI SHALL REMOVE ALL PREVIOUSLY INSTALLED AND ABANDONED CABLE BEFORE THE INSTALLATION OF NEW CABLE TAKES PLACE. THIS MAY CONSIST OF ABANDONED COMMUNICATIONS CABLING NOT REMOVED DURING DEMOLITION AS WELL AS ANY TEMPORARY CABLING INSTALLED BY THE LVI AS PART OF THE INSTALLATION.
3. DUE CARE AND DILIGENCE HAVE BE USED IN PREPARATION OF THE DRAWINGS, AND THEY ARE BELIEVED TO BE SUBSTANTIALLY CORRECT. HOWEVER, THE RESPONSIBILITY FOR DETERMINING THE FULL EXTENT OF EXPOSURE AND THE VERIFICATION OF ALL INFORMATION PRESENTED HEREIN SHALL REST SOLELY WITH THE LVI. THE OWNER, SENTINEL TECHNOLOGIES, AND ANY OTHER REPRESENTATIVES WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS IN THESE DRAWINGS, NOR FOR THE FAILURE ON THE PART OF THE LVI TO DETERMINE THE FULL EXTENT OF THE EXPOSURES.
4. THE LVI SHALL NOT BE ALLOWED TO TAKE ADVANTAGE OF ANY ERRORS OR OMISSIONS IN THESE DRAWINGS. WHERE ERRORS OR OMISSIONS APPEAR IN THESE DRAWINGS, THE LVI SHALL PROMPTLY NOTIFY SENTINEL TECHNOLOGIES IN WRITING OF SUCH ERROR OR OMISSIONS. ANY SIGNIFICANT ERROR, OMISSIONS, OR INCONSISTENCIES IN THE DRAWINGS SHALL BE REPORTED NO LATER THAN FIVE (5) DAYS BEFORE THE SUBMISSION DEADLINE. THE OWNER, SENTINEL TECHNOLOGIES, AND ANY OTHER REPRESENTATIVES SHALL NOT BE RESPONSIBLE FOR ERRORS THAT GO UNDISCOVERED.
5. THE LVI SHALL PROTECT ALL STORED AND INSTALLED MATERIALS AS PART OF THESE SYSTEMS BEFORE, DURING, OR AFTER INSTALLATION FROM DAMAGE CAUSED BY OTHER TRADES UNTIL TURNOVER AND FINAL ACCEPTANCE. IF DAMAGE OCCURS DESPITE SUCH PROTECTIONS, REMOVE AND REPLACE ALL DAMAGED COMPONENTS FOR THE ENTIRE UNIT(S) AS REQUIRED TO PROVIDE A SOLUTION IN AN ORIGINAL, UNDAMAGED CONDITION.
6. THE T568B WIRING PATTERN SHALL BE USED FOR ALL UTP CABLE TERMINATIONS.
7. IN DISTRIBUTED TELECOMMUNICATIONS ROOMS THAT ARE VERTICALLY STACKED, ALL LVI-INSTALLED CABLE SHALL BE INSTALLED IN SLEEVES OR CONDUITS (FURNISHED AND INSTALLED BY OTHERS). IF SLEEVES ARE USED, THEN ALL ALL CABLES SHALL BE SECURED TO THE WALL EVERY FORTY-EIGHT INCHES (48").
8. ALL LVI-INSTALLED CABLE RUNS SHALL CONTAIN NO SPLICE OR TRANSITION POINTS FROM CROSS-CONNECT TO CROSS-CONNECT OR FROM CROSS-CONNECT TO EACH OUTLET LOCATION.
9. ALL CABLES SHALL BE INSTALLED SUCH THAT THE RESPECTIVE MANUFACTURERS' RECOMMENDED BEND RADIUS FOR EACH CABLE TYPE IS NOT EXCEEDED.
10. THE LVI SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL DISTANCES FOR EACH LVI-INSTALLED CABLE RUN FROM CROSS-CONNECT TO CROSS-CONNECT.
11. ALL LVI-INSTALLED CABLES SHALL BE PROPERLY DRESSED, TIED, AND TRIMMED.
12. CABLE PULLING LUBRICANTS, WHERE USED, SHALL BE APPROVED BY THE CABLE MANUFACTURER SO THAT THE LUBRICATING COMPOUNDS DO NOT DETERIORATE THE CABLE JACKET.
13. THE LVI SHALL PROVIDE AND INSTALL ALL JACKS AND APPROPRIATE INSERTS FOR ALL LOCATIONS INCLUDING THOSE INSIDE FLOOR, TABLE-TOP BOXES, AND MODULAR FURNITURE SYSTEMS.

DRAWINGS:

1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND MAY NOT REPRESENT EXACT FIELD CONDITIONS. THE LVI SHALL FIELD-VERIFY CRITICAL INSTALLATION REQUIREMENTS AND PROVIDE NECESSARY ASSOCIATED WORK.
2. THE LOCATIONS OF TELECOMMUNICATION EQUIPMENT AND DEVICES SHOWN ARE APPROXIMATE. THE LVI SHALL, PRIOR TO INSTALLATION, VERIFY EXACT LOCATIONS BY CROSS-CHECKING ARCHITECTURAL AND ELECTRICAL DRAWINGS, FIELD CONDITIONS, AND APPROVED SHOP DRAWINGS.
3. THE LVI SHALL TAKE FIELD MEASUREMENTS AS REQUIRED TO FIT THE WORK PROPERLY. RECHECK MEASUREMENTS BEFORE INSTALLING EACH PRODUCT. WHERE PORTIONS OF THE WORK ARE INDICATED TO FIT OTHER CONSTRUCTION, VERIFY DIMENSIONS OF OTHER CONSTRUCTION BY FIELD MEASUREMENTS BEFORE FABRICATION. COORDINATE FABRICATION SCHEDULE WITH CONSTRUCTION PROGRESS TO AVOID DELAYING THE WORK.
4. LOCATIONS AND ROUTES OF PATHWAYS SHOWN ON DRAWINGS ARE SCHEMATIC AND NOT NECESSARILY REFLECTIVE OF CONDITIONS AT TIME OF INSTALLATION, OR WERE POSITIONED FOR CLARITY RATHER THAN EXACT SPACING, BENDING, OR DESIRED SEPARATION. THE LVI SHALL REVIEW ANY AND ALL SUCH PATHWAYS SHOWN ON THE DRAWINGS TO ENSURE THAT THE PROPOSED SOLUTION WILL FUNCTION AS INTENDED WITH REGARD TO QUANTITIES, SIZES, LOCATIONS, ETC.
5. THE LVI SHALL REVIEW THE ACTUAL CONDUIT PLANS PROPOSED BY THE MEP ENGINEER OR EC TO ENSURE THAT CONDUITS INTENDED FOR THE COMMUNICATIONS CABLING SYSTEM ARE CORRECTLY SIZED, ADEQUATELY POSITIONED, AND HAVE THE REQUISITE NUMBER OF PULL BOXES AS REQUIRED BY THE ACTUAL MATERIALS PROPOSED BY THE LVI, AND/OR AS THE LVI DESIRES AS OPTIMAL FOR INSTALLATION. THE LVI SHALL BE RESPONSIBLE FOR ANY AND ALL COSTS ASSOCIATED WITH CONDUIT CHANGES RESULTING FROM FAILURE TO PREVIEW AND APPROVE THE PATHWAYS INSTALLED BY OTHERS.
6. THE LVI SHALL BE PREPARED TO RELOCATE EQUIPMENT OR DEVICES PROVIDED UNDER THIS SCOPE OF WORK WHEN DIRECTED BY THE PROJECT TEAM WITHOUT COST, PROVIDED EQUIPMENT HAS NOT BEEN INSTALLED AND THE NEW LOCATION IS NOT GREATER THAN TWENTY FIVE FEET (25') FROM THE LOCATION ORIGINALLY SHOWN.
7. OUTLETS SHALL BE LOCATED AT SAME HEIGHT, AND OF SAME ORIENTATION UNLESS OTHERWISE NOTED.
8. WIRING, SIGNAL AND CONTROL DEVICES WHERE PROVIDED SHALL BE FLUSH-MOUNTED IN FINISHED AREAS.

QUALITY ASSURANCE:

1. ALL MATERIALS AND LABOR PROVIDED BY THE LVI SHALL BE OF THE HIGHEST QUALITY.
2. THE LVI SHALL BE CERTIFIED TO INSTALL THE SOLUTION THAT THE LVI HAS PROPOSED AS SPECIFIED IN THESE DRAWINGS. THE LVI SHALL INSTALL ALL MATERIALS IN COMPLIANCE WITH MANUFACTURER'S WRITTEN DIRECTIONS.
3. ONLY THE HIGHEST GRADE COMPONENTS SHALL BE CONSIDERED, AND ALL COMPONENTS SHALL BE BALANCED WITH EACH OTHER FROM AN ELECTRICAL AND PERFORMANCE CHARACTERISTIC STANDPOINT.
4. THE COMMUNICATIONS CABLING SYSTEM SHALL BE END-TO-END CERTIFIED BY THE LVI AND THE MANUFACTURER. A WRITTEN DOCUMENT ADDRESSING THE COMMUNICATION CABLING SYSTEM'S CERTIFICATION SHALL BE PROVIDED BY THE MANUFACTURER ONCE THE INSTALLATION IS COMPLETE.
5. ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER ACCORDING TO GENERALLY ACCEPTED TRADE PRACTICES.
6. APPROPRIATE UNION (OR PREVAILING WAGE) REQUIREMENTS SHALL BE STRICTLY FOLLOWED AND ALL LVI EMPLOYEES ON SITE SHALL HAVE APPROPRIATE UNION LICENSES IF REQUIRED BY THE GC.
7. ALL WORK TO BE PERFORMED BY THE LVI SHALL BE COORDINATED WITH THE OTHER TRADES AND THE GC.
8. THE LVI SHALL CONFORM AND ADHERE TO ALL JOB SITE REQUIREMENTS AS DEFINED BY THE GC. IT IS THE RESPONSIBILITY OF THE LVI TO OBTAIN THESE REQUIREMENTS FROM THE GC.
9. ALL NECESSARY PERMITS ARE TO BE SECURED BY THE LVI.
10. APPROPRIATE LEVELS OF INSURANCE AND BONDING SHALL BE MAINTAINED. CERTIFICATES OF INSURANCE MAY BE REQUESTED AND SHALL BE PROVIDED AT THE LVI'S EXPENSE.
11. ANY VARIATIONS TO THE INSTALLATION OF THE COMMUNICATIONS CABLING SYSTEM AS DESCRIBED IN THESE DRAWINGS SHALL BE SUBJECT TO THE CONTROL OF THE GC, THE OWNER, AND SENTINEL TECHNOLOGIES.
12. SUBSTITUTION OF ANY MATERIALS SPECIFIED IN THIS DOCUMENT SHALL ONLY BE CONSIDERED ONCE A REQUEST TO DO SO HAS BEEN SUBMITTED IN WRITING TO THE GC, THE OWNER, AND SENTINEL TECHNOLOGIES FOR APPROVAL. THIS SUBMITTAL SHALL DISCUSS THE SCOPE OF THE CHANGE, THE RAMIFICATIONS ON THE OVERALL COMMUNICATIONS CABLING SYSTEM AND THE ADVANTAGES TO BE GAINED BY THE OWNER.
13. THE LVI SHALL CONFORM TO THE FOLLOWING STANDARDS AND ALL CURRENT ADDENDA WHEN PROVISIONING AND INSTALLING THE COMMUNICATIONS CABLING SYSTEM:
    - 13.1. TIA-568.0-E, GENERIC TELECOMMUNICATIONS CABLING FOR CUSTOMER PREMISES
    - 13.2. TIA-568.1-E, COMMERCIAL BUILDING TELECOMMUNICATIONS CABLING STANDARD
    - 13.3. TIA-568.2-D, BALANCED TWISTED-PAIR TELECOMMUNICATIONS CABLING AND COMPONENTS STANDARD
    - 13.4. TIA-568.3-D, OPTICAL FIBER CABLING COMPONENTS
    - 13.5. TIA-568.4-D, BROADBAND COAXIAL CABLING COMPONENTS
    - 13.6. TIA-569-D, TELECOMMUNICATIONS PATHWAYS AND SPACES
    - 13.7. ANSI/NECA/BICSI 568-2006, STANDARD FOR INSTALLING COMMERCIAL BUILDING TELECOMMUNICATIONS CABLING
    - 13.8. ANSI/TIA-570-C, RESIDENTIAL TELECOMMUNICATIONS INFRASTRUCTURE STANDARD
    - 13.9. TIA-606-C, ADMINISTRATION STANDARD FOR TELECOMMUNICATIONS INFRASTRUCTURE
    - 13.10. TIA-607-C, GENERIC TELECOMMUNICATIONS BONDING AND GROUNDING (EARTHING) FOR CUSTOMER PREMISES
    - 13.11. ANSI/TIA-862-B, BUILDING AUTOMATION SYSTEMS CABLING STANDARD
    - 13.12. ANSI/TIA-1005-A, TELECOMMUNICATIONS INFRASTRUCTURE STANDARD FOR INDUSTRIAL PREMISES
    - 13.13. ANSI/TIA-1152-A, REQUIREMENTS FOR FIELD TEST INSTRUMENTS AND MEASUREMENTS FOR BALANCED TWISTED-PAIR CABLING
    - 13.14. ANSI/TIA-758-B, CUSTOMER-OWNED OUTSIDE PLANT TELECOMMUNICATIONS INFRASTRUCTURE STANDARD
    - 13.15. TIA-942-B, TELECOMMUNICATIONS INFRASTRUCTURE STANDARD FOR DATA CENTERS
    - 13.16. ANSI/TIA-1179-A, HEALTHCARE FACILITY TELECOMMUNICATIONS INFRASTRUCTURE STANDARD
    - 13.17. BUILDING INDUSTRY CONSULTING SERVICES INTERNATIONAL (BICSI) TELECOMMUNICATIONS DISTRIBUTION METHODS MANUAL (LATEST EDITION)
    - 13.18. BUILDING INDUSTRY CONSULTING SERVICES INTERNATIONAL (BICSI) INFORMATION TRANSPORT SYSTEMS INSTALLATION MANUAL (LATEST EDITION)
    - 13.19. TIA-526-14-C, OPTICAL POWER LOSS MEASUREMENTS OF INSTALLED MULTIMODE FIBER CABLE PLANT
    - 13.20. TIA-526-7-A, OPTICAL POWER LOSS MEASUREMENTS OF INSTALLED SINGLE-MODE FIBER CABLE PLANT
    - 13.21. ANSI/BICSI 001-2017, INFORMATION TRANSPORT SYSTEMS DESIGN STANDARD FOR K-12 EDUCATIONAL INSTITUTIONS
    - 13.22. ANSI/BICSI 002-2019, DATA CENTER DESIGN AND IMPLEMENTATION BEST PRACTICES
    - 13.23. ANSI/BICSI 004-2018, INFORMATION TECHNOLOGY SYSTEMS DESIGN AND IMPLEMENTATION BEST PRACTICES FOR HEALTHCARE INSTITUTIONS AND FACILITIES
    - 13.24. NFPA 70 NATIONAL ELECTRICAL CODE (NEC) 2020 (WHERE MORE STRINGENT THAN LOCAL CODES)
    - 13.25. ALL APPLICABLE LOCAL, COUNTY, AND STATE BUILDING AND ELECTRICAL CODES
    - 13.26. UL 444, COMMUNICATION CABLES
    - 13.27. FCC PART 68 REGULATIONS
    - 13.28. IEEE 802.3, ETHERNET STANDARD

FIRST-NAMED MANUFACTURER:

1. WITHIN THESE DRAWINGS, THE FIRST-NAMED APPROVED MANUFACTURER INDICATES THAT ITS RESPECTIVE DEVICE, EQUIPMENT OR SYSTEM MAY HAVE BEEN USED TO MEET THE JOB REQUIREMENTS AND TO DETERMINE THE SPACE AND DIMENSIONAL REQUIREMENTS. THE LVI'S USE OF ANOTHER PRE-APPROVED SYSTEM SHALL REQUIRE THAT THE LVI VERIFY THAT THE RESPECTIVE DEVICES, EQUIPMENT, SYSTEMS, OR PRODUCTS WILL MEET THE JOB REQUIREMENTS AND WILL FIT THE ALLOCATED SPACE.
2. THE LISTING OF A MANUFACTURER AS ACCEPTABLE OR PRE-APPROVED DOES NOT IN ANY WAY RELIEVE THE LVI FROM THE RESPONSIBILITY FOR PROVIDING DEVICES, EQUIPMENT, OR SYSTEMS THAT MEET THE REQUIREMENTS OF THE SPECIFICATIONS. THE LVI SHALL VERIFY THAT PERFORMANCE REQUIREMENTS ARE MET, AS NO TWO MANUFACTURERS SHOULD BE TRUSTED AS EXACTLY IDENTICAL IN FUNCTION, FIT, OR FINISH.

COORDINATION:

1. THE LVI SHALL COORDINATE THE ARRANGEMENT, INSTALLATION, AND FINISHING OF THE COMMUNICATIONS CABLING SYSTEM:
    - 1.1. ALL FACEPLATE COLORS AND FINISHES SHALL BE COORDINATED WITH THE ARCHITECT
    - 1.2. ANY CONDUIT, PATHWAY, OR SLEEVE REQUIREMENTS SHALL BE COORDINATED WITH THE MEP ENGINEER
    - 1.3. THE ALIGNMENT AND POSITIONING OF PULL BOXES, JUNCTION BOXES, BACK BOXES, CONDUIT ENDS, STUBS, SLEEVES, ETC., WITH LVI-INSTALLED RACEWAYS, HORIZONTAL OR VERTICAL TRAYS, RACKS, AND CABINETS, ETC.
    - 1.4. ANY EQUIPMENT CUT INTO, MOUNTED ON, OR SUSPENDED FROM ARCHITECTURAL ELEMENTS SUCH AS WALLS OR CEILINGS SHALL BE COORDINATED WITH THE ARCHITECT TO ENSURE THAT THERE IS NO CONFLICT WITH DESIGN INTENT OR FUNCTIONALITY.
    - 1.5. ANY OTHER ELEMENTS THAT MIGHT OR WILL INTERFERE WITH ELEMENTS INSTALLED BY OTHER TRADES SHALL BE COORDINATED WITH THE GC AND THOSE RESPECTIVE TRADES
2. CONFLICTS REQUIRING NOTICEABLE DEVIATION FROM THE DRAWINGS SHALL BE COORDINATED WITH SENTINEL.

FIRE STOPPING:

1. FIRE STOP SYSTEMS SHALL BE UL-LISTED OR FACTORY MUTUAL APPROVED. THE LVI SHALL FURNISH AND INSTALL THE PROPER FIRE STOP SYSTEM WITH CLASSIFIED PRODUCTS AND MATERIALS COMPATIBLE WITH THE APPROPRIATE PENETRATING ELEMENTS, TYPE OF CONSTRUCTION MATERIAL AND DIMENSIONS OF THE WALL, PARTITION, BARRIER, OR FLOOR, AND THE ENVIRONMENT AND TEMPERATURE RANGE OF BOTH SIDES OF THE OPENING. FIRE STOP SYSTEMS SHALL MAINTAIN THE ORIGINAL FIRE RESISTANCE RATING OF THE WALL, PARTITION, BARRIER, OR FLOOR PRIOR TO THE PENETRATION.
2. EXPANSION TYPE FIRE STOP MATERIAL SHALL BE USED WHERE NECESSARY TO PROTECT AND CLOSE UPON FAILURE OF THE PENETRATING ELEMENT DUE TO FIRE.
3. FIRE STOP PENETRATIONS IN FIRE-RATED WALLS AND FLOORS FOR SLEEVES, CABLES, CONDUITS, DUCTS, AND CABLE TRAYS.
4. FIRE STOPPING FOR OPENINGS THROUGH FIRE AND SMOKE-RATED WALLS AND FLOOR ASSEMBLIES SHALL BE LISTED OR CLASSIFIED BY AN APPROVED INDEPENDENT TESTING LABORATORY FOR "THROUGH-PENETRATION FIRE STOP SYSTEMS," AND SHALL MEET THE REQUIREMENTS DESIGNATED IN ASTM E814 (OR UL1479).
5. THICKNESS OF MATERIALS MUST BE ESTABLISHED BY FORMAL ASTM E814 OR UL1779 TESTS.
6. THE LVI SHALL INSTALL FIRE STOPPING MATERIAL IN ACCORDANCE WITH CONSTRUCTION ELEMENTS AND MANUFACTURER SPECIFICATIONS.
7. THE LVI SHALL THOROUGHLY CLEAN AND REMOVE ANY FIRE STOPPING MATERIAL THAT DRIPS OR FALLS ONTO WALL OR FLOOR SURFACES.

SUBMITTALS:

1. UPON AWARD OF THE PROJECT, SHOP DRAWINGS AND PRODUCT DATA OF STANDARD CATALOGED PRODUCTS SHALL BE SUBMITTED WITH APPLICABLE DATA THAT MEET THE PROJECT REQUIREMENTS. SUBMITTALS THAT INCLUDE INFORMATION ON MULTIPLE DEVICES OR EQUIPMENT ARE ACCEPTABLE ONLY WHEN ITEMS APPLICABLE TO THE PROJECT ARE IDENTIFIED WITH ARROWS, CHECK MARKS OR OTHER CALL OUTS. THE LVI SHALL CLEARLY IDENTIFY WHICH MANUFACTURER SOLUTIONS ARE BEING PROPOSED AT THE TIME OF THE BID RESPONSE.
2. WHEN SHOP DRAWINGS ARE CREATED FROM OR INCORPORATED WITH SENTINEL'S DRAWINGS, THE LVI SHALL REMOVE THE ARCHITECT'S, ENGINEER'S, AND SENTINEL'S TITLE BLOCKS AND REPLACE THEM WITH THE LVI'S OWN, UNIQUE TITLE BLOCK. THE LVI'S TITLE BLOCK SHALL INCLUDE AT A MINIMUM THE LVI'S NAME, ADDRESS AND TELEPHONE NUMBER, AND PROJECT NAME.
3. SHOP DRAWINGS OF RELATED EQUIPMENT, DEVICES, AND MATERIAL SHALL BE SUBMITTED AT THE SAME TIME SO THE PROJECT TEAM CAN COORDINATE RELATED COMPONENTS.
4. NO MATERIAL OR EQUIPMENT SHALL BE PURCHASED, RELEASED FOR MANUFACTURE, OR SHIPMENT WITHOUT FIRST OBTAINING THE APPROVAL OF THE PROJECT TEAM. ONLY THE LVI SHALL BE RESPONSIBLE FOR COSTS AND COORDINATION OF RETURNING ITEMS PURCHASED PRIOR TO APPROVAL.
5. THE LVI SHALL SUBMIT AN ELECTRONIC COPY OF THE SUBMITTALS UNLESS DIRECTED OTHERWISE BY THE GC OR THE OWNER. THESE SUBMITTALS SHALL BE SUBJECT TO APPROVAL OR REJECTION WITH COMMENTARY. SUBMITTALS MAY CONSIST OF BUT NOT BE LIMITED TO ONE OR ANY APPROPRIATE COMBINATION OF THE FOLLOWING:
    - 5.1. MANUFACTURER CUT-SHEETS
    - 5.2. SHOP DRAWINGS (INCLUDING SINGLE-LINE DIAGRAMS)
    - 5.3. CATALOG SHEETS
    - 5.4. WRITTEN SPECIFICATIONS
    - 5.5. ORIGINALS OR COPIES OF THE ABOVE
6. IF HARD COPIES OF THE SUBMITTALS ARE REQUESTED, THEY SHOULD BE BOUND IN A STANDARD THREE-RING BINDER WITH A MINIMUM OF THE LVI'S NAME, ADDRESS, TELEPHONE NUMBER, AND THE PROJECT NAME.

TESTING, IDENTIFICATION, AND ADMINISTRATION REQUIREMENTS:

1. UTP HORIZONTAL AND BACKBONE CABLING
    - 1.1. A LEVEL IIIe CERTIFIED TESTING DEVICE SHALL BE USED. THE TESTER SHALL HAVE BEEN FIELD CALIBRATED WITHIN THE LAST MONTH.
    - 1.2. THE LVI SHALL ENSURE THAT THE APPROPRIATE ADAPTERS AND TEST CORDS ARE USED.
    - 1.3. ALL PAIRS OF HORIZONTAL STATION AND BACKBONE CABLING SHALL BE TESTED FROM THE JACK TO THE PATCH PANEL OR BLOCK, AND FROM PATCH PANEL TO PATCH PANEL IN A BI-DIRECTIONAL MANNER.
    - 1.4. ALL TESTING SHALL BE CONDUCTED ON THE PERMANENT LINK. REFER TO THE END OF THIS SPECIFICATION FOR A NOTE ON THE USE OF PATCH CORDS.
    - 1.5. ALL TESTING SHALL BE IN CONFORMANCE WITH THE MANUFACTURER'S REQUIREMENTS TO OBTAIN APPLICATION PERFORMANCE WARRANTY CERTIFICATION.
2. THE LVI SHALL PROVIDE TEST RESULTS AND CERTIFICATION AS TO THE COMMUNICATIONS CABLING SYSTEM'S ADHERENCE TO THE STANDARDS AND PERFORMANCE REQUIREMENTS REFERENCED IN THESE DRAWINGS.
3. LABELS SHALL MEET THE LEGIBILITY, EXPOSURE, DEFACEMENT, AND ADHESION REQUIREMENTS OF UL969.
4. LABELS SHALL BE PREPRINTED OR PRINTED BY A COMPUTER. LABELS WRITTEN BY HAND ARE NOT ACCEPTABLE.
5. THE LVI SHALL THOROUGHLY LABEL THE ENTIRE COMMUNICATIONS CABLNG SYSTEM FOR FUTURE MAINTAINABILITY.
6. ALL CABLES SHALL BE LABELED AT THE FACEPLATE, THE PATCH PANEL JACK/PORT.
7. THE LVI SHALL PROVIDE RECORD DRAWINGS IN AN AUTOCAD COMPATIBLE FORMAT AND IN PDF FORMAT.
8. THE LVI SHALL THOROUGHLY DOCUMENT THE ENTIRE COMMUNICATIONS CABLING SYSTEM FOR FUTURE MAINTAINABILITY AND TROUBLESHOOTING.

CUTOVER AND TRAINING REQUIREMENTS:

1. THE LVI SHALL COORDINATE ALL TRAINING WITH THE CUSTOMER TO DETERMINE THE EXTENT, DURATION, AND SCHEDULE OF THE TRAINING SESSIONS.
2. THE LVI SHALL PROVIDE TRAINING FOR CUSTOMER PERSONNEL TO ENSURE KNOWLEDGE TRANSFER REGARDING DOCUMENTATION AND OPERATION OF THE COMMUNICATIONS CABLING SYSTEM.
3. AT CLOSEOUT, CLEAN OR RE-CLEAN ENTIRE WORK TO NORMAL LEVEL FOR "FIRST CLASS" MAINTENANCE/CLEANING OF BUILDOUT PROJECTS OF A SIMILAR NATURE. REMOVE NON-PERMANENT PROTECTION AND LABELS, CLEAN EXPOSED FINISHES, TOUCH-UP MINOR FINISH DAMAGE, REMOVE DEBRIS AND BROOM-CLEAN SPACES, SANITIZE WORK, AND PERFORM SIMILAR CLEANUP OPERATIONS NEEDED TO PRODUCE A CLEAN CONDITION.

SUPPORT AND WARRANTY REQUIREMENTS:

1. THE COMMUNICATIONS CABLING SYSTEM SHALL BE END-TO-END CERTIFIED BY THE LVI AND THE MANUFACTURER.

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COUNTY OF DANE WISCONSIN 1839

DANE COUNTY EMERGENCY MANAGEMENT REMODEL
5415 KING JAMES WAY
FITCHBURG, WISCONSIN

ISSUE RECORD

	ISSUE FOR BID	06-08-21

CHECKED BY
TFT
DRAWN BY
SENTINEL
DATE
01-04-21
PROJECT NUMBER
2020-001

TELECOM REQUIREMENTS 1

T0.1

2. AN EXTENDED MATERIAL, LABOR, AND PERFORMANCE WARRANTY SHALL BE PROVIDED BY THE MANUFACTURER. THE LVI SHALL DELIVER TO THE OWNER THE DOCUMENTATION OUTLINING THE TERMS AND CONDITIONS OF THE WARRANTY. A MINIMUM 20-YEAR APPLICATION PERFORMANCE WARRANTY IS REQUIRED.
3. ONCE THE COMMUNICATIONS CABLING SYSTEM IS CERTIFIED, THE LVI SHALL REPAIR - AT NO ADDITIONAL CHARGE - ANY PART OF THE COMMUNICATIONS CABLING SYSTEM THAT IS NOT WORKING PROPERLY WITHIN 24 HOURS OF THE REPORT OF THE PROBLEM, UNLESS OTHER ARRANGEMENTS ARE MADE WITH THE MANUFACTURER ISSUING THE WARRANTY.

COAXIAL BACKBONE CABLE:

1. RG11 COAXIAL CABLE SHALL CONSIST OF A 14 AWG SOLID COPPER CORE QUAD-SHIELDED SOLUTION THAT HAS BEEN SWEPT-TESTED TO 3000MHZ.
2. ALL COAXIAL CABLE SHALL BE CATVP (CATV PLENUM CABLE) FOR PLENUM SPACES AS SPECIFIED IN NEC SECTION 820-50.
3. ONLY COAXIAL CABLES FROM THE FOLLOWING MANUFACTURERS SHALL BE CONSIDERED:
   - 3.1. BELDEN - 1153A
   - 3.2. GEPCO - C3529
   - 3.3. COMMSCOPE/UNIPRISE - 2287K
   - 3.4. LIBERTY - RG11-QUAD PL
   - 3.5. PRE-APPROVED EQUIVALENT
4. ALL COAXIAL CABLE SHALL BE CATV (CATV NON-PLENUM CABLE) FOR NON-PLENUM SPACES AS SPECIFIED IN NEC SECTION 820-50.
5. ONLY COAXIAL CABLES FROM THE FOLLOWING MANUFACTURERS SHALL BE CONSIDERED:
   - 5.1. BELDEN - 1617A
   - 5.2. GEPCO - C5044
   - 5.3. COMMSCOPE/UNIPRISE - 5940R
   - 5.4. LIBERTY - RG11-QUAD
   - 5.5. PRE-APPROVED EQUIVALENT
6. THE LVI SHALL REVIEW THE ASSOCIATED PROJECT DRAWINGS AND IDENTIFY ALL CUMULATIVE DB LOSSES OR GAINS THROUGH THE ENTIRE COAXIAL SYSTEM TO DEVELOP A COMPREHENSIVE FRAMEWORK INDICATING TE NEED FOR LINE AMPLIFICATION.
7. THE LVI SHALL FURNISH AND INSTALL ALL NECESSARY SPLITTERS, TAPS, DIRECTIONAL COUPLERS, ETC., TO PROVIDE A COMPLETE COAXIAL DISTRIBUTION SYSTEM. DIRECTIONAL COUPLERS, TAPS, SPLITTERS AND COMBINERS, WHERE USED, SHALL MEET THE FOLLOWING REQUIREMENTS:
   - 7.1. THE LVI SHALL REVIEW THE ASSOCIATED DRAWINGS. IF THE LVI'S PROPOSED SOLUTION PROVIDES BETTER PERFORMANCE THAN THE MINIMAL GUIDELINES PROVIDED, THE LVI MAY REVISE THE QUANTITIES AND PLACEMENT OF COUPLERS, TAPS , SPLITTERS, AND COMBINERS.
   - 7.2. ALL COMPONENTS SHALL PROVIDE FOR A MINIMUM OF 3000MHZ FREQUENCY RANGE.
   - 7.3. ALL COMPONENTS SHALL BE MOUNTED SECURELY TO A PLYWOOD WALL WITHIN THE DISTRIBUTED TELECOMMUNICATIONS ROOM - REFER TO DRAWINGS.
   - 7.4. ALL COMPONENTS SHALL SUPPORT FEMALE F-TYPE CATV CONNECTORS FOR BOTH RF INPUT AND OUTPUTS.
   - 7.5. TAP VALUES SHALL BE APPROPRIATELY RATED FOR THE ESTIMATED SIGNAL STRENGTH AT THAT POINT OF INSERTION.
   - 7.6. THUR-LINE LOSSES SHALL BE CALCULATED FOR 3000MHZ FREQUENCIES.
   - 7.7. ALL COAXIAL BACKBONE RUNS SHALL BE APPROPRIATELY TERMINATED WITH 75-OHM TERMINATORS AS REQUIRED.
8. THE LVI SHALL NOT FURNISH OR INSTALL ANY AMPLIFIERS, LINE DISTRIBUTION AMPLIFIERS, OR MULTISWITCHES FOR DISTRIBUTION, THESE SHALL BE PROVIDED BY EITHER THE CATV OR SATV PROVIDER UNDER THE DIRECTION OF THE OWNER.
9. F-TYPE CATV CONNECTORS SHALL BE USED, EITHER COMPRESSION OR HIGH-STRENGHT SCREW-ON.
10. CONNECTORS SHALL BE RATE TO AT LEAST 3000MHZ.

UTP HORIZONTAL STATION CABLE:

1. ALL UTP CABLE SHALL BE CMP (COMMUNICATIONS PLENUM CABLE) FOR PLENUM SPACES OR CMR (COMMUNICATIONS RISER CABLE) FOR RISER SYSTEMS AS SPECIFIED IN NEC SECTION 800-50.
2. ALL UTP CABLE SHALL BE FROM THE SAME MANUFACTURER AND BE THE SAME TYPE.
3. ALL CATEGORY 6 UTP CABLE AND CONNECTORS SHALL MEET OR EXCEED THE CHANNEL REQUIREMENTS AS DEFINED BY THE LATEST STANDARDS.
4. ALL CATEGORY 6A (10GB) UTP CABLE AND CONNECTORS SHALL MEET OR EXCEED THE CHANNEL REQUIREMENTS AS DEFINED BY THE LATEST STANDARDS.
5. ONLY UTP CABLES FROM THE FOLLOWING MANUFACTURERS SHALL BE CONSIDERED:
   - 5.1. BERK-TEK
   - 5.2. GENERAL CABLE
   - 5.3. HUBBELL
   - 5.4. SYSTIMAX/UNIPRISE
6. ONLY 8 POSITION, 8 CONDUCTOR (8P8C) CATEGORY 6 AND CATEGORY 6A (10GB) CONNECTORS CONNECTORS SHALL BE USED.
7. ONLY UTP CONNECTORS FROM THE FOLLOWING MANUFACTURERS SHALL BE CONSIDERED:
   - 7.1. HUBBELL
   - 7.2. LEVITON
   - 7.3. SYSTIMAX/UNIPRISE
8. REFER TO THE DRAWINGS FOR CABLE SHEATH COLORS AND JACK ASSIGNMENTS.
   - 8.1. BLUE CABLES, SECURITY CAMERA CABLES, AND WIRELESS ACCESS POINT CABLES HOME RUN TO THE LOWER LEVEL NETWORK ROOM.
   - 8.2. ORANGE CABLES HEAD TO THE RADIO ROOM FOR TERMINATION AS DIRECTED BY THE OWNER. PATCH PANEL LAYOUT AND ASSIGNMENTS ARE STILL UNDER REVIEW BY THE OWNER.

COAXIAL HORIZONTAL STATION CABLE:

1. RG6 COAXIAL CABLE SHALL CONSIST OF A 18 AWG SOLID COPPER CORE QUAD-SHIELDED SOLUTION THAT HAS BEEN SWEPT-TESTED TO 3000MHZ.
2. ALL COAXIAL CABLE SHALL BE CATVP (CATV PLENUM CABLE) FOR PLENUM SPACES AS SPECIFIED IN NEC SECTION 820-50.
3. ONLY COAXIAL CABLES FROM THE FOLLOWING MANUFACTURERS SHALL BE CONSIDERED:
   - 3.1. BELDEN - 1189AP
   - 3.2. GEPCO - C3525
   - 3.3. COMMSCOPE/UNIPRISE - 2229V
   - 3.4. LIBERTY - RG6-QUAD PL
   - 3.5. PRE-APPROVED EQUIVALENT
4. ALL COAXIAL CABLE SHALL BE CATV (CATV NON-PLENUM CABLE) FOR NON-PLENUM SPACES AS SPECIFIED IN NEC SECTION 820-50.
5. ONLY COAXIAL CABLES FROM THE FOLLOWING MANUFACTURERS SHALL BE CONSIDERED:
   - 5.1. BELDEN - 1322R
   - 5.2. GEPCO - C5889
   - 5.3. COMMSCOPE/UNIPRISE - 5740
   - 5.4. LIBERTY - RG6-QUAD
   - 5.5. PRE-APPROVED EQUIVALENT
6. ALL STATION RUNS SHALL BE CALCULATED TO ENSURE THAT A SIGNAL STRENGTH OF +5DBMV OR GREATER EXISTS AT THE FAR END COAXIAL CONNECTOR.
7. IF THE SIGNAL STRENGTH AT THE CONNECTOR IS EXCESSIVE AND CAUSES SIGNAL DISTORTION, THE LVI SHALL FURNISH AND INSTALL THE APPROPRIATE ATTENUATOR PAD TO REDUCE THE SIGNAL AS CLOSE TO +5DBMV AS POSSIBLE.
8. THE LVI MAY USE ADJUSTABLE ATTENUATOR PADS IN THE STANDARD -1DBMV TO -20DBMV RANGE.
9. IT IS NOT NECESSARY FOR THE LVI TO PROVIDE ATTENUATOR PADS AT EACH STATION LOCATION - ONLY FOR THOSE OUTLETS THAT EXCEED A STANDARD NTSC TELEVISION MONITOR'S OR FLAT PANEL DISPLAY'S ABILITY TO COMPENSATE.
10. F-TYPE CATV CONNECTORS SHALL BE USED, EITHER COMPRESSION OR HIGH-STRENGHT SCREW-ON.
11. CONNECTORS SHALL BE RATE TO AT LEAST 3000MHZ.

PATCH CORDS:

1. ALL DATA PATCH CORDS WILL BE FURNISHED AND INSTALLED BY THE OWNER. TESTS FOR THE CHANNEL WILL NOT BE REQUIRED.
2. FOR ALL FACEPLATES WITH COAXIAL CABLING, THE LVI SHALL FURNISH AND INSTALL ONE (1) 3-FOOT RG59 PATCH CORD.

OWNER-FURNISHED REQUIREMENTS / SPECIFICATIONS FOR FIBER OPTIC AND DATA CABLING

CABLING:
FURNISH AND INSTALL MINIMALLY-COMPLIANT HUBBELL CATEGORY 6 PLENUM CABLING. ALL CABLES AND EQUIPMENT INSTALLED SHALL BE CAPABLE OF SUPPORTING 1GBPS TO THE DEVICE. ALL CABLES SHALL BE TERMINATED AND TESTED. A CABLE REPORT OR SIMILAR REPORT SHALL BE SUPPLIED TO DCIM AND THE PROJECT ENGINEER AT THE END OF INSTALLATION. A MINIMUM OF A 2-METER (FOR ETHERNET), AND 4-METER (FOR FIBER) SERVICE LOOP SHALL BE LEFT IN THE NETWORK ROOM FOR EASE OF CONNECTIVITY. CABLE LADDER TRAY SHALL BE USED IN THE NETWORK CLOSET FOR THE CABLE RUNS; ALL OTHER RUNS SHALL BE RUN ACCORDING TO ALL APPLICABLE CODES. CABLES AND KEYSTONE JACKS SHALL BE BLUE UNLESS OTHERWISE SPECIFIED. ALL KEYSTONE/PUNCH DOWN BLOCKS SHALL USE THE T568B STANDARD.

IN THE EOC, THE CONTRACTOR SHALL PROVIDE FOR A FEMALE RJ45 KEYSTONE CONNECTION IN THE RETRACTABLE LID (CUBBY) WITHIN THE TABLE CUBBIES (CUBBIES AND TABLE BY OTHERS. PROVIDE A 2-METER CONNECTION FROM THE CUBBY TO THE FLOOR PORT IN THE INSTALLED RAISED-FLOOR BOX, IN ADDITION TO THE STANDARD HORIZONTAL RUN TO THE DATA ROOM AND PATCH CORD TO THE DEVICE.

OPTICAL FIBER:

ALL OPTICAL FIBER SHALL BE OS2, BY EITHER CORNING, COMMSCOPE, OR OCC, CONSISTING OF TWO-STRAND FROM THE NETWORK ROOM FIBER PANEL TO THE RADIO/ANTENNA ROOM FIBER PANEL WITH LC UPC CONNECTORS. OPTICAL FIBER FROM THE STREET WILL BE PROVIDED FOR BY OTHERS AND CONNECTED TO THE NETWORK ROOM FIBER PANEL.

PATCH PANELS:
THE PATCH PANELS IN THE NETWORK CLOSET SHALL BE CAPABLE OF PLUGGING IN CAT 6A CABLES. BY DEFAULT, 2U 48 PORT PATCH PANELS ARE EXPECTED UNLESS OTHERWISE SPECIFIED. ANY AND ALL FIBER PANELS SHALL BE CLEARFIELD PANELS. ALL CAT6/6A PANELS SHALL BE HUBBELL PANELS. A MINIMUM OF 1U SPACING BETWEEN PATCH PANELS (PREFERRED 2U) IS REQUIRED.

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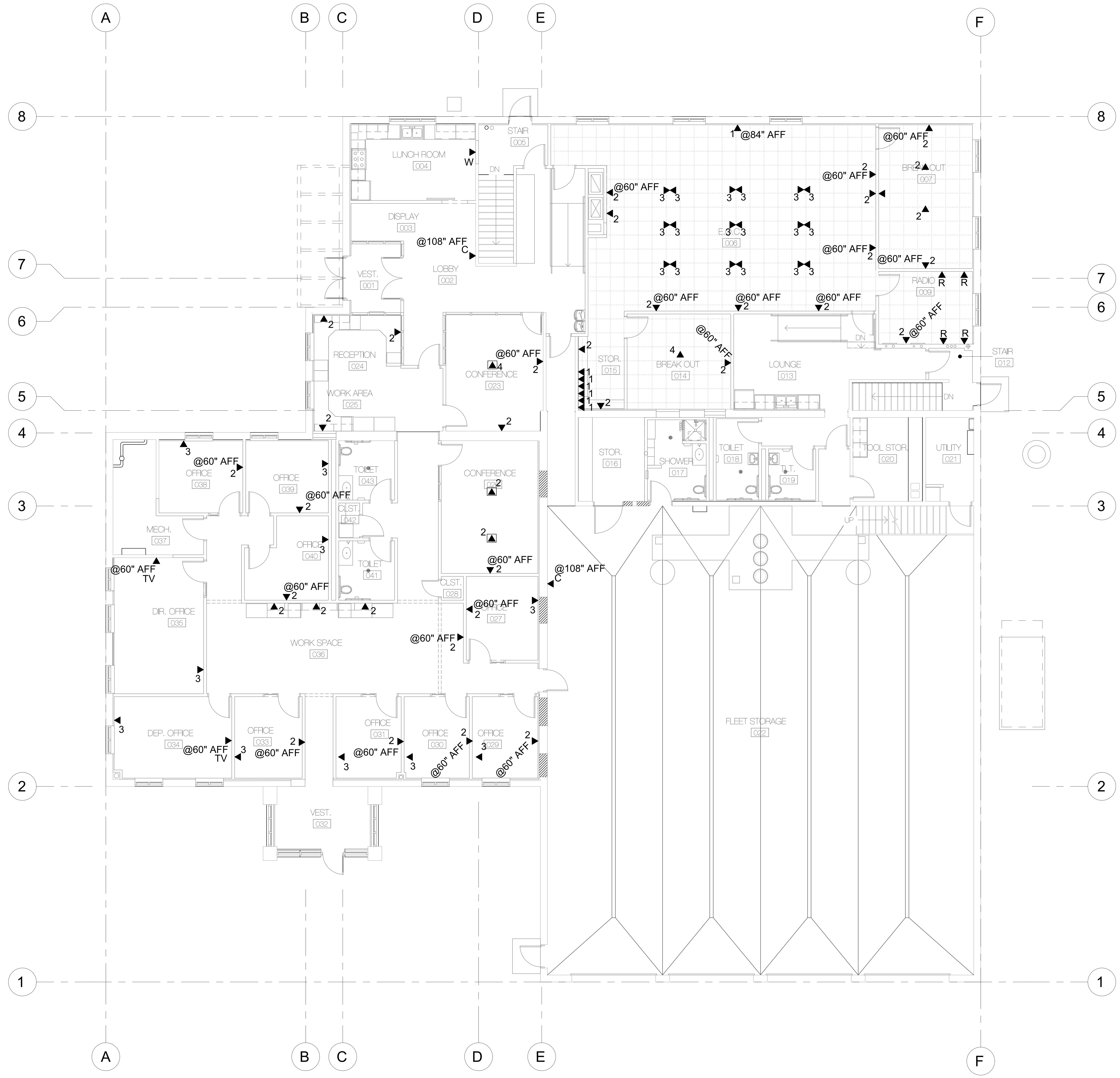
TELECOM REQUIREMENTS 2

T0.2



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

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FIRST FLOOR COMMUNICATIONS PLAN

T1.0

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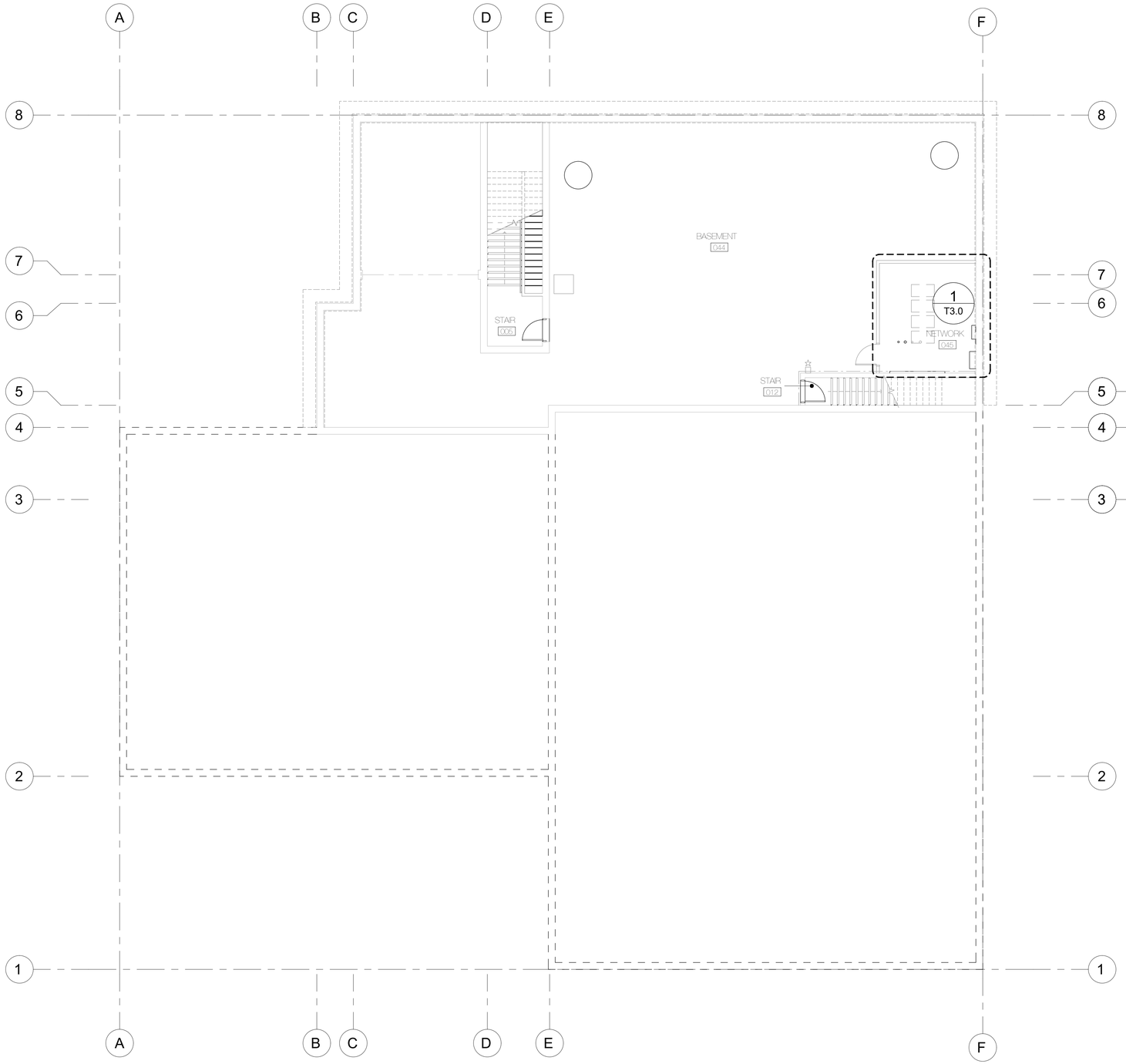
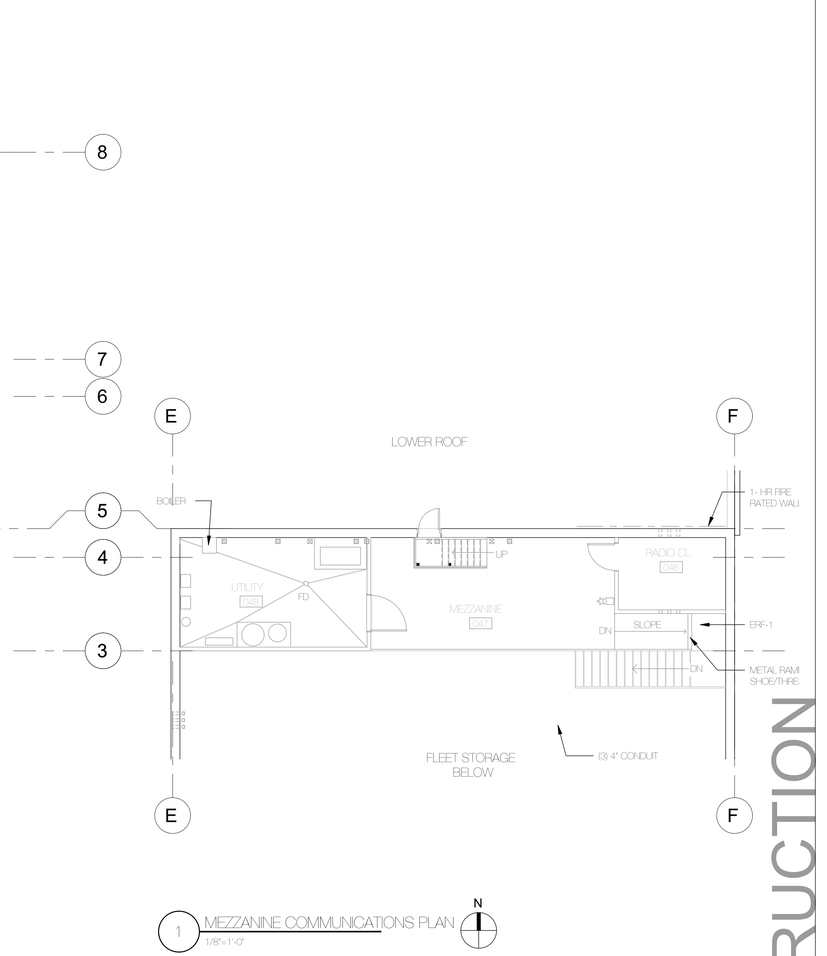


1 BASEMENT COMMUNICATIONS PLAN
1/8"=1'-0"



1 MEZZANINE COMMUNICATIONS PLAN
1/8"=1'-0"

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BASEMENT & MEZZANINE COMMUNICATION PLAN

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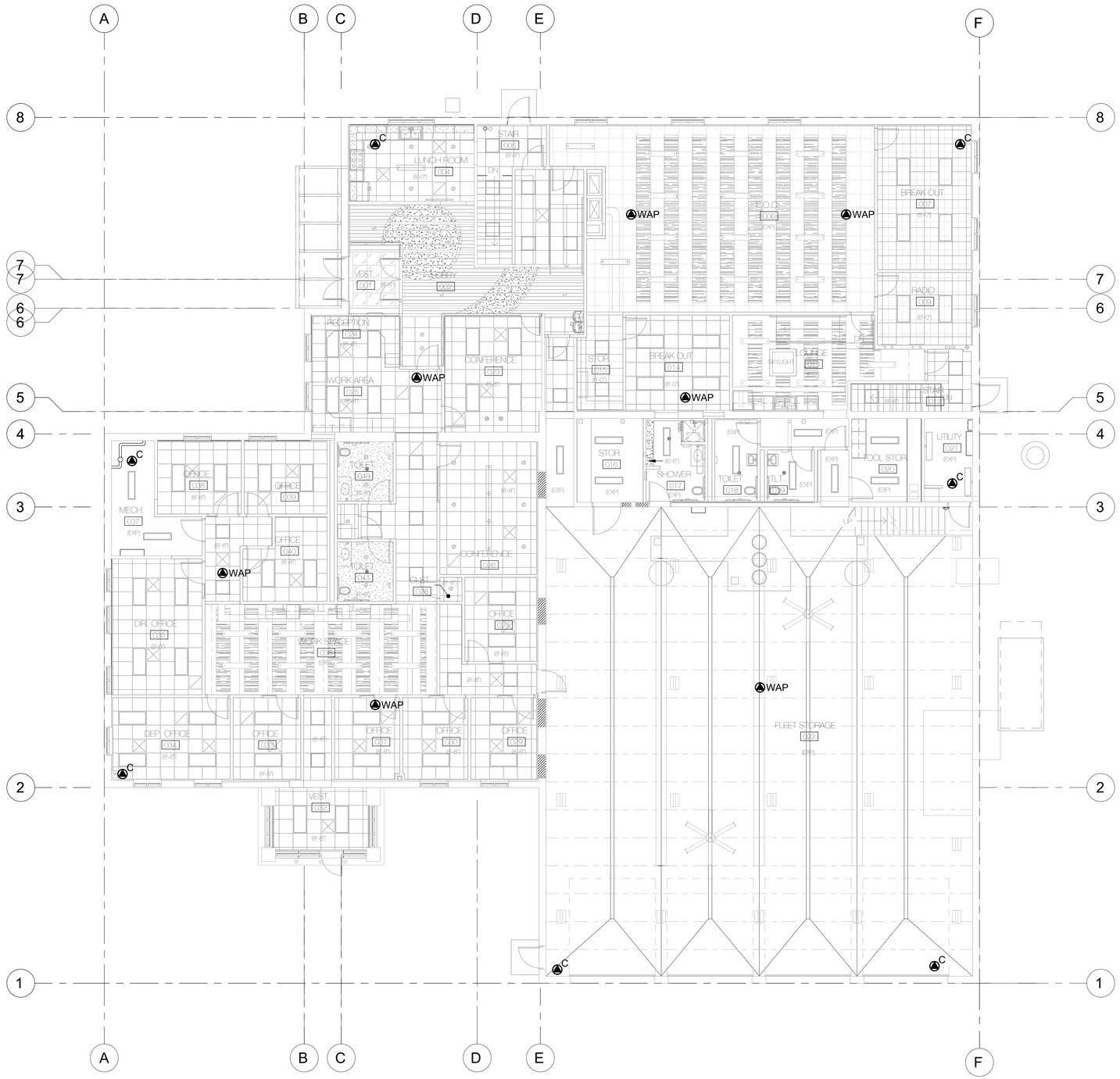

1 REFLECTED CEILING COMMUNICATIONS PLAN
1/8"=1'-0"

N

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FIRST FLOOR COMMUNICATIONS REFLECTED CEILING PLAN

T2.0

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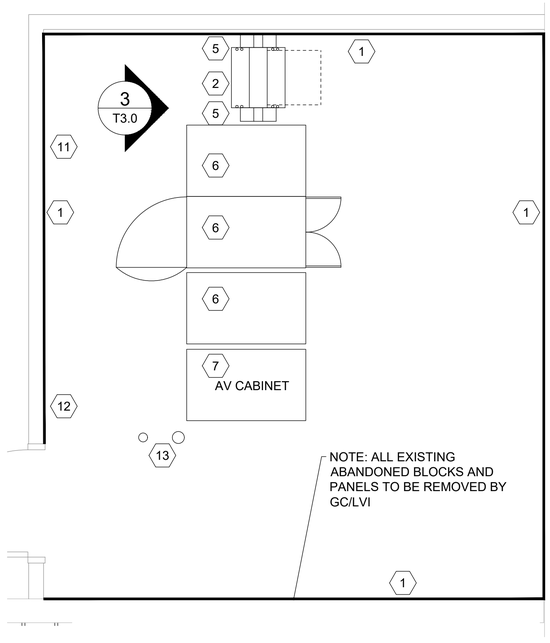
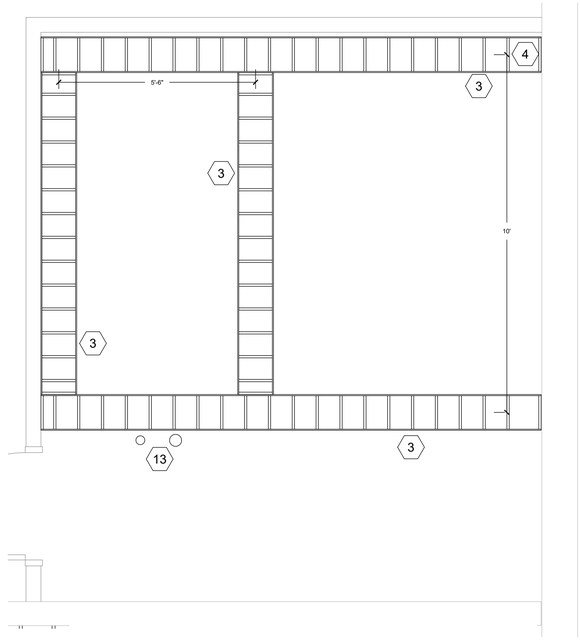


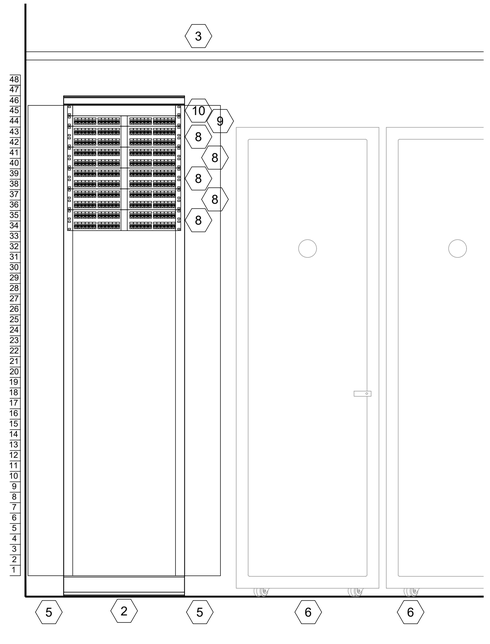
1 NETWORK 045 LAYOUT
1/2"=1'-0"

N

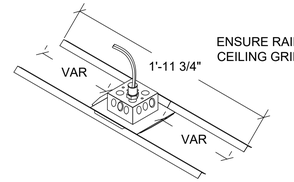


2 NETWORK 045 LADDER TRAY LAYOUT
1/2"=1'-0"

N



3 NETWORK 045 RACK ELEVATION
1"=1'-0"

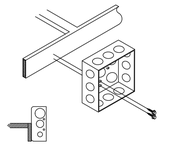


ENSURE RAILS OVERLAY CEILING GRID.

FURNISH AND INSTALL QUAM SSB-1900 DEEP ELECTRICAL BOX SUPPORT BRIDGE. ADJUST BOX AS REQUIRED LEFT-RIGHT AND FORWARD-BACK TO POSITION BOX IN FINAL POSITION. USE PENCIL ROD TO SECURE BOX TO PERMANENT STRUCTURE (NOT THE CEILING GRID) WHEN IN FINAL POSITION. COVER WITH BLANK FACEPLATE OR APPROPRIATE LOW VOLTAGE FACEPLATE AS INDICATED IN THE ASSOCIATED PROJECT DRAWINGS.

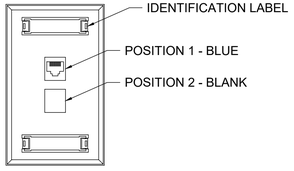
PROTECT CABLING FROM ENTERING BACKBOX BY USING 3/4" BUSHING.THROUGH APPROPRIATE KNOCKOUT.

4 WIRELESS ACCESS POINT LOCATIONS

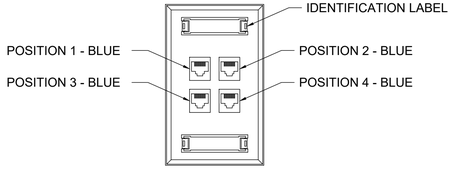


MOUNT BACKBOXES TO HORIZONTAL LADDER TRAY WITH (2) TWO #10 x 1/2" HEX HEAD SELF-TAPPING SCREWS, SO THAT THE BOTTOM OF THE BACKBOX IS FLUSH WITH THE STRINGER RAIL OF THE LADDER TRAY. NO PART OF THE BACKBOX MAY EXTEND BELOW THE STRINGER RAIL.

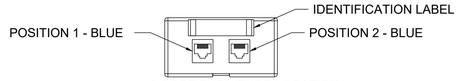
5 MOUNTING POWER BACK BOXES TO LADDER TRAY



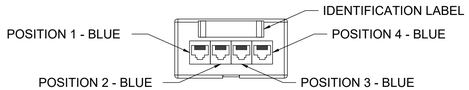
1-PORT LOCATION



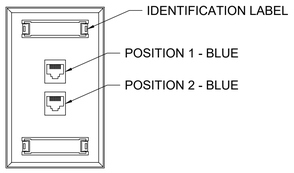
4-PORT LOCATION



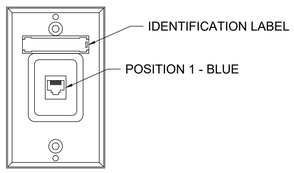
2-PORT FURNITURE LOCATION



4-PORT FURNITURE LOCATION

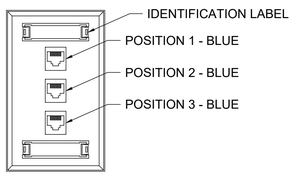


2-PORT LOCATION

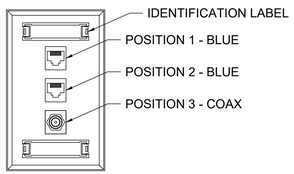


W (WALLPHONE) LOCATION

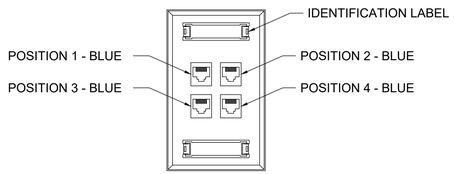
NOTE: FOR ALL FLOOR BOX, POKE-THRU, AND TABLE TOP LOCATIONS THE LVI, SHALL ADHERE TO THE POSITION FOR THE CORRESPONDING WALL LOCATION UNLESS NOTED OTHERWISE. IT IS THE RESPONSIBILITY OF THE LVI TO COORDINATE WITH THE EC AND/OR THE FURNITURE VENDOR TO DETERMINE WHAT FLOOR BOX, POKE-THRU, OR TABLE TOP BOX IS BEING PROVIDED FOR LVI USE.



3-PORT LOCATION



TV LOCATION



RADIO ROOM 009

6 COMMUNICATOINS FACEPLATES
6"=1'-0"

DRAWING KEYNOTES:

1. 3/4" FIRE-RATED (OR PAINTED WITH A MINIMUM OF THREE (3) COATS FIRE RETARDANT PAINT) A-C GRADE VOID FREE PLYWOOD SHEETING SHALL BE INSTALLED ON THE ENTIRE LENGTH OF THIS WALL. THE PLYWOOD SHALL BE MOUNTED SO THAT SUCH THAT THE TOP OF THE PLYWOOD IS 8' - 6" AFF AND THE BOTTOM EDGE OF THE PLYWOOD IS 6" AFF.
2. CABLING INSTALLATION CONTRACTOR SUPPLIED AND INSTALLED 2-POST 19-INCH OPEN RELAY RACK
3. CABLING INSTALLATION CONTRACTOR SUPPLIED AND INSTALLED 12-INCH WIDE LADDER CABLE TRAY. TRAY TO BE MOUNTED SUCH THAT THE BOTTOM OF THE TRAY IS 7-FEET, 6-INCHES AFF.
4. TELECOMMUNICATIONS MAIN GROUNDING BUSBAR. SEE DRAWING E1.0 FOR DETAILS AND COORDINATE WITH EC PRIOR TO INSTALLATION.
5. CABLING INSTALLATION CONTRACTOR SUPPLIED AND INSTALLED 6-INCH WIDE VERTICAL CABLE MANAGER. REFER TO OWNER SPECIFICATIONS FOR EXACT REQUIREMENTS.
6. OWNER-FURNISHED AND INSTALLED CABINET OR RACK. SHOWN FOR REFERENCE ONLY.
7. AVIC-FURNISHED-AND-INSTALLED AUDIOVISUAL HEAD END CABINET FOR EOC AND VIDEO DISTRIBUTION SYSTEMS.
8. CABLING INSTALLATION CONTRACTOR SUPPLIED AND INSTALLED CATEGORY 6 2U 48-PORT PATCH PANEL TO SUPPORT TERMINATION OF HORIZONTAL STATION CABLING. REFER TO OWNER SPECIFICATIONS FOR EXACT REQUIREMENTS.
9. CABLING INSTALLATION CONTRACTOR SUPPLIED AND INSTALLED CATEGORY 6A 1U 24-PORT PATCH PANEL TO SUPPORT WIRELESS ACCESS POINT CABLING CONNECTIVITY REQUIREMENTS. REFER TO OWNER SPECIFICATIONS FOR EXACT REQUIREMENTS.
10. CABLING INSTALLATION CONTRACTOR SUPPLIED AND INSTALLED 1U FIBER OPTIC TERMINATION SHELF TO SUPPORT TERMINATION OF FIBER BACKBONE CABLING. REFER TO OWNER SPECIFICATIONS FOR EXACT REQUIREMENTS.
11. LOCATION OF SIC-FURNISHED-AND-INSTALLED KEYSCAN DATA GATHERING PANEL AND POWER SUPPLIES.
12. WALL-FIELD LOCATION RESERVED FOR CABLE TELEVISION SPLITTERS/TAPS (BY CATV SERVICE PROVIDER).
13. GENERAL LOCATION OF NEW CORES THROUGH THE EXISTING PRE-CAST PLANK FLOOR. SEE DRAWING PL-1 AND VERIFY WITH OWNER PRIOR TO ANY INSTALLATION.

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ISSUE RECORD

1	ISSUE FOR BID	06-08-21

CHECKED BY
TFT
DRAWN BY
SENTINEL
DATE
01-04-21
PROJECT NUMBER
2020-001

TECHNOLOGY DETAILS

T3.0

COMMUNICATIONS & LOW VOLTAGE CONDUIT REQUIREMENTS:

ALL CONDUIT RUNS SHALL BE 3/4" EMT, UNLESS NOTED OTHERWISE.

ALL BOXES SHALL BE A MINIMUM OF 4-11/16" x 4-11/16" x 2-1/8" DEEP BOX WITH A SINGLE GANG TRIM RING MOUNTED FLUSH TO THE WALL SURFACE, UNLESS NOTED OTHERWISE.

ALL MOUNTING HEIGHTS ARE TO THE CENTERLINE OF THE BACKBOX UNLESS NOTED OTHERWISE.

ALL CONDUIT SHALL BE ROUTED ABOVE CEILINGS, BELOW FLOORS, OR STUBBED UP WITHIN WALLS; NO CONDUIT SHALL BE EXPOSED UNLESS APPROVED BY THE ARCHITECT OR OWNER.

ALL CONDUITS IN WALLS SHALL STUB UP AT LEAST 6-INCHES ABOVE THE FINISHED CEILING. ALL STUBS SHALL BE REAMED AND BUSHED AT BOTH ENDS.

ALL CONDUIT PENETRATIONS THROUGH FIRE-RATED PARTITIONS SHALL BE SEALED AS REQUIRED BY CODE. ALL BACKBOXES MOUNTED WITHIN FIRE-RATED PARTITIONS SHALL MEET THE FIRE RATING OF THE PARTITION AS REQUIRED BY CODE.

PROVIDE PULL STRINGS IN ALL CONDUIT RUNS LONGER THAN 10-FEET.

PROVIDE PULL BOXES EVERY 100 LINEAR FEET OR AFTER TWO SUCCESSIVE 90° BENDS.

ALL JUNCTION AND PULL BOXES SHALL BE FURNISHED WITH ACCOMPANYING BLANK COVER PLATE.

ALL BOXES IN EXTERIOR LOCATIONS SHALL BE WEATHERPROOF AND WATERPROOF.

INSTRUCTIONS SHOWN IN DIMENSION LINES, DETAILS, ELEVATIONS, AND PLANS (IN THIS ORDER) TAKE PRECEDENCE OVER INSTRUCTIONS SHOWN IN LEGENDS.

CONDUIT AND CABLE ROUTING SHOWN IS SCHEMATIC AND IS NOT INTENDED TO REPRESENT INSTALLATION PATHS OR DISTANCES. ACTUAL ROUTING AND BOX LOCATIONS SHALL BE FIELD-VERIFIED FOR FEASIBILITY AND COORDINATED WITH OTHER DISCIPLINES BY THE INSTALLATION CONTRACTOR.

HORIZONTAL CONDUITS INTO EACH TECHNOLOGY AREA FROM THE EXTERIOR CEILING PLENUM ARE REQUIRED FOR CABLE ACCESS INTO THE ROOM FROM ALL LOCATIONS THROUGHOUT THE SPACE. THE ENDS OF THE CONDUITS SHALL BE REAMED AND BUSHED, AND EXTEND A MINIMUM OF 2-INCHES INTO THE ROOM.

CABLE	CONDUIT TRADE SIZE AND MAXIMUM QUANTITIES OF CABLES OF THAT O.D.						
O.D. (")	3/4"	1"	1-1/4"	1-1/2"	2"	3"	4"
0.16	10	19	33	46	75	200	333
0.18	8	13	23	32	52	139	231
0.20	6	11	19	25	42	112	187
0.25	4	6	12	16	27	71	120
0.27	3	6	10	14	22	60	102
0.30	2	4	8	10	18	48	82
0.33	1	4	6	8	14	40	68
0.35	1	3	6	8	12	36	60
0.38	1	2	5	7	10	30	50
0.40	1	2	4	6	10	28	46
0.45	1	1	3	5	8	22	38
0.50	1	1	2	4	6	16	30
0.55	1	1	1	3	5	14	24
0.60	N/A	1	1	2	4	12	20
0.67	N/A	1	1	1	3	10	16
0.70	N/A	1	1	1	3	8	14
0.75	N/A	N/A	1	1	2	7	12

NUMBER AND SIZE OF OF CONDUITS	PULL BOX SIZE (W x L x H IN INCHES)	FOR EACH ADDITIONAL CONDUIT ENTERING THE PULL BOX, INCREASE THE WIDTH
ONE 1-INCH	4 X 16 X 3	2 INCHES
ONE 1-1/4-INCH	6 X 20 X 3	3 INCHES
ONE 1-1/2-INCH	8 X 27 X 4	4 INCHES
ONE 2-INCH	8 X 36 X 4	5 INCHES
ONE 4-INCH	15 X 60 X 8	8 INCHES

CONDUIT DIAMETER	MINIMUM BEND RADIUS
1-INCH	4 INCHES
1-1/4-INCH	8 INCHES
1-1/2-INCH	9 INCHES
2-INCH	12 INCHES
4-INCH	40 INCHES

TELECOMMUNICATIONS GROUNDING NOTES:

1. REFER TO E-SERIES DRAWINGS FOR PANEL SCHEDULING INFORMATION AND GROUNDING ELECTRODE SYSTEM DATA.
2. A SINGLE GROUND SOURCE SHALL BE PROVIDED FOR GROUNDING ALL RACKS, TRAYS AND METAL FRAMES IN THE MAIN DISTRIBUTION FRAME. A TELECOMMUNICATIONS MAIN GROUNDING BUSBAR (TMGB) SHALL BE PROVIDED AND INSTALLED ON THE MAIN CROSS-CONNECT WALL AT A HEIGHT OF 8-FEET AFF. THE TMGB SHALL CONSIST AT A MINIMUM OF A PREDRILLED COPPER BUSBAR WITH HOLES FOR USE WITH STANDARD-SIZED LUGS, AND HAVE MINIMUM DIMENSIONS OF 1/4-INCH THICK BY 4-INCHES WIDE WITH A MINIMUM OF FORTY-EIGHT (48) CONNECTION POINTS. THE TMGB SHALL BE DIRECTLY BONDED TO THE ELECTRICAL SERVICE GROUND AND TO THE BUILDING STEEL.
3. A TELECOMMUNICATIONS GROUNDING BUSBAR (TGB) SHALL BE INSTALLED IN ANY/ALL TELECOM ROOMS. THE TGB SHALL BE MOUNTED ON THE HORIZONTAL CROSS-CONNECT WALL AT A HEIGHT OF 8-FEET AFF. THE TGB SHALL CONSIST OF A PREDRILLED COPPER BUSBAR WITH HOLES FOR USE WITH STANDARD-SIZED LUGS, AND HAVE MINIMUM DIMENSIONS OF 1/4-INCH THICK BY 2-INCHES WIDE WITH A MINIMUM OF TWELVE (12) CONNECTION POINTS.
4. A GROUND CABLE FROM THE TMGB TO EACH TGB SHALL BE INSTALLED TO CREATE A FORMAL TELECOMMUNICATIONS BONDING BACKBONE (TBB). THE TBB MAY NOT BE DAISY-CHAINED, BUT CAN BE TAPPED-OFF USING A SHORT BONDING CONDUCTOR. BARE COPPER CABLING IS ACCEPTABLE. THE TBB SHALL BE SIZED BASED ON THE LENGTH OF THE CABLE RUN.
5. THE CONTRACTOR SHALL PROVIDE AND INSTALL A MINIMUM #6 AWG GROUND WIRE FROM EACH OPEN RELAY RACK AND CABLE TRAY TO THE MAIN TELECOMMUNICATIONS GROUNDING BUSBAR OR TELECOMMUNICATIONS GROUNDING BUSBAR.
6. ANY PENETRATION THROUGH A FIRE-RATED WALL SHALL BE PROPERLY FIRE-STOPPED BY THE CONTRACTOR WITH THE APPROPRIATE FIRE-STOP MATERIAL PER APPLICABLE BUILDING AND ELECTRICAL CODES.
7. THE CONTRACTOR SHALL COORDINATE GROUND CABLE INSTALLATION WITH THE ARCHITECTS, MEP ENGINEERS AND THE OTHER TRADES ON THE PROJECT.
8. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ANY DAMAGE TO ANY COMPONENT OF THE TELECOMMUNICATIONS GROUNDING SYSTEM DURNING INSTALLATION.
9. THE CONTRACTOR SHALL VERIFY THAT THE SIZE OF THE TMGB AND THE TGB ARE ADEQUATE TO SUPPORT THE TELECOMMUNICATIONS GROUNDING REQUIREMENTS FOR THE PROJECT.

ANSI/TIA-607-B CONDUCTOR SIZES	
LENGTH IN FEET	CONDUCTOR SIZE (AWG)
LESS THAN 13	6
14 - 20	4
21 - 26	3
27 - 33	2
34 - 41	1
42 - 52	1/0
53 - 66	2/0
67 - 84	3/0
85 - 105	4/0
106 - 125	250 KCMIL
126 - 150	300 KCMIL
151 - 175	350 KCMIL
176 - 250	500 KCMIL
251 - 300	600 KCMIL
GREATER THAN 301	750 KCMIL

ABBREVIATIONS USED IN THESE DRAWINGS:

AVIC = AUDIOVISUAL CABLING CONTRACTOR
LVI = LOW VOLTAGE INSTALLER
EC = ELECTRICAL INSTALLATION CONTRACTOR
PIC = PAGING INSTALLATION CONTRACTOR
SIC = SECURITY INSTALLATION CONTRACTOR

NOTE: THE INSTALLATION CONTRACTOR SHALL COORDINATE WITH THE OWNER, ARCHITECT AND GENERAL CONTRACTOR FOR EXACT MOUNTING LOCATIONS PRIOR TO INSTALLATION OF ANY COMPONENTS.

NOTE: ALL RADIO TOWER, RADIO ANTENNA, AND RELATED CABLING BY OWNER.

NOTE: THE GENERAL CONTRACTOR SHALL SCHEDULE A SITE MEETING WITH THE OWNER AND THE RESPECTIVE LOW VOLTAGE AND ELECTRICAL CONTRACTORS TO REVIEW ALL LOCATIONS OF JUNCTION BOXES PRIOR TO INSTALLATION

▲X MOUNTING INFORMATION, WHERE *X* =

- A ABOVE CEILING
- D TO THE DESK
- F FLUSH-MOUNTED
- H HIDDEN UNDER WORKSURFACE
- M TO THE MULLION
- R TO THE RACK ITSELF
- S PLACED ON THE WORKSURFACE

AVX MOUNTING INFORMATION, WHERE *X* =

- A ABOVE CEILING
- D TO THE DESK
- F FLUSH-MOUNTED
- H HIDDEN UNDER WORKSURFACE
- M TO THE MULLION
- P TO THE PODIUM
- R TO THE RACK ITSELF
- S PLACED ON THE WORKSURFACE
- TX TRANSMITTER
- RX RECEIVER

AUDIOVISUAL LEGEND:

- AVHE — AUDIOVISUAL HEAD END LOCATION CONSISTING OF AV RACK AND OTHER COMPONENTS AS SPECIFIED HEREIN FOR THE HEAD END.
- AV — AUDIOVISUAL INTERFACE ON FLOOR, CONSISTING OF HDMI INPUT. REFER TO SPECIFICATIONS FOR DETAILS.
- AVF — AUDIOVISUAL INTERFACE ON TABLE, CONSISTING OF HDMI JACK (BY AVIC) IN FURNITURE FITTING (BY FURNITURE VENDOR). REFER TO REQUIREMENTS FOR DETAILS.
- AV — AUDIOVISUAL INTERFACE WALL-MOUNTED AT STANDARD BUILDING HEIGHT, CONSISTING OF HDMI JACK IN DECORA FITTING. REFER TO SPECIFICATIONS FOR DETAILS. EC TO FURNISH AND INSTALL 4-11/16" X 4-11/16" X 3" DEEP (11-B) BOX WITH SINGLE-GANG TRIM RING.
- AVP — AUDIOVISUAL PASS-THROUGH, WALL-MOUNTED AT STANDARD BUILDING HEIGHT UNLESS NOTED OTHERWISE. EC TO FURNISH AND INSTALL 4-11/16" X 4-11/16" X 3" DEEP (11-B) BOX WITH TWO-GANG TRIM RING. AVIC TO FURNISH AND INSTALL TWO (2) LEVITON DECORA 41075-DBW BRUSHED INSERTS OR EQUIVALENT. CONFIRM FACEPLATE COLOR WITH ARCHITECT PRIOR TO ORDERING.
- AVX — FLOOR-MOUNTED AUDIOVISUAL TRANSMITTER; REFER TO REQUIREMENTS AND DETAIL DRAWINGS. EC TO FURNISH FLOORBOX OR POKETHRU OPENING AS DESCRIBED HEREIN. MAY BE INCORPORATED WITH POWER OR DATA; AV CABLING REQUIRES SEPARATE CONDUIT FROM DATA CABLING.
- CAM — CAMERA AND WALL-MOUNTED PASS-THROUGH BACKBOX FOR VIDEO CAMERA. AVIC TO FURNISH AND INSTALL WHITE QSC Q-SYS PTZ 12X72 CAMERA AND SHELF BRACKET. EC TO FURNISH AND INSTALL 4-11/16" X 4-11/16" X 3" DEEP (11-B) BOX WITH TWO-GANG TRIM RING AT HEIGHT INDICATED ON DRAWING. AVIC TO FURNISH AND INSTALL LEVITON DECORA 41075-DBW OR EQUIVALENT. CONFIRM FACEPLATE COLOR WITH ARCHITECT PRIOR TO ORDERING. AVIC TO FURNISH AND INSTALL CAMERA, MOUNT, WIRING, AND PASS-THROUGH FACEPLATE. REFER TO REQUIREMENTS FOR FACEPLATE AND CAMERA DETAILS.
- (CM) — SHURE MXA 910 2' X 2' CEILING MICROPHONE ON PENDANT MOUNT. AVIC TO FURNISH AND INSTALL MICROPHONE, MOUNT, AND ASSOCIATED WIRING.
- (J) — JUNCTION BOX MOUNTED ABOVE THE FINISHED CEILING. EC TO FURNISH AND INSTALL 4-11/16" X 4-11/16" X 3" DEEP (11-B) BOX WITH COVER. AVIC TO FURNISH AND INSTALL ALL WIRING.
- J — EC TO FURNISH AND INSTALL 4-11/16" X 4-11/16" X 3" DEEP (11-B) BOX WITH COVER AT STANDARD BUILDING HEIGHT U.N.O. AVIC TO FURNISH AND INSTALL ALL WIRING.
- (S) — CEILING SPEAKER LOCATION
- TX — AUDIOVISUAL TRNSMITTER ON FLOOR, CONNECT HDMI INPUT FROM TABLE INTO TRANSMITTER AND CONNECT TRANSMITTER TO LAN. REFER TO REQUIREMENTS FOR DETAILS.
- ◉ STUB DOWN
- ◎ STUB UP

1. 49-INCH (DIAGONAL) FLAT PANEL DISPLAY MOUNTED TO WALL (FURNISHED BY OWNER)
2. 65-INCH (DIAGONAL) FLAT PANEL DISPLAY MOUNTED TO WALL (FURNISHED BY OWNER)
3. 85-INCH (DIAGONAL) FLAT PANEL DISPLAY MOUNTED TO WALL (FURNISHED BY OWNER)
4. SOUNDBAR AT THIS LOCATOIN
5. CRESTRON GATEWAY RECEIVER AND RF RECEIVER FOR WIRELESS KEYBOARD AND MOUSE CONCEALED BEHIND THIS DISPLAY
6. CRESTRON PANEL TO BE PLACED ON TABLE

ALL DISPLAYS AND BRACKETS TO BE FURNISHED BY OWNER BUT INSTALLED BY AVIC.

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LEGEND AND GENERAL NOTES

AV0.0

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GENERAL SCOPE REQUIREMENTS:

1. ALL COMPONENTS (SOURCE, AUDIO, VIDEO, CONTROL, CABLE) AND ASSOCIATED MATERIALS AND LABOR REQUIRED FOR A COMPLETE INSTALLATION OF THE AUDIOVISUAL SYSTEM SHALL BE PROVIDED BY THE AVIC UNLESS OTHERWISE STATED IN THIS DOCUMENT.
2. DUE CARE AND DILIGENCE HAVE BEEN USED IN PREPARATION OF THIS INFORMATION, AND IT IS BELIEVED TO BE SUBSTANTIALLY CORRECT. HOWEVER, THE RESPONSIBILITY FOR DETERMINING THE FULL EXTENT OF EXPOSURE AND THE VERIFICATION OF ALL INFORMATION PRESENTED HEREIN SHALL REST SOLELY WITH THE AVIC. THE OWNER, SENTINEL TECHNOLOGIES, AND ANY OTHER REPRESENTATIVES WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS IN THESE REQUIREMENTS, NOR FOR THE FAILURE ON THE PART OF THE AVIC TO DETERMINE THE FULL EXTENT OF THE EXPOSURES.
3. THE AVIC SHALL NOT BE ALLOWED TO TAKE ADVANTAGE OF ANY ERRORS OR OMISSIONS IN THESE REQUIREMENTS AND ASSOCIATED PROJECT DRAWINGS. WHERE ERRORS OR OMISSIONS APPEAR IN THESE REQUIREMENTS OR DRAWINGS, THE AVIC SHALL PROMPTLY NOTIFY SENTINEL TECHNOLOGIES IN WRITING OF SUCH ERRORS OR OMISSIONS. ANY SIGNIFICANT ERRORS, OMISSIONS, OR INCONSISTENCIES IN THE REQUIREMENTS SHALL BE REPORTED NO LATER THAN FIVE (5) DAYS BEFORE THE SUBMISSION DEADLINE. THE OWNER, SENTINEL TECHNOLOGIES, AND ANY OTHER REPRESENTATIVES WILL NOT BE RESPONSIBLE FOR ERRORS THAT GO UNDISCOVERED.

DRAWINGS:

1. ASSOCIATED DRAWINGS ARE DIAGRAMMATIC IN NATURE AND MAY NOT REPRESENT EXACT FIELD CONDITIONS. THE AVIC SHALL FIELD-VERIFY CRITICAL INSTALLATION REQUIREMENTS AND PROVIDE NECESSARY ASSOCIATED WORK.
2. LOCATIONS AND ROUTES OF PATHWAYS SHOWN ON DRAWINGS ARE SCHEMATIC AND NOT NECESSARILY REFLECTIVE OF CONDITIONS AT TIME OF INSTALLATION, OR WERE POSITIONED FOR CLARITY RATHER THAN EXACT SPACING, BENDING, OR DESIRED SEPARATION. THE AVIC SHALL REVIEW ANY AND ALL SUCH PATHWAYS SHOWN ON THE DRAWINGS TO ENSURE THAT THE PROPOSED SOLUTION WILL FUNCTION AS INTENDED WITH REGARD TO QUANTITIES, SIZES, LOCATIONS, ETC.
3. THE AVIC SHALL, PRIOR TO INSTALLATION, VERIFY EXACT LOCATIONS BY CROSS-CHECKING ARCHITECTURAL, ELECTRICAL, AND COMMUNICATIONS DRAWINGS, FIELD CONDITIONS AND APPROVED SHOP DRAWINGS.
4. THE AVIC SHALL BE PREPARED TO RELOCATE EQUIPMENT OR DEVICES PROVIDED UNDER THIS SCOPE OF WORK WHEN DIRECTED BY THE PROJECT TEAM WITHOUT COST, PROVIDED EQUIPMENT HAS NOT BEEN INSTALLED AND THE NEW LOCATION IS NOT GREATER THAN TWENTY FIVE FEET (25') FROM THE LOCATION ORIGINALLY SHOWN.
5. INSTALLED DEVICES SHALL BE LOCATED AT SAME HEIGHT, AND OF SAME ORIENTATION, UNLESS OTHERWISE NOTED

QUALITY ASSURANCE:

1. THE AVIC SHALL BE CERTIFIED TO INSTALL THE AUDIOVISUAL SOLUTIONS THAT THE AVIC HAS PROPOSED AS SPECIFIED IN THIS DOCUMENT.
2. ONLY THE HIGHEST GRADE COMPONENTS SHALL BE CONSIDERED, AND ALL COMPONENTS SHALL BE BALANCED WITH EACH OTHER FROM AN ELECTRICAL AND PERFORMANCE CHARACTERISTIC STANDPOINT.
3. ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER ACCORDING TO GENERALLY ACCEPTED TRADE PRACTICES.
4. APPROPRIATE UNION REQUIREMENTS SHALL BE STRICTLY FOLLOWED AND ALL AVIC EMPLOYEES ON SITE SHALL HAVE APPROPRIATE UNION LICENSES.
5. THE AVIC SHALL CONFORM AND ADHERE TO ALL JOB SITE REQUIREMENTS AS DEFINED BY THE GENERAL CONTRACTOR. IT IS THE RESPONSIBILITY OF THE AVIC TO OBTAIN THESE REQUIREMENTS FROM THE GENERAL CONTRACTOR.
6. ALL NECESSARY PERMITS ARE TO BE SECURED BY THE AVIC.
7. APPROPRIATE LEVELS OF INSURANCE AND BONDING SHALL BE MAINTAINED. CERTIFICATES OF INSURANCE MAY BE REQUESTED, AND SHALL BE PROVIDED AT THE AVIC'S EXPENSE.
8. THE AVIC SHALL PROTECT ALL STORED OR INSTALLED MATERIALS AS PART OF THESE SYSTEMS BEFORE, DURING, OR AFTER INSTALLATION FROM DAMAGE CAUSED BY OTHER TRADES UNTIL TURNOVER AND FINAL ACCEPTANCE. IF DAMAGE OCCURS DESPITE SUCH PROTECTIONS, REMOVE AND REPLACE ALL DAMAGED COMPONENTS OR THE ENTIRE UNIT(S) AS REQUIRED TO PROVIDE A SOLUTION IN AN ORIGINAL, UNDAMAGED CONDITION.
9. ANY VARIATIONS TO THE INSTALLATION OF THE AUDIOVISUAL SYSTEM AS DESCRIBED IN THIS REQUIREMENT AND THE ASSOCIATED PROJECT DRAWINGS SHALL BE SUBJECT TO THE CONTROL AND APPROVAL OF THE GENERAL CONTRACTOR, THE OWNER AND SENTINEL.
10. SUBSTITUTION OF ANY MATERIALS SPECIFIED IN THIS DOCUMENT SHALL ONLY BE CONSIDERED ONCE A REQUEST TO DO SO HAS BEEN SUBMITTED IN WRITING TO THE GENERAL CONTRACTOR, THE OWNER AND SENTINEL FOR PRIOR APPROVAL. THIS SUBMITTAL SHALL DISCUSS THE SCOPE OF THE CHANGE, THE RAMIFICATIONS ON THE OVERALL AUDIOVISUAL SYSTEMS AND THE ADVANTAGES TO BE GAINED BY THE OWNER.
11. THE AVIC SHALL CONFORM TO THE FOLLOWING STANDARDS WHEN PROVISIONING AND INSTALLING THE NEW AUDIOVISUAL SYSTEM:
    - 11.1. ALL APPLICABLE LOCAL, COUNTY AND STATE BUILDING AND ELECTRICAL CODES WITH LOCAL ADDENDA
    - 11.2. THE AMERICANS WITH DISABILITIES ACT (ADA)
    - 11.3. BUILDING INDUSTRY CONSULTING SERVICES INTERNATIONAL (BICSI) *AV DESIGN REFERENCE MANUAL* (AVDRM) (LATEST EDITION)
    - 11.4. BUILDING INDUSTRY CONSULTING SERVICES INTERNATIONAL (BICSI) *INFORMATION TRANSPORT SYSTEMS INSTALLATION MANUAL* (LATEST EDITION)
    - 11.5. BUILDING INDUSTRY CONSULTING SERVICES INTERNATIONAL (BICSI) *TELECOMMUNICATIONS DISTRIBUTION METHODS MANUAL* (TDMM) (LATEST EDITION)
    - 11.6. NFPA 70 *NATIONAL ELECTRICAL CODE* (NEC) 2020 (WHERE MORE STRINGENT THAN LOCAL CODES)
    - 11.7. UL 444 2008, COMMUNICATION CABLES
    - 11.8. ANSI/NECA/BICSI 568-2006, STANDARD FOR INSTALLING COMMERCIAL BUILDING TELECOMMUNICATIONS CABLING
    - 11.9. ANSI/TIA-568.0-D, GENERIC TELECOMMUNICATIONS CABLING FOR CUSTOMER PREMISES
    - 11.10. FCC PART 68 REGULATIONS
    - 11.11. ANSI/TIA-568.1-D, COMMERCIAL BUILDING TELECOMMUNICATIONS CABLING STANDARD
    - 11.12. IEEE 802.3, *ETHERNET STANDARD*
    - 11.13. ANSI/TIA-568.2-D, BALANCED TWISTED-PAIR TELECOMMUNICATIONS CABLING AND COMPONENTS STANDARD
    - 11.14. ANSI/TIA-569-D, TELECOMMUNICATIONS PATHWAYS AND SPACES
    - 11.15. ANSI/TIA-606-C, ADMINISTRATION STANDARD FOR COMMERCIAL TELECOMMUNICATIONS INFRASTRUCTURE
    - 11.16. ANSI/TIA-607-C-1, GENERIC TELECOMMUNICATIONS BONDING AND GROUNDING (EARTHING) FOR CUSTOMER PREMISES
    - 11.17. NECA/BICSI-607, STANDARD FOR TELECOMMUNICATIONS BONDING AND GROUNDING PLANNING AND INSTALLATION METHODS FOR COMMERCIAL BUILDINGS
    - 11.18. ANSI/TIA-1152-A, REQUIREMENTS FOR FIELD TEST INSTRUMENTS AND MEASUREMENTS FOR BALANCED TWISTED-PAIR CABLING
    - 11.19. CRESTRON'S MOST RECENT *DIGITAL MEDIA DESIGN GUIDE*

FIRST-NAMED MANUFACTURER:

1. WITHIN THESE REQUIREMENTS AND ASSOCIATED DRAWINGS, THE FIRST-NAMED APPROVED MANUFACTURER INDICATES THAT ITS RESPECTIVE DEVICE, EQUIPMENT OR SYSTEM MAY HAVE BEEN USED TO MEET THE JOB REQUIREMENTS AND TO DETERMINE THE SPACE AND DIMENSIONAL REQUIREMENTS. THE AVIC'S USE OF ANOTHER PRE-APPROVED SYSTEM MAY REQUIRE THAT THE AVIC VERIFY THAT THE RESPECTIVE DEVICES, EQUIPMENT, SYSTEMS OR PRODUCTS WILL MEET THE JOB REQUIREMENTS AND WILL FIT THE ALLOCATED SPACE.
2. THE LISTING OF A MANUFACTURER AS ACCEPTABLE OR PRE-APPROVED DOES NOT IN ANY WAY RELIEVE THE AVIC FROM THE RESPONSIBILITY FOR PROVIDING DEVICES, EQUIPMENT OR SYSTEMS THAT MEET THE REQUIREMENTS OF THE SPECIFICATIONS. THE AVIC SHALL VERIFY THAT PERFORMANCE REQUIREMENTS ARE MET, AS NO TWO MANUFACTURERS SHOULD BE TRUSTED AS EXACTLY IDENTICAL IN FUNCTION, FIT, OR FINISH.

SUBMITTALS IF AWARDED:

1. SHOP DRAWINGS AND PRODUCT DATA OF STANDARD CATALOGED PRODUCTS SHALL BE SUBMITTED WITH APPLICABLE DATA THAT MEET THE JOB REQUIREMENTS. SUBMITTALS THAT INCLUDE INFORMATION ON MULTIPLE DEVICES OR EQUIPMENT ARE ACCEPTABLE ONLY WHEN ITEMS APPLICABLE TO THE JOB ARE IDENTIFIED WITH ARROWS, CHECK MARKS OR OTHER CALL OUTS. THE AVIC SHALL CLEARLY IDENTIFY WHICH MANUFACTURER SOLUTIONS ARE BEING PROPOSED AT THE TIME OF BID RESPONSE.
2. WHEN SHOP DRAWINGS ARE CREATED FROM OR INCORPORATED WITH SENTINEL'S DRAWINGS, THE AVIC SHALL REMOVE THE ARCHITECT'S, ENGINEER'S, AND SENTINEL'S TITLE BLOCKS AND REPLACE IT WITH THE AVIC'S OWN, UNIQUE TITLE BLOCK. THE AVIC'S TITLE BLOCK SHALL INCLUDE, AT A MINIMUM, THE AVIC'S NAME, ADDRESS AND TELEPHONE NUMBER, AND THE PROJECT NAME.
3. SHOP DRAWINGS OF RELATED EQUIPMENT, DEVICES AND MATERIAL SHALL BE SUBMITTED AT SAME TIME SO THE PROJECT TEAM CAN COORDINATE THE RELATED COMPONENTS.
4. NO MATERIAL OR EQUIPMENT SHALL BE RELEASED FOR MANUFACTURE OR SHIPMENT WITHOUT FIRST OBTAINING THE APPROVAL OF THE PROJECT TEAM. ONLY THE AVIC SHALL BE RESPONSIBLE FOR COSTS AND COORDINATION OF RETURNING ITEMS PURCHASED PRIOR TO APPROVAL.
5. THE AVIC SHALL SUBMIT AN ELECTRONIC COPY OF THE SUBMITTALS UNLESS DIRECTED OTHERWISE BY THE GC OR THE OWNER. THESE SUBMITTALS MAY BE SUBJECT TO APPROVAL, OR REJECTION WITH COMMENTARY. SUBMITTALS MAY CONSIST OF BUT NOT BE LIMITED TO ONE OR ANY APPROPRIATE COMBINATION OF THE FOLLOWING:
    - 5.1. MANUFACTURER CUT-SHEETS
    - 5.2. SHOP DRAWINGS (INCLUDING SINGLE-LINE DIAGRAMS)
    - 5.3. CATALOG SHEETS (AGGREGATED WITH A SPREADSHEET-STYLE INDEX SHOWING WHICH CATALOG SHEETS PERTAIN TO WHICH ROOM, RATHER THAN ROOM-BY-ROOM PACKETS OF REPETITIVE PAGES)
    - 5.4. WRITTEN SPECIFICATIONS
    - 5.5. ORIGINALS OR COPIES OF THE ABOVE
6. IF HARD COPIES OF THE SUBMITTALS ARE REQUESTED, THEY SHOULD BE BOUND IN A STANDARD THREE-RING BINDER WITH A MINIMUM OF THE AVIC'S NAME, ADDRESS AND TELEPHONE NUMBER, AND THE PROJECT NAME.

COORDINATION:

1. THE AVIC SHALL COORDINATE THE ARRANGEMENT, INSTALLATION, AND FINISHING OF THE AUDIOVISUAL SYSTEM.
2. WHERE A GIVEN COMPONENT OFFERS MULTIPLE COLOR OPTIONS, ALL SUCH FINISHES SHALL BE COORDINATED WITH THE ARCHITECT IN ADVANCE OF PURCHASE.
3. ANY CONDUIT, PATHWAY, OR SLEEVE REQUIREMENTS SHALL BE COORDINATED WITH THE MEP ENGINEER. THE AVIC SHALL REVIEW THE ACTUAL CONDUIT PLANS PROPOSED BY THE MEP OR EC TO ENSURE THAT CONDUITS INTENDED FOR THE AUDIOVISUAL SYSTEM ARE CORRECTLY SIZED, ADEQUATELY POSITIONED, AND HAVE THE REQUISITE NUMBER OF PULL BOXES AS REQUIRED BY THE ACTUAL MATERIALS PROPOSED BY THE AVIC, AND/OR AS THE AVIC DESIRES AS OPTIMAL FOR INSTALLATION. THE AVIC SHALL BE RESPONSIBLE FOR ANY AND ALL COSTS ASSOCIATED WITH CONDUIT CHANGES RESULTING FROM FAILURE TO PREVIEW AND APPROVE THE PATHWAYS INSTALLED BY OTHERS.
4. THE FINAL ALIGNMENT AND POSITIONING OF PULL BOXES, JUNCTION BOXES, BACK BOXES, CONDUIT ENDS, STUBS, SLEEVES, ETC., WITH AVIC-INSTALLED DEVICES SHALL BE COORDINATED WITH THE OWNER, MEP ENGINEER, AND ARCHITECT.
5. ANY EQUIPMENT CUT INTO, MOUNTED ON, OR SUSPENDED FROM ARCHITECTURAL ELEMENTS SUCH AS WALLS OR CEILING SHALL BE COORDINATED WITH THE ARCHITECT TO ENSURE THERE IS NO CONFLICT WITH DESIGN INTENT OR FUNCTIONALITY.
6. ANY OTHER ELEMENTS THAT MIGHT OR WILL INTERFERE WITH ELEMENTS INSTALLED BY OTHER TRADES SHALL BE COORDINATED WITH THE GC AND THOSE RESPECTIVE TRADES.
7. NETWORK-BASED DEVICES REQUIRING IP ADDRESSES OR SIP INTEGRATION SHALL BE COORDINATED WITH THE OWNER.
8. CONFLICTS REQUIRING NOTICEABLE DEVIATION FROM THE ASSOCIATED PROJECT DRAWINGS OR THESE REQUIREMENTS SHALL BE COORDINATED WITH SENTINEL.

FIRESTOPPING:

1. FIRE STOP SYSTEMS SHALL BE UL-LISTED OR FACTORY MUTUAL APPROVED. THE AVIC SHALL FURNISH AND INSTALL THE PROPER FIRE STOP SYSTEM WITH CLASSIFIED PRODUCTS AND MATERIALS COMPATIBLE WITH THE APPROPRIATE PENETRATING ELEMENTS, TYPE OF CONSTRUCTION MATERIAL AND DIMENSIONS OF THE WALL, PARTITION, BARRIER, OR FLOOR, AND THE ENVIRONMENT AND TEMPERATURE RANGE OF BOTH SIDES OF THE OPENING. FIRE STOP SYSTEMS SHALL MAINTAIN THE ORIGINAL FIRE RESISTANCE RATING OF THE WALL, PARTITION, BARRIER, OR FLOOR PRIOR TO THE PENETRATION.
2. EXPANSION TYPE FIRE STOP MATERIAL SHALL BE USED WHERE NECESSARY TO PROTECT AND CLOSE THE OPENING UPON FAILURE OF THE PENETRATING ELEMENT DUE TO FIRE.
3. FIRE STOP PENETRATIONS IN FIRE-RATED WALLS AND FLOORS FOR SLEEVES, WIRING, CABLES, CONDUITS, DUCTS, AND CABLE TRAYS.
4. FIRE STOPPING FOR OPENINGS THROUGH FIRE AND SMOKE-RATED WALLS AND FLOOR ASSEMBLIES SHALL BE LISTED OR CLASSIFIED BY AN APPROVED INDEPENDENT TESTING LABORATORY FOR “THROUGH-PENETRATION FIRESTOP SYSTEMS.”
5. THE AVIC SHALL FURNISH AND INSTALL SYSTEMS FIRE TESTED BY A THIRD PARTY ACCORDING TO ASTM E814 (OR UL 1479) TESTED UNDER POSITIVE PRESSURE.
6. THE AVIC SHALL INSTALL FIRE STOPPING MATERIAL IN ACCORDANCE WITH CONSTRUCTION ELEMENTS AND MANUFACTURER SPECIFICATION.
7. THOROUGHLY CLEAN AND REMOVE ANY FIRE STOPPING MATERIAL THAT DRIPS OR FALLS ONTO WALL OR FLOOR SURFACES.
8. AFTER INSTALLATION, PROTECT THE FIRE STOP MATERIAL FROM DAMAGE DURING CONSTRUCTION. IF DAMAGE OCCURS DESPITE SUCH PROTECTIONS, REMOVE AND REPLACE FIRE STOPPING MATERIAL AS REQUIRED TO RESTORE THE INTEGRITY OF THE FIRE RATING.

COMMON WORK RESULTS FOR INSTALLATION:

1. TAKE FIELD MEASUREMENTS AS REQUIRED TO FIT THE WORK PROPERLY. RECHECK MEASUREMENTS BEFORE INSTALLING EACH PRODUCT. WHERE PORTIONS OF THE WORK ARE INDICATED TO FIT TO OTHER CONSTRUCTION, VERIFY DIMENSIONS OF OTHER CONSTRUCTION BY FIELD MEASUREMENTS BEFORE FABRICATION. COORDINATE FABRICATION SCHEDULE WITH CONSTRUCTION PROGRESS TO AVOID DELAYING THE WORK.
2. VERIFY SPACE REQUIREMENTS AND DIMENSIONS OF ANY ITEMS SHOWN DIAGRAMMATICALLY ON THE ASSOCIATED PROJECT DRAWINGS.
3. IMMEDIATELY ON DISCOVERY OF THE NEED FOR CLARIFICATION OF THE CONTRACT DOCUMENTS CAUSED BY DIFFERING FIELD CONDITIONS OUTSIDE THE CONTROL OF THE AVIC, SUBMIT A REQUEST FOR INFORMATION.

AUDIOVISUAL CABLING:

1. THE AVIC SHALL FURNISH AND INSTALL ALL AUDIOVISUAL-RELATED WIRING AND CABLING FOR ALL COMPONENTS DESCRIBED HEREIN, EXCEPT FOR THOSE CABLE OR WIRING RUNS THAT WILL BE FURNISHED AND INSTALLED BY OTHERS. RUNS INSTALLED BY OTHERS WILL BE CLEARLY NOTED WITHIN THESE REQUIREMENTS.
    - 1.1. WHERE OTHERS ARE PROVIDING THE WIRING OR CABLING, THE AVIC SHALL COORDINATE WITH THOSE RESPECTIVE TRADES TO ENSURE THAT ALL AUDIOVISUAL REQUIREMENTS ARE MET, THAT THERE ARE ADEQUATE QUANTITIES INSTALLED, AND THAT THE INSTALLED SOLUTION WILL PERFORM AS EXPECTED FOR WARRANTY PURPOSES.
    - 1.2. WHERE THE AVIC IS TO FURNISH AND INSTALL CABLING, ALL MANUFACTURERS' RESPECTIVE REQUIREMENTS SHALL BE MET. WHERE MANUFACTURER REQUIREMENTS DIFFER FROM ANY REQUIREMENTS PROVIDED WITHIN THIS REQUIREMENT, THE MORE STRINGENT OF THE TWO SHALL BE FOLLOWED.
2. PERMANENTLY FIXED WIRING AND CABLING IN PLENUM SPACES SHALL BE PLENUM-RATED.
3. ALL CABLING NOT INSTALLED IN CONDUIT OR CONDUIT STUBS SHALL BE PROPERLY SUPPORTED.
4. CABLE RUNS SHALL CONTAIN NO SPLICE OR TRANSITION POINTS FROM THE ENDPOINT TO THE SOURCE UNLESS NOTED OTHERWISE.
5. THE AVIC SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL DISTANCES AND VOLTAGE DROPS FOR EACH CABLE RUN FROM ONE POINT TO ANOTHER.
6. ALL EXPOSED OR UNSUPPORTED AUDIOVISUAL CABLES SHALL BE PROPERLY DRESSED, TIED AND TRIMMED ACCORDING TO BEST PRACTICES.
7. WHERE APPLICABLE, ALL CABLE ENDS SHALL BE WRAPPED WITH SHRINK TUBING AND EACH SHIELD OR DRAIN WIRE SHALL BE SHEATHED IN CLEAR TUBING.

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1	ISSUE FOR BID	06-08-21

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AUDIOVISUAL REQUIREMENTS 1

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8. VELCRO® WRAPS SHALL BE USED IN LIEU OF PLASTIC TIE WRAPS.
9. ALL CABLING AND WIRING SHALL BE GROUPED AND BUNDLED ACCORDING TO THE SIGNAL LEVEL IN ALL ENCLOSURES AND RACKS.
   9.1. CABLING CARRYING SPEAKER-LEVEL SIGNALS (+24DBU OR HIGHER) SHALL BE KEPT SEPARATE FROM ALL OTHER GROUPS.
   9.2. CABLING CARRYING MICROPHONE-LEVEL SIGNALS SHALL BE KEPT SEPARATED FROM ALL OTHER GROUPS
   9.3. CABLING CARRYING LINE-LEVEL OR INTERCOM AUDIO SIGNALS SHALL BE KEPT SEPARATED FROM ALL OTHER GROUPS.
   9.4. VIDEO CABLING, HDMI, SIGNALS TRAVELING OVER UTP OR F/UTP, CONTROL SYSTEM WIRING, ETC., MAY BE GROUPED TOGETHER.
10. AUDIOVISUAL CABLING SHALL BE KEPT PHYSICALLY SEPARATED FROM POWER CABLING, WHETHER OR NOT THE CABLING TRAVELS IN CONDUITS: POWER AND SIGNAL SHALL BE KEPT PHYSICALLY SEPARATED BELOW TABLES, WITHIN CREDENZAS, INSIDE RACKS, AND SO ON.
11. INSPECT FOR AND REPLACE ALL WIRES AND CABLES SUFFERING FROM DEFORMED, BRITTLE, OR CRACKED INSULATION, STRIPPING IN EXCESS OF 1/8-INCH FROM POINT OF CONNECTION, COLD SOLDER JOINTS, FLUX JOINTS, SOLDER SPLATTER, UN-GROMMETTED, UN-BUSHED, OR UN-INSULATED WIRE OR CABLE ENTRIES, DEFORMATION OR IMPROPER RADIUS BENDING.
12. SHIELDED CABLES SHALL BE INSULATED, AND SHIELDS SHALL BE PREVENTED FROM ANY CONTACT WITH CONDUIT, RACEWAYS, BOXES, PANELS, OR EQUIPMENT ENCLOSURES.
13. SERVICE LOOPS SHALL BE USED AT ALL EQUIPMENT TERMINATION POINTS TO ALLOW FOR EASE OF INSTALLATION, CLEANING, SERVICE, INSPECTION, AND MODIFICATION.
14. CABLE PULLING LUBRICANTS, WHERE USED, SHALL BE APPROVED BY THE CABLE MANUFACTURER SO THAT THE LUBRICATING COMPOUND CANNOT DETERIORATE THE CABLE JACKET.
15. BRIDLE RINGS OR OTHER EQUIVALENT SUPPORTS SHALL BE INSTALLED IN AREAS WHERE DUCTS, CONDUITS OR CABLE TRAYS ARE NOT AVAILABLE.
16. CABLES SHALL NEVER REST UPON CEILING TILES, LIGHTING FIXTURES, STUD WALLS, OR PIPING. ALL CABLES SHALL BE PROPERLY SUPPORTED TO PREVENT THIS, AND SHALL BE SUPPORTED AT A MINIMUM OF EVERY TEN FEET TO REDUCE SAG.
17. LOCATIONS AND ROUTES OF PATHWAYS SHOWN ON DRAWINGS ARE SCHEMATIC AND NOT NECESSARILY REFLECTIVE OF CONDITIONS AT TIME OF INSTALLATION, OR WERE POSITIONED FOR CLARITY RATHER THAN EXACT SPACING, BENDING, OR DESIRED SEPARATION. THE AVIC SHALL REVIEW ANY AND ALL SUCH PATHWAYS SHOWN ON THE DRAWINGS TO ENSURE THAT THE PROPOSED SOLUTION WILL FUNCTION AS INTENDED WITH REGARD TO QUANTITIES, SIZES, LOCATIONS, ETC.

DIGITAL MEDIA CABLING:

1. WHERE THE REQUIREMENTS OR DRAWINGS REFER TO DIGITAL MEDIA, HD-BASE-T, HDBT, 8G+, OR DM CABLING, THE AVIC SHALL FURNISH AND INSTALL TWISTED PAIR CABLING.
2. FOILED/UNSHIELDED TWISTED PAIR (F/UTP) OR SCREENED TWISTED PAIR (SCTP) CATEGORY 6 CABLING RATED AT 250 MHZ OR BETTER SHALL BE USED FOR MOST DIGITAL MEDIA CABLING.
   2.1. UNSHIELDED TWISTED PAIR (UTP) MAY BE USED FOR RUN WHOSE TOTAL CHANNEL LENGTH IS EQUAL TO OR LESS THAN 100 FEET, AND WHERE INDIVIDUAL CONDUITS OR CONDUIT STUBS HAVE BEEN PROVIDED FOR UTP CABLING SO THAT DIGITAL SIGNALS DO NOT CAUSE INTERFERENCE WITH OTHER CABLING TYPES IN THE SAME PATHWAY.
   2.2. ADDITIONAL REQUIREMENTS FOR F/UTP AND UTP ARE DISCUSSED IN DETAIL LATER IN THESE REQUIREMENTS.
3. THE AVIC SHALL ENSURE THAT ANY HIGH-DEFINITION VIDEO CONTENT SENT ACROSS DIGITAL MEDIA CABLES SHALL SEND 4K FROM THE SOURCE AND RECEIVE 4K PROGRAMMING AT THE FAR END WITH NO STEP DOWN TO INTERLACED VIDEO OR 720P. THE AVIC SHALL USE TEST 4K SOURCE CONTENT TO VERIFY THAT THE MAXIMUM RESOLUTION FOR THE VIDEO DISPLAY IS PROPERLY EXCHANGED THROUGH EDID. THE DESIGN MAY INCLUDE NON-4K SOURCES; NEVERTHELESS, THE AVIC SHALL USE A 4K TEST TO ENSURE THAT FUTURE COMPONENTS WILL BE PROPERLY SUPPORTED BY THE AVIC'S INSTALLATION.
4. LIKEWISE, ANY DEVICES SPECIFIED TO TRANSMIT AND/OR RECEIVE AT 4K CONNECTIONS SHALL MAINTAIN CONSISTENT 4K PROGRAMMING FROM SOURCE TO OUTPUT, UNLESS THE DESIGN INHERENTLY ALLOWS FOR A STEP-DOWN TO 1080P DUE TO THE INCLUSION OF A NON-4K COMPONENT IN THE SIGNAL PATH.

HDMI CABLING:

1. ALL HDMI CABLES SHALL BE CERTIFIED BY THE MANUFACTURER TO CONFORM TO THE HDMI COMPLIANCE TEST SPECIFICATION.
2. ALL HDMI CABLES SHALL OPERATE UP TO AND INCLUDING 4K SIGNALS.
3. ALL HDMI CABLES SHALL BE 22 AWG OR 24 AWG (INCLUDING DRAIN WIRE). THE AUDIOVISUAL DESIGNS ASSUME A 20-FOOT RUN LIMITATION. THE AVIC MAY UTILIZE OTHER GAUGED CABLING PROVIDED THE TOTAL RUN LENGTH DISTANCES ARE SHORT ENOUGH TO SUPPORT 4K OR BETTER.
   3.1. FOR RUNS EXCEEDING 20-FEET, UTILIZE OPTICAL HDMI CABLE.
   3.2. FOR RUNS EXCEEDING 50-FEET, UTILIZE HD-BASE-T TRANSMISSION.
4. TIN PLATED HDMI CONDUCTORS SHALL NOT BE USED UNLESS THE AVIC CAN DEMONSTRATE 4K PROGRAMMING DUE TO THE SHORTER CABLE LENGTHS.
5. THE AVIC SHALL ENSURE THAT THE CABLE CAN SEND 4K FROM THE SOURCE AND RECEIVE 4K PROGRAMMING AT THE FAR END WITH NO STEP DOWN TO INTERLACED VIDEO OR LOWER RESOLUTION. THE AVIC SHALL USE TEST 4K-SOURCE CONTENT TO VERIFY THAT THE MAXIMUM RESOLUTION FOR THE VIDEO DISPLAY IS PROPERLY EXCHANGED THROUGH EDID.
6. VERIFY THAT VERTICALLY ORIENTED HDMI CONNECTORS WILL NOT DISLODGE AND FALL OUT OF THE HDMI PORTS ON ANY COMPONENT. THE AVIC SHALL UTILIZE STRAIN RELIEF AND/OR PORT SAVERS TO MITIGATE THIS RISK.
7. MAINTAIN A BEND RADIUS OF FOUR INCHES (4") UNLESS THE MANUFACTURER SPECIFIES A GREATER BEND RADIUS. IN ALL CASES, THE AVIC SHALL FOLLOW THE MORE STRINGENT REQUIREMENT.

AUDIO WIRING:

1. WHERE REQUIREMENTS OR DRAWINGS CALL OUT FOR AUDIO WIRING, THE AVIC SHALL UNDERSTAND THIS TO INCLUDE THE WIRING THAT MAY CONNECT DIVERSE LINE AUDIO CONNECTORS SUCH AS 3.5MM AUDIO, RIGHT AND LEFT STEREO AUDIO, MIXED STEREO AUDIO ON A SINGLE QUARTER-INCH JACK, PHOENIX, CAPTIVE SCREW, OR DIRECT-WIRE SYSTEMS, AND SO ON.
2. THE CONNECTOR TYPE SHOWN OR DESCRIBED WILL CLARIFY THE TYPE OF AUDIO CABLE AND TERMINATION METHOD REQUIRED.
3. GENERALLY, THIS SHALL CONSIST OF SINGLE PAIR, SHIELDED 22 AWG CABLING UNLESS OTHERWISE NOTED OR REQUIRED.
4. ACCEPTABLE MANUFACTURERS INCLUDE:
   4.1. GENERAL/CAROL
   4.2. WEST PENN/CDT
   4.3. BELDEN/CDT
5. THE AVIC SHALL NOT STRIP ANY AUDIO WIRING LESS THAN OR GREATER THAN THREE-SIXTEENTHS OF AN INCH (3/16").
6. THE AVIC SHALL NOT TIN THE WIRES.
7. FOLLOW ALL MANUFACTURER REQUIREMENTS FOR AUDIO WIRING.
8. THE AVIC SHALL FOLLOW ALL BEND RADIUS REQUIREMENTS AS DIRECTED BY THE MANUFACTURER FOR EACH TYPE OF CABLE.
9. WHEN USING UNBALANCED AUDIO, THE AVIC SHALL NOT CONNECT THE SLEEVE TO THE NEGATIVE CONTACT; THE AVIC SHALL CONNECT THE SLEEVE WIRE TO THE GROUND CONTACT.
10. WHEN USING BALANCED AUDIO, THE AVIC SHALL CONNECT THE SLEEVE WIRE TO THE GROUND CONTACT, AND THE RING WIRE TO THE NEGATIVE CONTACT.
11. THE BEND RADIUS SHALL BE NO LESS THAN ONE AND ONE-HALF (1.5) INCHES.

SPEAKER WIRING:

1. WHERE SPEAKER WIRING APPEARS IN THE DRAWINGS OR REQUIREMENTS, THE AVIC SHALL BE RESPONSIBLE TO CALCULATE THE FINAL GAUGE FOR EACH SPEAKER CHANNEL RUN.
2. SHIELDED, SINGLE-PAIR (RED AND BLACK) TWISTED PAIR WIRING SHALL BE USED UNLESS NOTED OTHERWISE OR A SPECIFIC INSTALLATION MAY CALL FOR ANOTHER MEDIUM.
3. WHERE THE SYSTEM TECHNOLOGY UTILIZES UNSHIELDED TWISTED PAIR CABLING, THE AVIC SHALL DISREGARD THE PREVIOUS TWO REQUIREMENTS AND FOLLOW THE REQUIREMENTS FOR UNSHIELDED TWISTED PAIR (SUCH AS IN SELF-AMPLIFIED SPEAKER APPLICATIONS).
4. ACCEPTABLE MANUFACTURERS INCLUDE:
   4.1. GENERAL/CAROL
   4.2. WEST PENN/CDT
   4.3. BELDEN/CDT
5. THE AVIC SHALL REVIEW THE DESIGN DRAWINGS AND CONDUIT IN THE FIELD AND DETERMINE THE APPROPRIATE GAUGE FOR EACH SPEAKER RUN. IN SOME CASES, MULTIPLE SPEAKER CHANNELS MAY BE SUPPORTED IN A SHARED CONDUIT.
6. THE AVIC SHALL FOLLOW ALL BEND RADIUS REQUIREMENTS AS DIRECTED BY THE MANUFACTURER FOR EACH TYPE OF CABLE.
7. WHERE FLEX CONDUITS HAVE BEEN PROVIDED, TREAT THE FREE END OF THE CONDUIT AS REQUIRED TO PROTECT THE WIRING, AND TRIM THE WIRING TO THE REQUIRED LENGTH BEFORE CONNECTING TO THE SPEAKER.

MICROPHONE LEVEL CABLING:

1. WHERE REQUIREMENTS OR DRAWINGS CALL OUT FOR MICROPHONE ("MIC")-LEVEL CABLING, THE AVIC SHALL UNDERSTAND THIS TO BE ANY CABLING CARRYING A MIC-LEVEL CURRENT OF -30 DBU OR LOWER, WHETHER THE CABLE RUNS FROM AN ACTUAL MICROPHONE TO A PRE-AMPLIFIER, OR HAS XLR-TO-XLR JACKS FOR POSSIBLE MICROPHONE INPUT.
2. GENERALLY, THIS SHALL CONSIST OF SINGLE PAIR, SHIELDED 22 AWG CABLING UNLESS OTHERWISE NOTED OR REQUIRED.
3. ACCEPTABLE MANUFACTURERS INCLUDE:
   3.1. GENERAL/CAROL
   3.2. WEST PENN/CDT
   3.3. BELDEN/CDT
4. MICROPHONE-LEVEL CABLES SHALL ALWAYS BE ROUTED IN THEIR OWN CONDUITS, SEPARATE FROM OTHER SIGNALS. IN THE EVEN THE AVIC DISCOVERS A DESIGN FACTOR OR INSTALLATION IN WHICH A SINGLE CONDUIT MAY BE SHARING SIGNAL AND MIC-LEVEL CABLING, THE AVIC SHALL NOTIFY SENTINEL AND THE GC.
5. WHERE MICROPHONE-LEVEL CABLING IS RUN PARALLEL TO OTHER LOW VOLTAGE CABLING, THE AVIC SHALL STRIVE TO MAINTAIN A ONE FOOT (1') SEPARATION AS LONG AS POSSIBLE; THIS MAY NOT ALWAYS BE POSSIBLE WHEN CABLING CONNECTS TO RACK-MOUNTED EQUIPMENT.
6. WHEN WIRING XLR CONNECTORS, PIN 1 SHALL BE USED FOR GROUND, PIN 2 FOR LIVE SIGNAL, AND PIN 3 FOR RETURN SIGNAL UNLESS THE MANUFACTURER OF THE JACK HAS OTHER, SPECIFIC POLARITY REQUIREMENTS OR 4-PIN OR 5-PIN XLR CONNECTORS ARE USED.
7. THE BEND RADIUS SHALL BE NO LESS THAN ONE AND ONE-HALF (1.5) INCHES.

RS-232 CABLING:

1. WHERE THE REQUIREMENTS CALL OUT FOR RS-232 CABLING, THE AVIC SHALL ASSUME THIS TO MEAN 9-PIN D CABLING.
2. CABLES MAY BE PRE-MANUFACTURED TO LENGTH; CABLES MADE IN THE FIELD SHALL BE ASSEMBLED EXACTLY TO MANUFACTURER REQUIREMENTS.
3. EACH FINAL RS-232 CABLE ASSEMBLY SHALL SUPPORT THE PREFERRED BAUD RATE FOR THE HOST SYSTEM AS A MINIMUM. FOR EXAMPLE, IF A HOST DEVICE USES A 9600 BAUD PROTOCOL, THE CABLE SHALL SUPPORT 9600 OR HIGHER BAUD.
4. THIS CABLE SHALL CONSIST OF 22 AWG, TWO-PAIR TWISTED PAIR CABLING UNLESS OTHERWISE NOTED OR REQUIRED.
5. ACCEPTABLE MANUFACTURERS INCLUDE:
   5.1. GENERAL/CAROL
   5.2. WEST PENN/CDT
   5.3. BELDEN/CDT
6. AFTER INSTALLATION, TEST EACH RS-232 CABLE BY SENDING AND RECEIVING COMMANDS TO AND FROM THE CONTROLLED DEVICE.
7. ENSURE THE DEVICE IS COMMUNICATING AT THE RECOMMENDED BAUD RATE.
8. UNLESS REQUIRED OTHERWISE BY A SPECIFIC DEVICE, USE THE GREEN WIRE FOR GROUND (PIN 5), THE WHITE WIRE TO RECEIVE (PIN 3), THE RED WIRE TO TRANSMIT (PIN 2), AND THE BLACK WIRE FOR PIN 9.
9. MAINTAIN A BEND RADIUS OF AT LEAST ONE-AND-SIX-TENTHS (1.6) INCHES.

CRESNET WIRING:

1. CABLING SHALL CONSIST OF 18 TO 22 AWG UNSHIELDED STRANDED WIRING WITH A 24 AWG DRAIN WIRE.
2. CATEGORY-RATED UTP SHALL NOT BE USED FOR DEDICATED CRESNET CONTROL FUNCTIONS.
3. ACCEPTABLE MANUFACTURERS INCLUDE:
   3.1. GENERAL/CAROL
   3.2. WEST PENN/CDT
   3.3. BELDEN/CDT
4. AFTER INSTALLATION, TEST EACH CONTROL CABLE BY SENDING COMMANDS TO THE CONTROLLED DEVICES.
5. MAINTAIN A BEND RADIUS OF AT LEAST TWO AND ONE-HALF (2.5) INCHES.

CONTROL OR RELAY WIRING:

1. WHERE THE REQUIREMENTS CALL OUT FOR CONTROL OR RELAY CABLING--SUCH AS THAT CONNECTING A PROJECTION SCREEN LOW VOLTAGE RELAY TO A CONTROL SYSTEM OR TO OTHER MECHANICAL OR MOTORIZED DEVICES), THE AVIC SHALL ASSUME THIS TO MEAN TYPICAL CONTROL CABLING.
2. CABLES MAY BE PRE-MANUFACTURED TO LENGTH; CABLES MADE IN THE FIELD SHALL BE ASSEMBLED EXACTLY TO MANUFACTURER REQUIREMENTS.
3. THIS CABLE SHALL CONSIST OF 22 AWG, TWO-PAIR TWISTED PAIR CABLING UNLESS OTHERWISE NOTED OR REQUIRED.
4. ACCEPTABLE MANUFACTURERS INCLUDE:
   4.1. GENERAL/CAROL
   4.2. WEST PENN/CDT
   4.3. BELDEN/CDT
5. AFTER INSTALLATION, TEST EACH CONTROL CABLE BY SENDING COMMANDS TO THE CONTROLLED DEVICE.
6. MAINTAIN A BEND RADIUS OF AT LEAST ONE-AND-SIX-TENTHS (1.6) INCHES.

UNSHIELDED TWISTED PAIR (UTP) WIRING:

1. ALL UTP CABLE SHALL BE CMP (COMMUNICATIONS PLENUM CABLE) FOR PLENUM SPACES OR CMR LISTED (COMMUNICATIONS RISER CABLE) FOR RISER SYSTEMS AS SPECIFIED IN NEC SECTION 800-50.
2. UTP SHALL CONSIST OF CATEGORY 6 UTP RATED BETWEEN 350 MHZ AND 600 MHZ.
3. THE AVIC SHALL PROVIDE AND INSTALL ALL JACKS AND APPROPRIATE INSERTS FOR ALL AUDIOVISUAL LOCATIONS, INCLUDING THOSE INSIDE FLOOR AND TABLE-TOP BOXES.
4. ALL CATEGORY 6 UTP CABLE AND CONNECTORS SHALL MEET OR EXCEED THE CHANNEL REQUIREMENTS AS DEFINED BY THE LATEST STANDARD REFERENCED IN THE COMMON WORK RESULTS SECTION (THE AVIC SHOULD BE AWARE THAT ALL TESTING REQUIREMENTS WILL BE FOR THE PERMANENT LINK).
5. ALL UTP CABLE SHALL BE FROM THE SAME MANUFACTURER AND BE THE SAME TYPE.
6. CATEGORY 6 8P8C (RJ45) CONNECTORS SHALL BE USED.
7. THE AVIC SHALL COORDINATE WITH THE ARCHITECT THE EXACT COLOR AND ORIENTATION AND PLACEMENT OF ALL FACEPLATES BEFORE ANY COMPONENTS ARE PURCHASED AND INSTALLED.
8. ALL UTP CABLE AND CONNECTING HARDWARE SHALL BE RATED AS CATEGORY 6 AND SHALL EXCEED THE MOST CURRENT ANSI/TIA PERFORMANCE SPECIFICATIONS FOR CATEGORY 6 PERMANENT LINK (AS SHOWN IN THIS REQUIREMENT'S OVERVIEW) UNLESS STATED OTHERWISE.
9. THE T568B WIRING PATTERN SHALL BE USED FOR ALL UTP CABLE TERMINATIONS.
10. ALL VERTICALLY RUN CABLES NOT IN CONDUIT SHALL BE SECURED TO THE WALL EVERY 48-FORTY EIGHT INCHES (48").
11. ALL CABLES SHALL BE INSTALLED SUCH THAT THE MANUFACTURER'S BEND RADIUS IS NOT EXCEEDED.

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AUDIOVISUAL REQUIREMENTS 2

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12. THE AVIC SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL DISTANCES FOR EACH UTP CABLE RUN.

13. THE AVIC SHALL ASSUME RESPONSIBILITY FOR ANY DAMAGE TO THE CABLE DURING INSTALLATION.

SHIELDED TWISTED PAIR (F/UTP) WIRING:

1. ALL F/UTP CABLE SHALL BE CMP (COMMUNICATIONS PLENUM CABLE) FOR PLENUM SPACES OR CMR LISTED (COMMUNICATIONS RISER CABLE) FOR RISER SYSTEMS AS SPECIFIED IN NEC SECTION 800-50.
2. F/UTP SHALL CONSIST OF CATEGORY 6 F/UTP RATED BETWEEN 350 MHZ AND 600 MHZ.
3. ALL CATEGORY 6 F/UTP CABLE AND CONNECTORS SHALL MEET OR EXCEED THE CHANNEL REQUIREMENTS AS DEFINED BY THE LATEST STANDARD REFERENCED IN THE COMMON WORK RESULTS SECTION (THE AVIC SHOULD BE AWARE THAT ALL TESTING REQUIREMENTS WILL BE FOR THE PERMANENT LINK).
4. ALL F/UTP CABLE SHALL BE FROM THE SAME MANUFACTURER AND BE THE SAME TYPE.
5. FOILED TWISTED PAIR (FTP), SCREENED TWISTED PAIR (SCTP), AND SCREENED/UNSHIELDED TWISTED PAIR (S/UTP) SOLUTIONS MAY BE SUBSTITUTED, PROVIDED THE SELECTED SOLUTION IS USED CONSISTENTLY AND DOES NOT CONSIST OF DIFFERENT PRODUCTS BY DIFFERENT MANUFACTURERS.
6. CATEGORY 6 8P8C (RJ45) CONNECTORS SHALL BE USED.
7. SHIELDED CONNECTORS SHALL BE USED IN FACEPLATES AND PATCH PANELS AS REQUIRED BY THE CABLING MANUFACTURER.
8. EXECUTION REQUIREMENTS SHALL MATCH THOSE FOR UTP WIRING, ABOVE.

GENERAL REQUIREMENTS:

1. INSTALL ALL COMPONENTS IN ACCORDANCE WITH MANUFACTURER DIRECTIONS.
2. ALL FACEPLATES SHALL BE INSTALLED FLUSH, TRIM, AND LEVEL, WITH LESS THAN 1/8-INCH DEVIATION.
3. ALL GROMMET OPENINGS SHALL BE CHECKED TO PREVENT DAMAGE TO THE CABLE JACKETING FROM EITHER BACK BOX KNOCKOUTS, CONDUIT ENDS, OR OTHER SHARP EDGES.
4. PROTECT ALL EQUIPMENT FROM DAMAGE. IF ANY ITEM IS MARRED OR DAMAGED, REPORT THIS TO THE GC AND REPAIR OR REPLACE ALL AFFECTED COMPONENTS UNTIL TURNOVER.
5. CEILING-MOUNTED DEVICES OF ANY TYPE SHALL BE ANCHORED TO STRUCTURE, AND NOT REST FULLY OR PARTIALLY SUPPORTED ON CEILING GRID OR TILES. SECURE PENCIL ROD ATTACHMENTS SHALL BE MADE TO STRUCTURE AND TO THE DEVICE.
6. FOR EACH LOCATION MARKED AS “AVP” ON THE DRAWINGS, THE AVIC SHALL FURNISH AND INSTALL A TWO-GANG DECORA®-STYLE FACEPLATE FEATURING A SPLIT-BRUSHED, GROMMETED OPENING (COLOR SHALL BE COORDINATED WITH THE ARCHITECT PRIOR TO MAKING PURCHASES). THIS FACEPLATE SHALL SERVE ONLY AS A CABLING PASS-THROUGH. THE PRODUCT MAY CONSIST OF A LEVITON 41075-DBW, GE 87698, VANCO 120827, OR PRE-APPROVED EQUIVALENT
7. ALL DISPLAYS AND MOUNTING BRACKETS WILL BE OWNER-FURNISHED, AVIC-INSTALLED.

STREAMING MEDIA:

1. THIS FACILITY UTILIZES CRESTRON NVX-BASED TRANSMITTERS AND RECEIVERS IN MOST LOCATIONS. THE INTENT OF THE COUNTY IS TO UTILIZE ANY TRANSMITTER AS A POTENTIAL SOURCE FOR PROGRAMMING, AND ANY DEVICE WITH A RECEIVER TO SELECT A STREAM FOR CONTENT. IN EFFECT, THIS SHALL CREATE AN IN-HOUSE TELEVISION NETWORK, WITH THE ABILITY TO “TUNE” ANY DISPLAY TO ANY ACTIVE CHANNEL AND VIEW THE CONTENT BEING STREAMED. REFER TO THE AV-SERIES DRAWINGS FOR A LIST OF SOURCES (“CHANNELS”) AND RECEIVERS.
2. NOT ALL INPUTS WILL BE ACTIVE AT ALL TIMES.
3. THE ROOM TYPES ARE AS FOLLOWS:
   - 3.1. EMERGENCY OPERATIONS CENTER (EOC) HAS NUMEROUS INPUTS AND DISPLAYS, AS WELL AS VIDEO AND AUDIO CONFERENCING
     - 3.1.1. EOC WALL DISPLAYS AND INPUTS
     - 3.1.2. EOC FLOOR INPUTS
     - 3.1.3. THE STORAGE ROOM ALSO FEATURES OWNER-FURNISHED, OWNER-INSTALLED LAPTOPS THAT WILL DISPLAY CRITICAL INFORMATION (SUCH AS RADAR, ALERTS, AND OTHER REAL-TIME WEBPAGES); EACH LAPTOP RECEIVES A TRANSMITTER
   - 3.2. GENERAL OFFICES FEATURE A LOCAL LAPTOP INPUT AND DISPLAY
   - 3.3. EXECUTIVE OFFICES FEATURE A LOCAL LAPTOP INPUT, DISPLAY, AND OWNER-FURNISHED CABLE TELEVISION RECEIVER
   - 3.4. BREAKOUT ROOMS AND CONFERENCE ROOMS RECEIVE A LOCAL LAPTOP INPUT AND DISPLAY AS WELL AS TOUCH PANEL
   - 3.5. A NUMBER OF OWNER-FURNISHED CABLE TELEVISION RECEIVERS SHALL BE PLACED IN NETWORK 045, AND EACH SHALL HAVE A TRANSMITTER SO THAT CABLE TELEVISION CAN BE STREAMED TO ANY ROOM.

EOC REQUIREMENTS:

1. THE EOC FEATURES AUDIO AND VIDEO CONFERENCING, THE ABILITY TO MONITOR MULTIPLE SCREENS WITH DYNAMICALLY CHANGED INPUTS, PRESENTATION CAPABILITIES, AND SERVES MOST CRITICAL FUNCTIONS OF THE FACILITY.
2. SIX (6) OWNER-FURNISHED, AVIC-INSTALLED DISPLAYS PROVIDE THE PRIMARY VIDEO OUTPUT. ALL DISPLAYS SHALL BE MOUNTED LEVEL AND CENTERED AS SHOWN IN THE DRAWINGS SO THAT ALL CABLES AND CORDS, BACK BOXES, FACEPLATES, AND OTHER MOUNTING ELEMENTS OR DEVICES ARE FULLY CONCEALED BEHIND THE RESPECTIVE DISPLAY. VERIFY THE PROPOSED MOUNT SOLUTION IS DESIGNED TO HOLD DISPLAYS OF THIS CLASS AND WEIGHT. ENSURE THE MOUNTED DISPLAYS ARE NOT SUBJECT TO WOBBLE OR VIBRATION, AND THAT ALL MOUNTING HARDWARE WAS USED AS DIRECTED.
3. FOR AUDIOVISUAL INPUT TRANSMITTERS (“AVX”), FURNISH AND INSTALL A SINGLE-GANG DECORA®-STYLE FACEPLATE (COLOR SHALL BE COORDINATED WITH THE ARCHITECT PRIOR TO MAKING PURCHASES). THE GANG POSITION SHALL CONSIST OF A CRESTRON DM-TX-4KZ-100-C-1G TRANSMITTER. THESE SHALL BE LOCATED IN FLOORBOXES (BY OTHERS). THE AVIC SHALL FURNISH AND INSTALL 8G+ CABLING (SHIELDED CAT 6 F/UTP OR SCTP RATED AT 350 MHz OR HIGHER) FROM THE TRANSMITTER TO NETWORK 045. THE DESIGN INTENT IS THAT A USER LAPTOP (BY OTHERS), USING EITHER HDMI OR DISPLAYPORT CAN CONNECT TO THIS TRANSMITTER, AND HAVE ITS VIDEO AND AUDIO OUTPUT ROUTED THROUGH THE SYSTEM.
4. FURNISH AND INSTALL A CRESTRON DM-NVX-E760C CARD IN NETWORK 045 FOR EACH “AVX” TRANSMITTER, SO THAT ITS PROGRAMMING IS ABLE TO BE STREAMED AS A “CHANNEL.”
5. BELOW EACH DISPLAY, FURNISH AND INSTALL A DECORA®-STYLE WALL PLATE WITH AN HDMI INSERT. EXTEND AN HDMI CABLE FROM THE WALL PLATE TO THE FLAT PANEL DISPLAY, UTILIZING THE “AVP” PASSTHROUGH BEHIND THE DISPLAY. KEEP ALL CABLING CONCEALED, AND ENSURE THE WALL PLATE IS LEVEL AND THE INSERT FLUSH TO THE WALL PLATE.
6. FULLY CONCEALED BEHIND EACH DISPLAY, FURNISH AND INSTALL A CRESTRON AM-200 AIRMEDIA UNIT. THE AVIC SHALL ALSO INSTALL THE LATEST CRESTRON FIRMWARE AND SUPPORTING SOFTWARE TO ENSURE THE SYSTEM IS CURRENT. VERIFY WIRELESS CONNECTIVITY BETWEEN A TYPICAL LAPTOP LOCATION AND THE AM-200 UNIT, CONFIGURE THE UNIT TO REFLECT THE 10.X.X.X URL IN THE SCREEN (VIA STREAMING, AS NOTED BELOW), AND PERFORM A TEST TO ENSURE THAT A LAPTOP CAN ACCESS THE AIRMEDIA FOR PRESENTATION AND CONTENT SHARING (VIEWING A TEST PRESENTATION ON A GUEST LAPTOP OR OTHER SMART DEVICE).
7. FULLY CONCEALED BEHIND EACH DISPLAY, FURNISH AND INSTALL A CRESTRON DM-NVX-E30, CONNECTING ITS HDMI INPUT TO THE AM-200 OUTPUT, AND ITS LAN CONNECTION TO ONE OF THE NETWORK JACKS BEHIND THE DISPLAY. ANY CONTENT EXITING THE AM-200 (LOCAL HDMI JACK OR WIRELESS HD CONNECTION) SHALL STREAM ONTO THE NETWORK AS A “CHANNEL.”
8. FULLY CONCEALED BEHIND EACH DISPLAY, FURNISH AND INSTALL A CRESTRON DM-NVX-360, CONNECTING ITS HDMI OUTPUT TO THE DISPLAY, AND ITS LAN CONNECTION TO ONE OF THE NETWORK JACKS BEHIND THE DISPLAY. THIS DISPLAY CAN THEN RECEIVE ANY SOURCE ON THE STREAMING NETWORK. BY DEFAULT, EACH DISPLAY'S “CHANNEL” SHALL BE THE AM-200 CONCEALED BEHIND IT.
9. IN STORAGE ROOM 015, THE OWNER WILL PROVIDE LAPTOPS, EACH VIEWING A DIFFERENT WEB SITE FOR LOCAL NEWS, WEATHER, EMERGENCY CONDITIONS, AND SO ON. FURNISH AND INSTALL SIX (6) CRESTRON DM-NVX-E30 TRANSMITTERS, CONNECTED VIA HDMI TO THE LAPTOPS AND TO THE NETWORK JACKS PROVIDED BY OTHERS FOR THEM. THE OUTPUT OF ANY LAPTOP THEREBY BECOMES A “CHANNEL” ON THE STREAMING NETWORK.
10. FOR ALL LOCATIONS SHOWN AS CEILING MICROPHONES, FURNISH AND INSTALL SHURE MXA 910-SERIES MICROPHONES, SUSPENDED FROM THE CEILING STRUCTURE VIA PENDANT MOUNT. CONFIRM EXACT MOUNTING OPTIONS, FINAL MOUNTING HEIGHT, AND COLORS WITH THE ARCHITECT PRIOR TO FINAL ORDERING. FURNISH AND INSTALL DANTE-BASED CATEGORY 6 CABLE TO THE HEAD END SYSTEM. PRIOR TO COMPILING FINAL PROGRAMMING, CONFIRM LIVE/MUTE LED COLORS WITH THE OWNER, PICKUP PATTERNS, AND PRESETS FOR EACH ROOM.
11. FURNISH AND INSTALL ONE (1) WHITE QSC QSYS PTZ 12X72 CAMERA AND MOUNTING BRACKET AS SHOWN IN THE EOC. OTHERS WILL PROVIDE A CAT 6 CABLE TO THE HEAD END FOR CONNECTION. ENSURE THE CAMERA IS LEVEL, AND THAT THE LENS HEIGHT MATCHES THE FINISHED HEIGHT SHOWN IN THE AV-SERIES DRAWINGS.
12. FURNISH AND INSTALL A WIRELESS KEYBOARD AND TRACKPAD UNIT FOR A PRESENTER AT THE TABLE. CONNECT ITS RF-BASED RECEIVER INTO A USB EXTENDER, SO THAT THE USB CONNECTION CAN REACH THE USB PORT ON THE OWNER-FURNISHED PC IN NETWORK 045 (DESCRIBED LATER). THE KEYBOARD SHALL BE BLACK IN COLOR AND FEATURE A RANGE OF 10m OR MORE. PLACE THIS ON THE CONFERENCE TABLE.
13. FURNISH AND INSTALL A CRESTRON TST-902 CONTROL PANEL FOR THE ROOM, POSITIONED ON A WORK SURFACE WITHIN THE ROOM. FURNISH AND INSTALL A CRESTRON CEN-GWEXER WIRLESS GATEWAY BEHIND THE FLAT PANEL DISPLAY WITH A LAN CONNECTION AS SHOWN ON THE AV-SERIES DRAWINGS. COORDINATE THE COLOR OF THE PANEL WITH THE ARCHITECTS PRIOR TO FINAL ORDERING. THE PANEL SHALL SERVE AS THE MEANS OF CONTROL FOR ALL AUDIOVISUAL SYSTEMS IN THIS ROOM. THE INTERFACE IS DESCRIBED IN ITS OWN REQUIREMENT SECTION, FOLLOWING.
14. FURNISH AND INSTALL COMPACT WHITE PENDANT CEILING SPEAKERS (JBL CONTROL 65P/T OR EQUIVALENT) AS SHOWN. UTILIZE POSITIVE-LOCKING CONNECTORS AND FURNISH AND INSTALL APPROPRIATELY GAUGED SPEAKER WIRE BACK TO THE HEAD END. CARE MUST BE TAKEN TO ENSURE EVEN SOUND DISTRIBUTION WITHOUT CONFLICTING WITH EXISTING LIGHTING OR CEILING FINISH MATERIALS. SPEAKERS WILL NOT BE USED FOR ANY OVERHEAD PAGING. TEST ALL SPEAKERS USING A SWEPT SINE WAVE AT ONE-HALF OF THE DEVICE'S RATED POWER. USE A FREQUENCY SWEEP TEST FROM 50 Hz TO 20 KHz TO DETECT AND CORRECT ANY BUZZING, RATTLING, OR VIBRATION NOISE. IF SPEAKERS HAVE LOGOS, INSIGNIA, OR DECALS, ENSURE ALL SPEAKERS ARE VISUALLY ORIENTED THE SAME WAY. UTILIZE CEILING ANCHORS OR SECURELY AFFIX TO BUILDING STRUCTURE. ALL CEILING SPEAKERS SHALL BE INSTALLED TO THE SAME FINISHED HEIGHT ABOVE THE FLOOR, AT THE SAME LEVEL OF THE LOWEST PERMANENTLY INSTALLED CEILING ELEMENTS UNLESS DIRECTED OTHERWISE BY THE ARCHITECT. CONFIRM COLOR WITH ARCHITECT PRIOR TO FINAL ORDERING.
15. MANY OF THE EOC'S HEAD END COMPONENTS SHALL BE LOCATED IN NETWORK 045:
    - 15.1. DANTE SWITCH. FURNISH AND INSTALL A PoE-CAPABLE DANTE-READY 10/100/1000 ETHERNET SWITCH IN THE HEAD END CABINET TO SUPPORT LAN-CONNECTED DEVICES AS SHOWN IN THE SCHEMATIC CONNECTIVITY DRAWING FOR THIS ROOM. WORK WITH OWNER FOR NETWORK CONNECTIVITY REQUIREMENTS.
    - 15.2. DIGITAL AUDIO PROCESSOR. THE AVIC SHALL FURNISH AND INSTALL A QSC Q-SYS CORE 110F AUDIO PROCESSOR TO SUPPORT LINE AND MIC AUDIO IN THE ROOM, ACOUSTICAL ECHO CANCELLATION, ADJUST AND MIX AUDIO LEVELS, AND PROVIDE POTS-BASED AUDIO CONFERENCING IN THE ROOM AS COORDINATED WITH THE OWNER'S IT TEAM. REFER TO SCHEMATIC CONNECTIVITY DRAWINGS FOR APPROXIMATE NUMBER OF INPUTS AND OUTPUTS, AND OTHER CONNECTIONS NECESSARY TO CONFIGURE. THE AVIC SHALL BE OTHERWISE RESPONSIBLE FOR THE PROCESSOR CONFIGURATION AND PROGRAMMING AND SUBSEQUENT AUDIO QUALITY OF THE FINISHED ROOM.
    - 15.3. NVX DIRECTOR. FURNISH AND INSTALL A CRESTRON NVX DIRECTOR TO MANAGE THE NVX TRANSMITTERS AND RECEIVERS THROUGHOUT THE SPACE. LOCATE THIS DEVICE IN THE HEAD END CABINET. WORK WITH OWNER FOR NETWORK CONNECTIVITY REQUIREMENTS.
    - 15.4. OWNER-FURNISHED PC. THE OWNER WILL PROVIDE A PERSONAL COMPUTER TO BE INCORPORATED INTO THE SIGNAL FLOW AND PROGRAMMING OF THE ROOM TO HOST VIDEO CONFERENCES REMOTELY VIA THE WIRELESS KEYBOARD AND MOUSE IN THE EOC. THE AVIC SHALL CONNECT THE PC INTO THE AUDIOVISUAL HEAD END ONLY, AND IS NOT RESPONSIBLE TO INSTALL SOFTWARE, MAINTAIN COMPONENTS, OR PROVIDE LICENSING FOR THIS SYSTEM UNLESS OTHER ARRANGEMENTS ARE MADE DIRECTLY WITH THE OWNER. UPON RECEIPT, DOCUMENT THE CONDITION OF THE ITEM AND VERIFY ITS FUNCTIONALITY BEFORE TAKING RESPONSIBILITY OF THE UNIT. NOTIFY THE OWNER OF ANY CONCERNS OR DEFICIENCIES DISCOVERED.
    - 15.5. CONTROL PROCESSOR. FURNISH AND INSTALL A CRESTRON CP4 CONTROL PROCESSOR TO MANAGE THE PROGRAMMING OF THE EOC AND STREAMING NETWORK SOLUTION. LOCATE THIS DEVICE IN THE HEAD END CABINET. WORK WITH OWNER FOR NETWORK CONNECTIVITY REQUIREMENTS.
    - 15.6. USB BRIDGE. FURNISH AND INSTALL A QSC QSYS USB BRIDGE BETWEEN THE OWNER-FURNISHED PC AND THE DANTE SWITCH SO THAT THE PC CAN REMOTELY SEND AND RECEIVE VIDEO AND AUDIO FROM THE EOC ON A CONFERENCE.
    - 15.7. TRANSMITTER AND RECEIVER. FURNISH AND INSTALL TWO (2) CRESTRON DM-NVX-360 UNITS, LOCATED IN THE HEAD END:
      - 15.7.1. ONE SHALL ACT AS A TRANSMITTER, TO SEND THE OUTPUT OF THE OWNER-FURNISHED PC'S HDMI OUTPUT TO THE STREAMING NETWORK. THIS TRANSMITTER SHALL ALSO STREAM THE MASTER AUDIO OUT OF THE QSC Q-SYS PROCESSOR, SO THAT ALL AUDIO FROM THE EOC IS STREAMED AS A CHANNEL PAIRED WITH THE PC'S VIDEO CONTENT.
      - 15.7.2. ONE SHALL ACT AS A RECEIVER, SO THAT ANY AUDIO SENT FROM A NON-EOC TRANSMITTER MAY BE HEARD OVER THE PENDANT SPEAKERS IN THE EOC. FOR EXAMPLE, AN AUDIO FEED FROM ONE OF THE LAPTOPS IN STORAGE 015 MAY NEED TO BE HEARD IN THE EOC; THIS RECEIVER MAKES THAT POSSIBLE.
    - 15.8. AMPLIFIER. FURNISH AND INSTALL A CRESTRON AMP-150-70 TO SEND OUTPUT FROM THE QSC QSYS PROCESSOR TO THE PENDANT SPEAKERS IN THE EOC. LOCATE THIS DEVICE IN THE HEAD END CABINET.

BREAKOUT AND CONFERENCE ROOM REQUIREMENTS:

1. BREAKOUT AND CONFERENCE ROOMS FUNCTION IDENTICALLY (WITH THE EXCEPTION OF A SOUNBAR IN CONFERENCE ROOMS). EACH TYPE OF ROOM SUPPORTS HDMI AND AIRMEDIA FED TO AN NVX TRANSMITTER; EACH OWNER-FURNISHED DISPLAY HAS A RECEIVER BEHIND IT, WHICH CAN BE “TUNED” TO ANY STREAMING “CHANNEL.”
2. OWNER-FURNISHED, AVIC-INSTALLED DISPLAYS PROVIDE THE PRIMARY VIDEO OUTPUT. ALL DISPLAYS SHALL BE MOUNTED LEVEL AND CENTERED AS SHOWN IN THE DRAWINGS SO THAT ALL CABLES AND CORDS, BACK BOXES, FACEPLATES, AND OTHER MOUNTING ELEMENTS OR DEVICES ARE FULLY CONCEALED BEHIND THE RESPECTIVE DISPLAY. VERIFY THE PROPOSED MOUNT SOLUTION IS DESIGNED TO HOLD DISPLAYS OF THIS CLASS AND WEIGHT. ENSURE THE MOUNTED DISPLAYS ARE NOT SUBJECT TO WOBBLE OR VIBRATION, AND THAT ALL MOUNTING HARDWARE WAS USED AS DIRECTED.
3. FULLY CONCEALED BEHIND EACH DISPLAY, FURNISH AND INSTALL A CRESTRON AM-200 AIRMEDIA UNIT. THE AVIC SHALL ALSO INSTALL THE LATEST CRESTRON FIRMWARE AND SUPPORTING SOFTWARE TO ENSURE THE SYSTEM IS CURRENT. VERIFY WIRELESS CONNECTIVITY BETWEEN A TYPICAL LAPTOP LOCATION AND THE AM-200 UNIT, CONFIGURE THE UNIT TO REFLECT THE 10.X.X.X URL IN THE SCREEN (VIA STREAMING, AS NOTED BELOW), AND PERFORM A TEST TO ENSURE THAT A LAPTOP CAN ACCESS THE AIRMEDIA FOR PRESENTATION AND CONTENT SHARING (VIEWING A TEST PRESENTATION ON A GUEST LAPTOP OR OTHER SMART DEVICE).
4. AT THE TABLE, FURNISH AN AUDIOVISUAL INTERFACE CONSISTING OF ONE (1) HDMI CABLE ATTACHED TO A FURNITURE-BASED INPUT; THIS INPUT WILL BE SELECTED BY THE FURNITURE DEALER, BUT IS EXPECTED TO CONSIST OF A KEYSTONE-STYLE PASS-THROUGH INSERT. FURNISH AND INSTALL A SIX-FOOT (6') CABLE FOR THE USER'S DEVICE, CONNECTED TO THE HDMI INPUT. THE AVIC WILL CONFIRM THE NATURE OF THIS CONNECTION PRIOR TO ORDERING, AS TABLE CONNECTIONS FURNISHED AND INSTALLED BY OTHERS MAY CHANGE. ADDITIONALLY, FURNISH AND INSTALL A BLACK HDMI CABLE FROM THE TABLE INTERFACE AND CONNECT THIS CORD FROM THIS INTERFACE TO THE AM-200'S HDMI INPUT JACK, KEEPING THE CABLE CONCEALED BELOW THE TABLE AND IN CONDUIT THE ENTIRE WAY: FEED THE CABLING TIGHT UNDERNEATH THE TABLE TOP INTO THE CONDUIT, AND THEN EXTEND THIS UP AND OUT THROUGH THE "AVP" DIRECTLY INTO THE AM-200.
5. FULLY CONCEALED BEHIND EACH DISPLAY, FURNISH AND INSTALL A CRESTRON DM-NVX-E30, CONNECTING ITS HDMI INPUT TO THE AM-200 OUTPUT, AND ITS LAN CONNECTION TO ONE OF THE NETWORK JACKS BEHIND THE DISPLAY. ANY CONTENT EXITING THE AM-200 (LOCAL HDMI JACK OR WIRELESS HD CONNECTION) SHALL STREAM ONTO THE NETWORK AS A “CHANNEL.”
6. FULLY CONCEALED BEHIND EACH DISPLAY, FURNISH AND INSTALL A CRESTRON DM-NVX-360, CONNECTING ITS HDMI OUTPUT TO THE DISPLAY, AND ITS LAN CONNECTION TO ONE OF THE NETWORK JACKS BEHIND THE DISPLAY. THIS DISPLAY CAN THEN RECEIVE ANY SOURCE ON THE STREAMING NETWORK. BY DEFAULT, EACH DISPLAY'S “CHANNEL” SHALL BE THE AM-200 CONCEALED BEHIND IT.
7. IN CONFERENCE ROOMS SO DESIGNATED BY A KEYNOTE ON THE AV-SERIES DRWAINGS, FURNISH AND INSTALL A SOUND BAR TO THE UNDERSIDE OF THE FLAT PANEL DISPLAY, EITHER MOUNTED TO THE DISPLAY OR AFFIXED SECURELY TO THE WALL SURFACE. THE SOUND BAR SHALL INCLUDE AN IR REPEATER CABLE, MOUNTING BRACKET, AND ALL NECESSARY CONNECTOR CABLES. ALTHOUGH THE SOUND BAR MAY SUPPORT BATTERY POWER, THE INSTALLED SOUND BAR SHOULD NOT OPERATE OFF BATTERY. A SEPARATE SUBWOOFER IS NOT REQUIRED AND WILL NOT BE CONVENIENT TO LOCATE IN THE FINISHED SPACE.
8. IN EACH ROOM, FURNISH AND INSTALL A CRESTRON TS-1070 CONTROL PANEL AND FOOTSTAND, POSITIONING IT ON THE TABLE AT OR NEAR TURNOVER. COORDINATE THE COLOR WITH THE ARCHITECT. THE PANEL SHALL SERVE AS THE MEANS OF CONTROL OF ALL NETWORK STREAMING IN THAT ROOM, ALLOWING THE USER TO SELECT WHICH STREAMING SOURCE (“CHANNEL”) SHALL DISPLAY ON THE SCREEN. THIS PANEL SHALL BE ABLE TO POWER ON/OFF THE DISPLAY AS WELL, AND RAISE, MUTE, AND LOWER THE VOLUME. EACH PANEL SHALL BE CONTROLLED BY THE CP4 PROCESSOR IN NETWORK 045, DESCRIBED PREVIOUSLY. ITS DEFAULT “CHANNEL” SHALL BE THE OUTPUT OF THE AIRMEDIA IN THAT ROOM. PROVIDE TEN FEET (10') OF SLACK FOR THE CABLE SO THAT THE PANEL CAN BE REPOSITIONED AS NEEDED BY THE OWNER AFTER TURNOVER. THE INTERFACE IS DESCRIBED IN ITS OWN REQUIREMENT SECTION, FOLLOWING.

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AUDIOVISUAL REQUIREMENTS 3

AV0.3

OFFICE REQUIREMENTS:

1. OFFICES FEATURE OWNER-FURNISHED DISPLAYS, AN HDMI INPUT AND AIRMEDIA, AS WELL AS THE ABILITY TO TRANSMIT AND RECEIVE STREAMED MEDIA. SOME OFFICES (NOTED IN THE DRAWINGS) RECEIVE LOCAL CABLE TELEVISION RECEIVES BY OWNER.
2. OWNER-FURNISHED, AVIC-INSTALLED DISPLAYS PROVIDE THE PRIMARY VIDEO OUTPUT. ALL DISPLAYS SHALL BE MOUNTED LEVEL AND CENTERED AS SHOWN IN THE DRAWINGS SO THAT ALL CABLES AND CORDS, BACK BOXES, FACEPLATES, AND OTHER MOUNTING ELEMENTS OR DEVICES ARE FULLY CONCEALED BEHIND THE RESPECTIVE DISPLAY. VERIFY THE PROPOSED MOUNT SOLUTION IS DESIGNED TO HOLD DISPLAYS OF THIS CLASS AND WEIGHT. ENSURE THE MOUNTED DISPLAYS ARE NOT SUBJECT TO WOBBLE OR VIBRATION, AND THAT ALL MOUNTING HARDWARE WAS USED AS DIRECTED.
3. FULLY CONCEALED BEHIND EACH DISPLAY, FURNISH AND INSTALL A CRESTRON AM-200 AIRMEDIA UNIT. THE AVIC SHALL ALSO INSTALL THE LATEST CRESTRON FIRMWARE AND SUPPORTING SOFTWARE TO ENSURE THE SYSTEM IS CURRENT. VERIFY WIRELESS CONNECTIVITY BETWEEN A TYPICAL LAPTOP LOCATION AND THE AM-200 UNIT, CONFIGURE THE UNIT TO REFLECT THE 10.X.X.X URL IN THE SCREEN (VIA STREAMING, AS NOTED BELOW), AND PERFORM A TEST TO ENSURE THAT A LAPTOP CAN ACCESS THE AIRMEDIA FOR PRESENTATION AND CONTENT SHARING (VIEWING A TEST PRESENTATION ON A GUEST LAPTOP OR OTHER SMART DEVICE).
4. FURNISH AND INSTALL A DECORA®-STYLE WALL PLATE WITH AN HDMI INSERT. EXTEND AN HDMI CABLE FROM THE WALL PLATE TO THE FLAT PANEL DISPLAY, UTILIZING THE "AVP" PASSTHROUGH BEHIND THE DISPLAY. KEEP ALL CABLING CONCEALED, AND ENSURE THE WALL PLATE IS LEVEL AND THE INSERT FLUSH TO THE WALL PLATE.
5. FULLY CONCEALED BEHIND EACH DISPLAY, FURNISH AND INSTALL A CRESTRON DM-NVX-E30, CONNECTING ITS HDMI INPUT TO THE AM-200 OUTPUT, AND ITS LAN CONNECTION TO ONE OF THE NETWORK JACKS BEHIND THE DISPLAY. ANY CONTENT EXITING THE AM-200 (LOCAL HDMI JACK OR WIRELESS HD CONNECTION) SHALL STREAM ONTO THE NETWORK AS A "CHANNEL."
6. FULLY CONCEALED BEHIND EACH DISPLAY, FURNISH AND INSTALL A CRESTRON DM-NVX-360, CONNECTING ITS HDMI OUTPUT TO THE DISPLAY, AND ITS LAN CONNECTION TO ONE OF THE NETWORK JACKS BEHIND THE DISPLAY. THIS DISPLAY CAN THEN RECEIVE ANY SOURCE ON THE STREAMING NETWORK. BY DEFAULT, EACH DISPLAY'S "CHANNEL" SHALL BE THE AM-200 CONCEALED BEHIND IT.
7. THE OWNER WILL PROVIDE A CABLE TELEVISION RECEIVER TO BE CONCEALED BEHIND THE DISPLAY SO THAT TELEVISION PROGRAMMING CAN BE SEEN BY THE AUDIENCE, WITH AUDIO. THE AVIC SHALL CONNECT THE RECEIVER INTO THE DISPLAY, AND IS NOT RESPONSIBLE TO PROVIDE LICENSING OR SERVICES FOR THIS SYSTEM UNLESS OTHER ARRANGEMENTS ARE MADE DIRECTLY WITH THE OWNER. UPON RECEIPT, DOCUMENT THE CONDITION OF THE RECEIVER AND VERIFY ITS FUNCTIONALITY BEFORE TAKING RESPONSIBILITY OF THE UNIT. NOTIFY THE OWNER OF ANY CONCERNS OR DEFICIENCIES DISCOVERED. FURNISH AND INSTALL AN INFRARED RECEIVER AND SECURE IT TO THE UNDERSIDE OF THE DISPLAY WITH AUDIOVISUAL TAPE SO THAT THE INFRARED RECEIVER DOES NOT DISCONNECT OVER TIME. CONNECT THE INFRARED RECEIVER INTO THE TELEVISION RECEIVER AND VERIFY THAT SIGNALS FROM THE CABLE REMOTE CONTROL OPERATE CORRECTLY ON THE DISPLAY. CABLE TELEVISION SHALL BE CONTROLLED BY LOCAL REMOTE, AND SHALL NOT BE TIED TO THE CONTROL SYSTEM NOR INCORPORATED INTO THE STREAMING NETWORK.
8. FURNISH AND INSTALL AN HDMI-BASED APPLICATION FOR EACH OFFICE USER, SO THAT THE USER CAN--FROM HIS OR HER LAPTOP IN THE ROOM--DO THE FOLLOWING:
   - 8.1. POWER ON/OFF THE DISPLAY
   - 8.2. RAISE/MUTE/LOWER ITS VOLUME
   - 8.3. SELECT WHICH STREAMING "CHANNEL" TO RECEIVE
   - 8.4. DEFAULT TO THE LOCAL AIRMEDIA BEHIND THE RESPECTIVE DISPLAY
   - 8.5. SWITCH INPUTS TO THE CABLE TELEVISION RECEIVER (IN OFFICES EQUIPPED WITH THE OWNER-FURNISHED RECEIVER ONY)
9. FURNISH THE COUNTY WITH CRESTRON ONE, SO THAT A USER CAN CONTROL THIS FUNCTIONALITY (IN HIS OR HER OFFICE ONLY) WITH A CELL PHONE.

NETWORK 045 REQUIREMENTS:

1. AS NETWORK 045 SERVES AS THE HUB FOR THE NETWORK STREAMING SYSTEM, SOME ADDITIONAL SCOPE IS REQUIRED BEYOND THE EOC HEAD END COMPONENTS.
2. FURNISH AND INSTALL AN AUDIOVISUAL RACK IN THE HEAD END. THE RACK SHALL BE ABLE TO ACCOMMODATE ALL MOUNTED EQUIPMENT, WITH SPACE IN THE REAR FOR POWER CORDS AND CABLE ROUTING. ALL COMPONENTS SHALL BE FROM THE SAME MANUFACTURER AND THE SAME COLOR. THE RACK SHALL HAVE A FINISHED TOP, SIDES, AND DOOR. POSITION THE RACK IN THE SPACE AS REQUIRED, ENSURING THAT DOORS OPEN AND CLOSE FULLY, AND THAT CABLES AND WIRING NEATLY DRESS DOWN THE BACK OF THE RACK WITHOUT BEND RADII BEING EXCEEDED, AND THAT THE RACK DOES NOT DAMAGE NOR IS IN JEOPARDY OF BEING DAMAGED BY OTHER EQUIPMENT IN THE IMMEDIATE VICINITY. DO NOT TIE OR SECURE POWER CORDS TO THE FRAME OF THE RACK SO THAT WORKING ON ONE DEVICE DOES NOT PULL THE PLUG OUT FROM ANOTHER DEVICE. ENSURE THAT CABLES AND CORDS DO NOT CREATE AN AIR DAM IN THE REAR OF THE RACK FOR HEAT REJECTION. THE RACK SHALL BE THOROUGHLY CLEANED OF DUST AND CONSTRUCTION DEBRIS, AND REMOVE ALL LABEL BACKINGS, WIRE TRIMMINGS, TIE-WRAP PIECES, AND OTHER RESIDUE.
3. FURNISH AND INSTALL A MIDDLE ATLANTIC UQFP-4 OR EQUIVALENT; EQUIVALENTS SHALL NOT BE MORE THAN TWO (2) RACK UNITS IN HEIGHT AND SHALL FEATURE FOUR (4) QUIET FANS. PLACE THE FAN KIT AT THE TOP OF THE HEAD END, LOCATED TOWARD THE REAR SO THAT HEAT IS REJECTED OUT THE BACK. THE KIT SHALL BE INSTALLED LEVEL WITHIN THE HEAD END. ENSURE THE THERMOSTATIC START POINT IS SET TO 81°.
4. FURNISH AND INSTALL A MIDDLE ATLANTIC PD-915R POWER DISTRIBUTION UNIT (OR SINGLE RACK UNIT EQUIVALENT) FOR THE HEAD END RACK. INSTALL THE POWER SUPPLY IN THE REAR OF THE RACK, TOWARD THE BOTTOM BUT NOT IN CONFLICT WITH WIRING OR OTHER EQUIPMENT.
5. THE OWNER WILL PROVIDE FIVE (5) CABLE TELEVISION RECEIVERS TO BE INCORPORATED INTO THE SIGNAL FLOW AND PROGRAMMING OF THE STREAMING NETWORK, WITH AUDIO. THE AVIC SHALL CONNECT THE RECEIVERS INTO THE NVX TRANSMITTERS, AND IS NOT RESPONSIBLE TO PROVIDE LICENSING OR SERVICES FOR THIS SYSTEM UNLESS OTHER ARRANGEMENTS ARE MADE DIRECTLY WITH THE OWNER. UPON RECEIPT, DOCUMENT THE CONDITION OF EACH RECEIVER AND VERIFY ITS FUNCTIONALITY BEFORE TAKING RESPONSIBILITY OF THE UNIT. NOTIFY THE OWNER OF ANY CONCERNS OR DEFICIENCIES DISCOVERED.
6. FURNISH AND INSTALL A RACK-MOUNTED CRESTRON CARD CHASSIS FOR THE DM-NVX-E760C CARDS AND CONNECT THIS TO THE NETWORK FOR DISTRIBUTION. THIS CHASSIS SUPPORTS THE TRANSMITTERS FOR THE EOC FLOOR INPUTS AND CATV RECEIVERS.
7. FURNISH AND INSTALL A CRESTRON DM-NVX-E760C CARD IN NETWORK 045 FOR EACH OWNER-FURNSIHED CABLE TELEVISION RECEIVER, SO THAT ITS PROGRAMMING IS ABLE TO BE STREAMED AS A "CHANNEL."

AUDIOVISUAL SYSTEM IDENTIFICATION:

1. THE AVIC SHALL THOROUGHLY LABEL THE ENTIRE AUDIOVISUAL SYSTEM FOR FUTURE MAINTAINABILITY.
2. EACH DEVICE SHALL BE GIVEN A UNIQUE IDENTIFIER AND LABELED ACCORDINGLY.
3. LABELS SHALL MEET THE LEGIBILITY, EXPOSURE DEFACEMENT AND ADHESION REQUIREMENTS OF UL969.
4. LABELS SHALL BE PREPRINTED OR PRINTED BY A COMPUTER. LABELS WRITTEN BY HAND ARE NOT ACCEPTABLE.
5. ALL REFERENCES TO THIS DEVICE IN AVIC-PREPARED DOCUMENTATION, DRAWINGS, AND LABELS SHALL BE CONSISTENT, EXCEPT:
   - 5.1. O&M MANUALS OR GENERIC DOCUMENTATION
   - 5.2. TRAINING MATERIALS, WHICH SHOULD USE NAMES RECOGNIZABLE TO THE USER, RATHER THAN MANUFACTURER NAMES AND PART NUMBERS.
   - 5.3. CONTROL SYSTEM INTERFACES SHALL ALSO USE MATCHING NAMES.
6. RECORD DRAWINGS SHALL INDICATE THE DEVICE IDENTIFIER, AND BE IN AGREEMENT BETWEEN THE DRAWINGS AND THE LABELS ON THE EQUIPMENT OR LABELS.
7. ALL WIRES AND CABLES SHALL BE LABELED AT BOTH ENDS.

AUDIOVISUAL SYSTEM ADMINISTRATION:

1. THE AVIC SHALL PROVIDE RECORD DRAWINGS IN AN AUTOCAD COMPATIBLE FORMAT OR IN PDF FORMAT.
2. THE AVIC SHALL THOROUGHLY DOCUMENT THE ENTIRE AUDIOVISUAL SYSTEM FOR FUTURE MAINTAINABILITY AND TROUBLESHOOTING.
3. PRIOR TO TURNOVER, THE AVIC SHALL PROVIDE THE OWNER A DETAILED TECHNICAL SPECIFICATION FOR ANY SERVER, REAL OR VIRTUALIZED, RUNNING MANAGEMENT APPLICATIONS. THIS SHALL INCLUDE ANY ADDITIONAL SOFTWARE, SUCH AS BROWSER OR SQL DATABASE, REQUIREMENTS UNLESS THE AVIC IS FURNISHING THAT SERVER AS PART OF THEIR PROPOSED PACKAGE. THE AVIC SHALL SO NOTE WHETHER OR NOT SERVER HARDWARE OR SOFTWARE IS BEING PROVIDED CLEARLY IN THE BID RESPONSE.
4. DOCUMENTATION SHALL INCLUDE BUT NOT BE LIMITED TO:
   - 4.1. AUTOCAD OR PDF SCALE DRAWINGS OF THE PROJECT (BACKGROUNDS AVAILABLE FROM SENTINEL) CLEARLY SHOWING:
   - 4.2. PRECISE DEVICE LOCATIONS AND IDENTIFICATION NUMBERS
   - 4.3. APPROXIMATE PATHWAYS OF HORIZONTAL CABLE RUNS TO THEIR NEAREST POINTS OF TERMINATION
   - 4.4. PRECISE LOCATIONS OF INSTALLED PULL BOXES, JUNCTION BOXES, AND ENCLOSURES RELATED TO ANY AUDIOVISUAL CONDUITS THAT MAY BE INSTALLED
   - 4.5. CONDUIT SIZES FOR ANY CONDUIT ABOVE THREE QUARTER INCH (3/4") IN SIZE (IF USED)
   - 4.6. DETAILED ELEVATION VIEWS OF ANY WALL-MOUNTED EQUIPMENT, INCLUDING BUT NOT LIMITED TO CONTROL PANELS AND HEAD END CABINETS
   - 4.7. SINGLE-LINE DIAGRAMS
   - 4.8. COMPILED AND NON-COMPILED CODE AND PROGRAMMING. THE COUNTY STRICTLY REQUIRES THAT ALL CONTROL CODE BE SUBMITTED, AT A MINIMUM, IN NON-COMPILED FORMAT FOR LATER MODIFICATIONS.
   - 4.9. PRODUCT CUT SHEETS, SHOP DRAWINGS, ETC.
   - 4.10. DOCUMENTATION SHALL BE SUBMITTED TO THE OWNER PRIOR TO FINAL PAYMENT.

AUDIOVISUAL SYSTEM TESTING:

1. REVIEW ALL TESTING REQUIREMENTS AS DESCRIBED IN THIS REQUIREMENT FOR EACH TYPE OF PRODUCT LISTED.
2. ALL DEVICES SHALL BE TESTED FOR CORRECT FUNCTIONALITY AS RECOMMENDED BY THE RESPECTIVE MANUFACTURER.
3. ALL WIRING SHALL BE TESTED FOR WIREMAP, WHERE APPLICABLE, AND CONTINUITY.
4. INSPECT FOR AND REPLACE ALL WIRES AND CABLES SUFFERING FROM DEFORMED, BRITTLE, OR CRACKED INSULATION, STRIPPING IN EXCESS OF 1/8-INCH FROM POINT OF CONNECTION, COLD SOLDER JOINTS, FLUX JOINTS, SOLDER SPLATTER, UN-GROMMETTED, UN-BUSHED, OR UN-INSULATED WIRE OR CABLE ENTRIES, DEFORMATION OR IMPROPER RADIUS BENDING.

FINAL ACCEPTANCE DEMONSTRATION:

1. PRIOR TO TURNOVER, THE AVIC SHALL BE PROVIDE A FINAL ACCEPTANCE DEMONSTRATION TO THE OWNER THAT SHALL DEMONSTRATE AND PROVE THAT ALL GOALS OF THE REQUIREMENT AND DESIGN INTENT HAVE BEEN MET, EXCEPT WHERE AND IF MODIFIED BY THE PROJECT TEAM AND THE AVIC DURING INSTALLATION.
2. THE DEMONSTRATION MUST BE SCHEDULED AT A DATE MUTUALLY AGREEABLE TO THE OWNER AND THE AVIC, AS AUDIOVISUAL SYSTEMS MAY, BY DESIGN OF THE OVERALL PROJECT SCHEDULE, STILL UNDERGO FINAL TESTING AND CONFIGURATION AFTER THE OFFICIAL DATE OF TURNOVER.
3. THE DEMONSTRATION SHALL BE SUBSTANTIVE, BUT NOT EXHAUSTIVE. BASIC FUNCTIONALITY AND CAPABILITIES SHALL BE DEMONSTRATED; HOWEVER, THIS IS NOT INTENDED TO BE AND SHALL NEITHER SERVE AS NOR CONSTITUTE A TRAINING SESSION.
4. THE OWNER'S PERSONNEL SHALL DETERMINE WHICH FEATURES MUST BE DEMONSTRATED ON DEMAND DURING THE PRESENTATION. THE AVIC SHALL NOT BE RESPONSIBLE TO DEMONSTRATE ANY REQUESTS WHICH WERE NEVER PART OF THIS SPECIFICATION OR ANY DOCUMENTED DISCUSSIONS DURING INSTALLATION.
5. THE AVIC WILL NOT BE EXPECTED TO DEMONSTRATE AN INCOMPLETE OR PARTIALLY INSTALLED SYSTEM.
6. ITEMS WHICH ARE INCOMPLETE, OR FAIL TO OPERATE AS EXPECTED, OR LACK FINAL CONTROL PROGRAMMING, DURING THE DEMONSTRATION WILL BE NOTED. A FOLLOW-UP DEMONSTRATION MUST BE SCHEDULED SOLELY FOR THESE ITEMS.

TRAINING SESSIONS:

1. THE AVIC SHALL PROVIDE TRAINING FOR THE OWNER PERSONNEL TO ENSURE KNOWLEDGE TRANSFER REGARDING DOCUMENTATION AND OPERATION OF THE AUDIOVISUAL SYSTEMS. THIS MAY CONSIST OF MULTIPLE TRAINING SESSIONS DEPENDING ON THE OWNER'S REQUIREMENTS NEAR CUTOVER.
2. THE FINAL ACCEPTANCE DEMONSTRATION SHALL NOT COUNT AS A TRAINING SESSION; FURTHER, SYSTEMS SHALL BE 100% COMPLETE AND TESTED AND ACCEPTED PRIOR TO TRAINING. UNDER NO CIRCUMSTANCES SHALL TRAINING SESSIONS BY CONDUCTED USING INCOMPLETELY ASSEMBLED OR TESTED OR DEBUGGED SYSTEMS.
3. THE OWNER WILL BE RESPONSIBLE TO IDENTIFY WHICH OF THEIR INDIVIDUALS MUST ATTEND TRAINING PRIOR TO SCHEDULING. ULTIMATELY, THE OWNER WILL DETERMINE THE DATES AND SESSIONS AT THEIR CONVENIENCE, PROVIDED THE SYSTEM HAS UNDERGONE FINAL ACCEPTANCE DEMONSTRATION.
4. TRAINING SESSIONS SHALL EXIST FOR THREE GROUPS, CONDUCTED SEPARATELY:
   - 4.1. FREQUENT USERS (BASIC OPERATION OF ROOM FUNCTIONS)
   - 4.2. ADVANCED USERS (ENHANCED OR EXTENDED ROOM FUNCTIONS)
   - 4.3. TECHNICAL SUPPORT (NETWORK, IT, DEDICATED AV, AND TECHNICAL STAFF, COVERING COMMON SUPPORT TOPICS AND CONFIGURATION INFORMATION)
5. THE TRAINING SESSION SHALL NOT ATTEMPT TO COMBINE THESE THREE AREAS TO AVOID OVERWHELMING OR CONFUSING THE FREQUENT OR ADVANCED USERS.
6. VIDEO RECORDING OF TRAINING TOPICS IS ENCOURAGED.
7. TRAINING SHALL BE PROVIDED FOR EACH TYPE OF ROOM; ROOM-BY-ROOM TRAINING COVERING REPETITIVE PROCEDURES IS NOT REQUIRED.
8. FOR EACH ROOM WITH INTEGRATED AUDIOVISUAL SYSTEMS INSTALLED BY THE AVIC, THE AVIC SHALL PROVIDE STEP-BY-STEP OPERATIONAL DIRECTIONS EITHER AS A BINDER OR, IF A SINGLE SHEET, LAMINATED PLACARD. THESE SHALL BE REVIEWED BY THE OWNER PRIOR TO TURNOVER.
9. THE USE OF LAMINATED CARDS OR BINDERS, WHILE ACCEPTABLE AS "LEAVE-BEHINDS," SHALL NOT BE DEEMED AN ACCEPTABLE REPLACEMENT FOR TRAINING.
10. THE AVIC SHALL FURNISH THESE DETAILED INSTRUCTIONS, INCLUDING SCREEN CAPTURES OR DIAGRAMS (AS APPROPRIATE) IN AN EDITABLE MICROSOFT WORD FORMAT SO THAT THE OWNER MAY REBRAND OR REFORMAT THE INSTRUCTION PACKET WITH THEIR FORMAT STANDARDS.
11. THE AVIC SHALL NOT PROVIDE TRAINING FOR OWNER-FURNISHED OR IN-HOUSE TECHNOLOGIES NOT SUPPORTED BY NOR CONFIGURED BY THE AVIC.

CUTOVER SERVICES:

1. BY DESIGN OF THE PROJECT SCHEDULE, THE OWNER UNDERSTANDS AND EXPECTS THAT NOT ALL AUDIOVISUAL SYSTEMS OR SERVICES MAY BE UNDERGOING FINAL INSTALLATION, CONFIGURATION, REFINEMENT, OR TESTING BY THE DATE OF THEIR OCCUPANCY. THEREFORE, PRIOR TO THE OWNER'S OCCUPANCY OF THE FACILITY, THE AVIC SHALL ISSUE A DETAILED LIST TO SENTINEL ANY AND ALL SYSTEMS WHICH WILL NOT BE FULLY OPERATIONAL BY THE MOVE-IN DATE, AS WELL AS AN EXPECTED DATE OF COMPLETION.
2. AT THIS TIME, THE AVIC SHALL TURN OVER ALL MICROPHONES, REMOTE CONTROL DEVICES, KEYS TO LOCKED EQUIPMENT, AND ANY AND ALL ITEMS STORED BY THE AVIC FOR SAFEKEEPING, AS PREVIOUSLY DEFINED IN THIS REQUIREMENT.
3. THE AVIC SHALL TURN OVER ALL OPERATIONS AND MAINTENANCE MANUALS IN THE QUANTITIES AND FORMATS DIRECTED BY THE GC. THE AVIC SHOULD EXPECT TO PROVIDE ONE PAPER COPY FOR EACH TYPE OF DEVICE, AND ELECTRONIC VERSIONS ON DISC TO REDUCE PAPER USAGE.
4. CODE AND PROGRAMMING FOR THE CONTROL SYSTEMS, DEVICE DRIVERS, PATCHES, UPGRADES, ETC., SHALL BE SUBMITTED ON COMPACT DISC. ALL DISCS FOR PRODUCT SOFTWARE, BACKUPS, ETC., SHALL BE SUBMITTED IN A SINGLE BINDER DESIGNED TO HOLD COMPACT DISCS OR DVDS AND LABELED CLEARLY.
5. AT CLOSEOUT, CLEAN OR RE-CLEAN ENTIRE WORK TO NORMAL LEVEL FOR "FIRST CLASS" MAINTENANCE/CLEANING OF BUILDING PROJECTS OF A SIMILAR NATURE. REMOVE NON-PERMANENT PROTECTION AND LABELS, CLEAN EXPOSED FINISHES, TOUCH-UP MINOR FINISH DAMAGE, REMOVE DEBRIS AND BROOM-CLEAN SPACES, SANITIZE WORK, AND PERFORM SIMILAR CLEANUP OPERATIONS NEEDED TO PRODUCE A CLEAN CONDITION.
6. THE AVIC SHALL BE AVAILABLE FOR ON-SITE SUPPORT DURING AND IMMEDIATELY AFTER START-UP FOR A PERIOD OF 2 BUSINESS DAYS.

SUPPORT AND WARRANTY:

1. THE AUDIOVISUAL SYSTEM SHALL BE END-TO-END CERTIFIED BY THE AVIC.
2. AN EXTENDED MATERIAL, LABOR AND PERFORMANCE WARRANTY SHALL BE PROVIDED BY THE INSTALLER FOR PERIOD OF AT LEAST ONE (1) YEAR.
3. THE AVIC SHALL PROVIDE ONGOING SUPPORT FOR WARRANTY WORK AS WELL AS MODIFICATIONS AND ENHANCEMENTS THAT MAY BE REQUIRED AS PART OF THAT WARRANTY.
4. THE AVIC SHALL PROVIDE PRICING FOR OPTIONAL SERVICE CONTRACTS THAT WOULD

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DANE COUNTY EMERGENCY MANAGEMENT REMODEL

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FITCHBURG, WISCONSIN

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AUDIOVISUAL REQUIREMENTS 4

AV0.4

EXTEND THE WARRANTY PERIOD OF THE INSTALLATION. TERMS SHALL INCLUDE ANY AND ALL BENEFITS OF THEIR WARRANTY.

5. THE AVIC SHALL REPAIR OR REPLACE ALL DEFECTIVE EQUIPMENT OR WORKMANSHIP (WITH NO COST TO THE OWNER) FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF THE ACCEPTANCE DEMONSTRATION, REGARDLESS OF WHEN THE EQUIPMENT WAS ORIGINALLY PURCHASED OR WORKMANSHIP PERFORMED BY THE AVIC . THE COMMENCEMENT DATE OF THE WARRANTY SHALL BEGIN AND ONLY BEGIN WITH THE ACCEPTANCE DEMONSTRATION.
6. ANY AND ALL EQUIPMENT FURNISHED AS PART OF THIS INSTALLATION SHALL BE WARRANTED FOR PARTS AND LABOR FOR ONE (1) YEAR OR THE ENTIRE SPAN OF THE RESPECTIVE MANUFACTURER'S WARRANTY (WHICHEVER IS LONGER).
7. THE AVIC SHALL RESPOND TO ANY REPORTS OF DEFECTIVE SYSTEM PERFORMANCE BY THE OWNER WITHIN FORTY-EIGHT (48) BUSINESS HOURS. THE AVIC SHALL RESPOND BY ASSESSING AND DIAGNOSING THE PROBLEM. THE TIME TO REPAIR OR REPLACE ANY DEFECTIVE ITEM COVERED BY THE WARRANTY SHALL BE NO LONGER THAN IS REQUIRED TO RECEIVE REPLACEMENT PARTS PLUS FORTY-EIGHT (48) HOURS.
8. THE AVIC SHALL PROVIDE A MINIMUM OF FOUR (4) SERVICE VISITS TO THE SITE FOR INSPECTION, CLEANING, AND ADJUSTMENT OF THE EQUIPMENT DURING THE YEAR-LONG WARRANTY PERIOD.
   - 8.1. DUSTING AND CLEANING
   - 8.2. ALL FIRMWARE OR SOFTWARE UPGRADES RECOMMENDED BY MANUFACTURERS
   - 8.3. ENSURING ALL CABLE AND WIRING LABELS ARE PROPERLY ATTACHED
9. THESE SHALL BE SCHEDULED WITH THE OWNER PRIOR TO EACH VISIT SO THAT QUESTIONS OR FOLLOWUP ISSUES CAN BE GATHERED AND PRESENTED, IF AND WHERE NECESSARY. THE AVIC SHALL DELIVER TO THE OWNER ALL DOCUMENTATION OUTLINING THE TERMS AND CONDITIONS OF THE WARRANTY.
10. THE AVIC MAY PRESENT AT TIME OF PROPOSAL ANY ADDITIONAL SERVICE PACKAGES AND SUPPORT OR WARRANTY PLANS IN ADDITION TO THOSE REQUIRED HERE, INCLUDING BUT NOT LIMITED TO:
    - 10.1. AN EXTENDED 2-YEAR PLAN
    - 10.2. AN EXTENDED 3-YEAR PLAN

PROGRAMMING:

1. WHERE KNOWN AND AVAILABLE, USE THE OWNER'S NAMING CONVENTION FOR ROOM NAMES, FOR EXAMPLE, IN THE CONFIGURATION OF EQUIPMENT WILL ALLOW FUTURE AUDIOVISUAL SUPPORT PERSONNEL A FASTER MEANS OF IDENTIFYING ROOMS AND USING THESE APPLICATIONS.
2. THE PROGRAMMER REMAINS SOLELY RESPONSIBLE TO IDENTIFY FULL FEATURE SETS AND POTENTIAL OPTIONS, AND PRESENT THESE TO THE OWNER FOR CONSIDERATION. THIS SECTION IS INTENDED AS A GUIDE TO THE OWNER'S WISHES AND EXPECTATIONS FOR OPERABILITY.
3. THE PROGRAMMER SHALL PROVIDE THE OWNER MOCK UPS OF ALL TOUCH PANEL SCREENS (IN PDF FORM) FOR PREVIEW, REVIEW, COMMENTARY, AND CHANGE REQUESTS, PRIOR TO FINAL COMPILATION AND INSTALLATION. IT IS IMPERATIVE THAT THE OWNER SIGN OFF ON ALL SCREENS, MENUS, SUB-SCREENS, AND PAGES PRIOR TO FINAL INSTALLATION.

PROGRAMMING GOALS:

1. THIS SECTION REVIEWS THE PROGRAMMING AND INTERFACE SUGGESTIONS REQUIRED FOR THIS SCOPE OF WORK. IT IS INTENDED TO PROVIDE THE AVIC A SENSE OF THE PROGRAMMING REQUIRED FOR THE CONTROL SYSTEM. IT IS ESSENTIAL THAT THESE SYSTEMS BE TRANSPARENTLY EASY FOR VISITORS AND NOVICES TO USE. WHILE EVERY EFFORT HAS BEEN MADE TO PROVIDE THIS DETAIL, THE AVIC SHOULD RECOGNIZE A RESPONSIBILITY TO APPLY CREATIVE LAYOUT AND FOLLOW INTERFACE GUIDELINES WHEN PROGRAMMING THE TOUCH PANELS.
2. THE AVIC IS ENCOURAGED TO INCORPORATE THE OWNER'S OFFICIAL LOGO AND COLOR SCHEME INTO THE USER INTERFACE, BUT SHALL FOLLOW THE REQUIREMENTS SET FORTH IN THE FOLLOWING PUBLICATIONS:
   - 2.1. AVIXA/INFOCOMM DASHBOARD FOR CONTROLS DESIGN GUIDE
   - 2.2. AVIXA/INFOCOMM DASHBOARD FOR CONTROLS DESIGN REFERENCE
   - 2.3. AVIXA/INFOCOMM DASHBOARD FOR CONTROL INTEGRATOR'S GUIDE
   - 2.4. AMX USER INTERFACE DESIGN GUIDE
3. THE INTERFACE MAY MAKE USE OF EITHER SOFT BUTTONS, BUTTONS ON THE TOUCH SCREEN, OR A COMBINATION THEREOF.
4. THE USE OF STANDARD ICONS FROM THE CONTROL SYSTEM MANUFACTURER (SUCH AS THOSE AT WWW.CRESTRON.COM/GUI) AS WELL AS THE USE OF WIDELY AVAILABLE FREE TEMPLATES IS ENCOURAGED TO PROVIDE A HIGH-QUALITY LOOK ACROSS ALL PAGES AND PANELS.
5. NOT ALL THEMES ARE APPROPRIATE FOR ALL PANELS DUE TO SIZE AND SHAPE. THE PROGRAMMER SHALL TAILOR ALL PANELS AND PAGES ACCORDINGLY.
6. ALL CONTROL SYSTEMS PROGRAMMING AND INTERFACE DESIGN SHALL BE THE PROPERTY OF THE OWNER. THE OWNER SHALL OWN ALL RIGHTS TO THE CODE, COMPILED AND NON-COMPILED, AT ALL STAGES OF PROGRAMMING UP TO AND INCLUDING THE FINAL VERSIONS. SENTINEL UNDERSTANDS THAT SOME PROGRAMMING MODULES MAY BE THE RESULT OF CUSTOM WORK AND UTILIZE THE PROGRAMMER'S INTELLECTUAL PROPERTY; HOWEVER, THE OWNER SHALL HAVE NO IMPEDIMENTS TO CHANGING, EXPANDING, OR REINTEGRATING THE CONTROL SYSTEM WITH THE AVIC OR OTHER INSTALLATION FIRMS IN THE FUTURE. PASSWORD-PROTECTED CODE IS NOT ACCEPTABLE.
7. THE AVIC SHALL SUBMIT GRAPHIC PRINTOUTS OR DISTRIBUTABLE MOCK-UPS OF THE USER INTERFACE FOR EACH CATEGORY OF CONTROL SYSTEM TO THE OWNER FOR PRIOR REVIEW AND APPROVAL.
8. CCP AND CAIP
   - 8.1. THE AVIC SHALL UTILIZE A “CERTIFIED CRESTRON PROGRAMMER” FOR ALL INTERFACE PROGRAMMING. THE INTEGRATOR SHALL PROVIDE A COPY OF THE CERTIFICATE BEARING THE NAME OF THE PROGRAMMER.
   - 8.2. IF THE AVIC DOES NOT HAVE A CERTIFIED CRESTRON PROGRAMMER ON STAFF, THAT INTEGRATOR SHALL CONTRACT A CAIP (CRESTRON AUTHORIZED INDEPENDENT PROGRAMMER) AND PROVIDE THE NAME OF THE CAIP AS PART OF THE BID RESPONSE. IF USING A CAIP, THE AVIC SHALL BE BOUND TO COMPLETE THE INTEGRATION WITH THAT SAME CAIP. SHOULD THE CAIP, FOR ANY REASON, NOT BE AVAILABLE OR IS UNABLE TO CONTINUE THE PROJECT TO COMPLETION, THE OWNER AND THE PROJECT TEAM SHALL BE NOTIFIED IN WRITING ABOUT THE REASON FOR THE CHANGE AND TO SUBMIT THE CANDIDATE REPLACEMENT FOR PRIOR APPROVAL.
   - 8.3. CONSIDERATION WILL BE GIVEN TO AN AVIC THAT HAS ON-STAFF PROGRAMMERS OVER THOSE WHO UTILIZE OUTSIDE “FOR-HIRE” PROGRAMMERS. OUTSIDE “FOR-HIRE” PROGRAMMERS CAN ONLY BE CAIPS AND IN GOOD STANDING WITH CRESTRON'S CAIP PROGRAM.
   - 8.4. DOCUMENTATION OF THE AVIC'S CERTIFIED CRESTRON PROGRAMMER'S CONTINUING EDUCATION SHOULD ALSO BE SUBMITTED IF THAT INDIVIDUAL HAS ATTENDED CRESTRON'S ANNUAL TRAINING FOR CERTIFIED CRESTRON PROGRAMMERS.
   - 8.5. THE AVIC SHALL BE RESPONSIBLE FOR ALL COORDINATION AND MANAGEMENT BETWEEN THE CAIP, THE AVIC'S INSTALLATION TEAM, SENTINEL, AND THE OWNER DURING THE DEVELOPMENT AND SUBSEQUENT REVISIONS OF THE CONTROL SYSTEM PROGRAMMING TO ENSURE ALL INTENDED FUNCTIONS ARE ACHIEVED.
9. THE AVIC SHALL SUBMIT GRAPHIC PRINTOUTS OR DISTRIBUTABLE MOCK-UPS OF THE USER INTERFACE FOR EACH CATEGORY OF CONTROL SYSTEM TO THE OWNER FOR PRIOR REVIEW AND APPROVAL.

PANEL PROGRAMMING REQUIREMENTS FOR THE EOC:

1. DAILY INFORMATION
   - 1.1. SHOW THE CURRENT TIME (SHOWN ON ALL SCREENS)
   - 1.2. SHOW THE CURRENT DATE (SHOWN ON ALL SCREENS)
2. ROOM VOLUME (ALL SCREENS):
   - 2.1. UP
   - 2.2. DOWN
   - 2.3. MUTE (THIS SHALL BE AN OVER-SIZED RED BUTTON). ONCE SELECTED, MUTE SHALL REMAIN SELECTED SO THAT VOLUME CAN BE ADJUSTED UP OR DOWN. THIS IS INTENDED TO REACT TO VERY LOUD SOUNDTRACKS OR FEEDBACK, ALLOWING THE USER TO LOWER THE VOLUME WHILE THE SYSTEM IS MUTED. MUTE MUST BE PRESSED AGAIN TO UN-MUTE.
3. “END SESSION,” WHICH RETURNS ALL DEVICES TO SLEEP.
4. PRESENTATION
   - 4.1. THIS SCREEN ALLOWS THE ROOM USERS TO ROUTE INPUTS AND OUTPUTS FOR PRESENTATIONS.
   - 4.2. PROVIDE ICONS AND FUNCTIONALITY TO ROUTE INPUTS TO OUTPUTS APPROPRIATE TO THE USE OF THE ROOM. FOR EXAMPLE, FLOOR INPUT EAST TO DISPLAY 1, AND SO ON.
   - 4.3. THE DEFAULT PRESENTATION SHALL BE THE LOCAL AIRTAME OUTPUT BEHIND EACH DISPLAY TO EACH DISPLAY, AS DESCRIBED IN THE EOC SECTION, ABOVE.
   - 4.4. MICROPHONE CONTROL
     - 4.4.1. MUTE ALL MICS
     - 4.4.2. EAST MIC MUTED
     - 4.4.3. WEST MIC MUTED
     - 4.4.4. UNMUTE MICS [RETURNS TO THE PREVIOUSLY SELECTED PRESET STATE]
5. STREAMING
   - 5.1. PROVIDE AN INTERFACE THAT ALLOWS A USER TO SELECT WHICH STREAMING “CHANNEL” APPEARS ON WHICH DISPLAY.
   - 5.2. VOLUME UP/MUTE/DOWN
6. VIDEO CONFERENCING
   - 6.1.1. SELECTION OF THIS OPTION SWITCHES TO THE INPUT OF THE OWNER-FURNISHED COMPUTER, ALLOWING ITS DESKTOP TO APPEAR FOR WEB BROWSING, WEB CONFERENCING, OR OTHER APPLICATIONS.
   - 6.1.2. NO OTHER CONTROLS ARE NECESSARY; A TEXT DESCRIPTION ON THE PANEL MAY DESCRIBE TYPICAL NEXT STEPS FOR THE FIRST-TIME USER.
   - 6.2. AUDIO CONFERENCING
     - 6.2.1. STANDARD TELEPHONE DTMF KEYS: 1-0, *, #
     - 6.2.2. ANSWER CALL
     - 6.2.3. DIAL
     - 6.2.4. HANG UP
     - 6.2.5. MUTE
     - 6.2.6. CONFERENCE
     - 6.2.7. TRANSFER
     - 6.2.8. PRESET NUMBERS MENU
     - 6.2.9. EDIT/STORE PRESETS
     - 6.2.10. MESSAGES/VOICE MAIL
   - 6.3. FLAT PANEL DISPLAY CONTROL
     - 6.3.1. POWER ON/OFF BUTTONS
     - 6.3.2. RESET (RETURN THE DISPLAY TO DEFAULT INPUT, AS WELL AS OTHER AVIC-ENGINEERED SETTINGS)
     - 6.3.3. INPUT SELECT (PROVIDE ONE TOGGLE BUTTON FOR EACH INPUT)
     - 6.3.4. VOLUME UP
     - 6.3.5. VOLUME DOWN
     - 6.3.6. MUTE [AUDIO]
     - 6.3.7. VIDEO MUTE

PANEL/APPLICATION PROGRAMMING REQUIREMENTS FOR BREAKOUT/CONFERENCE ROOMS AND OFFICES:

1. THESE ROOMS SHALL FEATURE A SIMILAR LOOK AND FEEL ON THEIR CONTROL INTERFACES (PANELS IN ROOMS, USER APPLICATIONS IN OFFICES).
2. THE DEFAULT, WHEN THE POWER TO THE DISPLAY IS ON, IS THE OUTPUT OF THE AIRMEDIA BEHIND THE DISPLAY IN QUESTION.
3. DISPLAY POWER ON/OFF
4. VOLUME UP/MUTE/DOWN
5. STREAMING CHANNEL SELECTION
6. INPUT SELECTION (ON EXECUTIVE OFFICES ONLY)
7. PROVIDE FOR AND CREATE A “CRESTRON ONE” VERSION FOR PHONE USE.

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AUDIOVISUAL REQUIREMENTS 5

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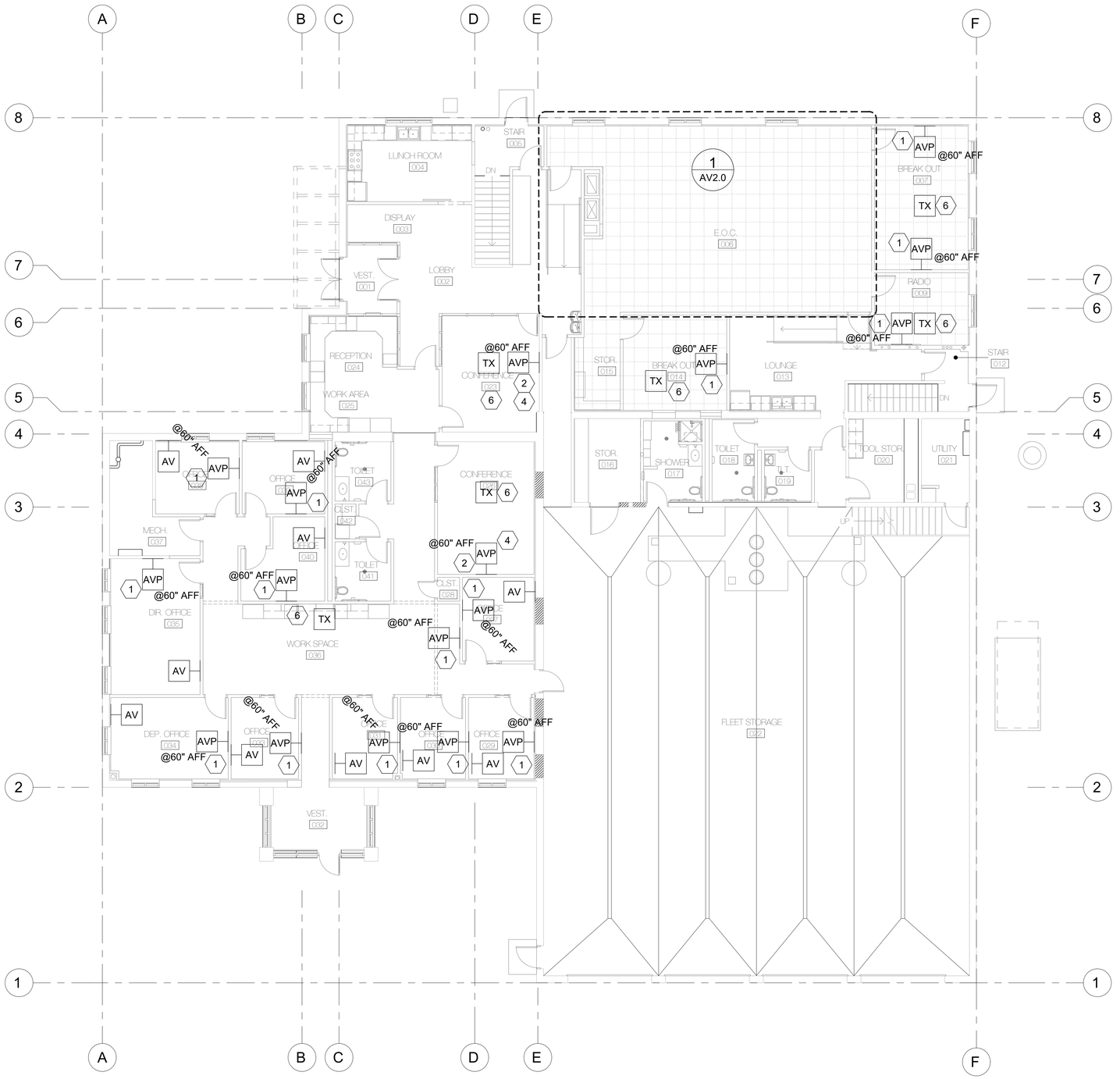
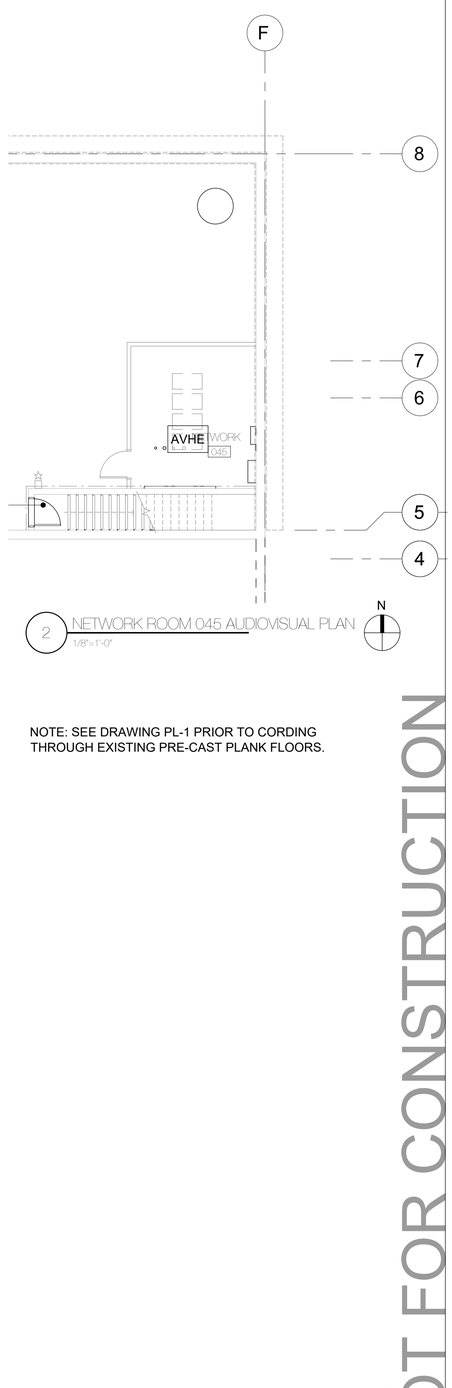


1 AUDIOVISUAL PLAN
1/8"=1'-0"



2 NETWORK ROOM 045 AUDIOVISUAL PLAN
1/8"=1'-0"

NOTE: SEE DRAWING PL-1 PRIOR TO CORDING THROUGH EXISTING PRE-CAST PLANK FLOORS.

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FIRST FLOOR AUDIOVISUAL PLAN

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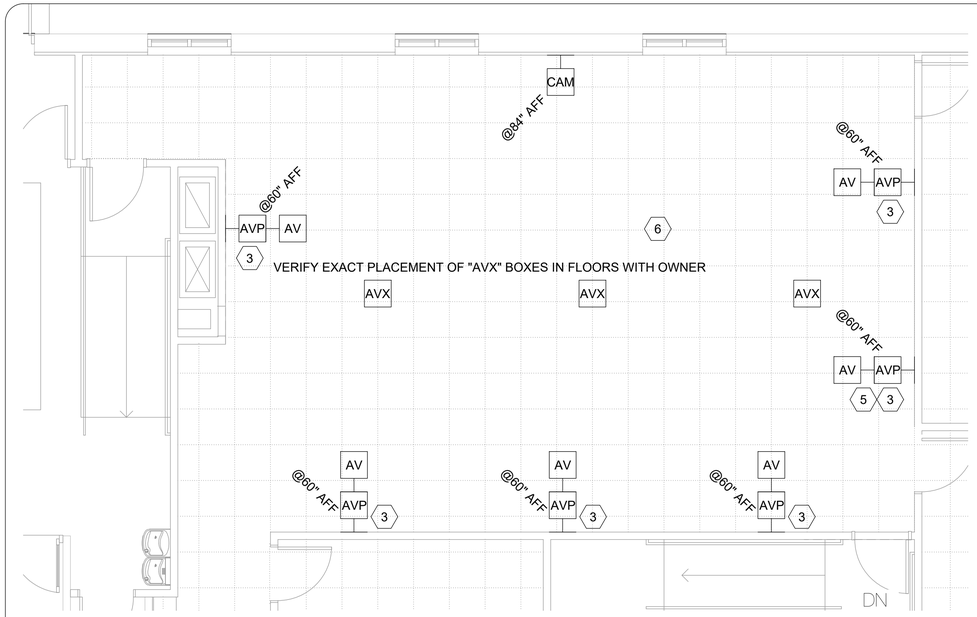
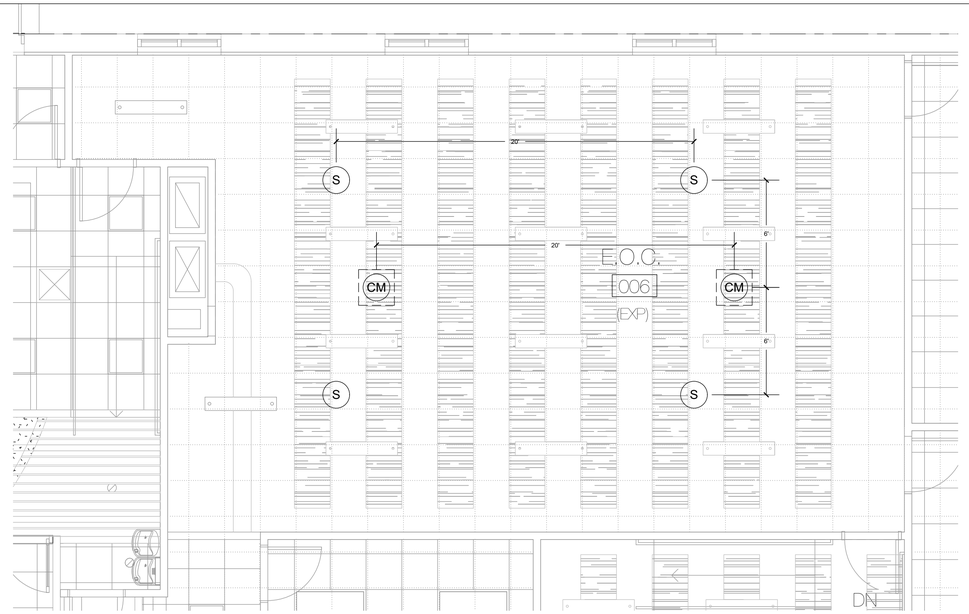
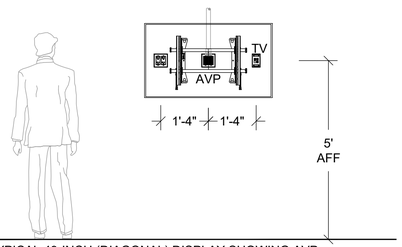


1 EOC AUDIOVISUAL LAYOUT
1/4"=1'-0"

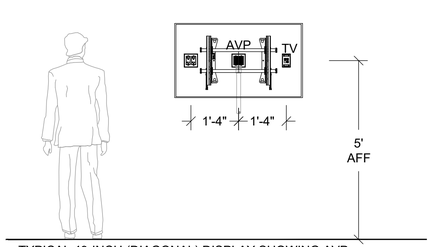


2 EOC REFLECTED CEILING AUDIOVISUAL LAYOUT
1/4"=1'-0"



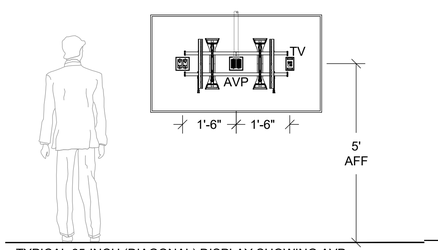
TYPICAL 49-INCH (DIAGONAL) DISPLAY SHOWING AVP (PASSTHROUGH), POWER AND DATA POSITIONED BY DISPLAY MOUNT. STUB UP 1-1/4"CONDUIT.

3 49" DISPLAYS ON SLAB FLOORS
1/2"=1'-0"



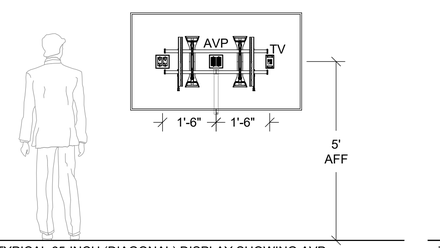
TYPICAL 49-INCH (DIAGONAL) DISPLAY SHOWING AVP (PASSTHROUGH), POWER AND DATA POSITIONED BY DISPLAY MOUNT. STUB DOWN 1-1/4"CONDUIT TO BELOW RAISED FLOOR.

4 49" DISPLAYS ON RAISED FLOORS
1/2"=1'-0"



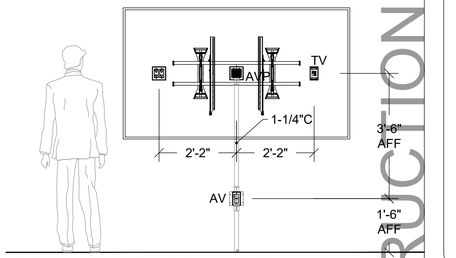
TYPICAL 65-INCH (DIAGONAL) DISPLAY SHOWING AVP (PASSTHROUGH), POWER AND DATA POSITIONED BY DISPLAY MOUNT. STUB UP 1-1/4"CONDUIT.

5 49" DISPLAYS ON SLAB FLOORS
1/2"=1'-0"



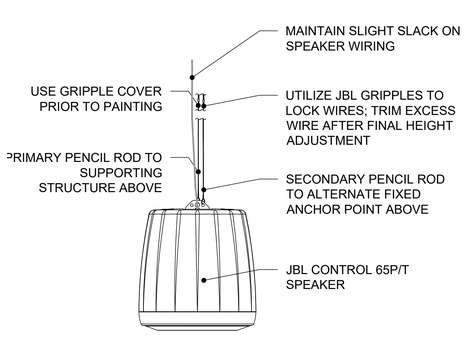
TYPICAL 65-INCH (DIAGONAL) DISPLAY SHOWING AVP (PASSTHROUGH), POWER AND DATA POSITIONED BY DISPLAY MOUNT. STUB DOWN 1-1/4"CONDUIT TO BELOW RAISED FLOOR.

6 65" DISPLAYS ON RAISED FLOORS
1/2"=1'-0"

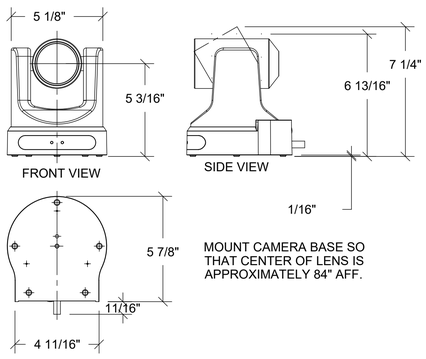


TYPICAL 84-TO-86-INCH (DIAGONAL) DISPLAY SHOWING AVP (PASSTHROUGH), POWER AND DATA POSITIONED BY DISPLAY MOUNT. CONNECT HDMI INPUT ("AV") TO AVP WITH 1-1/4"C. STUB DOWN 1-1/4"C BELOW RAISED FLOOR.

7 84" DISPLAYS ON RAISED FLOORS
1/2"=1'-0"



8 TYPICAL REQUIREMENTS FOR PENDANT CEILING SPEAKERS



9 QSC Q-SYS CAMERA

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EOC AUDIOVISUAL LAYOUT

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SOURCE	LOCATION	DESCRIPTION
1	BREAKOUT 007	HDMI INPUT
2	BREAKOUT 014	HDMI INPUT
3	CONF RM 023	HDMI INPUT
4	CONF RM 026	HDMI INPUT
5	EOC 006	HDMI ("AVX") INPUT 1*
6	EOC 006	HDMI ("AVX") INPUT 2*
7	EOC 006	HDMI ("AVX") INPUT 3*
8	EOC 006	AIRMEDIA 1 IN EOC 006
9	EOC 006	AIRMEDIA 2 IN EOC 006
10	EOC 006	AIRMEDIA 3 IN EOC 006
11	EOC 006	AIRMEDIA 4 IN EOC 006
12	EOC 006	AIRMEDIA 5 IN EOC 006
13	EOC 006	AIRMEDIA 6 IN EOC 006
14	HUDDLE 036	AIRMEDIA
15	HUDDLE 036	HDMI INPUT
16	NETWORK 045	VIDEO CONFERENCING PC
17	NETWORK 045	CATV RECEIVER 1**
18	NETWORK 045	CATV RECEIVER 2**
19	NETWORK 045	CATV RECEIVER 3**
20	NETWORK 045	CATV RECEIVER 4**
21	NETWORK 045	CATV RECEIVER 5**
22	OFFICE 034	HDMI INPUT
23	OFFICE 035	HDMI INPUT
24	RADIO 009	HDMI INPUT
25	STORAGE 015	LAPTOP 1
26	STORAGE 015	LAPTOP 2
27	STORAGE 015	LAPTOP 3
28	STORAGE 015	LAPTOP 4
29	STORAGE 015	LAPTOP 5
30	STORAGE 015	LAPTOP 6

RECEIVER	LOCATION	DESCRIPTION
1	DISPLAY	BREAKOUT 007 N
2	DISPLAY	BREAKOUT 007 S
3	DISPLAY	RADIO 009
4	DISPLAY	BREAKOUT 014
5	DISPLAY	CONF 023
6	DISPLAY	CONF 026
7	DISPLAY	HUDDLE 036
8	DISPLAY	OFFICE 027
9	DISPLAY	OFFICE 029
10	DISPLAY	OFFICE 030
11	DISPLAY	OFFICE 031
12	DISPLAY	OFFICE 033
13	DISPLAY	OFFICE 034
14	DISPLAY	OFFICE 035
15	DISPLAY	OFFICE 038
16	DISPLAY	OFFICE 039
17	DISPLAY	OFFICE 040
18	DISPLAY 1	EOC 006
19	DISPLAY 2	EOC 006
20	DISPLAY 3	EOC 006
21	DISPLAY 4	EOC 006
22	DISPLAY 5	EOC 006
23	DISPLAY 6	EOC 006
24	NETWORK 045	QSC QSYS CORE 110F
25	NETWORK 045	VIDEO INGEST/PC

* UTILIZES DM-NVX-E760C CARD IN DMF-CI-8 CHASSIS IN NETWORK 045

** UTILIZES DM-NVX-350C CARD IN DMF-CI-8 CHASSIS IN NETWORK 045

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STREAMING MEDIA NETWORK

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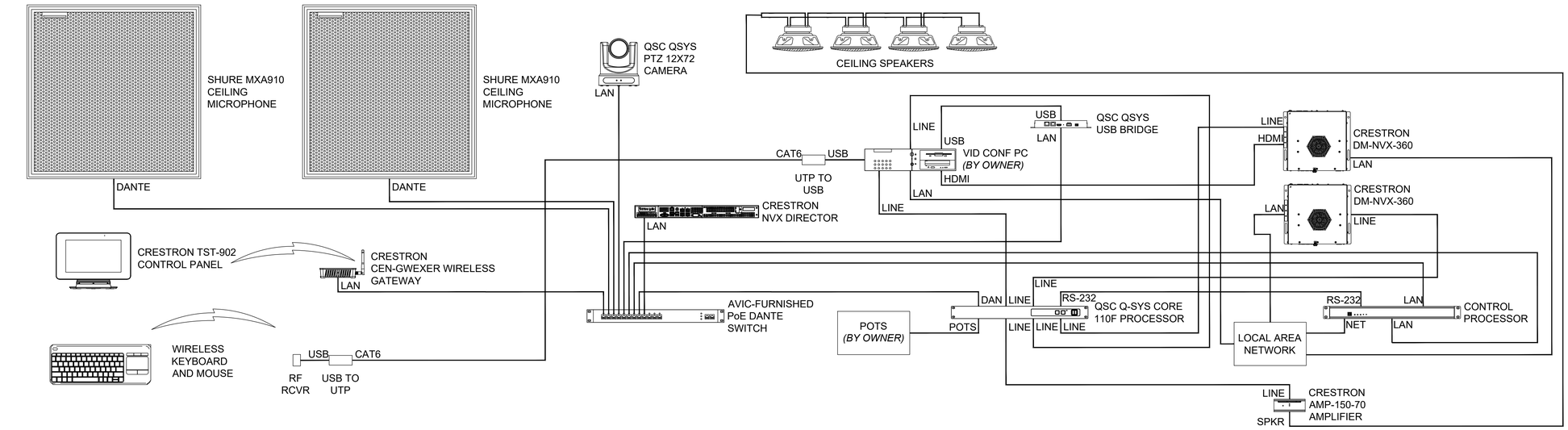
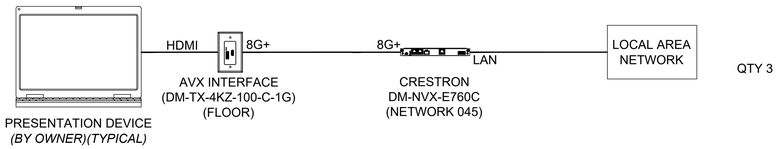
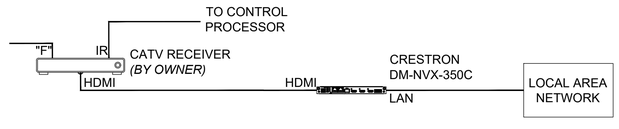
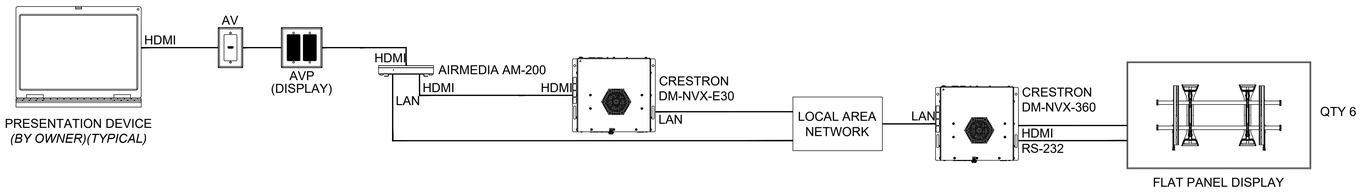


1 AUDIOVISUAL SCHEMATIC CONNECTIONS FOR EOC CONFERENCING



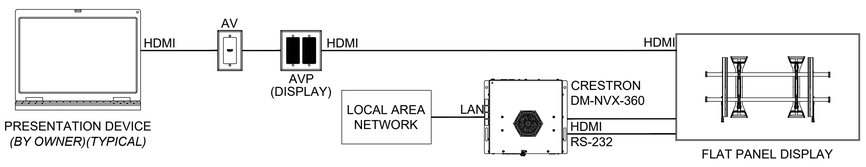


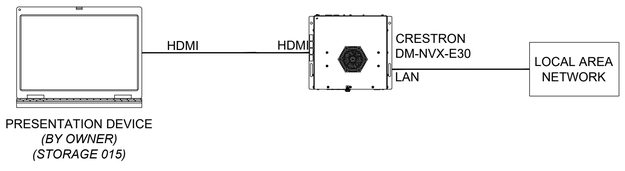
2 AUDIOVISUAL SCHEMATIC CONNECTIONS FOR EOC FLOOR CONNECTIONS



3 AUDIOVISUAL SCHEMATIC CONNECTIONS FOR CABLE TELEVISION IN NETWORK 045

4 AUDIOVISUAL SCHEMATIC CONNECTIONS FOR EOC WALL DISPLAYS





5 AUDIOVISUAL SCHEMATIC CONNECTIONS FOR OFFICES 027, 029, 030, 031, 033, 036, 039, AND 040

6 AUDIOVISUAL SCHEMATIC CONNECTIONS FOR STORAGE 015 CONNECTIONS

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SCHEMATIC AUDIOVISUAL CONNECTIONS 1

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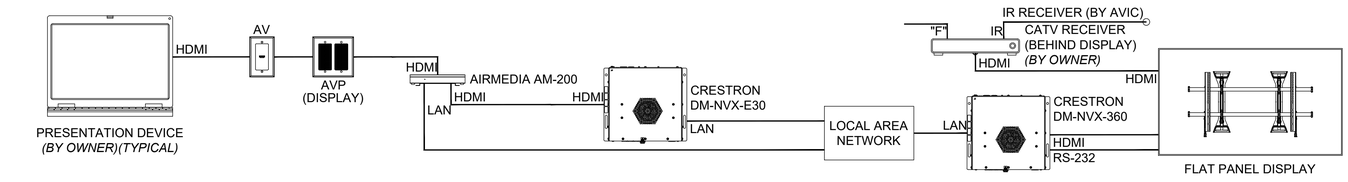
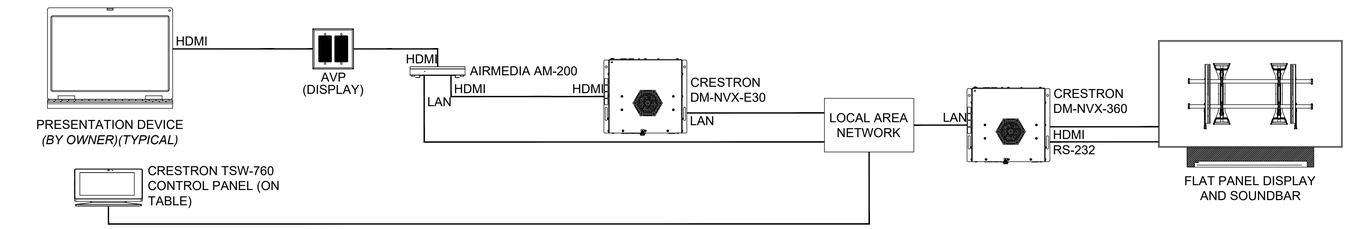
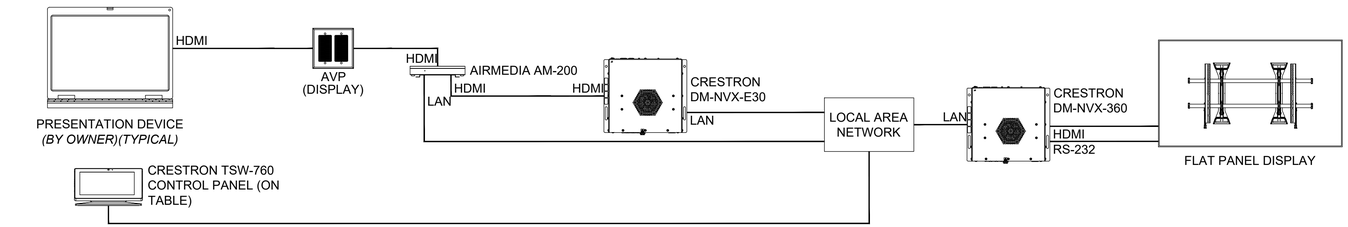


1 AUDIOVISUAL SCHEMATIC CONNECTIONS FOR OFFICES 034 AND 035



2 AUDIOVISUAL SCHEMATIC CONNECTIONS FOR CONFERENCE ROOMS 023 AND 026



3 AUDIOVISUAL SCHEMATIC CONNECTIONS FOR BREAKOUT ROOMS 007, 014, RADIO ROOM 009, AND WORK SPACE 036

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SCHEMATIC AUDIOVISUAL CONNECTIONS 2

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COMMUNICATIONS & LOW VOLTAGE CONDUIT REQUIREMENTS:

ALL CONDUIT RUNS SHALL BE 3/4" EMT, UNLESS NOTED OTHERWISE.

ALL BOXES SHALL BE A MINIMUM OF 4-11/16" x 4-11/16" x 2-1/8" DEEP BOX WITH A SINGLE GANG TRIM RING MOUNTED FLUSH TO THE WALL SURFACE, UNLESS NOTED OTHERWISE.

ALL MOUNTING HEIGHTS ARE TO THE CENTERLINE OF THE BACKBOX UNLESS NOTED OTHERWISE.

ALL CONDUIT SHALL BE ROUTED ABOVE CEILINGS, BELOW FLOORS, OR STUBBED UP WITHIN WALLS; NO CONDUIT SHALL BE EXPOSED UNLESS APPROVED BY THE ARCHITECT OR OWNER.

ALL CONDUITS IN WALLS SHALL STUB UP AT LEAST 6-INCHES ABOVE THE FINISHED CEILING. ALL STUBS SHALL BE REAMED AND BUSHED AT BOTH ENDS.

ALL CONDUIT PENETRATIONS THROUGH FIRE-RATED PARTITIONS SHALL BE SEALED AS REQUIRED BY CODE. ALL BACKBOXES MOUNTED WITHIN FIRE-RATED PARTITIONS SHALL MEET THE FIRE RATING OF THE PARTITION AS REQUIRED BY CODE.

PROVIDE PULL STRINGS IN ALL CONDUIT RUNS LONGER THAN 10-FEET.

PROVIDE PULL BOXES EVERY 100 LINEAR FEET OR AFTER TWO SUCCESSIVE 90° BENDS.

ALL JUNCTION AND PULL BOXES SHALL BE FURNISHED WITH ACCOMPANYING BLANK COVER PLATE.

ALL BOXES IN EXTERIOR LOCATIONS SHALL BE WEATHERPROOF AND WATERPROOF.

INSTRUCTIONS SHOWN IN DIMENSION LINES, DETAILS, ELEVATIONS, AND PLANS (IN THIS ORDER) TAKE PRECEDENCE OVER INSTRUCTIONS SHOWN IN LEGENDS.

CONDUIT AND CABLE ROUTING SHOWN IS SCHEMATIC AND IS NOT INTENDED TO REPRESENT INSTALLATION PATHS OR DISTANCES. ACTUAL ROUTING AND BOX LOCATIONS SHALL BE FIELD-VERIFIED FOR FEASIBILITY AND COORDINATED WITH OTHER DISCIPLINES BY THE INSTALLATION CONTRACTOR.

HORIZONTAL CONDUITS INTO EACH TECHNOLOGY AREA FROM THE EXTERIOR CEILING PLENUM ARE REQUIRED FOR CABLE ACCESS INTO THE ROOM FROM ALL LOCATIONS THROUGHOUT THE SPACE. THE ENDS OF THE CONDUITS SHALL BE REAMED AND BUSHED, AND EXTEND A MINIMUM OF 2-INCHES INTO THE ROOM.

CABLE	CONDUIT TRADE SIZE AND MAXIMUM QUANTITIES OF CABLES OF THAT O.D.						
O.D. (")	3/4"	1"	1-1/4"	1-1/2"	2"	3"	4"
0.16	10	19	33	46	75	200	333
0.18	8	13	23	32	52	139	231
0.20	6	11	19	25	42	112	187
0.25	4	6	12	16	27	71	120
0.27	3	6	10	14	22	60	102
0.30	2	4	8	10	18	48	82
0.33	1	4	6	8	14	40	68
0.35	1	3	6	8	12	36	60
0.38	1	2	5	7	10	30	50
0.40	1	2	4	6	10	28	46
0.45	1	1	3	5	8	22	38
0.50	1	1	2	4	6	16	30
0.55	1	1	1	3	5	14	24
0.60	N/A	1	1	2	4	12	20
0.67	N/A	1	1	1	3	10	16
0.70	N/A	1	1	1	3	8	14
0.75	N/A	N/A	1	1	2	7	12

NUMBER AND SIZE OF OF CONDUITS	PULL BOX SIZE (W x L x H IN INCHES)	FOR EACH ADDITIONAL CONDUIT ENTERING THE PULL BOX, INCREASE THE WIDTH
ONE 1-INCH	4 X 16 X 3	2 INCHES
ONE 1-1/4-INCH	6 X 20 X 3	3 INCHES
ONE 1-1/2-INCH	8 X 27 X 4	4 INCHES
ONE 2-INCH	8 X 36 X 4	5 INCHES
ONE 4-INCH	15 X 60 X 8	8 INCHES

CONDUIT DIAMETER	MINIMUM BEND RADIUS
1-INCH	4 INCHES
1-1/4-INCH	8 INCHES
1-1/2-INCH	9 INCHES
2-INCH	12 INCHES
4-INCH	40 INCHES

TELECOMMUNICATIONS GROUNDING NOTES:

1. REFER TO E-SERIES DRAWINGS FOR PANEL SCHEDULING INFORMATION AND GROUNDING ELECTRODE SYSTEM DATA.
2. A SINGLE GROUND SOURCE SHALL BE PROVIDED FOR GROUNDING ALL RACKS, TRAYS AND METAL FRAMES IN THE MAIN DISTRIBUTION FRAME. A TELECOMMUNICATIONS MAIN GROUNDING BUSBAR (TMGB) SHALL BE PROVIDED AND INSTALLED ON THE MAIN CROSS-CONNECT WALL AT A HEIGHT OF 8-FEET AFF. THE TMGB SHALL CONSIST AT A MINIMUM OF A PREDRILLED COPPER BUSBAR WITH HOLES FOR USE WITH STANDARD-SIZED LUGS, AND HAVE MINIMUM DIMENSIONS OF 1/4-INCH THICK BY 4-INCHES WIDE WITH A MINIMUM OF FORTY-EIGHT (48) CONNECTION POINTS. THE TMGB SHALL BE DIRECTLY BONDED TO THE ELECTRICAL SERVICE GROUND AND TO THE BUILDING STEEL.
3. A TELECOMMUNICATIONS GROUNDING BUSBAR (TGB) SHALL BE INSTALLED IN ANY/ALL TELECOM ROOMS. THE TGB SHALL BE MOUNTED ON THE HORIZONTAL CROSS-CONNECT WALL AT A HEIGHT OF 8-FEET AFF. THE TGB SHALL CONSIST OF A PREDRILLED COPPER BUSBAR WITH HOLES FOR USE WITH STANDARD-SIZED LUGS, AND HAVE MINIMUM DIMENSIONS OF 1/4-INCH THICK BY 2-INCHES WIDE WITH A MINIMUM OF TWELVE (12) CONNECTION POINTS.
4. A GROUND CABLE FROM THE TMGB TO EACH TGB SHALL BE INSTALLED TO CREATE A FORMAL TELECOMMUNICATIONS BONDING BACKBONE (TBB). THE TBB MAY NOT BE DAISY-CHAINED, BUT CAN BE TAPPED-OFF USING A SHORT BONDING CONDUCTOR. BARE COPPER CABLING IS ACCEPTABLE. THE TBB SHALL BE SIZED BASED ON THE LENGTH OF THE CABLE RUN.
5. THE CONTRACTOR SHALL PROVIDE AND INSTALL A MINIMUM #6 AWG GROUND WIRE FROM EACH OPEN RELAY RACK AND CABLE TRAY TO THE MAIN TELECOMMUNICATIONS GROUNDING BUSBAR OR TELECOMMUNICATIONS GROUNDING BUSBAR.
6. ANY PENETRATION THROUGH A FIRE-RATED WALL SHALL BE PROPERLY FIRE-STOPPED BY THE CONTRACTOR WITH THE APPROPRIATE FIRE-STOP MATERIAL PER APPLICABLE BUILDING AND ELECTRICAL CODES.
7. THE CONTRACTOR SHALL COORDINATE GROUND CABLE INSTALLATION WITH THE ARCHITECTS, MEP ENGINEERS AND THE OTHER TRADES ON THE PROJECT.
8. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ANY DAMAGE TO ANY COMPONENT OF THE TELECOMMUNICATIONS GROUNDING SYSTEM DURNING INSTALLATION.
9. THE CONTRACTOR SHALL VERIFY THAT THE SIZE OF THE TMGB AND THE TGB ARE ADEQUATE TO SUPPORT THE TELECOMMUNICATIONS GROUNDING REQUIREMENTS FOR THE PROJECT.

ANSI/TIA-607-B CONDUCTOR SIZES	
LENGTH IN FEET	CONDUCTOR SIZE (AWG)
LESS THAN 13	6
14 - 20	4
21 - 26	3
27 - 33	2
34 - 41	1
42 - 52	1/0
53 - 66	2/0
67 - 84	3/0
85 - 105	4/0
106 - 125	250 KCMIL
126 - 150	300 KCMIL
151 - 175	350 KCMIL
176 - 250	500 KCMIL
251 - 300	600 KCMIL
GREATER THAN 301	750 KCMIL

ABBREVIATIONS USED IN THESE DRAWINGS:

AVIC = AUDIOVISUAL CABLING CONTRACTOR
LVI = LOW VOLTAGE INSTALLER
EC = ELECTRICAL INSTALLATION CONTRACTOR
PIC = PAGING INSTALLATION CONTRACTOR
SIC = SECURITY INSTALLATION CONTRACTOR

NOTE: THE INSTALLATION CONTRACTOR SHALL COORDINATE WITH THE OWNER, ARCHITECT AND GENERAL CONTRACTOR FOR EXACT MOUNTING LOCATIONS PRIOR TO INSTALLATION OF ANY COMPONENTS.

NOTE: ALL RADIO TOWER, RADIO ANTENNA, AND RELATED CABLING BY OWNER.

NOTE: THE GENERAL CONTRACTOR SHALL SCHEDULE A SITE MEETING WITH THE OWNER AND THE RESPECTIVE LOW VOLTAGE AND ELECTRICAL CONTRACTORS TO REVIEW ALL LOCATIONS OF JUNCTION BOXES PRIOR TO INSTALLATION

▲ X

MOUNTING INFORMATION, WHERE *X* =

A	ABOVE CEILING
D	TO THE DESK
F	FLUSH-MOUNTED
H	HIDDEN UNDER WORKSURFACE
M	TO THE MULLION
R	TO THE RACK ITSELF
S	PLACED ON THE WORKSURFACE

AV X

MOUNTING INFORMATION, WHERE *X* =

A	ABOVE CEILING
D	TO THE DESK
F	FLUSH-MOUNTED
H	HIDDEN UNDER WORKSURFACE
M	TO THE MULLION
P	TO THE PODIUM
R	TO THE RACK ITSELF
S	PLACED ON THE WORKSURFACE
TX	TRANSMITTER
RX	RECEIVER

SECURITY LEGEND:

- (C) SIC FURNISHED AND INSTALLED CEILING-MOUNTED CAMERA LOCATION. DASHED LINES INDICATE DESIRED FIELD OF VIEW. REFER TO REQUIREMENTS DRAWINGS FOR REQUIREMENTS.
- (C) SIC FURNISHED AND INSTALLED WALL-MOUNTED CAMERA LOCATION. DASHED LINES INDICATE DESIRED FIELD OF VIEW. NUMBER(S) INDICATED MOUNTING HEIGHT (AFF). REFER TO REQUIREMENTS DRAWINGS FOR REQUIREMENTS.
- (C 360) SIC FURNISHED AND INSTALLED CEILING-MOUNTED PANAMORPHIC CAMERA LOCATION. REFER TO RESPECTIVE DETAIL DRAWING FOR REQUIREMENTS.
- (C 360) SIC FURNISHED AND INSTALLED WALL-MOUNTED PANAMORPHIC CAMERA LOCATION. REFER TO REQUIREMENTS DRAWINGS FOR REQUIREMENTS.
- [CR] SIC FURNISHED AND INSTALLED CARD READER LOCATION. MOUNT AT 42" AFF U.N.O. REFER TO REQUIREMENTS DRAWINGS FOR REQUIREMENTS.
- [DGP] SIC FURNISHED AND INSTALLED KEYSCAN DATA GATHERING PANEL LOCATION. WALL MOUNT AS REQUIRED. REFER TO REQUIREMENTS DRAWINGS FOR REQUIREMENTS.

  SIC FURNISHED AND INSTALLED DOOR RELEASE BUTTON LOCATION. REFER TO REQUIREMENTS DRAWINGS FOR REQUIREMENTS.
- [J] EC TO FURNISH TWO-GANG DEEP 1900 BOX WITH TWO GANG TRIM RING AT INDICATED HEIGHT AND COVER WITH BLANK FACEPLATE.
- (J) EC TO FURNISH TWO-GANG DEEP 1900 BOX ABOVE FINISHED CEILING IN ACCESSIBLE LOCATION AND COVER WITH BLANK FACEPLATE. SIC TO FURNISH AND INSTALL ALL WIRING.
- [J1] PRIMARY ACCESS CONTROL WIRING JUNCTION BOX. REFER TO ACCESS CONTROL DETAIL DRAWINGS. SIC TO SPECIFY EXACT SIZE AT EACH DOOR. EC TO FURNISH MINIMUM 6" X 6" X 4" BOX ABOVE CEILING IN ACCESSIBLE LOCATION WITH REMOVABLE COVER.
- [KP] SIC FURNISHED AND INSTALLED KEYPAD/CARD READER LOCATION. MOUNT AT 42" AFF U.N.O. REFER TO REQUIREMENTS DRAWINGS FOR REQUIREMENTS.

REFER TO DOOR HARDWARE SCHEDULE ON DRAWING A6.1 FOR ADDITIONAL INFORMATION.

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COUNTY of DANE WISCONSIN 1839

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LEGEND AND GENERAL NOTES

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GENERAL SCOPE REQUIREMENTS:

1. THE SIC SHALL FURNISH AND INSTALL A NEW PHYSICAL SECURITY SYSTEM INCLUDING THE FOLLOWING COMPONENTS AS SPECIFIED IN THESE DRAWINGS.
2. ALL ASSOCIATED MATERIALS AND LABOR REQUIRED FOR A COMPLETE INSTALLATION OF THE PHYSICAL SECURITY SYSTEM SHALL BE PROVIDED BY THE SIC UNLESS OTHERWISE STATED IN THESE DRAWINGS.
3. DUE CARE AND DILIGENCE HAVE BEEN USED IN PREPARATION OF THIS INFORMATION, AND IT IS BELIEVED TO BE SUBSTANTIALLY CORRECT. HOWEVER, THE RESPONSIBILITY FOR DETERMINING THE FULL EXTENT OF EXPOSURE AND THE VERIFICATION OF ALL INFORMATION PRESENTED HEREIN SHALL REST SOLELY WITH THE SIC. THE OWNER, SENTINEL TECHNOLOGIES, OR ANY OTHER REPRESENTATIVES SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS IN THESE DRAWINGS, NOR FOR THE FAILURE ON THE PART OF THE SIC TO DETERMINE THE FULL EXTENT OF THE EXPOSURES.
4. THE SIC SHALL NOT BE ALLOWED TO TAKE ADVANTAGE OF ANY ERRORS OR OMISSIONS IN THESE DRAWINGS. WHERE ERRORS OR OMISSIONS APPEAR IN THESE DRAWINGS, THE SIC SHALL PROMPTLY NOTIFY SENTINEL TECHNOLOGIES IN WRITING OF SUCH ERRORS OR OMISSIONS. ANY SIGNIFICANT ERRORS, OMISSIONS, OR INCONSISTENCIES IN THE DRAWINGS SHALL BE REPORTED NO LATER THAN FIVE (5) DAYS BEFORE THE SUBMISSION DEADLINE. THE OWNER, SENTINEL TECHNOLOGIES, AND ANY OTHER REPRESENTATIVES SHALL NOT BE RESPONSIBLE FOR ERRORS THAT GO UNDISCOVERED.

DRAWINGS:

1. DRAWINGS ARE DIAGRAMMATIC IN NATURE AND MAY NOT REPRESENT EXACT FIELD CONDITIONS. THE SIC SHALL FIELD-VERIFY CRITICAL INSTALLATION REQUIREMENTS AND PROVIDE NECESSARY ASSOCIATED WORK.
2. THE LOCATIONS OF THE SECURITY EQUIPMENT AND DEVICES SHOWN ARE APPROXIMATE. THE SIC SHALL PRIOR TO INSTALLATION, VERIFY EXACT LOCATIONS BY CROSS-CHECKING SECURITY, ARCHITECTURAL, ELECTRICAL AND COMMUNICATIONS DRAWINGS, FIELD CONDITIONS, AND APPROVED SHOP DRAWINGS.
3. THE SIC SHALL BE PREPARED TO RELOCATE EQUIPMENT OR DEVICES PROVIDED UNDER THIS SCOPE OF WORK WHEN DIRECTED BY THE PROJECT TEAM WITHOUT COST, PROVIDED EQUIPMENT HAS NOT BEEN INSTALLED AND THE NEW LOCATION IS NOT GREATER THAN TWENTY-FIVE FEET (25') FROM THE LOCATION ORIGINALLY SHOWN.
4. INSTALLED DEVICES SHALL BE LOCATED AT THE SAME HEIGHT, AND OF THE SAME ORIENTATION, UNLESS OTHERWISE NOTED.
5. WIRING, SIGNAL AND CONTROL DEVICES, WHERE PROVIDED, SHALL BE FLUSH-MOUNTED IN FINISHED AREAS.

QUALITY ASSURANCE:

1. ALL MATERIALS AND LABOR PROVIDED BY THE SIC SHALL BE OF THE HIGHEST QUALITY.
2. THE SIC SHALL BE CERTIFIED TO INSTALL THE SECURITY SOLUTIONS THAT THE SIC HAS PROPOSED AS SPECIFIED IN THESE DRAWINGS.
3. ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER ACCORDING TO GENERALLY ACCEPTED TRADE PRACTICES.
4. THE SIC SHALL PROTECT ALL STORED OR INSTALLED MATERIALS AS PART OF THESE SYSTEMS BEFORE, DURING, AND AFTER INSTALLATION FROM DAMAGE CAUSED BY OTHER TRADES UNTIL TURNOVER AND FINAL ACCEPTANCE. IF DAMAGE OCCURS DESPITE SUCH PROTECTIONS, REMOVE AND REPLACE ALL DAMAGED COMPONENTS OR THE ENTIRE UNIT(S) AS REQUIRED TO PROVIDE A SOLUTION IN AN ORIGINAL, UNDAMAGED CONDITION.
5. ANY VARIATIONS OR SUBSTITUTIONS TO THE INSTALLATION OF THE SECURITY SYSTEM AS DESCRIBED IN THESE DRAWINGS SHALL BE SUBJECT TO THE CONTROL AND APPROVAL OF THE GC, THE OWNER, AND SENTINEL TECHNOLOGIES AND SHALL ONLY BE CONSIDERED ONCE A REQUEST TO DO SO HAS BEEN SUBMITTED IN WRITING TO THE GC, THE OWNER, AND SENTINEL TECHNOLOGIES FOR PRIOR APPROVAL. THIS SUBMITTAL SHALL DISCUSS THE SCOPE OF THE CHANGE, THE RAMIFICATIONS ON THE OVERALL PHYSICAL SECURITY SYSTEM, AND THE ADVANTAGES TO BE GAINED BY THE OWNER.
6. THE SIC SHALL CONFORM TO THE FOLLOWING STANDARDS WHEN FURNISHING AND INSTALLING THE NEW PHYSICAL SECURITY SYSTEM:
   - 6.1. NFPA 101, LIFE SAFETY CODE (LATEST EDITION)
   - 6.2. NFPA 101A, ALTERNATIVE APPROACHES TO LIFE SAFETY (LATEST EDITION)
   - 6.3. NFPA 101B, CODE FOR MEANS OF EGRESS FOR BUILDINGS AND STRUCTURES (LATEST EDITION)
   - 6.4. NFPA 70 NATIONAL ELECTRICAL CODE (NEC) 2014 - WHERE MORE STRINGENT THAN LOCAL CODES
   - 6.5. ALL APPLICABLE LOCAL, COUNTY, AND STATE BUILDING AND ELECTRICAL CODES WITH LOCAL ADDENDA
   - 6.6. UL 444 COMMUNICATIONS CABLES (LATEST EDITION)
   - 6.7. FCC PART 68 REGULATIONS
   - 6.8. THE AMERICAN WITH DISABILITIES ACT (ADA)
   - 6.9. NFPA 731, STANDARD FOR THE INSTALLATION OF ELECTRONIC PREMISES SECURITY SYSTEMS (LATEST EDITION)

FIRST-NAMED MANUFACTURER:

1. WITHIN THESE DRAWINGS, THE FIRST-NAMED APPROVED MANUFACTURER INDICATES THAT ITS RESPECTIVE DEVICE, EQUIPMENT, OR SYSTEM MAY HAVE BEEN USED TO MEET THE JOB REQUIREMENTS AND TO DETERMINE THE SPACE AND DIMENSIONAL REQUIREMENTS. THE SIC'S USE OF ANOTHER PRE-APPROVED SYSTEM MAY REQUIRE THAT THE SIC VERIFY THAT THE RESPECTIVE DEVICES, EQUIPMENT, SYSTEMS, OR PRODUCTS WILL MEET THE JOB REQUIREMENTS AND WILL FIT THE ALLOCATED SPACE.
2. THE LISTING OF A MANUFACTURER AS ACCEPTABLE OR PRE-APPROVED DOES NOT IN ANY WAY RELIEVE THE SIC FROM THE RESPONSIBILITY FOR PROVIDING DEVICES, EQUIPMENT, OR SYSTEMS THAT MEET THE REQUIREMENTS OF THE DRAWINGS. THE SIC SHALL VERIFY THAT PERFORMANCE REQUIREMENTS ARE MET, AS NO TWO MANUFACTURERS SHOULD BE TRUSTED AS EXACTLY IDENTICAL IN FUNCTION, FIT, OR FINISH.

SUBMITTALS:

1. UPON PROJECT AWARD, SHOP DRAWINGS AND PRODUCT DATA OF STANDARD CATALOGUED PRODUCTS SHALL BE SUBMITTED WITH APPLICABLE DATA THAT MEET THE JOB REQUIREMENTS. SUBMITTALS THAT INCLUDE INFORMATION ON MULTIPLE DEVICES OR EQUIPMENT ARE ACCEPTABLE ONLY WHEN ITEMS APPLICABLE TO THE JOB ARE IDENTIFIED WITH ARROWS, CHECK MARKS, OR OTHER CALL OUTS. THE SIC SHALL CLEARLY IDENTIFY WHICH MANUFACTURER SOLUTIONS ARE BEING PROPOSED AT THE TIME OF BID RESPONSE.
2. WHEN SHOP DRAWINGS ARE CREATED FROM OR INCORPORATED WITH SENTINEL TECHNOLOGIES' DRAWINGS, THE SIC SHALL REMOVE THE ARCHITECT'S, ENGINEER'S, AND SENTINEL'S TITLE BLOCKS AND REPLACE IT WITH THE SIC'S OWN UNIQUE TITLE BLOCK. THE SIC'S TITLE BLOCK SHALL INCLUDE AT A MINIMUM THE SIC'S NAME, ADDRESS, TELEPHONE NUMBER, AND THE PROJECT NAME.
3. SHOP DRAWINGS OF RELATED EQUIPMENT, DEVICES, AND MATERIAL SHALL BE SUBMITTED AT THE SAME TIME SO THE PROJECT TEAM CAN COORDINATE THE RELATED COMPONENTS.
4. NO MATERIAL OR EQUIPMENT SHALL BE RELEASED FOR MANUFACTURE OR SHIPMENT WITHOUT FIRST OBTAINING THE APPROVAL OF THE PROJECT TEAM. ONLY THE SIC SHALL BE RESPONSIBLE FOR COSTS AND COORDINATION OF RETURNING ITEMS PURCHASED PRIOR TO APPROVAL.

COORDINATION:

1. THE SIC SHALL COORDINATE THE ARRANGEMENT, INSTALLATION, AND FINISHING OF THE PHYSICAL SECURITY SYSTEM:
2. WHERE A GIVEN COMPONENT OFFERS MULTIPLE COLOR OPTIONS, ALL SUCH FINISHES SHALL BE COORDINATED WITH THE ARCHITECT PRIOR TO FINAL ORDERING.
3. THE ALIGNMENT AND POSITIONING OF PULL BOXES, JUNCTION BOXES, BACK BOXES, CONDUIT ENDS, STUBS, SLEEVES, ETC., WITH SIC INSTALLED DEVICES.
4. ANY EQUIPMENT CUT INTO, MOUNTED ON, OR SUSPENDED FROM ARCHITECTURAL ELEMENTS SUCH AS WALLS OR CEILING SHALL BE COORDINATED WITH THE ARCHITECT TO ENSURE THEIR IS NO CONFLICT WITH DESIGN INTENT OR FUNCTIONALITY.
5. ANY OTHER ELEMENTS THAT MIGHT OR WILL INTERFERE WITH ELEMENTS INSTALLED BY OTHER TRADES SHALL BE COORDINATED WITH THE GC AND THOSE RESPECTIVE TRADES.
6. THE SIC SHALL TAKE FIELD MEASUREMENTS AS REQUIRED TO FIT THE WORK PROPERLY. RECHECK MEASUREMENTS BEFORE INSTALLING EACH PRODUCT. WHERE PORTIONS OF THE WORK ARE INDICATED TO FIT TO OTHER CONSTRUCTION, VERIFY DIMENSIONS OF OTHER CONSTRUCTION BY FIELD MEASUREMENT BEFORE FABRICATION. COORDINATE FABRICATION SCHEDULE WITH CONSTRUCTION PROGRESS TO AVOID DELAYING THE PROJECT.
7. VERIFY SPACE REQUIREMENTS AND DIMENSIONS OF ITEMS SHOWN DIAGRAMMATICALLY ON THE DRAWINGS.
8. NETWORK-BASED DEVICES REQUIRING IP ADDRESSES SHALL BE COORDINATED WITH THE OWNER.

TESTING, IDENTIFICATION, AND ADMINISTRATION REQUIREMENTS:

1. THE SIC SHALL TEST ALL DEVICES FOR CORRECT FUNCTIONALITY AS RECOMMENDED BY THE RESPECTIVE MANUFACTURER.
2. THE SIC SHALL TEST ALL WIRING FOR CONTINUITY, AND WHERE APPLICABLE FOR WIREMAP.
3. THE SIC SHALL THOROUGHLY LABEL THE ENTIRE PHYSICAL SECURITY SYSTEM FOR FUTURE MAINTAINABILITY.
4. ALL WIRES AND CABLES SHALL BE LABELED AT BOTH ENDS.
5. DEVICES SHALL BE LABELED CONSISTENTLY THROUGHOUT.
6. LABELS SHALL MEET THE LEGIBILITY, EXPOSURE DEFACEMENT, AND ADHESION REQUIREMENTS OF UL969.
7. LABELS SHALL BE PREPRINTED OR PRINTED BY A COMPUTER. LABELS WRITTEN BY HAND ARE NOT ACCEPTABLE.
8. THE SIC SHALL THOROUGHLY DOCUMENT THE ENTIRE PHYSICAL SECURITY SYSTEM FOR FUTURE MAINTAINABILITY AND TROUBLESHOOTING. DOCUMENTATION SHALL INCLUDE BUT NOT BE LIMITED TO:
   - 8.1. AUTOCAD OR PDF SCALE DRAWINGS OF THE PROJECT CLEARLY SHOWING:
     - 8.1.1. PRECISE DEVICE LOCATIONS AND IDENTIFICATION NUMBERS.
     - 8.1.2. APPROXIMATE PATHWAYS OF HORIZONTAL CABLE RUNS TO THEIR NEAREST POINTS OF TERMINATION.
     - 8.1.3. PRECISE LOCATIONS OF INSTALLED PULL BOXES, JUNCTION BOXES, AND ENCLOSURES RELATED TO ANY SECURITY CONDUITS THAT MAY BE INSTALLED.
     - 8.1.4. CONDUIT SIZES FOR ANY CONDUIT ABOVE ONE INCH (1") IN SIZE.
     - 8.1.5. DETAILED ELEVATION VIEWS OF ANY WALL-MOUNTED EQUIPMENT, INCLUDING BUT NOT LIMITED TO CONTROL PANELS, ALARM PANELS, AND HEAD END CABINETS.
     - 8.1.6. SINGLE-LINE DIAGRAMS.
     - 8.1.7. ANY EXTERIOR DEVICES, DIMENSIONED FROM BUILDING CORNERS OR OTHER PERMANENT STRUCTURES (TREES, PLANTS, PARKING LOT CURBING, FENCING, ETC., ARE NOT ACCEPTABLE LANDMARKS).
   - 8.2. PRODUCT CUT SHEETS, SHOP DRAWINGS, ETC.
9. DOCUMENTATION SHALL BE SUBMITTED TO THE OWNER PRIOR TO FINAL PAYMENT.

CUTOVER AND TRAINING REQUIREMENTS:

1. THE SIC SHALL BE AVAILABLE OR ON-CALL WITH A 2-HOUR RESPONSE TIME FOR TWO (2) BUSINESS DAYS AFTER THE PHYSICAL SECURITY SYSTEM IS CERTIFIED IN ORDER TO INVESTIGATE AND REPAIR ANY COMPONENTS OF THE SYSTEM THAT DO NOT FUNCTION PROPERLY.
2. THE SIC SHALL PROVIDE A PROGRAMMING, AS WELL AS A BRIEF TRAINING SESSION WITH THE APPROPRIATE OWNER STAFF TO EXPLAIN AND ORIENT THE STAFF IN THE USE AND MAINTENANCE OF THE PHYSICAL SECURITY SYSTEM.
3. AT CLOSEOUT, CLEAN OR RE-CLEAN ENTIRE WORK TO NORMAL LEVEL FOR "FIRST CLASS" MAINTENANCE/CLEANING OF BUILDING PROJECTS OF A SIMILAR NATURE. REMOVE NON-PERMANENT PROTECTION AND LABELS, CLEAN EXPOSED FINISHES, TOUCH-UP MINOR FINISH DAMAGE, REMOVE DEBRIS AND BROOM-CLEAN SPACES, SANITIZE WORK, AND PERFORM SIMILAR CLEANUP OPERATIONS NEEDED TO PRODUCE A CLEAN CONDITION.

SUPPORT AND WARRANTY REQUIREMENTS:

1. THE PHYSICAL SECURITY SYSTEM SHALL BE END-TO-END CERTIFIED BY THE SIC.
2. AN EXTENDED MATERIAL, LABOR, AND PERFORMANCE WARRANTY SHALL BE PROVIDED BY THE SIC FOR A PERIOD OF AT LEAST ONE (1) YEAR.
3. THE SIC SHALL PROVIDE ONGOING SUPPORT FOR WARRANTY WORK AS WELL AS MODIFICATIONS AND ENHANCEMENTS THAT MAY BE REQUIRED AS PART OF THE WARRANTY.
4. THE SIC SHALL REPAIR - AT NO ADDITIONAL CHARGE - ANY PART OF THE PHYSICAL SECURITY SYSTEM THAT IS NOT WORKING PROPERLY WITHIN 24 HOURS OF THE REPORT OF THE PROBLEM.
5. THE SIC SHALL DELIVER TO THE OWNER ALL DOCUMENTATION OUTLINING THE TERMS AND CONDITIONS OF THE WARRANTY.

SECURITY SYSTEM CABLING REQUIREMENTS:

1. THE SIC SHALL FURNISH AND INSTALL ALL SECURITY-RELATED WIRING AND CABLING FOR ALL COMPONENTS DESCRIBED HEREIN, EXCEPT FOR THOSE CABLING AND WIRING RUNS THAT WILL BE FURNISHED AND INSTALLED BY OTHERS. CABLING AND WIRING FURNISHED AND INSTALLED BY OTHERS WILL BE CLEARLY NOTED IN THESE DRAWINGS.
2. WHERE OTHERS ARE FURNISHING AND INSTALLING THE WIRING OR CABLING, THE SIC SHALL COORDINATE WITH THOSE RESPECTIVE TRADES TO ENSURE THAT ALL SECURITY REQUIREMENTS ARE MET, THAT THERE ARE ADEQUATE QUANTITIES INSTALLED, AND THAT THE INSTALLED SOLUTION WILL PERFORM AS EXPECTED FOR WARRANTY PURPOSES.
3. WHERE THE SIC IS TO FURNISH AND INSTALL CABLING AND WIRING, ALL MANUFACTURERS' RESPECTIVE REQUIREMENTS SHALL BE MET. WHERE MANUFACTURER REQUIREMENTS DIFFER FROM ANY REQUIREMENTS PROVIDED WITHIN THESE DRAWINGS, THE MORE STRINGENT OF THE TWO SHALL BE FOLLOWED.
4. THE SIC SHALL REMOVE ALL PREVIOUSLY INSTALLED AND ABANDONED SECURITY CABLING AND WIRING BEFORE THE INSTALLATION OF NEW CABLING TAKES PLACE. THIS MAY CONSIST OF ABANDONED SECURITY CABLING NOT REMOVED DURING DEMOLITION, AS WELL AS ANY TEMPORARY CABLING INSTALLED BY THE SIC AS PART OF THE INSTALLATION.
5. LOCATIONS AND ROUTES OF PATHWAYS SHOWN ON THE DRAWINGS ARE SCHEMATIC AND NOT NECESSARILY REFLECTIVE OF CONDITIONS AT TIME OF INSTALLATION, OR WERE POSITIONED FOR CLARITY RATHER THAN EXACT SPACING, BENDING, OR DESIRED SEPARATION. THE SIC SHALL REVIEW ANY AND ALL SUCH PATHWAYS SHOWN ON THE DRAWINGS TO ENSURE THAT THE PROPOSED SOLUTION WILL FUNCTION AS INTENDED WITH REGARD TO QUANTITIES, SIZES, LOCATIONS, ETC.
6. THE SIC SHALL REVIEW THE ACTUAL CONDUIT PLANS PROPOSED BY THE MEP OR EC TO ENSURE THAT CONDUITS INTENDED FOR THE PHYSICAL SECURITY CABLING ARE CORRECTLY SIZED, ADEQUATELY POSITIONED, AND HAVE THE REQUISITE NUMBER OF PULL BOXES REQUIRED BY THE ACTUAL MATERIALS PROPOSED BY THE SIC, AND/OR THE SIC DESIRES AS OPTIMAL FOR INSTALLATION. THE SIC SHALL BE RESPONSIBLE FOR ANY AND ALL COSTS ASSOCIATED WITH CONDUIT CHANGES RESULTING FROM FAILURE TO PREVIEW AND APPROVE THE PATHWAYS INSTALLED BY OTHERS.
7. BRIDLE RINGS OR OTHER EQUIVALENT SUPPORTS SHALL BE FURNISHED AND INSTALLED BY THE SIC IN AREAS WHERE DUCTS, CONDUITS, OR CABLE TRAYS ARE NOT AVAILABLE.
8. CABLES SHALL NEVER REST UPON CEILING TILES, LIGHTING FIXTURES, STUD WALLS, OR PIPING. ALL CABLES SHALL BE PROPERLY SUPPORTED TO PREVENT THIS, AND SHALL BE SUPPORTED AT A MINIMUM OF EVERY TEN FEET (10') TO REDUCE SAG.
9. ALL SECURITY CABLES SHALL BE PROPERLY DRESSED, TIED, AND TRIMMED.
10. CABLE RUNS SHALL CONTAIN NO SPLICE OR TRANSITION POINTS FROM THE ENDPOINT TO THE CONTROLLER UNLESS NOTED OTHERWISE.
11. ALL CABLES SHALL BE INSTALLED SUCH THAT THE RESPECTIVE MANUFACTURERS' RECOMMENDED BEND RADIUS FOR EACH CABLE TYPE IS NOT EXCEEDED.
12. CABLE PULLING LUBRICANTS, WHERE USED, SHALL BE APPROVED BY THE CABLE MANUFACTURER SO THAT THE LUBRICATING COMPOUND CANNOT DETERIORATE THE CABLE JACKET.
13. THE SIC SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL DISTANCES AND VOLTAGE DROPS FOR EACH CABLE RUN FROM ONE POINT TO ANOTHER.
14. THE WIRING AND CABLING SHALL BE PLENUM-RATED.

ACCESS CONTROL SYSTEM:

1. THE SIC SHALL FURNISH AND INSTALL A PANEL-BASED ACCESS CONTROL SYSTEM, CONSISTING OF KEYSCAN.
2. THE COUNTY HAS AN EMERGENCY OPERATIONS CENTER THAT USES KEYSCAN. THE SIC SHALL PROVIDE THE FACILITY CODE AND BASE BUILDING SYSTEM SECURITY REQUIREMENTS FOR THE NEW ACCESS CONTROL SYSTEM. THE PROPOSED SYSTEM SHALL BE FULLY COMPATIBLE WITH THE COUNTY'S EXISTING KEYSCAN SYSTEM AT ITS OTHER FACILITY, AS THE OWNER REQUIRES THAT STAFF CARRY ONLY ONE, BUILDING-ISSUED CARD OR FOB THAT CAN OPERATE AT EITHER LOCATION.
3. THE SIC SHALL COORDINATE WITH THE FIRE PROTECTION CONTRACTORS FOR THE FIRE ALARM SYSTEM TIE-IN TO ENSURE THAT ALL DOOR LOCKS RELEASE UPON ACTIVATION OF THE FIRE ALARM SYSTEM. ACTIVATION OF THE BUILDING FIRE ALARM SYSTEM SHALL IMMEDIATELY OPEN ALL ACCESS-CONTROLLED DOORS. IF THE SIC DISCOVERS THAT ACCESS-CONTROLLED DOORS ARE NOT RELEASED BY THE BASEBUILDING ALARM SYSTEM, THE SIC SHALL NOTIFY THE GC IMMEDIATELY. THE SIC SHALL COORDINATE THE CONNECTION OF THE FIRE ALARM SYSTEM TO THE SECURITY SYSTEM, AND ITS PROGRAMMING AS DESCRIBED ABOVE, WITH THE GC.
4. THE SIC SHALL COORDINATE WITH THE OWNER TO CONFIRM THE FINAL EQUIPMENT PLACEMENT.
5. THE SIC SHALL MEET AS REQUIRED WITH THE OWNER TO REVIEW ACCESS CONTROL SYSTEM OPTIONS, ZONES, HOLIDAYS, CARD HOLDER NAMES, ADMINISTRATOR NAMES, REPORT FORMATS AND CUSTOMIZATION, ALARM REPORTING REQUIREMENTS AND FORMATS, AND OTHER OPTIONS AND PREFERENCES.
6. ACCESS CONTROL SYSTEM INTEGRATION SHALL REQUIRE COORDINATION MEETINGS RELATED TO THE DOOR HARDWARE:
   - 6.1. THE SIC SHALL REVIEW ALL DOOR HARDWARE SCHEDULES SUPPL56IED BY THE ARCHITECT TO CONFIRM ALL HARDWARE REQUIREMENTS, AND IDENTIFY ANY CHANGES TO THE HARDWARE BILL OF MATERIALS REQUIRED DUE TO DIFFERENCES BETWEEN SENTINEL'S PROJECT DRAWINGS AND THE FINAL ARCHITECTURAL HARDWARE SCHEDULE AS IT MAY PERTAIN TO EXIT HARDWARE, STRIKES, LOCKS, AND OTHER DEVICES.
   - 6.2. DELAYED EGRESS DOOR INTEGRATION (IF IN USE).
7. THE SIC SHALL NOT PROVIDE REPORT PRINTERS: THE SYSTEM SHALL INSTEAD UTILIZE NETWORK PRINTING (SUPPLIED BY THE OWNER) FOR REPORT AND LOG PRINTING.
8. THE SIC SHALL BUDGET TIME TO MEET WITH THE OWNER TO DETERMINE AND FINALIZE:
   - 8.1. THE EXACT NUMBER OF CARDS AND/OR FOBS TO SUPPLY
   - 8.2. ZONES, DOOR ACCESS REQUIREMENTS, HOLIDAYS, AND WHICH CARDHOLDERS HAVE ACCESS TO WHICH DOORS AT WHICH DAYS AND TIMES.
   - 8.3. IP ADDRESS NEEDS, SWITCH CONFIGURATIONS, AND WHICH EVENTS SHALL BE TREATED BY THE SIC VERSUS THOSE TREATABLE BY THE IT STAFF.

CONTROL PANEL:

1. THE KEYSCAN CONTROLLER (DATA GATHERING PANEL OR READER PANEL) SHALL BE ABLE TO COMMUNICATE WITH READER LOCATIONS (WHICH MAY CONSIST OF ANY READER, KEYPAD, COMBINATION UNIT, OR BIOMETRIC DEVICE), AND SHALL SUPPORT NO LESS THAN TWO (2) READER LOCATIONS PER CONTROLLER. MULTIPLE READER CONTROLLERS ARE PREFERRED FOR REDUCING SPACE REQUIREMENTS.
2. CONTROLLERS SHALL BE MOUNTED TO THE WALL AS SHOWN IN THE SECURITY DRAWINGS. THE SIC SHALL COORDINATE THE PLACEMENT OF THE CONTROLLERS WITH SENTINEL PRIOR TO INSTALLATION.
3. PANELS SHOULD BE SIZED SPECIFICALLY FOR THE SUPPORTED HEAD END SYSTEM: CONTROLLERS MUST BE COMPACT AND SIZE-EFFICIENT TO MINIMIZE WALL-SPACE MOUNTING REQUIREMENTS.
4. CONTROLLERS SHALL UTILIZE RS-485 OR ETHERNET-BASED COMMUNICATIONS. IF THE SIC IS PROPOSING AN IP-BASED CONTROLLER SYSTEM, THE SIC SHALL CLEARLY INDICATE ON ITS BID RESPONSE THE QUANTITY OF POE SWITCH PORTS AND UTP JACKS REQUIRED OF THE OWNER. THE SIC SHALL ALSO PROPOSE, AS AN ALTERNATE, THE COST TO PROVIDE THE NECESSARY POE SWITCH.
5. PANELS SHALL BE ABLE TO PROVIDE 12 VDC, 24VDC, OR BOTH SIMULTANEOUSLY AS

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COUNTY of DANE WISCONSIN 1839

DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY
RITCHBURG, WISCONSIN

ISSUE RECORD

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SECURITY REQUIREMENTS 1

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REQUIRED BY DEVICES.

6. SEPARATE PANELS SHALL ALSO PROVIDE POWER TO THE CONTROL PANELS:
7. POWER PANELS SHALL BE APPROXIMATELY THE SAME SIZE AND COLOR AS THE ACCESS CONTROL PANELS WHERE POSSIBLE.
8. POWER PANELS SHALL FEATURE A KEY LOCK TO MAINTAIN THE SAFETY OF THE SYSTEMS.
9. ALL POWER SHALL BE FED BY CONDUIT OR SURFACE-MOUNT RACEWAY AS ALLOWED BY CODE.
10. POWER PANELS SHALL CONNECT TO BUILDING POWER BY HARD-WIRE CONNECTION, NOT BY WALL-WART TRANSFORMERS OR NEMA-STYLE PLUS.
11. ADDITIONAL ACCESS CONTROL PANELS SHALL BE MOUNTED ABOVE THE POWER SUPPLY PANELS. THE SIC SHALL UTILIZE A 1 X 1, 2 X 2, 3 X 2 GRID, ET CETERA, TO KEEP PANELS ORGANIZED ON THE WALL SURFACES. THE SIC SHALL COORDINATE WITH THE ARCHITECT AND SENTINEL TECHNOLOGIES FOR CONTROLLER MOUNTING.
12. ALL ACCESS CONTROL PANELS SHALL BE MOUNTED SO THAT THEY ARE AT A COMFORTABLE WORKING HEIGHT.
13. ALL PANELS SHALL BE MOUNTED PLUMB AND LEVEL.
14. ALL PANELS SHALL BE TESTED AND VERIFIED AS FUNCTIONAL.
15. A DOCUMENT DESCRIBING EACH TYPE OF PANEL, THEIR RESPECTIVE LOCATIONS, NUMBER OF READERS AND OTHER INPUTS OR OUTPUTS INSTALLED, AND WHICH OPTIONS ARE INCLUDED ON EACH PANEL.
16. RECORD DRAWINGS SHALL INCLUDE WIRING INFORMATION SO THAT WIRING, FROM THE HEAD END TO EACH PANEL AND FROM EACH PANEL TO EACH ENDPOINT, CAN BE EASILY IDENTIFIED AND TRACED.
17. FULLY CHECK ALL ELECTRICAL CIRCUITS OF THE VARIOUS DEVICES FOR CORRECT WIRING POLARITY, GROUNDING, AND ADEQUATE SIGNAL STRENGTH.

KEY CARDS AND FOBS:

1. THE SIC SHALL FURNISH FIFTY (50) PROXIMITY CARDS AND TWENTY (20) FOBS TO THE OWNER.
2. EACH CARD SHALL BE MANUFACTURED BY THE SAME COMPANY AND BE THE SAME TYPE.
3. EACH CARD SHALL BE RF-BASED AND BE REPROGRAMMABLE AND FULLY REUSABLE.
4. A SLOT PUNCH IS REQUIRED IN THE CARD, LOCATED AT THE CENTER OF THE SHORT END OF THE CARD (VERTICAL PUNCH).
5. CARDS SHALL SUPPORT PHOTOGRAPHIC IDENTIFICATION INFORMATION.
6. LANYARDS (ONE PER CARD).

PROXIMITY CARD READERS:

1. THE SIC SHALL FURNISH AND INSTALL ALL CARD READERS AS SHOWN ON THE ASSOCIATED DRAWINGS.
2. ALL READERS SHALL BE HID-COMPLIANT UNLESS NOTED OTHERWISE
3. ALL READERS SHALL BE MOUNTED AT 42" AFF UNLESS NOTED OTHERWISE
4. ALL CARD READERS OF THIS TYPE SHALL BE POSITIONED EITHER:
   - 4.1. ON THE MULLION OF THE DOOR ITSELF, USING FLEXIBLE CONDUIT FED THROUGH THE DOOR FRAME ITSELF, OR IF NOT POSSIBLE…
   - 4.2. SIX EDGES FROM THE EDGE OF THE DOOR FRAME ON THE HANDLE SIDE OF THE DOOR, OR…
   - 4.3. SIX EDGES FROM THE EDGE OF THE DOOR FRAME ON THE SAME SIDE OF THE ACTIVE LEAF OF DOUBLE DOORS.
5. ALL CARD READERS SHALL BE BLACK IN COLOR.
6. THE LED SHALL FLASH GREEN WHEN THE USER IS AUTHENTICATED; NO AUDIBLE TONE SHALL CHIME.
7. FACEPLATES OF READERS SHALL BE CLEANED.
8. ALL WIRING SHALL BE TESTED FOR CONTINUITY AND WIRE MAP.
9. THE SIC SHALL ESTIMATE THE DISTANCE BETWEEN THE POWER SUPPLY AND EACH DEVICE TO ENSURE THAT VOLTAGE DROP FALLS WITHIN THE OPERATING PARAMETERS OF THE DEVICE IN QUESTION AS SET BY THE DEVICE MANUFACTURER. A BUDGET OF AN ADDITIONAL 10-15 PERCENT SHALL BE INCLUDED AS A SAFETY MARGIN.

KEYPAD READERS:

1. THE SIC SHALL FURNISH AND INSTALL HID PROXPRO 5355 PROXIMITY CARD READERS WITH TWELVE-DIGIT KEYPADS FOR LOCATIONS WITHIN THE SPACE AS SHOWN ON THE ASSOCIATED PROJECT DRAWINGS.
2. ALL CARD READERS SHALL BE MOUNTED 42-INCHES A.F.F. UNLESS NOTED OTHERWISE.
3. ALL CARD READERS OF THIS TYPE SHALL BE POSITIONED EITHER:
   - 3.1. SIX EDGES FROM THE EDGE OF THE DOOR FRAME ON THE HANDLE SIDE OF THE DOOR, OR…
   - 3.2. SIX EDGES FROM THE EDGE OF THE DOOR FRAME ON THE SAME SIDE OF THE ACTIVE LEAF OF DOUBLE DOORS.
   - 3.3. THE KEYPAD SHALL PROVIDE DUAL AUTHENTICATION, SO THAT USERS MUST HAVE A VALID PROXIMITY CARD OR FOB AS WELL AS ENTER IN A PASSCODE (PASSCODES SHALL BE SUPPLIED BY THE OWNER).
4. ALL CARD READERS SHALL BE BLACK IN COLOR.
5. THE LED SHALL FLASH GREEN WHEN THE USER IS AUTHENTICATED; NO AUDIBLE TONE SHALL CHIME.
6. ALL WIRING SHALL BE TESTED FOR CONTINUITY AND WIRE MAP.
7. THE SIC SHALL ESTIMATE THE DISTANCE BETWEEN THE POWER SUPPLY AND EACH DEVICE TO ENSURE THAT VOLTAGE DROP FALLS WITHIN THE OPERATING PARAMETERS OF THE DEVICE IN QUESTION AS SET BY THE DEVICE MANUFACTURER. A BUDGET OF AN ADDITIONAL 10-15 PERCENT SHALL BE INCLUDED AS A SAFETY MARGIN.
8. UNDER THE DIRECTION OF THE OWNER, SOME KEYPADS SHALL REQUIRE DUAL AUTHENTICATION (CARD/FOB READ AS WELL AS PIN), AND OTHERS SHALL SUPPORT EITHER (SOME USERS WILL ONLY BE ISSUED A PIN THAT WILL RELEASE THE DOOR). CONFIRM WHICH DOORS REQUIRE WHICH FUNCTIONS PRIOR TO TURNOVER AND ENSURE DOORS ARE SO PROGRAMMED.

DOOR CONTACT POSITION SWITCHES:

1. CONTACTS SHALL BE 1-INCH OR LESS IN SIZE, AND BE DESIGNED FOR INSTALLATION IN STEEL DOOR FRAMES.
2. CONTACTS SHALL UTILIZE FORM C CONTACTS UP TO 30V DC.
3. CONTACTS SHALL FEATURE EITHER AN OPEN OR CLOSED LOOP, AND BE DOUBLE-PULL DOUBLE-THROW.
4. VERIFY THAT THE TOTAL LENGTH OF CABLE RUN FROM THE CONTACT TO THE INPUT ON THE CONTROLLER IS WITHIN MANUFACTURER LIMITS FOR VOLTAGE DROP.
5. UL-LISTED FIRE-RATED HARDWARE SHALL BE USED FOR ALL FIRE-RATED DOORS.

EXIT HARDWARE INTEGRATION:

1. SOME DOORWAYS WILL FEATURE EXIT HARDWARE THAT CAN ACT AS A MANUAL REQUEST TO EXIT, AND THEREBY SHUNT THE ALARM.
2. THE SIC SHALL REVIEW THE ARCHITECT'S FINAL DOOR HARDWARE SCHEDULE AND PROVIDE AND INSTALL ALL MATERIALS NECESSARY TO INTEGRATE THE DOOR HARDWARE (BY OTHERS) INTO THE ACCESS CONTROL SYSTEM, LIMITING INVOLVEMENT ONLY TO NEEDED INTEGRATION OF THE TWO SYSTEMS: THE SIC SHALL NOT BE RESPONSIBLE FOR PROVIDING, INSTALLING, CORRECTING, OR ADJUSTING THE DOOR HARDWARE.
3. ENSURE THAT ACTIVATION OF THE DOOR'S EXIT HARDWARE SHUNTS THE ALARM CORRECTLY.
4. SIMULATE A FORCED OPENING OF THE DOOR TO VERIFY THAT APPROPRIATE ALARMS ARE RECEIVED BY THE ACCESS CONTROL SYSTEM.
5. SIMULATE A POWER FAILURE AT EACH DOOR TO ENSURE THE DOOR UNLOCKS AS INTENDED. VERIFY THAT THE ACCESS CONTROL SERVER RECEIVES AND REPORTS THE SUBSEQUENT ALARM.
6. SIMULATE A FIRE ALARM CONDITION AT EACH DOOR TO ENSURE THAT THE DOOR UNLOCKS AS INTENDED. VERIFY THAT THE ACCESS CONTROL SERVER RECEIVES AND REPORTS THE SUBSEQUENT ALARM.

ELECTRIC STRIKE INTEGRATION:

1. THE SIC SHALL REVIEW THE ARCHITECT'S FINAL DOOR HARDWARE SCHEDULE AND PROVIDE AND INSTALL ALL MATERIALS NECESSARY TO INTEGRATE THE ELECTRIC STRIKES (BY OTHERS) INTO THE ACCESS CONTROL SYSTEM, LIMITING INVOLVEMENT ONLY TO NEEDED INTEGRATION OF THE TWO SYSTEMS: THE SIC SHALL NOT BE RESPONSIBLE FOR PROVIDING, INSTALLING, CORRECTING, OR ADJUSTING THE STRIKES OR FOR PROVIDING BACKUP BATTERY POWER TO THE STRIKES THEMSELVES.
2. ENSURE THE STRIKE IS A CONTINUOUS DUTY, 24 VDC STRIKE.
   - 2.1. IF NOT, NOTIFY THE GC AND SENTINEL BEFORE ATTEMPTING TO WIRE THE STRIKE INTO THE ACCESS CONTROL SYSTEM.
   - 2.2. IF SO, VERIFY EACH DOOR UNLOCKS WITH THE PRESENTATION OF A VALID CREDENTIAL AND RELOCKS WITHIN THE CORRECT TIME REQUESTED BY THE OWNER.
3. SIMULATE A POWER FAILURE AT EACH DOOR TO ENSURE THE DOOR UNLOCKS AS INTENDED. VERIFY THAT THE ACCESS CONTROL SERVER RECEIVES AND REPORTS THE SUBSEQUENT ALARM.
4. SIMULATE A FIRE ALARM CONDITION AT EACH DOOR TO ENSURE THAT THE DOOR UNLOCKS AS INTENDED. VERIFY THAT THE ACCESS CONTROL SERVER RECEIVES AND REPORTS THE SUBSEQUENT ALARM.

ELECTRONIC LOCKSET INTEGRATION:

1. THE SIC SHALL REVIEW THE ARCHITECT'S FINAL DOOR HARDWARE SCHEDULE AND PROVIDE AND INSTALL ALL MATERIALS NECESSARY TO INTEGRATE THE ELECTRONIC LOCKSETS (BY OTHERS) INTO THE ACCESS CONTROL SYSTEM, LIMITING INVOLVEMENT ONLY TO NEEDED INTEGRATION OF THE TWO SYSTEMS: THE SIC SHALL NOT BE RESPONSIBLE FOR PROVIDING, INSTALLING, CORRECTING, OR ADJUSTING THE LOCKSETS OR HINGES NOR FOR PROVIDING BACKUP BATTERY POWER TO THE LOCKSETS OR HINGES THEMSELVES.
2. ENSURE THE LOCKSET IS A CONTINUOUS DUTY, 12 VDC LOCKSET.
   - 2.1. IF NOT, NOTIFY THE GC AND SENTINEL BEFORE ATTEMPTING TO WIRE THE LOCKSET AND TRANSFER HINGE INTO THE ACCESS CONTROL SYSTEM.
   - 2.2. IF SO, VERIFY EACH DOOR UNLOCKS WITH THE PRESENTATION OF A VALID CREDENTIAL AND RELOCKS WITHIN THE CORRECT TIME REQUESTED BY THE OWNER.
3. SIMULATE A POWER FAILURE AT EACH DOOR TO ENSURE THE DOOR UNLOCKS AS INTENDED. VERIFY THAT THE ACCESS CONTROL SERVER RECEIVES AND REPORTS THE SUBSEQUENT ALARM.
4. SIMULATE A FIRE ALARM CONDITION AT EACH DOOR TO ENSURE THAT THE DOOR UNLOCKS AS INTENDED. VERIFY THAT THE ACCESS CONTROL SERVER RECEIVES AND REPORTS THE SUBSEQUENT ALARM.

VIDEO SURVEILLANCE SYSTEM:

1. THE SIC SHALL FURNISH AND INSTALL A HEAD END SYSTEM TO HOST THE VMS AND NVR CAPABILITIES OF THE SYSTEM.
2. THE HEAD END FOR THIS SYSTEM SHALL BE LOCATED IN NETWORK 045.
3. THE SIC IS RESPONSIBLE TO SELECT THE NVR HARDWARE--WHICH MAY BE AN OPEN SYSTEM OR PRE-ASSEMBLED APPLIANCE--AND INSTALL THE VMS SOFTWARE IF REQUIRED BY THE PROPOSED SOLUTION. THE SIC IS THEREFORE REQUIRED TO PERFORM ALL NECESSARY CALCULATIONS TO DETERMINE THE APPROPRIATE NUMBER OF CAMERA CONNECTIONS, PROCESSOR TYPE AND SPEED, RAM, HARD DRIVE STORAGE, SOFTWARE LEVEL, AND OTHER PERIPHERALS NECESSARY TO MEET THE FOLLOWING REQUIREMENTS:
   - 3.1. NINETY (90) DAYS OF STORAGE (ON SIC-FURNISHED RAID-BASED OR EXTERNAL STORAGE APPLIANCES)
   - 3.2. THE SIC SHALL FURNISH A RAID-BASED SOLUTION SO THAT THE LOSS OF ANY HARD DRIVE IS COMPENSATED BY A MIRROR DRIVE, OR DATA IS OTHERWISE SAVED REDUNDANTLY ON A NETWORK-ATTACHED STORAGE OR STORAGE-AREA-NETWORK APPLIANCE)
   - 3.3. A REDUNDANT RECORDING SERVER SHALL PROVIDE MIRRORING OF ALL VIDEO AND AUDIO DATA RECORDED
   - 3.4. 12-15 IMAGES PER SECOND (AS A BASELINE AVERAGE) PER CAMERA
   - 3.5. THE ABILITY TO PROVIDE A GRAPHIC MAP OF THE FACILITY SHOWING CAMERA LOCATIONS
   - 3.6. THE ABILITY TO INTEGRATE WITH VIDEO ANALYTICS (WHETHER BUILT-IN OR THIRD-PARTY)
   - 3.7. THE NVR SHALL FEATURE REDUNDANT POWER SUPPLIES
4. REMOTE VIEWING
   - 4.1. THE SYSTEM SHALL BE CONFIGURED SO THAT APPROVED USERS MAY VIEW CAMERAS THROUGH A CONVENTIONAL WEB BROWSER.
   - 4.2. THE SIC SHALL COORDINATE WITH THE OWNER TO ENSURE THAT ALL APPROVED USERS AND CAMERAS ARE IDENTIFIED FOR SUCH SHARING, AS NOT ALL CAMERAS MAY BE APPROVED FOR SHARING TO ALL USERS. THE SYSTEM SHALL SUPPORT THE ABILITY TO VIEW CAMERAS VIA REMOTE WEB BROWSING, IOS DEVICES, WINDOWS DEVICES, AND ANDROID DEVICES (TO PRE-APPROVED CLIENTS)
5. APPROVED MANUFACTURERS INCLUDE THE LATEST VERSIONS OF:
   - 5.1. HANWHA WISENET
   - 5.2. AVIGILON
   - 5.3. MILESTONE
   - 5.4. SALIENT
   - 5.5. EXACQ
   - 5.6. GENETEC
6. THE HARDWARE SHALL BE EQUIPPED WITH FULL 10/100/1000 ETHERNET FUNCTIONALITY, SO THAT NETWORK OPERATIONS CAN BE PERFORMED USING STANDARD TCP/IP-COMPATIBLE CONTROLS.

CAMERAS:

1. THE COUNTY USES AXIS CAMERAS.
2. CAMERAS SHALL FEATURE THE FOLLOWING:
   - 2.1. POWER-OVER-ETHERNET, USED FOR POWER AND DATA
   - 2.2. MOTORIZED VARIFOCAL LENSES
   - 2.3. WIDE DYNAMIC RANGE (WDR) UNLESS ASSOCIATED PROJECT DRAWINGS CALL FOR SOME LOCATIONS WITH SUPER WIDE DYNAMIC RANGE ON A CAMERA-BY-CAMERA BASIS; REFER TO PROJECT DRAWINGS FOR ANTICIPATED AREAS OF COVERAGE.
   - 2.4. MINIMUM RESOLUTION OF 1920 X 1080 AT THE MAXIMUM FRAME RATE (GREATER THAN OR EQUAL TO 15 FPS); MOST CAMERA FRAME RATES ARE EXPECTED TO BE 4-5 FPS UNLESS NOTE OTHERWISE ON A CAMERA-BY-CAMERA BASIS
   - 2.5. RECORD ON MOTION DETECTION. THE SIC SHALL ENSURE THE MOTION ACTIVATION FEATURES ARE OPERATING. FOR EACH FIXED VIEW CAMERA, THE SIC SHALL MASK ANY AREAS OF PREDICTABLE FREQUENT MOVEMENT, SO THAT MOTION ACTIVATION IS NOT NEEDLESSLY UTILIZED. EXTERIOR CAMERAS THAT LOOK INTO NON-THE OWNER FACILITY WINDOWS OR RESIDENTIAL AREAS SHALL ALSO BE MASKED TO PREVENT INVASIONS OF PRIVACY.
   - 2.6. ONVIF COMPLIANCE
   - 2.7. OPERATING TEMPERATURE RANGE MEETING OR EXCEEDING A WINDOW OF 15° FAHRENHEIT TO 130° FAHRENHEIT WITHOUT ADDITIONAL HEATER OR BLOWER
3. INSTALL ALL COMPONENTS ACCORDING TO THEIR MANUFACTURERS' RESPECTIVE REQUIREMENTS.
4. THE SIC SHALL ENSURE THAT THE CAMERA IMAGE IS STABLE, CLEAR, AND WORKS IN ALL ANTICIPATED LIGHTING CONDITIONS. THE SIC SHALL ENSURE THAT ALL CAMERA IMAGES ARE EQUALLY VISIBLE FROM THE NVR AND ANY VIEWING MONITORS. THE SIC SHALL INSTALL ALL REQUIRED SOFTWARE UPDATES, PATCHES, FIXES, AND DRIVERS TO ENSURE THE ENTIRE SOLUTION IS UP-TO-DATE TO MANUFACTURER RECOMMENDATIONS.
9. DOME CAMERAS
   - 9.1. DOME CAMERAS MAY BE CEILING-MOUNTED (ON EITHER GYPSUM WALLBOARD OR ACOUSTICAL CEILING TILES), OR SIDE-MOUNTED TO BACK BOXES ON WALL SURFACES. THE SIC SHALL MOUNT EACH CEILING CAMERA FLUSH AND LEVEL WITHIN THE CEILING SURFACE. COORDINATE LOCATIONS WITH THE ARCHITECT TO VERIFY CEILING TYPE IN EACH LOCATION.
   - 9.2. EACH CAMERA HOUSING SHALL BE TIGHT TO THE CEILING.
10. MULTI-LENS CAMERAS
   - 10.1. MULTI-LENS CAMERAS SHALL FEATURE 90°, 180°, 270°, AND 360° VIEWS AS SHOWN ON THE SECURITY DRAWINGS.
   - 10.2. POSITION LENSES AS REQUIRED TO ACHIEVE THE AREAS OF COVERAGE INDICATED. IT IS PERMISSIBLE TO HAVE DIFFERENT FOCUS POINTS BASED ON THE AREA A SPECIFIC CAMERA SERVES (FOR EXAMPLE, ONE LENS MAY FOCUS ON A DOOR WHILE OTHERS COVER A MORE GENERAL VIEW).
11. OUTDOOR CAMERAS SHALL HAVE:
   - 11.1. AN OPERATING TEMPERATE RANGE MEETING OR EXCEEDING A WINDOW OF -50° FAHRENHEIT TO 130° FAHRENHEIT WITH INTEGRATED 24V HEATER AND BLOWER
   - 11.2. UTP-BASED POWER AND SIGNALING; IF OPTICAL FIBER IS USED DUE TO DISTANCE, THE SIC SHALL FURNISH AND INSTALL ALL NECESSARY MEDIA CONVERTERS AND MEANS TO POWER THE CONVERTERS AS PART OF THEIR SOLUTION.
   - 11.3. THE SIC IS SOLELY RESPONSIBLE TO COORDINATE WITH THE EC FOR LIGHTNING PROTECTION BASED ON THE EC'S REQUIREMENTS.
   - 11.4. THE SIC SHALL FURNISH AND INSTALL 24 VAC POWER SUPPLY PANELS FOR ALL EXTERIOR CAMERAS. SELF-RESETTING CIRCUIT BREAKERS ARE REQUIRED ON THE PANEL. INPUT VOLTAGE SHALL BE 120 VAC. POWER SUPPLIES SHALL SUPPORT 24 HOURS UNINTERRUPTED OPERATION IN THE EVENT OF POWER LOSS.
12. WALL-MOUNTS
   - 12.1. ALL WALL MOUNTS SHALL FEATURE PAINTABLE METAL
   - 12.2. MOUNTS SHALL BE SECURELY MOUNTED TO THE WALL SURFACE AS WELL AS THE CAMERA HOUSING
   - 12.3. MOUNTS SHALL ALLOW FOR THE CAMERA HOUSING TO BE POSITIONED TO THE CORRECT VANTAGE POINT AND THEN LOCKED INTO A FINAL POSITION
13. CEILING OR SOFFIT-MOUNTS
   - 13.1. ALL CEILING OR SOFFIT MOUNTS SHALL BE FULLY RECESSED IN A RATED ENCLOSURE; IF FIELD CONDITIONS PREVENT FULL RECESSION, THE SIC SHALL UTILIZE A PENDANT-MOUNT
   - 13.2. MOUNTING METHODS SHALL BE SECURE TO PREVENT INJURY OR DAMAGE
   - 13.3. SMOKED DOMES SHALL BE USED TO CONCEAL THE CAMERA'S ORIENTATION
14. PENDANT-MOUNTS
   - 14.1. ALL PENDANT MOUNTS SHALL FEATURE PAINTABLE METAL
   - 14.2. MOUNTS SHALL BE SECURELY MOUNTED TO THE CEILING SURFACE AS WELL AS THE CAMERA HOUSING
   - 14.3. MOUNTS SHALL ALLOW FOR THE CAMERA HOUSING TO BE POSITIONED TO THE CORRECT VANTAGE POINT AND THEN LOCKED INTO A FINAL POSITION
15. CORNER OR PARAPET-MOUNTS
   - 15.1. ALL CORNER AND/OR PARAPET MOUNTS SHALL FEATURE PAINTABLE METAL
   - 15.2. MOUNTS SHALL BE SECURELY MOUNTED TO THE WALL OR ROOF SURFACE AS WELL AS THE CAMERA HOUSING
   - 15.3. MOUNTS SHALL ALLOW FOR THE CAMERA HOUSING TO BE POSITIONED TO THE CORRECT VANTAGE POINT AND THEN LOCKED INTO A FINAL POSITION

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COUNTY of DANE WISCONSIN 1839

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1	ISSUE FOR BID	06-08-21

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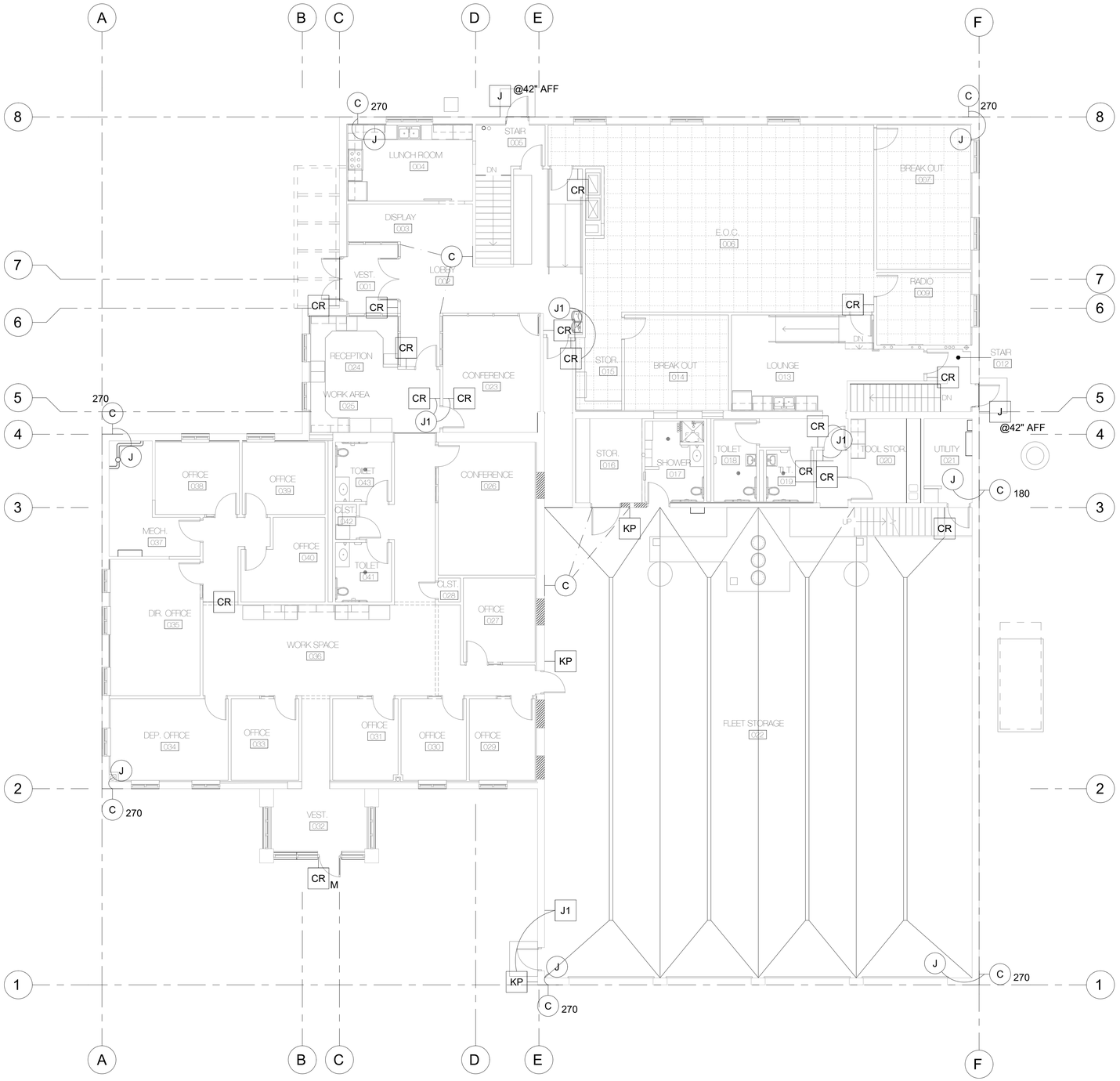
SECURITY REQUIREMENTS 2

SS0.2



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

N

NOTE: SEE DRAWING PL-1 PRIOR TO CORDING THROUGH EXISTING PRE-CAST PLANK FLOORS.

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FIRST FLOOR SECURITY PLAN

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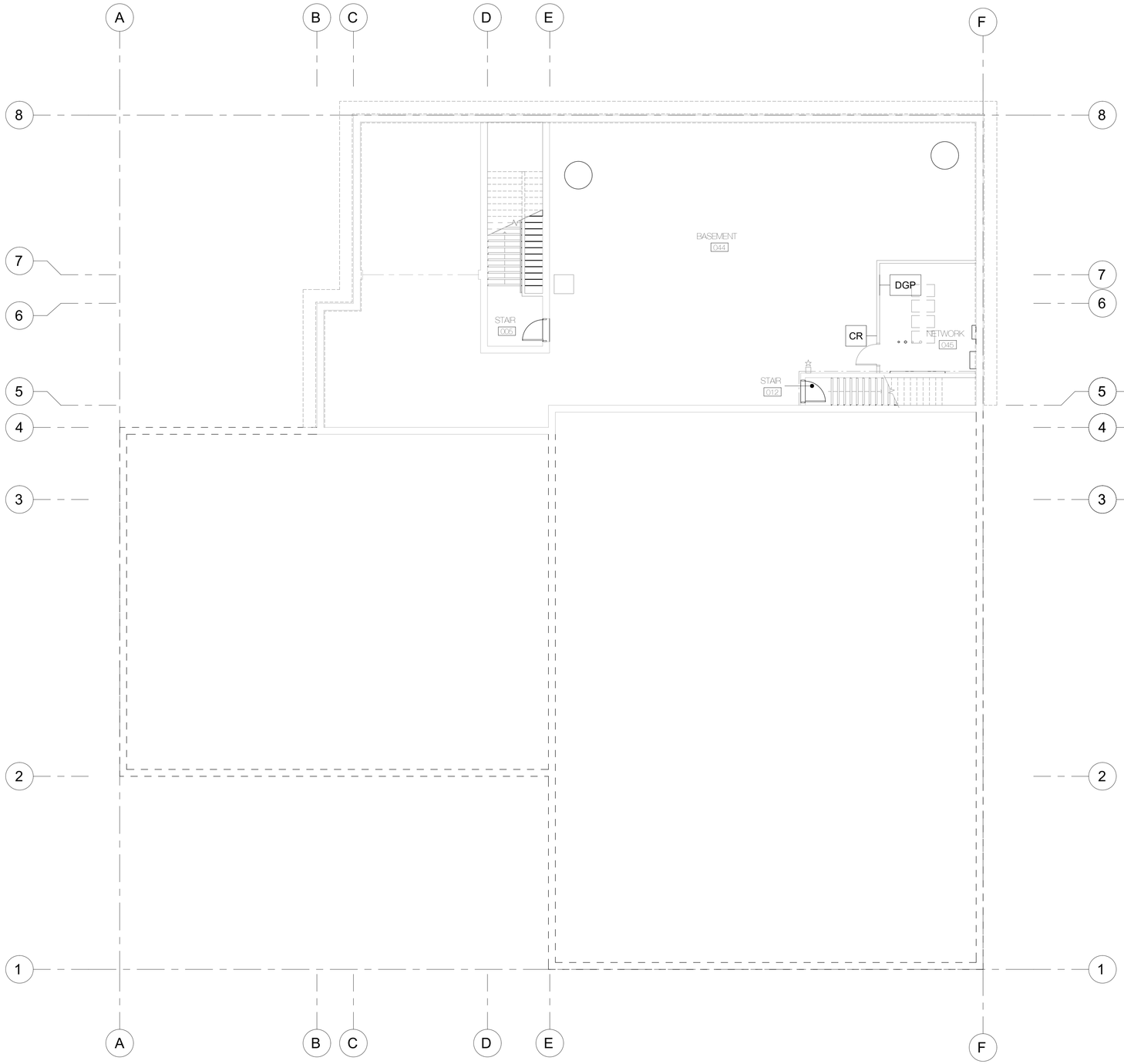

1 BASEMENT SECURITY PLAN
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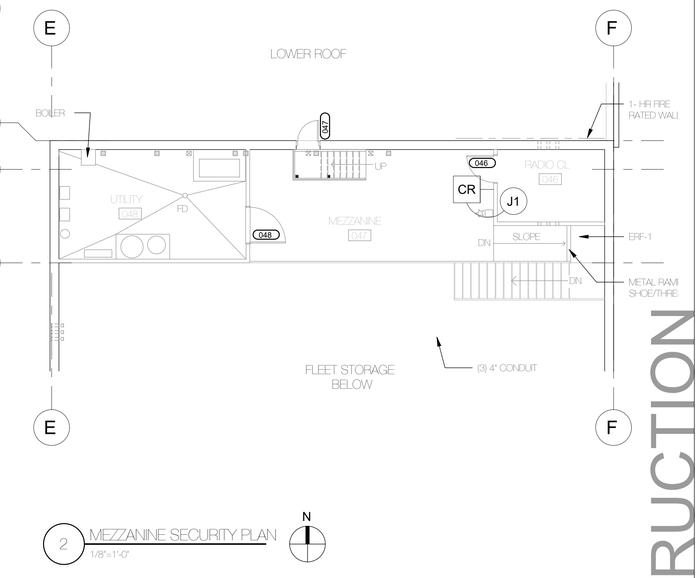

2 MEZZANINE SECURITY PLAN
1/8"=1'-0"

N

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BASEMENT & MEZZANINE SECURITY PLAN

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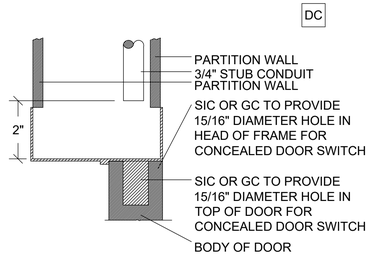
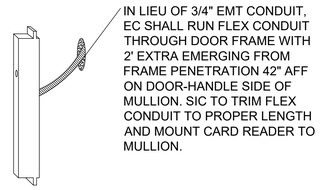
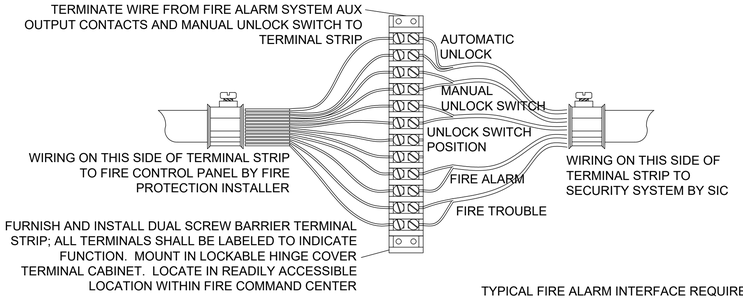


TYPICAL DOOR CONTACT INSTALLATION DETAILS

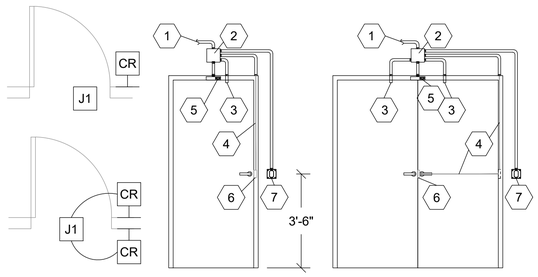


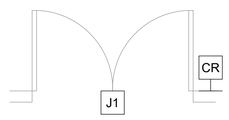
TYPICAL REQUIREMENTS FOR MULLION-MOUNTED CARD READERS



TYPICAL FIRE ALARM INTERFACE REQUIREMENTS

1 COMMON ACCESS CONTROL DETAILS



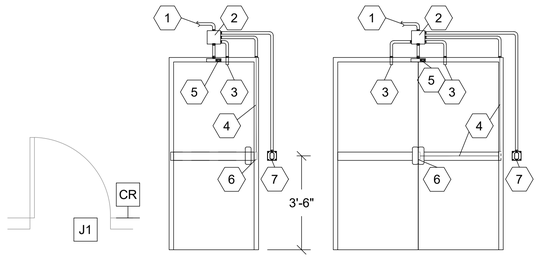


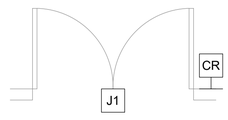
POSITIONS OF DOOR DEVICES ON PLANS MAY VARY FROM THOSE SHOWN HERE IN ORDER TO MAINTAIN DRAWING CLARITY.

1. 1" EMT CONDUIT (OR PLENUM PATHWAY AS REQUIRED) TO ACCESS CONTROL SYSTEM.
2. SIC SHALL FURNISH BOX AND COVERPLATE, SURFACE-MOUNTED ABOVE FINISHED CEILING IN ACCESSIBLE LOCATION ON SECURE SIDE OF DOOR (WHERE POSSIBLE). SHOWN AS "J1" IN SECURITY DRAWINGS. SIC SHALL DETERMINE SIZE IN ORDER TO ACCOMMODATE ALL WIRING AND COMPONENTS.
3. EC SHALL STUB 3/4" CONDUIT INTO DOOR FRAME FOR CONCEALED DOOR CONTACT POSITION SWITCH. SHOWN AS "DC" ON DRAWINGS.
4. EC SHALL STUB 3/4" CONDUIT THROUGH DOOR FRAME FOR ELECTRIC STRIKE WIRING.
5. SIC SHALL FURNISH AND INSTALL PASSIVE INFRARED REQUEST TO EXIT SENSOR ("REX" ON DRAWINGS) IN FRAME ABOVE DOOR. EC SHALL FURNISH 3/4" CONDUIT TO J1 BOX.
6. CONTINUOUS DUTY ELECTRIC STRIKE, SHOWN AS "ES" ON THE DRAWINGS. REFER TO ARCHITECTURAL DOOR HARDWARE SCHEDULE FOR TYPE.
7. EC SHALL EXTEND 1" CONDUIT TO 4" X 4" X 2-1/8" DEEP BACKBOX WITH SINGLE GANG TRIM RING, FLUSH MOUNTED ON EXTERIOR SIDE OF DOOR, FOR CARD READER. SHOWN AS "CR" ON DRAWINGS.

3 KEYPADS OR CARD READERS WITH ELECTRIC STRIKES

2 NOT USED





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4 KEYPADS OR CARD READERS WITH AD84xx OR 85xx-SERIES EXIT DEVICES

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ACCESS CONTROL DETAILS

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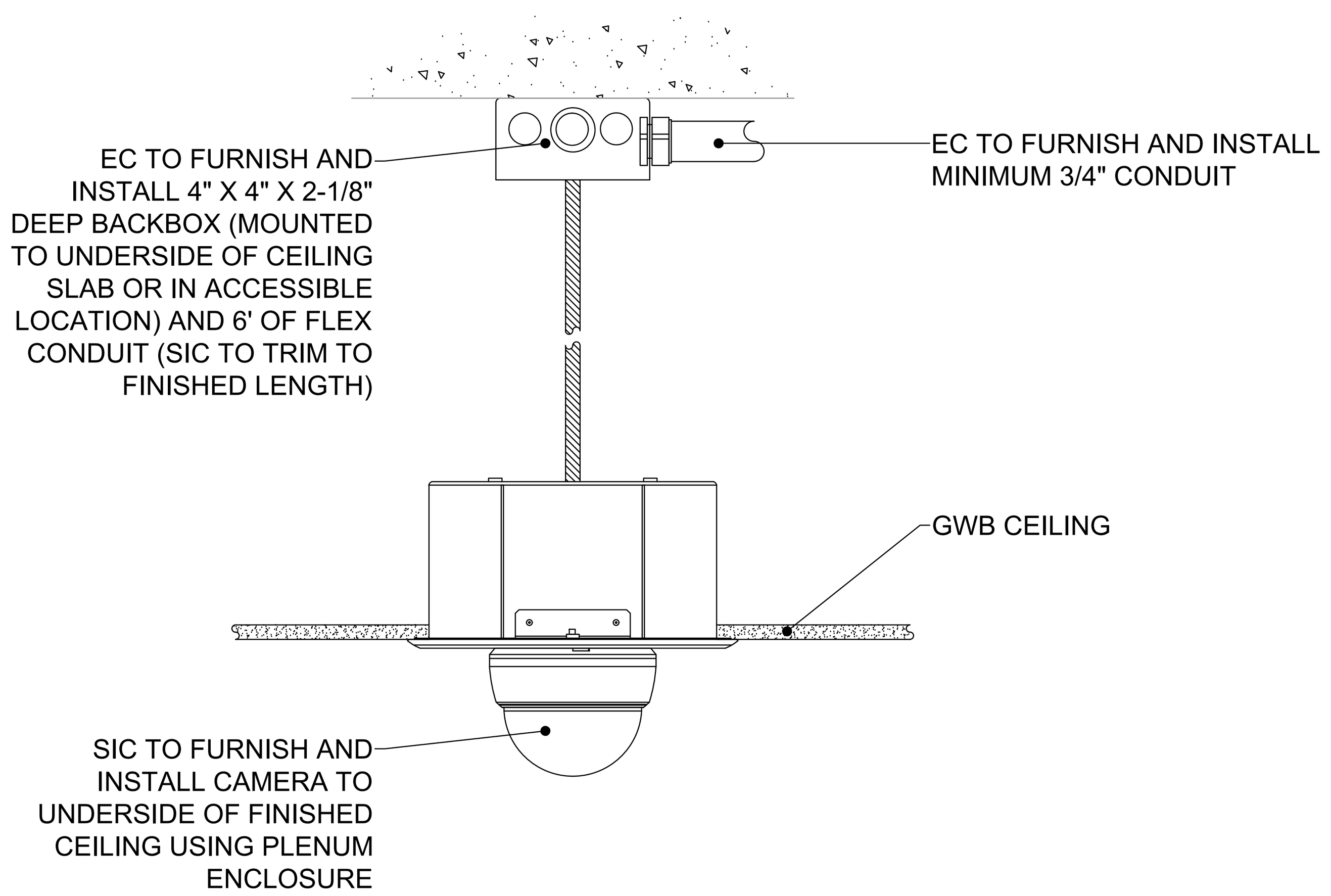
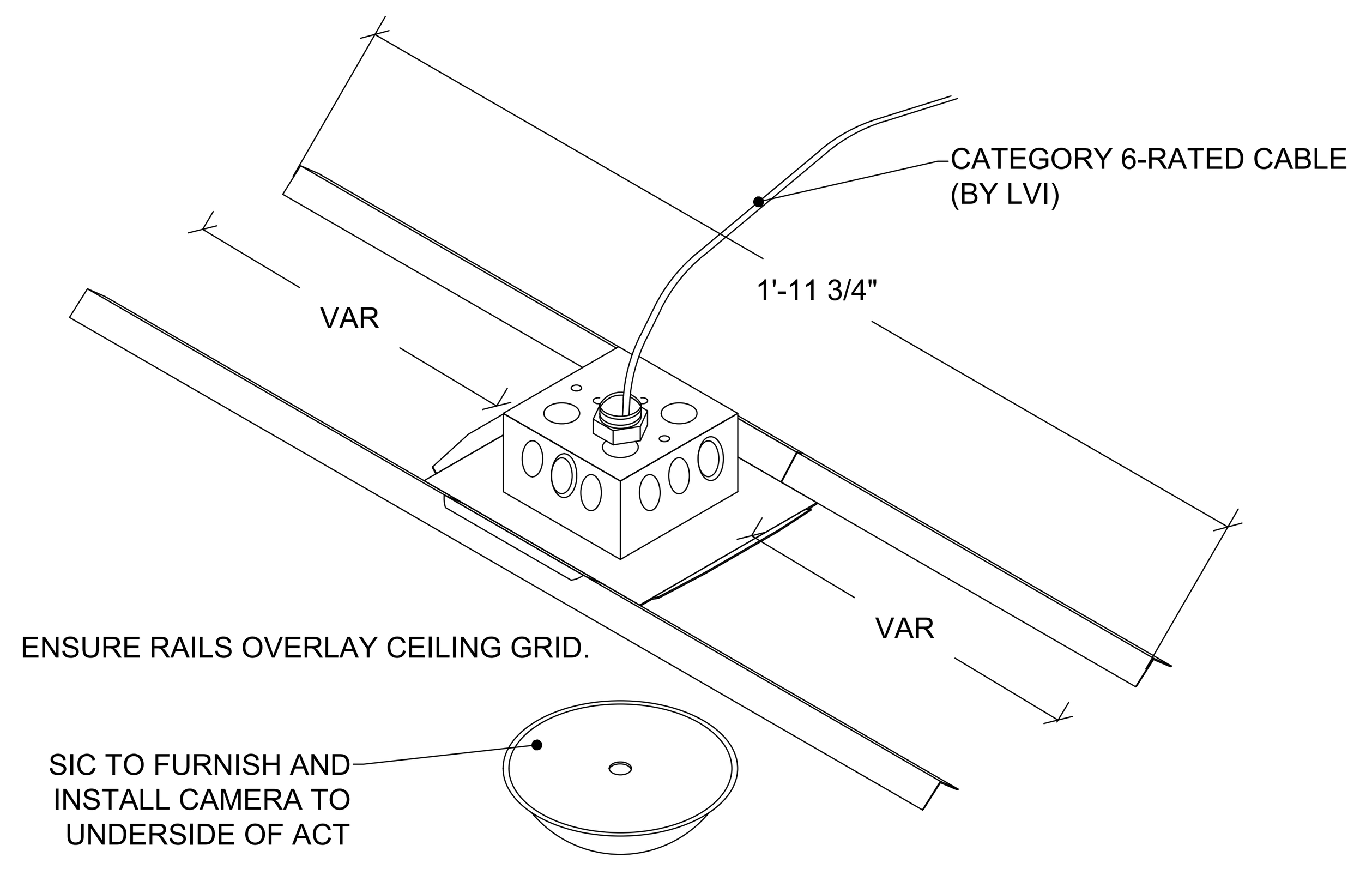


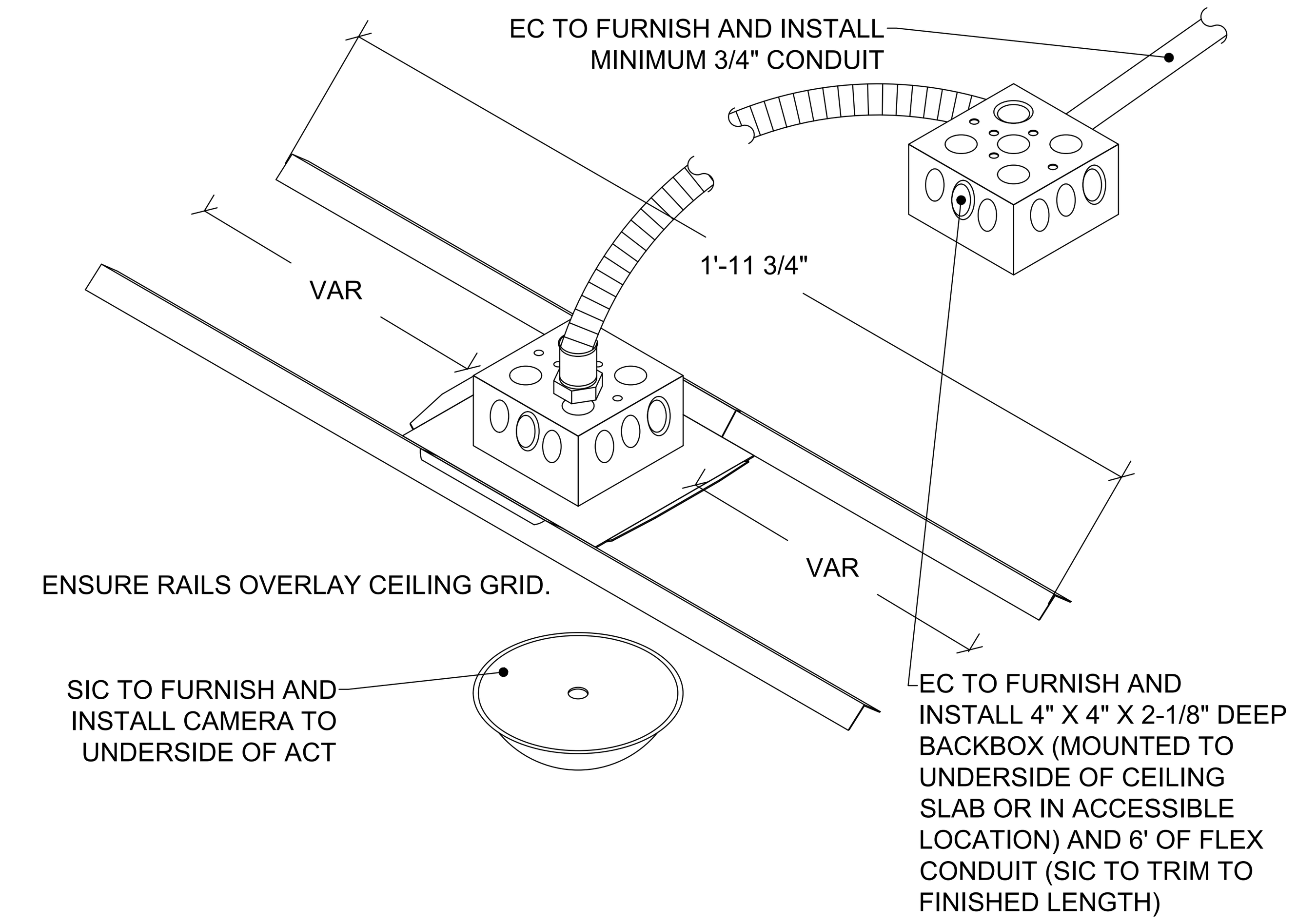
1 CAMERAS MOUNTED ON GWB CEILINGS OR SOFFITS



FURNISH AND INSTALL QUAM SSB-1900 DEEP ELECTRICAL BOX SUPPORT BRIDGE. ADJUST BOX AS REQUIRED LEFT-RIGHT AND FORWARD-BACK TO POSITION BOX IN FINAL POSITION. USE PENCIL ROD TO SECURE BOX TO PERMANENT STRUCTURE (NOT THE CEILING GRID) WHEN IN FINAL POSITION. COVER WITH BLANK FACEPLATE.

PROTECT CABLING FROM ENTERING BACKBOX BY USING 3/4" BUSHING.THROUGH APPROPRIATE KNOCKOUT.

2 CAMERAS MOUNTED ON ACT CEILINGS



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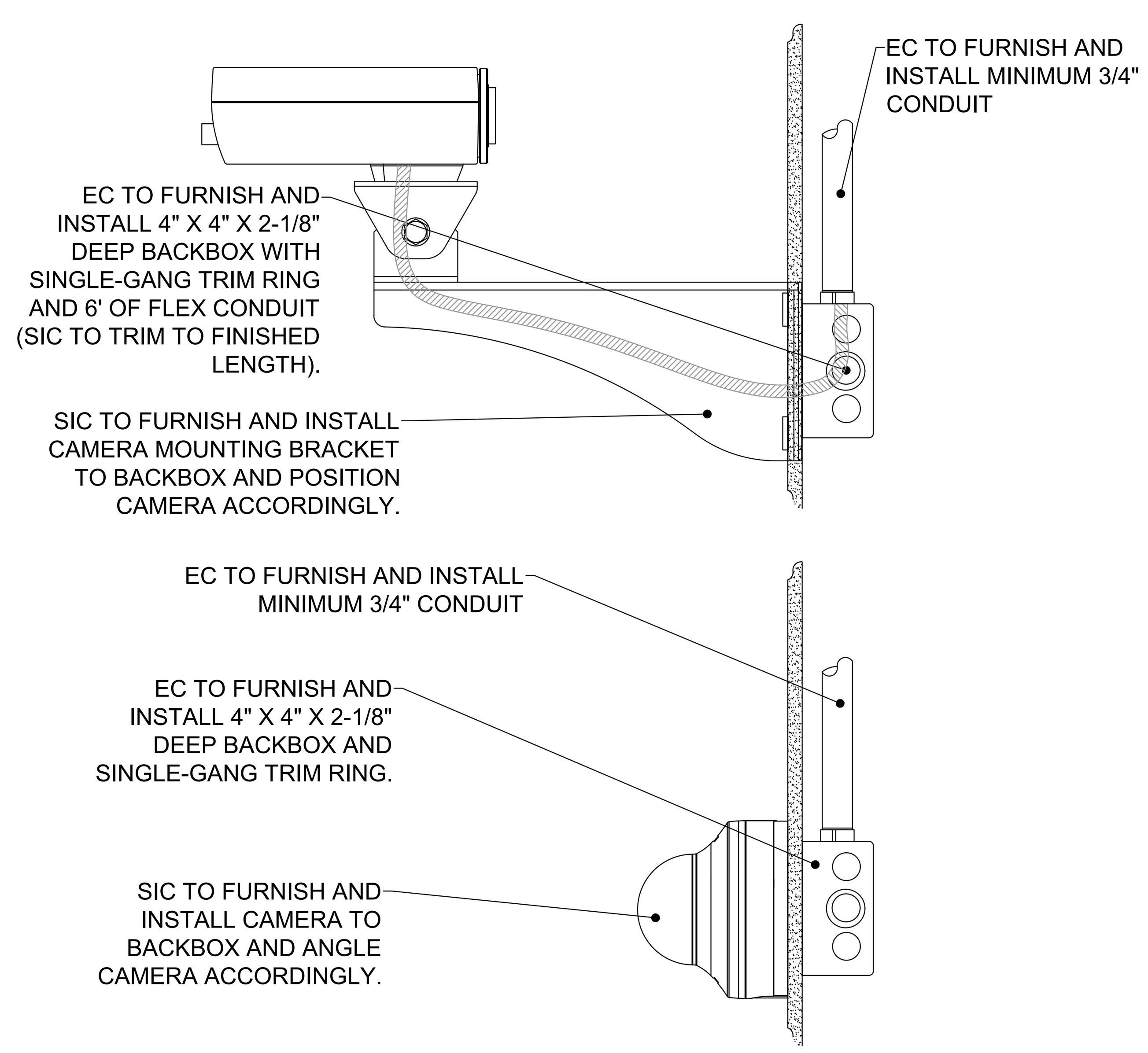
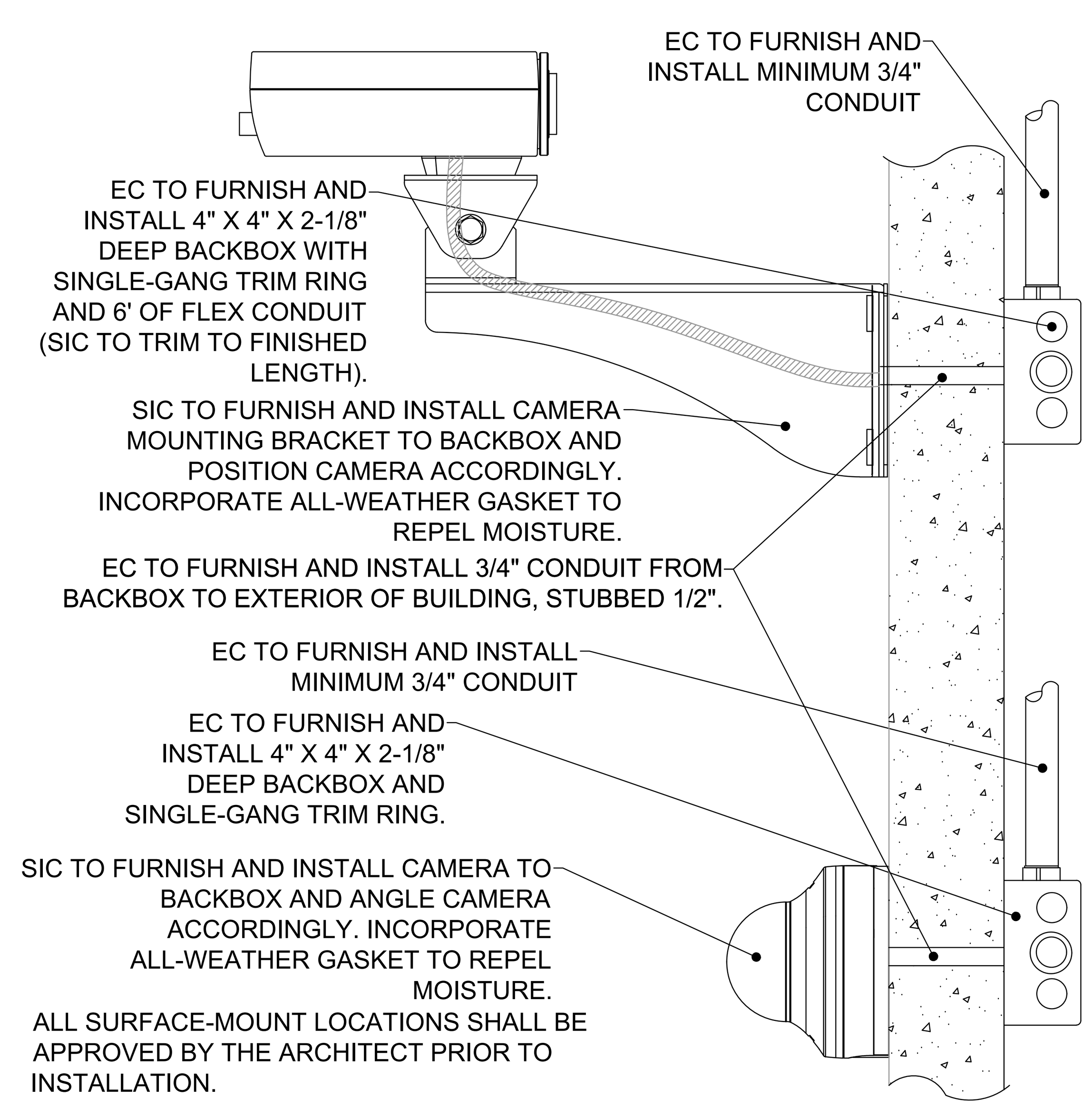
PROTECT CABLING FROM ENTERING BACKBOX BY USING 3/4" BUSHING.THROUGH APPROPRIATE KNOCKOUT.

3 CAMERAS MOUNTED ON ACT CEILINGS IN CONDUIT AREAS

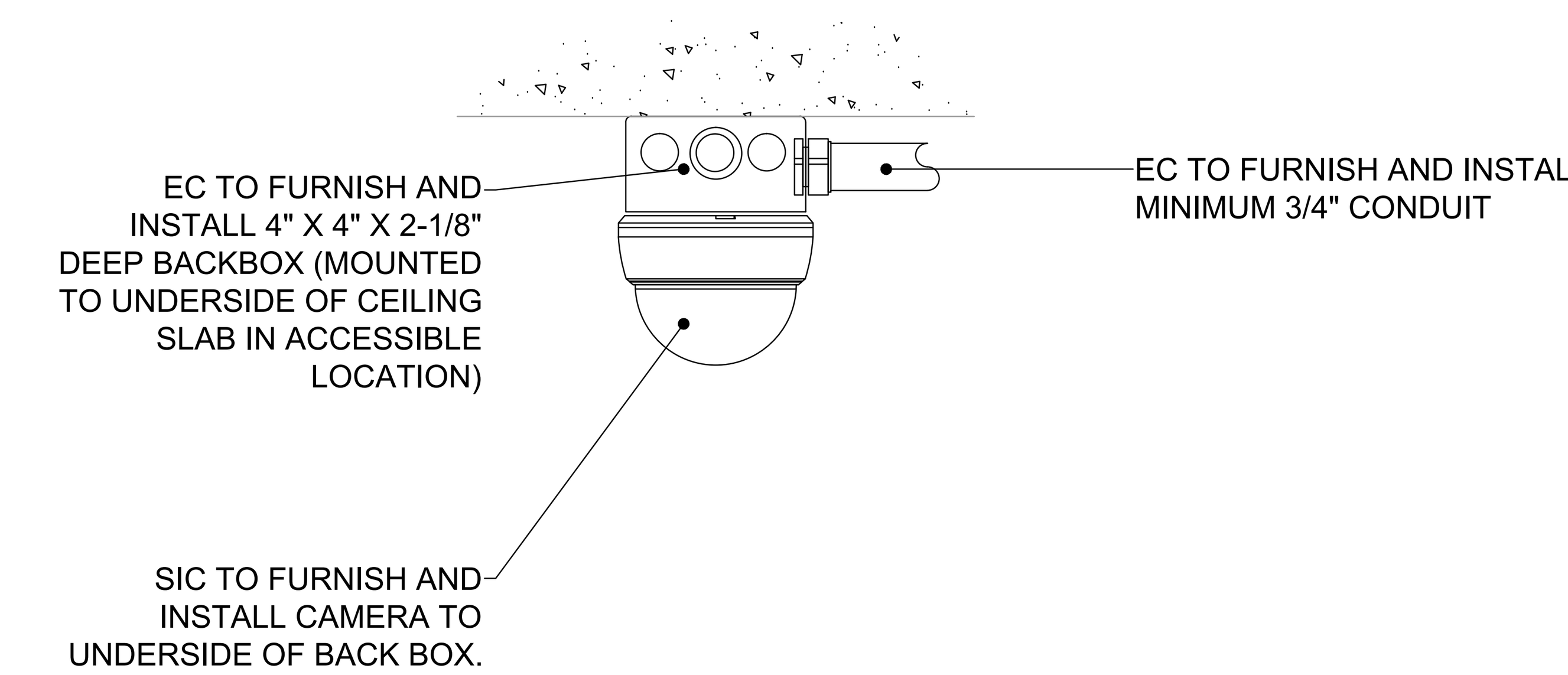


4 CAMERAS MOUNTED TO INTERIOR WALLS



ALL SURFACE-MOUNT LOCATIONS SHALL BE APPROVED BY THE ARCHITECT PRIOR TO INSTALLATION.

5 CAMERAS MOUNTED TO EXTERIOR WALLS



6 CAMERAS MOUNTED TO EXPOSED CEILING SPACES

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COUNTY of DANE WISCONSIN 1839

DANE COUNTY EMERGENCY MANAGEMENT REMODEL
5415 KING JAMES WAY
FITCHBURG, WISCONSIN

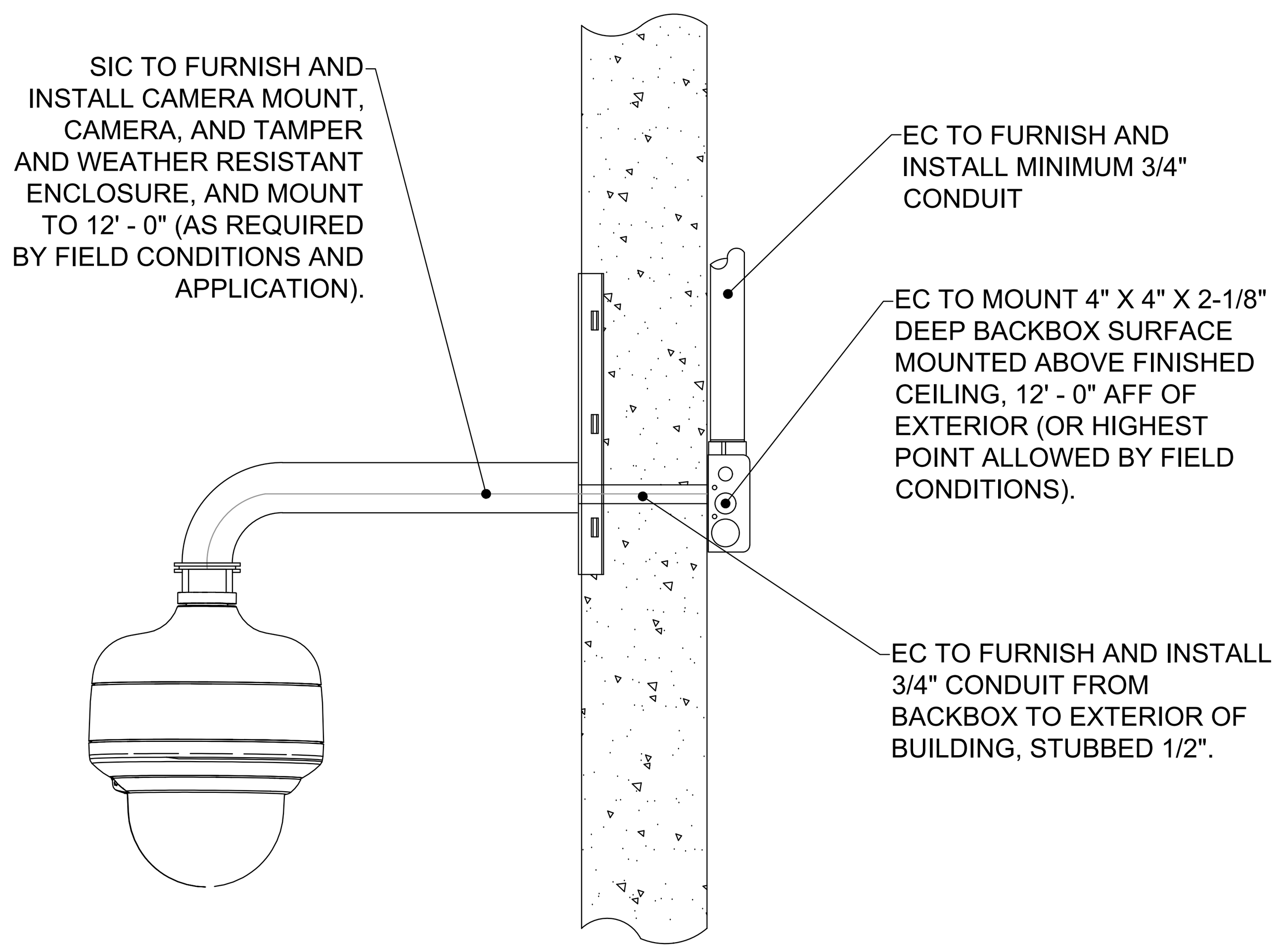
ISSUE RECORD

1	ISSUE FOR BID	06-08-21

CHECKED BY
TFT
DRAWN BY
SENTINEL
DATE
01-04-21
PROJECT NUMBER
2020-001

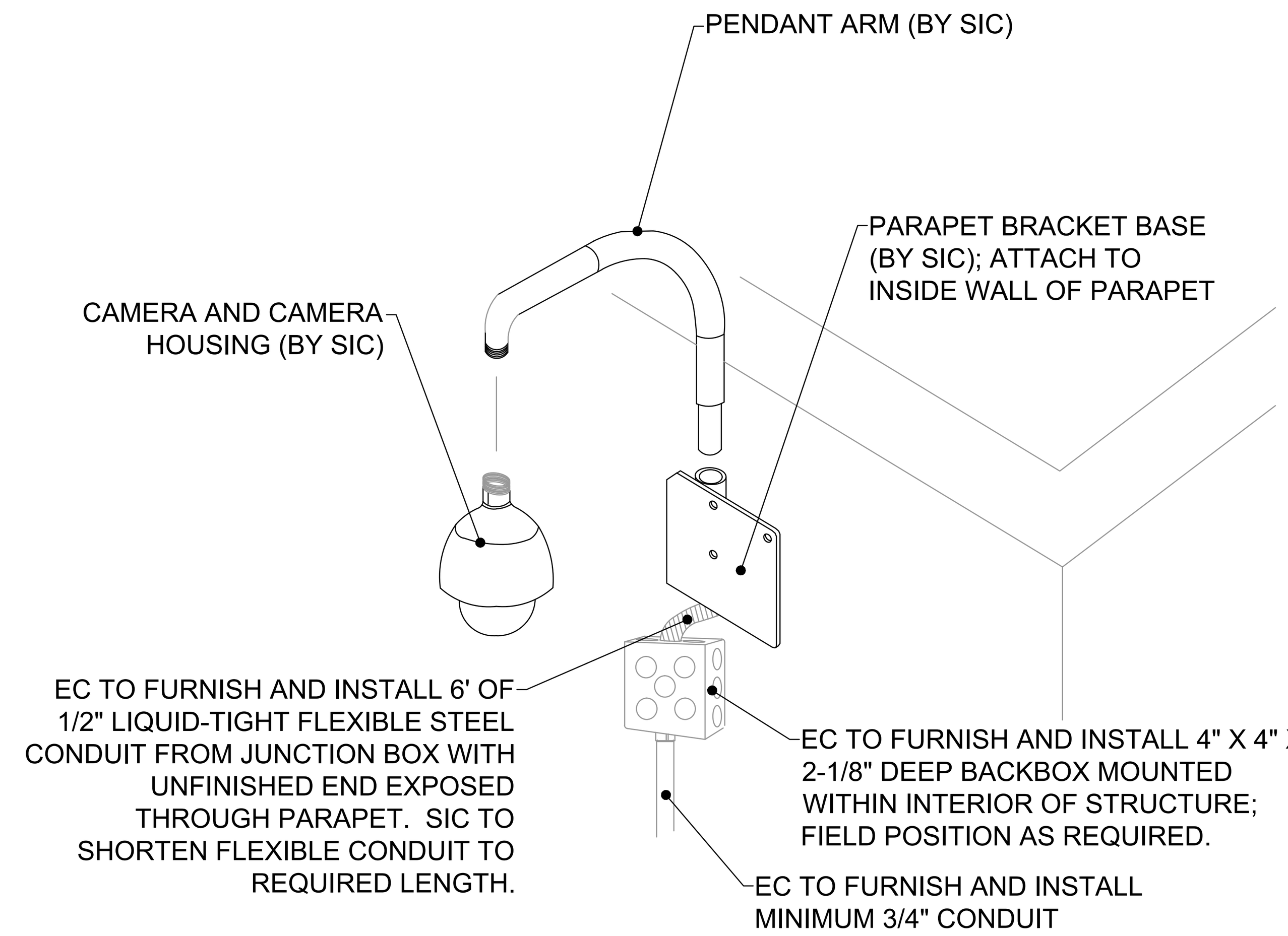
VIDEO SURVEILLANCE DETAILS 1

SS2.1



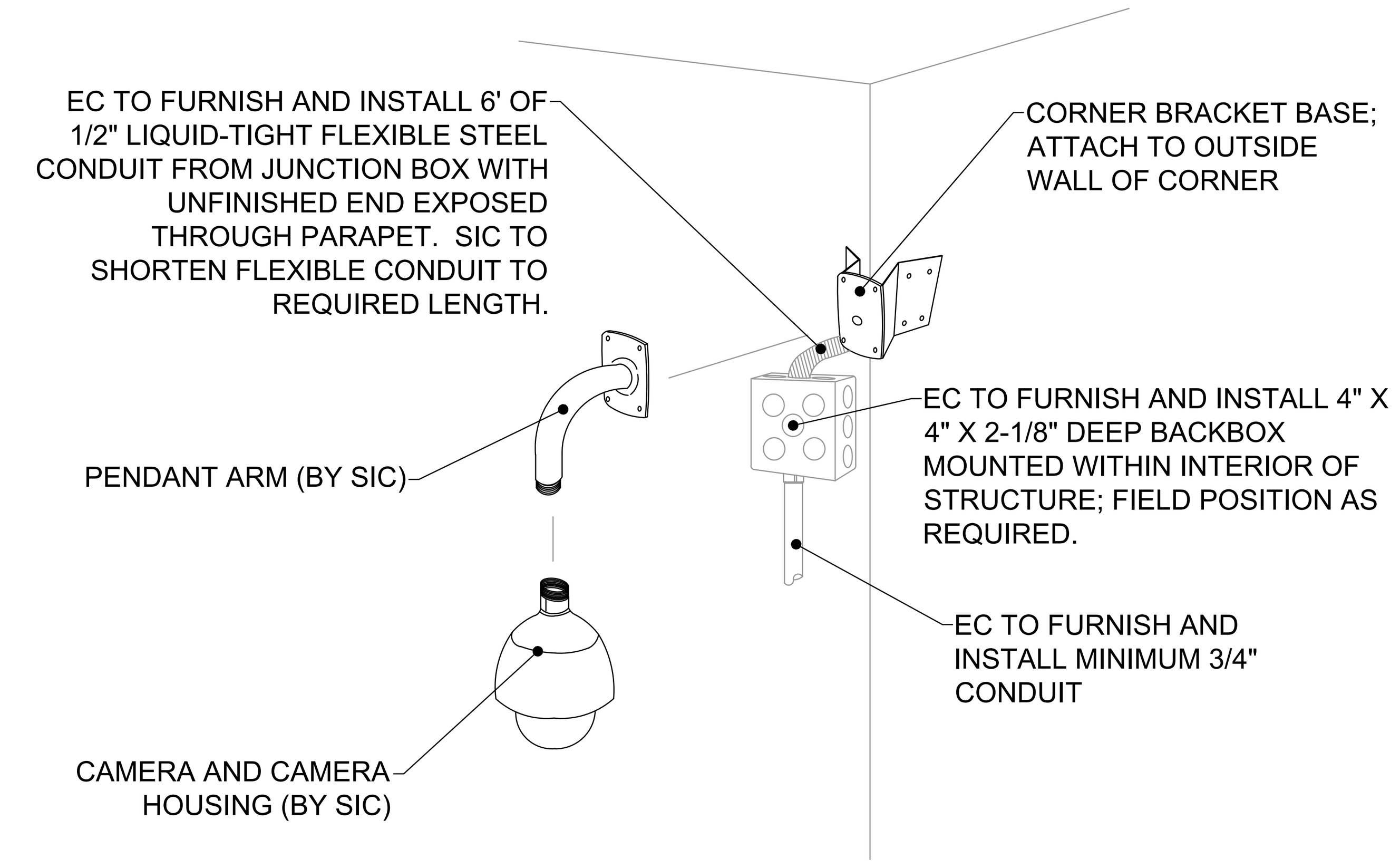
ALL COMPONENTS EXPOSED TO ELEMENTS (INCLUDING PENETRATIONS) SHALL BE GASKETED AND SEALED.

1 CAMERAS MOUNTED ON GOOSENECK EXTENSIONS



ALL COMPONENTS EXPOSED TO ELEMENTS (INCLUDING PENETRATIONS) SHALL BE GASKETED AND SEALED.

2 CAMERAS MOUNTED ON PARAPETS



ALL COMPONENTS EXPOSED TO ELEMENTS (INCLUDING PENETRATIONS) SHALL BE GASKETED AND SEALED.

3 CAMERAS MOUNTED ON OUTSIDE CORNERS (270-DEGREE CAMERAS)

NOT FOR CONSTRUCTION

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VIDEO SURVEILLANCE DETAILS 2

SS2.2