ELECTRICAL SYMBOLS AND ABBREVIATIONS

NOTE: NOT ALL SYMBOLS AND ABBREVIATIONS INDICATED HERE ARE USED IN DRAWINGS AND MAY NOT APPLY TO CURRENT PROJECT. ADDITIONAL SYMBOLS MAY BE INDICATED ON DRAWINGS.

ELECTRICAL ABBREVIATIONS

1P	ONE POLE
2P	TWO POLE
3P	THREE POLE
4P	FOUR POLE
1P,1W	ONE POLE, ONE WIRE
1P,2W	ONE POLE, TWO WIRE
2P,2W	TWO POLE, TWO WIRE
2P,3W	TWO POLE, THREE WIRE
3P,2W	THREE POLE, TWO WIRE
3P,3W	THREE POLE, THREE WIRE
3P,4W	THREE POLE, FOUR WIRE
4P,4W	FOUR POLE, FOUR WIRE
A	AMPERE
AC	ALTERNATING CURRENT
AF	AMPERE FRAME
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
AS	AMP SWITCH
AT	AMP TRIP
ARCH	ARCHITECT
ATS	AUTOMATIC TRANSFER SWITCH
A / V	AUDIO VISUAL
B	PEDESTAL MOUNTED ON BENCH TOP
BF	BELOW FLOOR
BFF	BELOW FINISHED FLOOR
BFG	BELOW FINISHED GRADE
BLDG	BUILDING
C	CONDUIT
CAT	CATALOG
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLG	CEILING MOUNTED
CT	CURRENT TRANSFORMER
CU	COPPER
CL	CENTERLINE
D	DEDICATED DEVICE
DC	DIRECT CURRENT
Δ	DELTA
DISC	DISCONNECT
DWG	DRAWING
E	EMERGENCY
EBU	EMERGENCY BATTERY UNIT
EC	ELECTRICAL CONTRACTOR
EMT	ELECTRIC METALLIC TUBING
ETR	EXISTING TO REMAIN
EWC	ELECTRIC WATER COOLER
EX	EXISTING
FA	FIRE ALARM
FLA	FULL LOAD AMPS
FO	FIBER OPTIC
FPC	FIRE PROTECTION CONTRACTOR
GC	GENERAL CONTRACTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFPE	GROUND FAULT PROTECTION EQUIPMENT
GND	GROUND
GRC	GALVANIZED RIGID CONDUIT
HH	HANDHOLE
HP	HORSEPOWER
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING
HZ	HERTZ (CYCLE) PER SECOND
JB	JUNCTION BOX
KVA	KILOVOLT AMPERE
KVAR	KILOVOLT AMPERE REACTIVE
KW	KILOWATT
LP	LIGHTING PANEL
LS	LIMIT SWITCH
LTG	LIGHTING
LV	LOW VOLTAGE
MC	MECHANICAL CONTRACTOR
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MISC	MISCELLANEOUS
MH	MANHOLE
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTG	MOUNTING
MTS	MANUAL TRANSFER SWITCH
N / A	NOT APPLICABLE
MV	MEDIUM VOLTAGE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
#	NUMBER
NTS	NOT TO SCALE
P	POLE
PB	PULL BOX
PC	PLUMBING CONTRACTOR
PH	PHASE
PNL	PANEL OR PANELBOARD
PP	POWER PANEL
PR	PAIR
PRI	PRIMARY
PVC	POLYVINYL CHLORIDE
REC	RECESSED
RSC	RIGID STEEL CONDUIT
SC	SECURITY CONTRACTOR
SEC	SECONDARY
SN	SOLID NEUTRAL
SP	SPARE
SS	STAINLESS STEEL
ST	SHUNT TRIP
STP	SHIELDED TWISTED PAIR
SUSP	SUSPENDED
SW	SWITCH
SWBD	SWITCHBOARD
T	TAMPER RESISTANT SAFETY RECEPTACLE
TC	TELEPHONE CABINET
TCI	TELECOMMUNICATIONS CABLING INSTALLER
TELE / DATA	TELEPHONE / DATA
TEL	TELEPHONE
TELECOM	TELECOMMUNICATIONS
TP	TWISTED PAIR
TYP	TYPICAL
UG	UNDERGROUND
UTP	UNSHIELDED TWISTED PAIR
V	VOLT
UOI	UNLESS OTHERWISE INDICATED
Y	WYE
W	WATT
WP	WEATHERPROOF
XFMR	TRANSFORMER
ZAM	ZONE ADAPTER MODULE

GENERAL SYMBOLS

- DETAIL REFERENCE
  - TOP DESIGNATES DETAIL NUMBER
  - BOTTOM DESIGNATES SHEET NUMBER
- DETAIL COVERAGE AREA
- EQUIPMENT REFERENCE
  - TOP DESIGNATES EQUIPMENT TYPE:
    (LP) LIGHTING PANEL
    (MDP) MAIN DISTRIBUTION PANEL
    (MSB) MAIN SWITCHBOARD PANEL
    (PP) POWER PANEL
    (RC) RELAY CABINET
    (RP) RECEPTACLE PANEL
    (T) TRANSFORMER
  - BOTTOM DESIGNATES EQUIPMENT ID
- BUSWAY REFERENCE
  - TOP DESIGNATES TYPE
  - BOTTOM DESIGNATES RATING

CONDUCTORS AND WIRING

- E — OVERHEAD POWER CONDUCTOR
- E — UNDERGROUND POWER CONDUCTOR OR DUCTBANK
- L — OVERHEAD LIGHTING CONDUCTOR
- L — UNDERGROUND LIGHTING CONDUCTOR
- T — OVERHEAD TELECOMMUNICATIONS CABLE
- T — UNDERGROUND TELECOMMUNICATIONS CABLE OR DUCTBANK
- FO — OVERHEAD FIBER OPTIC CABLE
- FO — UNDERGROUND FIBER OPTIC CABLE
- UNDERGROUND OR UNDERFLOOR CONDUIT OR DUCTBANK
- SURFACE OR SUSPENDED MOUNTED CONDUIT
- LIGHTNING PROTECTION / GROUNDING CABLE

LINETYPE LEGEND

- ITEMS SHOWN ON PLANS AS THIN, SOLID BLACK LINE ARE EXISTING TO REMAIN
- ITEMS SHOWN ON DEMOLITION PLANS AS THICK, SOLID BLACK LINE ARE EXISTING TO BE DEMOLISHED
- ITEMS SHOWN ON PROPOSED PLANS AS THICK, SOLID BLACK LINE ARE NEW
- ITEMS SHOWN ON PLANS AS THICK, DASHED BLACK LINE ARE FUTURE

LIGHTING FIXTURES

- SURFACE MOUNTED
- RECESS MOUNTED
- WALL MOUNTED
- SUSPENDED, PENDENT, CHAIN, STEM, OR CABLE HUNG
- POLE MOUNTED WITH ARM
- POST TOP MOUNTED
- IN-GROUND OR IN-FLOOR MOUNTED
- SINGLE HEAD SPOT OR FLOOD
- DOUBLE HEAD SPOT OR FLOOD
- STRIP OR UNDER CABINET
- LIGHTING TRACK
  - LENGTH AS INDICATED ON DRAWINGS
  - NUMBER AND DIRECTION OF FIXTURES AS INDICATED ON DRAWINGS AND / OR SCHEDULE
- SURFACE MOUNTED ACCENT
  - CHEVRON INDICATES DIRECTION OF ILLUMINATION
- RECESS MOUNTED ACCENT
  - CHEVRON INDICATES DIRECTION OF ILLUMINATION
- EMERGENCY BATTERY UNIT
  - DUAL LIGHTING HEADS
- EMERGENCY BATTERY REMOTE
  - SINGLE LIGHTING HEAD
- EMERGENCY BATTERY REMOTE
  - DUAL LIGHTING HEADS
- EXIT LIGHT FIXTURE
  - CEILING MOUNTED
  - SHADING INDICATES FACE(S)
  - ARROW(S) AND FACE(S) AS INDICATED ON DRAWINGS
- EXIT LIGHT FIXTURE
  - END MOUNTED
  - SHADING INDICATES FACE(S)
  - ARROW(S) AND FACE(S) AS INDICATED ON DRAWINGS

LIGHTING FIXTURE DESIGNATIONS

- SHADING INDICATES FIXTURE FULLY WIRED TO EMERGENCY OR NIGHT LIGHTING CIRCUIT
- PARTIAL SHADING INDICATES FIXTURE PARTIALLY WIRED TO EMERGENCY OR NIGHT LIGHTING CIRCUIT
- A-1b — LIGHT FIXTURE DESIGNATION
  - (A) INDICATES FIXTURE TYPE (SEE SCHEDULE)
  - (1) INDICATES CIRCUIT NUMBER (PANEL BOUNDS AS INDICATED ON DRAWINGS)
  - (b) INDICATES CONTROL DESIGNATION (IF NOT INDICATED, CONTROLLED VIA SWITCH AT ROOM ENTRY)

TYPICAL AT EACH FIXTURE LOCATION:
- ca — CONTACTOR DESIGNATION (SEE SCHEDULE) CONTROLLED VIA CONTACTOR
- dal — DIMMER CHANNEL CABINET DESIGNATION CONTROLLED VIA ELECTRONIC DIMMING SYSTEM
- oa — SPECIFIC DEVICE DESIGNATION CONTROLLING CIRCUIT OR PORTION OF CIRCUIT OCCUPANCY SENSOR CONTROLLED
- ra — RELAY DESIGNATION CONTROLLING CIRCUIT OR PORTION OF CIRCUIT LOW VOLTAGE RELAY CONTROLLED VIA RELAY CABINET
- ta — TIME CLOCK DESIGNATION (SEE SCHEDULE) TIME CLOCK CONTROLLED

LIGHTING CONTROL

- X a $ — SWITCH
  - MOUNTED 3'-8" AFF, UOI
  - (a) INDICATES SWITCH DESIGNATION
  - SINGLE POLE, UOI
  - (X) INDICATES SWITCH TYPE:
    (2) TWO POLE
    (3) THREE WAY
    (4) FOUR WAY
    (DLS) DUAL LEVEL SWITCH
    (K) KEY OPERATED
    (P) WITH PILOT LIGHT
- RELAY CABINET
  - LOW VOLTAGE
  - (SEE SCHEDULE)
- X L — SWITCH STATION
  - LOW VOLTAGE
  - (X) INDICATES STATION IDENTIFIER:
    (X) FOR (4) OR MORE SWITCHES AT SINGLE LOCATION (SEE SCHEDULE)
    (Xa,Xb,Ya) FOR (3) OR FEWER SWITCHES AT SINGLE LOCATION WITH SINGLE RELAYS OR PARTITIONS OF CIRCUIT BEING CONTROLLED
    (Xa) FOR SINGLE SWITCH CONTROLLING SINGLE RELAY
    ((X,Y)a) FOR SINGLE SWITCH CONTROLLING MULTIPLE CIRCUITS
- X OS — OCCUPANCY SENSOR
  - CEILING MOUNTED
  - (X) INDICATES TYPE (SEE SCHEDULE)
  - CHEVRON(S) INDICATE SENSING DIRECTION(S)
- X OS — OCCUPANCY SENSOR
  - WALL MOUNTED
  - 3'-8" AFF, UOI
  - (X) INDICATES TYPE (SEE SCHEDULE)
- X PC — PHOTOCELL
  - (X) INDICATES TYPE (SEE SCHEDULE)

EQUIPMENT AND PANELBOARDS

- X — TRANSFORMER
  - MOUNTED ON 4" CONCRETE PAD, UOI
  - (X) INDICATES MOUNTING TYPE:
    (W) WALL
    (S) SURFACE
- TRANSFORMER
  - PAD MOUNTED
- CT — CURRENT TRANSFORMER CABINET
- M — METER
- PANELBOARD
  - RECESSED MOUNTED
  - (SEE SCHEDULE)
- PANELBOARD
  - SURFACE MOUNTED
  - (SEE SCHEDULE)
- P X — POWER POLE
  - (X) INDICATES CIRCUIT
  - DEVICES AS INDICATED ON DRAWINGS AND / OR IN SPECIFICATION
- TP X — TELECOMMUNICATIONS / POWER POLE
  - (X) INDICATES CIRCUIT
  - DEVICES AS INDICATED ON DRAWINGS AND / OR IN SPECIFICATION

MOTOR STARTERS AND DISCONNECTS

- M — MOTOR STARTER
  - MANUAL
- X — MOTOR STARTER
  - MAGNETIC
  - (X) INDICATES MOTOR STARTER CONTROLLED (SEE SCHEDULE)
- X — COMBINATION MOTOR STARTER
  - (X) INDICATES MOTOR STARTER CONTROLLED (SEE SCHEDULE)
- X — DISCONNECT SWITCH
  - (X) INDICATES MOTOR FED BY SWITCH
- F X — DISCONNECT SWITCH
  - FUSED
  - (X) INDICATES MOTOR FED BY SWITCH
- EMERGENCY POWER SHUNT TRIP
- PUSHBUTTON DISCONNECT

WIRING DEVICES

- Y X — DUPLEX RECEPTACLE
  - MOUNTED 1'-6" AFF, UOI
  - (X) INDICATES CIRCUIT NUMBER (PANEL BOUNDS AS INDICATED ON DRAWINGS)
  - (Y) INDICATES TYPE:
    (D) DEDICATED
    (DD) DOUBLE DUPLEX
    (GFCI) GROUND FAULT CIRCUIT INTERRUPTING
    (WP) WEATHERPROOF
- X — DUPLEX RECEPTACLE MOUNTED 6" ABOVE COUNTER BACKSPLASH
  - (X) INDICATES CIRCUIT NUMBER (PANEL BOUNDS AS INDICATED ON DRAWINGS)
- S X — DUPLEX RECEPTACLE
  - TOP HALF SWITCHED
  - MOUNTED 1'-6" AFF, UOI
  - (X) INDICATES CIRCUIT NUMBER (PANEL BOUNDS AS INDICATED ON DRAWINGS)
- X — DUPLEX RECEPTACLE
  - MOUNTED FLUSH IN COUNTERTOP
  - (X) INDICATES CIRCUIT NUMBER (PANEL BOUNDS AS INDICATED ON DRAWINGS)
- C X — DUPLEX RECEPTACLE
  - MOUNTED FLUSH IN CEILING
  - (X) INDICATES CIRCUIT NUMBER (PANEL BOUNDS AS INDICATED ON DRAWINGS)
- X — SPECIAL PURPOSE OUTLET
  - (X) INDICATES DEVICE IDENTIFICATION (SEE SCHEDULE)
- X — SPECIAL POWER RECEPTACLE
  - (X) INDICATES NEMA CONFIGURATION AND CIRCUIT NUMBER (PANEL BOUNDS AS INDICATED ON DRAWINGS)
- X — MOTOR CONNECTION
  - (X) INDICATES MOTOR IDENTIFICATION (SEE SCHEDULE)

FIRE ALARM

- FAAP — ANNUNCIATOR PANEL
- FACP — CONTROL PANEL
- CM — CONTROL MODULE
  - ADDRESSABLE
- MM — MONITOR MODULE
  - ADDRESSABLE
- PULL STATION
  - MOUNTED 4'-0" AFF
- E S — SMOKE DETECTOR
  - PHOTOELECTRIC
  - INTELLIGENT
  - (E) INDICATES ELEVATOR RECALL OPTION
- E H — HEAT DETECTOR
  - INTELLIGENT
  - (E) INDICATES ELEVATOR SHUTDOWN OPTION
- DS — SMOKE DETECTOR
  - DUCT
  - PHOTOELECTRIC
  - INTELLIGENT
  - LINE INDICATES SENSING DIRECTION
- FS — SPRINKLER FLOW SWITCH
- TS — SPRINKLER TAMPER SWITCH
- SD — SMOKE DAMPER
- X FA — FIRE ALARM STROBE
  - WALL MOUNTED 6'-8" AFF OR 6" BELOW CEILING, WHICHEVER IS LOWER
  - (X) INDICATES STROBE CANDELA RATING
- X FA — FIRE ALARM STROBE
  - CEILING MOUNTED
  - (X) INDICATES STROBE CANDELA RATING
- X FA — FIRE ALARM HORN
  - WALL MOUNTED 6'-8" AFF OR 6" BELOW CEILING, WHICHEVER IS LOWER
  - (X) INDICATES HORN DECIBEL RATING
- X FA — FIRE ALARM HORN
  - CEILING MOUNTED
  - (X) INDICATES HORN DECIBEL RATING
- X FA — FIRE ALARM HORN / STROBE
  - WALL MOUNTED 6'-8" AFF OR 6" BELOW CEILING, WHICHEVER IS LOWER
  - (X) INDICATES STROBE CANDELA RATING
- X FA — FIRE ALARM HORN / STROBE
  - CEILING MOUNTED
  - (X) INDICATES STROBE CANDELA RATING

TELECOMMUNICATIONS

- TELEPHONE OUTLET
- W — TELEPHONE OUTLET
  - WALL MOUNTED
- DATA OUTLET
- TELEPHONE / DATA OUTLET
- T — TELECOMMUNICATIONS POLE
  - DEVICES AS INDICATED ON DRAWINGS AND / OR SPECIFICATION

PUBLIC ADDRESS AND MUSIC

- M — MICROPHONE OUTLET
  - FLOOR MOUNTED
- M — MICROPHONE OUTLET
  - WALL MOUNTED
- IC — INTERCOM UNIT
  - FLUSH MOUNTED
- MI — MASTER INTERCOM AND DIRECTORY UNIT
- VC — VOLUME CONTROL
- S — SPEAKER
  - WALL MOUNTED
- S — SPEAKER
  - CEILING MOUNTED
- P — SPEAKER
  - BI-DIRECTIONAL PAGING
  - WALL MOUNTED
- P — SPEAKER
  - BI-DIRECTIONAL PAGING
  - CEILING MOUNTED

SECURITY AND ACCESS CONTROL

- CCTV X — CCTV CAMERA
  - STATIONARY
  - (X) INDICATES TYPE:
    (WP) WEATHER PROOF
    (VP) VANDAL PROOF
- CCTV X — CCTV CAMERA
  - PAN-TILT-ZOOM
  - (X) INDICATES TYPE:
    (WP) WEATHER PROOF
    (VP) VANDAL PROOF
- CCTV — CCVT COAXIAL CABLE OUTLET
- MTV — CCVT MONITOR OUTLET
- DVR — DIGITAL VIDEO RECORDER OUTLET
- B — DOOR BELL
- B — DOOR BUZZER
- B — DOOR CHIME
- DC — DOOR CONTACT
- ML — DOOR LOCK
  - MAGNETIC
- DR — DOOR OPENER
  - ELECTRIC
- ES — DOOR STRIKE
  - ELECTRIC
- K — KEY SWITCH STATION
- X CR — SECURITY CARD READER
  - (X) INDICATES TYPE:
    (WP) WEATHER PROOF
    (VP) VANDAL PROOF
- MD — MOTION DETECTOR
- SCP — SECURITY CONTROL PANEL

GROUNDING AND LIGHTNING PROTECTION

- AIR TERMINAL
  - ROOF CENTER
- AIR TERMINAL
  - ROOF PERIMETER
- DOWN CONDUCTOR
- GROUND PLATE ELECTRODE
- GROUND ROD
- GROUND TEST STATION
- GROUND CONNECTION TO STRUCTURAL STEEL
- EXOTHERMIC CONNECTION
  - WELD OR BOLTED AS INDICATED ON DRAWINGS
- GROUND CONDUCTOR SPARE COIL

ONE LINE DIAGRAM

- XA — DISCONNECT SWITCH
  - NON-FUSED
  - (XA) INDICATES RATING
  - SIZE AS INDICATED ON DRAWINGS
- F XAF XA — DISCONNECT SWITCH
  - FUSED
  - (XAF) INDICATES FRAME SIZE
  - (XA) INDICATES FUSE RATING
  - SIZE AS INDICATED ON DRAWINGS
- CB XAF XAT — DISCONNECT SWITCH
  - CIRCUIT BREAKER
  - (XAF) INDICATES FRAME SIZE
  - (XAT) INDICATES TRIP SIZE
  - SIZE AS INDICATED ON DRAWINGS
- VFD X — VARIABLE FREQUENCY DRIVE
  - (X) INDICATES MOTOR CONTROLLED
- XA XP — CIRCUIT BREAKER
  - (XA) INDICATES TRIP SIZE
  - (XP) INDICATES NUMBER OF POLES
- MO — MOTOR OPERATOR FOR CIRCUIT BREAKERS OR SWITCHES
- GFCI — GROUND FAULT CIRCUIT INTERRUPTER
  - PERSONAL PROTECTION
- XXX / XXX — PANELBOARD
  - TOP DESIGNATES PANELBOARD TYPE
  - BOTTOM DESIGNATES PANELBOARD ID
- GROUND CONNECTION TO SYSTEM AND / OR EQUIPMENT
- Δ Y — T / XXX XXXKVA XXXV, XPH, XW PRI XXXY / XXXV, XPH, XW SEC
- TRANSFORMER
  - DRY TYPE, UOI
  - (XXX) INDICATES EQUIPMENT IDENTIFICATION
  - (XXXKVA) INDICATES RATING
  - (XXXV, XPH, XW PRI) INDICATES PRIMARY VOLTAGE, PHASE, AND WIRES
  - (XXXY / XXXV, XPH, XW SEC) INDICATES SECONDARY VOLTAGE, PHASE, AND WIRES

ELECTRICAL SHEET INDEX

E000 ELECTRICAL SYMBOLS, ABBREVIATIONS, AND SHEET INDEX
E001 SITE ELECTRICAL PLAN, LIGHTING FIXTURE SCHEDULE, AND DETAILS
E002 SITE PHOTOMETRIC PLAN
E101 HHW FIRST FLOOR / WTS LOWER LEVEL ELECTRICAL PLAN
E102 HHW MEZZANINE / WTS UPPER LEVEL ELECTRICAL PLAN
E103 HHW / WTS GROUNDING SYSTEM PLAN
E201 HHW FIRST FLOOR / WTS LOWER LEVEL SYSTEMS PLAN
E202 HHW MEZZANINE / WTS UPPER LEVEL SYSTEMS PLAN
E401 ELECTRICAL SCHEDULES
E402 ELECTRICAL SCHEDULES & ONE-LINE DIAGRAM
E500 ELECTRICAL DETAILS

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PROJECT TITLE:

DANE COUNTY
WASTE TRANSFER STATION
AND HOUSEHOLD HAZARDOUS
WASTE FACILITY
RODEFELD LANDFILL

ISSUE:

PROJECT INFORMATION:

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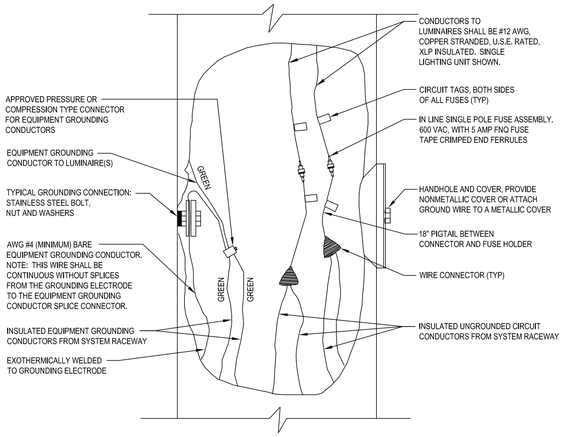
DRAWN BY:	JAH
CHECKED BY:	AAS
APPROVED BY:	JHK
SCALE:	AS NOTED

SHEET TITLE:

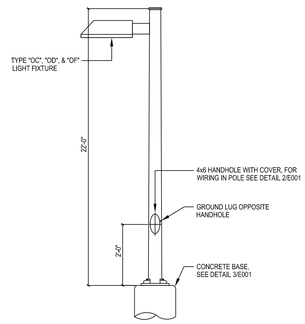
ELECTRICAL SYMBOLS,
ABBREVIATIONS AND SHEET INDEX

SHEET NUMBER:

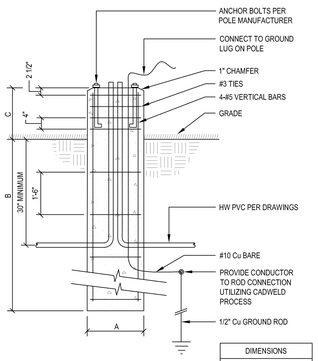
E000



2 E001 POLE WIRING DETAIL
NOT TO SCALE

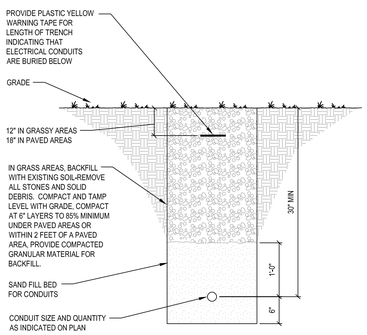


5 E001 POLE DETAIL
NOT TO SCALE



DIMENSIONS
A = 2'-0"
B = 6'-0" MIN.
C = 3'-0"

3 E001 FIXTURE TYPE "OC", "OD", & "OF" POLE BASE DETAIL
NOT TO SCALE



4 E001 CONDUIT TRENCH DETAIL
NOT TO SCALE

SITE LIGHTING FIXTURE SCHEDULE

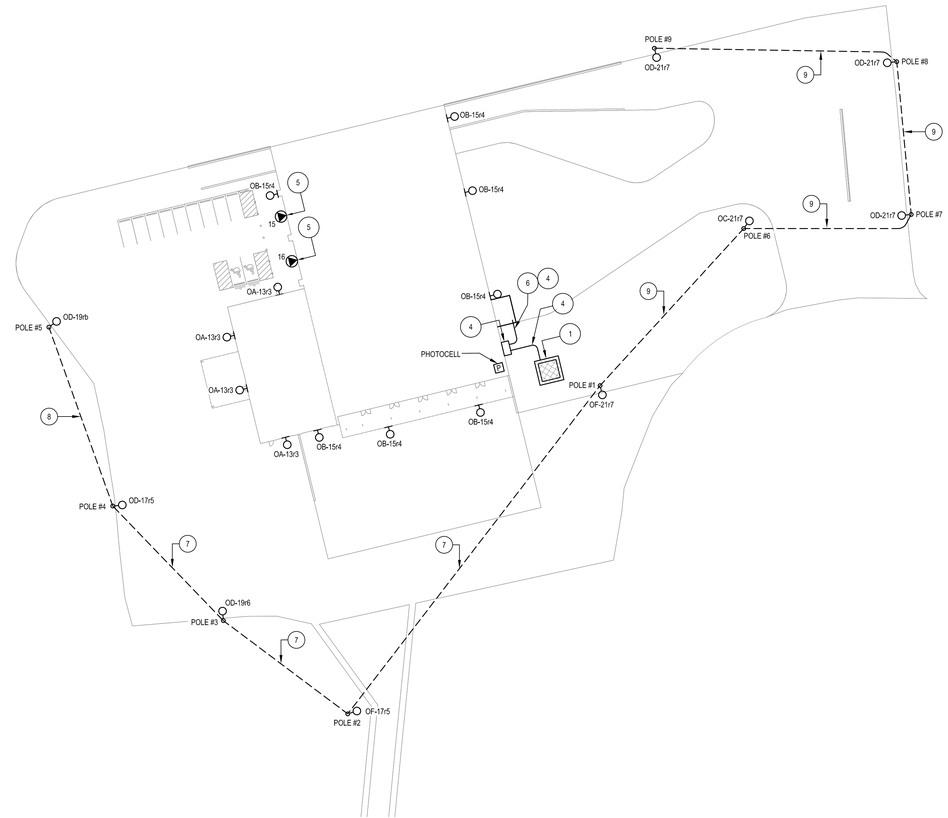
NOTE: SEE SPECIFICATIONS SECTIONS FOR ADDITIONAL INFORMATION REGARDING LIGHTING FIXTURE AND INSTALLATION REQUIREMENTS. PROVIDE OPTIONS AND ACCESSORIES REFERENCED BY THE COLUMN TITLED "OPTIONS/ACCESSORIES". MANUFACTURERS LISTED AS ACCEPTABLE SHALL MEET ALL REQUIREMENTS AND FEATURES INDICATED. ACCEPTABLE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

ABBREVIATIONS:
DW = DRY WALL; ES = EXPOSED STRUCTURE; LG = LAY-IN GRID; P = PENDANT; PL = PLASTER; PO = POLE; R = RECESS; S = SURFACE; W = WALL MOUNTED; V = VARIES

DES	LAMP DATA #	LAMP DATA TYPE	DESCRIPTION	LIGHTING FIXTURE MANUFACTURER	LIGHTING FIXTURE CATALOF SERIES	VOLT	MOUNT	CEILING TYPE	FIXTURE DEPTH	OPTIONS/ ACCESSORIES	ACCEPTABLE MANUFACTURERS	SEE NOTE
OA	1	F54T5HO	EXTERIOR WALL FLUORESCENT FIXTURE	LUMINAIRE LIGHTING	AEL48-CL-BKH-EMB	277	W	-	-	-	LITHONIA, DAYBRITE, LSI	-
OB	1	320W PSMH	EXTERIOR FLOOD	COOPER	AMF-F-76-BK	277	W	-	-	-	LITHONIA, DAYBRITE, LSI	-
OC	1	320W PSMH	PARKING LOT - 22FT POLE - TYPE III	COOPER	CLM-3F-FG-BK	277	PO	-	-	22FT POLE COOPER 'SSS' SERIES	LITHONIA, DAYBRITE, LSI	1,2
OD	1	320W PSMH	PARKING LOT - 22FT POLE - TYPE IV WITH SHIELD	COOPER	CLM-4F-FG-BK	277	PO	-	-	22FT POLE COOPER 'SSS' SERIES	LITHONIA, DAYBRITE, LSI	1,2
OF	1	320W PSMH	PARKING LOT - 22FT POLE - TYPE IV	COOPER	CLM-4F-FG-BK-HS	277	PO	-	-	22FT POLE COOPER 'SSS' SERIES	LITHONIA, DAYBRITE, LSI	1,2

LIGHTING FIXTURE SCHEDULE NOTES:

1. EC SHALL PROVIDE 22'-0", 4-INCH SQUARE STEEL POLE.
2. EC SHALL PROVIDE CONCRETE BASES. SEE DETAIL 3/E100.



1 E001 SITE ELECTRICAL PLAN
1"=40'-0"
0 20' 40'

SHEET NOTES:

1. MADISON GAS AND ELECTRIC COMPANY UTILITY TRANSFORMER. EC TO PROVIDE CONCRETE PAD.
2. EC TO PROVIDE 1600A,480V, 3-PHASE, 4-WIRE TRANSOCKET WITH METER SOCKET.
3. EC TO PROVIDE (4) 4" CONDUIT STUBS 36" BELOW FINISH GRADE TO TRANSOCKET AND UTILITY TRANSFORMER FROM BUILDING. EC TO COORDINATE ALL REQUIREMENTS WITH ELECTRIC UTILITY.
4. EC TO COORDINATE ALL REQUIREMENTS WITH ELECTRIC UTILITY.
5. EC TO PROVIDE ELECTRICAL CONNECTIONS TO HAZARDOUS MATERIAL STORAGE CONTAINERS. SEE SPECIAL OUTLET SCHEDULE FOR FURTHER REQUIREMENTS. EC TO COORDINATE EXACT REQUIREMENTS WITH MANUFACTURE.
6. ROUTE CONDUITS TO UNDERGROUND ELECTRICAL ROOM.
7. EC TO PROVIDE (3) #10 AWG, AND (1) #10 GRD IN 1" CONDUIT.
8. EC TO PROVIDE (2) #10 AWG, AND (1) #10 GRD IN 1" CONDUIT.
9. EC TO PROVIDE (2) #8 AWG, AND (1) #10 GRD IN 1" CONDUIT.

SHEET NOTES:

REFER TO SHEETS A300 AND A301 FOR EXACT LOCATIONS OF BUILDING MOUNTED LIGHT FIXTURES.

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CONSULTANTS:

PROJECT TITLE:

DANE COUNTY
WASTE TRANSFER STATION
AND HOUSEHOLD HAZARDOUS
WASTE FACILITY
RODEFELD LANDFILL

ISSUE:

PROJECT INFORMATION:

PROJECT NUMBER:	2009-0328.00
DATE:	05-11-2010
DRAWN BY:	TKA
CHECKED BY:	AAS
APPROVED BY:	JHK
SCALE:	AS NOTED

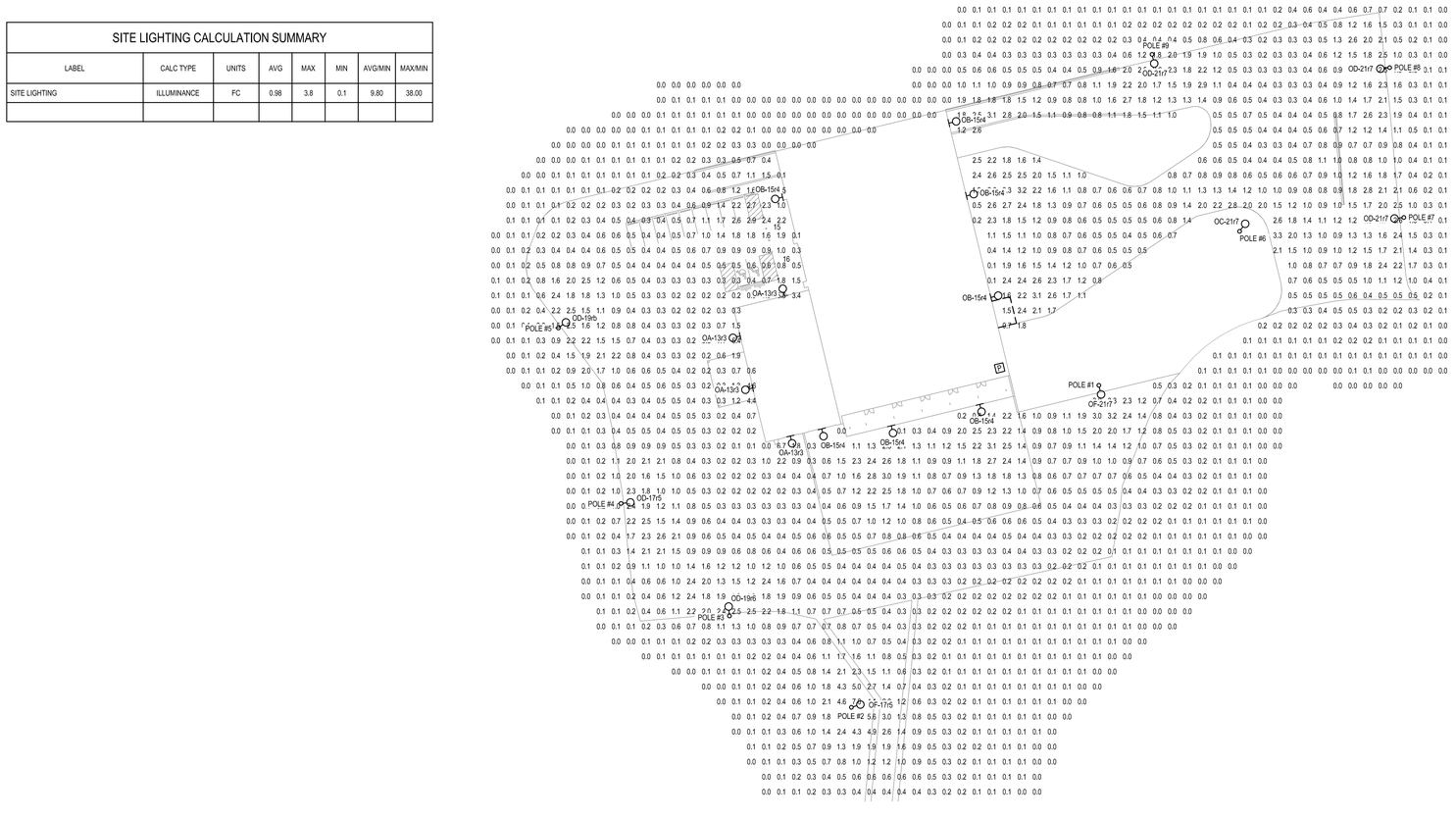
SHEET TITLE:

SITE ELECTRICAL PLAN, LIGHTING FIXTURE SCHEDULE, AND DETAILS

SHEET NUMBER:

E001

SITE LIGHTING CALCULATION SUMMARY							
LABEL	CALC TYPE	UNITS	AVG	MAX	MIN	AVG/MIN	MAX/MIN
SITE LIGHTING	ILLUMINANCE	FC	0.98	3.8	0.1	9.80	38.00



1
E002

SITE PHOTOMETRIC PLAN

1"=40'-0"

0 20' 40'

N

GENERAL NOTES:

1.) FOOT CANDLE CALCULATIONS POINTS AT GROUND LEVEL.

2.) ILLUMINATION LEVEL ASSUMED TO BE ON FLAT SURFACE.

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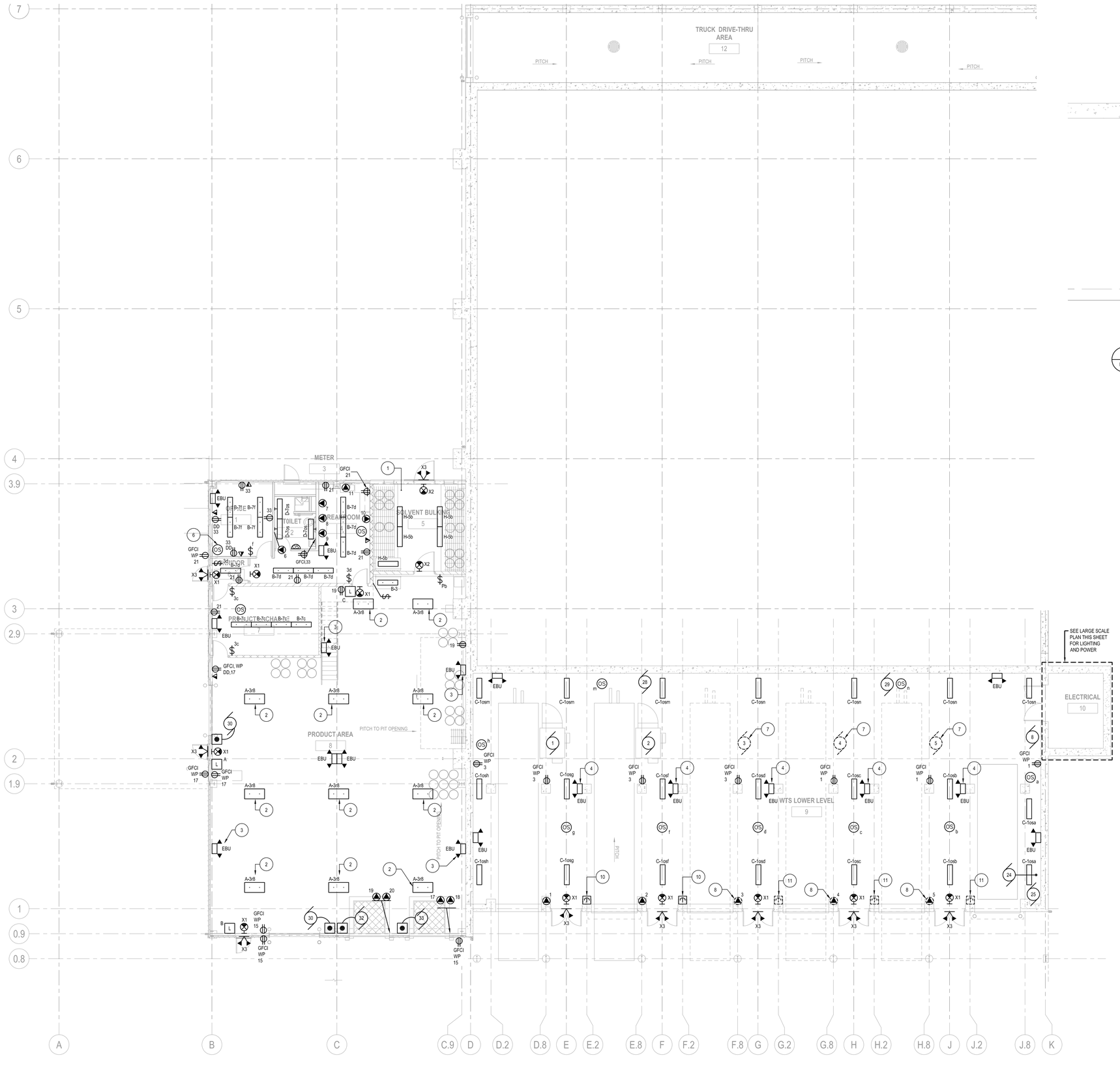
SCALE:	AS NOTED

SHEET TITLE:

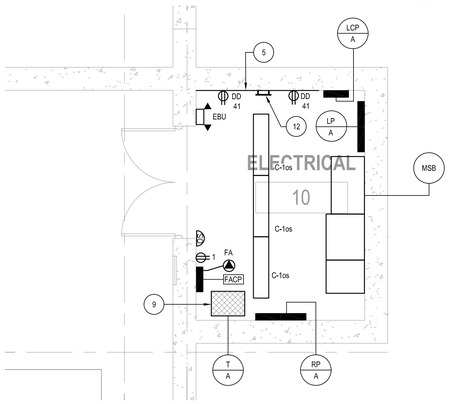
SITE PHOTOMETRIC PLAN

SHEET NUMBER:

E002



1 E101 HHW FIRST FLOOR / WTS LOWER LEVEL ELECTRICAL PLAN
1/8"=1'-0"



2 E101 LARGE SCALE PLAN ELECTRICAL ROOM
1/4"=1'-0"

GENERAL NOTES:

1.) ALL LIGHTING CIRCUITS TO BE FED FROM LP/A, UOI.
2.) ALL RECEPTACLE CIRCUITS TO BE FED FROM RP/A, OUI.
3.) EC TO WIRE EXIT SIGNS AND EMERGENCY BATTERY UNITS TO UNSWITCHED LEG OF CIRCUIT FEEDING LIGHTING IN ROOM.
4.) FEED REMOTE EMERGENCY LIGHTING UNITS TYPE "X3" FIXTURES FROM NEAREST EXIT SIGN OR EBU.

SHEET NOTES:

1. ALL ELECTRICAL DEVICES IN THIS AREA TO BE RATED CLASS I, DIVISION I AND SHALL MEET NEC ARTICLE 511.
2. MOUNT LIGHT FIXTURE IN PRODUCT AREA 18'-0" AFF, UOI.
3. MOUNT EMERGENCY BATTERY UNIT IN PRODUCT AREA 15'-0" AFF,OUI
4. MOUNT EMERGENCY BATTERY IN WTS AREA UNIT 8'-0" AFF.
5. EC TO PROVIDE FIRE RATED TELEPHONE BACKBOARD. SEE DETAIL 9/E500 FOR FURTHER REQUIREMENTS.
6. SEE LIGHTING CONTROL WIRING DIAGRAM DETAIL 1/E500. TYPICAL FOR ALL CEILING MOUNTED OCCUPANCY SENSORS.
7. FUTURE COMPACTOR MOTOR CONNECTION.
8. FUTURE COMPACTOR CONTROL PANEL CONNECTION.
9. TRANSFORMER "T/A" TO BE MOUNTED ON FLOOR. EC TO PROVIDE CONCRETE PAD.
10. EC TO PROVIDE EMERGENCY PUSHBUTTON
11. FUTURE EMERGENCY PUSHBUTTON.
12. EC TO PROVIDE GROUND BAR ERICO MODEL: EBGA14420 OR APPROVED EQUAL.

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WASTE FACILITY
RODEFELD LANDFILL

ISSUE:

PROJECT INFORMATION:

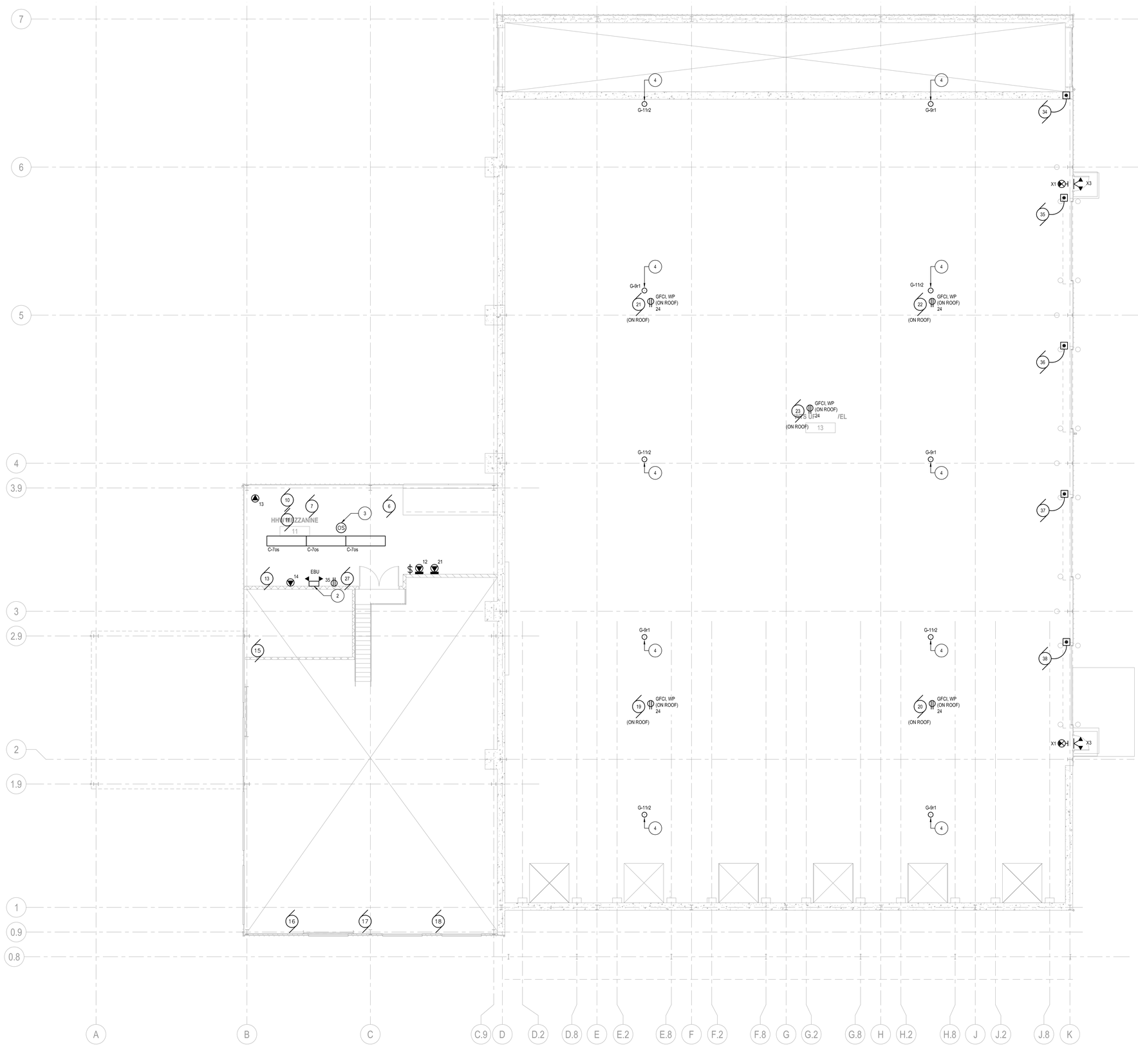
PROJECT NUMBER:	2009-0328.00
DATE:	05-11-2010
DRAWN BY:	TKA
CHECKED BY:	AAS
APPROVED BY:	JHK
SCALE:	AS NOTED

SHEET TITLE:

HHW FIRST FLOOR / WTS LOWER LEVEL ELECTRICAL PLAN

SHEET NUMBER:

E101



1 E102 HHW MEZZANINE / WTS UPPER LEVEL ELECTRICAL PLAN
1/8"=1'-0"

GENERAL NOTES:

1.) ALL LIGHTING CIRCUITS TO BE FED FROM LP/A UOI, SEE SHEET E101 FOR PANEL LOCATION.
2.) ALL RECEPTACLE CIRCUITS TO BE FED FROM RP/A, OUI. SEE SHEET E101 FOR PANEL LOCATION.
3.) EC TO WIRE EXIT SIGNS AND EMERGENCY BATTERY UNITS TO UNSWITCHED LEG OF CIRCUIT FEEDING
4.) LIGHTING IN ROOM.
FEED REMOTE EMERGENCY LIGHTING UNITS TYPE "X3" FIXTURES FROM NEAREST EXIT SIGN OR EBU.

SHEET NOTES:

1. MOUNT LIGHT FIXTURE IN PRODUCT AREA 18'-0" AFF, UOI.
2. MOUNT EMERGENCY BATTERY UNIT IN HHW MEZZANINE AREA 8'-0" AFF.
3. SEE LIGHTING CONTROL WIRING DIAGRAM DETAIL 1/E500.
4. MOUNT FIXTURE IN WTS 30'-0" MIN. FROM FINISHED FLOOR TO BOTTOM OF FIXTURE.

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ISSUE:

PROJECT INFORMATION:

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DATE:	05-11-2010
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CHECKED BY:	AAS
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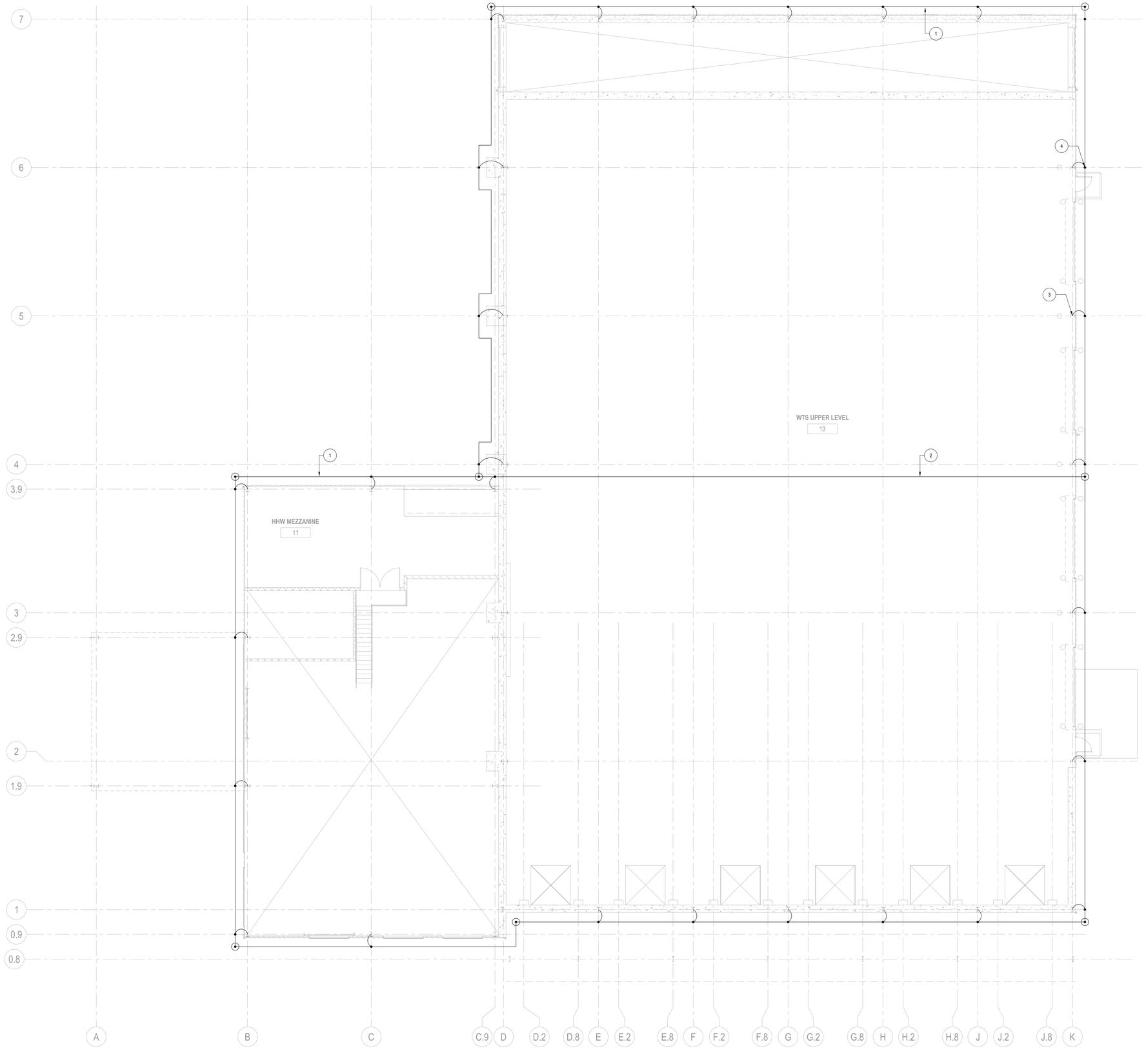
SCALE:	AS NOTED

SHEET TITLE:

HHW MEZZANINE / WTS UPPER LEVEL ELECTRICAL PLAN

SHEET NUMBER:

E102



1 E103 HHW / WTS GROUNDING SYSTEM ELECTRICAL PLAN

1/8"=1'-0"

0 4' 8'

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WASTE TRANSFER STATION
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WASTE FACILITY
RODEFELD LANDFILL

ISSUE:

GENERAL NOTES:

1.) GROUND ELECTRODES SHALL BE INSTALLED AS SHOWN BUT IN NO INSTANCE SHALL THEY BE LESS THAN 1'-0" BELOW GRADE AND 2'-0" FROM FOUNDATION WALL.

2.) BOUND GROUND RING TO WATER SERVICE AND OTHER PIPING SYSTEMS AS REQUIRED BY CODE.

3.) ALL GROUND SYSTEM COMPONENTS SHALL BE COPPER.

4.) CRIMP TYPE CONNECTIONS SHALL NOT BE USED. ALL CONNECTIONS BE VIA EXOTHERMIC WELDS

5.) GROUND CONDUCTORS SHALL NOT BE BENT TO FORM AN ANGLE OF LESS THAN 90 DEGREES, OR HAVE AN UNSUPPORTED RADIUS BEND LESS THAN 6 INCHES.

SHEET NOTES:

1. MAIN GROUND ELECTRODE RING TO BE #4/0 BARE COPPER
2. #4/0 BARE COPPER GROUNDING CONDUCTOR BELOW FOUNDATION (TYP.)
3. EXOTHERMIC WELD CONNECTION TO STEEL COLUMN (TYP). SEE DETAIL 11/E500
4. GROUND RING TO COLUMN CONNECTION (TYP.) SEE DETAIL 12/E500.

PROJECT INFORMATION:

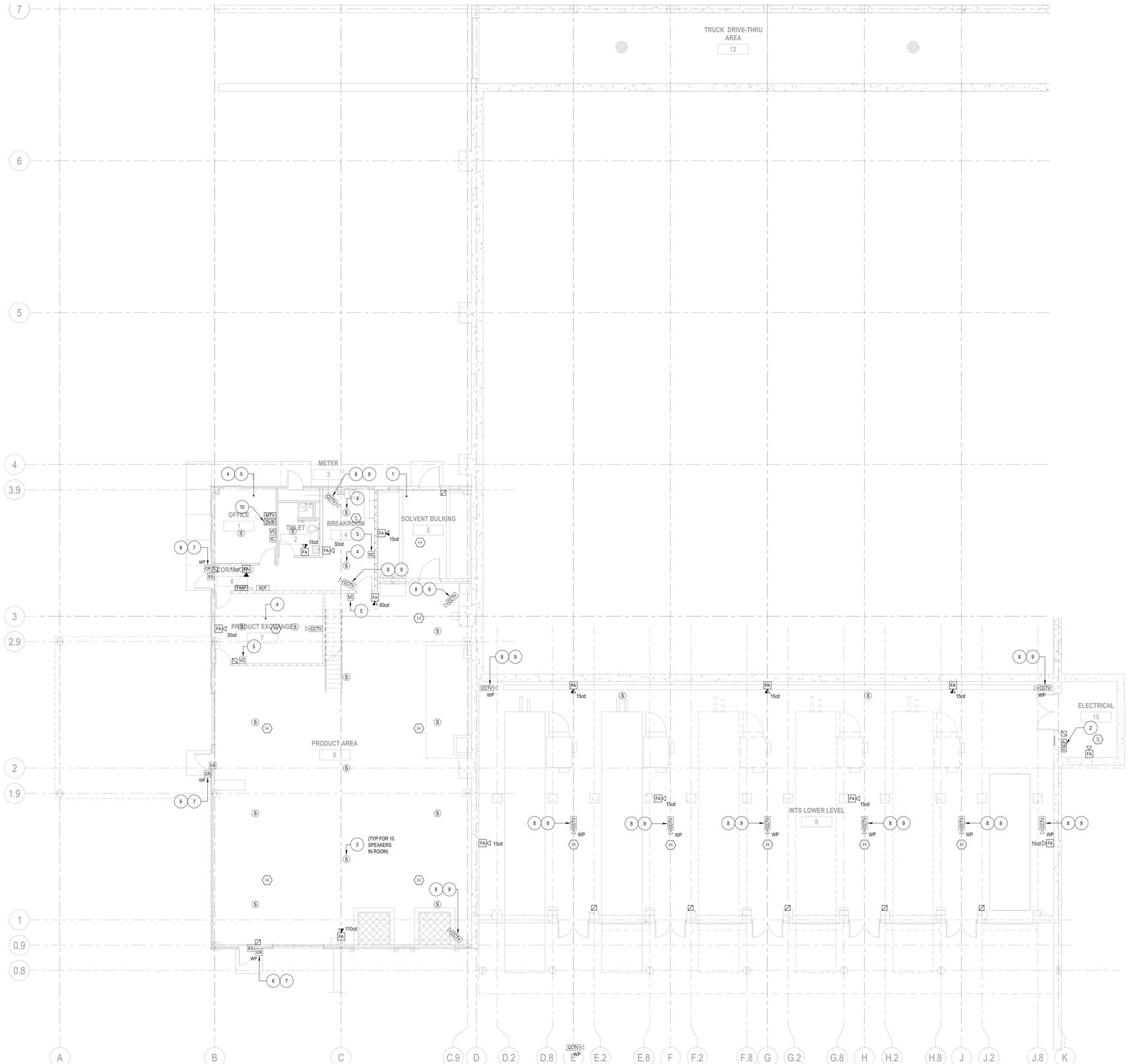
PROJECT NUMBER:	2009-0328.00
DATE:	05-11-2010
DRAWN BY:	TKA
CHECKED BY:	AAS
APPROVED BY:	JHK
SCALE:	AS NOTED

SHEET TITLE:

HHW / WTS GROUNDING SYSTEM
ELECTRICAL PLAN

SHEET NUMBER:

E103



1 E101 HHW FIRST FLOOR / WTS LOWER LEVEL SYSTEM PLAN

1/8"=1'-0"

0 4' 8'

GENERAL NOTES:

1.) EC TO CONNECT DDC ALARM NOTIFICATION WIRING INTO FIRE ALARM CONTROL PANEL.

2.) PROVIDE 18 AWG CONDUCTORS FOR PA SPEAKERS.

SHEET NOTES:

1. ALL FIRE ALARM DEVICES IN THIS AREA TO BE RATED CLASS I, DIVISION I AND SHALL MEET NEC ARTICLE 511. ALL FIRE ALARM DEVICES TO BE INTRINSICALLY SAFE DEVICES.
2. SEE FIRE ALARM RISER DIAGRAM DETAIL 7/E500 FOR FURTHER REQUIREMENTS.
3. PROVIDE PA SPEAKERS FOR VOICE ANNOUNCEMENTS. PA SPEAKERS TO BE MOUNTED 20'-0" AFF.
4. PROVIDE PA SPEAKERS FOR VOICE ANNOUNCEMENTS. PA SPEAKERS TO BE MOUNTED 8'-0" AFF.
5. VOLUME CONTROL TO CONTROL SPEAKER OUTPUT FOR ROOM.
6. PROVIDE PROXIMITY ACCESS CARD READER TO GRANT ACCESS INTO BUILDING. CARD READER TO BE WEATHERPROOF. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH OWNER.
7. PROVIDE ELECTRIC DOOR STRIKE AND DOOR RELEASE HARDWARE FOR COMPLETE INSTALLATION.
8. PROVIDE COLOR FIXED CCTV CAMERA. CAMERA TO BE IP ADDRESSABLE AND RESOLUTION OF 680x480.
9. PROVIDE CAMERA LENS THAT WILL SUPPLY SURVEILLANCE COVERAGE FOR ENTIRE AREA.
10. PROVIDE DVR TO RECORD ALL IP-BASED CCTV CAMERAS. DVR TO HAVE CAPACITY TO RECORD 2-WEEKS OF VIDEO FOR ALL CAMERAS AT 15 FRAMES PER SECOND..

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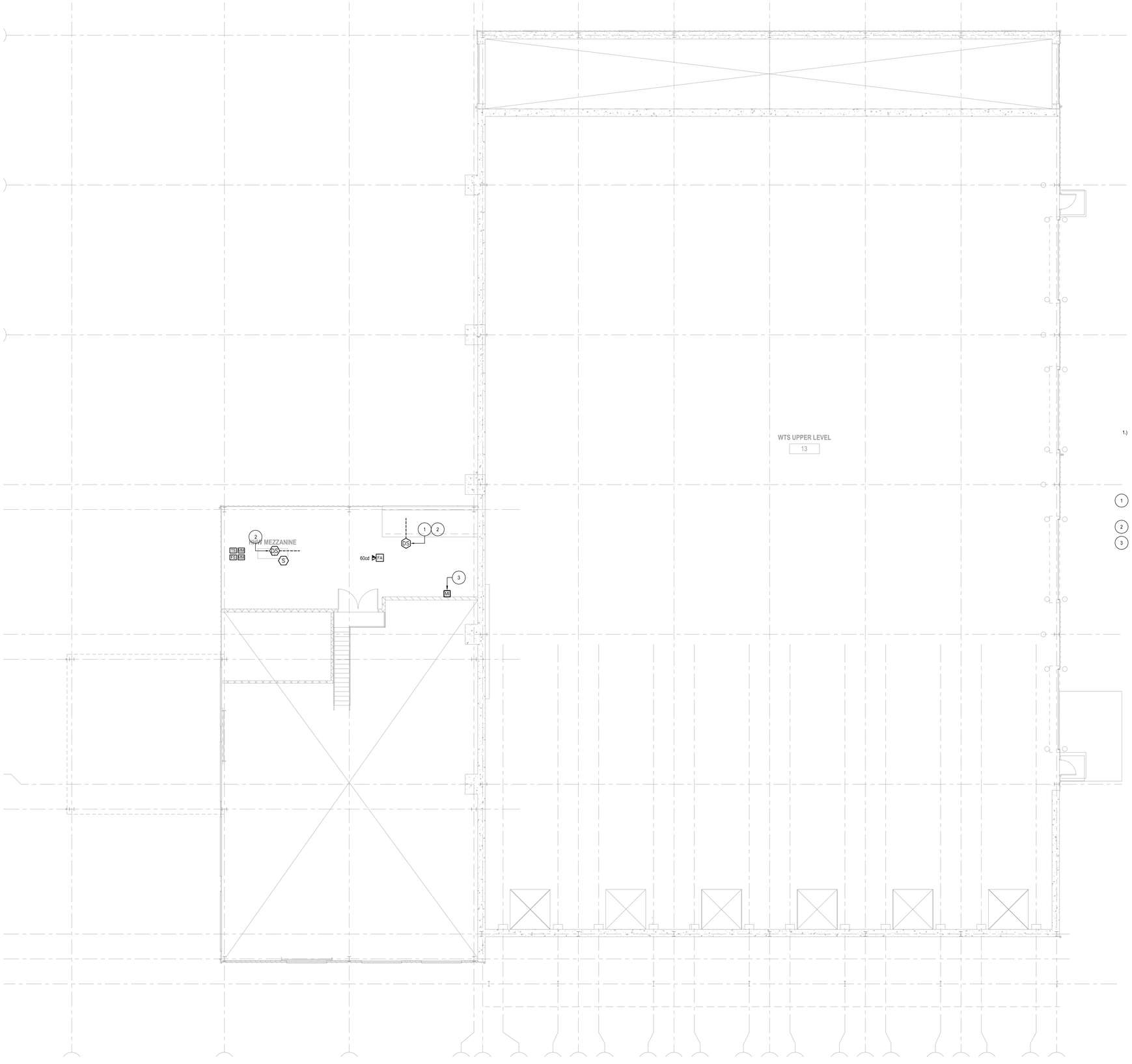
SCALE:	AS NOTED

SHEET TITLE:

HHW FIRST FLOOR / WTS LOWER LEVEL SYSTEM PLAN

SHEET NUMBER:

E201



1 E102 HHW MEZZANINE / WTS UPPER LEVEL SYSTEM PLAN

1/8"=1'-0"

0 4' 8'

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CONSULTANTS:

PROJECT TITLE:

DANE COUNTY
WASTE TRANSFER STATION
AND HOUSEHOLD HAZARDOUS
WASTE FACILITY
RODEFELD LANDFILL

ISSUE:

GENERAL NOTES:

1.) EC TO CONNECT DDC ALARM NOTIFICATION WIRING INTO FIRE ALARM CONTROL PANEL.

SHEET NOTES:

1. SMOKE DUCT DETECTOR TO BE RATED CLASS I, DIVISION I AND SHALL MEET NEC ARTICLE 511. SMOKE DUCT DETECTOR TO BE INTRINSICALLY SAFE.
2. SEE 8/E500 DETAIL FOR FURTHER REQUIREMENTS.
3. PROVIDE PA AMPLIFIER TO POWER SPEAKERS AND INTERCOM SYSTEM.

PROJECT INFORMATION:

PROJECT NUMBER:	2009-0328.00
DATE:	05-11-2010
DRAWN BY:	TKA
CHECKED BY:	AAS
APPROVED BY:	JHK
SCALE:	AS NOTED

SHEET TITLE:

HHW MEZZANINE / WTS UPPER LEVEL SYSTEM PLAN

SHEET NUMBER:

E202

MOTOR STARTER / WIRING SCHEDULE

NOTES:
1. ALL COMBINATION STARTERS SHALL BE CIRCUIT BREAKER TYPE UNLESS OTHERWISE NOTED.
2. PROVIDE A DISCONNECT SWITCH FOR ALL MOTORS LOCATED IN SIGHT OF MOTOR.

#	LOAD	VOLT	PH	LOC (RM)	DRIVING	FEED FROM PANEL	FEED FROM CKT	BREAKER SIZE	BREAKER POLE	BRANCH WIRING #	BRANCH WIRING SIZE	BRANCH WIRING GND	BRANCH WIRING COND	STARTER TYPE: INTEGRAL TO UNIT	STARTER TYPE: MANUAL	STARTER TYPE: COMBINATION, MAGNETIC, FULL VOLTAGE NON-REVERSING	STARTER TYPE: MAGNETIC, FULL VOLTAGE REVERSING	STARTER TYPE: VFD	STARTER TYPE: SOLID STATE REDUCED VOLTAGE	STARTER TYPE: TWO SPEED, 1 WINDING	STARTER TYPE: TWO SPEED, 2 WINDING	STARTER FURNISHED BY: EQUIPMENT MANUFACTURER	STARTER FURNISHED BY: MECHANICAL CONTRACTOR	STARTER FURNISHED BY: ELECTRICAL CONTRACTOR	ACCESSORIES ON STARTER: ON-OFF, PUSHBUTTON	ACCESSORIES ON STARTER: ON-OFF, SWITCH	ACCESSORIES ON STARTER: HAND-OFF-AUTO	ACCESSORIES ON STARTER: PILOT LIGHT	ACCESSORIES ON STARTER: PHASE LOSS PROTECTION	ACCESSORIES ON STARTER: NEMA STARTER SIZE	MOTOR DISCONNECT TYPE: INTEGRAL TO UNIT	MOTOR DISCONNECT TYPE: NOT REQUIRED	MOTOR DISCONNECT TYPE: NON-FUSED SWITCH NEAR MOTOR	MOTOR DISCONNECT TYPE: FUSIBLE SWITCH NEAR MOTOR	MOTOR DISCONNECT TYPE: CIRCUIT BREAKER NEAR MOTOR	MOTOR DISCONNECT TYPE: NEMA 4X ENCLOSURE	MOTOR DISCONNECT FURNISHED BY: EQUIPMENT MANUFACTURER	MOTOR DISCONNECT FURNISHED BY: MECHANICAL CONTRACTOR	MOTOR DISCONNECT FURNISHED BY: ELECTRICAL CONTRACTOR	ACCESSORIES NEAR EQUIPMENT WIRED TO STARTER: ON-OFF, PUSHBUTTON	ACCESSORIES NEAR EQUIPMENT WIRED TO STARTER: ON-OFF, SWITCH	ACCESSORIES NEAR EQUIPMENT WIRED TO STARTER: HAND-OFF-AUTO	ACCESSORIES NEAR EQUIPMENT WIRED TO STARTER: PILOT LIGHT	ACCESSORIES NEAR EQUIPMENT WIRED TO STARTER: PHASE LOSS PROTECTION	STARTER/UNIT CONTROL: SEE HVAC DRAWINGS AND SPECIFICATION	STARTER/UNIT CONTROL: MANUAL	STARTER/UNIT CONTROL: INTEGRAL	SEE NOTES	#
1	200A	480	3	9	COMPACTOR	MSB-1	-	SEE ONE LINE DIAGRAM						●								●															●									3	1
2	200A	480	3	9	COMPACTOR	MSB-1	-	SEE ONE LINE DIAGRAM						●								●															●									3	2
3	200A	480	3	9	COMPACTOR (FUTURE)	MSB-1	-	SEE ONE LINE DIAGRAM						●								●															●									3	3
4	200A	480	3	9	COMPACTOR (FUTURE)	MSB-1	-	SEE ONE LINE DIAGRAM						●								●															●									4	4
5	200A	480	3	9	COMPACTOR (FUTURE)	MSB-1	-	SEE ONE LINE DIAGRAM						●								●															●									4	5
6	10HP	480	3	11	MAU-1 (SUPPLY)	LP/A	2,4,6	30	3	3	10	10	3/4"					●					●				●						●					●									2	6
7	10HP	480	3	11	MAU-1 (EXHAUST)	LP/A	8,10,12	30	3	3	10	10	3/4"					●					●				●						●					●									2	7
8	7 FLA	120	1	11	ERV-1	RP/A	2	20	1	2	12	12	3/4"																							●	●									2	8
9	22MCA	208	1	11	ACCU-1	RP/A	4,6	35	1	3	8	10	3/4"			●						●															●									1,2	9
10	7.5HP	480	3	11	PP-1	LP/A	14,16,18	20	3	3	12	12	3/4"					●					●				●						●					●									2	10
11	7.5HP	480	3	11	PP-2	LP/A	20,22,24	20	3	3	12	12	3/4"					●				●	●				●						●					●									2	11
12	3/4HP	480	3	11	CP-1	LP/A	26,28,30	20	3	3	12	12	3/4"	●		●						●											●					●									1,2	12
13	1/2HP	120	1	11	CP-2	LP/A	28	20	1	2	12	12	3/4"	●		●						●											●					●									1,2	13
14	3/4HP	480	3	11	CP-3	LP/A	38,40,42	20	3	3	12	12	3/4"	●		●						●											●					●									1,2	14
15	.15HP	120	1	11	UH-1	RP/A	8	20	1	2	12	12	3/4"																				●					●									2	15
16	.15HP	120	1	11	UH-2	RP/A	10	20	1	2	12	12	3/4"																				●					●									2	16
17	.15HP	120	1	11	UH-3	RP/A	12	20	1	2	12	12	3/4"																				●					●									2	17
18	.15HP	120	1	11	UH-4	RP/A	14	20	1	2	12	12	3/4"																				●														2	18
19	3/4HP	480	3	11	EF-1	LP/A	43,45,47	20	3	3	12	12	3/4"	●		●						●											●				●										1,2	19
20	3/4HP	480	3	11	EF-2	LP/A	49,51,53	20	3	3	12	12	3/4"	●		●						●											●				●										1,2	20
21	3/4HP	480	3	11	EF-3	LP/A	55,57,59	20	3	3	12	12	3/4"	●		●						●											●				●										1,2	21
22	3/4HP	480	3	11	EF-4	LP/A	61,63,65	20	3	3	12	12	3/4"	●		●						●											●				●										1,2	22
23	1/4HP	120	1	11	EF-5	RP/A	26	20	1	2	12	12	3/4"	●		●						●											●				●										1,2	23
24	1 1/2HP	480	3	9	EF-6	LP/A	63,65,67	20	3	3	12	12	3/4"			●																					●										1,2	24
25	1 1/2HP	480	3	9	EF-7	LP/A	73,75,77	20	3	3	12	12	3/4"			●																					●										1,2	25
26	1/3HP	120	1	9	EF-8	RP/A	30	20	3	3	12	12	3/4"			●						●															●										1,2	26
27	1/4HP	208	1	11	FC-1	RP/A	32,34	20	1	2	12	12	3/4"			●						●															●										1,2	27
28	3/4HP	480	3	9	IFP-1	LP/A	52,54,56	20	3	3	12	12	3/4"			●						●											●						●								3	28
29	3/4HP	480	3	9	IFP-2	LP/A	58,60,62	20	3	3	12	12	3/4"			●						●											●						●								3	29
30	1HP	120	1	8	OVERHEAD DOOR	RP/A	51	20	1	3	12	12	3/4"	●								●											●						●								3	30
31	1HP	120	1	8	OVERHEAD DOOR	RP/A	53	20	1	3	12	12	3/4"	●								●											●						●								3	31
32	1HP	120	1	8	OVERHEAD DOOR	RP/A	55	20	1	3	12	12	3/4"	●								●											●						●								3,5	32
33	1HP	120	1	8	OVERHEAD DOOR	RP/A	57	20	1	3	12	12	3/4"	●								●											●						●								3,5	33
34	2HP	120	1	WTS	OVERHEAD DOOR	RP/A	59	20	1	3	12	12	3/4"	●								●											●						●								3,5	34
35	2HP	120	1	WTS	OVERHEAD DOOR	RP/A	61	20	1	3	12	12	3/4"	●								●											●						●								3,5	35
36	2HP	120	1	WTS	OVERHEAD DOOR	RP/A	63	20	1	3	12	12	3/4"	●								●											●						●								3,5	36
37	2HP	120	1	WTS	OVERHEAD DOOR	RP/A	65	20	1	3	12	12	3/4"	●								●											●						●								3,5	37
38	2HP	120	1	WTS	OVERHEAD DOOR	RP/A	67	20	1	3	12	12	3/4"	●								●											●						●								3,5	38

MOTOR STARTER / WIRING SCHEDULE NOTES:

1. EC TO PROVIDE HACR BREAKERS.
2. EC TO COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT REQUIREMENTS.
3. EC TO COORDINATE WITH EQUIPMENT MANUFACTURER FOR EXACT REQUIREMENTS.
4. EC TO PROVIDE SPARE CIRCUIT BREAKER FOR FUTURE COMPACTORS.
5. EC TO COORDINATE EXACT HORSEPOWER AND VOLTAGE WITH DOOR MANUFACTURER. PROVIDE ALL WIRING INTERFACES WITH LIMIT SWITCHES, DOOR CONTROLLER, ETC.

SPECIAL PURPOSE OUTLET SCHEDULE

#	SERVING	LOC	FEED FROM PANEL	FEED FROM CIRCUIT	BREAKER SIZE	BREAKER POLE	WIRING #	WIRING SIZE	WIRING COND	VOLT	PHASE	LOAD	SEE NOTE
1	COMPACTOR CONTROL PANEL	9	RP/A	5	20	1	3	12	3/4"	120	1		1
2	COMPACTOR CONTROL PANEL	9	RP/A	7	20	1	3	12	3/4"	120	1		1
3	COMPACTOR CONTROL PANEL	9	RP/A	9	20	1	3	12	3/4"	120	1		1
4	COMPACTOR CONTROL PANEL (FUTURE)	9	RP/A	11	20	1	3	12	3/4"	120	1		1
5	COMPACTOR CONTROL PANEL (FUTURE)	9	RP/A	13	20	1	3	12	3/4"	120	1		1
6	EWH-1	2	RP/A	37,39	30	2	4	10	3/4"	208	1	3.0KW	1,2
7	VENDING MACHINE	4	RP/A	27	20	1	3	12	3/4"	120	1		
8	VENDING MACHINE	4	RP/A	29	20	1	3	12	3/4"	120	1		
9	VENDING MACHINE	4	RP/A	31	20	1	3	12	3/4"	120	1		
10	REFRIGERATOR	4	RP/A	23	20	1	3	12	3/4"	120	1		
11	MICROWAVE	4	RP/A	25	20	1	3	12	3/4"	120	1		
12	TEMPERATURE CONTROL PANEL	11	RP/A	22	20	1	3	12	3/4"	120	1		1
13	WH-1	11	RP/A	16,18,20	20	3	4	12	3/4"	208	3	4.5KW	1
14	BOILER	11	MSB-1	-	SEE ONE LINE DIAGRAM					480	3	300KW	1,2
15	HAZARDOUS MATERIAL STORAGE	-	RP/A	43,45	50	2	2 / 1	8 / 10	3/4"	208	1	-	2
16	HAZARDOUS MATERIAL STORAGE	-	RP/A	47,49	50	2	2 / 1	8 / 10	3/4"	208	1	-	2
17	DOCK LEVELER	8	LP/A	44,46,48	20	3	4	12	3/4"	480	3	-	3
18	DOCK VEHICLE RESTRAINT	8	RP/A	46	20	3	3	12	3/4"	120	1	-	1
19	DOCK LEVELER	8	LP/A	44,46,48	20	3	4	12	3/4"	480	3	-	3
20	DOCK VEHICLE RESTRAINT	8	RP/A	46	20	1	3	12	3/4"	120	1	-	1
21	GAS MOTOR CONTROL PANEL	11	RP/A	22	20	1	3	12	3/4"	120	1	-	1
FA	FIRE ALARM PANEL	-	RP/A	44	20	1	3	12	3/4"	120	1	-	1

SPECIAL PURPOSE OUTLET SCHEDULE NOTES:

1. EC TO COORDINATE EXACT REQUIREMENTS WITH MANUFACTURER.
2. EC TO PROVIDE DISCONNECT.
3. FOR INSTALLATION SEE DETAIL 1/E401, 2/E401, 3/E401. CONFIRM EXACT INSTALLATION DETAILS WITH SHOP DRAWINGS AND ACTUAL EQUIPMENT PURCHASED FOR PROJECT.

LIGHTING FIXTURE SCHEDULE

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

ABBREVIATIONS:
DW = DRY WALL; ES = EXPOSED STRUCTURE; LG = LAY-IN GRID; P = PENDANT; PL = PLASTER; PO = POLE; R = RECESS; S = SURFACE; W = WALL MOUNTED; V = VARIES

DES	LAMP DATA #	LAMP DATA TYPE	DESCRIPTION	LIGHTING FIXTURE MANUFACTURER	LIGHTING FIXTURE CATALOG SERIES	VOLT	MOUNT	CEILING TYPE	FIXTURE DEPTH	OPTIONS/ ACCESSORIES	ACCEPTABLE MANUFACTURERS	SEE NOTE
A	6	F32T8	HIGH BAY FLUORESCENT	COOPER	2HB-632-MPC6	277	P	ES			LITHONIA, DAYBRITE, LSI	
B	2	F32T8	INDUSTRIAL STRIPS	COOPER	J8-R-232-TBW	277	P	ES			LITHONIA, DAYBRITE, LSI	
C	2	F32T8	VAPORTIGHT FLUORESCENT	COOPER	-	277	S	ES			LITHONIA, DAYBRITE, LSI	
D	2	F32T8	BATHROOM VANITY FLUORESCENT	COOPER	BAU-EB	277	S	ES			LITHONIA, DAYBRITE, LSI	
G	1	320W PSMH	HID HIGHBAY	COOPER	MPLX-PD-FC3-FH-1	277	P	ES			LITHONIA, DAYBRITE, LSI	
H	2	F32T8	EXPLOSION PROOF LINEAR	LDPI	380-T8-2L-4-277	277	S	ES				
K	1	200W A21	-	-	-	277	S	ES				
X1	2	12W MR16	EXIT SIGN WITH BATTERY BACK	EMERGI-LITE	BBSVX24NRDA2MK	277	W	ES			COOPER, LITHONIA, DAYBRITE	
X2	2	12W MR16	SOLVENT EXIT SIGN WITH BATTERY BACK	COOPER	HZX21	277	W	ES			EMERGI-LITE	
X3	2	20W MR16	REMOTE HEADS	EMERGI-LITE	EF39-MD	277	W	ES			COOPER, LITHONIA, DAYBRITE	
EBU	2	20W MR16	EMERGENCY BATTERY UNIT	EMERGI-LITE	B12SV24N-2MW-DA	277	W	ES			COOPER, LITHONIA, DAYBRITE	

LIGHTING FIXTURE SCHEDULE NOTES:

LOW VOLTAGE RELAY CABINET SCHEDULE

CABINET DESIGNATION: LCP/A

RELAY #	CIRCUIT CONTROLLED	CONTROLLED BY: SWITCH STATION	CONTROLLED BY: SWITCH DES
1	LP/A-9		
2	LP/A-11		
3	LP/A-13	PHOTOCELL	PHOTOCELL
4	LP/A-15	PHOTOCELL	PHOTOCELL
5	LP/A-17	PHOTOCELL	PHOTOCELL
6	LP/A-19	PHOTOCELL	PHOTOCELL
7	LP/A-21	PHOTOCELL	PHOTOCELL
8	LP/A-3	A,B,C	a

LOW VOLTAGE RELAY CABINET SCHEDULE NOTES:

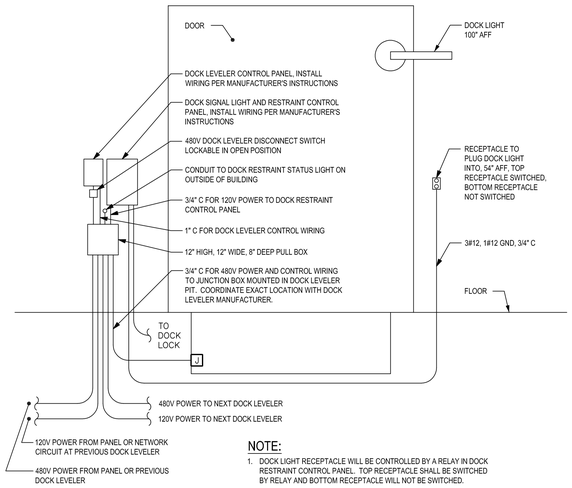
1. SEE LIGHTING CONTROL SCHEMATIC DETAIL 2/E500 FOR FURTHER REQUIREMENTS.

LOW VOLTAGE SWITCH STATION SCHEDULE

DESIGNATION	LOCATION	SWITCH	CIRCUITS CONTROLLED	RELAY CABINET	SEE NOTE
A	8	a	LP/A-3	LCP/A	1
B	8	a	LP/A-3	LCP/A	1
C	8	a	LP/A-3	LCP/A	1

LOW VOLTAGE SWITCH STATION SCHEDULE NOTES:

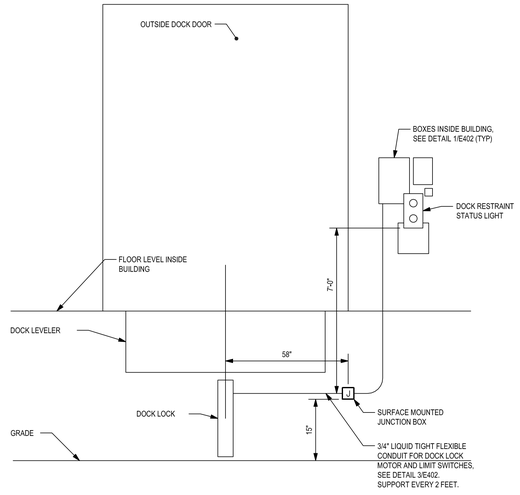
1. PROVIDE WEATHER-PROOF ENCLOSURE FOR OVER RIDE SWITCH



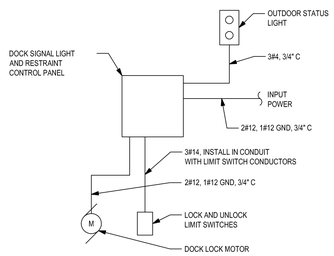
NOTE:

1. DOCK LIGHT RECEPTACLE WILL BE CONTROLLED BY A RELAY IN DOCK RESTRAINT CONTROL PANEL. TOP RECEPTACLE SHALL BE SWITCHED BY RELAY AND BOTTOM RECEPTACLE WILL NOT BE SWITCHED.

1 / E402 LOADING DOCK DOOR (INSIDE BUILDING)
1/2"=1'-0"



2 / E402 LOADING DOCK DOOR (OUTSIDE BUILDING)
NOT TO SCALE



NOTE:

1. VERIFY EXACT WIRING REQUIREMENTS WITH VEHICLE RESTRAINT EQUIPMENT PROVIDER.

3 / E402 VEHICLE RESTRAINT WIRING RISER DIAGRAM
NOT TO SCALE

GRÄEF

One Honey Creek Corporate Center
125 South 84th Street, Suite 401
Milwaukee, WI 53214-1469
414 / 259 1500
414 / 259 0037 fax

www.graef-usa.com

CONSULTANTS:

PROJECT TITLE:

DANE COUNTY
WASTE TRANSFER STATION
AND HOUSEHOLD HAZARDOUS
WASTE FACILITY
RODEFELD LANDFILL

ISSUE:

PROJECT INFORMATION:

PROJECT NUMBER:	2009-0328.00
DATE:	05-11-2010
DRAWN BY:	JAH
CHECKED BY:	AAS
APPROVED BY:	JHK
SCALE:	AS NOTED

SHEET TITLE:

ELECTRICAL SCHEDULES

SHEET NUMBER:

E401

PANELBOARD SCHEDULE: LP/A (TUB-1)

VOLTAGE: 480/277 | PHASE/WIRE: 3P/4W | [ ] SERVICE ENTRANCE LABEL | INTERRUPTING RATING: 35,000 AMPS SYMMETRICAL | [ ] SERIES RATED

MAIN TYPE: [ ] ____ A TRIP MAIN CB | [ ] ____ CONTACTOR | [X] LUGS ONLY [X] FEED THRU | [ ] SUB-FEED (DOUBLE) LUGS | [ ] SHUNT TRIP | [ ] ____

BUS: 225 AMPS | [X] COPPER | [ ] ALUMINUM | [ ] 200% NEUTRAL | GROUNDING: [X] STANDARD (NON-INSULATED) | [ ] ISOLATED (INSULATED)

MOUNTING: [X] SURFACE | [ ] FLUSH | ENCLOSURE: [X] NEMA 1 | [ ] ____

CCT #	LOAD DESCRIPTION	VA/PHASE A	VA/PHASE B	VA/PHASE C	TRIP	TRIP	VA/PHASE A	VA/PHASE B	VA/PHASE C	LOAD DESCRIPTION	CCT #
1	LIGHTING	1,500			20/1	30/3	-			MOTOR #6	2
3	LIGHTING		1,980		20/1	X		-		-	4
5	LIGHTING			240	20/1	X			-	-	6
7	LIGHTING	1,260			20/1	30/3	-			MOTOR #7	8
9	LIGHTING		2,275		20/1	X		-		-	10
11	LIGHTING			2,275	20/1	X			-	-	12
13	LIGHTING	216			20/1	20/3	-			MOTOR #10	14
15	LIGHTING		3,185		20/1	X		-		-	16
17	LIGHTING			1,820	20/1	X			-	-	18
19	LIGHTING	2,275			20/1	20/3	-			MOTOR #11	20
21	SPARE		-		20/1	X		-		-	22
23	SPARE			-	20/1	X			-	-	24
25	SPARE	-			20/1	20/3 HACR	-			MOTOR #12	26
27	SPARE		-		20/1	X		-		-	28
29	SPARE			-	20/1	X/1			-	-	30
31	SPARE	-			20/1	20/1	-			SPARE	32
33	SPARE		-		20/1	20/1		-		SPARE	34
35	SPARE			-	20/1	20/1			-	SPARE	36
37	SPARE	-			20/1	20/3 HACR	-			MOTOR #14	38
39	SPARE		-		20/1	X		-		-	40
41	SPARE			-	20/1	X			-	-	42

A: - | B: - | C: -

TOTAL CONNECTED: -

TOTAL DEMAND: -

ABBREVIATIONS:
HB HANDLE-BLOCKING DEVICE
GFCI GROUND FAULT CIRCUIT INTERRUPTER
HACR HEATING AND AIR-CONDITIONING RATED

PANELBOARD SCHEDULE NOTES:

1. PROVIDE HACR CIRCUIT BREAKERS FOR CIRCUITS 26,28,30 AND 38,40,42.

PANELBOARD SCHEDULE: LP/A (TUB-2)

VOLTAGE: 480/277 | PHASE/WIRE: 3P/4W | [ ] SERVICE ENTRANCE LABEL | INTERRUPTING RATING: 35,000 AMPS SYMMETRICAL | [ ] SERIES RATED

MAIN TYPE: [ ] ____ A TRIP MAIN CB | [ ] ____ CONTACTOR | [X] LUGS ONLY [ ] FEED THRU | [ ] SUB-FEED (DOUBLE) LUGS | [ ] SHUNT TRIP | [ ] ____

BUS: 225 AMPS | [X] COPPER | [ ] ALUMINUM | [ ] 200% NEUTRAL | GROUNDING: [X] STANDARD (NON-INSULATED) | [ ] ISOLATED (INSULATED)

MOUNTING: [X] SURFACE | [ ] FLUSH | ENCLOSURE: [X] NEMA 1 | [ ] ____

CCT #	LOAD DESCRIPTION	VA/PHASE A	VA/PHASE B	VA/PHASE C	TRIP	TRIP	VA/PHASE A	VA/PHASE B	VA/PHASE C	LOAD DESCRIPTION	CCT #
43	MOTOR #19	443			20/3 HACR	20/3	1024			SPO #17, 19	44
45	-		443		X	X		1024		-	46
47	-			443	X	X			1024	-	48
49	MOTOR #20	443			20/3 HACR	20/1	-			SPARE	50
51	-		443		X	20/3		256		MOTOR #28	52
53	-			443	X	X			256	-	54
55	MOTOR #21	443			20/3 HACR	X	256			-	56
57	-		443		X	20/3		256		MOTOR #29	58
59	-			443	X	X			256	-	60
61	MOTOR #22	443			20/3 HACR	X	256			-	62
63	-		443		X					SPACE	64
65	-			443	X					SPACE	66
67	MOTOR #24	832			20/3 HACR					SPACE	68
69	-		832		X					SPACE	70
71	-			832	X					SPACE	72
73	MOTOR #25	832			20/3 HACR					SPACE	74
75	-		832		X					SPACE	76
77	-			832	X					SPACE	78
79	SPACE									SPACE	80
81	SPACE									SPACE	82
83	SPACE									SPACE	84

A: 25,270 | B: 27,459 | C: 24,354

TOTAL CONNECTED: 77,083VA

TOTAL DEMAND: 101.34A

ABBREVIATIONS:
HB HANDLE-BLOCKING DEVICE
GFCI GROUND FAULT CIRCUIT INTERRUPTER
HACR HEATING AND AIR-CONDITIONING RATED

PANELBOARD SCHEDULE NOTES:

1. PROVIDE HACR CIRCUIT BREAKERS FOR CIRCUITS 43 THRU 77.

PANELBOARD SCHEDULE: RP/A (TUB-1)

VOLTAGE: 208/120 | PHASE/WIRE: 3P/4W | [ ] SERVICE ENTRANCE LABEL | INTERRUPTING RATING: 21,000 AMPS SYMMETRICAL | [ ] SERIES RATED

MAIN TYPE: [X] 225 A TRIP MAIN CB | [ ] ____ CONTACTOR | [X] LUGS ONLY [X] FEED THRU | [ ] SUB-FEED (DOUBLE) LUGS | [ ] SHUNT TRIP | [ ] ____

BUS: 225 AMPS | [X] COPPER | [ ] ALUMINUM | [ ] 200% NEUTRAL | GROUNDING: [X] STANDARD (NON-INSULATED) | [ ] ISOLATED (INSULATED)

MOUNTING: [X] SURFACE | [ ] FLUSH | ENCLOSURE: [X] NEMA 1 | [ ] ____

CCT #	LOAD DESCRIPTION	VA/PHASE A	VA/PHASE B	VA/PHASE C	TRIP	TRIP	VA/PHASE A	VA/PHASE B	VA/PHASE C	LOAD DESCRIPTION	CCT #
1	RECEPTACLES	720			20/1	30/1	840			MOTOR #8	2
3	RECEPTACLES		540		20/1	35/2 HACR		2,288		MOTOR #9	4
5	SPO #1			600	20/1	X			2,288	-	6
7	SPO #2	600			20/1	20/1	114			MOTOR #15	8
9	SPO #3		600		20/1	20/1		114		MOTOR #16	10
11	SPO #4			600	20/1	20/1			114	MOTOR #17	12
13	SPO #5	600			20/1	20/1	114			MOTOR #18	14
15	RECEPTACLES		540		20/1	20/3		1,500		SPO #13	16
17	RECEPTACLES			540	20/1	20/1			1,500	-	18
19	RECEPTACLES	360			20/1	20/1	1,500			-	20
21	RECEPTACLES		900		20/1	20/1		600		SPO #12	22
23	SPO #10			1,200	20/1	20/1			-	RECEPTACLES	24
25	SPO #11	1,200			20/1	20/1	696			MOTOR #23	26
27	SPO #7		1,200		20/1	20/1 HACR		1,176		MOTOR #13	28
29	SPO #8			1,200	20/1	20/1 HACR			696	MOTOR #26	30
31	SPO #9	1,200			20/1	20/2 HACR	130			MOTOR #27	32
33	RECEPTACLES		1,080		20/1	X		130		-	34
35	RECEPTACLES			180	20/1	20/1			-	SPARE	36
37	SPO 36	1,500			30/2	20/1	-			SPARE	38
39	-		1,500		X	20/1		-		SPARE	40
41	SPARE			-	20/1	20/1			-	SPARE	42

A: - | B: - | C: -

TOTAL CONNECTED: -

TOTAL DEMAND: -

ABBREVIATIONS:
HB HANDLE-BLOCKING DEVICE
GFCI GROUND FAULT CIRCUIT INTERRUPTER
HACR HEATING AND AIR-CONDITIONING RATED

PANELBOARD SCHEDULE NOTES:

1. PROVIDE HACR CIRCUIT BREAKERS FOR CIRCUITS 4,6,28,30,32,34.

PANELBOARD SCHEDULE: RP/A (TUB-2)

VOLTAGE: 208/120 | PHASE/WIRE: 3P/4W | [ ] SERVICE ENTRANCE LABEL | INTERRUPTING RATING: 21,000 AMPS SYMMETRICAL | [ ] SERIES RATED

MAIN TYPE: [ ] ____ A TRIP MAIN CB | [ ] ____ CONTACTOR | [X] LUGS ONLY [ ] FEED THRU | [ ] SUB-FEED (DOUBLE) LUGS | [ ] SHUNT TRIP | [ ] ____

BUS: 225 AMPS | [X] COPPER | [ ] ALUMINUM | [ ] 200% NEUTRAL | GROUNDING: [X] STANDARD (NON-INSULATED) | [ ] ISOLATED (INSULATED)

MOUNTING: [X] SURFACE | [ ] FLUSH | ENCLOSURE: [X] NEMA 1 | [ ] ____

CCT #	LOAD DESCRIPTION	VA/PHASE A	VA/PHASE B	VA/PHASE C	TRIP	TRIP	VA/PHASE A	VA/PHASE B	VA/PHASE C	LOAD DESCRIPTION	CCT #
43	SPO #15	-			50/2	20/1	500			SPO #FA	44
45	-		-		X	20/1		1248		SPO #18, 20	46
47	SPO #16			-	50/2					SPACE	48
49	-	-			X					SPACE	50
51	MOTOR #30		576		20/1					SPACE	52
53	MOTOR #31			576	20/1					SPACE	54
55	MOTOR #32	576			20/1					SPACE	56
57	MOTOR #33		576		20/1					SPACE	58
59	MOTOR #34			936	20/1					SPACE	60
61	MOTOR #35	936			20/1					SPACE	62
63	MOTOR #36		936							SPACE	64
65	MOTOR #37			936						SPACE	66
67	MOTOR #38	936								SPACE	68
69	SPACE									SPACE	70
71	SPACE									SPACE	72
73	SPACE									SPACE	74
75	SPACE									SPACE	76
77	SPACE									SPACE	78
79	SPACE									SPACE	80
81	SPACE									SPACE	82
83	SPACE									SPACE	84

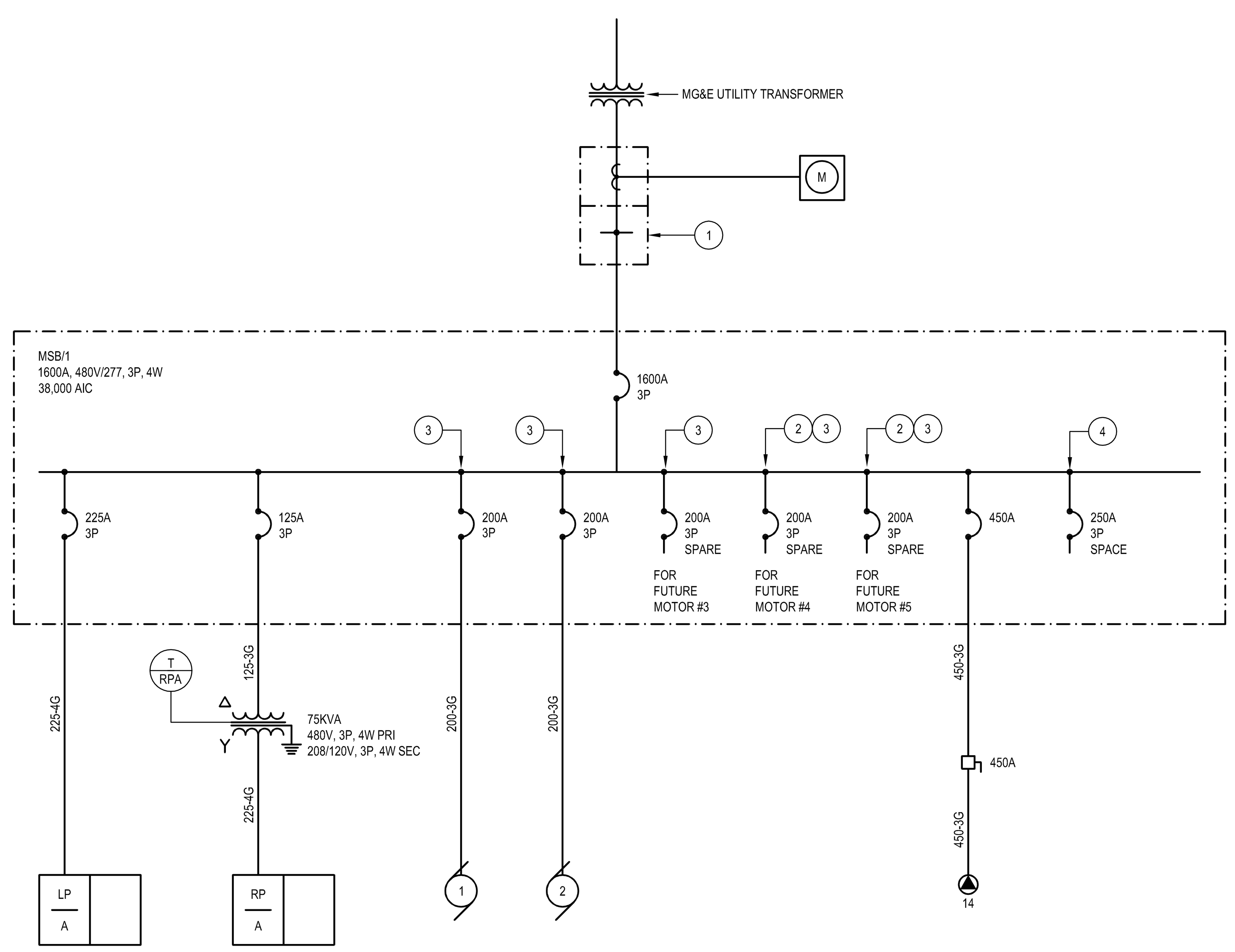
A: 20,122 | B: 19,604 | C: 16,426

TOTAL CONNECTED: 56,152VA

TOTAL DEMAND: 155.86A

ABBREVIATIONS:
HB HANDLE-BLOCKING DEVICE
GFCI GROUND FAULT CIRCUIT INTERRUPTER
HACR HEATING AND AIR-CONDITIONING RATED

PANELBOARD SCHEDULE NOTES:



ONE LINE DIAGRAM NOTES:

1. EC TO PROVIDE 1,600A, 480VOLT, 3-PHASE, 4-WIRE TRANSOCKET WITH METER SOCKET. EC TO COORDINATE WITH UTILITY FOR ACCEPTABLE MANUFACTURES FOR EXACT REQUIREMENTS.
2. EC TO PROVIDE 200A, 3-POLE, SPACE CIRCUIT BREAKERS FOR FUTURE COMPACTORS.
3. EC TO PROVIDE INVERSE TIME BREAKER FOR COMPACTORS.
4. EC TO PROVIDE SPACES FOR (5) ADDITIONAL 250A 3P BREAKERS

FEEDER SCHEDULE

FEEDER AMPACITY	CONDUCTOR SIZE (kcmil) PH AND N	CONDUCTOR SIZE (kcmil) GRD	CONDUIT SIZE (3) AND (3G)	CONDUIT SIZE (4) AND (4G)
50	#8	#10	3/4"	1"
70	#4	#8	1-1/4"	1-1/4"
80	#4	#8	1-1/4"	1-1/4"
100	#3	#8	1-1/4"	1-1/4"
110	#2	#6	1-1/4"	1-1/2"
125	#1	#6	1-1/2"	2"
150	#1/0	#6	1-1/2"	2"
175	#2/0	#6	2"	2"
200	#3/0	#6	2"	2-1/2"
225	#4/0	#4	2"	2-1/2"
250	#250	#4	2-1/2"	3"
300	#350	#4	3"	3"
350	#500	#3	3"	3-1/2"
380	#500	#3	3"	3-1/2"
400	(2) #3/0	(2) #3	(2) 2"	(2) 2-1/2"
450	(2) #4/0	(2) #2	(2) 2"	(2) 2-1/2"
500	(2) #250	(2) #2	(2) 2-1/2"	(2) 3"
600	(2) #350	(2) #1	(2) 3"	(2) 3"
700	(2) #500	(2) #1/0	(2) 3"	(2) 3-1/2"
800	(2) #600	(2) #1/0	(2) 3-1/2"	(2) 4"
1000	(3) #400	(3) #2/0	(3) 3"	(3) 3-1/2"
1200	(3) 600	(3) #3/0	(3) 3-1/2"	(3) 4"
1600	(4) 600	(4) #4/0	(4) 3-1/2"	(4) 4"
2000	(5) 600	(5) #250	(5) 3-1/2"	(5) 4"

GENERAL NOTES:

1. ABOVE FEEDER SCHEDULE IS SCHEDULE OF TYPICAL FEEDERS AND SOME SIZES MAY NOT BE UTILIZED.
2. ALL CONDUCTOR AMPACITIES ARE BASED ON TABLE 310-16 OF NEC FOR COPPER CONDUCTOR TYPE THW / THWN.
3. FEEDER SIZES SHOWN ON RISER DIAGRAM INDICATE FEEDER AMPACITIES AND DO NOT NECESSARILY CORRESPOND TO CIRCUIT BREAKER AMPACITIES. CERTAIN FEEDERS MAY BE SIZED FOR DERATING FACTORS REQUIRED BY CODE AND / OR ARE OVERSIZED FOR VOLTAGE DROP.

200 - 4G FEEDER DESIGNATION

SYSTEM DESCRIPTION
(3) 3PH, 3W
(3G) 3PH, 3W + GROUND
(4) 3PH, 4W
(4G) 3PH, 4W + GROUND

CONDUCTOR AMPACITY
(SEE FEEDER SCHEDULE)

One Honey Creek Corporate Center
125 South 84th Street, Suite 401
Milwaukee, WI 53214-1469
414 / 259 1500
414 / 259 0037 fax

www.graef-usa.com

CONSULTANTS:

PROJECT TITLE:

DANE COUNTY
WASTE TRANSFER STATION
AND HOUSEHOLD HAZARDOUS
WASTE FACILITY
RODEFELD LANDFILL

ISSUE:

PROJECT INFORMATION:

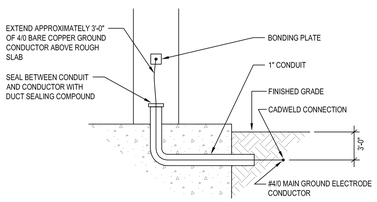
PROJECT NUMBER: 2009-0328.00
DATE: 05-11-2010
DRAWN BY: JAH
CHECKED BY: AAS
APPROVED BY: JHK
SCALE: AS NOTED

SHEET TITLE:

ELECTRICAL SCHEDULES & ONE-LINE DIAGRAM

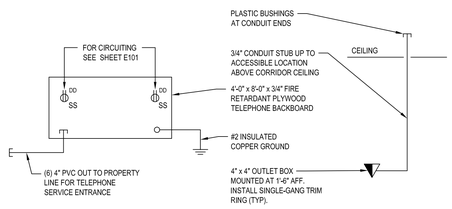
SHEET NUMBER:

E402



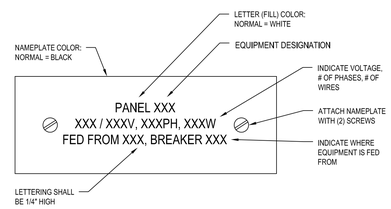
METAL BUILDING GROUND CONNECTION DETAIL

12 / E500 NOT TO SCALE



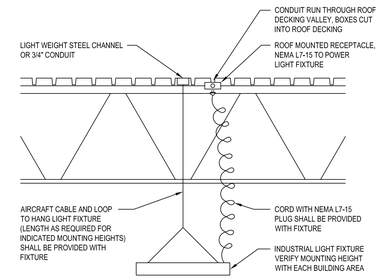
TELEPHONE SERVICE RISER DIAGRAM

9 / E500 NOT TO SCALE



PANELBOARD NAMEPLATE DETAIL

6 / E500 NOT TO SCALE

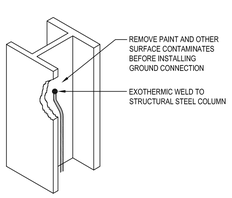


NOTE:

TYPICAL FOR FLUORESCENT INDUSTRIAL LIGHT FIXTURES SUPPORTED FROM ROOF STRUCTURE.

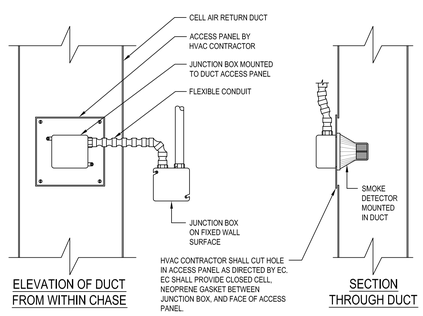
FIXTURE TYPE 'A' MOUNTING DETAIL

3 / E500 NOT TO SCALE



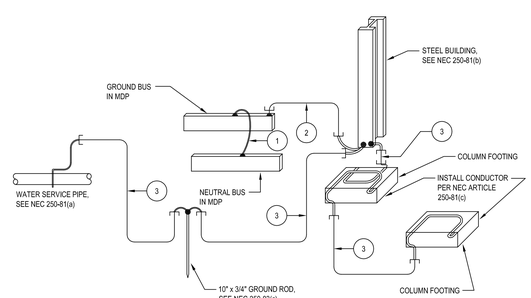
GROUND CONNECTION DETAIL

11 / E500 NOT TO SCALE



DUCT MOUNTED SMOKE DETECTOR DETAIL

8 / E500 NOT TO SCALE



KEYED NOTES:

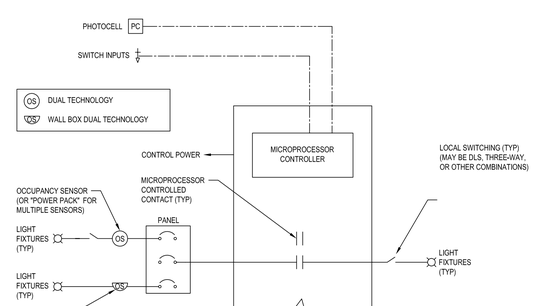
1. BARE COPPER MAIN BONDING JUMPER PER NEC 250-53(b).
2. BARE COPPER GROUNDING ELECTRODE CONDUCTOR PER NEC 250-23(a).
3. BARE COPPER GROUNDING ELECTRODE BONDING JUMPER PER NEC 250-81.

DETAIL NOTES:

1. INSTALL CONDUCTORS IN CONDUITS. CONDUIT TYPE SHALL BE HW PVC PER SPECIFICATIONS.
2. SIZE ALL GROUND CONDUCTORS IN ACCORDANCE WITH NEC.
3. EC SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF NEC ARTICLE 250.

ELECTRICAL SERVICE GROUNDING DIAGRAM

5 / E500 NOT TO SCALE

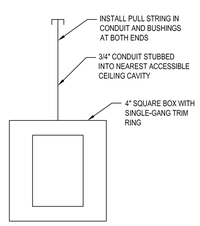


NOTES:

1. OCCUPANCY SENSORS USED IN CONJUNCTION WITH LOCAL LINE VOLTAGE SWITCHING SHALL BE ELECTRICALLY LOCATED ON PANEL SIDE OF SWITCH, AS INDICATED IN ABOVE DIAGRAM, UOI
2. BOTH SENSORS CONTROL SAME LIGHT FIXTURES VIA COMMON "POWER PACK" IN ROOMS SHOWN WITH (2) OR MORE OCCUPANCY SENSORS, UOI.
3. WHENEVER FEASIBLE, POWER PACKS SHALL BE LOCATED IN CEILING SPACE DIRECTLY ABOVE LOCAL WALL SWITCH .
4. USE OF OCCUPANCY SENSOR SYMBOL IN ROOM INDICATES TYPE OF SENSOR TO BE USED TO CONTROL ALL LIGHTS IN SPACE. EXACT LOCATION, MOUNTING, AND CONFIGURATION OF SENSOR SHALL BE DETERMINED IN FIELD, BASED UPON MANUFACTURER'S RECOMMENDATIONS AND GUIDELINES.
5. SPECIFIC MODEL OF OCCUPANCY SENSOR SHALL BE COORDINATED WITH ROOM SIZE, LAYOUT, CEILING HEIGHT, AND MOUNTING REQUIREMENTS, SENSOR MANUFACTURER, AND CONTRACTOR. VERIFY DEVICE COLOR WITH ARCHITECT PRIOR TO ORDERING.
6. OCCUPANCY SENSOR MANUFACTURER SHALL PROVIDE HARD COPIES AND ELECTRONIC AUTOCAD DRAWINGS FILES OF LOCATION AND MODEL NUMBERS OF ALL ASSOCIATED EQUIPMENT.

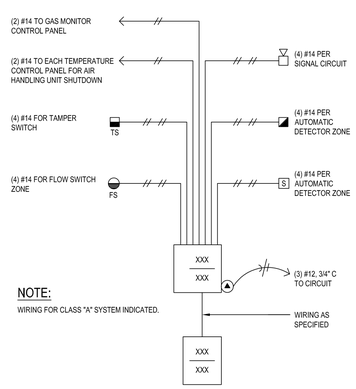
LIGHTING CONTROL SCHEMATIC DIAGRAM

2 / E500 NOT TO SCALE



TELEPHONE / DATA OUTLET DETAIL

10 / E500 NOT TO SCALE

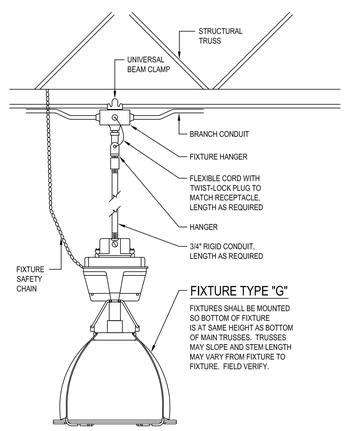


NOTE:

WIRING FOR CLASS "A" SYSTEM INDICATED.

FIRE ALARM RISER DIAGRAM

7 / E500 NOT TO SCALE

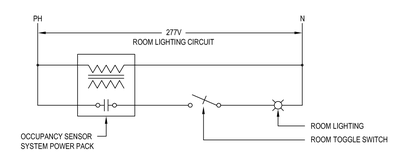


FIXTURE TYPE "G"

FIXTURES SHALL BE MOUNTED SO BOTTOM OF FIXTURE IS AT SAME HEIGHT AS BOTTOM OF MAIN TRUSSES. TRUSSES MAY SLOPE AND STEM LENGTH MAY VARY FROM FIXTURE TO FIXTURE. FIELD VERIFY.

FIXTURE TYPE 'G' MOUNTING DETAIL

4 / E500 NOT TO SCALE



LIGHTING CONTROL WIRING DIAGRAM

1 / E500 NOT TO SCALE

GRAEF

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CONSULTANTS:

PROJECT TITLE:

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WASTE TRANSFER STATION
AND HOUSEHOLD HAZARDOUS
WASTE FACILITY
RODEFELD LANDFILL

ISSUE:

PROJECT INFORMATION:

PROJECT NUMBER:	2009-0328.00
DATE:	05-11-2010
DRAWN BY:	JAH
CHECKED BY:	AAS
APPROVED BY:	JHK
SCALE:	AS NOTED

SHEET TITLE:

ELECTRICAL DETAILS

SHEET NUMBER:

E500

PLUMBING SYMBOLS, ABBREVIATIONS & SCHEDULES

NOTE: NOT ALL SYMBOLS AND ABBREVIATIONS INDICATED HERE ARE USED IN THE DRAWINGS AND MAY NOT APPLY TO THIS PROJECT. ADDITIONAL SYMBOLS MAY BE INDICATED IN THE DRAWINGS.

PLUMBING ABBREVIATIONS

A	-	AIR	L	-	LAVATORY
AFF	-	ABOVE FINISHED FLOOR	LBS.	-	POUNDS
AFG	-	ABOVE FINISHED GRADE	LB/HR	-	POUNDS PER HOUR
ALT	-	ALTERNATE			
AP	-	ACCESS PANEL	MAX	-	MAXIMUM
APPROX.	-	APPROXIMATELY	MB	-	MOP BASIN
ARCH	-	ARCHITECTURAL	MBH	-	THOUSANDS OF BTU PER HOUR
AV	-	ACID VENT	MC	-	MECHANICAL CONTRACTOR
AVG	-	AVERAGE	MEP	-	MECHANICAL, ELECTRICAL AND PIPING
AW	-	ACID WASTE	MER	-	MECHANICAL EQUIPMENT ROOM
			MEZZ	-	MEZZANINE
BFF	-	BELOW FINISHED FLOOR	MFR	-	MANUFACTURER
BLDG	-	BUILDING	MH	-	MANHOLE
BOT	-	BOTTOM	MIN.	-	MINIMUM
BOP	-	BOTTOM OF PIPE	MISC	-	MISCELLANEOUS
BT	-	BATHTUB	MTD	-	MOUNTED
BTU	-	BRITISH THERMAL UNITS	MTG	-	MOUNTING
BTUH	-	BRITISH THERMAL UNITS PER HOUR			
BV	-	BALANCING VALVE	NA	-	NOT APPLICABLE
			NIC	-	NOT IN CONTRACT
CAP	-	CEILING ACCESS PANEL	NO	-	NUMBER
CC	-	CAPPED CONNECTION	NPS	-	NOMINAL PIPE SIZE
CFH	-	CUBIC FEET PER MINUTE	NTS	-	NOT TO SCALE
CFM	-	CUBIC FEET PER HOUR			
CL	-	CENTERLINE	OC	-	ON CENTER
CLG	-	CEILING	OD	-	OUTSIDE DIAMETER
CLV	-	CLEAR WATER VENT	OFCI	-	OWNER FURNISHED, CONTRACTOR INSTALLED
CLW	-	CLEAR WATER WASTE	OFOI	-	OWNER FURNISHED, OWNER INSTALLED
CO	-	CLEANOUT			
COND	-	CONDUCTOR	P	-	PUMP
CONT	-	CONTRACTOR	PC	-	PLUMBING CONTRACTOR
CTR	-	CENTER	PCF	-	POUNDS PER CUBIC FOOT
CU	-	COPPER	PD	-	PRESSURE DROP
CV	-	CHECK VALVE	PH	-	PHASE
CW	-	COLD WATER	PLBG	-	PLUMBING
CWFU	-	COLD WATER FIXTURE UNITS	POC	-	POINT OF CONNECTION
CWS	-	COLD WATER SOFT	PP	-	POLYPROPYLENE
			PPH	-	POUNDS PER HOUR
DD	-	DRAIN DECK	PRV	-	PRESSURE RELIEF VALVE
DET	-	DETAIL	PSF	-	POUNDS PER SQUARE FOOT
DFU	-	DRAINAGE FIXTURE UNITS	PSI	-	POUNDS PER SQUARE INCH
DIA	-	DIAMETER	PSIA	-	POUNDS PER SQUARE INCH ABSOLUTE
DIM	-	DIMENSION	PSIG	-	POUNDS PER SQUARE INCH GAUGE
DN	-	DOWN	PVC	-	POLYVINYL CHLORIDE
DS	-	DOWNSPOUT			
DT	-	DRAIN TILE	RD	-	ROOF DRAIN
DTR	-	DRAIN TILE RECEIVER	REC	-	RECESSED
DWG.	-	DRAWING	RF	-	ROOF
DW	-	DISH WASHER	RI	-	ROUGH-IN
			RPZ	-	REDUCED PRESSURE ZONE VALVE
E	-	EXISTING	RV	-	RELIEF VALVE
EEW	-	EMERGENCY EYEWASH			
ELEV	-	ELEVATION	S	-	SLOPE
EM	-	EMERGENCY	SCH	-	SCHEDULE
EQUIP	-	EQUIPMENT	SH	-	SHOWER
ES	-	EMERGENCY SHOWER	SHT	-	SHEET
ET	-	EXPANSION TANK	SOG	-	SLAB ON GRADE
ETR	-	EXISTING TO REMAIN	SPEC	-	SPECIFICATION
EWC	-	ELECTRIC WATER COOLER	SQ	-	SQUARE
EWH	-	ELECTRIC WATER HEATER	SS	-	SERVICE SINK
EXST	-	EXISTING	S/S	-	STAINLESS STEEL
			STD	-	STANDARD
F	-	FUTURE			
FCO	-	FLOOR CLEANOUT	T&P	-	TEMPERATURE AND PRESSURE
FD	-	FLOOR DRAIN	TBR	-	TO BE REMOVED
FFE	-	FINISHED FLOOR ELEVATION	TD	-	TRENCH DRAIN
FLR	-	FLOOR	TDFU	-	TOTAL DRAIN FIXTURE UNITS
FP	-	FIREPROOF	TEMP	-	TEMPERATURE
FPM	-	FEET PER MINUTE	TOP	-	TOP OF PIPE
FPS	-	FEET PER SECOND	TOS	-	TOP OF SLAB
FS	-	FLOOR SINK	T STAT	-	THERMOSTAT
F&T	-	FLOAT AND THERMOSTATIC	TWFU	-	TOTAL WATER FIXTURE UNITS
FT	-	FEET	TYP	-	TYPICAL
FTG	-	FOOTING			
FU	-	FIXTURE UNITS	UNO	-	UNLESS OTHERWISE NOTED
G	-	GAS	V	-	VENT
GAL	-	GALLON	VB	-	VACCUM BREAKER
GC	-	GENERAL CONTRACTOR	VB	-	VALVE IN BOX
GPM	-	GALLONS PER MINUTE	VTR	-	VENT THRU ROOF
GPH	-	GALLONS PER HOUR			
			W	-	WASTE
HB	-	HOSE BIBB	W/	-	WITH
HD	-	HUB DRAIN	W/O	-	WITHOUT
HP	-	HORSE POWER	WHA	-	WATER HAMMER ARRESTOR
HVAC	-	HEATING, VENTILATING & AIR CONDITIONING	WCO	-	WALL CLEANOUT
HW	-	HOT WATER	WC	-	WATER CLOSET
HWFU	-	HOT WATER FIXTURE UNITS	WF	-	WASH FOUNTAIN
HWR	-	HOT WATER RETURN	WH	-	WATER HEATER
			WM	-	WASHING MACHINE
ID	-	INSIDE DIAMETER	WSFU	-	WATER SUPPLY FIXTURE UNITS
IE	-	INVERT ELEVATION	WG	-	WATER GAUGE
IN	-	INCHES			
			YCO	-	YARD CLEAN OUT
KO	-	KNOCK-OUT			

PIPE FITTINGS

- FLANGE
- UNION
- ANCHOR
- PIPE GUIDE
- TEE BRANCH
- LINE CONTINUATION BREAK
- PLUMBING FIXTURE STOPS
- PIPELINE STRAINER
- ELBOW DOWN
- ELBOW UP
- TEE DOWN
- TEE UP
- PIPE CAP
- VALVE IN VERTICAL
- DOUBLE WYE
- WYE
- WYE WITH VENT UP

DRAINS AND CLEANOUTS

- FLOOR DRAIN
- FLOOR SINK
- ROOF DRAIN
- HUB DRAIN
- FIXTURE WASTE TRAP
- CO — CLEANOUT
- FCO — FLOOR CLEANOUT

PIPING SYSTEM LABELS

WATER PIPING SYSTEMS:

- COLD WATER
- HOT WATER
- HOT WATER RETURN
- F — FIRE PROTECTION
- T — TEMPERED WATER

WASTE AND VENT SYSTEMS:

- CWV — CLEARWATER VENT
- CWW — CLEARWATER WASTE
- OD — OVERFLOW DRAIN LINE
- ST — STORM
- SSD — SUBSOIL DRAIN LINE
- UNDERFLOOR FOR WASTE OR SOIL, SUBSOIL, STORM & FORCE MAIN
- SANITARY VENT
- SAN — WASTE OR SOIL LINE

SITE PIPING SYSTEMS:

- SAN — SANITARY SEWER
- ST — STORM SEWER
- W — WATER LINE

NOTE:
(E) PRIOR TO SYSTEM TYPE DENOTES EXISTING PIPING
(F) PRIOR TO SYSTEM TYPE DENOTES FUTURE PIPING

PIPE VALVES AND SPECIALTIES

- ANGLE VALVE
- BALANCING VALVE
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- DRAIN VALVE
- GAS SHUTOFF VALVE
- GATE VALVE
- BACKFLOW PREVENTER
- PRESSURE GAUGE
- THERMOMETER
- HB — HOSE BIBB AND WALL HYDRANT
- WATER HAMMER ARRESTOR
- PRESSURE RELIEF VALVE

REFERENCE SYMBOLS

- 1 / P000 — DETAIL REFERENCE
  TOP DESIGNATES DETAIL NUMBER BOTTOM DESIGNATES SHEET NUMBER
- 1 / P000 — SECTION REFERENCE
  TOP DESIGNATES SECTION NUMBER BOTTOM DESIGNATES SHEET NUMBER
- ELEVATION SYMBOL
- VP / 1 — EQUIPMENT NAME AND NUMBER
- 1 — PLAN NOTE NUMBER
- 1 — REVISION NUMBER
- POINT OF CONNECTION
- POINT OF DISCONNECTION

WATER SUPPLY CALCULATION

USING THE FORMULA, FIND THE PRESSURE AVAILABLE FOR UNIFORM LOSS (PSI/100' OF PIPE)

$$A = \frac{B+C+D+E)X100}{F}$$

WHERE:

A. 10.4 PRESSURE AVAILABLE FOR UNIFORM LOSS (PSI/100' OF PIPE)

B. 50.0 AVAILABLE PRESSURE AT THE CONTROL VALVE.

C. 25.0 PRESSURE NEEDED AT CONTROLLING FIXTURE.

D. 5.2 DIFFERENCE IN ELEVATION BETWEEN WATER METER AND CONTROLLING FIXTURE
IN FEET 12 X .434 PSI/FT

E. 12.0 PRESSURE LOSS DUE TO WATER SOFTENERS, WATER TREATMENT DEVICES, INSTANTANEOUS WATER HEATERS, AND BACKFLOW PREVENTORS. CONVENTIONAL WATER HEATERS USUALLY DO NOT HAVE A PRESSURE LOSS. (EXISTING POOL FILL EQUIPM.)

F. 75 DEVELOPED LENGTH FROM WATER METER TO CONTROLLING FIXTURE
IN FEET 50 X 1.5.

WITH PRESSURE AVAILABLE FOR UNIFORM LOSS, GO TO APPLICABLE TABLE FOR DISTRIBUTION SIZING.

PLUMBING EQUIPMENT SCHEDULE

TAG	MANUFACTURER	MODEL NO.	REMARKS
WH-1	A.O. SMITH	DEN-66	ELECTRIC WATER HEATER, 66 GALLON STORAGE CAPACITY, 70 DEGREE TEMPERATURE RISE (120 DEGREE DISCHARGE TEMP). 4500W/4500W DUAL ELEMENT, 25 GPH RECOVERY CAPACITY. INCLUDE INSULATION, METAL PROTECTIVE JACKET, T&P RELIEF VALVE, DRAIN VALVE.
EXP-1	AMTROL	ST-5	STEEL EXPANSION TANK, 40 PSIG FACTORY PRE-CHARGED, EPDM DIAPHRAGM, POLYPROPYLENE LINER, 2 GALLON CAPACITY.
CP-1	BELL & GOSSETT	SERIES 100	3/4", 1/12 HP, 120 VOLT, 1 PHASE, ALL BRONZE CIRCULATING PUMP.
TMV-1	LAWLER	911E/F	ALL BRONZE THERMOSTATIC MIXING VLAVE W/OUTLET TEMPERATURE AT FACTORY SET POINT. NOTE: HOT WATER RETURN TEMPERATURE MUST HAVE MINIMUM 10° TEMPERATURE DECREASE FROM OUTLET TEMPERATURE.
RPBP-1	WATTS	009	3/4" REDUCED PRESSURE ZONE BACKFLOW PREVENTOR, BRONZE BODY CONSTRUCTION, DUAL CHECK VALVE ASSEMBLY.
HB-1	WOODFORD	MODEL 24	WALL HYDRANT WITH INTEGRAL VACUUM BREAKER, 3/4" HOSE THREAD NOZZLE AND LOOSE TEE KEY.

PLUMBING FIXTURE SCHEDULE

TAG	MANUFACTURER	MODEL NO.	REMARKS
WC-1	KOHLER	WELLCOMME K-4349	VITREOUS CHINA ,FLOOR OUTLET, 1.6 GALLON MANUAL OPERATED FLUSH VALVE.
	BEMIS	1955-SSC	ENLONGATED OPEN FRONT SEAT, LESS COVER, WITH STAINLESS STEEL SELF-SUSTAINING, CHECK HINGE.
	SLOAN	"ROYAL" 111	CHROME PLATED TOP SPUD, 1.6 GALLON MANUAL OPERATED FLUSH VALVE.
L-1	KOHLER	GREENWICH K-2032	VITREOUS CHINA, 20" X 18" WALL HUNG, 4" FAUCET CENTERS, ADA COMPLIANT, COLOR WHITE.
	CHICAGO	2200-4E2805CP	MANUAL, SINGLE CONTROL FAUCET, POLISHED CHROME, WITH GRID STRAINER, CERAMIC CARTRIDGES.
	MCGUIRE	PWV8902	1-1/4" x 1-1/2" P-TRAP, BRASS, 17 GAUGE WITH CLEAN-OUT.
		2165CC	ANGLE STOPS AND SUPPLIES.
		PW2000	INSULATION KIT.
		-	PROVIDE COMMERCIAL GRADE CONCEALED ARM LAVATORY CARRIER.
SH-1	SYMMONS	SAFETYMIX 1-100	SAFETYMIX SHOWER SYSTEM WITH PRESSURE-BALABCING MIXING VALVE, LEVER HANDLE, ADJUSTABLE STOP SCREW, BRONZE BODY VALVE, INTERGRAL SERVICE STOPS & ESCUTCHEON COVER. SHOWER HEAD TO BE CHROME PLATED MOUNTED AT 6'-0" ABOVE FLOOR WITH 2.0 GPM FLOW RESTRICTOR.
S-1	KOHLER	BANNON K-6719	CAST RION, 24"x20.25" WALL HUNG SERVICE SINK, SINGLE COMPARTMENT, BLANK BACK, ACID RESISTANT FINISH & STAINLESS STEEL RIM GUARD.
	CHICAGO	897-RCF	POLISHED CHROME PLATED WALL MOUNTED SERVICE SINK FAUCET WITH INTEGRAL STOPS.
		E27	SPOUT OUTLET VACUUM BREAKER
	KOHLER	K-6673	3" ADJUSTABLE IRON TRAP WITH STRAINER, CLEANOUT AND FLOOR PLATE.
EWISH-1	ACORN	S1310	PEDESTAL MOUNTED COMBINATION SHOWER/EYEWASH STATION, PLASTIC BOWL, STAY-OPEN 1/2" BALL VALVE WITH PUSH HANDLE, PLASTIC SHOWERHEAD AND 1" STAY-OPEN BALL VALVE WITH PULL ROD. 20 GPM SHOWERHEAD.

PLUMBING DRAIN AND CLEANOUT SCHEDULE

TAG	MANUFACTURER	MODEL NO.	REMARKS
FD-1	ZURN	Z415-B	CAST IRON BODY, ADJUSTABLE STRAINER HEAD, COMBINATION INVERTIBLE MEMBRANE CLAMP AND ADJUSTABLE COLLAR WITH NICKEL BRONZE TOP.
TD-1	ABT DRAINS, INC. POLYDRAIN	TF-14 TRENCH DRAIN FORMING SYSTEM	CAST-IN-PLACE TRENCH DRAIN AND CATCH BASIN, PRE-MANUFACTURED FORMING INSERTS WITH TRENCH DRAIN RAILS AND TF-14 SLOTTED DUCTILE IRON GRATE (HEAVY DUTY).
HD-1	ZURN	Z-326-DB	CAST IRON BODY, 9" INDIRECT WASTE FUNNEL WITH DOME BOTTOM STRAINER.
HD-2	ZURN	Z-415-E	CAST IRON BODY, ADJUSTABLE STRAINER HEAD, COMBINATION INVERTIBLE MEMBRANE CLAMP AND ADJUSTABLE COLLAR WITH NICKEL BRONZE TOP WITH 4" DIA FUNNEL.
FCO	ZURN	Z1400-BP	CAST IRON BODY, ADJUSTABLE FLOOR CLEANOUT WITH NICKEL BRONZE TOP AND GAS AND WATERTIGHT ABS TAPERED BRONZE PLUG (USE IN FINISHED AREAS).
		Z1474	CAST IRON BODY, HEAVY DUTY CLEANOUT HOUSING, WITH NICKEL BROZE TOP AND INTERNAL CLEANOUT (USE IN UNFINISHED AREAS, MECHANICAL ROOMS, JANITOR CLOSETS, ETC.).
YCO	ZURN	Z1440-BP	CAST IRON BODY FERRULE WITH BRONZE PLUG. PROVIDE WITH FROST SLEEVE AND HEAVY DUTY WATER TIGHT TOP.
WCO	ZURN	Z1468	ROUND STAINLESS STEEL WALL ACCESS COVER WITH SECURING SCREW, BRONZE RAISED HEX HEAD PLUG.
CO	ZURN	Z1440-BP	CAST IRON BODY FERRULE WITH BRONZE PLUG.

SHEET INDEX

P000 - PLUMBING SYMBOLS, ABBREVIATIONS & SCHEDULES
P100 - HHW FIRST/WTS LOWER LEVEL BELOW SLAB PLUMBING PLAN
P101 - HHW FIRST/WTS LOWER LEVEL PLUMBING PLAN
P102 - HHW MEZZANINE/WTS UPPER LEVEL PLUMBING PLAN
P300 - PLUMBING ISOMETRICS
P500 - PLUMBING DETAILS
FP101 - HHW FIRST/WTS LOWER LEVEL FIRE PROTECTION PLAN
FP102 - HHW MEZZANINE/WTS UPPER LEVEL FIRE PROTECTION PLAN

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PROJECT INFORMATION:

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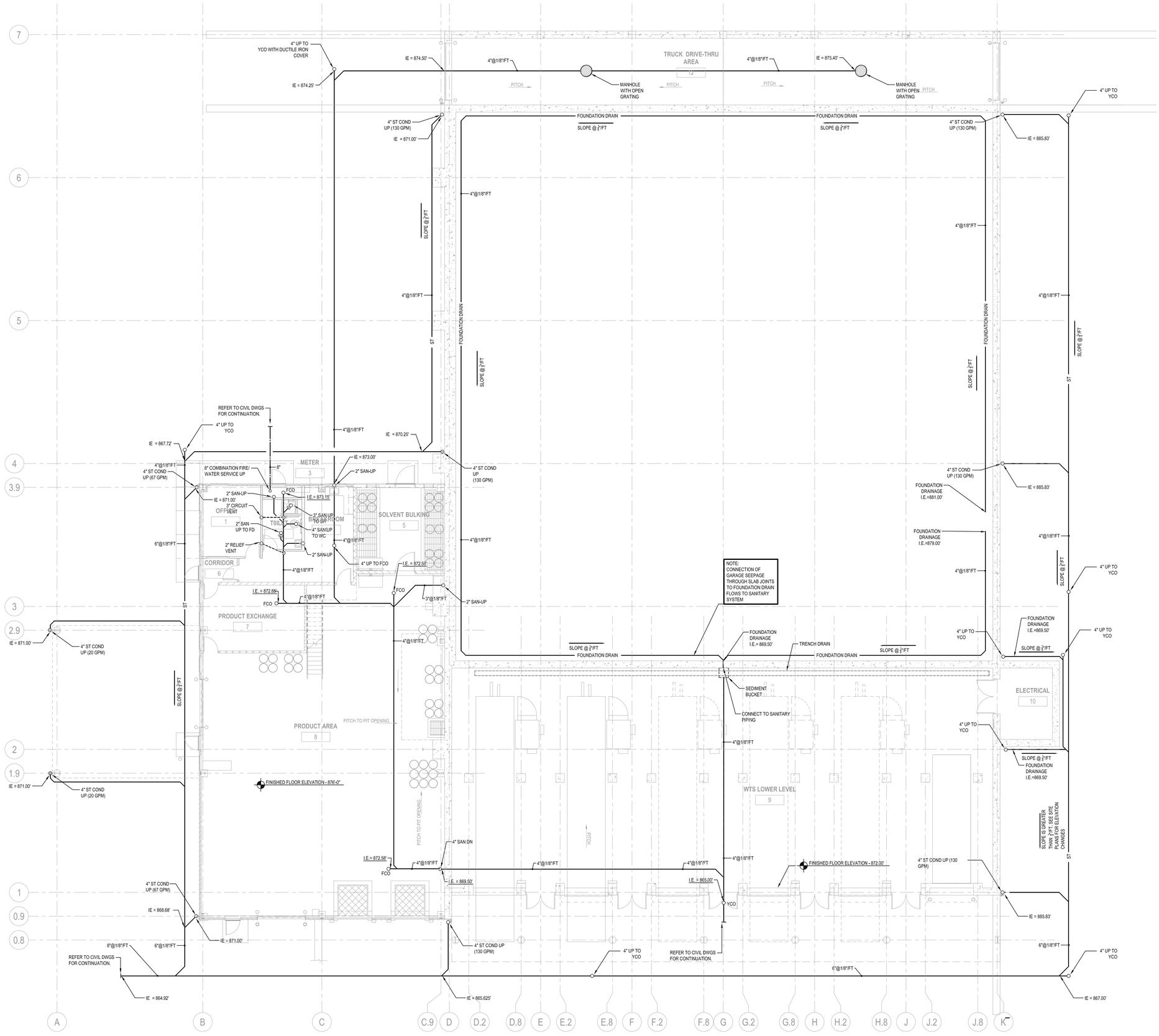
DRAWN BY:	BEJ
CHECKED BY:	RAK
APPROVED BY:	PDZ
SCALE:	AS NOTED

SHEET TITLE:

PLUMBING SYMBOLS
ABBREVIATIONS & SCHEDULES

SHEET NUMBER:

P000



HHW FIRST / WTS LOWER LEVEL
BELOW SLAB PLUMBING PLAN

1 / P100 — 1/8"=1'-0"

0 4' 8'

GRAEF

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CONSULTANTS:

PROJECT TITLE:

DANE COUNTY
WASTE TRANSFER STATION
AND HOUSEHOLD HAZARDOUS
WASTE FACILITY
RODEFELD LANDFILL

ISSUE:

PROJECT INFORMATION:

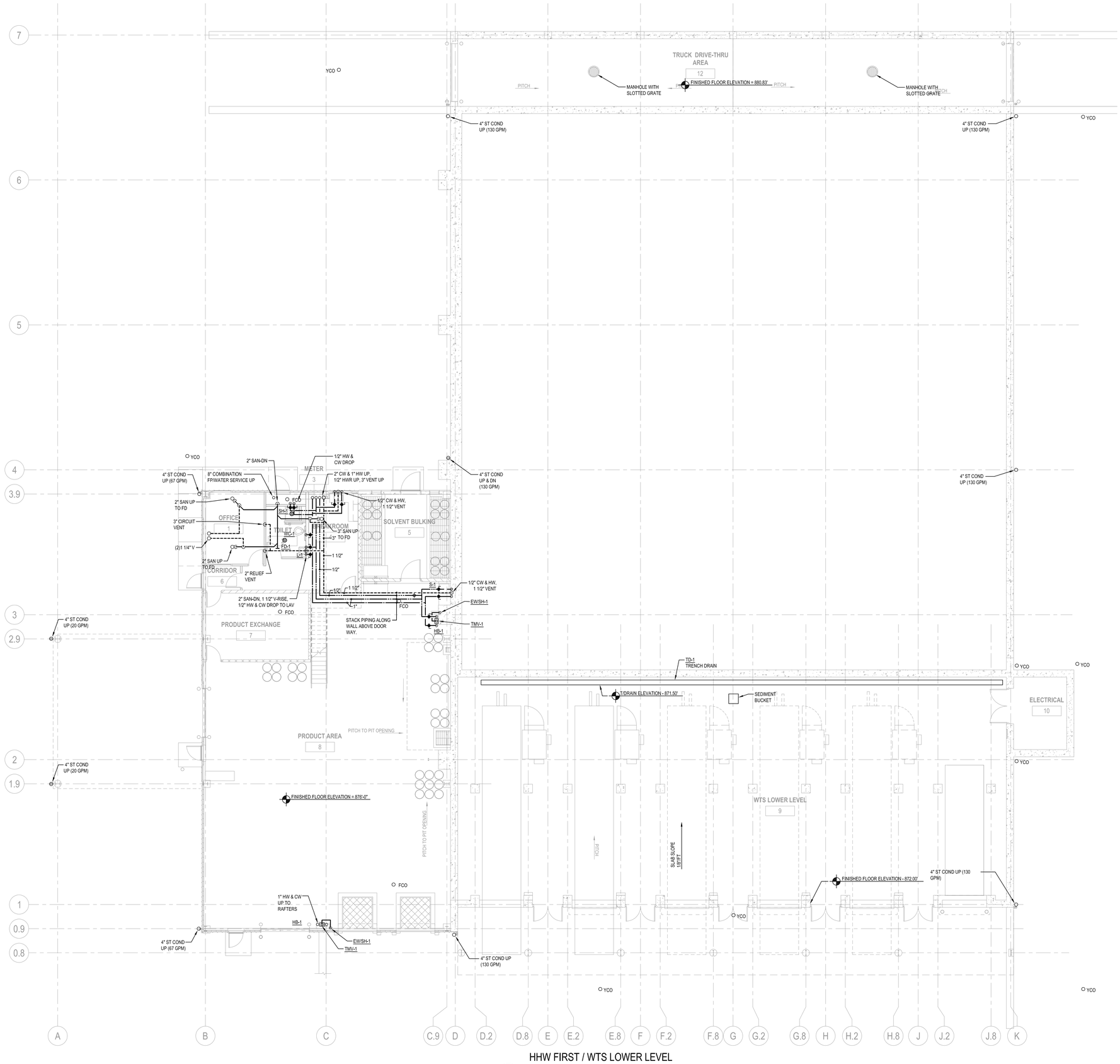
PROJECT NUMBER:	2009-0328.00
DATE:	05-11-2010
DRAWN BY:	BEJ
CHECKED BY:	RAK
APPROVED BY:	PDZ
SCALE:	AS NOTED

SHEET TITLE:

HHW FIRST/WTS LOWER LEVEL
BELOW SLAB PLUMBING PLAN

SHEET NUMBER:

P100



1 P101 HHW FIRST / WTS LOWER LEVEL PLUMBING PLAN

1/8"=1'-0"

0 4' 8'

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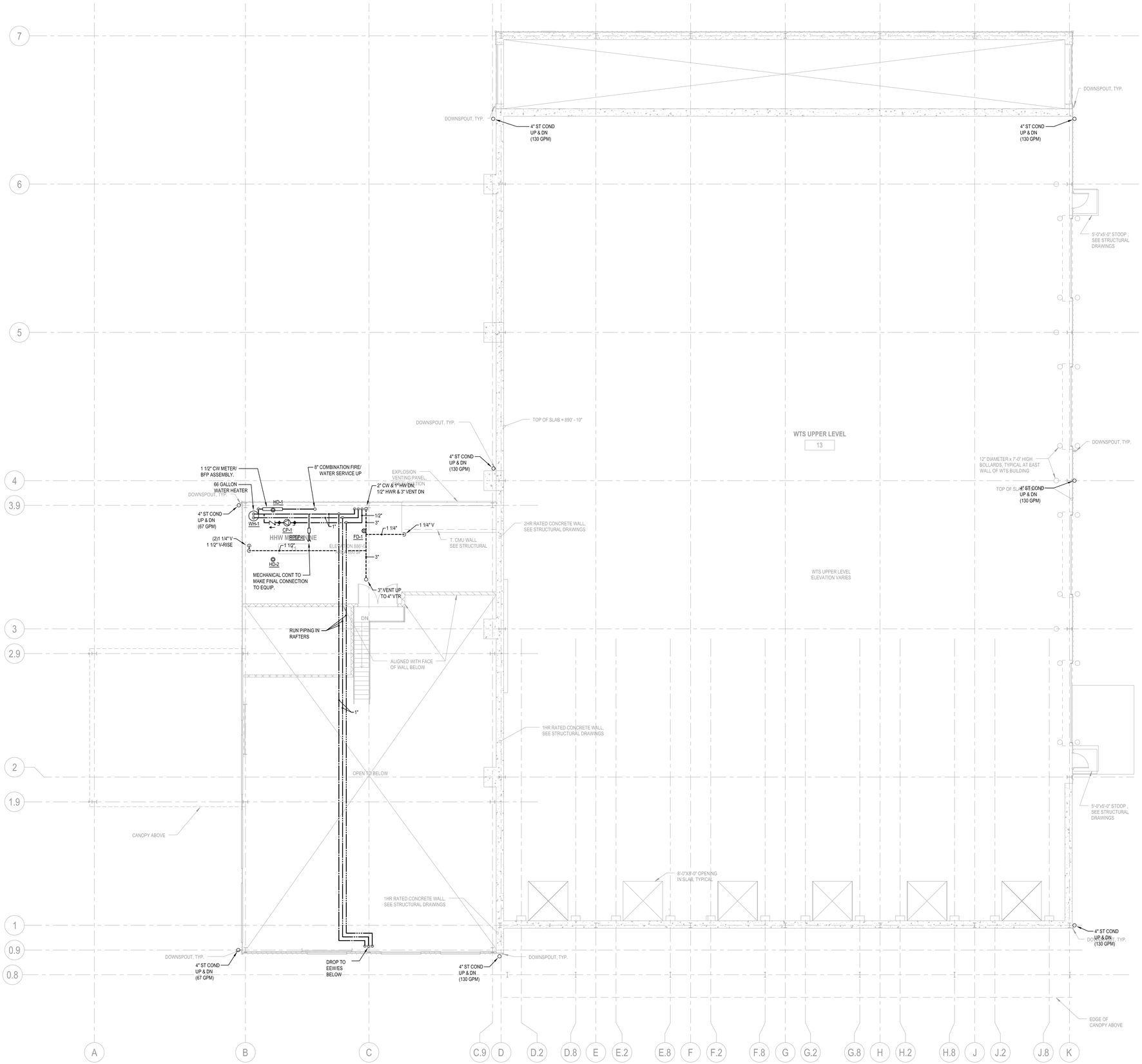
HHW FIRST/WTS LOWER LEVEL
PLUMBING PLAN

SHEET NUMBER:

P101



HHW MEZZANINE / WTS UPPER LEVEL PLUMBING PLAN

1 / P102

1/8"=1'-0"

0 4' 8'

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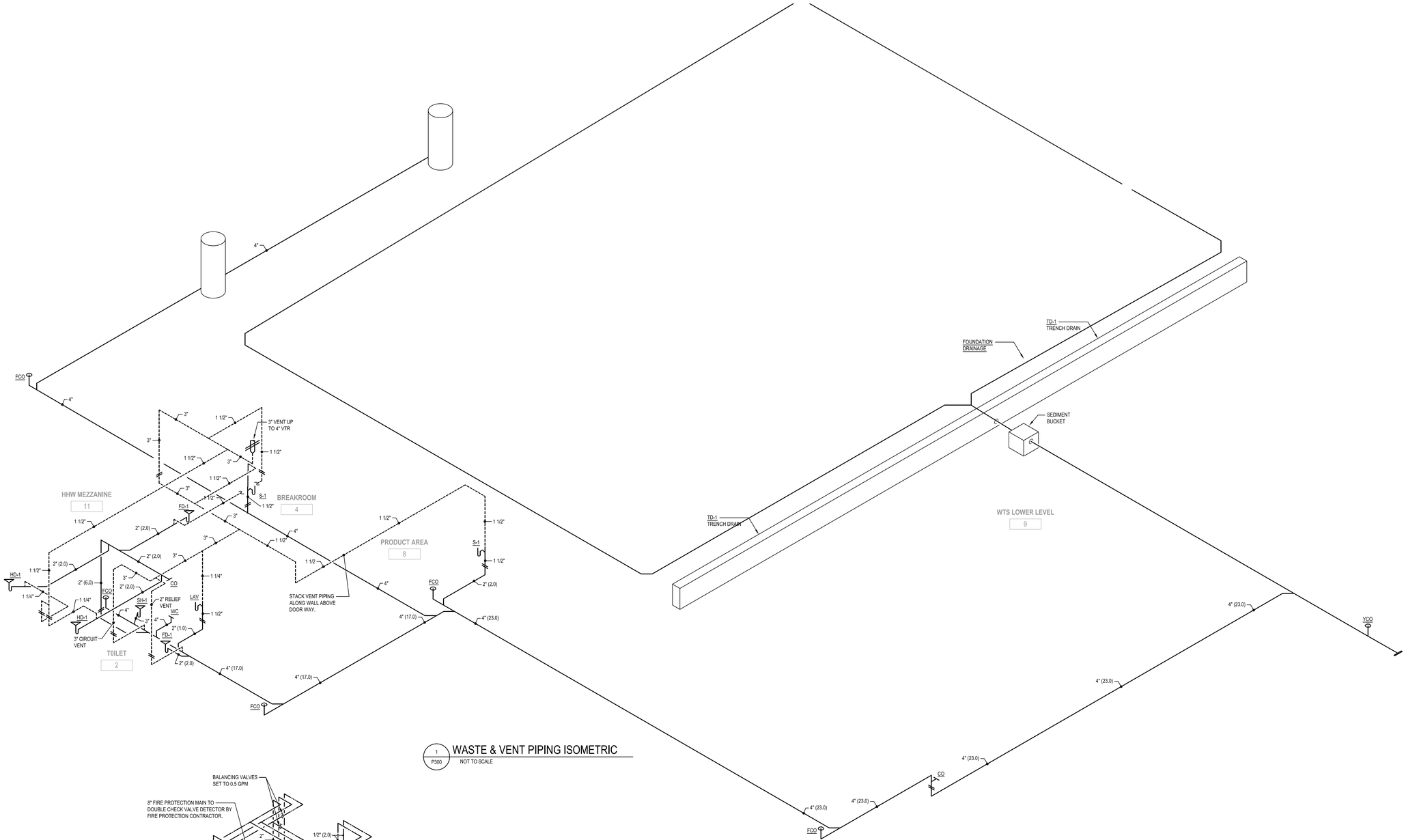
SHEET TITLE:

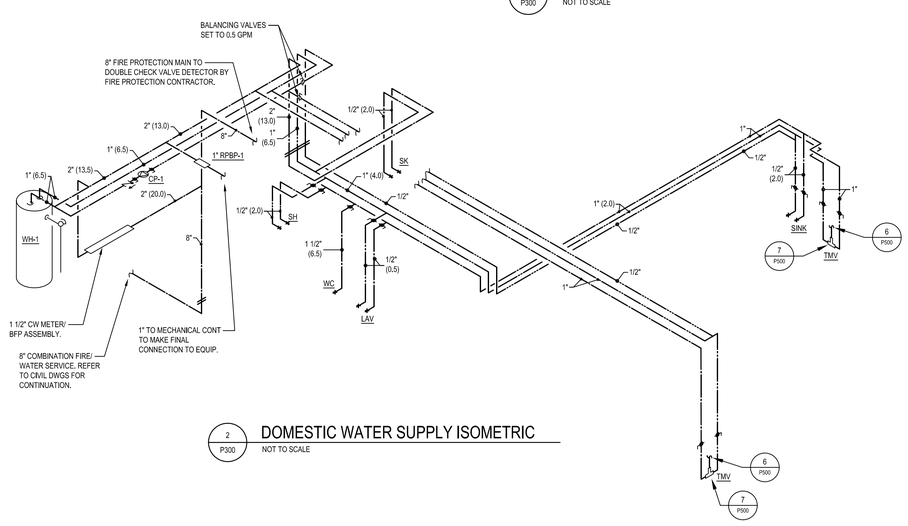
HHW MEZZANINE/WTS UPPER LEVEL PLUMBING PLAN

SHEET NUMBER:

P102



1 P300 WASTE & VENT PIPING ISOMETRIC
NOT TO SCALE



2 P300 DOMESTIC WATER SUPPLY ISOMETRIC
NOT TO SCALE

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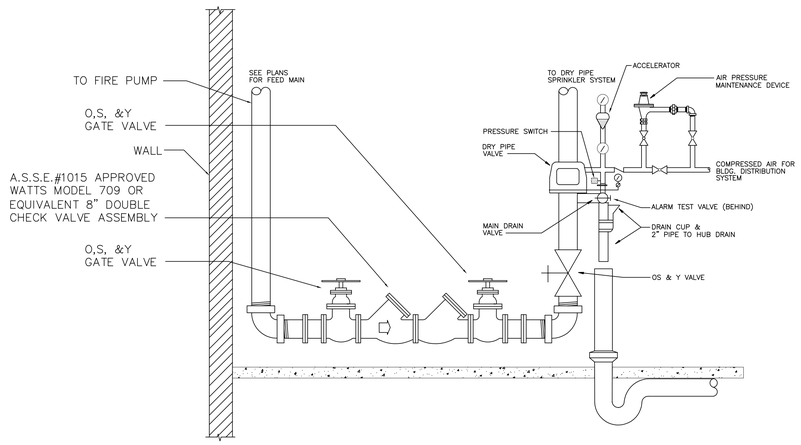
SCALE:	AS NOTED

SHEET TITLE:

PLUMBING ISOMETRICS

SHEET NUMBER:

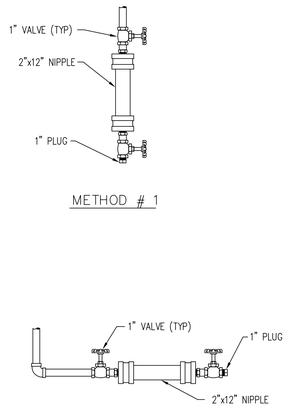
P300



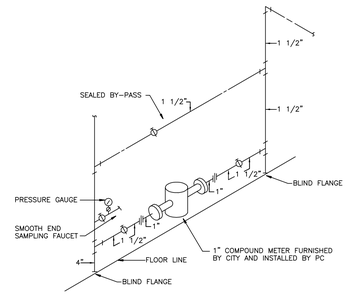
NOTE:

1. SEE FLOOR PLAN FOR SIZE.
2. PROVIDE WALL SUPPORTS FOR DOUBLE CHECK VALVE ASSEMBLY.

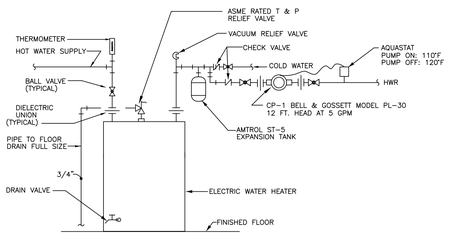
DOUBLE CHECK VALVE ASSEMBLY 1
No Scale



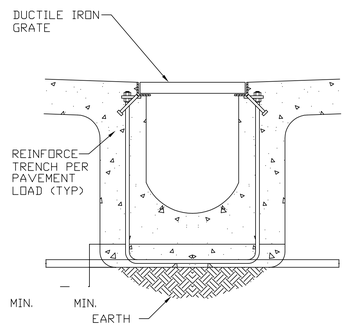
AUXILIARY DRAIN - DRY PIPE SYSTEM 2
No Scale



WATER METER ASSEMBLY 3
No Scale

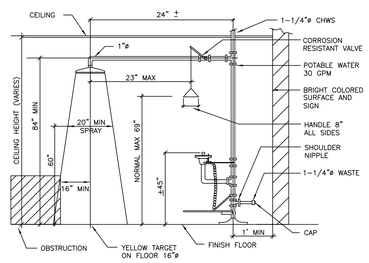


ELECTRIC WATER HEATER 4
No Scale



TF-14
TYPICAL INSTALLATION
MONOLITHIC CONCRETE POUR

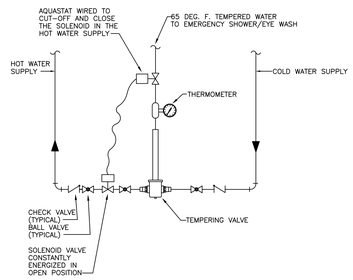
TRENCH DRAIN DETAIL 5
No Scale



NOTE

1 NORMAL MAX 69" W/MAX 54" HANDLE HEIGHT FOR HANDICAP ACCESSIBILITY
2 PROVIDE EMERGENCY SHOWERS NO MORE THAN 100' FROM ANY POINT IN LAB
3 ALL ELECTRICAL OUTLETS 18" MIN FROM OUTER EDGE OF SHOWER SPRAY CONE

EMERGENCY SHOWER/EYEWASH DETAIL 6
No Scale



TEMPERATURE/MIXING VALVE PIPING DETAIL 7
No Scale

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SCALE:	AS NOTED

SHEET TITLE:

PLUMBING DETAILS

SHEET NUMBER:

P500

WATER SUPPLY INFORMATION:
DATE OF TEST: DECEMBER 4, 2009
TIME OF TEST: 9:20 AM

HYDRANT FLOW TEST RESULTS:

STATIC PRESSURE	70 PSI
FLOW AT STATIC	0 GPM
RESIDUAL PRESSRE	40 PSI
FLOW AT RESIDUAL	1010 GPM

SPRINKLER CALCULATION INFORMATION:

ORDINARY HAZARD/GROUP 2
0.20 GPM/SF

SPRINKLER HEAD USED:
MAKE: RELIABLE SPRINKLER
MODEL: G XLO
K-FACTOR: 11.0
ORIFICE: ½"
RESPONSE: STANDARD

HHW FIRST/ WTS LOWER LEVEL FIRE PROTECTION PLAN

1 / FP101

1/8"=1'-0"

0 4' 8'

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LEVEL FIRE PROTECTION PLAN

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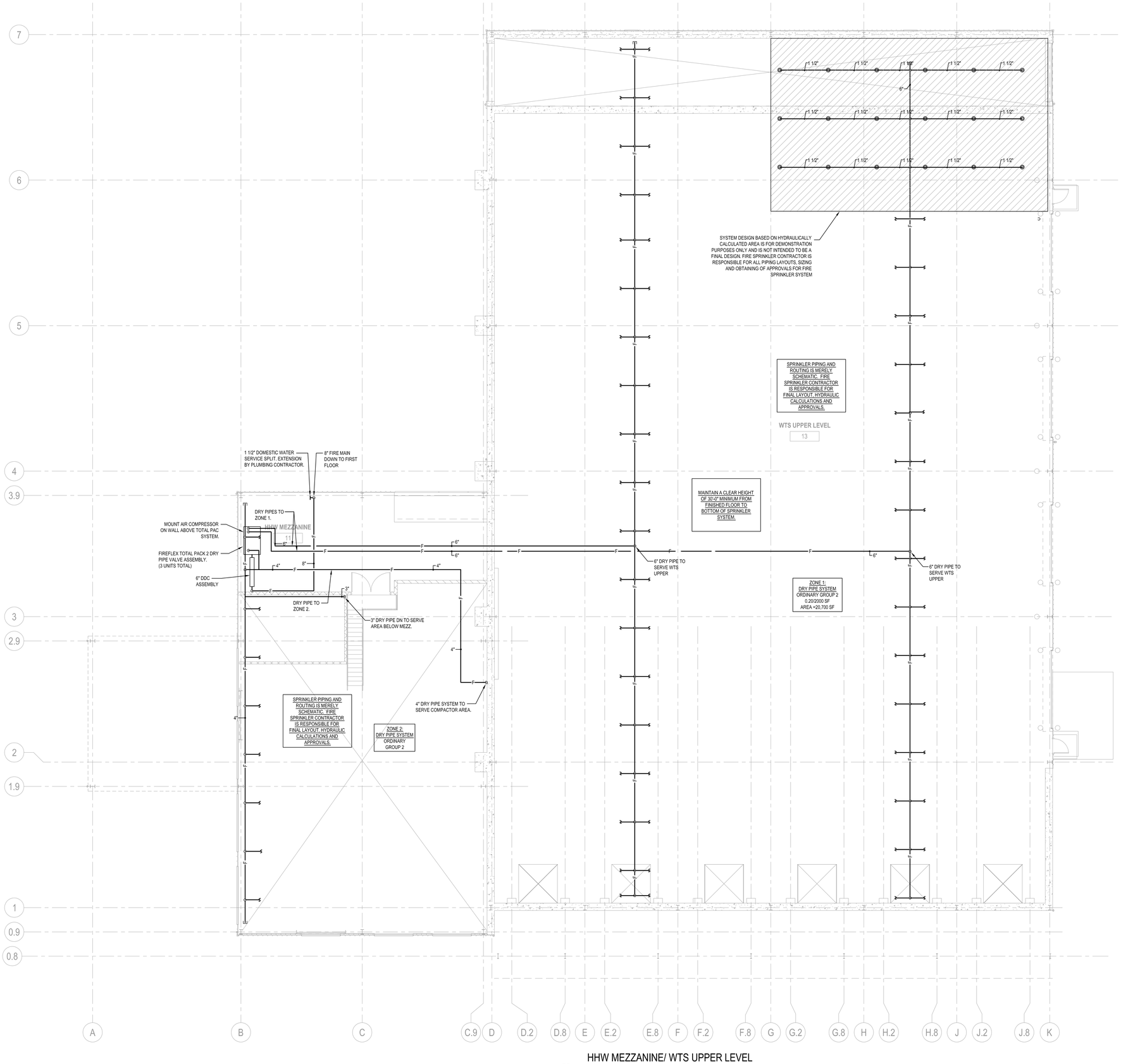
FP101



HHW MEZZANINE/ WTS UPPER LEVEL
FIRE PROTECTION PLAN

1
FP102

1/8"=1'-0"

0 4' 8'

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LEVEL FIRE PROTECTION PLAN

SHEET NUMBER:

FP102