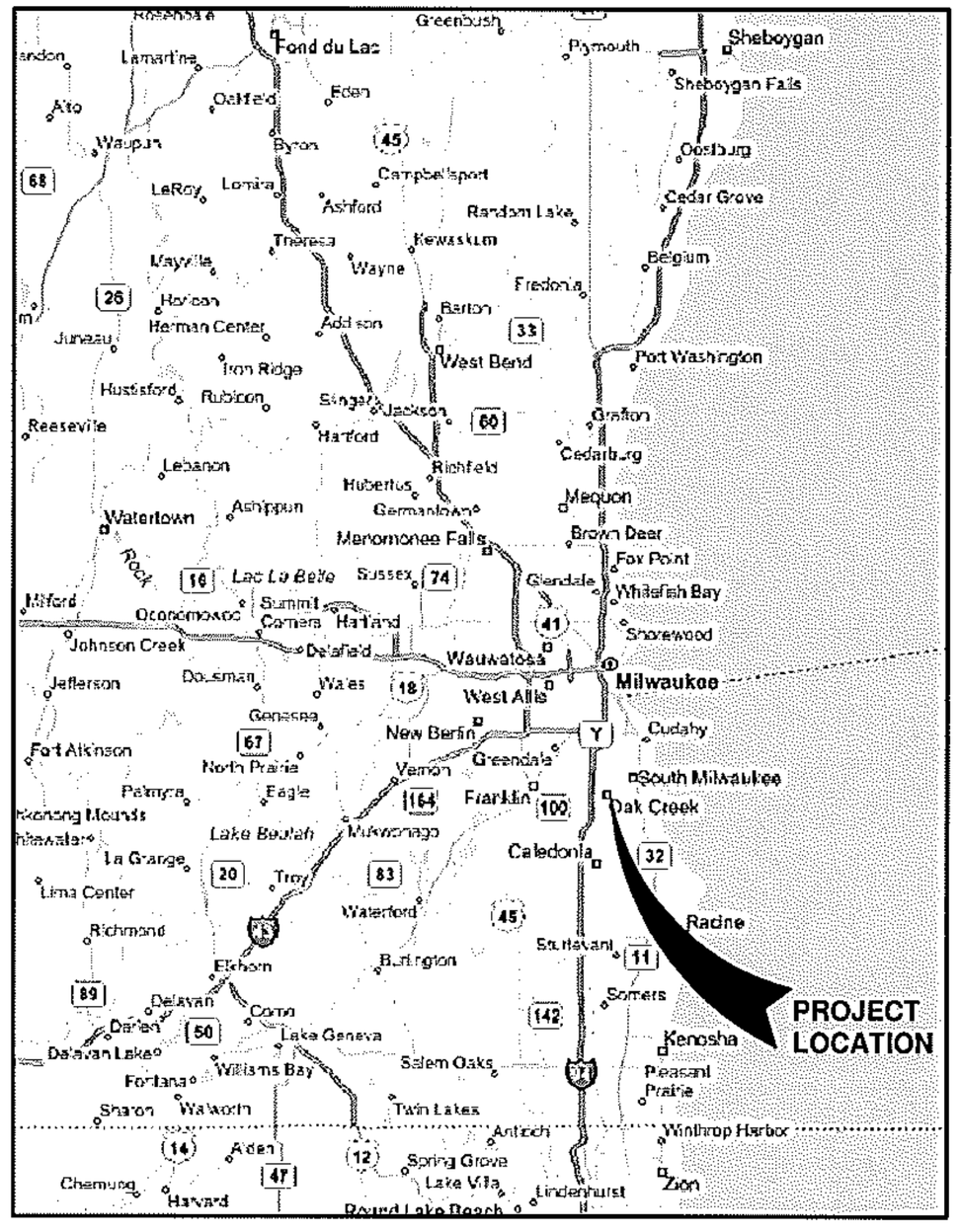
PUETZ ROAD BOOSTER STATION
OAK CREEK SEWER AND WATER UTILITY
CITY OF OAK CREEK
MILWAUKEE COUNTY, WISCONSIN

PROJECT NO. 08101 & 08102
PART A-BOOSTER STATION CONSTRUCTION
PART B-TRANSMISSION MAIN CONSTRUCTION

AUGUST 2009



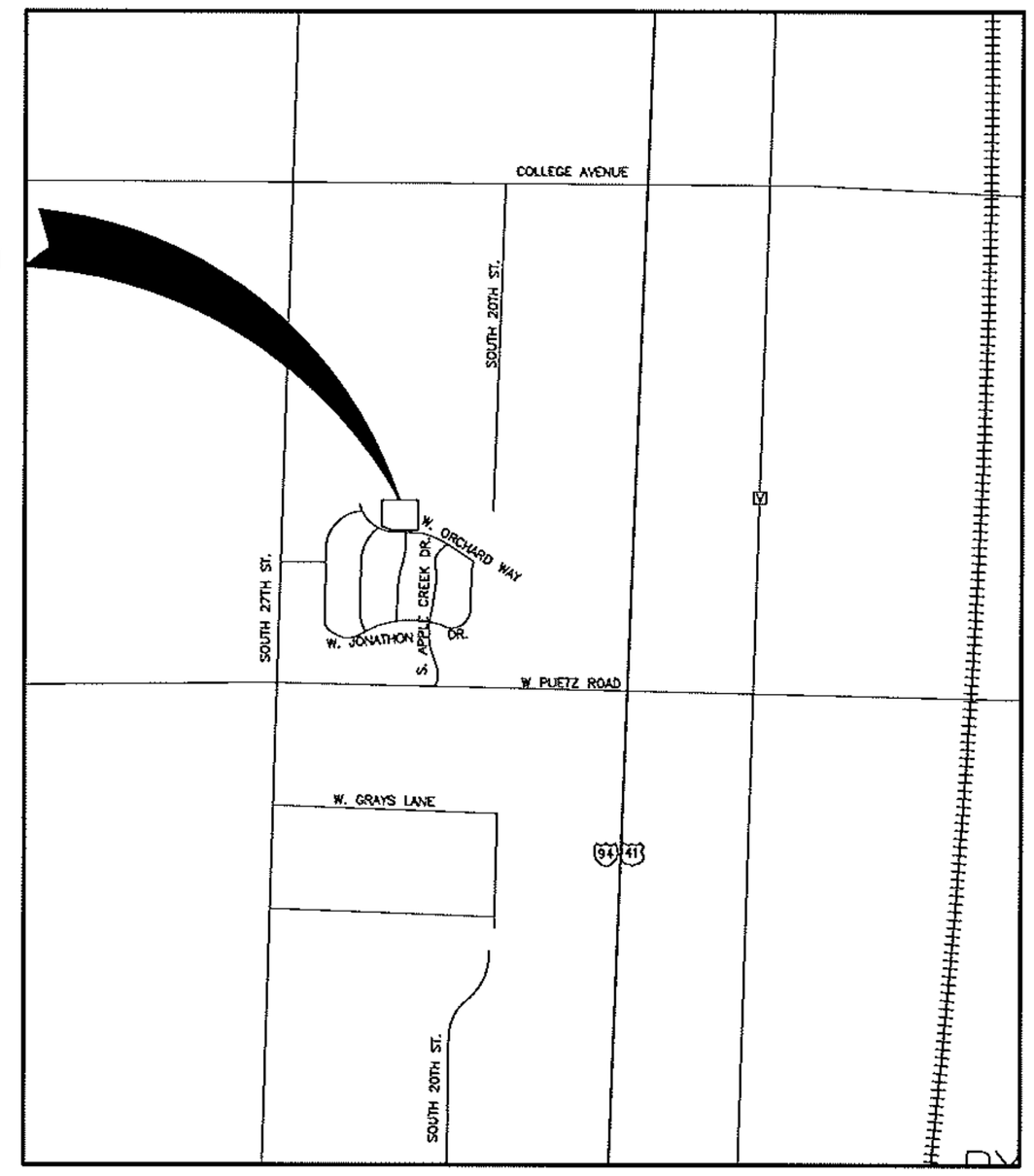
VICINITY MAP

NOTE:
ALL DRAWINGS CONTAINED IN THIS SET HAVE BEEN REDUCED TO HALF SIZE.

NOTE:
EXISTING UTILITIES SHOWN ON PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING EXACT LOCATIONS AND ELEVATIONS OF ALL UTILITIES, WHETHER SHOWN OR NOT, FROM THE OWNERS OF THE RESPECTIVE UTILITIES. ALL UTILITY OWNERS SHALL BE NOTIFIED FOR LOCATES BY THE CONTRACTOR 72 HOURS PRIOR TO EXCAVATION.

NOTE:
ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO CONSTRUCTION AND SHALL CONFORM TO THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONSTRUCTION SITE EROSION CONTROL AND TECHNICAL STANDARDS.

PROJECT LOCATION



LOCATION MAP

FOR CONSTRUCTION

This is to certify that this plan was approved by the Water Works and Sewer Utility Commission of Oak Creek at a special meeting.

Utility Engineer — Date 10/21/09

SOME DRAWINGS MAY HAVE BEEN REDUCED OR ENLARGED
DO NOT SCALE FROM DRAWINGS

SA. ST. W. G. E. T. I. TS. PP.

Consultant:
Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES
4664 GOLDEN POND PARK CT.
HOBART, WISCONSIN 54155
PHONE: 920-662-9441
FAX: 920-662-9441
WWW.RELEEINC.COM

REVISION BY | DATE

CITY OF OAK CREEK, WISCONSIN

DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE
D.A.M.	8/13/09	R.L.B.	8/13/09	K.A.K.	8/13/09

LOCATION MAPS
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY
UTILITY ENGINEER — DATE 10/21/09
APPROVED BY
CITY ENGINEER — DATE

SCALE	SHEET
PLAN HOR. N.T.S.	1
PROFILE HOR. N.T.S.	OF
VER. N.T.S.	53

00-G-01

INDEX TO SHEETS

SHEET NO.	CONTRACT	DWG. NO.	TITLE
		00 - GENERAL	
1	A & B	00-G-01	LOCATION MAPS
2	A & B	00-G-02	INDEX TO SHEETS
3	A	00-G-03	SYMBOLS AND ABBREVIATIONS
4	A & B	00-G-04	LEGEND AND GENERAL NOTES
5	A	00-G-05	PROCESS SCHEMATIC
6	A	00-G-06	EQUIPMENT DESIGNATION AND DESIGN DATA
7	A	00-E-01	ELECTRICAL SYMBOLS AND ABBREVIATIONS
		05-SITE	
8	A & B	05-D-01	EXISTING SITE AND SITE DEMOLITION PLAN
9	A & B	05-C-01	SITE AND YARD PIPING PLAN
10	A	05-C-02	GRADING AND EROSION CONTROL PLAN
11	B	05-C-03	PROPOSED WATERMAIN - STA. 40+00 TO STA. 41+28
12	B	05-C-04	PROPOSED WATERMAIN - WEST ORCHARD WAY STA. 9+35 TO STA. 10+48
13	B	05-C-05	PROPOSED WATERMAIN - WEST ORCHARD WAY STA. 10+48 TO STA. 14+24
14	A	05-E-01	ELECTRICAL SITE PLAN
		07-ONE - LINE DIAGRAM	
15	A	07-E-01	ONE LINE DIAGRAM
		09-PROCESS AND INSTURMENTATION DIAGRAM	
16	A	09-E-01	PROCESS INSTRUMENTATION DIAGRAM
		100 - BOOSTER PUMP STATION PLANS	
17	A	100-AS-01	FOUNDATION PLAN
18	A	100-AS-02	ARCHITECTURAL/STRUCTURAL FLOOR PLAN
19	A	100-AS-03	ARCHITECTURAL/STRUCTURAL SECTION
20	A	100-AS-04	ARCHITECTURAL/STRUCTURAL SECTION
21	A	100-AS-05	ARCHITECTURAL/STRUCTURAL SECTION
22	A	100-AS-06	BUILDING ELEVATIONS
23	A	100-AS-07	ROOF FRAMING PLAN
24	A	100-M-01	MECHANICAL PLAN
25	A	100-M-02	MECHANICAL SECTION
26	A	100-M-03	MECHANICAL SECTION
27	A	100-M-04	MECHANICAL SECTION
28	A	100-M-05	MECHANICAL SECTION
29	A	100-M-06	MECHANICAL SECTION
30	A	100-E-01	LIGHTING PLAN
31	A	100-E-02	ELECTRICAL POWER PLAN
32	A	100-E-03	PROCESS INSTRUMENTATION PLAN
33	A	100-H-01	HVAC PLAN
34	A	100-P-01	SANITARY DRAIN AND VENT PLAN
35	A	100-P-02	SANITARY WASTE AND VENT PIPING ISOMETRIC
		200 - DETAILS / SCHEDULES	
36	A & B	200-C-01	EROSION CONTROL DETAILS/INLET PROTECTION
37	A & B	200-C-02	EROSION CONTROL DETAILS/DITCH CHECK
38	A & B	200-C-03	EROSION CONTROL DETAILS/SHEET FLOW
39	A	200-AS-01	STRUCTURAL NOTES
40	A	200-AS-02	DOOR AND WINDOW SCHEDULES AND DETAILS
41	A	200-AS-03	TYPICAL REINFORCING AND CONCRETE DETAILS
42	A	200-AS-04	ARCHITECTURAL DETAILS
43	A	200-AS-05	ARCHITECTURAL DETAILS
44	A	200-AS-06	ARCHITECTURAL DETAILS
45	A	200-M-01	PIPE PENETRATION DETAILS
46	A & B	200-M-02	THRUST BLOCKING DETAILS
47	A & B	200-M-03	PIPE BEDDING DETAILS
48	A & B	200-M-04	WATERMAIN DETAILS
49	B	200-M-05	WATERMAIN DETAILS
50	A & B	200-M-06	PRESSURE GAUGE DETAILS
51	A	200-E-01	ELECTRICAL DETAILS
52	A	200-E-02	ELECTRICAL DETAILS
53	A	200-P-01	PLUMBING SCHEDULE AND DETAILS

DRAWING NUMBER DESIGNATION

120-E-03

- DRAWING NUMBER
- DISCIPLINE IDENTIFIER
- SECTION IDENTIFIER

DISCIPLINE DESIGNATION

- G - GENERAL
- C - CIVIL
- A - ARCHITECTURAL
- S - STRUCTURAL
- M - PROCESS
- P - PLUMBING
- H - HVAC
- E - ELECTRICAL
- D - DEMOLITION

FOR CONSTRUCTION

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PHONE: 920-662-9641
FAX: 920-662-9141
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REVISION BY DATE

CITY OF OAK CREEK, WISCONSIN

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D.A.M. 8/13/09	R.L.B. 8/13/09	K.A.K. 8/13/09

INDEX TO SHEETS
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY
UTILITY ENGINEER DATE

APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. N.T.S.	2
PROFILE HOR. N.T.S.	OF
VER. N.T.S.	53

00-G-02

- GATE VALVE
- BUTTERFLY VALVE
- GLOBE VALVE
- NEEDLE VALVE
- PLUG VALVE
- BALL VALVE
- CENTER GUIDE CHECK VALVE
- CHECK VALVE
- BALL CHECK VALVE
- DIAPHRAGM VALVE
- KNIFE GATE VALVE
- ACTUATED VALVE, S-SOLENOID, M-MOTOR, P-PNEUMATIC
- SELF ACTUATING PRESSURE REGULATING VALVE
- POWER OPERATED VALVE FOR VALVE SEE SPECS
- ANGLE VALVE
- RELIEF VALVE
- THERMOSTATICALLY CONTROLLED VALVE
- ROTAMETER
- STRAINER
- PIPELINE FLUSHING COCK CONNECTION
- INSULATED PIPE
- FLANGED JOINT
- GROOVED PIPE COUPLINGS
- FLANGED COUPLING ADAPTER
- MECHANICAL JOINT
- MECHANICAL PIPE COUPLING
- FLEXIBLE RUBBER COUPLING
- STAINLESS STEEL FLEXIBLE COUPLING
- SANITARY TRAP
- DIRECTION OF FLOW
- UNION
- REDUCER OR INCREASER
- MANUAL AIR VENT
- MORTAR GROUT OR PLASTER
- BRICK (ELEVATION)

- 12X24 — FIRST DIMENSION DUCT SIDE SHOWN SECOND DIMENSION SIDE NOT SHOWN
- SUPPLY OR OUTSIDE AIR DUCT
- EXHAUST OR RETURN AIR DUCT
- AIR TURNING VANES IN DUCT
- OBVD — OPPOSED BLADE VOLUME DAMPER
- FD — FIRE DAMPER
- FDC — FLEXIBLE DUCT CONNECTION
- FLOW — EXTRACTOR
- WALL LOUVER
- (W X H) NO. CFM — EXHAUST OR RETURN AIR GRILLE OR REGISTER (W X H = WIDTH X HEIGHT, INCHES)
- (W X H) NO. CFM — SUPPLY GRILLE OR REGISTER, (W X H = WIDTH X HEIGHT, INCHES)
- CENTRIFUGAL PUMP, FAN, BLOWER OR METERING PUMP
- FE — FLOW METER, OR ELEMENT
- FL — FLOW SWITCH
- T — THERMOMETER
- P — PRESSURE GAUGE
- PS — PRESSURE SWITCH
- HOSE RACK
- UTILITY STATION (PLAN)
- T — THERMOSTAT
- SANITARY MANHOLE
- CONNECTING LINES, SINGLE LINE SCHEMATIC DIAGRAMS
- NON-CONNECTING LINES, SINGLE LINE SCHEMATIC DIAGRAMS
- C/L — CENTERLINE
- FLEXIBLE PIPE CONNECTION (SINGLE LINE PIPE)
- @ — AT
- & — AND
- DIA. — DIAMETER
- L — ANGLE
- PL — PLATE OR PROPERTY LINE

- 101 — DOOR NUMBER
- 101 — ROOM NUMBER
- 8" STD — PIPING DESIGNATION
- P12345 — EQUIPMENT DESIGNATION
- GRATING, ARROW DESIGNATES DIRECTION OF SPAN
- CHECKER PLATE
- STEEL OR STAINLESS STEEL
- ALUMINUM
- WOOD
- RIGID INSULATION
- NEOPRENE
- OPENING OR DEPRESSION IN SLAB OR WALL
- OPENING WITH GRATING COVER
- OPENING W/ CHECKER PLATE COVER
- STUD WALL (PLAN)
- FIBERGLASS INSULATION
- CELLULAR INSULATION
- BM-1 — BENCHMARK
- 3:1 — SLOPE (3 HORZ. TO 1 VERT.)
- JOINT FILLER
- OR — PVC WATER STOP
- NATURAL GROUND OR GRADE
- BEDROCK
- TP-1 — SOIL BORING OR TEST PIT AND DESIGNATION
- SLIDE GATE OPENING AND DESIGNATION
- REINFORCEMENT IN SECTION
- REINFORCEMENT PLAN OR ELEVATION
- CONCRETE (POURED)
- CONCRETE (BLOCK)
- BRICK (PLAN OR SECTION)
- CONCRETE BLOCK

FOR CONSTRUCTION

EXAMPLE OF SECTION NUMBERING SYSTEM

(1) SECTION CUT ON DRAWING S251

5 / S260 — SECTION NUMBER; DRAWING ON WHICH SECTION APPEARS

(2) ON DRAWING S260, THIS SECTION IS IDENTIFIED BY:

5 / S251 — SECTION NUMBER; DRAWING FROM WHICH THE SECTION WAS TAKEN

Consultant: Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES
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FAX: 920-662-9141
WWW.RELEEINC.COM

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D.A.M.	8/13/09	R.L.B.	8/13/09	K.A.K.	8/13/09

SYMBOLS AND ABBREVIATIONS
IN: PUETZ ROAD BOOSTER STATION

APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. N.T.S.	3
PROFILE HOR. N.T.S.	OF
VER. N.T.S.	53

REVISION BY DATE

FILE NO: 08101

00-G-03

LEGEND

PROPOSED / EXISTING

- FIRE HYDRANT
- WATER VALVE/CURB STOP
- WATER MANHOLE
- REDUCER/INCREASER
- SANITARY MANHOLE
- STORM MANHOLE
- OPEN STORM MANHOLE
- STORM INLET
- STORM INLET MANHOLE
- SPRINKLER HEAD
- TRAFFIC SIGNAL
- POST
- IRON PIPE/ROD
- PK NAIL
- RECORDED COUNTY MONUMENT

- SB SOIL BORING
- POWER POLE
- POWER POLE W/GUY WIRE
- LIGHT POLE
- ELECTRIC MANHOLE
- ELECTRIC METER
- TELEPHONE MANHOLE
- TELEPHONE PEDESTAL
- CABLE TV MANHOLE
- CABLE TV PEDESTAL
- GAS VALVE
- GAS METER
- MAILBOX
- SIGN

- TREE/SHRUB TO BE REMOVED
- DECIDUOUS TREE
- CONIFEROUS TREE
- BUSH
- CONCRETE
- WETLANDS
- (POINT OF ELEVATION) 750.65 SPOT ELEVATION
- EXISTING CULVERT
- HANDICAP PARKING
- TO BE DEMOLISHED

- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- EXISTING CURB & GUTTER
- TREE/BRUSH LINE
- 750 EXISTING CONTOUR LINE
- RETAINING WALL
- FENCE
- SILT FENCE

- PROPOSED SANITARY SEWER
- 8"SS EXISTING SANITARY SEWER (SIZE NOTED)
- PROPOSED STORM SEWER
- 10"ST EXISTING STORM SEWER (SIZE NOTED)
- PROPOSED WATERMAIN
- 6"W EXISTING WATERMAIN (SIZE NOTED)
- 4"FM EXISTING FORCEMAIN (SIZE NOTED)
- G GAS LINE
- OT OVERHEAD TELEPHONE LINE
- T UNDERGROUND TELEPHONE LINE
- E OVERHEAD ELECTRIC LINE
- E UNDERGROUND ELECTRIC LINE
- OTV OVERHEAD CABLE TV LINE
- TV CABLE TV LINE
- R/W LINE
- PROPERTY LINE
- EASEMENT LINE
- BUILDING SETBACK LINE
- SECTION LINE

GR.	GRAVEL	WM	WATERMAIN	EX	EXISTING
BIT.	BITUMINOUS	HYD.	HYDRANT	EOR	END OF RADIUS
ASPH.	ASPHALT PAVEMENT	WV	WATER VALVE	B-B	BACK TO BACK (OF CURB)
CONC.	CONCRETE	SAN	SANITARY SEWER	R/W	RIGHT OF WAY
SW	SIDEWALK	MH	MANHOLE	T.O.C.	TOP OF CURB
BLDG	BUILDING	ST	STORM SEWER	F.L.	FLOW LINE
HSE	HOUSE	CB	CATCH BASIN	C/L	CENTERLINE
PED	PEDESTAL	TELE	TELEPHONE	INV.	INVERT
PP	POWER POLE	ELEC	ELECTRIC	CMP	CORRUGATED METAL PIPE
LP	LIGHT POLE	TV	TELEVISION	RCP	REINFORCED CONCRETE PIPE
BM	BENCH MARK	R	RADIUS	CULV.	CULVERT
PW	POTABLE WATER	CLS	CHLORINE LINE		

DEMOLITION NOTES

1. EXISTING ASPHALT AND BASE COURSE MAY BE PULVERIZED AND STOCKPILED ON SITE FOR FUTURE USE.
2. EXISTING GAS, ELECTRIC, CABLE TELEVISION AND TELEPHONE TO BE REMOVED AND/OR RELOCATED. ALL WORK AND ASSOCIATED COSTS SHALL BE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

UTILITY INFORMATION:

UTILITIES PRESENT:
PRIOR TO CONSTRUCTION, CONTACT DIGGERS HOTLINE FOR EXACT LOCATIONS OF UNDERGROUND UTILITIES

DIGGERS HOTLINE = 1-800-242-8511

NOTE

1. A MINIMUM OF 6.5 FEET OF COVER SHALL BE MAINTAINED OVER ALL WATERMAIN.
2. FIELD VERIFY LOCATION OF EXISTING UTILITIES. IF EXISTING LOCATIONS DIFFER FROM WHAT IS INDICATED ON THE PLANS, **CONTACT ENGINEER,** PRIOR TO CONTINUED WORK.
3. TO ACQUIRE USGS DATUM FROM CITY DATUM ADD 580.6.
4. ALL UNDERGROUND DUCTILE IRON PIPING SHALL BE POLYETHYLENE WRAPPED WITH TWO LAYERS. ALL UNDERGROUND DUCTILE IRON PIPING WITH BOLTS SHOULD BE WRAPPED WITH THREE LAYERS.
5. ALL VALVES SHALL BE OPERATED BY THE UTILITY.

BENCHMARK	BENCHMARK ESTABLISHED BY: ROBERT E. LEE & ASSOCIATES, INC. **FIELD VERIFY BENCHMARKS FOR ACCURACY.**	
NO.	DESCRIPTION	ELEV.
1	TOP NUT ON THE FIRE HYDRANT	194.61
2	TOP NUT ON THE FIRE HYDRANT	197.86
3	TOP NUT ON THE FIRE HYDRANT	191.02

FOR CONSTRUCTION

SA. ST. W. G. E. T. I. TS. PP.

REVISION BY DATE

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4664 GOLDEN POND PARK CT.
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PHONE: 920-662-9641
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D.A.M.	8/13/09	R.L.B.	8/13/09	K.A.K.	8/13/09

LEGEND AND GENERAL NOTES
IN: PUETZ ROAD BOOSTER STATION

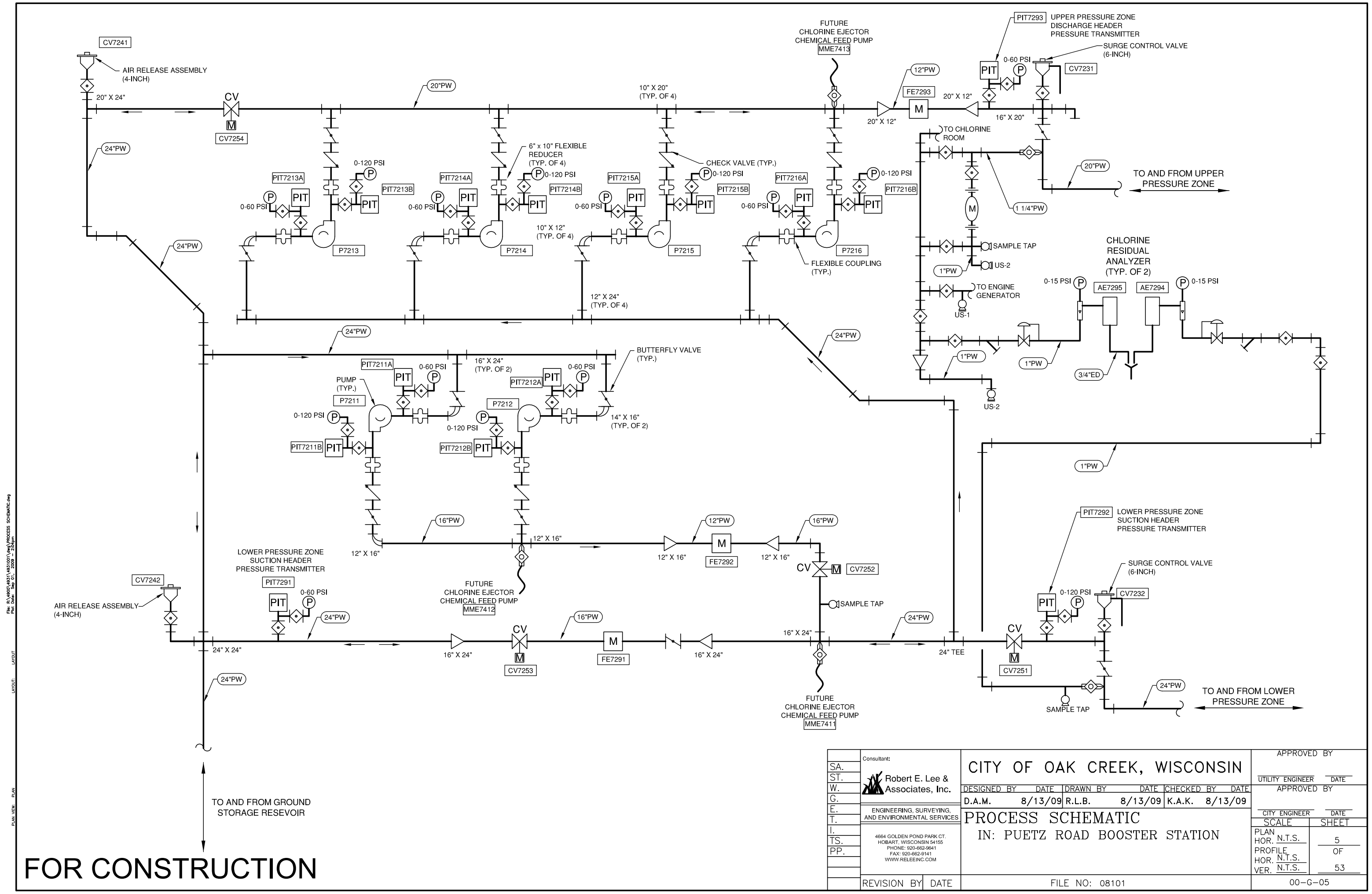
FILE NO: 08101

APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE: PLAN HOR. N.T.S. PROFILE HOR. N.T.S. VER. N.T.S.
SHEET 4 OF 53

00-G-04

File: R:\4900\4931\4931001\dwg\LEGEND.dwg
Plot Date: Sep 01, 2009 – 2:03pm
PLAN VIEW: PLAN LAYOUT: LAYOUT



FOR CONSTRUCTION

File: R:\ARCH\08101\PROCESS SCHEMATIC.dwg
Plot Date: Sep 01, 2009 - 2:34pm
LAYOUT:
PLAN VIEW: PLAN

SA.	Consultant: Robert E. Lee & Associates, Inc.	CITY OF OAK CREEK, WISCONSIN	APPROVED BY UTILITY ENGINEER DATE
ST.		DESIGNED BY DATE: D.A.M. 8/13/09 | DRAWN BY DATE: R.L.B. 8/13/09 | CHECKED BY DATE: K.A.K. 8/13/09	APPROVED BY CITY ENGINEER DATE
W.			
G.			
E.			
T.	ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES	PROCESS SCHEMATIC IN: PUETZ ROAD BOOSTER STATION	SCALE: PLAN HOR. N.T.S. / PROFILE HOR. N.T.S. VER. N.T.S.
I.			SHEET: 5 OF 53
TS.			
PP.	4664 GOLDEN POND PARK CT. HOBART, WISCONSIN 54155 PHONE: 920-662-9641 FAX: 920-662-9141 WWW.RELEEINC.COM		
	REVISION BY DATE	FILE NO: 08101	00-G-05

File: R:\4900\4931\4931001\dwg\EQUIP DESIGN DATA.dwg
Plot Date: Sep 01, 2009 – 2:06pm

PLAN VIEW: PLAN   LAYOUT: LAYOUT

PUETZ ROAD BOOSTER PUMP STATION

EQUIPMENT DESIGNATIONS

7000 PUETZ BOOSTER PUMP STATION
- 7000 GENERAL SITE

7100 MCC ROOM
- MCC7170 MOTOR CONTROL CENTER
- TFR7174 LIGHTING AND POWER TRANSFORMER
- PNL7175 LIGHTING AND POWER PANEL
- PNL7190 INSTRUMENTATION PANEL IP-1
- UH7160 UNIT HEATER
  - TS7160 TEMPERATURE SWITCH

7200 BOOSTER PUMP ROOM
- P7211 LOW ZONE BOOSTER PUMP NO. 1
  - PIT7211A PRESSURE TRANSMITTER
  - PIT7211B PRESSURE TRANSMITTER
- P7212 LOW ZONE BOOSTER PUMP NO. 2
  - PIT7212A PRESSURE TRANSMITTER
  - PIT7212B PRESSURE TRANSMITTER
- P7213 HIGH ZONE BOOSTER PUMP NO. 1
  - PIT7213A PRESSURE TRANSMITTER
  - PIT7213B PRESSURE TRANSMITTER
- P7214 HIGH ZONE BOOSTER PUMP NO. 2
  - PIT7214A PRESSURE TRANSMITTER
  - PIT7214B PRESSURE TRANSMITTER
- P7215 HIGH ZONE BOOSTER PUMP NO. 3
  - PIT7215A PRESSURE TRANSMITTER
  - PIT7215B PRESSURE TRANSMITTER
- P7216 HIGH ZONE BOOSTER PUMP NO. 4
  - PIT7216A PRESSURE TRANSMITTER
  - PIT7216B PRESSURE TRANSMITTER
- CV7231 SURGE CONTROL VALVE NO.1
- CV7232 SURGE CONTROL VALVE NO. 2
- CV7241 AIR RELEASE VALVE
- CV7242 AIR RELEASE VALVE
- CV7251 FLOW CONTROL VALVE NO. 1
- CV7252 FLOW CONTROL VALVE NO. 2
- CV7253 FLOW CONTROL VALVE NO. 3
- CV7254 FLOW CONTROL VALVE NO. 4
  - EF7250 PUMP ROOM EXHAUST FAN
  - D7250A INTAKE DAMPER NO. 1
  - D7250B INTAKE DAMPER NO. 2
  - TS7250 TEMPERATURE SWITCH
- UH7261 PUMP ROOM UNIT HEATER NO. 1
  - TS7261 TEMPERATURE SWITCH
  - UH7262 PUMP ROOM UNIT HEATER NO. 2
  - TS7262 TEMPERATURE SWITCH
- C7281 PUMP ROOM VENTILATION CONTACTOR
- C7282 CHEMICAL ROOM VENTILATION CONTACTOR
  - FE7291 BOOSTER PUMP STATION FLOW METER NO. 1 LOWER PRESSURE ZONE
  - FIQ7291A FLOW INDICATOR/TOTALIZER
  - FT7291B FLOW TRANSMITTER
  - PIT7291 PRESSURE TRANSMITTER
  - FE7292 BOOSTER PUMP STATION FLOW METER NO. 2 LOWER PRESSURE ZONE
  - FIQ7292A FLOW INDICATOR/TOTALIZER
  - FT7292B FLOW TRANSMITTER
  - PIT7292 PRESSURE TRANSMITTER
  - FE7293 BOOSTER PUMP STATION FLOW METER NO. 3 UPPER PRESSURE ZONE
  - FIQ7293A FLOW INDICATOR/TOTALIZER
  - FT7293B FLOW TRANSMITTER
  - PIT7293 PRESSURE TRANSMITTER
- AE7294 CHLORINE RESIDUAL ANALYZER
- AE7295 CHLORINE RESIDUAL ANALYZER
- FS7299 STATION FLOOD ALARM

7300 GENERATOR ROOM
- EG7310 EMERGENCY POWER ENGINE GENERATOR
  - PNL7310 ENGINE GENERATOR CONTROL PANEL
- EF7350 GENERATOR ROOM EXHAUST FAN
  - TS7350 TEMPERATURE SWITCH
  - D7350 INTAKE DAMPER
- MEE7376 AUTOMATIC TRANSFER SWITCH

7400 CHEMICAL ROOM
- MME7411 HYPOCHLORITE SOLUTION METERING PUMP LOWER PRESSURE ZONE RESERVOIR
- MME7412 HYPOCHLORITE SOLUTION METERING PUMP LOWER PRESSURE ZONE PUMPS
- MME7413 HYPOCHLORITE SOLUTION METERING PUMP UPPER PRESSURE ZONE PUMPS
- EF7450 CHEMICAL ROOM EXHAUST FAN
  - D7450A INTAKE DAMPER
  - D7450B DISCHARGE DAMPER
- TS7498 LOW TEMPERATURE SWITCH

7500 RESTROOM
- IWH7501 INSTANTANEOUS WATER HEATER

EQUIPMENT PREFIXES - THE FOLLOWING EQUIPMENT PREFIXES WILL BE USED THROUGHOUT THE PROJECT.

AE = ANALYTICAL EQUIPMENT
C = CONTACTOR
CB = CIRCUIT BREAKER
CFR = CHEMICAL FEEDER
CH = CABINET HEATER
CV = CONTROL VALVE
D = DAMPER
ECB = ENCLOSED CIRCUIT BREAKER
EF = EXHAUST FAN
EG = ENGINE GENERATOR
FDS = FUSED DISCONNECT SWITCH
FE = FLOW ELEMENT
FIQ = FLOW INDICATOR/TOTALIZER
FL = FLOW SWITCH
FS = FLOAT OR LEVEL SWITCH
FT = FLOW TRANSMITTER
FY = SIGNAL CONVERTER
IL = INSTRUMENT LOOP
IP = INSTRUMENT PANEL
M = MOTOR
MCC = MOTOR CONTROL CENTER
MEE = MISCELLANEOUS ELECTRICAL EQUIPMENT
MIE = MISCELLANEOUS INSTRUMENTATION EQUIPMENT
MME = MISCELLANEOUS MECHANICAL EQUIPMENT
P = PUMP
PIT = PRESSURE INDICATOR/TRANSMITTER
PNL = PANEL
PS = PRESSURE SWITCH
SGR = SUPPLY FAN
SV = SOLENOID FAN
SGR = SWITCHGEAR
SV = SOLENOID VALVE
T = TANK
TFR = TRANSFORMER
TS = TEMPERATURE SWITCH
UH = UNIT HEATER

DESIGN DATA

BOOSTER PUMPS

LOWER PRESSURE ZONE	2
CAPACITY, GPM	1500
TDH, FEET	60
MOTOR SIZE, HP	50
UPPER PRESSURE ZONE	4
CAPACITY, GPM	1500
TDH, FEET	115
MOTOR SIZE , HP	50

FLOW METER

NUMBER	3
SIZE, INCHES	2 METERS AT 12 inch 1 METER AT 16 inch

ENGINE GENERATOR

NUMBER	1
SIZE, KW	300

FOR CONSTRUCTION

Consultant: Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES
4664 GOLDEN POND PARK CT. HOBART, WISCONSIN 54155
PHONE: 920-662-9641
FAX: 920-662-9141
WWW.RELEEINC.COM

SA. ST. W. G. E. T. I. TS. PP.

REVISION BY DATE

CITY OF OAK CREEK, WISCONSIN

DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE
D.A.M.	7/24/09	R.L.B.	7/24/09	K.A.K.	7/24/09

EQUIPMENT DESIGNATION AND DESIGN DATA
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. N.T.S.	6
PROFILE HOR. N.T.S.	OF
VER. N.T.S.	53

00-G-06

INSTRUMENT SOCIETY OF AMERICA INSTRUMENT INDENTIFICATION

	FIRST LETTER(S)		SUCCEEDING LETTERS		
	PROCESS OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSOUT FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE			CONTROL	
D	USER'S CHOICE	DIFFERENTIAL	SENSOR (PRIMARY ELEMENT)		
E	VOLTAGE				
F	FLOW RATE	RATIO(FRACTION)			
G	USER'S CHOICE		GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT		INDICATE		
J	POWER	SCAN			
K	TIME OR SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	MOISTURE				
N	TORQUE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		
P	PRESSURE (OR VACUUM)		POINT, TEST CONNECTION		
Q	QUANTITY	INTEGRATE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION				
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE	Y AXIS		RELAY OR COMPUTE	
Z	POSITION, DIMENSION	Z AXIS		DRIVE ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT	

P&ID SYMBOLS (TYPICAL)

A: DESCRIPTION, TOP LINE

B: DESCRIPTION, BOTTOM LINE

TRS: FIRST LETTER(S) AND SUCCEEDING LETTERS OF INSTRUMENT IDENTIFICATION, REFER TO ISA TABLE

W: UNIT PROCESS NUMBER

X: LOOP NUMBER

Y: UNIT NUMBER, USED FOR MULTIPLE SETS WITH THE SAME X-Y DESIGNATION

Z: SET NUMBER, USED FOR MULTIPLE SETS OF UNITS WITH THE SAME W-X-Y DESIGNATION

N: NUMBER OF UNITS

C: INSTALLATION REQUIREMENT:
e.g.: CLASS I, DIVISION 1 HAZARDOUS LOCATION
i.s.: INTRINSICALLY SAFE, INSTALLED IN CLASS I, DIVISION 1 HAZARDOUS LOCATION

O: PROVISION REQUIREMENT:
* EXISTING, RE-USED EQUIPMENT
** EQUIPMENT SPECIFIED UNDER DIVISION 11, 13, OR 15
*** FUTURE EQUIPMENT
BLANK: EQUIPMENT SPECIFIED UNDER DIVISION 16

FIELD DEVICE

CONTROL PANEL DEVICE, FRONT-OF-PANEL, NORMALLY ACCESSIBLE

CONTROL PANEL DEVICE, BACK-OF-PANEL, NOT NORMALLY ACCESSIBLE

MCC DEVICE, FRONT-OF-PANEL, NORMALLY ACCESSIBLE

MCC DEVICE, BACK-OF-PANEL, NOT NORMALLY ACCESSIBLE

SOFTWARE DEVICE OR FUNCTION, NORMALLY ACCESSIBLE

SOFTWARE DEVICE OR FUNCTION, NOT NORMALLY ACCESSIBLE

SOFTWARE ALARM FUNCTION, NORMALLY ACCESSIBLE

INTERLOCK FUNCTION, REFER TO SPECIFICATIONS

XX (Y) PROGRAMMABLE LOGIC CONTROLLER INPUT/OUTPUT POINT WHERE Y=QUANTITY AND XX
DI: DIGITAL INPUT
DI: DIGITAL OUTPUT
AI: ANALOG INPUT
AO: ANALOG OUTPUT

XX (Y) NETWORK (DEVICENET, ETC) CONTROL SYSTEM INPUT/OUTPUT POINT WHERE Y=QUANTITY AND XX
DI: DIGITAL INPUT
DI: DIGITAL OUTPUT
AI: ANALOG INPUT
AO: ANALOG OUTPUT

MS XX FULL VOLTAGE MOTOR CONTROLLER, XX INDICATES LOCATION

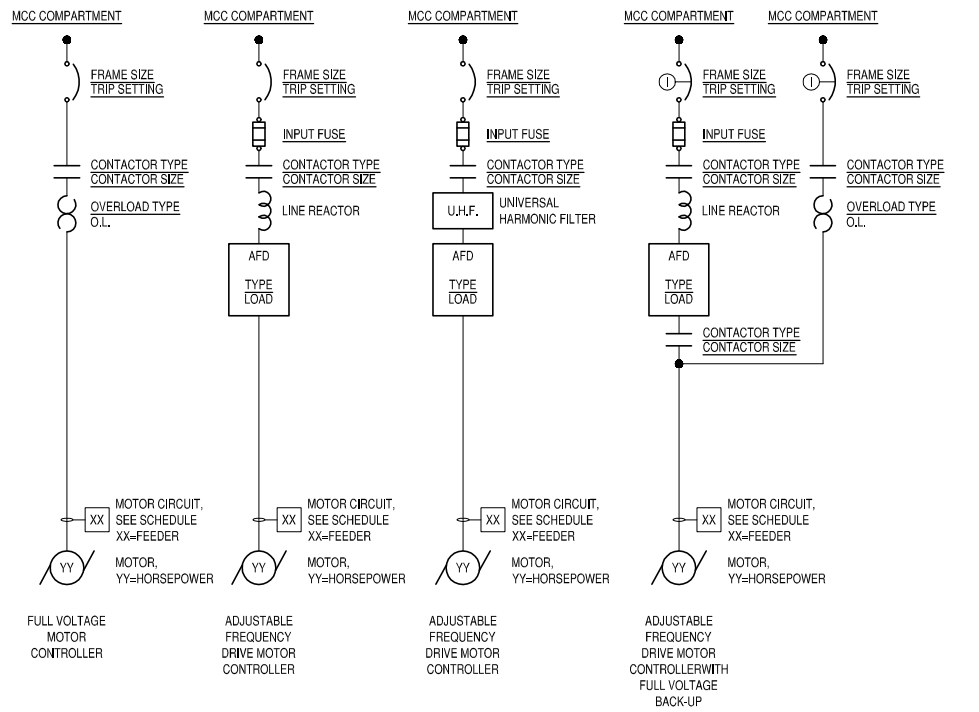
XX / YY MOTOR CONTROLLER, XX INDICATES TYPE OF CONTROLLER AND YY INDICATES LOCATION

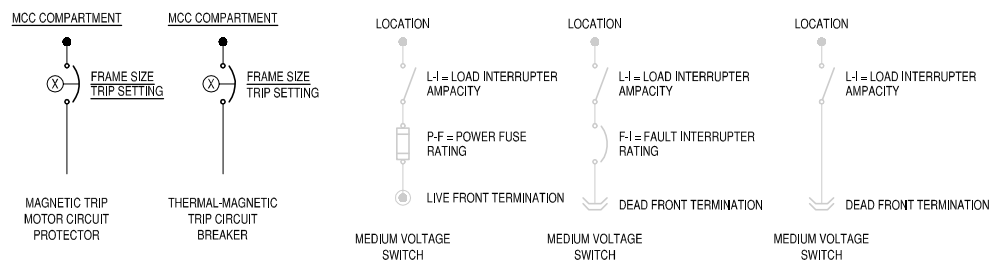
NON-CONNECTING LINES

CONNECTING LINES

(2) PARALLEL LINES (PARENTHETICAL NUMBER INDICATES THE NUMBER OF SIGNALS REPRESENTED)

MOTOR CONTROL CENTER (MCC) SYMBOLS





LIVE FRONT TERMINATION
TAG NUMBER
KVA RATING
PRIMARY VOLTAGE RATING
SECONDARY VOLTAGE RATING
IMPEDANCE
SECONDARY TERMINATION

MEDIUM VOLTAGE TRANSFORMER

WIRING & CONDUIT

1. (X) #12 & #12G

   REFERS TO NUMBER OF WIRE(S) AND SIZE OF WIRE(S) REQUIRED, WHERE AS:

   (1) = ONE WIRE
   #12 = THE SIZE OF WIRE REQUIRED
   G = GROUND WIRE

2. (X) 1-1/2"C

   REFERS TO NUMBER OF CONDUIT(S) AND SIZE OF CONDUIT(S) REQUIRED, WHERE AS:

   (1) = ONE CONDUIT
   1-1/2"C = THE SIZE OF CONDUIT REQUIRED

Ax = 2C#16 SHIELDED, TWISTED PAIR CABLE

Dx = #14 THHN WIRE (x = NUMBER OF WIRES)

Mx = 1" CONDUIT FOR CABLE SUPPLIED BY MANUFACTURER BY MFG. (x=NUMBER OF CONDUITS)

* REFER TO DRAWINGS FOR REQ'D WIRE AND CONDUIT SIZES AND AMOUNTS

GENERAL NOTES:

1. THIS DRAWING IS A STANDARD LEGEND. SYMBOLS SHOWN MAY NOT ALL APPEAR ON DRAWINGS FOR THIS PROJECT.
2. ALL CONTACTS ARE SHOWN IN THE DE-ENERGIZED (SHELF) POSITION. BI-STABLE RELAYS ARE SHOWN IN THE RESET POSITION.
3. ONE-LINE DIAGRAMS FOR POWER SWITCHGEAR, USE ANSI STANDARD SYMBOLS AND ABBREVIATIONS.
4. SEE INSTRUMENTATION DRAWINGS FOR INSTRUMENTATION SYMBOLS AND DETAILS.
5. OTHER ABBREVIATIONS PER ANSI Z32.13 AND ISA S5.1
6. ELEVATIONS ADJACENT TO SYMBOLS ARE BASED ON STATION DATUM. HEIGHTS ADJACENT TO SYMBOLS (+4.0) ARE REFERENCED TO FINISHED FLOOR GRADE.
7. THE LETTERS "GFI" ADJACENT TO A RECEPTACLE INDICATES A GROUND FAULT INTERRUPTER FEED-THROUGH RECEPTACLE ASSEMBLY. THE LETTERS ADJACENT TO A PANELBOARD CIRCUIT BREAKER INDICATES A GROUND FAULT CIRCUIT BREAKER. THE LETTERS "IG" INDICATE AN ISOLATED GROUND RECEPTACLE. PROVIDE SEPARATE GROUND WIRE.
8. SEE SPECIFICATIONS AND SCHEDULES FOR COMPONENT REQUIREMENTS FOR MOTOR CONTROLLERS AND FOR CONTACTORS.

LINETYPE LEGEND

- SOFTWARE SIGNAL/FUNCTION
- ANALOG SIGNAL, 4-20mADC OR PULSE FREQUENCY (— — A — —)
- PULSE FREQUENCY (— — PF — —)
- DISCRETE SIGNAL, DRY CONTACT
- MANUFACTURER'S SIGNAL (— — M — —)
- PNEUMATIC SIGNAL
- MAJOR PROCESS
- MINOR PROCESS

PROCESS NOTES:

1. SIZE CONDUIT PER NEC. MINIMUM SIZE 3/4".
2. PROVIDE SEPARATE CONDUITS FOR THE FOLLOWING:
   a. 4-20mADC
   b. 120 VOLT CONTROL
   c. 120 VOLT POWER
   d. 480 VOLT POWER
   e. LOW VOLTAGE INSTRUMENTATION
   f. COMMUNICATION
3. REFER TO SPECIFICATION 16900 FOR DETAILS ON VARIOUS LOOP FUNCTIONS AS WELL AS DETAILS REGARDING OPERATOR INTERFACE FUNCTIONS.
4. REFER TO DIVISION 11000, 13000, 15000 FOR ADDITIONAL DETAILS REGARDING INSTRUMENTATION AND CONTROL EQUIPMENT FURNISHED UNDER THOSE SPECIFICATIONS.
5. (1) 1-1/2"C REFERS TO NUMBER OF WIRES AND SIZE OF WIRE REQUIRED, WHERE AS:
   (1) = ONE WIRE
   1-1/2"C = THE SIZE OF WIRE REQUIRED

ELECTRICAL ABBREVIATIONS

AFD	ADJUSTABLE FREQUENCY DRIVE	EM	EMERGENCY	KVA	KILOVOLT-AMPERES	PC	PHOTO CONTROL
AFG	ABOVE FINISH GRADE	EP	CLASS 1, DIV. 1 EQUIPMENT	KW	KILOWATTS	PFR	PHASE FAIL RELAY
AHU	AIR HANDLING UNIT	EUH	ELECTRIC UNIT HEATER	MAU	MAKE-UP AIR UNIT	PVC	POLYVINYL CHLORIDE
AUTO	AUTOMATIC	EWC	ELECTRIC WATER COOLER	M.C.	MECHANICAL CONTRACTOR	REQ'D	REQUIRED
AUX	AUXILIARY	EWH	ELECTRIC WALL HEATER	MCC	MOTOR CONTROL CENTER	SPEC	SPECIFICATION
AWG	AMERICAN WIRE GAUGE	FBO	FURNISHED BY OTHERS	MFR	MANUFACTURER	SPD	160KA/PHASE MINIMUM SURGE PROTECTIVE DEVICE
BKR	BREAKER	G	GROUND	MS-AUX	MOTOR STARTER AUXILIARY	SS	STAINLESS STEEL
C	CONDUIT	G.C.	GENERAL CONTRACTOR	mA	MILLIAMPERE	TC	7 DAY TIMECLOCK PROVIDED BY ELECTRICAL CONTRACTOR
CB	CIRCUIT BREAKER	GFI	GROUND FAULT INTERRUPTER	mV	MILLIVOLT	TYP	TYPICAL
CKT	CIRCUIT	GND	GROUND	MOD	MOTOR OPERATED DAMPER	UH	UNIT HEATER
CU	COPPER	HVAC	HEATING, VENTILATING & AIR CONDITIONING	NL	NIGHTLIGHT	UPS	UNINTERRUPTIBLE POWER SUPPLY
DISC	DISCONNECT	HTR	HEATER	N.O.	NORMALLY OPEN	W/	WITH
E.C.	ELECTRICAL CONTRACTOR	I.S.	INTRINSICALLY SAFE	N.C.	NORMALLY CLOSED	WH	WATER HEATER
ECB	ENCLOSED CIRCUIT BREAKER	I/O	INPUT/OUTPUT	NF	NON-FUSED	WP	WEATHER PROOF
EDH	ELECTRIC DUCT HEATER	IG	ISOLATED GROUND	NTS	NOT TO SCALE	XFMR	TRANSFORMER
EF	EXHAUST FAN	J-BOX	JUNCTION BOX	O.L.	OVERLOAD	XLP	CROSS LINKED POLYETHYLENE
ELEV	ELEVATION	KCMIL	THOUSAND CIRCULAR MILS	OHD	OVER HEAD DOOR		
		KV	KILOVOLTS				

FOR CONSTRUCTION

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PHONE: 920-662-9641
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WWW.RELEEINC.COM

SA. ST. W. G. E. T. I. TS. PP.

REVISION BY DATE

CITY OF OAK CREEK, WISCONSIN

DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE
D.A.M.	8/13/09	R.L.B.	8/13/09	K.A.K.	8/13/09

ELECTRICAL SYMBOLS AND ABBREVIATIONS
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. N.T.S.	7
PROFILE HOR. N.T.S. VER. N.T.S.	OF 53

00-E-01

BENCHMARK	BENCHMARK ESTABLISHED BY: ROBERT E. LEE & ASSOCIATES, INC. **FIELD VERIFY BENCHMARKS FOR ACCURACY.**	
NO.	DESCRIPTION	ELEV.
1	TOP NUT ON THE FIRE HYDRANT	194.61
2	TOP NUT ON THE FIRE HYDRANT	197.86
3	TOP NUT ON THE FIRE HYDRANT	191.02

NORTH

0' 20' 40'

SCALE IN FEET

UTILITY INFORMATION:

UTILITIES PRESENT:
PRIOR TO CONSTRUCTION, CONTACT DIGGERS HOTLINE FOR EXACT LOCATIONS OF UNDERGROUND UTILITIES

DIGGERS HOTLINE = 1-800-242-8511

DEMOLITION NOTES

1. EXISTING ASPHALT AND BASE COURSE MAY BE PULVERIZED AND STOCKPILED ON SITE FOR FUTURE USE.
2. EXISTING GAS, ELECTRIC, CABLE TELEVISION AND TELEPHONE TO BE REMOVED AND/OR RELOCATED. ALL WORK AND ASSOCIATED COSTS SHALL BE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

NOTE

1. A MINIMUM OF 6.5 FEET OF COVER SHALL BE MAINTAINED OVER ALL WATERMAIN.
2. FIELD VERIFY LOCATION OF EXISTING UTILITIES. IF EXISTING LOCATIONS DIFFER FROM WHAT IS INDICATED ON THE PLANS, **CONTACT ENGINEER,** PRIOR TO CONTINUED WORK.
3. TO ACQUIRE USGS DATUM FROM CITY DATUM ADD 580.6.
4. ALL UNDERGROUND DUCTILE IRON PIPING SHALL BE POLYETHYLENE WRAPPED WITH TWO LAYERS. ALL UNDERGROUND DUCTILE IRON PIPING WITH BOLTS SHOULD BE WRAPPED WITH THREE LAYERS.
5. ALL VALVES SHALL BE OPERATED BY THE UTILITY.
6. CONTRACT A IS RESPONSIBLE FOR ALL ASPHALT RESTORATION WITHIN PUETZ ROAD RESERVOIR CONSTRUCTION LIMITS.

OUTLOT 1
CSM NO. 6111

OUTLOT 1
CSM NO. 6112

GROUND STORAGE RESERVOIR

" PVC=INV 188.95"

SB # 1= 199.16'

SB # 2 = 196.38'

SB # 3=195.77'

SAWCUT EX. ASPHALT

PUETZ ROAD RESERVOIR CONSTRUCTION LIMITS (TYP.)

REMOVE BENCH

RELOCATE EX SPRINKLER HEAD & APPURTENANCES (TYP. OF 5)

RELOCATE EX ELECTRIC

RELOCATE EX SPRINKLER HEADS & APPURTENANCES

RELOCATE EX CONC RETAINING WALL FLAG POLES AND LIGHTS REMOVE & REPLACE EXISTING SHRUBS & LANDSCAPING WITH SAME

SAWCUT EX. ASPHALT

REMOVE EX. LIGHT POLE & BASE USE POLE FOR CAMERAS

REMOVE TREE

REMOVE CONC.

RELOCATE EX MONUMENT

REMOVE ASPHALT

SAWCUT EX. ASPHALT

RELOCATE EX. LIGHT & CORRESPONDING ELECTRICAL

SOUTH BREABURN DRIVE

WEST ORCHARD WAY

EX SAN MH
RIM 183.57
INV. 170.53
D = 13.04'

EX SAN MH
RIM 192.09
INV. 181.07
D = 11.02'

FOR CONSTRUCTION

	Consultant:	CITY OF OAK CREEK, WISCONSIN	APPROVED BY
SA.	Robert E. Lee & Associates, Inc.		UTILITY ENGINEER DATE
ST.		DESIGNED BY DATE: D.A.M. 8/13/09 | DRAWN BY DATE: R.L.B. 8/13/09 | CHECKED BY DATE: K.A.K. 8/13/09	APPROVED BY
W.			CITY ENGINEER DATE
G.	ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES	EXISTING SITE AND SITE DEMOLITION PLAN IN: PUETZ ROAD BOOSTER STATION	SCALE: PLAN HOR. 1"=20', PROFILE HOR. N.T.S., VER. N.T.S. | SHEET: 8 OF 53
E.			
T.	4664 GOLDEN POND PARK CT. HOBART, WISCONSIN 54155 PHONE: 920-662-9641 FAX: 920-662-9141 WWW.RELEEINC.COM		
I.			
TS.			
PP.			
	REVISION BY DATE	FILE NO: 08101	05-D-01

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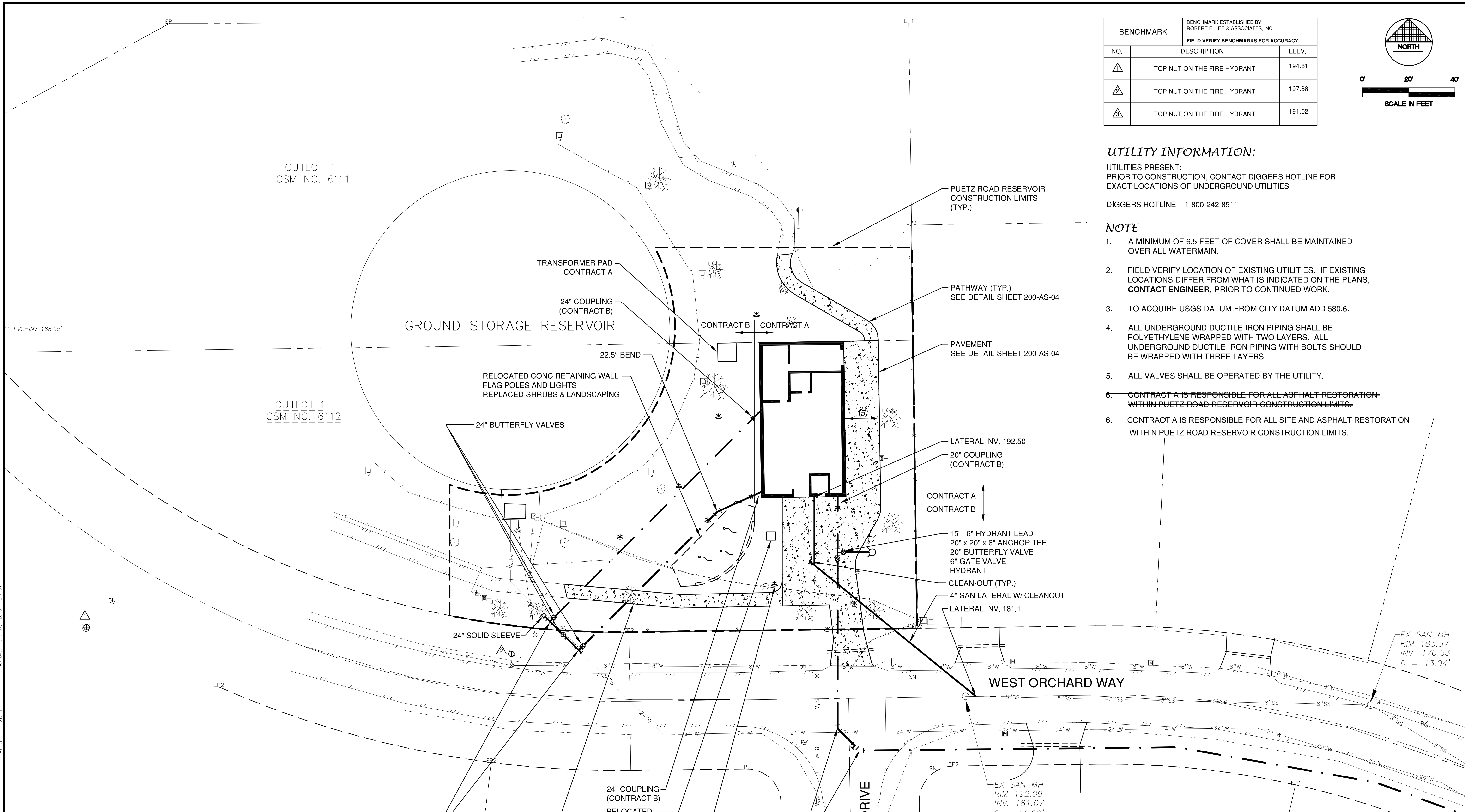
Plot Date: Sep 01, 2009 - 2:16pm
LAYOUT: LAYOUT
PLAN VIEW: PLAN



BENCHMARK	BENCHMARK ESTABLISHED BY: ROBERT E. LEE & ASSOCIATES, INC. FIELD VERIFY BENCHMARKS FOR ACCURACY.	
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2	TOP NUT ON THE FIRE HYDRANT	197.86
3	TOP NUT ON THE FIRE HYDRANT	191.02

NORTH

0' 20' 40'
SCALE IN FEET

UTILITY INFORMATION:

UTILITIES PRESENT:
PRIOR TO CONSTRUCTION, CONTACT DIGGERS HOTLINE FOR EXACT LOCATIONS OF UNDERGROUND UTILITIES

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NOTE

1. A MINIMUM OF 6.5 FEET OF COVER SHALL BE MAINTAINED OVER ALL WATERMAIN.
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3. TO ACQUIRE USGS DATUM FROM CITY DATUM ADD 580.6.
4. ALL UNDERGROUND DUCTILE IRON PIPING SHALL BE POLYETHYLENE WRAPPED WITH TWO LAYERS. ALL UNDERGROUND DUCTILE IRON PIPING WITH BOLTS SHOULD BE WRAPPED WITH THREE LAYERS.
5. ALL VALVES SHALL BE OPERATED BY THE UTILITY.
6. ~~CONTRACT A IS RESPONSIBLE FOR ALL ASPHALT RESTORATION WITHIN PUETZ ROAD RESERVOIR CONSTRUCTION LIMITS.~~
6. CONTRACT A IS RESPONSIBLE FOR ALL SITE AND ASPHALT RESTORATION WITHIN PUETZ ROAD RESERVOIR CONSTRUCTION LIMITS.

FOR CONSTRUCTION

SA.	Consultant: Robert E. Lee & Associates, Inc.	CITY OF OAK CREEK, WISCONSIN	APPROVED BY
ST.	ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES	DESIGNED BY D.A.M. DATE 8/13/09; DRAWN BY R.L.B. DATE 8/13/09; CHECKED BY K.A.K. DATE 8/13/09	UTILITY ENGINEER / DATE
W.	4664 GOLDEN POND PARK CT. HOBART, WISCONSIN 54155 PHONE: 920-662-9641 FAX: 920-662-9141 WWW.RELEEINC.COM	SITE AND YARD PIPING PLAN	APPROVED BY
G.		IN: PUETZ ROAD BOOSTER STATION	CITY ENGINEER / DATE
E.			SCALE: PLAN HOR. 1"=20'; PROFILE HOR. N.T.S.; VER. N.T.S.
T.			SHEET 9 OF 53
I.			
TS.			
PP.			
REVISION BY DATE		FILE NO: 08101	05-C-01

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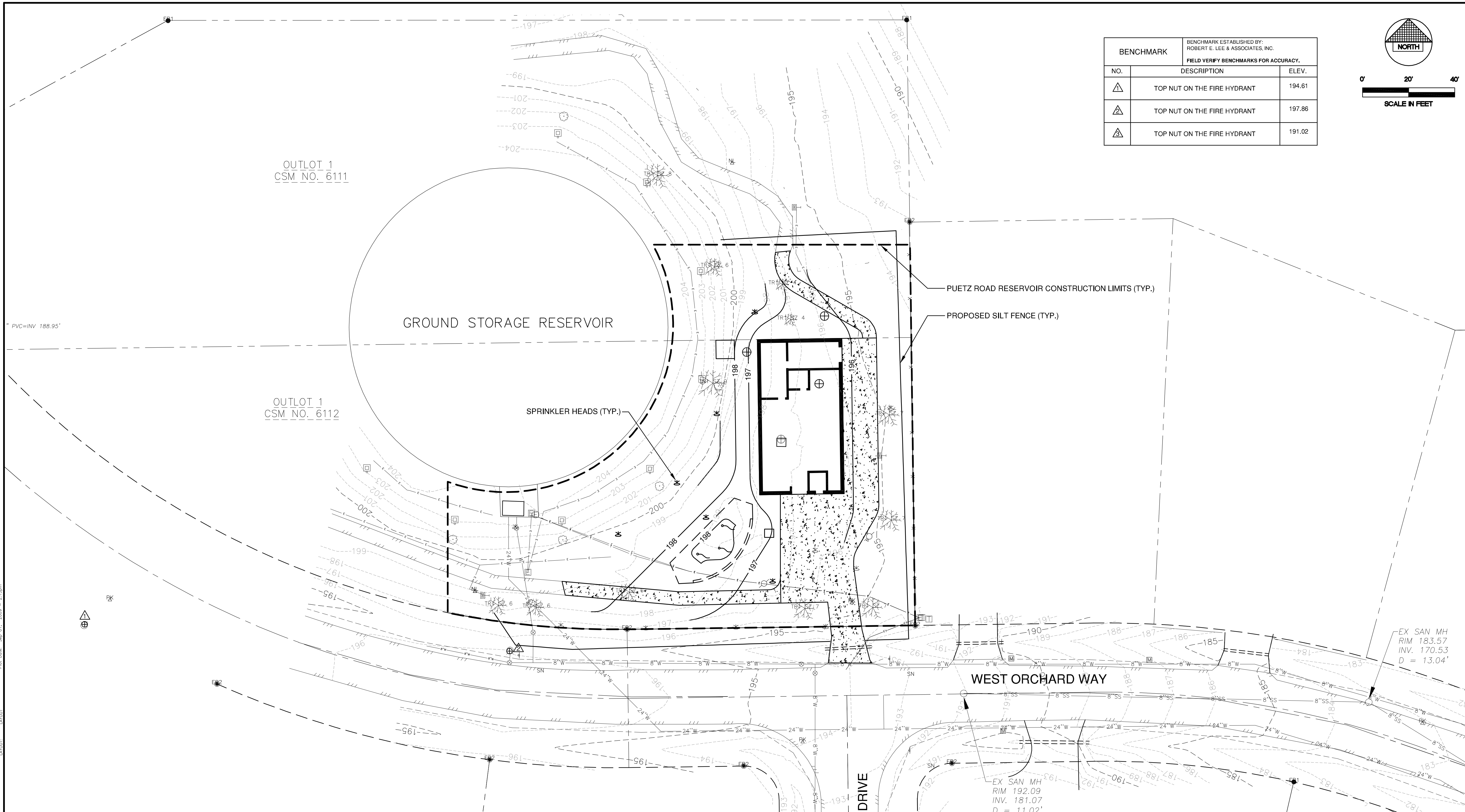
Plot Date: Sep 01, 2009 - 2:16pm
LAYOUT: LAYOUT
PLAN VIEW: PLAN



BENCHMARK	BENCHMARK ESTABLISHED BY: ROBERT E. LEE & ASSOCIATES, INC. FIELD VERIFY BENCHMARKS FOR ACCURACY.	
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FOR CONSTRUCTION

SA. ST. W. G. E. T. I. TS. PP.

REVISION BY DATE

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CITY OF OAK CREEK, WISCONSIN

DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE
D.A.M.	8/13/09	R.L.B.	8/13/09	K.A.K.	8/13/09

GRADING AND EROSION CONTROL PLAN

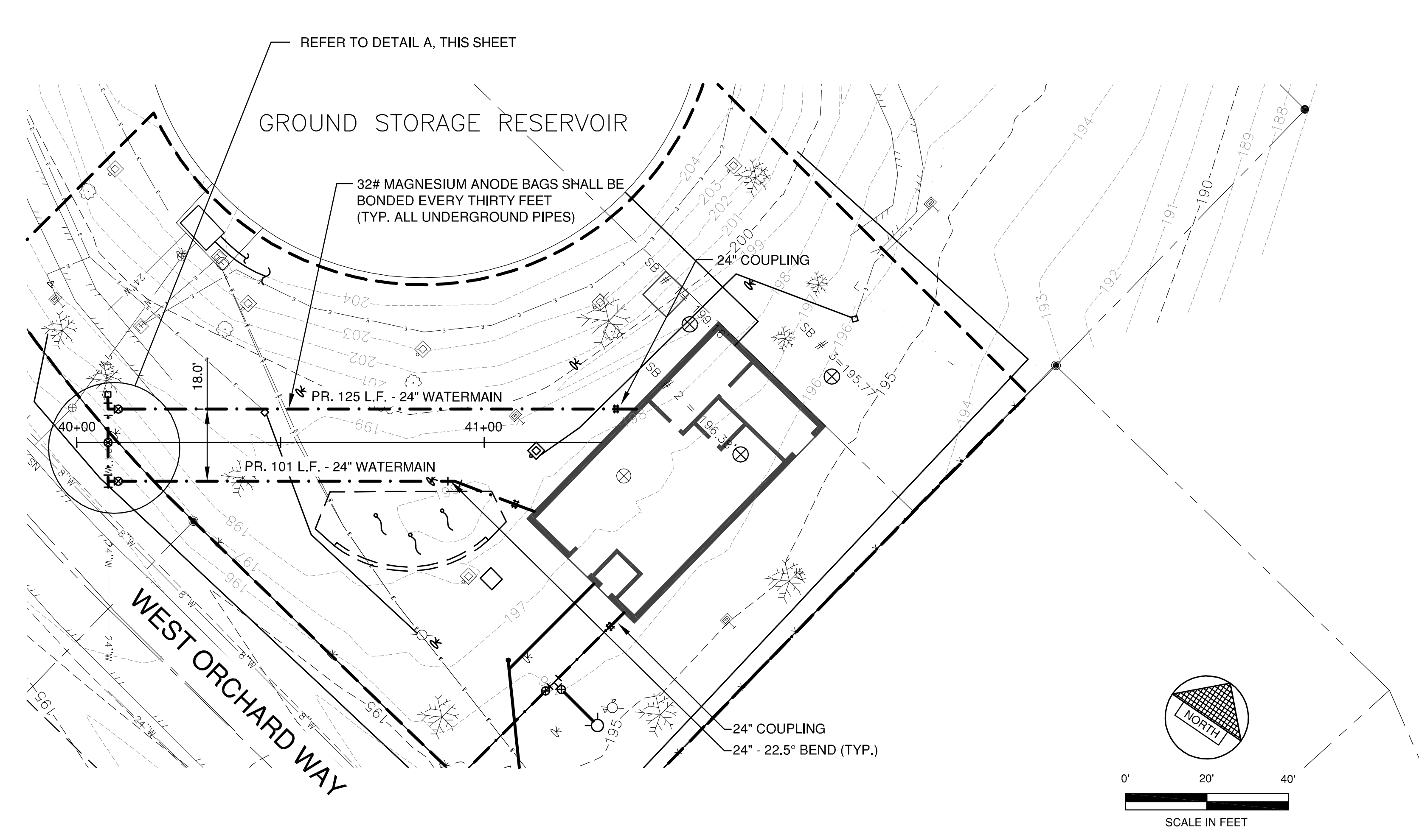
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

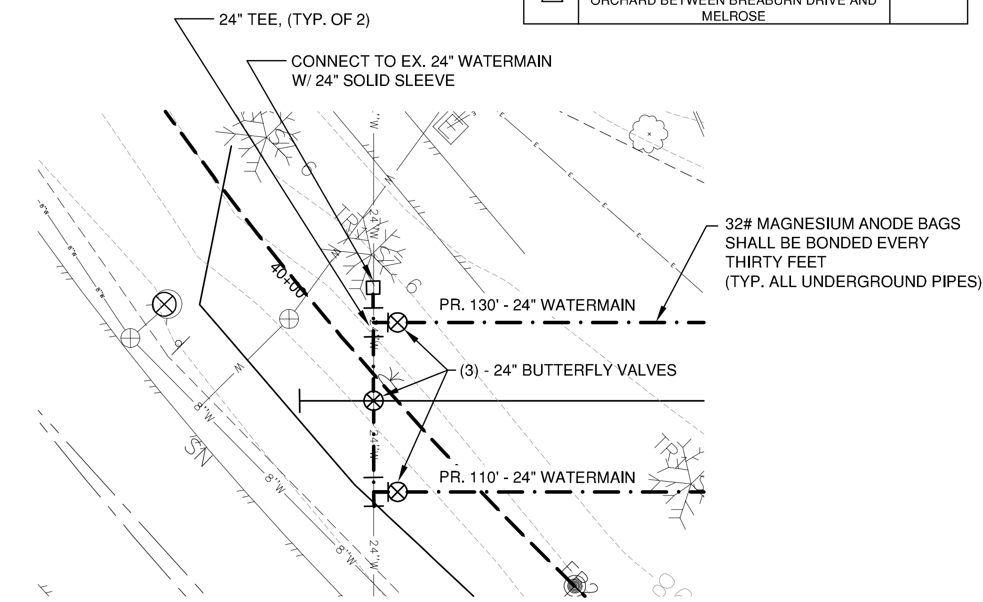
APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. 1"=20'	10
PROFILE HOR. N.T.S.	OF
VER. N.T.S.	53

05-C-02

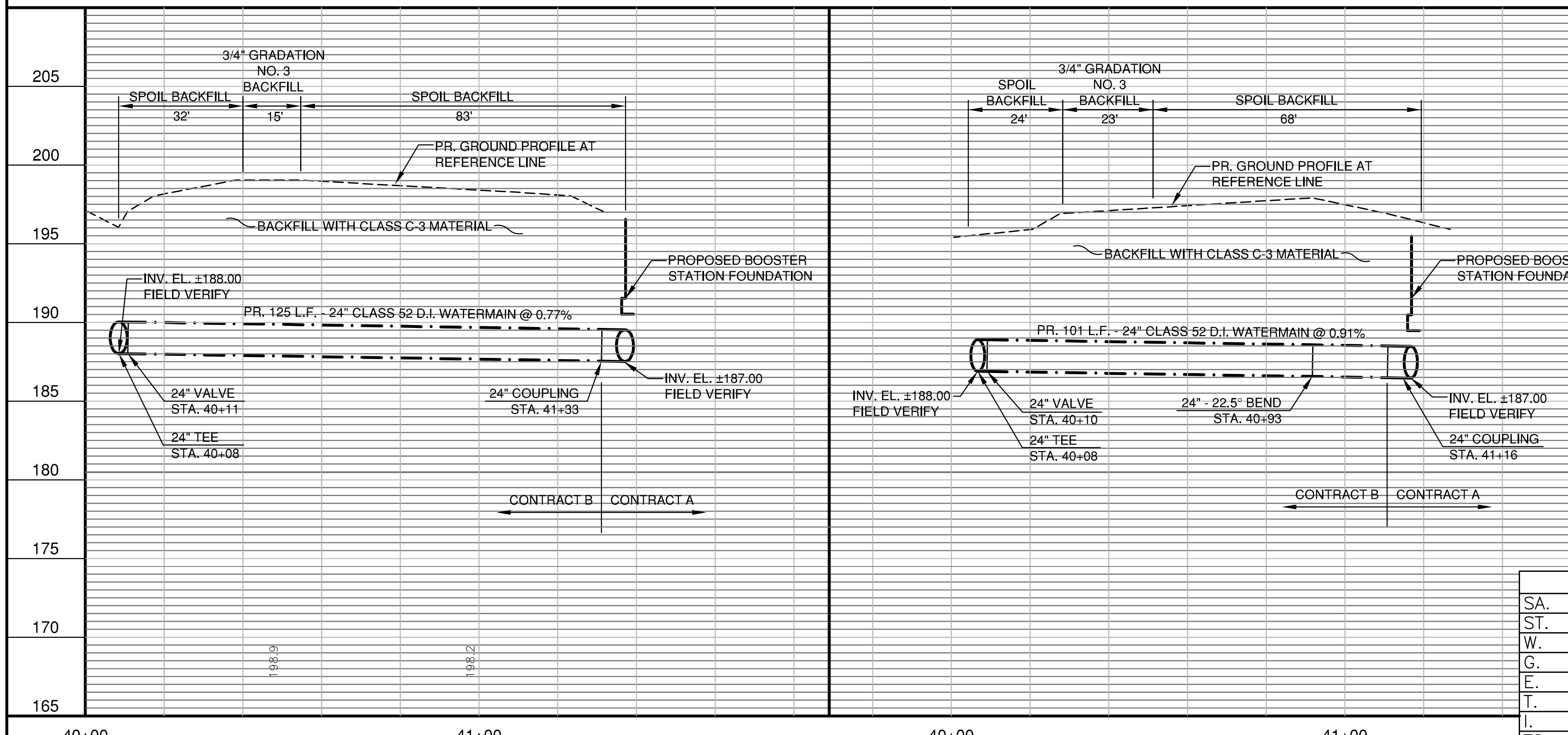


BENCHMARK	BENCHMARK ESTABLISHED BY: ROBERT E. LEE & ASSOCIATES, INC. FIELD VERIFY BENCHMARKS FOR ACCURACY.	
NO.	DESCRIPTION	ELEV.
△	BIG OUTLET ON HYD., NORTH SIDE OF ORCHARD BETWEEN BREABURN DRIVE AND MELROSE	197.86'



DETAIL A

NOTE:
1. BUILDING CONTRACTOR SHALL MAKE FINAL CONNECTION TO WATER MAIN AT FLEXIBLE COUPLINGS.
2. CONTRACTOR SHALL ATTACH ANNODE BAGS @ 30' INTERVALS ALONG ENTIRE PIPELINE LENGTH.
3. CONTINUOUS ELECTRICAL CONDUCTIVITY SHALL BE PROVIDED ON THE WATERMAIN BY USE OF THE CABLE BONDING SYSTEM (AWG #2 MIN.)
4. ALL WATERMAIN SHALL INCLUDE BLUE #10 TRACER WIRE LOOPED AT HYDRANTS AND AS NOTED ON THE PLANS IN A TRACER WIRE ACCESS BOX. TRACER WIRE ENDS SHALL BE BONDED TO 8' COPPER GROUND ROD.
5. ALL UNDERGROUND PIPING SHALL BE CONSTRUCTED WITHIN ROAD R.O.W.



BID ITEM NUMBERS	ESTIMATE OF QUANTITIES
2	24" D.I. WATERMAIN, BACKFILL, SURF. REST........ 226 L.F.
4	24" BUTTERFLY VALVE.. 3 EA.

SA.
ST.
W.
G.
E.
T.
I.
TS.
PP.

REVISION BY DATE

Consultant:

Robert E. Lee & Associates, Inc.

ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES

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CITY OF OAK CREEK, WISCONSIN

DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE
D.A.M.	8/13/09	R.L.B.	8/13/09	K.A.K.	8/13/09

PROPOSED WATERMAIN
STA. 40+00 TO STA. 41+28

FILE NO: 08101

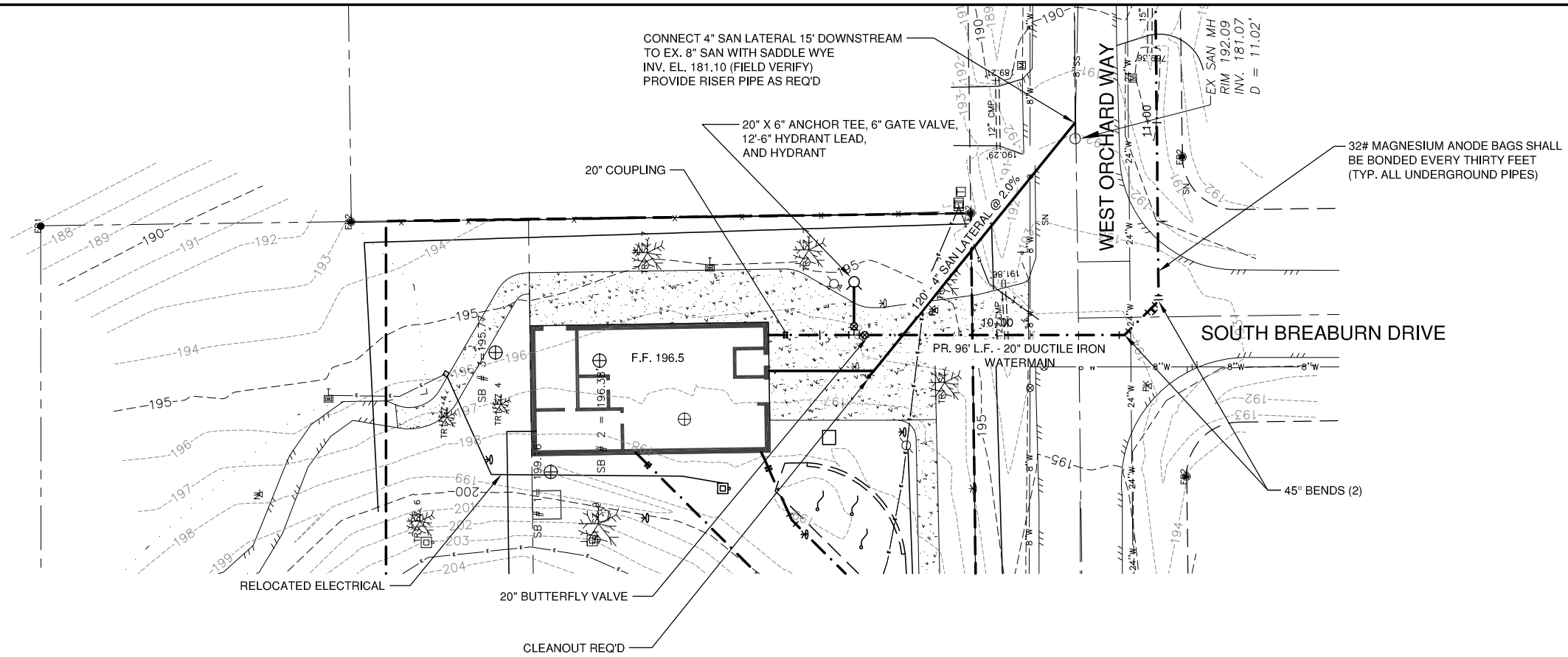
APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

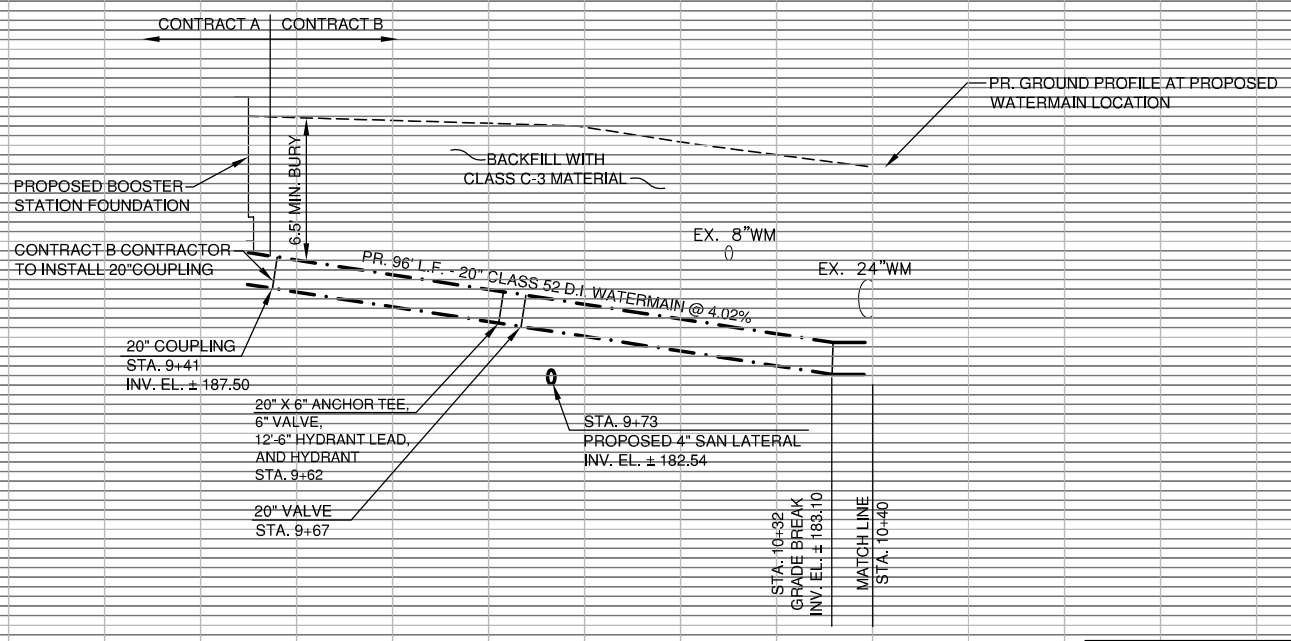
SCALE: PLAN HOR. 1"=20'; PROFILE HOR. 1"=20', VER. 1"=5'

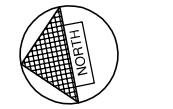
SHEET 11 OF 53

05-C-03

FOR CONSTRUCTION







NOTE:
1. BUILDING CONTRACTOR SHALL MAKE FINAL CONNECTION TO WATER MAIN AT FLEXIBLE COUPLINGS.
2. CONTRACTOR SHALL ATTACH ANNODE BAGS @ 30' INTERVALS ALONG ENTIRE PIPELINE LENGTH.
3. CONTINUOUS ELECTRICAL CONDUCTIVITY SHALL BE PROVIDED ON THE WATERMAIN BY USE OF THE CABLE BONDING SYSTEM (AWG #2 MIN.)
4. ALL WATERMAIN SHALL INCLUDE BLUE #10 TRACER WIRE LOOPED AT HYDRANTS AND AS NOTED ON THE PLANS IN A TRACER WIRE ACCESS BOX. TRACER WIRE ENDS SHALL BE BONDED TO 8' COPPER GROUND ROD.
5. ALL UNDERGROUND PIPING SHALL BE CONSTRUCTED WITHIN ROAD R.O.W.

BID ITEM NUMBERS	ESTIMATE OF QUANTITIES
1	20" D.I. WATERMAIN, BACKFILL, SURF. REST..... 96 L.F.
3	20" BUTTERFLY VALVE AND BOX..... 1 EA.
6	6" GATE VALVE AND BOX..... 1 EA.
7	HYDRANT..... 1 EA.
8	6" D.I. HYDRANT LEAD..... 12 L.F.
9	4" SANITARY SEWER LATERAL..... 120 L.F.

SA.
ST.
W.
G.
E.
T.
I.
TS.
PP.

Consultant:
Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES
4664 GOLDEN POND PARK CT.
HOBART, WISCONSIN 54155
PHONE: 920-662-9641
FAX: 920-662-9141
WWW.RELEEINC.COM

REVISION BY DATE

CITY OF OAK CREEK, WISCONSIN

DESIGNED BY DATE	DRAWN BY DATE	CHECKED BY DATE
D.A.M. 8/13/09	R.L.B. 8/13/09	K.A.K. 8/13/09

PROPOSED WATERMAIN & SAN. LAT.
WEST ORCHARD WAY
STA. 9+35 TO STA. 10+48

FILE NO: 08101

APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. 1"=20'	12
PROFILE HOR. 1"=20' VER. 1"=5'	OF 53

05-C-04

FOR CONSTRUCTION

BENCHMARK	BENCHMARK ESTABLISHED BY: ROBERT E. LEE & ASSOCIATES, INC. FIELD VERIFY BENCHMARKS FOR ACCU

NO.	DESCRIPTION	ELEV.
1	"OPEN" ON HYD, WEST SIDE OF BRE[illegible]URN DRIVE, SOUTH OF ORCH[illegible]	191.02'
2	BIG OUTLET ON HYD., N[illegible] SIDE OF ORCHARD BETWEEN BR[illegible]URN DRIVE AND MELROSE	197.86'

BID ITEM NUMBER	ESTIMATE OF QUANTITIES
1	20" D.I. WATERMAIN, BACKFILL, SURF. REST..... 390 L.F.
3	20" BUTTERFLY VALVE AND BOX..... 1 EA.
5	16" BUTTERFLY VALVE AND BOX..... 1 EA.

NOTE:
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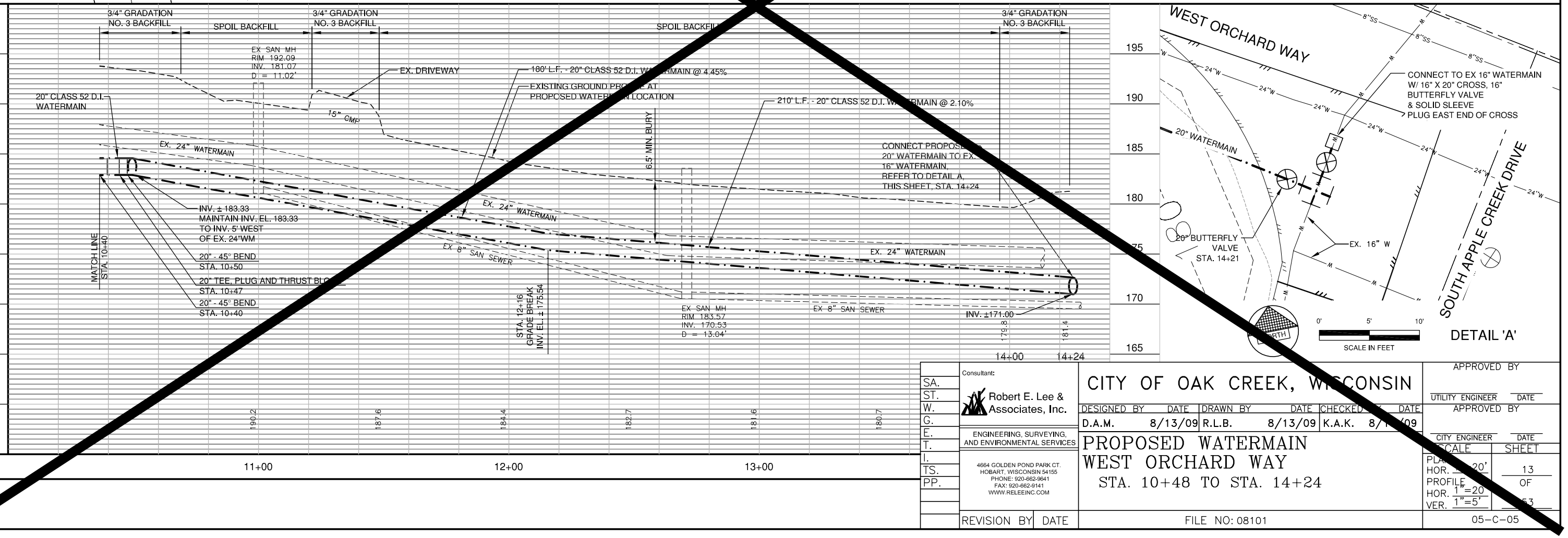
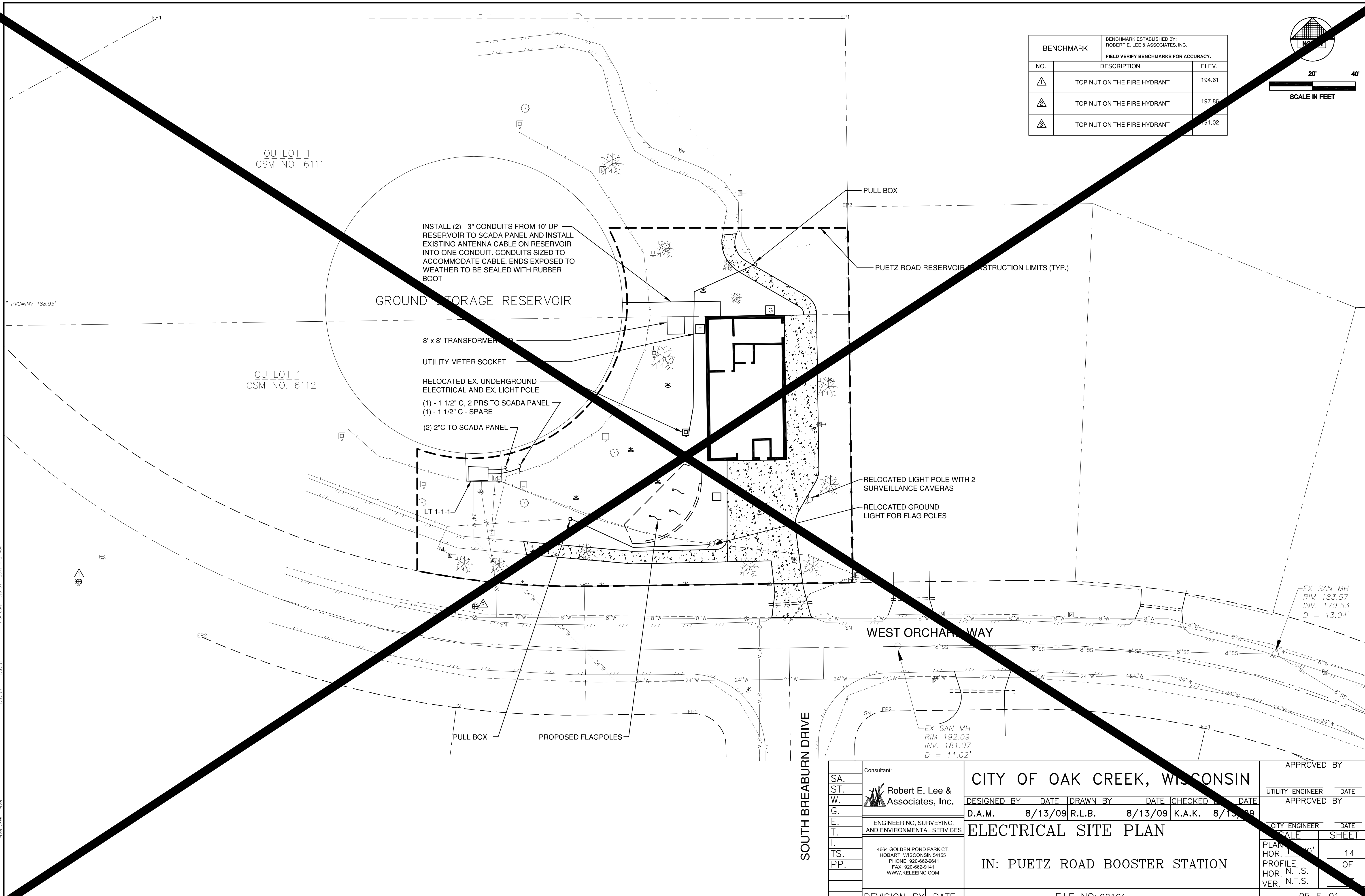


	Consultant: Robert E. Lee & Associates, Inc.	CITY OF OAK CREEK, WISCONSIN	APPROVED BY
SA.	ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES	DESIGNED BY D.A.M. 8/13/09 · DRAWN BY R.L.B. 8/13/09 · CHECKED K.A.K. 8/[illegible]/09	UTILITY ENGINEER DATE
ST.	4664 GOLDEN POND PARK CT. HOBART, WISCONSIN 54155 PHONE: 920-662-9641 FAX: 920-662-9141 WWW.RELEEINC.COM	PROPOSED WATERMAIN WEST ORCHARD WAY STA. 10+48 TO STA. 14+24	APPROVED BY CITY ENGINEER DATE
W.			SCALE: PLAN HOR. 1"=20' · PROFILE HOR. 1"=20' VER. 1"=5'
G.			SHEET 13 OF [illegible]
E.			
T.			
I.			
TS.			
PP.	REVISION BY DATE	FILE NO: 08101	05-C-05

PLAN: PLAN1
LAYOUT: WEST ORCHARD WAY WATERMAIN
PROFILE: PROFILE1
File: R:\PROJ\08101\08101\Dwg\WEST ORCHARD WAY.dwg
Plot Date: Sep 01, 2009 - 21:17pm



BENCHMARK	BENCHMARK ESTABLISHED BY: ROBERT E. LEE & ASSOCIATES, INC. FIELD VERIFY BENCHMARKS FOR ACCURACY.	
NO.	DESCRIPTION	ELEV.
1	TOP NUT ON THE FIRE HYDRANT	194.61
2	TOP NUT ON THE FIRE HYDRANT	197.86
3	TOP NUT ON THE FIRE HYDRANT	191.02

Consultant: Robert E. Lee & Associates, Inc.

ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES

4664 GOLDEN POND PARK CT.
HOBART, WISCONSIN 54155
PHONE: 920-662-9641
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WWW.RELEEINC.COM

CITY OF OAK CREEK, WISCONSIN

DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE
D.A.M.	8/13/09	R.L.B.	8/13/09	K.A.K.	8/13/09

ELECTRICAL SITE PLAN

IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE: PLAN HOR. 1"=20'; PROFILE HOR. N.T.S.; VER. N.T.S.

SHEET 14 OF

05-E-01

SA. ST. W. G. E. T. I. TS. PP.

REVISION BY DATE

BENCHMARK	BENCHMARK ESTABLISHED BY: ROBERT E. LEE & ASSOCIATES, INC. FIELD VERIFY BENCHMARKS FOR ACCURACY.	
NO.	DESCRIPTION	ELEV.
1	"OPEN" ON HYD. WEST SIDE OF BREABURN DRIVE, SOUTH OF ORCHARD	191.02'
2	BIG OUTLET ON HYD., NORTH SIDE OF ORCHARD BETWEEN BREABURN DRIVE AND MELROSE	197.66'

BID ITEM NUMBERS	ESTIMATE OF QUANTITIES
1	20" D.I. WATERMAIN, BACKFILL, SURF. REST..... 390 L.F.
3	20" BUTTERFLY VALVE AND BOX..... 1 EA.
5	16" BUTTERFLY VALVE AND BOX..... 1 EA.

NOTE:
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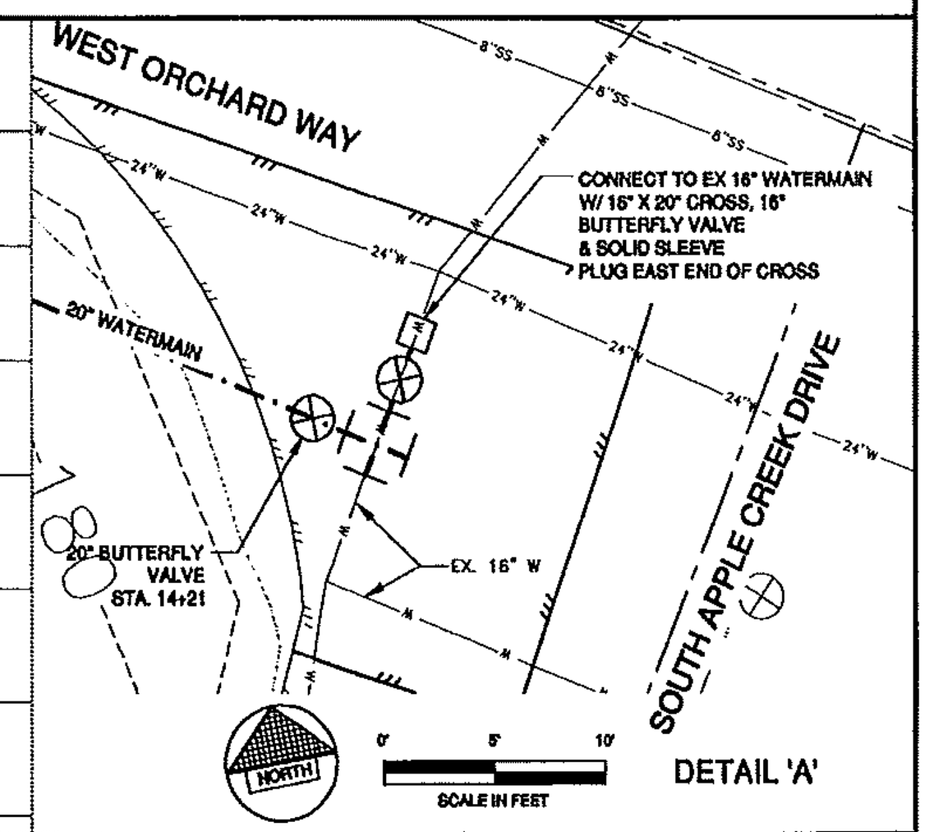
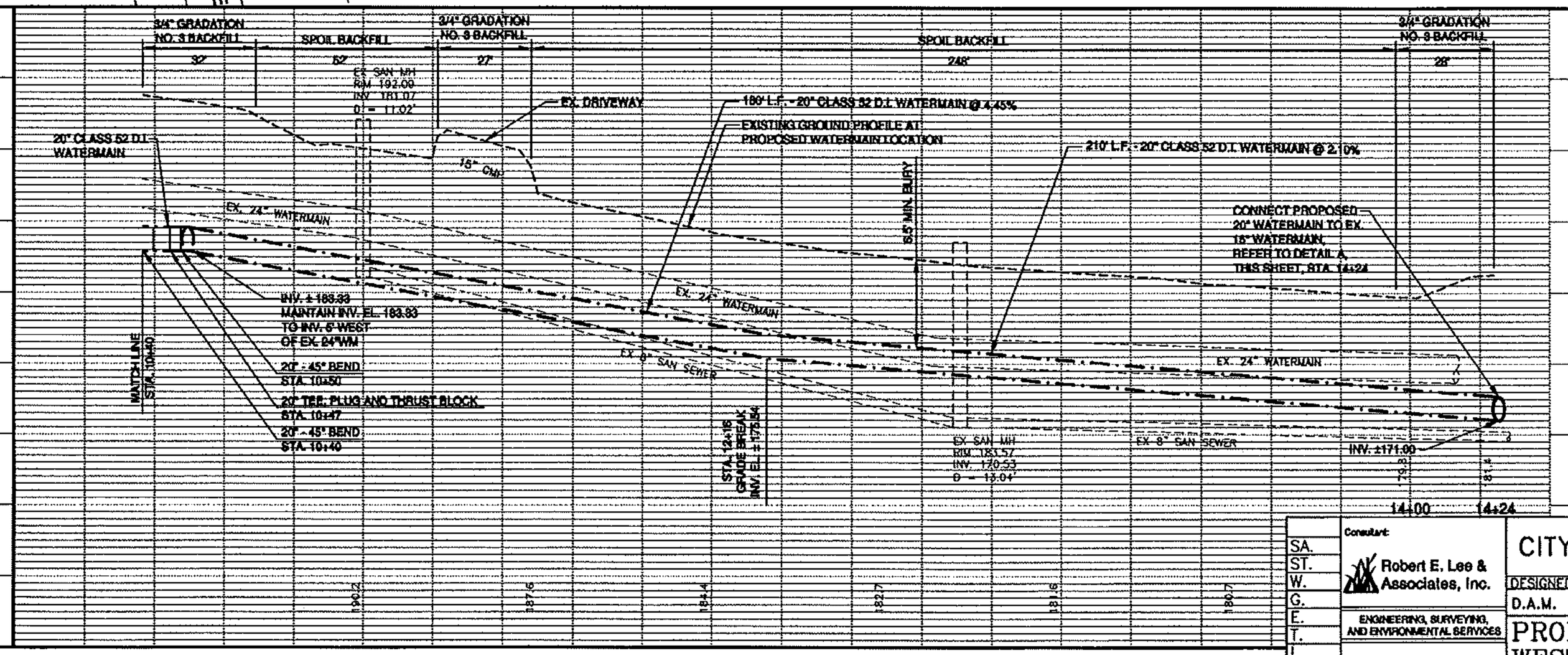
5. ALL UNDERGROUND PIPING SHALL BE CONSTRUCTED WITHIN ROAD R.O.W.



DETAIL 'A'



PROFILE: PROFILE1
LAYOUT: WEST ORCHARD WAY WATERMAIN
PLAN: PLAN1

FOR CONSTRUCTION

SA.
ST.
W.
G.
E.
T.
I.
TS.
PP.

Consultant:
Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES
4464 GOLDEN POND PARK CT.
HOBART, WISCONSIN 54155
PHONE: 920-983-9441
FAX: 920-983-9141
WWW.RELEEINC.COM

REVISION BY DATE

CITY OF OAK CREEK, WISCONSIN

DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE
D.A.M.	8/13/09	R.L.B.	8/13/09	K.A.K.	8/13/09

PROPOSED WATERMAIN
WEST ORCHARD WAY
STA. 10+48 TO STA. 14+24

FILE NO: 08101

APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. 1"=20'	13
PROFILE HOR. 1"=20' VER. 1"=5'	OF 53

05-C-05

BENCHMARK	BENCHMARK ESTABLISHED BY: ROBERT E. LEE & ASSOCIATES, INC. FIELD VERIFY BENCHMARKS FOR ACCURACY.	
NO.	DESCRIPTION	ELEV.
1	TOP NUT ON THE FIRE HYDRANT	194.61
2	TOP NUT ON THE FIRE HYDRANT	197.86
3	TOP NUT ON THE FIRE HYDRANT	191.02

NORTH

0' 20' 40'

SCALE IN FEET

OUTLOT 1
CSM NO. 6111

OUTLOT 1
CSM NO. 6112

INSTALL (2) - 3" CONDUITS FROM 10' UP RESERVOIR TO SCADA PANEL AND INSTALL EXISTING ANTENNA CABLE ON RESERVOIR INTO ONE CONDUIT. CONDUITS SIZED TO ACCOMMODATE CABLE. ENDS EXPOSED TO WEATHER TO BE SEALED WITH RUBBER BOOT

GROUND STORAGE RESERVOIR

PVC=INV 188.95'

8' x 8' TRANSFORMER PAD

UTILITY METER SOCKET

(1) - 1 1/2" C, 2 PRS TO SCADA PANEL
(1) - 1 1/2" C - SPARE

(2) 2"C TO SCADA PANEL

LT 1-1-1

PULL BOX

PROPOSED FLAGPOLES

RELOCATED GROUND LIGHT

PULL BOX

PUETZ ROAD RESERVOIR CONSTRUCTION LIMITS (TYP.)

(2) CAT 6 CABLES 2-12 PAIR POWER IN 3/4"C

RELOCATED LIGHT POLE WITH 2 SURVEILLANCE CAMERAS (NO LIGHT)

RELOCATED LIGHT POLE

WEST ORCHARD WAY

EX SAN MH
RIM 183.57
INV. 170.53
D = 13.04'

EX SAN MH
RIM 192.09
INV. 181.07
D = 11.02'

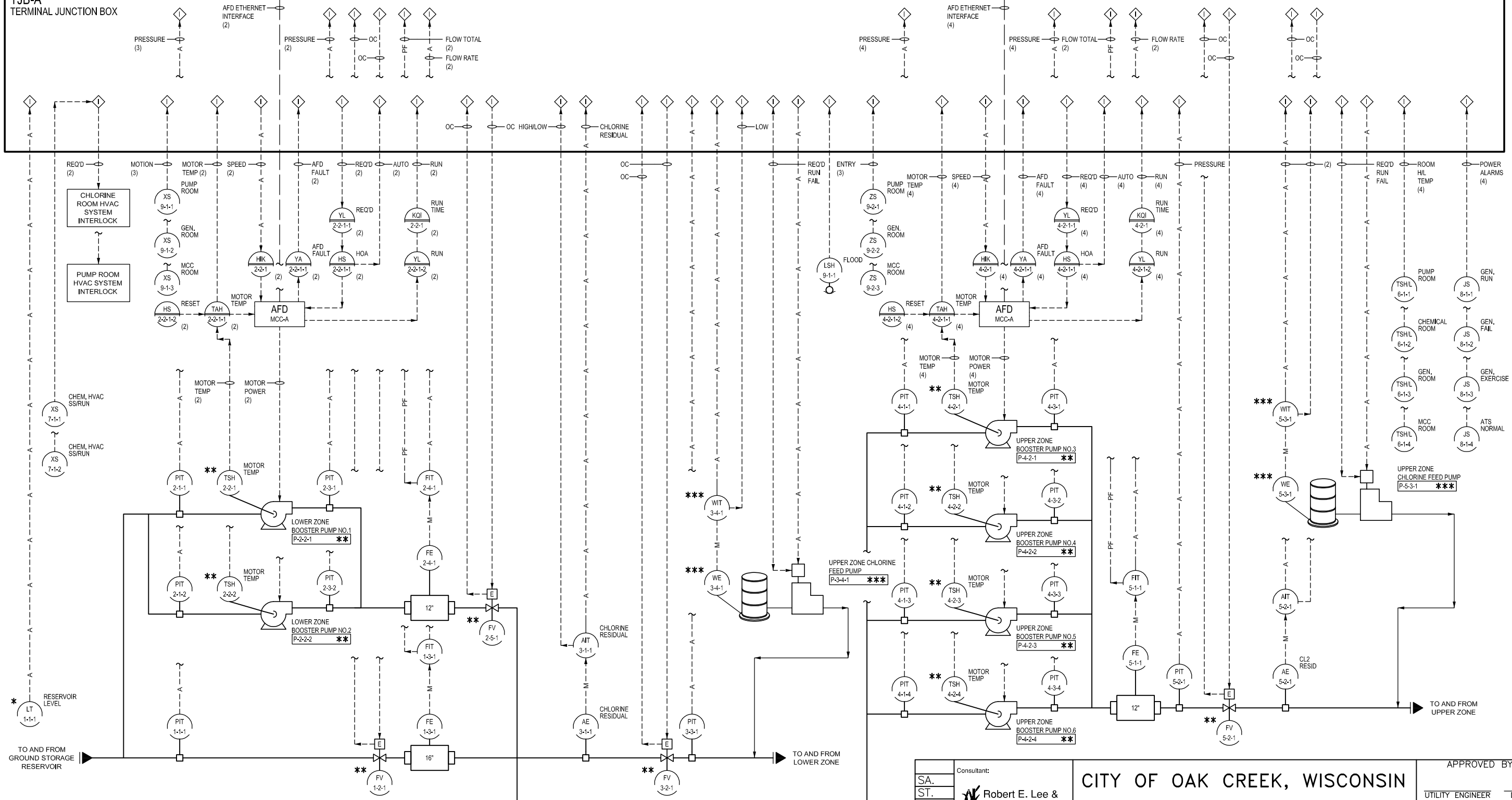
SOUTH BREABURN DRIVE

FOR CONSTRUCTION

SA.	Consultant: Robert E. Lee & Associates, Inc.	CITY OF OAK CREEK, WISCONSIN		APPROVED BY UTILITY ENGINEER DATE
ST.		DESIGNED BY D.A.M. DATE 8/13/09	DRAWN BY R.L.B. DATE 8/13/09	CHECKED BY K.A.K. DATE 8/13/09
W.				APPROVED BY CITY ENGINEER DATE
G.				
E.				
T.				
I.				
TS.				
PP.				
	ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES	ELECTRICAL SITE PLAN		SCALE: PLAN HOR. 1"=20', PROFILE HOR. N.T.S., VER. N.T.S.
	4864 GOLDEN POND PARK CT. HOBART, WISCONSIN 54155 PHONE: 920-662-9841 FAX: 920-662-9161 WWW.RELEENG.COM	IN: PUETZ ROAD BOOSTER STATION		SHEET: 14 OF 53
	REVISION BY DATE	FILE NO: 08101		05-E-01

RTU-A
SCADA SYSTEM CONTROL PANEL

TJB-A
TERMINAL JUNCTION BOX



FOR CONSTRUCTION

SA.	Consultant: Robert E. Lee & Associates, Inc.	CITY OF OAK CREEK, WISCONSIN	APPROVED BY UTILITY ENGINEER DATE
ST.		DESIGNED BY D.A.M. DATE 8/13/09 | DRAWN BY R.L.B. DATE 8/13/09 | CHECKED BY K.A.K. DATE 8/13/09	APPROVED BY CITY ENGINEER DATE
W.		ONE LINE DIAGRAM	SCALE: PLAN HOR. N.T.S. / PROFILE HOR. N.T.S. VER. N.T.S.
G.		IN: PUETZ ROAD BOOSTER STATION	SHEET: 15 OF 53
E.			
T.			
I.			
TS.			
PP.			
	ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES		
	4664 GOLDEN POND PARK CT. HOBART, WISCONSIN 54155 PHONE: 920-662-9641 FAX: 920-662-9141 WWW.RELEEINC.COM		
	REVISION BY DATE	FILE NO: 08101	07-E-01

File: R:\4900\4931-V03100\dwg\ONE LINE DIAGRAM.dwg
Plot Date: May 11, 2009 - 2:29pm
LAYOUT:
PLAN VIEW: PLAN

GENERAL NOTES:

1. COORDINATE ELECTRIC SERVICE REQUIREMENTS WITH ELECTRIC UTILITY. ALL ELECTRIC UTILITY COSTS SHALL BE PAID UNDER UTILITY ALLOWANCE LISTED ON THE BID FORM AND IDENTIFIED IN THE SPECIFICATIONS.

PLAN NOTES:

1. UTILITY PRIMARY CONDUITS: PROVIDE 2-5" CONDUITS FOR UTILITY INSTALLATION OF PRIMARY CONDUCTORS. STUB OUT FROM TRANSFORMER PAD PER UTILITY REQUIREMENTS.
2. UTILITY PAD-MOUNTED TRANSFORMER: PROVIDE CONCRETE PAD PER UTILITY REQUIREMENTS FOR UTILITY INSTALLATION OF PAD-MOUNTED TRANSFORMER. UTILITY TRANSFORMER SHALL PROVIDE 600A-277/48V 3ϕ,4W ELECTRIC SERVICE TO THE FACILITY.
3. UTILITY TRANSFORMER SECONDARY CIRCUIT: PROVIDE 2-5" CONDUITS FOR UTILITY INSTALLATION OF TRANSFORMER SECONDARY CIRCUIT AS SHOWN. TERMINATIONS AT TRANSFORMER AND CT CABINET BY UTILITY.
4. UTILITY APPROVED CT CABINET: PROVIDE CT CABINET SUITABLE FOR THE ELECTRIC SERVICE SHOWN AND PER UTILITY REQUIREMENTS FOR UTILITY INSTALLATION OF CURRENT TRANSFORMERS.
5. UTILITY APPROVED METER SOCKET: PROVIDE METER SOCKET SUITABLE FOR THE ELECTRIC SERVICE SHOWN AND PER UTILITY REQUIREMENTS FOR UTILITY INSTALLATION OF METER AND (1)1-1/4" CONDUIT TO CT CABINET PER UTILITY REQUIREMENTS FOR UTILITY INSTALLATION OF METERING CONDUCTORS .
6. SERVICE ENTRANCE CIRCUIT: PROVIDE SERVICE ENTRANCE CIRCUIT AS SHOWN.
7. SERVICE DISCONNECT SWITCH: PROVIDE 600A FUSIBLE SERVICE DISCONNECT SWITCH WITH SOLID NEUTRAL.
8. AUTOMATIC TRANSFER SWITCH: PROVIDE 600A 3P, 4W (OVERLAPPING NEUTRAL) AUTOMATIC TRANSFER SWITCH AS SHOWN.
9. STAND-BY PERMANAENT GENERATOR: PROVIDE 300KW, NATURAL GAS-FUELED STAND-BY GENERATOR COMPLETE WITH 500A CIRCUIT BREAKER, FUEL SYSTEM, EXHAUST SYSTEM, AND OTHER ACCESSORIES AS SHOWN, SPECIFIED, AND DETAILED.
10. GENERATOR CIRCUIT: PROVIDE GENERATOR CIRCUIT AS SHOWN.

MCC-A
MOTOR CONTROL CENTER FRONT ELEVATION
NTS

FEEDER SCHEDULE

IDENTIFIER	THERMAL-MAGNETIC CIRCUIT BREAKER	BREAKER PICKUP AMPS (80%)	SINGLE-PHASE TWO-WIRE CIRCUIT: CONDUIT	SINGLE-PHASE TWO-WIRE CIRCUIT: CIRCUIT CONDUCTORS	SINGLE OR THREE-PHASE THREE-WIRE CIRCUIT: CONDUIT	SINGLE OR THREE-PHASE THREE-WIRE CIRCUIT: CIRCUIT CONDUCTORS	THREE-PHASE FOUR-WIRE CIRCUIT: CONDUIT	THREE-PHASE FOUR-WIRE CIRCUIT: CIRCUIT CONDUCTORS	ALL: EQUIPMENT GROUNDING CONDUCTOR	MAX. DISTANCES (FT) 480V 3-PHASE: FEEDER (2% DROP)	MAX. DISTANCES (FT) 480V 3-PHASE: BRANCH (3% DROP)	MAX. DISTANCES (FT) 240V 3-PHASE: FEEDER (2% DROP)	MAX. DISTANCES (FT) 240V 3-PHASE: BRANCH (3% DROP)	MAX. DISTANCES (FT) 208V 3-PHASE OR 120/240V 1-PHASE: FEEDER (2% DROP)	MAX. DISTANCES (FT) 208V 3-PHASE OR 120/240V 1-PHASE: BRANCH (3% DROP)
1	10	8	3/4"	(2) #12	3/4"	(3) #12	3/4"	(4) #12	#12	335	502	167	251	145	218
2	15	12	3/4"	(2) #12	3/4"	(3) #12	3/4"	(4) #12	#12	223	335	112	167	97	145
3	20	16	3/4"	(2) #12	3/4"	(3) #12	3/4"	(4) #12	#12	167	251	84	126	73	109
4	25	20	3/4"	(2) #10	3/4"	(3) #10	3/4"	(4) #10	#10	212	317	106	159	92	138
5	30	24	3/4"	(2) #10	3/4"	(3) #10	3/4"	(4) #10	#10	176	264	88	132	76	115
6	35	28	3/4"	(2) #8	3/4"	(3) #8	3/4"	(4) #8	#10	241	361	120	181	104	157
7	40	32	3/4"	(2) #8	3/4"	(3) #8	3/4"	(4) #8	#10	211	316	105	158	91	137
8	45	36	3/4"	(2) #8	3/4"	(3) #8	3/4"	(4) #8	#10	187	281	94	140	81	122
9	50	40	3/4"	(2) #8	3/4"	(3) #8	3/4"	(4) #8	#10	169	253	84	126	73	110
10	60	48	3/4"	(2) #6	3/4"	(3) #6	1"	(4) #6	#10	224	336	112	168	97	146
11	70	56	1"	(2) #4	1"	(3) #4	1-1/4"	(4) #4	#8	305	457	152	228	132	198
12	80	64	1"	(2) #4	1"	(3) #4	1-1/4"	(4) #4	#8	266	400	133	200	115	173
13	90	72	1"	(2) #3	1"	(3) #3	1-1/4"	(4) #3	#8	290	436	145	218	126	189
14	100	80	1"	(2) #3	1"	(3) #3	1-1/4"	(4) #3	#8	261	392	131	196	113	170
15	110	88	1"	(2) #2	1"	(3) #2	1-1/2"	(4) #2	#6	307	461	154	230	133	200
16	125	100	1-1/4"	(2) #1	1-1/2"	(3) #1	1-1/2"	(4) #1	#6	340	510	170	255	147	221
17	150	120	1-1/4"	(1) #1/0	1-1/2"	(3) #1/0	2"	(4) #1/0	#6	355	533	178	266	154	231
18	175	140	N/A	N/A	2"	(3) #2/0	2"	(4) #2/0	#6	377	566	189	283	163	245
19	200	160	N/A	N/A	2"	(3) #3/0	2"	(4) #3/0	#6	413	619	206	310	179	268
20	225	180	N/A	N/A	2"	(3) #4/0	2-1/2"	(4) #4/0	#4	459	688	229	344	199	298
21	250	200	N/A	N/A	2-1/2"	(3) 250KCMIL	3"	(4) 250KCMIL	#4	484	725	242	363	210	314
22	300	240	N/A	N/A	3"	(3) 350KCMIL	3"	(4) 350KCMIL	#4	552	829	276	414	239	359
23	350	280	N/A	N/A	3"	(3) 500KCMIL	3-1/2"	(4) 500KCMIL	#3	647	970	323	485	280	420
24	400	320	N/A	N/A	3-1/2"	(3) 600KCMIL	4"	(4) 600KCMIL	#3	661	992	331	496	286	430
25	450	360	N/A	N/A	(2) 2"	2 SETS OF (3) #4/0	(2) 2-1/2"	2 SETS OF (4) #4/0	#2	459	688	229	344	199	298
26	500	400	N/A	N/A	(2) 2-1/2"	2 SETS OF (3) 250KCMIL	(2) 3"	2 SETS OF (4) 250KCMIL	#2	484	725	242	363	210	314
27	600	480	N/A	N/A	(2) 3"	2 SETS OF (3) 350KCMIL	(2) 3"	2 SETS OF (4) 350KCMIL	#1	552	829	276	414	239	359
28	700	560	N/A	N/A	(2) 3"	2 SETS OF (3) 500KCMIL	(2) 3-1/2"	2 SETS OF (4) 500KCMIL	#1/0	647	970	323	485	280	420
29	800	640	N/A	N/A	(2) 3-1/2"	2 SETS OF (3) 600KCMIL	(2) 4"	2 SETS OF (4) 600KCMIL	#1/0	661	992	331	496	286	430
30	900	720	N/A	N/A	(3) 3"	3 SETS OF (3) 350KCMIL	(3) 3"	3 SETS OF (4) 350KCMIL	#2/0	552	829	276	414	239	359
31	1000	800	N/A	N/A	(4) 2-1/2"	4 SETS OF (3) 250KCMIL	(4) 3"	4 SETS OF (4) 250KCMIL	#2/0	484	725	242	363	210	314
32	1200	960	N/A	N/A	(4) 3"	4 SETS OF (3) 350KCMIL	(4) 3"	4 SETS OF (4) 350KCMIL	#3/0	552	829	276	414	239	359
33	1600	1280	N/A	N/A	(4) 3-1/2"	4 SETS OF (3) 600KCMIL	(4) 4"	4 SETS OF (4) 600KCMIL	#4/0	661	992	331	496	286	430
34	1800	1440	N/A	N/A	(6) 3"	6 SETS OF (3) 350KCMIL	(6) 3"	6 SETS OF (4) 350KCMIL	250KCMIL	552	829	276	414	239	359
35	2000	1600	N/A	N/A	(6) 3"	6 SETS OF (3) 500KCMIL	(6) 3-1/2"	6 SETS OF (4) 500KCMIL	250KCMIL	679	1019	340	509	294	442
36	2500	2000	N/A	N/A	(6) 3-1/2"	6 SETS OF (3) 600KCMIL	(6) 4"	6 SETS OF (4) 600KCMIL	350KCMIL	635	952	317	476	275	413
37	3000	2400	N/A	N/A	(8) 3"	8 SETS OF (3) 500KCMIL	(8) 3-1/2"	8 SETS OF (4) 500KCMIL	400KCMIL	604	906	302	453	262	392
38	4000	3200	N/A	N/A	(10) 3-1/2"	8 SETS OF (3) 600KCMIL	(10) 4"	8 SETS OF (4) 600KCMIL	500KCMIL	529	793	264	397	229	344

PLAN NOTATION:
◇ SINGLE-PHASE, TWO-WIRE FEEDER, NUMBER IS THE FEEDER IDENTIFIER
□ SINGLE OR THREE-PHASE, THREE-WIRE FEEDER, NUMBER IS THE FEEDER IDENTIFIER
○ THREE-PHASE, FOUR-WIRE FEEDER, NUMBER IS THE FEEDER IDENTIFIER

FOR CONSTRUCTION

Consultant:
Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES
4664 GOLDEN POND PARK CT.
HOBART, WISCONSIN 54155
PHONE: 920-662-9641
FAX: 920-662-9141
WWW.RELEEINC.COM

SA. ST. W. G. E. T. I. TS. PP.

REVISION | BY | DATE

CITY OF OAK CREEK, WISCONSIN

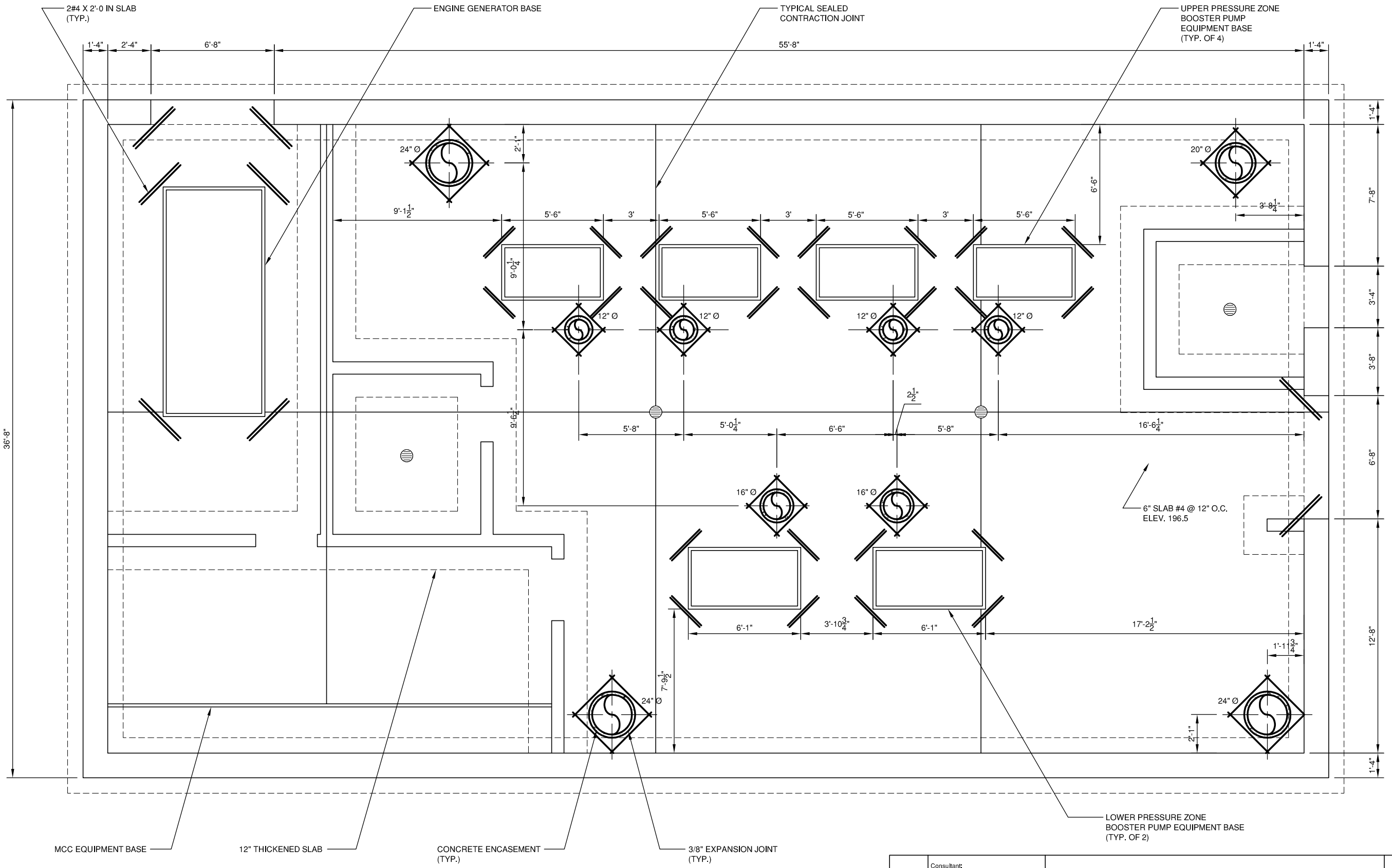
DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE
D.A.M.	8/13/09	R.L.B.	8/13/09	K.A.K.	8/13/09

PROCESS INSTRUMENTATION DIAGRAM
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY
UTILITY ENGINEER — DATE
APPROVED BY
CITY ENGINEER — DATE

SCALE: PLAN HOR. N.T.S. PROFILE HOR. N.T.S. VER. N.T.S.
SHEET 16 OF 53
09–E–01



NORTH

FOUNDATION PLAN

SCALE: 3/8" = 1'-0"

FOR CONSTRUCTION

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ST.
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Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES
4664 GOLDEN POND PARK CT.
HOBART, WISCONSIN 54155
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FAX: 920-662-9141
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CITY OF OAK CREEK, WISCONSIN

DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE
D.A.M.	8/13/09	R.L.B.	8/13/09	K.A.K.	8/13/09

FOUNDATION PLAN
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. N.T.S.	17
PROFILE HOR. N.T.S. VER. N.T.S.	OF 53

100-AS-01

File: R:\ARCH\A0311\A03107\Dwg\PR FOUNDATION PLAN.dwg
Plot Date: Sep 01, 2009 - 2:50pm
LAYOUT:
PLAN VIEW: PLAN

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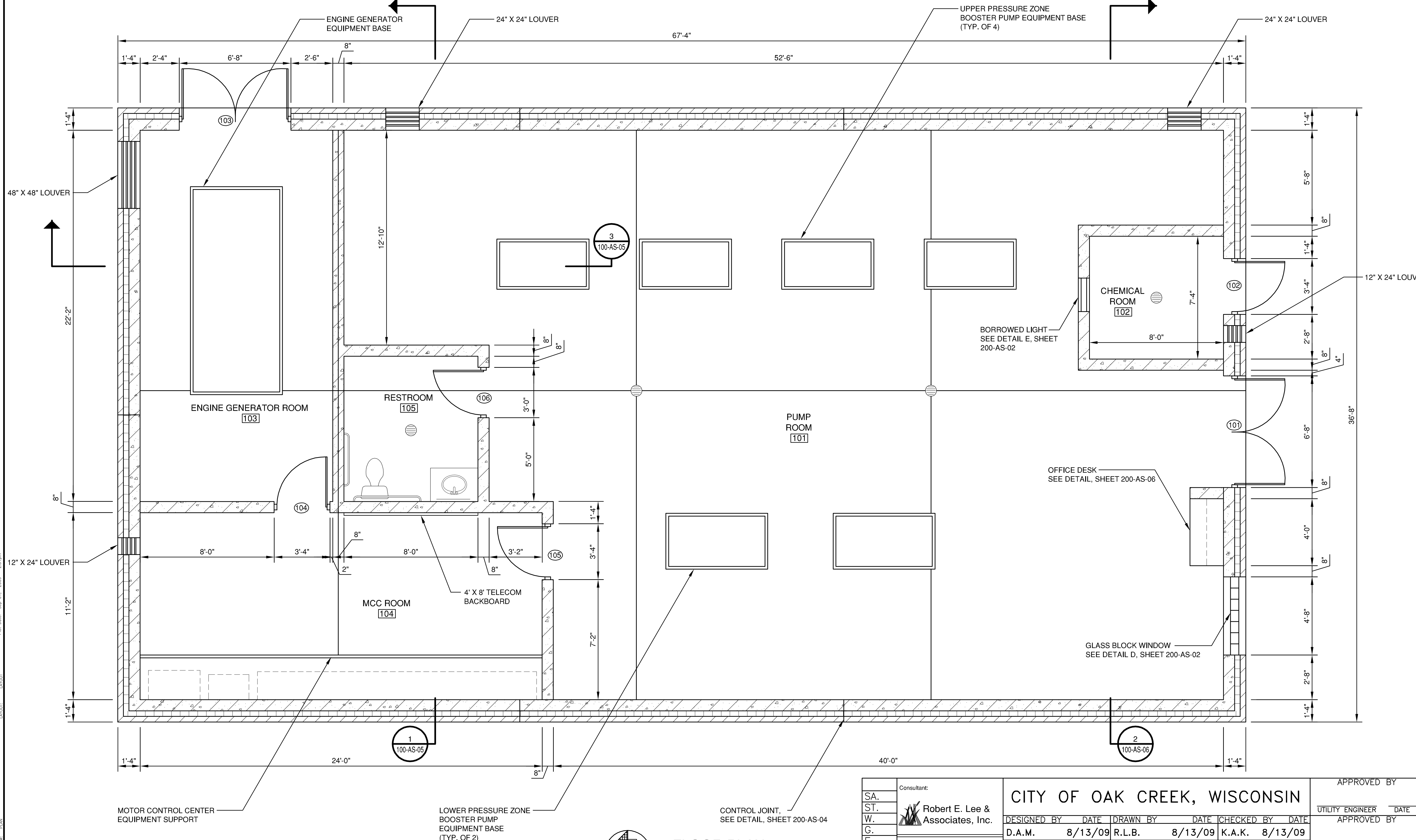
Plot Date: Sep 01, 2009 – 2:31pm

PLAN VIEW: PLAN   LAYOUT: LAYOUT



FLOOR PLAN

SCALE: 3/8" = 1'-0"

Note 1. The engine generator base size shall be verified with equipment suppliers

FOR CONSTRUCTION

SA.		
ST.		
W.		
G.		
E.		
T.		
I.		
TS.		
PP.		
REVISION	BY	DATE

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ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES
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D.A.M.	8/13/09	R.L.B.	8/13/09	K.A.K.	8/13/09

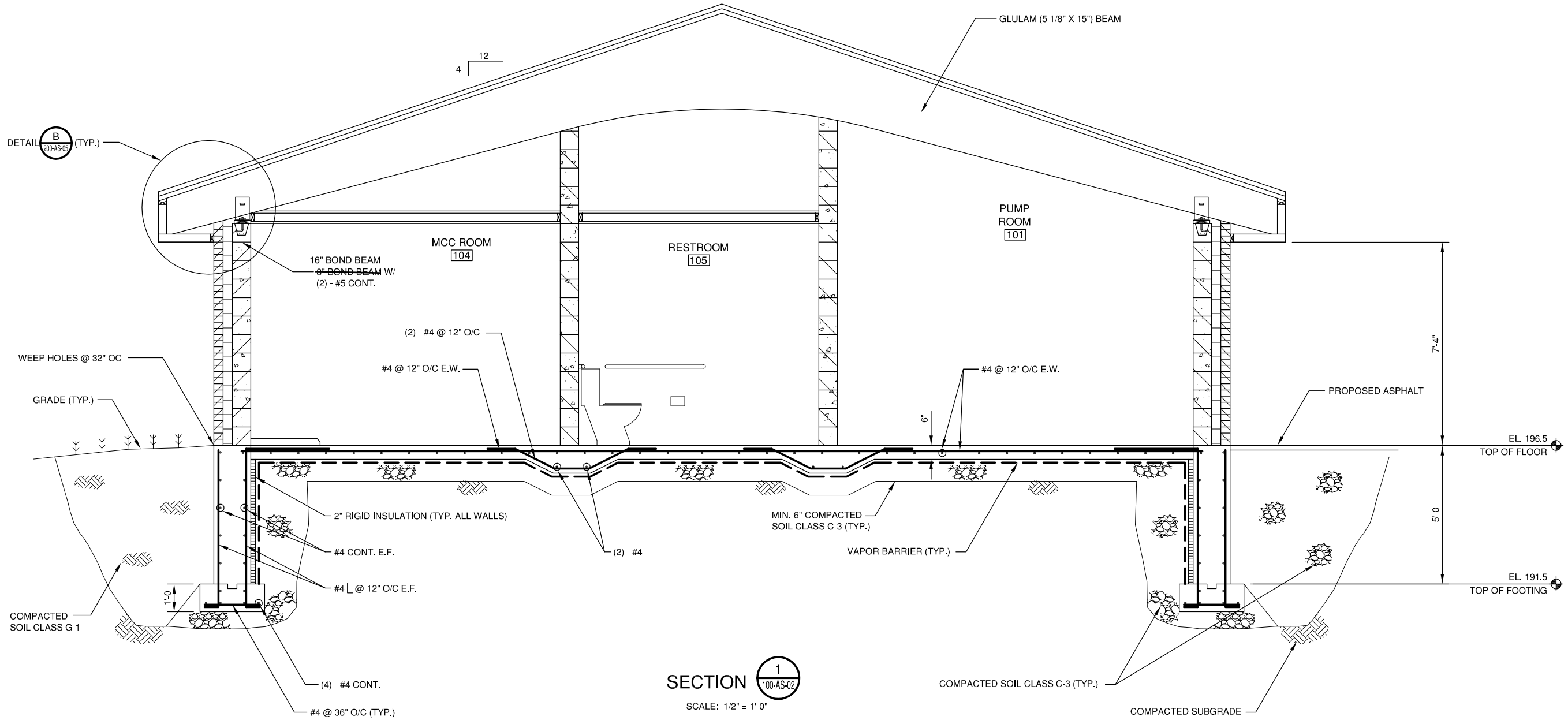
ARCHITECTURAL/STRUCTURAL FLOOR PLAN
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY
UTILITY ENGINEER   DATE
APPROVED BY
CITY ENGINEER   DATE

SCALE	SHEET
PLAN HOR. N.T.S.	18
PROFILE HOR. N.T.S.	OF
VER. N.T.S.	53

100–AS–02



SECTION 1 / 100-AS-02

SCALE: 1/2" = 1'-0"

FOR CONSTRUCTION

File: R:\JOBS\JOBS\JOB10101*.dwg PW_ARCHITECTURAL SECTIONS.dwg
Plot Date: Sep 01, 2009 - 2:32pm

LAYOUT: LAYOUT
PLAN VIEW: PLAN

SA.				
ST.				
W.				
G.				
E.				
T.				
I.				
TS.				
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ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES
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CITY OF OAK CREEK, WISCONSIN

DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE
D.A.M.	8/13/09	R.L.B.	8/13/09	K.A.K.	8/13/09

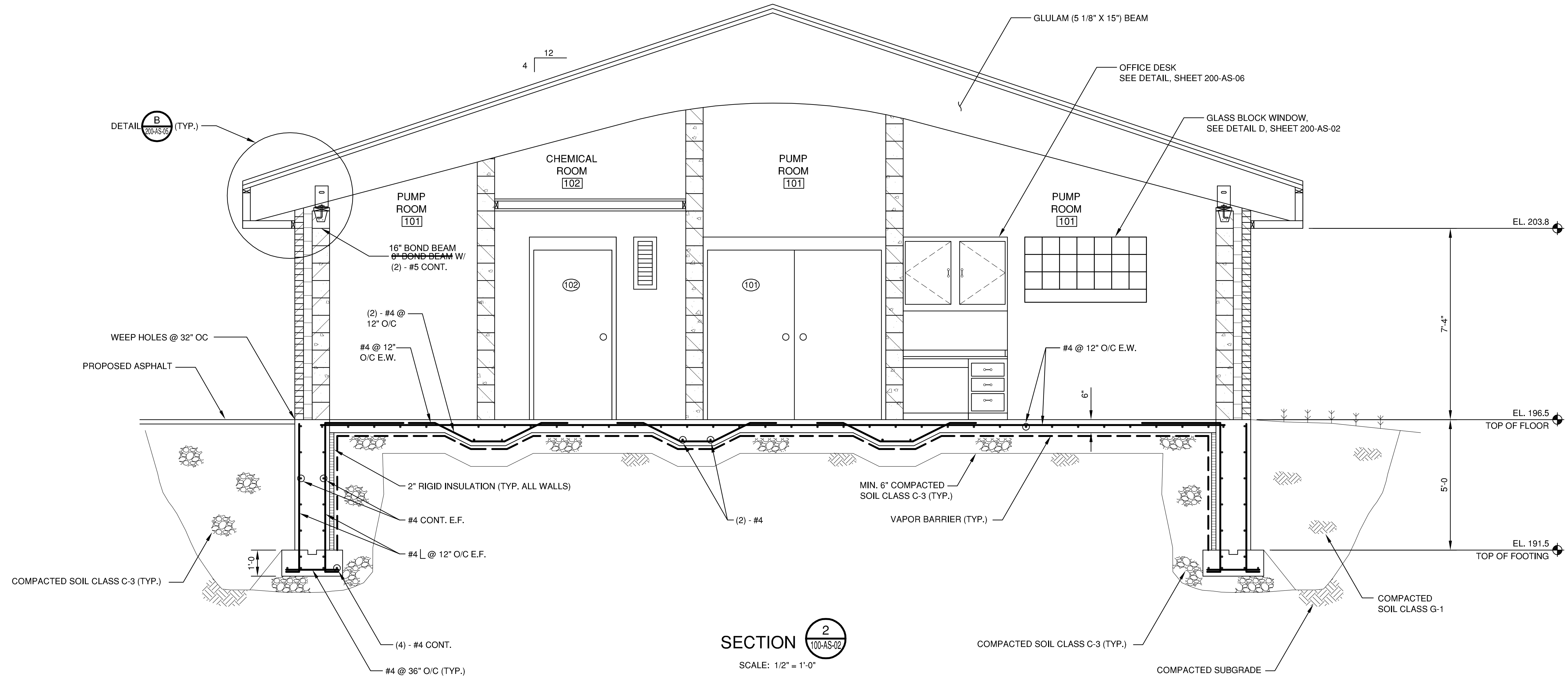
ARCHITECTURAL/STRUCTURAL SECTION
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. N.T.S.	19
PROFILE HOR. N.T.S.	OF
VER. N.T.S.	53

100-AS-03



SECTION 2 (100-AS-02)

SCALE: 1/2" = 1'-0"

THE WIDTH OF THE CONCRETE FOOTINGS SHALL BE 30"
THE WIDTH OF THE FOOTING WALLS SHALL BE 16"
THE THICKENED SLABS UNDER THE MASONRY WALLS SHALL BE 12 INCHES

FOR CONSTRUCTION

SA. ST. W. G. E. T. I. TS. PP.

REVISION | BY | DATE

Consultant:
Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES
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HOBART, WISCONSIN 54155
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CITY OF OAK CREEK, WISCONSIN

DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE
D.A.M.	8/13/09	R.L.B.	8/13/09	K.A.K.	8/13/09

ARCHITECTURAL/STRUCTURAL SECTION
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE: PLAN HOR. N.T.S.; PROFILE HOR. N.T.S.; VER. N.T.S.

SHEET 20 OF 53

100-AS-04

PLAN VIEW: PLAN LAYOUT: LAYOUT
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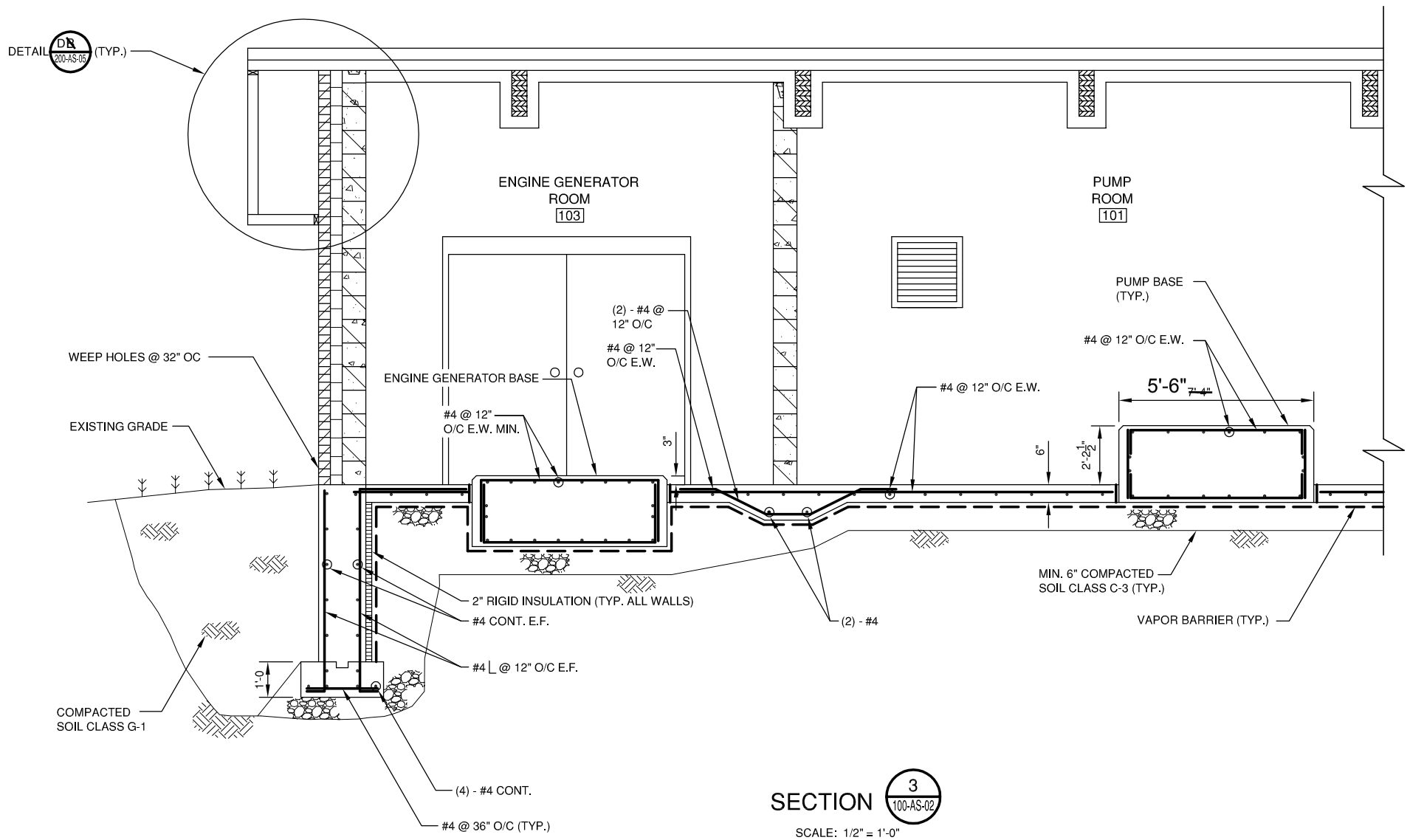


SECTION 3 / 100-AS-02

SCALE: 1/2" = 1'-0"

NOTE:

1. PUMP SUPPORT HEIGHT TO SUIT EQUIPMENT PROVIDED.

FOR CONSTRUCTION

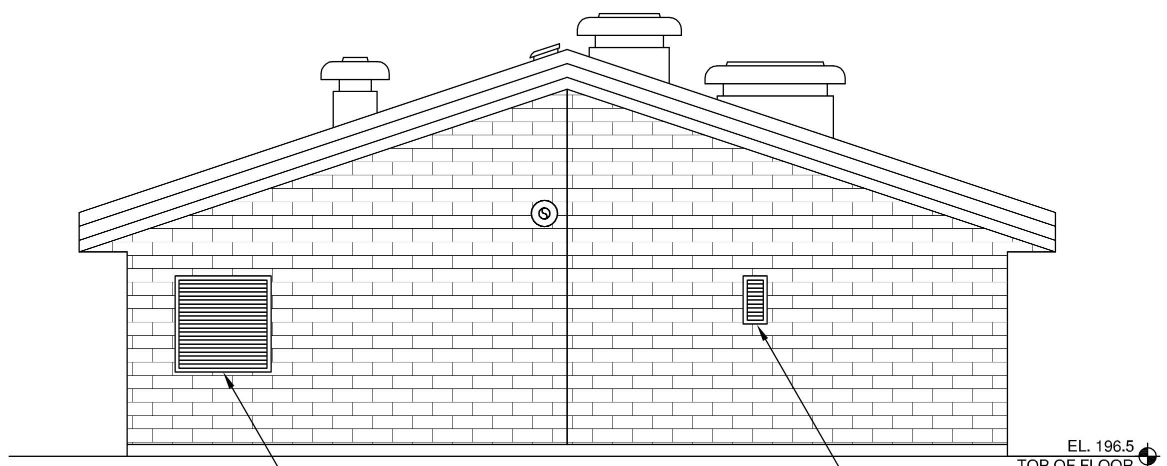
File: P:\ARCH\08101\Arch\08101(1-dwg) PW_ARCHITECTURAL SECTIONS.dwg
Plot Date: Sep 01, 2009 - 12:34pm

PLAN VIEW: PLAN
LAYOUT: LAYOUT

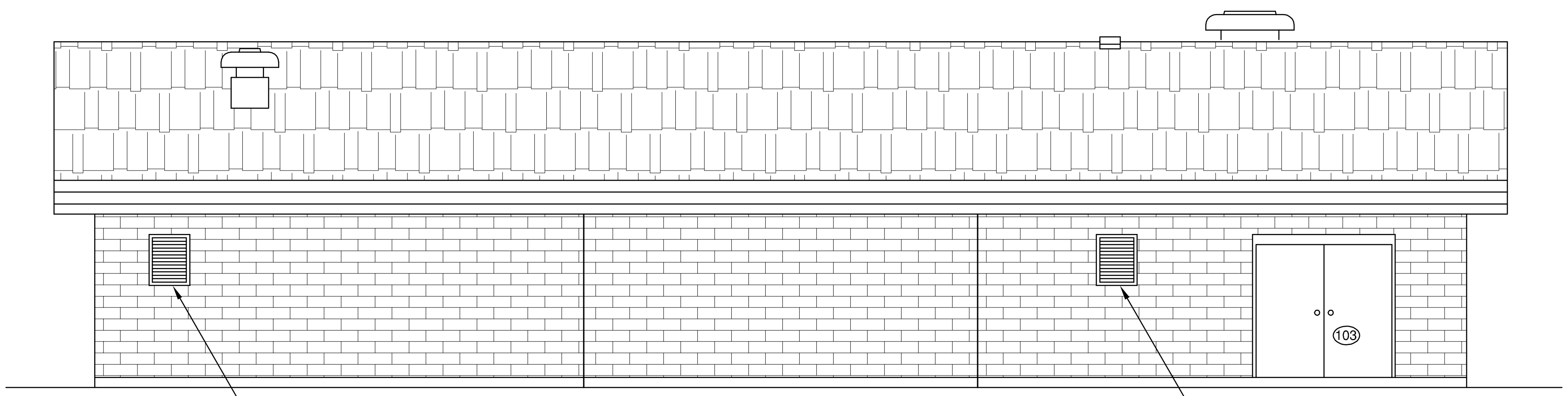
SA.	Consultant: Robert E. Lee & Associates, Inc.	CITY OF OAK CREEK, WISCONSIN		APPROVED BY UTILITY ENGINEER DATE
ST.		DESIGNED BY DATE	DRAWN BY DATE	CHECKED BY DATE
W.		D.A.M. 8/13/09	R.L.B. 8/13/09	K.A.K. 8/13/09
G.				APPROVED BY CITY ENGINEER DATE
E.	ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES	ARCHITECTURAL/STRUCTURAL SECTION		SCALE / SHEET
T.		IN: PUETZ ROAD BOOSTER STATION		PLAN HOR. N.T.S. / 21
I.	4664 GOLDEN POND PARK CT. HOBART, WISCONSIN 54155 PHONE: 920-662-9641 FAX: 920-662-9141 WWW.RELEEINC.COM			PROFILE HOR. N.T.S. VER. N.T.S. / OF 53
TS.				
PP.				
	REVISION BY DATE	FILE NO: 08101		100-AS-05

File: R:\4900\4931\4931001\dwg\PR_ELEVATIONS.dwg
Plot Date: Sep 01, 2009 – 2:35pm

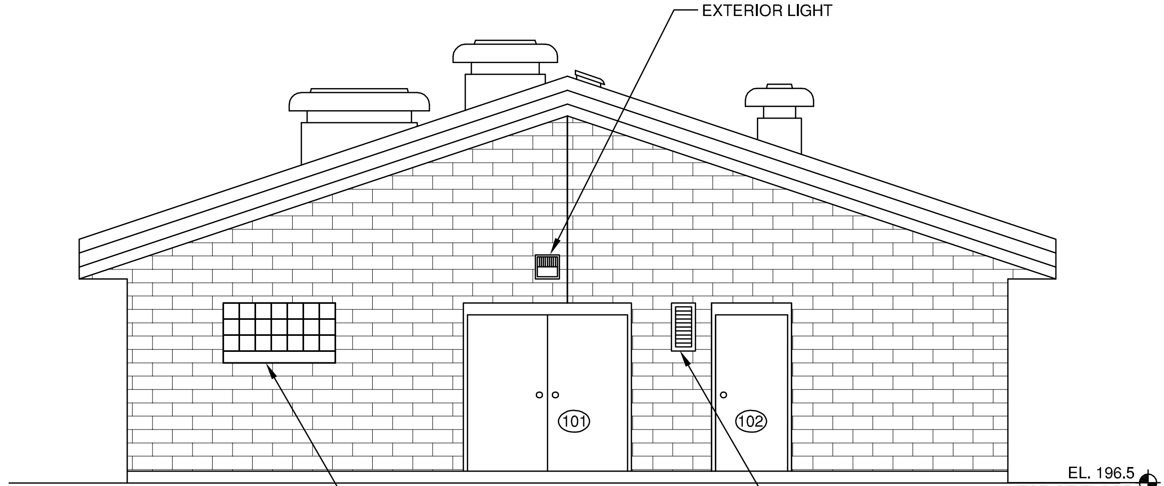
PLAN VIEW: PLAN LAYOUT: LAYOUT



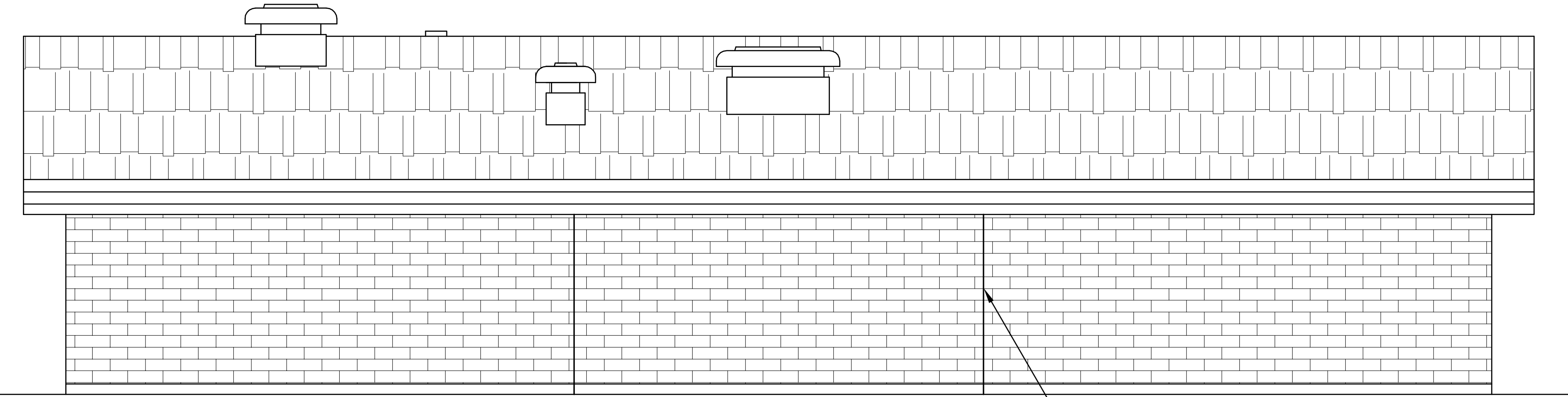
NORTH ELEVATION
SCALE: 3/8" = 1'-0"



EAST ELEVATION
SCALE: 3/8" = 1'-0"



SOUTH ELEVATION
SCALE: 3/8" = 1'-0"



WEST ELEVATION
SCALE: ~~3/8" = 1'-0"~~ 1/4" = 1'-0"

DO NOT SCALE FROM DRAWINGS

CONTRACTOR SHALL PROVIDE ROOF EXHAUST FAN ENCLOSURES (4). THE ENCLOSURE SHALL BE PRESSURE-TREATED 2X4 FRAMED AND ALUMINUM SIDED ENCLOSURE AND THE TOP CAP TO BE ALUMINUM CLAD. ALL FASTENERS SHALL BE GALVANIZED, ALUMINUM, OR STAINLESS STEEL. THE COLOR SHALL MATCH THE SOFFIT ALUMINUM SIDING

FOR CONSTRUCTION

SA.
ST.
W.
G.
E.
T.
I.
TS.
PP.

REVISION BY DATE

Consultant:
Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES
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HOBART, WISCONSIN 54155
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DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE
D.A.M.	8/13/09	R.L.B.	8/13/09	K.A.K.	8/13/09

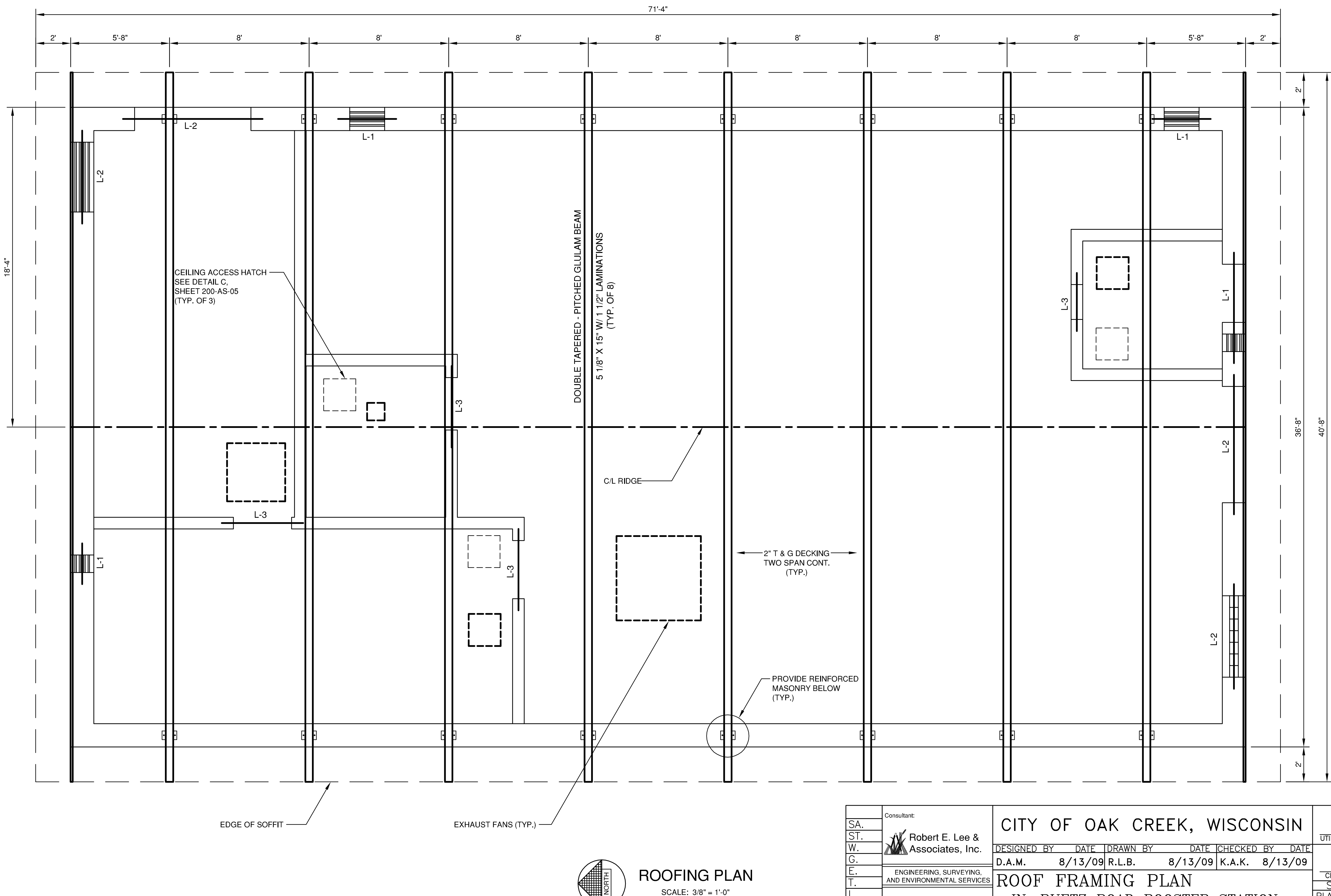
BUILDING ELEVATIONS
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. N.T.S.	22
PROFILE HOR. N.T.S.	OF
VER. N.T.S.	53

100-AS-06



ROOFING PLAN

SCALE: 3/8" = 1'-0"

FOR CONSTRUCTION

SA.	Consultant: Robert E. Lee & Associates, Inc. ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES	CITY OF OAK CREEK, WISCONSIN			APPROVED BY UTILITY ENGINEER DATE
ST.		DESIGNED BY DATE	DRAWN BY DATE	CHECKED BY DATE	APPROVED BY CITY ENGINEER DATE
W.		D.A.M. 8/13/09	R.L.B. 8/13/09	K.A.K. 8/13/09	
G.		ROOF FRAMING PLAN			SCALE / SHEET
E.		IN: PUETZ ROAD BOOSTER STATION			PLAN HOR. N.T.S. — 23
T.					PROFILE HOR. N.T.S. — OF
I.					VER. N.T.S. — 53
TS.					
PP.					
REVISION	BY DATE	FILE NO: 08101			100-AS-07

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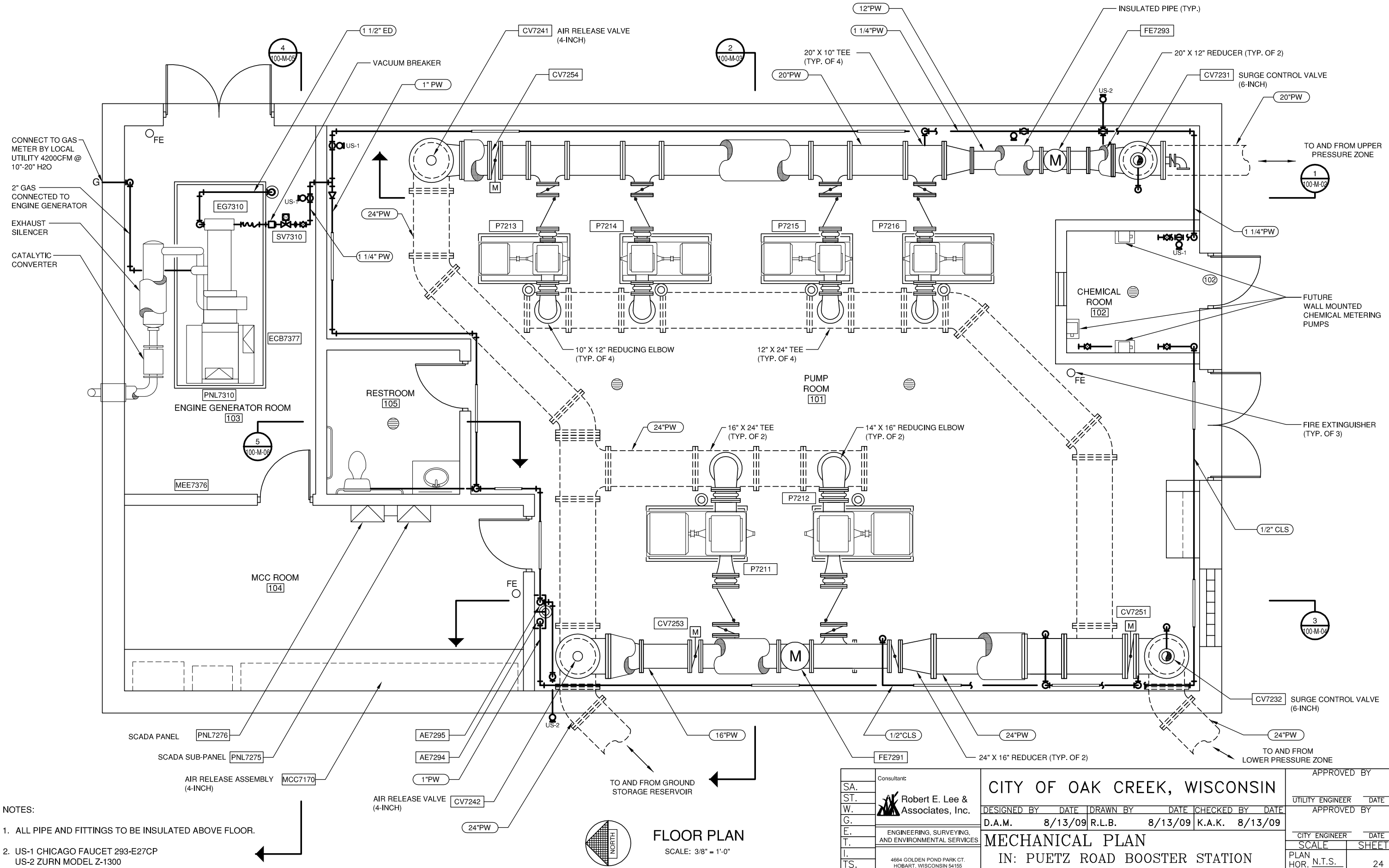
File: R:\4900\4931\4931001\dwg\PR ROOF FRAMING PLAN.dwg
Plot Date: Sep 01, 2009 – 2:36pm
LAYOUT: LAYOUT
PLAN VIEW: PLAN



NOTES:

1. ALL PIPE AND FITTINGS TO BE INSULATED ABOVE FLOOR.
2. US-1 CHICAGO FAUCET 293-E27CP
   US-2 ZURN MODEL Z-1300
   SAMPLE TAP - ZURM CHROME Z-8040
3. ANY PW PIPING 12" OR LARGER UNDER THE BOOSTER STATION SLAB SHALL BE FLANGE CLASS 53 PIPING ENCASED IN CONCRETE.

FOR CONSTRUCTION

SA. ST. W. G. E. T. I. TS. PP.

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ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES
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CITY OF OAK CREEK, WISCONSIN

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D.A.M.	8/13/09	R.L.B.	8/13/09	K.A.K.	8/13/09

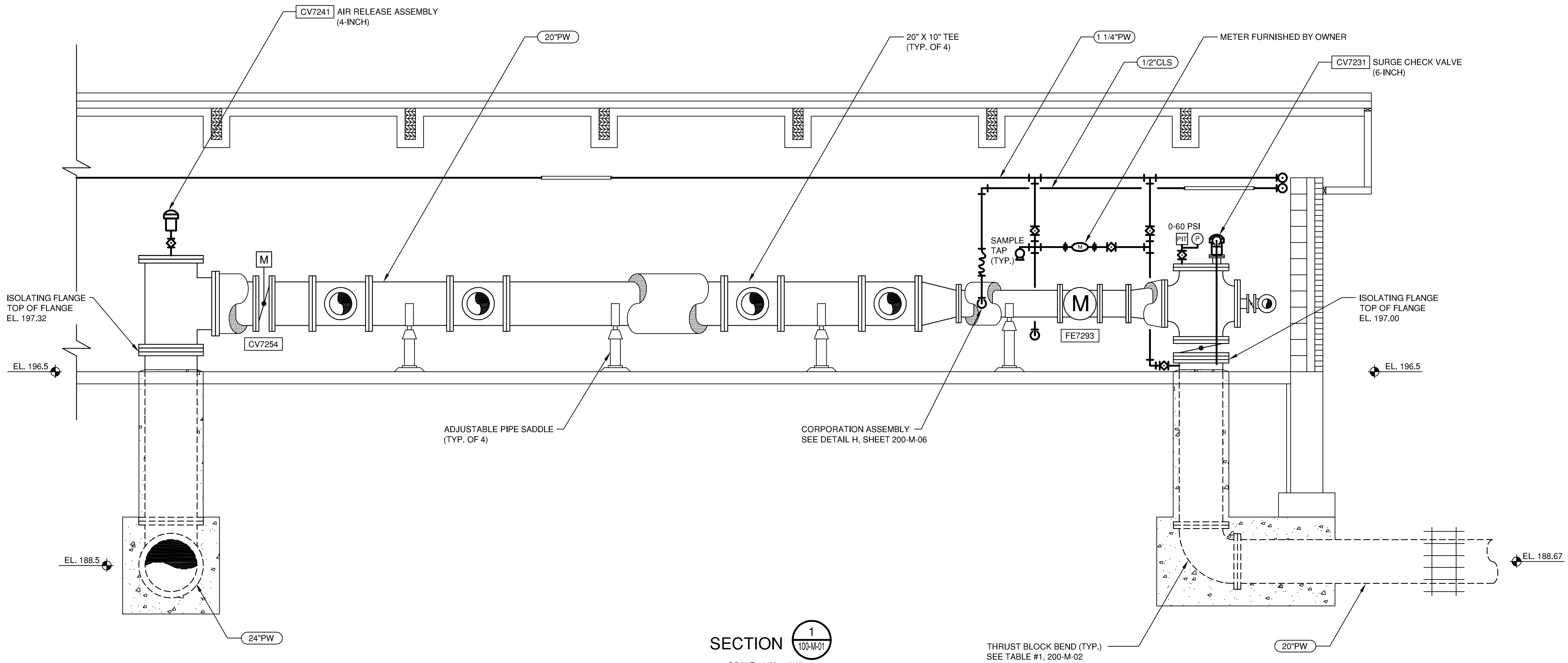
MECHANICAL PLAN
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. N.T.S.	24
PROFILE HOR. N.T.S. VER. N.T.S.	OF 53

100-M-01



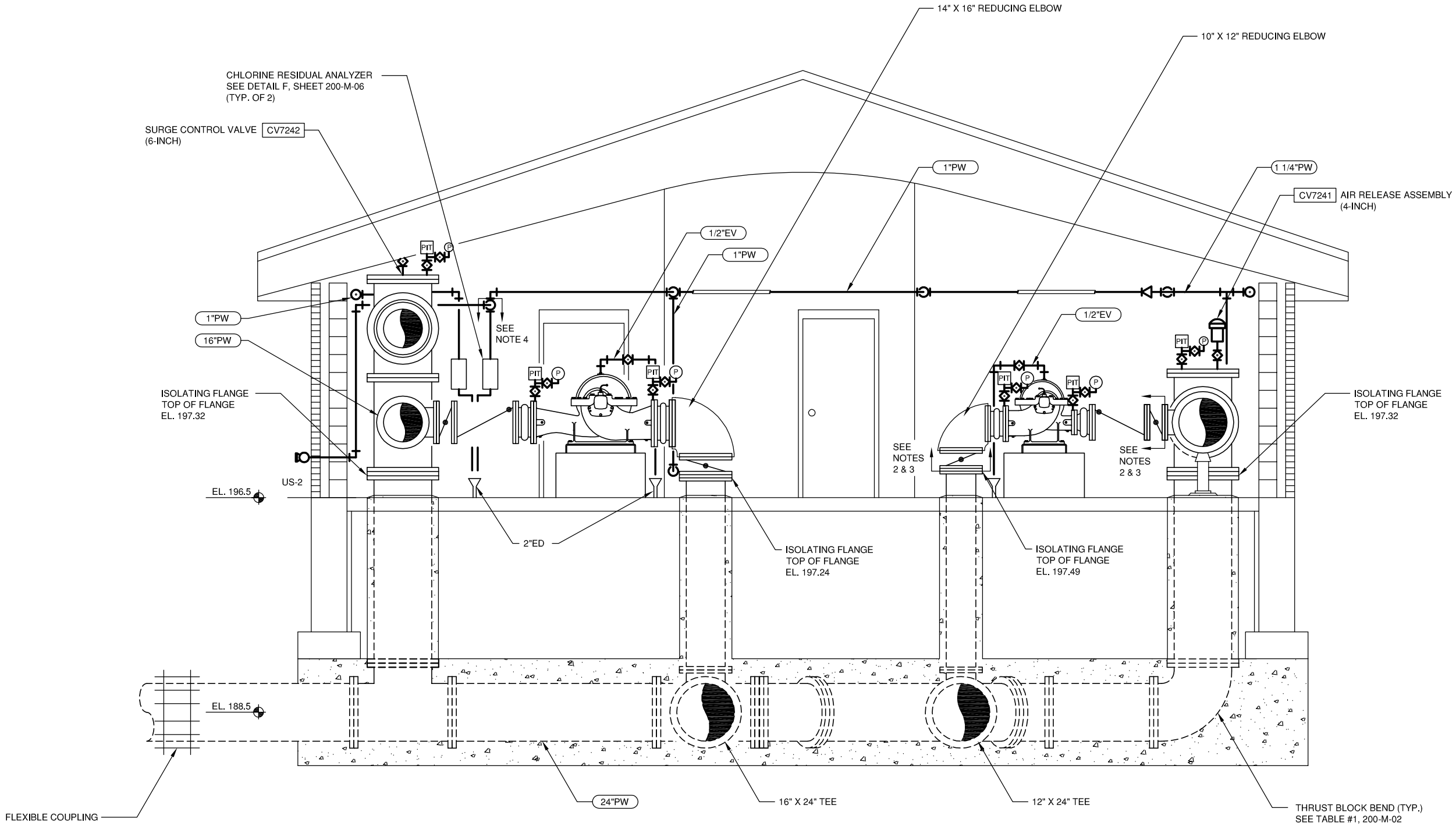
SECTION 1 100-M-01
SCALE: 1/2" = 1'-0"

NOTE:

1. ALL PIPE AND FITTINGS TO BE INSULATED ABOVE FLOOR.

SA. ST. W. G. E. T. I. TS. PP.	Consultant: Robert E. Lee & Associates, Inc. ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES. 4664 GOLDEN POND PARK CT. HOBART, WISCONSIN 54155 PHONE: 920-662-9641 FAX: 920-662-9141 WWW.RELEEINC.COM	CITY OF OAK CREEK, WISCONSIN	APPROVED BY: UTILITY ENGINEER / DATE
		DESIGNED BY: D.A.M. DATE: 8/13/09 — DRAWN BY: R.L.B. DATE: 8/13/09 — CHECKED BY: K.A.K. DATE: 8/13/09	APPROVED BY: CITY ENGINEER / DATE
		MECHANICAL SECTION IN: PUETZ ROAD BOOSTER STATION	SCALE: PLAN HOR. N.T.S. PROFILE HOR. N.T.S. VER. N.T.S. — SHEET 25 OF 53
REVISION BY DATE		FILE NO: 08101	100-M-02

FOR CONSTRUCTION



SECTION 2 / 100-M-01

SCALE: 1/2" = 1'-0"

NOTES:

1. ALL PIPE AND FITTINGS TO BE INSULATED ABOVE FLOOR.
2. LIMITS OF ALTERNATE BID UPPER PRESSURE ZONE PUMPS.
3. LOCATION OF BLIND FLANGES.
4. LIMITS OF ALTERNATIVE FOR UPPER PRESSURE ZONE ANALYZER. PROVIDE END CAP.

FOR CONSTRUCTION

File: R:\14001-14501\14311\Dwg\Pln_MECHANICAL SECTION.dwg
Plot Date: Sep 01, 2009 - 2:39pm
LAYOUT: LAYOUT
PLAN VIEW: PLAN

SA.
ST.
W.
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E.
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CITY OF OAK CREEK, WISCONSIN

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D.A.M.	8/13/09	R.L.B.	8/13/09	K.A.K.	8/13/09

MECHANICAL SECTION
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

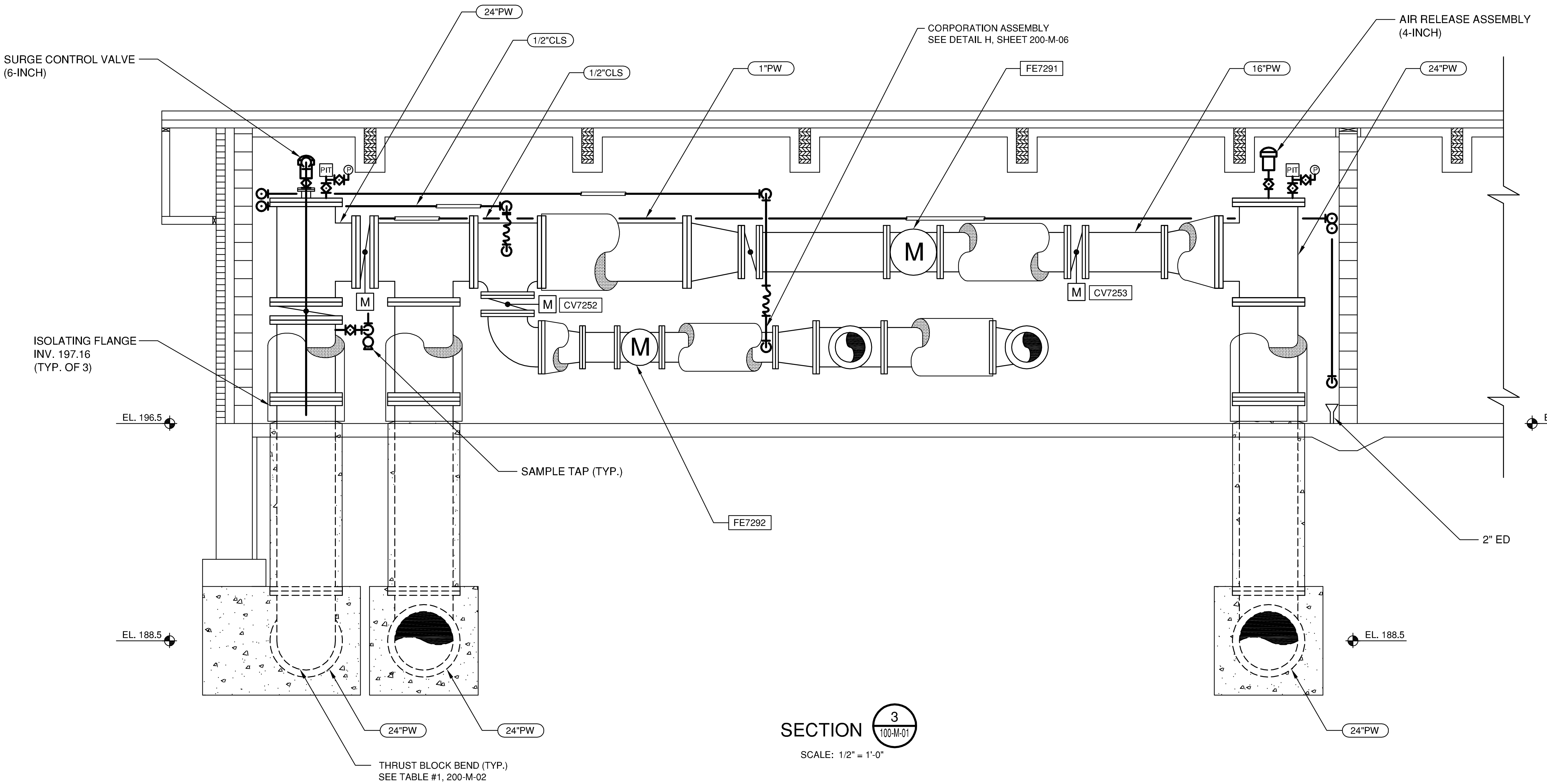
APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. N.T.S.	26
PROFILE HOR. N.T.S.	OF
VER. N.T.S.	53

100-M-03

File: R:\4900\4931\4931001\dwg\PR MECHANICAL SECTION.dwg
Plot Date: Sep 01, 2009 – 2:40pm

PLAN VIEW: PLAN LAYOUT: LAYOUT



SECTION 3 / 100-M-01

SCALE: 1/2" = 1'-0"

NOTE:

1. ALL PIPE AND FITTINGS TO BE INSULATED ABOVE FLOOR.

FOR CONSTRUCTION

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CITY OF OAK CREEK, WISCONSIN

DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE
D.A.M.	8/13/09	R.L.B.	8/13/09	K.A.K.	8/13/09

MECHANICAL SECTION

IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY

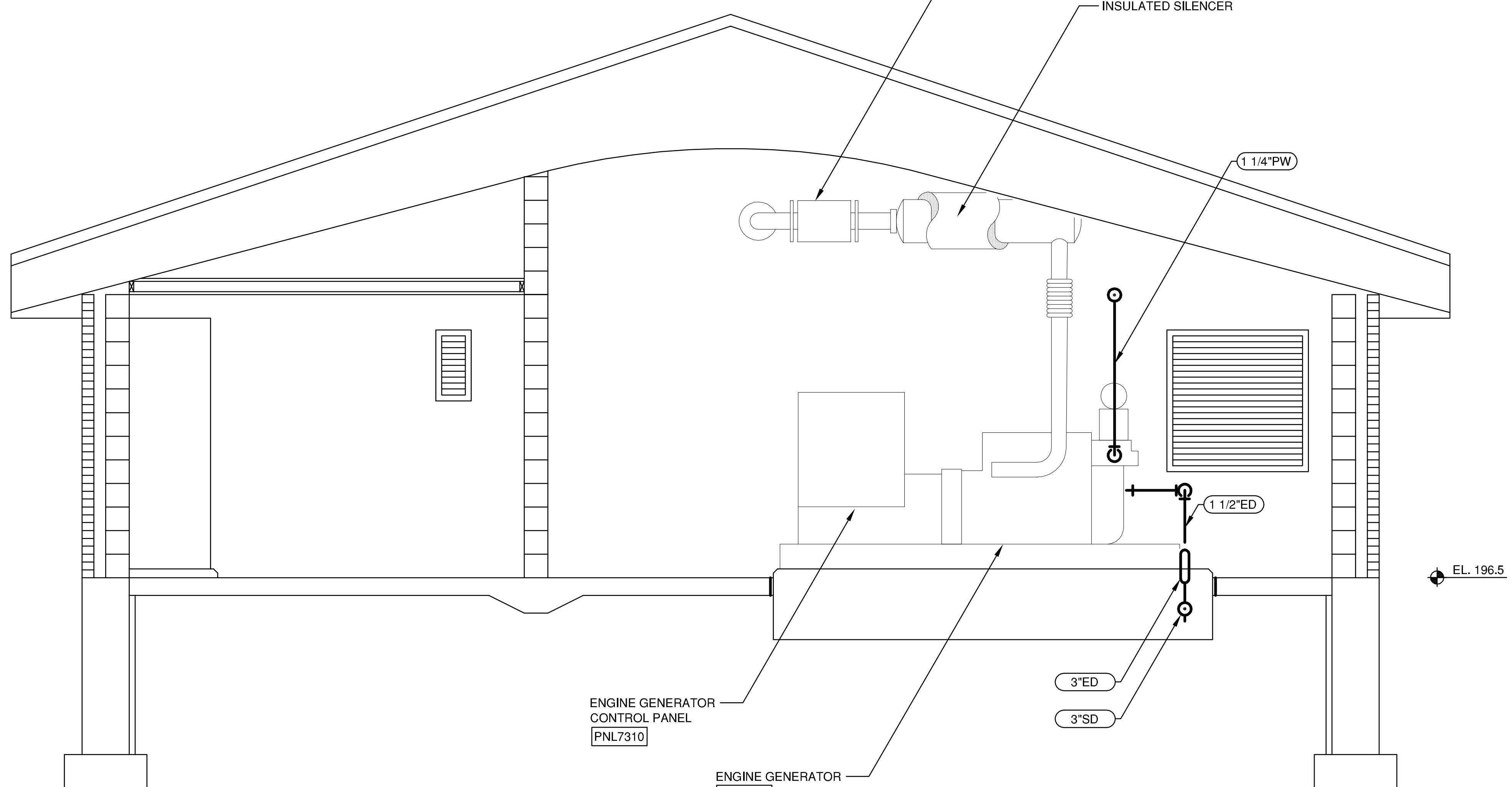
UTILITY ENGINEER DATE

APPROVED BY

CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. N.T.S.	27
PROFILE HOR. N.T.S.	OF
VER. N.T.S.	53

100–M–04



SECTION 4 / 100-M-01

SCALE: 1/2" = 1'-0"

NOTE:

1. ALL PIPE AND FITTINGS TO BE INSULATED ABOVE FLOOR.

FOR CONSTRUCTION

SA.	
ST.	
W.	
G.	
E.	
T.	
I.	
TS.	
PP.	

Consultant:
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HOBART, WISCONSIN 54155
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REVISION BY DATE

CITY OF OAK CREEK, WISCONSIN

DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE
D.A.M.	8/13/09	R.L.B.	8/13/09	K.A.K.	8/13/09

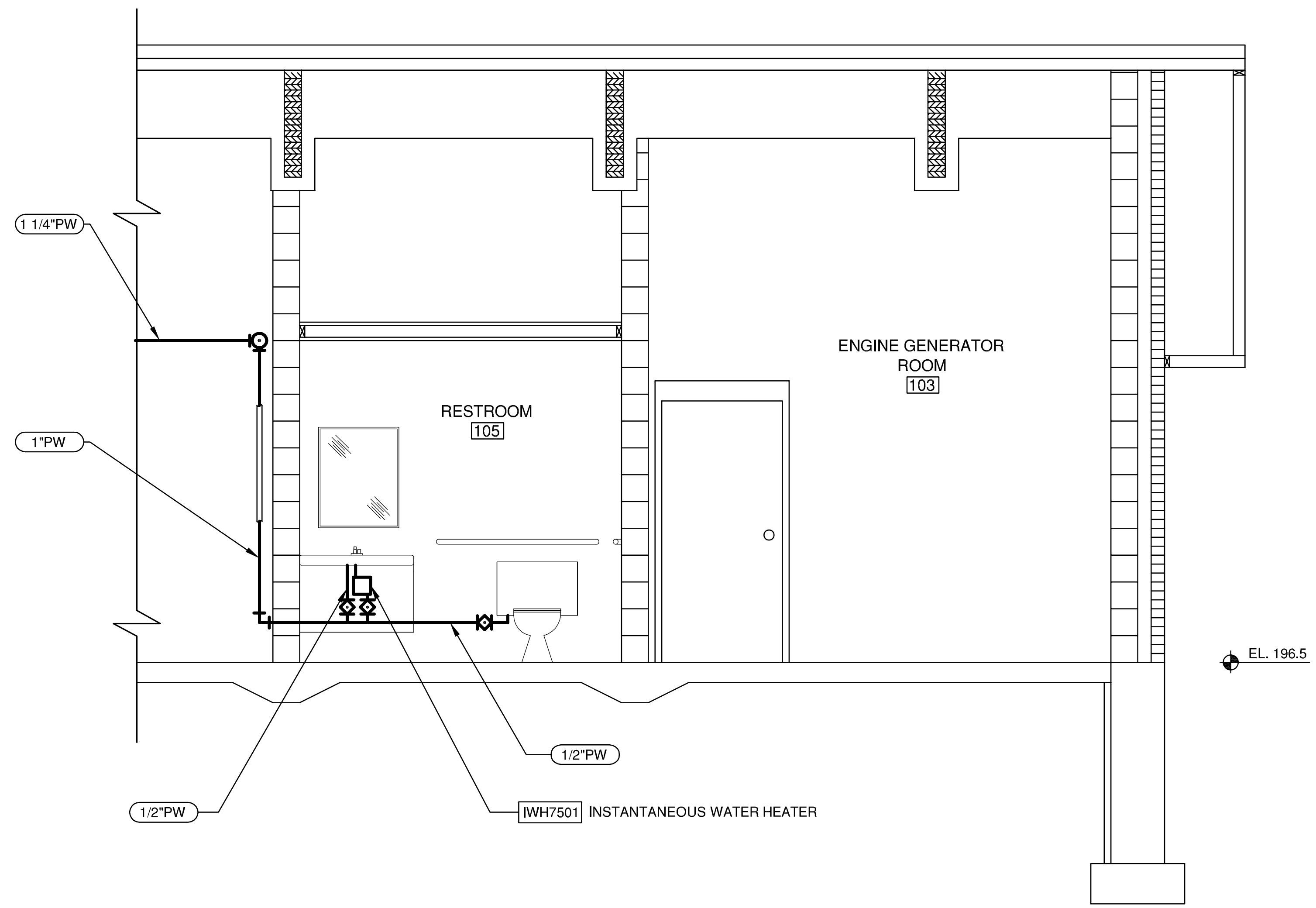
MECHANICAL SECTION
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. N.T.S.	28
PROFILE HOR. N.T.S.	OF
VER. N.T.S.	53

100–M–05



SECTION 5 100-M-06

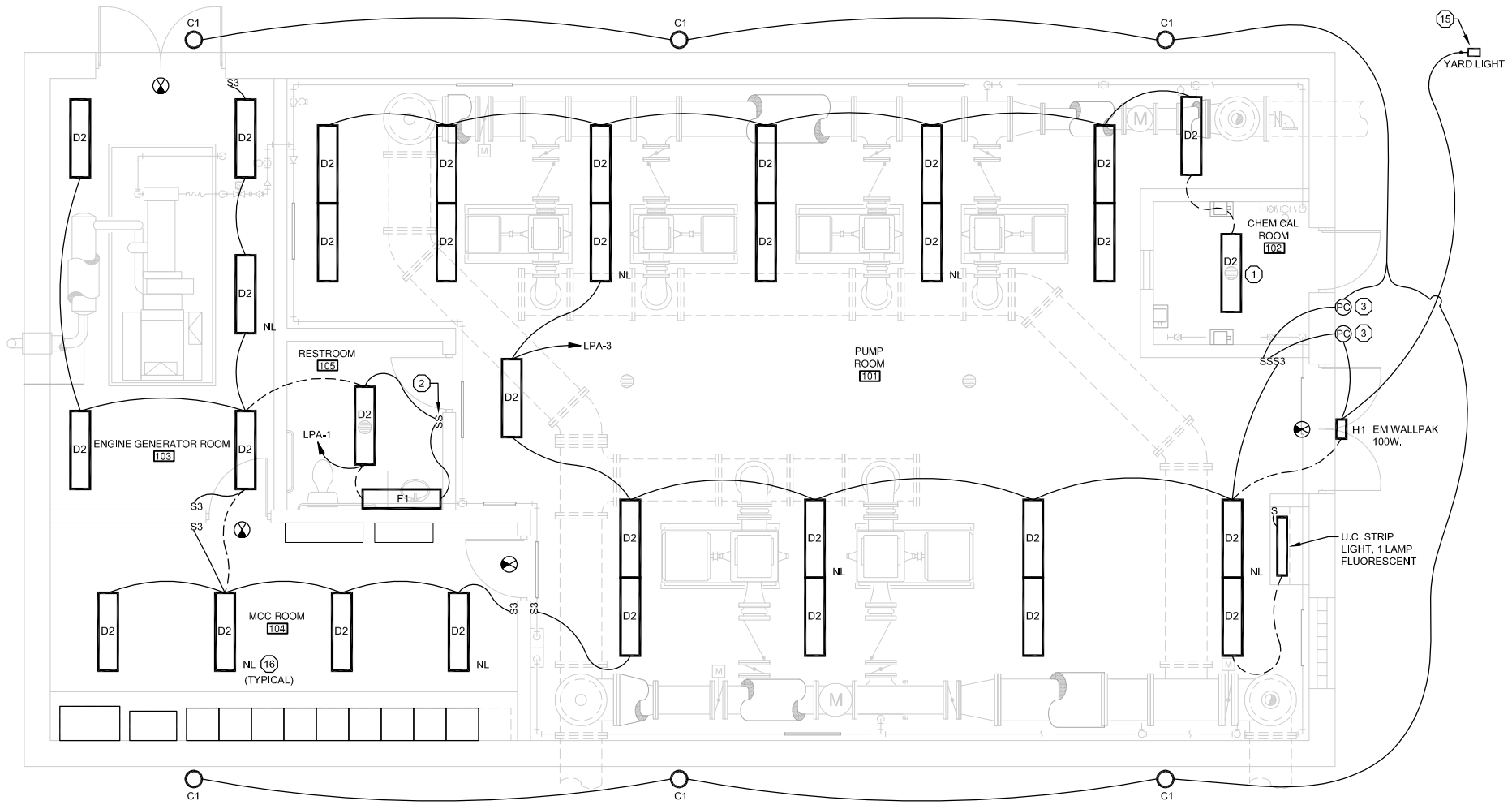
SCALE: 1/2" = 1'-0"

NOTE:

1. ALL PIPE AND FITTINGS TO BE INSULATED ABOVE FLOOR.

FOR CONSTRUCTION

SA. ST. W. G. E. T. I. TS. PP.	Consultant: Robert E. Lee & Associates, Inc. ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES 4664 GOLDEN POND PARK CT. HOBART, WISCONSIN 54155 PHONE: 920-662-9641 FAX: 920-662-9141 WWW.RELEEINC.COM	CITY OF OAK CREEK, WISCONSIN	APPROVED BY UTILITY ENGINEER DATE
		DESIGNED BY D.A.M. DATE 8/13/09 DRAWN BY R.L.B. DATE 8/13/09 CHECKED BY K.A.K. DATE 8/13/09	APPROVED BY CITY ENGINEER DATE
		MECHANICAL SECTION IN: PUETZ ROAD BOOSTER STATION	SCALE: PLAN HOR. N.T.S. PROFILE HOR. N.T.S. VER. N.T.S. — SHEET 29 OF 53
REVISION BY DATE		FILE NO: 08101	100-M-06



NORTH

LIGHTING PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

1. DO NOT SCALE DRAWINGS. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM ENGINEER PRIOR TO PROCEEDING WITH WORK.
2. HOMERUN WIRING SHALL BE (2)#12 & #12G UNLESS NOTED OTHERWISE.
3. ALL EXTERIOR RECEPTACLES TO BE GFCI WEATHERPROOF, MOUNT AT 30" ABOVE FINISHED GRADE.
4. ALL INTERIOR RECEPTACLES TO BE GFCI MOUNTED AT 42" AFF.
5. MOUNT EXTERIOR "H1" FIXTURE AT 9'-0" ABOVE GRADE.
6. CEILING MOUNT INTERIOR FIXTURES.
7. ROOM/AREA ATMOSPHERE REQUIREMENTS, REFER TO SECTION 16010:
   - 7.1. EXTERIOR: GENERAL, WET, NEW CONSTRUCTION.
   - 7.2. PUMP ROOM: GENERAL, DAMP, NEW CONSTRUCTION.
   - 7.3. TOILET ROOM: GENERAL, DRY, NEW CONSTRUCTION.
   - 7.4. CHLORINE ROOM: CORROSIVE, DAMP, NEW CONSTRUCTION.
   - 7.5. GENERATOR ROOM: GENERAL, DRY, NEW CONSTRUCTION.
8. LIGHT FIXTURES SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:
   - 8.1. TYPE D2: 4' INDUSTRIAL WET LABEL 2-LAMP FIXTURE WITH 2-F32T8/ADV841/ALTO LAMPS EACH AS MANUFACTURED BY DAYBRITE (MODEL DWAE-232), COLUMBIA (MODEL LUN4-232), OR EQUAL. BALLAST SHALL BE 120V, 0.88 MINIMUM POWER FACTOR, 2-LAMP AS MANUFACTURED BY ADVANCE (MODEL IOP-2P32-SC@1200-FOCUS ON ENERGY INCENTIVE), OR EQUAL.
   - 8.2. TYPE C1: EXTERIOR 6-INCH RECESSED ROUND FLUORESCENT 2-LAMP FIXTURE WITH 1-26WTT LAMP EACH AS MANUFACTURED BY CAPRI (MODEL CFR6V26Q-U-RMA100CLR), OR EQUAL. BALLAST SHALL BE SUITABLE FOR -20 DEGREES F STARTING.
   - 8.3. TYPE F1: 4' WALL UP/DOWN FLUORESCENT 2-LAMP FIXTURE WITH 2-F32T8/SP41/ALTO LAMPS EACH AS MANUFACTURED BY DAYBRITE (MODEL CB232W), COLUMBIA (MODEL WAL4-1U1D), OR EQUAL.
   - 8.4. TYPE H1: EXTERIOR WEDGE DOWNLIGHT FIXTURE WITH 1-100MH LAMP EACH AS MANUFACTURED BY NITEBRITE (MODEL WLM100MMT), OR EQUAL
   - 8.5. EXIT: SINGLE FACE EXIT AS MANUFACTURED BY COOPER SURE-LITES (MODEL LPX-7-O-LPX7-R-WH-SD-WG10), OR EQUAL.

8.6. YARD LIGHT: OUTDOOR POLE MOUNTED FIXTURE WITH POLE AS MANUFACTURED BY GARDCO (MODEL CA4-20'H-D1-BRA) AND LIGHT MANUFACTURED BY GARDCO (FORM 10 SQUARE: A-19-1-Q-250PSMH-120-BRA).

PLAN NOTES:

1. LIGHTING IN THIS SPACE SHALL BE CONTROLLED WITH HVAC EQUIPMENT PER (16000-01)
2. INTERLOCK LIGHT SWITCH WITH EXHAUST FAN PER (16000-02)
3. EXTERIOR LIGHTING SHALL BE CONTROLLED BY SWITCH AND PHOTOCELL. WIRE SWITCH AND PHOTOCELL IN SERIES SUCH THAT PHOTOCELL OPERATES FIXTURES WHEN SWITCH IS ON.
4. CONTROL PUMP ROOM HVAC EQUIPMENT PER (16000-03)
5. CONTROL CHLORINE ROOM HVAC EQUIPMENT PER (16000-01)
6. WIRE WITH 2#10 & #10G IN 3/4"C.
7. CONTROL GENERATOR ROOM HVAC EQUIPMENT PER (16000-04)
8. WALL MOUNTED AUTOMATIC TRANSFER SWITCH.
9. WALL MOUNTED MAIN DISCONNECT SWITCH.
10. EXTERIOR UTILITY METER SOCKET.
11. EXTERIOR UTILITY CT CABINET.
12. INSTALL MOTOR CONTROL CENTER ON CONCRETE HOUSEKEEPING PAD.
13. INSTALL STANDBY ENGINE GENERATOR ON CONCRETE HOUSEKEEPING PAD PER (16622-15)
14. INSTALL ENGINE EXHAUST THROUGH WALL THIMBLE PER (16622-17) TURN EXHAUST UPWARDBEYOND ROOF-LINE AND EXTEND UP ABOVE SOFFIT. PROVIDE WEATHER CAP.
15. INSTALL NEW LIGHT POLE PER (16520-10)
16. PROIVDE CONTINUOUS BURN NIGHT LIGHT AS INDICATED.

FOR CONSTRUCTION

SA.	Consultant: Robert E. Lee & Associates, Inc.	CITY OF OAK CREEK, WISCONSIN	APPROVED BY UTILITY ENGINEER DATE
ST.		DESIGNED BY DATE: D.A.M. 8/13/09 | DRAWN BY DATE: R.L.B. 8/13/09 | CHECKED BY DATE: K.A.K. 8/13/09	APPROVED BY CITY ENGINEER DATE
W.			
G.			
E.			
T.	ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES	LIGHTING PLAN	SCALE: PLAN HOR. N.T.S. / PROFILE HOR. N.T.S. VER. N.T.S.
I.		IN: PUETZ ROAD BOOSTER STATION	SHEET: 30 OF 53
TS.	4664 GOLDEN POND PARK CT. HOBART, WISCONSIN 54155 PHONE: 920-662-9641 FAX: 920-662-9141 WWW.RELEEINC.COM		
PP.			
	REVISION BY DATE	FILE NO: 08101	100-E-01

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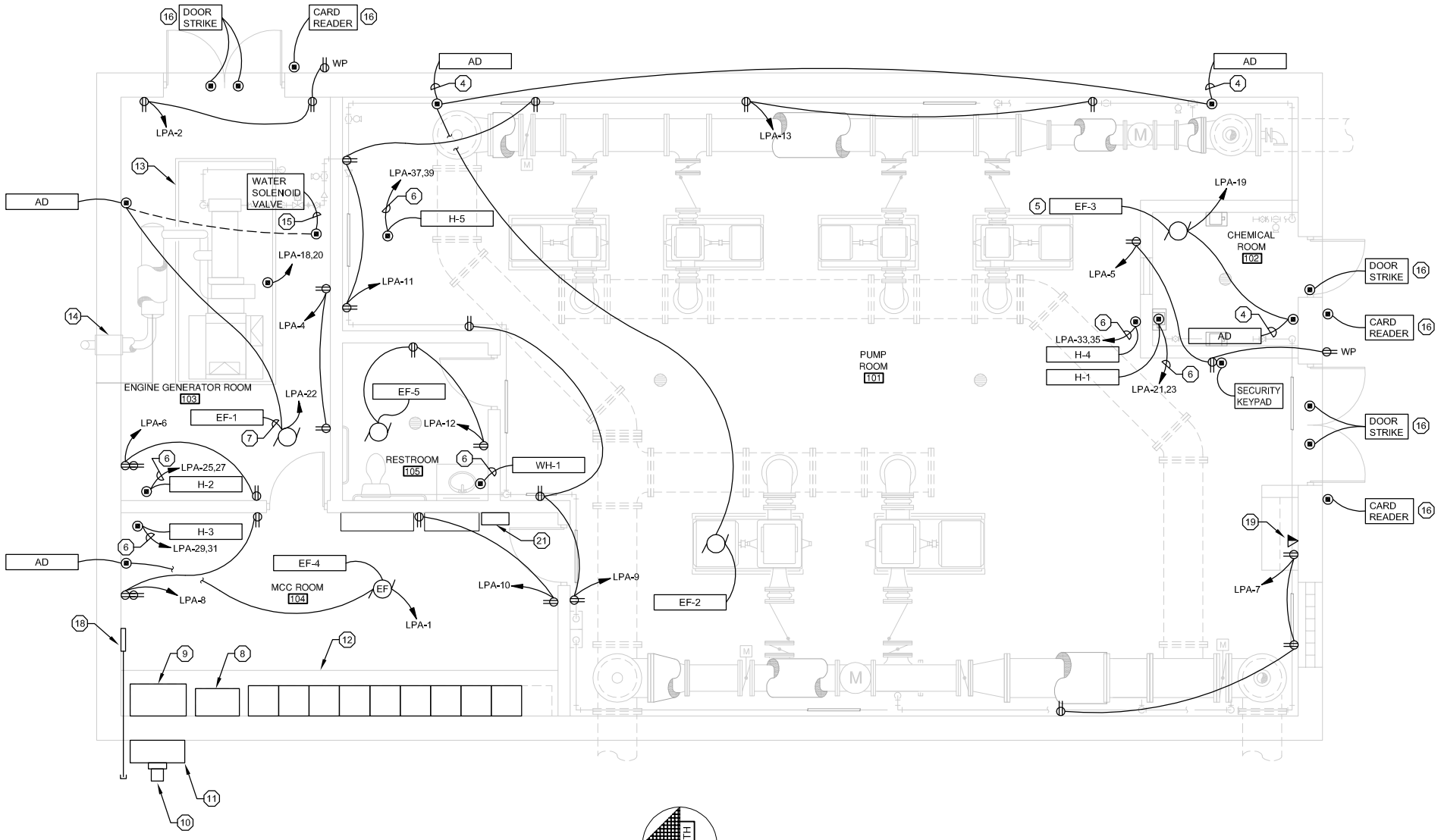
Date: Aug 31, 2009 - 2:36pm
LAYOUT: LAYOUT
PLAN VIEW: PLAN



PANEL I.D.	AMPS 225	MAIN CB AMPS: 125							AIC 10,000			
LPA	PHASE 3	TYPE: 250VAC LIGHTING AND APPLIANCE PANEL							MOUNT:			
	WIRE 4								SURFACE			
	VOLTAGE 120/208											
	CIRCUIT	KVA			BREAKER		CKT	CKT	BREAKER	KVA			CIRCUIT	
TYPE	DESIGNATION	Aϕ	Bϕ	Cϕ	AMP	POLE	#	#	AMP	POLE	Aϕ	Bϕ	Cϕ	DESIGNATION	TYPE
L	LTS - 103,104,105	0.54			20	1	1	2	20	1	0.54			RECP - 103	R
L	LTS - 101 EXT.		2.24		20	1	3	4	20	1		0.36		RECP - 103	R
R	RECP - 101			0.54	20	1	5	6	20	1			0.54	RECP - 103	R
R	RECP - 101	0.54			20	1	7	8	20	1	0.54			RECP - 104	R
R	RECP - 101		0.54		20	1	9	10	20	1		0.36		RECP - 104	R
R	RECP - 101			0.54	20	1	11	12	20	1			0.36	RECP - 105	R
R	RECP - 101	0.54			20	1	13	14	20	2	1.50			WH-1	X
X	SPARE		0.00		20	1	15	16				1.50			X
X	SPARE			0.00	20	1	17	18	20	2			0.75	GEN. BLOCK HTR.	X
M	EF-3	0.60			20	1	19	20			0.75				X
E	H-1		1.50		20	2	21	22	20	1		0.50		CNTRLS-103	X
E				0.50			23	24	20	1				SPARE	E
E	H-2	2.50			30	2	25	26	20	1	0.10			FIT-1-3-1	M
E			2.50				27	28	20	1		0.10		FIT-2-4-1	M
E	H-3			2.50	30	2	29	30	20	1			0.10	AIT-3-1-1	M
E		2.50					31	32	20	1	0.40			P-3-4-1	M
E	H-4		2.50		30	2	33	34	20	1		0.10		WIT-3-4-1	M
E				2.50			35	36	20	1			0.10	FIT-5-1-1	M
E	H-5	2.50			30	2	37	38	20	1	0.40			P-5-3-1	M
E			2.50				39	40	20	1		0.10		WIT-5-3-1	M
X	SPARE			0.00	20	1	41	42	20	1			0.00	RTU-A	X
TOTAL LINE-NEUTRAL KVA		9.92	11.78	7.58			TOTAL				4.23	3.02	4.85		
TOTAL CONNECTED KVA		41.38			THIS		W/ SUB				TOTAL ESTIMATED KVA DEMAND				41.38
TOTAL CONNECT AMPS		114.66			PANEL		PANELS				TOTAL ESTIMATED AMP DEMAND				114.86

TOTALS BY TYPE		THIS PANEL	W/ SUB PANELS		ESTIMATED DEMAND BY TYPE	NOTES
	R (RECEPTACLES)	5.40	5.40		5.40	
	L (LIGHTING)	3.08	3.08		3.08	* GFI CIRCUIT
	M (MOTORS)	1.90	1.90		1.90	
	X	8.00	8.00		8.00	
	A (AC)	0.00	0.00		0.00	
	E (ELEC. HEAT)	23.00	23.00		23.00	NEC 220-56 TABLE 6 AND
	K (KITCHEN EQUIPMENT)	0.00	0.00		0.00	OVER @ 0.65 DEMAND.

ELECTRICAL POWER PLAN

SCALE: 1/4" = 1'-0"

GENERAL NOTES:

1. DO NOT SCALE DRAWINGS. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM ENGINEER PRIOR TO PROCEEDING WITH WORK.
2. HOMERUN WIRING SHALL BE (2)#12 & #12G UNLESS NOTED OTHERWISE.
3. ALL EXTERIOR RECEPTACLES TO BE GFCI WEATHERPROOF. MOUNT AT 30" ABOVE FINISHED GRADE.
4. ALL INTERIOR RECEPTACLES TO BE GFCI MOUNTED AT 42" AFF.
5. MOUNT EXTERIOR "H1" FIXTURE AT 9'-0" ABOVE GRADE.
6. CEILING MOUNT INTERIOR FIXTURES.
7. ROOM/AREA ATMOSPHERE REQUIREMENTS, REFER TO SECTION 16010:
   - 7.1. EXTERIOR: GENERAL, WET, NEW CONSTRUCTION.
   - 7.2. PUMP ROOM: GENERAL, DAMP, NEW CONSTRUCTION.
   - 7.3. TOILET ROOM: GENERAL, DRY, NEW CONSTRUCTION.
   - 7.4. CHLORINE ROOM: CORROSIVE, DAMP, NEW CONSTRUCTION.
   - 7.5. GENERATOR ROOM: GENERAL, DRY, NEW CONSTRUCTION.
8. ALL CARD READERS, DOOR SWITCHES, DOOR STRIKES, MOTIONDETECTORS, AND CAMERAS SHALL RECEIVE POWER FROM AND PROVIDE SIGNAL TO THE LONGWATCH PANEL.
9. WIRE TO LONGWATCH BOX
   - 9.1. CAMERAS
   - 9.2. MOTION DETECTORS
   - 9.3. ELECTRIC STRIKES
   - 9.4. CARD READERS
   - 9.5. SECURITY KEY PAD

PLAN NOTES:

1. LIGHTING IN THIS SPACE SHALL BE CONTROLLED WITH HVAC EQUIPMENT.
2. INTERLOCK LIGHT SWITCH WITH EXHAUST FAN PER (16000-02)
3. EXTERIOR LIGHTING SHALL BE CONTROLLED BY SWITCH AND PHOTOCELL. WIRE SWITCH AND PHOTOCELL IN SERIES SUC THAT PHOTOCELL OPERATES FIXTURES WHEN SWITCH IS ON..
4. CONTROL PUMP ROOM HVAC EQUIPMENT PER (16000-03)
5. CONTROL CHLORINE ROOM HVAC EQUIPMENT PER (16000-01)
6. WIRE WITH 2#10 & #10G IN 3/4"C.
7. CONTROL GENERATOR ROOM HVAC EQUIPMENT PER (16000-04)
8. WALL MOUNTED AUTOMATIC TRANSFER SWITCH.
9. WALL MOUNTED MAIN DISCONNECT SWITCH.
10. EXTERIOR UTILITY METER SOCKET.
11. EXTERIOR UTILITY CT CABINET.
12. INSTALL MOTOR CONTROL CENTER ON CONCRETE HOUSEKEEPING PAD.
13. INSTALL STANDBY ENGINE GENERATOR ON CONCRETE HOUSEKEEPING PAD PER (16622-15)
14. INSTALL ENGINE EXHAUST THROUGH WALL THIMBLE PER (16622-17) ~~TURN EXHAUST UPWARDBEYOND ROOF LINE AND EXTEND UP ABOVE SOFFIT. PROVIDE WEATHER CAP.~~
15. CONNECT WATER SOLENOID VALVE TO GENERATOR CONTROL PANEL. WIRE PER GENERATOR MANUFACTURERS INSTRUCTIONS.
16. CARD ACCESS SYSTEM. VON DUPRIN ELECTRIC STRIKE #6211 (12 VOLT DC), CONTROLLED BY HID PROXPRO MODEL 5352 AGN. INSTALL PER MANUFACTURERS SPECIFICATIONS. CARD READER HEIGHT = 2'-9" AFG. CONTRACTOR TO WIRE BACK TO LONGWATCH BOX. PROVIDE 2 ADDITIONAL CARD READERS AND ELECTRIC STRIKES AND 1 ADDITIONAL CAMERA.
17. NOT USED.
18. TELCO INTERFACE EQUIPMENT BY OWNER WITH 2" C. STUBBED OUT FOR SERVICE ENTRANCE.
19. OUTLET FOR FUTURE TELEPHONE JACK AND LONGWATCH RJ-45 JACK. PROVIDE 3/4" C. TO TELCO INTERFACE. PROVIDE 3/4"C AND CAT6 CABLE TO LONGWATCH CABINET IN MCC ROOM.
20. NOT USED.
21. LONGWATCH CABINET, FURNISHED AND INSTALLED BY OWNER. PROVIDE 120V, 20 AMP CIRCUIT FROM PANEL LPA. CONTRACTOR TO PROVIDE CONDUIT FROM LOGWATCH BOX TO SCADA SUB-PANEL.
22. PROVIDE BATTERY BACK-UP FOR RTU-A LONGWATCH RADIO (IN RTU-A BOX).
23. SECURITY KEYPAD TO BE HID PROX PRO MODEL 5352 WITH KEY PAD, IN EITHER BLACK OR GRAY
24. CARD READERS AND KEYPAD SHALL BE WIRED PER MANUFACTURER'S RECOMMENDATIONS WITH RS-232 COMMUNICATION STANDARD.

FOR CONSTRUCTION

SA. ST. W. G. E. T. I. TS. PP.

Consultant:
Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES
4664 GOLDEN POND PARK CT.
HOBART, WISCONSIN 54155
PHONE: 920-662-9641
FAX: 920-662-9141
WWW.RELEEINC.COM

REVISION BY DATE

CITY OF OAK CREEK, WISCONSIN

DESIGNED BY DATE	DRAWN BY DATE	CHECKED BY DATE
D.A.M. 8/13/09	R.L.B. 8/13/09	K.A.K. 8/13/09

ELECTRICAL POWER PLAN
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. N.T.S.	31
PROFILE HOR. N.T.S. VER. N.T.S.	OF 53

100-E-02

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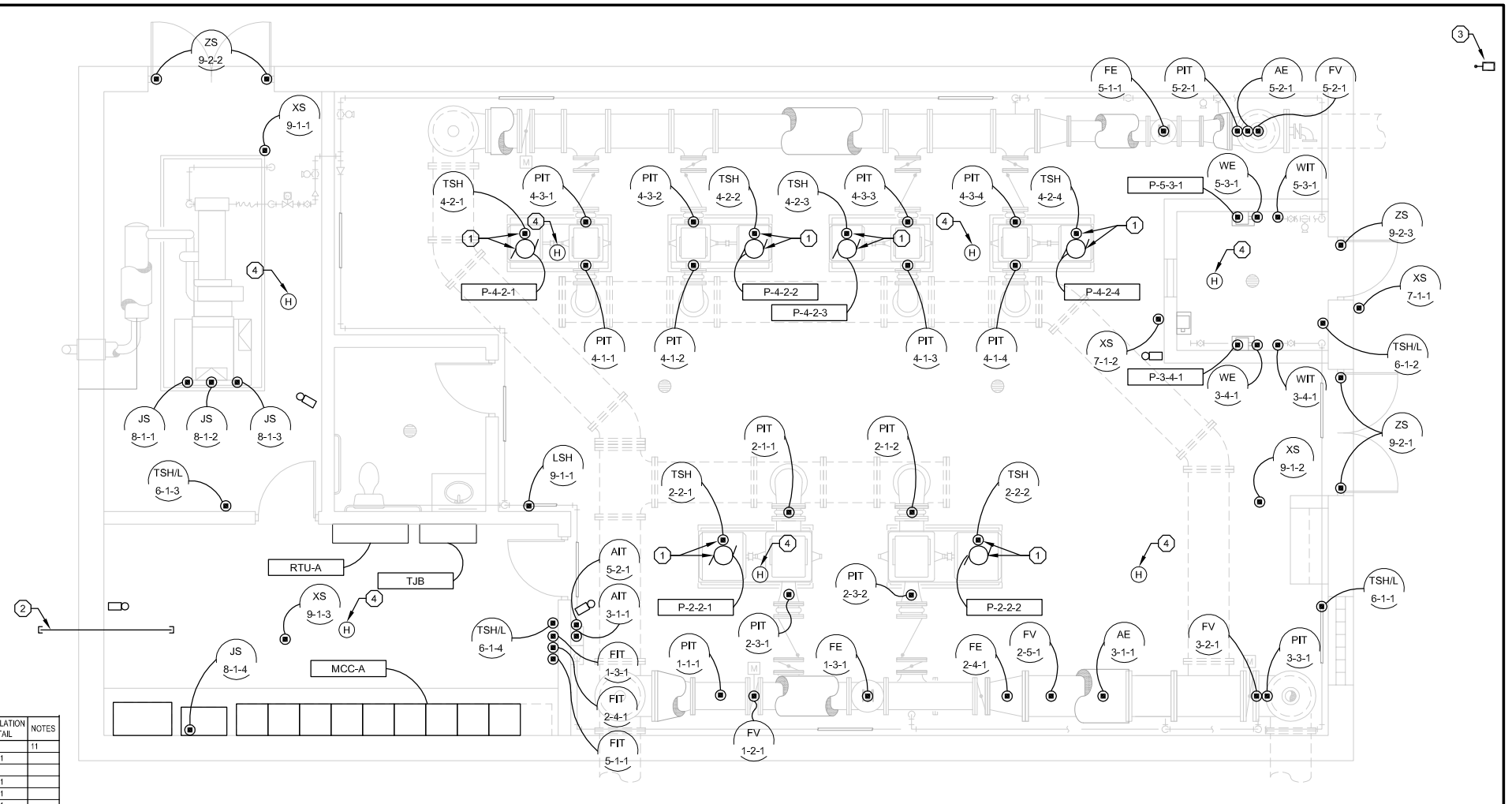
Plot Date: Aug 13, 2009 - 2:46pm
LAYOUT:
PLAN VIEW: PLAN

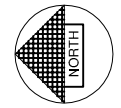
FOR CONSTRUCTION

TAG NUMBER	DEVICE DESCRIPTION	FIRST SIGNAL/CONTROL HOMERUN			SECOND SIGNAL/CONTROL HOMERUN			POWER HOMERUN				INSTALLATION DETAIL	NOTES
		DESTINATION	WIRING TYPE	WIRING	DESTINATION	WIRING TYPE	WIRING	CIRCUIT	VOLTAGE	CKT. BKR.	WIRING		
LT-1-1-1	EXISTING RESERVOIR LEVEL TRANSMITTER	TJB-A	24VDC ANALOG SIGNAL	A1									11
PIT-1-1-1	GROUND STORAGE RESERVOIR PRESSURE TRANSMITTER	TJB-A	24VDC ANALOG SIGNAL	A1								16930-51	
FV-1-2-1	GROUND STORAGE RESERVOIR CONTROL VALVE	TJB-A	120VAC DISCRETE SIGNAL	D16				MCC-A	480/3	15A/3P	3#12 & #12G		
FIT-1-3-1	GROUND STORAGE RESERVOIR FLOW TRANSMITTER	TJB-A	24VDC ANALOG SIGNAL	A1	TJB-A	120VAC DISCRETE SIGNAL	D2	LPA (26)	120/1	20A/1P	2#12 & #12G	16990-01	
FE-1-3-1	GROUND STORAGE RESERVOIR FLOW METER	FIT-1-1-3	MFG SIGNAL CABLE	M1								16910-51	
PIT-2-1-1	LOWER ZONE BOOSTER PUMP NO.1 INLET PRESSURE TRANSMITTER	TJB-A	24VDC ANALOG SIGNAL	A1								16930-51	
PIT-2-1-2	LOWER ZONE BOOSTER PUMP NO.2 INLET PRESSURE TRANSMITTER	TJB-A	24VDC ANALOG SIGNAL	A1								16930-51	
TSH-2-2-1	LOWER ZONE BOOSTER PUMP NO.1 MOTOR HIGH TEMPERATURE SENSOR	MCC-A	120VAC DISCRETE SIGNAL	D2									
TSH-2-2-2	LOWER ZONE BOOSTER PUMP NO.2 MOTOR HIGH TEMPERATURE SENSOR	MCC-A	120VAC DISCRETE SIGNAL	D2									
PIT-2-3-1	LOWER ZONE BOOSTER PUMP NO.1 OUTLET PRESSURE TRANSMITTER	TJB-A	24VDC ANALOG SIGNAL	A1								16930-51	
PIT-2-3-2	LOWER ZONE BOOSTER PUMP NO.2 OUTLET PRESSURE TRANSMITTER	TJB-A	24VDC ANALOG SIGNAL	A1								16930-51	
FIT-2-4-1	LOWER ZONE BOOSTER PUMP OUTLET FLOW TRANSMITTER	TJB-A	24VDC ANALOG SIGNAL	A1	TJB-A	120VAC DISCRETE SIGNAL	D2	LPA (28)	120/1	20A/1P	2#12 & #12G	16990-01	
FE-2-4-1	LOWER ZONE BOOSTER PUMP OUTLET FLOW METER	FIT-2-4-1	MFG SIGNAL CABLE	M1								16910-51	
FV-2-5-1	LOWER ZONE BOOSTER PUMP OUTLET CONTROL VALVE	TJB-A	120VAC DISCRETE SIGNAL	D16				MCC-A	480/3	15A/3P	3#12 & #12G		
AIT-3-1-1	LOWER ZONE CHLORINE RESIDUAL ANALYZER	TJB-A	24VDC ANALOG SIGNAL	A1	TJB-A	120VAC DISCRETE SIGNAL	D6	LPA (30)	120/1	20A/1P	2#12 & #12G		1
AE-3-1-1	LOWER ZONE CHLORINE RESIDUAL SENSOR	AIT-3-1-1	MFG SIGNAL CABLE	M1									1
FV-3-2-1	GROUND STORAGE RESERVOIR CONTROL VALVE	TJB-A	120VAC DISCRETE SIGNAL	D16				MCC-A	480/3	15A/3P	3#12 & #12G		
PIT-3-3-1	LOWER ZONE PRESSURE TRANSMITTER	TJB-A	24VDC ANALOG SIGNAL	A1								16930-51	
P-3-4-1	UPPER ZONE CHLORINE FEED PUMP	TJB-A	24VDC ANALOG SIGNAL	A1	TJB-A	120VAC DISCRETE SIGNAL	D6	LPA (32)	120/1	20A/1P	2#12 & #12G		2
WIT-3-4-1	LOWER ZONE CHLORINE DRUM WEIGH SCALE TRANSMITTER	TJB-A	24VDC ANALOG SIGNAL	A1	TJB-A	120VAC DISCRETE SIGNAL	D4	LPA (34)	120/1	20A/1P	2#12 & #12G		3
WE-3-4-1	LOWER ZONE CHLORINE DRUM WEIGH SCALE	WIT-3-4-1	MFG SIGNAL CABLE	M1									3
PIT-4-1-1	UPPER ZONE BOOSTER PUMP NO.1 INLET PRESSURE TRANSMITTER	TJB-A	24VDC ANALOG SIGNAL	A1								16930-51	
PIT-4-1-2	UPPER ZONE BOOSTER PUMP NO.2 INLET PRESSURE TRANSMITTER	TJB-A	24VDC ANALOG SIGNAL	A1								16930-51	
PIT-4-1-3	UPPER ZONE BOOSTER PUMP NO.3 INLET PRESSURE TRANSMITTER	TJB-A	24VDC ANALOG SIGNAL	A1								16930-51	
PIT-4-1-4	UPPER ZONE BOOSTER PUMP NO.4 INLET PRESSURE TRANSMITTER	TJB-A	24VDC ANALOG SIGNAL	A1								16930-51	
TSH-4-2-1	UPPER ZONE BOOSTER PUMP NO.1 MOTOR HIGH TEMPERATURE SENSOR	MCC-A	120VAC DISCRETE SIGNAL	D2									
TSH-4-2-2	UPPER ZONE BOOSTER PUMP NO.2 MOTOR HIGH TEMPERATURE SENSOR	MCC-A	120VAC DISCRETE SIGNAL	D2									
TSH-4-2-3	UPPER ZONE BOOSTER PUMP NO.3 MOTOR HIGH TEMPERATURE SENSOR	MCC-A	120VAC DISCRETE SIGNAL	D2									
TSH-4-2-4	UPPER ZONE BOOSTER PUMP NO.4 MOTOR HIGH TEMPERATURE SENSOR	MCC-A	120VAC DISCRETE SIGNAL	D2									
PIT-4-3-1	UPPER ZONE BOOSTER PUMP NO.1 OUTLET PRESSURE TRANSMITTER	TJB-A	24VDC ANALOG SIGNAL	A1								16930-51	
PIT-4-3-2	UPPER ZONE BOOSTER PUMP NO.2 OUTLET PRESSURE TRANSMITTER	TJB-A	24VDC ANALOG SIGNAL	A1								16930-51	
PIT-4-3-3	UPPER ZONE BOOSTER PUMP NO.3 OUTLET PRESSURE TRANSMITTER	TJB-A	24VDC ANALOG SIGNAL	A1								16930-51	
PIT-4-3-4	UPPER ZONE BOOSTER PUMP NO.4 OUTLET PRESSURE TRANSMITTER	TJB-A	24VDC ANALOG SIGNAL	A1								16930-51	
FE-5-1-1	UPPER ZONE BOOSTER PUMP OUTLET FLOW METER	FIT-5-1-1	MFG SIGNAL CABLE	M1								16910-51	
FIT-5-1-1	UPPER ZONE BOOSTER PUMP OUTLET FLOW TRANSMITTER	TJB-A	24VDC ANALOG SIGNAL	A1	TJB-A	120VAC DISCRETE SIGNAL	D2	LPA (36)	120/1	20A/1P	2#12 & #12G	16990-01	
FV-5-2-1	UPPER ZONE CONTROL VALVE	TJB-A	120VAC DISCRETE SIGNAL	D16				MCC-A	480/3	15A/3P	3#12 & #12G		
AIT-5-2-1	UPPER ZONE CHLORINE RESIDUAL ANALYZER	TJB-A	24VDC ANALOG SIGNAL	A1	TJB-A	120VAC DISCRETE SIGNAL	D6	LPA (30)	120/1	20A/1P	2#12 & #12G		1
AE-5-2-1	UPPER ZONE CHLORINE RESIDUAL SENSOR	AIT-5-2-1	MFG SIGNAL CABLE	M1									1
PIT-5-2-1	UPPER ZONE PRESSURE TRANSMITTER	TJB-A	24VDC ANALOG SIGNAL	A1								16930-51	
P-5-3-1	UPPER ZONE CHLORINE FEED PUMP	TJB-A	24VDC ANALOG SIGNAL	A1	TJB-A	120VAC DISCRETE SIGNAL	D6	LPA (38)	120/1	20A/1P	2#12 & #12G		2
WIT-5-3-1	UPPER ZONE CHLORINE DRUM WEIGH SCALE TRANSMITTER	TJB-A	24VDC ANALOG SIGNAL	A1	TJB-A	120VAC DISCRETE SIGNAL	D4	LPA (40)	120/1	20A/1P	2#12 & #12G		3
WE-5-3-1	UPPER ZONE CHLORINE DRUM WEIGH SCALE	WIT-5-3-1	MFG SIGNAL CABLE	M1									3
TSH/L-6-1-1	PUMP ROOM HIGH/LOW TEMPERATURE SWITCH	TJB-A	120VAC DISCRETE SIGNAL	D4								16990-01	7
TSH/L-6-1-2	CHEMICAL ROOM HIGH/LOW TEMPERATURE SWITCH	TJB-A	120VAC DISCRETE SIGNAL	D4								16990-01	7
TSH/L-6-1-3	GEN. ROOM HIGH/LOW TEMPERATURE SWITCH	TJB-A	120VAC DISCRETE SIGNAL	D4								16990-01	7
TSH/L-6-1-4	MCC ROOM HIGH/LOW TEMPERATURE SWITCH	TJB-A	120VAC DISCRETE SIGNAL	D4								16990-01	7
XS-7-1-1	CHEMICAL ROOM EXTERIOR HVAC CONTROL STATION (START-STOP-RUN)	TJB-A	120VAC DISCRETE SIGNAL	D6									6
XS-7-1-2	CHEMICAL ROOM INTERIOR HVAC CONTROL STATION (START-STOP-RUN)	TJB-A	120VAC DISCRETE SIGNAL	D6									
JS-8-1-1	GENERATOR RUN RELAY	TJB-A	120VAC DISCRETE SIGNAL	D2									4
JS-8-1-2	GENERATOR FAIL RELAY	TJB-A	120VAC DISCRETE SIGNAL	D2									4
JS-8-1-3	GENERATOR EXERCISE RELAY	TJB-A	120VAC DISCRETE SIGNAL	D2									4
JS-8-1-4	AUTOMATIC TRANSFER SWITCH NORMAL POSITION RELAY	TJB-A	120VAC DISCRETE SIGNAL	D2									5
XS-9-1-1	PUMP ROOM INTRUSION MOTION DETECTOR	TJB-A	12VDC DISCRETE SIGNAL	D4									10
XS-9-1-2	GEN. ROOM INTRUSION MOTION DETECTOR	TJB-A	12VDC DISCRETE SIGNAL	D4									10
XS-9-1-3	MCC ROOM INTRUSION MOTION DETECTOR	TJB-A	12VDC DISCRETE SIGNAL	D4									10
LSH-9-1-1	PUMP ROOM FLOOD SWITCH	TJB-A	120VAC DISCRETE SIGNAL	D2								16909-05	
ZS-9-2-1	PUMP ROOM DOOR SWITCH	TJB-A	120VAC DISCRETE SIGNAL	D4									10
ZS-9-2-2	GEN. ROOM DOOR SWITCH	TJB-A	120VAC DISCRETE SIGNAL	D4									10
ZS-9-2-3	MCC ROOM DOOR SWITCH	TJB-A	120VAC DISCRETE SIGNAL	D4									10
TJB	TERMINAL JUNCTION BOX	MCC-A	24VDC ANALOG SIGNAL	A10	MCC-A	120VAC DISCRETE SIGNAL	D96						8,9
RTU-A	SCADA SYSTEM CONTROL PANEL	TJB-A	24VDC ANALOG SIGNAL		TJB-A	120VAC DISCRETE SIGNAL		LPA (42)	120/1	20A/1P	2#12 & #12G		10

NOTES:
1. INSTALL CONDUIT, BOX, AND MANUFACTURER SUPPLIED CABLING FOR CHLORINE RESIDUAL ANALYZER IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. INSTALL CONDUIT, RECEPTACLE, POWER WIRING, AND SIGNAL WIRING FOR FUTURE CHEMICAL FEED PUMP. INTERLOCK DEDICATED SIMPLEX OUTLET WITH SIGNAL WIRING FROM MCC-A.
3. INSTALL CONDUIT AND BOX FOR FUTURE WEIGH SCALE.
4. COORDINATE TERMINATIONS AND CONFIGURATION OF PROGRAMMABLE RELAYS LOCATED WITHIN GENERATOR CONTROL PANEL WITH GENERATOR MANUFACTURER.
5. COORDINATE TERMINATIONS AND CONFIGURATION OF PROGRAMMABLE RELAY LOCATED WITHIN AUTOMATIC TRANSFER SWITCH WITH GENERATOR MANUFACTURER.
6. PROVIDE WEATHERPROOF, LOCKABLE EXTERIOR ENCLOSURE FOR CONTROL STATION.
7. SYMBOL IDENTIFIES LOCATION FOR TWO TEMPERATURE SENSORS. INSTALL SENSORS ADJACENT TO ONE ANOTHER AND COMBINE SIGNAL WIRING INTO A SINGLE CONDUIT.
8. PROVIDE 1"C FOR ETHERNET DATA CABLING FROM MCC-A.
9. INSTALL TERMINAL JUNCTION BOX AND TERMINATE ALL FIELD WIRING. COIL SUFFICIENT AFD COMMUNICATION ETHERNET CABLE IN TJB TO EXTEND TO RTU-A.
~~10. RTU-A PROVIDED AND INSTALLED BY OTHERS ALONG WITH ALL SIGNAL WIRING TO TJB. CO TO PROVIDE 120V CONNECTION AS SHOWN.~~

10. PROVIDE RTU-A PANEL WITH ALLEN-BRADLEY MICROLOGIX 1200 WITH MEMORY/REAL TIME CLOCK MODULE AND EXPANSION I/O MODULES TO PROVIDE 20% MORE I/O POINTS THAN NEEDED. INSTALL A MDS TRANSNET SPREAD SPECTRUM RADIO. THE CONTRACTOR TO SUPPLY 2 SPARE MDS TRANSNET 900 MHZ RADIOS AND A SPARE POLYPHASER. MDS TRANSNET SPREAD SPECTRUM RADIOS, POLYPHASER LIGHTNING ARRESTORS, ANTENNA CABLE GROUNDING KIT, AND ASSOCIATED ACCESSORIES SHALL BE PROVIDED BY TWIN CITIES INDUSTRIAL CONTROL AT (877) 307-6648.





PROCESS INSTRUMENTATION PLAN
SCALE: 1/4" = 1'-0"

PLAN NOTES:
1. INSTALL MOTOR AND TEMPERATURE SWITCH CONNECTIONS PER (16111-03)
2. INSTALL (2) 3" C. FROM RTU-A TO RESERVOIR, THEN A MINIMUM OF 10' UP SIDE OF RESERVOIR TO EXISTING ANTENNA LOCATION. PULL EXISTING ANTENNA CABLE INNEW CONDUITS TO RTU-A, REFER TO SITE PLAN.
3. INSTALL 1" C. FROM LIGHT POLE TO RTU-A FOR SECURITY CAMERA CABLE. INSTALL 2 SECURITY CAMERAS AND CABLE TO LONGWATCH BOX THROUGH RTU-A.
4. HEAT DETECTOR TO BE CONNECTED TO CONTROL PANEL TJB. HEAT DETECTORS WILL BE POWERED FROM RTU-A.
5. PUMP ROOM FLOOD SWITCH SHALL BE CONSOLIDATED ELECTRIC MODEL 101G OR EQUAL.

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Consultant:
Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES
4664 GOLDEN POND PARK CT.
HOBART, WISCONSIN 54155
PHONE: 920-662-9641
FAX: 920-662-9141
WWW.RELEEINC.COM

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CITY OF OAK CREEK, WISCONSIN

DESIGNED BY DATE	DRAWN BY DATE	CHECKED BY DATE
D.A.M. 8/13/09	R.L.B. 8/13/09	K.A.K. 8/13/09

PROCESS INSTRUMENTATION PLAN
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. N.T.S.	32
PROFILE HOR. N.T.S.	OF
VER. N.T.S.	53

100-E-02 03

PLAN VIEW: PLAN
LAYOUT: LAYOUT
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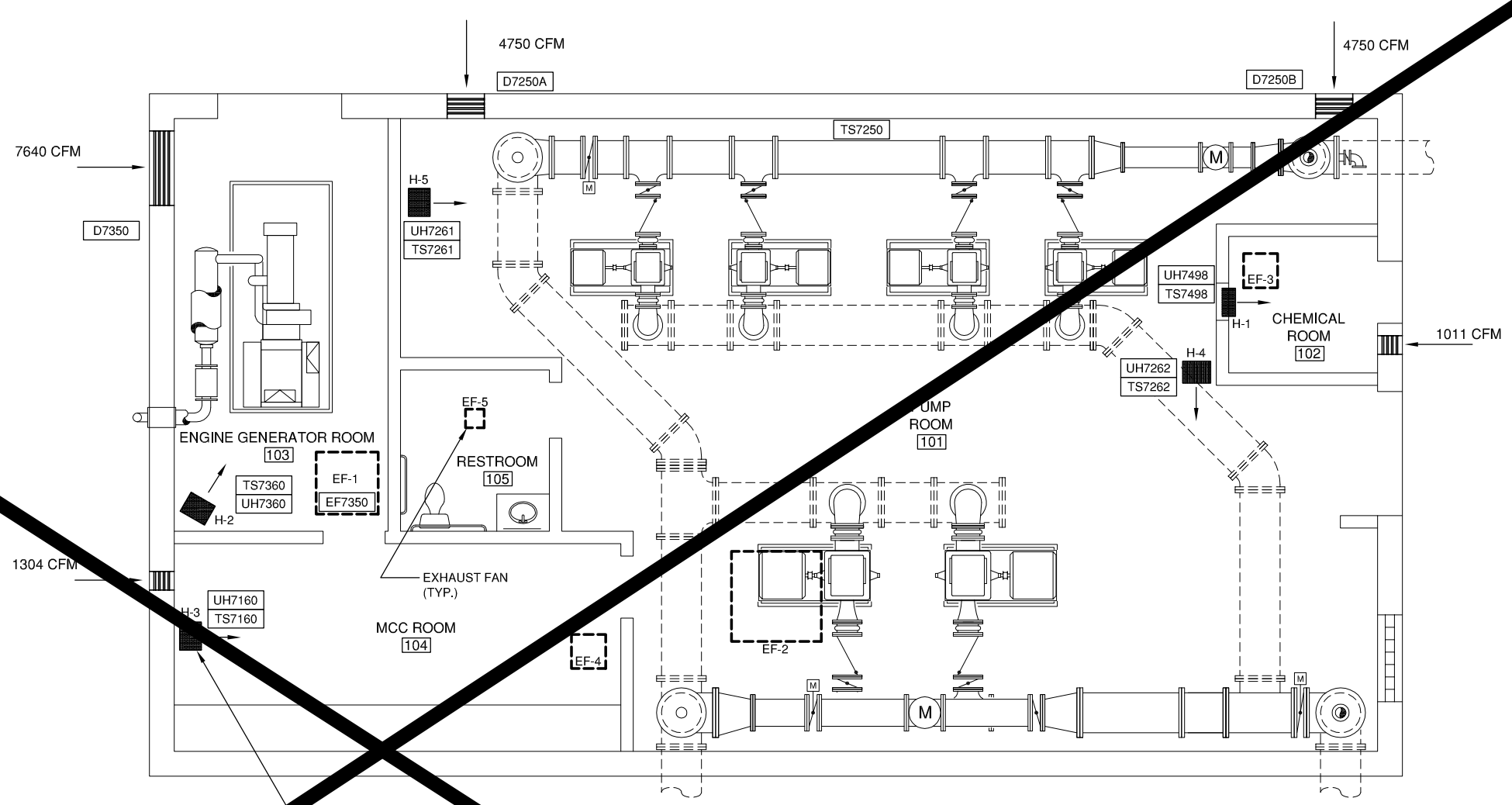

HVAC PLAN

SCALE: 1/4" = 1'-0"

ELECTRIC UNIT HEATERS

UNIT NO.	SERVICE	TYPE	CAP KW	AIR VOL. CFM	MOTOR WATTS	INTEGRAL STAT	MANUF. MODEL
H-2	GENERATOR RM	HORIZ.	5	270	6.00	NO (1)	BERKO HUH-520SA
H-3	MCC ROOM	HORIZ.	5	270	6.0	NO (1)	BERKO HUH-520SA
H-4/-5	PUMP ROOM	HORIZ.	5	270	6.0	NO (1)	BERKO HUH-520SA

(1) EXTERNAL THERMOSTAT KIT

ELECTRIC WALL HEATERS

UNIT NO.	SERVICE	W	H	D	CAP. WATTS	CAP. BTU	RECESS	INTEGRAL STAT	MANUF. MODEL
H-1	CHEMICAL	15 25/32"	19 3/16"	3 3/4"	3000	10,239	YES	YES	GREENHECK SP-200

CEILING EXHAUST FANS

UNIT NO.	SERVICE	CFM OF STD. AIR	TYPE	MAX SONES	EXT. S.P. IN IN. H2O	MOTOR WATTS	MOTOR RPM	SOLID STATE SPEED CONTROLLER	MANUF. MODEL
	BATHROOM	100	CEILING	4	0'-0 1/2"	173	2.20	NONE	GREENHECK SP-200

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HOBART, WISCONSIN 54155
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HVAC PLAN

IN: PUETZ ROAD BOOSTER STATION

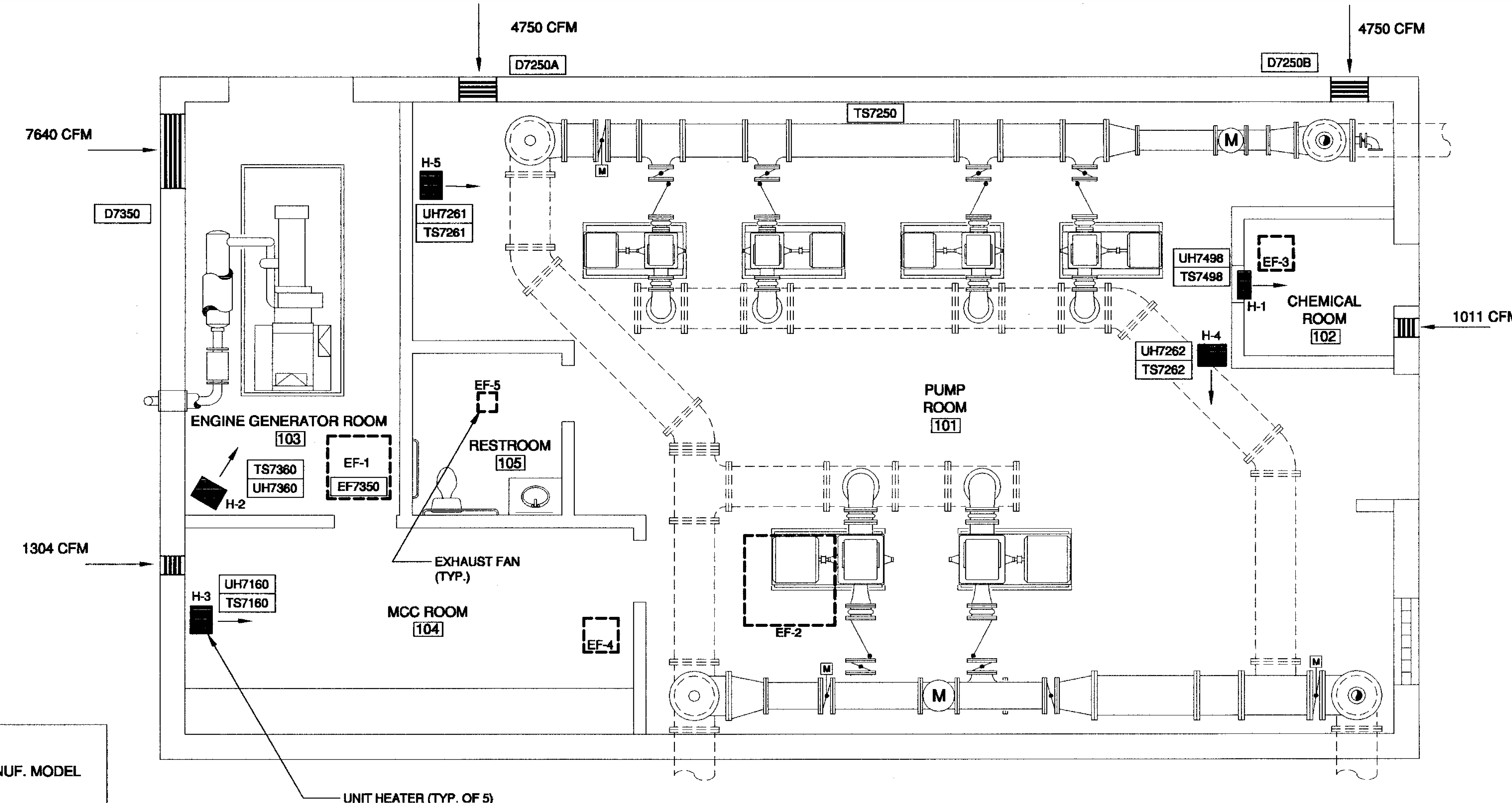
FILE NO: 08101

APPROVED BY
UTILITY ENGINEER DATE

APPROVED BY
ENGINEER DATE

SCALE | SHEET
PLAN HOR. N.T.S. | 33
PROFILE HOR. N.T.S. | OF
VER. N.T.S. | 53

100-H-01



HVAC PLAN
SCALE: 1/4" = 1'-0"

ELECTRIC UNIT HEATERS

UNIT NO.	SERVICE	TYPE	CAP KW	AIR VOL. CFM	MOTOR WATTS	INTEGRAL STAT	MANUF. MODEL
H-2	GENERATOR RM	HORIZ.	5	270	6.00	NO (1)	BERKO HUH-520SA
H-3	MCC ROOM	HORIZ.	5	270	6.0	NO (1)	BERKO HUH-520SA
H-4/-5	PUMP ROOM	HORIZ.	5	270	6.0	NO (1)	BERKO HUH-520SA

(1) EXTERNAL THERMOSTAT KIT

ELECTRIC WALL HEATERS

UNIT NO.	SERVICE	W	H	D	CAP. WATTS	CAP. BTU	RECESS	INTEGRAL STAT	MANUF. MODEL
H-1	CHEMICAL	15 25/32"	19 3/16"	3 3/4"	3000	10,239	YES	YES	BERKO FRA-4024

CEILING EXHAUST FANS

UNIT NO.	SERVICE	CFM OF STD. AIR	TYPE	MAX SONES	MOTOR RPM	MANUF. MODEL
EF-1	ENGINE GEN. ROOM	7640	CEILING	12.20	530	GREENHECK GB-300-10
EF-2	PUMP ROOM	9500	CEILING	7.60	225	GREENHECK GB-480-7
EF-3	CHEMICAL ROOM	1011	CEILING	6	860	GREENHECK G-131-C
EF-4	MCC ROOM	1304	CEILING	9.40	1140	GREENHECK GB-131-B
EF-5	RESTROOM	100	CEILING	4	2.20	GREENHECK SP-200

FOR CONSTRUCTION

SA. ST. W. G. E. T. I. TS. PP.

Consultant:
Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES
4664 GOLDEN POND PARK CT.
HOBART, WISCONSIN 54155
PHONE: 920-662-9641
FAX: 920-662-9141
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HVAC PLAN
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE | SHEET
PLAN HOR. N.T.S. | 33
PROFILE HOR. N.T.S. | OF
VER. N.T.S. | 53

100-H-01

PLAN VIEW: PLAN LAYOUT: LAYOUT
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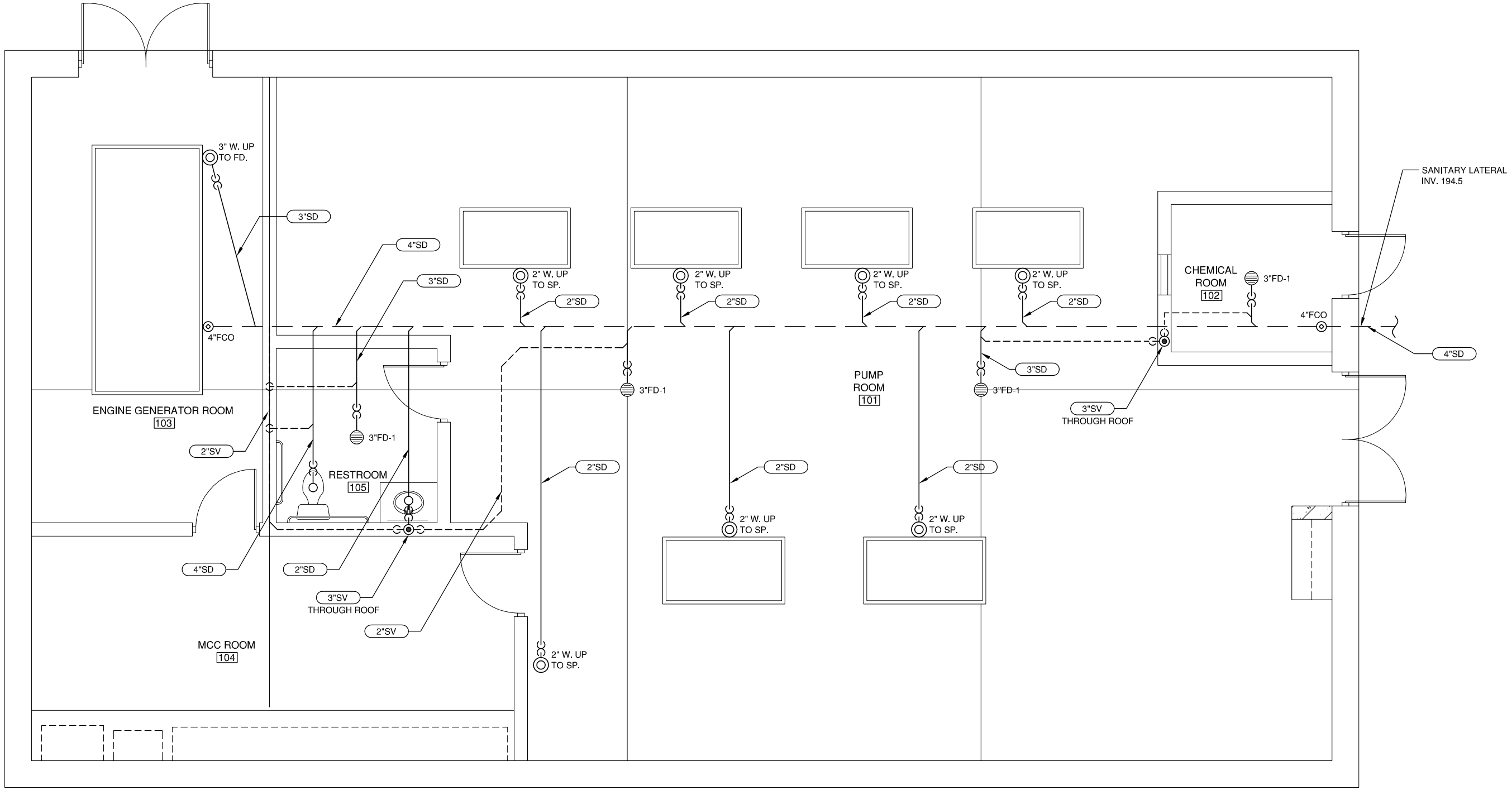

NORTH

PLUMBING PLAN

SCALE: 3/8" = 1'-0"

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Consultant:

Robert E. Lee & Associates, Inc.

ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES

4664 GOLDEN POND PARK CT.
HOBART, WISCONSIN 54155
PHONE: 920-662-9841
FAX: 920-662-9141
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SANITARY DRAIN AND VENT PLAN

IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY

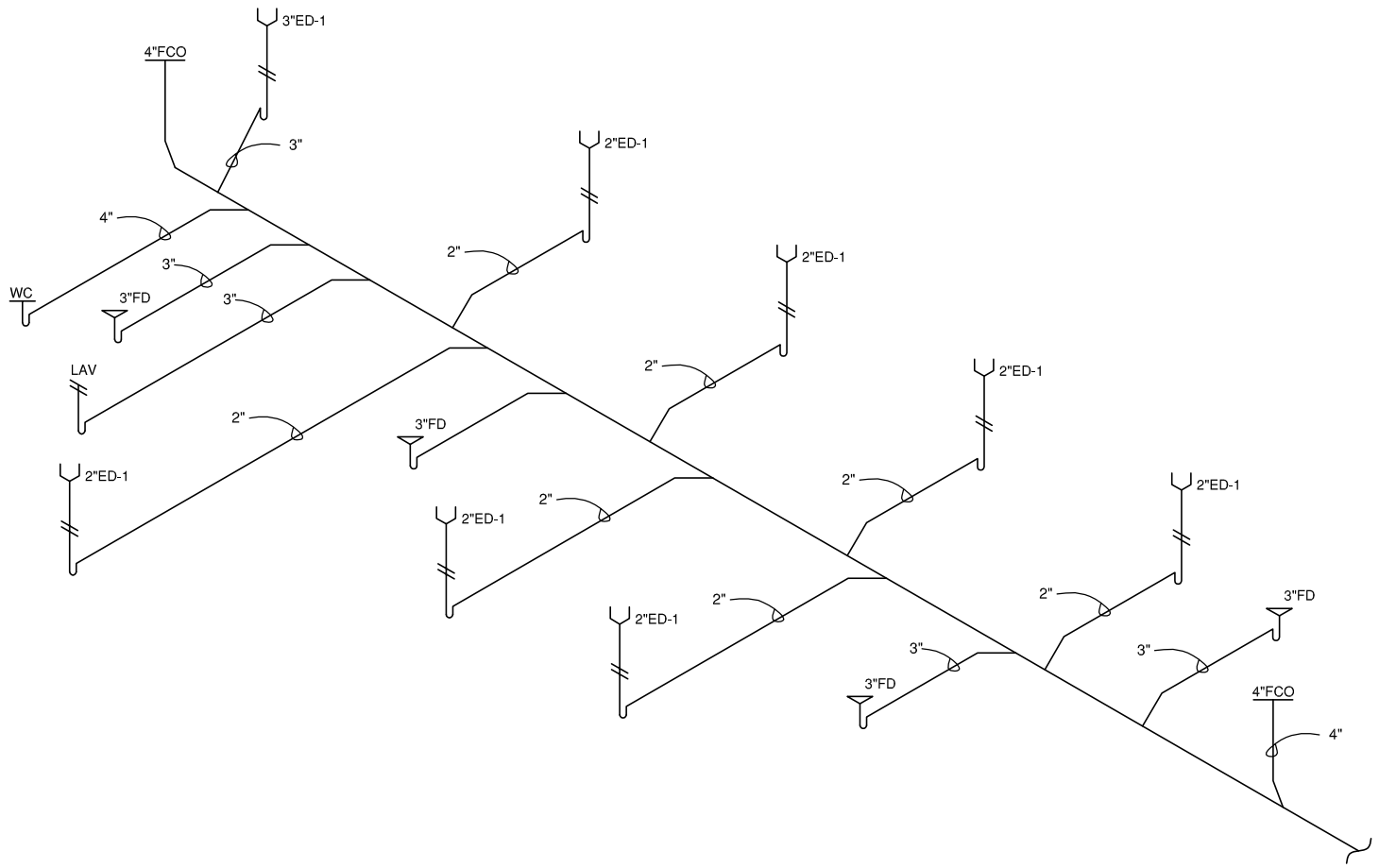
UTILITY ENGINEER | DATE

APPROVED BY

CITY ENGINEER | DATE

SCALE	SHEET
PLAN HOR. N.T.S.	34
PROFILE HOR. N.T.S.	OF
VER. N.T.S.	53

100-P-01



DRAIN AND VENT ISOMETRIC

GENERAL NOTES:

1. EXISTING EQUIPMENT LOCATIONS AND PIPE ROUTING ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETAILED SITE INVESTIGATION AND IS RESPONSIBLE FOR MINOR MODIFICATIONS REQUIRED BY EXISTING CONDITIONS. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR EXACT PIPE ROUTING AND INSTALLATION REQUIREMENTS DUE TO SITE CONDITIONS. NO ADDITIONAL CONTRACT COST WILL BE ALLOWED DUE TO A FAILURE OF THE CONTRACTOR TO ADEQUATELY IDENTIFY CONDITIONS THAT MAY AFFECT HIS WORK.
2. DO NOT SCALE DRAWING. INSTALL THE FIXTURES TO THE ROUGHING-IN DIMENSIONS SHOWN ON THE ARCHITECTURAL PLANS. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION BEFORE CONTINUING WITH CONSTRUCTION. ALL LOCATIONS ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED. COORDINATE WITH OWNER AND FIELD ENGINEER.
3. THE CONTRACTOR SHALL VERIFY ACTUAL PIPING LENGTHS AND SIZES.
4. ALL PIPES, FITTINGS, AND CONNECTIONS SHALL BE WATER TIGHT.
5. CONTRACTOR SHALL REVIEW ENTIRE PLANS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION AND DETAILS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIREMENTS REQUIRED HEREIN.
6. CONTRACTORS SHALL BE QUALIFIED PROFESSIONALS. ALL WORK SHALL BE INSTALLED IN A WORKMANLIKE MANNER. ALL WORK SHALL COMPLY WITH ALL RELEVANT CODES, REGULATIONS, AND GUIDANCES.
7. CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL PIPING, FIXTURES, AND EQUIPMENT WITH ALL DISCIPLINES TO ELIMINATE CONFLICTS. DO NOT INSTALL ANY PIPING OR DEVICES ABOVE ELECTRICAL PANELS.
8. ALL PENETRATIONS SHALL BE SUPPORTED, SEALED, AND FIRESTOPPED TO MATCH THE ORIGINAL FIRE RATING OF THE STRUCTURE PENETRATED.
9. PLUMBING CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL WATER DISTRIBUTION PIPING IN THE CEILINGS WITH THE ELECTRICAL LIGHT FIXTURES AND HVAC DUCT WORK AND PIPING.
10. PLUMBING CONTRACTOR SHALL COORDINATE THE LOCATIONS OF ALL FLOOR DRAINS AND SIGHT DRAINS IN MECHANICAL ROOMS WITH THE MECHANICAL CONTRACTOR.

FOR CONSTRUCTION

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Consultant:
Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES
4664 GOLDEN POND PARK CT.
HOBART, WISCONSIN 54155
PHONE: 920-662-9641
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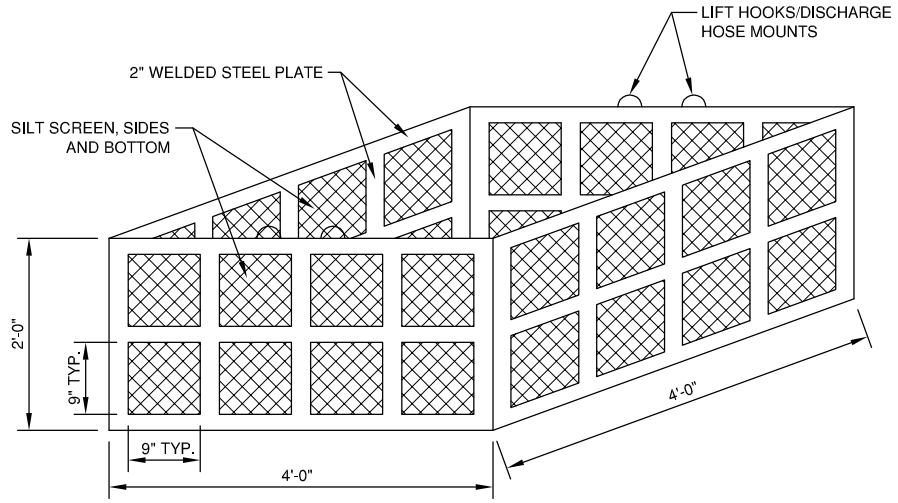
SANITARY WASTE AND VENT PIPING ISOMETRIC
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

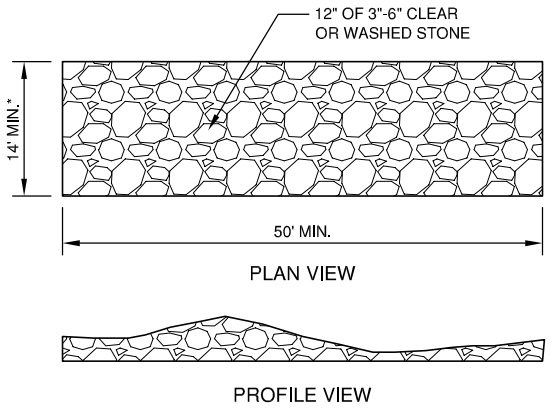
APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. N.T.S.	35
PROFILE HOR. N.T.S.	OF
VER. N.T.S.	53

100-P-02

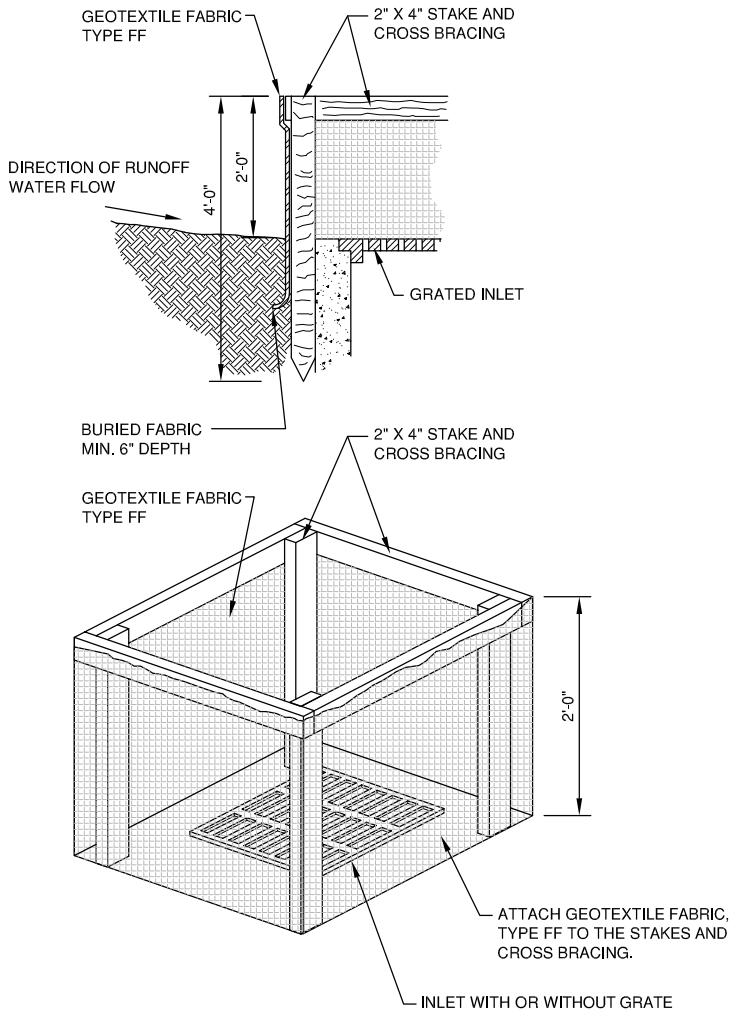


SEDIMENTATION CONTROL BASKET
(IF APPLICABLE)

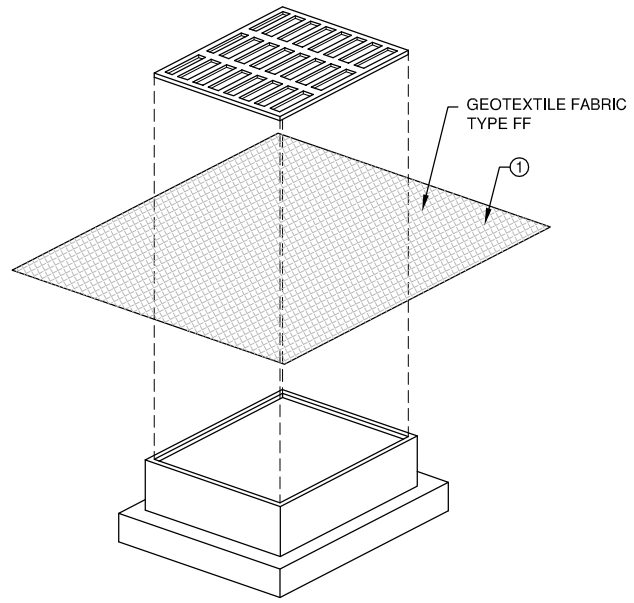


*14' MIN. OR FULL WIDTH OF THE EGRESS POINT.
REFERENCE WDNR TECHNICAL STANDARD 1057.

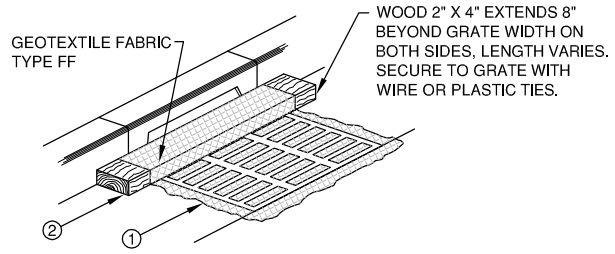
TRACKING PAD DETAIL
(IF APPLICABLE)



INLET PROTECTION, TYPE A



INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)
(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C
(WITH CURB BOX)

INLET PROTECTION NOTES:

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE WDOT PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

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

1. FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
2. FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
3. FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2"X4".

INSTALLATION NOTES:
TYPE "B" & "C"

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

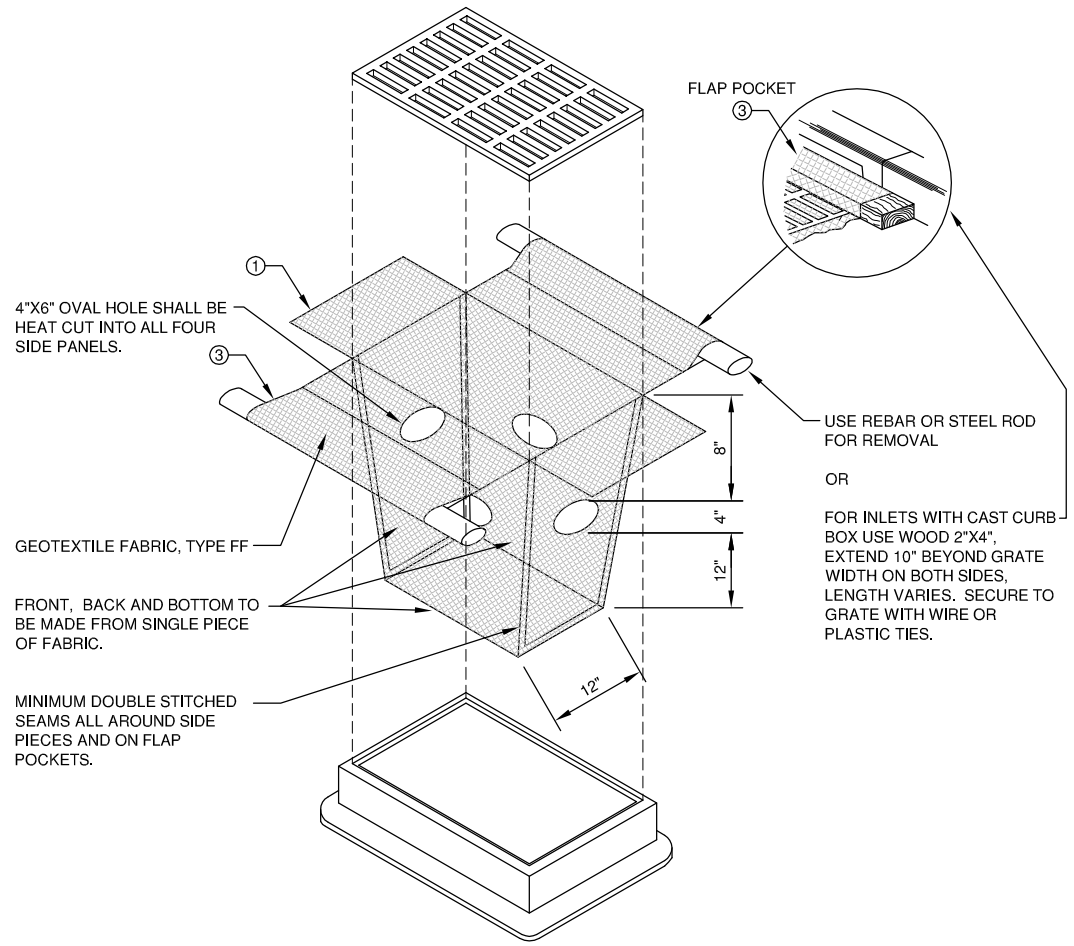
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE "D"

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30" MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE, THE TIES SHALL BE PLACED AT THE MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.



INLET PROTECTION, TYPE D
(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT CURB BOX AS PER NOTE "2")

FOR CONSTRUCTION

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I.
TS.
PP.

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ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES
4664 GOLDEN POND PARK CT.
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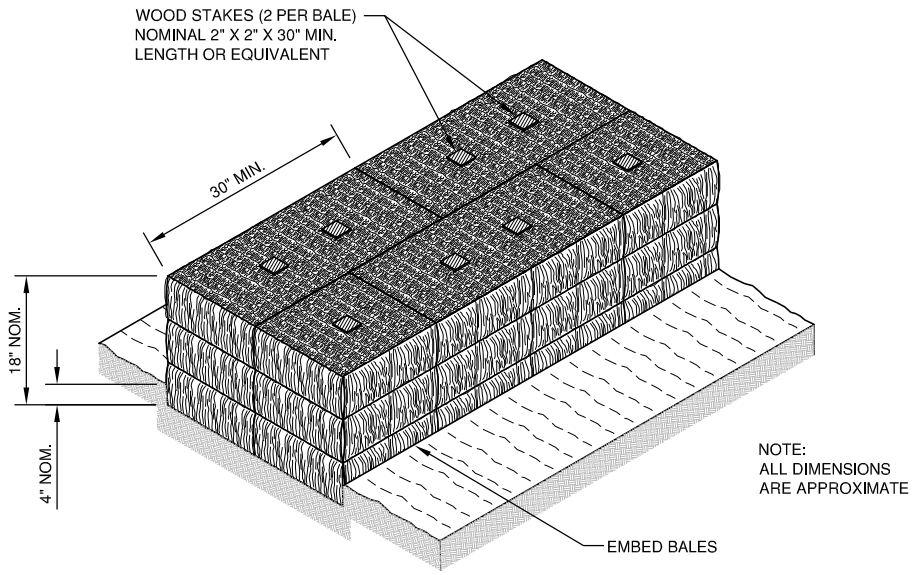
EROSION CONTROL DETAILS
INLET PROTECTION
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

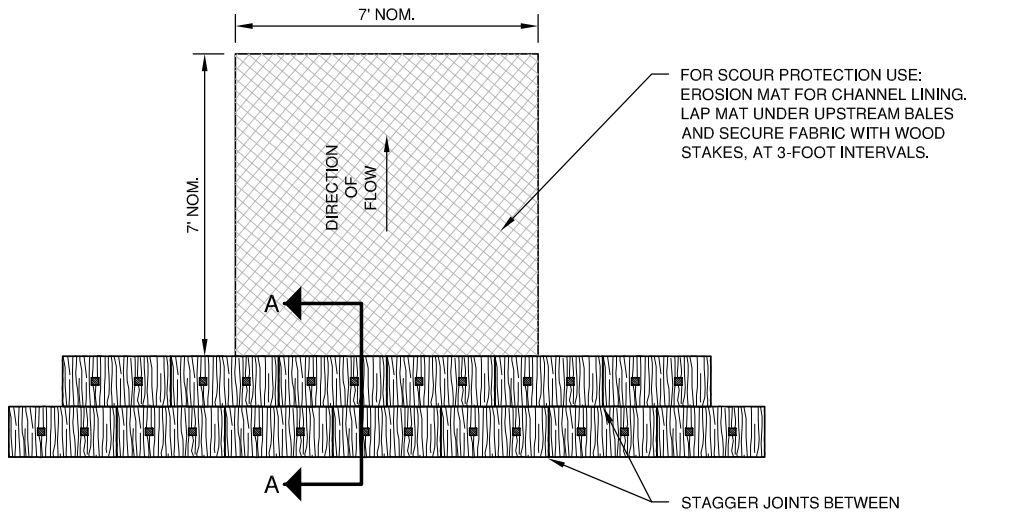
APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. N.T.S.	36
PROFILE HOR. N.T.S. VER. N.T.S.	OF 53

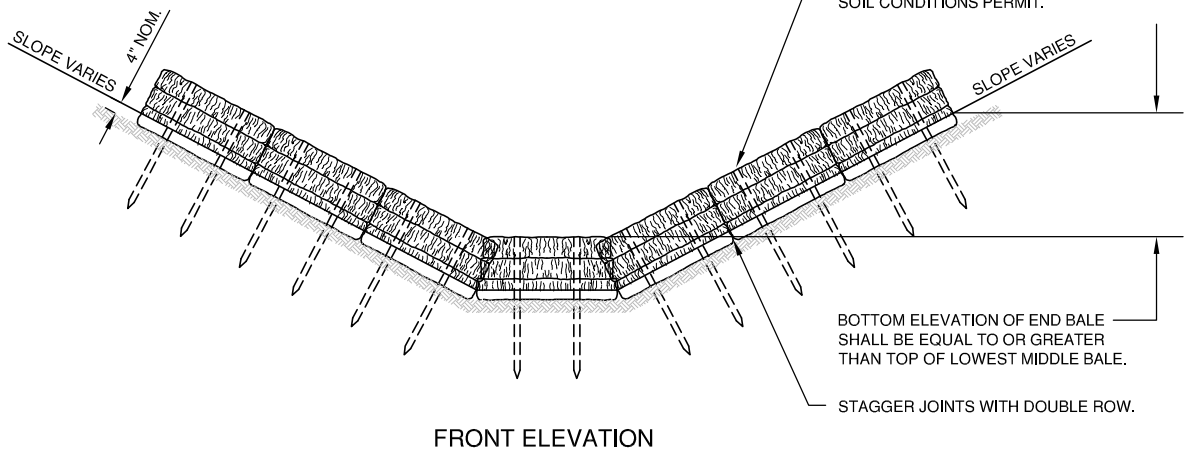
200-C-01



SECTION A-A

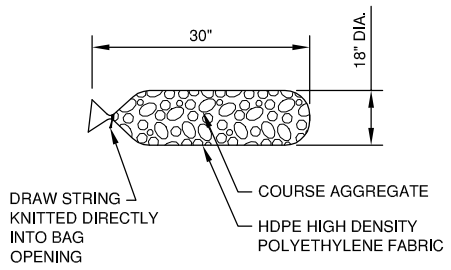


PLAN VIEW



FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES
TYPE A



FILTER BAG DETAIL

COURSE AGGREGATE INFORMATION

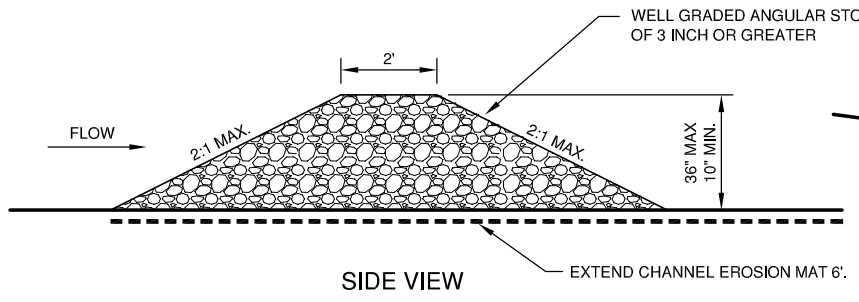
SIEVE SIZE	SIZE NO. AASHTO No. 67 (1)
2 INCH (50 mm)	-
1 1/2 INCH (37.5mm)	-
1 INCH (25.0 mm)	100
3/4 INCH (19.0mm)	90-100
3/8 INCH (9.5mm)	20-55
No. 4 (4.75mm)	0-10
No. 8 (2.36mm)	0-5

(1) SIZE No. ACCORDING TO AASHTO M 43

NOTES:

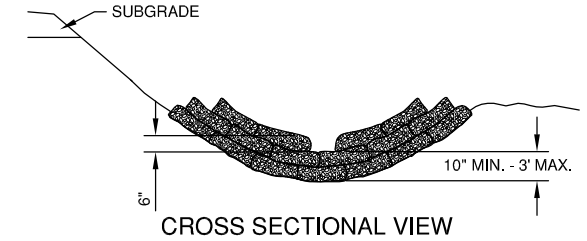
18" X 30" ROCK FILLED FILTER BAG SHALL BE COMPRISED OF THE FOLLOWING:
HDPE HIGH DENSITY POLYETHYLENE
HDPE HIGH DENSITY POLYETHYLENE DRAW STRING KNITTED DIRECTLY INTO BAG OPENING.
80% FABRIC CLOSURE WITH APPARENT OPENING SIZE NO LARGER THAN 1/8 " X 1/8 "
ROLLED SEAM USING A MINIMUM OF 480 DENIER POLYESTER SEWING YARN FOR STRENGTH AND DURABILITY.

USE WELL GRADED COURSE AGGREGATE CONFORMING TO THE FOLLOWING GRADATION REQUIREMENTS

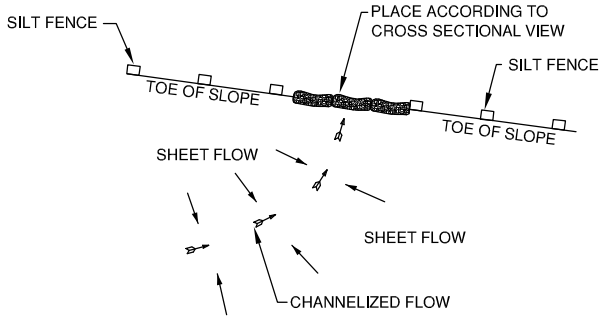


SIDE VIEW

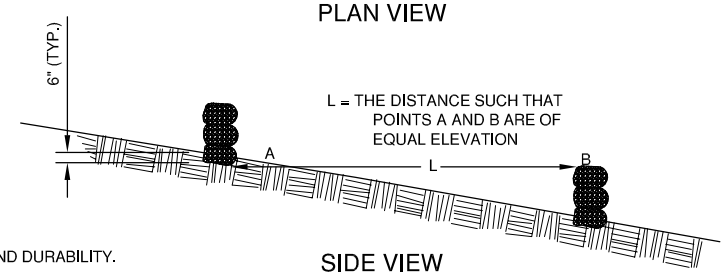
ROCK FILLED EROSION CONTROL BAGS
TYPE B



CROSS SECTIONAL VIEW

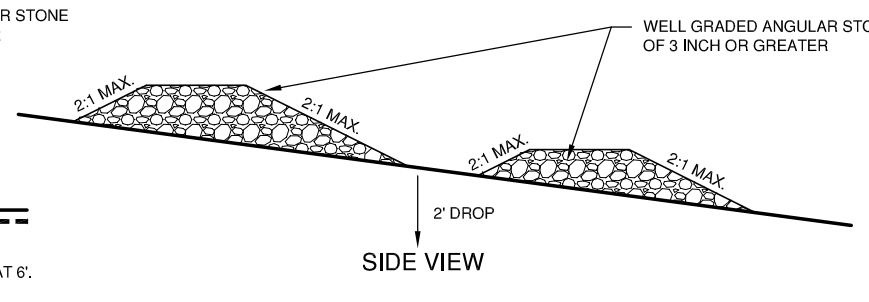


PLAN VIEW



SIDE VIEW

DITCH CHECK DETAIL

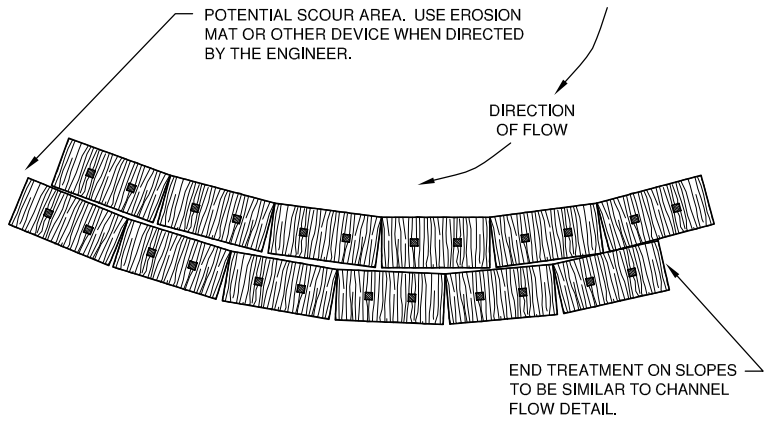


SIDE VIEW

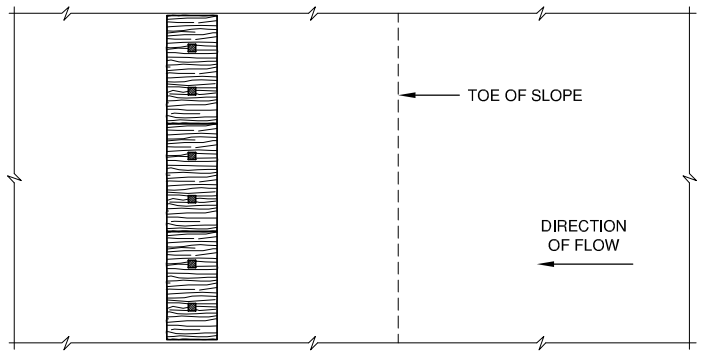
TEMPORARY DITCH CHECK USING STONE
TYPE C

FOR CONSTRUCTION

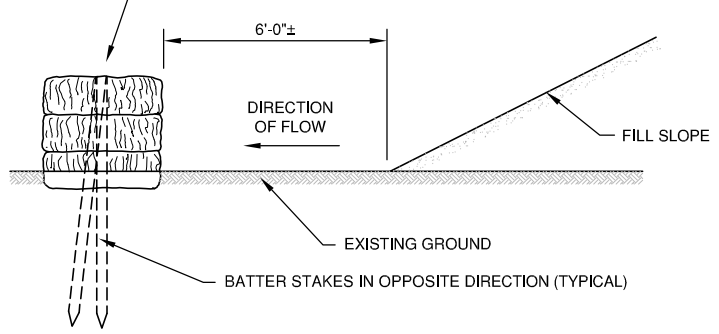
SA. ST. W. G. E. T. I. TS. PP.	Consultant: Robert E. Lee & Associates, Inc. ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES 4664 GOLDEN POND PARK CT. HOBART, WISCONSIN 54155 PHONE: 920-662-9541 FAX: 920-662-9141 WWW.RELEEINC.COM	CITY OF OAK CREEK, WISCONSIN DESIGNED BY D.A.M. DATE 8/13/09 | DRAWN BY R.L.B. DATE 8/13/09 | CHECKED BY K.A.K. DATE 8/13/09 EROSION CONTROL DETAILS DITCH CHECK IN: PUETZ ROAD BOOSTER STATION	APPROVED BY UTILITY ENGINEER DATE APPROVED BY CITY ENGINEER DATE SCALE: PLAN HOR. N.T.S. PROFILE HOR. N.T.S. VER. N.T.S. SHEET: 37 OF 53 200-C-02
	REVISION BY DATE	FILE NO: 08101	



PLAN VIEW
(WHEN ALTERING THE DIRECTION OF FLOW)

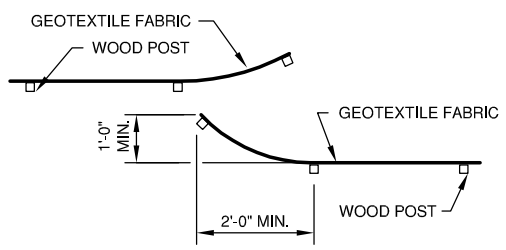


PLAN VIEW



FRONT ELEVATION
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

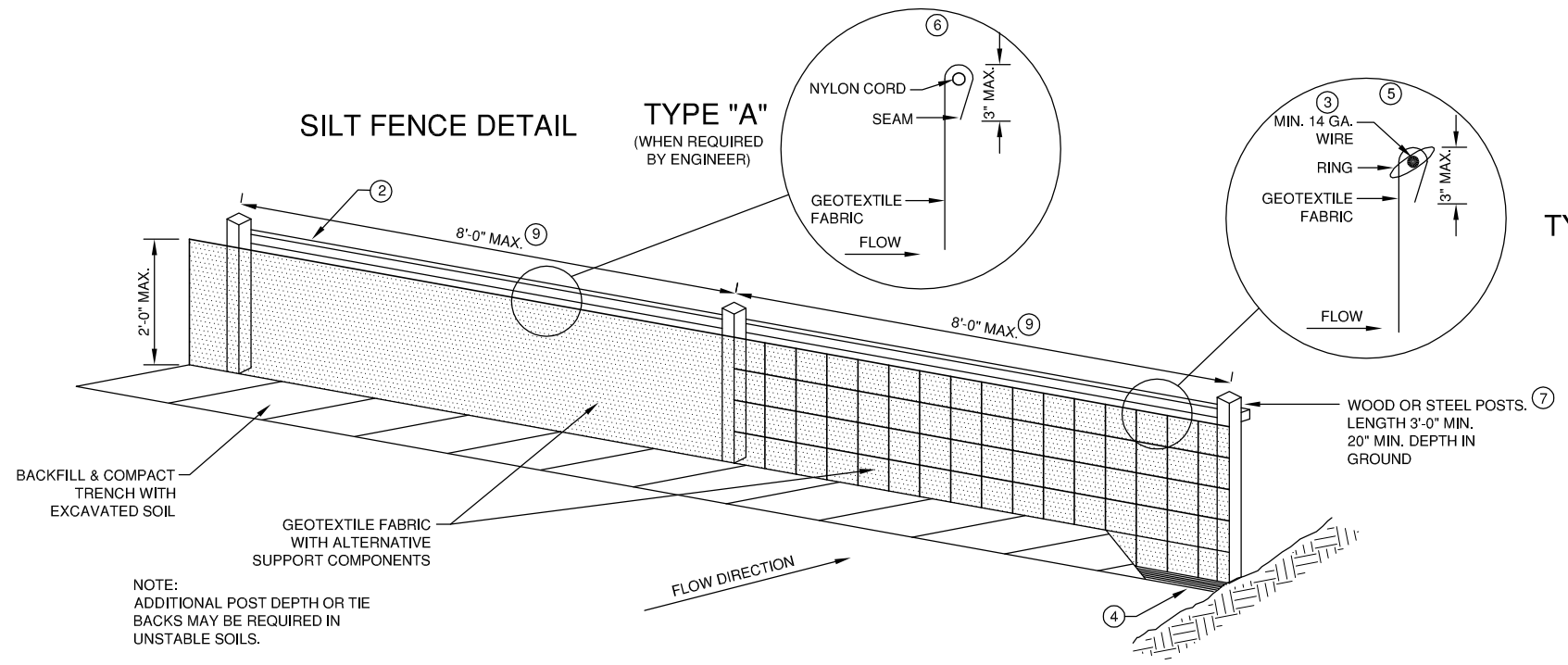
EROSION BALES FOR SHEET FLOW



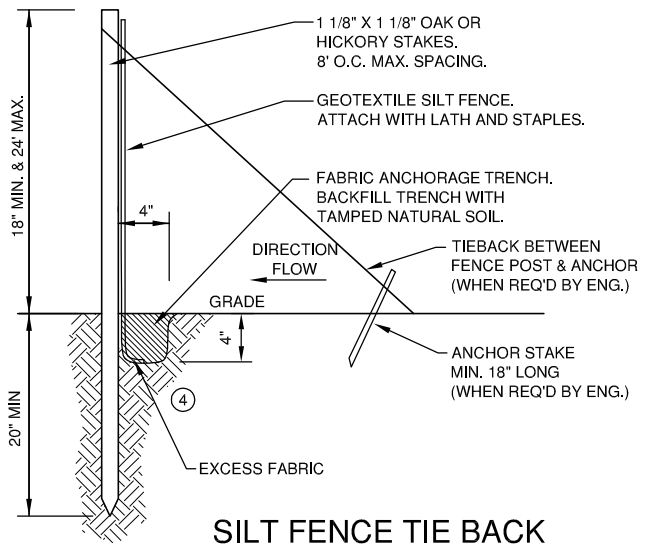
HOOK METHOD (8)

JOINING TWO LENGTHS OF SILT FENCE

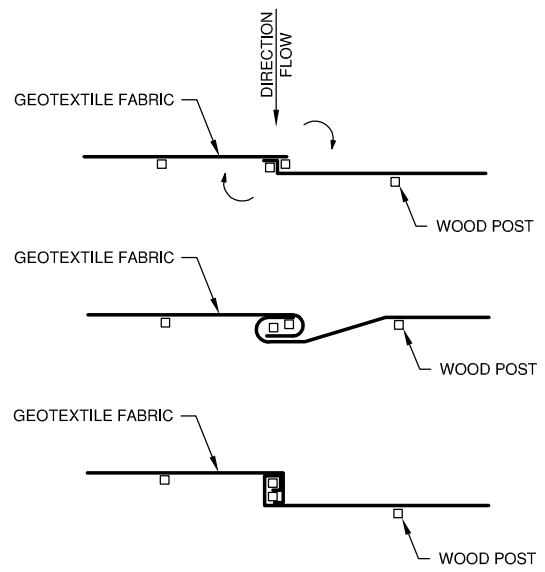
SILT FENCE DETAIL



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



SILT FENCE TIE BACK



TWIST METHOD (8)

SILT FENCE NOTES:

1. EROSION CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH WDNR TECHNICAL STANDARD.
2. CROSS BRACE WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS AS DIRECTED BY THE ENGINEER.
3. MINIMUM 14 GAUGE WIRE REQUIRED, FOLD FABRIC 3" OVER THE WIRE AND STAPLE OR PLACE WIRE RINGS ON 12" C.C.
4. EXCAVATE A TRENCH A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
5. WIRE SUPPORT FENCE SHALL BE 14 GAUGE MINIMUM WOVEN WIRE WITH A MAXIMUM MESH SPACING OF 6". SECURE TOP OF GEOTEXTILE FABRIC TO TOP OF FENCE WITH STAPLES OR WIRE RINGS AT 12" C.C. (TYPE B)
6. GEOTEXTILE FABRIC SHALL BE REINFORCED WITH AN INDUSTRIAL POLYPROPYLENE NETTING WITH A MAXIMUM MESH SPACING OF 3/4" OR EQUAL. A HEAVY DUTY NYLON TOP SUPPORT CORD OR EQUIVALENT IS REQUIRED. (TYPE A)
7. STEEL POSTS SHALL BE STUDDED "TEE" OR "U" TYPE WITH A MINIMUM WEIGHT OF 1.28 LBS./LIN. FT. (WITHOUT ANCHOR) FIN ANCHORS SUFFICIENT TO RESIST POST MOVEMENT ARE REQUIRED. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY.
8. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL, IF POSSIBLE, BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY, USE ONE OF THE FOLLOWING TWO METHODS: A.) TWIST METHOD -- OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B:) HOOK METHOD -- HOOK THE END OF EACH SILT FENCE LENGTH.
9. THE MAXIMUM SPACING OF POSTS FOR WOVEN FABRIC SILT FENCE SHALL BE 8 FEET AND FOR NON-WOVEN FABRIC, 3 FEET.

EROSION CONTROL SHEET FLOW NOTES:

1. ANY SOIL STOCKPILED THAT REMAINS FOR MORE THAN 7 DAYS SHALL BE COVERED OR TREATED WITH STABILIZATION PRACTICES SUCH AS TEMPORARY OR PERMANENT SEEDING AND MULCHING.
2. A MINIMUM OF 4 INCHES OF TOPSOIL MUST BE APPLIED TO ALL AREAS TO BE SEEDED OR SODDED.
3. ALL WASTE AND UNUSED BUILDING MATERIALS (INCLUDING GARBAGE, DEBRIS, CLEANING WASTES, WASTEWATER, TOXIC MATERIALS, OR HAZARDOUS MATERIALS) SHALL BE PROPERLY DISPOSED OF AND NOT ALLOWED TO BE CARRIED OFF-SITE BY RUNOFF OR WIND.
4. ALL OFF-SITE SEDIMENT DEPOSITS OCCURRING AS A RESULT OF CONSTRUCTION WORK OR A STORM EVENT SHALL BE CLEANED UP BY THE END OF EACH DAY. **FLUSHING SHALL NOT BE ALLOWED.**
5. ANY SOIL EROSION THAT OCCURS AFTER FINAL GRADING AND/OR THE APPLICATION OF STABILIZATION MEASURES MUST BE REPAIRED AND THE STABILIZATION WORK REDONE.
6. FOR ANY DISTURBED AREA THAT REMAINS INACTIVE FOR GREATER THAN 7 WORKING DAYS, OR WHERE GRADING WORK EXTENDS BEYOND THE PERMANENT SEEDING DEADLINES, THE SITE MUST BE TREATED WITH TEMPORARY STABILIZATION MEASURES SUCH AS SOIL TREATMENT, TEMPORARY SEEDING AND/OR MULCHING.
7. ALL TEMPORARY EROSION CONTROL PRACTICES SHALL BE MAINTAINED UNTIL THE SITE IS STABILIZED WITH 70% VEGETATION AND A NOTICE OF TERMINATION HAS BEEN APPROVED BY THE DNR.
8. WIND EROSION SHALL BE KEPT TO A MINIMUM DURING CONSTRUCTION. WATERING, MULCH OR A TACKING AGENT MAY NEED TO BE UTILIZED TO PROTECT NEARBY RESIDENCES/WATER RESOURCES.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL THE EROSION CONTROL MEASURES IN CONFORMANCE WITH THE WDNR CONSERVATION PRACTICE STANDARDS, LATEST EDITION.
10. UPON COMPLETION OF STORM INLET CONSTRUCTION, THE CONTRACTOR SHALL INSTALL STORM DRAIN INLET PROTECTION FOR CONSTRUCTION SITE AS SPECIFIED.
11. FINE SEDIMENT ACCUMULATIONS SHALL BE CLEANED FROM STREETS, PRIVATE DRIVES, OR PARKING AREAS BY MANUAL OR MECHANICAL SWEEPING A MINIMUM OF ONCE PER WEEK AND BEFORE ALL IMMINENT RAINS.
12. EROSION AND SEDIMENT CONTROL STRUCTURES SHALL BE INSPECTED WEEKLY AND WITHIN 24 HOURS OF RAINFALL OF 0.5 INCH OR MORE.

FOR CONSTRUCTION

SA. ST. W. G. E. T. I. TS. PP.

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Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES
4664 GOLDEN POND PARK CT.
HOBART, WISCONSIN 54155
PHONE: 920-662-9641
FAX: 920-662-9141
WWW.RELEEINC.COM

REVISION BY | DATE

CITY OF OAK CREEK, WISCONSIN

DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE
D.A.M.	8/13/09	R.L.B.	8/13/09	K.A.K.	8/13/09

EROSION CONTROL DETAILS
SHEET FLOW
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. N.T.S.	38
PROFILE HOR. N.T.S.	OF
VER. N.T.S.	53

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Plot Date: Sep 01, 2009 - 2:59pm

LAYOUT: LAYOUT

PLAN VIEW: PLAN

GENERAL

G1 SCOPE

THE NOTES AND DETAILS ON THIS SHEET ARE GENERAL AND APPLY TO THE ENTIRE PROJECT EXCEPT WHERE THERE ARE SPECIFIC INDICATIONS TO THE CONTRARY.

G2 APPLICABLE SPECIFICATIONS AND CODES

CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE WISCONSIN ADMINISTRATIVE CODE. THE ABOVE SHALL GOVERN EXCEPT WHERE OTHER APPLICABLE CODES OR THE FOLLOWING NOTES ARE MORE RESTRICTIVE.

G3 ALTERNATIVE DESIGNS

THE STRUCTURAL SYSTEMS AND DETAILS ON THESE PLANS ARE THE PRIORITY DESIGN. ALTERNATIVE SYSTEMS AND DETAILS MAY BE USED IF THE CONTRACTOR SUBMITS PLANS WITH SUBSTANTIATING CALCULATIONS AND TEST DATA, AND IF THE ALTERNATIVE PLANS ARE ACCEPTED BY THE ENGINEER.

G4 DIMENSIONS

STRUCTURAL DIMENSIONS CONTROLLED BY OR RELATED TO MECHANICAL OR ELECTRICAL EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

G5 PROVISIONS FOR EQUIPMENT

MECHANICAL AND ELECTRICAL EQUIPMENT SUPPORTS, ANCHORAGES, OPENINGS, RECESSES AND REVEALS NOT SHOWN ON THE STRUCTURAL DRAWINGS BUT REQUIRED BY OTHER CONTRACT DRAWINGS SHALL BE PROVIDED PRIOR TO CASTING CONCRETE.

G6 CONSTRUCTION LOADS

STRUCTURES HAVE BEEN DESIGNED FOR OPERATIONAL LOADS ON COMPLETED STRUCTURES; DURING CONSTRUCTION, STRUCTURES SHALL BE PROTECTED BY BRACING AND BALANCING WHEREVER EXCESSIVE CONSTRUCTION LOADS MAY OCCUR. ALL TEMPORARY AND PERMANENT SURCHARGE LOADS SHALL BE CONSIDERED.

G7 DRAINAGE SURFACES

SLOPE DRAINAGE SURFACES UNIFORMLY TO DRAIN. SLOPE SHALL BE 1/4-IN. PER FOOT EXCEPT WHERE NOTED OTHERWISE ON THE PLANS.

G8 FLOOR DRAINS

SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR LOCATIONS AND SIZES.

STRUCTURAL

S1 DESIGN CODE

DESIGN IS IN ACCORDANCE WITH THE LATEST EDITION OF THE WISCONSIN ADMINISTRATIVE CODE EXCEPT WHERE OTHER APPLICABLE CODES OR THE FOLLOWING NOTES ARE MORE RESTRICTIVE.

S2 DESIGN LIVE LOADS

WALKWAYS AND STAIRS -- 100 PSF

GROUND SNOW LOAD -- 40 PSF

WIND -- 20 PSF

S3 CONSTRUCTION JOINTS

LOCATION OF ALL CONSTRUCTION JOINTS SHALL HAVE THE APPROVAL OF THE ENGINEER. MAXIMUM LENGTH OF WALL AND SLAB POURS 40'. MAXIMUM HEIGHT OF WALL POURS 16' UNLESS OTHERWISE APPROVED BY ENGINEER. IN WATERTIGHT STRUCTURES, CONTINUOUS WATERSTOPS SHALL BE PROVIDED IN THE CONSTRUCTION JOINTS. CONSTRUCTION JOINTS SHALL BE AS DETAILED ON THE DRAWINGS.

ALUMINUM

A1 APPLICABLE CODE

DESIGN AND CONSTRUCTION OF ALUMINUM STRUCTURES SHALL CONFORM TO SUGGESTED SPECIFICATIONS FOR STRUCTURES OF ALUMINUM ALLOYS 6061-T6 AND 6062-T6, AMERICAN SOCIETY OF CIVIL ENGINEERS PROCEEDINGS PAPER NO. 3341, DECEMBER 1962.

A2 MATERIAL

UNLESS OTHERWISE INDICATED, STRUCTURAL ALUMINUM SHALL BE ALLOY 6061-T6 AS SPECIFIED IN ASTM B-308.

A3 ALUMINUM IN CONTACT WITH CONCRETE

WHERE ALUMINUM IS IN CONTACT WITH CONCRETE OR MASONRY SURFACES OR DISSIMILAR METALS, CONTACT SURFACES SHALL BE COATED WITH HEAVY ALKALI-RESISTANT BITUMINOUS PAINT.

STEEL

ST1 APPLICABLE CODE

STEEL CONSTRUCTION SHALL CONFORM TO SPECIFICATIONS AND STANDARDS PRESENTED IN THE LATEST EDITION OF AISC STEEL CONSTRUCTION MANUAL.

ST2 MATERIAL

ALL STRUCTURAL SHAPES, BARS, PLATES AND SHEETS INDICATED ON THE DRAWINGS SHALL CONFORM TO ASTM A-36. ALL PIPE SHALL CONFORM TO ASTM A-53, TYPE E, GRADE B. ALL RECTANGULAR OR SQUARE TUBES SHALL CONFORM TO ASTM A-500, GRADE B.

ST3 WELDING

WELDING SHALL CONFORM TO AWS CODE FOR ARC AND GAS WELDING IN BUILDING CONSTRUCTION. ALL WELDERS MUST BE CERTIFIED, USE E-70XX ELECTRODES. ALL FILLET WELDS SHALL BE FULL LENGTH AND HAVE END RETURNS IN THE SAME PLANE UNLESS NOTED OTHERWISE. ALL BUTT AND GROOVE WELDS SHALL BE FULL PENETRATION UNLESS OTHERWISE NOTED. PROVIDE CONTINUOUS SEAL WELDS AT ALL UNWELDED JOINTS.

ST4 ENCASED STEEL

STEEL ENCASED IN CONCRETE SHALL NOT BE PAINTED ON THAT SURFACE IN CONTACT WITH THE CONCRETE AND SHALL HAVE A CLEAN SURFACE FOR BONDING TO CONCRETE. GALVANIZED STEEL ENCLOSED IN CONCRETE SHALL HAVE SURFACES IN CONTACT WITH THE CONCRETE PHOSPHATIZED AND CLEANED.

ST5 COATINGS

AS SPECIFIED IN SECTION 09800 MISCELLANEOUS METALS SHALL BE GALVANIZED AS SPECIFIED IN SECTION 05500.

CONCRETE

C1 APPLICABLE CODE

CONCRETE CONSTRUCTION SHALL CONFORM TO ACI 318-89 AND ACI 350R-89.

C2 REINFORCING STEEL DETAILS

ALL DETAILING, FABRICATION, AND ERECTION OF REINFORCING BARS, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES (ACI-315), LATEST EDITION.

C3 MATERIAL STRENGTHS

CONCRETE, FC' 4,000 PSI ULTIMATE COMPRESSIVE STRESS AT 28 DAYS. ALL CONCRETE TO BE AIR ENTRAINED PER SPECIFICATIONS.

REINFORCING STEEL SHALL BE DEFORMED AND HAVE A TENSILE YIELD STRENGTH 60,000 PSI (GRADE 60).

C4 CONCRETE COVER

CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOWS WITH A MINIMUM COVER OF ONE BAR DIAMETER.

FOOTINGS AND FOUNDATION MATS CAST AGAINST EARTH -- 3".

FORMED CONCRETE TO BE IN CONTACT WITH GROUND OR WEATHER:

AT BARS GREATER THAN #5 -- 2"
AT BARS #5 OR LESS -- 1-1/2"

C5 MINIMUM REINFORCEMENT

CONCRETE CONSTRUCTION SHALL BE REINFORCED CONCRETE EXCEPT WHERE PLAIN CONCRETE (P/C) IS CALLED OUT ON THE DRAWINGS, IN WHICH CASE NO REINFORCEMENT SHALL BE USED. CONCRETE THAT IS NOT DESIGNATED P/C AND HAS NO REINFORCEMENT INDICATED SHALL BE REINFORCED PER ACI 318-89 AND THE FOLLOWING SCHEDULES:

WALL THICKNESS	SIZE	SPACING, E.W.	POSITION
6"	#4	12"	ON CENTERLINE
8"	#4	12"	E.F.
12" AND GREATER	#5	12"	E.F.

MASS CONCRETE SHALL BE REINFORCED WITH #5 @ 12" E.W. MINIMUM IN ALL FACES.

C6 SHRINKAGE AND TEMPERATURE STEEL

UNLESS OTHERWISE NOTED, SHRINKAGE AND TEMPERATURE REINFORCING STEEL SHALL BE PROVIDED FOR SLABS IN ACCORDANCE WITH THE FOLLOWING SCHEDULES:

SLAB THICKNESS	SIZE	SPACING
4"	#3	12"
5"	#3	12"
6"-7"	#3	12" T & B
8"-12"	#4	12" T & B
GREATER THAN 12"	#5	12" T & B

C7 EXTRA ACCESSORY BARS

IN ADDITION TO NORMAL ACCESSORIES USED TO HOLD REINFORCING STEEL FIRMLY IN POSITION, EXTRA ACCESSORY BARS SHALL BE USED AS FOLLOWS:

IN SLABS #5 RAISER BARS AT 36" O/C MAXIMUM TO SUPPORT TOP REINFORCING STEEL.

IN WALLS WITH TWO CURTAINS #3 "U" OR "Z" SHAPE SPACERS AT 6' O/C E.W.

C8 BAR SPLICES

PROVIDE CLASS "B" LAP SPLICES UNLESS OTHERWISE NOTED. PROVIDE 1.3 X CLASS "B" LAP SPLICES FOR HORIZONTAL BARS WITH MORE THAN 12" OF FRESH CONCRETE CAST BELOW THE REINFORCEMENT. PROVIDE TEMPERATURE REINFORCEMENT WITH A 30 BAR DIAMETER LAP, BUT NOT LESS THAN 12".

PROVIDE THE FOLLOWING LAP LENGTHS (INCHES) FOR SPLICES IN REINFORCING STEEL:

BAR SIZE	CLASS "A"	CLASS "B"
#3	12	14
#4	14	19
#5	18	23
#6	21	28
#7	25	32
#8	30	39
#9	38	49
#10	48	63
#11	59	77

C9 RESTRICTED BAR ANCHORAGE

IN CASES WHERE REINFORCING BARS CANNOT BE EXTENDED AS FAR AS REQUIRED DUE TO THE LIMITED EXTENT OF THE ADJACENT CONCRETE STRUCTURE, THE BARS SHALL EXTEND AS FAR AS POSSIBLE AND END IN STANDARD HOOKS.

C10 STANDARD HOOKS

BARS WITH HOOKS SHALL CONFORM TO THE REQUIREMENTS OF ACI 318-89.

WHERE HOOKS ARE REQUIRED AT EACH END OF REINFORCING STEEL, DETAIL BARS IN AT LEAST 2 PIECES WITH A LAP SPLICE AT THE CENTER EXCEPT WHERE BARS ARE NOT OF SUFFICIENT LENGTH TO ACCOMMODATE THE SPLICE.

C11 GROUND SUPPORTED SLABS

CONCRETE SLABS SUPPORTED BY GROUND, UNLESS OTHERWISE NOTED, SHALL BE 6" THICK, REINFORCED WITH #4 @ 12" O/C. PROVIDE SPECIFIED VAPOR BARRIER. PROVIDE 1/2" THICK PERFORMED JOINT FILLER TO ISOLATE THE SLAB FROM CONTACT WITH THE STRUCTURE ALONG ITS PERIMETER.

C12 SLOPING SLABS

MONOLITHIC SLABS WITH TOPS THAT ARE SLOPED, SHALL HAVE BOTTOMS SLOPED THE SAME AMOUNT, MAINTAINING A UNIFORM SLAB THICKNESS.

C13 CHAMFERS

EXCEPT AS OTHERWISE REQUIRED, EXPOSED CONCRETE CORNERS AND EDGES SHALL HAVE 3/4" CHAMFERS. RE-ENTRANT CORNERS SHALL NOT HAVE FILLETS.

C14 ANCHORS

USE OF ANCHOR BOLTS OR EXPANSION BOLTS IN MASONRY SHALL CONFORM TO AISI TYPE 316 STAINLESS STEEL AND BE GOVERNED BY THE FOLLOWING TABLE:

BOLT DIAMETER	1/2"	5/8"	3/4"	7/8"	1"	1 1/8"	1 1/4"
MIN. EMBEDMENT IN SOLIDLY GROUTED MASONRY	4"	4"	5"	6"	7"	8"	9"
ALLOWABLE SHEAR	550#	750#	1100#	1500#	1850#	2250#	2500#

ALL ANCHOR BOLTS IN CONCRETE SHALL CONFORM TO AISI TYPE 316 STAINLESS STEEL AND HAVE A STRAIGHT EMBEDMENT OF 12 ROD DIAMETERS AND A 90° HOOK LENGTH OF 3 ROD DIAMETERS UNLESS OTHERWISE NOTED. EMBEDDED PORTION OF ALL ANCHOR BOLTS SHALL BE CLEAN AND FREE OF OIL, GREASE, AND ANY FOREIGN SUBSTANCES.

ALL EXPANSION BOLTS FASTENED TO SOLID CONCRETE OR SOLID MASONRY SHALL BE AISI TYPE 316 STAINLESS STEEL WEDGE TYPE IN ACCORDANCE WITH FEDERAL SPECIFICATION EE-S-325, GROUP 11, TYPE 5, CLASS 1. ALLOWABLE LOADS SHALL NOT EXCEED THE MANUFACTURER'S RECOMMENDATIONS.

ALL EXPANSION BOLTS FASTENED TO HOLLOW MASONRY OR HOLLOW CONCRETE SHALL BE AISI TYPE 316 STAINLESS STEEL SLEEVE TYPE IN ACCORDANCE WITH FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 3, CLASS 3. ALLOWABLE LOADS SHALL NOT EXCEED THE MANUFACTURER'S RECOMMENDATIONS.

ALL ADHESIVE ANCHORS SHALL BE AS SPECIFIED IN SECTION 05500.

MASONRY

M1 MORTAR

USE MORTARS SPECIFIED IN SECTION 04100.

FOR CONSTRUCTION

SA.
ST.
W.
G.
E.
T.
I.
TS.
PP.

Consultant:
Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES
4664 GOLDEN POND PARK CT.
HOBART, WISCONSIN 54155
PHONE: 920-662-9641
FAX: 920-662-9141
WWW.RELEEINC.COM

REVISION BY DATE

CITY OF OAK CREEK, WISCONSIN

DESIGNED BY DATE	DRAWN BY DATE	CHECKED BY DATE
D.A.M. 8/13/09	R.L.B. 8/13/09	K.A.K. 8/13/09

STRUCTURAL NOTES
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY
UTILITY ENGINEER DATE
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SCALE	SHEET
PLAN HOR. N.T.S.	39
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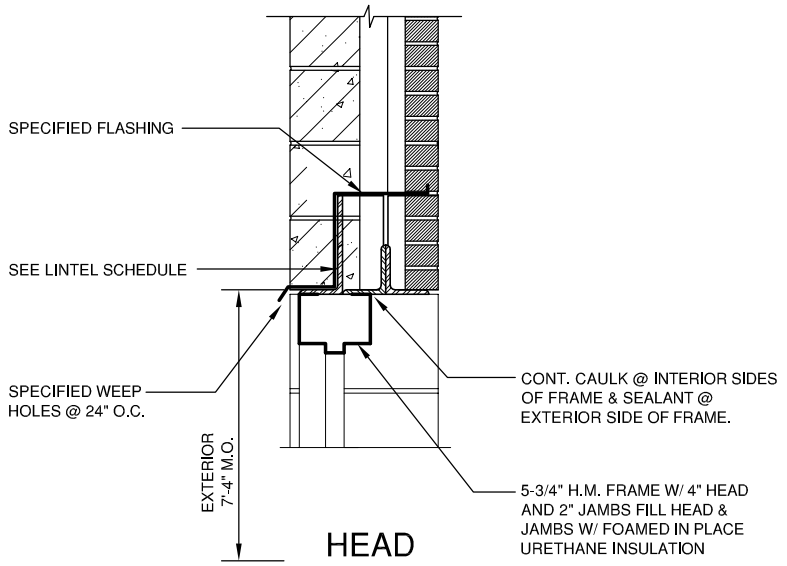
VER. N.T.S.	53

200-AS-01



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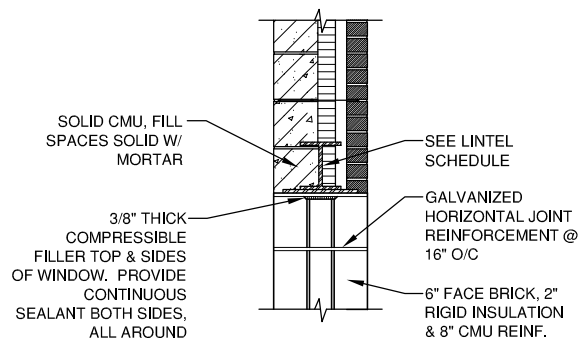

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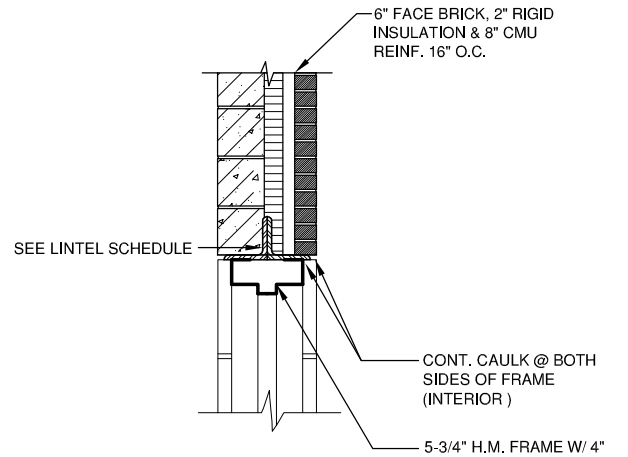

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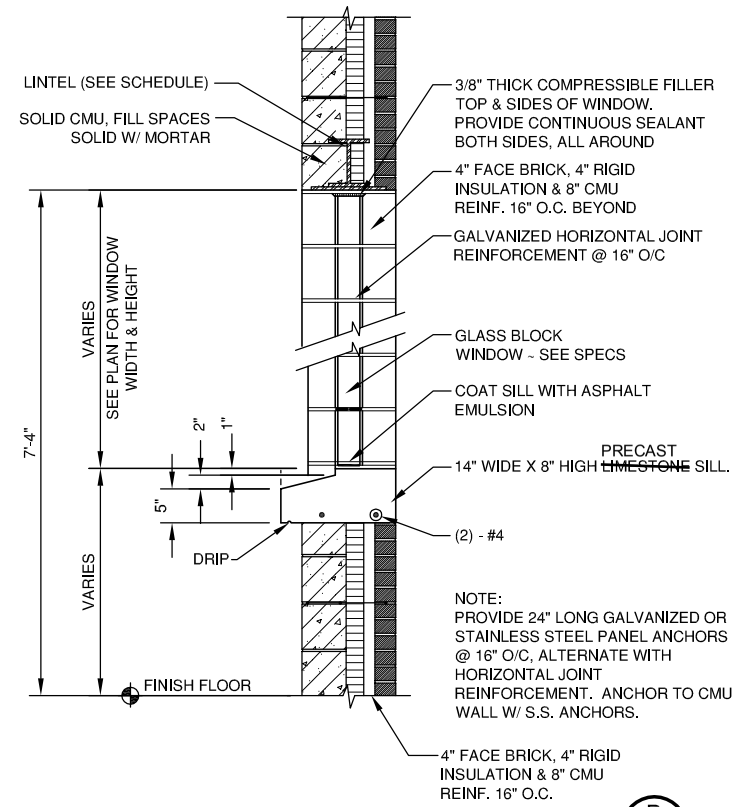
(JAMB SIM.)
C VAR.



GLASS BLOCK WINDOW & LIMESTONE SILL
D VAR.

LINTEL SCHEDULE

MARK	DESCRIPTION	SKETCH	REMARKS
L1	8 X 8 BOND BEAM W/ 3-1/2" x 3-1/2" x 5/16" OR WALL WIDTH x 8" DEEP BOND BEAM W/ #5 BOTTOM	⌐⌐⌐	8" BEARING EACH END
L2	3∠3-1/2" x 3-1/2" x 5/16" OR W8x10 W/ PL 5/16"x11" WELDED TO BOTTOM	⊤	8" BEARING EACH END
L3	W8x10 W/ PL 5/16" x 11" WELDED TO BOTTOM	⊤	8" BEARING EACH END

ROOM FINISH SCHEDULE

NAME	FLOOR: CONCRETE	FLOOR: RESILIENT	FLOOR: EPOXY PT.	FLOOR: CERAMIC	BASE: VINYL	BASE: CERAMIC	BASE: NONE	BASE: CMU	WALL: CONCRETE	WALL: DRYWALL	WALL: OTHER	CEILING: CONCRETE	CEILING: DRYWALL	CEILING: ACOUSTICAL	CEILING: OTHER	NOTES
101 PUMP ROOM	S					X	X	P							P	CEILING T & G
102 CHEMICAL ROOM	S					X	X	P					P		P	
103 GENERATOR ROOM	S					X	X	P							P	CEILING T & G
104 MCC ROOM	S					X	X	P					P		P	
105 RESTROOM	S					X	X	P					P		P	

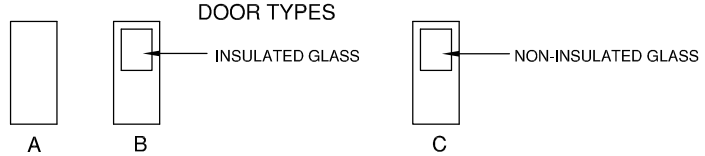
S= SEAL CONCRETE. REFER TO SPEC. SECTION 09800
P= PAINT. REFER TO SPEC SECTION 09800.
X = NO PAINT, PROVIDE AS INDICATED

NOTE:
1. CHLORINE ROOM SHALL BE SEALED GAS TIGHT FROM OTHER ROOMS.

DOOR SCHEDULE

NO.	DOOR SIZE: W	H	T	MAT.	TYPE	GLASS	FRAME MAT.	HRDW. SET	REMARKS
101	2- 3'-0	7'-0	1 3/4	HM	A		HM	2	INSULATE DOOR, FRAME AND PAIR
102	3'-0	7'-0	1 3/4	F.R.P.	A		HM	4	INSULATE DOOR AND FRAME
103	2- 3'-0	7'-0	1 3/4	HM	A		HM	2	INSULATE DOOR, FRAME AND PAIR
104	3'-0	7'-0	1 3/4	HM	A		HM	1	
105	3'-0	7'-0	1 3/4	HM	A		HM	1	
106	3'-0	7'-0	1 3/4	HM	A		HM	5	

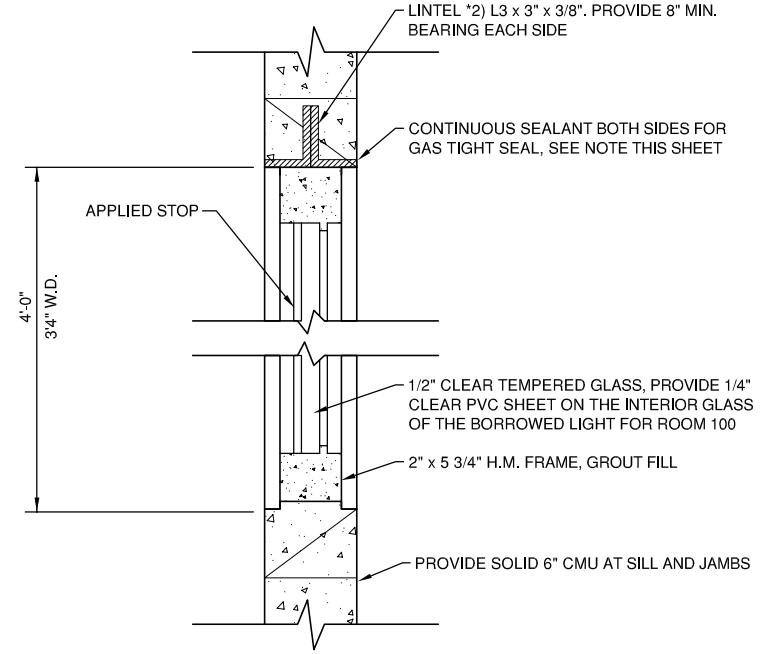
DOOR TYPES



F.R.P. = FIBERGLASS REINFORCED PLASTIC

H.M. = HOLLOW METAL

I.M. = INSULATED METAL DOOR AND FRAME



BORROWED LIGHT DETAIL
E VAR.

NOTE:
PROVIDE JAMB ANCHORS, 2 PER JAMB

FOR CONSTRUCTION

SA. ST. W. G. E. T. I. TS. PP.

Consultant:
Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES
4664 GOLDEN POND PARK CT.
HOBART, WISCONSIN 54155
PHONE: 920-662-9641
FAX: 920-662-9141
WWW.RELEEINC.COM

REVISION BY | DATE

CITY OF OAK CREEK, WISCONSIN

DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE
D.A.M.	8/13/09	R.L.B.	8/13/09	K.A.K.	8/13/09

DOOR AND WINDOW SCHEDULES AND DETAILS
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. N.T.S.	40
PROFILE HOR. N.T.S.	OF
VER. N.T.S.	53

200-AS-02

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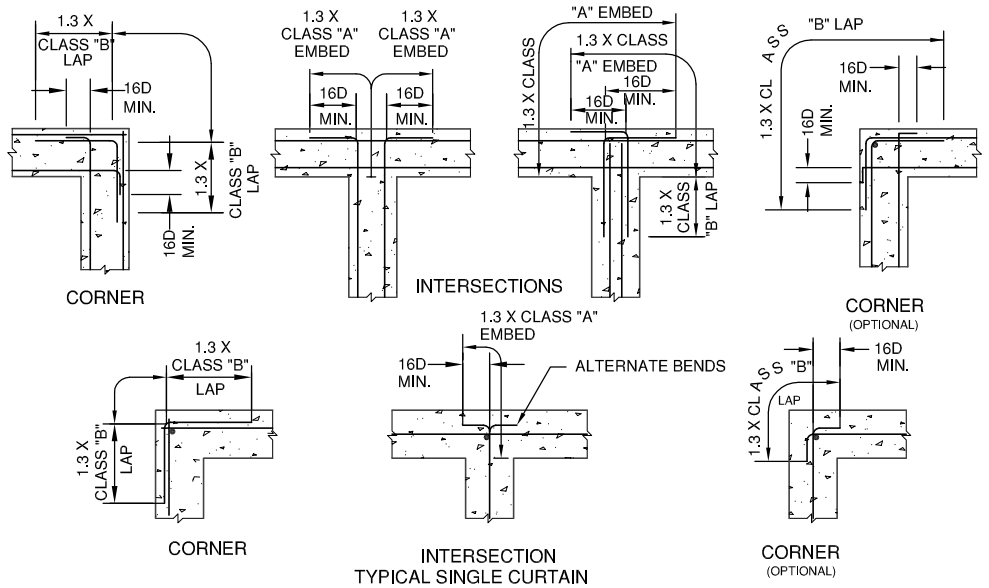
LAYOUT: LAYOUT
PLAN VIEW: PLAN

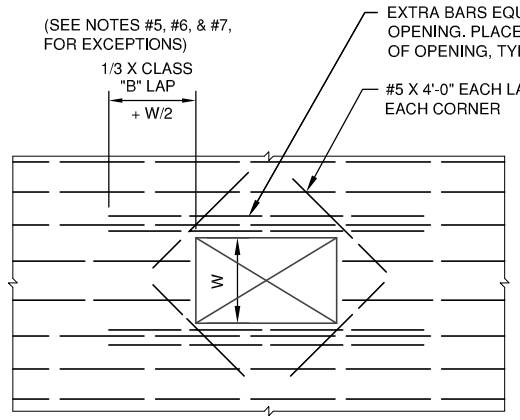


MINIMUM REINFORCING STEEL AT WALL INTERSECTIONS

DETAIL A VAR.

1.) D = BAR DIAMETER

2.) ALL 90° BENDS & EMBEDMENT LENGTHS SHALL BE AS SHOWN AND AS PER ACI 315 UNLESS OTHERWISE INDICATED ON DESIGN DRAWINGS.



REINFORCEMENT AT SLAB & WALL OPENINGS

DETAIL B VAR.

1.) REINFORCEMENT IN OTHER DIRECTION NOT SHOWN, BUT SHALL BE TREATED IN THE SAME MANNER.

2.) W = DIMENSION OF OPENING PERPENDICULAR TO BARS CUT. FOR CIRCULAR OPENINGS, W = DIA.

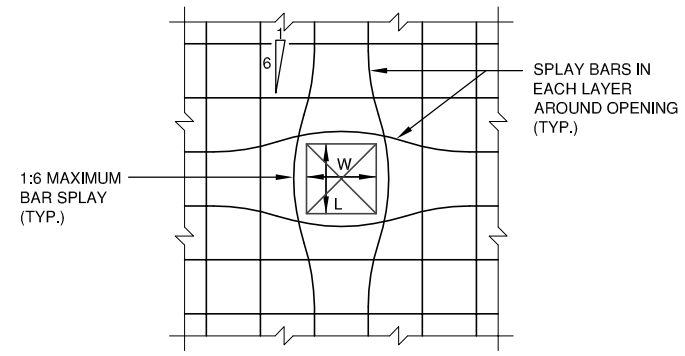
3.) ALL OPENINGS IN WALLS OR SLABS LARGER THAN 12" OR LARGER IN ANY ONE DIRECTION SHALL CONFORM TO THIS DETAIL.

4.) SEE MECH. AND ARCH. DRAWINGS FOR SLAB AND WALL OPENINGS NOT SHOWN ON STRUCTURAL DRAWINGS.

5.) ADDITIONAL BOTTOM BARS IN SLABS SHALL EXTEND FROM CENTER OF SUPPORTS ON EA. SIDE OF OPENING.

6.) ADDITIONAL VERTICAL BARS IN WALLS SHALL EXTEND FULL HEIGHT OF WALL. PROVIDE ADDITIONAL DOWELS TO FOOTING.

7.) PROVIDE STD. 180 HOOK ON END OF ADDITIONAL TOP BARS IN SLABS THAT CANNOT EXTEND TO LENGTH SHOWN.

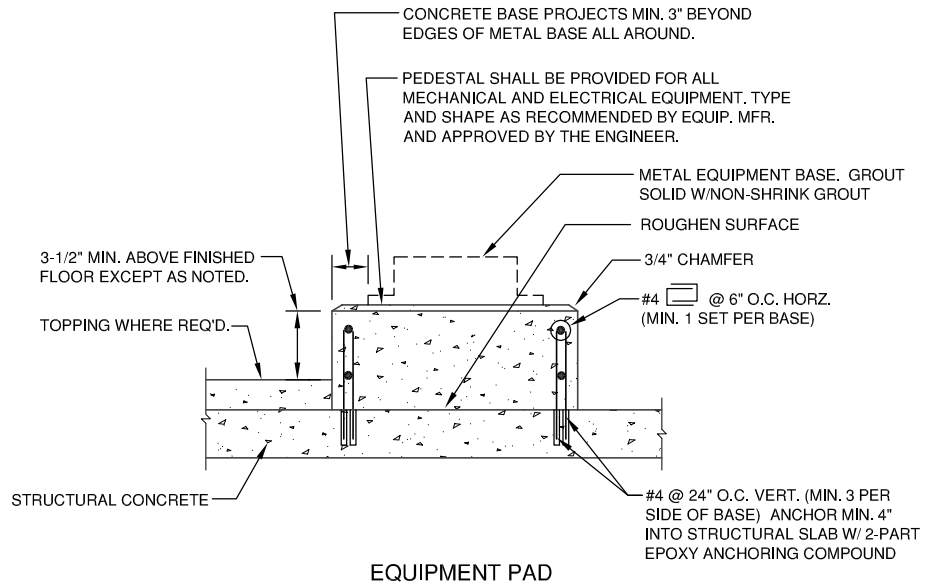


OPENINGS IN STRUCTURAL SLABS & WALLS

DETAIL C VAR.

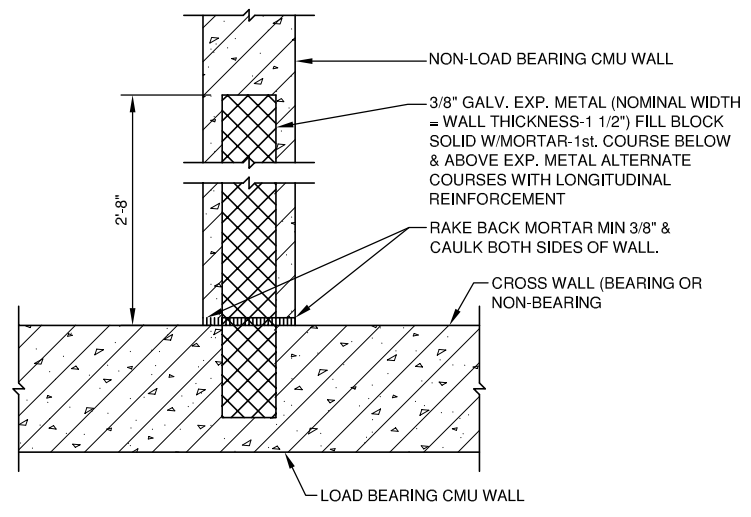
NOTE:

THE DETAIL APPLIES TO RECTANGULAR OR CIRCULAR OPENINGS WHICH HAVE DIMENSIONS LESS THAN 12". SEE DETAIL B, THIS SHEET, FOR OPENINGS 12" OR LARGER.



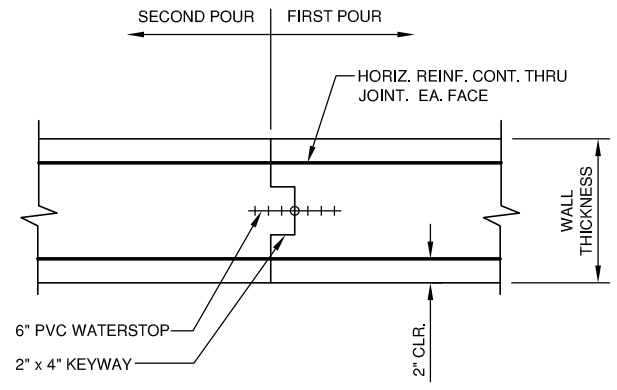
EQUIPMENT PAD

DETAIL D VAR.



INTERSECTING MASONRY WALLS NON-LOAD BEARING WITH LOAD BEARING

DETAIL E VAR.

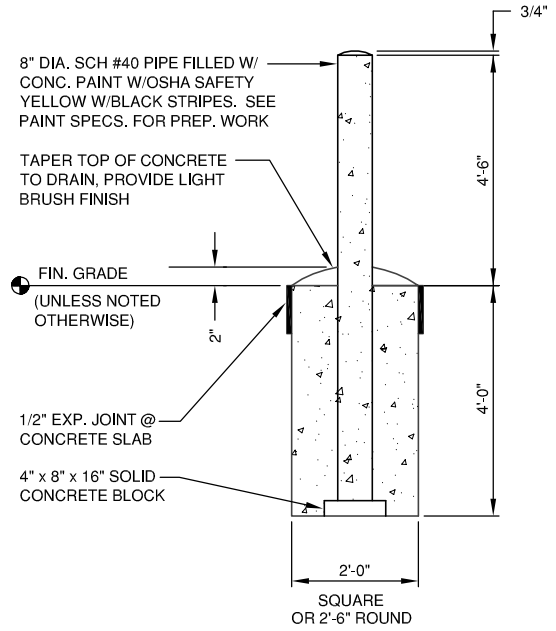


VERTICAL CONSTRUCTION JOINTS IN WALLS TYPICAL CONSTRUCTION JOINT

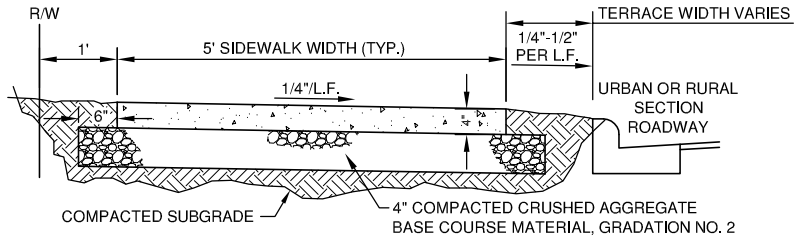
DETAIL F VAR.

FOR CONSTRUCTION

SA.	Consultant: Robert E. Lee & Associates, Inc.	CITY OF OAK CREEK, WISCONSIN		APPROVED BY
ST.				UTILITY ENGINEER DATE
W.		DESIGNED BY DATE	DRAWN BY DATE	CHECKED BY DATE
G.		D.A.M. 8/13/09	R.L.B. 8/13/09	K.A.K. 8/13/09
E.	ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES			APPROVED BY
T.				CITY ENGINEER DATE
I.		TYPICAL REINFORCING AND CONCRETE DETAILS		SCALE / SHEET
TS.	4664 GOLDEN POND PARK CT. HOBART, WISCONSIN 54155 PHONE: 920-662-9641 FAX: 920-662-9141 WWW.RELEEINC.COM	IN: PUETZ ROAD BOOSTER STATION		PLAN HOR. N.T.S. / 41
PP.				PROFILE HOR. N.T.S. / OF
				VER. N.T.S. / 53
	REVISION BY DATE	FILE NO: 08101		200-AS-03

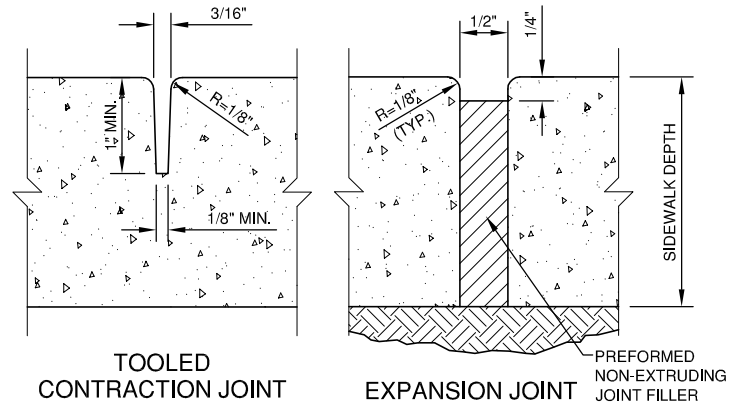


TYPICAL GUARD POST



TYPICAL SECTION

NOTE:
REFER TO SPECIFICATIONS FOR REINFORCEMENTS.

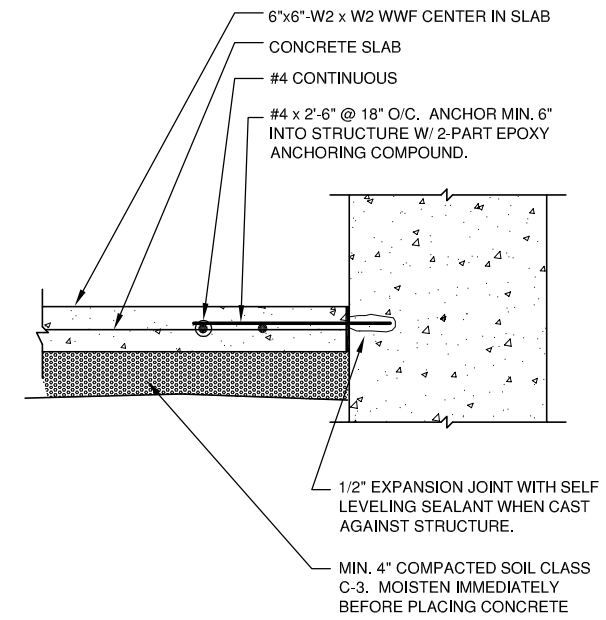


TOOLED CONTRACTION JOINT

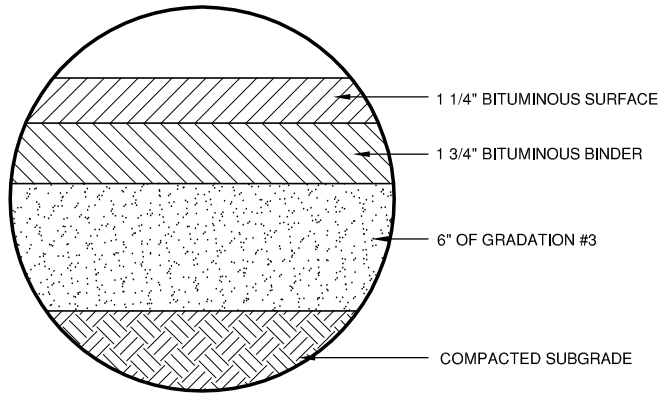
EXPANSION JOINT

WALK WIDTH	CONTRACTION JOINT SPACING		EXPANSION JOINT SPACING
	TRANSVERSE	LONGITUDINAL	
4'	4'	NOT REQ'D	100' MAX.
5'	5'	NOT REQ'D.	100' MAX.
6'	6'	NOT REQ'D.	100' MAX.
8'	4'	4'	100' MAX.
10'	5'	5'	100' MAX.
12'	6'	6'	100' MAX.

SIDEWALK DETAIL

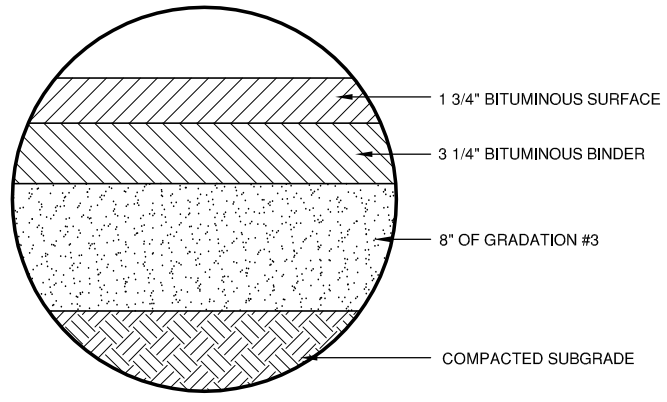


TYPICAL SIDEWALK ADJACENT TO STRUCTURE

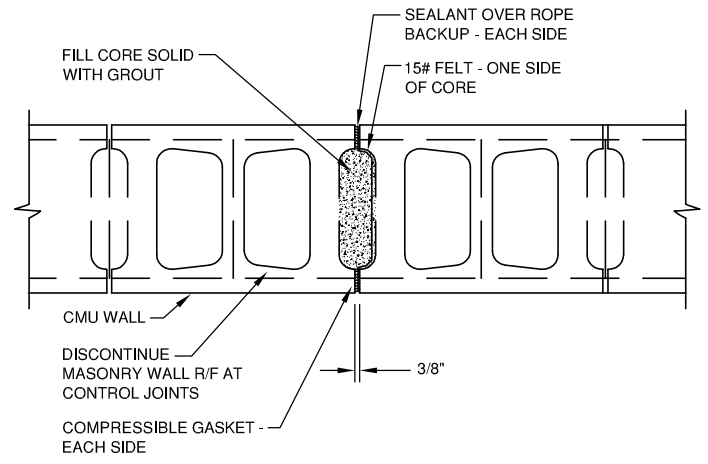


*SEE SPEC SECTION 02235 FOR GRADATIONS.

PATHWAY PAVEMENT DETAIL



PUMP HOUSE PAVEMENT AND PARKING DETAIL



CMU WALL - CONTROL JOINT

FOR CONSTRUCTION

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ST.		DESIGNED BY DATE	DRAWN BY DATE	CHECKED BY DATE
W.		D.A.M. 8/13/09	R.L.B. 8/13/09	K.A.K. 8/13/09
G.				APPROVED BY CITY ENGINEER DATE
E.	ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES	ARCHITECTURAL DETAILS		
T.		IN: PUETZ ROAD BOOSTER STATION		SCALE: PLAN HOR. N.T.S. / PROFILE HOR. N.T.S. VER. N.T.S.
I.				SHEET: 42 OF 53
TS.	4664 GOLDEN POND PARK CT. HOBART, WISCONSIN 54155 PHONE: 920-662-9641 FAX: 920-662-9141 WWW.RELEEINC.COM			
PP.				
	REVISION BY DATE	FILE NO: 08101		200-AS-04

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Plot date: Sep 01, 2009 - 3:34pm
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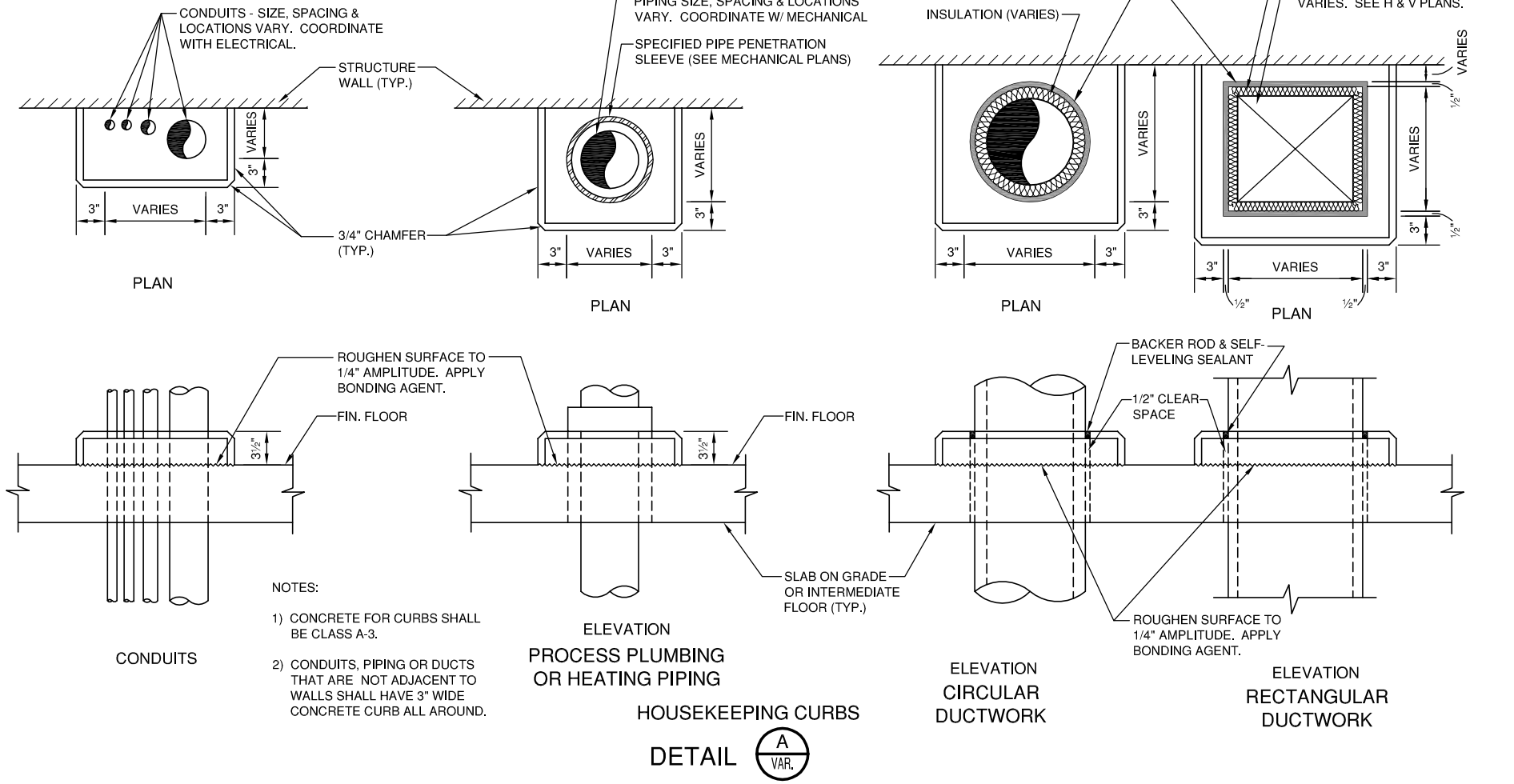
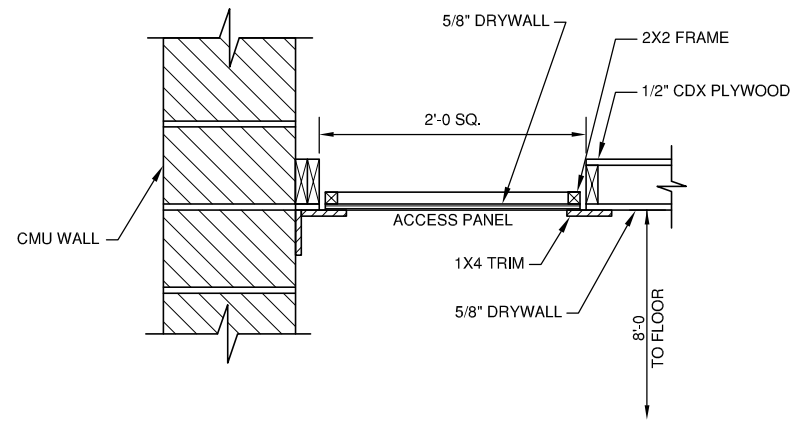
PLAN VIEW: PLAN



NOTES:

1) CONCRETE FOR CURBS SHALL BE CLASS A-3.
2) CONDUITS, PIPING OR DUCTS THAT ARE NOT ADJACENT TO WALLS SHALL HAVE 3" WIDE CONCRETE CURB ALL AROUND.

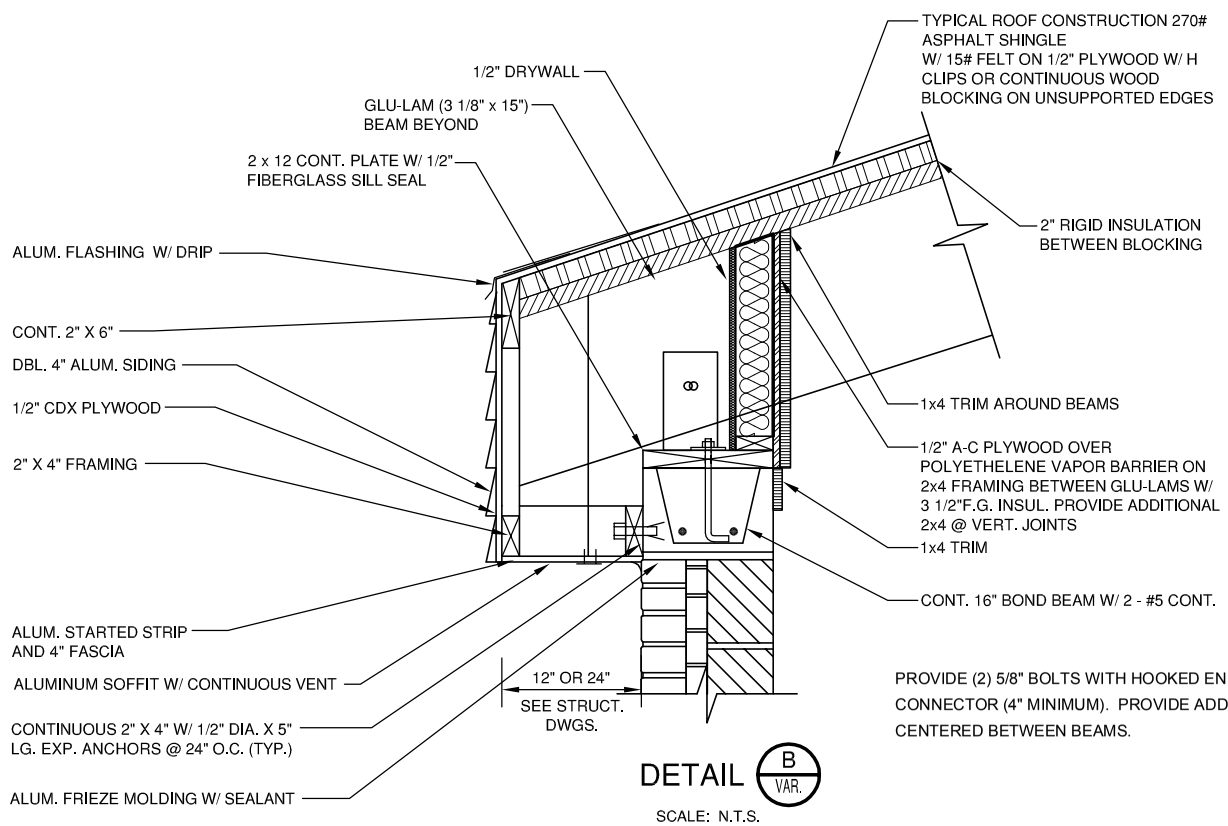
DETAIL A VAR.



NOTES: 100-AS-07
1. SEE DWG. ~~100-AS-01~~ FOR LOCATION.
2. IN ELECTRICAL ROOM PROVIDE 2-5/8" DRYWALL.

CEILING ACCESS DETAIL C VAR.

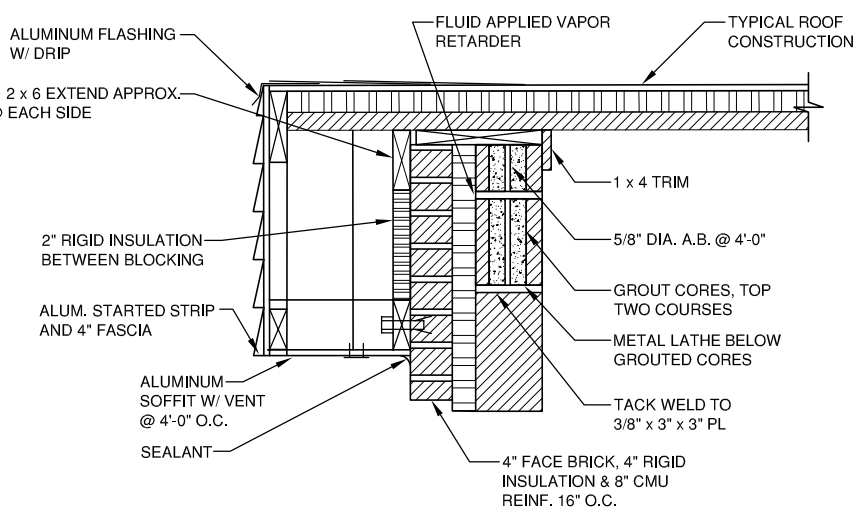
SCALE: N.T.S.



PROVIDE (2) 5/8" BOLTS WITH HOOKED ENDS AT EACH BEAM CONNECTOR (4" MINIMUM). PROVIDE ADDITIONAL BOLTS CENTERED BETWEEN BEAMS.

DETAIL B VAR.

SCALE: N.T.S.

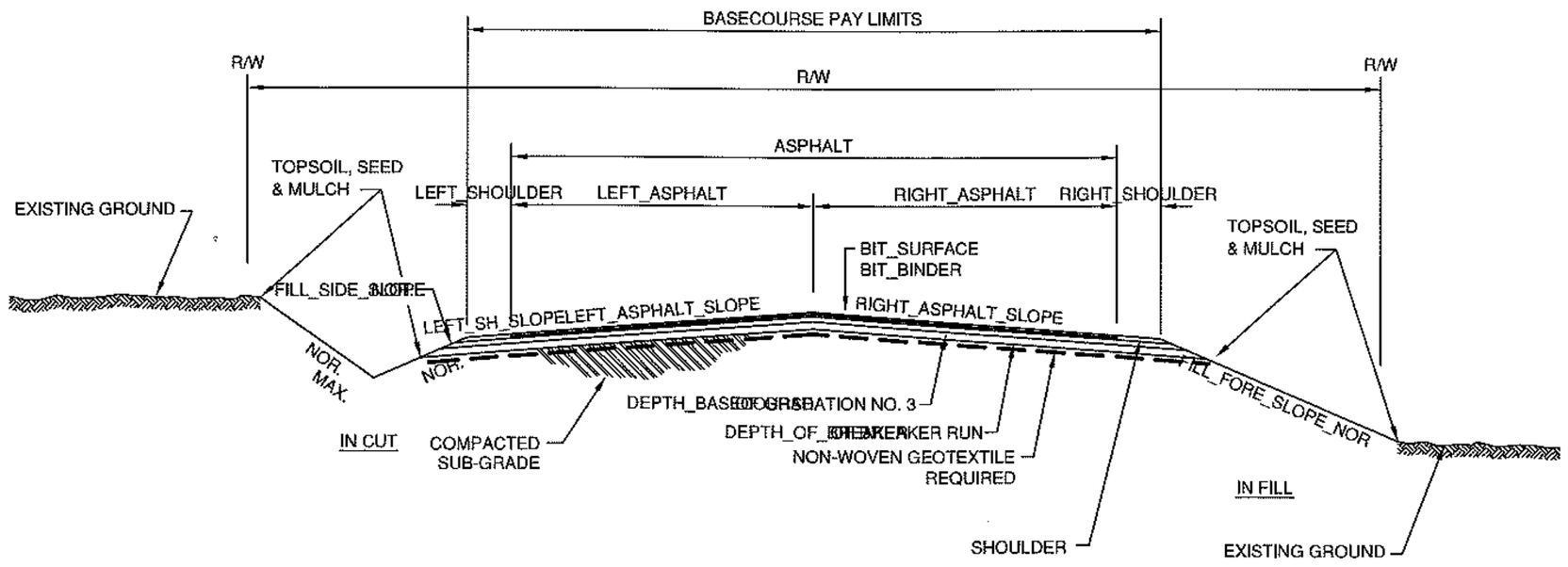


DETAIL D VAR. SCALE: N.T.S.

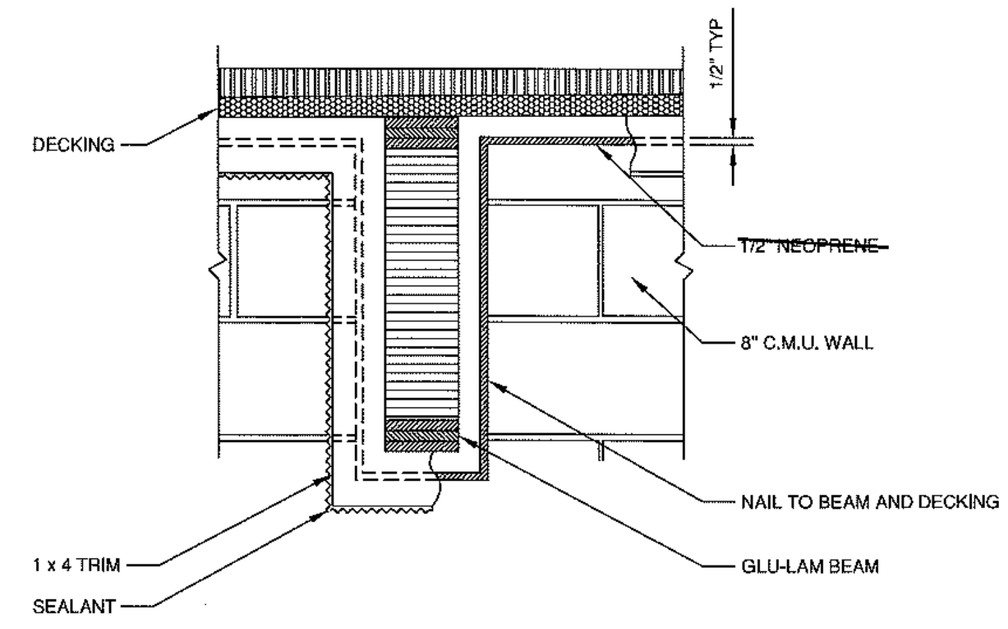
LAYOUT: LAYOUT
PLAN VIEW: PLAN

FOR CONSTRUCTION

SA.	Consultant: Robert E. Lee & Associates, Inc.	CITY OF OAK CREEK, WISCONSIN		APPROVED BY UTILITY ENGINEER DATE
ST.		DESIGNED BY DATE: D.A.M. 8/13/09	DRAWN BY DATE: R.L.B. 8/13/09	CHECKED BY DATE: K.A.K. 8/13/09
W.				APPROVED BY CITY ENGINEER DATE
G.	ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES	ARCHITECTURAL DETAILS		SCALE: PLAN HOR. N.T.S., PROFILE HOR. N.T.S. VER. N.T.S.
E.		IN: PUETZ ROAD BOOSTER STATION		SHEET: 43 OF 53
T.	4664 GOLDEN POND PARK CT. HOBART, WISCONSIN 54155 PHONE: 920-662-9641 FAX: 920-662-9141 WWW.RELEEINC.COM			
I.				
TS.				
PP.				
	REVISION BY DATE	FILE NO: 08101		200-AS-05

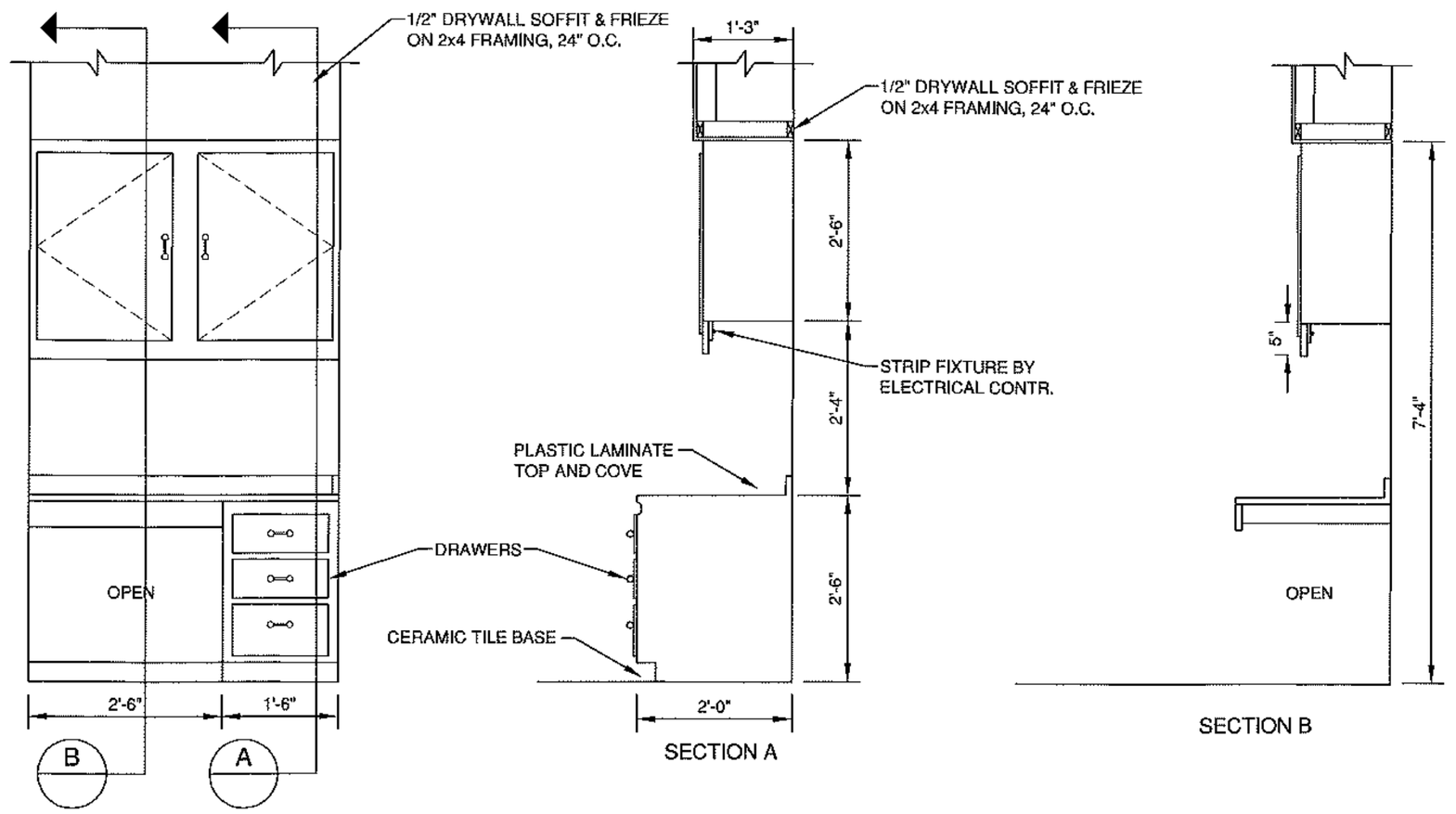


TYPICAL RURAL STREET CROSS SECTION



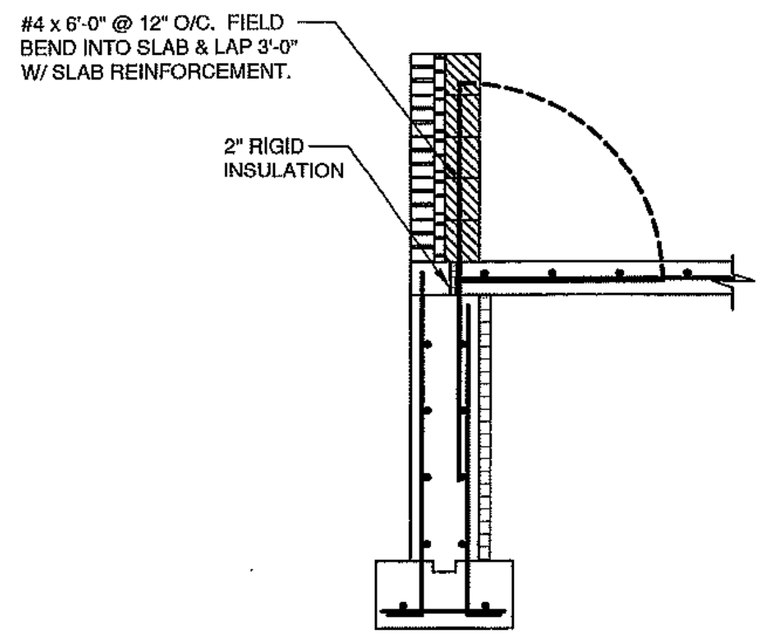
GLU-LAM BEAM DETAIL (E / 100-AS-01)

SCALE: 1-1/2" = 1'-0"



OFFICE DESK DETAIL

SCALE: 3/4" = 1'



FOUNDATION AND WALL CONNECTION DETAIL (F / VAR.)

NTS

FOR CONSTRUCTION

SA. ST. W. G. E. T. I. TS. PP.	Consultant: Robert E. Lee & Associates, Inc. ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES 4564 GOLDEN POND PARK CT. HOBART, WISCONSIN 54155 PHONE: 920-662-9641 FAX: 920-662-9141 WWW.RELEEINC.COM	CITY OF OAK CREEK, WISCONSIN			APPROVED BY UTILITY ENGINEER DATE
		DESIGNED BY DATE	DRAWN BY DATE	CHECKED BY DATE	APPROVED BY CITY ENGINEER DATE
		D.A.M. 8/13/09	R.L.B. 8/13/09	K.A.K. 8/13/09	SCALE SHEET
		ARCHITECTURAL DETAILS IN: PUETZ ROAD BOOSTER STATION			PLAN HOR. N.T.S. 44 PROFILE HOR. N.T.S. OF VER. N.T.S. 53
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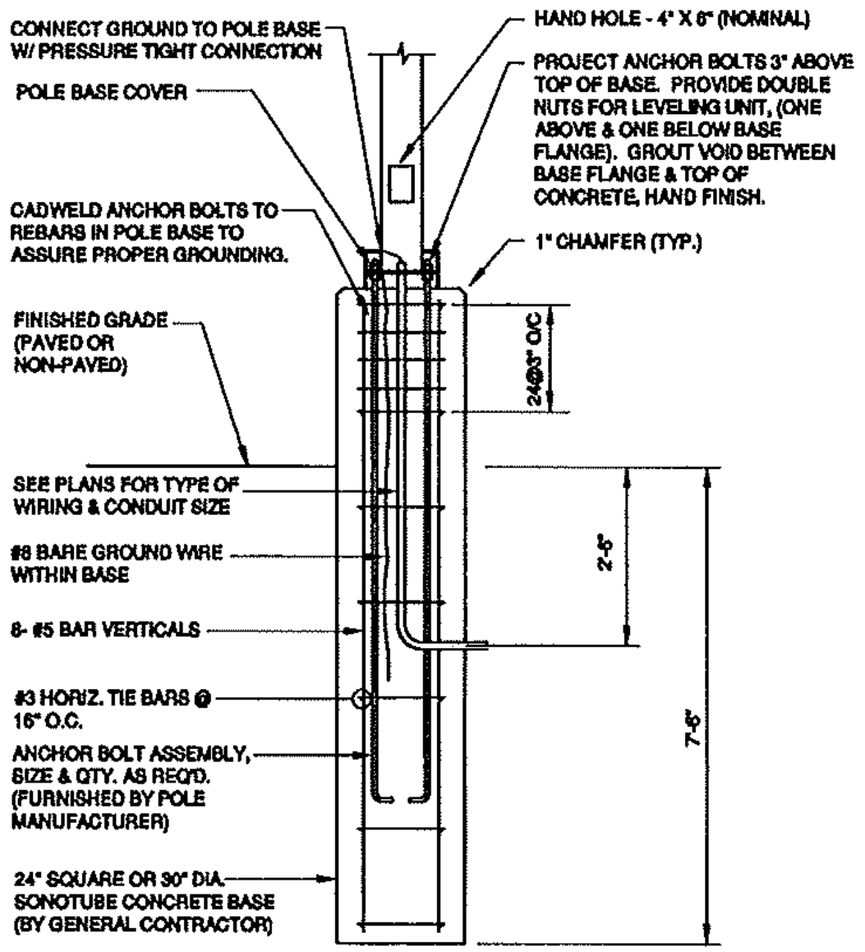
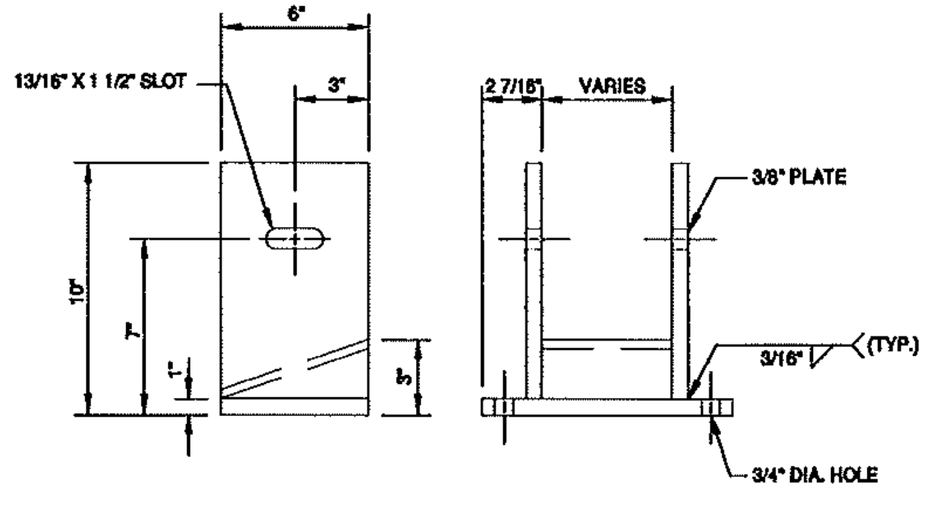
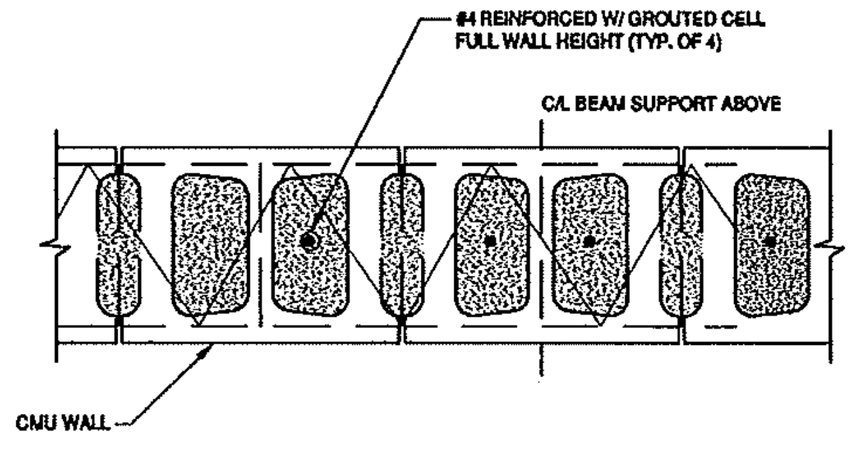


OUTDOOR LIGHTING STANDARD BASE DETAIL



TYPICAL BEAM CONNECTOR



TYPICAL REINFORCED MASONRY

FOR CONSTRUCTION

SA.	Consultant: Robert E. Lee & Associates, Inc.	CITY OF OAK CREEK, WISCONSIN				APPROVED BY
ST.		DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE	UTILITY ENGINEER DATE
W.		D.A.M.	8/13/09	R.L.B.	8/13/09	K.A.K.	8/13/09	APPROVED BY
G.								CITY ENGINEER DATE
E.	ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES	MISCELLANEOUS DETAILS						SCALE / SHEET
T.		IN: PUETZ ROAD BOOSTER STATION						PLAN HOR. N.T.S. / 44.1
I.								PROFILE HOR. N.T.S. / OF
TS.								VER. N.T.S. / 53
PP.								
	REVISION BY DATE	FILE NO: 08101						200-AS-07

4661 GOLDEN POND PARK CT.
HOBART, WISCONSIN 54155
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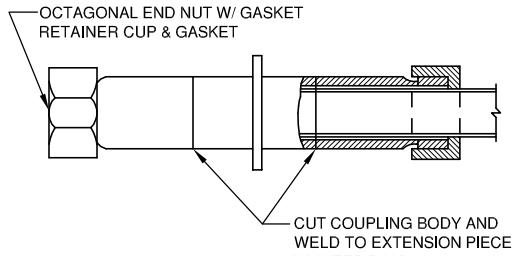
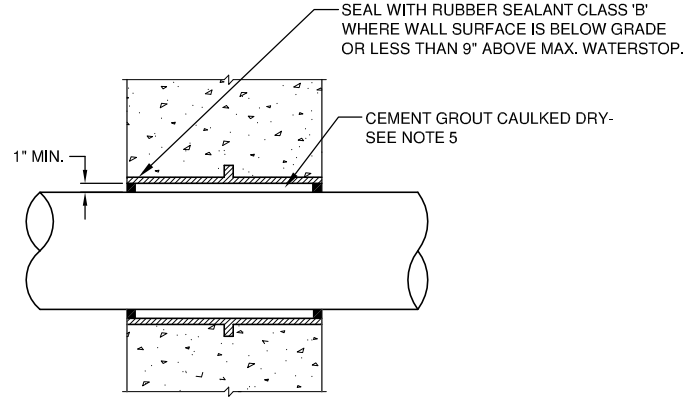
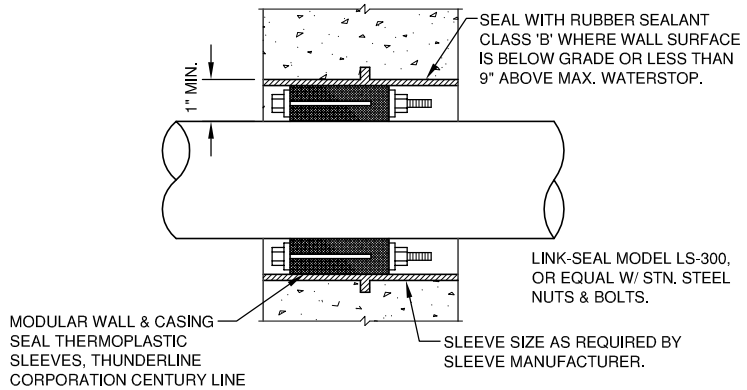


P-1

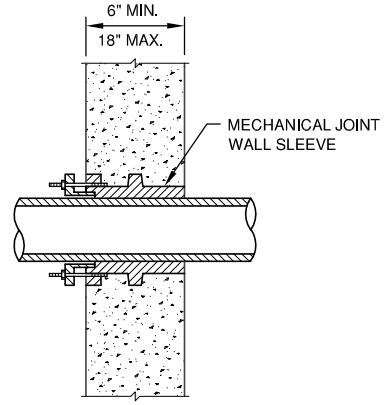
(FOR PIPES 2" & SMALLER)
WHERE SPECIFIED



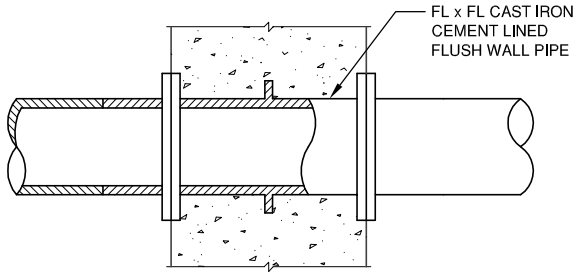
P-2



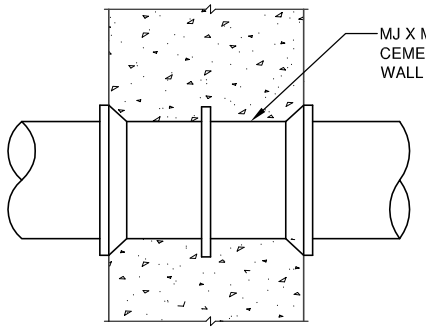
P-3



P-4



P-5



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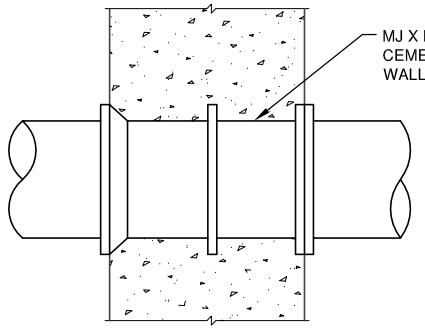

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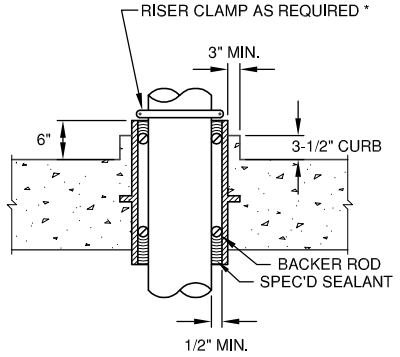


* FOR INSUBLATED PIPES, EXTEND INSULATION THROUGH SLEEVE AND COVER CLAMP.

P-8

(FOR INTERMEDIATE FLOORS, PASSAGE TO PASSAGE)

PIPES THROUGH WALLS

PIPE MATERIAL

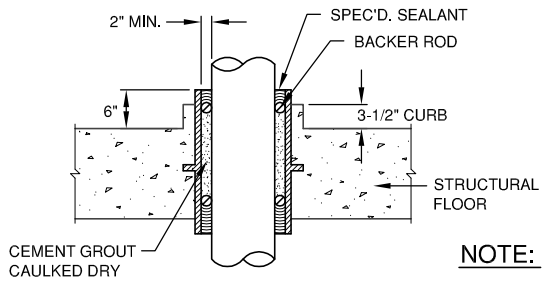
CONDITION	STEEL	COPPER	PVC	IRON
EARTH TO PASSAGE	P-1	P-1	P-1	P-3
LIQUID TO PASSAGE	P-4	P-2	P-2	P-4
LIQUID TO EARTH	P-1	P-2	P-2	P-3
PASSAGE TO PASSAGE	P-1	P-1	P-1	P-1
LIQUID TO LIQUID	P-4	P-1	P-1	P-4

P-2 MAY BE USED IN LIEU OF P-1, P-3, & P-4

NOTES:

1. WHERE PIPES PASS THOUGH WALLS, FLOORS, OR CEILINGS, THE METHOD USED SHALL CONFORM TO THE STANDARD DETAILS AS SHOWN IN THESE PLANS AND ON THIS DRAWING, EXCEPT WHERE SPECIAL DETAILS ARE SHOWN.
2. PASSAGE SHALL MEAN ANY ROOM, GALLERY, TUNNEL, OR SIMILAR ENCLOSED SPACE IN WHICH PIPES RUN.
3. ALL SLEEVES SHALL BE TYPE 304 STAINLESS STEEL.
4. FLANGES MAY BE INSTALLED FLUSH WITH WALL AND TAPPED FOR STUDS.
5. CEMENT GROUT CAULKING MAY BE ELIMINATED FOR PASSAGE TO PASSAGE PENETRATIONS EXCEPT WHERE THERE IS A CHANGE IN ELECTRICAL CLASSIFICATION.
6. LIQUID SHALL MEAN AN ELEVATION 9" ABOVE MAXIMUM WATER ELEVATION.

FOR CONSTRUCTION

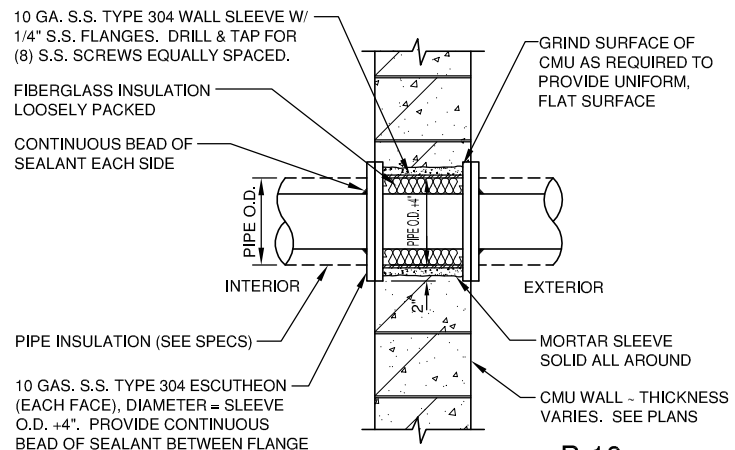


P-9

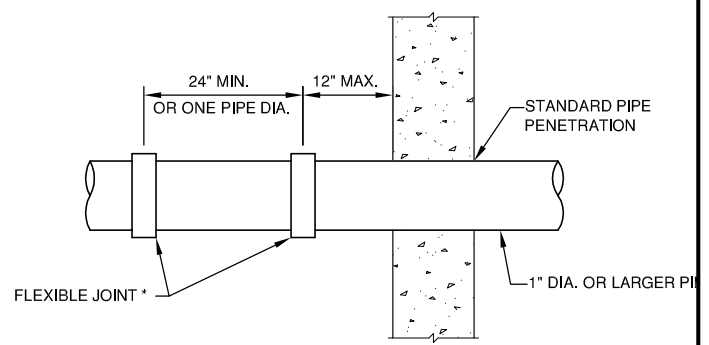
(FOR INTERMEDIATE FLOORS)

NOTE:

MECHANICAL CONTRACTOR SHALL PROVIDE CURBS AROUND ALL FLOOR PENETRATIONS UNLESS DIRECTED OTHERWISE BY THE ENGINEER. SEE CONCRETE SPECIFICATION SECTIONS.

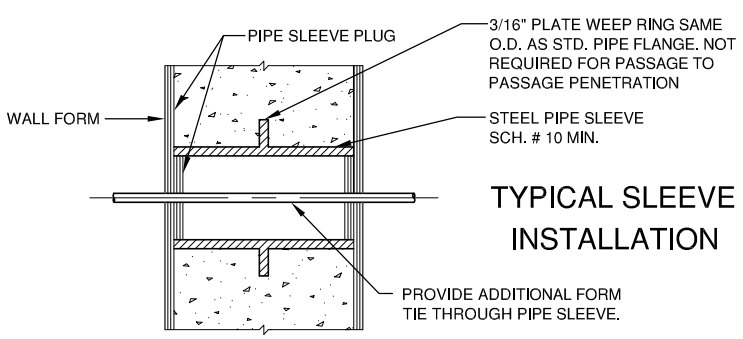


P-10



* FLEXIBLE JOINTS ARE MECHANICAL JOINTS. PUSH ON JOINTS & MECHANICAL PIPE COUPLINGS.

TYPICAL UNDERGROUND PIPING AT WALL



TYPICAL SLEEVE INSTALLATION

SA.
ST.
W.
G.
E.
T.
I.
TS.
PP.

Consultant:

Robert E. Lee & Associates, Inc.

ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES

4664 GOLDEN POND PARK CT.
HOBART, WISCONSIN 54155
PHONE: 920-662-9641
FAX: 920-662-9141
WWW.RELEEINC.COM

REVISION BY DATE

CITY OF OAK CREEK, WISCONSIN

DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE
D.A.M.	8/13/09	R.L.B.	8/13/09	K.A.K.	8/13/09

PIPE PENETRATION DETAILS

IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY

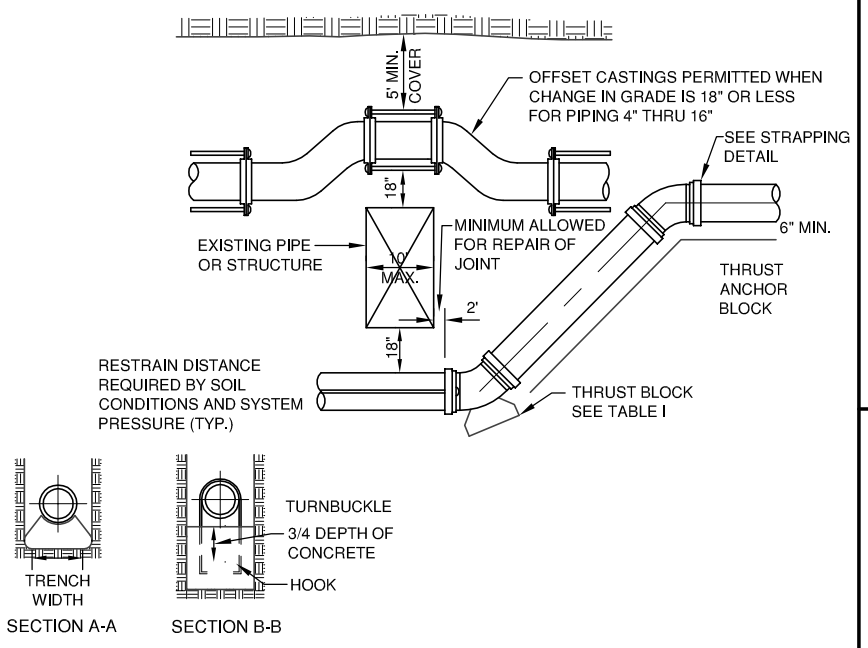
UTILITY ENGINEER DATE

APPROVED BY

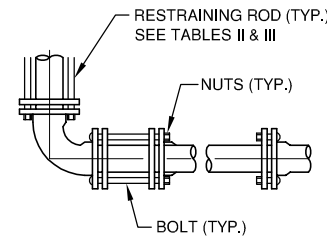
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. N.T.S.	45
PROFILE HOR. N.T.S.	OF
VER. N.T.S.	53

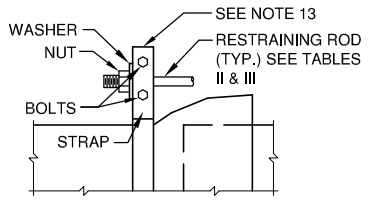
200-M-01



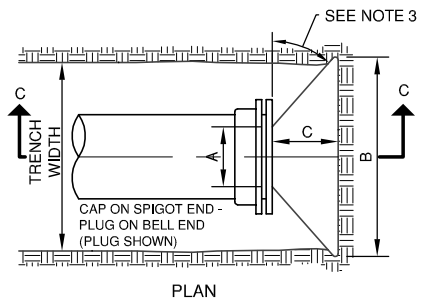
DETAIL FOR PRESSURE PIPE OFFSET



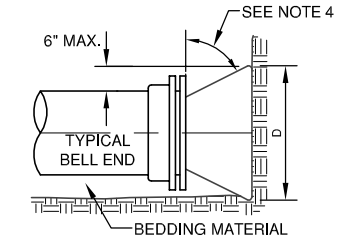
RESTRAINING ROD DETAIL FOR MECHANICAL JOINT PIPE



STRAPPING DETAIL

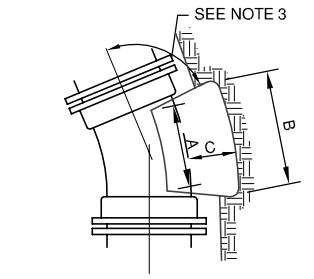


PLAN

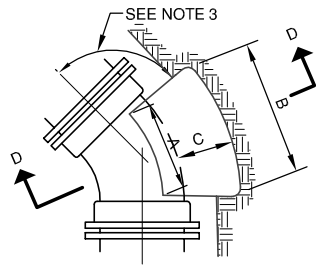


SECTION C-C

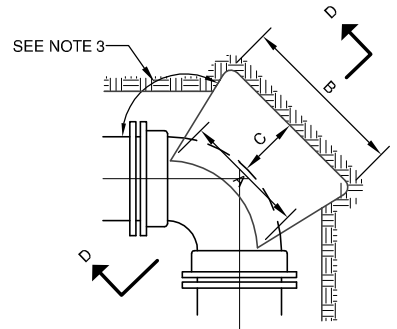
THRUST BLOCK DETAILS FOR DEAD END



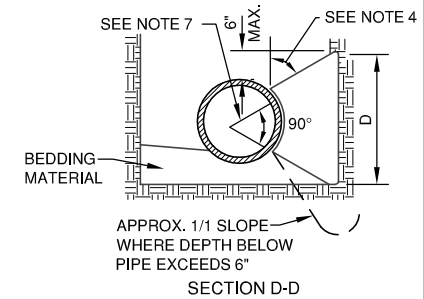
PLAN - 11-1/4° & 22-1/2° BENDS



PLAN - 45° BEND

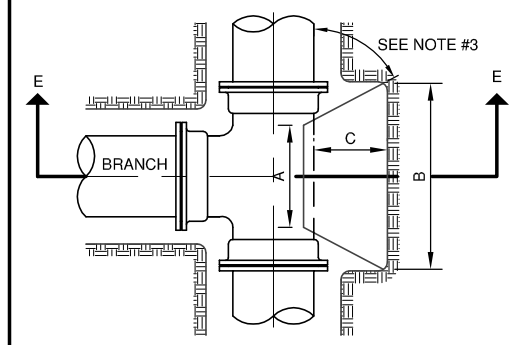


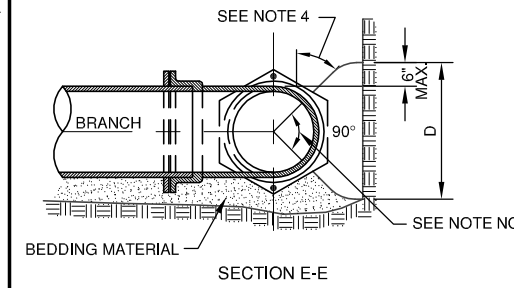
PLAN - 90° BEND



SECTION D-D

THRUST BLOCK DETAILS FOR BENDS





SECTION E-E

THRUST BLOCK DETAILS FOR TEES

TABLE NO. II

RESTRAINING ROD REQUIREMENTS FOR MECHANICAL JOINT PIPING SYSTEMS

0-50 PSI TEST PRESSURE — NUMBER & SIZE OF RESTRAINING RODS					
NOM. PIPE DIA.	DEAD END	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND
4	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
6	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
8	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
10	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
12	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
14	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
16	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
18	(3) 3/4"	(3) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
20	(4) 3/4"	(4) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
24	(4) 3/4"	(4) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
30	(4) 1"	(4) 1"	(2) 1"	(2) 1"	(2) 1"
36	(5) 1"	(5) 1"	(2) 1"	(2) 1"	(2) 1"
42	(4) 1-1/4"	(4) 1-1/4"	(2) 1-1/4"	(2) 1-1/4"	(2) 1-1/4"
48	(6) 1-1/4"	(6) 1-1/4"	(2) 1-1/4"	(2) 1-1/4"	(2) 1-1/4"
54	(7) 1-1/4"	(7) 1-1/4"	(2) 1-1/4"	(2) 1-1/4"	(2) 1-1/4"

51-100 PSI TEST PRESSURE — NUMBER & SIZE OF RESTRAINING RODS					
NOM. PIPE DIA.	DEAD END	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND
4	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
6	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
8	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
10	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
12	(4) 3/4"	(4) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
14	(4) 3/4"	(4) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
16	(4) 3/4"	(4) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
18	(6) 3/4"	(6) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
20	(6) 3/4"	(6) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
24	(8) 3/4"	(8) 3/4"	(3) 3/4"	(2) 3/4"	(2) 3/4"
30	(7) 1"	(7) 1"	(2) 1"	(2) 1"	(2) 1"
36	(10) 1"	(10) 1"	(3) 1"	(2) 1"	(2) 1"
42	(8) 1-1/4"	(8) 1-1/4"	(3) 1-1/4"	(2) 1-1/4"	(2) 1-1/4"
48	(11) 1-1/4"	(11) 1-1/4"	(3) 1-1/4"	(2) 1-1/4"	(2) 1-1/4"
54	(14) 1-1/4"	(14) 1-1/4"	(4) 1-1/4"	(2) 1-1/4"	(2) 1-1/4"

101-150 PSI TEST PRESSURE — NUMBER & SIZE OF RESTRAINING RODS					
NOM. PIPE DIA.	DEAD END	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND
4	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
6	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
8	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
10	(4) 3/4"	(4) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
12	(4) 3/4"	(4) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
14	(5) 3/4"	(5) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
16	(6) 3/4"	(6) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
18	(8) 3/4"	(8) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
20	(10) 3/4"	(10) 3/4"	(3) 3/4"	(2) 3/4"	(2) 3/4"
24	(12) 3/4"	(12) 3/4"	(4) 3/4"	(2) 3/4"	(2) 3/4"
30	(10) 1"	(10) 1"	(3) 1"	(2) 1"	(2) 1"
36	(15) 1"	(15) 1"	(5) 1"	(2) 1"	(2) 1"
42	(12) 1-1/4"	(12) 1-1/4"	(4) 1-1/4"	(2) 1-1/4"	(2) 1-1/4"
48	(16) 1-1/4"	(16) 1-1/4"	(5) 1-1/4"	(2) 1-1/4"	(2) 1-1/4"
54	(20) 1-1/4"	(20) 1-1/4"	(6) 1-1/4"	(2) 1-1/4"	(2) 1-1/4"

NOTE:
CONTRACTOR SHALL VERIFY COMPATIBILITY OF BOLTS WITH MECHANICAL CONNECTORS SELECTED.

TABLE NO. III

RESTRAINING ROD REQUIREMENTS FOR FLANGED PIPING SYSTEMS

0-50 PSI TEST PRESSURE — NUMBER & SIZE OF RESTRAINING RODS					
NOM. PIPE DIA.	DEAD END	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND
4	(2) 5/8"	(2) 5/8"	(2) 5/8"	(2) 5/8"	(2) 5/8"
6	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
8	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
10	(2) 7/8"	(2) 7/8"	(2) 7/8"	(2) 7/8"	(2) 7/8"
12	(2) 7/8"	(2) 7/8"	(2) 7/8"	(2) 7/8"	(2) 7/8"
14	(2) 1"	(2) 1"	(2) 1"	(2) 1"	(2) 1"
16	(2) 1"	(2) 1"	(2) 1"	(2) 1"	(2) 1"
18	(2) 1-1/8"	(2) 1-1/8"	(2) 1-1/8"	(2) 1-1/8"	(2) 1-1/8"
20	(2) 1-1/8"	(2) 1-1/8"	(2) 1-1/8"	(2) 1-1/8"	(2) 1-1/8"
24	(2) 1-1/4"	(2) 1-1/4"	(2) 1-1/4"	(2) 1-1/4"	(2) 1-1/4"
30	(3) 1-1/4"	(3) 1-1/4"	(2) 1-1/4"	(2) 1-1/4"	(2) 1-1/4"
36	(3) 1-1/2"	(3) 1-1/2"	(2) 1-1/2"	(2) 1-1/2"	(2) 1-1/2"
42	(4) 1-1/2"	(4) 1-1/2"	(2) 1-1/2"	(2) 1-1/2"	(2) 1-1/2"
48	(4) 1-1/2"	(4) 1-1/2"	(2) 1-1/2"	(2) 1-1/2"	(2) 1-1/2"
54	(6) 1-1/2"	(6) 1-1/2"	(3) 1-1/2"	(2) 1-1/2"	(2) 1-1/2"

51-100 PSI TEST PRESSURE — NUMBER & SIZE OF RESTRAINING RODS					
NOM. PIPE DIA.	DEAD END	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND
4	(2) 5/8"	(2) 5/8"	(2) 5/8"	(2) 5/8"	(2) 5/8"
6	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
8	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
10	(2) 7/8"	(2) 7/8"	(2) 7/8"	(2) 7/8"	(2) 7/8"
12	(2) 7/8"	(2) 7/8"	(2) 7/8"	(2) 7/8"	(2) 7/8"
14	(2) 1"	(2) 1"	(2) 1"	(2) 1"	(2) 1"
16	(4) 1"	(2) 1"	(2) 1"	(2) 1"	(2) 1"
18	(4) 1-1/8"	(4) 1-1/8"	(2) 1-1/8"	(2) 1-1/8"	(2) 1-1/8"
20	(4) 1-1/8"	(4) 1-1/8"	(2) 1-1/8"	(2) 1-1/8"	(2) 1-1/8"
24	(4) 1-1/4"	(4) 1-1/4"	(2) 1-1/4"	(2) 1-1/4"	(2) 1-1/4"
30	(5) 1-1/4"	(5) 1-1/4"	(2) 1-1/4"	(2) 1-1/4"	(2) 1-1/4"
36	(5) 1-1/2"	(5) 1-1/2"	(2) 1-1/2"	(2) 1-1/2"	(2) 1-1/2"
42	(6) 1-1/2"	(6) 1-1/2"	(2) 1-1/2"	(2) 1-1/2"	(2) 1-1/2"
48	(8) 1-1/2"	(8) 1-1/2"	(3) 1-1/2"	(2) 1-1/2"	(2) 1-1/2"
54	(12) 1-1/2"	(12) 1-1/2"	(4) 1-1/2"	(2) 1-1/2"	(2) 1-1/2"

101-150 PSI TEST PRESSURE — NUMBER & SIZE OF RESTRAINING RODS					
NOM. PIPE DIA.	DEAD END	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND
4	(2) 5/8"	(2) 5/8"	(2) 5/8"	(2) 5/8"	(2) 5/8"
6	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
8	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
10	(2) 7/8"	(2) 7/8"	(2) 7/8"	(2) 7/8"	(2) 7/8"
12	(3) 7/8"	(3) 7/8"	(2) 7/8"	(2) 7/8"	(2) 7/8"
14	(3) 1"	(3) 1"	(2) 1"	(2) 1"	(2) 1"
16	(4) 1"	(4) 1"	(2) 1"	(2) 1"	(2) 1"
18	(4) 1-1/8"	(4) 1-1/8"	(2) 1-1/8"	(2) 1-1/8"	(2) 1-1/8"
20	(4) 1-1/8"	(4) 1-1/8"	(2) 1-1/8"	(2) 1-1/8"	(2) 1-1/8"
24	(5) 1-1/4"	(5) 1-1/4"	(2) 1-1/4"	(2) 1-1/4"	(2) 1-1/4"
30	(7) 1-1/4"	(7) 1-1/4"	(3) 1-1/4"	(2) 1-1/4"	(2) 1-1/4"
36	(7) 1-1/2"	(7) 1-1/2"	(3) 1-1/2"	(2) 1-1/2"	(2) 1-1/2"
42	(10) 1-1/2"	(10) 1-1/2"	(3) 1-1/2"	(2) 1-1/2"	(2) 1-1/2"
48	(12) 1-1/2"	(12) 1-1/2"	(4) 1-1/2"	(2) 1-1/2"	(2) 1-1/2"
54	(16) 1-1/2"	(16) 1-1/2"	(6) 1-1/2"	(3) 1-1/2"	(2) 1-1/2"

TABLE NO. I

THRUST BLOCK AREA REQUIRED

0-50 PSI TEST PRESSURE — THRUST AREA REQUIRED FT.²					
NOM. PIPE DIA.	DEAD END	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND
4	1.0	1.0	1.0	1.0	1.0
6	1.0	2.0	1.0	1.0	1.0
8	2.0	3.0	1.0	1.0	1.0
10	3.0	3.0	2.0	1.0	1.0
12	4.0	5.0	3.0	2.0	1.0
14	5.0	7.0	4.0	2.0	1.0
16	6.0	7.0	5.0	3.0	1.0
18	8.0	11.0	6.0	3.0	2.0
20	9.0	13.0	7.0	4.0	2.0
24	13.0	19.0	10.0	5.0	3.0
30	20.0	29.0	16.0	8.0	4.0
36	29.0	41.0	22.0	12.0	6.0
42	39.0	55.0	30.0	15.0	7.0
48	51.0	72.0	39.0	20.0	10.0
54	64.0	91.0	49.0	25.0	13.0

51-100 PSI TEST PRESSURE — THRUST AREA REQUIRED FT.²					
NOM. PIPE DIA.	DEAD END	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND
4	1.0	2.0	2.0	1.0	1.0
6	2.0	3.0	2.0	1.0	1.0
8	3.0	5.0	3.0	2.0	1.0
10	5.0	7.0	4.0	2.0	1.0
12	7.0	10.0	5.0	3.0	2.0
14	9.0	13.0	7.0	4.0	2.0
16	12.0	17.0	9.0	5.0	3.0
18	15.0	21.0	12.0	6.0	3.0
20	19.0	26.0	14.0	7.0	4.0
24	26.0	37.0	20.0	10.0	5.0
30	40.0	57.0	31.0	16.0	8.0
36	58.0	82.0	44.0	23.0	12.0
42	78.0	110.0	60.0	31.0	15.0
48	102.0	144.0	78.0	40.0	20.0
54	128.0	181.0	98.0	50.0	25.0

101-150 PSI TEST PRESSURE — THRUST AREA REQUIRED FT.²					
NOM. PIPE DIA.	DEAD END	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND
4	2.0	2.0	1.0	1.0	1.0
6	3.0	4.0	2.0	1.0	1.0
8	5.0	7.0	4.0	2.0	1.0
10	8.0	11.0	6.0	3.0	2.0
12	10.0	15.0	8.0	4.0	2.0
14	14.0	22.0	11.0	6.0	3.0
16	18.0	25.0	14.0	7.0	4.0
18	23.0	32.0	17.0	9.0	5.0
20	28.0	39.0	21.0	11.0	6.0
24	39.0	56.0	30.0	15.0	8.0
30	61.0	86.0	46.0	24.0	12.0
36	87.0	122.0	66.0	34.0	17.0
42	117.0	165.0	90.0	46.0	23.0
48	152.0	215.0	117.0	60.0	30.0
54	194.0	272.0	147.0	75.0	38.0

NOTES:

1. WHERE A HORIZONTAL BEND IS MADE, THE PIPING SHALL BE RESTRAINED BY MEANS OF A THRUST BLOCK AS DETAILED ON THIS SHEET. WHERE VERTICAL OFFSETS ARE MADE, THE TOP BEND SHALL BE RESTRAINED BY RESTRAINING RODS, OR A COMBINATION OF BOTH, THE BOTTOM BENDS SHALL BE RESTRAINED BY THRUST BLOCKS AS DETAILED.
2. "A", "B", AND "D" DIMENSIONS SHALL BE AS LARGE AS POSSIBLE WITHOUT INTERFERING WITH THE MECHANICAL JOINTS OR THE M.J. BOLTS.
3. "C" DIMENSIONS SHALL BE LARGE ENOUGH TO MAKE ANGLE EQUAL TO OR LARGER THAN 45°.
4. ANGLE SHALL BE EQUAL TO OR LARGER THAN 45°.
5. "B" & "D" DIMENSIONS SHALL PROVIDE REQUIRED BLOCKING AREA AS LISTED IN TABLE I. REFER TO PIPE SCHEDULE IN THE SPECIFICATIONS FOR THE PRESSURE RATING OF THE PIPING SYSTEMS.
6. HARD WOOD BLOCKING MAY BE USED IN LIEU OF CONCRETE BUTTRESSES FOR TEES, DEAD ENDS, 90 BENDS AND 45 BENDS HAVING A SIZE OF 4 IN., 6 IN. AND 8 IN. AND FOR 11-1/4 AND 22-1/2 BENDS HAVING A SIZE OF 4 IN., 6 IN., 8 IN. AND 12 IN., PROVIDED THE AREA OF THE BLOCKING IN CONTACT WITH THE UNDISTURBED SOIL IS AT LEAST EQUAL TO THE AREA OF THE CONCRETE SHOWN IN TABLE 1. REFER TO "PIPE SYSTEM SPECIFICATION" IN THE CONTRACT SPECIFICATION FOR THE PRESSURE RATING OF THE PIPING SYSTEMS.
7. CONCRETE SHALL BEAR ON ONE FULL QUADRANT OF PIPE AS A MINIMUM, SEE DETAIL ABOVE.
8. WHERE THRUST BLOCKS ARE NOT POSSIBLE BECAUSE OF POOR SOIL CONDITIONS OR LACK OF ROOM, STRAPPING SHALL BE PERMITTED. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW A LIST OF RESTRAINT MATERIAL, DETAILS OF THE RESTRAINT AND METHODS OF CONSTRUCTION, AND SIZES OF ALL RESTRAINT MEMBERS HE DESIRES TO USE FOR THRUST ANCHOR BLOCKS, RESTRAINING RODS AND STRAPS. REFER TO PIPE SCHEDULE IN THE SPECIFICATIONS FOR THE PRESSURE RATING OF THE PIPING SYSTEMS.
9. THE THRUST BLOCK AREAS SHOWN IN TABLE I ARE CALCULATED USING A SOIL BEARING CAPACITY OF 2000 PSF. IF GREATER SOIL BEARING CAPACITY IS AVAILABLE, THE CONTRACTOR MAY, AFTER REVIEW BY THE ENGINEER, REDUCE THE THRUST BLOCK AREAS SHOWN ON TABLE I. THE THRUST BLOCK AREA SHALL BE INCREASED IF THE SOIL IS NOT CAPABLE OF PROVIDING 2000 PSF SOIL BEARING CAPACITY.
10. THE CONCRETE BUTTRESSES SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI.
11. IF THE CONTRACTOR DESIRES TO USE ALTERNATE METHODS OF RESTRAINT, HE SHALL SUBMIT A RESTRAINT SCHEDULE TO THE ENGINEER FOR REVIEW DETAILING THE SYSTEM THAT HE PROPOSES TO USE.
12. RESTRAINT RODS FOR BOTH INTERIOR AND EXTERIOR PIPING SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE NUMBER AND SIZE LISTED IN TABLE II AND/OR TABLE III. THE NUMBER AND SIZE OF RESTRAINING RODS IN TABLE II AND/OR TABLE III ARE CALCULATED USING ASTM A307 STEEL. THE RESTRAINT RODS SHALL BE ANCHORED TO PROVIDE A RIGID PIPING SYSTEM. THE CONTRACTOR SHALL SUBMIT DETAILS OF THE RESTRAINT SYSTEM TO THE ENGINEER FOR REVIEW. ALL RESTRAINING RODS SHALL BE EQUALLY SPACED AROUND THE CIRCUMFERENCE OF THE PIPE. INTERIOR RESTRAINING RODS SHALL BE PAINTED THE SAME PAINTING SYSTEM SPECIFIED FOR THE PIPING SYSTEM. EXTERIOR RESTRAINING RODS AND MISCELLANEOUS STEEL MATERIALS SHALL BE PROTECTED AS REQUIRED BY CONTRACT SPECIFICATIONS.
13. THE CONTRACTOR SHALL SIZE ALL STRAPS, BOLTS AND WASHERS TO BE COMPATIBLE WITH THE STRENGTH OF THE RESTRAINING RODS AND THE DETAILS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
14. THE CONTRACTOR SHALL REFER TO THE LATEST EDITION OF "A GUIDE FOR THE INSTALLATION OF DUCTILE IRON PIPE" PUBLISHED BY THE CAST IRON PIPE RESEARCH ASSOCIATION FOR DESIGN AND INSTALLATION OF RESTRAINT SYSTEMS.
15. WHERE APPROVED BY THE ENGINEER, MECHANICAL JOINT RESTRAINTS, "MEGALUG" BY EBAA IRON SALES, INC., OR EQUAL, MAY BE USED IN LIEU OF THRUST BLOCKS OR RESTRAINING RODS.

FOR CONSTRUCTION

SA. ST. W. G. E. T. I. TS. PP.

Consultant:
Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES
4664 GOLDEN POND PARK CT.
HOBART, WISCONSIN 54155
PHONE: 920-662-9641
FAX: 920-662-9141
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REVISION BY DATE

CITY OF OAK CREEK, WISCONSIN

DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE
D.A.M.	8/13/09	R.L.B.	8/13/09	K.A.K.	8/13/09

THRUST BLOCKING DETAILS
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. N.T.S.	46
PROFILE HOR. N.T.S. VER. N.T.S.	OF 53

200-M-02

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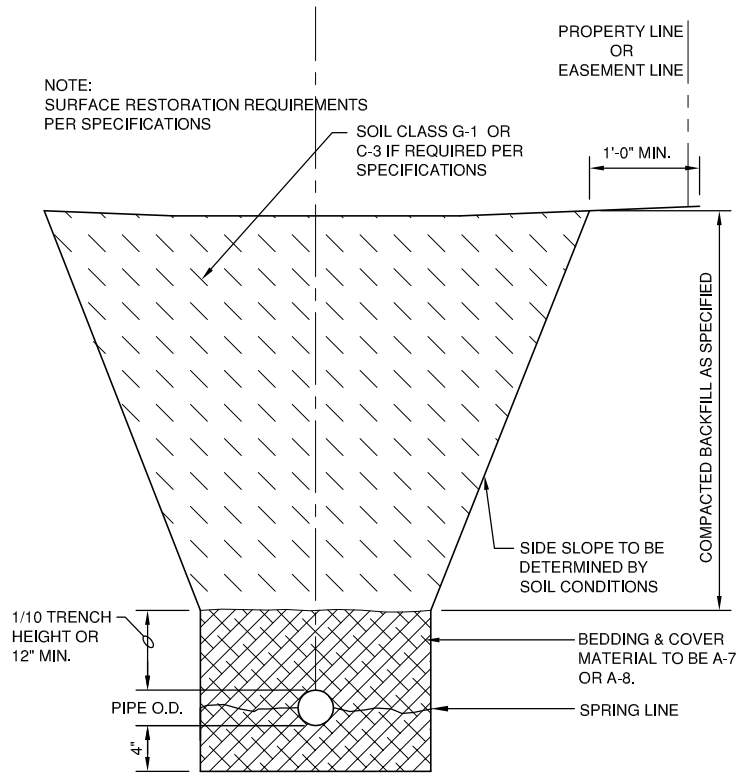
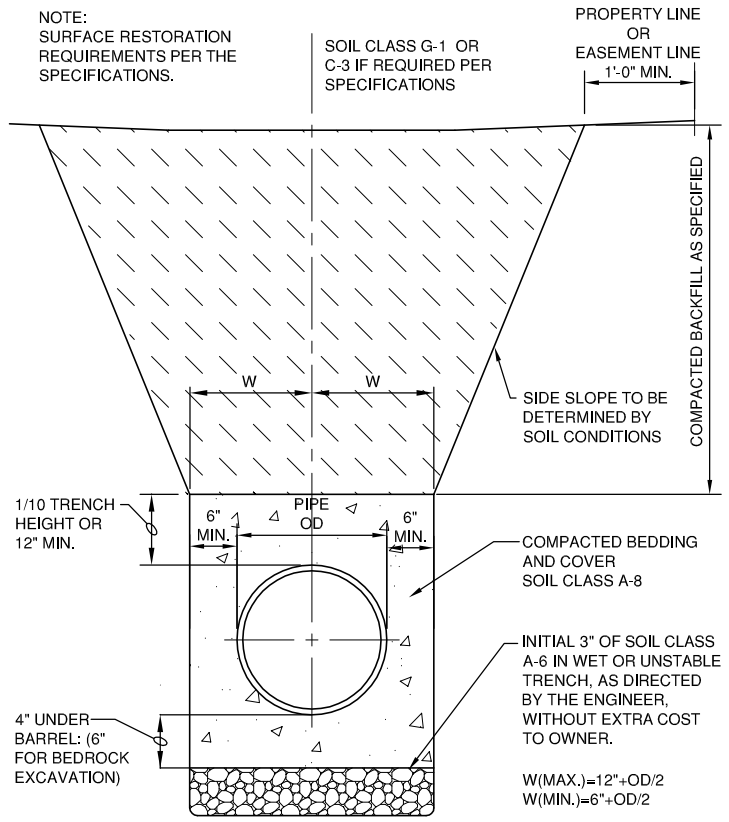
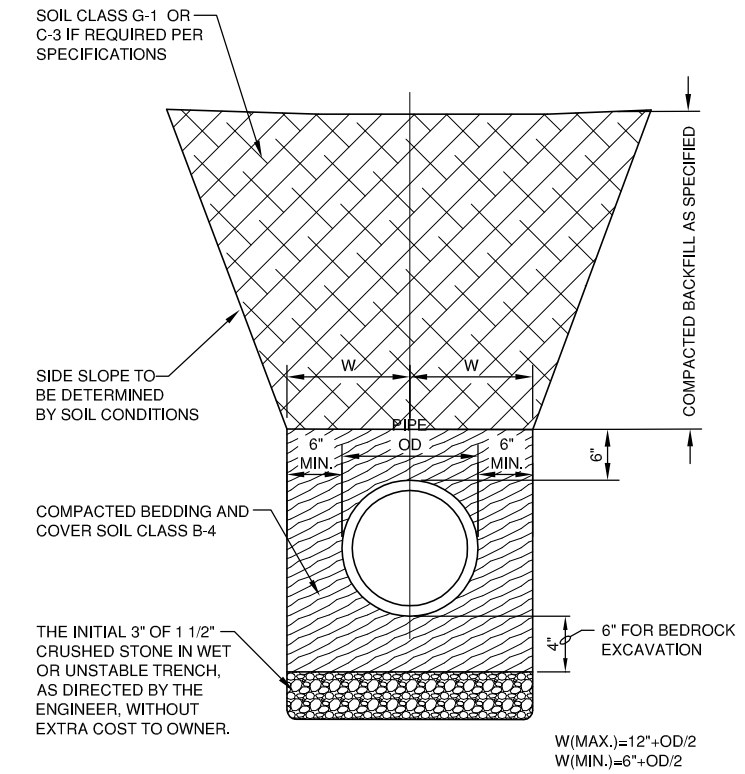
PLAN VIEW: PLAN



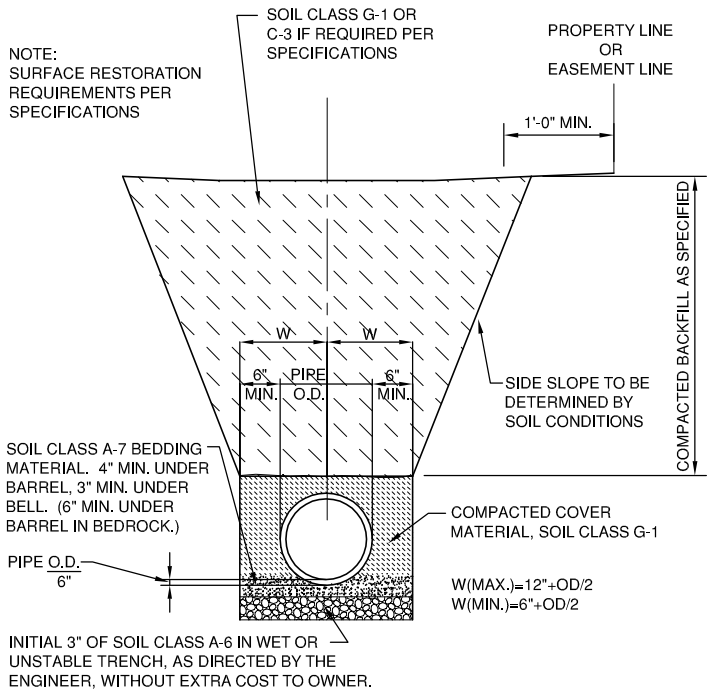
SMALL DIAMETER PIPING (UNDER 4" DIA.) PVC, COPPER, STEEL, AND POLYETHYLENE



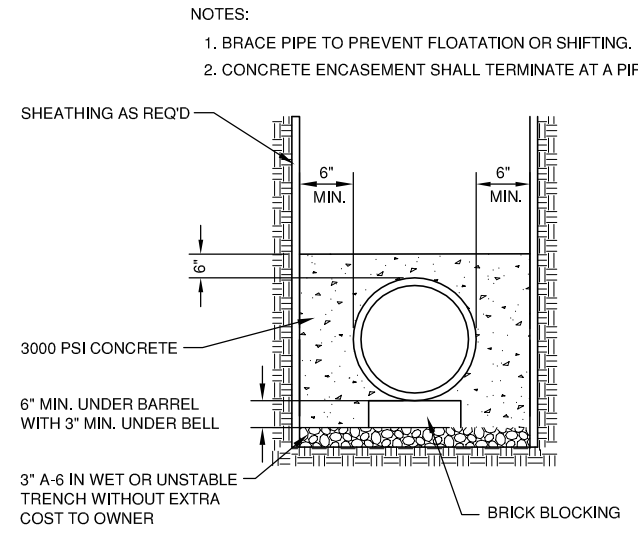
P.V.C. SEWER & WATERMAIN & FORCEMAIN BEDDING & TRENCH SECTION



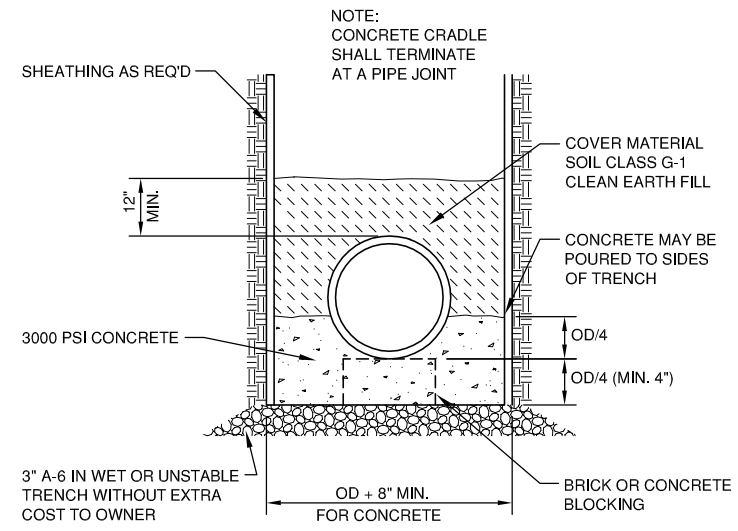
DUCTILE IRON BEDDING & TRENCH SECTION



CONCRETE PIPE BEDDING & TRENCH SECTION



CONCRETE ENCASEMENT BEDDING



CONCRETE PIPE CRADLE BEDDING

FOR CONSTRUCTION

SA.	Consultant: Robert E. Lee & Associates, Inc.	CITY OF OAK CREEK, WISCONSIN		APPROVED BY UTILITY ENGINEER DATE
ST.		DESIGNED BY DATE: D.A.M. 8/13/09	DRAWN BY DATE: R.L.B. 8/13/09	CHECKED BY DATE: K.A.K. 8/13/09
W.				APPROVED BY CITY ENGINEER DATE
G.				
E.	ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES	PIPE BEDDING DETAILS		SCALE: PLAN HOR. N.T.S. / PROFILE HOR. N.T.S. VER. N.T.S.
T.		IN: PUETZ ROAD BOOSTER STATION		SHEET: 47 OF 53
I.				
TS.				
PP.	4664 GOLDEN POND PARK CT. HOBART, WISCONSIN 54155 PHONE: 920-662-9641 FAX: 920-662-9141 WWW.RELEEINC.COM			
	REVISION BY DATE	FILE NO: 08101		200-M-03

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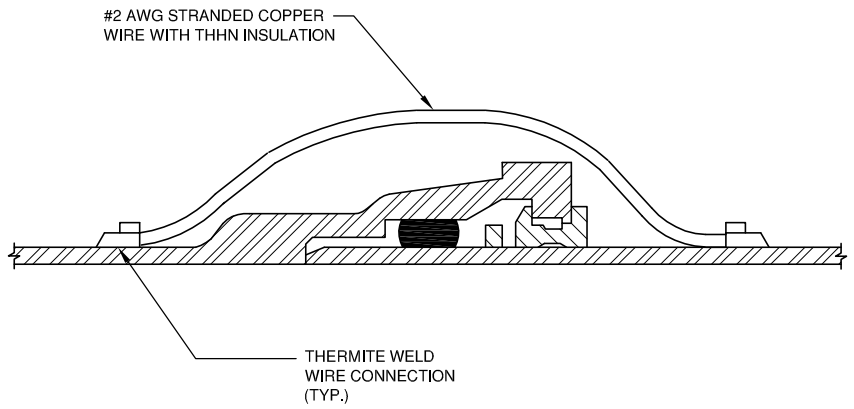
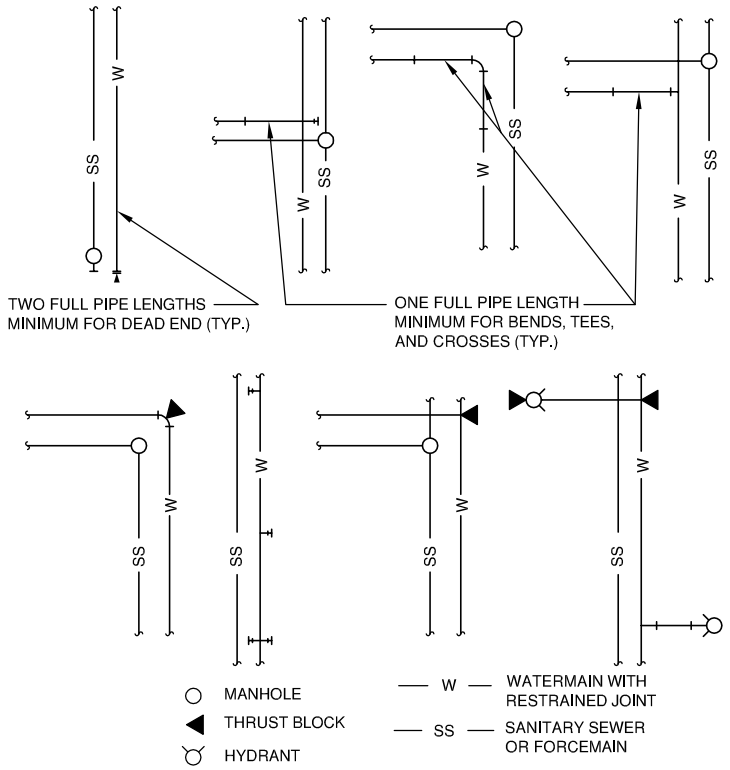
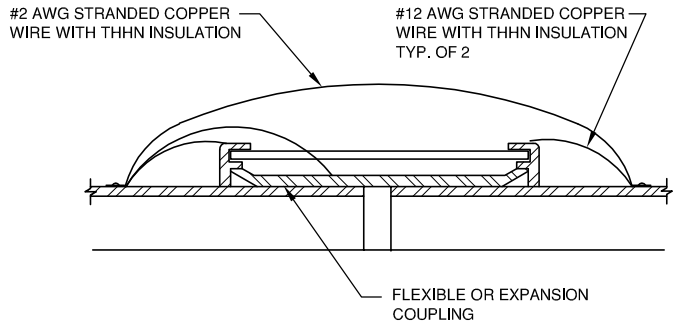
PLAN VIEW: PLAN



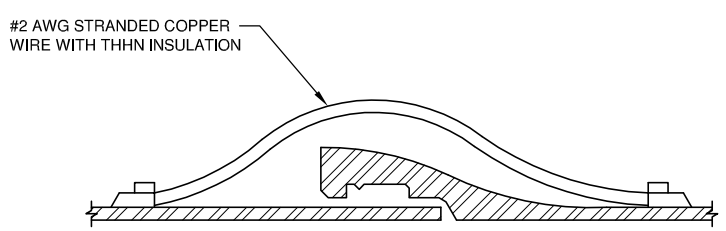
RESTRAINED JOINT BOND



TYPICAL WATERMAIN RESTRAINT
REQUIREMENTS FOR COMMON
TRENCH CONSTRUCTION



FLEXIBLE JOINT BOND



PUSH-ON JOINT BOND

FOR CONSTRUCTION

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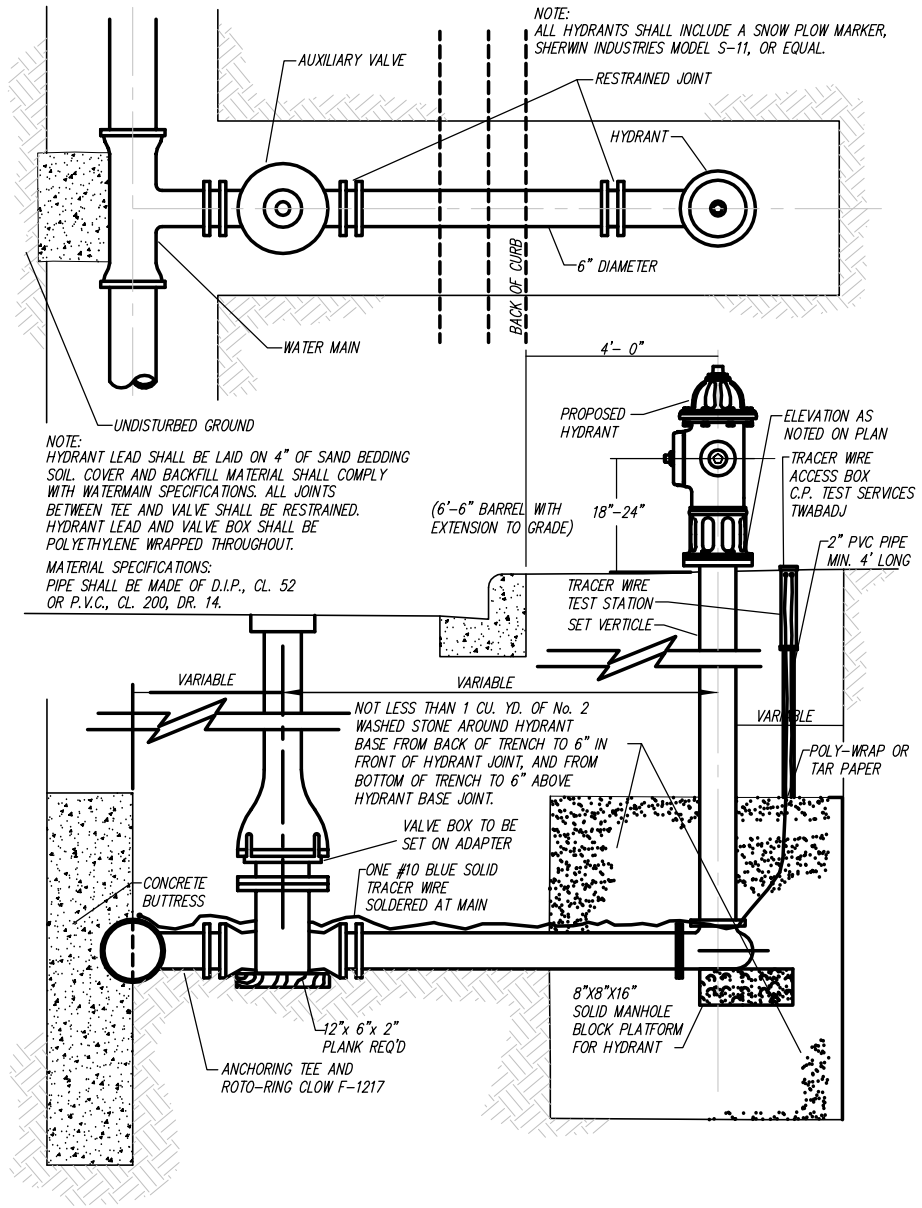
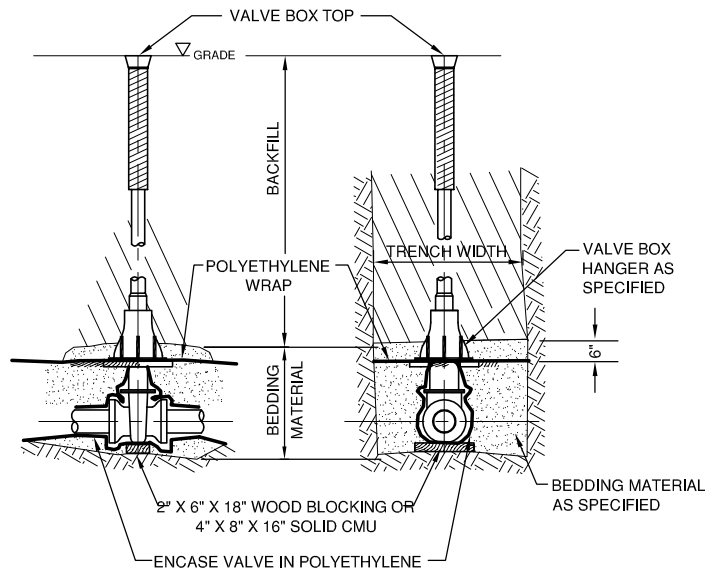
LAYOUT: LAYOUT
PLAN VIEW: PLAN

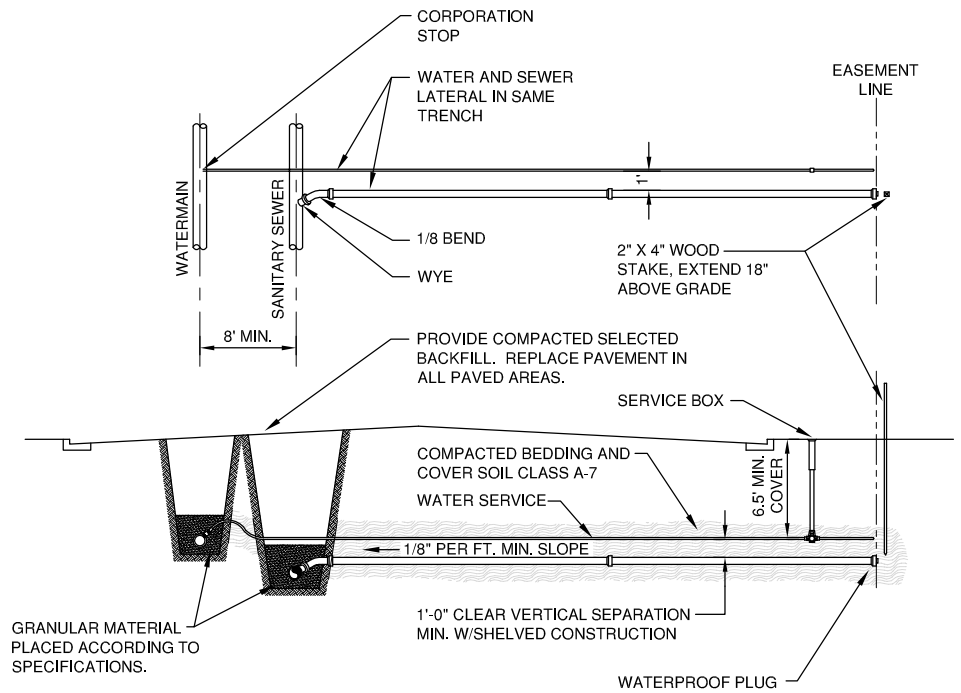
SA.	Consultant: Robert E. Lee & Associates, Inc.	CITY OF OAK CREEK, WISCONSIN		APPROVED BY _____ UTILITY ENGINEER _____ DATE
ST.		DESIGNED BY DATE	DRAWN BY DATE	CHECKED BY DATE
W.		D.A.M. 8/13/09	R.L.B. 8/13/09	K.A.K. 8/13/09
G.				APPROVED BY _____ CITY ENGINEER _____ DATE
E.	ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES	WATERMAIN DETAILS		SCALE / SHEET
T.		IN: PUETZ ROAD BOOSTER STATION		PLAN HOR. N.T.S. 48
I.				PROFILE HOR. N.T.S. OF
TS.	4664 GOLDEN POND PARK CT. HOBART, WISCONSIN 54155 PHONE: 920-662-9641 FAX: 920-662-9141 WWW.RELEEINC.COM			VER. N.T.S. 53
PP.				
	REVISION BY DATE	FILE NO: 08101		200-AS-04



STANDARD HYDRANT



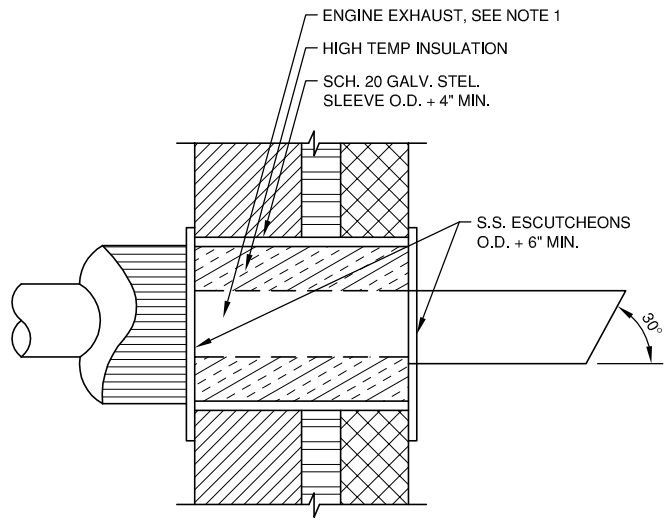
VALVE BOX SETTING



TYPICAL CONNECTION SEWER AND WATER

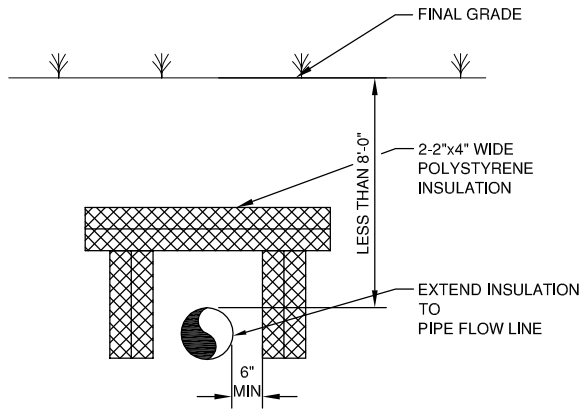
FOR CONSTRUCTION

SA.	Consultant: Robert E. Lee & Associates, Inc.	CITY OF OAK CREEK, WISCONSIN		APPROVED BY UTILITY ENGINEER DATE
ST.		DESIGNED BY DATE	DRAWN BY DATE	CHECKED BY DATE
W.		D.A.M. 8/13/09	R.L.B. 8/13/09	K.A.K. 8/13/09
G.				APPROVED BY CITY ENGINEER DATE
E.	ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES	WATERMAIN DETAILS IN: PUETZ ROAD BOOSTER STATION		SCALE: PLAN HOR. N.T.S. PROFILE HOR. N.T.S. VER. N.T.S.
T.				SHEET 49 OF 53
I.				
TS.				
PP.	4664 GOLDEN POND PARK CT. HOBART, WISCONSIN 54155 PHONE: 920-662-9641 FAX: 920-662-9141 WWW.RELEEINC.COM			
	REVISION BY DATE	FILE NO: 08101		200-M-05

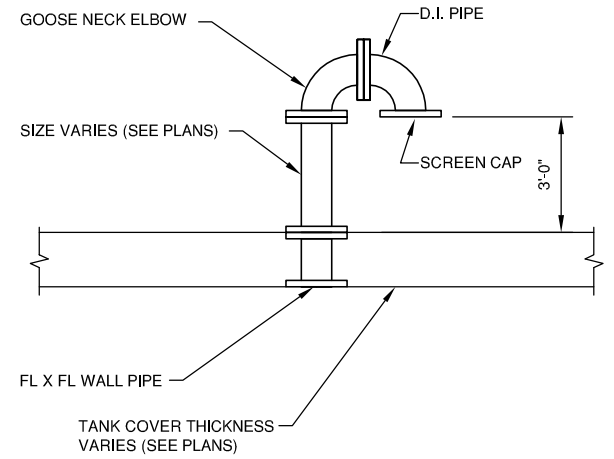


EXHAUST PIPE PENETRATION (G VAR.)

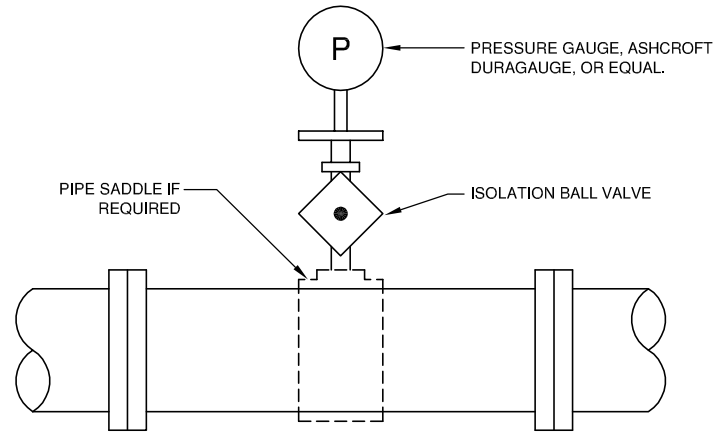
NOTE:
1. PROVIDE STAINLESS STEEL BIRD SCREEN ON ENGINE EXHAUST PIPE DISCHARGE



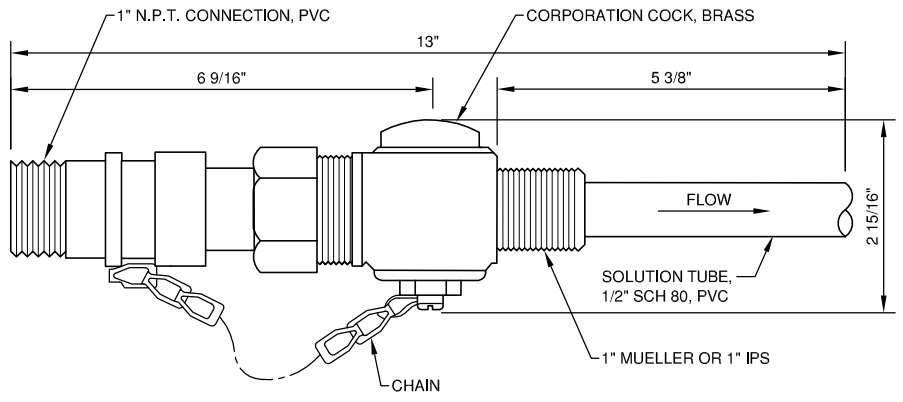
PIPE INSULATION (A VAR.)



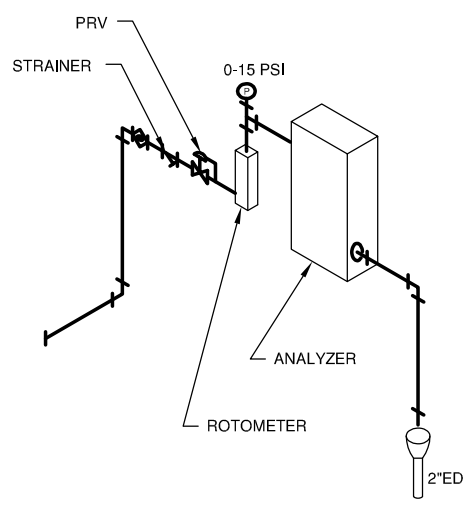
VENT PIPE DETAIL (B VAR.)



WATER SYSTEM PRESSURE GAUGE DETAIL (C VAR.)



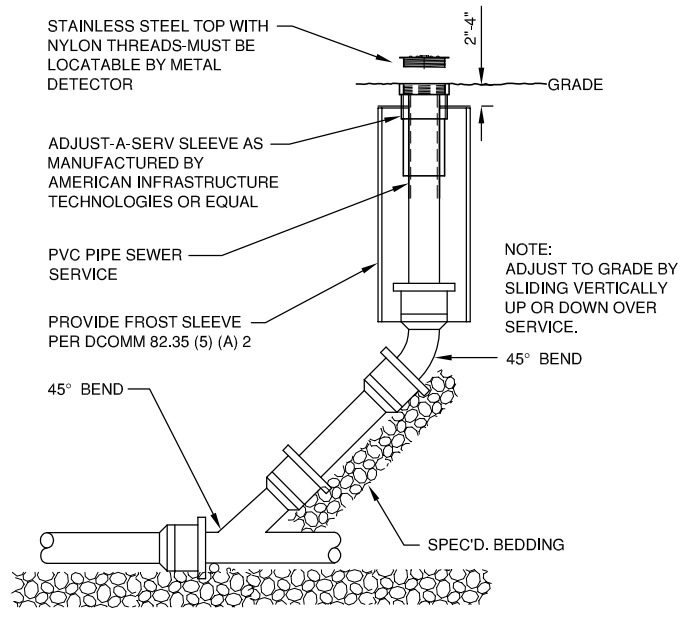
CORPORATION COCK ASSEMBLY DETAIL



CHLORINE RESIDUAL ANALYZER DETAIL (F VAR.)

NOTE:
ROTAMETER - KUBOLD VKP 4020
PRV - WATTS N223B
ANALYZER - EIT

NOTE: CLEANOUT LINE TO BE THE SAME SIZE & MATERIAL AS SEWER MAIN



CLEAN-OUT DETAIL (NON-TRAVELED AREAS) (E VAR.)

FOR CONSTRUCTION

SA.
ST.
W.
G.
E.
T.
I.
TS.
PP.

Consultant:
Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES
4664 GOLDEN POND PARK CT.
HOBART, WISCONSIN 54155
PHONE: 920-662-9641
FAX: 920-662-9141
WWW.RELEEINC.COM

REVISION BY DATE

CITY OF OAK CREEK, WISCONSIN

DESIGNED BY DATE	DRAWN BY DATE	CHECKED BY DATE
D.A.M. 8/13/09	R.L.B. 8/13/09	K.A.K. 8/13/09

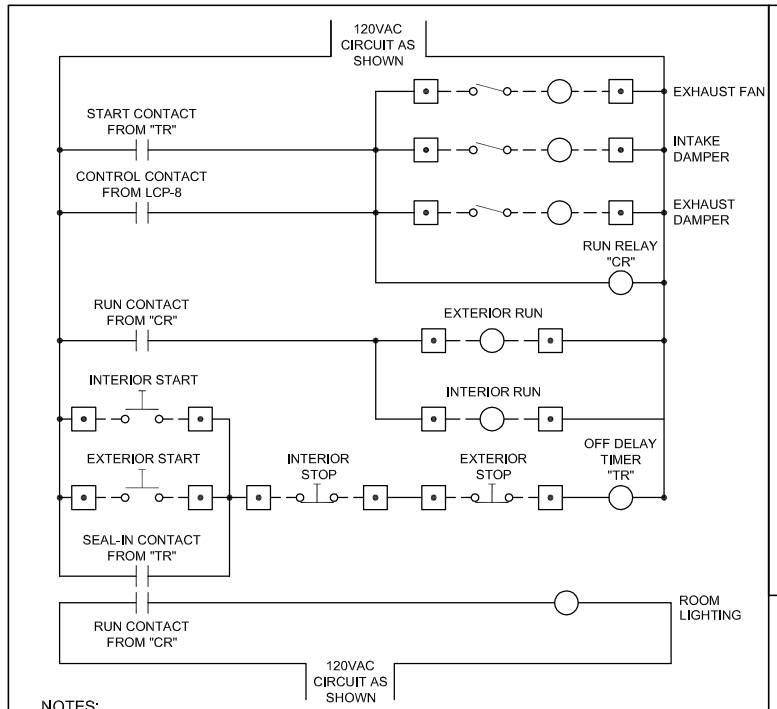
PRESSURE GAUGE DETAILS
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. N.T.S.	50
PROFILE HOR. N.T.S.	OF
VER. N.T.S.	53

200-M-06

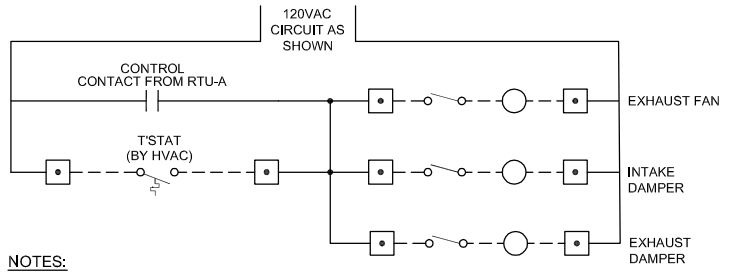


NOTES:

1. RTU-A SHALL PROVIDE MANUAL/AUTO CONTROL OF VENTILATION SYSTEM. AUTO CONTROL SHALL CONSIST OF OPERATOR ADJUSTABLE INTERVAL/DURATION TIMERS CONFIGURABLE TO OPERATE EQUIPMENT FOR AN ADJUSTABLE NUMBER OF MINUTES PER HOUR. ROOM LOW TEMPERATURE ALARM SHALL PREVENT AUTO EQUIPMENT OPERATION. GAS DETECTION ALARM AND ROOM INTRUSION CONDITION (SENSED BY DOOR SWITCH) SHALL OVER-RIDE AUTO OPERATION AND CAUSE EQUIPMENT TO OPERATE CONTINUOUSLY FOR AN OPERATOR ADJUSTABLE TIME PERIOD OR UNTIL THE GAS ALARM HAS CLEARED.
2. LOCAL INTERIOR AND EXTERIOR CONTROL STATION START-STOP SWITCHES SHALL OVER RIDE RTU-A CONTROL AND ACTIVATE VENTILATION SYSTEM WHEN INITIATED BY OPERATOR. HVAC EQUIPMENT SHALL RUN UNTIL STOP PUSHBUTTON IS ACTIVATED AR UNTIL THE ADJUSTABLE OFF DELAY TIMER HAS TIMED OUT.
3. ROOM LIGHTING AND PILOT INDICATOR LIGHTS SHALL BE INTERLOCKED WITH HVAC CONTROL AS SHOWN.
4. RTU-A PROVIDED BY OTHERS.

16000-01 CHEMICAL ROOM HVAC CONTROL
NTS

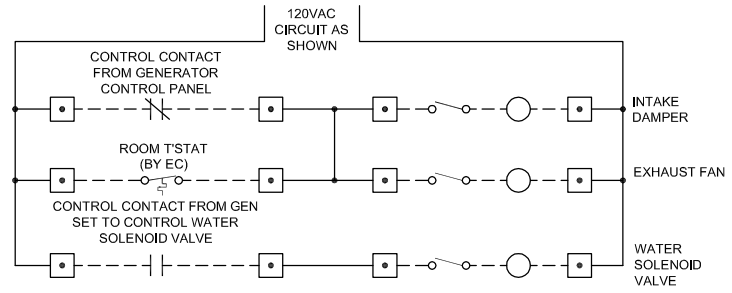
16000-02 TOILET ROOM HVAC CONTROL
NTS



NOTES:

1. RTU-A SHALL PROVIDE MANUAL/AUTO CONTROL OF VENTILATION SYSTEM. AUTO CONTROL SHALL CONSIST OF OPERATOR ADJUSTABLE INTERVAL/DURATION TIMERS CONFIGURABLE TO OPERATE EQUIPMENT FOR AN ADJUSTABLE NUMBER OF MINUTES PER HOUR. ROOM LOW TEMPERATURE ALARM SHALL OVER-RIDE AUTO OPERATION.
2. ROOM MOUNTED T'STAT SHALL OVER RIDE RTU-A CONTROL AND ACTIVATE VENTILATION SYSTEM WHEN ROOM TEMPERATURE RISES ABOVE SET POINT.
3. RTU-A PROVIDED BY OTHERS.

16000-03 PUMP ROOM HVAC CONTROL
NTS



NOTES:

1. GENERATOR CONTROL SHALL PROVIDE AUTO CONTROL OF VENTILATION SYSTEM. AUTO CONTROL SHALL CAUSE DAMPER OPERATORS TO OPEN WHEN GENERATOR ENGINE IS RUNNING. DAMPER OPERATORS SHALL BE POWER-TO-CLOSE, SPRING OPEN.
2. ROOM MOUNTED T'STAT SHALL ACTIVATE VENTILATION SYSTEM WHEN ROOM TEMPERATURE RISES ABOVE SET POINT.
3. GENERATOR CONTROL SHALL PROVIDE AUTO CONTROL OF WATER SOLENOID VALVE. CONTROL SHALL OPEN VALVE WHEN ENGINE RUNS.

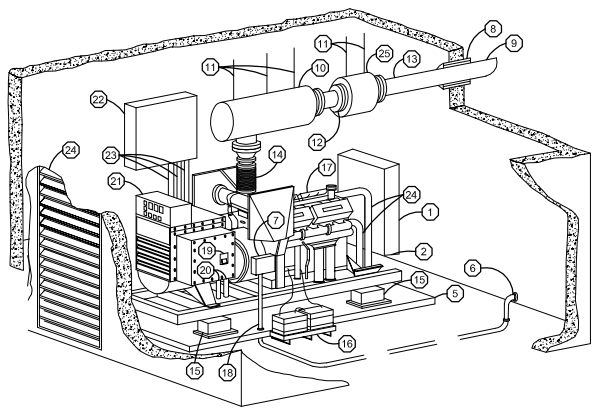
16000-04 GENERATOR ROOM HVAC CONTROL
NTS

FOR CONSTRUCTION

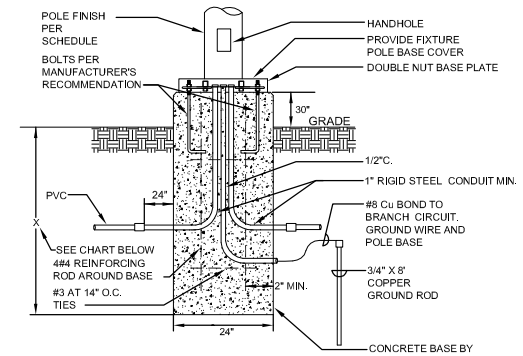
SA.	Consultant: Robert E. Lee & Associates, Inc.	CITY OF OAK CREEK, WISCONSIN		APPROVED BY
ST.				UTILITY ENGINEER DATE
W.		DESIGNED BY DATE	DRAWN BY DATE	CHECKED BY DATE
G.		D.A.M. 8/13/09	R.L.B. 8/13/09	K.A.K. 8/13/09
E.				APPROVED BY
T.	ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES			CITY ENGINEER DATE
I.		ELECTRICAL DETAILS		SCALE / SHEET
TS.	4664 GOLDEN POND PARK CT. HOBART, WISCONSIN 54155 PHONE: 920-662-9641 FAX: 920-662-9141 WWW.RELEEINC.COM	IN: PUETZ ROAD BOOSTER STATION		PLAN HOR. N.T.S. / 51
PP.				PROFILE HOR. N.T.S. / OF
				VER. N.T.S. / 53
	REVISION BY DATE	FILE NO: 08101		200-E-01

KEY NOTES: (X)

1. UNIT MOUNTED CITY WATER HEAT EXCHANGER.
2. SUPPLY AND DRAIN PIPING CONNECTIONS TO HEAT EXCHANGER, REFER TO PLUMBING PLANS.
3. NOT USED.
4. NOT USED.
5. CONCRETE HOUSEKEEPING PAD, SEE ARCHITECTURAL/STRUCTURAL DRAWINGS.
6. FUEL SUPPLY LINE TO GENERATOR, SIZED PER GENERATOR MANUFACTURER RECOMMENDATIONS.
7. REGULATOR FOR NATURAL GAS SUPPLY SIZED PER MFG RECOMMENDATIONS.
8. EXHAUST THIMBLE, REFER TO DETAIL (16622-17) FOR THIMBLE INSTALLATION.
9. EXHAUST PIPE WITH BIRD SCREEN, SIZED PER GENERATOR MANUFACTURER RECOMMENDATIONS.
10. EXHAUST SILENCER, MAINTAIN CLEARANCE OF 9" FROM ALL COMBUSTIBLE MATERIAL). PROVIDE MINIMUM TWO-INCH RIGID INSULATION AND 0.016" ALUMINUM JACKET, SECURED IN PLACE WITH RIVETS OR SCREWS. INSULATION AND JACKET NOT SHOWN FOR CLARITY. LOCATE AS NEAR EXHAUST OUTLET AS POSSIBLE.
11. GALVANIZED STEEL HANGER RODS, DESIGNED TO SUPPORT SILENCER, CATALYTIC CONVERTER, AND EXHAUST PIPING WEIGHT FROM CEILING. PROVIDE SUITABLE ANCHORS.
12. FLANGED CONNECTION, TYPICAL.
13. INSULATED EXHAUST PIPING SIZED PER GENERATOR MANUFACTURER RECOMMENDATIONS. SEE PLAN FOR ORIENTATION.
14. FLEXIBLE EXHAUST CONNECTOR, UNI-INSULATED.
15. SPRING TYPE VIBRATION ISOLATORS WHERE RECOMMENDED BY GENERATOR MANUFACTURER.
16. BATTERIES, CORROSION RESISTANT TRAY, AND HEAVY DUTY CABLES.
17. ENGINE-GENERATOR SET.
18. FLEXIBLE CONNECTOR ON FUEL LINE.
19. LINE CIRCUIT BREAKER.
20. CONDUITS TO TRANSFER SWITCH FOR POWER AND CONTROL. PROVIDE FLEXIBLE CONNECTORS. ROUTE ALARM WIRING TO SCADA SYSTEM THROUGH TRANSFER SWITCH. CONTROL WIRING FROM TRANSFER SWITCH TO GENERATOR CONTROL PANEL PER MANUFACTURER PROVIDED INSTALLATION DRAWINGS.
21. ENGINE GENERATOR CONTROL PANEL WITH CONTACTS FOR CONTROL OF EXHAUST SYSTEM AND FOR STATUS MONITORING.
22. AUTOMATIC TRANSFER SWITCH (SHOWN OUT OF POSITION).
23. CONDUITS FOR LINE POWER, GENERATOR POWER, OUTPUT POWER, GENERATOR CONTROL, AND CONTROL TO SCADA SYSTEM.
24. INTAKE LOUVER WITH MOTORIZED DAMPER, SPRING OPEN, POWER CLOSED. EXHAUST FAN WITH MOTORIZED DAMPER (NOT SHOWN). INTERLOCK WITH ENGINE CONTROL PANEL.
25. EXHAUST SYSTEM CATALYTIC CONVERTER, PROVIDED BY GENERATOR MANUFACTURER AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS TO MAINTAIN EXHAUST TEMPERATURE AT INLET. UNIT SHALL BE ENCLOSED AND VENTILATED, REFER TO HVAC PLANS.



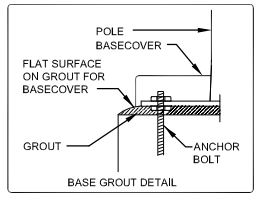
16622-15 NATURAL GAS ENGINE-GENERATOR W/ UNIT RADIATOR INSTALLATION
NTS



NOTES

1. IN UNDISTURBED EARTH, EXCLUDING FILL MATERIAL, A 2'-0" DIA. HOLE WHICH SHALL BE USED AS THE FORM FOR THE CONCRETE BASE SHALL BE DRILLED.
2. IN EXCAVATED AREAS OR IN EXISTING SOIL CONTAINING FILL OF OBJECTIONABLE MATERIAL, BACKFILL AROUND CONCRETE BASE WITH COMPACTED GRANULAR BACKFILL A MIN. OF 2'-0" IN ALL DIRECTIONS.

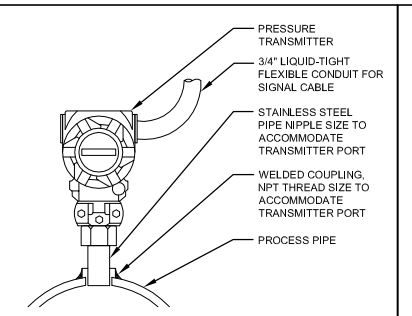
POLE HEIGHT IN FEET	BASE DEPTH IN INCHES BELOW GRADE
10'-0"	X = 60" (INCHES)
15'-0"	X = 60" (INCHES)
20'-0"	X = 60" (INCHES)
25'-0"	X = 72" (INCHES)
30'-0"	X = 72" (INCHES)
35'-0"	X = 72" (INCHES)
40'-0"	X = 96" (INCHES)
45'-0"	X = 96" (INCHES)
50'-0"	X = 108" (INCHES)



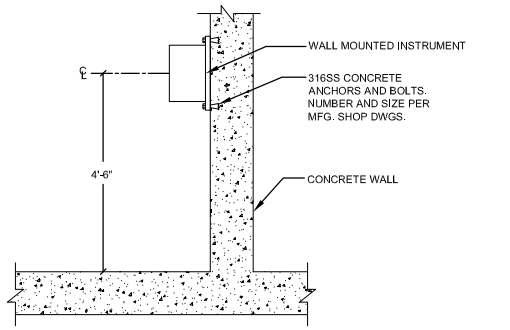
16520-10 EXTERIOR MOUNTED FIXTURE BASE DETAIL
NTS

NOTES:

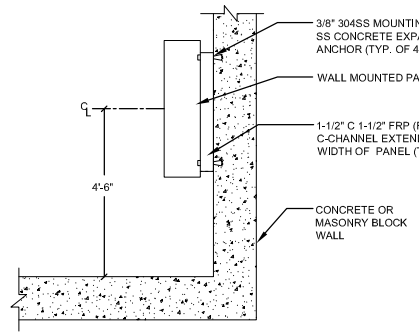
1. DIRECT-MOUNTING SUITABLE FOR POTABLE WATER OR AIR SERVICE ONLY.
2. COORDINATE PIPE FITTING REQUIREMENTS WITH MANUFACTURER.



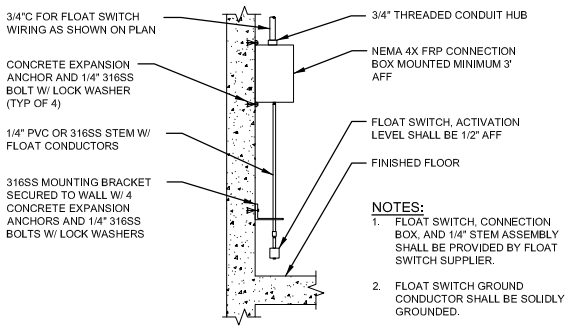
16930-51 PRESSURE TRANSMITTER DIRECT-MOUNTED INSTALLATION
NTS



16990-01 WALL-MOUNTED INSTRUMENT INSTALLATION
NTS



16980-03 WALL-MOUNTED CONTROL PANEL INSTALLATION (EXTERIOR WALL)
NTS

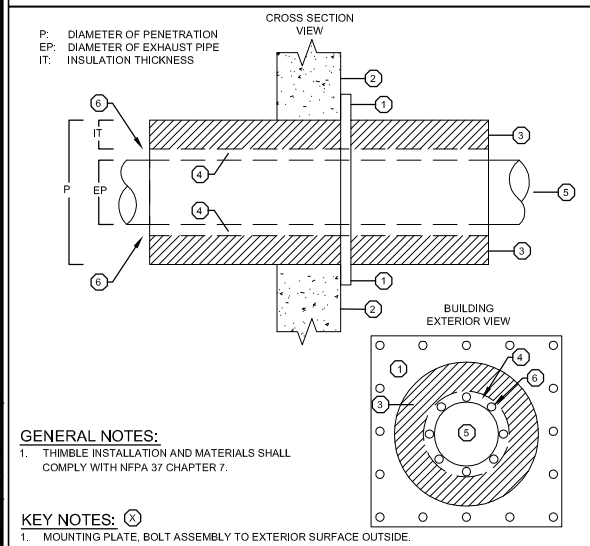


NOTES:

1. FLOAT SWITCH, CONNECTION BOX, AND 1/4" STEM ASSEMBLY SHALL BE PROVIDED BY FLOAT SWITCH SUPPLIER.
2. FLOAT SWITCH GROUND CONDUCTOR SHALL BE SOLIDLY GROUNDED.

16900-05 FLOAT SWITCH INSTALLATION DRY WELL
NTS

P: DIAMETER OF PENETRATION
EP: DIAMETER OF EXHAUST PIPE
IT: INSULATION THICKNESS



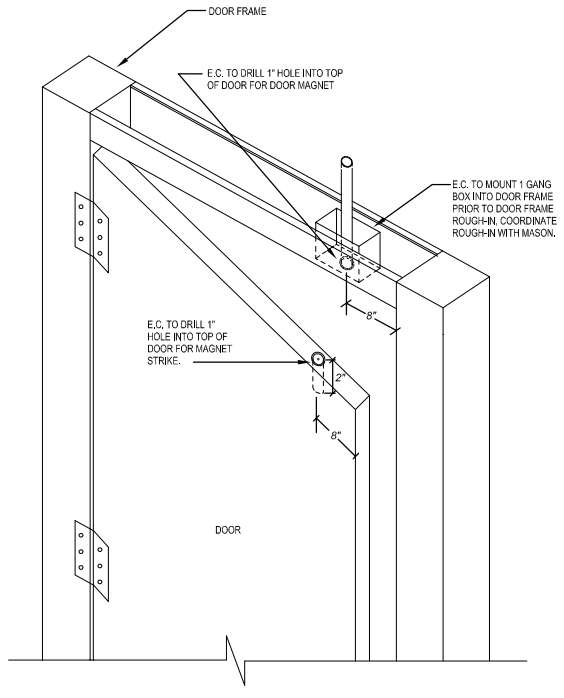
GENERAL NOTES:

1. THIMBLE INSTALLATION AND MATERIALS SHALL COMPLY WITH NFPA 37 CHAPTER 7.

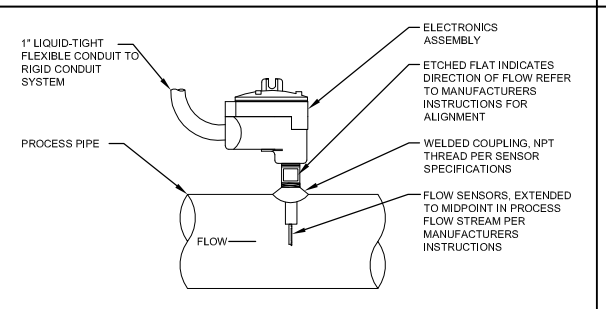
KEY NOTES: (X)

1. MOUNTING PLATE, BOLT ASSEMBLY TO EXTERIOR SURFACE OUTSIDE.
2. EXTERIOR SURFACE. FRAME & GROUT AS REQ'D TO PREPARE FOR MOUNTING PLATE INSTALLATION.
3. HIGH TEMPERATURE INSULATION. REFER TO GENERATOR MANUFACTURER'S DATA FOR EXHAUST TEMPERATURE INFORMATION AND TO NFPA 37 CHAPTER 7 FOR INSULATION REQUIREMENTS.
4. HEAT DISSIPATION CHAMBER.
5. EXHAUST PIPE. MINIMUM DIAMETER PER GENSET MANUFACTURER'S REQUIREMENTS. INSTALL SPACERS AS REQUIRED TO CENTER EXHAUST PIPE WITHIN THIMBLE.
6. HEAT DISSIPATION VENT OPENINGS (INTERIOR SIDE OF THIMBLE ONLY.)

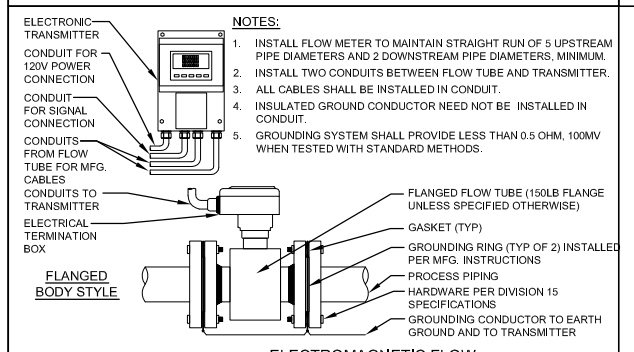
16622-17 STANDBY GENERATOR EXHAUST PIPE SURFACE PENETRATION (EXHAUST THIMBLE)
NTS



16708-01 INTRUSION ALARM DOOR SWITCH
NTS



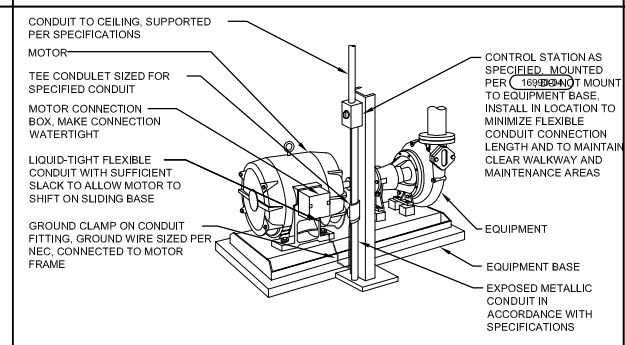
16910-01 THERMAL DISPERSION FLOW SWITCH INSTALLATION
NTS



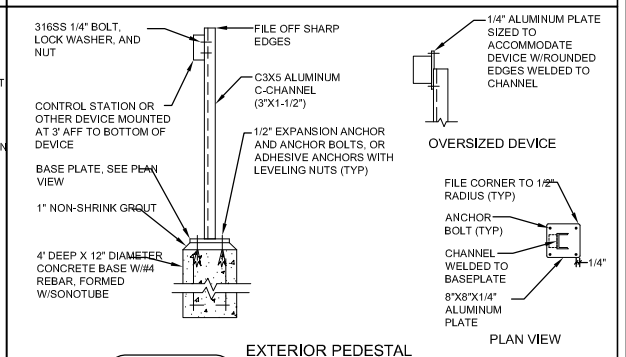
NOTES:

1. INSTALL FLOW METER TO MAINTAIN STRAIGHT RUN OF 5 UPSTREAM PIPE DIAMETERS AND 2 DOWNSTREAM PIPE DIAMETERS, MINIMUM.
2. INSTALL TWO CONDUITS BETWEEN FLOW TUBE AND TRANSMITTER.
3. ALL CABLES SHALL BE INSTALLED IN CONDUIT.
4. INSULATED GROUND CONDUCTOR NEED NOT BE INSTALLED IN CONDUIT.
5. GROUNDING SYSTEM SHALL PROVIDE LESS THAN 0.5 OHM, 100MV WHEN TESTED WITH STANDARD METHODS.

16910-51 ELECTROMAGNETIC FLOW METER INSTALLATION
NTS



16111-03 EQUIPMENT CONNECTION WITH EXPOSED CONDUIT
NTS



16990-04 EXTERIOR PEDESTAL MOUNTED DEVICE
NTS

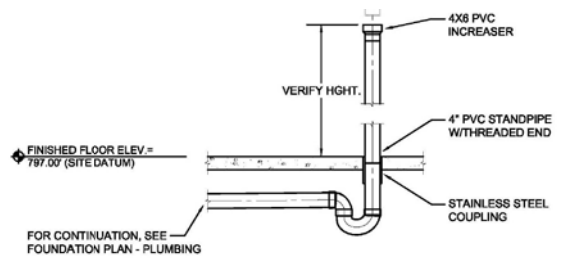
FOR CONSTRUCTION

	Consultant:	CITY OF OAK CREEK, WISCONSIN	APPROVED BY
SA.	Robert E. Lee & Associates, Inc.		UTILITY ENGINEER DATE
ST.		DESIGNED BY DATE / DRAWN BY DATE / CHECKED BY DATE	APPROVED BY
W.		D.A.M. 8/13/09 / R.L.B. 8/13/09 / K.A.K. 8/13/09	
G.			CITY ENGINEER DATE
E.	ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES		SCALE / SHEET
T.		ELECTRICAL DETAILS	PLAN HOR. N.T.S. / 52
I.		IN: PUETZ ROAD BOOSTER STATION	PROFILE HOR. N.T.S. / OF
TS.	4664 GOLDEN POND PARK CT. HOBART, WISCONSIN 54155 PHONE: 920-662-9641 FAX: 920-662-9141 WWW.RELEEINC.COM		VER. N.T.S. / 53
PP.			
	REVISION BY DATE	FILE NO: 08101	200-E-02

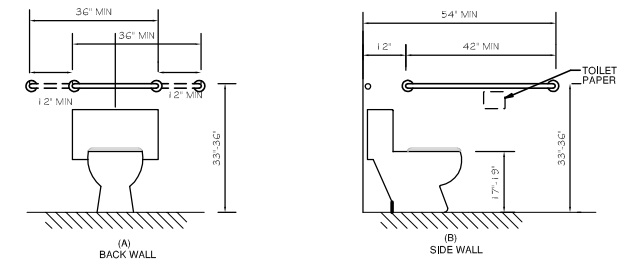
PLAN VIEW: PLAN
LAYOUT:
LAYOUT
File: R:\4900\4931\4931001\dwg\CB_DETAILS.dwg

CLEANOUT SCHEDULE						
TYPE	BODY MATERIAL	PLUG MATERIAL	TOP MATERIAL	OPTIONS	MFGR.	SERIES NUMBER
YCO	C.I.	BRASS	---	---	J.R. SMITH	FIG. NO. 4250-U
CO	C.I./P.V.C.	BRASS	---	---	---	---
FCO	C.I.	BRASS	N.B.	---	J.R. SMITH	FIG. NO. 4250-U

FLOOR DRAIN SCHEDULE							
TYPE	SIZE	BODY MATERIAL	TOP MATERIAL	STRAINER DIAMETER	FLASHING CLAMP	MFGR.	SERIES NUMBER
FD-1	0'-3"	C.I.	N.B.	6" DIAM.	NO	J.R. SMITH	FIG. NO. 2010A



STAND PIPE DETAIL
SCALE: 1/2" = 1'-0"

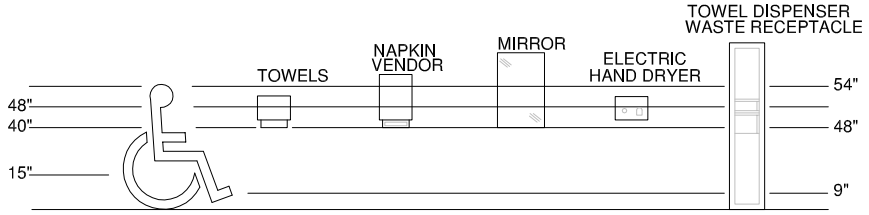


GRAB BARS AT WATER CLOSETS

ACCESSIBLITY GUIDELINES

THE DIAGRAM BELOW SHOWS RECOMMENDED MOUNTING HEIGHTS FOR MANY WASHROOM ACCESSORIES. A MINIMUM 30" x 48" CLEAR FLOOR SPACE IS REQUIRED IN FRONT OF ALL ACCESSIBLE FIXTURES AND ACCESSORIES.

FORWARD APPROACH



QUICK REFERENCE GUIDELINES
(BE SURE TO REFERNCE WITH ADA CODE)

GENERAL NOTES

1. DO NOT SCALE DRAWING. INSTALL THE FIXTURES TO THE ROUGHING-IN DIMENSIONS SHOWN ON THE ARCHITECTURAL PLANS. IF DIMENSIONS ARE IN QUESTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION BEFORE CONTINUING WITH CONSTRUCTION. ALL LOCATIONS ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED. COORDINATE WITH OWNER AND FIELD ENGINEER.
2. THE CONTRACTOR SHALL VERIFY ACTUAL PIPING LENGTHS AND SIZES.
3. ALL PIPES, FITTINGS, AND CONNECTIONS SHALL BE WATER TIGHT.
4. CONTRACTOR SHALL REVIEW ENTIRE PLANS AND SPECIFICATION FOR ADDITIONAL INFORMATION AND DETAILS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIREMENTS REQUIRED HEREIN.
5. CONTRACTORS SHALL BE QUALIFIED PROFESSIONALS. ALL WORK SHALL BE INSTALLED IN A WORKMANLIKE MANNER. ALL WORK SHALL COMPLY WITH ALL RELEVANT CODES, REGULATIONS, AND GUIDANCES.
6. CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL PIPING, FIXTURES, AND EQUIPMENT WITH ALL DISCIPLINES TO ELIMINATE CONFLICTS. DO NOT INSTALL ANY PIPING OR DEVICES ABOVE ELECTRICAL PANELS.
7. ALL PENETRATIONS SHALL BE SUPPORTED, SEALED, AND FIRESTOPPED TO MATCH THE ORIGINAL FIRE RATING OF THE STRUCTURE PENETRATED.
8. PLUMBING CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL WATER DISTRIBUTION PIPING IN THE CEILINGS WITH THE ELECTRICAL LIGHT FIXTURES AND HVAC DUCT WORK AND PIPING.
9. PLUMBING CONTRACTOR SHALL COORDINATE THE LOCATIONS OF ALL FLOOR DRAINS AND SIGHT DRAINS IN MECHANICAL ROOMS WITH THE MECHANICAL CONTRACTOR.

FOR CONSTRUCTION

SA.
ST.
W.
G.
E.
T.
I.
TS.
PP.

Consultant:
Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, AND ENVIRONMENTAL SERVICES
4664 GOLDEN POND PARK CT.
HOBART, WISCONSIN 54155
PHONE: 920-662-9641
FAX: 920-662-9141
WWW.RELEEINC.COM

REVISION BY DATE

CITY OF OAK CREEK, WISCONSIN

DESIGNED BY DATE	DRAWN BY DATE	CHECKED BY DATE
D.A.M. 8/13/09	R.L.B. 8/13/09	K.A.K. 8/13/09

PLUMBING SCHEDULE & DETAILS
IN: PUETZ ROAD BOOSTER STATION

FILE NO: 08101

APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. N.T.S.	53
PROFILE HOR. N.T.S.	OF
VER. N.T.S.	53

200-P-01

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Plot date: Sep 01, 2009 - 3:30pm
LAYOUT: LAYOUT
PLAN VIEW: PLAN