TWIN OAKS ELEMENTARY SCHOOL
BOILER MODIFICATIONS

PROJECT LOCATION

TWIN OAKS ELEMENTARY SCHOOL
85916 BAILEY HILL ROAD
EUGENE, OR 97405

SHEET INDEX

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M100 MECHANICAL PLANS
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PROJECT DESCRIPTION

THE PROJECT CONSISTS OF THE FOLLOWING ELEMENTS:

DEMOLITION BY OWNER PRIOR TO START OF WORK:
1. REMOVAL OF (E) OIL BURNER ASSEMBLY AND ALL RELATED OIL PIPING AND COMPONENTS INSIDE BOILER ROOM WILL BE PERFORMED BY OWNER.
2. REMOVAL OF (E) OIL STORAGE TANKS AND ALL OIL PIPING OUTSIDE BUILDING WILL BE PERFORMED BY OWNER.

DEMOLITION BY CONTRACTOR:
1. REMOVAL OF (E) DOMESTIC HOT WATER (DHW) STORAGE TANK AND CONNECTIONS TO (E) SIDE-ARM DHW HEATER ON BOILER.
2. REMOVAL OF (E) PROPANE GAS PILOT PIPING ON SOUTHEAST EXTERIOR WALL OF BUILDING, AND WITHIN MECHANICAL ROOM, TO BOILER.
3. REMOVAL OF (E) ABOVE-GROUND PROPANE TANK AND RELATED VALVING AT SOUTHEAST EXTERIOR WALL OF BUILDING.

NEW WORK BY OWNER AFTER COMPLETION OF CONTRACT WORK:
1. INSTALLATION AND PROCUREMENT OF NEW PROPANE FUEL BURNER ASSEMBLY AND RELATED ELECTRICAL CONNECTIONS WILL BE PROVIDED BY OWNER.
2. ALL LINE VOLTAGE ELECTRICAL AND LOW-VOLTAGE CONTROL WIRING WILL BE PROVIDED BY OWNER.

NEW WORK BY CONTRACTOR:
1. PROVIDE NEW PROPANE PIPING AND COMPONENTS BOTH INSIDE BOILER ROOM AND OUTSIDE BUILDING, REQUIREMENTS PER DESIGN CHART ACROSS (E) ASPHALT PAVED PARKING LOT TO LOCATION OF NEW PROPANE FUEL TANK.
2. PROVIDE NEW TRENCH THROUGH (E) ASPHALT CONCRETE PAVING BETWEEN BUILDING AND NEW PROPANE TANK PAD INCLUDING SAW-CUT, TRENCH, BACKFILL, AND COMPACTION OF NEW TRENCH. COORDINATE TRENCH LOCATION WITH CONCURRENT BUT SEPARATE PROJECT "TWIN OAKS SOUTH PARKING LOT UPGRADE".
3. PROVIDE HOUSEKEEPING PAD AND PROTECTIVE BOLLARDS FOR NEW PROPANE TANKS.
4. PROVIDE NEW POWERED COMBUSTION AIR SUPPLY FAN AND OEM SCR SPEED CONTROLLER (OWNER WILL PROVIDE WIRING).
5. PROVIDE NEW CONDENSING, PROPANE-FUELED, STORAGE TYPE DOMESTIC HOT WATER HEATER, INCLUDING ALL COMPONENTS AND CONNECTIONS TO (E) DHW COLD WATER, HOT WATER, AND REcircULATION PIPING.

APPlicable CODeS

2011 OREGON ELECTRICAL SPECIALTY CODE
2011 OREGON PLUMBING SPECIALTY CODE
2014 OREGON MECHANICAL SPECIALTY CODE
2014 OREGON ENERGY EFFICIENCY SPECIALTY CODE
2014 OREGON STRUCTURAL SPECIALTY CODE

WORK LOCATION PLAN

AREA OF INDOOR WORK
AREA OF OUTDOOR WORK

BOILER ROOM:
ACCESS FROM LOWER PARKING AREA
NEW PROPANE TANK HOUSEKEEPING SLAB.
SEE DET 14/M2.01

SCALE: 1" = 80'

PROJECT TEAM

OWNER/PROJECT MANAGER/ELECTRICIAN
EUGENE SCHOOL DISTRICT 4J
715 WEST 4TH AVENUE
EUGENE, OREGON 97402
PHONE: (541) 790-7417 OFFICE, (541) 968-0950 CELL
CONTACT: KIRK GEBB

MECHANICAL ENGINEER / ARCHITECT
SOLARC
223 WEST 12TH AVENUE
EUGENE, OREGON 97401
PHONE: (541) 349-0966
FAX: (541) 343-1533
CONTACT: GENE JOHNSON, P.E.
1. DEMO'D FLANGES AND VALVES MAY CONTAIN ASBESTOS. LEAVE ALL VALVES AND FLANGES IN A DESIGNATED LOCATION FOR OWNER'S DISPOSAL.

2. REMOVAL OF FUEL OIL PIPING AND OUTSIDE (BURIED) FUEL OIL TANK ARE OUTSIDE THE SCOPE OF THIS PROJECT, AND WILL HAVE BEEN REMOVED BY DISTRICT PRIOR TO START OF THE WORK OF THIS PROJECT.

3. CONTRACTOR TO VERIFY ALL FIELD CONDITIONS DURING PRE-BID PERIOD. CONTRACTOR'S BID SHALL INCLUDE ANY AND ALL ADJUSTMENTS TO LOCATIONS OF NEW WORK SHOWN ON THESE DRAWINGS TO AVOID INTERFERENCE WITH EXISTING DUCTWORK, PIPING, CONDUIT, EQUIPMENT, AND STRUCTURAL FEATURES.

KEYED SHEET NOTES - DEMOLITION (DET 01/M101)

- REMOVE (E) DOMESTIC HOT WATER STORAGE TANK AND PORTIONS OF (E) DHW RECIRCULATION, CW SUPPLY, AND HW SUPPLY PIPING AS INDICATED.
- REMOVE (E) SIDE-ARM DHW PIPING, INSULATION, CIRCULATION PUMP, PIPELINE DEVICES AND ACCESSORIES. CAP PIPING AT BOILER AFTER REMOVING ISOLATING GATE VALVES.
- (E) WATER METER, BACKFLOW ASSY AND FEEDWATER REGULATOR TO REMAIN.

KEYED SHEET NOTES - NEW WORK (DET 09/M101)

- COMBUSTION AIR SUPPLY FAN TO BE INTERLOCKED TO BOILER BURNER OPERATION BY DISTRICT. PROVIDE TIME DELAY IN PROGRAMMING TO PREVENT SHORT CYCLING OF FAN.
- PROVIDE SUPPLY GRILLE WITH HORIZONTAL BLADES ALLOWING COMBUSTION AIR TO BE DIRECTED DOWNWARD TOWARDS FLOOR IN FRONT OF BOILER. ALL WATER PIPING IN AIRFLOW PATH OF SUPPLY FAN DISCHARGE SHALL BE INSULATED, INCLUDING FITTINGS, TO ENSURE FREEZE PROTECTION DURING COLD WEATHER.
- SEAL NEW COMBUSTION AIR DUCT TO (E) 15" x 17" OPENING IN CONCRETE WALL USING MASTIC AND TAPCON SCREWS. SEAL AROUND GAS PIPING AND CONDUIT WHERE THEY PENETRATE DUCT.
- INSTALL SF-1 AND DUCTWORK TO AVOID (E) PIPING ON TOP OF WELL TANK, IF POSSIBLE.
- PROVIDE MOUNTING FLANGE TO SUPPORT NEW EXHAUST FLUE AT PENETRATION THRU CHIMNEY WALL. SEAL MOUNTING FLANGE TO FLUE AND TO CHIMNEY WITH SILICONE SEALANT.
- RECONNECT (E) EXPANSION TANK TO (N) GWH-1 AT HOT OUTLET PIPE.

MECHANICAL PLANS

- DRAWN BY:
- DRAFT DATE:
- CHECKED BY:
- PROJECT NO:
- REVISED:
- DATE:
- REVISIONS:
- GJ/KC
- EDJ

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PERMIT / BID DRAWINGS - APRIL 23, 2015
1. DOMESTIC WATER HEATING DIAGRAM - DEMOLITION

2. DOMESTIC WATER HEATING DIAGRAM - NEW WORK

11. PROPANE PIPING DIAGRAM - DEMOLITION

16. PROPANE PIPING DIAGRAM

KEYED SHEET NOTES
1. DEMOLISH ALL EXISTING OIL PIPING AND OIL TANKS PRIOR TO THE START OF PROJECT.
2. ALL WORK TO COMPLY WITH NFPA 54, NFPA 58, AND ALL STATE AND LOCAL CODES.

GENERAL SHEET NOTES
1. DISTRICT WILL REMOVE ALL EXISTING OIL PIPING AND OIL TANKS PRIOR TO THE START OF PROJECT.
2. ALL WORK TO COMPLY WITH NFPA 54, NFPA 58, AND ALL STATE AND LOCAL CODES.
36" SEPARATION BETWEEN TANKS, TYP.

48" CLEAR TO EDGE OF SLAB, TYP.

3/4" (10 PSIG) 1" CONDUIT STRUT FRAME, AND POSTS, TYP.

3/4" EQUALIZATION LINE

4 BOLLARDS, 3 SIDES SEE DET 13/M201 FENCE ENCLOSURE

48" MAX. DIST. BETWEEN BOLLARDS TYP.

8' GATE, WITH TWO 4' LEAVES, PADLOCK HASP

SEE DET 16/M200 (RELIEF PIPING, CONDUIT, ETC. NOT SHOWN)

PROVIDE GAS RISER CONFORMING TO NFPA. CONDUIT SHALL BE SCHEDULE 40 PVC. PROVIDE WITH PULL-STRING FOR OWNER'S USE IN PULLING CONDUCTORS.

PROVIDE STRUT FRAME AND POSTS, 48" HEIGHT, FOR ATTACHMENT OF GAS RISER UP THROUGH SLAB, REGULATOR PR1 AND RELATED VALVING, CONTROL CONDUIT, AND BRANCH GAS PIPING AND CONDUIT TO EACH PROPANE TANK.

ATTACH FIELD PIPING AND CONDUIT TO STRUT FRAME AT EACH PROPANE TANK, AND PROVIDE ANY ADDITIONAL PIPING SUPPORT REQUIRED TO PROVIDE RIGID CONNECTION POINT FOR JUNCTION OF RIGID AND FLEXIBLE PIPING AT EACH PROPANE TANK.

PROVIDE EQUALIZATION LINE CONNECTED TO DRAIN PORT ON EACH PROPANE TANK. INSTALL ISOLATION VALVE BETWEEN EACH TANK.

6' HIGH, BLACK CHAIN-LINK FENCE, WITH GATE.

ALL WORK TO COMPLY WITH NFPA 54, NFPA 58, AND ALL STATE AND LOCAL CODES.

ALL GAS REGULATOR DEVICES AND EQUIPMENT TO CONFORM TO ANSI Z21.80.
## WATER HEATER SCHEDULE

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### Notes:
1. PROVIDE WITH MANUFACTURER OEM FILTER RACK AND MANUFACTURER OEM MANUAL SPEED CONTROL (MOUNT ON FAN CABINET)

## PROPANE TANKS

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### Notes:
1. PROVIDE EACH TANK WITH:
   A) PRESSURE RELIEF VALVE
   B) MANUAL LEVEL GAUGE
   C) REMOTE LEVEL TRANSMITTER, 4-20MA PROPORTional SIGNAL
   D) ISOLATION VALVE
   E) FLEX CONNECTION TO RIGID SITE PIPING

## FANS

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### Notes:
1. PROVIDE WITH MANUFACTURER OEM FILTER RACK AND MANUFACTURER OEM MANUAL SPEED CONTROL (MOUNT ON FAN CABINET)