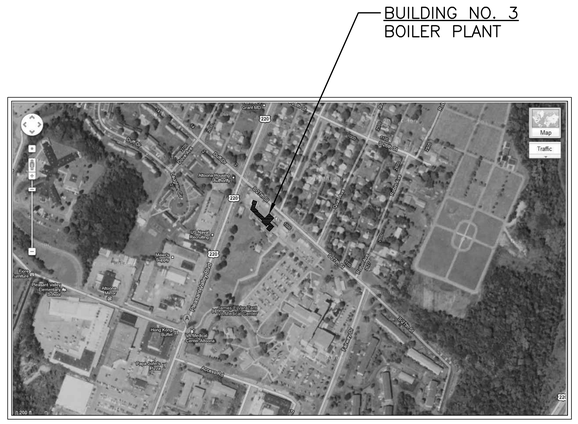
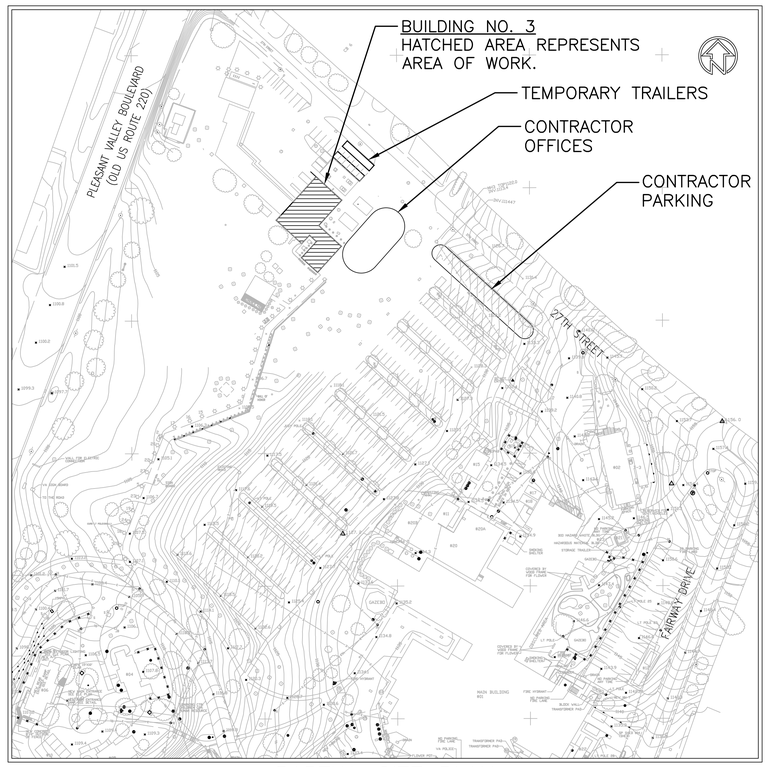
ALTOONA BOILER REPLACEMENT

DEPARTMENT OF VETERANS AFFAIRS MEDICAL CENTER ALTOONA, PENNSYLVANIA PROJECT NO. 503-13-120



LOCATION MAP



PARTIAL SITE PLAN

SCALE: NTS

PROJECT CONTACT DIRECTORY

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CONTRACTING OFFICER
MICHAEL KOONTZ

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PAUL WEIMER

MILLER–REMICK CORPORATION

ENGINEER OF RECORD
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Department of Veterans Affairs

DRAWING INDEX

Chief Information Officer	Fire Chief	Safety / Occupational Health Manager	Mental Health Program Manager	FES Project Section Supervisor	FES M-I-O Supervisor	General Utilities Foreman	Project Manager
	Police Chief	Patient Safety Manager	Infection Control Coordinator	Energy Manager	Patient Care Facilities Foreman	General Properties Foreman	A-I-M-M Chief / Contracting Officer

100% BID DOCUMENTS

NO.	DESCRIPTION	DATE

CONSULTANTS:

MILLER–REMICK CORPORATION
PROFESSIONAL ENGINEER

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — ANTHONY D. PACARO JR. — NO. PE062779

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SDVOSB — CVE

Drawing Title	COVER SHEET AND DRAWING INDEX
Approved: Project Director	
Project Title	ALTOONA BOILER REPLACEMENT
Location	VA MEDICAL CENTER ALTOONA, PA
Date	06-03-2014
Checked	GE
Drawn	GGP
Project Number	503-13-120
Building Number	BLDG. 03
Drawing Number	GI-001
Dwg.	1 of 63

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

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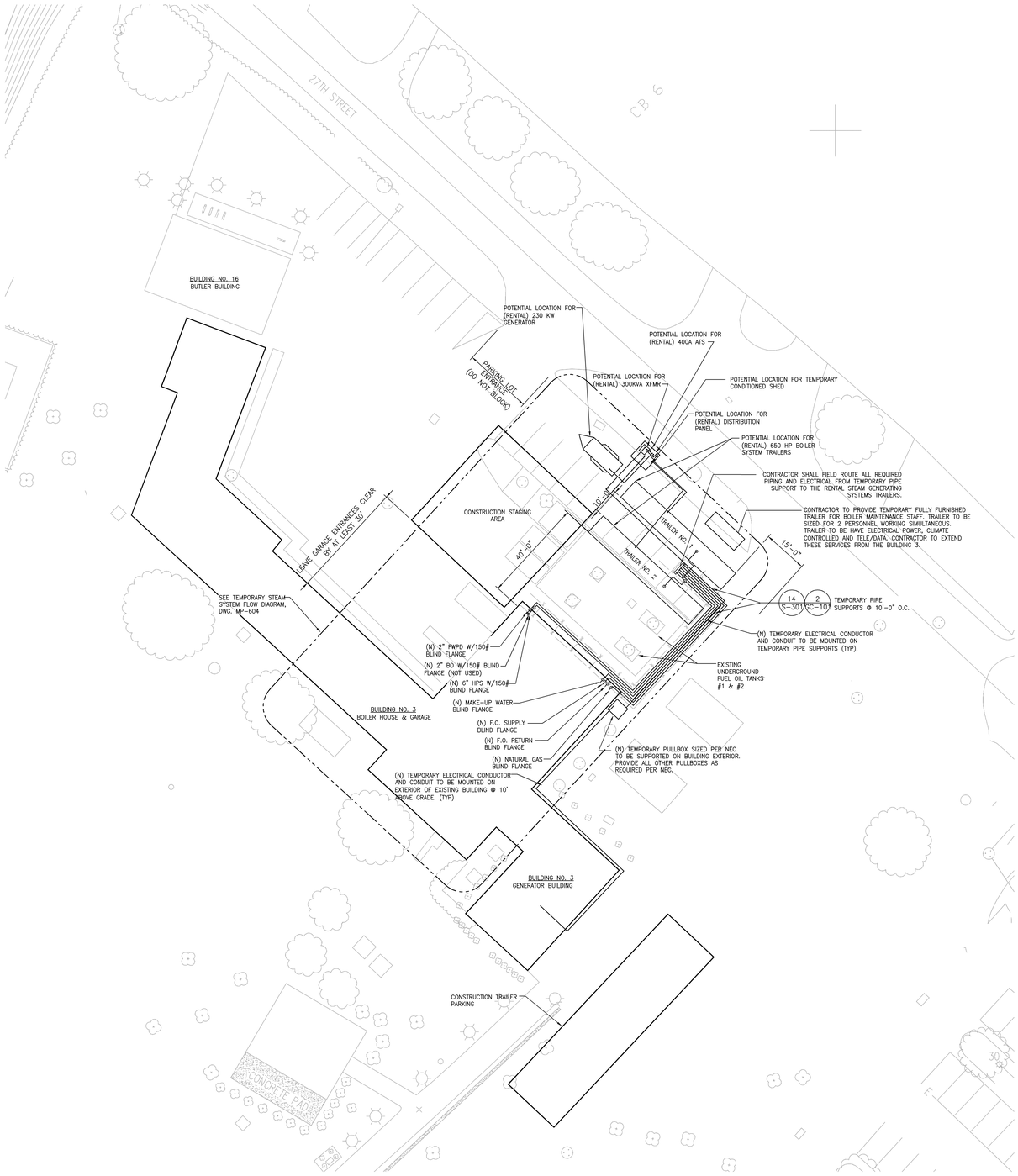
NORTH

three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
three eighths inch = one foot
one quarter inch = one foot
one eighth inch = one foot



1 SITE PLAN - TEMPORARY BOILER AND EQUIPMENT TRAILERS

SCALE: 1" = 20'-0"

CONSTRUCTION PHASING:

FOLLOWING IS A SUGGESTED CONSTRUCTION PHASING PLAN.THIS PLAN WAS USED TO DEVELOP A BASIS OF DESIGN. THE CONTRACTOR SHALL DEVELOP A FINAL PLAN THAT HAS BEEN FULLY COORDINATED WITH THE VA & ALL SUB-CONTRACTORS. THAT PLAN SHALL BE APPROVED TO MINIMIZE DISRUPTIONS TO THE STEAM, CONDENSATE AND ELECTRICAL SYSTEMS. THE FACILITY HAS RESTRICTED THE SHUTDOWN PERIOD TO TWO (2) HOURS (MAXIMUM) DURATION. ALL SHUTDOWNS MUST BE SCHEDULED WITH THE FACILITY COR:

PHASE 1 (RENTAL AND TEMPORARY SYSTEM PHASE)

1. THE CONTRACTOR SHALL PROVIDE THE FOLLOWING RENTAL EQUIPMENT FOR THE DURATION OF CONSTRUCTION. NOTE: THE ESTIMATED CONSTRUCTION PERIOD WAS ESTIMATED TO BE SIX (6) MONTHS (MAXIMUM):

   a. TWO (2) 650 HP STEAM BOILER SYSTEM TRAILERS (ONE STAND BY) CAPABLE OF GENERATING 15,000 LB PER HOUR OF STEAM AT 85 PSIG. EACH BOILER WILL BE DUAL FUEL READY AND CAPABLE OF OPERATING ON EITHER NATURAL GAS (PRIMARY FUEL) OR NO. 2 FUEL OIL (EMERGENCY FUEL). THE STEAM GENERATING TRAILERS WILL BE LOCATED AS SHOWN ON THIS DRAWING.

      EACH TRAILER WILL BE ABLE TO OPERATE AS A COMPLETE STEAM GENERATING PLANT AND BE SUPPLIED WITH THE FOLLOWING EQUIPMENT:

      i. 650 HP STEAM BOILER
      ii. DEAERATOR
      iii. FEEDWATER PUMPS
      iv. DUPLEX FUEL OIL PUMP ASSEMBLY (LOCATE IN BASEMENT, SEE DWG. MP-605)
      v. PROPANE TANK
      vi. WATER SOFTENERS
      vii. BLOWDOWN TANK WITH AFTERCOOLER
      viii. AIR COMPRESSOR
      ix. REFRIGERATION DRYER
      x. BOILER CHEMICAL FEED SYSTEM
      xi. INTEGRAL ELECTRIC DISTRIBUTION PANEL TO FEED ALL SUPPLIED EQUIPMENT.

      THE STEAM GENERATING TRAILERS WILL BE LOCATED AS SHOWN ON THIS DRAWING.

   b. ONE (1) LOW PROFILE DUPLEX BOILER FEED (CONDENSATE RETURN) SYSTEM WITH THE FOLLOWING:

      i. (2) PUMPS (1 STAND BY) (*VERIFY PUMP DISCHARGE HEAD PRIOR TO INSTALLING). PUMP DISCHARGE PRESSURE IS *20 PSIG, ON/OFF OPERATION. (1) STAGE, STANDARD FITTED, FLANGE MOUNTED, CENTRIFUGAL PUMPS EQUIPPED WITH HIGH TEMPERATURE MECHANICAL SEALS. EACH PUMP WILL HAVE A CAPACITYOF 83 GPM @ *46' TDH. PUMPS WILL BE MOUNTED ON TANK AND CLOSE COUPLED TO: 2 – 3 HP, 480 VOLT, 60 HERTZ, 3-PHASE, 3500 RPM VERTICAL, DRIP-PROOF MOTORS.

      ii. 225 GALLON, NON-CODE WELDED STEEL RECEIVER. TANK WILL BE 30" DIAMETER BY 72" STRAIGHT LENGTH. TANK COMPLETE WITH: WATER INLET CONTROL VALVE WITH INTERNAL FLOAT (1) WATER GLASS GAUGE.

      iii. MAGNETIC ACROSS THE LINE STARTERS WITH NEMA 1 ENCLOSURE; (2) HOA SWITCH AND (2) RUNNING LIGHTS

      THE BOILER FEED SYSTEM WILL BE LOCATED IN THE BASEMENT OF BUILDING NO. 3, ADJACENT THE STEAM TUNNEL AS SHOWN ON DRAWING MP-602.

2. THE CONTRACTOR SHALL PROVIDE TEMPORARY PIPING, VALVES AND APPURTENANCES. THE TEMPORARY PIPING SHALL INCLUDE THE FOLLOWING SYSTEMS:
   ii. *STEAM PIPING
   iii. *CONDENSATE RETURN PIPING
   iii. MAKE-UP WATER PIPING
   iim. NATURAL GAS PIPING
   iin. FUEL OIL PIPING AND ELECTRICAL

   *NOTE: THE TEMPORARY STEAM SUPPLY FROM THE RENTAL BOILERS AND THE 2" CONDENSATE RETURN PIPING WILL BE CONNECTED TO THE EXISTING FLANGED CONNECTIONS LOCATED ON THE NORTHWEST EXPOSURE OF BUILDING AS SHOWN ON DRAWINGS GC-101 AND MP-103.

3. THE CONTRACTOR SHALL PROVIDE TEMPORARY PIPE SUPPORT ASSEMBLIES. THESE STRUCTURES SHALL BE FABRICATED TO ALLOW 10'-0" CLEARANCE FROM GRADE AND A CLEAR WIDTH TO ALLOW THE FACILITIES UTILITY VEHICLES PASSAGE.

   THE TEMPORARY PIPE SUPPORTS AND EXTERIOR PIPE ROUTING ARE SHOWN ON THIS DRAWING.

4. THE CONTRACTOR SHALL PROVIDE THE FOLLOWING TEMPORARY ELECTRICAL EQUIPMENT AND POWER DISTRIBUTION IN A TEMPORARY CONDITIONED SHED COMPLETE WITH LIGHTING AND (3) GFCI RECEPTACLES:

   a. NEW NEMA 3R DRY-TYPE TRANSFORMER WITH RATINGS AS SHOWN ON DRAWING E-601. TRANSFORMER SHALL BE UL RATED 220 °C (428 °F) WITH AN AVERAGE MAXIMUM RISE BY RESISTANCE OF 150 °C (302 °F) IN MAXIMUM AMBIENT OF 40 °C (104 °F). ENCLOSURE SHALL HAVE VENTILATION OPENINGS SUCH THAT THEY PREVENT ACCIDENTAL ACCESS TO LIVE COMPONENTS. E.C. TO PERFORM TESTS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS PRIOR TO ENERGIZING.

   b. ONE (1) TEMPORARY NEMA 3R ATS WITH RATINGS AS SHOWN ON DRAWING E-601. AUTOMATIC TRANSFER SWITCH SHALL COMPLAY WITH UL, NEMA, NEC, ANSI, IEEE, AND NFPA. ATS SHALL BE OPEN TRANSITION, 3-POLE, COMPLETELY FACTORY-ASSEMBLED AND WIRED SUCH THAT ONLY EXTERNAL CIRCUIT CONNECTIONS ARE REQUIRED IN THE FIELD. ATS SHALL BE TESTED IN ACCORDANCE WITH UL 1008. ATS SHALL BE OPERATED BY AN ACTUATED ELECTRICAL OPERATOR, ELECTRICALLY AND MECHANICALLY INTERLOCKED AND CONTACT TRANSFER TIME SHALL NOT EXCEED SIX CYCLES. PROVIDE UNDERVOLTAGE SENSING FOR EACH PHASE, ADJUSTABLE TIME DELAY, VOLTAGE/FREQUENCY LOCKOUT RELAY, TIME DELAY FOR RETRANSFER TO NORMAL SOURCE, TEST SWITCH, SWITCH-POSITION INDICATION, SOURCE-AVAILABLE INDICATION, NORMAL POWER INDICATION, EMERGENCY POWER INDICATION, TRANSFER OVERRIDE CONTROL, ENGINE STARTING CONTACTS. ENGINE SHUTDOWN CONTACTS AND ENGINE-GENERATOR EXERCISER.

   c. TEMPORARY DISTRIBUTION PANEL WITH RATINGS AS SHOWN ON DRAWING E-601. PANELBOARD SHALL BE IN ACCORDANCE WITH NEC, NEMA AND UL. PANELBOARD SHALL HAVE BOLT-ON MOLDED CASE CIRCUIT BREAKERS, NON-REDUCED SIZE COPPER BUS BARS, 100% RATED NEUTRAL BUS AND A GROUNDING BUS BAR. PANELBOARD SHALL BE NEMA 3R ENCLOSURE. MOLDED CASE CIRCUIT BREAKERS SHALL HAVE AUTOMATIC, TRIP FREE, NON-ADJUSTABLE, INVERSE TIME, AND INSTANTANEOUS MAGNETIC TRIPS FOR LESS THAN 400 A FRAME. CIRCUITS BREAKERS WITH 400 A FRAMES AND ABOVE SHALL HAVE MAGNETIC TRIP, ADJUSTABLE FROM 5X TO 10X.

   d. ONE (1) TEMPORARY DIESEL ENGINE GENERATOR SYSTEM IN ACCORDANCE WITH NFPA, UL, NEMA AND ANSI. PROVIDE A FACTORY-ASSEMBLED, WIRED (EXCEPT FOR FIELD CONNECTIONS), COMPLETE, FULLY AUTOMATIC ENGINE GENERATOR SYSTEM FULLY ENCLOSED IN A WEATHERPROOF SOUND ATTENUATED ENCLOSURE. RATINGS AS INDICATED ON DRAWING E-601. FURNISH WITH A PORTABLE FUEL OIL TANK OF 400 GALLONS OR 24 HOURS OF STANDBY OPERATION AT 100% LOAD WHICHEVER IS GREATER. FURNISH ALL REQUIRED FUEL OIL PIPING, CONNECTIONS AND TRANSFER MEANS. LOCATE TEMPORARY GENERATOR A MINIMUM OF 25' FROM ANY BUILDING OPENINGS. PROVIDE ALL CONTROL DEVICES, WIRING AND CONNECTIONS FOR AUTOMATIC OPERATION UPON LOSS OF NORMAL SOURCE POWER PLUS ALL ASSOCIATED RETRANSFER AND COOLDOWN CONTROLS. PROVIDE (2) 30A, 120V BRANCH CIRCUITS FOR JACKET HEATER AND BATTERY CHARGER. PROVIDE EPO ON OUTSIDE OF GENERATOR ENCLOSURE.

   e. WIRE AND CONDUIT FROM EXISTING SWBD-2 TO TEMPORARY TRANSFORMER. REFER TO E-601 FOR FURTHER INFORMATION. ALL CONDUIT SUPPORTED BY EXISTING EXTERIOR WALL TO BE SECURED TO THE EXISTING MORTAR JOINTS. ALL MORTAR JOINTS TO BE PATCHED/POINTED TO MATCH EXISTING UPON REMOVAL OF TEMPORARY SUPPORTS.

   f. WIRE AND CONDUIT FROM TEMPORARY GENERATOR TO TEMPORARY ATS. REFER TO E-601 FOR FURTHER INFORMATION.

   g. WIRE AND CONDUIT FROM NEW TRANSFORMER TO TEMPORARY ATS. REFER TO E-601 FOR FURTHER INFORMATION.

   h. WIRE AND CONDUIT FROM TEMPORARY ATS TO TEMPORARY DISTRIBUTION PANEL. REFER TO E-601 FOR FURTHER INFORMATION.

   i. WIRE AND CONDUIT FROM TEMPORARY DISTRIBUTION PANEL TO TEMP TRAILER #1. REFER TO E-601 FOR FURTHER INFORMATION.

   j. WIRE AND CONDUIT FROM TEMPORARY DISTRIBUTION PANEL TO TEMP TRAILER #2. REFER TO E-601 FOR FURTHER INFORMATION.

   k. WIRE AND CONDUIT FROM TEMPORARY DISTRIBUTION PANEL TO TEMP BOILER FEED PUMPS. REFER TO E-601 FOR FURTHER INFORMATION.

   l. WIRE AND CONDUIT TO ELECTRIC HEAT TRACE FOR TEMPORARY MECHANICAL PIPING. REFER TO E-601 FOR FURTHER INFORMATION.

5. THE CONTRACTOR SHALL DEMOLISH THE EXISTING 6" TEMPORARY STEAM PIPE LOCATED WITHIN THE BOILER ROOM AS SHOWN ON DRAWING MD-102.

6. THE CONTRACTOR SHALL PROVIDE A NEW 6" TEMPORARY STEAM PIPE WITH 6"-300 PSIG TRIPLE OFFSET BUTTERFLY VALVE AS SHOWN ON DRAWING MP-103.

7. THE CONTRACTOR SHALL PROVIDE A 6" PIPE SPOOL ASSEMBLY WITH STEAM DRIP LEG TO BE INSTALLED TEMPORARILY TO SUPPLY STEAM FROM THE STEAM GENERATING TRAILERS TO THE EXISTING 8" HPS STEAM DISTRIBUTION SYSTEM. THIS PIPE SPOOL ASSEMBLY SHALL BE INSTALLED AS SHOWN ON DRAWING MP-103.

8. THE CONTRACTOR SHALL DEMOLISH A SECTION OF THE 4" CONDENSATE RETURN PIPING ADJACENT THE STEAM TUNNEL LOCATED IN THE BASEMENT OF BUILDING 3, AS SHOWN ON DRAWING MD-101.

9. THE CONTRACTOR SHALL PROVIDE A 4" SCHEDULE 80 PIPE SPOOL ASSEMBLY WITH TWO (2) 150 PSIG BALL VALVES WITH LOCKING DEVICE, TO BE INSTALLED ON THE CONDENSATE RETURN SYSTEM AS SHOWN ON DRAWINGS MP-602 AND MP-605.

10. THE CONTRACTOR SHALL INSTALL TEMPORARY 4" CONDENSATE PIPING FROM THE PIPE ASSEMBLY NOTED ABOVE AND CONNECT TO THE RENTAL CONDENSATE RETURN SYSTEM AS SHOWN ON DRAWING MP-605.

11. THE CONTRACTOR SHALL PROVIDE A 2" SCHEDULE 80 PIPE SPOOL ASSEMBLY WITH A 150 PSIG BALL VALVE AND LOCKING DEVICE, TO BE INSTALLED ON THE TEMPORARY BOILER FEED WATER SYSTEM AS SHOWN ON DRAWINGS MP-602 AND MP-605.

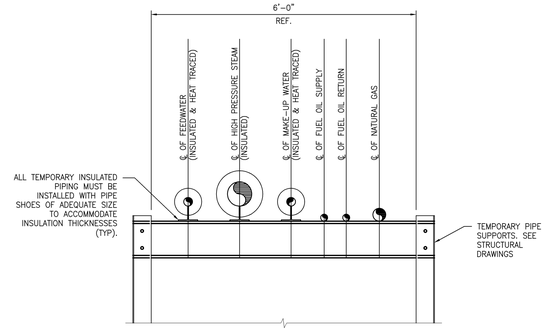
12. THE CONTRACTOR SHALL INSTALL TEMPORARY 2" PIPING FROM THE RENTAL CONDENSATE RETURN SYSTEM AND CONNECT TO THE EXISTING 2" TEMPORARY FEED WATER SYSTEM SHOWN ON DRAWING MP-605.

PHASE 2 (POST-INSTALLATION PHASE)

1. AFTER INSTALLATION AND TESTING OF NEW EQUIPMENT AND PIPING, THE CONTRACTOR SHALL REMOVE THE TEMPORARY 6" STEAM PIPE ASSEMBLY AND THE INSTALL THE NEW 8" HPS AND 6" HPS PERMANENT PIPE ASSEMBLIES AS SHOWN ON DRAWING MP-103.

2. THE CONTRACTOR SHALL REMOVE THE TEMPORARY 4" CONDENSATE RETURN PIPING TO THE RENTAL CONDENSATE RETURN SYSTEM, CLOSE THE VALVE AND OPEN THE 4" BALL VALVE ALLOWING THE CONDENSATE RETURN TO DISCHARGE INTO THE PERMANENT SYSTEM.

3. REMOVE ALL EXTERIOR PIPING AND ELECTRICAL SYSTEMS, PIPE SUPPORTS AND EQUIPMENT. REPAIR BUILDING EXTERIOR DAMAGED BY PIPING SUPPORT. ALL MORTAR JOINTS TO BE PATCHED/POINTED TO MATCH EXISTING UPON REMOVAL OF TEMPORARY SUPPORTS.



2 TEMPORARY PIPE SUPPORTS AND PIPING

SCALE: NTS

100% BID DOCUMENTS

NO.	DESCRIPTION	DATE

CONSULTANTS:

MILLER-REMICK CORPORATION PROFESSIONAL ENGINEER

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ANTHONY D. PACARO, JR. NO. PE062778

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SDVOSB CVE

Drawing Title	GENERAL - SITE CONSTRUCTION STAGING AREA
Approved: Project Director	
Project Title	ALTOONA BOILER REPLACEMENT
Location	VA MEDICAL CENTER ALTOONA, PA
Date	06-03-2014
Checked	JJM
Drawn	JJM
Project Number	503-13-120
Building Number	BLDG. 03
Drawing Number	GC-101
Dwg.	2 of 63

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

P:\0499_OVA\3-0499-0034 Altoona Boiler Replacement\2_Drawings\1_Cad\1_Current Submittal Phase\1_Civil & General\GC-101 SITE PLAN.dwg 5-29-14 01:01:32 PM vrizzo

three inches = one foot
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three quarters inch = one foot
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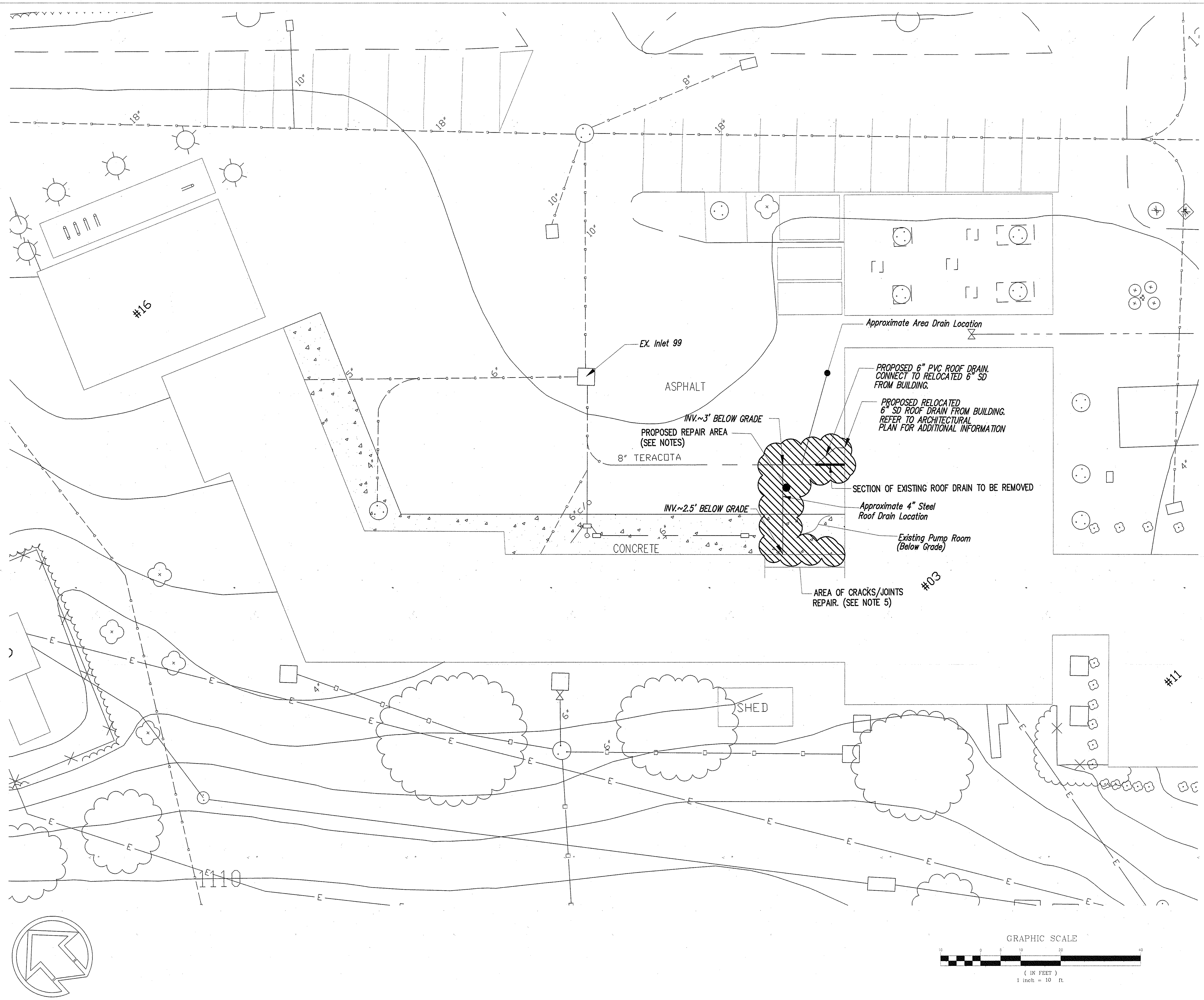

LEGEND

WATER LINE
SANITARY SEWER
STORM SEWER
STORM INLET
BUILDING
EDGE OF PAVEMENT
CONTOUR LINE
UNDERGROUND ELECTRIC

REPAIR AREA NOTES:

1. Replace existing 4" steel roof drain with 4" PVC from building to connection with 8" teracota main line.

2. Relocate 6" steel roof drain from building. Remove exsiting section where shown. Replace all 6" and 8" steel and teracota roof drain with respective 6" and 8" PVC pipe up to the connection with the new 4" PVC roof drain line.

3. Existing 8" teracota main line to be flushed clean of sediment and debris.

4. Refurbish all disturbed concrete and asphalt.

5. Seal all existing 1/8" and greater wide cracks and joints in concrete around building exterior with concrete expansion joint filler. Length of repair area is approximately 20'.

6. Location and depth of roof drain shown are approximate. Contractor to field verify location and depth of roof drain.

GRAPHIC SCALE

(IN FEET)
1 inch = 10 ft.

100% BID DOCUMENTS

NO. | DESCRIPTION | DATE

CONSULTANTS:

PennTerra ENGINEERING INC.

PENNTERRA ENGINEERING, INC.
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ARCHITECT/ENGINEERS:

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Drawing Title
BASEMENT SEEPAGE REPAIR-ROOF DRAIN REPLACEMENT

Approved: Facilities Engineering Service Chief

Approved: Medical Center Director

Project Title
ALTOONA BOILER REPLACEMENT

Location: VA MEDICAL CENTER, ALTOONA, PA

Date: 06-03-2014 | Checked | Drawn: JRS

Project Number: **503-13-120**

Building Number: BLDG. 03

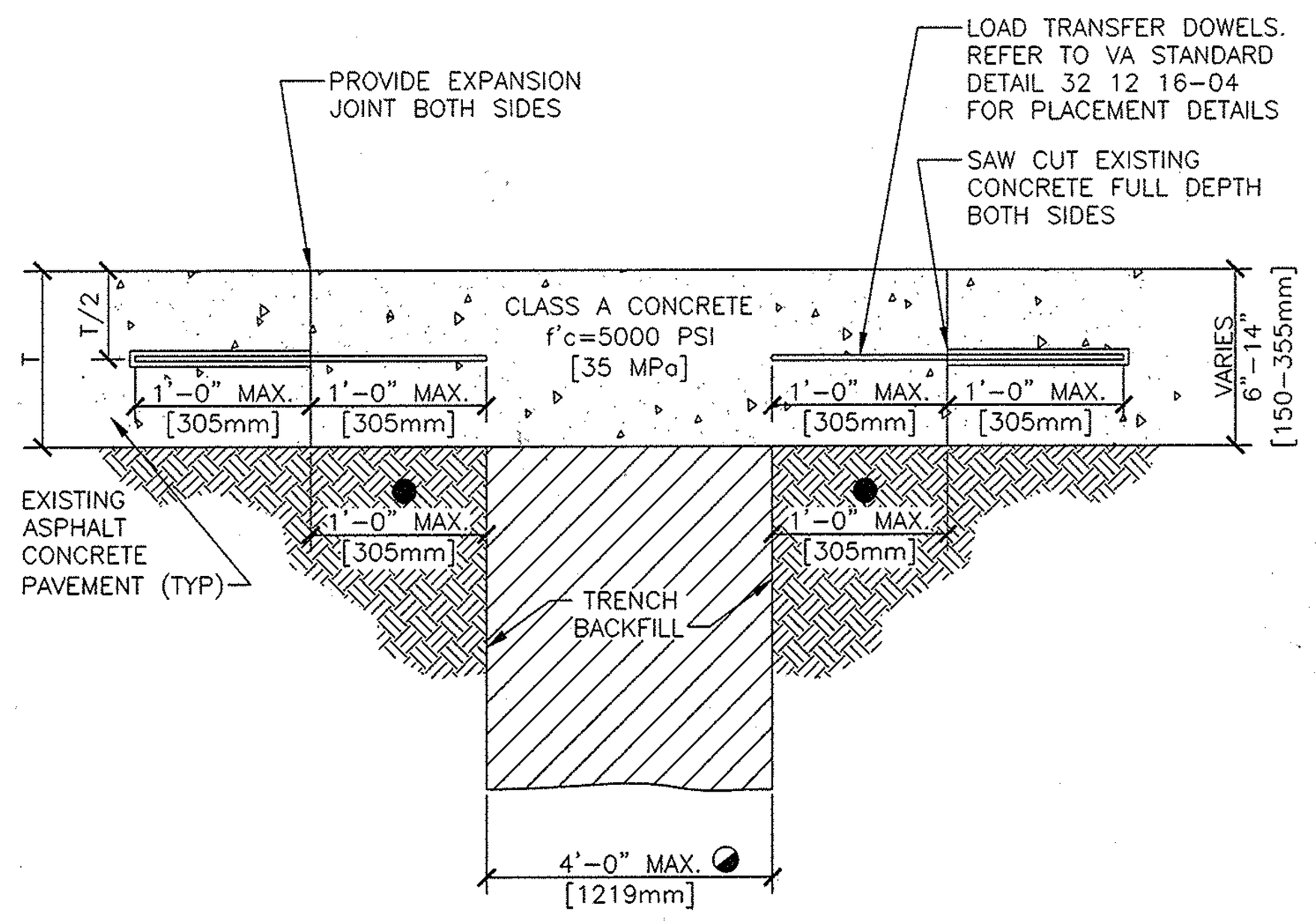
Drawing Number: **C-101**

Dwg. 3 of 63

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

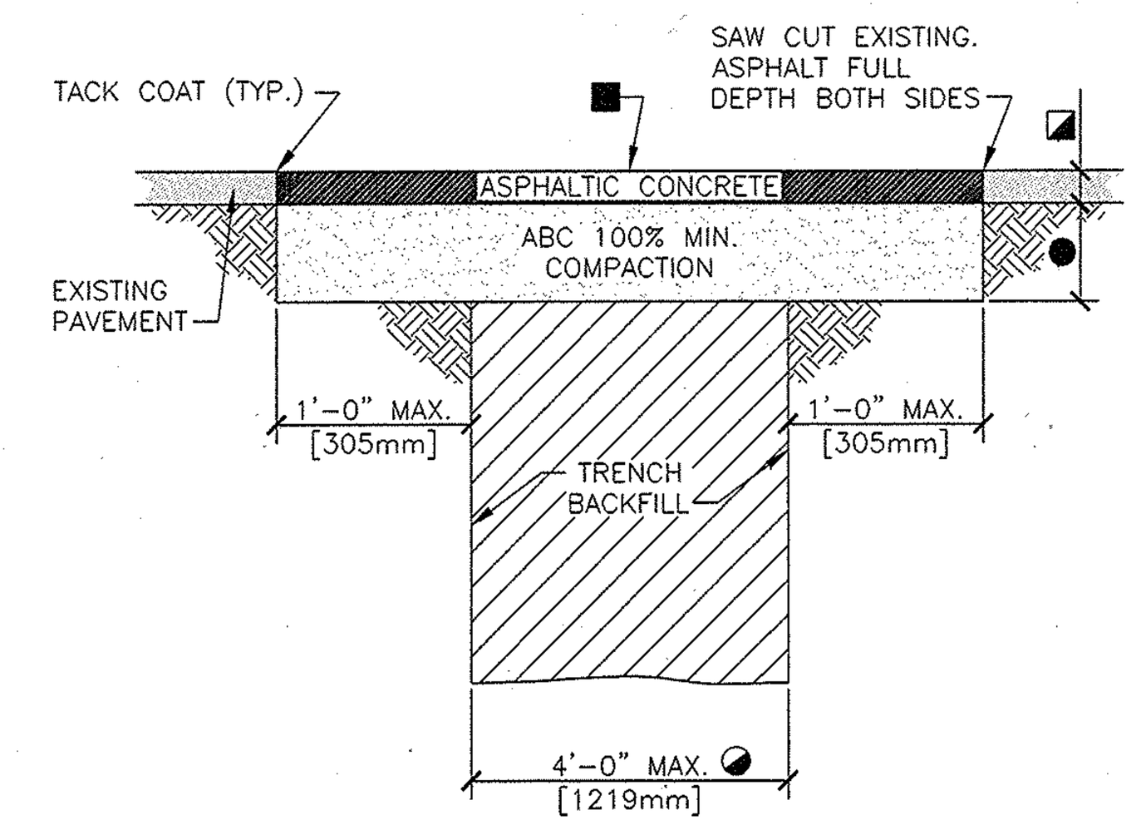


● REFER TO NOTE 13 ON VA STANDARD DETAIL 32 12 16-04 "UTILITY TRENCH PAVEMENT PATCH NOTES".

REFER TO VA STANDARD DETAIL 32 12 16-04 "UTILITY TRENCH PAVEMENT PATCH NOTES" FOR ADDITIONAL INFORMATION.

TYPE 3 UTILITY TRENCH PATCH

NTS



◒ FOR TRENCH WIDTHS EXCEEDING 4' [1219mm] REFER TO VA STANDARD DETAIL 32 12 16-02 "TYPE 2 UTILITY TRENCH PATCH". FOR TRENCH WHERE PORTLAND CEMENT CONCRETE (PCC) PAVEMENT EXISTS, REFER TO 32 12 16-03 "TYPE 3 UTILITY TRENCH PATCH".

◪ 2" [50mm] MINIMUM OR THICKNESS OF EXISTING PAVEMENT WHICHEVER IS GREATER.

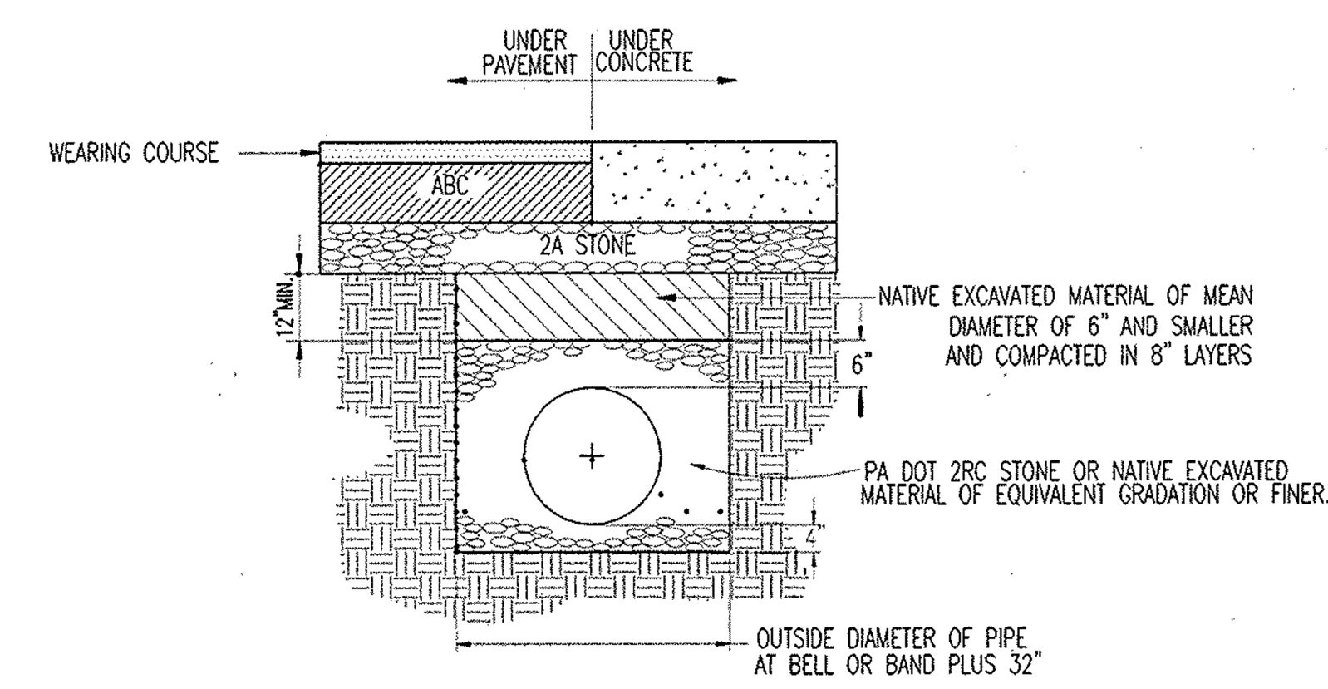
■ BITUMINOUS SURFACE TREATMENT (CHIPSEAL) REQUIRED ONLY FOR LONGITUDINAL TRENCHES WITH WIDTHS GREATER THAN 6' [1829mm].

● 4" [100mm] MINIMUM ABC OR THICKNESS OF EXISTING GRANULAR BASE COURSE MATERIALS (E.G. ABC & SELECT MATERIAL) WHICHEVER IS GREATER.

REFER TO VA STANDARD DETAIL 32 12 16-04 "UTILITY TRENCH PAVEMENT PATCH NOTES" FOR ADDITIONAL INFORMATION.

TYPE 1 UTILITY TRENCH PATCH

NTS



ROOF DRAIN INSTALLATION

NTS

GENERAL NOTES

1. MATERIAL AND COMPACTION REQUIREMENTS FOR PIPE BEDDING/SHADING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS FOR THE APPLICABLE UTILITY PIPE.
2. TRENCH BACKFILL SHALL COMMENCE 1 FOOT [305mm] ABOVE THE TOP OF PIPE AND SHALL BE PER SECTION 31 20 00.
3. BACKFILL COMPACTION REQUIREMENTS SHALL BE PER SECTION 31 20 00.
4. THE 1 FOOT [305mm] TRENCH "SHOULDER" AREAS SHALL BE DELETED FOR TYPE 2 TRENCHES.
5. ABC SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 31 20 00.
6. PORTLAND CEMENT CONCRETE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 03 30 00.
7. ASPHALTIC TACK MATERIAL SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 32 12 16.
8. ASPHALTIC CONCRETE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 32 12 16 FOR THE TYPE SPECIFIED.
9. BITUMINOUS SURFACE TREATMENT (CHIP SEAL) SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 32 12 16 FOR THE TYPE SPECIFIED.
10. LOAD TRANSFER DOWELS FOR JOINTS TRANSVERSE TO THE ROADWAY CENTERLINE SHALL BE SMOOTH STEEL DOWELS IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 03 30 00. DOWELS SHALL BE SIZED AND SPACED AS FOLLOWS:

PCCP THICKNESS	DOWEL SIZE	DOWEL LENGTH	DOWEL SPACING
6" [150mm]	#5 [No. 16]	12" [305mm]	18" [455mm]
7" [180mm]	#6 [No. 19]	15" [380mm]	15" [380mm]
8" [180mm]	#8 [No. 19]	15" [380mm]	12" [305mm]
10" [180mm]	#10 [No. 19]	15" [380mm]	12" [305mm]

11. DEFORMED TIE BARS SHALL BE USED IN TRENCH PATCHES LONGITUDINAL TO THE ROADWAY CENTERLINE WHEN THE TRENCH LENGTH IS GREATER THAN 50 FEET [15240mm]. TIE BARS SHALL BE 24 INCHES [610mm] LONG. DEFORMED #4 [No. 13] BARS FOR PCCP LESS THAN 8 INCHES [205mm] THICK AND #5 [No. 16] BARS IF 8 INCHES [205mm] THICK OR MORE. TIE BARS SHALL BE PLACED 30 INCHES [760mm] CENTER-TO-CENTER.
12. HOLES SHALL BE DRILLED 1 FOOT [305mm] INTO THE EXISTING SLAB FOR TIE BARS AND 7 INCHES [180mm] FOR DOWELS. HOLES SHALL BE OF A DIAMETER SUFFICIENT TO ACCOMMODATE THE TIE BAR ANCHORAGE OR DOWEL CAP. TIE BARS SHALL BE ANCHORED WITH AN APPROVED HIGH VISCOSITY EPOXY.
13. IF THE CONCRETE SLAB REMAINING NEXT TO A LONGITUDINAL OR TRANSVERSE JOINT IS LESS THAN 6 FEET [1829mm] AT ITS NARROWEST WIDTH, REMOVE AND REPLACE THE EXISTING CONCRETE TO THE JOINT.

100% BID DOCUMENTS

NO.	DESCRIPTION	DATE

CONSULTANTS:

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PENNTERRA ENGINEERING, INC. PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

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Drawing Title: BASEMENT SEEPAGE REPAIR-ROOF DRAIN REPLACEMENT

Approved: Facilities Engineering Service Chief

Approved: Medical Center Director

Project Title: ALTOONA BOILER REPLACEMENT

Location: VA MEDICAL CENTER ALTOONA, PA

Date: 06-03-2014 | Checked: | Drawn: JRS

Project Number: 503-13-120

Building Number: BLDG. 03

Drawing Number: C-102

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231