



DETAIL E
CASING / DUCT BANK INTERFACE
NTS

SECTION 2
REINFORCEMENT AT CASING/DUCT BANK INTERFACE
SCALE: 1:10

KDOT PROJ. NO. 54-87 K-8258-01

Sheet No. 150 of 556

APPROVED FOR CONSTRUCTION

- NOTES:**
- FOR GENERAL NOTES, SEE DWG WSTR-E002.
 - THERMAL CONCRETE FOR DUCT BANK ENCASMENT SHALL MEET PROJECT SPECIFICATIONS. MIX DESIGN SHALL BE TESTED AND APPROVED PRIOR TO INSTALLATION.
 - ACCEPTABLE CORRECTIVE BACKFILL SHALL MEET THE PROJECT SPECIFICATIONS. BACKFILL MIX DESIGN SHALL BE TESTED AND APPROVED PRIOR TO INSTALLATION.
 - ALL CASING PIPES SHALL BE COMPLETELY FILLED WITH A THERMALLY ACCEPTABLE GROUT. GROUT MIX DESIGN SHALL MEET PROJECT SPECIFICATIONS AND SHALL BE TESTED AND APPROVED PRIOR TO INSTALLATION.
 - PRIOR TO INSTALLING DUCTBANK CONCRETE, CORRECTIVE BACKFILL OR CASING GROUT, TWO (2) TEST BATCH SAMPLES SHALL BE SENT FOR THERMAL TESTING AND APPROVAL TO GEOTHERM, INC. DURING INSTALLATION OF GROUT, CONTRACTOR SHALL COLLECT TWO (2) TEST CYLINDERS (CONTACT GEOTHERM, INC FOR APPROPRIATE SIZE) FOR COMPRESSIVE TESTS AND THERMAL PROPERTIES APPROVAL. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS OF ALL TESTS AND FOR SENDING TEST CYLINDERS TO GEOTHERM, INC. AT THE FOLLOWING ADDRESS:
GEOTHERM, INC.
MS. GEETA PARMAR
561 EAST ELLIOT RD.
SUITE 115
CHANDLER, AZ 85225
PHONE: (480) 892-9723
FAX: (480) 892-9726
 - WITHIN THE DUCTBANK, A MINIMUM OF 3 INCHES SEPARATION SHALL BE MAINTAINED BETWEEN THE 6" CONDUITS. SPACERS AS MANUFACTURED BY CARLON OR APPROVED EQUIVALENT SHALL BE USED.
 - CONTRACTOR SHALL FURNISH AND INSTALL CASING PIPE SPACERS. SPACERS SHALL BE INSTALLED A MAXIMUM DISTANCE OF 5 FEET APART. SPACERS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
 - CONTRACTOR SHALL SUBMIT DETAILED DESIGN OF EACH BORED CROSSING FOR REVIEW, INCLUDING AS A MINIMUM, WORK SCHEDULE, WORK PLAN, EQUIPMENT AND MATERIALS TO BE USED.
 - EACH BURLAP BAG SHALL BE FILLED WITH CEMENT AND NET DOWN WITH WATER PRIOR TO CONCRETE ENCASMENT TO ENSURE THAT THE CEMENT IN THE BAG DOESN'T EXTRACT WATER FROM THE ENCASMENT CONCRETE. THESE BAGS SHALL NOT BE REMOVED AND SHALL REMAIN AS A PERMANENT PART OF THE BACKFILL. THE SIZE OF EACH BAG SHALL BE APPROXIMATELY 8" HIGH X 8" IN DIAMETER. THE BAGS SHALL BE ARRANGED IN A MANNER THAT WILL PLUG COMPLETELY THE END OF THE CASING PIPE AND PREVENT INFILTRATION OF CONCRETE INTO THE CASING PIPE.
 - INSTALL THE #4 LONGITUDINAL REINFORCING STEEL BARS AS SHOWN ON THE DRAWINGS AND EXTEND 30 INCHES MINIMUM BEYOND THE END OF THE DUCT CONCRETE. LAP SPICE THE #4 REINFORCING STEEL A MINIMUM OF 28 INCHES FOR A CONSTRUCTION JOINT FOR THE NEXT CONCRETE POUR.

NO	DATE	REVISIONS AND RECORD OF ISSUE
1	03/01/06	ISSUED FOR CONSTRUCTION
0	01/31/05	95% REVIEW ISSUE

I HEREBY CERTIFY THAT THIS DOCUMENT WAS PREPARED BY ME OR UNDER MY SUPERVISION AND THAT I AM A LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF KANSAS.

MR. KIM F. R. FLOR -
 PENDING

BLACK & VEATCH

ENGINEER
 KIM FLOR
 DRAWN
 KIM FLOR
 DATE
 01/31/05

WESTAR ENERGY COMPANY
 US HIGHWAY 54/KELLOGG AVENUE PROJECT
 69KV UNDERGROUND TRANSMISSION LINE
 DUCTBANK AND CASING DETAILS

PROJECT
 136462-WSTR-E003

DRAWING NUMBER
 1