1.9 WARRANTY

A. SPECIAL WARRANTY: MANUFACTURER'S STANDARD OR CUSTOMIZED FORM, WITHOUT MONETARY LIMITATION, IN WHICH MANUFACTURER AGREES TO REPAIR OR REPLACE COMPONENTS OF MEMBRANE ROOFING SYSTEM THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD.

1. SPECIAL WARRANTY INCLUDES MEMBRANE ROOFING, BASE FLASHINGS, ROOF INSULATION, FASTENERS, ROOFING ACCESSORIES, AND OTHER COMPONENTS OF MEMBRANE ROOFING SYSTEM.
2. WARRANTY PERIOD: 20 YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

PART 2 - PRODUCTS

2.1 EPDM MEMBRANE ROOFING

A. EPDM: ASTM D 4637, TYPEI, NON-REINFORCED, UNIFORM, FLEXIBLE EPDM SHEET.

1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

a. FIRESTONE BUILDING PRODUCTS.

2. THICKNESS: 60 MILS (1.5 MM), NOMINAL.
3. EXPOSED FACE COLOR: BLACK.

2.2 AUXILIARY MEMBRANE ROOFING MATERIALS

A. GENERAL: AUXILIARY MEMBRANE ROOFING MATERIALS RECOMMENDED BY ROOFING SYSTEM MANUFACTURER FOR INTENDED USE AND COMPATIBLE WITH MEMBRANE ROOFING.

1. LIQUID-TYPE AUXILIARY MATERIALS SHALL COMPLY WITH VOC LIMITS OF AUTHORITIES HAVING JURISDICTION.

B. SHEET FLASHING: 60-MIL- (1.5-MM-) THICK EPDM, PARTIALLY CURED OR CURED, ACCORDING TO APPLICATION.

C. BONDING ADHESIVE: MANUFACTURER'S STANDARD,WATER BASED.

D. SEAMING MATERIAL: SINGLE-COMPONENT, BUTYL SPLICING ADHESIVE AND SPLICE CLEANER.

E. FASTENERS: FACTORY-COATED STEEL FASTENERS AND METAL OR PLASTIC PLATES COMPLYING WITH CORROSION-RESISTANCE PROVISIONS IN FM APPROVALS 4470, DESIGNED FOR FASTENING MEMBRANE TO SUBSTRATE, AND ACCEPTABLE TO ROOFING SYSTEM MANUFACTURER.

F. MISCELLANEOUS ACCESSORIES: PROVIDE POURABLE SEALERS, PREFORMED CONE AND VENT SHEET FLASHINGS, PREFORMED INSIDE AND OUTSIDE CORNER SHEET FLASHINGS, REINFORCED EPDM SECUREMENT STRIPS, T-JOINT COVERS, IN-SEAM SEALANTS, TERMINATION REGLETS, COVER STRIPS, AND OTHER ACCESSORIES.

2.3 ROOF INSULATION

A. GENERAL: PREFORMED ROOF INSULATION BOARDS MANUFACTURED OR APPROVED BY EPDM MEMBRANE ROOFING MANUFACTURER, SELECTED FROM MANUFACTURER'S STANDARD SIZES SUITABLE FOR APPLICATION, OF THICKNESSES INDICATED AND THAT PRODUCE FM APPROVALS-APPROVED ROOF INSULATION.

B. POLYISOCYANURATE BOARD INSULATION: ASTM C 1289, TYPE II, CLASS 1, GRADE 2, FELT OR GLASS-FIBER MAT FACER ON BOTH MAJOR SURFACES.

C. TAPERED INSULATION: PROVIDE FACTORY-TAPERED INSULATION BOARDS FABRICATED TO SLOPE OF [1/4 INCH PER 12 INCHES (1:48)] UNLESS OTHERWISE INDICATED.

D. PROVIDE PREFORMED SADDLES, CRICKETS, TAPERED EDGE STRIPS, AND OTHER INSULATION SHAPES WHERE INDICATED FOR SLOPING TO DRAIN. FABRICATE TO SLOPES INDICATED.

2.4 INSULATION ACCESSORIES

A. GENERAL: FURNISH ROOF INSULATION ACCESSORIES RECOMMENDED BY INSULATION MANUFACTURER FOR INTENDED USE AND COMPATIBILITY WITH MEMBRANE ROOFING.

B. FASTENERS: FACTORY-COATED STEEL FASTENERS AND METAL OR PLASTIC PLATES COMPLYING WITH CORROSION-RESISTANCE PROVISIONS IN FM APPROVALS 4470, DESIGNED FOR FASTENING ROOF INSULATION TO SUBSTRATE, AND ACCEPTABLE TO ROOFING SYSTEM MANUFACTURER.

C. MODIFIED ASPHALTIC INSULATION ADHESIVE: INSULATION MANUFACTURER'S RECOMMENDED MODIFIED ASPHALT, ASBESTOS-FREE, COLD-APPLIED ADHESIVE FORMULATED TO ATTACH ROOF INSULATION TO SUBSTRATE OR TO ANOTHER INSULATION LAYER.

2.5 ASPHALT MATERIALS

A. ROOFING ASPHALT: ASTM D 312, TYPE III OR TYPE IV.

PART 3 - EXECUTION

3.1 EXAMINATION

A. EXAMINE SUBSTRATES, AREAS, AND CONDITIONS, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH THE FOLLOWING REQUIREMENTS AND OTHER CONDITIONS AFFECTING PERFORMANCE OF ROOFING SYSTEM:

1. VERIFY THAT ROOF OPENINGS AND PENETRATIONS ARE IN PLACE AND CURBS ARE SET AND BRACED AND THAT ROOF DRAIN BODIES ARE SECURELY CLAMPED IN PLACE.
2. VERIFY THAT WOOD BLOCKING, CURBS, AND NAILERS ARE SECURELY ANCHORED TO ROOF DECK AT PENETRATIONS AND TERMINATIONS AND THAT NAILERS MATCH THICKNESSES OF INSULATION.

B. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

3.2 PREPARATION

A. CLEAN SUBSTRATE OF DUST, DEBRIS, MOISTURE, AND OTHER SUBSTANCES DETRIMENTAL TO ROOFING INSTALLATION ACCORDING TO ROOFING SYSTEM MANUFACTURER'S WRITTEN INSTRUCTIONS. REMOVE SHARP PROJECTIONS.

B. COMPLETE TERMINATIONS AND BASE FLASHINGS AND PROVIDE TEMPORARY SEALS TO PREVENT WATER FROM ENTERING COMPLETED SECTIONS OF ROOFING SYSTEM AT THE END OF THE WORKDAY OR WHEN RAIN IS FORECAST. REMOVE AND DISCARD TEMPORARY SEALS BEFORE BEGINNING WORK ON ADJOINING ROOFING.

3.3 INSULATION INSTALLATION

A. COORDINATE INSTALLING MEMBRANE ROOFING SYSTEM COMPONENTS SO INSULATION IS NOT EXPOSED TO PRECIPITATION OR LEFT EXPOSED AT THE END OF THE WORKDAY.

B. COMPLY WITH MEMBRANE ROOFING SYSTEM AND INSULATION MANUFACTURER'S WRITTEN INSTRUCTIONS FOR INSTALLING ROOF INSULATION.

C. INSTALL TAPERED INSULATION UNDER AREA OF ROOFING TO CONFORM TO SLOPES INDICATED.

D. INSTALL INSULATION UNDER AREA OF ROOFING TO ACHIEVE REQUIRED THICKNESS. WHERE OVERALL INSULATION THICKNESS IS 2.7 INCHES (68 MM) OR GREATER, INSTALL TWO OR MORE LAYERS WITH JOINTS OF EACH SUCCEEDING LAYER STAGGERED FROM JOINTS OF PREVIOUS LAYER A MINIMUM OF 6 INCHES (150 MM) IN EACH DIRECTION.

1. WHERE INSTALLING COMPOSITE AND NONCOMPOSITE INSULATION IN TWO OR MORE LAYERS, INSTALL NONCOMPOSITE BOARD INSULATION FOR BOTTOM LAYER AND INTERMEDIATE LAYERS, IF APPLICABLE, AND INSTALL COMPOSITE BOARD INSULATION FOR TOP LAYER.

E. INSTALL INSULATION WITH LONG JOINTS OF INSULATION IN A CONTINUOUS STRAIGHT LINE WITH END JOINTS STAGGERED BETWEEN ROWS, ABUTTING EDGES AND ENDS BETWEEN BOARDS. FILL GAPS EXCEEDING 1/4 INCH (6 MM) WITH INSULATION.

1. CUT AND FIT INSULATION WITHIN 1/4 INCH (6 MM) OF NAILERS, PROJECTIONS, AND PENETRATIONS.

F. ADHERED INSULATION: INSTALL EACH LAYER OF INSULATION AND ADHERE TO SUBSTRATE AS FOLLOWS:

1. SET EACH LAYER OF INSULATION IN A SOLID MOPPING OF HOT ROOFING ASPHALT, APPLIED WITHIN PLUS OR MINUS 25 DEG F (14 DEG C) OF EQUIVISCOUS TEMPERATURE.

G. MECHANICALLY FASTENED INSULATION: INSTALL EACH LAYER OF INSULATION AND SECURE TO DECK USING MECHANICAL FASTENERS SPECIFICALLY DESIGNED AND SIZED FOR FASTENING SPECIFIED BOARD-TYPE ROOF INSULATION TO DECK TYPE.

1. FASTEN INSULATION ACCORDING TO REQUIREMENTS IN FM APPROVALS' "ROOFNAV" FOR SPECIFIED WINDSTORM RESISTANCE CLASSIFICATION.
2. FASTEN INSULATION TO RESIST UPLIFT PRESSURE AT CORNERS, PERIMETER, AND FIELD OF ROOF.

H. MECHANICALLY FASTENED AND ADHERED INSULATION: INSTALL FIRST LAYER OF INSULATION TO DECK USING MECHANICAL FASTENERS SPECIFICALLY DESIGNED AND SIZED FOR FASTENING SPECIFIED BOARD-TYPE ROOF INSULATION TO DECK TYPE.

1. FASTEN FIRST LAYER OF INSULATION ACCORDING TO REQUIREMENTS IN FM APPROVALS' "ROOFNAV" FOR SPECIFIED WINDSTORM RESISTANCE CLASSIFICATION.
2. FASTEN FIRST LAYER OF INSULATION TO RESIST UPLIFT PRESSURE AT CORNERS, PERIMETER, AND FIELD OF ROOF.
3. SET EACH SUBSEQUENT LAYER OF INSULATION IN A SOLID MOPPING OF HOT ROOFING ASPHALT, APPLIED WITHIN PLUS OR MINUS 25 DEG F (14 DEG C) OF EQUIVISCOUS TEMPERATURE.

I. INSTALL COVER BOARDS OVER INSULATION WITH LONG JOINTS IN CONTINUOUS STRAIGHT LINES WITH END JOINTS STAGGERED BETWEEN ROWS. OFFSET JOINTS OF INSULATION BELOW A MINIMUM OF 6 INCHES (150 MM) IN EACH DIRECTION. LOOSELY BUTT COVER BOARDS TOGETHER AND FASTEN TO ROOF DECK.

1. FASTEN COVER BOARDS ACCORDING TO REQUIREMENTS IN FM APPROVALS' "ROOFNAV" FOR SPECIFIED WINDSTORM RESISTANCE CLASSIFICATION.
2. FASTEN COVER BOARDS TO RESIST UPLIFT PRESSURE AT CORNERS, PERIMETER, AND FIELD OF ROOF.

3.4 MECHANICALLY FASTENED MEMBRANE ROOFING INSTALLATION

A. MECHANICALLY FASTEN MEMBRANE ROOFING OVER AREA TO RECEIVE ROOFING ACCORDING TO ROOFING SYSTEM MANUFACTURER'S WRITTEN INSTRUCTIONS. UNROLL MEMBRANE ROOFING AND ALLOW TO RELAX BEFORE INSTALLING.

1. FOR IN-SPLICE ATTACHMENT, INSTALL MEMBRANE ROOFING WITH LONG DIMENSION PERPENDICULAR TO STEEL ROOF DECK FLUTES.

B. START INSTALLATION OF MEMBRANE ROOFING IN PRESENCE OF ROOFING SYSTEM MANUFACTURER'S TECHNICAL PERSONNEL.

C. ACCURATELY ALIGN MEMBRANE ROOFING AND MAINTAIN UNIFORM SIDE AND END LAPS OF MINIMUM DIMENSIONS REQUIRED BY MANUFACTURER. STAGGER END LAPS.

D. MECHANICALLY FASTEN OR ADHERE MEMBRANE ROOFING SECURELY AT TERMINATIONS, PENETRATIONS, AND PERIMETER OF ROOFING.

E. APPLY MEMBRANE ROOFING WITH SIDE LAPS SHINGLED WITH SLOPE OF ROOF DECK WHERE POSSIBLE.

F. ADHESIVE SEAM INSTALLATION: CLEAN BOTH FACES OF SPLICE AREAS, APPLY SPLICING CEMENT, AND FIRMLY ROLL SIDE AND END LAPS OF OVERLAPPING MEMBRANE ROOFING ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS TO ENSURE A WATERTIGHT SEAM INSTALLATION. APPLY LAP SEALANT AND SEAL EXPOSED EDGES OF MEMBRANE ROOFING TERMINATIONS.

1. APPLY A CONTINUOUS BEAD OF IN-SEAM SEALANT BEFORE CLOSING SPLICE IF REQUIRED BY MEMBRANE ROOFING SYSTEM MANUFACTURER.

G. REPAIR TEARS, VOIDS, AND LAPPED SEAMS IN ROOFING THAT DOES NOT COMPLY WITH REQUIREMENTS.

H. SPREAD SEALANT OR MASTIC BED OVER DECK DRAIN FLANGE AT ROOF DRAINS AND SECURELY SEAL MEMBRANE ROOFING IN PLACE WITH CLAMPING RING.

I. THROUGH-MEMBRANE ATTACHMENT: SECURE MEMBRANE ROOFING USING FASTENING PLATES OR METAL BATTENS AND MECHANICALLY FASTEN MEMBRANE ROOFING TO ROOF DECK. COVER BATTENS AND FASTENERS WITH A CONTINUOUS COVER STRIP.

J. INSTALL MEMBRANE ROOFING AND AUXILIARY MATERIALS TO TIE IN TO EXISTING ROOFING TO MAINTAIN WEATHER-TIGHTNESS OF TRANSITION AND TO NOT VOID WARRANTY FOR EXISTING MEMBRANE ROOFING SYSTEM.

3.5 BASE FLASHING INSTALLATION

A. INSTALL SHEET FLASHINGS AND PREFORMED FLASHING ACCESSORIES AND ADHERE TO SUBSTRATES ACCORDING TO MEMBRANE ROOFING SYSTEM MANUFACTURER'S WRITTEN INSTRUCTIONS.

B. APPLY BONDING ADHESIVE TO SUBSTRATE AND UNDERSIDE OF SHEET FLASHING AT REQUIRED RATE AND ALLOW TO PARTIALLY DRY. DO NOT APPLY TO SEAM AREA OF FLASHING.

C. FLASH PENETRATIONS AND FIELD-FORMED INSIDE AND OUTSIDE CORNERS WITH CURED OR UNCURED SHEET FLASHING.

D. CLEAN SPLICE AREAS, APPLY SPLICING CEMENT, AND FIRMLY ROLL SIDE AND END LAPS OF OVERLAPPING SHEETS TO ENSURE A WATERTIGHT SEAM INSTALLATION. APPLY LAP SEALANT AND SEAL EXPOSED EDGES OF SHEET FLASHING TERMINATIONS.

E. TERMINATE AND SEAL TOP OF SHEET FLASHINGS.

3.6 COATING INSTALLATION

A. APPLY COATINGS TO MEMBRANE ROOFING ACCORDING TO MANUFACTURER'S WRITTEN RECOMMENDATIONS, BY SPRAY, ROLLER, OR OTHER SUITABLE APPLICATION METHOD.

3.7 PROTECTING AND CLEANING

A. PROTECT MEMBRANE ROOFING SYSTEM FROM DAMAGE AND WEAR DURING REMAINDER OF CONSTRUCTION PERIOD. WHEN REMAINING CONSTRUCTION WILL NOT AFFECT OR ENDANGER ROOFING, INSPECT ROOFING FOR DETERIORATION AND DAMAGE, DESCRIBING ITS NATURE AND EXTENT IN A WRITTEN REPORT, WITH COPIES TO ARCHITECT AND OWNER.

B. CORRECT DEFICIENCIES IN OR REMOVE MEMBRANE ROOFING SYSTEM THAT DOES NOT COMPLY WITH REQUIREMENTS, REPAIR SUBSTRATES AND REPAIR OR REINSTALL MEMBRANE ROOFING SYSTEM TO A CONDITION FREE OF DAMAGE AND DETERIORATION AT TIME OF SUBSTANTIAL COMPLETION AND ACCORDING TO WARRANTY REQUIREMENTS.

C. CLEAN OVERSPRAY AND SPILLAGE FROM ADJACENT CONSTRUCTION USING CLEANING AGENTS AND PROCEDURES RECOMMENDED BY MANUFACTURER OF AFFECTED CONSTRUCTION.

END OF SECTION 07531

Wiley & Wilson
Employee-Owned
2310 Langhorne Road
Lynchburg, VA 24501-1547
434.947.1901
www.wileywilson.com

COMMONWEALTH OF VIRGINIA
Carolyn A. Riddle
Lic. No. 42541
2/4/08
PROFESSIONAL ENGINEER

ROOF MODIFICATIONS
FOR
WEST CREWE PUMP STATATION
BURKEVILLE, VIRGINIA

MRK	DATE	REVISION DESCRIPTION

COMM NO: 207202.10
DATE: FEBRUARY 4, 2008
DRAWN: JCP | DESIGN: CAR
CHECK:
CAD FILE: 207202_A01.DGN
SHEET TITLE
ROOF MODIFICATION SPECIFICATIONS
SHT. NO. A-102
REV. NO.