

DIVISION 26 – ELECTRICAL

- A. GENERAL:
1. ALL ELECTRICAL WORK IS TO MEET THE APPLICABLE PORTIONS OF THE FOLLOWING RECOGNIZED CODES AND STANDARDS:
a) CERTIFIED BALLAST MANUFACTURERS (CBM)
b) NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION (NEMA)
c) FACTORY MUTUAL (FM)
d) NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
e) INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
f) UNDERWRITERS' LABORATORIES, INC. (UL)
g) ILLUMINATING ENGINEERING SOCIETY (IES)
h) AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
i) ALL BURIED POWER CABLE ENGINEERING ASSOCIATION (IPCEA)
j) OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
k) NATIONAL ELECTRICAL CODE (NEC)
l) NATIONAL ELECTRICAL SAFETY CODE (NESC)
m) NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION (NECA)
n) LOCAL AND STATE CODES
2. BASIC ELECTRICAL MATERIALS AND METHODS
a) THE STANDARD ELECTRICAL SERVICE WILL BE THREE-PHASE 120/208 VOLT (4-WIRE), "WILD LEG" DELTA SYSTEMS WILL NOT BE PERMITTED.
c) SINGLE PHASE 120/240 VOLT (3-WIRE) SYSTEMS WILL BE ALLOWED ONLY IF 120/208 VOLT THREE PHASE SERVICE IS NOT AVAILABLE.
3. EQUIPMENT FOR CLASSIFIED AREAS
a) PROVIDE ALL EQUIPMENT AND MATERIALS SUITABLE FOR THE CLASSIFIED AREAS IN ACCORDANCE WITH THE REQUIREMENTS OF ARTICLE 500 OF THE NEC, AND FOLLOWING THE RECOMMENDATIONS OF AMERICAN PETROLEUM INSTITUTE STANDARDS API-RP-500 AND API-RP-540.
b) MURPHY OIL USA, INC. WILL BE THE FINAL ARBITRATOR OF ALL QUESTIONS REGARDING AREA CLASSIFICATION.
c) INSTALLING TECHNICIANS ARE REQUIRED TO WEAR A GROUND STRAP FOR ANY ELECTRICAL WORK.
4. INSTALLATION:
a) INSTALL ELECTRIC SYSTEMS AS INDICATED FOLLOWING THE MANUFACTURER'S WRITTEN INSTRUCTIONS, THE APPLICABLE CODES AND REGULATIONS, AND MURPHY OIL USA, INC. INSTRUCTIONS.
5. INSTALL TEMPORARY ELECTRICAL SUPPLY FOR USE DURING CONSTRUCTION, INCLUDING POWER SUPPLY TO THE BUILDING/CANOPY ERECTOR AND ANY OTHER CONTRACTOR WORKING ON THE SITE. THE OWNER WILL PAY FOR ALL POWER USED DURING CONSTRUCTION.
B. CABLE, WIRE, AND CONNECTORS
1. WIRE AND CABLE:
a) PROVIDE FACTORY FABRICATED WIRE AND CABLE OF THE SIZE, RATING, MATERIAL, AND TYPE AS INDICATED.
b) PULL WIRES AND CABLES INTO THEIR CONDUITS USING A LUBRICANT FOLLOWING THE MANUFACTURER'S RECOMMENDATIONS.
1) DO NOT USE OIL OR GREASE FOR THIS PURPOSE.
2) USE FLAX SOAP, Y-ER-EAS, OR OTHER LUBRICANT AS APPROVED BY MURPHY OIL USA, INC. IF THERE ARE NO RECOMMENDATIONS BY THE MANUFACTURER.
c) PROVIDE TEMPERATURE RATED WIRING INSIDE OF LIGHTING FIXTURES FOLLOWING NEC.
2. CONDUCTORS:
a) PROVIDE SOFT OR ANNEALED COPPER WIRES THAT, BEFORE STRANDING, CONFORM TO ASTM B 3 - SPECIFICATION FOR SOFT OR ANNEALED COPPER WIRE.
b) PROVIDE STRANDED COPPER CONDUCTORS FOR POWER AND CONTROL WIRING. DISPENSER COMMUNICATION CONDUCTORS SHALL BE #16. ALUMINUM OR COPPER CLAD ALUMINUM WIRING WILL NOT BE PERMITTED.
c) PROVIDE MINIMUM #12 AWG SIZE CONDUCTORS FOR POWER WIRING UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
d) PROVIDE UL TYPE THHN/THWN GASOLINE AND OIL RESISTANT FOR CONDUCTORS SIZED NO. 8 AWG AND LARGER.
3. BRANCH CIRCUIT WIRING
a) EACH 120 VOLT BRANCH CIRCUIT MUST HAVE ITS OWN NEUTRAL RETURN CONDUCTOR.
b) NO SPLIT NEUTRALS ARE PERMITTED.
4. INSULATION:
a) PROVIDE INSULATION THAT MEETS OR EXCEEDS THE REQUIREMENTS OF UL 83 - STANDARD FOR THERMOPLASTIC INSULATED WIRES.
b) ALL INSULATION IS TO BE MARKED WITH THE UL TYPE REQUIRED FOR EACH USE.
c) PROVIDE UL TYPE THHN GASOLINE AND OIL RESISTANT INSULATION FOR CONDUCTORS SIZED NO. 18 AWG THROUGH NO. 16 AWG.
d) PROVIDE UL TYPE THHN/THWN GASOLINE AND OIL RESISTANT INSULATION FOR CONDUCTORS SIZED NO. 14 AWG THROUGH NO. 10 AWG.
5. CONNECTORS FOR BUILDING WIRE AND CABLE:
a) USE TERMINAL LUGS WHENEVER POSSIBLE UP TO AND INCLUDING #6 AWG.
b) LUG/BOLTED CONNECTIONS ARE REQUIRED FOR ALL CONDUCTORS LARGER THAN #6 AWG.
c) CONNECT ALL MOTOR LEADS, #10 AND LARGER, WITH PRESSURE FITTED LUGS AND BOLTED.
d) THE USE OF TERMINAL STRIPS FOR WIRING CONNECTIONS IS ENCOURAGED.
e) SPLICES ARE NOT PERMITTED IN FEEDERS, MOTOR LEAD, OR COMMUNICATION/DATA WIRING.
C. GROUNDING
1. GROUND ALL EQUIPMENT AND DEVICES AS INDICATED ON THE DRAWINGS, AND AS REQUIRED BY NEC, LOCAL ELECTRICAL INSPECTION AUTHORITIES, AND THE UTILITY COMPANY.
2. IT IS RECOMMENDED THAT THE GROUNDING SYSTEM INCORPORATE INCOMING COPPER WATER LINES, IF AVAILABLE, IN ADDITION TO 5/8 INCH X TEN FOOT COPPER CLAD GROUNDING ROD.
3. USE APPROVED PRESSURE CONNECTORS OR CAD WELDS TO CONNECT GROUND WIRES TO RODS.
4. DO NOT USE OIL, OR GAS LINES AS THE GROUNDING SYSTEM.

DIVISION 26 – ELECTRICAL (CONTINUED)

- D. CONDUCTOR TESTS
1. PERFORM MEGGER TESTS ON INSULATION BEFORE SEALS ARE POURED. THE TEST IS MANDATORY FOR INCOMING SERVICE CONDUCTORS AND MOTOR LEADS TO SUBMERGED PUMPS.
2. RESISTANCE BETWEEN CONDUCTORS AND BETWEEN ALL CONDUCTORS AND GROUND IS TO BE NOT LESS THAN TEN MEG-OHMS FOR ALL CIRCUITS LESS THAN 600 VOLTS.
3. TEST GROUND CONDUCTORS FOR CONTINUITY.
4. DO NOT PERFORM MEGGER TESTS AFTER WIRES HAVE BEEN CONNECTED TO A PIECE OF EQUIPMENT OR TERMINAL STRIP DUE TO POSSIBLE DAMAGE TO THE EQUIPMENT.
E. CONDUIT
1. PROVIDE A COMPLETE ASSEMBLY OF CONDUIT WITH FITTINGS FOR EACH ELECTRICAL RACEWAY INCLUDING CONNECTORS, NIPPLES, COUPLINGS, EXPANSION FITTINGS, BUSHINGS, LOCKNUTS, AND ALL OTHER COMPONENTS REQUIRED TO INSTALL A COMPLETE SYSTEM OF THE TYPE INDICATED, AND AS REQUIRED BY NEC.
2. PROVIDE HEAVY WALL ONE INCH MINIMUM, GALVANIZED STEEL CONDUIT EXCEPT AS OTHERWISE INDICATED ON THE DRAWINGS.
3. CONDUIT BODIES
a) PROVIDE GALVANIZED CAST METAL CONDUIT BODIES OF THE TYPE, SHAPE, AND SIZE TO SUITE EACH RESPECTIVE LOCATION AND INSTALLATION.
b) PROVIDE BODIES WITH THREADED CONDUIT ENDS, REMOVABLE COVERS, AND CORROSION RESISTANT SCREWS.
4. PLASTIC CONDUIT (PVC) MAY BE USED WHERE PERMITTED BY, AND IN ACCORDANCE WITH CODE.
5. USE SEPARATE CONDUITS FOR DATA AND POWER WIRING.
6. CAP CONDUIT PRIOR TO COMPLETE INSTALLATION TO PREVENT ANY FOREIGN MATTER FROM OBSTRUCTING THE CONDUIT.
7. PROVIDE CLASS 1, GROUP D SEAL-OFF FITTINGS AS REQUIRED BY THE NEC, ARTICLE 501.
8. AFTER TESTING PROCEDURES HAVE BEEN COMPLETED, POUR SEALING COMPOUND INTO ALL SEAL-OFF FITTINGS.
9. EQUIP CONDUIT RUNS EXCEEDING 25 FEET IN LENGTH WITH SUITABLE WIRE INSERT TO ENABLE THE PULLING OF A FISH TAPE FOR ADDITIONAL WIRING.
10. PROVIDE PROVISION FOR EXPANSION BY A MINIMUM OF ONE EXPANSION FITTING INSTALLED IN EACH STRAIGHT RUN OF CONDUIT EXCEEDING 150 FEET IN LENGTH, AND AT 150 FOOT INTERVALS THEREAFTER.
11. RIGIDLY SUPPORT ALL CONDUIT FROM STRUCTURAL MEMBERS WITH MALLEABLE IRON CONDUIT CLAMPS AT A MAXIMUM OF EIGHT FEET ON CENTER. USE U-BOLTS FOR MOUNTING. "ALL THREAD" IS NOT ACCEPTABLE FOR MOUNTING.
12. PROVIDE HOT DIPPED-GALVANIZED CONDUIT CONFORMING TO ANSI C80.1, AND FITTINGS CONFORMING TO ANSI C80.4 AS INDICATED FOR RIGID STEEL CONDUIT AND RIGID STEEL CONDUIT FITTINGS.
13. FLEXIBLE METAL CONDUIT
a) PROVIDE LIQUID TIGHT FLEXIBLE METAL CONDUIT COMPRESSED OF SINGLE STRIP CONTINUOUS, FLEXIBLE, INTERLOCKED, DOUBLE WRAPPED STEEL, GALVANIZED INSIDE AND OUTSIDE THAT FORMS A SMOOTH INTERNAL WIRING CHANNEL, AND WITH LIQUID TIGHT JACKET OF FLEXIBLE PVC.
b) PROVIDE LIQUID TIGHT, ZINC COATED STEEL FLEXIBLE METAL CONDUIT FITTINGS.
14. FITTINGS
a) PROVIDE FITTINGS EQUAL TO THOSE SUPPLIED BY CROUSE-HIND OR APPLETON.
b) PROVIDE FITTINGS WITH RUBBER OR NEOPRENE GASKETS WHERE INSTALLED IN DAMP AREAS.
c) PROVIDE FITTINGS COMPLYING WITH NEC AND UL 886 WHEN INSTALLING IN HAZARDOUS AREAS.
F. SITE CONDUIT ROUTING, BURIAL DEPTH AND SPACING
1. BURY ALL UNDERGROUND SITE CONDUIT AT A MINIMUM OF 24 INCHES BELOW THE FINISHED GRADE.
2. RIGHT ANGLE SWEEP ELBOWS MUST BE USED AT THE BASE OF EACH RISER.
3. NO GRADUAL RISE OF CONDUIT TO THE SURFACE GRADE IS PERMITTED.
G. CUTTING AND PATCHING
1. CUTTING AND PATCHING OF OTHER WORK TO ACCOMMODATE THE INSTALLATION OF ELECTRICAL WORK IS PERMITTED.
2. SET CONCRETE OR ASPHALT PAVING SECTIONS FOR PAVEMENT REPAIRS.
3. EXCEPT AS INDIVIDUALLY AUTHORIZED BY MURPHY OIL USA, INC. CUTTING AND PATCHING OF ELECTRICAL WORK TO ACCOMMODATE THE INSTALLATION OF OTHER WORK IS NOT PERMITTED.
4. FILL IN AND FINISH THE BUILDING FLOOR AT CONDUIT CHASE AFTER INSTALLING ALL INCOMING CONDUIT.
H. ELECTRICAL SYSTEM IDENTIFICATION
1. CONDUIT SYSTEMS
a) PROVIDE MARKING OF MAJOR CONDUIT WHICH IS EXPOSED OR CONCEALED IN ACCESSIBLE SPACES, TO DISTINGUISH EACH RUN AS EITHER POWER OR SIGNAL/COMMUNICATIONS CONDUIT.
b) PROVIDE SELF-ADHESIVE OR SNAP-ON TYPE PLASTIC OR METALLIC MARKERS.
c) LOCATE MARKERS AT ENDS OF CONDUIT RUNS.
2. UNDERGROUND CABLE
a) BURY A CONTINUOUS BRIGHT COLORED PLASTIC RIBBON CABLE MARKER WITH EACH UNDERGROUND CABLE (OR GROUP OF CABLES).
b) LOCATE EACH DIRECTLY OVER CABLES, SIX TO EIGHT INCHES BELOW THE FINISHED GRADE.
3. CABLE/CONDUIT
a) COORDINATE A UNIFORM AND CONSISTENT SCHEME OF COLOR IDENTIFICATION THROUGHOUT THE BUILDING SYSTEM.
b) ON LARGE CONDUCTORS, PROVIDE IDENTIFICATION BY MEANS OF PAINTED COLOR BANDING OR PLASTIC TAPE.
c) USE THE FOLLOWING COLOR SCHEME FOR BRANCH CIRCUITS:
120/208 VOLT
PHASE A BLACK
PHASE B RED
PHASE C BLUE
NEUTRAL WHITE
GROUND GREEN

DIVISION 26 – ELECTRICAL (CONTINUED)

- I. EQUIPMENT TESTS
1. PERFORM OPERATIONAL TESTS ON ALL ELECTRICAL EQUIPMENT TO ENSURE SATISFACTORY PERFORMANCE.
2. INCLUDE TESTS FOR MECHANICAL AND ELECTRICAL OPERATION FROM ALL CONTROL POINTS, OPERATION OF RELAYS, AND ALL SAFETY DEVICES.
J. ELECTRICAL WORK CLOSE-OUT
1. ALL SITE ELECTRICAL SYSTEMS MUST HAVE PASSED FUNCTIONAL TESTING AND BE FULLY OPERABLE.
2. ALL SITE ELECTRICAL SYSTEMS MUST HAVE PASSED INSPECTIONS BY THE LOCAL APPROVING AUTHORITIES.
3. ALL BURIED SITE POWER AND CONTROL SUBSYSTEMS MUST HAVE PASSED APPROPRIATE CONDUCTOR MEGGER TESTING.
4. ALL ELECTRICAL PANEL BOARDS MUST HAVE TYPED SCHEDULES THAT ACCURATELY IDENTIFY BREAKERS BY FUNCTION AND PANEL POSITION.
5. ALL CONDUITS AND CONDUCTORS MUST BE PROPERLY TAG IDENTIFIED.
6. ALL NON-TERMINATED ELECTRICAL WORK PROVIDED WHICH, INTENDED FOR INTERFACE WITH ANOTHER CONTRACTOR'S WORK, MUST BE PROPERLY SECURED.
7. ALL REQUIRED CONDUIT SEALS FOR HAZARDOUS LOCATIONS MUST BE INSTALLED AND THE COMPOUND POURED.
8. ALL SPARE CONDUITS MUST HAVE A PULL WIRE INSTALLED AND CAPPED ON BOTH ENDS.
9. ALL ELECTRICAL SYSTEMS MUST PASS A MURPHY OIL USA, INC. ENGINEER INSPECTION.
10. ALL ELECTRICAL RECORD DRAWINGS MUST BE IN THE POSSESSION OF MURPHY OIL USA, INC. ENGINEER.
11. ALL DISPENSER WIRING MUST BE CONTINUOUS (NO SPLICES) FROM DISPENSER JUNCTION BOX TO CONSOLE TERMINAL STRIP BOX.
12. ALL SPARE WIRES SHOULD BE TAPED AND LOOPED AT ENDS AND LABELED.
K. BOX AND PANEL BOARD
1. PROVIDE ELECTRICAL MATERIALS, AND COMPONENTS FOR A COMPLETE INSTALLATION EQUAL TO THOSE SUPPLIED BY CROUSE-HINDS, APPLETON, OR SQUARE D.
2. PANEL BOARDS
a) PROVIDE SQUARE D PANEL BOARDS WITH APPROPRIATE PLUG-IN BREAKERS FOR THE FUNCTIONS THAT ARE REQUIRED TO POWER FROM THE SELECTION OF SQUARE D PRODUCTS.
b) IF ROTATING EQUIPMENT IS SUPPLIED FROM THE PANEL BOARD, THE BREAKER TOGGLE MUST BE FITTED WITH A PERMANENT LOCKING ATTACHMENT.
c) THE ATTACHMENT MUST BE CAPABLE OF SECURING THE BREAKER IN THE OPEN POSITION USING A COMMON PADLOCK.
d) PROVIDE PANEL BOARDS WITH A TYPED CIRCUIT DIRECTORY FOLLOWING NEC.
3. EXTERIOR OUTLET BOXES
a) PROVIDE GALVANIZED STEEL INTERIOR OUTLET WIRING BOXES OF THE TYPE, SHAPE, AND SIZE, INCLUDING DEPTH OF BOX TO SUIT EACH RESPECTIVE LOCATION AND INSTALLATION; CONSTRUCTED WITH STAMPED KNOCKOUTS ON BACK AND SIDE, AND WITH THREADED HOLES WITH SCREWS FOR SECURING BOX COVERS AND WIRING DEVICES.
b) PROVIDE "GANG" BOXES WHERE DEVICES ARE INDICATED TO BE GROUPED.
c) FURNISH BOXES TO SUIT THE USE BY TAKING INTO ACCOUNT SPACE AVAILABLE, APPEARANCE, AND CODE REQUIREMENTS FOR VARIOUS LOCATIONS.
d) PROVIDE TYPE FS OR FD BOXES WITH GROUNDING COVER.
e) PROVIDE OUTLET BOX ACCESSORIES AS REQUIRED FOR EACH INSTALLATION, COMPATIBLE WITH OUTLET BOXES BEING USED AND MEETING THE REQUIREMENTS OF INDIVIDUAL WIRING SCHEDULES.
f) WEATHERPROOF OUTLET BOXES
1) PROVIDE HOT DIPPED GALVANIZED CAST IRON WEATHERPROOF OUTLET WIRING BOXES, OF THE TYPE, SHAPE AND SIZE, INCLUDING DEPTH OF BOX, WITH THREADED CONDUIT ENDS, LEXAN FIBERGLASS REINFORCED COVER PLATE WITH SPRING LOADED WEATHER CAPS, SUITABLY CONFIGURED FOR EACH APPLICATION.
2) INCLUDE FASTER PLATE GASKET AND CORROSION RESISTANT FASTENERS. WHERE THE BOX IS LOCATED IN A HAZARDOUS LOCATION, THOSE REQUIREMENTS WILL TAKE PRECEDENCE.
g) PROVIDE JUNCTION AND PULL BOXES WITH SCREW-ON COVERS OF THE TYPE, SHAPE AND SIZE TO SUIT EACH RESPECTIVE LOCATION AND INSTALLATION.
h) PROVIDE CORROSION RESISTANT PUNCHED STEEL BOX KNOCKOUT CLOSURES, CONDUIT LOCKNUTS, AND INSULATED CONDUIT BUSHINGS OF THE TYPE AND SIZE TO SUIT EACH RESPECTIVE USE AND INSTALLATION.
i) PROVIDE EXPLOSION PROOF CONDUIT BOXES, BODIES, AND SEALS AS REQUIRED TO CONFORM TO THE N.E.C., ARTICLE 501, FOR HAZARDOUS LOCATIONS; AND COMPLYING WITH UL STANDARD 886.
L. SAFETY AND DISCONNECT SWITCHES
1. PROVIDE HEAVY DUTY TYPE, DEAD FRONT, SHEET STEEL ENCLOSED, SURFACE MOUNTED SAFETY SWITCHES OF THE TYPE AND SIZE INDICATED.
2. PROVIDE SAFETY SWITCHES RATED FOR THE VOLTAGE OF THE CIRCUIT IN WHICH THEY ARE INSTALLED.
3. PROVIDE SAFETY SWITCHES, USED AS MOTOR DISCONNECTS, RATED FOR THE MOTOR HORSEPOWER SERVED.
4. PROVIDE QUICK-MAKE, QUICK-BREAK TYPE SWITCHES WITH EXTERNALLY OPERABLE INDICATING AND LOCKABLE HANDLES, MARKED FOR PURPOSE AND FAIL-SAFE AS MANUFACTURED BY GENERAL ELECTRIC, SQUARE D, WESTINGHOUSE OR AN APPROVED EQUAL.
5. FUSING
a) PROVIDE POSITIVE PRESSURE, REJECTION TYPE FUSE CLIPS SUITABLE FOR USE WITH UL CLASS R FUSES.
b) PROVIDE BUSSMAN DUAL ELEMENT, CURRENT LIMITING, TIME DELAY, CLASS RK-1 FUSES.
M. LIGHTING FIXTURES
1. PROVIDE LIGHTING FIXTURES OF THE SIZE, TYPE, AND RATING INDICATED, COMPLETE WITH LAMPS, LAMP HOLDERS, REFLECTORS, BALLASTS, STARTERS, WIRING, AND ALL OTHER REQUIRED COMPONENTS.
2. FLUORESCENT BALLASTS
a) PROVIDE LOW NOISE, HIGH POWER FACTOR, RAPID START, CLASS "P" THERMALLY PROTECTED, ENCASED, AND POTTED BALLASTS.
b) PROVIDE BALLAST FOR EXTERIOR OR INDOOR NON-CONDITIONED SPACES WITH A "C" SOUND RATING AND A "D" TEMPERATURE RATING.

DIVISION 33 – UTILITIES

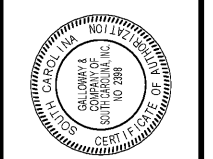
- A. MONITORING WELLS
1. REFER TO DRAWING F-4.
B. LIQUID FUEL DISTRIBUTION
1. GENERAL
a) PRIMARY PRODUCT PIPING TO BE AS PER SHEET F-5 AND F-6.
b) STEEL PIPE TO BE SCHEDULE 40 BLACK STEEL.
c) ALL PIPING AND SEALANT TO BE ALCOHOL COMPATIBLE.
d) GASOLIA SOFT SET SHALL BE USED ON ALL STEEL PIPE FITTINGS AND THREADED METAL CONNECTIONS.
e) TANK VENTS
1) ALL TANK, VENT AND STAGE 2 (AS APPLICABLE) VAPOR RECOVER PIPING SHALL BE RIGID, SINGLE WALL (PRIMARY) FIBERGLASS PIPING.
2) RISERS WILL BE SCHEDULE 40 BLACK STEEL.
3) REFER TO DETAILS F-4 AND F-5 FOR SIZING.
4) CANOPY MANUFACTURER SUPPLIES IN-COLUMN PORTION OF VENT-RISER (IF APPLICABLE).
f) VENT PIPING MUST SLOPE TOWARDS TANKS AT A MINIMUM OF 1/4" PER FOOT. STAGE 2 (AS APPLICABLE) VAPOR RECOVERY PIPING MUST SLOPE TOWARDS TANKS AT A MINIMUM OF 1/8" PER FOOT.
2. FLORIDA:
WHENEVER STORAGE TANKS OR INTEGRAL PIPING ARE INSTALLED OR RELOCATED AFTER JANUARY 11, 2017, A SURVEY DRAWING OF ABOVEGROUND TANKS AND UNDERGROUND INTEGRAL PIPING SIGNED AND SEALED BY A PROFESSIONAL LAND SURVEYOR OR PROFESSIONAL ENGINEER LICENSED BY THE STATE OF FLORIDA, SHALL BE COMPLETED AND MAINTAINED AS A RECORD IN ACCORDANCE WITH RULE 62-761.710, F.A.C. THE SURVEY DRAWING OF THE WORK COMPLETED, INCLUDING ANY CHANGES MADE TO THE ORIGINAL SPECIFICATIONS DURING THE CONSTRUCTION PROCESS, SHALL INCLUDE ALL CONSTRUCTION AND EQUIPMENT DESIGN SPECIFICATIONS INCLUDING EXACT DIMENSIONS, GEOMETRY AND CONDITIONS OF STORAGE TANKS OR INTEGRAL PIPING INSTALLED.
C. UNDERGROUND FUEL STORAGE TANKS
1. GENERAL
a) LOCATE TANKS, SEALS AND FILL AROUND ALL UNDERGROUND TANKS AS SHOWN ON DRAWINGS AND SPECIFICATIONS.
b) ALLOW TANK TEST PROCEDURES LISTED BELOW.
c) TANKS ARE TO BE BALLASTED WITH CLEAN, POTABLE WATER AND FILLED TO CAPACITY (SEE PROCEDURES BELOW). CONTRACTOR IS COMPLETELY RESPONSIBLE FOR THE FURNISHING OF WATER AND ALL ASSOCIATED COSTS WHETHER PROVIDED VIA TANKER TRUCK, FIRE HYDRANT OR OTHERWISE.
1) FOR SPLIT (COMPARTMENTALIZED) TANKS, STARTING WITH THE LARGEST COMPARTMENT, ALTERNATE FILLING EACH COMPARTMENT WITH 50% OF VOLUME UNTIL ALL COMPARTMENTS ARE 100% FULL.
2) DISPOSE OF CLEAN BALLAST WATER AS DIRECTED BY LOCAL AUTHORITIES.
d) DO NOT REMOVE BALLAST UNTIL INSTALLATION OF TANK SLABS HAS CURED FOR SEVEN (7) DAYS.
e) HAND PUMP ANY WATER AT THE BOTTOM OF TANKS PRIOR TO INTRODUCTION OF PRODUCT.
f) SUFFICIENT WATER BALLAST AND BACKFILL MATERIAL MUST BE AVAILABLE ON SITE TO COMPLETE THE SETTING OF TANKS IN ONE DAY.
g) NO TANK SETTING SHALL BE SCHEDULED FOR ANY FRIDAY WITHOUT PRIOR ARRANGEMENT WITH MURPHY OIL USA, INC. INSPECTOR.
h) PROVIDE 2" TEMPORARY VENTS UNTIL PERMANENT VENTING IS OPERATIONAL. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE EXCAVATION IN A DEWATERED STATE DURING THE ENTIRETY OF CONSTRUCTION.
1) BERMING OF THE EXCAVATION SHALL BE PROVIDED WHERE SURFACE DRAINAGE MAY ENTER THE OPEN TANK CAVITY.
j) WHERE THIS DRAWING IS IN CONFLICT WITH THE LOCAL REGULATIONS NOTIFY MURPHY OIL USA, INC.
1) LOCAL REGULATIONS WILL SUPERSEDE DRAWINGS IF MORE STRINGENT.
k) SUPPLY MURPHY OIL USA, INC. WITH AS-BUILT PLANS.
l) BACKFILL
1) ALL BACKFILL SHALL COMPLY WITH CURRENT MANUFACTURER'S INSTALLATION REQUIREMENTS.
2) SUPPLY QUARRY CERTIFICATION.
m) TANK TEST
1) TANKS MUST BE TESTED ACCORDING TO CURRENT MANUFACTURER'S PROCEDURES.
2) AFTER COMPLETION OF ALL YARD PAVEMENT WORK, INCLUDING TANK PADS AND PUMP ISLANDS, AN APPROVED PRECISION TANK TEST SHALL BE PERFORMED ON THE TANK, ULLAGE, PRODUCT AND VENT LINES (NITROGEN TEST FOR STAGE 2 VAPOR RECOVERY PIPING) AT THE EXPENSE OF MURPHY OIL USA, INC.
3) CONTRACTOR SHALL COMPLETE THE TANK MANUFACTURER'S CHECKLIST AND SUBMIT THIS LIST TO THE OWNER'S REPRESENTATIVE.
n) SUMPS
1) FIBERGLASS SUMP UNITS ARE TO BE SEALED PER MANUFACTURER INSTALLATION INSTRUCTIONS.
2) EACH SUMP SHALL BE FILLED WITH WATER FOR 24 HOURS BEFORE BACKFILL TO VERIFY WATER TIGHT.
D. FIBERGLASS PIPING
1. GENERAL
a) BACKFILL
1) ALL BACKFILL SHALL COMPLY WITH CURRENT MANUFACTURER'S INSTALLATION REQUIREMENTS.

FS-2 WAYNE OCTOBER 2019 STANDARDS



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CONTRACTOR SHALL REVIEW THE GEOTECH REPORT AND ALL CIVIL DOCUMENTS. THE GEOTECH REPORT AND CIVIL DOCUMENT SUPERCEDE ANY OF THE STANDARD SPECIFICATIONS ON THIS SHEET.

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