PERFORMANCE SPECIFICATION - CONT.

SECTION II INSPECTIONS / TESTING - CONTINUED

PART 3 - TANK INSTALLATION INSPECTION

3.1 SCHEDULE: CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING SCHEDULE SO TANKS ARE TESTED AND SET IN TANK HOLE SAME DAY OF DELIVERY.

3.2 EXCAVATION: ALL EXCAVATIONS SHALL BE COMPLETED WITH BEDDING MATERIAL IN PLACE AND READY FOR INSTALLATION PRIOR TO TANK DELIVERY.

3.3 ANCHORS: CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE INSTALLATION OF CONCRETE ANCHORS (DEAD MAN).

3.4 STRAPS: HOLD DOWN STRAPS TO BE INSTALLED AS PER MANUFACTURER'S SPECIFICATIONS - MINIMUM OF 4 - MORE IF REQUIRED BY MANUFACTURER (STRAPS SHALL BE SHIPPED WITH APPROPRIATE PADDING MATERIAL.

3.5 AIR TEST: TANKS SHALL BE AIR TESTED AS PER MANUFACTURER'S SPECIFICATIONS PRIOR TO PLACEMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MATERIALS TO PROVIDE COMPLETE AIR TEST INCLUDING, BUT NOT LIMITED TO, AIR COMPRESSOR OF SUFFICIENT SIZE AND CAPACITY, SPECIFIED SOAP MATERIAL AND ACCEPTABLE SOAP APPLICATION EQUIPMENT.

3.6 MINIMUM TESTING: DOUBLE WALL FIBERGLASS TANKS SHOULD ARRIVE AT THE JOB SITE WITH A MINIMUM OF 4" HG ON THE INTERSTICE. OBSERVE THE VACUUM HOLD TEST FOR AT LEAST ONE (1) HOUR PRIOR TO SETTING THE TANKS. SHOULD THE INTERSTICE NOT HOLD A MINIMUM 4" HG VACUUM, THEN CONTACT THE TANK MANUFACTURER IMMEDIATELY.

3.7 OBSERVATION: OWNER CONSTRUCTION DEPARTMENT AND/OR REPRESENTATIVE SHALL BE RESPONSIBLE FOR INSPECTION OF AIR OR VACUUM TEST, OBSERVATION OF LIFTING, SETTING AND BURIAL OF TANKS.

3.8 TANK INSPECTION REPORT: WRITTEN REPORT SHALL INCLUDE PHOTOGRAPHIC DOCUMENTATION OF ALL PROCEDURES.

PART 4 - TANK AND LINE TESTING

4.1 CONTRACTOR SHALL COMPLETE AND BE RESPONSIBLE FOR THE FOLLOWING PRIOR TO FINAL PLACEMENT OF CONCRETE AND FINAL SYSTEM TEST:

4.1.1 PIPING: ALL PIPING SHALL BE COMPLETED EXCEPT INSTALLATION OF OVERFILL PROTECTION. OVERFILL PROTECTION SHALL BE INSTALLED UPON COMPLETION OF TEST.

4.1.2 VENTS: VENT LINES SHALL BE COMPLETED UNDERGROUND AND STUBBED UP MINIMUM OF 12'ABOVE FINISHED GRADE.

4.1.3 PRODUCT LINES: ALL PRODUCT LINES SHALL BE COMPLETE WITH EMERGENCY SHUTOFF IMPACT VALVE INSTALLED AT DISPENSER BOX WITH MECHANICAL LEAK DETECTOR IN PLACE.

4.1.4 PUMPS: SUBMERSIBLE PUMPS AND LINES SHALL BE COMPLETELY INSTALLED.

4.1.6 SITE PREPARATION: CONTRACTOR SHALL PREPARE TANK AREA FOR WATER OR PRODUCT DELIVERY AND TANK TESTING PROCEDURES.

4.1.7 FILL: CONTRACTOR SHALL PROVIDE 42" MINIMUM BACK FILL OVER TANKS.

4.1.8 WATER: SHOULD WATER BE PRESENT IN TANK HOLE, CONTRACTOR SHALL VERIFY AND NOTIFY THE OWNER CONSTRUCTION MANAGER OF STATUS.

4.2 AFTER PLACEMENT OF CONCRETE, A COMPLETE SYSTEM TIGHTNESS TEST INCLUDING TANKS, PRODUCT LINES, STAGE II VAPOR RECOVERY LINES, SECONDARY CONTAINMENT PIPING AND VENT LINES SHALL BE PERFORMED. TESTING SYSTEM SHALL BE AS APPROVED BY OWNER. OWNER WILL BE BILLED DIRECTLY FOR TESTS. CONTRACTOR TO COORDINATE & SCHEDULE. RETEST OR STAND AROUND TIME BY THE TESTING COMPANY TO BE BILLED TO CONTRACTOR. DETAILS FOR THIRD PARTY TESTING REQUIREMENTS LISTED ON G9.X SHEETS.

4.2.1 AFTER ALL UNDERGROUND PIPING AND ELECTRIC CONDUITS ARE INSTALLED AND DURING EXCAVATION BACKFILLING AND CONCRETE POURING, A CONTINUOUS HYDROSTATIC TEST SHALL BE PERFORMED ON ALL SUMPS & SPILL BUCKETS TO ENSURE TIGHTNESS AND PROPER INSTALLATION.

4.3 PRODUCT DELIVERY: CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFICATION TO OWNER REPRESENTATIVE OF TEST DATE AND VERIFICATION OF NEED FOR TANKS TO BE FILLED WITH PRODUCT AND TANK MONITORING SYSTEM TO BE OPERATIONAL FOR TESTING PROCEDURES. A MINIMUM OF 72 HOURS ADVANCE NOTIFICATION WILL BE REQUIRED FOR PRODUCT DELIVERY. CHECK WITH LOCAL REGULATORY AGENCIES FOR ANY FURTHER REQUIREMENTS.

4.4 CONTRACTOR SHALL HAVE REPRESENTATIVES ON SITE TO ACCEPT AND RECORD ALL PRODUCT DELIVERIES. CONTRACTOR'S REPRESENTATIVE SHALL REMIND DELIVERY COMPANY THAT NO OVERFILL PROTECTION IS INSTALLED AND TO FOLLOW PROCEDURES FOR DELIVERY AS SITUATION DICTATES.

4.5 PRODUCT REMOVAL: ANY REMAINING PRODUCT IN VENT LINES UPON COMPLETION OF TEST SHALL BE REMOVED BY TESTING COMPANY.

PART 5 - STARTUP INSPECTION

5.1 SCHEDULING: CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL SCHEDULING STARTUP AND CHECK-OUT. CONTRACTOR SHALL NOTIFY LOCAL CONSTRUCTION DEPARTMENT AND APPLICABLE MAINTENANCE DEPARTMENT OFFICE A MINIMUM OF 48 HOURS PRIOR TO INTENDED FINAL STARTUP AND CHECK-OUT DATE AND TIME.

5.2 PERSONNEL: CONTRACTOR, PLUMBING SUBCONTRACTOR AND ELECTRICAL SUBCONTRACTOR SHALL BE AVAILABLE ON-SITE DURING STARTUP, AS APPROVED BY OWNER. ALL STARTUPS ARE TO BE DONE BY AN AUTHORIZED MANUFACTURER'S CONTRACTOR FOR THAT PIECE OF EQUIPMENT.

5.3 STARTUP: PHYSICAL STARTUP AND CHECK-OUT OF SYSTEMS AND EQUIPMENT SHALL BE DONE BY AND AT THE DIRECTION OF OWNER REPRESENTATIVE ONLY. CONTRACTOR SHALL NOT START OR ACTIVATE ANY EQUIPMENT WITHOUT THE SPECIFIC DIRECTIVE OF OWNER REPRESENTATIVE. DAMAGE TO ANY OWNER EQUIPMENT DUE TO IMPROPER INSTALLATION AND/OR UNAUTHORIZED STARTUP WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

5.4 SITE COMPLETION: ALL SITE WORK, INCLUDING CONCRETE/ASPHALT PAVEMENTS, SHALL BE COMPLETE. ALL UTILITIES SHALL BE CONNECTED AND OPERATIONAL. ALL LANDSCAPING, INCLUDING SPRINKLER SYSTEMS, SHALL BE COMPLETE.

5.5 VERIFICATION: PRIOR TO SCHEDULING OF STARTUP, CONTRACTOR SHALL OBSERVE AND VERIFY CORRECTNESS AND COMPLIANCE TO OWNER DRAWINGS AND SPECIFICATIONS FOR THE FOLLOWING, BUT THESE SHALL NOT COMPRISE THE TOTAL LIMIT OF THE CONTRACTOR'S VERIFICATION:

5.5.1 MAN WELLS SHALL BE PROPERLY CENTER/INSTALLED AT OVERFILLS, SUBMERSIBLES, VAPOR RECOVERY, AUTO GAUGING, OBSERVATION WELLS AND SUMP/RISER.

5.5.2 PROPER HEIGHT OF GRAVEL BACK FILL AROUND SUMP/RISERS.

5.5.3 TANK I.D. MARKERS INSTALLED IN CONCRETE AT PROPER LOCATIONS.

SECTION II INSPECTIONS / TESTING - CONTINUED

PART 5 - STARTUP INSPECTION - CONTINUED

5.5.4 ALL BRASS GOODS AND FITTINGS PROPERLY INSTALLED, TIGHT AND SECURE.

5.5.5 LEAK DETECTORS INSTALLED.

5.5.6 PROTECTED FLEX LINES PROPERLY INSTALLED WITHOUT TWIST IN INSTALLATION.

5.5.7 MANHOLE EXTENDERS PROPERLY INSTALLED AND SCREWED IN FRAME OF MANHOLE SUMP/RISERS, PROPERLY SET AND SEALED TO TANK MAN WAY OR FITTINGS AND CLEANED OUT FREE OF DEBRIS AND CONCRETE.

5.5.8 TANKS CLEAN AND FREE OF WATER.

5.5.9 ISLAND FORM INNER BOXES PROPERLY CLEANED OUT FREE OF DEBRIS AND CONCRETE.

5.5.10 DISPENSERS PROPERLY SET AND SECURED TO ISLAND BOX FRAME AND DISPENSER SUMPS PROPERLY CLEANED OUT FREE OF DEBRIS AND CONCRETE.

5.5.11 SHEAR VALVES SECURED TO FRAME WITH PROPER HARDWARE.

5.5.12 PHASE II VAPOR RECOVERY LINES STUBBED UP AND SECURED IN PROPER LOCATION.

5.513 ELECTRICAL CONDUITS SECURED WITH ALL CONNECTIONS COMPLETED. VERIFY COMPLIANCE WITH REQUIREMENTS FOR ISOLATED GROUND WIRING TO JUNCTION BOX CASING.

5.5.14 DISPENSER CANOPIES INSTALLED AND LIFTING LUGS REMOVED WITH PROPER PLUGS INSERTED.

5.5.15 ALL NOZZLES AND SWIVELS AVAILABLE ON-SITE, INSTALLED PRIOR ONLY IF REQUIRED BY GOVERNING AUTHORITIES FOR INSPECTION PURPOSES.

5.5.16 ALL INSPECTIONS BY GOVERNING AUTHORITIES COMPLETED AND SIGNED. SIGNED AND COMPLETED PERMIT CARD ON SITE.

5.5.17 ELECTRICAL DEVICES INCLUDING LIGHTS, SIGNS AND INTERCOMS PROPERLY INSTALLED, SECURED AND PLUMB.

5.5.18 ANY WIRING INSPECTION PORTS IN CANOPY COLUMNS COVERED WITH ACCEPTABLE PLATES.

5.5.19 VENT LINES PROPERLY SECURED, PROTECTED AND INSTALLED AT PROPER HEIGHT

5.5.20 VERIFICATION OF COMPLIANCE FOR TANK AND LINE TEST AVAILABLE ON SITE.

5.5.21 ALL MANHOLES FREE OF CONCRETE AND DEBRIS.

5.5.22 MANHOLE COVERS PROPERLY PAINTED.

5.5.23 ALL PAINTING COMPLETE INCLUDING CANOPY, DOWN SPOUTS, METALS AND MISCELLANEOUS METALS.

5.5.24 CONCRETE AT ISLANDS AND TANK PAD TRUE, PROPERLY SLOPED AND FINISHED WITH ACCEPTABLE RISE TO MANHOLES.

5.5.25 ELECTRICAL PANELS PROPERLY COMPLETED TO INCLUDE:

(A) ONE BREAKER FOR EACH SUBMERSIBLE PUMP, DISPENSER, CONSOLE AUTO GAUGING, DISPENSER LIGHTS (ALL) AND CANOPY LIGHTS (ALL).

(B) GAS PANEL CONTROLLED BY A MAIN BREAKER.

(C) CONTROL BOXES AND DISTRIBUTION BOXES INSTALLED AND WIRED.

(D) INTERCOM INSTALLATION COMPLETE AND PROPERLY WORKING.

(E) ALL APPLICABLE CONSOLE INSTALLATION COMPLETE AND FUNCTIONAL.

(F) ALL WIRING PROPERLY IDENTIFIED WITH COLOR CODED WIRING.

(G) CONDUITS PROPERLY IDENTIFIED. (H) ALL BREAKERS IN "OFF" POSITION.

5.6 NOTIFICATION: CONTRACTOR SHALL VERIFY ITEMS AS INDICATED ABOVE PRIOR TO SCHEDULING OF STARTUP MONIES AND/OR TIME LOST AT STARTUP DUE TO NON- COMPLIANCE SHALL BE CHARGED TO CONTRACTOR ACCORDINGLY.

5.7 EQUIPMENT SHALL BE TESTED PER SPECIFICATIONS ON SHEET G9.2.

5.8 CLEANUP: CLEAN UP ALL DEBRIS CAUSED BY WORK OF THIS SECTION, KEEPING PREMISES CLEAN AND NEAT AT ALL TIMES.

SECTION III EARTHWORK

PART 1 - GENERAL

1.1 SCOPE: THIS SECTION COVERS THE FURNISHING OF ALL LABOR, MATERIALS, SERVICES, EQUIPMENT AND APPLIANCES REQUIRED IN CONJUNCTION WITH OR PROPERLY INCIDENTAL TO EARTHWORK.

PART 2 - PRODUCTS

2.1 FILL MATERIAL: SHALL BE MATERIAL IN COMPLIANCE WITH TANK AND LINE MANUFACTURER'S SPECIFICATIONS.

2.1.1 PEA GRAVEL: SHALL BE CLEAN, NATURALLY ROUNDED AGGREGATE WITH A MIX OF PARTICLE SIZE NOT LESS THAN 1/8" OR MORE THAN 3/4".

2.1.2 STONE OR GRAVEL CRUSHING: SHALL BE WASHED MATERIAL WITH ANGULAR PARTICLE SIZE NOT LESS THAN 1/8" OR MORE THAN 1/2".

2.1.3 BACKFILL OR OTHER MATERIAL MUST BE APPROVED BY TANK MANUFACTURER.

NOTE: MATERIALS MUST MEET ASTM C-33 PARAGRAPH 7.1 FOR QUALITY AND SOUNDNESS. FILL MATERIAL SHALL NOT HAVE MORE THAN 3% PASSING A #8 SIEVE. DRY GRAVEL DENSITY MUST BE A MINIMUM OF 95 POUNDS PER CUBIC FOOT.

SECTION III EARTH WORK - CONTINUED

PART 3 - EXECUTION

3.1 PROTECTIONS: PROVIDE ADEQUATE SHORING, BRACING, PILING AND CRIBBING. COMPLY WITH ALL OSHA AND LOCAL REGULATIONS AS IT PERTAINS TO SAFETY.

3.2 LAYOUT: CONTRACTOR SHALL BE RESPONSIBLE FOR LAYOUT AS PRESENTED IN PERMITTED PLANS AND SPECIFICATIONS.

3.3 EXCAVATION: EXCAVATE TO LINES, ELEVATIONS AND LIMITS REQUIRED BY THE DRAWINGS, PLUS SUFFICIENT DISTANCE AND SPACE TO PERMIT INSTALLATION OF TANKS. EXCAVATE AS REQUIRED, REGARDLESS OF TYPE, CONDITION OR MOISTURE CONTENT OF THE MATERIAL ENCOUNTERED. HAUL EXCESS MATERIAL OFF THE SITE AND DISPOSE OF SAME. DIMENSIONS OF TANK EXCAVATION SHALL BE MINIMAL AS ESTABLISHED BY OWNER DRAWINGS UNLESS TANK MANUFACTURER REQUIREMENTS ARE GREATER. IF EXCAVATION MATERIAL IS FROM AN EXISTING GASOLINE FACILITY ALL MATERIALS MUST BE TESTED PRIOR TO REMOVAL.

3.4 SAW CUTTING: IF PAVING MUST BE REMOVED, THE PERIMETER OF THE TANK HOLE AND ALL TRENCHES SHALL BE CUT WITH A CONCRETE SAW. NOTE: PAVING TO BE CUT 2' BEYOND EDGES OF TANK HOLE IN ALL DIRECTIONS IN ORDER TO GIVE PROPER SUPPORT TO NEW SLAB TO AVOID SETTLING.

3.5 HAZARDOUS MATERIAL: SHOULD ROCK, WATER OR OTHER HAZARDOUS MATERIALS NOT SHOWN ON SOILS TEST BE ENCOUNTERED, LOCAL CONSTRUCTION OFFICE SITE MANAGER SHALL BE IMMEDIATELY CONTACTED FOR APPROVAL TO PROCEED.

3.6 PROTECTION: CONTRACTOR SHALL PROVIDE SUFFICIENT PROTECTION WITH EARTHEN BERMS AT ALL TIMES TO PROTECT TANK HOLE AND TRENCHES FROM DRAINAGE OF SURFACE WATERS. EXCAVATIONS SHALL BE PROPERLY MARKED, PROTECTED AND BARRICADED FOR SAFETY UNTIL BACK FILL IS COMPLETE AND SURFACING FINISHED.

3.7 SHORING: CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING REQUIREMENTS FOR SHORING AND PROVIDING SAME SHOULD SITE AND/OR SOIL CONDITIONS WARRANT SAME. REFERENCE SOIL REPORT FOR CONDITIONS WARRANTING SPECIAL REQUIREMENTS.

3.8 FILLING AND BACK FILLING: PLACE APPROVED FILL MATERIAL IN STRICT ACCORDANCE WITH TANK AND PIPING MANUFACTURER'S SPECIFICATIONS. PROVIDE A 12" BED OF APPROVED BACK FILL OVER BOTTOM OF EXCAVATION PRIOR TO TANK PLACEMENT. BACK FILL SHALL BE PLACED AND COMPACTED IN MAXIMUM 12" LIFTS.

3.9 CLEANUP: CLEAN UP ALL DEBRIS CAUSED BY WORK OF THIS SECTION, KEEPING PREMISES CLEAN AND NEAT AT ALL TIMES.

SECTION IV TANK INSTALLATION

PART 1 - GENERAL

1.1 SCOPE: THIS SECTION COVERS THE FURNISHING OF ALL LABOR, MATERIALS, SERVICES, EQUIPMENT AND RELATED APPLIANCES REQUIRED IN CONJUNCTION WITH OR PROPERLY INCIDENTAL TO THE INSTALLATION OF GASOLINE STORAGE TANKS.

PART 2 - PRODUCTS

2.1 TANKS: SHALL BE DESIGNED AND MANUFACTURED SO AS TO BE CORROSION PROTECTED PER EPA REQUIREMENTS. APPROVED TANKS SHALL BE:

2.1.1 DOUBLE WALL FIBERGLASS TANKS

2.2 HOLD DOWN STRAPS: SHALL BE SUPPLIED BY TANK MANUFACTURER ONLY. <u>FIELD FABRICATED UNITS ARE NOT ACCEPTABLE</u>.

PART 3 - INSTALLATION

3.1 MANUFACTURING: REFER TO TANK MANUFACTURER'S CRITERIA AND SPECIFICATIONS FOR TANK INSTALLATION AND ADHERE TO AS REQUIRED.

3.2 CLEARANCES: MINIMUM CLEARANCE FOR TANKS SHALL BE AS FOLLOWS: SHOULD REQUIREMENTS OF TANK MANUFACTURER OR SOIL CONDITIONS DICTATE GREATER CLEARANCE, ADHERE TO ACCORDINGLY.

3.2.1 BOTTOM: PROVIDE MINIMUM OF 12" BEDDING MATERIAL BETWEEN BOTTOM OF EXCAVATION OR PAD AND BOTTOM OF TANK.

3.2.2 SIDES: PROVIDE MINIMUM OF 2'0" BETWEEN TANKS AND 3' FROM SIDE/END OF TANK TO WALL OF EXCAVATION.

3.2.3 TOP: PROVIDE 42" FILL MATERIAL OVER TANK PLUS 8" OF CONCRETE

3.3 TESTING: PRIOR TO INSTALLATION OF TANKS, TESTING PER MANUFACTURER'S INSTRUCTIONS SHALL BE PERFORMED ON TANK(S). ON DUAL WALL TANKS, CONSULT TANK MANUFACTURER FOR TESTING CRITERIA BUT MINIMUM 4" HG VACUUM MUST BE HELD ON INTERSTITIAL SPACE FOR AT LEAST ONE (1) HOUR.

3.4 PLACEMENT:

3.4.1 REFER TO SITE PLAN FOR TANK PLACEMENT AND PRODUCT ROTATION.

3.4.2 PRIOR TO SETTING OF TANKS, REMOVE ALL FOREIGN DEBRIS, ROCKS, CLODS, GARBAGE, ETC. FROM EXCAVATION.3.4.3 PLACE TANKS ONLY ON APPROVED FILL. DO NOT SET ON CONCRETE OR WOOD.

3.4.4 NOT USED.

3.4.5 TANKS SHALL BE BURIED TO MINIMUM DEPTH AS PER ABOVE AND AS SHOWN ON GASOLINE DRAWINGS. TANKS MAY REQUIRE GREATER BURIAL DEPTH IF INSTALLED IN REMOTE POSITION TO ALLOW FOR PROPER SLOPE ON VENT LINES,VAPOR LINES, SECONDARY CONTAINMENT PRODUCT LINES. VERIFY DEPTH AS REQUIRED. (IF BURIAL DEPTH EXCEEDS 5'-0" (60"), NOTIFY OWNER MANAGER)

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