

New Single-Family Inspection Checklist

T -POLE:

1. Address shall be posted on t-pole.
2. 220V and 120V receptacles shall have ground fault protection on all 20 and 30 amp circuits.
3. Pole shall be braced and grounded.
4. Plugs and breakers shall be in weather-proof enclosure.
5. Ground rod properly installed.

PLUMBING ROUGH:

Required Paperwork:

Failure to have Form Board shall result in disapproval.

1. Address shall be posted.
2. Plumbing water, gas, and sanitary systems shall be on test. Air tests are not allowed on DWV systems. **A 4 psi hydro will be required during wet ground inspections.**
3. Water meter shall be installed and water to building shall be turned on if not an air test is allowed at minimum 60lbs.
4. All plumbing shall be exposed for inspection.
5. Hose bibs shall be installed for testing.
6. Copper lines shall be sleeved, taped, or painted where exposed to concrete.
7. All building sewers shall be sized and installed to code with a code approved cleanout.
8. Approved adapter fittings shall be at any change in material.
9. All underground plumbing shall be bedded with sand or clean soil. It should be laying on the bedding, not covered by it.
10. Barrier fencing shall be secured completely around yard sewer holes over four (3) feet in depth.
11. Minimum depth of services shall be twelve (12) inches.
12. Proper sanitary drainage shall be provided. 14. Island/foot vent shall be properly installed.
13. Trap arm shall not be too long and without excessive fall.
14. Sanitary shall be properly vented.
15. Water service pipes, water distribution pipes, and the necessary connecting pipes, fittings, control valves, faucets, and appurtenances used to dispense water intended for human ingestion shall be evaluated and listed as conforming to the requirements of NSF 61.
16. Pressure Reducing Valve (PRV) shall be installed were operating pressure is at or above 80 psi and installed to 2015 Code. Inspected on top out.
17. House service shutoff valve shall be required prior to slab or as soon as it enters the building.

18. Required city-side sanitary sewer cleanout shall comply with Public Works specifications.

FOUNDATION/ELECTRICAL UNDERGROUND:

Foundation Inspections shall be performed by the engineering firm that designed the foundation of the structure to back up City inspection.

1. Address and permit shall be posted.
2. Foundation inspection report letter can be provided at framing. Framing will not pass without it.
3. Beam width and depth shall comply with approved engineer designs.
4. Chairs shall be under reinforced steel and cables.
5. Forms shall be installed and adequately braced.
6. Block-outs for tubs and showers shall be in place.
7. Approved engineer inspection report shall be completed.
8. Beams shall be clear of debris and water.
9. Cables and rebar shall be installed to engineered plan, including corner steel.
10. Cables shall be properly routed and spaced off bottom of beams.
11. Plumbing shall be sleeved and wrapped properly.
12. String lines shall be installed.
13. Missing or damaged poly shall be repaired on interior pads.
14. Underground duct system clearances if applicable.
15. Rough grading for positive drainage away from slab must be done after concrete placement and removal of forms.
16. Electrical Underground shall be installed at time of inspection and shall include the concrete encased electrode.
17. Bottom plate anchors should to be installed. They must be 10" J-bolts with 7" in slab. You may be asked to show us what was used. Drilled anchors for missing bolts after frame are allowed but must be approved length and size.
18. Yard sewer holes shall be filled in.
19. Piers installed per plans/passed pier inspection (3rd party). Request a pier inspection in addition to 3rd party. We will look at depth and cage construction.
20. All new home/addition foundations greater than 200 square feet shall be an engineered design.
21. Fencing should be installed on the lot to contain trash.
22. Water and sewer shall be under test in the same manner as the plumbing rough inspection.

FLATWORK/APPROACH:

1. Expansion joints, not to exceed twenty (20) feet on center, shall be installed where abutting existing concrete.
2. Reinforcement shall be #3 bars at eighteen (18) inches on center each way.
3. Drive approaches shall be six (6) inches in depth and reinforced with #3 rebar dowelled into existing concrete at eighteen (18) inches on center placed on compacted soil.
4. Water meter boxes shall be flush to final grade (including sod) and meters and fittings shall be fully accessible.
5. Water meters shall not be located in any flat work.
6. Handicap ramps shall conform to the Texas Accessibility Standards (T.A.S.).
7. All fire hydrant and water main line valve stacks shall be clearly located and level with final grade.
8. Radius or cut of approach based on sub-division.
9. Flatwork area shall be dry and free of standing water.
10. Four (4) inch expansion joint shall be required at Town sidewalk to street.
11. Six (6) inch expansion joint shall be required at approach to street.
12. Smooth dowels with plastic caps shall be installed at expansion boards with epoxy at street.
13. Maximum of one (1) inch of sand with chairs shall be installed under rebar.

EXTERIOR SHEATHING/NAIL PATTERN:

1. All types of sheathing should follow manufacturer specifications in addition to code.
2. Wood structural panels shall be installed with nails at six (6) inches on center at edges, twelve (12) inches on center at intermediate supports (interior locations).
3. All hold downs from concrete to structural members shall be nailed in place.
4. Sheathing locations and inlet bracing to match plans.
5. Structural hold downs installed on exterior walls and nailed if to be covered prior to the Framing Inspection.

SECONDS INSPECTION:

A Seconds Inspection shall include: Framing, Sheathing, Electrical Rough, Plumbing Top Out, and Mechanical rough.

Partial inspections are not performed without prior approval being obtained from the Building Official or Senior Building Inspector. All trades shall be inspected at one time.

Required Paperwork:

Any foundation or framing alteration letters.

FRAMING:

1. All windows/construction doors shall be installed.
2. Windows shall be flashed.
3. Wind bracing shall be in place
4. Nailing of wind bracing shall be as structural sheathing and location to match the plans.
5. Sealed or flashed horizontal sheathing.
6. Brick ties shall be in place, where applicable.
7. Poly shall be on brick ledge.
8. Triple treated rafters shall be at brick on wood.
9. All holes and penetrations in exterior sheathing shall be sealed.
10. Holes between floors shall be sealed.
11. Penetrations through slab shall be sealed.
12. Hold down straps, slab bolts, nuts, and washers shall be correctly installed 12" and 6' per code.
13. Interior plates shall be anchored at thirty-six (36) inches.
14. Chases draft stopped/fire blocked from attic/floor space.
15. Fire blocking shall be installed.
16. Fireplace flue shall be boxed in attic from insulation.
17. Solid block sheathing wind bracing seams.
18. Over bored/notched stud/top plate/joist/rafter shall be properly repaired.
19. 2"x 6" studs shall be at plumbing walls where over 1" piping is used.
20. Attic access shall be required.
21. Joist properly supported. Hanger/pressure block.
22. Hangers properly web stiffened on LPI/TJI joist. **Manufacturer specifications.**
23. Double/triple studs under double/triple joist or beams.
24. Support under water heaters shall be installed in attic space.
25. Roll block floating beam.
26. OSB both sides of rafter splice/properly brace rafter splice.
27. Lateral restraint of joists.
28. Treated wood on slab.

29. Support stairs stringers.
30. Stairs, landings, handrails, and guardrails shall be in compliance.
31. Tempered glass shall be at hazardous locations.
32. Proper joist and rafter spans.
33. Adequate air vents for attic space unless foam insulation is used
34. Vaulted ceilings baffled.
35. If zero lot line check for 1hr resistance. **Change in code 2015: If your eaves are over the 5' to property line there can be no openings under the eave such as attic vents, you also must install fire blocking across the top plate. You place low vents on roof to provide ventilation.**
36. Bored engineered lumber to manufacturer recommendations.
37. Windows to match energy compliance documentation. (3rd party also)
38. Exterior joints, seams, or penetrations in building envelope shall be sealed including roof penetrations.
39. If guards are not provided for fall protection on the second floor the inspection may not be done.
40. Valleys, hips, and ridges shall be no less than two (2) inches nominal thickness and not less in depth than the end cut of the rafters.
41. Purlins shall be at least the same size as the rafter, with struts four (4) feet on center.
42. Fur downs, chimneys, ceilings of different heights, vertical wall spaces over ten (10) feet in height, roof lines, and open risers on stairs shall be fire blocked. Horizontal wall spaces more than (10) feet shall be fire blocked.
43. Support studs over 8' in attic space require a stiff back for additional support.
44. Manufactured fireplaces shall be installed appropriately. **Manufacturer specifications.**
45. Lintels are required to be installed prior to brick install.
46. Install joist hangers where required.
47. Fully support bottom sill plate.
48. Rafters below ridge boards.
49. Install ledger blocks where required.
50. Install permanent support post for porches. If posts they require a bottom bracket. If framed the bottom plates must be treated and anchored.
51. Installation to match plans with all support items such as foundation straps, rafter straps ,first/second floor hold downs and similar applications.

ELECTRICAL ROUGH:

1. Number of circuits in panel shall not exceed the allowable overcurrent devices allowed by manufacturer.
2. Two (2) - 20 amp circuits shall be required in the kitchen.
3. Proper stapling at boxes.
4. Check box fill.
5. Nm cable protection from damage such as being too close to roof deck, damaged or pinched cables under framing. Cables running over attic floor decking is not allowed.
6. Sleeve NM cable run through brick.
7. Sleeve NM cable in return air plenums.
8. No branch circuit aluminum wire unless all connections are AL/CU
9. Hall outlet installed.
10. Laundry circuit can't leave utility to serve other outlets.
11. Check circuit and outlet locations as well as amperage for the circuits.
12. AC service disconnects shall be outside building and labeled.
13. Fan rated boxes with bond screw.
14. Correct attic lighting shall be in place.
15. Kitchen counter top outlets cannot leave kitchen to serve other outlets no in the area.
16. Ground at metal boxes (stingers).
17. Heating & Air Conditioning equipment outlets.
18. Kitchen Island underground wiring shall be rated for wet location.
19. Proper receptacle and switch locations; 3 way switching, outlet spacing, and smoke detectors.
20. Combination and smoke sensor locations.
21. Bathroom outlets to meet code locations. Bathroom GFCI circuit cannot serve other locations.
22. Jacuzzi tub outlet dedicated GFCI outlet.
23. Nail guards where needed for protection of cable too close to stud edge.
24. Check egress lighting and outdoor outlet locations.
25. Fireplace, exhaust fan and can light connections completed.

PLUMBING TOP-OUT:

1. Waste/vent shall be properly supported.
2. Waste/vent shall have no leak ten (6) feet of head or 6" above the highest flood rim.
3. Trap arm shall not be too long or with excessive grade.
4. Proper grade on waste/vent.
5. Accessibility to cleanouts.

6. Cleanout on island and foot vent as required if installed.
7. No low dry venting.
8. Water test entire system, hot and cold tied together.
9. Gas test required on entire system 3psi for 20 min. with testable gauge.
10. Identification of CSST piping (medium pressure warning tag).
11. Gas valves at appliance/manifolds.
12. Shower pans shall be water tested.
13. Tubs shall be tested to overflow.
14. Water heater ignition source shall be not less than eighteen (18) inches in garage. Flammable vapor resistant water heaters are exempt.
15. B-vent horizontal not greater than seventy-five (75) percent of vertical rise.
16. Proper clearance from combustibles and B-vents.
17. Water heater T&P and pan line termination.
18. Pan drain required at water heater.
19. Gas vent shall termination.
20. Minimum five (5) foot rise on gas vents.
21. Combustion air for confined locations.
22. Unions for water heater connections.
23. Support horizontal runs of all PVC at four (4) foot intervals.
24. Stack vent all plumbing, where possible. Flat venting shall not be allowed. (Air admittance are being reviewed for use at this time for new construction).
25. Integral vacuum breakers are required on all hose bibs.
26. Install shield plates for protection of all plumbing, where required.
27. Install commode flanges correctly (corrosion resistant screws required).
28. Hose bibs may not be installed in uninsulated walls.

MECHANICAL ROUGH:

1. Return plenum shall be properly sealed.
2. Fresh air intake/gravity and volume damper.
3. Restricted A/C ducts. M1601
4. Exhaust vent terminations shall be located a minimum thirty-six (36) inches from openings into building.
5. Chimney shall be capped.
6. Piping and fittings for refrigerant vapor (suction) lines shall be insulated with insulation having a thermal resistivity of at least R-4 and having external surface not exceeding 0.05 perm [2.87 ng/ (s · m² · Pa)] when tested in accordance with ASTM E 96.
7. Minimum duct insulation shall be R-8 in unconditioned space and R-6 in other locations.

8. Flex duct shall be supported every twelve (12) feet horizontally. Bending radius shall not restrict airflow. Splice collars are required at duct splices. **Manufacturer specifications.**
9. Seal all vinyl seams and connections of ductwork and equipment. Mechanical fasten insulation over vinyl (Duct Tape is not approved for air tight sealing)
10. Main condensate drains shall be tied into a wet drain to a trap. Secondary drains shall discharge to an obvious location (over doors, windows, patios, etc.).
11. **Exhaust ducts from bathrooms shall discharge to the exterior in a manner where it can not recirculate back into the attic. 3" exhaust fans and ducts are limited to 5' smooth metal only with no bends or you must upgrade to 4' fan boxes and ductwork.**
12. Dryer vent maximum length is thirty-five (35) feet with no more than two (2) bends. When extra bends are installed, the maximum developed length shall be reduced two and a half (2 ½) feet for each forty-five (45) degree bend and five (5) feet for each ninety (90) degree bend (booster fan may be needed).
13. Dryer duct shall be a minimum four (4) inch diameter and shall not be reduced in its developed length.
14. A minimum twenty-four (24) inches wide by thirty (30) inch high unobstructed, solid catwalk is required from the point of attic entry to the attic furnace service panels and filters.
15. The "Line of Travel" distance between the attic entry point and the attic furnace access panels shall not exceed twenty (20) feet.
16. A 30" x 30" level work platform and thirty (30) inch clear work area is required in front of attic furnace access and filters. All decking must be minimum ¾ OSB or similar.
17. Air conditioning condensers are to be level and firmly supported three (3) inches above adjoining grade.
18. Gas flue pipes (B-Vent) shall not terminate to distances required by code.
19. Gas flue pipes (B-vent) shall have a minimum clearance of one (1) inch from combustibles.
20. Only materials with a flame spread index greater than two hundred (200) shall be allowed in the Return Air duct system.
21. Return air intake shall be a minimum of ten (10) feet from fireplace opening.
22. Range vents installed to code.

INSULATION:

Energy Rough and Energy Final Inspections are performed by an approved 3rd party provider. Reschecks shall be accepted under the 2015 codes. Effective September 1, 2016, Texas began enforcing the 2015 IECC Energy Codes. 3rd party plans examiners/inspectors may also use the code compliance calculator at <http://iccc.tamu.edu/>. All energy analysis shall include the ICC Certification number by the certified plans examiner and/or inspector. An approved/passed (Green) tag for the Energy Rough and Energy Final inspections from the approved 3rd party inspection firm shall be provided to the inspector. Both inspection tags are to be in the permit packet at time of Building Final

*Inspection request. **Inspection tags shall not have any items listed for correction.** Do not request Insulation Inspections from the City of Anna.*

1. All insulation in walls, ceilings, ductwork, and windows shall be in compliance.
2. Minimum R-38 blown in insulation for all attics is required.

GAS RELEASE:

CSST must be installed to manufacturer specifications and to 2015 Code.

1. Low pressure systems shall be air tested at 3 psi on a psi gauge. Medium pressure systems shall be air tested at 10 psi on a 15-30 lb. test gauge.
2. All gas supply openings shall have valves; any unused openings shall have a valve and a cap.
3. All gas lines shall be installed with gas stops and shut-off valves installed. Including flex lines.
4. If the building has LP gas all plumbers must have an endorsement from State. The building will still require a pressure test inspection by the City.
5. Fireplace valves must be installed.
6. Furnace and water heater must be ready to utilize gas. Flex lines and vents installed.
7. Sediment traps in place.
8. Water temperature control devices must be installed on this inspection.

ELECTRIC RELEASE:

1. Receptacles shall be in wall and plated.
2. Panel cover shall be removed for inspection.
3. Neutral shall be marked with phase tape.
4. Neutral if double lugged.
5. Main bonding jumper.
6. Isolate ground and neutral in sub-panel.
7. Connections shall not be loose in panel.
8. Sufficient workspace and clearances.
9. Air Conditioning condenser disconnects installed and electric to condenser.
10. Conductors shall not be overcut at meter.
11. Clean panel/busses.
12. Outlet covers shall not be missing.
13. Hydro massage tub motor shall be grounded with # 8 solid.
14. Properly size ground in sub-panel.
15. Properly connect A/C disconnect.

16. Air Conditioning application and selection (protective device rating not to exceed the manufacturer's values).
17. Protection of ground clamps and fittings.
18. AC service disconnects shall be outside building (disconnects shall be labeled to match panel box).
19. Smoke/combination alarms shall be installed.
20. Concrete encased electrode must be connected 21. Counter top receptacles 12" max from counter top.

PUBLIC WORKS:

An Inspection of the below items shall be approved prior to the request for a Building Final Inspection. A Building Final Inspection shall not be performed until the Public Works Inspection approval is obtained. The water and sewer inspections are requested like normal inspections.

1. Cracks or Chips in curbs, sidewalks, drive approaches.
2. Sidewalks and streets clean of all excess debris.
3. Trip Hazards in expansion joints, valve stacks, manhole lids.
4. Sod in place.
5. Meter box level, at grade, with no damage or missing parts.
6. Area is clean around water meter and angle stop.
7. Address is corrected and posted on house (address on mailbox is secondary to house posting).
8. Storm drains in working order.
9. Water meter is working.
10. Valve lids are clean of all excess concrete and not damaged.
11. Valve stack is clear of all debris, dirt and is not crooked or offset.
12. Valve stack directly above valve.
13. Water and sewer valve correctly marked on curb.
14. Fire hydrant is not damaged or missing parts.
15. Fire hydrant splash pad is not damaged or missing and is to grade.

BUILDING FINAL (CERTIFICATE OF OCCUPANCY):

No furniture or personal belongings may be brought in or stored in the residential occupancy unless approval from the Building Official is obtained.

Required Paperwork:

All final paperwork must be uploaded by contractor into the MY Gov. system. The required documents are listed below:

1. Termite treatment (commission stamp)
2. BPAT report submitted to BSI and Irrigation permit (copy left on site)

3. Site drainage survey (stamped by surveyor)
4. Site Drainage Acknowledgement (signed by builder)
5. 3rd party Energy Reports
6. Wall insulation, Testing and Final energy inspection certificates (signed, stamped and registration /license#)
7. Septic system approval from County (if required)
8. Fence permit (copy left on site)
9. Articulation elevation document (left on site) with 4 points circled, highlighted, or written
10. Concrete psi letter
11. ROW Inspection
12. Sewer Green Tag

PLUMBING FINAL:

1. Water meter and valve boxes shall be set to grade and cleaned-out so connections and valves are visible. All box and stack lids shall be in place and undamaged. **Local Policy.**
2. Water heaters shall be working. All houses shall have hot water on correct side per code. Gas valves to appliances – missing/plug/not accessible gas completed to appliances.
3. Hard pipe gas thru cabinet/partition.
4. Plumbing fixture shall be sealed at floor and walls to code.
5. Slip joints at tub shall not be concealed.
6. Fixtures shall not be leaking or missing.
7. Outside plumbing protected from freezing.
8. Plumbing vents shall not be too close to intake air.
9. Laundry standpipe no lower than 18” or top higher than 42”
10. Fire caulk fireplace at log lighter manufacture requires refractory to be sealed at log lighter penetration appliance vents too short.
11. Improper combustion air.
12. T&P/pan drain lines check approved material and location.
13. Fixture cross connect.
14. Island fixture venting/clean outs. Height of air admittance valve.
15. Secure all “B” vents.
16. Temperature limiting devices installed.

ELECTRICAL FINAL:

1. GFCI’s shall be operable at all installations.
2. All receptacles, switches, and fixtures shall be in place or blanked off if fixture is not available.
3. Plate covers shall be on.

4. All arc-fault breakers/circuits for bedrooms shall be installed and operable.
5. Ground hydro massage tub motor with # 8 solid.
6. Hydro massage tub motor shall be secured and accessible.
7. GFCI outlet for tub motor must be dedicated. Cant share GFCI protection with a receptacle outlet.
8. Receptacles shall be in wall and plated.
9. Air Conditioning condenser disconnects location. Outside? Accessible?
10. Connect/tighten grounding connections.
11. Protection of ground clamps and fittings.
12. Outlet covers shall not be missing.
13. Properly connect A/C disconnect.
14. Air Conditioning over current protection to match equipment label.
15. Smoke detectors and carbon monoxide detectors shall be installed and operational.
16. Three-way switch shall be installed at stairway lighting.
17. Closet light shall have proper clearance from shelves and clothes.
18. Identification of disconnecting means.

MECHANICAL FINAL:

1. Air Conditioning/furnace unit shall be operational.
2. Air conditioning condensers are to be level and firmly supported three (3) inches above adjoining grade (if installed).
3. Gas meter shall be installed and gas appliances shall be operable.
4. Range downdraft exhaust shall be complete.
5. Microwave exhaust vent shall be complete.
6. Gas flue pipes (B-vent) shall have a minimum clearance of one (1) inch from combustibles.
7. Dryer vents shall have a cover and backdraft damper.
8. Dryer vent size and length shall be determined by the dryer manufacturer specifications.
9. A minimum twenty-four (24) inch wide by thirty (30) inch high unobstructed, solid catwalk shall be provided from the point of attic entry to the attic furnace service panels and filters.
10. A 30" x 30" level work platform and thirty (30) inch clear work area is required in front of attic furnace access and filters.
11. Seal all seams and connections of ductwork and equipment.
12. Support horizontal runs of all PVC at four (4) foot intervals (Condensate lines).
13. Support duct work to code.
14. More than one Mechanical System labeled with matching furnace and condenser identification.

15. Auxiliary and secondary drain systems shall be in place on cooling or evaporator coils (A/C).
16. All HVAC ducts shall have proper identification of insulation and sealing.
17. Spark arrestor is installed at chimney.
18. Eighteen (18) inch single wall clearance is required on water heaters (garage installation).
19. Gas flue pipes (B-vent) termination caps shall be installed.
20. 20. Bathroom fans shall be properly working.

FENCE FINAL: (if applicable)

1. Fence shall be complete (if applicable). **Local Policy.**
2. Fence shall not exceed four (4) feet in height beyond the front building line. **Local Policy (Zoning Code).**
3. Fence shall have no visibility issues if located on a key lot. **Local Policy (Zoning Code).**
4. Fence shall not be taller than 8'in height.

IRRIGATION (DCA/BACKFLOW) FINAL: (if applicable)

1. DCA valve box and lid shall be in good condition, located immediately behind the water meter on the customer's side (behind sidewalk or bar ditch) of the property line. **Local Policy. *Properties utilizing a private irrigation water well will have different requirements.***
2. Area around backflow device shall be clean and clear of dirt and debris. Gravel shall be located at the bottom of the valve box. **Local Policy.**
3. Rain/freeze sensor for the irrigation system shall be installed.
4. BPAT report submitted to BSI.

ENERGY FINAL:

(Energy inspections to be completed by a third party inspection service.)

1. Blown insulation shall be in place with certification paperwork at attic entrance.
2. Weather stripping shall be installed at all exterior doors and attic pull downs.
3. Third party energy inspection documentation to be uploaded.

BUILDING FINAL:

1. The approved building address shall be posted in a location that is plainly visible and legible from the street fronting the property. The address shall contrast with the background and shall be a minimum of four (4) inches high and a stroke width of one-half (½) of an inch. An address posted on the mailbox shall be secondary to the address posted on the house.
2. Final grade, positive drainage, swale location, and sod shall be in place. Positive drainage shall be away from foundation. (Exception: Sod and landscaping do not have to be installed if the Town is under a water restriction, prohibiting installation.)

3. Sidewalks or approaches shall not be cracked or broken (Public Right-of-Ways only).
4. House shall be move-in ready with the lot, street, and sidewalk clean from debris and mud.
5. Provide attic access through ‘scuttle holes” that do not require a pull down ladder
6. Window screens shall be installed.
7. Landings shall be located outside of required exit doors.
8. Trees shall be installed per Planned Development requirements (neighborhood specific).
9. Weep holes shall be located at brick ledge and window lintels.
10. Caulk brick expansion joints. Penetrations in brick shall be sealed. No missing brick.
11. Tread depth on stairs shall be in compliance.
12. Safety glass shall be installed in hazardous locations.
13. Stairway handrail/guardrail shall be to code.
14. Opening protection from private garage. Solid door construction.
15. Exit doors shall be operable from inside without a key or special knowledge.
16. Final grade shall be four (4) inches below brick.
17. All roof and exterior wall terminations must have approved/code compliant termination covers.

SUMMARY

This guideline has been prepared to assist the builder and the field supervisors. This is not intended to be an all-inclusive list, but simply a guide to help the inspection process. Code correction may still be made in the field.