CEDAR HILL
WHERE OPPORTUNITIES GROW NATURALLY

THIS IS JUST A GUIDE

RESIDENTIAL BUILDER PACKET

ADOPTED CODES:

The City of Cedar Hill is currently under the following codes:

- 2021 International Building Code
- 2021 International Residential Code
- 2021 International Plumbing Code
- 2021 International Mechanical Code
- 2020 National Electric Code
- 2021 International Energy Conservation Code
- 2021 International Fuel Gas Code
- 2021 International Fire Code
- City Amendments

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Letter from the Building Official

November 1, 2023

To All Home Builders,

The information enclosed in this packet covers items needed to construct a single-family dwelling in the City of Cedar Hill. In ~~September 2015~~, the City of Cedar Hill adopted the 2021 International Residential Code.

In addition, the City of Cedar Hill has adopted a tree preservation ordinance. Any person building on an unplatted lot, or a lot platted after July 10, 2007, must comply with the Tree Preservation Ordinance. Removal of trees on vacant lots without complying with this ordinance could cost the property owner tens of thousands of dollars. Please contact the Planning Department at 972-291-5100 x 1081, before removing any trees to ensure compliance with the ordinance. The Tree Preservation Ordinance is located on page 32 of this packet.

A check list for each type of inspection and the key code requirements is also included in the packet. The list contains many, but not all, of the items that are checked during an inspection.

The following is a list of items included in this packet:

1. Inspection department phone numbers
2. Required inspections for a single-family dwelling
3. Driveway and sidewalk construction details
4. Foundation design requirements
5. Subcontractor validation forms
6. Construction site erosion control requirements
7. Landscaping requirements for lots under 10,000 square feet in size
8. Tree Preservation Ordinance

I hope you will find this information useful during the construction process.

Sincerely,

Gail Lux
Gail Lux
Building Official

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Attention:

To All Builders:

Due to continued non-compliance, we will be strictly enforcing our erosion control policy. A silt fence must encompass the entire disturbed area on the lot. The silt fence must also go across the front of the property. A twenty-foot-wide opening for vehicular traffic is permitted. The silt fence must be maintained throughout construction until landscaping is complete. A gravel construction entrance is also required.

All construction sites must have a dumpster, trash trailer, or a trash bin. Dumpsters must be supplied by Waste Management (972-315-5400). A port-a-let is also required on site. No inspections will be done on the property until these items are in place.

If you have any questions, please call me at 972-291-1500 ext. 1105

Thank you,
Mr. Gail Lux
Building Official

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Significant Code Changes

2021 International Residential Code

1. Permit required for excavation. Prior to any work performed on a property for the purpose of One- and Two-Family Dwellings, a permit must be issued for any tree removal, or the disturbance and/or addition of any soil in the preparation of the construction site.

2. All permit applications in the Lake Ridge Subdivision shall be required to submit a detailed lot grading and drainage plan, sealed by a Registered Professional Engineer in the State of Texas.

3. A precise grade survey shall be submitted at the time of final inspection. The precise grade survey must be sealed by a Registered Professional Land Surveyor in the State of Texas and match the engineered grading and drainage plan approved during permitting. If an engineered grading plan was not required to be submitted at the time of applying for the permit, the precise grade survey shall show drainage flow for the lot.

4. Building sites in the Lake Ridge Subdivision shall be elevated a minimum of 2 feet above street level, or on lots below street level, elevated 2 feet above existing grade at finish floor.

5. Storage tank design water heaters, in a single-family residence, shall not be located in the attic.

6. Water heaters shall be elevated not less than 18 inches (457 mm) above the garage floor.

7. The landscape irrigation rules promulgated by the Texas Commission on Environmental Quality and contained in Chapter 344, Subchapter E and F, §§344.50-344.65 Texas Administrative Code, as the same may be from time to time amended, are hereby adopted by reference as the landscape irrigation rules of the City.

8. Wall bracing plans must be submitted at the time of permit application. Wall bracing plans must include details of the type of bracing used, and calculations of wall bracing. Note that the foundation plans must match the required wall bracing plan for foundation anchor locations.

9. Building plans must be submitted electronically via our online permitting system.

10. Emergency egress (adequately sized window or door) is required for all habitable spaces, including office/study, media, and exercise rooms; kitchens and dining rooms are exempt.

11. Approved plans are required on site for all inspections.

12. A fence, accessory structure, generator, or swimming pool requires a separate permit.

13. Energy Star, HERS, or IC3 are acceptable energy compliance reports.

14. Duct systems R values have changed to R-8 for supply and return in unconditioned spaces.

15. Duct testing and blow door test is required based on the 2015 IRC and 2015 IECC requirements.

16. Gutters are required on all new residential homes.

17. A retaining wall requires a permit regardless of height. Walls holding house surcharge, or with a tall design, may require an engineer stamped plan.

18. Walls over 10’ in height must be designed by a professional engineer.

Contact Information

Tonya Mason, Permit Technician Tonya.mason@cedarhilltx.com	972.291.5100 ext. 1090
Gail Lux, Building Official gail.lux@cedarhilltx.com	972.291.5100 ext. 1105
Andrew Lipscomb, Asst. Building Official andrew.lipscomb@cedarhilltx.com	972.291.5100 ext. 1092
Alexis Sartin, Plans Examiner Alexis.sartin@cedarhilltx.com	972-291-5100 ext. 1120
Josh Barnes, Building Inspector Josh.barnes@cedarhilltx.com	972-291-5100 ext. 1102
Inspection Request Line cityinspections@cedarhilltx.com	972.291.5100 ext. 1093

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Plan Submittal Requirements

All submittals are through our online permitting portal.

- Completed permit application with subcontractor information listed.
  - All General Contractors and Sub Contractors must be registered ***at the time of submittal.*** All Subcontractors must register individually. This can be done in person or by sending all documents to **citypermits@cedarhilltx.com.**
  - Applicants must include a validation form for all 3 trades ***at the time of submittal***. These can be turned in by the General Contractor since each company would already be registered.
  - Must include a letter of approval from the HOA, if applicable.

- Plot/Site plan showing:
  - House on lot
  - House setback from all property lines
  - Driveway and sidewalks
  - Building lines and easements
  - Flood plain if applicable
  - Street elevation and building elevations above sea level

- Building plan showing:
  - Floor Plan
  - Exterior Elevations
  - Door and window sizes and elevations
  - Engineered foundation plan
  - Framing details
  - Energy report
  - Brace wall plan
  - Electric and Plumbing plans

- Soils report for lot, including PVR information

- **Additional documents required in Lake Ridge Subdivision:**
  - Engineered foundation plan in compliance with requirements for the Eagleford Shale Area.
  - Engineered drainage plan.

- A separate escarpment development plan may be required.

Required Inspections for a Single-Family Dwelling

- Electric temporary pole
- Pier Inspection if applicable (Form board survey required prior to inspection)
- Plumbing rough in (Form board survey required prior to inspection)
- Foundation inspection (Lake Ridge foundations require an engineer letter approving foundation make up before City does foundation inspection)
- Second inspection
    1. Framing
    2. Plumbing top out
    3. Electric rough
    4. Duct rough
- Fire box on brick fireplace, if site-built masonry
- Sidewalk, driveway, and approach
- Building final inspection (Termite treatment certification, SIC plumber form, final energy report, and final grade survey must be submitted to inspection department before final inspection)
    1. Building
    2. Plumbing
    3. Electric
    4. Heating and air conditioning
    5. Landscaping
    6. Final survey

*Electric and gas meters will not be released until Building Final is approved.
*Energy compliance inspections are performed by third party inspection companies.
*Inspection request must be called in by 4:00pm for next day inspection to 972-291-5100 X 1093 or email to cityinspections@cedarhilltx.com.

Inclement Weather

No concrete, plumbing rough, or underground inspections will be made if it has been determined that it is too wet. You may call 972-291-5100 ext. 1090 between 8:00 and 9:00am the morning of the inspection to verify if an inspection has been canceled due to the weather.

During inclement weather, it is the responsibility of the contractor to reschedule all inspections.

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Energy Code Compliance Standards

Ceiling
- Attic – R-30
- Roof – R-22

Walls
- R-15

Floors
- R-19

Doors
- u-factor – max .35

Windows
- U-factor – max 0.65
- Solar heat gain – max 0.40

H.V.A.C
- Split system – 13 SEER
- Single package unit – 13 SEER

H.V.A.C Duct
- Conditioned space – R-6
- Unconditioned space – R-8

Inspection checklist – This is just a guideline. Additional items may not be listed. All buildings are inspected to the current adopted codes.

Erosion Control	
	Silt fence must be installed on all sides of lot prior to any work or inspections.
	Silt fence must be maintained throughout construction process
	See enclosed silt fence detail (pg 33-34)
Temporary Pole (T-Pole)	
	Address on pole
	Pole braced in two directions
	Ground rod, ground wire, ground wire with acorn to rod
	GFCI protection on all receptacles
	Breakers set
	Weatherproof cover
	Wires secure
	Line load correct
	Overhead service, anchor mast (Minimum height 8')
	Overhead pole bracing should face the direction of the service drop
	Meter base location between 4 feet to 6 feet above grade

Form Survey	
	House behind platted building lines
	House meets side yard and rear yard setbacks
	Submitted by surveyor and sealed
	Check legal description and address
	Submit to Inspection Department before first inspection
	Provide Minimum Finish Floor Elevation on form survey and street level
Piers	
	Post address on lot
	Form survey on site
	Foundation plan on site
	Holes drilled straight
	Holes correct diameter and depth
	Reinforcement material on site
	Pump out any water in pier holes
Plumbing Rough	
	Plumbing validation form submitted to inspection department
	Form survey on site

	Address on lot
	Water meter is set
	Sewer service line connection to the city tap
	Sewer line minimum depth 12”
	Sewer line test tee should be within 1 fitting from tap
	Two-way sewer clean out a minimum of 18” from the foundation
	Water test PVC minimum 5’ of head
	Bed PVC piping in sand
	Check PVC piping for minimum fall
	Check fittings for flow direction
	Check trap arms for fall and anchoring
	Check pipe size on drain lines
	Minimum 2” drain lines on kitchen and washing machine
	Check material used for compliance with code
	Island fixture loop vent with foot vent
	Gate valve or ball valve on water service near water meter
	Water service line ¾” diameter minimum and buried 12” in depth
	Acceptable materials for water service - copper, PVC , polybutylene or PEX

	Minimum water pipe sizing ¾” to water heater
	Water pipe sizing minimum ½” to all fixtures
	No water line splices under slab
	Sleeve water piping and sewer drain lines where touching concrete, minimum ½” thick material
	Air or water test all plumbing lines, air test copper at 50 psi and PVC at 5 psi
	Pressure reducing valve required where service pressure is above 80 psi
Foundation	
	Treat for termites, chemical treatment of slab, Bora Care on wood framing, bait system at final
	Engineers letter approving foundation construction in Lake Ridge area (Engineer’s seal required)
	Foundation plans on site
	Strands and cables installed
	Anchor all cable ends
	Check beam depth and width
	Check beam locations
	Sleeve water piping and sewer drain lines where touching concrete, minimum ½” thick material
	No PVC lines allowed running parallel in any beam
	Tape live ends on cables
	Check moisture barrier for holes or gaps

	Check carton form size with plans
	Provide chairs on cables and rebar
	No cables or rebar on ground
	Check brick ledge to meet masonry requirements
	20’ of #4 copper or rebar ground in slab when eufer ground is required
Gas Yard Line	
	Minimum pipe depth 18”
	Polybutelyne provide tracer wire
	Air test 7 psi for 15 minutes
	Transition fitting wrapped
	Diaphragm gauges only
Framing	
	Roof covering complete
	Exterior sheathing nailed properly
	Vent flashing installed on all vents thru roof
	Chimney Cap installed or hole covered
	Sleeve electric wires, gas piping and copper piping thru brick
	Brick ties installed 16” oc by 24” oc

	Brick ledge poly installed
	Plumbing vent clearance from windows 2’ higher or 10’ horizontal
	Chimney height above roof 2’ higher than 10’ horizontal minimum height 3’ above roof
	Gas vent clearance from window 1’ higher 4’ horizontal
	Tempered glass required in exterior doors and windows within 24” of door edges
	Foundation cables stressed and cut
	Attic venting placed in top 1/3 of roof, and provide soffit vents
	Foundation vents 1 sqft/150 sqft of floor are openings within 3 feet of the corners
	Anchor bolts on exterior walls, within 1’ of corner and every 6’, anchor at bottom plate splices
	Wall bracing installed according to plans
	Stud grade and stud spacing per span charts
	Floor joist, ceiling joist, rafter spans
	Polyseal all top plate penetrations, bottom plates, around windows and doors
	Brick supported by wood minimum 3-2”X6”
	TJI, do not cut top or bottom band, do not angle cut ends
	Stairway, rise, run guardrail: stairway width 36”, step rise max 7 ¾”, step run min 10” with ¾’ minimum nose, minimum guard height 36”, max 4” spacing on vertical members
	Roof bracing, support ridge and valley rafter ends, Tee struts longer than 8’ in length
	Windows in habitable rooms, maximum sill height 44”, openable area 5 sqft for first floor, 5.7 sqft for 2nd floor, minimum width 20”, minimum opening height 24”

	No ventless fireplaces in bedrooms over 10,000 BTUs
	No ventless fireplaces in bathrooms over 6,000 BTUs
Plumbing Top Out	
	Check materials use
	Joint connections (primed and glued)
	Check fittings
	Maximum trap arm lengths by pipe size 1 ¼"-5', 1 ½"-6', 2"-8', 3"-12'
	Minimum drain line size – Kitchen and washing machine 2" min, lavatories, laundry sinks 1 ¼" min, toilets 3" min, shower 2" min
	Vents thru roof with flashing
	Check vents for slope to drain lines no bend on vents less than 45˚ unless 42" above floor level
	Fill tub holes
	Water test shower pans
	Water test all 2nd story lines and fittings 5' above lavatory trap arm
	Insulate water lines in exterior walls minimum 1/2" thick
	Strap all water lines
	Provide cleanout at washing machine, kitchen, dead end lines
	Minimum water line to fixture ½"
	Nail plates at all plates and fire blocks, minimum 18 gage steel with 3" at bottom plate and 5" at top plate

	Water Heaters
	Water piping material
	T&P line to house exterior
	Elevate 18” in garage above floor
	Strap water lines
	Provide drain pan
	Provide combustion air on gas water heater (high and low vets)
	Insulate water lines in attic area
	Terminate T&P line above grade 6” to 24”
	Expansion tank
	Storage type water heater not allowed in attic space
	Gas Piping
	Wrap black pipe on exterior of house
	Diaphragm gauges only
	Gas test on black pipe – 3 psi for 15 minutes
	No gas piping under slabs
	Strap and support piping material
	Proper gas pipe sizing

	No piping in return air ducts
	CSST piping gas test, 3 psi inside, 7 psi service line
	Pipe protection on studs
	Bond CSST per manufacture's requirements (Pg. 40-41)
	External shut off valve outside fireplace box within 6' maximum
	Gas piping in yard gas piping air test 7 psi for 15 minutes plastic piping requires tracer line minimum pipe depth 18" transition fitting wrapped
	Provide combustion air duct for gas appliances, minimum 100 sq in or 1 sq in/1000 btu's, two ducts 12" from the unit bottom and 12" from the unit top
	Bathtubs require mixing valve
Electric Rough	
	Electrical validation form submitted to inspection department
	Kitchen circuits – 2-20 amp circuits, kitchen appliance circuits a minimum of 2, every counter 12" in width requires receptacle, receptacles required every 24" along counter, GFCI all counter top receptacles and island receptacles
	Receptacles required – Receptacle spacing every 12' along walls, hallways greater than 10' in length, switched lighting required, 3-way switch at stairways, receptacles required every 24" along counter, GFCI all counter top receptacles and island receptacles
	Bathroom – Receptacle required within 3 feet of sink, GFCI all receptacles, bath receptacles separate 20-amp circuit, whirlpool motor grounded and on GFCI, exhaust fan wired
	Laundry room – 20-amp circuit, dryer minimum feed 30 amp circuit
	Smoke detectors – on each level of house, in each bedroom, outside bedrooms, top of stairway, wired in a manner so that when one is activated all are activated, smoke detectors must be on Arc fault protection
	Carbon monoxide detectors required outside each bedroom area
	Closet – No open bulb, clearance from light fixture within 12" bulb, clearance from florescent fixture 6", no panel box in clothes closet

	Condenser disconnect in sight of unit
	Panel Box
	Provide work space in front of panel min 30”X36”X78”, shut off power to house 6 handles max, meter height 4’ to 5’6”, Maximum breaker height 6’7”
	Arc fault protection on all outlets not protected by GFCI
	Provide two forms of ground
	Provide furnace shut off device at unit
	Check for properly sized wiring
	Check boxes for wire fill
	Lock off on oven, cook top and water heater breakers
Mechanical Rough	
	Mechanical validation form submitted to inspection department
	Duct insulation minimum R-8 for attic
	Duct supported and strapped properly
	Taped and sealed at plenum and boots
	Condensate line to terminate at live trap
	Provide work area in front of unit 30”X30”
	Catwalk to unit 22” width
	Secondary condensate to approved location (Above exterior doors or windows)

	Provide combustion air duct to gas units in closets 100 sq in min or 1 sq in per 1000 btu
	Provide clearance to combustible material on type B vent
	Install dryer vents maximum length 25’
	Provide exhaust fans in bathroom vented to outside of house
	Access to attic by means of a permanent stair, pull down stair or an access door from an upper floor level
Fire Stops	
	Factory built fireplace – Chimney in chase thru house and attic, Fire block at each ceiling level, Fire block at floor/ceiling level
	Walls over 10’ in height, block every 10’
	Fur downs
	Intersection of ceilings at different heights and attic area
	Stairway – Fire stop at stud space adjacent to steps, top and bottom of stairway stringers
	Duct chases at ceiling level
	Dead spaces and concealed locations at ceiling level
	Seal all floor spaces from attic
	Seal floor web trussed system not to exceed 1000 sq ft
Sidewalk	
	3/8” rebar 18” on center, expansion joints every 20’
	Maximum slope across the walk ¼” per foot

	Smooth dowel into existing walks
	Required along all lot street frontages
	See attached details
Approach	
	3/8”rebar 18” on center, expansion joint at property line
	Dowel into street 18” on center, ½” dowel with cap
	Pour headwalls on all culverts (Minimum culvert size 18” reinforced concrete pipe)
	Minimum 5’ radius
	Minimum approach width 12’ measured at drive connection
Building Final	
	Check for water meter
	Water meter box to grade
	Check for water valve
	Water valve box to grade
	Check for pressure reducing valve
	Valve box on pressure reducing valve
	Roof covering complete, drip strips, ridge rows
	Vent flashings installed and painted

	Chimney with chimney cap
	Gutters required on houses in areas with expansive soil (Lake Ridge)
	House numbers front and rear (if rear entry) 3” minimum in height, visible and contrasting color, by front door must be visible from street
	Lot grading complete
	Minimum finish floor to grade 4”, grade away from slab 6” in 10’
	Exterior painted, paint PVC through roof, paint lintels
	Brick complete with weep-holes, seal expansion joints
	Dryer vent and damper
	Exhaust fan duct with dampers
	Cleanouts cut to grade and capped with proper caps
	Cleanout marker on wall adjacent to cleanout 12” above grade
	Seal around all pipes thru brick
	90° down T&P line at 6” to 24” above grade
	Stoops outside all doors, 36” by the door width
	Electric meter base installed and wired
	Ground wire with ground rod
	Condenser set and connected to electric, a/c lines connected and insulated minimum 1” in thickness, minimum clearance between units 30”
	Driveway and sidewalks complete

	Sod along alley, street and walks
	Remove debris on adjacent lots
	Remove dirt from street, alley and walks
	GFCI protection on all exterior outlets
	Electric panel labeled, cover on, arc fault breakers
	Garage wall and ceiling sheet rocked
	Garage GFCI all outlets exceptions single pole and irrigation receptacles
	Attic access opening minimum 22”X30”
	Kitchen sink connected (water valves, p-trap, no leaks)
	GFCI all kitchen receptacles
	Lock off on oven, cook top and water heater breakers
	Label A/C disconnects
	Water Heater
	Valve on cold water side
	T&P valve and drain line (test valve)
	Drain pan line
	Combustion air ducts
	Vent gas heater with vent collar

	Elevate water heater in garage minimum 18” above floor
	Insulate water lines at water heater in garage and attic
	Expansion tank installed
	Bathroom
	Exhaust fan or openable window
	GFCI all bathrooms receptacles
	Check all fixtures (water valves, p-trap, no leaks)
	Whirlpool motor grounded and on GFCI circuit
	Toilet (valve, backflow, seat, no leaks)
	Shower enclosure (tempered glass)
	Shower drain complete
	Minimum shower door width 22”
	Bedroom
	Check power to receptacles
	Smoke detector
	Window (openable area 5 sq. ft. for 1st floor, 5.7 sq. ft. for 2nd floor, maximum sill height 44”)
	Duct register installed
	Receptacle covers installed

	Closet light clearances
	Carbon monoxide detector required in hallway adjacent to bedrooms
	Other Rooms
	Check electric to receptacles
	Receptacle covers installed
	Fire Place
	Hearth opening > 6 sqft, 20” hearth extension , 12” past opening
	Non-combustible around opening
	Gas valve within 6’ of opening
	Installation complete
	Attic Furnace
	Ladder within 20 feet of unit
	Light and receptacle near unit
	Catwalk to unit 22” in width
	Work area around unit minimum 30”X30”
	Gas valve installed and line connected to unit
	Gas vent clearance from combustibles
	Connect electric to unit

	Ducts connected to plenum
	Drain pan and drain line connected
	Smoke detector needed on each level of house
	Laundry Room
	Dryer vent thru wall
	Cleanout on washing machine line
	Washing machine connections complete
	Laundry sink (water valves, p-trap, no leaks)
	GFCI electric receptacles by sink
	Check 1 receptacle
	Drain pan and drain line needed for washing machines on upper levels
	Paperwork for Final Inspection
	Water Service Certificate/SIC Letter
	Energy Code approval
	Termite treatment letter
	Certificate of Elevation, where required
	Precise grade survey (Sealed by a Registered Professional Land Surveyor in the State of Texas)
	Stairway

	Steps Maximum 7 ¾” rise, minimum 10” run
	Handrail height 34” to 38”, width 1 ½, wall clearance 1 ½”, return to wall
	Guardrail member spacing maximum 4”, height 36”, anchored
	Stairway width minimum 36”
	Light switch at top and bottom of stairway
	Continuous handrail from bottom to top of stairs
	Landscaping Requirements
	Lots 10,000 sq ft or less
	Sod street yards and alley
	Provide minimum two 3” caliper trees in street yard
	Provide at least one 2 gallon shrub for each 2 linear feet of street facing foundation
	Lake Ridge sod between property line and street
	Sod, Seed or hydro mulch rear yard
	Retaining Walls
	Walls taller than 4’ in height must be engineered
	No graded slopes more than 3’ to 1’
	Retaining walls must be inspected before back fill
	Retaining walls must be completed before final inspection

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Foundation

Structural and Geotechnical Requirements for Single Family Dwellings in the Eagle Ford Shale Formation

All foundations for Single Family dwellings built in the Eagle Ford Shale areas shall be designed and constructed in accordance with these parameters:

1. A geotechnical investigation must be done under the direct supervision of a Registered Professional Engineer in the State of Texas with a specialty in Geotechnical Engineering.
2. The soils report must include appropriate design recommendations and recommendations for foundation movement vertically as well as overall tilt. Parameters must be provided to allow properly structural design on the foundation.
3. One soil test boring shall be taken at the specific location on the lot or tract.
4. The foundation shall be designed by a Registered Professional Engineer with a specialty in Structural Engineering. The foundation shall be designed to the following standards:
    a. Soils with potential vertical rise (PVR) less than 1". Turn down slabs with no sub-grade treatment are permissible.
    b. Soils with PVR's between 1" and 2" stiffened foundation slabs, no subgrade preparation required.
    c. Soils with PVRs between 2" and 4" stiffened slabs permitted, but require appropriate sub-grade preparation, such as select fill, water or lime injection.
    d. Soils with PVRs greater than 4". Structurally suspended beam and slab foundations supported on drilled piers bearing on suitable material below the expansive material zone
    e. The Potential Rise (PVR) shall be calculated per Texas Department of Transportation Method, Tex 124-E.
5. Consideration must be taken into account regarding tilt on sites where this is a factor.
6. The Structural Engineer shall submit a written report of the foundation inspection to the Building Inspection Department.

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Landscaping Standards for Single Family Districts

5.2.4 Landscaping Standards for Single-Family Districts (Ord. No. 03-156, § 5, 08-26-03)

A. Applicability – The regulations contained in this chapter 5.2.4 shall apply to all lots or dwelling sites that are zoned for single family 10,000 square foot lots or smaller, on which a new dwelling is to be constructed.

B. Minimum Landscaping - Prior to being occupied, all dwellings meeting the above stated applicability shall be landscaped as herein provided:

a. Trees Required – A sum total of at least 5-caliper inches of trees shall be provided within the street yard. Existing trees that are preserved on the site that are at least 15-feet tall and in a health condition may be used to satisfy this requirement. The caliper inches of existing trees shall be measured 4-feet above the ground. Any trees planted to satisfy this requirement shall meet all the following standards:

i. Newly planted trees shall be container grown and a minimum of 3-inch caliper, measured 6-inches above grade;

ii. Newly planted trees shall be among the list of "Large or Medium" trees specified within the Cedar Hill approved tree list (see appendix E, Cedar Hill Comprehensive Zoning Ordinance);

iii. Newly planted trees shall be warranted by the installer in favor of all subsequent lot owners for a period of not less than one year.

b. Foundation Planting Required – At least one 2-gallon shrub for each 2 linear feet of street facing foundation, less driveways and sidewalks, shall be planted to shield the dwelling foundation from street view. All shrubs planted to satisfy this requirement shall meet all the following requirements:

i. Shall be either a shrub listed on the City of Cedar Hill's "***Approved Plant List"*** or shall be a locally adaptable shrub as recommended by a nurseryman;

ii. Shall be warranted for a period of not less than one year from the date the dwelling is released by the City for occupancy. This warrantee shall be completely transferable to any subsequent property owner and shall cover the plants and their installation.

c. Ground Cover or Grass Required – The entire street yard, other than driveways, walkways, sidewalks, ponds, gardens, etc., shall be planted in grass or ground cover.

C. Relief – Waivers to the requirement to landscape residential lots shall lie with the P&Z. Waivers shall be considered on a lot by lot basis.

D. Effect Date – These regulations shall become effective immediately for any parcel that has not been final platted and filed of record at the county at the passage of this ordinance, however, any lot platted and filed of record at the County prior to the passage of this ordinance shall not be subject to this section 5.2.4 until March 1, 2004.

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Approved Plant List

The developer may select from the following plant list for fulfilling the requirement of the landscape ordinance. In the event that the developer uses trees not identified in the selected plant list, the requested tree must be submitted to Park and Recreation Department for approval. (Ord. No. 06-276, § 23, 01-10-06)

LARGE OR MEDIUM TREES	(3-inch caliper trunk and larger, measured 6-inches above ground level) (Ord. No. 06-276, § 23, 01-10-06)
Acer saccharinurn	Silver Maple
Carya illinoensis	Pecan
Cedrus deodera	Deodora Cedar
Cercis canadensis	Red Bud
Crataegus reverchanii	Hawthorne
Fraxinus pennsylvanica	Green Ash
Fraxinus texensis	Texas Ash
Gleditsia triacanthos	Honey Locust
Juniperus monosperma	Texas Juniper, Ashe Juniper
Juniperous virginiana	Eastern Red Cedar
Koelnenteria paniculata	Golden Raintree
Liquidambar styraciflua	Sweetgum
Magnolia grandiflora	Southern Magnolia
Pinus elliottli	Slash Pine
Pinus thumbergil	Japanese Black Pine
Pistacia chinensis	Chinese Pistachio
Platanus occidentalis	Sycamore
Quercus falcata	Southern Red Oak
Quercus macrocrapa	Bur Oak
Quercus muhlenbergii	Chinquapin Oak
Quercus rubra	Northern Red Oak
Quercus shumardii	Shumard Oak
Quercus virginlana	Live Oak
Taxodium distichurn	Bald Cypress
Ulmus crassifolia	Cedar Elm
Small Accent Trees	(10-foot and taller multiple canes one of which is 2-inch diameter or larger). *[Sec 4-332(1)]* (Ord. No. 06-276, § 23, 01-10-06)
Ilex vomitoria	Yaupon
Lagerstroemia indica	Crepe Myrtle
Ligustrum lucidum, tree form	Japanese Ligustrum

Tree Preservation Ordinance

Sec. 13-61. Purpose

The general purpose of these regulations is to establish the standards for the preservation and protection of a diminishing natural resource, in particular the native and other adapted existing site trees located in the City of Cedar Hill, and to encourage the planting of trees to replace and supplement our urban forest during the development, construction, and redevelopment process. It is the general intent of this article to protect mature trees that are eight (8) or more caliper inches in size, except for species that are identified as unprotected. In adopting this article, the city council expressly recognizes that protected trees often must be removed during the development process and thus it is necessary to define mitigation measures that over time will result in the reforestation of the city. Specific purposes include the following:

(1) Preserve and enhance the existing natural features of Cedar Hill that attract people to this community.
(2) Encourage preservation of existing public and private shade trees and ornamental trees.
(3) Define reasonable measures to preserve existing protected trees.
(4) Increase the population and the life span of protected trees.
(5) Improve the air quality and environmental comfort of both business and residential citizens.
(6) Reduce the erosive effects of rainfall.
(7) Prevent the indiscriminate destruction or removal of mature trees.
(8) Increase property values by improving the aesthetic qualities of the built environment by incorporating existing mature trees into the built environment.
(9) Encourage the preservation of tree groves in order to protect and decrease fragmentation of wildlife habitat.
(10) To balance the needs of development with the goals of preserving mature trees.

Sec. 13-62. General requirements.

(1) *Applicability.* The provisions of this article III apply as follows:

(a) To any activity resulting in removal of any protected tree on a developed lot or parcel, or on public land, that is not exempt under section 13-63(1) or (3);

(b) To any plat application or site plan application that is not exempt under section 13-63(2); and

(c) To any building permit application that is not exempt under section 13-63(2).

(2) *Prohibition on removal of protected tree.*

(a) For purposes of this article III, a protected tree is any species of tree eight (8) caliper inches or more in size and that is not an unprotected tree species.

(b) No protected tree shall be removed unless:

(i) The tree is located on property subject to an exempt development application or activity pursuant to section 13-63; or

1. Removal of the tree has been authorized under a tree protection plan pursuant to division 2 of this article, or a tree removal permit pursuant to division 3 of the article, and the removal of the protected tree is fully mitigated.

Sec. 13-63. Exempt activities and applications.

(1) *Exempt activities.* The following activities are exempt from these regulations. Whenever the removal of a protected tree is authorized for an activity by this subsection, the activity also is exempt from any other obligation imposed by these regulations related to protection of trees.

(a) *Single-family and duplex units.* Removal of a protected tree by the owner or authorized agent of a finally platted lot, or a parcel two (2) or less acres in size, containing a single-family or duplex dwelling unit, for which the city has authorized occupancy.

(b) *Pre-existing public contracts.* Removal of a protected tree on property for which a design contract has been awarded by the city council on or before the effective date of these regulations.

(c) *Public utilities and infrastructure.* Removal of a protected tree by the city, another governmental entity or a public utility in any right-of-way or easement dedicated to and accepted by the city.

(d) *Sports and recreation facilities.* Removal of a protected tree within soccer, baseball, football or other sports facilities, and within golf courses and approved hike and bike trails, which are open for public use.

(e) *Pre-existing paved surfaces.* Replacement or maintenance of any paved surface that existed on or before the effective date of these regulations and that is located within the critical root zone of a protected tree.

(f) *Plant nursery.* Activities within a plant nursery related to trees grown on the premises solely for sale, retail or wholesale.

(g) *Pruning.* Tree pruning solely for purposes of removing diseased limbs or to shape for aesthetic and safety purposes, according to the applicable provisions of the Texas Association of Nurserymen Grades and Standards.

(2) *Exempt development applications.* The following development applications are exempt from these regulations.

(a) *Zoning applications.* Any application to change the zoning district classification of property or amend the regulations applicable to the district.

(b) *Plat applications, not including replats.*

(i) Any plat application approved before or on the effective date of this article III; or

(ii) Any plat application pending for approval on such date, provided the application is subsequently approved; or

(iii) Any subsequent plat application in the same series as the approved or pending plat application.

(iv) For plat applications filed after the effective date of this article III, the applicant must seek a determination from the tree preservation administrator pursuant to procedures in section 13-76 that the application is exempt based on prior approvals.

(c) *Site plan applications.* Any application for a site plan required by the zoning ordinance and approved before or on the effective date of this article III or any site plan application pending for approval on such date, provided the application is subsequently approved.

(d) *Building permit applications.*

(i) Any application for a building permit approved before or on the effective date of this article III; or

(ii) Any building permit application pending for approval on the effective date, provided the application is subsequently approved;

(iii) Any building permit application filed after the effective date of this article III for a single-family or duplex residential use on a lot or tract in a subdivision subject to an exempt plat application; or

(iv) Any building permit application filed after the effective date for a nonresidential or apartment use on land subject to an exempt site plan application; or

(v) Any building permit application for land on which all protected trees have been removed pursuant to an approved tree protection plan.

(vi) For building permit applications filed after the effective date of this article III, or for applications for land on which all protected trees have been removed pursuant to an approved tree protection plan, the applicant must seek a determination from the tree preservation administrator pursuant to procedures in section 13-83 that the application is exempt based on prior approvals.

(e) *Vested applications.* Any application for which it is determined pursuant to section 20-30 of the City Code of Ordinances that the applicant has a vested right to proceed under prior regulations, provided that the application or a prior approved application upon which the vesting claim is based remains in effect for such land.

(3) *Conditional exemptions.* The following activities are exempt from these regulations, subject to conditions, upon approval of the tree preservation administrator pursuant to procedures in section 13-76

(a) *Emergency conditions.* During the period of an emergency, such as a tornado, storm, flood or other natural disaster, the requirements of this article may be waived as deemed necessary by the emergency management coordinator or other designee of the tree preservation administrator.

(b) *Utility and drainage easement maintenance.* Utility service providers, including the city, or their contractors, agents, successors and assigns shall have the right to maintain their facilities, through removal or trimming of protected trees located within lawfully designated easements or rights-of-way, so as to prevent any part of such trees from becoming a danger to public health, safety and welfare by interfering with utility service. Where possible, trimming shall be done in a manner such that the aesthetics and health of the trees are not destroyed.

(c) *Diseased or damaged trees.* A disease or damaged protected tree may be removed by the city or the owner of the land on which the tree is located upon certification by a landscape architect or other qualified professional that the tree is diseased or damaged beyond the point of recovery, or removal is

necessary to prevent the spread of the disease to adjacent, healthy trees, when approved by the tree preservation administrator.

(d) *Public health and safety.* A protected tree that is in danger of falling or otherwise poses a hazard to the public health or safety may be removed by the city or the owner of the land on which the tree is located, when approved by the tree preservation administrator.

(e) *Agricultural and ranching activities.* Removal of a protected tree within a vacant tract or parcel of land at least five (5) acres in size in conjunction with farming or ranching activities, except activities conducted within a flood plain or riparian buffer zone, or for which a sedimentation and erosion control plan must be approved.

Sec. 13-64. Definitions.

The following definitions apply to this article III:

(1) *Caliper inches.* The measurement of the average cross-sectional diameter of the trunk of an existing tree at four and one-half (4½) feet above grade in inches. If the tree is on a slope, it shall be measured from the high side of the slope. Newly planted trees shall be measured six (6) inches above grade.

(2) *Drip line.* The vertical line that runs from the outermost portion of the crown of the tree to the ground.

(3) *Non-disturbance area.* Any area of a proposed subdivision or site within which no grading or other development activities will take place and which has been buffered, as required by division 4 (entitled additional standards) of this article.

(4) *Pad site.* The footprint of a principal building or addition to a principal building to be placed on a platted lot or tract, as evidenced from an approved building permit application, together with all land lying within ten (10) linear feet of such footprint.

(5) *Removal of tree.* The act of directly or indirectly cutting down, destroying, taking out, or effectively removing a tree.

(6) *Riparian buffer zone.* The transitional areas between uplands and adjacent streams, ponds, lakes, and other fresh water bodies, characterized by the presence of moisture tolerant vegetation on banks, edges, or limits of fresh water bodies.

(7) *Tree grove.* A clustering of four (4) or more trees, excluding those tree species listed as unprotected trees, below, that have a combined caliper measurement of thirty-six (36) inches or greater and trunks spaced at no greater than ten-foot intervals.

(8) *Tree preservation administrator.* The person assigned by the city manager to administer this tree preservation ordinance.

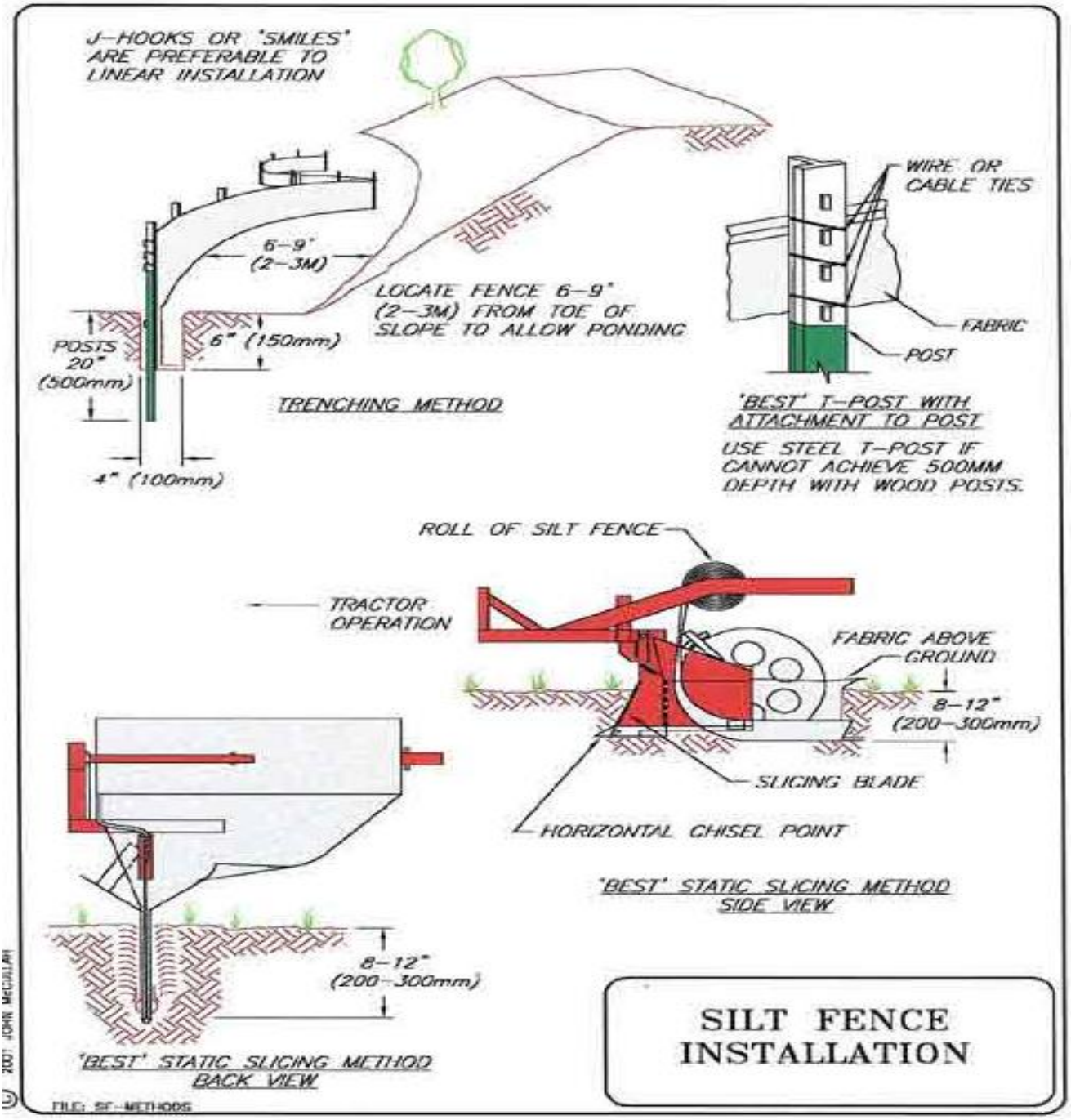
(9) *Unprotected tree.* Any tree of the following species regardless of size:

Silver Maple	*Acer saccharinum*
Sugar Hackberry	*Celtis laevigata*
Hackberry	*Celtis occidentalis*
Honey Locust	*Gleditsia tracanthos*
Bois d'arc	*Maclura pomifera*
Mimosa	*Albizia julibrissin*
Red Mulberry	*Morus rubra*
White Mulberry	*Morus alba*
White (Silver) Poplar	*Poplus alba*
Lombardy Poplar	*Populus nigra italica*
Cottonwood	*Populua deltoids*
Willow	*genus Salix*
Bradford Pear	*Pyrus calleryana*
Green Ash	*Fraxinus pennsylvanica*
Arizona Ash	*Fraxinus velutina*
Black Locus	*Robinia pseudoacacia*

Effective Silt Fence Installation

Inspection and Maintenance

- Silt fences and filter barriers shall be inspected weekly after each significant storm (1 inch (25.4mm) in 24 hour). Any required repairs shall be made immediately.
- Sediment should be removed when it reaches 1/3 height of the fence or 9 inches (0.3 m) maximum. The removed sediment shall conform with the existing grade and be vegetated or otherwise stabilized.
- Silt fences shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized and any sediment stored behind the silt fence has been removed.


J-HOOKS OR "SMILES" ARE PREFERABLE TO LINEAR INSTALLATION
6-9" (2-3M)
LOCATE FENCE 6-9" (2-3M) FROM TOE OF SLOPE TO ALLOW PONDING
POSTS 20" (500mm)
6" (150mm)
4" (100mm)
TRENCHING METHOD
WIRE OR CABLE TIES
FABRIC
POST
"BEST" T-POST WITH ATTACHMENT TO POST
USE STEEL T-POST IF CANNOT ACHIEVE 500MM DEPTH WITH WOOD POSTS.
ROLL OF SILT FENCE
TRACTOR OPERATION
FABRIC ABOVE GROUND
8-12" (200-300mm)
SLICING BLADE
HORIZONTAL CHISEL POINT
"BEST" STATIC SLICING METHOD SIDE VIEW
8-12" (200-300mm)
"BEST" STATIC SLICING METHOD BACK VIEW
SILT FENCE INSTALLATION
FILE: SF-METHODS

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IECC Energy Review Providers

Resnet – Residential Energy Services Network
PO Box 4561
Ocenside CA, 92052
Business – 760-806-3448
Fax 760-806-9449
www.resnet.us

Inspection Tech Services, Inc
107 Angela St
Azle, TX 76020
Business 817-444-3637
Fax 817-444-8485
itsvc@inspectiontech.net
www.inspectiontech.net

GWS
6444 NW Expressway, Ste 836A
Oklahoma City, OK 73132
Business 888-488-0206
Fax ----488-0212
info@gwssi.com
www.gwssi.com

Rhonda K. Johnson
4200 Oak Springs Court
Arlington, TX 76016
Business 817-561-6780
Fax 817-561-2601
rkj6780@gmail.com

Terry F. Brewer
5409 N Jim Miller Rd Ste 110
Dallas, TX 75227
Business 214-298-3525
Cell 214-850-6500
t@tfba.com
m@tfba.com

Elias Rodriguez – Construction Concepts
972-998-6456

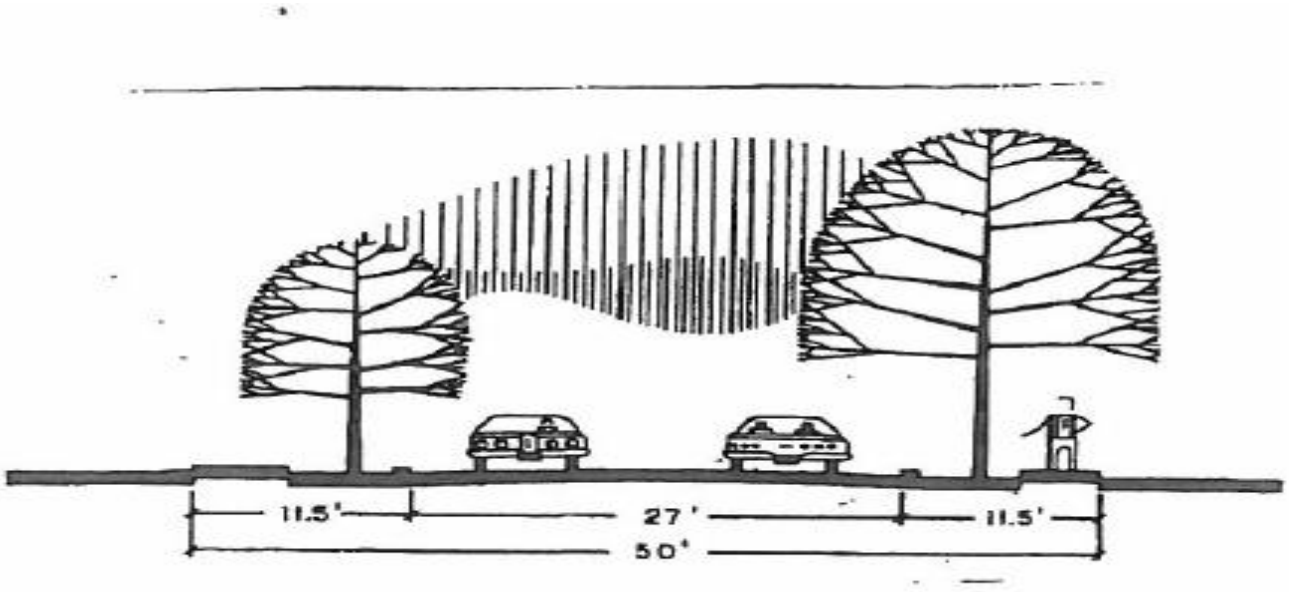
ACE Companies – Cherie Delude
2400 Great Southwest Pkwy #303
Grand Prairie, TX 75052
Business 972-647-8378
acecompaniestexas@gmail.com

Bureau Vertias
1000 Jupiter Rd STe 800
Plano, TX 75074
Business 888-357-7020
www.us.buraeuveritas.com

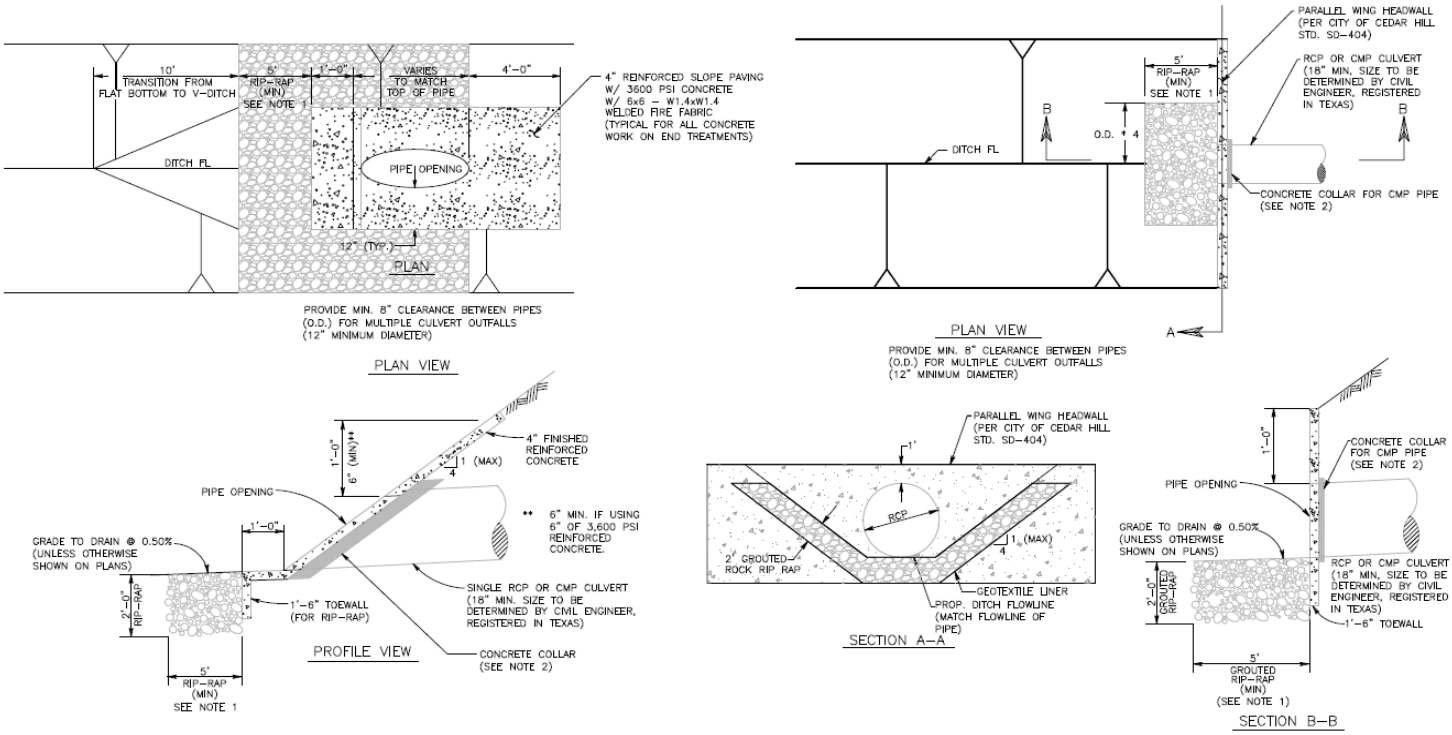
Evans Service Company
2926 Old Boyce Rd
Waxahachie, TX 75165
Business 972-351-9302 or 214-228-2159
Rebecca@evansservicecompany.com
www.evansservicecompany.com

Energy Code Compliance
325 Biscay Dr
Garland, TX 75043
Business 972-279-3741
Fax 972-279-4489

Curb and Gutter Street Sidewalk Location



Lake Ridge Culvert Detail



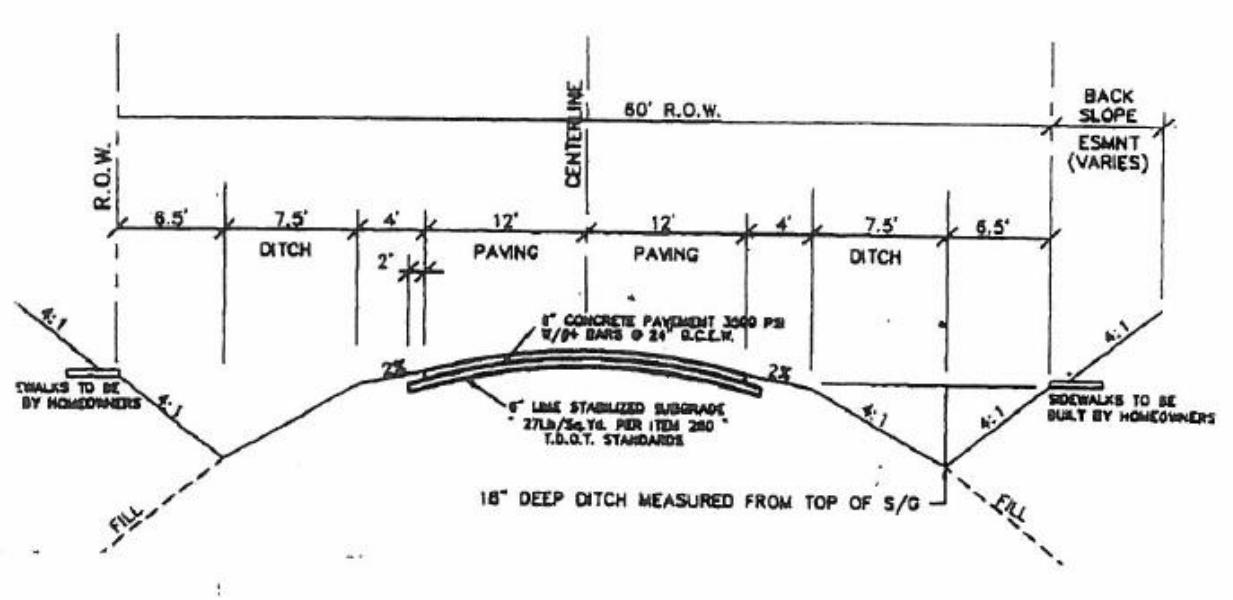
CULVERT WITH SLOPED HEADWALL DETAIL

CULVERT WITH PARALLEL WING HEADWALL DETAIL

CULVERT NOTES:

1) REFER TO SHEET SD 403 FOR SELECTION OF APPROPRIATE EROSION/SLOPE STABILIZATION OF DRAINAGE CHANNELS.
2) THE FLOWLINE OF THE CULVERT SHALL MATCH THE FLOWLINE OF THE DRAINAGE CHANNEL.
3) THE MINIMUM DIAMETER OF A SINGLE CULVERT PIPE IS 18". THE MINIMUM DIAMETER OF MUTIPLE CULVERTS IS 12".
4) FINISHED REINFORCED CONCRETE CAN BE USED INSTEAD OF GROUTED ROCK RIP RAP.
5) THE SIDE SLOPES OF THE DITCH SHALL NOT EXCEED 4:1.
5) FINISHED REINFORCED CONCRETE CAN BE USED IN LIEU OF GROUTED ROCK RIP RAP AND SHALL MATCH DIMENSIONS SHOWN IN PLAN VIEW ABOVE.
6) CORREGATED METAL PIPE (CMP) CAN BE USED FOR PRIVATE DRIVEWAYS. HOWEVER ENDS OF PIPE SHALL NOT BE EXPOSED BUT HAND TROWLED WITH NON-SHRINK GROUT TO A SMOOTH FINISH.
7) DISTURBED SOIL SHALL BE COMPACTED TO 95% STANDARD PROTOR DENSITY.

Lake Ridge Sidewalk Location



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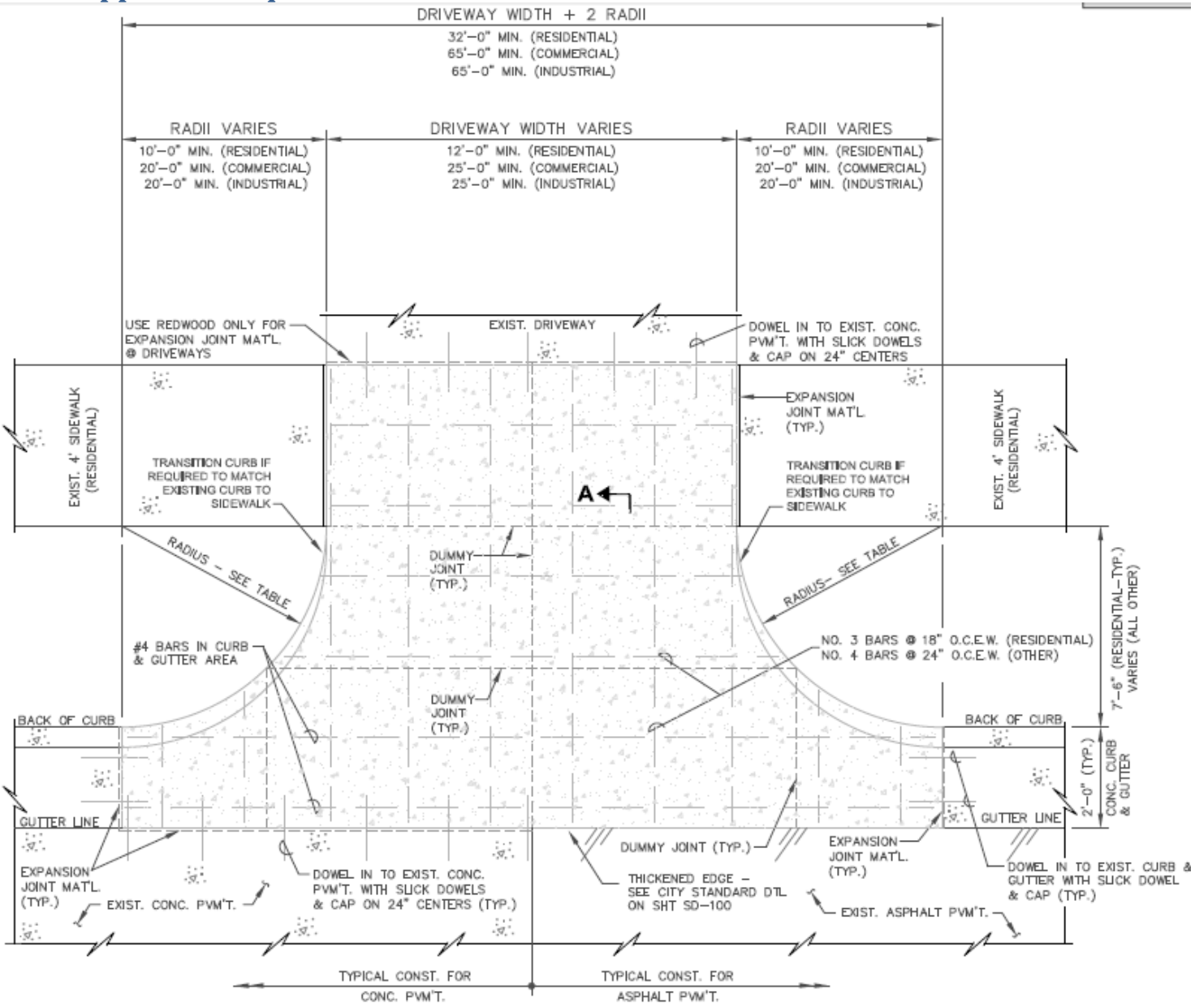
Drive Approach Requirements



CSST Bonding

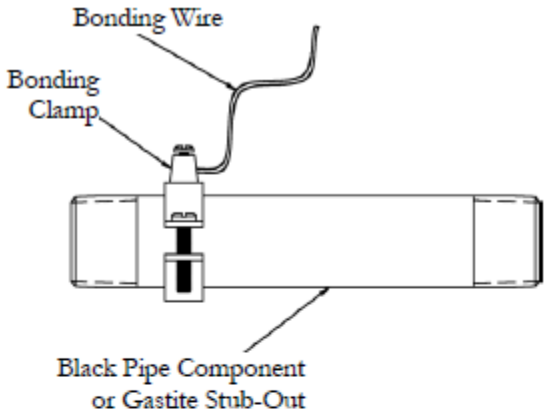


Figure 2

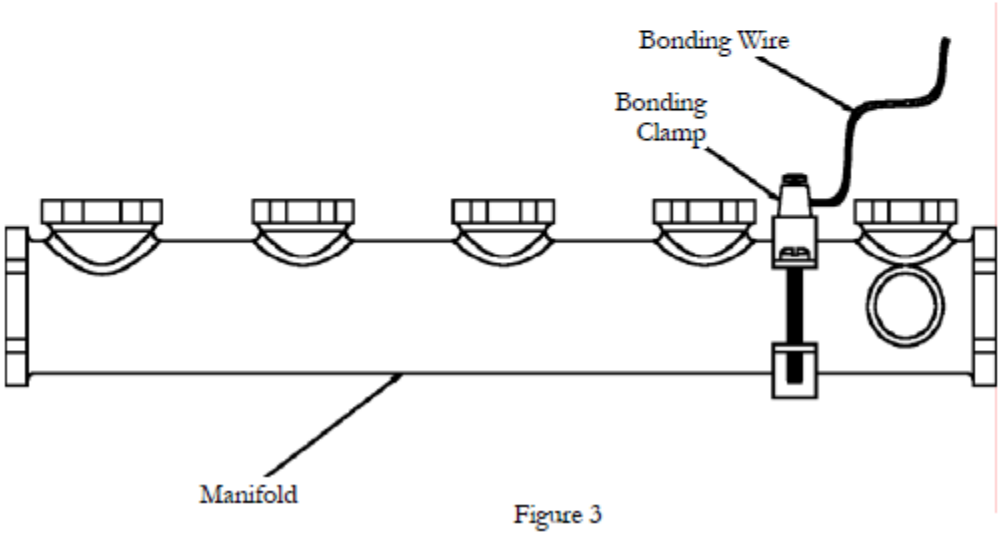


Figure 3

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Technical Bulletin #TB2007-01 01-26-07

Electrical Bonding of Gastite® CSST **January 26, 2007**

This Technical Bulletin provides requirements for the direct bonding of Gastite® CSST. These requirements supersede any prior documents and are mandatory manufacturer's instructions until such time as requirements are adopted by the appropriate national/state model codes and direct bonding installation instructions are specified therein. This document replaces Technical Bulletin TB2006-04 and Section 4.10 Electrical Bonding/Grounding of the November 2006 Gastite Design & Installation Guide. This Technical Bulletin is effective for all Gastite® CSST installed from this date forward.

Direct bonding of Gastite® CSST is required for all gas-piping systems incorporating Gastite® CSST whether or not the connected gas equipment is electrically powered. This requirement is provided as part of the manufacturer's instruction for single-family and multi-family buildings. Bonding for commercial applications should be designed by engineers knowledgeable in electrical system design and the local electrical code.

Gastite® CSST installed inside or attached to a building or structure shall be electrically continuous and direct bonded to an effective ground-fault current path. The gas piping system shall be considered to be direct bonded when installed in accordance with the following:

The piping is permanently and directly connected to the electrical service equipment enclosure, the grounded conductor at the electrical service, the grounding electrode conductor (where of sufficient size) or to one or more of the grounding electrodes used. A single bond shall be made at or near the service entrance of the structure or the gas meter of each individual housing unit within a multi-family structure. The bonding conductor shall be 6 AWG copper wire. Bonding jumpers shall be attached in an approved manner in accordance with NEC-2005 Article 250.70 and the point of attachment for the bonding jumper shall be accessible. Bonding/grounding clamps listed to UL 467 comply with this requirement. This bond is in addition to any other bonding requirements as specified by local codes.

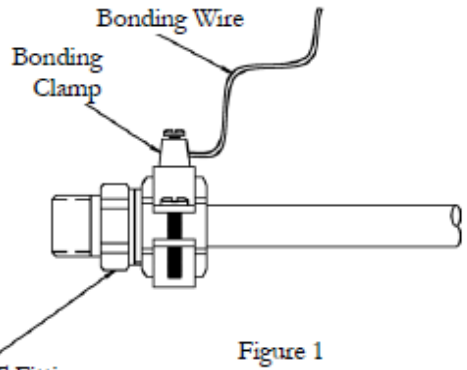

Figure 1

For attachment to the CSST gas piping system, a single bonding clamp must be attached to either a Gastite® brass fitting, a steel manifold or to any rigid pipe component. The corrugated stainless steel tubing portion of the gas piping system shall not be used as the point of attachment of the bonding conductor at any location along its length under any circumstances. See Figures 1, 2 and 3.

Proper bonding and grounding may reduce the risk of damage and fire from a lightning strike. Lightning is a highly destructive force. Even a nearby lightning strike that does not strike a structure directly can cause systems in the structure to become energized. If the systems are not properly bonded, the differences in potential between the systems may cause the charge to arc to another system. Arcing can cause damage to CSST. Bonding and grounding as set forth above should reduce the risk of arcing and related damage.

Depending upon conditions specific to the location of the structure in which the Gastite system is being installed, including but not limited to whether the area is prone to lightning, the owner of the structure should consider whether a lightning protection system is necessary or appropriate. Lightning protection systems are beyond the scope of this manual, but are covered by NFPA 780, the Standard for the Installation of Lightning Protection Systems, and other standards.

As with all Gastite® guidelines, the techniques outlined within this bulletin are subject to all local fuel gas and building codes.

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Forms