

TOWN OF NORTHLAKE
ENGINEERING DESIGN MANUAL

APPENDIX "C"

ENGINEERING DOCUMENT PLANS REVIEW CHECKLIST

Please make sure the plans you are submitting are in accordance with this checklist. The following checklist will be used during the Plan Review.

PRELIMINARY PLAT CHECKLIST:

- | | |
|--|---------------------------|
| 1. Preliminary plats shall be placed on maximum 22" x 34" sheets and drawn to a scale of 1" = 100' or 1" = 50' unless approved in advance by the Town. | Yes ____ No ____ N/A ____ |
| 2. Title or name of the subdivision preceded by the words: "Preliminary Plat" | Yes ____ No ____ N/A ____ |
| 3. Name, address and telephone number of the owner, applicant, survey, and/or engineer. | Yes ____ No ____ N/A ____ |
| 4. Volume and page, or deed record number of the ownership deed from Denton County Deed Records. | Yes ____ No ____ N/A ____ |
| 5. Vicinity map and key map, if multiple sheets are needed. | Yes ____ No ____ N/A ____ |
| 6. Date of preparation, written and graphic scale, and north arrow. | Yes ____ No ____ N/A ____ |
| 7. Boundary line of the proposed subdivision drawn with a heavy line. | Yes ____ No ____ N/A ____ |
| 8. Computed gross acreage of the subdivision | Yes ____ No ____ N/A ____ |
| 9. Metes and bounds description of the proposed subdivision. | Yes ____ No ____ N/A ____ |
| 10. Location of the subdivision with respect to a corner of the survey or tract or an original corner of the survey of which it is a part. | Yes ____ No ____ N/A ____ |
| 11. Names of adjoining subdivisions with lots and blocks shown with dashed lines and/or property owners of record for all contiguous unplatted properties. | Yes ____ No ____ N/A ____ |
| 12. Town limits (if applicable). | Yes ____ No ____ N/A ____ |

13. Location, dimension, and description and recording information for all existing rights-of-way, railroad rights-of-way, easements or other public ways on or adjacent to the property being developed. Yes ____ No ____ N/A ____
14. Show permanent structures or uses that will remain. Yes ____ No ____ N/A ____
15. Sizes and flowlines of existing drainage structures, 100-year floodplain and floodway as defined by FEMA. Yes ____ No ____ N/A ____
16. Location, size and type of all existing utilities within or adjacent lot the site. Yes ____ No ____ N/A ____
17. Existing two (2) foot interval contours referenced to NAD. Yes ____ No ____ N/A ____
18. Proposed streets, alleys, drainageways, parks, open spaces, easements, other public areas and other rights-of-way within the subdivision. Dimensions of all easements and rights-of-way. Yes ____ No ____ N/A ____
19. Number each proposed lot and block. Provide the proposed number of lots. Yes ____ No ____ N/A ____
20. Dimensions for all lots. Gross acreage for all non-residential lots. Approximate acreage for areas in residential use. Approximate acreage of streets, parks, and other non-residential uses. Yes ____ No ____ N/A ____
21. Front building setback lines and side building setback lines abutting streets. Yes ____ No ____ N/A ____
22. Preliminary drainage study meeting the requirements of the Engineering Design Manual shall be submitted with the Preliminary Plat. Yes ____ No ____ N/A ____
23. Preliminary Plat approval block as described by the UDC. Yes ____ No ____ N/A ____
24. Where the Preliminary Plat is part of a larger area owned by the Applicant that will be subsequently subdivided, provide a layout of the larger area showing the tentative layout of streets, blocks, drainage, water, sewerage, and other improvements for the larger area. Yes ____ No ____ N/A ____

FINAL PLAT CHECKLIST

- 1. Final plats shall be placed on maximum 22" x 34" sheets and drawn to a scale of 1" = 100' or 1" = 50' unless approved in advance by the Town. Yes ____ No ____ N/A ____
- 2. Title or name of the subdivision preceded by the words "Final Plat" Yes ____ No ____ N/A ____
- 3. Name address and telephone number of the owner, applicant, survey, and/or engineer. Yes ____ No ____ N/A ____
- 4. Vicinity map and key map if multiple sheets are needed. Yes ____ No ____ N/A ____
- 5. Date, written and graphic scale, and north arrow. Yes ____ No ____ N/A ____
- 6. Boundary line of subdivision drawn with a heavy line and with bearings, dimensions and curve data. Yes ____ No ____ N/A ____
- 7. Names of adjoining subdivisions with lots and blocks shown with dashed lines and/or property owners of record for all contiguous unplatted properties. Yes ____ No ____ N/A ____
- 8. Town limits, if applicable. Yes ____ No ____ N/A ____
- 9. Proposed streets, alleys, drainageways, parks, open spaces, easements, other public areas and other rights-of-way within the subdivision including dimensions, bearings and curve data. Yes ____ No ____ N/A ____
- 10. Location, dimension, description and recording information for all existing rights-of-way, railroad rights-of-way, easements or other public ways on or adjacent to the property being platted. Yes ____ No ____ N/A ____
- 11. Location and description of all permanent monuments and control points Yes ____ No ____ N/A ____
- 12. Floodways / Floodplains (FEMA):
 - a. Show the ultimate 100-year water surface elevation. Yes ____ No ____ N/A ____
 - b. Show floodplain and floodway boundaries. Yes ____ No ____ N/A ____
 - c. Drainage Floodway easement limits Yes ____ No ____ N/A ____
 - d. Minimum fill and floor elevations specified. Yes ____ No ____ N/A ____
- 13. Minimum building setback lines. Yes ____ No ____ N/A ____

14. Lot and block numbers. Yes ___ No ___ N/A ___
15. Approval block in the form prescribed by the UDC. Yes ___ No ___ N/A ___
16. Abutting property owner names and recording information. Yes ___ No ___ N/A ___
17. Gross acreage of the land being subdivided Yes ___ No ___ N/A ___
18. Owner's certificate of deed or dedication in the form prescribed by the UDC with the following:
- a. Metes and bounds description. Yes ___ No ___ N/A ___
 - b. Representation that dedicators own the property. Yes ___ No ___ N/A ___
 - c. Dedication statement. Yes ___ No ___ N/A ___
 - d. Reference and identification or name of final plat. Yes ___ No ___ N/A ___
 - e. Surveyor certification in the form prescribed by the UDC. Yes ___ No ___ N/A ___
19. Certificate showing all taxes have been paid. Yes ___ No ___ N/A ___
20. A letter fully outlining and alterations from the approved Preliminary Plat. Yes ___ No ___ N/A ___

SITE PLAN – Each site plan shall include:

1. Site plans shall be placed on maximum 22" x 34" sheets and drawn to a scale of 1" = 100' or 1" = 50' unless approved in advance by the Town. Yes ___ No ___ N/A ___
2. Title block in lower right hand corner including:
- a. Subdivision name with lot and block number. Yes ___ No ___ N/A ___
 - b. Area in acres. Yes ___ No ___ N/A ___
 - c. Metes and bounds description including survey name and abstract number. Yes ___ No ___ N/A ___
 - d. Town and County. Yes ___ No ___ N/A ___
 - e. Preparation Date. Yes ___ No ___ N/A ___
3. Name, address and telephone number of the owner, applicant, and surveyor/engineer. Yes ___ No ___ N/A ___

4. Vicinity map and key map, if multiple sheets are needed. Yes ____ No ____ N/A ____
5. Written scale, graphic scale and north arrow. Yes ____ No ____ N/A ____
6. Approximate distance to the nearest street. Yes ____ No ____ N/A ____
7. Site boundaries, dimensions, lot lines and lot areas. Yes ____ No ____ N/A ____
8. Legend. Yes ____ No ____ N/A ____
9. Site data summary table including:
- a. Zoning. Yes ____ No ____ N/A ____
 - b. Proposed use. Yes ____ No ____ N/A ____
 - c. Building area (gross square footage). Yes ____ No ____ N/A ____
 - d. Building height (feet and inches). Yes ____ No ____ N/A ____
 - e. Area of impervious surface. Yes ____ No ____ N/A ____
 - f. Total Parking: Required and provided. Yes ____ No ____ N/A ____
 - g. Number of handicap parking spaces. Yes ____ No ____ N/A ____
 - h. Number of dwelling units and number of bedrooms (multifamily). Yes ____ No ____ N/A ____
10. Existing improvements within 75' of the subject property. Yes ____ No ____ N/A ____
11. Land use, zoning, subdivision name, recording information and adjacent owners. Yes ____ No ____ N/A ____
12. Building locations, sizes, and dimensions. Yes ____ No ____ N/A ____
13. Distance between buildings on the same lot. Yes ____ No ____ N/A ____
14. Building lines and setbacks. Yes ____ No ____ N/A ____
15. Dimensions of all drive lanes and traffic flow arrows. Yes ____ No ____ N/A ____
16. FEMA floodplains with elevations, and minimum finished floor elevations (include the floodplain note shown on the final plat). Yes ____ No ____ N/A ____

17. Public streets, private drives, and fire lanes with pavement widths and including rights-of-way, median openings, turn lanes, existing driveways, adjacent existing driveways with dimensions, radii, and surface. Yes ___ No ___ N/A ___
18. Distances between existing and proposed driveways. Yes ___ No ___ N/A ___
19. Loading and unloading areas. Yes ___ No ___ N/A ___
20. Ramps, crosswalks, sidewalks and barrier-free ramps with dimensions. Yes ___ No ___ N/A ___
21. Locations of dumpsters and trash compactors with height and material of screening. Yes ___ No ___ N/A ___
22. Size, location, dimensions and details of all signs and exterior lighting of signs, including type of standards, locations and radius of light and intensity of foot-candles. All signage are subject to approval by the Building Inspections Department. Yes ___ No ___ N/A ___
23. Location and sizes of existing and proposed water and sewer mains. Yes ___ No ___ N/A ___
24. Location of fire hydrants. Yes ___ No ___ N/A ___
25. Location and sizes of storm drains, culverts, inlets and other drainage features on or adjacent to the site. Yes ___ No ___ N/A ___
26. Locations, widths, and types of existing and proposed easements. Yes ___ No ___ N/A ___
27. Provide an elevation of all four sides of the building including materials, colors and dimensions at an architectural scale of 1"=20'. Yes ___ No ___ N/A ___
28. Landscape plan provided on separate sheet to show the following: Yes ___ No ___ N/A ___
- a. Natural features including tree masses and anticipated tree loss. Yes ___ No ___ N/A ___
- b. Floodplains, drainageways and creeks. Yes ___ No ___ N/A ___
- c. Screening walls and fences, retaining walls, headlight screens, and service area screens including height and type of construction. Yes ___ No ___ N/A ___

- d. Existing and preserved trees including location, size, and species. Yes ____ No ____ N/A ____
- e. Landscaping materials including location and size. Yes ____ No ____ N/A ____
- f. Proposed plant materials. Yes ____ No ____ N/A ____
- g. Note to indicate type and placement of irrigation system. Yes ____ No ____ N/A ____
- 29. 2" x 3" blank box in lower right corner for Town use. Yes ____ No ____ N/A ____
- 30. Additional information as requested to clarify the proposed development. Yes ____ No ____ N/A ____

GENERAL

- 1. North arrow clearly shown on each plan sheet. Yes ____ No ____ N/A ____
- 2. Bench marks shown on each sheet; located on permanent structure outside of construction limits and conveniently spaced (500' +). Yes ____ No ____ N/A ____
- 3. Title blocks, title, sheet number and scales shown. Yes ____ No ____ N/A ____
- 4. Each sheet must bear the seal of a Licensed Professional Engineer, signature, and date. Yes ____ No ____ N/A ____
- 5. Street names on each sheet. Yes ____ No ____ N/A ____
- 6. Property owners and property lines shown. Yes ____ No ____ N/A ____
- 7. Submit four (4) sets of plans for review on 22" x 34" sheets. Yes ____ No ____ N/A ____
- 8. Prepare plans on 22" x 34" sheets allowing for half size reduction to 11" x 17". Yes ____ No ____ N/A ____
- 9. Text shall be legible on the half size 11" x17" plans. Yes ____ No ____ N/A ____
- 10. Place standard general notes on plans. Yes ____ No ____ N/A ____
- 11. Existing, proposed and future facilities must clearly be defined. Yes ____ No ____ N/A ____
- 12. Project name on right end of plan sheets. Yes ____ No ____ N/A ____

COVER SHEET * - The cover sheet shall include:

- | | |
|---|------------------------------|
| 1. Project title and type of project. | Yes _____ No _____ N/A _____ |
| 2. Location map. | Yes _____ No _____ N/A _____ |
| 3. Disposal site for excess excavation. | Yes _____ No _____ N/A _____ |
| 4. Index of Sheets (if not included on its own sheet). | Yes _____ No _____ N/A _____ |
| 5. Approval blocks for Town including Town Engineer and Director of Public Works. | Yes _____ No _____ N/A _____ |
| 6. Professional Engineer's seal, signature and date. | Yes _____ No _____ N/A _____ |
| 7. "Release for Construction" note. | Yes _____ No _____ N/A _____ |

* NOTE: If the Cover Sheet is not furnished, information should appear on other sheets.

GRADING * – Each grading plan shall include:

- | | |
|---|------------------------------|
| 1. Horizontal scale for grading plans shall be at 1" = 20' on full size drawings. | Yes _____ No _____ N/A _____ |
| 2. Existing one-foot contours based on an on-the-ground survey or controlled aerial topographic map (dashed lines and labeled) to extend 20 feet from property line onto adjacent property. | Yes _____ No _____ N/A _____ |
| 3. Proposed one-foot contours – solid lines and labeled. | Yes _____ No _____ N/A _____ |
| 4. Show top of curb elevation every 50 feet on streets, alleys, existing and proposed parking lots. | Yes _____ No _____ N/A _____ |
| 5. Slope: | |
| a. Back of street curb to property line: 1/4" per foot. | Yes _____ No _____ N/A _____ |
| b. Parking lot top of curb to property line: Maximum 4 (horizontal) to 1 (vertical). | Yes _____ No _____ N/A _____ |
| c. Any unpaved area to property line: Maximum slope of 4:1. | Yes _____ No _____ N/A _____ |
| d. Show driveways with 1/4" per foot + 6" from street gutter up to property line. | Yes _____ No _____ N/A _____ |
| 6. Letter of approval if grading is proposed on adjacent property. | Yes _____ No _____ N/A _____ |

- 7. Utility easement from abutting property owners. Yes ____ No ____ N/A ____
- 8. Proposed inlets, label and size. Yes ____ No ____ N/A ____
- 9. Proposed pipes, label and size. Yes ____ No ____ N/A ____
- 10. Existing inlets and pipes. Yes ____ No ____ N/A ____

* NOTE: Add statement that grading only is being submitted with these plans.

DRAINAGE – Design of Drainage Systems shall include:

- 1. Runoff calculations for all areas showing:
 - a. Acreage. Yes ____ No ____ N/A ____
 - b. Runoff Coefficient. Yes ____ No ____ N/A ____
 - c. Inlet Time. Yes ____ No ____ N/A ____
 - d. 25-year and 100-year intensities. Yes ____ No ____ N/A ____
- 2. Rational Method calculation for area less than 200 acres. Yes ____ No ____ N/A ____
- 3. Unit Hydrograph Method for areas greater than 200 acres. Yes ____ No ____ N/A ____
- 4. Statement that drainage from the abutting property will not be impaired by the proposed grading. Yes ____ No ____ N/A ____
- 5. Emergency overflow for 100-year storm at low points or design for 100-year storm. Yes ____ No ____ N/A ____
- 6. No diversion of drainage. Yes ____ No ____ N/A ____
- 7. Drainage Area Map:
 - a. 1" = 200' or less with match lines between any two or more maps. Yes ____ No ____ N/A ____
 - b. Show existing and proposed storm drains and inlets. Yes ____ No ____ N/A ____
 - c. Calculate sub areas for each inlet and point of analysis. Yes ____ No ____ N/A ____
 - d. Provide existing and proposed two foot contours on map for on and offsite. Yes ____ No ____ N/A ____

- e. Indicate zoning on drainage area. Yes ____ No ____ N/A ____
- f. Calculate discharge at all inlets, dead-end streets and alleys or to adjacent additions or acreage. Yes ____ No ____ N/A ____
- g. Calculations of:
 - 1) Spread of water. Yes ____ No ____ N/A ____
 - 2) Inlets. Yes ____ No ____ N/A ____
 - 3) Street capacity. Yes ____ No ____ N/A ____
 - 4) ROW capacity. Yes ____ No ____ N/A ____
 - 5) Hydraulic grade line for conduits. Yes ____ No ____ N/A ____
- h. For cumulative runoff, show calculations. Yes ____ No ____ N/A ____
- i. Define all crests, sags and streets and alley intersections with flow arrows. Yes ____ No ____ N/A ____
- 8. Curbs for alleys where capacity is exceeded. Yes ____ No ____ N/A ____
- 9. Storm water from streets does not flow into alleys or drives. Yes ____ No ____ N/A ____
- 10. Offsite drainage or discharge to downstream property will require a letter of permission and/or easements. Yes ____ No ____ N/A ____
- 11. Discharge does not adversely affect downstream property. Yes ____ No ____ N/A ____

PAVING PLAN – Each Paving Plan shall include:

- 1. Horizontal scale for paving plans shall be at 1" = 20' on full size drawings. Yes ____ No ____ N/A ____
- 2. Right-of-way, street, alley, drives and sidewalks dimensioned. Yes ____ No ____ N/A ____
- 3. Centerline stations shown. Yes ____ No ____ N/A ____
- 4. Limits of work defined. Yes ____ No ____ N/A ____
- 5. Barrier free ramps at all intersections. Yes ____ No ____ N/A ____
- 6. Pavement transitions. Yes ____ No ____ N/A ____

7. Traffic control items; striping, traffic buttons, sign. Yes ___ No ___ N/A ___
8. Street lighting. Yes ___ No ___ N/A ___
9. Concrete pavement thickness. Yes ___ No ___ N/A ___
10. 3,600 psi in 28 days concrete compressive strength. Yes ___ No ___ N/A ___
11. 6" curbs. Yes ___ No ___ N/A ___
12. Reinforcement with No. 4 bars 24" o.c. both ways. Yes ___ No ___ N/A ___
13. Sidewalks to be 4" thick, 3,600 psi in 28 days, reinforced with No. 3 bars 14" O.C.E.W. Yes ___ No ___ N/A ___
14. Expansion joints at intersection and at minimum 600 foot intervals for pavement. Yes ___ No ___ N/A ___
15. Saw cut at 15-, 17.5- and 20-foot intervals for 6-inch, 7-inch and 8-inch pavements respectively. Yes ___ No ___ N/A ___
16. Radius at corners conform to Table II-2. Yes ___ No ___ N/A ___
17. Gutter flow arrows. Yes ___ No ___ N/A ___
18. Roadways comply with thoroughfare plan. Yes ___ No ___ N/A ___
19. Geometrics meet design speed criteria. Yes ___ No ___ N/A ___
20. Is Superelevation required? Yes ___ No ___ N/A ___
21. Retaining Walls:
- a. Type, beginning and ending locations and wall elevations. Yes ___ No ___ N/A ___
- b. Provide design if non-standard or modified. Yes ___ No ___ N/A ___
- c. Drainage behind walls shown. Yes ___ No ___ N/A ___
22. Driveway grades shown. Yes ___ No ___ N/A ___
23. Prepare plans and necessary forms for TDLR plans review and field inspection. Yes ___ No ___ N/A ___
24. Developer to pay for all review and inspection fees. Yes ___ No ___ N/A ___

PAVING PROFILES AND GRADES – Plans shall include:

1. Vertical scale for paving profiles shall be at 1" = 4' on full size drawings. Yes ___ No ___ N/A ___
2. Profiles plotted showing ground at proposed property line. Yes ___ No ___ N/A ___
3. Top of curb profiles must meet minimum and maximum grade requirements. Yes ___ No ___ N/A ___
4. Driveway profile grades. Yes ___ No ___ N/A ___
5. Vertical curves must be designed in accordance with Table II-5. Yes ___ No ___ N/A ___
6. Contour grading plans for major intersections. Yes ___ No ___ N/A ___
7. Spot top of curb elevations in plan view on proposed left turn lanes. Yes ___ No ___ N/A ___
8. Check carefully for any place water might pond. Are inlets located at sag points or vertical curves? Yes ___ No ___ N/A ___
9. Are grades, crossfall, slopes, etc., consistent with information shown on typical section? Yes ___ No ___ N/A ___
10. Check ends of project for drainage. If gutters drain to ditches or field type inlets, are grades and profiles shown? Yes ___ No ___ N/A ___
11. Minimum grades maintained to assure complete drainage. Yes ___ No ___ N/A ___

CLOSED CONDUIT STORM DRAINS – All storm drain plans shall include:

1. Horizontal scale for storm drain profiles shall be at 1" = 20' on full size drawings. Yes ___ No ___ N/A ___
2. Vertical scale for storm drain profiles shall be at 1" = 4' on full size drawings. Yes ___ No ___ N/A ___
3. Plan and profile of all proposed storm drains. Yes ___ No ___ N/A ___
4. Station of laterals on trunk profile. Yes ___ No ___ N/A ___
5. Plan view of each area showing
 - a. Size of inlet. Yes ___ No ___ N/A ___
 - b. Lateral size. Yes ___ No ___ N/A ___

- c. Flow line. Yes ___ No ___ N/A ___
- d. Paving station. Yes ___ No ___ N/A ___
- e. Top of curb elevation. Yes ___ No ___ N/A ___
- 6. Details of all non-standard items. Yes ___ No ___ N/A ___
- 7. Curve data for storm drains. Yes ___ No ___ N/A ___
- 8. Property lines and easements with dimensions. Yes ___ No ___ N/A ___
- 9. Class III RCP required for all storm drain in public rights of way. Yes ___ No ___ N/A ___
- 10. Concrete cushion. Yes ___ No ___ N/A ___
- 11. Plot hydraulic grade line (HGL). Yes ___ No ___ N/A ___
- 12. Storm drain discharge at flow line of creek or channel and use rip-rap. Show coincident water surface of outfall. Yes ___ No ___ N/A ___
- 13. Headwalls and erosion control at outfall of storm drains. Yes ___ No ___ N/A ___
- 14. Laterals connected at 45 or 60 degree angle. Yes ___ No ___ N/A ___
- 15. Matching pipe centerline at connection. Yes ___ No ___ N/A ___
- 16. 3600 psi in 28 days for structural concrete strength. Yes ___ No ___ N/A ___
- 17. Existing and proposed utilities in plan and profile. Yes ___ No ___ N/A ___
- 18. On profile indicate:
 - a. Grade. Yes ___ No ___ N/A ___
 - b. Flow line elevations every station. Yes ___ No ___ N/A ___
 - c. Existing and proposed ground line. Yes ___ No ___ N/A ___
 - d. Hydraulic grade line and data. Yes ___ No ___ N/A ___
- 19. Show sizes in plan and profile. Yes ___ No ___ N/A ___
- 20. Show computations for existing system when connecting to existing storm drain. Yes ___ No ___ N/A ___
- 21. Velocities and hydraulic gradients conform to Design Manual. Yes ___ No ___ N/A ___

22. Inlets and conduits properly sized. Yes ___ No ___ N/A ___
23. Storm drain inlet and outlet velocity calculations. Yes ___ No ___ N/A ___

CREEKS AND CHANNELS – Plans of creeks and channels shall include:

1. Horizontal scale for plan views shall be at 1" = 20' on full size drawings. Yes ___ No ___ N/A ___
2. Vertical scale for profile views shall be at 1" = 4' on full size drawings. Yes ___ No ___ N/A ___
3. Stationing in plan and profile. Yes ___ No ___ N/A ___
4. Profiles indicating:
- a. Existing flow line. Yes ___ No ___ N/A ___
 - b. High banks. Yes ___ No ___ N/A ___
 - c. Hydraulic profile and data. Yes ___ No ___ N/A ___
 - d. Rock line. Yes ___ No ___ N/A ___
5. Hydraulic Computations.
- a. 100-year discharge Yes ___ No ___ N/A ___
 - b. Velocity Yes ___ No ___ N/A ___
 - c. Critical depth Yes ___ No ___ N/A ___
 - d. Manning's "n" Yes ___ No ___ N/A ___
 - e. Design grade for improved channels Yes ___ No ___ N/A ___
6. Cross sections as relative to property line. Yes ___ No ___ N/A ___
7. Erosion control. Yes ___ No ___ N/A ___
8. Compacted fill where fill required. Yes ___ No ___ N/A ___
9. Design velocities not greater than original stream velocities or greater than stated in Design Manual. Yes ___ No ___ N/A ___
10. Maximum side slope on earthen channels not greater than 4:1. Yes ___ No ___ N/A ___

BRIDGES – Plans of bridges shall include:

- | | |
|---|---------------------------|
| 1. Lowest member of bridge 2 feet above design water surface elevation. | Yes ____ No ____ N/A ____ |
| 2. Soil Borings on plans. | Yes ____ No ____ N/A ____ |
| 3. Soils report. | Yes ____ No ____ N/A ____ |
| 4. Channel sections upstream and downstream. | Yes ____ No ____ N/A ____ |
| 5. Structural details and calculations with dead load deflection diagram. | Yes ____ No ____ N/A ____ |
| 6. Vertical and horizontal alignment. | Yes ____ No ____ N/A ____ |
| 7. Bridge cross section. | Yes ____ No ____ N/A ____ |
| 8. Hydraulic calculations on all sections. | Yes ____ No ____ N/A ____ |

WATER – All water distribution and transmission facilities shall include:

- | | |
|---|---------------------------|
| 1. Horizontal scale for plan views shall be at 1" = 20' on full size drawings. | Yes ____ No ____ N/A ____ |
| 2. Vertical scale for profile views shall be at 1" = 4' on full size drawings. | Yes ____ No ____ N/A ____ |
| 3. Minimum 8" for main lines. | Yes ____ No ____ N/A ____ |
| 4. DR 18 Class 150 PVC all water mains less than or equal to 24-inch diameter. | Yes ____ No ____ N/A ____ |
| 5. Loop water mains. | Yes ____ No ____ N/A ____ |
| 6. Valves on fire hydrant leads. | Yes ____ No ____ N/A ____ |
| 7. Valves on main lines between each fire hydrant. | Yes ____ No ____ N/A ____ |
| 8. Maximum distance between each fire hydrant. | |
| a. Residential – 500' c-c on street. | Yes ____ No ____ N/A ____ |
| b. Multifamily – 400' c-c on street. | Yes ____ No ____ N/A ____ |
| c. Office, retail, commercial, industrial 300' c-c on street. | Yes ____ No ____ N/A ____ |
| 9. All portions of building within 300' radius of a fire hydrant in commercial. | Yes ____ No ____ N/A ____ |

10. All portions of building within 400' radius of a fire hydrant in multifamily. Yes ____ No ____ N/A ____
11. All portions of buildings within 500' radius of a fire hydrant in single family and duplex residential. Yes ____ No ____ N/A ____
12. Maximum length non-looped line serving a fire hydrant is 150 feet. Yes ____ No ____ N/A ____
13. Lateral service (min. 1" copper) from main line to two feet from back of curb at center of lot in residential subdivisions. Yes ____ No ____ N/A ____
14. Water main extended to opposite property line or tied to existing main. Yes ____ No ____ N/A ____
15. Profile mains 12" and larger. Yes ____ No ____ N/A ____
16. Show other utility lines crossing wastewater lines. Yes ____ No ____ N/A ____
17. Show location of water meters:
- a. Domestic. Yes ____ No ____ N/A ____
- b. Irrigation. Yes ____ No ____ N/A ____
- c. Fire line. Yes ____ No ____ N/A ____
18. Show size of water meters. Yes ____ No ____ N/A ____
19. Note minimum pipe covers (attach water and standard details and general notes). Yes ____ No ____ N/A ____
20. Dedicate water line easements up to and including fire hydrants and water meters for lines off ROW. Yes ____ No ____ N/A ____

WASTEWATER – All wastewater plans shall include:

1. Horizontal scale for plan views shall be at 1" = 20' on full size drawings. Yes ____ No ____ N/A ____
2. Vertical scale for profile views shall be at 1" = 4' on full size drawings. Yes ____ No ____ N/A ____
3. 8" minimum, PVC SDR-35 (unless 6-inch approved by Town). Yes ____ No ____ N/A ____
4. Manhole at end of all lines. Yes ____ No ____ N/A ____

5. Manholes at change of pipe size, tees and bends. Yes ___ No ___ N/A ___
6. 500' maximum distance between manholes on lines 21" and smaller. 800' maximum distance between manholes on lines 24" and larger. Yes ___ No ___ N/A ___
7. Minimum slopes:
- a. 6" – 0.50% (Pipe size as approved by Town). Yes ___ No ___ N/A ___
 - b. 8" – 0.33%. Yes ___ No ___ N/A ___
 - c. 10" – 0.25%. Yes ___ No ___ N/A ___
 - d. 12" – 0.20%. Yes ___ No ___ N/A ___
 - e. 15" – 0.14%. Yes ___ No ___ N/A ___
 - f. 18" – 0.12%. Yes ___ No ___ N/A ___
8. Maximum slope such that velocity is less than 10 fps. Yes ___ No ___ N/A ___
9. Sewer laterals 10' downstream from water service or to center of lot. Yes ___ No ___ N/A ___
10. Minimum lateral size:
- a. Residential, 4". Yes ___ No ___ N/A ___
 - b. Apartment, retail or commercial – 6". Yes ___ No ___ N/A ___
 - c. Manufacturing or industrial – 8". Yes ___ No ___ N/A ___
11. Profile all sewer lines except laterals. Yes ___ No ___ N/A ___
12. Show other utility lines crossing wastewater lines. Yes ___ No ___ N/A ___
13. Label lines to correspond to profile. Yes ___ No ___ N/A ___
14. Concrete encasement at creek crossing. Yes ___ No ___ N/A ___
15. Provide stub outs to adjacent property. Add services for Planned Development Communities. Yes ___ No ___ N/A ___
16. Note benchmark on all sheets. Yes ___ No ___ N/A ___
17. 10' utility easement provided for lines not in ROW. Yes ___ No ___ N/A ___

UTILITIES – All plans shall show the following:

- | | |
|---|---------------------------|
| 1. Existing and proposed facilities shown in plan and profiles views. | Yes ____ No ____ N/A ____ |
| 2. Underground facilities close to or in conflict with proposed construction located by actual ties and elevations. | Yes ____ No ____ N/A ____ |
| 3. Caution notes shown when construction operations come close to existing utilities. Telephone number of utility contact shall be shown. | Yes ____ No ____ N/A ____ |

EROSION CONTROL – All plans shall show the following:

- | | |
|--|---------------------------|
| 1. The scale for Erosion Control Plans may vary however shall be prepared on sheets no smaller than 1" = 100' on full size drawings. | Yes ____ No ____ N/A ____ |
| 2. Existing and Proposed Grading. | Yes ____ No ____ N/A ____ |
| 3. Existing and Proposed Drainage Features. | Yes ____ No ____ N/A ____ |
| 4. Erosion features including temporary construction entrance, silt fence, inlet protection, rock berms, seeding, etc. | Yes ____ No ____ N/A ____ |
| 5. Erosion control standard details. | Yes ____ No ____ N/A ____ |

PAVEMENT MARKINGS AND SIGNAGE

- | | |
|---|---------------------------|
| 1. The scale for Pavement Marking Plans may vary however shall be prepared on sheets no smaller than 1" = 100' on full size drawings. | Yes ____ No ____ N/A ____ |
| 2. Pavement Markings and Signage Plan in accordance with MUTCD. | Yes ____ No ____ N/A ____ |
| 3. Pavement Markings Standard Details. | Yes ____ No ____ N/A ____ |

TRAFFIC CONTROL PLAN

- 1. The scale for Traffic Control Plans may vary however shall be prepared on sheets no smaller than 1" = 200' on full size drawings. Yes ___ No ___ N/A ___
- 2. Traffic Control Plan in accordance with MUTCD. Yes ___ No ___ N/A ___
- 3. Traffic Control Standard Details. Yes ___ No ___ N/A ___
- 4. Traffic Control Phasing as necessary. Yes ___ No ___ N/A ___

LANDSCAPE AND IRRIGATION PLANS

- 1. The scale for Landscape and Irrigation Plans may vary however shall be prepared on sheets no smaller than 1" = 100' on full size drawings. Yes ___ No ___ N/A ___
- 2. Landscape Plan showing rights-of-way and proposed back of curbs, sidewalk, existing; and proposed utilities and other features pertinent to the plan. Yes ___ No ___ N/A ___
- 3. Planting details. Yes ___ No ___ N/A ___
- 4. Irrigation Plans including metering, back flow prevention, and provision for electrical service and controllers. Yes ___ No ___ N/A ___
- 5. Irrigation details. Yes ___ No ___ N/A ___

STREET LIGHTING

- 1. The scale for Street Lighting Plans may vary however shall be prepared on sheets no smaller than 1" = 100' on full size drawings. Yes ___ No ___ N/A ___
- 1. Lighting and Conduit Layout Plan. Yes ___ No ___ N/A ___
- 2. Lighting Standard Details. Yes ___ No ___ N/A ___