Austin District Schematic Layout Submission Guidelines

The submission of schematic layouts should include the basic information necessary for the proper review, recommendation, and approval of the proposed improvements; the list below must be used as a reference and complimented with as much information as necessary. The template AUS_Schem_Layout.dgn will be provided by the State:

1. **Project Designation will include general project information including the following for each facility:**
    - Texas Department of Transportation Preliminary Design Schematic
    - Program Name (if applicable)
    - District Engineer, P.E. – District Engineer Austin District
    - Control-Section-Job (CSJ) number(s)
    - Traffic Data:
        - Current ADT
        - Design ADT
    - Project Name - Roadway name / Highway
    - County
    - Project Scope
    - *(DRAFT/FINAL) Geometric Design Schematic*
    - Limits
    - Net Length of Project
    - Roadway length
    - Bridge length(s), if any

2. **Design data will include (Each roadway element and associated):**
    - Road type
    - Functional classification
    - Design speed
    - e_{max} used
    - Design exceptions
    - Variance

3. **The Location/Vicinity map will include:**
    - North arrow
    - Scale bar or note N.T.S
    - Begin and end project limits with Stations
    - Proposed road location(s) and names
    - Existing road/Street locations and names
    - Railroad location(s) and names, if any
    - Location of bodies of water/channels (streams, lakes, rivers, etc.) and names
    - City name(s)
    - County name(s) and limits
    - Major landmarks labeled

    and any other information with respect to the proposed improvement and a depiction of the map of the State of Texas with an inset of the project county.

4. **The Information block includes:**
    - Note: Not a Bidding Document
    - Project Manager Name and P.E Number and place for signature/date
    - Note: Submitted for Approval for further project development
    - Recommended By: Advanced Project Development Director and place for signature
    - Recommended By: Area Engineer and place for signature
    - Recommended By: District Design Engineer and place for signature
    - Approved By: Director, Transportation Planning and Development

    Design Standards:
    - Primary standards used and their release dates

5. **Existing Roadway(s) Typical Section(s) for existing conditions to include all modes of transportation and limits, and the following:**

   - Roadway name
   - Station Limits (Where applicable)
   - Existing ROW (Note if approximate)
   - Existing ground
   - Number of Lanes & Direction Arrows
   - Travel Lane labels and widths (Aux, CD, DC, TWLTL, LTL, etc.)
   - Cross-slope labels
   - Median labels and widths
   - Shoulder labels and widths
   - Sidewalk/SUP labels, width, and cross slopes, including buffer widths
   - Curb/C&G labels, types, and widths
   - Curb offsets
   - Barrier (rigid or flexible) labels, types, and widths
   - Retaining walls
   - Existing Pavement structure layers labeled and depths dimensioned
   - Border width labeled and dimensioned
   - Clear zone width labeled and dimensioned
   - Sideslopes labeled (usually H:V)
   - Ditches, with bottom widths specified (if not swales) and foreslopes/backslopes labeled (usually H:V)
   - Retaining walls
   - Locations of wildlife crossing structures
   - Vertical location of cross-drainage structures in the profile view

   Bridge Typical Section(s) (Existing and Proposed):

   - Type, location, depth, and width of structural elements (deck, beams, etc.)
   - Horizontal control line and other pertinent baselines/centerlines
   - Rail and barrier labels, types, and widths
   - Existing bridge (if widening)
   - Rail and barrier labels, types, and widths

6. **Proposed Roadway(s) Typical Section(s)** Additionally refer to items shown on No. 5 shown also as proposed if applicable (for example, Roadway name should be shown on both: existing and proposed). IF THE PROPOSED DESIGN IS INTERIM, INCLUDE TYPICAL SECTIONS FOR THE ULTIMATE DESIGN WITH THE SAME PARAMETERS INDICATED. Other information shown on the typical sections include the following:

   - Existing and Proposed ROW
   - Proposed Cross-slope labels, include any cross slope breaks
   - Location of Profile Grade Line (PGL) and identification of PGL Control Point
   - Pavement structure layers labeled and depths dimensioned, including any subgrade preparation
   - Curb offsets
   - Assumed Type, location, depth, and width of structural elements (deck, beams, etc.)
   - Other incidental items, e.g., sidewalk, pedestrian rail, Shared Use Path (SUP), Bike Lane, etc. stating widths and cross slopes, including buffer widths
   - Horizontal control line and other pertinent baselines/centerlines
   - Speed Change Lane width
   - Label Lane Type and include arrows; General Purpose (GP), Auxiliary Lane (Aux), Managed Lane (ML), etc.
   - Proposed retaining, noise, etc. walls
   - Other incidental items, e.g., sidewalk, pedestrian rail, Shared Use Path (SUP), Bike Lane, etc.

7. The Plan View to include:

- North arrow
- Legend (Includes Utility linework)
- Scale (graphic)
- Begin/end project limits w/ Sta & CSJ
- Begin/end construction limits w/ Sta & CSJ if different than Project limits
- Traffic diagram(s) showing existing and projected ADT volumes of mainlanes, ramps, frontage roads, turnarounds, and cross roads, and the breakdown of those volumes for turning movements, as applicable

Existing and Proposed Features:

- Aerial photogrammetry (if desired)
- Planimetrics
- Benchmarks
- Boundaries (city, county, etc.)
- Existing and Proposed Right of way
- Existing and Proposed Control/Denial of access lines
- Existing Property lines
- Landmark/Business/Property owner names
- Existing and proposed Easements
- Bodies of water/channels (streams, lakes, rivers, etc.)
- Edwards Aquafer Recharge / Contributing Zones
- Street, roadway, & Railroad names
- Edge of travelway and pavement
- Removal limits/hatching
- Widening limits/hatching
- Lane lines/striping, etc. to depict lane lines, transitions, gores, etc.
- Proposed Traffic arrows
- Curbs and/or gutters (c&g)
- Barrier (rigid or flexible) & attenuators
- Label Proposed Median (preserve typical width for divided highways)
- Existing and proposed bicycle and pedestrian accommodations, and sidewalks / Shared Use Paths (SUP), including curb ramp locations and roadway crossing locations
- Existing and proposed Driveways (driveways to be designed at a high level to identify ROW needs)
- Cemeteries
- Park lands
- Airports
- Existing/Proposed Large Guide Signs and face panels (Can be supplemental Sheet)
- Utilities, buried, surface, and overhead
- Existing and proposed Signalization
- Proposed Lighting
- Roadways to be closed/removed
- Structures to be closed/removed
- Traffic direction arrows and number of lanes
- Existing (dashed) and proposed Major culvert crossings, including labeling size/number/length/etc.
- Bridge-class box culverts, including labeling size/number/length/etc.
- Existing and proposed Major outfalls
- Existing and proposed Major riprap installations
- Channel (re-)alignments, if any
- Billboards
- Retaining Walls
- Noise Walls

Location and labels/names for:

- Interchanges/Grade Separations/Direct Connectors
- Toll/Managed/HOV/etc.
- Mainlanes
- Frontage roads
- Turnarounds
- Collector-Distributor roads
- Ramps
- Intersecting roads
- Other adjacent and area roadways/streets
- Railroad crossings/Existing and Proposed Crash Walls
- Existing and proposed horizontal alignments for railroads

Roadway alignments/baselines:

- Locations/Linework
- Labels
- Station text and ticks

Roadway element/section labels:

- Widths, including lanes, shoulders, sidewalks, c&g, barrier, etc.

Transition lengths dimensioned:

- Acceleration & deceleration lanes

- Lane additions & drops
- Auxiliary Lanes
- Storage Lengths
- Weaving Distance

Bridges:

- Proposed Begin and End
- Proposed Span/bent locations
- Proposed Columns

Roadway alignments/baselines (for all Mainlanes, Frontage Rd, Ramps, Cross Streets, CD's & DC's, etc.):

- Tangent bearings and lengths
- Cardinal data (PCs, PTs, PIs, etc.)
- Intersecting Station equivalencies (e.g., Road A BL STA XXX+XX.XX = Road B CL STA YYY+YY.YY)
- "Curve data to meet proposed ""e"" values and design speed
- (Include curve name, PI sta, Degree of Curve, Tangent, Length, Radius, PC&PT)"

8. The Profile View to include:

- Road Names
- Station and elevation axes labels
- Grid
- Scale (Horizontal and Vertical bars)
- Begin and end project limits with Stations
- Begin and end construction limits with Stations, if different than Project limits
- Strip grade elevations, with explanatory label

Existing Features:

- Water/channel crossings (streams, lakes, rivers, etc.)
- Street and roadway alignment crossings with names
- Railroad Crossings (if present) with names
- Railroad Crossings Vertical Clearances (if present)
- Existing grade lines (at the subject alignment)
- Existing and proposed grade line labels
- Existing ground and labels
- Major culverts

Proposed Features (for all Mainlanes, Frontage Rd, Ramps, Cross Streets, CD's & DC's, etc.):

- Roadway PGL labels and grades (3 decimal places)
- Major culvert crossings, including labeling size/number/type length/etc.
- Bridge-class box culverts, including label details to include size/number/type length/etc.
- Retaining walls

Roadway PGL vertical curves:

- VPCs, VPIs, and VPTs
- Curve lengths and Grades
- Stop Sight Distance (SSD) & K value

Bridges:

- Limit labels
- Superstructure depth depicted
- Vertical clearance labeled (< 25')
- vertical clearance from railroads, crossroads, and turnarounds;
- Bents/Columns depicted
- Removal, if any
- Bridges (include structure size, name of waterway, Design & 100 yr flood elevation)

Superelevation Tables baselines (for all Mainlanes, Frontage Rd, Ramps, Cross Streets, CD's & DC's, etc.):

- Alignment
- Station
- Width
- Slope
- Description

9. Survey Control:

State Plane coordinates with Datum and Surface Adjustment Factor

- Horizontal
- Vertical
- Station equations (V and/or H.), if any

10. Roll Border

- TxDOT logo with current copyright date
- Draft/Final Preliminary Design Schematic
- Highway & Project Name
- Program Logo (if applicable)
- Roll of Sheet Number
- Document Graphics File Name and Path & Date Plotted
- Logo of Consultant with Firm Name, Address and Registration Number

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Refer to AUS_Schem_Layout.dgn