

DESIGN SUMMARY REPORT (DSR)

The DSR summarizes a basic project information in one document. Use judgment in completing the report since it covers a wide range of items that may not apply to all projects.

This report can be partially completed during the *Preliminary* Design Conference and updated throughout project development. The DSR will be reviewed in detail during the Design Conference.

Highway No. _____

CSJ _____

County _____

Length _____

Project No. _____

Limits From _____

To _____

Is project on National Highway System (NHS)? ☐ yes ☐ no

If yes, is project ☐ State oversight ☐ Federal oversight

Type of work _____

Layman's description _____

Estimated construction cost _____ Date of estimate _____

Estimated right of way cost _____ Date of estimate _____

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COMMENTS AND CONCURRENCE

PRELIMINARY DESIGN CONFERENCE

District Comments _____

Signed

Title

Date

Design Division Comments _____

Signed

Title

Date

FHWA Comments _____

Signed

Title

Date

Note: Concurrence with this report does not imply approval of any design exceptions or waivers referred to herein.

COMMENTS AND CONCURRENCE

DESIGN CONFERENCE

District Comments _____

Signed

Date

Title

Design Division Comments _____

Signed

Date

Title

FHWA Comments _____

Signed

Date

Title

Note: Concurrence with this report does not imply approval of any design exceptions or waivers referred to herein.

SUGGESTED ATTENDANCE

PRELIMINARY DESIGN CONFERENCE

Date of conference _____ Location of conference _____

	INVITED (name)	ATTENDED (name)
TxDOT district and area office staff		
Advanced project dev. engineer		
Area engineer		
Area maintenance supervisor		
Bicycle coordinator		
Construction engineer		
Dir. Of trans. planning & dev.		
District engineer		
District design engineer		
Environmental coordinator		
Landscape architect		
Maintenance engineer		
Pedestrian coordinator		
Planner		
Programming & sched. mgr.		
Railroad coordinator		
Right of way administrator		
Utility coordinator		
Traffic engineer		
TxDOT division offices		
FHWA		
Bicycle groups		
city and county		
Consultants		
Environmental resource agencies		
Federal transit authority		
MPO director or staff		
Transit operators		
Trucking industry		
Utility companies		
Others (e.g., chamber of commerce)		

SUGGESTED ATTENDANCE

DESIGN CONFERENCE

Date of conference _____ Location of conference _____

	INVITED (name)	ATTENDED (name)
TxDOT district and area office staff		
Advanced project dev. engineer		
Area engineer		
Area maintenance supervisor		
Bicycle coordinator		
Construction engineer		
Dir. of trans. planning & dev.		
District engineer		
District design engineer		
Environmental coordinator		
Landscape architect		
Maintenance engineer		
Pedestrian coordinator		
Planner		
Programming & sched. mgr.		
Railroad coordinator		
Right of way administrator		
Utility coordinator		
Traffic engineer		
TxDOT division offices		
FHWA		
city and county		
Consultants		
Environmental resource agencies		
Federal transit authority		
Utility companies		
Others		

SUGGESTED AGENDA

PRELIMINARY DESIGN CONFERENCE

** Asterisks denote topic areas discussed elsewhere in this report.*

Background

- *existing elements

- *funding

feasibility study or Major Investment Study findings

Corridor issues

mobility & transportation

operations & maintenance

planned/funded projects

*Environmental issues

Multimodal issues

Alternatives

Project development criteria

Level of Service

- *control of access

- *geometric design

- *hydraulic design

- *bridge design

- *pavement design

- *traffic operations design

landscape and aesthetic design

constructibility

Maintenance

Permits, agreements, and coordination with outside entities

Federal, State, City, County, railroads & others

SUGGESTED AGENDA

DESIGN CONFERENCE

** Asterisks denote topic areas discussed elsewhere in this report.*

Background

- *funding
- surveys, studies, and data
- agreements and permits
- problematic features

Project Scope

Alternatives

Schematics

*Detailed Design Criteria

Right of Way

- *new ROW required
- *easements required
- *utility adjustments
- *control of access

Project Development Update

- Level of Service
- *geometric design
- *hydraulic design
- *bridge design
- *pavement design

*traffic operations design

*Public Involvement Plan

- stakeholders
- *public meeting and public hearing

*Environmental Documents

- commitments made

Permits, agreements, and coordination with outside entities

- Federal, State, City, County, railroads & others

SUGGESTED REPORT MATERIAL

Consider including the following:

PURPOSE AND NEED STATEMENT

*

PROJECT DEVELOPMENT SCHEDULE

*

DESCRIPTION OF KEY STAFF ROLES AND RESPONSIBILITIES

PROGRAMMING AND FUNDING DATA

Work Program _____ Authorized Funds _____ STIP Year _____

Breakdown of Funding Participation

	Preliminary Engineering		Construction		Right of Way		Eligible Utility Relocation	
	%	\$	%	\$	%	\$	%	\$
Federal								
State								
County								
City								
Totals								

Sidewalk funded by _____

Curb and gutter funded by _____

Storm drain system funded by _____

Illumination to be maintained by _____

List and describe active Minute Orders and agreements _____

Are advance funding agreements required? ☐ yes ☐ no

If yes, describe _____

Is unusual financing required? ☐ yes ☐ no

If yes, explain _____

If program estimate differs from authorized amount, explain overrun/underrun _____

See attached copy of current cost estimate.

Tentative letting date _____

Date of PS&E submission to District Design _____

Should letting date be rescheduled? ☐ yes ☐ no

If yes, recommended letting date _____

EXISTING ELEMENTS

A. Existing typical section

1. Number of traffic lanes _____

2. Lane width _____

3. Median width _____

4. Curb & gutter ☐ yes ☐ no

B. Existing bridge data (including bridge-class culverts)

Stream Name	Structure Number	Struct. Length	Structure Type	Date of Const.	Side-walk Width	Clear Rdwy. Width	Sufficiency Rating

C. Existing cross drainage culvert data

Station	Number of barrels	Sizes	Type (shape & material)

D. Stream data

1. Will channel work be required? ☐ yes ☐ no
2. If bridge shafts must be drilled in channel or stream bed, how will drilling rigs gain access?
(e.g., cofferdams, drilling pads, or access roads)

E. Other (e.g., stock pass) _____

F. ROW data

1. Existing ROW width _____
2. Estimated number of land owners _____
3. Predominant land use _____
4. Soil types _____

G. Existing constraints

1. Eligible historical structures _____
2. Schools _____
3. Parks _____
4. Archeological sites _____
5. Potential hazardous material sites _____
6. Ecological (wetlands, habitats, etc.) _____

EXISTING ELEMENTS (continued)

H. Highway-railroad (RR) grade crossings

1. Owner of RR: ☐ UP RR ☐ BNSF RR ☐ KCS RR ☐ Other _____
2. Type of RR crossing surface material: ☐ concrete ☐ rubber ☐ wood
3. Type of warning devices: ☐ passive ☐ cantilever flashing lights
 ☐ lights and gates ☐ mast signals
4. Do opportunities exist for consolidating or closing RR crossings? ☐ yes ☐ no
5. Is there a highway-RR grade crossing adjacent (i.e., within about 500 feet (152 m)) to a signalized highway intersection? ☐ yes ☐ no
If yes, responsible office for determining the need for pre-emption _____

ADVANCED PROJECT DEVELOPMENT ELEMENTS

A. Surveying

1. Is planimetric needed? ☐ yes ☐ no
2. Status of aerial photography: ☐ complete ☐ in progress ☐ not started ☐ not proposed
3. Status of field surveys: ☐ complete ☐ in progress ☐ not started
4. Has vertical and horizontal control been established on the ground? ☐ yes ☐ no
5. Additional elements to be surveyed (drainage channels, intersecting streets, etc.) _____
6. Is existing ROW staking required? ☐ yes ☐ no
Status: ☐ complete ☐ in progress ☐ not started
Responsible office _____
7. Comments _____

B. Schematic development

1. Is a geometric schematic required? ☐ yes ☐ no
If yes, responsible office _____
2. Is a signing schematic required? ☐ yes ☐ no
3. Schematic status
 - a. Percent complete _____%
 - b. Date preliminary schematic needed by _____
 - c. Date approved schematic needed by _____
 - d. Final approval authority ☐ FHWA ☐ Design Division ☐ District
Approval date _____
4. Comments _____

C. Environmental

1. Anticipated type of environmental document required ☐ CE ☐ EA ☐ EIS
2. Office responsible for preparing environmental document _____
3. Has environmental document been approved? ☐ yes ☐ no
Status _____
4. Public meetings ☐ proposed ☐ not proposed ☐ scheduled ☐ held
Date(s) _____
5. Public hearing ☐ scheduled ☐ opportunity afforded ☐ held ☐ not required
Date _____
6. Environmental commitments
 - a. Sound abatement _____
 - b. Wetlands _____
 - c. Vegetation _____
 - d. Endangered species _____
 - e. Other _____
 - f. Worksheet completed? ☐ yes ☐ no
7. Is hazardous contamination anticipated? ☐ yes ☐ no
8. Comments _____

PROPOSED RIGHT OF WAY & UTILITY ELEMENTS

A. Right of way elements

1. Usual ROW width _____
2. Additional ROW needed to accommodate design features (side slopes, sound walls, etc.) _____
3. Have adjacent property owners been identified? ☐ yes ☐ no
4. Is additional ROW required? ☐ yes ☐ no

Design Summary Report

5. How many parcels will be involved in ROW acquisition? _____
6. Are easements required (drainage or construction)? ☐ yes ☐ no
7. Is control of access needed? ☐ yes ☐ no
8. Have ROW map/plats/descriptions been prepared for parcels? ☐ yes ☐ no
9. Is relocation assistance required? ☐ yes ☐ no
- a. Number of residences _____
- b. Number of businesses _____
- c. Other improvements _____
10. Comments _____
- _____
- _____

B. Major utility facilities

1. Preliminary utility inventory

Utility	Type	Describe potential conflict

2. Have utility conflicts been determined? ☐ yes ☐ no
3. Have utility agreements been prepared through district ROW office? ☐ yes ☐ no
- Comments _____
- _____

PROPOSED GEOMETRIC DESIGN ELEMENTS

Note: Design features listed in tables may not apply to every project.

Functional classification:

☐ freeway ☐ arterial ☐ major collector ☐ minor collector ☐ local

Highway type:

☐ urban freeway ☐ urban frontage road ☐ rural freeway ☐ rural frontage road
☐ rural multilane ☐ rural two-lane ☐ suburban roadway ☐ urban street
☐ bicycle/pedestrian trail

Proposed work: ☐ 4R/new construction ☐ 3R ☐ 2R

Terrain: ☐ level ☐ rolling

A. Traffic

	ADT	Year
Existing		
Letting year		
Design year		

B. Design criteria

Design Elements	Existing Value	Proposed Value	Design Guidelines (figure or table reference)
Design speed			
Max. horiz. Curvature			
Max. superelevation rate			
K value – sag			
K value – crest			
Maximum grade			
Minimum grade			
Other			

PROPOSED GEOMETRIC DESIGN ELEMENTS (continued)

C. Roadway surface features (See attached typical sections.)

Roadway Surface Feature	Unit	Value	Comments
Proposed through lane – width	width		
Proposed through lane – number of lanes	number		
Ultimate through lane – width	width		
Ultimate through lane – number of lanes	number		
Speed change lane	width		
On-street bicycle lane	width		
Curb lane parking	width		
Curb offset	width		
Shoulder – inside through lane	width		
Shoulder – outside through lane	width		
Shoulder – speed change lane (left)	width		
Shoulder – speed change lane (right)	width		
Raised median	width		
Flush median (incl. TWLTL or CTB)	width		
Depressed median	width		
Bridge width	width		
Cross slopes – lane and median	%		
Cross slopes – inside shoulder	%		
Cross slopes – outside shoulder	%		
Median openings – spacing	spacing		
Median openings – usual width	usual width		
Speed change lanes – storage	length		
Speed change lanes – taper	length		
Structure clearance – horizontal	width		
Structure clearance – vertical	height		
Other			

PROPOSED GEOMETRIC DESIGN ELEMENTS (continued)

D. Roadside features (See attached typical sections.)

<u>Roadside Feature</u>	Unit	Value	Comments
Border	width		
Sidewalk Location: _____	width		
Cross slope – sidewalk	%		
Ditch front slope – usual	ratio		
Ditch front slope – maximum	ratio		
Ditch back slope – usual	ratio		
Ditch back slope – maximum	ratio		
Maximum fill height before considering retaining wall	height		
Clear zone	width		
Other			

E. Connecting roadways (See attached typical sections.)

Design Element	Ramps	Direct Connectors	Crossroads
Design speed			
Max. horizontal curve			
Maximum grade			
Minimum grade			
Prop. number of lanes			
Lane width			
Inside shoulder			
Outside shoulder			
Other			

F. Are design exceptions/waivers required? ☐ yes ☐ no

If yes, what design elements? _____

PROPOSED BRIDGE DESIGN DATA

A. Design data for structures

Structure Number	Structure Location	Clearance		Clear Rdwy. width	Length	Over-pass OR under-pass	Foundation type	Super-structure type	Sub-structure type
		horiz.	vert.						

Structure Number (repeat from above)	Railroad crossing? (yes/no)	Type of Exist. Rail	Type of Prop. Rail	Proposed approach treatment	Turn-arounds provided? (width)	Retaining walls proposed? (type)	Bridge widening (describe exist. & proposed)	Are bridge design exceptions/waivers required? If yes, for what design elements?

B. Bridge widths are for: ☐ proposed number of lanes ☐ ultimate number of lanes


C. Are bridge widths controlled by traffic handling? ☐ yes ☐ no

PROPOSED HYDRAULIC ELEMENTS

A. TxDOT design frequency

Notes:

Table shown below is in the TxDOT Hydraulic Design Manual

 Shaded boxes denote recommended design frequencies.

When multiple design frequencies are given, select a frequency by checking a box (☐).

Federal law requires interstate highways to be provided with protection from the 50-year flood event, and facilities such as underpasses and depressed roadways where no overflow relief is available should be designed for the 50-year event.

Functional Classification And Structure Type	Design Frequency (years)					Check 100-yr Flood?
	2	5	10	25	50	
Freeways (main lanes)						
♦ Culverts						yes
♦ Bridges						yes
<u>Principal arterials</u>						
♦ Culverts						yes
♦ Small bridges						yes
♦ Major river crossings						yes
Minor arterials and collectors (including frontage roads)						
♦ Culverts						yes
♦ Small bridges						yes
♦ Major river crossings						yes
Local roads and streets (off-system projects)						
♦ Culverts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			yes
♦ Small bridges	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			yes
Storm drain systems						
♦ Interstate and controlled access highways (main lanes)						yes
• inlets and drain pipe						yes
• inlets for depressed roadways						yes
♦ Other highways and frontage						

• inlets and drain pipe	<input type="checkbox"/>	<input type="checkbox"/>				yes
• inlets for depressed roadways				<input type="checkbox"/>	<input type="checkbox"/>	yes
Other						

PROPOSED HYDRAULIC ELEMENTS (continued)

- B. If design frequency is other than TxDOT guidelines, where it is to be used and the reason (e.g., to use in designing off-system facilities or to comply with FEMA requirements)

- C. Comments on runoff coefficients (e.g., coefficients based on future land use)

- D. Safety end treatment proposed
Parallel drainage structures

Cross drainage structures

- E. Will outfall channels be provided? ☐ yes ☐ no

If yes, by whom? _____

- F. Will outfall channels be maintained by others? ☐ yes ☐ no

If yes, by whom? _____

- G. Will others have to approve hydraulic design? ☐ yes ☐ no

If yes, who? _____

- H. Will others participate in funding hydraulic structures (e.g., joint ditch agreements with railroads)?

☐ yes ☐ no

If yes, who? _____

- I. Will storm drain design be based on using the larger of: a 150'-wide area (from ROW) or the actual drainage area? ☐ yes ☐ no

- J. Will pump stations be required? ☐ yes ☐ no

If yes, approximate locations

- K. Is this an evacuation route where roadway elevation is critical? ☐ yes ☐ no

If yes, explain

- L. Is the design of any special drainage facility required? ☐ yes ☐ no

If yes, explain

M. Which hydraulic programs will be required for analysis?

N. Are flood insurance study streams within project limits? ☐ yes ☐ no
If yes, which?

O. Is FEMA coordination required? ☐ yes ☐ no

PROPOSED PAVEMENT STRUCTURE ELEMENTS

A. Describe existing pavement _____

B. Is existing roadway load zoned? ☐ yes ☐ no
Limits From _____
To _____

C. Has pavement design been prepared? ☐ yes ☐ no
Responsible office _____

D. Proposed pavement structure
Describe thickness and material type of each layer.
(See attached typical sections.)

Pavement Structure Element	Roadway	Shoulder
Widen existing pavement		
Mainlanes		
Frontage roads		
Direct connectors		
Ramps		
Detours		
Crossroads		
Others		

PROPOSED TRAFFIC OPERATIONS ELEMENTS

A. Are signing, delineation, and pavement markings to be included in construction plans?

☐ yes ☐ no

If yes, responsible office _____

B. Is signalization proposed?

☐ yes ☐ no

If yes, are traffic signals warranted? ☐ yes ☐ no

If yes, responsible office for developing plans _____

C. Is there a highway-railroad grade crossing adjacent (i.e., within about 500-feet, (152 m)) to a signalized highway intersection? ☐ yes ☐ no

If yes, responsible office for determining the need for pre-emption _____

D. Is safety lighting proposed?

☐ yes ☐ no

If yes, is illumination warranted? ☐ yes ☐ no

If yes, responsible office for developing plans _____

E. Is continuous lighting proposed?

☐ yes ☐ no

If yes, is illumination warranted? ☐ yes ☐ no

If yes, responsible office for developing plans _____

F. Are Intelligent Transportation System (ITS) items proposed?

☐ yes ☐ no

If yes, are proposed ITS items included in the regional ITS plan? ☐ yes ☐ no

Comments _____

PROPOSED MISCELLANEOUS ELEMENTS

A. Geotechnical exploration

1. Roadway

Is geotechnical investigation needed? ☐ yes ☐ no

Is geotechnical investigation available? ☐ yes ☐ no

If yes, explain _____

2. Bridges (list bridges requiring foundation exploration)

3. Walls (list retaining walls or noise walls requiring foundation exploration)

4. Storm drains

5. Miscellaneous (e.g., overhead sign bridges, high mast illumination)

6. Office responsible for geotechnical exploration (borings) _____

7. Is a D₅₀ (grain size determination) for scour analysis on the proposed structure at the stream crossing required from the lab? ☐ yes ☐ no

B. Sequence of construction (Outline probable stages. **See attached typical sections.**)

1. Stage I _____

2. Stage II _____

3. Additional stages _____

C. Will median openings require approval by others? ☐ yes ☐ no

If yes, by whom? _____

D. Are requirements satisfied for the Americans with Disabilities Act Accessibility Guidelines (ADAAG) and the Texas Accessibility Standards (TAS)? ☐ yes ☐ no

Comments _____

PROPOSED MISCELLANEOUS ELEMENTS (continued)

E. Are railroad agreements needed? ☐ yes ☐ no

If yes, where? _____

F. Are airway/highway clearance permits required? ☐ yes ☐ no

1. For roadway _____

2. For other (e.g., high mast illumination) _____

G. What type of erosion control is proposed? _____

1. Fills _____

2. Other _____

H. What end treatment is proposed for metal beam guard fence? _____

I. Is a Safety Review Committee (or multi-discipline team) review required? ☐ yes ☐ no

J. Comments _____

SUGGESTED REPORT MATERIAL

Consider including the following:

DRAFT ALTERNATIVES SCREENING AND EVALUATION
CRITERIA

*

PUBLIC INVOLVEMENT PLAN

*

AGREEMENTS REACHED BETWEEN
PRELIMINARY DESIGN CONFERENCE PARTICIPANTS

*

AGREEMENTS REACHED BETWEEN
DESIGN CONFERENCE PARTICIPANTS

*

ATTACHMENTS

Preliminary Design Conference minutes or notes
Design Conference minutes or notes
Typical Sections
Page 3 of Form 1002
Location Map (optional)