



# Highway Design Standards (HDS) Form

- Exceptions vs. Variances

FEDERAL LANDS HIGHWAY HIGHWAY DESIGN STANDARDS [Print Form](#)

Field Name: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Year of Project: \_\_\_\_\_  
 Description: \_\_\_\_\_  
 National Highway System (NHS) \_\_\_\_\_  
 Functional System: \_\_\_\_\_

Traffic	Year	Annual ADT	Seasonal ADT	DIV	PERCENTAGE TRUCKS	ROW	D
Current							
Future							

Design Standards:  AASHTO Green Book  AASHTO Low Volume  Park Road Standards  
 State  Other (Describe)

CRITERIA	DESIGN SPEED	EXCEPTION	
Minimum from Standard	<input type="checkbox"/>	<input type="checkbox"/>	
Chosen for Segment	<input type="checkbox"/>	<input type="checkbox"/>	
CRITERIA	STANDARD per Green Book	AS DESIGNED	EXCEPTION
Lane Width			
Shoulder Width			
Horizontal Curve Radius			
Superelevation Rate	$e(\max) =$		
Stopping Sight Distance			
Maximum Grade			
Cross Slope			
Vertical Clearance			
Design Loading Structural Capacity			

For each exception provide description (including context), reasons, alternatives considered, analysis of risk, and proposed mitigation.

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Field Name: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Year of Project: \_\_\_\_\_  
 Description: \_\_\_\_\_  
 National Highway System (NHS) \_\_\_\_\_  
 Functional System: \_\_\_\_\_

Traffic	Year	Annual ADT	Seasonal ADT	DIV	PERCENTAGE TRUCKS	ROW	D
Current							
Future							

Design Standards:  AASHTO Green Book  AASHTO Low Volume  Park Road Standards  
 State  Other (Describe)

CRITERIA	DESIGN SPEED	EXCEPTION	
Minimum from Standard	<input type="checkbox"/> 30 MPH	<input type="checkbox"/>	
Chosen for Segment	<input type="checkbox"/>	<input type="checkbox"/>	
CRITERIA	STANDARD per Green Book	AS DESIGNED	EXCEPTION
Design Loading Structural Capacity			
CRITERIA	STANDARD per Green Book	AS DESIGNED	VARIANCE
Lane Width			
Shoulder Width			
Horizontal Curve Radius			
Superelevation Rate	$e(\max) =$		
Stopping Sight Distance			
Maximum Grade			
Cross Slope			
Vertical Clearance			

For each exception provide description (including context), reasons, alternatives considered, analysis of risk, and proposed mitigation. For any variance, provide brief description, reasons, and proposed mitigation.

# Highway Design Standards (HDS) Form

**RECOMMENDED ACTION:**

There are no exceptions to applicable standards, and the project should proceed to final PS&E.

The listed exceptions to design standards and their related risks have been reviewed with the appropriate agencies and interested parties, and are considered acceptable for this project.

**PREPARED BY:**

\_\_\_\_\_

Lead Designer \_\_\_\_\_ Date \_\_\_\_\_

**APPROVAL IS RECOMMENDED:**

Need additional Recommender

\_\_\_\_\_

A/E Manager \_\_\_\_\_ Date \_\_\_\_\_

Highway Design Manager  
Highway Standards Engineer  
A/E Manager

Project Development Branch Chief \_\_\_\_\_ Date \_\_\_\_\_

Highway Design Branch Chief  
Project Development Branch Chief

- A/E Lead Designer
- A/E Manager
- Project Manager
- Project Development Branch Chief
- Partner
- Chief of Engineering

# New Special Contract Requirements (SCR's)

- At each milestone, check for SCR updates
- Contractor Developed SWPPP
  - 2 LPSM stormwater pay items
- 152: Updated file type for survey deliverables

## FP-24

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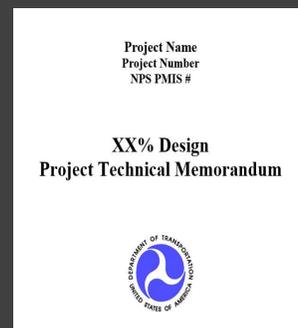
152 – CONSTRUCTION SURVEY AND STAKING\*  
201 – CLEARING AND GRUBBING\*  
202 – ADDITIONAL CLEARING AND GRUBBING\*  
211 – ROADWAY OBLITERATION\*  
609 – CURB AND GUTTER  
615 – SIDEWALKS, PADS, AND PAVED MEDIANS  
619 – FENCES, CATTLE GUARDS AND BOLLARD POSTS  
621 – MONUMENTS AND MARKERS  
710.01, 710.02, 710.03, 710.04, 710.05, 710.11, AND 725.12 –  
MATERIALS  
ROADSIDE DEVELOPMENT

\*In coordination with construction representatives

## Project Tech Memo & PE Memo

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- Design Tech Memo
  - Overview of Project
  - Extensively used by partners
  - Documents major revisions, environmental commitments, FLH supplemental standards, EDC initiatives





# Grading Summary - ORD

EARTHWORK SUMMARY										
USING ROADWAY EXCAVATION AND EITHER BORROW OR WASTE PAY ITEMS										
<b>EXCAVATION (unadjusted volumes)</b>										
Total Roadway Prism Excavation =									15,515	CUYD
Total Secondary Road Prism Excavation =									-	CUYD
Total Pay Item 20401.0000 Roadway Excavation =									15,515	CUYD
<b>EXCAVATION MATERIAL UNAVAILABLE FOR FILL (unadjusted volumes)</b>										
Total Topsoil Stripping in Cuts =									0	CUYD
Total =									0	CUYD
<b>TOTAL EXCAVATION AVAILABLE FOR FILLS (adjusted volume)</b>										
Total Volume After Adjustments Applied (Including Shrink/Swell) =									15,515	CUYD
<b>EMBANKMENT (unadjusted volumes)</b>										
Total Roadway Prism Fill =									42,676	CUYD
Total Secondary Road Prism Fill =									-	CUYD
Total =									42,676	CUYD
<b>VARIOUS BACKFILL MATERIAL GENERATED ONSITE</b>										
Total Topsoil Replacement Under Fill =									+00	CUYD
Total =									0	CUYD
<b>EXCAVATION MINUS EMBANKMENT</b>										
Total Estimated Excavation Available for Fills =									15,515	CUYD
Total Estimated Fill Material Required =									42,676	CUYD
Excavation - Embankment =									-27,161	CUYD
<b>WASTE</b>										
Estimated Total Pay Item 20441.0000 Waste =									NA	CUYD
<b>BORROW</b>										
Estimated Unadjusted Volume of Unclassified Borrow Required =									27,161	CUYD
Estimated Shrink / Swell at Borrow Pit Site =									0.9	
Estimated Total Pay Item 20403.0000 Unclassified Borrow =									30,179	CUYD

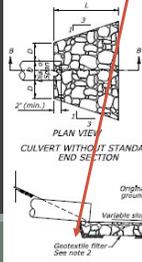
# Geotextile Callouts

**NOTE:**

1. Use for aprons serving culverts with slopes of less than 10%.
2. Furnish geotextile filter conforming to subsection 714.01(a). See summary tables for class and type.
3. Excavation for placement of riprap will not be measured for payment.

DRAINAGE SUMMARY						
Item Number	15215-3000	25101-0200	60201-0800	60201-1000		
Station	Side	Skew (deg)	SURVEY AND STRAINING, DRAINAGE STRUCTURE	PLACED RIPRAP, METHOD A, CLASS 2	24-INCH PIPE CULVERT	36-INCH PIPE CULVERT
			EACH	CUYD	LNFT	LNFT
			Remarks			
TOTALS			0	0	0	0

Note: Use geotextile filter, class #, type #, woven/non-woven. See subsection 714.01(a).



OUTLET WITHOUT DITCH PROTECTIVE APRON DIMENSIONS AND ESTIMATED QUANTITIES						
	CULVERT SIZE B (Inches)	RIPRAP CLASS	LENGTH OF APRON (feet)	DEPTH OF APRON (feet)	ESTIMATED RIPRAP QUANTITY (CY)	ESTIMATED GEOTEXTILE QUANTITY (CY)
WITH END SECTION	12	2	4	1.5	1	5
	18	2	6	1.5	2.2	9
	24	2	8	1.5	3.9	14
	30	3	12.5	2	10.9	28
	36	3	16	2	15.6	37
	42	4	21	2.5	31.1	63
WITHOUT END SECTION	12	2	6	1.5	1.7	8
	18	2	8	1.5	2.2	12
	24	2	10	1.5	3.2	17
	30	3	14.5	2	13.3	33
	36	3	17	2	16.5	43
	42	4	23	2.5	38.7	70
48	4	26	2.5	49.8	87	

Confirm class and type of geotextile with Geotech and Hydraulics CFT members.

DESIGN WILL NO LONGER SHOW NO PAY ESTIMATED QUANTITIES WHEN IT CAN BE FOUND ON THE DETAIL.

# Geotextile

TEMPLATES	DETAILS
157A – SEDIMENT TRAP	C157-50 – SILT FENCE
251A – RIPRAP RUNDOWN AT CULVERT INLET	C157-54 – CHECK DAM WITH ECP
252A – ROCKERY	C204-51 – SUBEXCAVATION
605A - UNDERDRAIN	C251-50 – PLACED RIPRAP AT CULVERTS
	C251-51 – PLACED RIPRAP BEWTEEN CUT & FILL
	C602-50 – 24" RUN DOWN AND PIPE ANCHOR ASSEMBLY
	C602-51 – 24" BURIED RUN DOWN AND PIPE ANCHOR ASSEMBLY

STANDARD DRAWINGS ARE NOT BEING ADDRESSED AT THIS TIME



# Communication

- Upcoming deadlines/schedules
- Major design changes that affect the estimate or schedule
- Scope changes

# EEBACS

**Project Information**  
(If modifying an existing project name or number, list both existing and modified data)

Division:	<input type="checkbox"/> CFLHD <input type="checkbox"/> EFLHD <input type="checkbox"/> WFLHD	Unit:	<input type="checkbox"/> Metric <input type="checkbox"/> USC
FP Version:	<input type="checkbox"/> FP14 <input type="checkbox"/> FP03	Density:	<input type="checkbox"/> Urban <input type="checkbox"/> Rural
Project Number:	<input type="text"/>	Terrain:	<input type="checkbox"/> Level <input type="checkbox"/> Rolling <input type="checkbox"/> Mountainous
Project Name:	<input type="text"/>	Partner Agencies:	<input type="text"/>
Project Description:	<input type="text"/>	Federal Land:	<input type="text"/>
State and County:	<input type="text"/>	Funding Sources:	<input type="text"/>

Project Description\*:

# EEBACS

**Design** | Account | Item | Event Log

Save & Close | Save | Delete | Cancel | Cancel & Close \* indicates a required field

**Schedule**

Schedule Type\*: Base

Schedule Letter\*: A

Construction Type\*: 40302 Mill + < 2.5-inches Asphalt Concrete Overlay

Schedule Description\*: Describes the type of work being performed on the project (i.e. Grading, Base, Pavement) (Grading, Drainage, aggregate base, asphalt paving, bridge replacement, and trail construction.)

Schedule Termin\*: Describes the beginning and ending location of the project (i.e. From Milepost 349.7 to 340)

CPM Days: 0

Line Item Starting Number\*: 100

Line Item Increment Number\*: 100

GIS Route(s): Add GIS route

Schedule Length: 0 miles

Lane Miles: 0

Bridge(s): Add Bridge

Schedule Length: 0 miles

Lane Miles: 0

Bridge(s):

**Bridge**

Bridge Identification

GIS Route

Bridge Construction Type

Bridge Size (area)

GIS Milepost Start

GIS Milepost End

Bridge Lat Begin

Bridge Long Begin

Bridge Lat End

Bridge Long End

Bridge Length\* FT

Add Bridge Remove Bridge

# EEBACS

**Quality Unit Price**

save and close close

**Quality Unit Price Analysis**

Pay Item Number: 30101-0000

Pay Item Description: AGGREGATE BASE

Pay Unit (U.S. Units): TON

Pay Item Type\*: QM

Unit Price: \$110.00

Incentive (%)\*:

Incentive Unit Price: \$

Unit Price Used\*:

Remarks: (maximum characters: 4000) 4000 remaining

save and close close

**Quality Unit Price**

save and close close

**Quality Unit Price Analysis**

Pay Item Number: 40101-0080

Pay Item Description: ASPHALT CONCRETE PAVEMENT, GYRATORY MIX, NO. 4 SIEVE NOMINAL MAXI

Pay Unit (U.S. Units): QM

Pay Item Type\*: QM

Unit Price: \$126.00

Incentive (%)\*:

Incentive Unit Price: \$

Unit Price Used\*:

Remarks: (maximum characters: 4000) 4000 remaining

save and close close

# EEBACS

Project Info **Design** Account Team Event Log

Estimate CPL Schedules Column Headers **Pay Items** Construction Estimates

Project Pay Items Add Master Pay Item Default BHUP Settings Advanced Search

**Search Filters:**

Keywords: roughness Show  selected  all

Pay Item Number: 40

Apply Search Clear

150 200 250 300 400 500 550 600 900 [all]

Items 1-3 of 3

Options	Pay Item # ▼	Pay Item Description (US Customary) ▼	Pay Item Type ▼	U.S. Pay Units ▼
 	40199-0002	INCENTIVE, ROUGHNESS	DI	LPSM
	40299-0002	INCENTIVE, ROUGHNESS	DI	LPSM
	40399-0002	INCENTIVE, ROUGHNESS	DI	LPSM

Items 1-3 of 3

# Open Roads Designer (ORD)

- Workspace Development
- Known Issues
- A/E Rollout
  - Timeline
  - Opportunities for pilot projects