

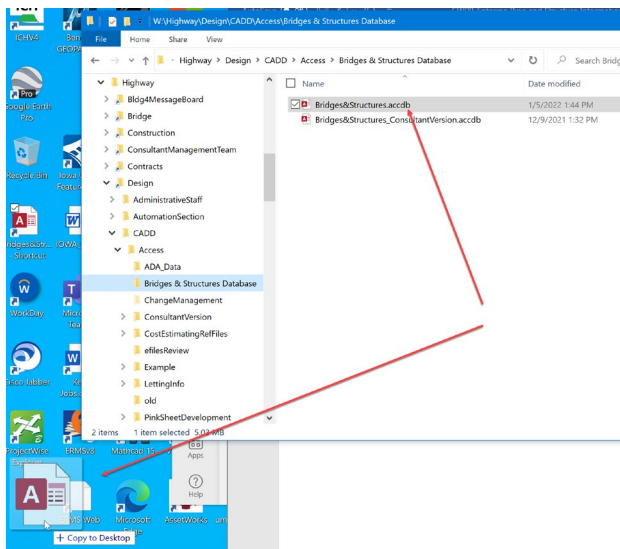
Entering Structure Information into Database

Once the cross sections are cut on each culvert and have been annotated as described in [CW06 How to Create Culvert TSL Sheet and Annotate Structures](#), then input the annotated information in the Bridges&Structures.accdb.

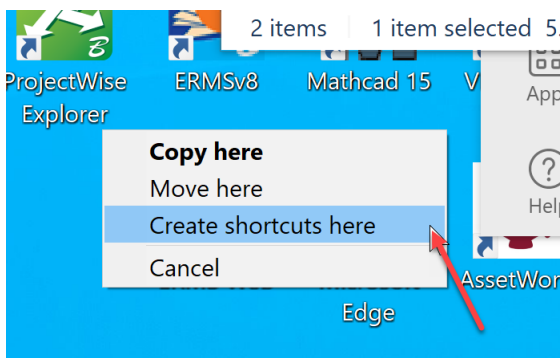
There are two ways this can be done. The first way is intended for internal Iowa DOT employees and the other way is for outside employees or consultant projects.

How to get started for internal Iowa DOT employees is covered first.

First place a short cut of the Bridges&Structures.accdb database on to the desktop. Open a Windows file explorer and browse to W:\Highway\Design\CADD\Access\Bridges & Structures Database. Select the [Bridges&Structures.accdb](#) and right click and drag to the desktop.



Then select Create shortcuts here.



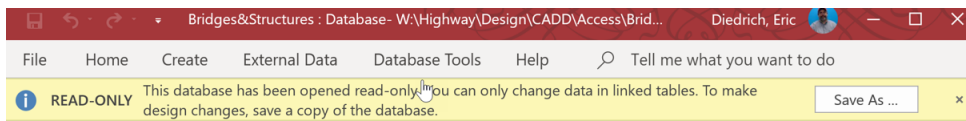
Note: By making a short cut, the system administrators can make changes to the database, and it will always open the latest version.

The second way to use the Bridges&Structures.accdb is intended for outside employees or consultant projects. A different consultant version of the database is located in ProjectWise at: pw:\NTPwint1.dot.int.lan:PWMain\Documents\Resources\ClientWorkspaces\IowaDOT\IowaDOTProduction\Organization-Civil\IowaDOT_Standards\Seed\Access\Bridges&Structures_ConsultantVersion.accdb.

This file should be copy to a local work directory then renamed to Bridges&Structures_CCRRRPPP.accdb. This is because Access does not work properly in ProjectWise.

Once the data entry is completed in this database, it should be placed in the project directory that it corresponds with.

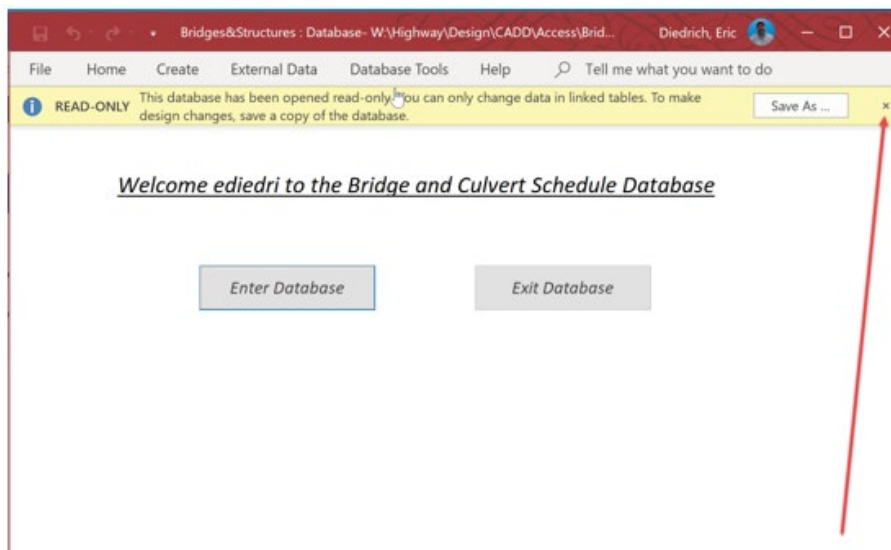
Now that the correct database for both internal and external users has been explained, open it and get started with data entry. The welcome screen appears as shown below.



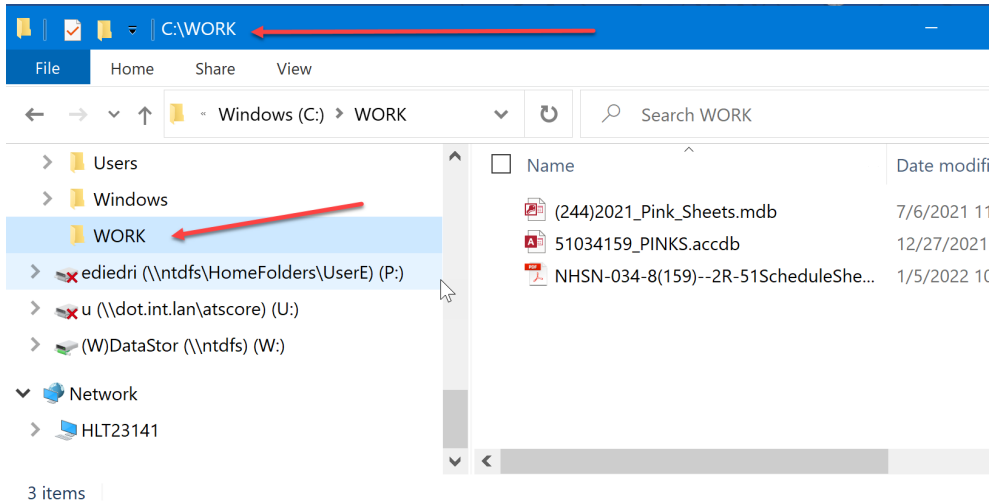
Welcome ediedri to the Bridge and Culvert Schedule Database



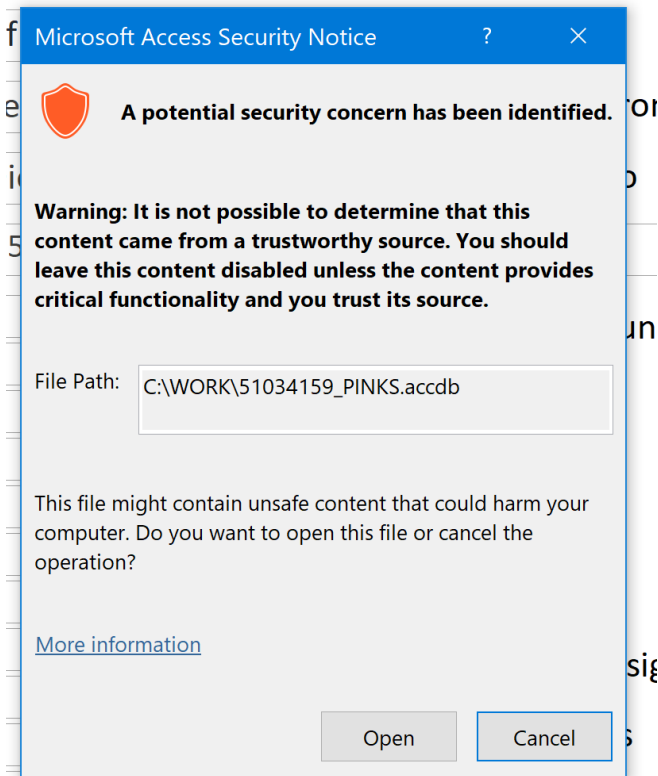
It will display a warning that it is READ-ONLY. Don't be concerned, this is normal. This is indicating that the database design can't be changed. However, the data entry will be stored in a table that is read by this database. Click on the X to close the warning.



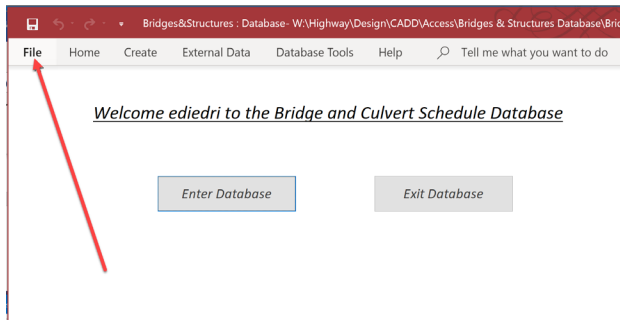
The next step is to make a working directory on the local C:\ drive. For this example, a folder named WORK was created.



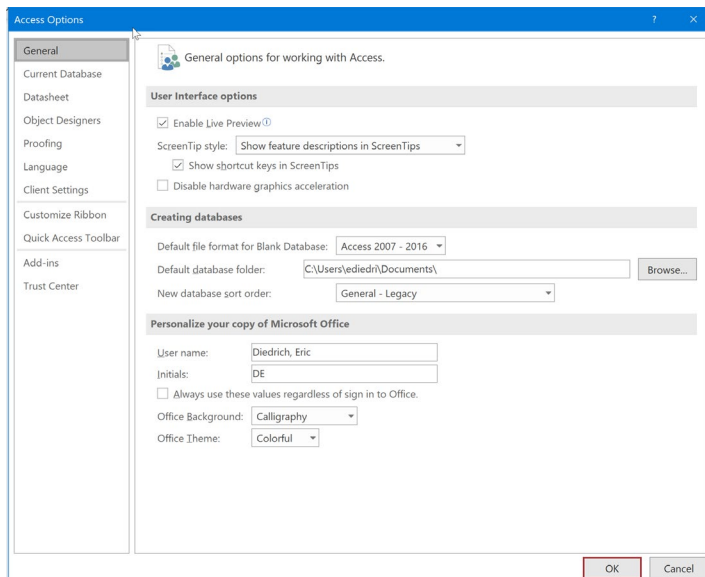
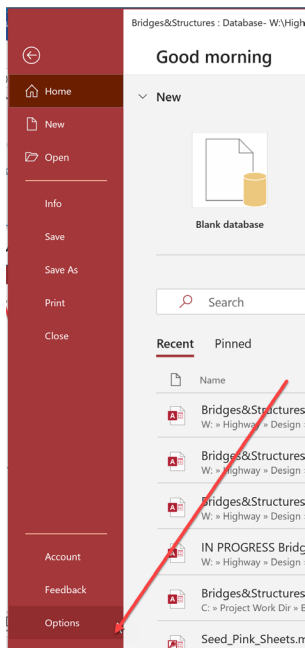
Next, change a few security settings in Access to avoid seeing the warning shown below when the survey information is imported.



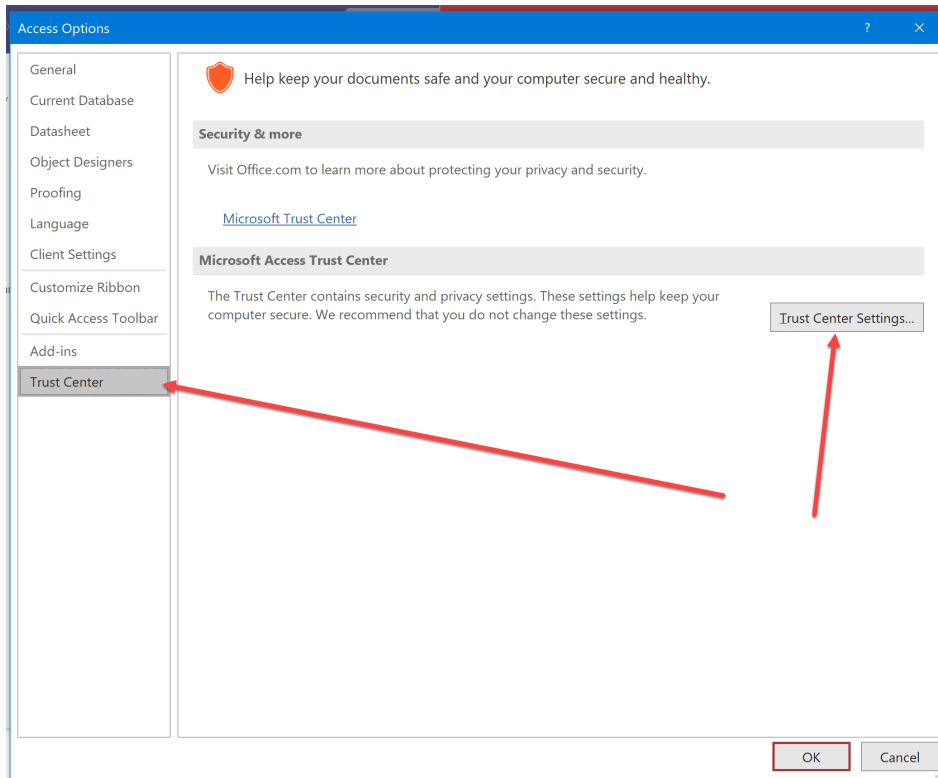
Click on the File tab at the top of the database.



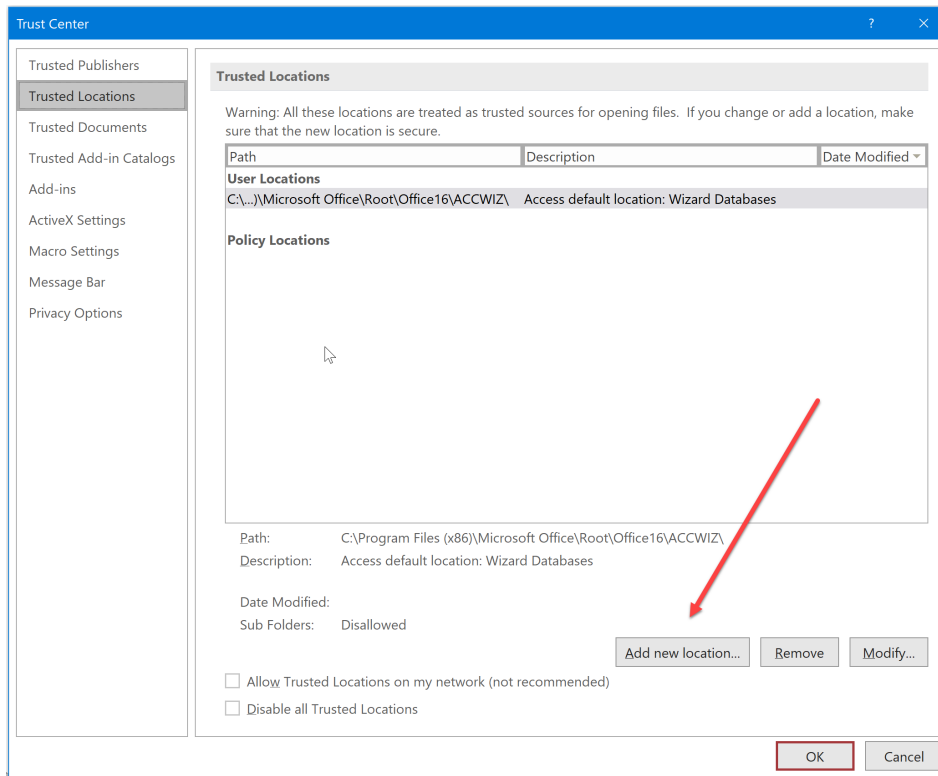
This will open the backstage to access Options. Click on Options to open the Access Options dialog box.



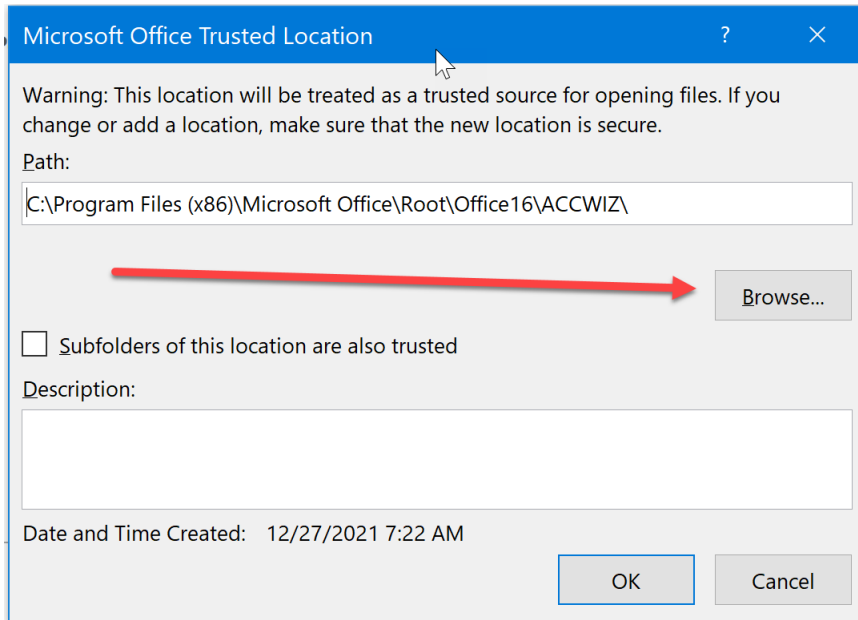
Next, click on the Trust Center option and then click on the Trust Center Settings button.



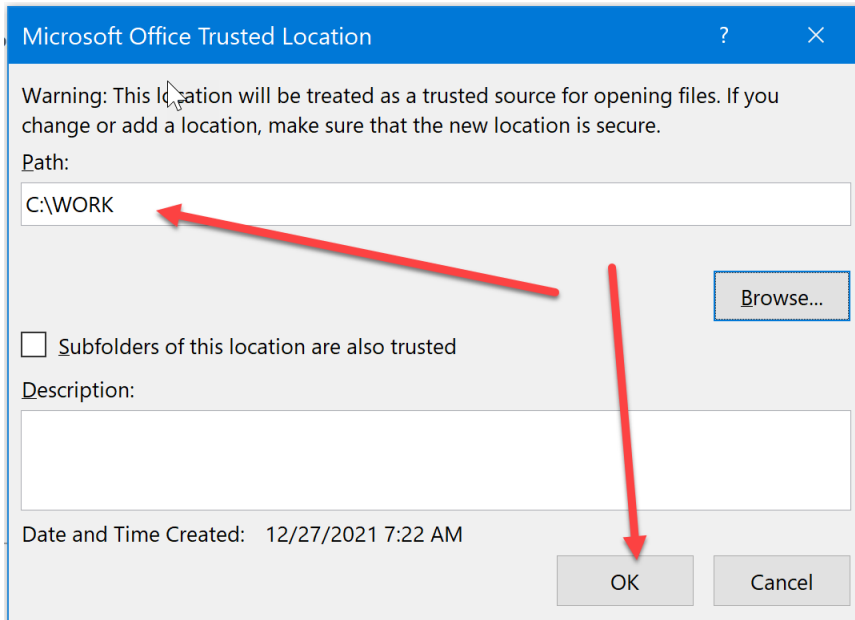
That will open the Trust Center dialog box. Click on the Add new location button.



This will open the Trusted Location dialog box. Click the Browse button to navigate to the temporary work directory created to place the survey information in.



For this example, select the WORK folder that was created.

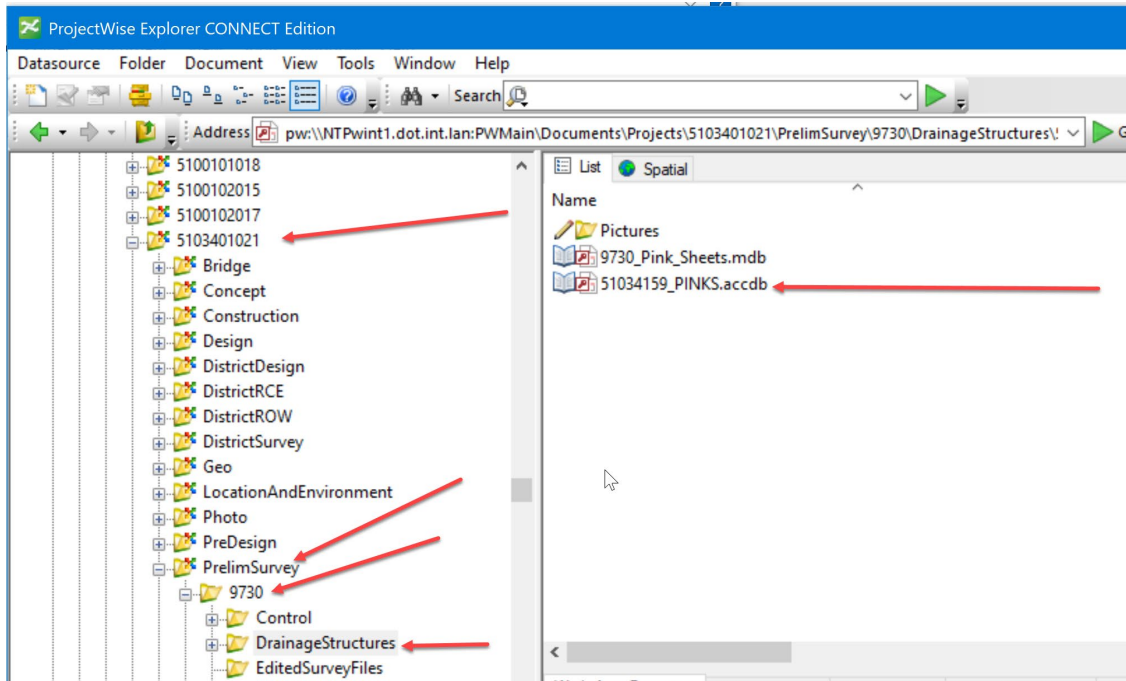


Then click OK.

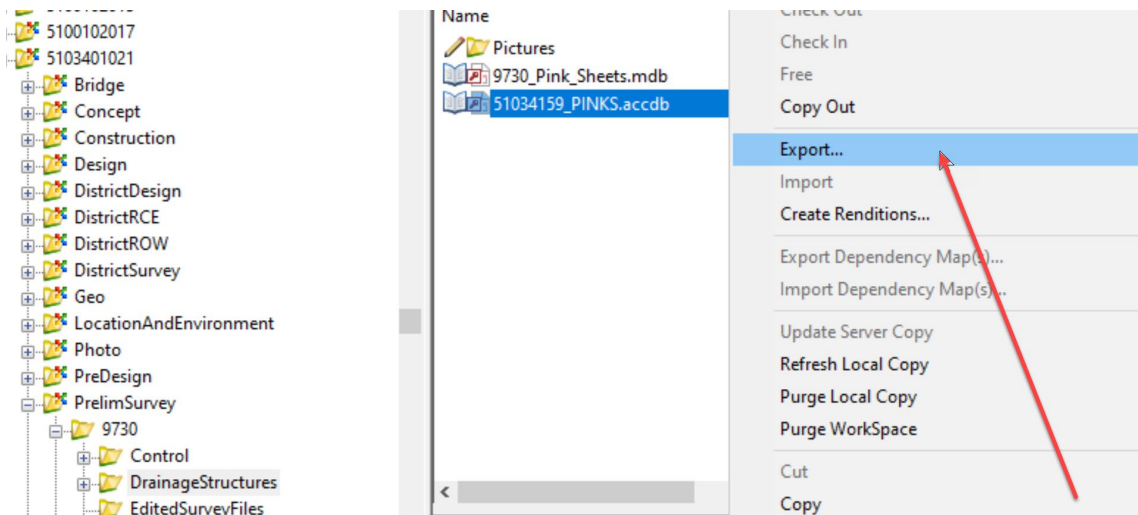
Note: If the same working directory is available and used for all projects, this will only need set once.

The next step is to check for the file to import the survey records for the project. The file is also a database that should be located in the project directory in the PrelimSurvey folder structure under the unique id number SAP folder in the DrainageStructures subfolder.

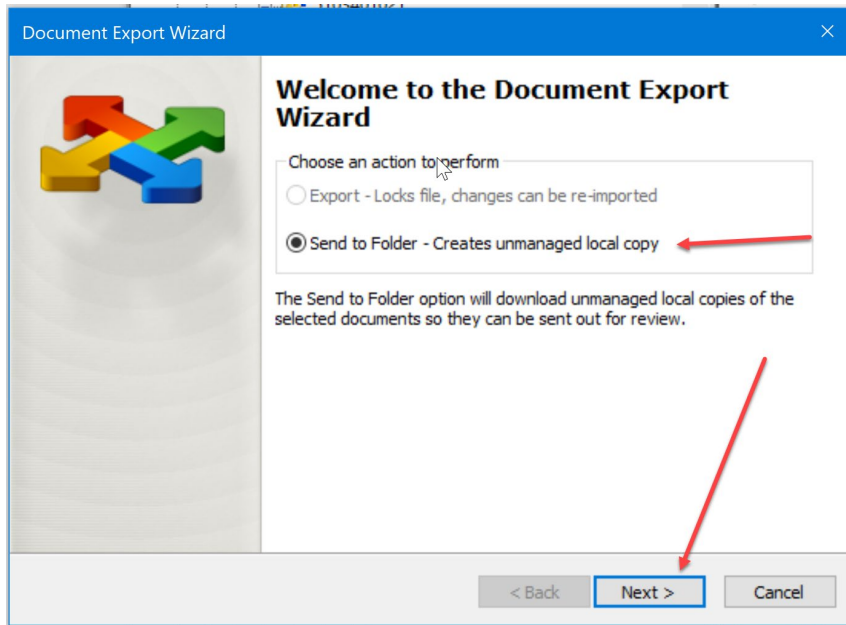
For example: PWMain\Documents\Projects\5103401021\PrelimSurvey\9730\DrainageStructures\
The file will be named CCRRRPPP_PINKS.accdb or for this example it will be 51034159_PINKS.accdb



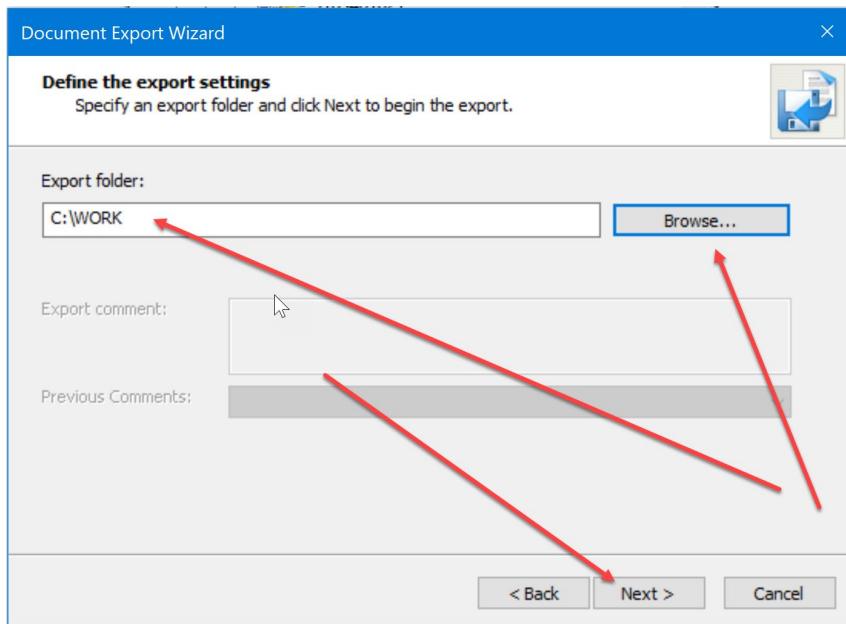
Once the Survey Records are located, export to a local work directory. Select the file, right click and select the Export option.



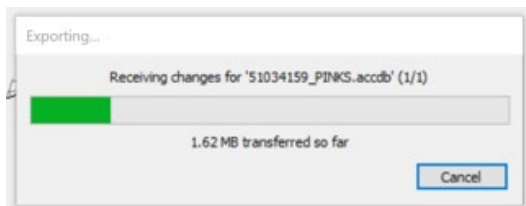
When the Document Export Wizard opens, select the Send to Folder with unmanaged local copy option. Then click the Next button.



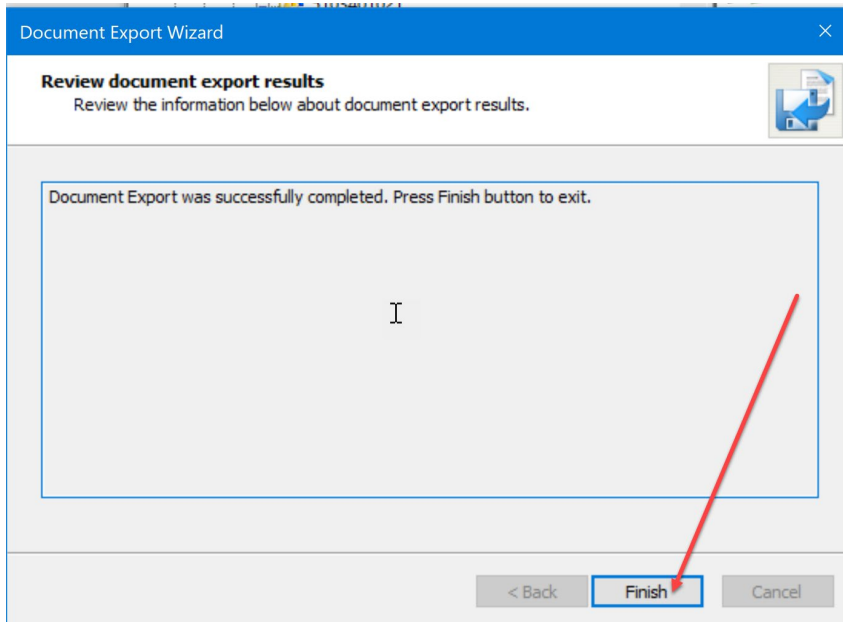
Browse to the local WORK folder created earlier. Then click the Next button.



A progress bar for exporting will display.

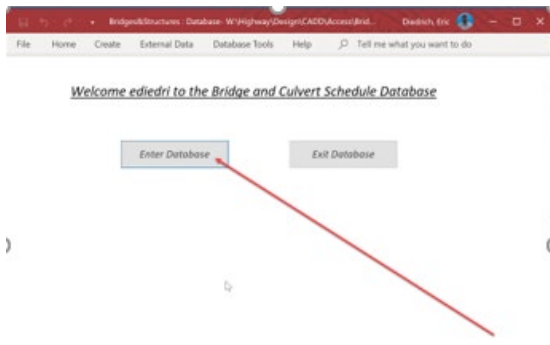


When it is finished, it will display a message indicating a successful export. Click on the Finish button.

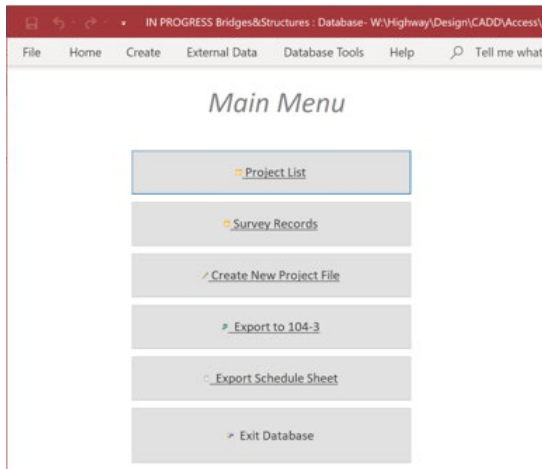


Now return to the Bridges&Structures.accdb database.

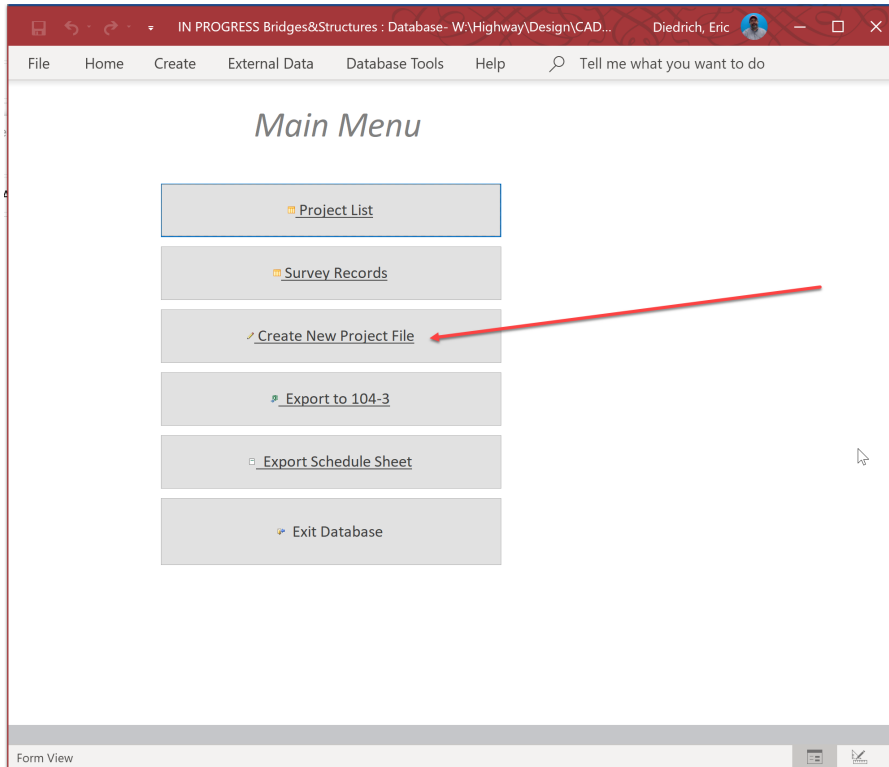
The next step is to Create New Project File. Click on the Enter Database button.



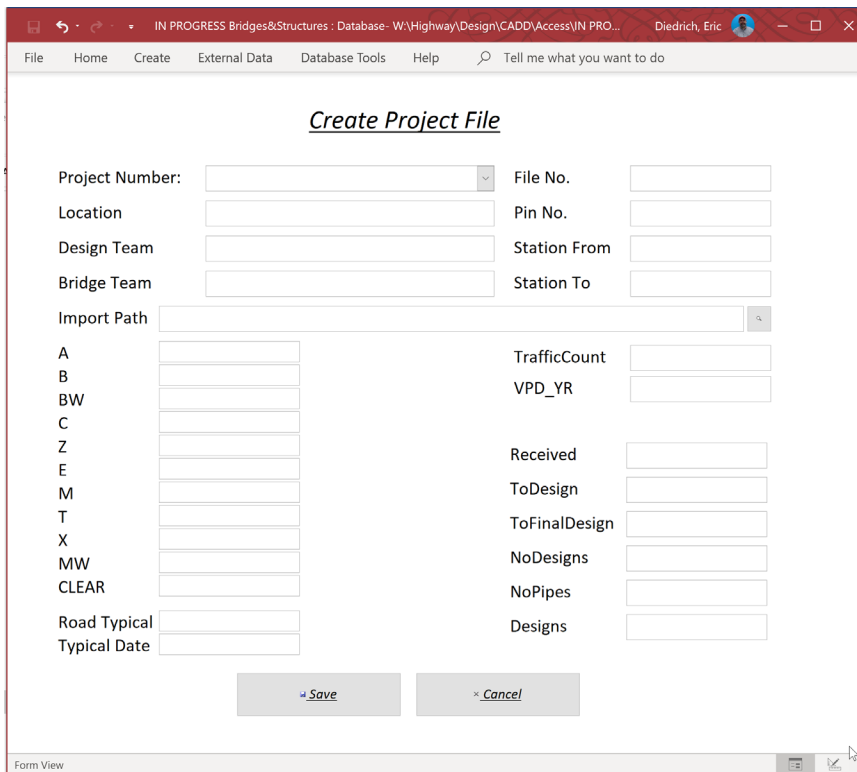
The Main Menu will display.



Next, click on the Create New Project File button.



The data entry form will display as shown below.



The first step to start a new project is to import the Survey Records into the new project. Click on the magnifying glass next to the Import Path field.

Create Project File

Project Number: File No.

Location Pin No.

Design Team Station From

Bridge Team Station To

Import Path

A	<input type="text"/>	TrafficCount	<input type="text"/>
B	<input type="text"/>	VPD_YR	<input type="text"/>
BW	<input type="text"/>		
C	<input type="text"/>	Received	<input type="text"/>
Z	<input type="text"/>	ToDesign	<input type="text"/>
E	<input type="text"/>	ToFinalDesign	<input type="text"/>
M	<input type="text"/>	NoDesigns	<input type="text"/>
T	<input type="text"/>	NoPipes	<input type="text"/>
X	<input type="text"/>	Designs	<input type="text"/>
MW	<input type="text"/>		
CLEAR	<input type="text"/>		
Road Typical	<input type="text"/>		
Typical Date	<input type="text"/>		

Form View

It will open a message to select the database. Click on the OK button.

Create Project File

Project Number: File No.

Location Pin No.

Design Team Station From

Bridge Team Station To

Import Path

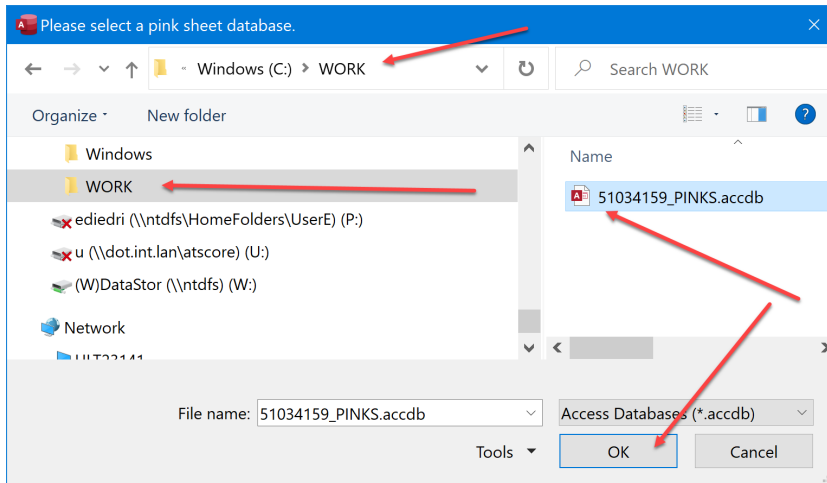
Microsoft Access

Please select the pink sheet database you would like to import all records from.

A	<input type="text"/>	ToFinalDesign	<input type="text"/>
B	<input type="text"/>	NoDesigns	<input type="text"/>
BW	<input type="text"/>	NoPipes	<input type="text"/>
C	<input type="text"/>	Designs	<input type="text"/>
Z	<input type="text"/>		
E	<input type="text"/>		
M	<input type="text"/>		
T	<input type="text"/>		
X	<input type="text"/>		
MW	<input type="text"/>		
CLEAR	<input type="text"/>		
Road Typical	<input type="text"/>		
Typical Date	<input type="text"/>		

Form View

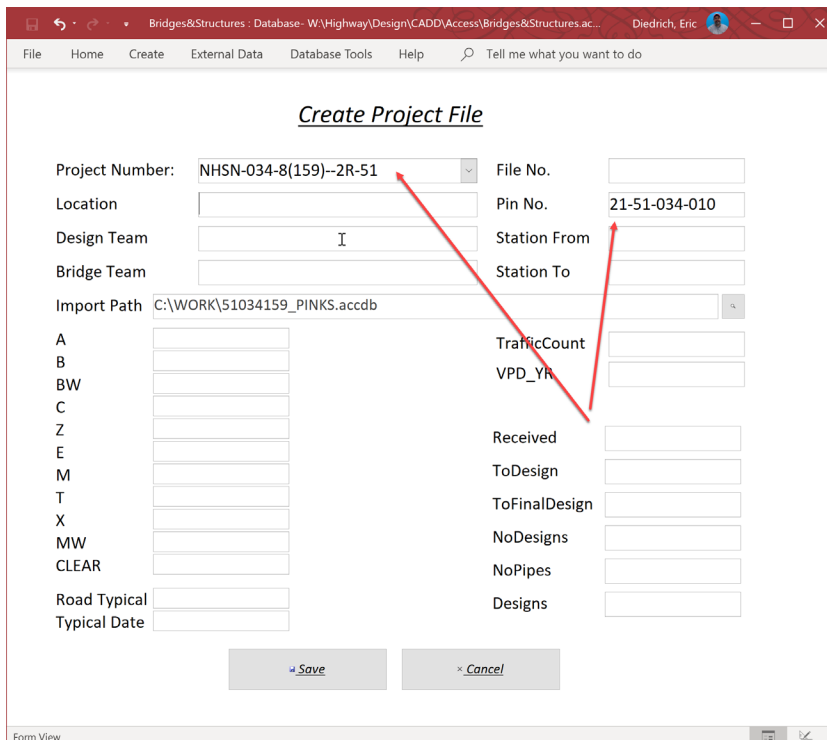
Next, browse to the location that was used to export the Survey Records to and select the CRRRRPPP_PINKS.sccdb file that corresponds with the project. For this example, it will be 51034159_PINKS.accdb in the C:\WORK folder.



Then click the OK button.

Next, set the project number.

Click on the pulldown in the Project Number field and find the project number from the list and select it. Otherwise, start typing the project number in the Project Number field and the number should autofill as it is typed. Select the correct number. For this example, the project number is NHSN-034-8(159)--2R-51. This will also autofill the PIN No. field once selected since these numbers are tied to each other. It should fill in as shown below.



Next, fill out the Location field with the project description. For this example, it will be 0.3 mi E of Bus 34 Interchange to 0.4 mi E of Umber Ave (5 Locations).

The screenshot shows the 'Create Project File' form in a software application. The form has a title bar with the text 'Bridges&Structures - Database- W:\Highway\Design\CADD\Access\Bridges&Structures.ac...' and a user profile for 'Diedrich, Eric'. The menu bar includes 'File', 'Home', 'Create', 'External Data', 'Database Tools', and 'Help'. The form itself is titled 'Create Project File' and contains several input fields. A red arrow points to the 'Location' field, which contains the text '0.3 mi E of Bus 34 Interchange to 0.4 n'. Other fields include 'Project Number' (NHSN-034-8(159)--2R-51), 'File No.', 'Pin No.' (21-51-034-010), 'Design Team', 'Bridge Team', 'Import Path' (C:\WORK\51034159_PINKS.accdb), and a list of checkboxes for categories A through CLEAR. On the right side, there are fields for 'TrafficCount', 'VPD_YR', 'Received', 'ToDesign', 'ToFinalDesign', 'NoDesigns', 'NoPipes', and 'Designs'. At the bottom, there are 'Save' and 'Cancel' buttons.

Next, fill out the Design Team. For this example, it will be Holst\Ackerman.

This screenshot shows the same 'Create Project File' form, but now the 'Design Team' field is filled with 'Holst\Ackerman'. A red arrow points to this field. The 'Location' field remains '0.3 mi E of Bus 34 Interchange to 0.4 n'. The 'Pin No.' is '21-51-034-010'. The 'Import Path' is 'C:\WORK\51034159_PINKS.accdb'. The 'Save' and 'Cancel' buttons are visible at the bottom.

Next, add the Bridge Team. For this example, it will be Claman\Diedrich.

Create Project File

Project Number: NHSN-034-8(159)--2R-51 File No.

Location 0.3 mi E of Bus 34 Interchange to 0.4 n Pin No. 21-51-034-010

Design Team Holst\Ackerman Station From

Bridge Team Claman\Diedrich Station To

Import Path C:\WORK\51034159_PINKS.accdb

A TrafficCount

B VPD_YR

BW

C

Z Received

E ToDesign

M ToFinalDesign

T NoDesigns

X NoPipes

MW Designs

CLEAR

Road Typical

Typical Date

Next, fill out the File No. and Station From and Station To.

Note: If the File No. and Station From and Station To are not known at the time of the project creation, leave it blank and fill it in later. Also, creation of the project as a new project is only need once. It will be accessed from the list button from then on.

Click the save button. The New Project will open at the first record. If the Survey Records (CCRRRPPP_PINKS.sccdb) was imported, it will open at the first record that was imported. For this example, the imported Survey Records (CCRRRPPP_PINKS.sccdb) contained two structures so it will show record 1 of 2 as shown at the bottom left.

Headwater:

Standard

DR

A

B

C

D

E

F

Record: 1 of 2

If survey records were not imported, it will show 1 of 1 records. Since the survey records were imported, the Survey Station, the Drainage Area, Terrain Type and Description of the existing structure are shown.

BRIDGE AND CULVERT SCHEDULE

FILE NO: _____ DESIGNER IN CHARGE: A C M
ROAD: Holst\Ackerman B Z T
DRAINAGE: Claman\Diedrich BW E X

PROJECT NO: NHSN-034-8(159)-2R-51 PIN NO: 21-51-034-010 TO: _____ TRAFFIC COUNT: _____ VPD YR: _____ SEE ROAD DESIGN TYPICAL NO.
LOCATION: 0.3 mi E of Bus 34 Interchange to 0.4 m TO: _____

Present Structure

Design No.: _____ Drainage Area: 19.15 acres TerrainType: Rolling Disposition of Present Structure: _____
Survey Station: 414+91.90 Description: 54"x289'
Remove Apron: _____ Remove Headwall To Face Parapet: _____

PROPOSED STRUCTURE

Station: _____ Bedding Class: _____ DIKE
Offset: _____ Proposed Camber DR102: _____ Control: _____
Kind: _____ Design Cover: _____ Left/Right: _____
Size: _____ Pipe Class: _____ Location Station: _____
Design No.: _____ Length New Construction: _____ Top Elevation: _____
Design Q: _____ Proposed Apron In: _____ Type: _____
Headwater: _____ Proposed Apron Out: _____
Standard: _____ Connection Type: _____
DR: _____ Flume Description: _____
A: _____ Grade: _____ Apron Guard (DR213) _____
B: _____ Flowline Left: _____ Diaphragm (DR501) _____
C: _____ Flowline Right: _____ Tee Section (DR142) _____
D: _____ Flowline Other: _____ Reducer _____
E: _____ Flowline Other: _____
DR205 Inlet Apron Top: _____

Record: 1 of 2 | No Filter | Search | Form View

This is the form that will need to be filled out for each structure in the new drainage design. If the existing structure is being replaced with a new one, fill out the proposed structure information on the record of the existing structure that will be replaced. If the existing structure will be left in place and used as constructed in the new drainage design, leave the proposed structure portion of this record blank. For this example, the existing structure (54" pipe) is being replaced with a new 54" pipe and the Proposed Structure information needs filled out on this record.

The first thing to fill out is the Design number of the existing structure if it is an RCB. This information can be acquired from the as-builts and entered here.

Present Structure

Design No.: _____ Drainage Area: 19.15 acres TerrainType: _____
Survey Station: 414+91.90 Description: 54"x289'
Remove Apron: Both Remove Headwall To Face Parapet: _____

PROPOSED STRUCTURE

This example is a pipe, so there is not a design number. Leave it blank.

The next thing to do is decide what will be done with the existing structure. If the structure is a pipe, click on the pulldown on the Remove Apron field. This will provide 3 options, Left, Right and Both. If the pipe is being extended, select the end that is being extended. However, if the pipe is being replaced select Both.

The screenshot shows the 'Bridges & Structures' software interface. The title bar indicates the file path: 'Bridges&Structures : Database- W:\Highway\Design\CADD\Access\Brid...'. The menu bar includes 'File', 'Home', 'Create', 'External Data', 'Database Tools', and 'Help'. The main window displays a 'BRIDGE AND CULVERT SCHEDULE' with the following details:

PROJECT NO	NHSN-034-8(159)--2R-51	PIN NO	21-51-034-010	DESIGNER	ROAD H
LOCATION	0.3 mi E of Bus 34 Interchange to 0.4 m		TO	DRAINAGE	C
				TRAFFIC COUN	

Below the schedule, the 'Present Structure' section contains the following fields:

- Design No. (blank)
- Drainage Area: 19.15 acres
- TerrainType: (blank)
- Survey Station: 414+91.90
- Description: 54"x289'
- Remove Apron: (dropdown menu)
- Remove Headwall To Face Parapet: (checkbox)

The 'PROPOSED STRUCTURE' section contains the following fields:

- Station: (blank)
- Bedding Class: (blank)
- Offset: (blank)
- Proposed Camber DR102: (blank)
- Kind: (dropdown menu)
- Design Cover: (blank)
- Size: (dropdown menu)
- Pipe Class: (blank)
- Design No: (blank)
- Length New Construction: (blank)
- Design Q: (blank)
- Proposed Apron In: (blank)

A red arrow points to the 'Remove Apron' dropdown menu, which is open and showing options: Left, Right, and Both.

If the structure is an RCB, click on the pulldown on the Remove Headwall field. This will provide 3 options, Left, Right and Both. If the RCB is being extended, select the end that is being extended. However, if the RCB is being replaced select Both.

The screenshot shows the 'Bridges & Structures' software interface. The title bar indicates the file path: 'Bridges & Structures : Database- W:\Highway\Design\CADD\Access\Bridges & Structures Data...'. The menu bar includes 'File', 'Home', 'Create', 'External Data', 'Database Tools', and 'Help'. The main window displays a 'BRIDGE AND CULVERT SCHEDULE' with the following details:

PROJECT NO	NHSN-034-8(159)--2R-51	PIN NO	21-51-034-010	DESIGNER IN CHARGE	ROAD	Holst/Ackerman
LOCATION	0.3 mi E of Bus 34 Interchange to 0.4 m		TO	DRAINAGE	Claman/Diedrich	
				TRAFFIC COUNT		VPD YR

Below the schedule, the 'Present Structure' section contains the following fields:

- Design No. (blank)
- Drainage Area: 19.15 acres
- TerrainType: Rolling
- Survey Station: 414+91.90
- Description: 54"x289'
- Remove Apron: (dropdown menu)
- Remove Headwall To Face Parapet: (checkbox)

The 'PROPOSED STRUCTURE' section contains the following fields:

- Station: (blank)
- Bedding Class: (blank)
- Offset: (blank)
- Proposed Camber DR102: (blank)
- Kind: (dropdown menu)
- Design Cover: (blank)
- Size: (dropdown menu)
- Pipe Class: (blank)
- Design No: (blank)
- Length New Construction: (blank)
- Control: (blank)
- Left/Right: (blank)
- Location Station: (blank)
- Top Elevation: (blank)

A red arrow points to the 'Remove Headwall To Face Parapet' dropdown menu, which is open and showing options: Left, Right, and Both.

For this example, it is a 54-inch pipe and is being replaced with a new structure so select Both.

BRIDGE AND CULVERT SCHEDULE FILE NO. DESIGNER IN CHARGE

PROJECT NO. NHSN-034-8(159)--2R-51 PIN NO. 21-51-034-010 ROAD Holst/Ackerr
 DRAINAGE Claman/Diec

LOCATION 0.3 mi E of Bus 34 Interchange to 0.4 m TO TRAFFIC COUNT

Present Structure

Design No. Drainage Area acres TerrainType:

Survey Station Description

Remove Apron Remove Headwall To Face Parapet

PROPOSED STRUCTURE

Station: Bedding Class:

Offset: Proposed Camber DR102:

Kind: Design Cover:

Size: Pipe Class:

Design No: Length New Construction:

Design Q: Proposed Apron In:

Next, fill out the Station of the Proposed Structure. This is the station value that is the intersection point at the centerline of the Proposed Structure and the centerline of the design alignment. For this example, it will be 414+29.00.

Note: When entering this station value, do not place the plus+ just the numeric value and then click in the next field. The database will put in the plus+ as shown below.

Present Structure

Design No. Drainage Area acres TerrainType: Rollir

Survey Station Description

Remove Apron Remove Headwall To Face Parapet

PROPOSED STRUCTURE

Station: Bedding Class:

Offset: Proposed Camber DR102:

Kind: Design Cover:

Size: Pipe Class:

Design No: Length New Construction:

Design Q: Proposed Apron In:

Headwater: Proposed Apron Out:

Standard Connection Type:

DR Flume Description:

A Grade:

R Flowline Left:

Present Structure

Design No. Drainage Area acres TerrainType: Roll

Survey Station Description

Remove Apron Remove Headwall To Face Parapet

PROPOSED STRUCTURE

Station: Bedding Class:

Offset: Proposed Camber DR102:

Kind: Design Cover:

Size: Pipe Class:

Design No: Length New Construction:

Design Q: Proposed Apron In:

Headwater: Proposed Apron Out:

Standard Connection Type:

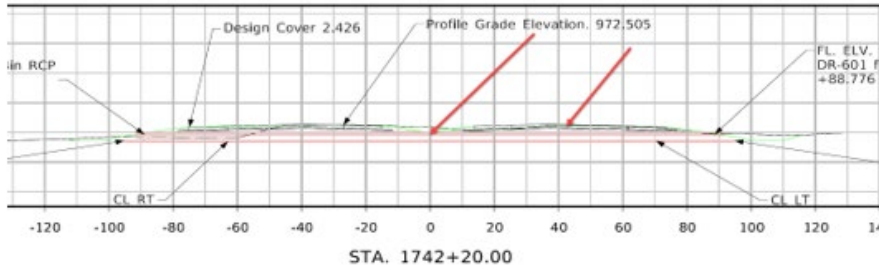
DR Flume Description:

A Grade:

B Flowline Left:

C Flowline Right:

The next field is Offset field. This is used if the structure is on a divided highway. This will be the distance from the mainline centerline to the Base Line as described in the standards.



If designing a two-lane highway like in this example, leave this blank.

The next field is the Kind of structure. This refers to what kind of structure is the proposed structure.

Present Structure

Design No. Drainage Area acres TerrainType

Survey Station Description

Remove Apron Remove Headwall To Face Parapet

PROPOSED STRUCTURE

Station: Bedding Class:

Offset: Proposed Camber DR102:

Kind: Design Cover:

Size: Pipe Class:

Design No.: Length New Construction:

Design Q: Proposed Apron In:

Headwater: Proposed Apron Out:

Standard Connection Type:

DR Flume Description:

A Grade:

~ Flowline Left:

For this example, select RCP.

Next, select the size.

Present Structure

Design No. Drainage Area acres Terra

Survey Station Description

Remove Apron Remove Headwall To Face Parapet

PROPOSED STRUCTURE

Station: Bedding Class:

Offset: Proposed Camber DR102:

Kind: Design Cover:

Size: Pipe Class:

Design Q: Length New Construction:

Headwater: Proposed Apron In:

Standard Proposed Apron Out:

DR Connection Type:

A Flume Description:

B Grade:

C Flowline Left:

D Flowline Right:

E Flowline Other:

~ Flowline Other:

Record: Filter:

Proposed Size:

For this example, it will be 54"

Present Structure

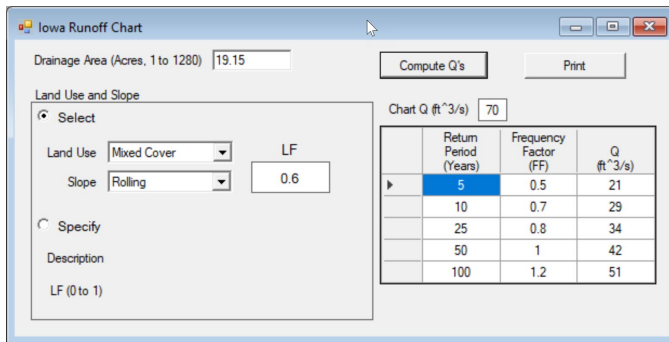
Design No. Drainage Area acres TerrainType: Rollin
 Survey Station Description
 Remove Apron Remove Headwall To Face Parapet

PROPOSED STRUCTURE

Station: Bedding Class:
 Offset: Proposed Camber DR102: Control
 Kind: Design Cover: Left/Rig
 Size: Pipe Class: Location
 Design Q: Length New Construction: Top Elev
 Headwater: Proposed Apron In: Type
 Standard Connection Type:
 DR Flume Description:
 A Grade: Apron G
 B Flowline Left: Diaphra
 C Flowline Right: Tee Sect
 D Flowline Other Reducer
 E Flowline Other



The Next field is the Design Q. Obtain the value from the ICH program that is used to determine the size of the proposed structure. This comes from the Iowa Runoff Chart.



For this example, it will have a Design Q of 42 because it is designed for the 50-year flood event.

Present Structure

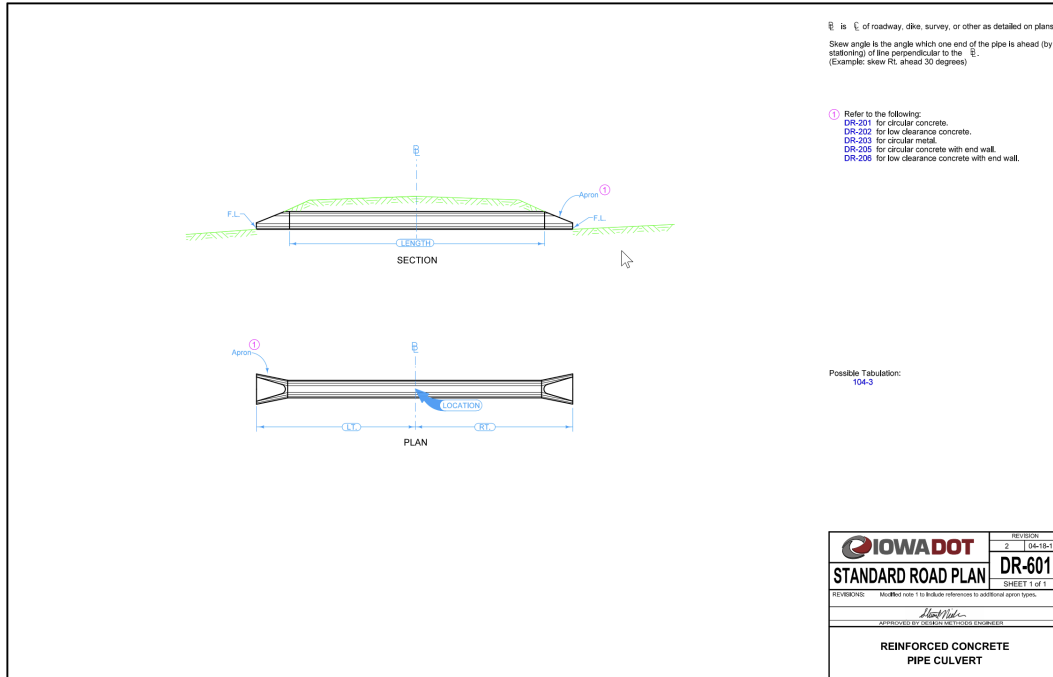
Design No. Drainage Area acres TerrainType: Rolling
 Survey Station Description
 Remove Apron Remove Headwall To Face Parapet

PROPOSED STRUCTURE

Station: Bedding Class:
 Offset: Proposed Camber DR102: Control
 Kind: Design Cover: Left/Right
 Size: Pipe Class: Location S
 Design Q: Length New Construction: Top Elevat
 Headwater: Proposed Apron In: Type
 Standard Connection Type:
 DR Flume Description:
 A Grade: Apron Gua
 B Flowline Left: Diaphragm
 C Flowline Right: Tee Section
 D Flowline Other

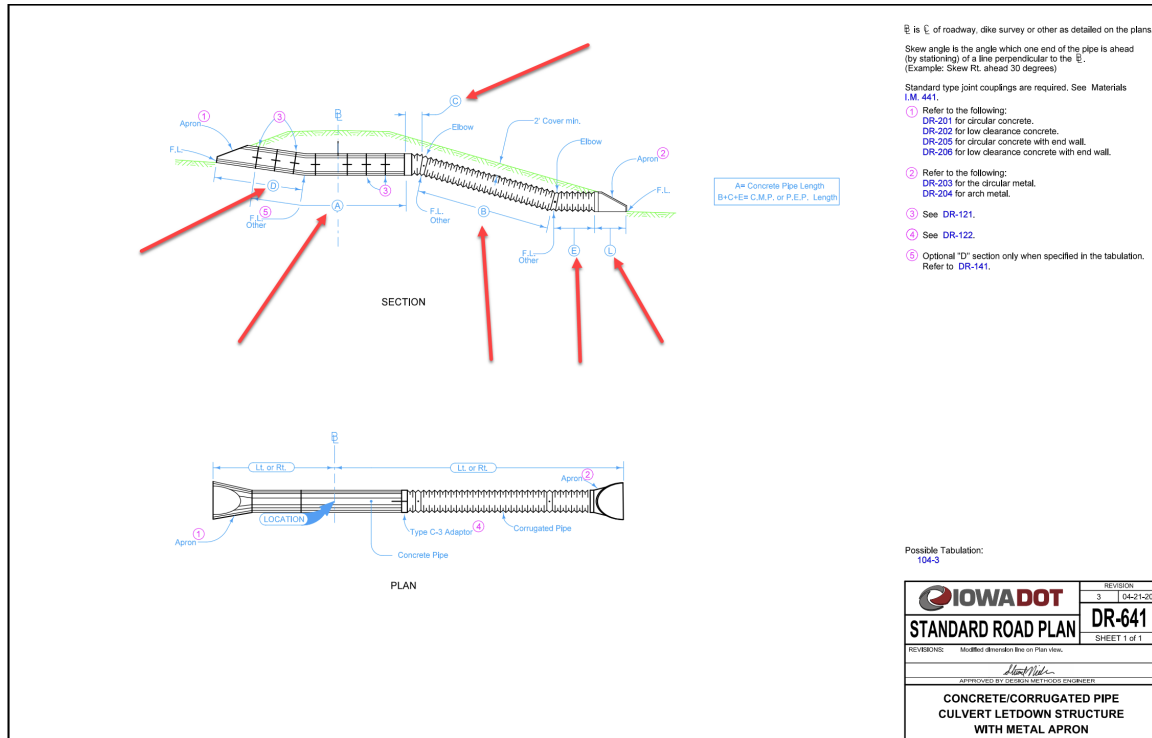
The Next field is the Headwater. This will need to be calculated for the larger structures. However, the example is small enough it is left blank.

The next field is the design Standard of the proposed structure. Select the correct Standard from the Proposed Structure field by clicking on the pulldown in the DR field. For the example it will be a [DR-601](#).



Note: For more information on the Iowa Department of Transportation drainage standards see the web page at this link. https://iowadot.gov/design/stdplne_dr

Depending on the DR Standard that is selected the appropriate information fields will become active. For example, assume the standard used is [DR-641](#)



The information fields A,B,C,D,E and L are now active and the corresponding information will be filled in.

Standard	Connection Type:	
DR	DR-641	Flume Description:
A		Grade:
B		Flowline Left:
C		Flowline Right:
D		Flowline Other
E		Flowline Other
F		DR205 Inlet Apron Top
G1		Total Length Left
G2		Total Length Right
L		Trenchless Total
M		Extension Left
R		Extension Right
X		Skew Ahead Left
Elbow 1		Skew Ahead Right
Elbow 2		
Standard Dr		

Record: 1 of 2 | No Filter | Search

Form View

Note: When entering a [DR-641](#) use two records in the database. One for the concrete or RCP portion of the structure and one for the CMP or plastic letdown section of the structure. Enter RCP portion on the first record with all special dimensions. Then just the letdown dimensions on the second record. This will allow the structure to be tabulated correctly.

For this design example, use a [DR-601](#).

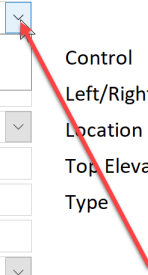
Next, select the Bedding Class:

Survey Station: Description:

Remove Apron: Remove Headwall To Face Parapet:

PROPOSED STRUCTURE

Station:	<input type="text" value="414+29.00"/>	Bedding Class:	<input type="text" value="B"/>	Control	<input type="text"/>
Offset:	<input type="text"/>	Proposed Camber DR102:	<input type="text" value="B"/>	Left/Right	<input type="text"/>
Kind:	<input type="text" value="RCP"/>	Design Cover:	<input type="text" value="C"/>	Location Station	<input type="text"/>
Size:	<input type="text" value="54"/>	Pipe Class:	<input type="text"/>	Top Elevation	<input type="text"/>
Design No.:	<input type="text"/>	Length New Construction:	<input type="text"/>	Type	<input type="text"/>
Design Q:	<input type="text" value="42"/>	Proposed Apron In:	<input type="text"/>		
Headwater:	<input type="text"/>	Proposed Apron Out:	<input type="text"/>		
Standard	<input type="text"/>	Connection Type:	<input type="text"/>		



For pipes it will usually be Class C. However, refer to the [DR-101](#) to verify.

Next, enter the Design Cover for the pipe design. This is the distance from the top of the pipe to the shoulder of the roadway. Refer to the [DR-102](#) to verify. For this example, it will be 2.42

Present Structure

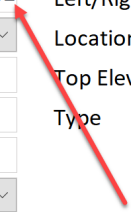
Design No.: Drainage Area: acres TerrainType:

Survey Station: Description:

Remove Apron: Remove Headwall To Face Parapet:

PROPOSED STRUCTURE

Station:	<input type="text" value="414+29.00"/>	Bedding Class:	<input type="text" value="C"/>	Control	<input type="text"/>
Offset:	<input type="text"/>	Proposed Camber DR102:	<input type="text"/>	Left/Right	<input type="text"/>
Kind:	<input type="text" value="RCP"/>	Design Cover:	<input type="text" value="2.42"/>	Location Station	<input type="text"/>
Size:	<input type="text" value="54"/>	Pipe Class:	<input type="text"/>	Top Elevation	<input type="text"/>
Design No.:	<input type="text"/>	Length New Construction:	<input type="text"/>	Type	<input type="text"/>
Design Q:	<input type="text" value="42"/>	Proposed Apron In:	<input type="text"/>		
Headwater:	<input type="text"/>	Proposed Apron Out:	<input type="text"/>		
Standard	<input type="text"/>	Connection Type:	<input type="text"/>		
DR	<input type="text" value="DR-601"/>	Flume Description:	<input type="text"/>		



Next, decide what class of pipe is used for this design. This is determined by the design cover and Bedding Class. Refer to the [DR-104](#) to verify. Use 2000 for this example.

Present Structure

Design No. Drainage Area acres TerrainType:

Survey Station Description

Remove Apron Remove Headwall To Face Parapet

PROPOSED STRUCTURE

Station: Bedding Class:

Offset:

Kind: Design Cover: Control

Size: Pipe Class: Left/Right

Design No: Length New Construction: Location Station

Design Q: Proposed Apron In: Top Elevation

Headwater: Proposed Apron Out: Type

Standard

DR Connection Type:

A

B

C

D

Flume Description:

Grade:

Flowline Left: Apron Guard (DR21)

Flowline Right: Diaphragm (DR501)

Flowline Other: Tee Section (DR142)

Next, enter the Length New Construction value. This is the total length from connection point of inlet apron to connection point of outlet apron. For the example it will be 290'.

The next two fields are Proposed Apron In and Proposed Apron Out. This is used to determine how many aprons will be needed to construct the new pipe. So, for the example place a (1) in each field so that there are two 54" pipe aprons on the 104-3 tab sheet. If the design was to only extend the pipe, place a (1) in the field of the end of the pipe that was being extended, Inlet or outlet.

PROPOSED STRUCTURE

Station: Bedding Class:

Offset:

Kind: Design Cover: Control

Size: Pipe Class: Left/Right

Design No: Length New Construction: Location Station

Design Q: Proposed Apron In: Top Elevation

Headwater: Proposed Apron Out: Type

Standard

DR Connection Type:

A

B

C

D

E

F Apron Guard (DR213)

G1 Diaphragm (DR501)

G2 Tee Section (DR142)

Flume Description:

Grade:

Flowline Left:

Flowline Right:

Flowline Other:

Flowline Other:

DR205 Inlet Apron Top:

Total Length Left:

Total Length Right:

Remarks:

The next field, Connection Type, is for indicating if the design requires a connection type, either a [DR-122](#) or [DR-141](#). Select the correct standard and the additional field will appear for the corresponding information for that standard. This will not be used for this design.

The next field is if the design uses a flume. Enter the size and type of flume in this field. This will not be used for this design.

The next field is for the Grade. This is going to be the Profile Grade Elevation that was determined while designing the structure and annotated on the cross section. For this example, it will be 972.50.

Note: The cross section is a great source to use to fill out the following data.

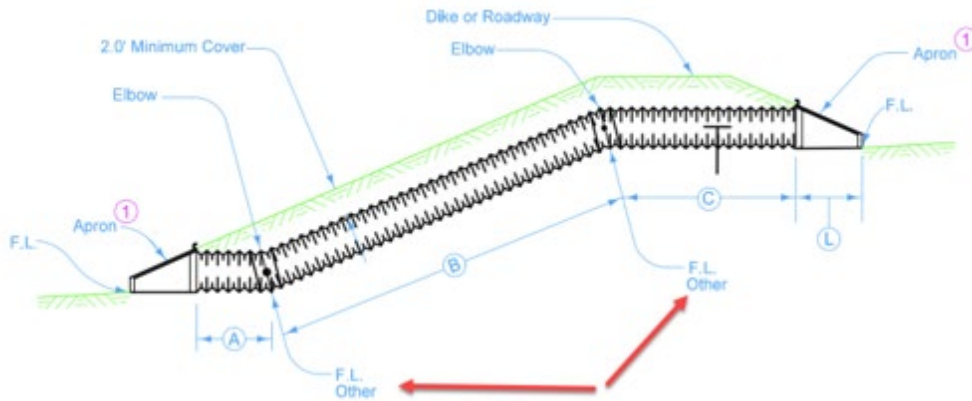
Station:	414+29.00	Bedding Class:	C	
Offset:		Proposed Camber DR102:		Control
Kind:	RCP	Design Cover:	2.42	Left/Right
Size:	54	Pipe Class:	2000	Location Station
Design No:		Length New Construction:	290	Top Elevation
Design Q:	42	Proposed Apron In:	1	Type
Headwater:		Proposed Apron Out:	1	
Standard		Connection Type:		
DR	DR-601	Flume Description:		
A		Grade:	972.50	Apron Guard (DR213)
B		Flowline Left:		Diaphragm (DR501)
C		Flowline Right:		Tee Section (DR142)
D		Flowline Other		Reducer
E		Flowline Other		
F		DR205 Inlet Apron Top		Remarks:
G1		Total Length Left		
G2		Total Length Right		
L		Trenchless Total	0	
..		Extension Left		

The next 2 fields will be Flowline Left and Flowline Right. This is the elevation of the flowline at the end of the pipe apron.

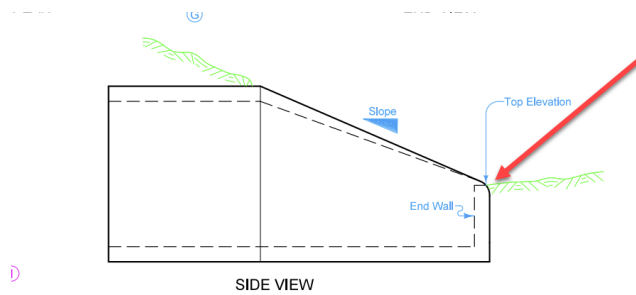
Note: The information was determined during the design process and annotated on the cross section for the next several fields. The cross section is a great source to use to fill out the following data.

PROPOSED STRUCTURE				
Station:	414+29.00	Bedding Class:	C	
Offset:		Proposed Camber DR102:		Control
Kind:	RCP	Design Cover:	2.42	Left/Right
Size:	54	Pipe Class:	2000	Location Station
Design No:		Length New Construction:	290	Top Elevation
Design Q:	42	Proposed Apron In:	1	Type
Headwater:		Proposed Apron Out:	1	
Standard		Connection Type:		
DR	DR-601	Flume Description:		
A		Grade:	972.50	Apron Guard (DR213)
B		Flowline Left:	971.69	Diaphragm (DR501)
C		Flowline Right:	969.95	Tee Section (DR142)
D		Flowline Other		Reducer
E		Flowline Other		
F		DR205 Inlet Apron Top		Remarks:
G1		Total Length Left		

The next fields are used if the standard requires other flowline elevations to be reported, for example a [DR-632](#).



The next field, DR205 Inlet Apron Top, is for the elevation at the top of the end wall of a [DR-205](#). If this apron is used in the design, enter the elevation here.



The next two fields are to report on the Total Length Left and the Total Length Right. This is the distance from center line to end of the apron.

Note: If there is not an offset base line, this will be the offset of the point at the end of the apron.

Size:	54	Pipe Class:	2000	Location Station:	
Design No.:		Length New Construction:	290	Top Elevation:	
Design Q:	42	Proposed Apron In:	1	Type:	
Headwater:		Proposed Apron Out:	1		
Standard:		Connection Type:			
DR:	DR-601	Flume Description:			
A:		Grade:	972.50		
B:		Flowline Left:	971.69	Apron Guard (DR2	
C:		Flowline Right:	969.95	Diaphragm (DR50:	
D:		Flowline Other:		Tee Section (DR14	
E:		Flowline Other:		Reducer	
F:		DR205 Inlet Apron Top:		Remarks:	
G1:		Total Length Left:	145.00		
G2:		Total Length Right:	145.00		
H:		Trenchless Total:	I 0		
I:		Extension Left:			
J:		Extension Right:			
K:		Flowline Left:			

The next field is for reporting the Trenchless Total. This will refer to a pipe that requires to be jacked in place during installation as opposed to being replaced by cut and cover. This field is to enter the total distance of that pipe that is to be jacked.

Size:	54	Pipe Class:	2000	Location Station:	
Design No:		Length New Construction:	290	Top Elevation:	
Design Q:	42	Proposed Apron In:	1	Type:	
Headwater:		Proposed Apron Out:	1		
Standard		Connection Type:			
DR	DR-601	Flume Description:			
A		Grade:	972.50		
B		Flowline Left:	971.69	Apron Guard (DR2	
C		Flowline Right:	969.95	Diaphragm (DR50:	
D		Flowline Other		Tee Section (DR14	
E		Flowline Other		Reducer	
F		DR205 Inlet Apron Top		Remarks:	
G1		Total Length Left	145.00		
G2		Total Length Right	145.00		
H		Trenchless Total	0		
I		Extension Left			
J		Extension Right			
K		Skew Ahead Left			

The next two fields are for if the design is to extend the existing structure. Enter the total distance in the direction of the extension that is to be constructed.

Design Q:	42	Proposed Apron In:	1	Type:	
Headwater:		Proposed Apron Out:	1		
Standard		Connection Type:			
DR	DR-601	Flume Description:			
A		Grade:	972.50		
B		Flowline Left:	971.69	Apron Guard (DR213)	
C		Flowline Right:	969.95	Diaphragm (DR501)	
D		Flowline Other		Tee Section (DR142)	
E		Flowline Other		Reducer	
F		DR205 Inlet Apron Top		Remarks:	
G1		Total Length Left	145.00		
G2		Total Length Right	145.00		
H		Trenchless Total	0		
I		Extension Left			
J		Extension Right			
K		Skew Ahead Left			
L		Skew Ahead Right			
Elbow 1					
Elbow 2					
Standard Dr					

The next two fields are for if the structure is skewed, enter the degree of the angle of the skew in the appropriate field Right or Left.

Station:	414+29.00	Bedding Class:	C	
Offset:		Proposed Camber DR102:		Contr
Kind:	RCP	Design Cover:	2.42	Left/F
Size:	54	Pipe Class:	2000	Locat
Design No:		Length New Construction:	290	Top E
Design Q:	42	Proposed Apron In:	1	Type
Headwater:		Proposed Apron Out:	1	
Standard		Connection Type:		
DR	DR-601	Flume Description:		
A		Grade:	972.50	
B		Flowline Left:	971.69	Apron
C		Flowline Right:	969.95	Diaph
D		Flowline Other		Tee Se
E		Flowline Other		Reduc
F		DR205 Inlet Apron Top		Remar
G1		Total Length Left	145.00	
G2		Total Length Right	145.00	
H		Trenchless Total	0	
I		Extension Left		
J		Extension Right		
K		Skew Ahead Left		
L		Skew Ahead Right		
M				
N				
O				
P				
Q				
R				
S				
T				
U				
V				
W				
X				
Y				
Z				
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lp				
lq				
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mh				</

The next field is for when the design has an [DR-501](#). Enter the number that is needed for that structure.

1	Type	<input type="text"/>	Nur
1			
972.50			
971.69	Apron Guard (DR213)	<input type="text"/>	
969.95	Diaphragm (DR501)	<input type="text"/>	
	Tee Section (DR142)	<input type="text"/>	
	Reducer	<input type="text"/>	
	Remarks:	<input type="text"/>	
145.00			
145.00			

The next field is for when the design has an [DR-142](#). Enter the number that is needed for that structure.

1	Type	<input type="text"/>	Nur
1			
972.50			
971.69	Apron Guard (DR213)	<input type="text"/>	
969.95	Diaphragm (DR501)	<input type="text"/>	
	Tee Section (DR142)	<input type="text"/>	
	Reducer	<input type="text"/>	
	Remarks:	<input type="text"/>	
145.00			
145.00			

The next field is for when the design has a Reducer. Enter the number and size that is needed for that structure.

1	Type	<input type="text"/>	Nur
1			
972.50			
971.69	Apron Guard (DR213)	<input type="text"/>	
969.95	Diaphragm (DR501)	<input type="text"/>	
	Tee Section (DR142)	<input type="text"/>	
	Reducer	<input type="text"/>	
	Remarks:	<input type="text"/>	
145.00			
145.00			

The next field is for Remarks. This is intended for the designer to include the design intent and direction on the staging of the replacement for the proposed structure.

Examples of typical remarks:

Plug and abandon exist median drain at Sta 1451+26. Jack 78' of 24" RCP then lay one 6' DR141 Type "D" double bevel section + apron on inlet end at Sta. 1452+25 – 51' Lt

or

Remove 30 ft of existing 36 in RCP. Replace with 42 ft of 36in RCP with one DR-141 7.5-degree D section beveled end to the RT. Tie new pipe to old pipe with longitude tie bars.

The purpose of the remarks is to eliminate questions during the construction phase of the project.

PROPOSED STRUCTURE

Station:	414+29.00	Bedding Class:	C	DIKE	
Offset:		Proposed Camber DR102:		Control	
Kind:	RCP	Design Cover:	2.42	Left/Right	
Size:	54	Pipe Class:	2000	Location Station	
Design No:		Length New Construction:	290	Top Elevation	
Design Q:	42	Proposed Apron In:	1	Type	
Headwater:		Proposed Apron Out:	1		
Standard		Connection Type:			
DR	DR-601	Flume Description:			
A		Grade:	972.50	Apron Guard (DR213)	
B		Flowline Left:	971.69	Diaphragm (DR501)	
C		Flowline Right:	969.95	Tee Section (DR142)	
D		Flowline Other		Reducer	
E		Flowline Other			
F		DR205 Inlet Apron Top		Remarks:	Remove or plug and abandon existing 54" RCP at Sta. 141+91.90 Replace with 290' 54" RCP at Sta. 141+29.00 with inlet and outlet aprons. Cut and cover.
G1		Total Length Left	145.00		
G2		Total Length Right	145.00		
L		Trenchless Total	0		
M		Extension Left			
R		Extension Right			
X		Skew Ahead Left			
Elbow 1		Skew Ahead Right			
Elbow 2					
Standard Dr					

Once all the correct fields that corresponds with that structure standard are entered in the record, move to the next record and repeat the process. If the next structure is to be replacing an existing structure, find the records that were imported from the CRRRPPP_PINKS.sccdb that corresponds with that structure. If the next structure does not replace an existing structure, make a new record.

Click the buttons at the bottom of the record or the arrow buttons in the access database task bar to navigate to the desired record.

F		DR205 Inlet Apron Top	
G1		Total Length Left	145.00
G2		Total Length Right	145.00
L		Trenchless Total	0
M		Extension Left	
R		Extension Right	
X		Skew Ahead Left	
Elbow 1		Skew Ahead Right	
Elbow 2			
Standard Dr			

« First Previous Save/Next » Last

Record: 1 of 2 ▶▶ ⚙️ No Filter Search ◀

Form View

Once a record for each structure in the drainage design is finished, create the Schedule Sheet. Click on the Schedule Sheet button at the bottom of the record.

59	Apron Guard (DR213)	
35	Diaphragm (DR501)	
	Tee Section (DR142)	
	Reducer	
00	Remarks:	Remove or plug and abandon existing 54" RCP at Sta. 141+91.90 Replace with 290' 54" RCP at Sta. 141+29.00 with inlet and outlet aprons. Cut and cover.
00		
0		

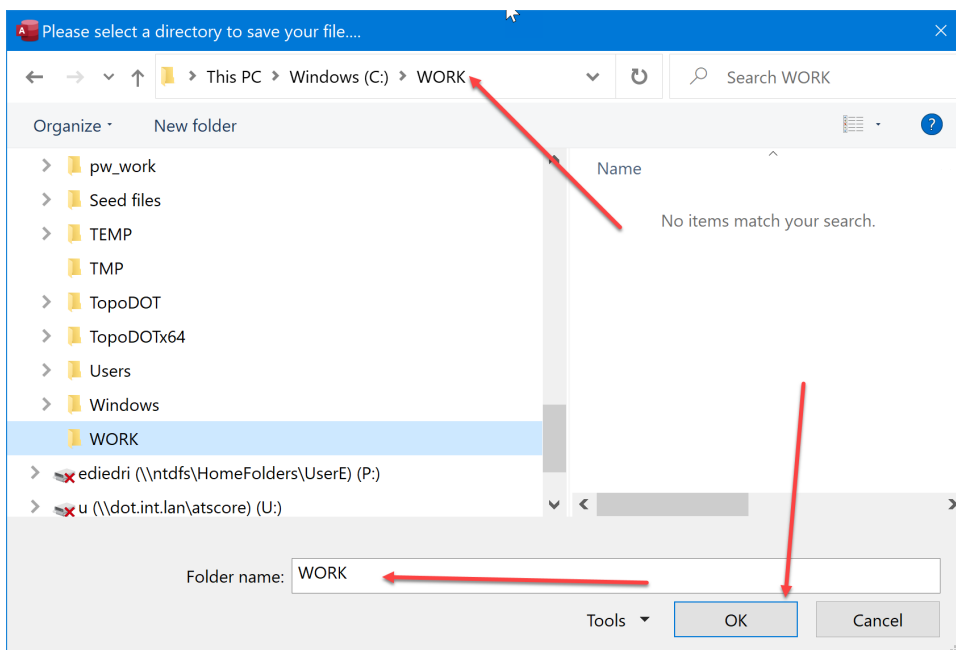
« Last ✖ Delete Current Main Menu Schedule Sheet ▶

All the records in the project are compiled onto a Schedule Sheet.

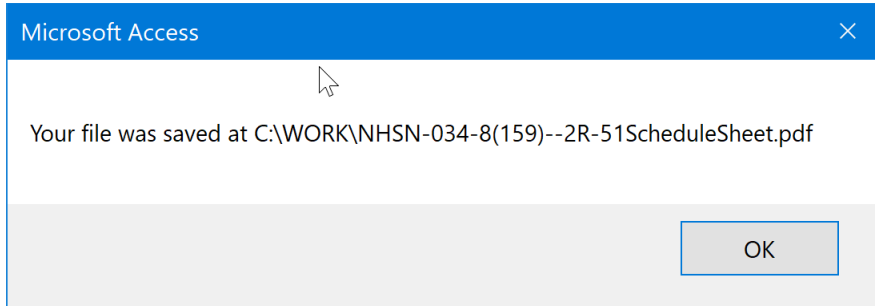
DESIGN		PRESENT STRUCTURE		LOCATION		PROPOSED STRUCTURE		ELEVATION		DIMENSIONS (E)		SKEW HEAD (DEGREES)		DIKE																				
NUMBER	DRAINAGE AREA	SURVEY STATION	DESCRIPTION	STATION	OFFSET	DR	SIZE	KIND	LGTH NEW CONST	DESIGN COVER (H)	IN	OUT	TYPE	NO.	FLUME DESCRIPTION	GRADE	LEFT	RIGHT	OTHER	OTHER	DR-205 INLET APPROX TOP ELEV	TOTAL	FRENCH 1/2% LEFT	FRENCH 1/2% RIGHT	LEFT	RIGHT	LEFT	RIGHT	CNTR	LY/RT	LOCATION STATION	TOP ELEVATIO	TOP ELE	DISPOSITION OF PRESENT
19-15-Rolling	414+93.90	54+287	414+29.00	DR-603	54	RCP	290	2.42	1	1					972.50	971.69	969.95					145.00	141.00	0										Poor
11.5-Hilly	228+15.65	54+437																																Fair

The next step, will be to create a PDF of the Schedule Sheet. Click on the Create PDF button at the top of the Schedule Sheet.

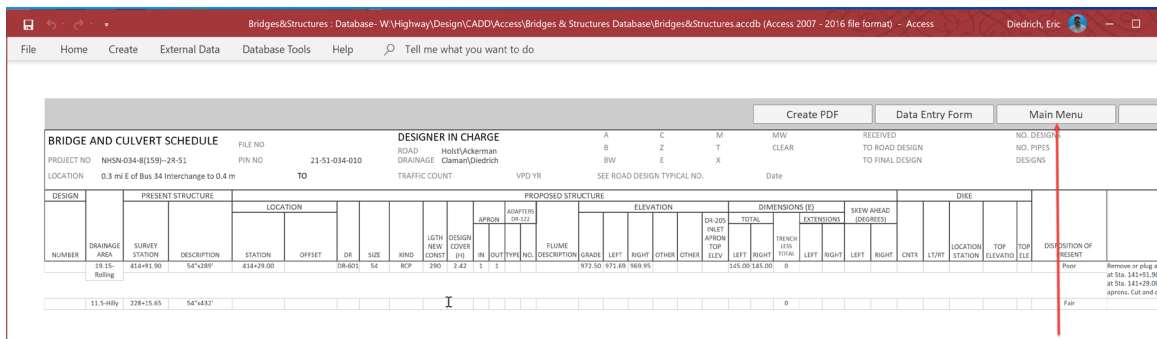
It will open the dialog box asking to select a directory to save the PDF file. For this example, use the C:\WORK directory that was created to download the CRRRRPPP_PINKS.sccdb to. Once the directory is selected, click the OK button.



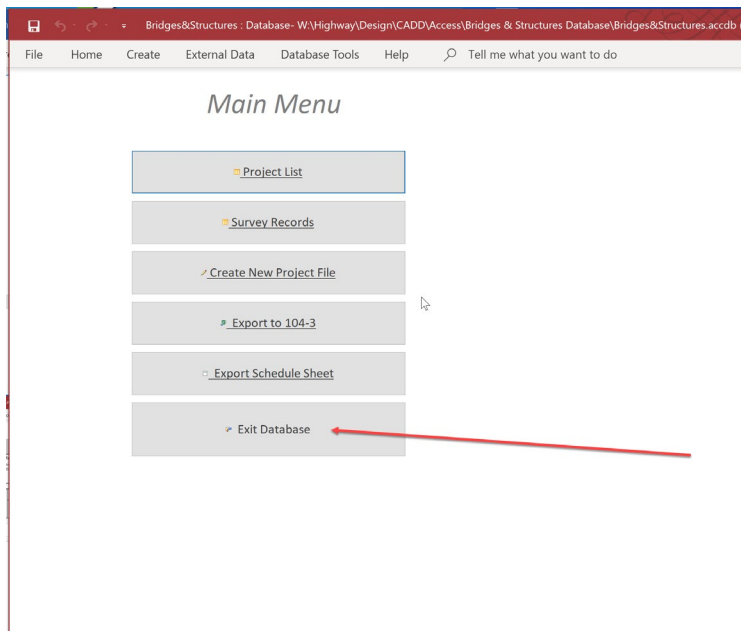
It will create the PDF of the Schedule Sheet in that directory and name the file Project NumberScheduleSheet.PDF. For this example it would be named “NHSN-034-8(159)—2R-51ScheduleSheet.pdf”. It will display this message to indicate when it is done. Click the OK button to dismiss.



Next, exit the database. Click on the Main Menu button at the top of the Schedule Sheet.



Once in the Main Menu, click on the Exit Database button.



Place the Project NumberScheduleSheet.pdf file in the Bridge\Design Events\B01\ folder of the project directory in project wise.