SH 36 Stream Conditions Assessment and Evaluation Report – Level 1

Brazoria and Fort Bend Counties, Texas

2020

Prepared For:

Texas Department of Transportation

Report Prepared By:

Ecosystem Planning and Restoration, LLC

ECOSYSTEM PLANNING & RESTORATION

Introduction

On October 31, 2008 the U.S. Army Corps of Engineers (USACE) issued a permit (SWG-2004-1704) authorizing impacts incurred from improvements to State Highway (SH) 36. The Texas Department of Transportation (TxDOT) proposes to widen existing SH 36 from Farm to Market (FM) 2218 to SH 35 to a 4-lane divided roadway. The permit authorized requires compensatory mitigation for regulated impacts to aquatic resources resulting in a no net loss of those resources. Additionally, based on the 2008 Compensatory Mitigation for Losses of Aquatic Resources Rule, all impacts to regulated waters of the U.S., including wetlands require mitigation to be implemented using a holistic approach while considering the functional capacity of the entire watershed, therefore maintaining the watershed's ability to support a diverse aquatic community comparable to reference systems within the region. As this rule is implemented across the country through Standard Operating Procedures developed by Interagency Review Teams, chaired by the USACE, compensatory stream mitigation is required.

Based on comments received from agencies during the public comment period for the proposed SH 36 USACE Permit Application regarding impacts associated with stream crossings, additional stream assessment was requested to ensure appropriate compensatory mitigation (in-kind mitigation) is developed for stream impacts.

In August 2015 and June 2018 a rapid visual field assessment in accordance with USACE-Galveston District SWG Stream Condition Assessment Standard Operating Procedure (SOP), approved June 2013, was performed for the SH 36 (from FM 2218 to SH 35) improvements project (**Figure 1**). The project area was reassessed in March 2020 to confirm existing conditions and scores.

During this assessment the team qualitatively evaluated stream habitat within the riparian corridor of each transect with respect to causes of habitat degradation and constraints to construction improvements.

Aquatic habitat is a function of the interaction between channel geomorphology, water quality, and riparian vegetation and thus serves as a general indicator of stream corridor health. Therefore, the field assessment consisted of a biologic and geomorphic component. Characteristics of biologic condition assessed included riparian vegetation, bed form diversity, aquatic life use, and the presence and frequency of habitat structures. Vegetation was evaluated based on the native or exotic/invasive dominance and diversity/richness evaluations. Bed form diversity is a qualitative measure of the amount and distribution of bed facet variation (steps, riffles, runs, pools, and glides). The presence and frequency of habitat structures was evaluated based on the existence or potential for benthic and aquatic diversity and richness.

Characteristics of geomorphic condition were qualitatively assessed and included erosion and vertical/horizontal stability. Erosion, identified by indicators of recent loss of soil/earth substrate, was evaluated based on active erosional processes. Vertical and horizontal stability was characterized by the potential of the channel to scour the existing bed and banks.

Ecosystem Planning and Restoration (EPR) performed a stream condition assessment for feet in August 2015 and June 2018 to determine the possible need for stream mitigation for unavoidable impacts required as part of the proposed construction of SH 36 from FM 2218 to SH 35 in Brazoria and Fort Bend Counties, Texas (**Figure 2**).

Existing Conditions

Seventeen streams were evaluated in Brazoria and Fort Bend Counties as part of the proposed SH 36 project. TxDOT proposes to widen existing SH 36 from FM 2218 to SH 35 to a 4-lane divided roadway within and outside of the existing right-of-way. Portions of the project will remain a 2-lane roadway, but will be improved. The existing SH 36 facility consists of a 2-lane roadway with periodic turning lanes. Culverts and bridges will be used at crossings within the project area. Specific design is depicted on the Plan and Profiles Exhibits included in the individual permit application.

Methodology/ Field Assessment

EPR performed a rapid visual field assessment in accordance with U.S. Army Corps of Engineers (USACE) Galveston District SWG Stream Condition Assessment Standard Operating Procedure (SOP-Level 1). The channels were evaluated using stream assessment transects. A transect is a set length of 350 linear feet (lf). Potential impacts of less than 500 lf to an ephemeral, intermittent or perennial stream were assessed using three, 350 lf transects placed no less than 125 lf apart and no greater than 200 lf apart. The functional condition of the streams were assessed at each transect using the following four parameters: Visual Channel Condition, Riparian Buffer, Desktop Aquatic Use, and Visual Channel Alteration. Each parameter is assigned a score and the scores are averaged to calculate the Condition Index (CI) for each transect. The formula used to calculate CI is shown below:

CI = (CV+BV+UV+AV) ÷ 4; where

CV = Channel Condition Variable
BV = Riparian Buffer Variable
UV = Aquatic Use Variable
AV = Channel Alteration Variable

A single Reach Condition Index (RCI) was calculated for each stream having a potential unavoidable impact. The formula for determining RCI is as follows:

RCI = $(\sum_{n-1}^{Y} CIn)$ ÷ Y; where

CI = Condition Index for each Transect
Y = Number of Transects

Visual Channel Condition Parameter

To determine the channel condition, an evaluator assigned the channel a Channel Condition Value (CV). The Channel CV was determined by assessing the channel geometry, channel stability, and the channel's connection to the active floodplain. The channel condition was assessed in the field by visually determining the degree of incision and/or widening of the

channel. To determine the channel stability an evaluator looked for visual indicators of stability or instability. The channel's connection to the active floodplain was assessed in the field by visually determining the degree of incision of the channel.

Riparian Buffer Parameter
The riparian Buffer Value (BV) was visually assessed by the evaluator in the field. The percentage of each cover type occupying the riparian buffer area for 100 feet on each side of the ordinary high water mark (OHWM) of the Transect was recorded. The left bank and right bank were determined by facing downstream.

Desktop Aquatic Use Parameter
The Aquatic Use Parameter is based on the aquatic life use category score assigned to stream segments by the Texas Commission on Environmental Quality (TCEQ). For streams not classified by the TCEQ, the aquatic life use is presumed based on the stream flow type.

Visual Channel Alteration Parameter
The Transect was assessed for the extent of anthropogenic channel alterations to determine the appropriate Visual Channel Condition Alteration Variable (AV). Examples of the types of channel alteration that were noted include, but are not limited to, the following:

- Straightening of channel or other channelization
- Stream crossings (bridges and bottomless culverts)
- Riprap, articulated matting, concrete aprons, gabions, or concrete blocks along streambank or in streambed
- Manmade embankments on streambanks, including soil piles
- Constrictions to stream channel or immediate flood prone area such as any culverts, levees, weirs, and impoundments
- Livestock impacted channels

Impact Assessment

To conduct the impact assessment, a theoretical, or assumed post construction stream condition assessment was completed based upon the proposed design of the project.

The theoretical stream condition assessment was conducted based upon, but was not limited to, the following assumptions; outside of the roadway footprint and in bridged sections, stream channel and re-vegetation practices and BMPs would be constructed and designed according to county, agency, FEMA, and TxDOT criteria. This theoretical assessment resulted in a theoretical RCI for each stream. The Delta between the existing condition RCI and the theoretical RCI (dRCI) was used to calculate the functional loss to each stream resulting from the proposed project.

Impacts are characterized as one of five classifications based on the dRCI, and each classification has a corresponding Impact Factor (IF). The more severe the impact, the higher the IF. The formula shown below was used to determine the number of Debits each stream impact would require.

Reach Condition Index Delta x Impact Factor x Linear Feet of Impact = Debits

The summary of impacts and associated compensation requirement are presented in **Table 1** below.

Table 1: Summary of Stream Impacts for SH 36

Stream Name	RCI	Proposed RCI	Delta	IF	Length (Linear Feet)	Compensation Requirement
Water 2	2.413	2.240	0.173	2	109	38
Water 3	1.897	1.713	0.184	2	351	130
Water 4	2.503	2.197	0.306	2	225	138
Water 5	1.910	1.777	0.133	2	223	60
Water 6	1.573	1.380	0.193	2	234	91
Water 7	1.857	1.653	0.204	2	293	120
Water 8	1.587	1.383	0.204	2	240	98
Water 9	1.747	1.743	0.004	2	125	1
Water 10	1.520	1.517	0.003	2	150	1
Water 11	1.503	1.500	0.003	2	159	1
Water 12	1.760	1.757	0.003	2	192	2
Water 13	1.563	1.340	0.223	2	268	120
Water 16	1.797	1.507	0.290	5	223	324
Water 18	1.510	1.500	0.010	5	151	8
Water 23	2.047	1.303	0.744	5	292	1,087
Water 24	2.197	1.967	0.230	2	697	321

Water 25	2.540	1.857	0.683	2	1,109	1,515
Total Linear Feet of Impact						**5,041**
Total Compensation Requirement						**4,055**

Summary/ Recommendations

The proposed project consists of seventeen impacted stream crossings with potential linear feet impacts as listed above. The total length of potential stream temporary and permanent impacts within the proposed project is 5,041 linear feet. Impacts vary within each crossing, including culvert construction, grading, riprap, and bridging. Each stream length was divided into transects and a Stream Assessment Form was performed for each transect (**Appendix A**) to ensure the entire project site was evaluated. The total compensation requirement for this project is **4,055** compensation credits. Considering the need for water quality improvement and proposed unavoidable impacts, recommendations would be developed for water quality treatments including stream and buffer restoration and enhancement.

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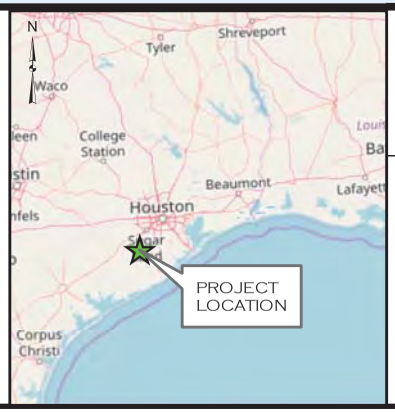
Stream Report Figures

Project Area



SH 36

Vicinity Map

Fort Bend and Brazoria Counties, Texas

Texas Department of Transportation

N

0 7.5 15 Miles

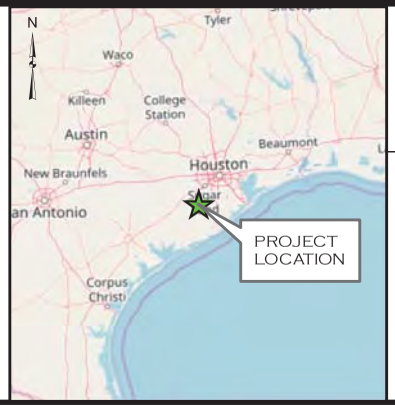
FIGURE 1

DATE: March 2020

Sources: ESRI Street Map; Open Street Map

Document Path: C:\GIS_Data\Project_Temp\HOU069\Stream_Assessment_MXDs\Fig1_vicinity.mxd

PROJECT AREA



SH 36

STREAM ASSESSMENT OVERVIEW

FORT BEND AND BRAZORIA COUNTIES, TEXAS

Texas Department of Transportation

N

0 11,000 22,000 Feet

FIGURE 2

DATE: MARCH 2020

Sources: ESRI Imagery 2017, Open Street Map, TIGER Road

Document Path: C:\GIS_Data\Project_Temp\HOU069\Stream_Assessment_MXDs\Fig2_StreamAssessment.mxd

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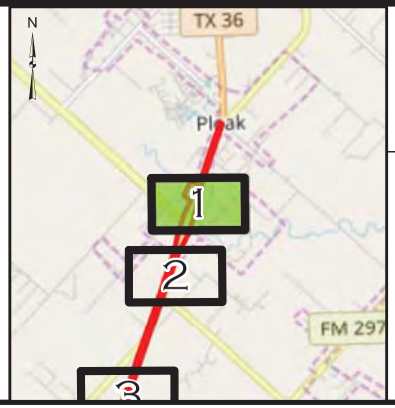
PROJECT AREA



SH 36

STREAM ASSESSMENT MAP

FORT BEND AND BRAZORIA COUNTIES, TEXAS

Texas Department of Transportation

N

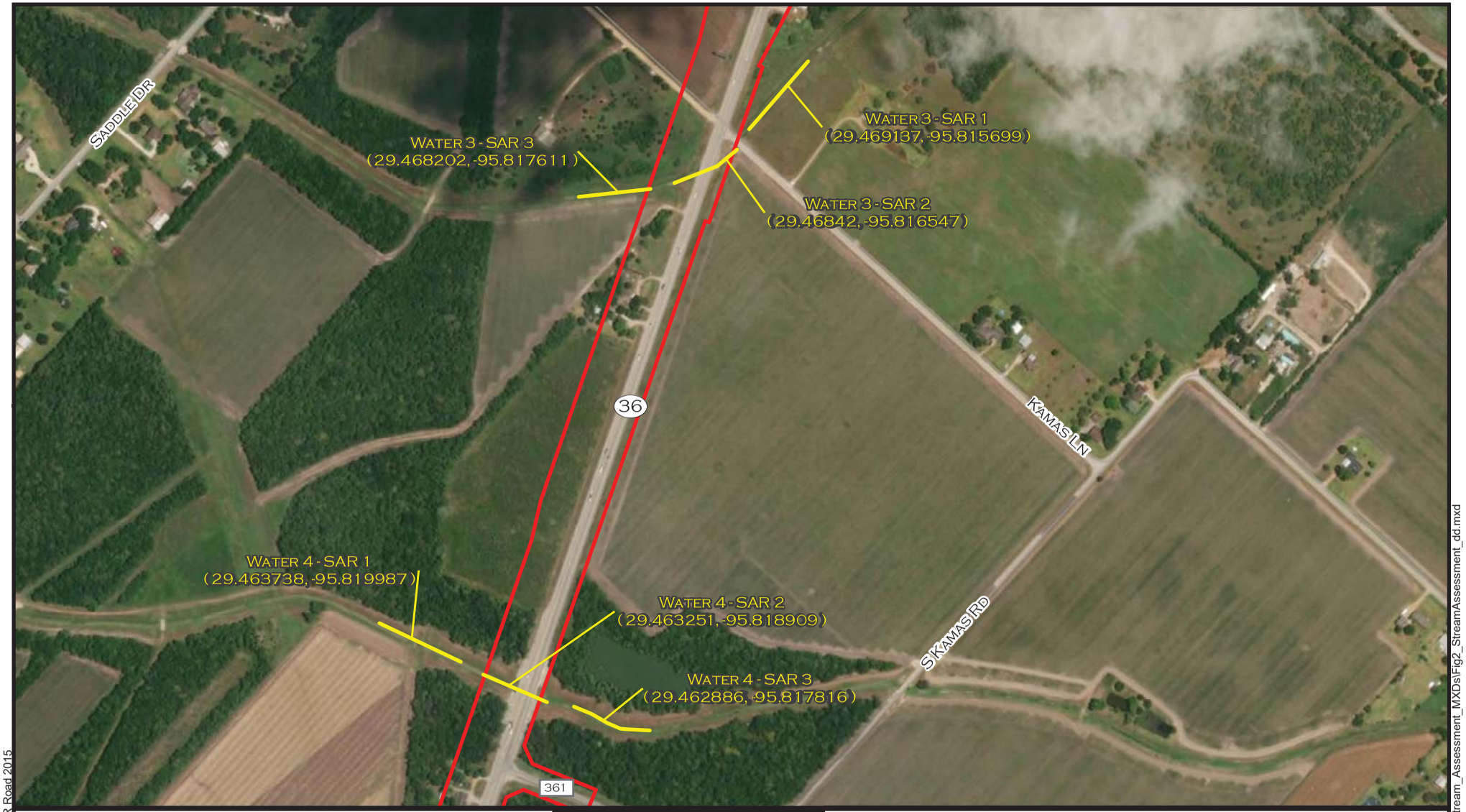
0 250 500 Feet

FIGURE 2
SHEET 1

DATE:
MARCH 2020

Sources: ESRI Imagery 2017, Open Street Map, TIGER Road 2015

Document Path: C:\GIS_Data\Project_Temp\HOU069\Stream_Assessment_MXDs\Fig2_StreamAssessment_dd.mxd



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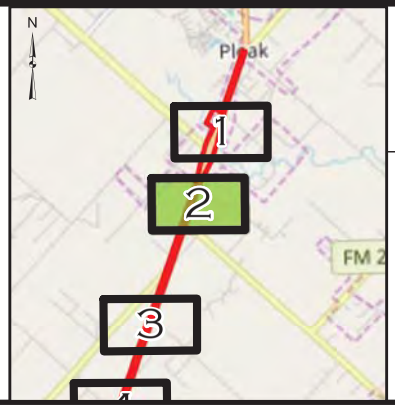
Project Area



SH 36

Stream Assessment Map

Fort Bend and Brazoria Counties, Texas

Texas Department of Transportation

N

0 250 500 Feet

FIGURE 2
SHEET 2

DATE:
March 2020

Sources: ESRI Imagery 2017, Open Street Map, TIGER Road 2015

Document Path: C:\GIS_Data\Project_Temp\HOU069\Stream_Assessment_MXDs\Fig2_StreamAssessment_dd.mxd

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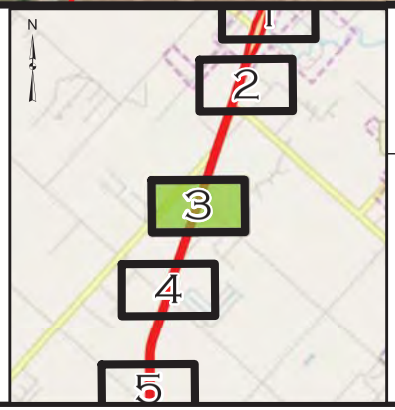
PROJECT AREA



SH 36

STREAM ASSESSMENT MAP

FORT BEND AND BRAZORIA COUNTIES, TEXAS

Texas Department of Transportation

N

0 250 500 Feet

FIGURE 2
SHEET 3

DATE:
MARCH 2020

Sources: ESRI Imagery 2017, Open Street Map, TIGER Road 2015

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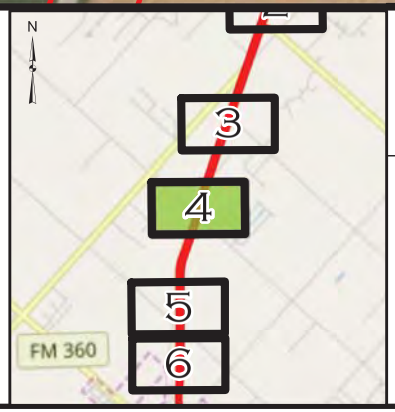
PROJECT AREA



SH 36

STREAM ASSESSMENT MAP

FORT BEND AND BRAZORIA COUNTIES, TEXAS

Texas Department of Transportation

N

0 250 500 Feet

FIGURE 2
SHEET 4

DATE:
MARCH 2020

Sources: ESRI Imagery 2017, Open Street Map, TIGER Road 2015

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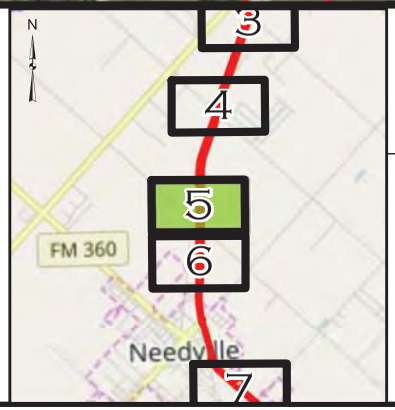
PROJECT AREA



SH 36

STREAM ASSESSMENT MAP

FORT BEND AND BRAZORIA COUNTIES, TEXAS

Texas Department of Transportation

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0 250 500 Feet

FIGURE 2
SHEET 5

DATE:
MARCH 2020

Sources: ESRI Imagery 2017, Open Street Map, TIGER Road 2015

Document Path: C:\GIS_Data\Project_Temp\HOU069\Stream_Assessment_MXDs\Fig2_StreamAssessment_dd.mxd

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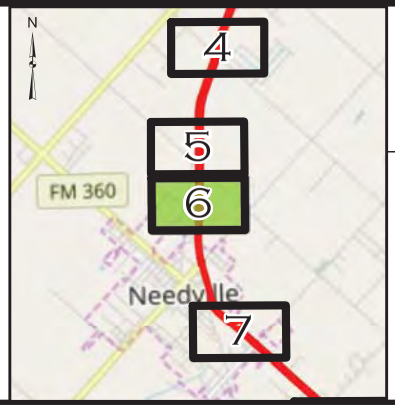
Project Area



SH 36

Stream Assessment Map

Fort Bend and Brazoria Counties, Texas

Texas Department of Transportation

N

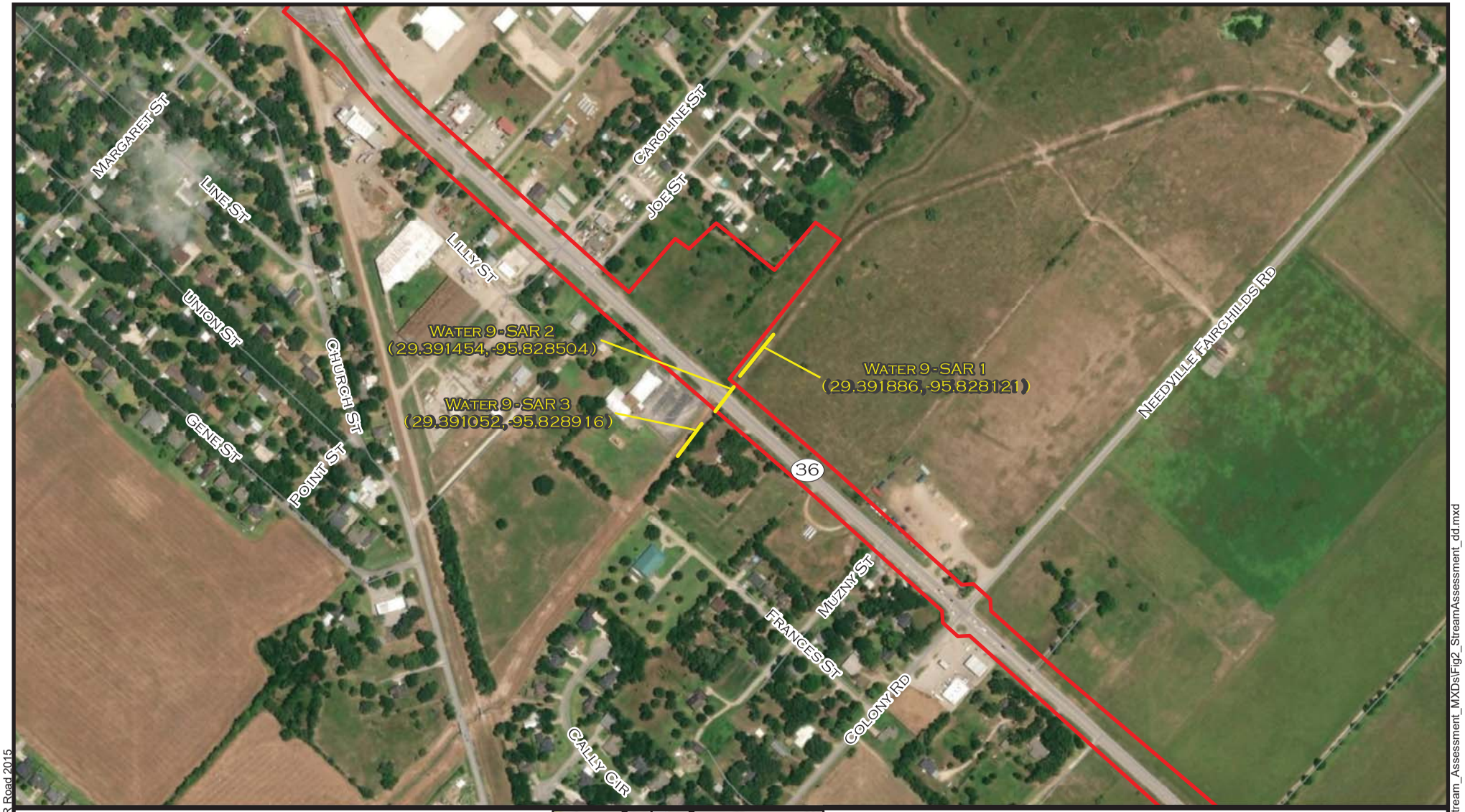
0 250 500 Feet

FIGURE 2
Sheet 6

DATE:
March 2020

Sources: ESRI Imagery 2017, Open Street Map, TIGER Road 2015

Document Path: C:\GIS_Data\Project_Temp\HOU069\Stream_Assessment_MXDs\Fig2_StreamAssessment_dd.mxd



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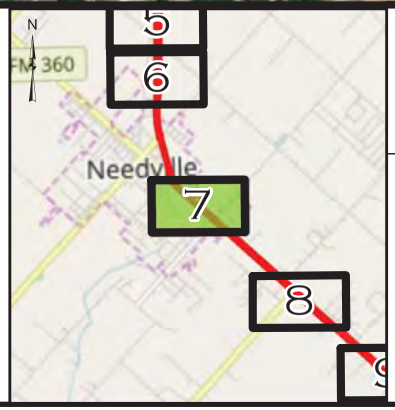
Project Area



SH 36

Stream Assessment Map

Fort Bend and Brazoria Counties, Texas

Texas Department of Transportation

N

0 250 500 Feet

FIGURE 2
Sheet 7

DATE:
March 2020

Sources: ESRI Imagery 2017, Open Street Map, TIGER Road 2015

Document Path: C:\GIS_Data\Project_Temp\HOU069\Stream_Assessment_MXDs\Fig2_StreamAssessment_dd.mxd

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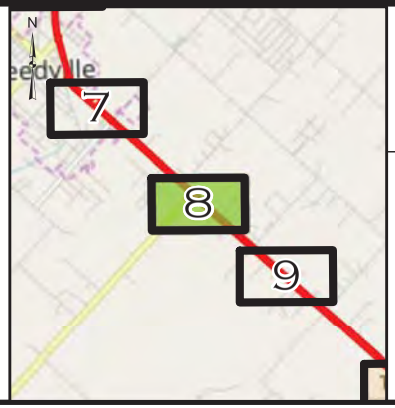
PROJECT AREA



SH 36

STREAM ASSESSMENT MAP

FORT BEND AND BRAZORIA COUNTIES, TEXAS

Texas Department of Transportation

N

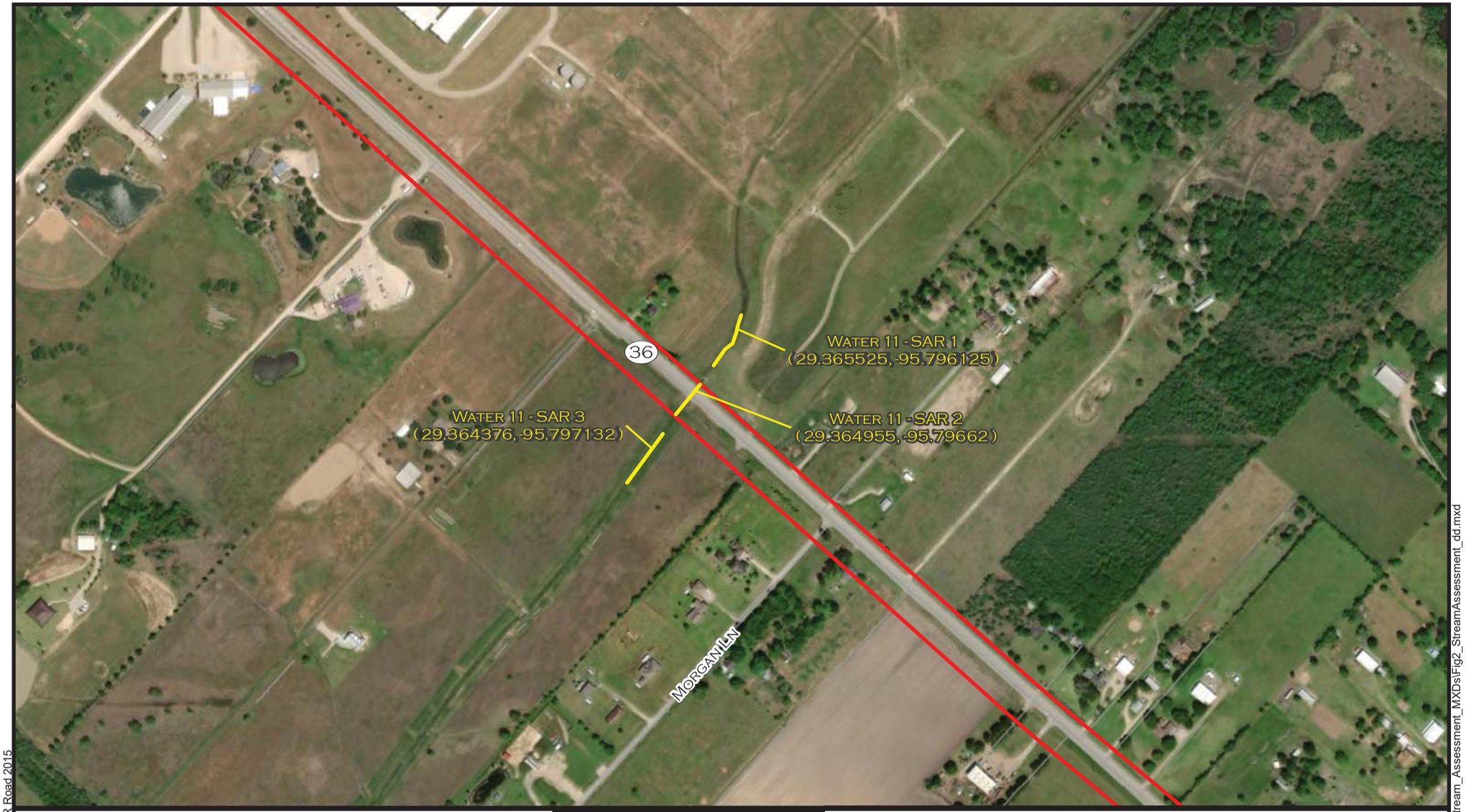
0 250 500 Feet

FIGURE 2
SHEET 8

DATE:
MARCH 2020

Sources: ESRI Imagery 2017, Open Street Map, TIGER Road 2015

Document Path: C:\GIS_Data\Project_Temp\HOU069\Stream_Assessment_MXDs\Fig2_StreamAssessment_dd.mxd



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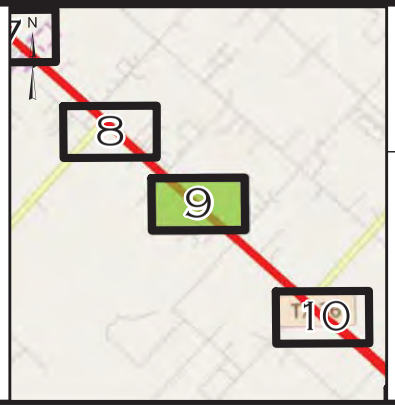

SH 36

STREAM ASSESSMENT MAP

FORT BEND AND BRAZORIA COUNTIES, TEXAS

Texas Department of Transportation

N

0 250 500 Feet

FIGURE 2
SHEET 9

DATE:
MARCH 2020

Sources: ESRI Imagery 2017, Open Street Map, TIGER Road 2015

Document Path: C:\GIS_Data\Project_Temp\HOU069\Stream_Assessment_MXDs\Fig2_StreamAssessment_dd.mxd

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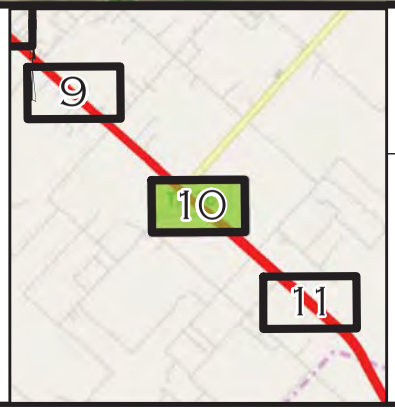
PROJECT AREA



SH 36

STREAM ASSESSMENT MAP

FORT BEND AND BRAZORIA COUNTIES, TEXAS

Texas Department of Transportation

N

0 250 500 Feet

FIGURE 2
SHEET 10

DATE:
MARCH 2020

Sources: ESRI Imagery 2017, Open Street Map, TIGER Road 2015

Document Path: C:\GIS_Data\Project_Temp\HOU069\Stream_Assessment_MXDs\Fig2_StreamAssessment_dd.mxd

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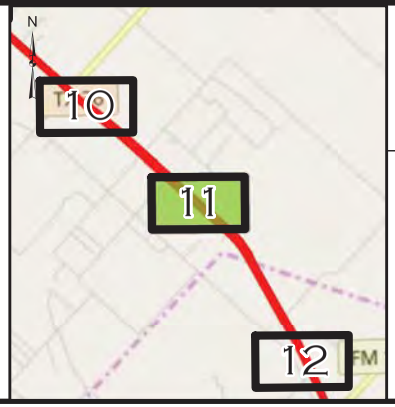

SH 36

STREAM ASSESSMENT MAP

FORT BEND AND BRAZORIA COUNTIES, TEXAS

Texas Department of Transportation

N

0 250 500 Feet

FIGURE 2
SHEET 11

DATE:
MARCH 2020

Sources: ESRI Imagery 2017, Open Street Map, TIGER Road 2015

Document Path: C:\GIS_Data\Project_Temp\HOU069\Stream_Assessment_MXDs\Fig2_StreamAssessment_dd.mxd

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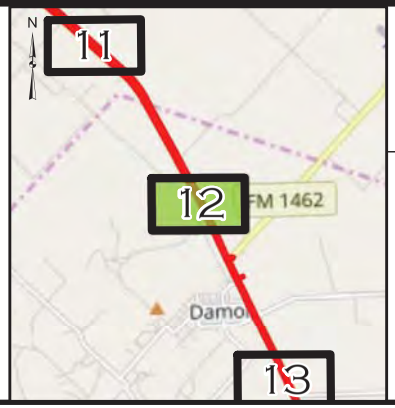

SH 36

STREAM ASSESSMENT MAP

FORT BEND AND BRAZORIA COUNTIES, TEXAS

Texas Department of Transportation

N

0 250 500 Feet

FIGURE 2
SHEET 12

DATE:
MARCH 2020

Sources: ESRI Imagery 2017, Open Street Map, TIGER Road 2015

Document Path: C:\GIS_Data\Project_Temp\HOU069\Stream_Assessment_MXDs\Fig2_StreamAssessment_dd.mxd

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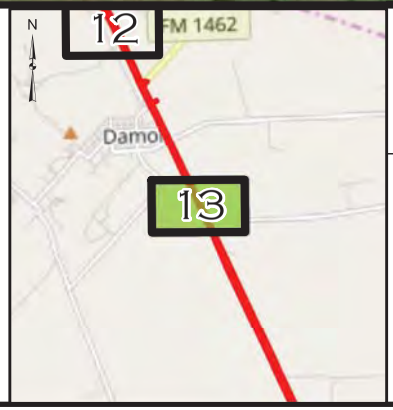

SH 36

STREAM ASSESSMENT MAP

FORT BEND AND BRAZORIA COUNTIES, TEXAS

Texas Department of Transportation

N

0 250 500 Feet

FIGURE 2
SHEET 13

DATE:
MARCH 2020

Sources: ESRI Imagery 2017, Open Street Map, TIGER Road 2015

Document Path: C:\GIS_Data\Project_Temp\HOU069\Stream_Assessment_MXDs\Fig2_StreamAssessment_dd.mxd

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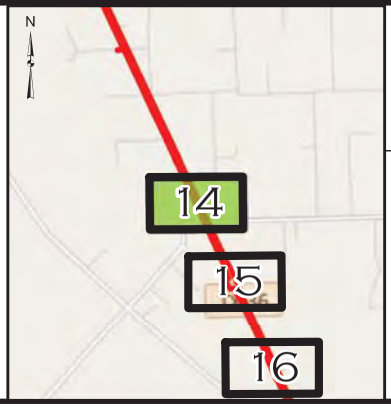

SH 36

STREAM ASSESSMENT MAP

FORT BEND AND BRAZORIA COUNTIES, TEXAS

Texas Department of Transportation

N

0 250 500 Feet

FIGURE 2
SHEET 14

DATE:
MARCH 2020

Sources: ESRI Imagery 2017, Open Street Map, TIGER Road 2015

Document Path: C:\GIS_Data\Project_Temp\HOU069\Stream_Assessment_MXDs\Fig2_StreamAssessment_dd.mxd

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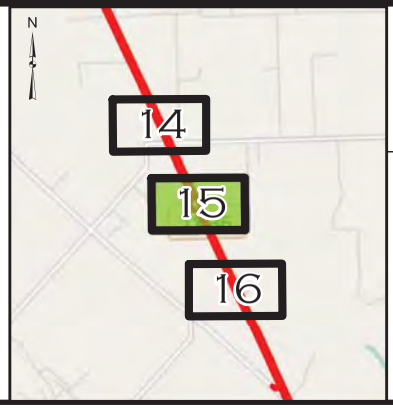

SH 36

STREAM ASSESSMENT MAP

FORT BEND AND BRAZORIA COUNTIES, TEXAS

Texas Department of Transportation

N

0 250 500 Feet

FIGURE 2
SHEET 15

DATE:
MARCH 2020

Sources: ESRI Imagery 2017, Open Street Map, TIGER Road 2015

Document Path: C:\GIS_Data\Project_Temp\HOU069\Stream_Assessment_MXDs\Fig2_StreamAssessment_dd.mxd

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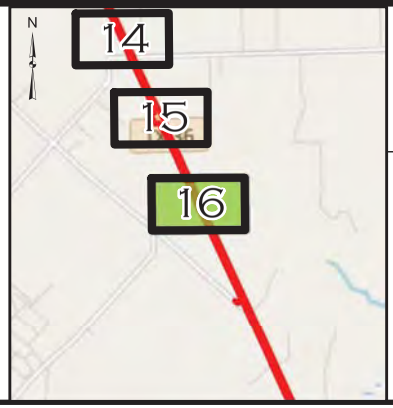


SH 36

STREAM ASSESSMENT MAP

FORT BEND AND BRAZORIA COUNTIES, TEXAS

Texas Department of Transportation

N

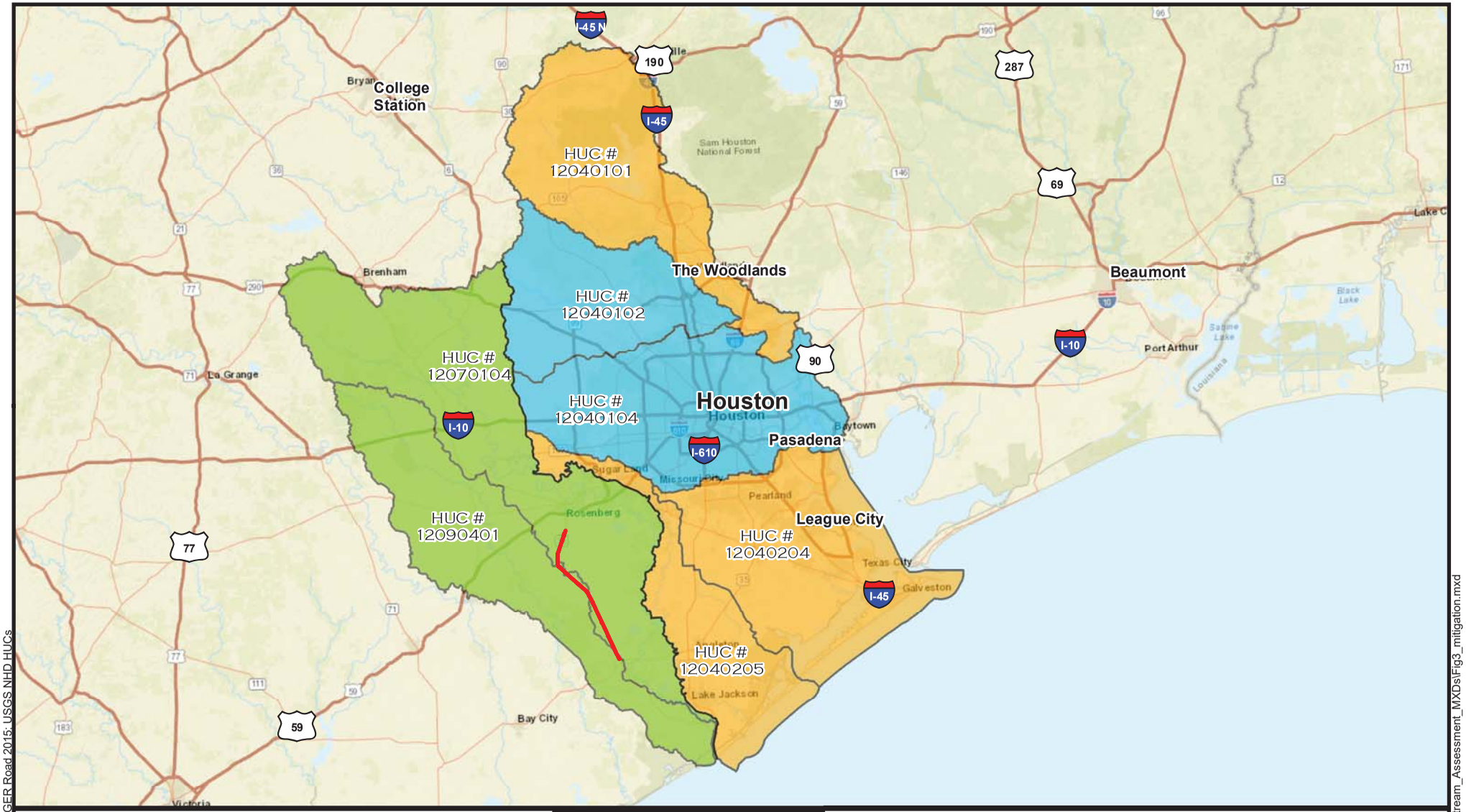
0 250 500 Feet

FIGURE 2
SHEET 16

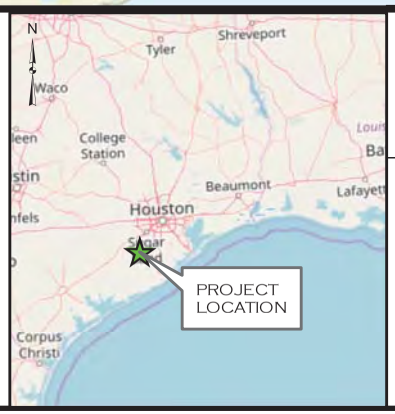
DATE:
MARCH 2020

Sources: ESRI Imagery 2017, Open Street Map, TIGER Road 2015

Document Path: C:\GIS_Data\Project_Temp\HOU069\Stream_Assessment_MXDs\Fig2_StreamAssessment_dd.mxd



- Project Area 8-digit HUC
- Katy Prairie Secondary Service Area
- Katy Prairie Primary Service Area
- Project Area



SH 36

Mitigation Map

Fort Bend and Brazoria Counties, Texas

Texas Department of Transportation

N

0 10 20 Miles

FIGURE 3

DATE: March 2020

Sources: ESRI World Street Map; Open Street Map; TIGER Road 2015; USGS NHD HUCs

Document Path: C:\GIS_Data\Project_Temp\HOU069\Stream_Assessment_MXDs\Fig3_mitigation.mxd

Level 1 – SOP Data Sheets
Pre- Construction

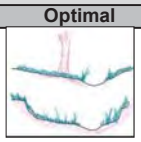
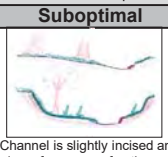
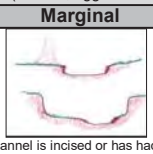
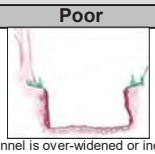
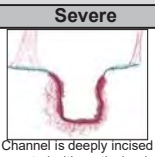
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	First	12070104	6/28/2018	1	Upstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 2 (Big Creek)

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 3.0

Notes: Channel has been widened and is eroding. Cattle pressure present. Natural flow and sinuosity present.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Both buffers dominated by grazed pasture.

Right Bank	% Riparian Area>	100%						100%			
	Score >	2									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	2.00	BV
	Score >	2							Lt Bank CI >	2.00	2.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	1	Upstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	3.00

Notes: Evidence of past alteration present, but stream pattern and stability are beginning to recover.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.50**

INSERT PHOTOS:

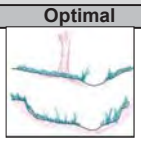
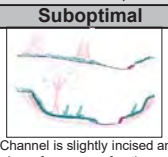
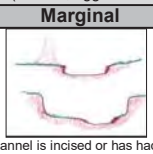
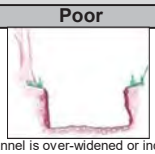
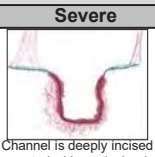
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	First	12070104	6/28/2018	2	Middle at road crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 2 (Big Creek)

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 3.0

Notes: Bridge present and outside banks of stream. Cattle pressure present, degrading banks in portion via foot traffic. Does not appeat to have access to floodplain.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of transect grazed pasture and maintained ROW.

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	2	1								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.95	BV
	Score >	2	1						Lt Bank CI >	1.95	1.95

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	2	Middle

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Rip rap present in areas, stream does not appear to be recovering.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.24**

INSERT PHOTOS:

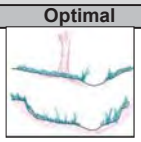
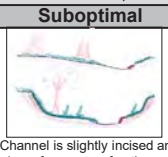
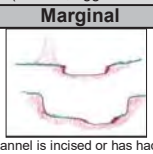
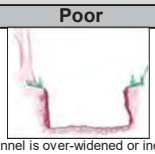
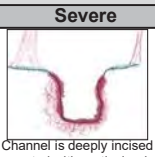
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT		12070104	6/28/2018	3	Downstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 2 (Big Creek)

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 3.0

Notes: Channel has been widened and is eroding. Cattle pressure present. Natural flow and sinuosity present.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer dominated by grazed pasture.

Right Bank	% Riparian Area>	100%						100%			
	Score >	2									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	2.00	BV
	Score >	2							Lt Bank CI >	2.00	2.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	3	Downstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	3.00

Notes: Evidence of past alteration present, but stream pattern and stability are beginning to recover.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.50**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
State Highway 36	TxDOT		6/29/2018
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark		12070104	SH36

Stream Name	Transect ID	Condition Index (RCI)	
Water 2	1	2.50	
Water 2	2	2.24	
Water 2	3	2.50	
Average RCI		**2.413**	
Impact Factor		2.00	
Linear Feet of Impact		109.00	
Compenesation Requirement		38	

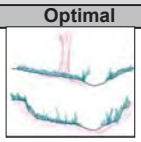
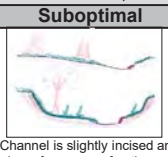
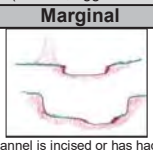
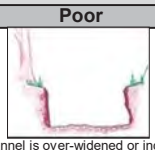
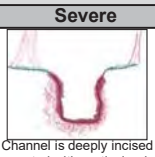
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	First	12070104	3/20/2020	1	Upstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 2 (Big Creek) Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 3.0

Notes: Projected condition similar to existing transect 2.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Both buffers dominated by grazed pasture and maintained ROW

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	2	1								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.95	BV
	Score >	2	1						Lt Bank CI >	1.95	1.95

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes: Aquatic use not anticipated to be impacted.

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	1	Upstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Projected condition similar to existing transect 2.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.24**

INSERT PHOTOS:

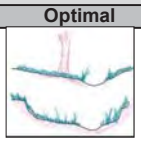
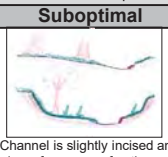
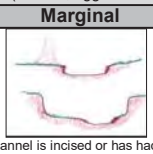
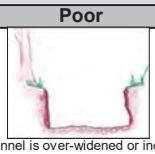
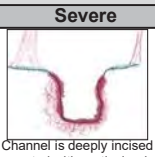
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	First	12070104	3/20/2020	2	Middle at road crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 2 (Big Creek) Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 3.0

Notes: Projected impacts will are not anticipated to significantly change the condition or function of this portion of Water 2. This transect is withi nthe current crossing of SH 36.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of transect grazed pasture and maintained ROW.

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	2	1								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.95	BV
	Score >	2	1						Lt Bank CI >	1.95	1.95

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes: Projected impacts will are not anticipated to significantly change the condition or function of this portion of Water 2. This transect is withi nthe current crossing of SH 36.

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	2	Middle

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Rip rap present in areas, stream does not appear to be recovering. Projected impacts will are not anticipated to significantly change the condition or function of this portion of Water 2. This transect is withi nthe current crossing of SH 36.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.24**

INSERT PHOTOS:

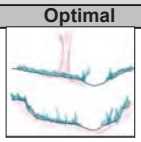
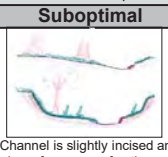
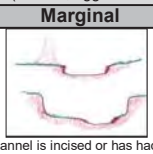
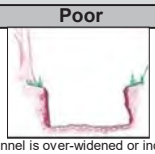
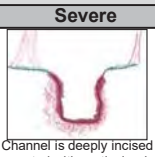
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT		12070104	3/20/2020	3	Downstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 2 (Big Creek) Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 3.0

Notes: Projected condition similar to existing transect 2.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer dominated by grazed pasture and maintained ROW.

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	2	1								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.95	BV
	Score >	2	1						Lt Bank CI >	1.95	1.95

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 2.00

Notes: Aquatic use will remain Poor.

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	3	Downstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Projected condition similar to existing transect 2.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.24**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
State Highway 36	TxDOT		3/20/2020
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark		12070104	SH36

Stream Name	Transect ID	Condition Index (RCI)	
Water 2 - Post	1	2.24	
Water 2 - Post	2	2.24	
Water 2 - Post	3	2.24	
Average RCI		**2.240**	
Impact Factor		2.00	
Linear Feet of Impact		109.00	
Compenesation Requirement		38	

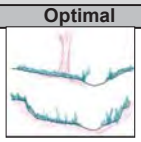
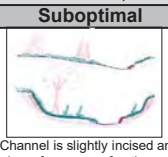
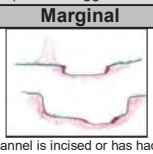
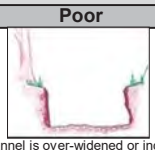
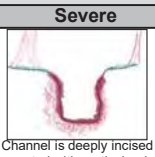
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Second	12070104	6/28/2018	1	Upstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 3

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	CV
Score	5	4	3	2	1	3.0

Notes: Channel is incised or has had its course widened. Erosional scars present. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer dominated by maintained ROW, row agriculture, and existing pavement

Right Bank	% Riparian Area>	25%	75%					100%			
	Score >	2	1								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	40%	60%					100%	Rt Bank CI >	1.25	BV
	Score >	2	1						Lt Bank CI >	1.40	1.33

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	1	Upstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.08**

INSERT PHOTOS:

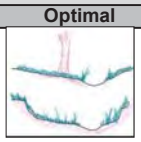
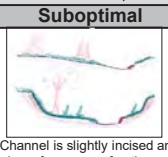
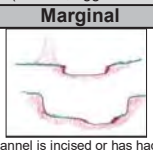
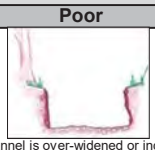
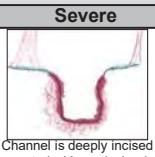
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Second	12070104	6/28/2018	2	Middle at road crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 3

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	CV
Score	5	4	3	2	1	2.0

Notes: Extensive riprap present around box culvert. Upstream of crossing no riprap but channel has been modified and channelized.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer dominated on both sides by row agriculture, maintained ROW, and existing pavement

Right Bank	% Riparian Area>	60%	40%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	50%	50%					100%	Rt Bank CI >	1.40	BV
	Score >	2	1						Lt Bank CI >	1.50	1.45

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	2	Middle

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: More than 90% of transect mimpacted by rip rap.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.61**

INSERT PHOTOS:

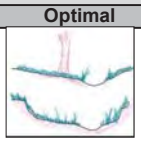
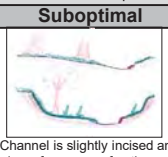
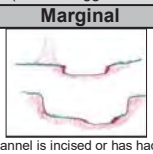
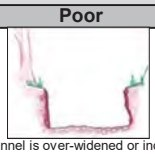
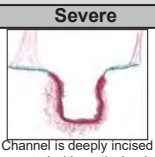
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
		Second	12070104	6/28/2018	2	Downstream of SH 36

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 3

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Channel over-widened; no point bars or benches.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of buffer on both sides consists of maintained right of way.

Right Bank	% Riparian Area>	100%						100%			
	Score >	2									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	2.00	BV
	Score >	2	1						Lt Bank CI >	1.95	1.98

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	3	downstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Evidence of past alteration is present, and stream pattern and stability are not recovering.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.00**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
State Highway 36	TxDOT		6/29/2018
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark		12070104	SH36

Stream Name	Transect ID	Condition Index (RCI)	
Water 3	1	2.08	
Water 3	2	1.61	
Water 3	3	2.00	
Average RCI		**1.897**	
Impact Factor		2.00	
Linear Feet of Impact		351.00	
Compenesation Requirement		130	

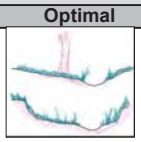
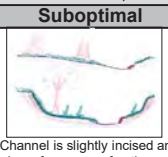
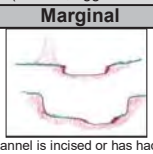
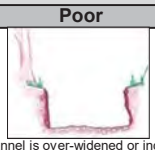
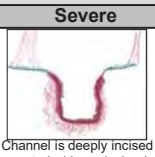
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Second	12070104	3/20/2020	1	Upstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 3 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Based on design, the new roadway will be built in this transect. Post construction condition anticipated to be similar to existing transect 2

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer dominated by maintained ROW, row agriculture, and existing pavement

Right Bank	% Riparian Area>	90%	10%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	90%	10%					100%	Rt Bank CI >	1.10	BV
	Score >	1	2						Lt Bank CI >	1.10	1.10

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description	
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	1	Upstream	

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.53**

INSERT PHOTOS:

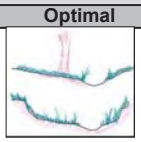
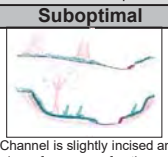
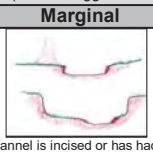
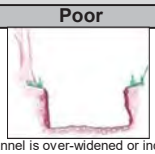
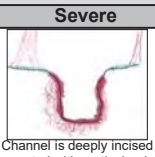
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Second	12070104	3/20/2020	2	Middle at road crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 3 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Extensive riprap present around box culvert. Upstream of crossing no riprap but channel has been modified and channelized.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer domianted on both sides by row agriculture, maintained ROW, and existing pavement

Right Bank	% Riparian Area>	60%	40%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	50%	50%					100%	Rt Bank CI >	1.40	BV
	Score >	2	1						Lt Bank CI >	1.50	1.45

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	2	Middle

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: More than 90% of transect mimpacted by rip rap.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.61**

INSERT PHOTOS:

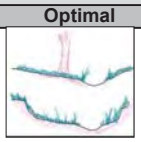
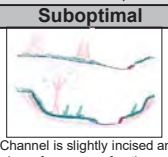
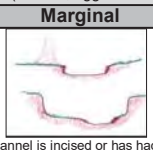
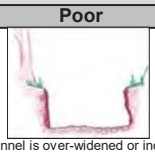
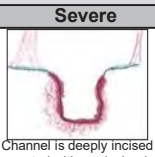
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Second	12070104	3/20/2020	3	Upstream of SH 36

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 3 Post Cosntruction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Channel over-widened; no point bars or benches. Impacts not anticipated.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of buffer on both sides consists of maintained right of way. Buffer impacts not anticpated.

Right Bank	% Riparian Area>	100%						100%			
	Score >	2									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	2.00	BV
	Score >	2	1						Lt Bank CI >	1.95	1.98

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	3	downstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Evidence of past alteration is present, and stream pattern and stability are not recovering. Channel will not be altered due to construction downstream of transect.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.00**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
State Highway 36	TxDOT		3/20/2020
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark		12070104	SH36

Stream Name	Transect ID	Condition Index (RCI)	
Water 3 Post	1	1.53	
Water 3 Post	2	1.61	
Water 3 Post	3	2.00	
Average RCI		**1.713**	
Impact Factor		2.00	
Linear Feet of Impact		351.00	
Compenesation Requirement		130	

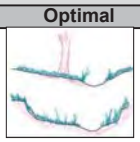
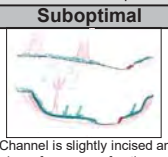
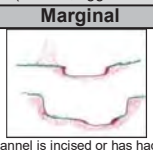
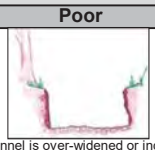
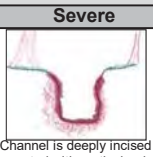
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Second	12070104	6/28/2018	1	Upstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 4

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	CV
Score	5	4	3	2	1	3.0

Notes: Channel incised, channelized previously but recovering.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Both banks primary buffer dominated by maintained ROW. Outside maintained ROW mature, native forest present.

Right Bank	% Riparian Area>	65%	30%	5%				100%			
	Score >	2	4.5	1							
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	70%	30%					100%	Rt Bank CI >	2.70	BV
	Score >	2	4.5						Lt Bank CI >	2.75	2.73

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	1	Upstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	3.00

Notes: Evidence of past alteration present, but stream pattern and stability are beginning to recover.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.68**

INSERT PHOTOS:

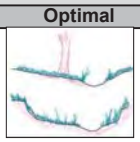
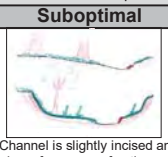
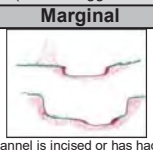
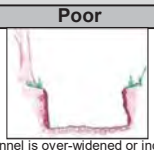
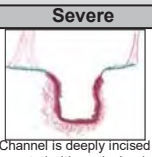
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Second	12070104	6/28/2018	2	Middle at road crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 4

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	CV
Score	5	4	3	2	1	2.0

Notes: Majority of transect within box culvert

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer mixed; primary dominated by existing pavement and maintained ROW. Native, mature forest present in the secondary buffer area.

Right Bank	% Riparian Area>	45%	30%	25%				100%			
	Score >	2	1	4							
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	40%	30%	30%				100%	Rt Bank CI >	2.20	BV
	Score >	2	4	1					Lt Bank CI >	2.30	2.25

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	2	Middle

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Majority of transect within box culvert

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.06**

INSERT PHOTOS:

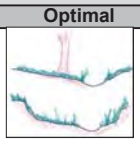
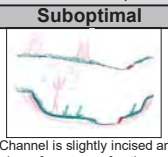
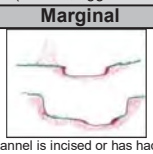
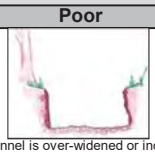
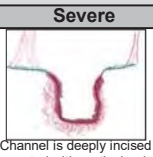
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Second	12070104	6/28/2018	3	downstream of crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 4

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	CV
Score	5	4	3	2	1	3.0

Notes: Channel incised, channelized previously but recovering.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Both banks primary buffer dominated by maintained ROW. Outside maintained ROW mature, native forest present.

Right Bank	% Riparian Area>	50%	50%					100%			
	Score >	2	4.5								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	65%	35%					100%	Rt Bank CI >	3.25	BV
	Score >	2	4.5						Lt Bank CI >	2.88	3.06

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	3	downstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	3.00

Notes: Evidence of past alteration present, but stream pattern and stability are beginning to recover.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.77**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant	Date
	TxDOT	6/29/2018
Evaluators	**HUC**	**Locality**
Arron Tuggle, Sally Clark		

Stream Name	Transect ID	Condition Index (RCI)	
Water 4	1	2.68	
Water 4	2	2.06	
Water 4	3	2.77	

Average RCI	**2.503**
Impact Factor	2.00
Linear Feet of Impact	225.00
Compenesation Requirement	138

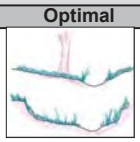
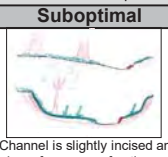
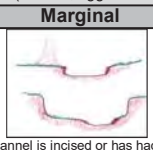
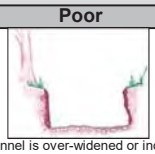
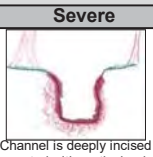
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Second	12070104	3/20/2020	1	Upstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 4 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	CV
Score	5	4	3	2	1	2.0

Notes: New roadway will be constructed in Transect 1. Anticipated function and conditions similar to existing Transect 2.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Additional areas of poor and severe quality buffer will be cosntructed.

Right Bank	% Riparian Area>	55%	40%	5%				100%			
	Score >	2	1	4							
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	55%	40%	5%				100%	Rt Bank CI >	1.70	BV
	Score >	2	1	4					Lt Bank CI >	1.70	1.70

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	1	Upstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: New roadway will be constructed in Transect 1. Anticipated function and conditions similar to existing Transect 2. Construction includes new bridge and additional rip rap in this transect.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.93**

INSERT PHOTOS:

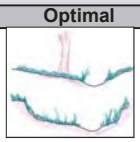
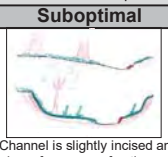
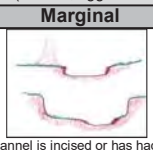
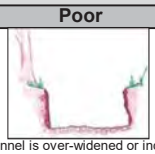
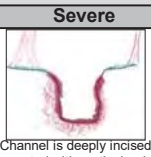
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Second	12070104	3/20/2020	2	Middle at road crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 4 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	CV
Score	5	4	3	2	1	2.0

Notes: Majority of transect within box culvert. Channel condition will remain poor post construction of new lanes upstream of Transect 2.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Anticipated additional clearing and paving and reduction of marginal and poor quality buffer.

Right Bank	% Riparian Area>	55%	45%					100%			
	Score >	2	1								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	55%	45%					100%	Rt Bank CI >	1.55	BV
	Score >	2	1						Lt Bank CI >	1.55	1.55

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes: Aquatic use will remain poor.

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	2	Middle

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Majority of transect within box culvert. Channel will be altered upstream of Transect 2.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.89**

INSERT PHOTOS:

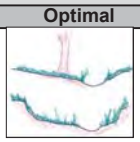
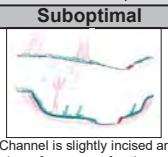
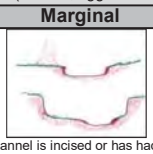
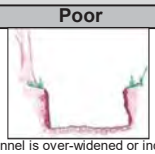
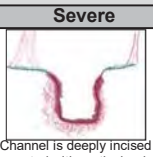
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Second	12070104	3/20/2020	3	downstream of crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 4 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	CV
Score	5	4	3	2	1	3.0

Notes: Construction of new roadway will be upstream of transect 3. Channel condition will remain marginal post construction as roadway is currently upstream.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer is not likely to be impacted by upstream construction

Right Bank	% Riparian Area>	50%	50%					100%			
	Score >	2	4.5								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	65%	35%					100%	Rt Bank CI >	3.25	BV
	Score >	2	4.5						Lt Bank CI >	2.88	3.06

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	3	downstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	3.00

Notes: Construction is upstream of Transect 3 and the channel is not anticipated to be altered.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.77**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant	Date
	TxDOT	3/20/2020
Evaluators	**HUC**	**Locality**
Arron Tuggle, Sally Clark	12070104	SH 36

Stream Name	Transect ID	Condition Index (RCI)	
Water 4 Post	1	1.93	
Water 4 Post	2	1.89	
Water 4 Post	3	2.77	

Average RCI	**2.197**
Impact Factor	2.00
Linear Feet of Impact	225.00
Compenesation Requirement	138

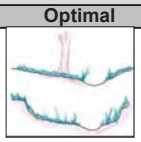
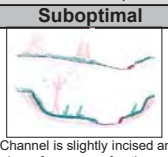
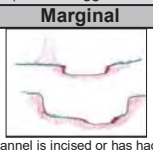
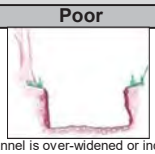
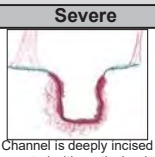
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	6/28/2018	1	Upstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 5

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Channel straightened and flattened. No point bars or bankfull benches present. No active floodplain.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer dominated by grazed pasture

Right Bank	% Riparian Area>	100%						100%			
	Score >	2									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	2.00	BV
	Score >	2							Lt Bank CI >	2.00	2.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	1	upstream of crossing

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Evidence of past alteration is present, and stream pattern and stability are not recovering.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.00**

INSERT PHOTOS:

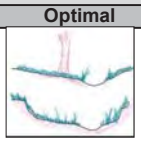
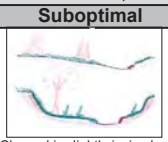
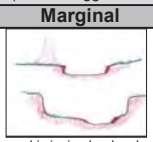
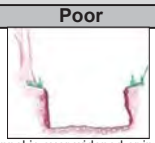
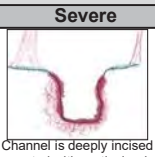
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	6/28/2018	2	Middle at crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 5

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	**CV** 2.0

Notes: Majority of channel is within box culvert, with some riprap present. Naturalized bottom through culvert.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of buffer existing pavement, maintained ROW, and grazed pasture with small portion of native woody vegetation in the secondary buffer.

Right Bank	% Riparian Area>	50%	45%	5%				100%			
	Score >	2	1	3							
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	60%	35%	5%				100%	**Rt Bank CI >**	1.60	**BV**
	Score >	2	1	3					**Lt Bank CI >**	1.70	1.65

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	**UV**
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description	
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	2	Middle	

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Majority of transect within bridge-grade box culvert. Portions of transect outside of culvert do no appear to be recovering.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.91**

INSERT PHOTOS:

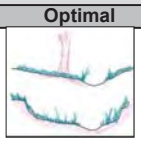
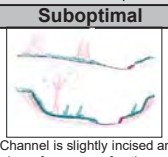
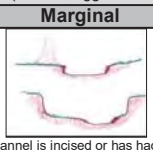
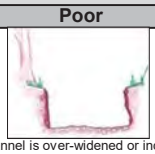
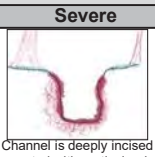
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	6/28/2018	3	Downstream of crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 5

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Channel straightened and flattened. No point bars or bankfull benches present. No active floodplain.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer dominated by row agriculture and maintained grasses

Right Bank	% Riparian Area>	75%	25%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	70%	30%					100%	Rt Bank CI >	1.25	BV
	Score >	1	2						Lt Bank CI >	1.30	1.28

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	3	Downstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Evidence of past alteration is present, and stream pattern and stability are not recovering.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.82**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
	TxDOT		6/29/2018
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark			

Stream Name	Transect ID	Condition Index (RCI)	
Water 5	1	2.00	
Water 5	2	1.91	
Water 5	3	1.82	

Average RCI	**1.910**
Impact Factor	0.00
Linear Feet of Impact	0.00
Compenesation Requirement	0

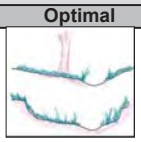
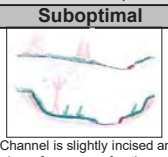
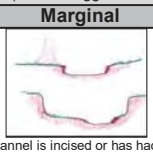
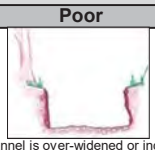
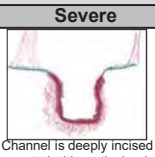
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	3/20/2020	1	Upstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 5 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.5

Notes: New roadway will be constructed in Transect 1. Anticipated function and conditions similar to existing Transect 2.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer will be reduced and dominated by maintained ROW and pavement.

Right Bank	% Riparian Area>	50%	50%					100%			
	Score >	2	1								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	50%	50%					100%	Rt Bank CI >	1.50	BV
	Score >	2	1						Lt Bank CI >	1.50	1.50

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	1	upstream of crossing

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.50

Notes: New roadway will be constructed in Transect 1. Anticipated function and conditions similar to existing Transect 2. Cosntruction includes new bridge and additional rip rap in this transect.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.63**

INSERT PHOTOS:

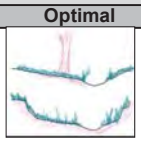
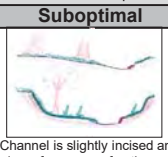
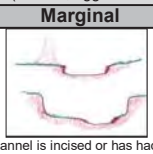
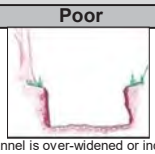
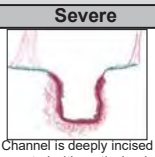
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	3/20/2020	2	Middle at crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 5 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	CV
Score	5	4	3	2	1	2.0

Notes: Majority of transect within box culvert. Channel condition will remain poor post construction of new lanes upstream of Transect 2.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Anticipated additional clearing and paving and reduction of marginal and poor quality buffer.

Right Bank	% Riparian Area>	50%	50%					100%			
	Score >	2	1								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	50%	50%					100%	Rt Bank CI >	1.50	BV
	Score >	2	1						Lt Bank CI >	1.50	1.50

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description	
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	2	Middle	

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Majority of transect within box culvert. Channel will be altered upstream of Transect 2.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.88**

INSERT PHOTOS:

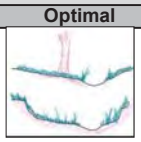
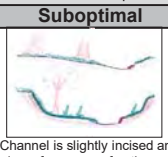
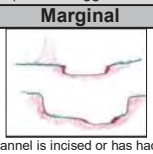
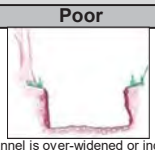
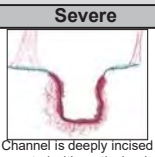
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	3/20/2020	3	Downstream of crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 5 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Construction of new roadway will be upstream of transect 3. Channel condition will remain poor post construction as roadway is currently upstream.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer will liekly not be imapcted by upstream construction

Right Bank	% Riparian Area>	75%	25%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	70%	30%					100%	Rt Bank CI >	1.25	BV
	Score >	1	2						Lt Bank CI >	1.30	1.28

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	3	Downstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Construction is upstream of Transect 3 and the channel is not anticipated to be altered.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.82**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
	TxDOT		3/20/2020
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark		12070104	SH 36

Stream Name	Transect ID	Condition Index (RCI)	
Water 5 Post	1	1.63	
Water 5 Post	2	1.88	
Water 5 Post	3	1.82	

Average RCI	**1.777**
Impact Factor	2.00
Linear Feet of Impact	223.00
Compenesation Requirement	91

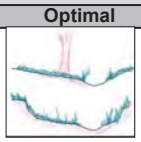
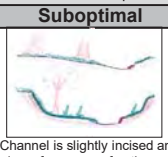
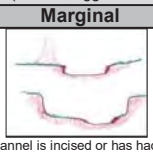
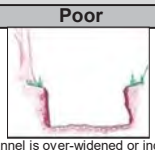
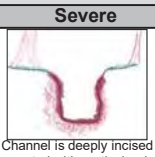
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	6/28/2018	1	Upstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 6

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Degraded channel with no access to floodplain. Channelized with no benches or point bars.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer dominated by row agriculture urban landscape, and maintained right of way

Right Bank	% Riparian Area>	60%	40%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	80%	20%					100%	Rt Bank CI >	1.40	BV
	Score >	1	2						Lt Bank CI >	1.20	1.30

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	1	upstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: No withdrawls or structures present but stream channel 100% impacted by alterations.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.58**

INSERT PHOTOS:

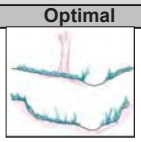
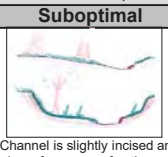
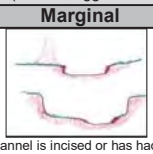
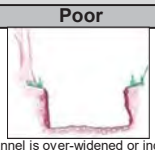
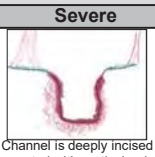
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Thrid	12070104	6/28/2018	2	Middle at crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 6

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Notes: Majority of transect within box culvert and existing maintained ROW

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer mostly existing pavement and maintained ROW, with small area of native shrubs present

Right Bank	% Riparian Area>	50%	40%	10%				100%			
	Score >	1	2	3							
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	50%	45%	5%				100%	Rt Bank CI >	1.60	BV
	Score >	1	2	3					Lt Bank CI >	1.55	1.58

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	2	at crossing

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Majority of transect impacted by existing culvert

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.40**

INSERT PHOTOS:

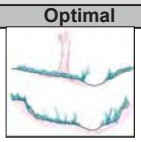
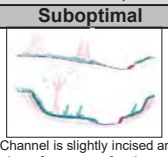
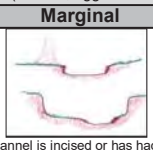
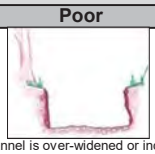
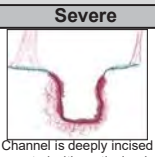
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	6/28/2018	3	Downstream of crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 6

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Degraded channel with no access to floodplain. Channelized with no benches or point bars.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of buffer dominated by maintained grasses

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	2	1								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.95	BV
	Score >	2	1						Lt Bank CI >	1.95	1.95

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	3	Downstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: No withdrawls or structures preent but stream channel 100% impacted by alterations.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.74**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
	TxDOT		6/29/2018
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark		12070104.00	SH 36

Stream Name	Transect ID	Condition Index (RCI)	
Water 6	1	1.58	
Water 6	2	1.40	
Water 6	3	1.74	

Average RCI	**1.573**
Impact Factor	2.00
Linear Feet of Impact	234.00
Compenesation Requirement	91

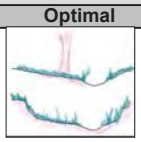
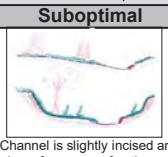
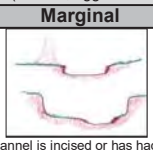
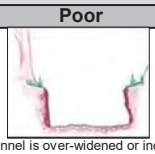
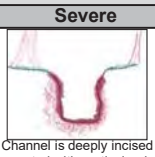
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	3/20/2020	1	Upstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 6 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Notes: Channel will be straightened and bridged with full impact. While it will recover, it is anticipated to function similar to the existing Transect 2, where SH 36 is now.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer will continue to be dominated by row agricultural, urban landscape, and maintained right of way

Right Bank	% Riparian Area>	50%	50%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	50%	50%					100%	Rt Bank CI >	1.50	BV
	Score >	1	2						Lt Bank CI >	1.50	1.50

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description	
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	1	upstream	

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Portions of transect 1 will be bridged/culverted.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.38**

INSERT PHOTOS:

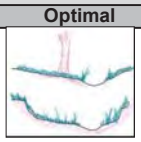
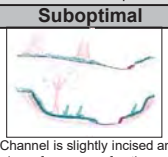
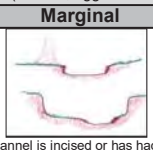
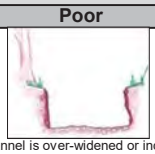
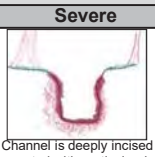
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Thrid	12070104	3/20/2020	2	Middle at crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 6 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Notes: The location of the crossing (bridge/culvert) will change slightly but remain within Transect 2.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer existing pavement and maintained ROW

Right Bank	% Riparian Area>	50%	50%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	50%	50%					100%	Rt Bank CI >	1.50	BV
	Score >	1	2						Lt Bank CI >	1.50	1.50

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	2	at crossing

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Majority of transect impacted by proposed culverts

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.38**

INSERT PHOTOS:

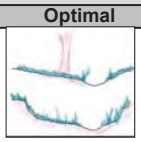
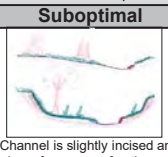
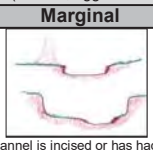
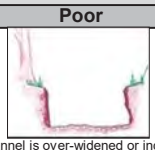
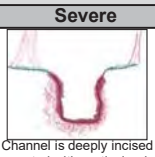
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	3/20/2020	3	Downstream of crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 6 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	**CV** 1.0

Notes: Channel will be straightened and bridged with full impact. While it will recover, it is anticipated to function similar to the existing Transect 2, where SH 36 is now.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of buffer dominated by maintained grasses and pavement

Right Bank	% Riparian Area>	50%	50%					100%			
	Score >	2	1								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	50%	50%					100%	Rt Bank CI >	1.50	BV
	Score >	2	1						Lt Bank CI >	1.50	1.50

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	**UV**
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	3	Downstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Portions of transect 3 will be bridged/culverted.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.38**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant	Date
	TxDOT	3/20/2020
Evaluators	**HUC**	**Locality**
Arron Tuggle, Sally Clark	12070104	SH 36

Stream Name	Transect ID	Condition Index (RCI)	
Water 6 Post	1	1.38	
Water 6 Post	2	1.38	
Water 6 Post	3	1.38	

Average RCI	**1.380**
Impact Factor	2.00
Linear Feet of Impact	234.00
Compenesation Requirement	91

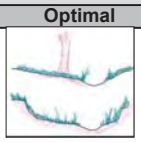
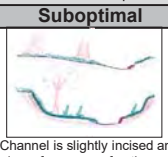
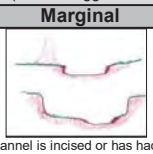
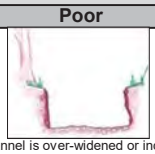
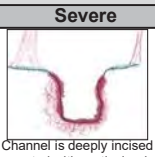
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Fourth	12070104	6/28/2018	1	Upstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 7

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	CV
Score	5	4	3	2	1	2.0

Notes: Channel over-widened with no access to floodplain.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of buffer maintaiend ROW with small grouping of native trees and brush.

Right Bank	% Riparian Area>	60%	20%	20%				100%			
	Score >	2	3	1							
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	80%	20%					100%	Rt Bank CI >	2.00	BV
	Score >	1	2						Lt Bank CI >	1.20	1.60

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	1	Upstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Some riprap present around old rail crossing. Channel does not appear to be recovering.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.90**

INSERT PHOTOS:

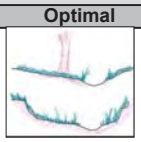
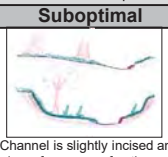
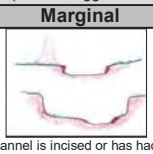
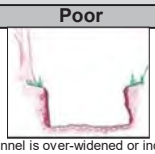
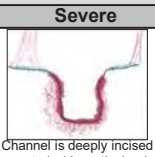
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Fourth	12070104	6/28/2018	2	Middle at Crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 7

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	CV
Score	5	4	3	2	1	1.0

Notes: Majority of crossing within culvert

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Crossing includes areas of maintained ROW, existing pavement, and a small wooded area of mixed vegetation.

Right Bank	% Riparian Area>	60%	35%	5%				100%			
	Score >	2	1	3							
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	70%	25%	5%				100%	Rt Bank CI >	1.70	BV
	Score >	2	1	3					Lt Bank CI >	1.80	1.75

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	2	middle

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Majority of the transect within box culvert

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.69**

INSERT PHOTOS:

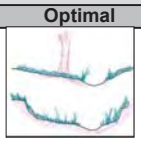
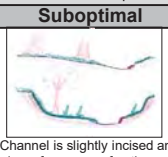
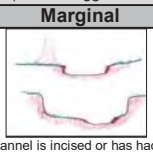
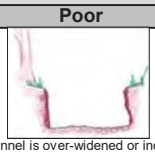
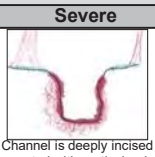
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Fourth	12070104	6/28/2018	3	Upstream of crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 7

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	**CV** 2.0

Notes: Channel over-widened with no flood plain or benches.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of buffer dominated by maintained grasses, with urban development and a small area of native brush present.

Right Bank	% Riparian Area>	90%	10%					100%			
	Score >	2	1								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	80%	15%	5%				100%	**Rt Bank CI >**	1.90	**BV**
	Score >	2	1	3					**Lt Bank CI >**	1.90	1.90

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	**UV**
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	3	Downstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Evidence of past alteration is present, and stream pattern and stability are not recovering

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.98**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
	TxDOT		6/29/2018
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark		12070104.00	SH 36

Stream Name	Transect ID	Condition Index (RCI)	
Water 7	1	1.90	
Water 7	2	1.69	
Water 7	3	1.98	

Average RCI	**1.857**
Impact Factor	2.00
Linear Feet of Impact	293.00
Compenesation Requirement	120

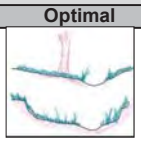
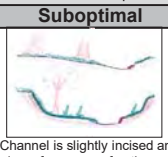
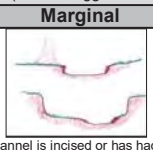
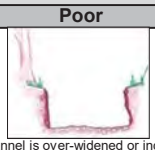
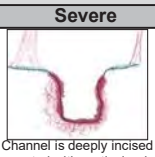
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Fourth	12070104	3/20/2020	1	Upstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 7 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Construction is not planned for upstream of the existign SH 36. Transect 1 condition should remain stable.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of buffer maintaiend ROW with small grouping of native trees and brush.

Right Bank	% Riparian Area>	60%	20%	20%				100%			
	Score >	2	3	1							
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	80%	20%					100%	Rt Bank CI >	2.00	BV
	Score >	1	2						Lt Bank CI >	1.20	1.60

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	1	Upstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Additional alteration and structure not planned for Transect 1

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.90**

INSERT PHOTOS:

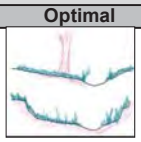
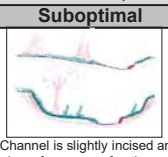
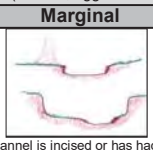
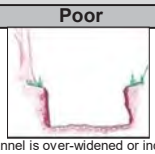
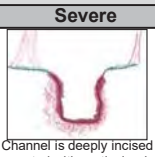
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Fourth	12070104	3/20/2020	2	Middle at Crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 7 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Notes: Majority of crossing within existing culvert and will remain in similar condition post construction.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Post construction vegetation will be maintained ROW with additional pavement present

Right Bank	% Riparian Area>	65%	35%					100%			
	Score >	2	1								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	75%	25%					100%	Rt Bank CI >	1.65	BV
	Score >	2	1						Lt Bank CI >	1.75	1.70

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	2	middle

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Majority of the transect within box culvert

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.68**

INSERT PHOTOS:

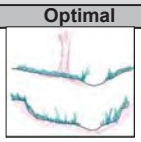
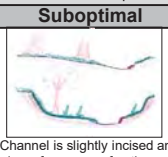
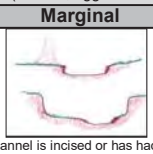
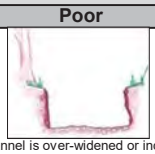
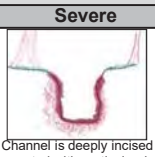
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Fourth	12070104	3/20/2020	3	Downstream of crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 7 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Notes: Additonal lane and bridge will be placed in this transect. Post construction stream condition will be similar to the existing transect 2.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of buffer dominated by maintained grasses and pavement.

Right Bank	% Riparian Area>	50%	50%					100%			
	Score >	2	1								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	50%	50%					100%	Rt Bank CI >	1.50	BV
	Score >	2	1						Lt Bank CI >	1.50	1.50

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	3	Downstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes:Transect will contain new lanes and bridge/culvert

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.38**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
	TxDOT		6/29/2018
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark		12070104	SH 36

Stream Name	Transect ID	Condition Index (RCI)	
Water 7	1	1.90	
Water 7	2	1.68	
Water 7	3	1.38	

Average RCI	**1.653**
Impact Factor	2.00
Linear Feet of Impact	293.00
Compenesation Requirement	120

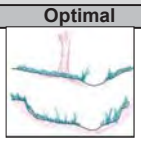
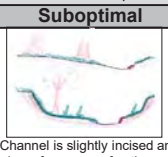
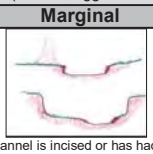
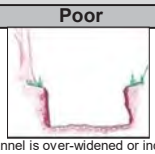
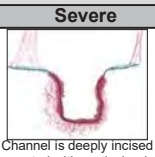
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	6/28/2018	1	Upstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 8 (Fairchilds Creek)

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Channelized; over widened. No bankfull benches or active floodplain.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of buffer dominated by maintained grasses with smaller areas of native woodland present in the secondary area of both banks

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	2	3								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	2.05	BV
	Score >	2	3						Lt Bank CI >	2.05	2.05

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	1	Upstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Riprap and structure present from old rail. Stream does not appear to be recovering.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.76**

INSERT PHOTOS:

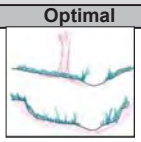
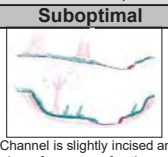
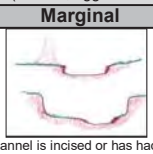
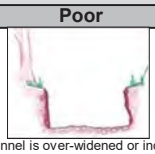
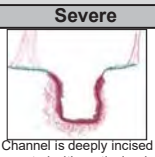
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	6/28/2018	2	Middle at crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 8 (Fairchilds Creek)

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	CV
Score	5	4	3	2	1	1.0

Notes: Majority of transect within box culvert

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of the buffer existing pavement and culvert with maintained ROW also present

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.05	BV
	Score >	1	2						Lt Bank CI >	1.05	1.05

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description	
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	2	middle	

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: More than 90% of channel at this transect within culvert

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.26**

INSERT PHOTOS:

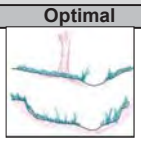
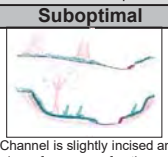
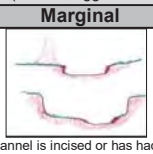
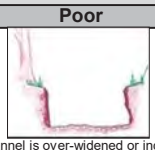
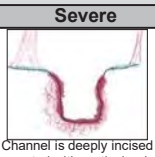
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	6/28/2018	3	Downstream of crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 8 (Fairchilds Creek)

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Channel over-widening, erosional scars present. No active floodplain, small benches present.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of buffer consists of maintained ROW

Right Bank	% Riparian Area>	100%						100%			
	Score >	2									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	90%	10%					100%	Rt Bank CI >	2.00	BV
	Score >	2	1						Lt Bank CI >	1.90	1.95

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDPT	SH 36	intermittent	12070104	06/28/20118	3	Downstream of SH 36

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Stream not recovering from previous alterations. Rip rap present along both banks, extending further on the right bank.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.74**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

TXDOT Third

Project #	Applicant	Date
	TxDOT	6/29/2018
Evaluators	**HUC**	**Locality**
Arron Tuggle, Sally Clark	12070104.00	SH 36

Stream Name	Transect ID	Condition Index (RCI)	
Water 8	1	1.76	
Water 8	2	1.26	
Water 8	3	1.74	

Average RCI	**1.587**
Impact Factor	2.00
Linear Feet of Impact	240.00
Compenesation Requirement	98

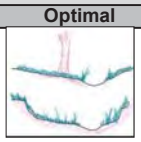
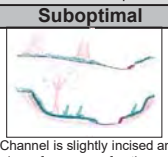
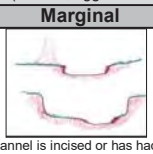
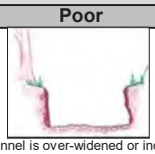
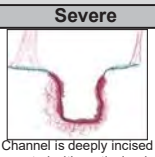
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	6/28/2018	1	Upstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 8 (Fairchilds Creek) Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Construction is not planned for upstream of the existing SH 36. Transect 1 condition should remain stable.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of buffer dominated by maintained grasses with smaller areas of native woodland present in the secondary area of both banks

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	2	3								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	2.05	BV
	Score >	2	3						Lt Bank CI >	2.05	2.05

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	1	Upstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Additional alteration and structure not planned for Transect 1

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.76**

INSERT PHOTOS:

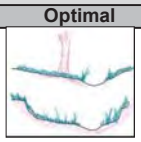
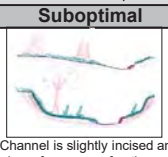
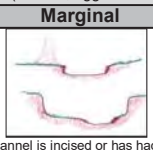
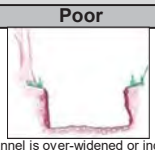
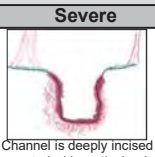
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	6/28/2018	2	Middle at crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 8 (Fairchilds Creek) Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Notes: Majority of crossing within existing culvert and will remain in similar condition post construction.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of the buffer existing pavement and culvery with maintained ROW also present. Should remain consisten (Poor) post construction

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.05	BV
	Score >	1	2						Lt Bank CI >	1.05	1.05

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	2	middle

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: More than 90% of channel at this transect within culvert

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.26**

INSERT PHOTOS:

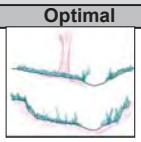
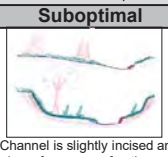
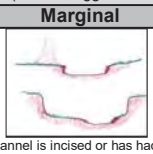
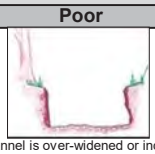
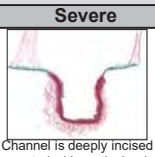
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	3/20/2020	3	Downstream of crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 8 (Fairchilds Creek) Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Notes: Additonal lane and bridge will be placed in this transect. Post construction stream condition will be similar to the existing transect 2.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of buffer consists of maintained ROW. Additional pavement anticipated

Right Bank	% Riparian Area>	50%	50%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	50%	50%					100%	Rt Bank CI >	1.50	BV
	Score >	2	1						Lt Bank CI >	1.50	1.50

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	03/20/2020	3	Downstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: Additonal lane and bridge will be placed in this transect.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.13**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

TXDOT Third

Project #	Applicant	Date
	TxDOT	3/20/2020
Evaluators	**HUC**	**Locality**
Arron Tuggle, Sally Clark	12070104	SH 36

Stream Name	Transect ID	Condition Index (RCI)	
Water 8 Post	1	1.76	
Water 8 Post	2	1.26	
Water 8 Post	3	1.13	

Average RCI	**1.383**
Impact Factor	2.00
Linear Feet of Impact	240.00
Compenesation Requirement	98

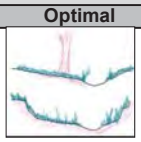
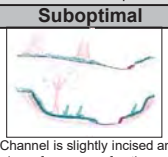
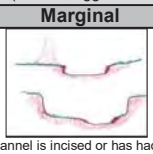
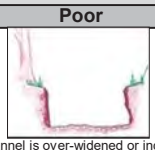
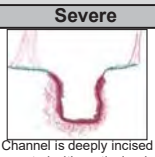
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	6/28/2018	1	Upstream of crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 9 (Buffalo Creek)

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	CV
Score	5	4	3	2	1	2.0

Notes: Channel is over-widened with no active floodplain. No benches present.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: The buffer consists of grazed pasture.

Right Bank	% Riparian Area>	100%						100%			
	Score >	2									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	2.00	BV
	Score >	2							Lt Bank CI >	2.00	2.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes:

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	1	Upstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Channel has been straightened and not allowed to recover.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.75**

INSERT PHOTOS:

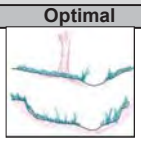
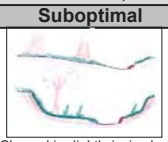
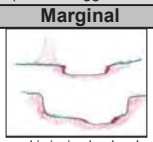
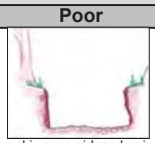
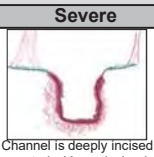
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	6/28/2018	2	Middle at crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 9 (Buffalo Creek)

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Notes: Majotity of transect within existing box culvert

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of transect existing pavement and maintained ROW

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.05	BV
	Score >	1	2						Lt Bank CI >	1.05	1.05

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: Majority of transect within box culvert

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.01**

INSERT PHOTOS:

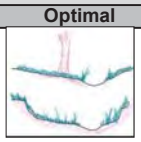
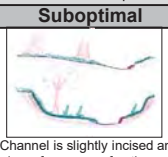
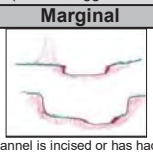
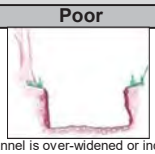
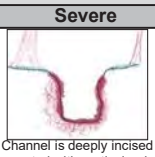
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	6/28/2018	3	Downstream of crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 9 (Buffalo Creek)

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 3.0

Notes: Channel more naturalized than upstream segments. Channel incised but small benches present. No active floodplain.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Right bank dominated by maintained grasses and parking lot. Left bank mostly maintained with strip of native trees and brush along fenceline.

Right Bank	% Riparian Area>	55%	45%					100%			
	Score >	2	1								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	70%	30%					100%	Rt Bank CI >	1.55	BV
	Score >	2	3						Lt Bank CI >	2.30	1.93

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	3	Downstream of crossing

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	3.00

Notes: Stream with enough room in modified channel to recover. No structure present.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.48**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
	TxDOT		6/29/2018
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark		12070104.00	SH 36

Stream Name	Transect ID	Condition Index (RCI)	
Water 9	1	1.75	
Water 9	2	1.01	
Water 9	3	2.48	

Average RCI	**1.747**
Impact Factor	2.00
Linear Feet of Impact	125.00
Compenesation Requirement	1

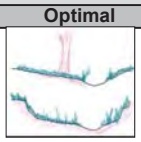
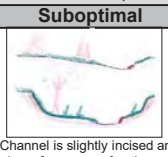
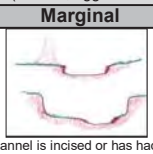
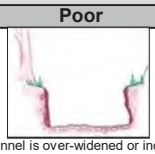
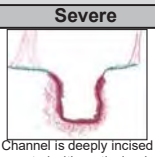
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	3/20/2020	1	Upstream of crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 9 (Buffalo Creek) Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	**CV** 2.0

Notes: Construction impacts are not anticipated upstream of the SH 36 crossing.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer impacts are not anticipated and the buffer should remain consistent.

Right Bank	% Riparian Area>	100%						100%			
	Score >	2									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	**Rt Bank CI >**	2.00	**BV**
	Score >	2							**Lt Bank CI >**	2.00	2.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	**UV**
Score	5	4	3	2	1	1.00

Notes:

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	3/20/2020	1	Upstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: No alterations are planned for this transect.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.75**

INSERT PHOTOS:

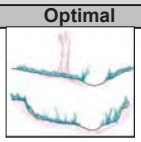
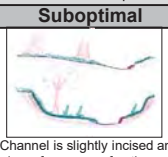
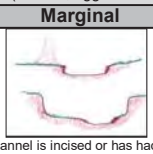
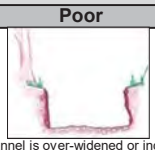
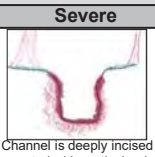
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	3/20/2020	2	Middle at crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 9 (Buffalo Creek) Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Notes: Majotity of transect within existing box culvert

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Additional buffer is likely to be converted to culvert and/or riprap

Right Bank	% Riparian Area>	100%						100%				
	Score >	1										
									CI= (Sum % RA * Scores*0.01)/2			
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	1.00	BV	
	Score >	1							Lt Bank CI >	1.00	1.00	

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	3/20/2020	2	at SH 36 crossing

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: Majority of transect within box culvert

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.00**

INSERT PHOTOS:

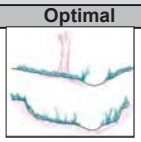
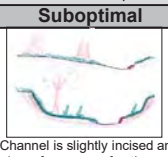
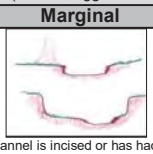
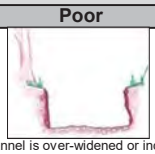
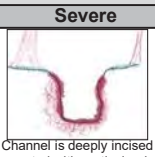
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	3/20/2020	3	Downstream of crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 9 (Buffalo Creek) Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 3.0

Notes: No construction impacts are anticipated at this transect.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Impacts to the buffer are not anticipated in this transect.

Right Bank	% Riparian Area>	55%	45%					100%			
	Score >	2	1								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	70%	30%					100%	Rt Bank CI >	1.55	BV
	Score >	2	3						Lt Bank CI >	2.30	1.93

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	3/20/2020	3	Downstream of crossing

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	3.00

Notes: No alterations are planned for this transect.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.48**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant	Date
	TxDOT	3/20/2020
Evaluators	**HUC**	**Locality**
Arron Tuggle, Sally Clark	12070104	SH 36

Stream Name	Transect ID	Condition Index (RCI)	
Water 9 Post	1	1.75	
Water 9 Post	2	1.00	
Water 9 Post	3	2.48	
Average RCI		**1.743**	
Impact Factor		2.00	
Linear Feet of Impact		125.00	
Compenesation Requirement		1	

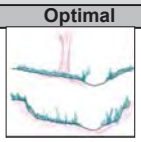
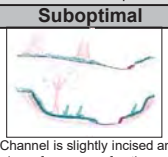
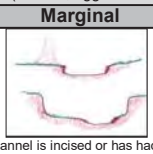
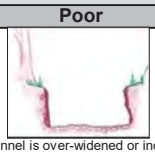
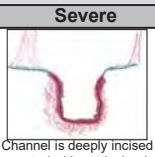
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	6/28/2018	1	Upstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 10

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Channel overwidened with excess sediment and vegetation creep.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of buffer dominated by maintained grasses with small area of native brush along right bank and urban development along left bank.

Right Bank	% Riparian Area>	85%	15%					100%			
	Score >	2	3								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	85%	15%					100%	Rt Bank CI >	2.15	BV
	Score >	2	1						Lt Bank CI >	1.85	2.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	1	Upstream of crossing

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Evidence of past alteration is present, and stream pattern and stability are not recovering

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.75**

INSERT PHOTOS:

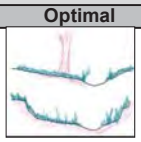
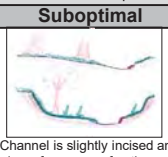
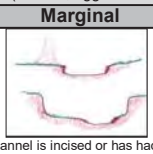
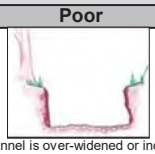
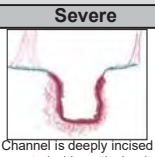
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	6/28/2018	2	Middle at road crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 10

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	**CV** 1.0

Notes: Majority of transect within box culvert

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of buffer existing pavement with small area of maintained ROW grasses

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.05	BV
	Score >	1	2						Lt Bank CI >	1.05	1.05

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	**UV**
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	2	Middle

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: Majority of transect within box culvert

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.01**

INSERT PHOTOS:

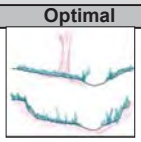
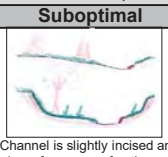
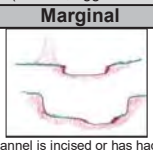
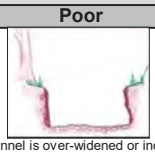
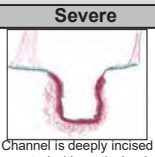
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	6/28/2018	3	Downstream of crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 10

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	CV
Score	5	4	3	2	1	2.0

Notes: Channel overwidened with excess sediment and vegetation creep. No benches present.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of both banks dominated by maintained grasses with an area of native woods along the right bank

Right Bank	% Riparian Area>	60%	40%					100%			
	Score >	2	3								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	2.40	BV
	Score >	2							Lt Bank CI >	2.00	2.20

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	3	downstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Minimal structure present but stream has not recovered from past alterations.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.80**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
	TxDOT		6/29/2018
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark			

Stream Name	Transect ID	Condition Index (RCI)	
Water 10	1	1.75	
Water 10	2	1.01	
Water 10	3	1.80	

Average RCI	**1.520**
Impact Factor	2.00
Linear Feet of Impact	150.00
Compenesation Requirement	1

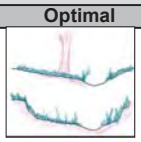
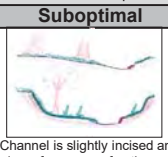
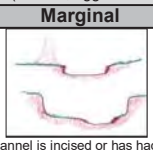
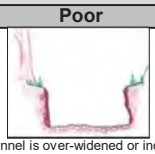
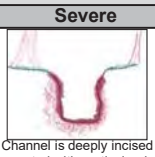
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	3/20/2020	1	Upstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 10 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Construction impacts are not anticipated upstream of the SH 36 crossing.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer impacts are not anticipated and the buffer should remain consistent.

Right Bank	% Riparian Area>	85%	15%					100%			
	Score >	2	3								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	85%	15%					100%	Rt Bank CI >	2.15	BV
	Score >	2	1						Lt Bank CI >	1.85	2.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description	
	TXDOT	SH 36	Intermittent	12070104	3/20/2020	1	Upstream of crossing	

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: No alterations are planned for this transect

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.75**

INSERT PHOTOS:

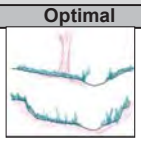
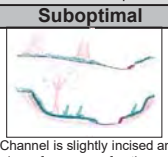
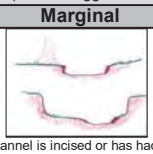
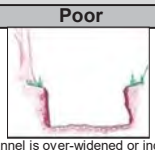
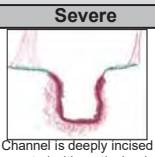
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	3/20/2020	2	Middle at road crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 10 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Notes: Majority of transect within box culvert; will remain severe

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Additional buffer to be converted to pavement and riprap

Right Bank	% Riparian Area>	100%						100%				
	Score >	1										
									CI= (Sum % RA * Scores*0.01)/2			
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	1.00	BV	
	Score >	1							Lt Bank CI >	1.00	1.00	

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	3/20/2020	2	Middle

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: Majority of transect within box culvert

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.00**

INSERT PHOTOS:

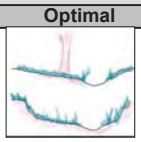
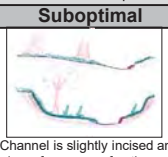
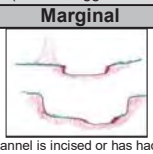
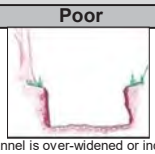
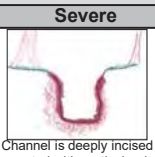
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
	TXDOT	Third	12070104	3/20/2020	3	Downstream of crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 10 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: No construction impacts are anticipated at this transect.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: No construction impacts are anticipated at this transect.

Right Bank	% Riparian Area>	60%	40%					100%			
	Score >	2	3								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	2.40	BV
	Score >	2							Lt Bank CI >	2.00	2.20

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	3/20/2020	3	downstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: No alterations projected for this transect.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.80**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
	TxDOT		3/20/2020
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark		12070104	SH 36

Stream Name	Transect ID	Condition Index (RCI)	
Water 10 Post	1	1.75	
Water 10 Post	2	1.00	
Water 10 Post	3	1.80	

Average RCI	**1.517**
Impact Factor	2.00
Linear Feet of Impact	150.00
Compenesation Requirement	1

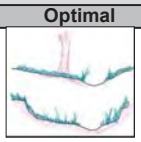
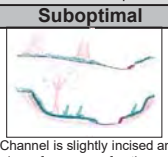
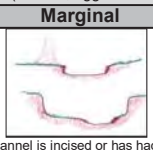
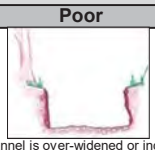
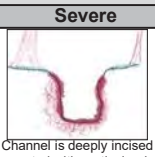
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12070401	6/28/2018	1	Upstream of crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 11

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	CV
Score	5	4	3	2	1	2.0

Notes: Channel overwidened with no benches and weak banks. Floodplain access minimal.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer consists of grazed pasture.

Right Bank	% Riparian Area>	100%						100%			
	Score >	2									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	2.00	BV
	Score >	2							Lt Bank CI >	2.00	2.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Ephemeral	12070104	06/28/2018	1	upstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes Minimla structure but stream has not recovered from previous alteration

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	1.75

INSERT PHOTOS:

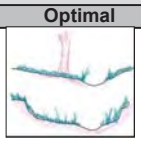
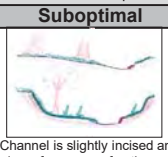
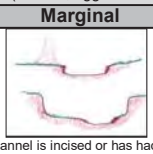
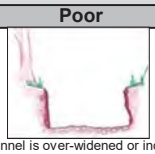
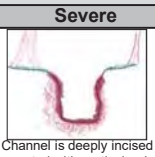
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12090401	6/28/2018	2	Middle and crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 11

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Majority of transect within box culvert

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of transect within box culvert, small areas of maintained ROW present

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.05	BV
	Score >	1	2						Lt Bank CI >	1.05	1.05

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description	
	TXDOT	SH 36	Fourth	12070104	06/28/2018	2	middle	

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: Majority of transect within box culvert

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.01**

INSERT PHOTOS:

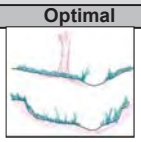
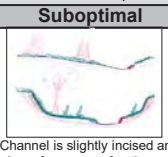
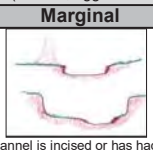
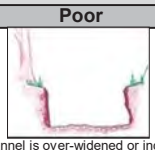
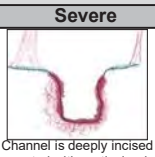
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12090401	6/28/2018	3	Downstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 11

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Over widened banks. Weak flow and overgrown aquatic vegetation present. No visible banks.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer is grazed pasture.

Right Bank	% Riparian Area>	100%						100%			
	Score >	2									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	2.00	BV
	Score >	2							Lt Bank CI >	2.00	2.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Ephemeral	12070104	06/28/2018	3	Downstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Evidence of past alteration is present, and stream pattern and stability are not recovering.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.75**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
State Highway 36	TxDOT		6/29/2018
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark		12070401	SH36

Stream Name	Transect ID	Condition Index (RCI)	
Water 11	1	1.75	
Water 11	2	1.01	
Water 11	3	1.75	

Average RCI	**1.503**
Impact Factor	2.00
Linear Feet of Impact	159.00
Compenesation Requirement	1

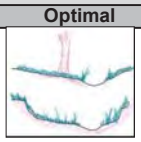
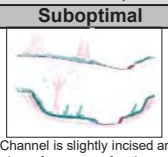
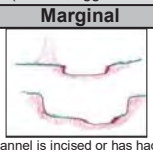
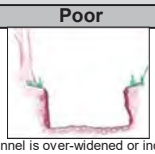
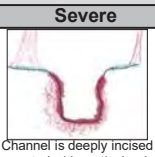
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12070401	3/20/2020	1	Upstream of crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Watr 11 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Construction impacts are not anticipated upstream of the SH 36 crossing.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer impacts are not anticipated upstream of the SH 36 crossing.

Right Bank	% Riparian Area>	100%						100%			
	Score >	2									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	2.00	BV
	Score >	2							Lt Bank CI >	2.00	2.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Ephemeral	12070104	3/20/2020	1	upstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Alterations impacts are not anticipated upstream of the SH 36 crossing.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.75**

INSERT PHOTOS:

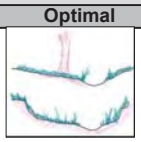
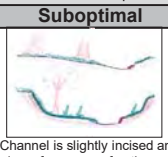
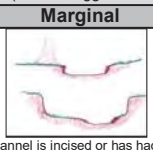
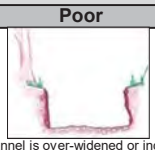
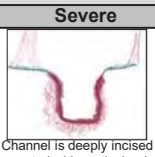
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12090401	3/20/2020	2	Middle and crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 11 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Majority of transect within box culvert; will remain severe

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of transect within box culvert; additional buffer impacts anticipated

Right Bank	% Riparian Area>	100%						100%			
	Score >	1									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	1.00	BV
	Score >	1							Lt Bank CI >	1.00	1.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description	
	TXDOT	SH 36	Fourth	12070104	3/20/2020	2	middle	

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: Majority of transect within box culvert; will remain severe

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.00**

INSERT PHOTOS:

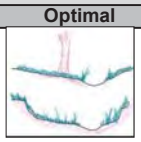
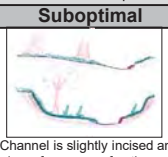
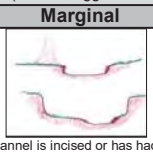
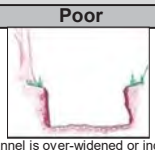
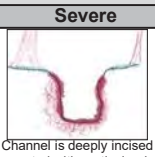
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12090401	3/20/2020	3	Downstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 11 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: No construction impacts are anticipated at this transect.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer impacts are not anticipated at this transect.

Right Bank	% Riparian Area>	100%						100%			
	Score >	2									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	2.00	BV
	Score >	2							Lt Bank CI >	2.00	2.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Ephemeral	12070104	3/20/2020	3	Downstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Alterations are not planned at this transect.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.75**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
State Highway 36	TxDOT		3/20/2020
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark		12070401	SH36

Stream Name	Transect ID	Condition Index (RCI)	
Water 11 Post	1	1.75	
Water 11 Post	2	1.00	
Water 11 Post	3	1.75	
Average RCI		**1.500**	
Impact Factor		2.00	
Linear Feet of Impact		159.00	
Compenesation Requirement		1	

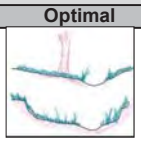
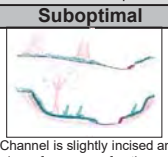
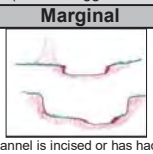
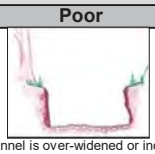
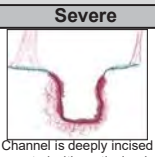
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12070401	6/28/2018	1	Upstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 12

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Channel over widened. No floodplain or benches visible

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of buffer maintained ROW and grazed pasture with urban development present.

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	2	1								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.95	BV
	Score >	2	1						Lt Bank CI >	1.95	1.95

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	1	Upstream of crossing

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	3.00

Notes: Evidence of past alteration may be present, but stream pattern and stability are beginning to recover.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.24**

INSERT PHOTOS:

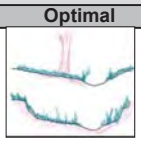
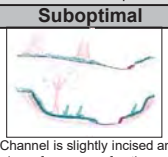
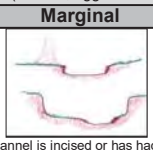
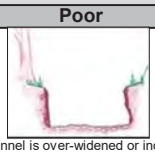
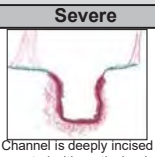
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12090401	6/28/2018	2	Mid at roadway crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 12

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Notes: Majority of transect within box culvert

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of buffer existing pavement/culvert with maintained ROW present

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.05	BV
	Score >	1	2						Lt Bank CI >	1.05	1.05

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV 2.00
Score	5	4	3	2	1	

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	2	middle

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: Channel in this transect is within box culvert

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.26**

INSERT PHOTOS:

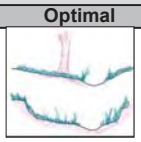
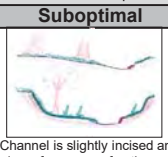
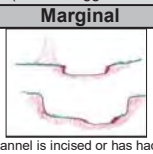
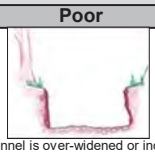
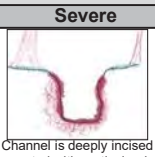
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12090401	6/28/2018	3	Downstream of crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 12

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: No active floodplain. Channel over widened with uniform sediment.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of buffer is row agriculture

Right Bank	% Riparian Area>	90%	10%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	90%	10%					100%	Rt Bank CI >	1.10	BV
	Score >	1	2						Lt Bank CI >	1.10	1.10

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	3	downstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Evidence of past alteration is present, and stream pattern and stability are not recovering. Riprap present along both banks.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.78**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
State Highway 36	TxDOT		6/29/2018
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark		12070401	SH36

Stream Name	Transect ID	Condition Index (RCI)	
Water 12	1	2.24	
Water 12	2	1.26	
Water 12	3	1.78	

Average RCI	**1.760**
Impact Factor	2.00
Linear Feet of Impact	192.00
Compenesation Requirement	2

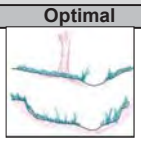
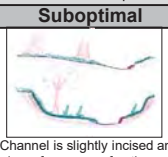
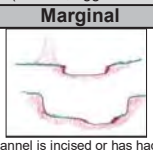
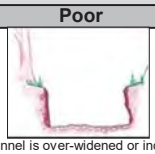
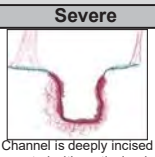
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12070401	3/20/2020	1	Upstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 12 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: No construction impacts are anticipated at this transect.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: No buffer impacts are anticipated at this transect.

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	2	1								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.95	BV
	Score >	2	1						Lt Bank CI >	1.95	1.95

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description	
	TXDOT	SH 36	Intermittent	12070104	3/20/2020	1	Upstream of crossing	

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	3.00

Notes: No alterations are anticipated at this transect.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.24**

INSERT PHOTOS:

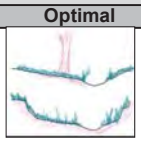
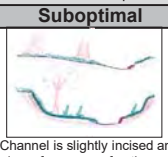
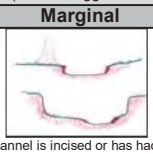
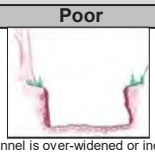
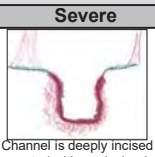
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12090401	3/20/2020	2	Mid at roadway crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 12 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Notes: Majority of transect within box culvert; will remain severe

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Additional buffer impacts anticipated with roadway expansion

Right Bank	% Riparian Area>	100%						100%			
	Score >	1									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	1.00	BV
	Score >	1							Lt Bank CI >	1.00	1.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	2	middle

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: Channel in this transect iwill remain in box culvert; will remain Severe

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.25**

INSERT PHOTOS:

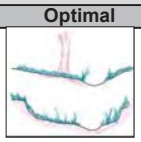
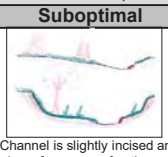
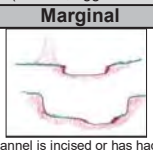
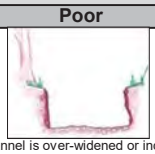
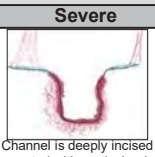
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12090401	3/20/2020	3	Downstream of crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 12 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: No construction impacts are anticipated at this transect.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: No buffer impacts are anticipated at this transect.

Right Bank	% Riparian Area>	90%	10%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	90%	10%					100%	Rt Bank CI >	1.10	BV
	Score >	1	2						Lt Bank CI >	1.10	1.10

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description	
	TXDOT	SH 36	Intermittent	12070104	3/20/2020	3	downstream	

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: No additional alterations are planned for this transect

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.78**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
State Highway 36	TxDOT		3/20/2020
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark		12070401	SH36

Stream Name	Transect ID	Condition Index (RCI)	
Water 12 Post	1	2.24	
Water 12 Post	2	1.25	
Water 12 Post	3	1.78	
Average RCI		**1.757**	
Impact Factor		2.00	
Linear Feet of Impact		192.00	
Compenesation Requirement		2	

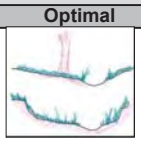
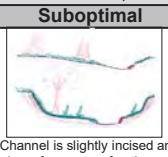
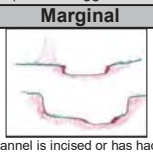
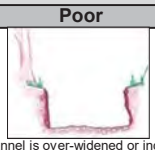
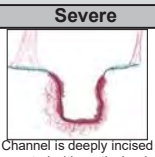
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12070401	6/28/2018	1	Upstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 13

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	CV
Score	5	4	3	2	1	2.0

Notes: Channel incised and straightened. Likely unfirm sediment and impeded flow. No benches observed and likely no floodplain.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Right bank contains urban areas and grazed pasture. Left bank majority grazed pasture and maintained ROW, with smaller areas of development and native woody vegetation.

Right Bank	% Riparian Area>	55%	45%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	90%	5%	5%				100%	Rt Bank CI >	1.45	BV
	Score >	2	1	3					Lt Bank CI >	2.00	1.73

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	1	Upstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Evidence of past alteration is present, and stream pattern and stability are not recovering.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.68**

INSERT PHOTOS:

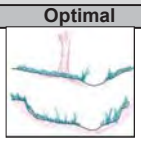
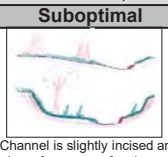
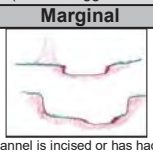
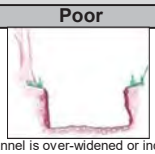
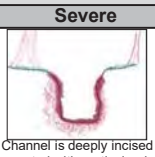
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12090401	6/28/2018	2	Midsection

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 13

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Notes: Majority of transect with box culvert

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes Majority of transect with box culvert; maintained ROW present

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.05	BV
	Score >	1	2						Lt Bank CI >	1.05	1.05

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	2	middle

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: Majority of transect with box culvert

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.01**

INSERT PHOTOS:

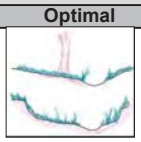
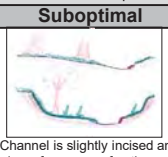
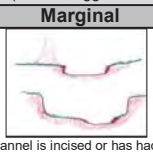
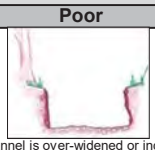
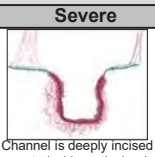
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12090401	6/28/2018	3	Downstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 13

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Channel incised and straightened. Likely unfirm sediment and impeded flow. No benches observed and likely no floodplain.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer consists of grazed pasture

Right Bank	% Riparian Area>	100%						100%			
	Score >	2									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	2.00	BV
	Score >	2							Lt Bank CI >	2.00	2.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	3	downstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	3.00

Notes: Minimal structure; Evidence of past alteration may be present, but stream pattern and stability are beginning to recover.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.00**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
State Highway 36	TxDOT		6/29/2018
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark		12090401	SH36

Stream Name	Transect ID	Condition Index (RCI)	
Water 13	1	1.68	
Water 13	2	1.01	
Water 13	3	2.00	
Average RCI		**1.563**	
Impact Factor		2.00	
Linear Feet of Impact		268.00	
Compenesation Requirement		120	

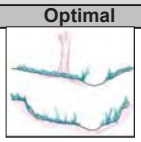
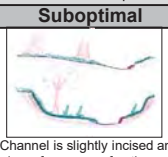
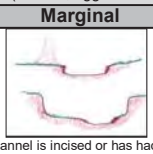
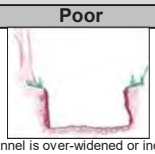
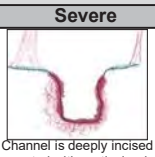
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12070401	3/20/2020	1	Upstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 13 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Notes: New northbound lane will be in this transect, including culvert/bridge

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: New northbound lane will be in this transect. Transect will be largely pavement and well maintained ROW

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.05	BV
	Score >	1	2						Lt Bank CI >	1.05	1.05

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	3/20/2020	1	Upstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: New northbound lane will be in this transect, including culvert/bridge

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.01**

INSERT PHOTOS:

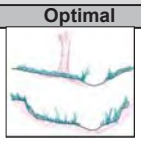
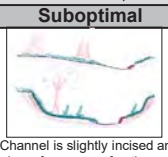
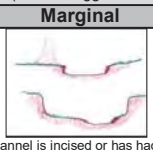
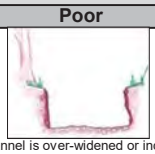
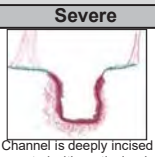
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12090401	3/20/2020	2	Midsection

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 13 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Notes: Majority of transect with box culvert at southbound lane crossing

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes Majority of transect with box culvert; maintained ROW present; will remain poor quality

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.05	BV
	Score >	1	2						Lt Bank CI >	1.05	1.05

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	3/20/2020	2	middle

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: Majority of transect with box culvert

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.01**

INSERT PHOTOS:

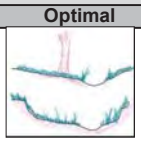
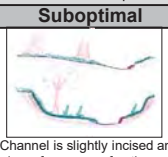
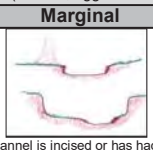
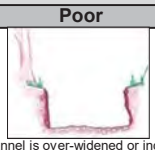
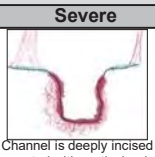
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12090401	3/20/2020	3	Downstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 13 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Construction is not planned for this transect

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer impacts are not anticipated for this transect

Right Bank	% Riparian Area>	100%						100%			
	Score >	2									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	2.00	BV
	Score >	2							Lt Bank CI >	2.00	2.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description	
	TXDOT	SH 36	Intermittent	12070104	3/20/2020	3	downstream	

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	3.00

Notes: Alterations are not planned for this transect

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.00**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
State Highway 36	TxDOT		3/20/2020
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark		12070401	SH36

Stream Name	Transect ID	Condition Index (RCI)	
Water 13 Post	1	1.01	
Water 13 Post	2	1.01	
Water 13 Post	3	2.00	

Average RCI	**1.340**
Impact Factor	2.00
Linear Feet of Impact	268.00
Compenesation Requirement	120

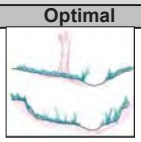
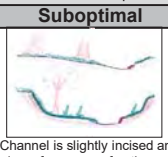
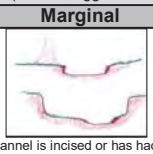
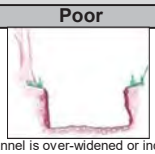
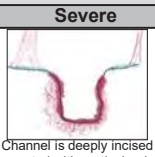
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12070104	6/28/2018	1	Upstream of crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 16

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Channel incised and likely dredged. No access to floodplain.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer consists of grazed pasture

Right Bank	% Riparian Area>	100%						100%			
	Score >	2									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	2.00	BV
	Score >	2							Lt Bank CI >	2.00	2.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	1	upstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Evidence of past alteration is present, and stream pattern and stability are not recovering. Most of transect impacted by previous dredging.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.00**

INSERT PHOTOS:

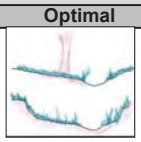
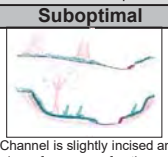
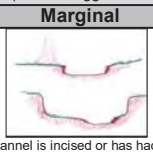
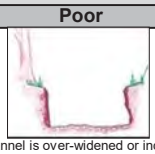
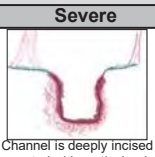
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12070104	6/28/2018	2	Mid Section

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 16

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Notes: Majority of transect within box culvert

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of transect within box culvert with small areas of maintained ROW

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.05	BV
	Score >	1	2						Lt Bank CI >	1.05	1.05

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	2	at crossing

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: Majority of transect at existing box culvert

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.26**

INSERT PHOTOS:

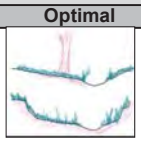
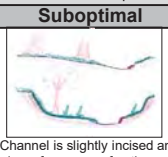
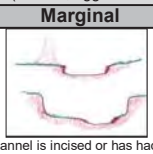
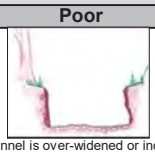
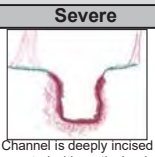
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12070104	6/28/2018	3	Downstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 16

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Channel incised and likely dredged. No access to floodplain. No benches visible.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer consists of over grazed pasture

Right Bank	% Riparian Area>	100%						100%			
	Score >	2									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	2.00	BV
	Score >	2							Lt Bank CI >	2.00	2.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	3	downstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.50

Notes: Evidence of past alteration is present, and stream pattern and stability are not recovering. Portion of transect impacted by previous dredging.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.13**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
State Highway 36	TxDOT		6/29/2018
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark		12070104	SH36

Stream Name	Transect ID	Condition Index (RCI)	
Water 16	1	2.00	
Water 16	2	1.26	
Water 16	3	2.13	

Average RCI	**1.797**
Impact Factor	5.00
Linear Feet of Impact	223.00
Compenesation Requirement	324

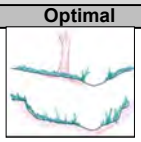
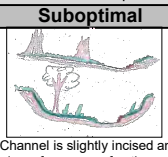
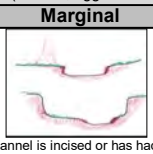
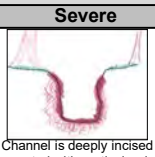
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12070104	3/20/2020	1	Upstream of crossing

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 16 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Construction impacts are not anticipated for this transect; will remain Poor

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer will remain grazed pasture

Right Bank	% Riparian Area>	100%						100%			
	Score >	2									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	2.00	BV
	Score >	2							Lt Bank CI >	2.00	2.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description	
	TXDOT	SH 36	Intermittent	12070104	3/20/2020	1	upstream	

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Alterations are not anticipated for this transect

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.00**

INSERT PHOTOS:

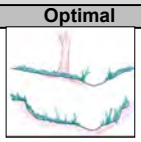
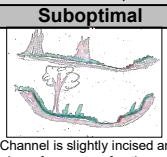
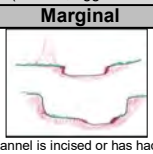
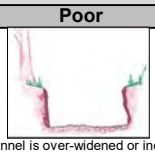
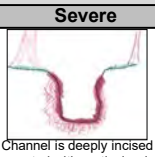
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12070104	3/20/2020	2	Mid Section

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 16 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	CV
Score	5	4	3	2	1	1.0

Notes: Majority of transect within box culvert of proposed southbound lanes

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer will remain Severe with majority pavement

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.05	BV
	Score >	1	2						Lt Bank CI >	1.05	1.05

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description	
	TXDOT	SH 36	Intermittent	12070104	3/20/2020	2	at crossing	

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: Majority of transect at existing box culvert

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.26**

INSERT PHOTOS:

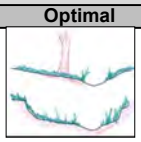
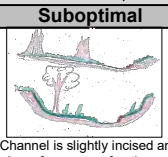
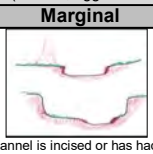
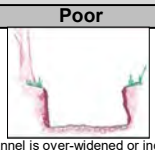
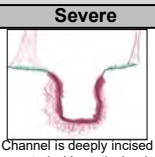
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12070104	3/20/2020	3	Downstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 16 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Notes: Proposed northbound lanes will be constructed in this transect. Channel will be culverted.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer will be impacted by additional pavement and maintained ROW

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.05	BV
	Score >	1	2						Lt Bank CI >	1.05	1.05

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	3/20/2020	3	downstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: Proposed northbound lanes will be constructed in this transect. Channel will be culverted.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.26**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant	Date
State Highway 36	TxDOT	3/20/2020
Evaluators	**HUC**	**Locality**
Arron Tuggle, Sally Clark	12070104	SH36

Stream Name	**Transect ID**	**Condition Index (RCI)**	
Water 16 Post	1	2.00	
Water 16 Post	2	1.26	
Water 16 Post	3	1.26	

Average RCI	**1.507**
Impact Factor	5.00
Linear Feet of Impact	223.00
Compenesation Requirement	324

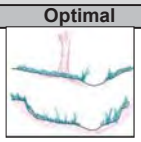
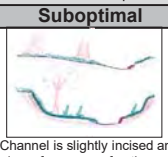
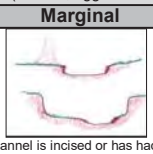
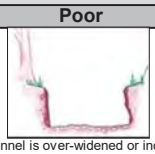
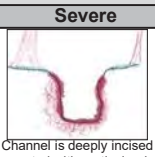
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12070104	6/28/2018	1	Upstream of SH 36

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 18

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	CV
Score	5	4	3	2	1	2.0

Notes: No access to active floodplain, no benches or point bars visible.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer consists of grazed pasture.

Right Bank	% Riparian Area>	100%						100%			
	Score >	2									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	2.00	BV
	Score >	2							Lt Bank CI >	2.00	2.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Ephemeral	12070104	06/25/2018	1	Upstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Evidence of past alteration is present, and stream pattern and stability are not recovering.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.75**

INSERT PHOTOS:

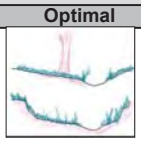
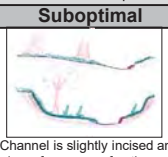
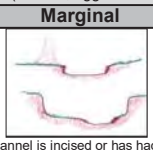
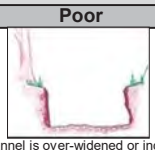
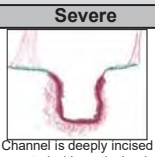
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12070104	6/28/2018	2	Mid Section

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 18

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Majority of transect with box culvert

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of transect with box culvert

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.05	BV
	Score >	1	2						Lt Bank CI >	1.05	1.05

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Inermittent	12070104	06/28/2018	2	At SH 36 Crossing

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: Majority of transect with box culvert

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.26**

INSERT PHOTOS:

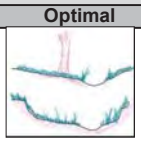
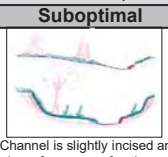
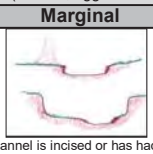
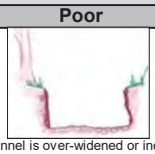
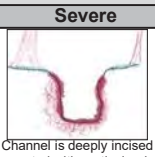
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12070104	6/28/2018	3	Downstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 18

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Channel incised with erosion present throughout. Floodplain not observed.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer consists of grazed pasture

Right Bank	% Riparian Area>	100%						100%			
	Score >	2									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	2.00	BV
	Score >	2							Lt Bank CI >	2.00	2.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	3	downstream of SH 36

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Evidence of past alteration is present, and stream pattern and stability are not recovering.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.75**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
State Highway 36	TxDOT		6/29/2018
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark		12070104	SH36

Stream Name	Transect ID	Condition Index (RCI)	
Water 18	1	1.75	
Water 18	2	1.26	
Water 18	3	1.75	

Average RCI	**1.587**
Impact Factor	5.00
Linear Feet of Impact	151.00
Compenesation Requirement	8

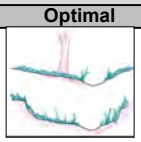
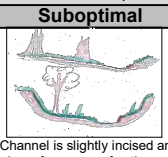
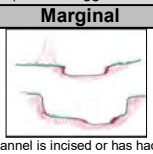
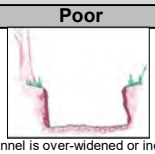
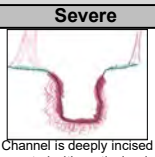
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12070104	3/20/2020	1	Upstream of SH 36

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 18 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: No construction impacts are anticipated at this transect.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer impacts are not anticipated at this transect.

Right Bank	% Riparian Area>	100%						100%			
	Score >	2									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	2.00	BV
	Score >	2							Lt Bank CI >	2.00	2.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Ephemeral	12070104	3/20/2020	1	Upstream

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Alterations are not proposed at this transect

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.75**

INSERT PHOTOS:

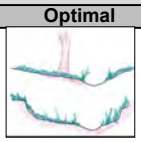
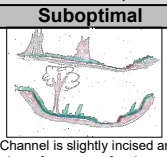
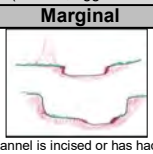
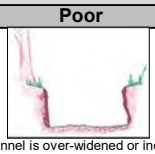
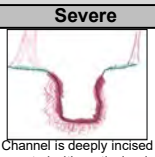
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12070104	3/20/2020	2	Mid Section

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 18 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Notes: Transect will be channelized through box culvert.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer will be entirely pavement and developed

Right Bank	% Riparian Area>	100%						100%			
	Score >	1									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	1.00	BV
	Score >	1							Lt Bank CI >	1.00	1.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	3/20/2020	2	Middle at SH 36

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: Majority of transect within box culvert

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.00**

INSERT PHOTOS:

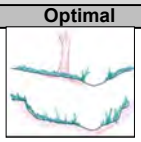
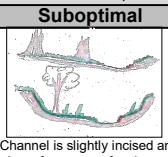
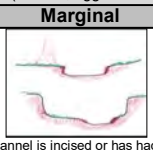
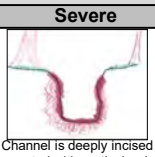
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Fourth	12070104	3/20/2020	3	Downstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 18 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: No construction impacts are anticipated at this transect.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer will remain grazed pasture

Right Bank	% Riparian Area>	100%						100%			
	Score >	2									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	2.00	BV
	Score >	2							Lt Bank CI >	2.00	2.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	3/20/2020	3	downstream of SH 36

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Alterations are not proposed at this transect

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.75**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant	Date
State Highway 36	TxDOT	3/20/2020
Evaluators	**HUC**	**Locality**
Arron Tuggle, Sally Clark	12070104	SH36

Stream Name	**Transect ID**	**Condition Index (RCI)**	
Water 18 Post	1	1.75	
Water 18 Post	2	1.00	
Water 18 Post	3	1.75	
Average RCI		**1.500**	
Impact Factor		5.00	
Linear Feet of Impact		151.00	
Compenesation Requirement		8	

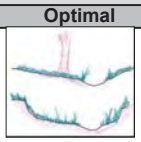
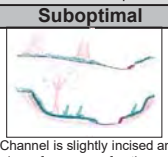
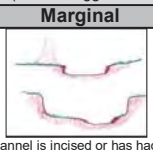
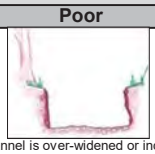
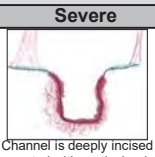
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Third	12070104	6/28/2018	1	Upstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 23

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer consists of maintained ROW and row agriculture

Right Bank	% Riparian Area>	90%	10%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	1.10	BV
	Score >	2							Lt Bank CI >	2.00	1.55

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Ephemeral	12070104	06/28/2018	1	upstream of SH 36

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Evidence of past alteration is present, and stream pattern and stability are not recovering.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.64**

INSERT PHOTOS:

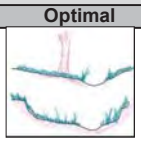
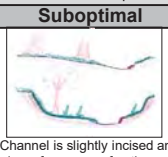
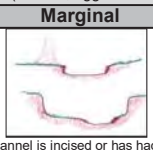
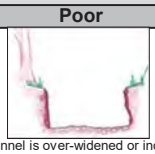
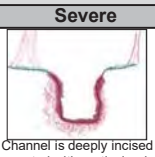
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Third	12070104	6/28/2018	2	Mid Section

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 23

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Notes: Majority of the transect is within a box culvert

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of the transect is within a box culvert

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.05	BV
	Score >	1	2						Lt Bank CI >	1.05	1.05

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description	
	TXDOT	SH 36	Ephemeral	12070104	06/28/218	2	at crossing	

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: Majority of the transect is within a box culvert

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.01**

INSERT PHOTOS:

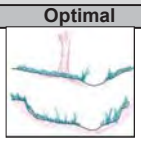
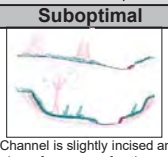
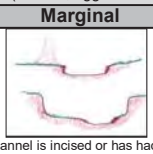
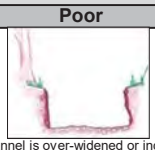
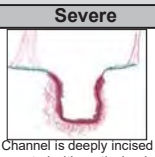
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Third	12070104	6/28/2018	3	Downstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 23

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer is a combination of maintained grasses and row agriculture

Right Bank	% Riparian Area>	50%	50%					100%			
	Score >	2	1								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	50%	50%					100%	Rt Bank CI >	1.50	BV
	Score >	2	1						Lt Bank CI >	1.50	1.50

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Ephemeral	12070104	06/28/2018	3	downstream of SH 36

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	3.00

Notes: Evidence of past alteration is present, and stream pattern and stability are not recovering.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.88**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
State Highway 36	TxDOT		6/29/2018
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark		12070104.00	SH36

Stream Name	Transect ID	Condition Index (RCI)	
Water 23	1	1.64	
Water 23	2	1.01	
Water 23	3	1.88	
Average RCI		**1.510**	
Impact Factor		5.00	
Linear Feet of Impact		292.00	
Compenesation Requirement		1087	

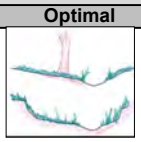
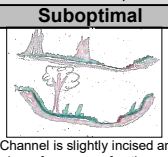
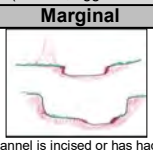
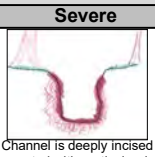
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Third	12070104	3/20/2020	1	Upstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 23 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	CV
Score	5	4	3	2	1	1.0

Notes: Proposed southbound lanes in this transect. Channel will be culverted

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer will be impacted by proposed construction and additional pavement

Right Bank	% Riparian Area>	90%	10%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	90%	10%					100%	Rt Bank CI >	1.10	BV
	Score >	1	2						Lt Bank CI >	1.10	1.10

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Ephemeral	12070104	3/20/2020	1	upstream of SH 36

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: Proposed southbound lanes in this transect. Channel will be culverted

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.03**

INSERT PHOTOS:

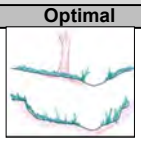
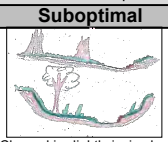
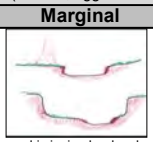
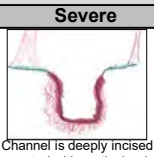
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Third	12070104	3/20/2020	2	Mid Section

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 23 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Notes: Majority of the transect is within a box culvert; will remain severe

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer will be further impacted via construction and addition of pavement

Right Bank	% Riparian Area>	100%						100%			
	Score >	1									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	1.00	BV
	Score >	1							Lt Bank CI >	1.00	1.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Ephemeral	12070104	3/20/2020	2	at crossing

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: Majority of the transect is within a box culvert; will remain poor

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.00**

INSERT PHOTOS:

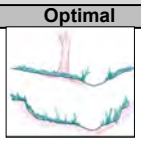
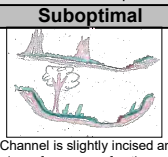
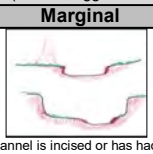
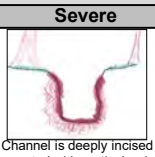
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Third	12070104	3/20/2020	3	Downstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 23 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Channel is not anticipated to be impacted in this transect. New construction is upstream

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer is a combination of maintained grasses and row agriculture; additional buffer impacts not anticipated

Right Bank	% Riparian Area>	50%	50%					100%			
	Score >	2	1								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	50%	50%					100%	Rt Bank CI >	1.50	BV
	Score >	2	1						Lt Bank CI >	1.50	1.50

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Ephemeral	12070104	3/20/2020	3	downstream of SH 36

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	3.00

Notes: Alterations are not proposed at this transect

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.88**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
State Highway 36	TxDOT		3/20/2020
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark		12070104	SH36

Stream Name	Transect ID	Condition Index (RCI)	
Water 23 Post	1	1.03	
Water 23 Post	2	1.00	
Water 23 Post	3	1.88	
Average RCI		**1.303**	
Impact Factor		5.00	
Linear Feet of Impact		292.00	
Compenesation Requirement		1087	

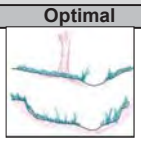
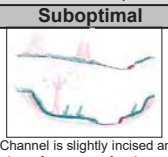
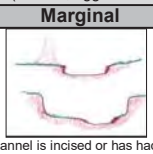
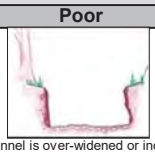
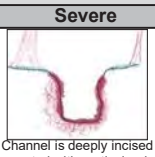
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Second	12070104	6/28/2018	1	Upstream of SH 36

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 24

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	CV
Score	5	4	3	2	1	3.0

Notes: Channel is incised or has had its course widened. No or minimum access to floodplain.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Right bank buffer is grazed pasture with mature oaks present along the margins of the riparian area. Left bank is maintained grasses and row agriculture.

Right Bank	% Riparian Area>	70%	30%					100%			
	Score >	2	3								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	85%	15%					100%	Rt Bank CI >	2.30	BV
	Score >	2	1						Lt Bank CI >	1.85	2.08

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	1	upstream of SH 36

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	3.00

Notes: Evidence of past alteration may be present, but stream pattern and stability are beginning to recover.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.27**

INSERT PHOTOS:

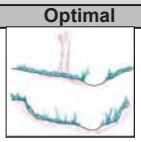
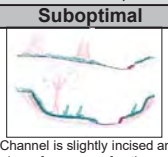
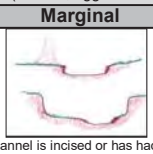
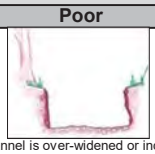
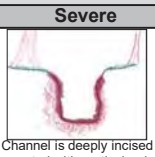
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Second	12070104	6/28/2018	2	Mid Section at SH 36

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 24

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Channel impacted and incised through crossing. Erosion present along both banks. No access to floodplain.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority ofbuffer developed roadway and maintained ROW

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.05	BV
	Score >	1	2						Lt Bank CI >	1.05	1.05

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	2	at SH 36 crossing

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Evidence of past alteration is present, and stream pattern and stability are not recovering.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.76**

INSERT PHOTOS:

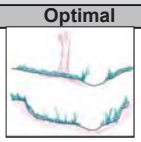
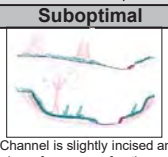
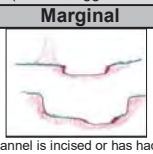
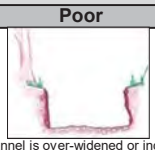
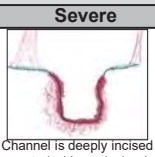
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Second	12070104	6/28/2018	3	Downstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 24

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 3.0

Notes: Channel is incised or has had its course widened. No or minimum access to floodplain.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer contains mixed woodlands along both banks and maintained grasses/ROW

Right Bank	% Riparian Area>	65%	35%					100%			
	Score >	2	3								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	85%	15%					100%	Rt Bank CI >	2.35	BV
	Score >	2	3						Lt Bank CI >	2.15	2.25

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	3	Downstream of SH 36

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	3.00

Notes: Evidence of past alteration may be present, but stream pattern and stability are beginning to recover.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.56**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant	Date
State Highway 36	TxDOT	6/29/2018
Evaluators	**HUC**	**Locality**
Arron Tuggle, Sally Clark	12070104.00	SH36

Stream Name	Transect ID	Condition Index (RCI)	
Water 24	1	2.27	
Water 24	2	1.76	
Water 24	3	2.56	
Average RCI		**2.197**	
Impact Factor		2.00	
Linear Feet of Impact		697.00	
Compenesation Requirement		321	

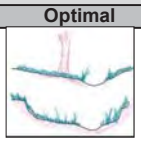
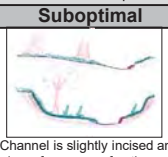
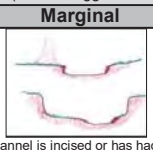
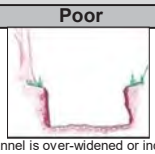
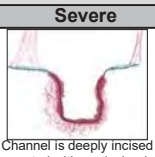
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Second	12070104	3/20/2020	1	Upstream of SH 36

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 24 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	CV
Score	5	4	3	2	1	2.0

Notes: Southbound lanes will be constructed in this transect. Stream will be bridged and channel will be allowed to normalize.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Proposed southbound lanes in this transect. Buffer will be converted to pavement and maintained ROW

Right Bank	% Riparian Area>	70%	30%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	70%	30%					100%	Rt Bank CI >	1.30	BV
	Score >	1	2						Lt Bank CI >	1.30	1.30

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	1.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	3/20/2020	1	upstream of SH 36

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Channel will be rerouted to accomdate flow under bridge. Rip rap present along some of the channel

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.58**

INSERT PHOTOS:

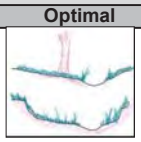
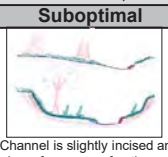
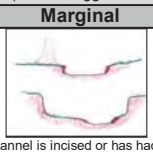
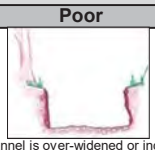
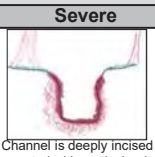
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Second	12070104	3/20/2020	2	Mid Section at SH 36

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 24 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 2.0

Notes: Northbound lanes and bridge will remain. Channel will still be Poor.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of buffer developed roadway and maintained ROW

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.05	BV
	Score >	1	2						Lt Bank CI >	1.05	1.05

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	3/20/2020	2	at SH 36 crossing

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	2.00

Notes: Channel will be beneath northbound brdige of SH 36 and continue to be Poor.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.76**

INSERT PHOTOS:

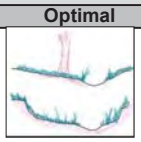
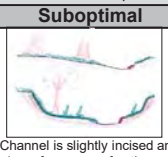
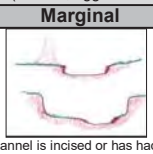
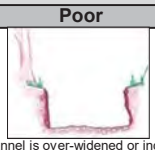
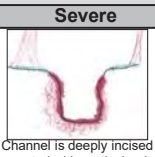
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Second	12070104	3/20/2020	3	Downstream

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 24 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	CV
Score	5	4	3	2	1	3.0

Notes: Construction is not proposed for this transect

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer impacts are not anticipated at this transect

Right Bank	% Riparian Area>	65%	35%					100%			
	Score >	2	3								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	85%	15%					100%	Rt Bank CI >	2.35	BV
	Score >	2	3						Lt Bank CI >	2.15	2.25

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	3/20/2020	3	Downstream of SH 36

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	3.00

Notes: Alterations are not proposed at this transect

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**2.56**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
State Highway 36	TxDOT		3/20/2020
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark		12070104	SH36

Stream Name	Transect ID	Condition Index (RCI)	
Water 24 Post	1	1.58	
Water 24 Post	2	1.76	
Water 24 Post	3	2.56	
Average RCI		**1.967**	
Impact Factor		2.00	
Linear Feet of Impact		697.00	
Compenesation Requirement		321	

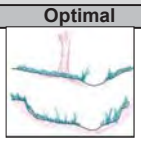
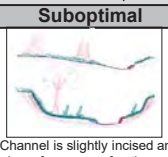
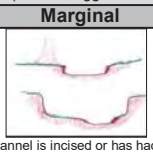
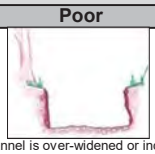
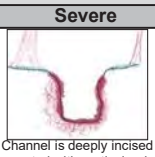
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Second	12070104	6/28/2018	1	Upstream of SH 36

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 25

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 4.0

Notes: Channel is slightly incised and contains a few areas of active erosion. Developed floodplains and benches.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer consists of grazed pasture, mature pockets of oak forest

Right Bank	% Riparian Area>	50%	40%	10%				100%			
	Score >	2	1	4							
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	70%	30%					100%	Rt Bank CI >	1.80	BV
	Score >	2	4						Lt Bank CI >	2.60	2.20

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	1	upstream of SH 36

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	4.00

Notes: Minimal structure impacts, stream recovered but impacted by presence of cattle.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**3.05**

INSERT PHOTOS:

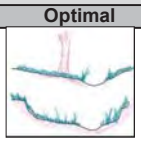
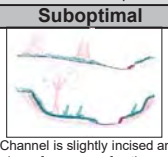
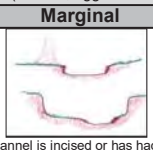
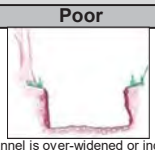
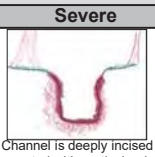
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Second	12070104	6/28/2018	2	Mid Section

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 25

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Notes: Majority of transect at culvert

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Majority of transect at culvert

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.05	BV
	Score >	1	2						Lt Bank CI >	1.05	1.05

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	
Score	5	4	3	2	1	UV 2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	2	at crossing

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: Majority of transect at crossing

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.26**

INSERT PHOTOS:

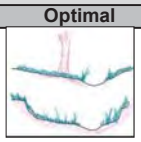
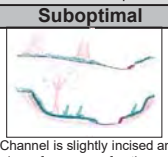
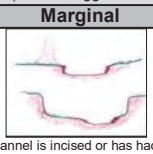
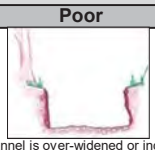
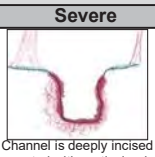
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Second	12070104	6/28/2018	3	Downstream of SH 36

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 25

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 4.0

Notes: Channel is slightly incised and contains a few areas of active erosion. Developed floodplains and benches.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer consists of mature columbia bottomlands with grazing pressure

Right Bank	% Riparian Area>	50%	50%					100%			
	Score >	4.5	4								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	50%	50%					100%	Rt Bank CI >	4.25	BV
	Score >	4.5	4						Lt Bank CI >	4.25	4.25

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV 2.00
Score	5	4	3	2	1	

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	06/28/2018	3	downstream of SH 36

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	3.00

Notes: Minimal structure impacts, stream no altered but impacted by presence of cattle.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**3.31**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
State Highway 36	TxDOT		6/29/2018
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark		12070104.00	SH36

Stream Name	Transect ID	Condition Index (RCI)	
Water 25	1	3.05	
Water 25	2	1.26	
Water 25	3	3.31	
Average RCI		**2.540**	
Impact Factor		2.00	
Linear Feet of Impact		1109.00	
Compenesation Requirement		1515	

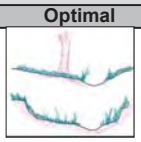
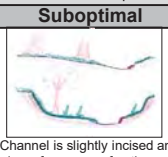
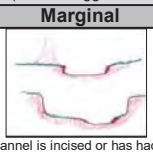
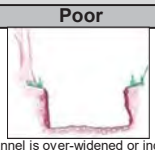
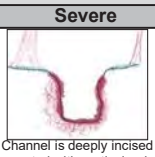
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Second	12070104	3/20/2020	1	Upstream of SH 36

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 25 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Notes: Southbound lanes proposed in this transect. Channel will be channelized and culverted.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer impacts will included conversion to pavement and maintained ROW

Right Bank	% Riparian Area>	95%	5%					100%			
	Score >	1	2								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	95%	5%					100%	Rt Bank CI >	1.05	BV
	Score >	1	2						Lt Bank CI >	1.05	1.05

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV 2.00
Score	5	4	3	2	1	

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	3/20/2020	1	upstream of SH 36

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: Channel will be routed through a proposed culvert.

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.26**

INSERT PHOTOS:

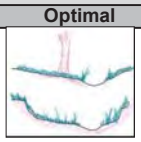
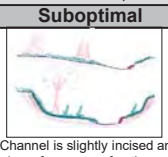
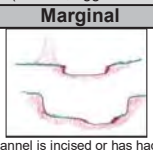
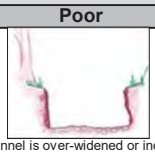
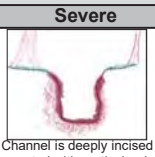
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Second	12070104	3/20/2020	2	Mid Section

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 25 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 1.0

Notes: Transect will remain largely culverted.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Additional pavement and extention of culvert will reduce maintained ROW within buffer

Right Bank	% Riparian Area>	100%						100%			
	Score >	1									
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI >	1.00	BV
	Score >	1							Lt Bank CI >	1.00	1.00

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	3/20/2020	2	at crossing

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	1.00

Notes: Majority of transect will remain within culvert at crossing

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**1.25**

INSERT PHOTOS:

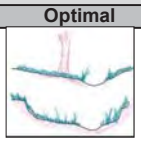
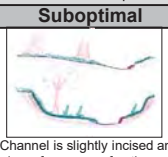
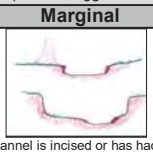
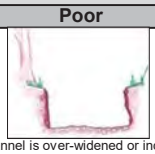
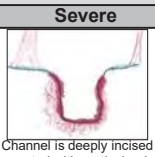
Stream Assessment Data Form for Level 1

U.S. Army Corps of Engineers Galveston District

File Number	Applicant	Stahler Stream Order	8 Digit HUC	Date	Transect #	Transect Description
State Highway 36	TxDOT	Second	12070104	3/20/2020	3	Downstream of SH 36

Name(s) of Evaluator(s)	Steam Name and Type
Arron Tuggle, Sally Clark	Water 25 Post Construction

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation).

	Optimal	Suboptimal	Marginal	Poor	Severe	
Visual Channel Condition Parameter	 Channel shows very little incision or widening and little or no evidence of erosion or unprotected banks. Indicators of stability include greater than 80% vegetative cover on the banks, stable point bars and bankfull benches may be present, mid-channel and transverse bars are rare or transient. The stream has access to active floodplain or fully developed bankfull benches. No bulkheading or riprap may be present.	 Channel is slightly incised and contains a few areas of active erosion. Indicators of instability include vegetative cover or natural rock protection only present along 60-80% of the Transect, point bars and bankfull benches are likely present and transient sediment is present along 10-40% of the stream bottom. The stream has access to bankfull benches or developed floodplains along portions of the reach. Channel may show evidence of past channel alteration, but should be exhibiting notable recovery of a natural channel. Bulkhead and riprap are limited to 1-25% of the Transect.	 Channel is incised or has had its course widened. Indicators of instability include the presence of erosional scars on 40-60% of the Transect, vegetative cover or natural rock only found on 40-60% of the Transect, vertical or undercut banks, or nickpoints associated with headcuts may be present and portions of the channel may be widening while other portions of the channel are narrowing, and transient sediments are found in 40-60% of the natural stream bed or bottom. The stream does not have access to the active floodplain. Bulkheading or riprap is found along 25-50% of the Transect.	 Channel is over-widened or incised with vertically or laterally unstable banks. Visual indicators of over-widening and incision include near vertical banks with shallow root depths, erosional scars present along 60-80% of the Transect, vegetative cover or natural rock is limited to 20-40% of the Transect, substantial sediment deposition of uniformed-size material is present along 60-80% of the Transect and point bars and bankfull benches are absent. The stream does not have access to an active floodplain. Bulkheading and riprap are present along 50-80% of the Transect.	 Channel is deeply incised or excavated with vertical or lateral instability in the stream bank. Indicators of instability include the streambed elevation located below the rooting depth, both banks are vertical or undercut, vegetative surface protection or natural rock is only found along 20% or less of the Transect, the bank is sloughing and erosional scars or raw banks present on 80-100% of the Transect and 80% or more of the natural streambed is covered by substantial sediment resulting in threaded channels. The stream does not have access to an active floodplain.	
Score	5	4	3	2	1	CV 3.0

Notes: Construction is not proposed for this transect. Because of extense conversion upstream, the condition of the channel downstream likely to be impacted.

2. RIPARIAN BUFFERS: Assess both banks' 100-foot riparian areas along the entire Transect.

	Optimal	Suboptimal		Marginal	Poor	Severe
Riparian Buffers	Native woody species represent greater than 60% of the coverage and wetlands are present.	Native woody community species represent greater than 60% coverage with *NO* wetlands present within the buffer **OR** native woody community species represent 30-60% coverage with wetlands present. No maintenance or grazing activities.	Native woody community species represent between 30-60% coverage with *NO* wetlands present. No maintenance or grazing activities.	Native woody communty represents less than 30% coverage with no maintenance or grazing activities.	The buffer is dominated by one or more of the following: lawns, mowed or maintained right-of-way, no-till cropland, actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized or other comparable condition.	The area is dominated by impervious surfaces, mine spoil lands, denuded surfaces, conventional tillage row crops, active feed lots or comparable conditions.
Condition Scores	5	High = 4.5	Low = 4	3	2	1

Notes: Buffer is not anticipated to be impacted at this transect.

Right Bank	% Riparian Area>	50%	50%					100%			
	Score >	4.5	4								
									CI= (Sum % RA * Scores*0.01)/2		
Left Bank	% Riparian Area>	50%	50%					100%	Rt Bank CI >	4.25	BV
	Score >	4.5	4						Lt Bank CI >	4.25	4.25

3. AQUATIC USE: The Transect is assessed based on the aquatic life use category score assigned to the stream segment by the TCEQ.

	Optimal	Suboptimal	Marginal	Poor	Severe	
AQUATIC USE	Aquatic Life Score of Exceptional.	Aquatic Life Score of High. Perennial streams that have not been assessed are also assumed to have an Aquatic Life Score of High.	Aquatic Life Score of Intermediate.	Aquatic Life Score of Limited. Intermittent Streams with Perennial Pools that have not been assessed are also assumed to have an Aquatic Life Score of Limited.	Aquatic Life Score of Minimal. Intermittent and ephemeral streams that have not been assessed are also assumed to have an Aquatic Life Score of Minimal.	UV
Score	5	4	3	2	1	2.00

Notes

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Transect #	Transect Description
	TXDOT	SH 36	Intermittent	12070104	3/20/2020	3	downstream of SH 36

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Alteration	Channelization, dredging, alteration or hardening absent. Stream has unaltered pattern or has normalized. No dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures within the Transect.	Less than 30% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability have recovered. Withdrawals, if present, have no observable affect on flow.	Between 30-60% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration may be present, but stream pattern and stability are beginning to recover. Withdrawals, if present, may have an observable affect on flow, but no observable affect on habitat or biota.	Between 60-90% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Evidence of past alteration is present, and stream pattern and stability are not recovering. Withdrawals, if present, may have an observable affect on both flow and habitat or biota.	Between 90-100% of the Transect is impacted by dredging, dams, dikes, levees, culverts, riprap, bulkheads, armor, drop structures or withdrawal structures. Withdrawals, if present, are large enough to have severe loss of flow and cause little to no habitat or biota.	AV
SCORE	5	4	3	2	1	3.00

Notes: Alterations are not proposed for this transect

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

THE CONDITION INDEX (CI) >>	**3.06**

INSERT PHOTOS:

Stream Assessment Summary Form (Form 2)

Galveston District Stream Condition Assessment SOP

Project #	Applicant		Date
State Highway 36	TxDOT		3/20/2020
Evaluators		HUC	Locality
Arron Tuggle, Sally Clark		12070104	SH36

Stream Name	Transect ID	Condition Index (RCI)	
Water 25 Post	1	1.25	
Water 25 Post	2	1.26	
Water 25 Post	3	3.06	
Average RCI		**1.857**	
Impact Factor		2.00	
Linear Feet of Impact		1109.00	
Compenesation Requirement		1515	