



**CONSENT AGENDA
DRAINAGE DISTRICT
BOARD OF DIRECTORS
January 6, 2015
9:00 A.M.**

NOTICE is hereby given in accordance with Chapter 551, Texas Government Code, that a SPECIAL MEETING of the Drainage District #1 Board of Directors will be held at the Edinburg Council Chambers 415 W. University Drive, Edinburg, Hidalgo County, Texas. Discussion and possible action relating to the following business will be transacted:

**NOTICE TO THE PUBLIC
CONSENT AGENDA**

The following items are of a routine or administrative nature. The Drainage District #1 Board has been furnished with background and support on each item, and/or it has been discussed at a previous meeting. All items will be acted upon by one vote without being discussed separately unless requested by a Board Member, in which event the item or items will immediately be withdrawn for individual consideration in its normal sequence after the items not requiring separate discussion have been acted upon. The remaining items will be adopted by one vote.

1. Approval of check register and payment of claims and bills - County Treasurer

2. **AI -47886** Discharge permits:
Hidalgo County Pct. 2- Lopezville Park 7.22 & 1.22
Buena Tierra Holdings, LLC - San Joaquin Subdivision Phase II, 74.40 & 73.90
Utility Permit:
City of San Juan - proposes to place a 16" PVC RAW Water Transfer line to cross the drainage ROW of Sioux between "I" Road and Raul Longoria.

3. **AI -47728** Discharge permit:
R. Schamberger - Cardinal Island Subdivision

4. **AI -47914** Discharge Permits:
Rhodes Enterprises L. T. D. - Aurora Valley Phase 4:
7.29 cfs
8.62 cfs
11.28 cfs
12.00 cfs
13.33 cfs

5. **AI -47925** Approval for Budget Transfers:
- A. CIP 2013 Bonds
6. **AI -47932** A. Request approval of L & G Engineering Invoice number 11325004 in the amount of \$55,267.87 for the La Joya Watershed Improvement Project (Work Authorization #4) for engineering services for the Month of November 2014.
- B. Request approval of L & G Engineering Invoice number 11325006 in the amount of \$ 18,674.58 for the Hidalgo County Precinct 4 - SH 68 TxDOT Roadway Watershed Study (Work Authorization #1)
- C. Request approval of TEDSI Infrastructure Group Invoice number 20142145 in the amount of \$28,762.12 for the Hydrologic and Hydraulic Analysis for the SH 68 Segment D Work Authorization #15. Engineering services performed from January 2014 through October 31, 2014. 60.3 % complete.
- D. Request approval of R. Gutierrez Engineering Corporation, Invoice number 3727 in the amount of \$10,672.94 for Rural Drainage Development - Pct #2 Work Authorization #1 Supplemental #'s 1 and 2 relating to projects Seminole Valley Subdivision and Minnesota Meadows Subdivisions.

AI -47886

2.

DRAINAGE - CONSENT

Meeting Date: 01/06/2015

Submitted By: Sylvia Sanchez, DRAINAGE
DISTRICT

Department: DRAINAGE DISTRICT

Information

CAPTION

Discharge permits:

Hidalgo County Pct. 2- Lopezville Park 7.22 & 1.22

Buena Tierra Holdings, LLC - San Joaquin Subdivision Phase II, 74.40 & 73.90

Utility Permit:

City of San Juan - proposes to place a 16" PVC RAW Water Transfer line to cross the drainage ROW of Sioux between "I" Road and Raul Longoria.

BACKGROUND

Fiscal Impact

Attachments

No file(s) attached.

Form Review

Inbox	Reviewed By	Date
Budget & Management	Veronica Ortiz	12/23/2014 11:58 AM
Final Approval	Monica Badillo	01/02/2015 05:06 PM
Form Started By: Sylvia Sanchez		Started On: 12/19/2014 03:14 PM
Final Approval Date: 01/02/2015		

AI -47728

3.

DRAINAGE - CONSENT

Meeting Date: 01/06/2015

Submitted By: Sylvia Sanchez, DRAINAGE
DISTRICT

Department: DRAINAGE DISTRICT

Information

CAPTION

Discharge permit:
R. Schamberger - Cardinal Island Subdivision

BACKGROUND

Fiscal Impact

Attachments

No file(s) attached.

Form Review

Inbox	Reviewed By	Date
Budget & Management	Veronica Ortiz	12/09/2014 01:27 PM
Final Approval	Monica Badillo	01/02/2015 05:06 PM
Form Started By: Sylvia Sanchez		Started On: 12/09/2014 09:55 AM
Final Approval Date: 01/02/2015		

AI -47914

4.

DRAINAGE - CONSENT

Meeting Date: 01/06/2015

Submitted By: Sylvia Sanchez, DRAINAGE
DISTRICT

Department: DRAINAGE DISTRICT

Information

CAPTION

Discharge Permits:

Rhodes Enterprises L. T. D. - Aurora Valley Phase 4:

7.29 cfs

8.62 cfs

11.28 cfs

12.00 cfs

13.33 cfs

BACKGROUND

Fiscal Impact

Attachments

No file(s) attached.

Form Review

Inbox	Reviewed By	Date
Budget & Management	Veronica Ortiz	12/30/2014 11:21 AM
Final Approval	Monica Badillo	01/02/2015 05:06 PM
Form Started By: Sylvia Sanchez		Started On: 12/29/2014 03:35 PM
Final Approval Date: 01/02/2015		

AI -47925

5.

DRAINAGE - CONSENT

Meeting Date: 01/06/2015

Submitted By: Claudette Guerrero,
DRAINAGE DISTRICT

Department: DRAINAGE DISTRICT

Information

CAPTION

Approval for Budget Transfers:

A. CIP 2013 Bonds

BACKGROUND

Fiscal Impact

Attachments

BT CP 2013 BS-Bdgt 300

1

2

Form Review

Inbox	Reviewed By	Date
Budget & Management	Debbie Tamez	12/30/2014 04:26 PM
Final Approval	Monica Badillo	01/02/2015 05:06 PM
Form Started By: Claudette Guerrero		Started On: 12/30/2014 04:04 PM
Final Approval Date: 01/02/2015		

AI -47559

10.

DRAINAGE DISTRICT

Meeting Date: 12/02/2014

Submitted By: Jaime Salazar, DRAINAGE
DISTRICT

Department: DRAINAGE DISTRICT

Information

CAPTION

A.) Requesting approval to reject all bids received for RFB No. HCDD1-14-029-10-29 "Pueblo De Palmas Drainage Improvements".

B.) Requesting approval to re-advertise for RFB No. HCDD1-14-034-01-07 "Pueblo De Palmas Drainage Improvements".

C.) Requesting approval of Supplemental Agreement No. 1 with TEDSI Infrastructure Group to Agreement for Professional Services Hidalgo County Drainage District No.1 Master Drainage System ("MDS"). Extension of Termination Date.

2013 BOND SERIES

D.) Requesting approval of Notice to Suspend Work as it relates to Construction Contract No. HCDD1-14-008-07-08; "Pct. 2 Alamo Expressway Drain" due to lead time to manufacture Slide Gate. Resumption of Work Effective March 2, 2015.

E.) Requesting approval to accept bid and approval to award Construction Contract in the amount of \$283,595.20 to lowest bidder (GO Underground LLC) meeting all required specifications for RFB No. HCDD1-14-031-1-13 "Pct. 1- Rural Drainage Development - Spanish Palms Subdivision".

F.) Requesting approval of Amendment No. One to License No. LSF/G-1376 to USIBWC Permits as it relates to the South Mercedes Lateral Structure 164AL.

G.) Requesting approval of Amendment No. Two to License No. LSF/G-780 to USIBWC Permits as it relates to the East Donna Drain Structure 96AL.

H.) Requesting approval of Amendment No. One to License No. LSF/G-1541 to USIBWC Permits as it relates to the Mercedes Lateral Structure 601CL.

BACKGROUND

Contract No.: HCDD1-14-031-12-02

Hidalgo County Drainage District No.1

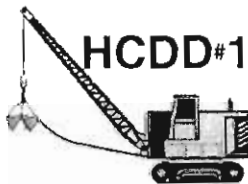
SPECIFICATIONS AND FORMS OF CONTRACT, BOND, AND PROPOSAL
FOR

Rural Drainage Development 2013 Bond Project Spanish Palms Subdivision

CONSTRUCTION OF STORM SYSTEM, REGRADE OF ROADSIDE DITCHES, AND
SPANISH PLANS & MILE 13 N RD TURNOUT IMPROVEMENTS
FROM N SPANISH PALMS DR.
TO 0.23 MILES SOUTH OF MILE 13 N ROAD.
HIDALGO COUNTY, TEXAS

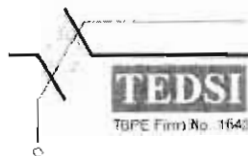


HIDALGO COUNTY DRAINAGE DISTRICT NO. 1
BOARD OF DIRECTORS



RAMON GARCIA, CHAIRMAN OF THE BOARD
A.C. CUELLAR JR, BOARD MEMBER
HECTOR "TITO" PALACIOS, BOARD MEMBER
JOE M. FLORES, BOARD MEMBER
JOSEPH PALACIOS, BOARD MEMBER

Prepared for:
Prepared by:



TEDSI INFRASTRUCTURE GROUP

Consulting Engineers

1201 East Expressway 83 + Mission, Texas 78572

Tel: (956) 424-7898

Fax: (956) 424-7022

PROJECT ENGINEER: ROBERTO FINA CARRAL, P.E.

December 2014

Spanish Palms Subdivision
Hidalgo County Drainage District No. 1
Bid Number: HCDD1-14-031-11-13

ARTICLE 4 – CONTRACT TIME. The Contractor hereby agrees to commence work under this Contract on or after a date to be specified in a written “Notice to Proceed” by the Owner, and to substantially complete the project within 90 Calendar Days. The Contractor further agrees to pay, as liquidated damages, the sum of five hundred dollars (\$500.00) for each consecutive Calendar Day thereafter.

IN WITNESS WHEREOF, the Contractor and the Owner to these present have executed this Contract in four (4) counterparts, each of which shall be deemed an original, in year and day first above mentioned.

CONTRACTOR:
AO Underground, LLC
BY: George Allwines
Name / Title: President

OWNER:
HIDALGO COUNTY DRAINAGE DISTRICT NO. 1
BY: Ramon Garcia
Ramon Garcia, Chairman of the Board

APPROVED AS TO FORM:
ATLAS, HALL & RODRIGUEZ, LLP

BY: [Signature]

APPROVED BY HIDALGO
COUNTY DRAINAGE DISTRICT
NO. 1 BOARD OF DIRECTORS
ON: 12/2/14

ATTACHMENTS:
PART I CONTRACT AWARD FORMS AND CERTIFICATIONS
PART II GENERAL CONDITIONS
PART III CONSTRUCTION DRAWING

AI -47932

6.

DRAINAGE - CONSENT

Meeting Date: 01/06/2015

Submitted By: Lora Briones, DRAINAGE
DISTRICT

Department: DRAINAGE DISTRICT

Information

CAPTION

A. Request approval of L & G Engineering Invoice number 11325004 in the amount of \$55,267.87 for the La Joya Watershed Improvement Project (Work Authorization #4) for engineering services for the Month of November 2014.

B. Request approval of L & G Engineering Invoice number 11325006 in the amount of \$ 18,674.58 for the Hidalgo County Precinct 4 - SH 68 TxDOT Roadway Watershed Study (Work Authorization #1)

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BACKGROUND

Fiscal Impact

Attachments

1

2

3

4

Form Review

Inbox

Budget & Management

Final Approval

Form Started By: Lora Briones

Final Approval Date: 01/02/2015

Reviewed By

Debbie Tamez

Monica Badillo

Date

01/02/2015 01:13 PM

01/02/2015 05:06 PM

Started On: 01/02/2015 10:18 AM

HIDALGO COUNTY DRAINAGE DISTRICT NUMBER ONE

902 NORTH DODDLETTLE

EDINBURG, TEXAS 78542

(958) 292-7080

FAX (958) 292-7083



GODFREY GARZA, JR.
MANAGER

INVOICE PROCESSING CHECKLIST

Data Received: 12.3.2014

Engineer/Firm Name: L&G Engineering

Project Name/Number: WA#4 La Joya Watershed Imp. Proj.

Invoice No: #11325004

Logged in and Scanned: 8:30 AM 12/3 By: Rosa Arce Forwarded to: Joey Garza

Engineer	Name	Date	Comment
Scope of work reviewed			

Accounting	Name	Date	Comment
Encumbrance			
Purchase Order Attached			
Audit			
Final Approval for Agenda			

	Name	Date	Comment
Placed on Agenda			

Additional Comments: _____



December 1, 2014

Mr. Godfrey Garza – District Manager
Attn: Ms. Lora Briones – Chief Financial Officer
 Hidalgo County Drainage District #1
 902 N. Doolittle
 Edinburg, Texas 78542

RE: Work Authorization #4 on La Joya Watershed Improvement Project

Job # 130104
P.O. # 625396

Dear Mr. Garza,

Attached for your review and approval is our invoice for the services rendered during the month of November 2014 on the subject referenced project.

The following is attached:

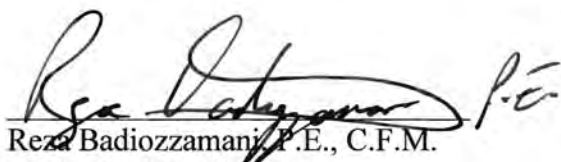
- L&G's Invoice #11325004
- CD w/ Electronic Files of Data for:
 - R.O.W. Surveying Services – Monthly Progress Report and Invoice (#R14-0069) – November 2014
 - Task A (Task 1a, 2a, 3a, & 5a)
 - Task C (Task 4c)

TASK		% COMPL
Task A		
Construction Plans for Liberty Pit Detention Facility		
Task 1a ~ Coordination & Management of ROW and Design Survey, & Geotechnical	L&G	54.4%
Update – L&G has held weekly meetings with ROW Surveying Services, LLC and continued to coordinate the ROW and Design Survey and Geotechnical aspects of this project.		
Task 2a ~ (SUB): Field and Design Survey (Utility Locates) - #3 (FC150)	ROW SS	50.0%
Update – See progress report from ROW SS as of 11/30/14 (see attached)		
Task 3a ~ (SUB): ROW Map, Parcel Sketches & Field Notes - #3 (FC130)	ROW SS	60.0%
Update – See progress report from ROW SS as of 11/30/14 (see attached)		
Task 5a ~ (SUB): Geotechnical Exploration & Analyses for Proposed Facility - #2	L&G LAB	72.6%
Update – See progress report from L&G Lab Dated November 26, 2014		

Task 6a ~ Conceptual Site Plan Identifying 60% of Recovered ROW & Design Surveys (Prior to PS&E Release)	L&G	39.0%
No Update – See progress report dated October 2, 2014		
<u>Task B</u> Construction Plan for South Basin Pit Detention Facility		
Task 1b ~ Coordination & Management of ROW and Design Survey, & Geotechnical	L&G	78.9%
No Update – See progress report dated November 4, 2014		
Task 2b ~ (SUB): Field and Design Survey (Utility Locates) - #3 (FC150)	ROW SS	75%
No Update – See progress report from ROW SS as of 10/31/14		
Task 3b ~ (SUB): ROW Map, Parcel Sketches & Field Notes - #3 (FC130)	ROW SS	90%
No Update – See progress report from ROW SS as of 10/31/14		
Task 6b ~ Conceptual Site Plan Identifying 60% of Recovered ROW & Design Surveys (Prior to PS&E Release)	L&G	36.8%
No Update – See progress report dated October 2, 2014		
<u>Task C</u> Phase I Outfall Development of La Joya Watershed Drainage Master Plan		
Task 1c ~ Coordination & Management of ROW Base Map, Design Survey & Geotechnical	L&G	6.8%
No Update – See progress report dated October 2, 2014		
Task 2c ~ Design Surveys (Utility Locates) - #3 (FC150)	ROW SS	4.6%
No Update – See progress report from ROW SS as of 09/22/14		
Task 4c ~ Preliminary Detailed Schematic for Proposed Phase I Outfall	L&G	60.0%
Update – L&G has continued to evaluate various alternative alignments for the needed outfall. L&G has developed a detailed schematic for the portion of this outfall south of Mile 3. This exhibit was presented to the public on 11/19/14 at the Mile 3 PM and has been vetted with 75% of the affected land owners. (see Attached Exhibits)		

Should you have any questions regarding this submittal or would like clarification on any aspect of the project, please do not hesitate to call me at (956) 583-7117.

Sincerely,



Reza Badiozzaman, P.E., C.F.M.
Senior Project Manager
L&G Engineering

L & G Consulting Engineers Inc
2100 W. Expressway 83
Mercedes, TX 78570
(956)565-9813 Fax (956)565-9018

INVOICE#: 11325004
INVOICE DATE: 11/30/2014

RECEIVED
 HIDALGO COUNTY
 DRAINAGE DISTRICT #1

BILL TO:
 Hidalgo County Drainage District#1
 902 N. Doolittle
 Edinburg, TX 78542

JOB:130104
 La Joya Watershed Imp
 WA#4
 PO #625396

DEC 02 2014
 4:09 AM PM
 BY: *[Signature]*

DESCRIPTION	CONTRACT	PREVIOUS APPLICATIONS	CURRENT COMPLETED	TOTAL COMPLETED	% COMPL	BALANCE TO FINISH
Engineering services for the month of November 2014.						
Task A - Construction Plans for Liberty Pit Detention Facility						
Task 1a - Coord. & Management of ROW & Design Survey	10,704.28	1,575.62	4,251.69	5,827.31	54.4	4,876.97
Task 2a - SUB: Field & Design Survey (Utility Locates)	27,168.00	2,041.00	11,543.00	13,584.00	50.0	13,584.00
Task 3a - SUB: ROW Map Parcel Sketches & Field Notes	22,400.00	4,480.00	8,960.00	13,440.00	60.0	8,960.00
Task 4a - Acquisition of ROW for Proposed Facility	28,100.00	0.00		0.00	0.0	28,100.00
Task 5a - SUB: Geotech, Exploration & Analysis	27,538.64	0.00	19,996.12	19,996.12	72.6	7,542.52
Task 6a - Conceptual Site Plan Identify 60% of Recovered	11,498.80	4,483.22		4,483.22	39.0	7,015.58
Task 7a - Plans, Specification & Estimates (PS&E)	50,384.04	0.00		0.00	0.0	50,384.04
Task B - Construction Plans for South Basin Pit Detention Facility						
Task 1b - Coord. & Management of ROW & Design Survey	7,928.16	6,252.49		6,252.49	78.9	1,675.67
Task 2b - SUB: Field & Design Survey (Utility Locates)	24,935.00	18,701.00		18,701.00	75.0	6,234.00
Task 3b - SUB: ROW Map Parcel Sketches & Field Notes	7,488.00	6,739.00		6,739.00	90.0	749.00
Task 4b - Acquisition of ROW for Proposed Facility	14,800.00	0.00		0.00	0.0	14,800.00
Task 5b - SUB: Geotech, Exploration & Analysis	21,162.28	0.00		0.00	0.0	21,162.28
Task 6b - Conceptual Site Plan Identify 60% of Recovered	8,966.44	3,295.20		3,295.20	36.8	5,671.24
Task 7b - Plans, Specification & Estimates (PS&E)	33,589.36	0.00		0.00	0.0	33,589.36
Task C - Phase I Outfall Development of La Joya Watershed Drainage Master Plan						
Task 1c - Coord. & Management of ROW Base Map, Design Survey	13,030.24	887.86		887.86	6.8	12,142.38
Task 2c - SUB: Design Survey (Utility Locates)	67,062.00	3,113.00		3,113.00	4.6	63,949.00
Task 3c - SUB: Geotechnical Exploration & Analysis for Preliminary	29,301.96	0.00		0.00	0.0	29,301.96
Task 4c - Preliminary Detailed Schematic for Proposed Phase I	37,866.28	12,217.68	10,517.06	22,734.74	60.0	15,131.54
Task 5c - Plans, Specifications & Estimates (PS&E)	200,524.00	0.00		0.00	0.0	200,524.00
	644,447.48	63,786.07	55,267.87	119,053.94	18.5	525,393.54
TOTALS	644,447.48	63,786.07	55,267.87	119,053.94	18.5	525,393.54

[Signature]
 PROJECT MANAGER'S SIGNATURE

ORIGINAL CONTRACT SUM \$ 644,447.48
CHANGE BY CHANGE ORDER \$ 0.00
CONTRACT SUM TO DATE \$ 644,447.48
TOTAL COMPLETED TO DATE \$ 119,053.94
LESS PREVIOUS INVOICES \$ 63,786.07
CURRENT PAYMENT DUE \$ 55,267.87

L&G Consulting Engineers, Inc
 2100 W. Expressway 83
 Mercedes, Texas 78570
 (956) 565-9813

Project Workhour Report

La Joya Watershed Improvements WA#4

Reference: Inv# 11325004

Date: 11/30/2014

P.O. #625396

	Hrs		Rate	Total
Senior Project Manager	13.00	X	212.59	\$2,763.67
Senior Engineer	22.00	X	175.07	\$3,851.54
Design Engineer	18.00	X	112.55	\$2,025.90
Senior Engineer Tech	64.00	X	78.16	\$5,002.24
Admin/Clerical	20.00	X	56.27	\$1,125.40

Grand Total of Hours

\$ 14,768.75

(Difference due to rounding hours)

\$ -

Invoice Summary

Man Hours **\$ 14,768.75**

Sub Contract **\$ 40,499.12**

(See Attached Sub Invoice for Man Hour Breakdown)

Direct Expenses	Current Units		Rate		
10 Sets of Plans and Geo Report - As per contract requirements	0	X	500.00	\$	-

\$ -

(Difference due to rounding)

\$ -

Total Per Invoice Submitted

\$ 55,267.87

R. O. W. SURVEYING SERVICES, LLC.

November 30, 2014

Jacinto Garza, President/CEO
L & G Engineering
Attn: **Reza Badiozzamani, P.E.**
2100 W. Expressway 83
Mercedes, Texas 78570

RE: Liberty Road Caliche Pit-Work Authorization #8
Invoice #R14-0069 Limits: Liberty Road Caliche Pit

Dear Mr. Badiozzamani:

Attached for your approval is our invoice for services rendered for the month of November, 2014:

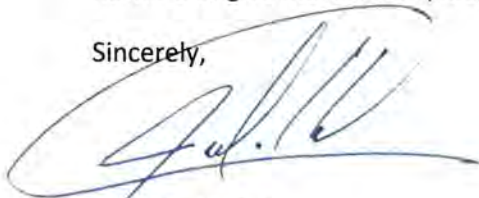
ROW's Invoice Exhibit C – Work Schedule Progress Report

FC 130 – ROW Map	Contract Amount	Invoice to Date	Paid to Date	Current Amount Due	Contract Balance	Percent Complete
Phase I – ROW Map, Parcel Description, Metes & Bounds Description, :& Title Reports	\$22,400	\$13,440	\$4,480	\$8,960	\$8,960	60%
FC 150-Field Surveying						
Phase I - Primary & Secondary Control Phase II – DTM Topography and Cross-Sections Phase III – Final Report and Deliverables Project Management & Oversight	\$27,168	\$13,584	\$2,041	\$11,543	\$13,584	50%
Total	\$49,568	\$27,024	\$6,521		\$22,544	54.52%
		Total Due		\$20,503		

Make Checks Payable to: **R.O.W. Surveying Services, LLC.**

Thank you for your business. Should you have any questions or require additional information, please do not hesitate to give me a call at (956) 451-2670.

Sincerely,



Julio Cerda, P.E.
President/CEO

R. O. W. SURVEYING SERVICES

Liberty Road Caliche Pit Progress Report as of 11/30/14:

Project Management:

- Have met with prime consultant (L&G Engineering) to update project progress, scope, and final deliverable.
- Have met with John Womack from Bell Properties to coordinate Right of Entry and discuss any restrictions when field crews are on site.
- Meet with TxDOT, L&G, and Hidalgo County in reference to ongoing projects in the Penitas area
- Requested from Urban County survey control, right of way map and project benchmarks that would be beneficial to survey.
- Coordinate office staff on daily assignments and project progress

General Task:

- Completed field topography survey
- Boundary analysis completed, Property ownership and easements verified
- Preliminary Base map completed
- Preliminary Metes and Bounds with sketches completed

INVOICE PERIOD: 11/01/14 through 11/30/14

INVOICE AMOUNT: \$19,996.12

November 26, 2014

Mr. Jacinto Garza, P.E. – President
L&G Consulting Engineers, Inc. (L&G Engineering)
2100 W. Expressway 83
Mercedes, Texas 78570

**RE: Geotechnical Drilling, Testing, & Engineering for La Joya Watershed Project (Phase I)
Invoice No. 9003**

Dear Mr. Garza,

Attached for your review and approval is our invoice for services rendered during the month of November 2014 on the subject referenced project.

The following is attached:

- L&G Lab's Invoice No. 9003
- Invoice Backup incl. Boring Location Graphic File & Boring Logs (Task A – Liberty Pit)

The following is a narrative of the progress for this period.

TASK
(1) – Geotechnical Exploration & Laboratory Testing (Task A)
Updated – L&G Lab has completed all borings at the Liberty Pit Proposed Detention Facility. Field & Laboratory testing for all borings has also been completed.
(2) – Geotechnical Engineering & Report (Task A)
Updated – L&G Lab has completed the adjustment and plan location/depths of the boring logs. L&G Lab has also begun analyzing the soil strength information, generating material make-up models, and developing modeling section for global stability.
(3) – Geotechnical Exploration & Laboratory Testing (Task B)
No Update
(4) – Geotechnical Engineering & Report (Task B)
No Update
(5) – Geotechnical Exploration & Laboratory Testing (Task C)
No Update

(6) – Geotechnical Engineering & Report (Task C)

No Update

Should you have any comments or questions regarding this submittal, please do not hesitate to call me at (956) 583-7117.

Respectfully Submitted,



David A. Saenz, P.E., C.F.M.
Project Manager / Project Engineer



L & G Engineering Laboratory, LLC Invoice

2100 W. Expressway 83
 Mercedes, Texas 78570
 (956) 565-0760 • Fax (956) 565-6746

Date	Invoice #
11/26/2014	9003

Bill To/Ship To
L&G Engineering 2100 W. Exp 83 Mercedes, Tx 78570

Project
La Joya Watershed Imprvts. Project Ph. I Geotechnical Engineering Services

Due Date	Job #
12/10/2014	GL14030-La Joya W...

Description	Contract Amo...	Prior Billed	Curr %	Total %	Amount Due
(Task A)					
(1) Geotechnical Exploration Laboratory Testing	16,829.66		100.00%	100.00%	16,829.66
(2) Geotechnical Engineering & Report	10,708.98		29.57%	29.57%	3,166.46
(Task B)					
(3) Geotechnical Exploration & Laboratory Testing	12,326.12		0.00%	0.00%	0.00
(4) Geotechnical Engineering & Report	8,836.16		0.00%	0.00%	0.00
(Task C)					
(5) Geotechnical Exploration & Laboratory Testing	15,235.62		0.00%	0.00%	0.00
(6) Geotechnical Engineering & Report	14,066.34		0.00%	0.00%	0.00

Total	\$19,996.12
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Highway / Civil • Structural / Bridge • Environmental • Construction Material Testing

HIDALGO COUNTY DRAINAGE DISTRICT NUMBER ONE

902 NORTH DODDLE

EDINBURG, TEXAS 78542

(958) 292-7080

FAX (958) 292-7083



GODFREY GARZA, JR.
MANAGER

INVOICE PROCESSING CHECKLIST

Data Received: 12.3.2014

Engineer/Firm Name: L&G Engineering

Project Name/Number: Proj 4 SH68 TxDot Roadway Watershed Study

Invoice No: #11325000

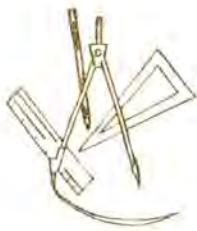
Logged in and Scanned: 8:33 AM 12/3 By: Rosaline Forwarded to: Joey Garza

Engineer	Name	Date	Comment
Scope of work reviewed			

Accounting	Name	Date	Comment
Encumbrance			
Purchase Order Attached			
Audit			
Final Approval for Agenda			

	Name	Date	Comment
Placed on Agenda			

Additional Comments: _____



December 1, 2014

Mr. Godfrey Garza – District Manager
Attn: Ms. Lora Briones – Chief Financial Officer
Hidalgo County Drainage District #1
902 N. Doolittle
Edinburg, Texas 78542

RE: Hidalgo County Pct. 4 - SH68 TxDOT Roadway Watershed Study

Job #130501
P.O. #623106

Dear Mr. Garza,

Attached for your review and approval is our invoice for the services rendered during the month of November 2014 on the subject referenced project.

The following is attached:

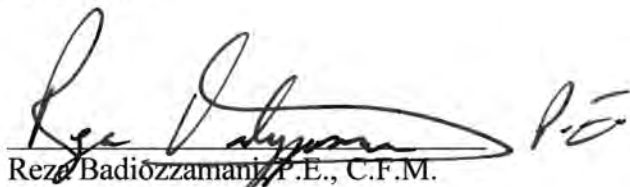
- L&G's Invoice #11325006
- CD w/ Electronic Files of Data (Exhibits/Calcs./Models/Misc. Info) for:
 - Task 7
 - Task 7a (FC16170 (SUB))
 - Civil Systems Engineering, Inc. – Monthly Progress Report #5 – November 2014
 - Civil Systems Engineering, Inc. – Invoice (#201445)

TASK		% COMPL
11001 ~ Task #1 – SH68 Proj. Schem./Exhibit w/ HCDD#1 Exist. & Prop. Facilities	L&G	84.5%
No Update – See Progress Report Dated October 1, 2013		
13009 ~ Task #2 – Identification of All Affected Prop. Owners (Appraisal Dist. Info)	L&G	80.4%
No Update – See Progress Report Dated December 2, 2013		
10201 ~ Task #3 – Review of Previous Studies Done on and Within Project Area	L&G	100%
No Update – See Progress Report Dated February 4, 2014		
10202 ~ Task #4 – Support to HCDD#1 on Project Development	L&G	43.9%
No Update – See Progress Report Dated December 2, 2013		
10203 ~ Task #5 – Coord. w/TxDOT & SH 68 Design Eng's of Record	L&G	12.2%
No Update – See Progress Report Dated December 2, 2013		

17007 ~ Task #6 – Field Reconnaissance for Identification & Logging of Exist. Cond.	L&G	25.6%
No Update – See Progress Report dated December 2, 2013		
16107 ~ Task #7 – Coord. & Support to Hydraulic Engineer for Hydraulic Analysis and HEC-HMS Model Creation	L&G	61.9%
Update – L&G has continued working with CSE on refining hydrologic areas, updating drainage basin delineations and pertinent hydrologic data, and determining/reviewing selected criteria for hydraulic modeling (HEC-RAS) for potential outfall channels/structures.		
16170 (SUB) ~ Task #7a – H&H Modeling	CSE	60.4%
Update – See progress report from CSE titled “SH68 H&H Study – Monthly Progress Report #5 - November, 2014” for a detailed explanation of the work that has been completed during this billing period.		
16102 ~ Task #8 – Hydrologic Map for SH68 (Overall Contributing Water Basin & Small Drainage Areas)	L&G	72.9%
No Update – See Progress Report dated November 1, 2013		
Direct Expenses	L&G	21.4%
No Update – See Progress Report Dated September 9, 2013		

Should you have any questions regarding this submittal or would like clarification on any aspect of the project, please do not hesitate to call me at (956) 583-7117.

Sincerely,



Reza Badiuzzaman, P.E., C.F.M.
 Senior Project Manager
 L&G Engineering

L & G Consulting Engineers Inc
2100 W. Expressway 83
Mercedes, TX 78570
(956)565-9813 Fax (956)565-9018

INVOICE#: 11325006
INVOICE DATE: 11/30/2014

RECEIVED
 HIDALGO COUNTY
 DRAINAGE DISTRICT #1

BILL TO:
 Hidalgo County Drainage District#1
 902 N. Doolittle
 Edinburg, TX 78542

JOB:130501
 SH68 TxDOT Roadway Watershed
 WA#1
 P.O.#623106

DEC 02 2014
4:09 AM/PM
 BY: *Rosa Cuevas*

DESCRIPTION	CONTRACT	PREVIOUS APPLICATIONS	CURRENT COMPLETED	TOTAL COMPLETED	% COMPL	BALANCE TO FINISH
Engineering services for the month of November 2014.						
FC 11001 - Task 1 - Overall SH68 Project Schematic/Exhibit	7,868.52	6,645.78		6,645.78	84.5	1,222.74
FC 13009 - Task 2 - Ident. of all affected property Owners	10,269.50	8,254.86		8,254.86	80.4	2,014.64
FC 10201 - Task 3 - Rev. of previous studies on proj. area	7,634.26	7,634.26		7,634.26	100.0	-
FC 10202 - Task 4 - Support to HCDD#1 on Proj. Development	37,442.36	16,440.46		16,440.46	43.9	21,001.90
FC 10203 - Task 5 - Coord. w/TxDOT & SH68 Design Eng's of reco	24,581.60	3,009.34		3,009.34	12.2	21,572.26
FC 17007 - Task 6 - Field Recon. For I.D. and logging	18,962.10	4,846.66		4,846.66	25.6	14,115.44
FC 16107 - Task 7 - Coord. & Supp. To Hydraulic Engineer	21,223.80	11,904.30	1,222.74	13,127.04	61.9	8,096.76
FC 16170 - Task 7a - Ph. 1 - Ext. Conditions of H&H Modeling	121,885.00	56,114.80	17,451.84	73,566.64	60.4	48,318.36
FC 16102 - Task 8 - Hydro Map for SH 68	28,256.00	20,596.46		20,596.46	72.9	7,659.54
FC 12001 - Task 9 - Pub. Invl for Vetting of Loc. Of Outfalls	20,273.60			0.00	0.0	20,273.60
FC 16401 - Task 10 - Prelim. Eng Report Summarizing Findings	27,050.74			0.00	0.0	27,050.74
	<u>325,447.48</u>	<u>135,446.92</u>	<u>18,674.58</u>	<u>154,121.50</u>		<u>171,325.98</u>
Direct Expenses	3,625.00	775.00		775.00	21.4	2,850.00
	<u>3,625.00</u>	<u>775.00</u>	<u>0.00</u>	<u>775.00</u>		<u>2,850.00</u>
TOTALS:	<u><u>329,072.48</u></u>	<u><u>136,221.92</u></u>	<u><u>18,674.58</u></u>	<u><u>154,896.50</u></u>	<u>47.1</u>	<u><u>174,175.98</u></u>

ORIGINAL CONTRACT SUM	\$	329,072.48
CHANGE BY CHANGE ORDER	\$	0.00
CONTRACT SUM TO DATE	\$	329,072.48
TOTAL COMPLETED TO DATE	\$	154,896.50
LESS PREVIOUS INVOICES	\$	136,221.92
CURRENT PAYMENT DUE	\$	18,674.58


 PROJECT MANAGER'S SIGNATURE

L&G Consulting Engineers, Inc
 2100 W. Expressway 83
 Mercedes, Texas 78570
 (956) 565-9813

Project Workhour Report

SH68 TxDOT Roadway Watershed Study WA#1

Reference: Inv#11325006

Date: 11/30/14

P.O.#623106

	Hrs		Rate	Total
Senior Project Manager	2.00	X	215.40	\$430.80
Senior Engineer	2.00	X	167.89	\$335.78
Design Engineer	4.00	X	114.04	\$456.16
Senior Engineering Technician	0.00	X	79.19	\$0.00
ROW Administrator	0.00	X	107.70	\$0.00
Admin/Clerical	0.00	X	57.02	\$0.00

Grand Total of Hours

\$ 1,222.74
 (Difference due to rounding hours)
 \$ -

Invoice Summary

Man Hours **\$ 1,222.74**
 Sub Contract **\$ 17,451.84**
 (See Attached Sub Invoice for Man Hour Breakdown)

Direct Expenses	Current Units		Rate		
20 ft. Long by 3 ft. Tall Hydro Map (60sq. Ft) @\$5.00/sq. ft - 5 prints	0	X	300.00	\$	-
8.5 X 11 Copies (i.e. Corr. w/Landowners) - (2,000 units)	0	X	1.00	\$	-
11 X 17 Copies (Various Applications & Exhibits) - 750 units	0	X	1.50	\$	-
				\$	-
				\$	-

(Difference due to rounding)

Total Per Invoice Submitted

\$ 18,674.58

SH68 H&H Study
Monthly Progress Report No. #5 – November 2014

Period of Coverage: November 2014
Date of Submittal: November 25, 2014
Submitted To: Reza Badiozzamani, P.E.
Prepared By: Civil Systems Engineering Inc.

This study covers the following activities:

1. Project coordination and meetings
2. Data collection
3. Site visits
4. LiDAR data and field survey data processing
5. Drainage basin delineations
6. Estimation of hydrologic and drainage parameters
7. Gamma function based unit hydrographs development
8. Existing conditions HEC-HMS modeling analysis
9. Proposed conditions HEC-HMS modeling analysis
10. Determination of runoff impacts and preliminary mitigation volumes.
11. Existing and proposed HEC-RAS modeling analysis for stream crossing
12. Evaluation of proposed crossing structure configurations
13. Determination of water surface profiles
14. Outfall determination
15. Documentation and report

PROGRESS TO REPORT FOR THIS PERIOD

Activity 1 – Coordination and Meetings

Activity 2 – Data Collection

Activity 3 – Site Visits

Activity 4 – LiDAR Data and field survey data Processing

Activity 5 – Drainage Basin Delineations

Finalized crossing locations and contributing drainage area delineations.

Activity 6 – Estimation of hydrologic and drainage parameters

Estimated hydrologic and drainage parameters including flow paths lengths, slopes, area lag time, landuse, imperviousness, and runoff CN values.

Activity 7 – Gamma Function HEC-HMS modeling analysis

Developed UH hydrographs for each subarea

Activity 8 – Existing Conditions HEC-HMS Modeling Analysis

Developed and updated HEC-HMS models based on contributing drainage areas, parameters and computed unit hydrographs.

Activity 9 – Proposed Conditions HEC-HMS Modeling Analysis

Activity 10 – Impacts and Mitigation Volumes

Activity 11 – Existing and Proposed HEC-RAS modeling analysis

Established a revised-existing condition HEC-RAS model for the proposed SH 68 analysis. Determined preliminary SH 68 crossings of South Main Drain and North Main Drain and evaluated within HEC-RAS.

Activity 12 – Evaluation of proposed crossing structure configurations

Estimated physical parameters of each crossing structure included length, invert elevations, slope, and tailwater conditions. Determined a preliminary culvert size to convey the design frequency flow.

Activity 13 – Water surface profiles

Activity 14 – Outfalls

Activity 15 – Report



2299 Lone Star Drive, Ste 239
 Sugar Land, Texas 77479
 (713) 782-3811

INVOICE


Engineering Services
 SH68 H&H Study

L&G Engineering 2100 W. Expressway 83 Mercedes, Texas 78570 Attention: Mr. Reza Badiozzamani, P.E.	CSE Invoice Number: 201445 CSE Project Number: LG2013014 Invoice Period: 10/26/2014 Through 11/25/2014 Invoice Date: November 25, 2014
---	---

Contract Amount \$121,885.00	Contract Amount Remaining \$48,318.36
--	---

Employee Classification	Rate	Previous		This Period		To Date	
		Hr	Total	Hr	Total	Hr	Total
Project Manager	\$178.36	70.0	\$12,485.20	24.0	\$4,280.64	94.0	\$16,765.84
Project Engineer	\$164.64	200.0	\$32,928.00	60.0	\$9,878.40	260.0	\$42,806.40
GIS Specialist	\$137.20	78.0	\$10,701.60	24.0	\$3,292.80	102.0	\$13,994.40
Subtotal			\$56,114.80		\$17,451.84		\$73,566.64

TOTAL FEE EARNED:	\$73,566.64
LESS PREVIOUSLY INVOICED:	\$56,114.80
TOTAL AMOUNT DUE THIS INVOICE:	\$17,451.84

Deren Li, Ph.D., P.E., D.WRE Project Manager	
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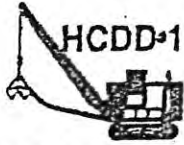
HIDALGO COUNTY DRAINAGE DISTRICT NUMBER ONE

902 NORTH DOOLITTLE

EDINBURG, TEXAS 78542

(958) 292-7080

FAX (958) 292-7089



GODFREY GARZA, JR.
MANAGER

INVOICE PROCESSING CHECKLIST

Date Received: 12.9.14

Engineer/Firm Name: R. Gutierrez Eng.

Project Name/Number: Rural Drainage Dev. Pct. 2

Invoice No: # 3727

Logged in and Scanned: 8AM 12/10 By: Rosa Arce Forwarded to: Joey Garza

Engineer	Name	Date	Comment
Scope of work reviewed			

Accounting	Name	Date	Comment
Encumbrance			
Purchase Order Attached			
Audit			
Final Approval for Agenda			

	Name	Date	Comment
Placed on Agenda			

Additional Comments: _____

R. Gutierrez Engineering Corporation

INVOICE

RECEIVED
HIDALGO COUNTY
DRAINAGE DISTRICT #1

INVOICE 3727
DATE 12/10/2014
Due on Receipt

HCDD1
902 N. Doolittle Road
Edinburg, TX 78542

DEC 09 2014
4:46 AM / PM
BY: Joey Garcia

Project: Rural Drainage Development Program-Pct. 2

Billing Fee: 218,195.96

Project No.: ENG13.001
Contract No. WA#1, SA#1, SA#2
PO No.: 622585/626044

<u>Northside Village Subdivision</u>	<u>Phase Fee</u>	<u>% Complete</u>	<u>Fee Earned</u>	<u>Prior Billing</u>	<u>Current Due</u>
Phase I - Data Collection	3,479.93	100%	3,479.93	3,479.93	0.00
Phase II - Preliminary Engineering	3,479.93	100%	3,479.93	3,479.93	0.00
Phase III - Final Design	11,599.77	100%	11,599.77	11,599.77	0.00
Phase IV - Construction	4,639.91	100%	4,639.91	4,639.91	0.00
Topographic Survey	4,639.91	100%	4,639.91	4,639.91	0.00
ROW Surveying (3 Parcels)	8,250.00	100%	8,250.00	8,250.00	0.00
Northside Village Subdivision Subtotal	36,089.45		36,089.45	36,089.45	0.00

<u>Hidden Valley Estates Subdivision</u>	<u>Phase Fee</u>	<u>% Complete</u>	<u>Fee Earned</u>	<u>Prior Billing</u>	<u>Current Due</u>
Phase I - Data Collection	3,479.93	100%	3,479.93	3,479.93	0.00
Phase II - Preliminary Engineering	3,479.93	100%	3,479.93	3,479.93	0.00
Phase III - Final Design	11,599.77	100%	11,599.77	11,599.77	0.00
Phase IV - Construction	4,639.91	100%	4,639.91	4,639.91	0.00
Topographic Survey	4,639.91	100%	4,639.91	4,639.91	0.00
ROW Surveying (4 Parcels)	11,000.00	100%	11,000.00	11,000.00	0.00
Hidden Valley Estates Subdivision Subtotal	38,839.45		38,839.45	38,839.45	0.00

<u>Seminole Valley Subdivision</u>	<u>Phase Fee</u>	<u>% Complete</u>	<u>Fee Earned</u>	<u>Prior Billing</u>	<u>Current Due</u>
Phase I - Data Collection	7,922.94	100%	7,922.94	7,922.94	0.00
Phase II - Preliminary Engineering	7,922.94	100%	7,922.94	7,922.94	0.00
Phase III - Final Design	26,409.81	100%	26,409.81	26,409.81	0.00
Phase IV - Construction	10,563.92	75%	7,922.94	0.00	7,922.94
Topographic Survey	10,563.92	100%	10,563.92	10,563.92	0.00
ROW Surveying (1 Parcel)	2,750.00	100%	2,750.00	2,750.00	0.00
Seminole Valley Subdivision Subtotal	66,133.53		63,492.55	55,569.61	7,922.94

<u>Minnesota Meadows Subdivision</u>	<u>Phase Fee</u>	<u>% Complete</u>	<u>Fee Earned</u>	<u>Prior Billing</u>	<u>Current Due</u>
Phase I - Data Collection	7,922.94	100%	7,922.94	7,922.94	0.00
Phase II - Preliminary Engineering	7,922.94	100%	7,922.94	7,922.94	0.00
Phase III - Final Design	26,409.81	100%	26,409.81	26,409.81	0.00
Phase IV - Construction	10,563.92	0%	0.00	0.00	0.00
Topographic Survey	10,563.92	100%	10,563.92	10,563.92	0.00
ROW Surveying (5 Parcels)	13,750.00	100%	13,750.00	11,000.00	2,750.00
Minnesota Meadows Subdivision Subtotal	77,133.53		66,569.61	63,819.61	2,750.00

PROJECT TOTALS: 218,195.96 204,991.06 194,318.12 10,672.94

Balance Due

\$ 10,672.94

R. Gutierrez Engineering Corporation

Transmittal Form

TO: Noe Saldivar
Hidalgo County Drainage Dist. No. 1
902 N. Doolittle
Edinburg TX 78542

FROM: Jaime Jaimez, Jr.
SUBJECT: 2012 Bond Referendum-Rural Drainage Development
PROJECT NO.: ENG13.001
DATE: December 10, 2014

WE ARE SENDING YOU ATTACHED UNDER SEPARATE COVER VIA Hand Delivery THE FOLLOWING ITEMS:

BLUEPRINTS PLANS SHOP DRAWINGS CD
 CHANGE ORDER SAMPLES PAYMENT REQUEST OTHER: INVOICE
 BID TABULATION CONTRACT DOCUMENTS RECORD DRAWINGS 3 1/2" DISKETTE

QUANTITY / SETS	DATED	ITEM DESCRIPTION
1	12/10/14	Invoice 3727

THESE ARE TRANSMITTED AS CHECKED BELOW:

FOR BIDS DUE APPROVED AS NOTED FOR YOUR RECORDS
 FOR APPROVAL APPROVED AS SUBMITTED FOR YOUR ACKNOWLEDGEMENT
 FOR YOUR USE RETURN FOR CORRECTIONS RESUBMIT FOR APPORVAL
 AS REQUESTED FOR FURTHER PROCESSING ON LOAN
 FOR REVIEW AND COMMENT FOR SIGNATURE OTHER

COMMENTS:
This invoice is for 75% of the construction phase for Seminole Valley and for the additional parcel that was added with SA#2 for Minnesota Meadows.

RECEIVED
HIDALGO COUNTY
DRAINAGE DISTRICT #1

DEC 09 2014

4:46 AM PM

BY: Joey Farza

Copy Distribution: file Received by: _____

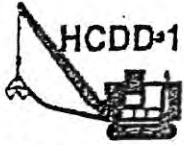
HIDALGO COUNTY DRAINAGE DISTRICT NUMBER ONE

502 NORTH DOOLITTLE

EDINBURG, TEXAS 78542

(958) 292-7080

FAX (958) 292-7089



GODFREY GARZA, JR.
MANAGER

INVOICE PROCESSING CHECKLIST

Date Received: 12.4.14

Engineer/Firm Name: TEOSI

Project Name/Number: SH-68 Seg. D.

Invoice No: # 2014 2145

Logged in and Scanned: 1046 AM By: R. Arce Forwarded to: Joey Garza

Engineer	Name	Date	Comment
Scope of work reviewed			

Accounting	Name	Date	Comment
Encumbrance			
Purchase Order Attached			
Audit			
Final Approval for Agenda			

	Name	Date	Comment
Placed on Agenda			

Additional Comments: _____

RECEIVED
HIDALGO COUNTY
DRAINAGE DISTRICT #1

DEC 04 2014

10:41 AM

BY: *Rosalie*



TEDSI INFRASTRUCTURE GROUP

Consulting Engineers

1201 East Expressway 83 • Mission, Texas 78572
Tel: (956) 424-7898
Fax: (956) 424-7022

December 01, 2014

Project No: 24773-15

Invoice No: 20142145

Ms. Claudette Guerrero
Hidalgo County Drainage District No. 1
902 North Doolittle Road
Edinburg, TX 78542

Project 24773-15 SH 68 Segment D - Work Authorization No. 15

P. O. No. 623261
Acct # 13-133-433-365-010-001-43340
Precinct No. 1

Professional Services from January 01, 2014 to October 31, 2014

Fee

Billing Phase	Fee	Percent Complete	Earned	Previous Fee Billing	Current Fee Billing
Hydrologic & Hydraulic Analysis	279,243.92	60.30	168,384.08	139,621.96	28,762.12
Total Fee	279,243.92		168,384.08	139,621.96	28,762.12
Total Fee					28,762.12

Billing Summary

	Current	Prior	To-Date
Total Billings	28,762.12	139,621.96	168,384.08
Total Fee			279,243.92
Remaining Fee			110,859.84
Total this Invoice			\$28,762.12

PLEASE REMIT PAYMENT TO:
TEDSI Infrastructure Group, Inc.
738 Highway 6 South, Suite 430
Houston, Texas 77079

Authorized By:

Mark W. Luper
Mark W. Luper, P.E.
Executive Vice President

Date:

12.1.14

SH68 H&H Study
Monthly Progress Report No. #5
January 2014 thru October 2014

Period of Coverage: January thru October 2014
Date of Submittal: December 01, 2014
Submitted To: Claudette Guerrero, HCDD No. 1
PREPARED BY: Mark Lupher, P.E., TEDSI Infrastructure, Inc.

This study covers the following activities:

1. Project coordination and meetings
2. Data collection
3. Site visits
4. LiDAR data and field survey data processing
5. Drainage basin delineations
6. Estimation of hydrologic and drainage parameters
7. Gamma function based unit hydrographs development
8. Existing conditions HEC-HMS modeling analysis
9. Proposed conditions HEC-HMS modeling analysis
10. Determination of runoff impacts and preliminary mitigation volumes.
11. Existing and proposed HEC-RAS modeling analysis for stream crossing
12. Evaluation of proposed crossing structure configurations
13. Determination of water surface profiles
14. Outfall determination
15. Detention modeling analysis
16. Documentation and report

PROGRESS TO REPORT FOR TIDS PERIOD

Activity 1 - Coordination and Meetings

Coordination with HCDD No. 1

Activity 2 - Data Collection

Activity 3 - Site Visits

Activity 4 -LiDAR Data and field survey data Processing

Activity 5 -Drainage Basin Delineations

Finalized crossing locations and contributing drainage area delineations.

Activity 6 -Estimation of hydrologic and drainage parameters

Estimated hydrologic and drainage parameters including flow paths lengths, slopes, darea lag time, landuse, imperviousness, and runoff CN values.

Activity 7 -Gamma Function HEC-HMS modeling analysis

Developed UH hydrographs for each subarea

Activity 8 -Exist Conditions HEC-HMS Modeling Analysis

Updated existing conditions HEC-HMS models

Activity 9 -Proposed Conditions HEC-HMS Modeling Analysis

Activity 10 -Impacts and Mitigation Volumes

Activity 11 -Existing and Proposed HEC-RAS modeling analysis

Established a revised-existing condition HEC-RAS model for the proposed SH 68 analysis.

Activity 12 -Evaluation of proposed crossing structure configurations

Estimated physical parameters of each crossing structure included length, invert elevations, slope, and tailwater conditions. Determined a preliminary culvert size to convey the design frequency flow.

Activity 13 - Water surface profiles

Activity 14 -Outfalls

Activity 15 -Detention modeling

analysis Activity

16-Report

