

# CITY OF HOUSTON (H - TOWN)



# MAIN PURPOSE OF THE PRESENTATION

TO EXPLAIN AND DISCUSS HOW CITY  
OF HOUSTON MAINTAINS ITS OFF-  
SYSTEM BRIDGES

**PRESENTATION INVITATION BY  
MR. STEVEN AUSTIN, PE  
TxDOT MAINTENANCE DIRECTOR**

**DUE TO OUR HIGH RATE OF SUCCESS  
AND TEAMWORK WITH TxDOT  
HOUSTON DISTRICT FOR MAINTAINING  
OVER 1100 LONG SPAN (>20') BRIDGES**

TO IDENTIFY OUR BRIDGES, WE HAVE ESTABLISHED  
THE FOLLOWINGS

**BRIDGE ROUT BOOKS**

- **BY COH NUMBERS**
- **BY COH STREETS**

# BRIDGE ROUT BOOK BY COH STREETS

## CITY OF HOUSTON ROUTE BOOK BY STREET

Revised 3/13/2012

QUAD	BRDG #	PG #	CD	TYPE	BLOCK	STREET	LOC	CROSS	KEY MAP #
SE	1041	6	E		1300	2ND	&	DRAIN DITCH	619S
SE	29	2	I		400	75TH ST	&	BRAYS BAYOU	495W
SE	727	2	I	UP	200	75TH STREET	UNDER	RR @ RUSK	495W
NE	1538	8	E	CUL	22000	ACCESS RD.	&	DRAIN DITCH	295V
NE	1541	8	E	CUL	22000	ACCESS RD.	&	DRAIN DITCH	295Z
NW	446	6	A		1200	ADKINS	N OF	I-10	450Y
SE	216	7	I		4800	AHRENS	&	BERRY CREEK	535R
NW	1158	3	H	CUL	4400	AIRLINE	&	LWO BAYOU	453K
NW	737	3	H	OP	3400	AIRLINE	&	STOKES	453P
SE	1207	2	D	CUL	3000	AIRPORT BLVD	&	BUFFUM	573F
SE	1208	2	D	CUL	2900	AIRPORT BLVD	E OF	288	573F
SW	1033	9	D		1900	AIRPORT BLVD EB	&	DRAIN DITCH	573E
SE	539	2	D		3600	AIRPORT BLVD EB	&	SCOTT	573G
SE	831	3	D		3900	AIRPORT BLVD EB	E OF	SOUTHVIEW	573G
SW	1034	9	D		1900	AIRPORT BLVD WB	&	DRAIN DITCH	573E
SE	552	2	D		3600	AIRPORT BLVD WB	&	SCOTT	573G
SE	858	2	D		3900	AIRPORT BLVD WB	E OF	SOUTHVIEW	573G
SE	634	3	D		5300	AIRPORT BLVD. EB	W OF	MLK	574E
SE	830	4	E		8700	AIRPORT	&	BERRY CREEK	575C
SE	908	2	D		3100	AKARD	&	DULCIMER	573F
NW	657	4	A		6900	ALABONSON RD	&	WHITE OAK BAYOU	411T
NE	391	5	B		6000	ALBERT	&	KURT	375S
NE	1264	4	H	CUL	10400	ALDINE-WFIELD	&	GOODLOE	413Z
NE	545	5	H		12300	ALDINE-WFIELD	&	HALLS BAYOU	413M
NE	546	5	H		13900	ALDINE-WFIELD	&	STRAWN	413D
NE	527	5	B		15200	ALDINE-WFIELD	&	GREENS BAYOU	373V
SW	315	3	F		11800	ALIEF CLODINE	&	BRAYS BAYOU	529A
SW	79	1	H	FB	800	ALLEN PKWY	OVER	ALLEN PKWY	493K
SW	54	1	H	BLK	1800	ALLEN PKWY	&	TAFT	493K
SW	706	1	H	UP	2900	ALLEN PKWY	UNDER	MONTROSE	493J
SW	724	1	H	UP	2900	ALLEN PKWY	UNDER	WAUGH DR.	492M
SW	763	1	H	OP	2900	ALLEN PKWY	@	WAUGH DR TA	492M
SE	338	7	E		5100	ALLENDALE EB	&	BERRY CREEK	536N
SE	344	7	E		5100	ALLENDALE WB	&	BERRY CREEK	536N
SE	397	3	E		4900	ALLISON	&	HENDRICKSEN	574N
SE	396	3	E		5200	ALLISON	&	KIER RD.	574P
NE	437	4	H		10000	ALLWOOD	S OF	PATE	454D
SW	38	10	D		6100	ALMEDA	&	BRAYS BAYOU	533F
SE	1579	5	E		11600	ALMEDA GENOA	&	DRAIN DITCH	576Q
SE	1561	5	E	CUL	10600	ALMEDA GENOA	&	DRAIN DITCH	576P
SW	95	9	D	FB	2700	ALMEDA PLAZA	W OF	ALMEDA	572L
SW	1591	8	D	CUL	2920	ALMEDA PLAZA	&	DRAIN DITCH	572L
SW	1592	8	D	FB	2920	ALMEDA PLAZA	&	DRAIN DITCH	572L
SE	1325	5	E	CUL	3000	ALMOND CREEK	@	DRAIN DITCH	578W
NW	361	2	H		100	ANABEL LANE	&	CORTLANDT	453A

# BRIDGE ROUT BOOK BY COH

# BRIDGE NUMBERS

CITY OF HOUSTON

ROUTE BOOK BY NUMBER

Revised 3/13/2012

QUAD	BRDG #	PG #	CD	TYPE	BLOCK	STREET	LOC	CROSS	KEY MAP #
SE	1041	6	E		1300	2ND	&	DRAIN DITCH	619S
SE	29	2	I		400	75TH ST	&	BRAYS BAYOU	495W
SE	727	2	I	UP	200	75TH STREET	UNDER	RR @ RUSK	495W
NE	1538	8	E	CUL	22000	ACCESS RD.	&	DRAIN DITCH	295V
NE	1541	8	E	CUL	22000	ACCESS RD.	&	DRAIN DITCH	295Z
NW	446	6	A		1200	ADKINS	N OF	I-10	450Y
SE	216	7	I		4800	AHRENS	&	BERRY CREEK	535R
NW	1158	3	H	CUL	4400	AIRLINE	&	LWO BAYOU	453K
NW	737	3	H	OP	3400	AIRLINE	&	STOKES	453P
SE	1207	2	D	CUL	3000	AIRPORT BLVD	&	BUFFUM	573F
SE	1208	2	D	CUL	2900	AIRPORT BLVD	E OF	288	573F
SW	1033	9	D		1900	AIRPORT BLVD EB	&	DRAIN DITCH	573E
SE	539	2	D		3600	AIRPORT BLVD EB	&	SCOTT	573G
SE	831	3	D		3900	AIRPORT BLVD EB	E OF	SOUTHVIEW	573G
SW	1034	9	D		1900	AIRPORT BLVD WB	&	DRAIN DITCH	573E
SE	552	2	D		3600	AIRPORT BLVD WB	&	SCOTT	573G
SE	858	2	D		3900	AIRPORT BLVD WB	E OF	SOUTHVIEW	573G
SE	634	3	D		5300	AIRPORT BLVD EB	W OF	MLK	574E
SE	830	4	E		8700	AIRPORT	&	BERRY CREEK	575C
SE	908	2	D		3100	AKARD	&	DULCIMER	573F
NW	657	4	A		6900	ALABONSON RD	&	WHITE OAK BAYOU	411T
NE	391	5	B		6000	ALBERT	&	KURT	375S
NE	1264	4	H	CUL	10400	ALDINE-WFIELD	&	GOODLOE	413Z
NE	545	5	H		12300	ALDINE-WFIELD	&	HALLS BAYOU	413M
NE	546	5	H		13900	ALDINE-WFIELD	&	STRAWN	413D
NE	527	5	B		15200	ALDINE-WFIELD	&	GREENS BAYOU	373V
SW	315	3	F		11800	ALIEF CLODINE	&	BRAYS BAYOU	529A
SW	79	1	H	FB	800	ALLEN PKWY	OVER	ALLEN PKWY	493K
SW	54	1	H	BLK	1800	ALLEN PKWY	&	TAFT	493K
SW	706	1	H	UP	2900	ALLEN PKWY	UNDER	MONTROSE	493I
SW	724	1	H	UP	2900	ALLEN PKWY	UNDER	WAUGH DR.	492M
SW	763	1	H	OP	2900	ALLEN PKWY	@	WAUGH DR TA	492M
SE	338	7	E		5100	ALLENDALE EB	&	BERRY CREEK	536N
SE	344	7	E		5100	ALLENDALE WB	&	BERRY CREEK	536N
SE	397	3	E		4900	ALLISON	&	HENDRICKSEN	574N
SE	396	3	E		5200	ALLISON	&	KIER RD.	574P
NE	437	4	H		10000	ALLWOOD	S OF	PATE	454D
SW	38	10	D		6100	ALMEDA	&	BRAYS BAYOU	533F
SE	1579	5	E		11600	ALMEDA GENOA	&	DRAIN DITCH	576Q

# CITY OF HOUSTON BRIDGE REPAIR AND MAINTENANCE METHODS



## OVERVIEW OF THE CITY OF HOUSTON BRIDGES:

- A) OVERALL NUMBER OF BRIDGES
- B) LONG SPAN BRIDGES- OFF SYSTEM
- C) SHORT SPAN BRIDGES – LOCAL BRIDGES (VEHICLE & SHORT/LONG SPAN PEDESTRIANS)
- D) RAILROAD BRIDGES WHITIN THE MANUCIPALITY
- E) REPAIR AND MAINTENACE PROCESS
- F) REVISING AND MAINTAINING COH NBI DATABASE
- G) REVISING AND MAINTAINING COH BRIDGE DATABASE



# CITY OF HOUSTON BRIDGES

APPROXIMETLY 1400 BRIDGES

A) *1100+ - LONG SPAN BRIDGES*

B) 300 + - SHORT SPAN & PED.  
BRIDGES

LONG SPAN BRIDGES ARE INSPECTED  
AND REPORTED TO THE CITY BY  
TxDOT HOUSTON DISTRICT FOR  
Repair/Maintenance/Feedback  
(TxDOT Revises City's NBI)

SHORT PAN BRIDGES ARE INSPECTED  
BY THE CITY PERSONNEL FOR  
REPAIR/MAINT.  
(COH STAFF REVISES BR. DATABASE)

# DAILY BRIDGE RELATED MAINTENACE SCHEDULE FOR REPORTED PROBLES

CITY OF HOUSTON DEPARTMENT OF HOUSTON PUBLIC WORKS TRANSPORTATION & DRAINAGE OPERATIONS		Bridge	Weather: Cloudy	DAILY ROUTE			DATE: Monday, November 4, 2024
			Manager: Ivan Marquez				
			Assistant Manager: -				
			Section Chief: -				
			Vincent Wells Tom Towery				
Tree Crew - Jerlene Nunn							
Job #:	Location		Type of Work (Description)	Co. Dist.	Keymap Location	Employee Name	
	Scheduled Off-day					Connell Lee	Arthur Myres
	Scheduled Off-day					Algeria Allen	Gerald Page
Iron Worker - Carlos Lopez							
Job #:	Location		Type of Work (Description)	Co. Dist.	Keymap Location	Employee Name	
1	149	900 N. Durham	Repairing Guardrail	C	492C	Lavender Aubrey	John Wiley
2		2778 Kingwood Dr.	Remove Handrail	E	337B	Russell Childress	Juan Rodriguez
3		2701 Dalton	Training	I	535K	Ryan Norfleet	
Painters and Semi-Skilled Laborer - Frederick Greeno							
Job #:	Location		Type of Work (Description)	Co. Dist.	Keymap Location	Employee Name	
	Scheduled Off-day					Charles Brown	
Operators - George Davilla							
Job #:	Location		Type of Work (Description)	Co. Dist.	Keymap Location	Employee Name	
1		2248 Bissonnet	Remove Tree	C	492Y	Wanda Deter	Norberto Garcia
2	149	900 Durham	Repairing Guardrail	C	492C	Dontate Myles	Reinaldo Soto
3							Barry Pardue
Carpenters - Luis Ramirez							
Job #:	Location		Type of Work (Description)	Co. Dist.	Keymap Location	Employee Name	
1	132	400 Montrose	Piling Repair	H	493J	Johnny Juarez	Daniel Ellis
2	476	10100 Hirsch	Piling Repairs	H	454C	Mark Gack Robert Taylor	Steven Franklin
3							Oscar Velasquez
							Ulysses Donovan
Grass Cut & Clean - Quentin Pett & Reginald Johniken							
Job #:	Location		Type of Work (Description)	Co. Dist.	Keymap Location	Employee Name	
	Scheduled Off-day					Charles Mathis	Johnathan McKenzie
	Scheduled Off-day					Damion Blackmon	Stephen Rodgers
	Scheduled Off-day					William Craig	Joe Mercado
							Robert M. Lin
							Juan Dias
Supply Room - Vincent Wells							
Job #:	Location		Type of Work (Description)	Co. Dist.	Keymap Location	Employee Name	
1		2701 Dalton	Tods and Supplies Warehouse	I	535K	Douglas Arington	
Employee							
	Name	City/Business	Vacation / Personal	Sick	FMLA	Floating Holiday	Funeral Leave
1	Carlos Medina		Parental Leave				AWOL
2							WCTD Light Duty

SAMPLE OF HOUSTON  
LONG AND SHORT  
SPAN BRIDGES  
MAINTAINED BY COH  
WORKFORCE

# PEDESTRAIN BRIDGE SPANNING OVER RAILROAD AND ROADWAYS CONNECTING COMMUNITIES



# LAND BRIDGE INSPECTION AND MAINTENANCE



# LAND BRIDGE INSPECTION AND MAINTENANCE



# WALKING, JOGING & HIKE AND BIKE TRAIL TUNNELS



# LOVE LOCK HEADACHE

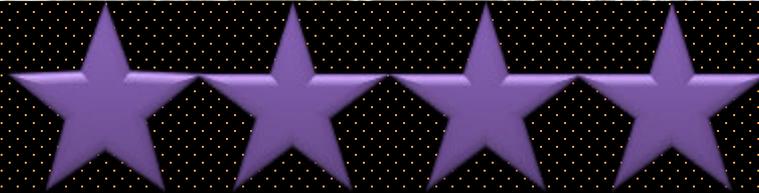
## PEDESTRIAN BRIDGE MAINTENANCE



YALE STREET BRIDGE MAINTENANCE  
IT WAS INSPECTED AND MAINTAINED  
FOR TWO YEARS TO AVOID CLOSURE



# VIEW OF YALE STREET BRIDGE



# YALE STREET BRIDGE INSPECTION COMPARISON

DEC. 30, 2015

MARCH 30, 2016



DEC. 30, 2015



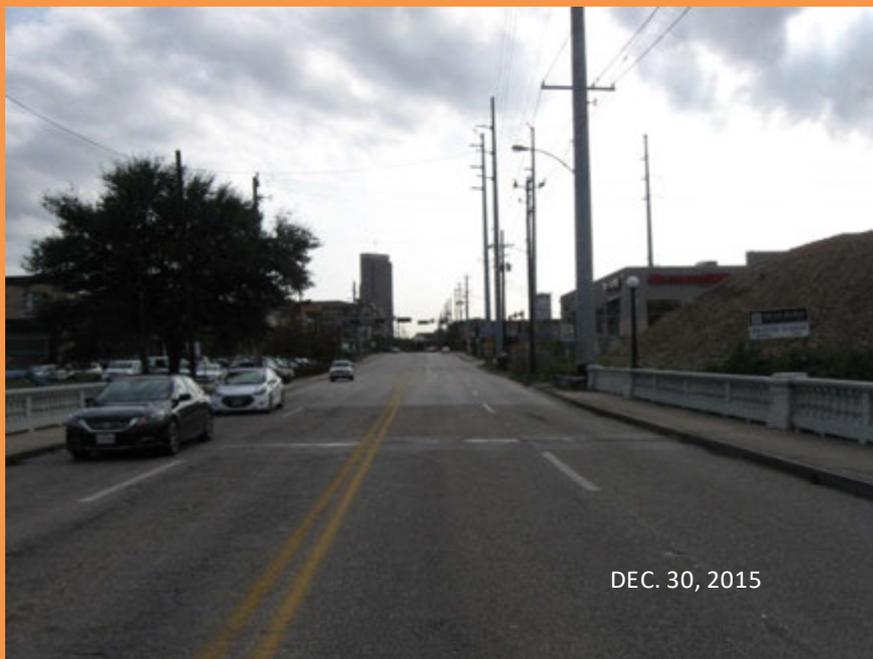
03/24/2016



# YALE STREET BRIDGE INSPECTION COMPARISON

**DEC. 30, 2015**

**MARCH 30, 2016**



# YALE STREET BRIDGE INSPECTION COMPARISON

DEC. 30, 2015

MARCH 30, 2016



# YALE STREET BRIDGE INSPECTION COMPARISON

DEC. 30, 2015

MARCH 30, 2016



# YALE STREET BRIDGE INSPECTION COMPARISON

DEC. 30, 2015

MARCH 30, 2016



# BRIDGE INSPECTION COMPARISON

DEC. 30, 2015



MARCH 30, 2016



# BRIDGE INSPECTION COMPARISON

DEC. 30, 2015

MARCH 30, 2016

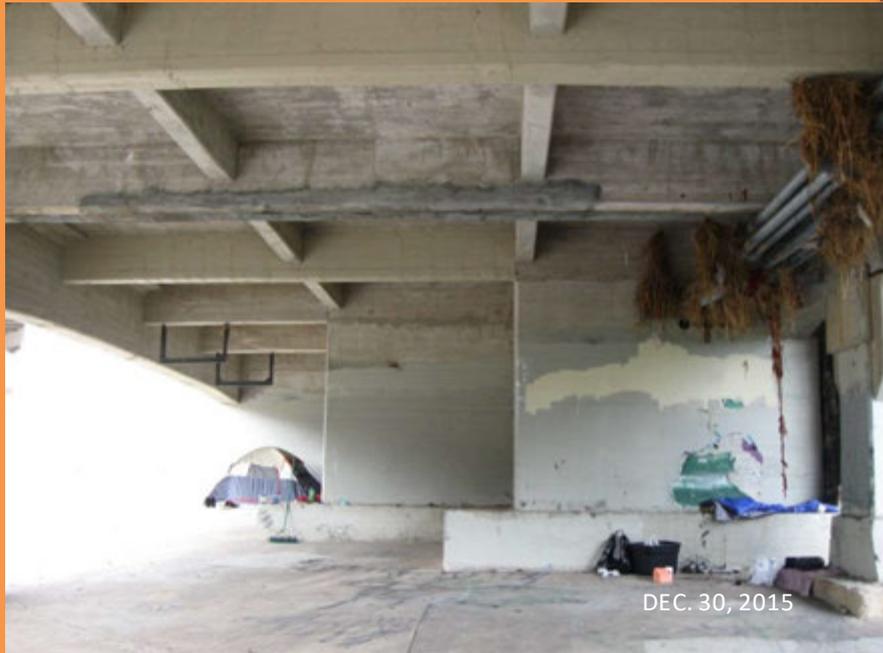


# BRIDGE INSPECTION COMPARISON

DEC. 30, 2015



MARCH 30, 2016



# YALE STREET BRIDGE INSPECTION COMPARISON

**DEC. 30, 2013**



**MARCH 31, 2014**

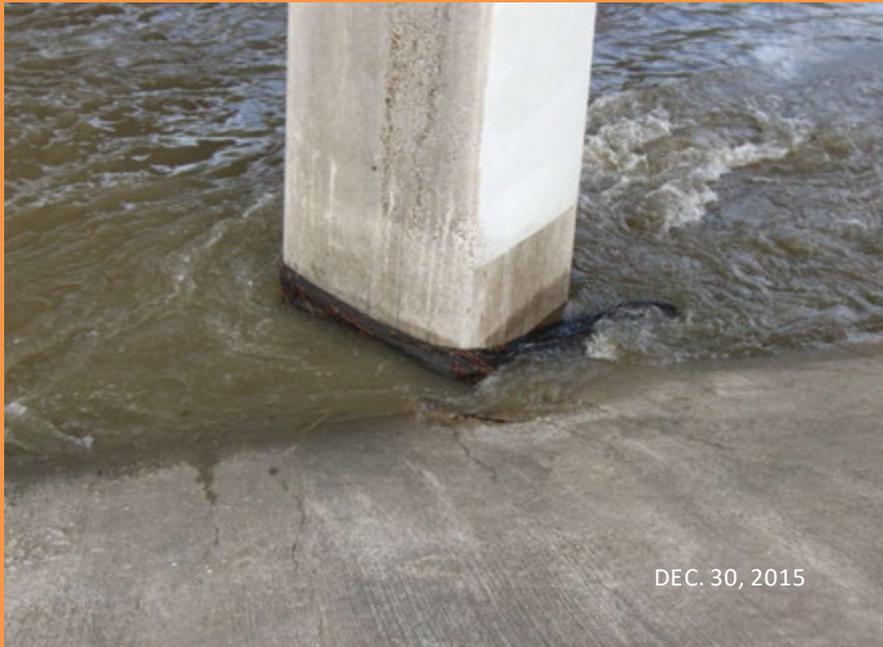


# BRIDGE INSPECTION COMPARISON

DEC. 30, 2015



MARCH 30, 2016



# YALE STREET BRIDGE INSPECTION COMPARISON

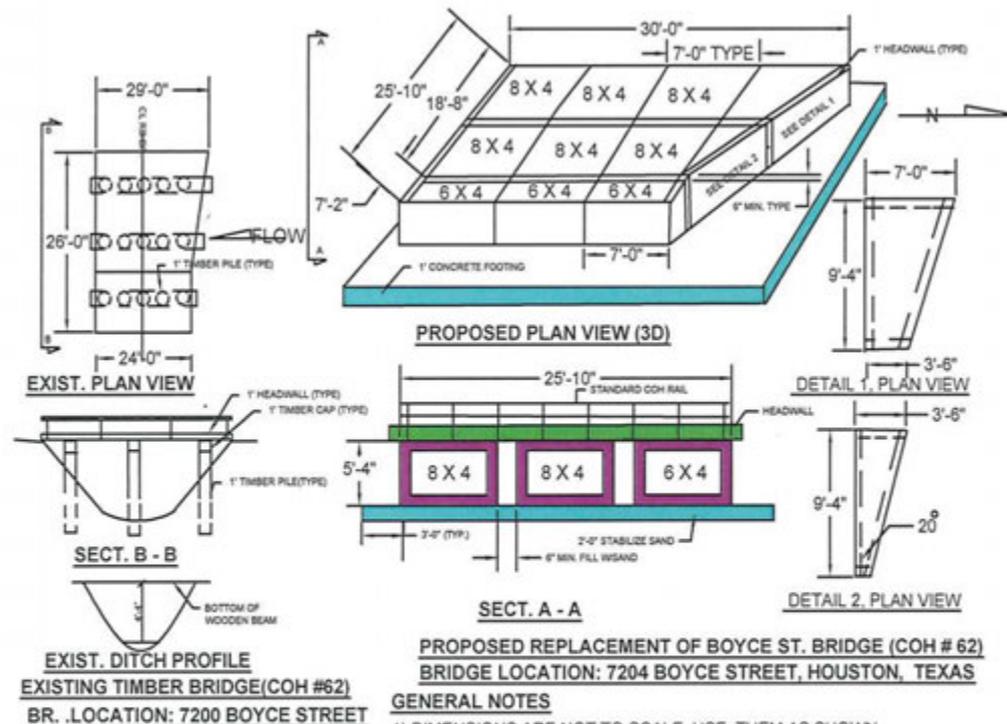
**DEC. 30, 2013**

**MARCH 31, 2014**



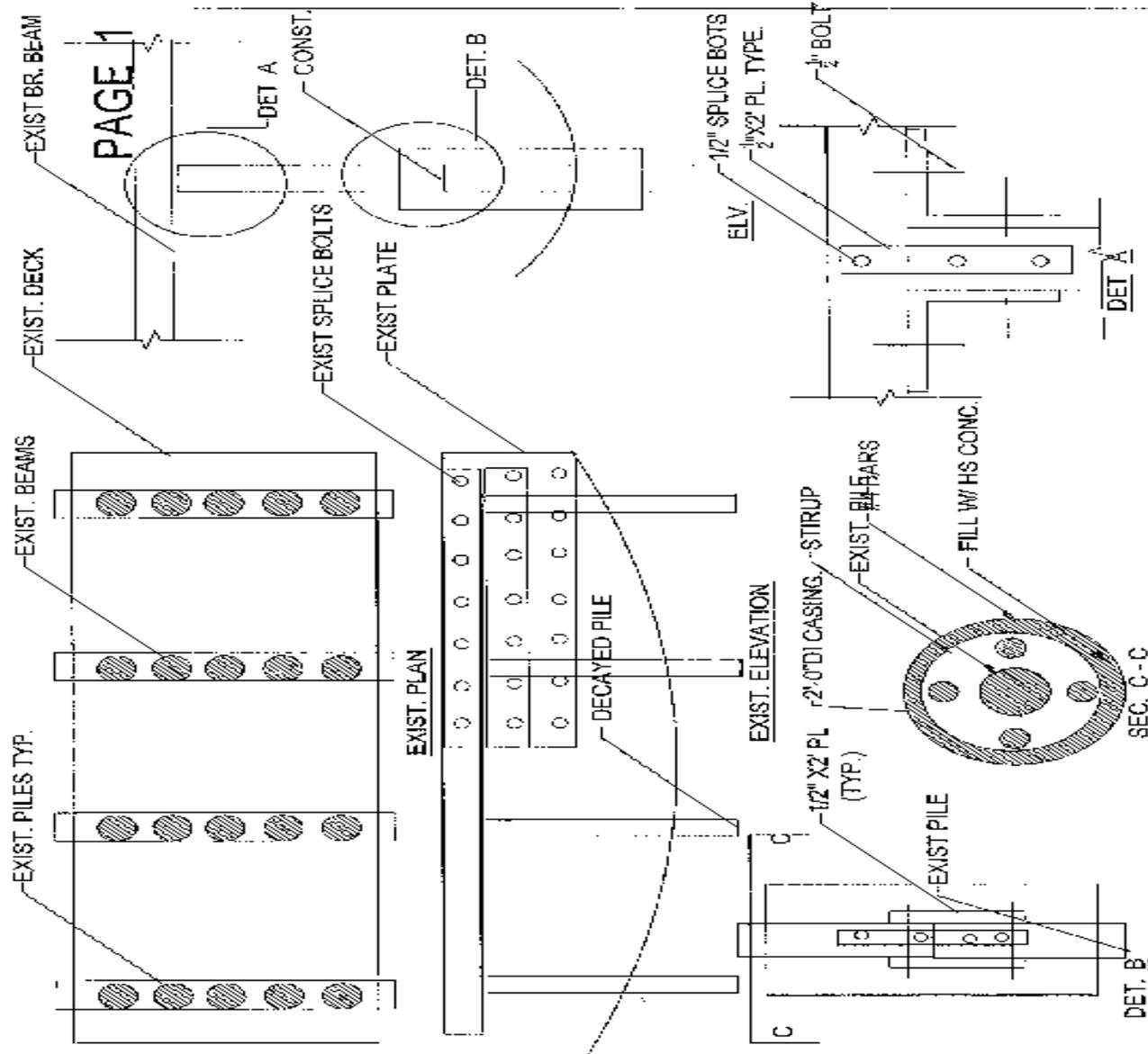
SAMPLE OF  
MAINTENANCE  
DESIGN BY CITY  
PERSONNEL

---

**GENERAL NOTES**

- 1) DIMENSIONS ARE NOT TO SCALE, USE THEM AS SHOWN
- 2) ALL DIMENSIONS ARE FIELD MEASUREMENTS; ADJUST THEM IF NECESSARY
- 3) CONTACT THE ENGINEER FOR ANY ISSUES AND PROBLEMS
- 4) REMOVE/RELOCATE ALL EXISTING UTILITY LINES PRIOR TO CONSTRUCTION
- 5) INFORM AND COORDINATE WITH HCFCD IF WORKING IN THEIR ROW LIMITS
- 6) USE COH/TxDOT STANDARDS TO CONSTRUCT HEADWALLS, WINGWALLS, RAIL, ETC.
- 7) INSTALL ALL WARNING, REGULATORY, AND OTHER REQUIRED SIGNS PRIOR TO CONSTRUCTION ACTIVITIES. REMOVE ALL THE SIGNS AND CLEAN-UP AFTER BRIDGE CONSTRUCTION IS COMPLETED.
- 8) MAXIMUM DECK FILL IS 2' OR LESS (SEE TxDOT STANDARD)

PREPARED BY: J.TASHI, P.E.



PAGE 1

REPAIR OF HUENI RD. BRIDGE (#991)

SEC. C-C

SAMPLE OF  
MAINTENANCE  
CONSTRUCTION BY  
THE CITY  
PERSONNEL

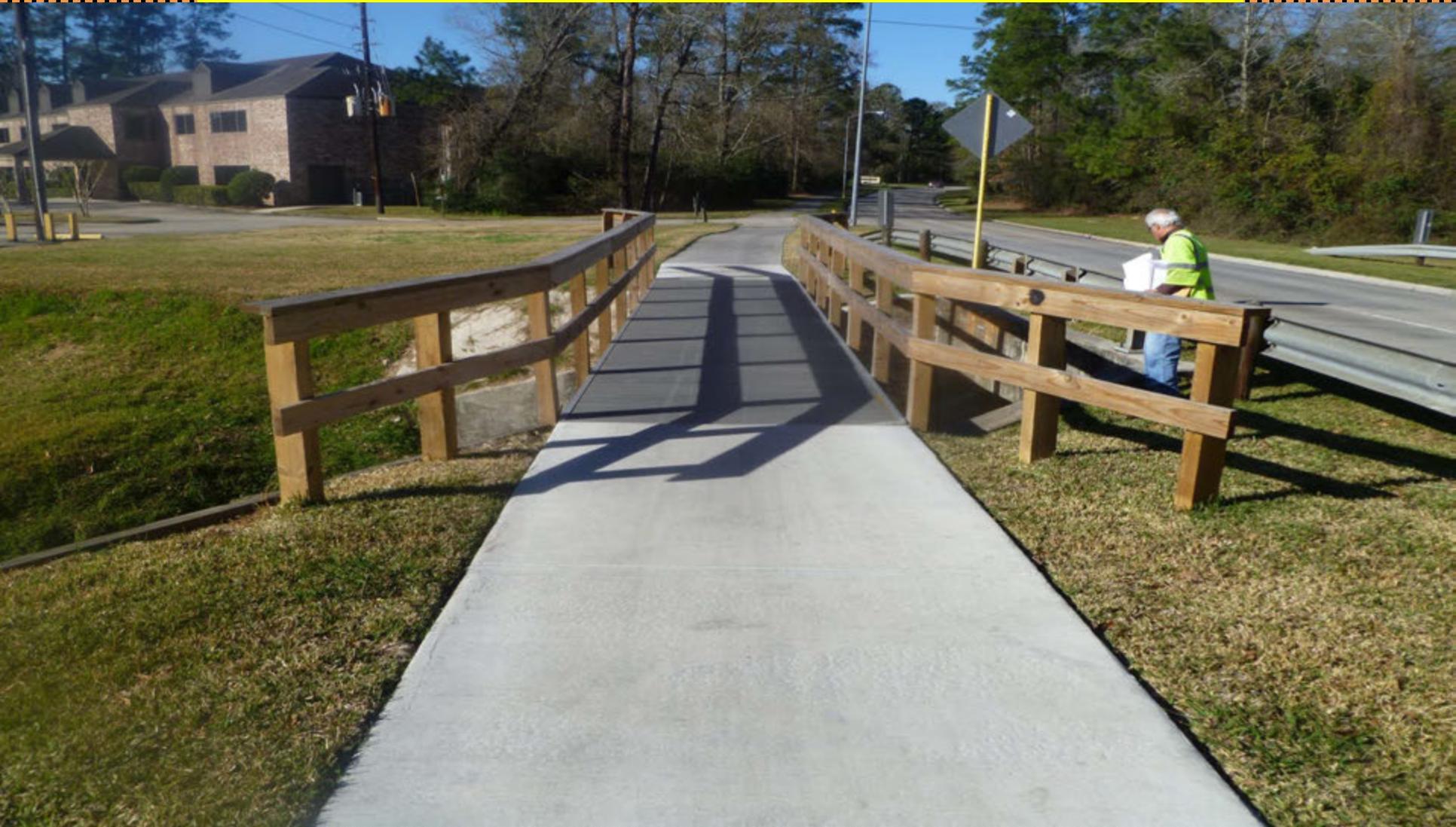
# SHORT SPAN CULVERT DESIGNED AND MAINTAINED BY THE CITY



# BOYCE BRIDGE STRUCTURE (DECK VIEW) IN NEED OF REPLACEMENT



# TIMBER PEDESTRIAN BRIDGE



# BOYCE BRIDGE (SIDE VIEW)



# DEMOLISHED BOYCE BRIDGE



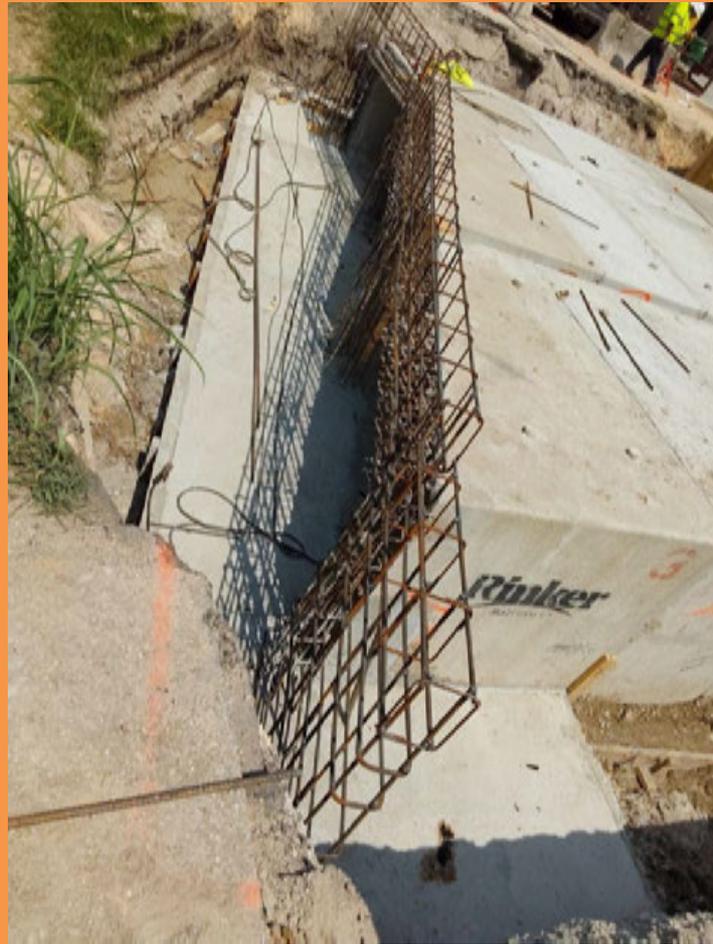
# DEMOLISHING BOYCE BRIDGE



# BOYCE BRIDGE RECONSTRUCTION



# BOYCE BRIDGE RECONSTRUCTION



# BOYCE BRIDGE RECONSTRUCTION



# BOYCE BRIDGE NEAR COMPLETION



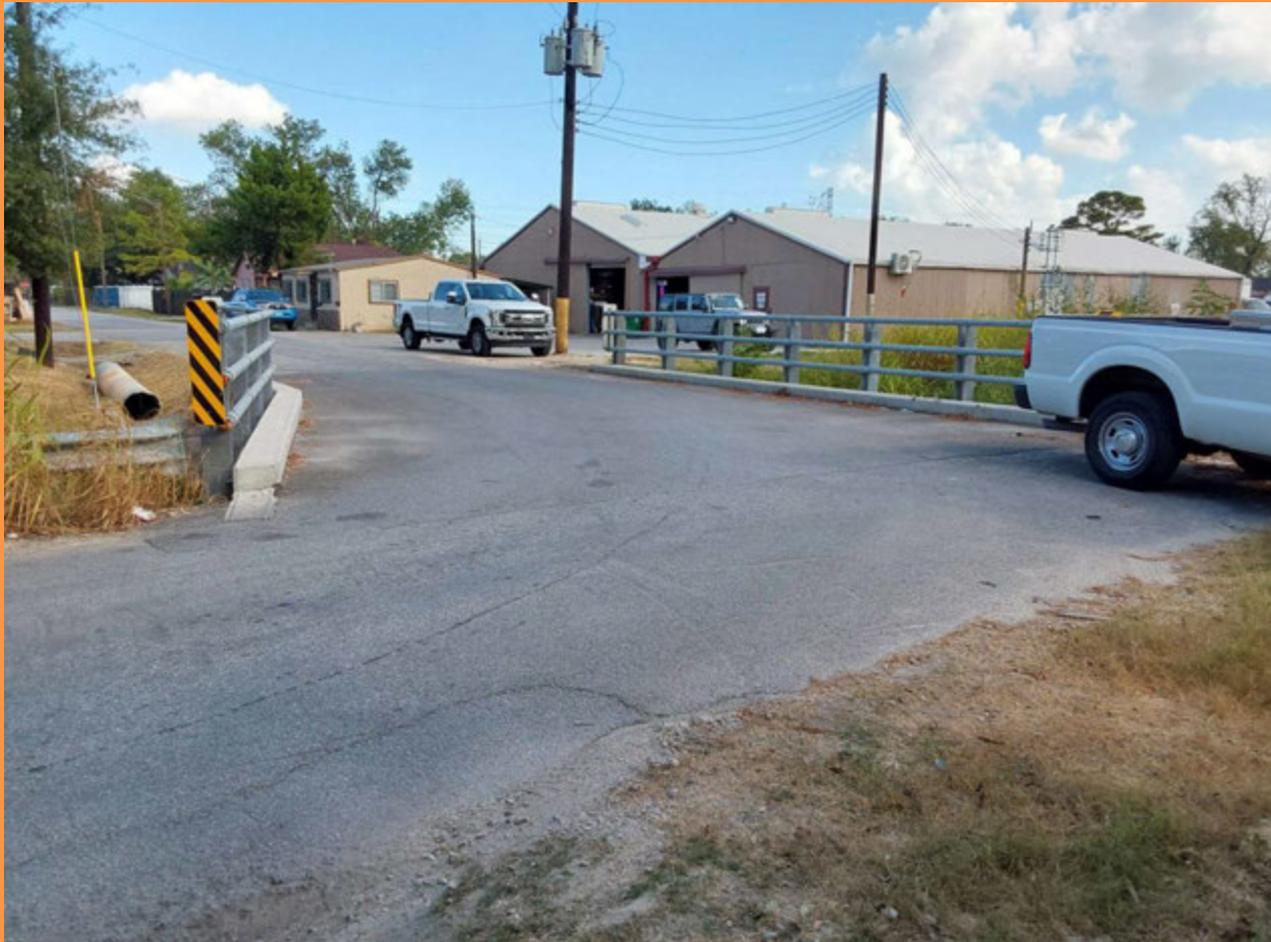
# BOYCE BRIDGE NEAR COMPLETION



# BOYCE BRIDGE CONSTRUCTION COMPLETION



# BOYCE BRIDGE COMPLETION



# TIMBER PEDESTRIAN BRIDGE IN NEED OF REPLACEMENT



# INITIAL BRIDGE EVALUATION



# DECK REPAIR



# DECK AND RAIL REPAIR



# TIMBER PEDESTRIAN DECK REPAIR



# BRIDGE TOTAL COST RECORDS

## **Bridge # 62, 7200 Boyce ,**

*Bridge reconstruction*

Total project cost: \$193,259.82

Project Duration : 11 Weeks ( 5/8/2023 – 7/20/2023)

## **Bridge # 702, 500 T.C. Jester SB**

*Repairs to headwall, expansion joint and bridge approach*

Total Project Cost: \$69,186.34

Project Duration: 5 Weeks (2/20/2024 – 3/28/2024)

## **Bridge # 294, 5800 Blackgum**

*Bridge rehabilitation*

Total project cost: \$66,596.59

Project Duration: 11 Weeks (6/4/2024 – 8/22/2024)

# EXPANSION JOINT REPAIR

TEMPORARY AND PERMINANT

# TEMPORARY EXPANSION JOINT REPAIR



# FULL EXPANSION JOINT REPAIR



# EXPANSION JOINT REPAIR



# EXPANSION JOINT REPAIR



# EXPANSION JOINT REPAIR



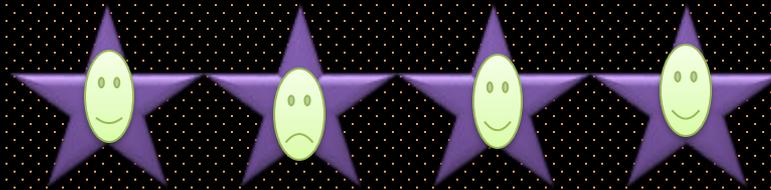
**BRIDGE REPAIR AND MAINTENANCE CHALLENGES:**

- A) LACK OF ADEQUATE BUDGET
- B) LACK OF ADVANCED MAINTENANCE TOOLS AND EQUIPMENT
- C) LACK OF SKILLED AND TRAINED PERSONNEL
- D) LONG HIRING PROCESS TO FILL VACANT POSITIONS
- E) DIFFICULTIES IN KEEPING TRAINED PERSONNEL
- F) LACK OF MAINTENANCE TRAINING PROGRAMS
- G) LACK OF FLEXIBILITY IN HIRING DESIGN/CONSTRUCTION CONTRACTORS
- H) LACK OF LAW ENFORCEMENT SUPPORT
- I) HOMELESS LIVING UNDER BRIDGES AND CREATING VARIOUS MAINTENANCE ISSUES
- J) EXPANSION JOINT REPAIR AND MAINTENANCE



## OVERCOMING BRIDGE MAINTENANCE AND REPAIR CHALLENGES:

- A) USING OUR BUDGET IN AN EFFECTIVE AND EFFICIENT MANNER
- B) UPKEEPING AND PRESERVING OUR AVAILABLE TOOLS AND EQUIPMENT
- C) USING RENTAL TOOLS AND EQUIPMENT AS NEEDED
- D) PROVIDING JOB SATISFACTION TO KEEP TRAINED PERSONNEL
- E) USING OJT TO ENHANCE SKILL AND KNOWLEDGE OF OUR EMPLOYEES
- F) CROSS TRAINING AND ROTATING OUR PERSONNEL
- G) PROVIDING FORMAL TRAINING USING CITY'S TRAINING PROGRAMS
- H) PROVIDING EXTERNAL FREE AND PAID TRAININGS
- I) DAILY INSPECTION AND BRIDGE REPAIR/MAINTENANCE
- J) CREATING TEAMWORK AND CLOSE CONTACT WITH THE LAW ENFORCEMENT



# SECRET TO OUR SUCCESS

COMBINING ENGINEERING AND MAINTENANCE

DAILY INSPECTION OF OFF SYSTEM BRIDGES

DAILY REPAIR OF REPORTED MAINTENANCE ISSUES

CONTRACTING BRIDGE MAINTENANCE WORKS THAT  
ARE BEYOND OUR RESOURCES AND CAPABILITIES

PROVIDING OJT & FORMAL MAINTENANCE  
TRAINING PROGRAMS

TEAMWORK WITH TxDOT HOUSTON DISTRICT AND OTHERS

**QUESTIONS OR COMMENTS**

[Jamshid.Tashi@houstontx.gov](mailto:Jamshid.Tashi@houstontx.gov)

832-256-2289