# CITY OF HOUSTON

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
ENGINEERING AND CONSTRUCTION DIVISION
WASTEWATER ENGINEERING SECTION
DESIGN GUIDELINE DRAWINGS FOR
SUBMERSIBLE LIFT STATIONS
CIVIL, MECHANICAL, AND STRUCTURAL DRAWING SET

FEBRUARY, 2015



## MAYOR Annise D. Parker

CONTROLLER RONALD C. GREEN

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		DISTRICT COUNCIL MEMBERS		COUNCIL M AT-LA		
	BRENDA STARDIG DISTRICT A	JERRY DAVIS DISTRICT B	ELLEN R. COHEN DISTRICT C	STEPHEN C. COSTELLO POSITION 1	DAVID ROBINSON POSITION 2	
	DWIGHT BOYKINS DISTRICT D	DAVE MARTIN DISTRICT E	RICHARD NGUYEN DISTRICT F	MICHAEL KUBOSH POSITION 3	C.O. BRADFORD POSITION 4	
SEAL	OLIVER PENNINGTON DISTRICT G	EDWARD GONZALEZ DISTRICT H	ROBERT GALLEGOS DISTRICT I	JACK CHE POSITIO		
	MIKE LA DISTRI					
CADD DWG F	THE NO :					

FILENAME.DWG (Scale: ###)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

NOTES TO DESIGN ENGINEER:

- BE DESIGN GUIDELINES FOR THE CONSTRUCTION OF CITY OF HOUSTON WASTEWATER SUBMERSIBLE LIFT STATIONS. THEIR INTENDED USE IS AS A FRAMEWORK FOR THE CONTRACTED DESIGN ENGINE IN DEVELOPING SPECIFIC LIFT STATION DESIGNS.

  IT IS THE RESPONSIBILITY OF THE CONTRACTED DESIGN ENGINEER TO VERIFY THE COMPLETENESS AND ACCURACY OF THE INFORMATION HEREIN CONTAINED AND TO ADJUST ACCORDING TO SPECIF
- B. FOUNDATION REINFORCING SHOWN IS BASED ON SOI BEARING PRESSURE OF 2000 psf. DESIGN ENGINES SHALL VERIFY AND ADJUST AS REQUIRED FOR SITE SPECIFIC GEOTECHNICAL RECOMMENDATIONS
- C. DESIGN ENGINEER SHALL SELECT THE APPROPRIATE BUILDING LENGTH, MCC CONFIGURATION AND CONTROL PANEL WIDTH (SEE DEVICE RATINGS SCHEDULES ON SHEETS ZOE40 THRU ZOE44); AND SHALL ADJUST THE FLOOR PLAN (SECTION A1A) AND THE SIDE ELEVATION (VIEW A1D1) ACCORDINGLY. SEE SHEET ZOE05 FOR ALTERNATE LOCATION OF TRANSFORMER AND LIGHTING PANEL IF REQUIRED, SEE SHEETS ZOE40 THRU ZOE44.
- D. DESIGN ENGINEER SHALL PROVIDE A NORTH ARROADJACENT TO THE FLOOR PLAN (SECTION A1A).
- E. THE DESIGN ENGINEER SHALL VERIFY THE STRUCTURAL ADEQUACY OF THE BUILDING DESIGN. AND SHALL COMPLETE NOTE NO. 6 PROVIDING THE APPRPPRIATE DESIGN CRITERIA USED FOR THIS VERIFICATION.
- F. THE DESIGN ENGINEER SHALL DESIGN ROOF TIMBER TRUSSES IN ACCORDANCE WITH SECTION 3 OF THE ENGINEERING DESIGN MANUAL AND THE CITY OF HOUSTON TECHNICAL SPECIFICATIONS SECTION 06193 PLATE CONNECTED WOOD TRUSSES.
- G. THE DESIGN ENGINEER SHALL INCORPORATE <u>ONLY</u>
  THE NECESSARY STANDARD GUIDELINE DRAWINGS
  AND DETAILS INTO HIS PROJECT CONTRACT
  DOCUMENTATION PACKAGE, AND SHALL ADJUST PACKAGE,
- H. THE DESIGN ENGINEER SHALL CONSULT THE CITY OF HOUSTON DESIGN GUIDELINES MANUAL, THE ENGINEERING DESIGN MANUAL, AND THE MASTEF SPECIFICATIONS FOR FURTHER INSTRUCTIONS AN INFORMATION PERTINENT TO THESE STANDARD DESIGN GUIDELINE DRAWINGS
- I. THE DESIGN ENGINEER SHALL REMOVE THESE NOTE ALL REFERENCES TO THESE NOTES, AND ANY OTHE EXTRANEOUS INFORMATION FROM THE DESIGN GUIDELINE DRAWINGS. DESIGN ENGINEER SHALL PROVIDE ANY NOTES OR OTHER APPROPRIATE INFORMATION NECESSARY TO COMPLETE THE LIFT STATION DESIGN.

	TITLE	PAGE					
	PROJECT NO. R-0267	-02-2					
	TITLE CITY OF HOUSTON DESIGN GUIDELINE DRAWINGS						
	FOR SUBMERSIBLE						
	CITY OF  DEPARTMENT OF PUBLIC WO  ENGINEERING, CONSTRUCTION A	ORKS AND ENGINEERING					
	APPRO	VALS					
	WATER DESIGN	TRAFFIC AND SIGNAL DESIGN					
	STORM SEWER DESIGN	STREET, BRIDGE & R.O.W.					
	WASTEWATER DESIGN	CONSTRUCTION					
	OTHER RE	EVIEWS					
	PLANNING AND DEVELOPMENT						
		0.175					
	CITY ENGINEER	DATE					
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	SUBMITTED: DATE:	SHEET NO. OF SHEE					
	SURVEY BY:	DWG. NO.					
_	FIELD BOOK NO.	TITLE					

### <u>City Of Houston</u>

#### Design Guideline Drawings For Submersible Lift Stations Filename & Sheet Numbering Designation Codes

B	Station Configuration  2-Pump Station  2-Pump Station  2-Pump Station	Pump Size Range  0-199 gpm Per Pump	Maximum Firm Station Capacity	<u>Filename Designation</u>		(VIEW A1D1) ACCORDINGLY. SEE SHEET ZOE05 FOR ALTERNATE LOCATION OF TRANSFORMER AND LIGHT PANEL IF REQUIRED, SEE SHEETS ZOE40 THRU ZOED. DESIGN ENGINEER SHALL PROVIDE A NORTH ARRO
A	2-Pump Station 2-Pump Station	0-199 gpm Per Pump	<del></del>			D. DEGIGN ENGINEEN. SHALL PROVIDE A MORTH ARK
B	2-Pump Station		100	Sheet Number Shown		ADJACENT TO THE FLOOR PLAN (SECTION A1A).  E. THE DESIGN ENGINEER SHALL VERIFY THE STRUCTURAL ADEQUACY OF THE BUILDING DESIGN.
C	•	// // // // //	199 gpm	in Title Block		AND SHALL COMPLETE NOTE NO. 6 PROVIDING THE APPRPPRIATE DESIGN CRITERIA USED FOR THIS VERIFICATION.
D 3	2-Pump Station	200-499 gpm Per Pump	499 gpm	$\begin{array}{cccc} \times \times \times \times \times \times \\ & & \\ $		F. THE DESIGN ENGINEER SHALL DESIGN ROOF TIMB TRUSSES IN ACCORDANCE WITH SECTION 3 OF THE ENGINEERING DESIGN MANUAL AND THE CITY OF HOUSTON TECHNICAL SPECIFICATIONS SECTION 061
E :	2 Division Charling	500-999 gpm Per Pump	999 gpm			PLATE CONNECTED WOOD TRUSSES.  G. THE DESIGN ENGINEER SHALL INCORPORATE ONLY THE NECESSARY STANDARD GUIDELINE DRAWINGS
	3-Pump Station	250-500 gpm Per Pump	1000 gpm			AND DETAILS INTO HIS PROJECT CONTRACT  DOCUMENTATION PACKAGE, AND SHALL ADJUST PA NUMBERS AND CROSS REFERENCING ACCORDINGLY.
F :	3-Pump Station	500-999 gpm Per Pump	1998 gpm	Discipline Code (A,C,E,G,S)		H. THE DESIGN ENGINEER SHALL CONSULT THE CITY OF HOUSTON DESIGN GUIDELINES MANUAL, THE ENGINEERING DESIGN MANUAL, AND THE MASTER
	3-Pump Station	1000-1399 gpm Per Pump	2798 gpm			SPECIFICATIONS FOR FURTHER INSTRUCTIONS AND INFORMATION PERTINENT TO THESE STANDARD DESIGN GUIDELINE DRAWINGS.
	3-Pump Station	1400-1999 gpm Per Pump	3998 gpm	Configuration Code (0-3)		I. THE DESIGN ENGINEER SHALL REMOVE THESE NOT ALL REFERENCES TO THESE NOTES, AND ANY OTH EXTRANEOUS INFORMATION FROM THE DESIGN GUIDELINE DRAWINGS. DESIGN ENGINEER SHALL
	3-Pump Station	2000-3499 gpm Per Pump	6998 gpm	Description Code (A-Z)		PROVIDE ANY NOTES OR OTHER APPROPRIATE INFORMATION NECESSARY TO COMPLETE THE LIFT STATION DESIGN.
	4-Pump Station	500-2500 gpm Per Pump	7500 gpm			NOTES:
	4-Pump Station	800-3499 gpm Per Pump	10497 gpm			
	5-Pump Station	2500-3999 gpm Per Pump	15996 gpm	<u>Discipline Codes</u>		
	5-Pump Station	3 Wet & 2 Dry Weather Pumps		A - Architectural		
	6-Pump Station	3000- 5299 gpm Per Pump	26495 gpm	B - Civil		
N	6-Pump Station	4 Wet & 2 Dry Weather Pumps		E — Electrical & Instrumentation		
0	6-Pump VFD Station	Conduit Layout		G — General S — Structural		FILE NAME & SHEET
P	Open			J Jacardi		NUMBERING DESIGNATION CODE SHEET 1 OF 1
Q	Open					PROJECT NO. R-0267-02-2
R	Open			<u>Configuration Codes</u>		TITLE CITY OF HOUSTON DESIGN GUIDELINE DRAWINGS
S	Open			0 - Dwg Non-Specific to Configuration		FOR SUBMERSIBLE LIFT STATIONS  CITY OF HOUSTON
T	Open			1 — Alternate High Profile Configuration		DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE GROUP
U	Open			2 - Preferred Configuration		APPROVALS
V	Open			3 — Alternate Low Profile Configuration		WATER DESIGN TRAFFIC AND SIGNAL DESIGNAL
W	Open					STORM SEWER DESIGN STREET, BRIDGE & R.O
X	2, 3, & 4 Pump Station	Outdoor Control Cabinet & Wiring				WASTEWATED DESIGN
Υ	All Pump Stations	Indoor Control Cabinet & Wiring				WASTEWATER DESIGN CONSTRUCTION OTHER REVIEWS
Z	All Pump Stations	Common Drawings				PLANNING AND DEVELOPMENT
					<u> </u>	T EARWING AND DEVELOT MENT
						CITY ENGINEER DATE
						SCALE: AS NOTED DESIGNED BY:  SUBMITTED: DRAWN BY:

NOTES TO DESIGN ENGINEER:

A. THESE LIFT STATION DRAWINGS ARE CONSIDERED TO BE DESIGN GUIDELINES FOR THE CONSTRUCTION OF CITY OF HOUSTON WASTEWATER SUBMERSIBLE LIFT STATIONS. THEIR INTENDED USE IS AS A FRAMEWORK FOR THE CONTRACTED DESIGN ENGINEER IN DEVELOPING SPECIFIC LIFT STATION DESIGNS.

IT IS THE RESPONSIBILITY OF THE CONTRACTED
DESIGN ENGINEER TO VERIFY THE COMPLETENESS
AND ACCURACY OF THE INFORMATION HEREIN
CONTAINED AND TO ADJUST ACCORDING TO SPECIFIC
SITE REQUIREMENTS.

LE & INDEX SHEETS	B SERIES (200-499 GPM)	C SERIES (500-999 GPM)	D SERIES (250-500 GPM)	NOTES TO DESIGN ENGINEER:
LE & INDEX SHEETS	B SERIES (200-499 GPIVI)	C SERIES (SUU-999 GPIVI)	D SERIES (250-500 GPIVI)	A. THESE LIFT STATION DRAWINGS ARE CONSIDERE BE DESIGN GUIDELINES FOR THE CONSTRUCTION CITY OF HOUSTON WASTEWATER SUBMERSIBLE L.
Title Sheet	Alternate High Profile Configuration	Alternate High Profile Configuration	Alternate High Profile Configuration	STATIONS. THEIR INTENDED USE IS AS A FRAMEWORK FOR THE CONTRACTED DESIGN ENGI
File Name & Sheet Numbering Designation Code	Drawing No. Title	Drawing No. Title	Drawing No. Title	IN DEVELOPING SPECIFIC LIFT STATION DESIGNS IT IS THE RESPONSIBILITY OF THE CONTRACTED
Index Sheet 1	B1C01 Plan View @ Grade & Sections - 2 Pumps @ 200-499 GPM Per Pump B1C02 Elevation Sections - 2 Pumps @ 200-499 GPM Per Pump	C1C01 Plan View @ Grade & Base Section - 2 Pumps @ 500-999 GPM Per Pump C1C02 Elevation Section - 2 Pumps @ 500-999 GPM Per Pump	D1C01 Plan View @ Grade & Base Section - 3 Pumps @ 250-500 GPM Per Pump D1C02 Elevation Section - 3 Pumps @ 250-500 GPM Per Pump	DESIGN ENGINEER TO VERIFY THE COMPLETENES
Index Sheet 2	B1S01 Structural - 2 Pumps @ 200-499 GPM Per Pump	C1C02 Elevation Section - 2 Pumps @ 500-999 GPM Per Pump C1S01 Structural - 2 Pumps @ 500-999 GPM Per Pump	D1C02 Elevation Section - 3 Pumps @ 250-500 GPM Per Pump D1S01 Structural - 3 Pumps @ 250-500 GPM Per Pump	AND ACCURACY OF THE INFORMATION HEREIN CONTAINED AND TO ADJUST ACCORDING TO SPECI
Index Sheet 3	2 200 499 Griver en rump	C1S02 Structural - 2 Pumps @ 500-999 GPM Per Pump	D1S02 Structural - 3 Pumps @ 250-500 GPM Per Pump	<u>SITE REQUIREMENTS</u> .  B. FOUNDATION REINFORCING SHOWN IS BASED ON
				BEARING PRESSURE OF 2000 psf. DESIGN ENGI SHALL VERIFY AND ADJUST AS REQUIRED FOR S
EDIES (O 100 CDM)	Preferred Configuration			SPECIFIC GEOTECHNICAL RECOMMENDATIONS
ERIES (0-199 GPM)	Drawing No. Title	Preferred Configuration	Preferred Configuration	C. DESIGN ENGINEER SHALL SELECT THE APPROPRI BUILDING LENGTH, MCC CONFIGURATION AND CON
nate High Profile Configuration	B2C01 Plan View @ Grade & Sections - 2 Pumps @ 200-499 GPM Per Pump	Drawing No. Title	Drawing No. Title	PANEL WIDTH (SEE DEVICE RATINGS SCHEDULES SHEETS ZOE40 THRU ZOE44); AND SHALL ADJUS
ring No. Title	B2C02 Elevation Sections - 2 Pumps @ 200-499 GPM Per Pump	C2C01 Plan View @ Grade & Base Section - 2 Pumps @ 500-999 GPM Per Pump	D2C01 Plan View @ Grade - 3 Pumps @ 250-500 GPM Per Pump	FLOOR PLAN (SECTION A1A) AND THE SIDE ELEV (VIEW A1D1) ACCORDINGLY. SEE SHEET ZOEO5 H
1C01 Plan View @ Grade & Sections - 2 Pumps @ 0-199 GPM Per Pump	B2S01 Structural - 2 Pumps @ 200-499 GPM Per Pump	C2C02 Elevation Section - 2 Pumps @ 500-999 GPM Per Pump	D2C02 Elevation Section - 3 Pumps @ 250-500 GPM Per Pump	ALTERNATE LOCATION OF TRANSFORMER AND LIC PANEL IF REQUIRED, SEE SHEETS ZOE40 THRU
1C02 Elevation Sections - 2 Pumps @ 0-199 GPM Per Pump		C2S01 Structural - 2 Pumps @ 500-999 GPM Per Pump C2S02 Structural - 2 Pumps @ 500-999 GPM Per Pump	D2C03 Base Section - 3 Pumps @ 250-500 GPM Per Pump D2S01 Structural - 3 Pumps @ 250-500 GPM Per Pump	D. DESIGN ENGINEER SHALL PROVIDE A NORTH AR
1S01 Structural - 2 Pumps @ 0-199 GPM Per Pump	Alternate Low Profile Configuration	C2S03 Structural - 2 Pumps @ 500-999 GPM Per Pump	D2S02 Structural - 3 Pumps @ 250-500 GPM Per Pump	ADJACENT TO THE FLOOR PLAN (SECTION A1A).  E. THE DESIGN ENGINEER SHALL VERIFY THE
	Drawing No. Title	Structural 2 rumps & 300 333 Criminal rump	D2S03 Structural - 3 Pumps @ 250-500 GPM Per Pump	STRUCTURAL ADEQUACY OF THE BUILDING DESIGNAND SHALL COMPLETE NOTE NO. 6 PROVIDING TO
	B3C01 Plan View @ Grade & Sections - 2 Pumps @ 200-499 GPM Per Pump		D2S04 Structural - 3 Pumps @ 250-500 GPM Per Pump	APPRPPRIATE DESIGN CRITERIA USED FOR THIS VERIFICATION.
erred Configuration	B3C02 Elevation Sections - 2 Pumps @ 200-499 GPM Per Pump	Alternate Low Profile Configuration		F. THE DESIGN ENGINEER SHALL DESIGN ROOF TI
ving No. Title	B3S01 Structural - 2 Pumps @ 200-499 GPM Per Pump	Drawing No. Title		TRUSSES IN ACCORDANCE WITH SECTION 3 OF ENGINEERING DESIGN MANUAL AND THE CITY O
2C01 Plan View @ Grade & Sections - 2 Pumps @ 0-199 GPM Per Pump  2C02 Elevation Sections - 2 Pumps @ 0-199 GPM Per Pump		C3C01 Plan View @ Grade & Base Section - 2 Pumps @ 500-999 GPM Per Pump	Alternate Low Profile Configuration	HOUSTON TECHNICAL SPECIFICATIONS SECTION PLATE CONNECTED WOOD TRUSSES.
2CO2 Elevation Sections - 2 Pumps @ 0-199 GPM Per Pump 2SO1 Structural - 2 Pumps @ 0-199 GPM Per Pump		C3C02 Elevation Section - 2 Pumps @ 500-999 GPM Per Pump	Drawing No. Title	G. THE DESIGN ENGINEER SHALL INCORPORATE Q
Salastara Zilamps & O 133 Orivir Cirump		C3S01 Structural - 2 Pumps @ 500-999 GPM Per Pump	D3C01 Plan View @ Grade - 3 Pumps @ 250-500 GPM Per Pump	THE NECESSARY STANDARD GUIDELINE DRAWI AND DETAILS INTO HIS PROJECT CONTRACT
		C3S02 Structural - 2 Pumps @ 500-999 GPM Per Pump	D3C02 Elevation Section - 3 Pumps @ 250-500 GPM Per Pump	DOCUMENTATION PACKAGE, AND SHALL ADJUST NUMBERS AND CROSS REFERENCING ACCORDIN
ate Low Profile Configuration		C3S03 Structural - 2 Pumps @ 500-999 GPM Per Pump	D3C03 Base Section - 3 Pumps @ 250-500 GPM Per Pump D3S01 Structural - 3 Pumps @ 250-500 GPM Per Pump	H. THE DESIGN ENGINEER SHALL CONSULT THE
ng No. Title			D3S02 Structural - 3 Pumps @ 250-500 GPM Per Pump	OF HOUSTON DESIGN GUIDELINES MANUAL, TE ENGINEERING DESIGN MANUAL, AND THE MAS
C01 Plan View @ Grade & Sections - 2 Pumps @ 0-199 GPM Per Pump			D3S03 Structural - 3 Pumps @ 250-500 GPM Per Pump	SPECIFICATIONS FOR FURTHER INSTRUCTIONS INFORMATION PERTINENT TO THESE STANDAR
CO2 Elevation Sections - 2 Pumps @ 0-199 GPM Per Pump			D3S04 Structural - 3 Pumps @ 250-500 GPM Per Pump	DESIGN GUIDELINE DRAWINGS.
SO1 Structural - 2 Pumps @ 0-199 GPM Per Pump				I. THE DESIGN ENGINEER SHALL REMOVE THES ALL REFERENCES TO THESE NOTES, AND ANY
				EXTRANEOUS INFORMATION FROM THE DESIGN GUIDELINE DRAWINGS. DESIGN ENGINEER SE
				PROVIDE ANY NOTES OR OTHER APPROPRIATE INFORMATION NECESSARY TO COMPLETE THE
				STATION DESIGN.
RIES (500-999 GPM)	F SERIES (1000-1399 GPM)	G SERIES (1400-1999 GPM)	H SERIES (2000-3499 GPM)	NOTES:
nate High Profile Configuration	Alternate High Profile Configuration	Alternate High Profile Configuration	Alternate High Profile Configuration	
ing No. Title	Drawing No. Title	Drawing No. Title	Drawing No. Title	
1C01 Plan View @ Grade - 3 Pumps @ 500-999 GPM Per Pump	F1C01 Plan View @ Grade - 3 Pumps @ 1000-1399 GPM Per Pump	G1C01 Plan View @ Grade & Base Section - 3 Pumps @ 1400-1999 GPM Per F	H1C01 Plan View @ Grade - 3 Pumps @ 2000-3499 GPM Per Pump	
1C02 Elevation Section - 3 Pumps @ 500-999 GPM Per Pump	F1C02 Elevation Section - 3 Pumps @ 1000-1399 GPM Per Pump	G1C02 Elevation Section - 3 Pumps @ 1400-1999 GPM Per Pump	H1C02 Elevation Section - 3 Pumps @ 2000-3499 GPM Per Pump	
1C03 Base Section - 3 Pumps @ 500-999 GPM Per Pump	F1C03 Base Section - 3 Pumps @ 1000-1399 GPM Per Pump	G1S01 Structural - 3 Pumps @ 1400-1999 GPM Per Pump	H1C03 Plan View @ Grade - 3 Pumps @ 2000-3499 GPM Per Pump	
1S01 Structural - 3 Pumps @ 500-999 GPM Per Pump	F1S01 Structural - 3 Pumps @ 1000-1399 GPM Per Pump	G1S02 Structural - 3 Pumps @ 1400-1999 GPM Per Pump	H1S01 Structural - 3 Pumps @ 2000-3499 GPM Per Pump	
1S02 Structural - 3 Pumps @ 500-999 GPM Per Pump	F1S02 Structural - 3 Pumps @ 1000-1399 GPM Per Pump		H1S02 Structural - 3 Pumps @ 2000-3499 GPM Per Pump	
ISO3 Structural - 3 Pumps @ 500-999 GPM Per Pump	F1S03 Structural - 3 Pumps @ 1000-1399 GPM Per Pump	Preferred Configuration	H1S03 Structural - 3 Pumps @ 2000-3499 GPM Per Pump	
		Drawing No. Title		
		G2C01 Plan View @ Grade - 3 Pumps @ 1400-1999 GPM Per Pump	Preferred Configuration	
erred Configuration	Preferred Configuration	G2C02 Elevation Section - 3 Pumps @ 1400-1999 GPM Per Pump	Drawing No. Title	INIDEV
ing No. Title	Drawing No. Title	G2C03 Base Section - 3 Pumps @ 1400-1999 GPM Per Pump	H2C01 Plan View @ Grade - 3 Pumps @ 2000-3499 GPM Per Pump	INDEX
CO1 Plan View @ Grade - 3 Pumps @ 500-999 GPM Per Pump	F2C01 Plan View @ Grade - 3 Pumps @ 1000-1399 GPM Per Pump	G2S01 Structural - 3 Pumps @ 1400-1999 GPM Per Pump	H2CO2 Elevation Section - 3 Pumps @ 2000-3499 GPM Per Pump	SHEET 1 OF 3
CO2 Elevation Section - 3 Pumps @ 500-999 GPM Per Pump	F2C02 Elevation Section - 3 Pumps @ 1000-1399 GPM Per Pump	G2S02 Structural - 3 Pumps @ 1400-1999 GPM Per Pump	H2C03 Base Section - 3 Pumps @ 2000-3499 GPM Per Pump	PROJECT NO.
CO3 Base Section - 3 Pumps @ 500-999 GPM Per Pump	F2C03 Base Section - 3 Pumps @ 1000-1399 GPM Per Pump	G2S03 Structural - 3 Pumps @ 1400-1999 GPM Per Pump	H2S01 Structural - 3 Pumps @ 2000-3499 GPM Per Pump	R-0267-02-2
S01 Structural - 3 Pumps @ 500-999 GPM Per Pump	F2S01 Structural - 3 Pumps @ 1000-1399 GPM Per Pump	G2S04 Structural - 3 Pumps @ 1400-1999 GPM Per Pump	H2S02 Structural - 3 Pumps @ 2000-3499 GPM Per Pump	TITLE CITY OF HOUSTON
S02 Structural - 3 Pumps @ 500-999 GPM Per Pump	F2S02 Structural - 3 Pumps @ 1000-1399 GPM Per Pump		H2S03 Structural - 3 Pumps @ 2000-3499 GPM Per Pump	DESIGN GUIDELINE DRAWINGS
S03 Structural - 3 Pumps @ 500-999 GPM Per Pump	F2S03 Structural - 3 Pumps @ 1000-1399 GPM Per Pump		H2S04 Structural - 3 Pumps @ 2000-3499 GPM Per Pump	FOR SUBMERSIBLE LIFT STATION
Structural - 3 Pumps @ 500-999 GPM Per Pump	F2S04 Structural - 3 Pumps @ 1000-1399 GPM Per Pump	Alternate Low Profile Configuration		CITY OF HOUST
		Drawing No. Title G3C01 Plan View @ Grade - 3 Pumps @ 1400-1999 GPM Per Pump	Altermate Lave Duefile Configuration	DEPARTMENT OF PUBLIC WORKS AND ENGIN
ate Low Profile Configuration	Alternate Low Profile Configuration	G3C01 Plan View @ Grade - 3 Pumps @ 1400-1999 GPM Per Pump G3C02 Elevation Section - 3 Pumps @ 1400-1999 GPM Per Pump	Alternate Low Profile Configuration	ENGINEERING, CONSTRUCTION AND REAL ESTATE GR
te Low Profile Configuration g No. Title	Alternate Low Profile Configuration  Drawing No. Title	G3C02 Elevation Section - 3 Pumps @ 1400-1999 GPM Per Pump  G3C03 Base Section - 3 Pumps @ 1400-1999 GPM Per Pump	Drawing No. Title H3C01 Plan View @ Grade - 3 Pumps @ 2000-3499 GPM Per Pump	APPROVALS
19 No. Title 101 Plan View @ Grade - 3 Pumps @ 500-999 GPM Per Pump	F3C01 Plan View @ Grade - 3 Pumps @ 1000-1399 GPM Per Pump	G3S01 Structural - 3 Pumps @ 1400-1999 GPM Per Pump	H3C02 Elevation Section - 3 Pumps @ 2000-3499 GPM Per Pump	
Elevation Section - 3 Pumps @ 500-999 GPM Per Pump	F3C02 Elevation Section - 3 Pumps @ 1000-1399 GPM Per Pump	G3S02 Structural - 3 Pumps @ 1400-1999 GPM Per Pump	H3C03 Base Section - 3 Pumps @ 2000-3499 GPM Per Pump	WATER DESIGN TRAFFIC AND SIGNAL
03 Base Section - 3 Pumps @ 500-999 GPM Per Pump	F3C03 Base Section - 3 Pumps @ 1000-1399 GPM Per Pump	G3S03 Structural - 3 Pumps @ 1400-1999 GPM Per Pump	H3S01 Structural - 3 Pumps @ 2000-3499 GPM Per Pump	
01 Structural - 3 Pumps @ 500-999 GPM Per Pump	F3S01 Structural - 3 Pumps @ 1000-1399 GPM Per Pump	G3S04 Structural - 3 Pumps @ 1400-1999 GPM Per Pump	H3S02 Structural - 3 Pumps @ 2000-3499 GPM Per Pump	STORM SEWER DESIGN STREET, BRIDGE
SO2 Structural - 3 Pumps @ 500-999 GPM Per Pump	F3S02 Structural - 3 Pumps @ 1000-1399 GPM Per Pump		H3S03 Structural - 3 Pumps @ 2000-3499 GPM Per Pump	STALLI, DINDGE (
Structural - 3 Pumps @ 500-999 GPM Per Pump	F3S03 Structural - 3 Pumps @ 1000-1399 GPM Per Pump		H3S04 Structural - 3 Pumps @ 2000-3499 GPM Per Pump	
Structural - 3 Pumps @ 500-999 GPM Per Pump	F3S04 Structural - 3 Pumps @ 1000-1399 GPM Per Pump			WASTEWATER DESIGN CONSTRUC
				OTHER REVIEWS
				PLANNING AND DEVELOPMENT
1				CITY ENGINEER DATE
				SCALE: AS NOTED DESIGNED BY:
				SCALE: AS NOTED DESIGNED BY: SUBMITTED:  DRAWN BY:
				SUBMITTED: DRAWN BY:
CADD DWG. FILE NO. : FILENAME.DWG (Scale: ###)				SUBMITTED: DRAWN BY:

#### NOTES TO DESIGN ENGINEER: L SERIES ( 3 WET - 2 DRY) **I SERIES (500-2500 GPM)** J SERIES (800-3499 GPM) K SERIES (2500-3999 GPM) . THESE LIFT STATION DRAWINGS ARE CONSIDERED TO BE DESIGN GUIDELINES FOR THE CONSTRUCTION OF CITY OF HOUSTON WASTEWATER SUBMERSIBLE LIFT STATIONS. THEIR INTENDED USE IS AS A **Alternate High Profile Configuration Alternate High Profile Configuration Alternate High Profile Configuration Alternate High Profile Configuration** FRAMEWORK FOR THE CONTRACTED DESIGN ENGINEER Drawing No. Title Drawing No. Title Drawing No. Title IN DEVELOPING SPECIFIC LIFT STATION DESIGNS. Drawing No. Title IT IS THE RESPONSIBILITY OF THE CONTRACTED DESIGN ENGINEER TO VERIFY THE COMPLETENESS Plan View @ Grade - 4 Pumps @ 800-3499 GPM Per Pump Plan View @ Grade - 5 Pumps @ 2500-3999 GPM Per Pump 11C01 Plan View @ Grade - 4 Pumps @ 500-2500 GPM Per Pump Plan View @ Grade - 3 Wet & 2 Dry Weather Pumps AND ACCURACY OF THE INFORMATION HEREIN CONTAINED AND TO ADJUST ACCORDING TO SPECIFIC Elevation Section - 4 Pumps @ 800-3499 GPM Per Pump Elevation Section - 5 Pumps @ 2500-3999 GPM Per Pump 11C02 Elevation Section - 3 Wet & 2 Dry Weather Pumps Elevation Section - 4 Pumps @ 500-2500 GPM Per Pump I1C03 Base Section - 4 Pumps @ 800-3499 GPM Per Pump Base Section - 5 Pumps @ 2500-3999 GPM Per Pump Base Section - 3 Wet & 2 Dry Weather Pumps Base Section - 4 Pumps @ 500-2500 GPM Per Pump SITE REQUIREMENTS. I1S01 Structural - 4 Pumps @ 800-3499 GPM Per Pump Structural - 5 Pumps @ 2500-3999 GPM Per Pump Structural - 3 Wet & 2 Dry Weather Pumps B. FOUNDATION REINFORCING SHOWN IS BASED ON SOIL Structural - 4 Pumps @ 500-2500 GPM Per Pump BEARING PRESSURE OF 2000 psf. DESIGN ENGINEER Structural - 4 Pumps @ 800-3499 GPM Per Pump I1S02 Structural - 5 Pumps @ 2500-3999 GPM Per Pump Structural - 3 Wet & 2 Dry Weather Pumps Structural - 4 Pumps @ 500-2500 GPM Per Pump SHALL VERIFY AND ADJUST AS REQUIRED FOR SITE SPECIFIC GEOTECHNICAL RECOMMENDATIONS I1S03 Structural - 4 Pumps @ 800-3499 GPM Per Pump Structural - 5 Pumps @ 2500-3999 GPM Per Pump Structural - 3 Wet & 2 Dry Weather Pumps Structural - 4 Pumps @ 500-2500 GPM Per Pump DESIGN ENGINEER SHALL SELECT THE APPROPRIATE BUILDING LENGTH, MCC CONFIGURATION AND CONTROL PANEL WIDTH (SEE DEVICE RATINGS SCHEDULES ON SHEETS ZOE40 THRU ZOE44); AND SHALL ADJUST TH **Preferred Configuration** Preferred Configuration **Preferred Configuration** FLOOR PLAN (SECTION A1A) AND THE SIDE ELEVATION **Preferred Configuration** (VIEW A1D1) ACCORDINGLY. SEE SHEET ZOE05 FOR Drawing No. Title Drawing No. Title Drawing No. Title Drawing No. Title ALTERNATÉ LOCATION OF TRANSFORMER AND LIGHTIN PANEL IF REQUIRED, SEE SHEETS ZOE40 THRU ZOE44 K2C01 Plan View @ Grade - 4 Pumps @ 800-3499 GPM Per Pump Plan View @ Grade - 5 Pumps @ 2500-3999 GPM Per Pump 12C01 Plan View @ Grade - 3 Wet & 2 Dry Weather Pumps Plan View @ Grade - 4 Pumps @ 500-2500 GPM Per Pump D. DESIGN ENGINEER SHALL PROVIDE A NORTH ARROW K2C02 Elevation Section - 5 Pumps @ 2500-3999 GPM Per Pump Elevation Section - 4 Pumps @ 800-3499 GPM Per Pump 12C02 Elevation Section - 3 Wet & 2 Dry Weather Pumps Elevation Section - 4 Pumps @ 500-2500 GPM Per Pump ADJACENT TO THE FLOOR PLAN (SECTION A1A). K2C03 THE DESIGN ENGINEER SHALL VERIFY THE J2C03 12C03 Base Section - 4 Pumps @ 800-3499 GPM Per Pump Base Section - 5 Pumps @ 2500-3999 GPM Per Pump Base Section - 3 Wet & 2 Dry Weather Pumps Base Section - 4 Pumps @ 500-2500 GPM Per Pump STRUCTURAL ADEQUACY OF THE BUILDING DESIGN. K2C04 J2S01 Station Operation Tables - 5 Pumps @ 2500-3999 GPM Per Pump L2C04 12S01 Structural - 4 Pumps @ 500-2500 GPM Per Pump Structural - 4 Pumps @ 800-3499 GPM Per Pump Station Operation Tables - 3 Wet & 2 Dry Weather Pumps AND SHALL COMPLETE NOTE NO. 6 PROVIDING THE APPRPPRIATE DESIGN CRITERIA USED FOR THIS K2S01 J2S02 Structural - 5 Pumps @ 2500-3999 GPM Per Pump Structural - 4 Pumps @ 800-3499 GPM Per Pump Structural - 4 Pumps @ 500-2500 GPM Per Pump Structural - 3 Wet & 2 Dry Weather Pumps VERIFICATION. K2S02 J2S03 Structural - 5 Pumps @ 2500-3999 GPM Per Pump L2S02 Structural - 4 Pumps @ 800-3499 GPM Per Pump Structural - 3 Wet & 2 Dry Weather Pumps Structural - 4 Pumps @ 500-2500 GPM Per Pump THE DESIGN ENGINEER SHALL DESIGN ROOF TIMBER TRUSSES IN ACCORDANCE WITH SECTION 3 OF THE K2S03 Structural - 5 Pumps @ 2500-3999 GPM Per Pump L2S03 Structural - 4 Pumps @ 800-3499 GPM Per Pump Structural - 3 Wet & 2 Dry Weather Pumps Structural - 4 Pumps @ 500-2500 GPM Per Pump ENGINEERING DESIGN MANUAL AND THE CITY OF HOUSTON TECHNICAL SPECIFICATIONS SECTION 06193 Structural - 5 Pumps @ 2500-3999 GPM Per Pump Structural - 3 Wet & 2 Dry Weather Pumps PLATE CONNECTED WOOD TRUSSES. THE DESIGN ENGINEER SHALL INCORPORATE ONLY THE NECESSARY STANDARD GUIDELINE DRAWINGS **Alternate Low Profile Configuration Alternate Low Profile Configuration** AND DETAILS INTO HIS PROJECT CONTRACT **Alternate Low Profile Configuration** Drawing No. Title **Alternate Low Profile Configuration** Drawing No. Title DOCUMENTATION PACKAGE, AND SHALL ADJUST PAGE NUMBERS AND CROSS REFERENCING ACCORDINGLY. J3C01 Plan View @ Grade - 4 Pumps @ 800-3499 GPM Per Pump Drawing No. Title Drawing No. Title Plan View @ Grade - 4 Pumps @ 500-2500 GPM Per Pump I. THE DESIGN ENGINEER SHALL CONSULT THE CITY K3C01 Plan View @ Grade - 5 Pumps @ 2500-3999 GPM Per Pump Elevation Section - 4 Pumps @ 800-3499 GPM Per Pump L3C01 Plan View @ Grade - 3 Wet & 2 Dry Weather Pumps OF HOUSTON DESIGN GUIDELINES MANUAL, THE Elevation Section - 4 Pumps @ 500-2500 GPM Per Pump ENGINEERING DESIGN MANUAL, AND THE MASTER J3C03 Elevation Section - 5 Pumps @ 2500-3999 GPM Per Pump Base Section - 4 Pumps @ 800-3499 GPM Per Pump 13C03 Elevation Section - 3 Wet & 2 Dry Weather Pumps Base Section - 4 Pumps @ 500-2500 GPM Per Pump SPECIFICATIONS FOR FURTHER INSTRUCTIONS AND K3C03 INFORMATION PERTINENT TO THESE STANDARD J3S01 Structural - 4 Pumps @ 800-3499 GPM Per Pump Base Section - 5 Pumps @ 2500-3999 GPM Per Pump L3C03 I3S01 Base Section - 3 Wet & 2 Dry Weather Pumps Structural - 4 Pumps @ 500-2500 GPM Per Pump DESIGN GUIDELINE DRAWINGS. Station Operation Tables - 5 Pumps @ 2500-3999 GPM Per Pump K3C04 J3S02 Structural - 4 Pumps @ 800-3499 GPM Per Pump **13S02** Structural - 4 Pumps @ 500-2500 GPM Per Pump L3C04 Station Operation Tables - 3 Wet & 2 Dry Weather Pumps . THE DESIGN ENGINEER SHALL REMOVE THESE NOTES J3S03 Structural - 5 Pumps @ 2500-3999 GPM Per Pump ALL REFERENCES TO THESE NOTES, AND ANY OTHER Structural - 4 Pumps @ 800-3499 GPM Per Pump Structural - 4 Pumps @ 500-2500 GPM Per Pump L3S01 Structural - 3 Wet & 2 Dry Weather Pumps EXTRANEOUS INFORMATION FROM THE DESIGN K3S02 Structural - 5 Pumps @ 2500-3999 GPM Per Pump **13S04** Structural - 4 Pumps @ 800-3499 GPM Per Pump Structural - 4 Pumps @ 500-2500 GPM Per Pump L3S02 Structural - 3 Wet & 2 Dry Weather Pumps GUIDELINE DRAWINGS. DESIGN ENGINEER SHALL PROVIDE ANY NOTES OR OTHER APPROPRIATE K3S03 Structural - 5 Pumps @ 2500-3999 GPM Per Pump L3S03 Structural - 3 Wet & 2 Dry Weather Pumps INFORMATION NECESSARY TO COMPLETE THE LIFT Structural - 5 Pumps @ 2500-3999 GPM Per Pump STATION DESIGN. Structural - 3 Wet & 2 Dry Weather Pumps N SERIES (4 WET - 2 DRY) M SERIES (3000-5299 GPM) **Alternate High Profile Configuration Alternate High Profile Configuration** Drawing No. Title Drawing No. Title N1C01 M1C01 Plan View @ Grade - 6 Pumps @ 3000-5299 GPM Per Pump Plan View @ Grade - 4 Wet & 2 Dry Weather Pumps M1C02 Elevation Section - 6 Pumps @ 3000-5299 GPM Per Pump Elevation Section - 4 Wet & 2 Dry Weather Pumps Base Section - 6 Pumps @ 3000-5299 GPM Per Pump M1C03 N1C03 Base Section - 4 Wet & 2 Dry Weather Pumps M1C04 Structural - 4 Wet & 2 Dry Weather Pumps Station Operation Tables - 6 Pumps @ 3000-5299 GPM Per Pump Structural - 6 Pumps @ 3000-5299 GPM Per Pump Structural - 4 Wet & 2 Dry Weather Pumps Structural - 4 Wet & 2 Dry Weather Pumps Structural - 6 Pumps @ 3000-5299 GPM Per Pump M1S03 Structural - 6 Pumps @ 3000-5299 GPM Per Pump **Preferred Configuration** INDEX **Preferred Configuration** Drawing No. Title SHEET 2 OF 3 N2C01 Plan View @ Grade - 4 Wet & 2 Dry Weather Pumps Drawing No. Title M2C01 Plan View @ Grade - 6 Pumps @ 3000-5299 GPM Per Pump N2CO2 Elevation Section - 4 Wet & 2 Dry Weather Pumps PROJECT NO. R-0267-02-2 Base Section - 4 Wet & 2 Dry Weather Pumps Elevation Section - 6 Pumps @ 3000-5299 GPM Per Pump CITY OF HOUSTON N2C04 Station Operation Tables - 4 Wet & 2 Dry Weather Pumps Base Section - 6 Pumps @ 3000-5299 GPM Per Pump DESIGN GUIDELINE DRAWINGS Structural - 4 Wet & 2 Dry Weather Pumps Station Operation Tables - 6 Pumps @ 3000-5299 GPM Per Pump FOR SUBMERSIBLE LIFT STATIONS N2S02 Structural - 4 Wet & 2 Dry Weather Pumps Structural - 6 Pumps @ 3000-5299 GPM Per Pump CITY OF M2S02 Structural - 4 Wet & 2 Dry Weather Pumps HOUSTON Structural - 6 Pumps @ 3000-5299 GPM Per Pump M2S03 Structural - 6 Pumps @ 3000-5299 GPM Per Pump N2S04 Structural - 4 Wet & 2 Dry Weather Pumps DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING. CONSTRUCTION AND REAL ESTATE GROUP M2S04 Structural - 6 Pumps @ 3000-5299 GPM Per Pump APPROVALS **Alternate Low Profile Configuration Alternate Low Profile Configuration** TRAFFIC AND SIGNAL DESIGN WATER DESIGN Drawing No. Title Drawing No. Title N3C01 Plan View @ Grade - 4 Wet & 2 Dry Weather Pumps M3C01 Plan View @ Grade - 6 Pumps @ 3000-5299 GPM Per Pump Elevation Section - 4 Wet & 2 Dry Weather Pumps Elevation Section - 6 Pumps @ 3000-5299 GPM Per Pump STORM SEWER DESIGN STREET, BRIDGE & R.O.W. N3C03 Base Section - 4 Wet & 2 Dry Weather Pumps Base Section - 6 Pumps @ 3000-5299 GPM Per Pump Station Operation Tables - 4 Wet & 2 Dry Weather Pumps Station Operation Tables - 6 Pumps @ 3000-5299 GPM Per Pump WASTEWATER DESIGN CONSTRUCTION N3S01 Structural - 4 Wet & 2 Dry Weather Pumps Structural - 6 Pumps @ 3000-5299 GPM Per Pump N3S02 Structural - 4 Wet & 2 Dry Weather Pumps Structural - 6 Pumps @ 3000-5299 GPM Per Pump OTHER REVIEWS N3S03 Structural - 4 Wet & 2 Dry Weather Pumps Structural - 6 Pumps @ 3000-5299 GPM Per Pump N3S04 Structural - 4 Wet & 2 Dry Weather Pumps M3S04 Structural - 6 Pumps @ 3000-5299 GPM Per Pump PLANNING AND DEVELOPMENT DATE CITY ENGINEER AS NOTED DESIGNED BY: DRAWN BY: SUBMITTED: SHEET NO. OF SURVEY BY: DWG. NO. CADD DWG. FILE NO. INDEX-2 FILENAME.DWG (Scale: ###) FIELD BOOK NO. DESCRIPTION COHSTD.BDR

SHEET

#### NOTES TO DESIGN ENGINEER: . THESE LIFT STATION DRAWINGS ARE CONSIDERED TO **Z SERIES** BE DESIGN GUIDELINES FOR THE CONSTRUCTION OF CITY OF HOUSTON WASTEWATER SUBMERSIBLE LIFT STATIONS. THEIR INTENDED USE IS AS A FRAMEWORK FOR THE CONTRACTED DESIGN ENGINEER IN DEVELOPING SPECIFIC LIFT STATION DESIGNS. General IT IS THE RESPONSIBILITY OF THE CONTRACTED DESIGN ENGINEER TO VERIFY THE COMPLETENESS AND ACCURACY OF THE INFORMATION HEREIN CONTAINED AND TO ADJUST ACCORDING TO SPECIFIC SITE REQUIREMENTS. Drawing No. Title Z0A01 Control Building, Architectural Z0C01 Submersible Transducer Well Level Gauging System & Details P. FOUNDATION REINFORCING SHOWN IS BASED ON SOIL BEARING PRESSURE OF 2000 psf. DESIGN ENGINEER Z0C02 Typical Details - Civil SHALL VERIFY AND ADJUST AS REQUIRED FOR SITE Z0C03 Typical Details - Civil SPECIFIC GEOTECHNICAL RECOMMENDATIONS C. DESIGN ENGINEER SHALL SELECT THE APPROPRIATE Z0C04 Discharge Piping Support Details BUILDING LENGTH, MCC CONFIGURATION AND CONTROL PANEL WIDTH (SEE DEVICE RATINGS SCHEDULES ON Z0C05 Typical Catwalk Details SHEETS ZOE40 THRU ZOE44); AND SHALL ADJUST THE FLOOR PLAN (SECTION A1A) AND THE SIDE ELEVATION Z0C06 Typical Details - Surge Relief Valve Installation (VIEW A1D1) ACCORDINGLY. SEE SHEET ZOE05 FOR ALTERNATE LOCATION OF TRANSFORMER AND LIGHTING Z0C07 Typica Details - Civil PANEL IF REQUIRED, SEE SHEETS ZOE40 THRU ZOE44 D. DESIGN ENGINEER SHALL PROVIDE A NORTH ARROW Z0C08 Typical Site Details ADJACENT TO THE FLOOR PLAN (SECTION A1A). Z0C09 Example - Civil Site Plan E. THE DESIGN ENGINEER SHALL VERIFY THE STRUCTURAL ADEQUACY OF THE BUILDING DESIGN. Z0C10 Typical Site Details AND SHALL COMPLETE NOTE NO. 6 PROVIDING THE APPRPPRIATE DESIGN CRITERIA USED FOR THIS Z0C11 Typical Hatch Details VERIFICATION. THE DESIGN ENGINEER SHALL DESIGN ROOF TIMBER Z0G01 Cover Sheet TRUSSES IN ACCORDANCE WITH SECTION 3 OF THE Z0S01 ENGINEERING DESIGN MANUAL AND THE CITY OF Structural Standard Details HOUSTON TECHNICAL SPECIFICATIONS SECTION 06193 Z0S02 Structural - Standard Details, General Notes and Abbreviations PLATE CONNECTED WOOD TRUSSES. G. THE DESIGN ENGINEER SHALL INCORPORATE ONLY THE NECESSARY STANDARD GUIDELINE DRAWINGS AND DETAILS INTO HIS PROJECT CONTRACT DOCUMENTATION PACKAGE, AND SHALL ADJUST PAGE NUMBERS AND CROSS REFERENCING ACCORDINGLY. H. THE DESIGN ENGINEER SHALL CONSULT THE CITY OF HOUSTON DESIGN GUIDELINES MANUAL, THE ENGINEERING DESIGN MANUAL, AND THE MASTER SPECIFICATIONS FOR FURTHER INSTRUCTIONS AND INFORMATION PERTINENT TO THESE STANDARD DESIGN GUIDELINE DRAWINGS. I. THE DESIGN ENGINEER SHALL REMOVE THESE NOTES, ALL REFERENCES TO THESE NOTES, AND ANY OTHER EXTRANEOUS INFORMATION FROM THE DESIGN GUIDELINE DRAWINGS. DESIGN ENGINEER SHALL PROVIDE ANY NOTES OR OTHER APPROPRIATE INFORMATION NECESSARY TO COMPLETE THE LIFT STATION DESIGN. NOTES: INDEX SHEET 3 OF 3 PROJECT NO. R-0267-02-2 CITY OF HOUSTON DESIGN GUIDELINE DRAWINGS FOR SUBMERSIBLE LIFT STATIONS CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE GROUP APPROVALS TRAFFIC AND SIGNAL DESIGN WATER DESIGN STORM SEWER DESIGN STREET, BRIDGE & R.O.W. WASTEWATER DESIGN CONSTRUCTION OTHER REVIEWS PLANNING AND DEVELOPMENT DATE CITY ENGINEER AS NOTED DESIGNED BY: DRAWN BY: SUBMITTED: SHEET NO. OF SHEETS SURVEY BY: DWG. NO. CADD DWG. FILE NO. : INDEX— FILENAME.DWG (Scale: ###) DESCRIPTION APP'D DATE FIELD BOOK NO. REV. NO. COHSTD.BDR ORIGINAL SCALE IN INCHES FOR REDUCED PLANS