

09/29/2016 3:06PM
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STARTING HGL AND FLOWLINE TAKEN FROM STORM SEWER PLAN PREPARED FOR "JUSTIN ROAD FROM INDUSTRIAL BOULEVARD TO JOHN KING BOULEVARD, ROCKWALL COUNTY, TEXAS", PREPARED BY WEIR & ASSOCIATES, INC., DATED JAN. 01, 2014.

STARTING HGL FROM "ST-4 UP HGL W/ JUMP". THE HGL IS HIGHER THAN THE CHANNEL DEPTH AND THUS CONTROLS. (REF: SHEET C2.4 FOR CHANNEL DEPTH CALCULATION)

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Line ST-	1	100-YR																					
Downstream Station	Upstream Station	Q (cfs)	Pipe Type	Size Box (W x H) Pipe (")	"n" Value	Design Slope (ft/ft)	Upstream Junction Type	Connect or FL	Dwn HGL (Auto Calc)	Up HGL	Up HGL w/ Jump	Dwn FL (Auto Calc)	Up FL	V (fps)	V ² /2g (ft)	Sr	Q _{cap} (cfs)	D _o (ft)	D _p (ft)	V _p (fps)	V _p ² /2g (ft)	Partial Station (2)	Partial Elevation (3)
0+00.00	0+07.00	159.23	Box	6 x 4	0.013	0.0040	Wye - 60°	Centerlines	554.87	554.89	555.45	549.34	549.37	6.63	0.68	0.0026	195.93	2.85	N/A	N/A	N/A	N/A	N/A
0+07.00	0+20.40	86.80	Box	6 x 4	0.013	0.0040	Wye - 60°	Centerlines	555.45	555.46	555.65	549.37	549.42	3.62	0.20	0.0008	195.93	1.84	N/A	N/A	N/A	N/A	N/A
0+20.40	0+25.40	24.97	Box	6 x 4	0.013	0.0040	Size Change	Centerlines	555.65	555.65	555.65	549.42	549.44	1.04	0.02	0.0001	195.93	0.79	N/A	N/A	N/A	N/A	N/A
0+25.40	1+49.85	24.97	Pipe	30"	0.013	0.0060	Bend - 45°	Softits	555.65	556.12	556.32	549.44	550.18	5.09	0.40	0.0037	31.68	1.67	N/A	N/A	N/A	N/A	N/A
1+49.85	2+35.87	24.97	Pipe	30"	0.013	0.0060	Bend - 45°	Softits	556.32	556.63	556.84	550.18	550.70	5.09	0.40	0.0037	31.68	1.67	N/A	N/A	N/A	N/A	N/A
2+35.87	4+65.88	24.97	Pipe	30"	0.013	0.0060	Bend - 45°	Softits	556.84	557.69	557.89	550.70	552.07	5.09	0.40	0.0037	31.68	1.67	N/A	N/A	N/A	N/A	N/A
4+65.88	5+33.61	24.97	Pipe	30"	0.013	0.0060	Wye - 45°	Centerlines	557.89	558.14	558.47	552.07	552.47	5.09	0.40	0.0037	31.68	1.67	N/A	N/A	N/A	N/A	N/A
5+33.61	6+30.62	18.97	Pipe	30"	0.013	0.0060	Bend - 45°	Softits	558.47	558.68	558.80	552.47	553.05	3.86	0.23	0.0021	31.68	1.39	N/A	N/A	N/A	N/A	N/A
6+30.62	6+50.62	18.97	Pipe	30"	0.013	0.0060	Inlet	N/A	558.80	558.84	559.13	553.05	553.17	3.86	0.23	0.0021	31.68	1.39	N/A	N/A	N/A	N/A	N/A

Line ST-	10	100-YR																					
Downstream Station	Upstream Station	Q (cfs)	Pipe Type	Size Box (W x H) Pipe (")	"n" Value	Design Slope (ft/ft)	Upstream Junction Type	Connect or FL	Dwn HGL (Auto Calc)	Up HGL	Up HGL w/ Jump	Dwn FL (Auto Calc)	Up FL	V (fps)	V ² /2g (ft)	Sr	Q _{cap} (cfs)	D _o (ft)	D _p (ft)	V _p (fps)	V _p ² /2g (ft)	Partial Station (2)	Partial Elevation (3)
0+00.00	0+57.47	4.41	Pipe	18"	0.013	0.0193	None	N/A	559.18	559.28	559.28	556.89	558.00	2.50	0.10	0.0018	14.59	0.57	1.28	2.74	0.12	N/A	N/A

Line ST-	11	100-YR																					
Downstream Station	Upstream Station	Q (cfs)	Pipe Type	Size Box (W x H) Pipe (")	"n" Value	Design Slope (ft/ft)	Upstream Junction Type	Connect or FL	Dwn HGL (Auto Calc)	Up HGL	Up HGL w/ Jump	Dwn FL (Auto Calc)	Up FL	V (fps)	V ² /2g (ft)	Sr	Q _{cap} (cfs)	D _o (ft)	D _p (ft)	V _p (fps)	V _p ² /2g (ft)	Partial Station (2)	Partial Elevation (3)
0+00.00	0+35.67	4.41	Pipe	18"	0.013	0.0216	None	N/A	559.25	559.32	559.32	557.23	558.00	2.50	0.10	0.0018	15.44	0.55	1.32	2.68	0.11	N/A	N/A

Line ST-	12	100-YR																					
Downstream Station	Upstream Station	Q (cfs)	Pipe Type	Size Box (W x H) Pipe (")	"n" Value	Design Slope (ft/ft)	Upstream Junction Type	Connect or FL	Dwn HGL (Auto Calc)	Up HGL	Up HGL w/ Jump	Dwn FL (Auto Calc)	Up FL	V (fps)	V ² /2g (ft)	Sr	Q _{cap} (cfs)	D _o (ft)	D _p (ft)	V _p (fps)	V _p ² /2g (ft)	Partial Station (2)	Partial Elevation (3)
0+00.00	0+25.96	3.44	Pipe	18"	0.013	0.0129	Bend - 30°	Softits	555.71	555.74	555.76	553.16	553.49	1.95	0.06	0.0011	11.93	0.55	N/A	N/A	N/A	N/A	N/A
0+25.96	0+59.60	3.44	Pipe	18"	0.013	0.0129	Inlet	N/A	555.76	555.80	555.87	553.49	553.93	1.95	0.06	0.0011	11.93	0.55	N/A	N/A	N/A	N/A	N/A

Line ST-	13	100-YR																					
Downstream Station	Upstream Station	Q (cfs)	Pipe Type	Size Box (W x H) Pipe (")	"n" Value	Design Slope (ft/ft)	Upstream Junction Type	Connect or FL	Dwn HGL (Auto Calc)	Up HGL	Up HGL w/ Jump	Dwn FL (Auto Calc)	Up FL	V (fps)	V ² /2g (ft)	Sr	Q _{cap} (cfs)	D _o (ft)	D _p (ft)	V _p (fps)	V _p ² /2g (ft)	Partial Station (2)	Partial Elevation (3)
0+00.00	0+17.61	12.08	Pipe	30"	0.013	0.0710	Inlet	N/A	555.71	555.73	555.84	550.25	551.50	2.46	0.09	0.0009	109.29	0.56	N/A	N/A	N/A	N/A	N/A

Line ST-	15	100-YR																					
Downstream Station	Upstream Station	Q (cfs)	Pipe Type	Size Box (W x H) Pipe (")	"n" Value	Design Slope (ft/ft)	Upstream Junction Type	Connect or FL	Dwn HGL (Auto Calc)	Up HGL	Up HGL w/ Jump	Dwn FL (Auto Calc)	Up FL	V (fps)	V ² /2g (ft)	Sr	Q _{cap} (cfs)	D _o (ft)	D _p (ft)	V _p (fps)	V _p ² /2g (ft)	Partial Station (2)	Partial Elevation (3)
0+00.00	2+39.50	51.35	Pipe	36"	0.013	0.0070	Inlet - Through	Flowlines	556.13	557.55	558.12	552.98	554.65	7.26	0.82	0.0059	55.80	2.27	2.89	7.35	0.84	N/A	N/A
2+39.50	3+41.18	41.38	Pipe	36"	0.013	0.0071	Inlet - Through	Flowlines	558.12	558.51	558.86	554.65	555.38	5.85	0.53	0.0038	56.20	1.91	N/A	N/A	N/A	N/A	N/A
3+41.18	5+63.24	24.17	Pipe	30"	0.013	0.0073	Inlet - Through	Softits	558.86	559.63	559.63	555.38	557.00	4.92	0.38	0.0035	35.05	1.53	N/A	N/A	N/A	N/A	N/A
5+63.24	6+25.67	23.02	Pipe	18"	0.013	0.0331	None	N/A	559.63	562.63	562.63	558.00	560.06	13.03	2.63	0.0480	23.02	N/A	N/A	N/A	N/A	N/A	N/A

HGL NOTES:
 1. DESIGNATES THE TYPE OF STORM PIPE CONNECTION (SOFFIT TO SOFFIT, CENTERLINE TO CENTERLINE, OR FLOWLINE TO FLOWLINE) OR THE ELEVATION DIFFERENCE ACROSS THE STRUCTURE AT THE UPSTREAM STATION.
 2. THE STATION AT WHICH THE HYDRAULIC GRADE LINE INTERSECTS THE NORMAL DEPTH IN THE PIPE.
 3. THE ELEVATION AT WHICH THE HYDRAULIC GRADE LINE INTERSECTS THE NORMAL DEPTH IN THE PIPE.

NOTE: ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

NO.	09/29/2016	RECORD DRAWINGS
	09/24/2015	ASI 26
		REVISION

RECORD DRAWING

THE SIGNED AND SEALED CONSTRUCTION DOCUMENT HAS BEEN REVISED TO REFLECT CONSTRUCTION RECORDS MAINTAINED AND PROVIDED BY THE CONTRACTOR FOR THIS PROJECT. THE INFORMATION SHOWN ON THIS RECORD DRAWING, WHICH WAS PROVIDED BY THE CONTRACTOR, OR OTHERS NOT ASSOCIATED WITH THE DESIGN ENGINEER, CANNOT BE VERIFIED FOR ACCURACY OR COMPLETENESS. PACHECO KOCH SHALL ASSUME NO LIABILITY FOR ANY CHANGES MADE DURING CONSTRUCTION THAT WERE NOT SPECIFICALLY APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION. THE SEALED CONSTRUCTION DRAWINGS ARE ON FILE AT THE OFFICES OF PACHECO KOCH.

ATTENDED BY: *Steven Heilbrun*
 SIGNATURE: _____
 ENGINEER OF RECORD: STEVEN HEILBRUN, P.E.
 CONTRACTOR: BOB MOORE CONSTRUCTION, INC.
 DATE REVISED: 09/29/2016

7557 RAMBLER ROAD, SUITE 1400
 DALLAS, TX 75231 972.235.3031
 TX REG. ENGINEERING FIRM F-14439
 TX REG. SURVEYING FIRM LS-101938-05

Pacheco Koch

HYDRAULIC CALCULATIONS

CHANNELL BTS

NWC JUSTIN RD. & JOHN KING BLVD.

CHANNELL SUBDIVISION LOT 2, BLOCK A

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

DESIGN	DRAWN	DATE	SCALE	NOTES	FILE	NO.
SMH/MG	MG	NOV 2014	H: 1"=40' V: 1"=5'			C4.6

CHANNELL BTS-LOT 2 BLOCK A CHANNELL SUBDIVISION