

Quintero Engineering, LLC

CIVIL ENGINEERS / PLANNERS / CONSTRUCTION MANAGEMENT

April 27, 2016

John Nett, P.E., CFM
City of Killeen
P.O. Box 1329
Killeen, TX 76540-1329

Mr. Nett:

On behalf of the owner, please find this letter as the owner's intent to seek city participation on the oversized, constructed and City accepted drainage infrastructure that serves approximately 40 acres of offsite undeveloped drainage area. The subject drainage improvements are associated with the Cosper Ridge Estates, Phase 5 (CRE 5) residential subdivision development for public benefit.

The owner is seeking city-owner agreement participation for the following:

- 33% of the oversized drainage infrastructure construction cost. The subject drainage improvements serve approximately 40 acres of undeveloped drainage area, as shown on the attached Sheet COA1, City-Owner Agreement Exhibit.
 - The oversized percentage was determined by evaluating the storm drain system capacity versus the offsite drainage area runoff flow under the 25-year storm frequency event per the City's DDM. Two 42" diameter storm drain trunk mains were utilized to capture and convey the upstream offsite drainage area runoff flow through and across the subdivision. Based on the analysis results, the combined full pipe capacity of the two storm drain trunk mains using the minimum pipe slopes is 158.28 cfs. The calculated runoff flow from the offsite drainage area is 106.76 cfs. Dividing the runoff flow by the combined full capacity resulted in a 33% oversizing. Please reference an excerpt page from the approved Cosper Ridge Estates, Phase 5, Technical Drainage Report prepared by Mitchell & Associates, Inc. and dated October 28, 2014. The excerpt page is the Storm Sewer Tabulation, which summarizes the storm drain system design hydrology and hydraulic characteristics under the 25-year storm frequency event.

Attached please find the cost estimate for City Staff review. Upon agreement to the scope and preliminary numbers, we will proceed with an agreement in principle as required by city ordinance. Please note:

The Engineer's evaluations of the Owner's project budget and its opinions of construction costs as provided herein will be made on the basis of the Engineer's experience and qualifications and will represent the Engineer's best judgment as a qualified design professional familiar with the construction industry.

Please feel free to contact us at any time should you have any questions or concerns.

Thank you.



Pedro Quintero, P.E.
President

Attachments:
City-Owner Agreement Exhibit
Drainage Report Excerpt: Storm Sewer Tabulation (25-Year)
Engineer's Construction Cost Estimate
Copy: File

Quintero Engineering, LLC

Civil Engineering • Land Surveying
 Planning • Construction Management



ENGINEER'S CONSTRUCTION COST ESTIMATE

Prepared For

Cosper Ridge Estates, Phase 5

City Owner Agreement Drainage Improvements

April 29, 2016

Item	Description	Quantity	Units	Unit Cost	Sub-Total
1	42" Diameter Storm Drain Pipe	725	LF	\$112.00	\$81,200.00
2	42" Diameter 30 Degree Storm Drian Pipe Bends	4	EA	\$500.00	\$2,000.00
3	Wing Wall	1	EA	\$7,500.00	\$7,500.00
4	4.5'x4.5' Junction Box	2	EA	\$5,500.00	\$11,000.00
5	Concrete Sloped End Treatment	2	EA	\$1,250.00	\$2,500.00
6	14" Diameter Stone Grouted Riprap	31	CY	\$100.00	\$3,100.00
7	6" Diameter Stone Grouted Riprap	43	CY	\$85.00	\$3,655.00
8	Downstream Channel (Includes excavation & stabilization)	200	CY	\$12.00	\$2,400.00
Total					\$113,355.00
Drainage Improvements Considered for Oversizing Total					\$113,355.00
33% CITY COST SHARING PARTICIPATION					\$37,407.15

Pedro Quintero, P.E. 04/27/2016

Engineer's Name

Date



P.O. Box 4386, Killeen, Texas 76540
 Office: 254-493-9962 Fax: 254-432-7070
 T.B.P.E. Firm No.: 14709 T.B.P.L.S. Firm No. 10194111

Storm Sewer Tabulation

Runoff Flow

Full Pipe Capacity

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	34.284	0.00	24.76	0.00	0.00	11.80	0.0	26.1	5.9	67.57	87.33	9.46	42	0.75	852.86	853.12	855.17	855.69	856.95	857.21	P-B-1D.2.1
2	1	16.654	0.00	24.76	0.00	0.00	11.80	0.0	26.0	5.9	67.57	87.14	8.26	42	0.75	853.12	853.24	856.16	855.82	857.21	857.33	P-B-1D.2.2
3	2	204.925	0.00	24.76	0.00	0.00	11.80	0.0	25.6	5.9	67.57	87.22	8.26	42	0.75	853.24	854.78	856.28	857.35	857.33	861.47	P-JB-1D.2
4	3	27.760	4.79	9.58	0.55	2.63	5.27	14.0	14.1	8.1	28.38	66.50	6.73	30	2.63	855.78	856.51	858.07	858.32	861.47	862.04	P-CI-2D-1
5	4	39.000	4.79	4.79	0.55	2.63	2.63	14.0	14.0	8.2	14.17	19.50	5.46	24	0.74	857.01	857.30	858.87	858.66	862.04	862.04	P-CI-2D-2
6	3	137.518	15.18	15.18	0.43	6.53	6.53	25.0	25.0	6.0	39.19	87.91	5.74	42	0.76	854.78	855.83	857.90	857.77	861.47	859.92	P-HW-1D.2
7	End	77.296	0.00	15.18	0.00	0.00	6.53	0.0	26.1	5.9	39.19	71.25	7.36	42	0.50	852.86	853.25	854.71	855.19	856.95	857.34	P-B-1D.1.1
8	7	17.321	0.00	15.18	0.00	0.00	6.53	0.0	26.0	5.9	39.19	71.14	6.26	42	0.50	853.25	853.33	855.73	855.28	857.34	857.42	P-B-1D.1.2
9	8	147.393	0.00	15.18	0.00	0.00	6.53	0.0	25.4	5.9	39.19	101.8	6.25	42	1.02	853.33	854.84	855.81	856.78	857.42	860.39	P-JB-1D.1
10	9	97.018	15.18	15.18	0.43	6.53	6.53	25.0	25.0	6.0	39.19	101.6	6.26	42	1.02	854.84	855.83	857.32	857.77	860.39	859.92	P-HW-1D.1
11	End	55.415	0.00	2.51	0.00	0.00	1.15	0.0	11.1	9.1	17.84	47.07	7.52	30	1.32	852.86	853.59	853.93	855.02	855.81	856.54	P-B-1D
12	11	24.444	2.51	2.51	0.46	1.15	1.15	11.0	11.0	9.1	17.84	46.92	5.42	30	1.31	853.59	853.91	855.40	855.34	856.54	859.16	P-CI-1D-1

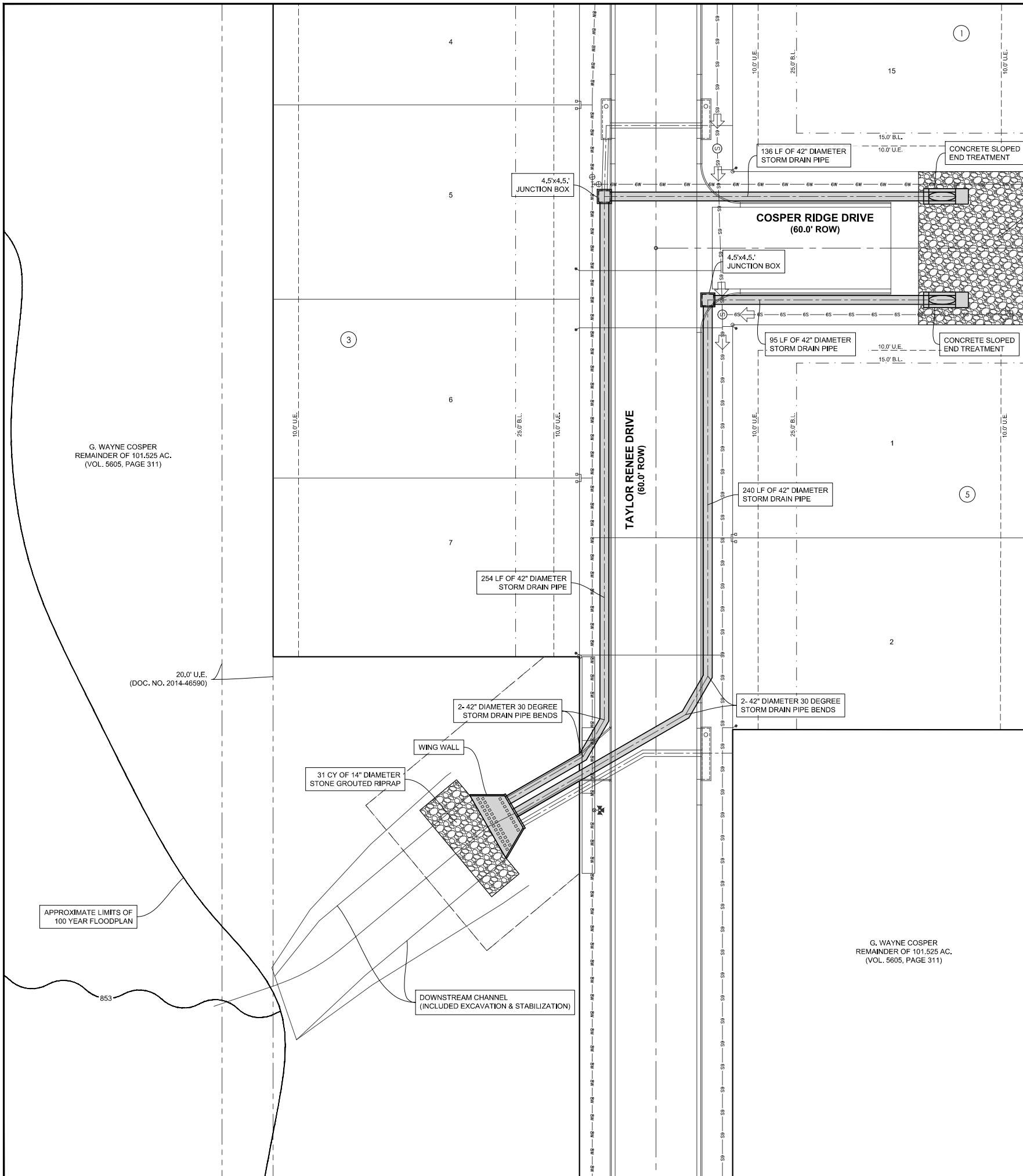
TITLE: Drainage Report Excerpt - Storm Sewer Tabulation (25-Year) - Re: Cosper Ridge Estates, Phase 5 - Technical Drainage Report prepared by Mitchell & Associates, Inc. and dated October 28, 2014

Project File: SD-Cosper 5-25yr.stm

Number of lines: 12

Run Date: 10/28/2014

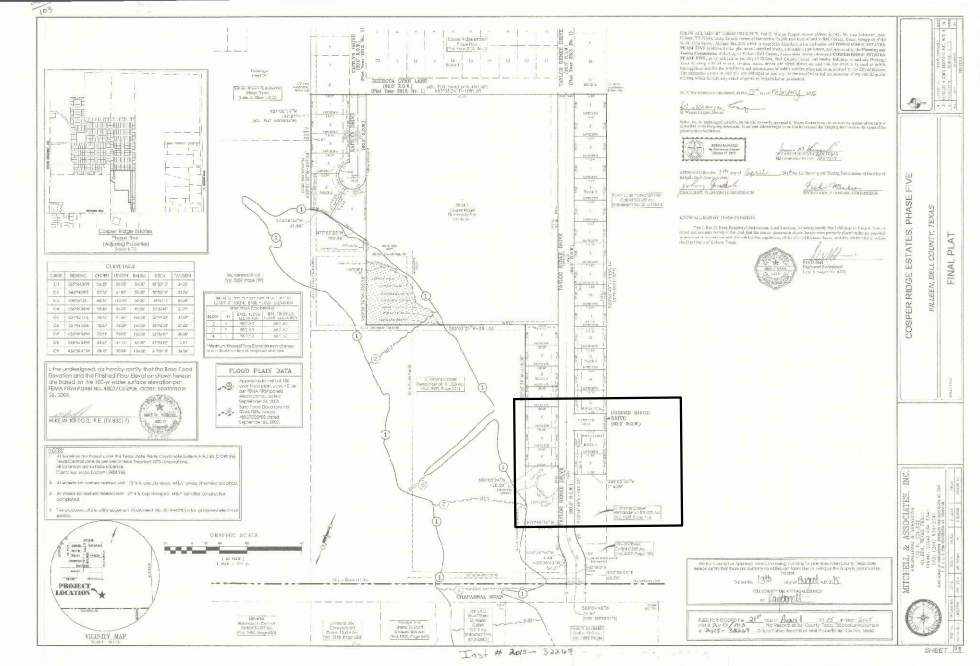
NOTES: Intensity = 90.00 / (Inlet time + 8.50) ^ 0.77; Return period = Yrs. 25 ; Total flows limited to inlet captured flows. ; c = cir e = ellip b = box



LEGEND

- PROPERTY BOUNDARY
- LOT LINE
- EASEMENT LINES
- ADJOINING TRACT PROPERTY LINES
- FLOODPLAIN - BOUNDARY (100-YEAR)
- FLOODPLAIN - BASE FLOOD ELEVATION (100-YEAR)
- IRON ROD FOUND
- IRON ROD SET
- **UNLESS OTHERWISE NOTED**
- BLOCK NUMBER

KAREN COLE PROTECTION TRUST
 CALLED 253.659 AC.
 (DOC. NO. 2010-45838)



COSPERE RIDGE ESTATES, PHASE FIVE
 RECORDED IN PLAT YEAR 2015, PLAT # 103
 SCALE: N.T.S

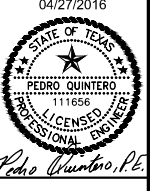


G. WAYNE COSPER
 REMAINDER OF 101.525 AC.
 (VOL. 5605, PAGE 311)

20.0' U.E.
 (DOC. NO. 2014-46590)

G. WAYNE COSPER
 REMAINDER OF 101.525 AC.
 (VOL. 5605, PAGE 311)

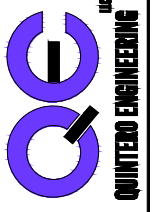
NO.	DATE	REVISIONS	BY



ISSUED FOR REVIEW, COMMENT

PROJECT NO.: 16-040
 DATE: April 2016

QUINTERO ENGINEERING, LLC
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 KILLEEN, TEXAS 76541
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 FAX: (254) 432-7070
 T.E.P.E. FIRM NO.: 14709
 T.E.P.L.S. FIRM NO.: 10194111



COSPERE RIDGE ESTATES, PHASE FIVE
 KILLEEN, BELL COUNTY, TEXAS
 CITY-OWNER AGREEMENT EXHIBIT

DRAWING NO.:
COA1