STORM SEWER IMPROVEMENTS
to serve
Stoney Pointe Apartments
Phase II
CITY OF WICHITA, KANSAS
Gary Janzen, P.E., City Engineer
0331 PPD (607861)

GENERAL NOTES:

1. The Contractor shall comply with all applicable safety regulations. All construction shall be completed following current City Standard Specifications and Special Provisions.

2. Contractor will be required to provide notice to utility companies a minimum of seventy–two (72) hours prior to any excavation, as follows:

Kansas One–Call	1–316–687–2470

The Contractor must notify the following in case of an emergency:

AT&T	1–800–246–8464
Black Hills Energy	1–800–694–8989
City of Wichita Water	1–316–268–4555
City of Wichita Sewer	1–316–268–4073
City of Wichita Stormwater	1–316–268–4090
City of Wichita Traffic	1–316–268–4034
Cox Communications	1–888–249–3530
Kansas Gas Service	1–888–482–4950
Westar Energy	1–800–544–4857

3. Utility service lines, poles, etc. are to be adjusted as necessary by others prior to construction unless the plans specifically call for their adjustment by the Contractor or unless the plans specifically identify a utility to be adjusted by its owner during construction. Existing utilities and their location, as shown on the plans, represent the best information obtainable for design. The Contractor will be required to work around existing utilities within the right–of–way which do not conflict with proposed construction.

4. Rubble from the removal of miscellaneous structures and excess excavation which is to be wasted shall be disposed of on sites to be provided by the Contractor. These sites shall be approved by the Engineer as to suitability, appearance and site location. Locations, in the opinion of the Engineer, that will leave an unsightly appearance will not be approved.. All disposal sites must be approved by the Kansas Department of Health and Environment. Material either stockpiled or disposed of in a flood plain would require a Kansas State Board of Agriculture permit. Any material buried or stockpiled beyond approved construction limits would require additional archeological investigations unless buried in a previously approved borrow location.

5. Trees and shrubs in public right–of–way which are in direct conflict with proposed new construction shall be removed by the Contractor with the Engineer's approval. Trees and shrubs which are not in direct conflict with proposed new construction shall be saved and protected from damage.

6. The Contractor shall give all property owners and/or tenants of developed property abutting the construction of this project a minimum of ten (10) days notice prior to start of construction.

7. The Contractor shall be responsible for preserving property irons. The Contractor will be required to re–establish any property irons which are damaged or destroyed by his construction operations. Such irons shall be re–established by a licensed land surveyor in accordance with state laws.

8. The Water Distribution Division shall field locate water valves one time during construction when requested by the Contractor. It shall be the Contractor's responsibility to preserve such field locations during the construction process. Water valves, valve boxes or fire hydrants damaged during construction shall be repaired by Contractor at his own expense. Valves boxes and water meters within the project limits shall be adjusted to match field grades.

9. The Contractor shall notify the consultant engineer and Tom Mason with the City at 316–268–4574 with the anticipated construction start date and notify them of project completion. Staking and inspection for this project will be the responsibility of the Contractor.

10. If traffic is impacted by construction, a traffic control plan must be submitted and approved by the City Traffic Engineer, Brian Coon at traffic@wichita.gov before construction can begin. The Contractor shall be responsible for all traffic control measures to facilitate construction. All construction zone markings and signage shall conform to the latest version of the Manual on Uniform Traffic Control Devices (MUTCD) as published by the US Dept. of Transportation, Federal Highway Administration. All costs associated with construction markings and signage shall be the Contractors responsibility.

11. All elevations shown are U.S.G.S. Datum (NAVD 88).

12. All areas disturbed during construction that will not be under proposed pavement shall be restored to match existing conditions.

13. A portion of excess excavated material shall be mounded around manholes which extend more than one (1) foot above the existing ground. Such mound shall be constructed with new development a six (6) foot diameter flat top with 4 to 1 side slopes down to the original ground. The elevation of the flat top of the mound shall be 0.4 foot below the top of the manhole.

14. Geotechnical report available upon request.

15. Contractor shall limit the extent of trench openings overnight and weekends to less than 50 feet.

16. Contractor shall provide positive drainage away from all manhole covers.

17. City maintenance of storm sewer ends at right–of–way or easement line. All storm sewer lines in this development are privately owned and maintained.

18. Any sidewalk, drive approach, or street pavement removed to construct project must have a pavement cut permit and be replaced by the City contractor. Permits can be obtained by calling 316–268–4501 or 316–268–4480.

19. The inspection firm shall submit to the City Stormwater Maintenance Division a digital copy of the CCTV inspection of the conduits and structures following construction. The digital file formation shall be compatible with the City input template. A copy of the template is available upon request at 316–268–4090.

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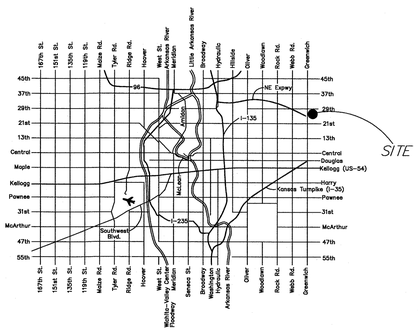
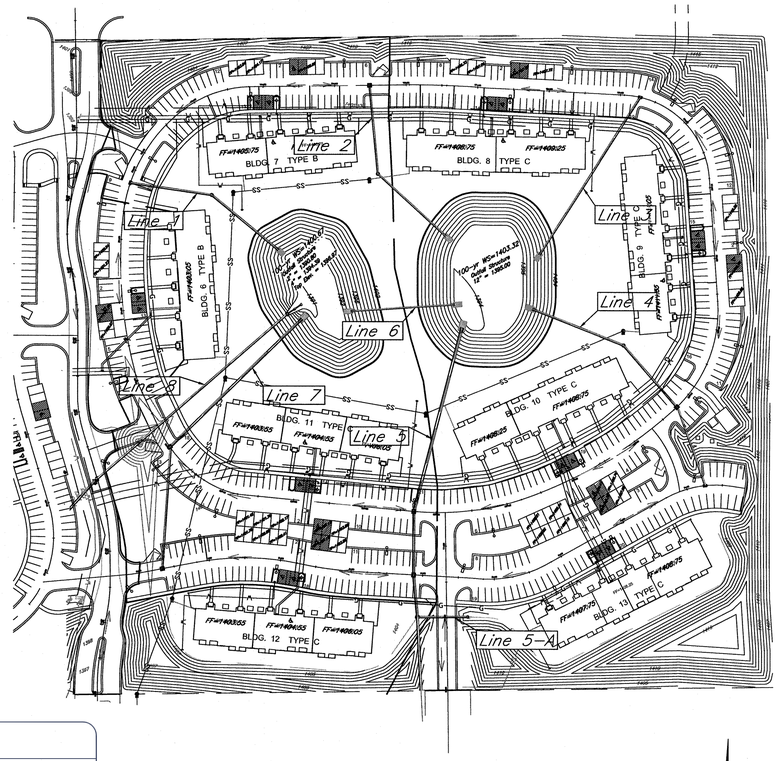


Vicinity Map

29th Street



27th Street

Benchmark:

Top of "T" Post 129.17' East and 1177.81' North of W. 1/4, COR, Sec 3, T27S, R2E, 6TH P.M.
Elev. = 1376.51 NAVD88

Stormwater Certification:
New Development or Redevelopment (New)

These construction plans were prepared in accordance with the current Stormwater Management Regulations as set forth in the City of Wichita's Stormwater Management Ordinance 16.32 and the policies/guidelines presented in the Wichita/Sedgwick County Stormwater Manual.

Disturbed Area: 142,867.00 sq.ft.
Water Quality Treatment: Series of dry ponds
Downstream Channel Protection: detained in ext. detention ponds
Detention: dry ponds
The BMP used for this development is dry ponds.

APPROVED AS NOTED
BY WICHITA PUBLIC WORKS ENGINEERING
AND STORMWATER DIVISION

Engineering Rebecca Dail 11/10/2015
Stormwater Joe Fichb P.E. 11/12/15

NOTE TO CONTRACTORS

Inspection and testing for this project is to be provided by a Licensed Consulting Engineering Firm under contract with the Owner/Developer. Said Inspection to be in accordance with the City of Wichita standard construction engineering practices and certified by a Licensed Professional Engineer in the State of Kansas. No work shall be performed by the Contractor without such inspection nor shall any work be commenced without written authorization by City Engineering. All Construction and Materials shall comply with the current City of Wichita Specifications and Standards and Special Provisions (on file and available at Wichita.gov).

An approved copy of these plans signed by City staff are required on–site.

KIRK E. MILLER LICENSED 11283 KANSAS PROFESSIONAL ENGINEER
DATE: 11.05.2015
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

AS BUILTS

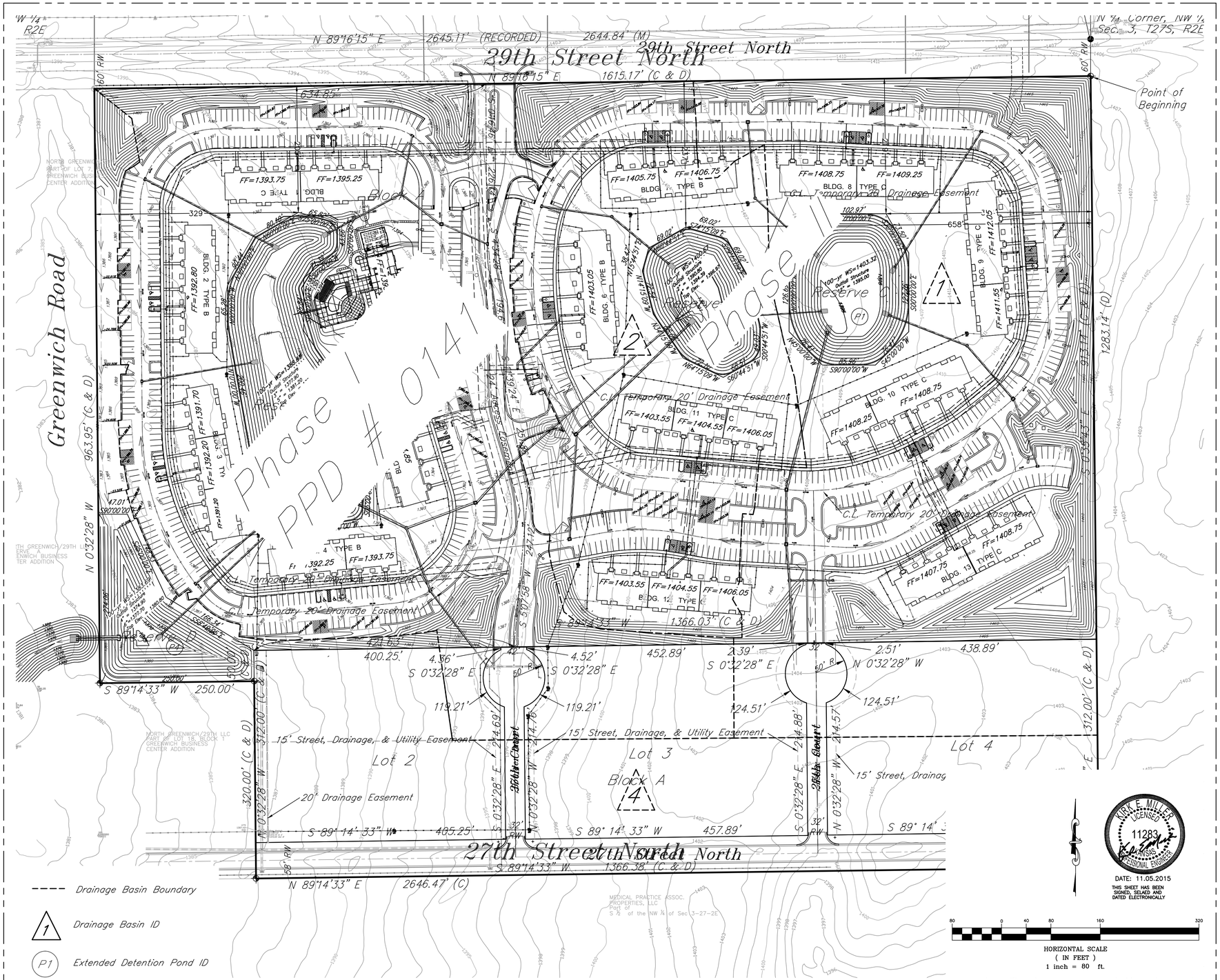
Contractor:	Project Inspector:
McCullough Excavation, Inc.	Larry Gann
6/8/2016	KEMILLER ENGINEERING PA 117 E. Lewis, Wichita, KS 67202 (316)264–0242

100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

November, 2015

KEMILLER ENGINEERING PA
117 E. Lewis, Wichita, KS 67202 (316)264–0242

November 5, 2015



HORIZONTAL SCALE
(IN FEET)
1 inch = 80 ft.

Project Narrative

The proposed site is located between 27th and 29th St. North, east of the Greenwich Road. The proposed development include an apartment complex of 438 unit covering 34.17 acres and two commercial lots of 11.60 acres. The apartment complex include multi storey apartment buildings, parking lots, drives, office building, an outdoor swimming pool, and other facilities. There will be four detention basins in series to acquire the required extended detention for downstream channel protection, extended detention for water quality and detention for flood protection. The detention basins are designed for the entire development of 45.77 acres. The two south commercial lots of area 11.60 acres is expected to develop in later time.

Water Quality Volume and Water Quality Flow

Water Quality Volume (WQv) and Flow Calculation

Drainage Basin	Acres	85th percentile storm event P, inches	Rainfall Coeff, Rv	Water Quality Vol, ac-ft	Corresponding Water Quality Flow, cfs
1	13.52	1.20	0.60	0.81	**7.99**
2	7.57	1.20	0.60	0.45	**4.47**
3	15.00	1.20	0.60	0.90	**8.86**
4	9.68	1.20	0.60	0.58	**5.72**

Extended Detention (WQV) and TSS Removal

Dry extended detention basins are rated as 60% TSS removal. Each drainage basin will acquire 60% TSS removal through dry extended detention basins. The four extended detention basins will act in series for the water quality and TSS removal. Areas 1 and 2 are treated three times in series in ponds P2, P3 and P4. Area 3 is treated twice in series in pond P3 and P4. Area 4 is treated once in pond 4.

Extended Detention for WQV (P=1.2 inches)

Centroid of inflow hydrograph for Pond P2=14.06 hrs
Centroid of outflow hydrograph for Pond P2=38.67 hrs
Centroid-Centroid separation of inflow and outflow hydrograph= 38.67-14.06 = 24.61 hrs

Centroid of inflow hydrograph for Pond P3=13.97 hrs
Centroid of outflow hydrograph for Pond P3=42.70 hrs
Centroid-Centroid separation of inflow and outflow hydrograph= 42.70-28.73 = 28.73 hrs

Centroid of inflow hydrograph for Pond P4=14.01 hrs
Centroid of outflow hydrograph for Pond P4=38.36 hrs
Centroid-Centroid separation of inflow and outflow hydrograph= 38.36-14.01 = 24.35 hrs

Which meets the current city requirement of 24-48 hrs detention time.

TSS Removal:

TSS removal of drainage basin 1 and 2=60% in Pond P2 +60% in Pond P3+60% in Pond P4=93.6%
TSS removal of drainage basin 3 = 60% in Pond P3+60% in Pond P4=83.3%
TSS removal of drainage basin 4 = 60% in Pond P4= 60%
*Effective TSS removal of entire site =(21.09*93.6+15.00*83.3+9.68x*60)/45.77 = 83.12 %*

which meets the current city requirement of 80% TSS removal

Channel Protection (Extended Detention)

Channel Protection Volume Calculation

Drainage Area	Acres	24 hr 1 yr Storm	Developed			Existing		
			CN	S	Runoff Volume ac-ft	CN	S	Runoff Volume ac-ft
1	13.52	2.80	93	0.753	**2.32**	84	1.905	**1.56**
2	7.57	2.80	93	0.753	**1.30**	84	1.905	**0.85**
3	15.00	2.80	93	0.753	**2.58**	84	1.905	**1.69**
4	9.68	2.80	93	0.753	**1.66**	84	1.905	**1.09**

Channel Protection volume in developed condition is detained in series of extended detention ponds.

The separation between the combined inflow hydrograph and outflow hydrograph of downstream pond (P4) is considered in design of channel protection volume detention.

Centroid of combined inflow hydrograph for 1 yr storm=13.44 hrs
Centroid of outflow hydrograph from Pond P4= 38.31 hrs
Centroid-Centroid separation of inflow and outflow hydrograph= 39.79-13.44 = 26.35 hrs

which meets the current city requirement of 24-48 hrs detention time.
The extended detention ponds in series will acquire the channel protection volume for entire 45.77 acres of site (Apartment complex+Commercail Site)

Benchmark:

Top of "T" Post 129.17' East and 1177.81' North of W. 1/4, COR, Sec 3, T27S, R2E, 6TH P.M.
Elev. = 1376.51 NAVD88

MARK E. MILLER LICENSED 11283 KANSAS PROFESSIONAL ENGINEER

DATE: 11.05.2015
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

Stoney Pointe Apartments - Phase II

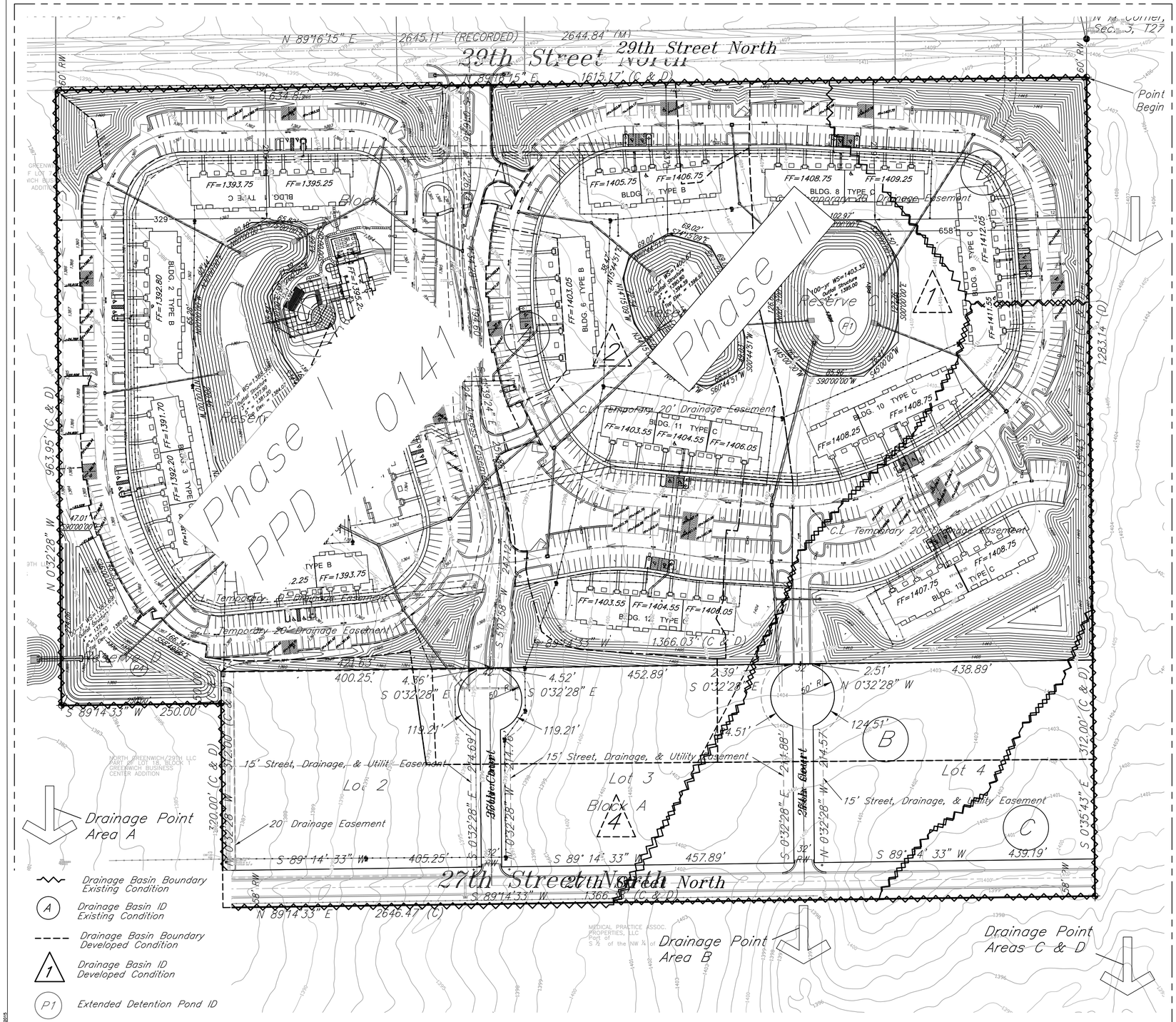
Drainage Plan, WQV and CPV

Wichita, Kansas

KEMILLER ENGINEERING PA
117 E. Lewis, Wichita, KS 67202 (316)264-0242

PROJECT NUMBER			
KEM NO. 12037	FILE	DATE 7/2015	SHEET 2.0
DESIGN KM	DRAWN DM	REVISED 11/2015	

December 6, 2015



Flood Detention (2–, 5–, 10–, 25–, 100–yr)

Existing Condition:
Total Site Area= 45.77 Acres
Land use: Pasture land
Hydrologic Soil Group 'D'

Existing Runoff Calculation

Drainage Basin	Acres	Curve No. (CN)	Time of Concentration	24-hr Rainfall Depth, in					Peak Runoff, Q (cfs)					Remark
				2-yr	5-yr	10-yr	25-yr	100-yr	2-yr	5-yr	10-yr	25-yr	100 -yr	
A	33.28	84	44	3.50	4.50	5.20	6.10	7.80	43.15	62.94	77.07	95.38	130.10	Area draining into southwest coner
B	8.66	84	48	3.50	4.50	5.20	6.10	7.80	10.57	15.43	18.90	23.39	31.92	Area draining into south ditch
C	1.30	84	41	3.50	4.50	5.20	6.10	7.80	1.77	2.58	2.58	3.91	5.33	Area draining into east ditch
D	2.53	84	39	3.50	4.50	5.20	6.10	7.80	5.07	7.36	8.99	11.10	15.09	Area draining into southeast corner

Only 36.80 cfs of peak discharge is allowed to leave the site due to downstream conveyance restriction (Culvert under K–96) according to Drainage Report, Stoney Pointe Addition.

Developed Condition:
Total Site Area= 45.77 Acres
Land use: 34.17 Acres Apartment Complex and 11.60 Commercial Site
Based on available site plan and assumed % impervious for commercial site, a combined CN value of 93 is used in analysis.
Hydrologic Soil Group 'D'

Developed Runoff Calculation

Drainage Basin	Acres	Curve No. (CN)	Time of Concentration	24-hr Rainfall Depth, in					Peak Runoff, Q (cfs)					Remark
				2-yr	5-yr	10-yr	25-yr	100-yr	2-yr	5-yr	10-yr	25-yr	100 -yr	
1	13.52	93	21	3.50	4.50	5.20	6.10	7.80	34.33	45.79	53.77	63.96	83.09	Basin draining to pond 1
2	7.57	93	16	3.50	4.50	5.20	6.10	7.80	20.59	27.56	32.41	38.61	50.24	Basin draining to pond 2
3	15.00	93	16	3.50	4.50	5.20	6.10	7.80	40.80	62.07	72.89	86.96	113.15	Basin draining to pond 3
4	9.68	93	19	3.50	4.50	5.20	6.10	7.80	24.61	32.83	38.55	45.86	59.58	Basin draining to pond 4

DED Pond	Outflow, Qout				
	Runoff, Q				
	2-yr	5-yr	10-yr	25-yr	100 -yr
1	5.87	5.65	5.49	5.54	6.43
2	4.32	6.69	8.18	9.75	11.94
3	3.66	6.06	7.25	8.50	10.32
4	8.24	17.44	22.81	28.77	36.72

Note:

All of the 45.77 acres of proposed development drains to the southwest corner (to existing pond at Greenwich Business Center Addition). The over detention is achieved through series of extended detention ponds. Internal storm sewers are designed to collect the runoff to the corresponding detention basin.

Developed peak flows are calculated using the SCS hydrograph method, "CN" & "I" values are established from the City of Wichita Stormwater Design Manual.

KIRK E. MILLER LICENSED 11283 KANSAS PROFESSIONAL ENGINEER

DATE: 11.05.2015

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

80 0 40 80 160 320

HORIZONTAL SCALE
(IN FEET)
1 inch = 80 ft.

Benchmark:

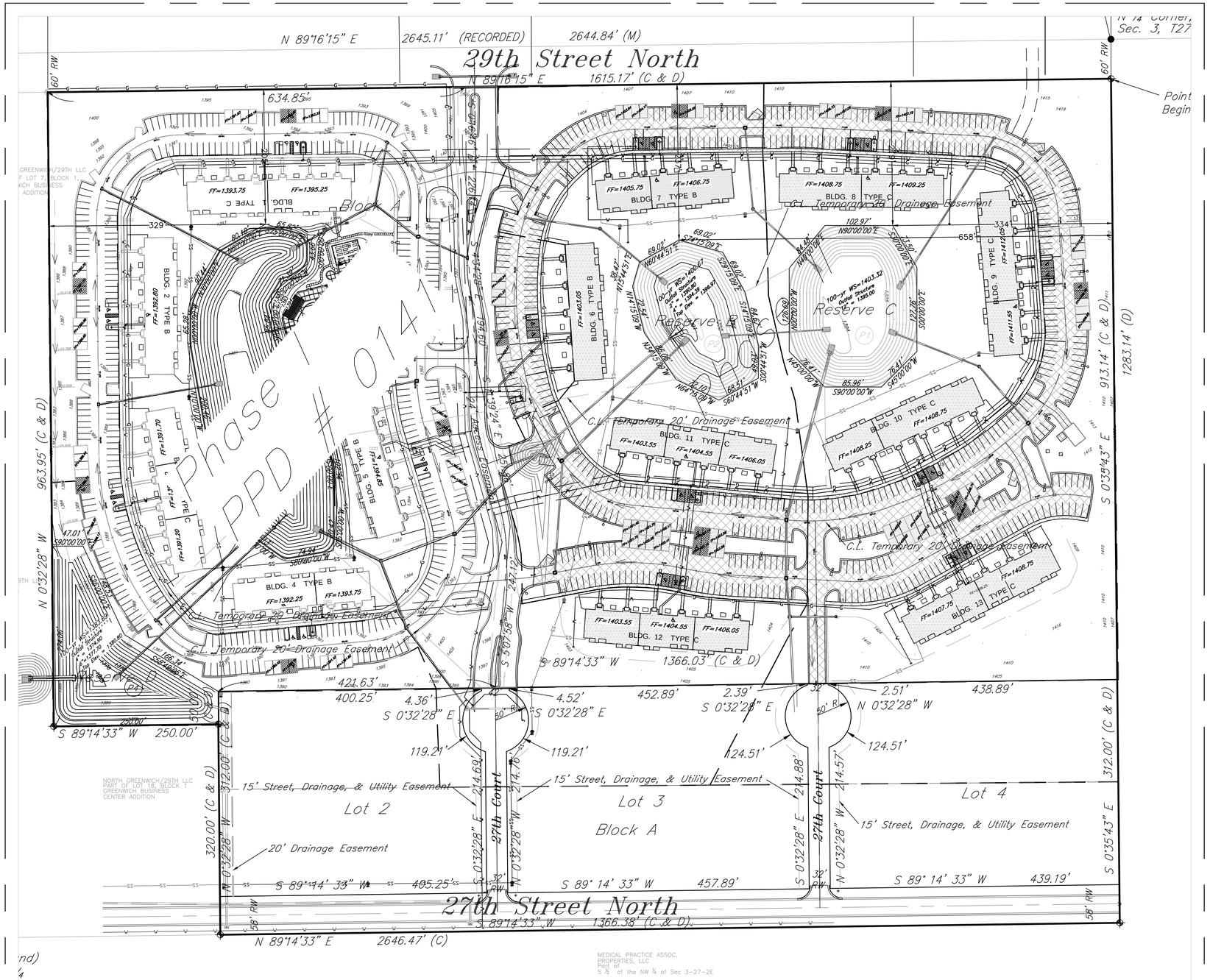
Top of "T" Post 129.17' East and 1177.81' North of W. 1/4, COR, Sec 3, T27S, R2E, 6TH P.M.
Elev. = 1376.51 NAVD88

Stoney Pointe Apartments - Phase II
Drainage Plan - Page 2
Wichita, Kansas

KEMILLER ENGINEERING PA
117 E. Lewis, Wichita, KS 67202 (316)264-0242

PROJECT NUMBER			
KEM NO. 12037	FILE	DATE 7/2015	SHEET 2.1
DESIGN KM	DRAWN DM	REVISED 11/2015	

December 8, 2015



ERU Calculations(Phase –II)

Existing Impervious Area:	0 sq.ft.
Proposed Building Area:	118,660 sq.ft.
Proposed Parking, Sidewalks, and Other Impervious Area:	185,517 sq.ft.
Total Impervious Area: (Post Construction)	304,177 sq.ft.
Net Increase in impervious Area:	304,117 sq.ft.

Hatching Legend:

Building and Garage Area

Parking, Sidewalks, and Other Impervious Areas

KIRK E. MILLER LICENSED 11283 KANSAS PROFESSIONAL ENGINEER

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80 0 40 80 160 320

HORIZONTAL SCALE
(IN FEET)
1 inch = 80 ft.

Stoney Pointe Apartments - Phase II

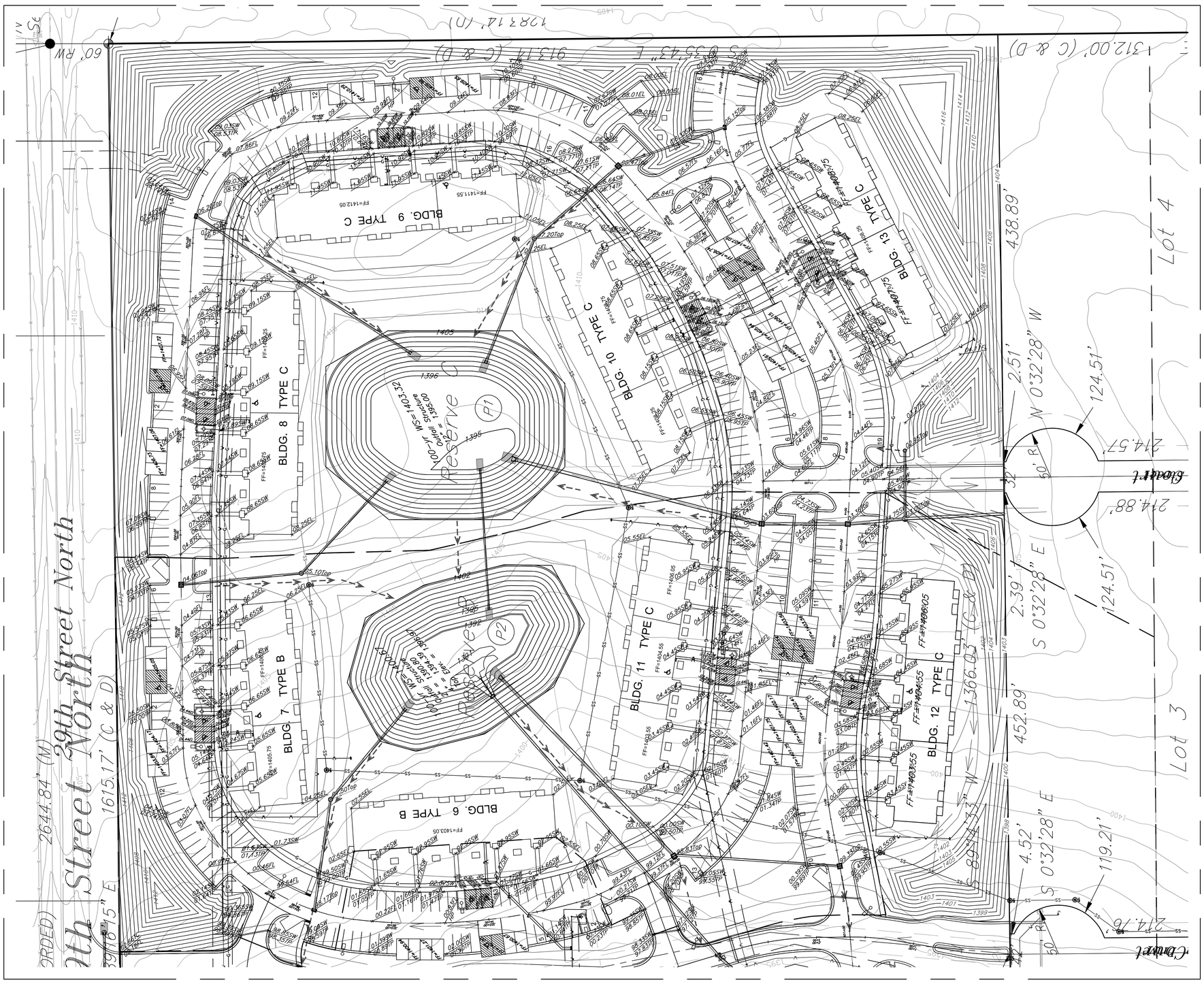
ERU Plan

Wichita, Kansas

KEMILLER ENGINEERING PA
117 E. Lewis, Wichita, KS 67202 (316)264-0242

PROJECT NUMBER			
KEM NO. 12037	FILE	DATE 7/2015	SHEET 3.0
DESIGN KM	DRAWN DM	REVISED 11/2015	

December 6, 2015



Grading Legend:

FF	Finish Floor (Building or Garage)
FL	Flow Line
TP	Top of Pavement
HP	High Point
CL	Centerline
SW	Sidewalk
TC	Top of Curb
Top	Top of MH or Inlet
→	Flow Arrow
—1390—	Prop Contour, Major
—1389—	Prop Contour, Minor
—1393—	Existing Contour

Benchmark:

Top of "T" Post 129.17' East and 1177.81' North of W. 1/4, COR, Sec 3, T27S, R2E, 6TH P.M.
Elev. = 1376.51 (NAVD88)

KIRK E. MILLER LICENSED 11283 KANSAS PROFESSIONAL ENGINEER

DATE: 11.05.2015

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50 0 25 50 100 200

HORIZONTAL SCALE
(IN FEET)
1 inch = 50 ft.

Stoney Pointe Apartments - Phase II

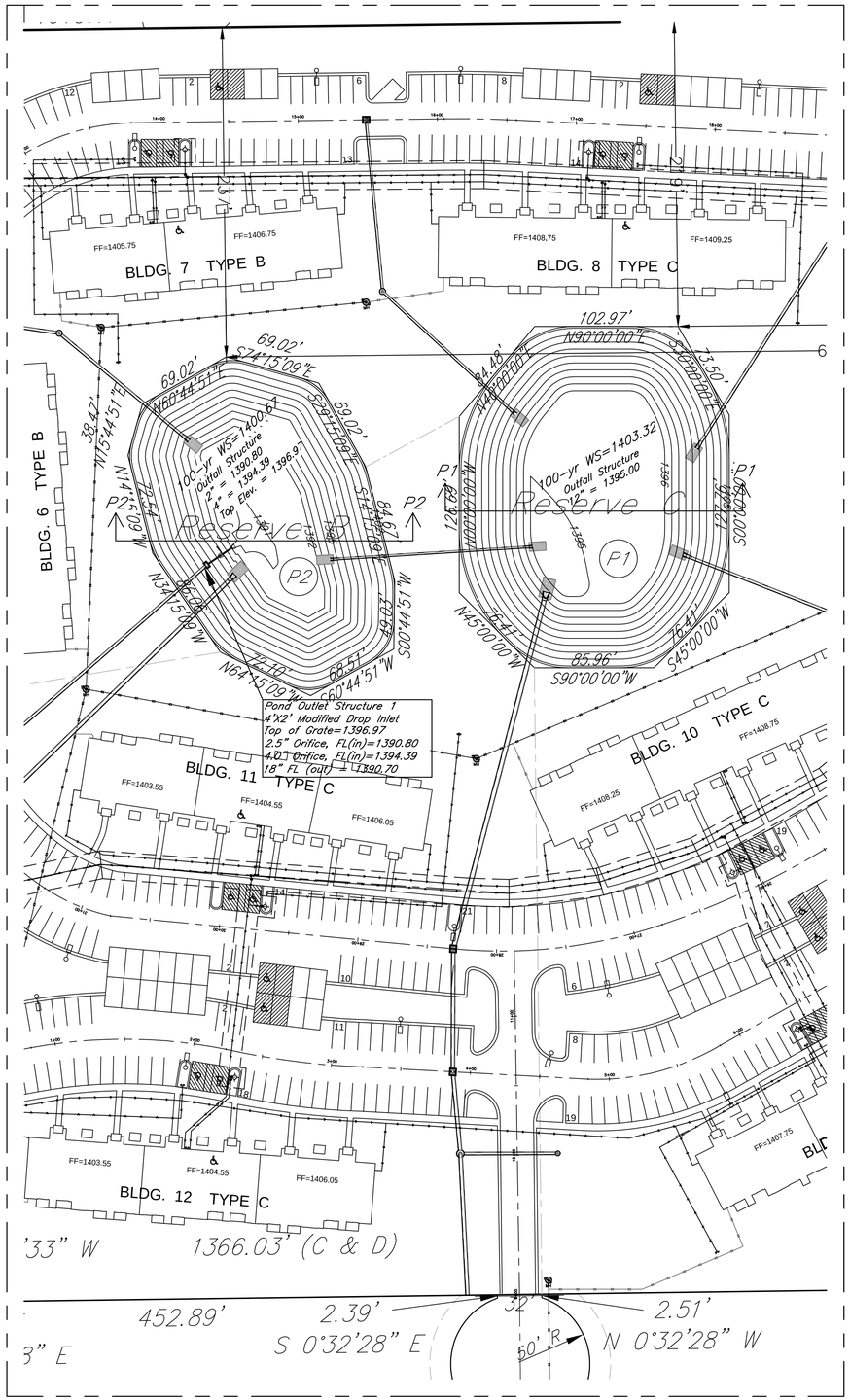
Grading Plan - Phase II

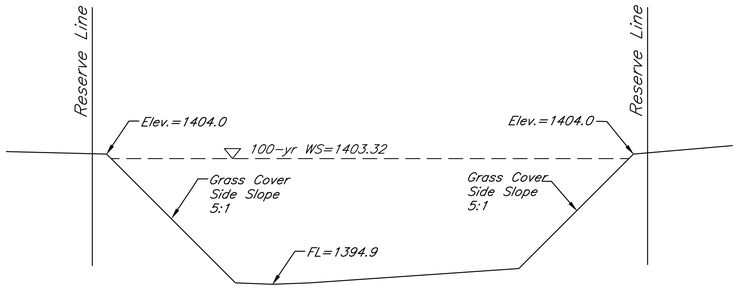
Wichita, Kansas

KEMILLER ENGINEERING PA
117 E. Lewis, Wichita, KS 67202 (316)264-0242

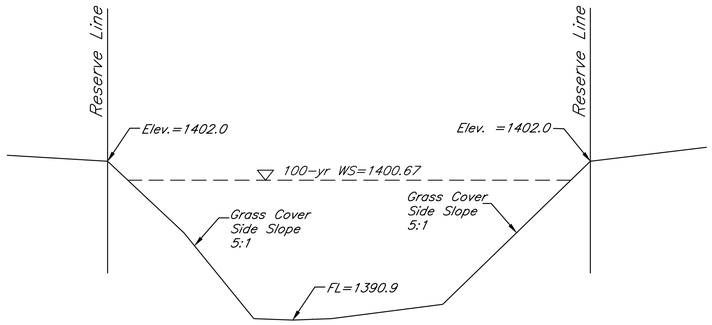
PROJECT NUMBER			
KEM NO. 12037	FILE	DATE 1/2013	SHEET 4.0
DESIGN KM	DRAWN ME	REVISED 11/2015	

December 4, 2015





Section P1–P1
DED Pond 1



Section P2–P2
DED Pond 2

Dry Extended Detention Pond
(Not to Scale)

Note: The outlet structure of pond P2 is similar to outlet structure of Pond P3 (from Phase I, PPD # 0141) except the size and elevation of orifice and top of grate.

KIRK E. MILLER LICENSED 11283 KANSAS PROFESSIONAL ENGINEER

DATE: 11.05.2015

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50 0 25 50 100 200

HORIZONTAL SCALE
(IN FEET)
1 inch = 50 ft.

Stoney Pointe Apartments - Phase II

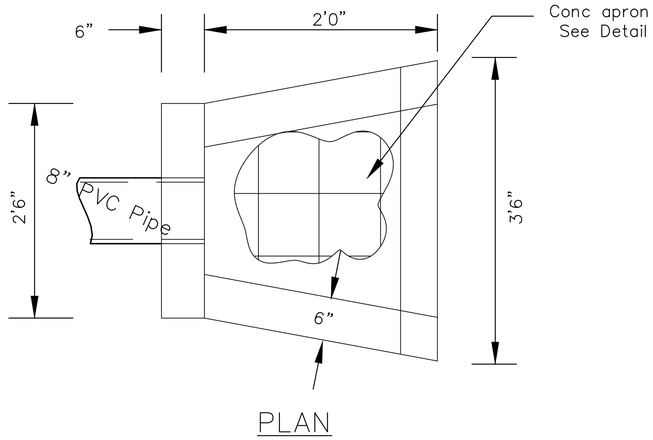
Pond Detail, P1&P2

Wichita, Kansas

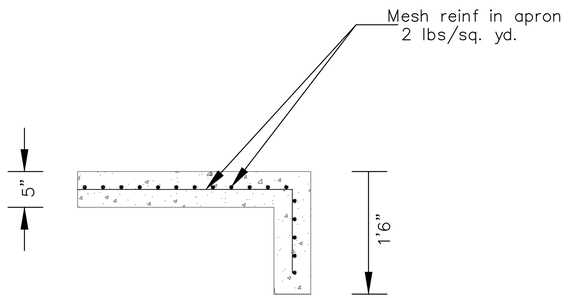
KEMILLER ENGINEERING PA
117 E. Lewis, Wichita, KS 67202 (316)264-0242

PROJECT NUMBER			
KEM NO. 12037	FILE	DATE 7/2015	SHEET 5.0
DESIGN KM	DRAWN DM	REVISED 11/2015	

December 8, 2015



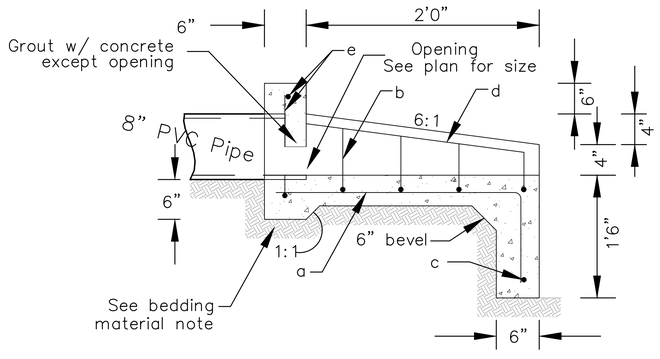
PLAN



Conc. Apron

Bedding Material

The material for bedding shall confirm to the requirements of UD-1 according to KDOT specification.



SECTION

All rebars (a,b,c,d,e) to be #4
All exposed edges to have 1/2” bevel.

Head Wall Detail

Not to Scale

July 23, 2015

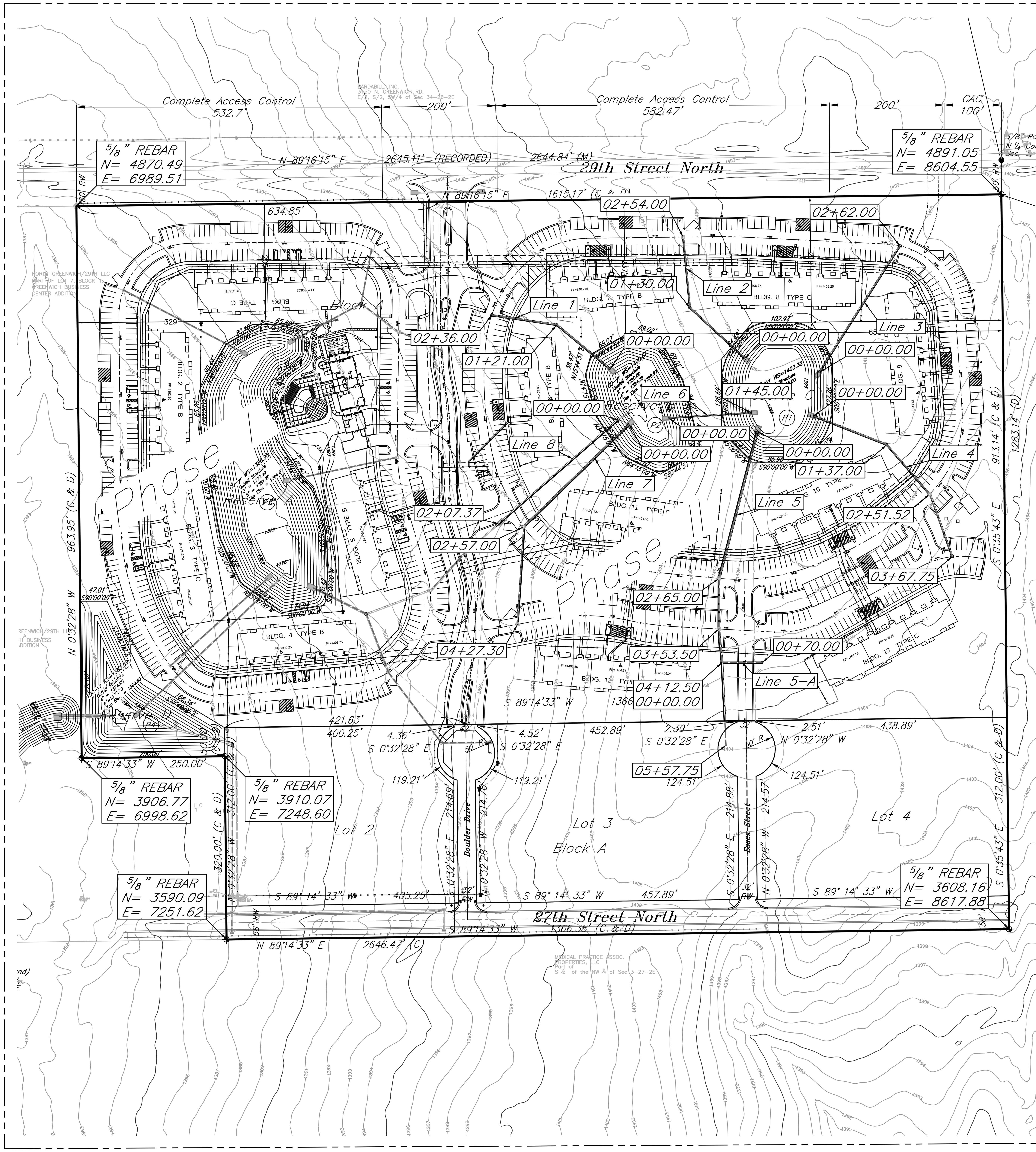
Stoney Pointe Apartments - Phase II

Head Wall Detail

Wichita, Kansas

KEMILLER ENGINEERING PA
117 E. Lewis, Wichita, KS 67202 (316)264-0242

PROJECT NUMBER			
KEM NO. 12037	FILE	DATE 07/2015	SHEET 5.1
DESIGN KM	DRAWN DM	REVISED	



LINE 1

STRUCTURE	℄ LOCATION DESIGN	℄ LOCATION BUILT	RIM ELEV. DESIGN	RIM ELEV. BUILT	FLOWLINE INFO. DESIGN	FLOWLINE INFO. BUILT
00+00.00 L1	N= 4585.87 E= 7921.54	N= E=			18" FL (out) = 1393.55	
01+21.00 L1	N= 4663.09 E= 7828.39	N= E=	1401.50		18" FL (out) = 1394.01	
02+36.00 L1	N= 4679.88 E= 7714.62	N= E=			18" FL (out) = 1394.49	

LINE 2

STRUCTURE	℄ LOCATION DESIGN	℄ LOCATION BUILT	RIM ELEV. DESIGN	RIM ELEV. BUILT	FLOWLINE INFO. DESIGN	FLOWLINE INFO. BUILT
00+00.00 L2	N= 4604.86 E= 8156.24	N= E=			15" FL (out) = 1398.50	
01+30.00 L2	N= 4693.04 E= 8060.72	N= E=	1407.07		15" FL (out) = 1399.83 15" FL (in) = 1399.93	
02+54.00 L2	N= 4816.48 E= 8048.91	N= E=	1404.06		15" FL (out) = 1401.04	

LINE 3

STRUCTURE	℄ LOCATION DESIGN	℄ LOCATION BUILT	RIM ELEV. DESIGN	RIM ELEV. BUILT	FLOWLINE INFO. DESIGN	FLOWLINE INFO. BUILT
00+00.00 L3	N= 4580.28 E= 8286.54	N= E=			18" FL (out) = 1399.70	
02+62.00 L3	N= 4801.20 E= 8427.39	N= E=			18" FL (out) = 1402.74	

LINE 4

STRUCTURE	℄ LOCATION DESIGN	℄ LOCATION BUILT	RIM ELEV. DESIGN	RIM ELEV. BUILT	FLOWLINE INFO. DESIGN	FLOWLINE INFO. BUILT
00+00.00 L4	N= 4503.82 E= 8276.85	N= E=			18" FL (out) = 1398.00	
01+37.00 L4	N= 4453.78 E= 8404.39	N= E=	1407.20		18" FL (out) = 1398.54 18" FL (in) = 1398.64	
02+52.51 L4	N= 4367.57 E= 8515.55	N= E=	1405.47		18" FL (out) = 1400.05 18" FL (in) = 1400.15	
03+67.75 L4	N= 4258.32 E= 8276.85	N= E=	1405.15		18" FL (out) = 1401.50	

LINE 5

STRUCTURE	℄ LOCATION DESIGN	℄ LOCATION BUILT	RIM ELEV. DESIGN	RIM ELEV. BUILT	FLOWLINE INFO. DESIGN	FLOWLINE INFO. BUILT
00+00.00 L5	N= 4476.88 E= 8178.37	N= E=			30" FL (out) = 1395.34	
02+65.00 L5	N= 4220.44 E= 8111.50	N= E=	1403.60		30" FL (out) = 1396.37 30" FL (in) = 1396.47	
03+53.50 L5	N= 4131.95 E= 8111.20	N= E=	1403.36		30" FL (out) = 1396.73 30" FL (in) = 1396.83	
04+12.50 L5	N= 4073.20 E= 8116.65	N= E=	1403.00		30" FL (out) = 1397.05 30" FL (in) = 1397.15 30" FL (in) = 1397.15	
05+57.75 L5	N= 3928.10 E= 8123.96	N= E=	1404.08		30" FL (out) = 1397.64	

LINE 5–A

STRUCTURE	℄ LOCATION DESIGN	℄ LOCATION BUILT	RIM ELEV. DESIGN	RIM ELEV. BUILT	FLOWLINE INFO. DESIGN	FLOWLINE INFO. BUILT
00+00.00 L5–A	N= 4073.20 E= 8116.65	N= E=	1403.00		30" FL (in) = 1397.15 30" FL (out) = 1397.05	
00+70.00 L5–A	N= 4073.40 E= 8186.65	N= E=	1402.95		30" FL (out) = 1397.43	

LINE 6

STRUCTURE	℄ LOCATION DESIGN	℄ LOCATION BUILT	RIM ELEV. DESIGN	RIM ELEV. BUILT	FLOWLINE INFO. DESIGN	FLOWLINE INFO. BUILT
00+00.00 L6	N= 4500.43 E= 8023.35	N= E=			12" FL (in) = 1393.55	
01+45.00 L6	N= 4509.54 E= 8168.06	N= E=			12" FL (out) = 1395.00	

LINE 7

STRUCTURE	℄ LOCATION DESIGN	℄ LOCATION BUILT	RIM ELEV. DESIGN	RIM ELEV. BUILT	FLOWLINE INFO. DESIGN	FLOWLINE INFO. BUILT
00+00.00 L7	N= 4489.39 E= 7954.52	N= E=			24" FL (out) = 1394.00	
02+57.00 L7	N= 4310.28 E= 7770.22	N= E=	1398.83		24" FL (out) = 1395.03 24" FL (in) = 1395.13	
04+27.30 L7	N= 4140.29 E= 7759.90	N= E=	1399.33		24" FL (out) = 1395.81	

LINE 8

STRUCTURE	℄ LOCATION DESIGN	℄ LOCATION BUILT	RIM ELEV. DESIGN	RIM ELEV. BUILT	FLOWLINE INFO. DESIGN	FLOWLINE INFO. BUILT
00+00.00 L8	N= 4315.84 E= 7727.02	N= E=			18" FL (in) = 1389.01	
02+75.00 L8	N= 4496.43 E= 7934.39	N= E=	1396.96		18" FL (out) = 1390.66 18" FL (in) = 1390.76	

KIRK E. MILLER LICENSED 11283 KANSAS PROFESSIONAL ENGINEER

DATE: 11.05.2015

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

100 0 50 100 200 400

HORIZONTAL SCALE
(IN FEET)
1 inch = 100 ft.

Stoney Pointe Apartments - Phase II

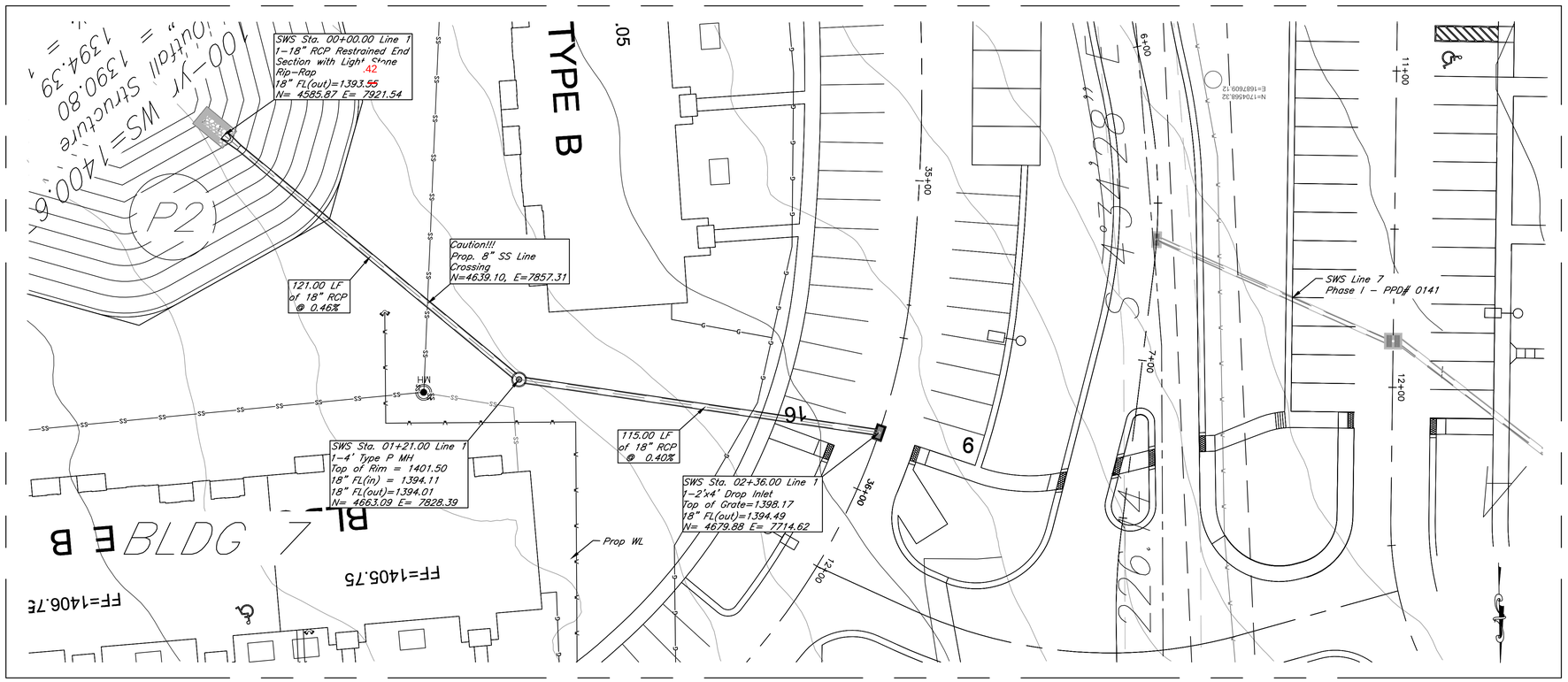
Plan Sheet

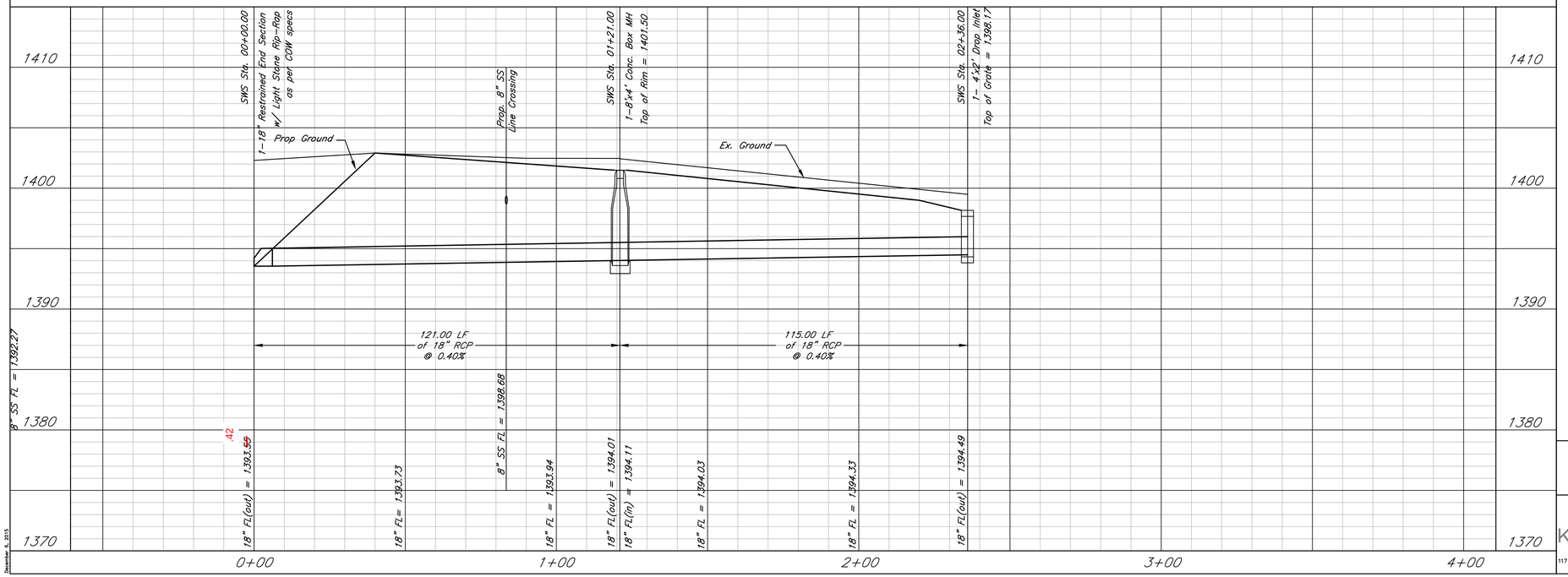
Wichita, Kansas

KEMILLER ENGINEERING PA
117 E. Lewis, Wichita, KS 67202 (316)264–0242

PROJECT NUMBER			
KEM NO. 12037	FILE	DATE 05/2015	SHEET 6.0
DESIGN KM	DRAWN DM	REVISED 11/2015	

December 6, 2015





AS BUILTS

KEMILLER ENGINEERING PA
117 E. Lewis,
Wichita, KS 67202
(316)264-0242

KIRK E. MILLER LICENSED 11283 KANSAS PROFESSIONAL ENGINEER

DATE: 11.05.2015
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VERTICAL SCALE
(IN FEET)
1 inch = 5 ft.

HORIZONTAL SCALE
(IN FEET)
1 inch = 20 ft.

Stoney Pointe Apartments - Phase II

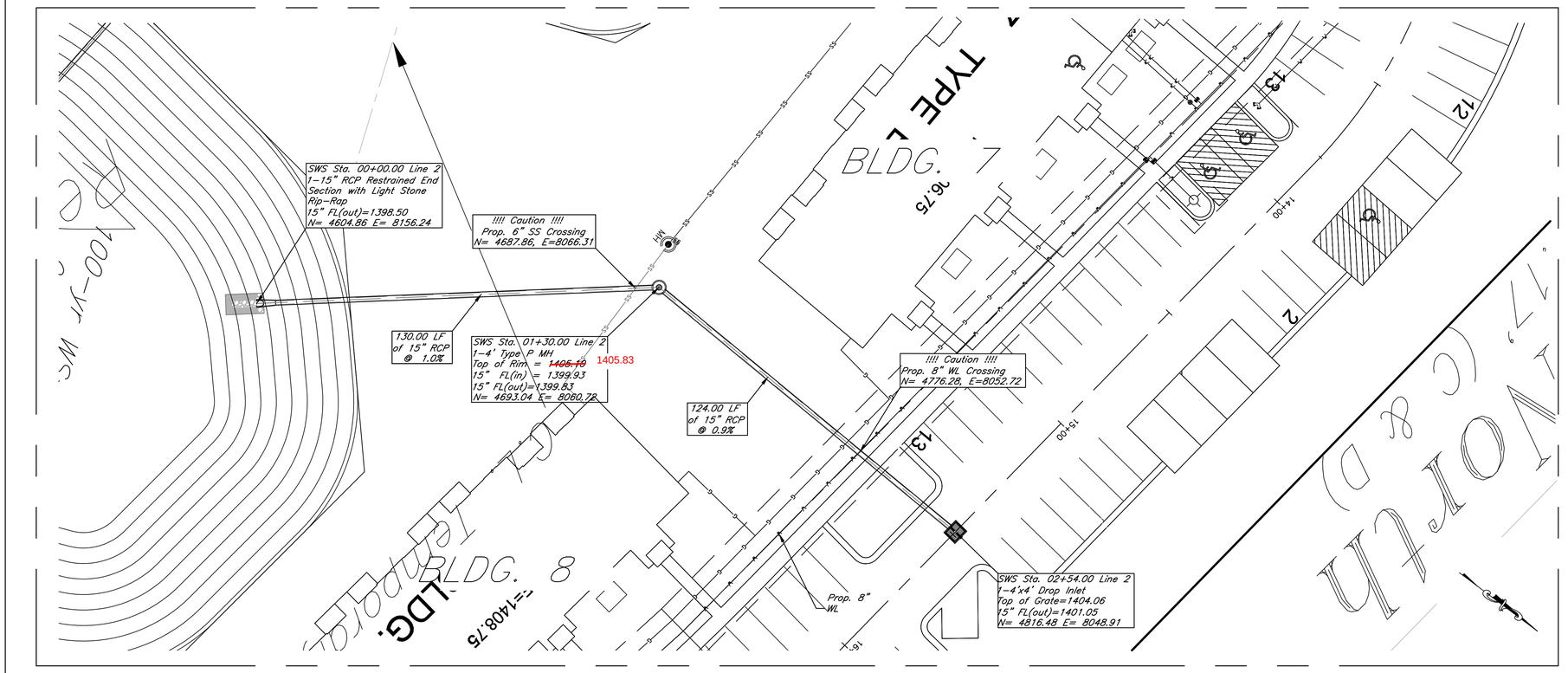
SWS Line 1

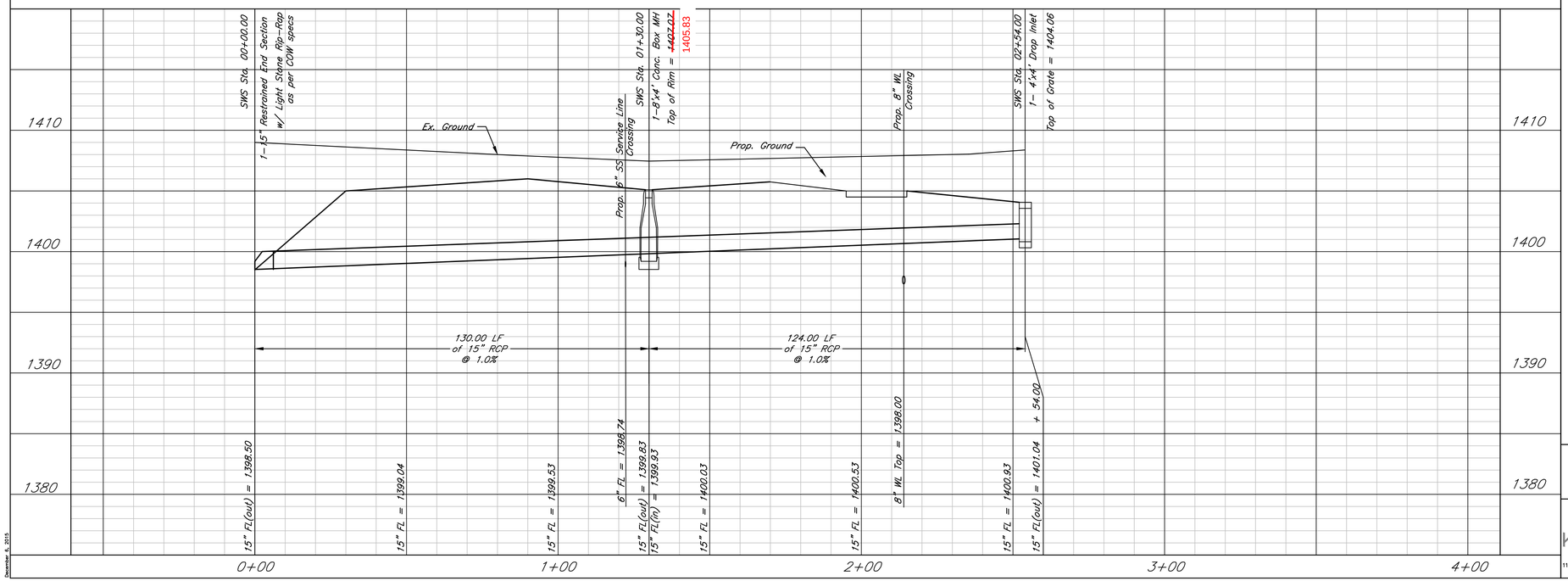
Wichita, Kansas

KEMILLER ENGINEERING PA
117 E. Lewis, Wichita, KS 67202 (316)264-0242

PROJECT NUMBER			
KEM NO. 12037	FILE	DATE 5/2015	SHEET 7.0
DESIGN KM	DRAWN DM	REVISED 11/2015	

December 8, 2015





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KEMILLER ENGINEERING PA
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Wichita, KS 67202
(316)264-0242

KIRK E. MILLER LICENSED 11283 KANSAS PROFESSIONAL ENGINEER

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Stoney Pointe Apartments - Phase II

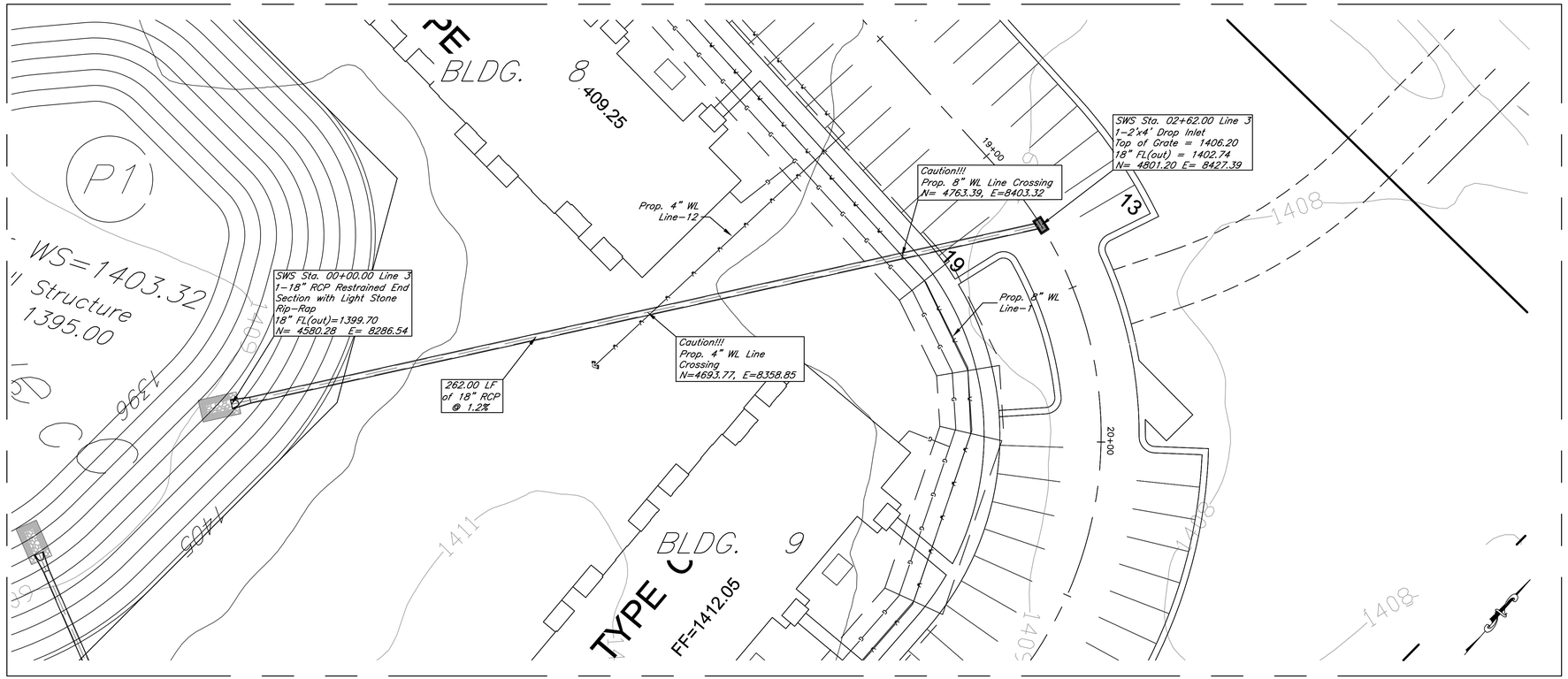
SWS Line 2

Wichita, Kansas

KEMILLER ENGINEERING PA
117 E. Lewis, Wichita, KS 67202 (316)264-0242

PROJECT NUMBER			
KEM NO. 12037	FILE	DATE 7/2015	SHEET 7.1
DESIGN KM	DRAWN DM	REVISED 11/2015	

December 8, 2015



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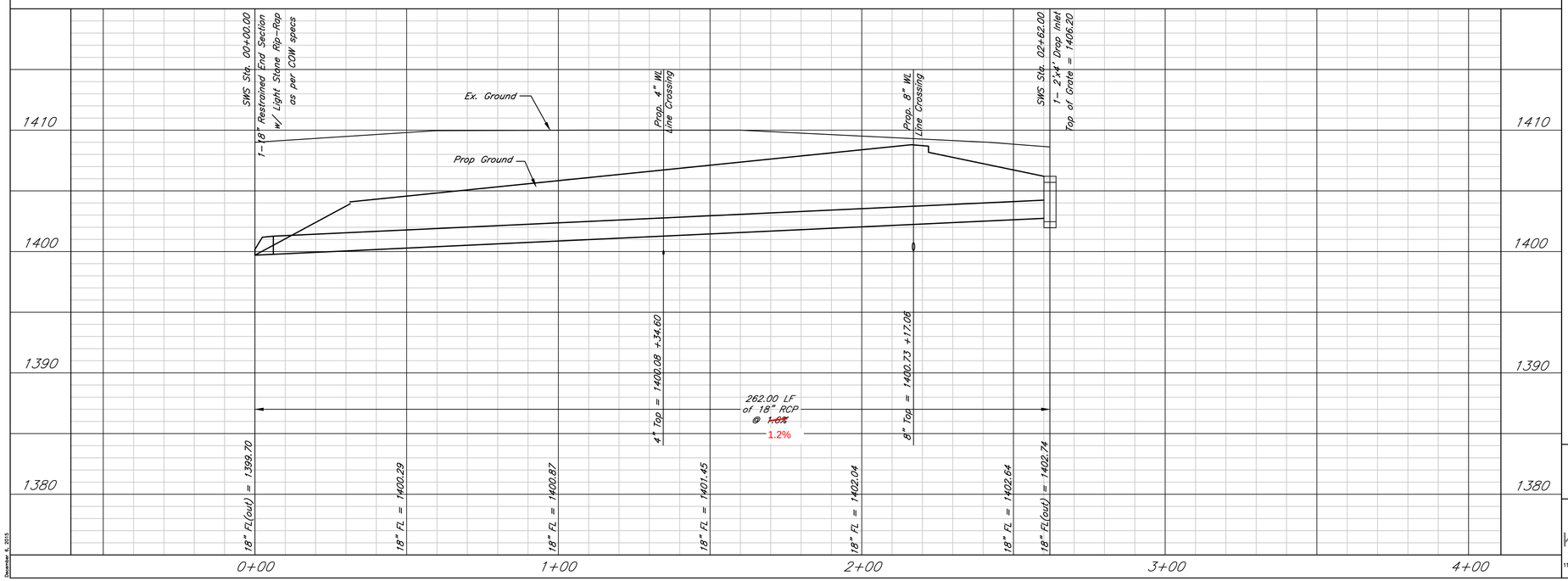

December 6, 2015

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117 E. Lewis,
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KIRK E. MILLER
LICENSED
11283
KANSAS
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(IN FEET)
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(IN FEET)
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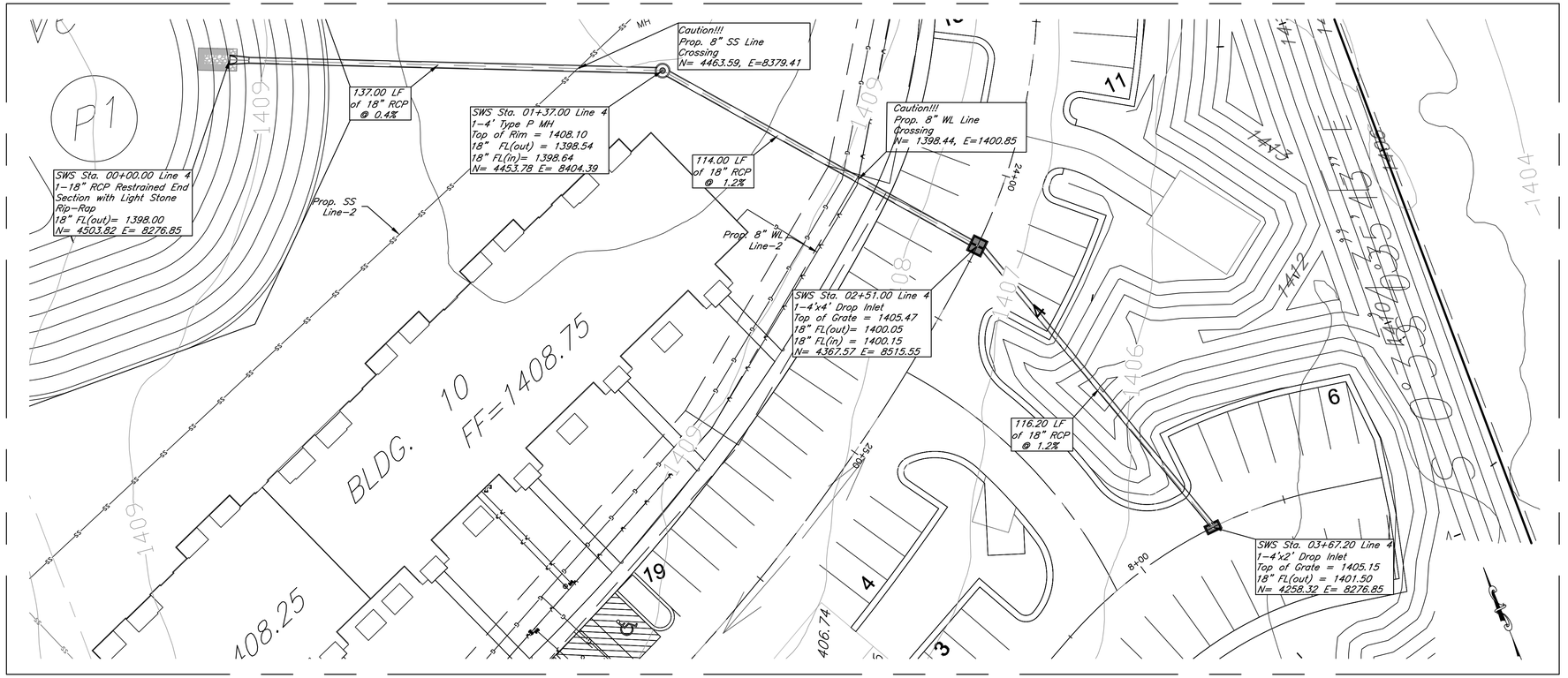
Stoney Pointe Apartments - Phase II

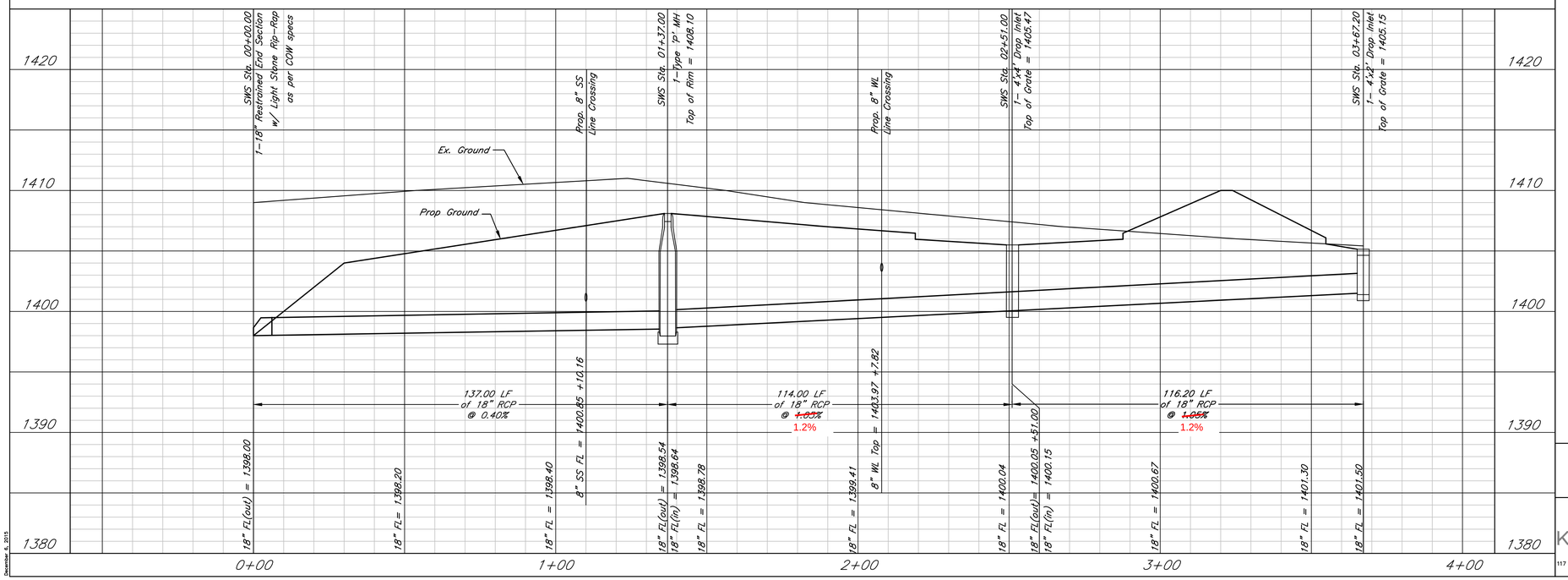
SWS Line 3

Wichita, Kansas

KEMILLER ENGINEERING PA
117 E. Lewis, Wichita, KS 67202 (316)264-0242

PROJECT NUMBER			
KEM NO. 120.37	FILE	DATE 7/2015	SHEET 7.2
DESIGN KM	DRAWN DM	REVISED 11/2015	





December 4, 2015

AS BUILTS

KEMILLER ENGINEERING PA
117 E. Lewis,
Wichita, KS 67202
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KIRK E. MILLER
LICENSED
11283
KANSAS
PROFESSIONAL ENGINEER

DATE: 11.05.2015

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(IN FEET)
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(IN FEET)
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Stoney Pointe Apartments - Phase II

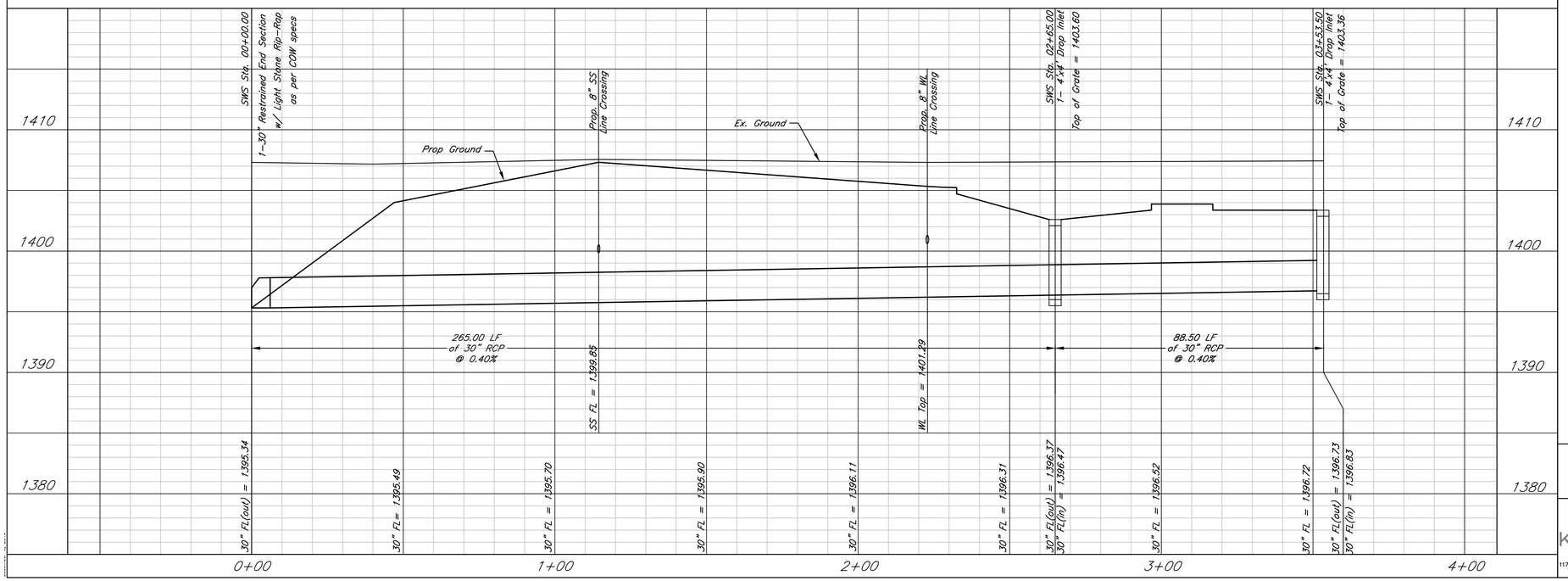
SWS Line 4

Wichita, Kansas

KEMILLER ENGINEERING PA
117 E. Lewis, Wichita, KS 67202 (316)264-0242

PROJECT NUMBER			
KEM NO. 120.37	FILE	DATE 7/2015	SHEET 7.3
DESIGN KM	DRAWN DM	REVISED 11/2015	

Line 5



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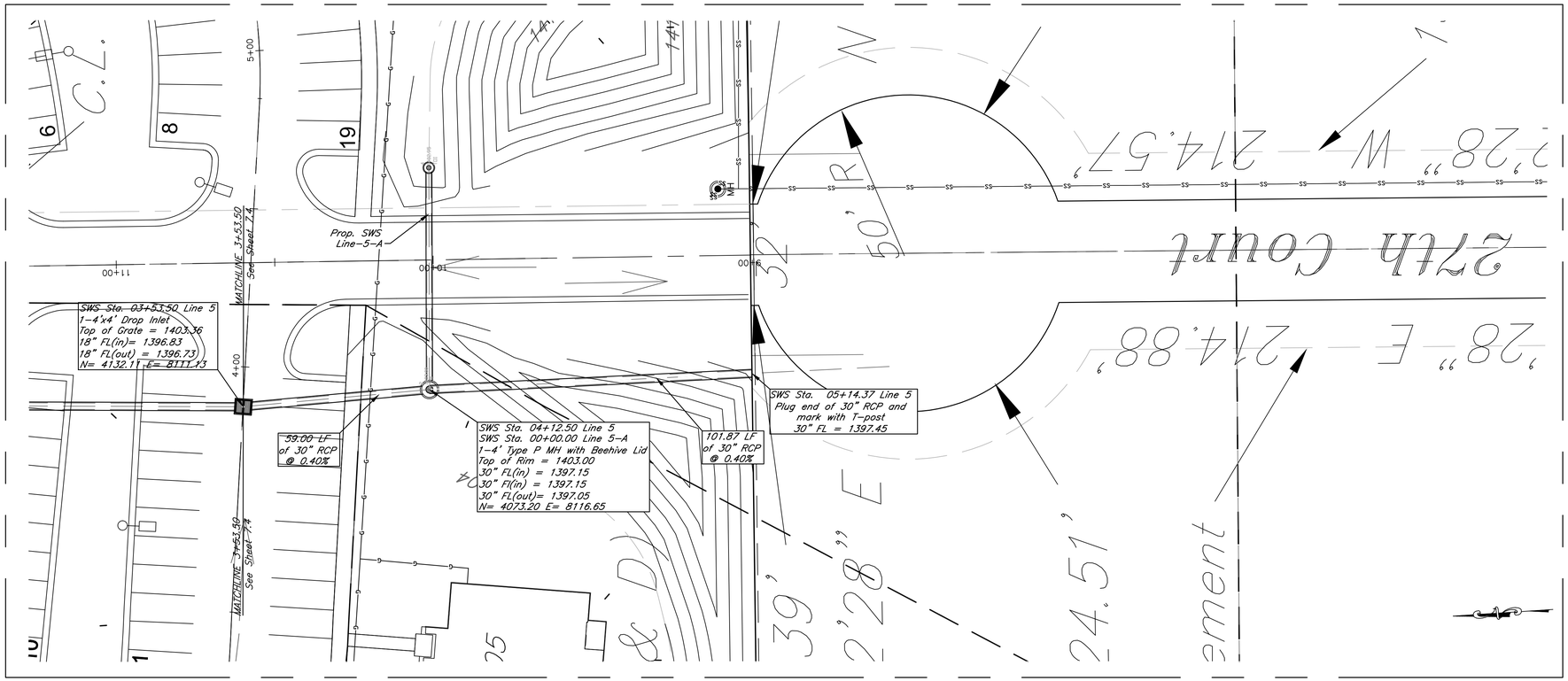
Stoney Pointe Apartments - Phase II

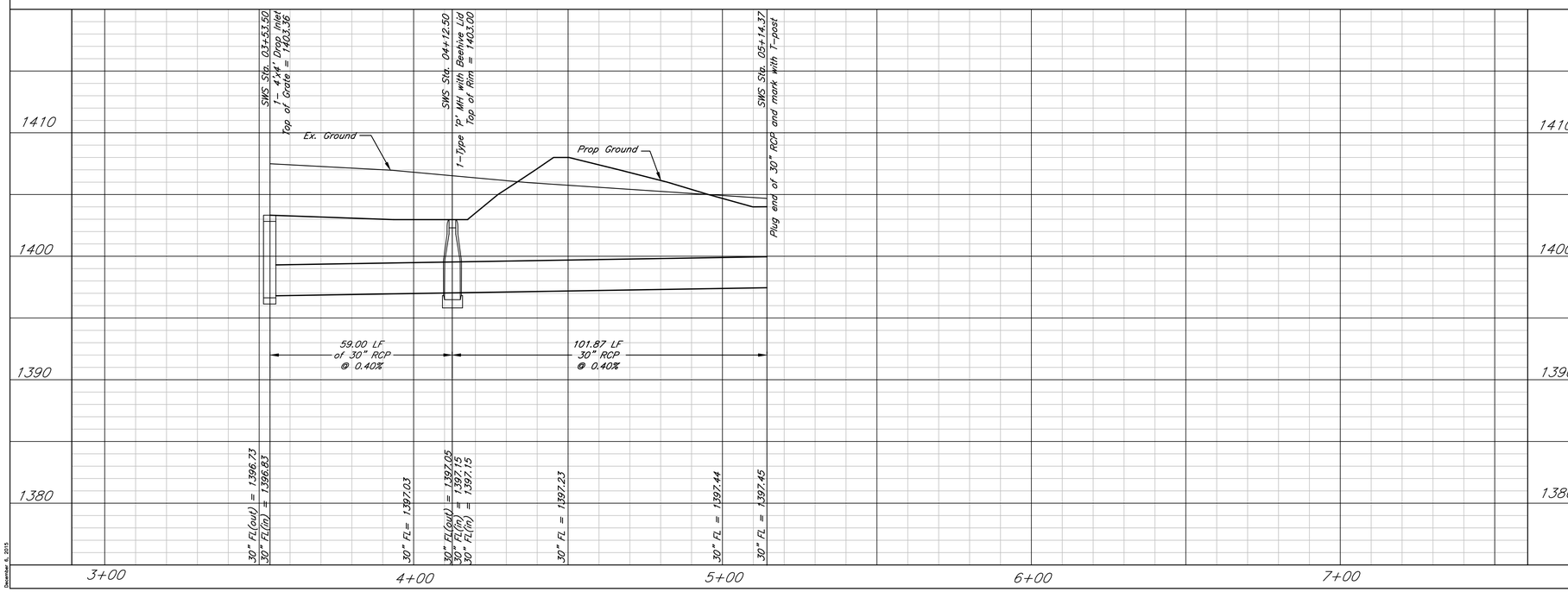
SWS Line 5

Wichita, Kansas

KEMILLER ENGINEERING PA
117 E. Lewis, Wichita, KS 67202 (316)264-0242

PROJECT NUMBER			
KEM NO. 12037	FILE	DATE 7/2015	SHEET 7.4
DESIGN KM	DRAWN DM	REVISED 11/2015	





December 8, 2015

ANOTHER PHASE

KIRK E. MILLER LICENSED 11283 KANSAS PROFESSIONAL ENGINEER

DATE: 11.05.2015

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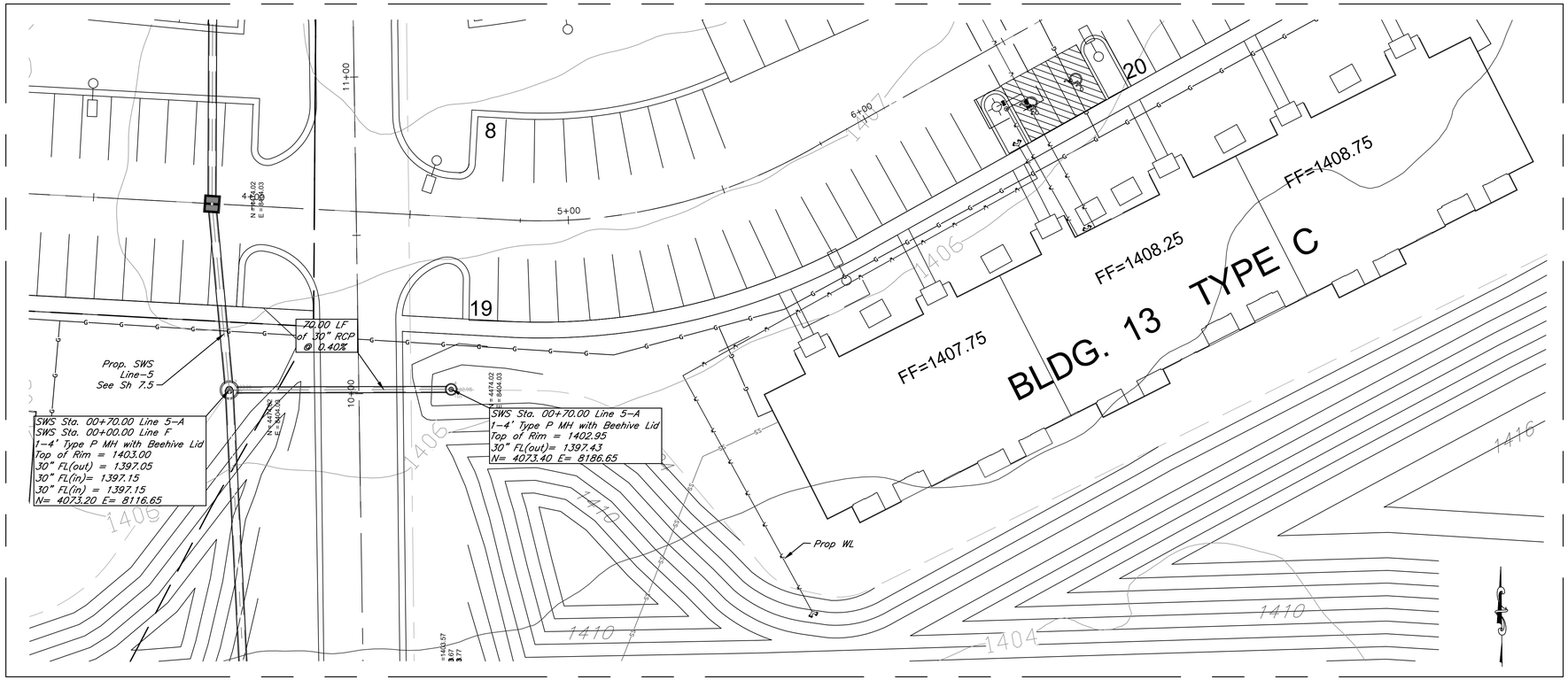
Stoney Pointe Apartments - Phase II

SWS Line 5

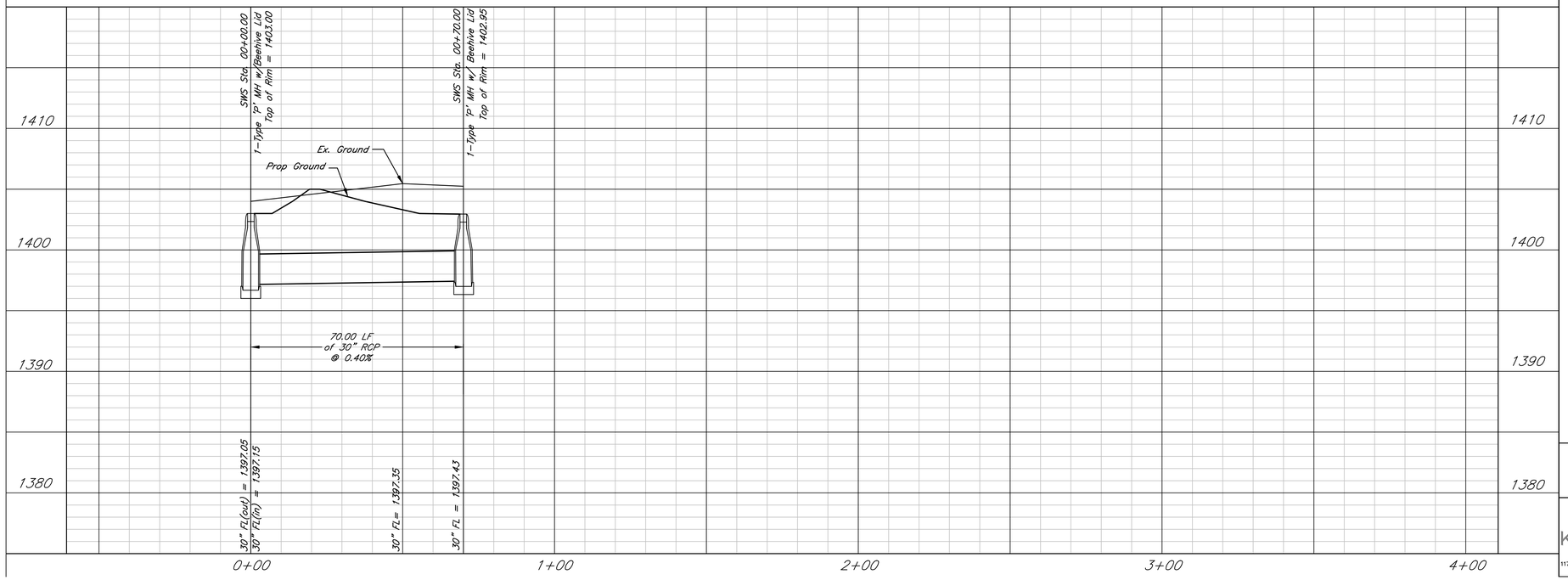
Wichita, Kansas

KEMILLER ENGINEERING PA
117 E. Lewis, Wichita, KS 67202 (316)264-0242

PROJECT NUMBER			
KEM NO. 12037	FILE	DATE 7/2015	SHEET 7.5
DESIGN KM	DRAWN DM	REVISED 11/2015	



Line 5-A



ANOTHER PHASE

KIRK E. MILLER
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KANSAS
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DATE: 11.05.2015

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Stoney Pointe Apartments - Phase II

SWS Line 5-A

Wichita, Kansas

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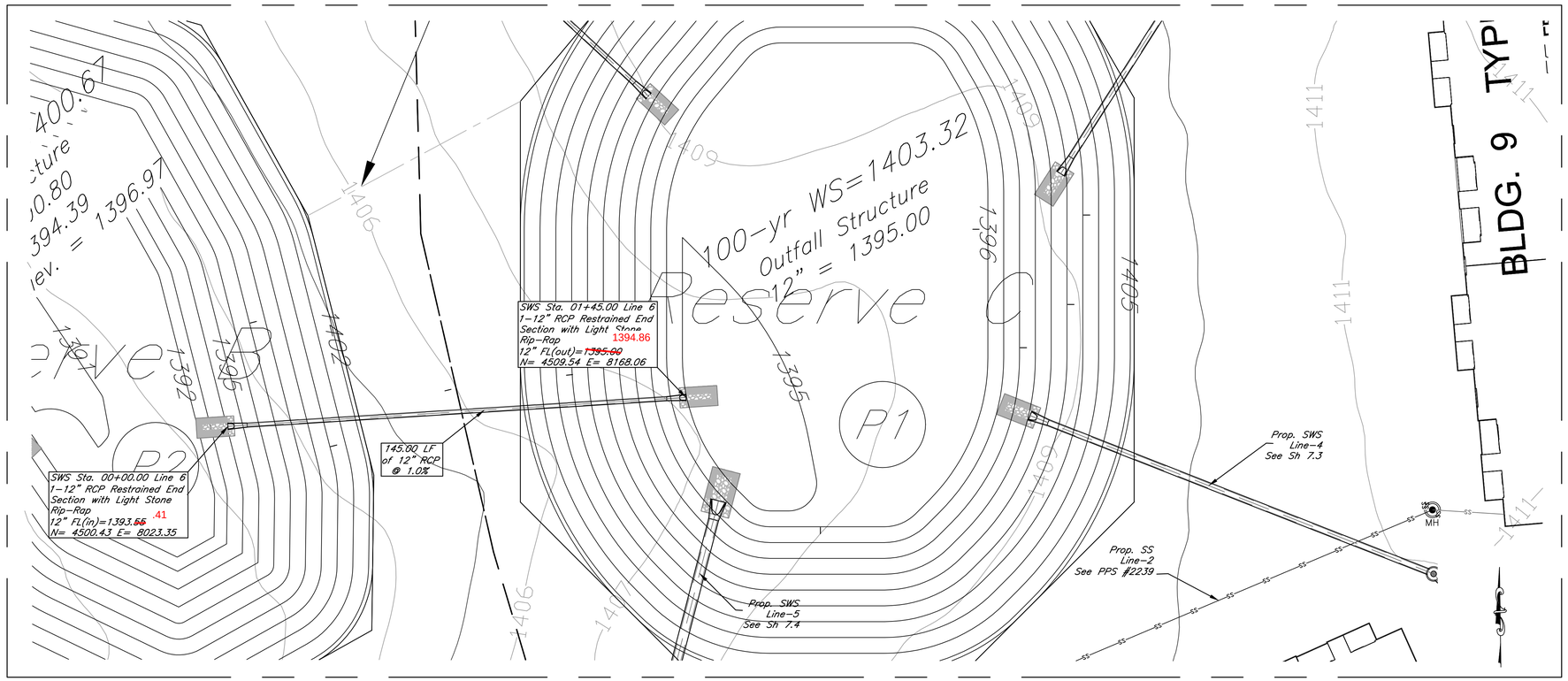
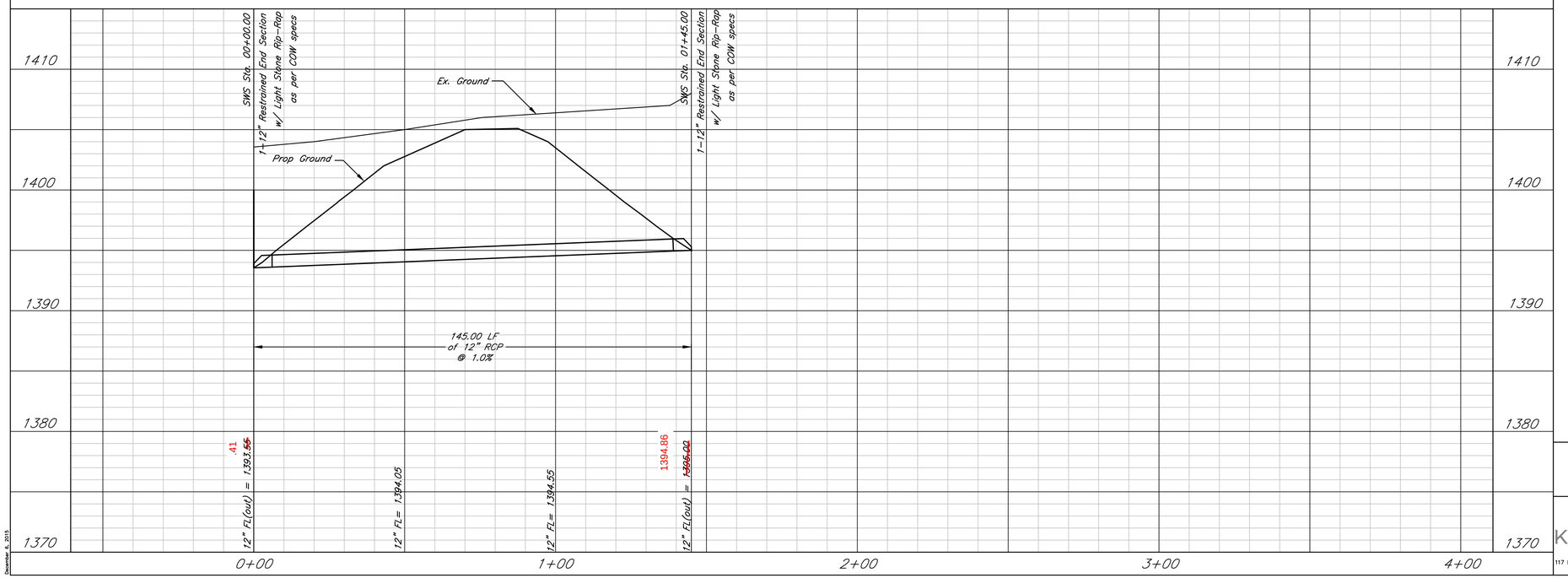
PROJECT NUMBER			
KEM NO. 12037	FILE	DATE 7/2015	SHEET 7.6
DESIGN KM	DRAWN DM	REVISED 11/2015	





December 4, 2015

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Wichita, KS 67202
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KIRK E. MILLER
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Stoney Pointe Apartments - Phase II
SWS Line 6
Wichita, Kansas

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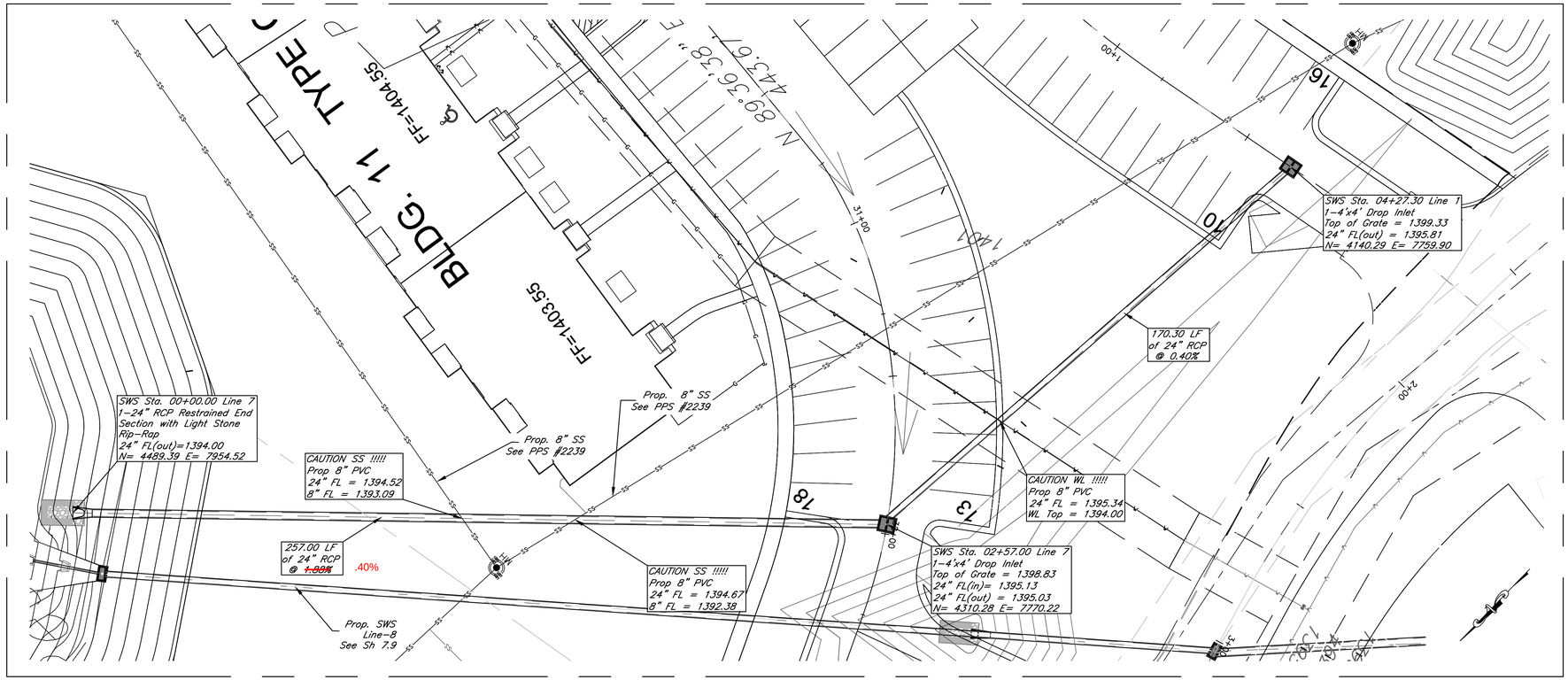
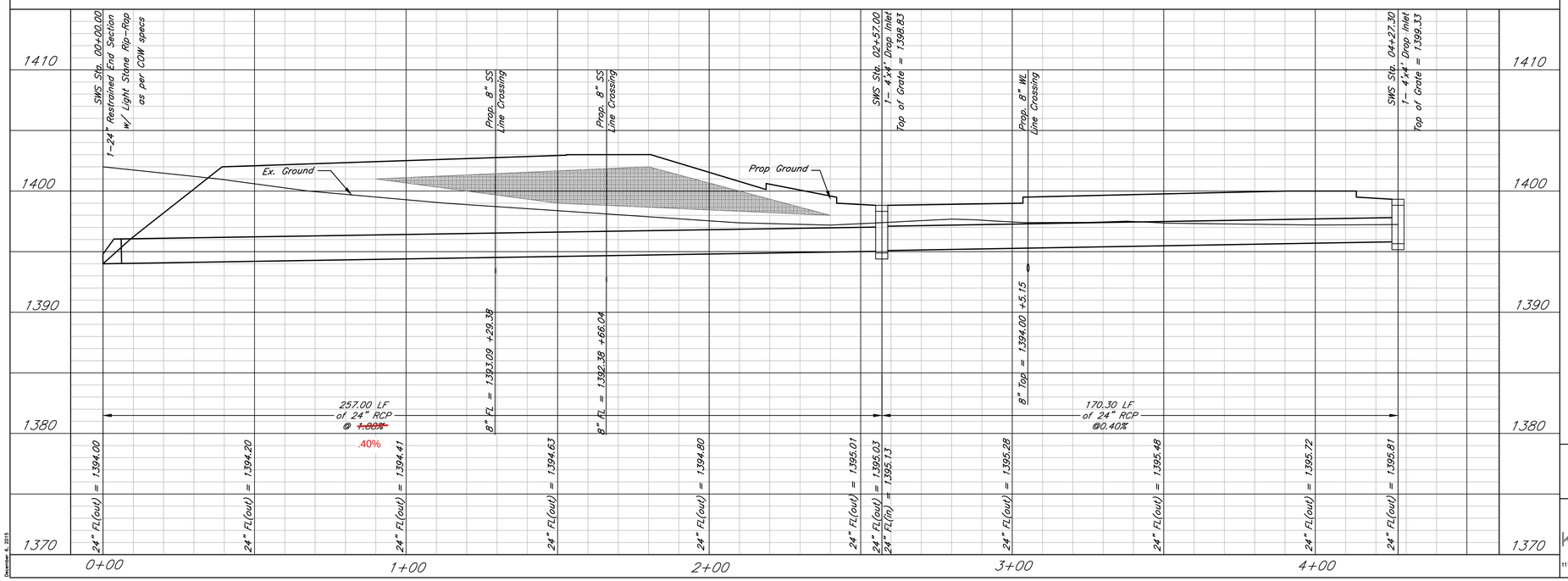
117 E. Lewis, Wichita, KS 67202 (316)264-0242

PROJECT NUMBER			
KEM NO. 12037	FILE	DATE 7/2015	SHEET 7.7
DESIGN KM	DRAWN DM	REVISED 11/2015	



Line 7



December 6, 2015

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Wichita, KS 67202
(316)264-0242

KIRK E. MILLER LICENSED 11283 STATE OF KANSAS PROFESSIONAL ENGINEER

DATE: 11.05.2015

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Stoney Pointe Apartments - Phase II

SWS Line 7

Wichita, Kansas

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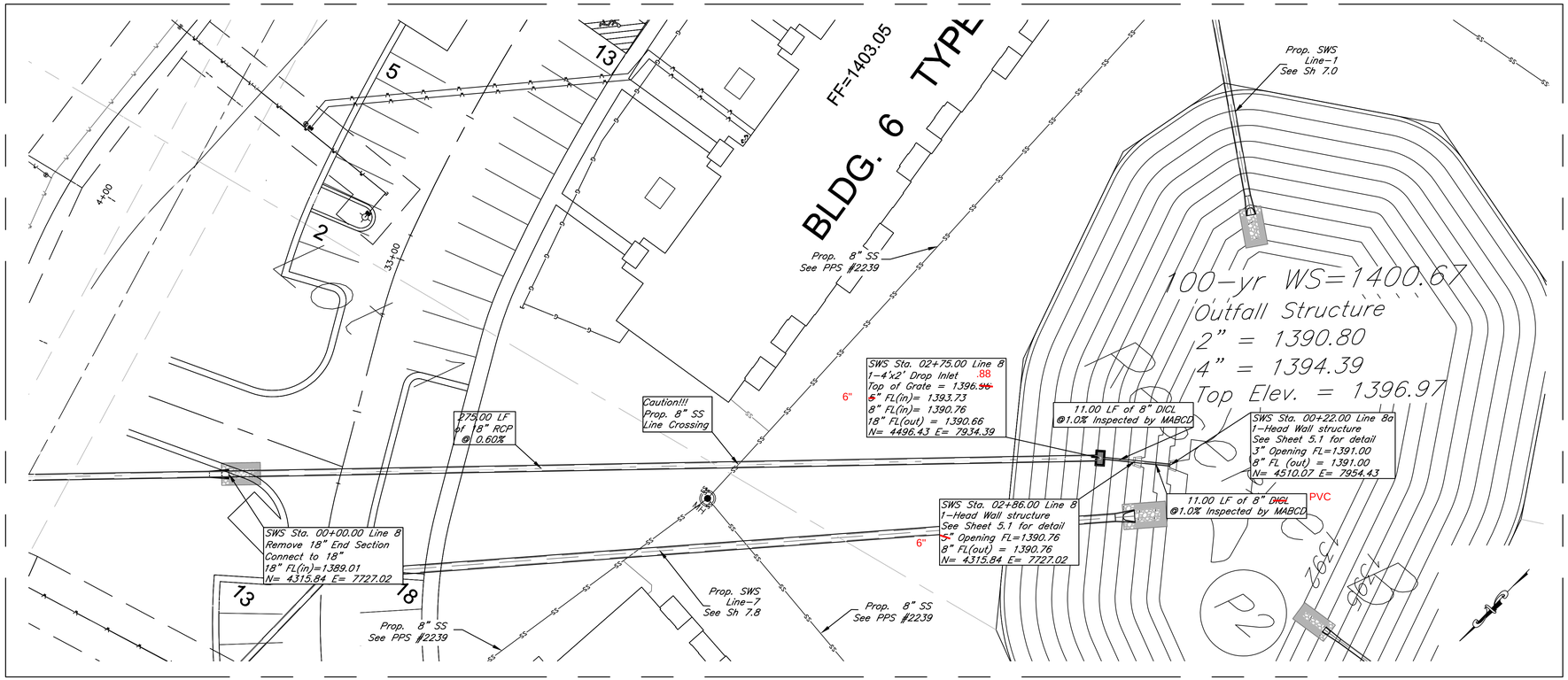
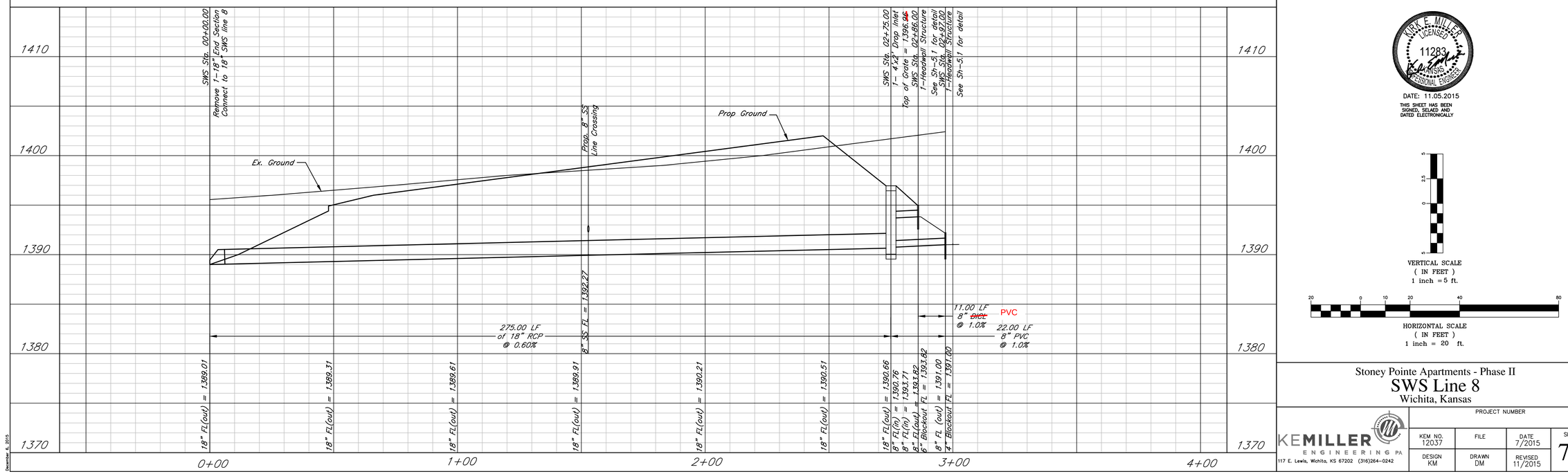
117 E. Lewis, Wichita, KS 67202 (316)264-0242

PROJECT NUMBER			
KEM NO. 12037	FILE	DATE 5/2015	SHEET 7.8
DESIGN KM	DRAWN DM	REVISED 11/2015	





December 6, 2015

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Wichita, KS 67202 (316)264-0242

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117 E. Lewis,
Wichita, KS 67202 (316)264-0242

KIRK E. MILLER LICENSED 11283 KANSAS PROFESSIONAL ENGINEER

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Stoney Pointe Apartments - Phase II

SWS Line 8

Wichita, Kansas

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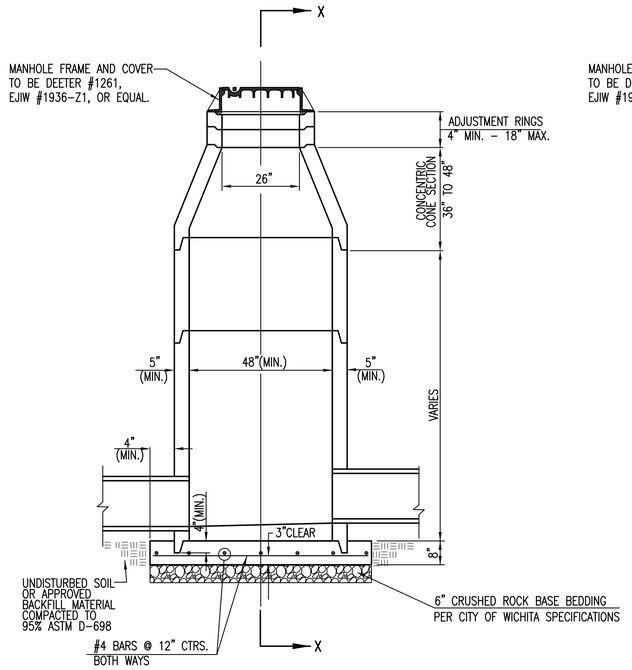
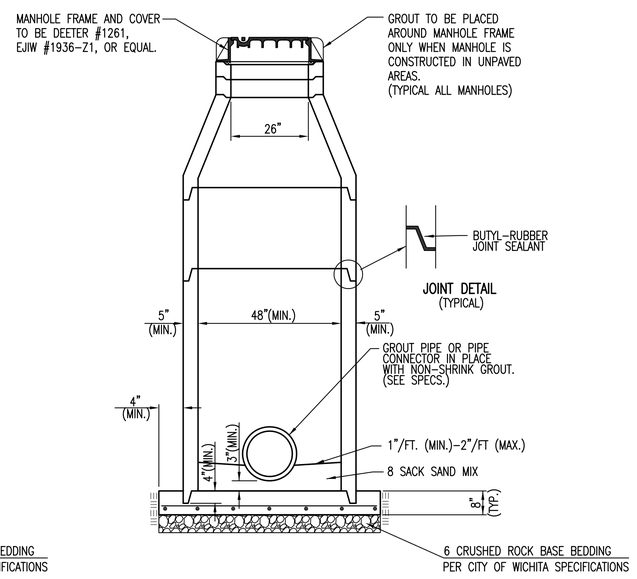
117 E. Lewis, Wichita, KS 67202 (316)264-0242

PROJECT NUMBER			
KEM. NO. 12037	FILE	DATE 7/2015	SHEET 7.9
DESIGN KM	DRAWN DM	REVISED 11/2015	



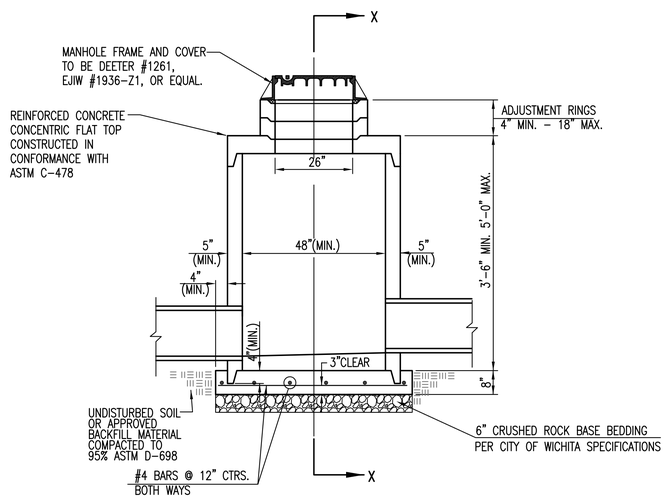
PRECAST
STANDARD MANHOLE
TYPE "A"



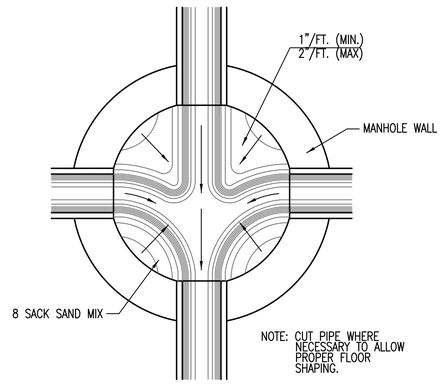
SECTION X-X
(TYPICAL)

GENERAL NOTES

1. IF, IN THE OPINION OF THE ENGINEER, THE MANHOLE SUBGRADE APPEARS UNSTABLE, THE CONTRACTOR WILL HAVE THE OPTION TO COMPACT SUBGRADE AS SHOWN OR INCREASE THE THICKNESS OF THE MANHOLE BASE AS DIRECTED BY THE ENGINEER.
2. STEEL REINFORCING WILL BE REQUIRED IN ALL MANHOLE BASES.
3. ALL MANHOLE CONSTRUCTION SHALL BE WATER TIGHT.
4. TOP OF MANHOLE FLOOR SLAB SHALL BE AT LEAST 3 INCHES BELOW THE FLOW LINE OF THE OUTLET PIPE TO INSURE SUFFICIENT MINIMUM THICKNESS OF SHAPED INVERT.
5. ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISION OF ASTM C-478 AS MODIFIED BY THE SPECIFICATIONS.
6. CONCRETE USED FOR MANHOLE CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
7. PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO MANHOLE BASE.
8. MANHOLES WITH PIPE SIZES 24" AND LARGER SHALL HAVE 5 FOOT INSIDE DIAMETER (MIN.)
9. MANHOLES WITH PRECAST BASES MAY BE USED AT THE CONTRACTORS OPTION. THESE MANHOLES SHALL HAVE AN 8" MINIMUM BASE THICKNESS AND SHALL BE PLACED ON AN 8" MIN. CRUSHED ROCK BASE. PIPES SHALL BE ENCASED WITH CRUSHED ROCK TO AT LEAST 3 FEET FROM THE MANHOLE WALL.
10. CONTRACTOR SHALL REMOVE LIFTING HOOKS AFTER INSTALLATION. RECESSES IN MANHOLE WALL SHALL BE GROUTED FLUSH TO THE MANHOLE WALL WITH HYDRAULIC CEMENT AFTER THE MANHOLE IS IN PLACE. LIFTING HOLES THRU THE MANHOLE WALL WILL NOT BE ACCEPTED.
11. THE ENDS OF ALL PIPES IN MANHOLES SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE MANHOLE WALL.
12. MANHOLE INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE MANHOLE WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.
13. MANHOLE FRAME AND COVER TO BE DEETER #1261, EJIW #1936-Z1, OR APPROVED EQUAL, SEE SW-303.
14. FOR FLAT GRATED INLET APPLICATION, GRATE TO BE DEETER #1933, EJIW #1205 MDI, OR APPROVED EQUAL.
15. FOR BEEHIVE GRATE APPLICATION, GRATE TO BE DEETER #4495, EJIW #120545, OR APPROVED EQUAL.



PRECAST
SHALLOW MANHOLE
TYPE "B"



TYPICAL MANHOLE
FLOOR SHAPING

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

PRECAST CONCRETE MANHOLE (STORM SEWER)

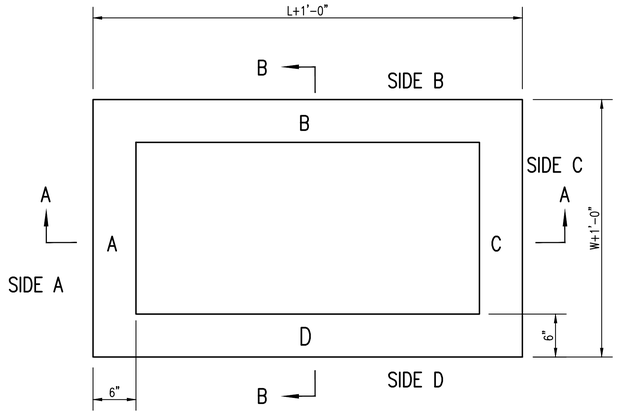
CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
		11/2010

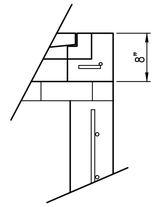
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET
8.0

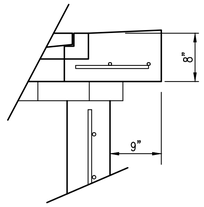
SW-301



TOP VIEW

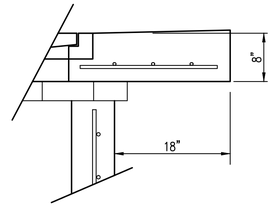


FLUSH STYLE TOP
NO APRON



9" APRON

* APRON TO EXTEND ON ALL 4 SIDES OF INLET. DESIGNER TO DESIGNATE APRON SIZE.



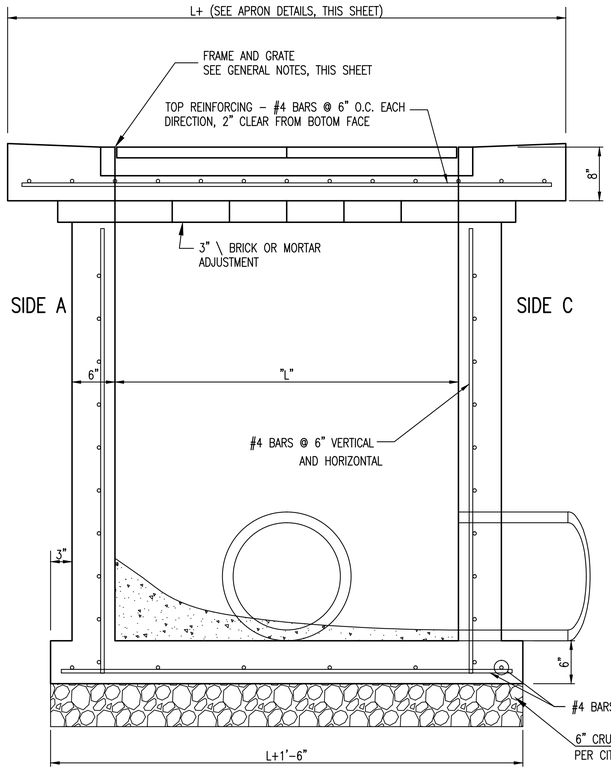
18" APRON

W=2' and L=2' for SINGLE DROP INLET
W=2' and L=4' for DOUBLE DROP INLET

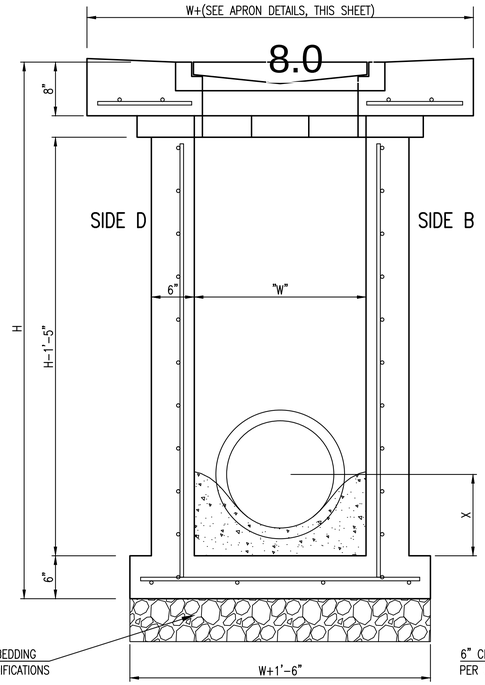
The structure(s) on this detail sheet are designed for HS-20 loading at these specific dimensions only. If larger dimensions are required, the ENGINEER shall provide a project specific structure design for approval by the City Engineer's office.

GENERAL NOTES

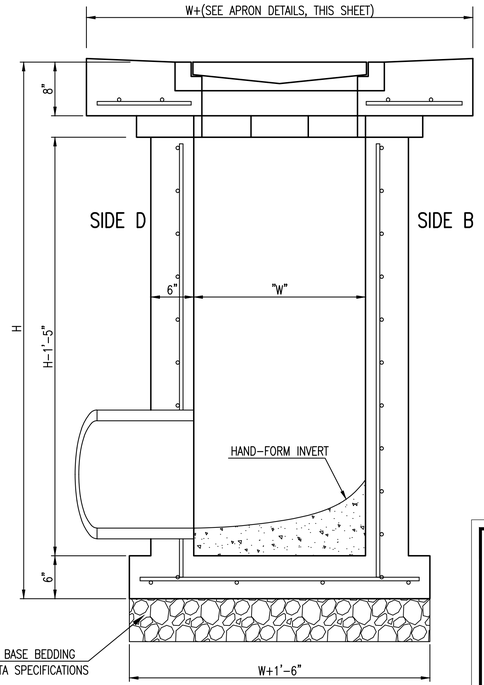
1. GRATE FRAME TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK. CONCRETE USED FOR INLET CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
2. INLET INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE INLET WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.
3. THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.
4. INLET FRAME AND GRATE TO BE DEETER #2433, EJIW #5391-Z1 OR APPROVED EQUAL FOR 2'x2' SINGLE DROP INLET AND DEETER #2434, EJIW #5391 Z3 OR APPROVED EQUAL FOR 2'x4' DOUBLE DROP INLET.
5. CONTRACTOR SHALL REMOVE LIFTING HOOKS AFTER INSTALLATION. RECESSES IN INLET WALL SHALL BE GROUTED FLUSH TO THE INLET WALL WITH HYDRAULIC CEMENT AFTER THE INLET IS IN PLACE. LIFTING HOLES THRU THE INLET WALL WILL NOT BE ACCEPTED.



SECTION "A-A"



SECTION "B-B"
END OUTLET



SECTION "B-B"
SIDE OUTLET

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

SINGLE/DOUBLE DROP INLET

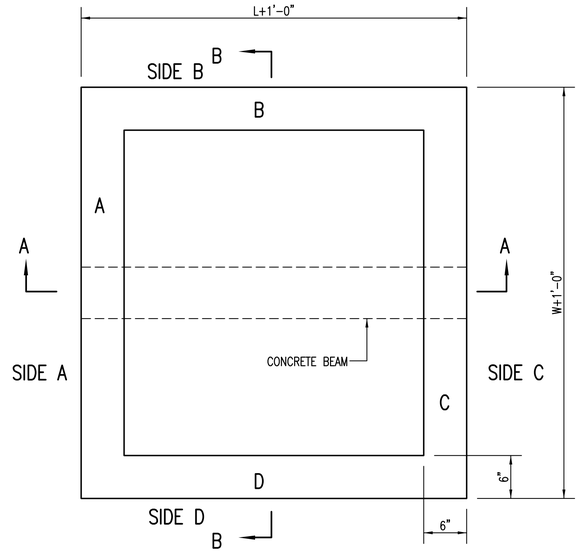
CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
		05/2011

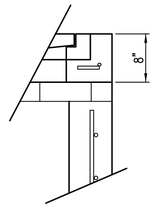
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET 8.1

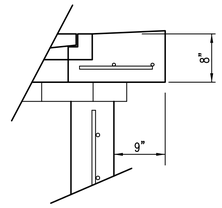
SW-201



TOP VIEW

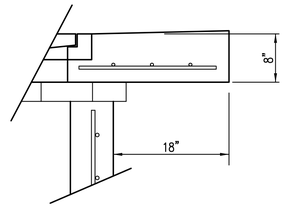


FLUSH STYLE TOP
NO APRON



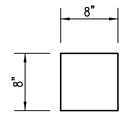
9" APRON

* APRON TO EXTEND ON ALL 4 SIDES OF INLET. DESIGNER TO DESIGNATE APRON SIZE.

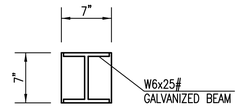


18" APRON

BEAM REQUIRED FOR THIS INLET



CONCRETE BEAM POCKET



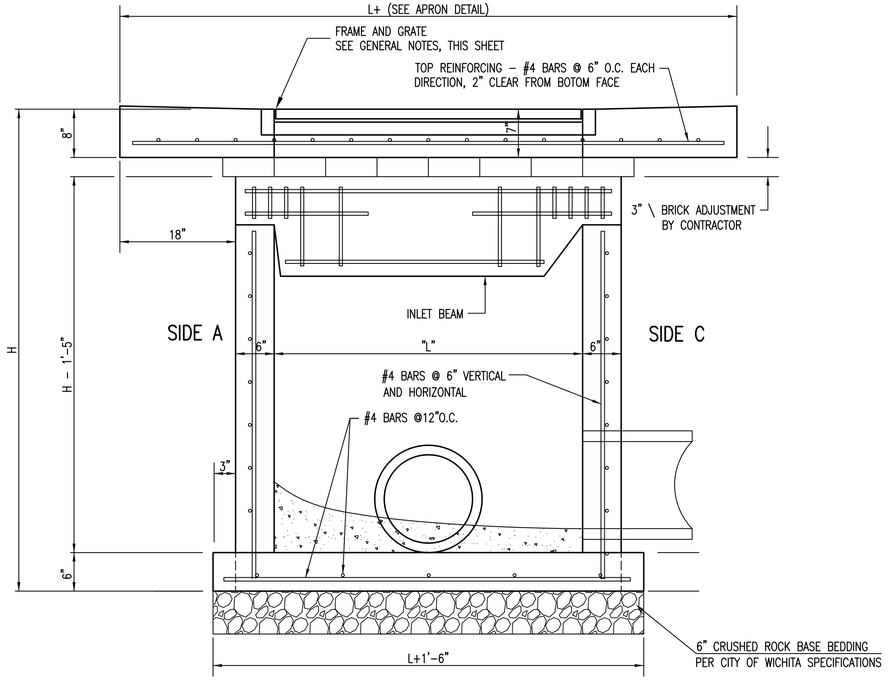
GALV. STEEL BEAM POCKET

W=4'-4" and L=4' for DOUBLE DROP INLET

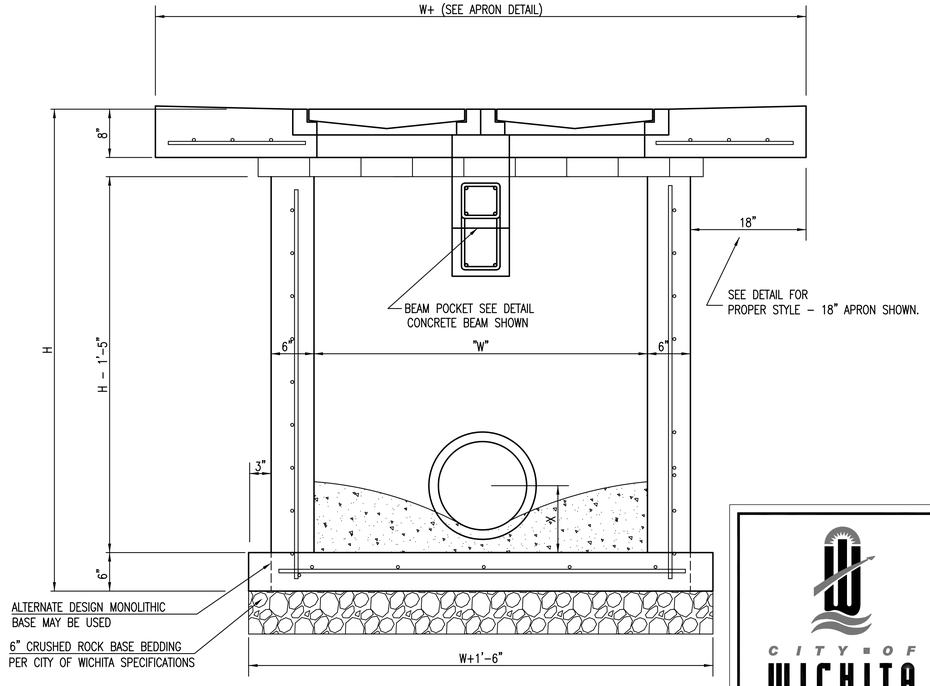
The structure(s) on this detail sheet are designed for HS-20 loading at these specific dimensions only. If larger dimensions are required, the ENGINEER shall provide a project specific structure design for approval by the City Engineer's office.

GENERAL NOTES

1. GRATE FRAME TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK. CONCRETE USED FOR INLET CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
2. INLET INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE INLET WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.
3. THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.
4. INLET FRAME AND GRATE TO BE DEETER #2433, EJIW #5391-Z1 OR APPROVED EQUAL FOR 2'x2' SINGLE DROP INLET AND DEETER #2434, EJIW #5391 Z3 OR APPROVED EQUAL FOR 2'x4' DOUBLE DROP INLET.
5. CONTRACTOR SHALL REMOVE LIFTING HOOKS AFTER INSTALLATION. RECESSES IN INLET WALL SHALL BE GROUTED FLUSH TO THE INLET WALL WITH HYDRAULIC CEMENT AFTER THE INLET IS IN PLACE. LIFTING HOLES THRU THE INLET WALL WILL NOT BE ACCEPTED.



SECTION "A-A"



SECTION "B-B"

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

DOUBLE DOUBLE DROP INLET WITH BEAM

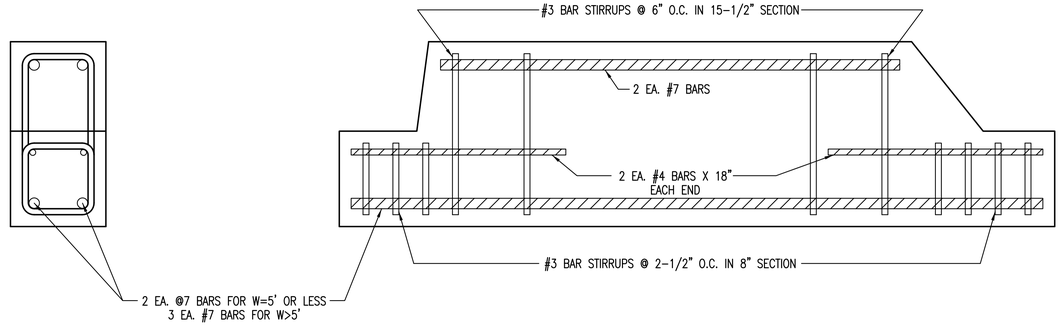
CITY ENGINEER
GARY JANZEN, P.E..

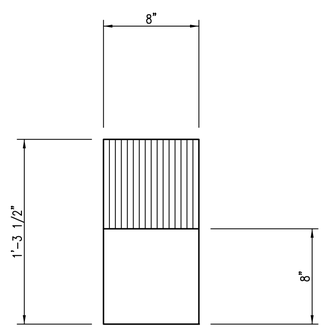
PROJECT NUMBER	OCA NUMBER	DATE
		05/2011

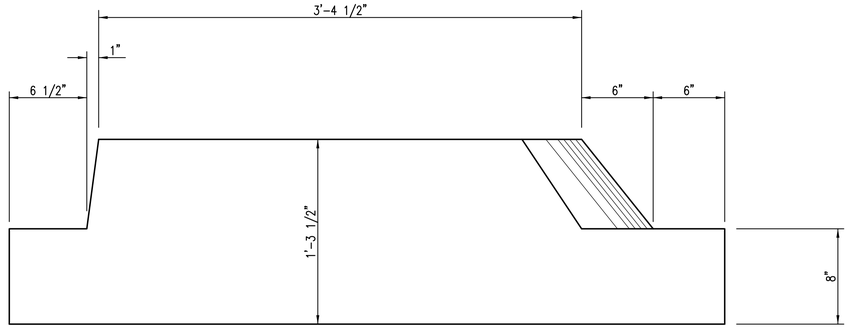
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET 8.2

SW-202







CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

INLET BEAM

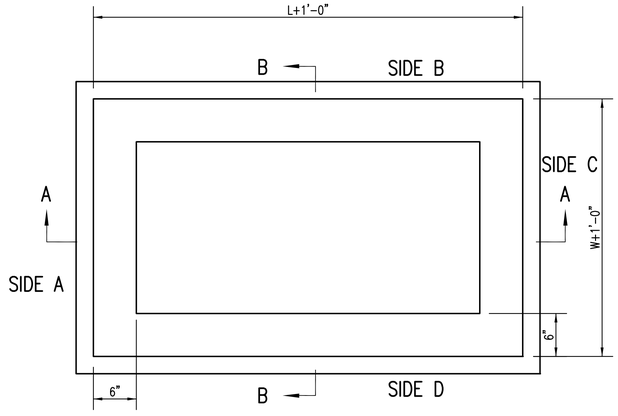
CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
		11/2010

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET
8.3

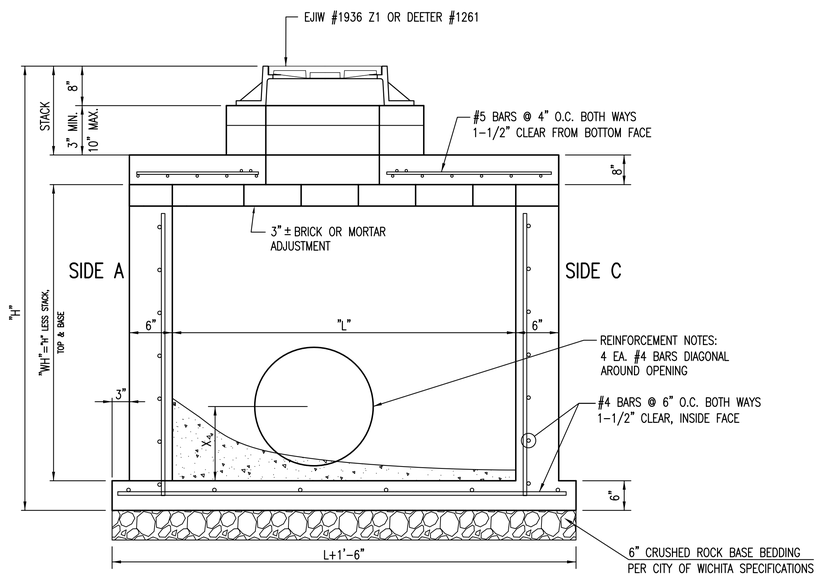
SW-110



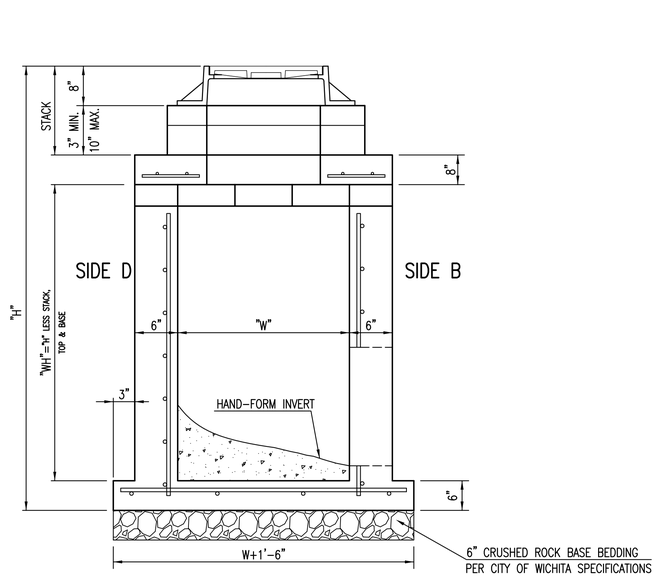
TOP VIEW

GENERAL NOTES

1. GRATE FRAME TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK. CONCRETE USED FOR INLET CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
2. INLET INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE INLET WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.
3. THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.
4. INLET FRAME AND GRATE TO BE DEETER #1261, EJIW #1936-Z1 OR APPROVED EQUAL, SEE SW-303.
5. CONTRACTOR SHALL REMOVE LIFTING HOOKS AFTER INSTALLATION. RECESSES IN MANHOLE WALL SHALL BE GROUTED FLUSH TO THE MANHOLE WALL WITH HYDRAULIC CEMENT AFTER THE MANHOLE IS IN PLACE. LIFTING HOLES THRU THE MANHOLE WALL WILL NOT BE ACCEPTED.



SECTION "A-A"



SECTION "B-B"

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

REINFORCED CONCRETE MANHOLE (STORM SEWER)

CITY ENGINEER
GARY JANZEN, P.E.

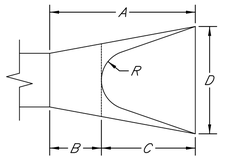
PROJECT NUMBER	OCA NUMBER	DATE
		11/2010

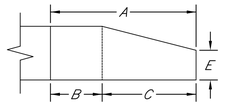
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

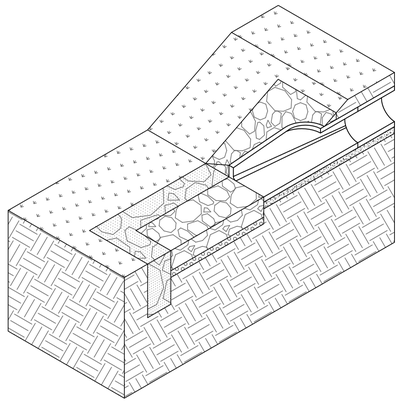
SHEET
8.4

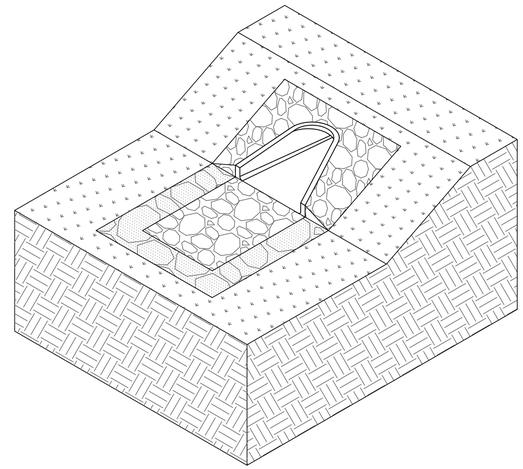
SW-302

Re-Enforced Concrete Pipe Information									
Pipe Size	Wall Thickness	Weight per ft	Elliptical Equivalent	End Section Information "A"	"B"	"C"	"D"	"E"	"R"
12"	2.0"	100 lbs	-----	6.07'	4.07'	2.00'	2.00'	0.33'	0.75'
15"	2.5"	128 lbs	-----	6.08'	3.83'	2.25'	2.50'	0.50'	0.92'
18"	2.5"	168 lbs	23"x14"	6.08'	3.83'	2.25'	3.00'	0.75'	1.00'
24"	3.0"	268 lbs	30"x19"	6.12'	2.50'	3.62'	4.00'	0.79'	1.16'
30"	3.5"	385 lbs	38"x24"	6.12'	1.64'	4.50'	5.00'	1.00'	1.25'
36"	4.0"	524 lbs	45"x29"	8.14'	2.89'	5.25'	6.00'	1.25'	1.66'
42"	4.5"	684 lbs	53"x34"	8.16'	2.92'	5.25'	6.50'	1.75'	1.83'
48"	5.0"	868 lbs	60"x38"	8.16'	2.16'	6.00'	7.00'	2.00'	1.83'
54"	5.5"	1070 lbs	68"x43"	8.18'	2.77'	5.42'	7.50'	2.25'	2.00'
60"	6.0"	1290 lbs	-----	8.25'	3.25'	5.00'	8.00'	2.92'	2.00'
66"	6.5"	1540 lbs	-----	-----	-----	-----	-----	-----	-----
72"	7.0"	1800 lbs	-----	8.25'	1.75'	6.50'	9.00'	3.00'	2.00'
84"	-----	-----	-----	9.25'	1.75'	7.54'	10.00'	3.00'	2.00'
all measurements approximate									









GRADATION REQUIREMENTS:

1. Heavy Stone Riprap: Heavy stone riprap shall be constructed twenty–four inches (24") in thickness and shall be placed on a stone filter course backing having a thickness of nine inches (9"). Stone used in riprap shall meet the required quality requirements and the following size requirements.

Weight of Individual Pieces	Minimum Percent Larger Than
1,000 lbs	0%
500 lbs	50%
75 lbs	90%

Filter course backing for heavy stone riprap shall be produced from the stone meeting the quality requirements of stone for riprap and shall have the following size requirements

Sieve Size	Percent Retained
6"	0%
5"	5–25%
2"	40–60%
3/8"	75–95%

2. Light Stone Riprap: Light stone riprap shall be constructed eighteen inches (18") in thickness and shall be placed on a stone filter course backing having a thickness of six inches (6"). Stone used in riprap shall meet the required quality requirements and the following size requirements.

Weight of Individual Pieces	Minimum Percent Larger Than
500 lbs	0%
250 lbs	50%
125 lbs	70%
10 lbs	90%

Filter course backing for heavy stone riprap shall be produced from the stone meeting the quality requirements of stone for riprap and shall have the following size requirements

Sieve Size	Percent Retained
4"	0%
2"	10–40%
1"	25–60%
3/8"	55–85%
#4	70–95%

INSTALLATION OF STONE RIPRAP:

Stone riprap shall be placed on a prepared bedding layer so as to produce a reasonably well–graded mass with a minimum percentage of void. Stone riprap shall be placed to it's full course thickness in one operation without displacing the bedding. Placing stone riprap by dumping into chutes or any other method likely to cause segregation will not be permitted. Placement of stone on the slope and in toe trenches shall be accomplished by controlled dumping directly in place.

Bulldozing of stone from the upper banks will not be permitted. use of a drag line or similar equipment operated from the top of the bank to pull stone into position on the upper slope will be permitted. Stone riprap may be placed below water, providing it is placed by skip or another approved method which will prevent segregation. Larger stones should be distributed and the entire mass of stones in their final position should be stable and free of pockets of small stones and clusters of larger of larger ones; rearrangement of individual pieces by hand may be required to obtain the results described above. A tolerance of plus three inches (3") from the lines and grades shown on the continuous over an area greater than 100 square feet. Hand placing of riprap stones shall be necessary to produce reasonably true surfaces and close fit of stones. The larger spaces between the stones shall be fitted with spalls of suitable size, rammed thoroughly in place. The spaces between stones shall be fitted with smaller rock, carefully hand placed in such a manner to obtain a tight surface.

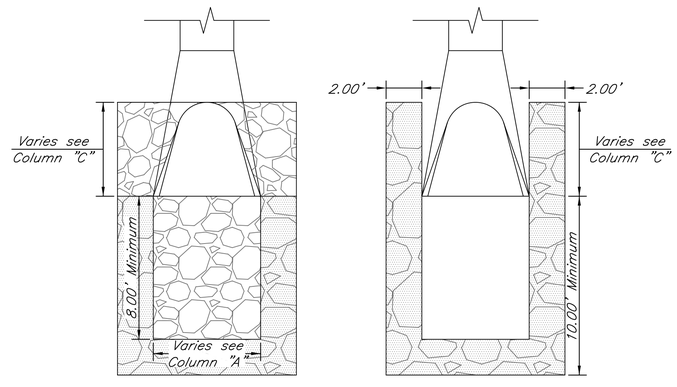
Toewalls shall be installed along all unprotected edges of edges of stone riprap construction. Such toewalls shall be constructed using the same size stone specified for t he riprap with the toewall thickness being the same thickness as specified for the riprap without the filter course backing. The toewalls shall extend a minimum distance of 2' below the bottom of the filter course backing material and they shall be constructed perpendicular to the top surface of the riprap construction. Toewall construction shall be grouted in place for the full depth from the bottom of the toewall to the top surface of the riprap for the full thickness of the toewall to the top surface of riprap for the full thickness of the toewall.

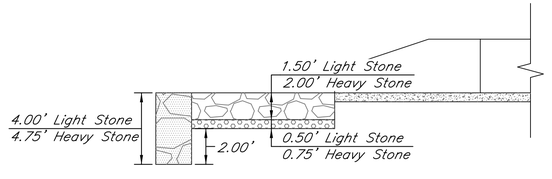
When specified, all riprap placed within the limits of a dimension of 10' from pipe ends, pipe end sections and headwall structures, as measured from the outside edges of such pipe ends or structures, shall be grouted in place. Other area shall be grouted when indicated by the plans. When grouted stone riprap is required, the spaces between the riprap stones shall be filled with water to form a plastic mix. The grout mixture shall be poured and broomed into the voids around the rock until all such voids are completely filled. Grouted stone riprap will be cured in the same manner as specified in the standard specifications for concrete pavement.

GROUTED TOEWALL

STONE RIPRAP

FILTER COURSE BACKING



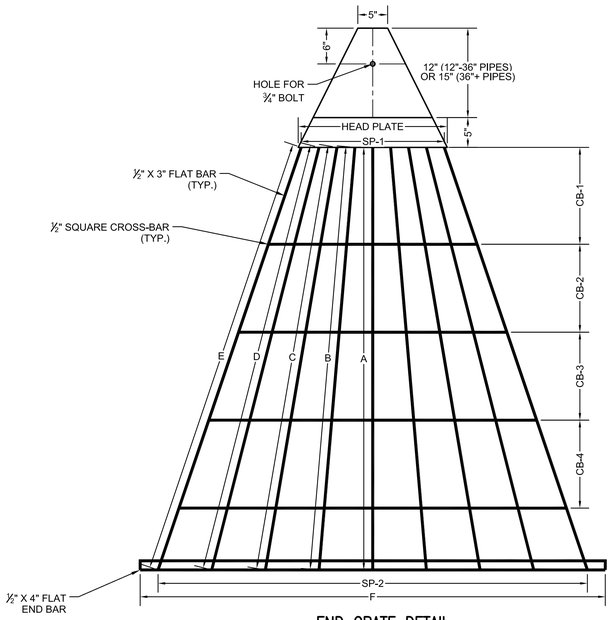


kemiller engineering
516 S. Market, Wichita, KS 67202 (316)264–0242

KEM NO. 12037

DATE 7/2015

SHEET 8.5



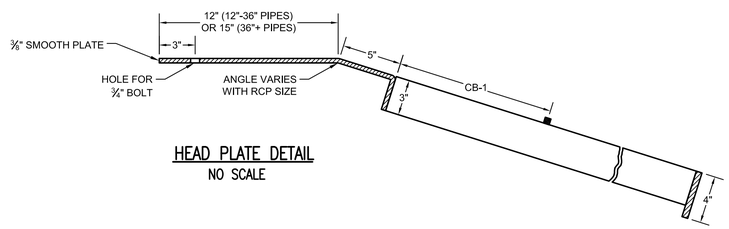
END GRATE DETAIL

NO SCALE

NOTE: GRATE TO BE USED AS DIRECTED BY THE CITY OF WICHITA.

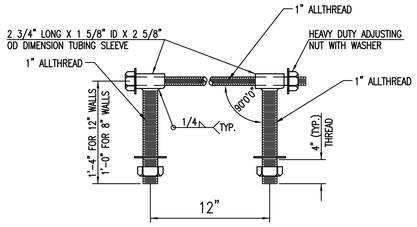
GRATE DIMENSIONS

PIPE SIZE	HEAD PLATE	A	B	C	D	E	F	CB-1	CB-2	CB-3	CB-4	SP-1	SP-2
12"	13"	19¼"	19⅜"	–	–	–	27"	10⅜"	–	–	–	3@4"	3@6"
15"	13"	23½"	25¼"	–	–	–	34"	10¾"	–	–	–	3@4"	3@8"
18"	13"	25"	26⅛"	–	–	–	40"	12⅞"	–	–	–	3@4"	3@9"
24"	17"	41½"	42½"	43½"	–	–	53"	12"	15"	–	–	4@4"	4@9"
30"	19"	51½"	52½"	53½"	–	–	65"	16¼"	11¾"	12"	–	2@3"+3@4"	5@9"
36"	21"	60½"	61½"	62½"	–	–	78"	18⅝"	14¼"	16"	–	2@2"+4@4"	6@9"
42"	22"	65½"	66½"	67⅜"	68¾"	–	86"	13⅜"	12⅝"	13"	11¾"	7@3"	7@9"
48"	25"	70⅞"	71"	71¾"	73"	74½"	90"	16¼"	14¾"	14¾"	14¾"	8@3"	8@9"
54"	26"	71¾"	73"	74½"	74¾"	76¾"	96"	6⅞"	20⅞"	17⅞"	15⅝"	4@2¾"+5@3"	9@9"
60"	28"	61⅛"	61¾"	62¾"	64½"	66⅝"	102"	12"	12"	11½"	13"	2@2"+8@3"	10@9"



HEAD PLATE DETAIL

NO SCALE

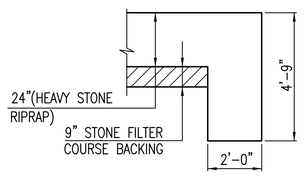


HEAVY DUTY (H.D.) COUPLER(≥36")

NO SCALE

NOTES

1. BOLTS TO BE A-36 1 1/2" DIAMETER.
2. BOLTS, NUTS, WASHERS AND SLEEVES TO BE ZINC PLATED.
3. WASHERS TO BE 3 1/2" O.D. X 7 GAUGE.
4. SHIP WITH NUTS AND WASHERS PLACED ON BOLTS.



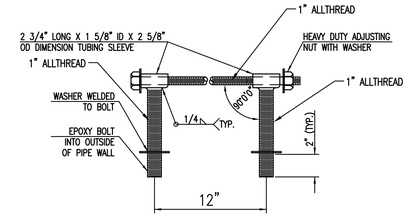
TYPICAL SECTION THRU TOEWALL

NO SCALE

NOTES

1. ALL RIPRAP FOR THIS PROJECT SHALL BE NATURAL STONE. NEITHER BROKEN CONCRETE, FABRIC ENVELOPE, NOR PREMIXED DRY PACKAGED CONCRETE BAG ALTERNATES WILL BE ALLOWED, UNLESS INDICATED OTHERWISE.
2. TOEWALLS SHALL BE INSTALLED ALONG ALL UNPROTECTED EDGES OF STONE RIPRAP.
3. GROUTING OF THE SURFACE OF THE RIPRAP SHALL NOT BE PERFORMED, UNLESS INDICATED OTHERWISE. GROUTING OF THE TOEWALLS SHALL BE PERFORMED PER CITY SPECIFICATIONS.

HEAVY STONE RIPRAP DETAILS

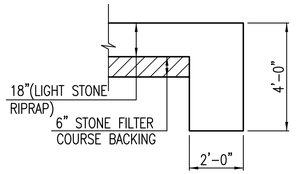


HEAVY DUTY (H.D.) COUPLER(≤30")

NO SCALE

NOTES

1. BOLTS TO BE A-36 1 1/2" DIAMETER.
2. BOLTS, NUTS, WASHERS AND SLEEVES TO BE ZINC PLATED.
3. WASHERS TO BE 3 1/2" O.D. X 7 GAUGE.
4. SHIP WITH NUTS AND WASHERS PLACED ON BOLTS.



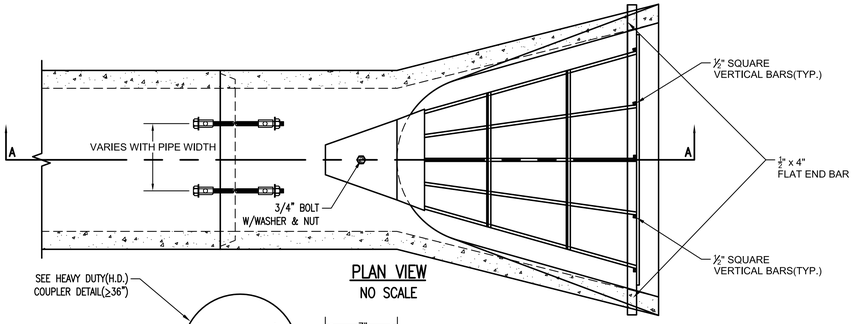
TYPICAL SECTION THRU TOEWALL

NO SCALE

NOTES

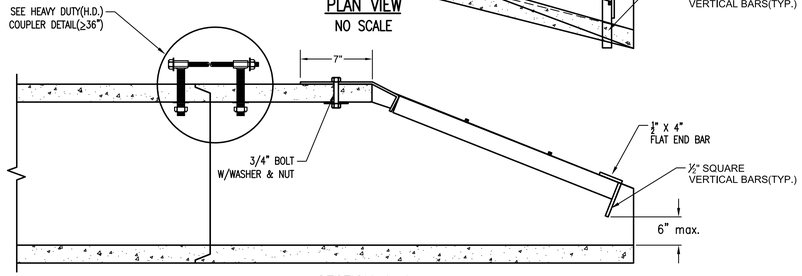
1. ALL RIPRAP FOR THIS PROJECT SHALL BE NATURAL STONE. NEITHER BROKEN CONCRETE, FABRIC ENVELOPE, NOR PREMIXED DRY PACKAGED CONCRETE BAG ALTERNATES WILL BE ALLOWED, UNLESS INDICATED OTHERWISE.
2. TOEWALLS SHALL BE INSTALLED ALONG ALL UNPROTECTED EDGES OF STONE RIPRAP.
3. GROUTING OF THE SURFACE OF THE RIPRAP SHALL NOT BE PERFORMED, UNLESS INDICATED OTHERWISE. GROUTING OF THE TOEWALLS SHALL BE PERFORMED PER CITY SPECIFICATIONS.

LIGHT STONE RIPRAP DETAILS

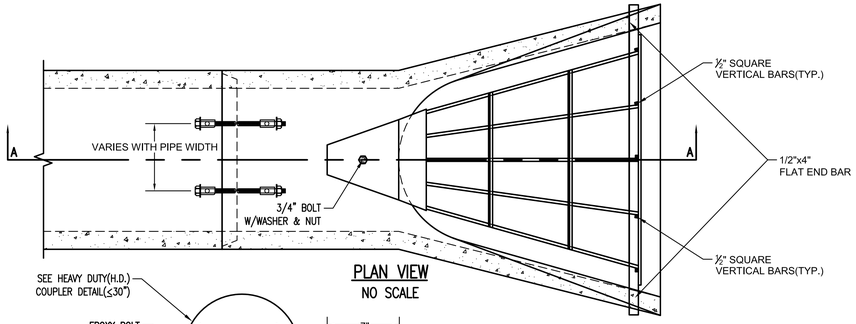


PLAN VIEW

NO SCALE

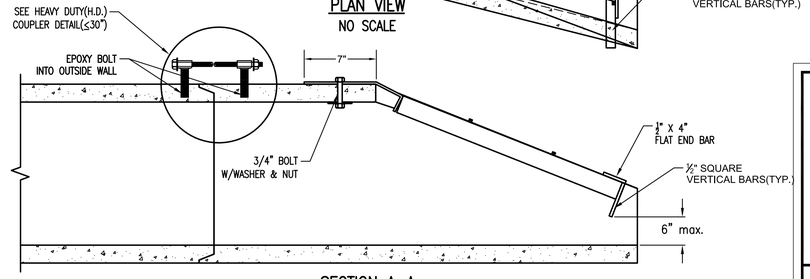


SECTION A-A



PLAN VIEW

NO SCALE



SECTION A-A

CITY OF WICHITA

PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

END SECTION, PIPE RESTRAINT COUPLER & END GRATE

CITY ENGINEER

GARY JANZEN, P.E

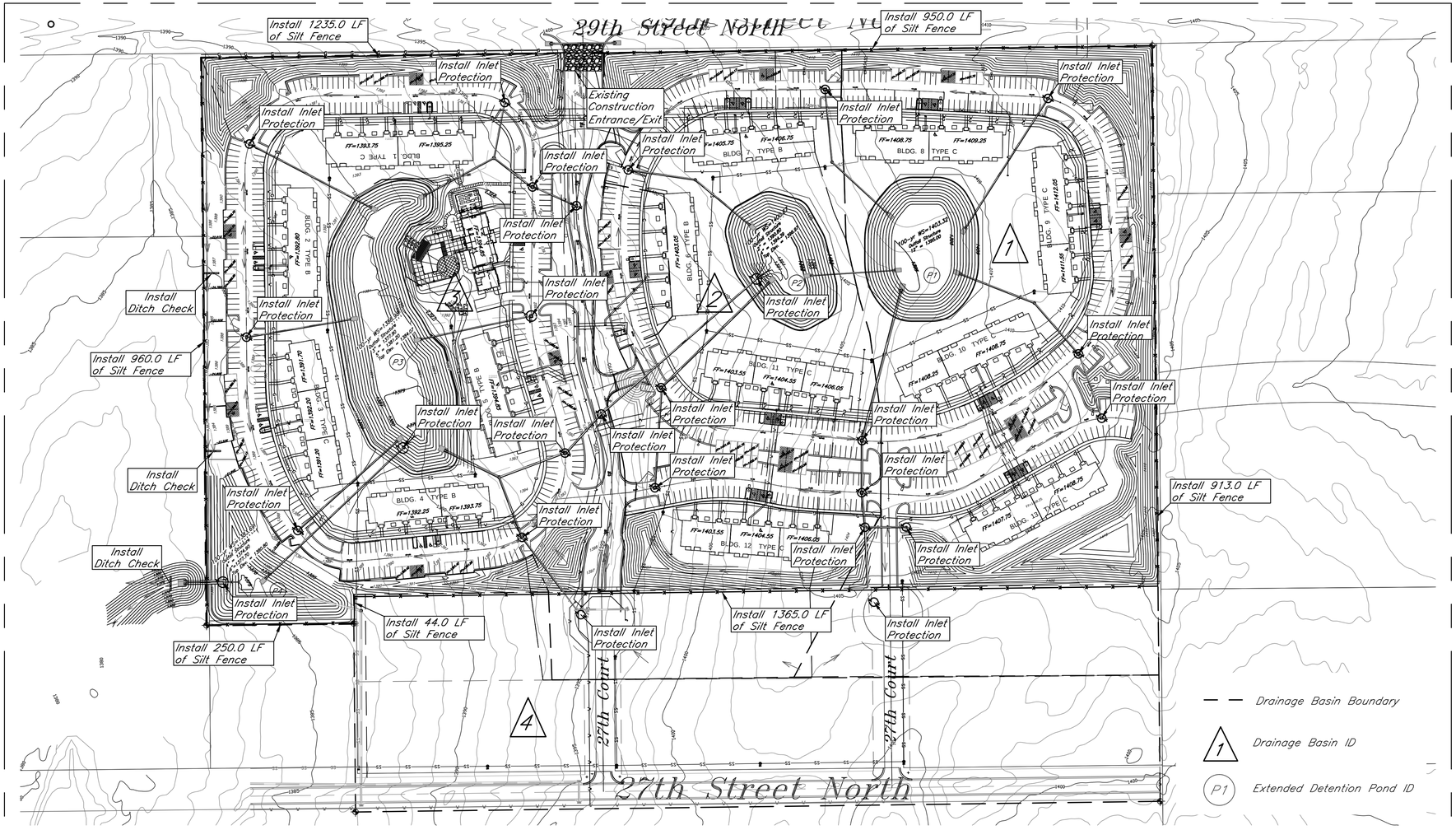
PROJECT NUMBER	OCA NUMBER	DATE
		01/2015

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

DESIGN	DRAWN

SHEET 8.6

SW-408



General Notes:

1. *The BMP's shown on this sheet are considered minimum standards. Whenever sediment enters the streets, storm sewers, ditches, or ponds, contractor will install additional BMP's, as needed, to correct the problem.*
2. *The soil erosion BMP's shown hereon must be in place at all times during construction until such time as the site is re-established with paving or grass.*
3. *Back of curb protection can include hay bale, silt fence, Curlex barrier, or approved alternate as shown on BMP standard details. This BMP must remain in place until the area between the curb and right-of-way line has been permanently stabilized.*
4. *The General Contractor is responsible for the installation and maintenance per the prevention maintenance plan.*
5. *Concrete trucks will be permitted to wash out only at approved locations, then maintain and clean up as conditions require, by contractor. No hazardous materials are expected to be encountered. Any spills (diesel, fuel, oil, etc.) will be cleaned up and removed immediately. Portable toilets will be supplied and maintained at various sites along the project. Disposal of sewage will be handled by a contracting firm specializing in this activity.*
6. *The above mentioned storm water prevention methods will be monitored daily and maintained as required. A weekly erosion control log will be posted in the job trailer onsite, and updated weekly. Site inspections are required within 24 hours after a precipitation event of 0.5" or greater.*

LEGEND:

- *Flow Direction*
- *Inlet Protection – to be provided at all inlets subject to silt laden runoff.*
- *Ditch Check*
- *Temporary Seeding.*
- *Silt Fence or Hay Bale Barrier – to be installed along property lines where runoff from construction site can run onto other properties.*
- *Stabilized Construction Entrance – to be used at all locations where vehicles or equipment enter or exit property.*
- *Back of Curb Protection – to be installed whenever curb is backfilled to less than 3 inches from top and disturbed earth exists adjacent thereto. (See City Standard Details.)*

HORIZONTAL SCALE
(IN FEET)
1 inch = 100 ft.

Calculation for Sedimentation Basins:

Sediment volume from each drainage basin

Sediment Yield = 3600 CF per acre

Drainage Basin	Area, acres	Sed. Yield, CF/acre	Sed. Vol, CF	Sed. Vol, ac-ft
1	13.68	3600	49248	1.13
2	7.70	3600	27720	0.64
3	14.68	3600	52848	1.21
4	9.71	3600	34956	0.80
Total Volume of Sediment				**3.78**

Three dry extended detention ponds, namely P2, P3 and P4 (as shown in plan) are utilized for sedimentation. The sedimentation volumes in each basin is achieved by plugging the bottom two orifices of each outlet structure designed for extended detention. Following calculations show the available storage for sedimentation,

Pond P2

Elevation	Area, SF	Average Area	Cumulative Vol, CF	Cumulative Vol, ac-ft
1391	1104			
1392	6954	4029.0	4029.0	0.09
1393	8770	7862.0	11891.0	0.27
1394	10751	9760.5	21651.5	0.50
1395	12897	11824.0	33475.5	0.77
1396	15205	14051.0	47526.5	1.09
Available volume for sedimentation			1.09	ac-ft

Pond P3

Elevation	Area, SF	Average Area	Cumulative Vol, CF	Cumulative Vol, ac-ft
1378	2424			
1379	7312	4868	4868	
1380	13513	10413	15281	0.35
1381	18856	16185	31465	0.72
1382	25694	22275	53740	1.23
1383	31596	28645	82385	1.89
1384	36886	34241	116626	2.68
Available volume for sedimentation			2.68	ac-ft

Pond P4

Elevation	Area, SF	Average Area	Cumulative Vol, CF	Cumulative Vol, ac-ft
1375	337			
1376	926	632	632	
1377	3825	2376	3007	0.07
1378	5785	4805	7812	0.18
1379	8186	6986	14798	0.34
1380	11028	9607	24405	0.56
1381	14301	12665	37069	0.85
Available volume for sedimentation			0.85	ac-ft

Total volume available for sedimentation =1.09+2.68+0.81=4.62 ac-ft > 3.78 ac-ft

Sedimentation Basins Note:
The sedimentation basins need to be cleaned and regraded when the sediment level reaches the level of upper orifice. Restore the full basin storage and unplug the orifice when site and ponds are fully stabilized.

KIRK E. MILLER LICENSED 11283 KANSAS PROFESSIONAL ENGINEER

DATE: 07.23.2015

THIS SHEET HAS BEEN SIGNED, SELAED AND DATED ELECTRONICALLY

Stoney Pointe Apartments - Phase II

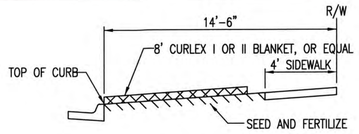
Erosion Plan

Wichita, Kansas

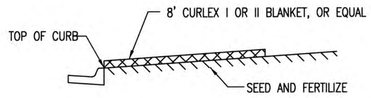
KEMILLER ENGINEERING PA
117 E. Lewis, Wichita, KS 67202 (316)264-0242

PROJECT NUMBER			
KEM NO. 12037	FILE	DATE 7/2015	SHEET 9.0
DESIGN GP	DRAWN DM	REVISED	

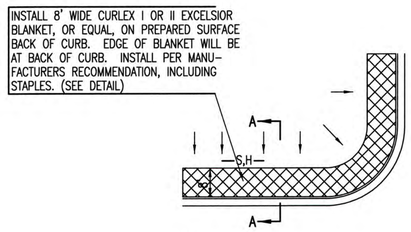
November 9, 2015



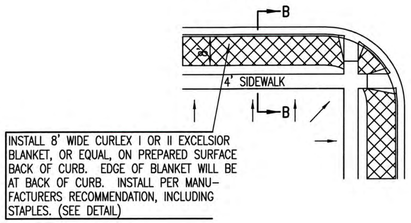
SECTION B–B



SECTION A–A



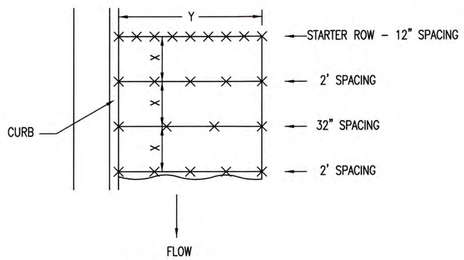
SOUTH STREET



GENERAL NOTES

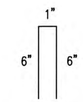
1. EXCELSIOR MAT TO BE INSTALLED WHEN SOD IS NOT SPECIFIED ON PROJECT.
2. EXCELSIOR BLANKET TO BE INSTALLED OVER SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
3. AFTER INSTALLATION OF EXCELSIOR BLANKET, AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB AND INTO THE GUTTER, SUPPLEMENTAL EROSION CONTROL DEVICES WILL BE INSTALLED BY THE CONTRACTOR AS NEEDED, TO FIX THE PROBLEM.

BACK OF CURB PROTECTION DETAIL



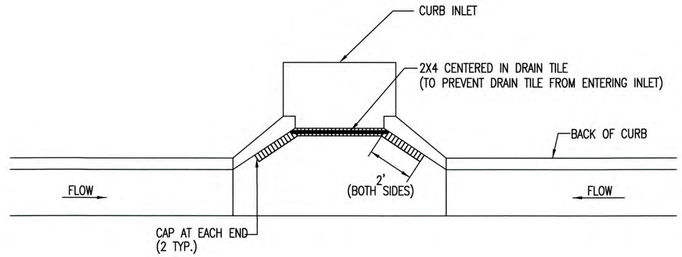
STAPLE PATTERN

NOTES: USE 6" SEAM OVERLAP
(X & Y = RECOMMENDED BY MANUFACTURE)



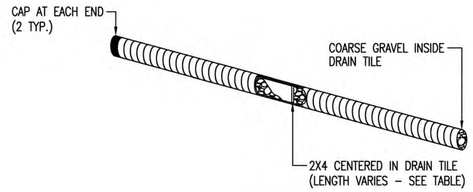
STAPLE

DETAILS FOR APPROVED EROSION CONTROL MAT

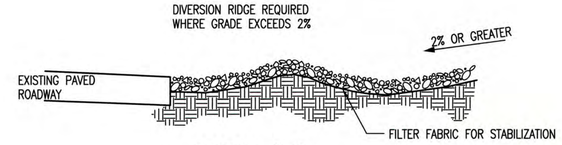


NOTE:
PLACE 4" PERFORATED PVC PIPE, FILLED WITH 1/2"–1" DIA. GRAVEL, IN FRONT OF CURB INLET AS SHOWN.

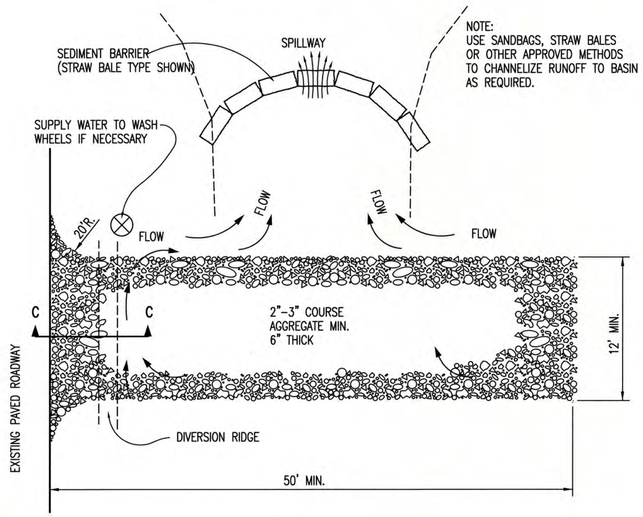
2X4 LENGTH	INLET TYPE	INLET OPENING
5'–6"	1–A	5'–0"
10'–6"	1–A	10'–0"
15'–6"	1–A	15'–0"



CURB INLET PROTECTION
4" PERFORATED PIPE W/ GRAVEL



SECTION C–C



STABILIZED CONSTRUCTION ENTRANCE

GENERAL NOTES

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN, AS SHOWN ABOVE.
4. DRIVE ENTRANCES ONTO RESIDENTIAL LOTS WILL NOT BE REQUIRED TO HAVE THE SEDIMENT BARRIER SHOWN, BUT WHEEL WASHING MAY BE REQUIRED IF STABILIZED ENTRANCE IS NOT SUFFICIENT TO KEEP MUD FROM BEING TRACKED ONTO ADJACENT STREET. ENTRANCE SHALL EXTEND FROM BACK OF CURB TO DWELLING.

REVISION DATE: MAY 2013

GARY L. JANZEN LICENSED PROFESSIONAL ENGINEER 16854 KANSAS
05/30/13

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

BACK OF CURB PROTECTION, CURB INLET PROTECTION AND CONSTRUCTION ENTRANCE

CITY ENGINEER
GARY JANZEN, P.E.

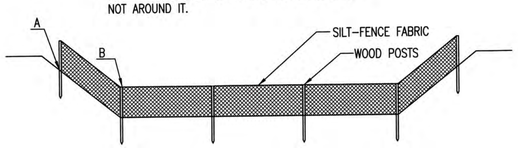
PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET
9.1

SW-501

NOTE: POINT A MUST BE HIGHER THAN POINT B SO THAT WATER FLOWS OVER THE SILT FENCE FABRIC AND NOT AROUND IT.



ELEVATION

SILT FENCE DITCH CHECKS
(STREAM PROTECTION)

MATERIAL SPECIFICATION:

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION.
THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
SILT FENCE FABRIC SHOULD BE ATTACHED TO THE WOODEN POSTS WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

PLACEMENT:

PLACE SILT FENCE IN DITCHES WHERE IT IS UNLIKELY THAT IT WILL BE OVERTOPPED.
WATER SHOULD FLOW THROUGH A SILT FENCE DITCH CHECK, NOT OVER IT. SILT FENCE DITCH CHECKS OFTEN FAIL WHEN OVERTOPPED.
SILT FENCE DITCH CHECKS SHOULD BE PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH.
THE SILT FENCE SHOULD EXTEND FAR ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE FENCE IS HIGHER THAN THE TOP OF THE LOW POINT OF THE FENCE. THIS PREVENTS WATER FROM FLOWING AROUND THE CHECK.
SILT FENCE DITCH CHECKS SHOULD NOT BE PLACED IN DITCHES WHERE HIGH FLOWS ARE EXPECTED. ROCK CHECKS SHOULD BE USED INSTEAD.
SILT FENCE SHOULD BE PLACED IN DITCHES WITH SLOPES OF 6% OR LESS. FOR SLOPES STEEPER THAN 6%, ROCK CHECKS SHOULD BE USED.

THE FOLLOWING TABLE PROVIDES CHECK SPACING FOR A GIVEN DITCH GRADE:

DITCH CHECK DITCH GRADE (%)	SPACING CHECK SPACING (FEET)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH PERPENDICULAR TO THE DITCH FLOWLINE THAT IS AT LEAST 12" DEEP BY 6" WIDE.
EXTEND THE TRENCH IN A STRAIGHT LINE ALONG THE ENTIRE LENGTH OF THE PROPOSED DITCH CHECK.
PLACE THE SOIL ON THE UPSTREAM SIDE OF THE TRENCH FOR LATER USE.
ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC ON THE DOWNSTREAM SIDE OF THE TRENCH.
PLACE THE EDGE OF THE FABRIC IN THE TRENCH STARTING AT THE TOP UPSTREAM EDGE OF THE TRENCH.
LINE TWO SIDES OF THE TRENCH WITH THE FABRIC AS SHOWN ON DETAIL. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT FENCE FABRIC SHOULD REMAIN EXPOSED.
LAY THE EXPOSED SILT FENCE ON THE UPSTREAM SIDE OF THE TRENCH TO CLEAR AN AREA FOR DRIVING IN THE POSTS. JUST DOWNSTREAM OF THE TRENCH, DRIVE POSTS INTO THE GROUND TO A DEPTH OF AT LEAST 24". PLACE POSTS NO MORE THAN 4' APART.
ATTACH THE SILT FENCE TO THE ANCHORED POST WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

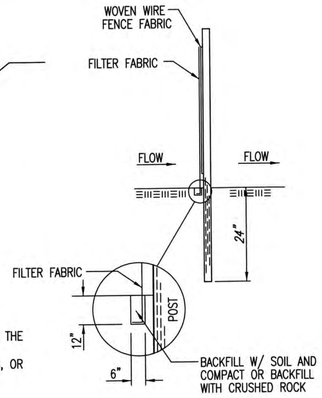
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WATER SHOULD FLOW THROUGH A SILT FENCE DITCH CHECK–NOT OVER IT. PLACE SILT FENCE IN DITCHES WHERE IT IS UNLIKELY THAT IT WILL BE OVERTOPPED. SILT FENCE INSTALLATIONS QUICKLY DETERIORATE WHEN WATER OVERTOPS THEM.
DO NOT PLACE SILT FENCE POSTS ON THE UPSTREAM SIDE OF THE SILT FENCE FABRIC. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESTRICTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL.
DO NOT PLACE A SILT FENCE DITCH CHECK DIRECTLY IN FRONT OF A CULVERT OUTLET. IT WILL NOT STAND UP TO THE CONCENTRATED FLOW.
DO NOT PLACE SILT FENCE DITCH CHECKS IN DITCHES THAT WILL LIKELY EXPERIENCE HIGH FLOWS. THEY WILL NOT STAND UP TO CONCENTRATED FLOW.
FOLLOW PRESCRIBED DITCH CHECK SPACING GUIDELINES. IF SPACING GUIDELINES ARE EXCEEDED, EROSION WILL OCCUR BETWEEN THE DITCH CHECKS.
DO NOT ALLOW WATER TO FLOW AROUND THE DITCH CHECK. MAKE SURE THAT THE DITCH CHECK IS LONG ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE FENCE IS HIGHER THAN THE LOW POINT ON THE TOP OF THE FENCE.
DO NOT PLACE SILT FENCE DITCH CHECKS IN CHANNELS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE CHECK IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT.

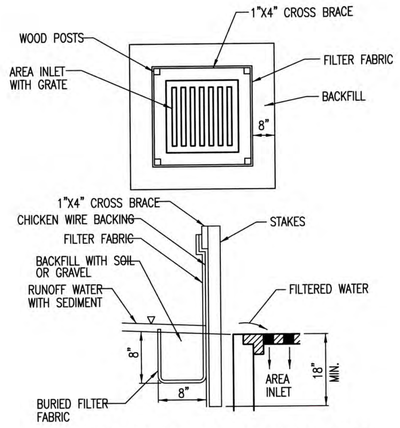
INSPECTION AND MAINTENANCE:

SILT FENCE DITCH CHECKS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW AROUND THE DITCH CHECK?
DOES WATER FLOW UNDER THE DITCH CHECK?
DOES THE SILT FENCE SAG EXCESSIVELY?
HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE DITCH CHECK?



ANCHOR TRENCH DETAIL



SILT FENCE BARRIERS FOR AREA INLETS
(INLET PROTECTION)

MATERIAL SPECIFICATION:

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION.
THE WIRE OR POLYMERIC MESH BACKING USED TO HELP SUPPORT THE SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION.
THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
THE MATERIAL USED TO FRAME THE TOPS OF THE POSTS SHOULD BE 1" BY 4" BOARDS.
SILT FENCE FABRIC AND SUPPORT BACKING SHOULD BE ATTACHED TO THE WOODEN POSTS AND FRAME WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

PLACEMENT:

PLACE A SILT FENCE DROP INLET BARRIER IN A LOCATION WHERE IT IS UNLIKELY TO BE OVERTOPPED.
WATER SHOULD FLOW THROUGH SILT FENCE, NOT OVER IT. SILT FENCE BARRIERS FOR AREA INLETS OFTEN FAIL WHEN REPEATEDLY OVERTOPPED.
WHEN USED AS A BARRIER FOR AREA INLETS, SILT FENCE FABRIC AND POSTS MUST BE SUPPORTED AT THE TOP BY A WOODEN FRAME.
WHEN A SILT FENCE BARRIER FOR AREA INLETS IS LOCATED NEAR AN INLET THAT HAS STEEP APPROACH SLOPES, THE STORAGE CAPACITY BEHIND THE BARRIER IS DRASTICALLY REDUCED. TIMELY REMOVAL OF SEDIMENT MUST OCCUR FOR A BARRIER TO OPERATE PROPERLY IN THIS LOCATION.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH AROUND THE PERIMETER OF THE AREA INLET THAT IS AT LEAST 8" DEEP BY 8" WIDE.
DRIVE POSTS TO A DEPTH OF AT LEAST 18" AROUND THE PERIMETER OF THE AREA INLET.
THE DISTANCE BETWEEN POSTS SHOULD BE 4' OR LESS. IF THE DISTANCE BETWEEN TWO ADJACENT CORNER POSTS IS MORE THAN 4', ADD ANOTHER POST(S) BETWEEN THEM.
CONNECT THE TOPS OF ALL THE POSTS WITH A WOODEN FRAME MADE OF 1" BY 4" BOARDS. USE NAILS OR SCREWS FOR FASTENING.
ATTACH THE WIRE OR POLYMERIC–MESH BACKING TO THE OUTSIDE OF THE POST/FRAME STRUCTURE WITH STAPLES, WIRE, ZIP TIES, OR NAILS.
ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC LONG ENOUGH TO WRAP AROUND THE PERIMETER OF THE AREA INLET. ADD MORE LENGTH FOR OVERLAPPING THE FABRIC JOINT. PLACE THE EDGE OF THE FABRIC IN THE TRENCH, STARTING AT THE OUTSIDE EDGE OF THE TRENCH. LINE ALL THREE SIDES OF THE TRENCH WITH THE FABRIC. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT FENCE FABRIC SHOULD REMAIN EXPOSED.
ATTACH THE SILT FENCE TO THE OUTSIDE OF THE POST/FRAME STRUCTURE WITH STAPLES, WIRE, ZIP TIES, OR NAILS. THE JOINT SHOULD BE OVERLAPPED TO THE NEXT POST.

NOTE: WHEN A SILT FENCE BARRIER FOR AREA INLET IS PLACED IN A SHALLOW MEDIAN DITCH, MAKE SURE THAT THE TOP OF THE BARRIER IS NOT HIGHER THAN THE PAVED ROAD. IN THIS CONFIGURATION, WATER MAY SPREAD ONTO THE ROADWAY CAUSING A HAZARDOUS CONDITION.

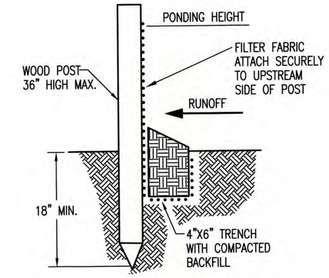
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WATER SHOULD FLOW THROUGH A SILT FENCE BARRIER FOR AREA INLET–NOT OVER IT. PLACE A SILT FENCE BARRIER FOR AREA INLET IN A LOCATION WHERE IT IS UNLIKELY TO BE OVERTOPPED. SILT FENCE BARRIER FOR AREA INLETS OFTEN FAIL WHEN REPEATEDLY OVERTOPPED.
DO NOT PLACE POSTS ON THE OUTSIDE OF THE SILT FENCE BARRIER FOR AREA INLET. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESISTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL.
DO NOT INSTALL SILT FENCE BARRIER FOR AREA INLETS WITHOUT FRAMING THE TOP OF THE POSTS. THE CORNER POSTS AROUND AREA INLETS ARE STRESSED IN TWO DIRECTIONS WHEREAS A NORMAL SILT FENCE IS ONLY STRESSED IN ONE DIRECTION. THIS ADDED STRESS REQUIRES MORE SUPPORT.

INSPECTION AND MAINTENANCE:

SILT FENCE BARRIER FOR AREA INLETS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW UNDER THE SILT FENCE?
DOES THE SILT FENCE SAG EXCESSIVELY?
HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE AREA INLET BARRIER?



SILT FENCE BARRIERS

MATERIAL SPECIFICATION:

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION.
THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
SILT FENCE FABRIC SHOULD BE ATTACHED TO THE WOODEN POSTS WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

PLACEMENT:

A SLOPE BARRIER SHOULD BE USED AT THE TOE OF A SLOPE WHEN A DITCH DOES NOT EXIST. THE SLOPE BARRIER SHOULD BE PLACED ON NEARLY LEVEL GROUND 5' TO 10' AWAY FROM THE TOE OF A SLOPE. THE BARRIER IS PLACED AWAY FROM THE TOE OF THE SLOPE TO PROVIDE ADEQUATE STORAGE FOR SETTLING OUT SEDIMENT.
WHEN PRACTICABLE, SILT FENCE SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW.
SILT FENCE SLOPE BARRIERS CAN ALSO BE PLACED ALONG RIGHT–OF–WAY FENCE LINES TO KEEP SEDIMENT FROM CROSSING ONTO ADJACENT PROPERTY. WHEN PLACED IN THIS MANNER, THE SLOPE BARRIER WILL NOT LIKELY FOLLOW CONTOURS.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH THE LENGTH OF THE PLANNED SLOPE BARRIER THAT IS 6" DEEP BY 4" WIDE.
MAKE SURE THAT THE TRENCH IS EXCAVATED ALONG A SINGLE CONTOUR. WHEN PRACTICABLE, SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. PLACE THE SOIL ON THE UPSLOPE SIDE OF THE TRENCH FOR LATER USE.
ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC ON THE DOWNSLOPE SIDE OF THE TRENCH.
PLACE THE EDGE OF THE FABRIC IN THE TRENCH STARTING AT THE TOP UPSLOPE EDGE. LINE ALL THREE SIDES OF THE TRENCH WITH THE FABRIC. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT–FENCE FABRIC SHOULD REMAIN EXPOSED.
LAY THE EXPOSED SILT FENCE UPSLOPE OF THE TRENCH TO CLEAR AN AREA FOR DRIVING IN THE POSTS. JUST DOWNSLOPE OF THE TRENCH, DRIVE POSTS INTO THE GROUND TO A DEPTH OF AT LEAST 18".
PLACE POSTS NO MORE THAN 4' APART.
ATTACH THE SILT FENCE TO THE ANCHORED POST WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WHEN PRACTICABLE, DO NOT PLACE SILT FENCE SLOPE BARRIERS ACROSS CONTOURS. SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. WHEN THE FLOW CONCENTRATES, IT OVERTOPS THE BARRIER AND THE SILT FENCE SLOPE BARRIER QUICKLY DETERIORATES.
DO NOT PLACE SILT–FENCE POSTS ON THE UPSLOPE SIDE OF THE SILT FENCE FABRIC. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESTRICTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL.
DO NOT PLACE SILT FENCE SLOPE BARRIERS IN AREAS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE BARRIER IS NOT SUFFICIENTLY ANCHORED, IT WILL WASH OUT.
SILT FENCE SLOPE BARRIERS MUST BE DUG INTO THE GROUND–SILT FENCE AT GROUND LEVEL DOES NOT WORK BECAUSE WATER WILL FLOW UNDERNEATH.

INSPECTION AND MAINTENANCE:

SILT FENCE SLOPE BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

ARE THERE ANY POINTS ALONG THE SLOPE BARRIER WHERE WATER IS CONCENTRATING?
DOES WATER FLOW UNDER THE SLOPE BARRIER?
DO THE SILT FENCES SAG EXCESSIVELY?
HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE SLOPE BARRIER?

GARY L. JANZEN LICENSED 16294 PROFESSIONAL ENGINEER KANSAS
05/31/13

REVISION DATE: MAY 2013

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

SILT FENCE DITCH CHECK AND BARRIER DETAILS

CITY ENGINEER
GARY JANZEN, P.E.

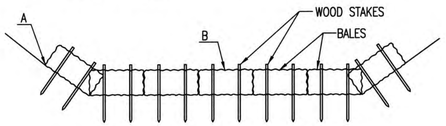
PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET 9.2

SW–502

NOTE: POINT A MUST BE HIGHER THAN POINT B
SO THAT WATER FLOWS OVER THE BALES AND
NOT AROUND THEM.



STRAW BALE DITCH CHECKS

MATERIAL SPECIFICATION:

BALE DITCH CHECKS MAY BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE.
THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
OPTIONAL: THE DOWNSTREAM SCOUR APRON SHOULD BE CONSTRUCTED OF A DOUBLE-NETTED STRAW EROSION-CONTROL BLANKET AT LEAST 6' WIDE.
OPTIONAL: THE METAL LANDSCAPE STAPLES USED TO ANCHOR THE EROSION-CONTROL BLANKET SHOULD BE AT LEAST 8" LONG.

PLACEMENT:

BALE DITCH CHECKS SHOULD BE PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH.
THE DITCH CHECK SHOULD EXTEND FAR ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE CHECK IS HIGHER THAN THE TOP OF THE LOWEST CENTER BALE. THIS PREVENTS WATER FROM FLOWING AROUND THE CHECK.
STRAW BALE DITCH CHECKS SHOULD NOT BE PLACED IN DITCHES WHERE HIGH FLOWS ARE EXPECTED. ROCK CHECKS SHOULD BE USED INSTEAD.
BALES SHOULD BE PLACED IN DITCHES WITH SLOPES OF 6% OR LESS. FOR SLOPES STEEPER THAN 6%, ROCK CHECKS SHOULD BE USED.
THE FOLLOWING TABLE PROVIDES CHECK SPACING FOR A GIVEN DITCH GRADE:

DITCH GRADE (%)	CHECK SPACING (FEET)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH PERPENDICULAR TO THE DITCH FLOWLINE THAT IS 4" DEEP AND A BALE'S WIDTH WIDE. EXTEND THE TRENCH IN A STRAIGHT LINE ALONG THE ENTIRE LENGTH OF THE PROPOSED DITCH CHECK. PLACE THE SOIL ON THE UPSTREAM SIDE OF THE TRENCH-IT WILL BE USED LATER.
OPTIONAL: ON THE DOWNSTREAM SIDE OF THE TRENCH, ROLL OUT A LENGTH OF EROSION-CONTROL BLANKET (SCOUR APRON) EQUAL TO THE LENGTH OF THE TRENCH. PLACE THE UPSTREAM EDGE OF THE EROSION-CONTROL BLANKET ALONG THE BOTTOM UPSTREAM EDGE OF THE TRENCH. THE EROSION CONTROL BLANKET SHOULD BE ANCHORED IN THE TRENCH WITH ONE ROW OF 8" LANDSCAPE STAPLES PLACED ON 18" CENTERS. THE REMAINDER OF THE EROSION-CONTROL BLANKET (THE PORTION THAT IS NOT LYING IN THE TRENCH) WILL SERVE AS THE DOWNSTREAM SCOUR APRON. THIS SECTION OF THE BLANKET SHOULD BE ANCHORED TO THE GROUND WITH 8" LANDSCAPE STAPLES PLACED AROUND THE PERIMETER OF THE BLANKET ON 18" CENTERS. THE REMAINDER OF THE BLANKET SHOULD BE ANCHORED USING TWO EVENLY SPACED ROWS OF 8" LANDSCAPE STAPLES ON 18" CENTERS PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH.
PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE ALONG THE CENTERLINE OF THE DITCH CHECK, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS. STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND.
ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE UPSTREAM SIDE OF THE CHECK AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP AND EXTEND UPSTREAM NO MORE THAN 24".

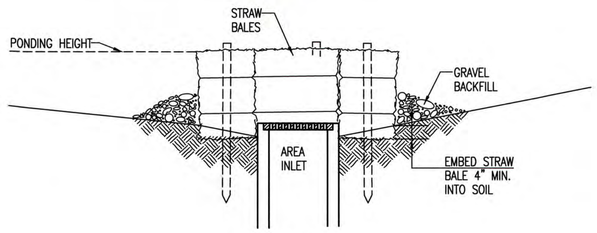
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

DO NOT PLACE A BALE DITCH CHECK DIRECTLY IN FRONT OF A CULVERT OUTLET. IT WILL NOT STAND UP TO THE CONCENTRATED FLOW.
DO NOT PLACE BALE DITCH CHECKS IN DITCHES THAT WILL LIKELY EXPERIENCE HIGH FLOWS. THEY WILL NOT STAND UP TO CONCENTRATED FLOW.
FOLLOW PRESCRIBED DITCH-CHECK SPACING GUIDELINES. IF SPACING GUIDELINES ARE EXCEEDED, EROSION WILL OCCUR BETWEEN THE DITCH CHECKS.
DO NOT ALLOW WATER TO FLOW AROUND THE DITCH CHECK. MAKE SURE THAT THE DITCH CHECK IS LONG ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE CHECK IS HIGHER THAN THE TOP OF THE LOWEST CENTER BALE.
DO NOT PLACE BALE DITCH CHECKS IN CHANNELS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE CHECK IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT.
BALE DITCH CHECKS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE CHECK.

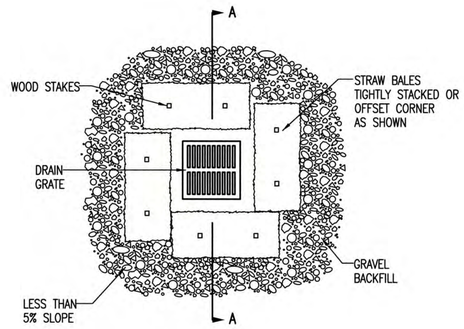
INSPECTION AND MAINTENANCE:

BALE DITCH CHECKS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW AROUND THE DITCH CHECK?
DOES WATER FLOW UNDER THE DITCH CHECK?
DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?
ARE ANY BALES AND/OR SCOUR APRONS (OPTIONAL) DISLODGED?
ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE DITCH CHECK?



SECTION A-A



STRAW BALE BARRIERS FOR AREA INLETS
(INLET PROTECTION)

MATERIAL SPECIFICATION:

BALE AREA INLET BARRIERS SHOULD BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE.
THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
TWINE SHOULD BE USED TO BIND BALES. THE USE OF WIRE BINDING IS PROHIBITED BECAUSE IT DOES NOT BIODEGRADE READILY.

PLACEMENT:

BALE AREA INLET BARRIERS SHOULD BE PLACED DIRECTLY AROUND THE PERIMETER OF A DROP INLET.
WHEN A BALE AREA INLET BARRIER IS LOCATED NEAR AN INLET THAT HAS STEEP APPROACH SLOPES, THE STORAGE CAPACITY BEHIND THE BARRIER IS DRASTICALLY REDUCED. TIMELY REMOVAL OF SEDIMENT MUST OCCUR FOR A BARRIER TO OPERATE PROPERLY IN THIS LOCATION.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH AROUND THE PERIMETER OF THE AREA INLET THAT IS AT LEAST 4" DEEP BY A BALE'S WIDTH WIDE.
PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. SOME BALES MAY NEED TO BE SHORTENED TO FIT INTO THE TRENCH AROUND THE AREA INLET. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS.
STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND.
ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE RECEIVING SIDE OF THE BARRIER AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP.
NOTE: WHEN A BALE AREA INLET BARRIER IS PLACED IN A SHALLOW MEDIAN DITCH, MAKE SURE THAT THE TOP OF THE BARRIER IS NOT HIGHER THAN THE PAVED ROAD. IN THIS CONFIGURATION, WATER MAY SPREAD ONTO THE ROADWAY CAUSING A HAZARDOUS CONDITION.

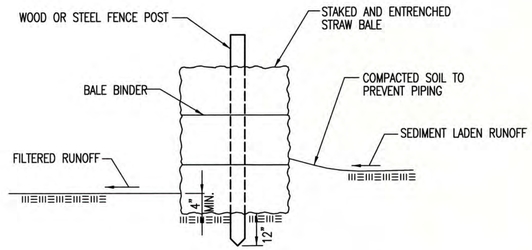
LIST OF COMMON PLACEMENT INSTALLATION MISTAKES TO AVOID:

BALES SHOULD BE PLACED DIRECTLY AGAINST THE PERIMETER OF THE AREA INLET. THIS ALLOWS OVERTOPPING WATER TO FLOW DIRECTLY INTO THE INLET INSTEAD OF ONTO NEARBY SOIL CAUSING SCOUR.
BALE AREA INLET BARRIERS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE BARRIER.

INSPECTION AND MAINTENANCE:

BALE AREA INLET BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW UNDER THE AREA INLET BARRIER?
DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?
ARE ANY BALES DISLODGED?
ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE AREA INLET BARRIER?



STRAW BALE BARRIERS

MATERIAL SPECIFICATION:

BALE SLOPE BARRIERS MAY BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE.
THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
TWINE SHOULD BE USED TO BIND BALES. THE USE OF WIRE BINDING IS PROHIBITED BECAUSE IT DOES NOT BIODEGRADE READILY.

PLACEMENT:

A SLOPE BARRIER SHOULD BE USED AT THE TOE OF A SLOPE WHEN A DITCH DOES NOT EXIST. THE SLOPE BARRIER SHOULD BE PLACED ON NEARLY LEVEL GROUND 5' TO 10' AWAY FROM THE TOE OF A SLOPE. THE BARRIER IS PLACED AWAY FROM THE TOE OF THE SLOPE TO PROVIDE ADEQUATE STORAGE FOR SETTLING OUT SEDIMENT.
WHEN PRACTICABLE, BALE SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW.
BALE SLOPE BARRIERS CAN ALSO BE PLACED ALONG RIGHT-OF-WAY FENCE LINES TO KEEP SEDIMENT FROM CROSSING ONTO ADJACENT PROPERTY. WHEN PLACED IN THIS MANNER, THE SLOPE BARRIER WILL NOT LIKELY FOLLOW CONTOURS.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH THE LENGTH OF THE PLANNED SLOPE BARRIER THAT IS 4" DEEP AND A BALE'S WIDTH WIDE. MAKE SURE THAT THE TRENCH IS EXCAVATED ALONG A SINGLE CONTOUR. WHEN PRACTICABLE, SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. PLACE THE SOIL ON THE UPSLOPE SIDE OF THE TRENCH FOR LATER USE.
PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE ALONG THE CENTERLINE OF THE DITCH CHECK, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS. STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND.
ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE UPSLOPE SIDE OF THE CHECK AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP.

LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WHEN PRACTICAL, DO NOT PLACE BALE SLOPE BARRIERS ACROSS CONTOURS. SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. CONCENTRATED FLOW OVER A SLOPE BARRIER CREATES A SCOUR HOLE ON THE DOWNSLOPE SIDE OF THE BARRIER. THE SCOUR HOLE EVENTUALLY UNDERMINES THE BALES AND THE BARRIER FAILS.
DO NOT PLACE BALE SLOPE BARRIERS IN AREAS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE BARRIER IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT.
BALE SLOPE BARRIERS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE BARRIER.

INSPECTION AND MAINTENANCE:

BALE SLOPE BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

ARE THERE ANY POINTS ALONG THE SLOPE BARRIER WHERE WATER IS CONCENTRATING?
DOES WATER FLOW UNDER THE SLOPE BARRIER?
DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?
ARE ANY BALES DISLODGED?
ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE SLOPE BARRIER?

REVISION DATE: MAY 2013

GARY L. JANZEN LICENSED 16284 KANSAS PROFESSIONAL ENGINEER
05/13/13

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

STRAW BALE DITCH CHECK AND BARRIER DETAILS

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET
9.3

SW-503

GENERAL NOTES

1. THIS SHEET IS INTENDED TO PROVIDE GUIDELINES AS TO WHAT TYPES OF EROSION CONTROL DEVICES WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS. CONTRACTORS ARE EXPECTED TO BID PROJECTS ACCORDINGLY.

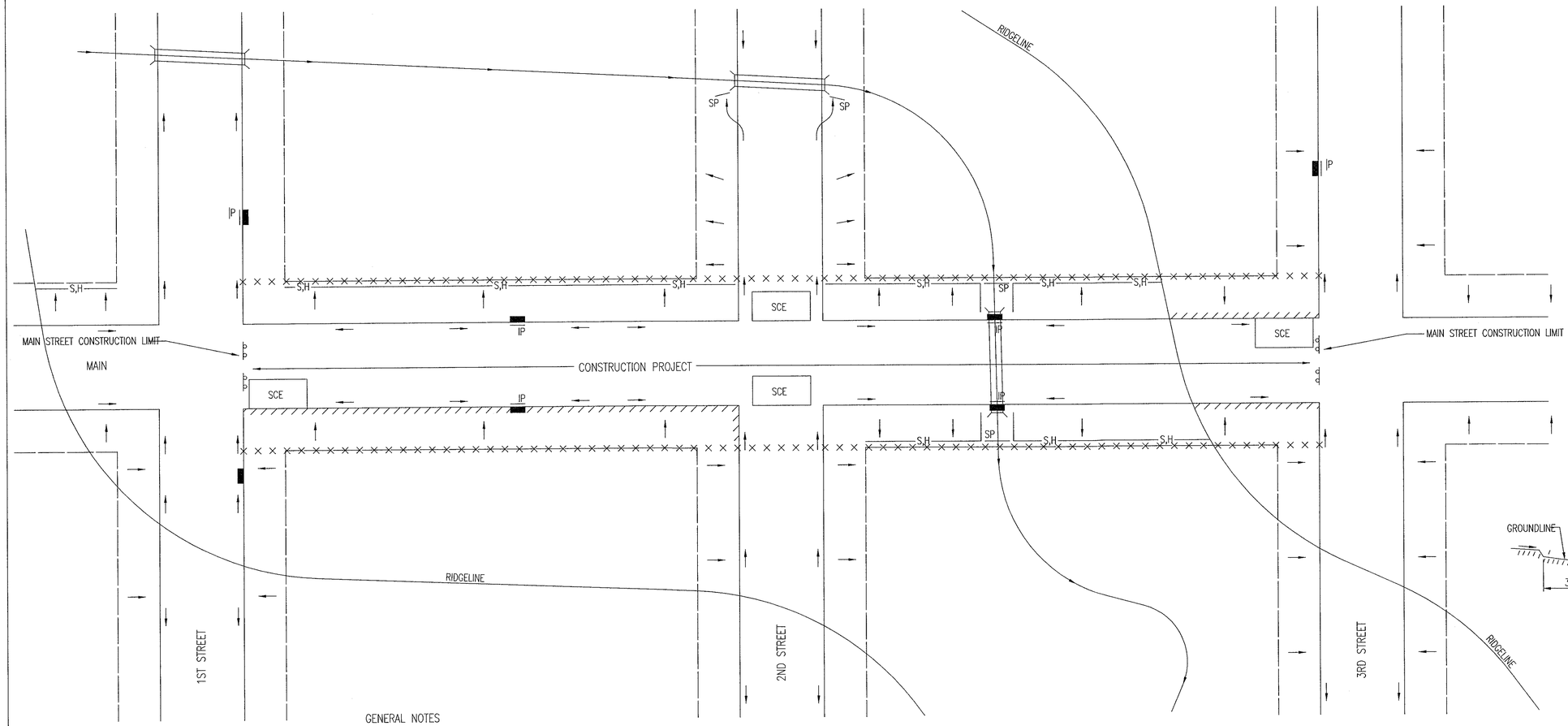
2. EROSION CONTROL DEVICES MUST BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION PROCESS AND UNTIL THE DISTURBED EARTH IS RESTABILIZED.

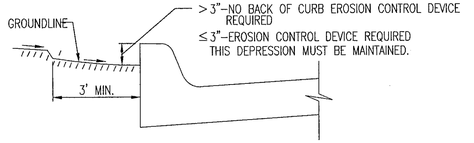
3. IF THE PROJECT WILL DISTURB 1 ACRE OR MORE, A FEDERAL/STATE NPDES STORMWATER PERMIT IS REQUIRED. A DETAILED STORMWATER POLLUTION PREVENTION PLAN, IS REQUIRED. THE EROSION CONTROL DEVICES SHOWN ON THIS SHEET ARE CONSIDERED TO BE THE MINIMUM TO BE SHOWN IN THE POLLUTION PREVENTION PLAN.

4. FOR PROJECTS DISTURBING LESS THAN 1 ACRE, CONTRACTORS ARE ENCOURAGED TO PREPARE STORMWATER POLLUTION PREVENTION PLANS PRIOR TO CONSTRUCTION. EROSION CONTROL DEVICES MUST BE USED ON ALL PROJECTS.

5. FAILURE TO USE AND MAINTAIN EROSION CONTROL DEVICES IS A VIOLATION OF SECTION 16.32 OF THE CITY CODE AND WILL SUBJECT THE CONTRACTOR TO THE PENALTIES PROVIDED FOR THEREIN.

6. THE APPLICATION OF EROSION CONTROL DEVICES SHOWN ON THIS SHEET IS FOR SITUATIONS NORMALLY ENCOUNTERED. FROM TIME TO TIME, SITUATIONS WILL ARISE THAT MAY REQUIRE A DIFFERENT DEVICE OTHER THAN THOSE SHOWN. EROSION CONTROL DEVICES, OTHER THAN THOSE SHOWN, MAY BE UTILIZED AS LONG AS THEY ARE EFFECTIVE AND MAINTAINED.





CURB BACKFILL DETAIL

THIS IS A TEMPORARY MEASURE ONLY, WHEN APPROVED BY THE PROJECT ENGINEER. THE DIRT GRADE BEHIND THE CURB SHALL BE BROUGHT TO THE TOP OF CURB, WITH TEMPORARY EROSION CONTROL MAT OR PERMANENT VEGETATION PLACED, PRIOR TO THE COMPLETION OF ALL PROJECTS.

LEGEND

- R–O–W LIMITS
- DRAINAGE FLOW PATH
- R/W LIMIT WITHIN CONSTRUCTION LIMIT
- STORM WATER INLETS
- IP — INLET PROTECTION
- S,H — SILT FENCE OR HAY BALE BARRIER
- SP — STREAM PROTECTION
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- BACK OF CURB PROTECTION

GENERAL NOTES

1. THE INTENT OF ALL EROSION CONTROL DEVICES IS TO KEEP ALL SEDIMENT CONFINED TO THE CONSTRUCTION SITE, AND OUT OF ALL UNDERGROUND PIPES, DITCHES, LAKES, AND OTHER DRAINAGE FACILITIES, AND OFF OF STREETS.

2. THE POINT OF COMPLIANCE IS GENERALLY THE RIGHT–OF–WAY LINES WITHIN THE LIMITS OF CONSTRUCTION.

3. EROSION CONTROL DEVICES WILL BE REQUIRED AT ALL POINTS ALONG THE PROJECT WHERE DISTURBED EARTH CAN DRAIN ONTO PRIVATE PROPERTY.

4. INLET PROTECTION DEVICES WILL BE REQUIRED WHEREVER WATER CAN DRAIN OFF THE PROJECT SITE INTO AN INLET, INCLUDING ANY SIDE STREET INLETS.

5. EROSION CONTROL DEVICES SHALL BE INSTALLED AT CREEK CROSSINGS SO AS TO PREVENT SEDIMENT FROM ENTERING THEREIN.

6. STABILIZED CONSTRUCTION ENTRANCES SHALL BE PROVIDED, AS NEEDED, TO PREVENT MUD FROM TRACKING ONTO STREETS NOT UNDER CONSTRUCTION AND ON STREETS WITHIN THE PROJECT LIMITS IF TRAFFIC IS BEING MAINTAINED THROUGH THE PROJECT.

7. ANY MUD TRACKED ONTO STREETS MUST BE REMOVED AT THE END OF EACH WORK DAY.

8. THE CONTACTOR WILL BE REQUIRED TO PLACE EROSION CONTROL DEVICES BACK OF CURB, WHENEVER WATER CAN DRAIN OVER CURB, TO KEEP ERODED SOIL OUT OF THE GUTTERLINES, IN ACCORDANCE WITH THE FOLLOWING:
   A. THE DEVICE REQUIRED WILL BE APPROVED EROSION CONTROL MAT LISTED ON THE CITY'S APPROVED MATERIAL LIST. SAID BLANKET SHALL BE PLACED OVER THE APPROPRIATE SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS. (SEE SOIL EROSION BMPs – BACK OF CURB SEDIMENT BARRIER DETAILS)
   B. THIS DEVICE SHALL BE INSTALLED IMMEDIATELY WHENEVER THE CURB IS BACKFILLED TO WITHIN 3" OF THE TOP OF CURB. (SEE CURB BACKFILL DETAIL) OTHER BMP'S MAY BE REQUIRED AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB.
   C. ADDITIONALLY, OTHER EROSION CONTROL DEVICES (HAY BALES, SILT FENCE, ETC.) WILL BE INSTALLED AT LOCATIONS OF CONCENTRATED FLOW RESULTING IN SEDIMENT OVERRUNNING THE MAT.
   D. SHOULD THE PROJECT PLANS SPECIFY THAT THE RIGHT–OF–WAY IS TO BE SODDED, THE EXCELSIOR MAT WILL NOT BE REQUIRED SO LONG AS THE SOD IS PLACED WITHIN 48 HOURS AFTER CURB BACKFILL REACHES A HEIGHT OF 3" OR LESS FROM TOP OF CURB. (SEE CURB BACKFILL DETAIL)

GARY L. JANZEN — 16294 — REGISTERED — KANSAS — PROFESSIONAL ENGINEER — 06/05/15

REVISION: JUNE 2015

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

STREET IMPROVEMENT PROJECTS

CITY ENGINEER
GARY JANZEN, P.E.

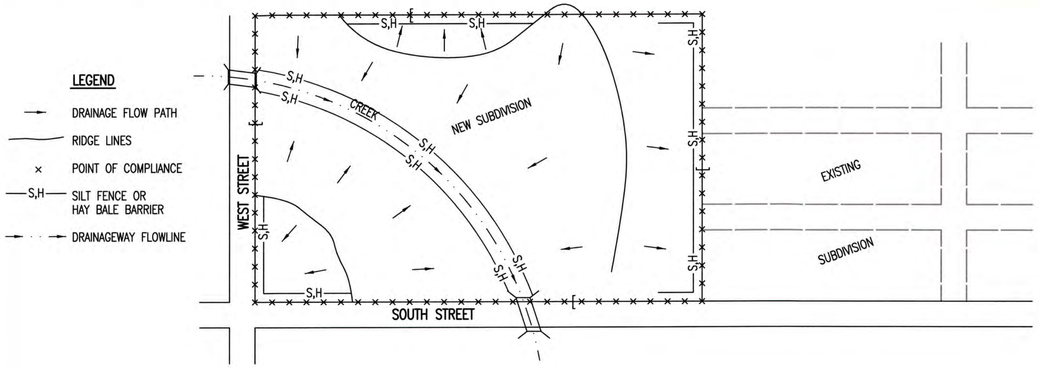
PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET 9.4

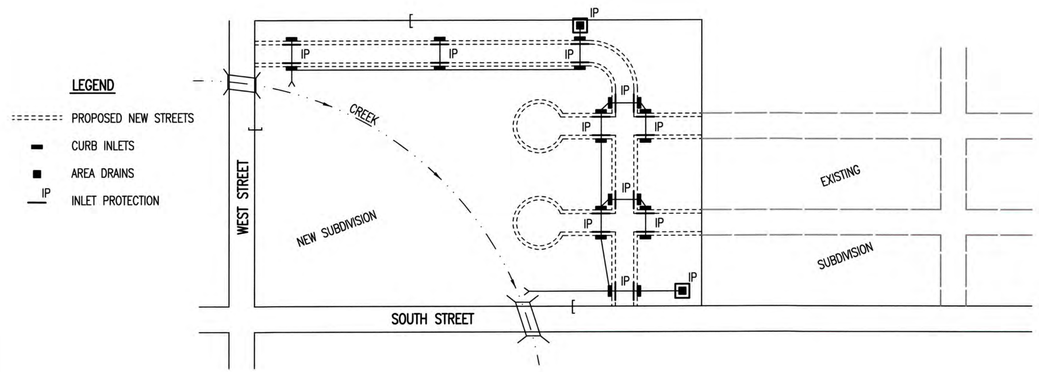
SW-504

PHASE 1 – INITIAL EARTHWORK AND UTILITIES (EXCEPT STORM SEWER)



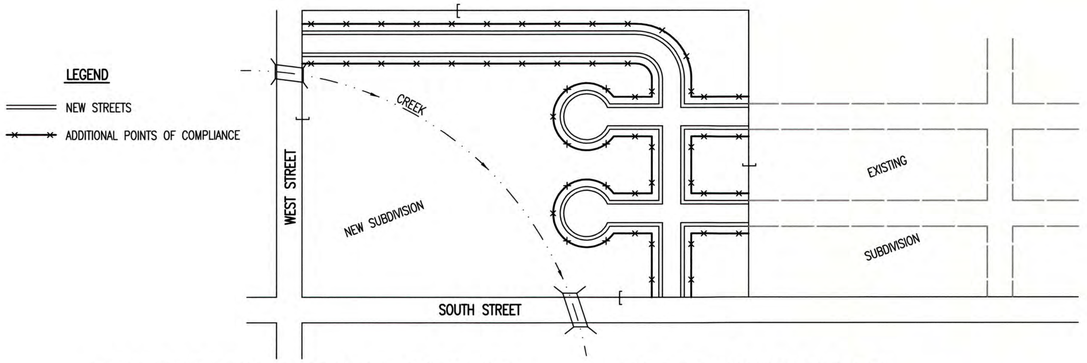
1. DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, THE POINTS OF COMPLIANCE ARE THE PERIMETER BOUNDARIES AND ANY DRAINAGE WAYS OR STORM SEWERS DRAINING THROUGH OR FROM THE SITE. SHOULD LAKES BE CONSTRUCTED WITHIN THE SUBDIVISION THAT WILL DISCHARGE DURING STORMS, THEY ARE ALSO A POINT OF COMPLIANCE.
2. HAY BALES OR SILT FENCE MUST BE CONSTRUCTED ALONG THE PROPERTY LINE WHERE ON SITE WATER CAN DRAIN OFF THE PROPERTY. THESE EROSION CONTROL DEVICES WILL ALSO BE INSTALLED ALONG ANY DRAINAGE DITCH OR LAKE THAT CAN DISCHARGE.
3. SHOULD SILT OR SEDIMENT ENTER THE DITCHES OR STREETS ON THE ADJACENT BOUNDARY STREETS, APPROPRIATE EROSION CONTROL DEVICES WILL BE PLACED WITHIN THE SUBDIVISION TO PREVENT THIS.
4. ANY MUD TRACKED ONTO ADJACENT STREETS WILL BE REMOVED WITHIN 48 HOURS OR BY FRIDAY AT 6:00 PM, WHICHEVER IS EARLIER.
5. CONTRACTORS WORKING WITHIN THE SITE WILL NOT BE REQUIRED TO USE INDIVIDUAL EROSION CONTROL DEVICES AS LONG AS THOSE SPECIFIED ABOVE ARE IN PLACE AND EFFECTIVE. CONTRACTORS WORKING ON THE BOUNDARY LINE STREETS OR ON ADJACENT PROPERTIES TO EXTEND UTILITIES ARE EXPECTED TO USE EROSION CONTROL DEVICES AT THEIR WORK LOCATIONS, AS NEEDED.
6. UTILIZE STABILIZED CONSTRUCTION ENTRANCE AT ENTRANCE AND EXIT ONTO ANY EXISTING PUBLIC STREETS.
7. IF THE INITIAL EARTH WORK AND UTILITIES ARE DONE AS PART OF A PUBLIC IMPROVEMENT PROJECT, THESE EROSION CONTROL DEVICES WILL BE INSTALLED BY THE CONTRACTOR AS SPECIFIED IN THE INDIVIDUAL PROJECT CONTRACTS. THE CONTRACTOR WILL MAINTAIN THE DEVICES UNTIL COMPLETION OF THE CONTRACT, AT WHICH TIME THE DEVELOPER WILL ASSUME MAINTENANCE RESPONSIBILITIES. IF THESE CONTRACTS ARE NOT PUBLIC IMPROVEMENT PROJECTS, THE DEVELOPER WILL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING THESE DEVICES.
8. WITHIN 14 DAYS OF COMPLETION OF EARTHWORK ACTIVITIES IN ANY GIVEN AREA, THAT AREA SHALL BE TEMPORARILY OR PERMANENTLY SEEDED AND MULCHED.

PHASE 2 – INSTALLATION OF STORM SEWER



1. DURING THIS PHASE OF SUBDIVISION DEVELOPMENT, ALL EROSION CONTROL DEVICES REQUIRED IN PHASE 1 SHALL REMAIN IN PLACE AND BE MAINTAINED.
2. AS NEW STORM SEWERS, WITH INLETS, ARE INSTALLED, THE STORM SEWERS MUST NOW BE PROTECTED SO ALL NEW INLETS BECOME POINTS OF COMPLIANCE.
3. AREA DRAINS – AS SOON AS WATER CAN FLOW INTO THESE DRAINS, HAY BALE OR SILT FENCE PROTECTION WILL BE INSTALLED AROUND THEM.
4. CURB OPENING INLETS – AS SOON AS WATER CAN FLOW INTO THESE DRAINS, INLET PROTECTION DEVICES MUST BE INSTALLED. IF WATER CANNOT FLOW INTO CURB INLETS UNTIL STREET CONSTRUCTION IS COMPLETE, THEN STREET CONTRACTOR WILL INSTALL INLET PROTECTION. SEE PHASE 3 – STREET CONSTRUCTION.
5. THE STORM SEWER CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING THESE DEVICES.
6. THE SUBDIVISION DEVELOPER WILL MAINTAIN THESE EROSION CONTROL DEVICES ONCE INSTALLED.
7. ALL DISTURBED GROUND WILL BE FINAL GRADED AND TEMPORARILY OR PERMANENTLY SEEDED WITHIN 14 DAYS IF COMPLETION OF WORK IN ANY GIVEN PART OF THE SUBDIVISION.
8. ONCE ALL DISTURBED GROUND DRAINING TO AN INLET HAS BEEN RESTABILIZED WITH GRASS OR SOD, THE SUBDIVISION DEVELOPER WILL BE RESPONSIBLE FOR PERMANENTLY REMOVING THE INLET PROTECTION.

PHASE 3 – STREET CONSTRUCTION

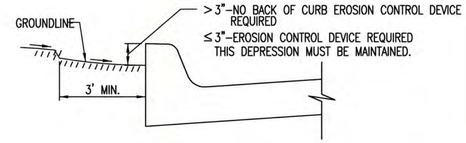


1. DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, NEW STREETS ARE INSTALLED. ALL EROSION CONTROL DEVICES INSTALLED DURING PHASE 1 AND 2 MUST STILL BE MAINTAINED. THE POINT OF COMPLIANCE NOW SHIFTS TO THE BACK OF CURB ALONG EACH STREET.
2. CURB OPENING INLET PROTECTION:
   A. SUMP AREAS – INLET PROTECTION SHALL BE PROVIDED WHEN STREET SUBGRADE WORK IS COMPLETED.
   B. NON–SUMP LOCATIONS – PROVIDE INLET PROTECTION AS SOON AS BASE COURSE ASPHALT IS INSTALLED, BEFORE THE SURFACE COURSE LIFT.
3. EROSION CONTROL DEVICES WILL BE REQUIRED BACK OF CURB WHEREVER WATER CAN FLOW OVER THE CURB AND THE CURB HAS BEEN BACKFILLED TO WITHIN 3" OR LESS OF THE TOP OF CURB (SEE CURB BACKFILL DETAIL). FOR CURBS NOT YET ENTIRELY BACKFILLED (3" OR MORE BELOW TOP OF CURB), ADDITIONAL DEVICES WILL BE REQUIRED AT POINTS WHERE WATER BREAKS OVER CURB WHICH COULD RESULT IN THE PLACEMENT OF SEDIMENT IN THE GUTTER.
4. SEE DETAIL SHEET FOR BACK OF CURB PROTECTION.
5. THE BACK OF CURB PROTECTION SPECIFIED ON THIS PLAN MAY HAVE TO BE SUPPLEMENTED WITH HAY BALE OR SILT FENCE EROSION CONTROL DEVICES AT LOCATIONS WHERE CONCENTRATED FLOW RESULTS IN SEDIMENT BEING CARRIED OVER THE EXCELSIOR MATS.
6. THE STREET CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING BACK OF CURB EROSION CONTROL DEVICES.
7. THE INDIVIDUAL LOT OWNERS WILL BE RESPONSIBLE FOR MAINTAINING THE BACK OF CURB EROSION CONTROL DEVICES IN FRONT OF THEIR LOTS UNTIL SUCH TIME AS ADJACENT DISTURBED EARTH IS STABILIZED WITH GRASS OR SOD.

GENERAL NOTES

1. THE INTENT OF ALL EROSION CONTROL DEVICES IS TO PREVENT ERODED SOIL FROM ENTERING DITCHES, STORM SEWERS, LAKES, STREETS OR ANY OTHER OTHER DRAINAGE FEATURE.
2. THIS SHEET IS INTENDED TO PROVIDE GUIDELINES AS TO WHAT TYPE OF EROSION CONTROL DEVICES WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS. CONTRACTORS ARE EXPECTED TO BID PROJECTS ACCORDINGLY.
3. EROSION CONTROL DEVICES SHALL BE MAINTAINED DURING THE CONSTRUCTION PROCESS TO REMAIN EFFECTIVE. MAINTENANCE SHALL BE AS INDICATED ON SOIL EROSION BMP'S DETAIL SHEETS.
4. PERSONS DESTROYING EROSION CONTROL DEVICES SHALL BE RESPONSIBLE FOR IMMEDIATELY REPAIRING THEM OR INSTALLING SUITABLE REPLACEMENT DEVICES.
5. THE DEVELOPMENT OF ANY SUBDIVISION THAT DISTURBS 1 ACRE OR MORE WILL REQUIRE A FEDERAL/STATE NPDES STORMWATER PERMIT. THE PREPARATION OF A STORMWATER POLLUTION PREVENTION PLAN IS REQUIRED. EROSION CONTROL DEVICES ARE REQUIRED. THE DETAILS SHOWN ON THIS SHEET ARE THE MINIMUM STANDARDS TO BE SHOWN ON POLLUTION PREVENTION PLANS.
6. FOR SUBDIVISIONS SMALLER THAN 1 ACRE, SOIL EROSION DEVICES ARE REQUIRED. ALSO, DEVELOPERS AND CONTRACTORS ARE ENCOURAGED TO DEVELOP POLLUTION PREVENTION PLANS FOR EACH PROJECT PRIOR TO CONSTRUCTION.
7. FAILURE TO USE AND MAINTAIN SOIL EROSION DEVICES IS A VIOLATION OF SECTION 16.32 OF THE CITY CODE AND WILL SUBJECT THE SUBDIVISION DEVELOPER AND CONTRACTORS TO THE PENALTIES PROVIDED THEREIN.
8. THE APPLICATION OF EROSION CONTROL DEVICES SHOWN ON THIS SHEET IS FOR SITUATIONS NORMALLY ENCOUNTERED. FROM TIME TO TIME, SITUATIONS WILL ARISE THAT MAY REQUIRE DEVICES OTHER THAN THAT SHOWN. EROSION CONTROL DEVICES, OTHER THAN THOSE SHOWN, MAY BE UTILIZED SO LONG AS THEY ARE EFFECTIVE AND MAINTAINED.
9. A STABILIZED EARTH SURFACE IS DEFINED AS ONE THAT IS HARD SURFACED WITH CONCRETE, ASPHALT, OR THE LIKE, OR ONE ON WHICH 70% OF THE GRASS HAS GERMINATED ON THE ENTIRE SURFACE.

SEE DETAIL SHEET FOR
BACK OF CURB PROTECTION DETAIL



CURB BACKFILL DETAIL
(STREET CONSTRUCTION ONLY)

THIS IS A TEMPORARY MEASURE ONLY, WHEN APPROVED BY THE PROJECT ENGINEER. THE DIRT GRADE BEHIND THE CURB SHALL BE BROUGHT TO THE TOP OF CURB, WITH TEMPORARY EROSION CONTROL MAT OR PERMANENT VEGETATION PLACED, PRIOR TO THE COMPLETION OF ALL PROJECTS.

REVISION DATE: MAY 2013

GARY L. JANZEN LICENSED 16294 PROFESSIONAL ENGINEER KANSAS
05.13.13

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

SUBDIVISION DEVELOPMENT PROCESS

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE

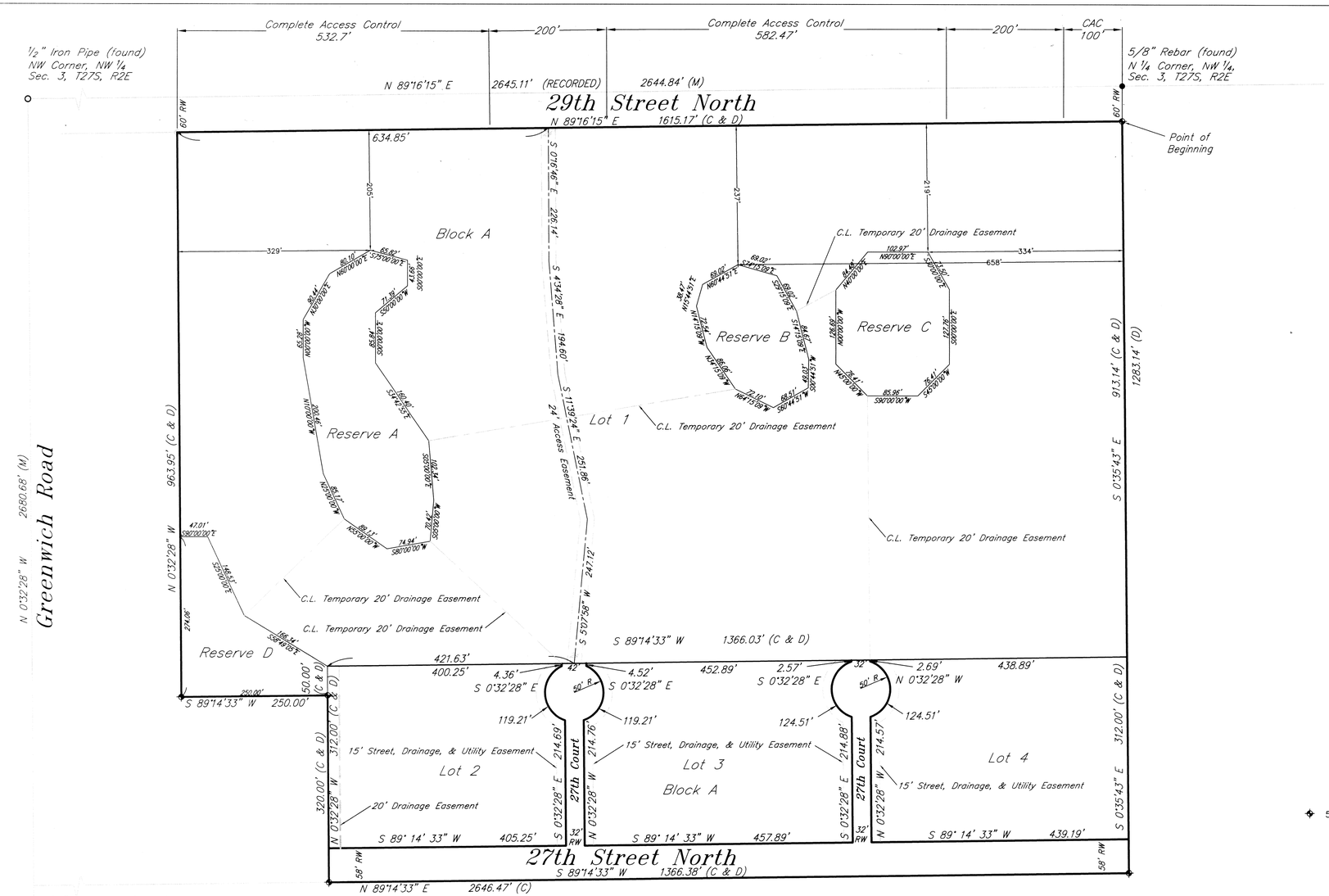
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

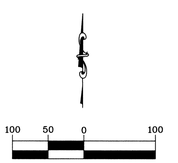
SHEET 9_5

SW–505

Stoney Pointe Addition
Wichita, Sedgwick County, Kansas

Part of the NW 1/4, Section 3
Township 27 South, Range 2 East, of the 6th. P.M.





Benchmark:
Brass disc on top of curb in front of fire hydrant, Lot 1, Block 1, Regency Park Addition to Wichita, Sedgwick County , Kansas
Elevation=1378.96 (NGVD 29) (191.56 City of Wichita datum)

Notes:
1. This Addition is subject to conditions of Protective Overlay No. 74.
2. Developer shall provide and record with the appropriate governing body permanent drainage and access easements at the time of construction to allow access to the reserves through and from public and or private streets and easements.

State of Kansas)
County of Sedgwick) SS

I, Bradley C. Ward, a licensed land surveyor of the State of Kansas, do hereby certify that the following described tract of land was surveyed on the 12th day of October, 2010, and the accompanying final plat prepared and that all the monuments shown herein actually exist and their positions are correctly shown to the best of my knowledge and belief:

LEGAL DESCRIPTION

A tract of land lying within a portion of Greenwich Business Center Addition, an addition to Wichita, Sedgwick County, Kansas; said tract being described as, Lots 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and portions of Lots 7 and 18, Block 1, TOGETHER with, Lots 1 and 2, Block 2, TOGETHER with, Lots 16 and 17, Block 3, TOGETHER with, 27th Street Court, Essex Street, 28th Street North and part of 27th Street North rights-of-way being vacated, TOGETHER with, Reserves D and E, being more particularly described as follows:

Beginning at the Northeast corner of said Lot 1, Block 2, said addition; thence along the East line of Lots 1 and 2, Block 2, and extended along the East lines of Lots 16 and 17, Block 3, along a platted bearing of S 0°35'43" E, a distance of 1283.14 feet to the Southeast corner of said Lot 17, Block 3; thence along the Southerly line of said addition, S 89°14'33" W, a distance of 1366.38 feet; thence parallel with the West line of said Lot 18, N 0°32'28" W, a distance of 320.00 feet; thence parallel with the Southerly line of said addition S 89°14'33" W, a distance of 250.00 feet, to said West line of Lot 18; thence along the West line of Lots 18, 17 and 16, Block 1 and extended to the North line of said Lot 7, N 0°32'28" W, a distance of 963.95 feet; thence along the North line of Lots 7, 8, 9 and Reserve D, Block 1 and extended along the North line of Reserve E and Lot 1, Block 2, on a platted bearing of N 89°16'15" E, a distance of 1615.17 feet the Point of Beginning.

Said tract contains 45.77 acres ±.

All easements and rights-of-way within said tract are hereby vacated by virtue of KSA 12-512(b) amended.

BRADLEY C. WARD LICENSED LS-920 KANSAS LAND SURVEYOR

Bradley C. Ward, L.S. #920 Date
Not original unless signed in blue ink!

State of Kansas)
County of Sedgwick) SS

Know all men by these presents, that we, the undersigned, have caused the land described in the surveyor's certificate to be platted into Lots and a Block, reserves and streets to be known as Stoney Pointe Addition, Wichita, Sedgwick County, Kansas. The streets are hereby dedicated to and for the use of the public. The streets, drainage and utility easements are hereby granted as indicated for street and drainage purposes and for the construction and maintenance of all public utilities. Temporary drainage easements are hereby granted for the conveyance of storm water and shall automatically vacate at such time as the conveyance of storm water is confined to permanent 20' drainage easements, to be accepted by the City and recorded by separate instrument with the Sedgwick County Register of Deeds. The access easement is hereby dedicated for the benefit of the adjoining properties. Reserves A, B, C, and D are dedicated for storm water detention, landscaping, irrigation and beautification. A drainage plan has been developed for the plat and all drainage easements, rights-of-way, and reserves A, B, C, and D shall remain at established grades or as modified with the approval of the applicable City or County Engineer, and unobstructed to allow for the conveyance of storm water. Minimum pad elevations for Lot 1 are detailed on the master grading plan. Reserves A, B, C and D shall be owned and maintained by the owner of Lot 1, for the use as a drainage reserve and utility easement. Complete access control except for 2 openings shall be as shown on the plat. And further, that the land contained herein is held and shall be conveyed subject to any applicable restrictions, reservations and covenants now on file or hereafter filed in the Office of the Register of Deeds of Sedgwick County, Kansas.

By: NORTH GREENWICH / 29TH LLC, a Kansas limited liability company

3/7/2011
Kevin Mullen, President, Ritchie Investment Company, Inc., Manager of NORTH GREENWICH/ 29TH, LLC, a Kansas limited liability company — Date

State of Kansas)
County of Sedgwick) SS

This instrument was acknowledged before me on this 7th day of March 2011, by Kevin Mullen, President, Ritchie Investment Company, Inc., Manager of North Greenwich/29th LLC, a Kansas limited liability company
IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day last above written.

Angie M. Sizemore
Notary Public
My Commission Expires: 7/25/11

ANGIE M. SIZEMORE Notary Public - State of Kansas My Appt. Expires 7/25/11

State of Kansas)
County of Sedgwick) SS

Intrust Bank, N.A. holders of a mortgage on the above decribed property, does hereby consent to the plat of Stoney Pointe Addition.

Intrust Bank, N.A.
Gary Schmitt, Executive Vice President

State of Kansas)
County of Sedgwick) SS

This instrument was acknowledged before me on this 7th day of March 2011, by Gary D. Schmitt, Executive Vice President of Intrust Bank, N.A.
IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day last above written.

Susan K. Cook
Notary Public
My Commission Expires: 11/3/12

SUSAN K. COOK Notary Public - State of Kansas My Appt. Expires 11/3/12

State of Kansas)
City of Wichita) SS

This plat of Stoney Pointe Addition, Wichita, Sedgwick County, Kansas, has been submitted to and approved by the Wichita-Sedgwick County Metropolitan Area Planning Commission, Wichita, Kansas. Dated this 12th day of December 2010.
Wichita-Sedgwick County Metropolitan Area Planning Commission.

Debra Miller Stevens, Chair
John L. Schlegel, Secretary

WICHITA PLANNING COMM. KANSAS

SEDGWICK COUNTY METROPOLITAN AREA PLANNING COMMISSION SEAL KANSAS

State of Kansas)
City of Wichita) SS

This plat approved and all dedications shown hereon accepted by the City Council of the City of Wichita, Kansas, this 12TH day of April 2011.

At the Direction of the City Council

Carl Brewer, Mayor

Karen Sublett, City Clerk

Entered on transfer record this 12 day of April, 2011.

Kelly B. Arnold, County Clerk

CLERK OF SEDGWICK COUNTY KANSAS

State of Kansas)
County of Sedgwick) SS

This is to certify that this plat has been filed for record in the Office of the Register of Deeds this 12th day of April, 2011, at 9:24:37 o'clock A.M. and is duly recorded.

Bill Meek, Register of Deeds

Tonya Buckingham, Deputy

Reviewed in accordance with K.S.A. 58-2005 on this 12th day of April, 2011.

RICK L. ROBELLO LICENSED LS-1246 KANSAS LAND SURVEYOR

Tricia L. Robello, L.S. #1246
Deputy County Surveyor
Sedgwick County, Kansas

Sedgwick County
Register of Deeds - Bill Meek
DOC.#/FLM-PG: 29212158
Receipt #: 1778308
Pages Recorded: 1
Cashier Initials: JP
Recording Fee: $20.00
Authorized By:
Date Recorded: 4/12/2011 9:24:37 AM

Filename: 10088\Stoney Pointe Final Plat.dwg Prepared: 2-3-11

kemiller engineering
516 S. Market, Wichita, KS 67202 316/264-0242