SHEET NO.	TOTAL SHEETS
1	21

PRIVATE STREET PLANS

FOR

LEGACY PARK WILSON ESTATES ADDITION

STORM SEWER PRIVATE PROJECT NO. 1187PPS(607861)

INDEX OF SHEETS

1. TITLE SHEET
2. TYPICAL SECTIONS
3. HORIZONTAL AND VERTICAL CONTROL
4.-5. PLAN - PRIVATE STREET
6. PLAN & PROFILE - SWS LINE NO. 1
7. PLAN & PROFILE - SWS LINE NO. 2
8. VALLEY GUTTER DETAILS
9. MISCELLANEOUS PAVING DETAILS
10. PRIVATE STREET ENTRANCE DETAILS
11. WEST ENTRANCE DETAILS
12. STD. TYPE 1-A CURB INLET DETAILS
13. R.C. MANHOLE DETAILS
14. TYPE "C" INLET DETAILS
15. FRAME AND COVER DETAILS
16. FCND GRADING PLAN
17. SITE GRADING PLAN
18.-21. SOIL EROSION BMP DETAILS

APPROVED AS NOTED
BY CITY ENGINEER OF WICHITA

SANITARY SEWERS _____

STORM SEWERS VRH 12/4/01

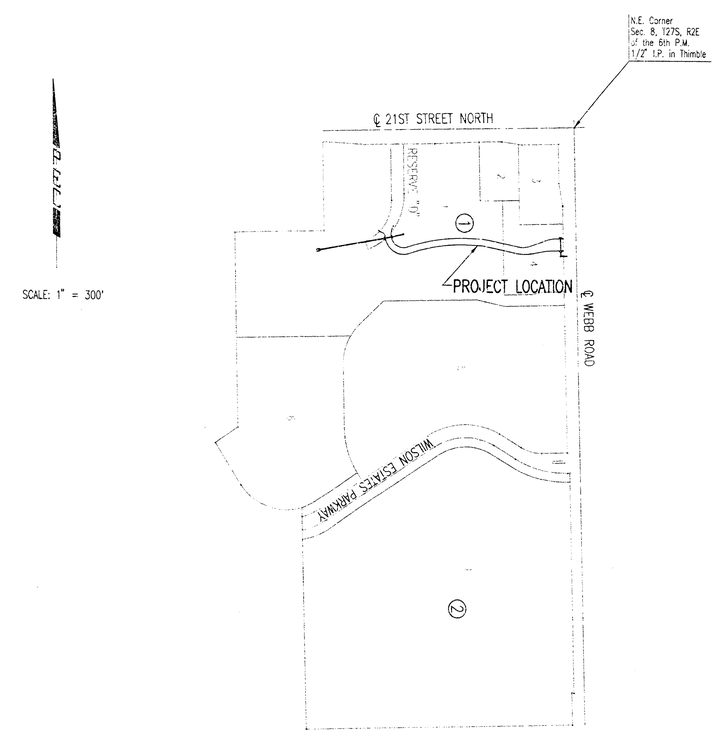
DRIVEWAY APPROACHES _____

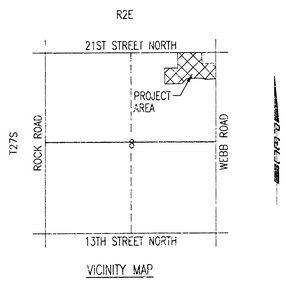
WATER MAINS _____

PAVING _____

NOTE TO CONTRACTOR

INSPECTION AND TESTING FOR THIS PROJECT IS TO BE PROVIDED BY A LICENSED CONSULTING ENGINEERING FIRM CONTRACTED BY THE CONTRACTOR. SAID INSPECTION TO BE IN ACCORDANCE WITH THE CITY OF WICHITA STANDARD CONSTRUCTION ENGINEERING PRACTICES AND CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER. NO WORK SHALL BE PERFORMED IN DEDICATED EASEMENTS OR PUBLIC RIGHT-OF-WAY BY THE CONTRACTOR UNTIL SUCH INSPECTION IS ARRANGED FOR AND REQUIRED BONDS HAVE BEEN SUBMITTED TO AND APPROVED BY THE CITY NOR SHALL ANY WORK BE COMMENCED IN DEDICATED EASEMENTS OR PUBLIC RIGHT-OF-WAY WITHOUT WRITTEN AUTHORIZATION BY THE CITY ENGINEER. IMPROVEMENTS PERFORMED UNDER THIS PROJECT SHALL NOT BE ACCEPTED BY THE CITY UNTIL ALL APPLICABLE DOCUMENTATION HAS BEEN SUBMITTED TO THE CITY ENGINEER. THIS MAY INCLUDE: AS-BUILT DRAWINGS, INSPECTION LOGS, TEST DOCUMENTATION, TV TAPES, AND A CERTIFICATE OF COMPLETION. THE ABOVE SHALL BE PERFORMED BY THE CONSULTING FIRM CONTRACTED TO INSPECT THIS PROJECT.





VICINITY MAP

GENERAL NOTES

UNDERGROUND UTILITY SERVICE LINES AND OVERHEAD UTILITY POLE LINES ARE TO BE ADJUSTED AS NECESSARY BY OTHERS PRIOR TO CONSTRUCTION UNLESS THE PLANS SPECIFICALLY CALL FOR THEIR ADJUSTMENT BY THE CONTRACTOR. EXISTING UTILITIES AND THEIR LOCATION, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. LOCATION INFORMATION HAS BEEN OBTAINED FROM THE VARIOUS UTILITY COMPANIES AND IS EITHER FROM COMPANY RECORD DRAWINGS OR COMPANY PROVIDED FIELD LOCATIONS. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE RIGHT-OF-WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION.

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.

RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES SHALL BE DISPOSED OF ON SITES TO BE PROVIDED BY THE CONTRACTOR.

CONTRACTOR SHALL PROVIDE A MINIMUM FORTY-EIGHT (48) HOUR ADVANCE NOTICE (EXCLUDING WEEKENDS AND HOLIDAYS) PRIOR TO BEGINNING ANY EXCAVATION, TO KANSAS ONE-CALL SYSTEM, A UTILITY LOCATION SERVICE, AT (316) 687-2470 TO REQUEST THE FOLLOWING UTILITY COMPANIES TO LOCATE ALL EXISTING LINES WITHIN THE PROJECT AREA: K.G.S. GAS, PEOPLES NATURAL GAS, K.G.E. ELECTRIC, SOUTHWESTERN BELL TELEPHONE, COX COMMUNICATION, CITY OF WICHITA SEWER MAINTENANCE AND CITY OF WICHITA WATER DEPARTMENT.

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.

THE WATER DEPARTMENT 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, WATER VALVE BOXES OR FIRE HYDRANTS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE.

ALL CONSTRUCTION METHODS AND MATERIALS TO COMPLY WITH CITY OF WICHITA STANDARD SPECIFICATIONS UNLESS NOTED OTHERWISE.

CONTRACTOR SHALL OBTAIN CITY OF WICHITA DRIVEWAY PERMIT FOR CONNECTION TO WEBB ROAD AND RECONSTRUCTION OF CITY SIDEWALK.

BOOKED
6-14-02
MCB
C-21E

EXCESS EXCAVATION SHALL BE WASTED WITHIN LEGACY PARK WILSON ESTATES ADDITION AS DIRECTED BY THE OWNER, MR. GEORGE LAHAM (316) 292-3950.

NOVEMBER 2001

PLANS PREPARED BY

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

JOSEPH P. SURMEIER
LICENSED
13977
12-31-01
KANSAS
PROFESSIONAL ENGINEER

13 FEB 02
RECORD DRAWING

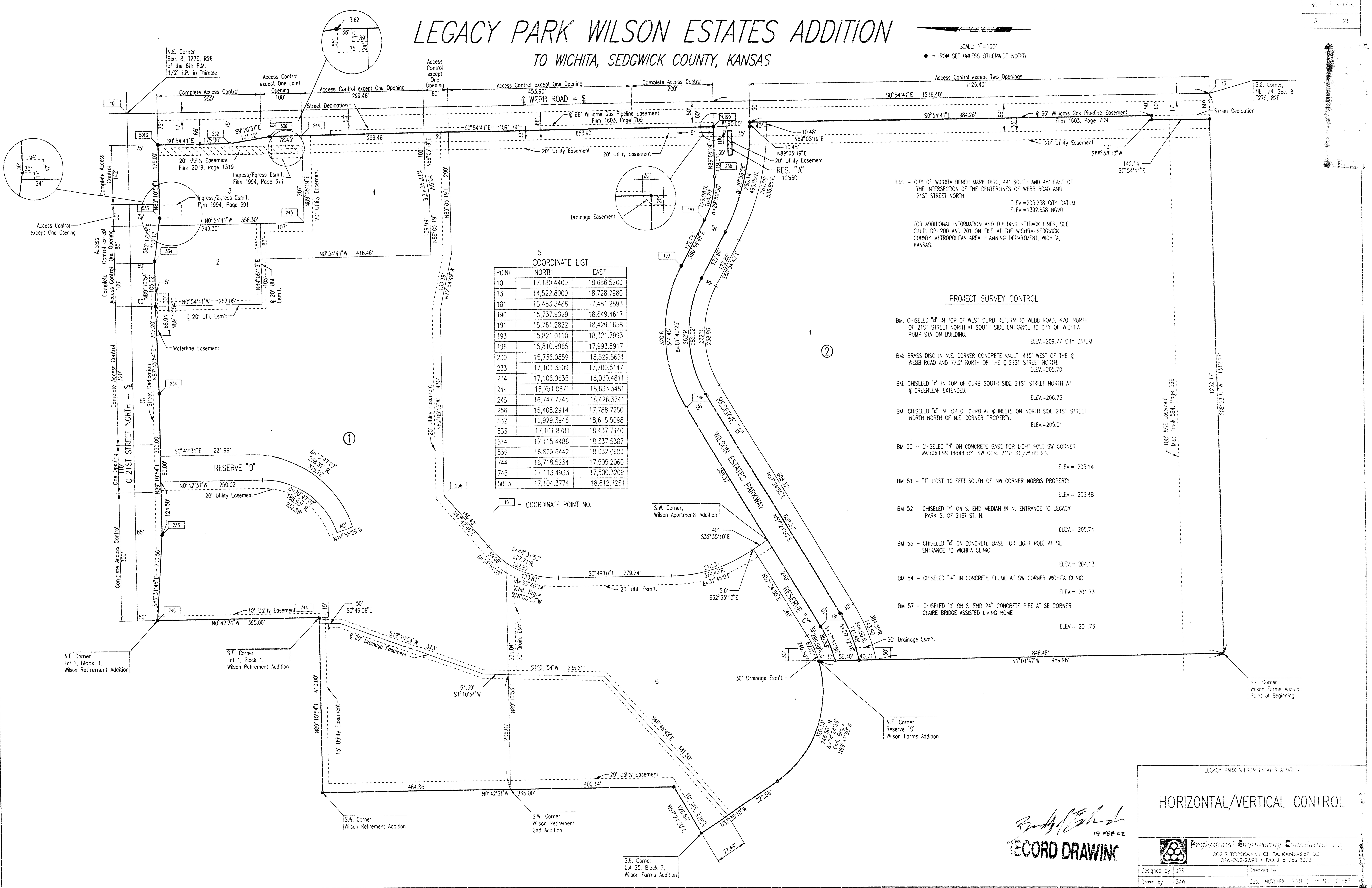
LEGACY PARK WILSON ESTATES ADDITION

TO WICHITA, SEDGWICK COUNTY, KANSAS

SHEET NO.	TOTAL SHEETS
3	21

SCALE: 1"=100'

● = IRON SET UNLESS OTHERWICE NOTED



5

COORDINATE LIST

POINT	NORTH	EAST
10	17,180.4400	18,686.5260
13	14,522.8000	18,728.7980
181	15,483.3486	17,481.2893
190	15,737.9929	18,649.4617
191	15,761.2822	18,429.1658
193	15,821.0110	18,321.7993
196	15,810.9965	17,993.8917
230	15,736.0859	18,529.5651
233	17,101.3509	17,700.5147
234	17,106.0635	18,030.4811
244	16,751.0671	18,633.3481
245	16,747.7745	18,426.3741
256	16,408.2914	17,788.7250
532	16,929.3946	18,615.5098
533	17,101.8781	18,437.7440
534	17,115.4486	18,337.5387
536	16,829.6442	18,032.0983
744	16,718.5234	17,505.2060
745	17,113.4933	17,500.3209
5013	17,104.3774	18,612.7261

[10] = COORDINATE POINT NO.

B.M. – CITY OF WICHITA BENCH MARK DISC, 44' SOUTH AND 48' EAST OF THE INTERSECTION OF THE CENTERLINES OF WEBB ROAD AND 21ST STREET NORTH.
ELEV.=205.238 CITY DATUM
ELEV.=1392.638 NGVD

FOR ADDITIONAL INFORMATION AND BUILDING SETBACK LINES, SEE C.U.P. DP-200 AND 201 ON FILE AT THE WICHITA-SEDGWICK COUNTY METROPOLITAN AREA PLANNING DEPARTMENT, WICHITA, KANSAS.

PROJECT SURVEY CONTROL

BM: CHISELED "◻" IN TOP OF WEST CURB RETURN TO WEBB ROAD, 470' NORTH OF 21ST STREET NORTH AT SOUTH SIDE ENTRANCE TO CITY OF WICHITA PUMP STATION BUILDING.
ELEV.=209.77 CITY DATUM

BM: BRASS DISC IN N.E. CORNER CONCRETE VAULT, 415' WEST OF THE ℄ WEBB ROAD AND 77.2' NORTH OF THE ℄ 21ST STREET NORTH.
ELEV.=205.70

BM: CHISELED "◻" IN TOP OF CURB SOUTH SIDE 21ST STREET NORTH AT ℄ GREENLEAF EXTENDED.
ELEV.=206.76

BM: CHISELED "◻" IN TOP OF CURB AT ℄ INLETS ON NORTH SIDE 21ST STREET NORTH NORTH OF N.E. CORNER PROPERTY.
ELEV.=205.01

BM 50 – CHISELED "◻" ON CONCRETE BASE FOR LIGHT POLE SW CORNER WALGREENS PROPERTY, SW COR. 21ST ST./WEBB RD.
ELEV.= 205.14

BM 51 – "T" POST 10 FEET SOUTH OF NW CORNER NORRIS PROPERTY
ELEV.= 203.48

BM 52 – CHISELED "◻" ON S. END MEDIAN IN N. ENTRANCE TO LEGACY PARK S. OF 21ST ST. N.
ELEV.= 205.74

BM 53 – CHISELED "◻" ON CONCRETE BASE FOR LIGHT POLE AT SE ENTRANCE TO WICHITA CLINIC
ELEV.= 204.13

BM 54 – CHISELED "+" IN CONCRETE FLUME AT SW CORNER WICHITA CLINIC
ELEV.= 201.73

BM 57 – CHISELED "◻" ON S. END 24" CONCRETE PIPE AT SE CORNER CLAIRE BRIDGE ASSISTED LIVING HOME
ELEV.= 201.73

19 FEB 02

RECORD DRAWING

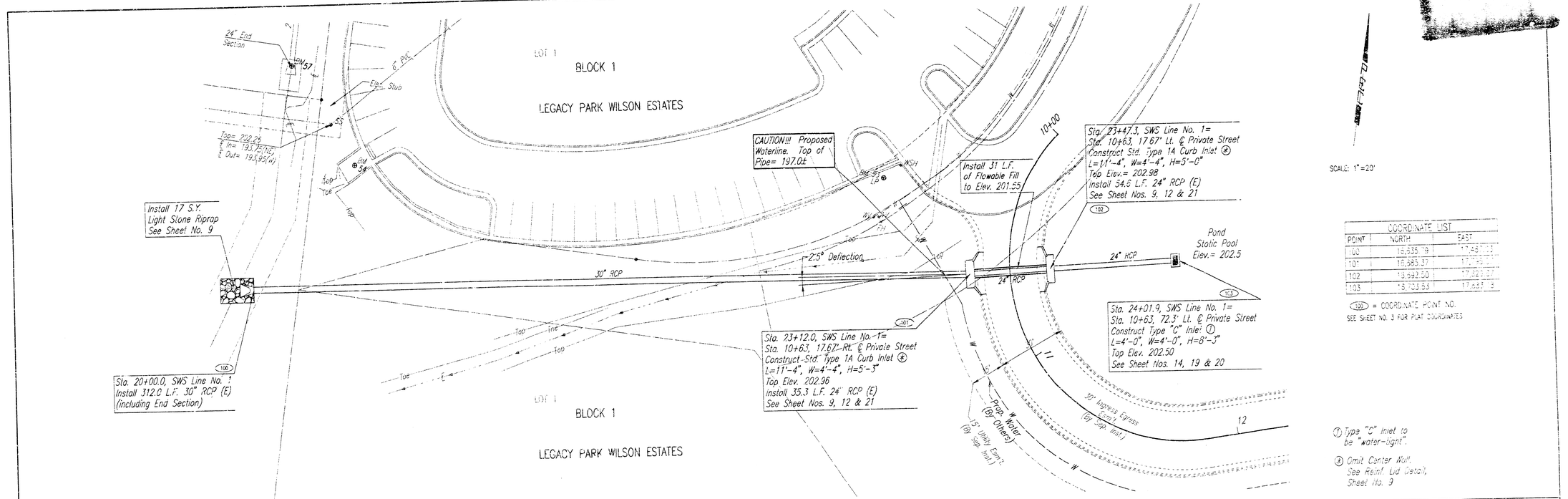
LEGACY PARK WILSON ESTATES ADDITION

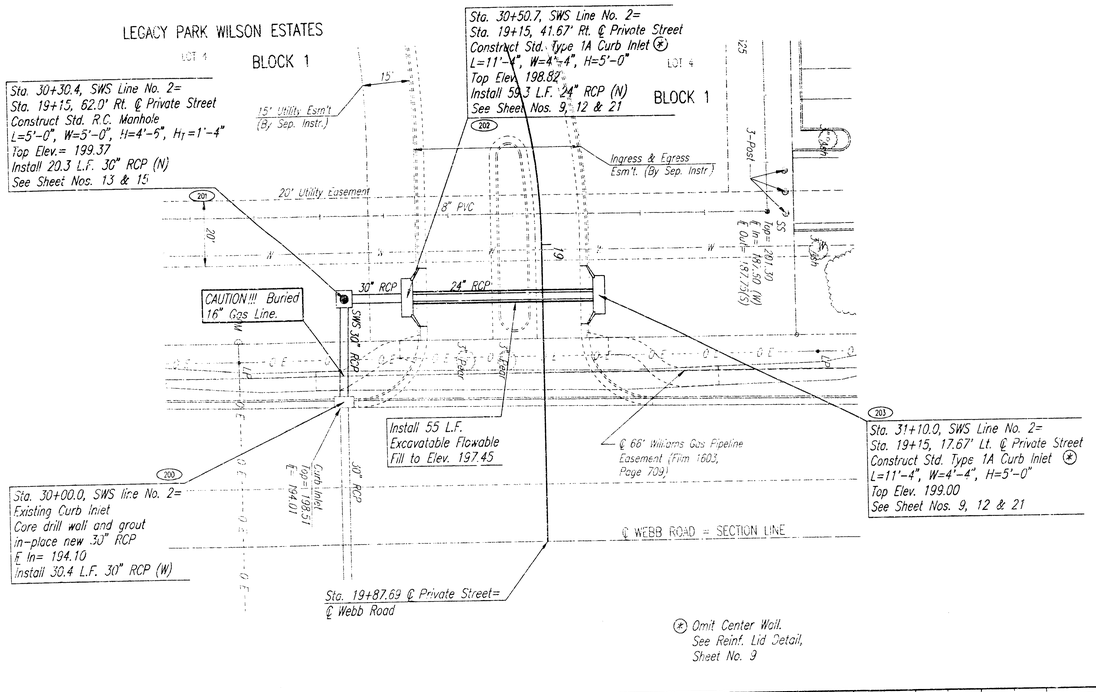
HORIZONTAL/VERTICAL CONTROL

Professional Engineering Consultants, P.A.
303 S. TOPEKA • WICHITA, KANSAS 67202
316-262-2691 • FAX 316-262-3003

Designed by	JPS	Checked by	
Drawn by	SAW	Date NOVEMBER 2001	Job No. 01565

DSNR: JPS OPER: SAD SCALE: 1=100.00
Q:\2001\01565\000\PLAT 12-03-2001 03:06:09 pm

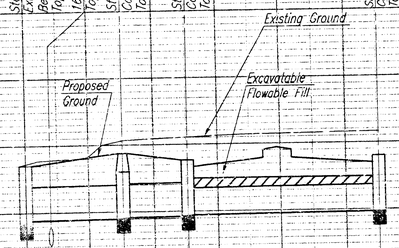

24" End Section
6" PVC
Elec. Stub
Top= 202.25
E In= 193.75(NE)
E Out= 193.95(W)
Top
Toe
Top
Toe
Install 17 S.Y. Light Slone Riprap See Sheet No. 9
Sta. 20+00.0, SWS Line No. 1
Install 312.0 L.F. 30" RCP (E)
(including End Section)
LOT 1
BLOCK 1
LEGACY PARK WILSON ESTATES
CAUTION!!! Proposed Waterline. Top of Pipe= 197.0±
Install 31 L.F. of Flowable Fill to Elev. 201.55
Sta. 23+12.0, SWS Line No. 1=
Sta. 10+63, 17.67' Rt. ℄ Private Street
Construct Std. Type 1A Curb Inlet Ⓔ
L=11'-4", W=4'-4", H=5'-3"
Top Elev. 202.96
Install 35.3 L.F. 24" RCP (E)
See Sheet Nos. 9, 12 & 21
Sta. 23+47.3, SWS Line No. 1=
Sta. 10+63, 17.67' Lt. ℄ Private Street
Construct Std. Type 1A Curb Inlet Ⓔ
L=11'-4", W=4'-4", H=5'-0"
Top Elev.= 202.98
Install 54.6 L.F. 24" RCP (E)
See Sheet Nos. 9, 12 & 21
Sta. 24+01.9, SWS Line No. 1=
Sta. 10+63, 72.3' Lt. ℄ Private Street
Construct Type "C" Inlet ①
L=4'-0", W=4'-0", H=8'-3"
Top Elev. 202.50
See Sheet Nos. 14, 19 & 20
Pond Static Pool Elev.= 202.5
30" RCP
24" RCP
24" RCP
2.5° Deflection
Prop. Water (By Others)
15' Utility Esm't (By Sep. Inst.)
30' Ingress Egress Esm't (By Sep. Inst.)
10+00
11
12
SCALE: 1"=20'
COORDINATE LIST
POINT | NORTH | EAST
100 | 13,635.19 | 17,551.13
101 | 13,883.37 | 17,752.33
102 | 13,992.50 | 17,721.57
103 | 13,703.55 | 17,668.52
(100) = COORDINATE POINT NO.
SEE SHEET NO. 3 FOR PLAT COORDINATES
① Type "C" Inlet to be "water-tight".
④ Omit Center Wall. See Reinf. Lid Detail, Sheet No. 9
Sta. 20+00.0, SWS Line No. 1
Begin 30" RCP Construction
Proposed 8" Waterline Top Pipe= 197.0±
Sta. 23+12.0 SWS Line No. 1 (101)
Construct Std. Type 1A Curb Inlet
Top Elev.= 202.96
Sta. 23+47.3 SWS Line No. 1 (102)
Construct Std. Type 1A Curb Inlet
Top Elev.= 202.98
Sta. 24+01.9 SWS Line No. 1 (103)
Construct Type "C" Inlet
Top Elev.= 202.50
Existing Ground
Proposed Ground
Excavatable Flowable Fill
312.0 L.F. 30" RCP @ +0.16%
35.3 L.F. 24" RCP @ +0.30%
54.6 L.F. 24" RCP @ +0.20%
℄ Out= 198.00
℄ In= 198.60
℄ Out= 198.62
℄ In= 198.73
℄ Out= 198.74
℄ In= 198.85
℄ Out= 198.85
Static Pool Elev.= 202.5
Elev. 201.5
Elev. 195.0
Clay "Plug" Compacted to 95% Std. Density at 0 to +3% Opt. Moisture
14'
4'
4'
2:1
2:1
SECTION A-A
19 FEB 02
RECORD DRAWING
SWS LINE NO. 1
STA. 20+00.0 TO STA. 24+01.9
20+00
21
22
23
24
25+00
210
205
200
195
DSNR: JPS DPER: SAD SCALE: 1=20.00
D:\2001\D1565\000\SWS1 12-03-2001 03:05:51 pm



SCALE: 1"=20'

COORDINATE LIST		
POINT	NORTH	EAST
200	16,609.72	18,653.34
201	16,609.91	18,622.90
202	16,630.24	18,622.58
203	16,689.57	18,621.62

(200) = COORDINATE POINT NO.
SEE SHEET NO. 3 FOR PLAT COORDINATES



DSNR: SAD OPER: SAD SCALE: 1"=20.00
G:\2001\01565\000\SWS2 12-03-2001 03:07:00 pm

LEGACY PARK WILSON ESTATES, Addition

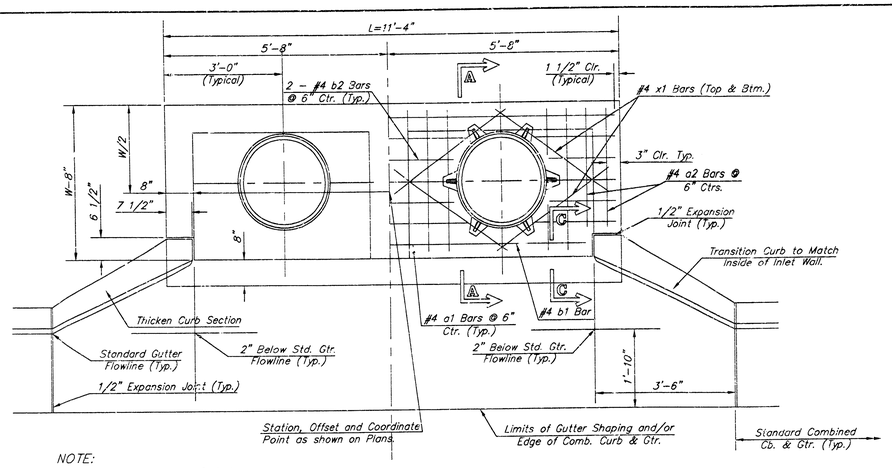
SWS LINE NO. 2
STA. 30+00.0 TO STA. 31+10.0

Professional Engineering Consultants, P.A.
303 S. TOPEKA • WICHITA, KANSAS 67202
316.262.2691 • FAX 316.262.8328

Designed by: JAH
Drawn by: SAW
Job No.: 01565-000
Date: November 2001

Sheet 7 of 21

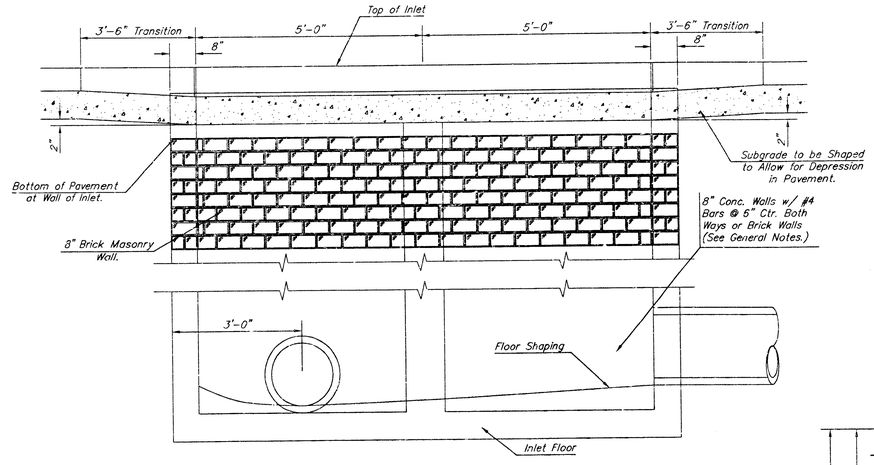
RECORD DRAWING



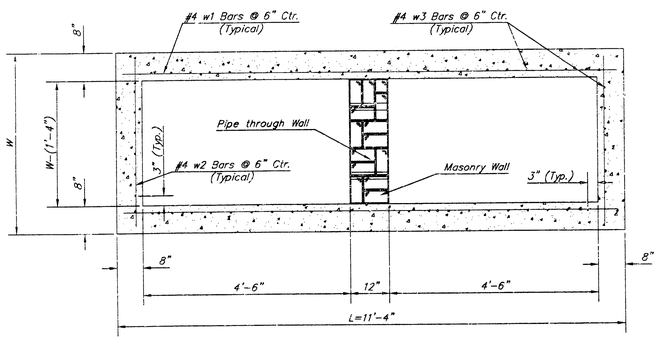
NOTE:
Expansion Joint Only in Curb Area with Concrete Pavement.

PLAN

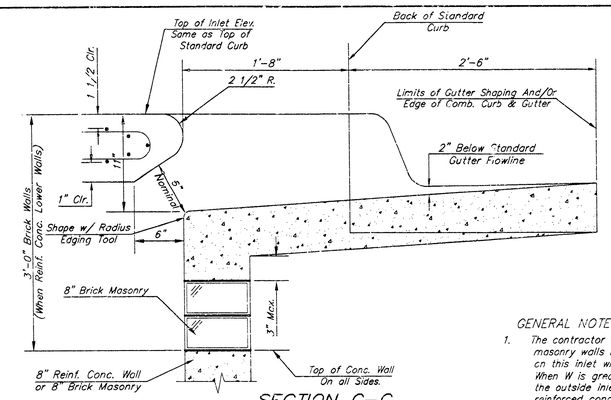
*Left Side Shown Without Slab Reinforcing, Right Side Shown With Slab Reinforcing



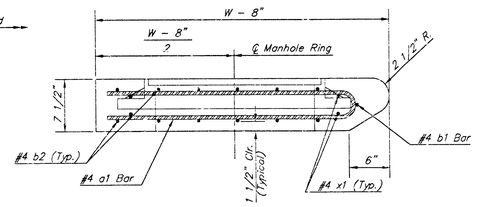
ELEVATION



SECTION B-B



SECTION C-C



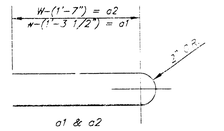
SECTION A-A

PRECAST SLAB AND FLOOR REINFORCING									
		W = 4'-4"		W = 5'-4"		W = 6'-4"		W = 7'-4"	W = 8'-4"
MARK	SIZE	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
* a1	#4	13	6'-7"	13	8'-7"	13	10'-7"	13	12'-7"	13	14'-7"
a2	#4	4	6'-0"	4	8'-0"	4	10'-0"	4	12'-0"	4	14'-0"
a3	#4	23	4'-1"	23	5'-1"	23	6'-1"	23	7'-1	23	8'-1"
b1	#4	1	9'-9"	1	9'-9"	1	9'-9"	1	9'-9"	1	9'-9"
* b2	#4	23	11'-1"	29	11'-1"	35	11'-1"	41	11'-1"	47	11'-1"
x1	#4	16	3'-10"	16	4'-2"	16	4'-6"	16	4'-10"	16	5'-2"
WALL REINFORCING									
		W = 4'-4"		W = 5'-4"		W = 6'-4"		W = 7'-4"	W = 8'-4"
MARK	SIZE	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
w1	#4	①	11'-1"	①	11'-1"	①	11'-1"	①	11'-1"	①	11'-1"
w2	#4	①	4'-1"	①	5'-1"	①	6'-1"	①	7'-1"	①	8'-1"
w3	#4	52	②	56	②	60	②	64	②	68	②

* Field Bend or Cut Reinforcing as Required for Clearance.
① 4 (HI - 12") (HI - 21") Rounded down to nearest 0.5'
② HI - 3"

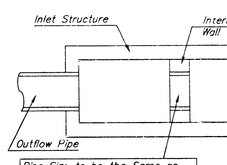
GENERAL NOTES:

1. The contractor shall be required to construct 8" brick masonry walls between the concrete inlet base and top on this inlet when W=6'-4" or less and H=7'-0" or less. When W is greater than 5'-4" and H is less than 7'-0" the outside inlet walls below the brick stack shall be reinforced concrete construction and the center wall shall be of masonry construction as shown for the masonry wall option.
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. Concrete tops to be installed on thin mortar cushion to insure full support along brick walls. Concrete tops may be cast in place or precast. Concrete used for inlet construction shall be concrete pavement mix.
4. Inlet top reinforcing shall be spaced on 6" max. centers. Inlet lids shall be notched out as indicated to facilitate construction of curb. Bars in inlet top to be field bent or cut to clear manhole ring.
5. The ends of all pipes installed in inlets shall be cut off flush with the inside face of the inlet wall.

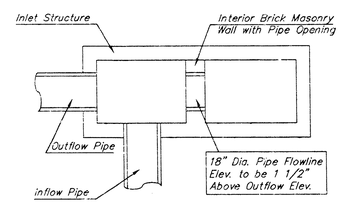


BENDING DIAGRAM

STANDARD CURB INLET PRECAST TOPS			
W	PRE-CAST TOP SIZE	PIPE SIZE	CU. YD. CONC.
4'-4"	3'-8" 11'-4" 7 1/2"	21" & SMALLER	0.83±
5'-4"	4'-8" 11'-4" 7 1/2"	24" & 30"	1.09±
6'-4"	5'-8" 11'-4" 7 1/2"	36" & 42"	1.35±
7'-4"	6'-8" 11'-4" 7 1/2"	48" & 54"	1.61±
8'-4"	7'-8" 11'-4" 7 1/2"	60" & 66"	1.87±

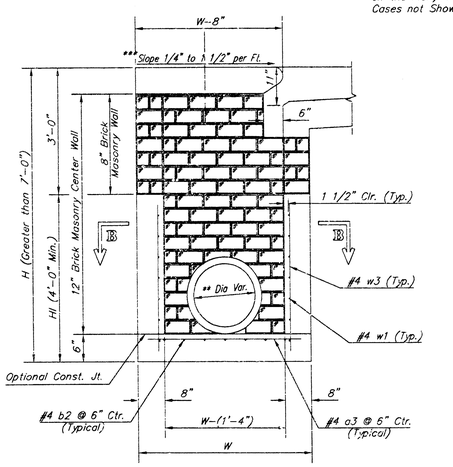


CASE I



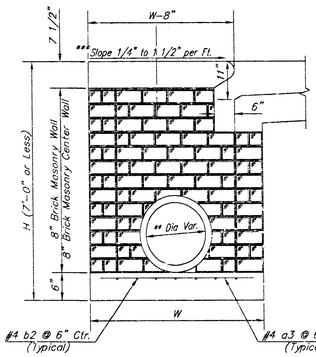
CASE II

NOTE:
Center Wall Pipe Size shall be as Specified in Inlet Construction Notes on the Plan/Profile Sheets for those Cases not Shown Here.



TYPICAL INLET SECTION AT CENTER WALL

(Reinforced Concrete Walls)

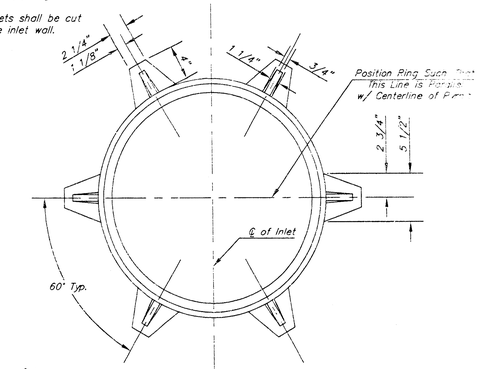


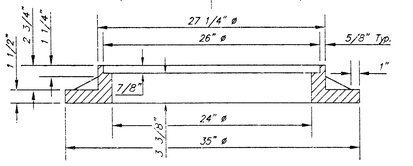
TYPICAL INLET SECTION AT CENTER WALL

(Masonry Walls)

NOTES:
** A center wall opening shall be provided by means of a section of reinforced concrete pipe. See Case I and Case II above.
*** Slope of inlet tops to match sidewalk of parking slopes within limits indicated

19 FEB 02
RECORD DRAWING





MANHOLE RING AND COVER

Weight = 180 lbs.

*See City of Wichita Standard Manhole Ring and Cover Detail Sheet for Cover Details to Be Used With Inlet Frame.

THE CITY OF WICHITA

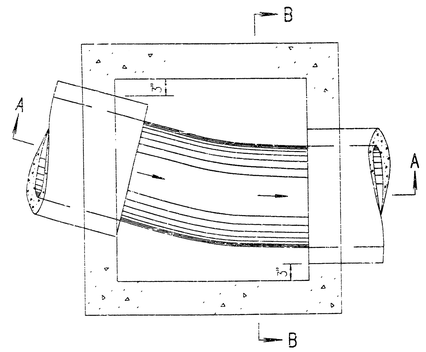
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202
(316) 268-4501
(316) 268-4114 FAX

STANDARD TYPE 1-A CURB INLET OPENING = 6" x 10'-0" L=11'-4"

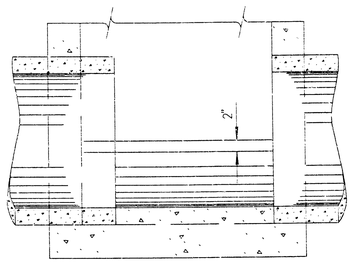
M. E. LINDEBAK P.E. - CITY ENGINEER

PROJECT NUMBER	OCA NO.
36-01565-4297	XXXXXX
DATE: MAR 96	SHEET 12 OF 21

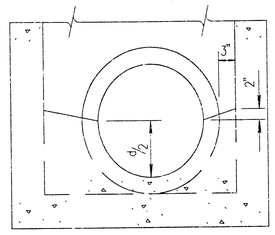
DSNR: SAD OPER: SAD SCALE: 1=1.00
Q:\2001\01565\000\TYP1A-2C 12-03-2001 03:07:29 pm



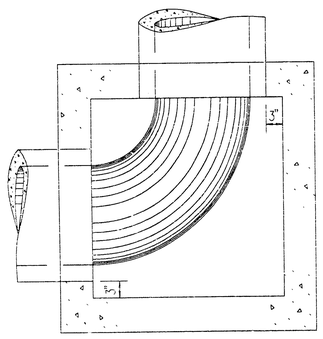
PLAN – FLOOR (Example I)



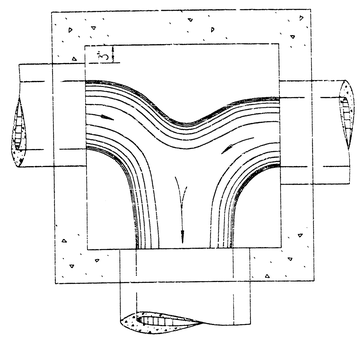
SECTION A–A (Example I)



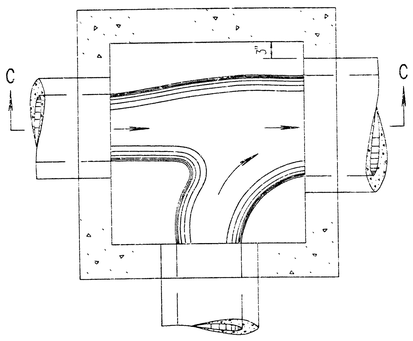
SECTION B–B (Example I)



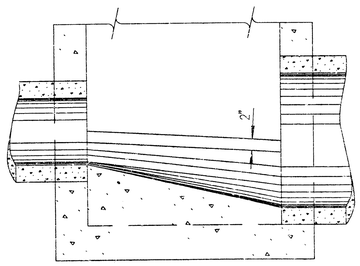
PLAN – FLOOR (Example II)



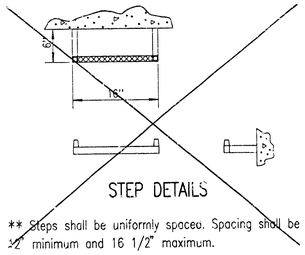
PLAN – FLOOR (Example III)



PLAN – FLOOR (Example IV)

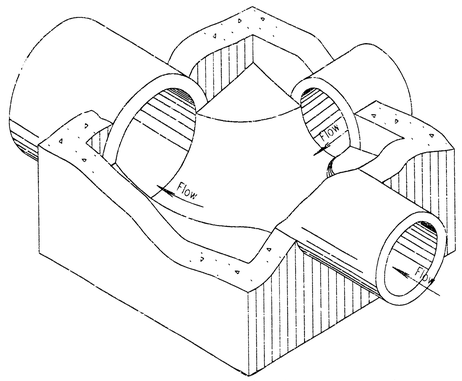


SECTION C–C (Example IV)



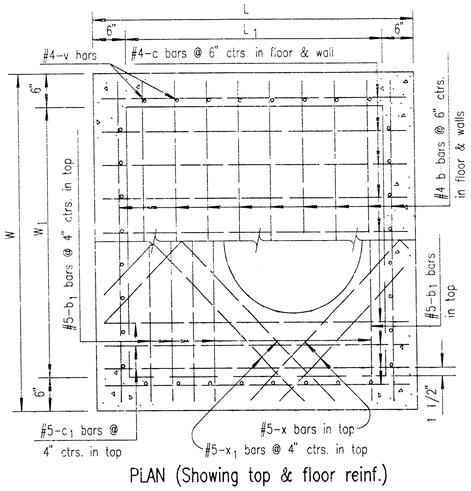
STEP DETAILS

** Steps shall be uniformly spaced. Spacing shall be ½" minimum and 16 1/2" maximum.

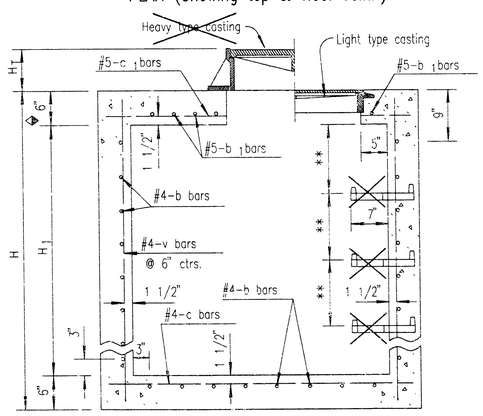


Floor of manhole shall be shaped as shown in the examples to increase hydraulic efficiency.

ISOMETRIC VIEW (Example IV)



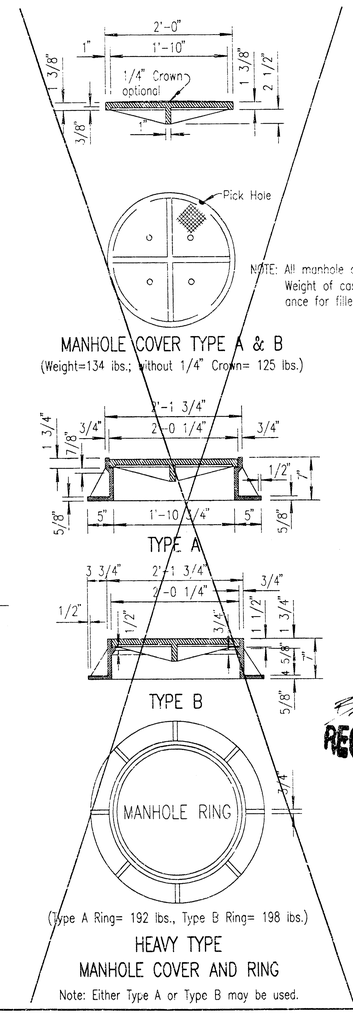
PLAN (Showing top & floor reinf.)



◆ Where dimension "L" or "W" is greater than 6'–0" use 8" slab thickness.

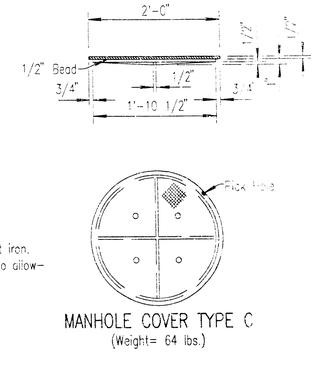
SECTION (Exclusive of floor shaping)

Note: Use 3000 p.s.i. Concrete throughout. All exposed edges shall be finished with an edging tool.
At the contractors option, the mix used in concrete pavement may be used throughout.
In general, pipes will enter and leave manhole at various positions. Where possible bend bars around pipes.
Floor of manhole shall be shaped as shown in various "EXAMPLES" with unreinforced 3000 p.s.i. Concrete.
Manhole opening and steps, where used, shall be placed to afford easy access to top of shaped invert.
Top reinforcing bars shall be adjusted accordingly.
All castings shall be gray iron and shall comply with the KDOT Standard Specifications.
No deductions in concrete quantities shall be made for pipe openings or additions to concrete quantities shall be made for shaping floor of manholes.
The top of the manhole shall be sloped slightly to approximately fit the ground line or other condition as directed by the Engineer.
Dimensions and weights of cast iron as shown on this sheet are minimum. Larger dimensions and/or heavier weights of cast iron may be used.
The Contractor has the option of using precast manholes, as approved by the Engineer.
~~Steps shall be installed in all manholes when specified in the plans or when "H" is 4'-0" or greater than six feet. Steps shall comply with the requirements of the KDOT Standard Specification.~~



MANHOLE COVER TYPE A & B
(Weight=134 lbs.; Without 1/4" Crown= 125 lbs.)

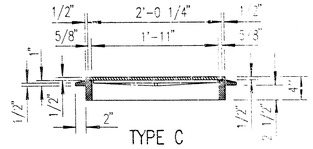
NOTE: All manhole castings are cast iron. Weight of castings includes no allowance for fillets and overruns.



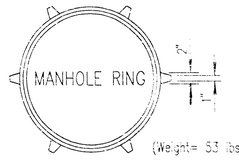
MANHOLE COVER TYPE C
(Weight= 64 lbs.)

TYPE A

TYPE B



TYPE C



(Weight= 53 lbs.)

MANHOLE RING

(Type A Ring= 192 lbs., Type B Ring= 198 lbs.)

HEAVY TYPE
MANHOLE COVER AND RING

Note: Either Type A or Type B may be used.

RECORD DRAWING 19 FEB 02

*LIGHT TYPE
MANHOLE COVER & RING

*Rings with four equally spaced lugs will be permitted.

NOTE: DETAIL ADAPTED FROM KDOT STANDARD DETAIL

LEGACY PARK WILSON ESTATES ADDITION

REINFORCED CONCRETE MANHOLE

Professional Engineering Consultants, P.A.
303 S. TOPEKA • WICHITA, KANSAS 67202
316-262-2691 • FAX 316-262-3003

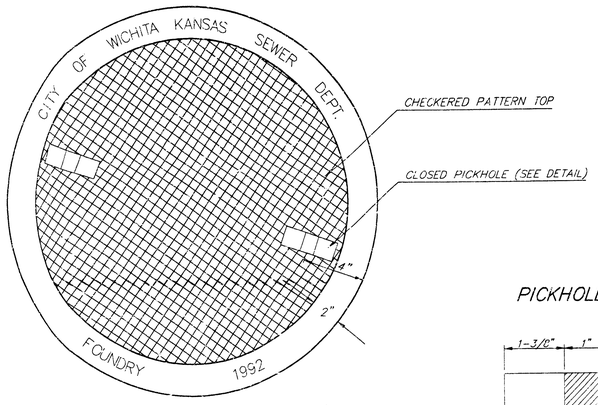
Designed by	JPS	Checked by	
Drawn by	SAW	Date	NOVEMBER 2001

Job No. 01565

MANHOLE FRAME AND COVER DETAIL

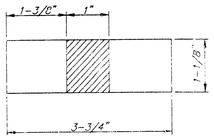
ADOPTED AS STANDARD DESIGN BY
CITY OF WICHITA, KANSAS

MANHOLE COVER
Weight = 180 Lbs.

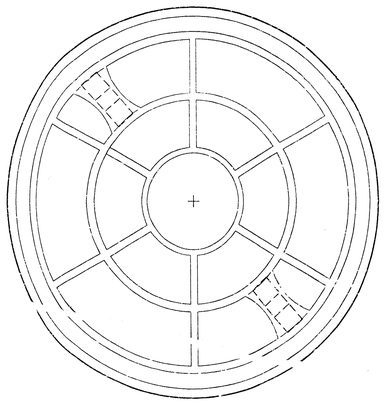


TOP VIEW

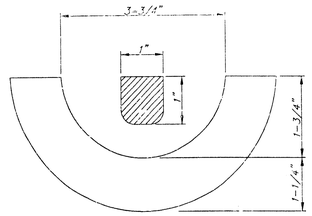
PICKHOLE DETAIL



TOP VIEW

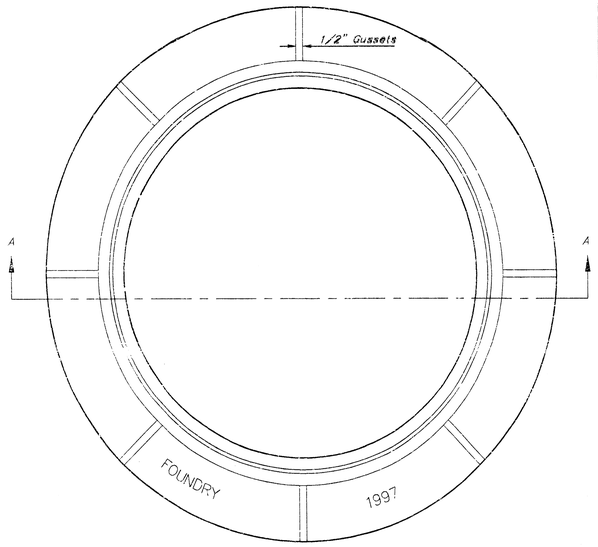


BOTTOM VIEW

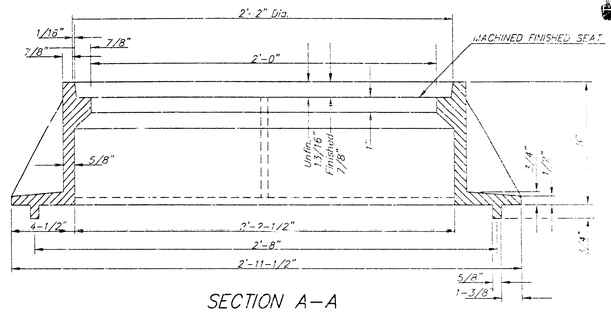


SECTION VIEW

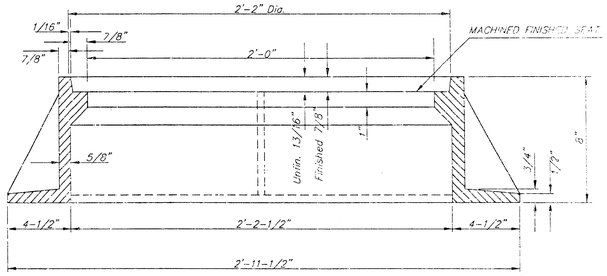
MANHOLE FRAME
Weight = 240 Lbs.



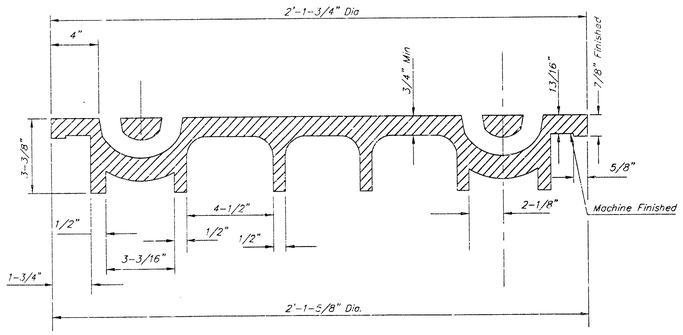
TOP VIEW



SECTION A-A
MUD RING



SECTION A-A



SECTION VIEW

GENERAL NOTES

1. MANHOLE CASTINGS SHALL BE MANUFACTURED USING GOOD QUALITY GRAY IRON CONFORMING TO CLASS 30 OF A.S.T.M. DESIGNATION A-48. DIMENSIONS AND WEIGHTS SHOWN ON THE DETAILED DRAWINGS SHALL BE CONSIDERED AS MINIMUM REQUIREMENTS AND ANY DEVIATIONS FROM THE DIMENSIONS SHOWN MUST BE SPECIFICALLY APPROVED. THE FINISHED CASTINGS SHALL BE OF UNIFORM QUALITY, FREE FROM BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTIONS OR OTHER DEFECTS.

2. MANHOLE CASTINGS SHALL WEIGH A MINIMUM OF 180 POUNDS ON THE SOLID COVER AND 240 POUNDS ON THE MANHOLE RING. THIS IS A TOTAL OF 420 POUNDS ON A RING AND COVER SET. CASTINGS WEIGHING LESS THAN THE MINIMUM SPECIFICATIONS WILL NOT BE ACCEPTED.

3. MANHOLE CASTINGS SHALL BE MANUFACTURED SUCH THAT A COVER MANUFACTURED BY ANY ONE FOUNDRY WILL FIT INTERCHANGEABLY INTO A FRAME MANUFACTURED BY ANOTHER FOUNDRY AND STILL MEET ALLOWABLE CLEARANCES AND NON-ROCKING REQUIREMENTS. THIS WILL REQUIRE MANUFACTURING OF THE MATCHING FACES ON THE COVER AND THE FRAME TO CLOSE TOLERANCES.

4. THE OUTSIDE CIRCUMFERENCE OF THE VERTICAL FACE OF THE COVER AND THE INSIDE CIRCUMFERENCE OF THE VERTICAL FACE IN THE FRAME RECESS SHALL BE MANUFACTURED TO TOLERANCES SUCH THAT THE CLEARANCE BETWEEN THE COVER AND FRAME WILL NOT EXCEED 1/8" AT ANY POINT AROUND THE CIRCUMFERENCE OF THE COVER. THE SEATING SURFACES BETWEEN THE COVER AND FRAME SHALL BE MACHINED SUCH THAT THESE SEATING SURFACES SHALL MAKE FULL CONTACT FOR THEIR FULL CIRCUMFERENCE TO PRECLUDE THE COVER FROM ROCKING IN THE FRAME.

5. THE MANHOLE FRAME AND COVER SHALL BE MARKED WITH LETTERING INDICATING THE NAME OF THE MANUFACTURER AND THE YEAR WHEN THE COVER OR FRAME WAS CAST. THE COVER SHALL BE FURTHER IDENTIFIED WITH REGARDS TO OWNERSHIP USING LETTERS AT LEAST 1 INCH IN HEIGHT. THIS IDENTIFICATION SHALL BE "CITY OF WICHITA SEWER DEPARTMENT". THE WORD DEPARTMENT MAY BE ABBREVIATED. THE TEXTURE OF THE TOP SURFACE OF THE COVER SHALL BE MANUFACTURED IN A CHECKERED PATTERN DESIGN AS INDICATED ON THE DRAWINGS. SMOOTH BLOCKOUTS SHALL BE UTILIZED TO HIGHLIGHT THE LETTERING ON THE COVER SURFACE. THE TOTAL AREA OF SMOOTH SURFACE BLOCKOUT SHALL NOT EXCEED THE AREA AS INDICATED ON THE DRAWING. POSITIONING OF SMOOTH BLOCKOUTS AND LETTERING MAY VARY FROM THAT SHOWN ON THE DETAILED DRAWING.

17 FEB 02
RECORD DRAWING

THE CITY OF WICHITA

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202
(316) 265-4501
(316) 268-4114 FAX

MANHOLE FRAME AND COVER

M. E. LINDEBAK P.E. - CITY ENGINEER

PROJECT NUMBER	OCA NO.
36-01565-4297	XXXXXX
DATE: MAR 96	SHEET 15 OF 21

DSNR: SAD OPER: SAD SCALE: 1=1.00
Q:\2001\01565\000\FRAMEANDCOVER 12-03-2001 03:09:01 pm

SHEET NO.	TOTAL SHEETS
15	2

COORDINATE LIST		
POINT	NORTH	EAST
500	16,695.5455	17,942.9220
501	16,700.1064	17,946.6357
502	16,713.9614	18,006.3011
503	16,725.2984	18,091.8167
504	16,729.6782	18,142.6672
505	16,766.1482	18,186.9445
506	16,774.9239	18,173.6725
507	16,797.3084	18,165.5335
508	16,826.3476	18,141.0959
509	16,821.9783	18,128.5819
510	16,819.5713	18,098.1877
511	16,822.6705	18,080.9478
512	16,851.1761	18,052.6485
513	16,873.5668	18,048.7910
514	16,877.3861	18,045.6546
515	16,879.0128	18,023.3336
516	16,864.9199	18,015.2619
517	16,849.0128	18,003.9995
518	16,832.4708	17,952.2716
519	16,822.8192	17,923.9530
520	16,780.8391	17,900.8165
521	16,765.6693	17,890.3454
522	16,758.4326	17,881.1524
523	16,743.7204	17,867.5980
524	16,755.6793	18,062.3471
525	16,781.9396	18,059.9108
526	16,790.2968	18,041.7406
527	16,775.0567	18,020.2167
528	16,755.1422	18,022.0643
529	16,744.1220	18,046.0245

500 = COORDINATE POINT NO.
SEE SHEET NO. 3 FOR PLAT COORDINATES

PIERSON DENTAL

WALGREENS

RESERVE "D"

Temporary Construction Access
Excavate upon completion of water feature.

Static Pool = 202.5
Top of Bank = 203.0

Water Feature

Future Pad
Elev.= 207.00

24" RCP

24" RCP

PRIVATE STREET

FUTURE DRIVE

NORRIS PROPERTY

SCALE: 1"=20'

17 FEB 02
RECORD DRAWING

LEGACY PARK WILSON ESTAES ADDITION

POND GRADING

Professional Engineering Consultants, P.A.
303 S. TOPEKA • WICHITA, KANSAS 67202
316-262-2691 • FAX 316-262-3003

Designed by	JPS	Checked by	
Drawn by	SAW	Date NOVEMBER 2001	Job No. 01565

DSN:R- SAW OPER- SAD SCALE: 1=20.00
O:\2001\01565\000\POND\GRADING 12-03-2001 03:09:25 pm

GENERAL NOTES:

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

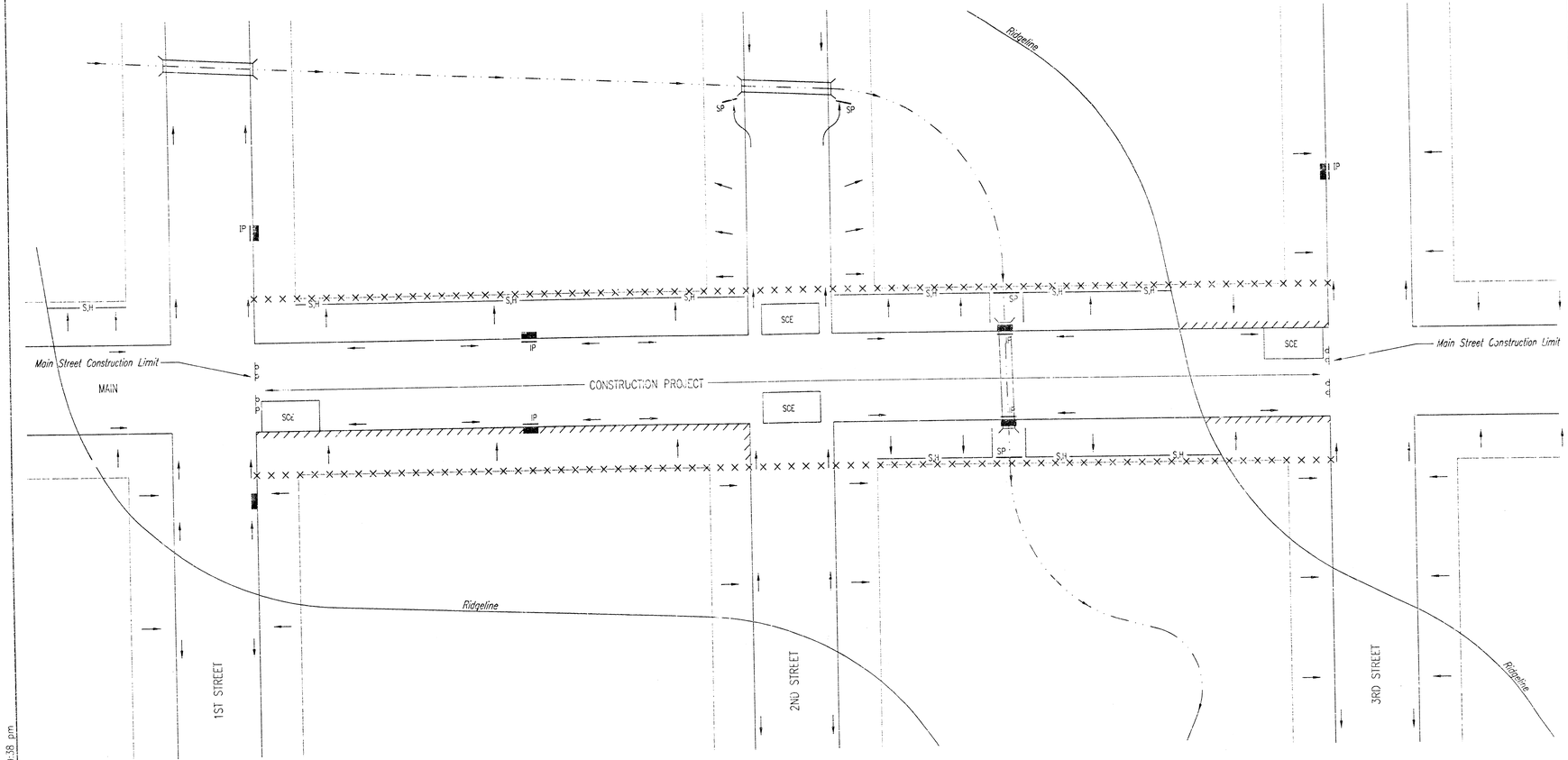
2. BMP'S MUST BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION PROCESS.

3. IF THE PROJECT WILL DISTURB 5 ACRES OR MORE, A FEDERAL/STATE NPDES STORMWATER PERMIT IS REQUIRED. A DETAILED STORMWATER POLLUTION PREVENTION PLAN, IS REQUIRED. THE BMP'S SHOWN ON THIS SHEET ARE CONSIDERED TO BE THE MINIMUM TO BE SHOWN IN THE POLLUTION PREVENTION PLAN.

4. FOR PROJECTS DISTURBING LESS THAN 5 ACRES, CONTRACTORS ARE ENCOURAGED TO PREPARE STORMWATER POLLUTION PREVENTION PLANS PRIOR TO CONSTRUCTION.

5. FAILURE TO USE AND MAINTAIN BMP'S 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 BMP'S SHOWN ON THIS SHEET IS FOR SITUATIONS NORMALLY ENCOUNTERED. FROM TIME TO TIME, SITUATIONS WILL ARISE THAT MAY REQUIRE A DIFFERENT BMP OTHER THAN THOSE SHOWN. BMP'S, OTHER THAN THOSE SHOWN, MAY BE UTILIZED AS LONG AS THEY ARE EFFECTIVE AND MAINTAINED.



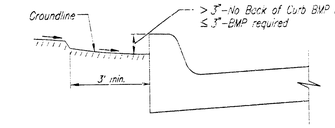
LEGEND

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

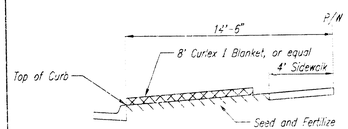
NOTES:

1. GENERAL BMP GOAL IS TO KEEP ALL SEDIMENT CONFINED TO THE CONSTRUCTION SITE, AND OUT OF ALL UNDERGROUND PIPES, DITCHES, AND OTHER DRAINAGE FACILITIES.
2. THE POINT OF COMPLIANCE IS GENERALLY THE RIGHT-OF-WAY LINES WITHIN THE LIMITS OF CONSTRUCTION.
3. BMP'S 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. BMP'S 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 BMP'S BACK OF CURB, WHENEVER WATER CAN DRAIN OVER CURB, TO KEEP ERODED SOIL OUT OF THE GUTTERLINES, IN ACCORDANCE WITH THE FOLLOWING:
   A. THE BMP REQUIRED WILL BE CURLEX I EXCELSIOR BLANKET, OR EQUAL. SAID BLANKET SHALL BE PLACED OVER THE APPROPRIATE SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS. (SEE BACK OF CURB PROTECTION DETAIL)
   B. THIS BMP 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 BMP'S (HAYBALES, 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 DETAIL)

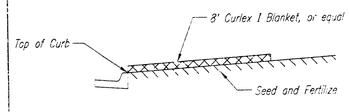
Approved Drawing 19 FEB 02



CURB BACKFILL DETAIL

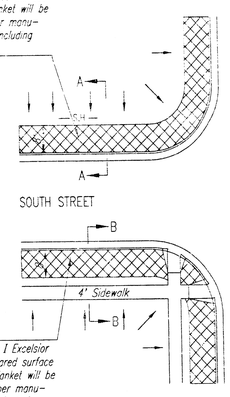


SECTION B-B



SECTION A-A

BMP-Install 8' wide Curlex I Excelsior Blanket, or equal, on prepared surface back of curb. Edge of blanket will be at back of curb. Install per manufacturers recommendation, including staples.



BMP-Install 8' wide Curlex I Excelsior Blanket, or equal, on prepared surface back of curb. Edge of blanket will be at back of curb. Install per manufacturers recommendation, including staples.

BACK OF CURB PROTECTION DETAIL

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 BMP'S WILL BE INSTALLED BY THE CONTRACTOR AS NEEDED, TO FIX THE PROBLEM.

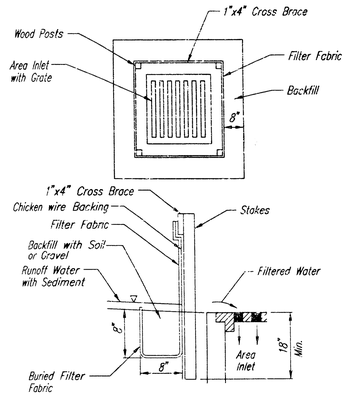
CITY OF WICHITA

SOIL EROSION BMPS STREET IMPROVEMENT PROJECTS

CHRISTOPHER M. CARRIER, P.E.
STORM WATER ENGINEER

PROJECT NUMBER	OCA NO.
36-01565-4297	------
DATE: MAY 2001	SHEET 18 OF 21

DSNR: JPS OPER: SAD SCALE: 1=20.00
Q:\2001\01565\000\SEBMP_STREETS-R14 12-03-2001 03:10:38 pm



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:

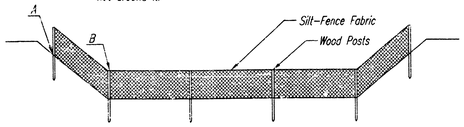
Water should flow through a silt fence barrier for area inlet-not over it. Place a silt fence barrier for area inlet in a location where it is unlikely to be overtopped. Silt fence barrier for area inlets often fail when repeatedly overtopped.
Do not place posts on the outside of the silt fence barrier 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?

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.
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:

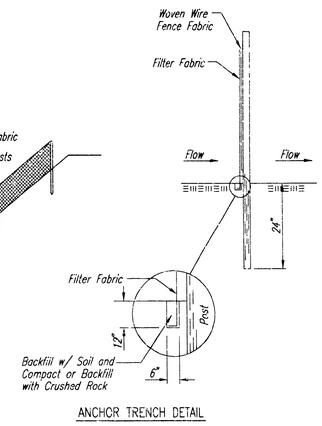
Ditch grade (%)	Check Spacing (feet)
0.5	700
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

Proper installation method:

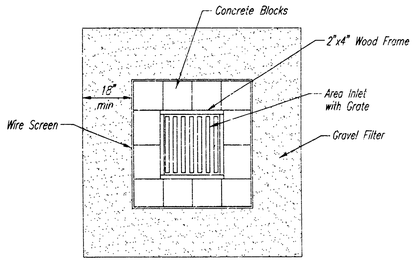
Excavate a trench perpendicular to the ditch flowline that is at least 12" deep by 6" wide.
Extend the trench in a straight line along the entire length of the proposed ditch check.
Place the soil on the upstream side of the trench for later use.
Roll out a continuous length of silt fence fabric on the 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.

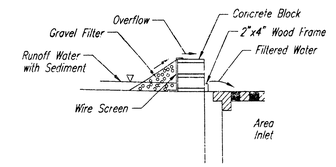
List of common placement/installation mistakes to avoid:

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.



ANCHOR TRENCH DETAIL





CONCRETE BLOCK FILTER FOR AREA DRAIN
(INLET PROTECTION)

Gravel barriers provide little filtering of large inflow waters. However, when installed correctly and maintained, they can effectively treat low runoff flows.

Placement of gravel filters around area drains must be completed in a manner that will not cause local flooding.

Gravel filters can be used if the immediate and adjacent area to the area drain consists of soil or pavement.

Only gravel filters are to be installed on top of the pavement.

Instructions for Installing:

STEP 1: Place concrete blocks around the grate. The blocks can be stacked one or two high and should be supported by a 2"x4" board.
STEP 2: Wrap 1/2" mesh wire screen around the concrete blocks.
STEP 3: Place 1" to 1-1/2" diameter rock around the blocks and wire screen. Be sure the rock extends down from the top of the concrete block.
STEP 4: To prevent damage to vehicles, signs warning drivers about the structures may be necessary.

An alternative method is use of gravel bags that are supported to prevent collapsing.

Use of rock having diameters smaller than 1" may result in clogging of pores and reduce the amount of water flowing into an inlet.

Maintenance:

All gravel filters installed around area drains should be inspected and repaired after each runoff event. Sediment should be removed when material is within 3" of the top of any block. Periodically, the gravel should be raked to increase infiltration and filtering of runoff waters. Accumulated sediment is to be removed immediately from roads and streets after every runoff event.

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?

RECORD DRAWING

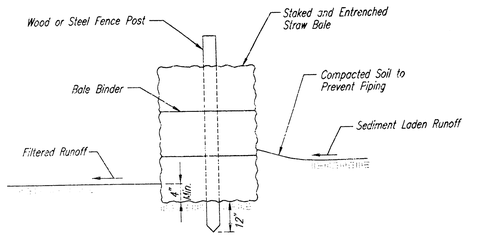
CITY OF WICHITA

SOIL EROSION BMP DETAILS

CHRISTOPHER M. CARRIER, P.E.
STORM WATER ENGINEER

PROJECT NUMBER	OCA NO.
36-01565-4297	-----
DATE: MAY 2001	SHEET 19 OF 21

DSNR JPS OPER SAD SCALE: 1=1.00
O:\2001\01565\000\SEMP_PEC_DTLS2-R14 12-03-2001 03:10:02 pm



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.

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 setting 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:

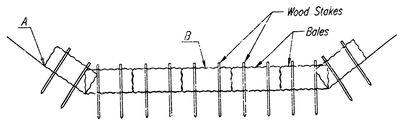
When practical, do not place bale slope barriers across contours. Slope barriers should be placed along contours to avoid a concentration of flow. Concentrated flow over a slope barrier creates a scour hole on the downslope side of the barrier. The scour hole eventually undermines the bales and the barrier 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?

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.
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".

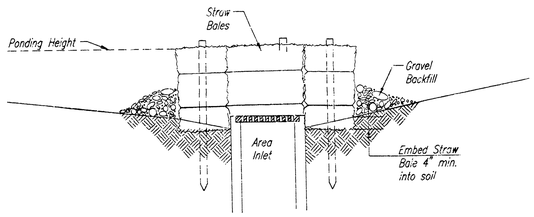
List of common placement/installation mistakes to avoid:

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.

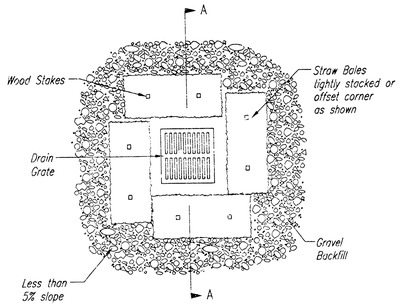
Inspection and Maintenance:

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.

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.

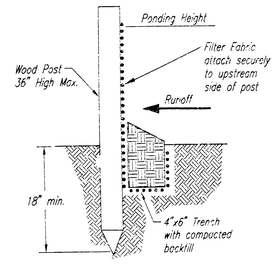
List of common placement installation mistakes to avoid:

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 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?



SILT FENCE BARRIERS

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 setting 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?

RECORD DRAWING
10 FEB 02

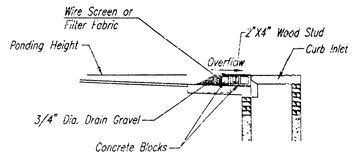
CITY OF WICHITA

SOIL EROSION BMP DETAILS

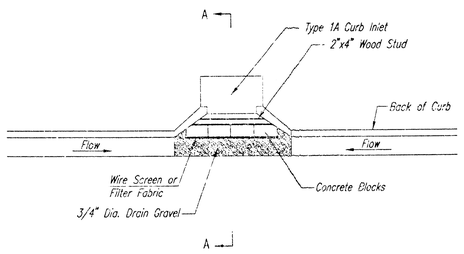
CHRISTOPHER M. CARRIER, P.E.
STORM WATER ENGINEER

PROJECT NUMBER	OCA NO.
36-01565-4297	------
DATE: MAY 2001	SHEET 20 OF 21

DSNR: JPG OPER: SAD SCALE: 1=1.00
Q:\2001\01565\000\SCBMP_PEC_DTL51-R14 12-03-2001 03:09:42 pm



SECTION A-A



CURB INLET GRAVEL FILTERS
(INLET PROTECTION-RESIDENTIAL STREETS ONLY)

NOTE: Other types of curb inlet protection may be approved by the city so long as equal protection is provided.

A gravel inlet filter shall be installed at sump locations on residential streets. This type of protection is not to be used on arterial or collector streets at any time that it would pose an undue traffic hazard.

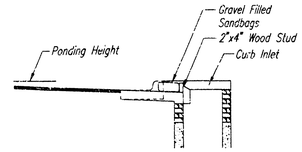
Instructions for Installing:

STEP 1: Place concrete blocks around the inlet as shown on drawing. Insert 2x4 board as shown.
STEP 2: Wrap 1/2" mesh wire screen around the concrete blocks.
STEP 3: Place 1" to 1-1/2" diameter rock around the blocks and wire screen. Be sure the rock extends down from the top of the concrete block.
STEP 4: To prevent damage to vehicles, signs warning drivers about the structures may be necessary. An alternative installation is the use of gravel bags supported by a 2"x4" board to prevent collapsing.

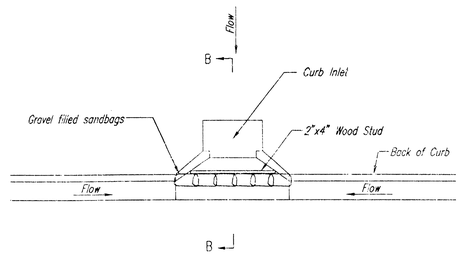
Use of rock with diameters smaller than 1" in the bag may result in clogging of pores and reduce the amount of water flowing into an inlet.

Maintenance:

All curb inlet gravel filters shall be inspected and repaired after each runoff event. Sediment deposits are to be removed once material is within 8 cm (3 inches) of the top of any block. Periodically, the gravel shall be raked to increase infiltration and filtering of runoff waters. Accumulated sediment is to be removed immediately from roads and streets.

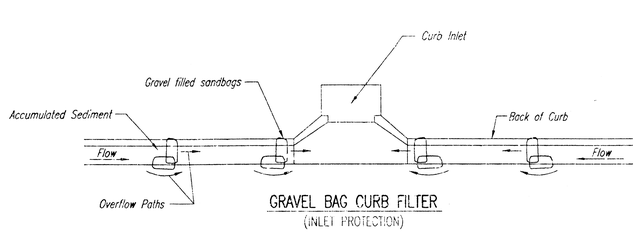


SECTION B-B



CURB INLET SANDBAG FILTERS
(INLET PROTECTION)

NOTE: Other types of curb inlet protection may be approved by the City so long as equal protection is provided.



GRAVEL BAG CURB FILTER
(INLET PROTECTION)

NOTE: Place two or more sets of bags in a manner that results in maximum support. The flow line bag must be lower than top of curb.

CURB SEDIMENT TRAPS

When inlets are located on streets having a grade (i.e., sump conditions do not exist), installing gravel (or sand) bags in the gutter flow line to create small sediment traps can be considered. Gravel bags are recommended over sand bags to allow for drainage.

If the spacing between bags becomes too large, little sediment may be trapped. Spacing of bags should be completed using the table or graph that illustrates placement distances based upon street slope. When installed in the gutter, bag tops must be lower than the sidewalk.

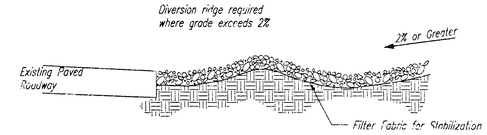
Spacing:

Gravel bags are to be placed according to street grades using the following table or graph that appears below.

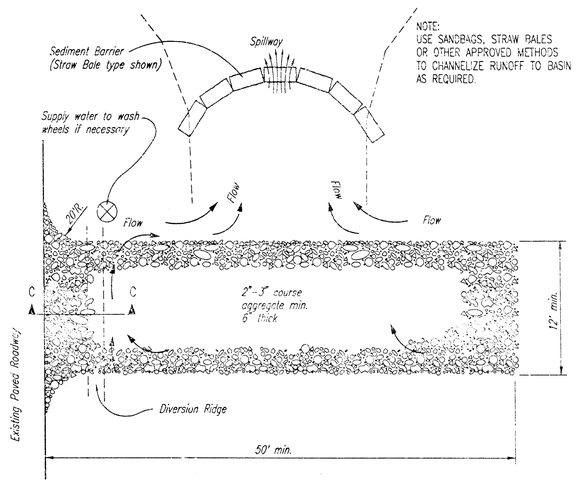
GRADE (%)	SPACING (FEET)
0.5	75
1.0	45
2.0	18
3.0	12
4.0	9
5.0	6

Maintenance:

Collected sediment shall be removed after every runoff event. Bags that are destroyed by vehicular traffic or through natural deterioration are to be immediately replaced.



SECTION C-C



STABILIZED CONSTRUCTION ENTRANCE

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.

RECORD DRAWING

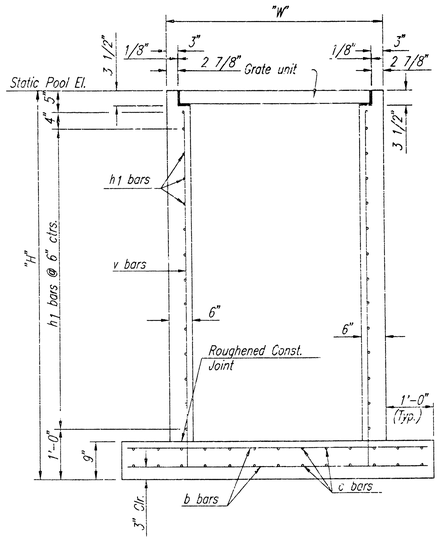
CITY OF WICHITA

SOIL FROSION BMP DETAILS

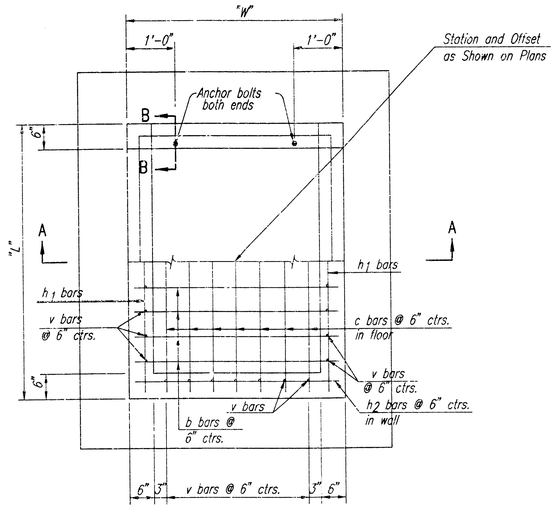
CHRISTOPHER M. CARRIER, P.E
STORM WATER ENGINEER

PROJECT NUMBER 36-01565-4297
OCA NO. ------
DATE MAY 2001
SHEET 21 OF 21

DSNR: JPS OPER: SAD SCALE: 1=1.00
Q:\2001\01565\00\SEMP_REC_DTL53-R14 12-03-2001 03:10:21 pm



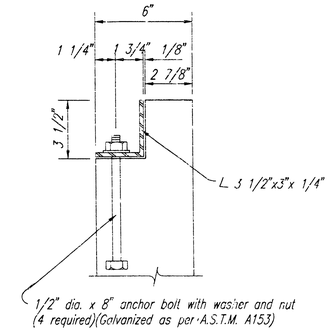
SECTION A-A



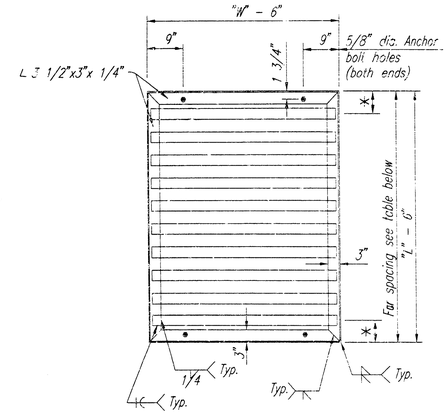
PLAN/SECTION

AREA INLET

See Plan Sheet for inlet orientation.



SECTION B-B

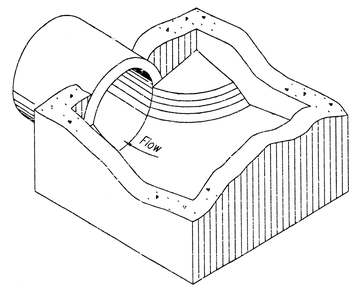


GRATE UNIT DETAILS

BILL OF MATERIALS			
"L" 4'-0" x	"W" 4'-0" x	"H" 8"-3"	(103)
Bar	No.	Size	Length
v	24	#4	7'-6"
c	24	#4	5'-9"
b	24	#4	5'-9"
h 1	30	#4	3'-9"
h2	30	#4	3'-9"
Class "A" Conc.		2.91	Cu.Yd.
Reinf. steel		455	Lbs.
Struct. steel		130	Lbs.

Quantities are for information only.

PIPE DIMENSIONS AND SPACING				
Location	L x W	No. of Pipes	Dia. x Length x Spacing	*
(103)	4'-0"x4'-0"	3	2 1/2 ϕ x 3'-4 1/4" pipes @ 12" ctrs.	9"



Floor of inlet or manhole shall be shaped as shown to increase hydraulic efficiency.

ISOMETRIC VIEW

GENERAL NOTES

Concrete shall be as per City of Wichita Standard Specifications for Concrete Paving Mix. Except that it shall have a minimum 28 day compressive strength of 4,000 p.s.i. All Pipes shall be flush cut prior to being cast into the Inlet.

All dimensions relative to Reinforcing Steel are to centerline of bar unless otherwise noted. All Reinforcing Steel shall conform to A.S.T.M. Designation A615 Grade 60 and shall be Epoxy Coated.

All exposed edges shall be finished with an edging tool.

All external pipe to inlet joints shall be coated with an asphaltic tar to waterproof the joint interface

Where possible bend bars around pipes.

Floor of inlet shall be shaped as shown. Concrete used for shaping shall be unreinforced concrete pavement mix. No addition in concrete quantities shall be made for shaping floor of inlet.

No deductions in concrete quantities shall be made for pipe openings.

All bars are #4 @ 6" spacing and shall have a minimum clearance of 1 1/2 " unless otherwise noted on the plans.

The top of the inlet shall be set level.

The grate shall be fabricated from standard or commercial grade structural steel and black steel pipe. The unit shall be hot dipped, galvanized after fabrication, in accordance with ASTM A123 except the weight of coating shall average not less than 2.0 ounces per square foot of actual surface and no individual test shall show less than 1.8 ounces of coating per square foot of actual surface area.

Note: Inlet modified from KDOT Std. No. 648

19 FEB 02
RECORD DRAWING

LEGACY PARK WILSON ESTATES ADDITION

TYPE "C" INLET DETAILS

Professional Engineering Consultants, P.A.
303 S. TOPEKA • WICHITA, KANSAS 67202
316-262-2691 • FAX 316-262-3003

Designed by: JPS	Checked by:
Drawn by SAW	Date NOVEMBER 2001 Job No. 01565

DSNR: SAD OPER: SAD SCALE: 1=1.00
D:\2001\01565\002\AREAINLT 12-03-2001 03:08:43 pm