SHEET NO.	TOTAL SHEETS
CS3.0	45

THE WICHITA AIRPORT AUTHORITY

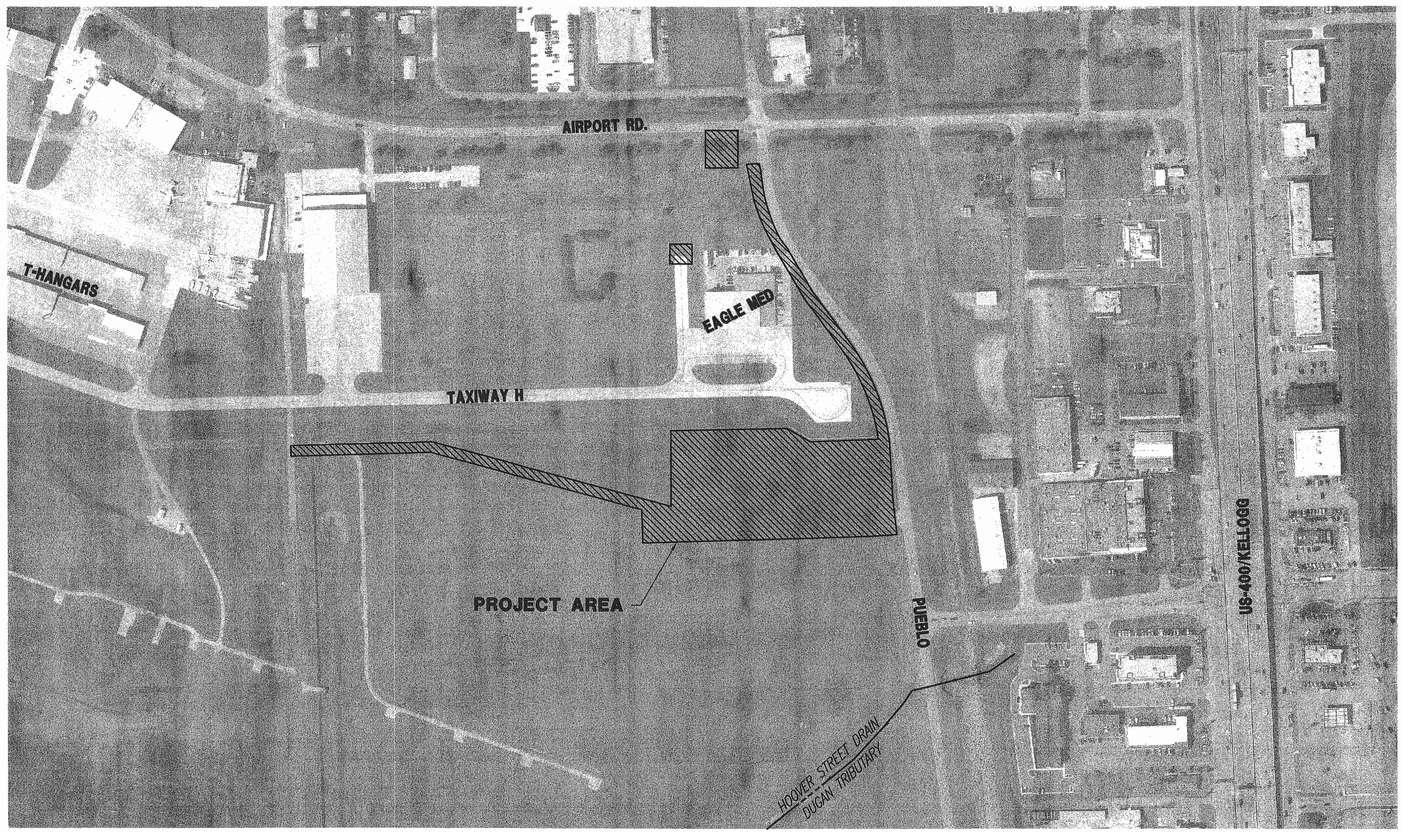
WICHITA, KANSAS

MID-CONTINENT AIRPORT

PLANS FOR

TAXIWAY H EAST DEVELOPMENT AREA PAVING AND UTILITY IMPROVEMENTS

PRIVATE PROJECT NO. 0082PPD (607861)



SCALE: 1"=200'

INDEX OF SHEETS

AS BUILT PLANS
CONTRACTOR: NOWAK CONSTRUCTION
INSPECTOR: DAKOTA ZIMMERMAN
RUGGLES & BOHM, P.A.
.pdf's BY: DGZ 2/18/2013

JASMINE R. CROWE LICENSED 14005 PROFESSIONAL ENGINEER KANSAS 9-25-12

APPROVED AS NOTED
BY CITY ENGINEER OF WICHITA

Engineering Juliana Kallman 9-25-12

Stormwater 09/25/12

NOTE TO CONTRACTORS

Inspection and testing for this project are to be provided by a Licensed Consulting Engineering Firm under contract with 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 without such Inspection, nor shall any work be commenced without written authorization by the City Engineer.

SEPTEMBER, 2012

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

Saved 09-24-2012 3:51:33 PM by JDT
Plotted 9/24/2012 3:55:35 PM by JASON D. TEMPLIN
C:\2006\057791\-000 STREET DESIGN\CS3.0-PPD TITLE SHEET

SHEET NO.	TOTAL SHEETS
CS1.2	45

GENERAL NOTES

1. EXISTING AND PROPOSED UTILITIES AND THEIR LOCATION, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. LOCATION INFORMATION HAS BEEN OBTAINED FROM DESIGN PLANS AND 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 WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION.

2. RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES SHALL BE DISPOSED OF ON SITES TO BE PROVIDED BY THE CONTRACTOR AND APPROVED AS NOTED BELOW. 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 DUMPED IN WATERS OF THE UNITED STATES OR WETLANDS IS SUBJECT TO U.S. CORPS OF ENGINEERS PERMITTING REGULATIONS. ANY MATERIAL BURIED OR STOCKPILED BEYOND APPROVED CONSTRUCTION LIMITS WOULD REQUIRE ADDITIONAL ARCHEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED BORROW LOCATION.

3. CONTRACTOR SHALL SATISFY HIMSELF OF SURFACE AND SUBSURFACE CONDITIONS PRIOR TO BIDDING. GEOTECH BORING HOLE LOCATIONS ARE SHOWN ON THIS SHEET, AND BORING LOGS ARE INCLUDED IN THE PROJECT SPECIFICATIONS.

4. CONTRACTOR SHALL PROVIDE A MINIMUM SEVENTY-TWO (72) 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 UTILITY COMPANIES TO LOCATE ALL EXISTING LINES WITHIN THE PROJECT AREA.

5. 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 OR COVERED BY 12" OR MORE OF FILL BY HIS CONSTRUCTION OPERATIONS. SUCH IRONS SHALL BE RE-ESTABLISHED BY A LICENSED LAND SURVEYOR IN ACCORDANCE WITH STATE LAWS.

6. 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.

7. THE CONTRACTOR SHALL ADJUST WATER VALVE BOXES AS DIRECTED BY THE ENGINEER. THIS WORK TO BE SUBSIDIARY TO OTHER BID ITEMS.

8. THE CONTRACTOR SHALL APPLY PERMANENT SEED TO ALL DISTURBED AREAS IN ACCORDANCE WITH THE SPECIFICATIONS. THE AREAS DISTURBED ALONG PUEBLO FOR WATERLINE AND DUCT INSTALLATION SHALL BE SEEDED WITH FESCUE SEED. ALL OTHER AREAS SHALL BE SEEDED WITH THE NATIVE GRASS AND WILDFLOWER BLEND OF SEED. SEE PLAN BELOW FOR SEEDING LIMITS. ALL WORK, INCLUDING MULCHING AS SPECIFIED, SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR "PERMANENT SEEDING" OF THE APPROPRIATE TYPE.

9. EROSION CONTROL (BMP'S)
THE CONTRACTOR SHALL INSTALL AND/OR MAINTAIN EROSION CONTROL METHODS AS SPECIFIED ON SHEET CS2.4. THE FOLLOWING QUANTITIES ARE ESTIMATED, AND SHOULD BE CONSIDERED THE MINIMUM EFFORT REQUIRED. INSTALLATION OF THESE BMP'S DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF ABATING SOIL EROSION.

SEDIMENT BARRIER, INLET	5 EACH
SEDIMENT BARRIER, LINEAR	1900 L.F.
BACK OF CURB PROTECTION	1500 L.F.
CONSTRUCTION ENTRANCE	1 EACH

10. THE CONTRACTOR SHALL STAGE HIS OPERATIONS AND STORE MATERIALS AT THE LOCATION SHOWN ON THIS SHEET. CONTRACTOR SHALL INSTALL A CONSTRUCTION ENTRANCE AS SHOWN ON BMP DETAILS AND SHALL BE DILIGENT ABOUT ENSURING THAT NO TRACKING OF DIRT IS ALLOWED ONTO CITY STREETS. ADDITIONALLY, BMP'S SHALL BE INSTALLED TO ENSURE NO EROSION SEDIMENT IS CARRIED INTO CITY STREETS OR INTO DRAINAGE WAYS.

11. CONSTRUCTION OF THE SEGMENT OF SANITARY SEWER WITHIN THE SECURED AIRPORT PERIMETER SHALL BE ACCOMPLISHED BY INSTALLING A TEMPORARY SECURITY FENCE AS SHOWN ON THE PLAN. THE OWNER WILL PROVIDE SAFETY PERSONNEL TO OVERSEE THE CONTRACTOR PERSONNEL WHILE THE FENCE IS BEING INSTALLED AND LATER REMOVED. ONCE THE TEMPORARY FENCE IS IN-PLACE, THE CONSTRUCTION AREA WILL BE CONSIDERED OUTSIDE THE SECURED PERIMETER AND NO BADGING OF CONTRACTOR PERSONNEL WILL BE REQUIRED. SEE PROJECT SCHEDULE, THIS SHEET, FOR LIMITATION ON ALLOWABLE DURATION FOR WORK TO OCCUR IN THIS AREA.

13. WHERE INDICATED ON THIS SHEET, THE CONTRACTOR SHALL INSTALL A TEMPORARY SECURITY FENCE. THIS FENCE SHALL MEET THE FOLLOWING REQUIREMENTS:

(1) INDIVIDUAL PANELS SHALL BE CONSTRUCTED OF 1 3/8" O.D. X 0.055" FRAME WITH A 1 3/8" (OR 1") O.D. CENTER BRACE. INSTALLED PANELS SHALL BE 14' WIDE X 9' HIGH (8' OF CHAIN LINK FABRIC AND 3 STRANDS OF BARBED WIRE MAN BARRIER). MAXIMUM GAP BETWEEN PANELS OR BETWEEN PANEL AND GROUND SHALL BE TWO INCHES. ALL BRACING AND CONNECTIONS SHALL BE ON THE SECURE SIDE OF THE FENCE.
(2) CHAIN LINK FABRIC SHALL BE 96" HIGH X 12 ½ GA. WITH 0.02 OZ. ZINC PER SQUARE FOOT.
(3) BARBED WIRE STRAND SHALL BE 15 ½ GA. HIGH TENSILE STRENGTH WITH 0.02 OZ. ZINC PER SQUARE FOOT.
(4) PANELS TO BE CONNECTED BY INSTALLING A 1 ⅝" O.D. X 0.08" WALL POST THROUGH 2 ⅞" O.D. RINGS WELDED TO PANEL FRAMES. a) IN UNPAVED AREAS, POSTS SHALL BE DRIVEN TO A MINIMUM DEPTH OF 2 FEET. b) IN PAVED AREAS, POSTS SHALL BE SET INTO A RECEIVING SLEEVE ATTACHED TO A BASE PLATE. BASE PLATE AND SLEEVE SHALL BE AS DETAILED ON THIS SHEET.
(5) ALL CHAIN LINK FABRIC SHALL BE ATTACHED BY LACING WIRE THROUGH FABRIC ON EACH END TO THE FRAMEWORK. FABRIC AND BARBED WIRE SHALL BE STRETCHED TAUT TO PRODUCE A SECURE PANEL AND SHALL BE MAINTAINED IN THIS CONDITION THROUGHOUT PROJECT.

14. CONTRACTOR SHALL CALL KANSAS GAS SERVICE TO COORDINATE FOR INSTALLATION OF THE PROPOSED GAS SERVICE MAIN. CONTACT ED KOEHLER AT 316-832-3177. AFTER KGS HAS INSTALLED MAIN(S), THE CONTRACTOR SHALL RECOMPACT ALL TRENCHES BACKFILLED BY THE UTILITY COMPANY TO MEET REQUIREMENTS OF SPECIFICATION SECTION 801. NO DIRECT PAYMENT WILL BE MADE FOR THIS WORK.

15. THE CONTRACTOR SHALL SEQUENCE AND CONSTRUCT THE SANITARY SEWER WORK NEAR THE SECURITY GATE SO AS TO ENSURE UNINTERRUPTED ACCESS TO THE AIRFIELD AT ALL TIMES. THIS WILL REQUIRE: 1) PROVIDE A MIN. 10' "GATE" OPENING BY ALLOWING ONE TEMPORARY FENCE PANEL TO BE SECURED WITH A CHAIN AND LOCK, 2) MAINTAIN A MIN. 10' ACCESS DRIVE FOR VEHICLES, 3) PHASE SEWER INSTALLATION SO AS TO NOT BLOCK VEHICLE ACCESS ACROSS TRENCH EXCAVATION.

BID ITEM FOR REMOVAL AND REPLACEMENT OF THE ASPHALT DRIVE SHALL INCLUDE REMOVAL OF EXISTING ASPHALT PAVEMENT; REMOVAL AND SALVAGE OF APPROXIMATELY 12" ASPHALT MILLINGS; PLACEMENT OF SALVAGED MILLINGS; AND CONSTRUCTION OF MINIMUM 4" NEW ASPHALT PAVEMENT.

PROJECT SCHEDULE

THE PROJECT SHALL BE COMPLETED IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

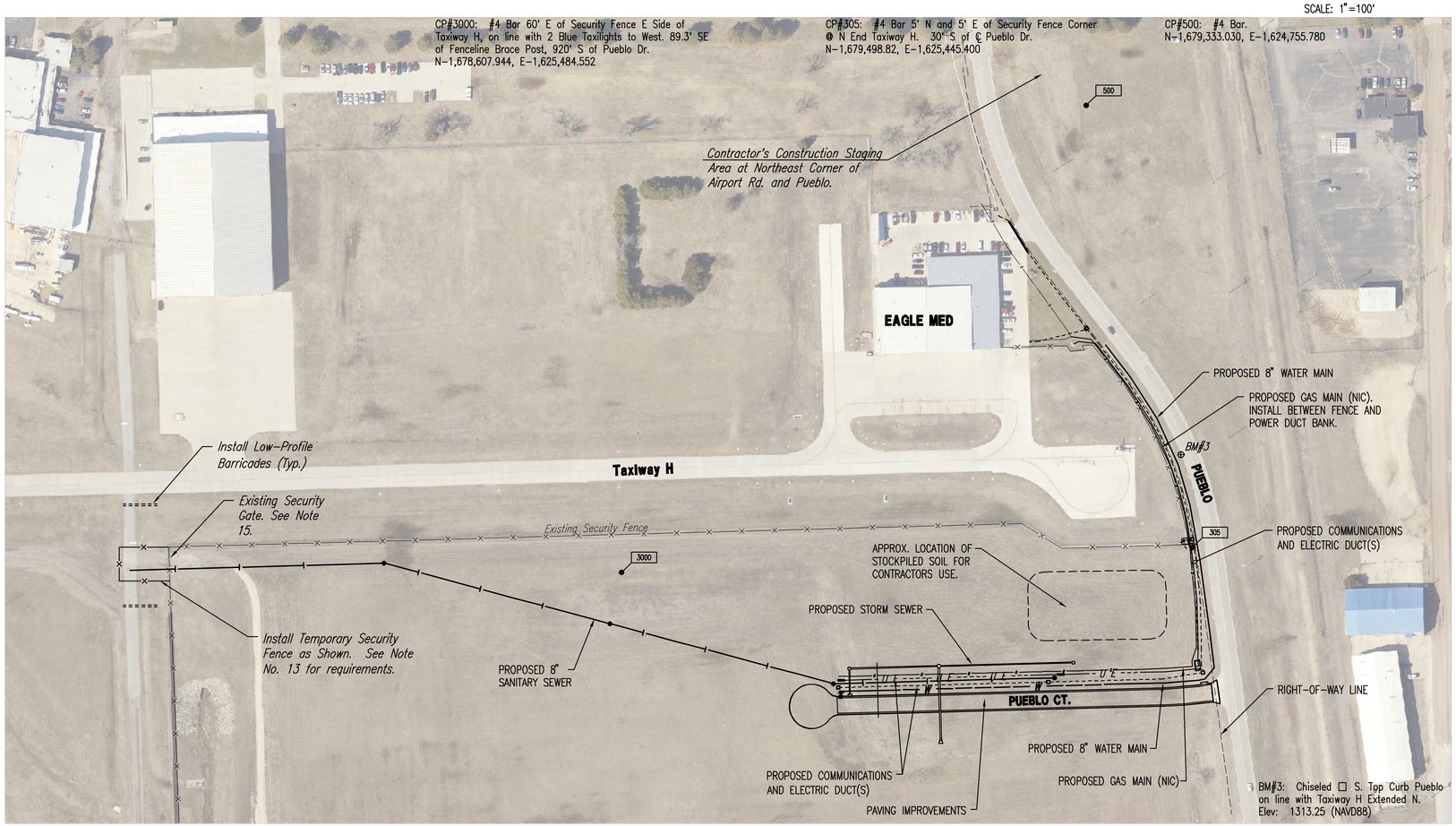
1. SUBSTANTIAL COMPLETION OF ALL PROJECT WORK, EXCEPT PERMANENT SEEDING AND SODDING AND SETTING PAD SWITCH, SHALL BE COMPLETE WITHIN 100 CALENDAR DAYS FROM THE NOTICE TO PROCEED.

2. FINAL ACCEPTANCE OF THE PROJECT SHALL BE ACCOMPLISHED BY JUNE 1, 2013.

3. SUBSTANTIAL COMPLETION OF ALL WORK NEAR TAXIWAY H-1, EXCEPT PERMANENT SEEDING AND SODDING, SHALL BE COMPLETE BY FEBRUARY 15, 2013.

4. CONSTRUCTION OF THE SANITARY SEWER INSIDE THE SECURITY FENCE SHALL BE COMPLETED WITHIN 10 CONSECUTIVE CALENDAR DAYS, INCLUDING INSTALLATION AND REMOVAL OF THE TEMPORARY SECURITY FENCE.

SCALE: 1"=100'



SUMMARY OF QUANTITIES

ITEM	QTY.	UNIT	DESCRIPTION
1	1	L.S.	SITE CLEARING & RESTORATION
2	12450	C.Y.	EXCAVATION ①
3	9960	C.Y.	COMPACTED FILL
4	3000	C.Y.	BORROW EXCAVATION (CONTR. FURNISHED) ②
5	1	L.S.	TEMPORARY SECURITY FENCE
6	1	L.S.	TEMPORARY EROSION CONTROL
7	2061	S.Y.	LIME TREATED SUBGRADE (8") ③
8	1572	S.Y.	PCC PAVEMENT (6")
9	37	S.Y.	PCC PAVEMENT (REINF.)(8")
10	450	C.Y.	ASPHALTIC CONCRETE PAVEMENT (6")
11	1171	L.F.	COMBINED CURB AND GUTTER (TYPE I)
12	1	EA.	TYPE I CURB INLET (L=5')
13	1	EA.	TYPE I CURB INLET (L=10')
14	2	EA.	PRECAST CONCRETE MANHOLE (STORM)
15	1	EA.	STORMWATER QUALITY SEPARATOR
16	42	L.F.	SWS PIPE, 15" RCP
17	350	L.F.	SWS PIPE, 18" RCP
18	121	L.F.	SWS PIPE, 30" RCP
19	78	S.Y.	LIGHT STONE RIPRAP
20	225	M.S.F.	SEEDING-TEMPORARY
21	220	M.S.F.	SEEDING-PERMANENT
22	80	S.Y.	SODDING-BUFFALO
23	375	S.Y.	SODDING-FESCUE
24	1	L.S.	CABLE GATE
25	1	L.S.	SIGNING AND MARKING
26	108	L.F.	REMOVE & REPLACE GRAVEL DRIVE
27	20	L.F.	REMOVE AND REPLACE ASPHALT DRIVE
28	1470	L.F.	SANITARY SEWER PIPE (8")
29	4	EA.	RISER ASSEMBLY (4")
30	4	EA.	STANDARD MANHOLE (SANITARY)
31	20	L.F.	DIRECTIONAL DRILL (18" ID MIN.), STEEL
32	249	L.F.	PROTECTIVE FILL
33	1130	L.F.	WATERLINE PIPE (8")
34	1	EA.	CIMJ PLUG (8")
35	1	EA.	FIRE HYDRANT ASSEMBLY
36	1	L.S.	ELECTRICAL DEMO, TEMPORARY, AND MISC WORK
37	1	EA.	ELECTRICAL PAD VAULT
38	1	EA.	MEDIUM VOLTAGE PAD SWITCH
39	1	EA.	ELECTRICAL HANDHOLE
40	1	L.S.	CONNECTION TO EXISTING SECTIONALIZER
41	1125	L.F.	5" PVC CONDUIT 4-WAY CONC. ENCASED DUCTBANK-POWER
42	1550	L.F.	15KV FEEDER INSTALLED IN DUCT OR CONDUIT
43	2	EA.	15KV 4-WAY SECTIONALIZER AND PAD
44	5	EA.	COMMUNICATIONS HANDHOLE
45	115	L.F.	4" PVC CONDUIT DIRECT BURIED-COMM
46	1150	L.F.	6" PVC CONDUIT DIRECT BURIED-COMM
47	175	L.F.	8" PVC CONDUIT DIRECT BURIED-COMM
48	60	L.F.	8" PVC CONDUIT DIRECTIONALLY DRILLED-COMM
49	5950	L.F.	1 ¼" INNERDUCT-COMM
50	800	L.F.	50-PAIR OUTSIDE PLANT COPPER PHONE CABLE
51	1	L.S.	COPPER PHONE CABLE TERMINATION AND SPLICING
52	15	EA.	DUCT BANK UTILITY MARKER
53	1	L.S.	SERVICE TRANSFORMER
54	1	EA.	REPLACE EXISTING JUNCTION BOX WITH COMM. HANDHOLE
55	72	L.F.	#8 1/C L-824C AIRFIELD LIGHTING CABLE
56	3	EA.	RELOCATE EXISTING L-861T TAXIWAY EDGE LIGHT
57	35	L.F.	2"PVC CONDUIT DIRECT BURIED-AIRFIELD LIGHTING
58	40	L.F.	BARE COUNTERPOISE-TRENCH, BACKFILL, AND GROUND RODS

① INCLUDES 2624 C.Y. FROM ON-SITE STOCKPILE
② ITEM SUBJECT TO 100% UNDERRUN IN EVENT STOCKPILE HAS ADEQUATE MATERIAL
③ SEE SH. CS2.1 FOR OPTIONAL BASE CONSTRUCTION

THE WICHITA AIRPORT AUTHORITY
MID-CONTINENT AIRPORT

KEY MAP AND GENERAL NOTES

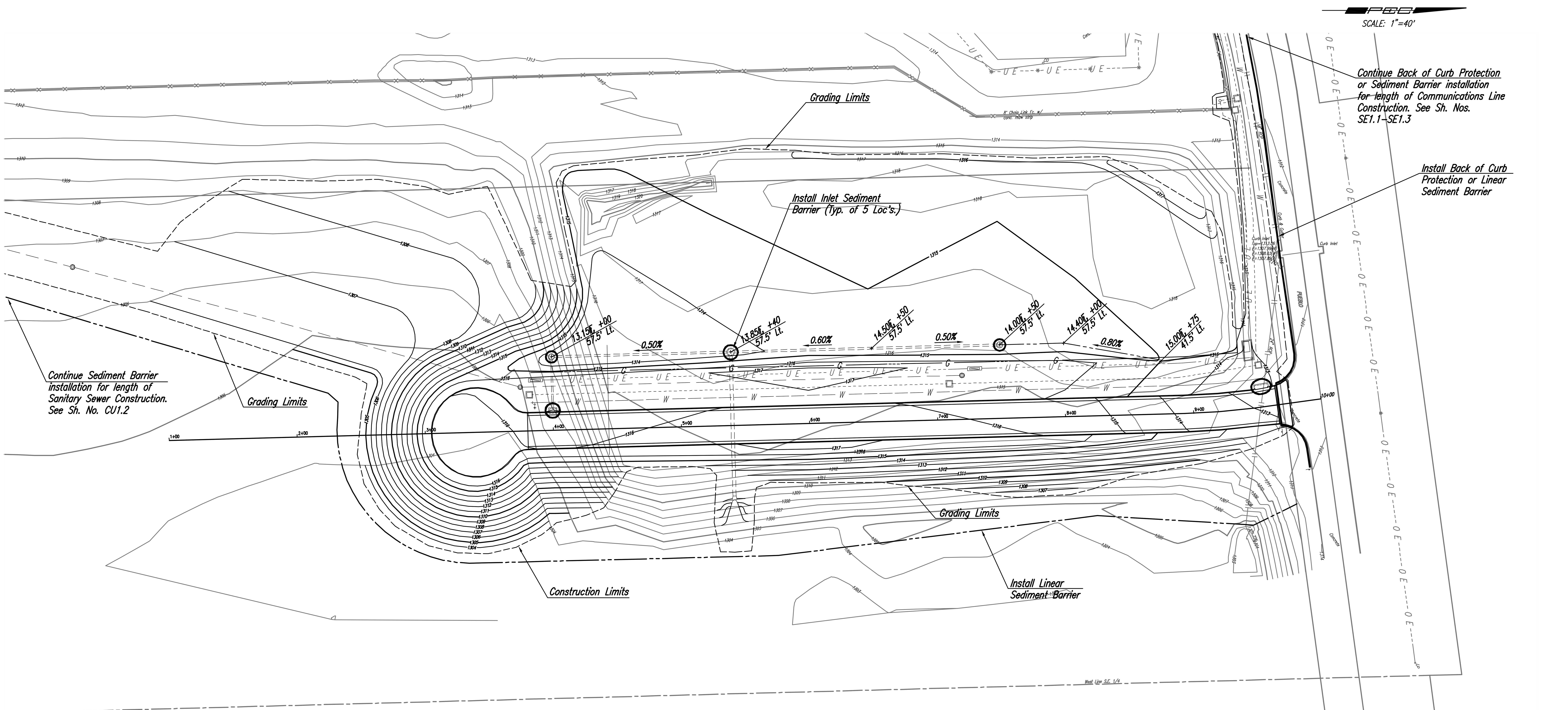
PAVING, GRADING, AND DRAINAGE IMPROVEMENTS
T/W H EAST SIDE SITE DEVELOPMENT IMPROVEMENTS

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

Date SEPT., 2012 | Job No. 05779

Saved 09-27-2012 3:55:27 PM by JDT
Plot Scale 1:100 09-27-2012 3:36:58 PM by JASON D. TEMPLIN
Q:\2005\05779_-000 STREET DESIGN\CS1.2-KEYMAP

SHEET NO.	TOTAL SHEETS
CS2.4	45



STORMWATER, EROSION, AND SEDIMENT CONTROL GENERAL

This sheet outlines minimum Stormwater Practices to be followed by the Contractor during all Phases of Construction of the Project. The Contractor will be responsible for prevention of soil or sediment loss from the Construction Site. These notes are to be used as a guideline only. The Project is not considered complete until all permanent Erosion and Sediment Controls and Storm Water Management Practices are in place to the satisfaction of the Owner and Engineer. All temporary practices must be properly removed.

EROSION AND SEDIMENT CONTROL

In accordance with local and state regulations pursuant to the general NPDES Permit for Construction Stormwater, a Stormwater Pollution Prevention Plan (SWPPP) has been developed for this site. The plan was developed to minimize the effects of soil erosion and resulting sediment loss. Prevention will be provided through the use of proper Construction Techniques. These techniques will include both temporary and permanent Management Practices. To prevent erosion and sediment from leaving the Construction Site the following steps will be taken during Construction:

1. Prior to starting any soil disturbing activities, the Contractor shall install the Erosion and Sediment Control Measures consisting of the Silt Fence, Ditch Checks, Inlet/Culvert Sediment Barriers, and Gravel Construction Entrance(s). It is understood that some clearing and preparation may be required to properly install perimeter erosion and sediment control items.

2. The recommended sequence of Construction Activities and of the Installation and Removal of Erosion and Sediment Control Measures is as follows: perimeter control measures (Silt Fence), Gravel Construction Entrance(s), Temporary Straw or Hay Bales (Bale) at any drainage area crossings to be disturbed by Construction Activities, Construction of Grading improvements, Seeding, Fertilizing and Mulching on all slopes and disturbed areas, Installation of Erosion Slope Protection, Removal of Temporary Practices, Removal of Perimeter Controls and Site Cleanup.

3. Perimeter silt fence and gravel construction site entrance(s) shall be constructed in accordance with details included in these plans. Install Erosion Fence at indicated locations, and other locations as directed by the Engineer to control Soil Erosion. Silt Fence shall be kept in place until grass is established.

4. Construction Entrance(s) shall be maintained by the Contractor in a condition that will prevent tracking or flowing of sediment onto Public Right-of-Ways and paved streets. This may include periodic top dressing with additional crushed stone as conditions warrant. Repair of Entrance(s), cleaning of Right-of-Ways and paved streets that have been soiled by Construction Activities shall be the Contractor's responsibility.

5. During all soil disturbing activities, the Contractor will take appropriate steps using accepted Construction Methods to minimize the time of exposure of unprotected soil and other construction materials to rainfall. Particular care must be exercised when dealing with stockpiles of topsoil or fill materials and with soil on slopes.

6. Soil stockpiled for more than 7 days will have Silt Fence placed on the downhill side to trap sediment.

7. No ground shall be left disturbed for more than 14 days of non-activity without being temporarily mulched and/or seeded.

8. Erosion Controls shall be Inspected and Maintained by the Contractor not less than weekly or within 24 hours after a rainfall event of 0.5 inches or more. Maintenance shall include but not be limited to Sediment removal, Silt Fence and Hay Bale Barrier Repair and/or Replacement.

9. Whenever dirt, rock or other materials are exported for placement in areas off of the primary Construction Site, the Contractor is responsible for determining that EPA Storm Water Permitting requirements are met. Prior to the removal of any materials from the site the Contractor will furnish the Engineer with a written agreement, signed by each Landowner who will receive exported materials, stating that the receiving site will be properly permitted, when required.

10. Contractor shall keep a written log of when Construction Activities begin, Erosion and Sediment Controls are Installed, Inspected and Repaired. Copies of Log shall be furnished to the Engineer.

11. Erosion and Sediment Control Measures shall be removed by the Contractor upon stabilization of disturbed areas with a healthy stand of vegetation.

NOTES

1. Contractor shall seed or sod all areas disturbed by his Construction Activities in accordance with the notes on this sheet. If permanent seeding or sodding cannot be performed during the planting season, the Contractor shall install Temporary Seeding in accordance with the Specifications. Seeding/Sodding shall be as follows:
   a. Buffalo grass seed-inside security fence at sanitary sewer manhole connection; northeast of the north Taxiway H-1 fillet.
   b. Buffalo grass sod-all area southeast of the south Taxiway H-1 fillet; 3'-6" strip along edge of north Taxiway H-1 fillet.
   c. Fescue Seed-south Pueblo right-of-way except in front of Eagle Med; contractor staging area.
   d. Fescue Sod-area in front of Eagle Med. Contractor shall repair any damage to irrigation system. (Subsidiary)
   e. Native Grass Mix-Pueblo Ct. area north and east of airport security fence and south of Pueblo right-of-way.

   Sodding will be paid for by the square yard. Seeding, of all types, shall be paid as a lump sum and no extra payment will be made for seeding of disturbed areas beyond the construction or grading limits shown in the plans.

2. Install and Maintain Erosion Protection throughout the entire Project.

3. The Erosion Control Devices shown on this sheet are considered minimum Standards. Whenever Sediment enters the Streets, Storm Sewers, or Ditches, install additional devices, as needed, to correct the problem.

4. The Erosion Control Devices within these Plans must be in place at all times during Construction until such time as the Site is re-established with grass.

THE WICHITA AIRPORT AUTHORITY
MID-CONTINENT AIRPORT

GRADING & SWPPP PLAN

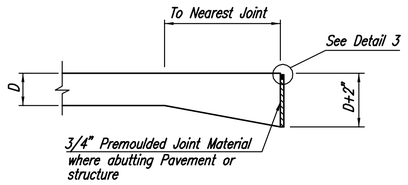
PAVING, GRADING, AND DRAINAGE IMPROVEMENTS
T/W H EAST SIDE SITE DEVELOPMENT IMPROVEMENTS

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

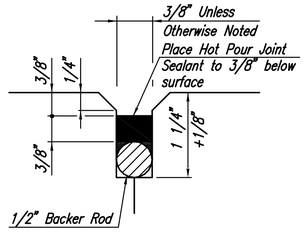
Date SEPT., 2012	Job No. 05779

Saved 09-24-2012 11:09:32 AM by DAR
Plot Scale 1:40 09-27-2012 2:30:17 PM by JDT
Q:\2005\05779\--000 STREET DESIGN\CS2.4-GRADING PLAN

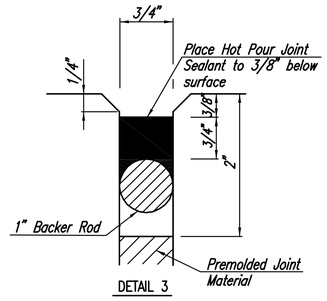
SHEET NO.	TOTAL SHEETS
CS2.5	45



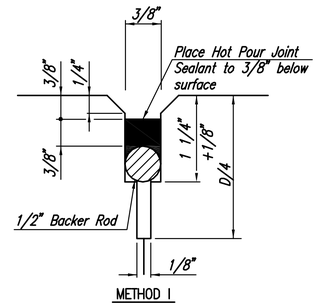
TYPE T



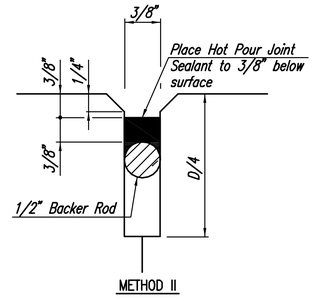
DETAIL 1



DETAIL 3



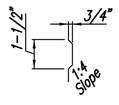
METHOD I



METHOD II

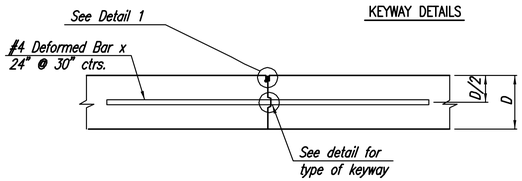
DETAIL 2

JOINT SEAL DETAILS

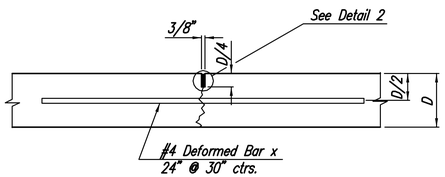


(7" PAVEMENT)

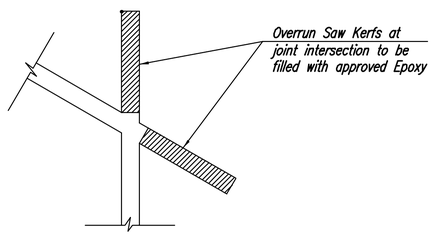
KEYWAY DETAILS



TYPE E (TIED)
TYPE EU (UNTIED)

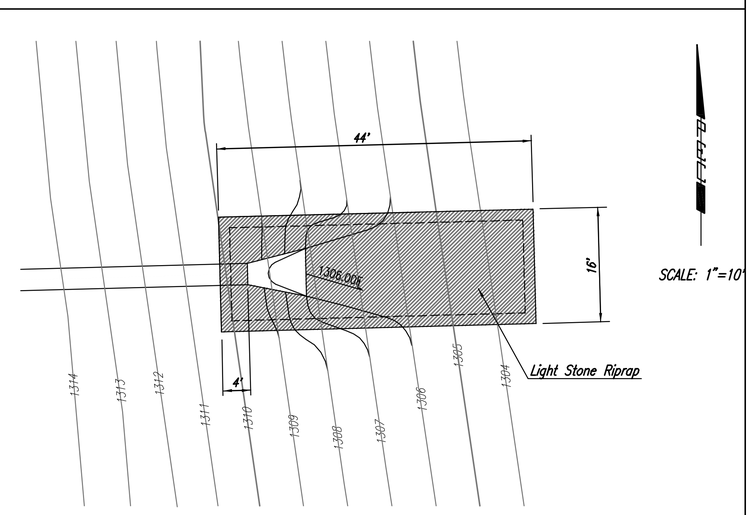


TYPE G (TIED)
TYPE GU (UNTIED)



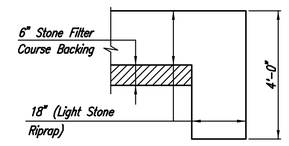
KERF DETAIL

THE CONTRACTOR SHALL STAMP FRESHLY PLACED CONCRETE WITH THE NAME OF THE COMPANY AND DATE PLACED (MONTH AND YEAR) USING MINIMUM 2 INCH BLOCK CHARACTERS, WHERE INDICATED IN THE PLANS OR AS DIRECTED BY THE ENGINEER.



SCALE: 1"=10'

RIPRAP DETAIL



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.
2. SURFACE OF RIPRAP SHALL BE MADE FLUSH WITH SURROUNDING GROUND TO ENSURE THAT MOWER DECK CAN BE DRIVEN OVER THE RIPRAP SURFACE.
3. TOEWALLS SHALL BE INSTALLED ALONG ALL UNPROTECTED EDGES OF STONE RIPRAP.
4. GROUTING OF THE SURFACE OF THE RIPRAP AND TOEWALLS SHALL NOT BE PERFORMED.

THE WICHITA AIRPORT AUTHORITY
MID-CONTINENT AIRPORT

CONCRETE PAVEMENT DETAILS

PAVING, GRADING, AND DRAINAGE IMPROVEMENTS
T/W H EAST SIDE SITE DEVELOPMENT IMPROVEMENTS

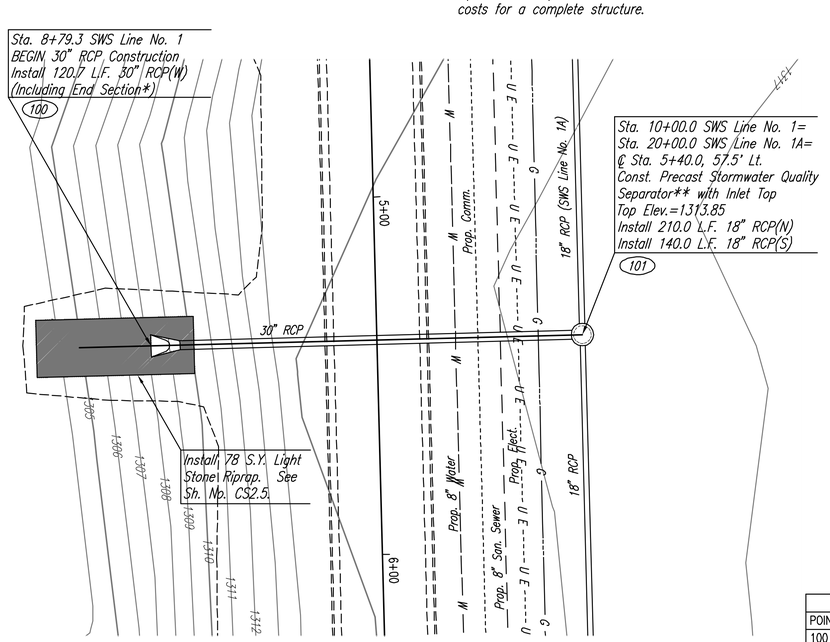
Professional Engineering Consultants, P.A.
303 S. TOPEKA • WICHITA, KANSAS 67202
316-262-2691 • FAX 316-262-3003

Date SEPT., 2012 | Job No. 05779

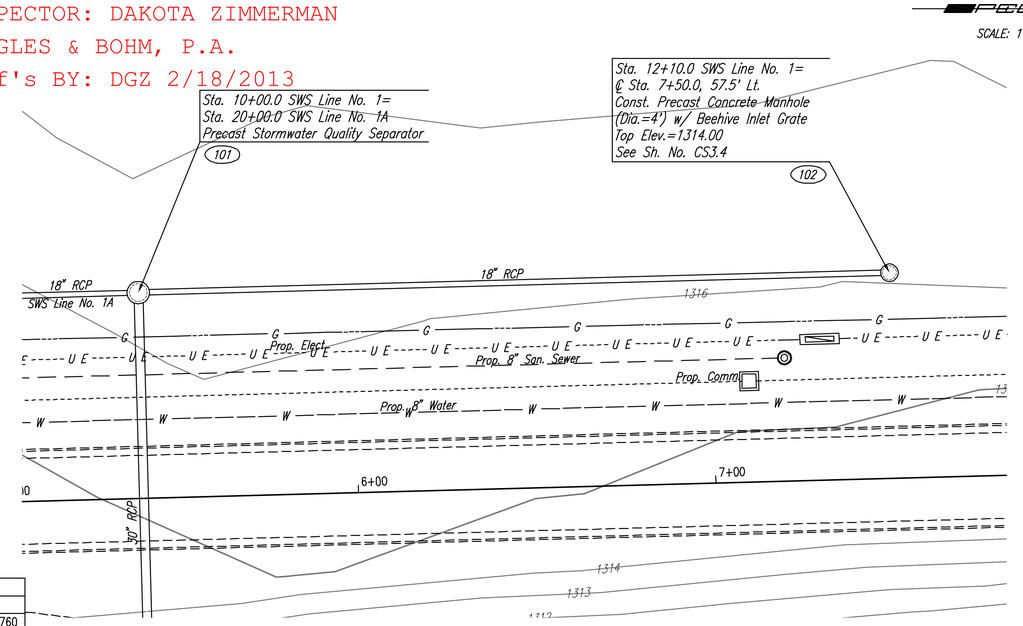
* – 30" RC End Section paid as L.F. 30" RCP

** – Stormwater Quality Separator shall be Hydroworks HC5 Structure or equivalent. Bid price shall include all costs for a complete structure.

AS BUILT PLANS
CONTRACTOR: NOWAK CONSTRUCTION
INSPECTOR: DAKOTA ZIMMERMAN
RUGGLES & BOHM, P.A.
.pdf's BY: DGZ 2/18/2013

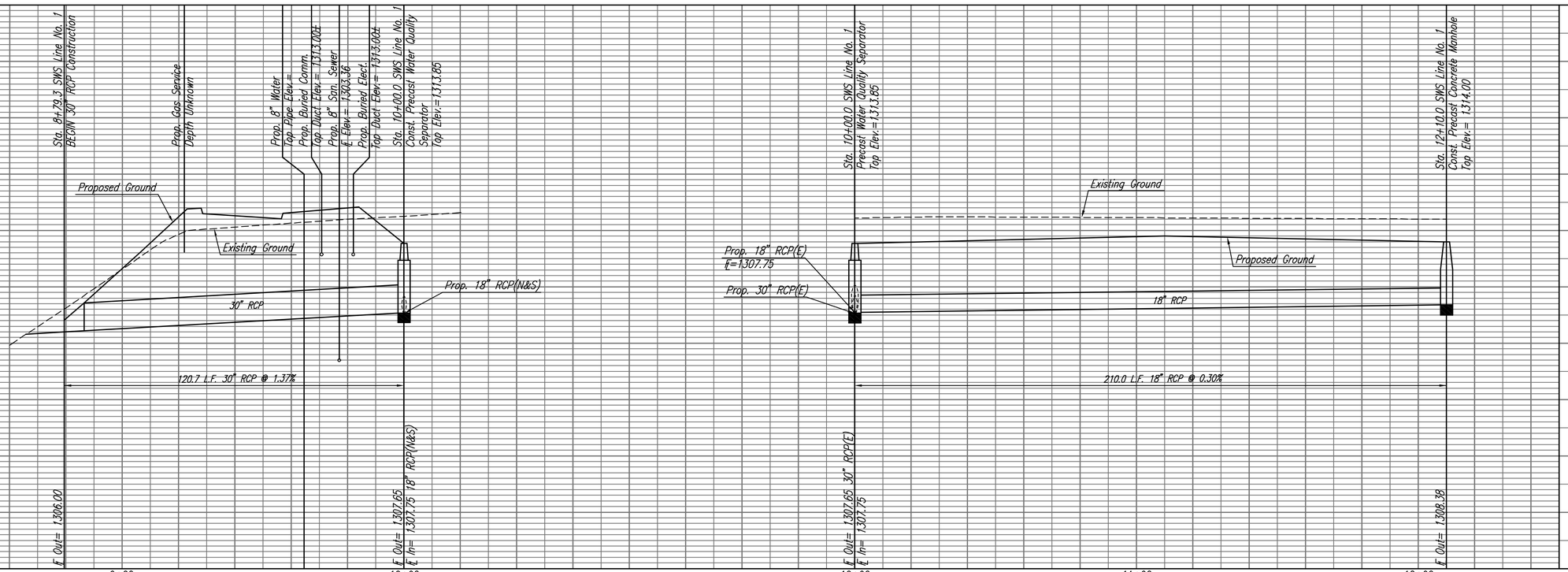


SCALE: 1"=20'



SCALE: 1"=20'

COORDINATE LIST		
POINT	NORTH	EAST
100	1,679,106.4353	1,625,751.4760
101	1,679,103.2429	1,625,630.8724
102	1,679,313.1693	1,625,625.3112



SWS LINE NO. 1
STA. 8+81.85 TO STA. 12+10.00

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

Job No. 32-05779
Date Sept., 2012
Designed By DAR
Drawn By JDT
Sheet CS3.1 of 42

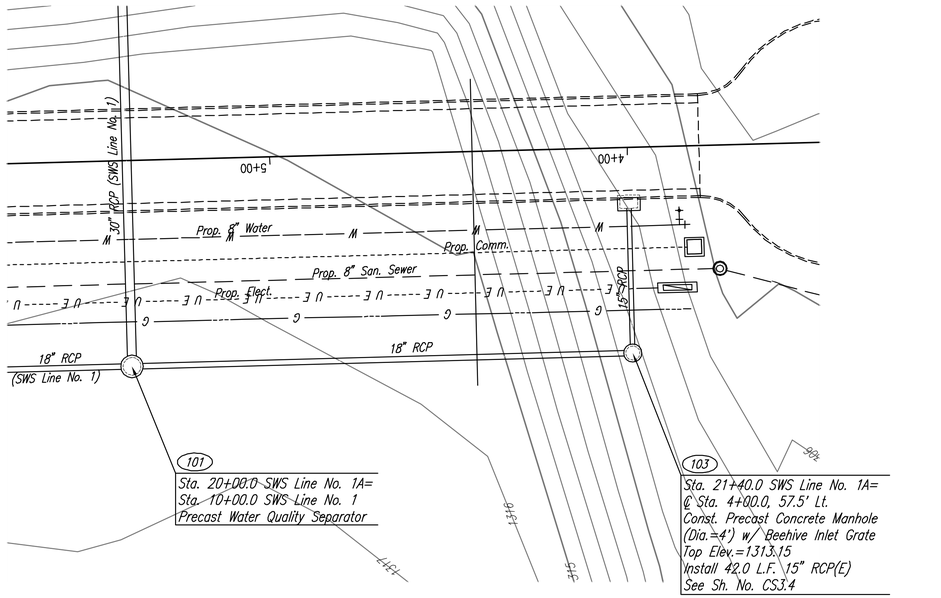
PLAN: CHECKED, CHECKED, BY, DATE
PROFILE: CHECKED, CHECKED, BY, DATE

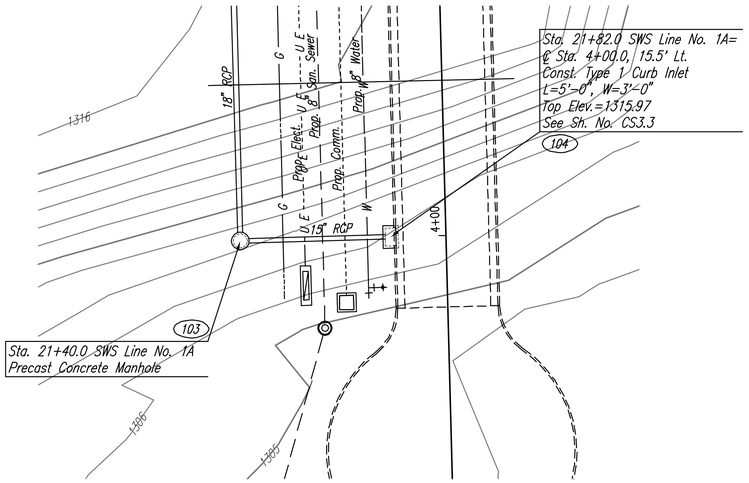
Saved 09-26-2012 8:41:33 AM by JDT
Plot Scale 1:20 09-27-2012 2:45:21 PM by JDT
Q:\2005\05779\-000 STREET DESIGN\CS3.1-SWSLINE1

AS BUILT PLANS
CONTRACTOR: NOWAK CONSTRUCTION
INSPECTOR: DAKOTA ZIMMERMAN
RUGGLES & BOHM, P.A.
.pdf's BY: DGZ 2/18/2013

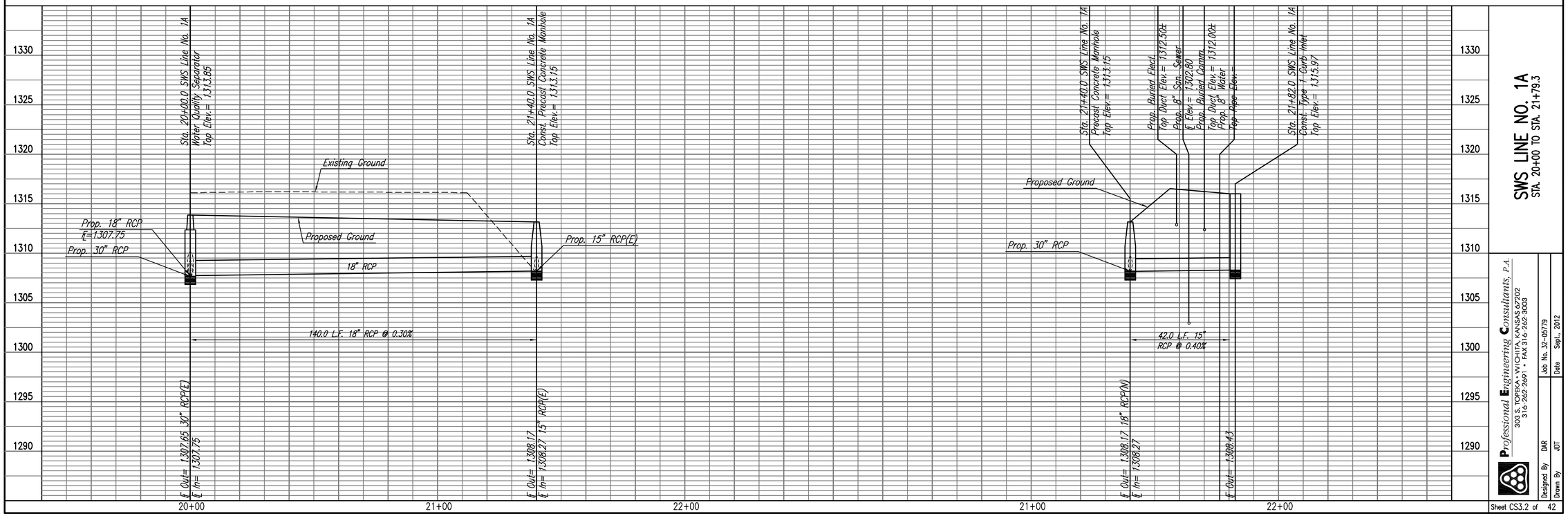
COORDINATE LIST		
POINT	NORTH	EAST
101	1,679,103.2429	1,625,630.8724
103	1,678,963.2920	1,625,634.5800
104	1,678,964.4043	1,625,676.5652

SCALE: 1"=20'





SCALE: 1"=20'



SWS LINE NO. 1A
STA. 20+00 TO STA. 21+79.3

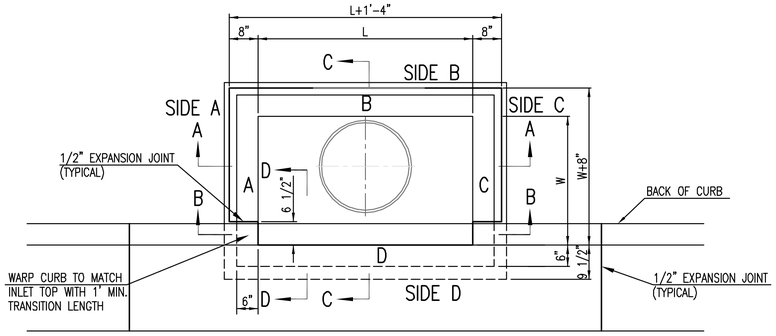
Professional Engineering Consultants, P.A.
303 S. TOPEKA • WICHITA, KANSAS 67202
316 262 2691 • FAX 316 262 3003

Designed By DMR | Job No. 32-05779
Drawn By JDT | Date Sept., 2012

PLAN | CHECKED | CHECKED | BY | DATE

PROFILE | CHECKED | CHECKED | BY | DATE

Saved 09-17-2012 10:31:44 AM by JDT
Plotted 09-17-2012 10:32:24 AM by JDT
G:\2005\05779\-000 STREET DESIGN\CS3.2- SWSLINE1A

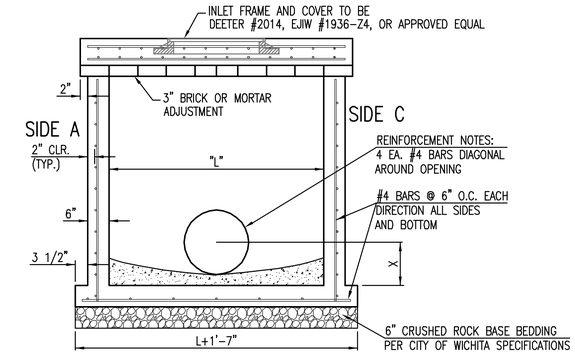


TOP VIEW

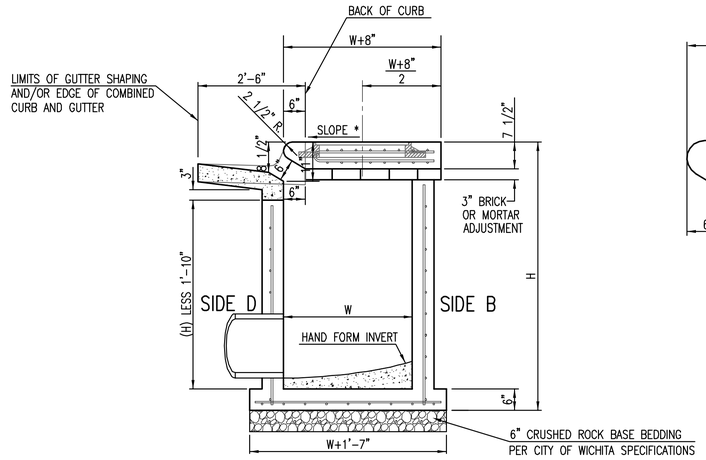
BAR SCHEDULE		
INLET OPENING	B1 BARS	SPACING
5'-0"	#4	4"
10'-0"	#6	3.5"

PRECAST CURB INLET WIDTHS				
W	PRE-CAST TOP SIZE			PIPE DIA.**
	WIDTH	LENGTH	TOP	
3'-0"	W+8"	L+1'-4"	7 1/2"	21" & SMALLER
4'-0"	W+8"	L+1'-4"	7 1/2"	24" & 30"
5'-0"	W+8"	L+1'-4"	7 1/2"	36" & 42"
6'-0"	W+8"	L+1'-4"	7 1/2"	48" & 54"
7'-0"	W+8"	L+1'-4"	7 1/2"	60" & 66"

** FOR PIPES PERPENDICULAR TO INLET WALL

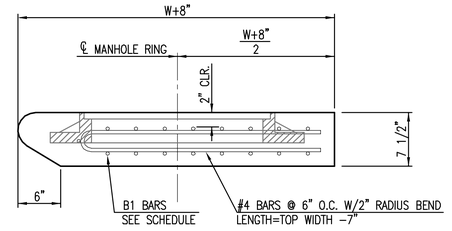


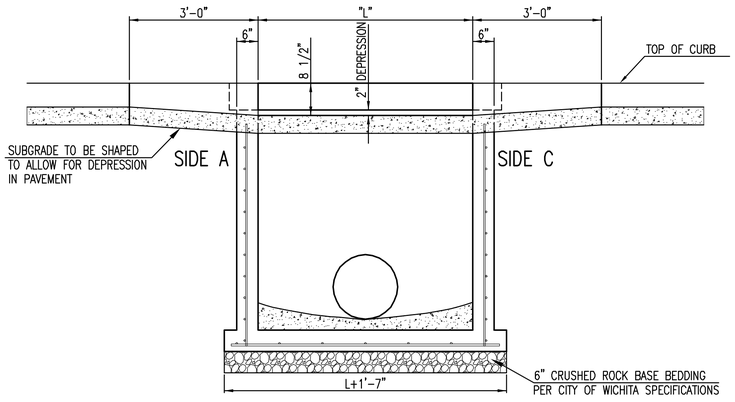
SECTION "A-A"



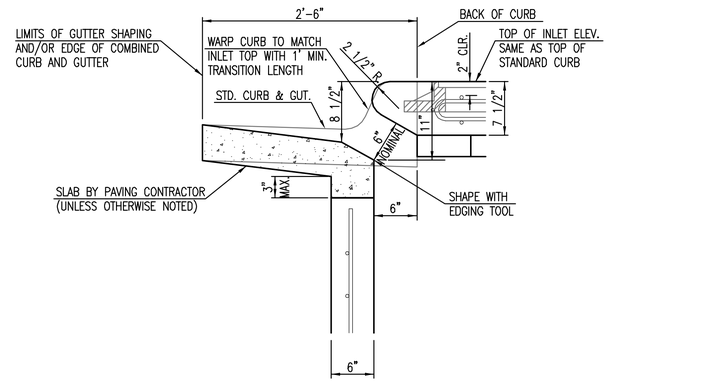
SECTION "C-C"

NOTES:
* SLOPE OF INLET TOP TO MATCH SIDEWALK OR PARKING SLOPES WITHIN LIMITS INDICATED.





SECTION "B-B"



SECTION "D-D"

GENERAL NOTES

1. CONCRETE TOPS TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK. CONCRETE TOPS MAY BE CAST IN PLACE OR PRECAST. CONCRETE USED FOR INLET CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
2. CONTRACTOR SHALL HAVE THE OPTION OF CONSTRUCTING 8" BRICK MASONRY WALLS BETWEEN THE CONCRETE INLET BASE AND TOP OF THIS INLET WHEN W=5'-0" AND H=7'-0" OR LESS.
3. 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.
4. THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.
5. INLET FRAME AND COVER TO BE DEETER #2014, EJIW #1936 Z4, OR APPROVED EQUAL, SEE SW-303.
6. 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.

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

STANDARD TYPE 1 CURB INLET 5'-0" OR 10'-0" OPENING

CITY ENGINEER
JAMES L. ARMOUR, P.E., L.S.

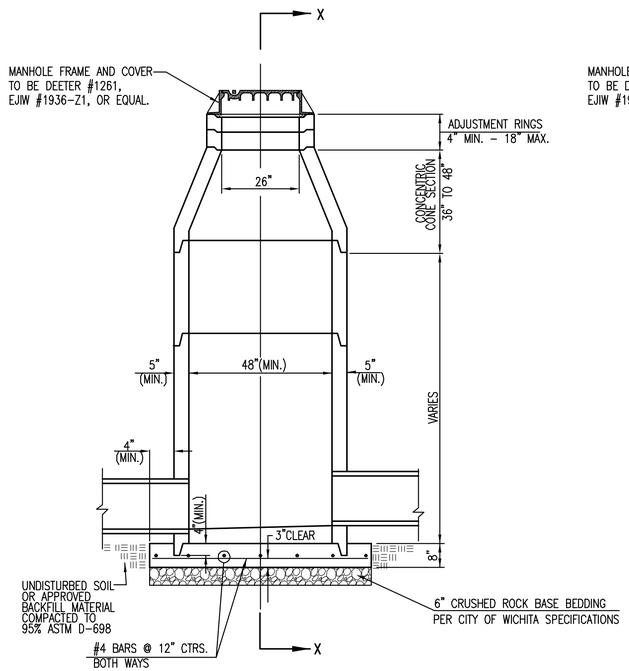
PROJECT NUMBER	OCA NUMBER	DATE
0082PPD	607861	11/2010

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

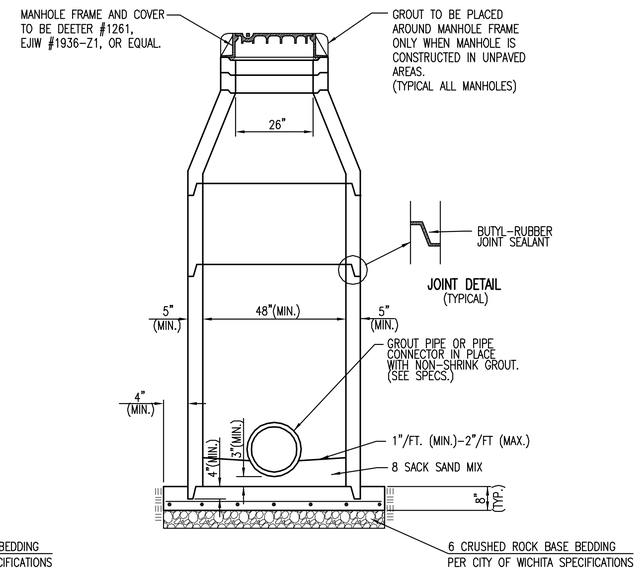
DESIGN	DRAWN

SHEET
CS3.3

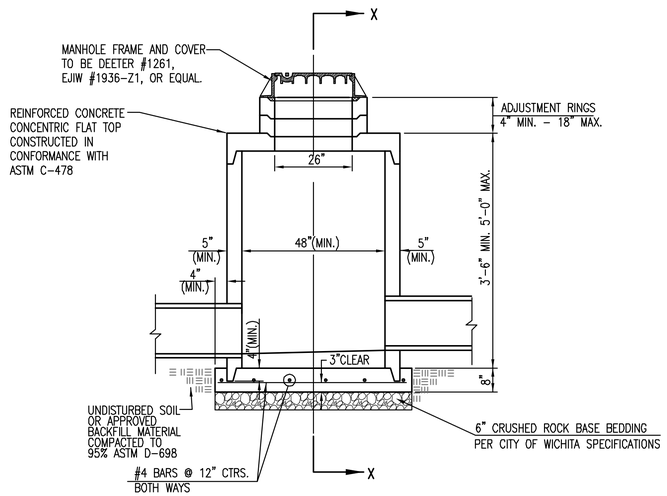
SW-101



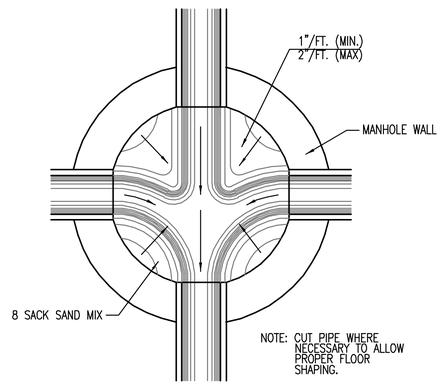
PRECAST
STANDARD MANHOLE
TYPE "A"



SECTION X-X
(TYPICAL)



PRECAST
SHALLOW MANHOLE
TYPE "B"



TYPICAL MANHOLE
FLOOR SHAPING

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.

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

PRECAST CONCRETE MANHOLE (STORM SEWER)

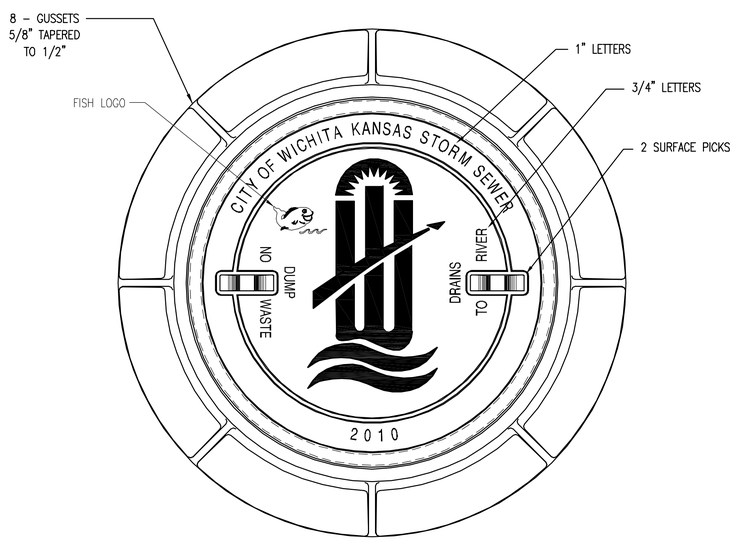
CITY ENGINEER
JAMES L. ARMOUR, P.E., L.S.

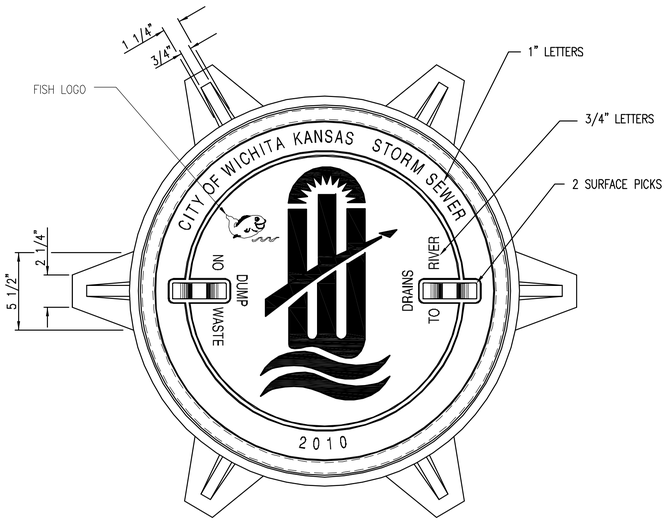
PROJECT NUMBER	OCA NUMBER	DATE
0082PPD	607861	11/2010

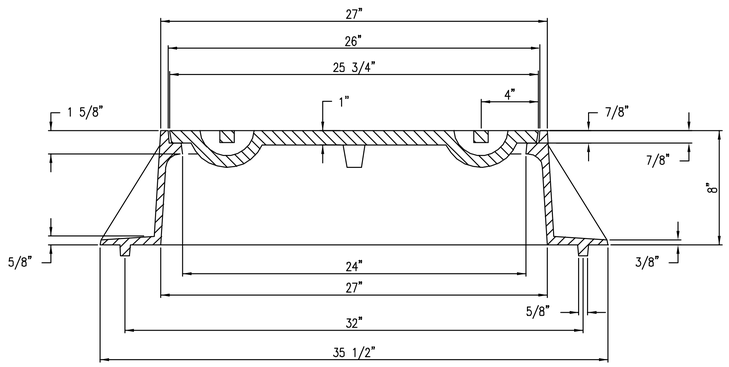
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

DESIGN	DRAWN

SHEET
CS3.4

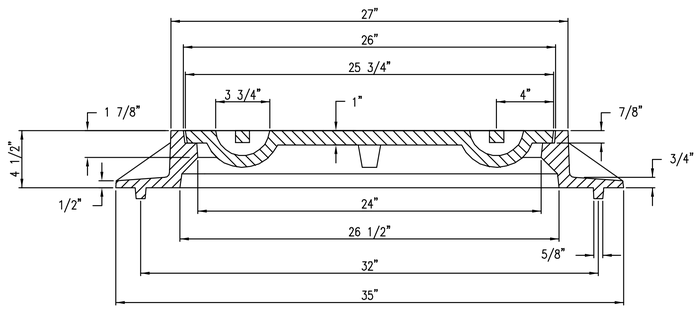






MANHOLE FRAME
DEETER #1261 OR EJIW #1936-Z1

NOTE:
1. FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACE.
2. COVER TO BE DEETER #1261 OR EJIW #1936A.
3. FOR BEEHIVE GRATE APPLICATION, GRATE TO BE DEETER #4495, EJIW #120545, OR APPROVED EQUAL.



INLET FRAME
DEETER #2014 OR EJIW #1936-Z4

NOTE:
1. FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACES.
2. NOT TO BE USED UNDER PAVEMENT.
3. COVER TO BE DEETER #1261 OR EJIW #1936A.
4. FOR BEEHIVE GRATE APPLICATION, GRATE TO BE DEETER #4495, EJIW #120545, OR APPROVED EQUAL.

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

MANHOLE/INLET FRAME AND COVER (STORM SEWER)

CITY ENGINEER
JAMES L. ARMOUR, P.E., L.S.

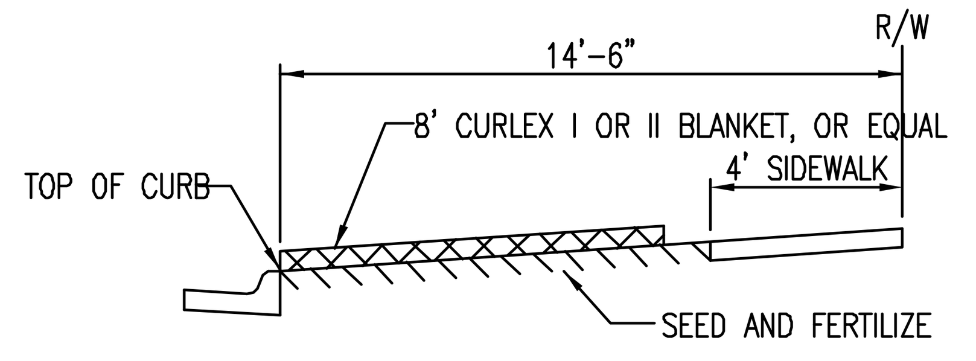
PROJECT NUMBER	OCA NUMBER	DATE
0082PPD	607861	11/2010

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

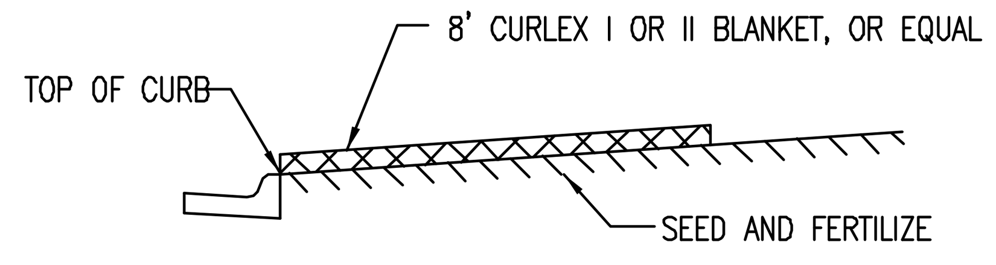
DESIGN	DRAWN

SHEET
CS3.5

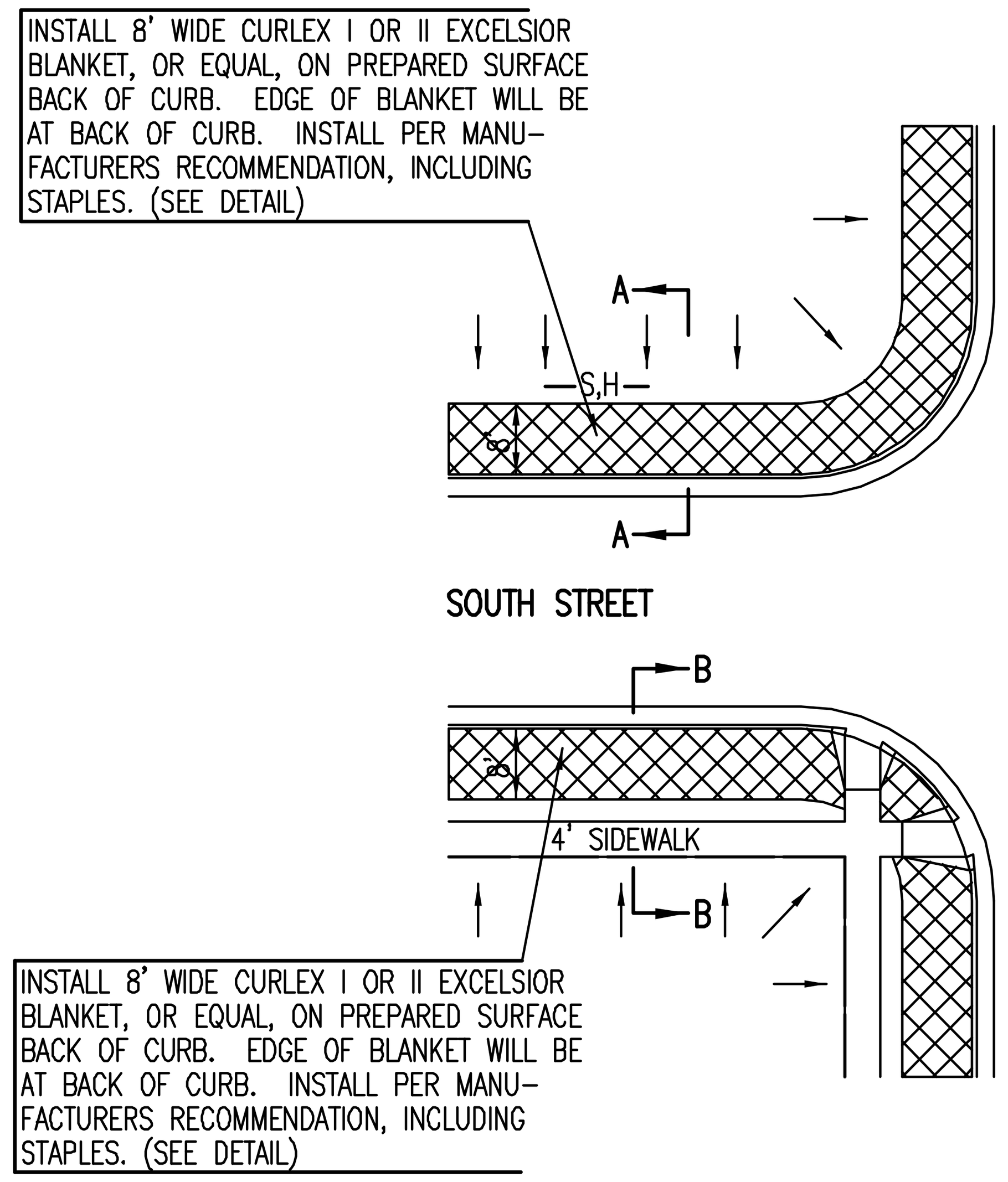
Saved 09-26-2012 8:50:11 AM by JDT
Plot Scale 1:5 09-27-2012 2:54:59 PM by JASON D. TEMPLIN
Q:\2005\05779_000 STREET DESIGN\CS3.5-MH Frame & Cover



SECTION B-B



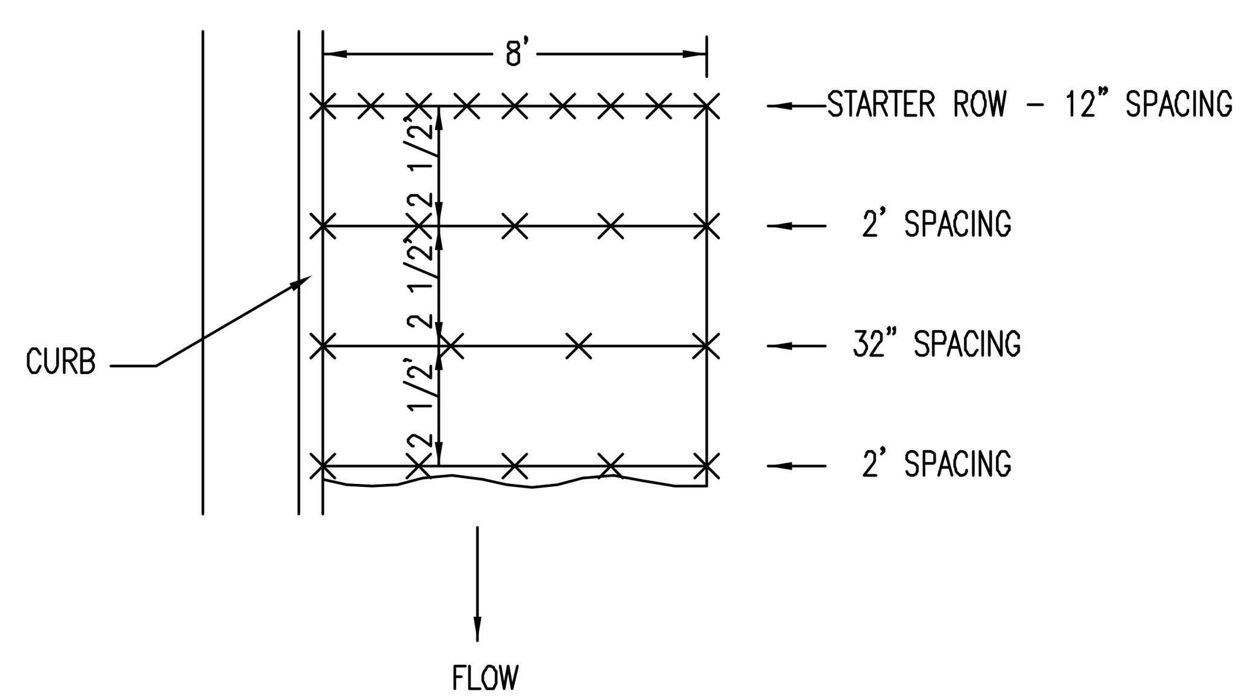
SECTION A-A



GENERAL NOTES

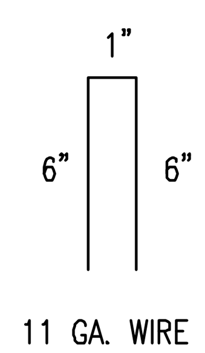
1. EXCELSIOR MAT TO BE INSTALLED WHEN SOD IS NOT SPECIFIED ON PROJECT.
2. EXCELSIOR BLANKET TO BE INSTALLED OVER SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
3. AFTER INSTALLATION OF EXCELSIOR BLANKET, AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB AND INTO THE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

BACK OF CURB PROTECTION DETAIL



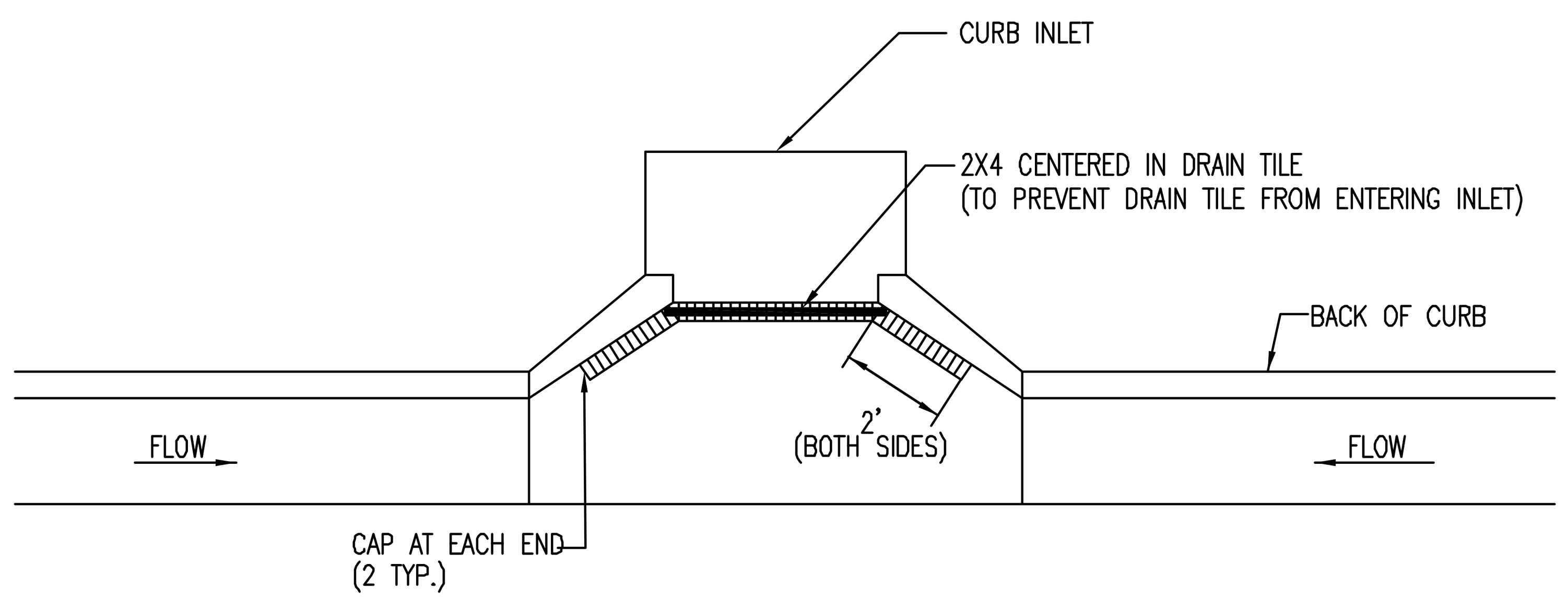
STAPLE PATTERN

NOTES: USE 6" SEAM OVERLAP



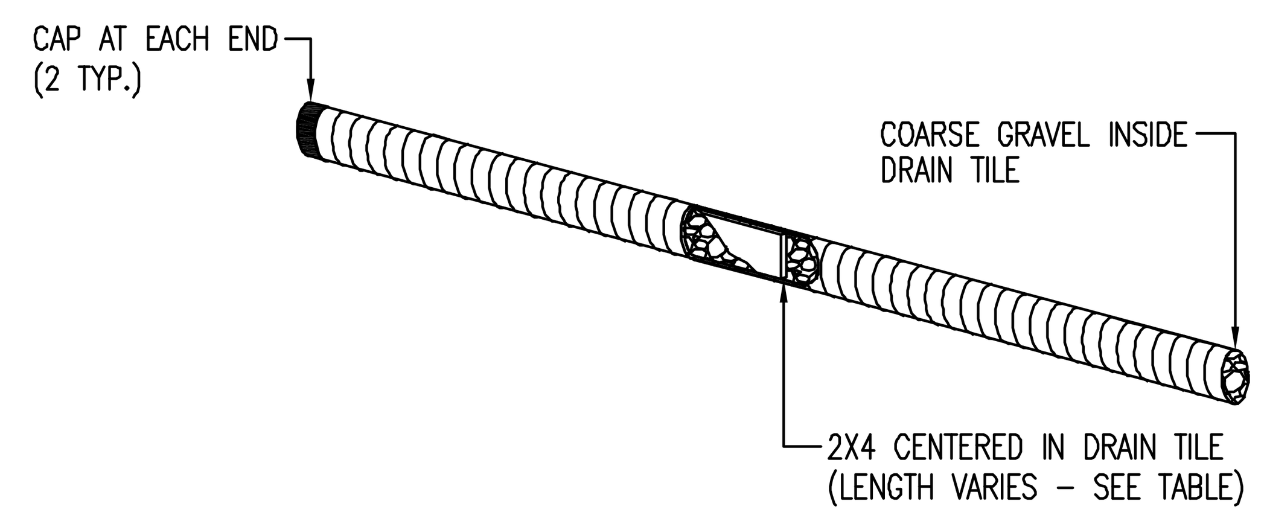
STAPLE

DETAILS FOR CURLEX I OR II BLANKETS



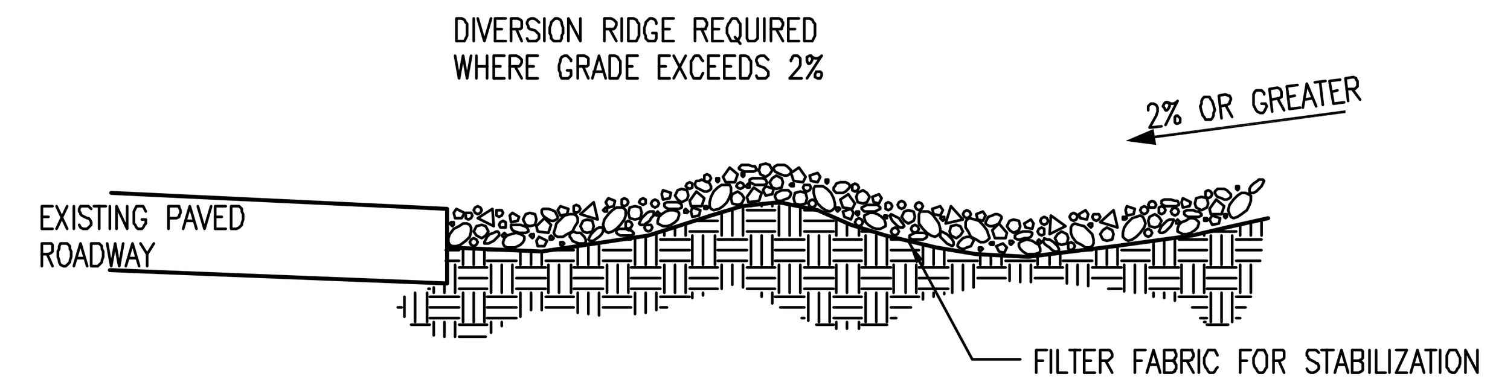
NOTE:
PLACE 4" PERFORATED PVC PIPE, FILLED WITH 1/2"-1" DIA. GRAVEL, IN FRONT OF CURB INLET AS SHOWN.

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

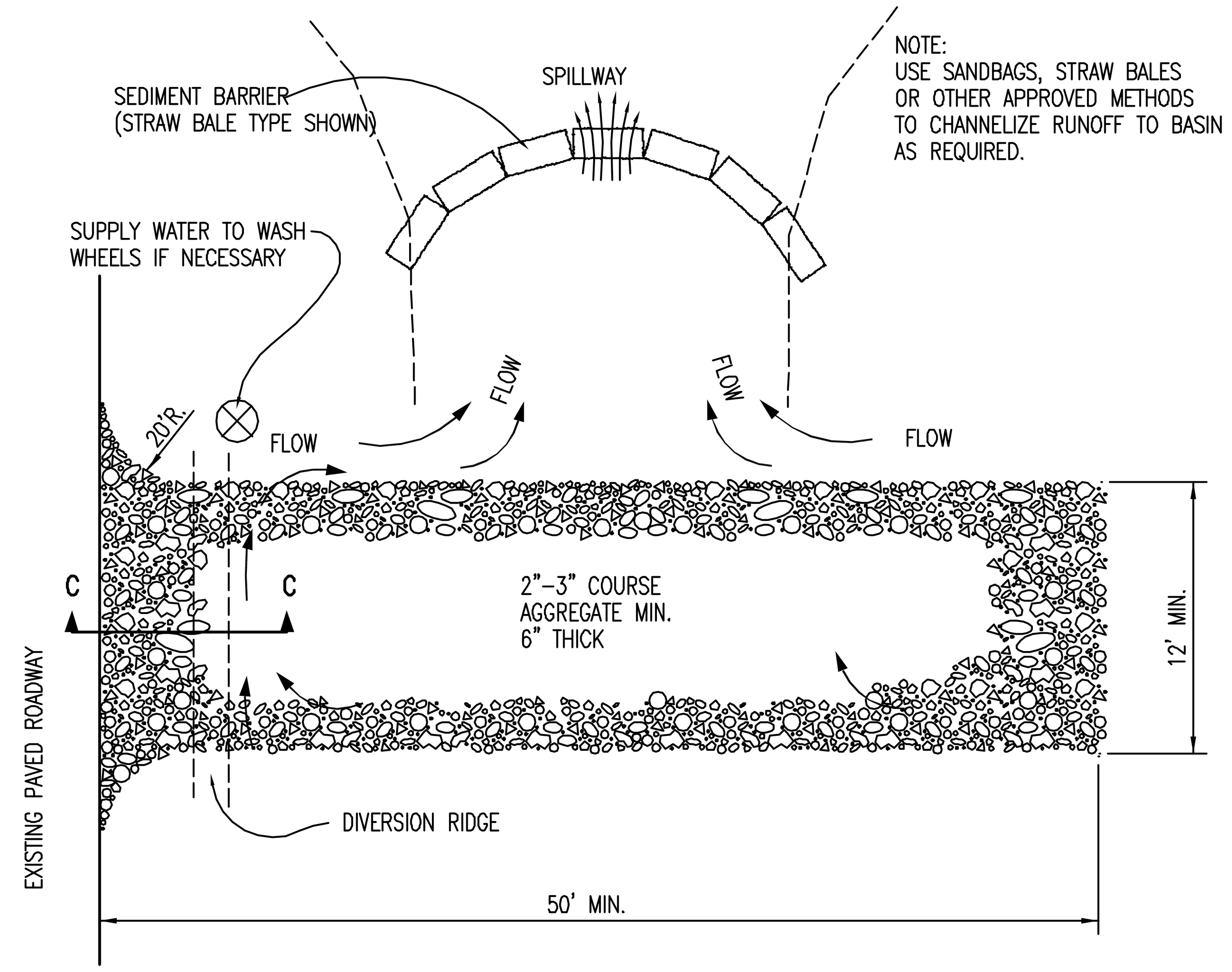


CURB INLET PROTECTION

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.

CITY OF WICHITA

PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

BACK OF CURB PROTECTION, CURB INLET PROTECTION AND CONSTRUCTION ENTRANCE

CITY ENGINEER
JAMES L. ARMOUR, P.E., L.S.

PROJECT NUMBER	OCA NUMBER	DATE
0082PPD	607861	11/2010

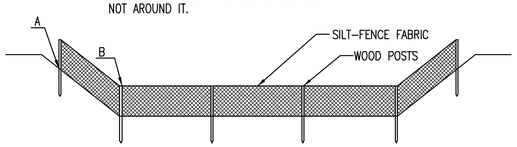
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

DESIGN | DRAWN

SHEET
CS4.1

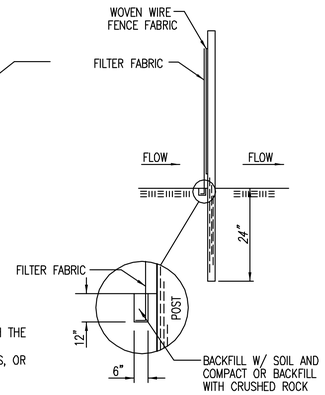
Saved 09-26-2012 8:53:37 AM by JDT
Plot Scale 1:1 09-27-2012 2:55:48 PM by JASON D. TEMPLIN
G:\2005\05779\-000 STREET DESIGN\CS4.1-Back of Curb Prot, Curb Inlet Prot and Const. Entr

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)



ANCHOR TRENCH DETAIL

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.

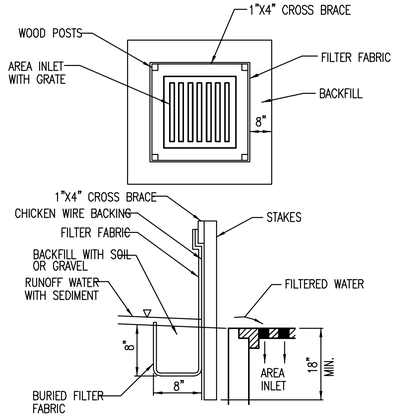
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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?



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.

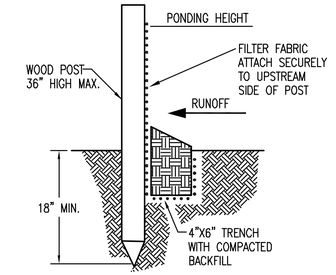
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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?

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

SILT FENCE DITCH CHECK AND BARRIER DETAILS

CITY ENGINEER
JAMES L. ARMOUR, P.E., L.S.

PROJECT NUMBER	OCA NUMBER	DATE
0082PPD	607861	11/2010

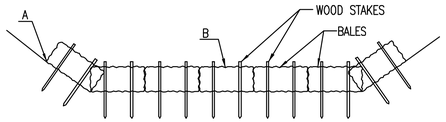
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

DESIGN	DRAWN

SHEET
CS4.2

Saved 09-26-2012 8:54:00 AM by JDT
Plot Scale 1:1 09-27-2012 2:57:39 PM by JASON D. TEMPLIN
Q:\2005\05779\-000 STREET DESIGN\CS4.2-Slt Fc Dt Check and Barr Dtls

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".

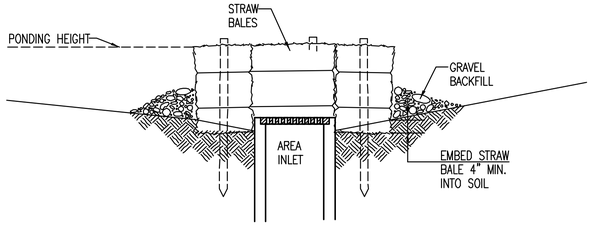
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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.

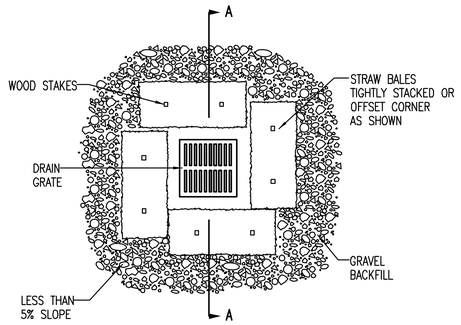
INSPECTION AND MAINTENANCE:

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.

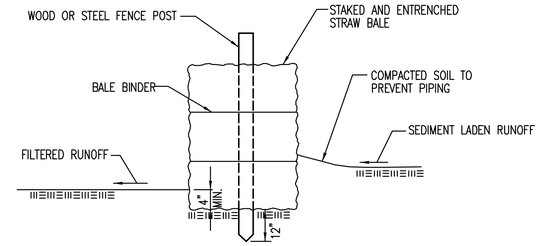
LIST OF COMMON PLACEMENT INSTALLATION MISTAKES TO AVOID:

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 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?

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

STRAW BALE DITCH CHECK AND BARRIER DETAILS

CITY ENGINEER
JAMES L. ARMOUR, P.E., L.S.

PROJECT NUMBER	OCA NUMBER	DATE
0082PPD	607861	11/2010

DESIGN | DRAWN

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

SHEET
CS4.3

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.

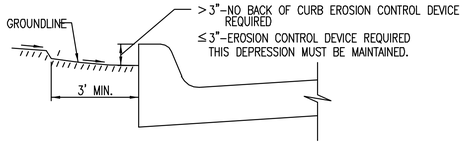
2. EROSION CONTROL DEVICES MUST BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION PROCESS AND UNTIL THE DISTURBED EARTH IS RESTABILIZED.

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.

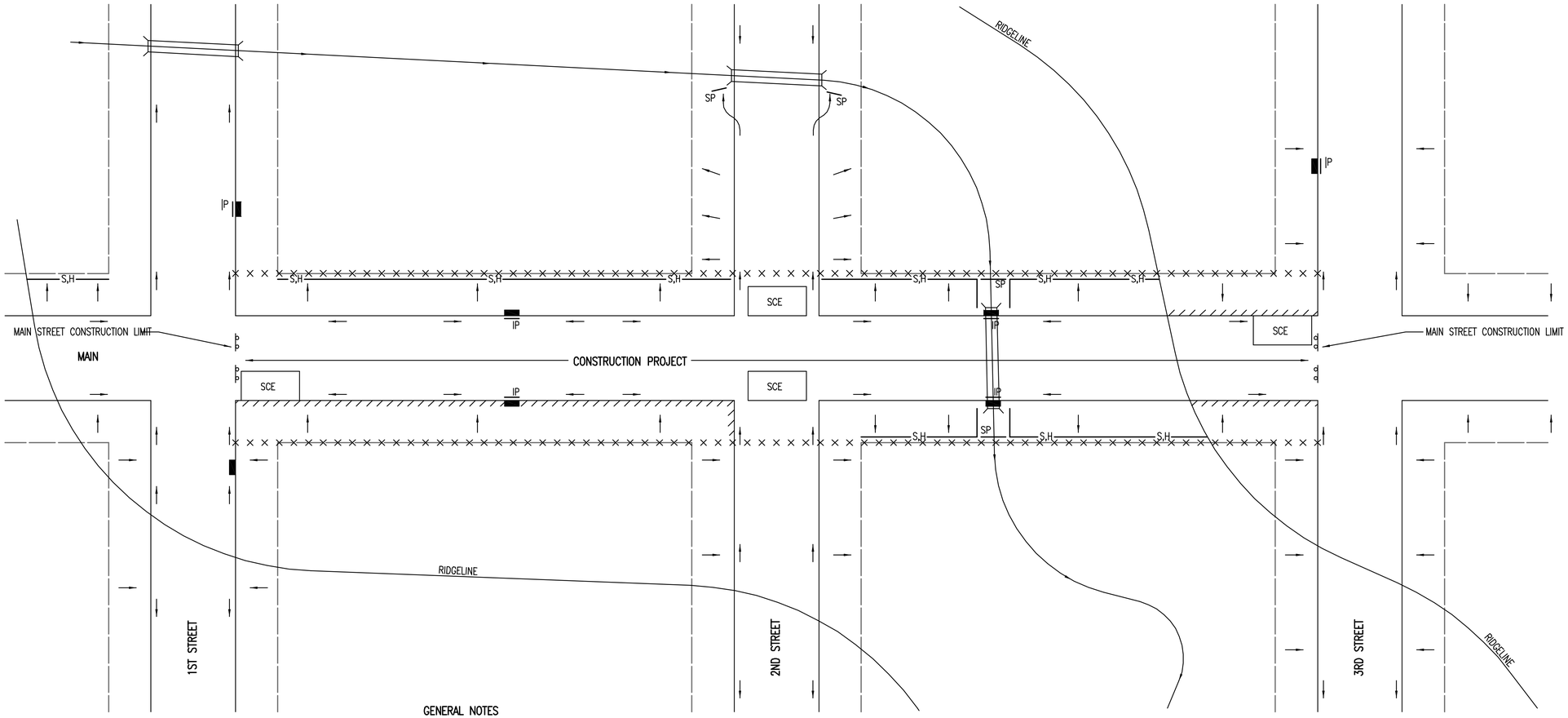
4. FOR PROJECTS DISTURBING LESS THAN 1 ACRE, CONTRACTORS ARE ENCOURAGED TO PREPARE STORMWATER POLLUTION PREVENTION PLANS PRIOR TO CONSTRUCTION. EROSION CONTROL DEVICES MUST BE USED ON ALL PROJECTS.

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



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 CURLEX I OR II EXCELSIOR BLANKET, OR EQUAL. 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)

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

STREET IMPROVEMENT PROJECTS

CITY ENGINEER
JAMES L. ARMOUR, P.E., L.S.

PROJECT NUMBER	OCA NUMBER	DATE
0082PPD	607861	11/2010

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

DESIGN	DRAWN

SHEET
CS4.4

Saved 09-26-2012, 8:54:47 AM by JDT
Plot Scale 1:1 09-27-2012 5:00:01 PM, by JASON D. TEMPLIN
Q:\2005\057791-000 STREET DESIGN\CS4.4-Street Improvement Projects