STORM WATER DRAIN #279

TO SERVE

AUBURN HILLS COMMERCIAL 4th ADDITION

PROJECT NO. 468-84108

THE CITY OF WICHITA, KANSAS

JAMES L. ARMOUR, CITY ENGINEER

OCA NO. 751426

GENERAL NOTES

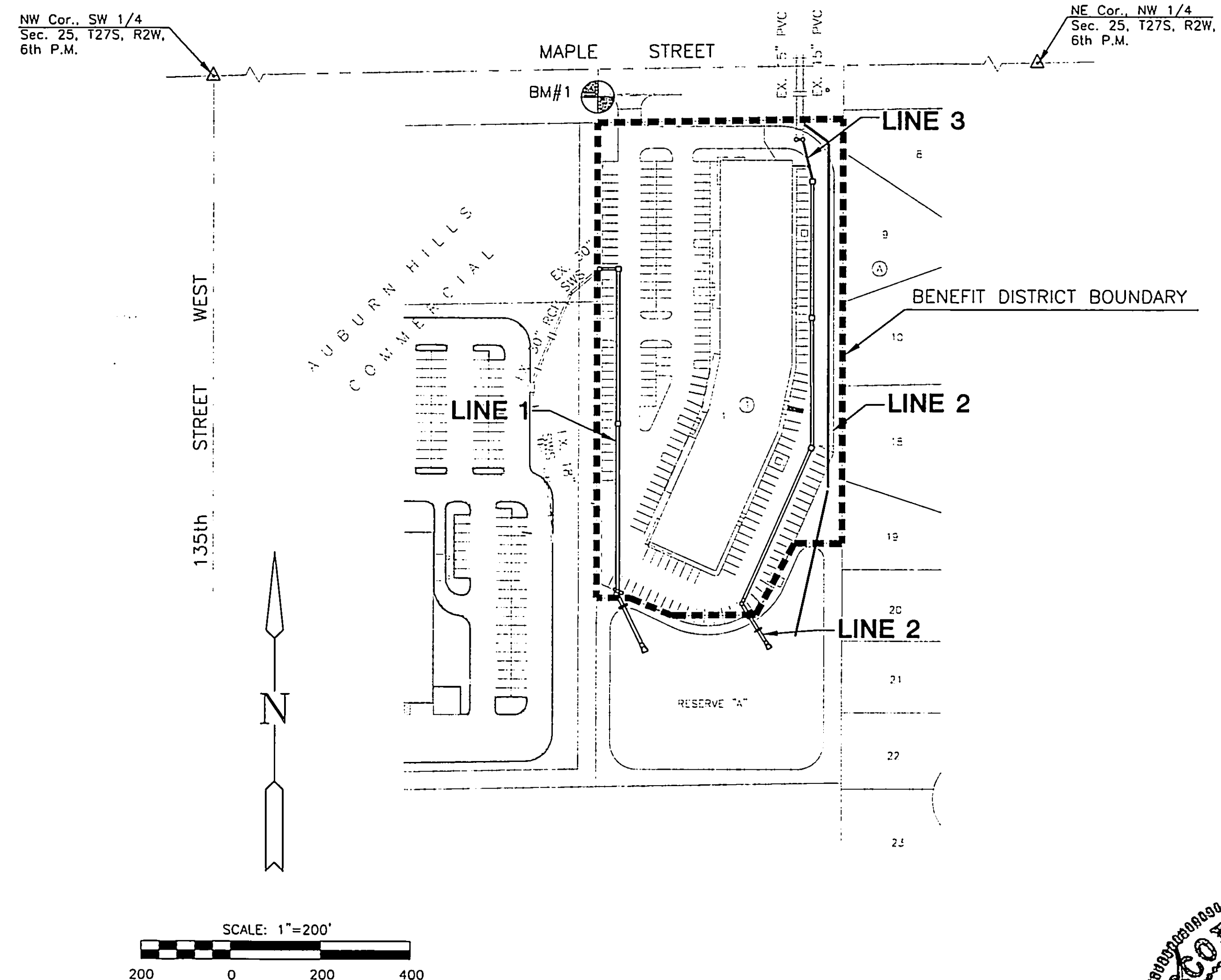
1. UNLESS SHOWN OR OTHERWISE STATED ON THESE DRAWINGS, MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF WICHITA STANDARD SPECIFICATIONS.
2. THE TOPS OF INLETS AND MANHOLES AS NOTED ON THE PLANS MAY VARY SO AS TO MEET PROPOSED TOP OF CURB ELEVATIONS OR PAVEMENT ELEVATIONS. THE FIELD ENGINEER SHALL LOCATE INLETS AND MANHOLES WITH REFERENCE TO PROPOSED PAVING PLANS OF THE PERTINENT PARKING LOTS.
3. ALL CONCRETE SHALL BE STANDARD PAVING MIX UNLESS OTHERWISE NOTED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. THE CONTRACTOR SHALL 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.
5. CONTRACTOR SHALL NOTIFY UTILITY COMPANIES OF CONSTRUCTION SCHEDULING.
6. EXISTING UTILITIES AND THEIR LOCATIONS, AS SHOWN ON THE PLANS REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. LOCATION INFORMATION HAS BEEN OBTAINED FROM THE VARIOUS COMPANIES AND IS EITHER FROM COMPANY UTILITY DRAWINGS OR COMPANY PROVIDED FIELD LOCATIONS. THE PLAN LOCATIONS SHOWN ARE NOT GUARANTEED. ADDITIONAL EXISTING UTILITIES MAY ALSO BE ENCOUNTERED.
7. CONTRACTOR WILL BE REQUIRED TO PROVIDE A MINIMUM ADVANCE NOTICE OF SEVENTY-TWO (72) HOURS TO UTILITY COMPANIES TO STARTING ANY EXCAVATION AS FOLLOWS:

   KANSAS ONE-CALL 800-344-7233
OR 687-2470 (LOCAL WICHITA)

   THE CONTRACTOR MUST NOTIFY THE FOLLOWING IN CASE OF EMERGENCY:

COX COMMUNICATIONS (CABLE)	262-0661
WESTAR (ELECTRIC)	261-6512
KANSAS GAS SERVICE (GAS)	832-3101
SBC (TELEPHONE)	800-870-8390
CITY OF WICHITA WATER & SEWER	262-6000
AQUILA (GAS)	800-303-0357

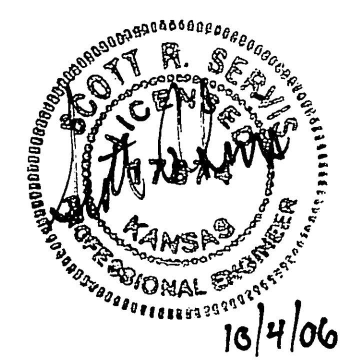
8. RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES AND EXCESS EXCAVATION WHICH IS TO BE WASTED SHALL BE DISPOSED OF ON SITES TO BE PROVIDED BY THE CONTRACTOR. THESE SITES SHALL BE APPROVED BY THE ENGINEER AS TO SUITABILITY, APPEARANCE AND SITE LOCATION. LOCATIONS THAT, IN THE OPINION OF THE ENGINEER, WILL LEAVE AN UNSIGHTLY APPEARANCE WILL NOT BE APPROVED. ALL DISPOSAL SITES MUST BE APPROVED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT. MATERIAL EITHER STOCKPILED OR DISPOSED OF IN A FLOOD PLAIN WOULD REQUIRE A KANSAS STATE BOARD OF AGRICULTURE PERMIT. ANY MATERIAL 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 ARCHAEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED BORROW LOCATION.
9. CONTRACTOR SHALL RESEED AND MULCH IN ACCORDANCE WITH THE REQUIREMENTS OUTLINED ON SHEET 2 OF 14.
10. ALL EARTHWORK COMPACTION SHALL BE 95% STANDARD DENSITY. CONTRACTOR SHALL PROVIDE TEST RESULTS TO CONFIRM COMPACTION.

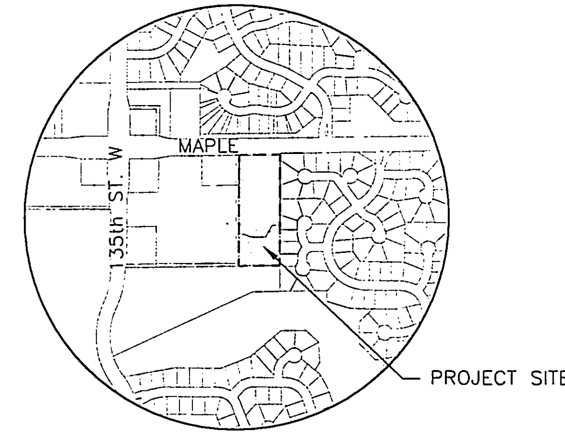


BENCHMARKS

BM #1 Chiseled square on the back of curb, lying North of the Northwest corner oF Lot 1, Blk. 1
Elev. = 147.64 (City Datum)
1335.04 (NGVD 29)

EARTHWORK SUMMARY	
EXCAVATION	17,500 C.Y.
BORROW (CONTRACTOR FURNISHED)	2,000 C.Y.
COMPACTED FILL (95% DENSITY)	19,500 C.Y.





VICINITY MAP

NO SCALE

INDEX TO DRAWINGS

CONSTRUCTION SEQUENCE

1. PRE-BID MEETING WILL BE HELD AT 2:00 P.M. ON OCTOBER 12, 2006 AT THE CITY OF WICHITA CENTRAL MAINTENANCE FACILITY, 1801 S MCLEAN, WICHITA, KS 67213.
2. DEWATER EXISTING POND AND REMOVE SEDIMENT, MUCK AND CLAY LINER.
3. CONSTRUCT LINE 1 FROM STA. 10+13.2 TO STA. 14+48.5.
4. BEGIN EXCAVATION ON NORTH SIDE OF POND BETWEEN 101 AND 106 (SEE BUBBLE MAP). USE DIRT TO BEGIN FILLING EAST AND SOUTH SIDE OF EXISTING POND. MAINTAIN SLOPE ON EXISTING POND BOTTOM TO DRAIN TO NORTH.
5. CONSTRUCT LINE 2 FROM STA. 10+05.6 TO STA. 15+51.4. BEGIN CONSTRUCTION WHEN POND HAS BEEN FILLED TO PROVIDE ADEQUATE COVER OVER PIPE.
6. CONSTRUCT TEMPORARY OVERFLOW SWALE BETWEEN PONDS AND MAINTAIN POSITVE DRAINAGE FROM 10" STUB AT STA. 15+51.4 ON LINE 2 TO EXISTING POND.
7. CONSTRUCT LINE 1 FROM STA. 14+48.5 TO STA. 14+69.5 TO DIVERT FLOW TO SOUTH POND. ABANDON EXISTING OUTFLOW PIPE AS SPECIFIED ON SHEET 7 OF 14.
8. EXCAVATE THE REMAINDER OF THE PROPOSED POND AND FILL THE EXISTING POND. CONSTRUCT LINE 3 AND FILL TEMPORARY OVERFLOW SWALE BETWEEN PONDS.
9. UPON COMPLETION OF MASS GRADING, COMPLETE SEEDING.
10. CONTRACTOR SHALL MAKE CONNECTIONS TO EXISTING PIPES IN SUCH A MANNER TO MAINTAIN TOTAL AVAILABLE SITE DETENTION VOLUME AS THE EXISTING DETENTION CELL IS FILLED AND THE NEW CELL IS CUT.
11. CONTRACTOR SHALL COORDINATE CONSTRUCTION WITH DEVELOPER AND BUILDING GENERAL CONTRACTOR. BUILDING GENERAL CONTRACTOR IS PROJECTING A CONSTRUCTION START DATE OF DECEMBER 23, 2006. ALL WORK, WITH THE EXCEPTION OF SEEDING, SHALL BE COMPLETED BY DECEMBER 23, 2006.

MKEC
ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316-684-9600

STORM WATER SEWER

AUBURN HILLS COMMERCIAL 4TH. ADDITION

TITLE SHEET
SHEET TITLE

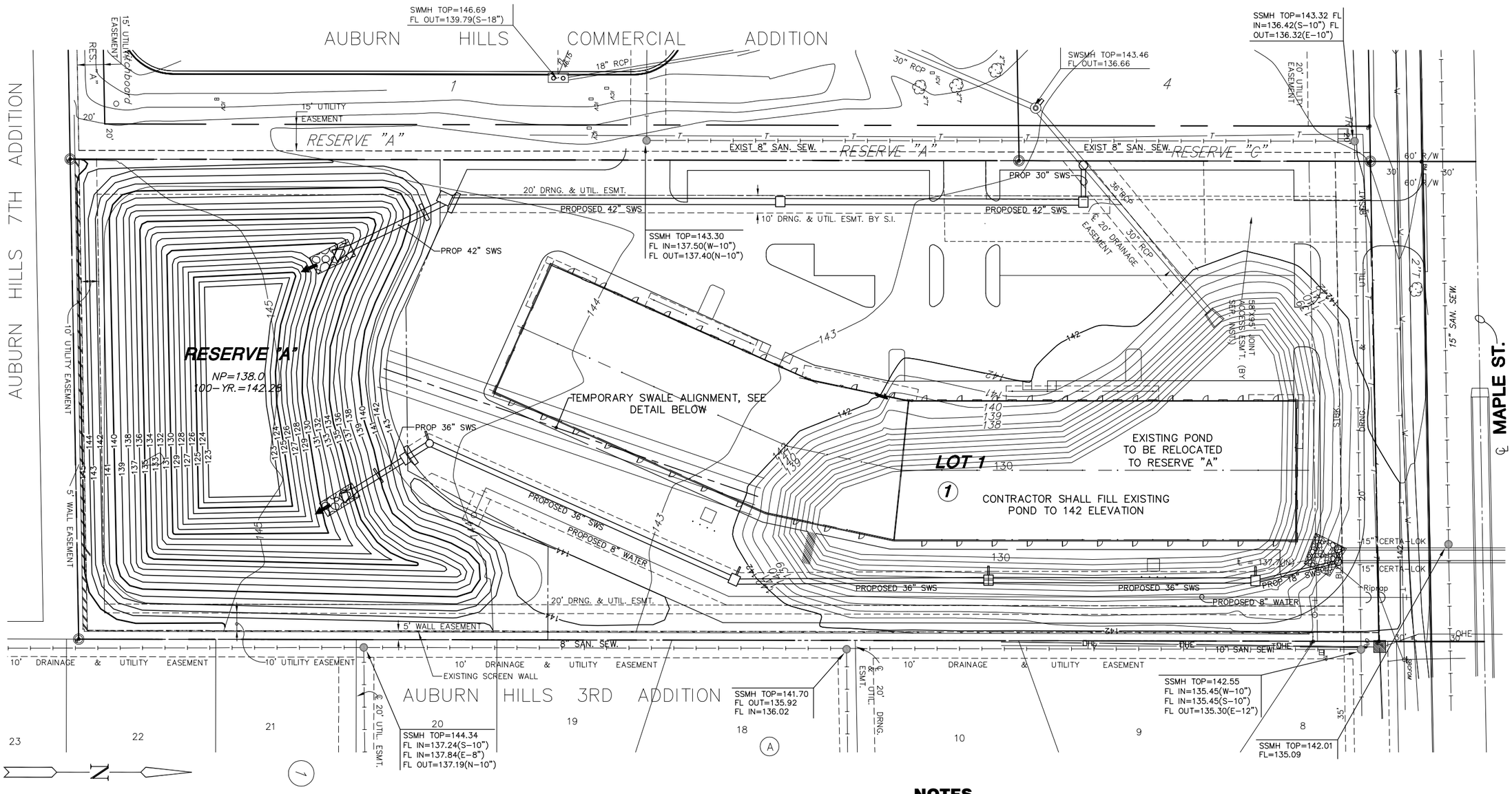
468-84108
PROJECT NUMBER

SRS / DLM / GJA
DESIGNED DRAWN CHECKED

ISSUED
Oct. 2006

REVISED

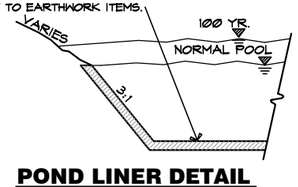
SHEET NO.
1 of 15



SCALE: 1"=30'

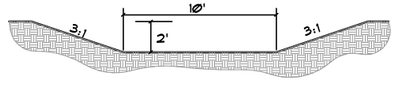
0 30 60

OVER EXCAVATE 12" OF SOIL. PLACE IN TWO 6" LIFTS CLAY LINER (PI=30 MIN.). COMPACT TO 2% ABOVE OPTIMUM ASTM D698 95% RELATIVE MAX DENSITY. A PERMIABILITY TEST OF THE LINER MATERIAL SHALL BE PERFORMED BY A GEOTECHNICAL SOILS ENGINEER AT A RANDOM LOCATION AS DETERMINED BY THE PROJECT INSPECTOR AND AT THE CONTRACTORS EXPENSE (1 PER POND). THE CLAY LINER MATERIAL SHALL MEET OR EXCEED A PERMIABILITY RATING VALUE OF 10-7. ALL COST ASSOCIATED WITH THIS WORK SHALL BE SUBSIDIARY TO EARTHWORK ITEMS.



POND LINER DETAIL

NOT TO SCALE



TEMPORARY SWALE

NOT TO SCALE

NOTE: SEE PLAN FOR ALIGNMENT.

LEGEND

- TR – TELEPHONE RISER
- – INLET
- – STORM SEWER PIPE
- W – WATER LINE
- S – SANITARY SEWER LINE
- G – GAS LINE
- T – TELEPHONE LINE
- UGE – UNDERGROUND ELECTRIC LINE
- OHT – OVERHEAD TELEPHONE
- OHE – OVERHEAD ELECTRIC
- FOC – UNDERGROUND FIBER OPTIC CABLE
- – SECTION CORNER
- – PROPERY CORNER FOUND
- BM – BENCHMARK
- 141 – EXISTING CONTOURS
- 141.5 – PROPOSED CONTOURS
- SN – DECIDUOUS TREE & DIAMETER
- SN – SIGN
- x – FENCE
- SSMH – SANITARY SEWER MANHOLE
- – WALL

NOTES

1. DE-WATER EXISTING POND AND REMOVE EXISTING SEDIMENT, MUCK, AND CLAY LINER IN ACCORDANCE WITH SECTION 207 OF DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR STATE ROAD AND BRIDGE CONSTRUCTION AND THE RECOMMENDATIONS OF A GEOTECHNICAL ENGINEER LICENSED IN THE STATE OF KANSAS.

2. CONTRACTOR SHALL FILL EXISTING POND TO THE 142 ELEVATION (LEVEL).

3. CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING POND LINER FOR THE NEW POND LOCATION. SEE POND LINER DETAIL THIS SHEET.

3. EROSION CONTROL IS TO MEET ALL FEDERAL, STATE, COUNTY & LOCAL CODE STANDARDS.

4. RESERVE "A" SHALL BE SEEDED AND FERTILIZED WITH WINTER COVER CROP AS FOLLOWS:
   AUSTRIAN WINTER PEAS (Lathyrus hirsutus) @ 30 LBS./ACRE
   10-20-10 @ 175 LBS./ACRE

THIS AREA SHALL BE FINE GRADED AND SURFACE SHALL BE FREE FROM STICKS, STONES OVER 1 1/2" IN SIZE, AND OTHER EXTRANEOUS MATERIALS PRIOR TO SEEDING.

5. CONTRACTOR SHALL PROVIDE EROSION PROTECTION THROUGHOUT PROJECT CONSTRUCTION.

6. SEEDING AREAS SHALL BE PREPARED FOR PLANTING WITH COMMON AGRICULTURAL TECHNIQUES. APPROVE WITH OWNER'S REPRESENTATIVE BEFORE PLANTING.

7. ALL SEED SHALL BE DISTRIBUTED WITH AN ACCEPTABLE DRILL INTENDED FOR SUCH OPERATIONS, OR OTHER EQUIPMENT APPROVED BY THE OWNER'S REPRESENTATIVE. SEEDING DEPTH SHALL BE 1/4".

8. ALL SEEDED AREAS SHALL BE IMMEDIATELY MULCHED W/PRAIRIE HAY AT 2 TONS/ACRE. ANCHOR MULCH BY CRIMPING INTO TOPSOIL WITH SUITABLE MECHANICAL EQUIPMENT.

9. CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING ALL EROSION CONTROL FOR THIS SITE UNTIL SITE IS TURNED OVER TO BUILDING CONTRACTOR, AT WHICH TIME BUILDING CONTRACTOR WILL TAKE OVER MAINTENANCE OF ALL EROSION CONTROL UNTIL SITE IS TURNED OVER TO OWNER. COST FOR MAINTENANCE OF EROSION CONTOL IS SUBSIDIARY TO BMP'S.

MKEC ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

STORM WATER SEWER PLANS
AUBURN HILLS COMMERCIAL 4TH. ADDITION

LAKE GRADING PLAN

SHEET TITLE

468-84108
PROJECT NUMBER

SRS
DESIGN BY

RJD
DRAWN BY

GJA
CHECKED BY

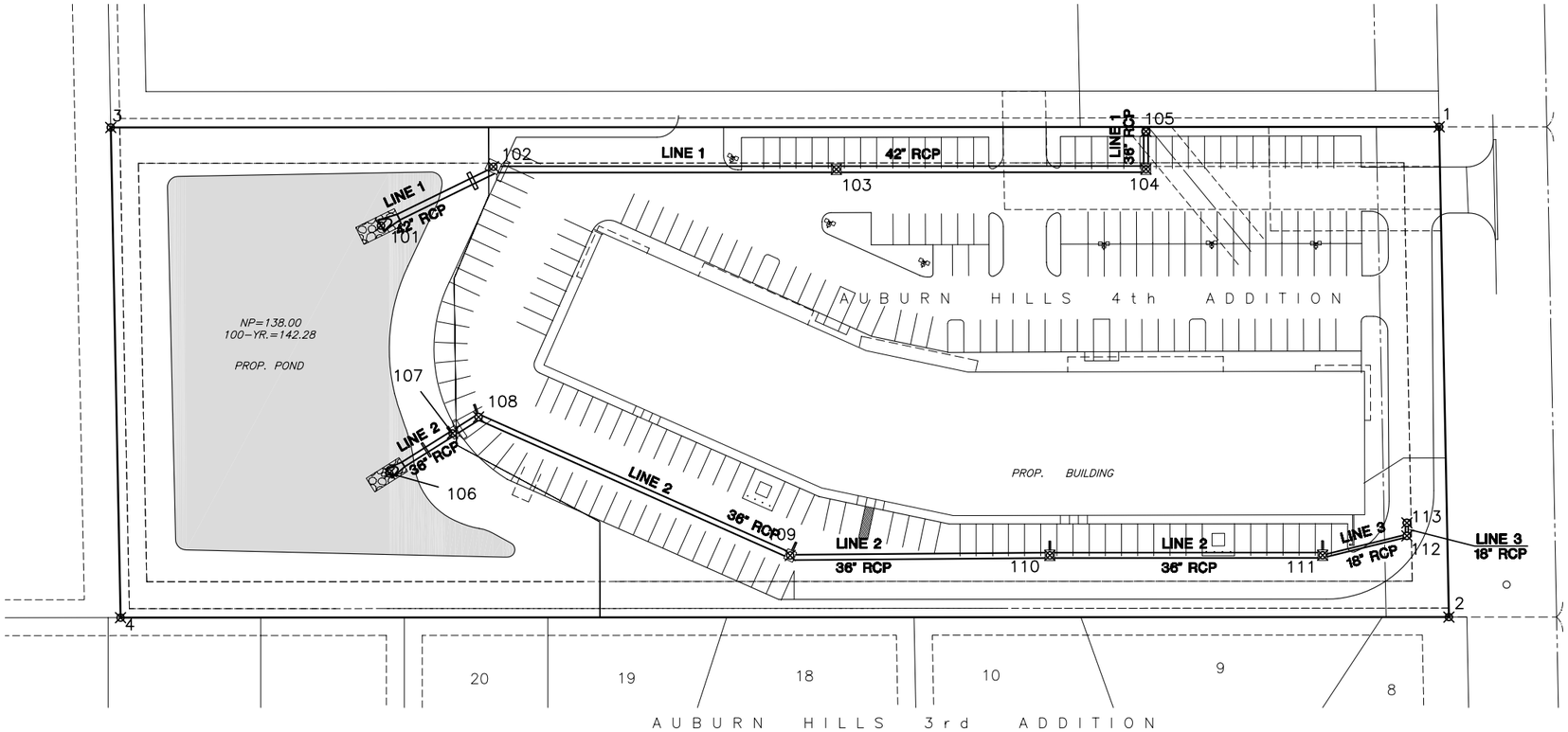
ISSUED
Oct. 2006

REVISED

SHEET NO.
2 of 15

PLOTTED: Wednesday, October 04, 2006 @ 01:14PM

J:\JOB\L054030\DWG\SWS\AUBURN 4 COMM@INDX(054030).DWG



PLAT IRONS			
Points	Northing	Easting	Description
1	22499.65	15606.64	Property Line
2	22504.50	15879.89	Property Line
3	21759.51	15605.37	Property Line
4	21764.36	15878.63	Property Line

STORM SEWER POINTS			
Points	Northing	Easting	Description
101	21909.98	15660.42	End Section, Line 1
102	21972.67	15627.74	Inlet, Line 1
103	22163.74	15629.56	Inlet, Line 1
104	22336.25	15629.86	Inlet, Line 1
105	22336.29	15608.86	Manhole, Line 1
106	21914.25	15798.49	End Section, Line 2
107	21949.56	15776.34	Inlet, Line 2
108	21964.10	15767.22	Manhole, Line 2
109	22137.56	15844.76	Inlet, Line 2
110	22282.22	15845.01	Inlet, Line 2
111	22434.22	15845.27	Inlet, Line 2
112	22481.17	15834.56	Manhole, Line 2
113	22481.17	15827.33	Manhole, Line 2

N

SCALE: 1"= 40'
0 20 40 80

MKEC ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

STORM WATER SEWER

AUBURN HILLS COMMERCIAL 4TH. ADDITION

BUBBLE MAP
SHEET TITLE

468-84108
PROJECT NUMBER

SRS
DESIGN BY

DM
DRAWN BY

GJA
CHECKED BY

ISSUED
Oct. 2006

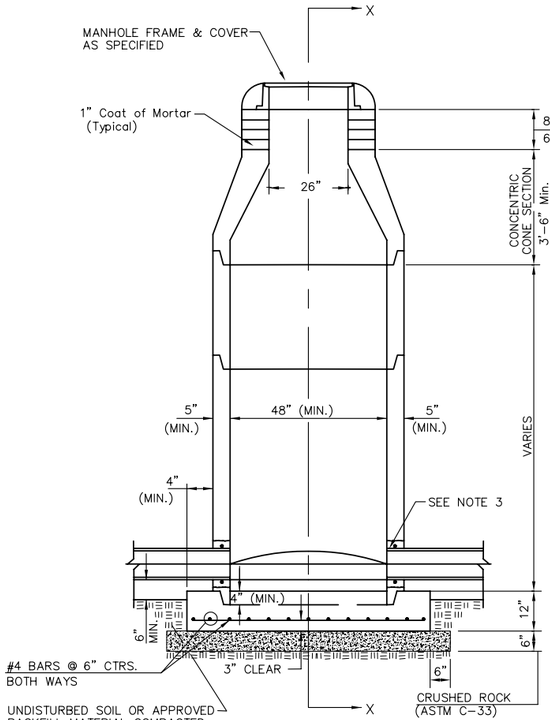
REVISED

SHEET NO.
3 of 15

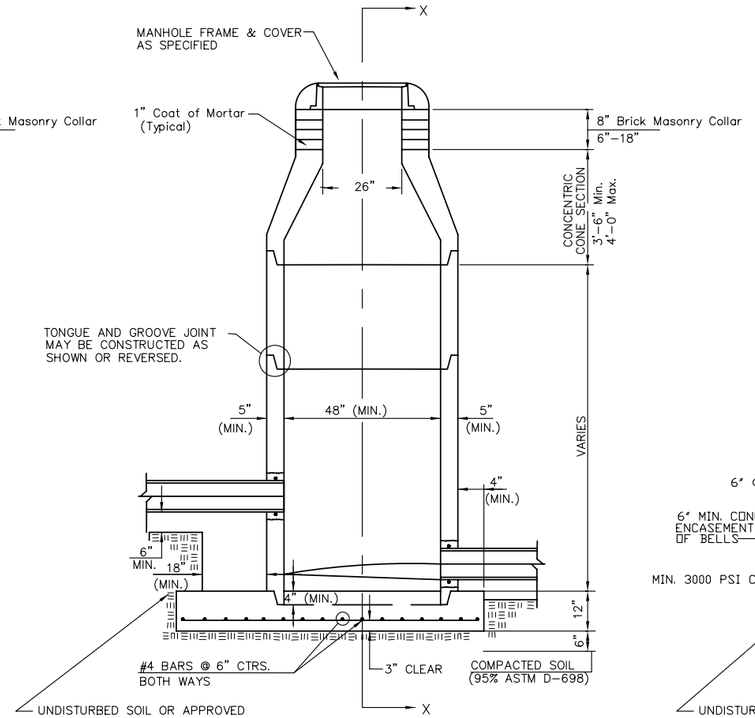
J:\CIVIL\05403\DWG\SWS\AUBURN 4 COMM\05403BM.DWG

PLOTTED: Wednesday, October 04, 2006 @ 10:36AM

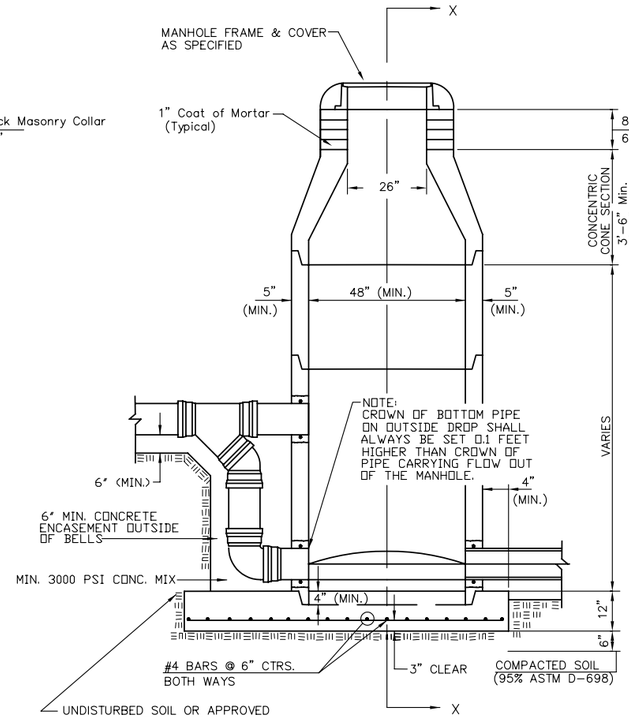
SEWER APPURTENANCES DETAILS



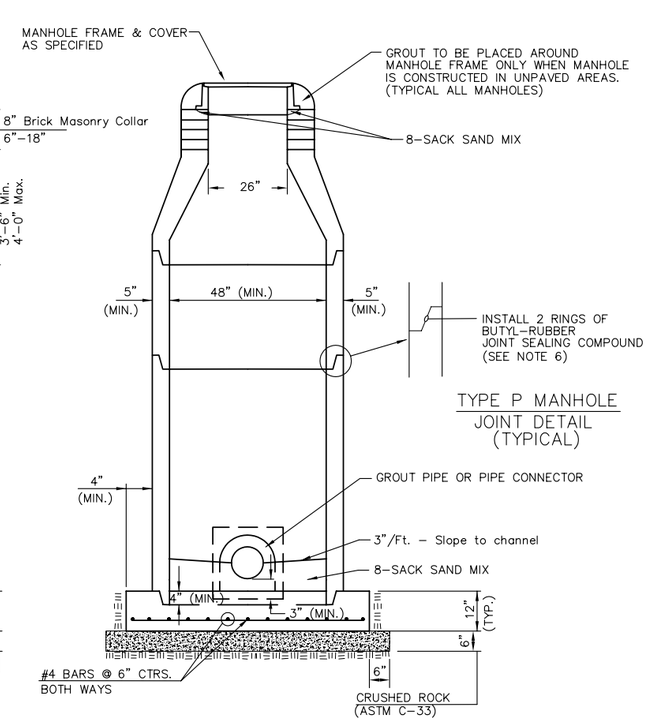
TYPE P
STANDARD MANHOLE



TYPE P
INSIDE DROP MANHOLE



TYPE P
OUTSIDE DROP MANHOLE



TYPE P MANHOLE
JOINT DETAIL
(TYPICAL)

SECTION X
(TYPICAL)

GENERAL NOTES

PRECAST MANHOLE NOTES

1. ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISIONS OF A.S.T.M. C478 AS MODIFIED BY THE SPECIFICATIONS.
2. NON–SHRINK GROUT SHALL BE NON–METALLIC TYPE.
3. APPROVED FLEXIBLE WATERSTOP GASKETS SHALL BE INSTALLED TO JOIN THE SEWER TO THE MANHOLE WALL WHEN A.B.S. COMPOSITE PIPE OR P.V.C. PIPE IS USED. FOR OTHER TYPES OF PIPE THE SEWER SHALL BE GROUTED IN PLACE WITH NON–SHRINK GROUT. THE SEWER PIPE SHALL BE SUPPORTED WITH CONCRETE ENCASEMENT A MINIMUM OF 3 FEET FROM THE MANHOLE WALL AND TO THE FIRST JOINT FOR V.C.P. SUCH THAT THE JOINT REMAINS FLEXIBLE.
4. ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE COATED WITH 2 COATS TNEMEC SERIES 66 HI–BUILD EPOXOLINE, DRY THICKNESS OF 8 MILS (MIN.)
5. EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 1 COAT MOBILARMA 633 BITUMINOUS COATING.
6. JOINT SEALING COMPOUND SHALL BE KENT SEAL NO. 2 OR APPROVED EQUAL.
7. PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO THE MANHOLE BASE.
8. 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.
9. LIFTING HOLES SHALL BE FILLED WITH NON–SHRINK GROUT AND THE INTERIOR SURFACE COATED AS SPECIFIED.
10. MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE BASES SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE FOR CONCRETE PAVEMENT CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD PAVING SPECIFICATIONS USING CITY CONCRETE PAVEMENT MIX WITHOUT AIR ENTRAINING ADMIXTURE. MORTAR SHALL BE PLACED AROUND THE MANHOLE RING AS SHOWN ON THE DRAWINGS WHEN MANHOLES ARE CONSTRUCTED IN UNPAVED AREAS. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE SMALLER THAN 24" SHALL HAVE AN INSIDE DIAMETER OF 4'. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE 24" OR LARGER SHALL HAVE AN INSIDE DIAMETER OF 5'. COMPLETED MANHOLE SHALL BE WITHOUT LEAKS AND WATER TIGHT.
11. REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASES AND SHALL CONSIST OF NO. 4 BARS PLACED ON 6" CENTERS IN BOTH DIRECTIONS. THE MANHOLE BASE REINFORCEMENT SHALL BE PLACED AT LEAST 3" ABOVE THE BOTTOM OF THE MANHOLE BASE. ALL COSTS FOR FURNISHING AND INSTALLING REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
12. OPENINGS SHALL BE CUT INTO THE MANHOLE WALL WHEN OUTSIDE DROPS ARE CONSTRUCTED ON EXISTING MANHOLES. SUCH OPENINGS CUT INTO EXISTING MANHOLES SHALL BE AS SMALL AS PRACTICAL TO FACILITATE INSTALLING AND GROUTING THE NEW PIPE IN PLACE. WATERSTOP GASKETS SHALL BE USED WITH P.V.C. AND A.B.S. COMPOSITE PIPE. THE NEW PIPE SHALL BE GROUTED INTO THE OPENING USING AN APPROVED NONSHRINK GROUT FOR THE FULL MANHOLE WALL THICKNESS. THE EXTERIOR OF THE COMPLETED CONNECTION SHALL BE SEALED WITH AN APPROVED BITUMINOUS COATING SUCH THAT THE CONNECTION WILL BE WATER TIGHT. FLOOR OF MANHOLE SHALL BE MODIFIED TO FORM NEW FLOW CHANNEL FOR THE NEW CONNECTION AS INDICATED BY THE DRAWING. THIS WORK, INCLUDING MODIFICATION OF MANHOLE FLOOR, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR OUTSIDE DROP STACK CONSTRUCTED ON EXISTING MANHOLE.
13. THE FLOORS OF ALL MANHOLES SHALL BE SHAPED WITH FLOW CHANNELS SUCH THAT THE MANHOLES WILL BE SELF CLEANING AND FREE OF AREAS WHERE SOLIDS COULD BE DEPOSITED AS SEWAGE FLOWS THROUGH THE MANHOLE FROM ALL INLET PIPES TO THE OUTLET PIPE. FLOW CHANNELS SHALL BE FORMED TO MATCH THE BOTTOM HALVES OF THE INFLOWING PIPES AND THE OUTFLOWING PIPE AS SHOWN BY THE DRAWINGS EXCEPT FOR INSIDE DROP MANHOLES. FLOW CHANNELS FOR INSIDE DROP MANHOLES SHALL BE CONSTRUCTED AS INDICATED BY THE DRAWING. MANHOLE FLOORS SHALL HAVE SLOPES OF 3 INCHES PER FOOT IN THE AREAS OUTSIDE OF THE FLOW CHANNELS SLOPED TOWARD THE FLOW CHANNELS. PIPES LAID THROUGH MANHOLES SHALL HAVE THE TOP HALF REMOVED TO NEAT LINES FOR THE FULL INSIDE DIAMETER OF THE MANHOLE. MANHOLE FLOORS SHALL THEN BE SHAPED AROUND THE BOTTOM HALF OF THE PIPE WHICH FORMS THE FLOW CHANNEL.
14. PIPES INSTALLED WITHIN THE EXCAVATION MADE FOR THE MANHOLE SHALL BE CRADLED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION. WHEN CLAY PIPE IS USED, THE CRADLE SHALL EXTEND TO THE FIRST JOINT OUTSIDE THE MAHOLE. THE CRADLE SHALL BE TERMINATED AT THE CLAY PIPE JOINT IN A MANNER WHICH WILL MAINTAIN THE FLEXIBILITY OF THE JOINT. COST OF CRADLE WITHIN MANHOLE EXCAVATION OR TO CLAY PIPE JOINTS ADJACENT TO MANHOLE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
15. MANHOLE COVER CASTINGS AND MANHOLE FRAME CASTINGS SHALL CONFORM TO THE REQUIREMENTS AS INDICATED IN THE STANDARD SPECIFICATIONS AND AS SHOWN IN THE STANDARD DETAIL DRAWING.
16. THE VERTICAL DROP IN INSIDE DROP MANHOLES SHALL NOT EXCEED 2' FOR INFLOWING PIPES SIZED 12" OR SMALLER AND 2' FOR INFLOWING PIPES LARGER THAN 12". THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.
17. STANDARD MANHOLES AND STANDARD INSIDE DROP MANHOLES SHALL BE BID AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. OUTSIDE DROP MANHOLES SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.
18. A BRICK MASONRY COLLAR SHALL BE INSTALLED BETWEEN THE CAST IRON FRAME AND THE CONCENTRIC CONE. THE COLLAR WILL HAVE 8" WALLS AND A VERTICAL HEIGHT OF 6" MINIMUM AND 18" MAXIMUM. A 1" COAT OF MORTAR WILL BE PLASTERED ON THE OUTSIDE OF THE COLLAR. THE USE OF PRE–CAST CONCRETE SPACERS FOR MANHOLE TOP ADJUSTMENT IS ALSO ALLOWED.
19. CRUSHED ROCK CONFORMING TO ASTM C–33 WITH A GRADATION OF NO. 67 SHALL BE INSTALLED AT THE BASE OF THE MANHOLE TO A DEPTH OF NO LESS THAN 6", AND SHALL EXTEND NO LESS THAN 6" OUTSIDE THE DIAMETER OF THE CONCRETE FLOOR OF THE MANHOLE.
20. WALL THICKNESS SHALL BE 1" GREATER THAN MANHOLE DIAMETER IN FEET.
21. THE FULL DIAMETER OF THE MANHOLE SHALL EXTEND THE ENTIRE DEPTH OF THE MANHOLE TO THE CONE SECTION. NO REDUCTION IN MANHOLE DIAMETER WILL BE ALLOWED.

REV. 1/05/01, MCG

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

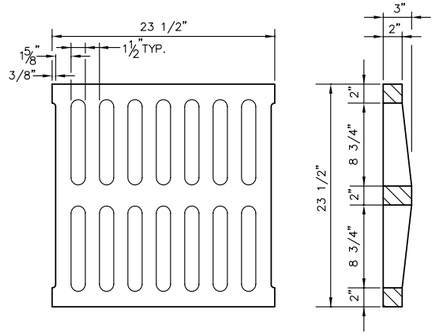
STANDARD TYPE 'P' MANHOLES

JAMES L. ARMOUR, P.E. – CITY ENGINEER

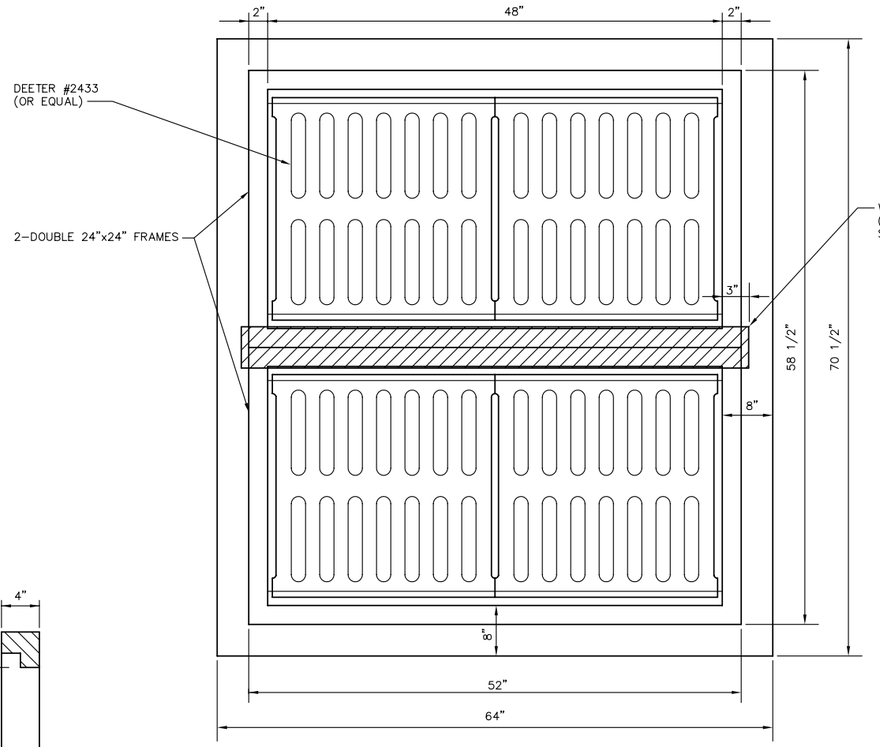
PROJECT NUMBER	INDEX CODE
468–84108	751426
DATE: Oct. 06	Sheet 4 of 15

J:\CIVIL\05403\DWG\SHTS\AUBURN 4 COMM\05403D02.DWG

NOTE: GRATES SHALL BE IMPRINTED ON THE TOP SURFACE WITH "CITY OF WICHITA" USING LETTERS AT LEAST 1" IN HEIGHT. OTHER MARKING METHODS MAY BE USED ONLY IF APPROVED BY THE ENGINEER.

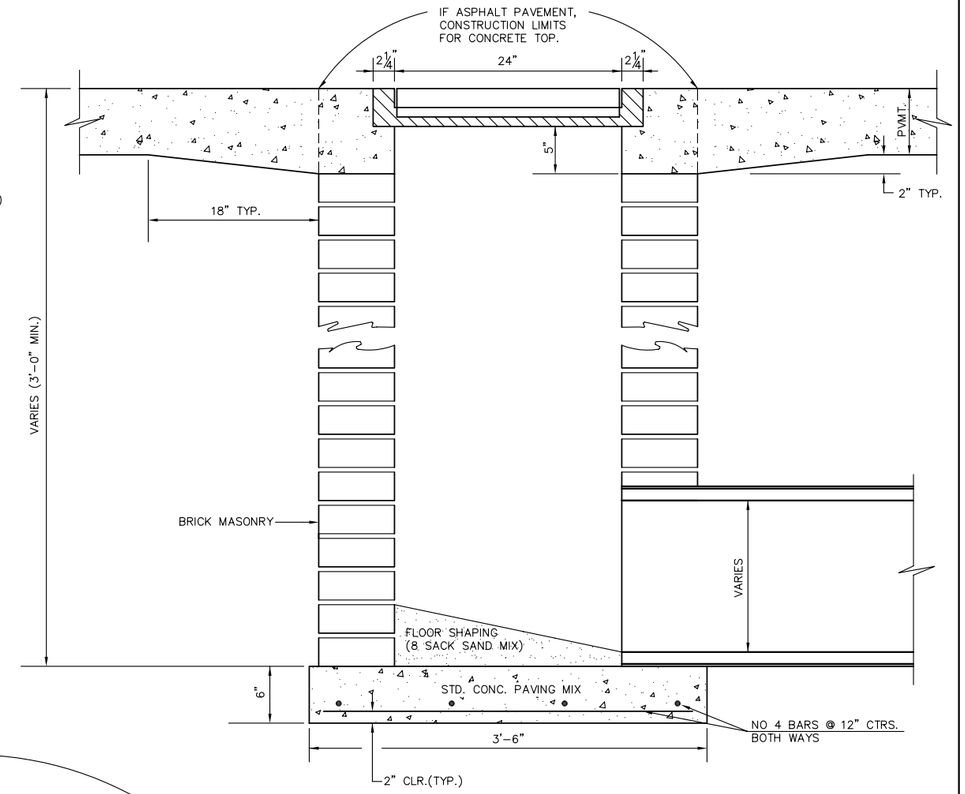


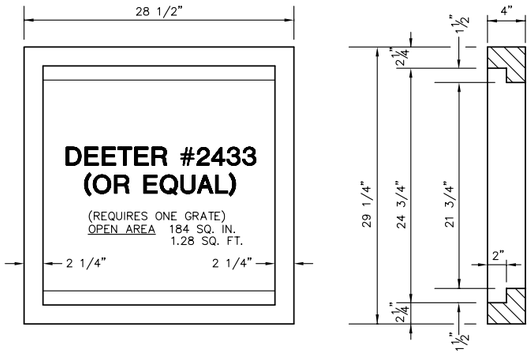
24"x24" GRATE DETAIL



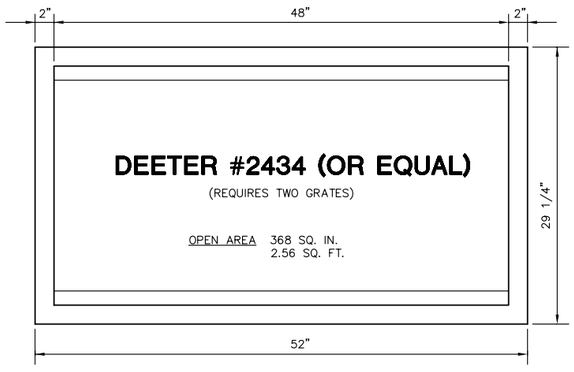
ALTERNATE 2-DOUBLE DROP INLET

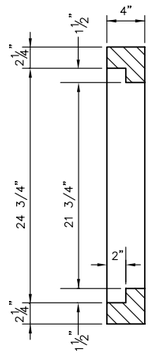
(USING BEAM INSTEAD OF 2 COMMON WALLS)
(REQUIRES FOUR GRATES)



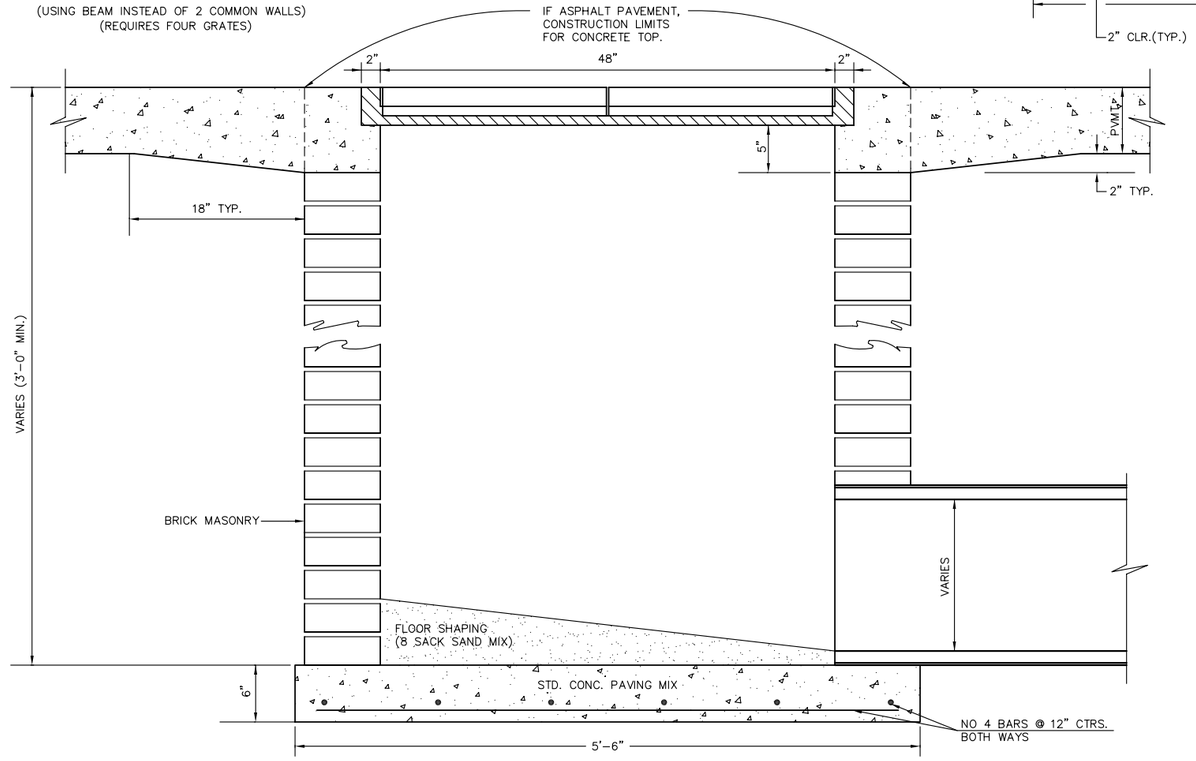


SINGLE 24"x24" FRAME DETAIL





DOUBLE 24"x24" FRAME DETAIL



ORIFICE EQUATION		
$Q=C*A*\sqrt{2gh}$ C=0.60		
h (DEPTH)	#2433 (SINGLE)	#2434 (DOUBLE)
0.1	1.95 cfs	3.89 cfs
0.2	2.75 cfs	5.50 cfs
0.3	3.37 cfs	6.74 cfs
0.4	3.89 cfs	7.78 cfs
0.5	4.35 cfs	8.70 cfs
0.6	4.77 cfs	9.53 cfs
0.7	5.15 cfs	10.30 cfs
0.8	5.50 cfs	11.01 cfs
0.9	5.84 cfs	11.67 cfs
1.0	6.15 cfs	12.30 cfs

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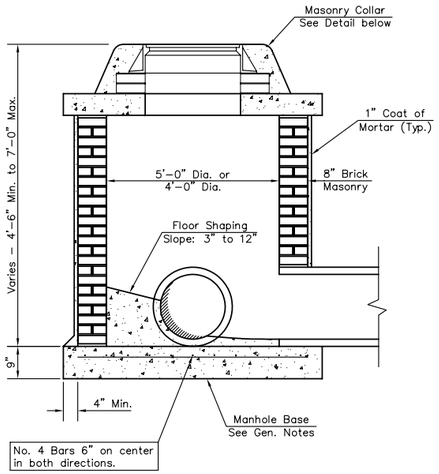
REVISED: 5-8-90 JNJ

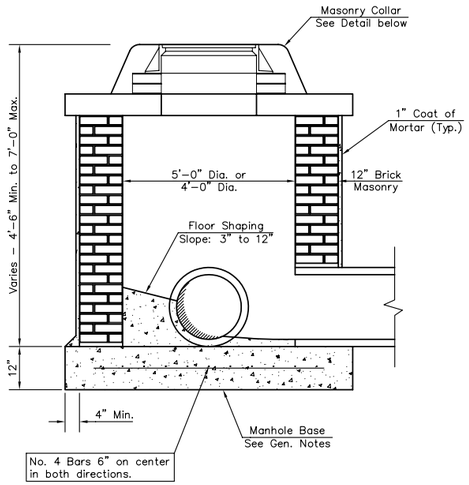
DROP INLET DETAILS

CITY OF WICHITA, KANSAS

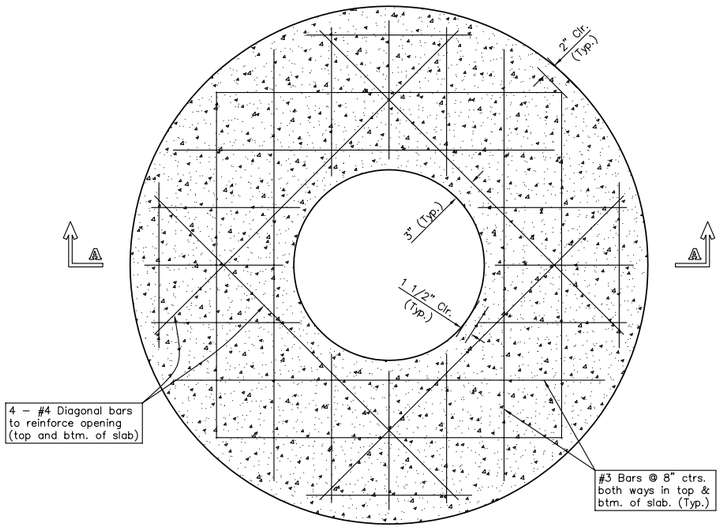
Design C.O.W.	Checked by	Checked by	5 / 15
Drawn by	Date	Date OCT. 06	Job No. _____



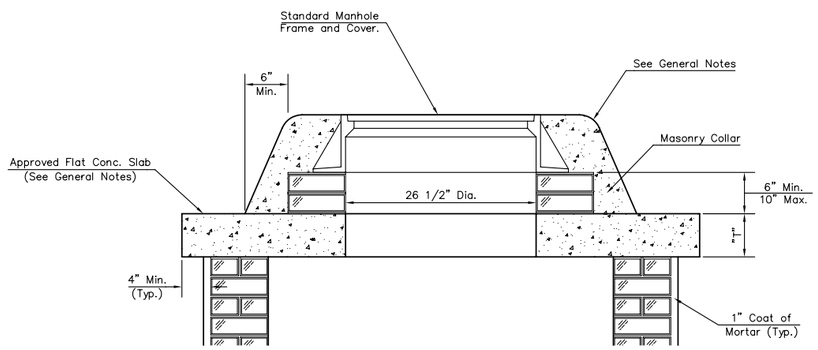
SHALLOW TYPE "A" MANHOLE



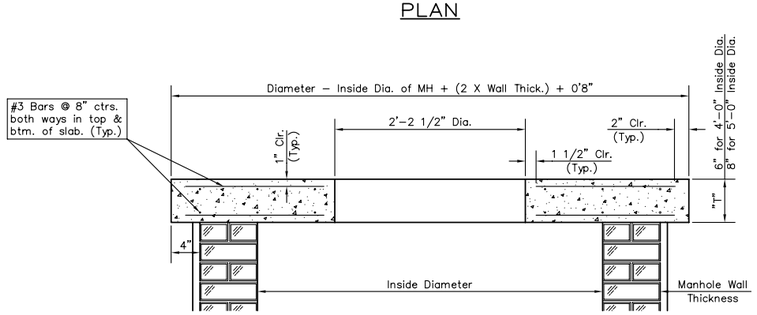
SHALLOW TYPE "B" MANHOLE



PLAN

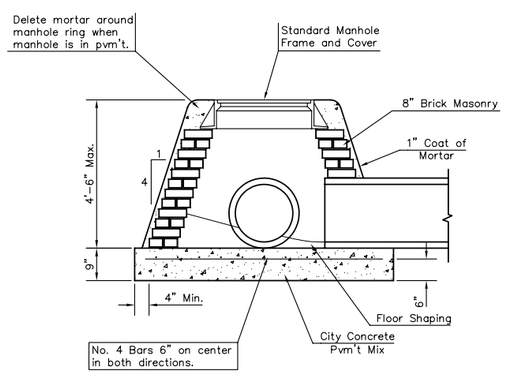


MASONRY COLLAR DETAIL

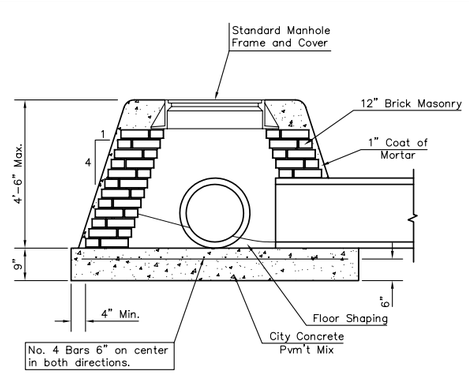


SECTION A-A

FLAT CONCRETE SLAB DETAILS



SPECIAL SHALLOW TYPE "A" MANHOLE



SPECIAL SHALLOW TYPE "B" MANHOLE

REV. 1/05/01, MCG

GENERAL NOTES

1. Mortar used in masonry construction shall contain 8 sacks of cement per cubic yard. Concrete used in manhole bases shall conform to the requirements of concrete for concrete pavement construction as specified in the city standard paving specifications using city concrete cement mix without air entraining admixture. Mortar shall be placed around the manhole ring as shown on the drawings when manholes are constructed in unpaved areas. Type "A" shallow manholes can be used on sewers when the manhole is not located within public street pavement. Manholes constructed where pipe sizes are smaller than 24" shall have an inside diameter of 4'. Manholes constructed where pipe sizes are 24" or larger shall have an inside diameter of 5'. Completed manhole shall be without leaks and water tight.

2. Reinforcing steel shall be installed in the manhole bases and shall consist of no. 4 bars placed on 6" centers in both directions. The manhole base reinforcement shall be placed 6" above the bottom of the manhole base. All costs for furnishing and installing reinforcing steel shall be included in the unit price bid for the manhole.

3. The floors of all manholes shall be shaped with flow channels such that the manholes will be self cleaning and free of areas where solids could be deposited as sewage flows through the manhole from all inlet pipes to the outlet pipe. Flow channels shall be formed to match the bottom halves of the inflowing pipes and the outflowing pipe as shown by the drawings. Manhole floors shall have slopes of 3 inches per foot in the areas outside of the flow channels sloped toward the flow channels. Pipes laid through manholes shall have the top half removed to neat lines for the full inside diameter of the manhole. Manhole floors shall then be shaped around the bottom half of the pipe which forms the flow channel.

4. Pipes installed within the excavation made for the manhole shall be cradled with concrete to the limits of the manhole excavation. When clay pipe is used, the cradle shall extend to the first joint outside the manhole. The cradle shall be terminated at the clay pipe joint in a manner which will maintain the flexibility of the joint. Cost of cradle within manhole excavation or to clay pipe joints adjacent to manhole shall be included in the unit price bid for the manhole.

5. Manhole cover castings and manhole frame castings shall conform to the requirements as indicated in the standard specifications and as shown in the standard detail drawings.

6. The crowns of inflowing pipes shall never be set lower than the crown of the outflowing pipe.

7. Standard shallow manholes type "A" and "B" shall be paid for at the unit price bid per each for the type and diameter indicated. Standard special shallow manholes type "A" and "B" shall be paid for at the unit price bid per each for the type indicated. All standard shallow manhole diameters will be 4' unless indicated otherwise.

8. All brick used in manhole construction shall meet Grade SW of ASTM C652 or C62-87.

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/SPECIAL SHALLOW MANHOLES TYPE 'A' & 'B'

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

PROJECT NUMBER	INDEX CODE
468-84108	751426

DATE: Oct. 06

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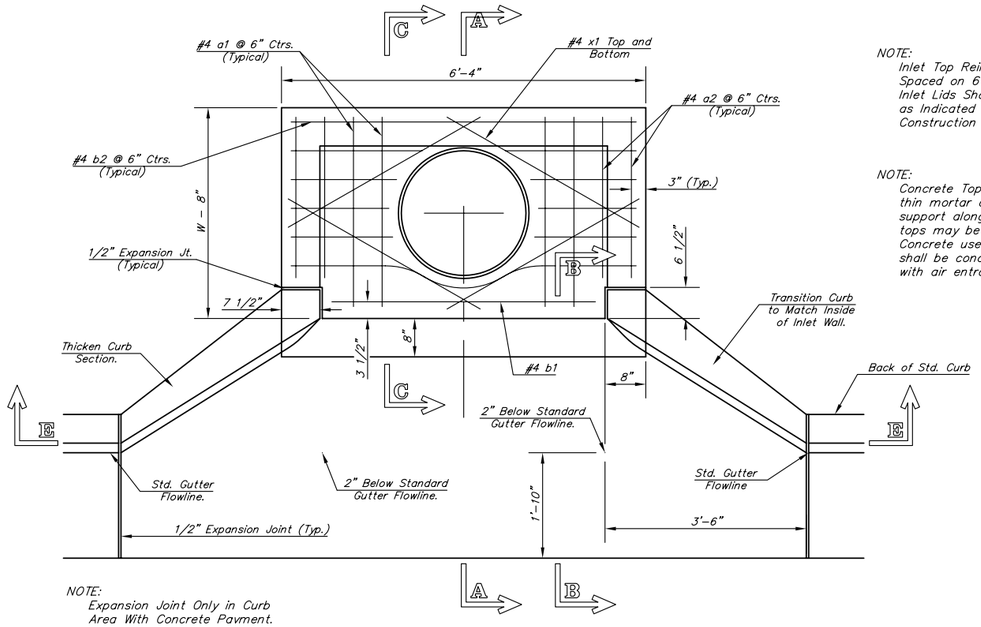
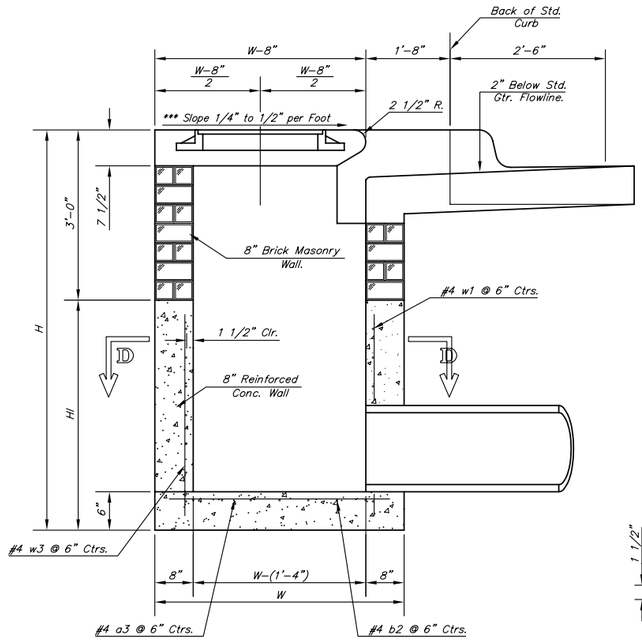


NOTE:
Expansion Joint Only in Curb Area With Concrete Pavment.

PLAN

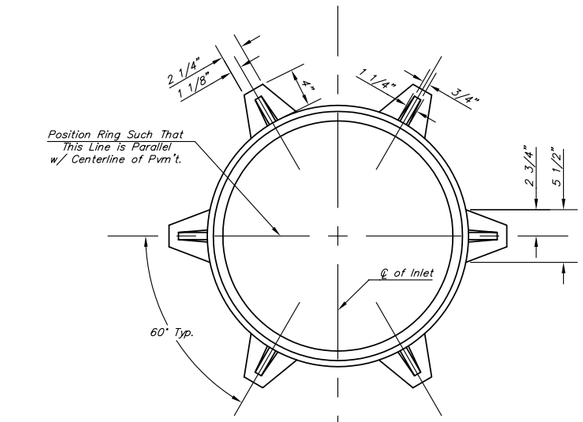
NOTE:
Inlet Top Reinforcing shall be Spaced on 6" Max. Centers. Inlet Lids Shall be Notched Out as Indicated to Facilitate Construction of Curb.

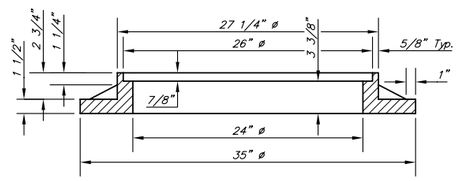
NOTE:
Concrete Tops to be installed on thin mortar cushion to insure full support along brick walls. Concrete tops may be cast in place or precast. Concrete used for inlet construction shall be concrete pavement mix with air entrainment.



SECTION A-A

***NOTE: Slope of Inlet tops to Match Sidewalk or Parking Slopes within Limits Indicated.

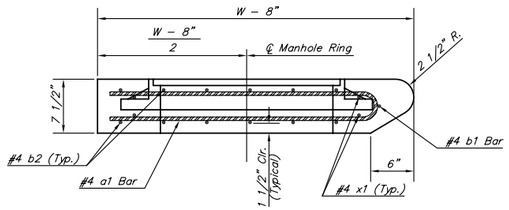




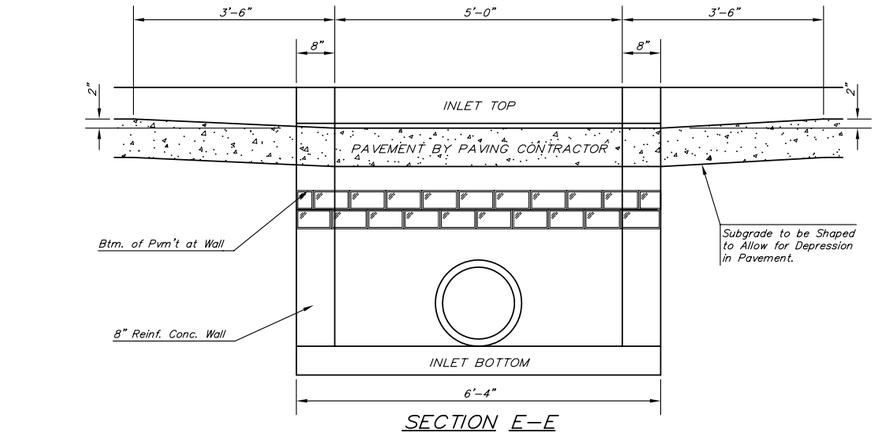
MANHOLE RING AND COVER

Weight = 180 Lbs.

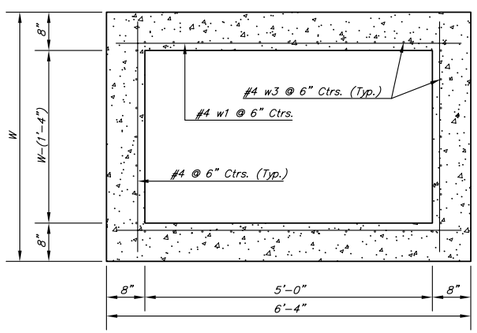
*See City of Wichita Standard Manhole Ring and Cover Detail Sheet for Cover Details to Be Used With Inlet Frame.



SECTION A-A



SECTION E-E



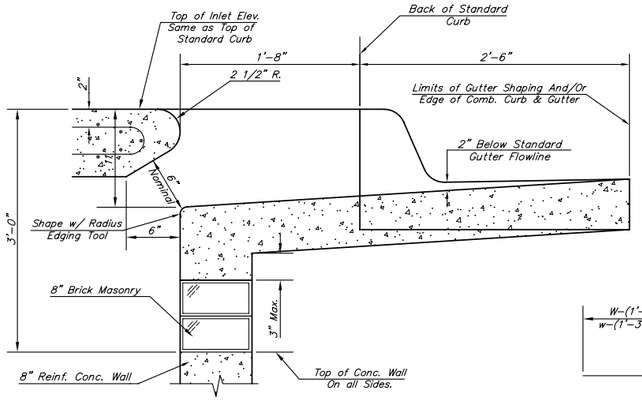
SECTION D-D

NOTE: Contractor shall have the option of constructing 8" brick masonry walls between the concrete inlet base and top on this inlet when W=6'-4" and H=7'-0" or less.

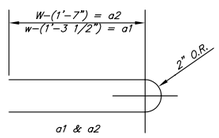
Additional curb and gutter construction necessary to connect set-back inlet to pavement will be paid for at the unit price bid for each inlet hookup.

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.

The ends of all pipes installed in inlets shall be cut off flush with the inside face of the inlet wall



SECTION B-B



BENDING DIAGRAM

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
* a1	#4	6	6'-7"	6	8'-7"	6	10'-7"	6	12'-7"	6	14'-7"
a2	#4	4	6'-0"	4	8'-0"	4	10'-0"	4	12'-0"	4	14'-0"
a3	#4	13	4'-1"	13	5'-1"	13	6'-1"	13	7'-1	13	8'-1"
b1	#4	1	4'-9"	1	4'-9"	1	4'-9"	1	4'-9"	1	4'-9"
* b2	#4	23	6'-1"	29	6'-1"	35	6'-1"	41	6'-1"	47	6'-1"
x1	#4	8	3'-10"	8	4'-2"	8	4'-6"	8	4'-10"	8	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
w1	#4	①	6'-1"	①	6'-1"	①	6'-1"	①	6'-1"	①	6'-1"
w2	#4	①	4'-1"	①	5'-1"	①	6'-1"	①	7'-1"	①	8'-1"
w3	#4	32	②	36	②	40	②	44	②	48	②

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

STANDARD CURB INLET PRECAST TOPS			
W	PRE-CAST TOP SIZE	PIPE SIZE	CU. YD. CONC.
4'-4"	3'-8" x 6'-4" x 7 1/2"	21" & SMALLER	0.38±
5'-4"	4'-8" x 6'-4" x 7 1/2"	24" & 30"	0.51±
6'-4"	5'-8" x 6'-4" x 7 1/2"	36" & 42"	0.64±
7'-4"	6'-8" x 6'-4" x 7 1/2"	48" & 54"	0.77±
8'-4"	7'-8" x 6'-4" x 7 1/2"	60" & 66"	0.90±

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CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202
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STANDARD TYPE 1-A CURB INLET OPENING = 6" x 5'-0"

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

PROJECT NUMBER	INDEX CODE
468-84108	751426
DATE: Oct. 06	Sheet 7 of 15

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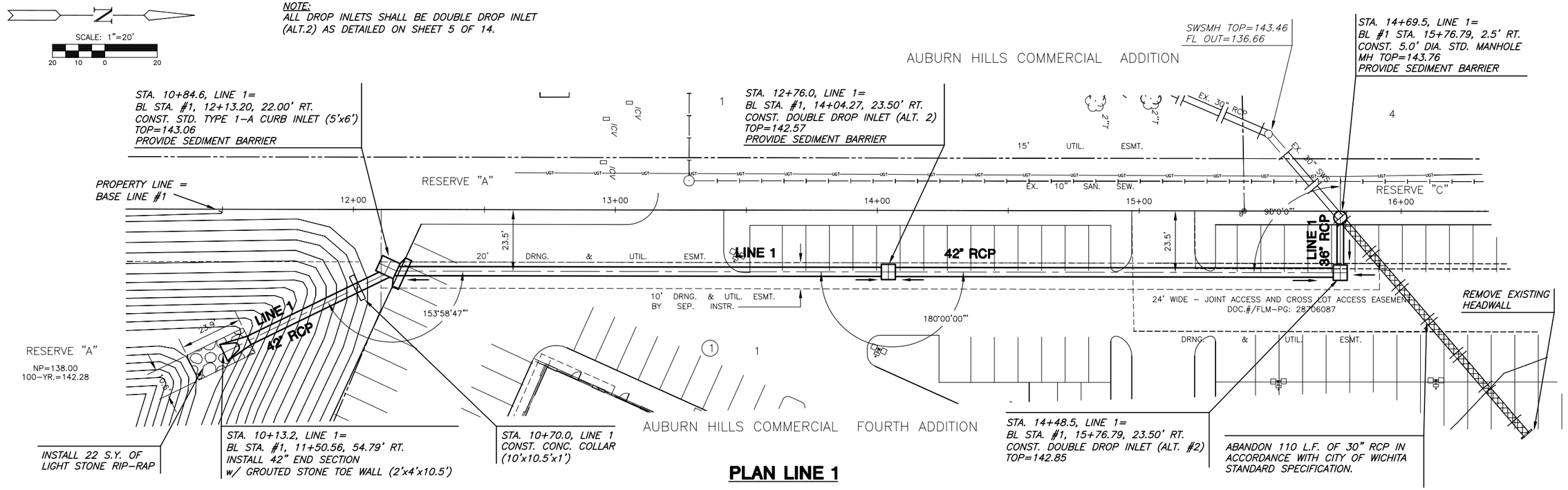
SCALE: 1"=20'

20 10 0 20

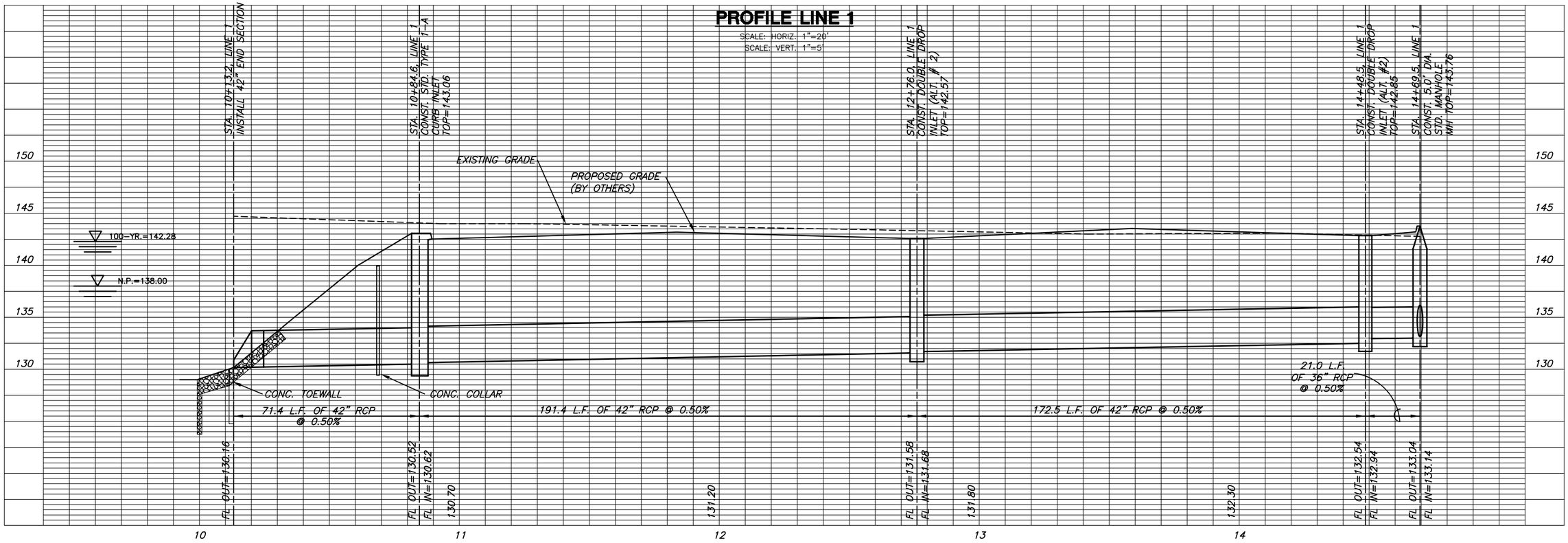
NOTE:
ALL DROP INLETS SHALL BE DOUBLE DROP INLET (ALT.2) AS DETAILED ON SHEET 5 OF 14.



PLAN LINE 1

PROFILE LINE 1

SCALE: HORIZ. 1"=20'
SCALE: VERT. 1"=5'



MKEC ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

STORM WATER SEWER AUBURN HILLS COMMERCIAL 4TH. ADDITION

STORM WATER SEWER LINE 1
SHEET TITLE

468-84108
PROJECT NUMBER

SRS
DESIGN BY

DM
DRAWN BY

GJA
CHECKED BY

ISSUED
Oct. 2006
REVISED

SHEET NO.
8 of 15

PLOTTED: Wednesday, October 04, 2006 @ 10:37AM

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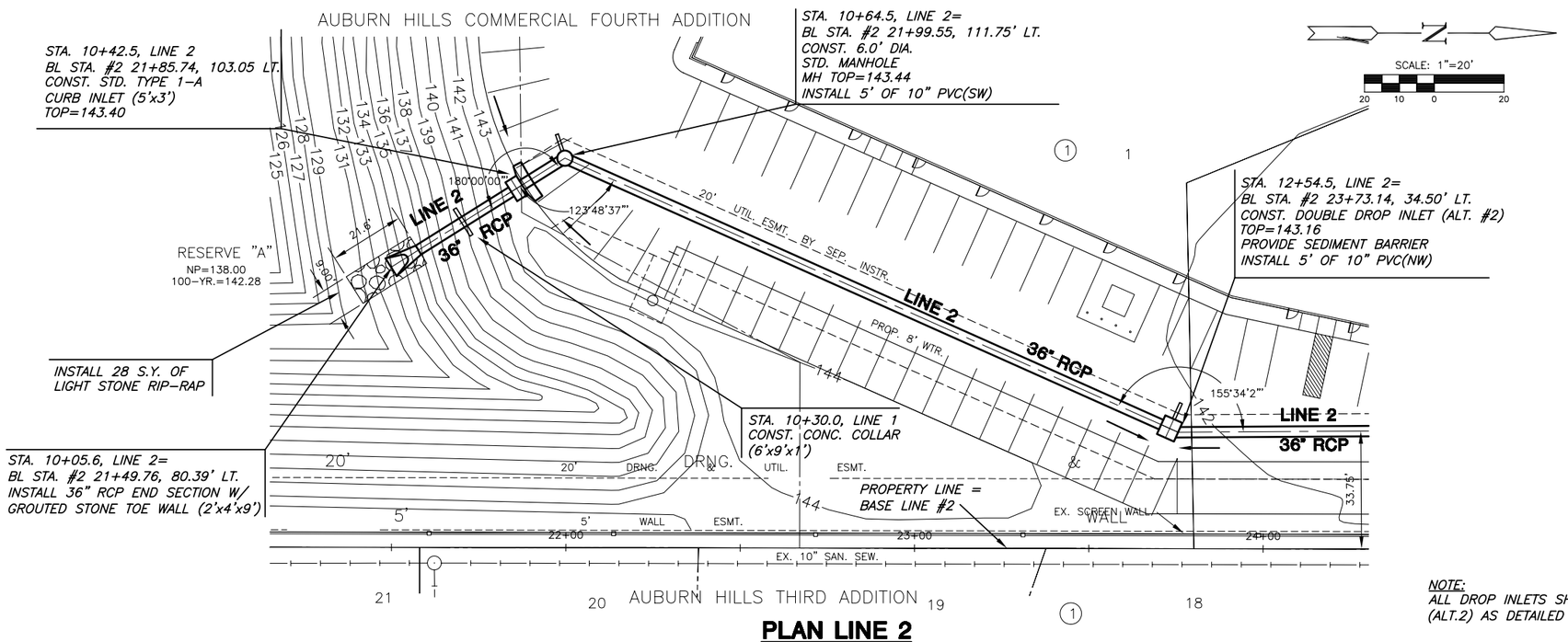
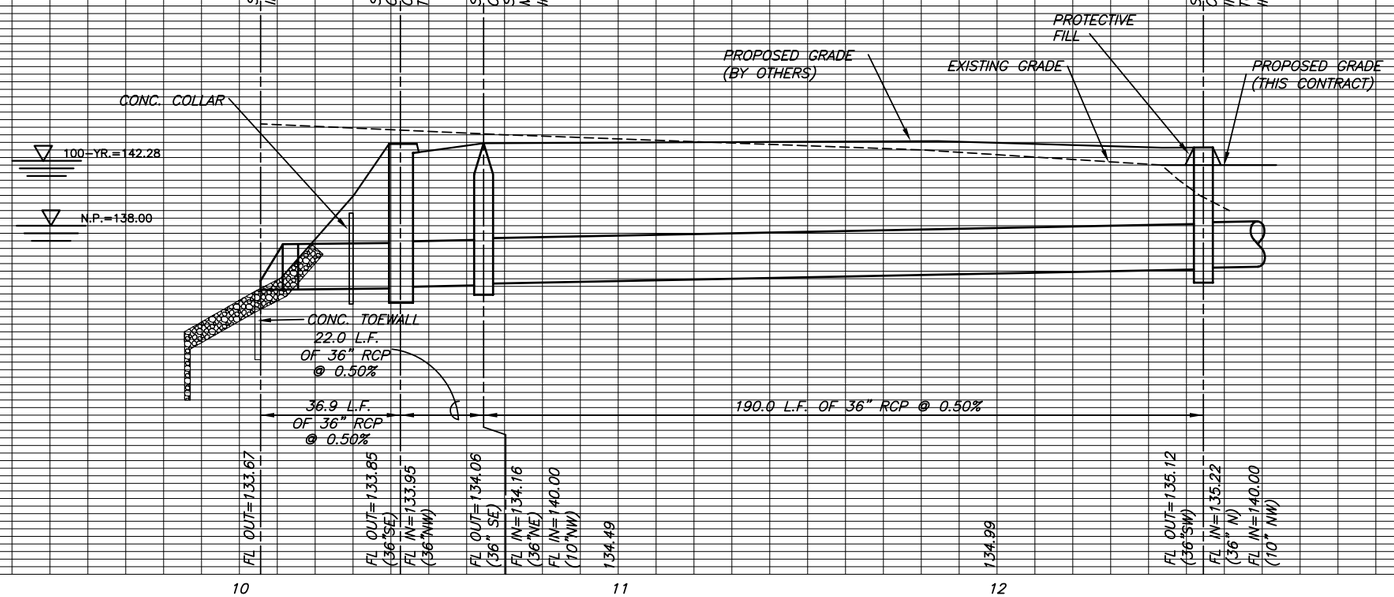


PLAN LINE 2

NOTE:
ALL DROP INLETS SHALL BE DOUBLE DROP INLET (ALT.2) AS DETAILED ON SHEET 5 OF 14.

PROFILE LINE 2

SCALE: HORIZ. 1"=20'
SCALE: VERT. 1"=5'



MKEC ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

STORM WATER SEWER
AUBURN HILLS COMMERCIAL 4TH. ADDITION

STORM WATER SEWER LINE 2
SHEET TITLE

468-84108
PROJECT NUMBER

SRS
DESIGN BY
DM
DRAWN BY
GJA
CHECKED BY

ISSUED
Oct. 2006
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SHEET NO.
9 of 15

PLOTTED: Wednesday, October 04, 2006 @ 10:37AM
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NOTE:
ALL DROP INLETS SHALL BE DOUBLE DROP INLET (ALT.2) AS DETAILED ON SHEET 5 OF 14.

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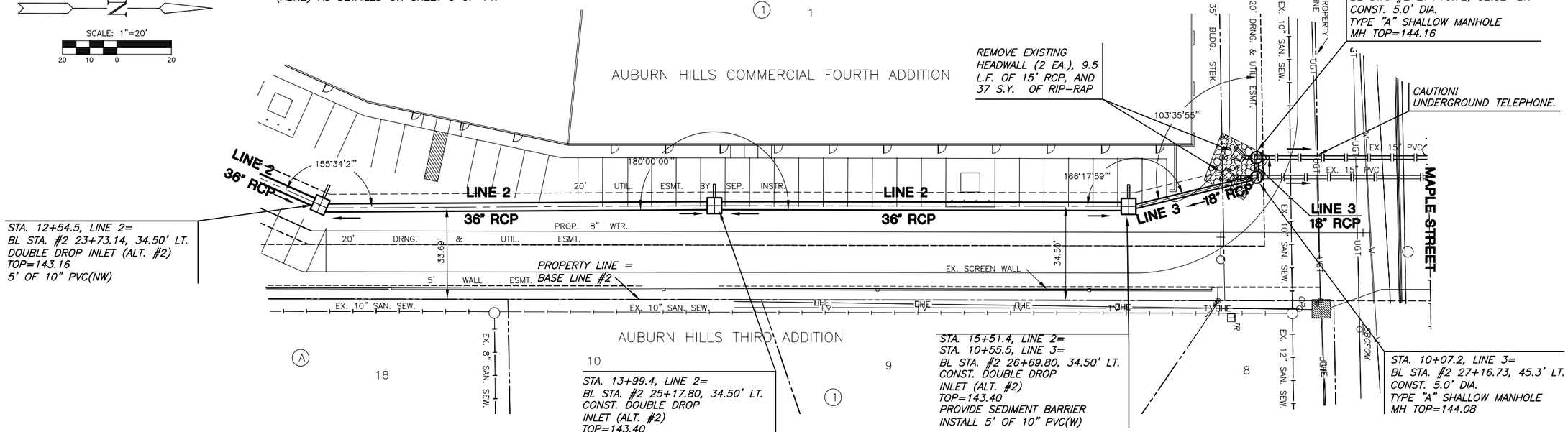


STA. 12+54.5, LINE 2=
BL STA. #2 23+73.14, 34.50' LT.
DOUBLE DROP INLET (ALT. #2)
TOP=143.16
5' OF 10" PVC(NW)

REMOVE EXISTING HEADWALL (2 EA.), 9.5 L.F. OF 15" RCP, AND 37 S.Y. OF RIP-RAP

STA. 10+00.0, LINE 3=
BL STA. #2 27+16.72, 52.52' LT.
CONST. 5.0' DIA.
TYPE "A" SHALLOW MANHOLE
MH TOP=144.16

CAUTION!
UNDERGROUND TELEPHONE.

STA. 13+99.4, LINE 2=
BL STA. #2 25+17.80, 34.50' LT.
CONST. DOUBLE DROP
INLET (ALT. #2)
TOP=143.40
PROVIDE SEDIMENT BARRIER
INSTALL 5' OF 10" PVC(W)

STA. 15+51.4, LINE 2=
STA. 10+55.5, LINE 3=
BL STA. #2 26+69.80, 34.50' LT.
CONST. DOUBLE DROP
INLET (ALT. #2)
TOP=143.40
PROVIDE SEDIMENT BARRIER
INSTALL 5' OF 10" PVC(W)

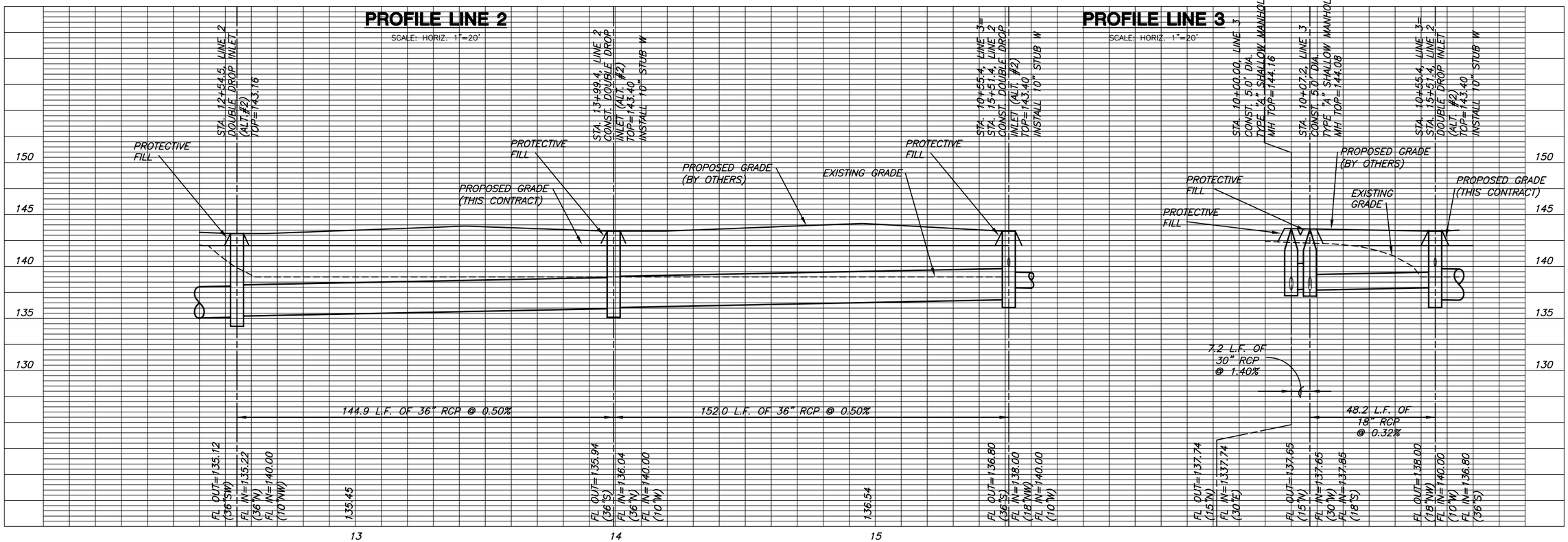
STA. 10+07.2, LINE 3=
BL STA. #2 27+16.73, 45.3' LT.
CONST. 5.0' DIA.
TYPE "A" SHALLOW MANHOLE
MH TOP=144.08

PLAN LINE 2

PLAN LINE 3

PROFILE LINE 2

SCALE: HORIZ. 1"=20'



PROFILE LINE 3

SCALE: HORIZ. 1"=20'

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411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

STORM WATER SEWER AUBURN HILLS COMMERCIAL 4TH. ADDITION

STORM WATER SEWER LINES 2 & 3

SHEET TITLE

468-84108
PROJECT NUMBER

SRS
DESIGN BY
DM
DRAWN BY
GJA
CHECKED BY

ISSUED
Oct. 2006
REVISED

SHEET NO.
10 of 15

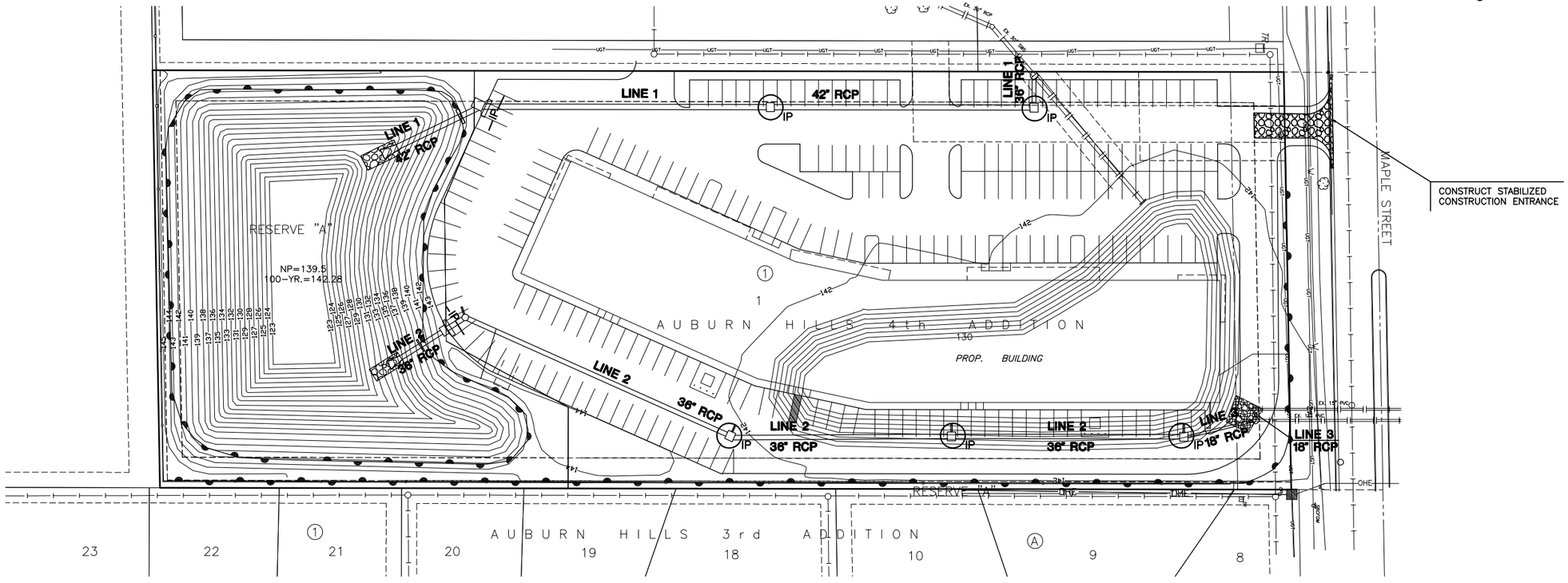
SCALE: 1"= 40'
0 20 40 80

LEGEND

IP – AREA INLET PROTECTION

IP – CURB INLET PROTECTION

– SILT FENCE



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411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

STORM WATER SEWER
AUBURN HILLS COMMERCIAL
4TH. ADDITION

EROSION CONTROL
SHEET TITLE

468-84108
PROJECT NUMBER

SRS
DESIGN BY

DM
DRAWN BY

GJA
CHECKED BY

ISSUED
Oct. 2006
REVISED

SHEET NO.
11 of 15

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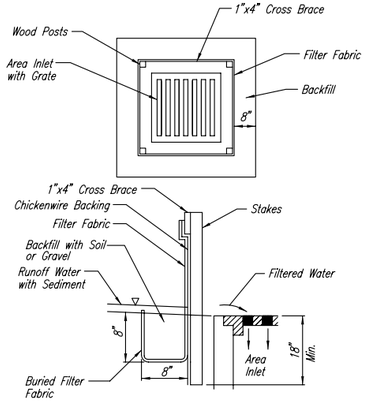
PLOTTED: Wednesday, October 04, 2006 @ 01:09PM



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 barrierfor 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.

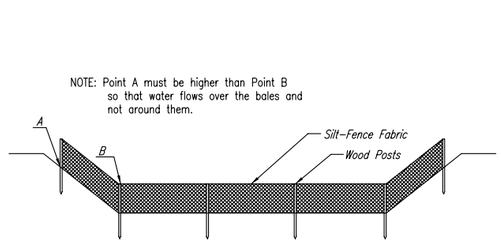
List of common placement/installation mistakes to avoid:

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?



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:

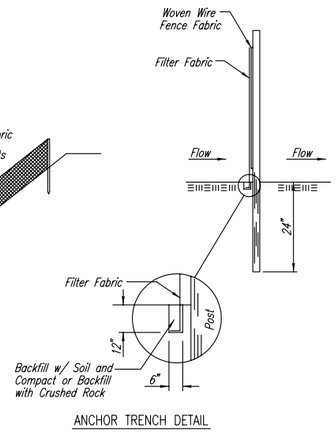
Ditch grade (%)	Check Spacing (feet)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

Proper installation method:

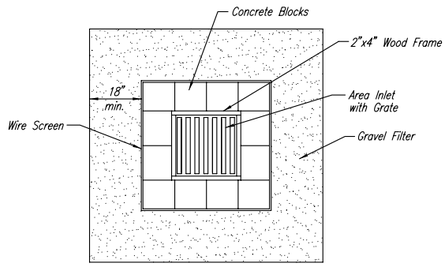
Excavate a trench perpendicular to the ditch flowline that is at least 12" deep by 6" wide.
Extend the trench in a straight line along the entire length of the proposed ditch check.
Place the soil on the upstream side of the trench for later use.
Roll out a continuous length of silt fence fabric on the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

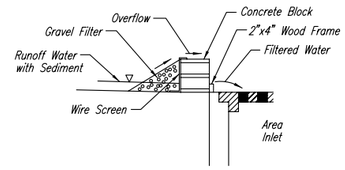
List of common placement/installation mistakes to avoid:

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.



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?

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CITY OF WICHITA

SOIL EROSION BMP DETAILS

SCOTT LINDEBAK, P.E.
STORM WATER ENGINEER

PROJECT NUMBER	OCA NO.
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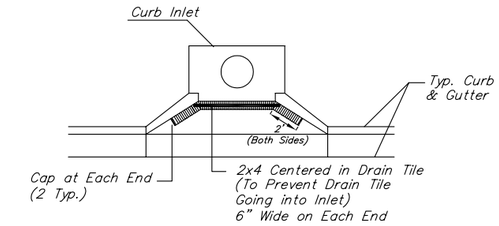
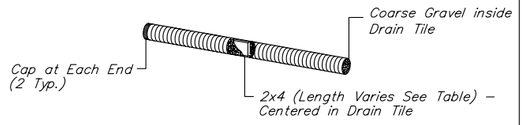
DATE: Oct. 06	Sheet 12 of 15



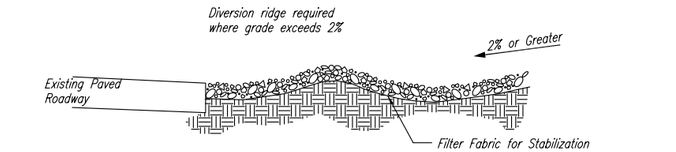
Note:
Place 4" perforated PVC pipe filled w/ 1/2"–1" Dia. gravel. Place pipe in front of Curb Inlet as Shown.

2x4 LENGTH	INLET TYPE	INLET OPENING
5'–6"	1–A	5'–0"
10'–6"	1–A	10'–0"
15'–6"	1–A	15'–0"

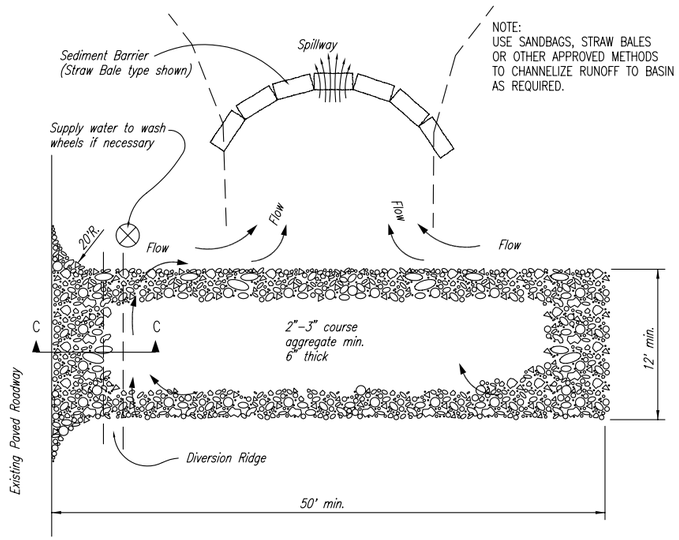


CURB INLET PROTECTION

4" Perforated Pipe w/ Gravel



SECTION C–C



STABILIZED CONSTRUCTION ENTRANCE

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 STABLIZED 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.

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CITY OF WICHITA

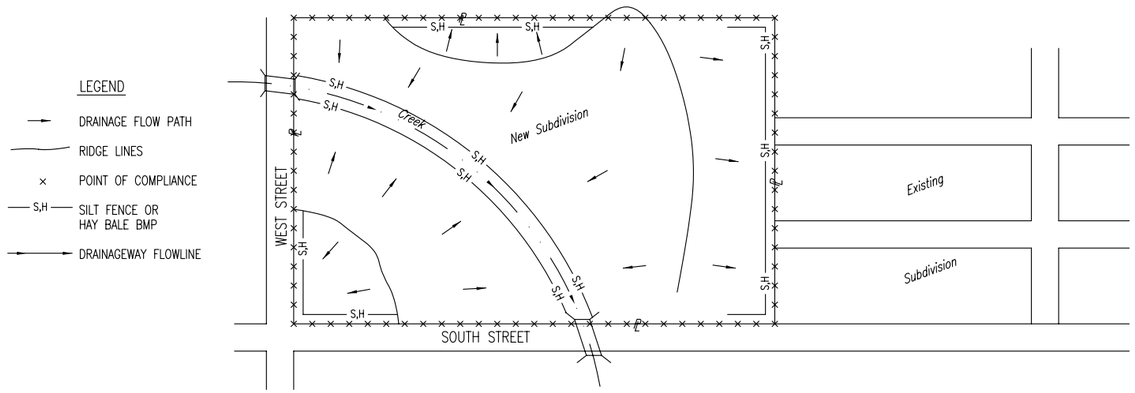
SOIL EROSION BMP DETAILS

SCOTT LINDEBAK, P.E.
STORM WATER ENGINEER

PROJECT NUMBER	OCA NO.
468–84108	751426

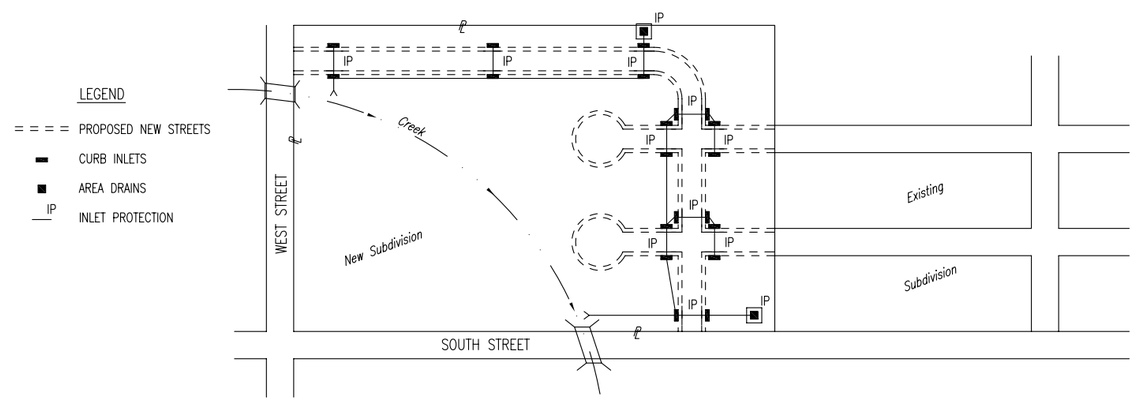
DATE: Oct. 06

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



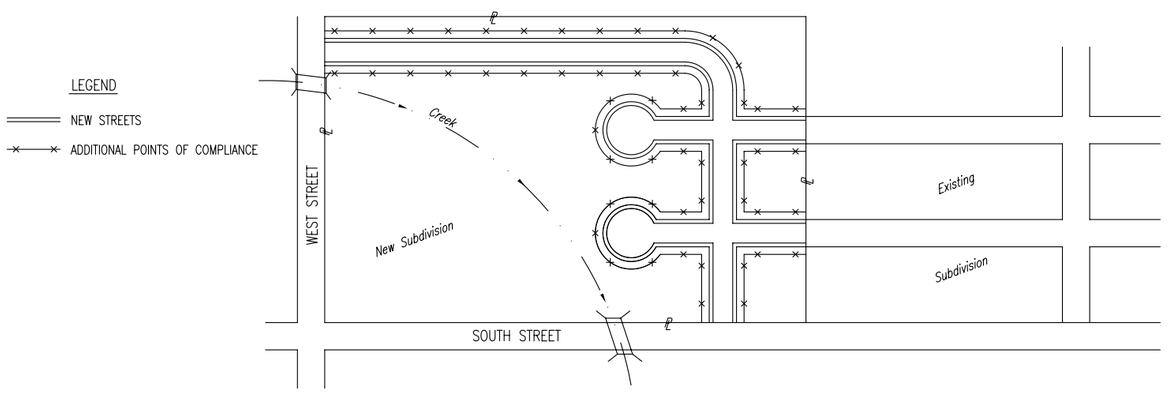
1. DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, THE POINTS OF COMPLIANCE ARE THE PERIMETER BOUNDARIES AND ANY DRAINAGE WAYS OR STORM SEWERS DRAINING THROUGH OR FROM THE SITE. SHOULD LAKES BE CONSTRUCTED WITHIN THE SUBDIVISION THAT WILL DISCHARGE DURING STORMS, THEY ARE ALSO A POINT OF COMPLIANCE.
2. HAYBALES OR SILT FENCE MUST BE CONSTRUCTED ALONG THE PROPERTY LINE WHERE ON SITE WATER CAN DRAIN OFF THE PROPERTY. THESE BMP'S WILL ALSO BE INSTALLED ALONG ANY DRAINAGE DITCH OR LAKE THAT CAN DISCHARGE.
3. SHOULD SILT OR SEDIMENT ENTER THE DITCHES OR GUTTERLINES ON THE ADJACENT BOUNDRY STREETS, APPROPRIATE BMP'S WILL BE PLACED WITHIN THE SUBDIVISION TO PREVENT THIS.
4. ANY MUD TRACKED ONTO ADJACENT STREETS WILL BE REMOVED AT THE END OF EACH WORK DAY.
5. CONTRACTORS WORKING WITHIN THE SITE WILL NOT BE REQUIRED TO USE INDIVIDUAL BMP'S AS LONG AS THOSE SPECIFIED ABOVE ARE IN PLACE AND EFFECTIVE. CONTRACTORS WORKING ON THE BOUNDRY LINE STREETS OR ON ADJACENT PROPERTIES TO EXTEND UTILITIES ARE EXPECTED TO USE BMP'S AT THEIR WORK LOCATIONS, AS NEEDED.
6. UTILIZE STABILIZED CONSTRUCTION ENTRANCE AT ENTRANCE AND EXIT ONTO ANY EXISTING PUBLIC STREETS.
7. THE SUBDIVISION DEVELOPER (OWNER) SHALL INSTALL AND MAINTAIN THE ON–SITE BMP'S.

PHASE 2 – INSTALLATION OF STORM SEWER



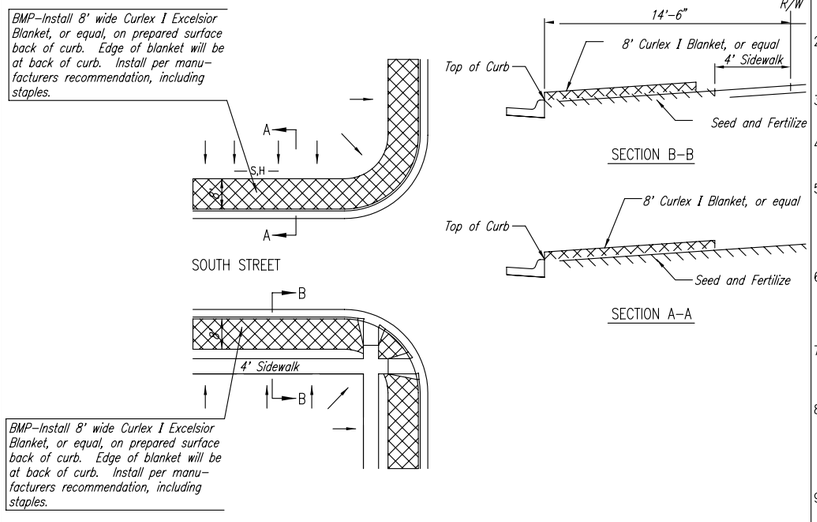
1. DURING THIS PHASE OF SUBDIVISION DEVELOPMENT, ALL BMP'S REQUIRED IN PHASE 1 SHALL REMAIN IN PLACE AND BE MAINTAINED.
2. AS NEW STORM SEWERS, WITH INLETS, ARE INSTALLED, THE STORM SEWERS MUST NOW BE PROTECTED SO ALL NEW INLETS BECOME POINTS OF COMPLIANCE.
3. AREA DRAINS – AS SOON AS WATER CAN FLOW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

PHASE 3 – STREET CONSTRUCTION

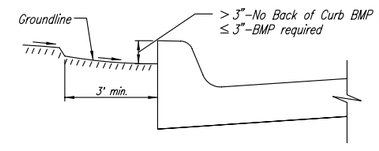


1. DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, NEW STREETS ARE INSTALLED. ALL BMP'S INSTALLED DURING PHASE 1 AND 2 MUST STILL BE MAINTAINED. THE POINT OF COMPLIANCE NOW SHIFTS TO THE BACK OF CURB ALONG EACH STREET.
2. CURB OPENING INLET PROTECTION:
   A. SUMP AREAS – INLET PROTECTION SHALL BE PROVIDED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

BACK OF CURB PROTECTION DETAIL



CURB BACKFILL DETAIL



GENERAL NOTES:

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

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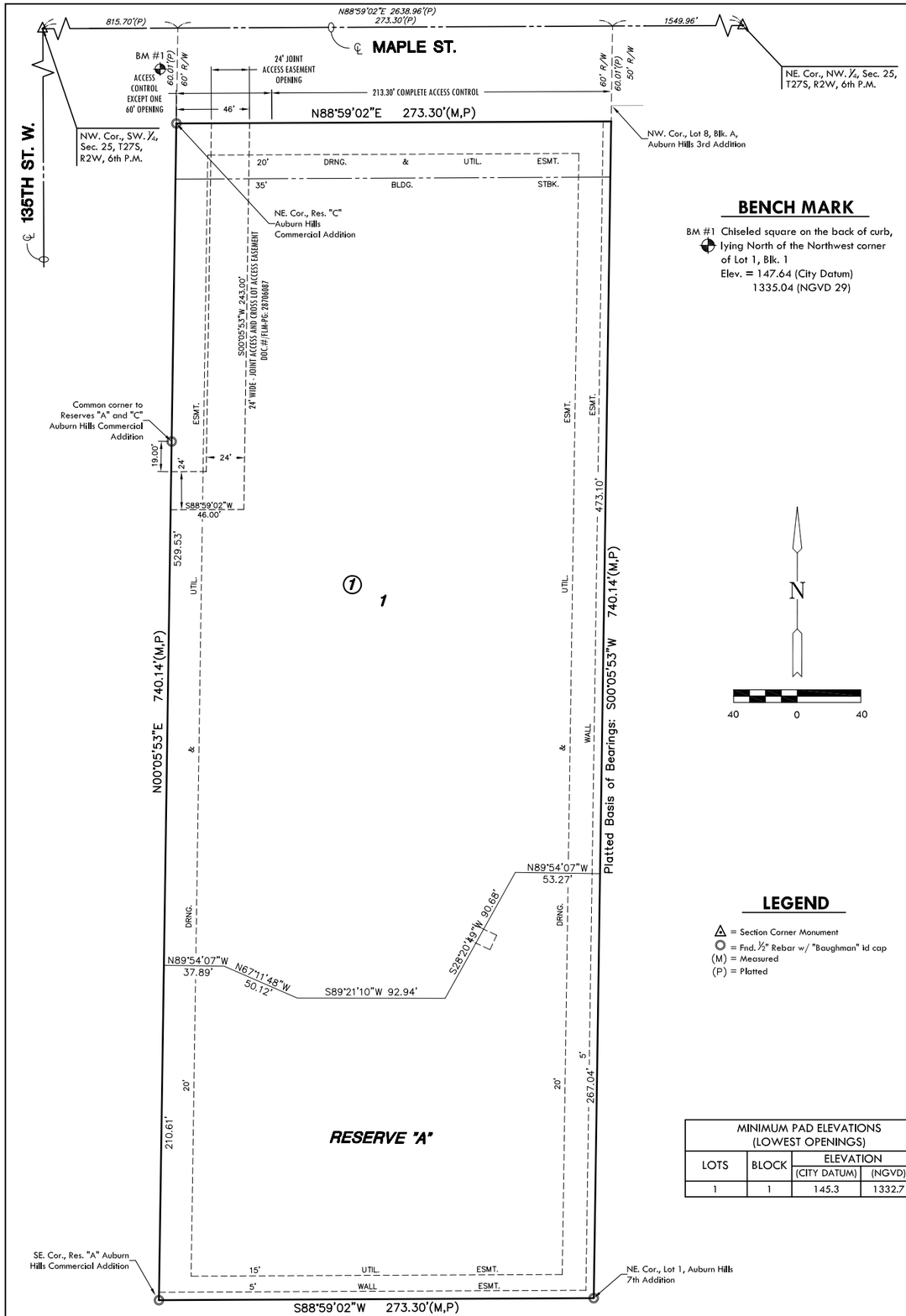
CITY OF WICHITA

SOIL EROSION BMPS SUBDIVISION DEVELOPMENT PROCESS

SCOTT LINDEBAK, P.E.
STORM WATER ENGINEER

PROJECT NUMBER	OCA NO.
468–84108	751426
DATE: Oct. 06	Sheet 14 of 15



BENCH MARK

BM #1 Chiseled square on the back of curb, lying North of the Northwest corner of Lot 1, Blk. 1
Elev. = 147.64 (City Datum)
1335.04 (NGVD 29)

LEGEND

△ = Section Corner Monument
○ = Fnd. ½" Rebar w/ "Baughman" id cap
(M) = Measured
(P) = Platted

MINIMUM PAD ELEVATIONS (LOWEST OPENINGS)			
LOTS	BLOCK	ELEVATION (CITY DATUM)	ELEVATION (NGVD)
1	1	145.3	1332.7

FINAL PLAT
AUBURN HILLS COMMERCIAL 4TH ADDITION
AN ADDITION TO WICHITA, SEDGWICK COUNTY, KANSAS

We, MKEC Engineering Consultants, Inc., a Registered Corporate Land Surveyor in Kansas, do hereby certify that we have been in responsible charge of surveying and platting of "AUBURN HILLS COMMERCIAL 4TH ADDITION" an addition to Wichita, Sedgwick County, Kansas, into a Lot, a Block, and a Reserve, the same being accurately set forth in the accompanying plat and described herein:

A Replat of all of Auburn Hills Commercial 3rd Addition, Wichita, Sedgwick County, Kansas.

All reserves, streets, utility easements, building setbacks, access controls; together with any and all other public dedications within the above described property are hereby vacated and replatted by virtue of K.S.A. 12-512(b).

I hereby certify that the details of this plat are correct to the best of my knowledge and belief this___day of _____2005.

Gregory J. Allison, PE, LS #1257
MKEC Engineering Consultants, Inc.
411 North Webb Road
Wichita, Kansas 67206

Know all men by these presents that we the undersigned property owners of the land above set forth in the Registered Land Surveyor's Certificate, have caused the same to be surveyed and platted into a Lot, a Block, and a Reserve, the same to be known as "AUBURN HILLS COMMERCIAL 4TH ADDITION," an addition to Wichita, Sedgwick County, Kansas.

Easements for the construction and maintenance of public utilities and drainage, as indicated on the accompanying plat are hereby granted to the public.

The streets are hereby dedicated to and for the use of the public.

All abutters right to access to or from Maple Street over and across the North line of "AUBURN HILLS COMMERCIAL 4TH ADDITION," are hereby granted to the appropriate governing body, except at one location providing access as indicated hereon.

A drainage plan has been developed for this plat and all drainage easements, right-of-way, or reserves shall remain at established grades or as modified with the approval of the applicable City or County Engineer, and unobstructed to allow for the conveyance of storm water.

Lot 1, Block 1, is required to adhere to the minimum pad elevation as shown on the "Minimum Pad Elevations" table.

Reserve "A" is platted for utilities in designated areas, drainage, wall on perimeter as shown, ponds, landscaping, irrigation, open space, monuments, and water features. The Reserve shall be owned and maintained by the Lot Owner Association and or the owners of Lot 1, Block 1.

The 5' Wall Easement along South and East lines of Lot 1, Block 1 and Reserve "A", as shown, is hereby platted for the construction and maintenance of a private wall. Utilities may cross the wall easement.

NEVILLE FAMILY TRUST III, dated September 10, 1996

_____, Co-Trustee
Rita A. Neville-Landwehr, Co-Trustee

_____, Co-Trustee
Gregory A. Neville, Co-Trustee

_____, Co-Trustee
Alvin L. Neville, Co-Trustee

STATE OF KANSAS, SEDGWICK COUNTY} ss:

This instrument was acknowledged before me on _____ day of _____ , 2005, by Rita A. Neville-Landwehr, Gregory A. Neville, Alvin L. Neville, Co-Trustees, Neville Family Trust III, dated September 10, 1996.
IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year last above written.

SEAL

_____, Notary Public
Notary Public:

My Term Expires: _____. *Sign and print below*

STATE OF KANSAS, SEDGWICK COUNTY} ss:

This plat of "AUBURN HILLS COMMERCIAL 4TH ADDITION" has been submitted to and approved by the Wichita-Sedgwick County Metropolitan Area Planning Commission, Wichita, Kansas.

Dated this ____ day of _____ , 2005

WICHITA-SEDGWICK COUNTY METROPOLITAN AREA PLANNING COMMISSION

_____, Chair
Morris K. Dunlap, Chair

Attest:
_____, Secretary
John L. Schlegel, Secretary

This plat of "AUBURN HILLS COMMERCIAL 4TH ADDITION" has been submitted to and approved by the City Council of the City of Wichita, Sedgwick County, Kansas. The easements, rights-of-way and other public dedications are hereby accepted by the City Council. Dated this ____ day of , 2005.

At the direction of the City Council.

_____, Mayor
Carlos Mayans, Mayor

Attest:
_____, City Clerk
Karen Sublett, City Clerk

STATE OF KANSAS, SEDGWICK COUNTY} ss:

Entered on transfer record this ____ day of _____ , 2005

_____, County Clerk
Don Brace, County Clerk

This is to certify that this instrument was filed for record in the Register of Deeds office this ____ day of _____ , 2005, at _____ o'clock _M; and is duly recorded.

DOCUMENT NO.

_____, Register of Deeds
Bill Meek, Register of Deeds

Attest:

_____, Deputy
Tonya E. Buckingham, Deputy

Reviewed in accordance with K.S.A. 58-2005 on this ____ day of _____ , 2005.

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

MKEC ENGINEERING CONSULTANTS
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600
WWW.MKEC.COM

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