PRIVATE STORM WATER SEWER EXTENSION

TO SERVE

SEDGWICK COUNTY ARENA

PRIVATE PROJECT NO. 1794 PPS (607861)

CITY OF WICHITA, KANSAS

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

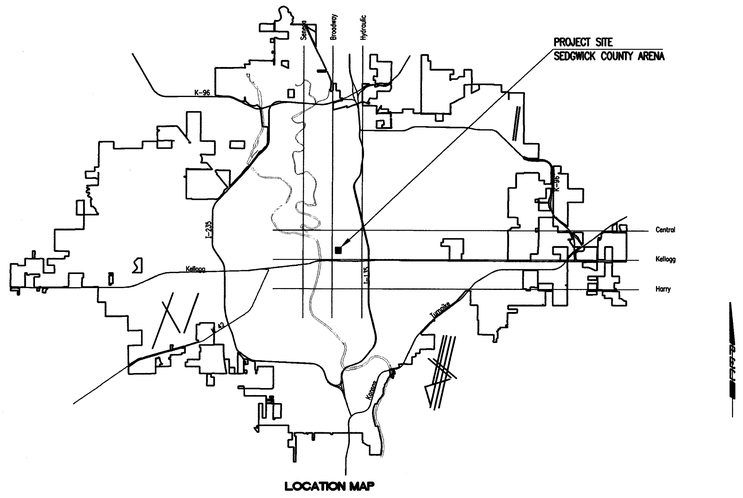
AS-BUILT PLANS

CONTRACTOR: DONDLINGER & SONS CONST. CO., INC.

INSPECTOR: BRIAN BLOYD, SCHWAB-EATON, P.A.

.PDF BY: BDB 4-13-09

PROJECT WAS CONSTRUCTED TO PLAN SPECIFICATIONS.



LOCATION MAP

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APPROVED AS NOTED
By CITY ENGINEER OF WICHITA

Sanitary Sewers _____

Storm Sewers VRH 10/26/07

Driveway Approaches _____

Paving _____

NOTE TO CONTRACTOR

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

JULY 2007

PLANS PREPARED BY

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.

ENGINEERS

WICHITA, KANSAS

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Print Scale: 1:1 / 10-17-2007 4:02:25 PM by CSL
O:\2005\05493\000\CONSTRUCTION PLANS\48-CU3_1-Storm Water Sewer Title

ROD R. YOUNG LICENSED 11485 KANSAS PROFESSIONAL ENGINEER 10-26-07

arenadesign CONSORTIUM

WILSON DARNELL MANN ARCHITECTS ARCHITECT OF RECORD 105 N. Washington Wichita, KS 67202	ME ENGINEERS ASSOCIATE MECH/ELECT/PLUMBING ENGINEER WRIGHTSON, JOHNSON, HADDON & WILLIAMS, INC.
HOK SPORT DESIGN ARCHITECT WALTER P. MOORE STRUCTURAL ENGINEER	
JACOBS/RAMSEY/SCHOLE AND PERRY ASSOCIATE ARCHITECT	PROFESSIONAL ENGINEERING CONSULTANTS AUDIO VISUAL CONSULTANT BIGELOW
GOSSEN LIVINGSTON ASSOCIATES, INC ASSOCIATE ARCHITECT	MECH/ELECT/PLUMBING ENGINEER FOOD SERVICE CONSULTANT

SEDGWICK COUNTY ARENA

500 E. WATERMAN , WICHITA, KS 67202

FOR CONSTRUCTION
OCTOBER 26, 2007

PACKAGE

REVISIONS

NO.	DATE	DESCRIPTION

KEYPLAN

PROJECT NO. 05220	ISSUED BY: PEC
DRAWN BY: CSL	REVIEWED BY: RRY

ISSUE DATE: 10-26-2007

SHEET TITLE:

STORM WATER SEWER TITLE SHEET

CU3.1

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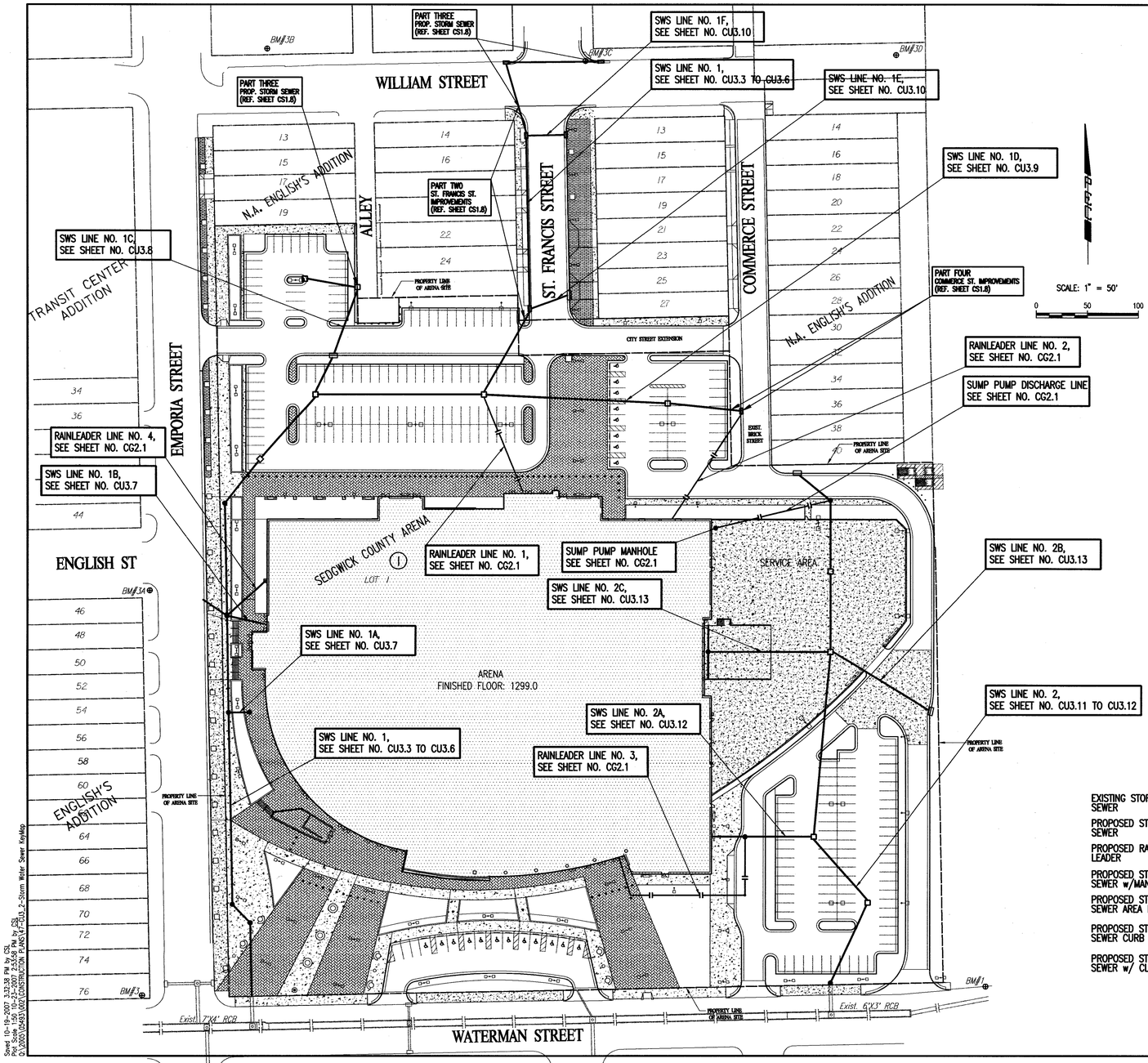

BENCH MARKS

Datum Bench Mark
Sec. 21, T27S, R1E
10.40' S. of the NW corner of the old Union Train Station,
3 1/2 rails S. of the centerline of the Douglas Avenue viaduct,
set vertically in the W. wall of the old Railroad Station.
Elev.=1316.61 NGVD 29 (Arena SWS Outfall vertical control)
Elev.=1317.08 NAVD 88 (Waterwalk vertical control)

BM#1 – Elev.=1294.96
Chiseled square SW corner curb inlet N. side of Waterman on W. side of RR trock bridge

BM#2 – Elev.=1296.05
Chiseled square W edge concrete parking lot S. side of concrete drive 25'± N. of the NE corner of Waterman Street and St. Francis Street

BM#3 – Elev.=1294.80
Chiseled square SW corner concrete slab sign base NW corner of Waterman Street and Emporia Street

BM#3A – 1294.71
Chiseled square on concrete base for cross walk signal pole at SW corner of Emporia Street and English Street

BM#3B – 1298.94
Chiseled square on concrete base for light pole at NE corner of Emporia Street and William Street

BM#3C – 1297.42
Chiseled square on top of curb at NE corner of William Street and St. Francis Street

BM#3D – 1298.59
Chiseled square on top of curb 10.00' W of E. end of N. curb WNW of William Street and Santa Fe Avenue

GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIALS TO COMPLY WITH CITY OF WICHITA SPECIFICATIONS AND STANDARDS.
2. ALL ELEVATIONS SHOWN ARE U.S.G.S. DATUM.
3. THE CONTRACTOR SHALL LIMIT THE EXTENT OF TRENCH TO REMAIN OPEN OVERNIGHT AND WEEKENDS TO LESS THAN 50 FEET.
4. AT LEAST 72 HOURS PRIOR TO BEGINNING EXCAVATION (EXCLUDING WEEKENDS AND HOLIDAYS), THE CONTRACTOR SHALL CONTACT THE KANSAS ONE-CALL SYSTEM, A UTILITY LOCATION SERVICE, AT (316) 687-2470 TO REQUEST THE LOCAL UTILITY COMPANIES MARK ANY EXISTING LINES WITHIN THE PROJECT AREA.
5. UNDERGROUND UTILITY SERVICE LINES AND OVERHEAD UTILITY POLE LINES ARE TO BE ADJUSTED AS NECESSARY BY OTHERS PRIOR TO CONSTRUCTION UNLESS THE PLANS SPECIFICALLY CALL FOR THEIR ADJUSTMENT BY THE CONTRACTOR OR UNLESS THE PLANS SPECIFICALLY IDENTIFY A UTILITY TO BE ADJUSTED BY ITS OWNER DURING CONSTRUCTION. EXISTING UTILITIES AND THEIR LOCATIONS, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR THE DESIGN. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE RIGHT-OF-WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. THE CONTRACTOR WILL BE REQUIRED TO RE-ESTABLISH ANY PROPERTY IRONS WHICH ARE DAMAGED OR DESTROYED BY HIS CONSTRUCTION OPERATIONS. SUCH IRONS SHALL BE RE-ESTABLISHED BY A LICENSED LAND SURVEYOR IN ACCORDANCE WITH STATE LAWS.
7. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL MANHOLE COVERS.
8. MANHOLES SHALL BE TYPE "F" MANHOLES. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS.
9. RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES INCLUDING ANY TREES REMOVED, TREE TRIMMINGS, AND EXCESS EXCAVATION WHICH IS TO BE WASTED SHALL BE DISPOSED OF ON SITES PROVIDED BY THE CONTRACTOR. THESE SITES SHALL ALSO 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 WILL 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 MAY REQUIRE ARCHAEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED DISPOSAL LOCATION.
10. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL RE-ESTABLISH CONTROL POINTS AND BENCH MARKS AND VERIFY THEIR ACCURACY.

LEGEND

- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- PROPOSED RAIN LEADER
- PROPOSED STORM SEWER w/MANHOLE
- PROPOSED STORM SEWER AREA INLET
- PROPOSED STORM SEWER CURB INLET
- PROPOSED STORM SEWER w/ CLEANOUT

No.	Revision	By	Date

PRIVATE STORM WATER SEWER EXTENSION
SEDGWICK COUNTY ARENA

KEY MAP AND GENERAL NOTES

JAMES L. ARMOUR, P.E. – CITY ENGINEER
PRIVATE PROJECT NO. 1794 PPS (607861)

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

Designed by	MDK	Job No. 35-05493-002-1324	SH. CU3.2
Drawn by	CSL, JAN	Date JANUARY 2006	

ROD R. YOUNG LICENSED 11485 KANSAS PROFESSIONAL ENGINEER 10/26/07

arenadesign CONSORTIUM

WILSON DARNELL MANN ARCHITECTS	HOK SPORT	ME ENGINEERS
ARCHITECT OF RECORD	DESIGN ARCHITECT	ASSOCIATE MECH/ELECT/PLUMBING ENGINEER
105 N. Washington	WALTER P. MOORE	WRIGHTSON, JOHNSON, HADDON & WILLIAMS, INC.
Wichita, KS 67202	STRUCTURAL ENGINEER	
McCLUGGAGE VANSICKLE AND PERRY	PROFESSIONAL ENGINEERING CONSULTANTS	AUDIO VISUAL CONSULTANT
ASSOCIATE ARCHITECT	GOSSEN LIVINGSTON ASSOCIATES, INC.	BIGELOW
ASSOCIATE ARCHITECT	MECH/ELECT/PLUMBING ENGINEER	FOOD SERVICE CONSULTANT

SEDGWICK COUNTY ARENA
500 E. WATERMAN, WICHITA, KS 67202

FOR CONSTRUCTION
OCTOBER 26, 2007

PACKAGE

REVISIONS

NO.	DATE	DESCRIPTION

KEYPLAN

PROJECT NO. 05220	ISSUED BY: PEC
DRAWN BY: CSL	REVIEWED BY: RRY
ISSUE DATE:	10-26-2007

SHEET TITLE:
STORM WATER SEWER KEY MAP

CU3.2

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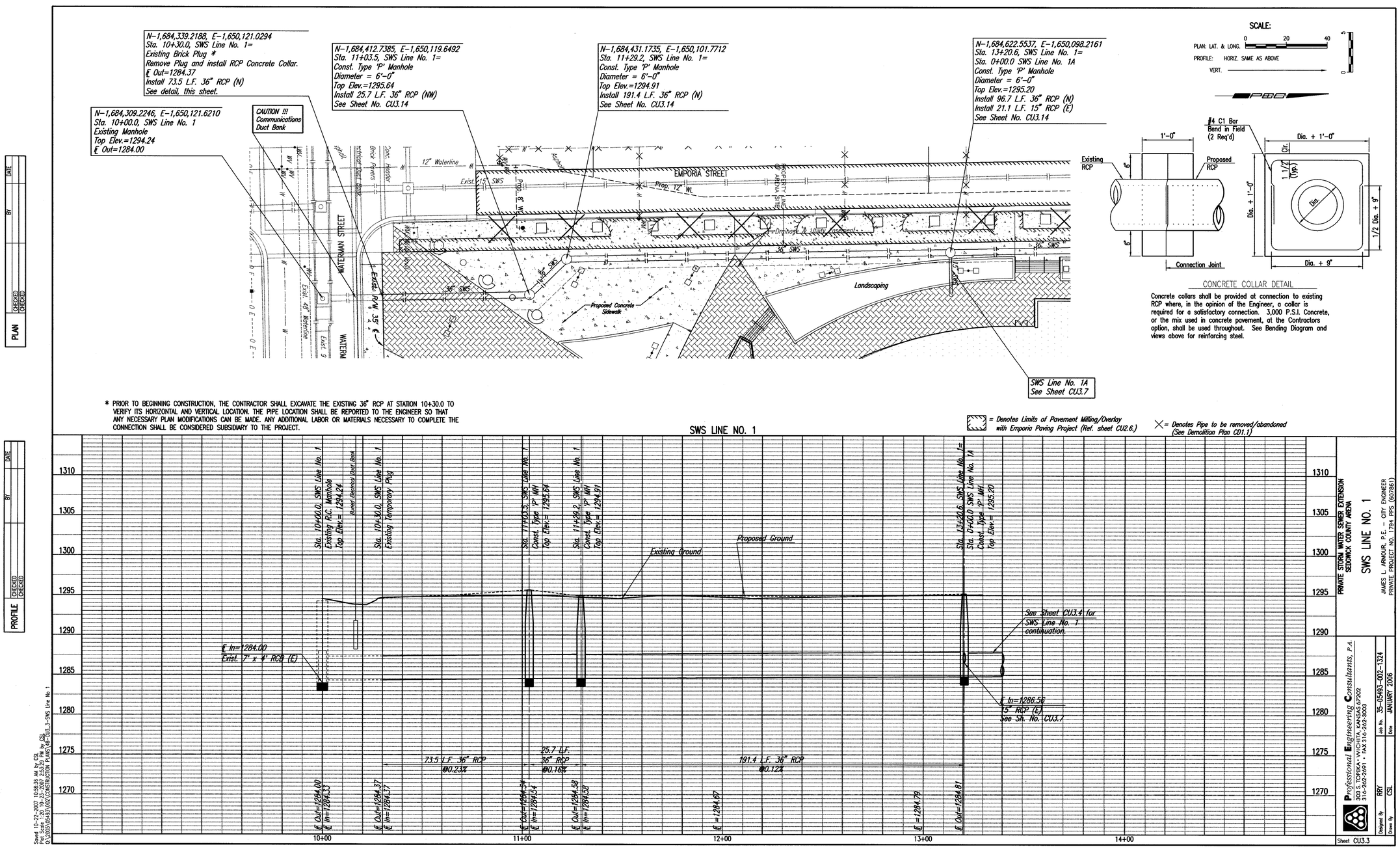

CONCRETE COLLAR DETAIL

Concrete collars shall be provided at connection to existing RCP where, in the opinion of the Engineer, a collar is required for a satisfactory connection. 3,000 P.S.I. Concrete, or the mix used in concrete pavement, at the Contractors option, shall be used throughout. See Bending Diagram and views above for reinforcing steel.

* PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE THE EXISTING 36" RCP AT STATION 10+30.0 TO VERIFY ITS HORIZONTAL AND VERTICAL LOCATION. THE PIPE LOCATION SHALL BE REPORTED TO THE ENGINEER SO THAT ANY NECESSARY PLAN MODIFICATIONS CAN BE MADE. ANY ADDITIONAL LABOR OR MATERIALS NECESSARY TO COMPLETE THE CONNECTION SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT.

= Denotes Limits of Pavement Milling/Overlay with Emporia Paving Project (Ref. sheet CU2.6.)

X = Denotes Pipe to be removed/abandoned (See Demolition Plan CD1.1)

SWS LINE NO. 1

PLAN CHECKED CHECKED

PROFILE CHECKED CHECKED

BY DATE

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HOK SPORT — DESIGN ARCHITECT
WALTER P. MOORE — STRUCTURAL ENGINEER
McCLUGGAGE VANSICKLE AND PERRY — ASSOCIATE ARCHITECT
GOSSEN LIVINGSTON ASSOCIATES, INC — ASSOCIATE ARCHITECT
ME ENGINEERS — ASSOCIATE MECHELECT/PLUMBING ENGINEER
WRIGHTSON, JOHNSON, HADDON & WILLIAMS — AUDIO VISUAL CONSULTANT
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BIGELOW — MECHELECT/PLUMBING ENGINEER

SEDGWICK COUNTY ARENA

500 E. WATERMAN , WICHITA, KS 67202

FOR CONSTRUCTION
OCTOBER 26, 2007

PACKAGE

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NO.	DATE	DESCRIPTION

KEYPLAN

PROJECT NO. 05220	ISSUED BY: PEC
DRAWN BY: CSL	REVIEWED BY: RRY
ISSUE DATE:	10-26-2007

SHEET TITLE:

STORM WATER SEWER LINE NO. 1

CU3.3

PRIVATE STORM WATER SEWER EXTENSION
SEDGWICK COUNTY ARENA

SWS LINE NO. 1

JAMES L. ARMOUR, P.E. – CITY ENGINEER
PRIVATE PROJECT NO. 1794, PPS (607/561)

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

Job No. 35-05493-002-1324
Date JANUARY 2006
Designed By RRY
Drawn By CSL

Sheet CU3.3

N-1,684,622.5537, E-1,650,098.2161
Sta. 13+20.6, SWS Line No. 1=
Sta. 0+00.0 SWS Line No. 1A
Type 'P' Manhole
Top Elev.=1295.20

N-1,684,719.2027, E-1,650,096.4898
Sta. 14+17.2, SWS Line No. 1=
Sta. 0+00.0 SWS Line No. 1B=
Sta. 0+00.0 RL Line No. 4
Const. Type 'P' Manhole
Diameter = 6'-0"
Top Elev.=1295.21
Install 112.6 L.F. 36" RCP (N)
Install 36.2 L.F. 15" RCP (E)
Install 6" RL (NE) See Sheet CG2.1
Install 29.0 L.F. 15" RCP, Cap for future (NW)
See Sheet No. CU3.14

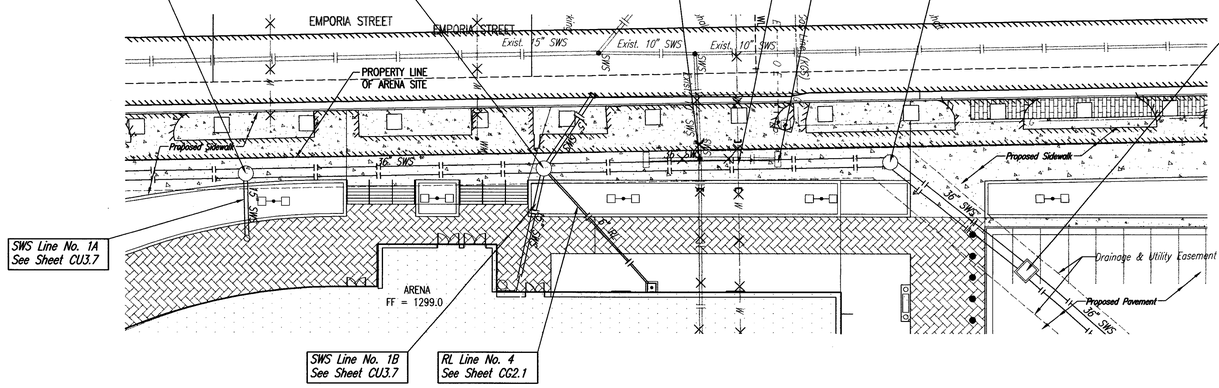
CAUTION !!!
Exist. 10" RCP
Storm Water Sewer

CAUTION !!!
Exist. 8" Waterline
(City of Wichita)

CAUTION !!!
Exist. 10" RCP
Storm Water Sewer

N-1,684,831.7516, E-1,650,094.3712
Sta. 15+29.8, SWS Line No. 1
Const. Type 'P' Manhole
Diameter = 6'-0"
Top Elev.=1295.65
Install 56.5 L.F. 36" RCP (NE)
See Sheet No. CU3.14

N-1,684,875.8159, E-1,650,129.7202
Sta. 15+86.3, SWS Line No. 1=
Const. Std. Area Inlet
L=6'-0", W=5'-4"
Top Elev.=1294.96
Install 84.5 L.F. 36" RCP (NE)
See Sheet No. CU3.16



SCALE:
PLAN: LAT. & LONG. 0 20 40
PROFILE: HORIZ. SAME AS ABOVE
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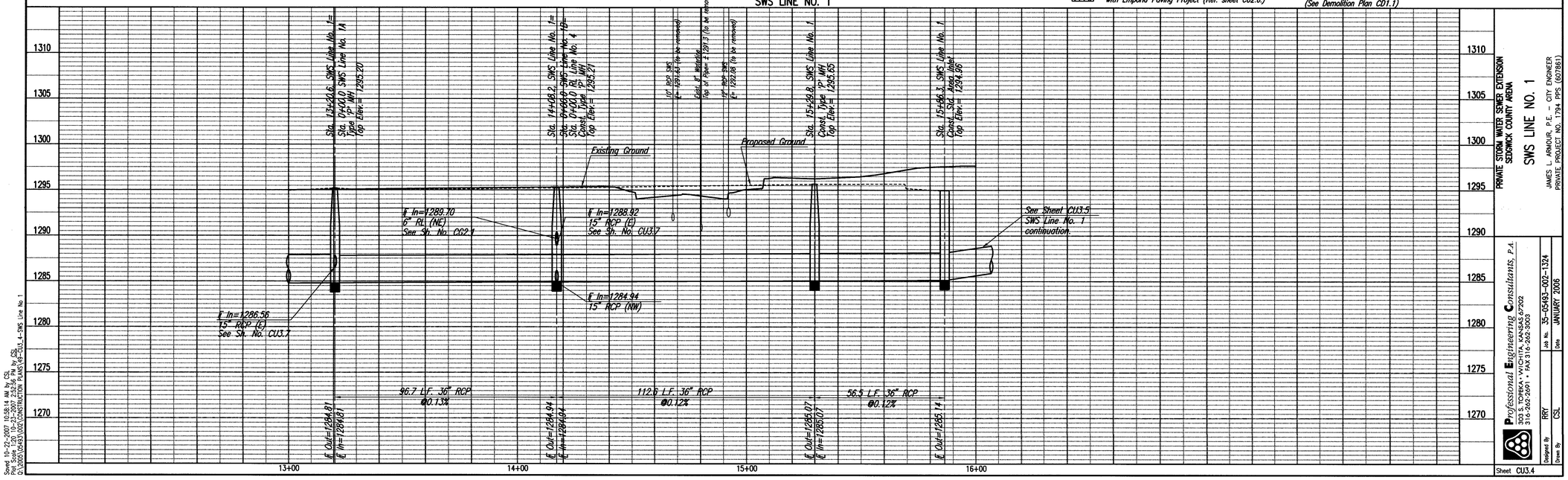
E—— = Denotes Caps or Plugs to be installed

= Denotes Limits of Pavement Milling/Overlay with Emporia Paving Project (Ref. sheet CU2.6.)

X = Denotes Pipe to be removed/abandoned (See Demolition Plan CD1.1)

SWS LINE NO. 1



PLAN: CHECKED, CHECKED
PROFILE: CHECKED, CHECKED
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PRIVATE STORM WATER SEWER EXTENSION
SEDGWICK COUNTY ARENA
SWS LINE NO. 1
JAMES L. ARNOUR, P.E. – CITY ENGINEER
PRIVATE PROJECT NO. 1794 - PPS (607861)

Professional Engineering Consultants, P.A.
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Designed By: RRY | Job No. 35-05493-002-1324
Drawn By: CSL | Date JANUARY 2006

Sheet CU3.4

ROD R. YOUNG LICENSED 11485 KANSAS PROFESSIONAL ENGINEER

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WALTER P. MOORE STRUCTURAL ENGINEER	ME ENGINEERS ASSOCIATE MECH/ELECT/PLUMBING ENGINEER
MCCLURG/GEE VANSICKLE AND PERRY ASSOCIATE ARCHITECT	WRIGHTSON, JOHNSON, HADDON & WILLIAMS AUDIO VISUAL CONSULTANT
GOSSEN LIVINGSTON ASSOCIATES, INC ASSOCIATE ARCHITECT	PROFESSIONAL ENGINEERING CONSULTANTS MECH/ELECT/PLUMBING ENGINEER
	BIGELOW FOOD SERVICE CONSULTANT

SEDGWICK COUNTY ARENA
500 E. WATERMAN , WICHITA, KS 67202

FOR CONSTRUCTION
OCTOBER 26, 2007

PACKAGE
REVISIONS

NO.	DATE	DESCRIPTION

KEYPLAN

PROJECT NO. 05220	ISSUED BY: PEC
DRAWN BY: CSL	REVIEWED BY: RRY
ISSUE DATE:	10-26-2007

SHEET TITLE:
STORM WATER SEWER LINE NO. 1

CU3.4

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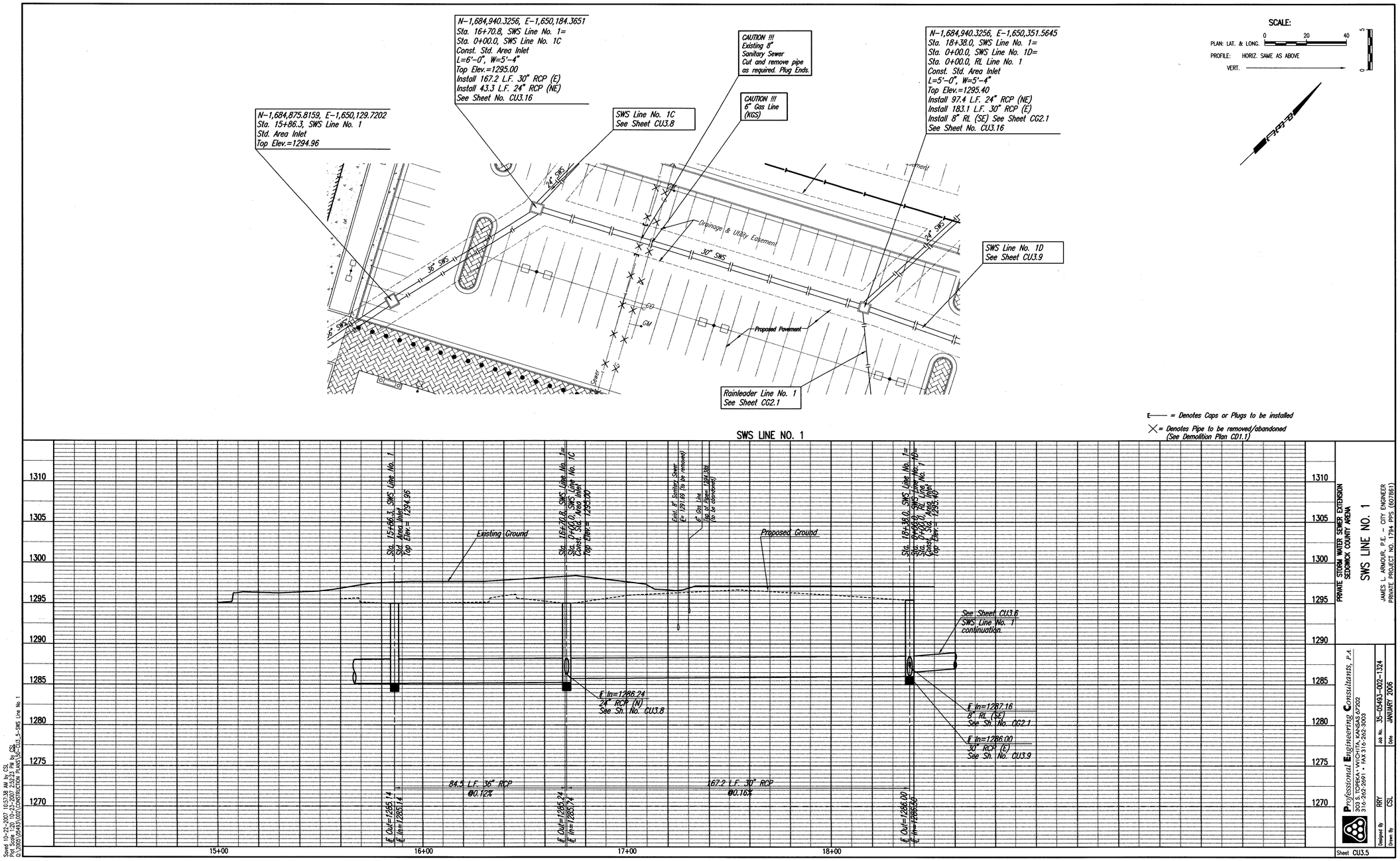

PRIVATE STORM WATER SEWER EXTENSION
SEDGWICK COUNTY ARENA
SWS LINE NO. 1
JAMES L. ARMOUR, P.E. – CITY ENGINEER
PRIVATE PROJECT NO. 1794 PPS (607861)

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Designed By RRY
Drawn By CSL
Job No. 35-05493-002-1324
Date JANUARY 2006

Sheet CU3.5

PLAN | CHECKED | CHECKED | BY | DATE

PROFILE | CHECKED | CHECKED | BY | DATE

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ROD B. YOUNG
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11485
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PROFESSIONAL ENGINEER

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McCLUGGAGE VANSICKLE AND PERRY
ASSOCIATE ARCHITECT

GOSSEN LIVINGSTON ASSOCIATES, INC
ASSOCIATE ARCHITECT

HOK SPORT
DESIGN ARCHITECT

WALTER P. MOORE
STRUCTURAL ENGINEER

PROFESSIONAL ENGINEERING
CONSULTANTS
MECH/ELECT/PLUMBING ENGINEER

ME ENGINEERS
ASSOCIATE MECH/ELECT/PLUMBING
ENGINEER

WRIGHTSON, JOHNSON, HADDON &
WILLIAMS, INC.
AUDIO VISUAL CONSULTANT

BIGELOW
FOOD SERVICE CONSULTANT

SEDGWICK COUNTY ARENA

500 E. WATERMAN, WICHITA, KS 67202

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KEYPLAN

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SHEET TITLE:
STORM WATER SEWER
LINE NO. 1

CU3.5

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N-1,684,940.3256, E-1,650,351.5645
Sta. 18+38.0, SWS Line No. 1=
Sta. 0+00.0, SWS Line No. 1D=
Sta. 0+00.0, RL Line No. 1
Std. Area Inlet
Top Elev.=1295.40

CAUTION !!!
Proposed 8" Sanitary Sewer (By others)

N-1,685,026.1275, E-1,650,397.5983
Sta. 19+35.4, SWS Line No. 1=
Sta. 0+00.00, SWS Line No. 1E
Const. Std. Type 2 Curb Inlet
L=6'-4", W=3'-4"
Top Elev.=1296.61
Install 173.3 L.F. 18" RCP (N)
Install 41.6 L.F. 18" RCP (E)
See Sheet No. CU3.18

N-1,685,199.3740, E-1,650,394.3237
Sta. 21+08.7 SWS Line No. 1=
Sta. 0+00.0, SWS Line No. 1F
Const. Std. Type 2 Curb Inlet
L=6'-4", W=3'-4"
Top Elev.=1296.46
Install 75.4 L.F. 18" RCP (N)
Install 39.4 L.F. 18" RCP (E)
See Sheet No. CU3.18

CAUTION !!!
12" Waterline (City of Wichita)

CAUTION !!!
Prop. 12" Waterline

CAUTION !!!
Buried Electrical Duct Bank (Westar Energy)

N-1,685,272.0214, E-1,650,374.2078
Sta. 21+84.1, SWS Line No. 1=
Const. Std. Type 2 Curb Inlet
L=6'-4", W=3'-4"
Top Elev.=1296.97
Install 94.2 L.F. 18" RCP (E)
See Sheet No. CU3.18

CAUTION !!!
10" VCP Storm Water Sewer

CAUTION !!!
Prop. 8" Waterline (by others)

CAUTION !!!
6" Waterline (City of Wichita)

CAUTION !!!
Proposed 12" Sanitary Sewer

CAUTION !!!
Buried Electrical Duct Bank (Westar Energy)

CAUTION !!!
Existing 21" Sanitary Sewer

CAUTION !!!
10" VCP Storm Water Sewer

CAUTION !!!
6" Waterline (City of Wichita)

CAUTION !!!
Buried Electric (Westar Energy)

N-1,685,272.8828, E-1,650,468.3777
Sta. 22+78.3, SWS Line No. 1=
Const. Std. Type 2 Curb Inlet
L=6'-4", W=3'-4"
Top Elev.=1296.82
See Sheet No. CU3.18

Rainleader Line No. 1
See Sheet CG2.1

SWS Line No. 1D
See Sheet CU3.9

PROPERTY LINE OF ARENA SITE

CITY STREET EXTENSION

SWS Line No. 1E
See Sheet CU3.10

Part Two
St. Francis St. Improvements
(Ref. Sheet CS1.8)

SWS Line No. 1F
See Sheet CU3.10

Part Two
St. Francis St. Improvements
(Ref. Sheet CS1.8)

Part Three
St. Francis St. Improvements
(Ref. Sheet CS1.8)

Drainage & Utility Easement
Asphalt
2'x2' Brick Column (typ. of 6)
Wrought Iron Fence
Irrig. Meter (approx. location)
Ramp
Limits of Prop. Pvmt.
ST. FRANCIS STREET
WILLIAM STREET
BACH PLACE
Exist. 10" SWS
Prop. 12" SWS
Electrical Duct Bank
Sign
Brick
Curb

SCALE:
0 20 40
PLAN: LAT. & LONG.
PROFILE: HORIZ. SAME AS ABOVE
VERT.

= Denotes Limits of Pavement removed/replaced

See Sheet CU2.5 for Pavement Removal and Replacement at St. Francis Street.

See Sheet CU4.16 for Pavement Removal and Replacement at William/St. Francis St. Intersection.

= Denotes Tree removal (See Demolition Plan CD1.1)

* INFORMATION AS PROVIDED BY WESTAR ENERGY. CONTRACTOR SHALL VERIFY THE HORIZONTAL/VERTICAL LOCATIONS PRIOR TO CONSTRUCTION.

E—— = Denotes Caps or Plugs to be installed

X = Denotes Pipe to be removed/abandoned (See Demolition Plan CD1.1)

SWS LINE NO. 1

Sta. 18+38.0, SWS Line No. 1=
Sta. 0+00.0, SWS Line No. 1D
Const. Std. Type 2 Curb Inlet
Top Elev.= 1295.40

Prop. 8" San. Sew.
E=1286.71

Sta. 19+35.4, SWS Line No. 1=
Sta. 0+00.00, SWS Line No. 1E
Const. Std. Type 2 Curb Inlet
Top Elev.= 1296.61

Existing Ground

Proposed Ground

Sta. 21+08.7, SWS Line No. 1=
Sta. 0+00.0, SWS Line No. 1F
Const. Std. Type 2 Curb Inlet
Top Elev.= 1296.46

Prop. 12" Waterline
Top of Pipe= 1292.60

Exist. 10" Sanitary Sewer
Ex= 1287.40
(to be removed)

Buried Electrical Duct Bank
52.1' Cover to Bottom*

Sta. 21+84.1, SWS Line No. 1
Const. Std. Type 2 Curb Inlet
Top Elev.=1296.97

10" VCP SWS
(to be removed)

Prop. 8" Waterline
Top of Pipe= 1292.60

Exist. 6" Waterline
Top of Pipe= 1287.73
(to be removed)

Prop. 12" Sanitary Sewer
Ex= 1285.74

Buried Electrical Duct Bank
46.7' Cover to Bottom*

Exist. 21" Sanitary Sewer
Ex= 1283.76 (to be removed)

10" VCP SWS
Ex= 1234.76 (to be removed)

Exist. 6" Waterline
Top of Pipe= 1283.83
(to be removed)

Sta. 22+78.3, SWS Line No. 1
Const. Std. Type 2 Curb Inlet
Top Elev.=1296.82

1310 1305 1300 1295 1290 1285 1280 1275 1270

18+00 19+00 20+00 21+00 22+00

E In=1286.00
30" RCP (E)
See Sh. No. CU3.9

E In=1287.16
8" RL (SE)
See Sh. No. CG2.1

E In=1287.20
18" RCP (E)
See Sh. No. CU3.10

E In=1287.54
18" RCP (E)
See Sh. No. CU3.10

97.4 L.F. 24" RCP @0.21%

173.3 L.F. 18" RCP @0.20%

75.4 L.F. 18" RCP @0.20%

94.2 L.F. 18" RCP @0.20%

E Out=1286.00
E In=1286.58

E Out=1286.70
E In=1287.20

E Out=1287.54
E In=1287.54

E Out=1287.69
E In=1287.83

E Out=1287.88

PRIVATE STORM WATER SEWER EXTENSION
SEDGWICK COUNTY ARENA
SWS LINE NO. 1

JAMES L. ARMOUR, P.E. – CITY ENGINEER
PRIVATE PROJECT NO. 1794 PPS (607861)

Professional Engineering Consultants, P.A.
303 S. TOPEKA • WICHITA, KANSAS 67202
316.262.2691 • FAX 316.262.8003

Designed By: RRY
Drawn By: CSL
Job No. 35-05493-002-1324
Date JANUARY 2006

Sheet CU3.6

PLAN / PROFILE — CHECKED / CHECKED — BY — DATE

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ROD R. YOUNG LICENSED 19487 KANSAS PROFESSIONAL ENGINEER 10-26-07

arenadesign CONSORTIUM

WILSON DARNELL MANN ARCHITECT'S — ARCHITECT OF RECORD — 1098 N. Waterman Blvd. Wichita, KS 67202
HOK SPORT — DESIGN ARCHITECT
WALTER P. MOORE — STRUCTURAL ENGINEER
McCLUGAGE VANSICKLE AND PERRY — ASSOCIATE ARCHITECT
GOSSEN LIVINGSTON ASSOCIATES, INC — ASSOCIATE ARCHITECT
ME ENGINEERS — ASSOCIATE MECH/ELECT/PLUMBING ENGINEERS
WRIGHTSON, JOHNSON, HADDON & WILLIAMS, INC. — PROFESSIONAL ENGINEERING CONSULTANTS
AUDIO VISUAL CONSULTANT — INGELOW
FOOD SERVICE CONSULTANT — MECHELECTR CUMBING ENGINEER

SEDGWICK COUNTY ARENA
500 E. WATERMAN, WICHITA, KS 67202

FOR CONSTRUCTION
OCTOBER 26, 2007

PACKAGE
REVISIONS
NO. DATE DESCRIPTION

KEYPLAN

PROJECT NO. 05220 — ISSUED BY: PEC
DRAWN BY: CSL — REVIEWED BY: RRY
ISSUE DATE: 10-26-2007
SHEET TITLE: STORM WATER SEWER LINE NO. 1

CU3.6

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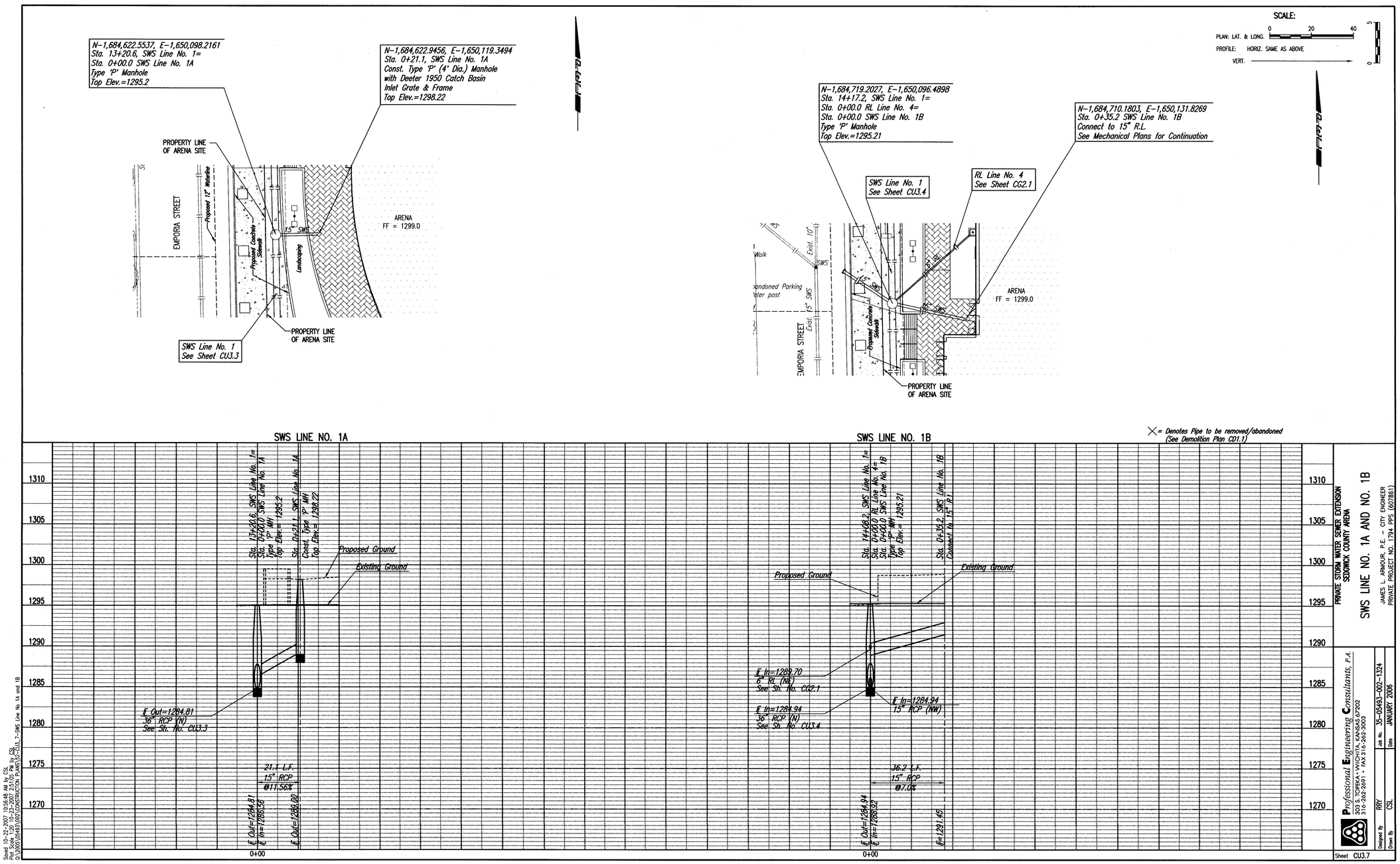

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PROFILE CHECKED CHECKED

BY	DATE

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ROD R. YOUNG LICENSED 11485 KANSAS PROFESSIONAL ENGINEER 10-22-07

arenadesign CONSORTIUM

WILSON DARNELL MANN ARCHITECTS ARCHITECT OF RECORD	MEP ENGINEERS ASSOCIATE MECHELECT/PLUMBING ENGINEER
105 N. Washington Wichita, KS 67202	WRIGHTSON, JOHNSON, HADDON & WILLIAMS, INC.
WALTER P. MOORE STRUCTURAL ENGINEER	AUDIO VISUAL CONSULTANT
HOK SPORT ASSOCIATE ARCHITECT	PROFESSIONAL ENGINEERING CONSULTANTS
GOSSEN LIVINGSTON ASSOCIATES, INC ASSOCIATE ARCHITECT	BIGELOW FOOD SERVICE CONSULTANT

SEDGWICK COUNTY ARENA

500 E. WATERMAN , WICHITA, KS 67202

FOR CONSTRUCTION
OCTOBER 26, 2007

PACKAGE

REVISIONS

NO.	DATE	DESCRIPTION

KEYPLAN

PROJECT NO. 05220	ISSUED BY: PEC
DRAWN BY: CSL	REVIEWED BY: RRY
ISSUE DATE:	10-26-2007

SHEET TITLE:

STORM WATER SEWER LINE NO. 1A AND NO. 1B

CU3.7

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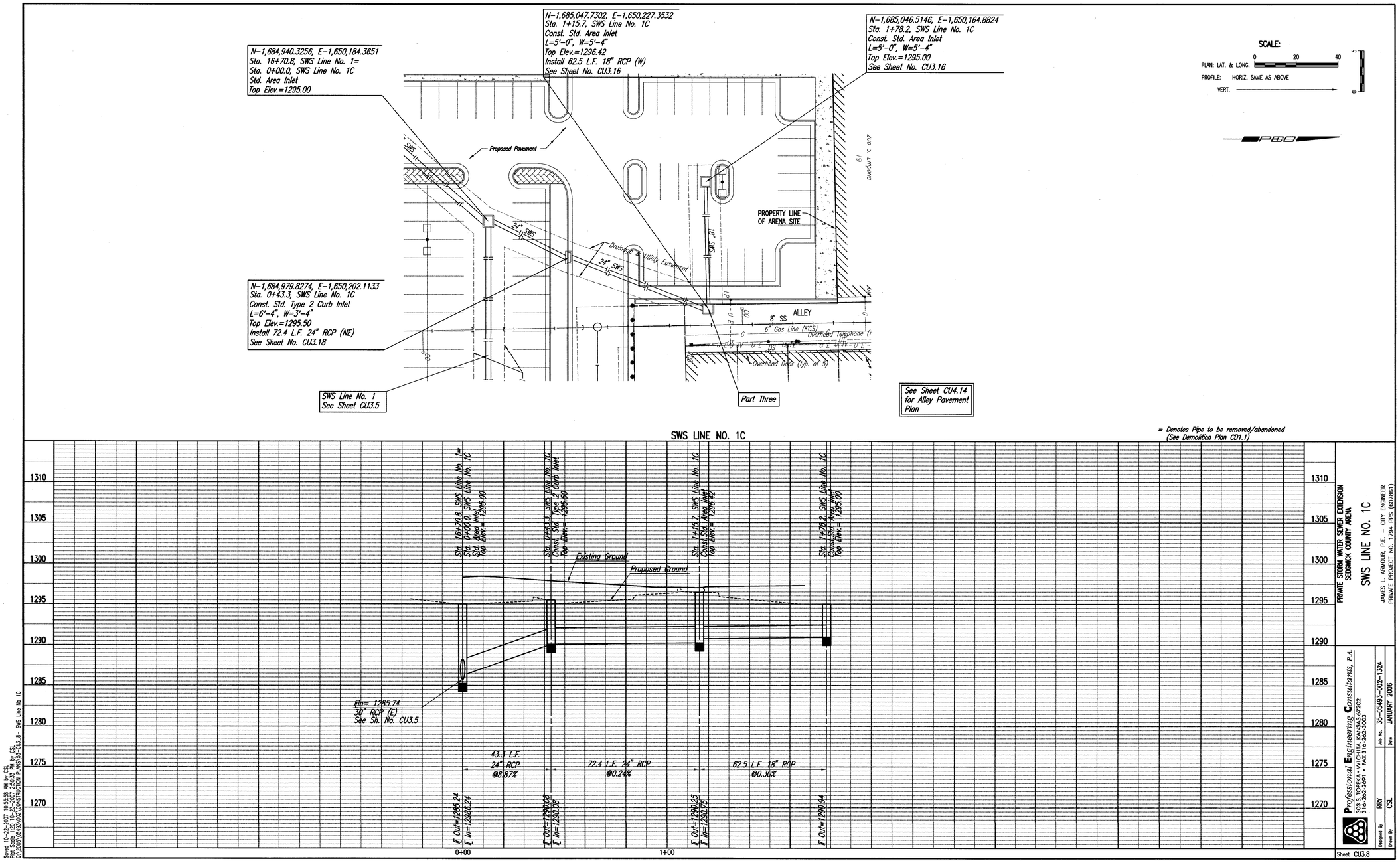

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ROD R. YOUNG
LICENSED
11486
KANSAS
PROFESSIONAL ENGINEER
10/26/07

arenadesign
CONSORTIUM

WILSON DARNELL MANN ARCHITECTS
ARCHITECT OF RECORD
105 N. Washington
Wichita, KS 67202

McCLUGGAGE VANSICKLE AND PERRY
ASSOCIATE ARCHITECT

GOSSEN LIVINGSTON ASSOCIATES, INC
ASSOCIATE ARCHITECT

HOK SPORT
DESIGN ARCHITECT

WALTER P. MOORE
STRUCTURAL ENGINEER

PROFESSIONAL ENGINEERING
CONSULTANTS
MECH/ELECT/PLUMBING ENGINEER

ME ENGINEERS
ASSOCIATE MECH/ELECT/PLUMBING
ENGINEER

WRIGHTSON, JOHNSON, HADDON &
WILLIAMS, INC.
AUDIO VISUAL CONSULTANT

BIGELOW
FOOD SERVICE CONSULTANT

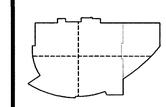
SEDGWICK COUNTY ARENA

500 E. WATERMAN, WICHITA, KS 67202

FOR CONSTRUCTION
OCTOBER 26, 2007

PACKAGE
REVISIONS

NO.	DATE	DESCRIPTION



KEYPLAN

PROJECT NO.	ISSUED BY:
05220	PEC
DRAWN BY:	REVIEWED BY:
CSL	RRY

ISSUE DATE: 10-26-2007

SHEET TITLE:

STORM WATER SEWER LINE NO. 1C

CU3.8

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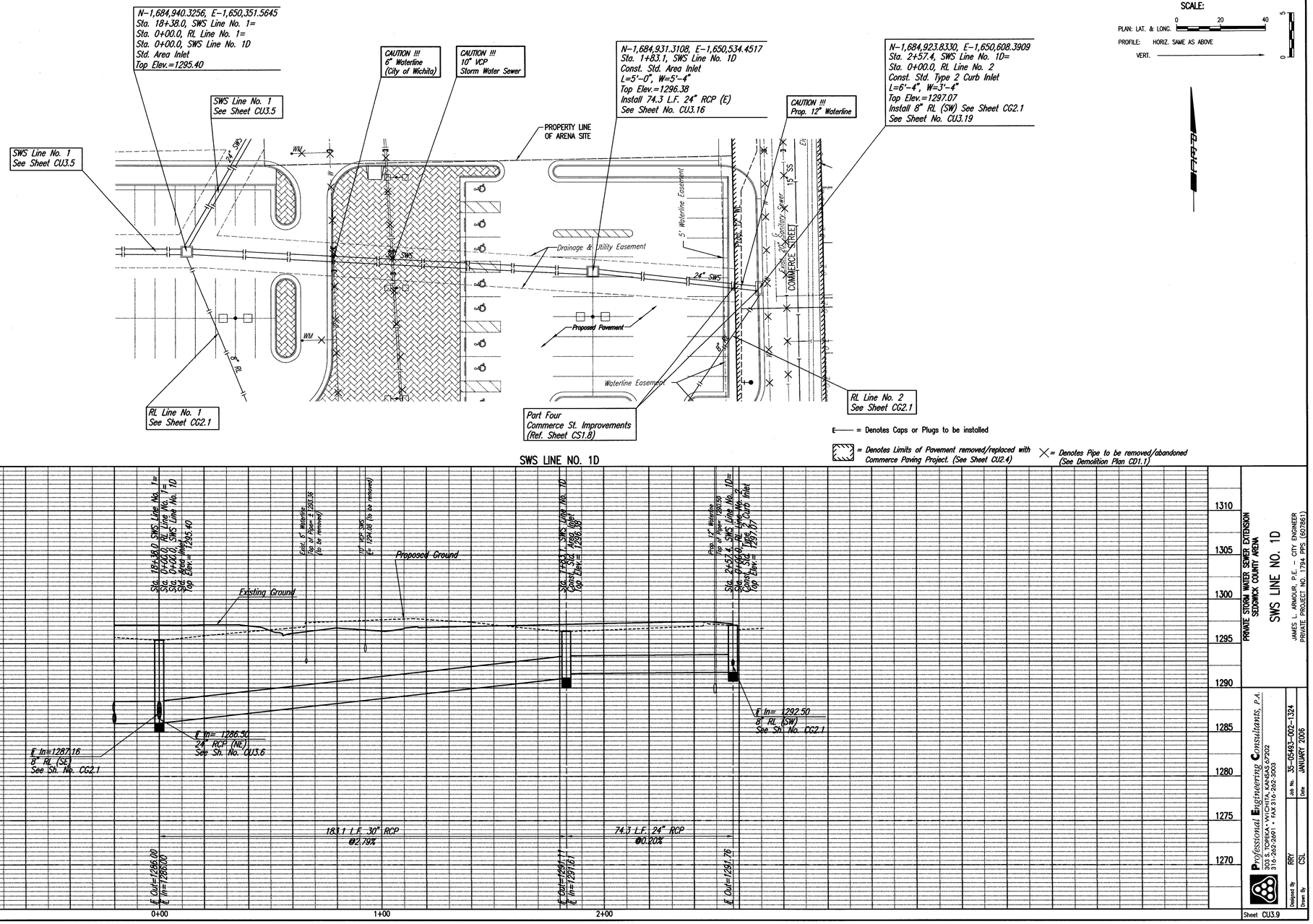

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ROD R. YOUNG LICENSED 11485 KANSAS PROFESSIONAL ENGINEER 10/26/07

arenadesign CONSORTIUM

WILSON DARNELL MANN ARCHITECTS ARCHITECT OF RECORD 105 N. Washington Wichita, KS 67202	HOK SPORT DESIGN ARCHITECT
MCCLURE ENGINEERING ASSOCIATE ARCHITECT	WALTER P. MOORE STRUCTURAL ENGINEER
GOSSEN LIVINGSTON ASSOCIATES, INC ASSOCIATE ARCHITECT	PROFESSIONAL ENGINEERING CONSULTANTS MECH/ELECT/PLUMBING ENGINEER
ME ENGINEERS ASSOCIATE MECH/ELECT/PLUMBING ENGINEER	
WRIGHTSON, JOHNSON, HADDON & WILLIAMS, INC. AUDIO VISUAL CONSULTANT	
BIGELOW FOOD SERVICE CONSULTANT	

SEDGWICK COUNTY ARENA

500 E. WATERMAN, WICHITA, KS 67202

FOR CONSTRUCTION
OCTOBER 26, 2007

PACKAGE

REVISIONS

NO.	DATE	DESCRIPTION

KEYPLAN

PROJECT NO. 05220	ISSUED BY: PEC
DRAWN BY: CSL	REVIEWED BY: RRY
ISSUE DATE:	10-26-2007

SHEET TITLE:

STORM WATER SEWER LINE NO. 1D

CU3.9

PRIVATE STORM WATER SEWER EXTENSION
SEDGWICK COUNTY ARENA

SWS LINE NO. 1D

JAMES L. ARMOUR, P.E. – CITY ENGINEER
PRIVATE PROJECT NO. 17934 #PS (607851)

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

Designed By: RRY
Drawn By: CSL
Job No. 35-05483-002-1324
Date: JANUARY 2006

Sheet CU3.9

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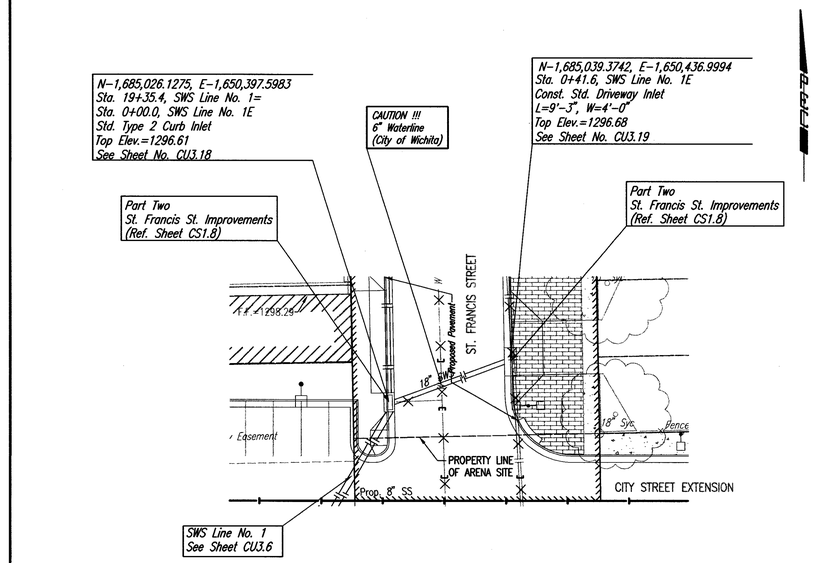
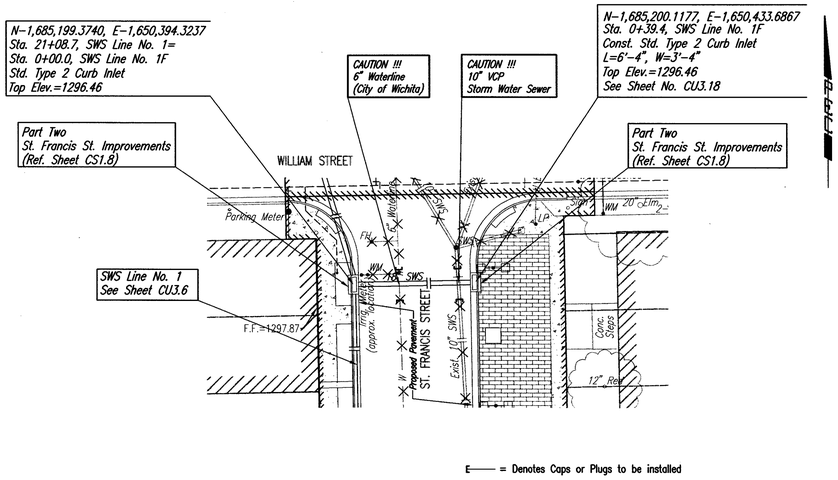




SCALE:

PLAN: LAT. & LONG. 0 20 40

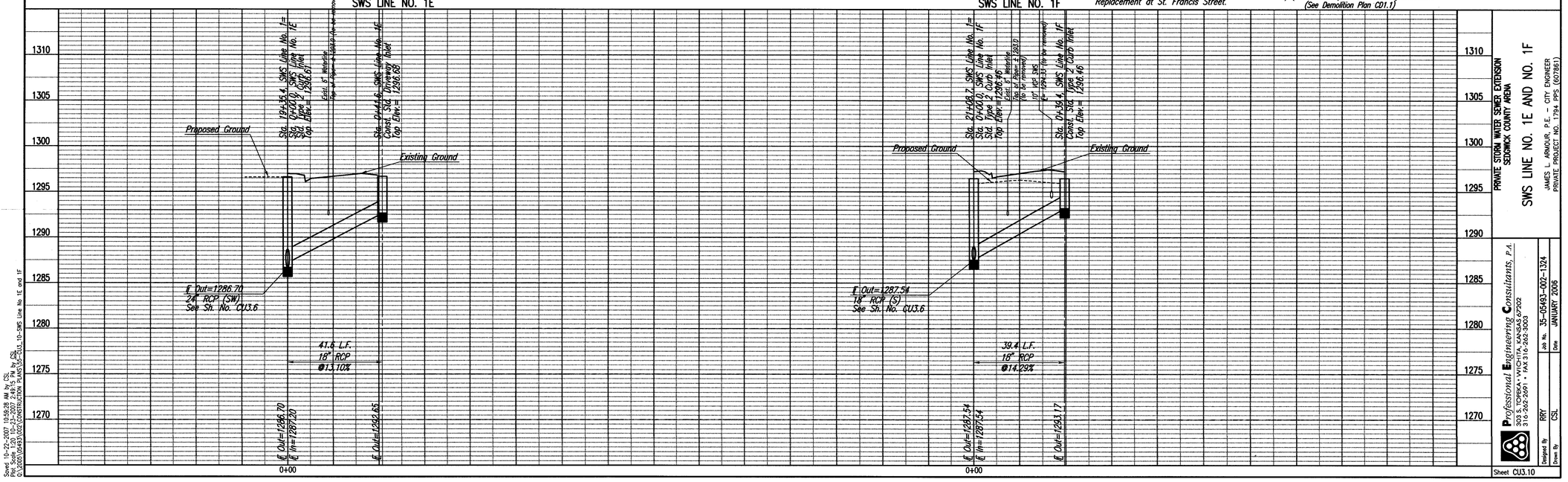
PROFILE: HORIZ. SAME AS ABOVE

VERT. 0 5

E—— = Denotes Caps or Plugs to be installed

= Denotes Limits of Pavement removed/replaced See Sheet CU2.5 for Pavement Removal and Replacement at St. Francis Street.

×= Denotes Pipe to be removed/abandoned (See Demolition Plan CD1.1)



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PRIVATE STORM WATER SEWER EXTENSION
SEDGWICK COUNTY ARENA

SWS LINE NO. 1E AND NO. 1F

JAMES L. ARMOUR, P.E. - CITY ENGINEER
PRIVATE PROJECT NO. 1794 PPS (607861)

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

Designed By: RRY
Drawn By: CSL
Job No. 35-05493-002-1324
Date: JANUARY 2006

Sheet CU3.10

ROD R. YOUNG LICENSED 11485 PROFESSIONAL ENGINEER 10-26-07

arenadesign CONSORTIUM

WILSON DARNELL MANN ARCHITECTS ARCHITECT OF RECORD 105 N. Washington Wichita, KS 67202	HOK SPORT DESIGN ARCHITECT
McCLUGGAGE VANSICKLE AND PERRY ASSOCIATE ARCHITECT	WALTER P. MOORE STRUCTURAL ENGINEER
GOSSEN LIVINGSTON ASSOCIATES, INC. ASSOCIATE ARCHITECT	PROFESSIONAL ENGINEERING CONSULTANTS
MECHELECT PLUMBING ENGINEER	FOOD SERVICE CONSULTANT

ME ENGINEERS
ASSOCIATE MECH/ELECT/PLUMBING ENGINEER
KIRKHAM, JOHNSON, HADDON & WILLIAMS, INC.
AUDIO VISUAL CONSULTANT
BIGELOW

SEDGWICK COUNTY ARENA

500 E. WATERMAN, WICHITA, KS 67202

FOR CONSTRUCTION
OCTOBER 26, 2007

PACKAGE

REVISIONS

NO.	DATE	DESCRIPTION

KEYPLAN

PROJECT NO. 05220	ISSUED BY: PEC
DRAWN BY: CSL	REVIEWED BY: RRY
ISSUE DATE:	10-26-2007

SHEET TITLE:

STORM WATER SEWER LINE NO. 1E AND NO. 1F

CU3.10

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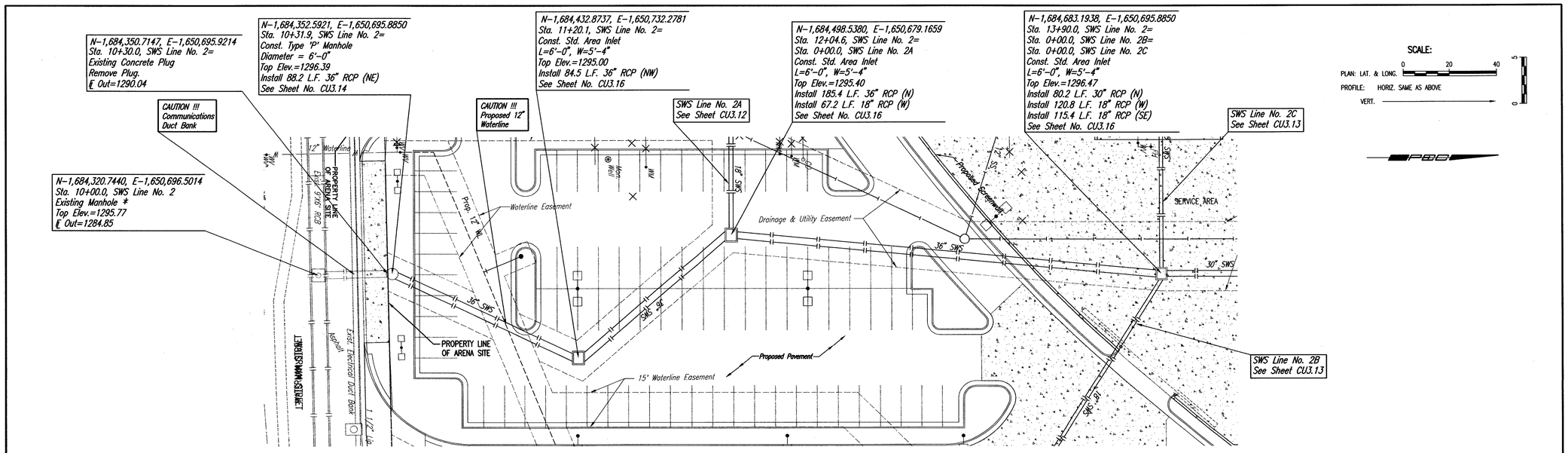
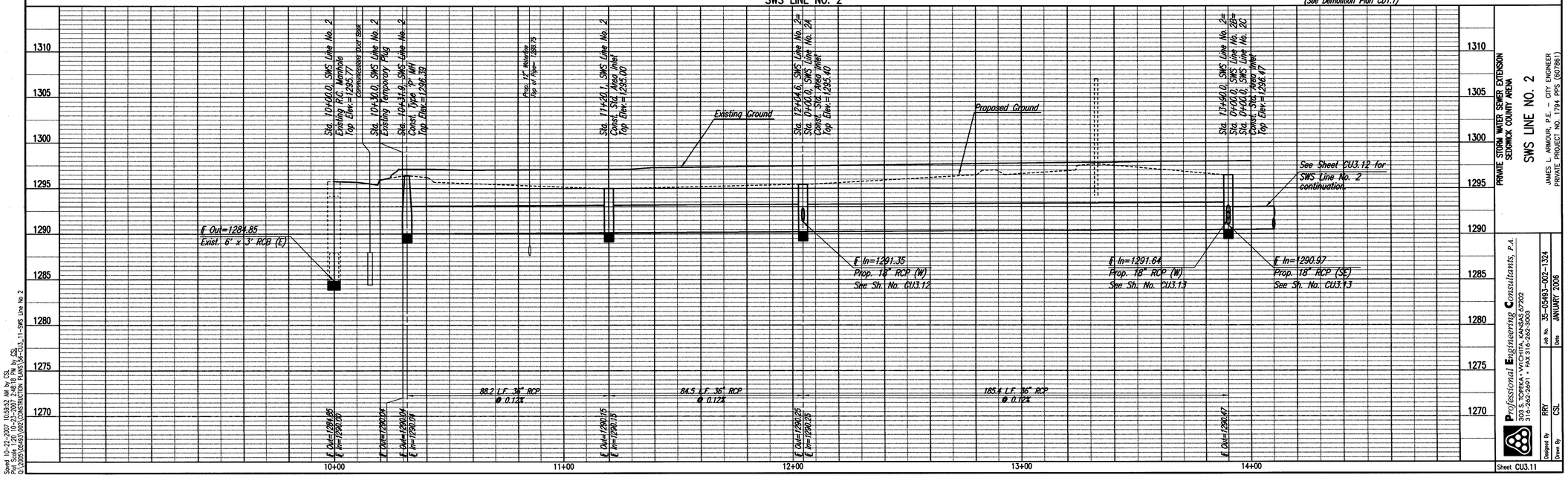


* PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE THE EXISTING 36" RCP AT STATION 10+30.0 TO VERIFY ITS HORIZONTAL AND VERTICAL LOCATION. THE PIPE LOCATION SHALL BE REPORTED TO THE ENGINEER SO THAT ANY NECESSARY PLAN MODIFICATIONS CAN BE MADE. ANY ADDITIONAL LABOR OR MATERIALS NECESSARY TO COMPLETE THE CONNECTION SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT.

PLAN — CHECKED / CHECKED — BY — DATE

SWS LINE NO. 2

× = Denotes Pipe to be removed/abandoned (See Demolition Plan CD1.1)



PROFILE — CHECKED / CHECKED — BY — DATE

PRIVATE STORM WATER SEWER EXTENSION
SEDGWICK COUNTY ARENA
SWS LINE NO. 2
JAMES L. ARMOUR, P.E. – CITY ENGINEER
PRIVATE PROJECT NO. 1794, PPS. (6078S1)

Professional Engineering Consultants, P.A.
303 S. TOPEKA • WICHITA, KANSAS 67202 • 316-262-2691 • FAX 316-262-3003
Designed By: RRY | Job No. 35-05493-002-1324
Drawn By: CSL | Date: JANUARY 2006

Sheet CU3.11

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ROD R. YOUNG LICENSED 11485 KANSAS PROFESSIONAL ENGINEER 10-26-07

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WILSON DARNELL MANN ARCHITECTS ARCHITECT OF RECORD 105 N. Washington Wichita, KS 67202	HOK SPORT DESIGN ARCHITECT
MCKISSACK & MCKISSACK ASSOCIATE ARCHITECT	WALTER P. MOORE STRUCTURAL ENGINEER
GOSSEN LIVINGSTON ASSOCIATES, INC ASSOCIATE ARCHITECT	PROFESSIONAL ENGINEERING CONSULTANTS MECHELECT/PLUMBING ENGINEER
	ME ENGINEERS ASSOCIATE MECHELECT/PLUMBING ENGINEER
	WRIGHTSON, JOHNSON, HADDON & WILLIAMS, INC.
	AUDIO VISUAL CONSULTANT BIGELOW
	FOOD SERVICE CONSULTANT

SEDGWICK COUNTY ARENA

500 E. WATERMAN, WICHITA, KS 67202

FOR CONSTRUCTION
OCTOBER 26, 2007

PACKAGE

REVISIONS

NO.	DATE	DESCRIPTION

KEYPLAN

PROJECT NO. 06220	ISSUED BY: PEC
DRAWN BY: CSL	REVIEWED BY: RRY
ISSUE DATE:	10-26-2007

SHEET TITLE:

STORM WATER SEWER LINE NO. 2

CU3.11

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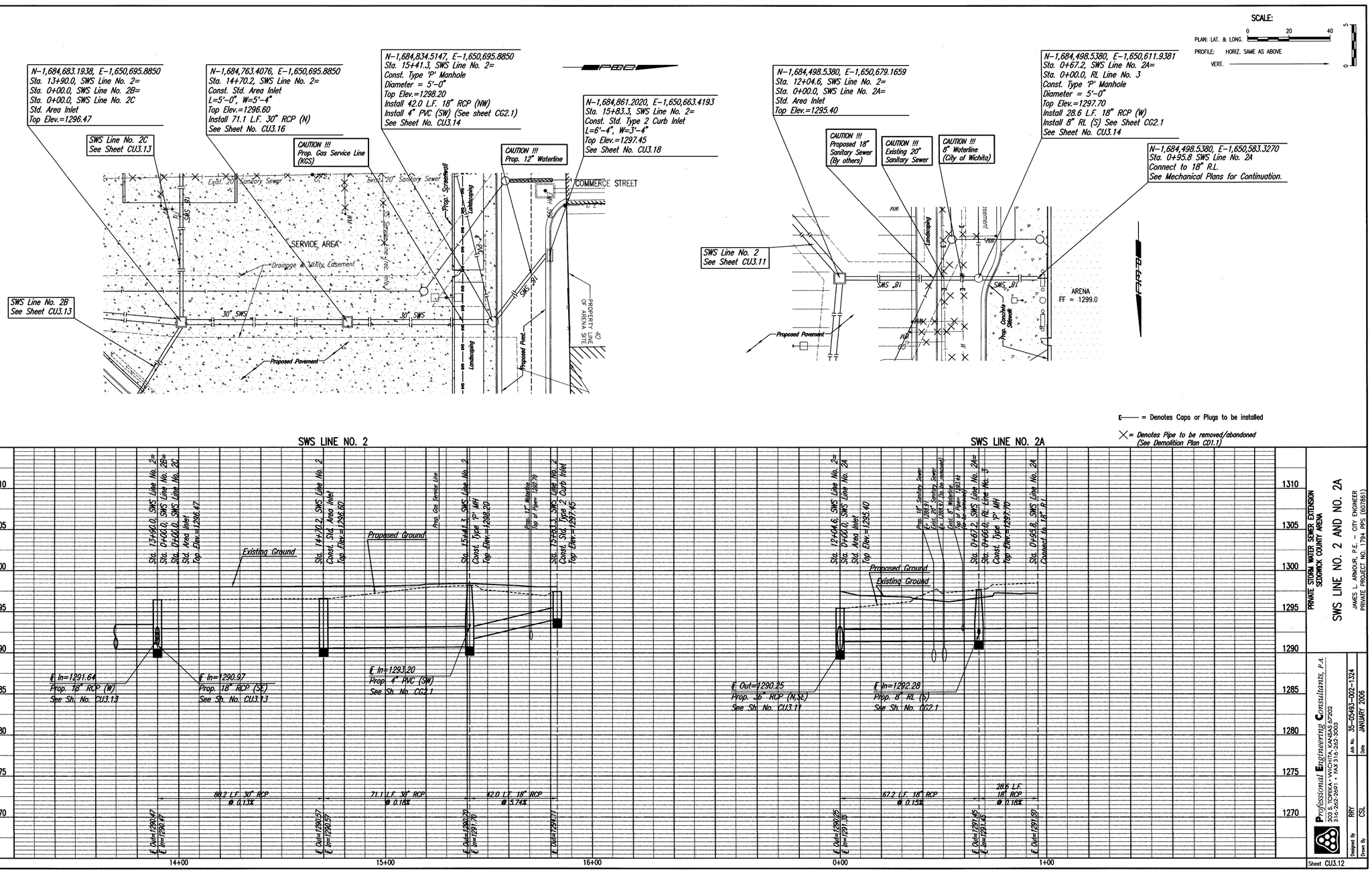

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ROD R. YOUNG — LICENSED — 11485 — KANSAS — PROFESSIONAL ENGINEER — 10-22-07

arenadesign CONSORTIUM

WILSON DARNELL MANN ARCHITECTS	MJK SPORT
ARCHITECT OF RECORD	DESIGN ARCHITECT
105 N. Washington	
Wichita, KS 67202	WALTER P. MOORE
	STRUCTURAL ENGINEER
MACKEY MITCHELL HENDRICKSON & PERRY	
ASSOCIATE ARCHITECT	PROFESSIONAL ENGINEERING
GOSSEN LIVINGSTON ASSOCIATES, INC	CONSULTANTS
ASSOCIATE ARCHITECT	MECHELECT/PLUMBING ENGINEER

ME ENGINEERS — ASSOCIATE MECHELECT/PLUMBING ENGINEER
WRIGHTSON, JOHNSON, HADDON & WILLIAMS, INC. — AUDIO VISUAL CONSULTANT
BIGELOW — FOOD SERVICE CONSULTANT

SEDGWICK COUNTY ARENA

500 E. WATERMAN , WICHITA, KS 67202

FOR CONSTRUCTION
OCTOBER 26, 2007

PACKAGE
REVISIONS

NO.	DATE	DESCRIPTION

KEYPLAN

PROJECT NO. 05220	ISSUED BY: PEC
DRAWN BY: CSL	REVIEWED BY: RRY
ISSUE DATE: 10-26-2007	

SHEET TITLE:

STORM WATER SEWER LINE NO. 2 AND NO. 2A

CU3.12

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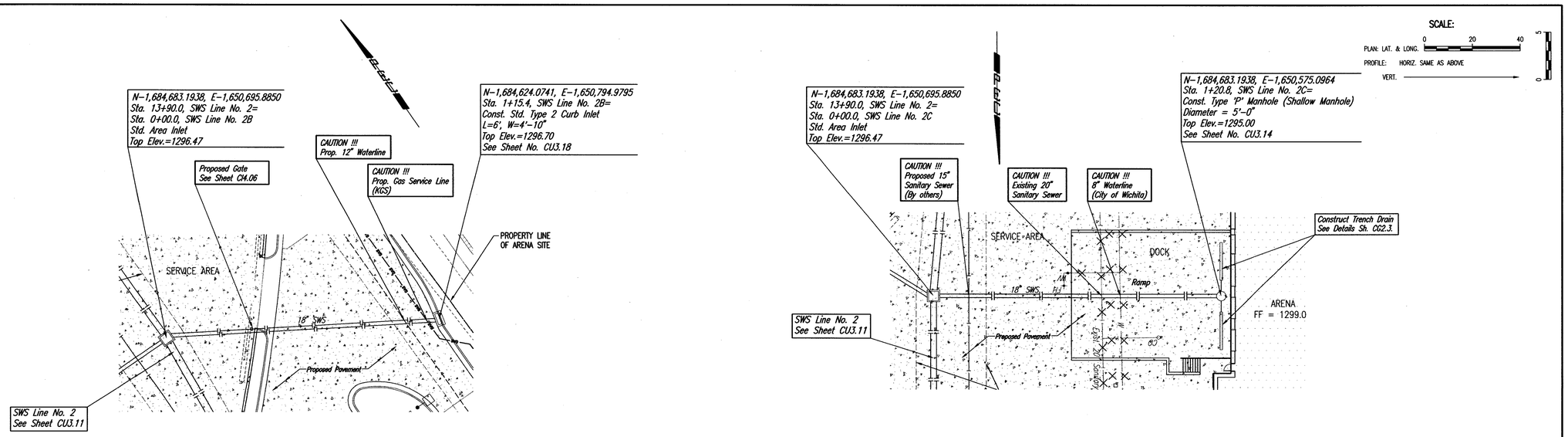

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PROFILE — CHECKED — CHECKED — BY — DATE

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ROD R. YOUNG LICENSED 11495 KANSAS PROFESSIONAL ENGINEER

arenadesign CONSORTIUM

WILSON DARNELL MANN ARCHITECTS ARCHITECT OF RECORD 105 N. Washington Wichita, KS 67202	HOK SPORT ARCHITECT
McCLURG&CHANCELLOR AND PERRY ASSOCIATE ARCHITECT	MECHANICAL & MAYONE STRUCTURAL ENGINEER
GOSSEN LIVINGSTON ASSOCIATES, INC ASSOCIATE ARCHITECT	PROFESSIONAL ENGINEERING CONSULTANTS MECH/ELECT/PLUMBING ENGINEER
ME ENGINEERS MECH/ELECT/PLUMBING ENGINEER	
WRIGHTSON, JOHNSON, HADDON & WILLIAMS, INC. ARCHITECTURAL CONSULTANT	
BIGELOW FOOD SERVICE CONSULTANT	

SEDGWICK COUNTY ARENA

500 E. WATERMAN, WICHITA, KS 67202

FOR CONSTRUCTION
OCTOBER 26, 2007

PACKAGE

REVISIONS

NO.	DATE	DESCRIPTION

KEYPLAN

PROJECT NO. 05220	ISSUED BY: PEC
DRAWN BY: CSL	REVIEWED BY: RRY
ISSUE DATE: 10-26-2007	

SHEET TITLE:

STORM WATER SEWER LINE NO. 2B AND NO. 2C

CU3.13

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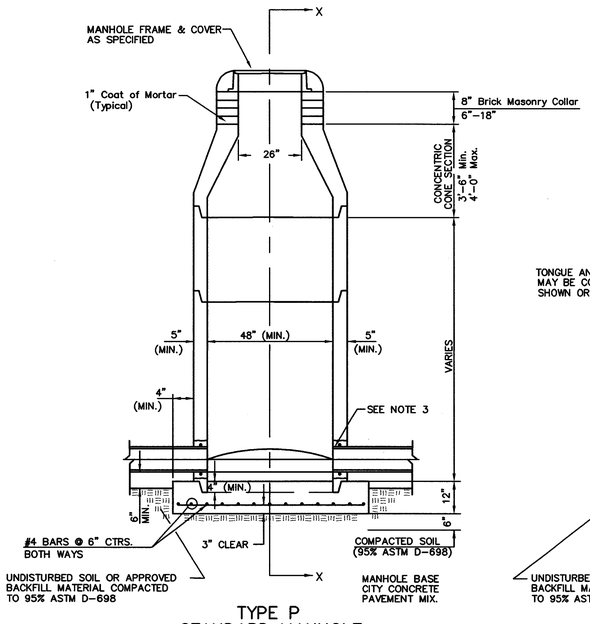
SEWER APPURTENANCES DETAILS



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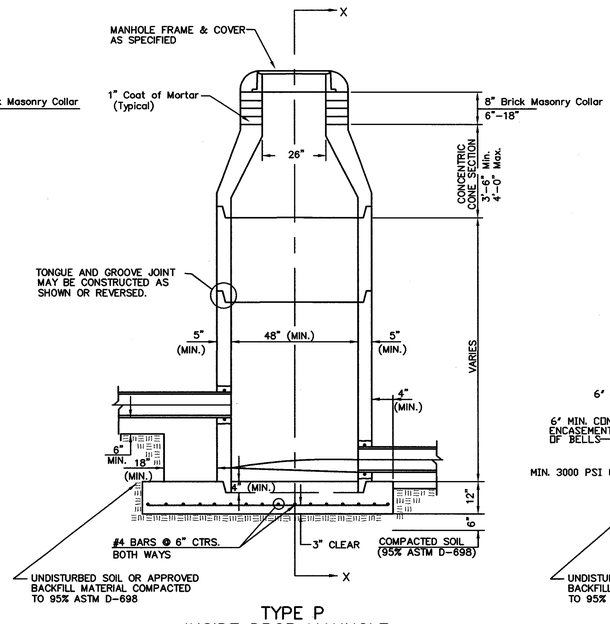
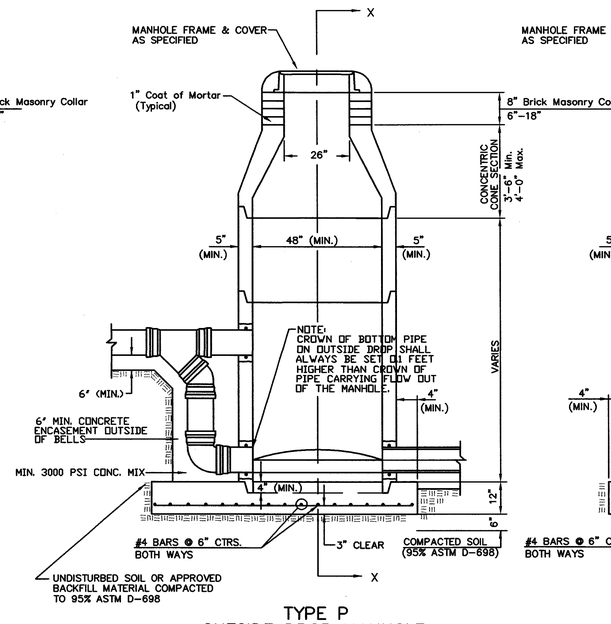
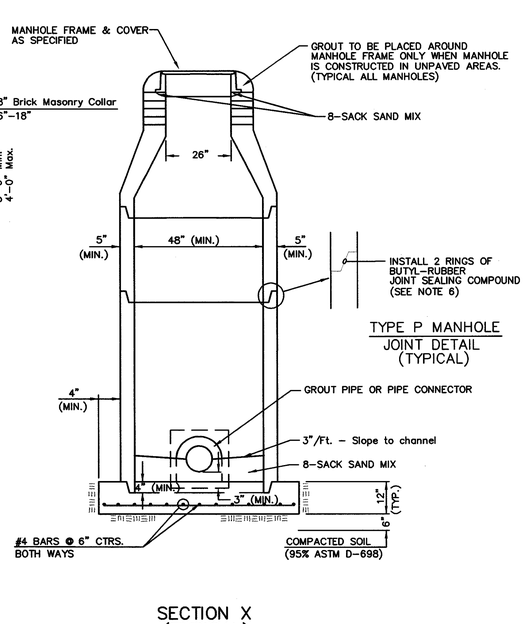


TYPE P
INSIDE DROP MANHOLE



TYPE P
OUTSIDE DROP MANHOLE



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 INEMEC 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 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.
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.

THE CITY OF WICHITA

CITY ENGINEER'S OFFICE
CITY HALL – SEVENTH FLOOR
455 NORTH MAIN STREET
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(316) 268-4422
(316) 268-4114 FAX

STANDARD TYPE 'P' MANHOLES

JAMES L. ARMOUR, P.E. – CITY ENGINEER

PROJECT NUMBER	OCA NO.
1794 PPS	(607861)
DATE: MAR 96	SHEET CU3.14

Saved: 10-19-2007 11:28:44 AM by PSL
Plot Scale: 1:1 10-23-2007 2:31:19 PM by PSL
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WILSON DARNELL MANN ARCHITECTS — ARCHITECT OF RECORD — 105 N. Washington, Wichita, KS 67202
McCLUGGAGE VANSICKLE AND PERRY — ASSOCIATE ARCHITECT
GOSSEN LIVINGSTON ASSOCIATES, INC. — ASSOCIATE ARCHITECT
HOK SPORT — DESIGN ARCHITECT
WALTER P. MOORE — STRUCTURAL ENGINEER
PROFESSIONAL ENGINEERING CONSULTANTS — MECHELECT/PLUMBING ENGINEER
ME ENGINEERS — ASSOCIATE MECHELECT/PLUMBING ENGINEER
WORDWRIGHT, JOHNSON, HADDON & WILLIAMS, INC. — STRUCTURAL ENGINEER
AUDIO VISUAL CONSULTANT — BRIELOW — FOOD SERVICE CONSULTANT

SEDGWICK COUNTY ARENA

500 E. WATERMAN , WICHITA, KS 67202

FOR CONSTRUCTION
OCTOBER 26, 2007

PACKAGE

REVISIONS

NO.	DATE	DESCRIPTION

KEYPLAN

PROJECT NO. 05220	ISSUED BY: PEC
DRAWN BY:	REVIEWED BY: RRY

ISSUE DATE: 10-26-2007

SHEET TITLE:

TYPE P MANHOLE DETAILS

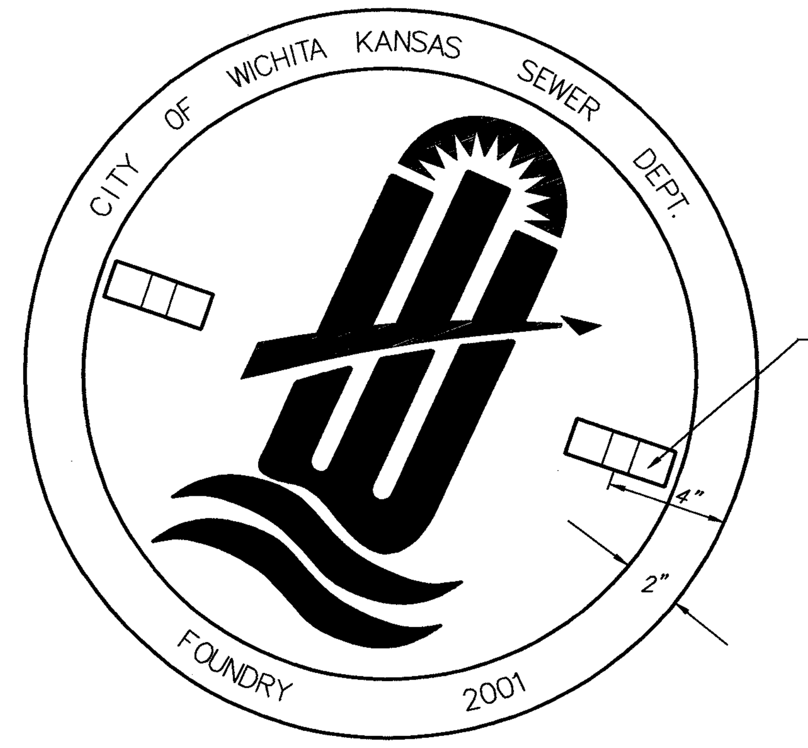
CU3.14

Professional Engineering Consultants, P.A.
303 S. TOPEKA • WICHITA, KANSAS 67202 • 316-262-2691 • FAX 316-262-3003
www.pec1.com

MANHOLE FRAME AND COVER DETAIL

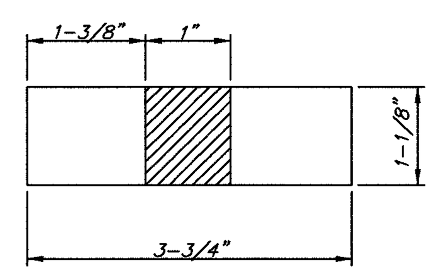
ADOPTED AS STANDARD DESIGN BY
CITY OF WICHITA, KANSAS

MANHOLE COVER
Weight = 180 Lbs.

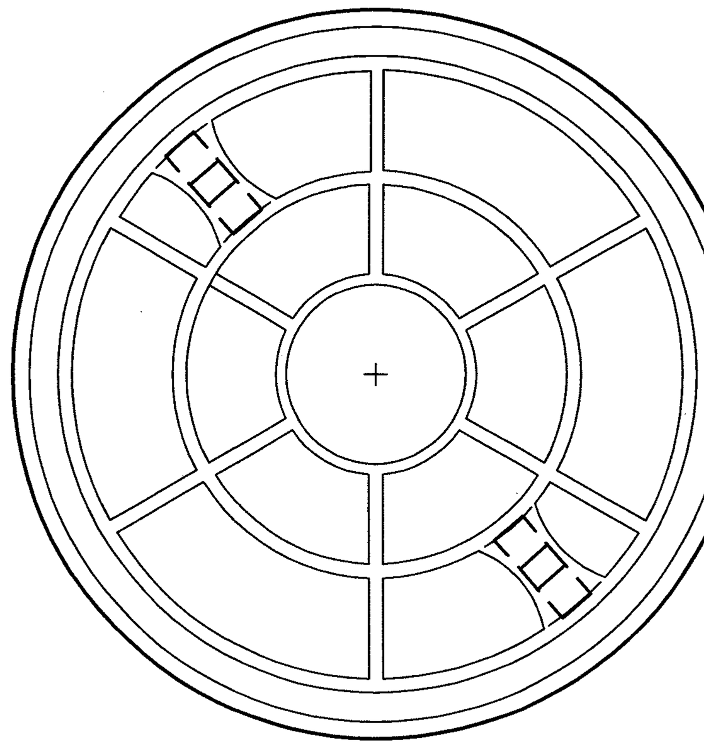


TOP VIEW

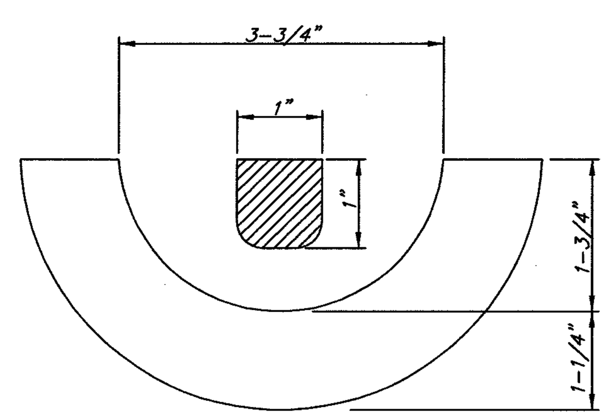
PICKHOLE DETAIL



TOP VIEW

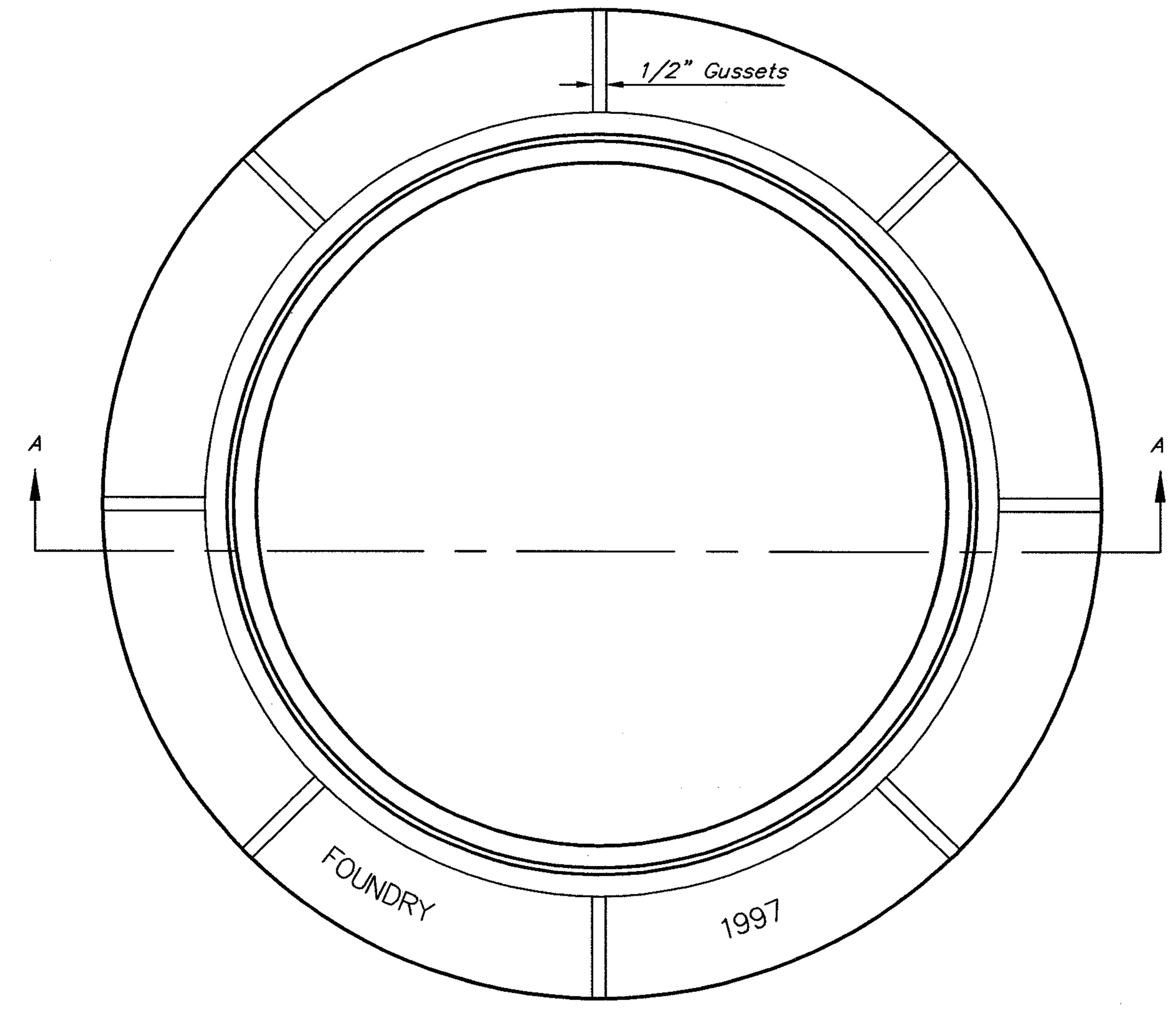


BOTTOM VIEW

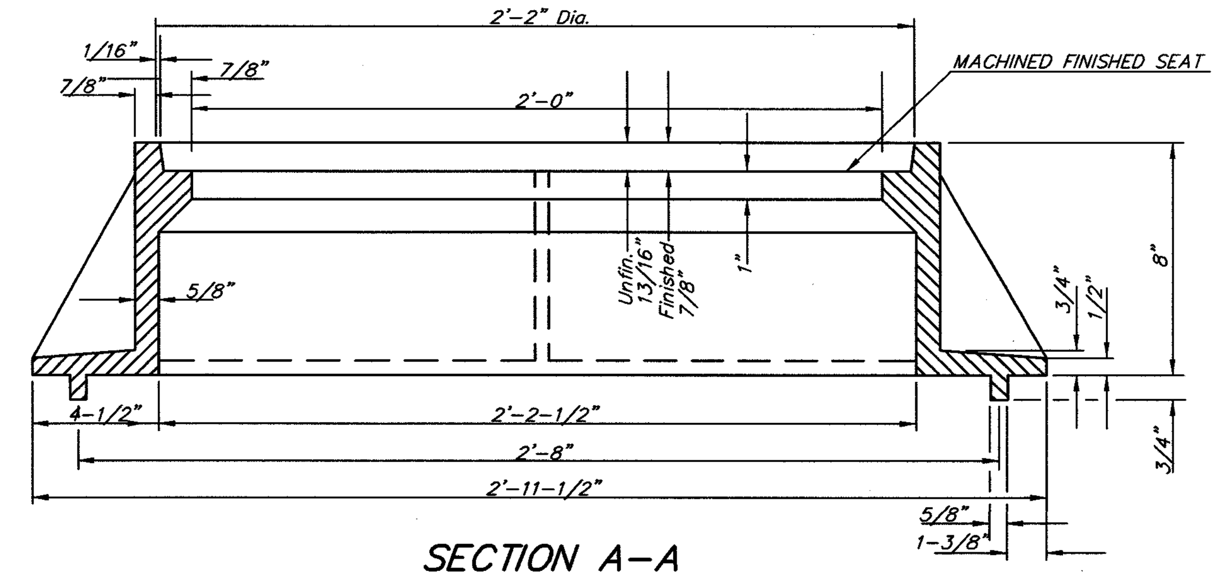


SECTION VIEW

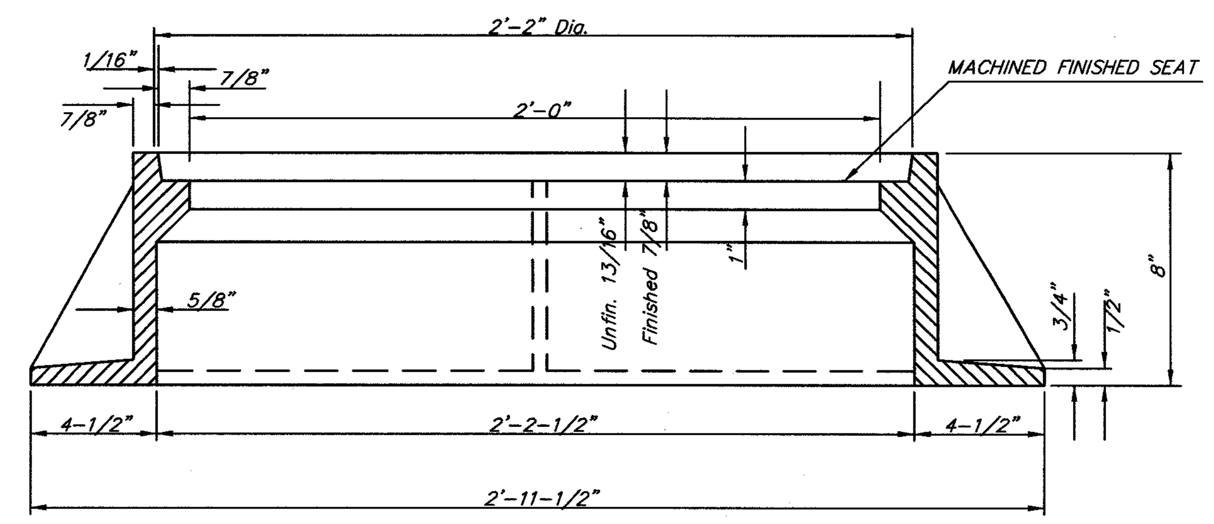
MANHOLE FRAME
Weight = 240 Lbs.



TOP VIEW



SECTION A–A
MUD RING



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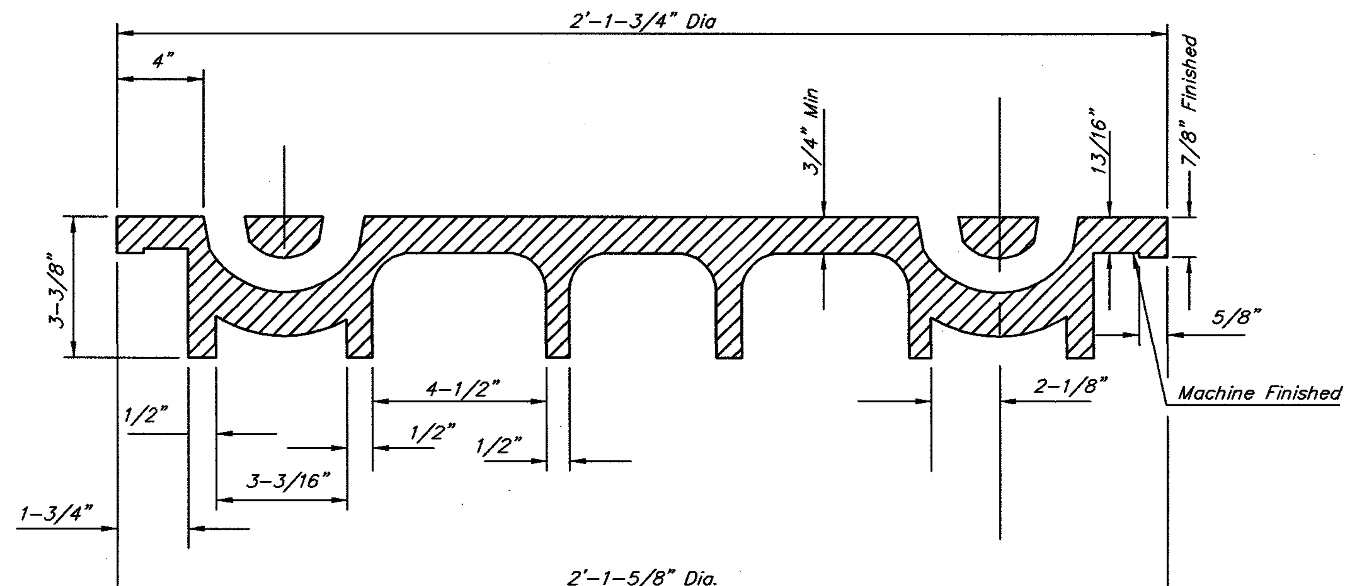

SECTION VIEW

GENERAL NOTES

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

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

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

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

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

THE CITY OF WICHITA

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(316) 268–4501
(316) 268–4114 FAX

MANHOLE FRAME AND COVER

JAMES L. ARMOUR, P.E. – CITY ENGINEER

PROJECT NUMBER	OCA NO.
1794 PPS	(607861)

DATE	
MAR 96	SHEET CU3.15

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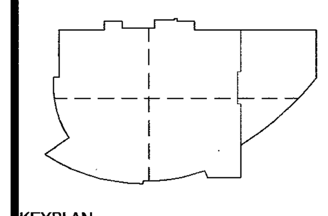
SEDGWICK COUNTY ARENA
500 E. WATERMAN, WICHITA, KS 67202

FOR CONSTRUCTION
OCTOBER 26, 2007

PACKAGE

REVISIONS

NO.	DATE	DESCRIPTION



KEYPLAN

PROJECT NO. 05220	ISSUED BY: PEC
DRAWN BY:	REVIEWED BY: RRY

ISSUE DATE: 10-26-2007

SHEET TITLE:

MANHOLE FRAME AND COVER DETAILS

CU3.15

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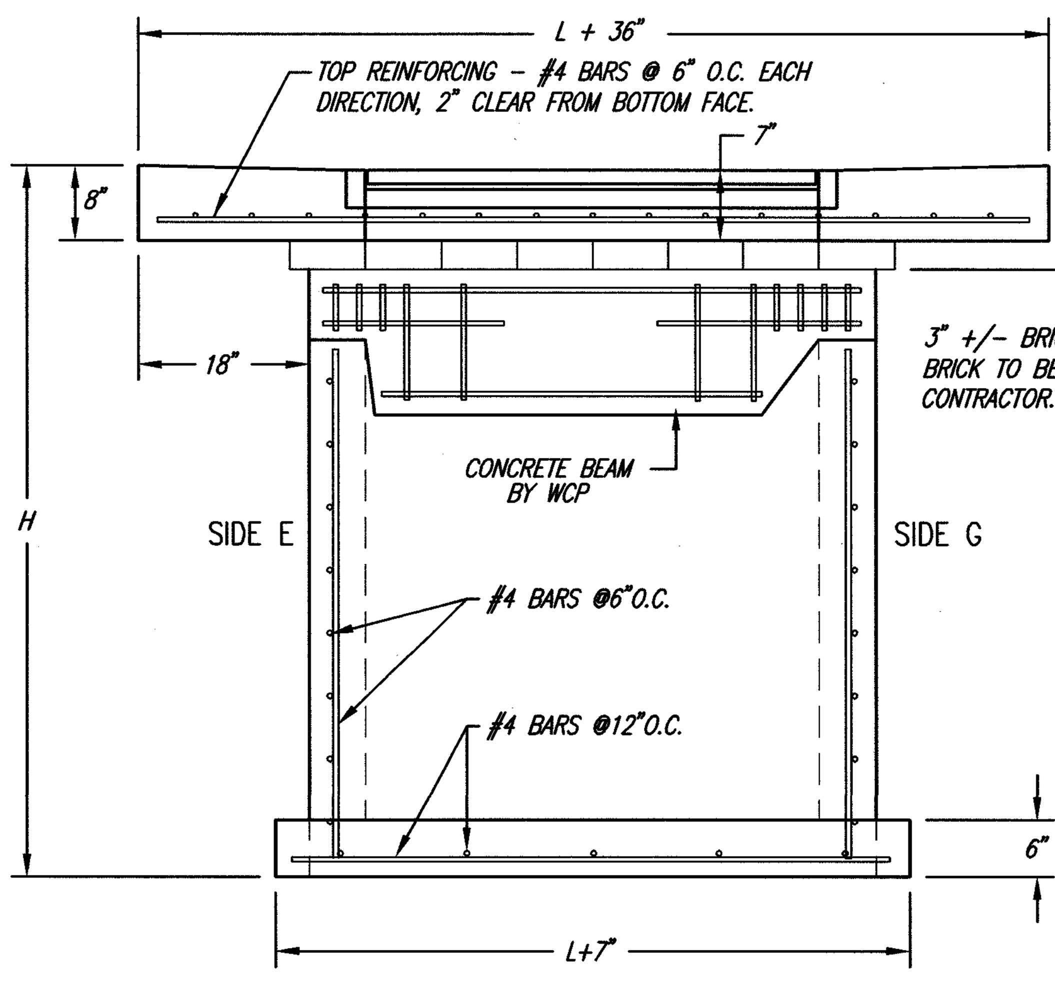

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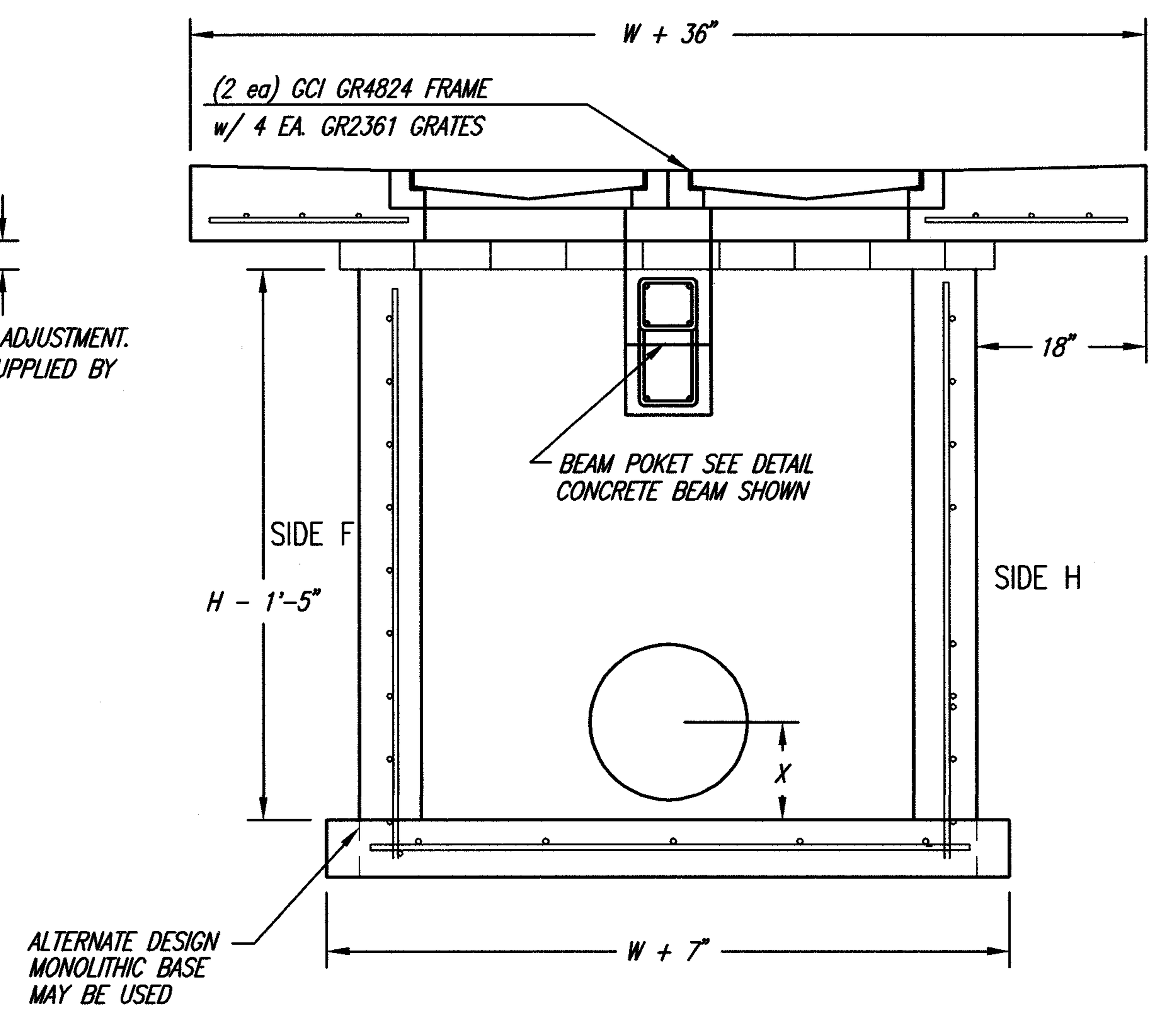

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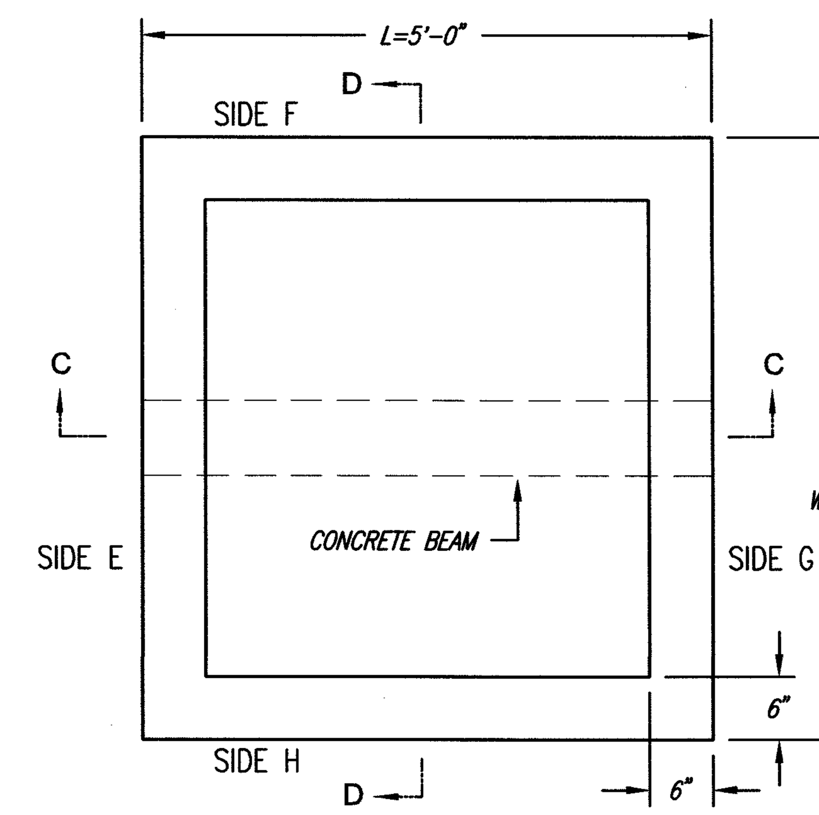
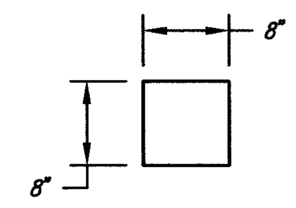
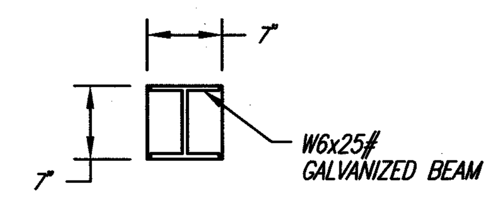


TOP VIEW



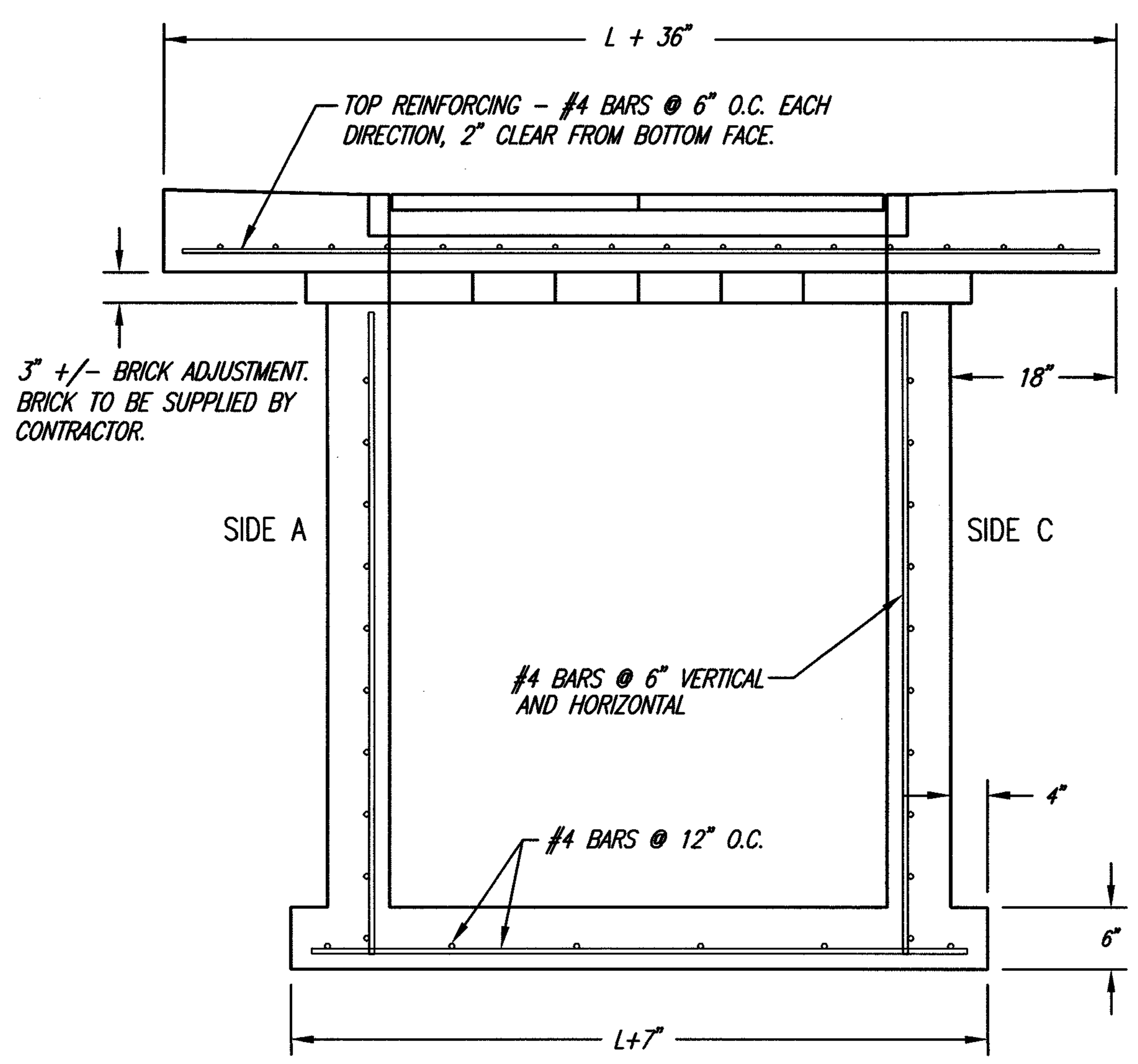
CONCRETE BEAM POCKET



GALV. STEEL BEAM POCKET

DBL. DOUBLE DROP INLET WITH BEAM
CONCRETE/STEEL BEAM (W6x25# GALVANIZED STEEL)
REQUIRED FOR THIS INLET

AREA DRAIN AND PIPE SCHEDULE					
Line No.	Station	Inlet Dimensions		Outfall Pipe Dia. (In.)	Inlet Pipe Dia. (In.)
		W (Ft.)	L (Ft.)		
1	15+86.3	5'-4"	6'-0"	36"	36"
1	16+70.8	5'-4"	6'-0"	36"	24", 30"
1	18+38.0	5'-4"	5'-0"	30"	8", 24", 30"
1C	1+15.7	5'-4"	5'-0"	24"	18"
1C	1+69.9	5'-4"	5'-0"	18"	–
1D	1+83.1	5'-4"	5'-0"	30"	24"
2	11+20.1	5'-4"	6'-0"	36"	36"
2	12+04.6	5'-4"	6'-0"	36"	36", 18"
2	13+90.0	5'-4"	6'-0"	36"	30", 18"
2	14+70.2	5'-4"	5'-0"	30"	30"



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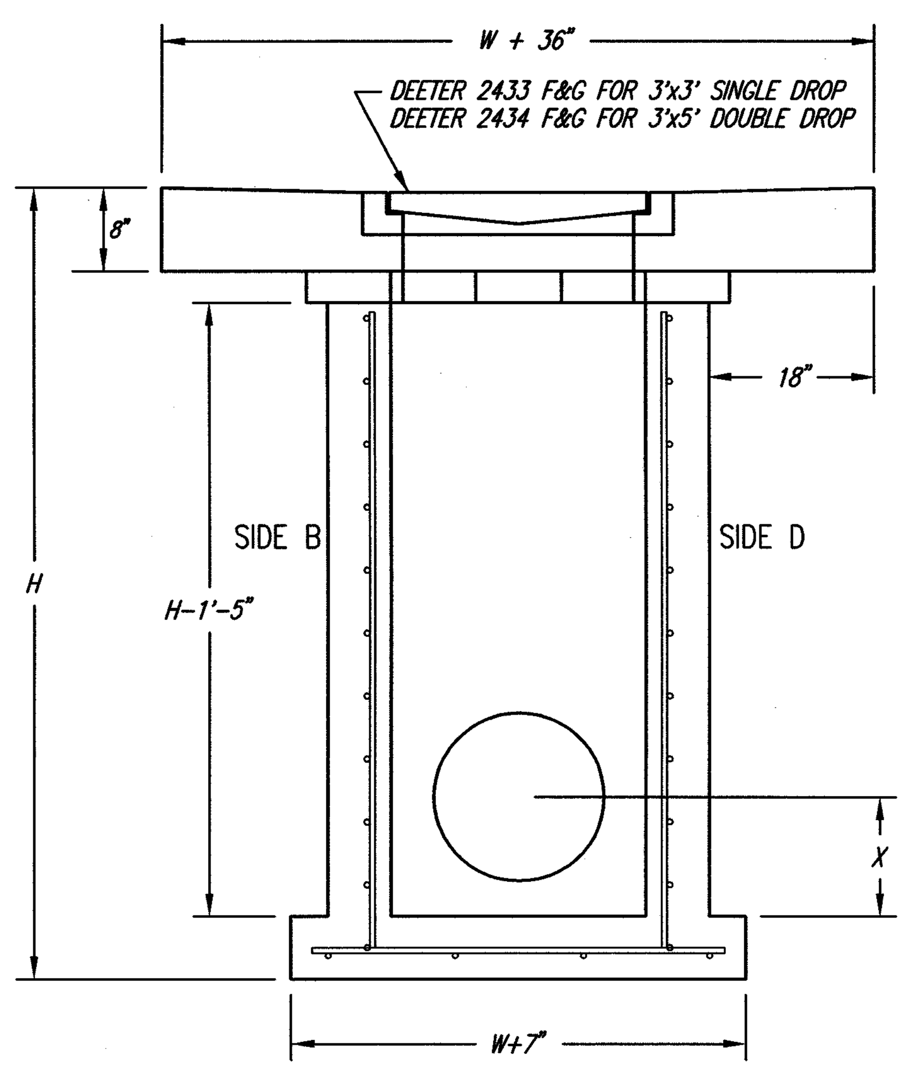

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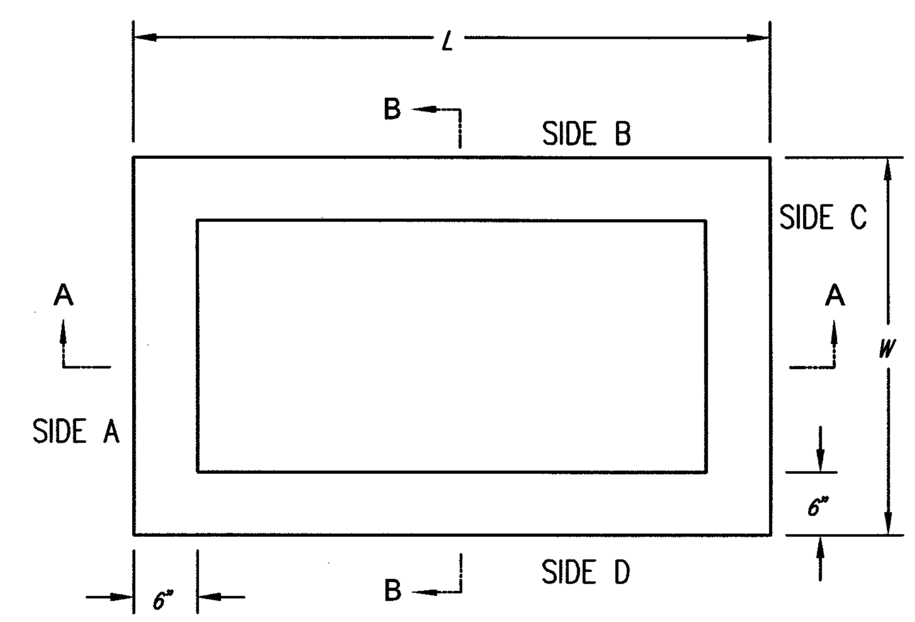

TOP VIEW

DOUBLE DROP & SINGLE DROP INLETS
SINGLE DROP = 3' x 3' OUTSIDE
DOUBLE DROP = 3' x 5' OUTSIDE

WICHITA CONCRETE PIPE COMPANY
221 W. 37th St. North, Wichita,KS. 67204 (316)-838-8651

No.	Revision	By	Date

PRIVATE STORM WATER SEWER EXTENSION
SEDGWICK COUNTY ARENA

STANDARD AREA INLET DETAILS

JAMES L. ARMOUR, P.E. – CITY ENGINEER
PRIVATE PROJECT NO. 1794 PPS (607861)

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

Designed by	MDK	Job No. 35-05493-002-1324		Sht. CU3.16
Drawn by	CSL, JAN	Date	JANUARY 2006	

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SEDGWICK COUNTY ARENA
500 E. WATERMAN, WICHITA, KS 67202

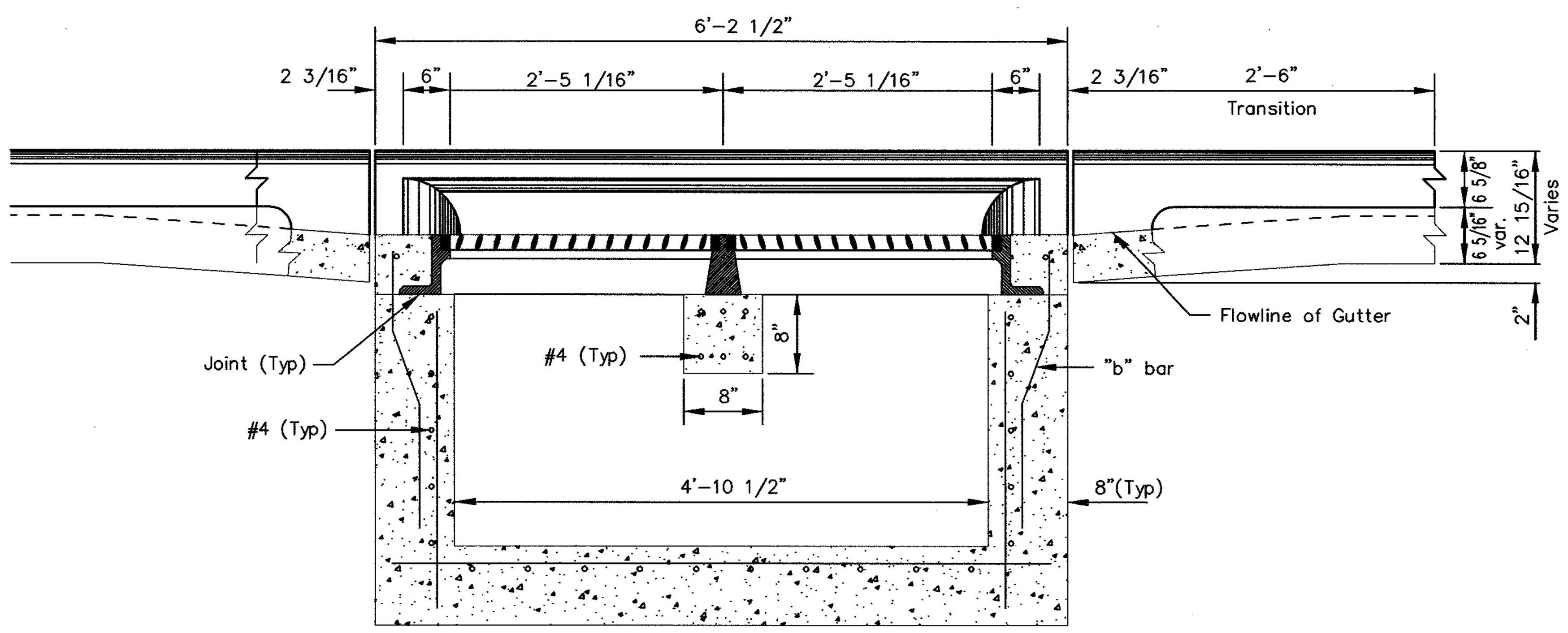
FOR CONSTRUCTION
OCTOBER 26, 2007

PACKAGE
REVISIONS
NO. DATE DESCRIPTION

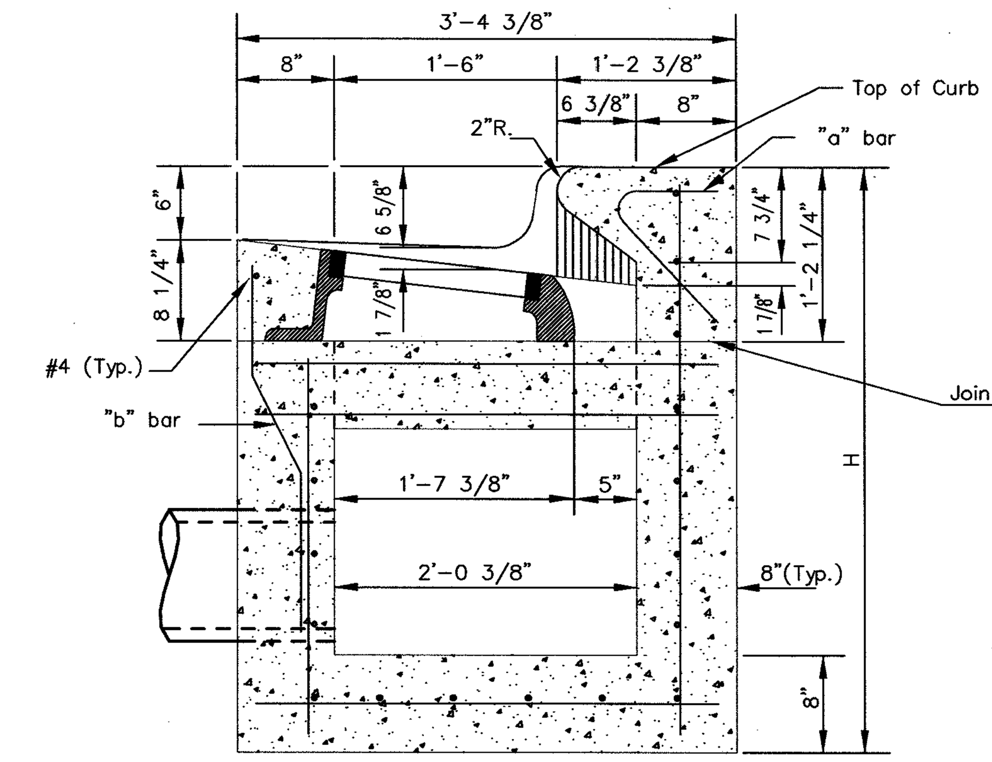
KEYPLAN

PROJECT NO. 05220	ISSUED BY: PEC
DRAWN BY:	REVIEWED BY: RRY
ISSUE DATE: 10-26-2007	
SHEET TITLE: STANDARD AREA INLET DETAILS	

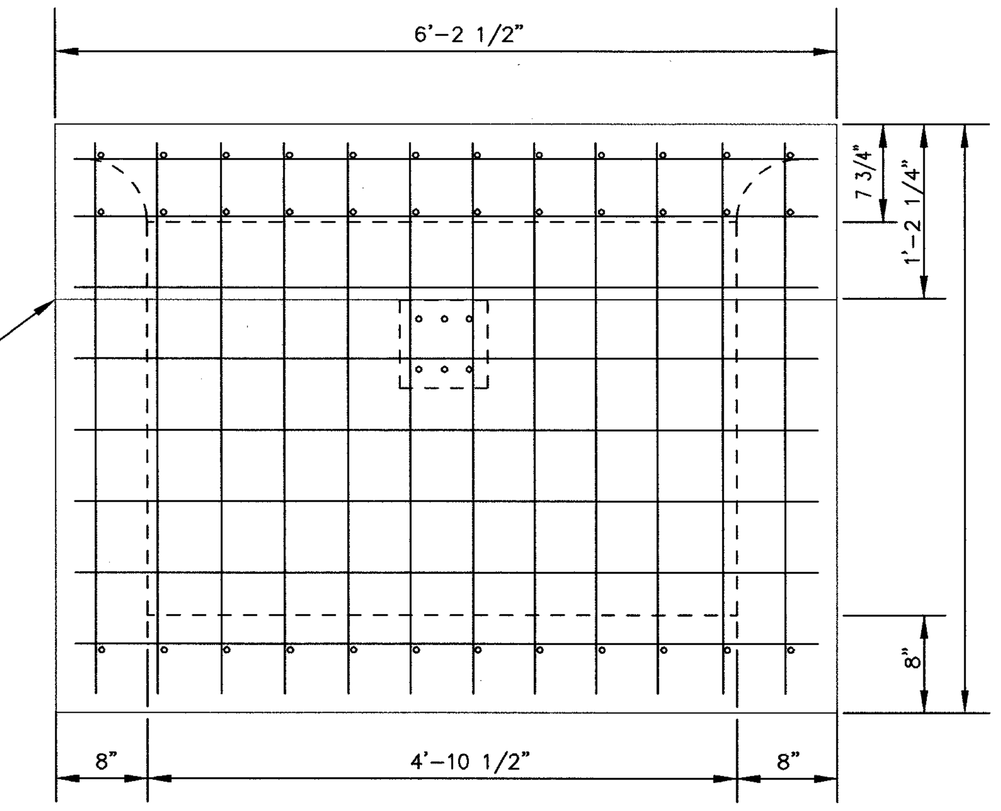
CU3.16



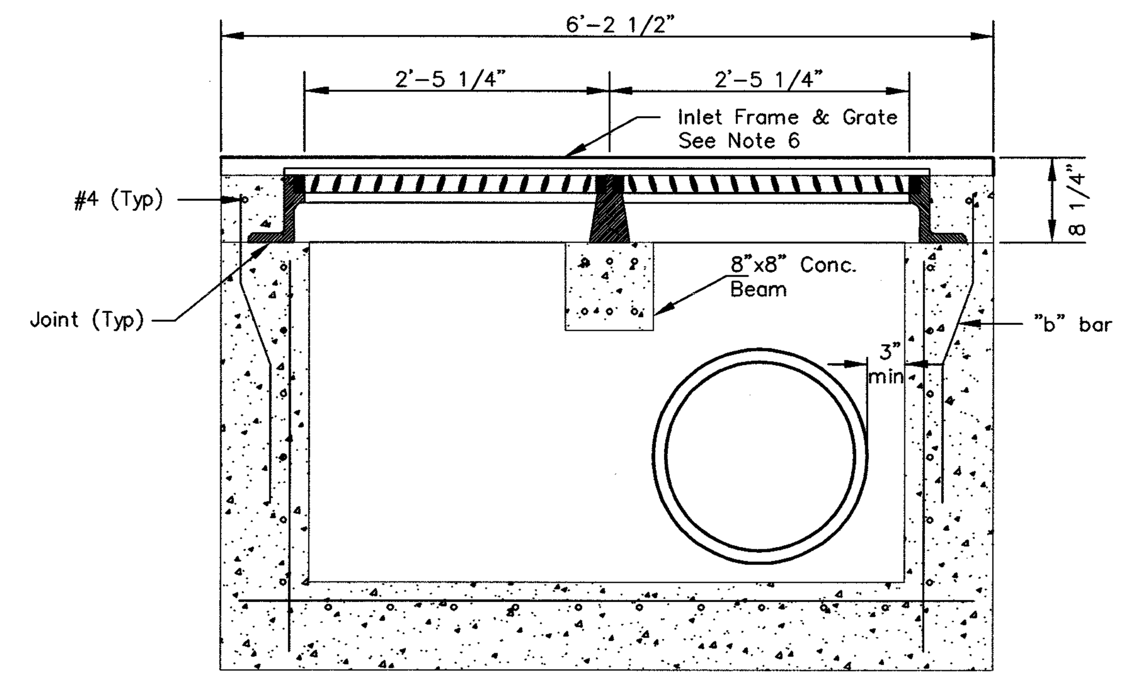
SECTION C-C



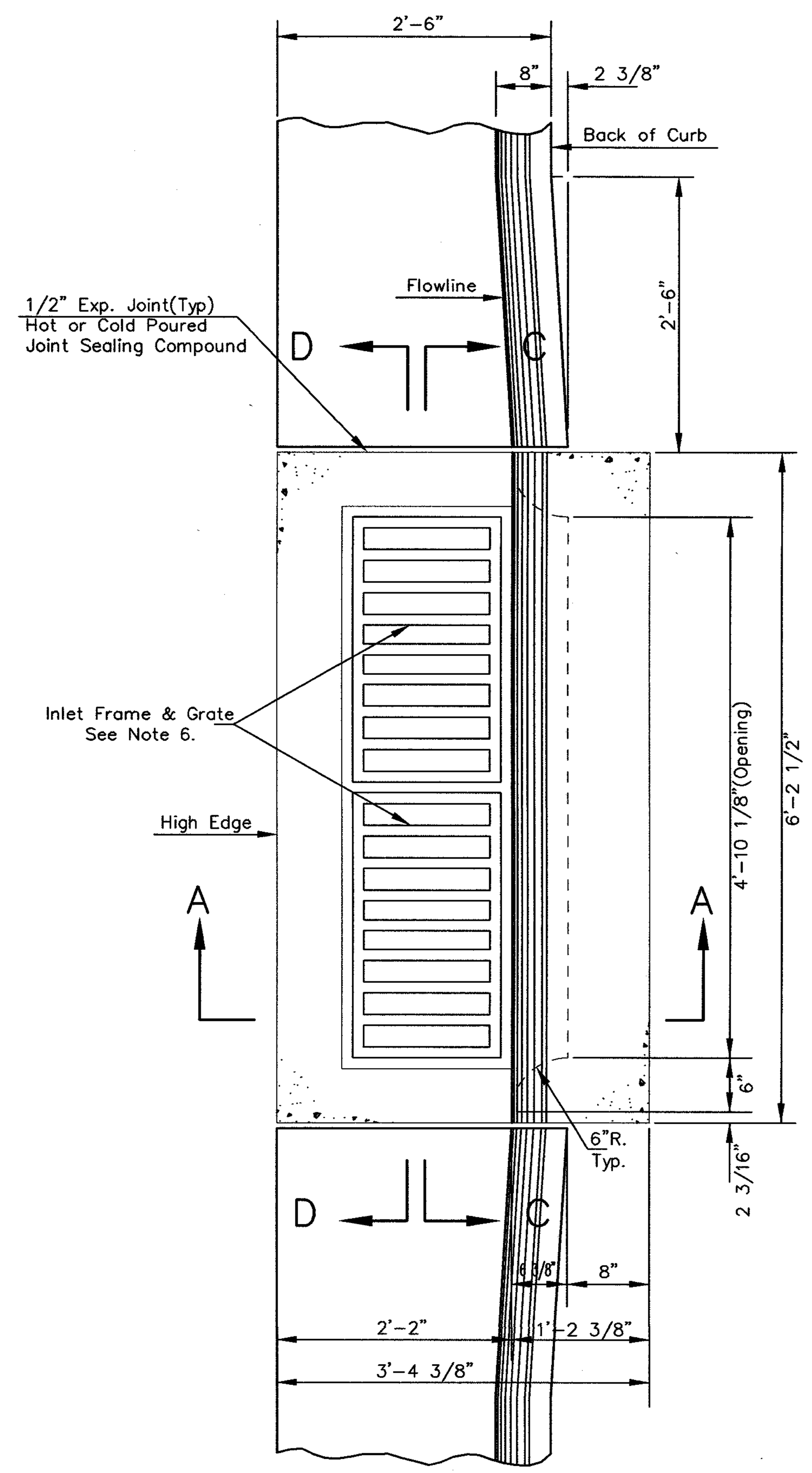
SECTION A-A

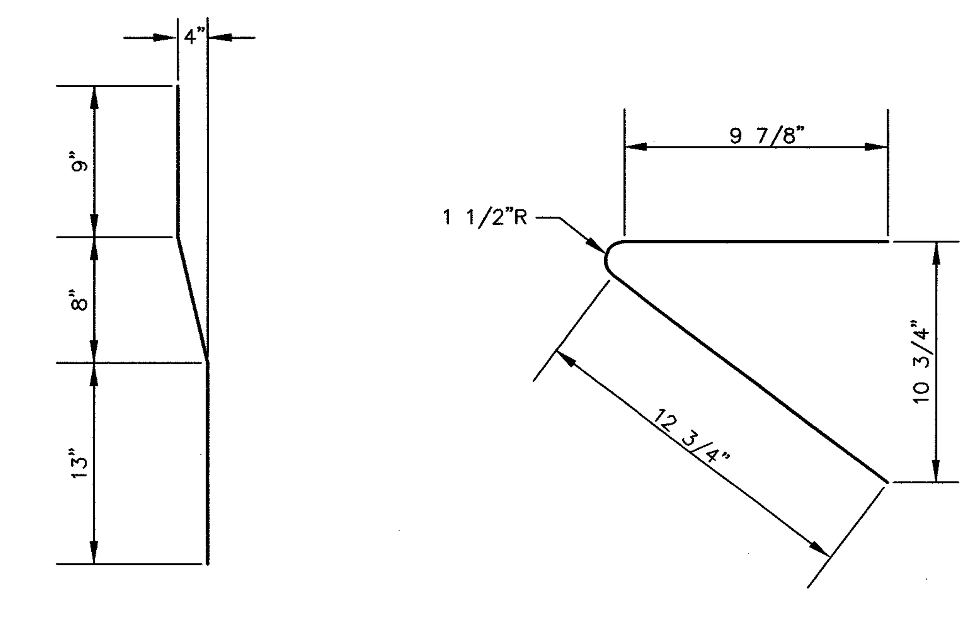


REAR WALL



SECTION D-D





BENDING DIAGRAM

GENERAL NOTES

1. Use the concrete mix specified for the City of Wichita concrete pavement throughout. All exposed edges shall be finished with an edging tool. Reinforcing bars shall be bent around pipe.
2. Inlet invert shall be shaped with 8 sack mix concrete to create flow channels and to increase hydraulic efficiency such that the inlet will be self cleaning between all inlet and/or outlet pipes.
3. All bars are #4 with 6" spacing and shall have a minimum clearance of 1 1/2 inches unless otherwise noted on the plans.
4. When directed by the Engineer, a small opening may be required in the back of the inlet in order to drain a low area. Reinforcing bars will extend through the openings. No deductions in concrete quantities will be made for these openings.
5. No deductions will be made in pay length of curb, gutter, or curb and gutter through the inlet area.
6. Use Neenah R-3288 HV Inlet Frame with Two Piece Grate or approved equal. Inlet frame to be proof load tested to 40,000 lbs. on unsupported side.
7. Reinforcing bars shall be cut or bent around pipes. No deduction in concrete quantites will be made for pipe openings.
8. The vanes of the grate shall be oriented with respect to the flow arrows shown on the plans.
9. DEETER FOUNDARY, Inc. casting No. 2442/43 with style H grate is an approved equal to NEENAH castings specified. Inlet drawing is based on NEENAH castings and concrete walls and supports will require some field modification to accomodate DEETER castings.

THE CITY OF WICHITA

CITY ENGINEER'S OFFICE
CITY HALL – SEVENTH FLOOR
455 NORTH MAIN STREET
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STANDARD TYPE II
INLET OPENING
6" x 4'-10 1/8"

JAMES L. ARMOUR, P.E. – CITY ENGINEER

PROJECT NUMBER	OCA NO.
1794 PPS	(607861)
DATE MAR 96	SHEET CU3.18

Saved: 10-19-2007 11:30:20 AM by CSL
Plot Scale: 1:1 10-23-2007 2:30:1 PM by CSL
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105 N. Washington
Wichita, KS 67202

McCLUGGAGE VANSICKLE AND PERRY
ASSOCIATE ARCHITECT

GOSSEN LIVINGSTON ASSOCIATES, INC
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DESIGN ARCHITECT

WALTER P. MOORE
STRUCTURAL ENGINEER

PROFESSIONAL ENGINEERING CONSULTANTS
MECH/ELECT/PLUMBING ENGINEER

ME ENGINEERS
ASSOCIATE MECH/ELECT/PLUMBING ENGINEER

WRIGHTSON, JOHNSON, HADDON & WILLIAMS, INC
AUDIO VISUAL CONSULTANT

BIGELOW
FOOD SERVICE CONSULTANT

SEDGWICK COUNTY ARENA

500 E. WATERMAN, WICHITA, KS 67202

FOR CONSTRUCTION
OCTOBER 26, 2007

PACKAGE

REVISIONS

NO.	DATE	DESCRIPTION

KEYPLAN

PROJECT NO. 05220	ISSUED BY: PEC
DRAWN BY:	REVIEWED BY: RRY
ISSUE DATE: 10-26-2007	

SHEET TITLE:

STANDARD TYPE 2
CURB INLET DETAILS

CU3.18

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303 S. TOPEKA • WICHITA, KANSAS 67202 • 316-262-2691 • FAX 316-262-3003
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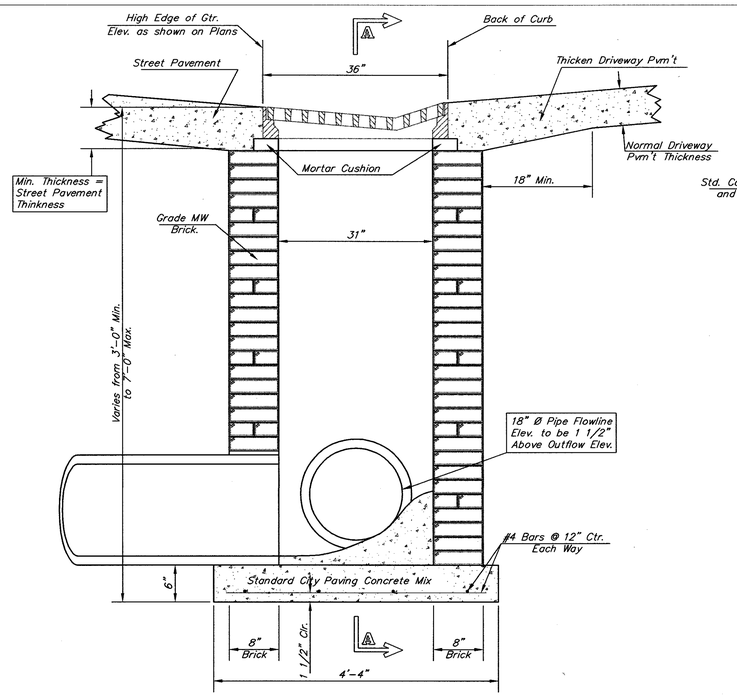
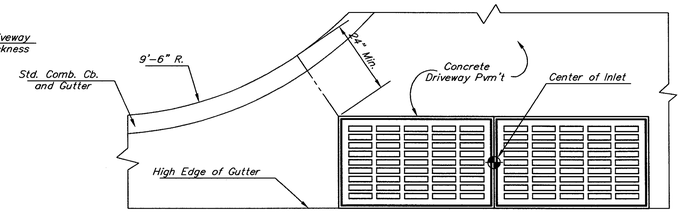


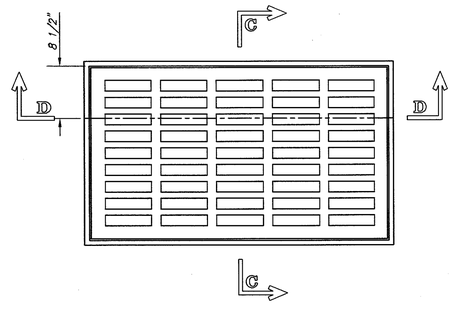
SECTION B–B



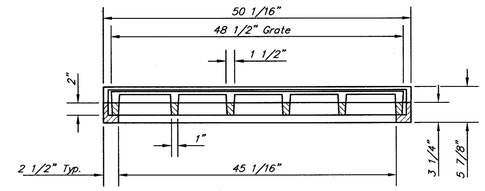
PLAN

GENERAL NOTES

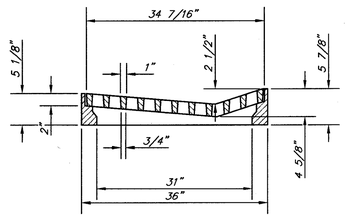
1. Grate frames to be installed on thin mortar cushion to insure full support along brick walls. Concrete used for inlet construction shall be concrete pavement mix.
2. Inlet invert shall be shaped with 8 sack sand mix concrete to create flow channels and to increase hydraulic efficiency such that the inlet will be self cleaning between all inlet and/or outlet pipes.
3. The ends of all pipes installed in inlets shall be cut off flush with the inside face of the inlet wall.
4. Inlet Frames and Grates to be two (2) Deeter #2095 or approved equal.



PLAN

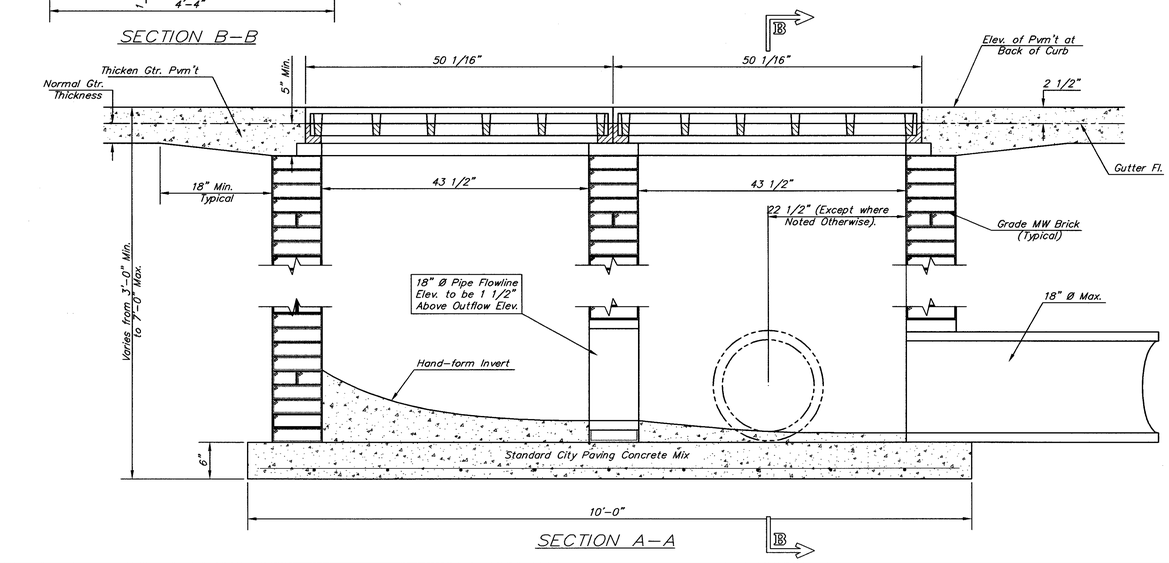


SECTION D–D



SECTION C–C

DEETER #2095 FRAME & GRATE
TOTAL WEIGHT: 705 lbs.
(2 Each Required)



SECTION A–A

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

DRIVEWAY
GRATED INLET
DOUBLE

JAMES L. ARMOUR P.E. – CITY ENGINEER

PROJECT NUMBER	INDEX CODE
1794 PPS	(607861)
DATE MAR 96	SHEET CU3.19

Saved 10-19-2007 11:30:42 AM by CSL
Plot Scale 1:10 10-23-2007 2:29:56 PM by CSL
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HOK SPORT
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WALTER P. MOORE
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WRIGHTSON, JOHNSON, HADDON & WILLIAMS, INC
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BIGELOW
FOOD SERVICE CONSULTANT

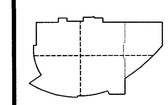
SEDGWICK COUNTY ARENA

500 E. WATERMAN, WICHITA, KS 67202

FOR CONSTRUCTION
OCTOBER 26, 2007

PACKAGE
REVISIONS

NO.	DATE	DESCRIPTION



KEYPLAN

PROJECT NO. 05220	ISSUED BY: PEC
DRAWN BY:	REVIEWED BY: RRY
ISSUE DATE:	10-26-2007

SHEET TITLE:

STANDARD DRIVEWAY INLET DETAILS

CU3.19

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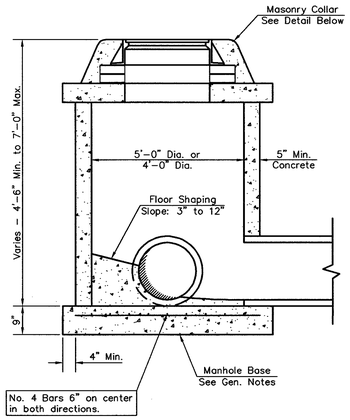
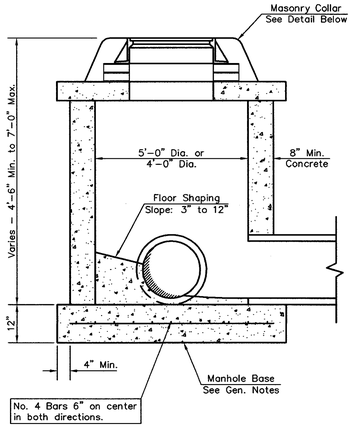
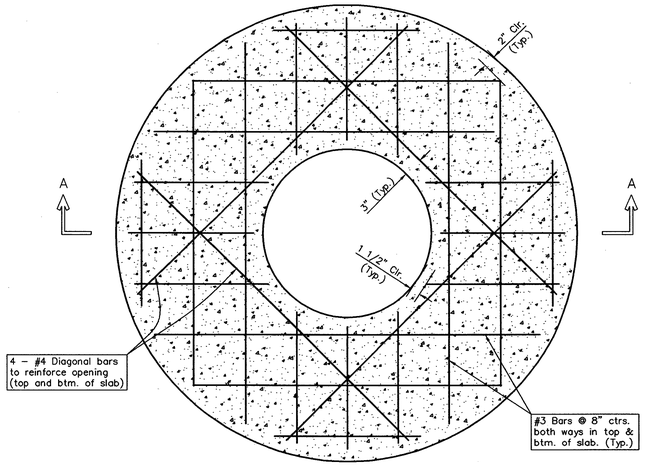


SHALLOW TYPE "P" MANHOLE



SHALLOW TYPE "C" MANHOLE



PLAN

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. 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.

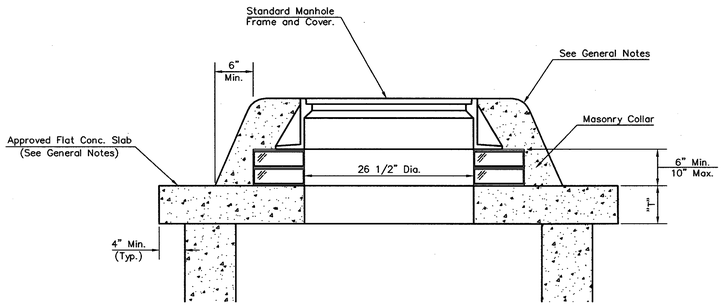
4. Pipes installed within the excavation made for the manhole shall be cradled with concrete to the limits of the manhole excavation. When clay pipe is used, the cradle shall extend to the first joint outside the manhole. The cradle shall be terminated at the clay pipe joint in a manner which will maintain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

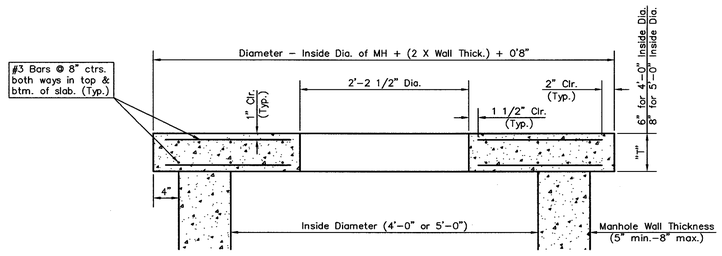
6. The crowns of inflowing pipes shall never be set lower than the crown of the outflowing pipe.

7. Standard shallow manholes type "P" and "C" shall be paid for at the unit price bid per each for the type and diameter 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.



MASONRY COLLAR DETAIL



SECTION A–A

FLAT CONCRETE SLAB DETAILS

THE CITY OF WICHITA

CITY ENGINEER'S OFFICE
CITY HALL – SEVENTH FLOOR
455 NORTH MAIN STREET
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SHALLOW MANHOLES
TYPE 'P' & 'C'

JAMES L. ARMOUR, P.E. – CITY ENGINEER

PROJECT NUMBER	CCA NO.
1794 PPS	(807861)
DATE: MAR 96	SHEET CU3.20

Drawing No. 11-19-2007 11:31:12 AM by CSL
Plotted on 11-20-2007 7:28:16 AM by PSU
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MICK SPORT DESIGN ARCHITECT	WRIGHTSON, JOHNSON, HADDON & WILLIAMS, INC.
WALTER P. MOORE STRUCTURAL ENGINEER	AUDIO VISUAL CONSULTANT
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GOSSELL LIVINGSTON ASSOCIATES, INC ASSOCIATE ARCHITECT	BIGELOW MECH/ELECT/PLUMBING ENGINEER
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SEDGWICK COUNTY
ARENA
500 E. WATERMAN , WICHITA, KS 67202

FOR CONSTRUCTION
OCTOBER 26, 2007

PACKAGE

REVISIONS

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KEYPLAN

PROJECT NO. 05220	ISSUED BY: PEC
DRAWN BY:	REVIEWED BY: RRY
ISSUE DATE:	10-26-2007

SHEET TITLE:

SHALLOW MANHOLES DETAILS

CU3.20

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