

PRIVATE STORM WATER SEWER EXTENSION

TO SERVE

KOCH WICHITA CAMPUS EXPANSION

PRIVATE PROJECT NO. 189 PPD (607861)

CITY OF WICHITA, KANSAS

GARY JANZEN, P.E.- CITY ENGINEER

STORM COMPLIANCE

PROJECT AREA: 358.0 AC
DISTURBED AREA: 111.2 AC

THIS PROJECT COMPLIES WITH DEVELOPMENT AND REDEVELOPMENT REQUIREMENTS OF SECTION 16.32 THROUGH THE CONSTRUCTION OF PROJECT 189 PPD.

AS BUILTS

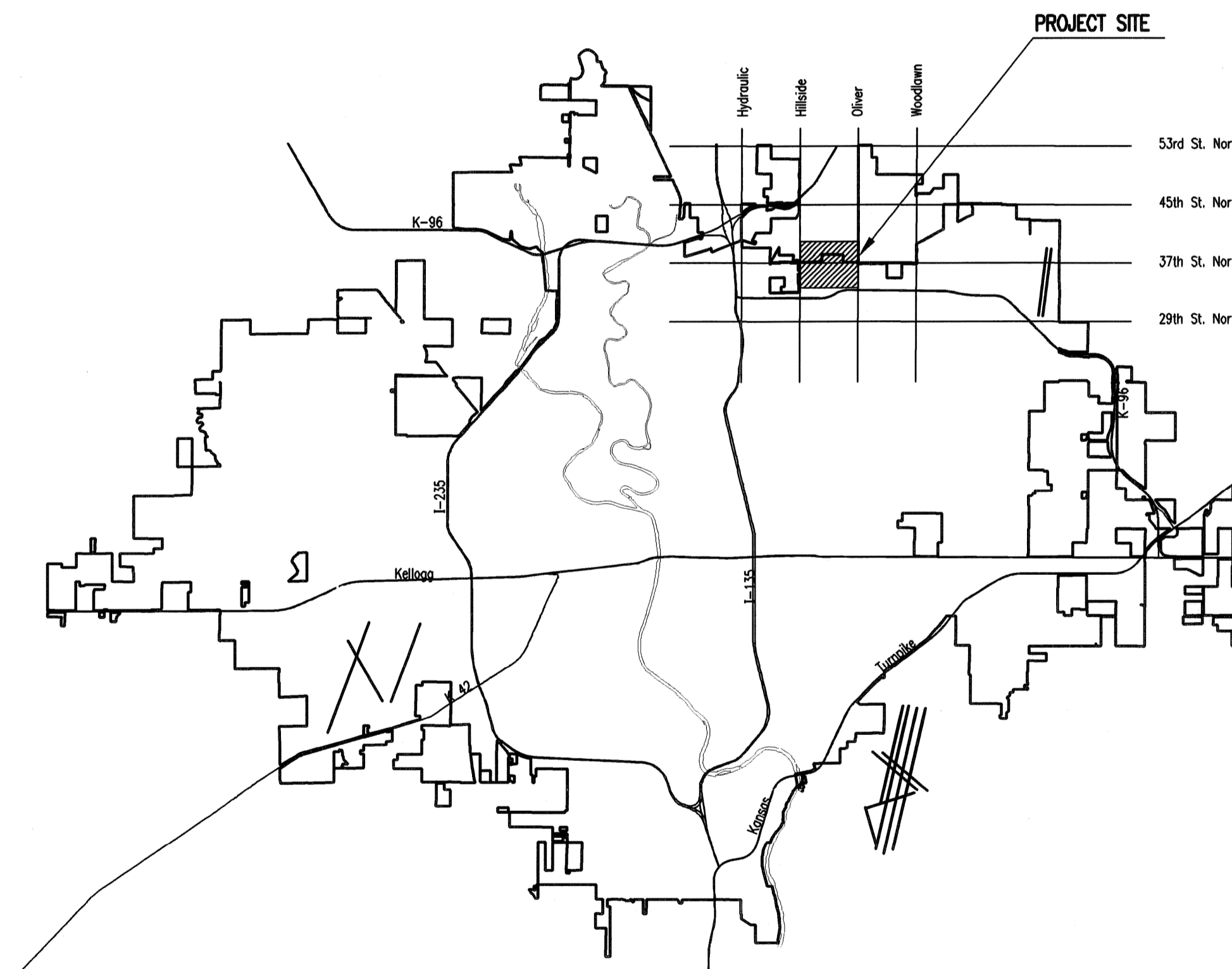
Contractor:
McCullough
Excavation, Inc.

4/7/2015

Project Inspector:
Larry Gann



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



LOCATION MAP

INDEX OF SHEETS

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SHEET NO. C-6.26	RIPRAP AND MISCELLANEOUS DETAILS
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SHEET NO. C-8.01-C-8.03	SOIL EROSION BMP DETAILS

APPROVED AS NOTED
BY CITY ENGINEER OF WICHITA

Engineering Jim Janzen 10/02/13
Stormwater Jim Janzen 10-2-13

NOTE TO CONTRACTORS

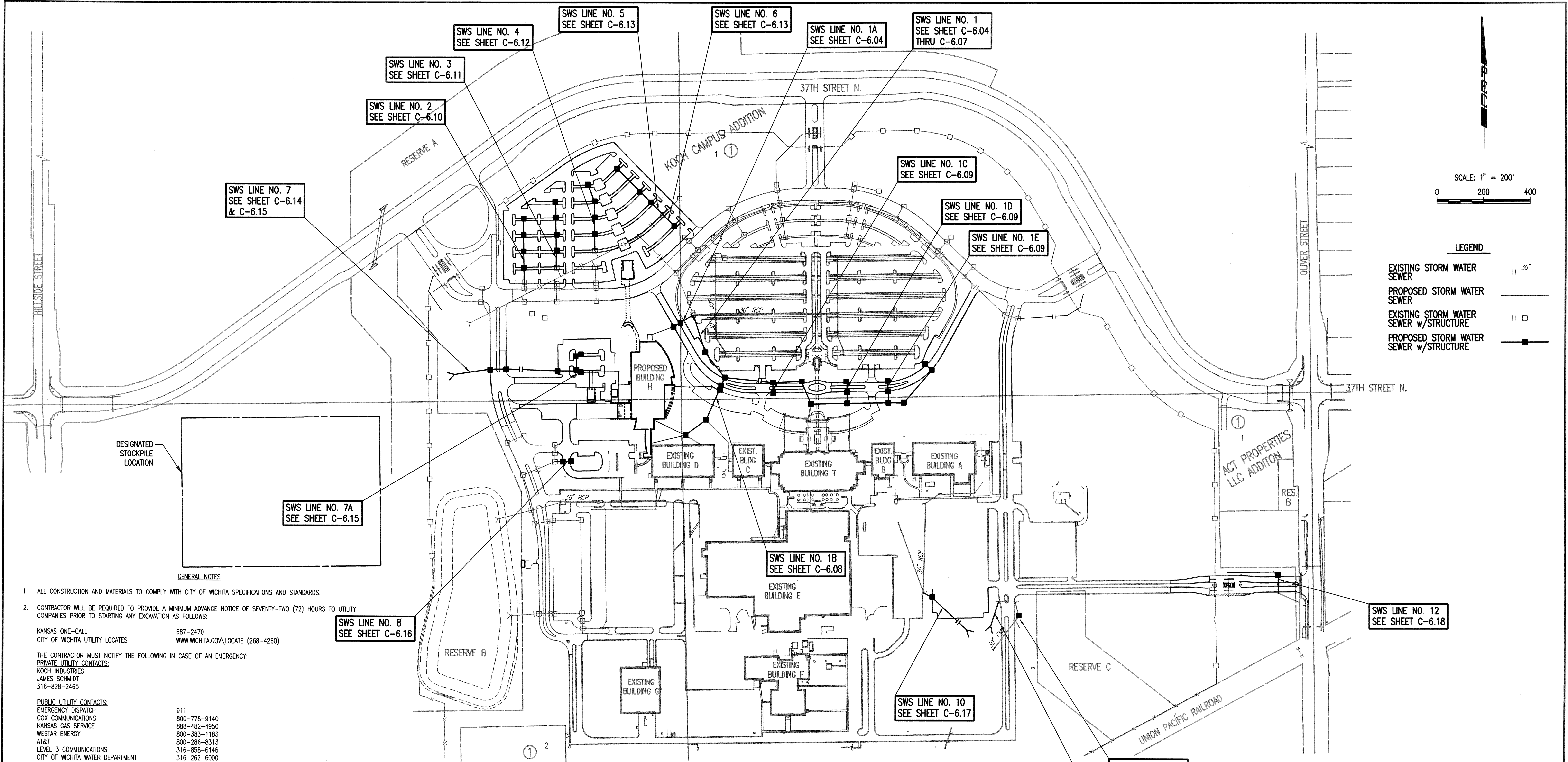
Inspection and testing for this project are to be provided by a Licensed Consulting Engineering Firm under contract with the Owner/Developer. Said inspection to be in accordance with the City of Wichita standard construction engineering practices and certified by a Licensed Professional Engineer. No work shall be performed in dedicated easements or public right-of-way by the Contractor without such inspection, nor shall any work be commenced without written authorization by the City Engineer.

OCTOBER 2013

PLANS PREPARED BY
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS



Sheet 10-01-001.854555 AM by CSI
 Plan Scale: 1" = 10'-0" (2013 854555 AM by CSI)
 Q:\V\2013\12275\003\SITE\DWG\PHASE 2\PPD\12275-003-C-PPD_PPD Title Sheet



SCALE: 1" = 200'
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LEGEND

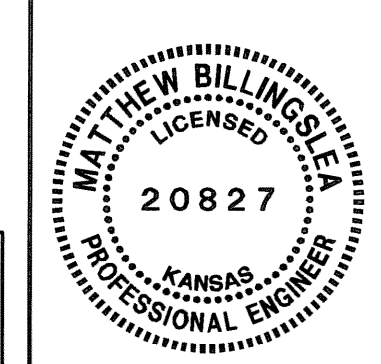
- EXISTING STORM WATER SEWER — 30"
- PROPOSED STORM WATER SEWER — 30"
- EXISTING STORM WATER SEWER w/STRUCTURE — []
- PROPOSED STORM WATER SEWER w/STRUCTURE — []

GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIALS TO COMPLY WITH CITY OF WICHITA SPECIFICATIONS AND STANDARDS.
2. CONTRACTOR WILL BE REQUIRED TO PROVIDE A MINIMUM ADVANCE NOTICE OF SEVENTY-TWO (72) HOURS TO UTILITY COMPANIES PRIOR TO STARTING ANY EXCAVATION AS FOLLOWS:
 KANSAS ONE-CALL 687-2470
 CITY OF WICHITA UTILITY LOCATES WWW.WICHITA.GOV/LOCATE (268-4260)
 THE CONTRACTOR MUST NOTIFY THE FOLLOWING IN CASE OF AN EMERGENCY:
PRIVATE UTILITY CONTACTS:
 KOCH INDUSTRIES
 JAMES SCHMIDT
 316-828-2465
PUBLIC UTILITY CONTACTS:
 EMERGENCY DISPATCH 911
 COX COMMUNICATIONS 800-778-9140
 KANSAS GAS SERVICE 888-482-4950
 WESTAR ENERGY 800-383-1183
 AT&T 800-286-8313
 LEVEL 3 COMMUNICATIONS 316-858-6146
 CITY OF WICHITA WATER DEPARTMENT 316-262-6000
 CITY OF WICHITA SEWER MAINTENANCE 316-262-6000
3. ALL ELEVATIONS SHOWN ARE NAVD88 DATUM.
4. THE CONTRACTOR SHALL LIMIT THE EXTENT OF TRENCH TO REMAIN OPEN OVERNIGHT AND WEEKENDS TO LESS THAN 50 FEET.
5. UNDERGROUND UTILITY SERVICE LINES AND OVERHEAD UTILITY POLE LINES ARE TO BE ADJUSTED AS NECESSARY PRIOR TO CONSTRUCTION. EXISTING UTILITIES AND LOCATIONS, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR SITE DESIGN. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES 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 UNLESS OTHERWISE NOTED ON THE GRADING PLAN.
8. RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES INCLUDING ANY TREES REMOVED OR TREE TRIMMINGS 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.

9. ALL EXCESS EXCAVATION WHICH IS TO BE WASTED SHALL BE STOCKPILED AT THE LOCATION AS SHOWN ABOVE.
10. REFERENCE LANDSCAPING PLANS FOR PERMANENT SEED MIX. RESTORATION OF DISTURBED AREAS SHALL INCLUDE, BUT NOT BE LIMITED TO, TOP SOIL PREPARATION, SEEDING, MULCH, AND/OR RESEEDING. ALL SEEDING/SODDING WORK SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND THE CITY OF WICHITA ADMINISTRATIVE REGULATION NO. AR6.5 WHICH GOVERNS CLEANUP AND RESTORATION OR REPLACEMENT FOLLOWING CONSTRUCTION.
11. THE CONTRACTOR SHALL SEED (OR OTHER EFFECTIVE STABILIZATION PRACTICE) ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WITH TEMPORARY RYE GRASS. RYE GRASS SEED SHALL BE PLANTED AT A MINIMUM RATE OF FIVE (5) POUNDS PER ONE THOUSAND (1,000) SQUARE FEET. THIS TEMPORARY SEEDING MAY BE OMITTED ONLY IF OTHER SEEDING IS REQUIRED IN ACCORDANCE WITH GENERAL NOTE NO. 10 ABOVE. TEMPORARY SEEDING OR PERMANENT SEEDING/SODDING SHALL BE APPLIED WITHIN 14 DAYS AFTER THE AREA HAS BEEN DISTURBED.
12. THE CONTRACTOR SHALL GIVE THE OWNER A MINIMUM OF TEN (10) DAYS ADVANCE NOTICE PRIOR TO START OF CONSTRUCTION.
13. THE CONTRACTOR SHALL PREVENT ANY CONSTRUCTION DEBRIS FROM ENTERING THE EXISTING STORM SEWER DURING CONSTRUCTION. REFERENCE EROSION CONTROL PLAN.
14. THE CONTRACTOR SHALL NOT BURY MANHOLES THAT HAVE RIM ELEVATIONS WHICH ARE LOWER THAN EXISTING GROUND AT THE MANHOLE. THE GROUND AROUND SUCH MANHOLES AND ALONG THE SEWER ALIGNMENT SHALL BE BACKFILLED TO THE APPROXIMATE ELEVATION OF THE PROPOSED GROUND ELEVATION SHOWN ON THE PLAN/PROFILE SHEETS. THE CONTRACTOR SHALL PROVIDE DRAINAGE AWAY FROM THESE MANHOLES AND SEWER LINES BY CONSTRUCTION OF TEMPORARY DITCHES OR SLOPING THE GROUND AS REQUIRED.
15. THE CONTRACTOR SHALL PROVIDE MOUNDING EARTH AT MANHOLES AND CLEANOUTS THAT HAVE TOP ELEVATIONS GREATER THAN 1 FOOT ABOVE EXISTING GRADE, AS SHOWN ON THE PLANS.
16. INTERURBAN TRAFFIC GENERATED OUTSIDE THE PROJECT AREA AND LOCAL ACCESS WITHIN THE PROJECT AREA ARE TO BE CARRIED THROUGH CONSTRUCTION. THE CONTRACTOR SHALL UTILIZE BARRICADES, SIGNS, GUARDS, AND FLAGMEN IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
17. THE CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL METHODS AS SPECIFIED. THE GENERAL LOCATION OF THE REQUIRED EROSION CONTROL IS SHOWN ON THE EROSION CONTROL PLAN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE EROSION CONTROL SHOWN THROUGH THE COMPLETION OF THIS PROJECT. INSTALLATION OF THESE BMP'S DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF ABATING SOIL EROSION.
18. MEASUREMENT OF STORM SEWER CONDUITS SHALL BE FROM CENTER TO CENTER OF STRUCTURES OR TO THE END OF THE FULL BARREL SECTION WHERE NO STRUCTURE IS PROPOSED EXCEPT AS NOTED ON PROFILES. CURB INLET DETAIL IS NOT INDICATIVE OF NORTHING/EASTING OR PIPE LENGTHS PROVIDED. POINTS PROVIDED REPRESENT THE CENTER OF THE INSIDE OF THE CURB INLET STRUCTURE.

PROPOSED STORM WATER SEWER TO BE PRIVATELY OWNED AND MAINTAINED.



SURVEY PROVIDED BY:
 GARBER SURVEYING SERVICE, P.A.
 2908 NORTH PLUM STREET
 HUTCHINSON, KS. 67502
 620-665-7032
 www.garbersurveying.com
 FEBRUARY 2013

No.	Revision	By	Date
KOCH WICHITA CAMPUS EXPANSION PRIVATE STORM WATER SEWER EXPANSION KEY MAP AND GENERAL NOTES GARY JANZEN, P.E. - CITY ENGINEER PRIVATE PROJECT NO. 189 PPD (607861)			
		PROFESSIONAL ENGINEERING CONSULTANTS, P.A. 303 SOUTH TOPEKA WICHITA, KS 67202 316-262-2691 www.pec1.com	
Designed by	MEB, JAG	Job No.	35-12275-3-7208
Drawn by	CSL	Date	FEBRUARY 2013

Saved: 10-04-2013 10:41:00 AM by CSI
 Plot: Scale: 1:200 10-04-2013 11:41:48 AM by JAW
 C:\2012\12275\03\SITE CIVIL PHASE 2\PPD\12275-003-C-PPD_PPD Key Map

CONTROL POINTS:
CP 12:
 N:1709101.70 E:1660886.83
 1. 1/2" Rebar (no cap)
 2. 12.4' SE to centerline ditch.
 3. 8.0' NW to edge of cultivated field.
 4. 20.80' NE to Mag Nail in SW face of 4' tree.

CP 15:
 N:1707819.95 E:1660455.35
 1. 1/2" Rebar (no cap)
 2. 5.4' NE to centerline monitoring well.
 3. 6.3' NW to centerline monitoring well.
 4. 59.0' W. to flowline of drainage swale.

CP 26:
 N:1710079.70 E:1661209.42
 1. 5/8" Rebar with green GSS Cap.
 2. 31.75' SE to Mag Nail in NW face 6" Tree.
 3. 30.80' SSE to Mag Nail in N. face 10" Tree.
 4. 74.70' WSW to Mag Nail in East face of 10" Tree.

CP 27:
 N:1711177.01 E:1661281.68
 1. 5/8" Rebar with green GSS Cap.
 2. 5.0' N. to 8 foot tall brace post.
 3. 9.35' ENE to spike in fence West face of brace post for fence in East-West tree row North of 37th St.
 4. 1250' S. to North back of curb of 37th St.

CONTROL POINTS 13, 14, 16-19 ARE OUTSIDE OF CONSTRUCTION AREA.

BENCHMARKS:
BM 1: (City of Wichita) Brass Disk in NW Corner traffic light conc. Base in SE quadrant of Hillside & 37th St. Elev: 1353.25 (NAVD88)

BM 2: "+" cut back of curb South side of median East of West Koch building entrance, 3.2' east of bullnose end, 71.3' West of Centerline West entrance median. Elev: 1365.27 (NAVD88)

BM 3: 5/8" Rebar with green GSS Cap. 11.6' SE to EDR in West curb & gutter for South bound traffic, West Koch building entrance. 12.3' West to NE Cor. of concrete sign base. 30.9' NW to top centerline fire hydrant. 28.8' E. to centerline West entrance median. Elev: 1364.97 (NAVD88)

BM 4: 5/8" Rebar, 33.4' N. to South back of curb of 37th St., 53.4' NE to West edge of conc. Pillar for West end of RCB handrail, 348' NE to cable pedestal. Elev: 1363.28 (NAVD88)

BM 5: 5/8" Rebar with red GSS Cap, 18.1' S. to North Back of curb of 37th St., 197.7' WSW to "+" cut in bullnose at West end of West median in 37th St. 391.4' E. to West end of North handrail to RCB. Elev: 1364.50 (NAVD88)

BM 6: 5/8" Rebar with purple GSS Cap, 18.3' S. to North Back of curb of 37th St., 109.8' W. to SE bolt for traffic light pole in NE quadrant of Hillside and 37th St., 130.0' SW to Brass Disk (BM 1) Elev: 1354.17 (NAVD88)

BM 7: Square Cut on the South Back of curb of 37th St., 288±' West of the centerline of the West entrance to the front door of the main building, West side of expansion joint. Elev: 1365.78 (NAVD88)

BM 8: Square Cut on the South Back of curb of 37th St., 152' West of the centerline of the East entrance to the front door of the main Building, 4.5±' SW to centerline of Koch emblem. Elev: 1371.60 (NAVD88)

BM 9: Square Cut on the South Back of curb of 37th St., 314±' West from the centerline of median in the East entrance to main Building. East side of an expansion joint. Elev: 1376.87 (NAVD88)

BM 10: Square Cut on South side of median Back of curb 79.5' West of the bullnose which is West of the East entrance to the main building. Elev: 1380.73 (NAVD88)

BM 11: 1/2" Rebar with Red Cap in island for East entrance for Main Building, 4.0' West of centerline of San. Sewer manhole in island, 8.3' South of South Back of curb of 37th St. 254.0' South to Fire Hydrant. Elev: 1382.28 (NAVD88)

BM 12: 5/8" Rebar with Red Cap, 9.4' N. of North Back of curb of 37th St., 161.4' East of 2 telephone pedestals on the North side of 37th St., East of the main Building East entrance, 189.6' East of centerline concrete entrance. Elev: 1383.23 (NAVD88)

BM 13: Square Cut on back of curb on the North side of 37th St., 50.0' East of the centerline of the North entrance to Advance Pain Medicine Associates, 17.5' N. to edge of grass, 120.3' W. to base of 40 mph sign. Elev: 1374.35 (NAVD88)

BM 14: Square Cut on the East end of the North headwall for RCB, NW quadrant of Oliver St. & 37th St., 15.4' S. to North Back of curb of 37th St., 29.2' E. to NW bolt of signal pole in NW quadrant of Oliver St. & 37th St., 35.18' SW to NE Corner of East curb inlet. Elev: 1374.09 (NAVD88)

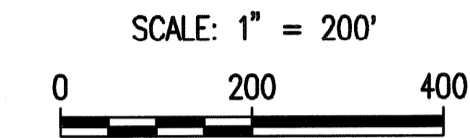
BM 15: Square Cut on back of curb West side of median for East Main Building entrance, 65.2±' N. of South bullnose between First & Second regular parking stalls for Invista building, 105±' NNE to top centerline fire hydrant South of East entrance of main building. Elev: 1379.15 (NAVD88)

BM 16: Mag Nail in joint of curb Inlet, NW Corner of Inlet 36.4' W. to centerline of median East main Building entrance. 65.3' N. to Koch campus Exit, road running East & West East of East main Building. 153.5' South to a fire hydrant. Elev: 1371.08 (NAVD88)

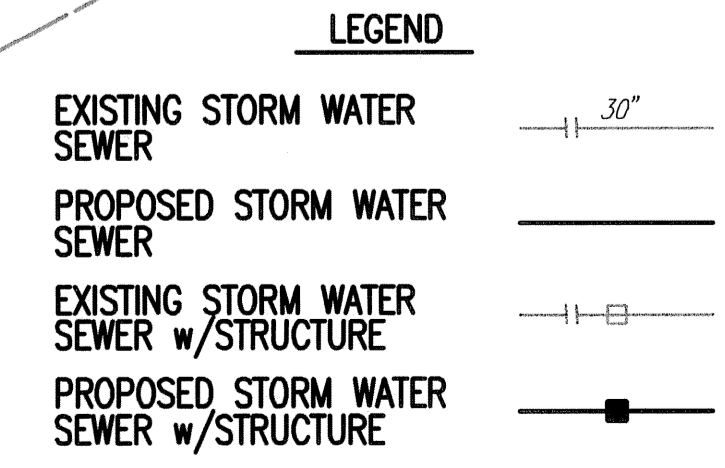
BM 20: Square cut on South back of curb of South East-West paved access drive (Westerly end). 36.7' NNE to top of fire hydrant, 32.0' N. to S. Face of 14'0x12' Shed. Elev: 1361.05 (NAVD88)

BM 21: Mag Nail in expansion joint at West end of South East-West paved access drive. 5.5' SE to centerline of a flume, 58.2' NNE to most southerly bullnose for median in West main Building entrance, 42.3' NNW to top SE Corner of transformer. Elev: 1355.07 (NAVD88)

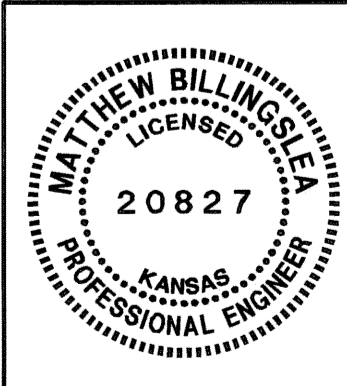
BMK 17, 18-19 ARE OUTSIDE OF CONSTRUCTION AREA.



ACT PROPERTIES
 LLC ADDITION



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 2908 NORTH PLUM STREET
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 FEBRUARY 2013



No.	Revision	By	Date
KOCH WICHITA CAMPUS EXPANSION PRIVATE STORM WATER SEWER EXTENSION HORIZONTAL AND VERTICAL CONTROL			
GARY JANZEN, P.E. - CITY ENGINEER PRIVATE PROJECT NO. 189 PPD (607861)			
		PROFESSIONAL ENGINEERING CONSULTANTS, P.A. 303 SOUTH TOPEKA WICHITA, KS 67202 316-262-2691 www.pec1.com	
Designed by	MEB, JAG	Job No.	35-12275-3-7208
Drawn by	CSL	Date	FEBRUARY 2013
			Sht. C-6.03 of 30

Sheet 10-01-2013 9:06:59 AM by CSL
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 2/13/2013 12:23:00 PM by MJK

N: 1,710,242.6982, E: 1,662,202.9673
Sta. 10+00.0 SWS Line No. 1
Box Manhole (Constructed in Phase II)
Remove Temporary Caps and
Install 168.9 L.F. 48" RCP (SE)
Install 68.7 L.F. 24" RCP (SW)

N: 1,710,082.2026, E: 1,662,255.4685
Sta. 11+68.9, SWS Line No. 1
Const. Std. Precast Conc. MH
(Type A) (6' dia.)
Top Elev. = 1369.20
See detail, Sheet C-6.19
Install 132.8 L.F. 48" RCP (SE)

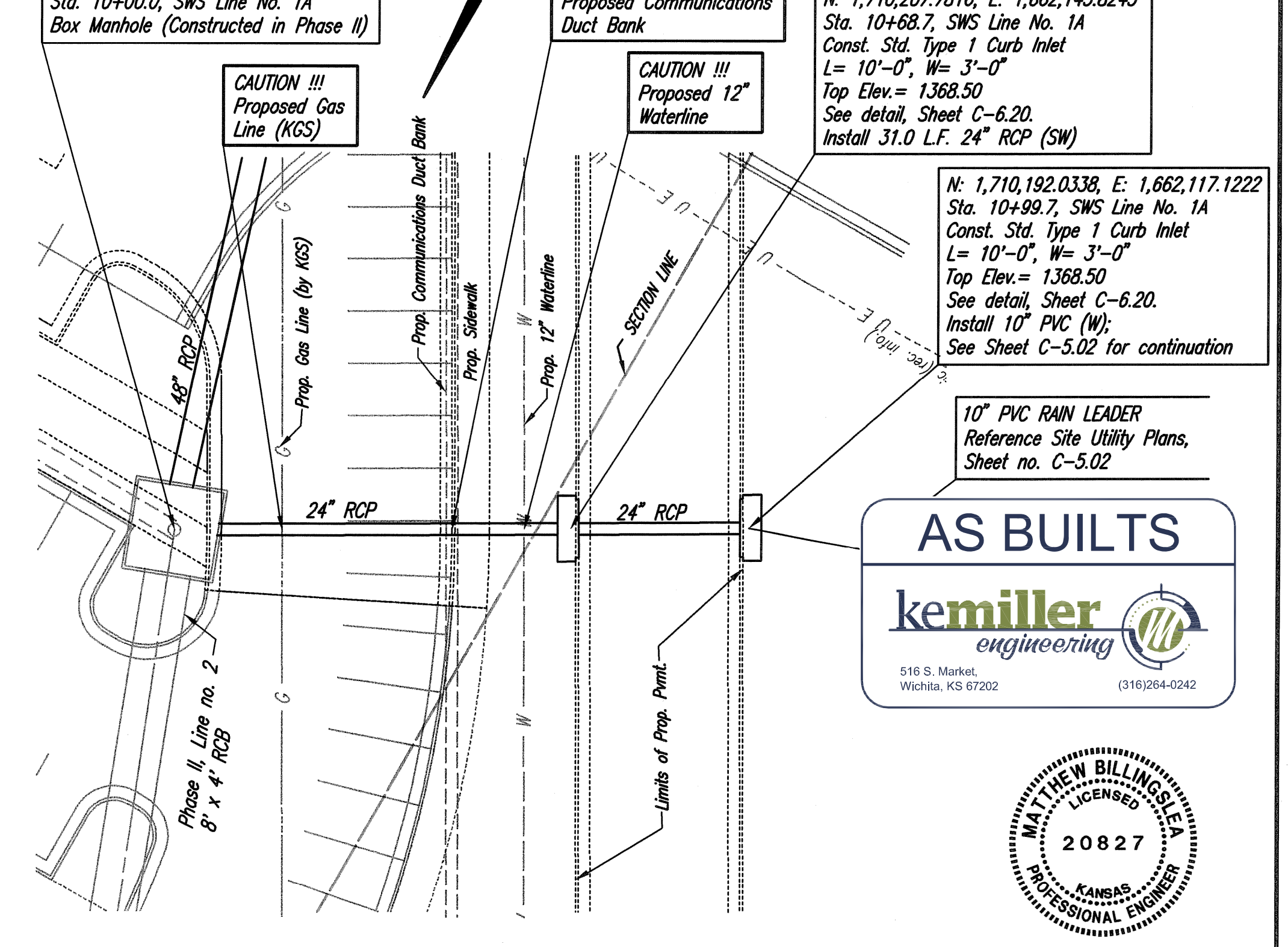
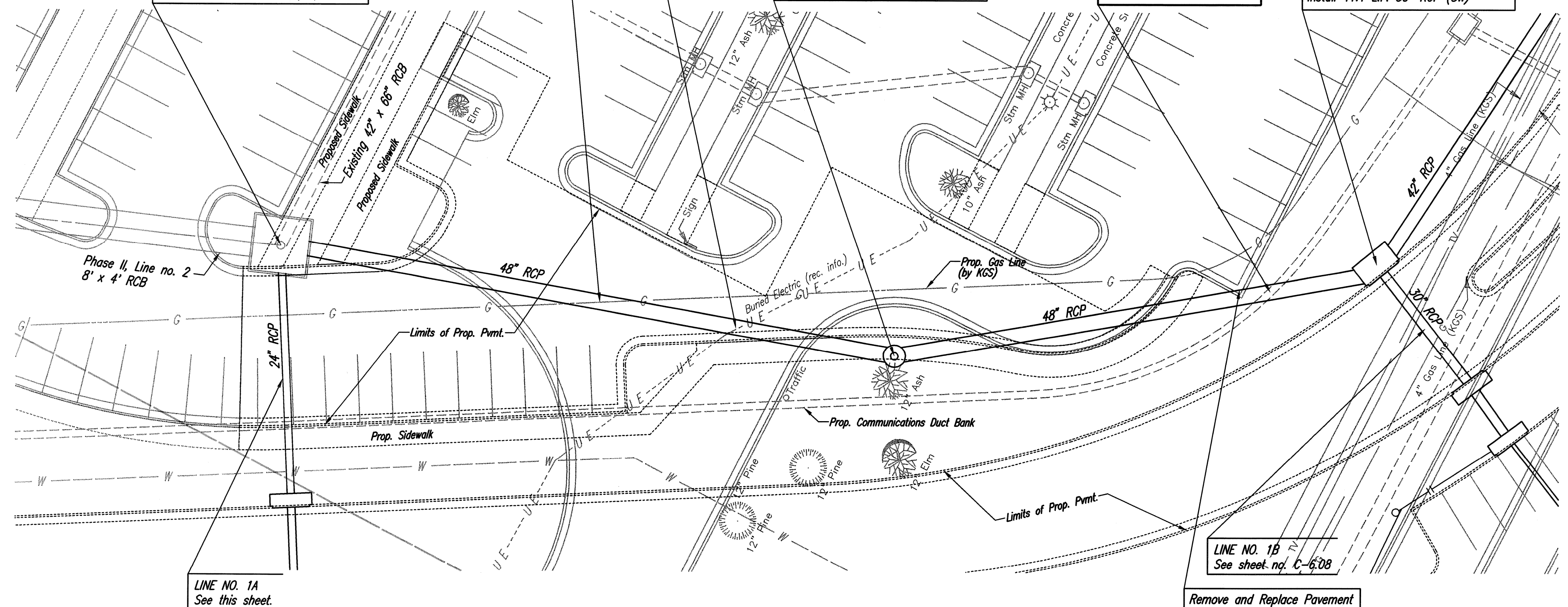
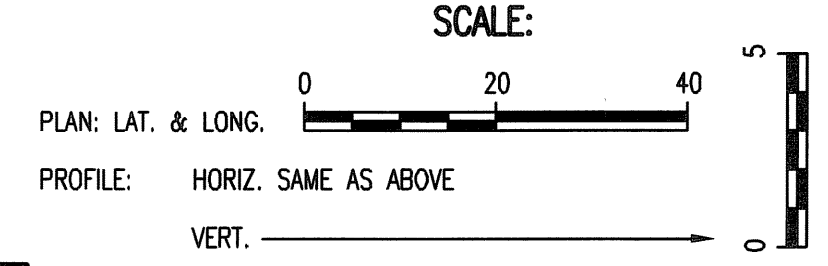
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Sta. 13+01.7, SWS Line No. 1 =
Sta. 10+00.0, SWS Line No. 1B
Const. Std. Type 1 Curb Inlet
L = 10'-0", W = 6'-0"
Top Elev. = 1368.62
See detail, Sheet C-6.20
Install 207.6 L.F. 42" RCP (SE)
Install 41.1 L.F. 30" RCP (SW)

N: 1,710,242.6982, E: 1,662,202.9673
Sta. 10+00.0, SWS Line No. 1
Sta. 10+00.0, SWS Line No. 1A
Box Manhole (Constructed in Phase II)

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Sta. 10+68.7, SWS Line No. 1A
Const. Std. Type 1 Curb Inlet
L = 10'-0", W = 3'-0"
Top Elev. = 1368.50
See detail, Sheet C-6.20
Install 31.0 L.F. 24" RCP (SW)

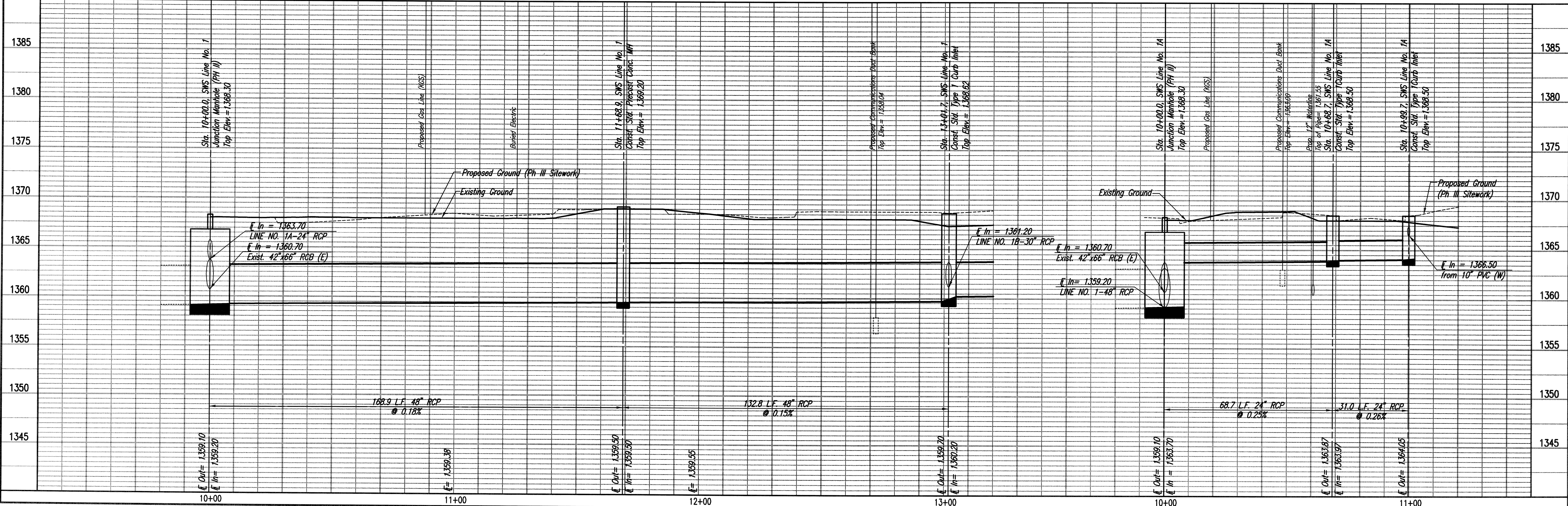
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Sta. 10+99.7, SWS Line No. 1A
Const. Std. Type 1 Curb Inlet
L = 10'-0", W = 3'-0"
Top Elev. = 1368.50
See detail, Sheet C-6.20
Install 10" PVC (W);
See Sheet C-5.02 for continuation

10" PVC RAIN LEADER
Reference Site Utility Plans,
Sheet no. C-5.02



STORM WATER SEWER LINE NO. 1

STORM WATER SEWER LINE NO. 1A



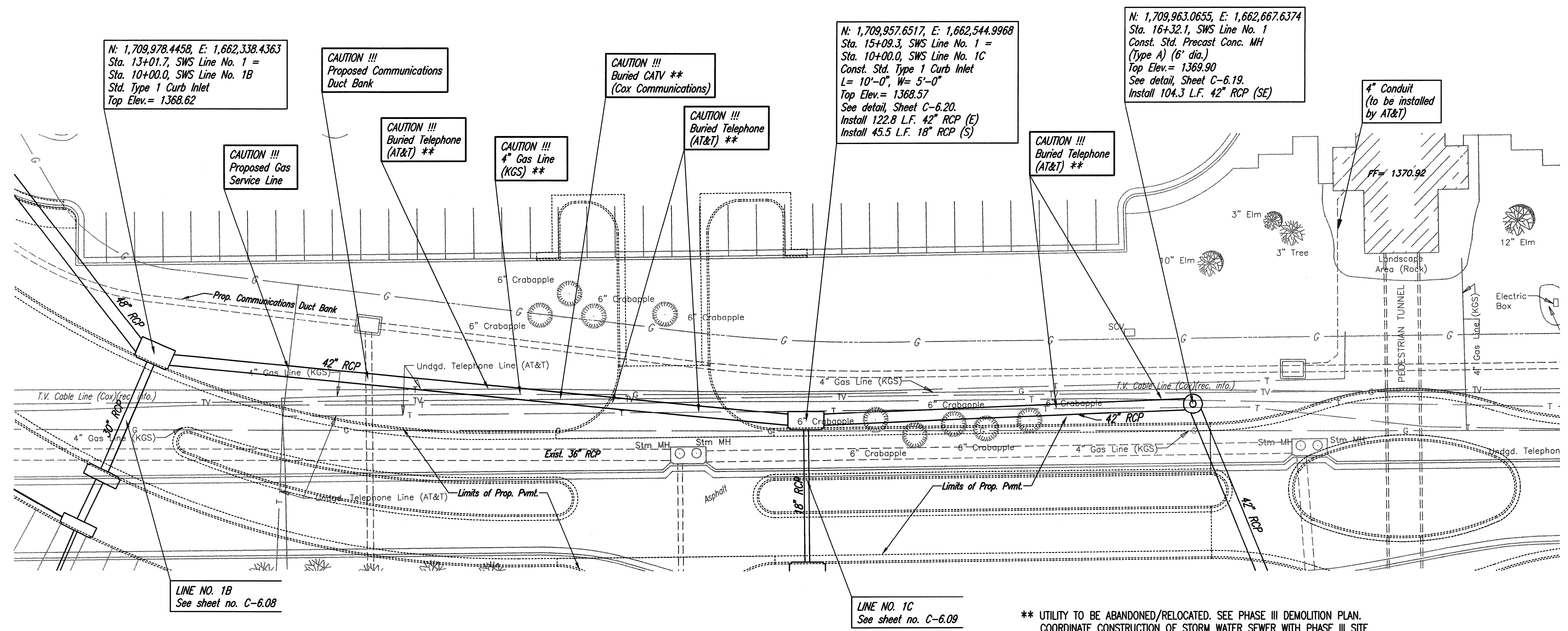
KOCH WICHITA CAMPUS EXPANSION
PRIVATE STORM WATER SEWER LINE NO. 1
AND LINE NO. 1A

PROFESSIONAL ENGINEERS CONSULTANTS P.A.
303 SOUTH TOPEKA, WICHITA, KS 67202
316-262-2881 www.pec.com

DESIGNED BY: MEB, JAG
CHECKED BY: CSJ
DATE: FEBRUARY 2013

Sheet C-6.04 of 30

Save: 09-30-2013 12:03:18 PM by CSI
Plot Scale: 1"=20'-0" (1:240)
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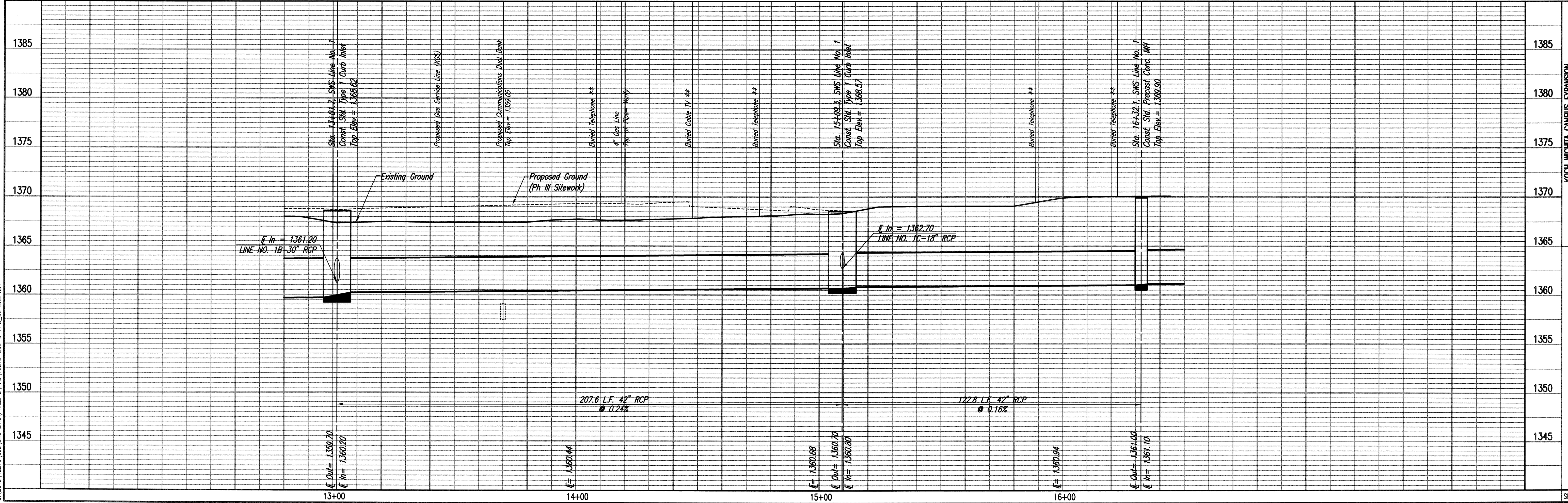


SCALE: 0 20 40
 PLAN: LAT. & LONG.
 PROFILE: HORIZ. SAME AS ABOVE
 VERT. _____



STORM WATER SEWER LINE NO. 1

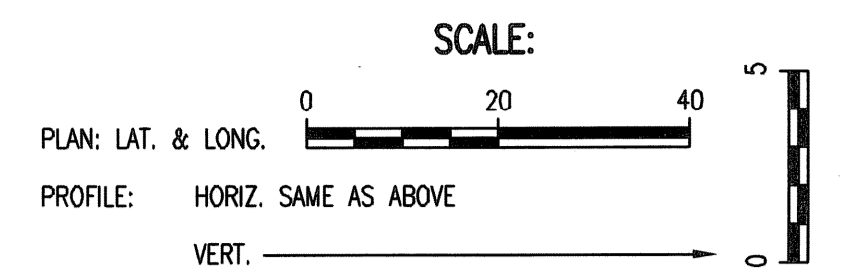
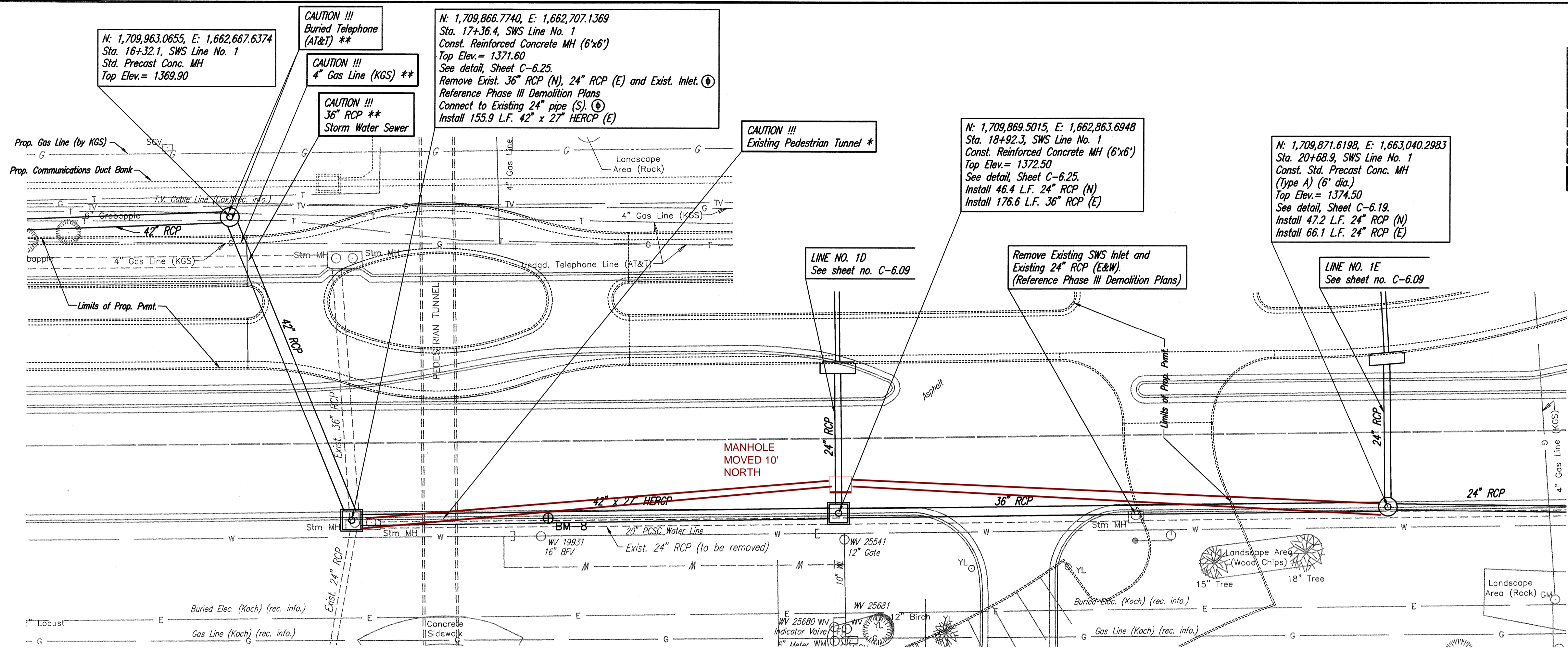
** UTILITY TO BE ABANDONED/RELOCATED. SEE PHASE III DEMOLITION PLAN. COORDINATE CONSTRUCTION OF STORM WATER SEWER WITH PHASE III SITE WORK AND UTILITY/PAVEMENT DEMOLITION.



KOCH WICHITA CAMPUS EXPANSION
 PRIVATE STORM WATER SEWER EXTENSION
 STORM WATER SEWER LINE NO. 1
 GARY JANZEN, P.E. - CITY ENGINEER
 PRIVATE PROJECT NO. 199 PFD (607861)

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 303 SOUTH TOPEKA WICHITA, KS 67202
 316-262-2891 www.pec.com
PEC
 Designed By: MEB, JAG
 Drawn By: CSL
 Job No.: 35-12275-3-7208
 Date: FEBRUARY 2013

Save: 10-04-2013 11:17:15 AM by JAW
 Plot: 10-04-2013 04:41:20 AM by JAW
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* PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE OVER THE EXISTING PEDESTRIAN TUNNEL AT STATION 16+98.0 TO VERIFY STRUCTURE SIZE, AND HORIZONTAL AND VERTICAL LOCATION. THE CONTRACTOR SHALL REPORT HIS FINDINGS TO THE ENGINEER SO THAT ANY NECESSARY PLAN MODIFICATIONS CAN BE MADE. ANY ADDITIONAL LABOR OR MATERIALS NECESSARY TO COMPLETE THE CONSTRUCTION OF THE STORM WATER SEWER SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT.

** UTILITY TO BE ABANDONED/RELOCATED. SEE PHASE III DEMOLITION PLAN. COORDINATE CONSTRUCTION OF STORM WATER SEWER WITH PHASE III SITE WORK AND UTILITY/PAVEMENT DEMOLITION.

Ⓢ PRIOR TO CONSTRUCTION CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION AND SIZE OF EXISTING SWS PIPE AND REPORT THESE FINDINGS TO THE ENGINEER SO THAT ANY NECESSARY ADJUSTMENTS CAN BE MADE. INSTALL CONNECTION OF EXISTING SWS PIPE AND PROPOSED STRUCTURE, CUT FLUSH WITH INSIDE WALL OF STRUCTURE, AND GROUT IN PLACE WITH NON-SHRINK GROUT. SUBSIDIARY TO SWS STRUCTURE.

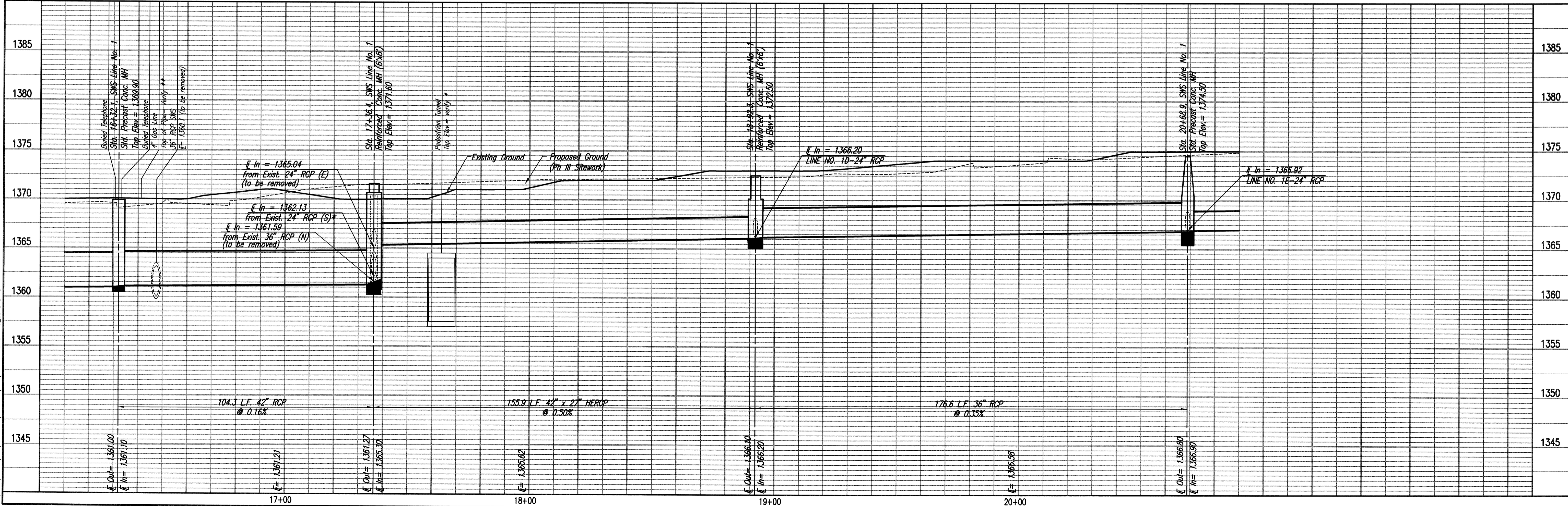
AS BUILTS

kemiller engineering

516 S. Market, Wichita, KS 67202 (316)264-0242

MATTHEW BILLINGSLEY
 LICENSED PROFESSIONAL ENGINEER
 20827
 KANSAS

STORM WATER SEWER LINE NO. 1



Sheet 08-10-2013, 1:38:10 PM, by CSI
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IPEC
 PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 308 SOUTH TOPEKA WICHITA, KS 67202
 316-262-2881 www.ipec.com

Designed By: MEB, JAG
 Drawn By: CSI

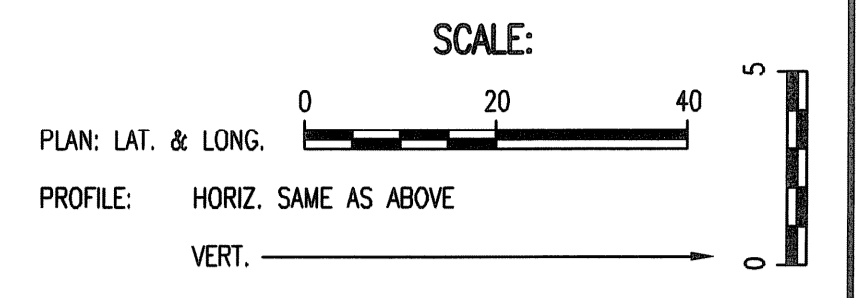
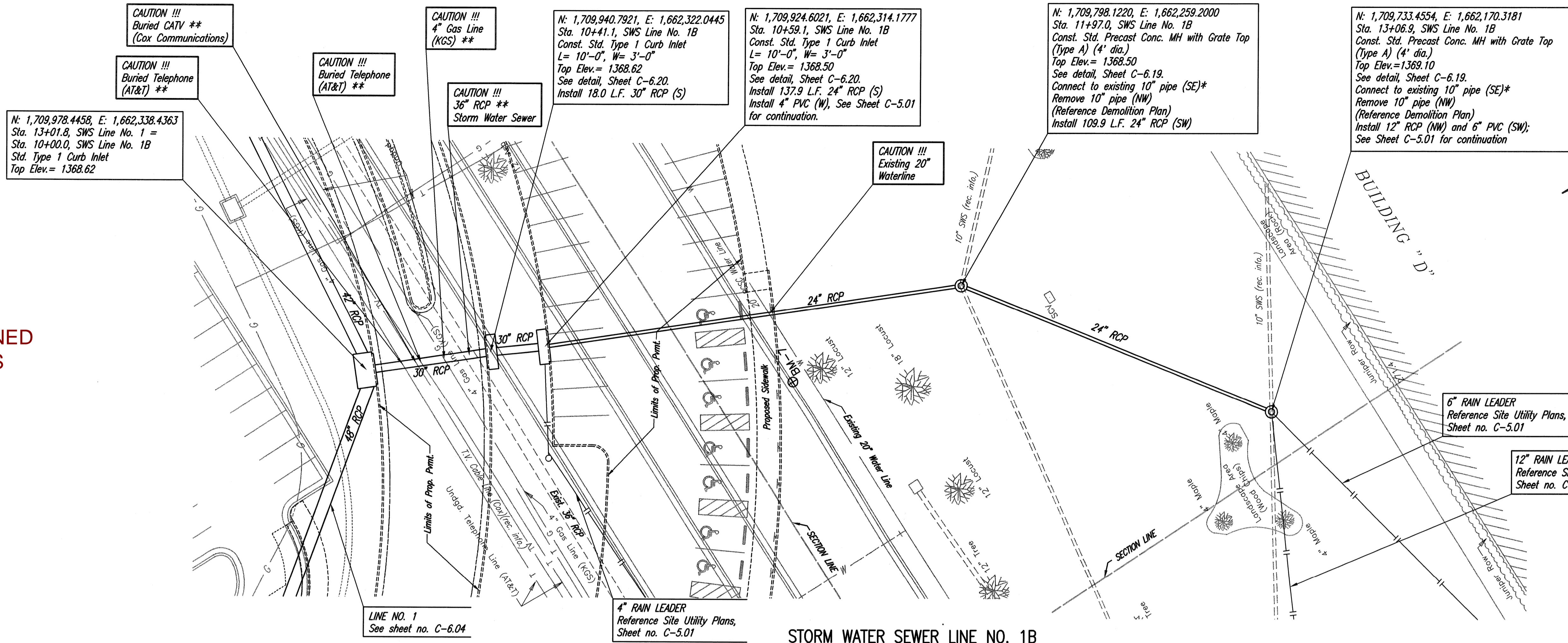
Job No. 35-12275-3-7208
 Date: FEBRUARY 2013

KOCH WICHITA CAMPUS EXPANSION
 PRIVATE STORM WATER SEWER EXTENSION
 STORM WATER SEWER LINE NO. 1

GARY JANZEN, P.E. - CITY ENGINEER
 PRIVATE PROJECT NO. 189 PPD (607861)

Sheet C-6.06 of 30

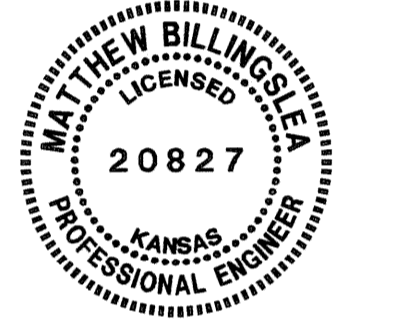
SEE
SCANNED
PAGES
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944



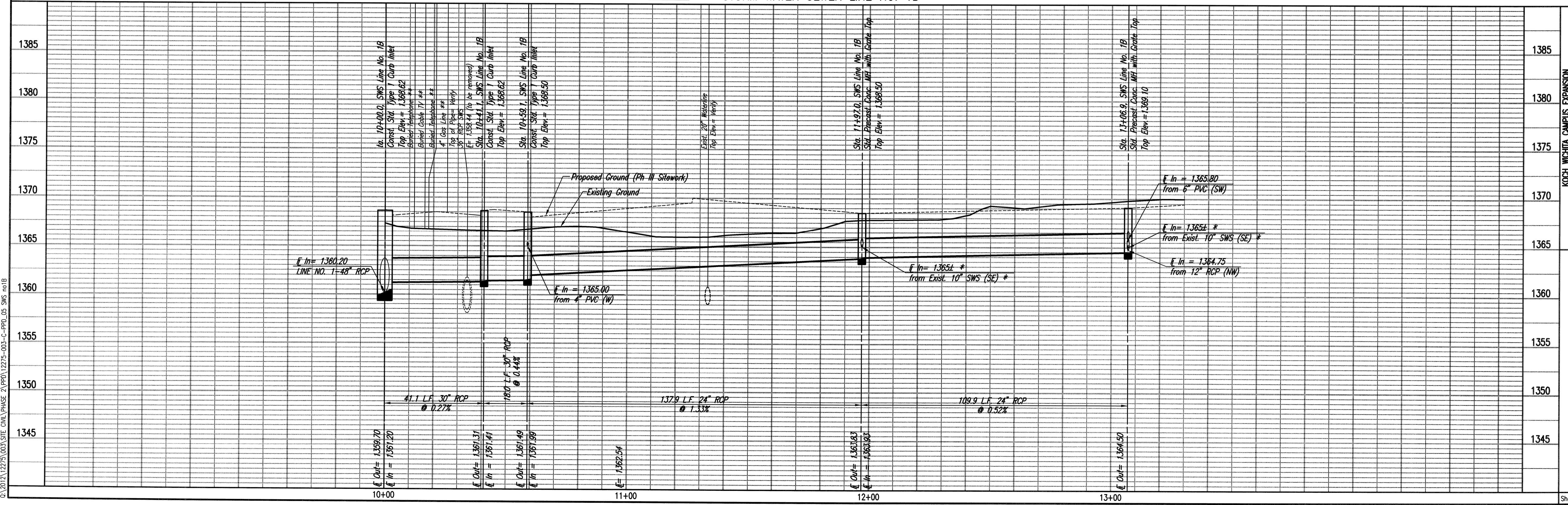
* EXISTING STORM SEWER SIZE, LOCATION AND DEPTH BASED ON LIMITED RECORD INFORMATION PROVIDED FOR DESIGN. PRIOR TO PURCHASE OF MATERIALS OR BEGINNING CONSTRUCTION THE CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION AND SIZE OF EXISTING SWS AND REPORT ANY FINDINGS TO THE ENGINEER FOR ANY NECESSARY ADJUSTMENTS. ANY ADDITIONAL PAYMENT WILL NOT BE MADE FOR MATERIAL OR LABOR ASSOCIATED WITH CONNECTION OF PROPOSED AND EXISTING STORM SEWER.

INSTALL CONNECTION OF EXISTING SWS PIPE AND PROPOSED STRUCTURE, CUT FLUSH WITH INSIDE WALL OF STRUCTURE, AND GROUT IN PLACE WITH NON-SHRINK GROUT. SUBSIDIARY TO SWS STRUCTURE.

** UTILITY TO BE ABANDONED/RELOCATED. SEE PHASE III DEMOLITION PLAN. COORDINATE CONSTRUCTION OF STORM WATER SEWER WITH PHASE III SITE WORK AND UTILITY/PAVEMENT DEMOLITION.



STORM WATER SEWER LINE NO. 1B



Saved 09-30-2013 12:18:23 PM by CSJ
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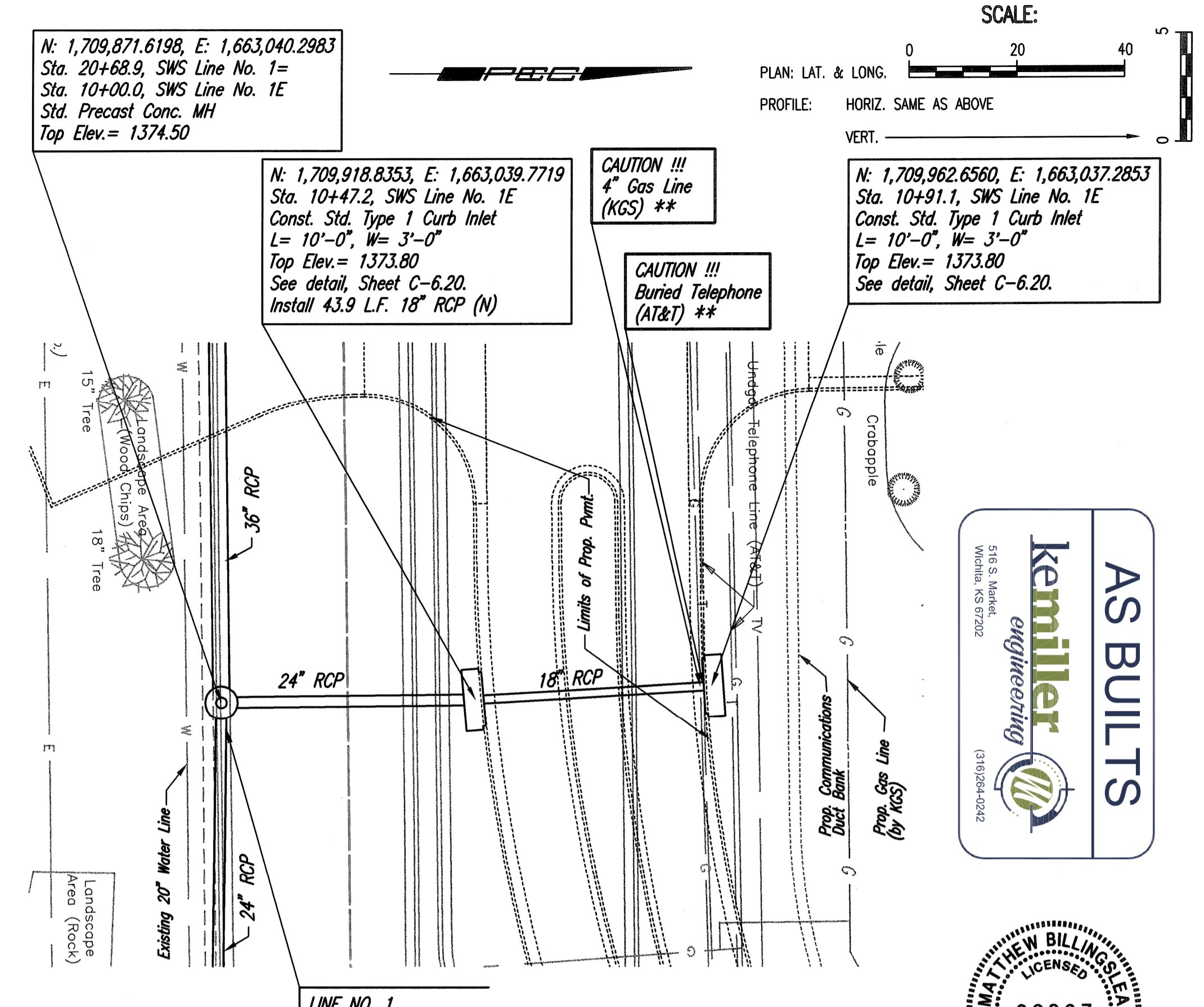
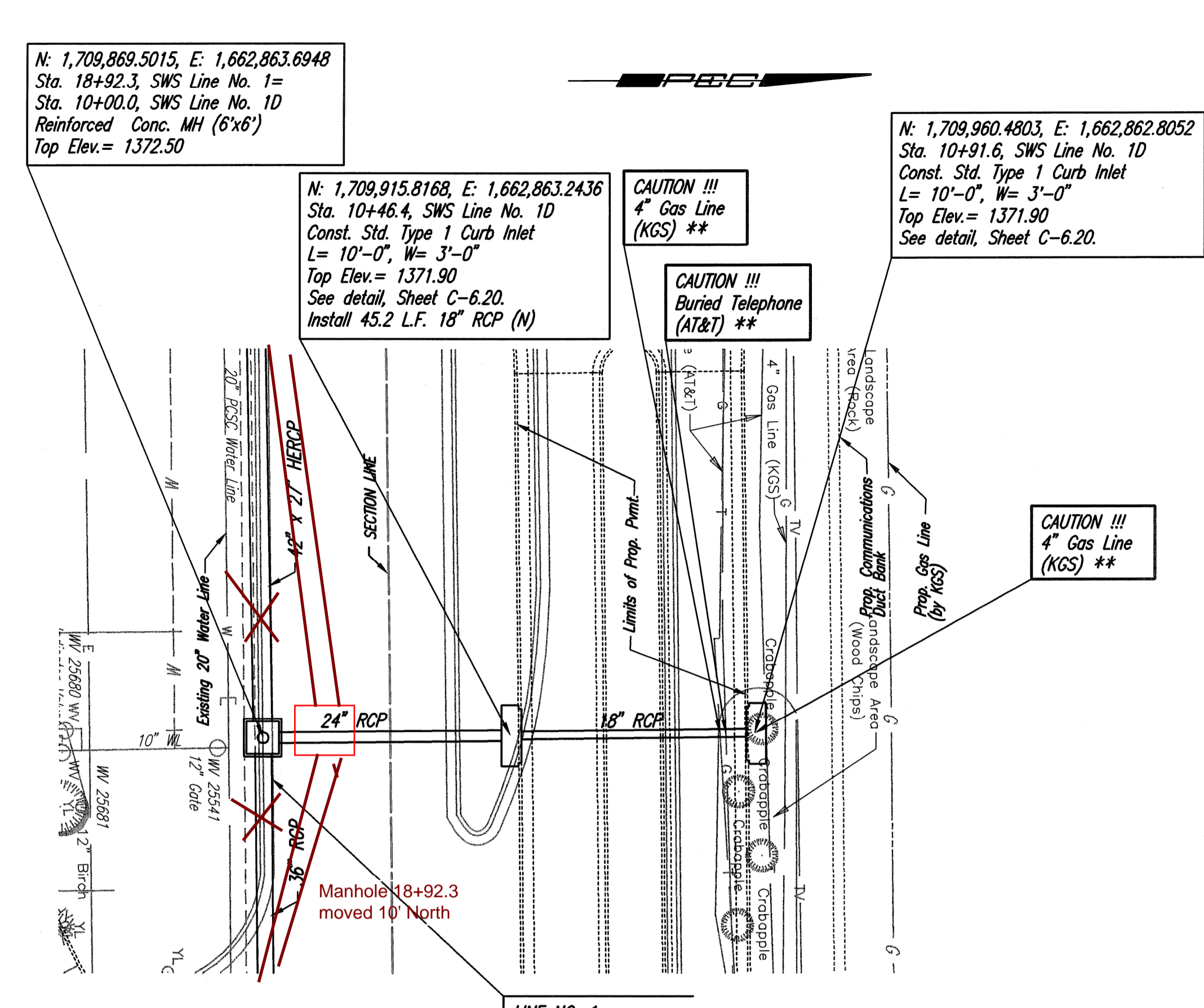
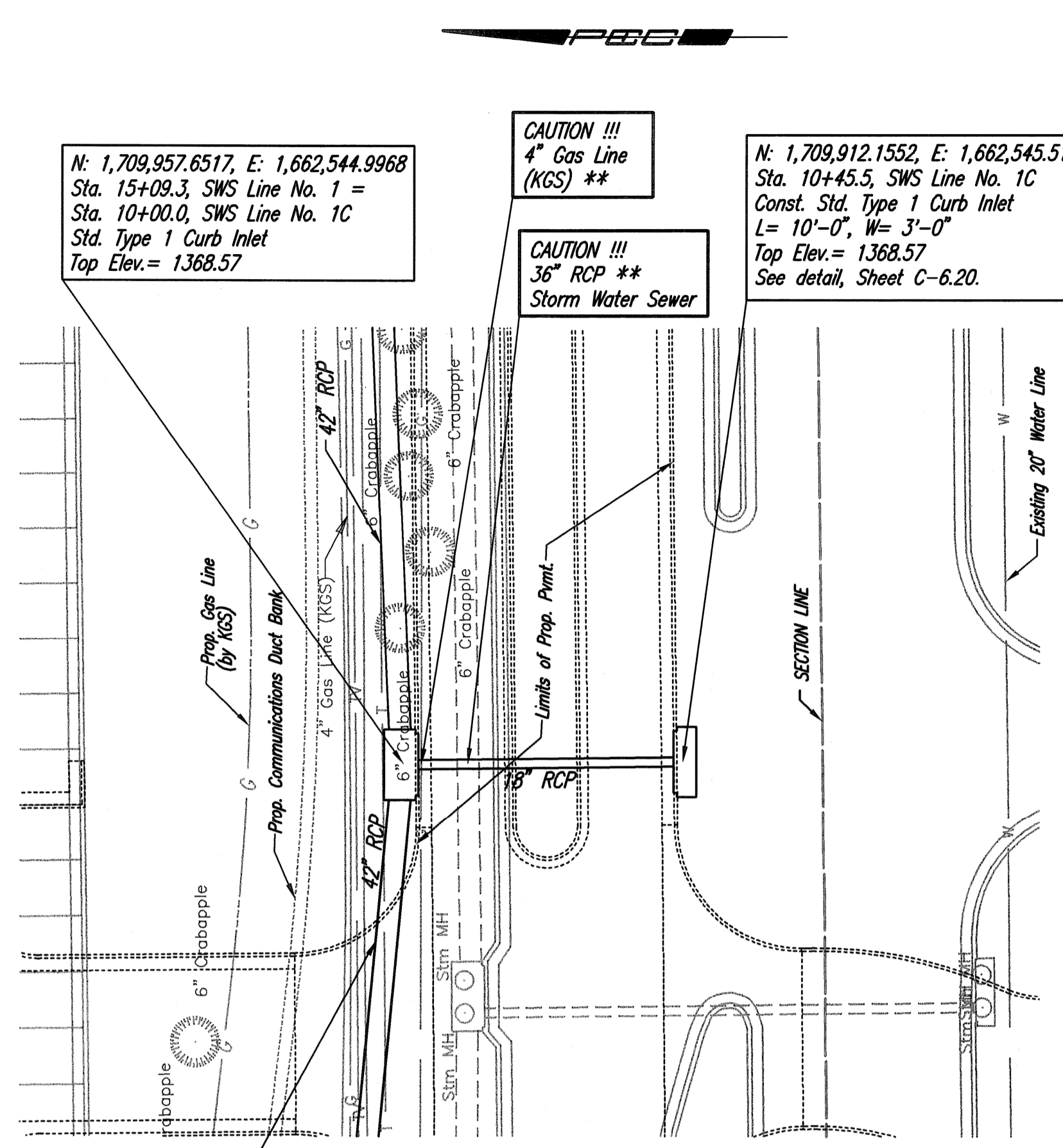
MEB, JAG
 Down By CSJ

Job No. 35-12275-3-7208
 Date FEBRUARY 2013

IPPEC
 KOCH WICHITA CAMPUS EXPANSION
 PRIVATE STORM WATER SEWER EXTENSION
 STORM WATER SEWER LINE NO. 1B

GARY JANZEN, P.E. - CITY ENGINEER
 PRIVATE PROJECT NO. 189 PPD (607861)

Sheet C-6.08 of 30



LINE NO. 1
See sheet no. C-6.05

LINE NO. 1
See sheet no. C-6.06

LINE NO. 1
See sheet no. C-6.06

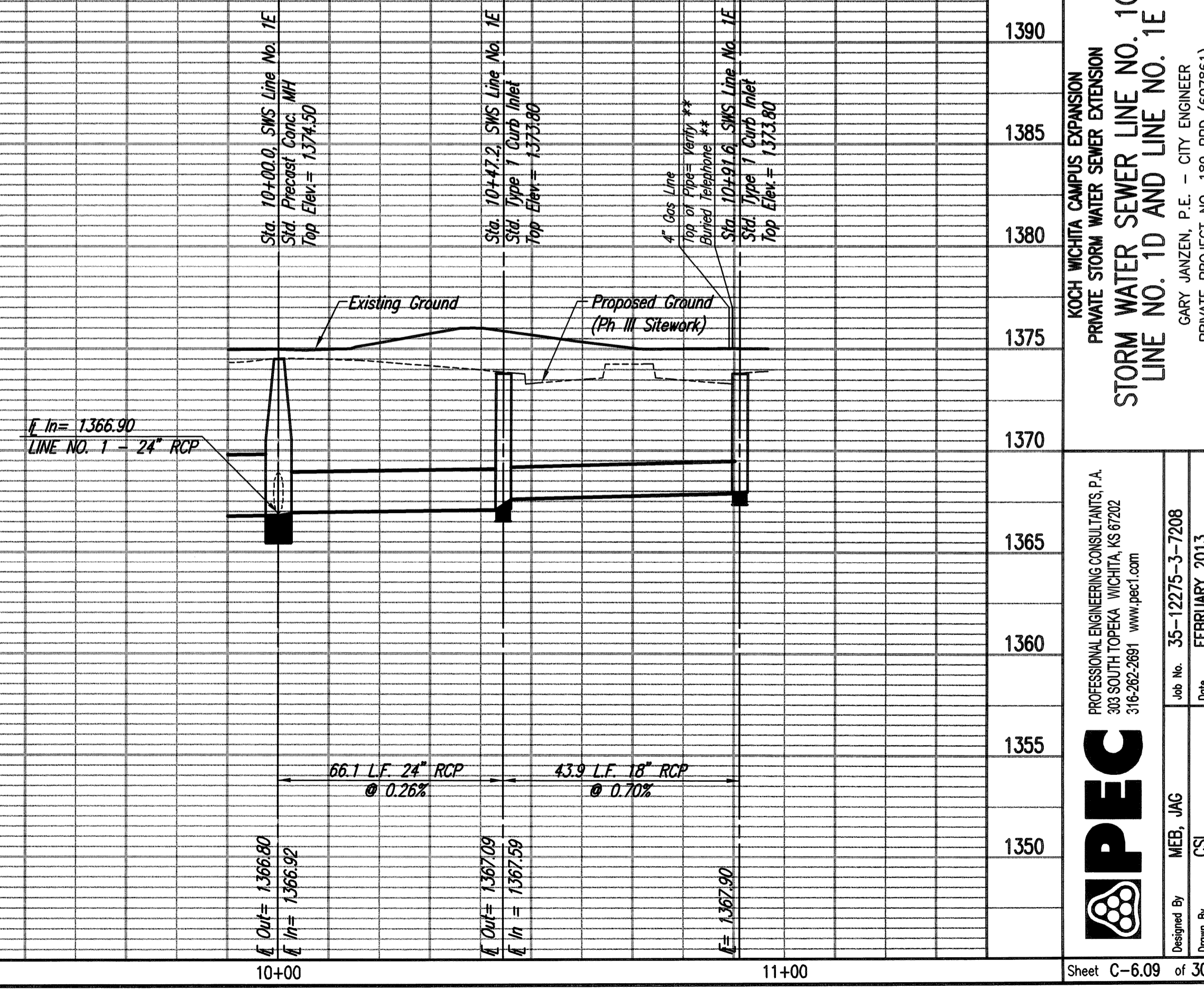
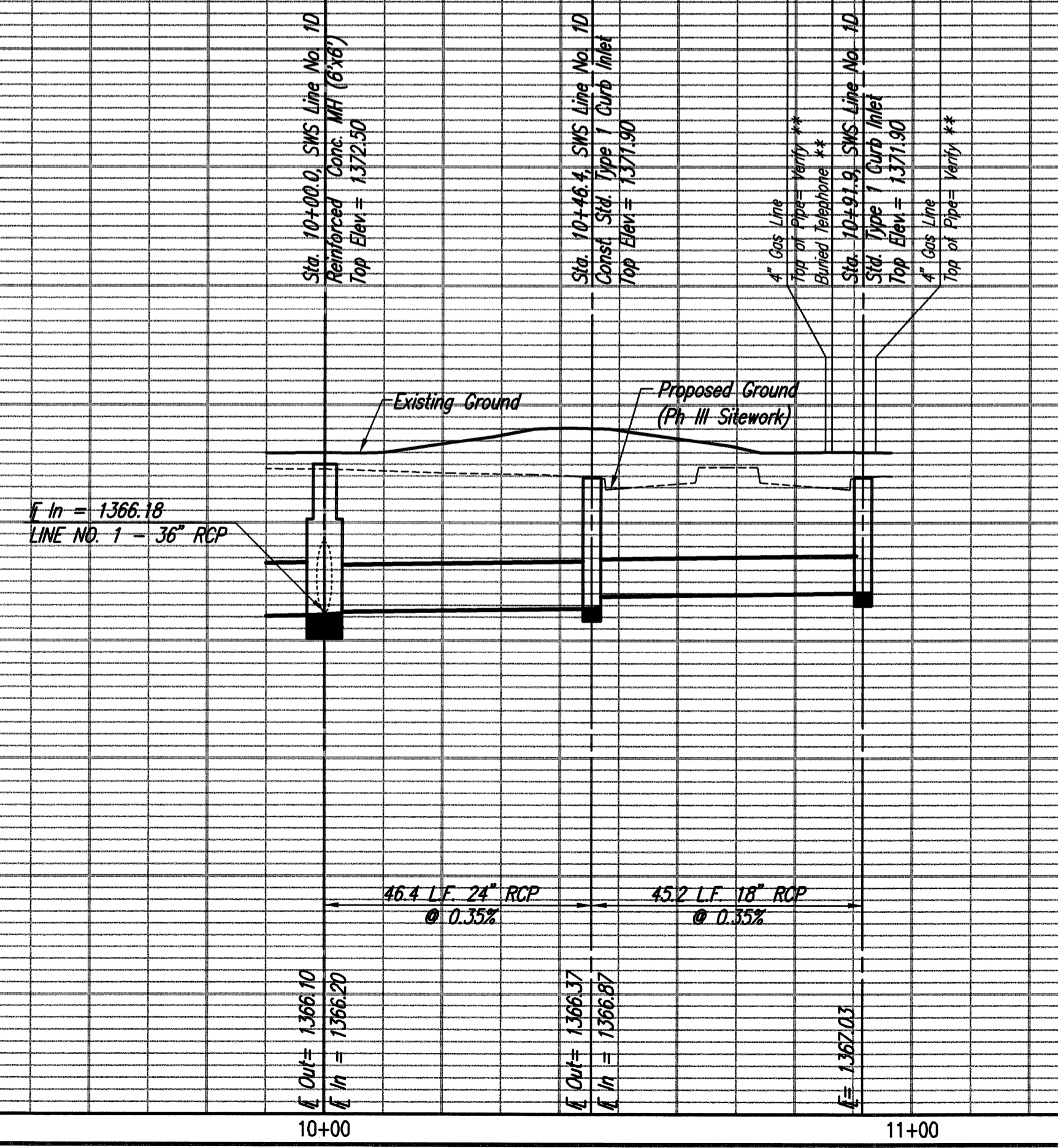
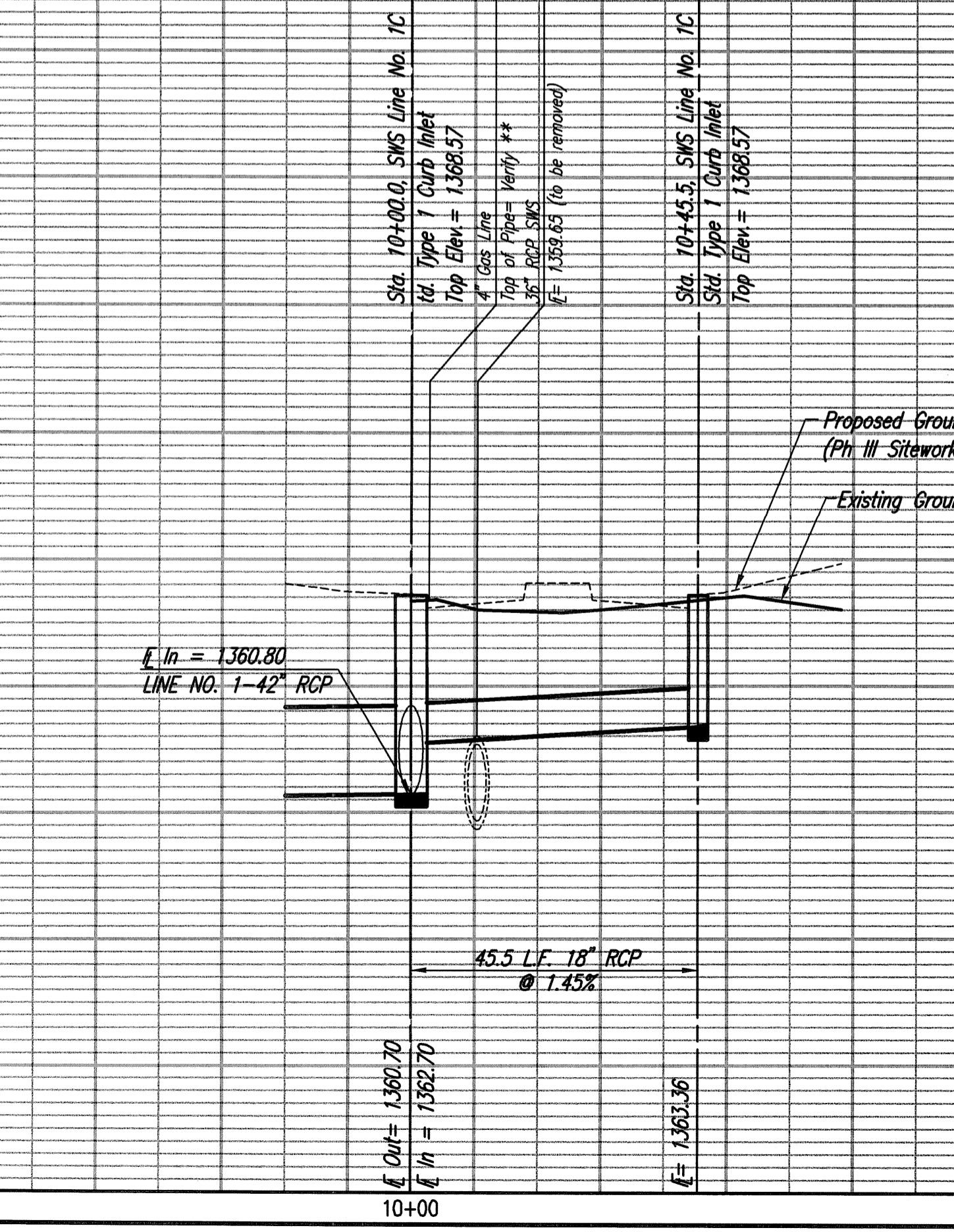
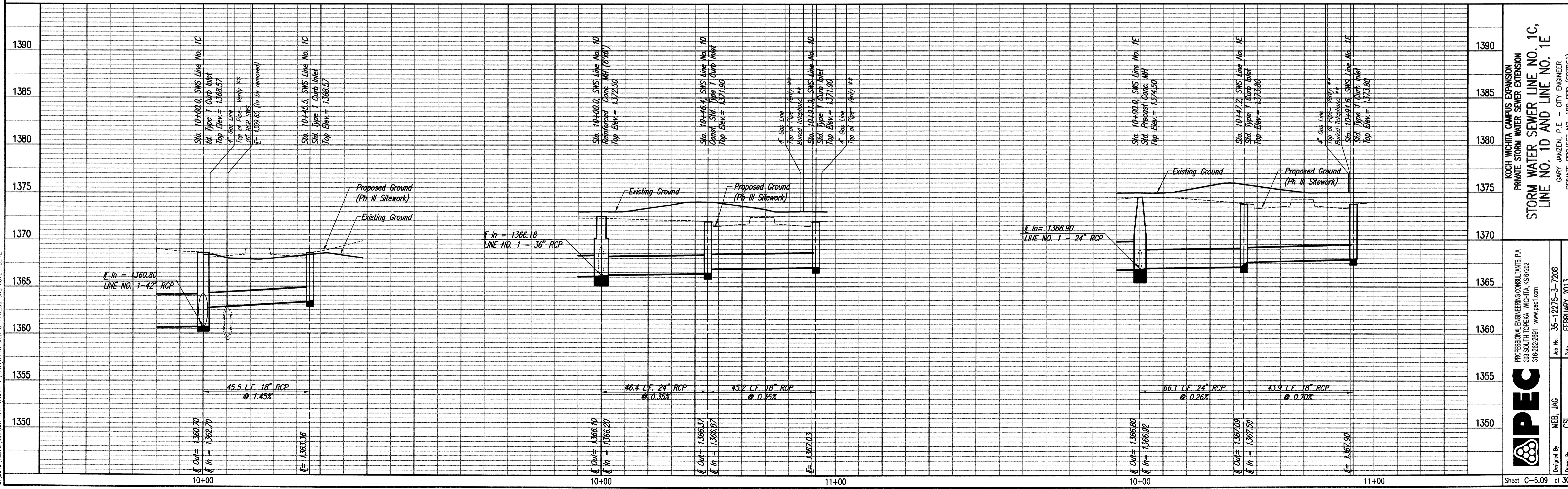
* PRIOR TO CONSTRUCTION CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION AND SIZE OF EXISTING SWS PIPE AND REPORT THESE FINDINGS TO THE ENGINEER SO THAT ANY NECESSARY ADJUSTMENTS CAN BE MADE. INSTALL CONNECTION OF EXISTING SWS PIPE AND PROPOSED STRUCTURE, CUT FLUSH WITH INSIDE WALL OF STRUCTURE, AND GROUT IN PLACE WITH NON-SHRINK GROUT. SUBSIDIARY TO SWS STRUCTURE.

** UTILITY TO BE ABANDONED/RELOCATED. SEE PHASE III DEMOLITION PLAN. COORDINATE CONSTRUCTION OF STORM WATER SEWER WITH PHASE III SITE WORK AND UTILITY/PAVEMENT DEMOLITION.

STORM WATER SEWER LINE NO. 1C

STORM WATER SEWER LINE NO. 1D

STORM WATER SEWER LINE NO. 1E



AS BUILTS

emiller
Engineering

515 S. Anderson
Wichita, KS 67202
316-262-2881

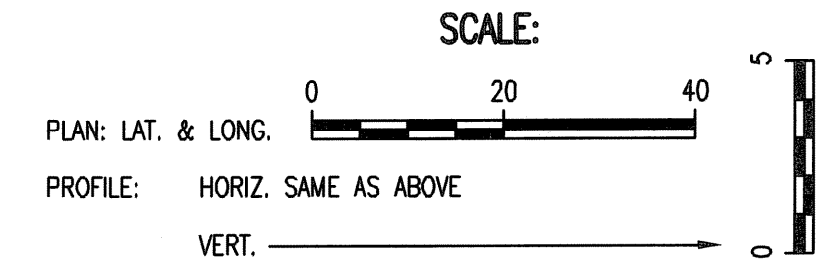
MATTHEW BILLINGSLEY
LICENSED PROFESSIONAL ENGINEER
20827
KANSAS

IPEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPERA WICHITA, KS 67202
316-262-2881 www.ipec.com

DESIGNED BY: MEB, JAG
CHECKED BY: CSJ
DATE: FEBRUARY 2013

PROJECT: KOCH WICHITA CAMPUS EXPANSION
PRIVATE STORM WATER SEWER EXTENSION
STORM WATER SEWER LINE NO. 1C,
LINE NO. 1D AND LINE NO. 1E
CARY JANZEN, P.E. - CITY ENGINEER
PROJECT NO. 189 PFD (60786)

Saved: 09-30-2013 1:46:46 PM by: CSJ
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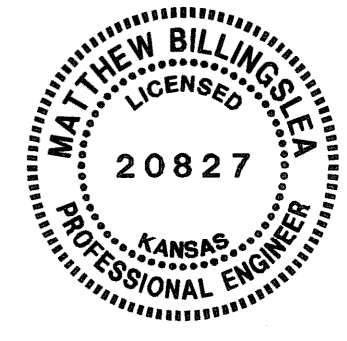
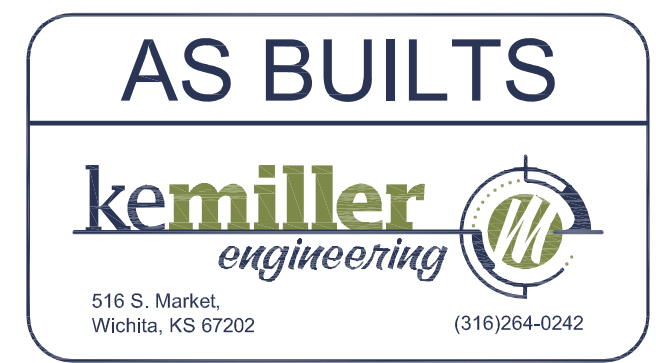
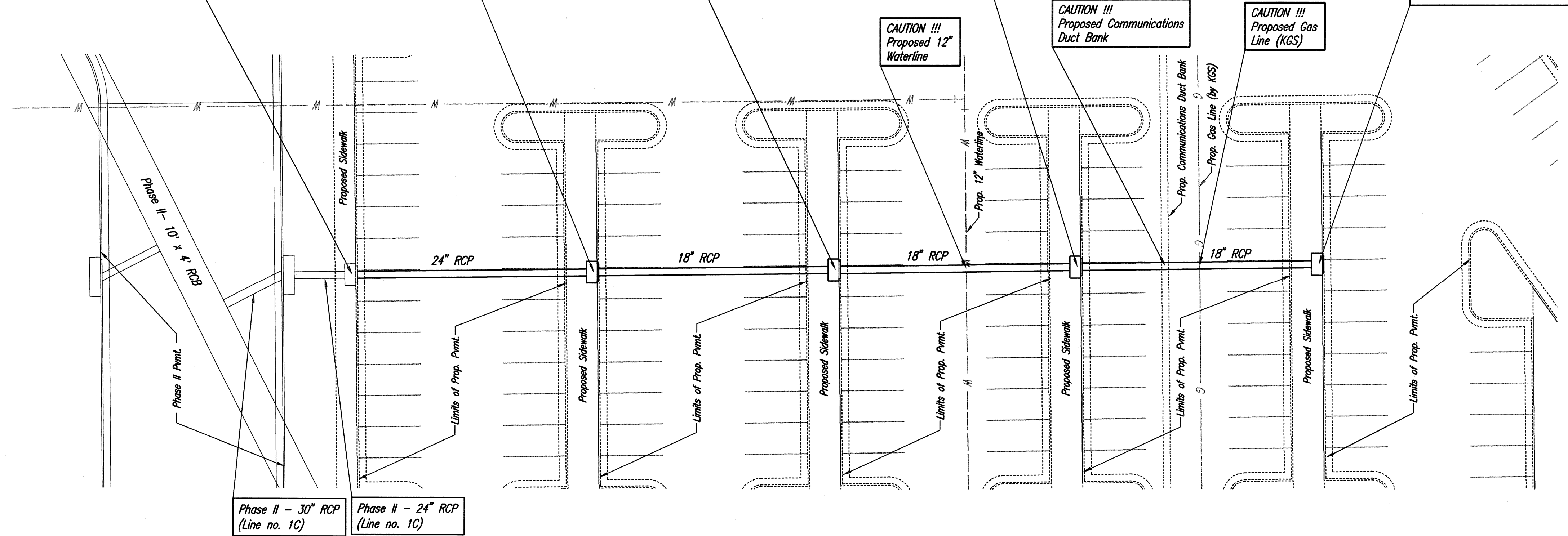
N: 1,710,371.5175, E: 1,661,477.4424
Sta. 10+00.0, SWS Line No. 2
Std. Type 1 Curb Inlet (Constructed in Phase II)
Top Elev. = 1367.70
Remove Temporary Cap and
Install 70.0 L.F. 24" RCP (N)

N: 1,710,441.5129, E: 1,661,476.6350
Sta. 10+70.0, SWS Line No. 2
Const. Std. Type 1 Curb Inlet
L = 5'-0", W = 3'-0"
Top Elev. = 1369.55
See detail, Sheet C-6.20.
Install 70.0 L.F. 18" RCP (N)

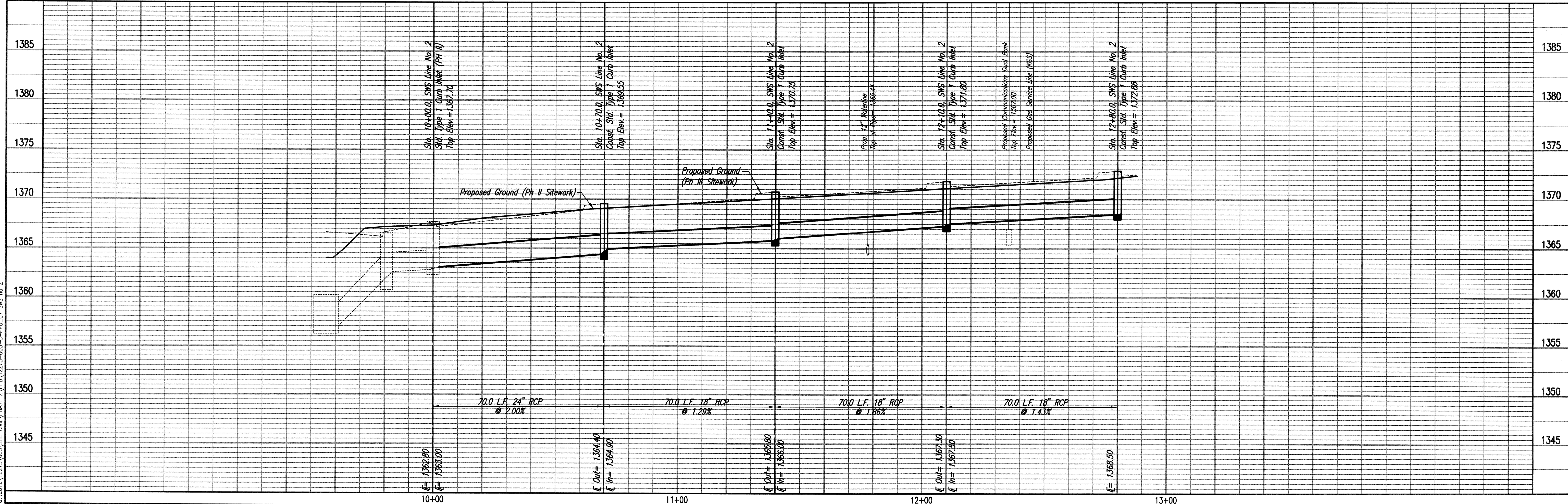
N: 1,710,511.5082, E: 1,661,475.8080
Sta. 11+40.0, SWS Line No. 2
Const. Std. Type 1 Curb Inlet
L = 5'-0", W = 3'-0"
Top Elev. = 1370.75
See detail, Sheet C-6.20.
Install 70.0 L.F. 18" RCP (N)

N: 1,710,581.5035, E: 1,661,475.0025
Sta. 12+10.0, SWS Line No. 2
Const. Std. Type 1 Curb Inlet
L = 5'-0", W = 3'-0"
Top Elev. = 1371.80
See detail, Sheet C-6.20.
Install 70.0 L.F. 18" RCP (N)

N: 1,710,651.4990, E: 1,661,474.2367
Sta. 12+80.0, SWS Line No. 2
Const. Std. Type 1 Curb Inlet
L = 5'-0", W = 3'-0"
Top Elev. = 1372.86
See detail, Sheet C-6.20.



STORM WATER SEWER LINE NO. 2



KOCH WICHITA CAMPUS EXPANSION
PRIVATE STORM WATER SEWER EXTENSION

STORM WATER SEWER LINE NO. 2

PROFESSIONAL ENGINEERING CONSULTANTS P.A.
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DESIGNED BY: MEB, JAG
DRAWN BY: CSI

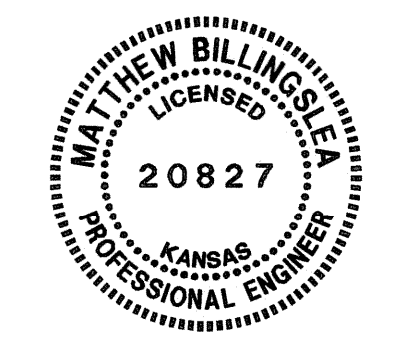
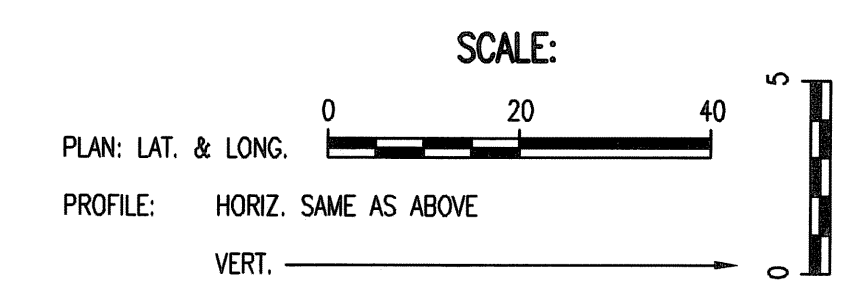
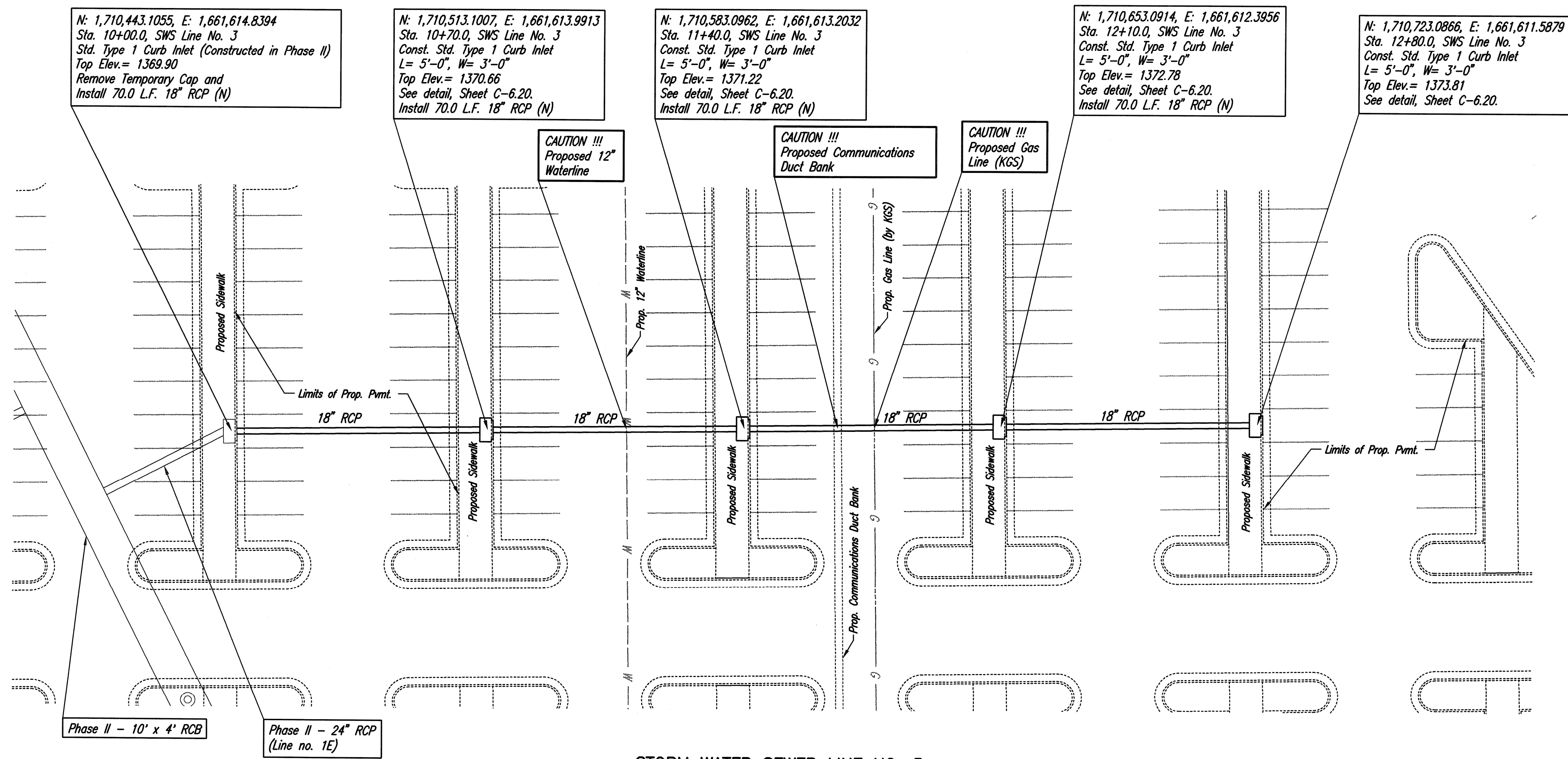
Job No. 35-12275-3-7208
Date FEBRUARY 2013

GARY JANZEN, P.E. - CITY ENGINEER
PRIVATE PROJECT NO. 189-PPD (607861)

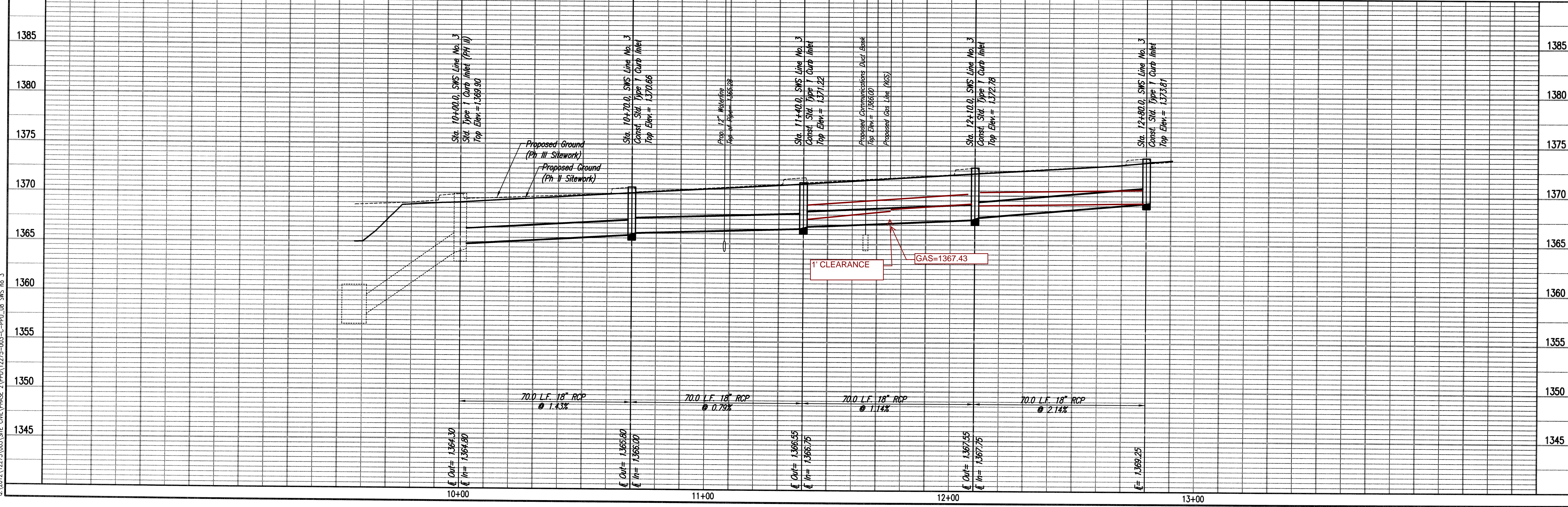
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Sheet 09-03-2013 10:40:19 AM by CSI
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942



STORM WATER SEWER LINE NO. 3



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 316-262-2881 www.pec1.com

JOB NO. 35-12275-3-7208
 DATE FEBRUARY 2013

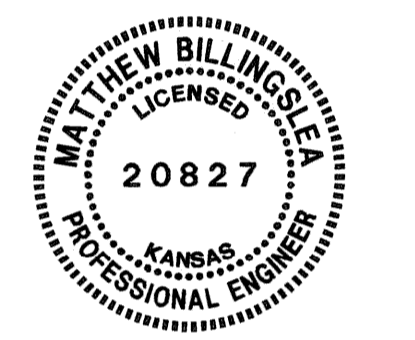
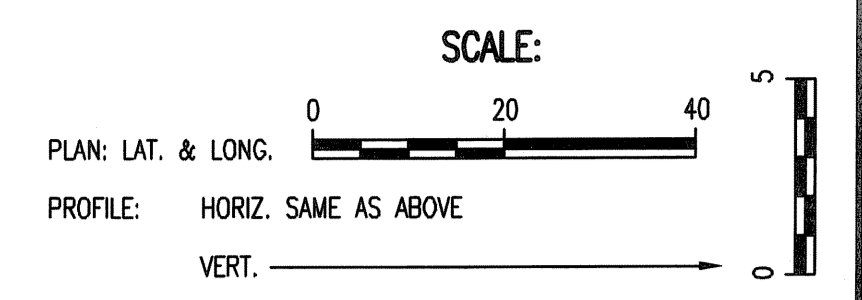
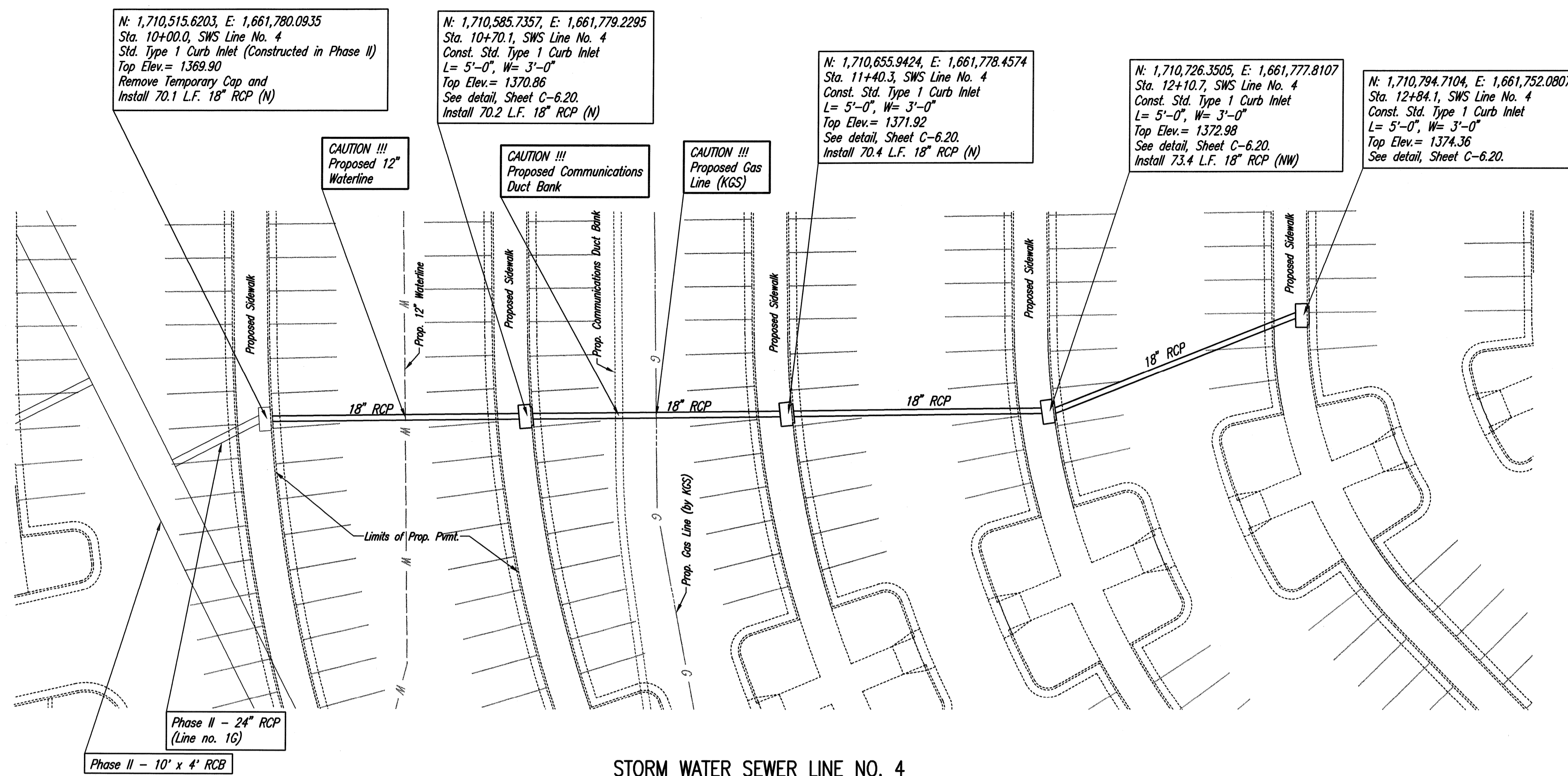
DESIGNED BY MEB, JAG
 DRAWN BY CSL

GARY JANZEN, P.E. - CITY ENGINEER
 PRIVATE PROJECT NO. 189 PPD (607861)

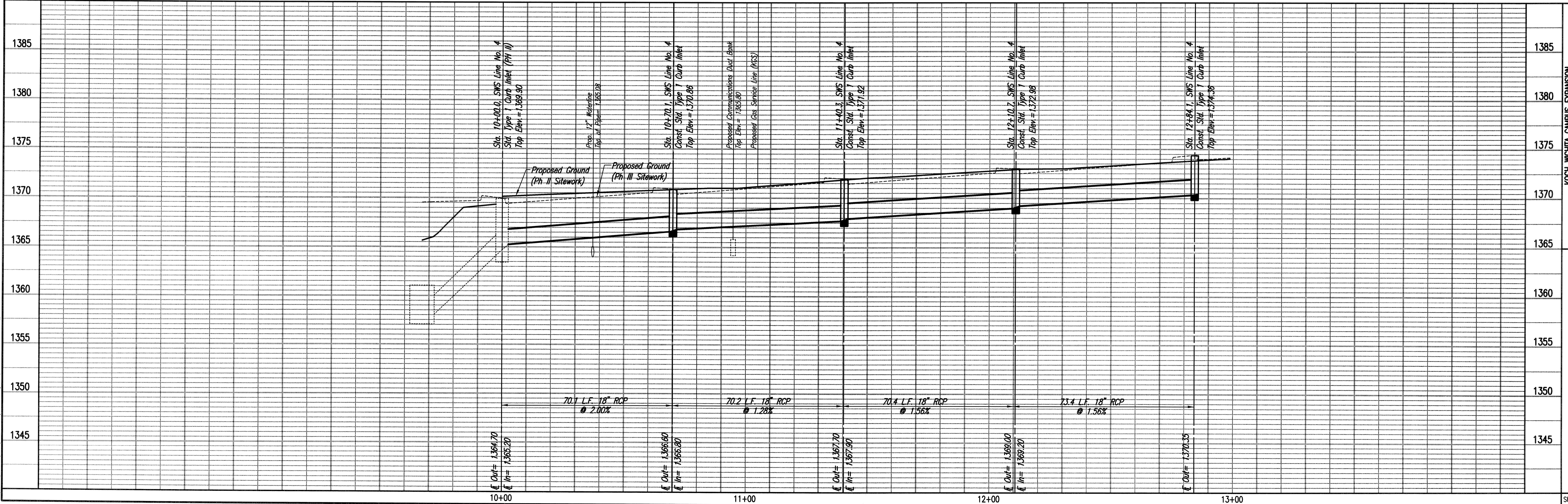
KOCH WICHITA CAMPUS EXPANSION
 PRIVATE STORM WATER SEWER EXTENSION
 STORM WATER SEWER LINE NO. 3

Saved 09-16-2013 7:58:29 AM by CSL
 03/02/2013 09:04:20 AM by JAG
 03/02/2013 09:04:20 AM by JAG

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SCAN 943



STORM WATER SEWER LINE NO. 4

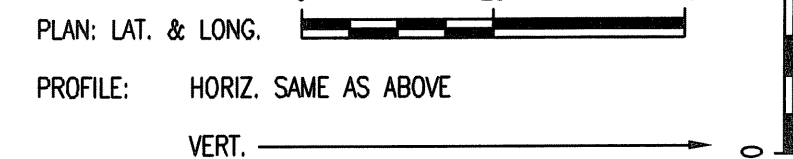


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KOCH WICHITA CAMPUS EXPANSION
 PRIVATE STORM WATER SEWER EXTENSION
STORM WATER SEWER LINE NO. 4
 GARY JANZEN, P.E. - CITY ENGINEER
 PRIVATE PROJECT NO. 189 PPD (607861)

PROFESSIONAL ENGINEERING CONSULTANTS P.A.
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IPEC
 Designed By: MEB, JAC
 Drawn By: CSI
 Job No. 35-12275-3-7208
 Date: FEBRUARY 2013
 Sheet C-6.12 of 30

SCALE:



N: 1,710,670.3623, E: 1,662,071.7005
Sta. 10+00.0, SWS Line No. 5 =
Sta. 10+00.0, SWS Line No. 6
Std. Type 1 Curb Inlet (Constructed in Phase II)
Top Elev. = 1369.60
Remove Temporary Cap and
Install 71.0 L.F. 18" RCP (NW)
Install 69.0 L.F. 18" RCP (SE)

N: 1,710,720.8116, E: 1,662,021.7418
Sta. 10+71.0, SWS Line No. 5
Const. Std. Type 1 Curb Inlet
L = 5'-0", W = 3'-0"
Top Elev. = 1370.08
See detail, Sheet C-6.20
Install 70.0 L.F. 18" RCP (NW)

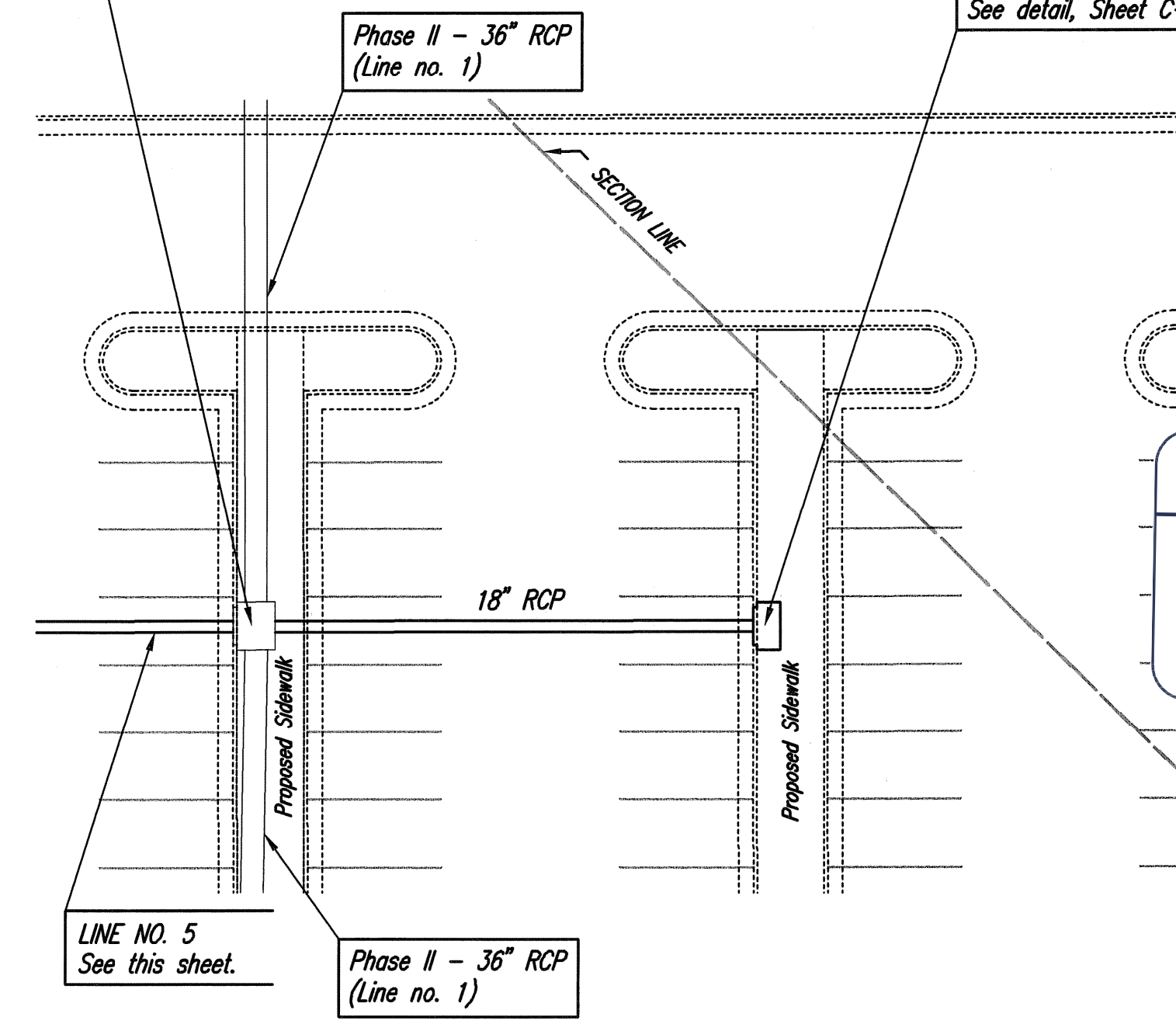
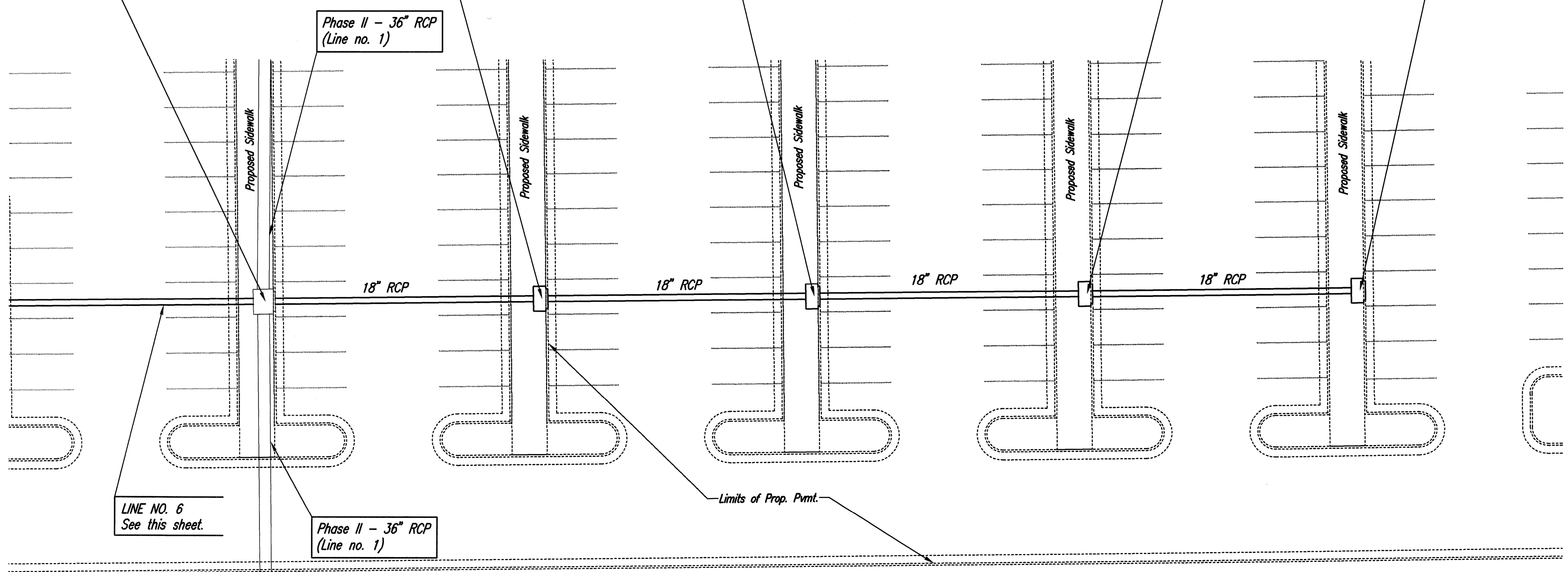
N: 1,710,770.6160, E: 1,661,972.5531
Sta. 11+41.0, SWS Line No. 5
Const. Std. Type 1 Curb Inlet
L = 5'-0", W = 3'-0"
Top Elev. = 1371.06
See detail, Sheet C-6.20
Install 70.0 L.F. 18" RCP (NW)

N: 1,710,820.4203, E: 1,661,923.3644
Sta. 12+11.0, SWS Line No. 5
Const. Std. Type 1 Curb Inlet
L = 5'-0", W = 3'-0"
Top Elev. = 1372.03
See detail, Sheet C-6.20
Install 70.0 L.F. 18" RCP (NW)

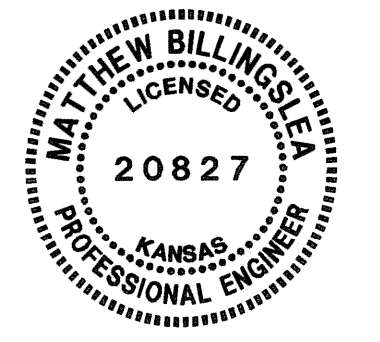
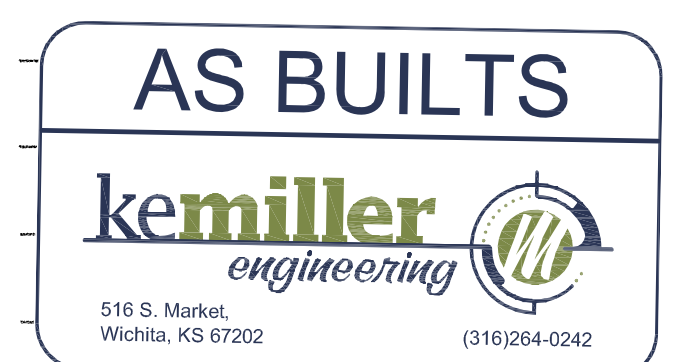
N: 1,710,870.2247, E: 1,661,874.1757
Sta. 12+81.0, SWS Line No. 5
Const. Std. Type 1 Curb Inlet
L = 5'-0", W = 3'-0"
Top Elev. = 1373.46
See detail, Sheet C-6.20

N: 1,710,670.3623, E: 1,662,071.7005
Sta. 10+00.0, SWS Line No. 5 =
Sta. 10+00.0, SWS Line No. 6
Std. Type 1 Curb Inlet (Constructed in Phase II)
Remove Temporary Cap(s)
Top Elev. = 1369.60

N: 1,710,621.2029, E: 1,662,120.1191
Sta. 10+69.00, SWS Line No. 6
Const. Std. Type 1 Curb Inlet
L = 5'-0", W = 3'-0"
Top Elev. = 1367.99
See detail, Sheet C-6.20

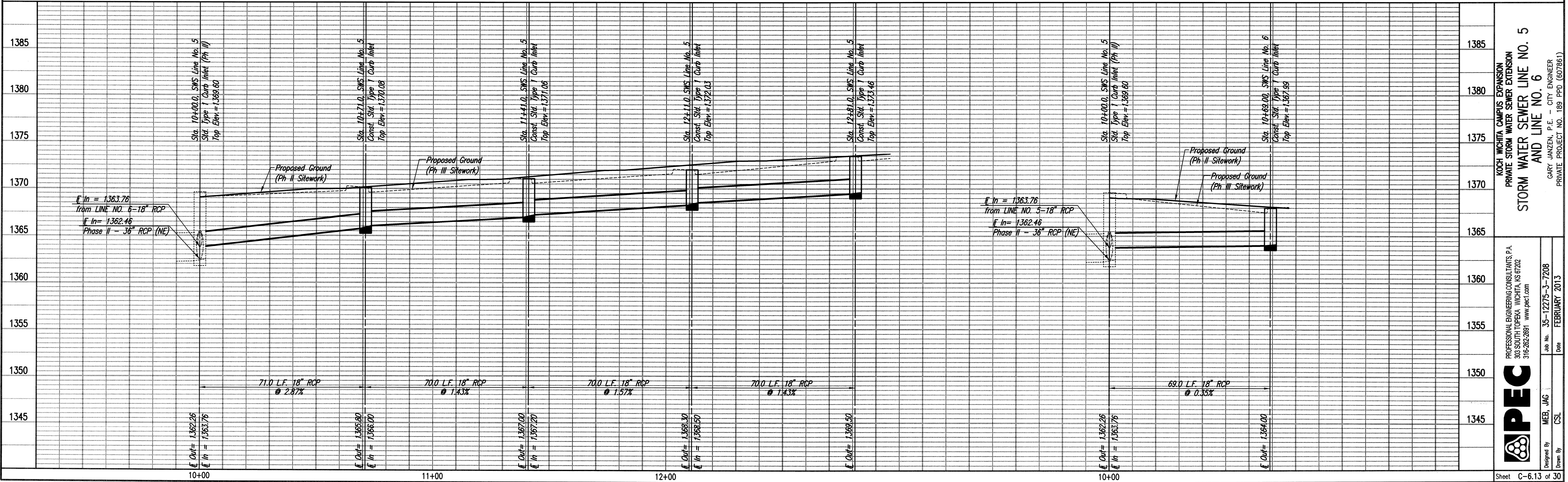


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STORM WATER SEWER LINE NO. 5

STORM WATER SEWER LINE NO. 6



Sheet 09-16-2013 8:01:40 AM by CSI
Plot Scale 1:20 10-04-2013 11:31:09 AM by JMN
01/2012/12275/003/SITE/CIVIL/PHASE 2/PPD/12275-003-C-PPD_10_SWS no 5 and 6

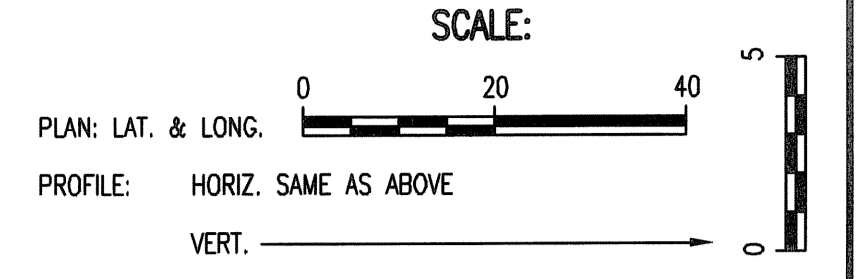
KOCH WICHITA CAMPUS EXPANSION
PRIVATE STORM WATER SEWER EXTENSION
STORM WATER SEWER LINE NO. 5
AND LINE NO. 6
GARY JANZEN, P.E. - CITY ENGINEER
PRIVATE PROJECT NO. 189-PPD (607861)

PROFESSIONAL ENGINEERING CONSULTANTS P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2891 www.pec.com
PEC
Designed By: MEB, JAG
Drawn By: CSI
Job No. 35-12275-3-7208
Date: FEBRUARY 2013
Sheet C-6.13 of 30

AS BUILTS



516 S. Market, Wichita, KS 67202 (316)264-0242



N: 1,709,990.1666, E: 1,661,182.0626
Sta. 10+00.0, SWS Line No. 7
Const. Std. Type 1 Curb Inlet
L= 10'-0", W= 3'-0"
Top Elev.= 1365.36
See detail, Sheet C-6.20.
Install 152.1 L.F. 36" RCP (NE)
First 3 Sections of RCP Shall have Restraining Joints.

N: 1,710,012.2139, E: 1,661,332.5260
Sta. 11+52.1, SWS Line No. 7
Const. Std. Type 1 Curb Inlet
L= 10'-0", W= 3'-0"
Top Elev.= 1365.36
See detail, Sheet C-6.20.
Install 70.5 L.F. 36" RCP (E)

N: 1,710,013.0264, E: 1,661,403.0276
Sta. 12+22.6, SWS Line No. 7
Const. Std. Type 1 Curb Inlet
L= 10'-0", W= 3'-0"
Top Elev.= 1365.36
See detail, Sheet C-6.20.
Install 218.9 L.F. 30" RCP (E)

N: 1,710,004.8569, E: 1,661,621.7517
Sta. 14+41.5, SWS Line No. 7
Const. Std. Type 1 Curb Inlet
L= 10'-0", W= 3'-0"
Top Elev.= 1366.69
See detail, Sheet C-6.20.
Install 82.4 L.F. 30" RCP (E)

N: 1,710,005.3073, E: 1,661,704.2173
Sta. 15+23.9, SWS Line No. 7
Const. Std. Type 1 Curb Inlet
L= 5'-0", W= 4'-0"
Top Elev.= 1366.74
See detail, Sheet C-6.20.
Install 18.8 L.F. 18" RCP (E)
Install 63.5 L.F. 24" RCP (N)

CAUTION !!!
Proposed Gas Line (KGS)

CAUTION !!!
Proposed 12" Waterline

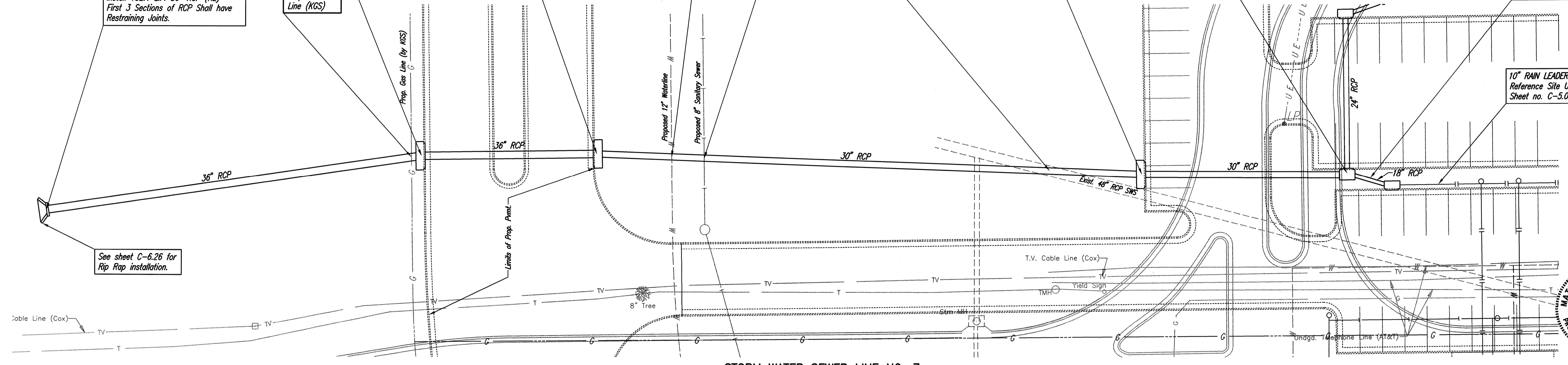
CAUTION !!!
Proposed 8" Sanitary Sewer Line

CAUTION !!!
48" RCP Storm Water Sewer
(To be removed, Ref. Demolition Plans.)

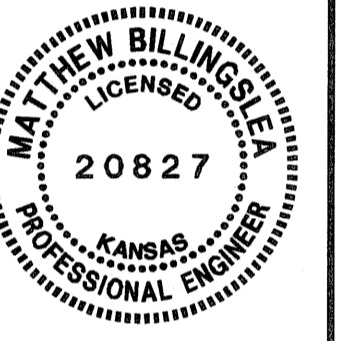
LINE NO. 7A
See sheet no. C-6.15

10" RAIN LEADER
Reference Site Utility Plans,
Sheet no. C-5.01.

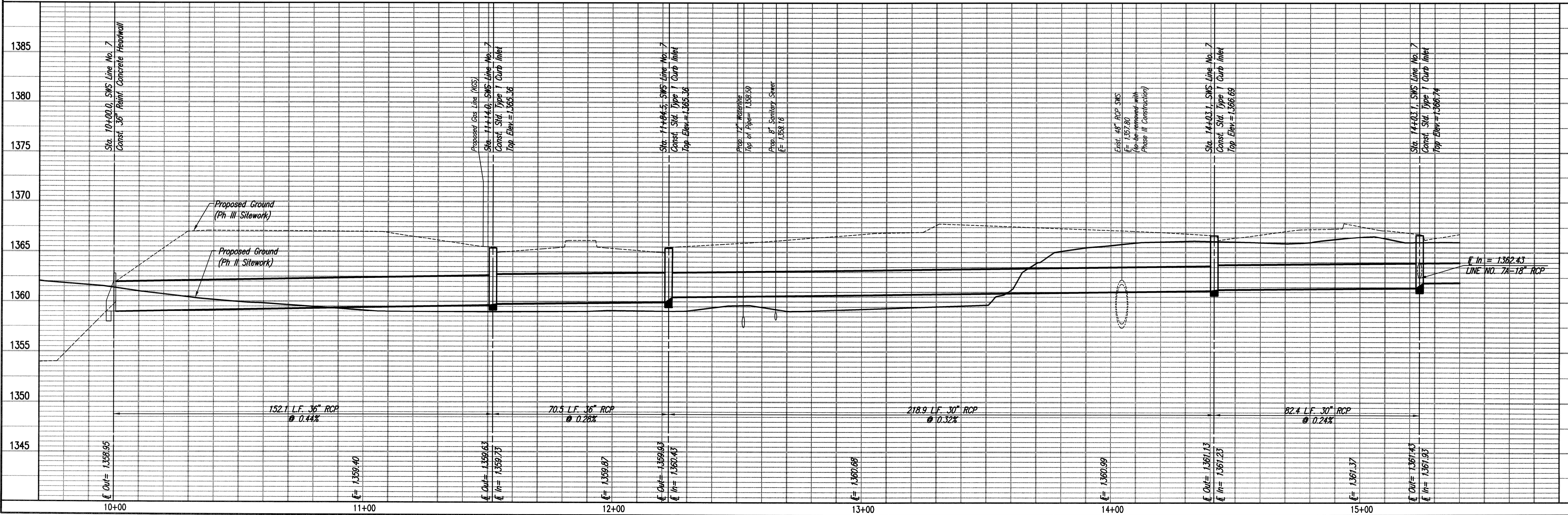
See sheet C-6.26 for
Rip Rap installation.



STORM WATER SEWER LINE NO. 7



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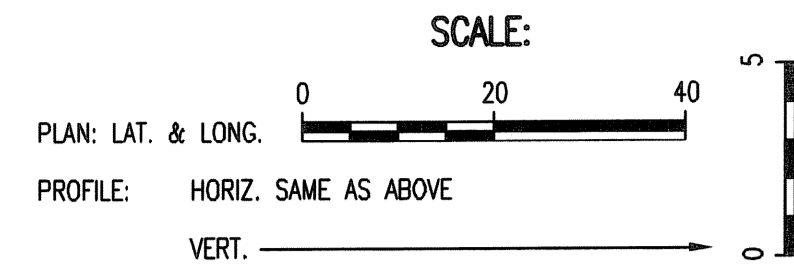
KOCH WICHITA CAMPUS EXPANSION
PRIVATE STORM WATER SEWER EXTENSION
STORM WATER SEWER LINE NO. 7
GARY JANZEN, P.E. - CITY ENGINEER
PRIVATE PROJECT NO. 189-PPD (607861)

Professional Engineering Consultants, P.A.
303 SOUTH TOPPERA WICHITA, KS 67202
316-262-2891 www.pcc.com

Designed By: MEB, JAG
Drawn By: CSL

Job No. 35-12275-3-7208
Date: FEBRUARY, 2013

Sheet C-6.14 of 30



N: 1,710,005.3073, E: 1,661,704.2173
Sta. 15+23.9, SWS Line No. 7 =
Sta. 10+00.0, SWS Line No. 7A
Top Elev. = 1366.74
Match Point

N: 1,710,068.8029, E: 1,661,703.4732
Sta. 15+87.4, SWS Line No. 7
Const. Std. Type 1 Curb Inlet
L = 5'-0", W = 3'-0"
Top Elev. = 1367.30
See detail, Sheet C-6.20.
Install 19.0 L.F. 18" RCP (NE)

N: 1,710,075.0102, E: 1,661,721.4184
Sta. 16+06.4, SWS Line No. 7
Const. Std. Type 1 Curb Inlet
L = 5'-0", W = 3'-0"
Top Elev. = 1367.42
See detail, Sheet C-6.20.

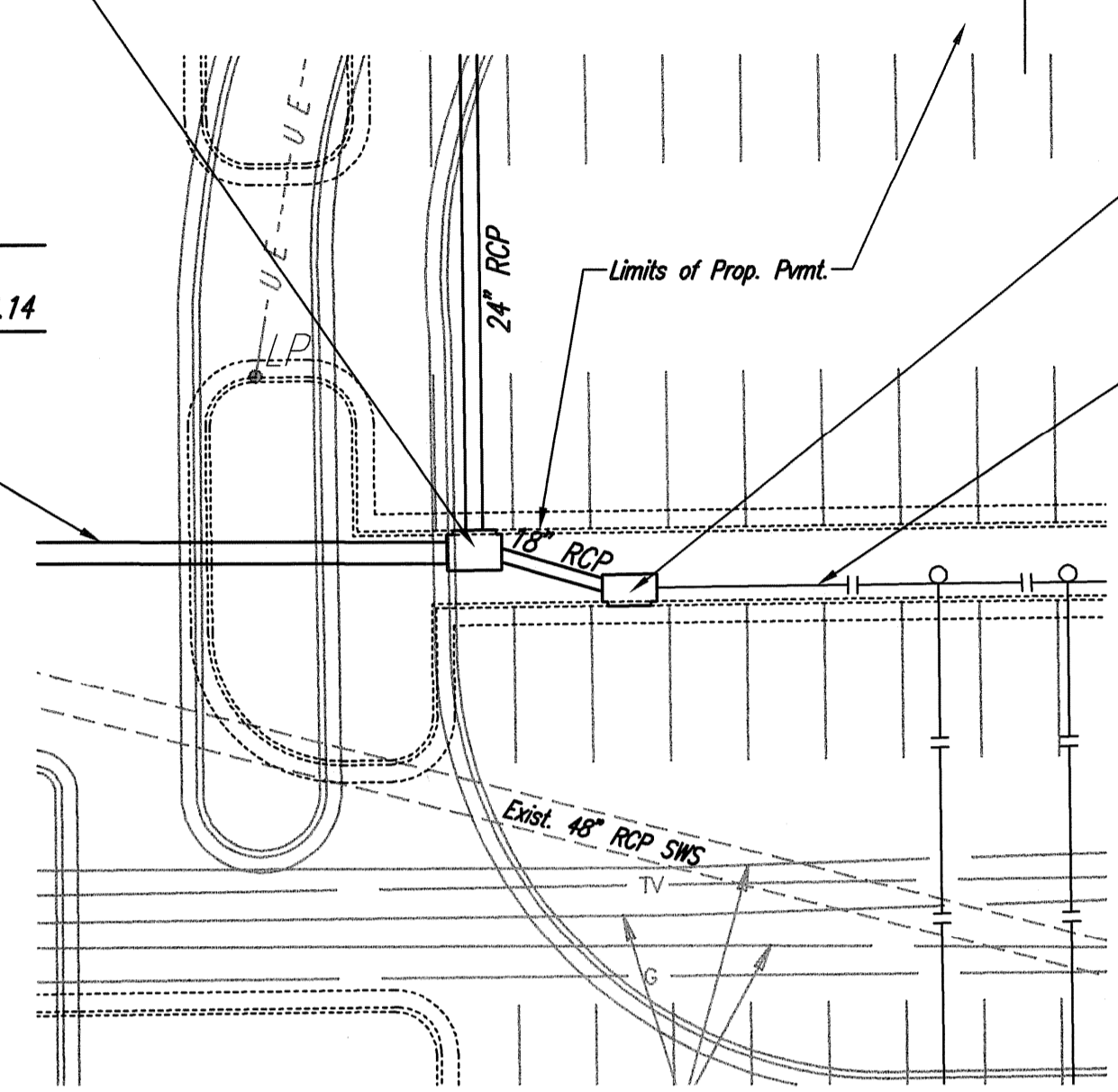
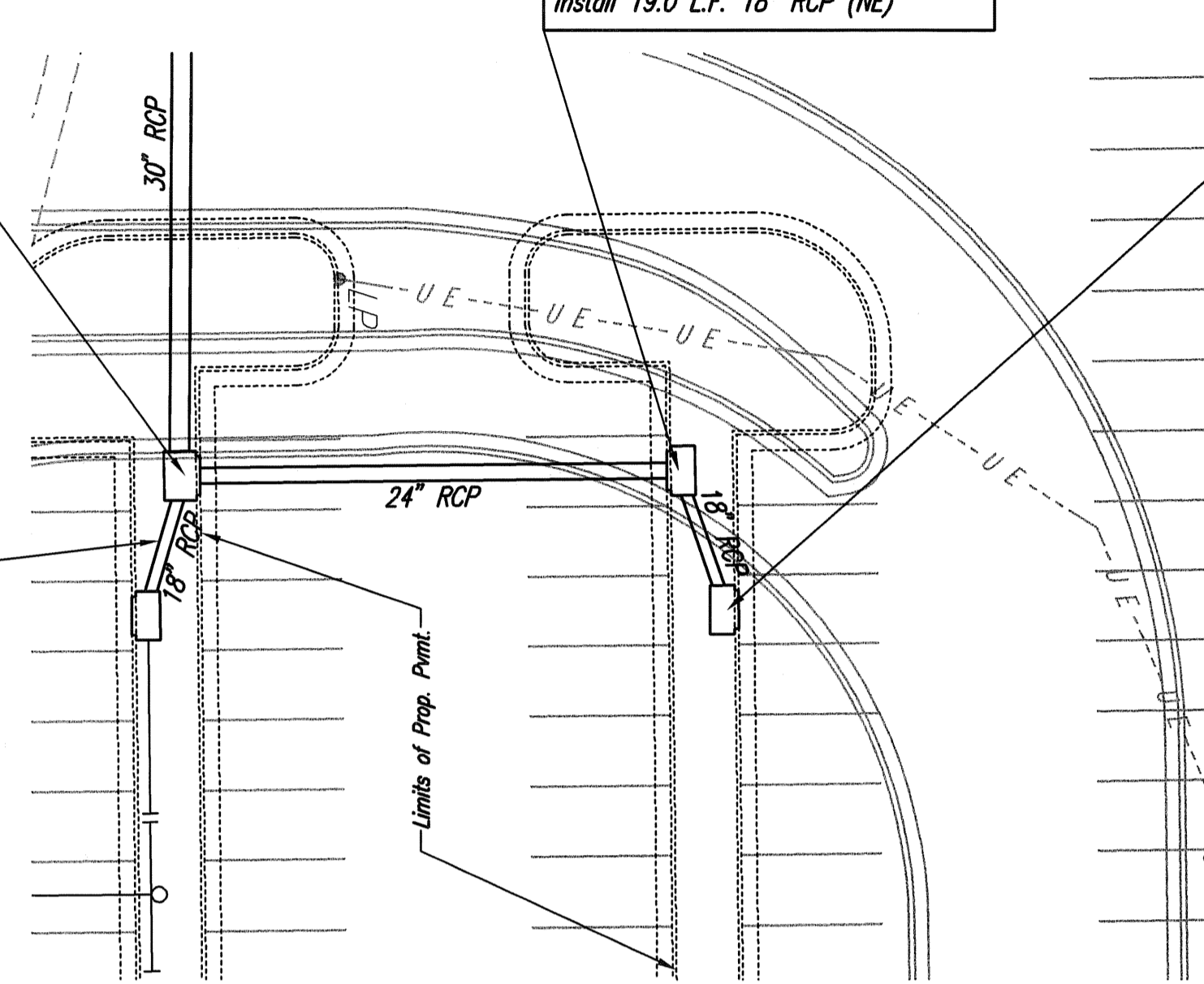
N: 1,710,005.3073, E: 1,661,704.2173
Sta. 15+23.9, SWS Line No. 7 =
Sta. 10+00.0, SWS Line No. 7A
Std. Type 1 Curb Inlet

N: 1,710,000.0207, E: 1,661,722.2512
Sta. 10+18.8, SWS Line No. 7A
Const. Std. Type 1 Curb Inlet
L = 5'-0", W = 3'-0"
Top Elev. = 1366.72
See detail, Sheet C-6.20.
Install 10" PVC (E)
(See sheet no. C-5.02, for continuation)

10" RAIN LEADER
Reference Site Utility Plans,
Sheet no. C-5.01.

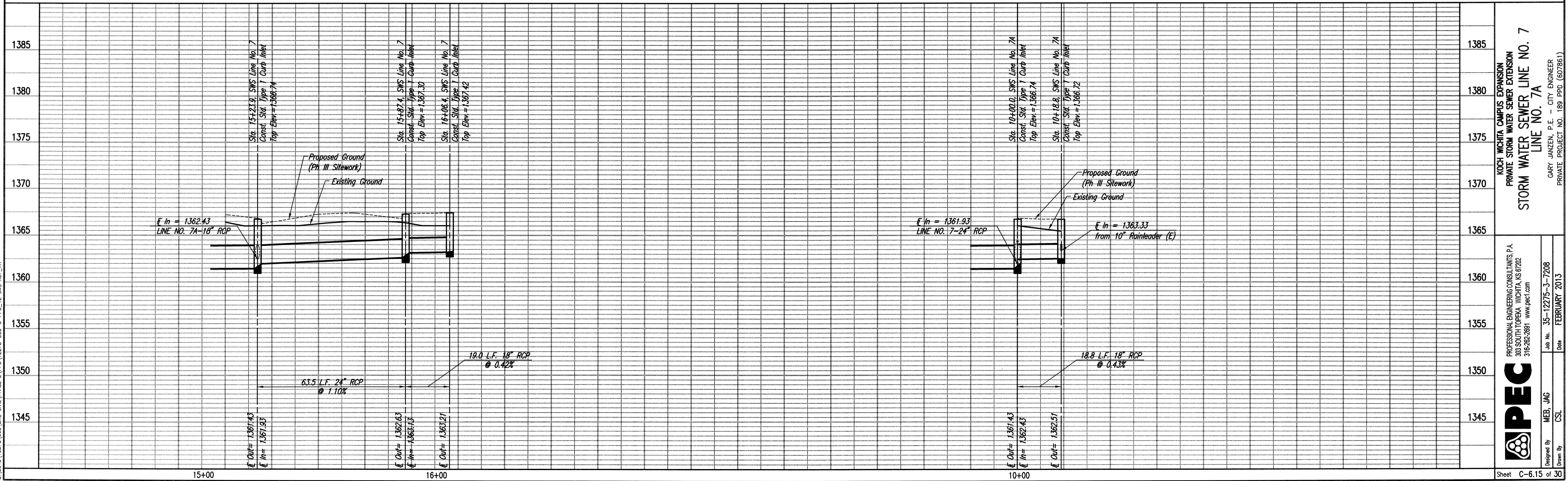
LINE NO. 7A
See this sheet.

LINE NO. 7
See Sheet No. C-6.14



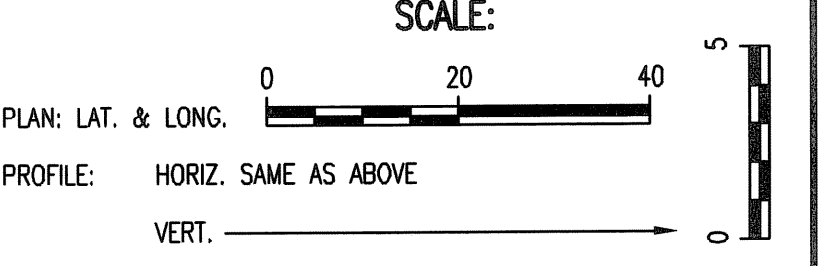
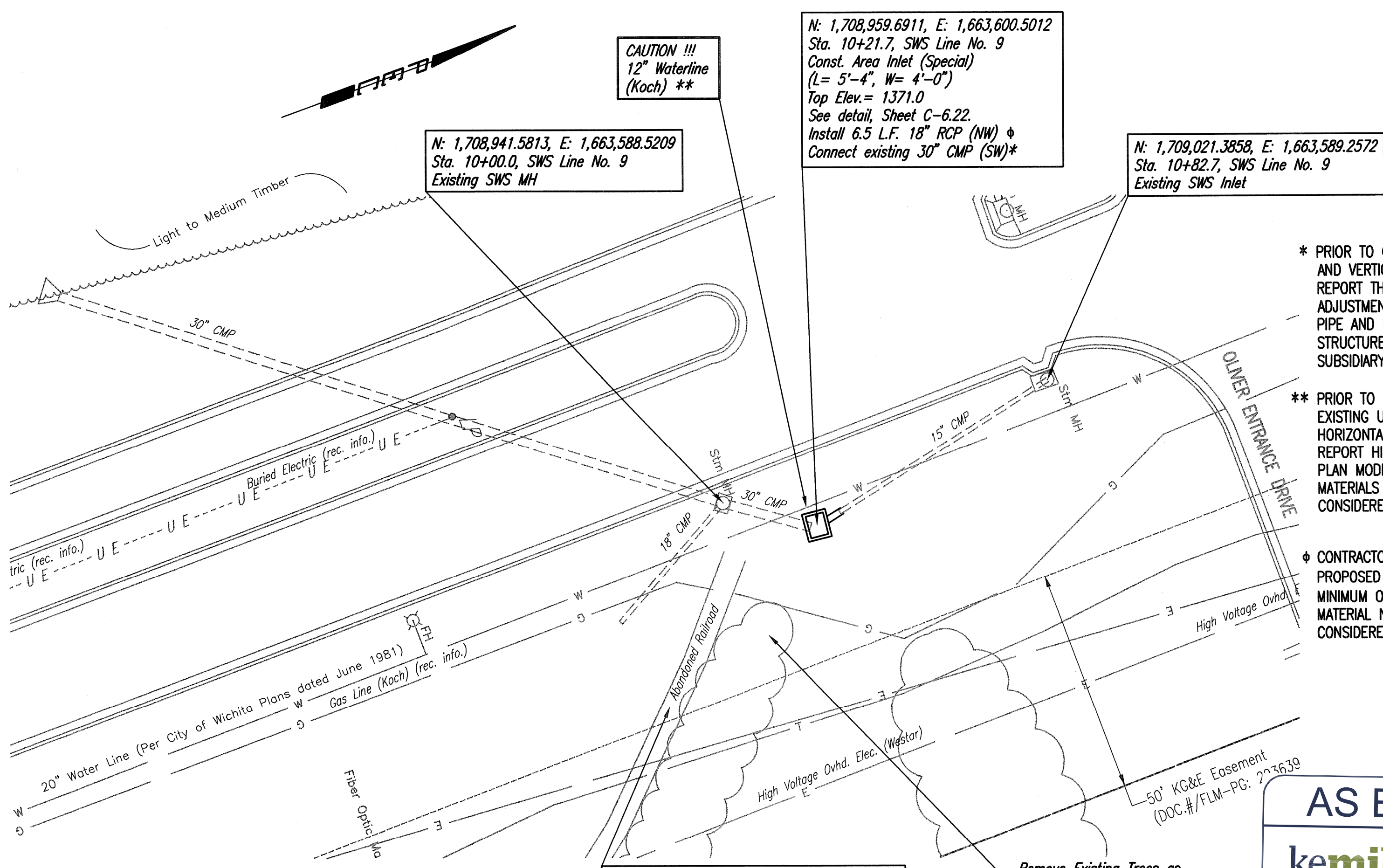
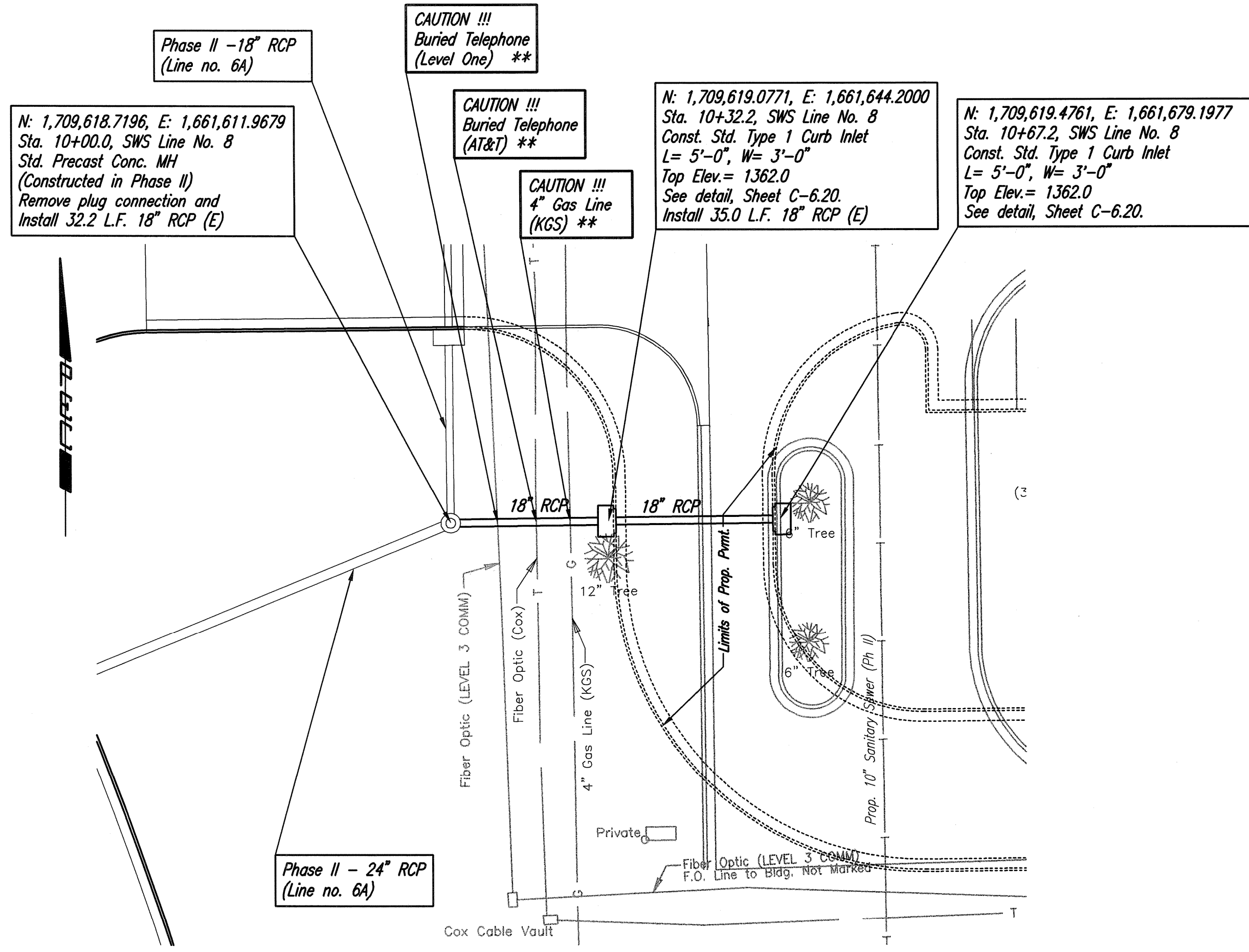
STORM WATER SEWER LINE NO. 7

STORM WATER SEWER LINE NO. 7A



Sheet 09-30-2013 1:50:13 PM by: JAG
 SWS No. 7, 7A, 10+00.0, 15+23.9, 15+87.4, 16+06.4, 10+18.8
 01/20/13 12:25:00:31 SITE - CIVIL PHASE 2 PFD 12275-003-C-PPD_12_SWS no7_7A

PEC
 PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 303 SOUTH TOPERA WICHITA, KS 67202
 316-262-2891 www.pec.com
 Designed By: MEB, JAG
 Drawn By: CSL
 Job No.: 35-12275-3-7208
 Date: FEBRUARY 2013
 PROJECT: KOCH WICHITA CAMPUS EXPANSION
 PRIVATE STORM WATER SEWER EXPANSION
 STORM WATER SEWER LINE NO. 7
 LINE NO. 7A
 GARY JANZEN, P.E. - CITY ENGINEER
 PRIVATE PROJECT NO. 189 PPD (607861)

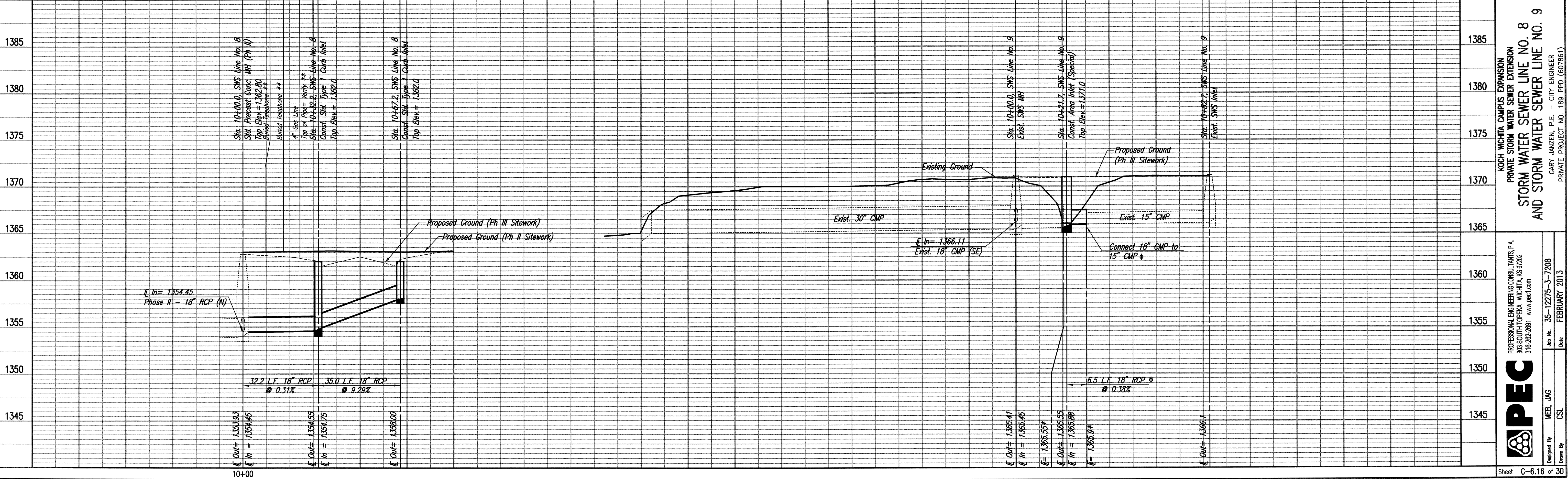


- * PRIOR TO CONSTRUCTION CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION AND SIZE OF EXISTING SWS PIPE AND REPORT THESE FINDINGS TO THE ENGINEER SO THAT ANY NECESSARY ADJUSTMENTS CAN BE MADE. INSTALL CONNECTION OF EXISTING SWS PIPE AND PROPOSED STRUCTURE, CUT FLUSH WITH INSIDE WALL OF STRUCTURE, AND GROUT IN PLACE WITH NON-SHRINK GROUT. SUBSIDIARY TO SWS STRUCTURE.
- ** PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL EXCAVATE THE EXISTING UTILITIES TO VERIFY PIPE SIZE, TYPE, FITTINGS, AND HORIZONTAL AND VERTICAL LOCATION. THE CONTRACTOR SHALL REPORT HIS FINDINGS 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.
- ◆ CONTRACTOR SHALL CONSTRUCT CONCRETE COLLAR TO CONNECT PROPOSED 18" RCP WITH EXISTING 15" CMP. CMP SHALL EXTEND A MINIMUM OF 6" INTO PROPOSED 18" RCP. ANY ADDITIONAL LABOR OR MATERIAL NECESSARY TO COMPLETE THE CONNECTION SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT.

STORM WATER SEWER LINE NO. 8

STORM WATER SEWER LINE NO. 9

AS BUILTS
kemiller engineering
 516 S. Market
 Wichita, KS 67202 (316)264-0242



Sheet 10-04-2013 11:08:17 AM by JAG
 Plot Scale: 20' 10-04-2013 11:33:07 AM by JAG
 C:\2012\12275\003\SWE-CMA\PHASE 2\PH2\12275-003-C-PP0_13_SWS_m08_3

KOCH WICHITA CAMPUS EXPANSION
 PRIVATE STORM WATER SEWER EXTENSION
 STORM WATER SEWER LINE NO. 8
 AND STORM WATER SEWER LINE NO. 9
 GARY JANZEN, P.E. - CITY ENGINEER
 PRIVATE PROJECT NO. 189 PPD (607861)

PEC
 PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 303 SOUTH TOPEKA WICHITA, KS 67202
 316-262-2881 www.pec.com
 Designed By: MEB, JAG
 Drawn By: CSL
 Job No. 35-12275-3-7208
 Date: FEBRUARY 2013
 Sheet C-6.16 of 30

N: 1,708,895.3502, E: 1,663,384.3307
 Sta. 9+92.0, SWS Line No. 10
 Const. 36" Concrete Headwall
 See Sheet No. C-6.24
 Install 212.3 L.F. 36" RCP (NW)
 First 3 Sections of RCP Shall have Restraining Joints.

See sheet C-6.26 for Rip Rap installation.

N: 1,709,040.6286, E: 1,663,229.8994
 Sta. 12+04.0, SWS Line No. 10
 Const. Std. Type 1 Curb Inlet
 L= 10'-0", W= 4'-0"
 Top Elev.= 1,368.58
 See detail, Sheet C-6.20
 Install 40.7 L.F. 36" RCP (NW)

CAUTION !!!
 Existing 10"
 Sanitary Sewer **

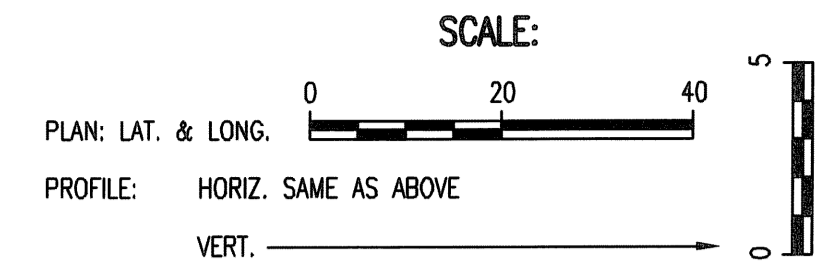
CAUTION !!!
 Existing 12"
 Sanitary Sewer **

CAUTION !!!
 Gas Line **

N: 1,709,060.6162, E: 1,663,193.9089
 Sta. 12+45.1, SWS Line No. 10
 Existing SWS Inlet*
 Remove existing 30" RCP and end section as necessary. Reference Demolition Plan, See Sheet C-1.00.
 Core existing Inlet wall as necessary. Seal proposed 36" RCP to Inlet with non-shrink grout. Reshape Inlet floor as needed to provide smooth flow.

N: 1,708,919.0369, E: 1,663,482.2276
 Sta. 10+00.0, SWS Line No. 11
 Const. 18" Concrete Headwall
 See detail, Sheet C-6.23
 Install 109.5 L.F. 18" RCP (SW)
 First 3 Sections of RCP Shall have Restraining Joints.

N: 1,709,023.2305, E: 1,663,515.9238
 Sta. 11+09.5, SWS Line No. 11
 Existing SWS Inlet*
 Remove existing 18" CMP and end section as necessary. Reference Demolition Plan, Sheet C-1.00.
 Core existing Inlet wall as necessary. Seal proposed 18" RCP to Inlet with non-shrink grout. Reshape Inlet floor as needed to provide smooth flow.

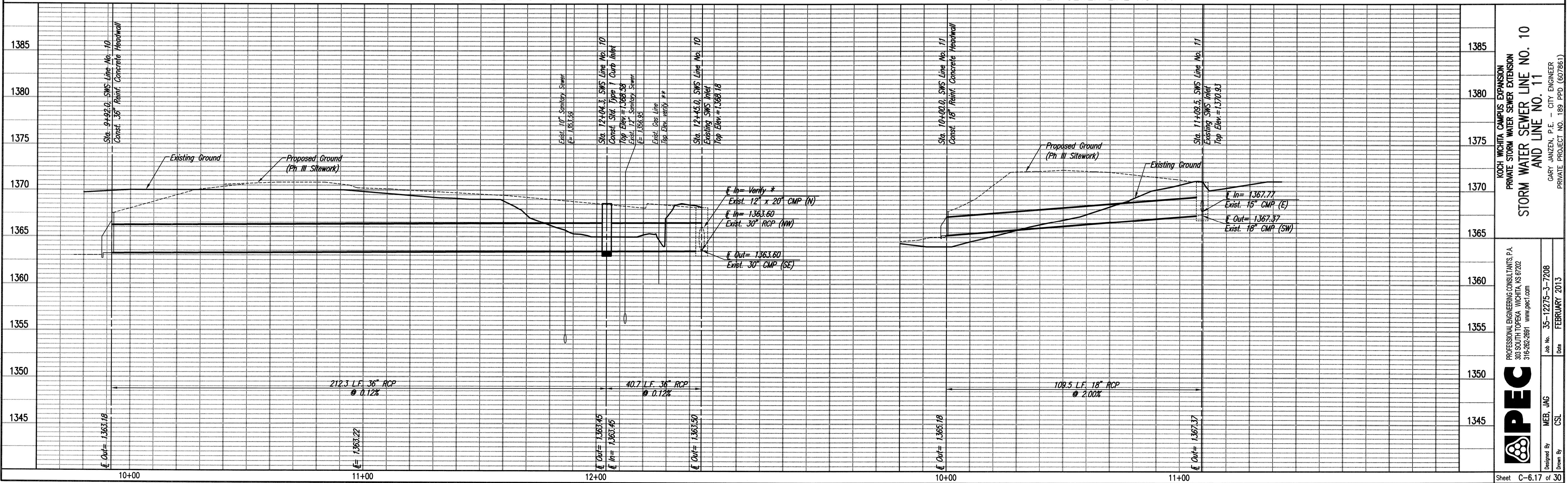


* PRIOR TO CONSTRUCTION CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION AND SIZE OF EXISTING SWS PIPE AND REPORT THESE FINDINGS TO THE ENGINEER SO THAT ANY NECESSARY ADJUSTMENTS CAN BE MADE. INSTALL CONNECTION OF PROPOSED SWS PIPE AND EXISTING STRUCTURE, CUT FLUSH WITH INSIDE WALL OF STRUCTURE, AND GROUT IN PLACE WITH NON-SHRINK GROUT. SUBSIDIARY TO SWS STRUCTURE.

** PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL EXCAVATE THE EXISTING UTILITIES TO VERIFY PIPE SIZE, TYPE, FITTINGS, AND HORIZONTAL AND VERTICAL LOCATION. THE CONTRACTOR SHALL REPORT HIS FINDINGS 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.

STORM WATER SEWER LINE NO. 10

STORM WATER SEWER LINE NO. 11



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KOCH WICHITA CAMPUS EXPANSION
 PRIVATE STORM WATER SEWER EXTENSION
STORM WATER SEWER LINE NO. 10 AND LINE NO. 11
 GARY JANZEN, P.E. - CITY ENGINEER
 PRIVATE PROJECT NO. 189 PPD (607861)

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 303 SOUTH TOPERA WICHITA, KS 67202
 316-262-2881 www.pec.com

Designed By: MEB, JAG
 Drawn By: CSL
 Job No. 35-12275-3-7208
 Date: FEBRUARY 2013

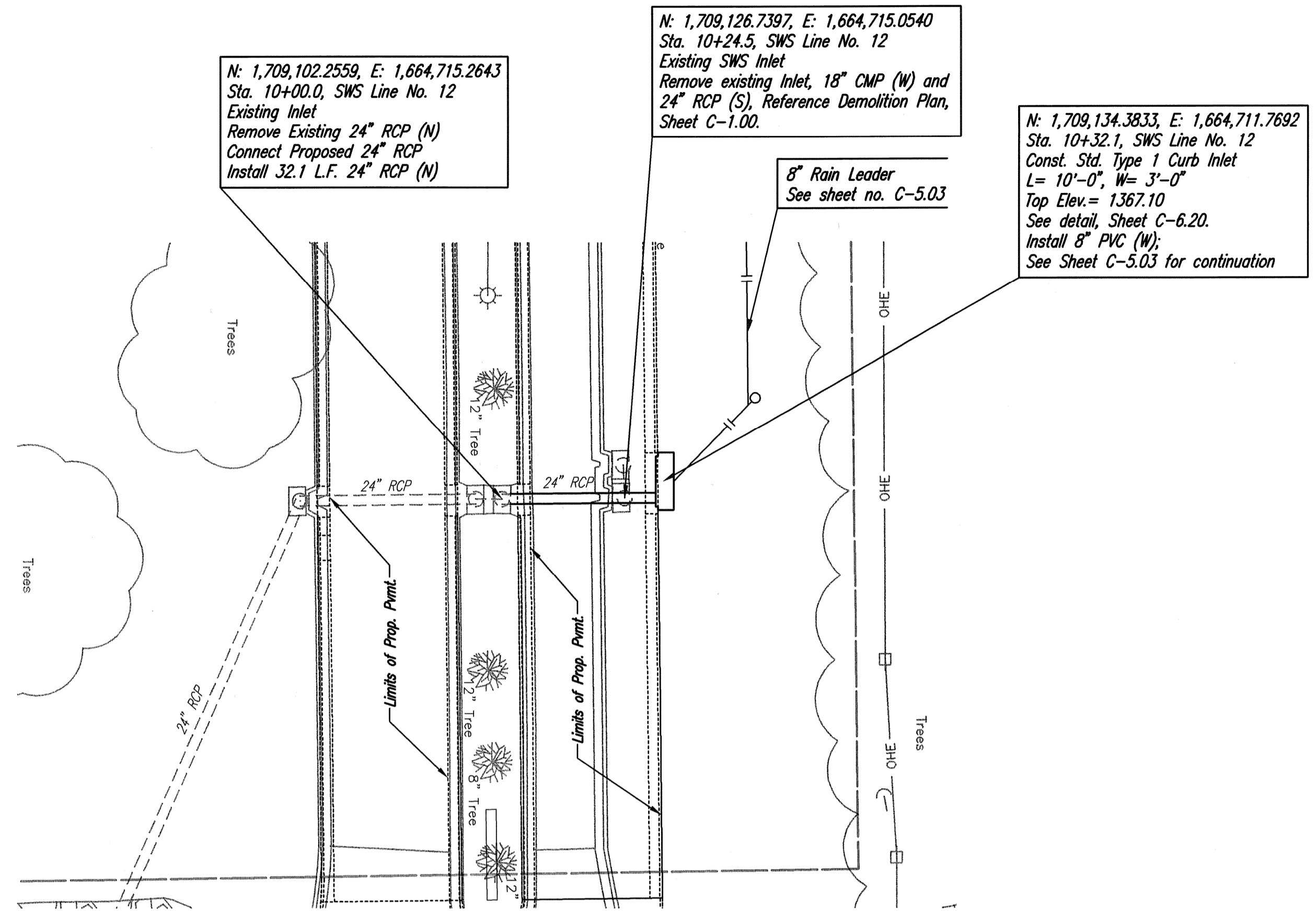
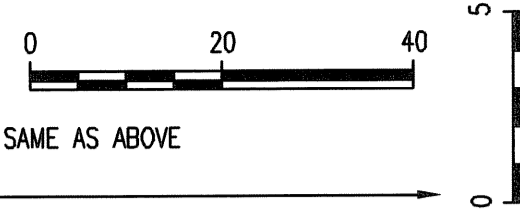
Sheet C-6.17 of 30

SCALE:

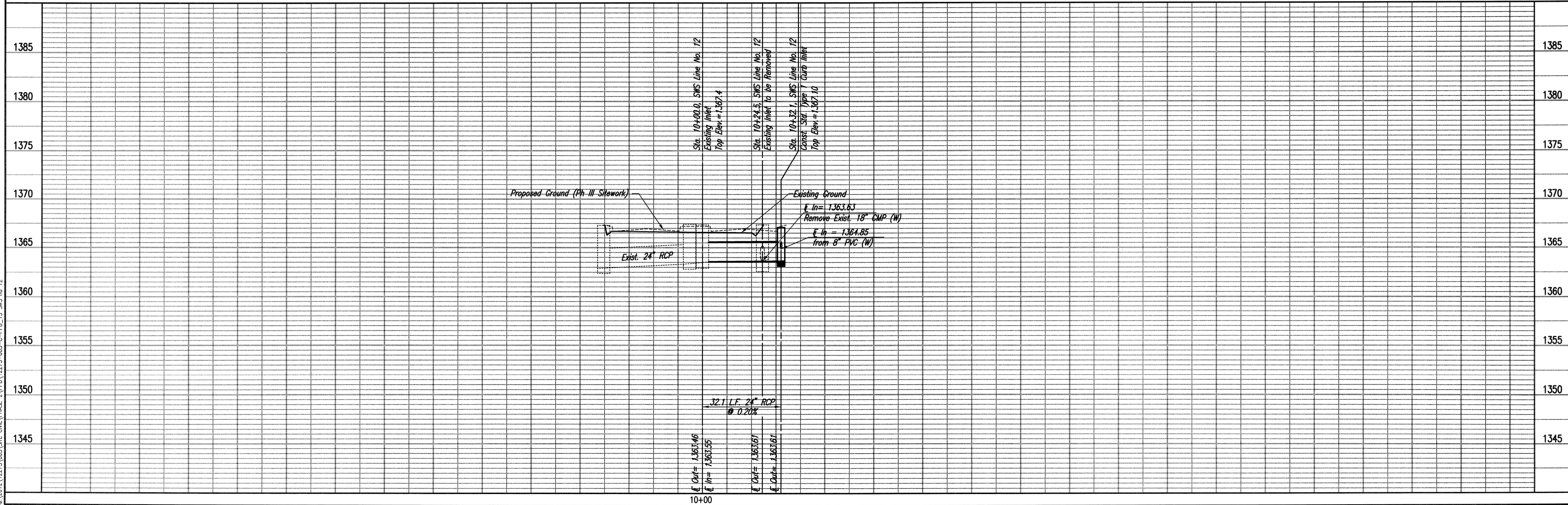
PLAN: LAT. & LONG.

PROFILE: HORIZ. SAME AS ABOVE

VERT. _____



STORM WATER SEWER LINE NO. 12



STORM WATER SEWER LINE NO. 12

KCH WICHITA CAMPUS EXPANSION
PRIVATE STORM WATER SEWER EXTENSION

GARY JANZEN, P.E. - CITY ENGINEER
PRIVATE PROJECT NO. 189-PPD (607861)

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2891 www.pec1.com

Designed By: MEB, JAG
Drawn By: CSL

Job No.: 35-12275-3-7208
Date: FEBRUARY 2013

AS BUILTS

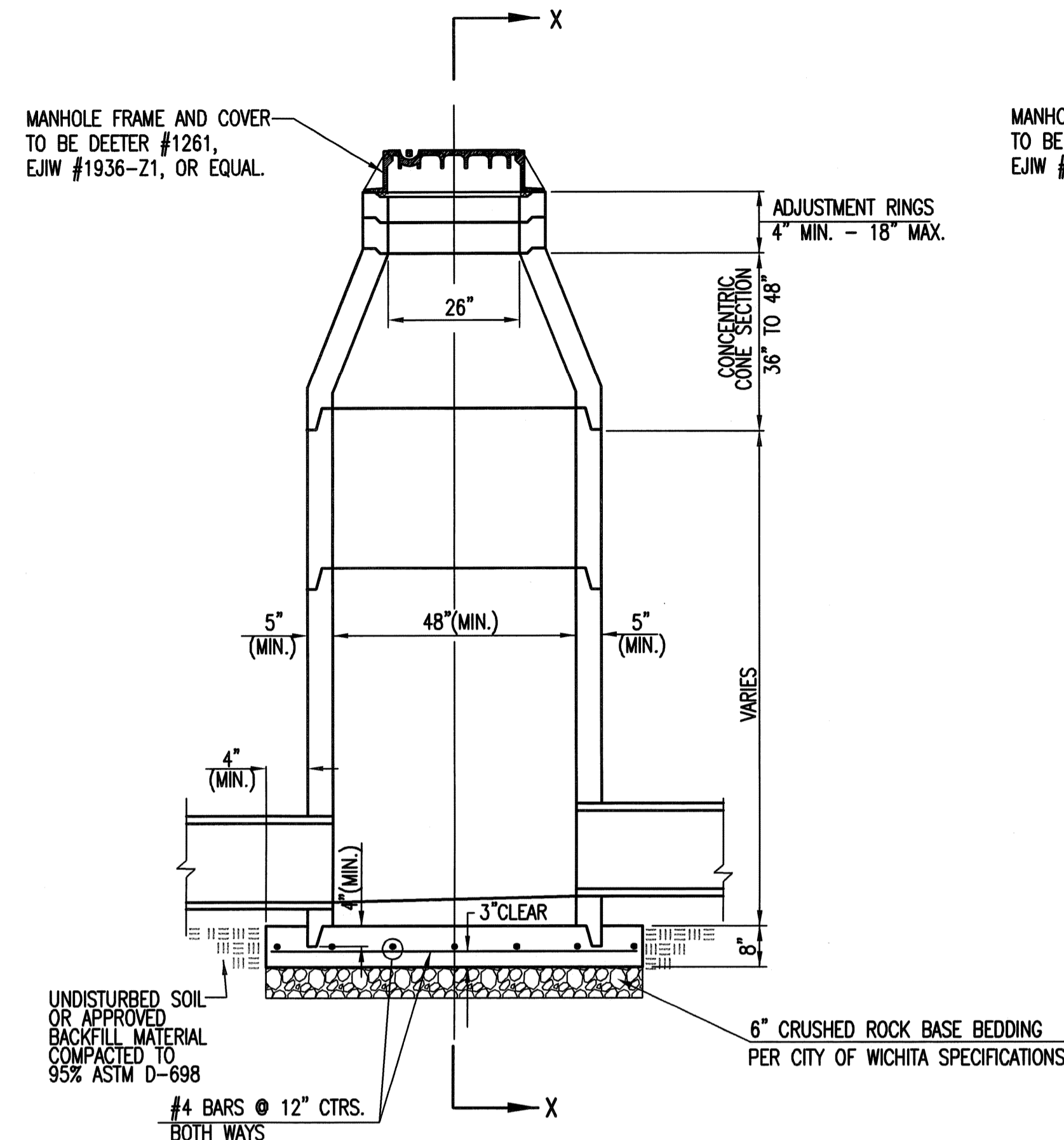
kemiller
engineering

516 S. Market,
Wichita, KS 67202

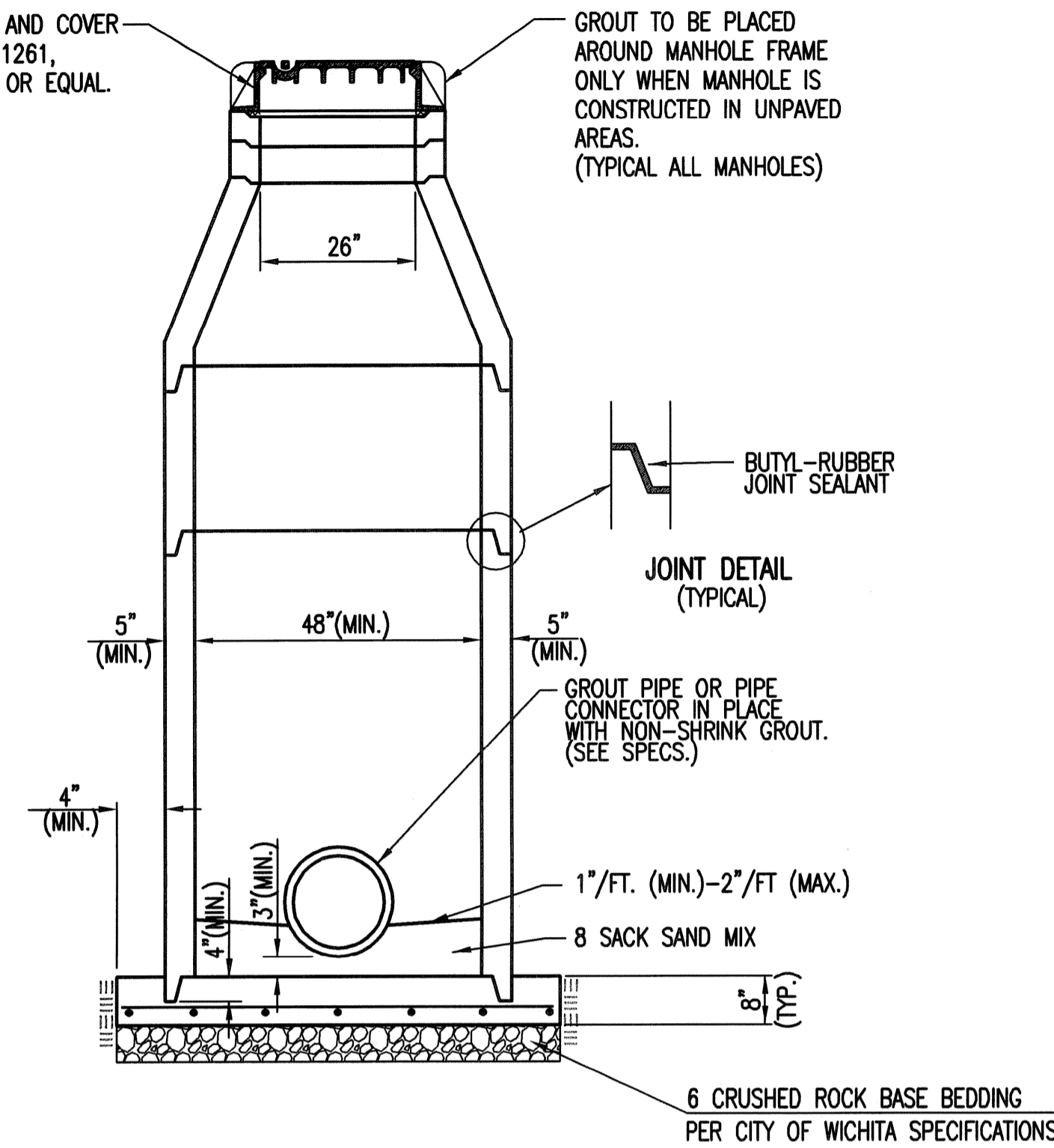
(316)264-0242

MATTHEW BILLINGSLEY
LICENSED
20827
KANSAS
PROFESSIONAL ENGINEER

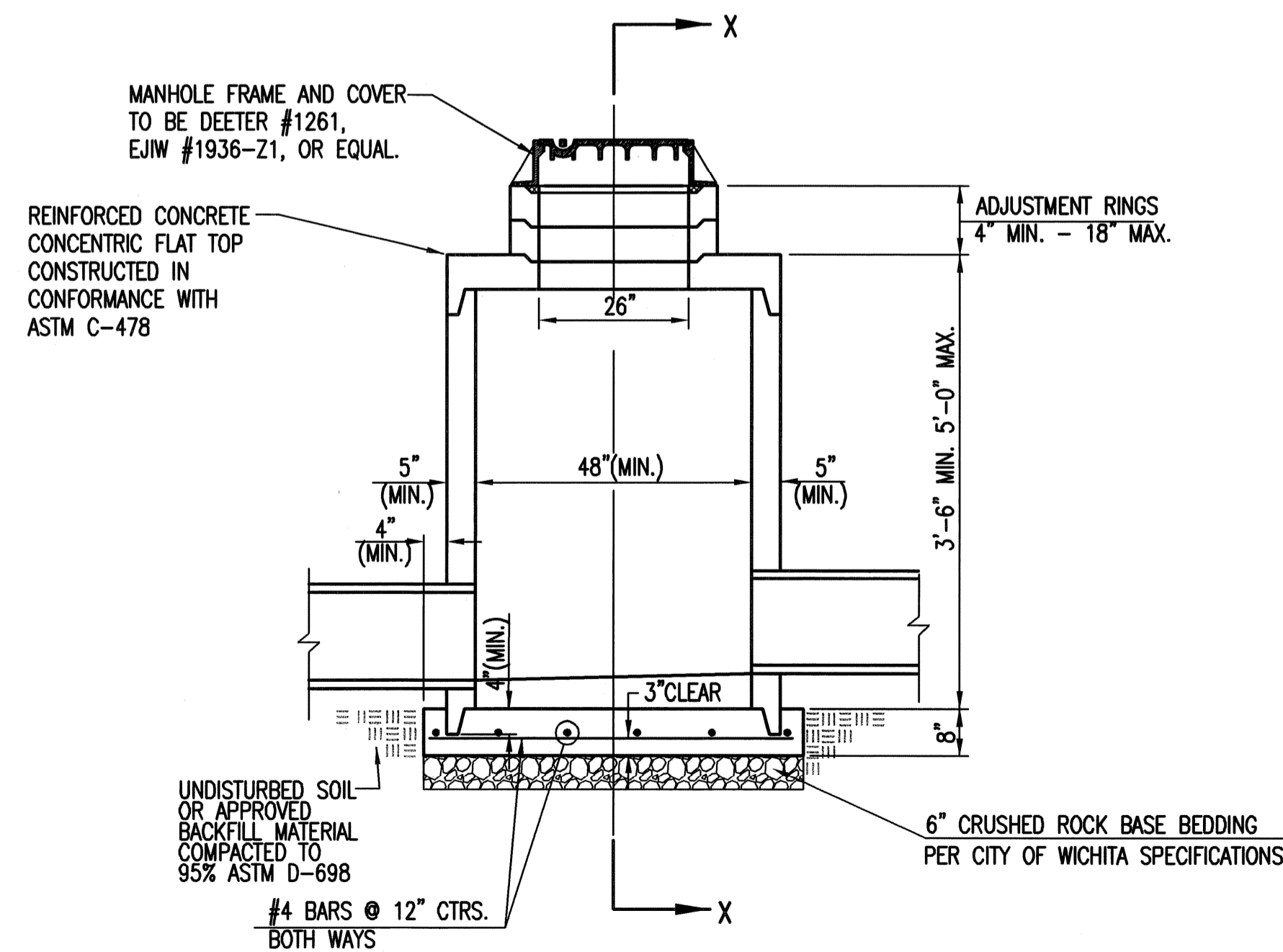
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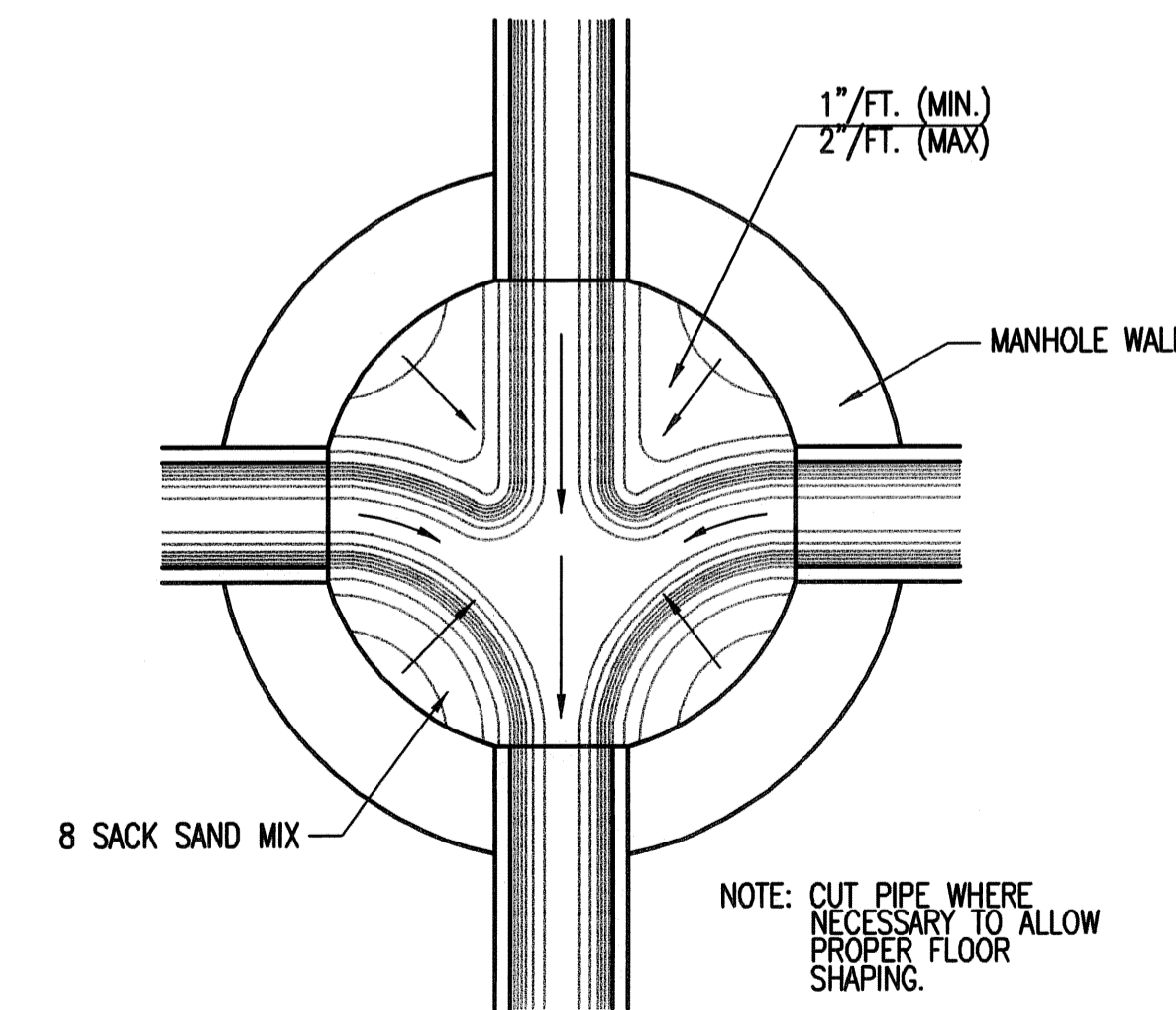
PRECAST STANDARD MANHOLE TYPE "A"



SECTION X-X (TYPICAL)



PRECAST SHALLOW MANHOLE TYPE "B"



TYPICAL MANHOLE FLOOR SHAPING

GENERAL NOTES

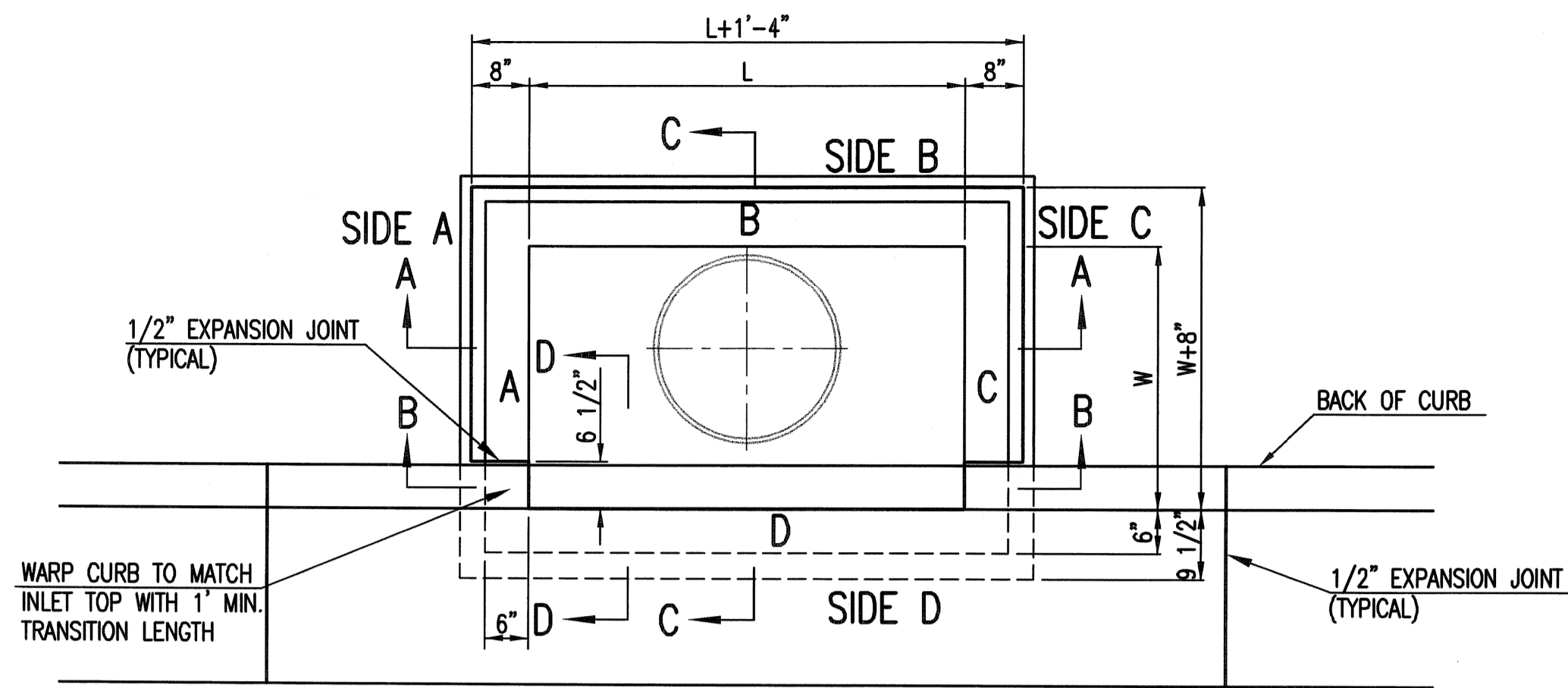
- IF, IN THE OPINION OF THE ENGINEER, THE MANHOLE SUBGRADE APPEARS UNSTABLE, THE CONTRACTOR WILL HAVE THE OPTION TO COMPACT SUBGRADE AS SHOWN OR INCREASE THE THICKNESS OF THE MANHOLE BASE AS DIRECTED BY THE ENGINEER.
- STEEL REINFORCING WILL BE REQUIRED IN ALL MANHOLE BASES.
- ALL MANHOLE CONSTRUCTION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



PRECAST CONCRETE MANHOLE (STORM SEWER)

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER 189 PPD	OCA NUMBER (607861)	DATE 11/2010
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		DESIGN DRAWN SHEET C-6.19



TOP VIEW

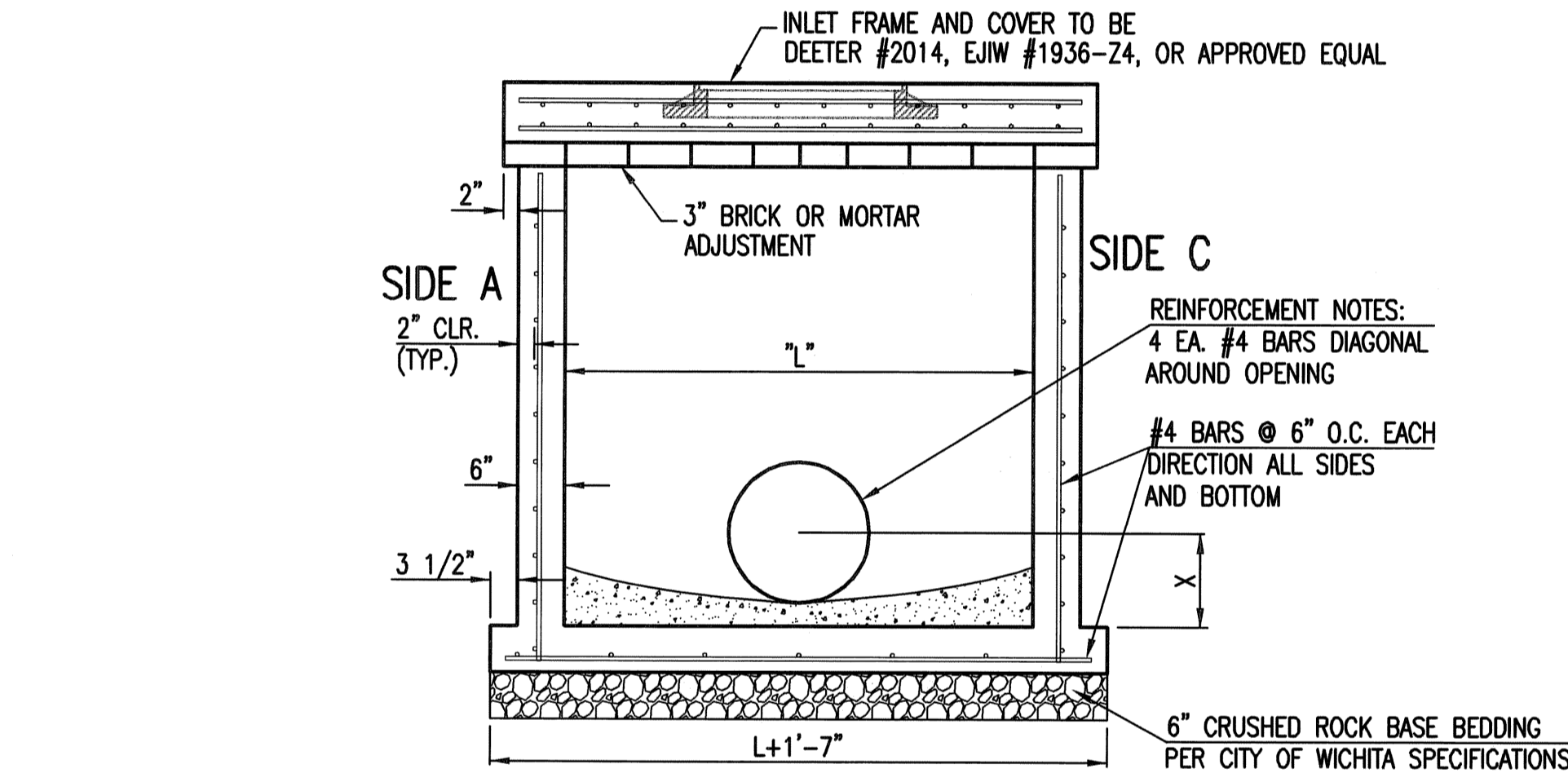
BAR SCHEDULE		
INLET OPENING	B1 BARS	SPACING
5'-0"	#4	4"
10'-0"	#6	3.5"

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

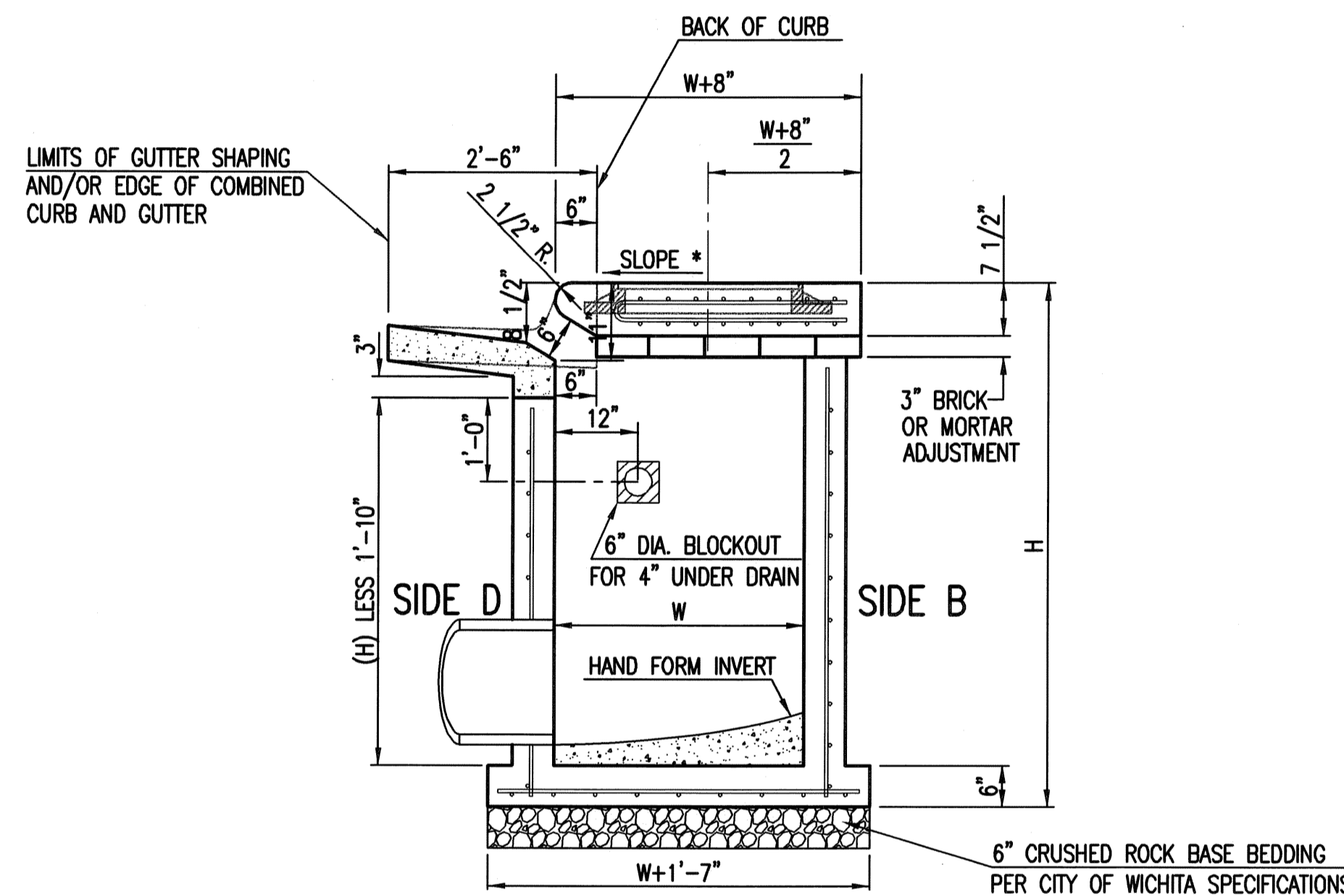
** FOR PIPES PERPENDICULAR TO INLET WALL

GENERAL NOTES

- CONCRETE TOPS TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK. CONCRETE TOPS MAY BE CAST IN PLACE OR PRECAST. CONCRETE USED FOR INLET CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
- CONTRACTOR SHALL HAVE THE OPTION OF CONSTRUCTING 8" BRICK MASONRY WALLS BETWEEN THE CONCRETE INLET BASE AND TOP OF THIS INLET WHEN W=5'-0" AND H=7'-0" OR LESS.
- 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.
- INLET FRAME AND COVER TO BE DEETER #2014, EJIW #1936 Z4, OR APPROVED EQUAL, SEE SW-303.
- CONTRACTOR SHALL REMOVE LIFTING HOOKS AFTER INSTALLATION. RECESSES IN INLET WALL SHALL BE GROUTED FLUSH TO THE INLET WALL WITH HYDRAULIC CEMENT AFTER THE INLET IS IN PLACE. LIFTING HOLES THRU THE INLET WALL WILL NOT BE ACCEPTED.

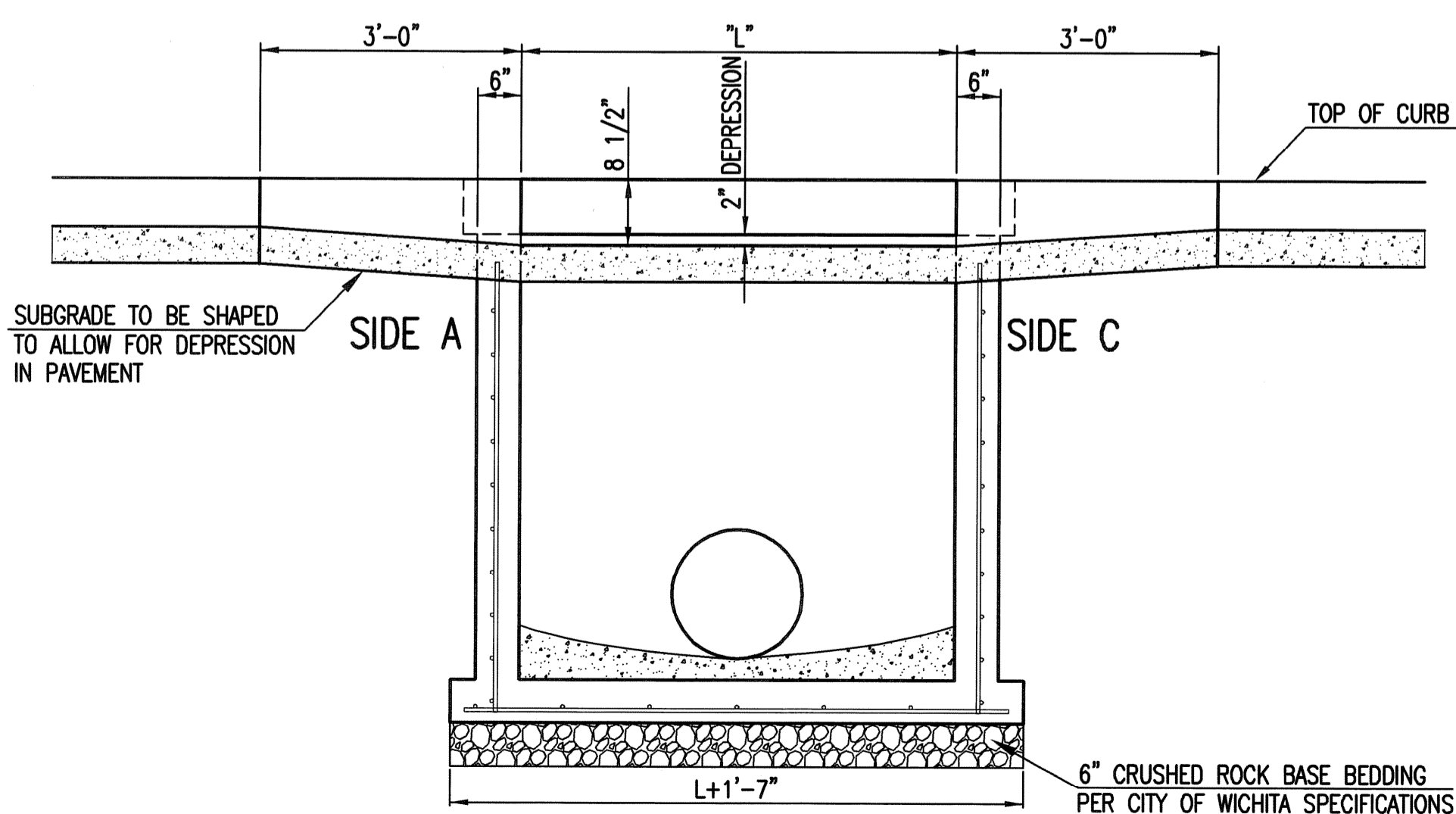
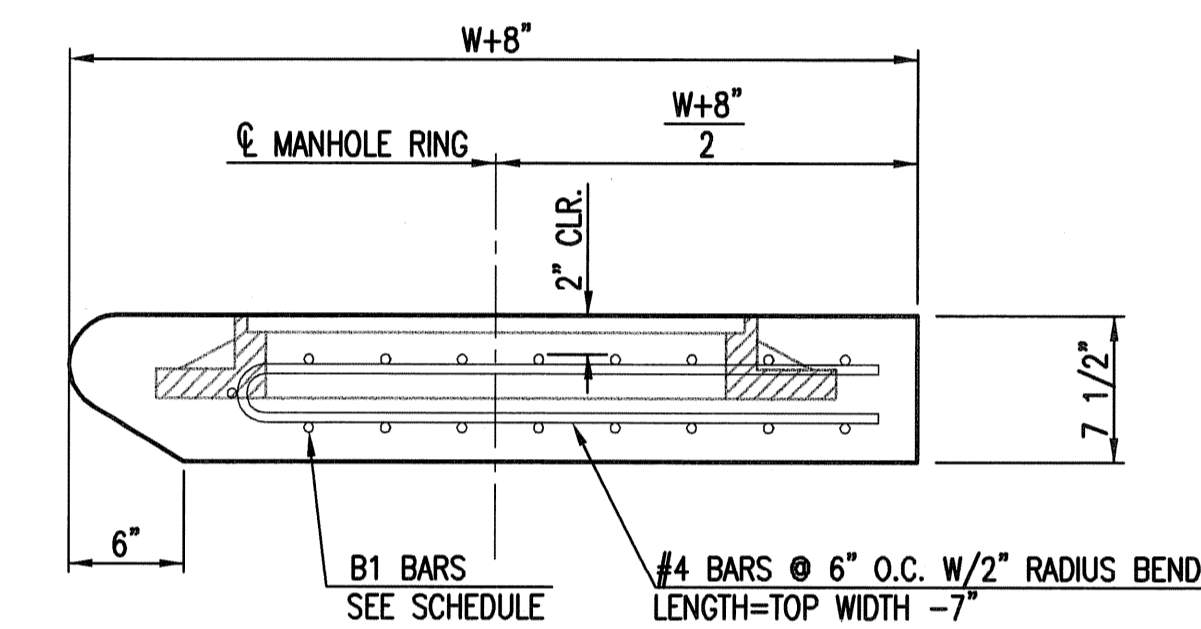


SECTION "A-A"

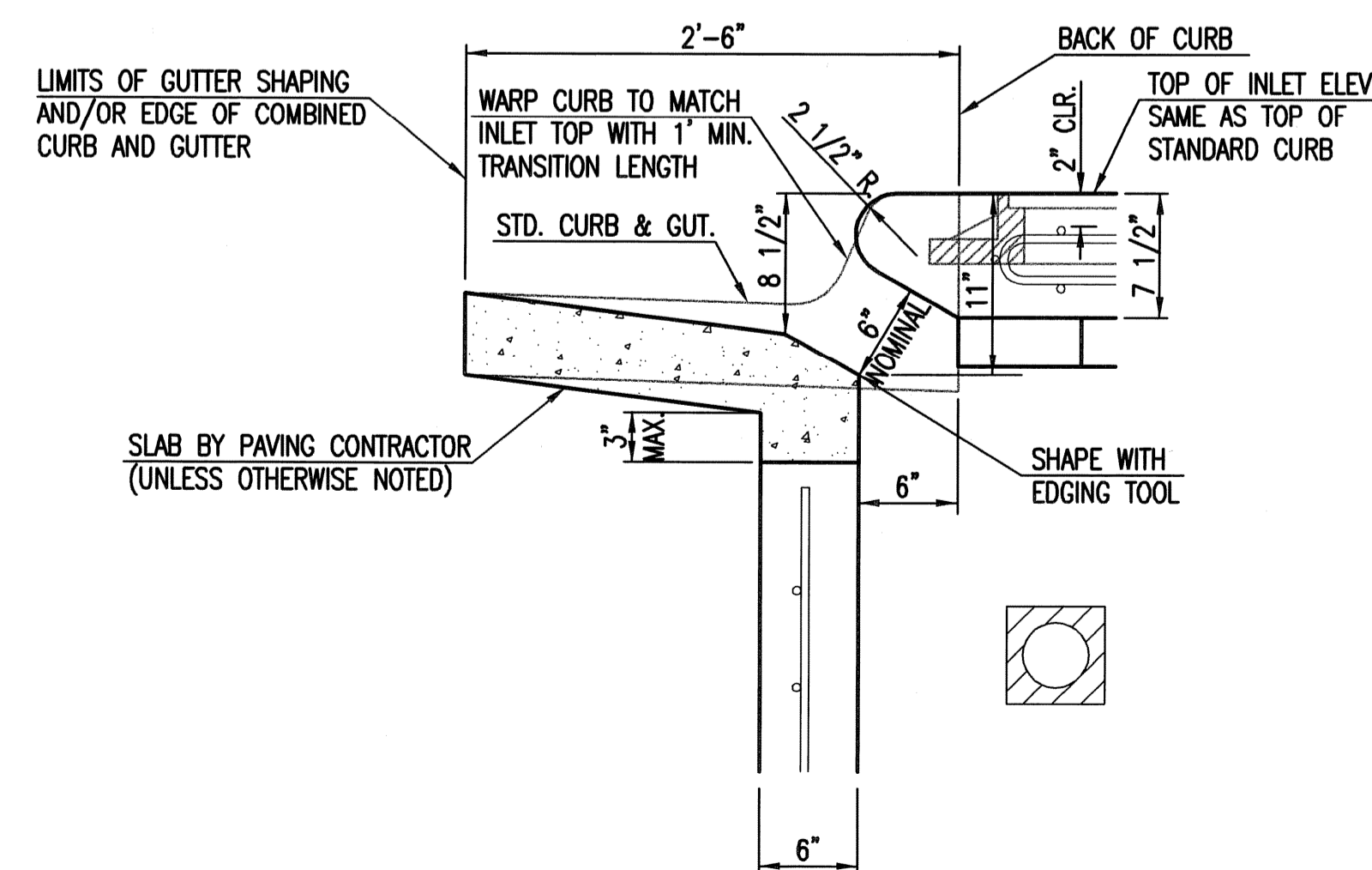


SECTION "C-C"

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



SECTION "B-B"



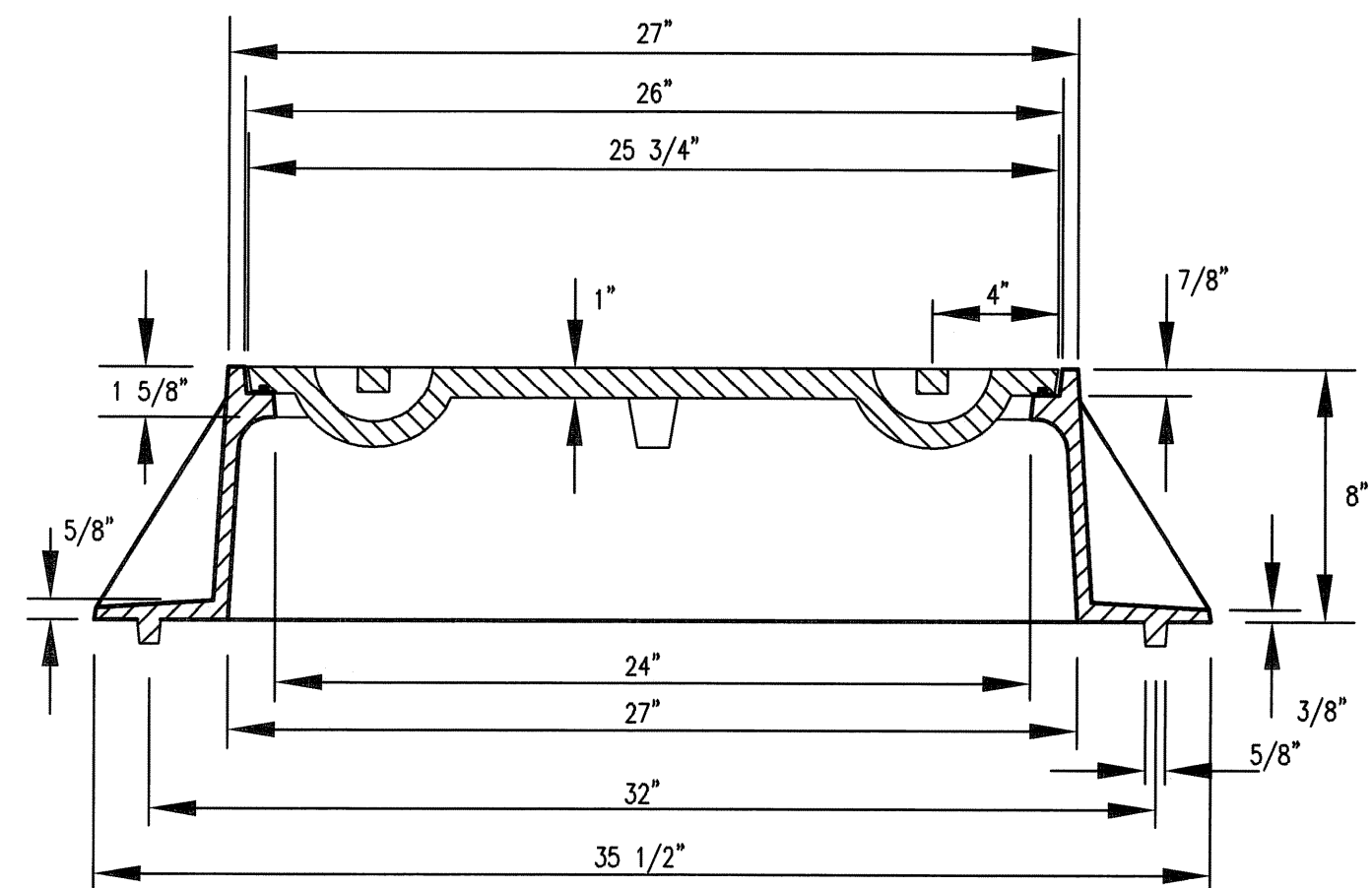
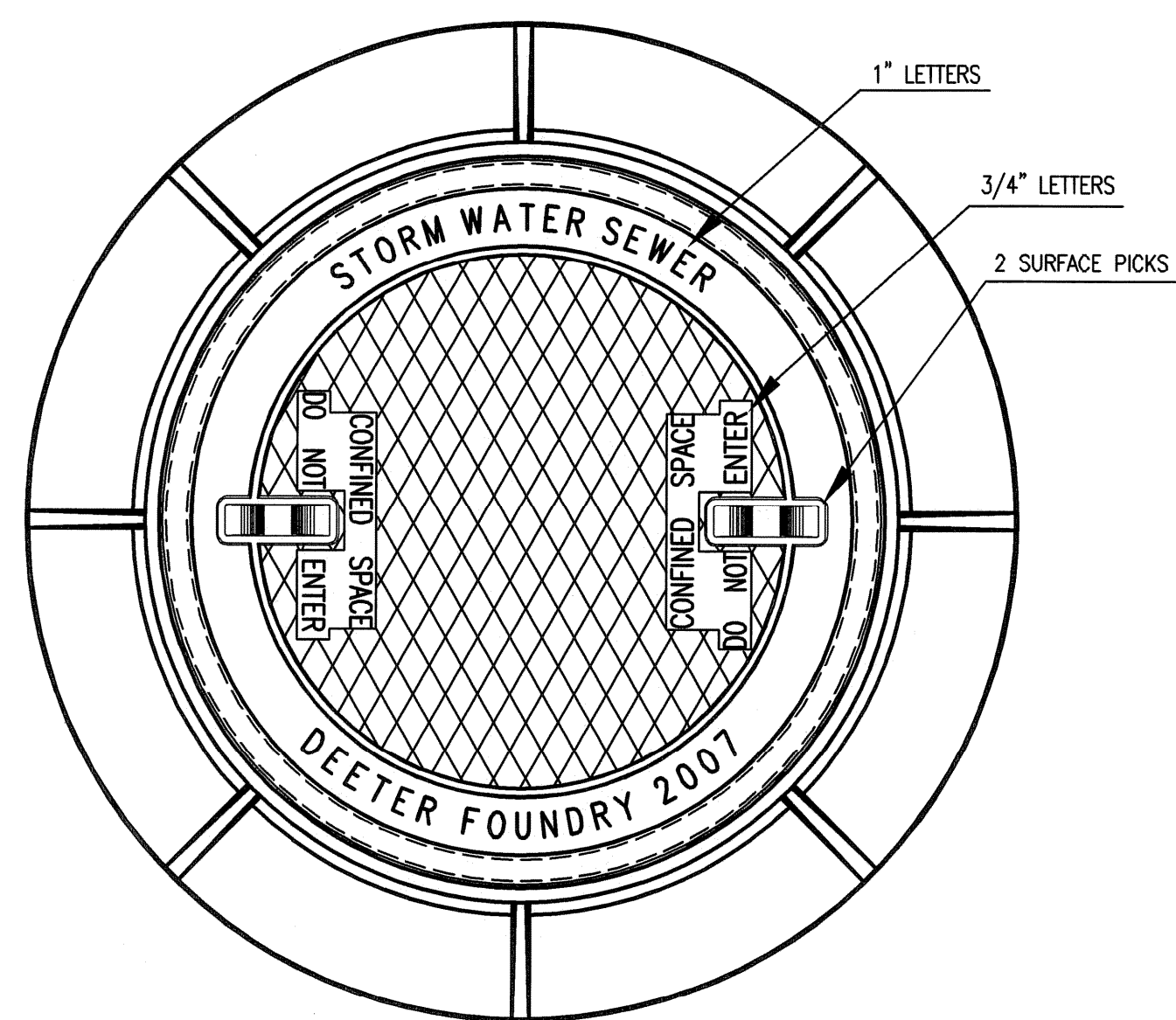
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STANDARD TYPE 1 CURB INLET		
5'-0" OR 10'-0" OPENING		
CITY ENGINEER		
GARY JANZEN, P.E.		
PROJECT NUMBER	OCA NUMBER	DATE
189 PPD	(607861)	11/2010
CITY ENGINEER'S OFFICE		DESIGN
CITY HALL - SEVENTH FLOOR		DRAWN
455 NORTH MAIN STREET		
WICHITA, KANSAS 67202-1620		
(316) 268-4501		
		SHEET
		C-6.20

NO PLAIN CITY OF WICHITA
LIDS SHALL BE USED.

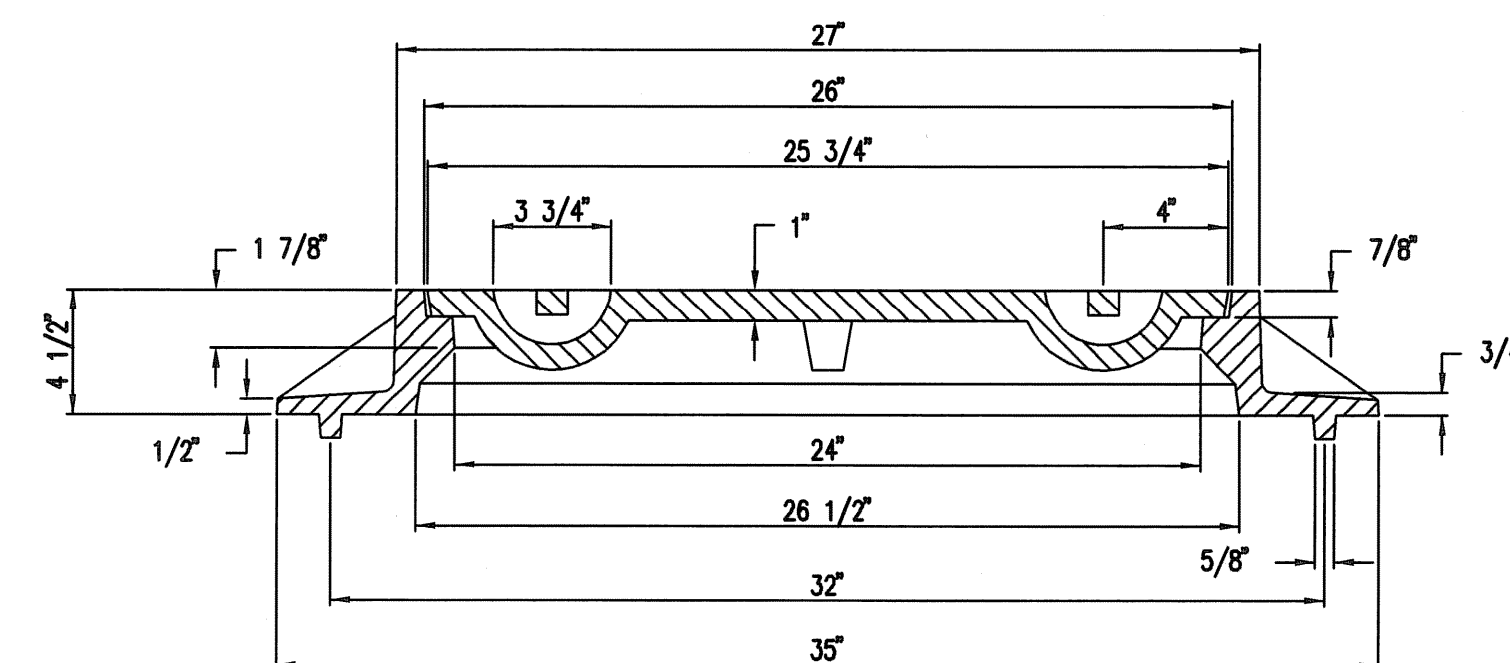
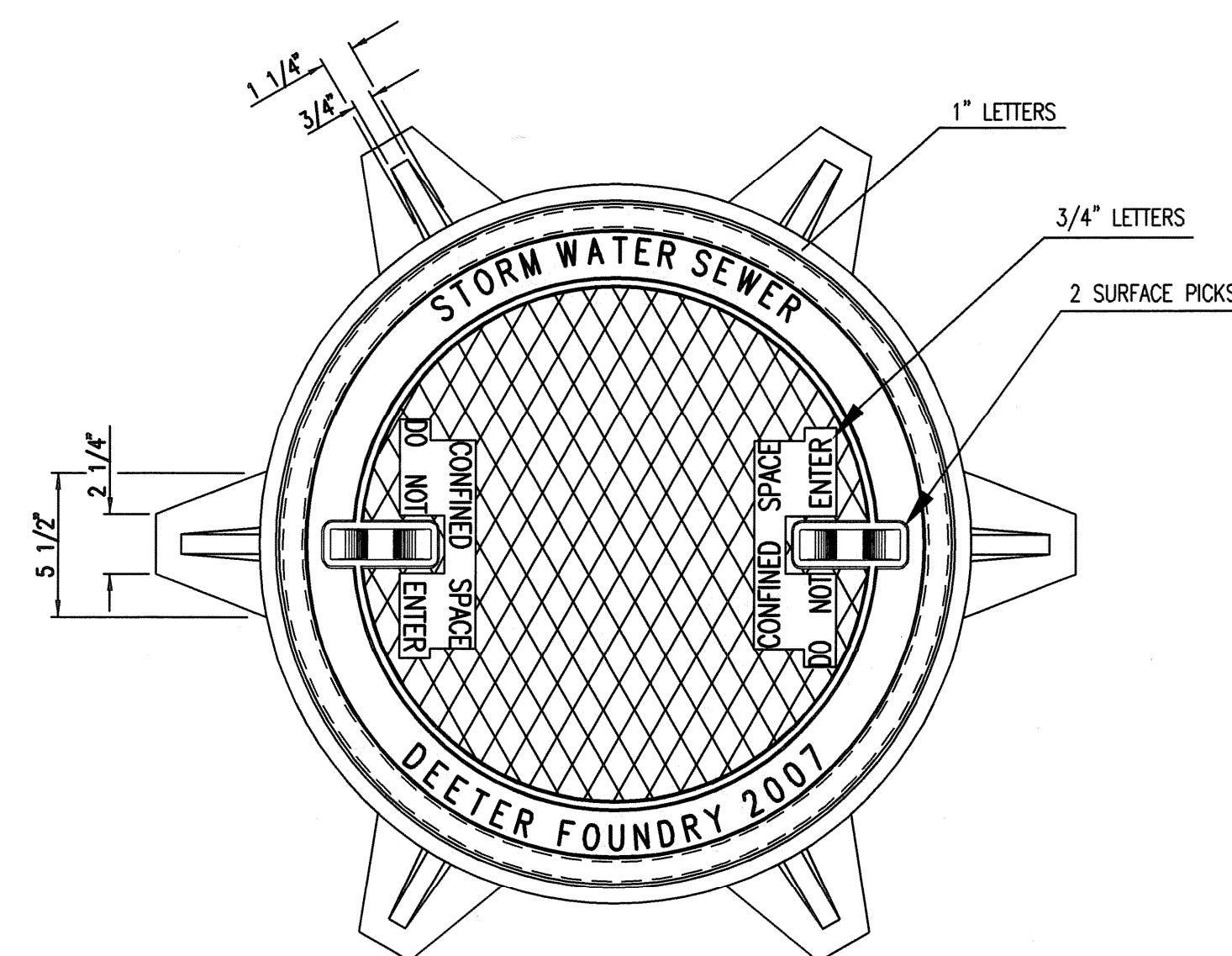


MANHOLE FRAME AND COVER

(FRAME WEIGHT = 180 LBS.)
(COVER WEIGHT = 125 LBS.)


MANHOLE FRAME AND COVER NOTES

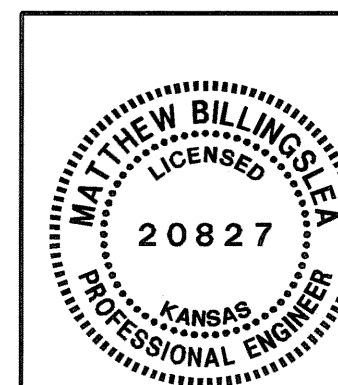
1. CAST IRON MANHOLE FRAME AND COVER SHALL CONFORM TO ASTM A-48, CLASS 35B, OR BETTER.
2. CASTINGS ARE TO BE MANUFACTURED TRUE TO PATTERN AND WITH SATISFACTORY FIT OF COMPONENT PARTS. CASTINGS SHALL BE FREE OF DEFECTS AND ALL BURRS SHALL BE GROUND SMOOTH. DIMENSIONS AS DETAILED ON PLAN SHALL NOT DEVIATE BY $\pm 1/16$ " PER FOOT.
3. NO OTHER LETTERING OR MARKINGS OTHER THAN THOSE DETAILED ON PLAN WILL BE PERMITTED ON CASTINGS.
4. CASTINGS MUST BE DOMESTICALLY MANUFACTURED IN THE UNITED STATES OF AMERICA.
5. THE FRAMES AND COVERS SHALL BE FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACES SO FITTING PARTS WILL NOT RATTLE OR ROCK UNDER TRAFFIC.
6. MANHOLE CASTINGS SHALL BE SELF-SEALING DEETER FOUNDRY INC. NO. 1261 OR APPROVED EQUAL, UNLESS OTHERWISE SPECIFIED IN THE SPECIAL CONDITIONS. (MINIMUM WT. = 305 LBS.) ALL MANHOLE CASTINGS SHALL BE CONSIDERED SUBSIDIARY TO THE UNIT PRICES BID FOR THE VARIOUS MANHOLE TYPES.
7. THE MANUFACTURER SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO MANUFACTURE. THE ENGINEER SHALL RETAIN THE RIGHT TO REJECT CASTINGS NOT CONFORMING TO THE SPECIFICATIONS OR THE APPROVED SHOP DRAWINGS.
8. THE MANHOLE FRAME SHALL BE FURNISHED WITH AN APPROVED CONTINUOUS T-GASKET GROOVED INTO THE BEARING SURFACE OF THE MANHOLE COVER. THE T-GASKET SHALL BE FACTORY INSTALLED IN THE MANHOLE COVER WITH 100% SILICON SEALANT-DOW CORNING OR EQUAL.

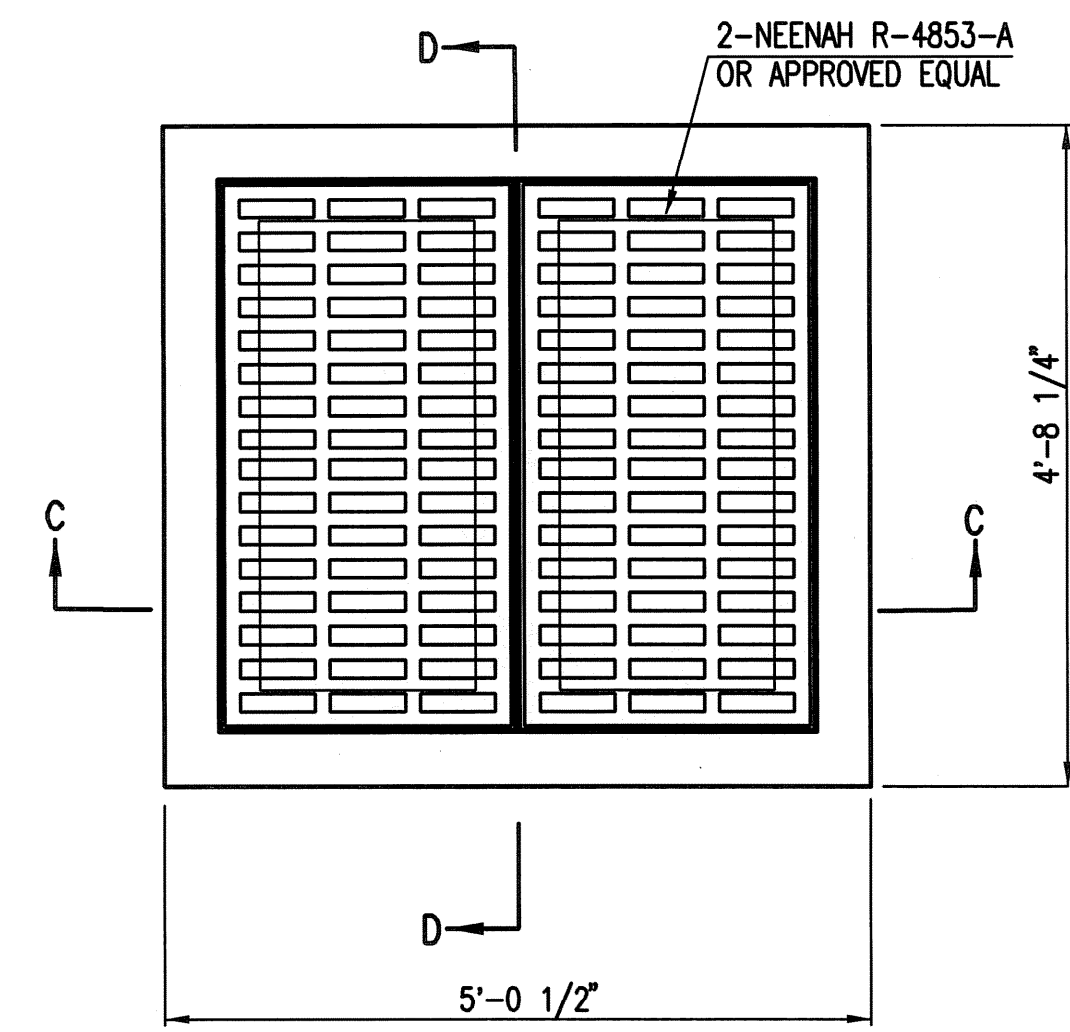


INLET FRAME

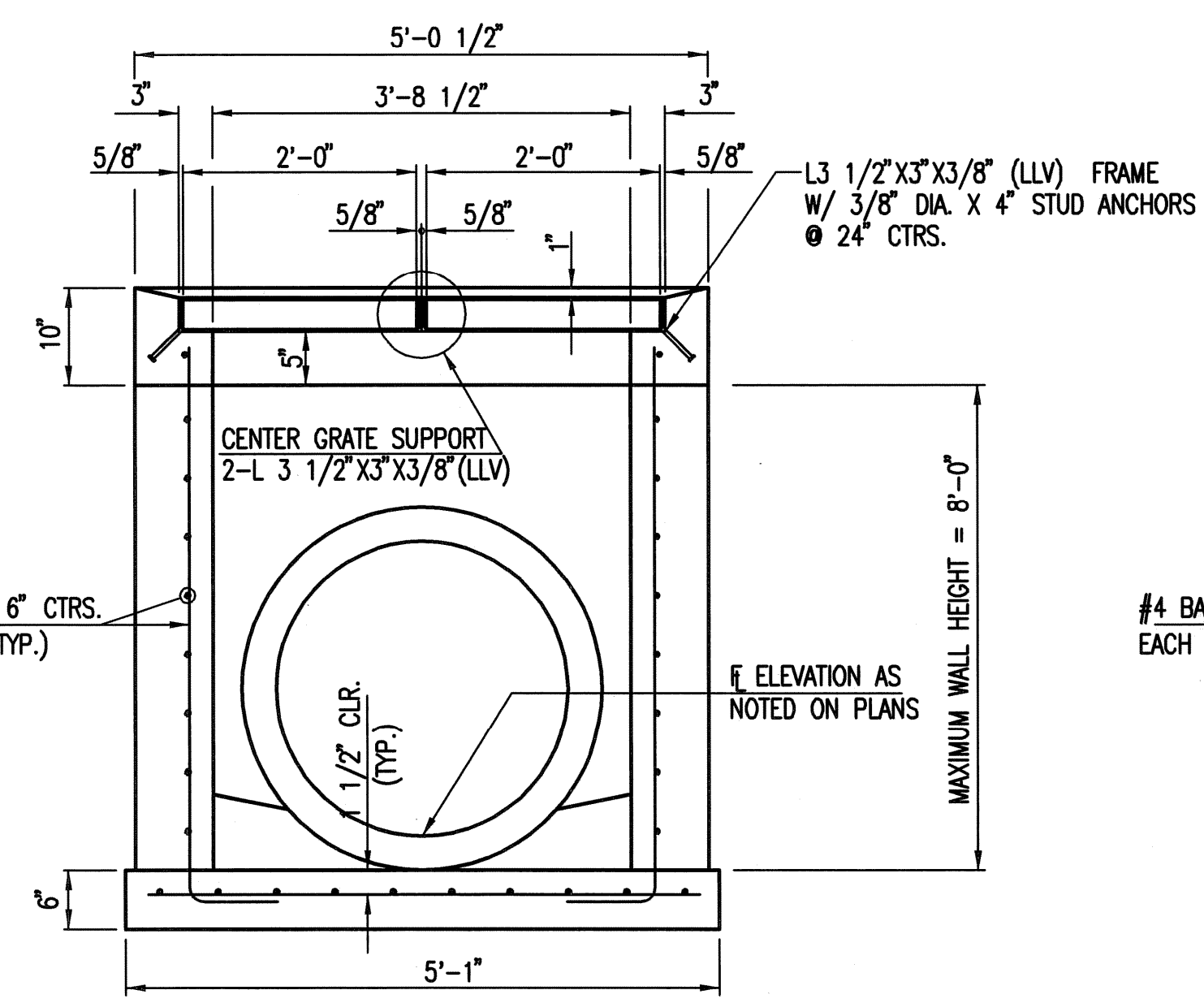
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No.	Revision	By	Date
KOCH WICHITA CAMPUS EXPANSION PRIVATE STORM WATER SEWER EXTENSION MANHOLE FRAME AND COVER GARY JANZEN, P.E. - CITY ENGINEER PRIVATE PROJECT NO. 189 PPD (607861)			
 PEC PROFESSIONAL ENGINEERING CONSULTANTS, P.A. 303 SOUTH TOPEKA WICHITA, KS 67202 316-262-2691 www.pec1.com			
Designed by	MEB, JAG	Job No.	35-12275-3-7208
Drawn by	CSL	Date	FEBRUARY 2013
			Sht. C-6.21 of 30

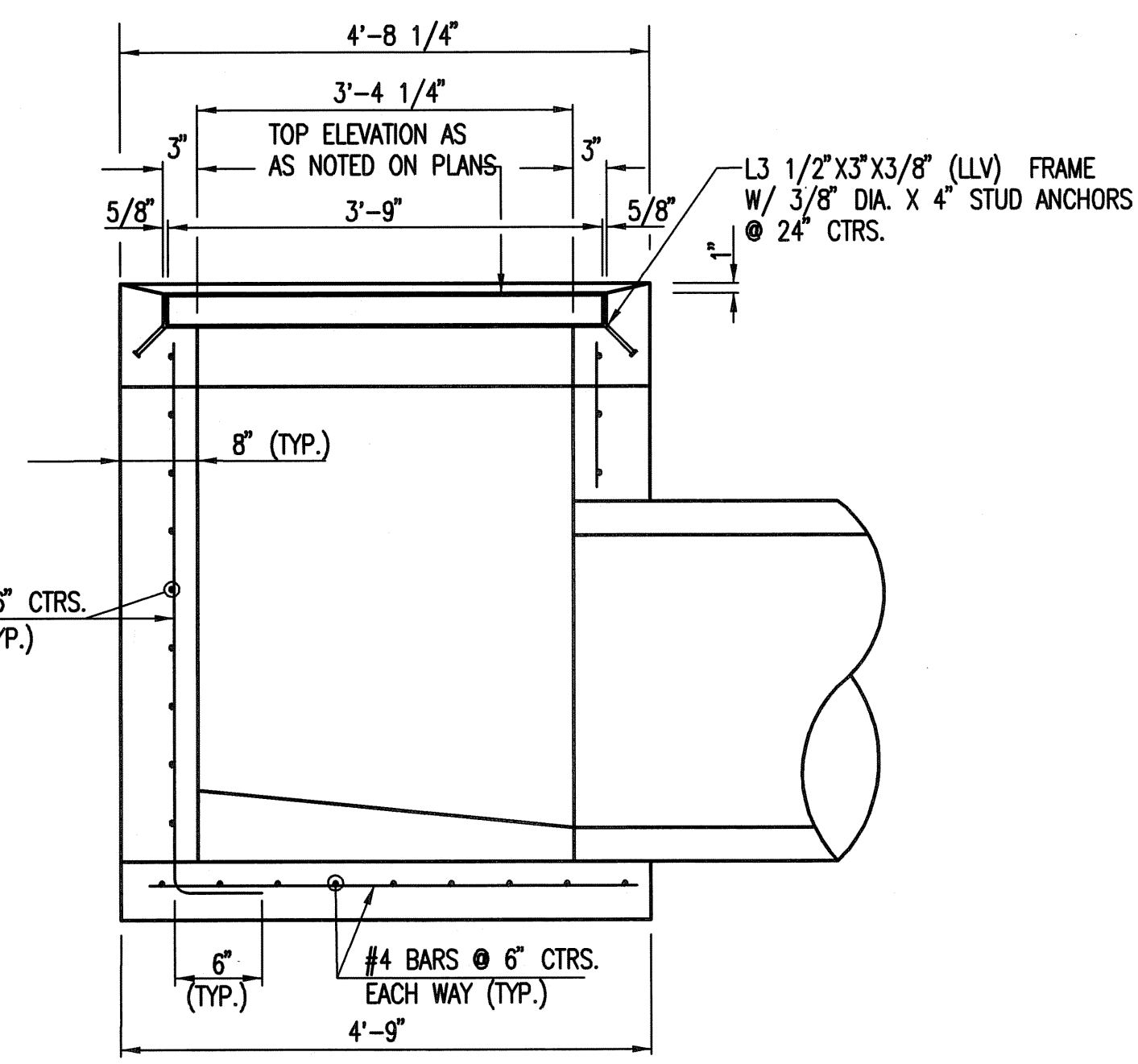




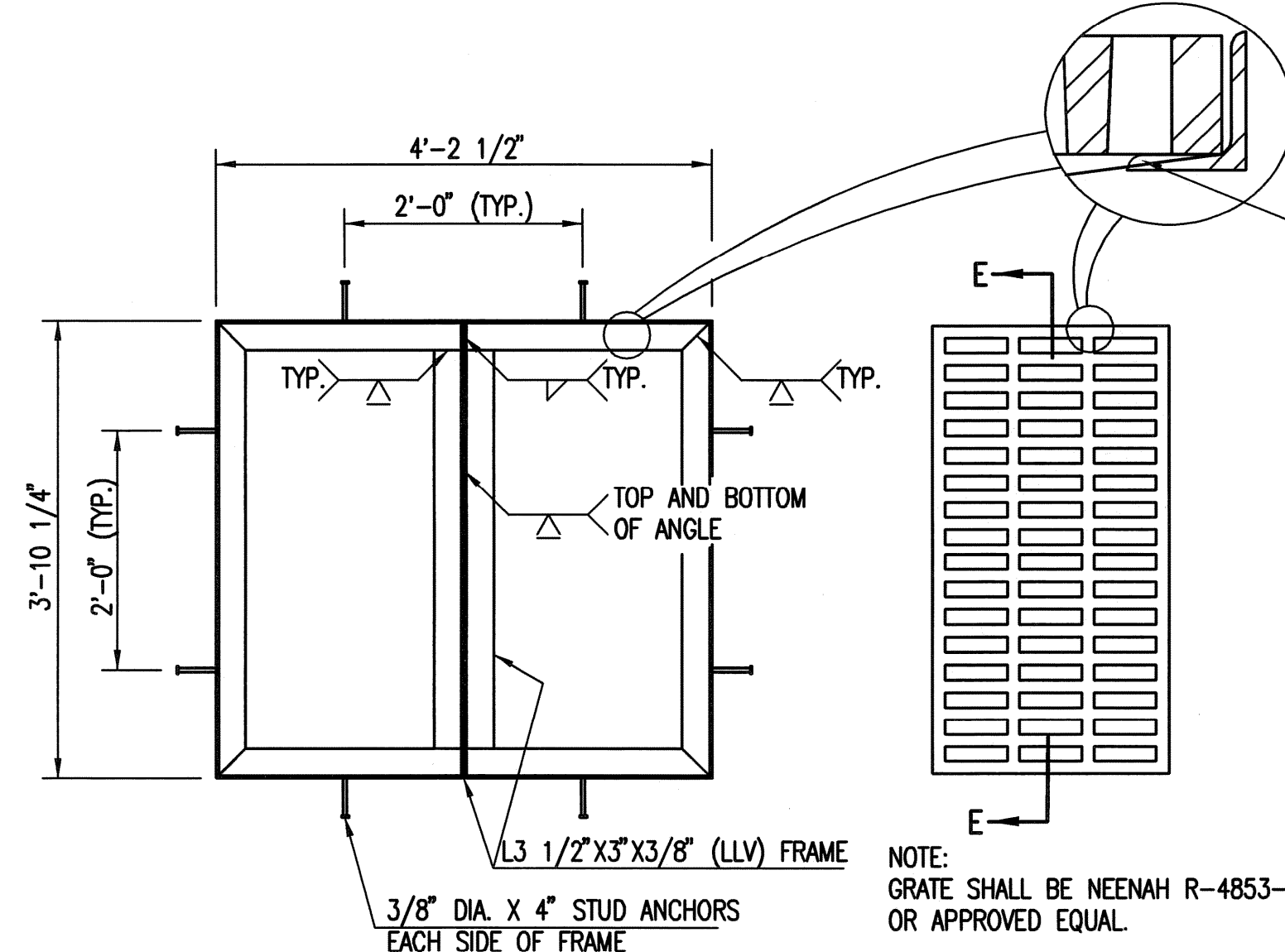
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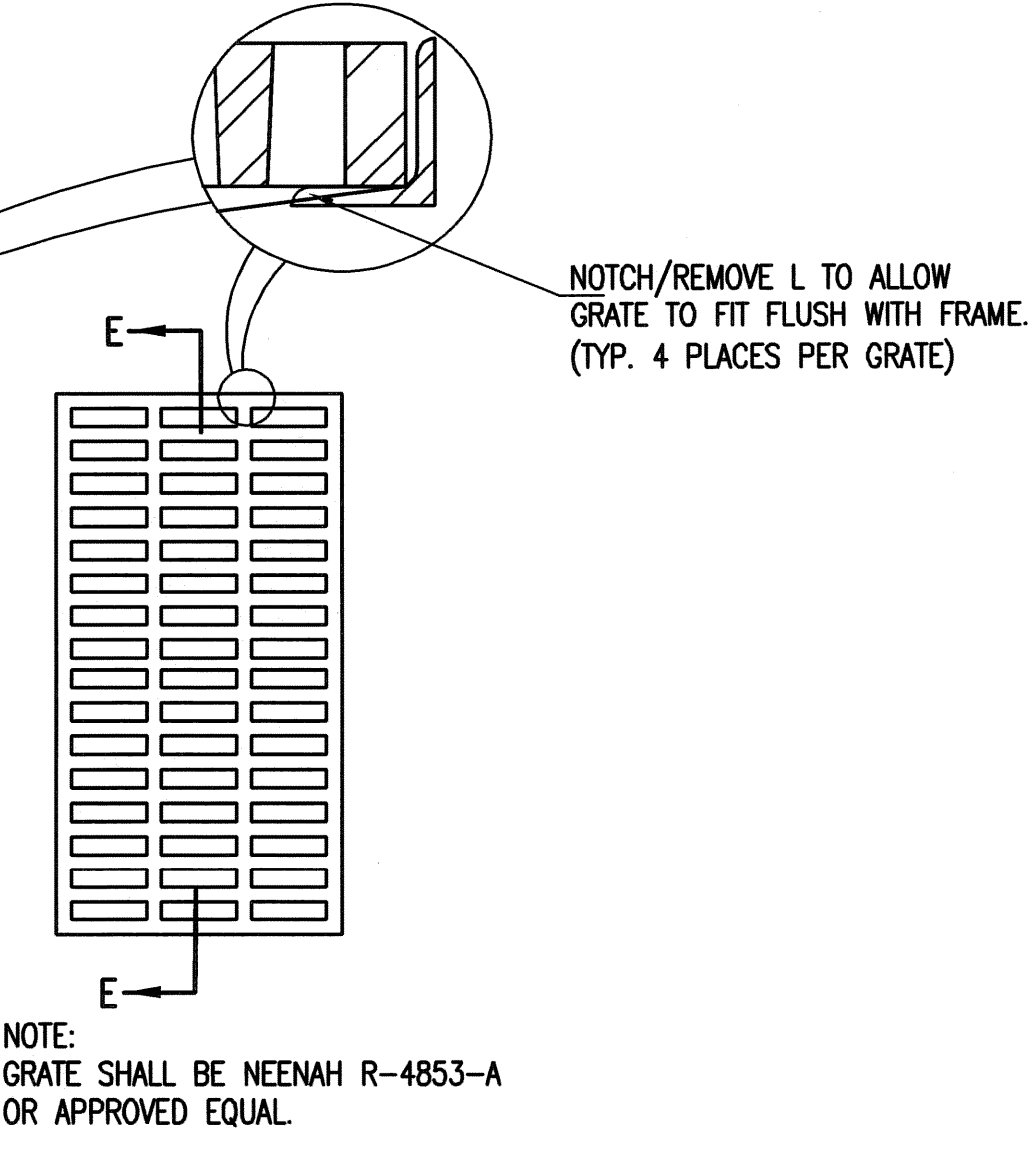
SECTION C-C



SECTION D-D



FRAME DETAIL
(FOR SPECIAL AREA INLET)
NOTE:
FRAME TO MATE WITH 2 NEENAH R-4853-A GRATES
OR APPROVED EQUAL.



GRATE DETAIL
(WT.=520 LBS.)
(2 REQUIRED)

GENERAL NOTES

CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI.
ALL PIPES SHALL BE FLUSH CUT PRIOR TO BEING CAST INTO WALLS.

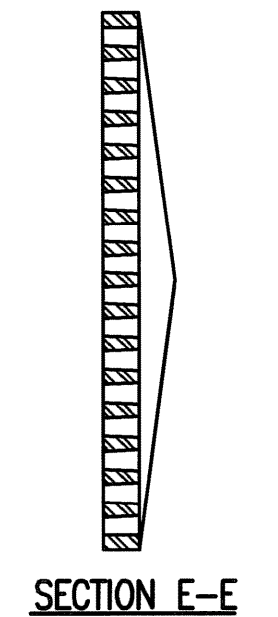
REINFORCING STEEL SHALL BE GRADE 60, A.S.T.M. A615.
ALL DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO THE CENTERLINE OF BARS UNLESS OTHERWISE NOTED.

INLET CASTINGS SHALL BE MANUFACTURED USING DUCTILE IRON CONFORMING TO ASTM A536-80 GRADE 65-45-12.
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.

INLET FLOOR SHALL BE SHAPED WITH UNREINFORCED CONCRETE (8 SACK SAND MIX) TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE INLET WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.

PIPES ENTERING EXISTING STRUCTURE SHALL BE CENTERED ON INSIDE FACE OF WALL.

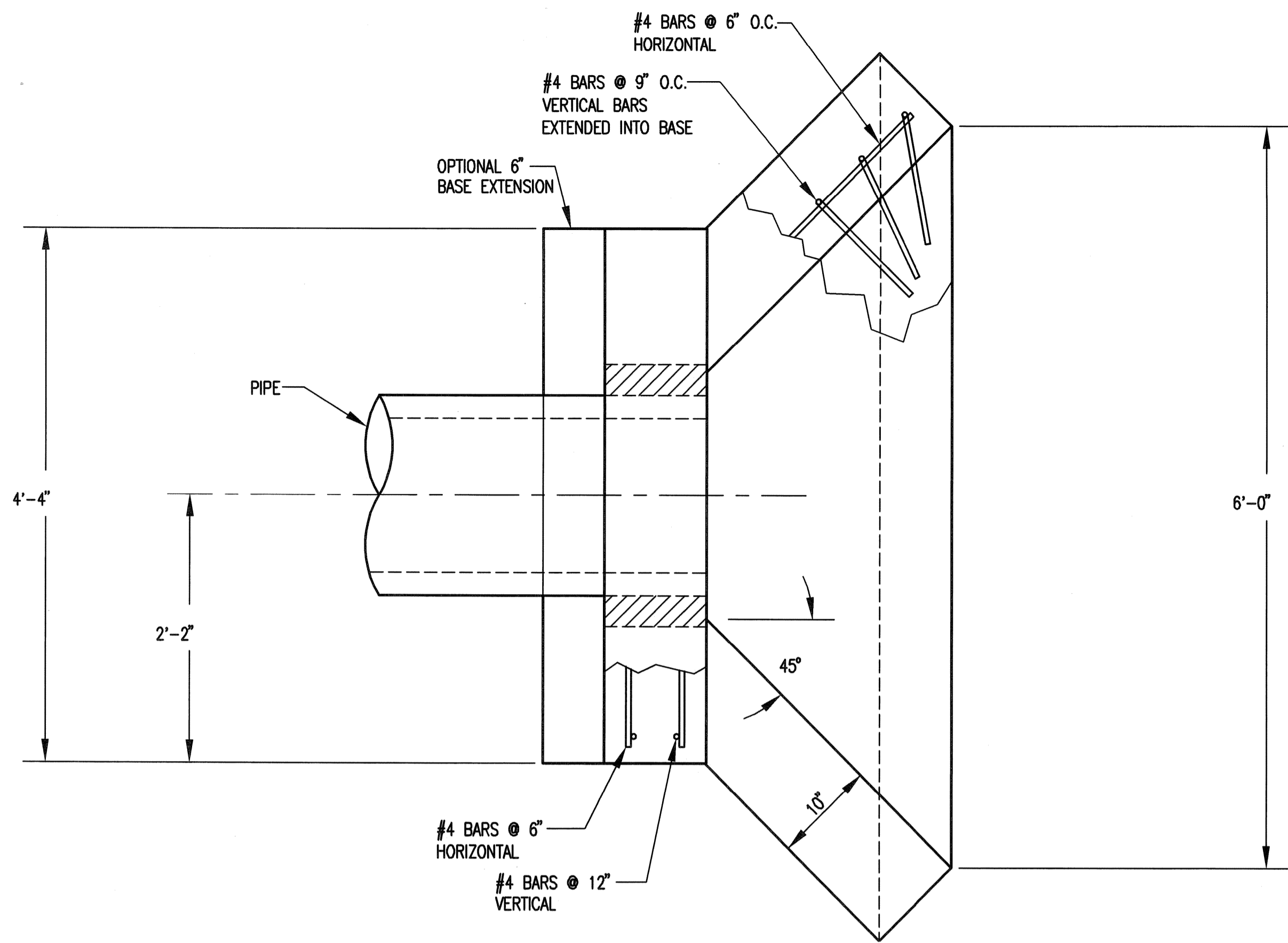
ALL EXPOSED STRUCTURAL STEEL SHALL BE PAINTED WITH A COAT OF INORGANIC ZINC PRIMER AND THEN WITH A TOP COAT OF OR A FIELD COAT OF ORGANIC ZINC, EACH COAT TO BE 3 TO 4 MILS. STRUCTURAL STEEL USED TO FABRICATE THE SPECIAL AREA INLET FRAME SHALL COMPLY WITH A.S.T.M. A36. WELDING SHALL CONFORM TO THE STRUCTURAL WELDING CODE A.W.S. D1.1-88.



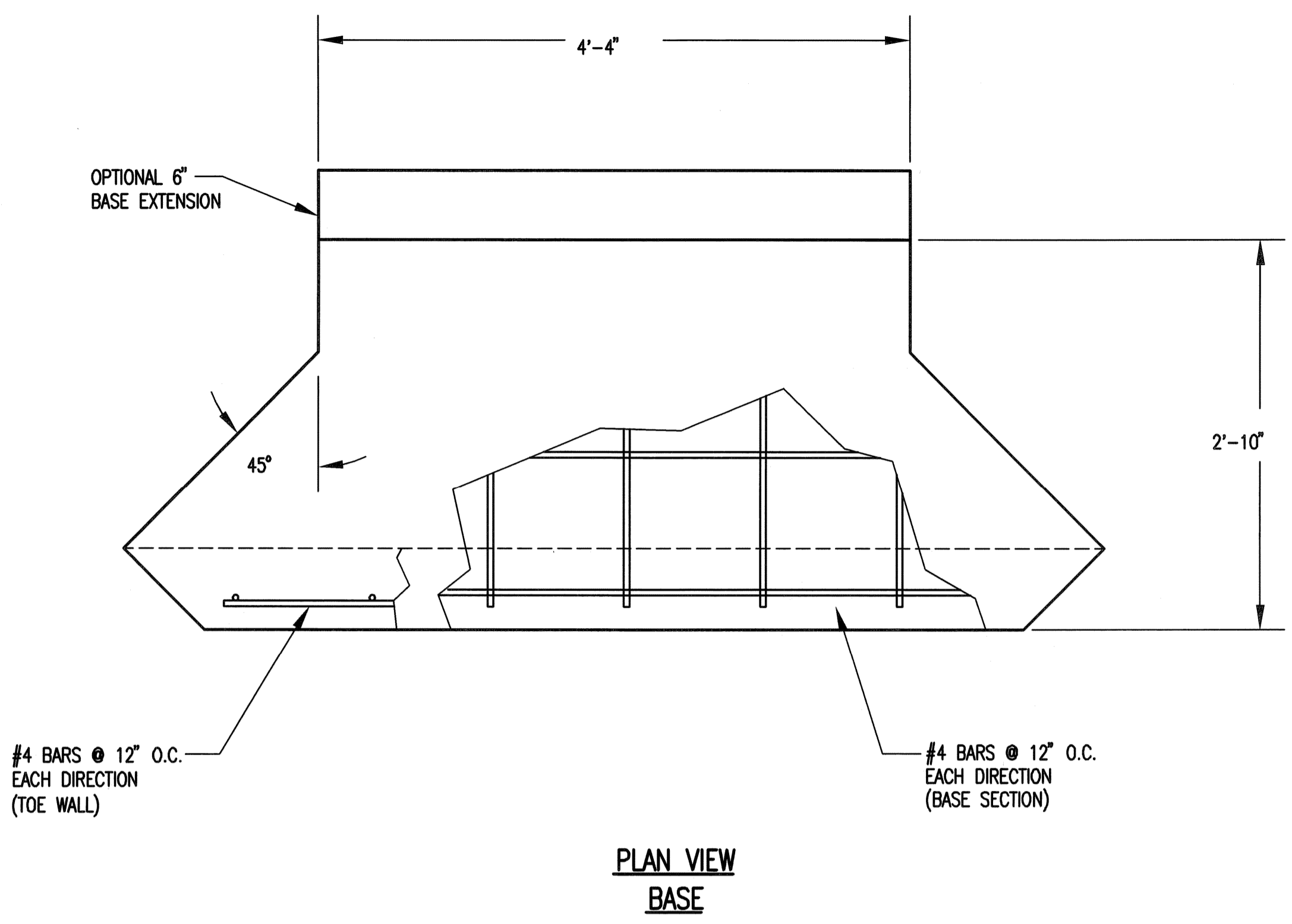
SECTION E-E

Sined 09-16-2013 9:38:23 AM by CSJ
 Proj. Scale 1:1 10-04-2013 11:34:58 AM by JESSICA NISTERLEBAO
 C:\2012\12275\003 SITE CHG\FRAME 2\FRAME 2\FRAME 2-PPD\12275-003-C-PPD_Area Inlet (Special)

	Revision		By	Date
	KOCH WICHITA CAMPUS EXPANSION PRIVATE STORM WATER SEWER EXTENSION AREA INLET DETAILS (SPECIAL)			
	GARY JANZEN, P.E. - CITY ENGINEER PRIVATE PROJECT NO. 189 PPD (607861)			
	PROFESSIONAL ENGINEERING CONSULTANTS, P.A. 303 SOUTH TOPEKA WICHITA, KS 67202 316-262-2891 www.pec1.com			
Designed by	MEB, JAG	Job No.	35-12275-3-7208	Sht. C-6.22 of 30
Drawn by		Date	FEBRUARY 2013	

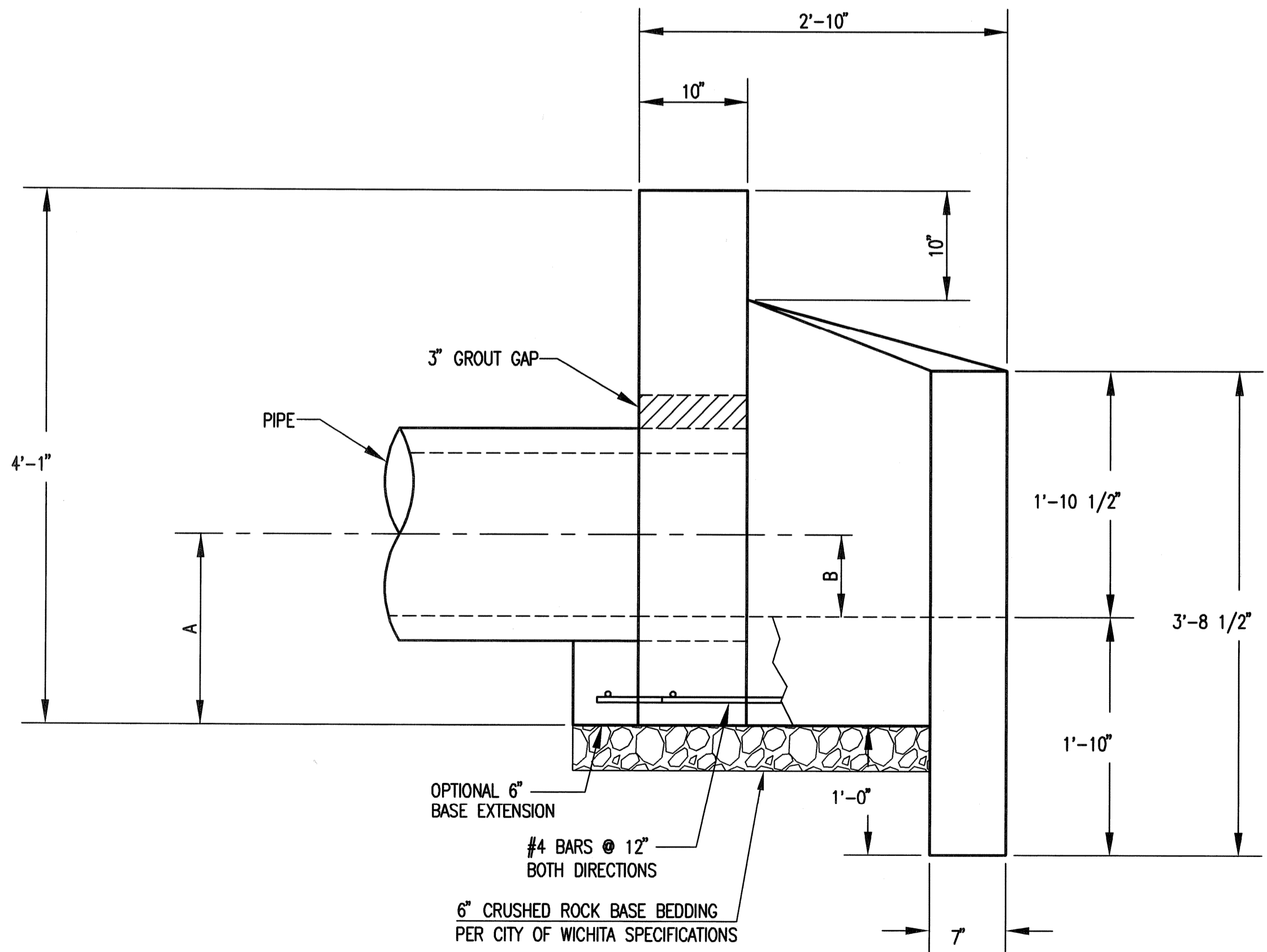


PLAN VIEW

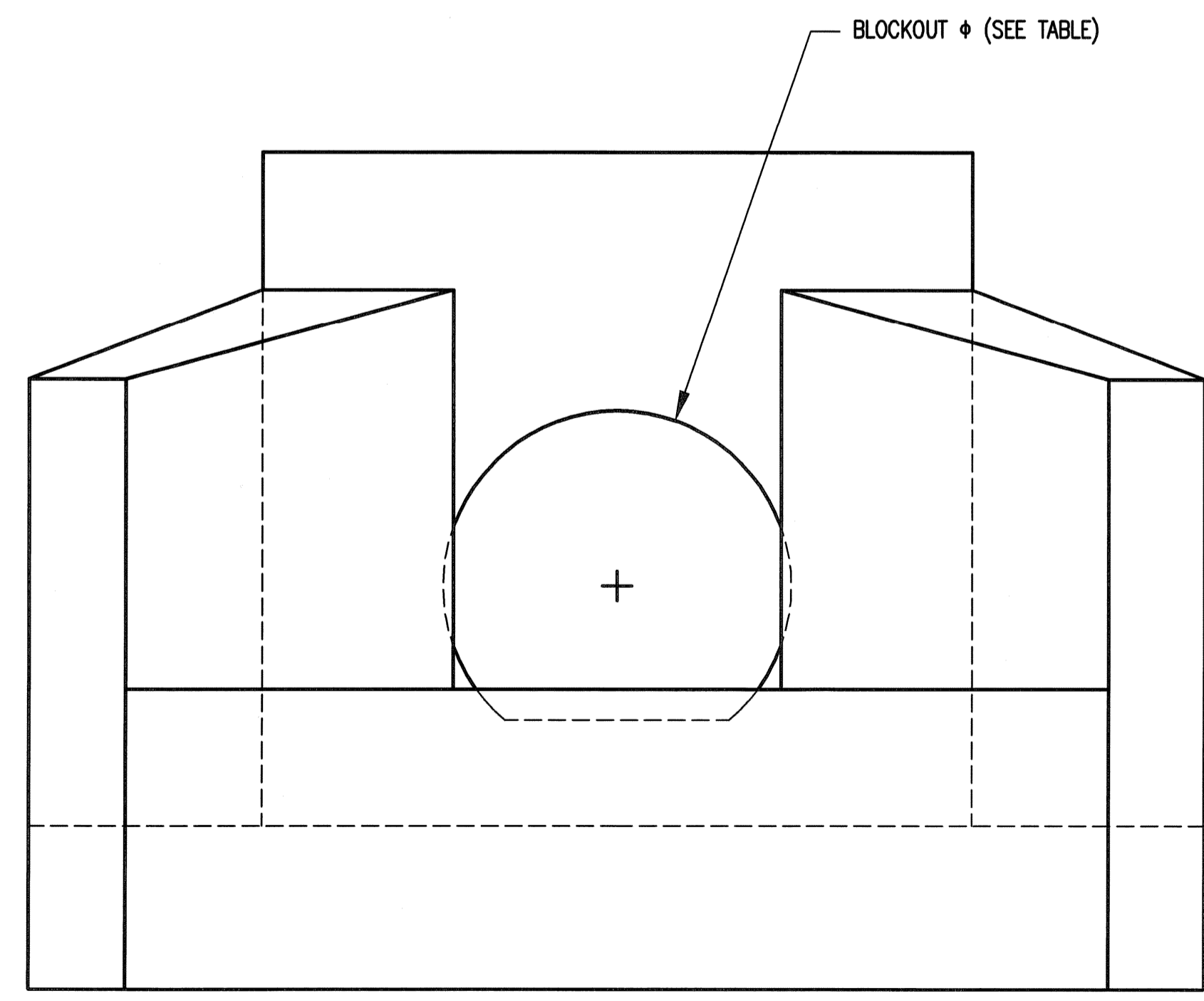


PLAN VIEW
BASE

PIPE ϕ	A	B	BLOCKOUT ϕ
15"	1'-5 1/2"	7 1/2"	2'-1 1/2"
18"	1'-7"	9"	2'-5"
24"	1'-10"	1'-0"	3'-0"



ELEVATION



FRONT VIEW

HEADWALLS, AS SHOWN, WILL NOT SUPPORT FLAP GATE.

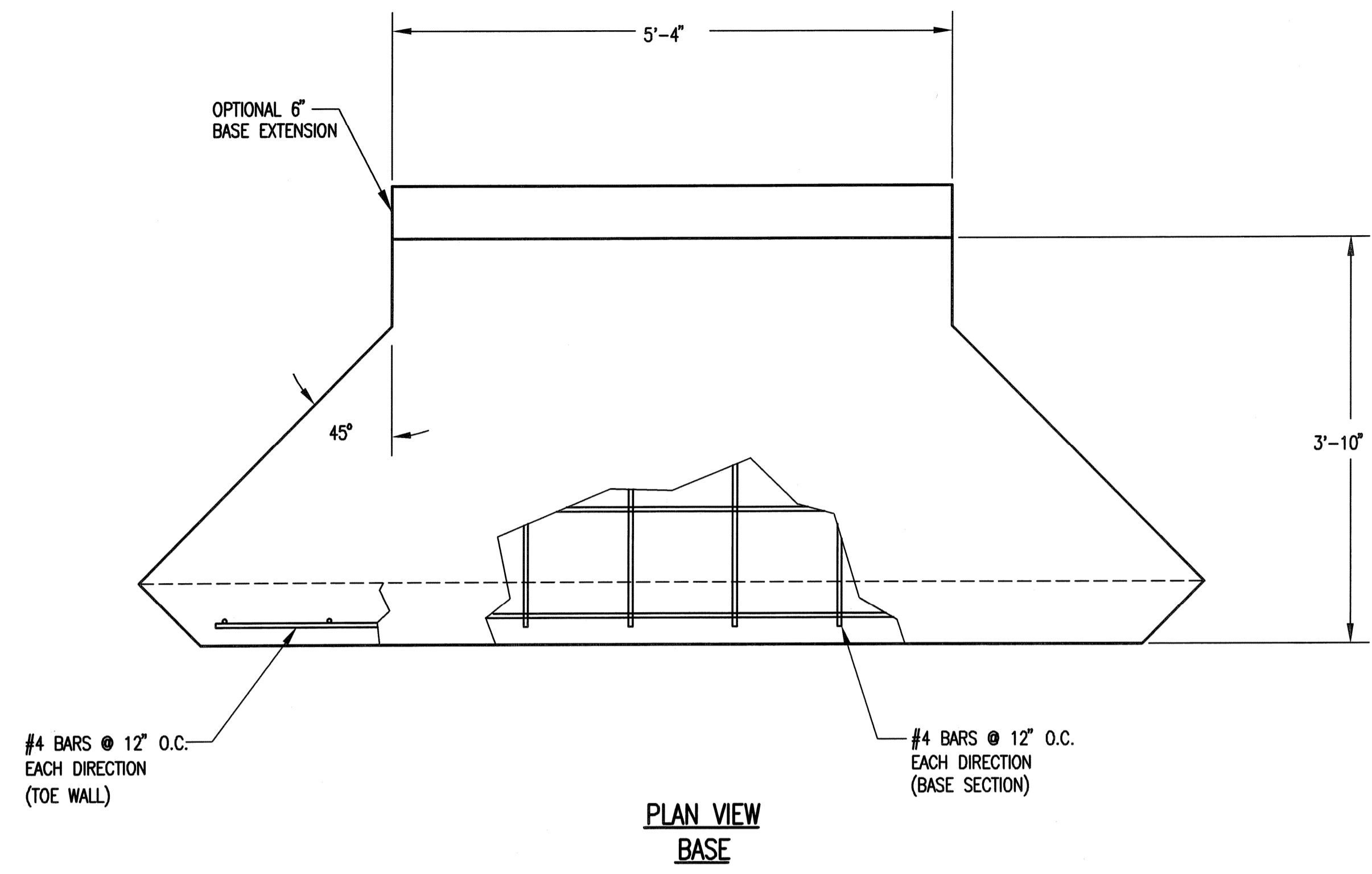
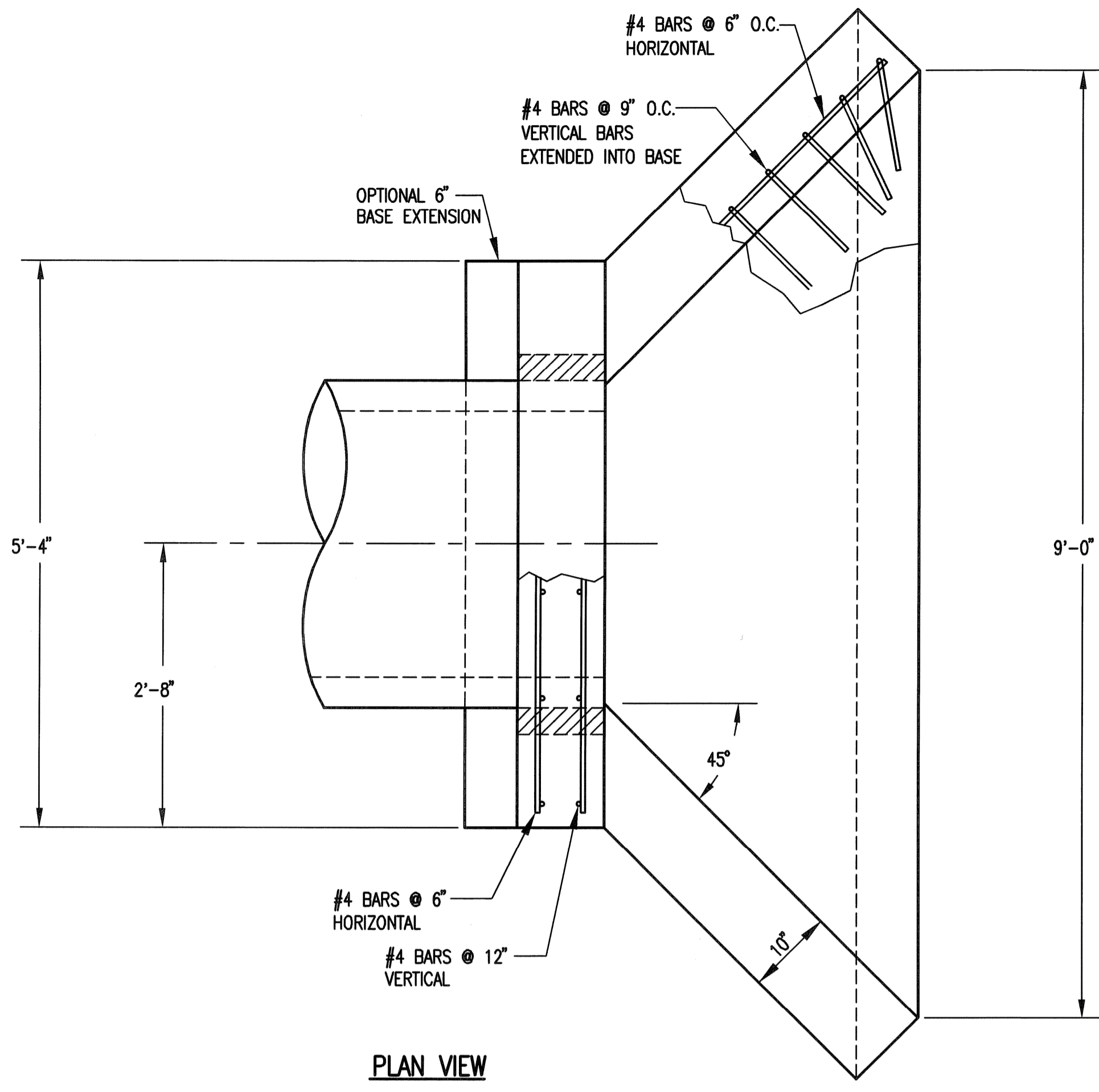
CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

**HEADWALL
DETAILS FOR
15", 18", AND 24" PIPE**

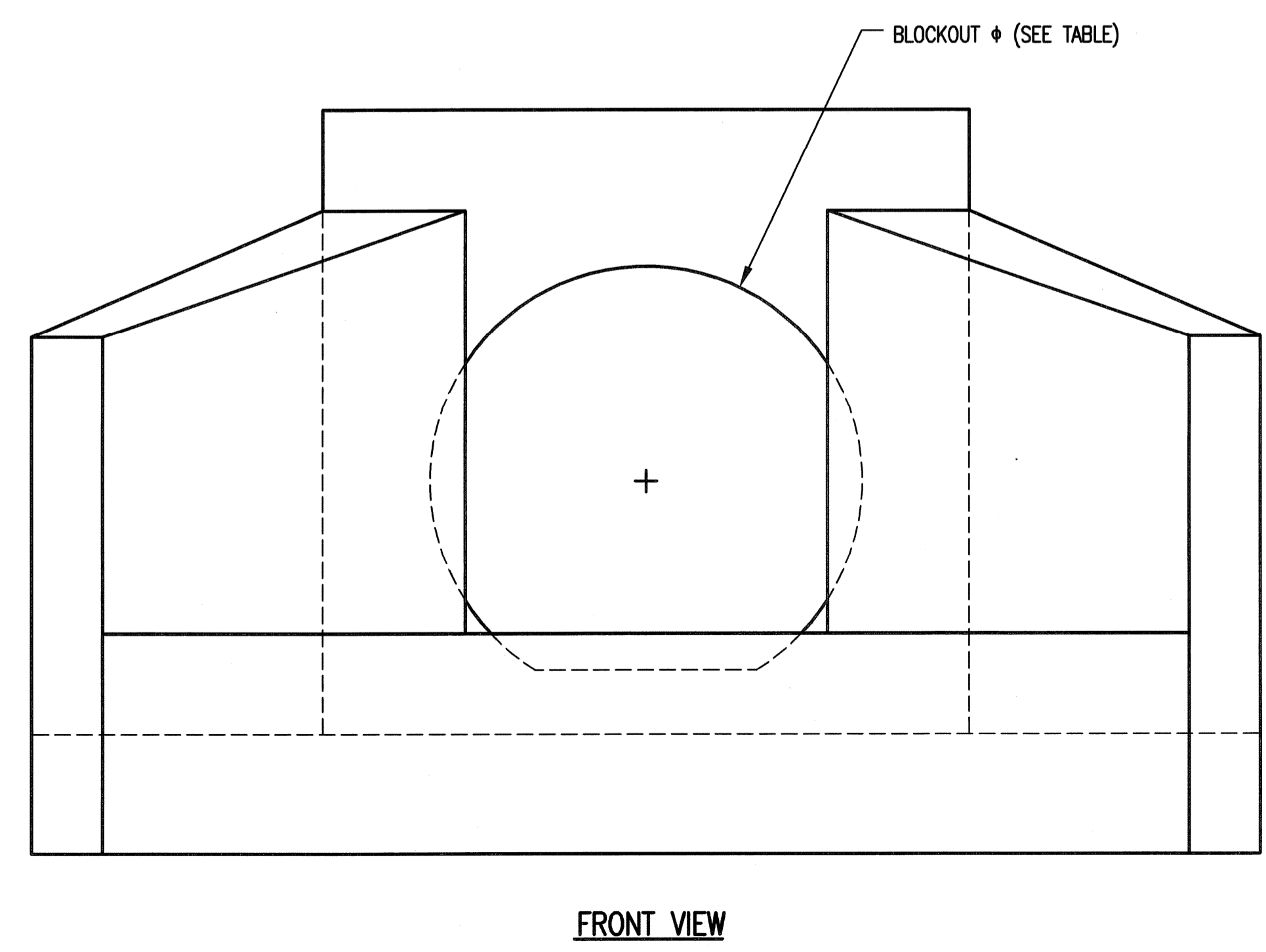
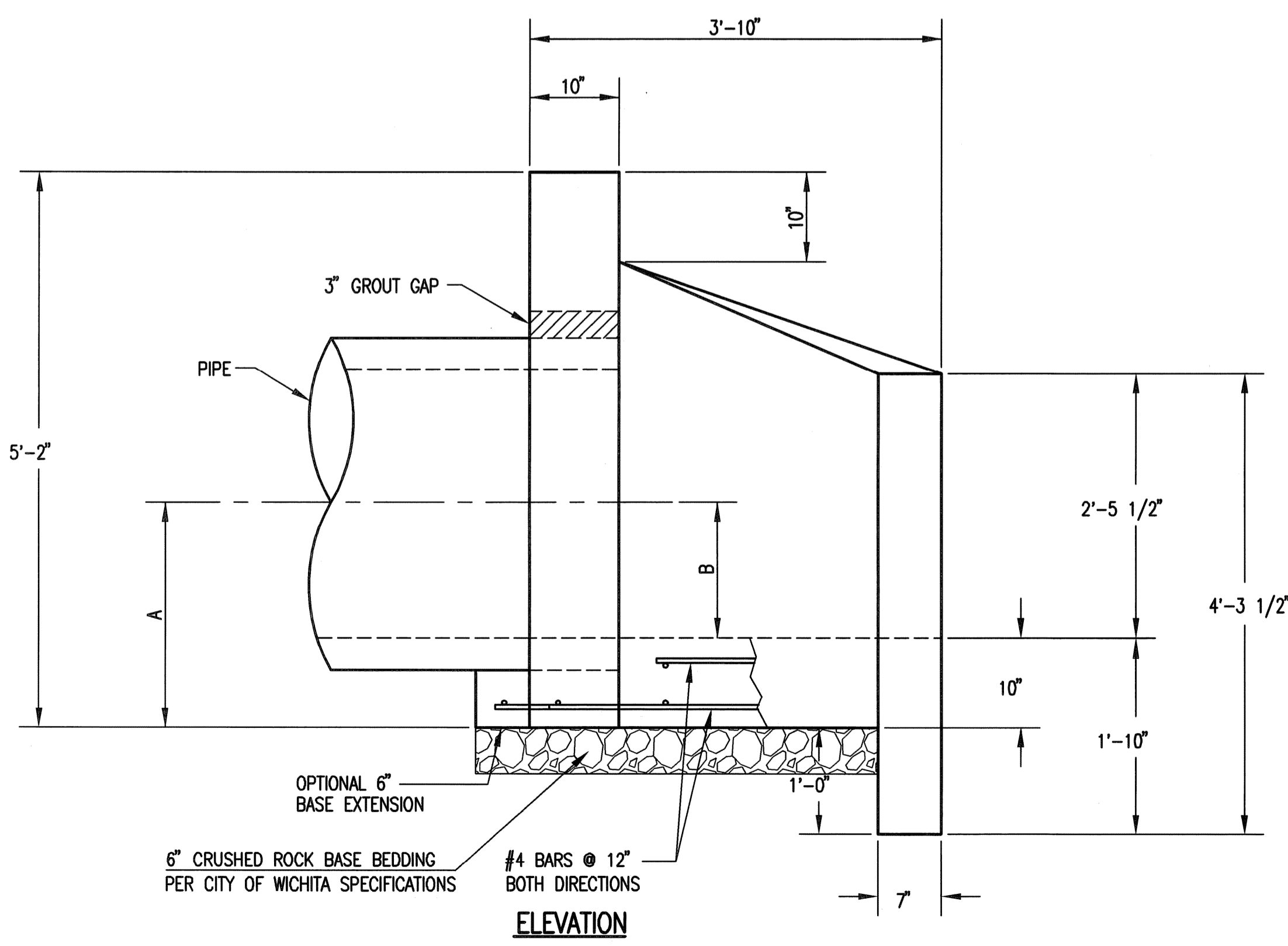
CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER 189 PPD	OCA NUMBER (607861)	DATE 11/2010
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		DESIGN DRAWN SHEET C-6.23

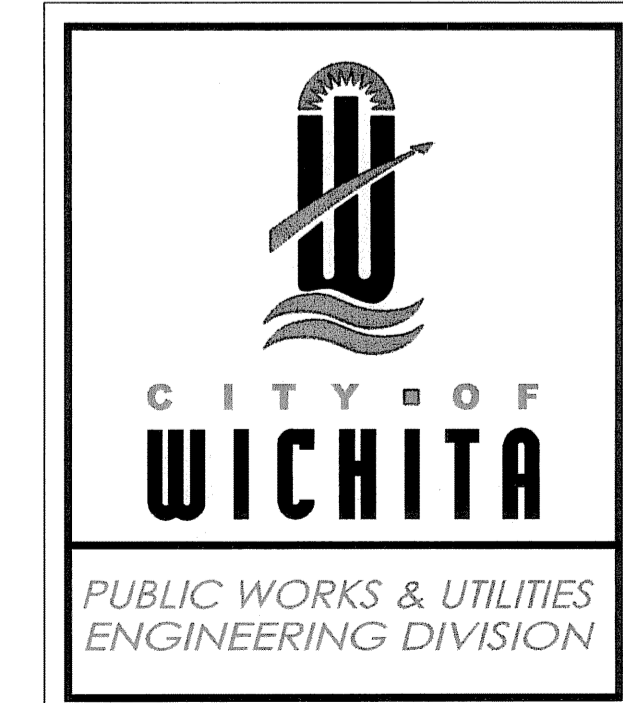
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 0:\2013\12275\003\SITE CIVIL\PHASE 2\PROJ\2275-003-C-PPD_Headwall 15_18_24 Details



PIPE ϕ	A	B	BLOCKOUT ϕ
30"	2'-1"	1'-3"	3'-7"
36"	2'-4"	1'-6"	4'-2"



HEADWALLS, AS SHOWN, WILL NOT SUPPORT FLAP GATE.



**HEADWALL
 DETAILS FOR
 30" AND 36" PIPE**

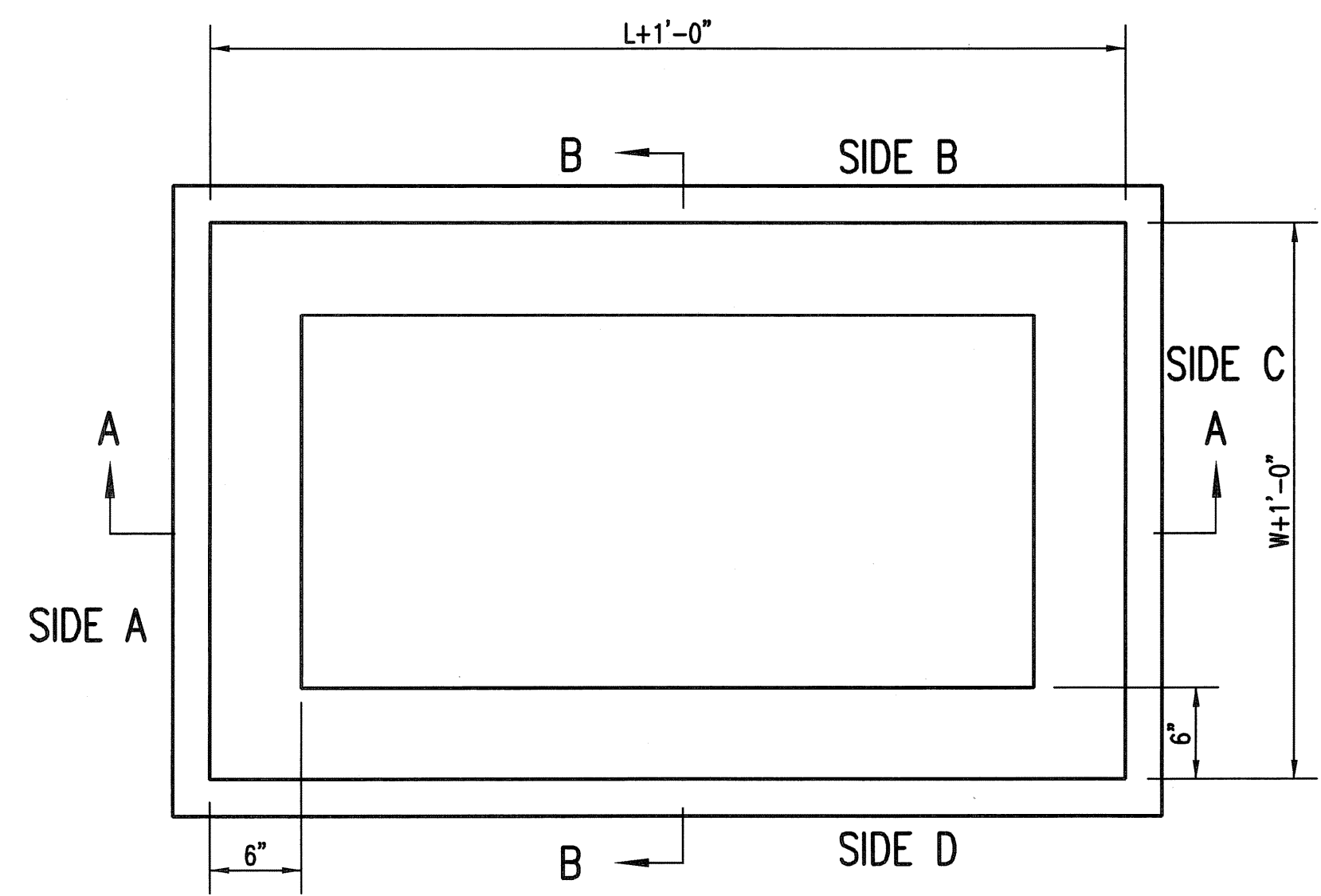
CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER 189 PPD	OCA NUMBER (607861)	DATE 11/2010
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CITY ENGINEER'S OFFICE
 CITY HALL - SEVENTH FLOOR
 455 NORTH MAIN STREET
 WICHITA, KANSAS 67202-1620
 (316) 268-4501

DESIGN	DRAWN
SHEET C-6.24	

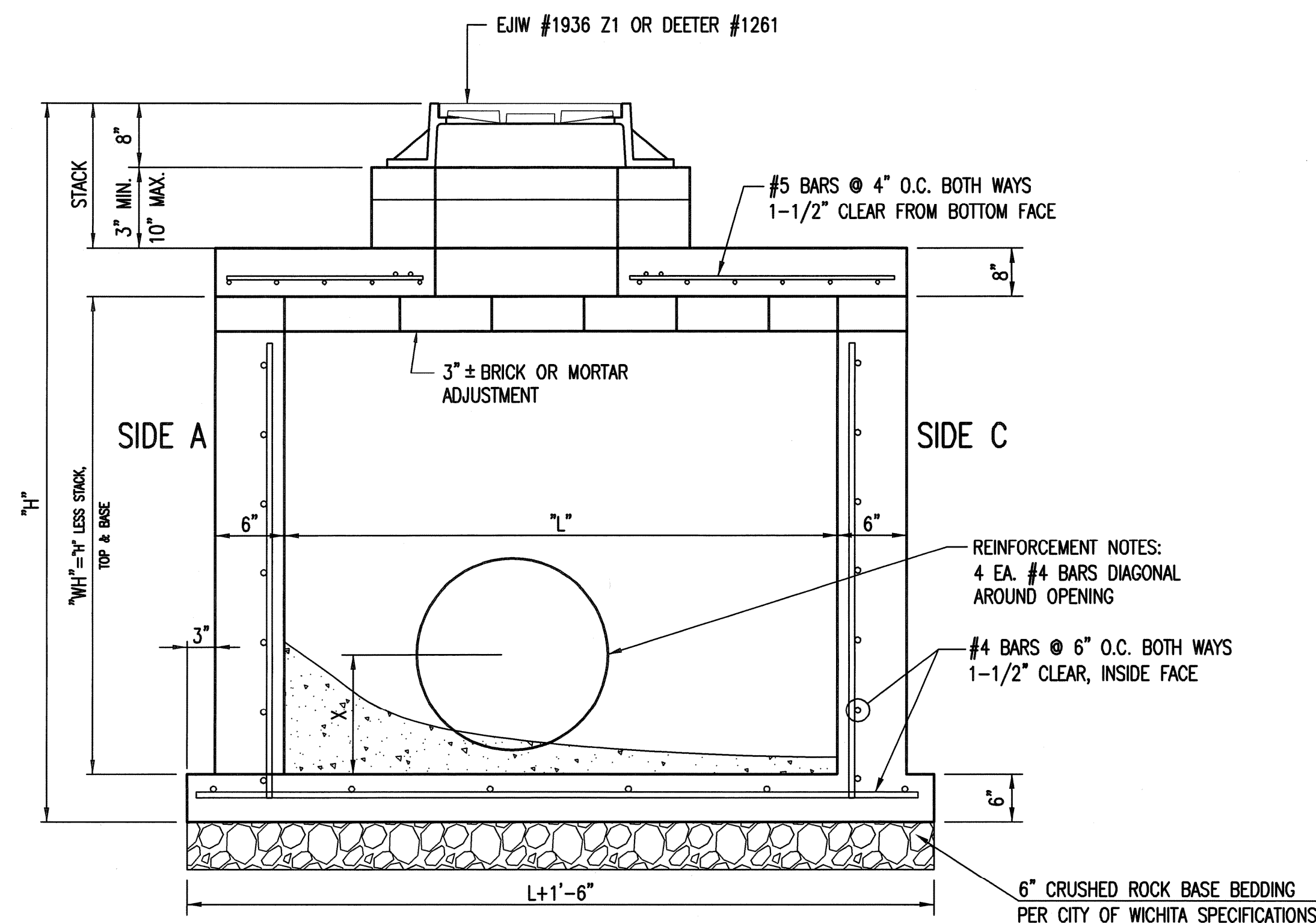
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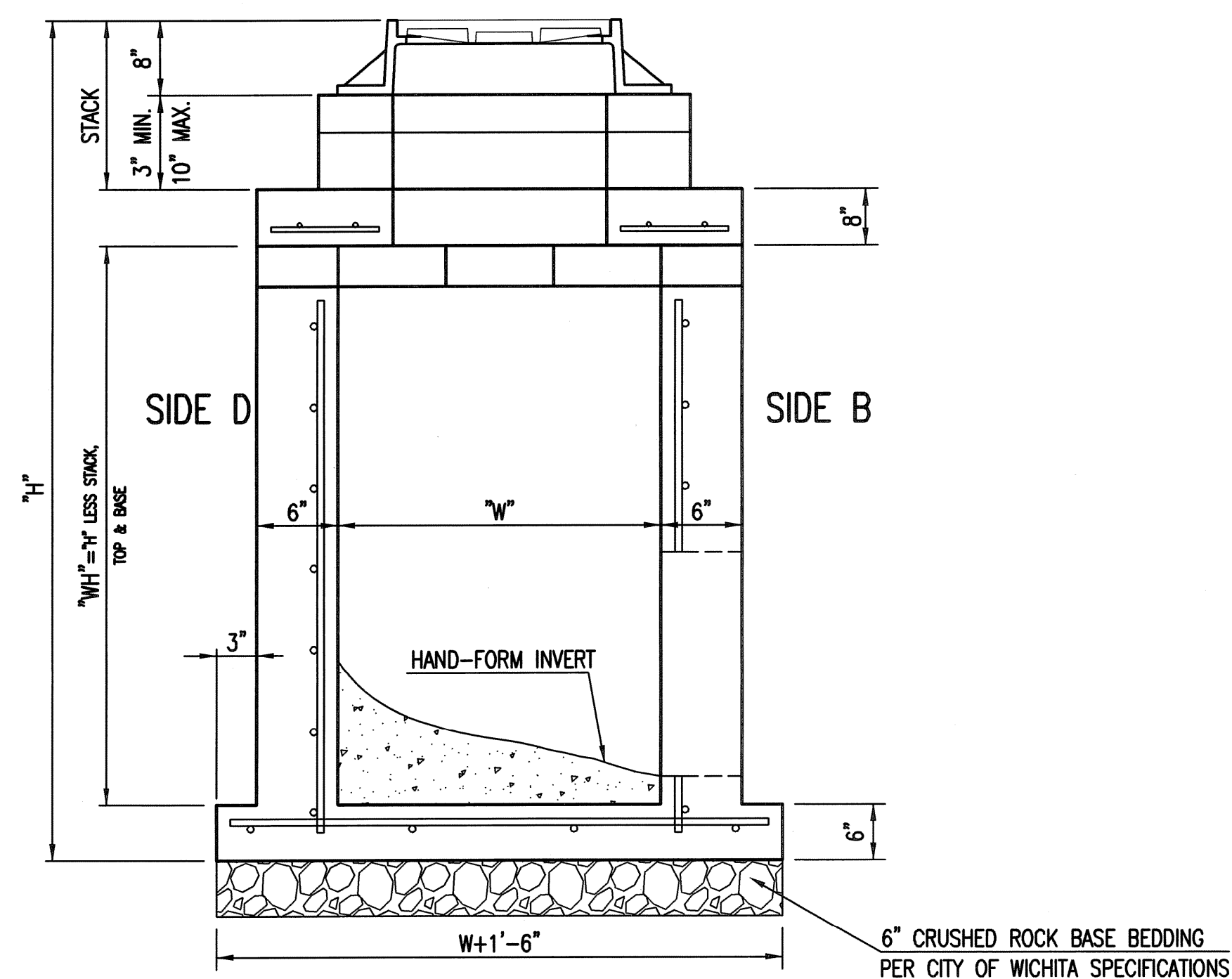
TOP VIEW

GENERAL NOTES

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



SECTION "A-A"

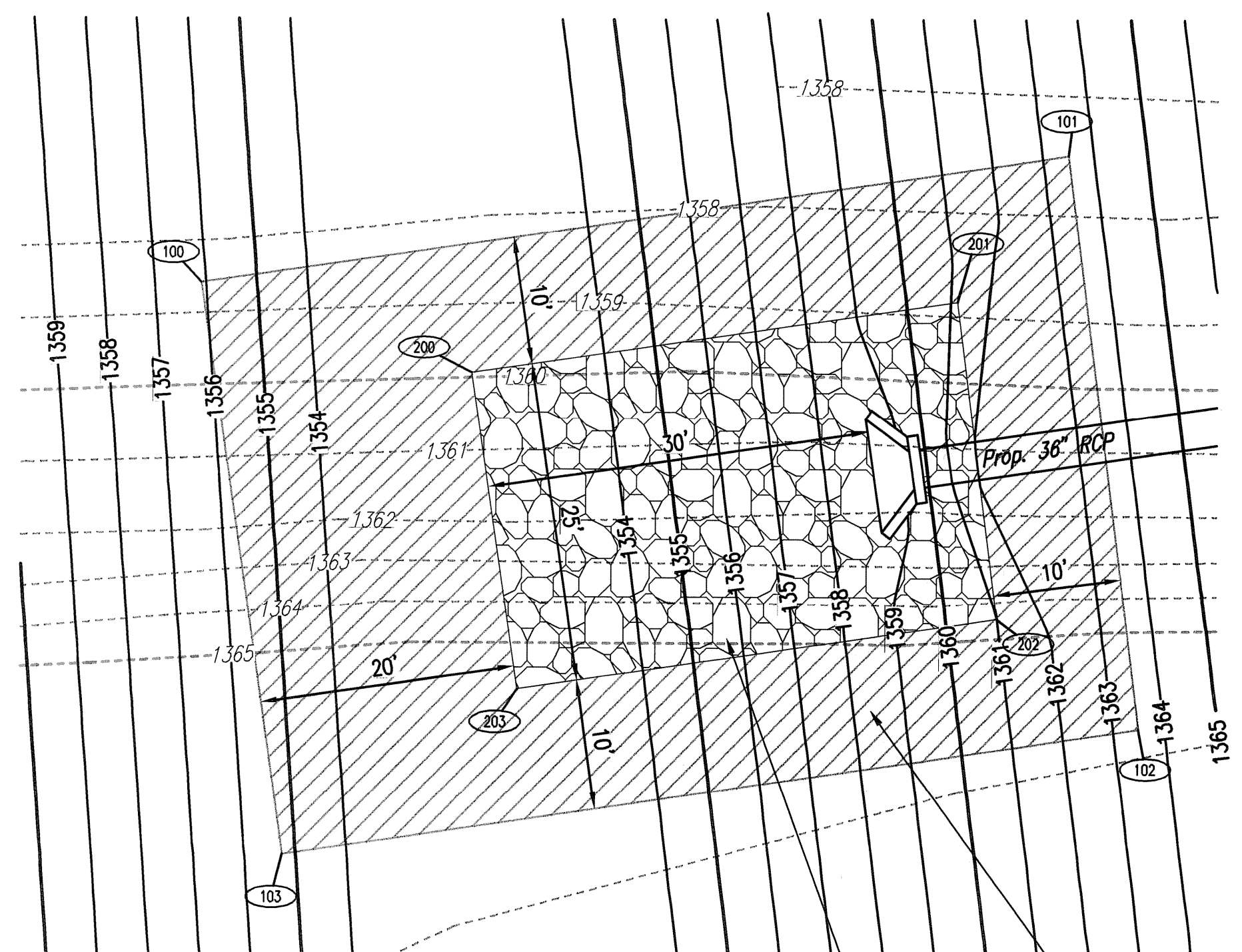


SECTION "B-B"

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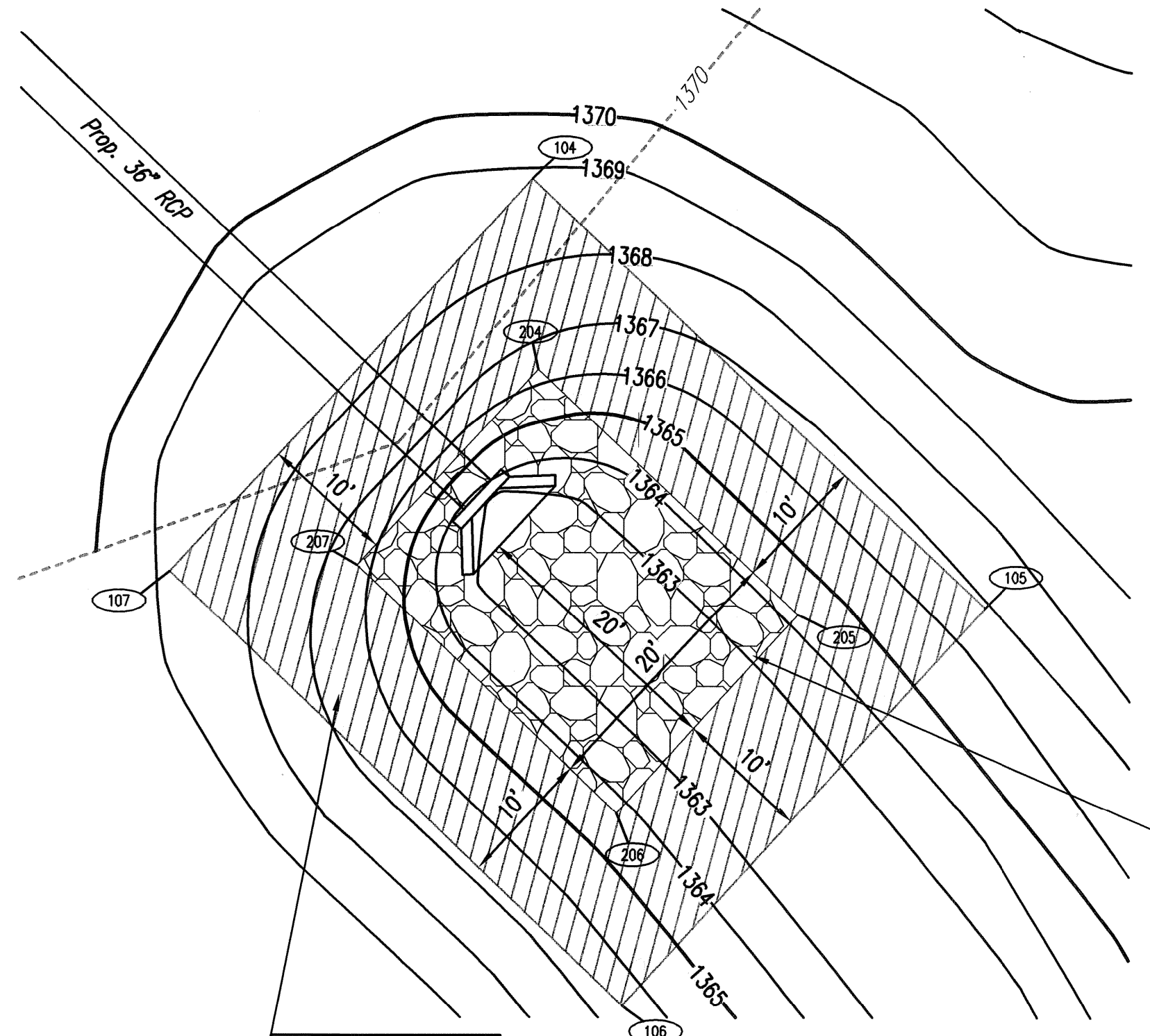
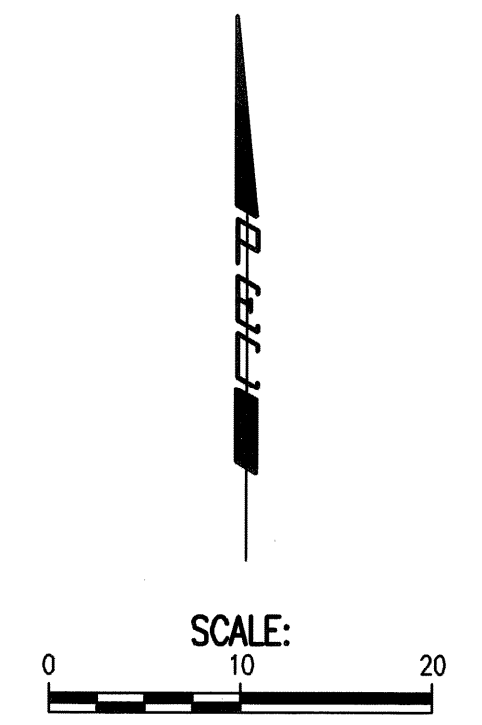
REINFORCED CONCRETE MANHOLE (STORM SEWER)		
CITY ENGINEER GARY JANZEN, P.E.		
PROJECT NUMBER 189 PPD	OCA NUMBER (607861)	DATE 11/2010
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		DESIGN DRAWN SHEET C-6.25



RIPRAP PLAN
(SWS Line No. 7)

Install 235 S.Y. Turf Reinf. Mat

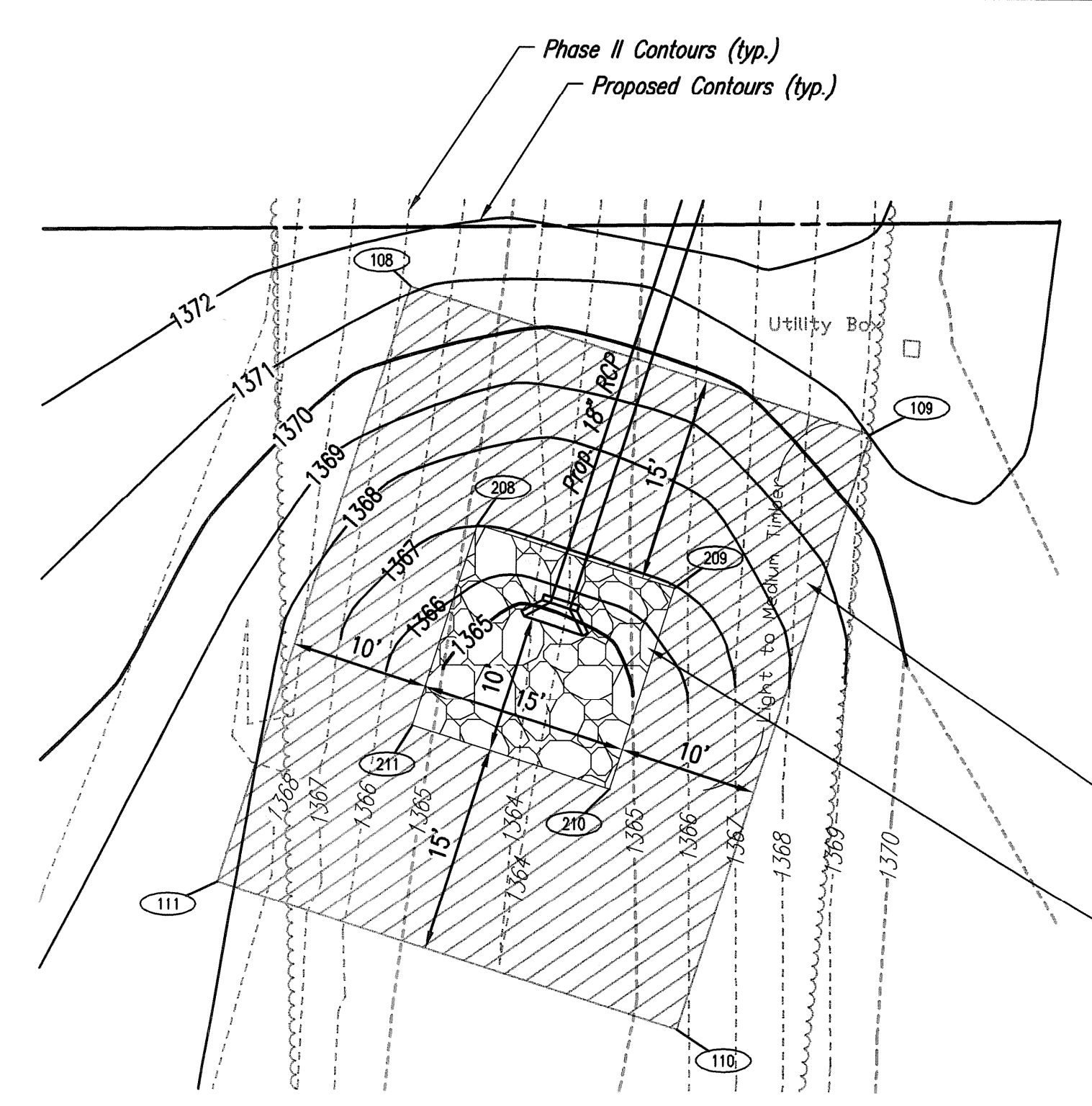
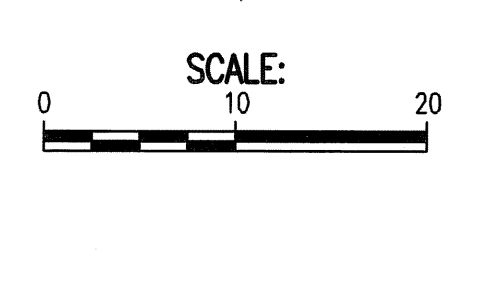
Install 103 S.Y. Light Stone Rip Rap



RIPRAP PLAN
(SWS Line No. 10)

Install 149 S.Y. Turf Reinf. Mat

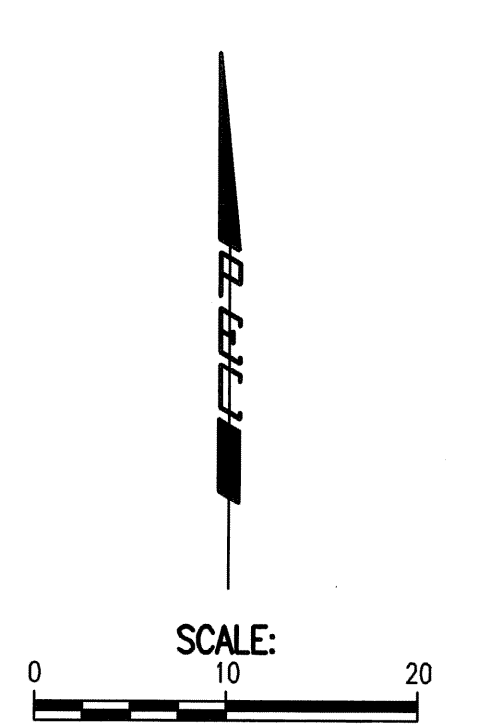
Install 56 S.Y. Light Stone Rip Rap



RIPRAP PLAN
(SWS Line No. 11)

Install 151 S.Y. Turf Reinf. Mat

Install 25 S.Y. Light Stone Rip Rap



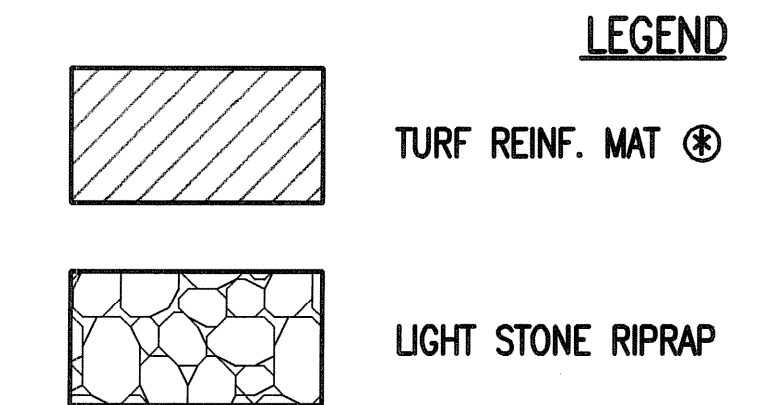
TURF REINF. MAT COORDINATES		
POINT	NORTH	EAST
100	1,710,004.7432	1,661,126.3488
101	1,710,014.6929	1,661,194.2516
102	1,709,970.0465	1,661,199.9441
103	1,709,960.2187	1,661,132.8729
104	1,708,919.5541	1,663,387.7929
105	1,708,887.4488	1,663,421.9208
106	1,708,858.0925	1,663,394.7489
107	1,708,890.1978	1,663,360.6209
108	1,708,941.8269	1,663,471.1427
109	1,708,931.1659	1,663,504.4795
110	1,708,888.0632	1,663,490.6955
111	1,708,898.7241	1,663,457.3586

100 = COORDINATE POINT NO.

RIPRAP COORDINATES		
POINT	NORTH	EAST
200	1,709,997.7485	1,661,147.5873
201	1,710,003.3215	1,661,185.6205
202	1,709,978.5179	1,661,188.7830
203	1,709,973.0126	1,661,151.2118
204	1,708,905.3628	1,663,388.2837
205	1,708,886.9619	1,663,407.8440
206	1,708,872.2837	1,663,394.2580
207	1,708,890.6847	1,663,374.6978
208	1,708,924.4937	1,663,476.0985
209	1,708,919.9247	1,663,490.3857
210	1,708,905.3964	1,663,485.7396
211	1,708,909.9654	1,663,471.4524

200 = COORDINATE POINT NO.

TURF REINFORCEMENT MAT SHALL BE TEMPORARY SHORELINE PROTECTION PRODUCT. MEETING KDOT REQUIREMENTS FOR CLASS 1, TYPE D INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. TURF REINFORCEMENT MAT SHALL BE TOED IN A MINIMUM 1' AT ALL LOCATIONS ADJACENT TO RIPRAP.

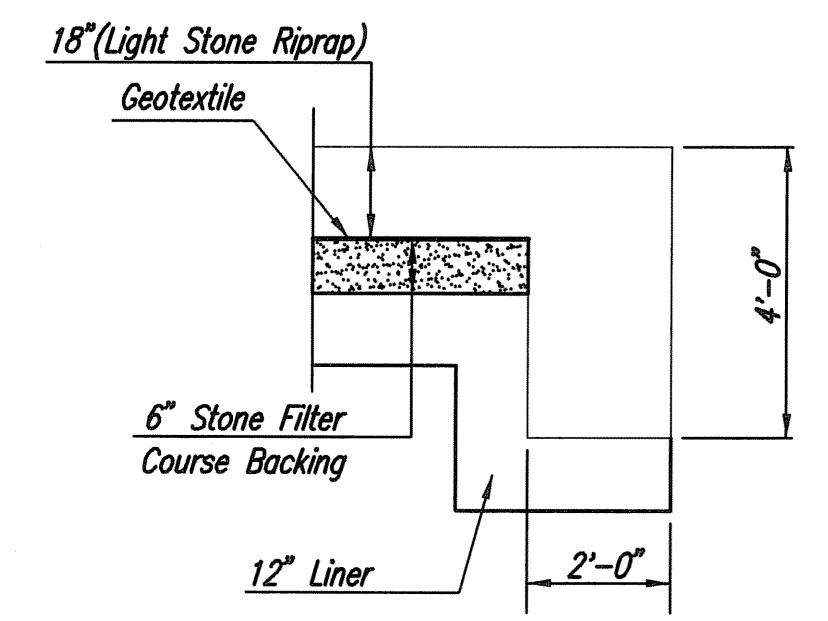


LEGEND

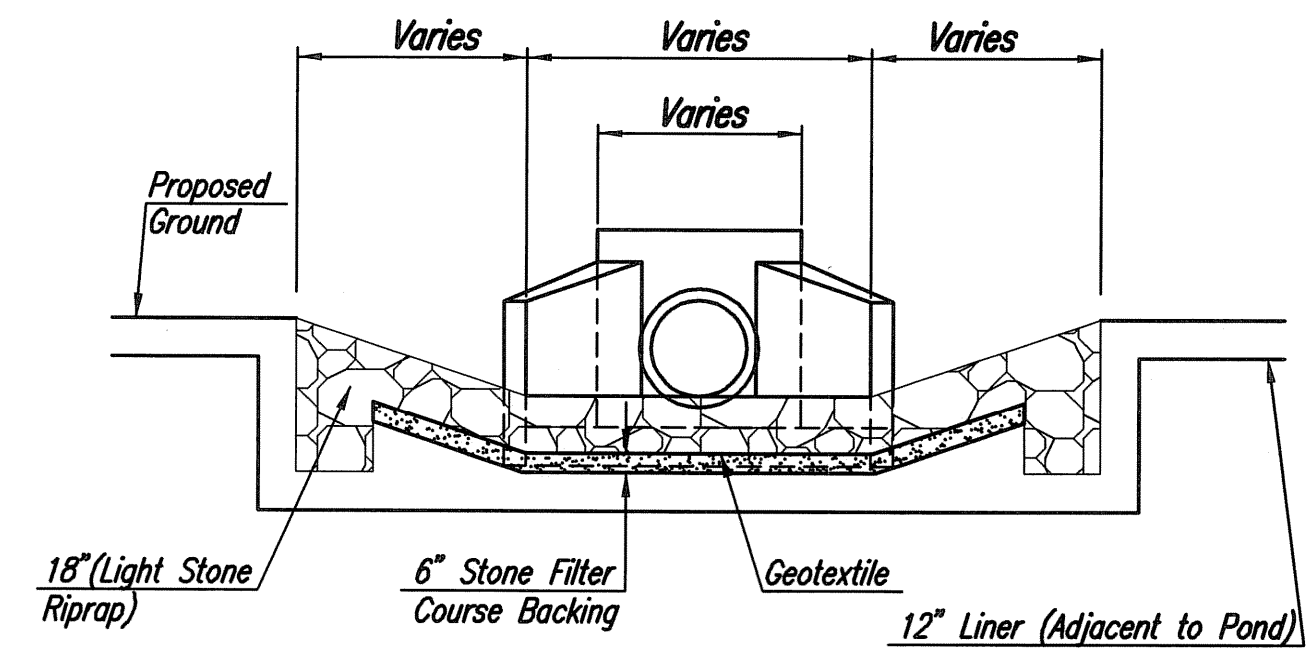
NOTES

- ALL RIPRAP FOR THIS PROJECT SHALL BE NATURAL STONE. NEITHER BROKEN CONCRETE, FABRIC ENVELOPE, NOR PREMIXED DRY PACKAGED CONCRETE BAG ALTERNATES WILL BE ALLOWED.
- TOEWALLS SHALL BE INSTALLED ALONG ALL EDGES OF STONE RIPRAP OR AS SHOWN ON PLANS.
- GROUTING OF THE SURFACE OF THE RIPRAP SHALL NOT BE PERFORMED. GROUTING OF THE TOEWALLS SHALL BE PERFORMED PER SPECIFICATIONS.

CONTRACTOR SHALL COORDINATE PHASE III LIGHT STONE RIPRAP INSTALLATION WITH PHASE II AND III EROSION CONTROL NOTED ON PLAN VIEWS. WHERE LIGHT STONE RIPRAP OVERLAPS OR CONFLICTS WITH PREVIOUS PHASE CONSTRUCTION, LIGHT STONE RIPRAP WILL BE INSTALLED. DEDUCTION OF PERVIOUS PHASE OVERLAPPING QUANTITIES HAS NOT BEEN SHOWN.

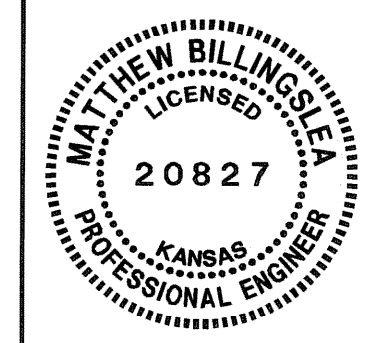


TYPICAL SECTION THRU TOEWALL



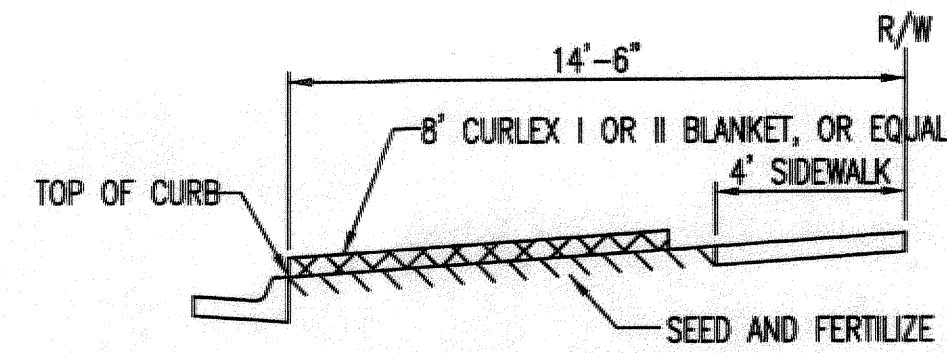
SECTION A-A

SIZE REQUIREMENTS FOR ROCK RIPRAP						
PERCENT HEAVIER THAN:						
	1/4 TON	250 LBS.	200 LBS.	180 LBS.	60 LBS.	10 LBS.
HEAVY	0%	0%	50%	5-15%	50-70%	85-100%
LIGHT	0%	0%	50%	5-15%	50-70%	85-100%

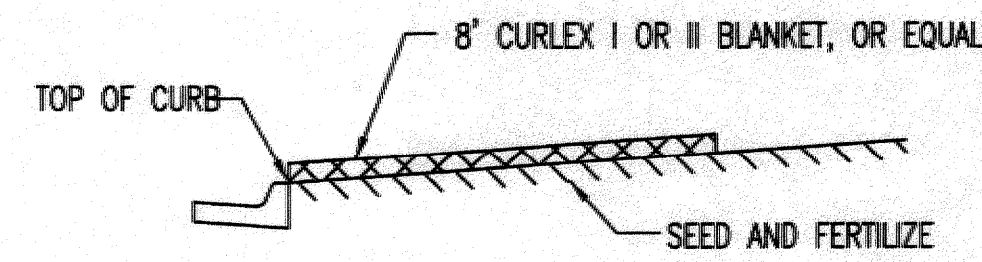


No.	Revision	By	Date
KOCH WICHITA CAMPUS EXPANSION PRIVATE STORM WATER SEWER EXTENSION RIPRAP AND MISCELLANEOUS DETAILS GARY JANZEN, P.E. - CITY ENGINEER PRIVATE PROJECT NO. 189 PPD (607861)			
PROFESSIONAL ENGINEERING CONSULTANTS, P.A. 303 SOUTH TOPEKA WICHITA, KS 67202 316-262-2691 www.pec1.com			
Designed by	MEB, JAG	Job No.	35-12275-3-7208
Drawn by	JAN	Date	FEBRUARY 2013
			Sht. C-6.26 of 30

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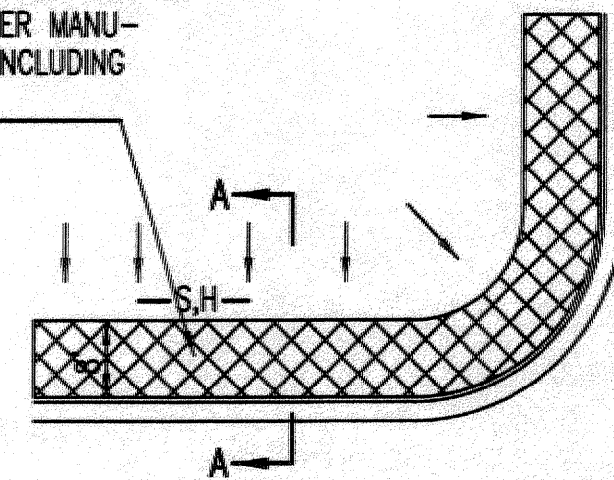


SECTION B-B

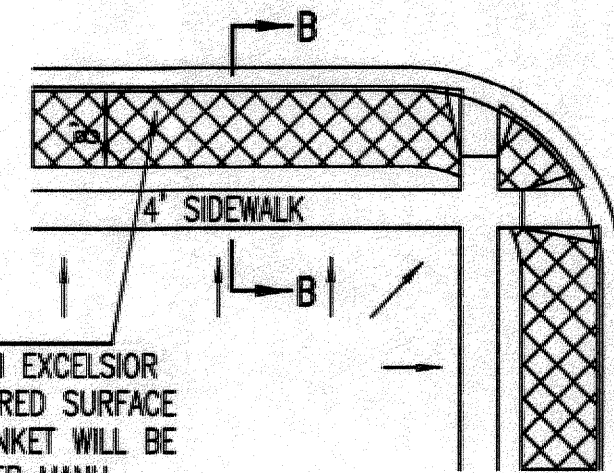


SECTION A-A

INSTALL 8" WIDE CURLEX I OR II EXCELSIOR BLANKET, OR EQUAL, ON PREPARED SURFACE BACK OF CURB. EDGE OF BLANKET WILL BE AT BACK OF CURB. INSTALL PER MANUFACTURERS RECOMMENDATION, INCLUDING STAPLES. (SEE DETAIL)



SOUTH STREET

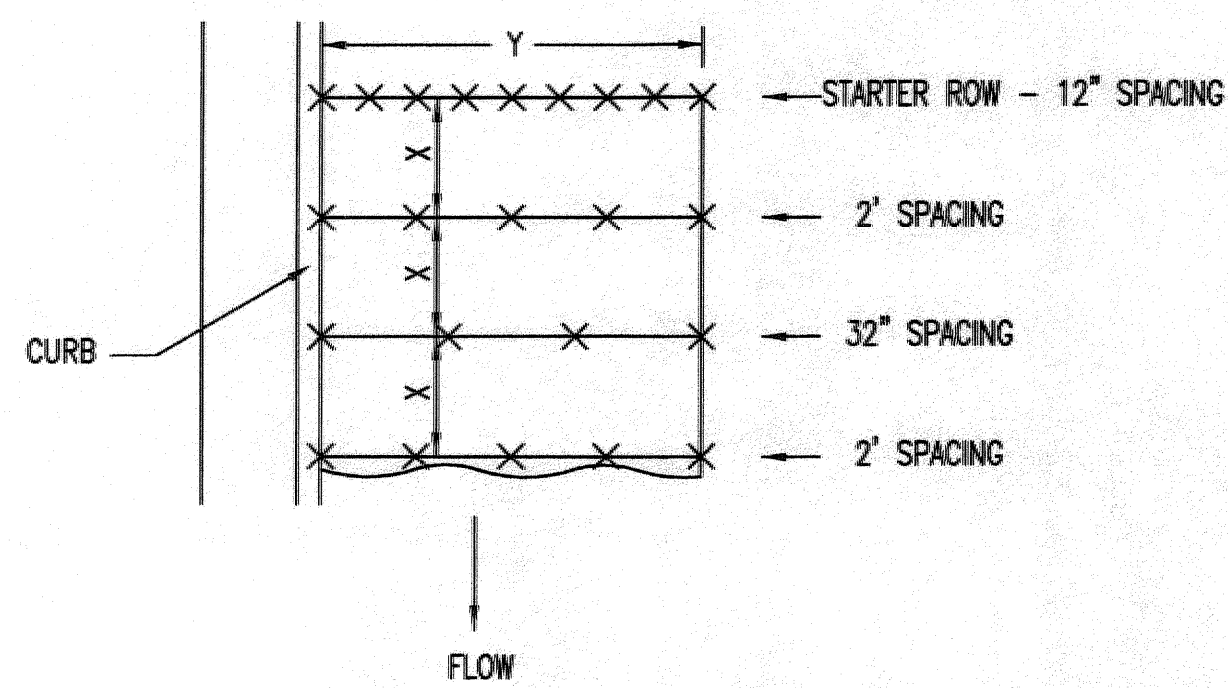


INSTALL 8" WIDE CURLEX I OR II EXCELSIOR BLANKET, OR EQUAL, ON PREPARED SURFACE BACK OF CURB. EDGE OF BLANKET WILL BE AT BACK OF CURB. INSTALL PER MANUFACTURERS RECOMMENDATION, INCLUDING STAPLES. (SEE DETAIL)

GENERAL NOTES

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

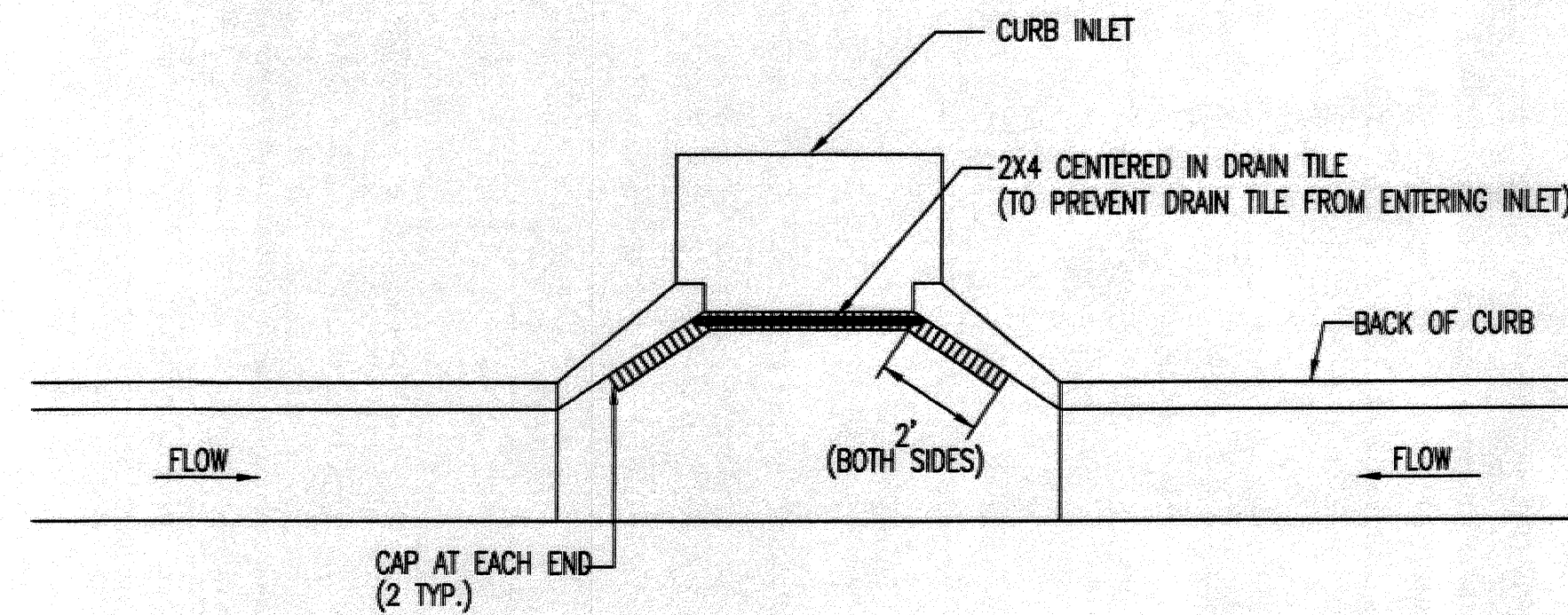
BACK OF CURB PROTECTION DETAIL



STAPLE PATTERN

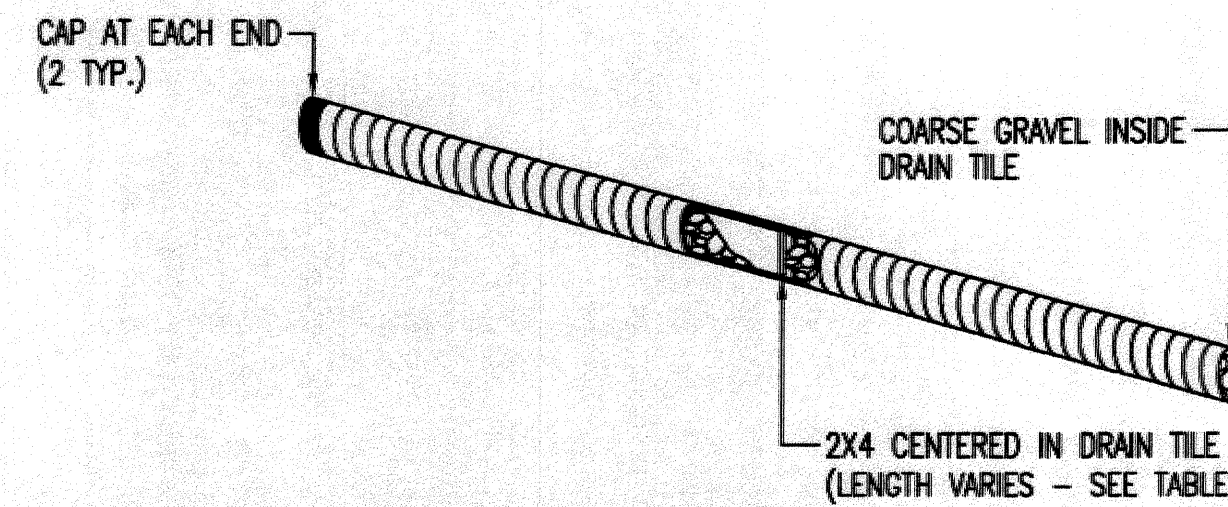
NOTES: USE 6" SEAM OVERLAP
(X & Y = RECOMMENDED BY MANUFACTURE)

DETAILS FOR APPROVED EROSION CONTROL MAT

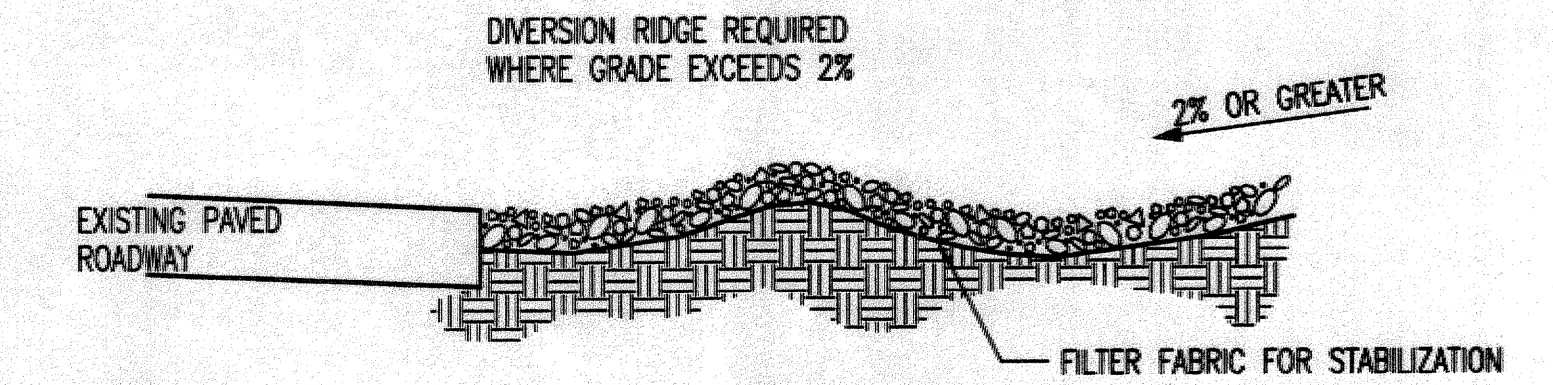


NOTE: PLACE 4" PERFORATED PVC PIPE, FILLED WITH 1/2"-1" DIA. GRAVEL, IN FRONT OF CURB INLET AS SHOWN.

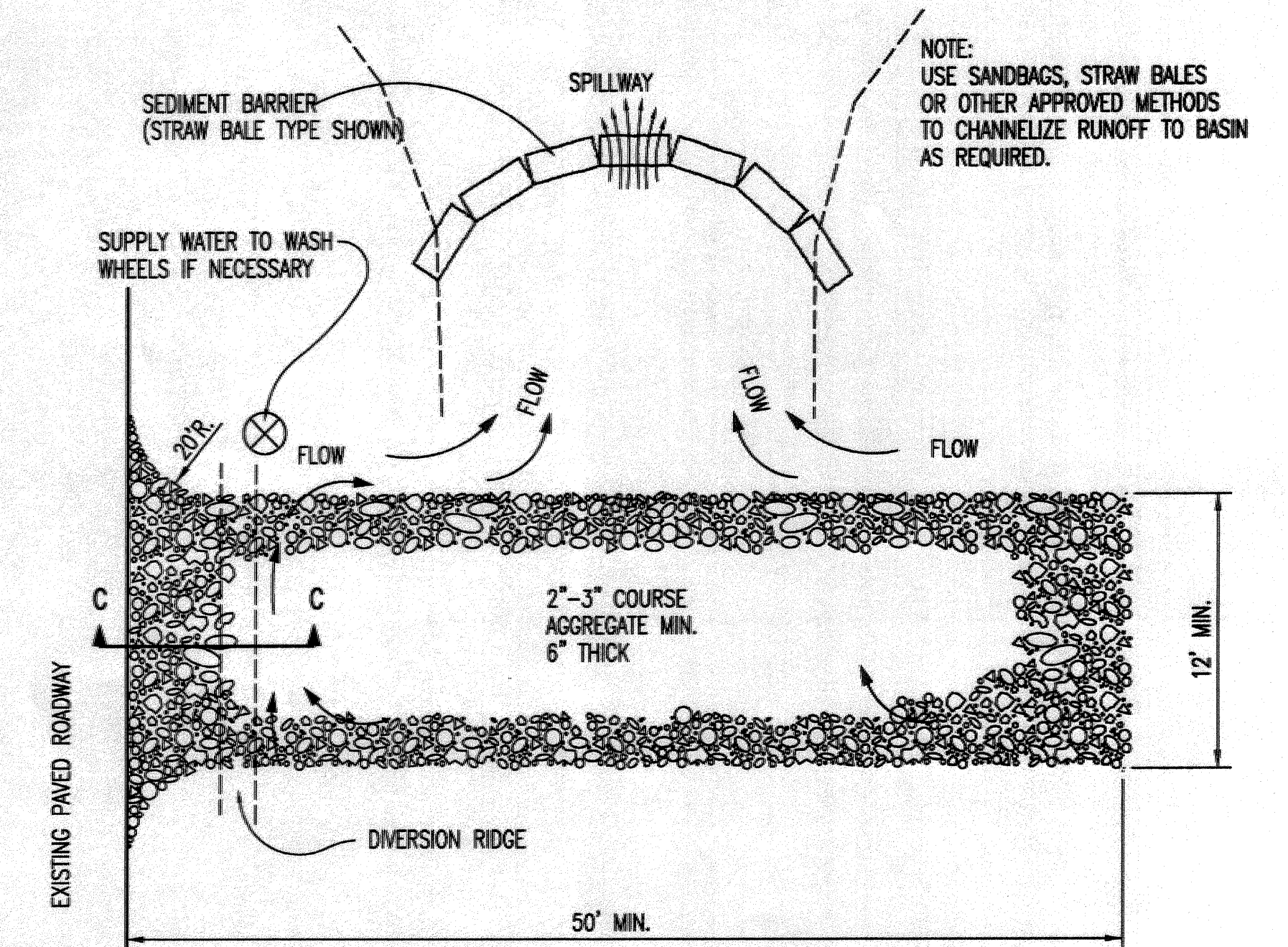
2X4 LENGTH	INLET TYPE	INLET OPENING
5'-6"	1-A	5'-0"
10'-6"	1-A	10'-0"
15'-6"	1-A	15'-0"



CURB INLET PROTECTION
4" PERFORATED PIPE W/ GRAVEL



SECTION C-C



STABILIZED CONSTRUCTION ENTRANCE

GENERAL NOTES

- 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.
- WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
- WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN, AS SHOWN ABOVE.
- DRIVE ENTRANCES ONTO RESIDENTIAL LOTS WILL NOT BE REQUIRED TO HAVE THE SEDIMENT BARRIER SHOWN, BUT WHEEL WASHING MAY BE REQUIRED IF STABILIZED ENTRANCE IS NOT SUFFICIENT TO KEEP MUD FROM BEING TRACKED ONTO ADJACENT STREET. ENTRANCE SHALL EXTEND FROM BACK OF CURB TO DWELLING.

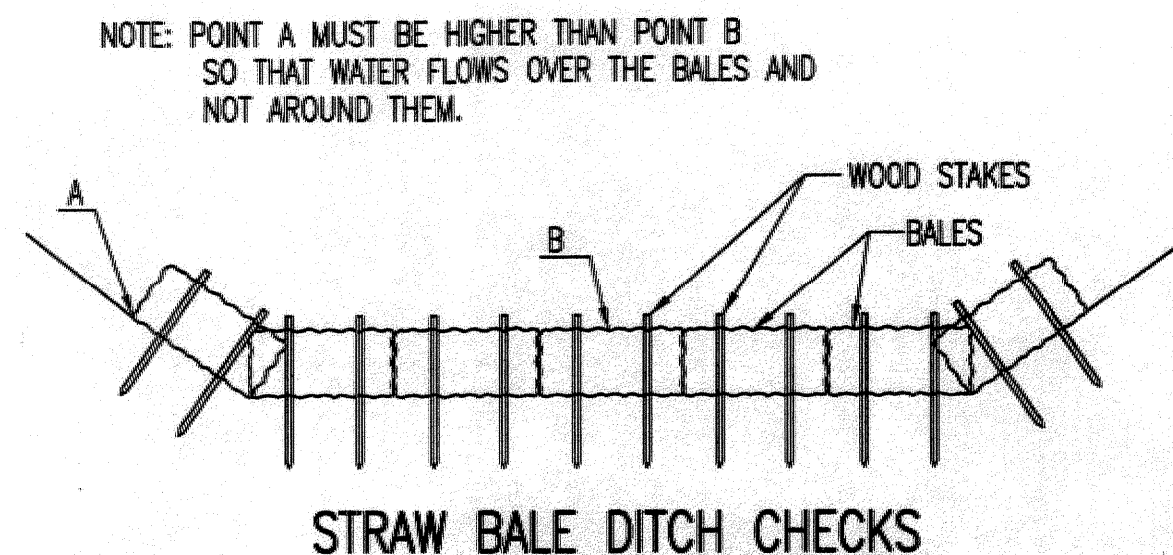
REVISION DATE: MAY 2013



CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

**BACK OF CURB PROTECTION,
CURB INLET PROTECTION AND
CONSTRUCTION ENTRANCE**

CITY ENGINEER GARY JANZEN, P.E.		
PROJECT NUMBER 189 PPD	OCA NUMBER 607861	DATE
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		SHEET C-8. 01



STRAW BALE DITCH CHECKS

MATERIAL SPECIFICATION:

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

PLACEMENT:

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

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

PROPER INSTALLATION METHOD:

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

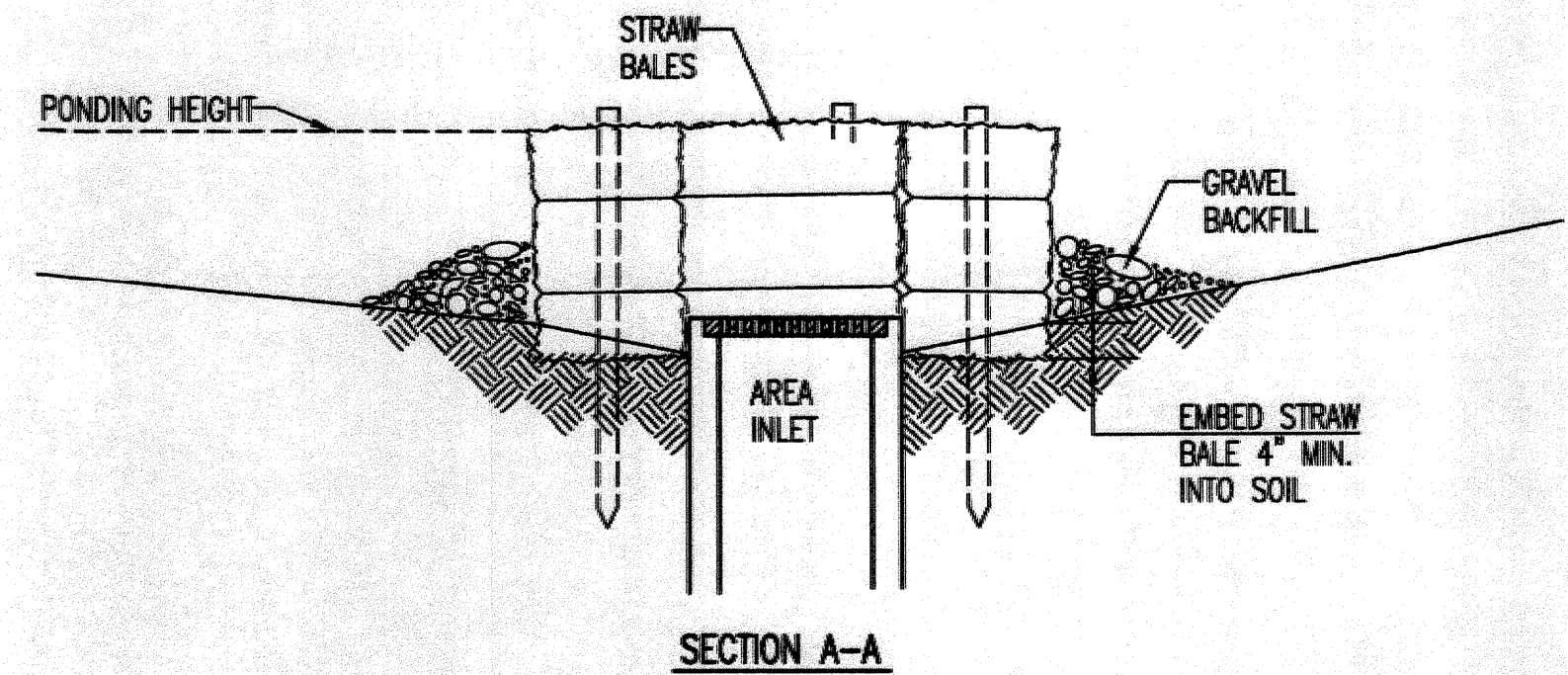
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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

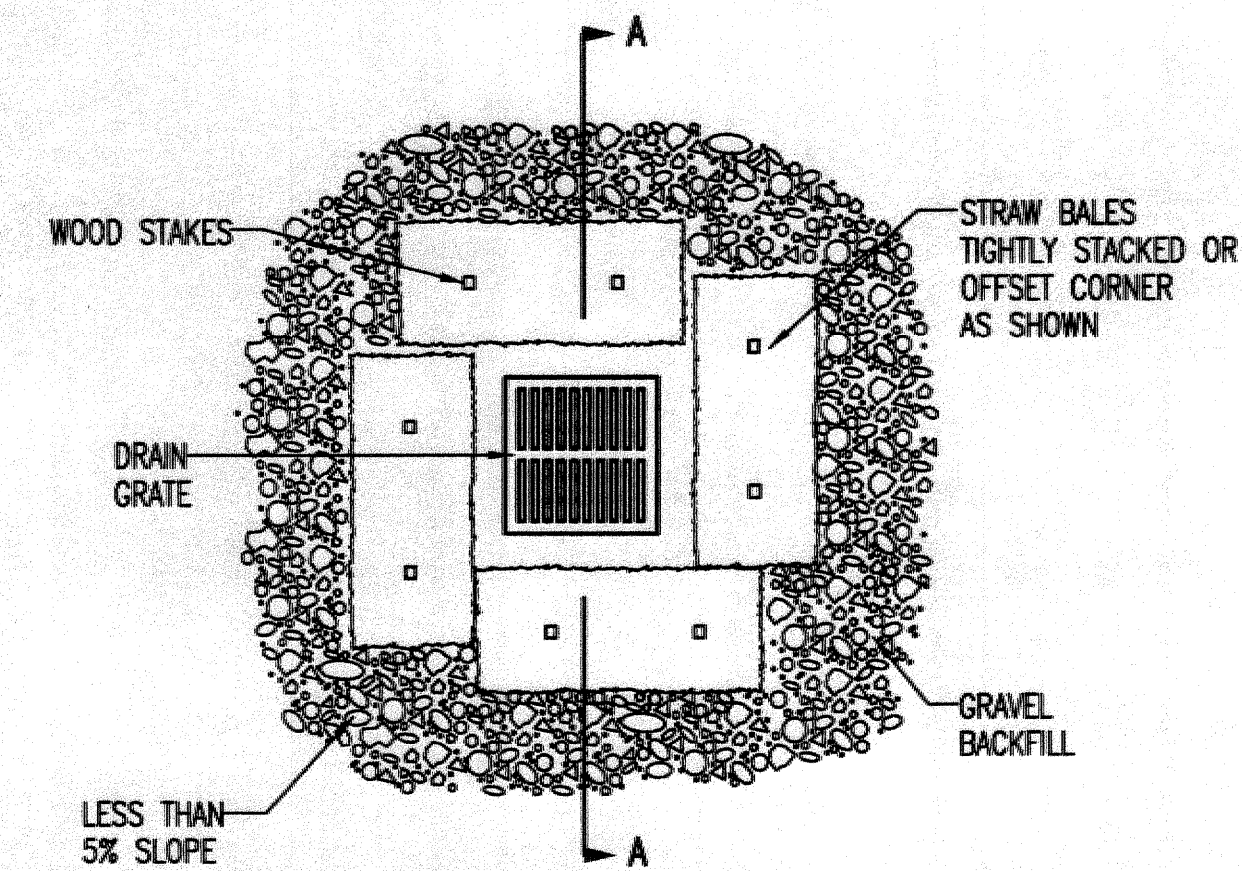
INSPECTION AND MAINTENANCE:

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

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



SECTION A-A



STRAW BALE BARRIERS FOR AREA INLETS (INLET PROTECTION)

MATERIAL SPECIFICATION:

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

PLACEMENT:

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

PROPER INSTALLATION METHOD:

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

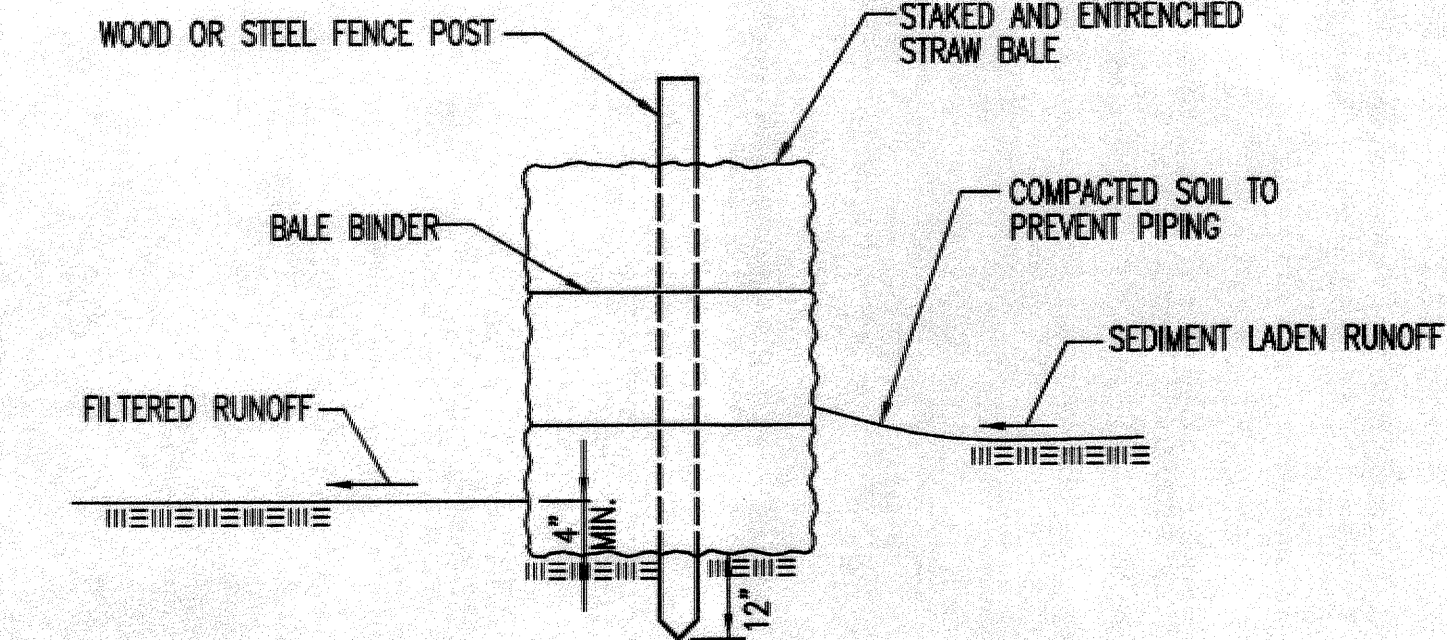
LIST OF COMMON PLACEMENT INSTALLATION MISTAKES TO AVOID:

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

INSPECTION AND MAINTENANCE:

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

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



STRAW BALE BARRIERS

MATERIAL SPECIFICATION:

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

PLACEMENT:

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

PROPER INSTALLATION METHOD:

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

LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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

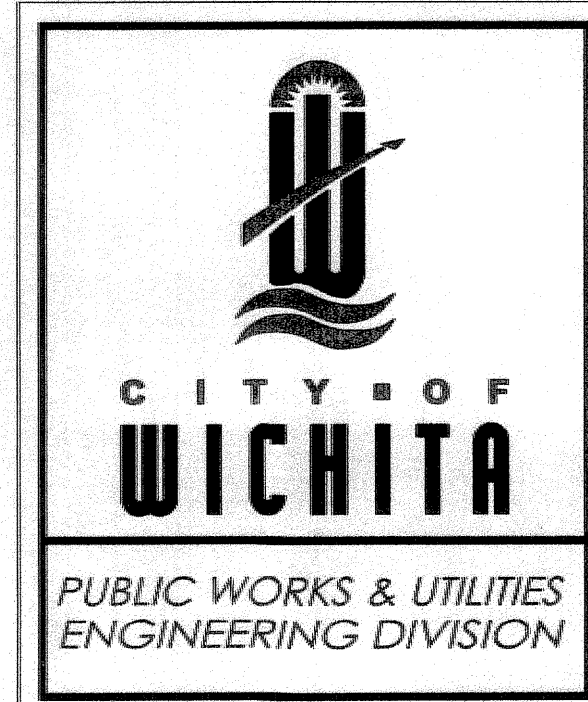
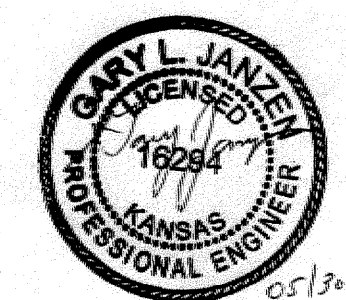
INSPECTION AND MAINTENANCE:

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

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

REVISION DATE: MAY 2013

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STRAW BALE DITCH CHECK AND BARRIER DETAILS		
CITY ENGINEER GARY JANZEN, P.E.		
PROJECT NUMBER 189 PPD	OCA NUMBER 607861	DATE
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		SHEET C-8.03