

PRIVATE STORM SEWER SYSTEM SPRING HILL SUITES

TO SERVE LOT 12, BLK 1, THE GATEWAY CENTER 2ND ADD PRIVATE PROJECT NUMBER 1787 PPS (607861)

INDEX OF SHEETS

1. TITLE SHEET
2. SITE GRADING PLAN (FOR REFERENCE)
3. STORM SEWER LINE 1
4. STORM SEWER LINE 1 & 4
5. STORM SEWER LINE 2
6. STORM SEWER LINE 3
7. TYPE I INLET
8. 2x2 DROP INLET
9. STANDARD MANHOLE
10. EROSION CONTROL
11. EROSION CONTROL DETAILS

BENCHMARK

BENCH MARK: CHISELED SQUARE ON TO OF CURB AT EAST END OF CENTER MEDIAN AT THE NORTH ENTRANCE TO RESIDENCE INN, NORTH OF RESIDENCE INN BUILDING
ELEVATION = 1390.29 (NGVD29)

REVISED 7/22/08

GENERAL NOTES

1. Contractor will be required to provide a minimum advance notice of forty-eight (48) hours to utility companies prior to starting any excavation as follows:

Kansas One-Call 687-2470

The Contractor must notify the following in case of an emergency:

Cox Communications	262-0661
Kansas Gas Service	383-8600
Westar	383-8600
AT&T	1-800-286-8313
City of Wichita Water Department	262-6000
City of Wichita Sewer Maintenance	262-6000

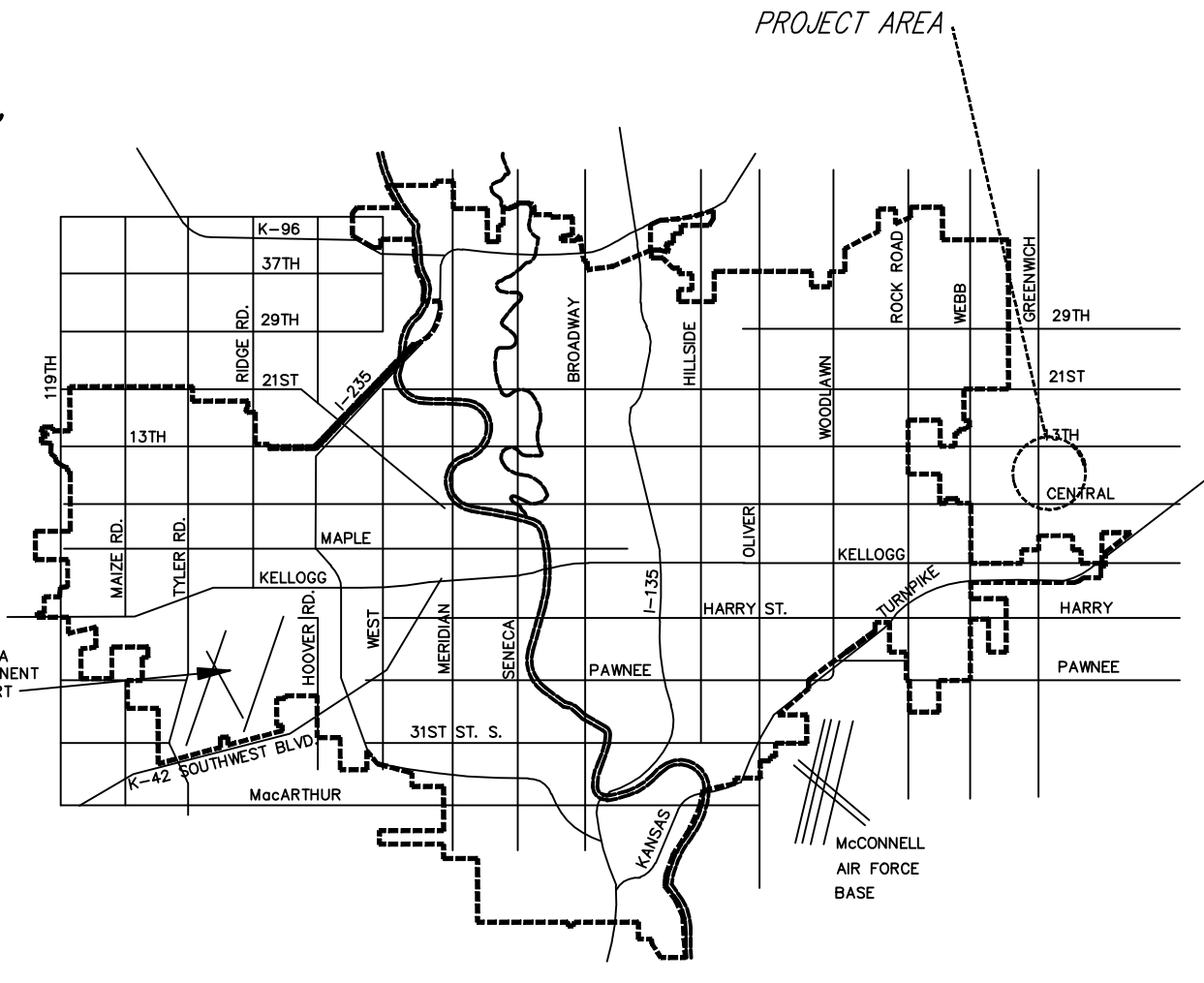
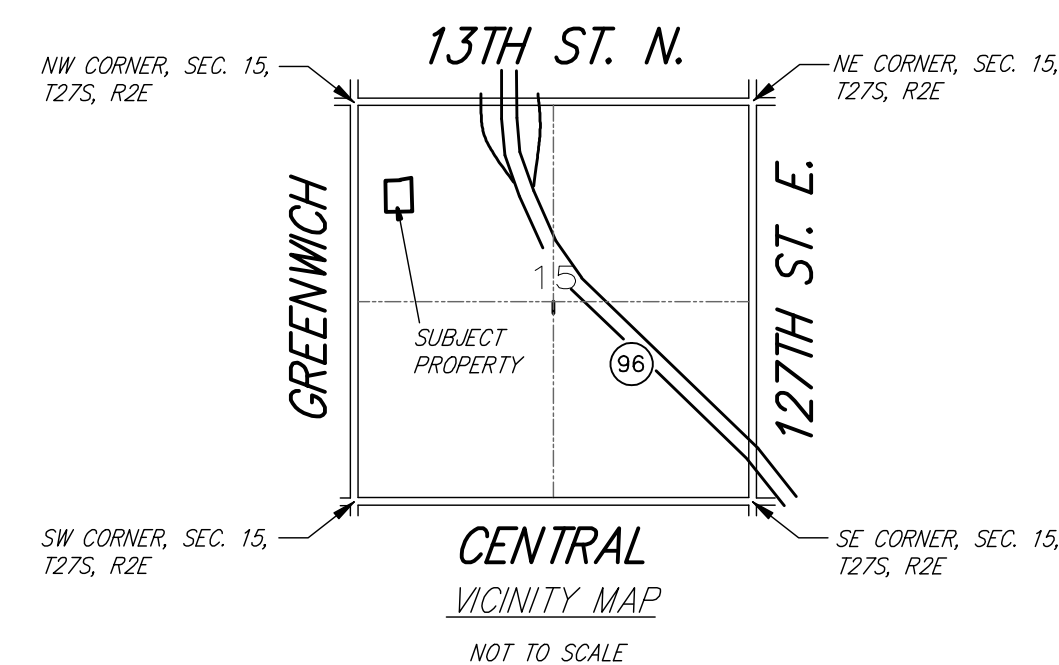
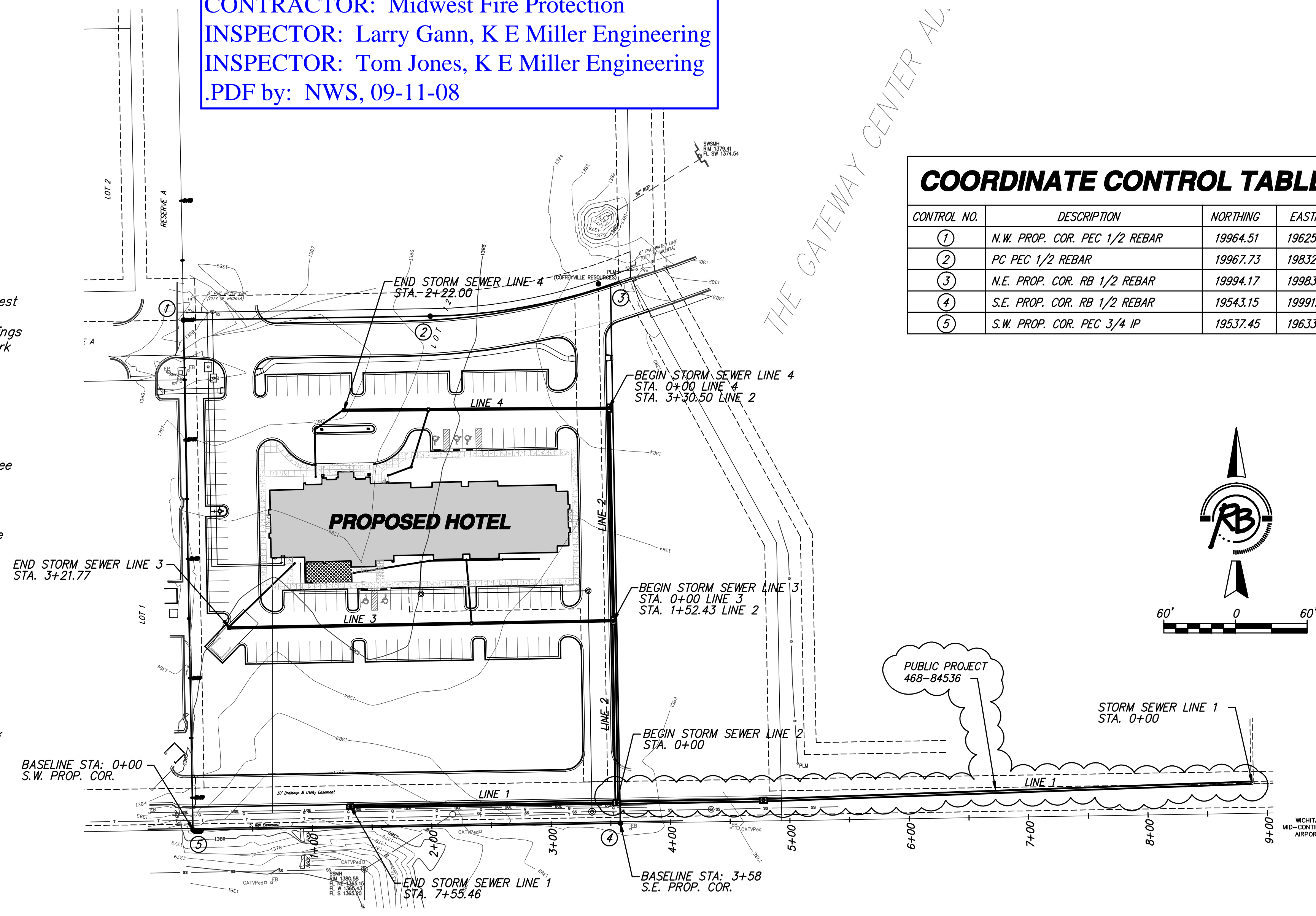
2. Existing utilities and their location, as shown on the plans, represent the best information obtainable for design. Location information has been obtained from the various utility companies and is either from company record drawings or company-provided field locations. The Contractor will be required to work around existing utilities within the right-of-way which do not conflict with proposed construction.
3. A saw cut of the full depth of existing surface courses or pavement thickness shall be provided at locations where proposed construction abuts an existing surface course or pavement for which partial removal of that surface or pavement is required, except when such saw cuts are within three (3) feet of an existing joint the limits of removal shall be extended to the existing joint.
4. This project is located within the limits of a larger project which will include building construction. The General Contractor for the project will submit a Storm Water Pollution Prevention Plan for the entire project prior to beginning any work on this project.
5. This project is to be constructed in accordance with City of Wichita Standard Specifications for the Construction of City Projects, and Policy on Construction of Public Works Improvements by Private Contract.
6. No work shall begin on this project before required bonds are submitted to the City of Wichita, and the project inspector has been notified.
7. All areas of public R/W disturbed by construction of this project are to be restored in accordance with Administrative Regulation AR 6.5 of the City of Wichita.

As Built Plans:

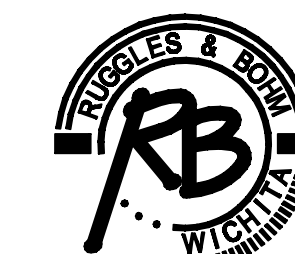
CONTRACTOR: Midwest Fire Protection
INSPECTOR: Larry Gann, K E Miller Engineering
INSPECTOR: Tom Jones, K E Miller Engineering
.PDF by: NWS, 09-11-08

COORDINATE CONTROL TABLE

CONTROL NO.	DESCRIPTION	NORTHING	EASTING
①	N.W. PROP. COR. PEC 1/2 REBAR	19964.51	19625.53
②	PC PEC 1/2 REBAR	19967.73	19832.11
③	N.E. PROP. COR. RB 1/2 REBAR	19994.17	19983.11
④	S.E. PROP. COR. RB 1/2 REBAR	19543.15	19991.44
⑤	S.W. PROP. COR. PEC 3/4 IP	19537.45	19633.48



CITY OF WICHITA, KANSAS
JAMES L. ARMOUR, P.E. - CITY ENGINEER



Ruggles & Bohm, P.A.
Engineering, Surveying, Land Planning
924 North Main
Wichita, Kansas 67203
www.rbkansas.com
(316) 264-8008
(316) 264-4621 fax
E-mail: info@rbkansas.com



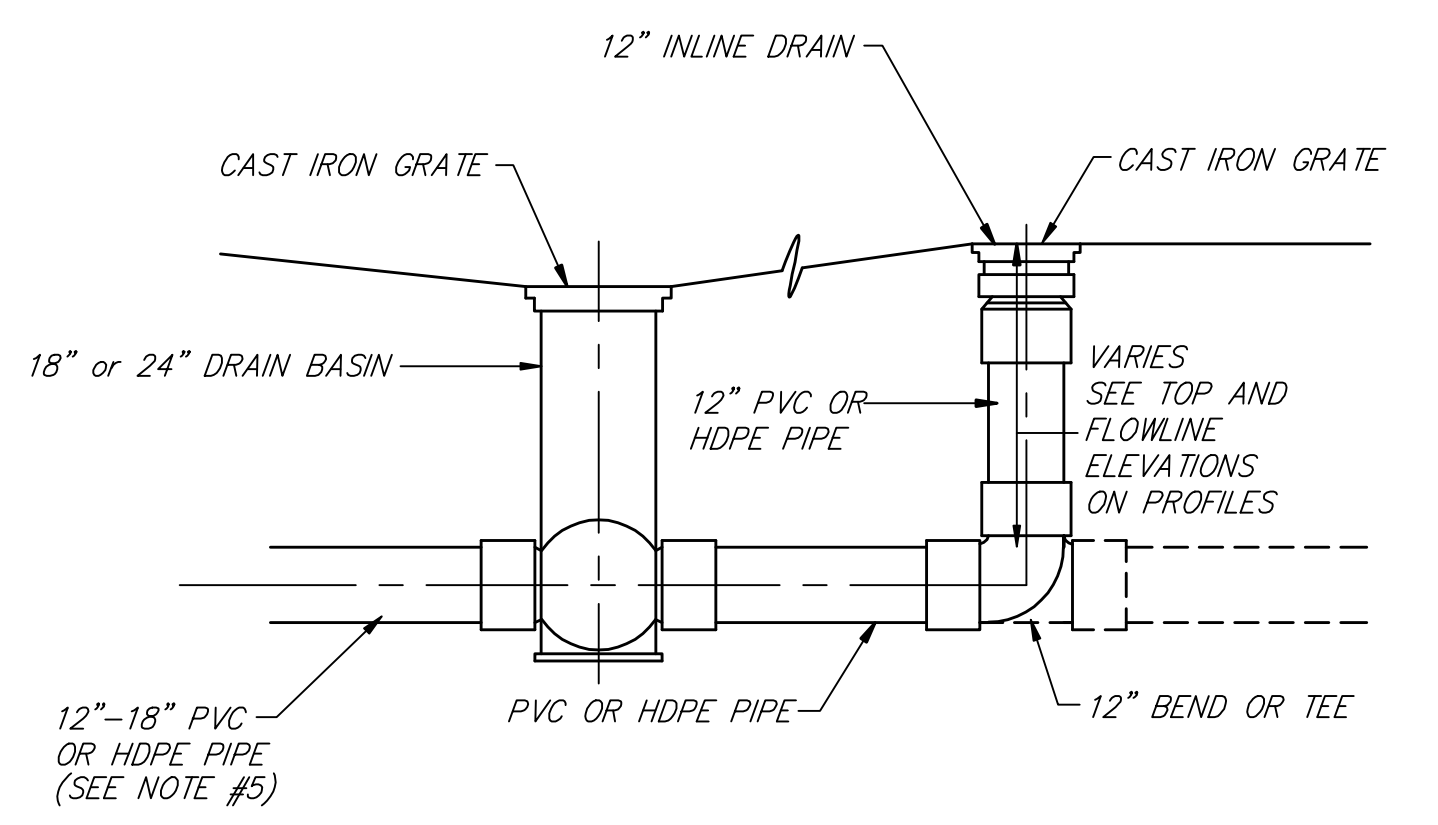
SITE AREAS

TOTAL 154,070 Sq. Ft.
 PERVIOUS 59,850 Sq. Ft.
 IMPERVIOUS 94,220 Sq. Ft.

SCALE 1" = 30'


STORM DRAIN NOTES:

1. STORM DRAIN PIPE (EXCEPT WHERE RCP IS INDICATED) TO BE EITHER REINFORCED CONCRETE PIPE AS SPECIFIED BELOW, CLOSED PROFILE PVC PIPE MEETING ASTM D-1784 (FOR SIZES 21"-48"), SDR 35 PVC PIPE MEETING ASTM F-679 OR D-3034 (FOR SIZES 8"-18"), OR HIGH DENSITY POLYETHYLENE CORRUGATED PIPE MEETING THE REQUIREMENTS OF AASHTO DESIGNATION M 294 (N12 AS MFGD. BY ADVANCED DRAINAGE SYSTEMS, INC., OR APPROVED EQUAL).
2. REINFORCED CONCRETE PIPE SHALL BE CLASS III, MEETING REQUIREMENTS OF ASTM C-76 FOR WALL B.
3. HDPE OR PVC PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D-2321.
4. DRAIN BASINS TO BE PREFABRICATED HIGH-DENSITY POLYETHYLENE BASINS WITH FLAT SLOTTED CAST IRON GRATES (AS MFGD. BY ADS, INC.) OR APPROVED EQUAL).
5. CONNECTION OF DISSIMILAR PIPE MATERIALS SHALL BE MADE WITH ADAPTERS MADE FOR THAT PURPOSE.
6. ALL ROOF DRAIN CONNECTIONS TO STORM SEWERS REQUIRE PERMIT FROM O.C.I.



**STORM WATER DRAIN CONNECTIONS
 TYPICAL DETAIL**

**SPRING HILL SUITES
 SITE GRADING PLAN
 WICHITA, KANSAS**



Ruggles & Bohm, P.A.
 Engineering, Surveying, Land Planning

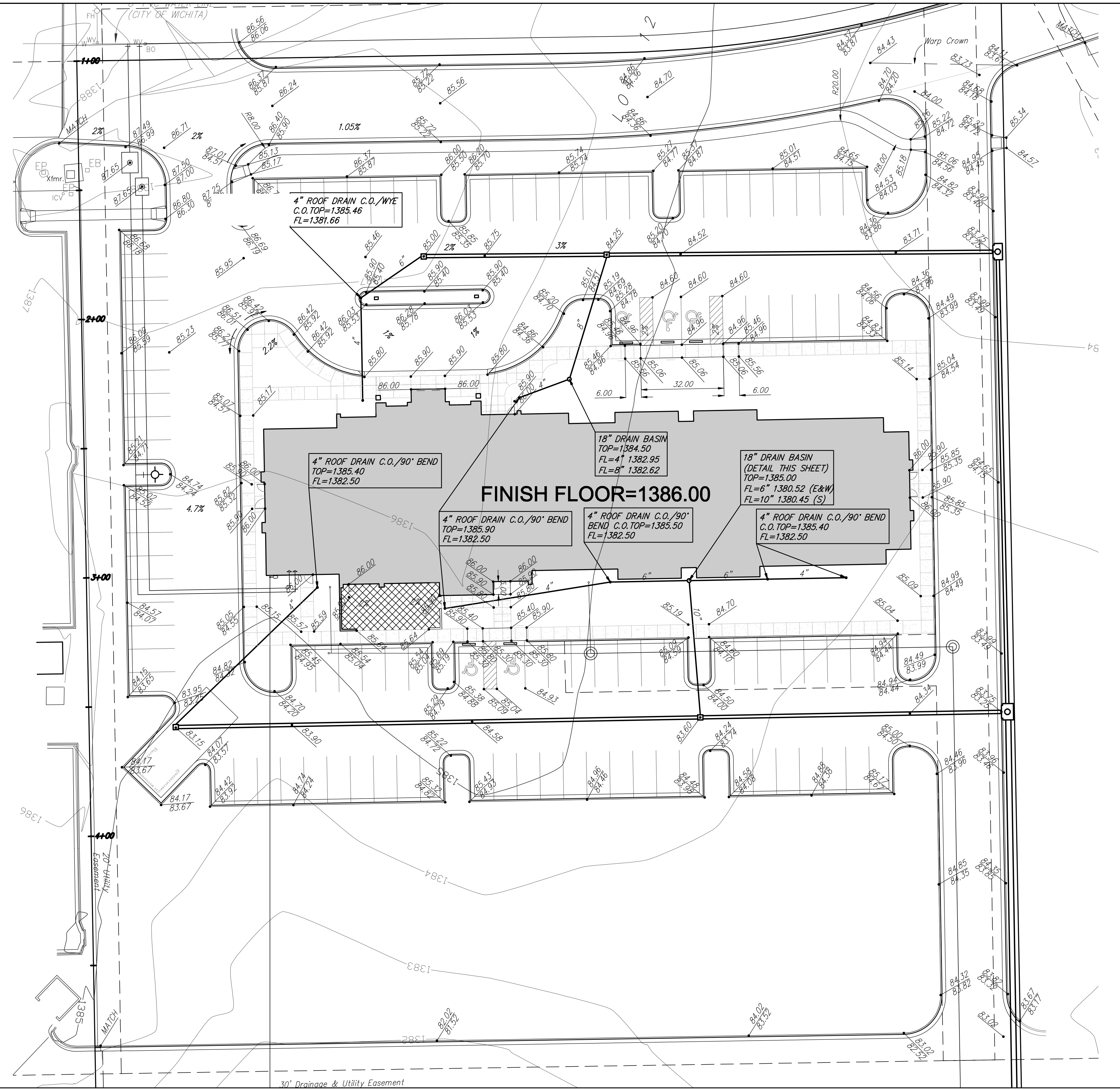
624 North Main
 Wichita, Kansas 67208
 www.rbkansas.com

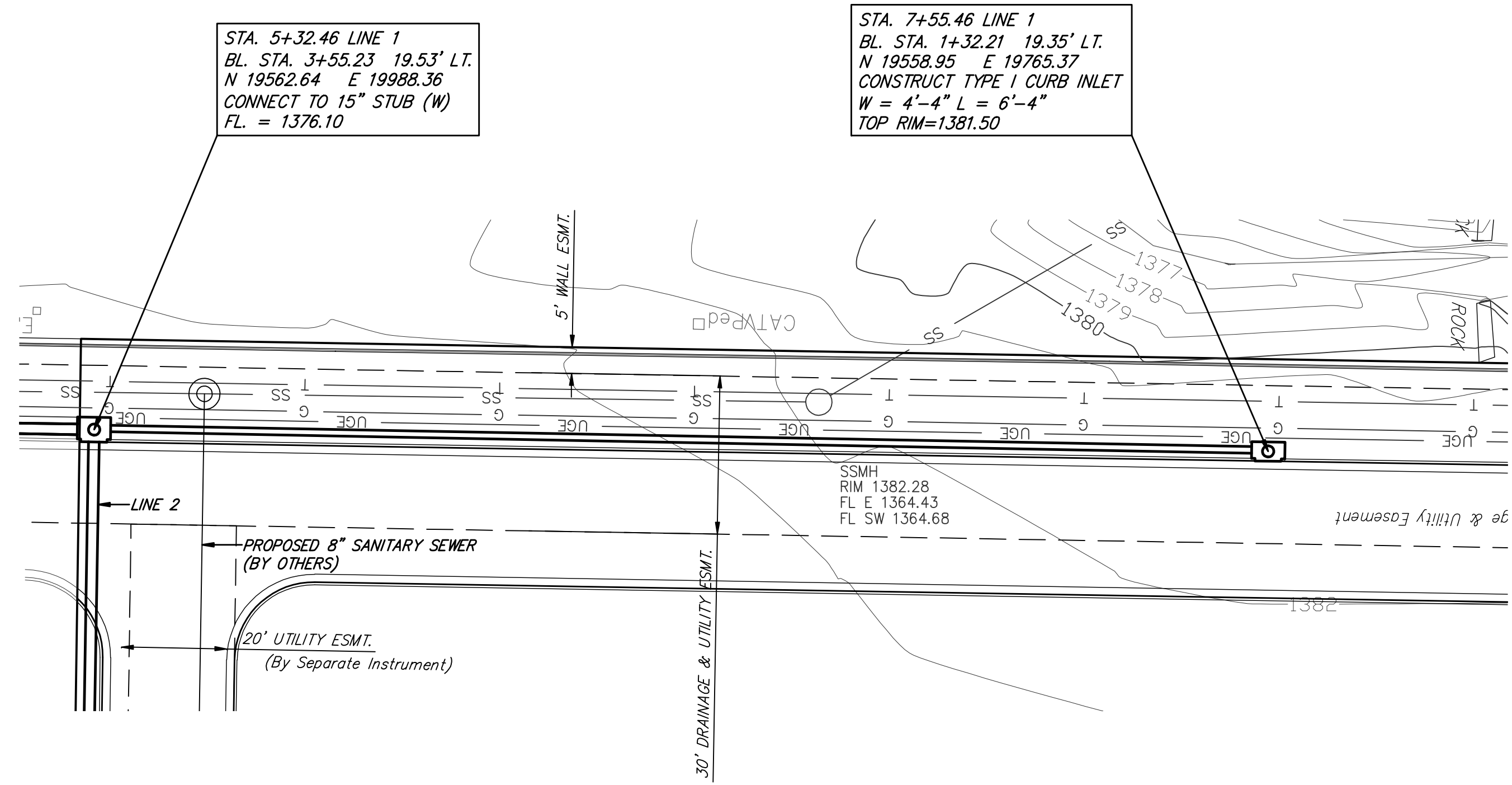
(785) 264-6800
 (785) 264-6811 fax
 E-mail: info@rbkansas.com

DESIGNED BY	SWD [Site Grading]	PROJECT NUMBER	Proj No. 1787	DATE	June 27, 2007
ISSUED BY		PROJECT NUMBER	PPS 607861		

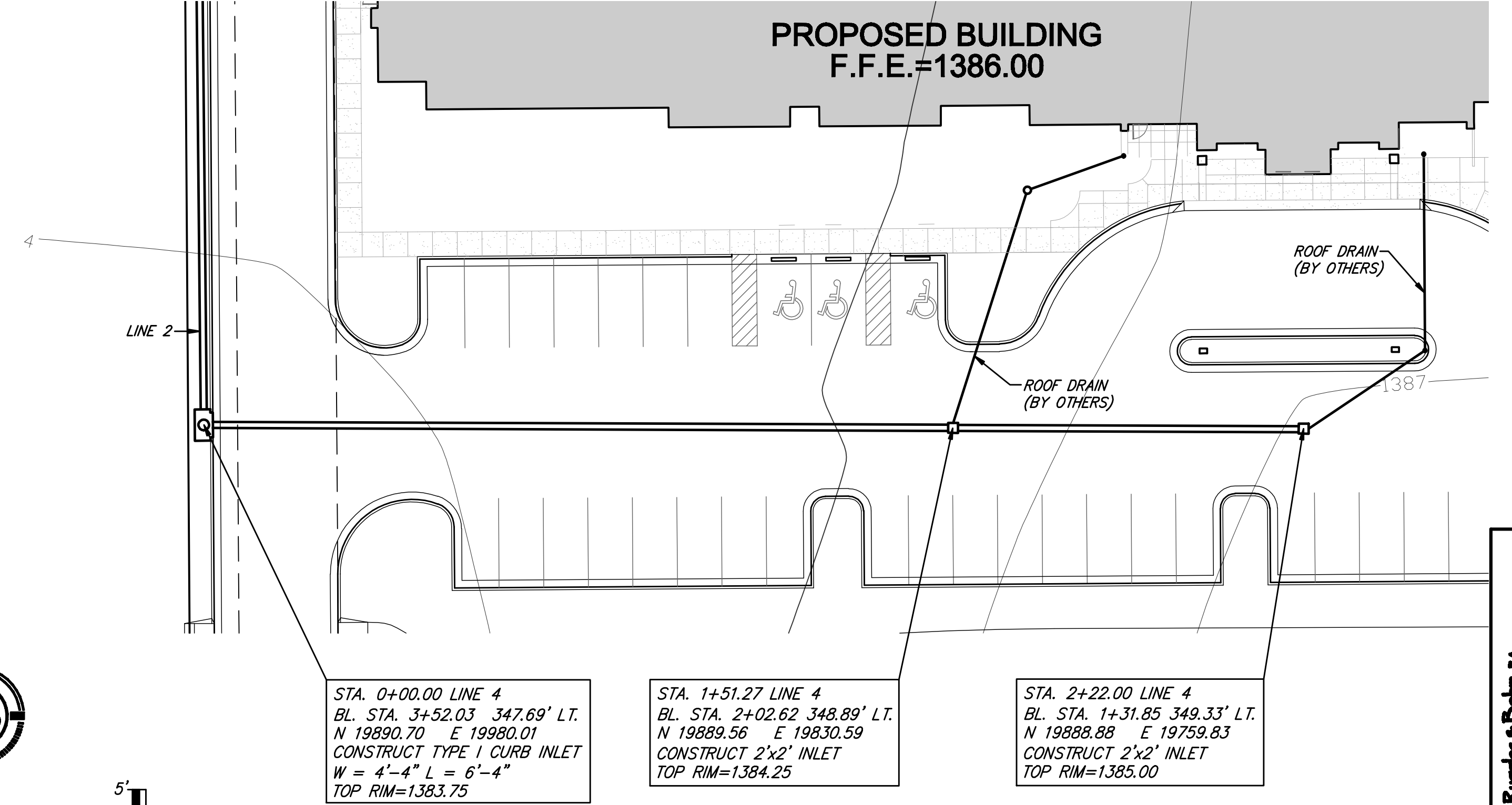
TCR
 JDM
 2
 of
 9

DATE
 June 27, 2007





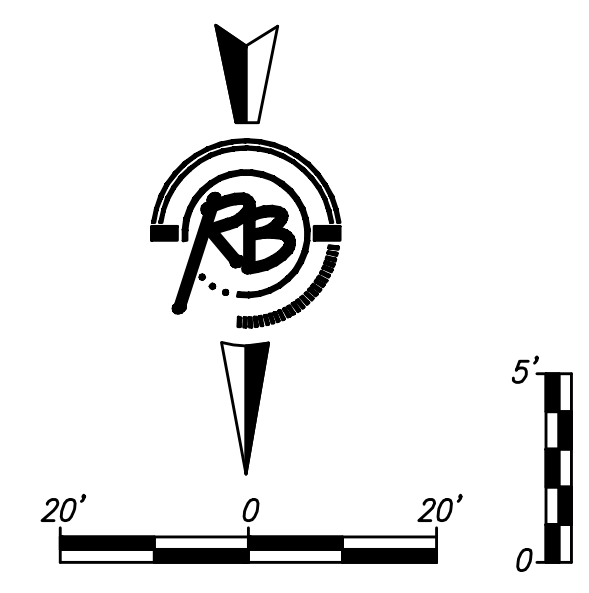
LINE 1



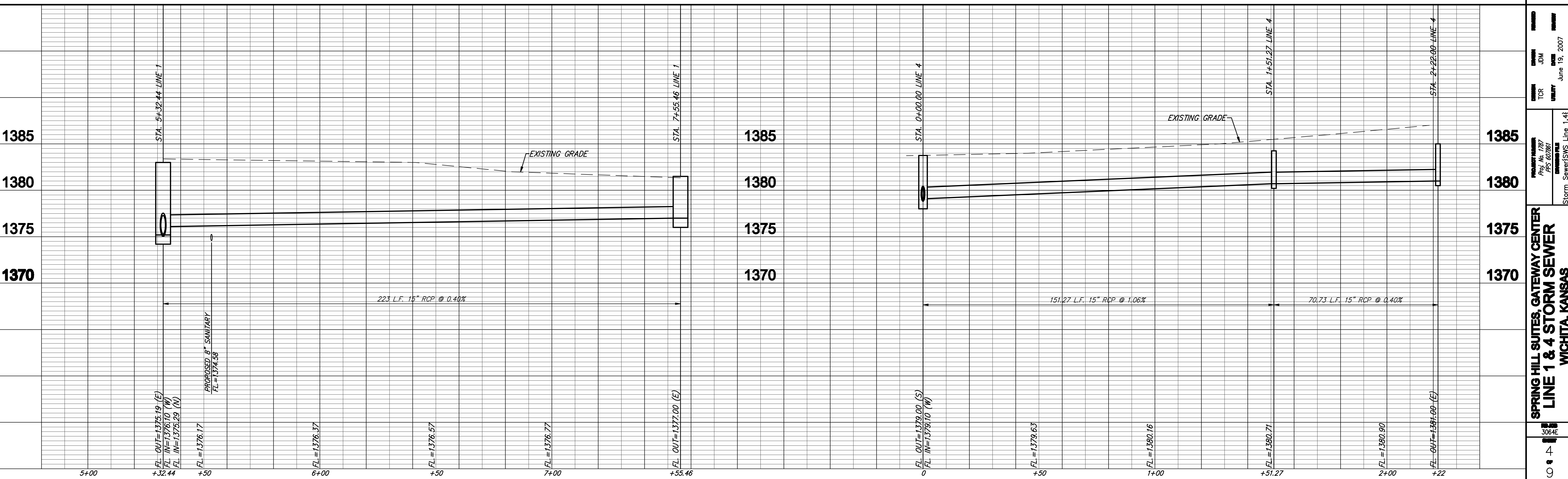
LINE 4

NOTE: BASELINE STATIONS AND COORDINATES ARE TO FRONT INSIDE FACE FOR TYPE 1 INLETS AND CENTER OF 2x2 INLETS.

REVISED 7/22/08



Ruggles & Bohlen, P.A.
 Engineering, Surveying, Land Planning
 306 E. 4th St., Suite 400
 Wichita, Kansas 67202
 Phone: 316.261.1111
 Fax: 316.261.1112
 www.rugglesandbohlen.com



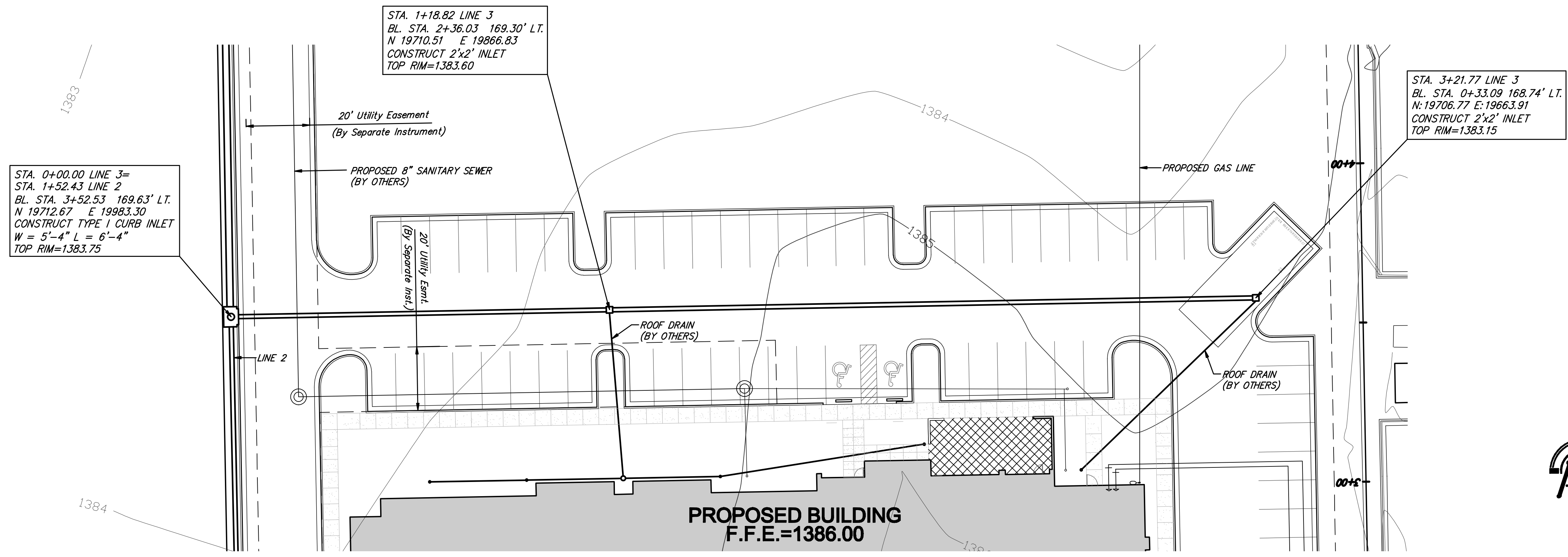
PROJECT NUMBER
 Proj. No. 1787
 PFS 602861
 DATE
 06/19/07

DRAWN BY
 JDM
 CHECKED BY
 JDM
 DATE
 June 19, 2007

Storm Sewer(SWS) Line 1, 4, 3

SPRING HILL SUITES, GATEWAY CENTER
 LINE 1 & 4 STORM SEWER
 WICHITA, KANSAS

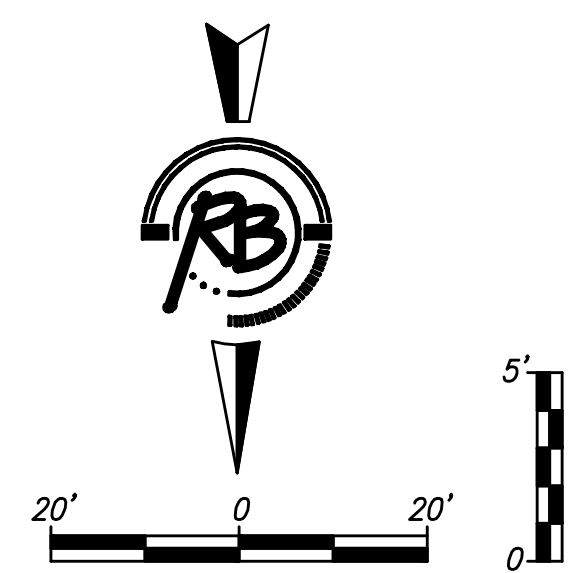
306AE
 4
 0



STA. 0+00.00 LINE 3=
 STA. 1+52.43 LINE 2
 BL. STA. 3+52.53 169.63' L.T.
 N 19712.67 E 19983.30
 CONSTRUCT TYPE 1 CURB INLET
 W = 5'-4" L = 6'-4"
 TOP RIM=1383.75

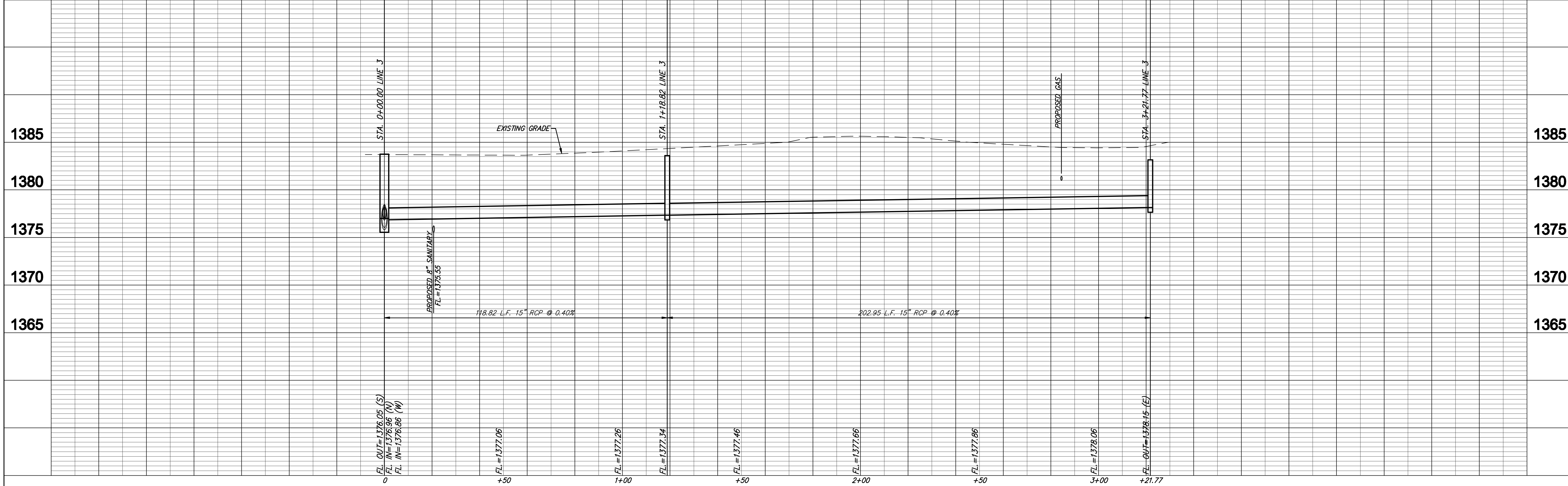
STA. 1+18.82 LINE 3
 BL. STA. 2+36.03 169.30' L.T.
 N 19710.51 E 19886.83
 CONSTRUCT 2'x2' INLET
 TOP RIM=1383.60

STA. 3+21.77 LINE 3
 BL. STA. 0+33.09 168.74' L.T.
 N: 19706.77 E: 19663.91
 CONSTRUCT 2'x2' INLET
 TOP RIM=1383.15



NOTE: BASELINE STATIONS AND COORDINATES ARE TO FRONT INSIDE FACE FOR TYPE 1 INLETS AND CENTER OF 2x2 INLETS.

LINE 3



FL. OUT=1376.05 (S)
 FL. IN=1376.96 (N)
 FL. IN=1376.86 (W)

PROPOSED 8" SANITARY
 FL=1376.55

118.82 L.F. 15" RCP @ 0.40%

202.95 L.F. 15" RCP @ 0.40%

PROPOSED GAS

Ruggles & Bohlen, P.A.
 Engineering, Surveying, Drafting
 1000 W. 17th St., Suite 100
 Wichita, Kansas 67202
 Phone: 316-261-1111
 Fax: 316-261-1112
 Website: www.rugglesandbohlen.com

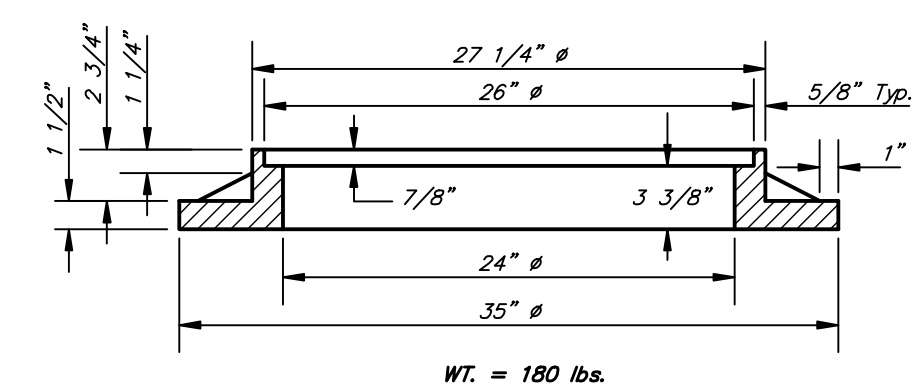
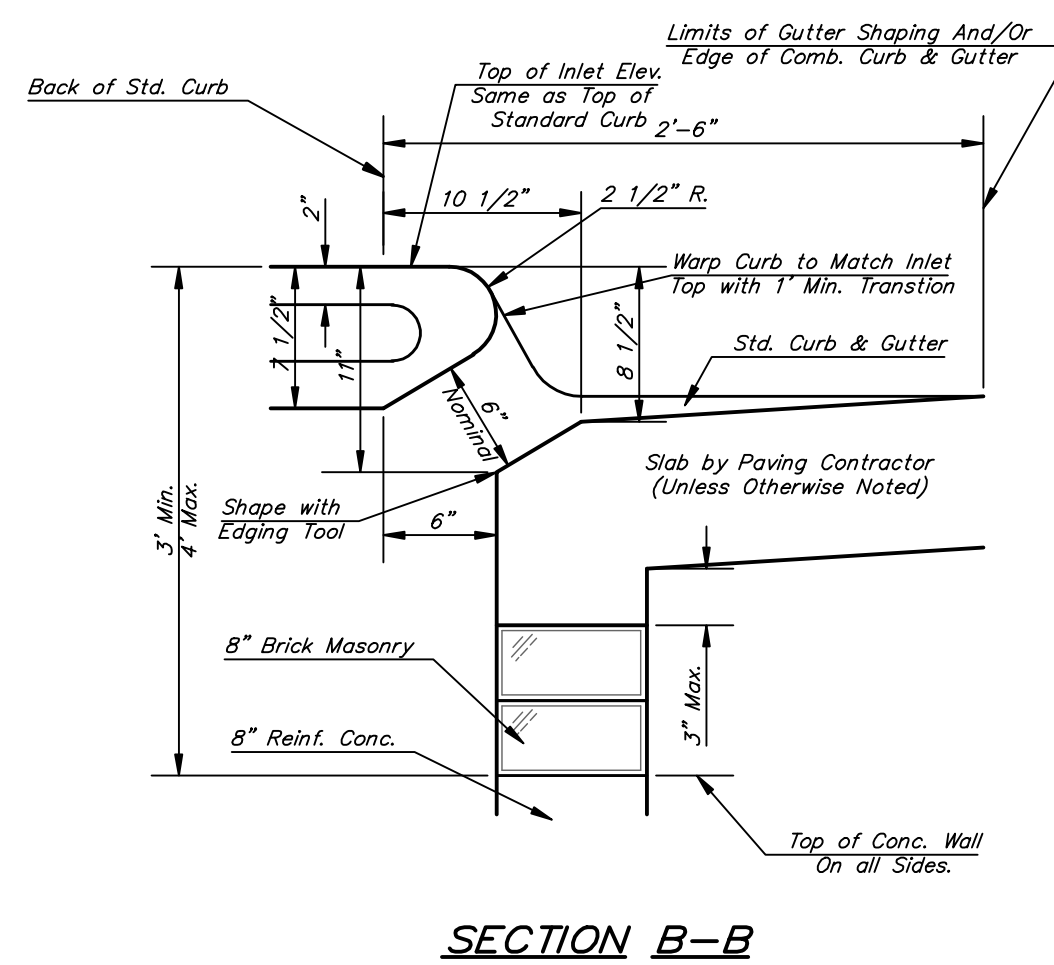
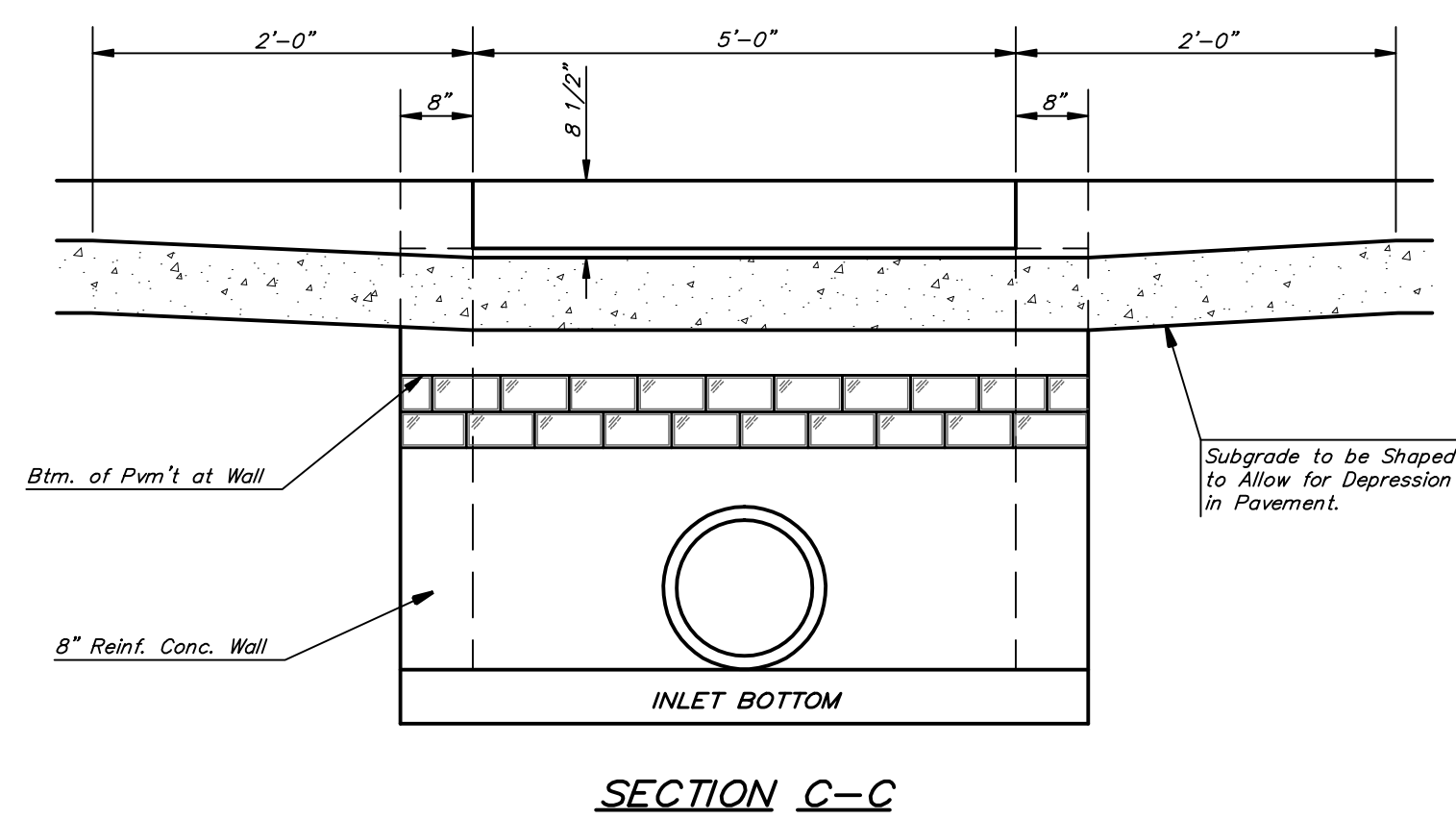
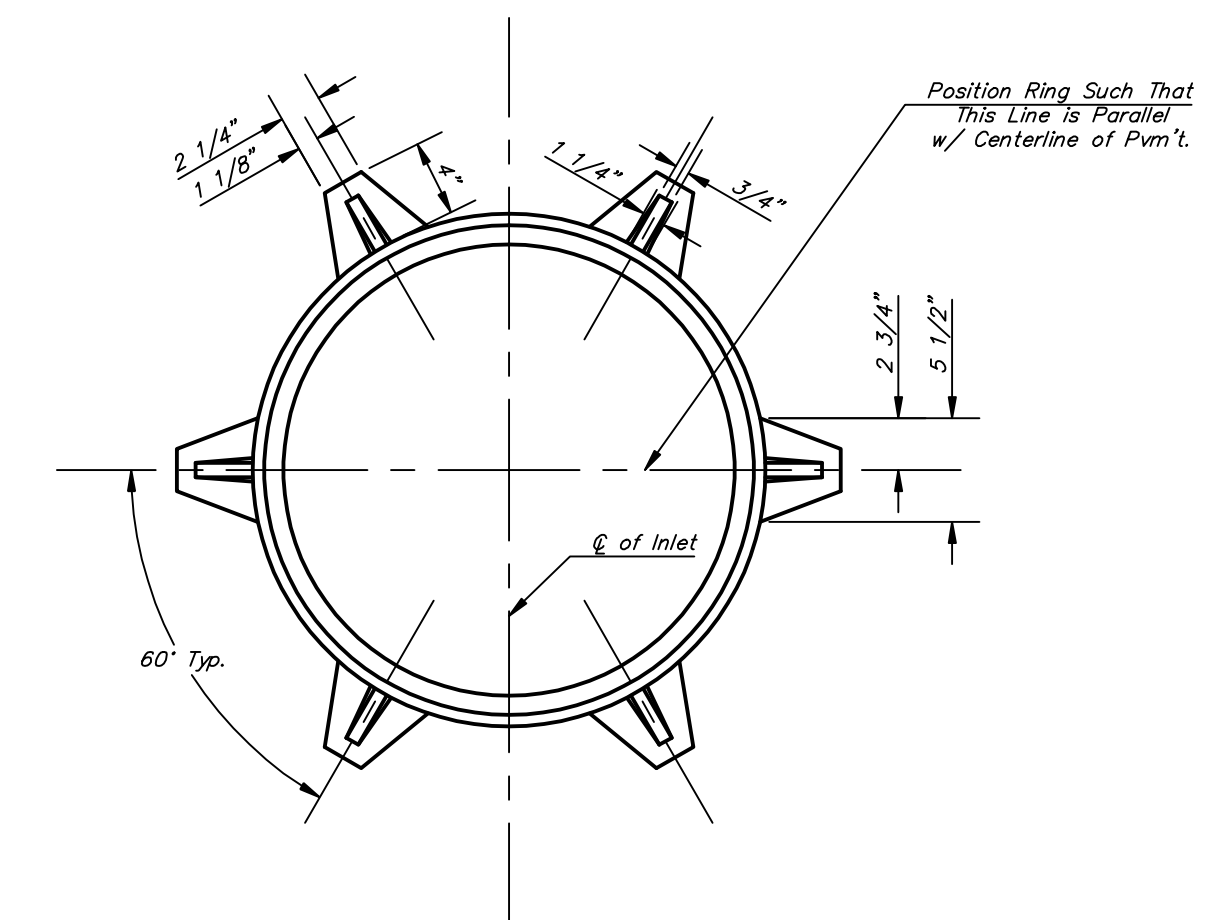
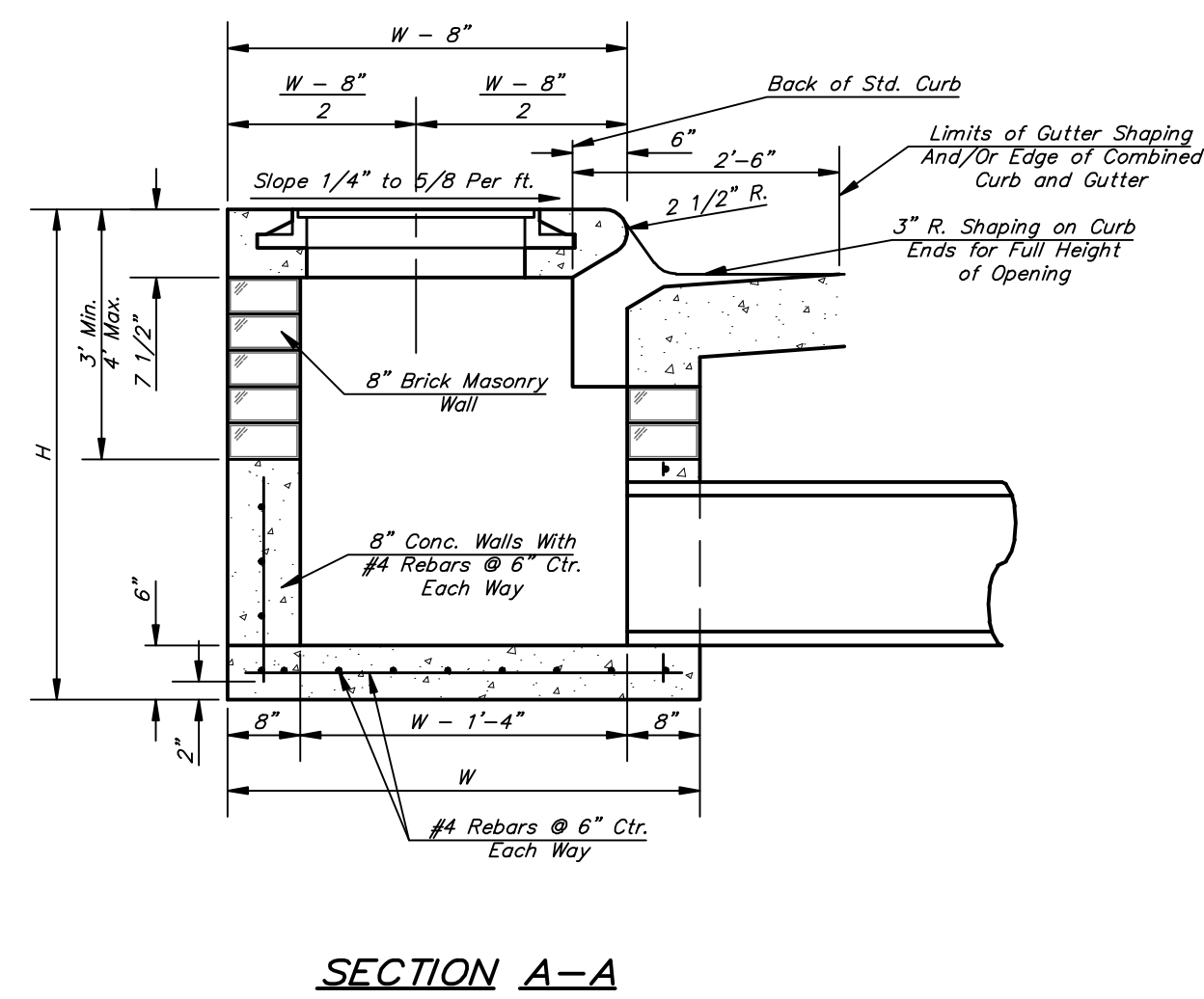
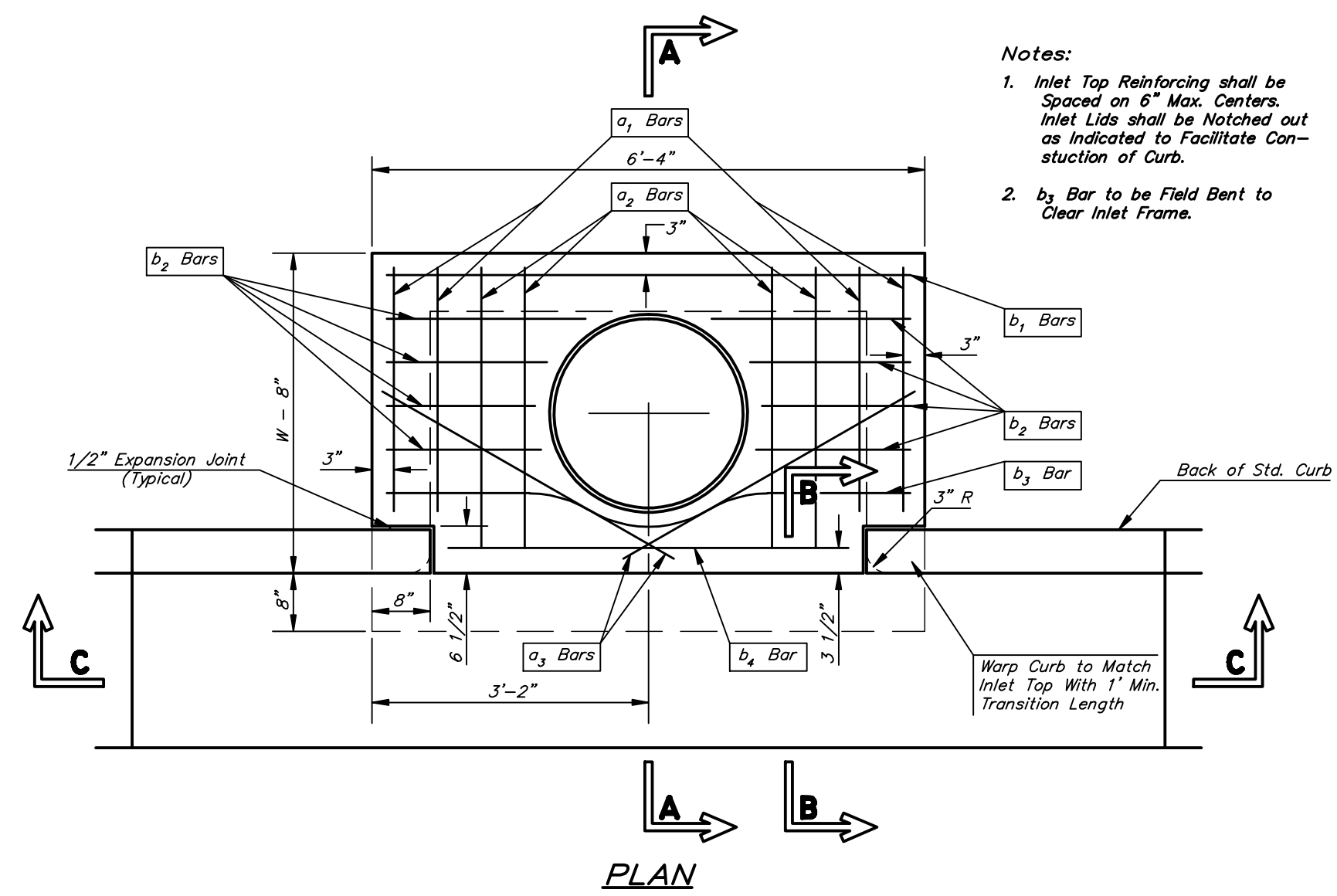


DATE: June 19, 2007
 DRAWN BY: JDM
 CHECKED BY: TRC
 PROJECT: Storm Sewer [SWS Line 3]

PROJECT NUMBER: PPS 602861
 PROJECT TITLE: Storm Sewer [SWS Line 3]

**SPRING HILL SUITES, GATEWAY CENTER
 LINE 3 STORM SEWER
 WICHITA, KANSAS**

3064E
 10 11



STEEL SCHEDULE

BAR	b ₁										Wt. Lbs.	
	a ₁	a ₂	a ₃	#4-4"	#4-5"	#4-6"	#4-7"	#4-8"	b ₂	b ₃		b ₄
NUMBER	4	4	2	1	3	5	7	9	6	1	1	
SIZE	#4	#4	#4	#4	#4	#4	#4	#4	#4	#6	#6	
LENGTH	W=4'-4"	5'-7"	6'-7"	4'-0"	6'-1"	-	-	-	1'-9"	6'-2"	4'-8"	60±
	W=5'-4"	7'-7"	8'-7"	5'-0"	6'-1"	-	-	-	1'-9"	6'-2"	4'-8"	81±
	W=6'-4"	9'-7"	10'-7"	6'-0"	-	6'-1"	-	-	1'-9"	6'-2"	4'-8"	101±
	W=7'-4"	11'-7"	12'-7"	7'-0"	-	-	6'-1"	-	1'-9"	6'-2"	4'-8"	121±
W=8'-4"	13'-7"	14'-7"	8'-0"	-	-	-	6'-1"	1'-9"	6'-2"	4'-8"	141±	

Note: a₃ Bars to be Placed Approx. 2" Below Top of Inlet Cover.

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

GENERAL NOTES

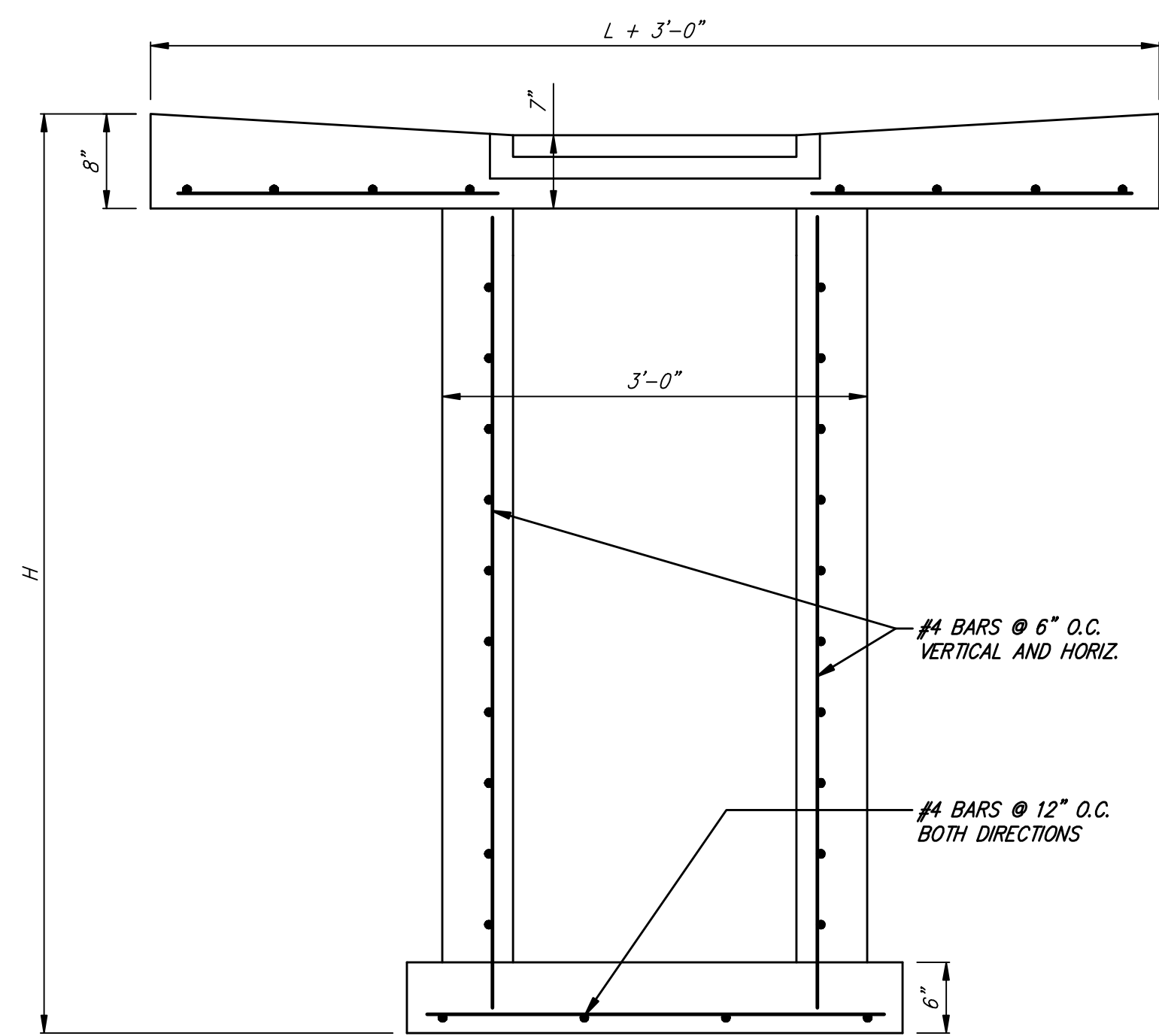
- Concrete tops to be installed on thin mortar cushion to insure full support along brick walls. Concrete tops may be cast in place or precast. Concrete used for inlet construction shall be concrete pavement mix.
- Contractor shall have the option of constructing 8" brick masonry walls between the concrete inlet base and top on this inlet when W=6'-4" and H=7'-0" or less.
- 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.

THE CITY OF WICHITA

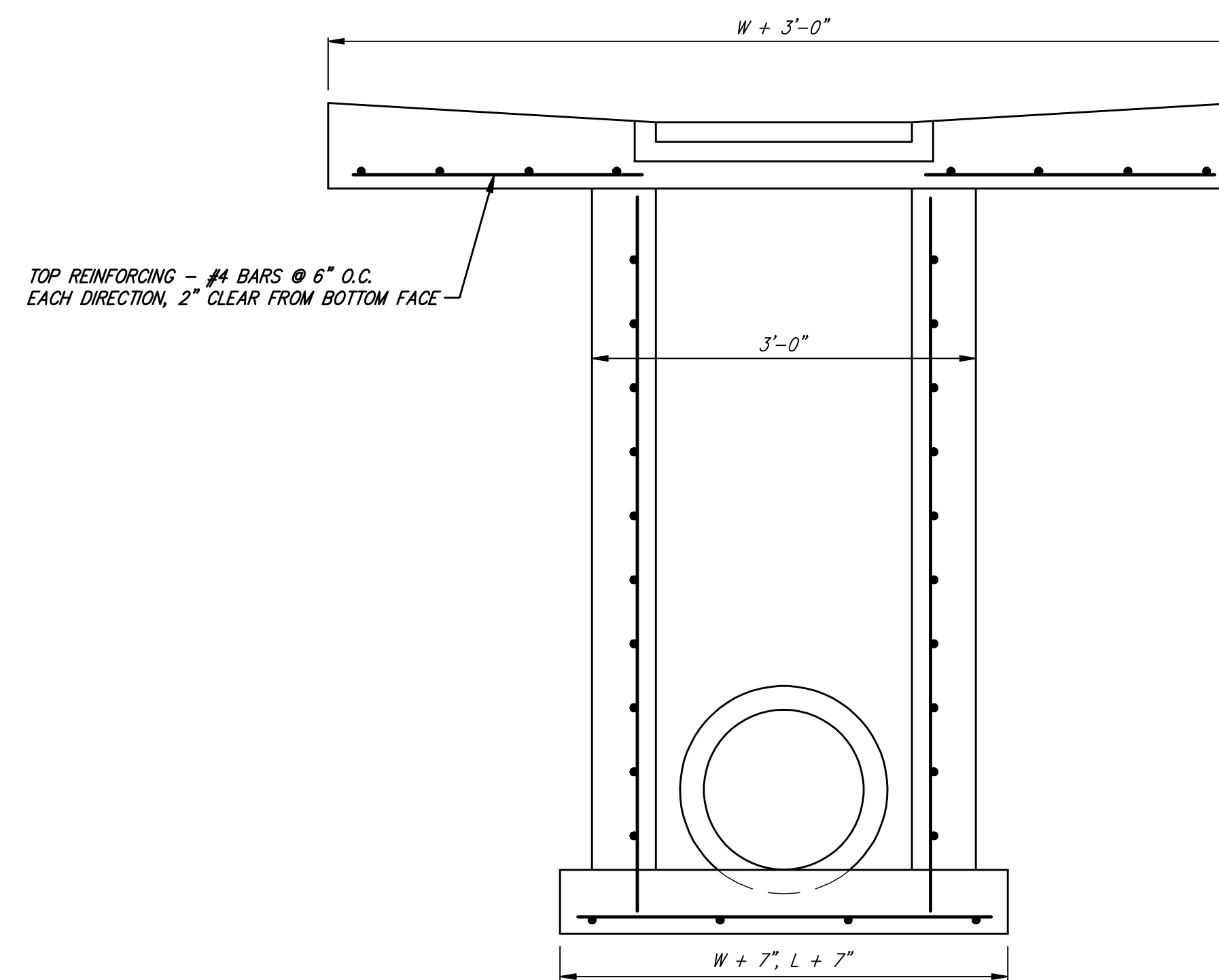
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202
(316) 268-4501
(316) 268-4114 FAX

**STANDARD TYPE 1
CURB INLET
OPENING = 6"x5'-0"**

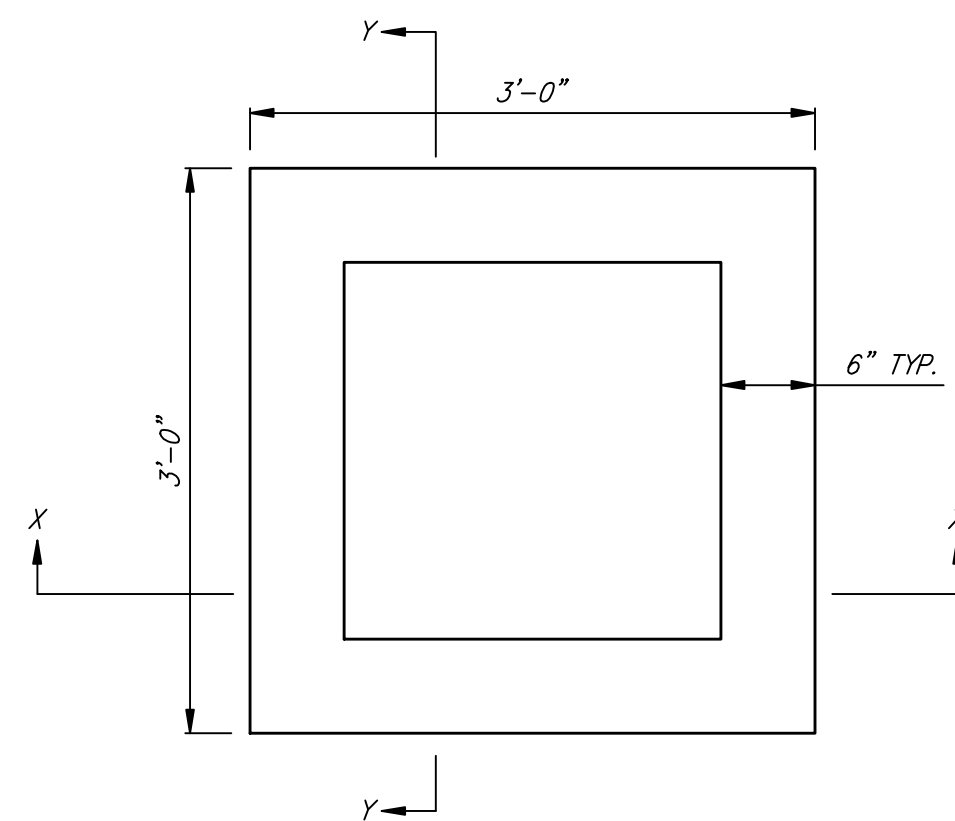
PROJECT NUMBER 1787	OCA # PPS 607861
DATE MAR 96	SHEET 7 OF 9



SECTION X-X



SECTION Y-Y



NOTES:

FRAME AND GRATE TO BE GCI CASTINGS, INC. GR 2361,
 DETTER FOUNDRY 2433, OR EQUIVALENT.

SPRING HILL SUITES, GATEWAY CENTER
 2'x2' DROP INLET
 WICHITA, KANSAS



Ruggles & Bohm, P.A.
 Engineering, Surveying, Land Planning

624 North Main
 Wichita, Kansas 67203
 www.rbkansas.com

(316) 264-6000
 (316) 264-6001 fax
 E-mail: info@rbkansas.com

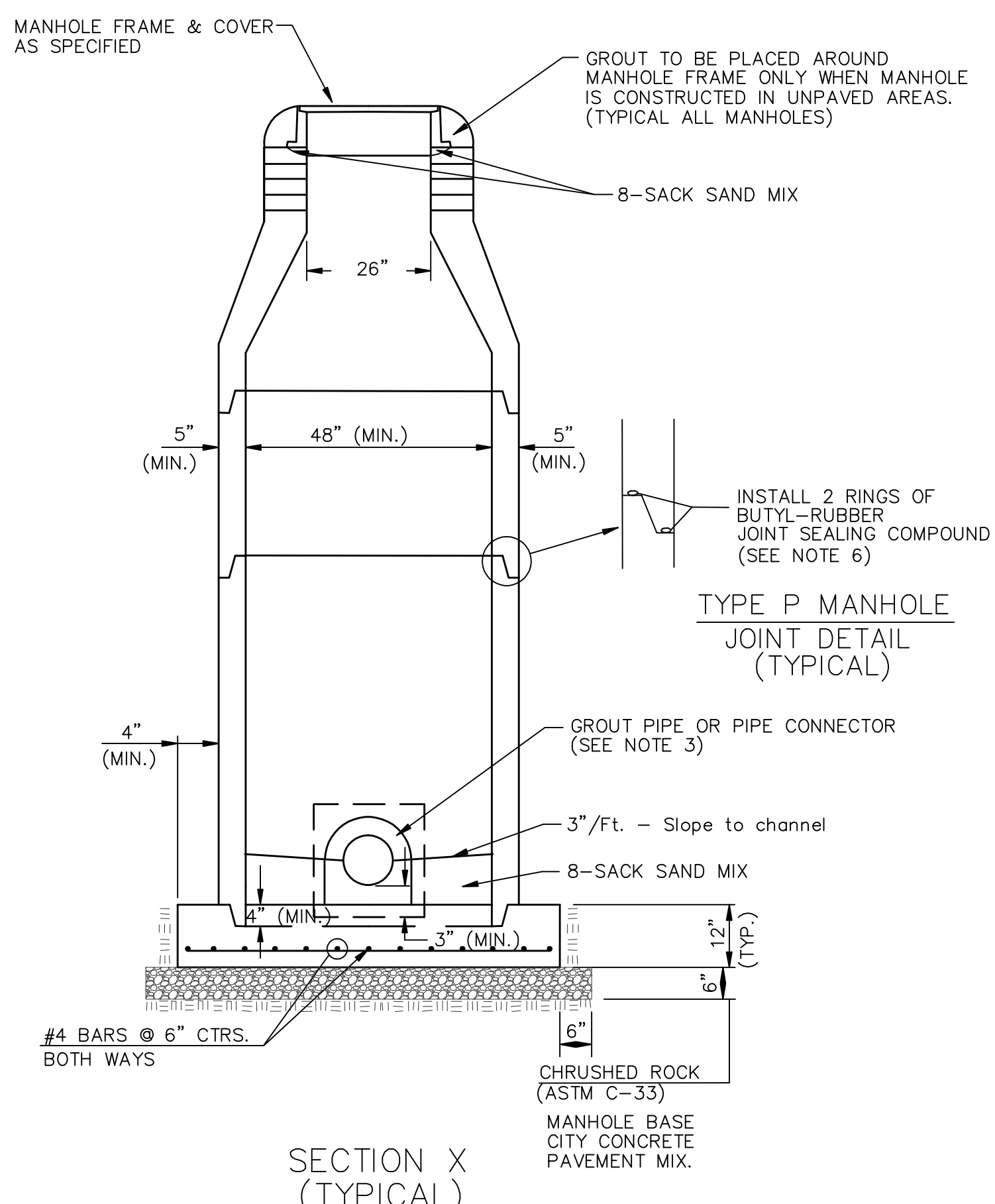
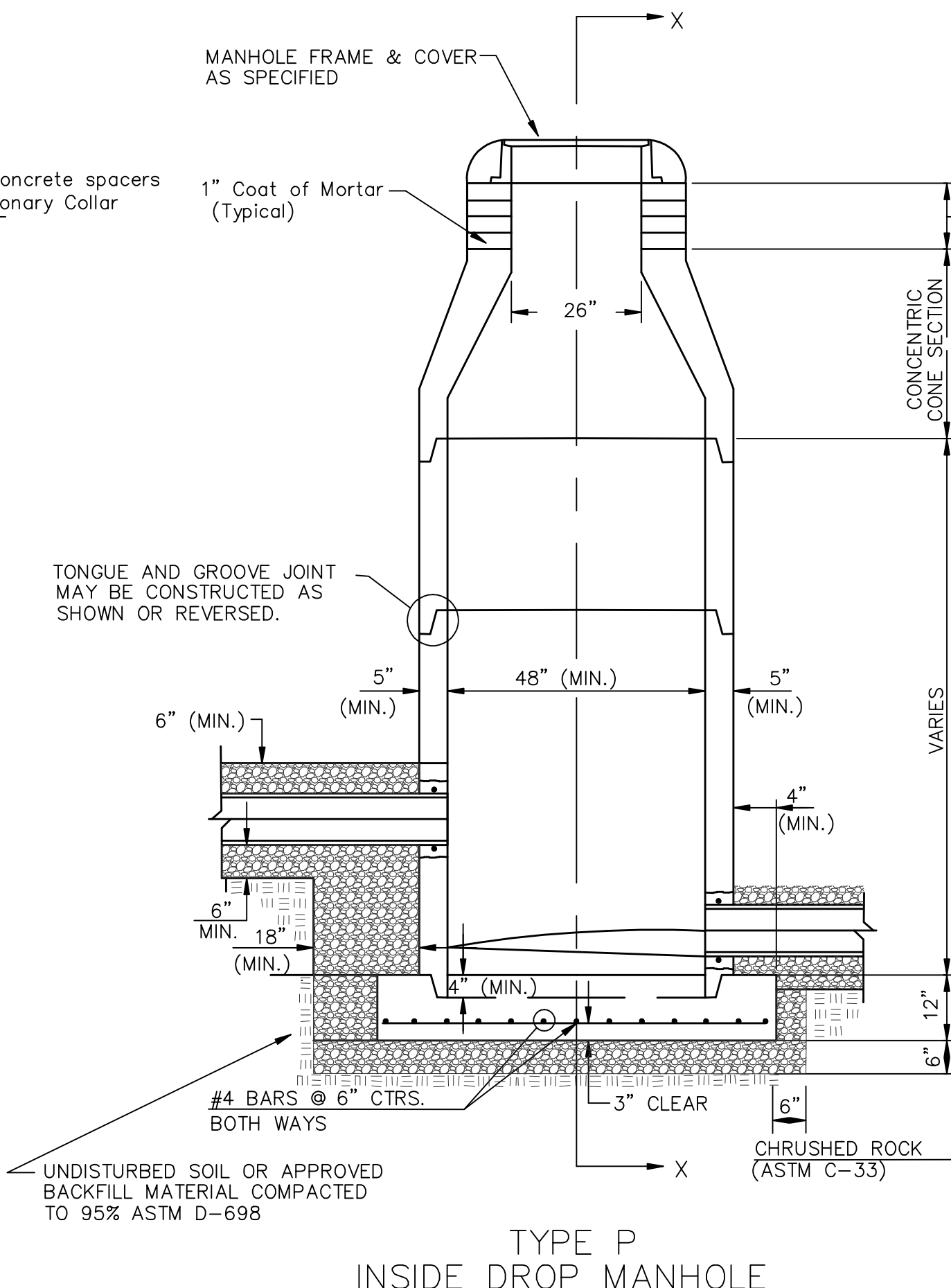
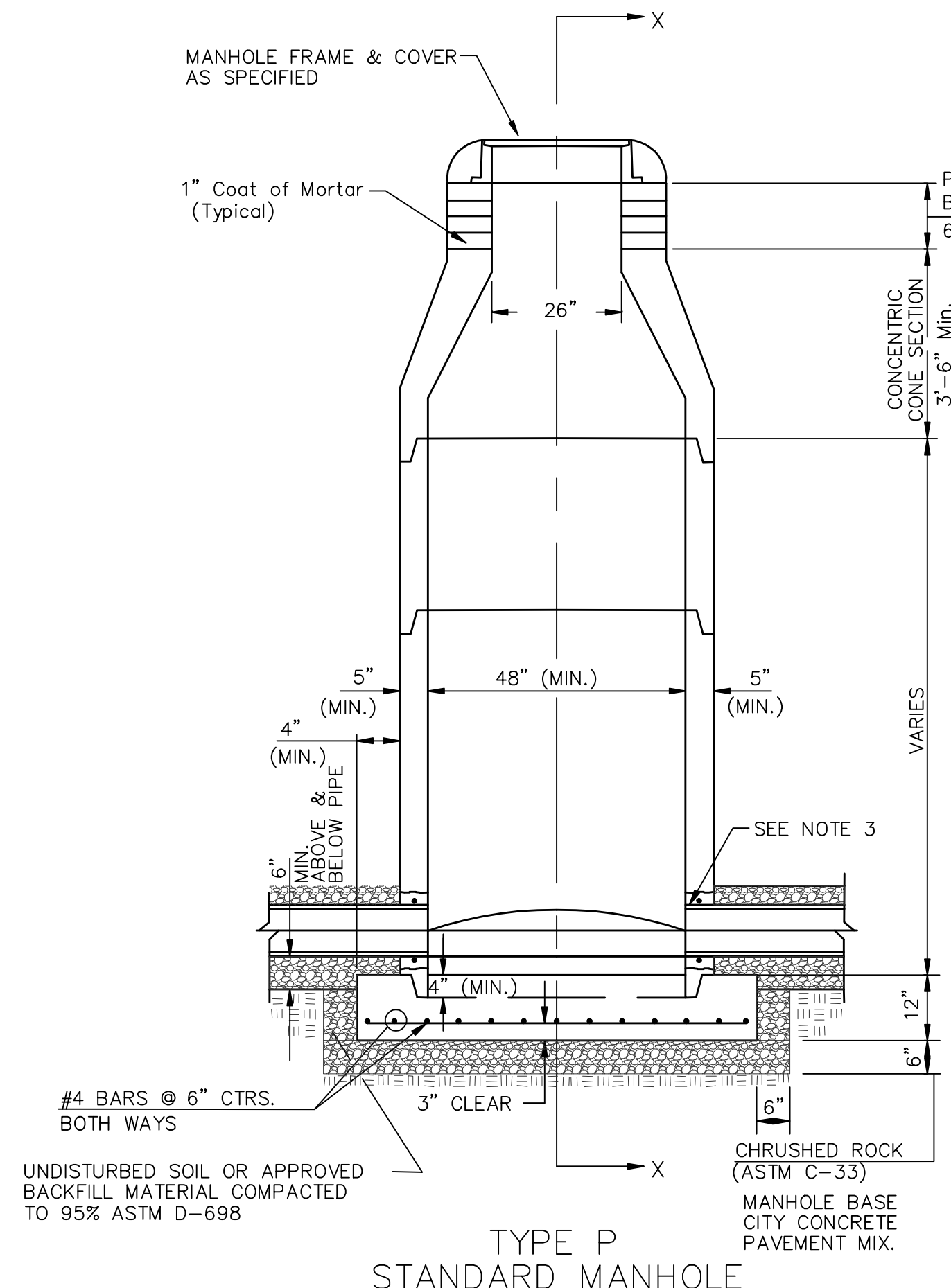
ISSUED FILE
 Storm Sewer {2x2 Inlet}

PROJECT NUMBER
 Proj. No. 1787
 PCS 607881

DATE
 Mar. 18, 2008

DESIGNED	TCR	JOB# 4E
DRAWN	JDM	
CHECKED		
DATE		

SEWER APPURTENANCES DETAILS



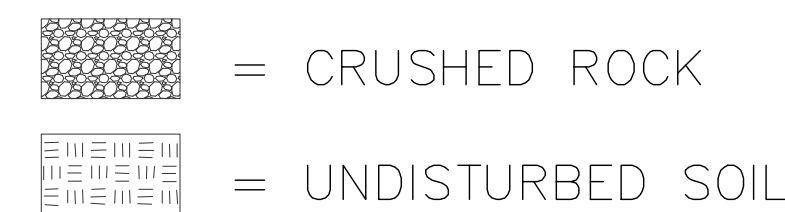
GENERAL NOTES

PRECAST MANHOLE NOTES

- ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISIONS OF A.S.T.M. C478 AS MODIFIED BY THE SPECIFICATIONS.
- NON-SHRINK GROUT SHALL BE NON-METALLIC TYPE.
- APPROVED FLEXIBLE WATERSTOP GASKETS SHALL BE INSTALLED TO JOIN THE SEWER TO THE MANHOLE WALL WHEN 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.
- ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE COATED PER SECTION 804.4 OF STANDARD SPECIFICATIONS.
- EXTERIOR MANHOLE WALLS SHALL BE COATED PER SECTION 804.4 OF STANDARD SPECIFICATIONS.
- JOINT SEALING COMPOUND SHALL BE PER 804.4 OF STANDARD SPECIFICATIONS.
- PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO THE MANHOLE BASE.
- 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.
- LIFTING HOLES SHALL BE FILLED WITH NON-SHRINK GROUT AND THE INTERIOR SURFACE COATED AS SPECIFIED.
- 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.

- 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.
- 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. 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.
- 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.

- 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.
- THE VERTICAL DROP IN INSIDE DROP MANHOLES SHALL NOT EXCEED 2' REGARDLESS OF PIPE SIZE. THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.
- 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.
- 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.
- WALL THICKNESS SHALL BE 1" GREATER THAN MANHOLE DIAMETER IN FEET.
- THE FULL DIAMETER OF THE MANHOLE SHALL EXTEND THE ENTIRE DEPTH OF THE MANHOLE TO THE CONE SECTION. NO REDUCTION IN MANHOLE DIAMETER WILL BE ALLOWED.



CRUSHED ROCK USED FOR ENCASEMENT AND BEDDING SHALL CONFORM TO ASTM C-33, GRADATION NO. 67, AND SHALL MEET ALL REQUIREMENTS FOR PORTLAND CEMENT CONCRETE PAVEMENT COARSE AGGREGATE, SECTION 406.2, CITY OF WICHITA STANDARD SPECIFICATIONS. ALL CRUSHED ROCK FOR BEDDING AND ENCASEMENT SHALL EXTEND TO THE LIMITS OF THE MANHOLE EXCAVATION.

REV. 3/29/06, MCG

<p>CITY OF WICHITA PUBLIC WORKS ENGINEERING</p>	STANDARD TYPE 'P' MANHOLES		
	CITY ENGINEER		
	JAMES L. ARMOUR, P.E., L.S.		
	PROJECT NUMBER Proj. No. 1787 PPS 607861	OCA NUMBER	DATE Mar. 18, 2008
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501 (316) 268-4114 FAX		DESIGN COW	DRAWN MCG
		SHEET 9 of 9	