



T & S Construction
Substation Engineering

IFC PACKAGE CIVIL - SITE DEVELOPMENT

- P & C
- Physical
- Civil

PROJECT : 050302 - PAWNEE SUBSTATION WR # 2383S00075

PROJECT DETAILS:

IFC Pkg Issue Date: 5/3/2021
 Revision Number: 1
 Revision Date: 11/24/2021
 IFC Package State: ISSUED FOR CONSTRUCTION
 Substation: PAWNEE
 MX Number: -
 Funding Project: 450302

**Field Drawing Steward to return As-Built drawings and
 Drawing List to: ZOE DRURY AT TGO-LL**

DOCUMENTS CONTAINED IN THIS PACKAGE:

- Drawing Index & Checklist
- AFC One-Line
- Construction Drawings
- Scope *
- Bill of Material *
- Photos *
- Other *

* SUPPORTING DOCUMENTS are included as a convenience. These are not tracked in Vault and do not need to be returned with the As-Builts.

Project Manager	Project Controls Analyst	Field Drawings Steward	Construction Supervisor	System Planner	Maintenance Planner	Resource Scheduler	Transmission Engineer	Civil Engineer	Mechanical Engineer	Relay Engineer
GOOD	CALHOUN	J.MILLER	J.MILLER	ORTIZ	ALBERT	FLYNN	ROHR	MEYER	GREENE	WALLER

Comments:

-REV 1: RELEASED NEW DRAWINGS STAMPED 8/25/2021

Substation Address:

4699 E. Pawnee Ave.
Wichita, KS

GENERAL NOTES

- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY REGULATIONS. ALL CONSTRUCTION SHALL BE COMPLETED FOLLOWING CURRENT CITY STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.
- CONTRACTOR WILL BE REQUIRED TO PROVIDE NOTICE TO UTILITY COMPANIES A MINIMUM OF SEVENTY-TWO (72) HOURS PRIOR TO ANY EXCAVATION, AS FOLLOWS:

KANSAS ONE-CALL 687-2470

THE CONTRACTOR MUST NOTIFY THE FOLLOWING IN CASE OF AN EMERGENCY:

AT&T	1-800-246-8464
BLACK HILLS ENERGY	1-800-694-8989
CITY OF WICHITA WATER & SEWER	1-316-219-8921
CITY OF WICHITA STORMWATER	1-316-268-4090
CITY OF WICHITA TRAFFIC	1-316-268-4034
COX COMMUNICATIONS	1-888-249-3530
KANSAS GAS SERVICE	1-888-482-4950
EVERGY	1-800-544-4857

- UTILITY SERVICE LINES, POLES, ETC. ARE TO BE ADJUSTED AS NECESSARY BY OTHERS PRIOR TO CONSTRUCTION UNLESS THE PLANS SPECIFICALLY CALL FOR THEIR ADJUSTMENT BY THE CONTRACTOR OR UNLESS THE PLANS SPECIFICALLY IDENTIFY A UTILITY TO BE ADJUSTED BY ITS OWNER DURING CONSTRUCTION. EXISTING UTILITIES AND THEIR LOCATION, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE RIGHT-OF-WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION.

- RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES AND EXCESS EXCAVATION WHICH IS TO BE WASTED SHALL BE DISPOSED OF ON SITES TO BE PROVIDED BY THE CONTRACTOR. THESE SITES SHALL BE APPROVED BY THE ENGINEER AS TO SUITABILITY, APPEARANCE AND SITE LOCATION. LOCATIONS, IN THE OPINION OF THE ENGINEER, THAT 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 WILL REQUIRE ADDITIONAL ARCHAEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED BORROW LOCATION.

- TREES AND SHRUBS IN PUBLIC RIGHT-OF-WAY WHICH ARE IN DIRECT CONFLICT WITH PROPOSED NEW CONSTRUCTION SHALL BE REMOVED BY THE CONTRACTOR WITH THE CITY ENGINEER'S APPROVAL. TREES AND SHRUBS WHICH ARE NOT IN DIRECT CONFLICT WITH PROPOSED NEW CONSTRUCTION SHALL BE SAVED AND PROTECTED FROM DAMAGE.

- THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND/OR TENANTS OF DEVELOPED PROPERTY ABUTTING THE CONSTRUCTION OF THIS PROJECT A MINIMUM OF TEN (10) DAYS NOTICE PRIOR TO START OF CONSTRUCTION.

- 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.

- THE ENGINEERING DIVISION SHALL FIELD LOCATE WATER VALVES ONE TIME DURING CONSTRUCTION WHEN REQUESTED BY THE CONTRACTOR. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PRESERVE SUCH FIELD LOCATIONS DURING THE CONSTRUCTION PROCESS. WATER VALVES, VALVE BOXES OR FIRE HYDRANTS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY CONTRACTOR AT HIS OWN EXPENSE. VALVE BOXES AND WATER METERS WITHIN THE PROJECT LIMITS SHALL BE ADJUSTED TO MATCH FINAL GRADES BY THE CONTRACTOR.

- THE CONTRACTOR SHALL NOTIFY THE INSPECTING ENGINEER AND DAWNITA REINHARDT AT 316-650-0740 WITH THE CITY OF WICHITA WITH THE ANTICIPATED CONSTRUCTION START DATE AND NOTIFY THEM OF PROJECT COMPLETION. STAKING AND INSPECTION FOR THIS PROJECT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

- IF TRAFFIC WILL BE IMPACTED BY CONSTRUCTION, A TRAFFIC CONTROL PLAN MUST BE SUBMITTED AND APPROVED BY THE CITY TRAFFIC ENGINEER, MIKE ARMOUR AT TRAFFIC@WICHITA.GOV BEFORE CONSTRUCTION CAN BEGIN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL MEASURES TO FACILITATE CONSTRUCTION. ALL CONSTRUCTION ZONE MARKINGS AND SIGNAGE SHALL CONFORM TO THE LATEST VERSION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS PUBLISHED BY THE US DEPT. OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION. ALL COSTS ASSOCIATED WITH CONSTRUCTION MARKINGS AND SIGNAGE SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

- ALL ELEVATIONS SHOWN ARE NAVD 88.

- ALL AREAS DISTURBED DURING CONSTRUCTION THAT WILL NOT BE UNDER PROPOSED PAVEMENT SHALL BE RESTORED TO MATCH EXISTING CONDITIONS IN ACCORDANCE WITH CITY OF WICHITA SPECIFICATIONS.

- ANY SIDEWALK, DRIVE APPROACH, OR STREET PAVEMENT REMOVED TO CONSTRUCT PROJECT MUST HAVE A PAVEMENT CUT PERMIT AND BE REPLACED BY THE CITY CONTRACTOR. PERMITS CAN BE OBTAINED BY CALLING 316-268-4501 OR 316-268-4480.

- CITY MAINTENANCE OF STORM SEWER ENDS AT THE LAST STRUCTURE IN THE EASEMENT OR RIGHT-OF-WAY.

- CONTRACTOR SHALL LIMIT THE EXTENT OF TRENCH OPENINGS OVERNIGHT AND WEEKENDS TO LESS THAN 50 FEET.

- THE CONTRACTOR SHALL PROTECT FROM DAMAGE AND SUPPORT EXISTING UTILITIES THROUGH CONSTRUCTION AS APPROVED BY THE UTILITY OWNER AND THE ENGINEER AT THE CONTRACTOR'S EXPENSE.

- A PORTION OF EXCESS EXCAVATED MATERIAL SHALL BE MOUNDING AROUND MANHOLES WHICH EXTEND MORE THAN ONE (1) FOOT ABOVE THE EXISTING GROUND. SUCH MOUND SHALL BE CONSTRUCTED WITH NEW DEVELOPMENT AS A SIX (6) FOOT DIAMETER FLAT TOP WITH 4 TO 1 SIDE SLOPES DOWN TO THE ORIGINAL GROUND. THE ELEVATION OF THE FLAT TOP OF THE MOUND SHALL BE 0.4 FOOT BELOW THE TOP OF THE MANHOLE.

OWNER CONTACT

CHRIS MEYER, PE
EVERGY, INC.

785-379-4482
CHRIS.MEYER@EVERGY.COM

KEY MAP

SEE SHEET SKXXXX_SI0502

BENCHMARKS

SEE SHEET SKXXXX_SI0502

HORIZONTAL CONTROL

SEE SHEET SKXXXX_SI0502

STORM SEWER IMPROVEMENTS to serve PAWNEE SUBSTATION 2423 S OLIVER AVENUE CITY OF WICHITA, KANSAS

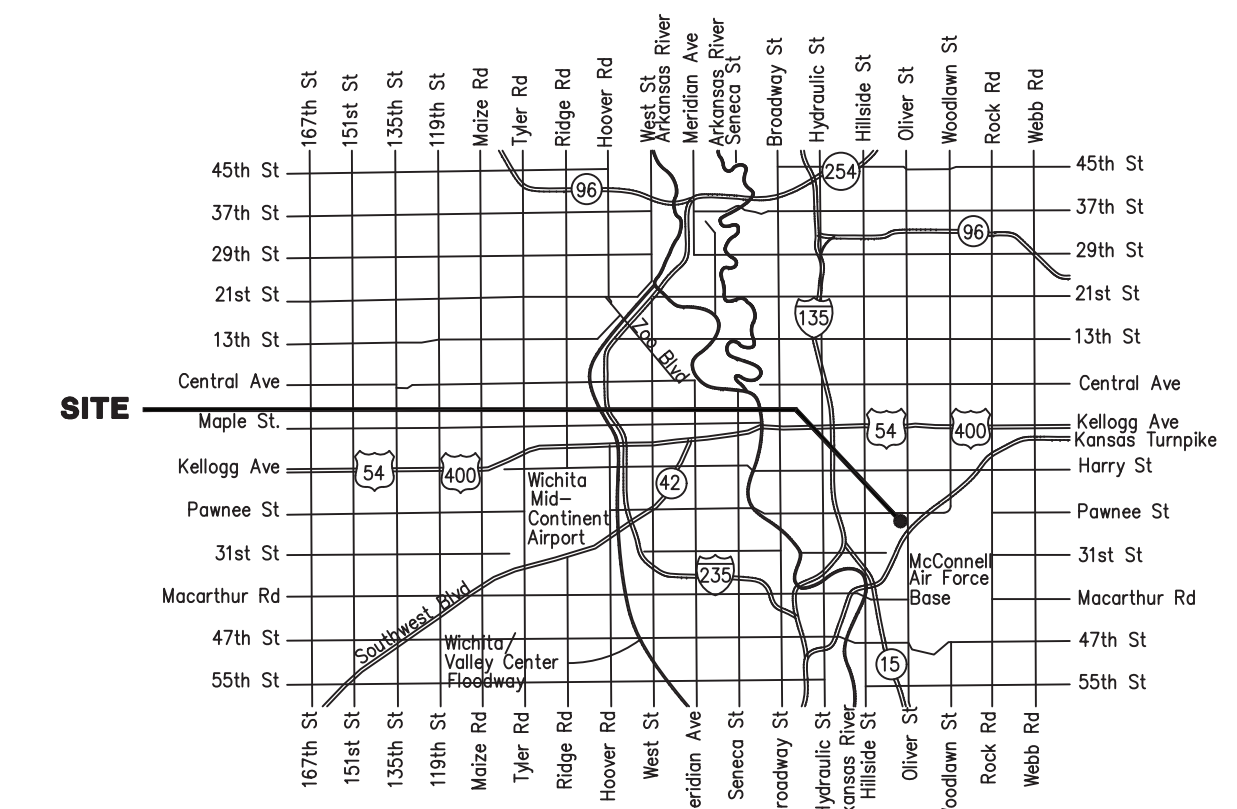
Gary Janzen, P.E. City Engineer
Project Number
2021-000696 PPD (56030970)

AS BUILTS

Contractor: Wolf Construction	Project Inspector: John Schuller
McCullough Excavation	KEMILLER ENGINEERING PA
4-18-22	117 E. Lewis, Wichita, KS 67202 (316)264-0242

SHEET INDEX

SKXXXX_SI0501	PPD TITLE SHEET AND GENERAL NOTES
SKXXXX_SI0502	KEY MAP AND BUBBLE MAP
SKXXXX_SI0503	STORMWATER PLAN & PROFILE - 1
SKXXXX_SI0504	STORMWATER PLAN & PROFILE - 2
SKXXXX_SI0505	PRECAST STANDARD MANHOLE DETAIL
SKXXXX_SI0506	MANHOLE FRAME AND COVER DETAIL
SKXXXX_SI0507	SINGLE DROP INLET DETAIL
SKXXXX_SI0508	BEDDING AND BACKFILL DETAILS



Vicinity Map

Stormwater Certification:

New Development Redevelopment (Circle One)

Stormwater Permit # _____

NOI State Permit # KSR116602

NOI Federal Permit # S-AR94-1702

These construction plans were prepared in accordance with the current Stormwater management Regulations as set forth in the City of Wichita's Stormwater Management Ordinance 16.32 and the policies/guidelines presented in the Wichita/Sedgwick County Stormwater Manual.

Site Area (Acres) = 3.62 acres

Disturbed Area (Acres) = 2.75 acres

Water Quality Treatment: Offsite BMP Program

Downstream Channel Protection: Outfall Scour Protection

Detention: N/A, BY 10% RULE

The BMP used for this development is N/A

APPROVED AS NOTED
BY WICHITA PUBLIC WORKS ENGINEERING
AND STORMWATER DIVISION

Engineering BEN FERGUSON P.E. August 25, 2021

Stormwater JOE HICKLE, P.E. August 25, 2021

NOTE TO CONTRACTORS

Inspection and testing for this project is 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 in the state of Kansas. No work shall be performed the Contractor without such inspection nor shall any work be commenced without written authorization by City Engineering. All Construction and Materials shall comply with the current City of Wichita Specifications and Standards and Special Provisions. (on file and available at Wichita.gov).

An approved copy of these plans signed by City staff are required on-site.

August 2021



PEC #: 209030-055

400 S KANSAS AVE. #200
TOPEKA, KS 66603
785-233-8300
www.pec1.com

REV.	REVISION DESCRIPTION	DATE	BY/CK	REV.	REVISION DESCRIPTION	DATE	BY/CK
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6				2			
5				1			

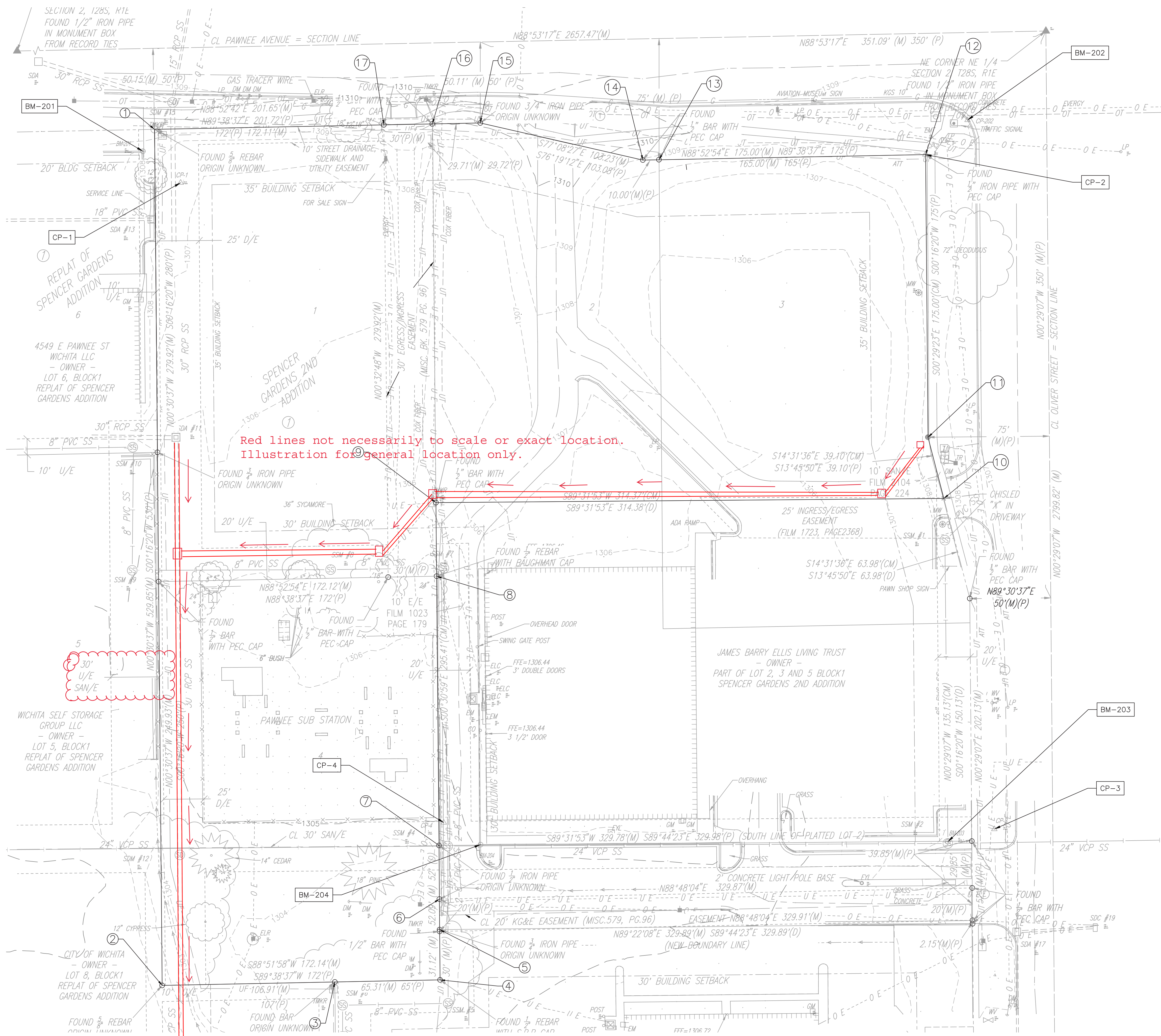
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DESIGNED BY	<u>CRG - PEC</u>	DATE	<u>04/2021</u>
APPROVED BY	<u>RAK - PEC</u>	DATE	<u>04/2021</u>

SCALE:	NOT TO SCALE
W.R. NO.	XXXXXX



TITLE	PAWNEE SUBSTATION PPD TITLE SHEET AND GENERAL NOTES
SHEET NO.	1 OF 8
REV.	0

DWG. NO.	SKXXXX_SI0501
REV.	0



Red lines not necessarily to scale or exact location.
Illustration for general location only.

COORDINATE LIST		
POINT #	NORTHING	EASTING
1	1,672,673.39	1,664,856.77
2	1,672,143.56	1,664,861.48
3	1,672,145.68	1,664,968.37
4	1,672,146.97	1,665,033.50
5	1,672,178.08	1,665,033.19
6	1,672,196.97	1,665,033.07
7	1,672,230.18	1,665,032.84
8	1,672,396.84	1,665,031.34
9	1,672,442.37	1,665,030.93
10	1,672,444.94	1,665,345.29
11	1,672,482.78	1,665,335.48
12	1,672,657.78	1,665,333.99
13	1,672,654.56	1,665,169.02
14	1,672,654.36	1,665,159.02
15	1,672,677.34	1,665,058.38
16	1,672,676.76	1,665,028.67
17	1,672,676.17	1,664,998.68

PROJECT CONTROL

HORIZONTAL CONTROL:

HORIZONTAL DATUM: NAD83 (2011) KANSAS SOUTH ZONE US SURVEY FEET STATE PLANE GRID.
USE A COMBINED SCALE FACTOR OF 1.00005317579226 TO CONVERT GRID COORDINATES TO GROUND COORDINATES.

CP-1
N: 1,672,640.346 E: 1,664,872.911
1/2" REBAR WITH CAP STAMPED PEC CP NORTHEAST OF A DOLLAR GENERAL, NEAR THE PROPERTY LINE.
1. 18.45' WNW TO THE EAST FACE OF THE SOUTH 12" ELM TREE.
2. 54.30' N TO THE SOUTH BACK OF CURB OF PAWNEE STREET.
3. 30.35' NNW TO THE SOUTHEAST CORNER OF HANDHOLE.

CP-2
N: 1,672,657.772 E: 1,665,333.855
1/2" IRON PIPE NEAR THE NORTHEAST CORNER OF SPENCER GARDENS 2ND ADDITION SUBDIVISION
1. 1.10' E TO THE WEST EDGE OF SIDEWALK
2. 2.30' N TO THE SOUTH BACK OF CURB OF PAWNEE STREET.
3. 3.26' NNE TO THE CENTER OF A TRAFFIC SIGNAL MANHOLE

CP-3
N: 1,672,240.291 E: 1,665,376.521
1/2" REBAR WITH A CAP STAMPED PEC CONTROL POINT NEAR THE SOUTHEAST PROPERTY CORNER OF MONEY TOWN PAWN SHOP.
1. 13.20' E TO THE WEST BACK OF CURB.
2. 12.15' S TO THE EDGE OF A CONCRETE DRIVEWAY.
3. 15.30' NNE TO THE SIGN READING "WICHITA TRANSIT".

CP-4
N: 1,672,244.299 E: 1,665,035.777
MAG NAIL IN ASPHALT NEAR SE CORNER OF SUBSTATION
1. 0.25' W TO THE HIGH EDGE OF CONCRETE.
2. 7.10' NW TO A CHAINLINK FENCE CORNER POST.
3. 14.83' SSE TO THE CENTER OF A MANHOLE.

VERTICAL DATUM:

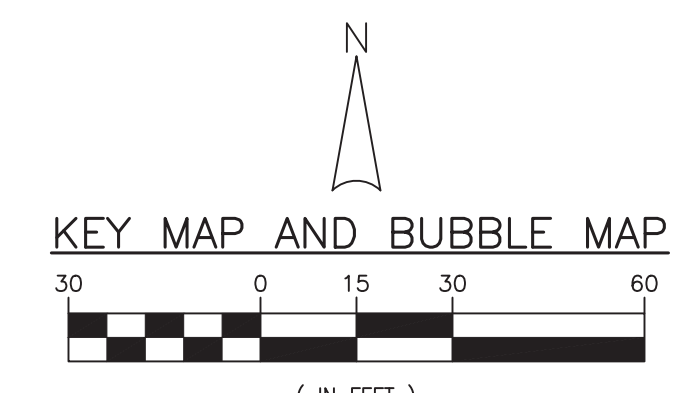
NAVD 88 DATUM

BM-201
CHISELED SQUARE ON THE CORNER OF CURB, LOCATED AT THE NE CORNER OF THE PARKING LOT OF THE DOLLAR GENERAL.
EL= 1308.32

BM-202
CHISELED "X" ON THE TOP OF CURB BETWEEN SIDEWALKS SOUTHWEST OF THE INTERSECTION OF PAWNEE AND OLIVER STREETS.
EL= 1308.22

BM-203
CHISELED "X" ON THE NORTH RIM OF A SANITARY SEWER MANHOLE LOCATED NEAR THE SOUTHEAST CORNER FOR MONEY TOWN PAWN SHOP.
EL= 1307.84

BM-204
CHISELED SQUARE ON TOP OF THE CONCRETE CURB LOCATED NEAR THE SOUTHWEST CORNER OF THE MONEY TOWN PAWN BUILDING, 20' EAST OF THE SANITARY SEWER MANHOLE, 15' SOUTH OF THE SOUTH FACE OF THE BUILDING
EL= 1305.62



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REV.	REVISION DESCRIPTION	DATE	BY/CK	REV.	REVISION DESCRIPTION	DATE	BY/CK
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DRAWN BY	CRG - PEC	DATE	04/2021
DESIGNED BY	CRG - PEC	DATE	04/2021
APPROVED BY	RAK - PEC	DATE	04/2021

SCALE: AS SHOWN
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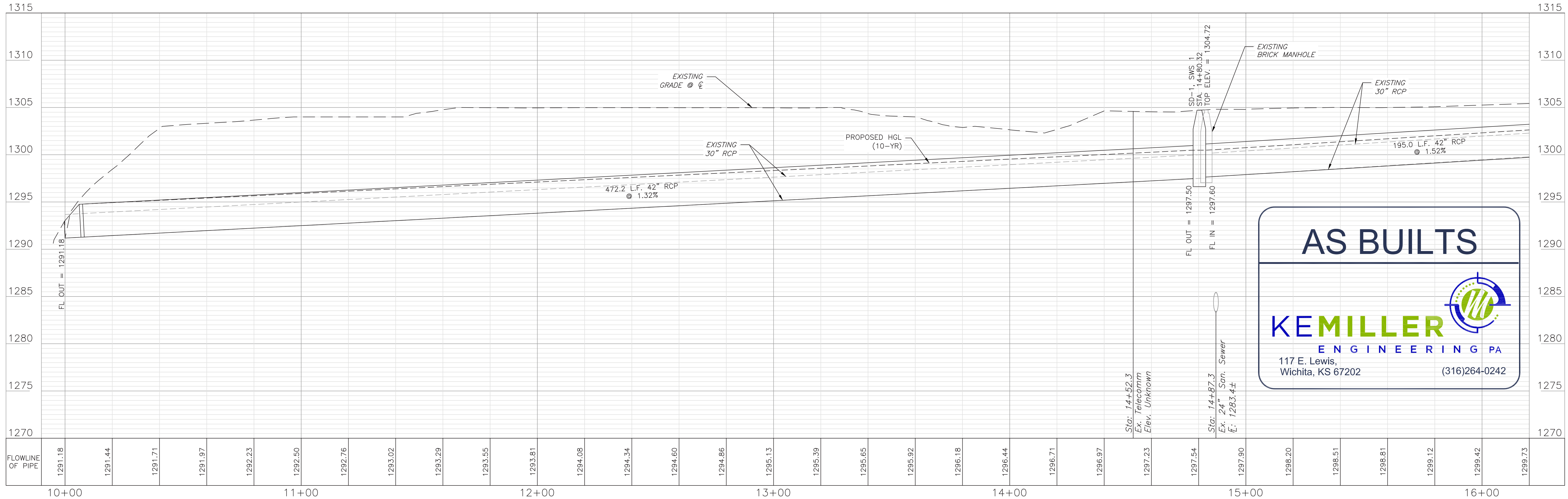


TITLE: PAWNEE SUBSTATION
KEY MAP AND BUBBLE MAP

DWG. NO.	SKXXXX_SI05
SHEET NO.	2 OF 8
REV.	0



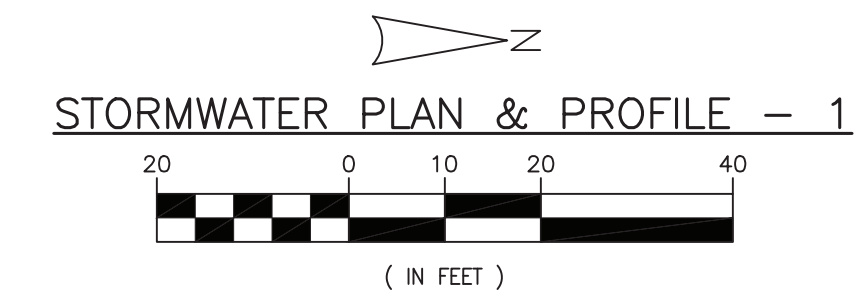
- GENERAL NOTES**
- UNLESS NOTED OTHERWISE, ALL PROPOSED SPOT ELEVATIONS AND CONTOURS ARE TO FINAL GRADE OF AGGREGATE, PAVEMENT, OR SOIL SURFACE.
 - SUBSTATION AND POWER LINES WILL REMAIN IN SERVICE DURING CONSTRUCTION. CONTRACTOR MUST USE EXTREME CAUTION DURING CONSTRUCTION.
 - DEMOLITION AND REWORK OF AREAS WILL BE PERFORMED DURING SCHEDULED SUBSTATION OUTAGE. ALL EXISTING STRUCTURES, FOUNDATIONS, AND POLES SHALL REMAIN IN PLACE UNLESS OTHERWISE NOTED. CONTRACTOR TO USE EXTREME CAUTION DURING CONSTRUCTION AROUND EXISTING FOUNDATIONS.



AS BUILTS

KEMILLER ENGINEERING PA

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



PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.

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REV.	REVISION DESCRIPTION	DATE	BY/CK	REV.	REVISION DESCRIPTION	DATE

DRAWN BY	CRG - PEC	DATE	04/2021	SCALE:	AS SHOWN
DESIGNED BY	CRG - PEC	DATE	04/2021	I.W.R. NO.	XXXXXX
APPROVED BY	RAK - PEC	DATE	04/2021		



TITLE: **PAWNEE SUBSTATION**
STORMWATER PLAN & PROFILE - 1

DWG. NO.: **SKXXXX_SI05**

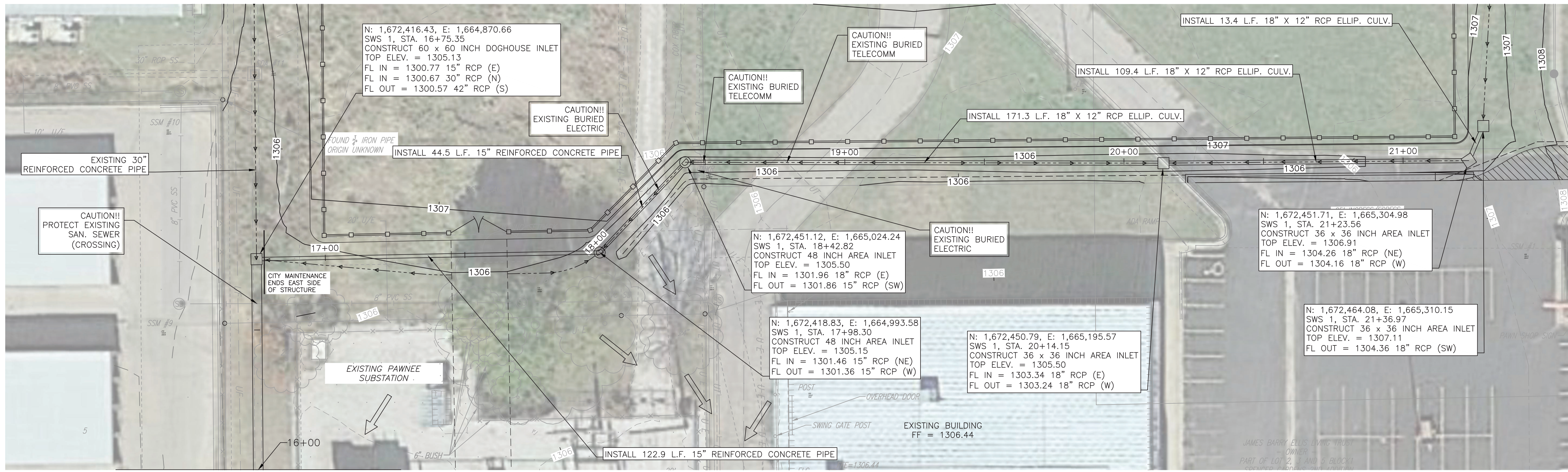
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GROUP: ESUB

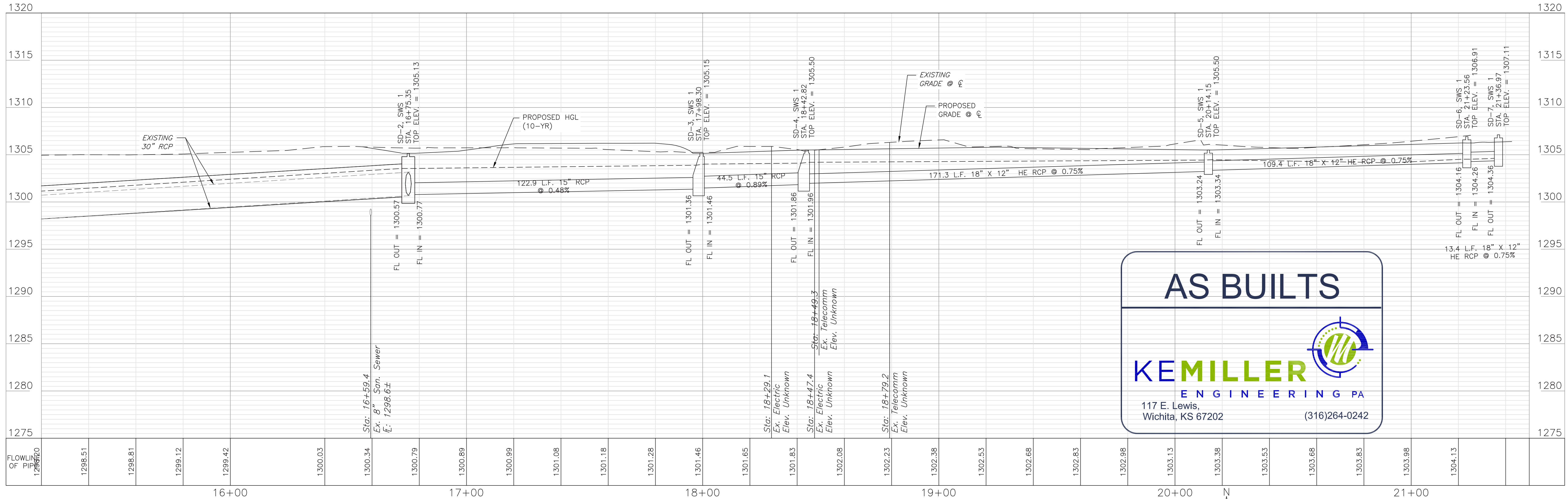
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7/15/2021 4:10 PM chad.grisier



- GENERAL NOTES**
- UNLESS NOTED OTHERWISE, ALL PROPOSED SPOT ELEVATIONS AND CONTOURS ARE TO FINAL GRADE OF AGGREGATE, PAVEMENT, OR SOIL SURFACE.
 - SUBSTATION AND POWER LINES WILL REMAIN IN SERVICE DURING CONSTRUCTION. CONTRACTOR MUST USE EXTREME CAUTION DURING CONSTRUCTION.
 - DEMOLITION AND REWORK OF AREAS WILL BE PERFORMED DURING SCHEDULED SUBSTATION OUTAGE. ALL EXISTING STRUCTURES, FOUNDATIONS, AND POLES SHALL REMAIN IN PLACE UNLESS OTHERWISE NOTED. CONTRACTOR TO USE EXTREME CAUTION DURING CONSTRUCTION AROUND EXISTING FOUNDATIONS.

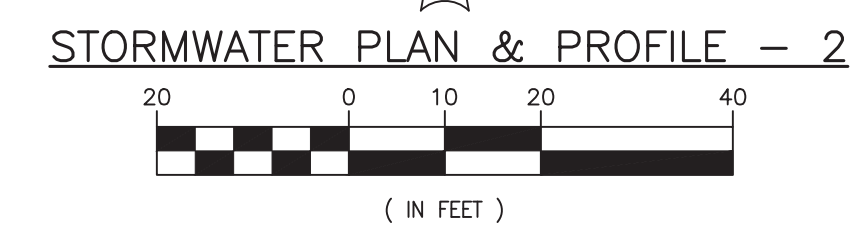
MATCHLINE STA. 16+00



AS BUILTS

KEMILLER
ENGINEERING PA

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



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PEC #: 209030-055
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REV.	REVISION DESCRIPTION	DATE	BY/CK	REV.	REVISION DESCRIPTION	DATE	BY/CK
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DRAWN BY	CRG - PEC	DATE	04/2021	SCALE:	AS SHOWN
DESIGNED BY	CRG - PEC	DATE	04/2021	I.W.R. NO.	XXXXXX
APPROVED BY	RAK - PEC	DATE	04/2021		



TITLE: PAWNEE SUBSTATION
STORMWATER PLAN & PROFILE - 2

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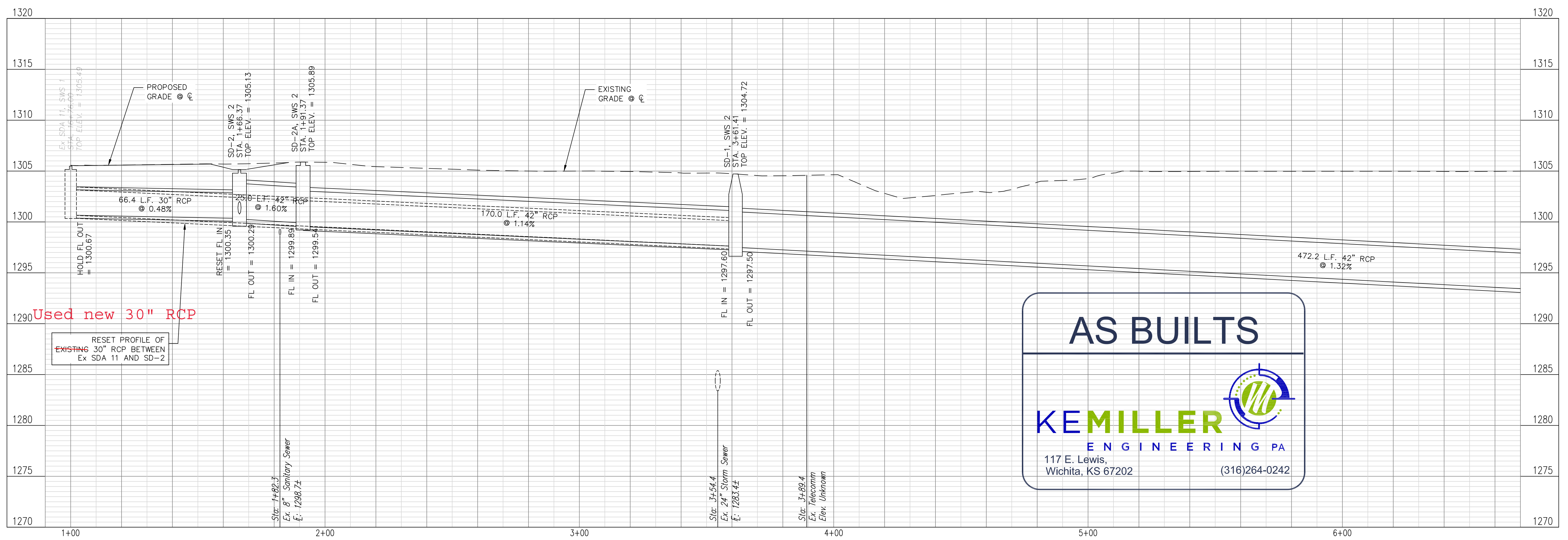
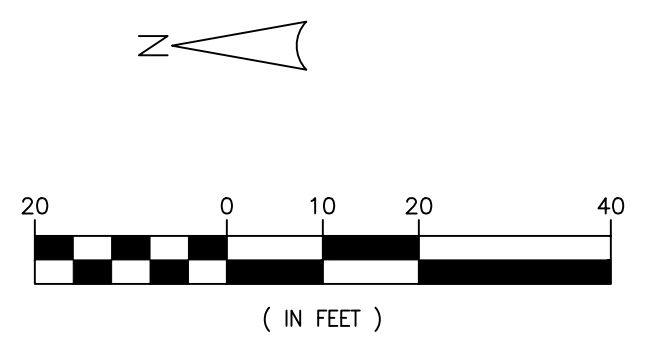
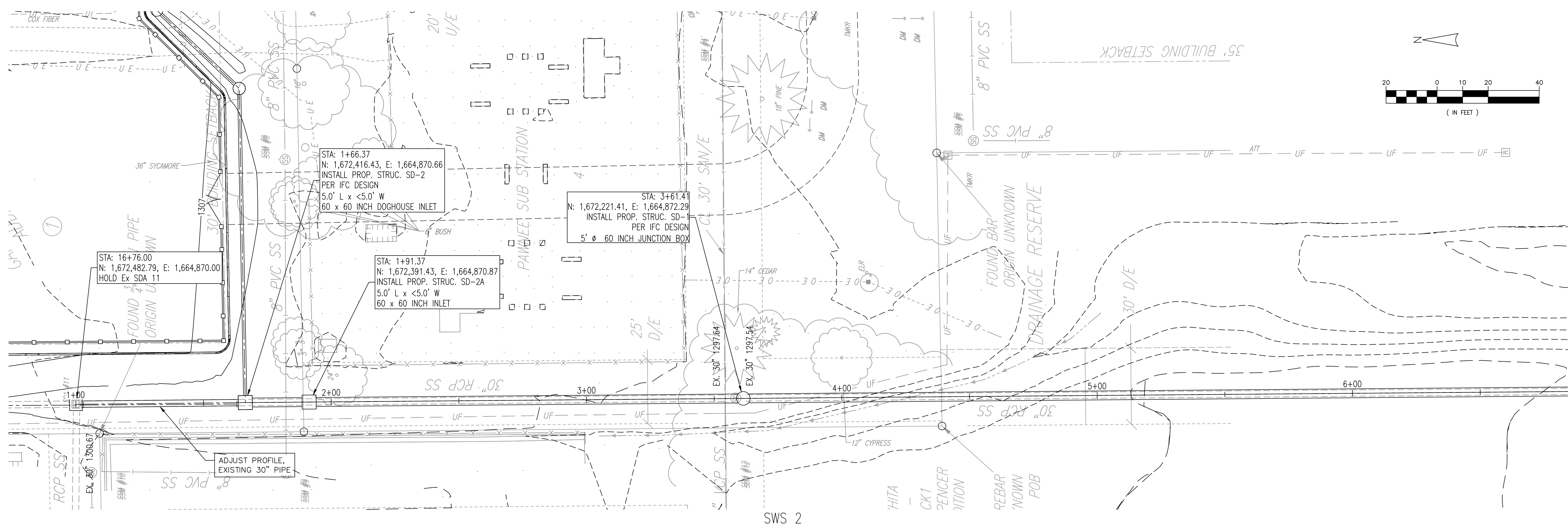
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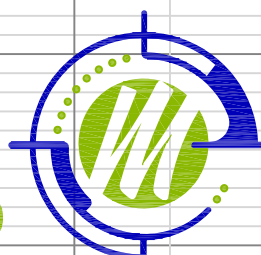
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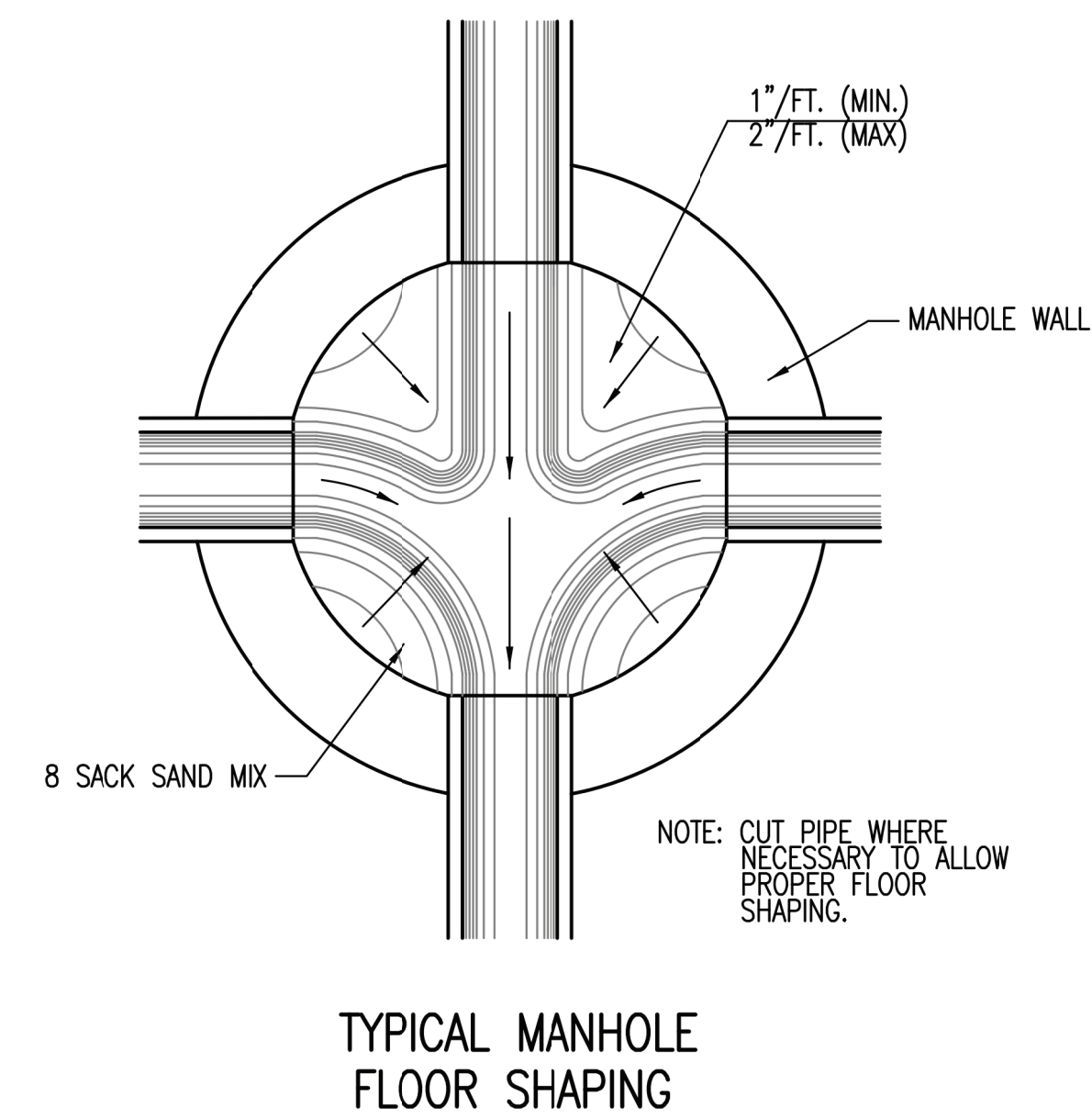
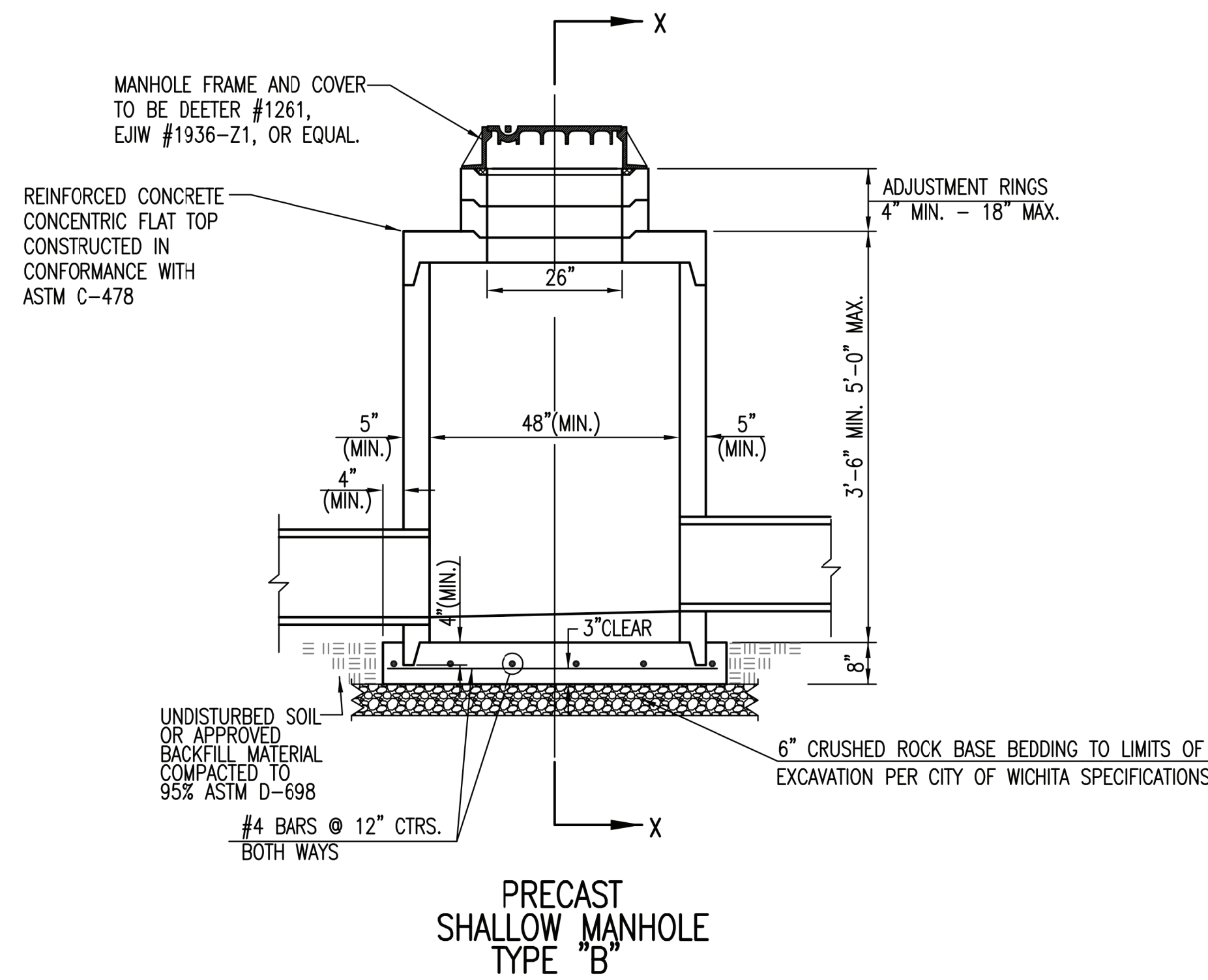
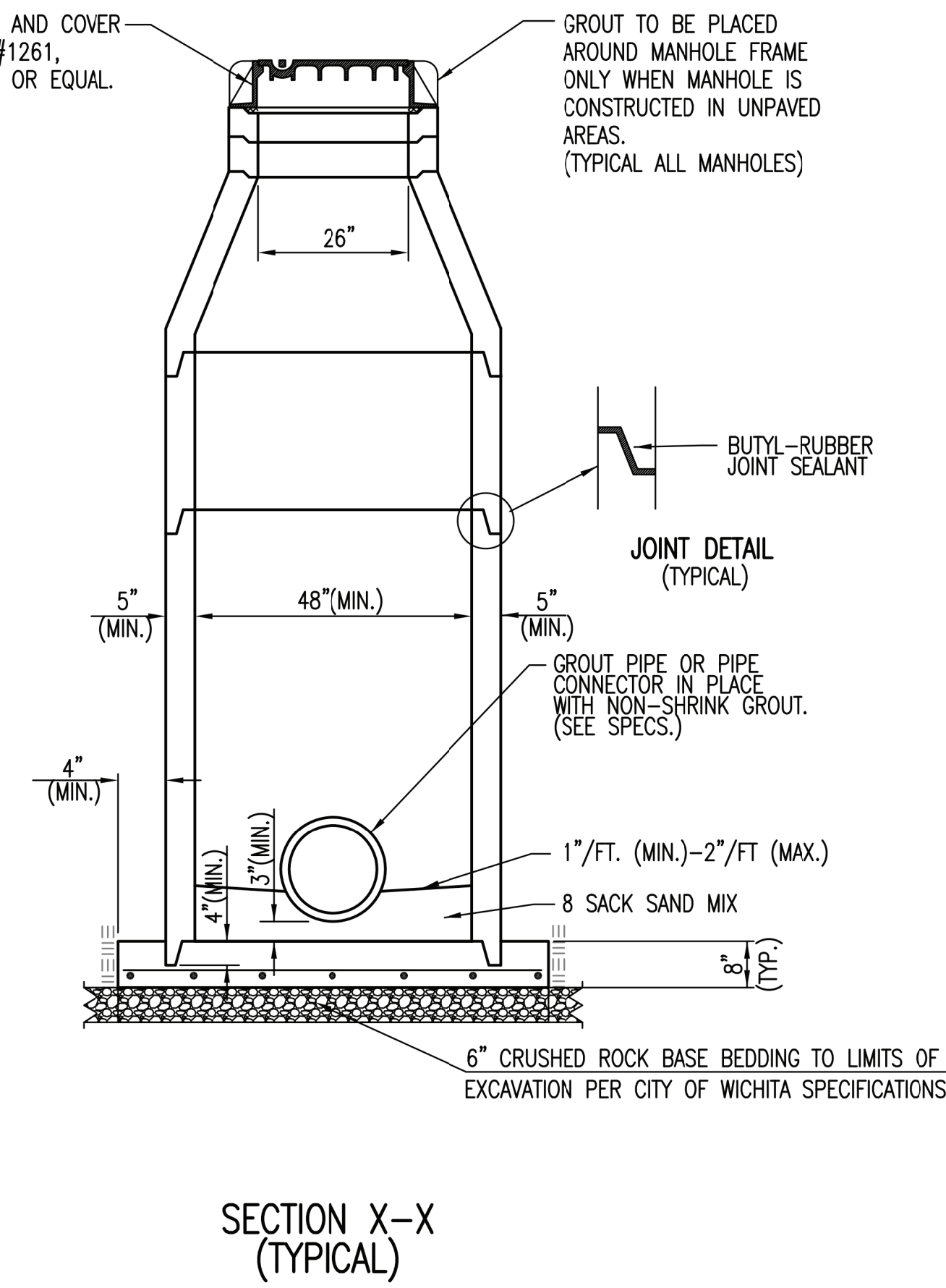
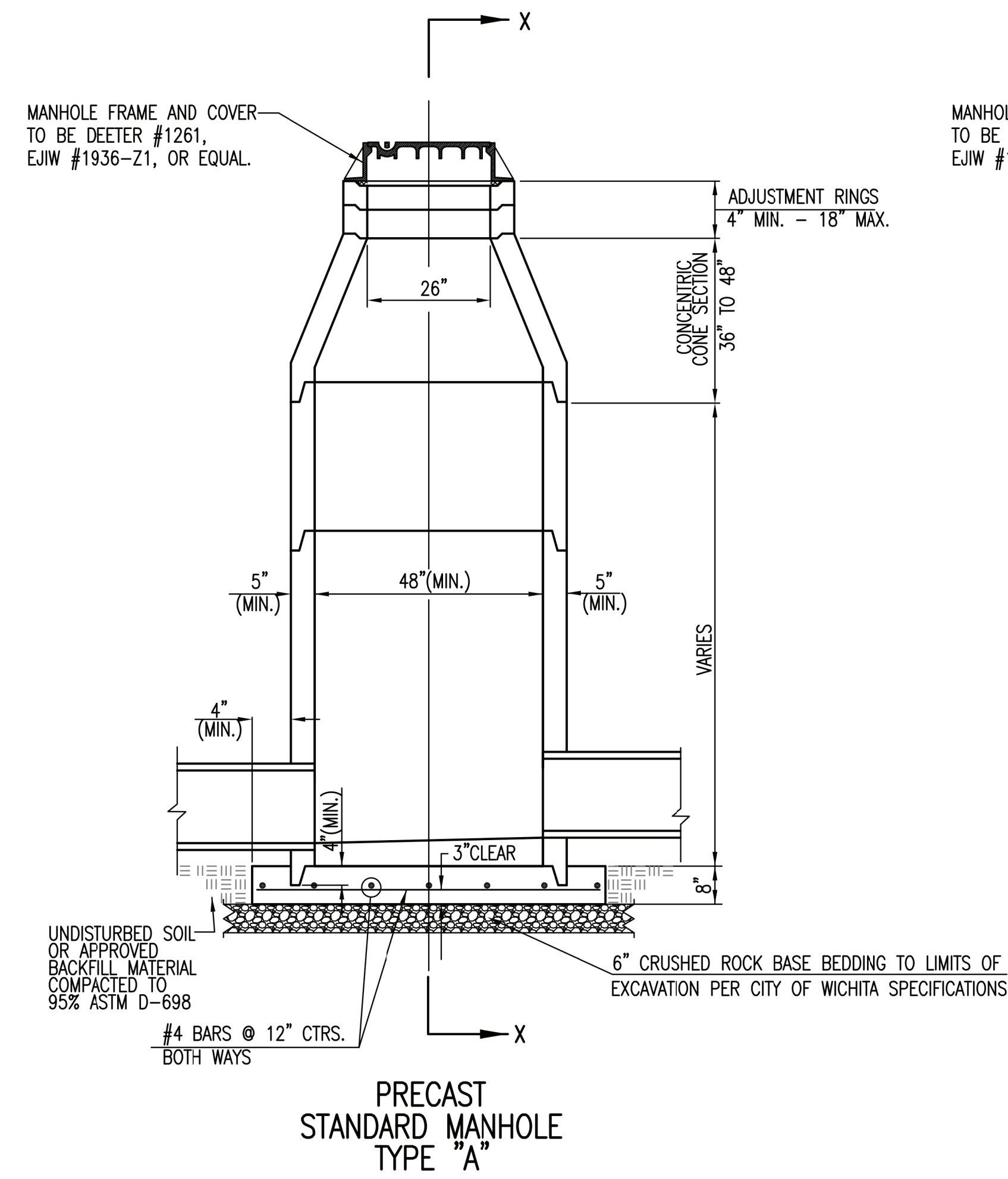
AS BUILTS



KEMILLER
ENGINEERING PA

117 E. Lewis,
Wichita, KS 67202


(316)264-0242



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.

REVISED: MARCH 2015

 <p>CITY OF WICHITA PUBLIC WORKS & UTILITIES ENGINEERING DIVISION</p>			<p>PRECAST CONCRETE MANHOLE (STORM SEWER)</p> <p>CITY ENGINEER GARY JANZEN, P.E.</p>		
			PROJECT NUMBER	OCA NUMBER	DATE
<p>CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501</p>					

SW-301
PEC #: 209030-055
400 S KANSAS AVE. #200
TOPEKA, KS 66603
785-233-8300
www.pec1.com



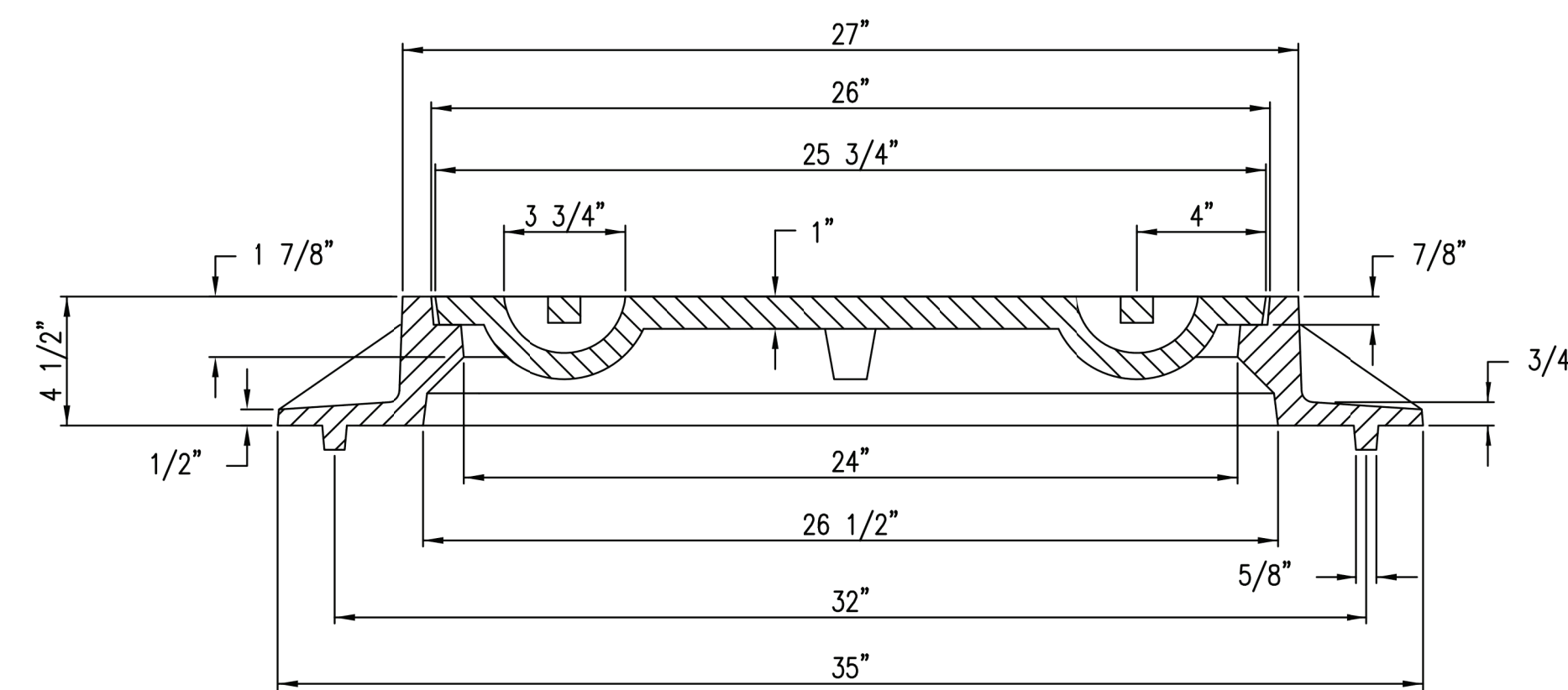
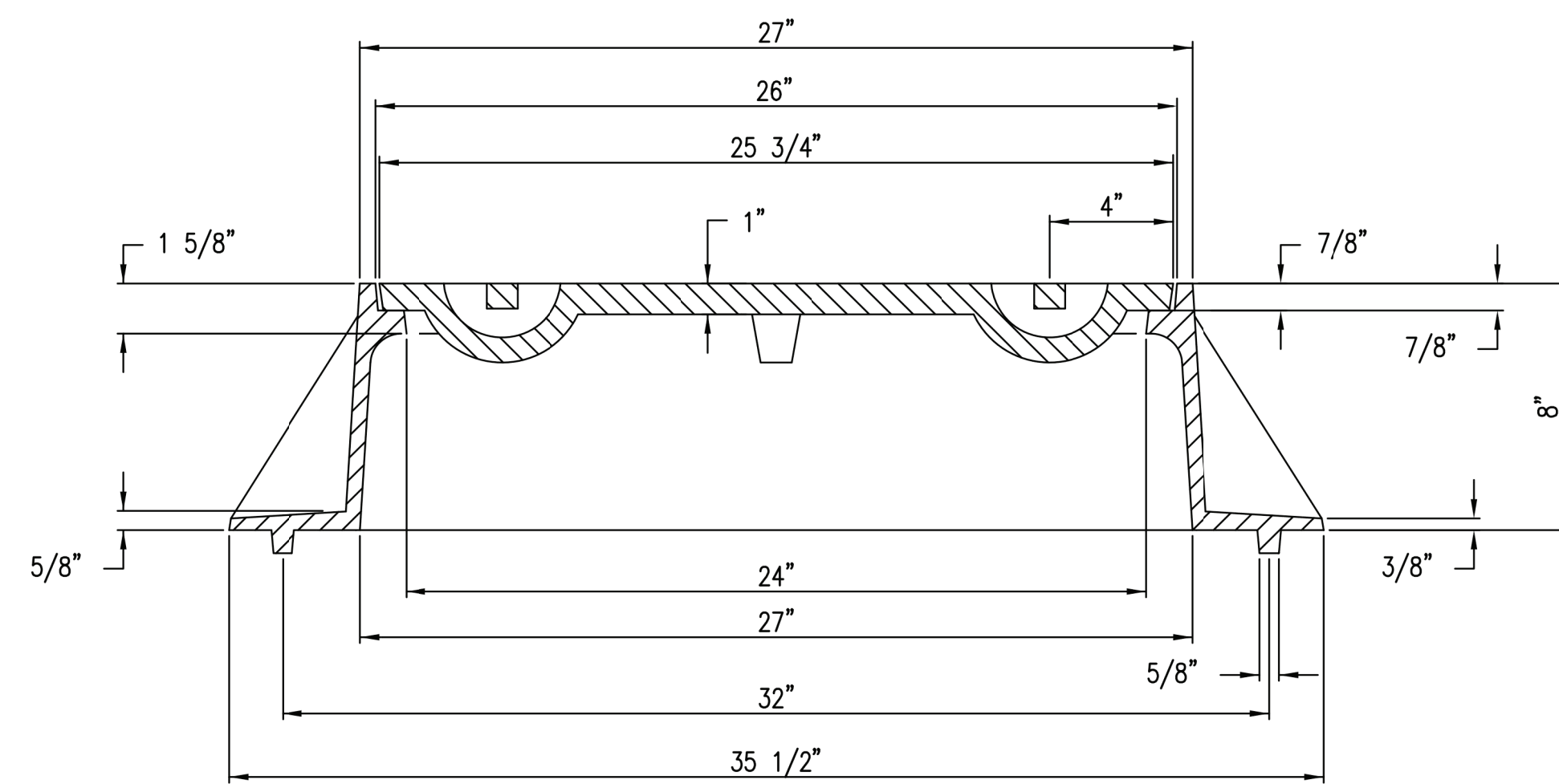
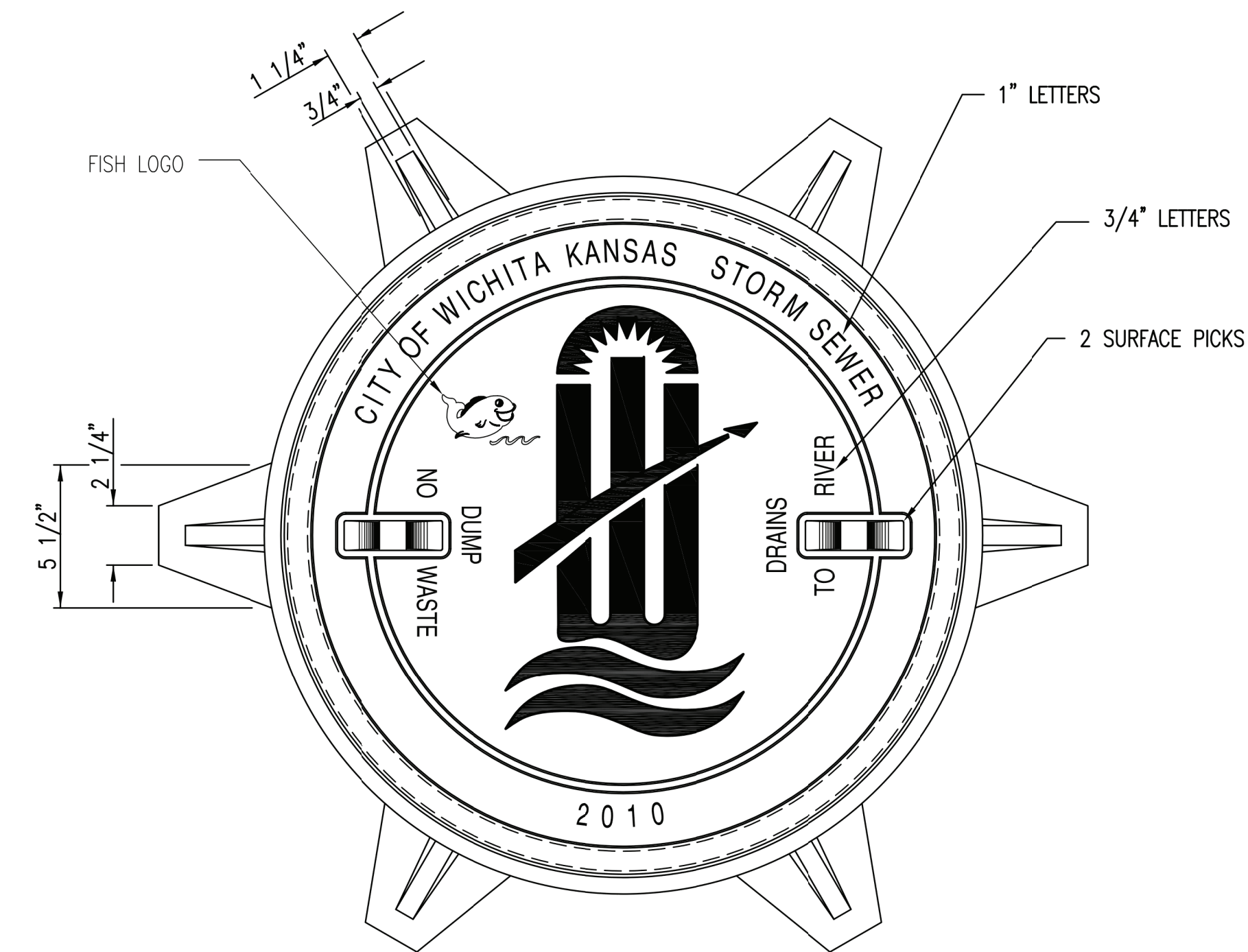
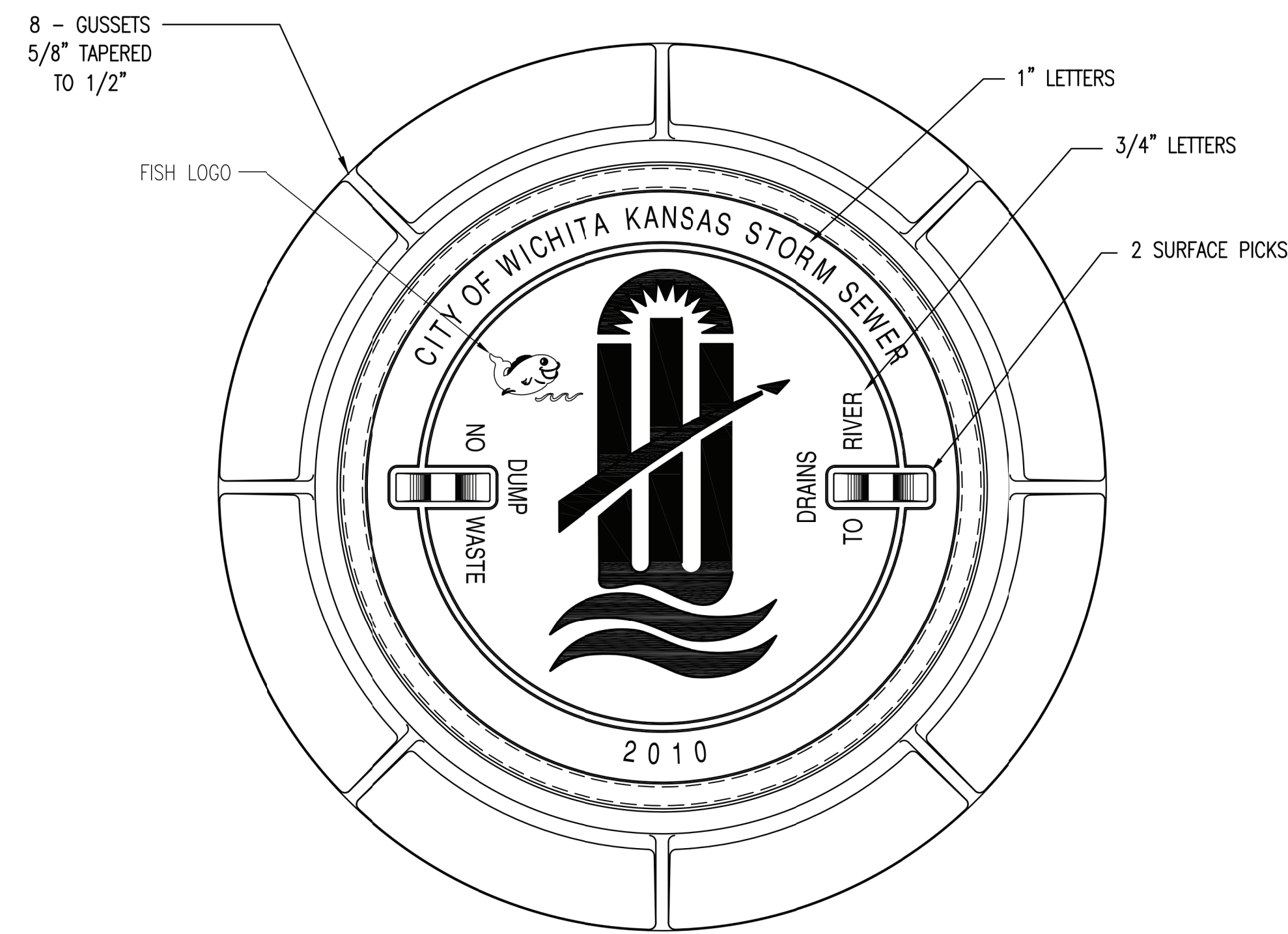
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DRAWN BY	CRG - PEC	DATE	04/2021	SCALE:	NONE
DESIGNED BY	CRG - PEC	DATE	04/2021	I.W.R. NO.	XXXXXX
APPROVED BY	RAK - PEC	DATE	04/2021		



TITLE	PAWNEE SUBSTATION PRECAST STANDARD MANHOLE DETAIL	
DWG. NO.	SKXXXX_SI05	
SHEET NO.	5	OF 8
REV.	0	

DWG. NO.	SKXXXX_SI05
SHEET NO.	5
REV.	0



MANHOLE FRAME
DEETER #1261 OR EJIW #1936-Z1

- NOTE:
1. FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACE.
 2. COVER TO BE DEETER #1261 OR EJIW #1936A.

INLET FRAME
DEETER #2014 OR EJIW #1936-Z4

- NOTE:
1. FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACES.
 2. NOT TO BE USED UNDER PAVEMENT.
 3. COVER TO BE DEETER #1261 OR EJIW #1936A.



MANHOLE/INLET FRAME AND COVER (STORM SEWER)		
CITY ENGINEER GARY JANZEN, P.E.		
PROJECT NUMBER	OCA NUMBER	DATE 11/2010
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		SHEET

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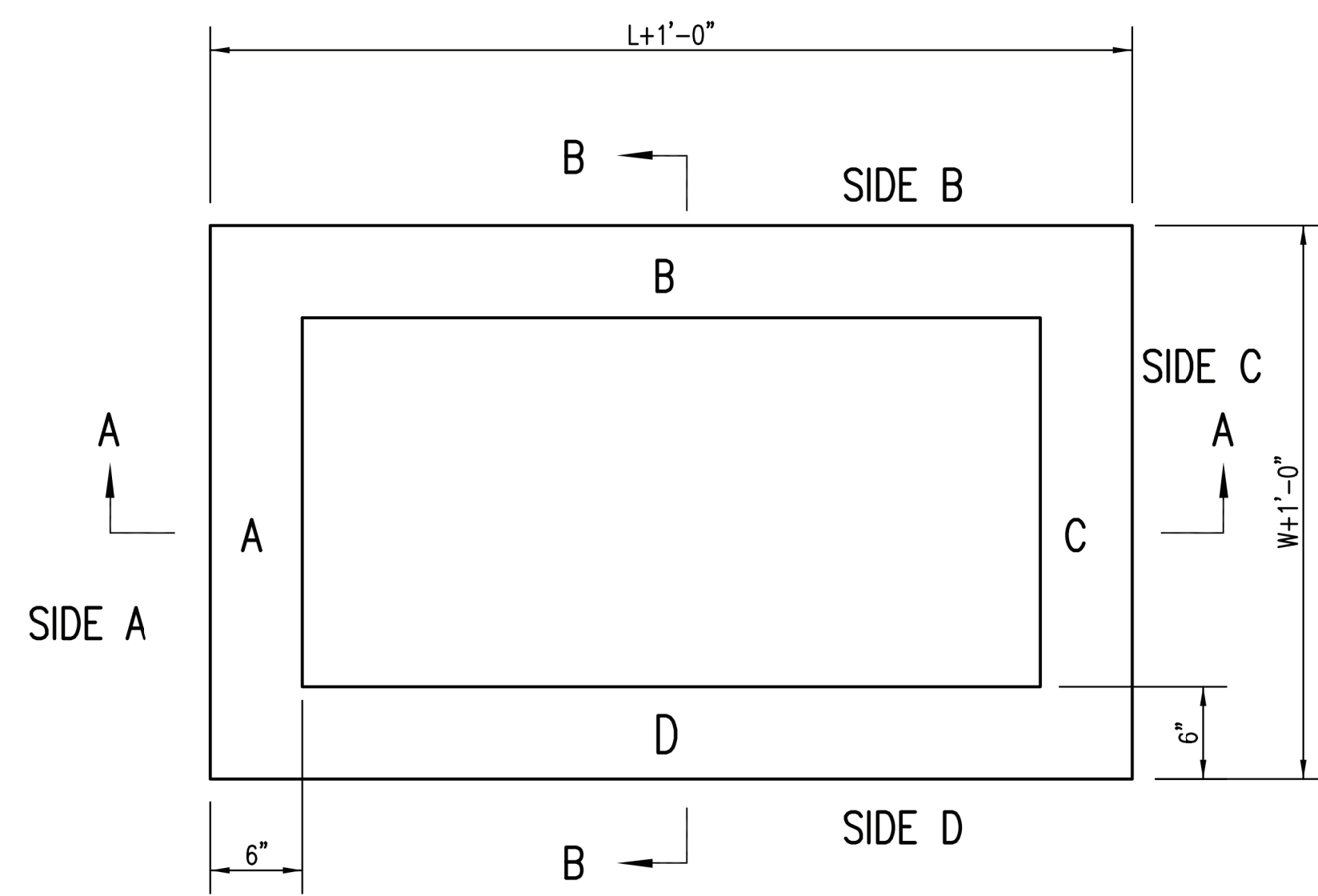
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DESIGNED BY	CRG - PEC	DATE	04/2021
APPROVED BY	RAK - PEC	DATE	04/2021

SCALE:	NONE
W.R. NO.	XXXXXX

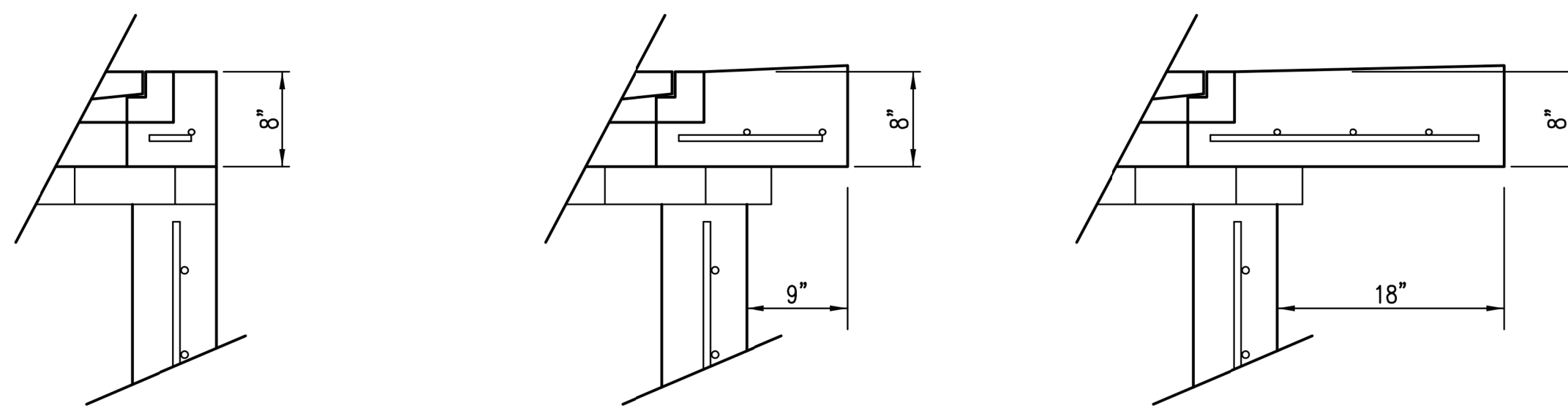


TITLE	PAWNEE SUBSTATION MANHOLE FRAME AND COVER DETAIL
DWG. NO.	SKXXXX_SI05
SHEET NO.	6 OF 8
REV.	0

SW-303
PEC #: 209030-055
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 785-233-8300
 www.pec1.com



TOP VIEW



FLUSH STYLE TOP
NO APRON

9" APRON
* APRON TO EXTEND ON ALL 4 SIDES OF INLET.
DESIGNER TO DESIGNATE APRON SIZE.

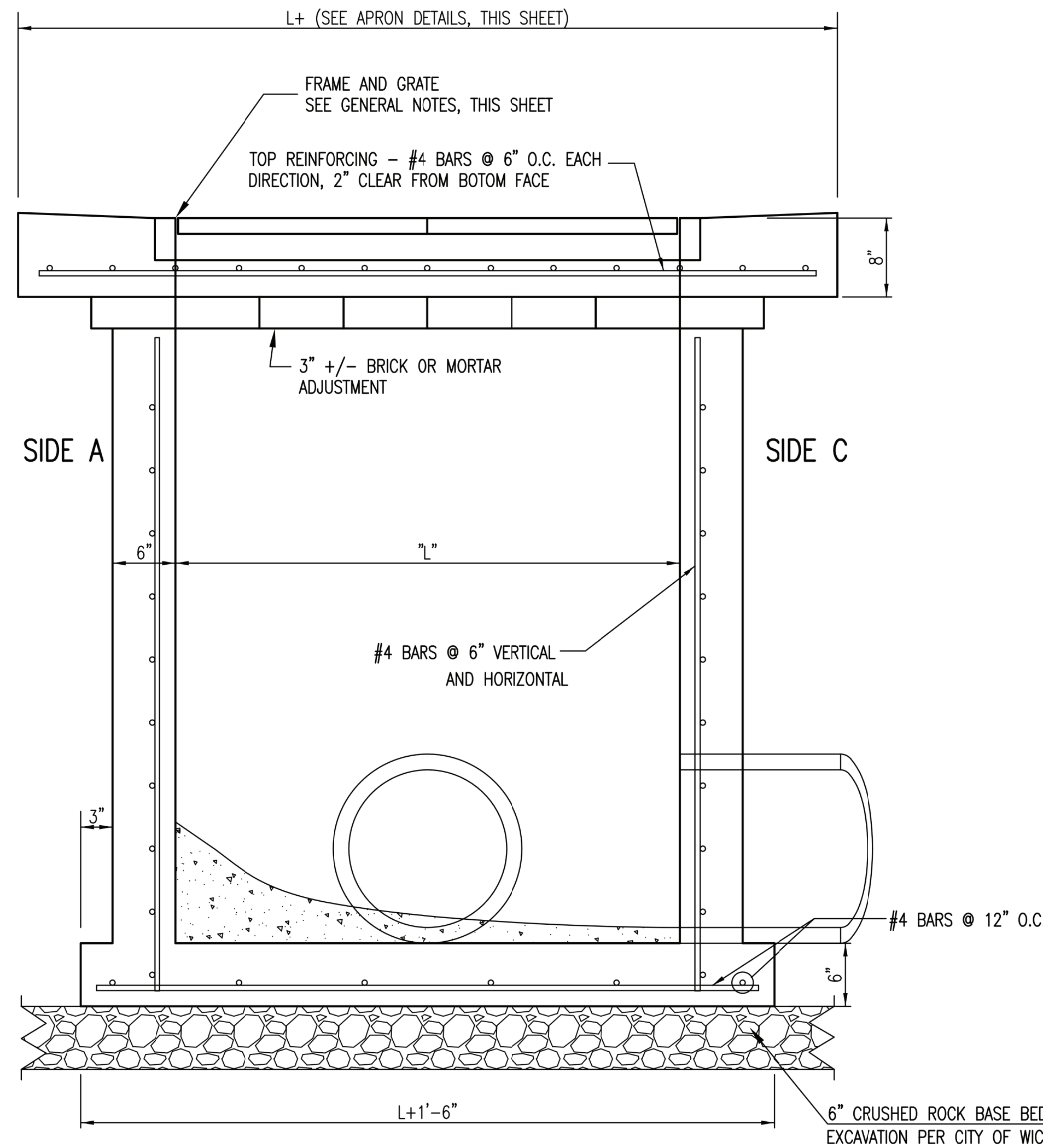
18" APRON

W=2' and L=2' for SINGLE DROP INLET
W=2' and L=4' for DOUBLE DROP INLET

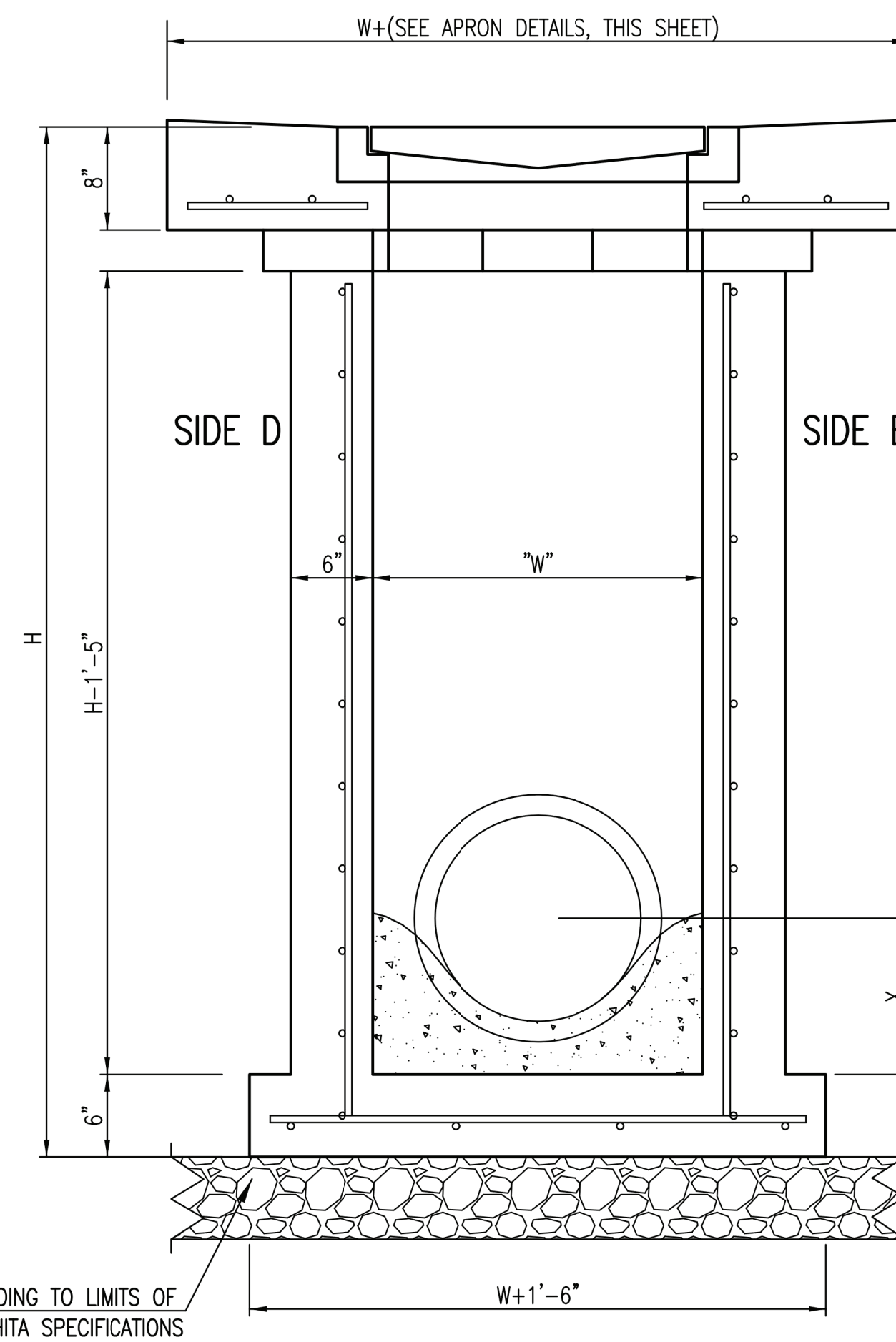
The structure(s) on this detail sheet are designed for HS-20 loading at these specific dimensions only. If larger dimensions are required, the ENGINEER shall provide a project specific structure design for approval by the City Engineer's office.

GENERAL NOTES

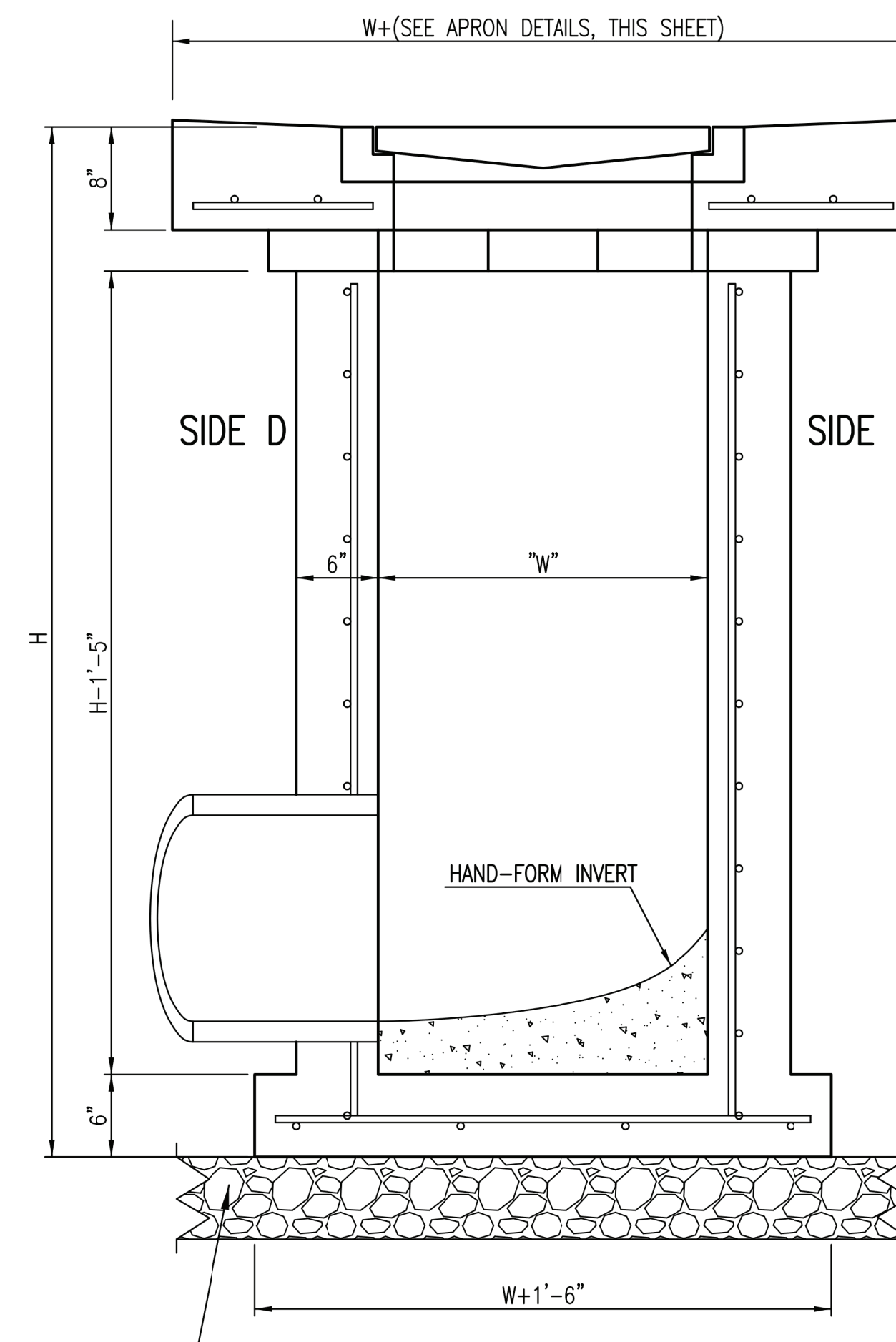
- GRATE FRAME TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK. CONCRETE USED FOR INLET CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
- INLET INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE 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 GRATE TO BE DEETER #2433, EJIW #5391-Z1 OR APPROVED EQUAL FOR 2'x2' SINGLE DROP INLET AND DEETER #2434, EJIW #5391 Z3 OR APPROVED EQUAL FOR 2'x4' DOUBLE DROP INLET.
- 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 "B-B"
END OUTLET



SECTION "B-B"
SIDE OUTLET



REVISED: MARCH 2015

SINGLE/DOUBLE DROP INLET		
CITY ENGINEER GARY JANZEN, P.E.		
PROJECT NUMBER	OCA NUMBER	DATE
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		SHEET

8			4			
7			3			
6			2			
5			1			
REV.	REVISION DESCRIPTION	DATE	BY/CK	REVISION DESCRIPTION	DATE	BY/CK

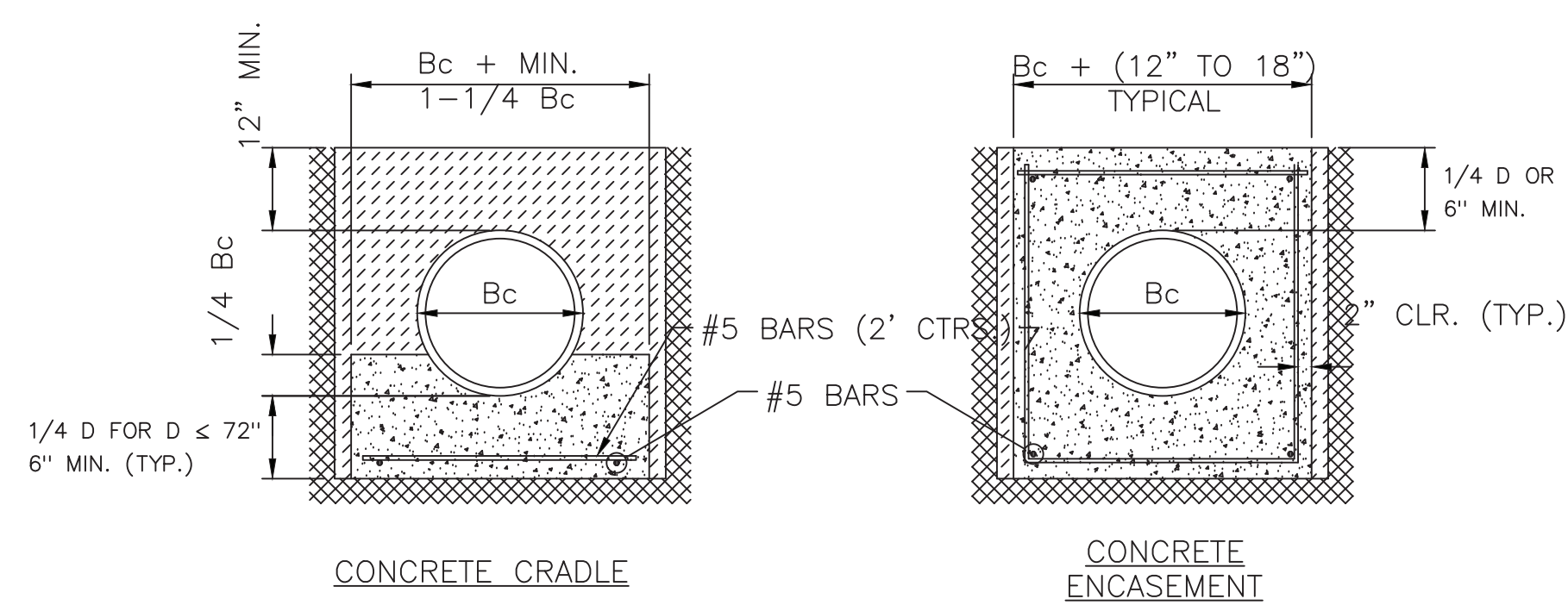
DRAWN BY	CRG - PEC	DATE	04/2021
DESIGNED BY	CRG - PEC	DATE	04/2021
APPROVED BY	RAK - PEC	DATE	04/2021

SCALE:	NONE
W.R. NO.	XXXXXX

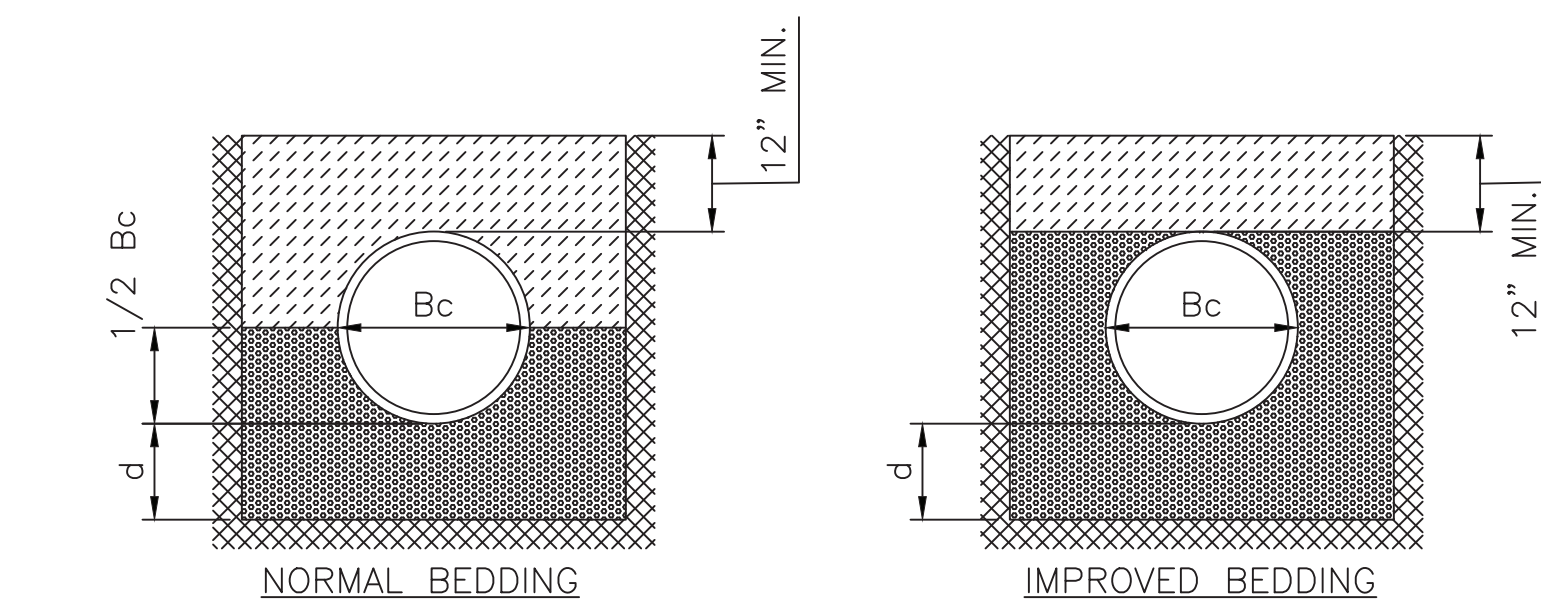


TITLE	PAWNEE SUBSTATION SINGLE DROP INLET DETAIL
DWG. NO.	SKXXXX_SI05
SHEET NO.	7 OF 8
REV.	0

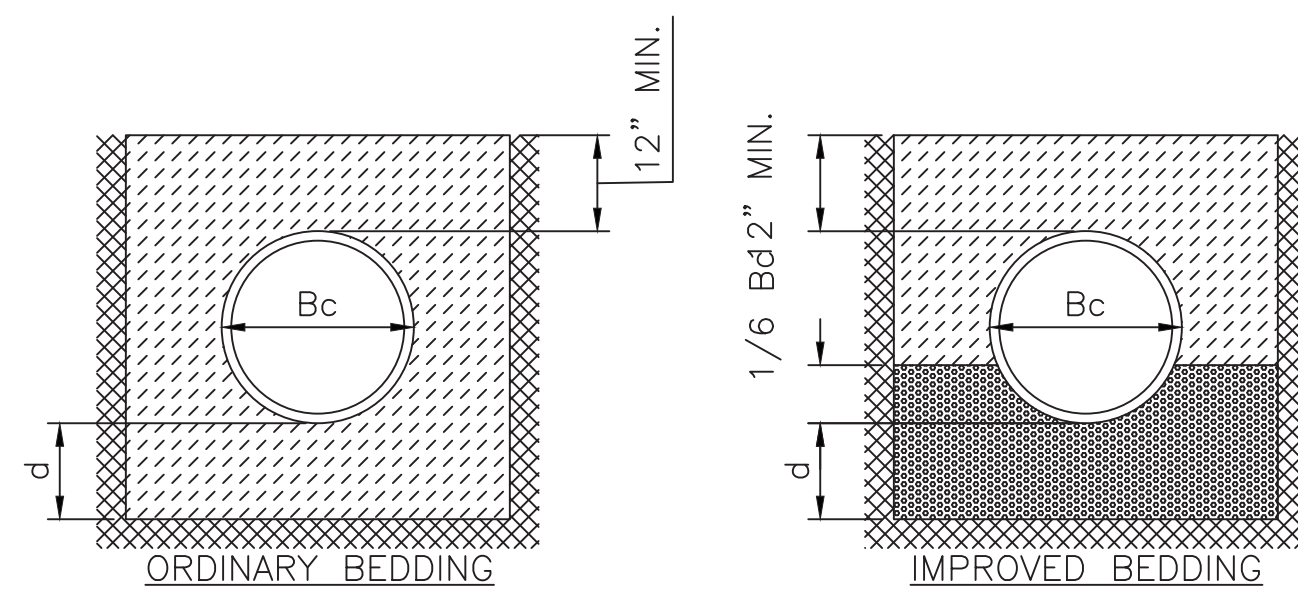
SW-201	PEC #:	209030-055
400 S KANSAS AVE. #200	TOPEKA, KS 66603	785-233-8300
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CLASS A
NOT TO SCALE



CLASS B
NOT TO SCALE



CLASS C
NOT TO SCALE

PIPE ZONE BACKFILLING
NOT TO SCALE

Bc = OUTSIDE PIPE DIAMETER
H = BACKFILL FROM TOP OF PIPE TO EXISTING GROUND
D = INSIDE PIPE DIAMETER
d = DEPTH OF BEDDING MATERIAL BELOW PIPE

GRANULAR BEDDING MATERIAL OR SAND-GRAVEL BEDDING
COMPACTED EMBEDMENT
CONCRETE

DEPTH OF BEDDING MATERIAL BELOW PIPE		
D	d (MIN) SOIL	d (MIN) ROCK
27" & SMALLER	4"	6"
30" TO 60"	5"	9"
66" & LARGER	6"	12"

GRANULAR BEDDING MATERIAL SHALL BE AN APPROVED MATERIAL CONSISTING OF DURABLE CRUSHED ROCK CONFORMING WITH THE REQUIREMENTS OF THE LATEST REVISION OF ASTM C-33 SIZE NO. 67 (3/4" TO NO. 4); TO BE PLACED IN NOT MORE THAN 6" LAYERS AND COMPACTED BY SLICING WITH A SHOVEL OR VIBRATING. SOUNDNESS, ABRASION, AND ABSORPTION LIMITS SHALL BE AS REQUIRED FOR COARSE AGGREGATES IN 03 30 00 CAST-IN-PLACE CONCRETE IN THE SPECIFICATIONS.

SAND-GRAVEL BEDDING MATERIAL - SAND-GRAVEL MIX MEETING TYPE UD-1 OF THE 2015 KANSAS STANDARD SPECIFICATIONS FOR STATE ROAD AND BRIDGE CONSTRUCTION.

COMPACTED EMBEDMENT SHALL BE AN APPROVED SAND MATERIAL FREE FROM DEBRIS, ORGANIC MATERIAL, AND STONES WITH 100% PASSING THE 3/4" SIEVE TO BE PLACED IN UNIFORM LAYERS NOT MORE THAN 6" THICK AND COMPACTED TO 95 PERCENT MAXIMUM DENSITY AS DETERMINED BY ASTM D698. GRANULAR BEDDING MATERIAL MAY BE SUBSTITUTED FOR ALL OR PART OF COMPACTED EMBEDMENT MATERIALS.

CLASS A "CONCRETE CRADLE" AND/OR CLASS A "CONCRETE ENCASEMENT" IS NOT REQUIRED UNLESS SPECIFIED ON THE PLANS. HOWEVER, WHERE UNEXPECTED TRENCH CONDITIONS EXIST OR IMPROPER TRENCHING IS PERFORMED CLASS A BEDDING MAY BE REQUIRED AS DETERMINED BY THE ENGINEER.

CLASS B BEDDING SHALL BE USED FOR ALL FLEXIBLE PIPE.

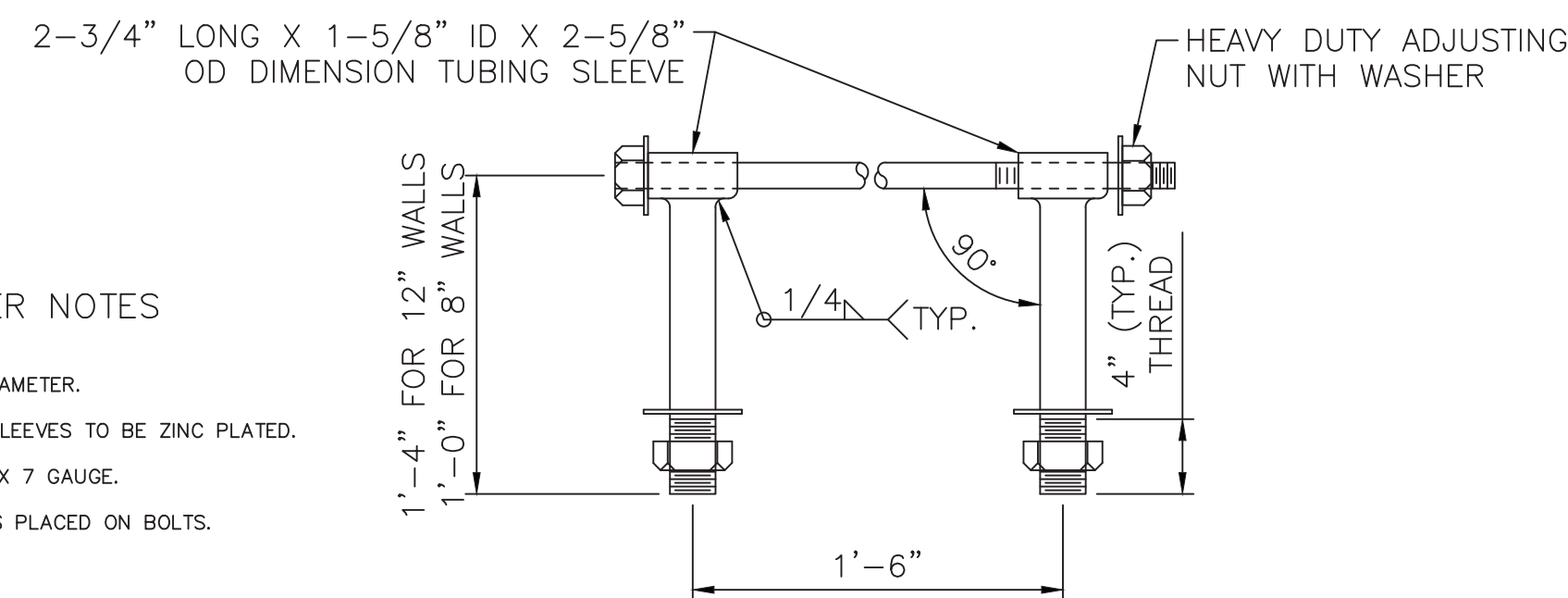
- A. CLASS B NORMAL BEDDING SHALL BE USED FOR PVC PIPE UNLESS WET CONDITIONS ARE ENCOUNTERED.
- B. CLASS B IMPROVED BEDDING SHALL BE USED FOR OTHER FLEXIBLE PIPE, AND FOR PVC PIPE IN WET CONDITIONS.

CLASS C BEDDING SHALL BE USED FOR ALL RIGID PIPE.

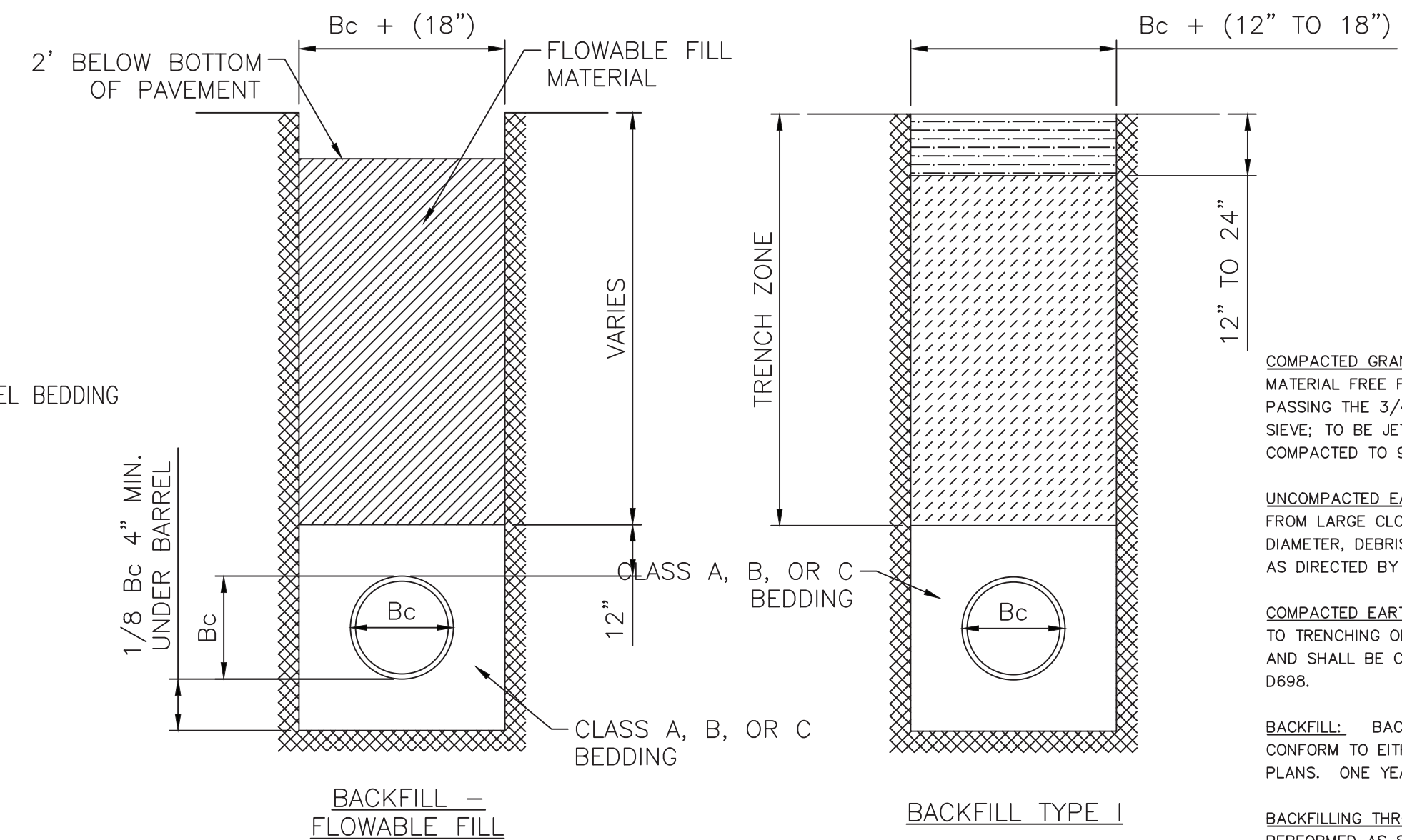
- A. CLASS C ORDINARY BEDDING SHALL BE USED FOR ALL RIGID PIPE UNLESS WET CONDITIONS ARE ENCOUNTERED.
- B. CLASS C IMPROVED BEDDING SHALL BE USED FOR WET CONDITIONS EXISTING IN THE TRENCH, AS DIRECTED BY THE ENGINEER, AT NO ADDITIONAL COST TO THE OWNER. THE DIMENSIONS SHALL BE EQUAL TO THAT REQUIRED FOR "ROCK" EXCAVATION (SEE SPECIFICATIONS).

HEAVY DUTY COUPLER NOTES

- 1. BOLTS TO BE A-36 1-1/2" DIAMETER.
- 2. BOLTS, NUTS, WASHERS AND SLEEVES TO BE ZINC PLATED.
- 3. WASHERS TO BE 3-1/2" O.D. X 7 GAUGE.
- 4. SHIP WITH NUTS AND WASHERS PLACED ON BOLTS.



HEAVY DUTY (H.D.) COUPLER
NOT TO SCALE



Bc = OUTSIDE PIPE DIAMETER
COMPACTED GRANULAR BACKFILL
UNCOMPACTED EARTH BACKFILL
COMPACTED EARTH BACKFILL

COMPACTED GRANULAR BACKFILL MATERIAL SHALL BE AN APPROVED SAND MATERIAL FREE FROM DEBRIS, ORGANIC MATERIAL AND STONES WITH 100% PASSING THE 3/4" SIEVE AND NOT MORE THAN 15% PASSING A NO. 200 SIEVE; TO BE LETTED AND MECHANICALLY VIBRATED INTO PLACE AND COMPACTED TO 95% DENSITY AS DETERMINED BY ASTM D698.

UNCOMPACTED EARTH BACKFILL MATERIAL MAY BE NATURAL SOIL FREE FROM LARGE CLODS OR STONES, BRUSH, ROOTS MORE THAN 2 INCHES IN DIAMETER, DEBRIS, AND JUNK. FLOODING WITH WATER SHALL BE PROVIDED AS DIRECTED BY THE ENGINEER.

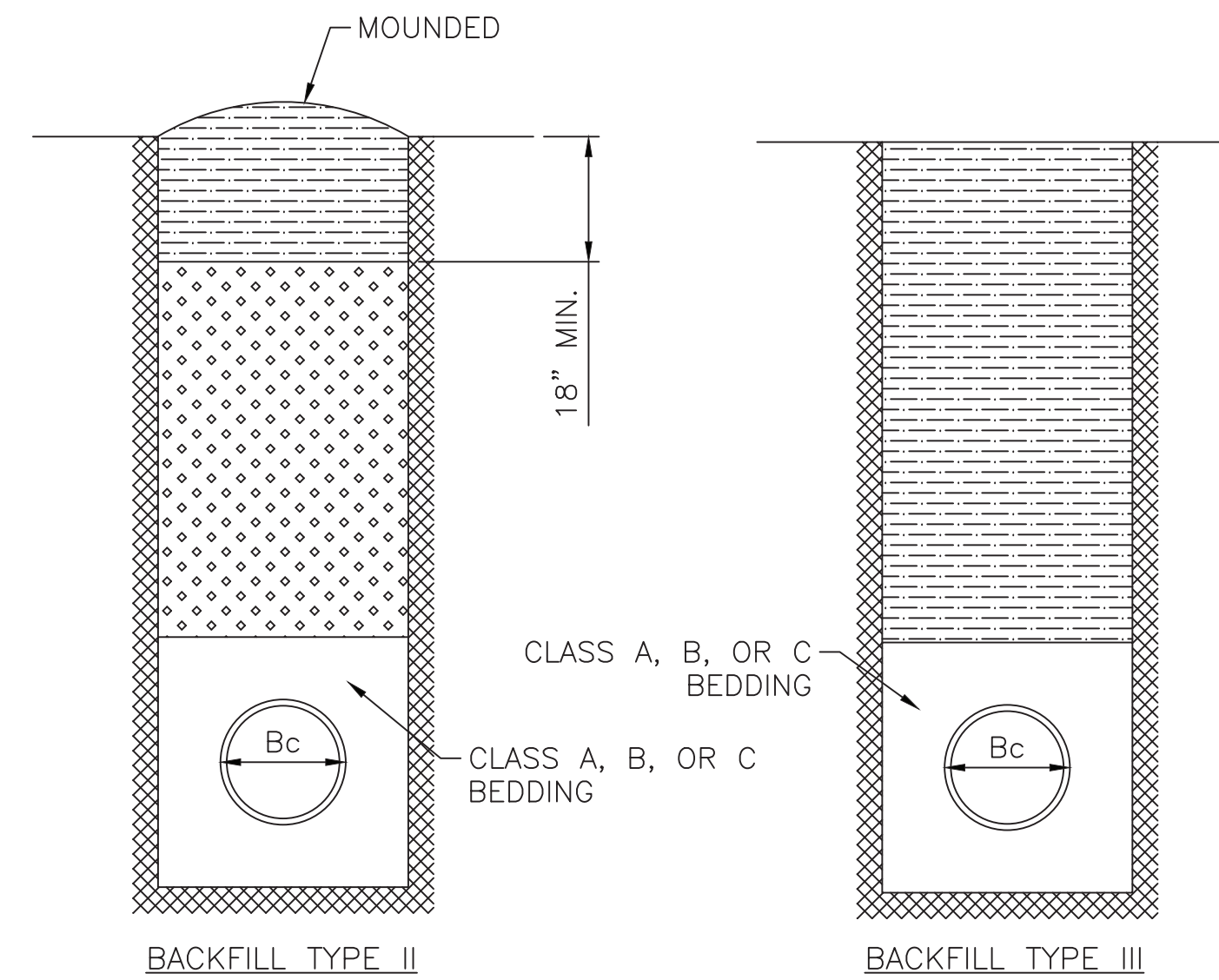
COMPACTED EARTH BACKFILL SHALL CONSIST OF MATERIAL EXISTING PRIOR TO TRENCHING OR SELECTED MATERIAL AS DIRECTED BY THE ENGINEER, AND SHALL BE COMPACTED TO 90% DENSITY AS DETERMINED BY ASTM D698.

BACKFILL: BACKFILL MATERIAL AND COMPACTION REQUIREMENTS SHALL CONFORM TO EITHER TYPE I, TYPE II OR TYPE III AS SPECIFIED IN THE PLANS. ONE YEAR MAINTENANCE WILL BE REQUIRED ON ALL BACKFILL.

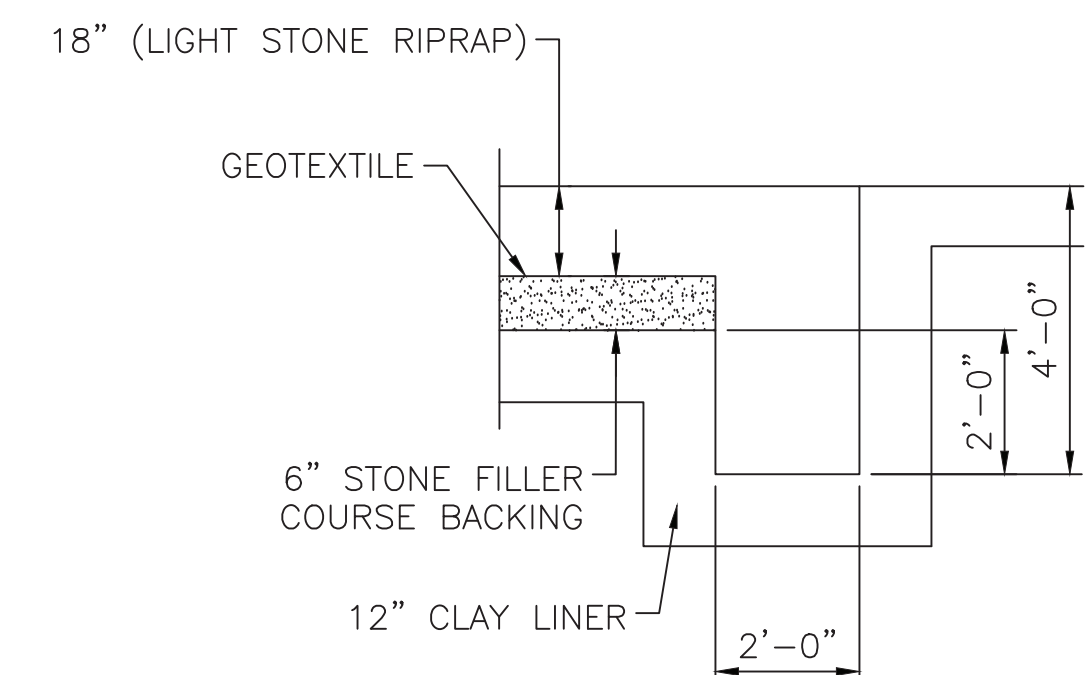
BACKFILLING THROUGH ROCK: BACKFILLING THROUGH ROCK SHALL BE PERFORMED AS SPECIFIED IN THE PARAGRAPH BACKFILL ABOVE, EXCEPT THAT THE PIPE ZONE IS INCREASED TO PROVIDE EIGHTEEN (18) INCHES OF COVER OVER THE PIPE. WHEN APPROVED BY THE ENGINEER THE REMAINDER OF THE BACKFILL MAY BE EXCAVATED ROCK PROVIDED THE EXCAVATED ROCK HAS BEEN BROKEN UP SO THAT EARTH AND ROCK WILL THOROUGHLY MIX AND NOT RESULT IN VOIDS AROUND THE LARGER PIECES OF ROCK. ANY EXCESS ROCK REMAINING AFTER THE TRENCH HAS BEEN BACKFILLED SHALL BE REMOVED OR WASTED AS DIRECTED BY THE ENGINEER.

BACKFILLING UNDER PAVEMENT: BACKFILLING UNDER EXISTING OR PROPOSED PAVEMENT SHALL BE PERFORMED AS BACKFILL TYPE I OR BACKFILL - FLOWABLE FILL TO A LEVEL OF TWO (2) FEET FROM THE BOTTOM OF THE PAVEMENT. THE REMAINDER OF THE TRENCH SHALL BE BACKFILLED WITH SELECTED MATERIAL, SUFFICIENTLY DAMP TO BE PROPERLY COMPACTED IN LAYERS NOT EXCEEDING SIX (6) INCHES IN DEPTH. COMPACTION SHALL BE PERFORMED WITH MECHANICAL TAMPERS AND CONTINUED UNTIL A RELATIVE DENSITY OF 100 PERCENT OF STANDARD DENSITY, IN CONFORMANCE WITH ASTM D698 IS ATTAINED.

BACKFILLING UNDER GRAVEL STREETS: WHERE THE TRENCH CROSSES OR IS IN EXISTING GRAVEL SURFACED STREETS, THE BACKFILL SHALL BE COMPACTED AS PROVIDED IN THE PARAGRAPH "BACKFILLING UNDER PAVEMENT".



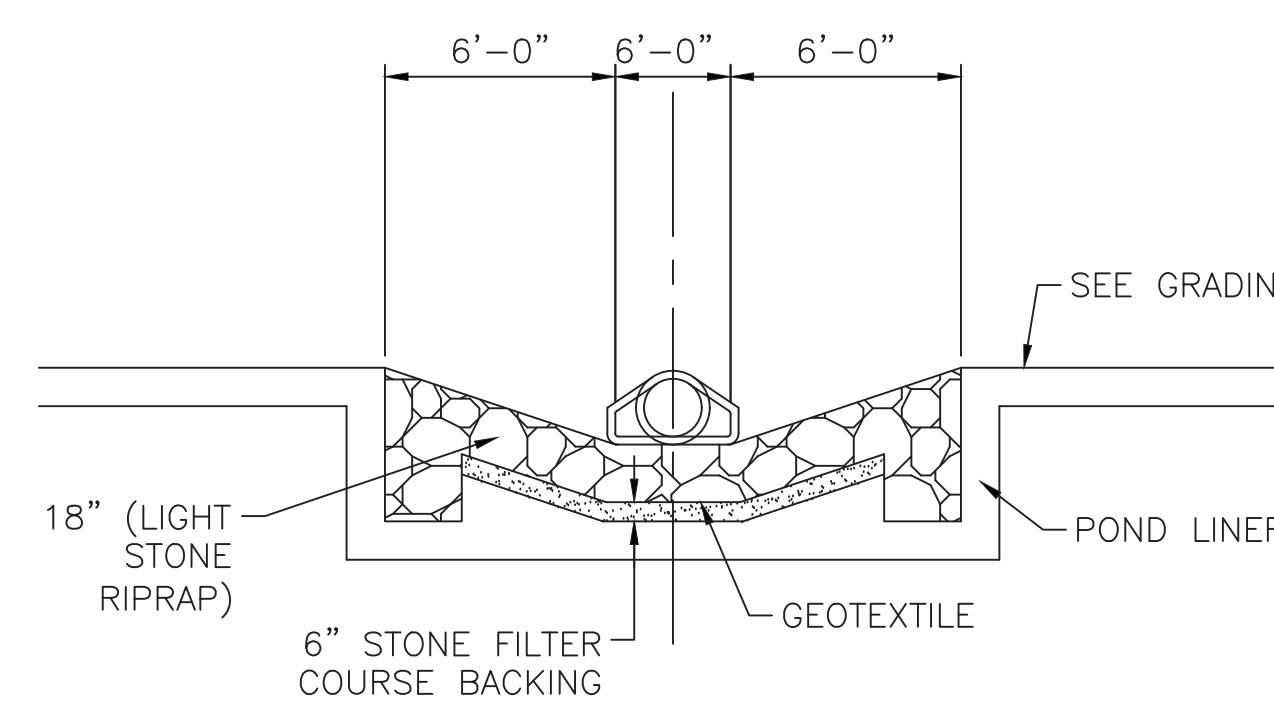
TRENCH ZONE BACKFILLING
NOT TO SCALE



TOEWALL NOTES

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

TYPICAL SECTION THRU TOEWALL
NOT TO SCALE



SCOUR PROTECTION
NOT TO SCALE



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DRAWN BY	CRG - PEC	DATE	04/2021
DESIGNED BY	CRG - PEC	DATE	04/2021
APPROVED BY	RAK - PEC	DATE	04/2021

SCALE:	NONE
W.R. NO.	XXXXXX



TITLE	PAWNEE SUBSTATION BEDDING AND BACKFILL DETAILS	
DWG. NO.	SKXXXX_SI05	
SHEET NO.	8	OF 8
REV.		0