

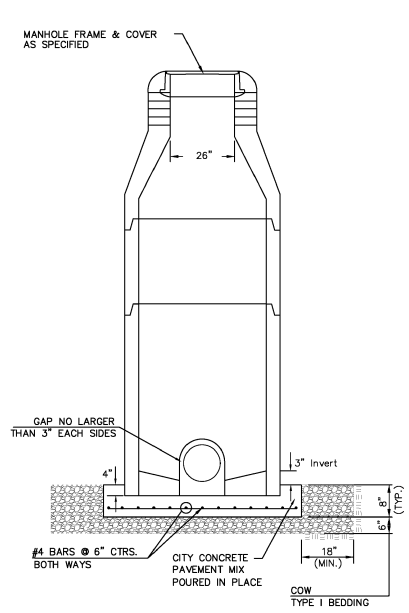
REVISION	DATE

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 1845 FAIRMOUNT ST.
 WICHITA, KANSAS 67260-0047
 Phone 316-978-3030

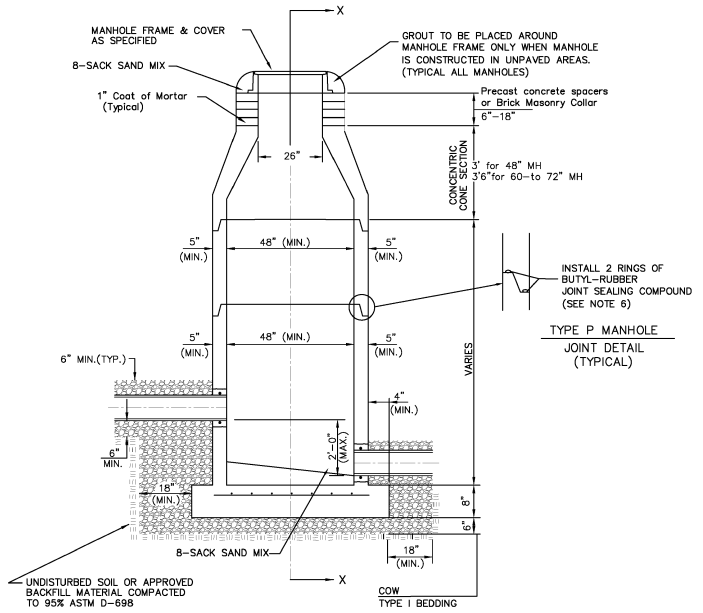
Department of Administration
 Office of Facilities & Procurement Management
 Design, Construction & Compliance
 800 SW Jackson, Suite 700
 Topeka, Kansas 66612-1216
 Phone 785-296-8899

WICHITA STATE UNIVERSITY
INNOVATION CAMPUS INFRASTRUCTURE
PHASE 1
 1845 FAIRMOUNT ST.
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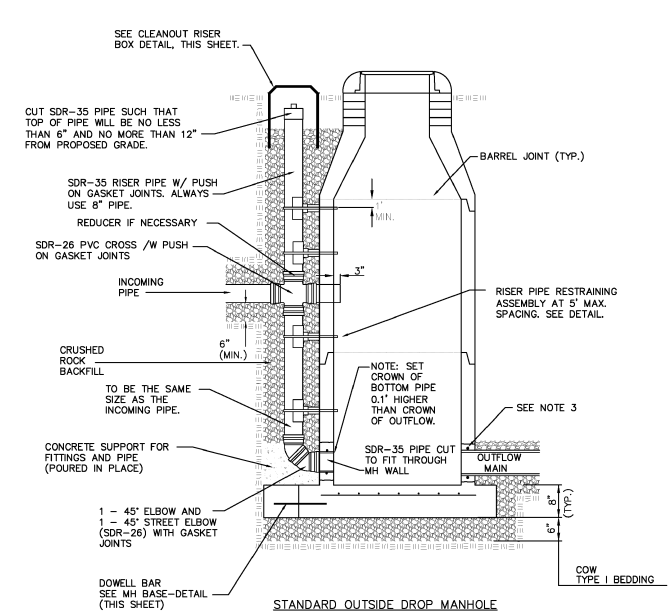
MANHOLE DETAILS
 A-012817
 05 OF 34
 ORIGINAL CONTRACT DOCUMENTS



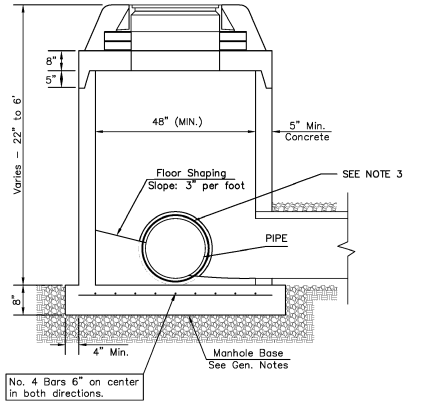
DOG HOUSE MANHOLE
 (OVER EXISTING PIPE)
 Not to Scale



STANDARD MANHOLE
 Not to Scale



STANDARD OUTSIDE DROP MANHOLE
 Not to Scale

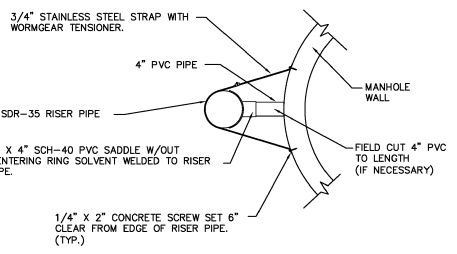


SHALLOW MANHOLE
 Not to Scale

= COW TYPE I BEDDING
 = UNDISTURBED SOIL

PRECAST MANHOLE GENERAL NOTES

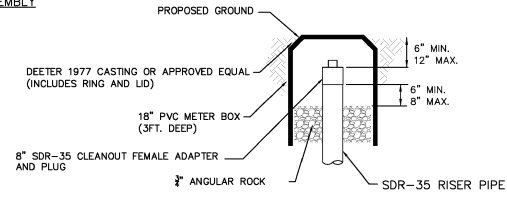
- ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISIONS OF A.S.T.M. C478 AS MODIFIED BY THE SPECIFICATIONS.
- NON-SHRINK GROUT SHALL BE NON-METALLIC TYPE.
- APPROVED FLEXIBLE WATERSTOP SHALL BE INSTALLED TO JOIN THE SEWER PIPE TO THE MANHOLE WALL. THE SEWER PIPE SHALL BE SUPPORTED WITH CRUSHED ROCK 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.
- ALL MANHOLE SECTION JOINTS THAT WILL BE IN GROUNDWATER OR GREATER THAN 12" DEEP SHALL BE WRAPPED WITH AN EXTERNAL JOINT SEAL PER SECTION 804.4 OF STANDARD SPECIFICATIONS, AS INDICATED BY THE PLANS.
- PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO THE MANHOLE BASE FOR DOG HOUSE MANHOLES.
- 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. 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.
- WALL THICKNESS SHALL BE 1" GREATER THAN MANHOLE DIAMETER IN FEET.
- OPENINGS SHALL BE CORE DRILLED INTO THE MANHOLE WALL WHEN OUTSIDE DROPS ARE CONSTRUCTED ON EXISTING MANHOLES. SUCH OPENINGS DRILLED 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. 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 STANDARD 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 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.
- PRECAST CONCRETE SPACERS OR BRICK MASONRY COLLAR SHALL BE INSTALLED BETWEEN THE CAST IRON FRAME AND THE CONCENTRIC CONE. THE COLLAR WILL HAVE 8" WALLS AND A VERTICAL HEIGHT OF 6" MINIMUM AND 18" MAXIMUM. A 1" COAT OF MORTAR WILL BE PLASTERED ON THE OUTSIDE OF THE COLLAR. THE USE OF PRE-CAST CONCRETE SPACERS FOR MANHOLE TOP ADJUSTMENT IS ALSO ALLOWED.
- THE 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.
- REFER TO PLANS FOR SIZE OF OUTSIDE DROP RISER, SADDLES AND CROSS.



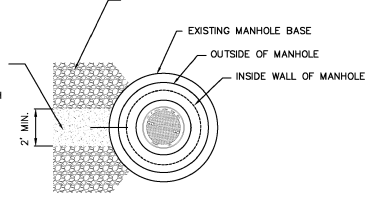
RISER PIPE RESTRAINING ASSEMBLY
 Not to Scale

SANITARY SEWER MANHOLE DIAMETERS

DIAMETER	DEPTH	PIPE SIZE
4'	0'-15'	8"-18"
5'	>15'-30'	21"-30"
6'	>30'	36"-60"



CLEANOUT RISER BOX DETAIL
 Not to Scale



MH BASE DETAIL
 Not to Scale

AS-BUILT PLANS - APRIL 2016

CITY OF WICHITA
 PUBLIC WORKS & UTILITIES
 ENGINEERING DIVISION

REVISED JANUARY 2015

PRECAST SANITARY SEWER MANHOLE

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

SS-101

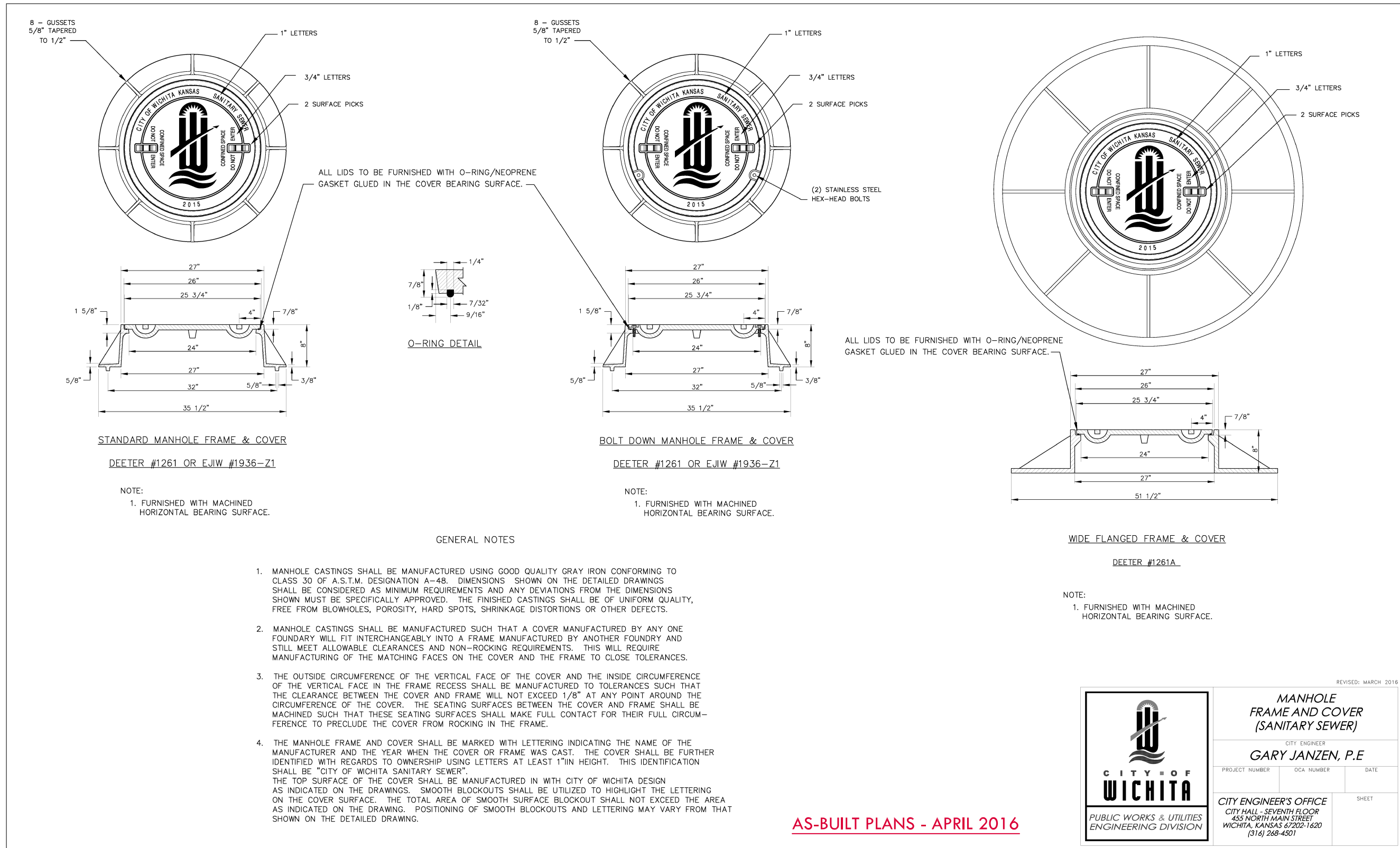
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MH FRAME & COVER DETAILS
 A-012817
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 ORIGINAL CONTRACT DOCUMENTS



AS-BUILT PLANS - APRIL 2016



REVISED: MARCH 2016

MANHOLE FRAME AND COVER (SANITARY SEWER)

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

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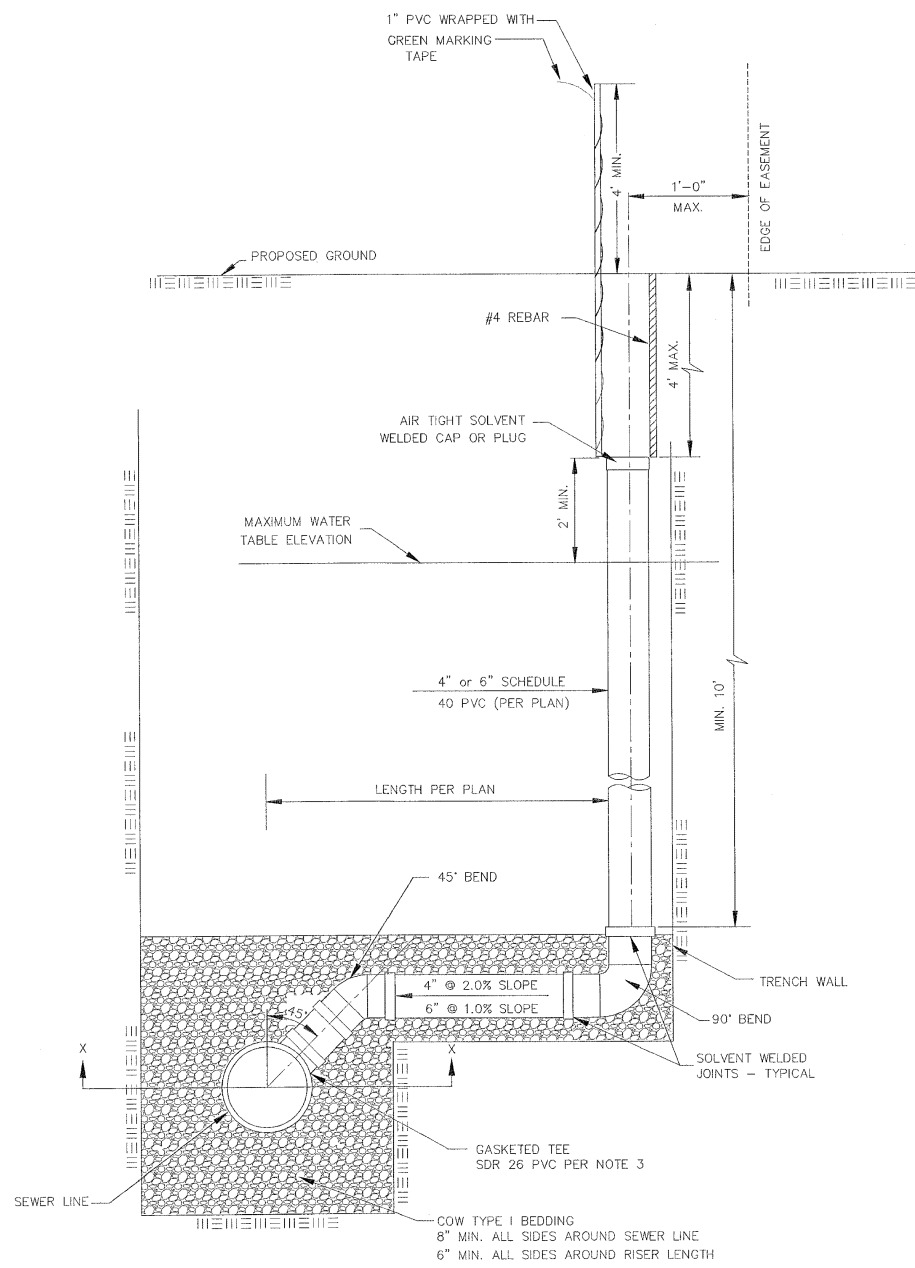
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SANITARY SEWER RISER DETAILS
 A-012817
 07 OF 34
 ORIGINAL CONTRACT DOCUMENTS

GENERAL NOTES

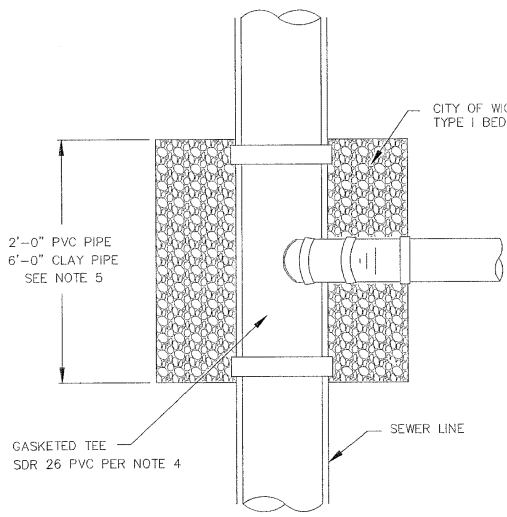
- APPLICATION.** Risers shall be installed to serve all lots or tracts where the sanitary sewer main is below the water table, where the sanitary sewer main depth is greater than 12' below the proposed ground elevation, where the main is adjacent to a pond or wherever service lines would have to cross under storm sewer pipe. Installation of risers because of field conditions shall be as approved by the City Engineer. The location of the risers to serve developed property shall be approved by the property owner and the Construction Engineer.
- MANHOLE STUB RISERS.** Manhole stub risers be installed in manholes where locations of manholes will provide satisfactory service connection as determined by the Construction Engineer. The vertical distance between the flowline of the manhole stub and the flowline of the sanitary sewer line out of the manhole shall not exceed 2'. Risers shall be utilized at manholes as indicated in Note 1. Manhole stub riser shall be set such that the top of the stub is not lower than the top of the sanitary sewer line.
- SIZING.** Risers shall be sized according to the plans and riser table where risers are indicated by the plans. Where risers are required because of field conditions, the risers shall be 6" diameter for commercial or industrial properties and 4" or 6" diameter for residential properties, based on lot size and sanitary sewer main depth. Sizing of risers shall be approved by the construction Engineer prior to installation.
- RISER MATERIAL.** Risers shall be constructed of Schedule 40 PVC Pipe, meeting the requirement of the latest revision of A.S.T.M.. All pipe joints shall be solvent welded. Full body tee shall be SDR 26 PVC pipe.
- ROCK ENCASEMENT.** Riser connection to clay pipe sanitary sewers shall be rock encased both ways from the riser centerline. The rock encasement shall extend three feet from the riser centerline or stop at the first sanitary sewer pipe joint within three feet of the riser centerline. Riser connections to PVC Sanitary sewer mains shall be rock encased one foot each way from the riser centerline. Crushed rock 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.
- BEDDING.** Beyond the limits of the rock encasement, bedding around the sanitary sewer riser shall be compacted Pipe Bedding Type 1 or 2. The bedding shall be placed and compacted from the depth of the sanitary sewer main to the top of the sanitary sewer riser pipe. Compacted Pipe Bedding Type 1 or 2 shall be required for all risers whether constructed in vertical wall or sloped wall trenches. Bedding material and construction practices shall be approved by the Construction Engineer prior to installation.
- SUPPORT OF RISERS.** Sanitary sewer riser pipe shall be supported during trench backfill. The riser pipe shall be held in a vertical position at all times until trench backfill and compaction has been completed. Contractor's methods for supporting and back filling the riser pie shall be approved by the Construction Engineer.
- PLUGGING.** The ends of the riser pipes and manhole stubs shall be plugged using an airtight solvent welded cap or plug. Cap or plug fittings shall be approved by the Construction Engineer prior to installation. Caps or plugs which do not provide an airtight seal will not be accepted.
- TOP OF THE RISER PIPE.** The top elevation of the sanitary sewer riser pipe shall be built per plan elevations, unless otherwise directed by the Construction Engineer. Where riser elevations are not shown on the plans, the top of the risers shall be set at an elevation four feet below the proposed ground surface. If ground water is encountered, the top of the riser pipe shall be set at an elevation 2' (min.) above the maximum water table elevation, regardless of the riser elevation shown on the plans.
- MARKING.** Locations of the ends of the sanitary sewer riser pipe shall be marked by installing 1" PVC from the top of the riser to a minimum of 4" above the top of finished grade. No. 4 rebar shall be placed centered over the riser from the cap to the existing ground. The 1" PVC pipe shall be wrapped with green colored plastic tape, for the full length above ground surface. The green tape shall be 4 mil Polyethylene film with a minimum width of three inches, specifically manufactured for the purpose of identification of underground sewers.
- LOCATION MEASURES.** The project inspector shall record and document the location of all risers constructed as measured from the nearest manhole, indicate the direction from the manhole, the direction and distance from the main, riser size, and elevation of the top of the riser in tabular format.
- RISER LOCATION.** the riser shall be located per plan if shown. If not shown on the plan, the riser shall be located at the center of the lot, within one foot of the property side of the easement for the lot being served. All riser locations shall be approved by the Construction Engineer prior to installation.
- PAYMENT.** "Riser Assembly, Vertical" shall be paid for at the contract unit price per each, which shall be full compensation for all pipe, fittings, marking tape, length of backfill, labor, site restoration, and any other items necessary to complete the work.

 "Riser Assembly, Manhole Stub" shall be paid for at the contract unit price per each, which shall be full compensation for all labor material and incidentals necessary to complete the work including all pipe, fittings, rock encasement, and all other items as required and listed for "Riser Assembly, Vertical"



SANITARY SEWER RISER TABLE							FOR INFORMATION ONLY	
NUMBER	TYPE	LOCATION			STATION	DIRECTION	APPROXIMATE LENGTH	
		LOT NO.	BLOCK NO.	LINE NO.			VERTICAL (Ft)	HORIZONTAL (Ft)
1	4" MANHOLE CONNECTION							
2	6" MANHOLE CONNECTION							
3	4" TEE							
4	6" TEE							

NOTE: TABLE FOR REFERENCE ONLY AND SHOULD BE ON EACH APPLICABLE PLAN SHEET.



NOTE: NON SHEAR COUPLING TO BE USED WHEN HOOKING TO CLAY PIPE.

NOTE: RISER PIPE REQUIREMENTS AT MANHOLE CONNECTION SHALL BE SIMILAR TO THOSE SHOWN ABOVE.

TYPICAL SECTION X-X

AS-BUILT PLANS - APRIL 2016



REVISED: JULY 2015

VERTICAL RISER ASSEMBLY SEWER DETAIL

CITY ENGINEER
GARY JANZEN, P.E.

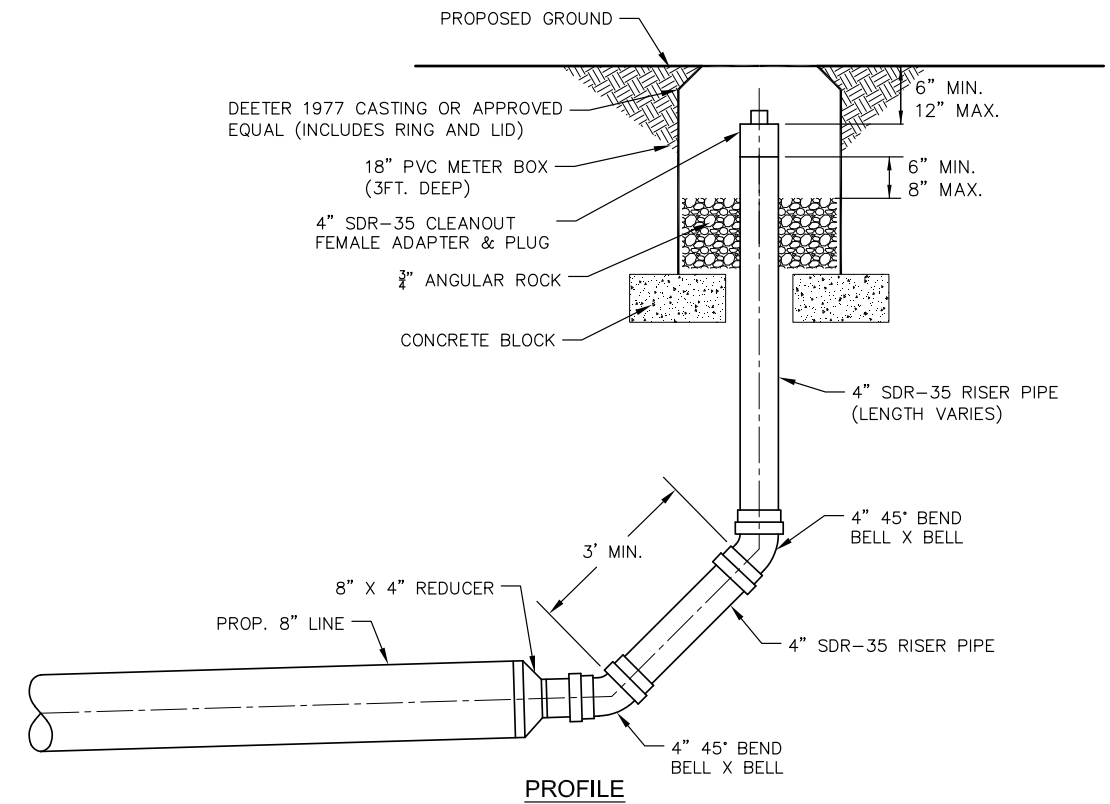
PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE
 CITY HALL - SEVENTH FLOOR
 455 NORTH MAIN STREET
 WICHITA, KANSAS 67202-1620
 (316) 268-4501

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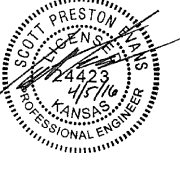
SS-103

NOTE: RISERS SHOWN ON THESE PLANS SHALL BE PRIVATELY OWNED AND MAINTAINED.



PROFILE
4" CLEANOUT ASSEMBLY DETAIL

NOTE: NO TAPS SHALL BE ALLOWED ON THE 4" CLEANOUT. CLEANOUTS SHALL BE REMOVED WHEN 8" SANITARY LINES ARE EXTENDED WITH FUTURE PROJECTS.



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SANITARY CLEANOUT ASSEMBLY
A-012817
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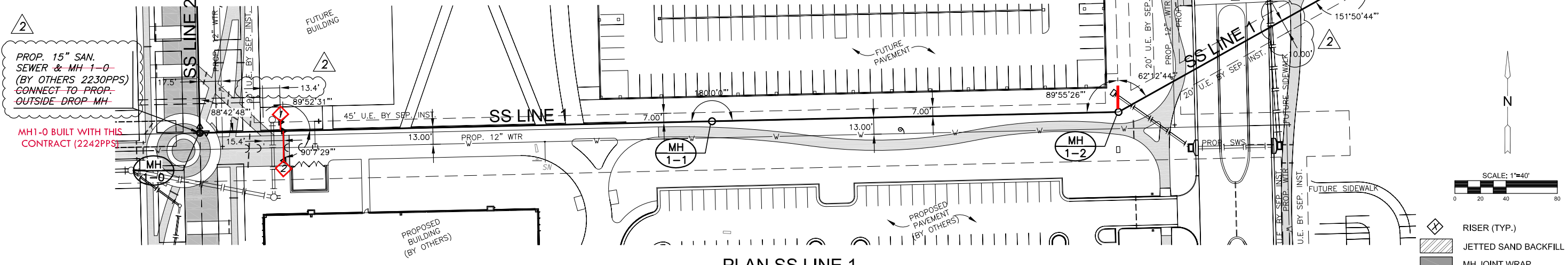
AS-BUILT PLANS - APRIL 2016

NOTE:

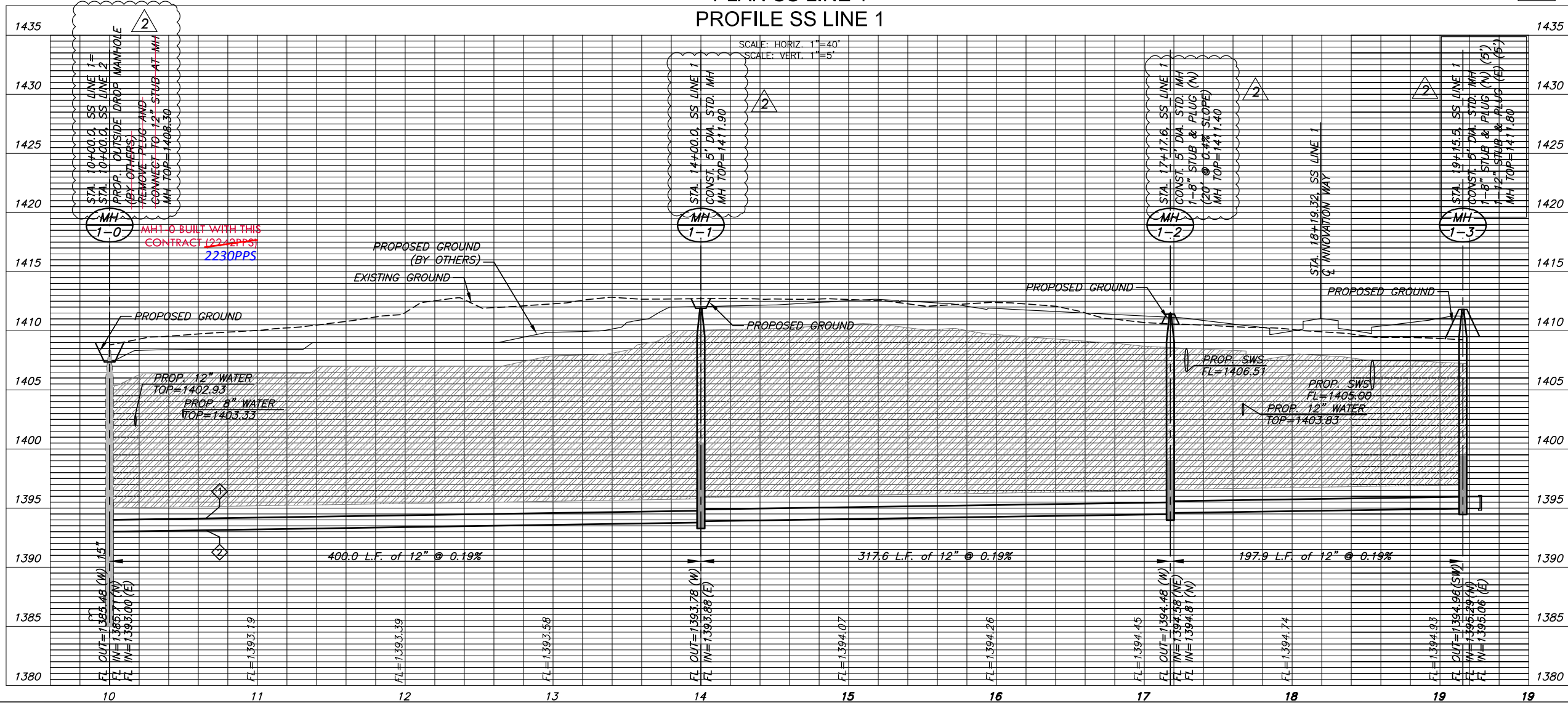
- 1) CONTRACTOR TO VERIFY THE DEPTH AND LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- 2) SEE RISER DETAIL ON SHEET 07.
- 3) 2230PPS MUST BE ACCEPTED BY CITY OF WICHITA BEFORE CONNECTION.
- 4) JETTED SAND IS SHOWN THROUGHOUT THESE PLANS FOR TRENCH BACKFILL. IT SHALL BE UP TO THE CONTRACTOR WHETHER TO MECHANICALLY COMPACT ON-SITE SOILS OR INSTALL JETTED SAND ABOVE THE SHALE SOIL LAYER FROM MH 1-1 TO MH 1-2.

NO.	TYPE	MH LOCATION		FOR INFORMATION ONLY	
		LINE NO.	STA./DIRECTION	VERTICAL	HORIZONTAL
1	6" - SERVICE CONNECTION	1	STA. 10+63.14 / N	14.5'	7'
2	6" - SERVICE CONNECTION	1	STA. 10+65.14 / S	14.5'	23'

AS-BUILT PLANS - APRIL 2016



**PLAN SS LINE 1
PROFILE SS LINE 1**



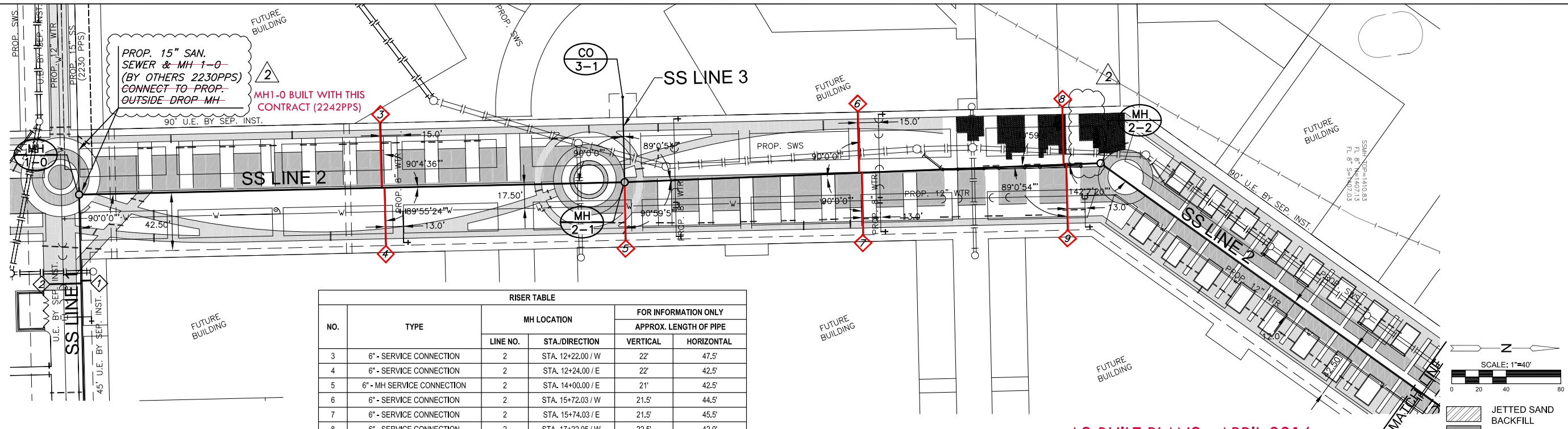
NO.	REVISIONS	DATE
2	ADDENDUM 2	
1		

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SANITARY SEWER LINE 1
 A-012817
 09 OF 34
 ORIGINAL CONTRACT DOCUMENTS

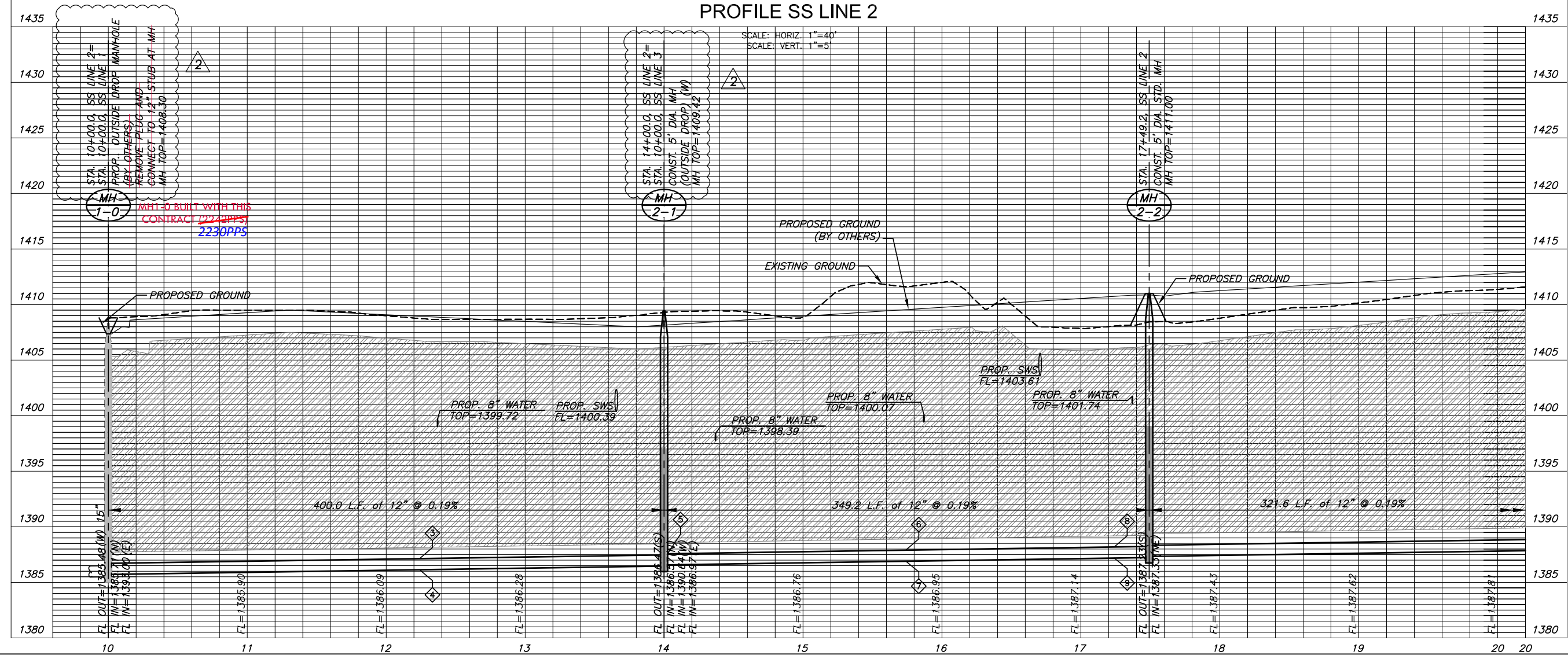


NO.	TYPE	MH LOCATION		FOR INFORMATION ONLY	
		LINE NO.	STA./DIRECTION	VERTICAL	HORIZONTAL
3	6" - SERVICE CONNECTION	2	STA. 12+22.00 / W	22'	47.5'
4	6" - SERVICE CONNECTION	2	STA. 12+24.00 / E	22'	42.5'
5	6" - MH SERVICE CONNECTION	2	STA. 14+00.00 / E	21'	42.5'
6	6" - SERVICE CONNECTION	2	STA. 15+72.03 / W	21.5'	44.5'
7	6" - SERVICE CONNECTION	2	STA. 15+74.03 / E	21.5'	45.5'
8	6" - SERVICE CONNECTION	2	STA. 17+22.05 / W	22.5'	42.0'
9	6" - SERVICE CONNECTION	2	STA. 17+24.05 / E	22.5'	48.0'

- NOTE:**
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 - 2) SEE RISER DETAIL ON SHEET 07.
 - 3) 2230PPS MUST BE ACCEPTED BY CITY OF WICHITA BEFORE CONNECTION.

AS-BUILT PLANS - APRIL 2016

PLAN SS LINE 2
PROFILE SS LINE 2



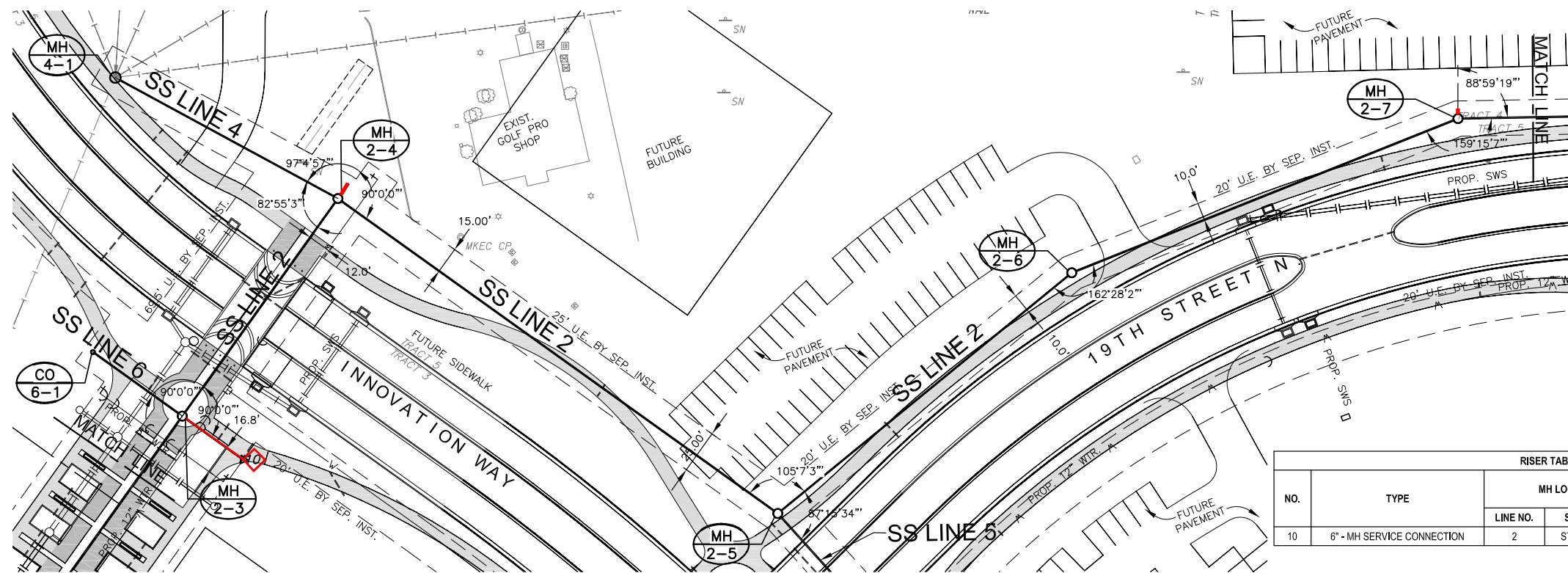
REVISION	DATE
1	ADDENDUM 2
2	REVISIONS
	10/07/15
	9/21/15

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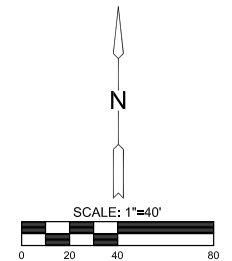
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SANITARY SEWER LINE 2
A-012817
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NOTE:
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 2) SEE RISER DETAIL ON SHEET 07.
 3) JETTED SAND IS SHOWN THROUGHOUT THESE PLANS FOR TRENCH BACKFILL. IT SHALL BE UP TO THE CONTRACTOR WHETHER TO MECHANICALLY COMPACT ON-SITE SOILS OR INSTALL JETTED SAND ABOVE THE SHALE SOIL LAYER FROM MH 2-4 TO MH 2-9.

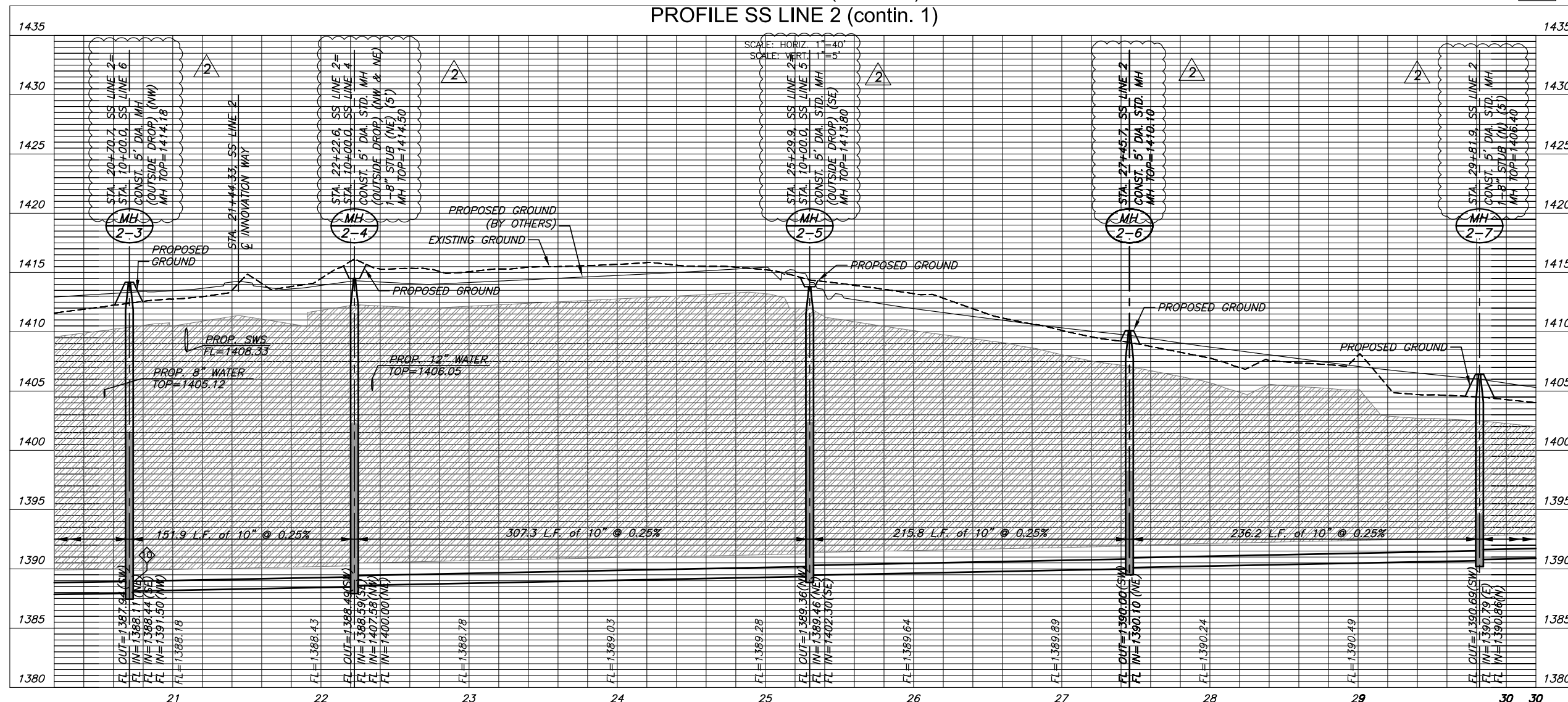
NO.	TYPE	MH LOCATION		FOR INFORMATION ONLY	
		LINE NO.	STA./DIRECTION	APPROX. LENGTH OF PIPE	
				VERTICAL	HORIZONTAL
10	6" - MH SERVICE CONNECTION	2	STA. 20+70.73 / SE	25'	42.5'



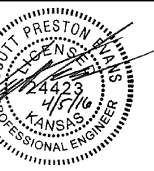
- RISER (TYP.)
- JETTED SAND BACKFILL
- MH JOINT WRAP

PLAN SS LINE 2 (contin. 1)
 PROFILE SS LINE 2 (contin. 1)

AS-BUILT PLANS - APRIL 2016



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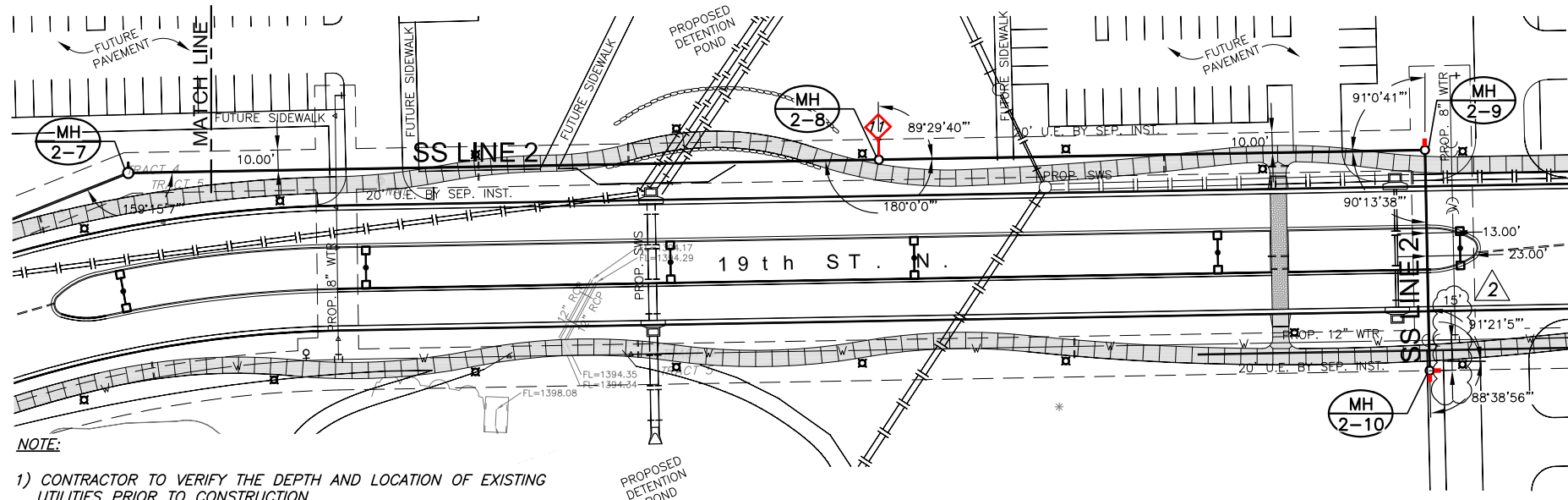
NO.	REVISIONS	DATE
2	REVISIONS	10/07/15

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 Phone 316-978-3030

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WICHITA STATE UNIVERSITY
 INNOVATION CAMPUS INFRASTRUCTURE
 PHASE 1
 1845 FAIRMOUNT ST.
 WICHITA, KANSAS 67260-0023
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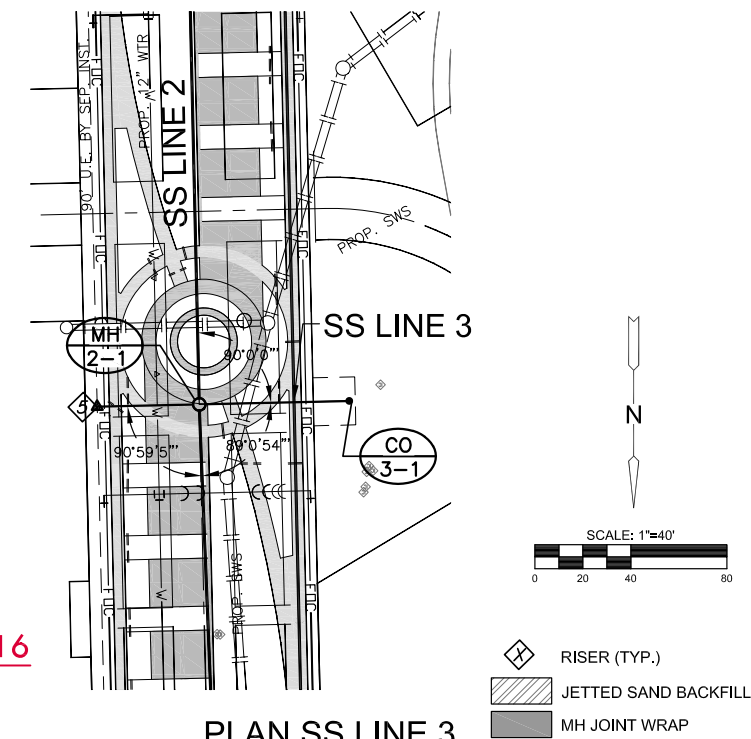
SANITARY SEWER LINE 2
 A-012817
 11 OF 34
 ORIGINAL CONTRACT DOCUMENTS



- NOTE:
- 1) CONTRACTOR TO VERIFY THE DEPTH AND LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
 - 2) SEE RISER DETAIL ON SHEET 07.
 - 3) JETTED SAND IS SHOWN THROUGHOUT THESE PLANS FOR TRENCH BACKFILL. IT SHALL BE UP TO THE CONTRACTOR WHETHER TO MECHANICALLY COMPACT ON-SITE SOILS OR INSTALL JETTED SAND ABOVE THE SHALE SOIL LAYER FROM MH 2-4 TO MH 2-9.

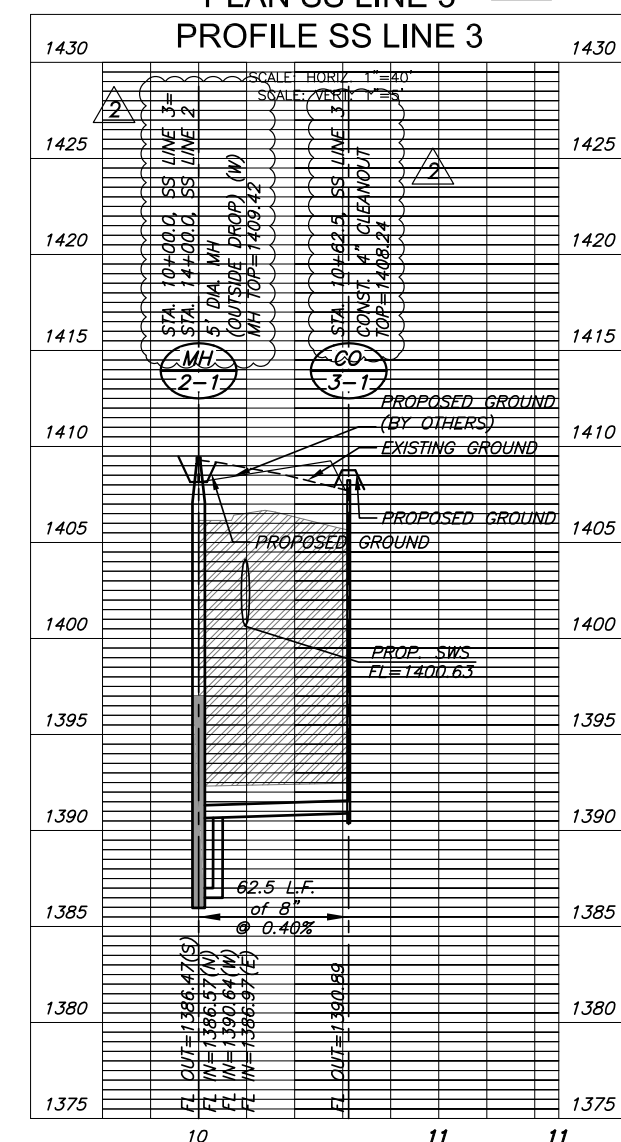
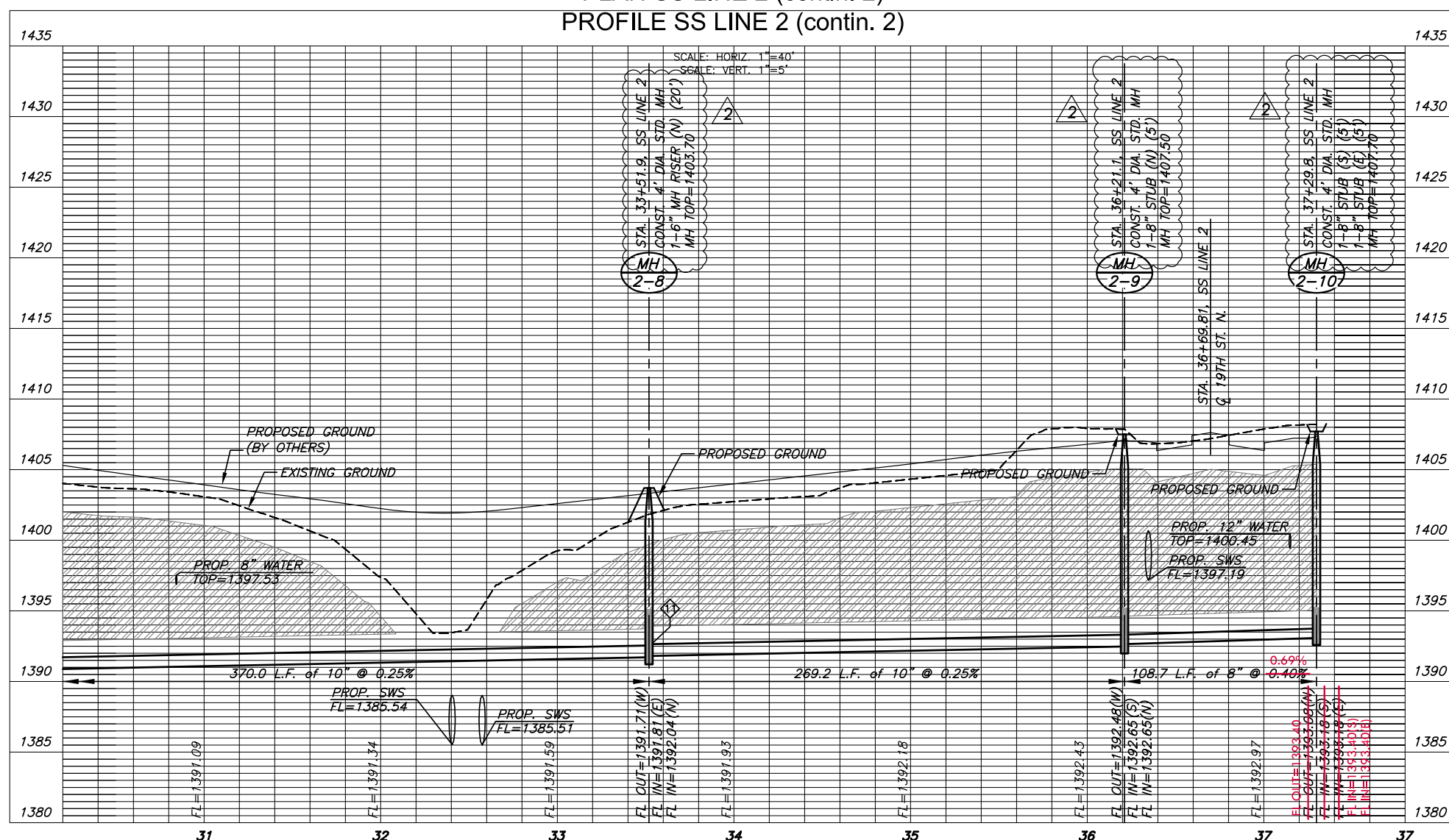
RISER TABLE					
NO.	TYPE	MH LOCATION		FOR INFORMATION ONLY	
		LINE NO.	STA./DIRECTION	VERTICAL	HORIZONTAL
11	6" - MH SERVICE CONNECTION	2	STA. 33+51.93 / N	10.5'	10'

AS-BUILT PLANS - APRIL 2016



PLAN SS LINE 2 (contin. 2)
PROFILE SS LINE 2 (contin. 2)

PLAN SS LINE 3
PROFILE SS LINE 3



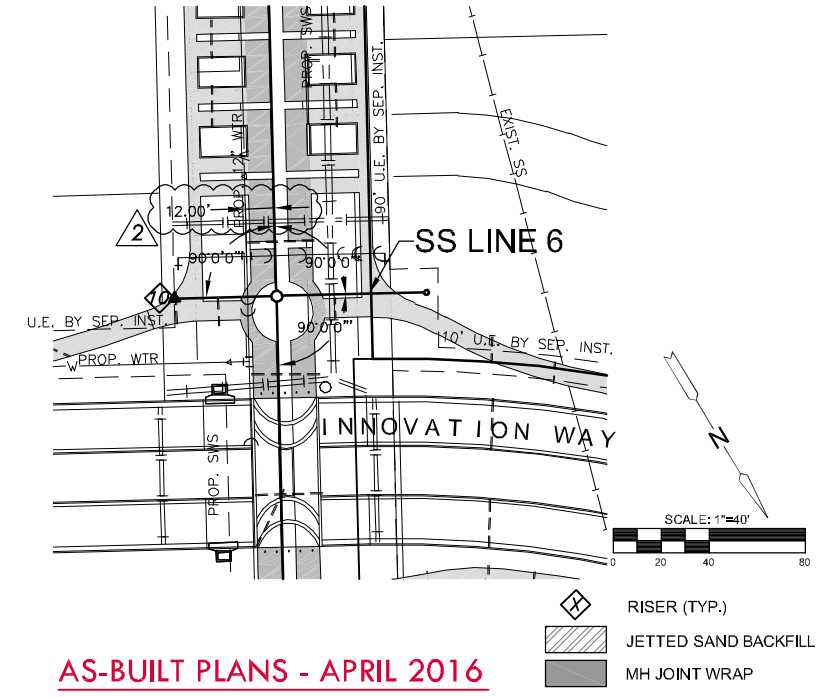
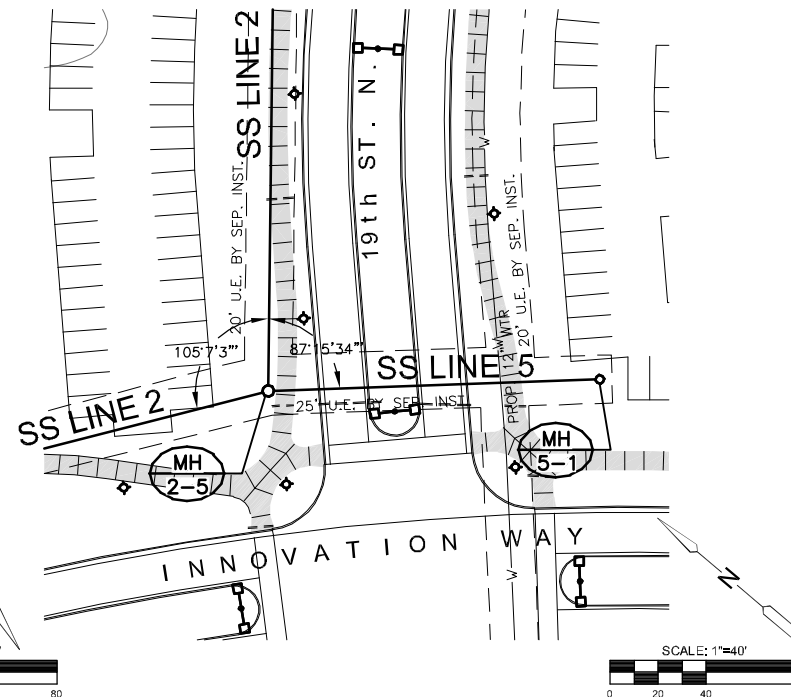
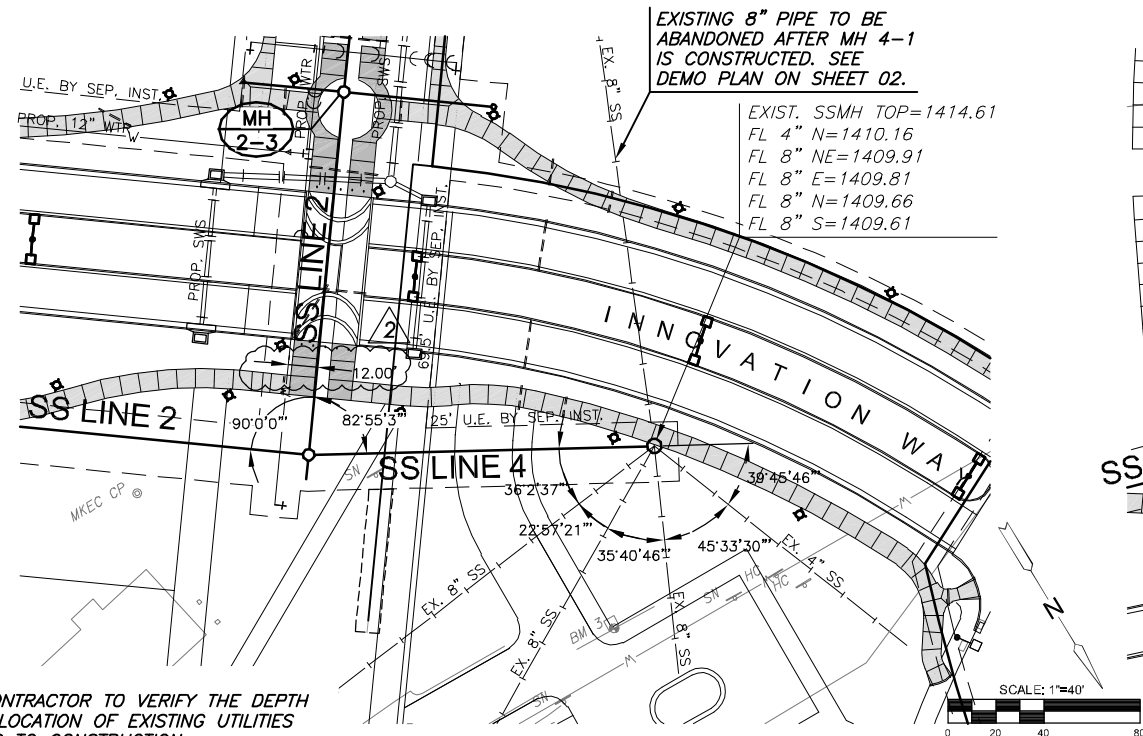
NO.	REVISIONS	DATE
1		
2		

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SANITARY SEWER
LINE 2 & 3
A-012817
12 OF 34
ORIGINAL
CONTRACT
DOCUMENTS

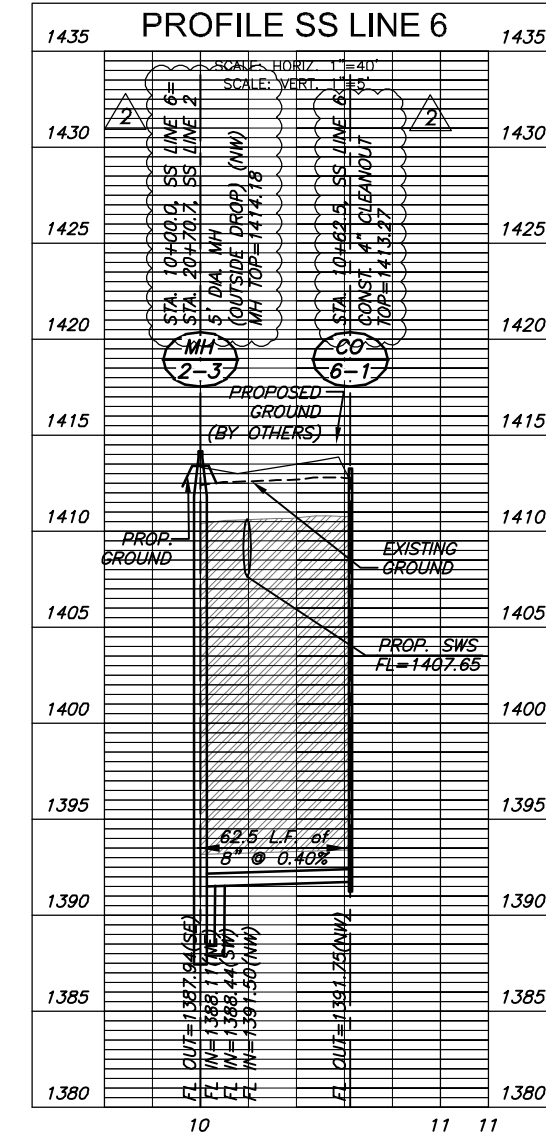
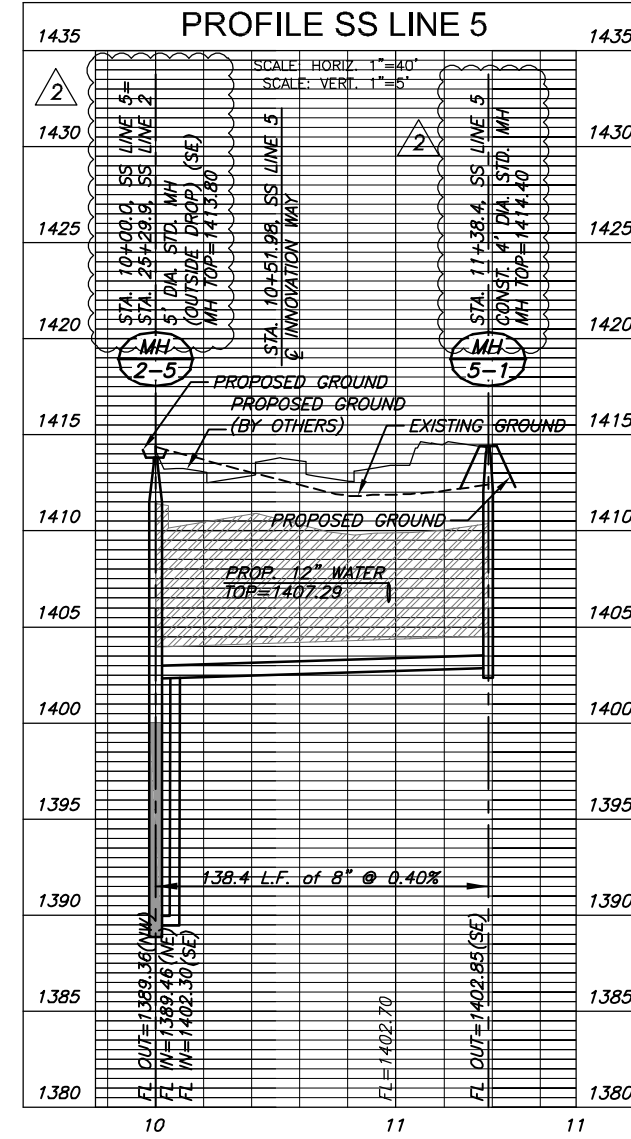
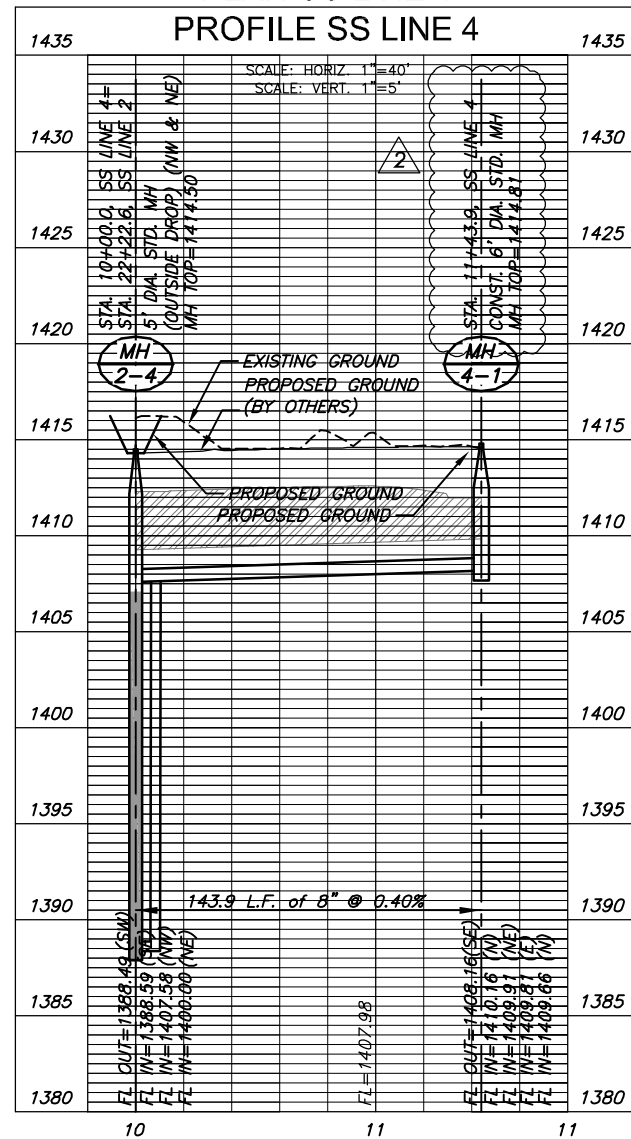


- NOTE:**
- 1) CONTRACTOR TO VERIFY THE DEPTH AND LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
 - 2) SEE RISER DETAIL ON SHEET 07.
 - 3) SEE CLEANOUT DETAIL ON SHEET 08.

PLAN SS LINE 4

PLAN SS LINE 5

PLAN SS LINE 6



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NO.	REVISION	DATE
2	ADDENDUM 3	10/25/15

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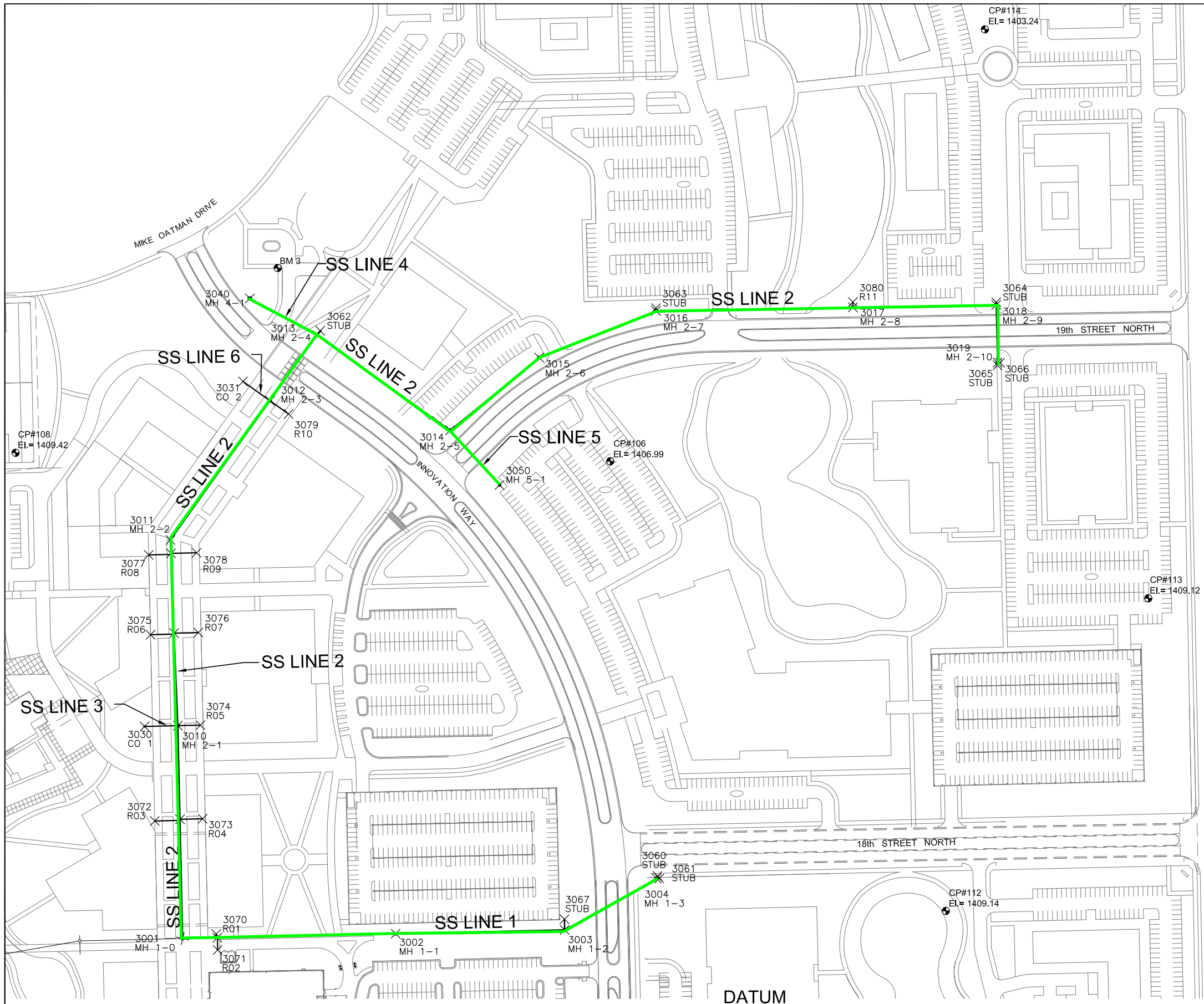
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SANITARY SEWER LINES 4, 5 & 6

A-012817

13 OF 34

ORIGINAL CONTRACT DOCUMENTS



EVERY ATTEMPT HAS BEEN MADE TO INSURE ALL COORDINATE VALUES SHOWN ARE AN ACCURATE AND TRUE REPRESENTATION OF THE CURRENT PLANS. ALL VALUES ARE TO BE CONFIRMED WITH THE FINAL SIGNED PLAN SET BEFORE USE.

1 - The Project Horizontal Datum is based on the NAD83, Kansas State Plane Coordinate System, South Zone. (US Survey Feet Definition), with a Combined Adjustment Factor (CAF) of 1.0001200144.
 All coordinates and dimensions shown on these plans are modified to Ground values.

The following equations can be used for conversion:
 Ground Coordinates to State Plane Coordinates = Ground x 1/CAF
 State Plane Coordinates to Ground Coordinates = State Plane x CAF

2 - The Vertical Datum used is NAVD88.

BENCHMARKS
 BM #3
 Chiseled "x" on north side of water meter vault, southeast of Mike Oatman Drive, south side of golfer drop off area.
 Elev. = 1416.07 NAVD 88
 N = 169745.62 E = 1663464.625

SANITARY POINTS			
Point #	Northing	Easting	Desc.
3001	1697485.94	1663286.12	MH 1-0
3002	1697495.04	1663686.02	MH 1-1
3003	1697502.26	1664003.53	MH 1-2
3004	1697598.71	1664176.36	MH 1-3
3010	1697885.84	1663277.03	MH 2-1
3011	1698234.74	1663263.10	MH 2-2
3012	1698496.22	1663450.23	MH 2-3
3013	1698619.75	1663538.64	MH 2-4
3014	1698440.93	1663788.51	MH 2-5
3015	1698577.59	1663955.52	MH 2-6
3016	1698665.16	1664174.92	MH 2-7
3017	1698671.70	1664544.86	MH 2-8
3018	1698676.45	1664814.04	MH 2-9
3019	1698567.81	1664816.34	MH 2-10
3030	1697884.42	1663214.55	CO 1
3031	1698532.60	1663399.41	CO 2
3040	1698688.45	1663412.15	MH 4-1
3050	1698338.13	1663881.17	MH 5-1
3060	1697603.52	1664177.72	STUB
3061	1697598.80	1664181.36	STUB
3062	1698627.88	1663544.46	STUB
3063	1698670.17	1664174.92	STUB
3064	1698681.45	1664814.04	STUB
3065	1698562.81	1664816.45	STUB
3066	1698567.89	1664821.34	STUB
3067	1697522.25	1664003.05	STUB
3070	1697494.38	1663349.09	R01
3071	1697464.43	1663351.72	R02
3072	1697706.81	1663233.59	R03
3073	1697710.85	1663323.52	R04
3074	1697886.81	1663319.52	R05
3075	1698056.72	1663225.64	R06
3076	1698060.76	1663315.57	R07
3077	1698206.68	1663222.23	R08
3078	1698210.72	1663312.16	R09
3079	1698471.49	1663484.80	R10
3080	1698681.70	1664544.77	R11

AS-BUILT PLANS - APRIL 2016

CONTROL POINTS

- PT. 106
5/8" rebar with red "MKEC Control Point" cap
N = 1698382.648 E = 1664089.055
Elev. = 1406.99 NAVD 88
88' southwest of a golf course green
12' southeast of a 30' tree
9.4' west of west edge cart path
75' northwest of a covered bench
- PT. 108
5/8" rebar with red "MKEC Control Point" cap
N = 1698398.52 E = 1662972.17
Elev. = 1409.42 NAVD 88
63' ENE of a golf course tee
45' north of north edge golf cart path
- PT. 112
5/8" rebar with 2" aluminum MKEC cap
N = 1697537.84 E = 1664719.37
Elev. = 1409.14 NAVD 88
29' southwest of #18 tee
11.0' south of south edge golf cart path circle
- PT. 113
5/8" rebar with red "MKEC Control Point" cap
N = 1698125.20 E = 1665099.67
Elev. = 1409.12 NAVD 88
19.5' west of west edge golf cart path
In line with hedge row to the east
- PT. 114
5/8" rebar with 2" aluminum MKEC cap
N = 1699194.07 E = 1664792.88
Elev. = 1409.24 NAVD 88
21' NW of northwesterly edge golf cart path 46' WNW of a 12" tree
On southwest corner of 21st Street North and Oliver



Wichita, KS - 316-684-9800



REVISION	DATE

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SANITARY SEWER BUBBLE MAP

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ORIGINAL CONTRACT DOCUMENTS