MAIN 13, SS #23

PHASE 1

PROJECT NO. 468-83262

CITY OF WICHITA, KANSAS

MICHAEL E. LINDEBAK, CITY ENGINEER

OCA 624072

GENERAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS SHOWN ON PLANS. THE CONTRACTOR SHALL 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.

2. EXISTING UTILITIES AND THEIR LOCATIONS 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 PLAN LOCATIONS SHOWN ARE NOT GUARANTEED. ADDITIONAL EXISTING UTILITIES MAY BE ENCOUNTERED.

3. CONTRACTOR SHALL PROVIDE A MINIMUM ADVANCE NOTICE OF FORTY-EIGHT (48) HOURS TO UTILITY COMPANIES PRIOR TO STARTING ANY EXCAVATION AS FOLLOWS:

   KANSAS ONE-CALL 1-800-344-7233 OR 687-2470 (LOCAL WICHITA)

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

SOUTHWESTERN BELL TELEPHONE COMPANY	1-800-734-7590
WICHITA PUBLIC SCHOOLS TELEPHONE CABLE	1-316-833-2000
CABLEVISION	1-316-262-0681
KG&E (GAS & ELECTRIC)	1-316-383-8600
CITY OF WICHITA WATER & SEWER MAINTENANCE	1-316-262-4908
BEL AIRE (WATER)	1-316-744-2451
PARK CITY (WATER)	1-316-744-3865
KECHI (WATER & GAS)	1-316-744-9287
WILLIAMS NATURAL GAS	1-316-529-6600
	1-800-324-9696
PHILLIPS PIPELINE	1-316-838-3411
	1-800-766-8230
JAYHAWK PIPELINE	1-316-755-0241
	1-800-542-9575
KINDER-MORGAN PIPELINE	1-316-838-3361
KANSAS PIPELINE	1-316-832-1814
KINNET, INC FIBER OPTIC	1-800-967-8989

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

5. 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 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 WILL REQUIRE ADDITIONAL ARCHAEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED BORROW LOCATION. COST OF EXCAVATION HAULING, AND DUMPING OF EXCESS EXCAVATION SHALL BE SUBSIDIARY TO THE PROJECT.

6. THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND/OR TENANTS OF DEVELOPED PROPERTY ABUTTING THE CONSTRUCTION OF THIS PROJECT A MINIMUM OF (48) HOURS ADVANCE NOTICE PRIOR TO START OF CONSTRUCTION.

7. ALL CONSTRUCTION AND MATERIALS SHALL COMPLY WITH CITY OF WICHITA STANDARD SPECIFICATIONS.

8. THE CONTRACTOR SHALL LIMIT THE EXTENT OF TRENCH TO REMAIN OPEN OVERNIGHT AND WEEKENDS TO LESS THAN 50 FEET.

9. THE CONTRACTOR SHALL RESTORE ALL DITCHES, CHANNELS, BANK STABILIZATION, SWALES, ROAD SHOULDERS, PAVEMENT ENTRANCES, AND BANKS TO THEIR ORIGINAL SLOPES AND GRADES. WHERE EXISTING ENTRANCE PIPE, DRAINAGE PIPE, SPRINKLER SYSTEMS, SIDEWALKS, DRIVES, SIGNS, FENCES, MAIL BOXES, ETC., CONFLICT WITH THE PROPOSED WORK HEREIN THEY SHALL BE REMOVED AND REPLACED OR RESET IN LIKE KIND. ALL OF THE ABOVE INCLUDING TREES, SHRUBS, GRASS, SOD AND OTHER LANDSCAPING, WHERE NOTED, SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS BID.

10. TREES AND SHRUBS IN PUBLIC RIGHTS-OF-WAY WHICH ARE IN DIRECT CONFLICT WITH PROPOSED NEW CONSTRUCTION SHALL BE REMOVED BY THE CONTRACTOR AS NOTED IN THE DRAWING OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL RESTORE AND REPLACE LANDSCAPE FEATURES AND PLANTINGS AS NOTED IN THE DRAWINGS OR AS DIRECTED BY THE ENGINEER. TREES AND SHRUBS WHICH ARE NOT IN DIRECT CONFLICT WITH PROPOSED NEW CONSTRUCTION SHALL BE SAVED AND PROTECTED FROM DAMAGE. COSTS SHALL BE INCLUDED IN THE PRICE BID FOR THE SITE CLEARING.

11. POSITIVE DRAINAGE SHALL BE PROVIDED FOR ALL AREAS ON OR NEAR SPOIL AREAS. NATURAL DRAINAGE WAYS SHALL BE MAINTAINED. THE COST OF GRADING SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS BID.

12. WHERE REMOVAL OF EXISTING FENCES NEXT TO THE CONSTRUCTION IS DEEMED NECESSARY BY THE CONTRACTOR, THE CONTRACTOR SHALL COORDINATE REMOVAL WITH ADJACENT PROPERTY OWNERS. ALL REMOVAL AND RESETTING OF FENCES SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS BID.

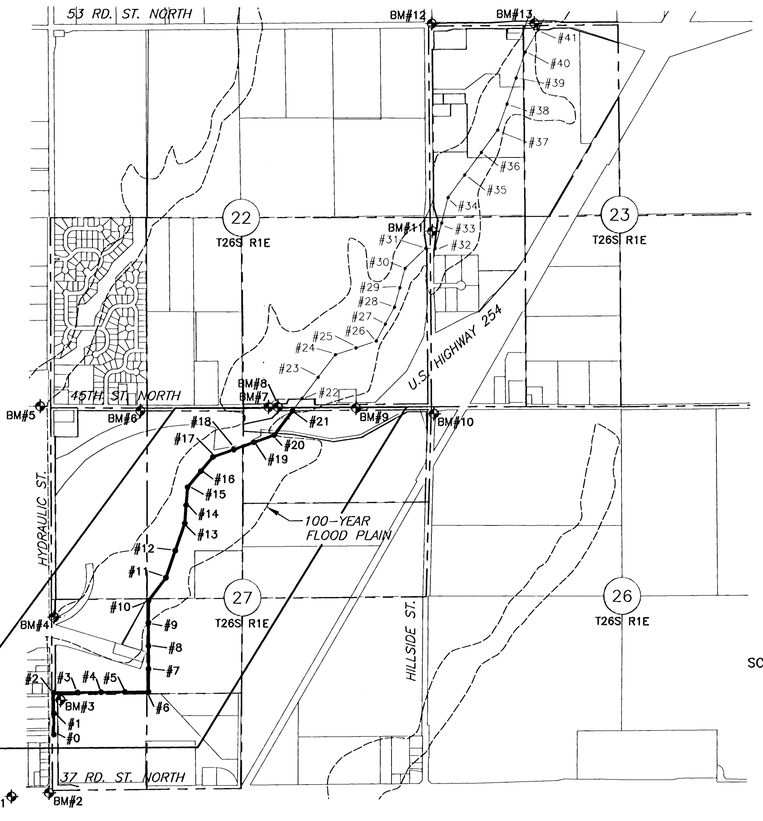
13. ALL ELEVATIONS SHOWN ARE NGVD DATUM. CITY DATUM = NGVD - 1187.4.

14. ALL EXISTING GRASSED AREAS WHICH ARE DISTURBED OR DAMAGED DURING CONSTRUCTION OPERATIONS SHALL BE RESTORED TO ORIGINAL CONDITIONS, AND RE-SEEDED OR RE-SODDED IN LIKE KIND, UNLESS OTHERWISE NOTED ON THE PLANS. COSTS SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS BID. APPLICATION RATE FOR THE VARIOUS SEED MIXTURES SHALL BE AS APPROVED BY THE ENGINEER. SEEDING SHALL CONFORM TO APPLICABLE REQUIREMENTS OF STANDARD SPECIFICATIONS. SODDING SHALL CONFORM TO APPLICABLE REQUIREMENTS OF SUPPLEMENTAL SPECIFICATIONS.

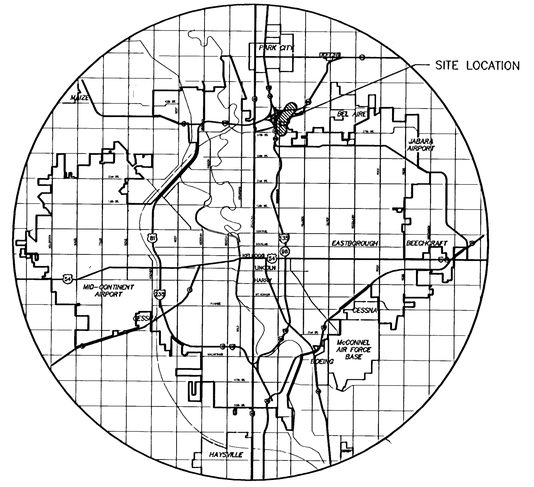
15. SLOPES STEEPER THAN 10 TO 1 SHALL BE MULCHED AS REQUIRED BY STANDARD SPECIFICATIONS. COST OF MULCHING SHALL BE INCLUDED IN PRICE BID FOR SITE RESTORATION.

16. THE COST OF EXCAVATION, HAULING, AND DUMPING, SHALL BE SUBSIDIARY TO OTHER ITEMS BID.

17. CONTRACTOR SHALL INSTALL PLASTIC SEWER MANHOLE MARKERS. SEWER DEPARTMENT WILL PROVIDE THE MATERIALS. COST TO INSTALL MARKERS SUBSIDIARY TO MANHOLES.



SCALE: 1" = 1000'



LOCATION MAP

INDEX TO DRAWINGS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	MANHOLE DETAILS
3	MISCELLANEOUS DETAILS, BENCHMARKS, AND CONTROL POINTS
4	SOIL EROSION BMP DETAILS
5	SOIL EROSION BMP SUBDIVISION DEVELOPMENT DETAILS
6-11	PLAN / PROFILE SHEETS

LEGEND

- 3IN - TREE AND DIAMETER
- SN SN - SIGN AND POSTS
- IP-1/2" MID-KANSAS BAR - IRON PIPE AND DESCRIPTION
- 214 x 49 - SPOT ELEVATION AND LOCATION
- PP X - POWER POLE AND DEADMAN
- KGE - ELECTRIC BOX
- - DRAINAGE ARROW
- - EDGE OF TREES
- E - UNDERGROUND ELECTRIC LINE
- OHE - OVERHEAD ELECTRIC LINE
- X X X - FENCE
- BM - BENCHMARK
- SWMH - STORM WATER MANHOLE
- SSMH - SANITARY SEWER MANHOLE
- - RETAINING WALL
- LP - LIGHT POLE
- FH - FIRE HYDRANT
- WV - WATER VALVE
- WM - WATER METER
- ICV_0 - IRRIGATION CONTROL VALVE
- - GRATE INLET
- TR - TELEPHONE RISER
- - STORM SEWER PIPE
- W W - WATER LINE
- SS - SANITARY SEWER LINE
- G G - GAS LINE
- T T - TELEPHONE LINE

Built Per Plan
6/5/03 RDL
PDF

DAVID A. CAUDILL LICENSED 10787 6/27/02 KANSAS PROFESSIONAL ENGINEER

MKEC ENGINEERING CONSULTANTS
411 N. WEBB ROAD
WICHITA, KS. 67206
316-684-9600

MAIN 13, SS #23 (PHASE 1)
PROJECT NAME

TITLE SHEET
SHEET TITLE

D. CAUDILL	RDH	D. CAUDILL
DESIGN BY:	DRAWN BY:	CHECKED BY:
JUNE 27, 2002	01138bt	1 / 11
DATE	DRAWING NAME	SHEET/OF

BENCHMARKS

BM#1 1344.21 Datum Bench Mark #1
USGS Bench Mark Disk in the East end of the South bridge abutment of the I-135 Southbound Bridge over 37th Street North. 75' +/- South of the centerline of 37th Street North and 26.5' +/- East of the centerline of the Southbound Lanes.

BM#2 1325.69 City of Wichita Bench Mark Disk in the North side of the concrete base of a steel High Line Pole, 50' +/- West of the centerline of Hydraulic Avenue and 36' +/- South of the centerline of 37th Street North. Published Elevation = 1325.73 (City of Wichita Bench Mark Book).

BM#3 1330.16 Chiseled Square on the West end of the North Headwall of the RCB under the North drive into the U.S.D. # 259 Food Services Building. 1295' North and 45' East of the SW Corner Sec 27, T 26 S, R 1 E.

BM#4 1341.17 City of Wichita Bench Mark Disk in the North end of the East Hub Guard of the Hydraulic Avenue Bridge over Middle Fork Chisholm Creek. 250' +/- South of the West 1/4 Corner of Sec 27, T 26 S, R 1 E. Published Elevation = 1341.07 (Sedgwick County Bench Mark Book).

BM#5 1340.89 City of Wichita Bench Mark Disk in the East end of the North Hub Guard of a Bridge on 45th Street North, 150' +/- West of Hydraulic Avenue. RM 55 on FEMA FIRM Map 200321 0150 A. Published Elevation = 1340.72.

BM#6 1354.11 RR Spike in the North face of a Power Pole on the South side of 45th Street North, 95' +/- West of the SE Corner, West 1/2, SW 1/4, Sec 22, T 26 S, R 1 E.

BM#7 1346.25 City of Wichita Bench Mark Disk in the middle of the North Hub Guard of the 45th Street Bridge over Middle Fork Chisholm Creek.

BM#8 1346.24 Chiseled Square on the East end of the South Hub Guard of the 45th Street Bridge over Middle Fork Chisholm Creek. RM 51 on FEMA FIRM Map 200321 0150 A. Published Elevation = 1346.07.

BM#9 1348.18 Chiseled Square on the West nose of Traffic Island under Highway K-254 at the West Bound Entrance Ramp on 45th Street North.

BM#10 1359.70 Chiseled Square on the middle of the East Headwall of a RCB under Hillside Avenue, 100' +/- South of the centerline of 45th Street North and 35' +/- East of the centerline of Hillside Avenue. Published Elevation = 1359.54 (Sedgwick County Bench Mark Book).

BM#11 1354.49 City of Wichita Bench Mark Disk in the South end of the East concrete traffic rail on the Hillside Avenue Bridge over Middle Fork Chisholm Creek. 190' South and 26.7' East of the West 1/4 Corner Sec 23, T 26 S, R 1 E.

BM#12 1369.43 RR Spike in the SW Face of a Guy Pole, 45' +/- East of the centerline of Hillside Avenue and 36' +/- North of the centerline of 53rd Street North. Published Elevation = 1369.36 (Sedgwick County Bench Mark Book).

BM#13 1356.79 Datum Bench Mark #2
City of Wichita Bench Mark Disk in the East end of the North Hub Guard of the 53rd Street North Bridge over Middle Fork Chisholm Creek. 185' East and 14' North of the SW Corner, East 1/2, SW 1/4, Sec 14, T 26 S, R 1 E. RM 53 on FEMA FIRM Map 200321 0150 A. Published Elevation = 1356.79.

CONTROL POINTS

H.C.#100 South ¼ Corner Sec. 27, T26S, R1E
½" Pipe in Thimble 0.6' below Road Surface
N=1710013.77 E=1657043.47

H.C.#101 Southwest Corner Sec. 27, T26S, R1E
¾" Pinched Pipe in Thimble
N=1709965.27 E=1654411.86

H.C.#102 West ¼ Corner Sec. 27, T26S, R1E
⅝" Bar 1.6' below Road Surface
N=1712621.61 E=1654379.52

H.C.#103 Southwest Corner Sec. 22, T26S, R1E
¾" Bar at Road Surface
N=1715289.85 E=1654349.09

H.C.#104 SE Corner West ½, SW ¼, Sec. 22, T26S, R1E
1" Bar
N=1715297.26 E=1655693.55

H.C.#105 South ¼ Corner Sec. 22, T26S, R1E
1" Pipe at Road Surface
N=1715304.75 E=1657037.64

H.C.#106 Southwest Corner Sec. 23, T26S, R1E
⅝" Bar in Thimble
N=1715346.96 E=1659659.97

H.C.#107 West ¼ Corner Sec. 23, T26S, R1E
¾" Pipe 0.9' below Road Surface
N=1717983.42 E=1659623.41

H.C.#108 Southwest Corner Sec. 14, T26S, R1E
¾" Pipe 0.1' below Road Surface
N=1720649.63 E=1659582.57

H.C.#109 Southeast Corner West ½, SW ¼, Sec. 14, T26S, R1E
⅝" Bar in Thimble 0.6' below Road Surface
N=1720667.64 E=1660903.25

H.C.#110 South ¼ Corner Sec. 14, T26S, R1E
¾" Pipe
N=1720685.46 E=1662223.54

H.C.#112 Center Sec. 27, T26S, R1E
⅝" Bar with "Mid Kansas" Cap
N=1712661.27 E=1657040.56

H.C.#6607 Southeast Corner, West ½, NW ¼, Sec. 23, T26S, R1E
0.3' North-South by 0.5' East-West Stone
N=1718007.13 E=1660946.25

H.C.#200 ⅝" Bar with Red "MKEC Design Point" Cap
N=1710958.39 E=1654430.98

H.C.#201 ⅝" Bar with Red "MKEC Design Point" Cap
N=1711753.61 E=1654409.13

H.C.#202 ⅝" Bar with Red "MKEC Design Point" Cap
N=1711297.75 E=1654800.96

H.C.#203 ⅝" Bar with Red "MKEC Design Point" Cap
N=1711328.27 E=1655686.44

H.C.#204 ⅝" Bar with Red "MKEC Design Point" Cap
N=1711953.35 E=1655818.52

H.C.#205 ⅝" Bar with Red "MKEC Design Point" Cap
N=1712518.77 E=1655728.21

H.C.#207 ⅝" Bar with Red "MKEC Design Point" Cap
N=1718269.13 E=1660082.86

H.C.#208 ⅝" Bar with Red "MKEC Design Point" Cap
N=1718906.47 E=1660473.22

H.C.#209 ⅝" Bar with Red "MKEC Design Point" Cap
N=1719427.07 E=1660852.32

H.C.#210 ⅝" Bar with Red "MKEC Design Point" Cap
N=1718264.33 E=1659600.74

H.C.#212 ⅝" Bar with Red "MKEC Design Point" Cap
N=1716758.97 E=1659253.10

H.C.#400 ⅝" Bar with Red "MKEC Design Point" Cap
N=1720653.60 E=1661212.71

H.C.#501 ⅝" Bar with Red "MKEC Design Point" Cap
N=1715076.52 E=1657551.05

H.C.#1827 ⅝" Bar with Red "MKEC Design Point" Cap
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H.C.#4000 ⅝" Bar with Red "MKEC Design Point" Cap
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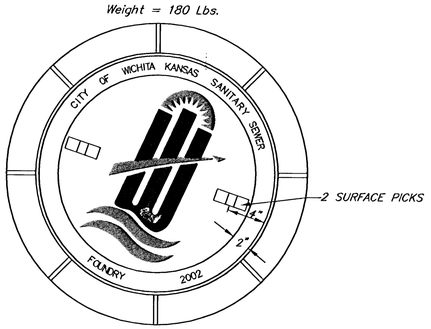
H.C.#4001 ⅝" Bar with Red "MKEC Design Point" Cap
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H.C.#4003 ⅝" Bar with Red "MKEC Design Point" Cap
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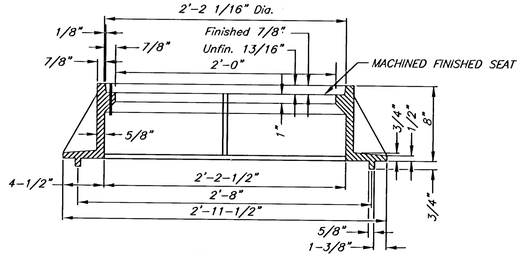
H.C.#4004 ⅝" Bar with Red "MKEC Design Point" Cap
N=1714649.28 E=1657217.52

H.C.#5000 ⅝" Bar with Red "MKEC Design Point" Cap
N=1715280.64 E=1657738.96

H.C.#5002 ⅝" Bar with Red "MKEC Design Point" Cap
N=1715547.85 E=1657839.45



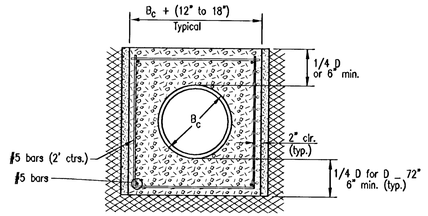
TOP VIEW



SECTION A-A
MUD RING

MANHOLE COVER

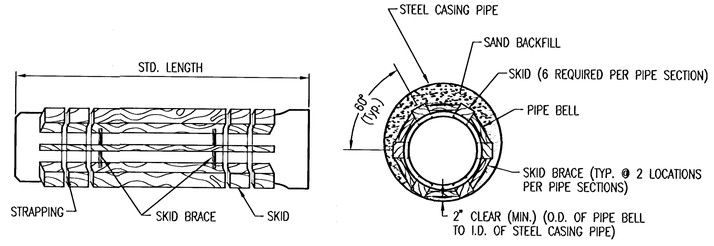
N.T.S.



B_c = Outside Pipe Diameter
D = Inside Pipe Diameter
d = Depth of Bedding Material Below Pipe
= Compacted Embedment
= Concrete

CONCRETE ENCASEMENT

N.T.S.



STEEL ENCASEMENT DETAIL

N.T.S.

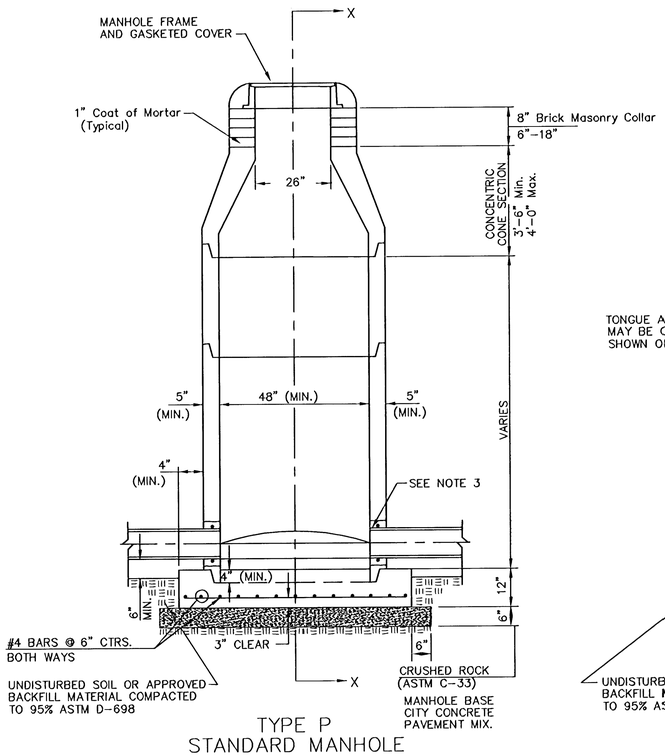
MKEC
ENGINEERING CONSULTANTS
411 N. WEBB ROAD
WICHITA, KS. 87206
316-684-9600

MAIN 13, SS #23 (PHASE 1)
PROJECT NAME

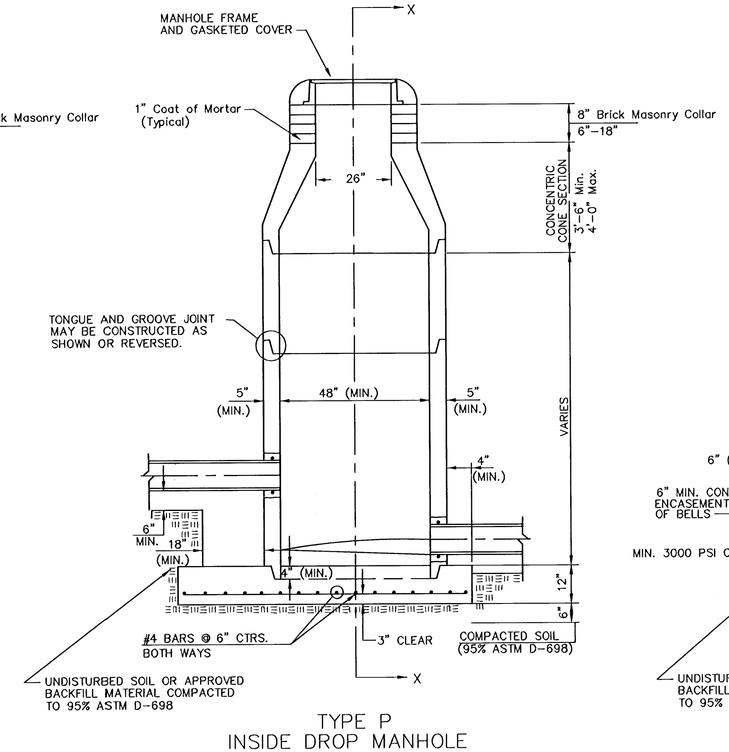
MISC. DETAILS, BENCHMARKS, AND CONTROL POINTS
SHEET TITLE

D. CAUDILL	RDH	D. CAUDILL
DESIGN BY:	DRAWN BY:	CHECKED BY:
JUNE 27, 2002	01138bd2	3 / 11
DATE	DRAWING NAME	SHEET / OF

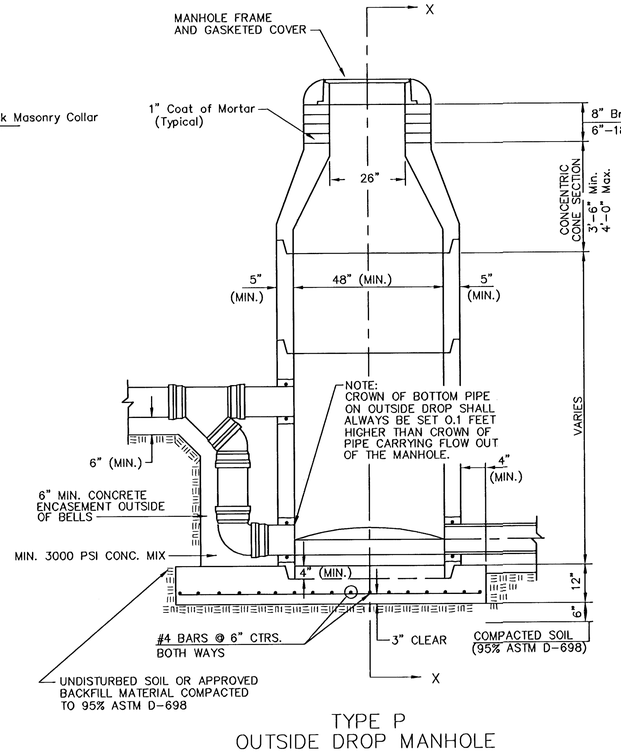
SEWER APPURTENANCES DETAILS



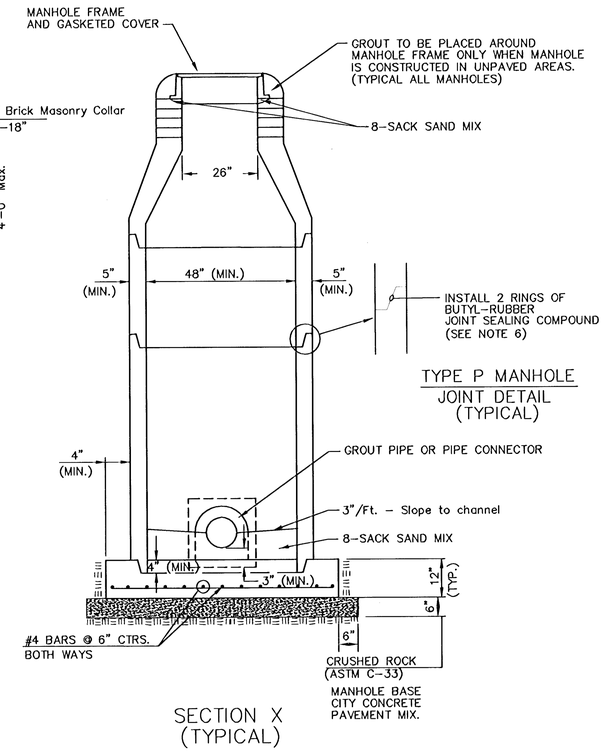
TYPE P
STANDARD MANHOLE



TYPE P
INSIDE DROP MANHOLE



TYPE P
OUTSIDE DROP MANHOLE



TYPE P MANHOLE
JOINT DETAIL
(TYPICAL)

SECTION X
(TYPICAL)

GENERAL NOTES

PRECAST MANHOLE NOTES

1. ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISIONS OF A.S.T.M. C478 AS MODIFIED BY THE SPECIFICATIONS.
2. NON–SHRINK GROUT SHALL BE NON–METALLIC TYPE.
3. APPROVED FLEXIBLE WATERSTOP GASKETS SHALL BE INSTALLED TO JOIN THE SEWER TO THE MANHOLE WALL WHEN A.B.S. COMPOSITE PIPE OR P.V.C. PIPE IS USED. FOR OTHER TYPES OF PIPE THE SEWER SHALL BE GROUTED IN PLACE WITH NON–SHRINK GROUT. THE SEWER PIPE SHALL BE SUPPORTED WITH CONCRETE ENCASEMENT A MINIMUM OF 3 FEET FROM THE MANHOLE WALL AND TO THE FIRST JOINT FOR V.C.P. SUCH THAT THE JOINT REMAINS FLEXIBLE.
4. ALL INSIDE CONCRETE SURFACES OF THE MANHOLE SHALL BE LINED WITH AMER–PLATE T–LOCK AS MANUFACTURED BY AMERON PROTECTIVE LININGS DIVISION, BREA, CALIFORNIA OR APPROVED EQUAL
5. EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 1 COAT MOBILARMA 633 BITUMINOUS COATING.
6. JOINT SEALING COMPOUND SHALL BE KENT SEAL NO. 2 OR APPROVED EQUAL.
7. PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO THE MANHOLE BASE.
8. TOP OF MANHOLE FLOOR SLAB SHALL BE AT LEAST 3 INCHES BELOW THE FLOW LINE OF THE OUTLET PIPE TO INSURE SUFFICIENT MINIMUM THICKNESS OF SHAPED INVERT.
9. LIFTING HOLES SHALL BE FILLED WITH NON–SHRINK GROUT AND THE INTERIOR SURFACE COATED AS SPECIFIED.
10. MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE BASES SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE FOR CONCRETE PAVEMENT CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD PAVING SPECIFICATIONS USING CITY CONCRETE PAVEMENT MIX WITHOUT AIR ENTRAINING ADMIXTURE. MORTAR SHALL BE PLACED AROUND THE MANHOLE RING AS SHOWN ON THE DRAWINGS WHEN MANHOLES ARE CONSTRUCTED IN UNPAVED AREAS. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE SMALLER THAN 24" SHALL HAVE AN INSIDE DIAMETER OF 4'. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE 24" OR LARGER SHALL HAVE AN INSIDE DIAMETER OF 5'. COMPLETED MANHOLE SHALL BE WITHOUT LEAKS AND WATER TIGHT.
11. REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASES AND SHALL CONSIST OF NO. 4 BARS PLACED ON 6" CENTERS IN BOTH DIRECTIONS. THE MANHOLE BASE REINFORCEMENT SHALL BE PLACED AT LEAST 3" ABOVE THE BOTTOM OF THE MANHOLE BASE. ALL COSTS FOR FURNISHING AND INSTALLING REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
12. OPENINGS SHALL BE CUT INTO THE MANHOLE WALL WHEN OUTSIDE DROPS ARE CONSTRUCTED ON EXISTING MANHOLES. SUCH OPENINGS CUT INTO EXISTING MANHOLES SHALL BE AS SMALL AS PRACTICAL TO FACILITATE INSTALLING AND GROUTING THE NEW PIPE IN PLACE. WATERSTOP GASKETS SHALL BE USED WITH P.V.C. AND A.B.S. COMPOSITE PIPE. THE NEW PIPE SHALL BE GROUTED INTO THE OPENING USING AN APPROVED NONSHRINK GROUT FOR THE FULL MANHOLE WALL THICKNESS. THE EXTERIOR OF THE COMPLETED CONNECTION SHALL BE SEALED WITH AN APPROVED BITUMINOUS COATING SUCH THAT THE CONNECTION WILL BE WATER TIGHT. FLOOR OF MANHOLE SHALL BE MODIFIED TO FORM NEW FLOW CHANNEL FOR THE NEW CONNECTION AS INDICATED BY THE DRAWING. THIS WORK, INCLUDING MODIFICATION OF MANHOLE FLOOR, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR OUTSIDE DROP STACK CONSTRUCTED ON EXISTING MANHOLE.
13. THE FLOORS OF ALL MANHOLES SHALL BE SHAPED WITH FLOW CHANNELS SUCH THAT THE MANHOLES WILL BE SELF CLEANING AND FREE OF AREAS WHERE SOLIDS COULD BE DEPOSITED AS SEWAGE FLOWS THROUGH THE MANHOLE FROM ALL INLET PIPES TO THE OUTLET PIPE. FLOW CHANNELS SHALL BE FORMED TO MATCH THE BOTTOM HALVES OF THE INFLOWING PIPES AND THE OUTFLOWING PIPE AS SHOWN BY THE DRAWINGS EXCEPT FOR INSIDE DROP MANHOLES. FLOW CHANNELS FOR INSIDE DROP MANHOLES SHALL BE CONSTRUCTED AS INDICATED BY THE DRAWING. MANHOLE FLOORS SHALL HAVE SLOPES OF 3 INCHES PER FOOT IN THE AREAS OUTSIDE OF THE FLOW CHANNELS SLOPED TOWARD THE FLOW CHANNELS. PIPES LAID THROUGH MANHOLES SHALL HAVE THE TOP HALF REMOVED TO NEAT LINES FOR THE FULL INSIDE DIAMETER OF THE MANHOLE. MANHOLE FLOORS SHALL THEN BE SHAPED AROUND THE BOTTOM HALF OF THE PIPE WHICH FORMS THE FLOW CHANNEL.
14. PIPES INSTALLED WITHIN THE EXCAVATION MADE FOR THE MANHOLE SHALL BE CRADLED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION. WHEN CLAY PIPE IS USED, THE CRADLE SHALL EXTEND TO THE FIRST JOINT OUTSIDE THE MAHOLE. THE CRADLE SHALL BE TERMINATED AT THE CLAY PIPE JOINT IN A MANNER WHICH WILL MAINTAIN THE FLEXIBILITY OF THE JOINT. COST OF CRADLE WITHIN MANHOLE EXCAVATION OR TO CLAY PIPE JOINTS ADJACENT TO MANHOLE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
15. MANHOLE COVER CASTINGS AND MANHOLE FRAME CASTINGS SHALL CONFORM TO THE REQUIREMENTS AS INDICATED IN THE STANDARD SPECIFICATIONS AND AS SHOWN IN THE STANDARD DETAIL DRAWING.
16. THE VERTICAL DROP IN INSIDE DROP MANHOLES SHALL NOT EXCEED 2' FOR INFLOWING PIPES SIZED 12" OR SMALLER AND 2' FOR INFLOWING PIPES LARGER THAN 12". THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.
17. STANDARD MANHOLES AND STANDARD INSIDE DROP MANHOLES SHALL BE BID AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. OUTSIDE DROP MANHOLES SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.
18. A BRICK MASONRY COLLAR SHALL BE INSTALLED BETWEEN THE CAST IRON FRAME AND THE CONCENTRIC CONE. THE COLLAR WILL HAVE 8" WALLS AND A VERTICAL HEIGHT OF 6" MINIMUM AND 18" MAXIMUM. A 1" COAT OF MORTAR WILL BE PLASTERED ON THE OUTSIDE OF THE COLLAR. THE USE OF PRE–CAST CONCRETE SPACERS FOR MANHOLE TOP ADJUSTMENT IS ALSO ALLOWED.
19. CRUSHED ROCK CONFORMING TO ASTM C–33 WITH A GRADATION OF NO. 67 SHALL BE INSTALLED AT THE BASE OF THE MANHOLE TO A DEPTH OF NO LESS THAN 6", AND SHALL EXTEND NO LESS THAN 6" OUTSIDE THE DIAMETER OF THE CONCRETE FLOOR OF THE MANHOLE.
20. WALL THICKNESS SHALL BE 1" GREATER THAN MANHOLE DIAMETER IN FEET.
21. 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.
22. GASKETED MANHOLE LIDS SHALLL BE INSTALLED WHERE INDICATED WITH REPLACEABLE RUBBER O–RING, SELF–SEALING GASKETS. PROVIDE ONE SPARE GASKET FOR EACH MANHOLE FRAME AND COVER INSTALLED. DO NOT INSTALL GASKETS UNTIL AFTER FINAL INSPECTION.

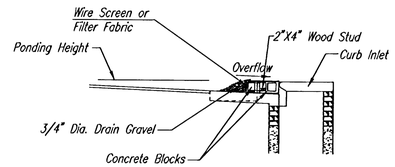
REV. 1/05/01, MCG

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

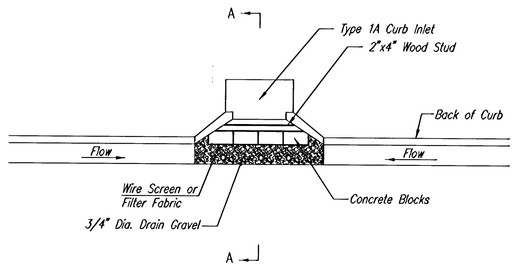
STANDARD TYPE 'P' MANHOLES

M. E. LINDEBAK P.E. – CITY ENGINEER

PROJECT NUMBER	OCA NO.
468–83262	624072
DATE: JUNE 27, 2002	SHEET 2 OF 11



SECTION A-A



CURB INLET GRAVEL FILTERS
(INLET PROTECTION-RESIDENTIAL STREETS ONLY)

NOTE: Other types of curb inlet protection may be approved by the city so long as equal protection is provided.

A gravel inlet filter shall be installed at sump locations on residential streets. This type of protection is not to be used on arterial or collector streets at any time that it would pose an undue traffic hazard.

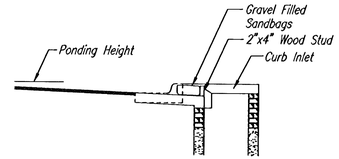
Instructions for Installing:

STEP 1: Place concrete blocks around the inlet as shown on drawing. Insert 2x4 board as shown.
STEP 2: Wrap 1/2" mesh wire screen around the concrete blocks.
STEP 3: Place 1" to 1-1/2" diameter rock around the blocks and wire screen. Be sure the rock extends down from the top of the concrete block.
STEP 4: To prevent damage to vehicles, signs warning drivers about the structures may be necessary. An alternative installation is the use of gravel bags supported by a 2"x4" board to prevent collapsing.

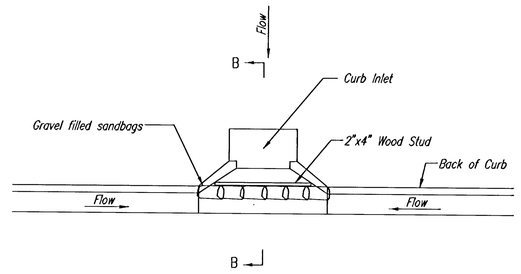
Use of rock with diameters smaller than 1" in the bag may result in clogging of pores and reduce the amount of water flowing into an inlet.

Maintenance:

All curb inlet gravel filters shall be inspected and repaired after each runoff event. Sediment deposits are to be removed once material is within 8 cm (3 inches) of the top of any block. Periodically, the gravel shall be raked to increase infiltration and filtering of runoff waters. Accumulated sediment is to be removed immediately from roads and streets.

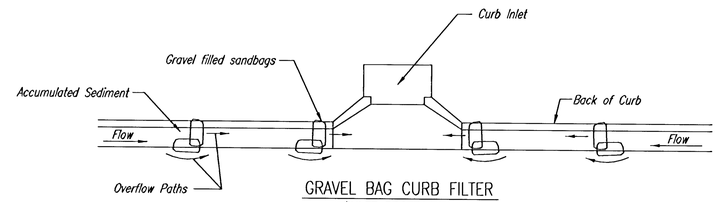


SECTION B-B



CURB INLET SANDBAG FILTERS
(INLET PROTECTION)

NOTE: Other types of curb inlet protection may be approved by the City so long as equal protection is provided.



GRAVEL BAG CURB FILTER
(INLET PROTECTION)

NOTE: Place two or more sets of bags in a manner that results in maximum support. The flow line bag must be lower than top of curb.

CURB SEDIMENT TRAPS

When inlets are located on streets having a grade (i.e., sump conditions do not exist), installing gravel (or sand) bags in the gutter flow line to create small sediment traps can be considered. Gravel bags are recommended over sand bags to allow for drainage.

If the spacing between bags becomes too large, little sediment may be trapped. Spacing of bags should be completed using the table or graph that illustrates placement distances based upon street slope. When installed in the gutter, bag tops must be lower than the sidewalk.

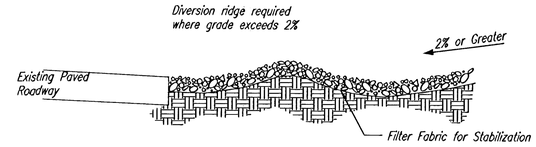
Spacing:

Gravel bags are to be placed according to street grades using the following table or graph that appears below.

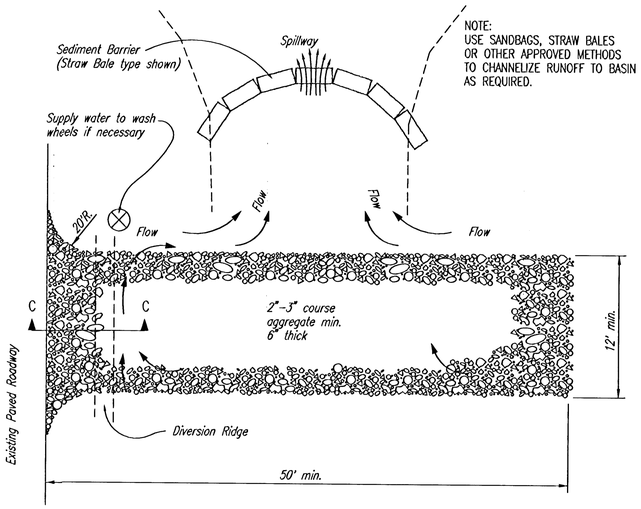
GRADE (%)	SPACING (FEET)
0.5	75
1.0	45
2.0	18
3.0	12
4.0	9
5.0	6

Maintenance:

Collected sediment shall be removed after every runoff event. Bags that are destroyed by vehicular traffic or through natural deterioration are to be immediately replaced.



SECTION C-C



STABILIZED CONSTRUCTION ENTRANCE

NOTES:

1. 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.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABLIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN, AS SHOWN ABOVE.
4. 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.

CITY OF WICHITA

SOIL EROSION BMP DETAILS

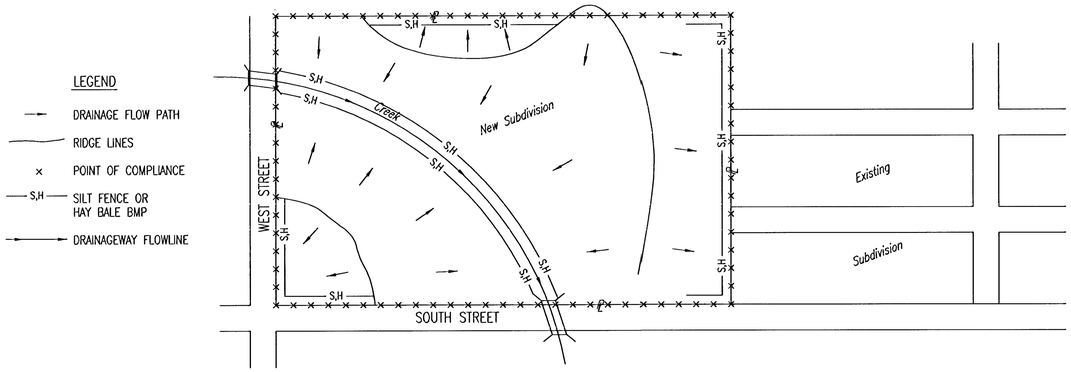
CHRISTOPHER M. CARRIER, P.E.
STORM WATER ENGINEER

PROJECT NUMBER	OCA NO.
468-83262	624072
DATE: JUNE 27, 2002	SHEET 4 OF 11

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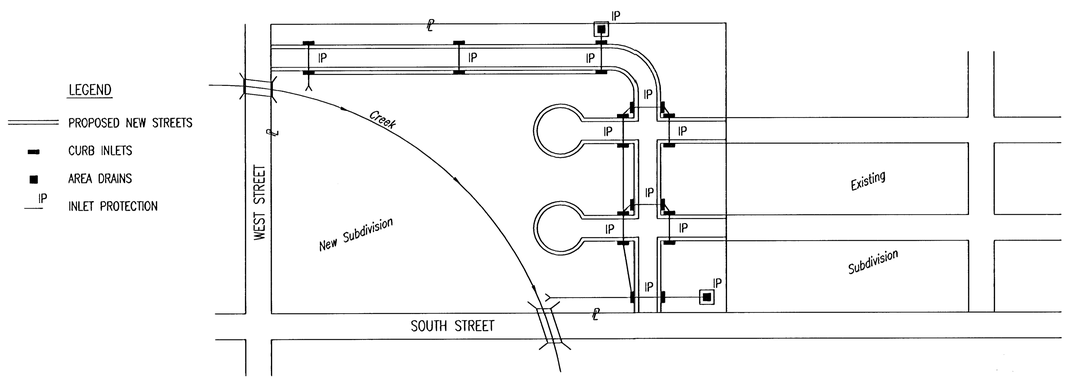
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PHASE 1 – INITIAL EARTHWORK AND UTILITIES (EXCEPT STORM SEWER)



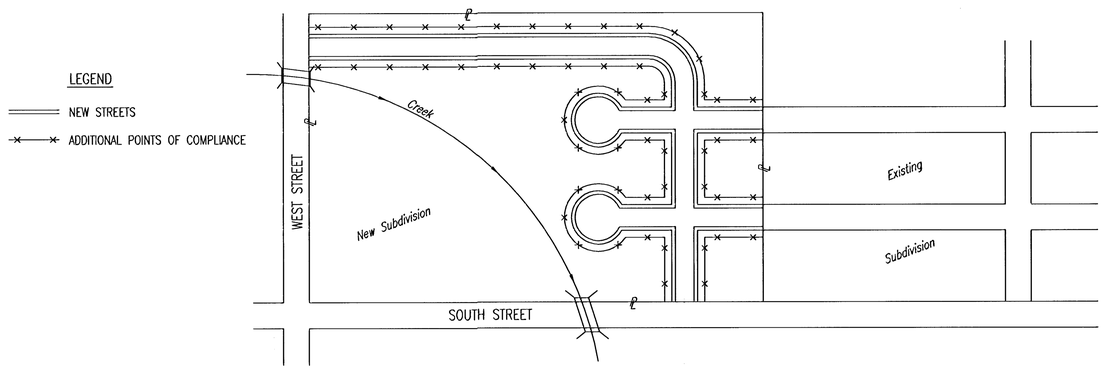
1. DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, THE POINTS OF COMPLIANCE ARE THE PERIMETER BOUNDARIES AND ANY DRAINAGE WAYS OR STORM SEWERS DRAINING THROUGH OR FROM THE SITE. SHOULD LAKES BE CONSTRUCTED WITHIN THE SUBDIVISION THAT WILL DISCHARGE DURING STORMS, THEY ARE ALSO A POINT OF COMPLIANCE.
2. HAYBALES OR SILT FENCE MUST BE CONSTRUCTED ALONG THE PROPERTY LINE WHERE ON SITE WATER CAN DRAIN OFF THE PROPERTY. THESE BMP'S WILL ALSO BE INSTALLED ALONG ANY DRAINAGE DITCH OR LAKE THAT CAN DISCHARGE.
3. SHOULD SILT OR SEDIMENT ENTER THE DITCHES OR GUTTERLINES ON THE ADJACENT BOUNDRY STREETS, APPROPRIATE BMP'S WILL BE PLACED WITHIN THE SUBDIVISION TO PREVENT THIS.
4. ANY MUD TRACKED ONTO ADJACENT STREETS WILL BE REMOVED AT THE END OF EACH WORK DAY.
5. CONTRACTORS WORKING WITHIN THE SITE WILL NOT BE REQUIRED TO USE INDIVIDUAL BMP'S AS LONG AS THOSE SPECIFIED ABOVE ARE IN PLACE AND EFFECTIVE. CONTRACTORS WORKING ON THE BOUNDRY LINE STREETS OR ON ADJACENT PROPERTIES TO EXTEND UTILITIES ARE EXPECTED TO USE BMP'S AT THEIR WORK LOCATIONS, AS NEEDED.
6. UTILIZE STABILIZED CONSTRUCTION ENTRANCE AT ENTRANCE AND EXIT ONTO ANY EXISTING PUBLIC STREETS.
7. THE SUBDIVISION DEVELOPER (OWNER) SHALL INSTALL AND MAINTAIN THE ON-SITE BMP'S.

PHASE 2 – INSTALLATION OF STORM SEWER



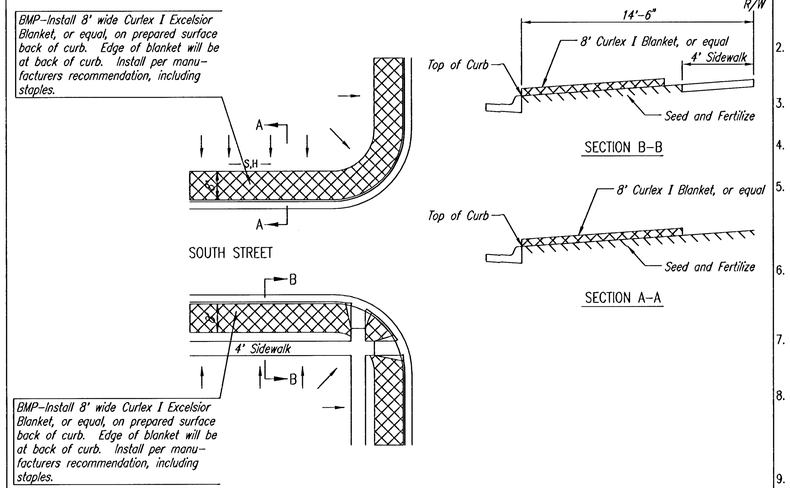
1. DURING THIS PHASE OF SUBDIVISION DEVELOPMENT, ALL BMP'S REQUIRED IN PHASE 1 SHALL REMAIN IN PLACE AND BE MAINTAINED.
2. AS NEW STORM SEWERS, WITH INLETS, ARE INSTALLED, THE STORM SEWERS MUST NOW BE PROTECTED SO ALL NEW INLETS BECOME POINTS OF COMPLIANCE.
3. AREA DRAINS – AS SOON AS WATER CAN FLOW INTO THESE DRAINS, HAYBALE OR SILT FENCE PROTECTION WILL BE INSTALLED AROUND THEM.
4. CURB OPENING INLETS – AS SOON AS WATER CAN FLOW INTO THESE DRAINS, INLET PROTECTION BMP'S MUST BE INSTALLED. SEE PHASE 3 – STREET CONSTRUCTION.
5. THE STORM SEWER CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING THESE BMP'S. IF WATER CANNOT FLOW INTO CURB INLETS UNTIL STREET CONSTRUCTION IS COMPLETE, THEN STREET CONTRACTOR WILL INSTALL INLET PROTECTION.
6. THE SUBDIVISION DEVELOPER WILL MAINTAIN THESE BMP'S ONCE INSTALLED.
7. ONCE ALL DISTURBED GROUND DRAINING TO AN INLET HAS BEEN RESTABILIZED WITH GRASS OR SOD, THE SUBDIVISION DEVELOPER WILL BE RESPONSIBLE FOR PERMANENTLY REMOVING THE INLET PROTECTION.

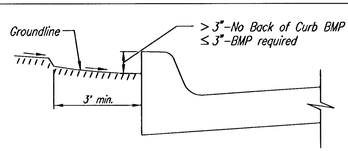
PHASE 3 – STREET CONSTRUCTION



1. DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, NEW STREETS ARE INSTALLED. ALL BMP'S INSTALLED DURING PHASE 1 AND 2 MUST STILL BE MAINTAINED. THE POINT OF COMPLIANCE NOW SHIFTS TO THE BACK OF CURB ALONG EACH STREET.
2. CURB OPENING INLET PROTECTION:
   A. SUMP AREAS – INLET PROTECTION SHALL BE PROVIDED WHEN STREET SUBGRADE WORK IS COMPLETED.
   B. NON-SUMP LOCATIONS – PROVIDE INLET PROTECTION AS SOON AS BASE COURSE ASPHALT IS INSTALLED, BEFORE THE SURFACE COURSE LIFT.
3. BMP'S WILL BE REQUIRED BACK OF CURB WHEREVER WATER CAN FLOW OVER THE CURB AND THE CURB HAS BEEN BACKFILLED TO WITHIN 3" OR LESS OF THE TOP OF CURB (SEE CURB BACKFILL DETAIL). FOR CURBS NOT YET ENTIRELY BACKFILLED (3" OR MORE BELOW TOP OF CURB), BMP'S WILL BE REQUIRED AT POINTS WHERE WATER BREAKS OVER CURB WHICH COULD RESULT IN THE PLACEMENT OF SEDIMENT IN THE GUTTER.
4. SEE DETAIL THIS SHEET ON BACK OF CURB PROTECTION.
5. THE BACK OF CURB PROTECTION SPECIFIED ON THIS PLAN MAY HAVE TO BE SUPPLIMENTED WITH HAYBALE OR SILT FENCE BMP'S AT LOCATIONS WHERE CONCENTRATED FLOW RESULTS IN SEDIMENT BEING CARRIED OVER THE EXCELSIOR MATS.
6. THE STREET CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING BACK OF CURB BMP'S.
7. THE INDIVIDUAL LOT OWNERS WILL BE RESPONSIBLE FOR MAINTAINING THE BACK OF CURB BMP'S IN FRONT OF THEIR LOTS UNTIL SUCH TIME AS ADJACENT DISTURBED EARTH IS STABILIZED WITH GRASS OR SOD.

BACK OF CURB PROTECTION DETAIL





CURB BACKFILL DETAIL

GENERAL NOTES:

1. THE INTENT OF ALL BEST MANAGEMENT PRACTICES (B.M.P.'S) IS TO PREVENT ERODED SOIL FROM ENTERING DITCHES, STORM SEWERS, OR ANY OTHER DRAINAGE FEATURE.
2. THIS SHEET IS INTENDED TO PROVIDE GUIDELINES AS TO WHAT TYPE OF BMP'S WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS. CONTRACTORS ARE EXPECTED TO BID PROJECTS ACCORDINGLY.
3. BMP'S SHALL BE MAINTAINED DURING THE CONSTRUCTION PROCESS TO REMAIN EFFECTIVE. MAINTENANCE SHALL BE AS INDICATED ON THE BMP DETAIL SHEETS.
4. PERSONS DESTROYING BMP'S SHALL BE RESPONSIBLE FOR IMMEDIATELY REPAIRING THEM OR INSTALLING SUITABLE REPLACEMENT BMP'S.
5. THE DEVELOPMENT OF ANY SUBDIVISION THAT DISTURBS 5 ACRES OR MORE WILL REQUIRE A FEDERAL/STATE NPDES STORMWATER PERMIT. THE PREPARATION OF A STORMWATER POLLUTION PREVENTION PLAN IS REQUIRED. EROSION CONTROL BMP'S ARE REQUIRED. THE DETAILS SHOWN ON THIS SHEET ARE THE MINIMUM STANDARDS TO BE SHOWN ON POLLUTION PREVENTION PLAN.
6. FOR SUBDIVISIONS SMALLER THAN 5 ACRES, SOIL EROSION BMP'S ARE REQUIRED. ALSO, DEVELOPERS AND CONTRACTORS ARE ENCOURAGED TO DEVELOP POLLUTION PREVENTION PLANS FOR EACH PROJECT PRIOR TO CONSTRUCTION.
7. FAILURE TO USE AND MAINTAIN BMP'S IS A VIOLATION OF SECTION 16.32 OF THE CITY CODE AND WILL SUBJECT THE SUBDIVISION DEVELOPER AND CONTRACTORS TO THE PENALTIES PROVIDED THEREIN.
8. THE APPLICATION OF BMP'S SHOWN ON THIS SHEET IS FOR SITUATIONS NORMALLY ENCOUNTERED. FROM TIME TO TIME, SITUATIONS WILL ARISE THAT MAY REQUIRE A DIFFERENT BMP OTHER THAN THAT SHOWN. BMP'S, OTHER THAN THOSE SHOWN, MAY BE UTILIZED SO LONG AS THEY ARE EFFECTIVE AND MAINTAINED.
9. A STABILIZED EARTH SURFACE IS DEFINED AS ONE THAT IS HARD SURFACED WITH CONCRETE, ASPHALT, OR THE LIKE, OR ONE ON WHICH 70% OF THE GRASS HAS GERMINATED ON THE ENTIRE SURFACE.

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CITY OF WICHITA

SOIL EROSION BMPS SUBDIVISION DEVELOPMENT PROCESS

CHRISTOPHER M. CARRIER, P.E.
STORM WATER ENGINEER

PROJECT NUMBER	OCA NO.
468-83262	624072
DATE: JUNE 27, 2002	SHEET 5 OF 11

DSNR: DEP OPER: DEP SCALE: 1=1.00
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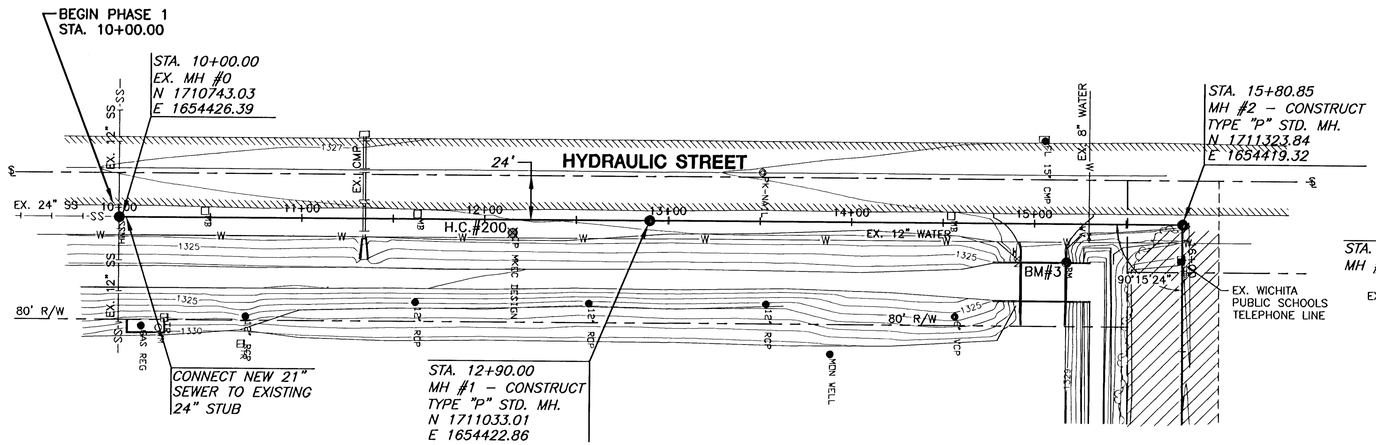
BM#3 1330.16 Chiseled Square on the West end of the North Headwall of the RCB under the North drive into the U.S.D. # 259 Food Services Building. 1295' North and 45' East of the SW Corner Sec 27, T 26 S, R 1 E.

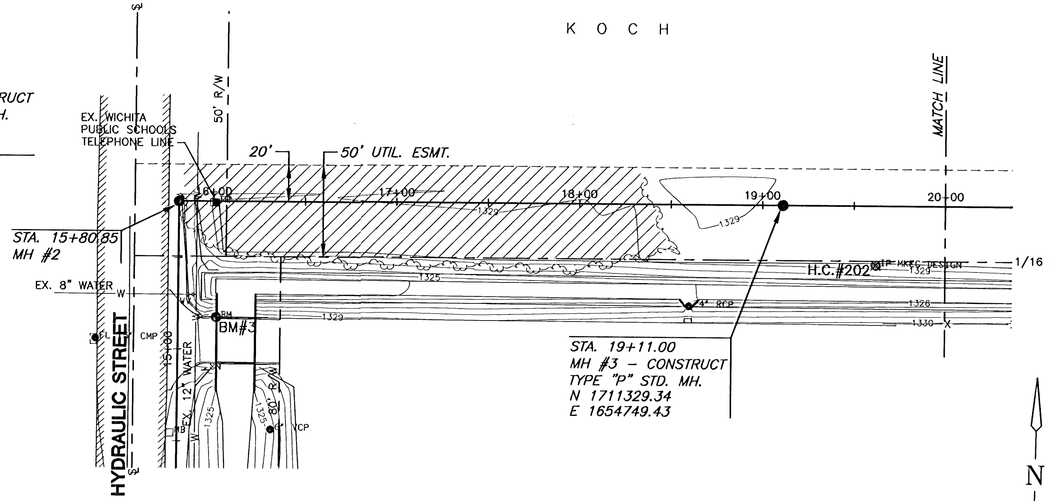
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H.C.#202 ⅝" Bar with Red "MKEC Design Point" Cap N=1711297.75 E=1654800.96

REMOVE TREES AS NECESSARY WITH ENGINEER'S APPROVAL

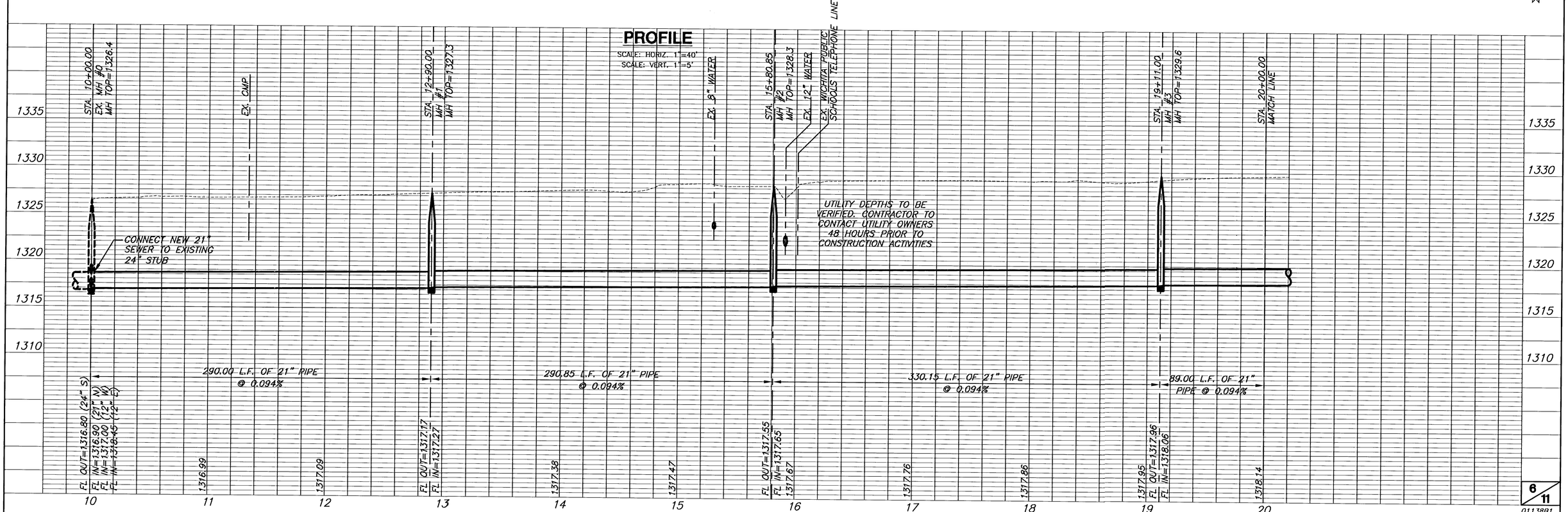
MAIN 13, SS #23 PLAN & PROFILE





PLAN
SCALE: 1"=40'

PROFILE
SCALE: HORIZ. 1"=40'
SCALE: VERT. 1"=5'



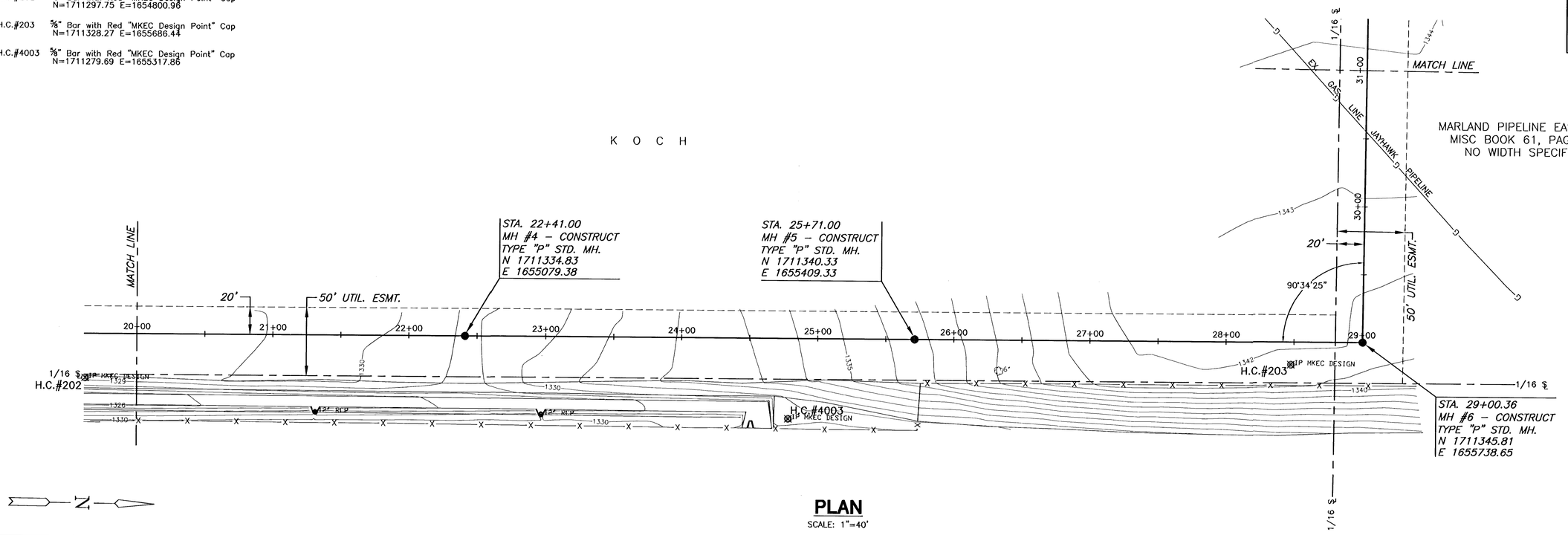
01138B1

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H.C.#203 ⅝" Bar with Red "MKEC Design Point" Cap
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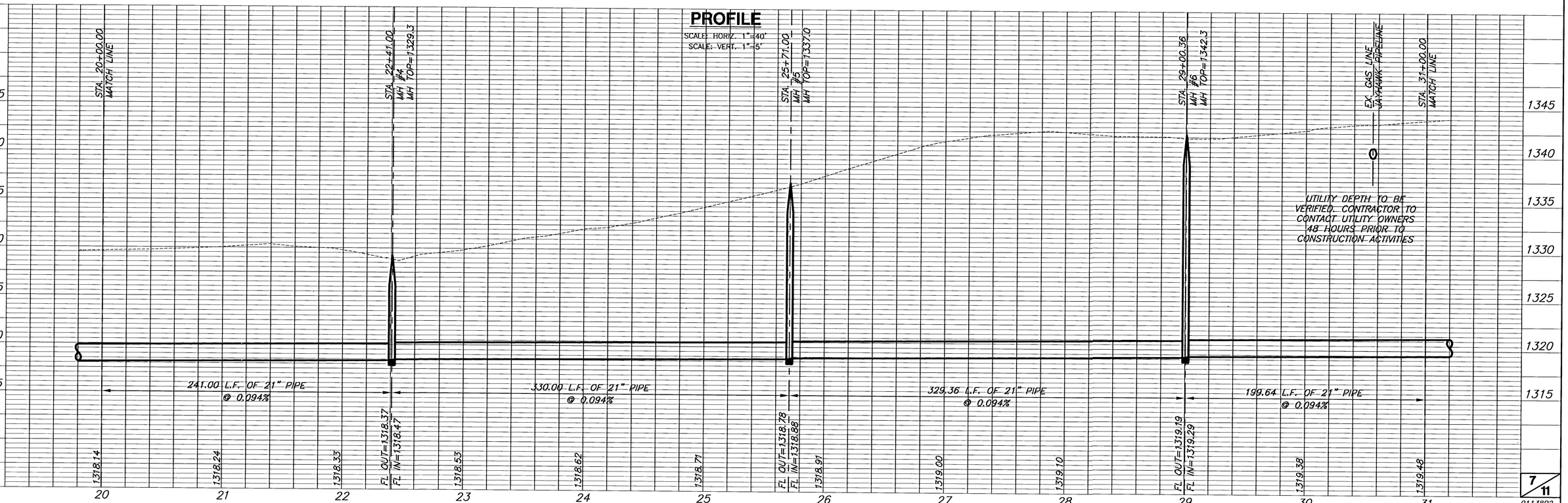
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MAIN 13, SS #23
PLAN & PROFILE



PLAN
SCALE: 1"=40'

PROFILE
SCALE: HORIZ. 1"=40'
SCALE: VERT. 1"=5'



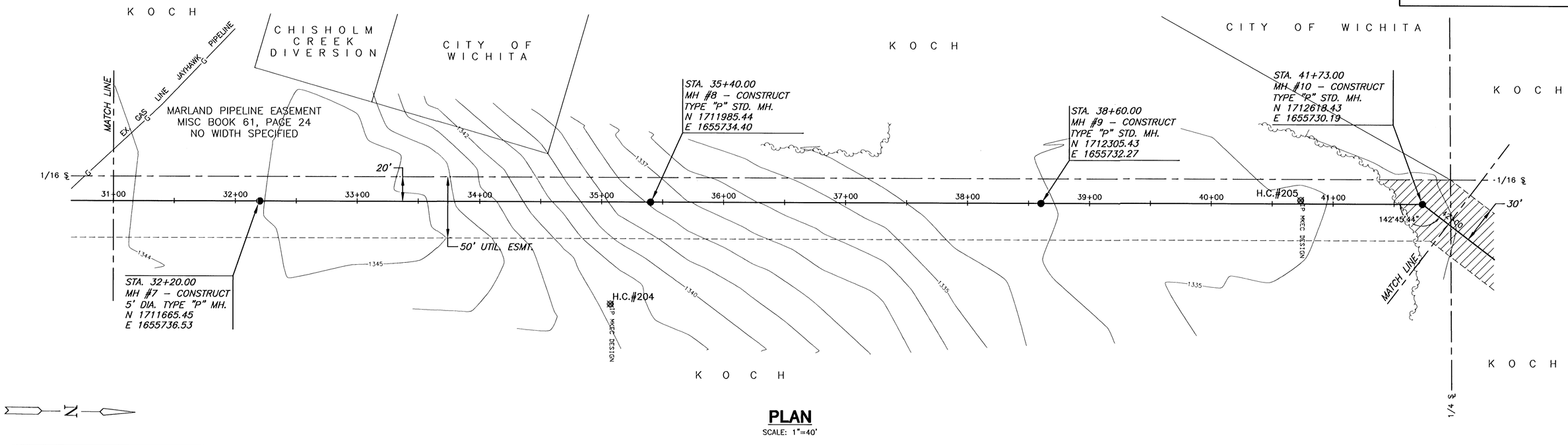
01138B2

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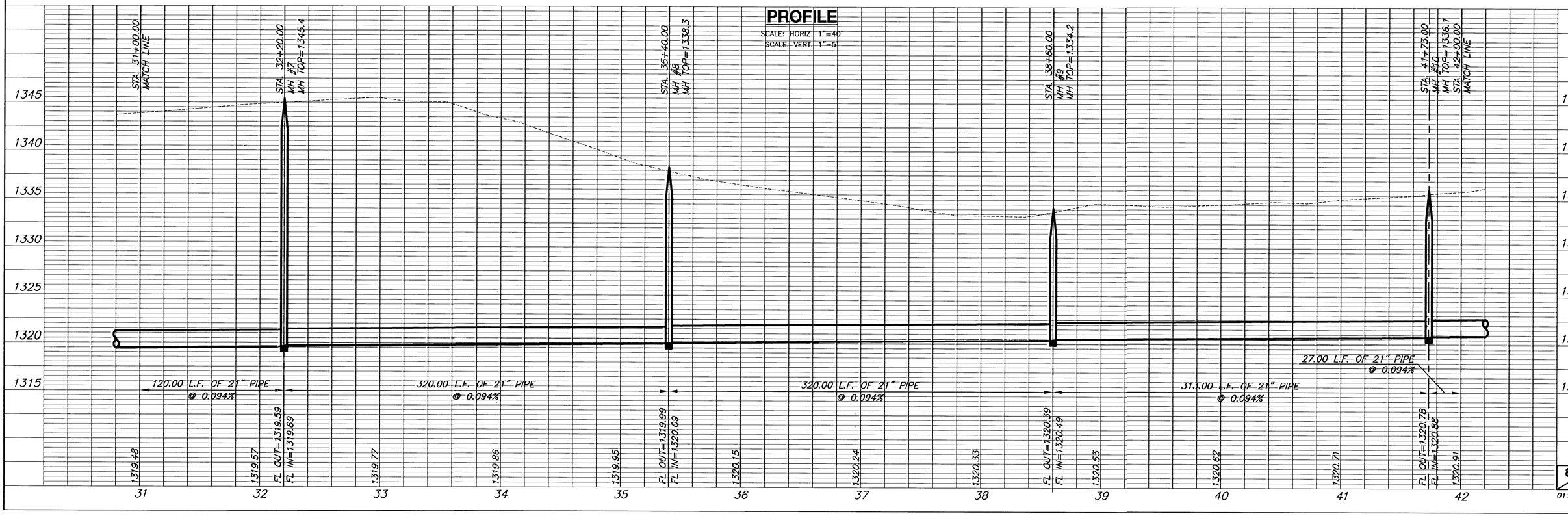
REMOVE TREES AS NECESSARY WITH ENGINEER'S APPROVAL

MAIN 13, SS #23
PLAN & PROFILE



PLAN
SCALE: 1"=40'

PROFILE
SCALE: HORIZ. 1"=40'
SCALE: VERT. 1"=5'

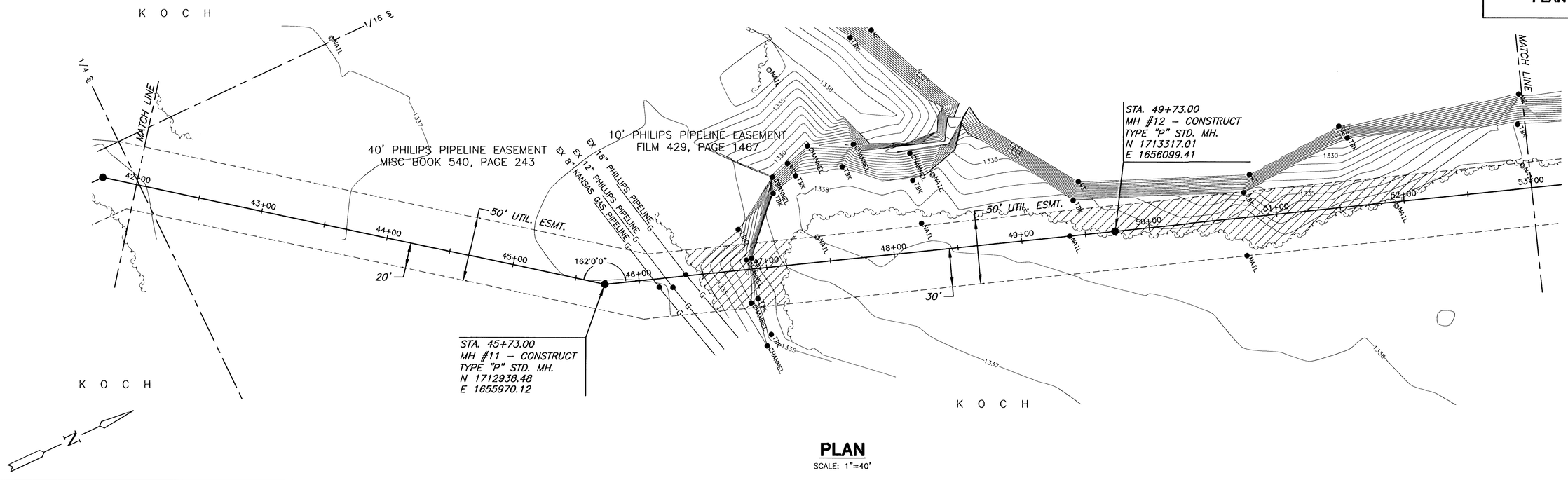


8/11

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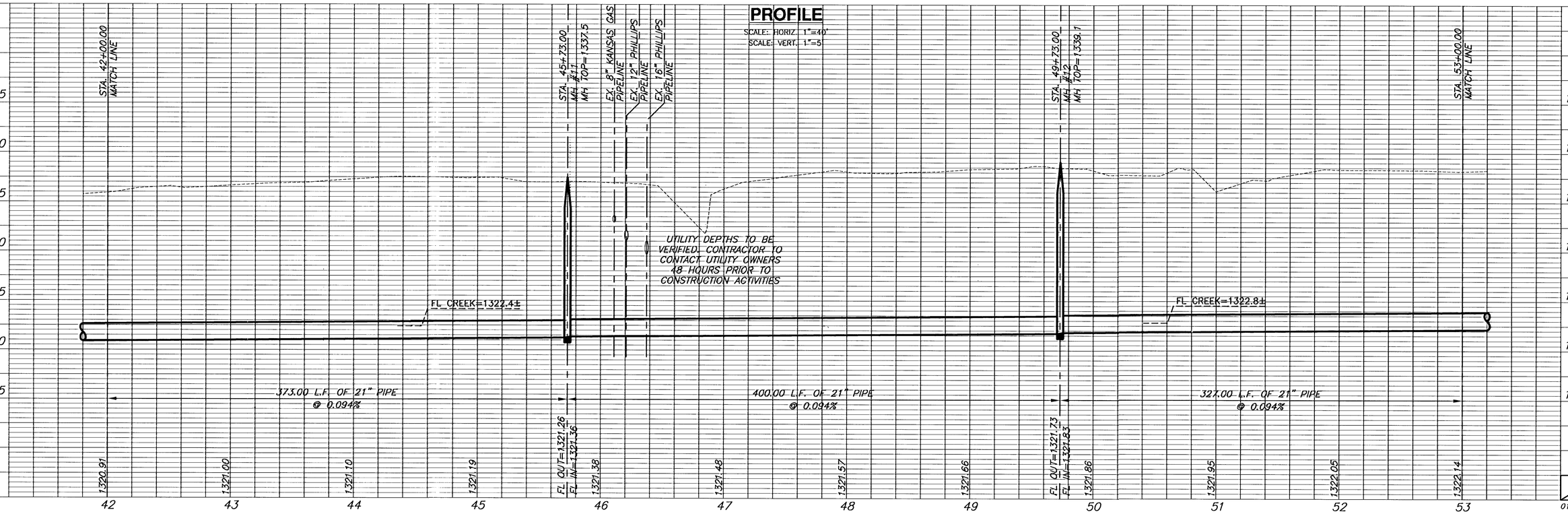
MAIN 13, SS #23
PLAN & PROFILE

REMOVE TREES AS NECESSARY WITH ENGINEER'S APPROVAL



PLAN
SCALE: 1"=40'

PROFILE
SCALE: HORIZ. 1"=40'
SCALE: VERT. 1"=5



MAIN 13, SS #23
PLAN & PROFILE

REMOVE TREES AS NECESSARY WITH ENGINEER'S APPROVAL

K O C H

STA. 58+83.00
MH #15 – CONSTRUCT
TYPE "P" STD. MH.
N 1714204.39
E 1656263.00

MATCH LINE

20'

50' UTIL. ESMT.

165°0'0"

144°0'0"

STA. 56+28.00
MH #14 – CONSTRUCT
TYPE "P" STD. MH.
N 1713949.97
E 1656245.84

STA. 61+73.00
MH #16 – CONSTRUCT
TYPE "P" STD. MH.
N 1714427.01
E 1656448.85

STA. 53+73.00
MH #13 – CONSTRUCT
TYPE "P" STD. MH.
N 1713695.55
E 1656228.69

N

PLAN
SCALE: 1"=40'

PROFILE
SCALE: HORIZ. 1"=40'
SCALE: VERT. 1"=5'

STA. 53+00.00
MATCH LINE

STA. 53+73.00
MH #13
MH TOP=1338.8

STA. 56+28.00
MH #14
MH TOP=1339.1

STA. 58+83.00
MH #15
MH TOP=1339.6

STA. 61+73.00
MH #16
MH TOP=1340.9

STA. 64+00.00
MATCH LINE

FL. CREEK=1324.9±

FL. CREEK=1326.3±

73.00 L.F. OF 21" PIPE @ 0.094%

255.00 L.F. OF 21" PIPE @ 0.094%

255.00 L.F. OF 21" PIPE @ 0.094%

290.00 L.F. OF 21" PIPE @ 0.094%

227.00 L.F. OF 21" PIPE @ 0.094%

FL. OUT=1322.21
FL. IN=1322.31

FL. OUT=1322.55
FL. IN=1322.65

FL. OUT=1322.89
FL. IN=1322.99

FL. OUT=1323.26
FL. IN=1323.36

1322.14 1322.34 1322.43 1322.52 1322.72 1322.81 1323.01 1323.10 1323.19 1323.39 1323.48 1323.58

1345 1340 1335 1330 1325 1320 1315

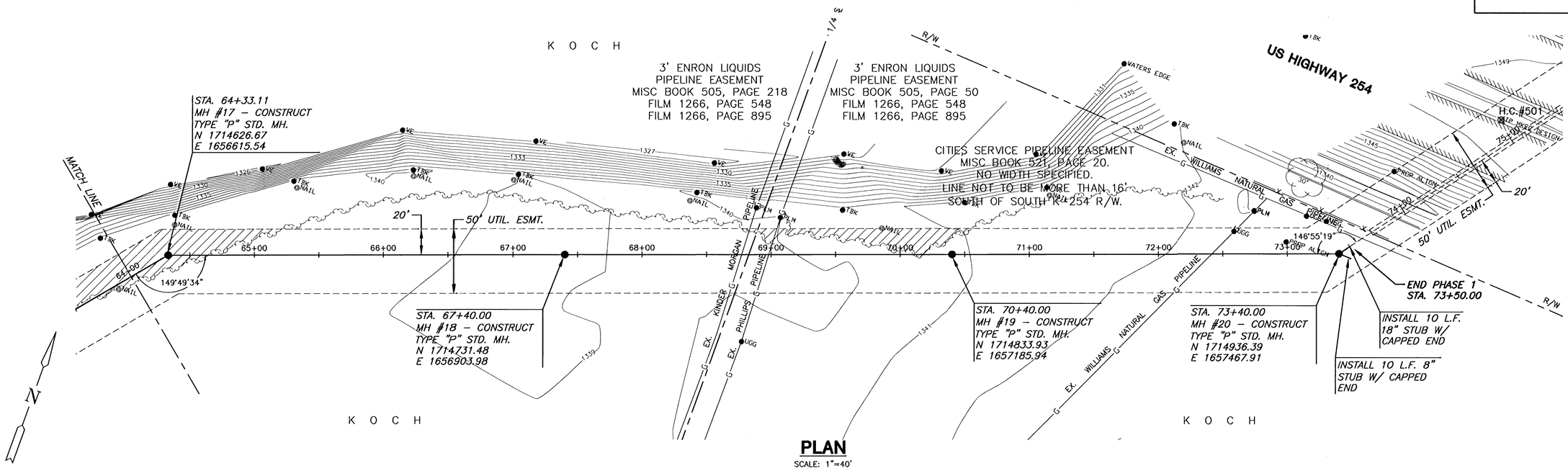
53 54 55 56 57 58 59 60 61 62 63 64

0113B85

H.C.#501 5/8" Bar with Red "MKEC Design Point" Cap
N=1715076.52 E=1657551.05

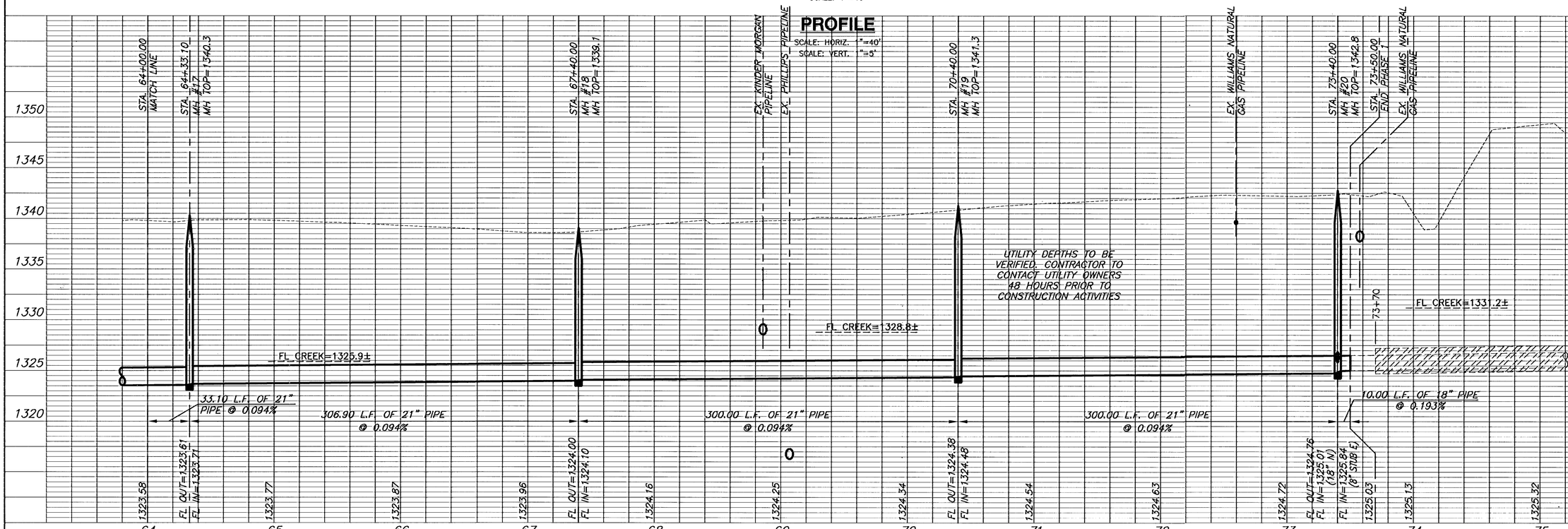
REMOVE TREES AS NECESSARY WITH ENGINEER'S APPROVAL

MAIN 13, SS #23 PLAN & PROFILE



PLAN
SCALE: 1"=40'

PROFILE
SCALE: HORIZ. 1"=40'
SCALE: VERT. 1"=5'



11/11

0113886

10-40-80-AT