CONSTRUCTION PLANS FOR

WAR INDUSTRIES SEWER EXTENSION

ALONG GYPSUM CREEK FROM KELLOGG TO CENTRAL

PROJECT NO.

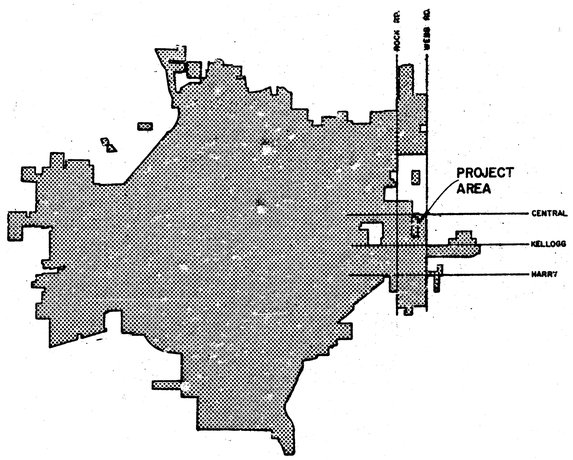
468·76·245·81478·000·000·001

CITY OF WICHITA, KANSAS

MICHAEL E. LINDEBAK

INDEX TO DRAWINGS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	GENERAL NOTES & DETAILS
3-7	PLAN & PROFILE
8	MANHOLE "D" DETAIL



N

Not To Scale

LOCATION MAP

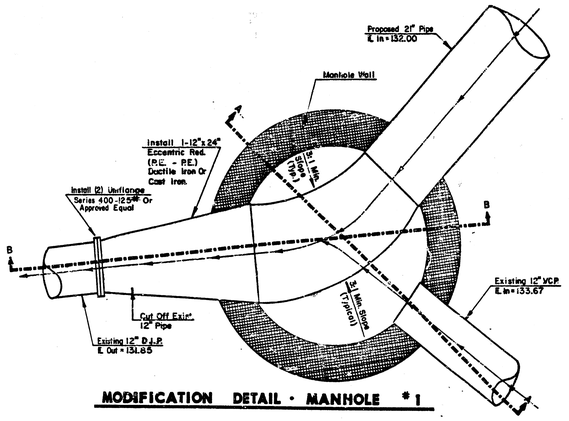
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RDL
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CLAYTON C. HOSTELLER
LICENSED
5532
KANSAS
PROFESSIONAL ENGINEER

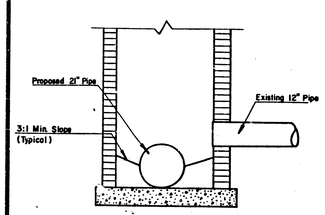
	WAR INDUSTRIES SEWER EXTENSIONS CONSTRUCTION PLANS
Design	D.H.
Drawn by	D.L. M.
Checked by	D.H. B.
Date	March 1986
Job no.	
Sheet	1 of 8

MID-KANSAS ENGINEERING CONSULTANTS PA
3500 NORTH ROCK ROAD
BUILDING #800
WICHITA, KANSAS 67226
682-6561

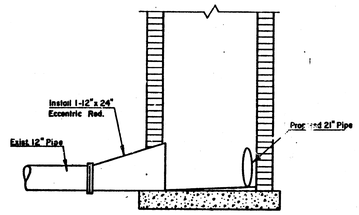
SC - F'87



MODIFICATION DETAIL · MANHOLE #1



SECTION A·A



SECTION B·B

HOTES FOR MANHOLE #1

1. THE OPENINGS CUT INTO EXISTING MANHOLE SHALL BE AS SMALL AS PRACTICAL TO FACILITATE INSTALLING AND GROUTING THE NEW PIPES IN PLACE. WATERSTOP GASKETS SHALL BE USED WITH P.V.C. PIPE. THE NEW PIPES SHALL BE GROUTED INTO THE OPENING USING AN APPROVED NONSHRINK GROUT FOR THE FULL MANHOLE WALL THICKNESS. THE EXTERIOR OF THE COMPLETED CONNECTIONS SHALL BE SEALED WITH AN APPROVED BITUMINOUS COATING SUCH THAT THE CONNECTIONS WILL BE WATER TIGHT.

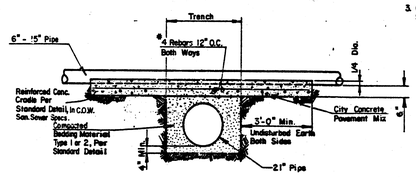
2. THE FLOOR OF MANHOLE SHALL BE MODIFIED AND SHAPED WITH FLOW CHANNELS SUCH THAT THE MANHOLE WILL BE SELF CLEANING AND FREE OF AREAS WHERE SOLUTION COULD BE DEPOSITED AS SEWAGE FLOWS THROUGH THE MANHOLE FROM ALL INLET PIPES TO THE OUTLET PIPE. FLOW CHANNEL SHALL BE FORMED TO MATCH THE BOTTOM HALVES OF THE INFLOWING 21" PIPE AND THE OUTFLOWING 12" x 24" ECCENTRIC REDUCER PIPE AS SHOWN. MANHOLE FLOOR SHALL HAVE SLOPES OF 3 INCHES PER FOOT IN THE AREAS OUTSIDE OF THE FLOW CHANNELS SLOPED TOWARD THE FLOW CHANNELS.

3. PIPE AND REDUCER INSTALLED WITHIN THE EXCAVATION MADE FOR THE MANHOLE SHALL BE CRADLED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION.

4. EXTERIOR AND INTERIOR SURFACES OF REDUCER PIPE SHALL BE RESPECTIVELY COVERED WITH BITUMINOUS COATING AND A CHEMICALLY INERT LINER AS REQUIRED BY CITY OF WICHITA SANITARY SEWER SPECIFICATIONS FOR DUCTILE IRON PIPE (D.I.P.).

NOTES:

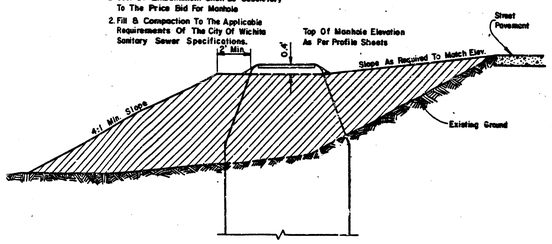
1. Concrete Cradle Shall Begin & Or Terminate Only At Joints In VCP.
2. Install Cradle At All Crossings Where Clearance Between Pipes Is Less Than 12"
3. Cost Of Crossing Cradle Shall Be Considerd Subsidiary To The Price Bid For 21" Pipe.



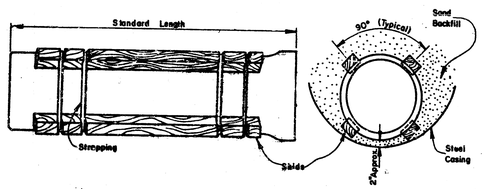
SEWER PIPE CROSSING CONCRETE CRADLE DETAIL

NOTES:

1. Cost Of Embankment Shall Be Subsidiary To The Price Bid For Manhole
2. Fill & Compaction To The Applicable Requirements Of The City Of Wichita Sanitary Sewer Specifications.



TYPICAL EMBANKMENT AROUND MANHOLE



STEEL ENCASEMENT DETAIL

· GENERAL NOTES ·

1. ALL CONSTRUCTION AND MATERIALS TO COMPLY WITH CITY OF WICHITA SPECIFICATIONS AND STANDARDS.

2. INTERURBAN TRAFFIC GENERATED OUTSIDE THE PROJECT AREA AND LOCAL TRAFFIC GENERATED WITHIN THE PROJECT AREA ARE TO BE CARRIED THROUGH CONSTRUCTION ON EXISTING ROADWAYS AT ALL TIMES. VEHICULAR ACCESS TO ALL DWELLINGS IN THE PROJECT AREA SHALL BE PROVIDED AT ALL TIMES. THE CONTRACTOR SHALL ERECT WARNING SIGNS, FLASHING LIGHTS, AND BARRICADES IN COMPLIANCE WITH THE STANDARD SPECIFICATIONS.

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

4. THE CONTRACTOR WILL BE REQUIRED TO NOTIFY EACH OF THE FOLLOWING UTILITY COMPANIES PRIOR TO THE BEGINNING OF CONSTRUCTION AND SHOULD REQUEST THAT ANY EXISTING LINES BE FLAGGED:

KANSAS ONE-CALL
(FOR EXACT LOCATION OF ALL UNDERGROUND UTILITIES)
1-800-344-7233

KPL GAS SERVICE
1021 E. 26TH ST. NORTH
WICHITA, KANSAS 67219
ERIC WENDT
316-263-7511

SOUTHWESTERN BELL TELEPHONE COMPANY
154 N. BROADWAY
WICHITA, KANSAS 67202
DENNIS BEARD
316-268-2102
BEFORE DIGGING: 1-800-571-2115

KG&E, THE ELECTRIC COMPANY
1900 E. CENTRAL
WICHITA, KANSAS 67214
DOUG PAUL
316-261-6311

AIRCAPITAL CABLEVISION
701 E. DOUGLAS
WICHITA, KANSAS 67202
DON SHUE
316-262-4270

CITY OF WICHITA
455 N. MAIN
WICHITA, KANSAS 67202
WATER: ORVILLE PRINE
316-268-4555
SANITARY & STORM SEWERS:
JERRY BLAIN
316-268-4210

5. THE CONTRACTOR MUST ALSO NOTIFY THE TELEPHONE COMPANY 24 HOURS PRIOR TO BEGINNING ANY CONSTRUCTION WORK NEAR BURIED TELEPHONE LINES.

6. EXISTING UTILITIES AND THEIR LOCATION, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. LOCATION INFORMATION HAS BEEN OBTAINED FROM THE VARIOUS UTILITY COMPANIES AND IS EITHER FROM COMPANY RECORD DRAWINGS OR COMPANY PROVIDED FIELD LOCATIONS. THE PLAN LOCATIONS SHOWN ARE NOT GUARANTEED. ADDITIONAL EXISTING UTILITIES MAY ALSO BE ENCOUNTERED. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION DURING CONSTRUCTION TO AVOID DAMAGING THESE LINES. THE CONTRACTOR SHOULD COORDINATE ANY TRENCHING OPERATIONS THROUGH THE UTILITIES LISTED TO AVOID ANY DAMAGE TO THE LINES. IF ANY LINES ARE DAMAGED THEY SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

7. 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, RETAINING WALLS, SIGNS, FENCES, EXERCISE EQUIPMENT, 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 THE PRICE BID FOR SITE RESTORATION.

8. THE CONTRACTOR SHALL AVOID REMOVAL OR TRIMMING OF ANY TREES WHERE POSSIBLE. WHERE THE CONTRACTOR BELIEVES THE REMOVAL OR TRIMMING IS UNAVOIDABLE, HE SHALL COORDINATE SUCH WORK WITH THE ENGINEER. COSTS FOR TRIMMING, REMOVAL AND DISPOSAL SHALL BE CONSIDERED SUBSIDIARY TO THE PRICE BID FOR SITE PREPARATION.

9. POSITIVE DRAINAGE SHALL BE PROVIDED FOR ALL AREAS ON OR NEAR SPOIL AREAS. NATURAL DRAINAGE WAYS SHALL BE MAINTAINED.

10. 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 SITE PREPARATION AND SITE RESTORATION, RESPECTIVELY.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. 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 OR A LICENSED PROFESSIONAL ENGINEER IN ACCORDANCE WITH STATE LAWS.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONTINUOUS FLOW FOR SEWAGE THROUGH CONSTRUCTION. CONTRACTOR'S PROPOSED METHOD FOR MAINTAINING SEWAGE FLOW SHALL BE APPROVED BY THE ENGINEER. COST OF MAINTAINING SEWAGE FLOW THROUGH CONSTRUCTION SHALL BE CONSIDERED SUBSIDIARY TO THE OTHER ITEMS OF WORK.

13. ALL ELEVATIONS SHOWN ARE CITY OF WICHITA DATUM. CITY DATUM = USGS MSL -1187.4

14. BASE LINE COORDINATE SYSTEM IS BASED ON THE COORDINATES OF N 1000.00 AND E 1000.00 BEING LOCATED AT THE SOUTHWEST CORNER, NORTHWEST QUARTER, SOUTHEAST QUARTER, SECTION 20, TOWNSHIP 27 SOUTH, RANGE 2 EAST, AND ALSO THE WEST LINE OF SAID QUARTER BEING AN ASSUMED BEARING OF N 0° 00' 00" E.

15. A SAW CUT OF AT LEAST ONE-HALF THE DEPTH OF EXISTING SURFACE COURSES OR ONE-FOURTH THE DEPTH OF THE EXISTING TOTAL PAVEMENT THICKNESS SHALL BE PROVIDED AT LOCATIONS WHERE PROPOSED CONSTRUCTION ABUTS AN EXISTING SURFACE COURSE OR PAVEMENT FOR WHICH PARTIAL REMOVAL OF THAT SURFACE OR PAVEMENT IS REQUIRED. SUCH SAW CUTS WILL NOT BE PAID FOR DIRECTLY AND THIS COST SHALL BE CONSIDERED AS SUBSIDIARY TO THE PRICE BID FOR SITE PREPARATION.

16. ALL COSTS FOR REMOVAL AND REPLACEMENT OF EXISTING PAVEMENT SHALL BE CONSIDERED SUBSIDIARY TO THE PRICE BID FOR SITE PREPARATION AND SITE RESTORATION, RESPECTIVELY. REMOVAL OF EXISTING PAVEMENT AND/OR REPLACEMENT OF EXISTING PAVEMENT SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE CITY OF WICHITA STANDARD SPECIFICATIONS. MINIMUM LIMITS OF SUCH PAVEMENT REMOVAL AND REPLACEMENT SHALL BE ONE FOOT BEYOND THE LIMITS OF THE EXCAVATION MADE FOR THE SEWER OR THE STRUCTURE, OR TO EXISTING PAVEMENT JOINT IF IT IS THREE FEET OR LESS BEYOND THE MINIMUM LIMITS.

17. THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND/OR TENANTS OF PROPERTY DIRECTLY AFFECTED BY THE CONSTRUCTION OF THIS PROJECT A MINIMUM OF 24 HOURS ADVANCE NOTICE PRIOR TO START OF CONSTRUCTION.

18. THE COST OF CONCRETE ENCASEMENTS AND CONCRETE CRADLES, SHALL BE CONSIDERED SUBSIDIARY TO THE PRICE BID FOR SEWER PIPE INSTALLATION.

19. ALTERNATE FOR TYPE "D" MANHOLE INTERIOR LINING: IN LIEU OF T-LOCK LINER REQUIRED BY CITY OF WICHITA SPECIFICATIONS AND DRAWINGS, TNEMEC SERIES 66 EPOXOLINE, OR APPROVED EQUAL, MAY BE USED.

SURFACE PREPARATION: SURFACES TO BE PAINTED SHALL BE DRY AND FREE OF DIRT, DUST, SAND, GRIT, MUD/OIL, GREASE, RUST, OR OTHER OBJECTIONABLE SUBSTANCES. CLEANING AND PAINTING OPERATIONS WILL BE PERFORMED IN A MANNER WHICH WILL PREVENT DUST OR OTHER CONTAMINANTS FROM GETTING ON FRESHLY PAINTED SURFACES. OIL AND GREASE SHALL BE COMPLETELY REMOVED BY USE OF SOLVENTS OR DETERGENTS BEFORE MECHANICAL CLEANING IS STARTED.

SURFACES SHALL BE FREE OF CRACKS, PITS, PROJECTIONS, OR OTHER IMPERFECTIONS WHICH WOULD PREVENT THE FORMATION OF A SMOOTH, UNBROKEN PAINT FILM. THE SURFACE SHALL THEN BE CLEANED IN ACCORDANCE WITH SPECIFICATION SSPC-SP7 (BRUSH-OFF BLAST CLEANING.)

INSTALLATION: APPLY ONE INTERMEDIATE AND ONE FINAL COATINGS OF EPOXY PAINT. PAINT PREPARATION & APPLICATION SHALL BE AS RECOMMENDED BY THE MANUFACTURER. PAINT FILM WITH SAGS, CHECKS, BLISTERS, AND OTHER IMPERFECTIONS SHALL BE REMOVED AND THE SURFACE REPAINTED. THICKNESS SHALL BE 9.0 - 10.5 WET MILS AND 4.0 - 6.0 DRY MILS PER COAT.

20. WHERE SHOWN ON DRAWINGS, GASKETED MANHOLE LIDS SHALL BE INSTALLED 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.

21. CONTRACTOR'S EQUIPMENT, VEHICLES AND EMPLOYEE VEHICLES SHALL BE RESTRICTED TO THE WEST HALF OF LINDEN DRIVE, BETWEEN DOUGLAS AND CENTRAL.

22. MAILBOXES WITHIN THE LIMITS OF THE PROJECT SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AS APPROVED BY THE ENGINEER AND POST OFFICE. CONTRACTOR WILL BE REQUIRED TO MAKE SATISFACTORY PROVISIONS FOR MAIL DELIVERY TO PROPERTIES AFFECTED BY THIS PROJECT DURING CONSTRUCTION. COSTS SHALL BE SUBSIDIARY TO THE PRICE BID FOR SITE PREPARATION.

23. ALL EXISTING GRASSED AREAS WHICH ARE DISTURBED OR DAMAGED DURING CONSTRUCTION OPERATIONS SHALL BE RESTORED TO ORIGINAL CONDITIONS, AND RESEEDED OR RESODDED IN LIKE KIND, UNLESS OTHERWISE NOTED ON THE PLANS. COSTS SHALL BE CONSIDERED SUBSIDIARY TO THE PRICE BID FOR SITE RESTORATION. 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.

24. 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.

CITY OF WICHITA, KANSAS
WAR INDUSTRIES SEWER EXTENSION
PROJECT NO.
468-76-245-81478-000-000-001

GENERAL NOTES & DETAILS

Design
Drawn by
Checked by
Date
Job no.

MID-KANSAS ENGINEERING CONSULTANTS PA
3500 NORTH ROCK ROAD
BUILDING #800
WICHITA, KANSAS 67226
682-6561

Sheet 2 of 8

CITY OF WICHITA
W.I.S. EXTENSIONS
GYPSUM CREEK
PROJ. NO. 468-76-245-81478-000-000-001

Sta. 0+00
Exist. Manhole #1
Type "A" Modify As Per Dtls.

+55.9
Sta. 2+~~56.6~~
Manhole #2
Const. Type "D" Manhole
With Rubber Gasket Self Sealing Lid

+98.0
Sta. 5+~~54.2~~
Manhole #3
Const. Type "D" Manhole

+04.0
Sta. 8+~~00.3~~
Manhole #4
Const. Type "D" Manhole

S.W. Cor., N.W. 1/4 S.E. 1/4
Sec. 20 (SW. Cor. PH.I Add.)
(Project Coordinates
N = 1000.00 E = 1000.00)

UNPLATTED

MAXWELL 2ND. ADD.

Utility Easement

Railroad Tie Ret. Wall

Exist. 6' Wood Stockade Fence

Cloister Driveway (Private)

15' Utility Easement

15' Util. Esmt.

BM #1

Pl. #1 ℄ Sta. 0+00

℄ Sta. 2+51.48
32.00' Left

℄ Sta. 5+49.1
32.00' Left

Pl. #2 ℄ Sta. 5+60.23

Pl. #3
℄ Sta. 7+73.81

℄ Sta. 7+83.47 P.I. 2 To 3 Extended
25.00' Left

Abandoned 4x6 Slab

Slab

PH.I. ADDITION

N

Scale: 1"=40' Horiz.
1"= 5' Vert.

LEGEND
= Tree 12" & Smaller
= Tree Larger Than 12"
= Tree To Be Removed (Deciduous)

NOTES:

1. FROM THE BEST INFORMATION OBTAINABLE FOR DESIGN, THE CLOISTER PRIVATE DRIVE IS 6" THICK ASPHALT LAID OVER LIME/CEMENT TREATED SUBGRADE.

P.I. NO.	BASELINE STATION	COORDINATES NORTH	COORDINATES EAST	BEARING	DISTANCE (FT.)	REFERENCE TIES
1	0+00	999.88	1087.00	N 0° 00' 00" E	560.23	½" Bar & Cap 48.75' N.W. to C.L. Exist. M.H. 32.8' W. to C.L. Exist. M.H. 2.0' N. to E-W 2 Rail Fence
2	5+60.23	1560.11	1087.00	N 23° 16' 04" E	213.58	½" Bar & Cap 119.00' S. to 60 "D" in 18" Cottonwood in Cluster of 5 41.7' E. N.E. to 60 "D" in 18" Cottonwood in Cluster of 5 29.0' N.W. to Fence running N.E.
3	7+73.81	1756.32	1171.37			½" Bar & Cap 42.85' S.W. to 60"D" in 48" Cottonwood 28.3' W. N.W. to Fence running S. S.W. 28.3' N. N.W. to Fence running E. N.E.

B.M. #1 Elev. 145.67
South Rim Of M.H. 6.5' N & 55' E.
Of S.W. Cor. P.H.I. Addition

100 Year Flood
Existing Ground
Exist 8" Water
Exist 15" San. Sewer
R= 134.7'
Concrete Cradle Per Detail

256.6 L.F. - 21" PVC @ 0.24%
257.6 L.F. - 21" PVC @ 0.24%
246.1 L.F. - 21" PVC @ 0.24%

3/8

CITY OF WICHITA
W.I.S. EXTENSIONS
GYPSUM CREEK
PROJ. NO. 468-76-245-81478-000-000-001

Cloister Driveway (Private)

Sta. 8+00.3
Manhole #4

Exist. 6' Wood Stockade Fence

Sta. 10+11+09.1
Manhole #5
Const. Type "D" Manhole

Sta. 15+68.1 +67.9
Manhole #6
Const. Type "D" Manhole
With Rubber Gasket Self Sealing Lid

℄ Sta. 7+83.47 P.I. 2 to 3 Extended
25.00' Left

P.I. #3 ℄ Sta. 7+73.81

15' Utility Easement

PHI ADDITION

UNPLATTED

℄ Sta. 9+74.86
25.00' Left

P.I. #4 ℄ Sta. 10+56.13

P.I. #5 ℄ Sta. 14+80.39

Center Section 20

N 89° 50' 51" W 2650.51'

423.55'

B.M. #2

DOUGLAS AVENUE

LINDEN DRIVE

40' R/W

100' R/W

50' R/W

℄ Sta. 16+09.13
73.49' Left

Scale: 1" = 40' Horiz.
1" = 5' Vert.

LEGEND
= Tree 12" & Smaller
= Tree Larger Than 12"
= Tree To Be Removed (Deciduous)
= Pine Tree

P.I. NO.	BASELINE STATION	COORDINATES NORTH	COORDINATES E. T	BEARING	DISTANCE (FT.)	REFERENCE TIES
3	7+73.81	1756.32	1171.37	N 65° 31' 44" E	282.32	½" Bar & Cap 42.85' S.W. to 60"D" in 48" Cottonwood 28.3' W. N.W. to Fence running S. S.W. 28.3' N. N.W. to Fence running E. N.E.
4	10+56.13	1873.27	1428.33	N 0° 00' 00" E	424.26	½" Bar & Cap 25.2' S. to 60 "D" in 20" Cottonwood 39.5' N.W. to ½" Pipe @ Prop. Corner 33.6' N. N.W. to Fence running E. N.E.
5	14+80.39	2297.53	1428.33	N 4° 57' 08" W	669.58	½" Bar & Cap 37.5' E. to the W. edge of Cloister Entrance 7.62' N. to the S. Bk. of curb on Douglas 80.15' W. to 3 nails in Power Pole
6	21+49.97	2964.61	1370.53			Conc. Nail & Penny 71.2' N. N.E. 3 nails in Light Pole 20.7' N.E. C.L. of fire hydrant 87.45' S. S.E. 3 nails in Light Pole

NOTES:

1. FROM THE BEST INFORMATION OBTAINABLE FOR DESIGN, THE CLOISTER PRIVATE DRIVE IS 6" THICK ASPHALT LAID OVER LIME/CEMENT TREATED SUBGRADE.
2. STA. 10+50 TO 11+00. ANY TREE OR SHRUB REMOVED SHALL BE REPLANTED OR REPLACED IN LIKE KIND.

B. M. #2 Elev = 154.27
City Disc On Guard Rail At N.E. Cor. RCBC
At Douglas & East Branch Gypsum Creek

Sta. 8+00.3
Manhole #4
Top Of Mh. Elev. = 152.50
151.85

Sta. 10+11
Manhole #5
Top Of Mh. Elev. = 154.40
153.10

Sta. 15+68.1
Manhole #6
Top Of Mh. Elev. = 147.39
146.73

2' Gas
8" Water
Existing Ground
100 Year Flood
Exist. 8" San Sew.
Exist. 3" Gas Line
Exist. 24" Storm Water Sewer
Exist. 8" Water
Exist. Telephone Duct Bank (4x3)
54" ø Steel Casing For 21" Sewer Pipe
Concrete Cradle Per Detail
Existing Sanitary Sewer Flow = 1378.4 ±
212.7 L.F. - 21" AVG @ 0.34%
58.21 L.F. - 21" @ 0.85%

8 9 10 11 12 13 14 15 16

155 150 145 140 135 130

4/8

CITY OF WICHITA
W.I.S. EXTENSIONS
GYPSUM CREEK
PROJ. NO. 468-76-245-81478-000-000-001

Verify For The Engineer The Depth Of 6" Sanitary Sewer Before Trenching Between Manholes 6 & 7.

Sta. 15+~~68.1~~ +61.9
Manhole #6

Sta. 19+~~60.4~~ +57.7
Manhole #7
Const. Type "D" Manhole With Rubber Gasket Self Sealing Lid

Sta. 20+~~73.8~~ +33.8
Manhole #8
Const. Type "D" Manhole With Rubber Gasket Self Sealing Lid

Sta. 22+~~68.5~~ +54.6
Manhole #9
Const. Type "D" Manhole With Rubber Gasket Self Sealing Lid

Sta. 24+~~24.4~~ +23.2
Manhole #10
Const. Type "D" Manhole With Rubber Gasket Self Sealing Lid

Sta. 27+~~37.9~~ +36.7
Manhole #11
Const. Type "D" Manhole With Rubber Gasket Self Sealing Lid

℄ Sta. 16+09.13
73.49' Left

℄ Sta. 19+99.15
31.39' Left

℄ Sta. 20+73.92
41.01' Left

P.I. #6 ℄ Sta. 21+49.97

℄ Sta. 22+75.47
61.32' Left

℄ Sta. 24+40.57
30.89' Left

℄ Sta. 27+53.63
47.45' Left

P.I. NO.	BASELINE STATION	COORDINATES NORTH	COORDINATES EAST	BEARING	DISTANCE (FT.)	REFERENCE TIES
5	14+80.39	2297.53	1428.33	N 4° 57' 08" W	669.58	½" Bar & Cap 37.5' E. to the W. edge of Cloister Entrance 7.62' N. to the S. Bk. of curb on Douglas 80.15' W. to 3 nails in Power Pole
6	21+49.97	2964.61	1370.53	N 23° 40' 40" E	746.43	Conc. Nail & Penny 71.2' N. E. 3 nails in Light Pole 20.7' N.E. C.L. of fire hydrant 87.45' S. S.E. 3 nails in Light Pole
7	28+96.40	3648.20	1670.29			½" Bar & Cap 40.35' W. to 3 nails in Light Pole 11.35' E. to 60 "D" in 20" Elm 1.0' W. to E. edge Asph. on W. lane of Linden

NOTES:

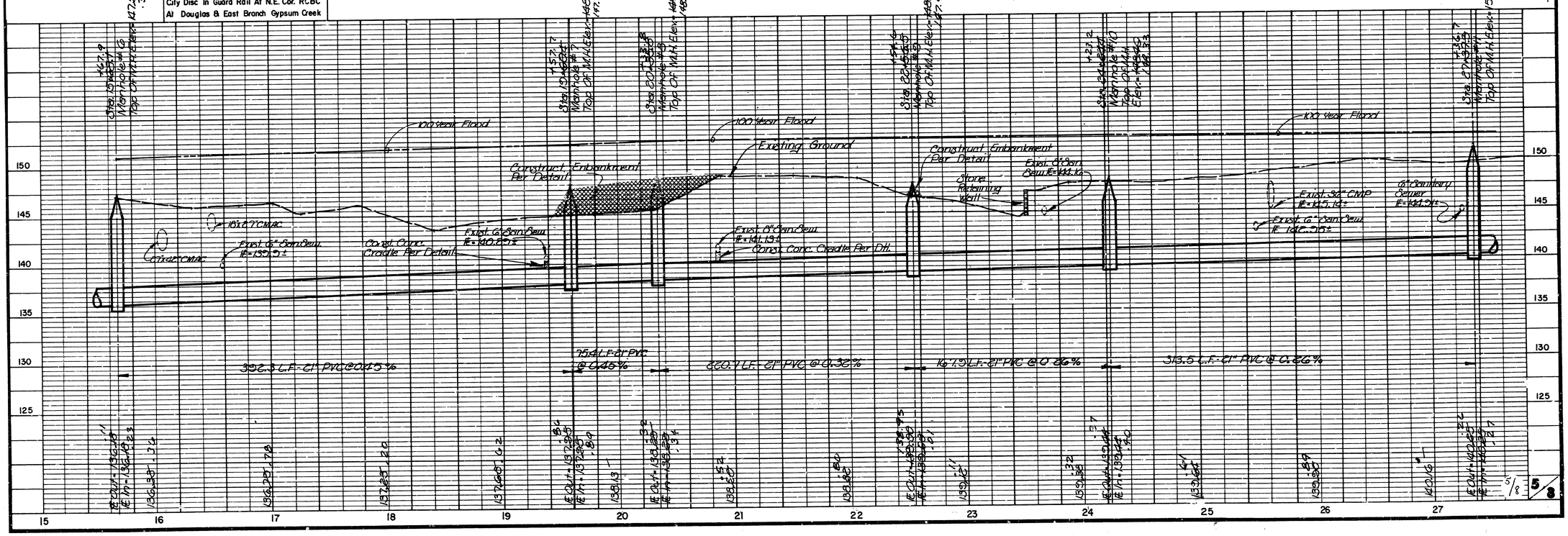
1. FROM THE BEST INFORMATION OBTAINABLE FOR DESIGN, THE WEST ROADWAY OF LINDEN DRIVE IS 7" THIC' ASPHALT PAVEMENT LAID OVER 6" LIME/CEMENT TREATED SUBGRADE OR A PREVIOUS 4½" AVG. ASPHALT MAT.
2. STA. 23+50 TO 24+25. NOTIFY PROPERTY OWNERS 7 DAYS PRIOR TO BEGINNING OF CONSTRUCTION AND ALLOW THEM TO REMOVE ANY FLOWER BULBS, PLANTS, ETC. FROM THE FLOWER BED WHICH THEY WANT TO SAVE. GRADE AND REWORK AREA TO EXISTING TOPOGRAPHY, ALL DISTURBED AREAS SHALL BE RESODDED OR RESEEDED IN LIKE KIND, ANY TREE, OR SHRUB, REMOVED SHALL BE REPLACED IN LIKE KIND (EXCEPT 20" DIA. MATURE COTTONWOOD AT STA. 23+50). RETAINING WALL, DRIVEWAY AND OTHER IMPROVEMENTS SHALL BE REPAIRED OR REPLACED TO EXISTING CONDITIONS.
3. STA.. 25+30. REMOVE 12" PINE INDICATED AND REPLACE WITH 2-4" PINES OF LIKE KIND. TREES SHALL BE LOCATED NOT CLOSER THAN 10 FT. TO WEST EDGE OF PAVEMENT AND AS DIRECTED BY THE ENGINEER.

N

Scale: 1"=40' Horiz.
1"=5' Vert.

LEGEND
- (12") = Tree 12" & Smaller
- (20") = Tree Larger Than 12"
- (20") = Tree To Be Removed (Deciduous)
- = Tree To Be Removed (Pine)

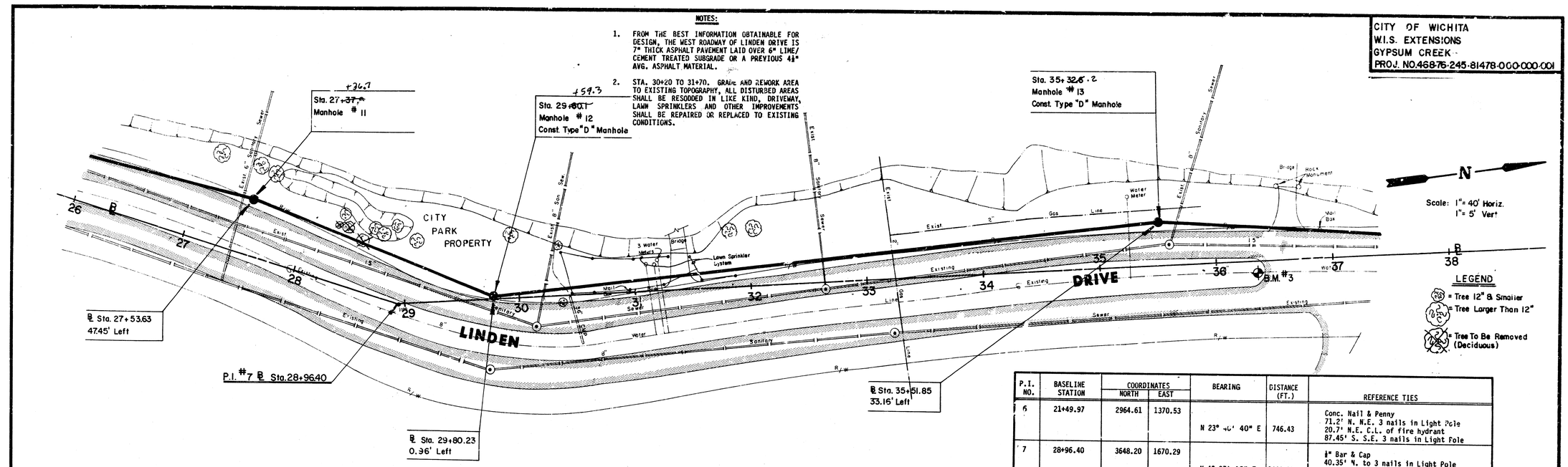
B.M. Elev.= 154.27
City Disc in Guard Rail At N.E. Cor. RCBC At Douglas & East Branch Gypsum Creek



CITY OF WICHITA
W.I.S. EXTENSIONS
GYPSUM CREEK
PROJ. NO. 468-76-245-81478-000-000-001

NOTES:

1. FROM THE BEST INFORMATION OBTAINABLE FOR DESIGN, THE WEST ROADWAY OF LINDEN DRIVE IS 7" THICK ASPHALT PAVEMENT LAID OVER 6" LIME/CEMENT TREATED SUBGRADE OR A PREVIOUS 4½" AVG. ASPHALT MATERIAL.
2. STA. 30+20 TO 31+70. GRADE AND REWORK AREA TO EXISTING TOPOGRAPHY, ALL DISTURBED AREAS SHALL BE RESODDED IN LIKE KIND, DRIVEWAY, LAWN SPRINKLERS AND OTHER IMPROVEMENTS SHALL BE REPAIRED OR REPLACED TO EXISTING CONDITIONS.



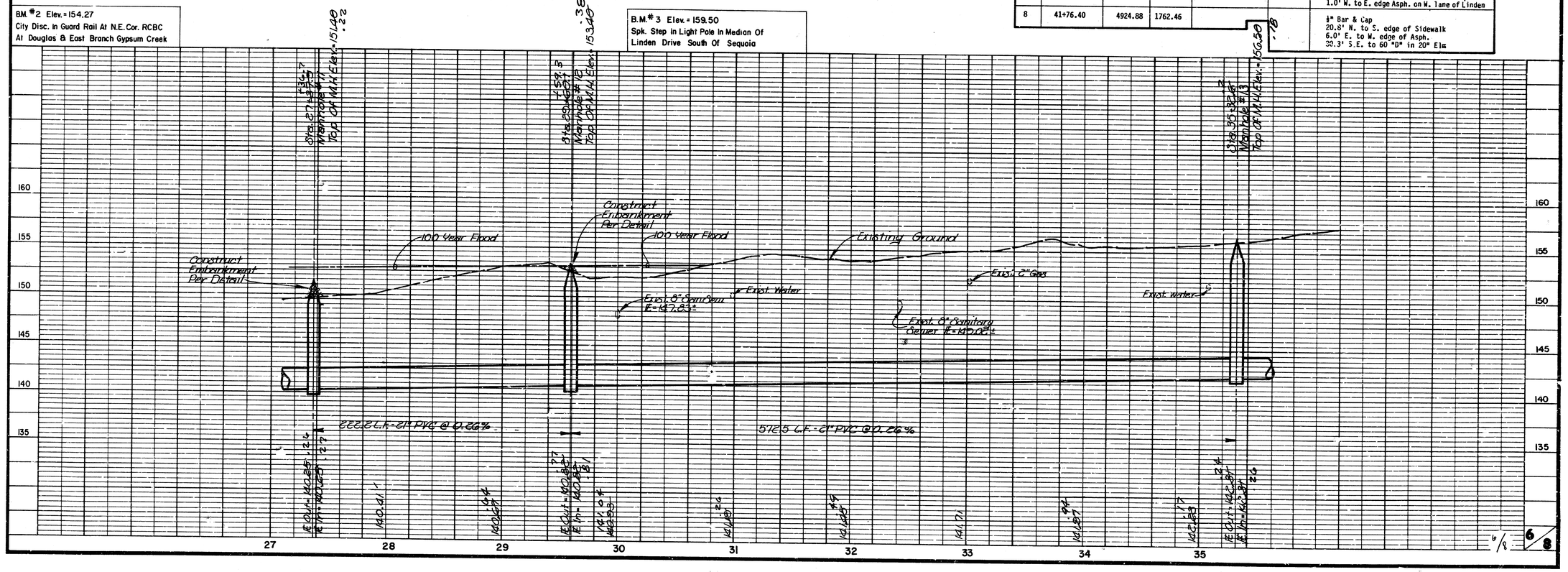
LEGEND

= Tree 12" & Smaller
= Tree Larger Than 12"
= Tree To Be Removed (Deciduous)

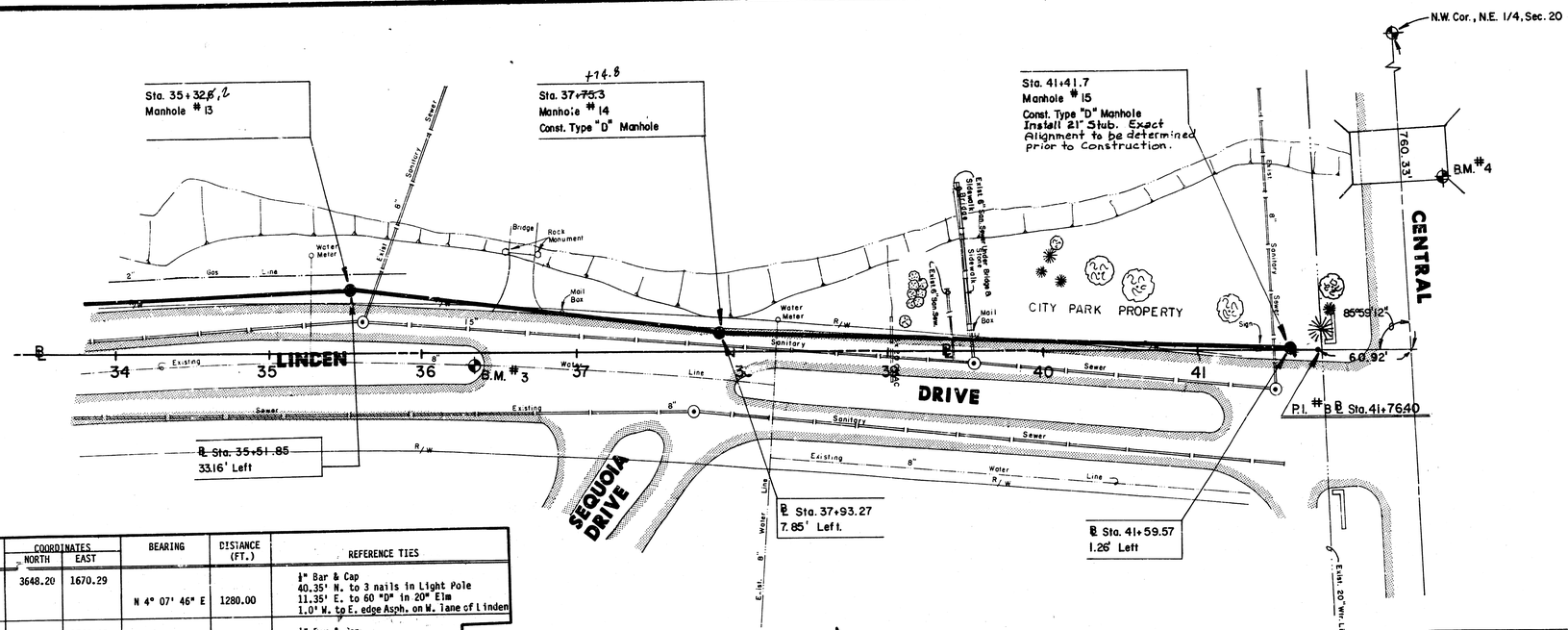
P.I. NO.	BASELINE STATION	COORDINATES NORTH	COORDINATES EAST	BEARING	DISTANCE (FT.)	REFERENCE TIES
6	21+49.97	2964.61	1370.53	N 23° 40' 40" E	746.43	Conc. Nail & Penny 71.2' N. N.E. 3 nails in Light Pole 20.7' N.E. C.L. of fire hydrant 87.45' S. S.E. 3 nails in Light Pole
7	28+96.40	3648.20	1670.29	N 4° 07' 45" E	1280.00	½" Bar & Cap 40.35' N. to 3 nails in Light Pole 11.35' E. to 60 "D" in 20" Elm 1.0' W. to E. edge Asph. on W. lane of Linden
8	41+76.40	4924.88	1762.46			½" Bar & Cap 20.8' N. to S. edge of Sidewalk 6.0' E. to W. edge of Asph. 30.3' S.E. to 60 "D" in 20" Elm

B.M. #2 Elev. = 154.27
City Disc. in Guard Rail At N.E. Cor. RCBC
At Douglas & East Branch Gypsum Creek

B.M. #3 Elev. = 159.50
Spk. Step in Light Pole in Median Of
Linden Drive South Of Sequoia



CITY OF WICHITA
W.I.S. EXTENSIONS
GYPSUM CREEK
PROJ. NO. 468-76-245-61478-000-000-001



P.I. NO.	BASELINE STATION	COORDINATES NORTH	COORDINATES EAST	BEARING	DISTANCE (FT.)	REFERENCE TIES
7	28+96.40	3648.20	1670.29	N 4° 07' 46" E	1280.00	½" Bar & Cap 40.35' N. to 3 nails in Light Pole 11.35' E. to 60 "D" in 20" Elm 1.0' W. to E. edge Asph. on W. lane of Linden
8	41+76.40	4924.88	1762.46			½" Bar & Cap 20.8' N. to S. edge of Sidewalk 6.0' E. to W. edge of Asph. 80.3' S.E. to 60 "D" in 20" Elm

NOTES:

1. FROM THE BEST INFORMATION OBTAINABLE FOR DESIGN, THE WEST ROADWAY OF LINDEN DRIVE IS 7" THICK ASPHALT PAVEMENT LAID OVER 6" LIME/CEMENT TREATED SUBGRADE OR A PREVIOUS 4½" AVG. ASPHALT MATERIAL.
2. STA. 35+50 TO 37+00. GRADE & REWORK AREA TO EXISTING TOPOGRAPHY, ALL DISTURBED AREAS SHALL BE RESODDED OR RESEEDED IN LIKE KIND, DRIVEWAY AND OTHER IMPROVEMENTS SHALL BE REPAIRED OR REPLACED TO EXISTING CONDITIONS.
3. STA. 38+15 TO 41+42. GRADE AND REWORK AREA TO EXISTING TOPOGRAPHY, ALL DISTURBED AREAS SHALL BE RESODDED OR RESEEDED IN LIKE KIND, ANY TREE OR SHRUB SHALL BE REPLACED IN LIKE KIND, SIDEWALK AND OTHER IMPROVEMENTS SHALL BE REPAIRED OR REPLACED TO EXISTING CONDITIONS.

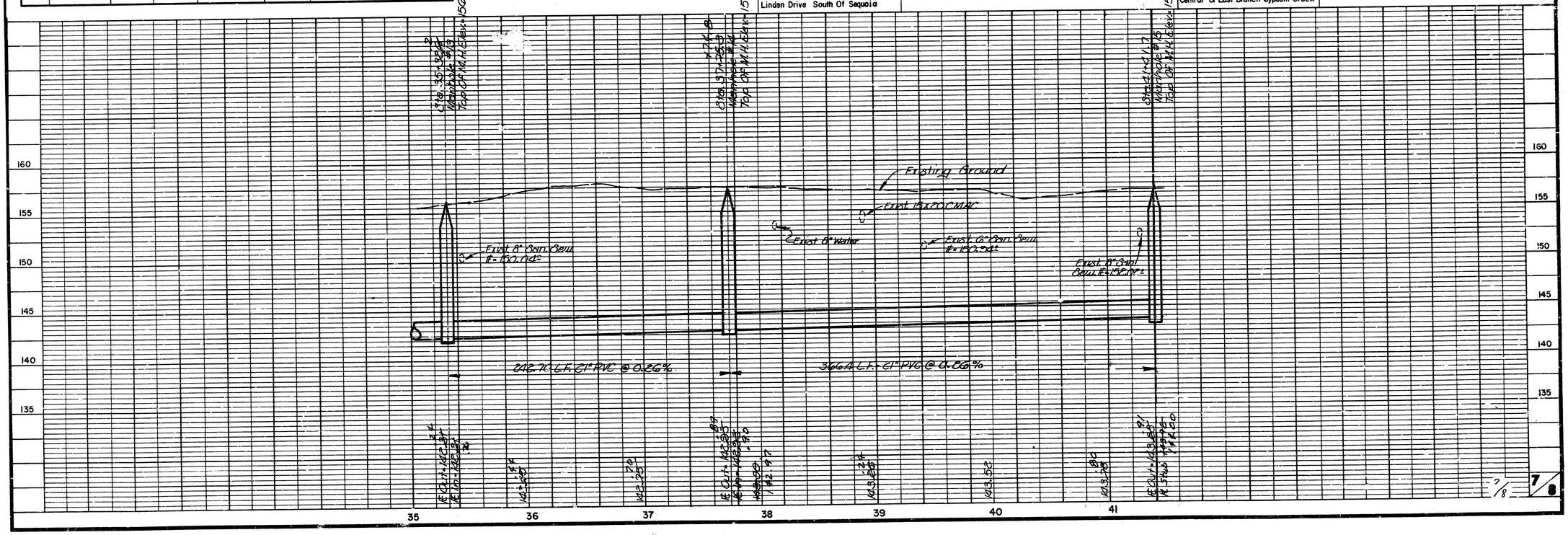
N

Scale: 1"= 40' Horiz.
1"= 5' Vert.

LEGEND
= Tree 12" & Smaller
= Tree Larger Than 12"

B.M. # 3 Elev. = 159.50
Spk. Step In light Pole In Median Of Linden Drive South Of Sequoia

B.M. #4 Elev. = 157.24
City Disc On N.E. Cor. R C B At Central & East Branch Gypsum Creek



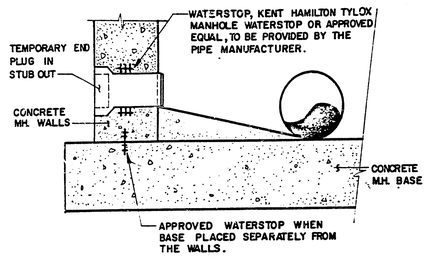
SEWER APPURTENANCES DETAILS

ADOPTED AS STANDARD DESIGN BY

CITY OF WICHITA, KANSAS

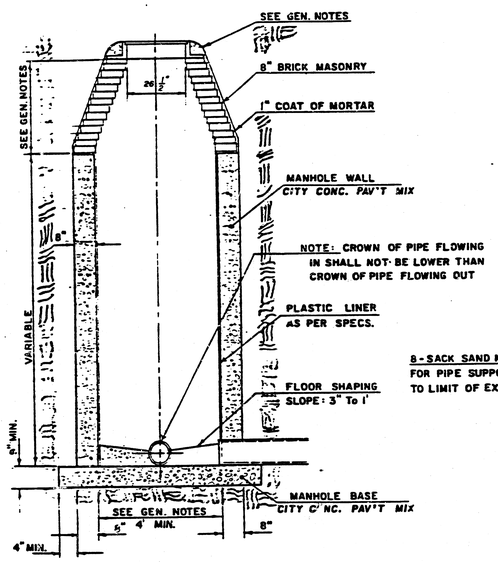
NOTE: PIPE STUB OUT AND WATERSTOP INTEGRAL WITH MANHOLE WALL

INSTALL WATERSTOP IN THE SAME MANNER AT ALL PIPE TO MANHOLE CONNECTIONS

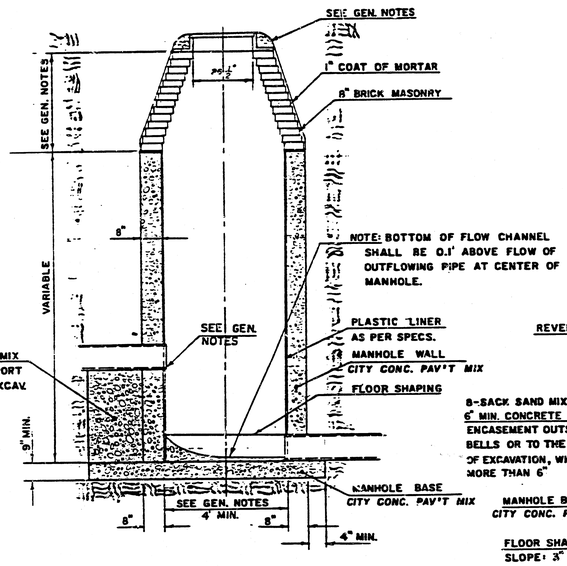


WATER STOP DETAIL

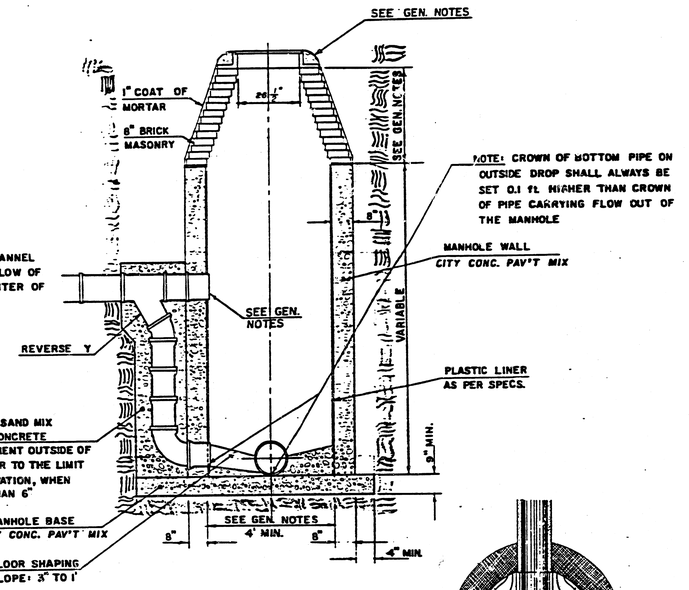
TYPE "D" MANHOLE

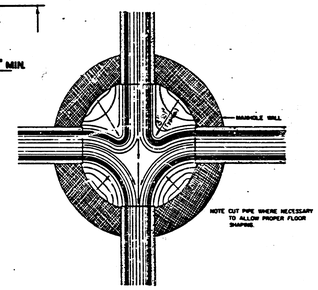


TYPE "D" INSIDE DROP MANHOLE



TYPE "D" OUTSIDE DROP MANHOLE





TYPICAL MANHOLE FLOOR SHAPING

GENERAL NOTES

1. MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE WALLS AND 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. PLASTIC LINING INSIDE THE MANHOLE SHALL CONFORM TO THE REQUIREMENTS SPECIFIED IN THE STANDARD SPECIFICATIONS FOR PLASTIC LINING FOR REINFORCED CONCRETE PIPE FOR SANITARY SEWER CONSTRUCTION. ALL INSIDE SURFACES OF THE MANHOLE WALL WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE PROTECTED BY THE PLASTIC LINING. TYPE "D" MANHOLES MAY BE USED ON PIPE SIZES 10" TO 36" WHEN THE MANHOLE DEPTH EXCEEDS THE REQUIRED CORBEL HEIGHT BY 1' PLUS THE OUTSIDE DIAMETER OF THE LARGEST PIPE IN THE MANHOLE. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE SMALLER THAN 24" SHALL HAVE A DIAMETER OF 4'. MANHOLES CONSTRUCTED WHERE THE PIPE SIZES ARE 24" OR LARGER SHALL HAVE A DIAMETER OF 5'. THE HEIGHT OF THE CORBELS ON 4' DIAMETER MANHOLES SHALL BE 4' MANHOLES HAVING A DIAMETER OF 5' SHALL HAVE CORBELS 6' IN HEIGHT. COMPLETED MANHOLE SHALL BE WITHOUT LEAKS AND WATER TIGHT.

2. REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASE. REINFORCING STEEL SHALL CONSIST OF NO. 4 BARS PLACED ON 6" CENTERS IN BOTH DIRECTIONS. REINFORCING STEEL SHALL BE PLACED 6" ABOVE THE BOTTOM OF THE MANHOLE BASE. COST OF FURNISHING AND INSTALLING REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.

3. AN OPENING SHALL BE CUT IN THE MANHOLE WALL FOR THE UPPER INLET PIPE FOR INSIDE AND OUTSIDE DROP MANHOLES. THE UPPER INLET PIPE SHALL BE GROUTED INTO THIS OPENING WITH NON-SHRINK GROUT. THE EXTERIOR OF THIS COMPLETED CONNECTION SHALL BE SEALED WITH AN APPROVED BITUMINOUS COATING SUCH THAT THE CONNECTION WILL BE WATER TIGHT. THE INTERIOR PLASTIC LINING SHALL BE SEALED AROUND THE INLET PIPE OPENING IN SUCH A MANNER THAT WILL EFFECTIVELY MAINTAIN THE INTEGRITY OF THE PROTECTIVE PLASTIC LINER.

4. 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.

5. 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 MANHOLE. 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.

6. 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.

7. THE VERTICAL DROP IN INSIDE DROP MANHOLES SHALL NOT EXCEED 4' 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.

8. STANDARD MANHOLES TYPE "D" AND STANDARD INSIDE DROP MANHOLES TYPE "D" SHALL BE BID AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. OUTSIDE DROP MANHOLES TYPE "D" SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.

CITY OF WICHITA, KANSAS
WAR INDUSTRIAL SEWER EXTENSION
PROJECT NO.
468-76-245-81478-000-000-001

MANHOLE "D" DETAIL

Design
Drawn by
Checked by
Date
Job no.

MID-KANSAS ENGINEERING CONSULTANTS PA
240 NORTH ROCK ROAD
SUITE 130
WICHITA, KANSAS 67206
682-6561

8/8

Sheet 8 of 8