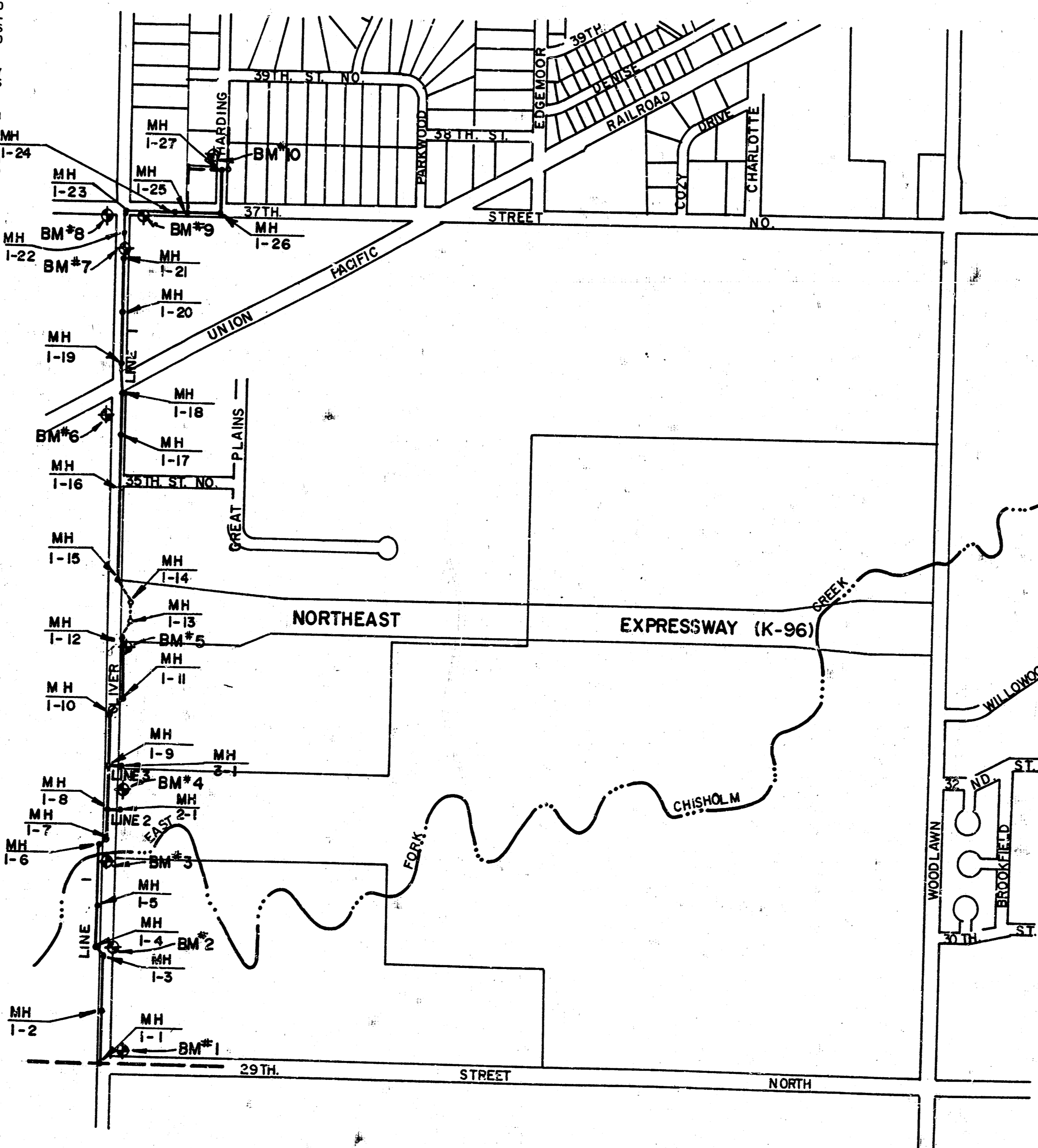


PLANS FOR  
**SANITARY SEWER MAIN IN BEL AIRE**  
**ON OLIVER ... 29TH. ST. NO. TO 37TH. ST. NO.**  
 CITY OF BEL AIRE  
 SEDGWICK COUNTY, KANSAS

**GENERAL NOTES**

1. ALL CONSTRUCTION AND MATERIALS TO COMPLY WITH THE SPECIFICATIONS.
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. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL UTILITIES 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 REPAIRS TO LESS THAN 50 FEET.
4. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE A MINIMUM ADVANCE NOTICE OF FORTY EIGHT (48) HOURS TO UTILITY AND PIPELINE COMPANIES PRIOR TO STARTING ANY EXCAVATION AS FOLLOWS:  
 KANSAS ONE-CALL 1-800-344-7233  
 THE CONTRACTOR MUST NOTIFY THE FOLLOWING IN CASE OF AN EMERGENCY:  
 CITY OF BEL AIRE 744-2888 or 744-2451  
 CARELESSION 282-4270 or 263-2061  
 KPL GAS SERVICE COMPANY 263-7511  
 KANSAS GAS & ELECTRIC 264-1141  
 SOUTHWESTERN BELL TELEPHONE COMPANY 1-571-2811  
 CITY OF WICHITA WATER DEPARTMENT 268-4908  
 CITY OF WICHITA SEWER MAINTENANCE 268-4908  
 UNION PACIFIC RAILROAD YARDMASTER 268-9624
5. 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 ALSO BE ENCOUNTERED. UNDERGROUND UTILITY LINES ARE TO BE ADJUSTED DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING AND MAINTAINING EXISTING UTILITIES WHICH DO NOT COMPLY WITH PROPOSED CONSTRUCTION.
6. THE CONTRACTOR SHALL RESTORE ALL DITCHES, CHANNELS, BANK STABILIZATION, SLOPES AND GRADES, WALKWAYS, DRIVEWAYS, ENTRANCES, AND SIGNS TO THEIR ORIGINAL CONDITION. EXISTING ENTRANCE PIPES, DRAINAGE PIPES, SPRINKLER SYSTEMS, SIRENS, SIGNS, FENCES, ETC., WHICH COMPLY WITH THE PROPOSED WORK HEREIN SHALL BE REMOVED AND REPLACED OR RESET IN LIKE KIND.
7. TREES AND SHRUBS IN THE PUBLIC RIGHT-OF-WAY WHICH ARE IN DIRECT CONFLICT WITH PROPOSED NEW CONSTRUCTION SHALL BE REMOVED BY THE CONTRACTOR WITH THE ENGINEER'S APPROVAL. TREES AND SHRUBS WHICH ARE NOT IN DIRECT CONFLICT WITH PROPOSED NEW CONSTRUCTION SHALL BE SAVED AND PROTECTED FROM DAMAGE.
8. RUMBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES, DEBRIS AND EXCESS EXCAVATION WHICH IS TO BE WASTED SHALL BE DISPOSED OF ON SITES TO BE AS TO SUITABILITY, APPEARANCE AND SITE LOCATION. LOCATIONS THAT, IN THE OPINION OF THE ENGINEER, WILL LEAVE AN UNDESIRABLE APPEARANCE WILL NOT BE APPROVED.
9. POSITIVE DRAINAGE SHALL BE PROVIDED FOR ALL AREAS ON OR NEAR SPOIL AREAS. NATURAL DRAINAGEWAYS 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 OTHER ITEMS OF WORK.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY LINES. THE CONTRACTOR SHALL BE REQUIRED TO RE-ESTABLISH ANY PROPERTY LINES WHICH ARE DAMAGED OR RESTORED BY HIS CONSTRUCTION OPERATIONS. SUCH LINES SHALL BE RE-ESTABLISHED BY A REGISTERED LAND SURVEYOR IN ACCORDANCE WITH STATE LAWS.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONTINUOUS FLOW FOR SEWER THROUGH CONSTRUCTION. CONTRACTOR'S PROPOSED METHOD FOR MAINTAINING FLOW THROUGH CONSTRUCTION SHALL BE APPROVED BY THE ENGINEER. COST OF MAINTAINING SEWAGE FLOW SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS OF WORK.
13. ALL ELEVATIONS SHOWN ARE USGS MSL.
14. 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 ADJUTS AN EXISTING SURFACE COURSE OR PAVEMENT FOR WHICH PARTIAL PORTION OF THE SURFACE OR PAVEMENT IS REQUIRED. SUCH SAW CUTS WILL NOT BE PAID FOR DIRECTLY AND THIS COST SHALL BE CONSIDERED AS SUBSIDIARY TO OTHER ITEMS OF WORK.
15. ALL COSTS FOR REMOVAL AND REPLACEMENT OF EXISTING PAVEMENT SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS OF WORK. REMOVAL OF EXISTING PAVEMENT SECTIONS OF THE 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.
16. FOR CONSTRUCTION IN AREAS WITH GRAVELED SURFACING, THE CONTRACTOR SHALL CAREFULLY REMOVE THE EXISTING SURFACING MATERIAL OVER THE AREA TO BE EXCAVATED. AFTER TRENCHING AND BACKFILLING IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIFICATIONS, THE GRAVEL SURFACING MATERIAL SHALL BE REPLACED TO A DEPTH OF AT LEAST EQUAL TO UNDISTURBED GRAVEL SURFACING. IF THE GRAVEL TAKEN FROM THE DISTURBED AREA HAS BEEN ALLOWED TO BECOME MIXED WITH OTHER MATERIAL, IT SHALL NOT BE RE-USED BUT SHALL BE REPLACED WITH APPROVED CLEAN GRAVEL. COSTS FOR GRAVEL REPLACEMENT SHALL BE CONSIDERED AS SUBSIDIARY TO OTHER ITEMS OF WORK.
17. MATERIALS WITHIN THE LIMITS OF THE PROJECT SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AS APPROVED BY THE ENGINEER. CONTRACTOR WILL BE REQUIRED TO MAKE SATISFACTORY PROVISIONS FOR MAIL DELIVERY TO PROPERTIES AFFECTED BY THIS PROJECT DURING ITS CONSTRUCTION. COST SUBSIDIARY TO OTHER ITEMS.
18. THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND/OR TENANTS OF PROPERTY DIRECTLY AFFECTED BY THE CONSTRUCTION OF THIS PROJECT A MINIMUM OF 5 DAYS ADVANCE NOTICE PRIOR TO START OF CONSTRUCTION.
19. THE COST OF SERVICE LINE AND CLEAN OUT CONSTRUCTION AND/OR RECONSTRUCTION SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS OF WORK.
20. ALL EXISTING GRASSED AREAS WHICH ARE DISTURBED OR DAMAGED DURING CONSTRUCTION OPERATIONS SHALL BE RESTORED TO ORIGINAL CONDITIONS AND RESEEDED IN SUBSIDIARY TO OTHER ITEMS OF WORK. APPLICATION RATE FOR THE VARIOUS SEED MIXTURES SHALL BE AS APPROVED BY THE ENGINEER. SEEDING SHALL OCCUR TO APPLICABLE REQUIREMENTS OF THE SPECIFICATIONS.
21. SLOPES STEEPER THAN 10 TO 1 SHALL BE MULCHED AS REQUIRED BY STANDARD SPECIFICATIONS. COST OF MULCHING SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS OF WORK.
22. THE COST OF MANHOLE STUB OUTS, WHERE SHOWN ON THE PLANS, SHALL BE SUBSIDIARY TO THE PRICE BID FOR MANHOLE.
23. AT SANITARY SEWER LINE (INCLUDING SERVICE LINES) AND WATER LINE CROSSINGS, THE SEWER LINE SHALL BE CONCRETE ENCASED FOR 10 FT. EACH WAY FROM THE WATER LINE, UNLESS THE SEWER LINE HAS 2 FT. OR MORE CLEARANCE BELOW THE WATER LINE.
24. A PORTION OF EXCESS EXCAVATED MATERIAL SHALL BE HOUND AROUND MANHOLES WHICH EXTEND MORE THAN ONE (1) FOOT ABOVE THE EXISTING GROUND. SUCH MOUNDS SHALL BE CONSTRUCTED WITH A SIX (6) FOOT DIAMETER FLAT TOP WITH 4 TO 1 SIDE SLOPES DOWN TO THE ORIGINAL GROUND. THE ELEVATION OF THE FLAT TOP OF THE MOUND SHALL BE 0.4 FOOT BELOW THE TOP OF THE MOUND.
25. WHERE SHOWN ON DRAWINGS, GASKETED MANHOLE LIDS SHALL BE INSTALLED WITH REPLACEABLE RUBBER GASKET SELF-SEALING GASKETS. PROVIDE ONE SPARE GASKET FOR EACH MANHOLE FRAME AND COVER INSTALLED. DO NOT INSTAL GASKETS UNTIL AFTER FINAL INSPECTION.
26. AFTER THE 10 INCH PVC SEWER LINE OR PORTIONS THEREOF, HAVE BEEN ACCEPTED APPROVED BY THE CITY OF WICHITA, THE EXISTING 10 INCH AND 12 INCH TOP LINES, MANHOLES, AND THE SPECIFICATIONS SHALL BE ABANDONED IN PLACE OR REMOVED IN ACCORDANCE WITH THE SPECIFICATIONS.
27. CONTRACTOR TO PURCHASE CONNECTION PERMITS FOR HOUSE SERVICES FROM CITY OF WICHITA.
28. CONSTRUCTION OF K-96 AND ASSOCIATED OLIVER STREET IMPROVEMENTS BY CITY OF WICHITA CONTRACTOR WILL BE IN PROGRESS DURING THIS PROJECT. CONSTRUCTION OPERATIONS INVOLVING THE SEWER CROSSING AT OLIVER STR. 29+48.5 TO STA. 29+48.1 AND OTHER POTENTIAL AREAS OF CONFLICT WITH OLIVER STREET IMPROVEMENTS SHALL BE COORDINATED AND SCHEDULED WITH MAX LERNER, BONDINGER & SONS CONSTRUCTION COMPANY, 264-3101, WELL IN ADVANCE OF THE P.LANNED WORK.



**LOCATION MAP**

**INDEX TO DRAWINGS**

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2-7	PLAN & PROFILE-LINE 1
8	PLAN & PROFILE-LINE 2, 3, & 4
9	DETAILS

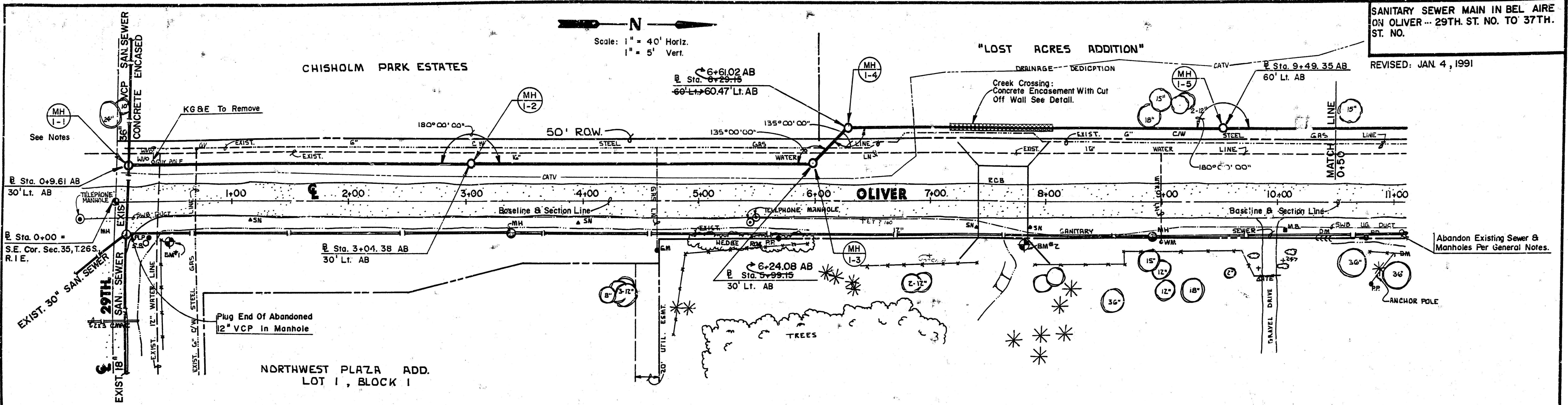
APPROVED AS NOTED  
 CITY ENGINEER OF WICHITA  
 Sanitary Sewers VRH 1/4/91  
 Storm Sewers \_\_\_\_\_  
 Driveway Approaches \_\_\_\_\_  
 Water Mains \_\_\_\_\_  
 Paving \_\_\_\_\_

**NOTE TO CONTRACTOR**  
 INSPECTION AND TESTING FOR THIS PROJECT IS TO BE PROVIDED BY A LICENSED CONSULTING ENGINEERING FIRM UNDER CONTRACT WITH THE OWNER/DEVELOPER. SAID INSPECTION TO BE IN ACCORDANCE WITH THE CITY OF WICHITA STANDARD CONSTRUCTION ENGINEERING PRACTICES AND CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER. NO WORK SHALL BE PERFORMED IN DEDICATED EASEMENTS OR THE PUBLIC RIGHT-OF-WAY BY THE CONTRACTOR WITHOUT SUCH INSPECTION AND SHALL ANY WORK BE COMMENCED IN DEDICATED EASEMENTS OR PUBLIC RIGHT-OF-WAY WITHOUT WRITTEN AUTHORIZATION BY THE CITY ENGINEER.

REVISED: JAN. 4, 1991 AS-BUILT 9-19-91  
 CITY OF WICHITA PRIVATE PROJECT NO. 277PPS (607861)

<b>SEWER</b>	<b>SANITARY SEWER MAIN</b>	Design DSS/DCH
	<b>IN BEL AIRE</b>	Drawn by DLM
<b>ON OLIVER ... 29TH. ST. NO. TO 37TH. ST. NO.</b>		Checked by DCH
		Date Dec., 1990
		Job no.
MID-KANSAS ENGINEERING CONSULTANTS PA 3500 NORTH ROCK ROAD BUILDING #600 WICHITA, KANSAS 67226		Sheet 1 of 9
636-5566		

SANITARY SEWER MAIN IN BEL AIR  
ON OLIVER - 29TH. ST. NO. TO 37TH.  
ST. NO.  
REVISED: JAN 4, 1991

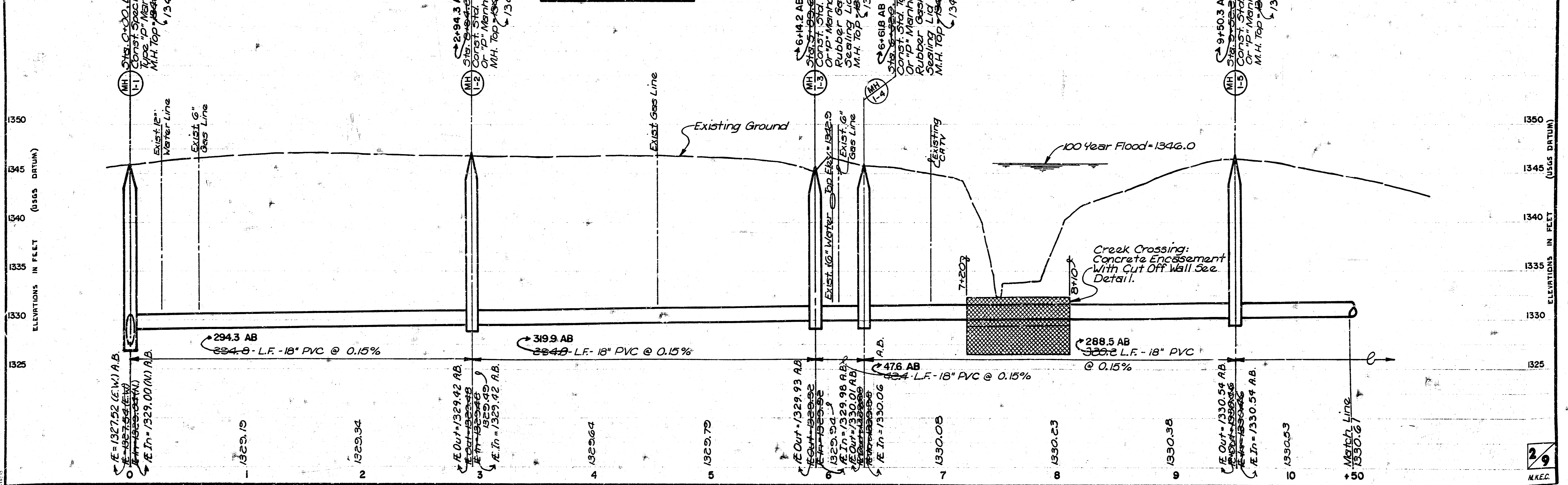


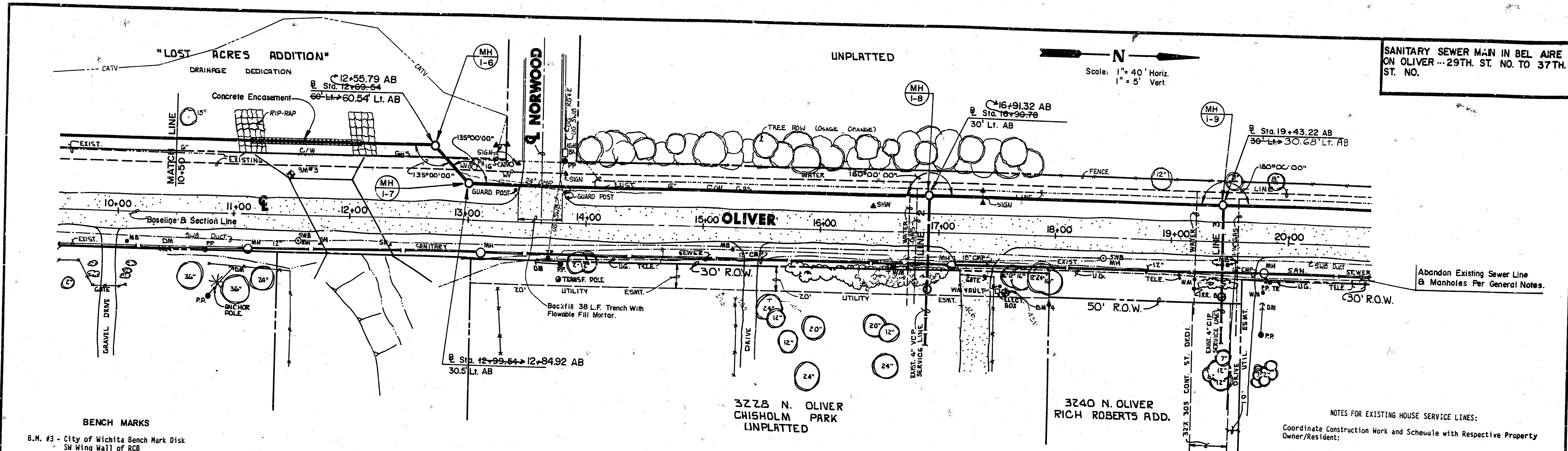
**PLAN LINE I**

**BENCH MARKS**  
 B.M. #1 - City of Wichita Bench Mark Disk  
 39' N CL 29th; 32' E CL Oliver  
 Elev. = 1347.15  
 B.M. #2 - City of Wichita Bench Mark Disk  
 NE Wing Wall of RCB  
 Elev. = 1348.225

- NOTES**
1. CONTRACTOR SHALL VERIFY CONDITION AND EXTENT OF CONCRETE ENCASUREMENT BEFORE ORDERING MANHOLE. NOTIFY ENGINEER IF A DIFFERENT MANHOLE TYPE OR SIZE IS REQUIRED.
  2. SPECIAL TYPE "P" MANHOLE SHALL BE MANUFACTURED AND INSTALLED PER APPLICABLE PORTIONS OF SPECIFICATIONS AND STANDARD DETAILS WITH MODIFICATIONS AS REQUIRED FOR DIMENSIONS AND ADAPTATION TO EXISTING 36 INCH PIPE.
  3. REDUCER COLLAR SHALL BE POSITIONED AT THE BASE OF CONE SECTION.
  4. MANHOLE SHALL BE TESTED FOR LEAKS IN ACCORDANCE WITH SPECIFICATIONS.

**PROFILE LINE I**





**BENCH MARKS**  
 B.M. #3 - City of Wichita Bench Mark Disk  
 SW Wing Wall of RCB  
 Elev. = 1348.805  
 B.M. #4 - " " Cut NE Corner MH Vault  
 Elev. = 1350.94

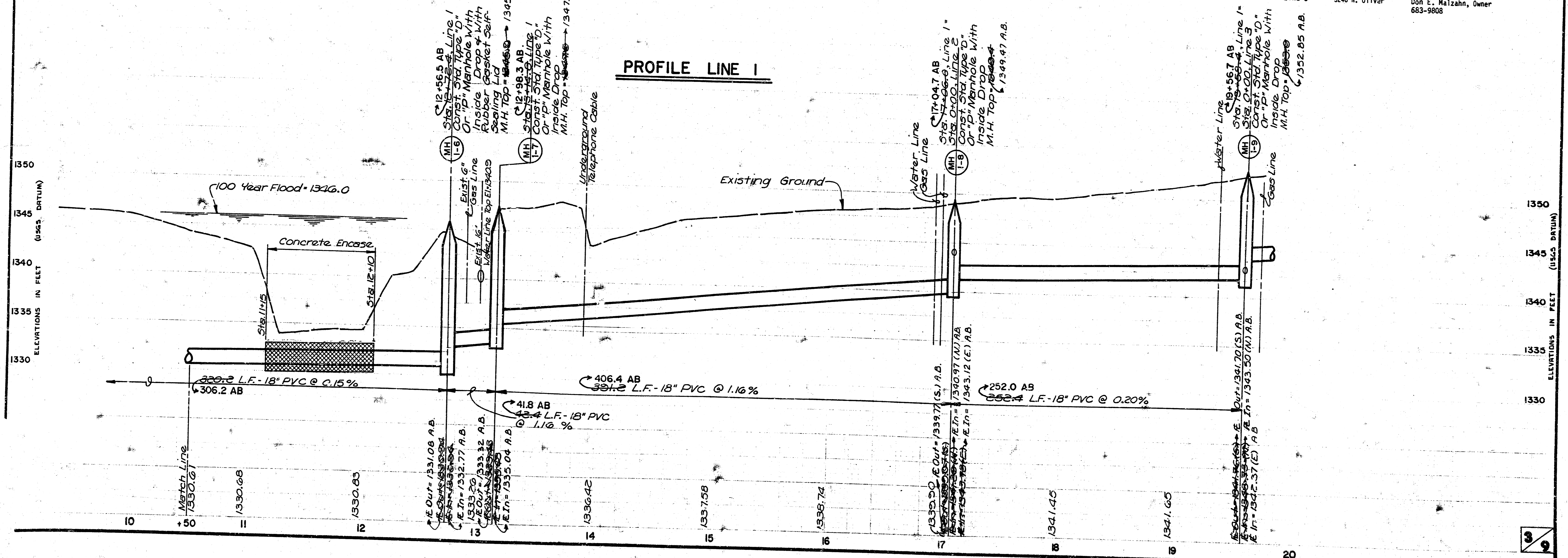
Abandon Existing Sewer Line  
 & Manholes Per General Notes.

**NOTES FOR EXISTING HOUSE SERVICE LINES:**  
 Coordinate Construction Work and Schedule with Respective Property Owner/Resident:

Line 2	3228 N. Oliver	Chisholm Park Residence Art Ackey, Caretaker Larry Conners, Park Maintenance, 264-1642
Line 3	3240 N. Oliver	Don E. Malzahn, Owner 683-9808

**PLAN LINE 1**

**PROFILE LINE 1**

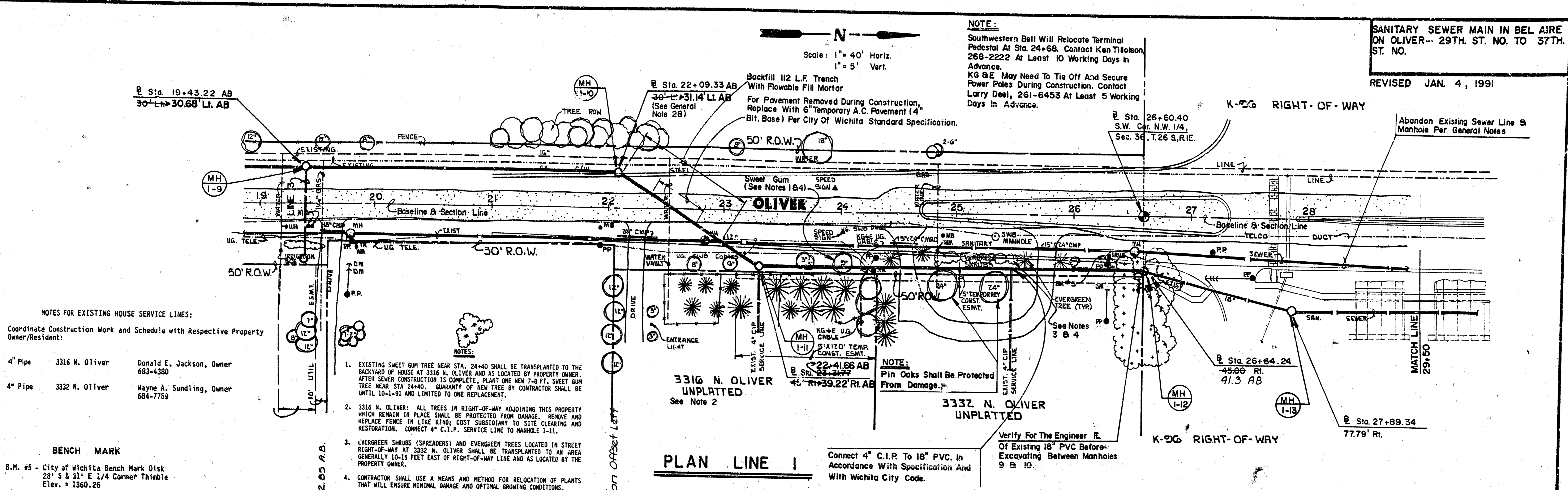


SANITARY SEWER MAIN IN BEL AIRE ON OLIVER-- 29TH. ST. NO. TO 37TH. ST. NO.

REVISED JAN. 4, 1991

**NOTE:**  
Southwestern Bell Will Relocate Terminal Pedestal At Sta. 24+68. Contact Ken Titobson, 268-2222 At Least 10 Working Days In Advance.  
K&E May Need To Tie Off And Secure Power Poles During Construction. Contact Larry Deel, 261-6453 At Least 5 Working Days In Advance.

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



**NOTES FOR EXISTING HOUSE SERVICE LINES:**  
Coordinate Construction Work and Schedule with Respective Property Owner/Resident:

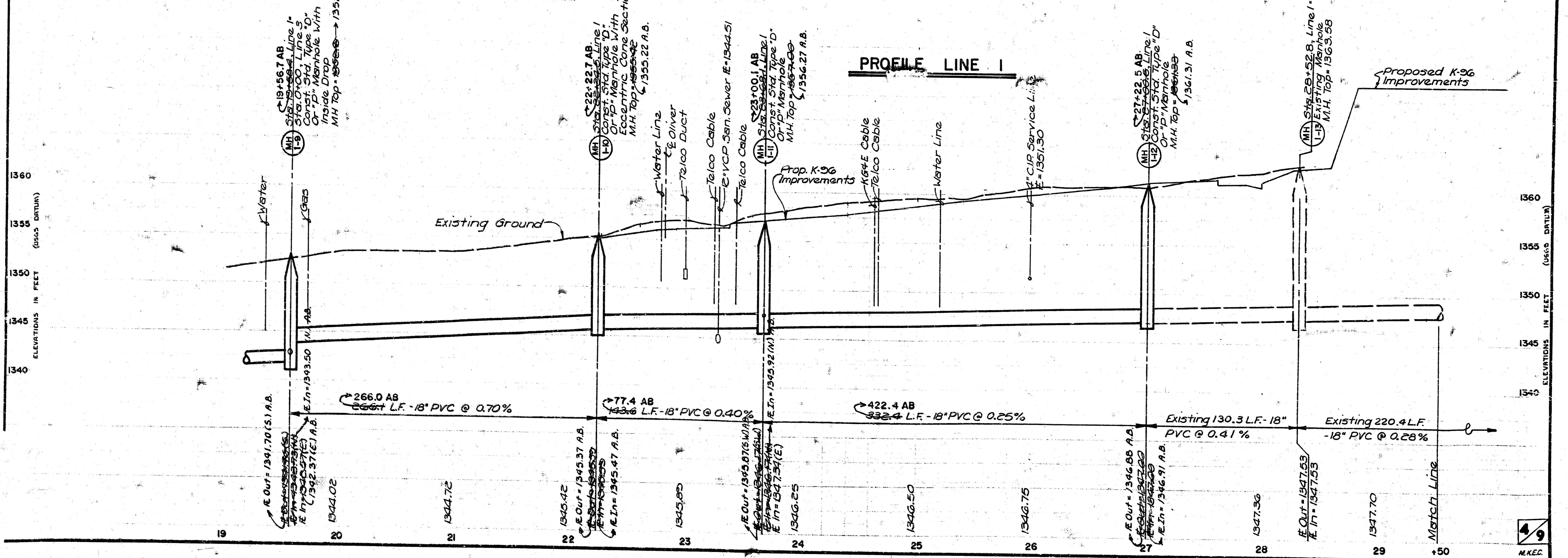
4" Pipe	3316 N. Oliver	Donald E. Jackson, Owner 683-4380
4" Pipe	3332 N. Oliver	Wayne A. Sundling, Owner 684-7759

**BENCH MARK**  
B.M. #5 - City of Wichita Bench Mark Disk  
28' S & 31' E 1/4 Corner Thimble  
Elev. = 1360.26

- EXISTING SWEET GUM TREE NEAR STA. 24+40 SHALL BE TRANSLATED TO THE BACKYARD OF HOUSE AT 3316 N. OLIVER AND AS LOCATED BY PROPERTY OWNER. AFTER SEWER CONSTRUCTION IS COMPLETE, PLANT ONE NEW 7-8 FT. SWEET GUM TREE NEAR STA. 24+40. GUARANTY OF NEW TREE BY CONTRACTOR SHALL BE UNTIL 10-15 AND LIMITED TO ONE REPLACEMENT.
- 3316 N. OLIVER: ALL TREES IN RIGHT-OF-WAY ADJOINING THIS PROPERTY WHICH REMAIN IN PLACE SHALL BE PROTECTED FROM DAMAGE. REMOVE AND REPLACE FENCE IN LIKE KIND; COST SUBSIDIARY TO SITE CLEARING AND RESTORATION. CONNECT 4" C.I.P. SERVICE LINE TO MANHOLE 1-11.
- EVERGREEN SHRUBS (SPREADERS) AND EVERGREEN TREES LOCATED IN STREET RIGHT-OF-WAY AT 3332 N. OLIVER SHALL BE TRANSLATED TO AN AREA GENERALLY 10-15 FEET EAST OF RIGHT-OF-WAY LINE AND AS LOCATED BY THE PROPERTY OWNER.
- CONTRACTOR SHALL USE A MEANS AND METHOD FOR RELOCATION OF PLANTS THAT WILL ENSURE MINIMAL DAMAGE AND OPTIMAL GROWING CONDITIONS.

**PLAN LINE 1**

**PROFILE LINE 1**

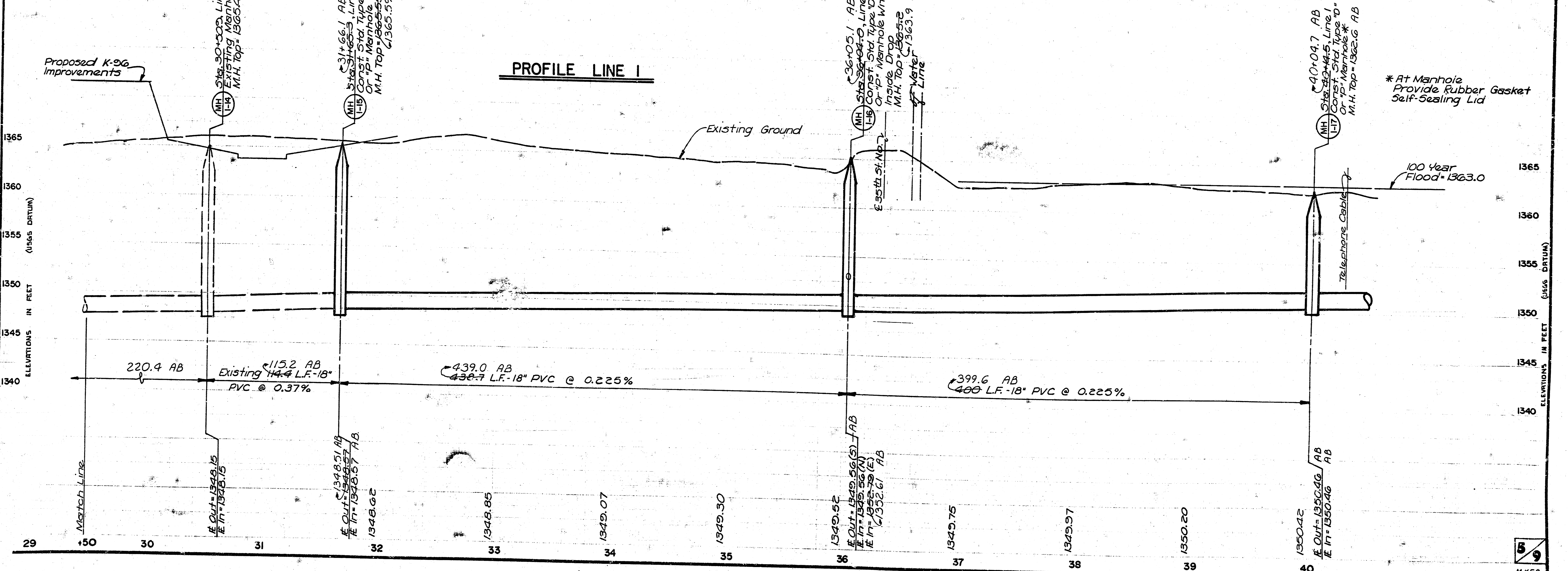
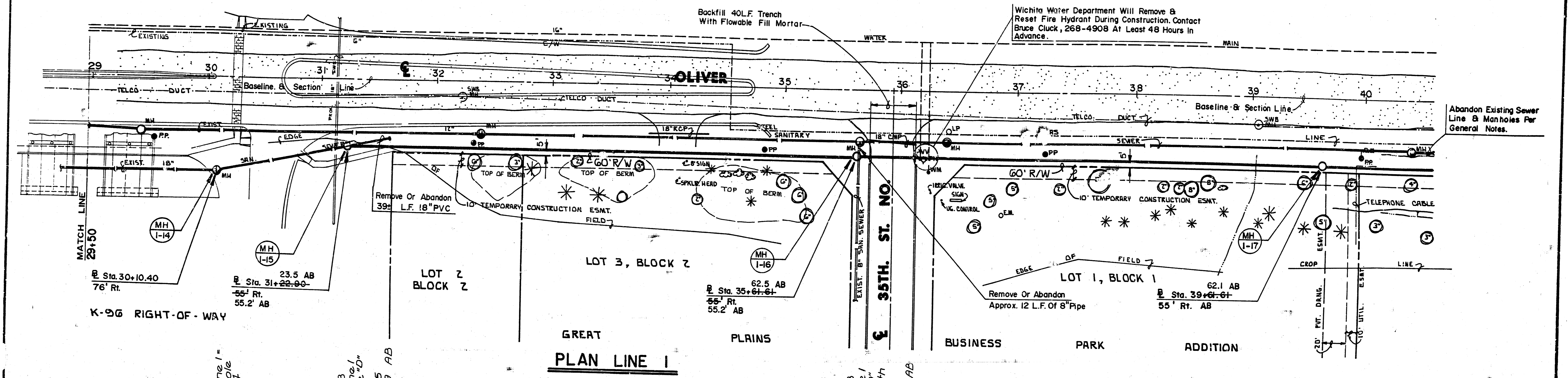


N

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

**NOTE:**  
 K&E May Need To Tie Off And Secure  
 Power Poles During Construction. Contact  
 Larry Deel, 261-6453 At Least 5  
 Working Days In Advance.

**SANITARY SEWER MAIN IN BEL AIR  
 ON OLIVER--- 29TH. ST. NO. TO 37TH.  
 ST. NO.**



\* At Manhole Provide Rubber Gasket Self-Sealing Lid

**BENCH MARKS**

B.M. #6 - "X" Cut CL W Headwall RCB  
Elev. = 1365.00  
B.M. #7 - "X" Cut NE Corner E Headwall RCB  
Near 300' S 37th/Oliver  
Elev. = 1370.09

**NOTE:**

At Railroad Crossing, Notify Union Pacific, Mary Stockdale, 268-9457 At Least 48 Hours In Advance Before Starting Excavation. Also, Call Union Pacific Communications 1-800-336-9193 To See If Fiber Optic Cable Installed Prior To Construction, Refer To Ticket 424333.

**NOTE:**

Contractor Shall Verify Size Of Existing Service Line At 3636 N. Oliver Before Connection. Notify Engineer If Different Than 6".

**NOTE:**

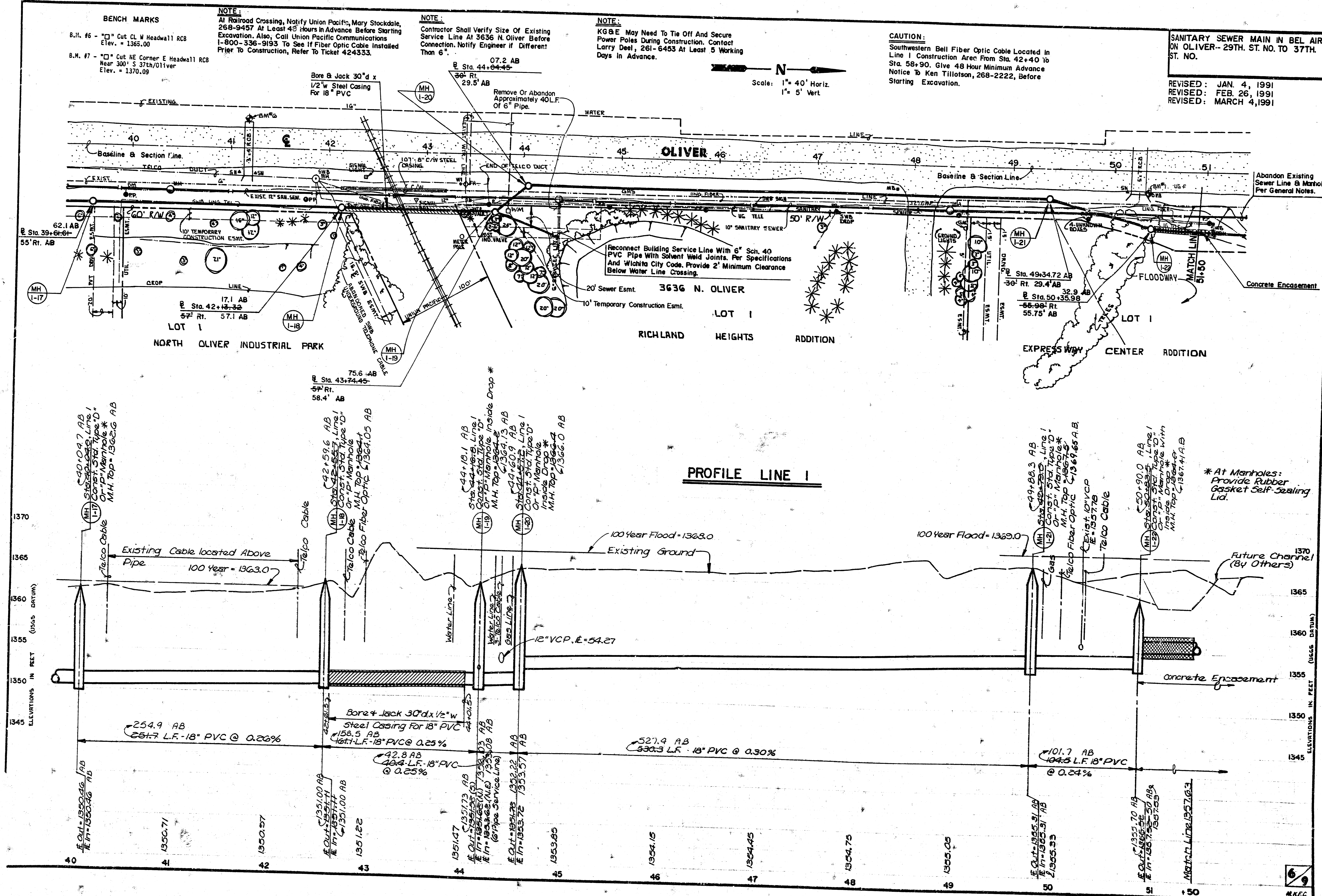
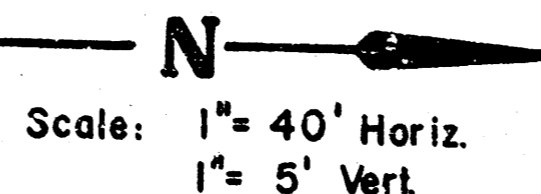
KG&E May Need To Tie Off And Secure Power Poles During Construction. Contact Larry Deal, 261-6453 At Least 5 Working Days In Advance.

**CAUTION:**

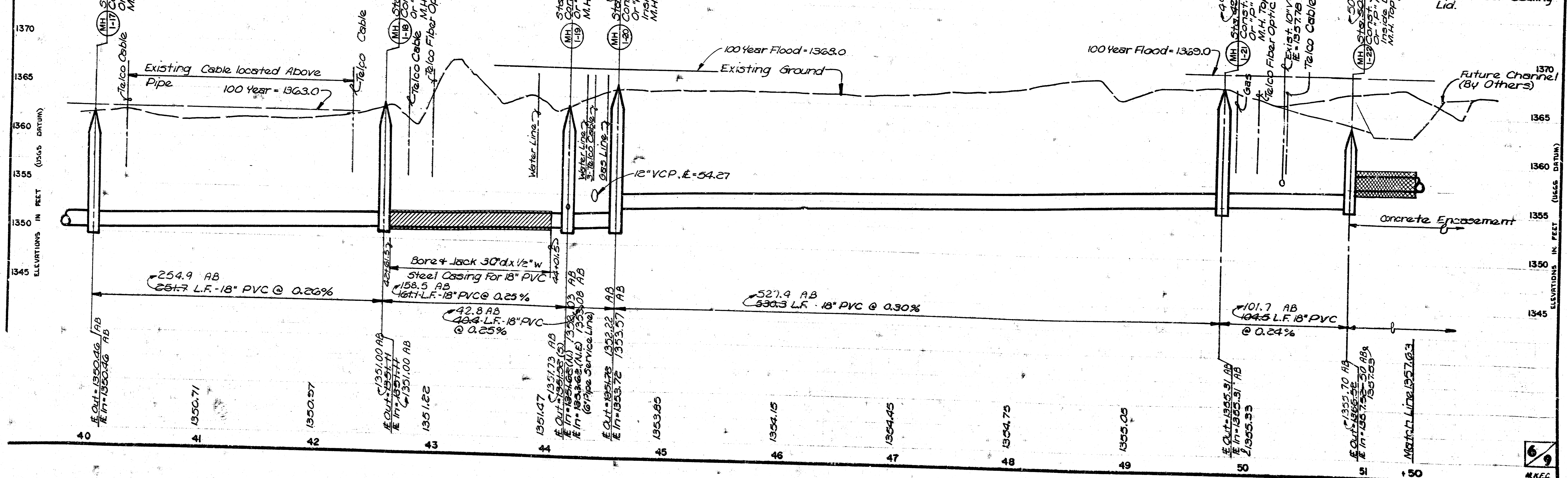
Southwestern Bell Fiber Optic Cable Located In Line 1 Construction Area From Sta. 42+40 To Sta. 58+90. Give 48 Hour Minimum Advance Notice To Ken Tillotson, 268-2222, Before Starting Excavation.

**SANITARY SEWER MAIN IN BEL AIR**  
ON OLIVER--29TH. ST. NO. TO 37TH.  
ST. NO.

REVISED: JAN. 4, 1991  
REVISED: FEB. 26, 1991  
REVISED: MARCH 4, 1991



**PROFILE LINE 1**



\* At Manholes: Provide Rubber Gasket Self-Sealing Lid.

**NOTE:**

KGBE May Need To Tie Off And Secure Power Poles During Construction. Contact Larry Deal, 261-6453 At Least 5 Working Days In Advance.

**CAUTION:**

Southwestern Bell Fiber Optic Cable Located In Line 1 Construction Area From Sta. 42+40 To Sta. 58+30. Give 48 Hour Minimum Advance Notice To Ken Tillotson, 268-2222, Before Starting Excavation.

Southwestern Bell Guy Anchor: Replacement By Southwestern Bell Contact Ken Tillotson, 268-2222 Provide 2 Weeks Minimum Advance Notice.

Abandon Existing Sewer Line & Manhole Per General Notes

**BENCH MARKS**

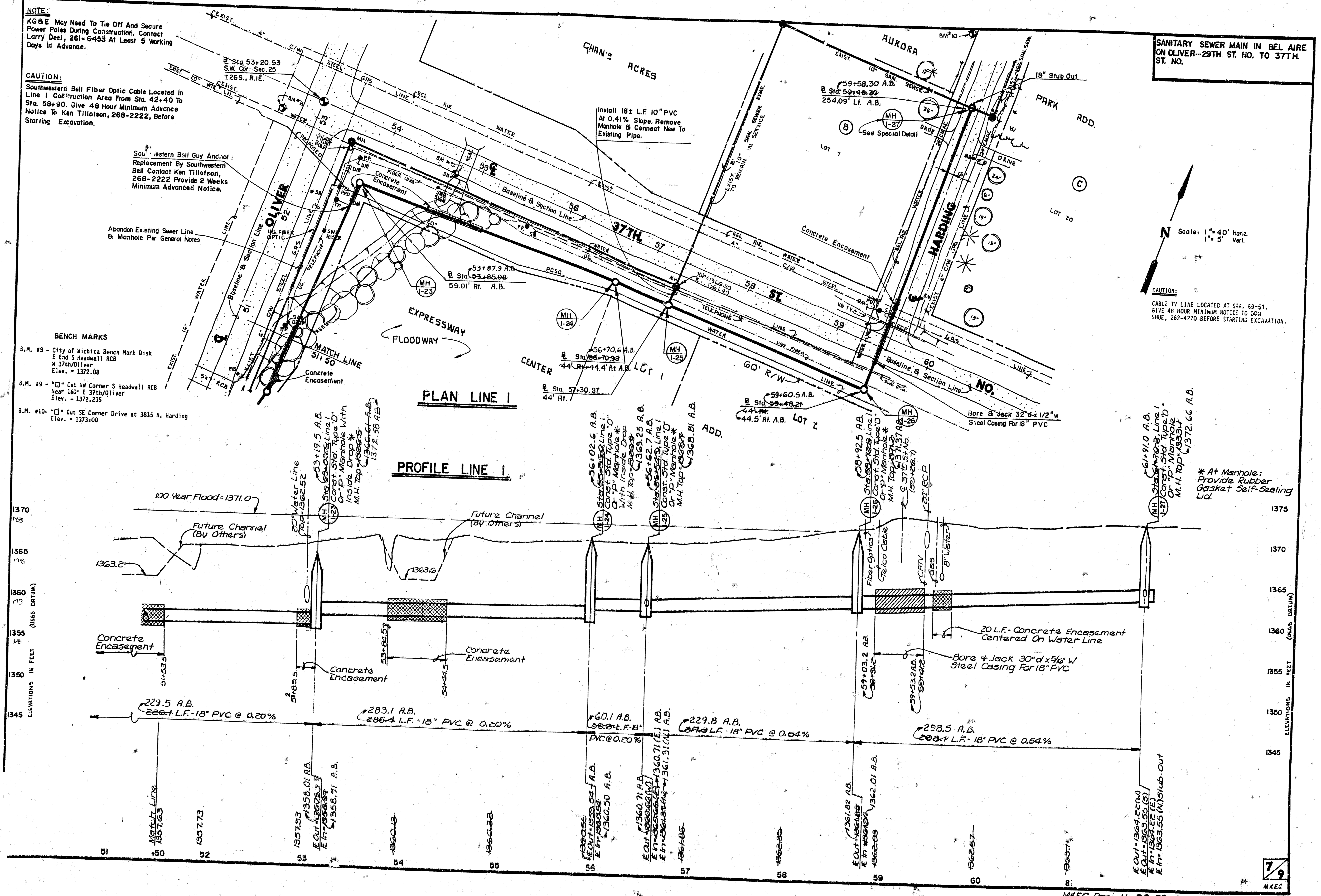
- B.M. #8 - City of Wichita Bench Mark Disk E End S Headwall RCB # 37th/Oliver Elev. = 1372.08
- B.M. #9 - "□" Cut NW Corner S Headwall RCB Near 160° E 37th/Oliver Elev. = 1372.235
- B.M. #10 - "□" Cut SE Corner Drive at 3815 N. Harding Elev. = 1373.00

SANITARY SEWER MAIN IN BEL AIRE ON OLIVER--29TH ST. NO. TO 37TH ST. NO.

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

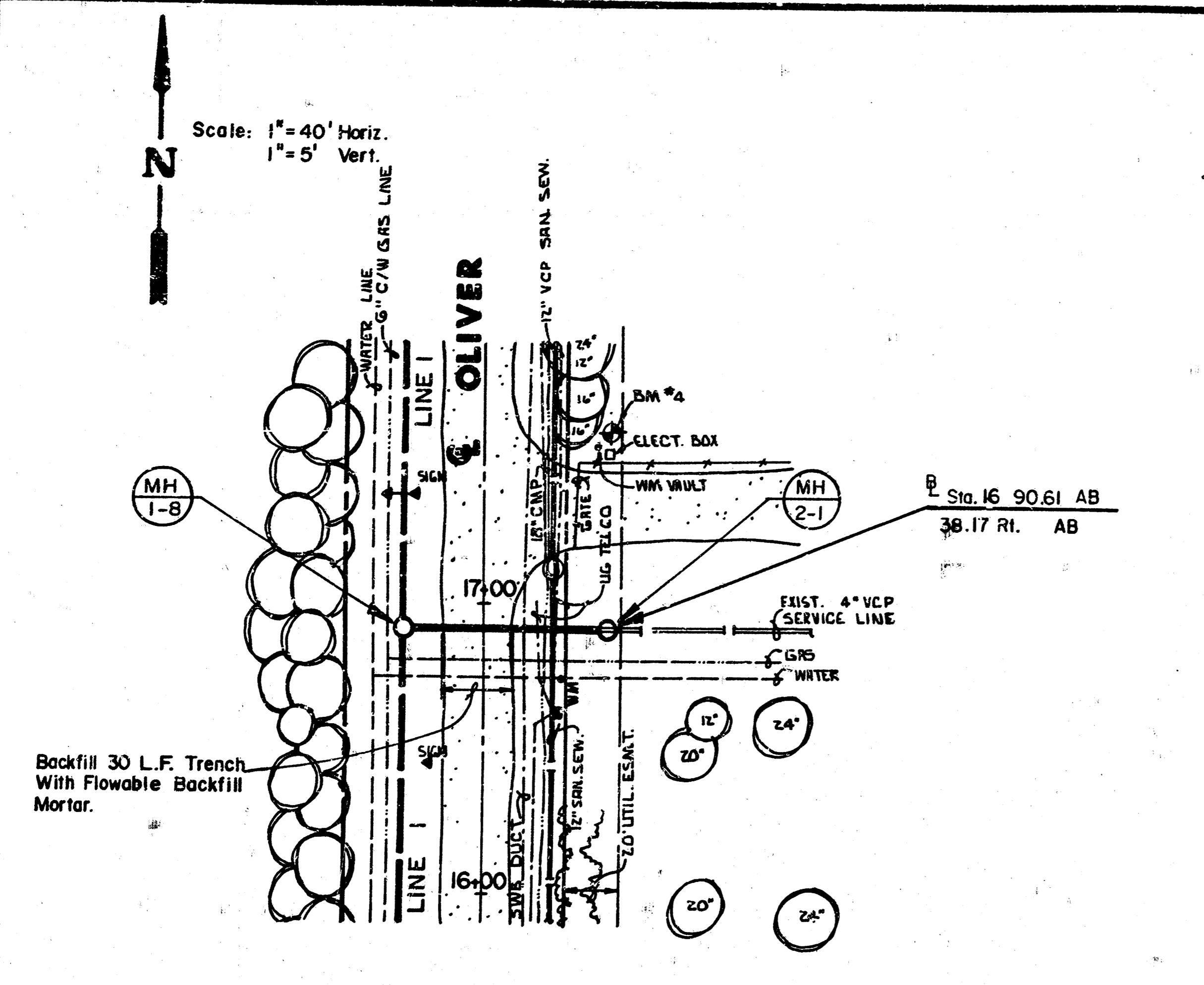
**CAUTION:**

CABLE TV LINE LOCATED AT STA. 59-51. GIVE 48 HOUR MINIMUM NOTICE TO COH SHUE, 262-4270 BEFORE STARTING EXCAVATION.

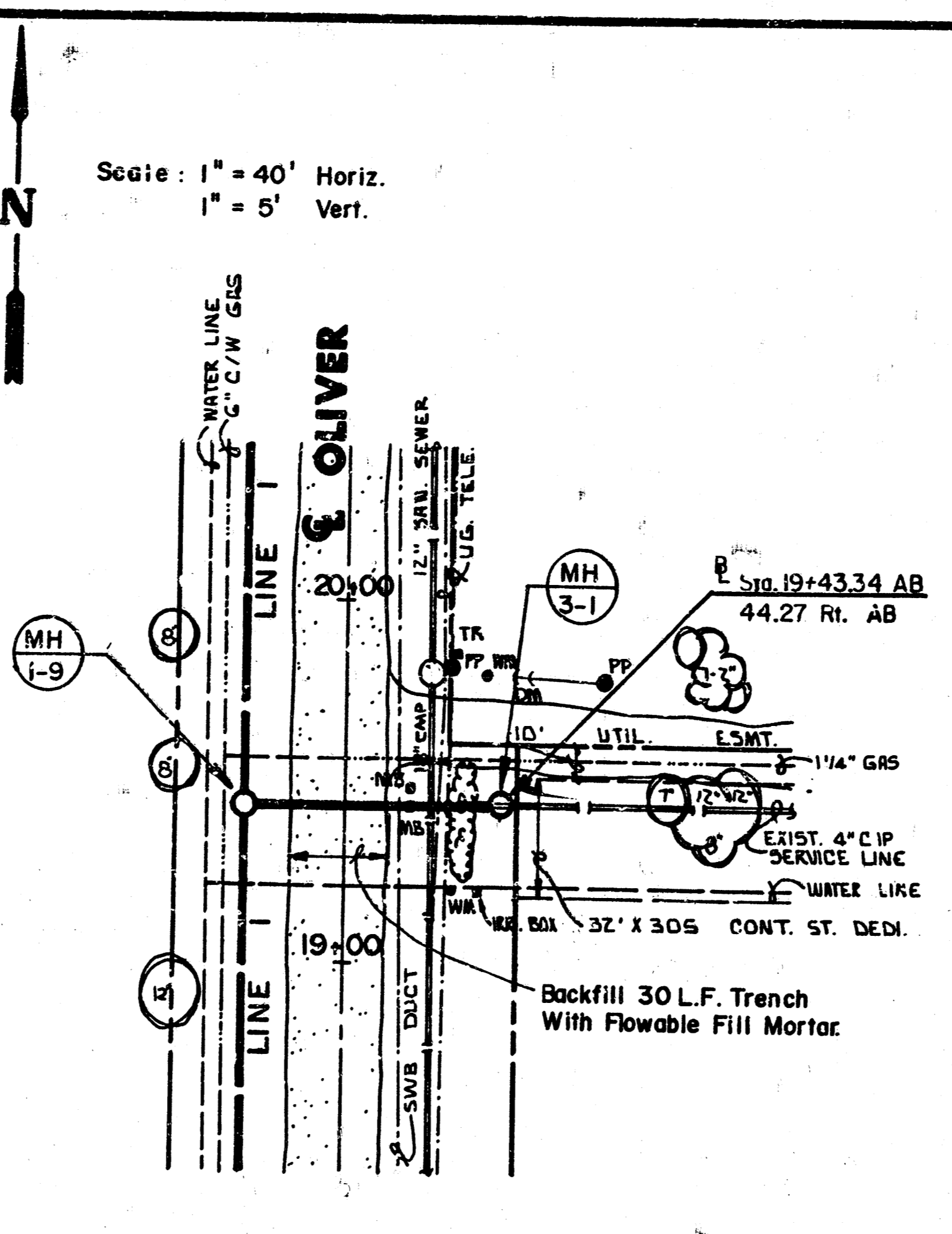


\* At Manhole: Provide Rubber Gasket Self-Sealing Lid.

SANITARY SEWER MAIN IN BEL AIRE  
ON OLIVER-- 29TH. ST. NO. TO 37TH.  
ST. NO.

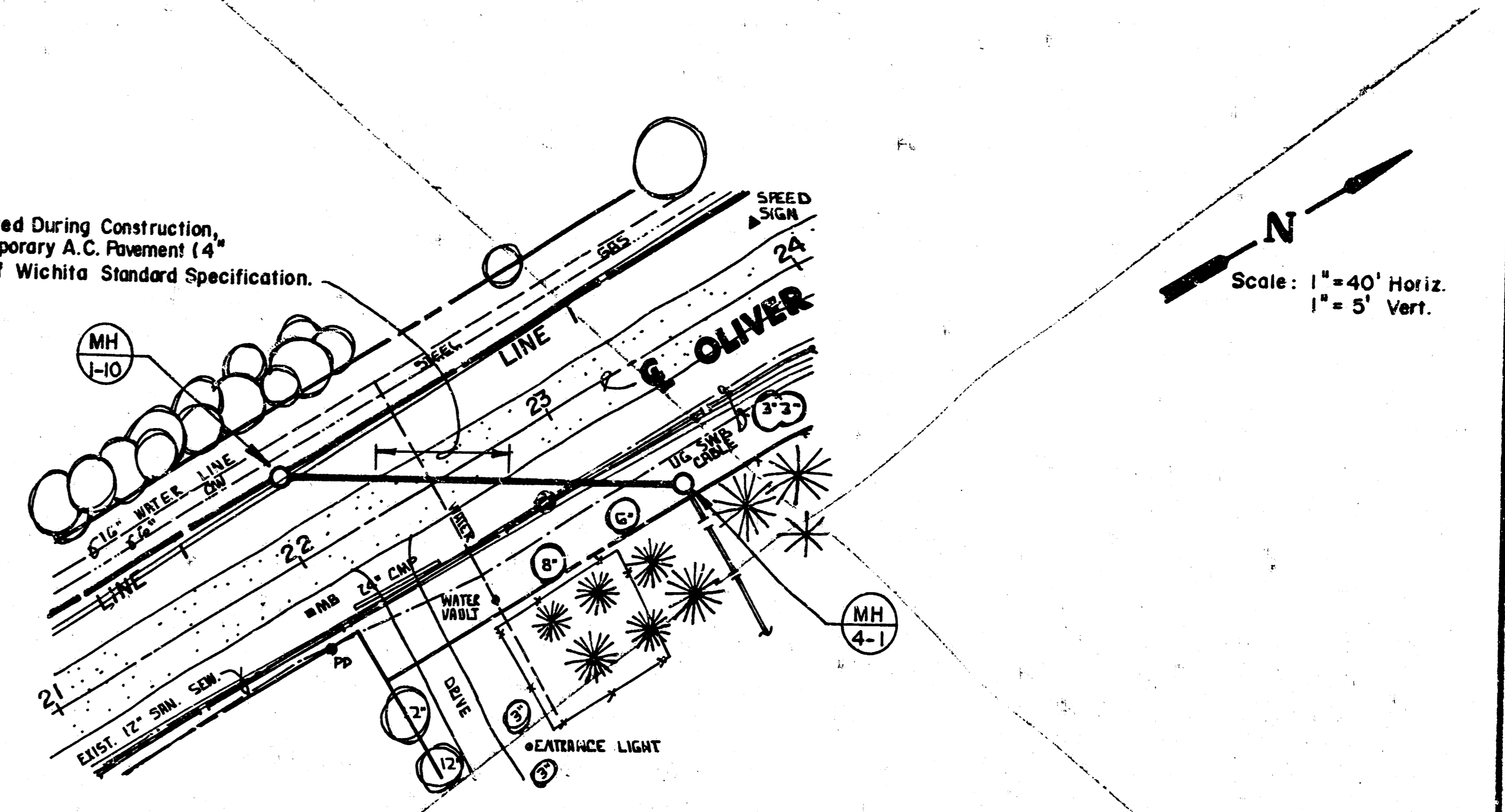


PLAN LINE 2

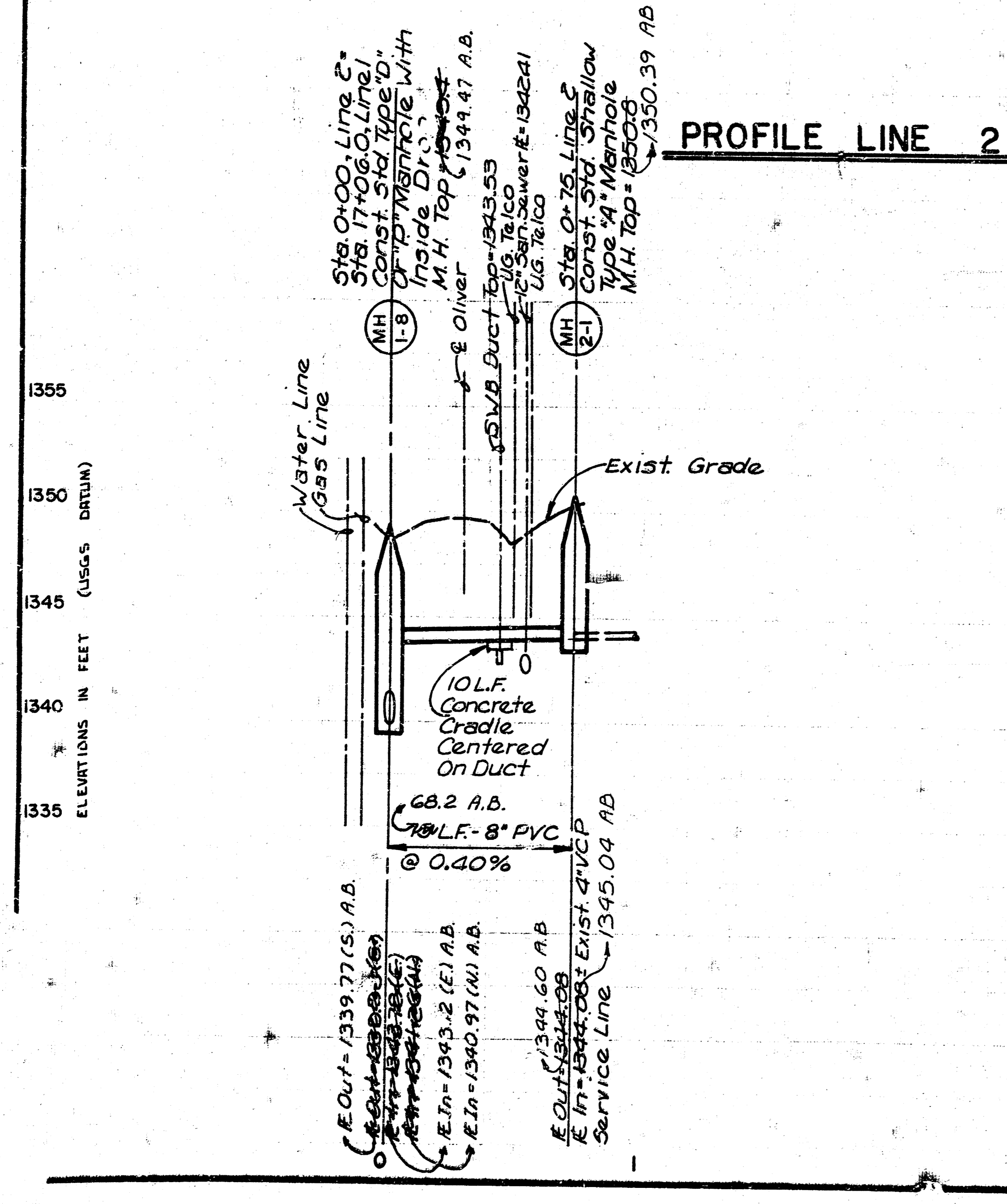


PLAN LINE 3

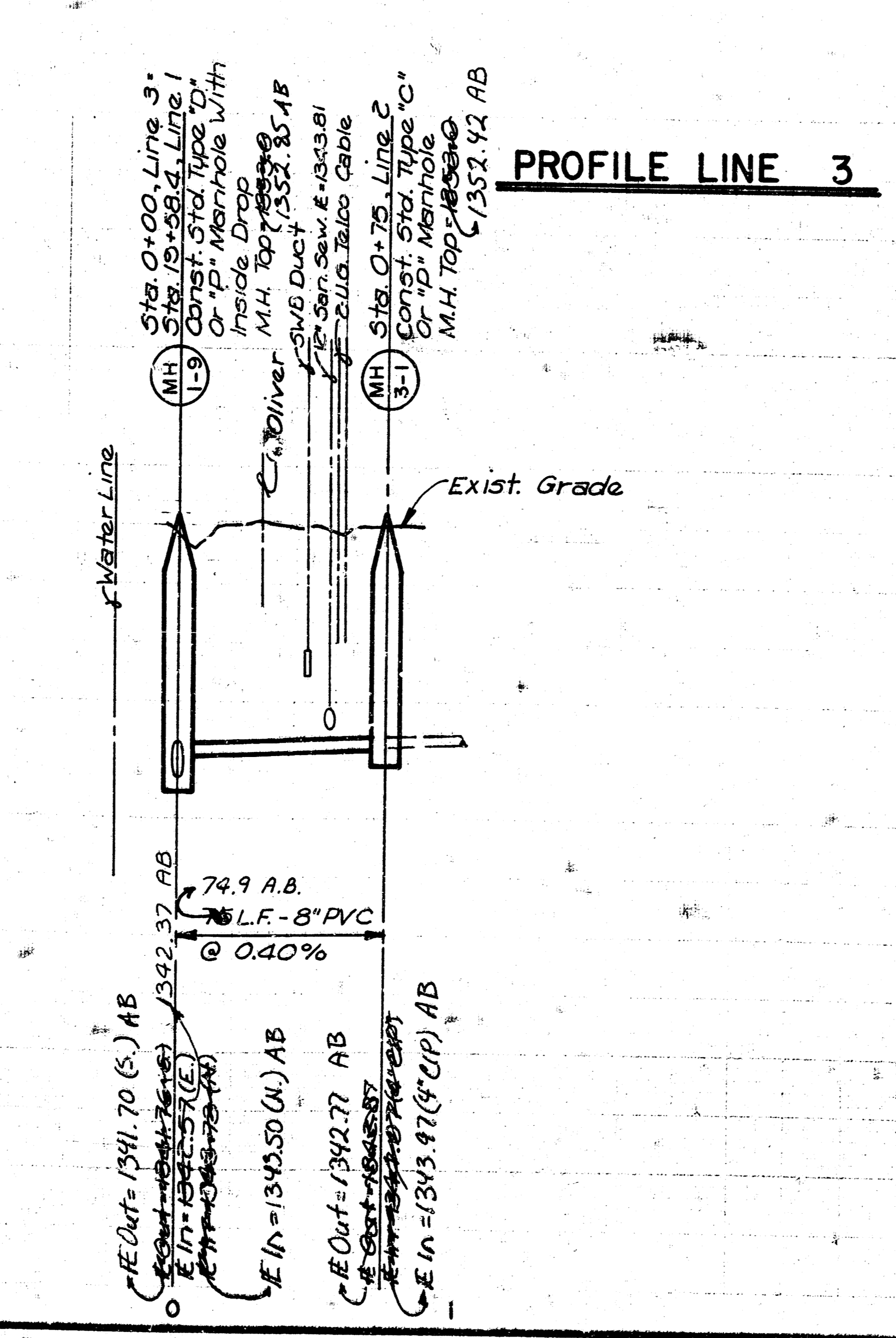
For Pavement Removed During Construction,  
Replace With 6" Temporary A.C. Pavement (4"  
Bit. Base) Per City Of Wichita Standard Specification.



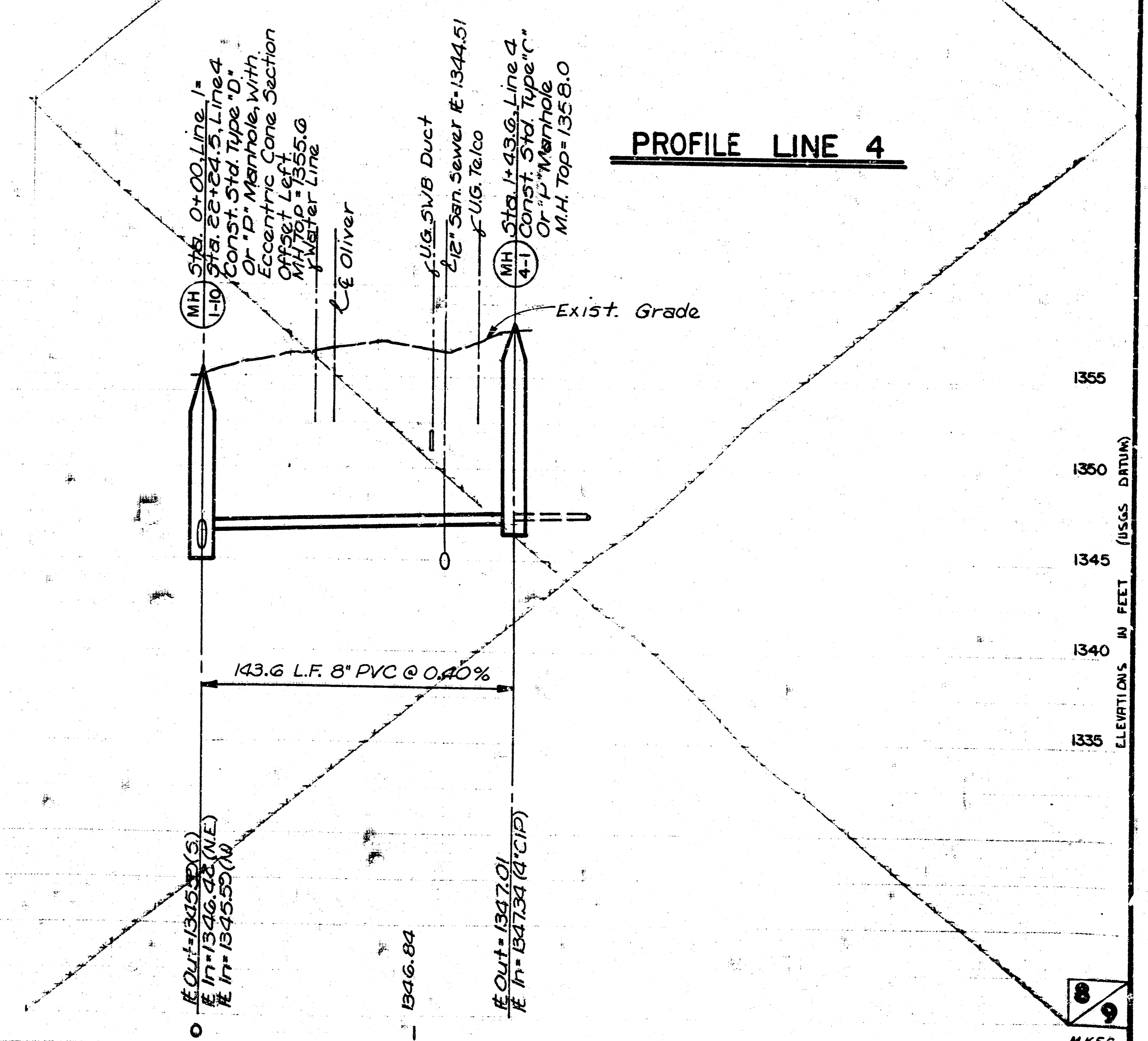
PLAN LINE 4



PROFILE LINE 2



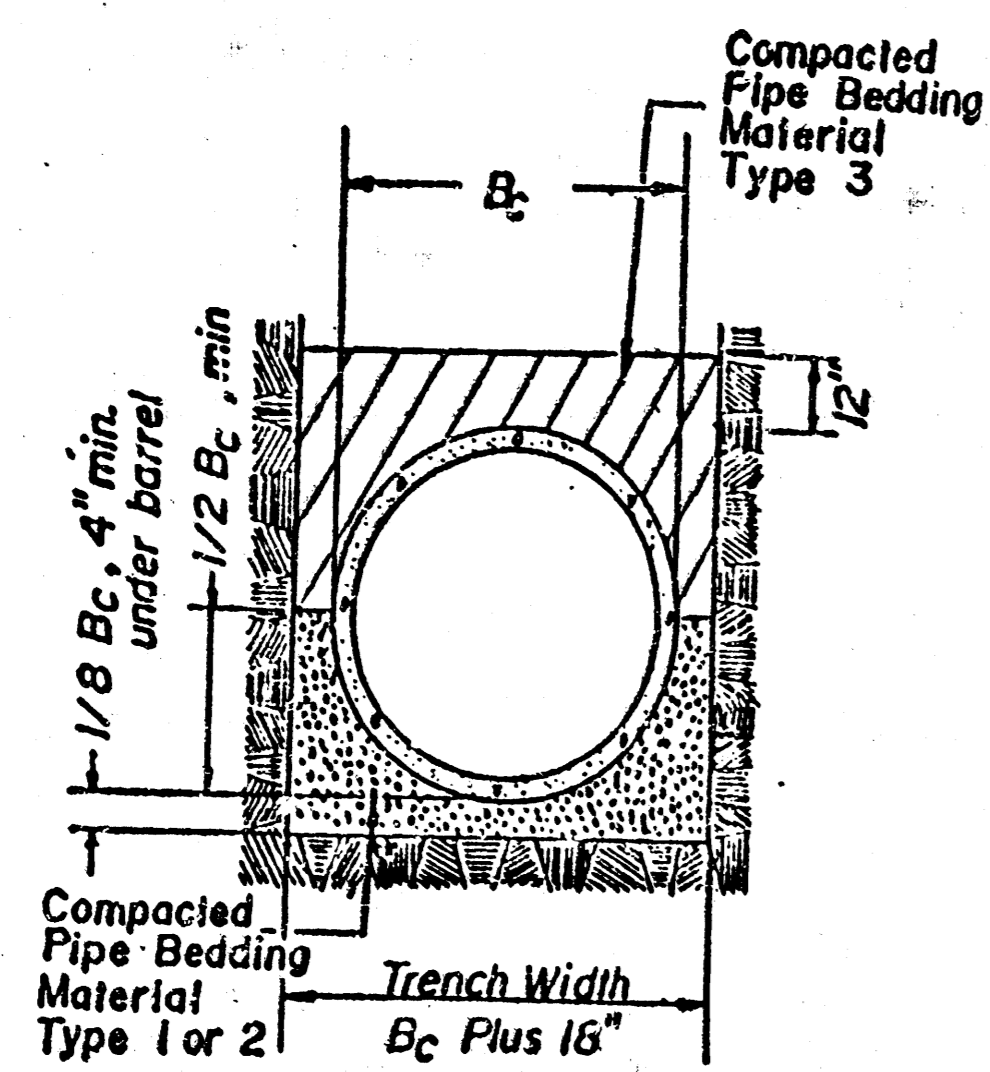
PROFILE LINE 3



PROFILE LINE 4

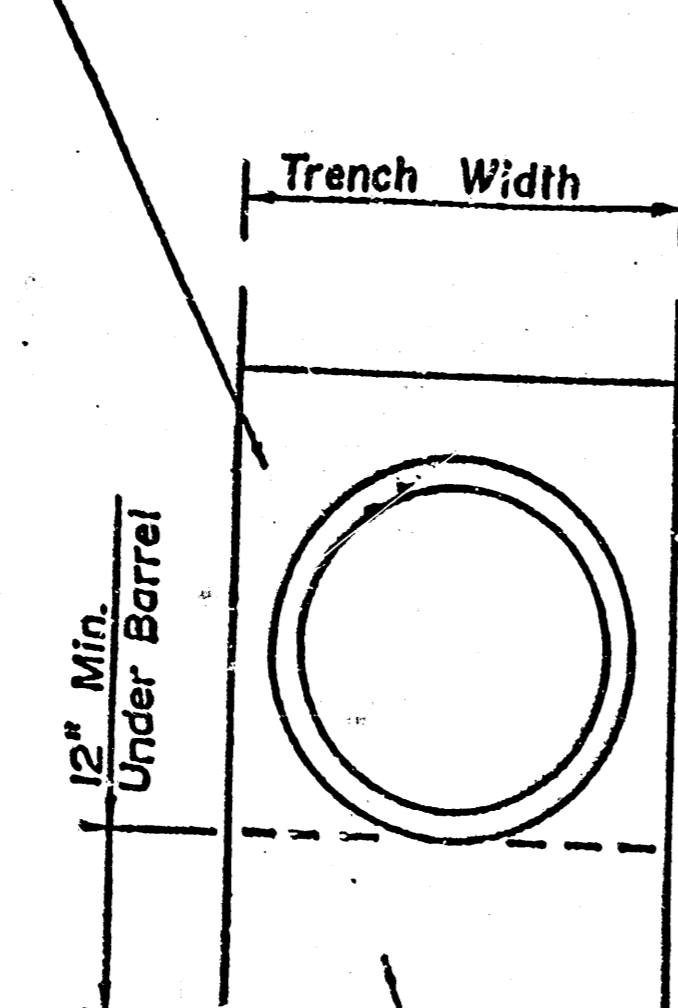
ELEVATIONS IN FEET (USGS DATUM)  
1355  
1350  
1345  
1340  
1335

ELEVATIONS IN FEET (USGS DATUM)  
1355  
1350  
1345  
1340  
1335

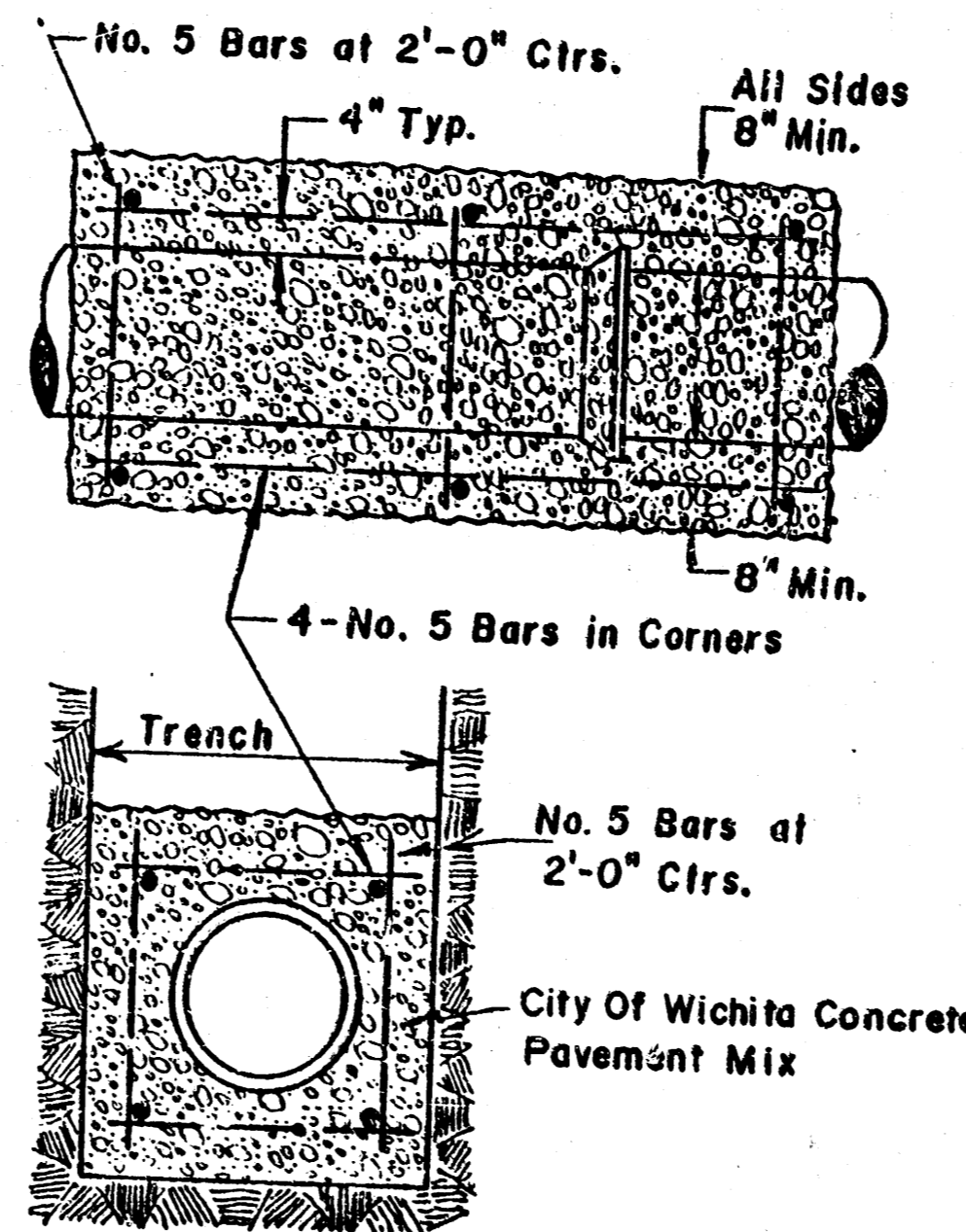


Detail Of Improved Bedding For P.V.C. Or P.V.C. Composite Pipe.

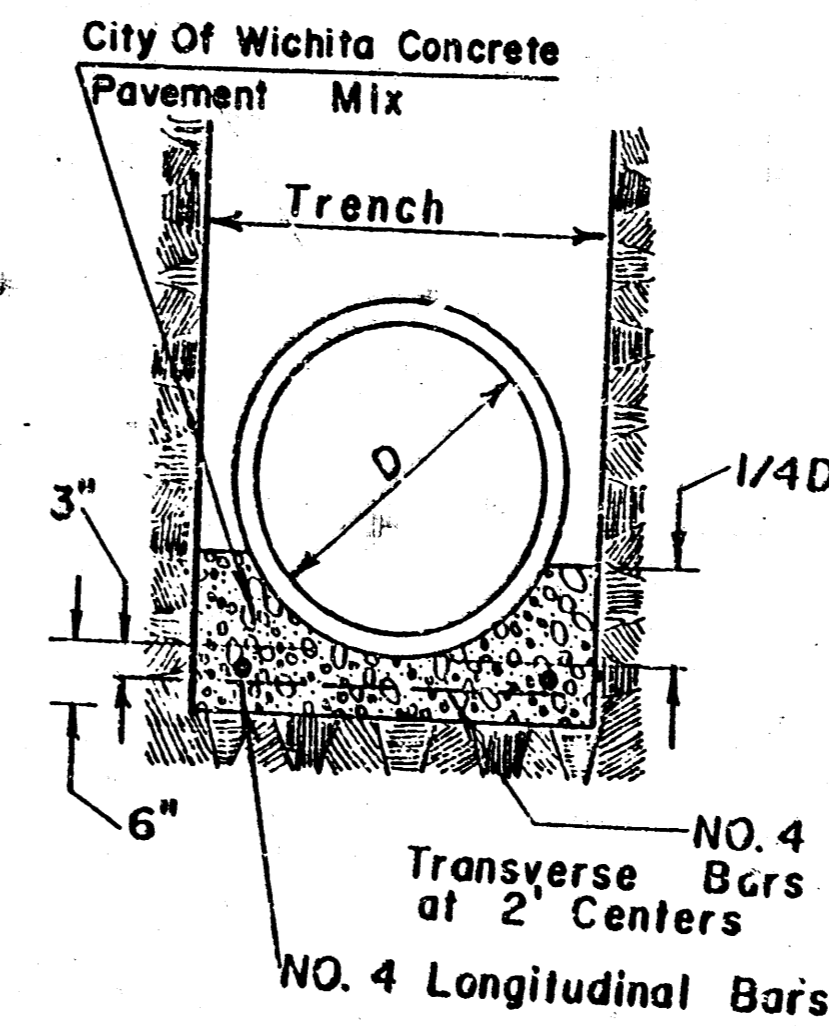
Remainder of Pipe Bedding as Required for the type of Pipe.



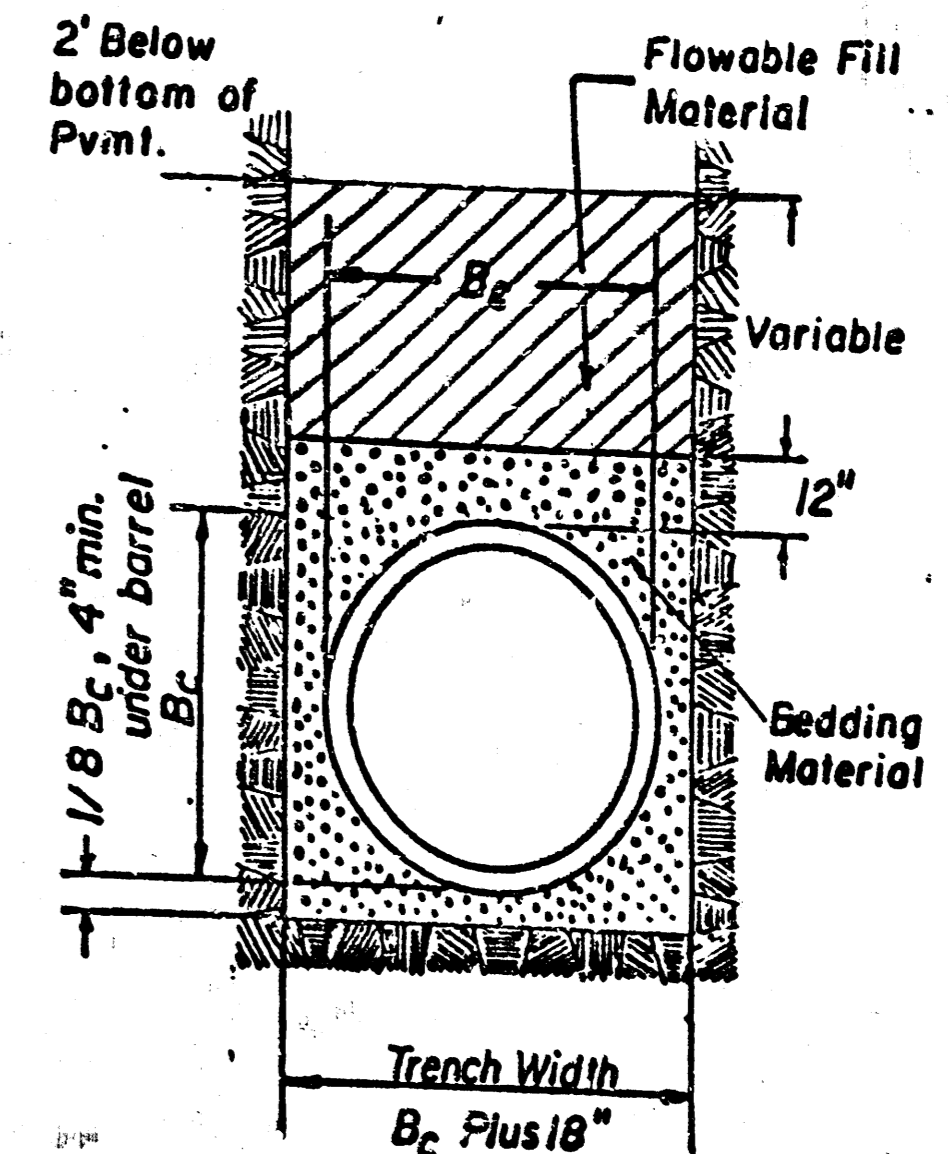
Detail of Trench Stabilization, Required When Trench is Wet or Unstable or When Dewatering is Required.



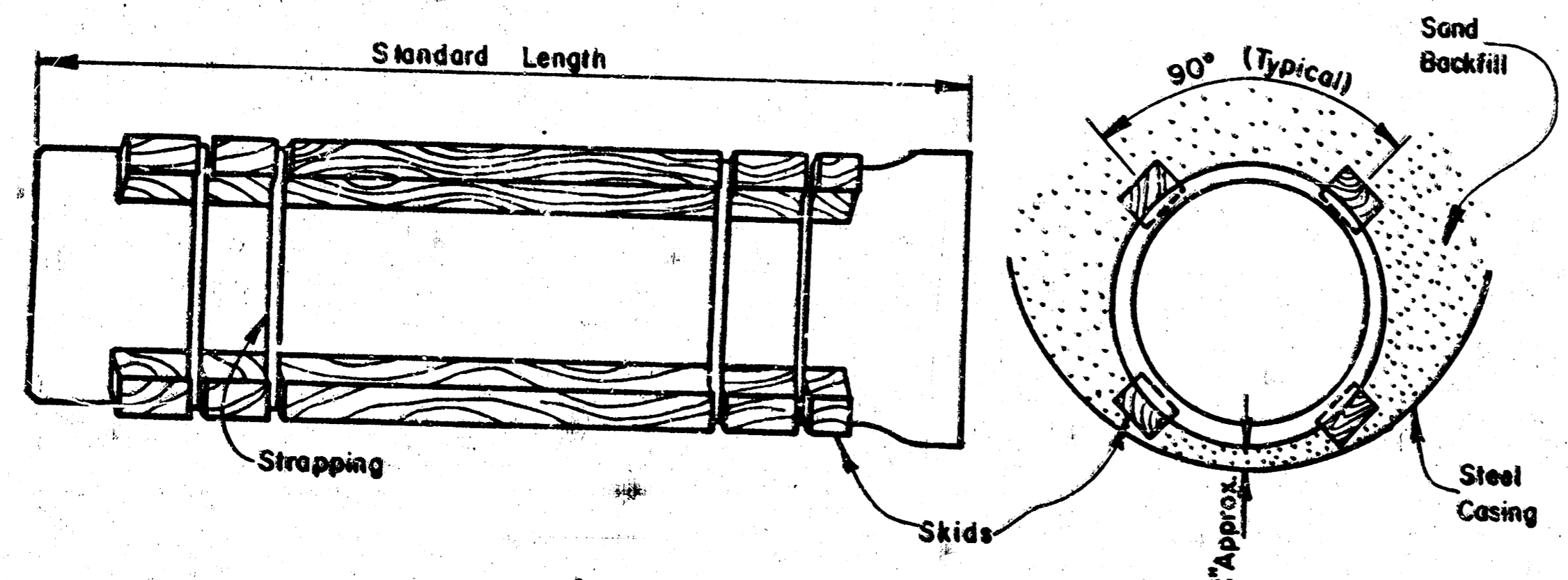
Detail Of Reinforced Concrete Encasement



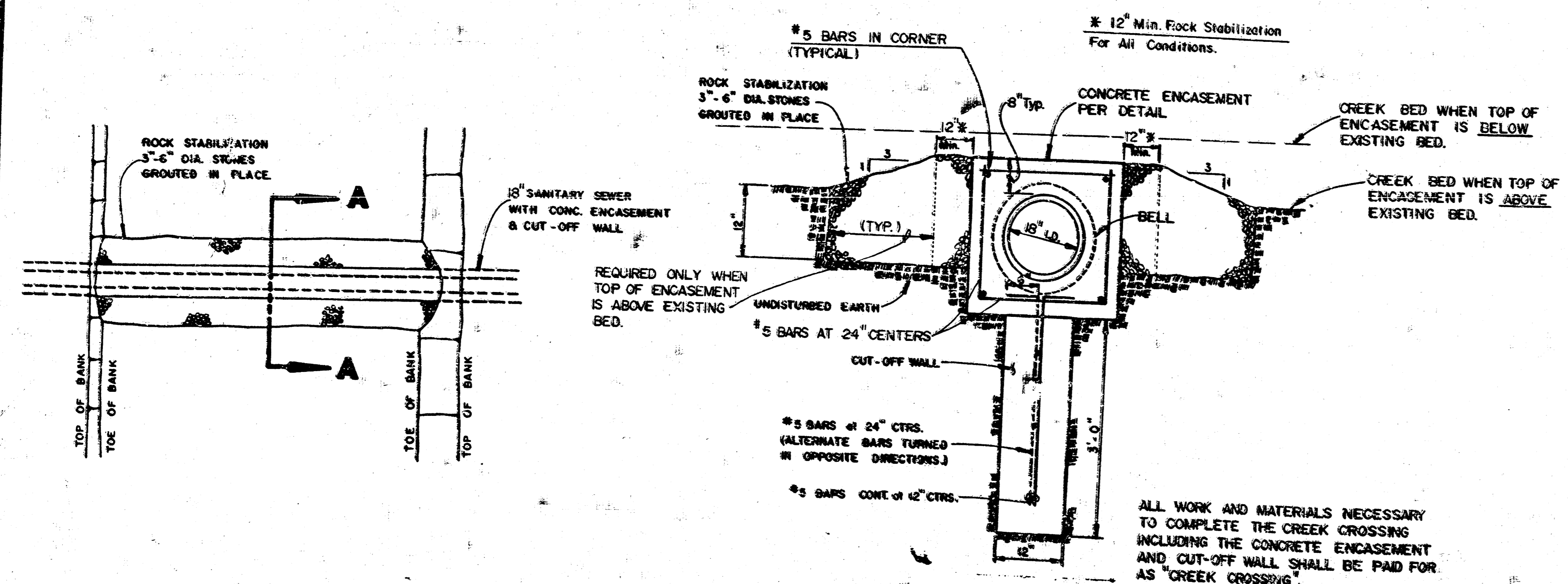
Detail Of Reinforced Concrete Cradle



Detail Of Flowable Fill For Sanitary Sewer Pipe & Water Line.



STEEL ENCASUREMENT DETAIL



CREEK CROSSING & CONG. ENCASE W/ CUT-OFF WALL

**SUPPLEMENTAL SPECIFICATIONS**  
**FLOWABLE FILL**

1. **DESCRIPTION**  
This work shall consist of placing a flowable mortar fill material in sewer, water and utility trenches under the pavement or at other locations as shown on the plans or as specified. The work shall be done in accordance with this specification.

2. **MATERIALS**  
All materials shall meet requirements for the respective items in the Standard Specifications with the following exceptions:  
A. Cement shall be Type 1.  
B. Fly Ash shall meet requirements of ASTM C 618, Class C, and shall come from a source approved by the engineer.  
C. Fine Aggregate for flowable mortar shall be natural sand consisting of natural aggregate particles. The gradation of this material shall be as follows:

Sieve Size	Percentage
3/4"	100
200	0 - 10

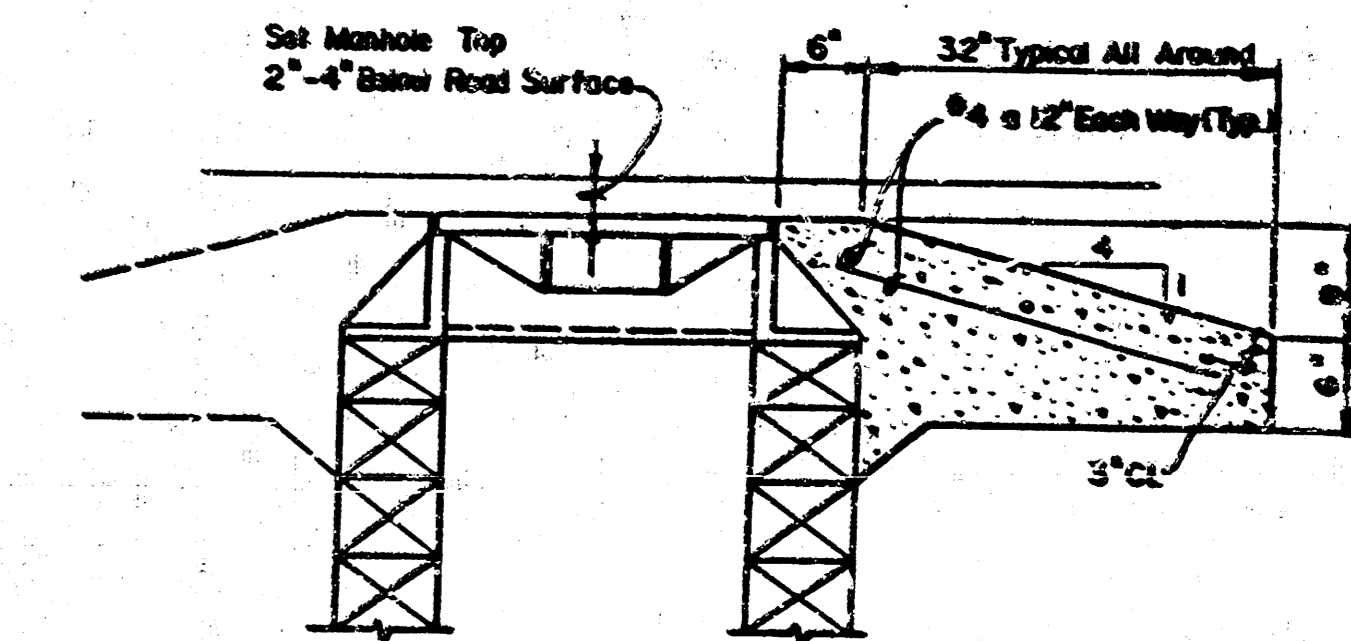
It is intended that the sand be a fine sand that will stay in suspension in the mortar to the extent required for proper flow. Generally, mortar shall be submitted in the central laboratory before the work begins. The engineer reserves the right to require certified aggregate testing. The contractor will not be responsible for providing aggregate testing. The engineer will provide inspection and be deemed appropriate, normally source approval followed by visual inspection.

3. **CONSTRUCTION AND MIXING EQUIPMENT**  
A. Sufficient mixing capacity or mixer shall be provided to permit the intended pour to be placed without interruption.  
B. Flowable mortar shall be placed one foot beyond either side of the pavement by any reasonable means into the area to be filled. The fill shall be brought up uniformly to an elevation 12" above the top of the flowable mortar shall then cause the fill protected from traffic for a period of 72 hours.

4. **LIMITATION OF OPERATIONS**  
A. Mortar shall not be placed on frozen ground.  
B. Mortar handling, mixing, and placing may be started, if weather conditions are favorable, when the temperature is at least 50 degrees F and stable. At time of placement, mortar must have a temperature of at least 40 degrees F. Mixing and placing shall stop if the temperature of the mortar falls below 40 degrees F or less on falling.  
C. Each filling stage shall be a continuous operation as is practicable.

5. **MEASUREMENT AND PAYMENT**  
All materials, labor, equipment, tools and incidentals shall be paid for at the unit price bid per cubic foot of trench filled regardless of trench depth and/or pipe sizes unless otherwise indicated otherwise by plans or contract.

These quantities of dry materials, with approximately 70 gallons of water will yield approximately 1 cubic yard of flowable mortar of the proper consistency.



CONCRETE COLLAR FOR MANHOLE COVER (When Located in Graveled Surfacing) MANHOLE 1-27 SPECIAL DETAIL

	<p><b>DETAILS</b></p>	<p>Design</p>
		<p>Checked by</p>
<p>MID-KANSAS ENGINEERING CONSULTANTS PA 3500 NORTH ROCK ROAD BUILDING 600 WICHITA, KANSAS 67226</p>		<p>Sheet 9 of 9</p>