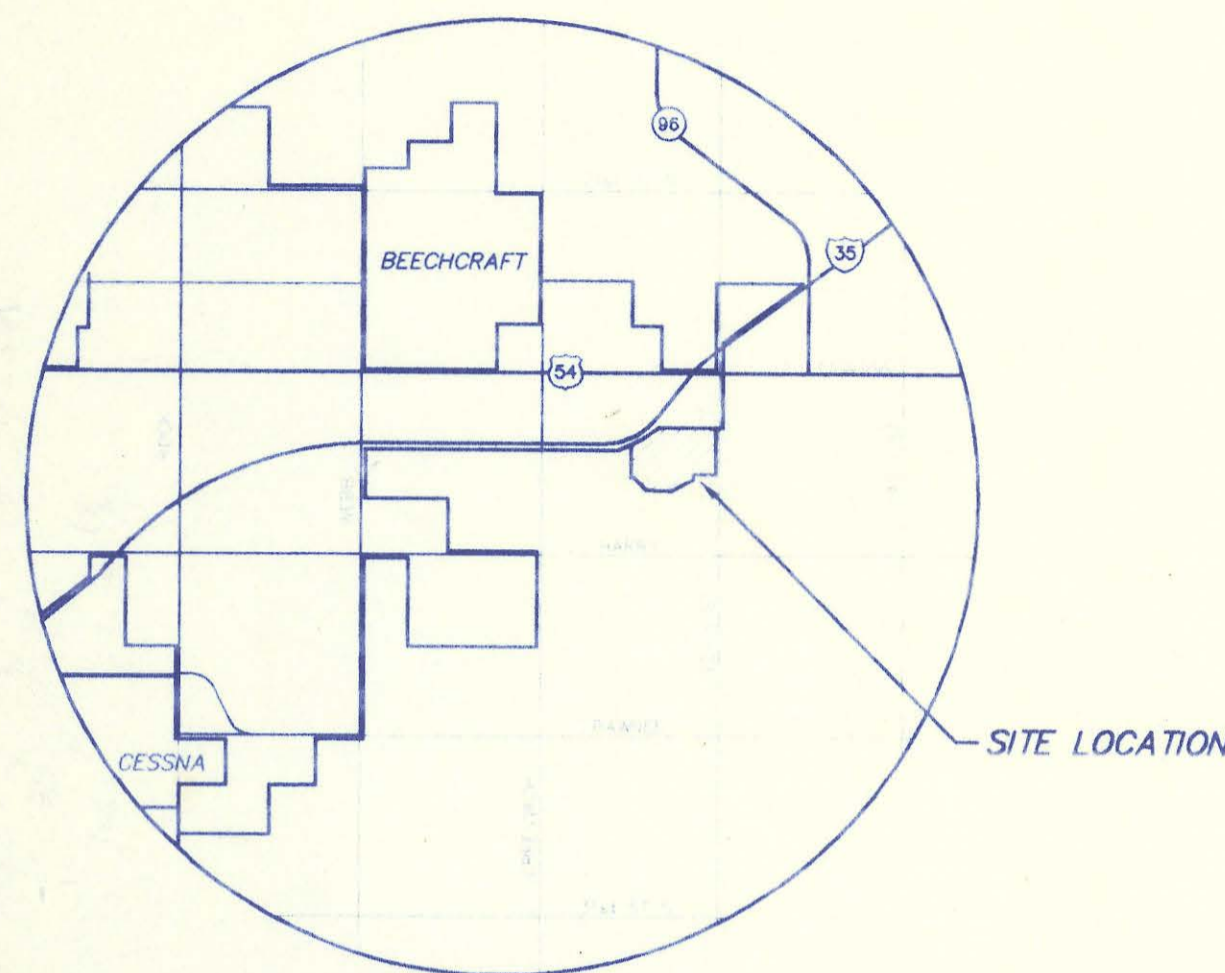


4MC-017
with field notes

SEDGWICK COUNTY PUBLIC WORKS



VICINITY MAP
NOT TO SCALE



CONSTRUCTION PLANS FOR SANITARY SEWER LATERAL IN WOODLAND LAKES ESTATES SECOND ADDITION

AN ADDITION TO SEDGWICK COUNTY, KANSAS

SEPTEMBER 1999

BY

 MID-KANSAS ENGINEERING CONSULTANTS, INC.

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APPROVED:

David C. Spears
DAVID C. SPEARS, P.E.
DIRECTOR OF PUBLIC WORKS/COUNTY ENGINEER
DATE: 9/23/99

APPROVED:

Bill Hanna
BILL HANNA
CHAIR, BOARD OF COUNTY COMMISSIONERS
DATE: 9-27-99

FILED IN THE OFFICE OF
THE SEDGWICK COUNTY CLERK
Jane Ober
JANE OBER
COUNTY CLERK
DATE: 9/28/99



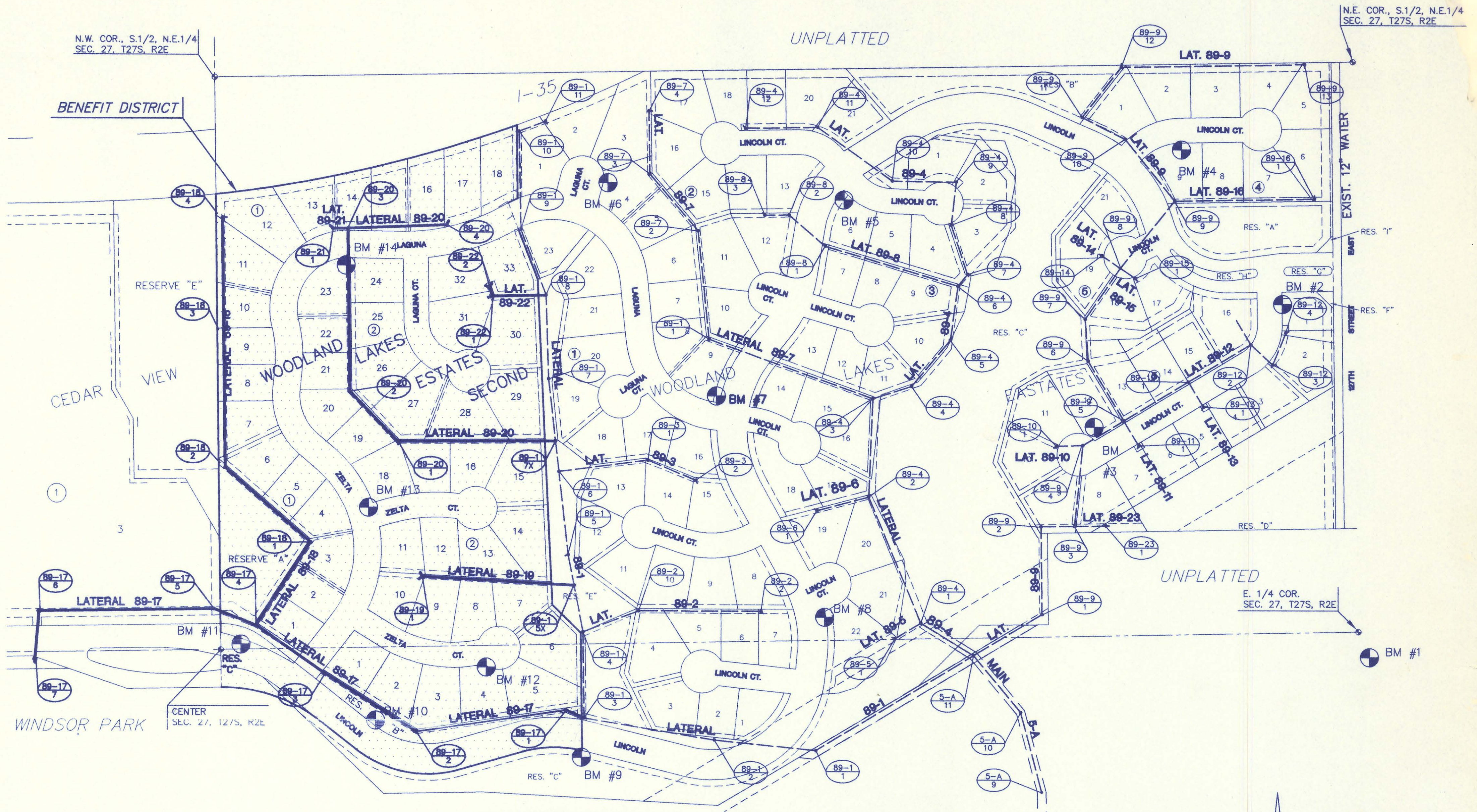
Gregory J. Alkanoff
9/22/99

4MC-017

4MC 017

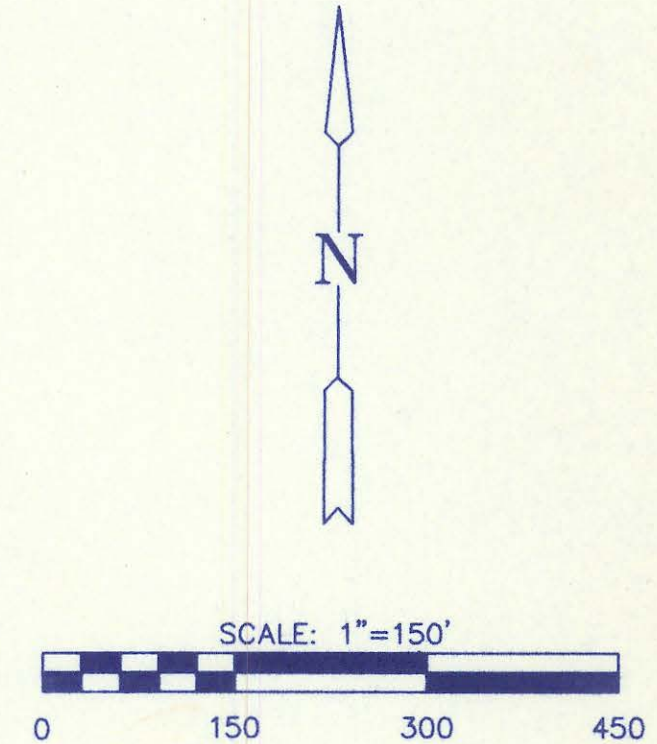
GENERAL NOTES

- ALL ELEVATIONS SHOWN ARE USGS DATUM.
- AT LEAST 72 HOURS PRIOR TO BEGINNING ANY EXCAVATION (EXCLUDING WEEKENDS AND HOLIDAYS), THE CONTRACTOR SHALL CONTACT THE KANSAS ONE-CALL SYSTEM, A UTILITY LOCATION SERVICE, AT 687-2470 TO REQUEST ALL MEMBERS TO LOCATE ANY EXISTING LINES WITHIN THE PROJECT AREA.
- THE BURIED UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE LOCATIONS ONLY. IT SHOULD BE NOTED THAT OTHER BURIED LINES AND CABLES MAY EXIST WHICH ARE NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION DURING TRENCHING OPERATIONS TO AVOID DAMAGING THESE LINES. ANY LINES DAMAGED SHALL BE REPLACED OR REPAIRED IMMEDIATELY AS DIRECTED BY THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- AT LEAST 24 HOURS BEFORE CONNECTING NEW SEWER PIPE TO THE EXISTING SEWAGE SYSTEM, THE CONTRACTOR SHALL CONTACT THE SEDGWICK COUNTY EASTERN SEWER DISTRICT (733-0202). THE CONTRACTOR SHALL KEEP ANY CONSTRUCTION DEBRIS FROM ENTERING THE EXISTING SANITARY SEWER DURING CONSTRUCTION. TO PREVENT WATER OR DEBRIS FROM ENTERING THE EXISTING SEWER, A MECHANICAL PLUG SHALL BE INSTALLED AND MAINTAINED TO ISOLATE THE EXISTING SEWER FROM THE NEW CONSTRUCTION UNTIL THE NEW CONSTRUCTION IS CLEANED, TESTED, AND HAS BEEN ACCEPTED. THE WATER USED FOR CLEANING SHALL NOT BE ADDED TO THE FLOW OF THE EXISTING SEWER. THE CLEANING OR OTHERWISE ACCUMULATED WATER SHALL BE PUMPED OR OTHERWISE REMOVED PRIOR TO TELEVISION.
- ALL PIPE JOINTS SHALL BE LAID AND PUSHED "FULL HOME", WITH THE BEVELED END OF THE SPIGOT MAKING FULL CONTACT WITH THE CHAMFERED AREA AT THE THROAT OF THE BELL OR SOCKET, WITH NO SEPARATION BETWEEN THEM. IF SEPARATION IS DETERMINED, THE PIPE SHALL BE EXCAVATED AND RE-LAID AT THE CONTRACTOR'S EXPENSE.
- EXCESS EXCAVATED MATERIAL AND OTHER DEBRIS SHALL BE WASTED ON SITES TO BE PROVIDED BY THE CONTRACTOR AS APPROVED BY THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER. APPROVED EXCESS MATERIAL SHALL BE STOCKPILED IN A LOCATION AS APPROVED BY THE DEVELOPER.
- THE CONTRACTOR SHALL CONTAIN HIS OPERATIONS TO PERMIT TRAFFIC THROUGH AND ACROSS CONSTRUCTION AT EXISTING ROADWAYS AT ALL TIMES. THE CONTRACTOR SHALL ERECT WARNING SIGNS, FLASHING LIGHTS, AND BARRICADES IN COMPLIANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES TO ENSURE SAFETY AS DIRECTED IN THE GENERAL CONDITIONS. THE CONTRACTOR SHALL LIMIT THE EXTENT OF TRENCH TO REMAIN OPEN OVERNIGHT AND WEEKENDS TO LESS THAN 50 FEET.
- THE CONTRACTOR SHALL RESTORE ALL DITCHES, SWALES, ROAD SHOULDERS, AND BANKS TO THEIR ORIGINAL SLOPES AND GRADES, WHERE EXISTING ENTRANCE PIPE, DRAINAGE PIPE, SIGNS, FENCES, ETC., CONFLICT WITH THE PROPOSED WORK HEREIN, THEY SHALL BE REMOVED AND REPLACED OR RESET UNLESS OTHERWISE INDICATED ON THE PLANS REPLACEMENT OF ALL THE FOREMENTIONED ITEMS, INCLUDING SEEDING, FERTILIZER, AND MULCHING SHALL BE CONSIDERED SUBSIDIARY TO "SITE CLEARING AND RESTORATION".
- EASEMENTS AND RIGHTS-OF-WAY PROVIDED BY THE OWNER FOR THE PROJECT ARE SHOWN IN THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACQUISITION OF ANY ADDITIONAL TEMPORARY EASEMENTS OR RIGHTS-OF-WAY THAT HE DESIRES TO USE IN COMPLETING THE WORK.
- POSITIVE DRAINAGE SHALL BE PROVIDED FOR ALL AREAS ON OR NEAR SPOIL AREAS. NATURAL DRAINAGE WAYS SHALL BE MAINTAINED.
- THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL MANHOLE COVERS.
- THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND/OR TENANTS OF DEVELOPED PROPERTY ADJACENT TO THE CONSTRUCTION OF THIS PROJECT A MINIMUM OF 10 DAYS ADVANCE NOTICE PRIOR TO START OF CONSTRUCTION IN THE VICINITY OF THE AFFECTED PROPERTY.
- ALL TRENCH BACKFILL SHALL BE EITHER TYPE I OR TYPE III UNLESS NOTED OTHERWISE.
- THE CONTRACTOR SHALL CONTACT THE FOLLOWING AT LEAST 72 HOURS PRIOR TO BEGINNING CONSTRUCTION TO ADVISE THEM OF THE INTENDED WORK AND OF HIS PROPOSED SCHEDULE:
 SEDGWICK COUNTY PUBLIC WORKS
 1250 S. SENECA
 WICHITA, KS 67213
 MR. JIM WEBER
 (316) 383-7901
- THE CONTRACTOR SHALL AVOID REMOVAL OR TRIMMING OF ANY TREES WHERE POSSIBLE. WHERE THE CONTRACTOR BELIEVES THE REMOVAL OR TRIMMING IS UNAVOIDABLE, HE SHALL OBTAIN THE CONCURRENCE OF THE ENGINEER BEFORE PROCEEDING WITH SUCH WORK.
- RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES INCLUDING ANY TREES REMOVED, TREE TRIMMINGS, AND EXCESS EXCAVATION WHICH IS TO BE WASTED, SHALL BE DISPOSED OF ON SITES PROVIDED BY THE CONTRACTOR. THESE SITES SHALL ALSO BE APPROVED BY THE ENGINEER AS TO SUITABILITY, APPEARANCE, AND SITE LOCATION. ALL DISPOSAL SITES MUST BE APPROVED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT. MATERIAL EITHER STOCKPILED OR DISPOSED OF IN A FLOODPLAIN WILL REQUIRE A KANSAS STATE BOARD OF AGRICULTURE PERMIT AND A FLOODPLAIN DEVELOPMENT PERMIT FROM SEDGWICK COUNTY. ANY MATERIALS DUMPED IN WATERS OF THE UNITED STATES OR WETLANDS IS SUBJECT TO U.S. CORPS OF ENGINEERS PERMITTING REGULATIONS. ANY MATERIALS BURIED OR STOCKPILED BEYOND APPROVED CONSTRUCTION LIMITS MAY REQUIRE ARCHAEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED DISPOSAL LOCATION.
- EACH BIDDER SHALL VISIT THE SITE OF THE PROJECT BEFORE SUBMITTING THE PROPOSAL FOR THIS WORK SO THAT HE WILL BE FULLY INFORMED OF THE EXISTING FIELD CONDITIONS AND THE OBSTACLES WHICH MIGHT BE ENCOUNTERED. UPON AWARD OF THE CONTRACT, THE CONTRACTOR WILL NOT BE GRANTED ANY ADDITIONAL COMPENSATION WITH REGARDS TO TIME AND MONEY FOR CONDITIONS THAT MAY HAVE BEEN EVALUATED DURING AN INSPECTION OF THE SITE.
- ALL DISTURBED AREAS TO BE SEEDED WITH RYE GRASS AT A RATE OF 200lbs/ACRE WITHIN 14 DAYS OF CONSTRUCTION. COST SHALL BE CONSIDERED SUBSIDIARY TO SITE CLEARING AND RESTORATION.
- PROPERTIES WITHIN THE PROJECT LIMITS MAY HAVE UNDERGROUND SPRINKLER SYSTEMS IN PUBLIC RIGHT-OF-WAY WHICH CONFLICT WITH NEW CONSTRUCTION. CONTRACTOR WILL BE REQUIRED TO REMOVE SUCH IMPROVEMENTS SHOULD THEY NOT BE REMOVED BY THEIR OWNER AT THE TIME OF CONSTRUCTION OF THE PROJECT. THE CONTRACTOR WILL BE REQUIRED TO SALVAGE ALL SPRINKLER HEADS AND/OR VALVES AND GIVE SUCH MATERIAL TO THEIR OWNER. PORTIONS OF UNDERGROUND SPRINKLER SYSTEMS NOT IN CONFLICT WITH NEW CONSTRUCTION SHALL BE PROTECTED FROM DAMAGE AND SHALL REMAIN IN PLACE. ALL WORK IN CONNECTION WITH UNDERGROUND SPRINKLER SYSTEMS SHALL BE CONSIDERED AS SUBSIDIARY TO PRICE BID FOR PIPE IN PLACE.
- THE CONTRACTOR SHALL NOT BURY MANHOLES THAT HAVE RIM ELEVATIONS WHICH ARE LOWER THAN EXISTING GROUND AT THE MANHOLE. THE GROUND AROUND SUCH MANHOLES AND ALONG THE SEWER ALIGNMENT SHALL BE BACKFILLED TO THE APPROXIMATE ELEVATION OF THE PROPOSED GROUND ELEVATION SHOWN ON THE PLAN/PROFILE SHEETS. THE CONTRACTOR SHALL PROVIDE DRAINAGE AWAY FROM THESE MANHOLES AND SEWER LINES BY CONSTRUCTION OF TEMPORARY DITCHES OR SLOPING THE GROUND AS REQUIRED. ALL COSTS FOR THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO THE INSTALLED BID PRICE FOR MANHOLES OR PIPE.
- THE CONTRACTOR SHALL PROVIDE MOUNDED EARTH AT MANHOLES AND CLEANOUTS THAT HAVE TOP ELEVATIONS GREATER THAN 1 FOOT ABOVE FINISHED GRADE, AS SHOWN ON THE PLANS. COSTS FOR MOUNDING SHALL BE CONSIDERED SUBSIDIARY TO THE LUMP SUM PRICE BID FOR "EASEMENT GRADING".
- CONTRACTOR SHALL GRADE THE SANITARY SEWER ALIGNMENT TO THE PROFILE AND ELEVATIONS SHOWN ON THE EASEMENT GRADING PLAN. ALL COSTS FOR EASEMENT GRADING SHALL BE SUBSIDIARY TO THE LUMP SUM PRICE BID FOR "EASEMENT GRADING".
- WATER LINE TO SERVICE WOODLAND LAKE ESTATES 2ND HAS ALREADY BEEN INSTALLED. SEWER CONTRACTOR SHOULD TAKE CAUTION WHEN WORKING IN AREAS WHERE THE WATER LINE AND THE SANITARY SEWER LINES CROSS OR ARE IN CLOSE PROXIMITY. ANY DAMAGE DONE TO THE WATER LINE BY THE SEWER CONTRACTOR DUE TO HIS NEGLIGENCE SHALL BE REPAIRED AT NO EXTRA COST TO THE OWNER.



BENCHMARKS

- BM #9 "T" POST 10'± S. OF P.T. ON SOUTH SIDE OF LINCOLN, 845'± EAST OF CENTER OF SECTION 27, T27S, R2E. USGS=1338.58 CITY=151.18
- BM #10 "T" POST 10'± S. OF P.C. ON NORTH SIDE OF LINCOLN, 358'± EAST OF CENTER OF SECTION 27, T27S, R2E. USGS=1345.23 CITY=157.83
- BM #11 "C" NE COR OF HEADWALL OF RCB UNDER LINCOLN 31'E & 11'N OF CTR. SEC.27, T27S, R2E USGS=1345.25 CITY=157.85
- BM #12 "T" POST 10'± WEST OF S. PC IRON CUL-DE-SAC N. LINE LOT 4, BLOCK 2 USGS=1347.075 CITY=159.675
- BM #13 "T" POST 16.3'± E SW COR LOT 18, BLOCK 2 16.4' W. OF PCC ON S. LINE OF LOT 18, BLOCK 2 USGS=1354.81 CITY=167.41
- BM #14 "T" POST 10'± S. OF PC NE COR LOT 23, BLOCK 2 USGS=1359.46 CITY=172.06



MID-KANSAS ENGINEERING CONSULTANTS, INC.
 411 N. WEBB ROAD
 WICHITA, KS. 67206
 316-684-9600

WOODLAND LAKES ESTATES SECOND
 PROJECT NAME

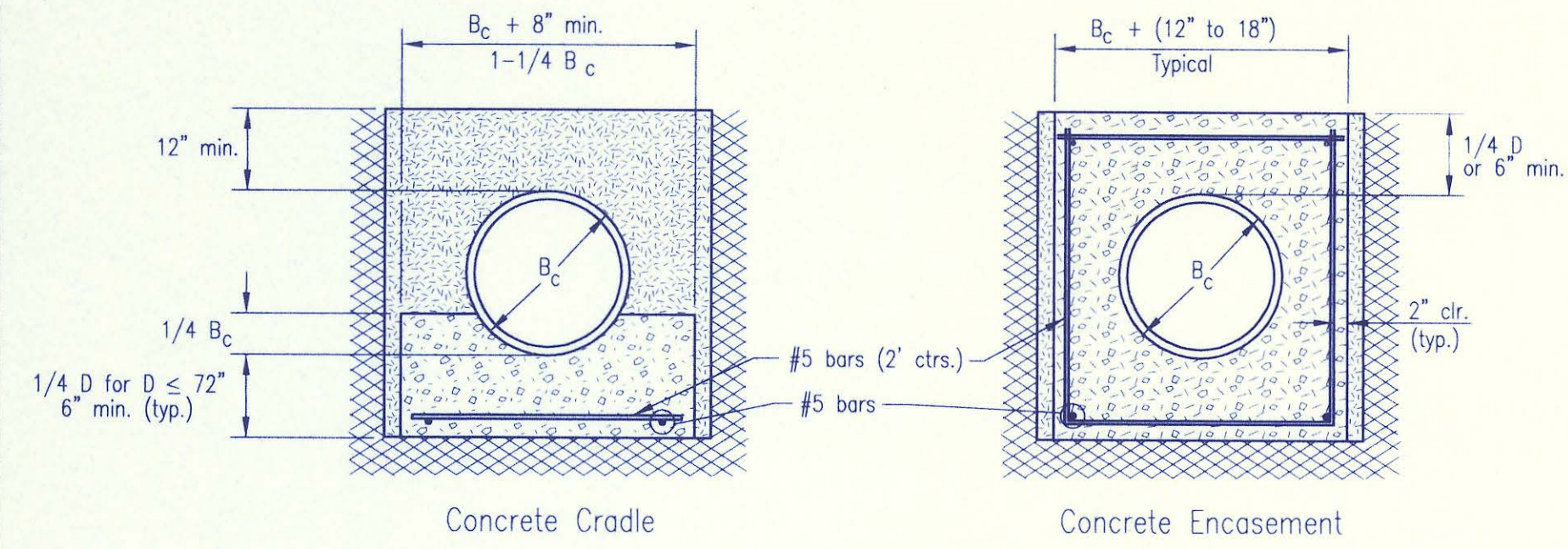
KEY MAP
 SHEET TITLE

GJA DESIGN BY. KKL/BDM DRAWN BY. DSS CHECKED BY.

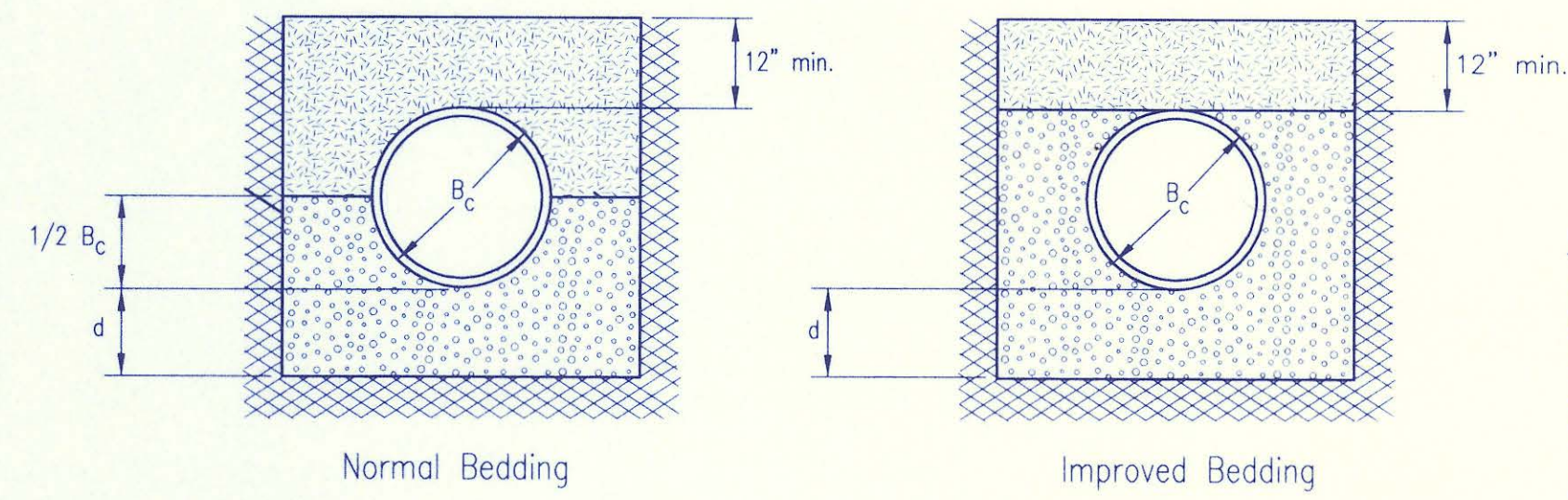
MAY 1999 DATE. 97158_BK JOB NO. 2 / 13 SHEET/OF

H:\CIVIL\95069\97158\97158_BK.DWG Wed Sep 22 11:05:45 1999

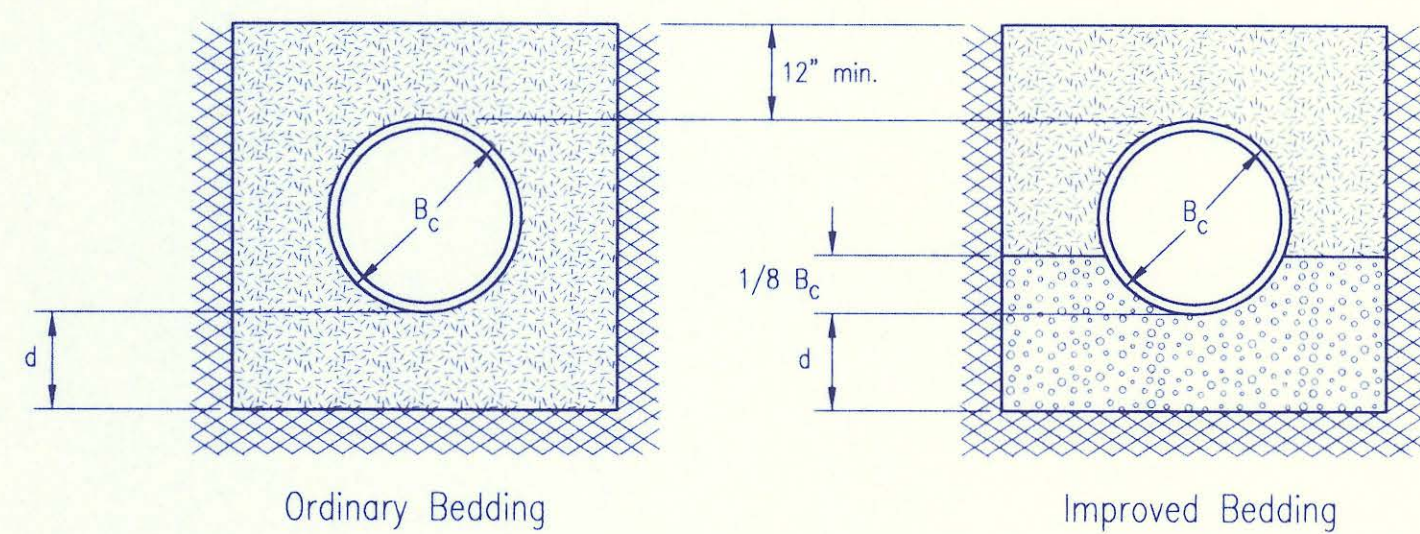
DATE
BY
CHECKED
CHECKED
PLAN



CLASS A



CLASS B



CLASS C

PIPE ZONE BACKFILLING

- B_c = Outside Pipe Diameter
- H = Backfill from Top of Pipe to Existing Ground
- D = Inside Pipe Diameter
- d = Depth of Bedding Material Below Pipe
- [Pattern] = Granular Bedding Material or Sand-Gravel Bedding
- [Pattern] = Compacted Embedment
- [Pattern] = Concrete

Depth of Bedding Material Below Pipe		
D	d(min) Soil	d(min) Rock
27" & smaller	4"	6"
30" to 60"	5"	9"
66" & larger	6"	12"

Granular Bedding Material shall be an approved material consisting of durable crushed rock conforming with the requirements of the latest revision of ASTM C-33 Size No. 67 (3/4" to No. 4); to be placed in not more than 6" layers and compacted by slicing with a shovel or vibrating. Soundness, abrasion, and absorption limits shall be as required for coarse aggregates in Section 03010-Concrete Work in the specifications.

Sand-Gravel Bedding Material - sand-gravel mix meeting Type UD-1 of the 1990 Kansas Standard Specifications for State Road and Bridge Construction.

Compacted Embedment shall be an approved sand material free from debris, organic material, and stones with 100% passing the 3/4" sieve to be placed in uniform layers not more than 6" thick and compacted to 95 percent maximum density as determined by ASTM D698. Granular Bedding Material may be substituted for all or part of Compacted Embedment Materials.

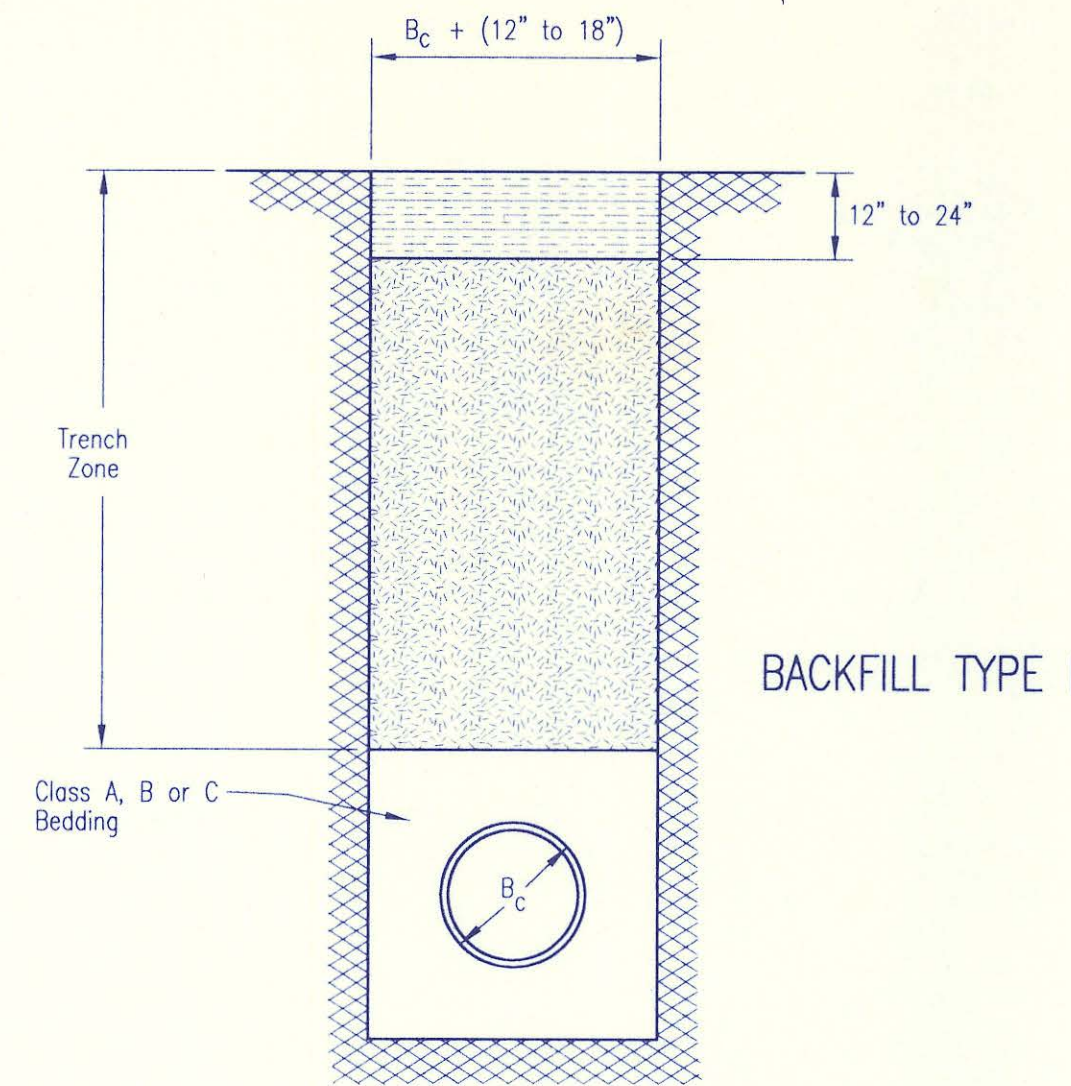
Class A "Concrete Cradle" and/or Class A "Concrete Encasement" is not required unless specified on the plans. However, where unexpected trench conditions exist or improper trenching is performed Class A Bedding may be required as determined by the Engineer.

Class B Bedding shall be used for all flexible pipe.

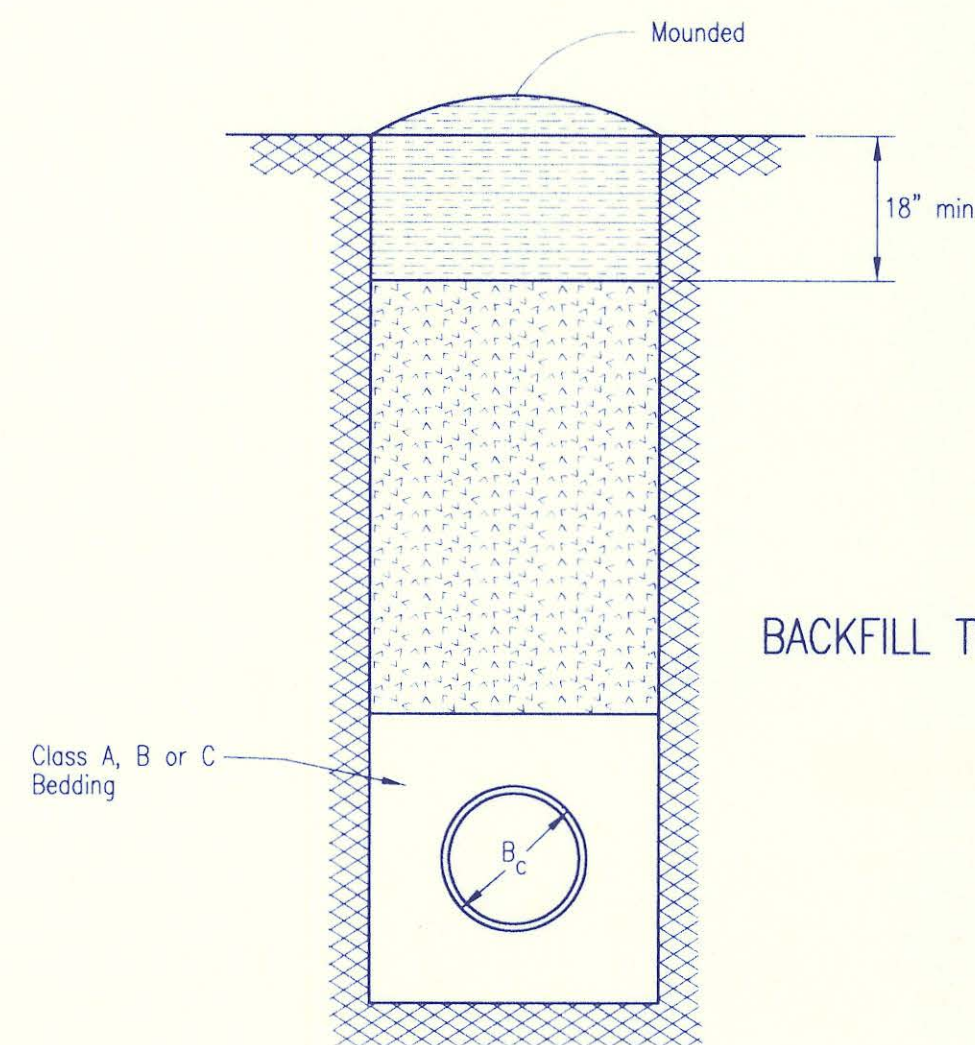
- a. Class B Normal Bedding shall be used for PVC Pipe unless wet conditions are encountered.
- b. Class B Improved Bedding shall be used for other flexible pipe, and for PVC pipe in wet conditions.

Class C Bedding shall be used for all rigid pipe.

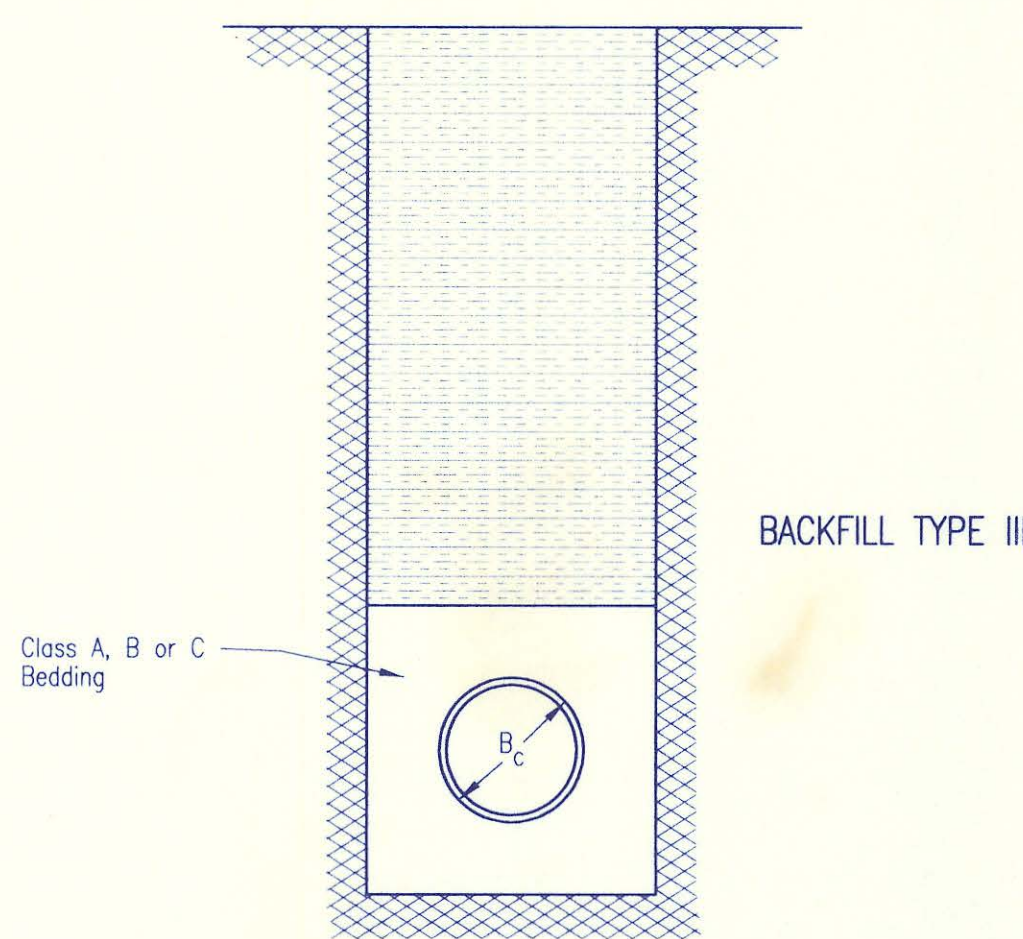
- a. Class C Ordinary Bedding shall be used for all rigid pipe unless wet conditions are encountered.
- b. Class C Improved Bedding shall be used for wet conditions existing in the trench, as directed by the Engineer, at no additional cost to the Owner. The dimensions shall be equal to that required for "rock" excavation (see specifications).



BACKFILL TYPE I



BACKFILL TYPE II



BACKFILL TYPE III

TRENCH ZONE BACKFILLING

- B_c = Outside Pipe Diameter
- [Pattern] = Compacted Granular Backfill
- [Pattern] = Uncompacted Earth Backfill
- [Pattern] = Compacted Earth Backfill

Compacted Granular Backfill material shall be an approved sand material free from debris, organic material and stones with 100% passing the 3/4" sieve and not more than 15% passing a No. 200 sieve; to be jetted and mechanically vibrated into place and compacted to 95% density as determined by ASTM D698.

Uncompacted Earth Backfill material may be natural soil free from large clods or stones, brush, roots more than 2 inches in diameter, debris, and junk. Flooding with water shall be provided as directed by the Engineer.

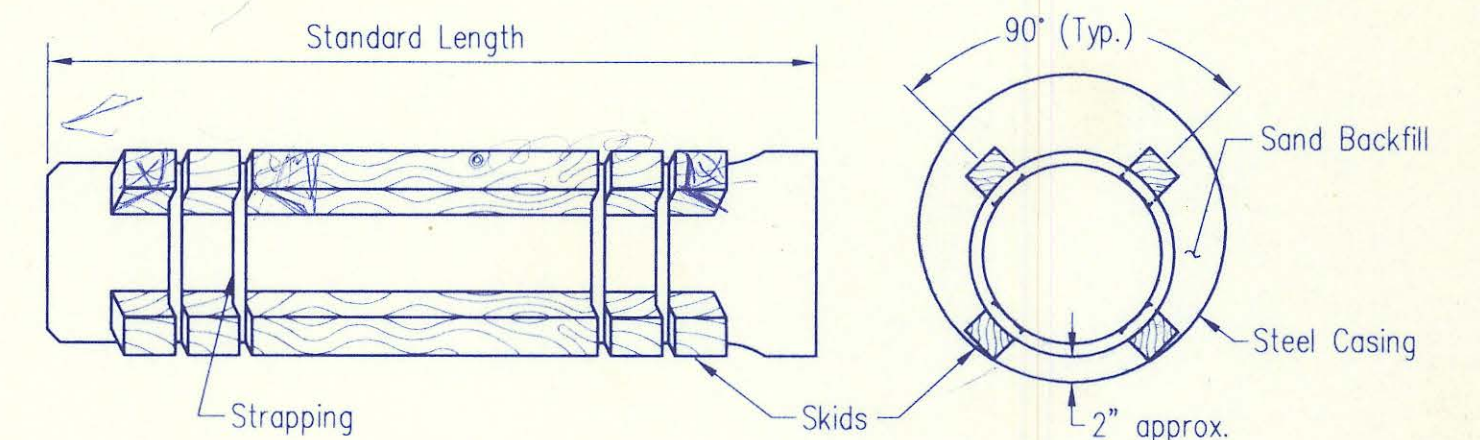
Compacted Earth Backfill shall consist of material existing prior to trenching or selected material as directed by the Engineer, and shall be compacted to 90% density as determined by ASTM D698.

Backfill: Backfill material and compaction requirements shall conform to either Type I, Type II or Type III as specified in the plans. One years maintenance will be required on all backfill.

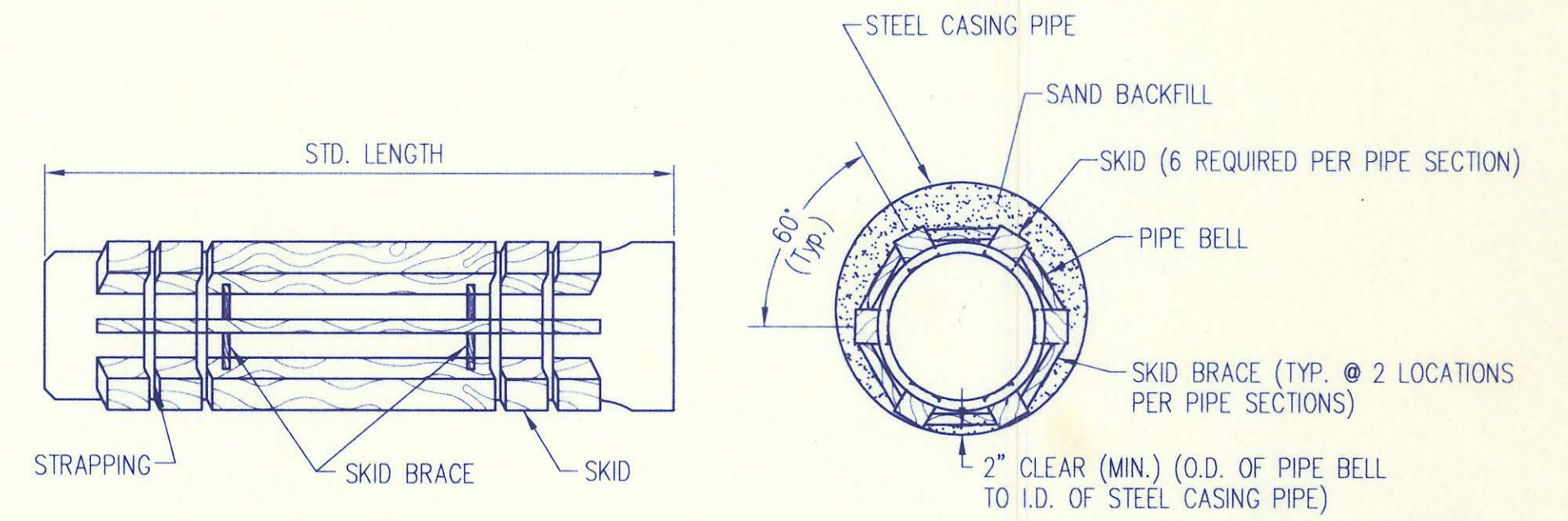
Backfilling Through Rock: Backfilling through rock shall be performed as specified in the paragraph Backfill above, except that the Pipe Zone is increased to provide eighteen (18) inches of cover over the pipe. When approved by the Engineer the remainder of the backfill may be excavated rock provided the excavated rock has been broken up so that earth and rock will thoroughly mix and not result in voids around the larger pieces of rock. Any excess rock remaining after the trench has been backfilled shall be removed or wasted as directed by the Engineer.

Backfilling Under Pavement: Backfilling under existing or proposed pavement shall be performed as Backfill Type I to a level of two (2) feet from the bottom of the pavement. The remainder of the trench shall be backfilled with selected material, sufficiently damp to be properly compacted in layers not exceeding six (6) inches in depth, compaction shall be performed with mechanical tampers and continued until a relative density of 100 percent of standard density, in conformance with ASTM D698 is attained.

Backfilling Under Gravel Streets: Where the trench crosses or is in existing gravel surfaced streets, the backfill shall be compacted as provided in the paragraph "Backfilling Under Pavement".



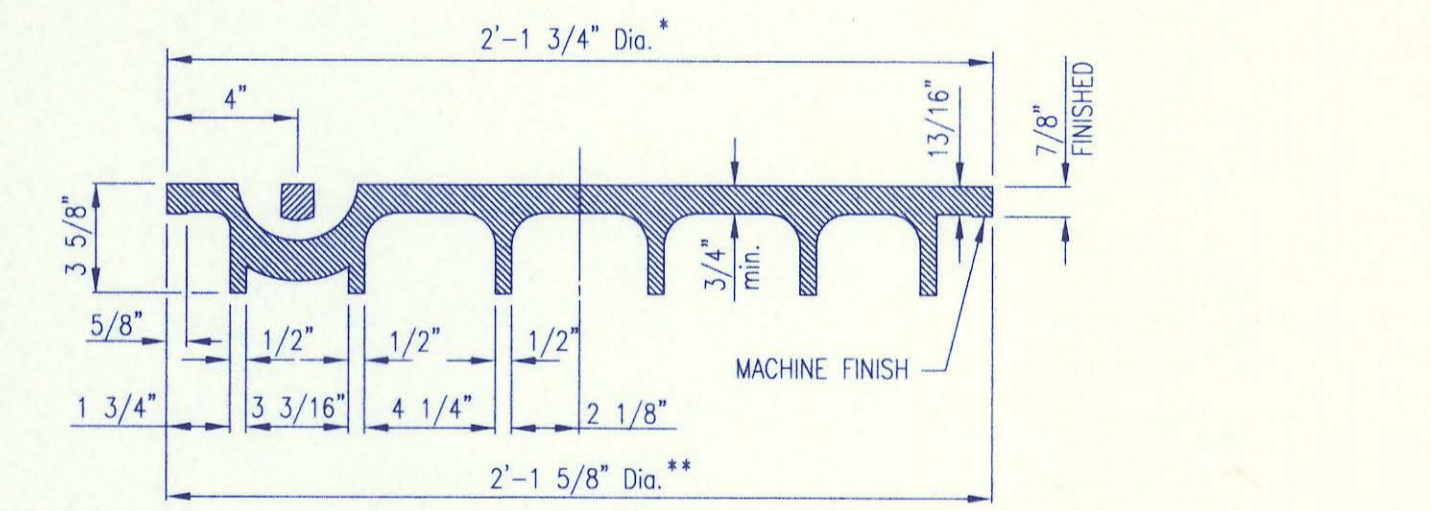
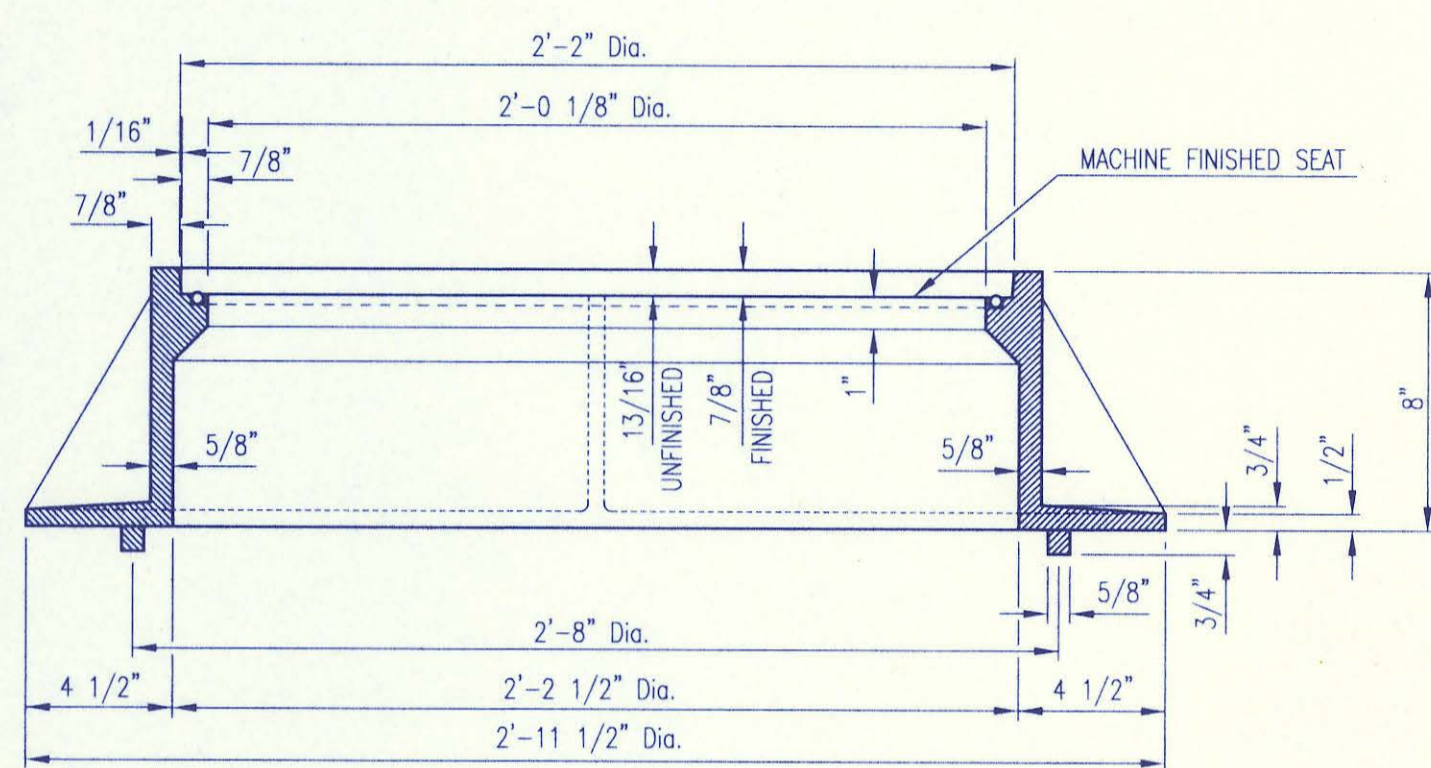
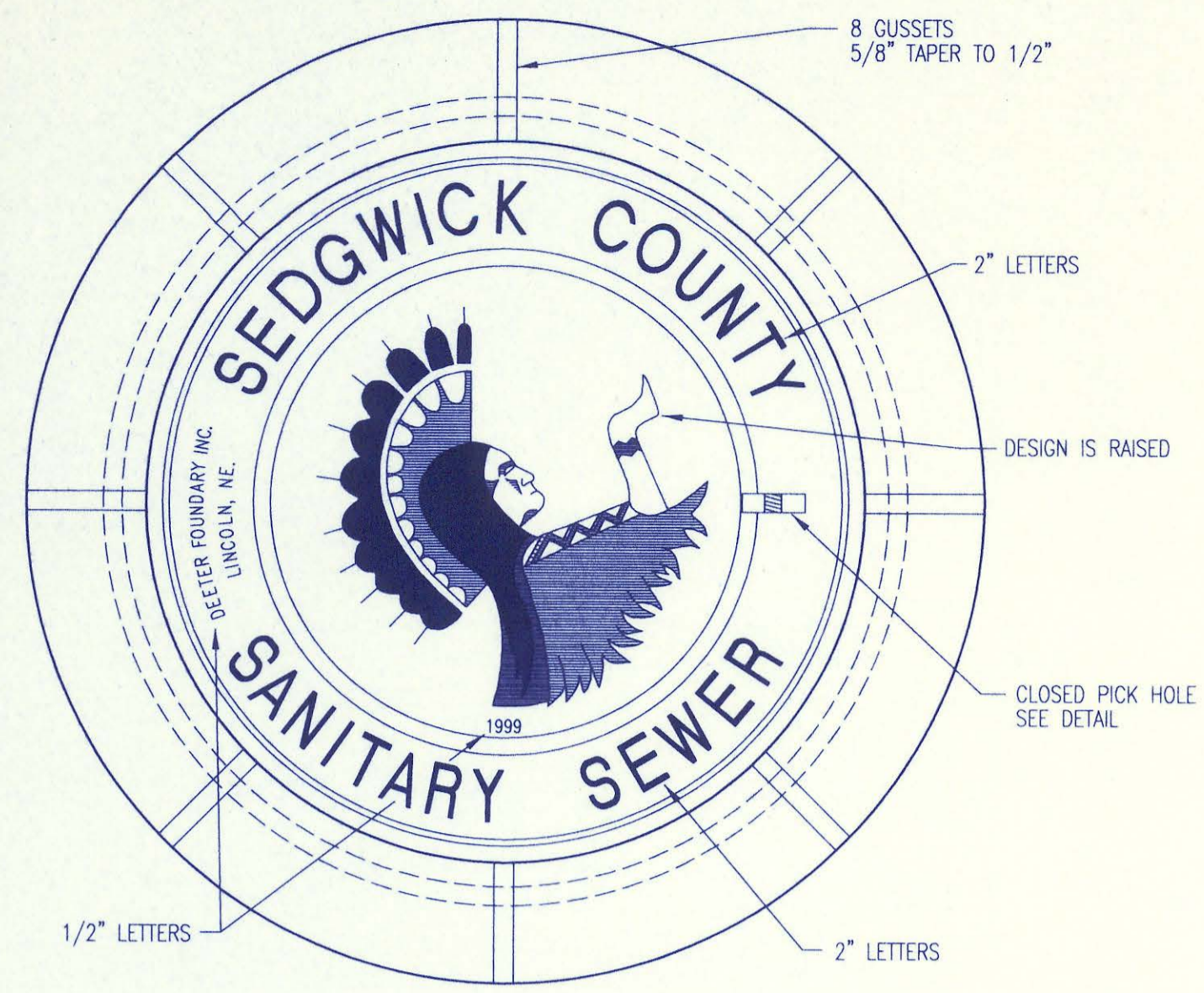
STEEL ENCASEMENT DETAIL
SEWER MAIN 12" AND UNDER



STEEL ENCASEMENT DETAIL
SEWER MAIN OVER 12"

TRENCH AND BACKFILL DETAILS

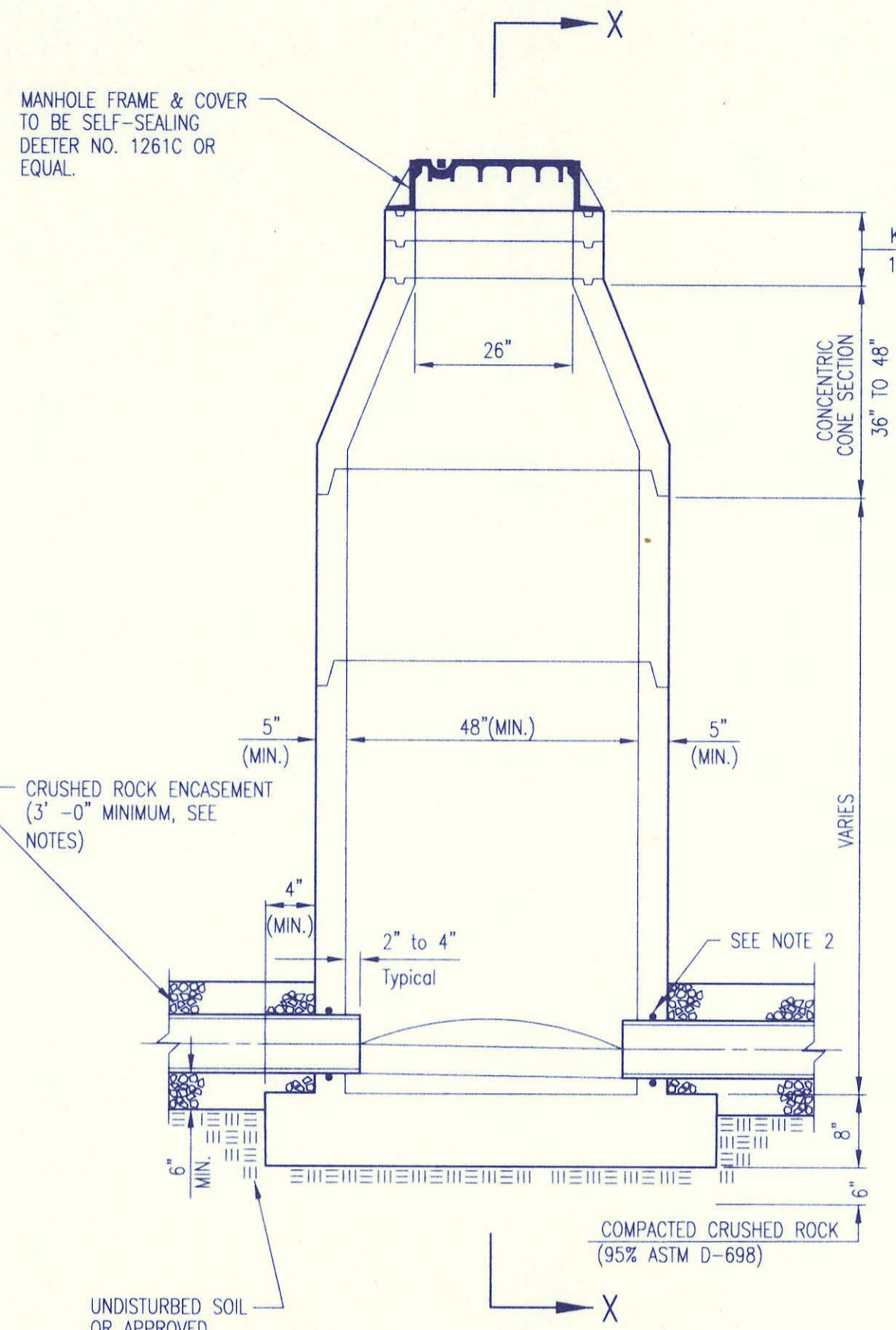
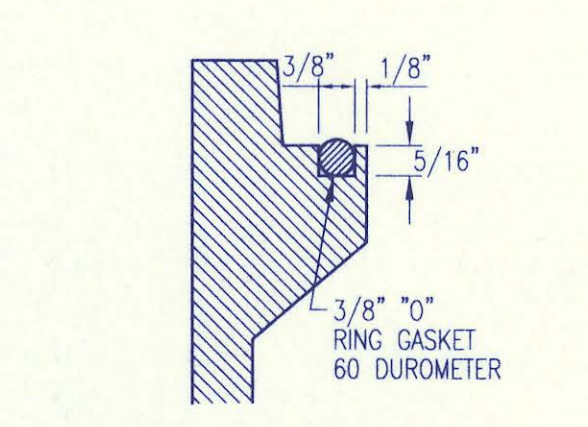
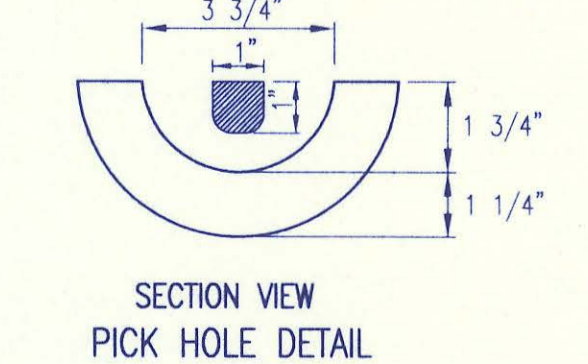
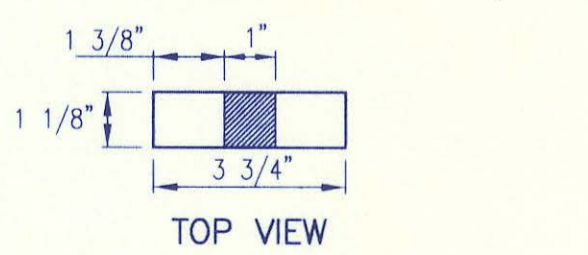
ADOPTED AS STANDARD DESIGN JANUARY 1998
BY
SEDCWICK COUNTY BUREAU OF PUBLIC SERVICES
DAVID C. SPEARS, P.E. DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER



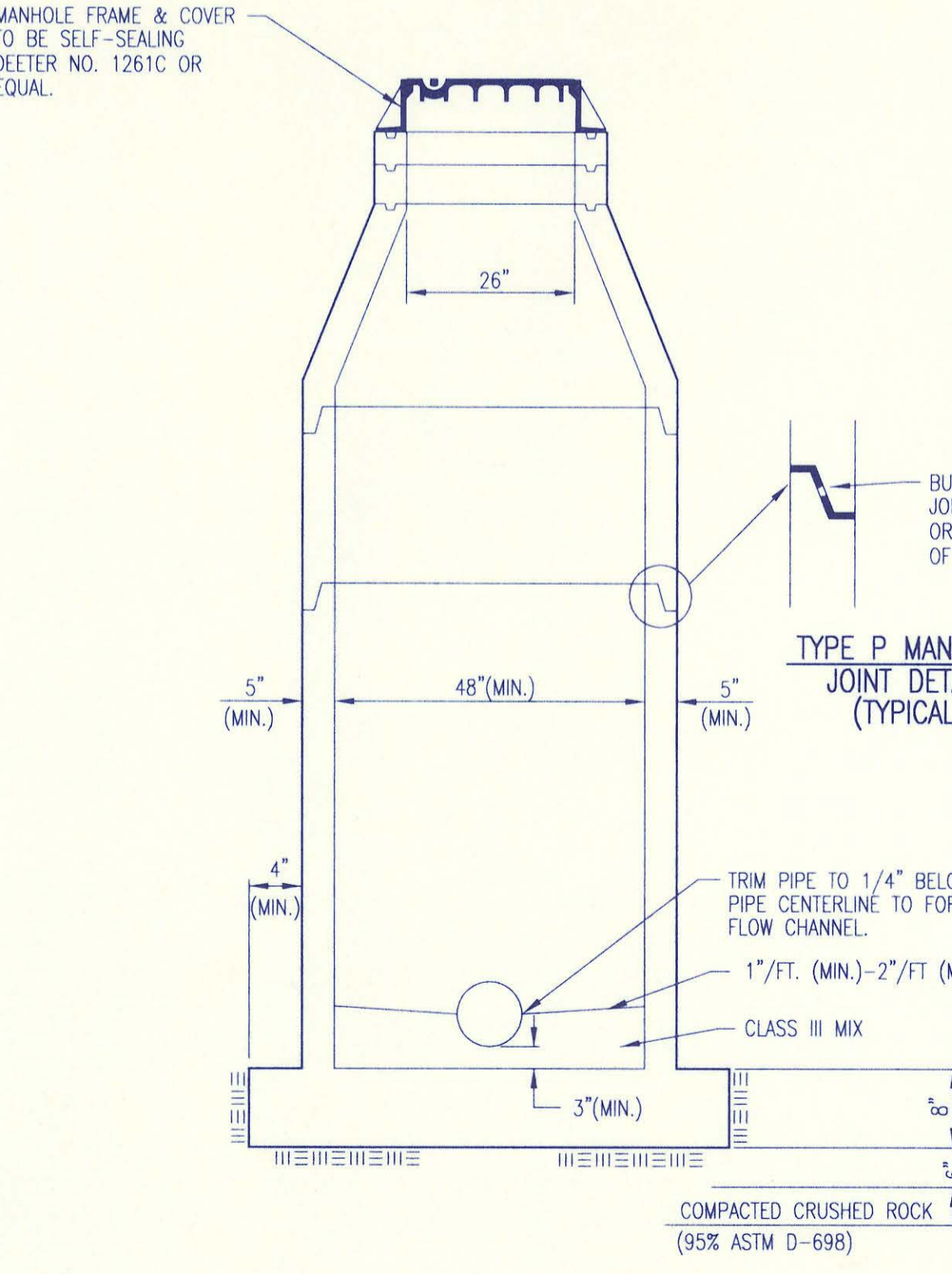
MANHOLE FRAME AND COVER
(TOTAL WEIGHT = 430 LBS.)

MANHOLE FRAME AND COVER NOTES

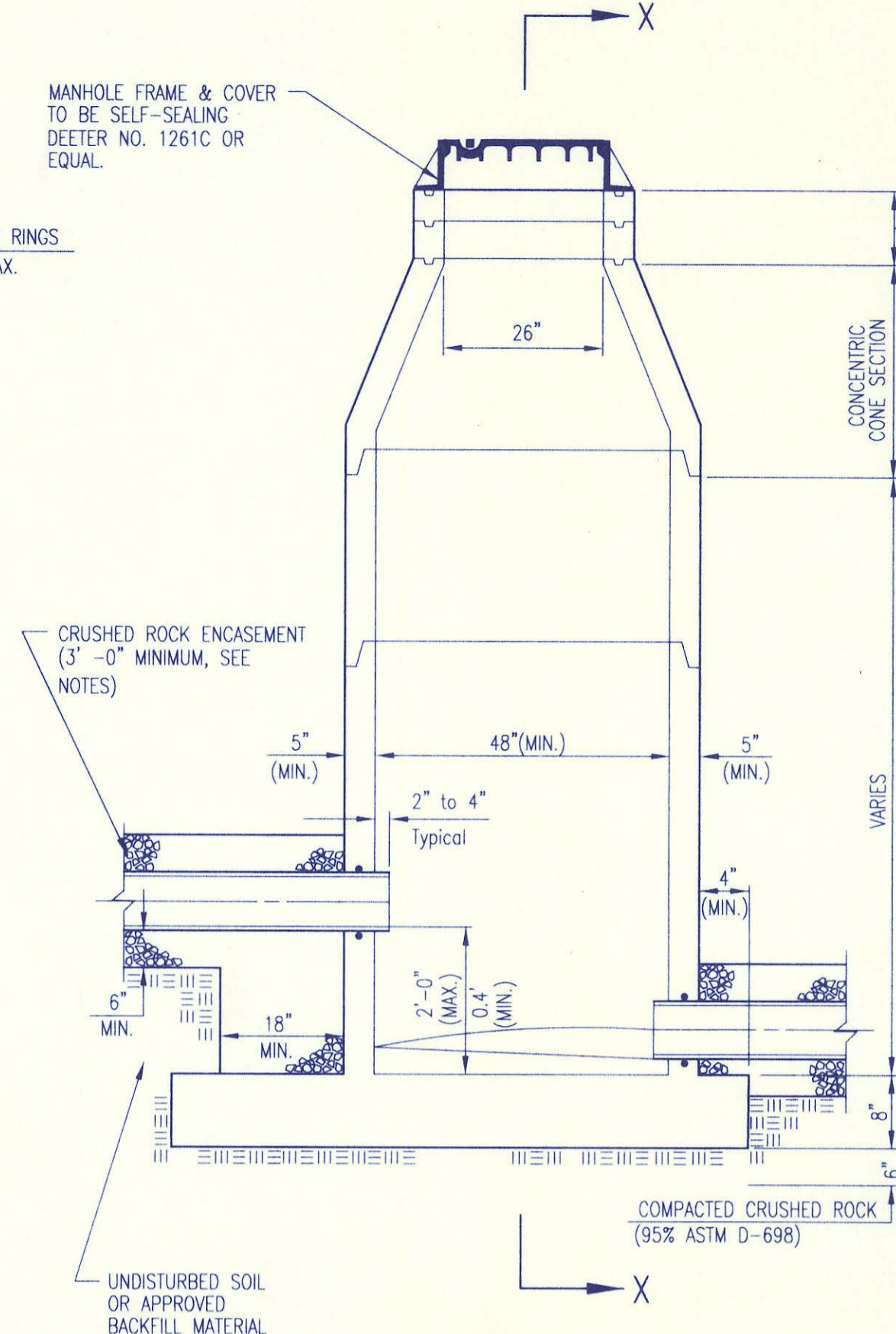
- CAST IRON MANHOLE FRAME AND COVER SHALL CONFORM TO ASTM A-48, CLASS 35B, OR BETTER.
- CASTINGS ARE TO BE MANUFACTURED TRUE TO PATTERN AND WITH SATISFACTORY FIT OF COMPONENT PARTS. CASTINGS SHALL BE FREE OF DEFECTS AND ALL BURRS SHALL BE GROUND SMOOTH. DIMENSIONS AS DETAIL ON PLAN SHALL NOT DEVIATE BY $\pm 1/16$ " PER FOOT.
- NO OTHER LETTERING OR MARKINGS OTHER THAN THOSE DETAILED ON PLAN WILL BE PERMITTED ON CASTINGS.
- CASTINGS MUST BE DOMESTICALLY MANUFACTURED IN THE UNITED STATES OF AMERICA.
- THE FRAMES AND COVERS SHALL BE FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACES SO FITTING PARTS WILL NOT RATTLE OR ROCK UNDER TRAFFIC.
- MANHOLE CASTINGS SHALL BE SELF-SEALING DEETER FOUNDRY INC. NO. 1261C OR APPROVED EQUAL, UNLESS OTHERWISE SPECIFIED IN THE SPECIAL CONDITIONS. (MINIMUM WT. = 430 LBS.) ALL MANHOLE CASTINGS SHALL BE CONSIDERED SUBSIDIARY TO THE UNIT PRICES BID FOR THE VARIOUS MANHOLE TYPES.
- THE MANUFACTURER SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO MANUFACTURE. THE ENGINEER SHALL RETAIN THE RIGHT TO REJECT CASTINGS NOT CONFORMING TO THE SPECIFICATIONS OR THE APPROVED SHOP DRAWINGS.
- THE MANHOLE FRAME SHALL BE FURNISHED WITH AN APPROVED CONTINUOUS "O" RING GASKET GROOVED INTO THE BEARING SURFACE OF THE MANHOLE FRAME (PER DETAIL). THE "O" RING GASKET SHALL BE FACTORY INSTALLED IN THE MANHOLE FRAME WITH 100% SILICON SEALANT-DOW CORNING OR EQUAL.



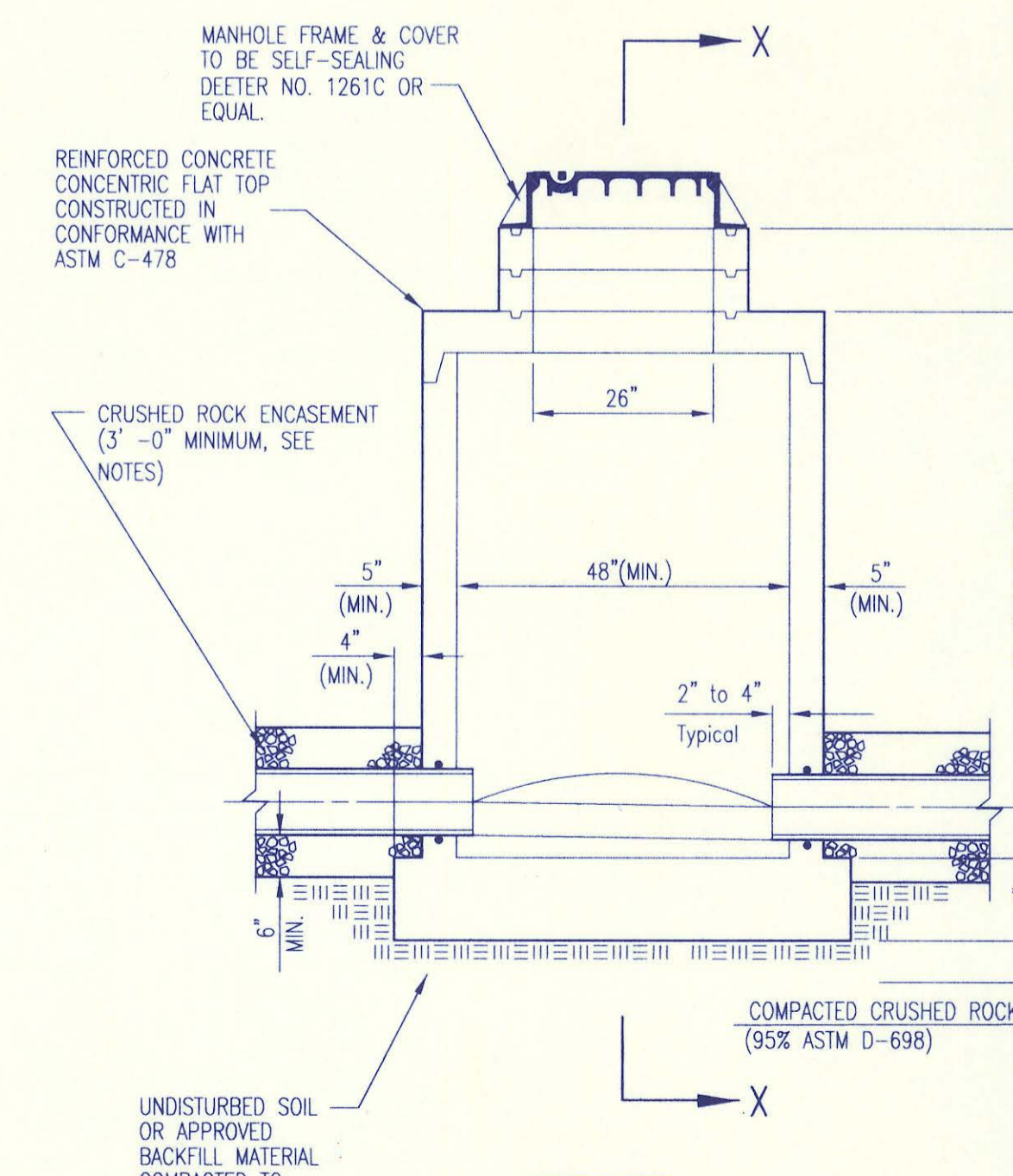
PRECAST STANDARD MANHOLE TYPE "A"



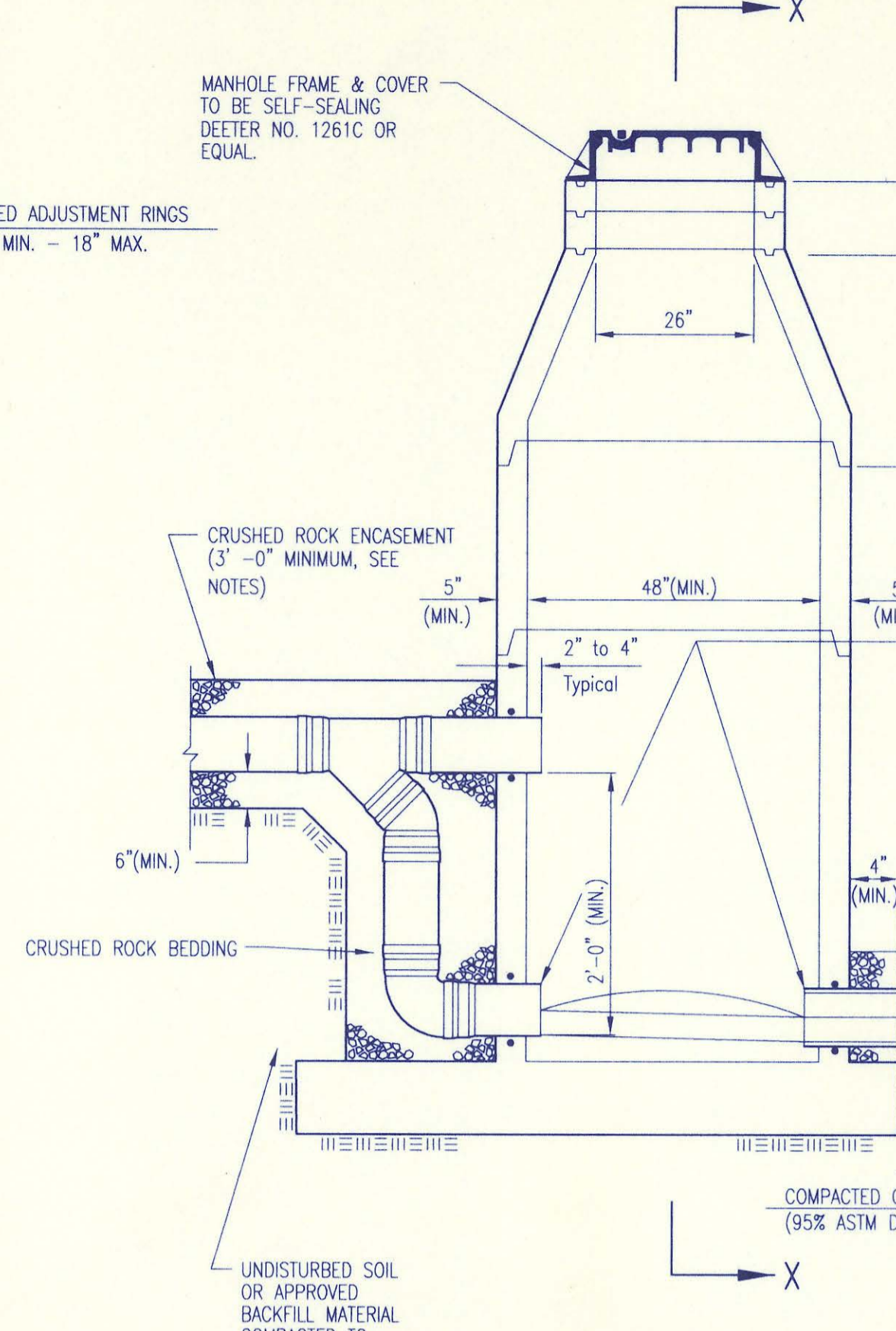
SECTION X (TYPICAL)



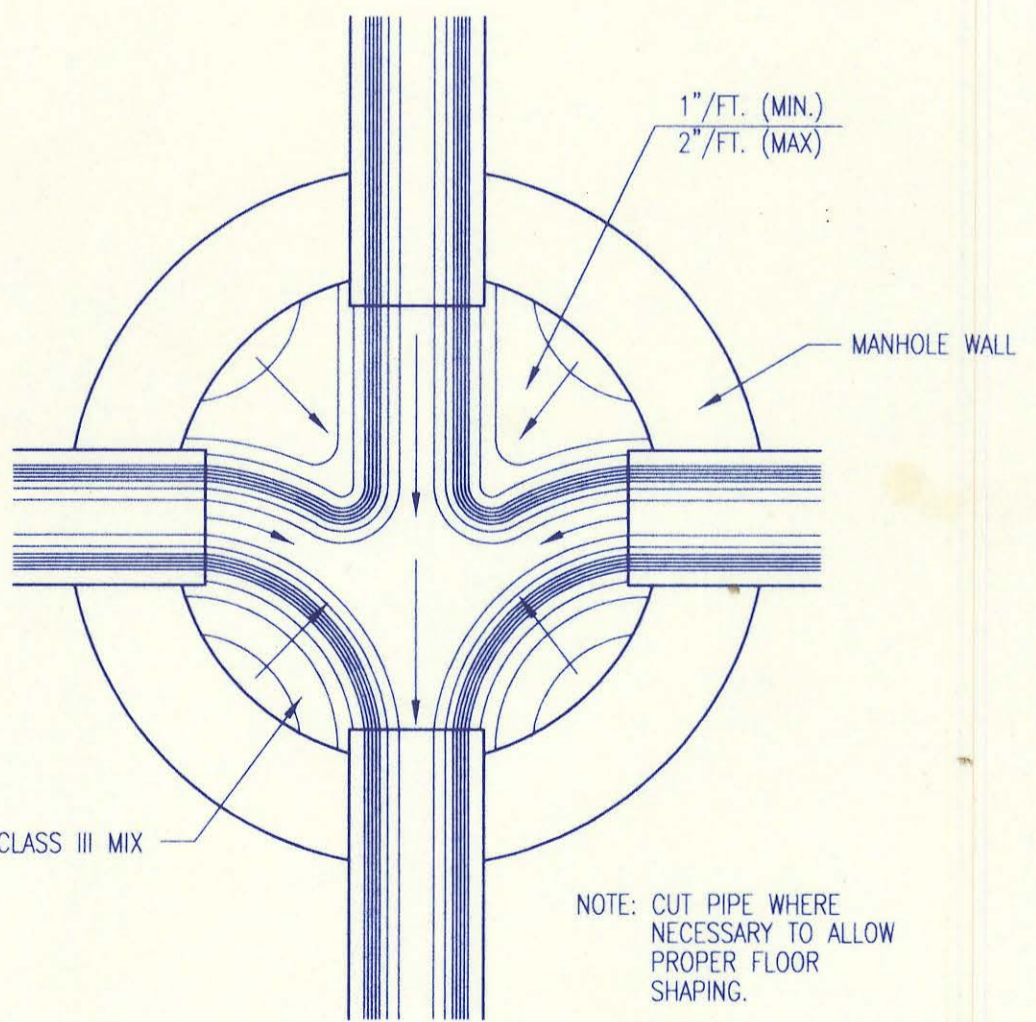
PRECAST INSIDE DROP MANHOLE TYPE "B"



PRECAST SHALLOW MANHOLE TYPE "D"



PRECAST OUTSIDE DROP MANHOLE TYPE "C"



TYPICAL MANHOLE FLOOR SHAPING

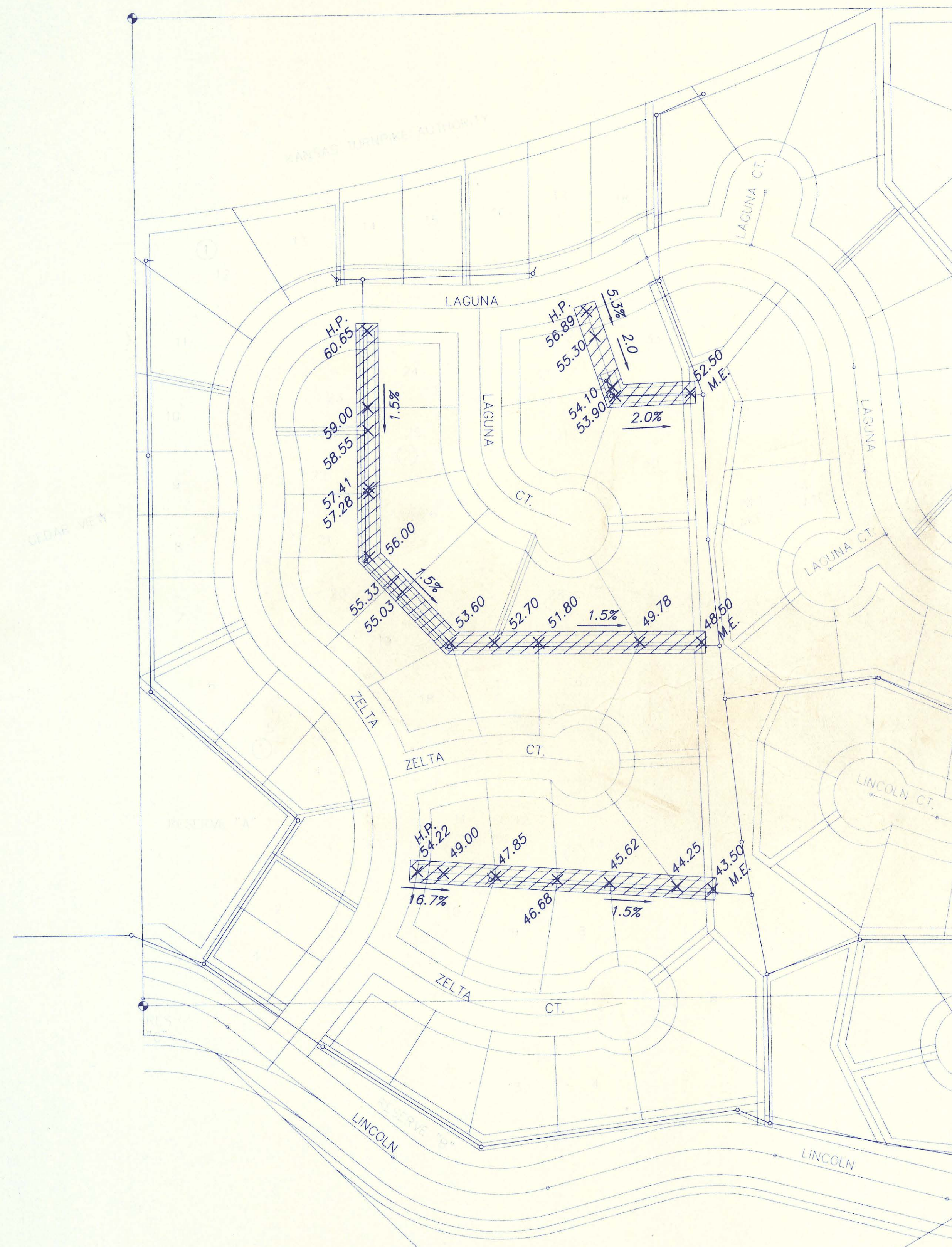
NOTE: TOP OF BOTTOM PIPE ON OUTSIDE DROP SHALL ALWAYS BE SET 0.1 FEET HIGHER THAN TOP OF PIPE CARRYING FLOW OUT OF THE MANHOLE.

PRECAST MANHOLE NOTES

- IF, IN THE OPINION OF THE ENGINEER, THE MANHOLE SUBGRADE APPEARS UNSTABLE, THE CONTRACTOR WILL OVEREXCAVATE TO A SUITABLE SUBGRADE CONDITION AND CRUSHED ROCK SHALL BE PLACED AND COMPACTED TO THE REQUIRED GRADE.
- "A-LOK" OR APPROVED EQUAL FLEXIBLE WATER-STOP GASKETS WHICH MEET OR EXCEED THE TEST REQUIREMENTS OF ASTM C-923 SHALL BE INSTALLED TO CONNECT THE SEWER TO THE MANHOLE WALL.
- THE MANHOLE FRAME SHALL BE SEATED ON AN APPROVED BUTYL-RUBBER OR MASTIC SEALANT TO PROVIDE WATER-TIGHT SEAL BETWEEN THE MANHOLE ADJUSTMENT RING AND THE MANHOLE FRAME.
- GASKETED PIPE CAPS SHALL BE PROVIDED BY THE PIPE SUPPLIER. GULCH OR CEMENTED CAPS WILL NOT BE ACCEPTED.
- ALL MANHOLE CONSTRUCTION SHALL BE WATER TIGHT.
- TOP OF MANHOLE FLOOR SLAB SHALL BE AT LEAST 3 INCHES BELOW THE FLOW LINE OF THE OUTLET PIPE TO INSURE SUFFICIENT MINIMUM THICKNESS OF SHAPED INVERT.
- MANHOLES WITH PIPE SIZES 24" AND LARGER SHALL HAVE 5" INSIDE DIAMETER (MIN.).
- INSIDE DIAMETER OF FIVE-FOOT DIAMETER PRECAST MANHOLES SHALL REMAIN CONSTANT TO THE LOCATION OF THE REDUCING FLAT TOP WHICH CONNECTS THE FOUR-FOOT DIAMETER CONE SECTION TO THE FIVE-FOOT DIAMETER MANHOLE BARREL.
- MANHOLES SHALL BE SUPPLIED WITH PRECAST BASE SECTIONS UNLESS OTHERWISE APPROVED. ALL PRECAST CONCRETE MANHOLE SECTIONS AND BASES SHALL CONFORM TO THE LATEST REVISION OF ASTM C478 AS MODIFIED BY THE SPECIFICATIONS. ALL MANHOLES WITH PRECAST BASES SHALL INCLUDE A-LOK GASKETS FOR ALL PIPE PENETRATIONS INTO THE MANHOLES.
- WHERE MANHOLE STUBS ARE SHOWN ON THE PLANS, THE STUB SHALL EXTEND AT LEAST 5 FEET FROM THE INSIDE WALL OF THE MANHOLE. 4" STUBS SHALL BE SET AT 2.0X GRADE. 6" STUBS SHALL BE SET AT 1.0X GRADE.
- MANHOLE SECTIONS SHALL BE SUPPLIED WITH RECESSED LIFTING EYES. LIFTING EYE RECESSES SHALL BE GROUDED FLUSH TO THE MANHOLE WALL WITH HYDRAULIC CEMENT AFTER THE MANHOLE IS IN PLACE. LIFTING HOLES THRU THE MANHOLE WALL WILL NOT BE ACCEPTED.
- WHERE A-LOK GASKETS ARE REQUIRED, THE CONTRACTOR SHALL UTILIZE A CRUSHED ROCK BEDDING MATERIAL. THE ROCK BEDDING MATERIAL SHALL EXTEND TO 3 FEET FROM THE MANHOLE WALL AND SHALL BE COMPACTED IN PLACE FROM THE BOTTOM OF THE DISTURBED AREA TO 1 FOOT ABOVE THE TOP OF PIPE. THE CRUSHED ROCK WHICH IS PLACED BELOW THE PIPE BEDDING ZONE SHALL BE COMPACTED TO 95% ASTM D-698(MIN.).
- WHERE MANHOLES ARE TO BE BUILT OVER EXISTING SANITARY SEWER LINES, SEWER PIPES SHALL BE SUPPORTED WITH CLASS III CONCRETE ENCASEMENT A MINIMUM OF 3 FEET OUTSIDE THE MANHOLE WALL.
- CRUSHED ROCK SHALL MEET THE REQUIREMENTS FOR GRANULAR BEDDING MATERIAL, AS OUTLINED IN THE SPECIFICATIONS.

PRECAST MANHOLE DETAILS

ADOPTED AS STANDARD DESIGN JANUARY 1998
BY
SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
DAVID C. SPEARS, P.E. DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER



EASEMENT GRADING PLAN

EASEMENT GRADING DETAILS

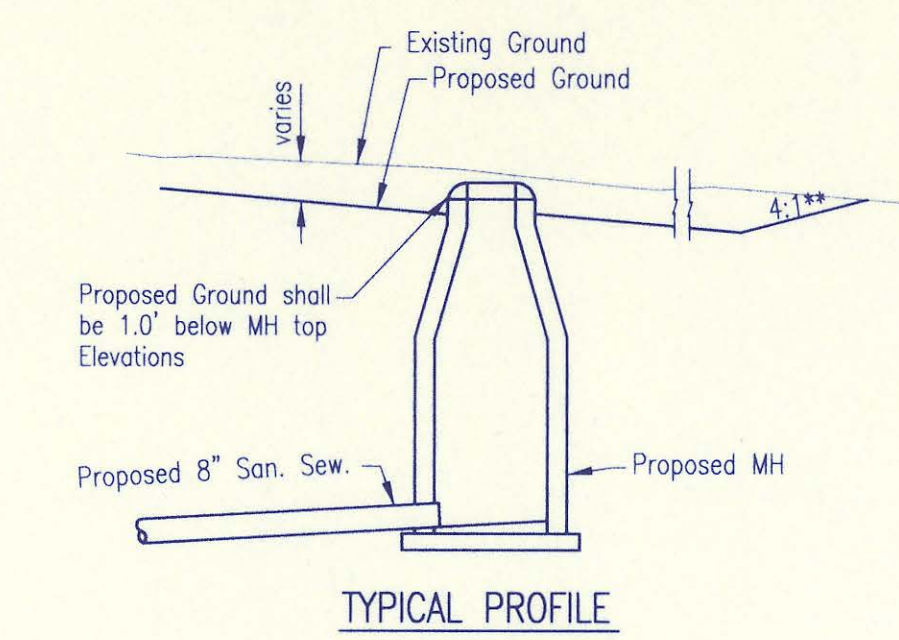
= AREAS TO BE GRADED

H.P. = HIGH POINT
M.E. = MATCH EXISTING

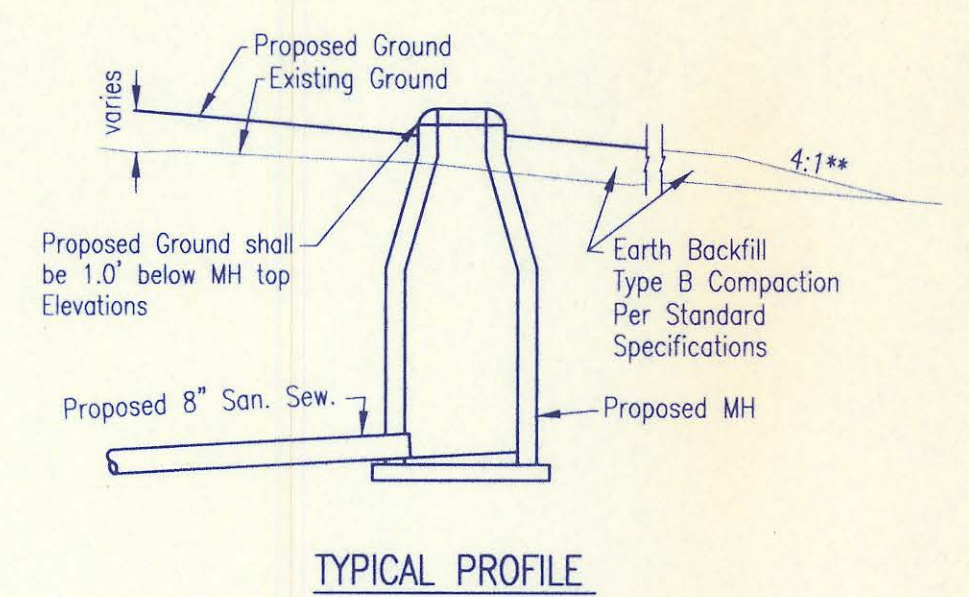
**Graded widths and slopes may vary as approved by the Engineer to minimize conflict with existing trees.

Easement Grading will be bid on a lump sum basis for grading the easements to the profile and elevations shown on the Easement Grading Plan (this sheet). Approximate quantities of earthwork for easement grading are shown below. These approximate quantities are given for information only. The Contractor should verify the quantities when preparing the proposal.

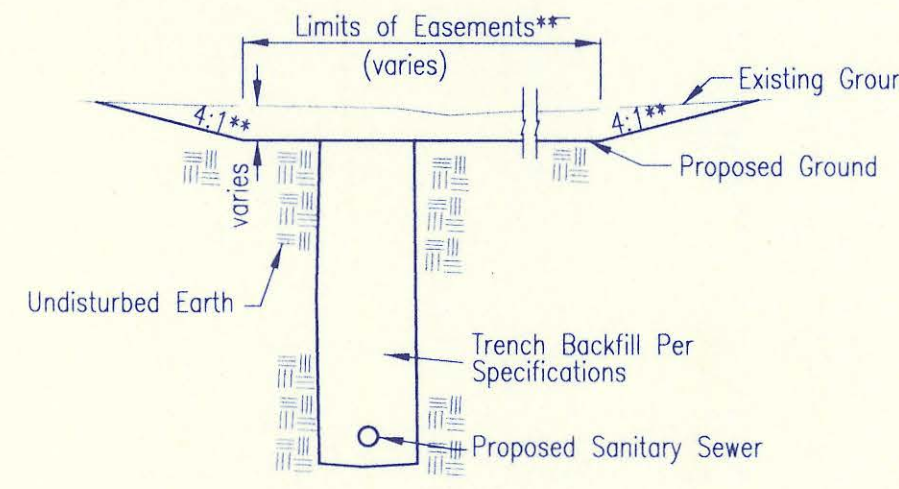
Cut 2100 C.Y. (Approximate)
Fill 125 C.Y. (Approximate)



TYPICAL PROFILE

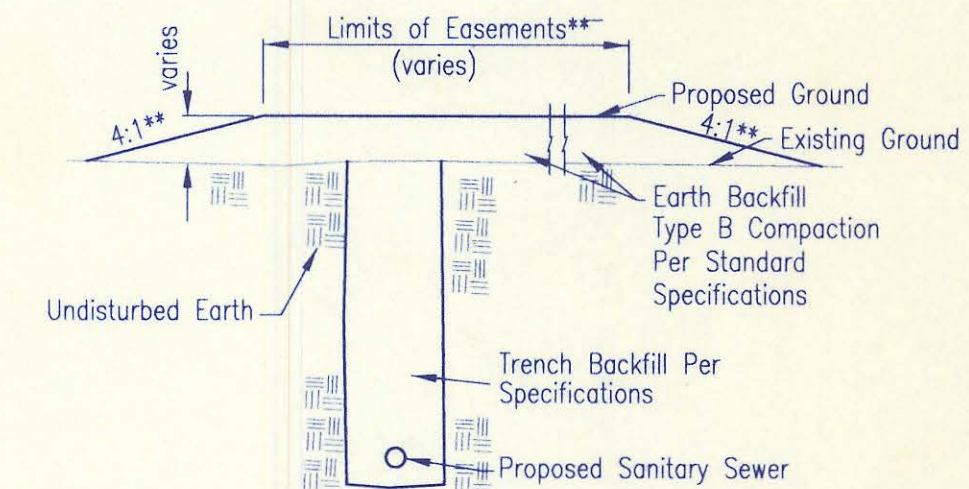


TYPICAL PROFILE



TYPICAL SECTION

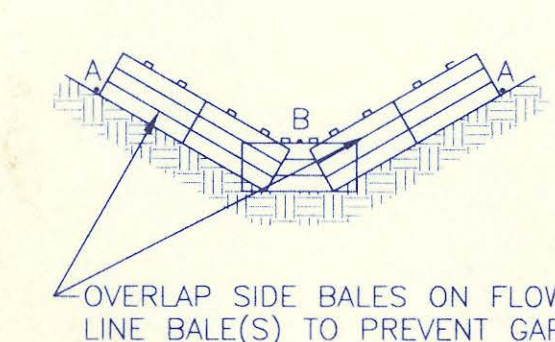
"CUT" SITUATIONS



TYPICAL SECTION

"FILL" SITUATIONS

END POINTS "A" MUST BE HIGHER THAN FLOW LINE POINT "B"

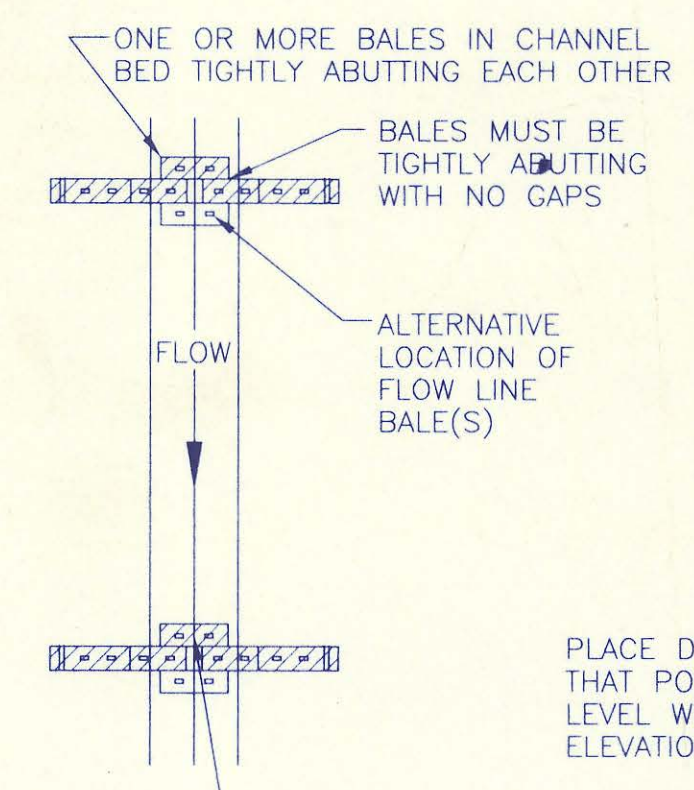


OVERLAP SIDE BALES ON FLOW LINE BALE(S) TO PREVENT GAPS

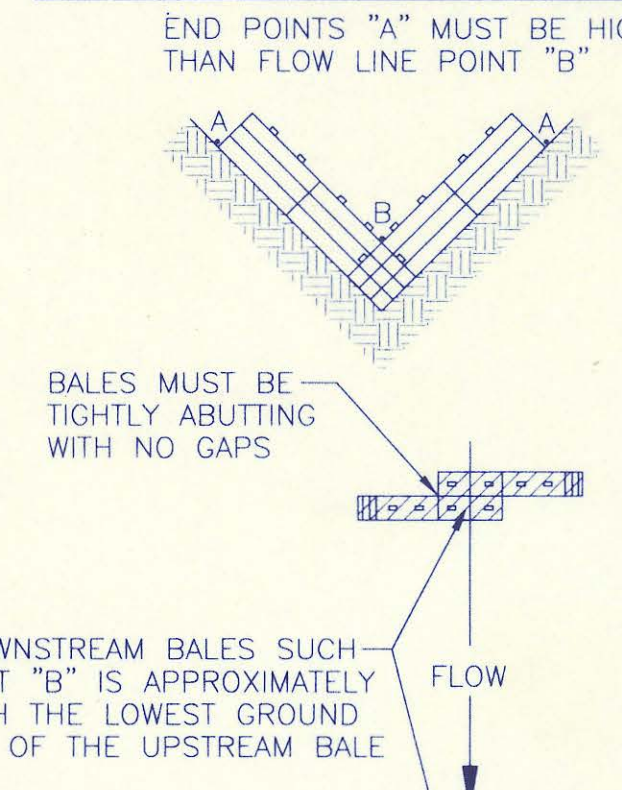
18 INCH BY 36 INCH BALES	VALUE OF Z	MINIMUM NUMBERS OF BALES
	10 OR <	1**
	10-35	2**
	35-50	3**
	50-70	4**
	70 OR >	NOT RECOMMENDED

** ASSUMES DEPTH OF WATER ABOVE POINT "B" WILL NOT EXCEED 6 INCHES

END POINTS "A" MUST BE HIGHER THAN FLOW LINE POINT "B"

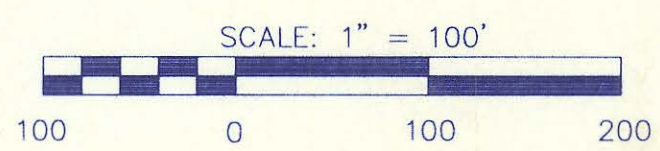


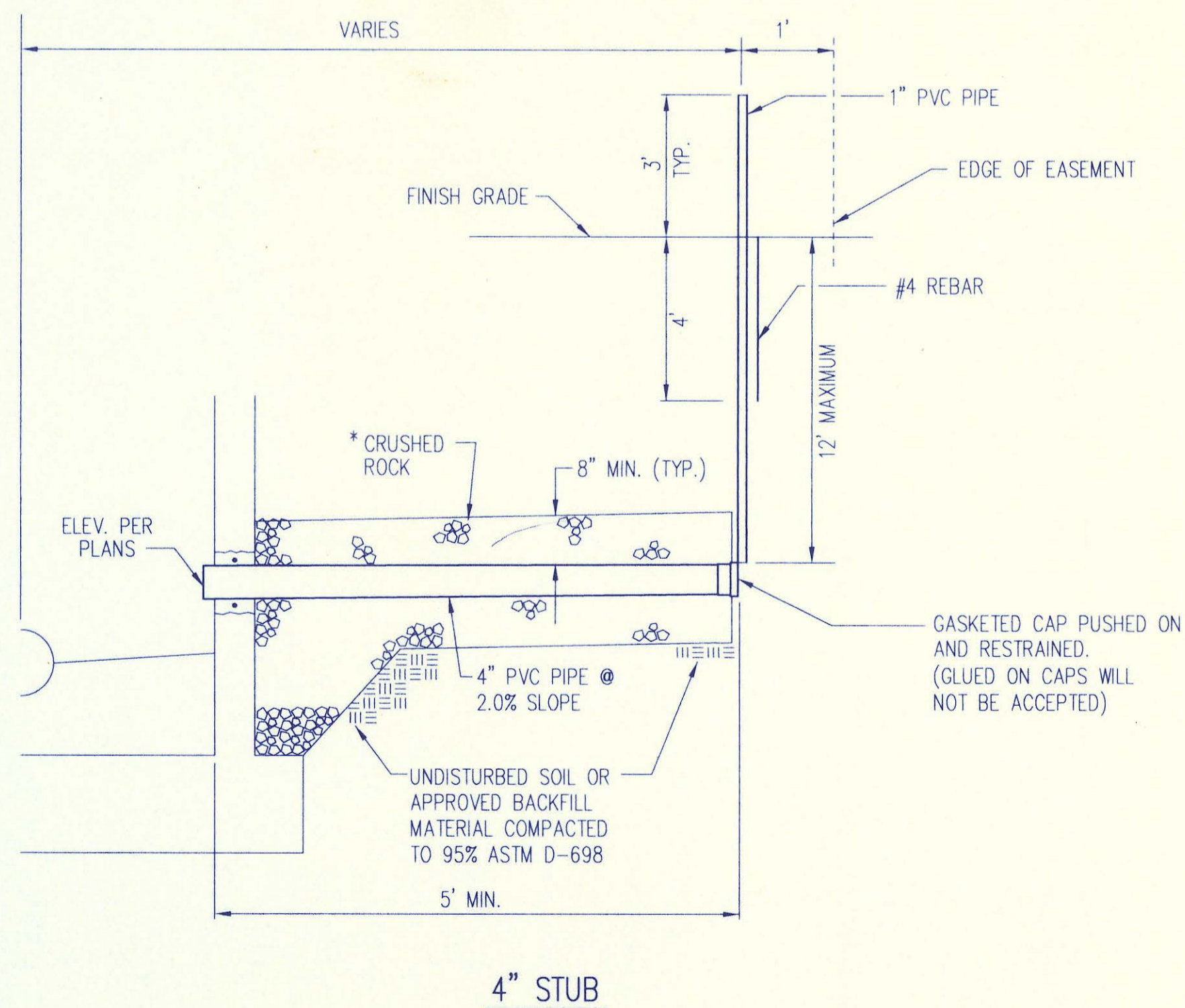
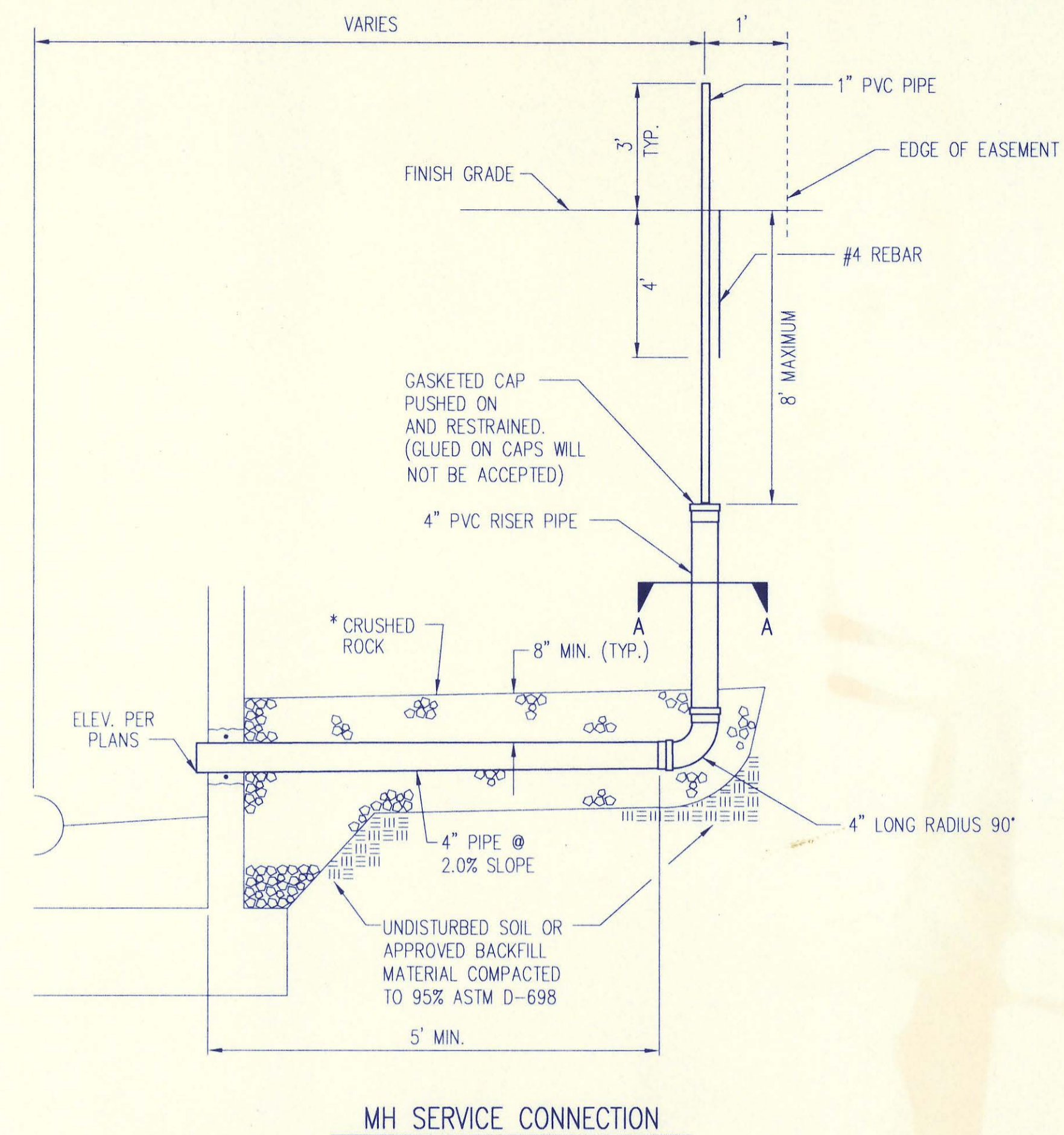
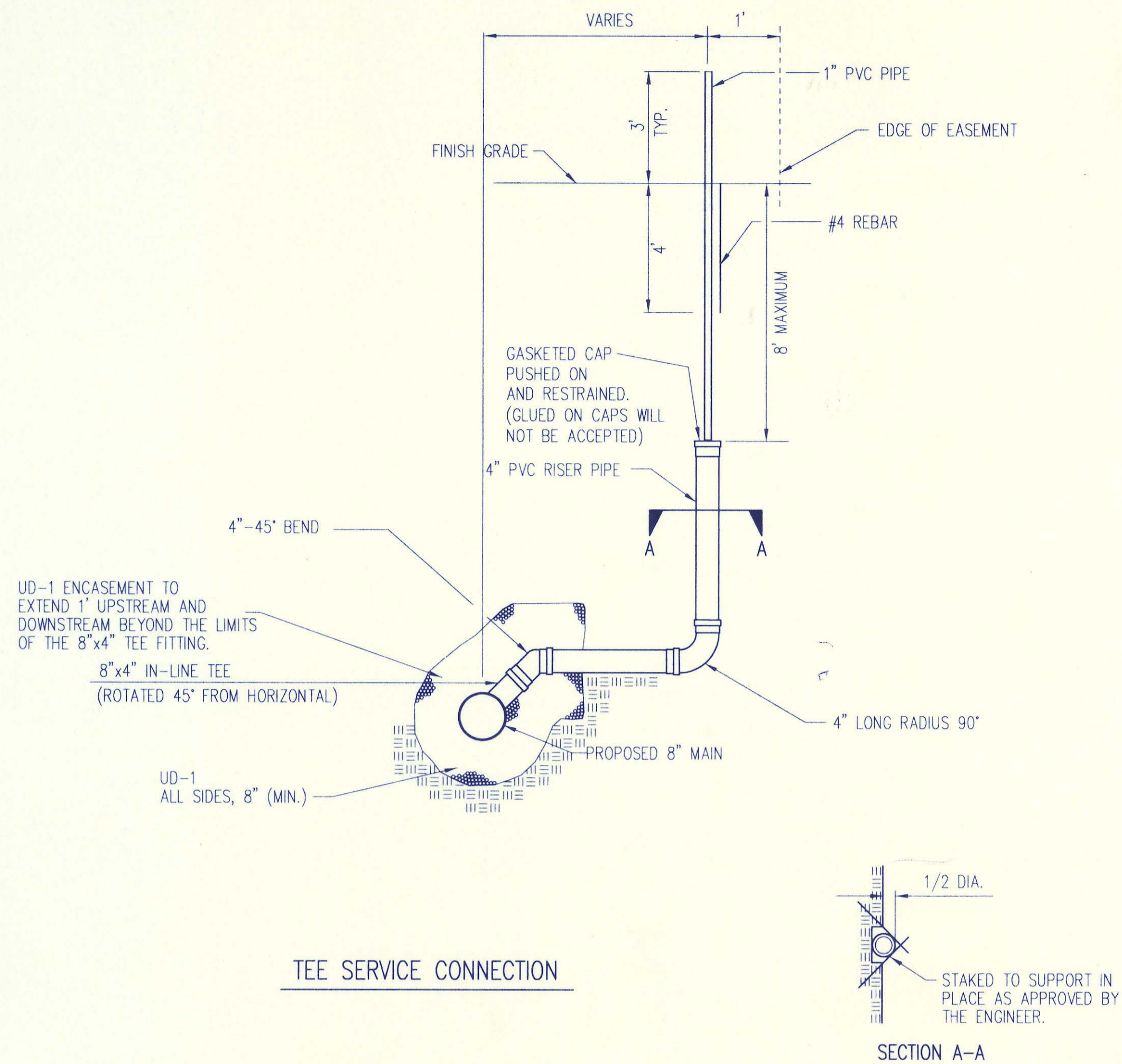
WIDE CHANNELS



NARROW CHANNELS

STRAW BALE DIKES FOR EASEMENT GRADING



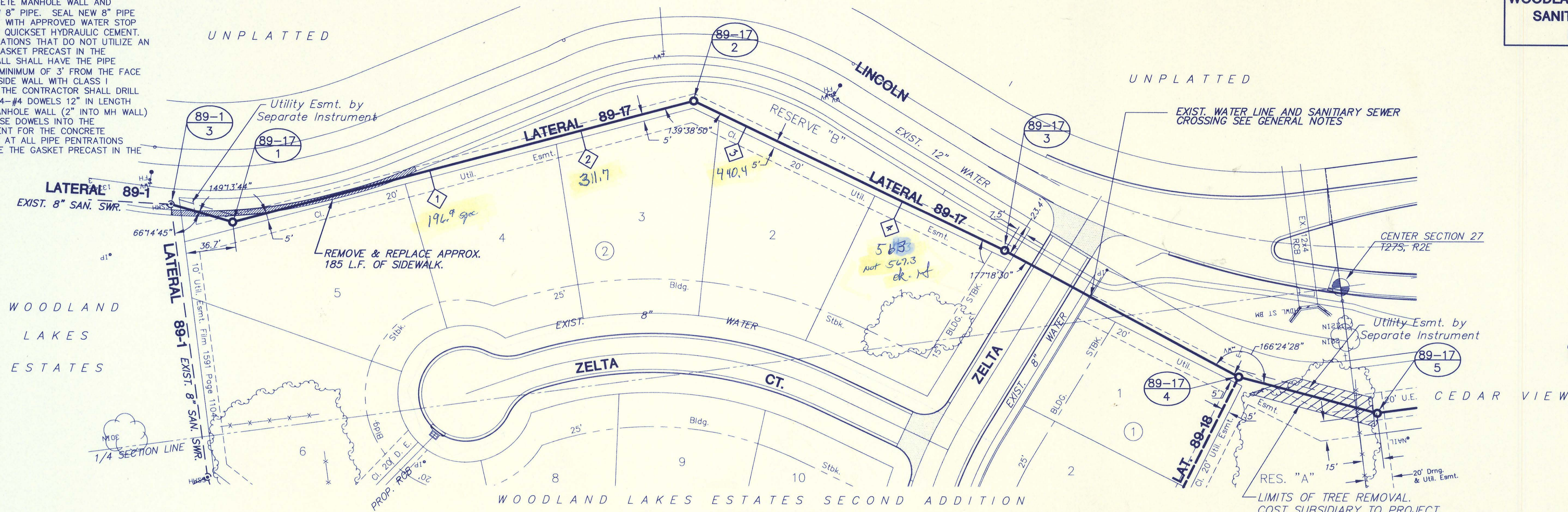


* CRUSHED ROCK SHALL MEET THE REQUIREMENTS FOR GRANULAR BEDDING MATERIAL, AS OUTLINED IN THE SPECIFICATIONS.

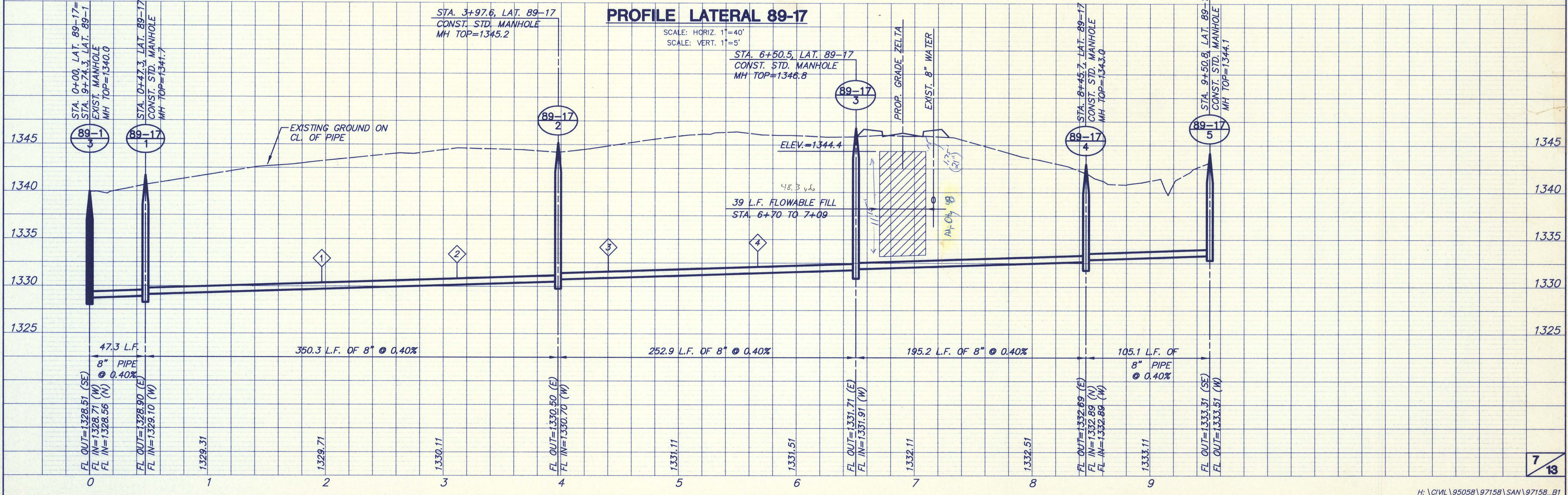
SERVICE CONNECTIONS ARE TO BE INSTALLED WHERE PROPOSED SEWER MAIN IS 12' OR MORE BELOW PROPOSED GROUND OR AS SHOWN IN THE PLANS.

SEWER SERVICE TABLE										
NO.	TYPE	LOCATION				FOR INFORMATION ONLY		RECORD INFORMATION (TO BE COMPLETED BY PROJECT INSPECTOR)		NO.
		LOT NO.	BLOCK NO.	LATERAL NO.	STATION / DIRECTION	APPROXIMATE LENGTH 4" PIPE	DISTANCE FROM NEAREST MANHOLE			
							UPSTREAM	DOWNSTREAM		
1	TEE SERVICE CONNECTION	4	2	89-17	1+96.9 / RT.	14' - 5' deep	200.7' From 89-17-2	149.6' From 89-17-1	1	
2	TEE SERVICE CONNECTION	3	2	89-17	3+11.7 / RT.	14' - 6' deep	85.9' From 89-17-2	264.4' From 89-17-1	2	
3	TEE SERVICE CONNECTION	2	2	89-17	4+40.4 / RT.	14' - 5' deep	210.1' From 89-17-2	42.8' From 89-17-1	3	
4	TEE SERVICE CONNECTION	1	2	89-17	5+63.0 / RT.	14' - 8' deep	87.5' From 89-17-2	168.4' From 89-17-1	4	
5	TEE SERVICE CONNECTION	2	1	89-18	1+10.0 / RT.	4' - 5' deep	120.9' From 89-18-1	110.0' From 89-17-4	5	
6	TEE SERVICE CONNECTION	3	1	89-18	1+95.0 / RT.	4' - 11' deep	265.9' From 89-18-1	195.0' From 89-17-4	6	
7	TEE SERVICE CONNECTION	4	1	89-18	2+55.9 / RT.	14' - 7' deep	263.5' From 89-18-2	25.0' From 89-18-1	7	
8	TEE SERVICE CONNECTION	26	2	89-20	4+82.5 / RT.	14' - 8' deep	44.7' From 89-20-2	116.9' From 89-20-1	8	
9	TEE SERVICE CONNECTION	20	2	89-20	5+01.0 / LT.	4' - 8' deep	26.2' From 89-20-2	135.4' From 89-20-1	9	
10	TEE SERVICE CONNECTION	21	2	89-20	5+52.2 / LT.	4' - 8' deep	253.5' From 89-20-3	25.0' From 89-20-2	10	
11	TEE SERVICE CONNECTION	22	2	89-20	6+37.2 / LT.	4' - 8' deep	268.5' From 89-20-3	110.0' From 89-20-2	11	
12	TEE SERVICE CONNECTION	25	2	89-20	6+45.5 / RT.	14' - 8' deep	266.2' From 89-20-3	118.3' From 89-20-2	12	
13	TEE SERVICE CONNECTION	23	2	89-20	7+22.22 / LT.	4' - 8' deep	183.5' From 89-20-3	195.0' From 89-20-2	13	
14	TEE SERVICE CONNECTION	24	2	89-20	7+52.7 / RT.	14' - 8' deep	153.0' From 89-20-3	225.5' From 89-20-2	14	
15	TEE SERVICE CONNECTION	15	1	89-20	9+80.6 / LT.	9.8' - 8' deep	155.1' From 89-20-4	74.9' From 89-20-3	15	
16	4" STUB	12	1	89-18	10+74.1 / RT.	5' - 6' deep	at Manhole 89-18-1	N/A	16	
17	4" STUB	10	2	89-19	3+53.9 / LT.	5' - 8' deep	at Manhole 89-19-1	N/A	17	
18	4" STUB	11	2	89-19	3+53.9 / RT.	14' - 8' deep	at Manhole 89-19-1	N/A	18	
19	4" STUB	13	1	89-21	0+35.1 / RT.	14' - 8' deep	at Manhole 89-21-1	N/A	19	
20	4" STUB	17	1	89-20	11+35.7 / LT.	14' - 9' deep	at Manhole 89-20-4	N/A	20	
21	4" STUB	31	2	89-22	1+24.3 / LT.	5' - 8' deep	at Manhole 89-22-1	N/A	21	
22	4" STUB	32	2	89-22	1+45.8 / LT.	5' - 8' deep	at Manhole 89-22-2	N/A	22	
23	4" STUB	33	2	89-22	1+45.8 / RT.	14' - 7' deep	at Manhole 89-22-2	N/A	23	
24	4" STUB	18	2	89-20	3+65.6 / LT.	5' - 11' deep	at Manhole 89-20-1	N/A	24	
25	4" STUB			89-17	14+71.7	5' - 10' deep	at Manhole 89-17-1	N/A	25	

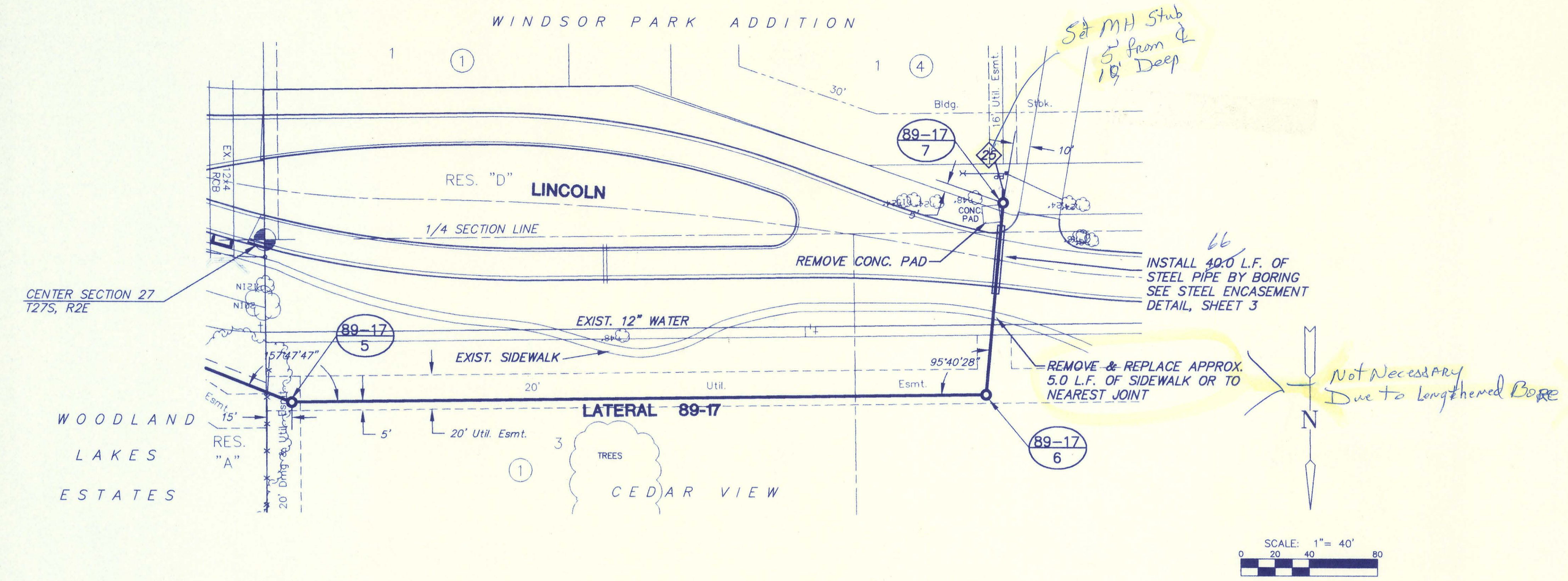
NOTE:
CORE CONCRETE MANHOLE WALL AND
INSTALL NEW 8" PIPE. SEAL NEW 8" PIPE
TO MANHOLE WITH APPROVED WATER STOP
GASKET AND QUICKSET HYDRAULIC CEMENT.
PIPE PENETRATIONS THAT DO NOT UTILIZE AN
APPROVED GASKET PRECAST IN THE
MANHOLE WALL SHALL HAVE THE PIPE
ENCASED A MINIMUM OF 3' FROM THE FACE
OF THE OUTSIDE WALL WITH CLASS I
CONCRETE. THE CONTRACTOR SHALL DRILL
AND EPOXY 4-#4 DOWELS 12" IN LENGTH
INTO THE MANHOLE WALL (2" INTO MH WALL)
AND TIE THESE DOWELS INTO THE
REINFORCEMENT FOR THE CONCRETE
ENCASEMENT AT ALL PIPE PENETRATIONS
THAT DO USE THE GASKET PRECAST IN THE
MANHOLE.



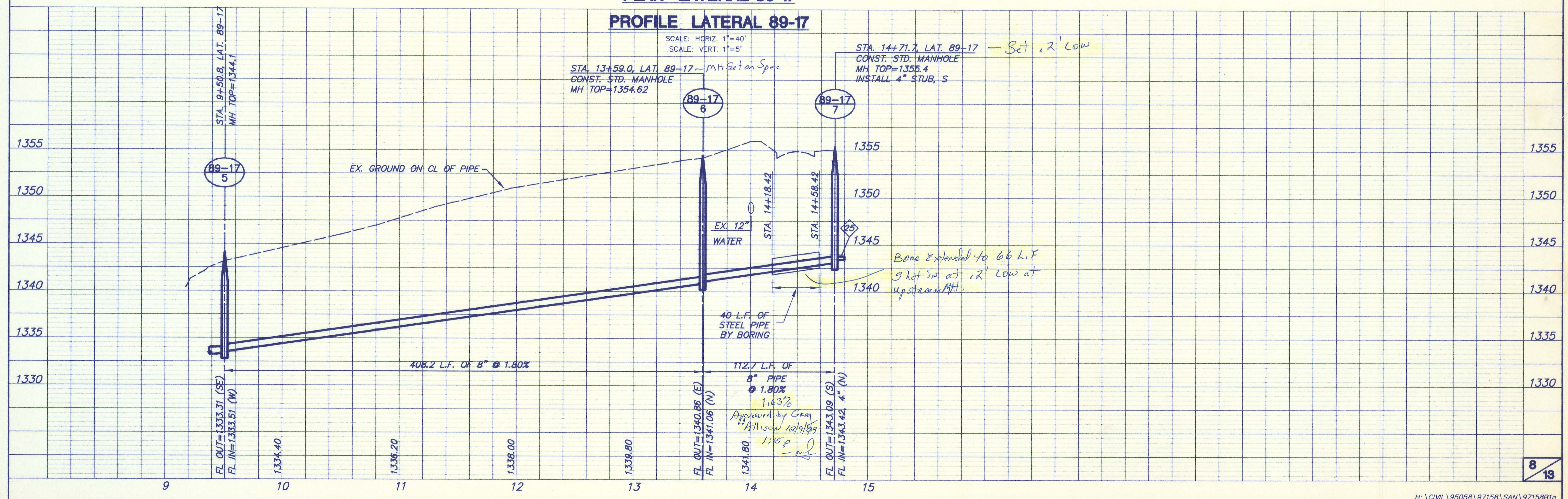
PLAN LATERAL 89-17



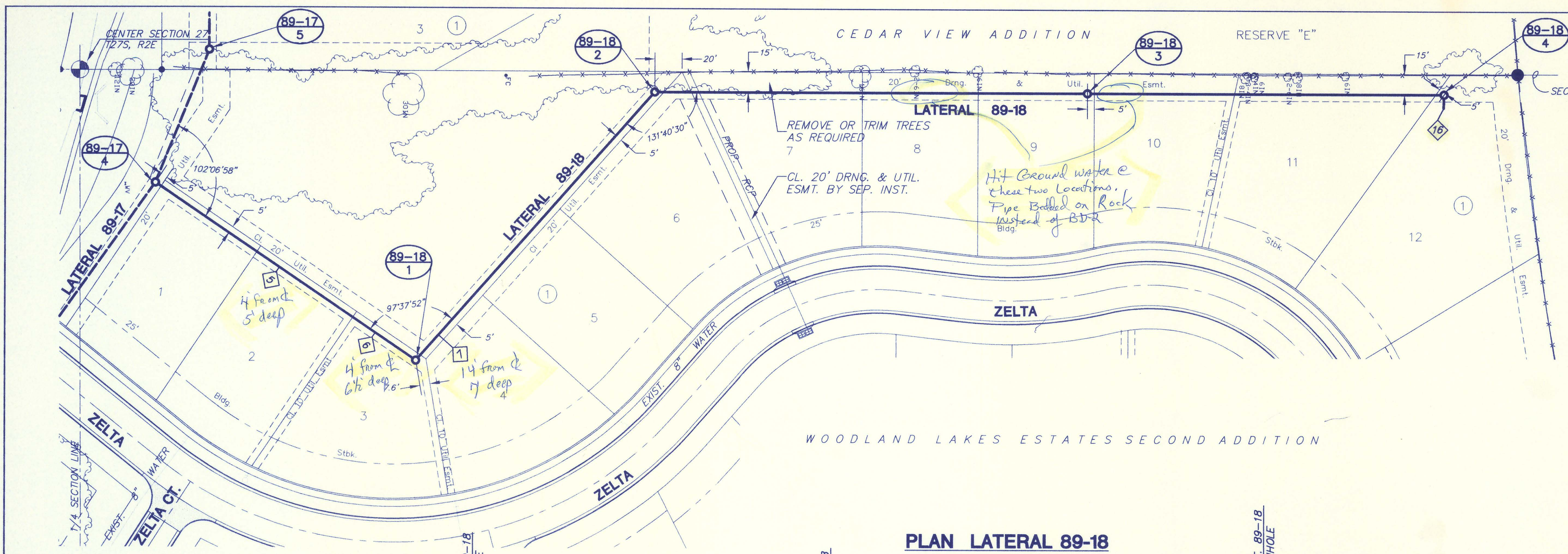
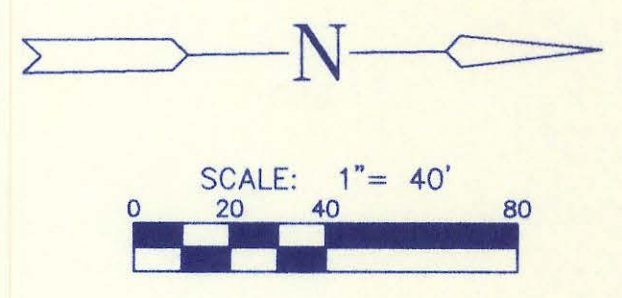
PROFILE LATERAL 89-17



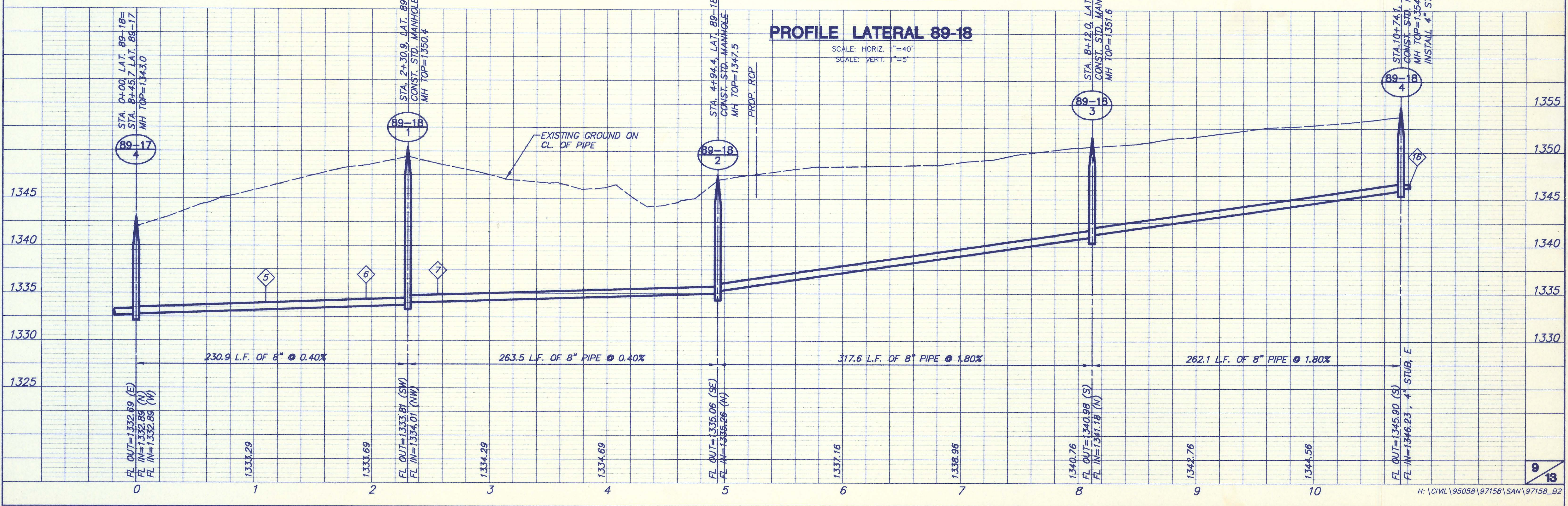
PLAN LATERAL 89-17
PROFILE LATERAL 89-17



KANSAS TURNPIKE AUTHORITY

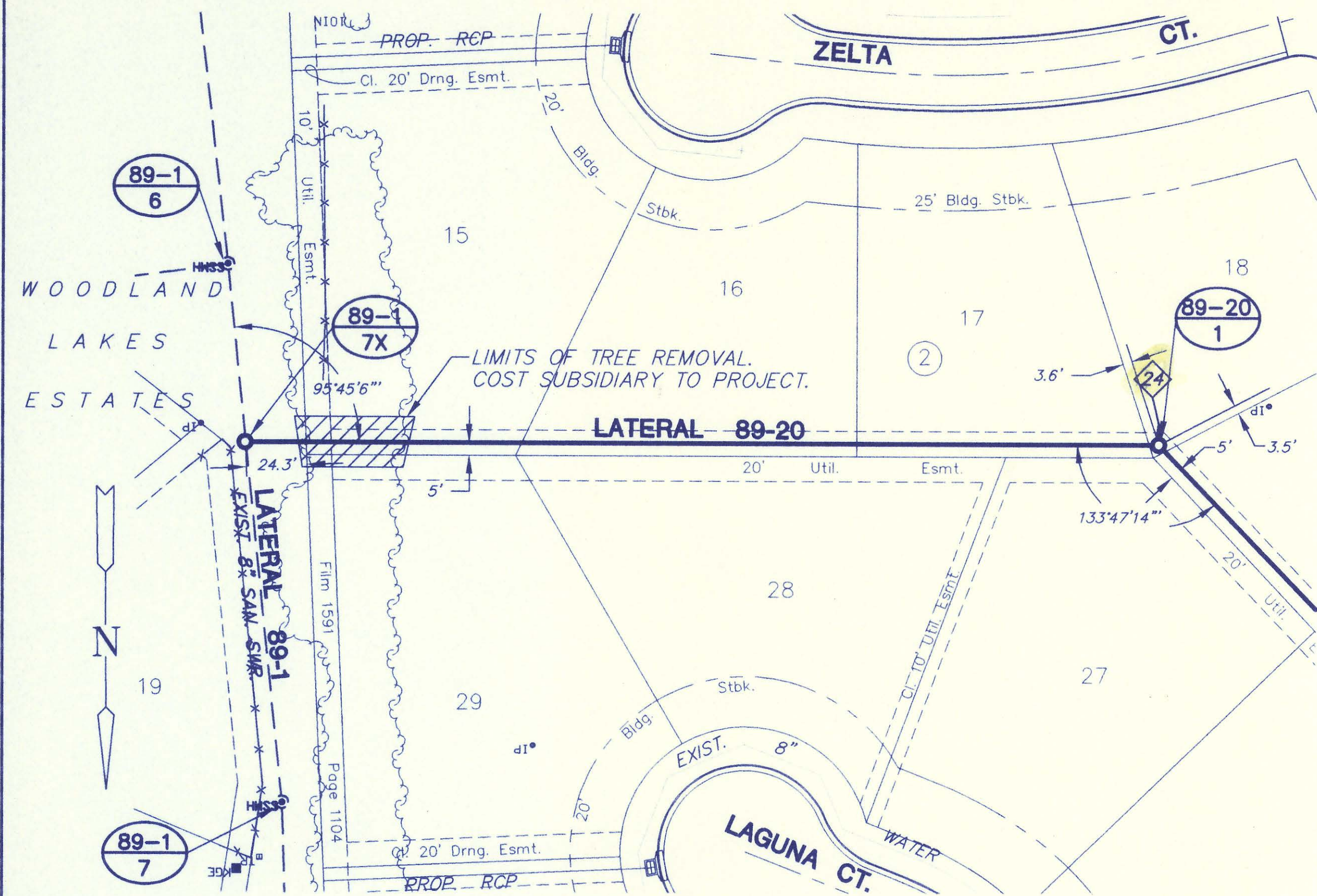


PLAN LATERAL 89-18

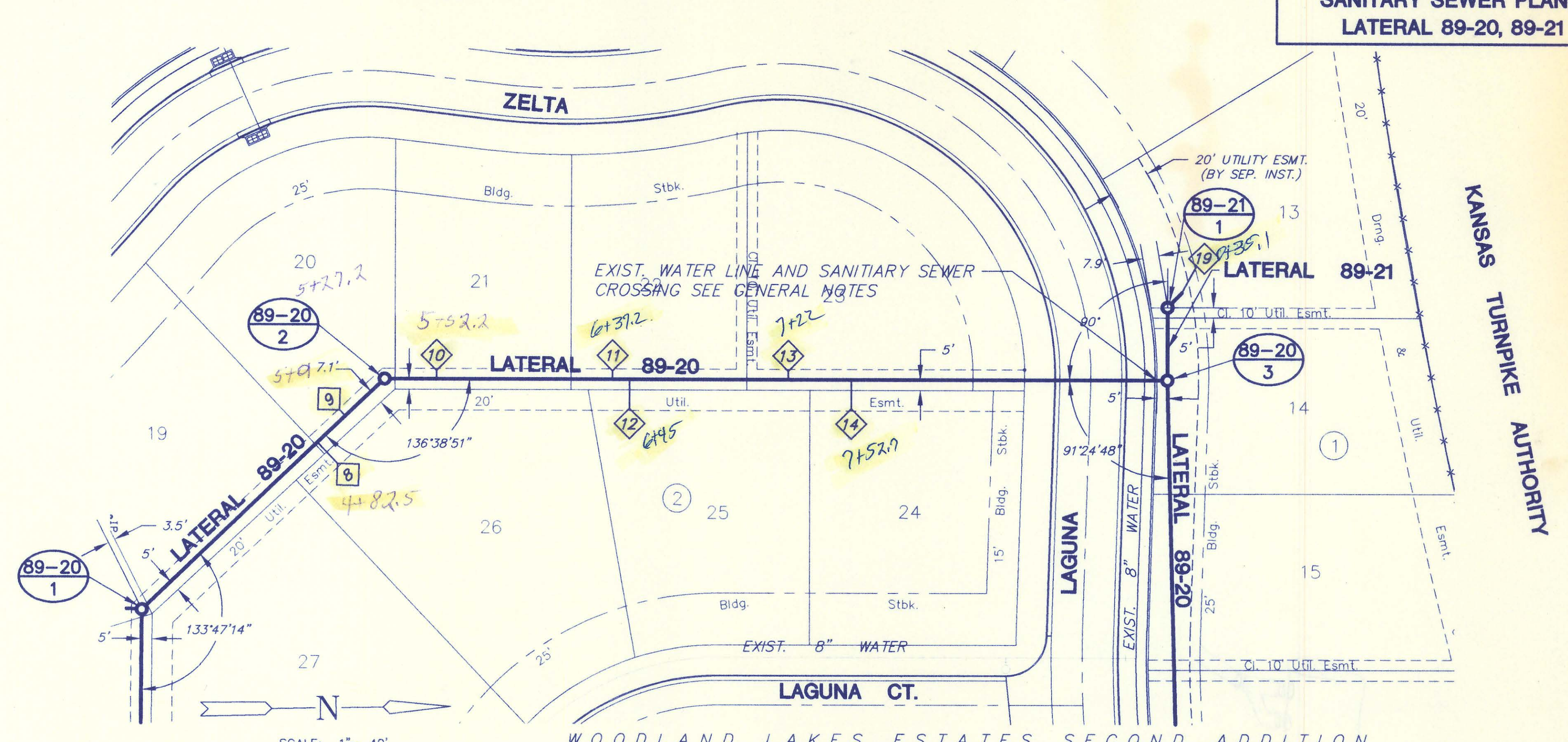


PROFILE LATERAL 89-18

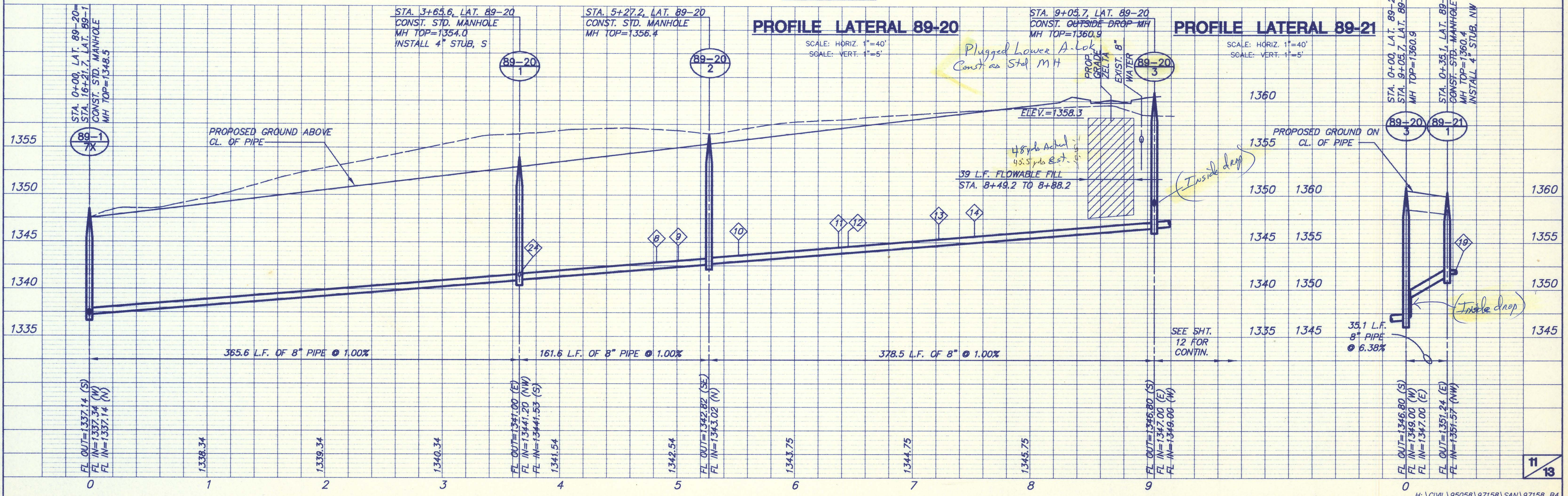
SCALE: HORIZ. 1" = 40'
SCALE: VERT. 1" = 5'



PLAN LATERAL 89-20

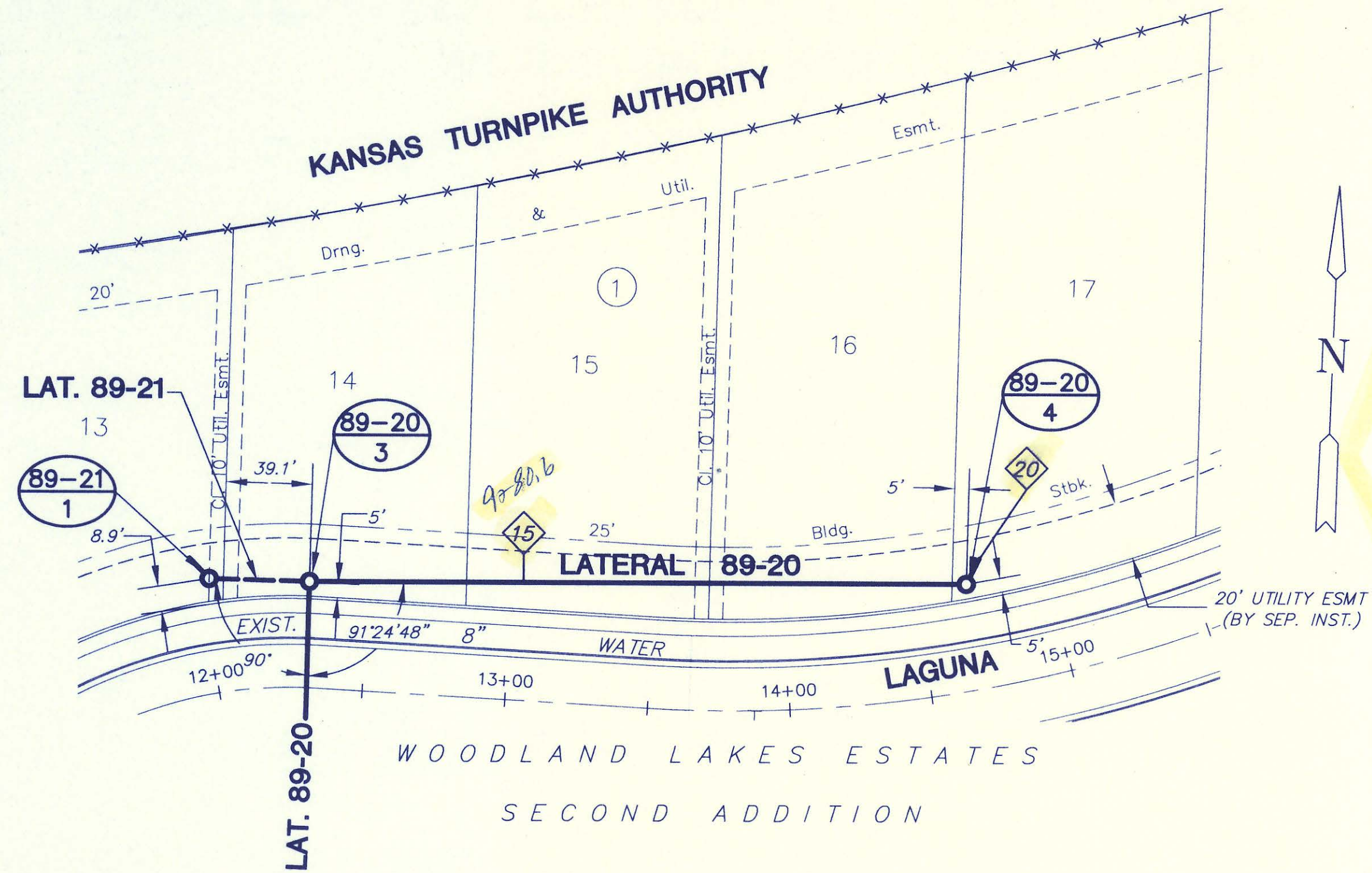


PLAN LATERAL 89-20, 89-21



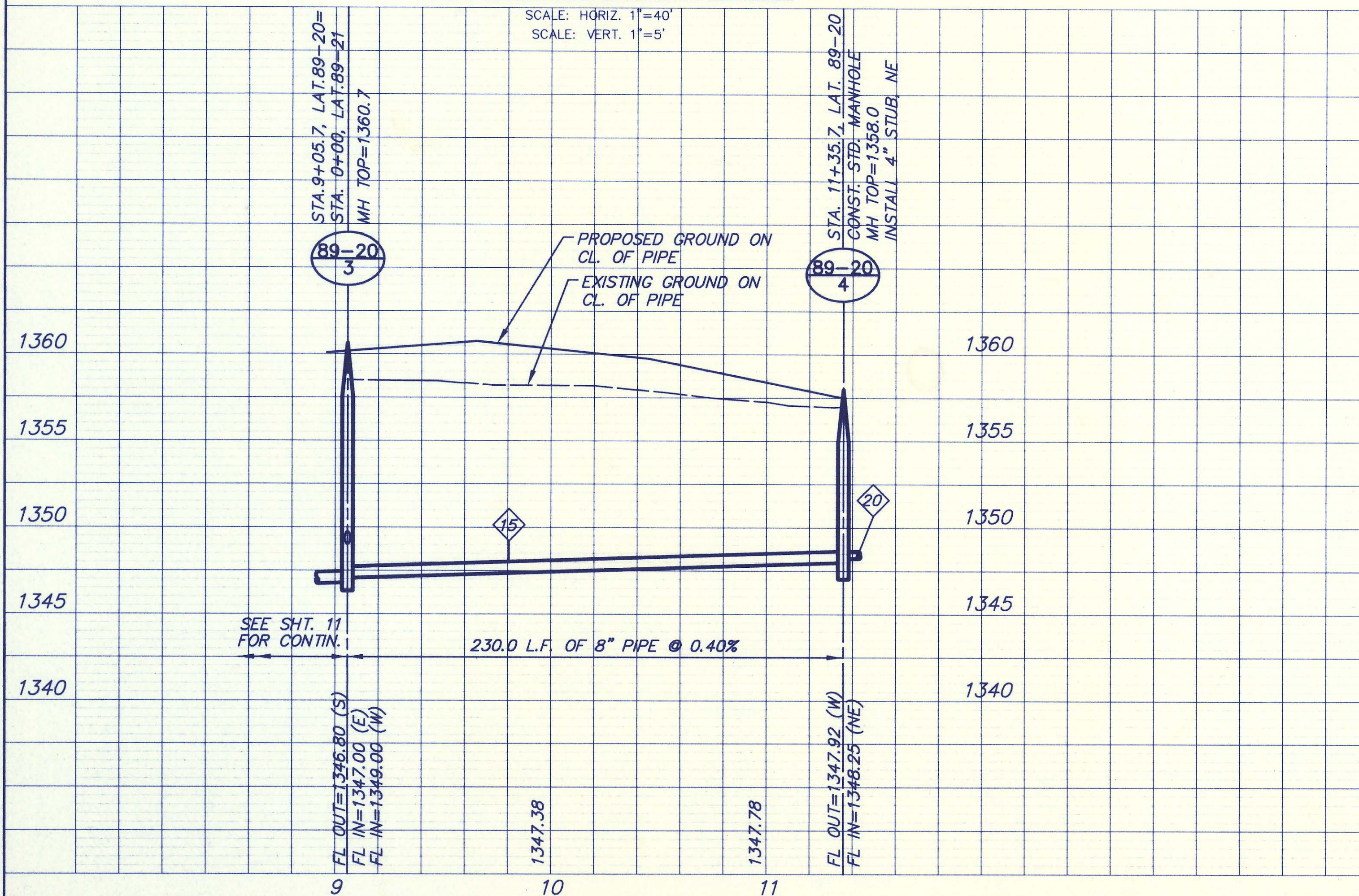
H:\CIVIL\95058\97158\SAN\97158_B4.DWG Wed Sep 22 10:48:48 1999

WOODLAND LAKES ESTATES
SECOND ADDITION



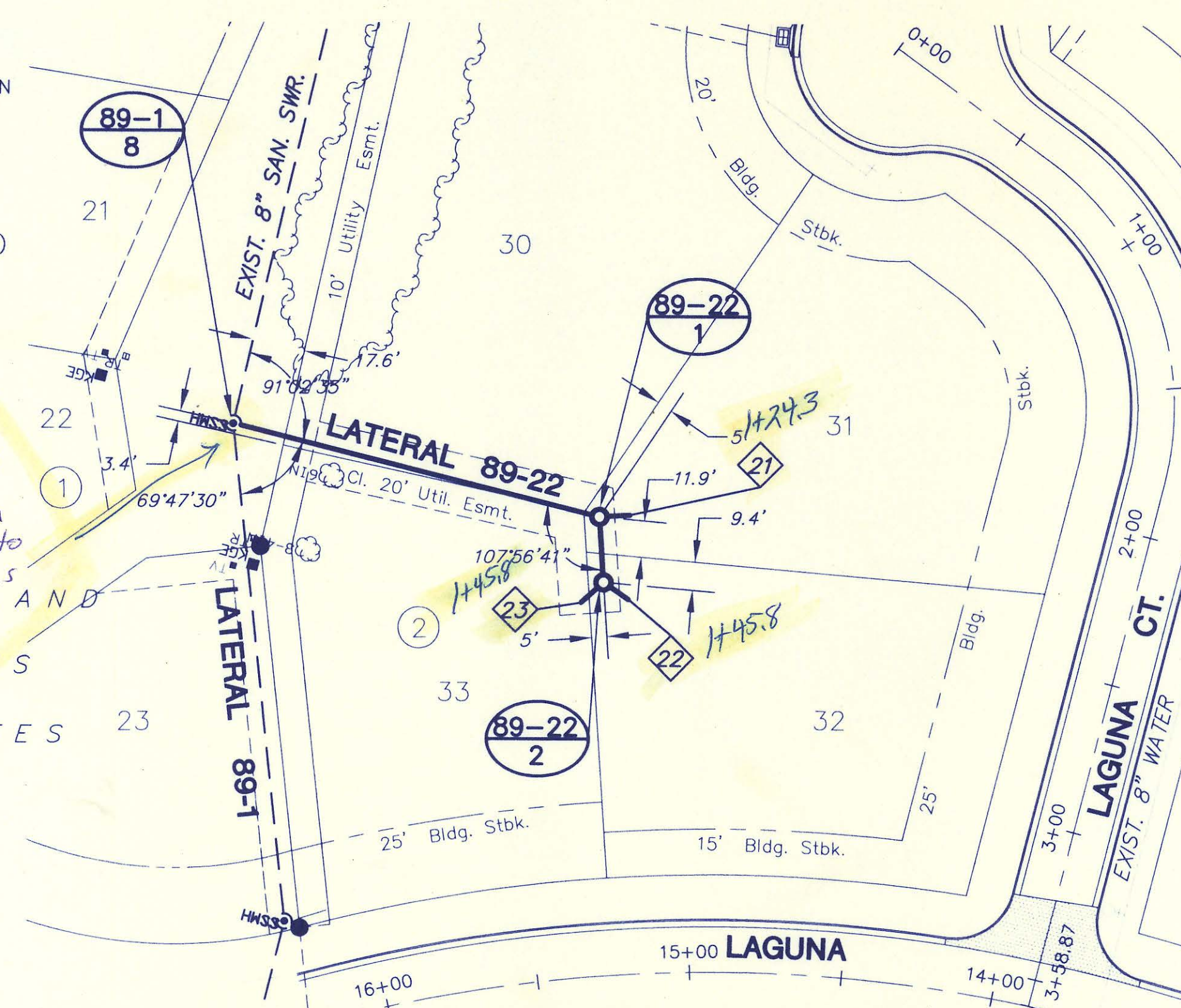
PLAN LATERAL 89-20 (cont.)

PROFILE LATERAL 89-20 (cont.)



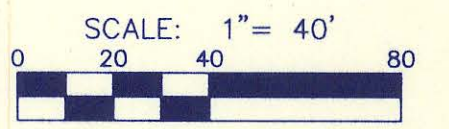
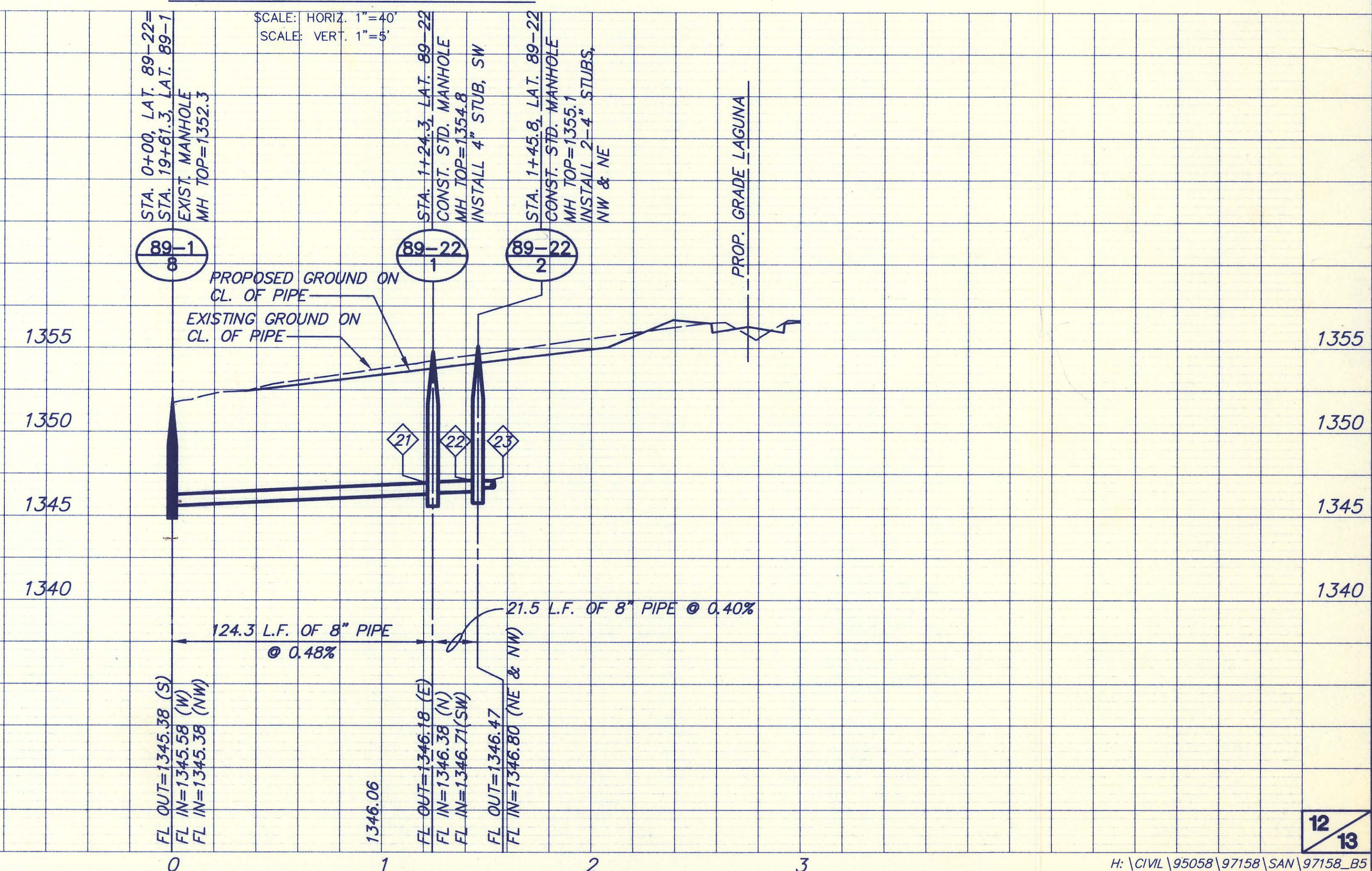
NOTE:
CORE CONCRETE MANHOLE WALL AND
INSTALL NEW 8" PIPE. SEAL NEW 8" PIPE
TO MANHOLE WITH APPROVED WATER STOP
GASKET AND QUICKSET HYDRAULIC CEMENT.
PIPE PENETRATIONS THAT DO NOT UTILIZE AN
APPROVED GASKET PRECAST IN THE
MANHOLE WALL SHALL HAVE THE PIPE
ENCASED A MINIMUM OF 3" FROM THE FACE
OF THE OUTSIDE WALL WITH CLASS I
CONCRETE. THE CONTRACTOR SHALL DRILL
AND EPOXY 4-#4 DOWELS 12" IN LENGTH
INTO THE MANHOLE WALL (2" INTO MH WALL)
AND TIE THESE DOWELS INTO THE
REINFORCEMENT FOR THE CONCRETE
ENCASEMENT AT ALL PIPE PENETRATIONS
THAT DO USE THE GASKET PRECAST IN THE
MANHOLE.

*Coreing not performed as
MH had A-Lok gasket precast
in the MH w/stub. Utilized
A-Lok, but due to deflection
of line & 10' gasket failed to
pass the test. Installed as
a waterstop w/greasing +
encasement.*

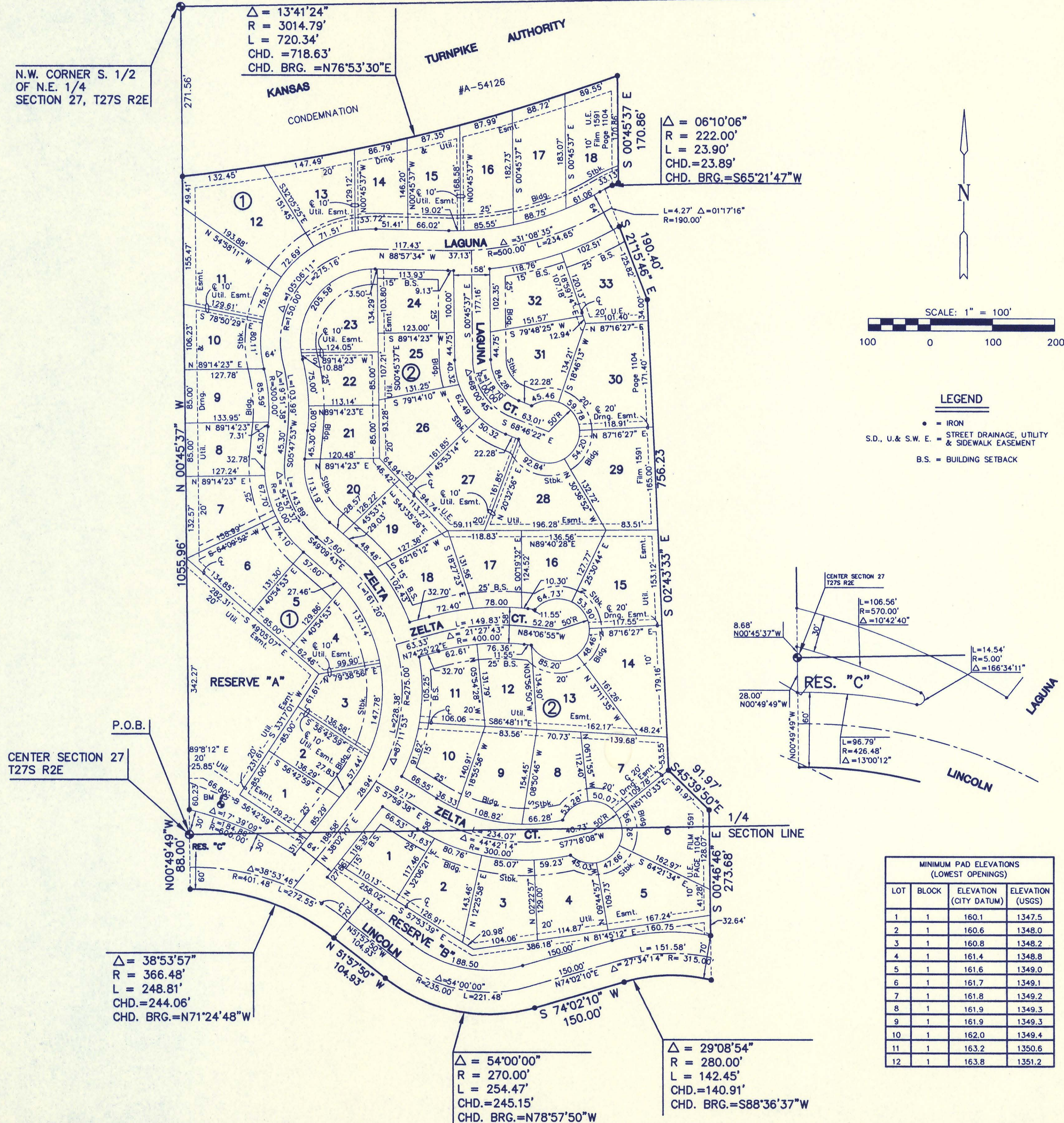


PLAN LATERAL 89-22

PROFILE LATERAL 89-22



FINAL PLAT OF WOODLAND LAKES ESTATES SECOND ADDITION AN ADDITION TO WICHITA, SEDGWICK COUNTY, KANSAS



I, Gregory J. Allison, a Registered Land Surveyor in Kansas, do hereby certify that I have been in responsible charge of surveying and platting of "WOODLAND LAKES ESTATES SECOND ADDITION", an addition to Wichita, Sedgwick County, Kansas, into lots, blocks, streets and reserves the same being accurately set forth in the accompanying plat and described herein:

A tract of land lying in the South Half of the Northeast Quarter and the North half of the Southeast Quarter of, Section 27, Township 27 South, Range 2 East of the 6TH P.M., Sedgwick County, Kansas, more particularly described as follows:

Beginning at the Southwest corner of said South Half of the Northeast Quarter; thence N 00° 45' 37" W, 1055.96 feet to a point on the South line of Kansas Turnpike Authority right of way as dedicated in Condemnation Case A-54126, said point on a curve to the left; thence along said curve 720.34 feet to the Northwest corner of Woodland Lakes Estates, an addition to Wichita, Sedgwick County, Kansas, said curve having a central angle of 13° 41' 24", a radius of 3014.79 feet, and a long chord of 718.63 feet, bearing N 76° 53' 30" E; thence S 00° 45' 37" E, 170.86 feet along the West boundary of said addition to a point on a curve to the left; thence along said curve and said boundary 23.90 feet, said curve having a central angle of 06° 10' 06", a radius of 222.00 feet, and a long chord of 23.89 feet, bearing S 65° 21' 47" W; thence S 21° 15' 46" E, 190.40 feet along said West boundary; thence S 02° 43' 33" E, 756.23 feet along said West boundary; thence S 45° 39' 50" E, 91.97 feet along said West boundary; thence S 00° 46' 46" E, 273.68 feet along said West boundary to a point on a curve to the left, said point being on the South right of way line of Lincoln as platted in said addition; thence along said curve and South right of way line 142.45 feet, said curve having a central angle of 29° 08' 54", a radius of 280.00 feet, and a long chord of 140.91 feet, bearing S 88° 36' 37" W; thence S 74° 02' 10" W, 150.00 feet along said right of way to a point on a curve to the right; thence along said curve and said right of way, 254.47 feet, said curve having a central angle of 54° 00' 00", a radius of 270.00 feet, and a long chord of 245.15 feet, bearing N 78° 57' 50" W; thence N 51° 57' 50" W, 104.93 feet along said right of way to a point on a curve to the left; thence along said curve 248.81 feet to a point on the West line of said Southeast Quarter, said curve having a central angle of 38° 53' 57", a radius of 366.48 feet, and a long chord of 244.06 feet, bearing N 71° 24' 48" W; thence N 00° 49' 49" W, 88.00 feet along said West line to the point of beginning.

I hereby certify that the details of this plat are correct to the best of my knowledge and belief this _____ day of _____, 1998.

Gregory J. Allison R.L.S. #1257
Mid-Kansas Engineering Consultants, Inc.
411 North Webb Road
Wichita, Kansas 67206

Know all men by these presents that we the undersigned property owners of the land above set forth in the Registered Land Surveyor's Certificate, have caused the same to be surveyed and platted into lots, blocks, streets, and reserves the same to be known as "WOODLAND LAKES ESTATES SECOND ADDITION", an addition to Wichita, Sedgwick County, Kansas. The streets are hereby dedicated to and for the use for the public. Easements for the construction and maintenance of public utilities and drainage as indicated on the accompanying plat are hereby granted. Reserves A & B are platted for construction and maintenance of public drainage. Reserves A, B & C are platted for open space, landscaping, recreational equipment, entry monuments, sidewalks and irrigation. The reserves shall be owned and maintained by the homeowners association.

WOODLAND LAKES ESTATES JOINT VENTURE

Joe H. Lee
Manager

STATE OF KANSAS }
SEDGWICK COUNTY } ss.

BE IT REMEMBERED, that on this _____ day of _____, 1998, before me the undersigned, a Notary Public in and for the County and State aforesaid, came Joe H. Lee, Manager for WOODLAND LAKES ESTATES JOINT VENTURE, to me personally known to be the same person who executed the foregoing instrument of writing and duly acknowledged the execution of the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year last above written.

Notary Public
My appointment expires: _____

We, Emprise Bank, holders of a mortgage on the above described property, do hereby consent to the plat of "WOODLAND LAKES ESTATES SECOND ADDITION."

STATE OF KANSAS }
SEDGWICK COUNTY } ss.

BE IT REMEMBERED, that on this _____ day of _____, 1998, before me the undersigned, a Notary Public in and for the County and State aforesaid, came Joe H. Lee, Manager, Kancel, L.C., to me personally known to be the same person who executed the foregoing instrument of writing and duly acknowledged the execution of the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year last above written.

Notary Public
My appointment expires: _____

We, Wichita Federal Saving and Loan Association, holders of a mortgage on the above described property, do hereby consent to the plat of "WOODLAND LAKES ESTATES SECOND ADDITION."

STATE OF KANSAS }
SEDGWICK COUNTY } ss.

BE IT REMEMBERED, that on this _____ day of _____, 1998, before me the undersigned, a Notary Public in and for the County and State aforesaid, came Joe H. Lee, Manager, Kancel, L.C., to me personally known to be the same person who executed the foregoing instrument of writing and duly acknowledged the execution of the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year last above written.

Notary Public
My appointment expires: _____

This plat of "WOODLAND LAKES ESTATES SECOND ADDITION", has been submitted to and approved by the Wichita-Sedgwick County Metropolitan Area Planning Commission, Wichita, Kansas.

Dated this _____ day of _____, 1998.

WICHITA-SEDGWICK COUNTY METROPOLITAN PLANNING COMMISSION

Richard Lopez
Chairman

Marvin S. Krout
Secretary

Consent is hereby given for the information of a S.S. DISTRICT within the boundary of this plat by the board of Sedgwick County Commissioners, as they deem necessary to provide S.S. Service to this area.

This plat approved and all dedications shown thereon, if any, accepted by the City Council of the City of Wichita, Kansas, this _____ day of _____, 1998.

Bob Knight
Mayor

Pat Burnett
City Clerk

Entered on transfer record this _____ day of _____, 1998.

James Alfrod
County Clerk

STATE OF KANSAS }
SEDGWICK COUNTY } ss.

This is to certify that this instrument was filed for record in the Register of Deeds office this _____ day of _____, 1998.

Bill Meek
Register of Deeds

Deputy