

CONSTRUCTION DRAWINGS

CAVE SPRINGS WASTEWATER TRANSFER AND TREATMENT SYSTEM - PHASE 1

CAVE SPRINGS, ARKANSAS

GENERAL NOTES:

- A. TOPOGRAPHIC BOUNDARY SURVEY, INCLUDING PROPERTY LINES, LEGAL DESCRIPTION, EXISTING UTILITIES, SITE TOPOGRAPHY WITH SPOT ELEVATIONS, OUTSTANDING PHYSICAL FEATURES AND EXISTING STRUCTURE LOCATIONS WAS PROVIDED BY THE FOLLOWING COMPANY, AS A CONTRACTOR TO THE SELLER/OWNER:

GEOMATIC CONSULTANTS, INC.
134 N. MAIN STREET
CAVE SPRINGS, AR 72718
(479)248-1466

CEI ENGINEERING AND ITS ASSOCIATES WILL NOT BE HELD RESPONSIBLE FOR THE ACCURACY OF THE SURVEY OR FOR DESIGN ERRORS OR OMISSIONS RESULTING FROM SURVEY INACCURACIES.

- B. ALL PHASES OF SITE WORK FOR THIS PROJECT SHALL MEET OR EXCEED THE OWNER / DEVELOPER SITE WORK SPECIFICATIONS.

- C. CONTRACTOR SHALL BE RESPONSIBLE FOR RAZING AND REMOVAL OF THE EXISTING STRUCTURES, RELATED UTILITIES, PAVING, UNDERGROUND STORAGE TANKS AND ANY OTHER EXISTING IMPROVEMENTS AS NOTED. SEE SITE WORK SPECIFICATIONS.

- D. CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM PREVIOUS AND CURRENT DEMOLITION OPERATIONS. DISPOSAL WILL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND/OR FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.

- E. THE GENERAL CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR AND SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT.

- F. **WARRANTY/DISCLAIMER:**
THE DESIGNS REPRESENTED IN THESE PLANS ARE IN ACCORDANCE WITH ESTABLISHED PRACTICES OF CIVIL ENGINEERING FOR THE DESIGN FUNCTIONS AND USES INTENDED BY THE OWNER AT THIS TIME. HOWEVER, NEITHER THE ENGINEER NOR ITS PERSONNEL CAN OR DO WARRANT THESE DESIGNS OR PLANS AS CONSTRUCTED EXCEPT IN THE SPECIFIC CASES WHERE THE ENGINEER INSPECTS AND CONTROLS THE PHYSICAL CONSTRUCTION ON A CONTEMPORARY BASIS AT THE SITE.

- G. **SAFETY NOTICE TO CONTRACTOR:**
IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. ANY CONSTRUCTION OBSERVATION BY THE ENGINEER OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES, IN, ON OR NEAR THE CONSTRUCTION SITE.

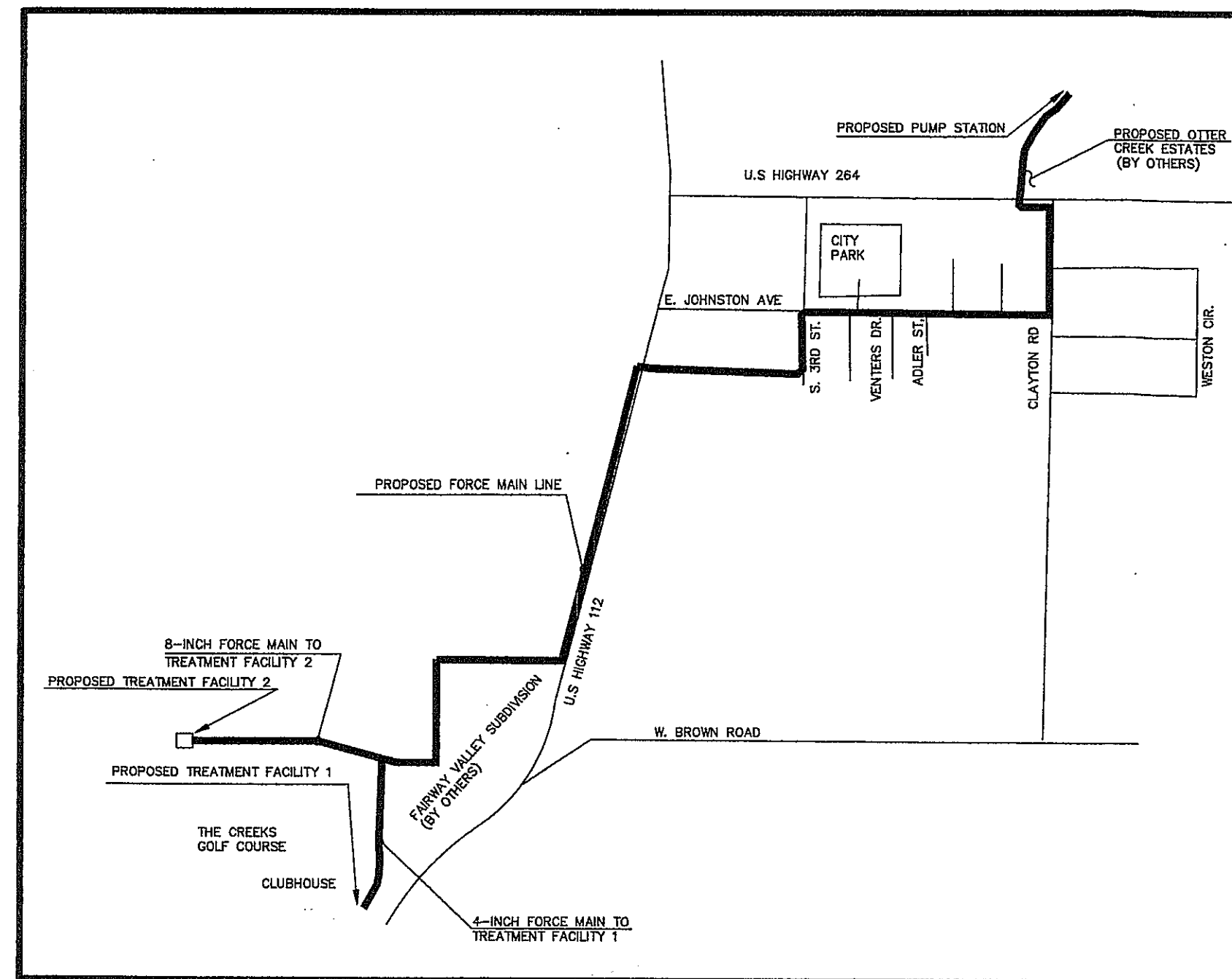
- H. ALL CONSTRUCTION IN STATE HIGHWAY DEPARTMENT RIGHT-OF-WAY SHALL BE COORDINATED WITH THE HIGHWAY DEPARTMENT RESIDENT MAINTENANCE ENGINEER.

- I. **WETLANDS NOTE:**
ANY DEVELOPMENT, EXCAVATION, CONSTRUCTION, OR FILLING IN A U.S. CORPS OF ENGINEERS DESIGNATED WETLAND IS SUBJECT TO LOCAL, STATE AND FEDERAL APPROVALS. THE CONTRACTOR SHALL COMPLY WITH ALL PERMIT REQUIREMENTS AND/OR RESTRICTIONS AND ANY VIOLATION WILL BE SUBJECT TO FEDERAL PENALTY. THE CONTRACTOR SHALL HOLD THE OWNER/DEVELOPER, THE ENGINEER AND THE LOCAL GOVERNING AGENCIES HARMLESS AGAINST SUCH VIOLATION.

- J. **RESIDENT ENGINEERING SERVICES:**
WHEN REQUESTED BY THE OWNER, RESIDENT ENGINEERING SERVICES SHALL BE PROVIDED BY THE ENGINEERS (ON A TIME AND FREQUENCY BASIS) ACCEPTABLE TO THE CITY ENGINEER FOR IMPROVEMENTS TO PUBLIC WATER MAINS, PUBLIC SEWER, AND CITY STREETS. AT THE COMPLETION OF CONSTRUCTION, THE ENGINEER SHALL CERTIFY THE CONSTRUCTION TO BE IN COMPLIANCE WITH THE PLANS AND SPECIFICATIONS. THIS WORK WILL BE AT THE OWNER/DEVELOPER'S DIRECT EXPENSE AND SHALL BE COORDINATED WITH CEI ENGINEERING ASSOCIATES, INC. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE RESIDENT ENGINEER OF ANY PRECONSTRUCTION / CONSTRUCTION CONFERENCES AND ANY PUBLIC CONSTRUCTION 24 HOURS PRIOR TO SAID ACTION.

FLOOD CERTIFICATION:

A PORTION OF THIS SITE AS SHOWN IS IN THE "ZONE A" DESIGNATED FLOOD AREA (100-YEAR FREQUENCY FLOOD ZONE) AS DESIGNATED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NUMBER 05007C 0145 E, FOR BENTON COUNTY, EFFECTIVE DATE SEPTEMBER 18, 1991.



Vicinity Map

NOT TO SCALE

APPROVED _____ DATE _____

CITY OF CAVE SPRINGS WASTEWATER DISTRICT

CITY OF CAVE SPRINGS

CARROLL ELECTRIC COOPERATIVE CORP.

ARKANSAS WESTERN GAS

COX COMMUNICATIONS

SOUTHWESTERN BELL

ARKANSAS DEPARTMENT OF HEALTH

ARKANSAS HIGHWAY AND TRANSPORTATION DEPARTMENT

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY

ARKANSAS GAME AND FISH COMMISSION



ENGINEERING ASSOCIATES, INC.

ENGINEERS

PLANNERS

SURVEYORS

3317 S.W. 1 Street
Bentonville, AR 72712

(479) 273-9472
FAX (479) 273-0844

PLAN INDEX:

1. COVER SHEET	18. DRIP FIELD OVERALL LAYOUT	34. SITE PLAN TREATMENT PLANT 2
2. OVERALL LAYOUT 1	19. DRIP FIELD LAYOUT 1	35. GRADING PLAN TREATMENT PLANT 2
3. OVERALL LAYOUT 2	20. DRIP FIELD LAYOUT 2	36. DETAIL SHEET 1
4. GRADING PLAN: PUMP STATION	21. DRIP FIELD LAYOUT 3	37. DETAIL SHEET 2
5. CAVE SPRINGS INTERCEPTOR #1 PLAN AND PROFILE #1	22. DRIP FIELD LAYOUT 4	38. DETAIL SHEET 3
6. CAVE SPRINGS INTERCEPTOR #1 PLAN AND PROFILE #2	23. DRIP FIELD LAYOUT 5	39. DETAIL SHEET 4
7. CAVE SPRINGS INTERCEPTOR #1 PLAN AND PROFILE #3	24. DRIP FIELD LAYOUT 6	40. DETAIL SHEET 5
8. CAVE SPRINGS INTERCEPTOR #1 PLAN AND PROFILE #4	25. DRIP FIELD LAYOUT 7	41. DETAIL SHEET 6
9. CAVE SPRINGS INTERCEPTOR #1 PLAN AND PROFILE #5	26. DRIP FIELD LAYOUT 8	42. DETAIL SHEET 7
10. CAVE SPRINGS INTERCEPTOR #1 PLAN AND PROFILE #6	27. DRIP FIELD LAYOUT 9	43. PUMP STATION DETAIL
11. CAVE SPRINGS INTERCEPTOR #1 PLAN AND PROFILE #7	28. DRIP FIELD LAYOUT 10	
12. CAVE SPRINGS INTERCEPTOR #1 PLAN AND PROFILE #8	29. DRIP FIELD LAYOUT 11	
13. CAVE SPRINGS INTERCEPTOR #1 PLAN AND PROFILE #9	30. DRIP FIELD LAYOUT 12	
14. CAVE SPRINGS INTERCEPTOR #1 PLAN AND PROFILE #10	31. DRIP FIELD LAYOUT 13	
15. CAVE SPRINGS INTERCEPTOR #1 PLAN AND PROFILE #11	32. DRIP FIELD LAYOUT 14	
16. TREATMENT PLANT #2 INTERCEPTOR #1 PLAN AND PROFILE #1	33. DRIP FIELD LAYOUT 15	
17. TREATMENT PLANT #2 INTERCEPTOR #1 PLAN AND PROFILE #2		

ASSOCIATED PLANS:

1. PLANS FOR WATER AND SEWER IMPROVEMENTS TO SERVE FAIRWAY VALLEY SUBDIVISION (ESI, INC.)

RESOURCE LIST:

CITY OF CAVE SPRINGS WATER DEPT.
WATER/STREET SUPERINTENDENT
479-248-1040 EXT. 17
MR. RICK SAYRE

CARROLL ELECTRICAL COOPERATIVE CORP.
U.S. HWY. 71B
BENTONVILLE, AR 72712
(479) 273-2421
MR. MIKE PHILLIPS

AMERICAN ELECTRIC POWER CORP.
101 W. TOWNSHIP
FAYETTEVILLE, AR 72701
(479) 973-2533
MR. RONALD R. BERTRAM

ARKANSAS DEPT. OF HEALTH AND HUMAN SERVICES
4815 W. MARKHAM ST.
LITTLE ROCK, AR 72205-3867
(501) 681-2623
MR. ROY DAVIS, P.E.

ARKANSAS DEPT. OF ENVIRONMENTAL QUALITY
#1 STATE POLICE PLAZA DRIVE
LITTLE ROCK, AR 72209
(501) 682-0045
MS. CARA HILL, P.E.

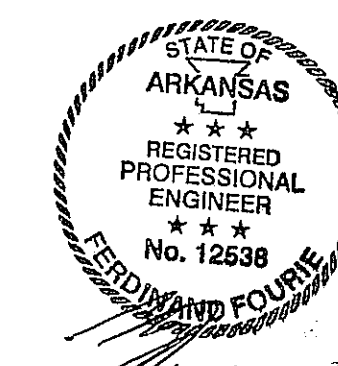
ARKANSAS HWY. & TRANS. DEPT.
P.O. BOX 610
HIGHWAY 65 SOUTH
HARRISON AR 72601
(870) 743-2100
MR. BOBBY KEETON

ARKANSAS WESTERN GAS COMPANY
P.O. BOX 13288
FAYETTEVILLE, AR 72703-1002
(479) 435-1753
MR. DERRY BIRDSONG

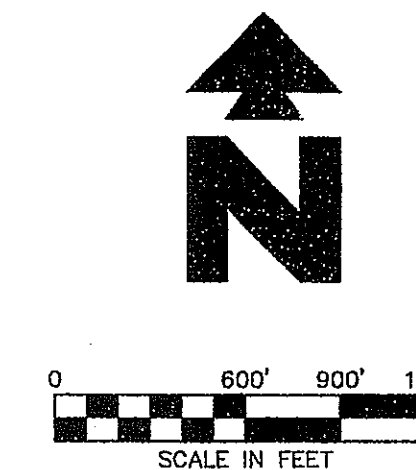
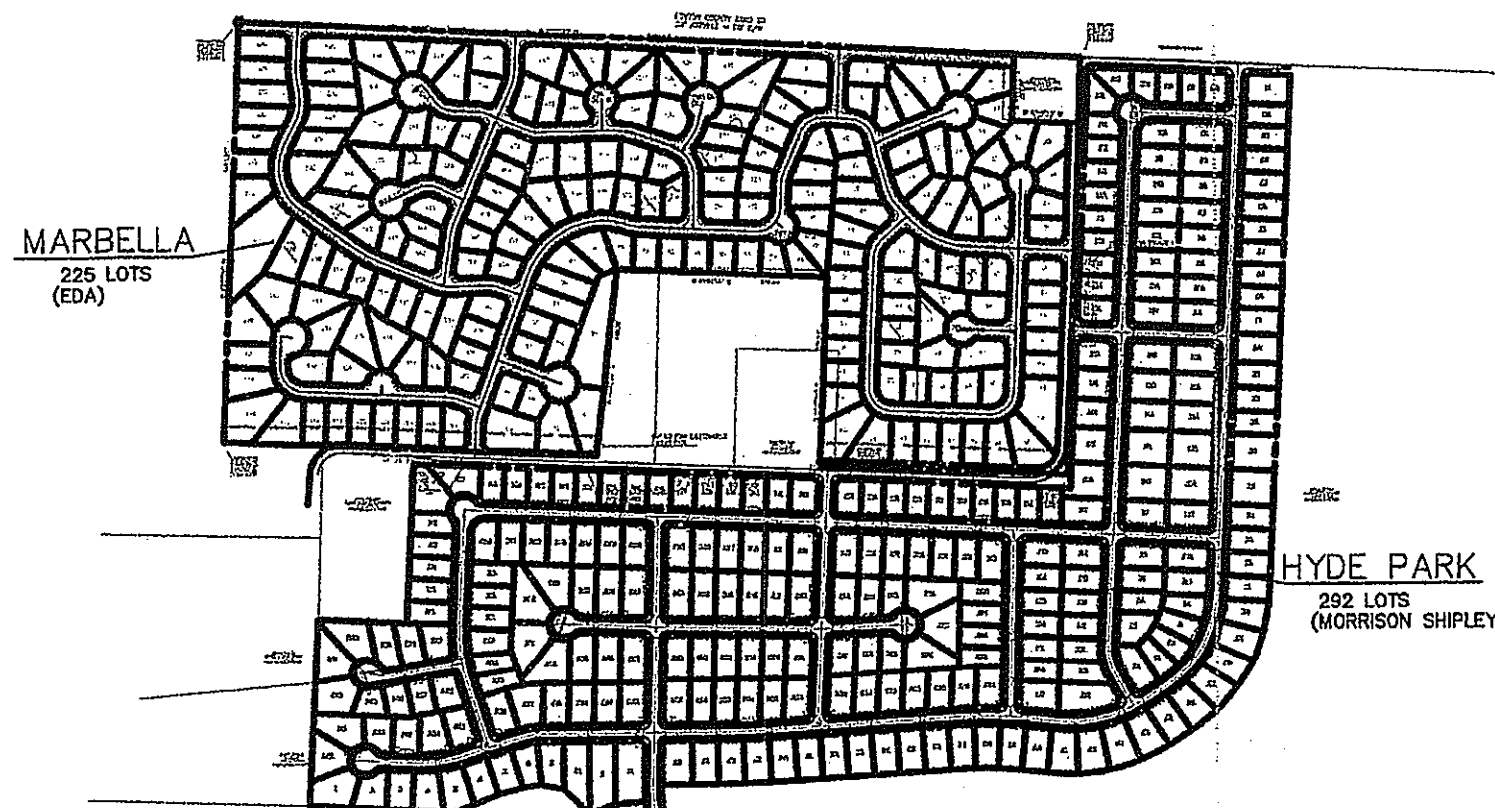
COX COMMUNICATIONS
4901 S. 48th STREET
SPRINGDALE, AR 72762
(479) 717-3738
MR. RYAN BUTLER

ENGINEER
CEI ENGINEERING ASSOCIATES, INC.
3317 SW 1st ST.
BENTONVILLE, AR 72712
(479) 273-9472
(479) 273-0844 (FAX)
FERDINAND FOURIE, P.E.

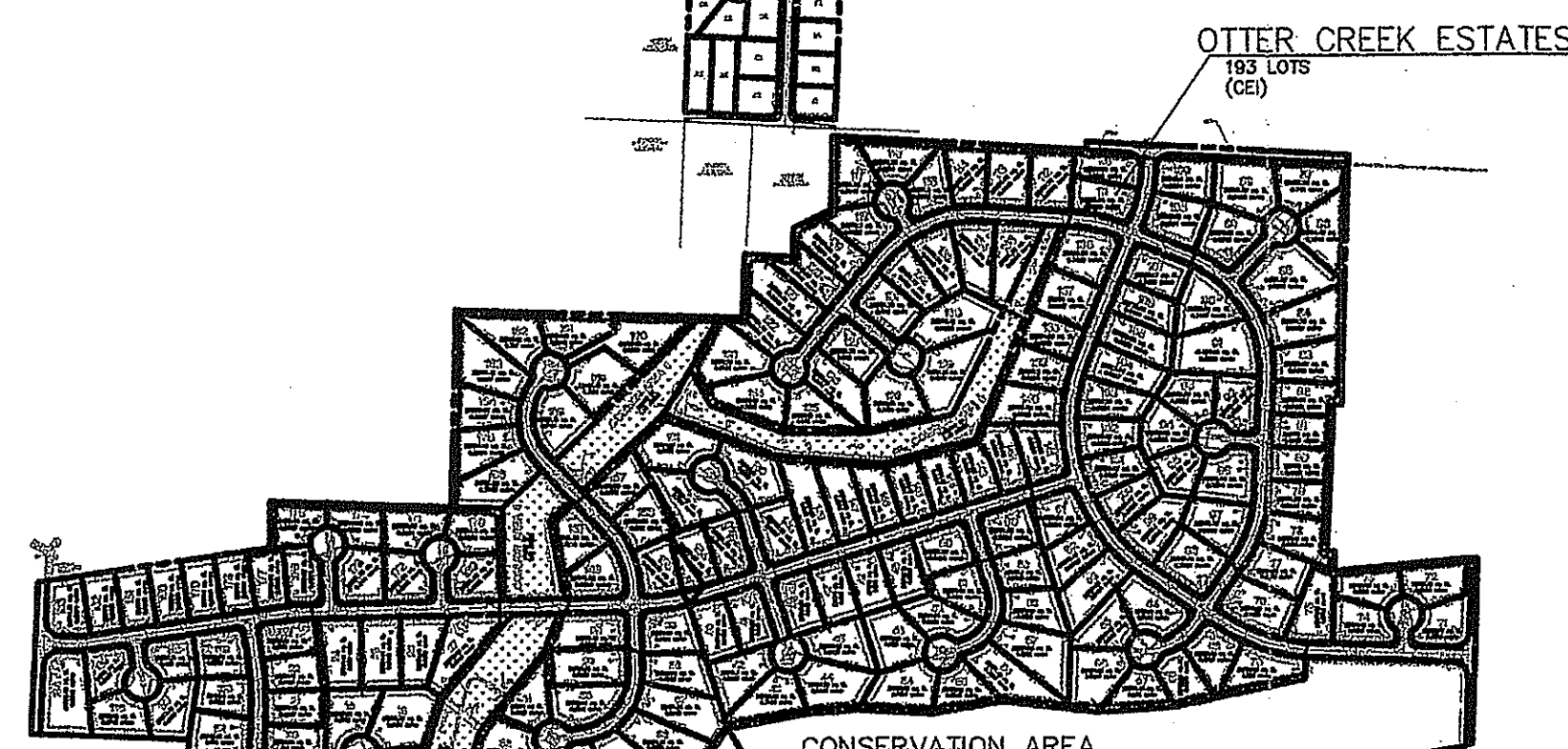
DEVELOPER
CAVE SPRINGS MUNICIPAL PROPERTY OWNERS
IMPROVEMENT DISTRICT #1 / THE CREEKS SPECIAL
SEWER DISTRICT
(479)601-5687
MR. BRETT HASH



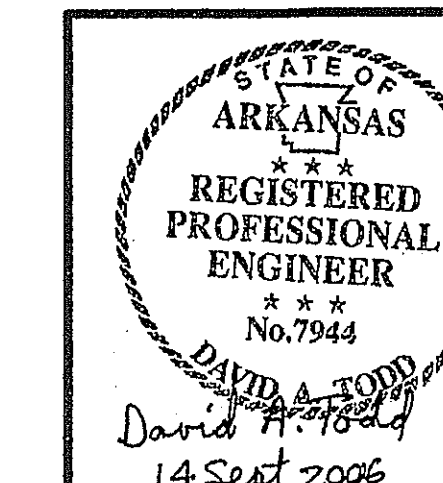
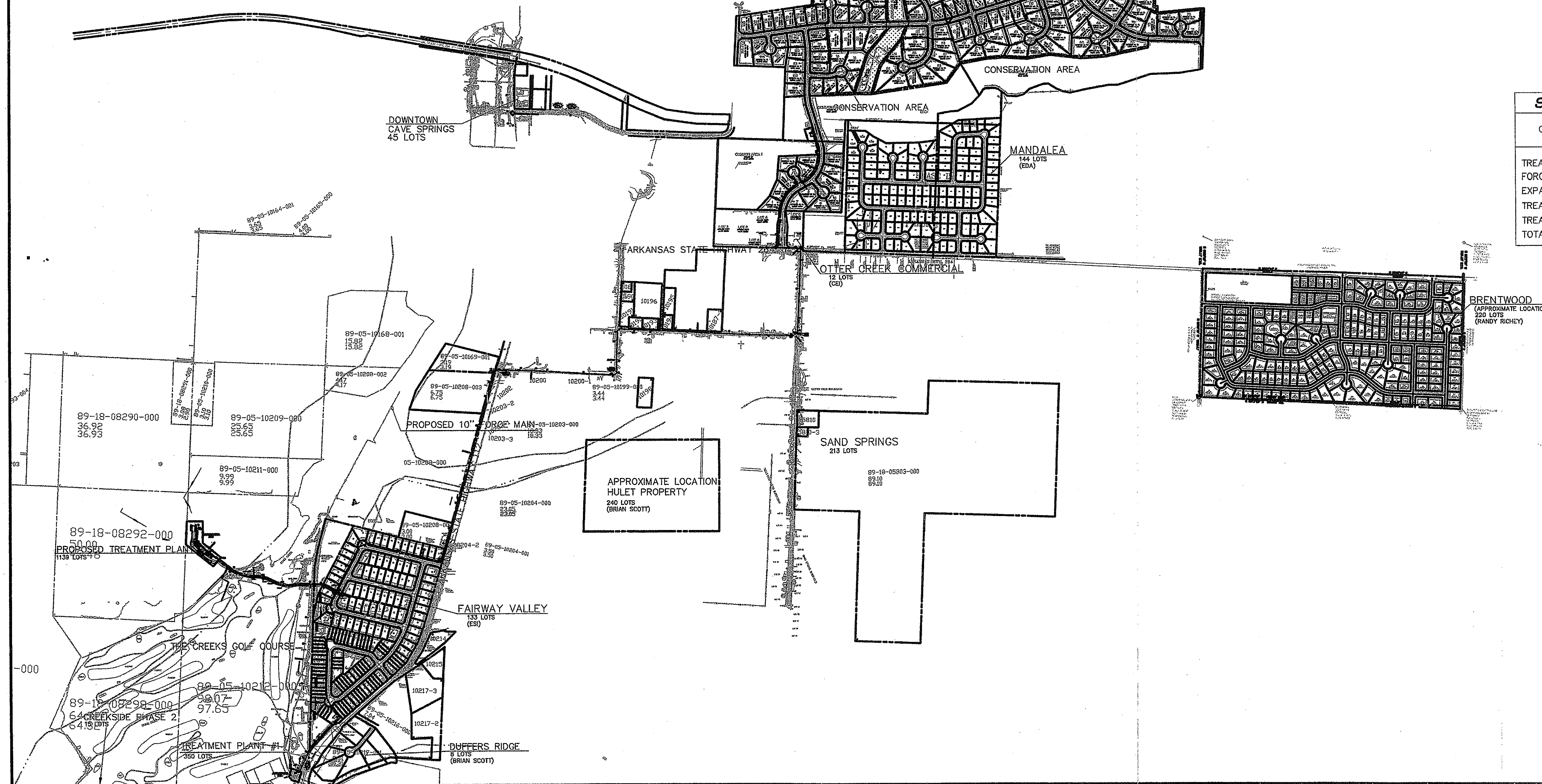
Arkansas * California * Florida * Georgia * Minnesota * Pennsylvania * Tennessee * Texas



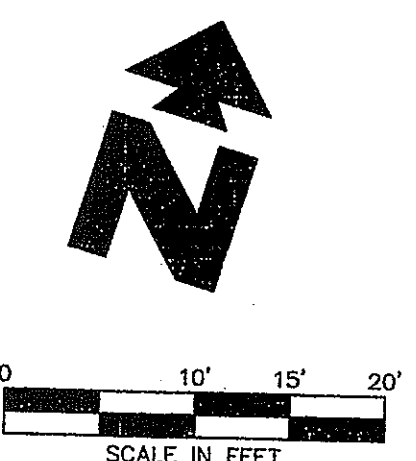
WASTEWATER DISTRICT SUMMARY			
DEVELOPMENT	EQ. # LOTS	AVG. DAILY WASTEWATER (G/DAY)	ENGINEER
MARBELLA	225	58,500	EDA
HYDE PARK	292	75,920	MORRISON SHIPLEY
OTTER CREEK ESTATES	193	50,180	CEI
MANDALEA	144	37,440	EDA
OTTER CREEK COMMERCIAL	12	3,120	CEI
BRENTWOOD	220	57,200	RANDY RICHEY
DOWNTOWN CAVE SPRINGS	45	11,700	-
FAIRWAY VALLEY	133	34,580	ESI
HULET PLACE	240	62,400	-
DUFFERS RIDGE	8	2,080	(COMPLETE)
CREEKSIDE PHASE 2	15	3,900	(COMPLETE)
TOTAL	1527	397,020	



SUMMARY OF WASTEWATER COMPONENT CAPACITIES		
COMPONENT	NO. LOTS	AVERAGE DAILY FLOW (G/DAY)
TREATMENT PLANT NO. 1	350	91,000
FORCE MAIN LINE	2600	676,000
EXPANDED DRIPFIELD	250	66,000
TREATMENT PLANT #2	1231	320,000
TREATMENT PLANT #2 FIELD	1231	320,000
TOTAL SYSTEM CAPACITY	1584	412,000



INITIAL DESIGN	10-10-05	DAT	FF	FF	FF
	DATE	EOR	PM	DES	DRW
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
CAVE SPRINGS ARKANSAS					
CEI ENGINEERING ASSOCIATES, INC.					
ENGINEERS PLANNERS SURVEYORS					
3317 S.W. I Street Bentonville, AR 72712			(479) 273-9472 FAX (479) 273-0844		
DATE 08-21-06 11:01 AM			JOB NO.: 20733 DWG NAME: 20733OVERALL2		
OVERALL LAYOUT 2			SHEET NO. 3 OF 43		
REV 5					



LEGEND	
EXISTING	
—	EAST OR ELECTRIC
—	WORTH
—	OVERHEAD
—	SOUTH OR SEWER
—	TELEPHONE
—	UNDERGROUND
—	REST OR WATER
PROPOSED	
—	BOUNDARY LINE
—	RIGHT OF WAY LINE
—	STORM DRAIN
—	GAS
—	OVERHEAD ELECTRIC
—	OVERHEAD ELECTRIC AND TELEPHONE
—	OVERHEAD TELEPHONE
—	OVERHEAD TV
—	SEWER
—	UNDERGROUND ELECTRIC
—	UNDERGROUND ELECTRIC AND TELEPHONE
—	UNDERGROUND TELEPHONE
—	UNDERGROUND TV
—	WATER
5-10-11 50.5	TREE INFO
5	DIAMETER OF TRUNK IN FEET
10	HEIGHT OF TREE IN FEET
11	CANOPY DIAMETER IN FEET
50.5	ELEVATION AT BASE OF TREE

PROPOSED	
—	BOUNDARY LINE
—	RIGHT OF WAY LINE
—	GRADE BREAK
—	CONTOUR ELEVATIONS
—	STORM DRAIN
—	LIMITS OF PAVING
XX.XX	SPOT ELEVATIONS
TC	TOP OF CURB
G	GUTTER

GENERAL GRADING NOTES

A. PRIOR TO INSTALLATION OF WATERLINE OR SANITARY SEWER, THE CONTRACTOR SHALL EXCAVATE, VERIFY, AND CALCULATE ALL CROSSINGS AND INFORM THE OWNER AND THE ENGINEER OF ANY CONFLICTS PRIOR TO CONSTRUCTION. THE ENGINEER WILL BE HELD HARMLESS IN THE EVENT THE ENGINEER IS NOT NOTIFIED OF DESIGN CONFLICTS.

B. ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED TO MATCH THE ORIGINAL TOPSOIL. IF ADEQUATE TOPSOIL IS NOT AVAILABLE ON SITE, THE CONTRACTOR SHALL PROVIDE TOPSOIL, APPROVED BY THE OWNER, AS NEEDED. THE AREA SHALL THEN BE SEED, FERTILIZED, MULCHED, WATERED AND MAINTAINED UNTIL HARDY GRASS GROWTH IS ESTABLISHED IN ALL AREAS. ANY AREAS DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE PROJECT SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

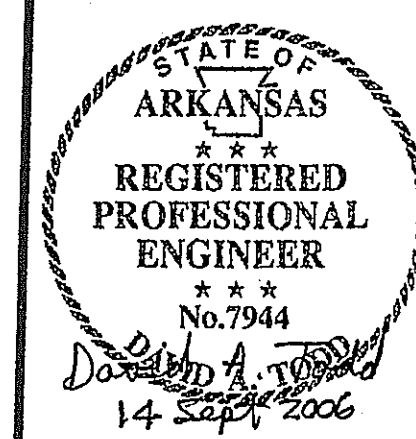
C. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES.

GRADING DETAILS	
10	MOUNTABLE CURB
7F	SECURITY CHAIN LINK FENCE AND GATE
8C	REGULAR DUTY CONCRETE PAVING
SF	84A TEMPORARY SILT FENCE
N	34A REDUCED PRESSURE ZONE ASSEMBLY
36A	FIRE HYDRANT ASSEMBLY - SEE DETAIL FOR BRAND & TYPE

GRADING NOTES	
22D	M.A. TEE WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
22E	M.A. REDUCER (SEE SIZES THIS SHEET)
22G	8" M.A. BEND WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
22Y	INTERIOR BACKFLOW PREVENTER
73A	SLICING GATE
76A	CONNECT 8" INLET FORCE MAIN TO EXISTING FORCE MAIN USING REQUIRED JOINTS AND FITTINGS
76B	REMOVE CAP AND CONNECT TO EXISTING 6" WATER LINE.

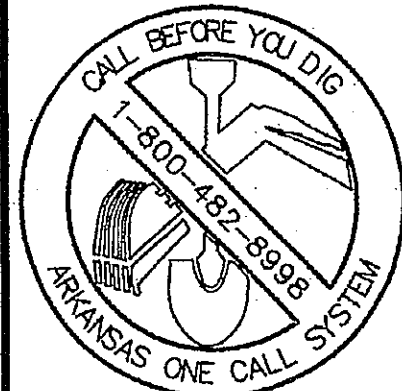
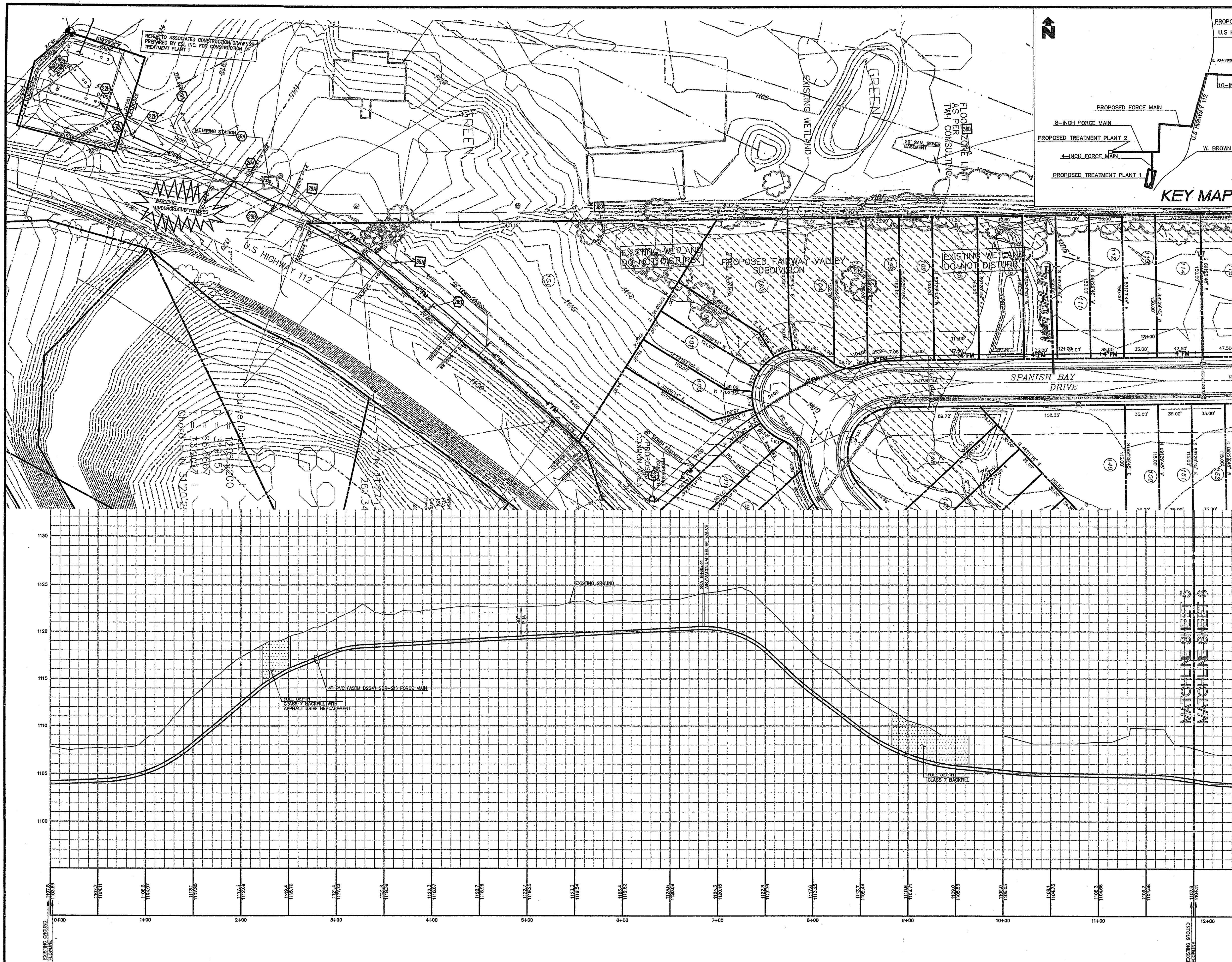
NOTE:
CONTRACTOR SHALL COORDINATE WITH OTTER CREEK ESTATES CONTRACTOR DURING CONSTRUCTION

NOTE:
EXISTING GROUND ELEVATIONS, UTILITIES AND ROADS AS SHOWN ON THESE PLANS ARE PARTLY BASED ON DESIGN DRAWINGS FOR THE OTTER CREEK ESTATES SUBDIVISION, PREPARED BY CEI ENGINEERING. ACTUAL ELEVATIONS/LOCATIONS MAY DIFFER AFTER CONSTRUCTION OF OTTER CREEK ESTATES. THE CONTRACTOR SHALL INFORM CEI ENGINEERING OF ANY INCONSISTENCIES, DISCREPANCIES OR CONFLICTS THAT MAY ARISE.



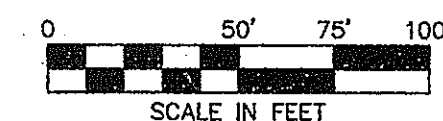
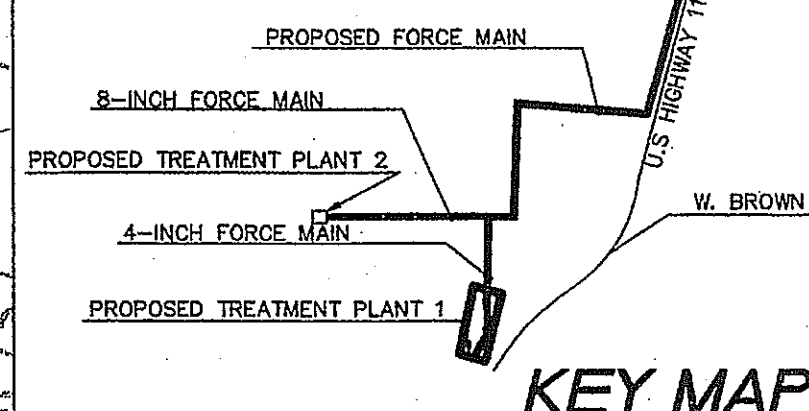
INITIAL DESIGN	10-10-05	DATE	FF	FF	FF
		FOR	PM	DES	DRW
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
CAVE SPRINGS ARKANSAS					
CEI ENGINEERING ASSOCIATES, INC.					
ENGINEERS PLANNERS SURVEYORS					
3317 S.W. 1 Street Bentonville, AR 72712			(479) 273-9472 FAX (479) 273-0844		
DATE 08-21-05 10:33 AM			JOB NO.: 20733 DWG NAME: 20733PHASE1A		
GRADING PLAN PUMP STATION			SHEET NO. 4 OF 43 REV. 5		

© 2005 CEI ENGINEERING ASSOCIATES, INC.



STA 0+00 TO STA 12+00

HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'



LEGEND

EXISTING	
BOUNDARY LINE	---
RIGHT OF WAY LINE	---
STORM DRAIN	---
GAS	---
OHE	---
OHE&T	---
OHT	---
OHTV	---
SEWER	---
UNDERGROUND ELECTRIC	---
UG&T	---
UGT	---
UGTV	---
WATER	---
TREE INFO	---
5-10-11 50.5	5 = DIAMETER OF TRUNK IN FEET 10 = HEIGHT OF TREE IN FEET 11 = CANOPY DIAMETER IN FEET 50.5 = ELEVATION AT BASE OF TREE EDGE OF ROADWAY

PROPOSED

PROPERTY LINE	---
RIGHT OF WAY LINE	---
EASEMENT	---
SANITARY SEWER SERVICE	---
WATER SERVICE	---

GENERAL UTILITY NOTES

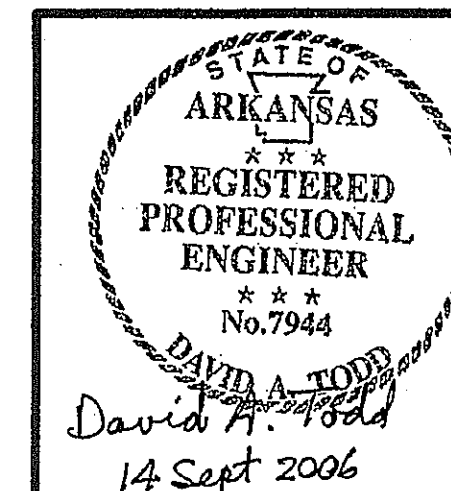
- ALL WASTEWATER LINES 4" AND SMALLER SHALL BE PVC (ASTM D2241 SDR-21) WITH 60" MIN. COVER. ALL WASTEWATER LINES LARGER THAN 4" SHALL BE PVC (ASTM D2241 SDR-21) WITH 60" MIN. COVER.
- ALL SANITARY SEWER LINES AT CREEK AND ROAD CROSSING SHALL BE PVC (ASTM D2241 SDR-21) WITH 60" MIN. COVER.
- ALL WATER LINES SHALL BE PVC (AWWA C-900) WITH 48" MIN. COVER.
- CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO EXISTING UTILITY SERVICES WITH ADJACENT PROPERTY OWNERS.
- CONSTRUCTION SHALL NOT START ON ANY PUBLIC UTILITY SYSTEM UNTIL WRITTEN APPROVAL HAS BEEN RECEIVED BY THE ENGINEER FROM THE APPROPRIATE GOVERNING AUTHORITY AND CONTRACTOR HAS BEEN NOTIFIED BY THE ENGINEER.
- PRIOR TO THE CONSTRUCTION OF OR CONNECTION TO ANY STORM DRAIN, SANITARY SEWER, WATER MAIN OR ANY OF THE CITY UTILITIES, THE CONTRACTOR SHALL EXCAVATE, VERIFY AND CALCULATE ALL POINTS OF CONNECTION AND ALL UTILITY CROSSINGS AND INFORM CEI ENGINEERING AND THE OWNER/DEVELOPER OF ANY CONFLICT OR REQUIRED DEVIATIONS FROM THE PLAN. NOTIFICATION SHALL BE MADE A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION. CEI ENGINEERING AND ITS CLIENTS SHALL BE HELD HARMLESS IN THE EVENT THAT THE CONTRACTOR FAILS TO MAKE SUCH NOTIFICATION.
- UNLESS OTHERWISE SHOWN, CALLED OUT OR SPECIFIED HEREON OR WITHIN SPECIFICATIONS:
 - ALL SANITARY SEWER PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.
 - ALL SANITARY FORCE MAIN FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 - ALL WATER LINE FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 - ALL WATER LINE PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.

UTILITY NOTES

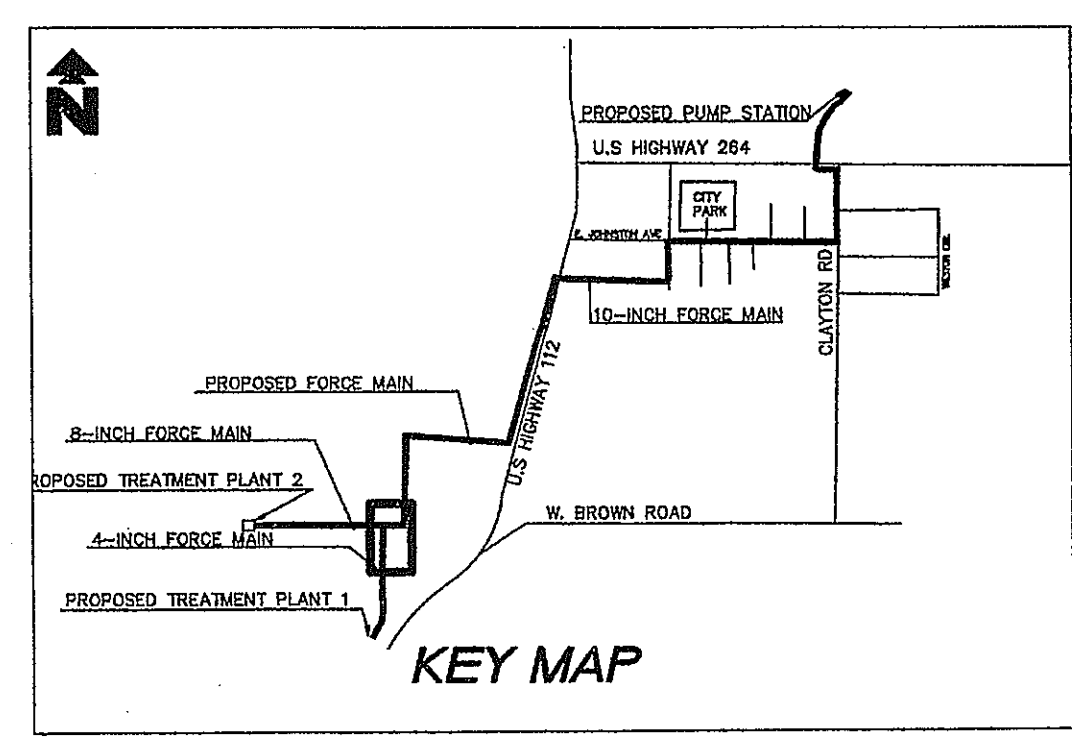
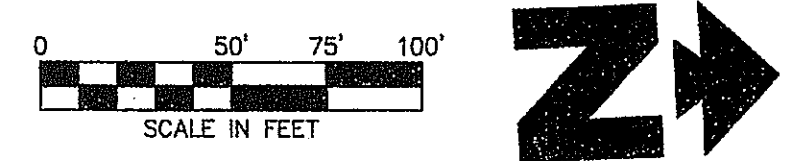
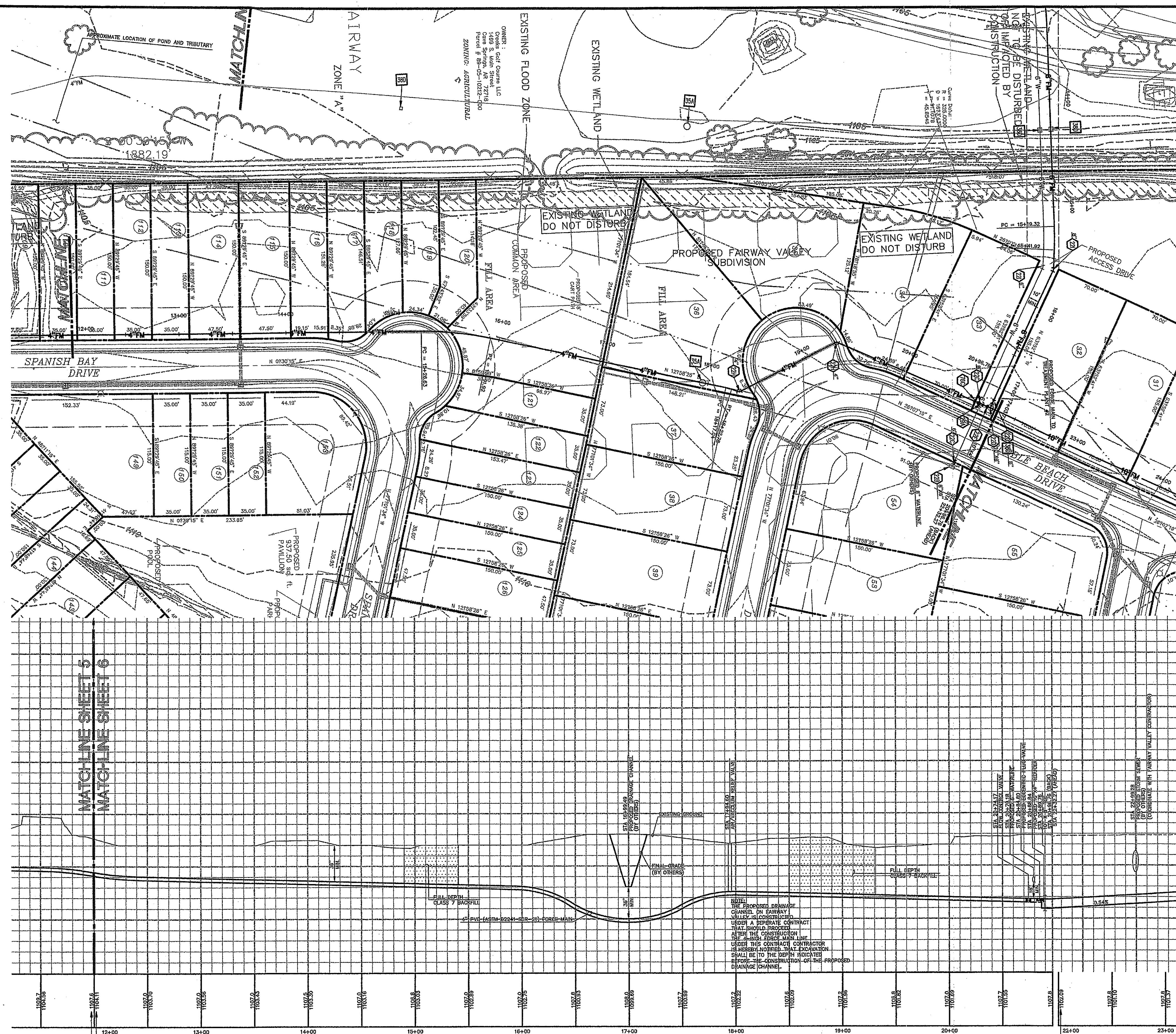
- EXISTING TO REMAIN
- M.I. ECCENTRIC PLUG VALVE WITH ADJUSTABLE VALVE BOX (SEE SIZES THIS SHEET)
- M.I. TEE WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- M.I. ECCENTRIC REDUCER, FLAT SIDE ON TOP (SEE SIZES THIS SHEET)
- M.I. CAP/PLUG WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- 45" M.I. BEND WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- PROTECT EXISTING STRUCTURES AND/OR PIPES DURING EXCAVATION AND CONSTRUCTION PHASES.
- ASPHALT PAVEMENT STRIP WITH FULL DEPTH CLASS 7 BACKFILL.
- CONNECT TO TREATMENT PLANT TANK (REFER TO CONSTRUCTION DRAWINGS PREPARED BY ESS, INC.)
- FLOW CONTROL VALVE
- SOLENOID VALVE

UTILITY DETAILS

- ASPHALT DRIVE CUT/REPAIR
- GRAVEL DRIVE CUT/REPAIR
- JACK & BORE
- AIR/VACUUM RELIEF VALVE (SANITARY SEWER)
- SANITARY SEWER FORCE MAIN CLEAN-OUT WITH CHECK VALVE
- LIFT STATION
- CONCRETE CHANNEL WITH DISSIPATORS
- TRACER WIRE INSTALLATION



INITIAL DESIGN	4-26-05	DAT	FF	FF	FF
DATE	EOR	PM	DES	DRW	
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
CAVE SPRINGS			ARKANSAS		
CEI ENGINEERS			ENGINEERING ASSOCIATES, INC.		
PLANNERS			SURVEYORS		
3317 S.W. 1 Street			(479) 273-9472		
Bentonville, AR 72712			FAX (479) 273-0844		
JOB NO.: 20733.0			DWG NAME: 20733PROJ		
CAVE SPRINGS INTERCEPTOR #1			DATE: 09-13-06		
PLAN AND PROFILE #1			1:30 PM		
			REV: 6		
			SHEET NO. 5 OF 43		



LEGEND

- EXISTING**
- BOUNDARY LINE
 - RIGHT OF WAY LINE
 - STORM DRAIN
 - GAS
 - OHE OVERHEAD ELECTRIC
 - OHE&T OVERHEAD ELECTRIC AND TELEPHONE
 - OHT OVERHEAD TELEPHONE
 - OHTV OVERHEAD TV
 - SEWER
 - UGE UNDERGROUND ELECTRIC
 - UGE&T UNDERGROUND ELECTRIC AND TELEPHONE
 - UGT UNDERGROUND TELEPHONE
 - UGTV UNDERGROUND TV
 - WATER
- PROPOSED**
- PROPERTY LINE
 - RIGHT OF WAY LINE
 - EASEMENT
 - SANITARY SEWER SERVICE
 - WATER SERVICE

GENERAL UTILITY NOTES

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- ALL WATER LINES SHALL BE PVC (AWWA C-900) WITH 48" MIN. COVER.
- CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO EXISTING UTILITY SERVICES WITH ADJACENT PROPERTY OWNERS.
- CONSTRUCTION SHALL NOT START ON ANY PUBLIC UTILITY SYSTEM UNTIL WRITTEN APPROVAL HAS BEEN RECEIVED BY THE ENGINEER FROM THE APPROPRIATE COVERING AUTHORITY AND CONTRACTOR HAS BEEN NOTIFIED BY THE ENGINEER.
- PRIOR TO THE CONSTRUCTION OF OR CONNECTION TO ANY STORM DRAIN, SANITARY SEWER, WATER MAIN OR ANY OF THE DRY UTILITIES, THE CONTRACTOR SHALL EXCAVATE, VERIFY AND CALCULATE ALL POINTS OF CONNECTION AND ALL UTILITY CROSSINGS AND INFORM CE ENGINEERING AND THE OWNER/DEVELOPER OF ANY CONFLICT OR REQUIRED DEVIATIONS FROM THE PLAN. NOTIFICATION SHALL BE MADE A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION. CE ENGINEERING AND ITS CLIENTS SHALL BE HELD HARMLESS IN THE EVENT THAT THE CONTRACTOR FAILS TO MAKE SUCH NOTIFICATION.
- UNLESS OTHERWISE SHOWN, CALLED OUT OR SPECIFIED HEREON OR WITHIN SPECIFICATIONS:
 - ALL SANITARY SEWER PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.
 - ALL SANITARY FORCE MAIN FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 - ALL WATER LINE FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 - ALL WATER LINE PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.

STA 12+00 TO STA 22+00

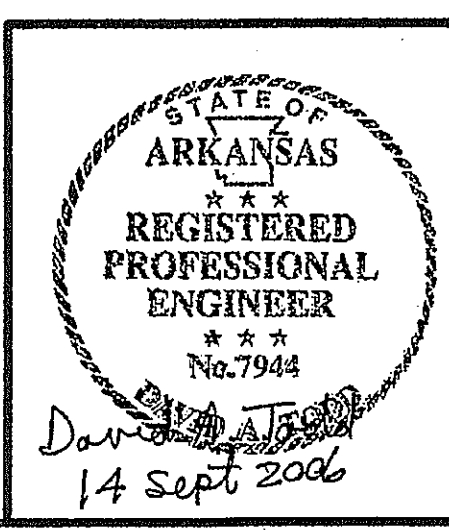
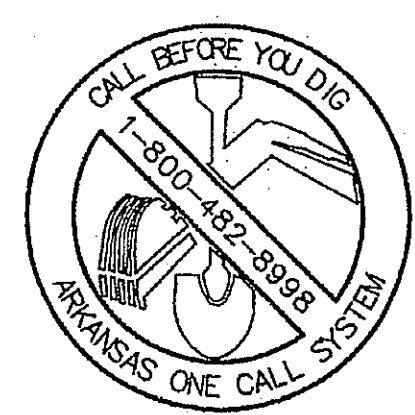
HORIZONTAL : 1" = 50'
VERTICAL : 1" = 5'

UTILITY NOTES

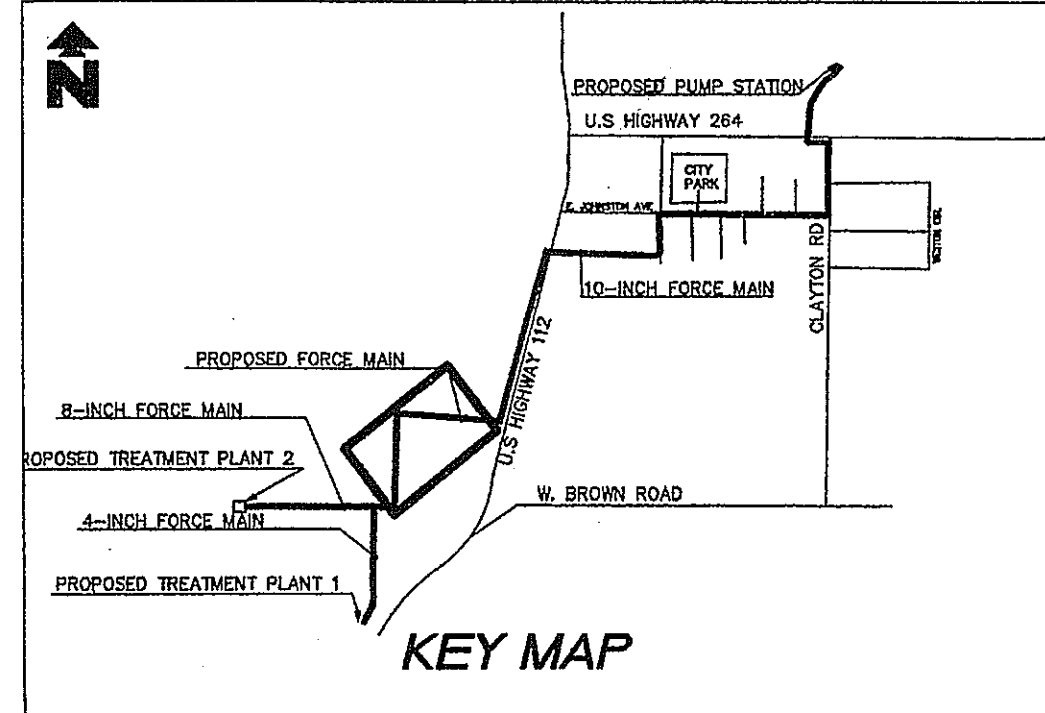
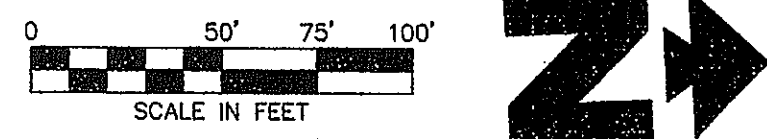
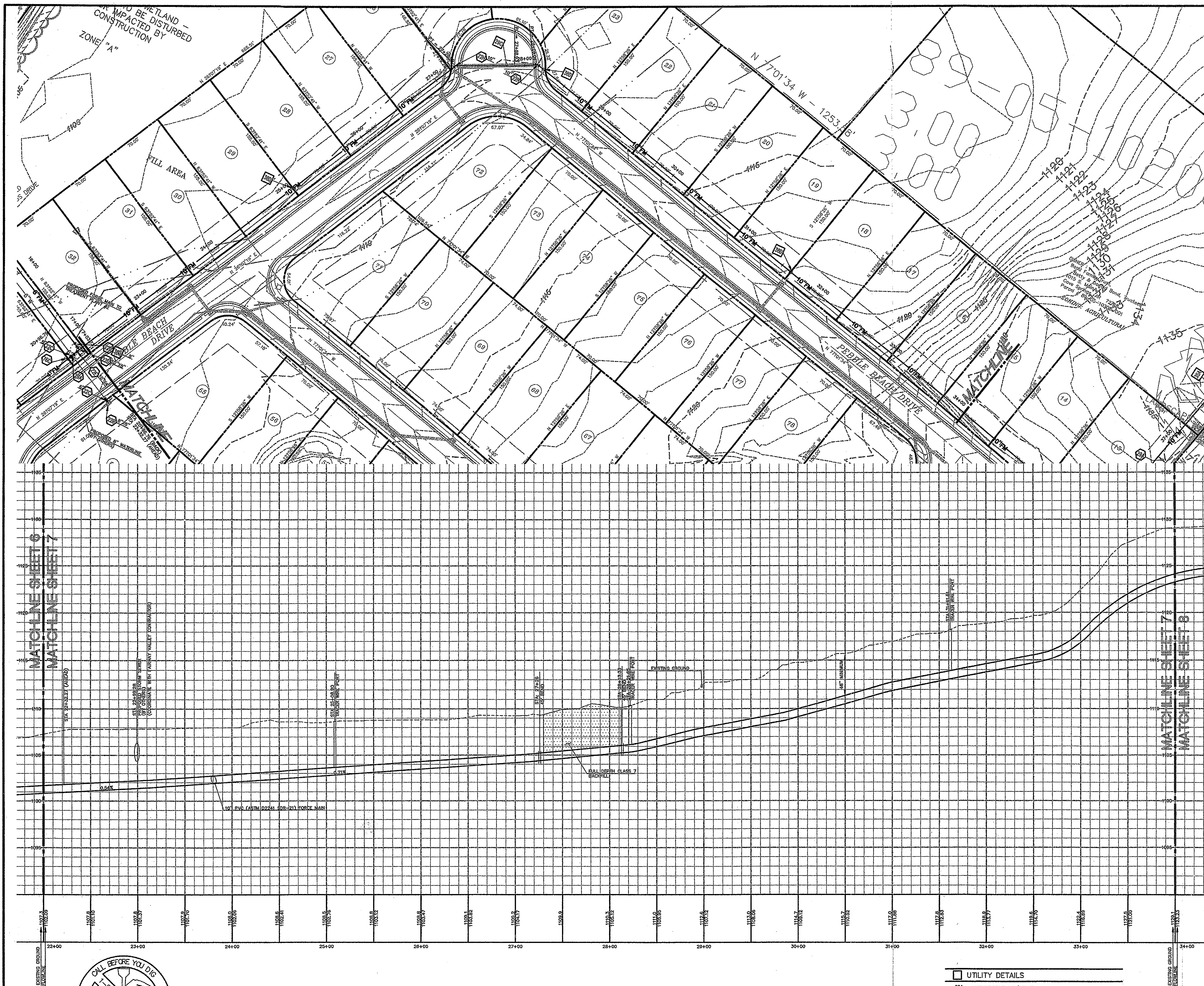
- 19A EXISTING TO REMAIN
- 22C M.A. EXISTING FLOW VALVE WITH ADJUSTABLE VALVE BOX (SEE SIZES THIS SHEET)
- 22D M.A. TEE WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- 22E M.A. ECCENTRIC REDUCER, FLAT SIDE ON TOP (SEE SIZES THIS SHEET)
- 22F M.A. CAP/PLUG WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- 22H 45° M.A. BEND WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- 51D PROTECT EXISTING STRUCTURES AND/OR PIPES DURING DEMOLITION AND CONSTRUCTION PHASES
- 76A ASPHALT PAVEMENT STRIP WITH FULL DEPTH CLASS 7 BACKFILL
- 76B CONNECT TO TREATMENT PLANT TANK (REFER TO CONSTRUCTION DRAWINGS PREPARED BY ES, INC.)
- 76C FLOW CONTROL VALVE
- 76G SOLENOID VALVE

UTILITY DETAILS

- 28A ASPHALT DRIVE CUT/REPAIR
- 29C GRAVEL DRIVE CUT/REPAIR
- 30B JACK & BORE
- 35A AIR/VACUUM RELIEF VALVE (SANITARY SEWER)
- 76A SANITARY SEWER FORCE MAIN CLEAN-OUT WITH CHECK VALVE
- 76B LIFT STATION
- 76C CONCRETE CHANNEL WITH DISSIPATORS
- 38D TRACER WIRE INSTALLATION



INITIAL DESIGN	4-26-05	DAT	FF	FF	FF
DATE		FOR	PM	DES	DRW
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
CAVE SPRINGS			ARKANSAS		
CEI ENGINEERING ASSOCIATES, INC					
ENGINEERS PLANNERS SURVEYORS					
3317 S.W. 1 Street Bentonville, AR 72712		(479) 273-9472 FAX (479) 273-0844		JOB NO.: 20733.0 DWG NAME: 20733PROJ.05	
CAVE SPRINGS INTERCEPTOR #1				DATE 09-13-06 1:38 PM	SHEET NO. 6 OF 43
PLAN AND PROFILE #2					



LEGEND

- EXISTING**
- BOUNDARY LINE
 - RIGHT OF WAY LINE
 - STORM DRAIN
 - O/E OVERHEAD ELECTRIC
 - O/E&T OVERHEAD ELECTRIC AND TELEPHONE
 - OHTV OVERHEAD TELEPHONE
 - OHTV OVERHEAD TV
 - UGES UNDERGROUND ELECTRIC
 - UGES&T UNDERGROUND ELECTRIC AND TELEPHONE
 - UGT UNDERGROUND TELEPHONE
 - UGTV UNDERGROUND TV
 - WATER
- PROPOSED**
- PROPERTY LINE
 - RIGHT OF WAY LINE
 - EASEMENT
 - X'S SANITARY SEWER SERVICE
 - X'W WATER SERVICE

GENERAL UTILITY NOTES

- ALL WASTEWATER LINES 4" AND SMALLER SHALL BE PVC (ASTM D2241 SDR-21) WITH 36" MIN. COVER. ALL WASTEWATER LINES LARGER THAN 4" SHALL BE PVC (ASTM D2241 SDR-21) WITH 48" MIN. COVER.
- ALL SANITARY SEWER LINES AT CREEK AND ROAD CROSSING SHALL BE PVC (ASTM D2241 DR-14) WITH 60" MIN. COVER.
- ALL WATER LINES SHALL BE PVC (AWWA C-900) WITH 48" MIN. COVER.
- CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO EXISTING UTILITY SERVICES WITH ADJACENT PROPERTY OWNERS.
- CONSTRUCTION SHALL NOT START ON ANY PUBLIC UTILITY SYSTEM UNTIL WRITTEN APPROVAL HAS BEEN RECEIVED BY THE ENGINEER FROM THE APPROPRIATE GOVERNING AUTHORITY AND CONTRACTOR HAS BEEN NOTIFIED BY THE ENGINEER.
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- UNLESS OTHERWISE SHOWN, CALLED OUT OR SPECIFIED HEREON OR WITHIN SPECIFICATIONS:
 - ALL SANITARY SEWER PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.
 - ALL SANITARY FORCE MAIN FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 - ALL WATER LINE FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 - ALL WATER LINE PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.

UTILITY NOTES

- 19A EXISTING TO REMAIN
- 22C M.I. ECCENTRIC PLUG VALVE WITH ADJUSTABLE VALVE BOX (SEE SIZES THIS SHEET)
- 22D M.I. TEE WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- 22E M.I. ECCENTRIC REDUCER, FLAT SIDE ON TOP (SEE SIZES THIS SHEET)
- 22F M.I. CAP/PLUG WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- 22H 45° M.I. BEND WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- 51D PROTECT EXISTING STRUCTURES AND/OR PIPES DURING DEMOLITION AND CONSTRUCTION PHASES
- 76A ASPHALT PAVEMENT STRIP WITH FULL DEPTH CLASS 7 BACKFILL
- 76B CONNECT TO TREATMENT PLANT TANK (REFER TO CONSTRUCTION DRAWINGS PREPARED BY ESI, INC.)
- 76C FLOW CONTROL VALVE
- 76D SOLENOID VALVE



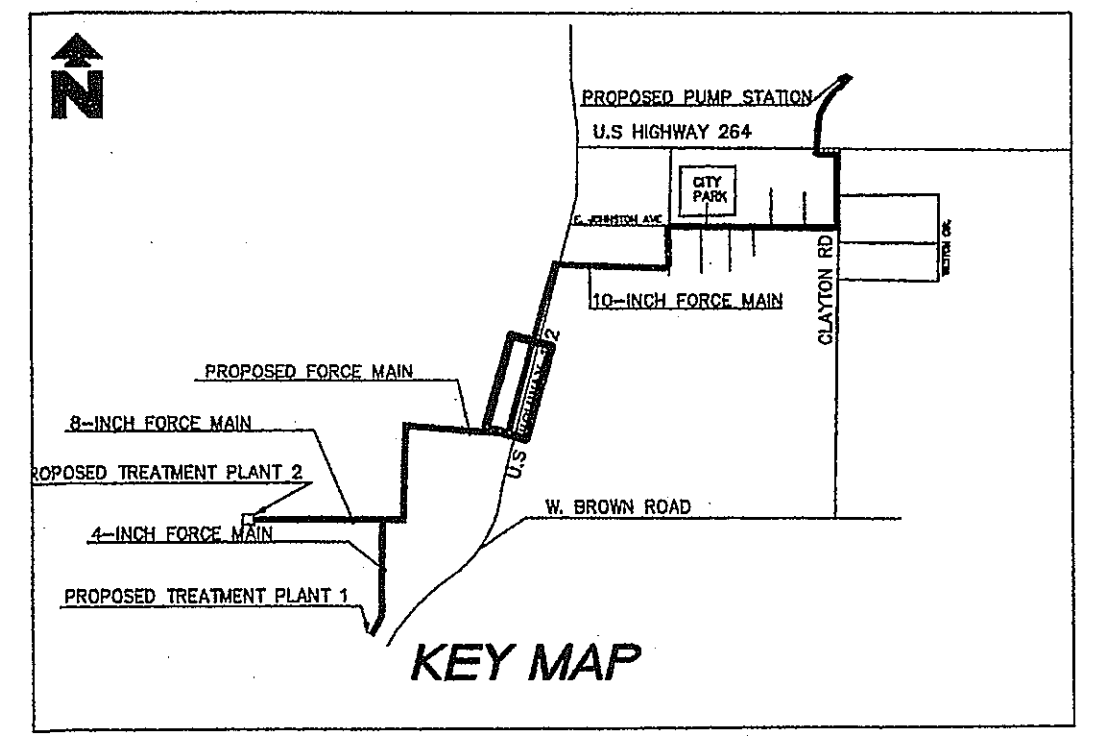
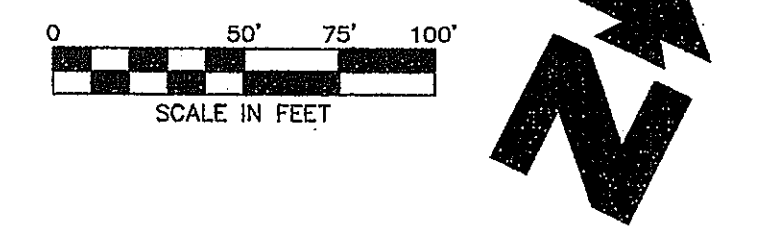
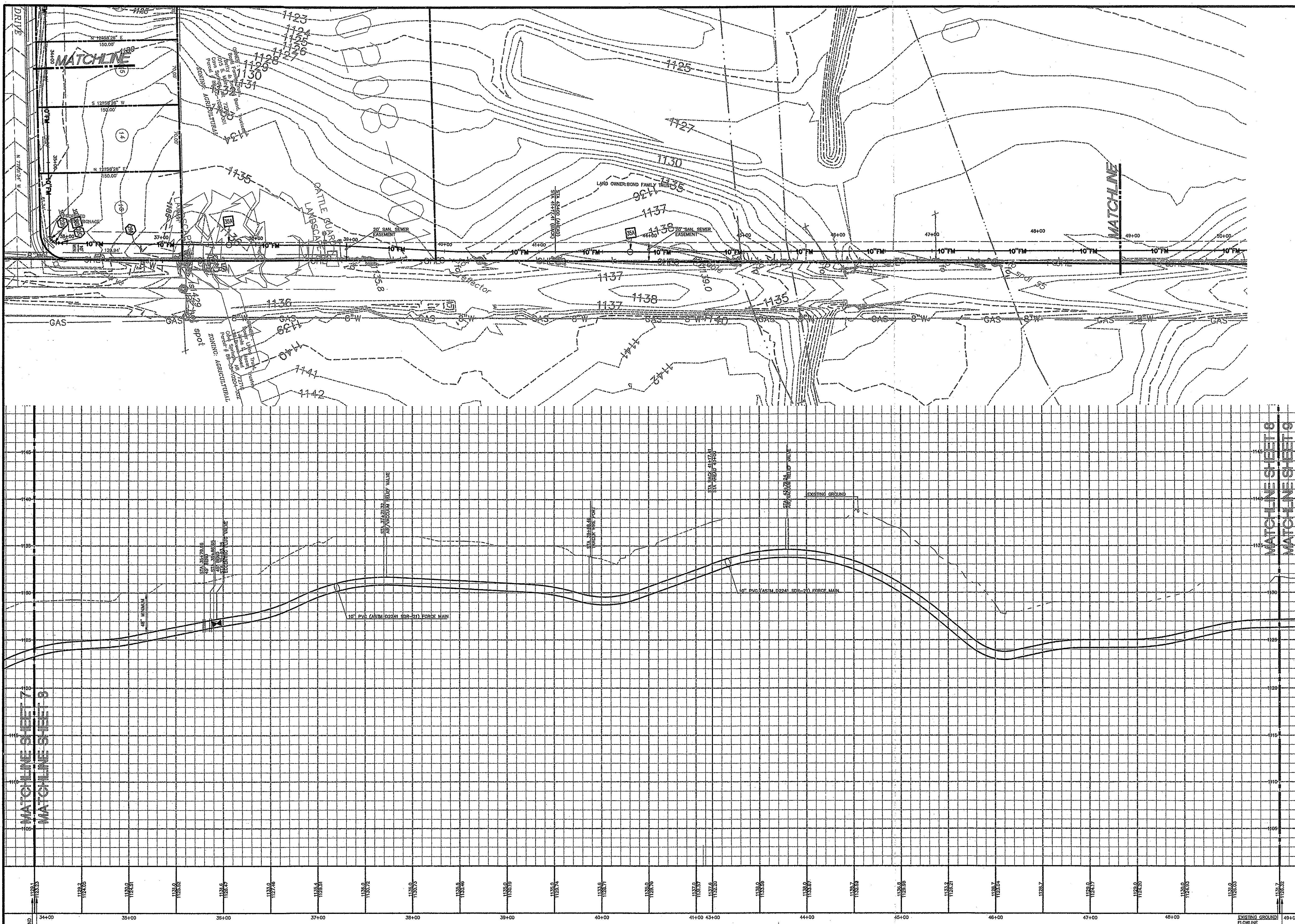
STA 22+00 TO STA 34+00

HORIZONTAL : 1" = 50'
VERTICAL : 1" = 5'

UTILITY DETAILS

- 29A ASPHALT DRIVE CUT/REPAIR
- 29C GRAVEL DRIVE CUT/REPAIR
- 30B JACK & BORE
- 35A AIR/VACUUM RELIEF VALVE (SANITARY SEWER)
- 76A SANITARY SEWER FORCE MAIN CLEAN-OUT WITH CHECK VALVE
- 76B LIFT STATION
- 76C CONCRETE CHANNEL WITH DISSIPATORS
- 38D TRADER WIRE INSTALLATION

INITIAL DESIGN	4-26-05	DAT	FF	FF	FF
DATE	EOR	PM	DES	DRW	
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
CAVE SPRINGS			ARKANSAS		
CEI ENGINEERS			ASSOCIATES, INC.		
3317 S.W. 1 Street Bentonville, AR 72712			(479) 273-0472 FAX (479) 273-0844		
JOB NO.: 20733.0 DWG NAME: 20733PRO.05			DATE: 09-13-06 1:38 PM REV6		
CAVE SPRINGS INTERCEPTOR #1			SHEET NO. 7 OF 43		
PLAN AND PROFILE #3					



LEGEND	
EXISTING	
BOUNDARY LINE	---
RIGHT OF WAY LINE	---
STORM DRAIN	---
GAS	---
OHE	---
OHE&T	---
OHT	---
OHTV	---
SEWER	---
UGE	---
UGE&T	---
UGT	---
UGTV	---
WATER	---
5-10-11 50.5	---
5 - DIAMETER OF TRUNK IN FEET	---
10 - HEIGHT OF TREE IN FEET	---
11 - CANOPY DIAMETER IN FEET	---
50.5 - ELEVATION AT BASE OF TREE	---
EDGE OF ROADWAY	---
PROPOSED	
PROPERTY LINE	---
RIGHT OF WAY LINE	---
EASEMENT	---
SANITARY SEWER SERVICE	---
WATER SERVICE	---

GENERAL UTILITY NOTES

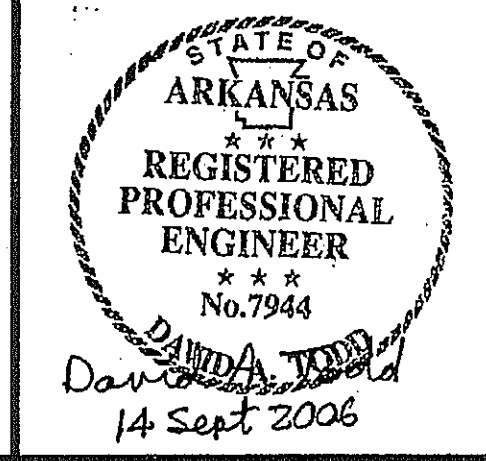
- ALL WASTEWATER LINES 4" AND SMALLER SHALL BE PVC (ASTM D2241 SDR-21) WITH 20" MIN. COVER. ALL WASTEWATER LINES LARGER THAN 4" SHALL BE PVC (ASTM D2241 SDR-21) WITH 48" MIN. COVER.
- ALL SANITARY SEWER LINES AT CREEK AND ROAD CROSSING SHALL BE PVC (ASTM D2241 SDR-21) WITH 48" MIN. COVER.
- ALL WATER LINES SHALL BE PVC (AWWA C-900) WITH 48" MIN. COVER.
- CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO EXISTING UTILITY SERVICES WITH ADJACENT PROPERTY OWNERS.
- CONSTRUCTION SHALL NOT START ON ANY PUBLIC UTILITY SYSTEM UNTIL WRITTEN APPROVAL HAS BEEN RECEIVED BY THE ENGINEER FROM THE APPROPRIATE GOVERNING AUTHORITY AND CONTRACTOR HAS BEEN NOTIFIED BY THE ENGINEER.
- PRIOR TO THE CONSTRUCTION OF OR CONNECTION TO ANY STORM DRAIN, SANITARY SEWER, WATER MAIN OR ANY OF THE DRY UTILITIES, THE CONTRACTOR SHALL EXCAVATE, VERIFY, AND CALCULATE ALL POINTS OF CONNECTION AND ALL UTILITY CROSSINGS AND INFORM CEI ENGINEERING AND THE OWNER/DEVELOPER OF ANY CONFLICT OR REQUIRED DEVIATIONS FROM THE PLAN. NOTIFICATION SHALL BE MADE A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION. CEI ENGINEERING AND ITS CLIENTS SHALL BE HELD HARMLESS IN THE EVENT THAT THE CONTRACTOR FAILS TO MAKE SUCH NOTIFICATION.
- UNLESS OTHERWISE SHOWN, CALLED OUT OR SPECIFIED HEREON OR WITHIN SPECIFICATIONS:
 - ALL SANITARY SEWER PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.
 - ALL SANITARY FORCE MAIN FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 - ALL WATER LINE FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 - ALL WATER LINE PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.

- UTILITY NOTES
- EXISTING TO REMAIN
 - M.I. ECCENTRIC PLUG VALVE WITH ADJUSTABLE VALVE BOX (SEE SIZES THIS SHEET)
 - M.I. TIE WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
 - M.I. ECCENTRIC REDUCER, FLAT SIDE ON TOP (SEE SIZES THIS SHEET)
 - M.I. CAP/PLUG WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
 - 45" M.I. BEND WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
 - PROTECT EXISTING STRUCTURES AND/OR PIPES DURING DEMOLITION AND CONSTRUCTION PHASES.
 - ASPHALT PAVEMENT STRIP WITH FULL DEPTH CLASS 7 BASECOURSE
 - CONNECT TO TREATMENT PLANT TANK (REFER TO CONSTRUCTION DRAWINGS PREPARED BY ESI, INC.)
 - FLOW CONTROL VALVE
 - SOLENOID VALVE
- UTILITY DETAILS
- ASPHALT DRIVE CUT/REPAIR
 - GRAVEL DRIVE CUT/REPAIR
 - JACK & BORE
 - AIR/VACUUM RELIEF VALVE (SANITARY SEWER)
 - SANITARY SEWER FORCE MAIN CLEAN-OUT WITH CHECK VALVE
 - UFT STATION
 - CONCRETE CHANNEL WITH DISSIPATORS
 - TRACER WIRE INSTALLATION

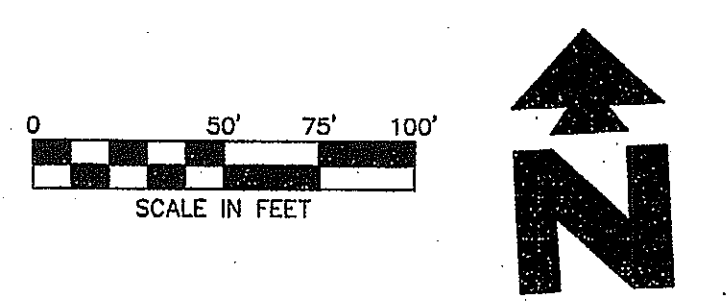
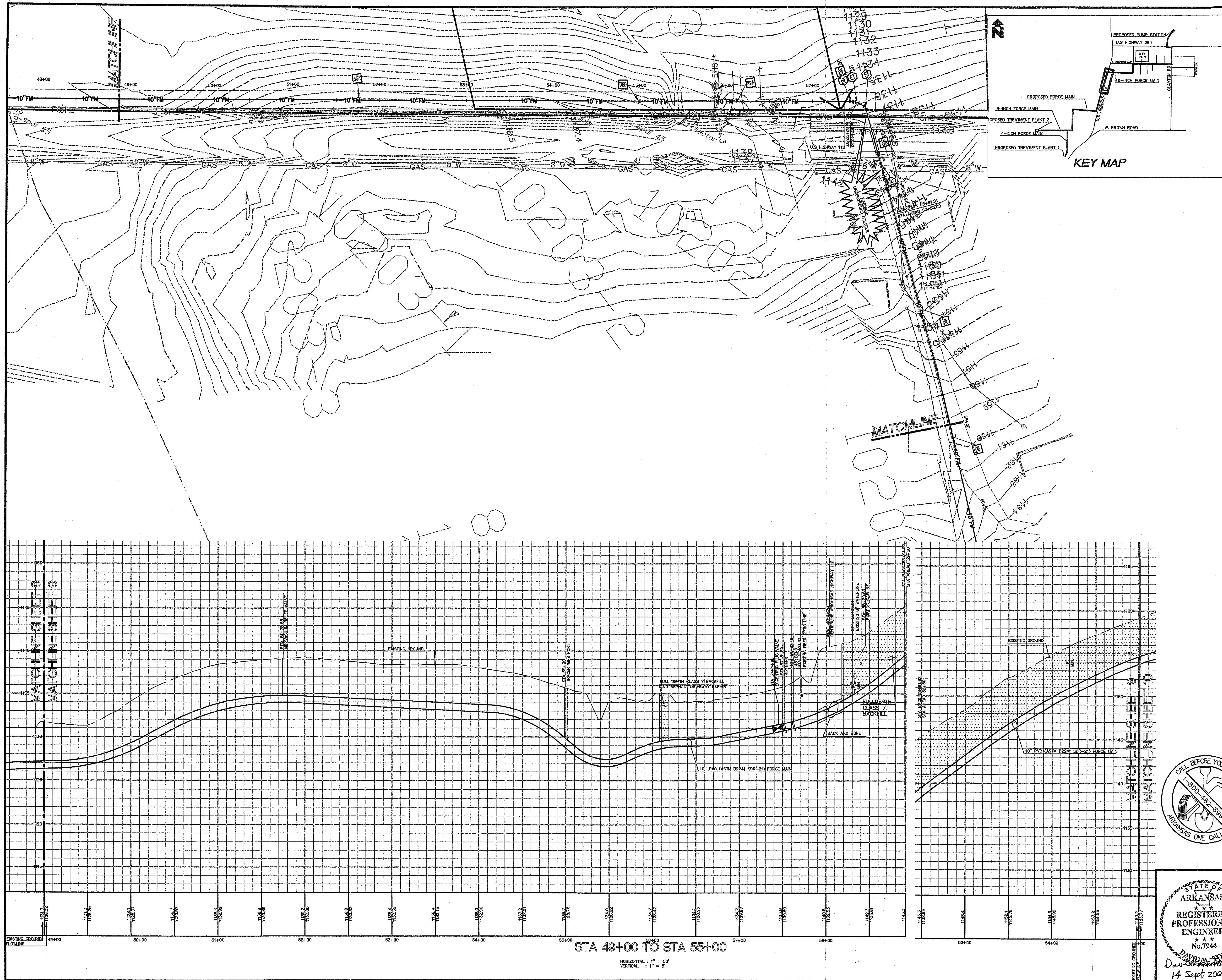
STA 34+00 TO STA 49+00

HORIZONTAL : 1" = 50'
VERTICAL : 1" = 5'

NOTE: CONTRACTOR SHALL COORDINATE WITH OTHER CREEK CONTRACTOR DURING CONSTRUCTION



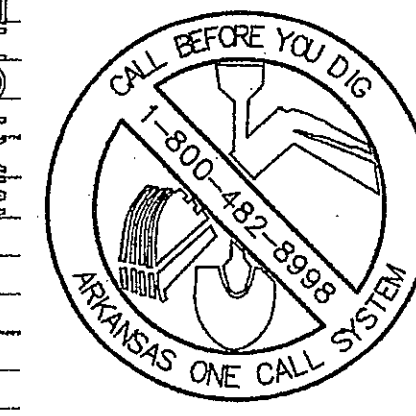
INITIAL DESIGN	4-26-05	DAT	FF	FF	FF
DATE	FOR	PM	DES	DRW	
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
CAVE SPRINGS			ARKANSAS		
CEI ENGINEERS			PLANNERS		
3317 S.W. 1 Street			Bentonville, AR 72712		
(479) 273-9472			FAX (479) 273-0844		
JOB NO.: 207333.0			DWG NAME: 207333PRD.05		
CAVE SPRINGS INTERCEPTOR #1			DATE 09-13-06		
PLAN AND PROFILE #4			1:39 PM		
			REV 6		
			SHEET NO. 8 OF 43		



- LEGEND**
- EXISTING**
- BOUNDARY LINE
 - RIGHT OF WAY LINE
 - STORM DRAIN
 - GAS
 - OHE
 - OHE&T
 - OHT
 - OHTV
 - SEWER
 - UGE
 - UGE&T
 - UGT
 - UGTV
 - X-W
- PROPOSED**
- PROPERTY LINE
 - RIGHT OF WAY LINE
 - EASEMENT
 - X-S
 - X-W
- GENERAL UTILITY NOTES**
- ALL WASTEWATER LINES 4" AND SMALLER SHALL BE PVC (ASTM D2241 SDR-21) WITH 36" MIN. COVER. ALL WASTEWATER LINES LARGER THAN 4" SHALL BE PVC (ASTM D2241 SDR-21) WITH 48" MIN. COVER.
 - ALL SANITARY SEWER LINES AT CREEK AND ROAD CROSSING SHALL BE PVC (ASTM D2241 DR-14) WITH 60" MIN. COVER.
 - ALL WATER LINES SHALL BE PVC (AWWA C-900) WITH 48" MIN. COVER.
 - CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO EXISTING UTILITY SERVICES WITH ADJACENT PROPERTY OWNERS.
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 - ALL SANITARY FORCE MAIN FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 - ALL WATER LINE FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 - ALL WATER LINE PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.

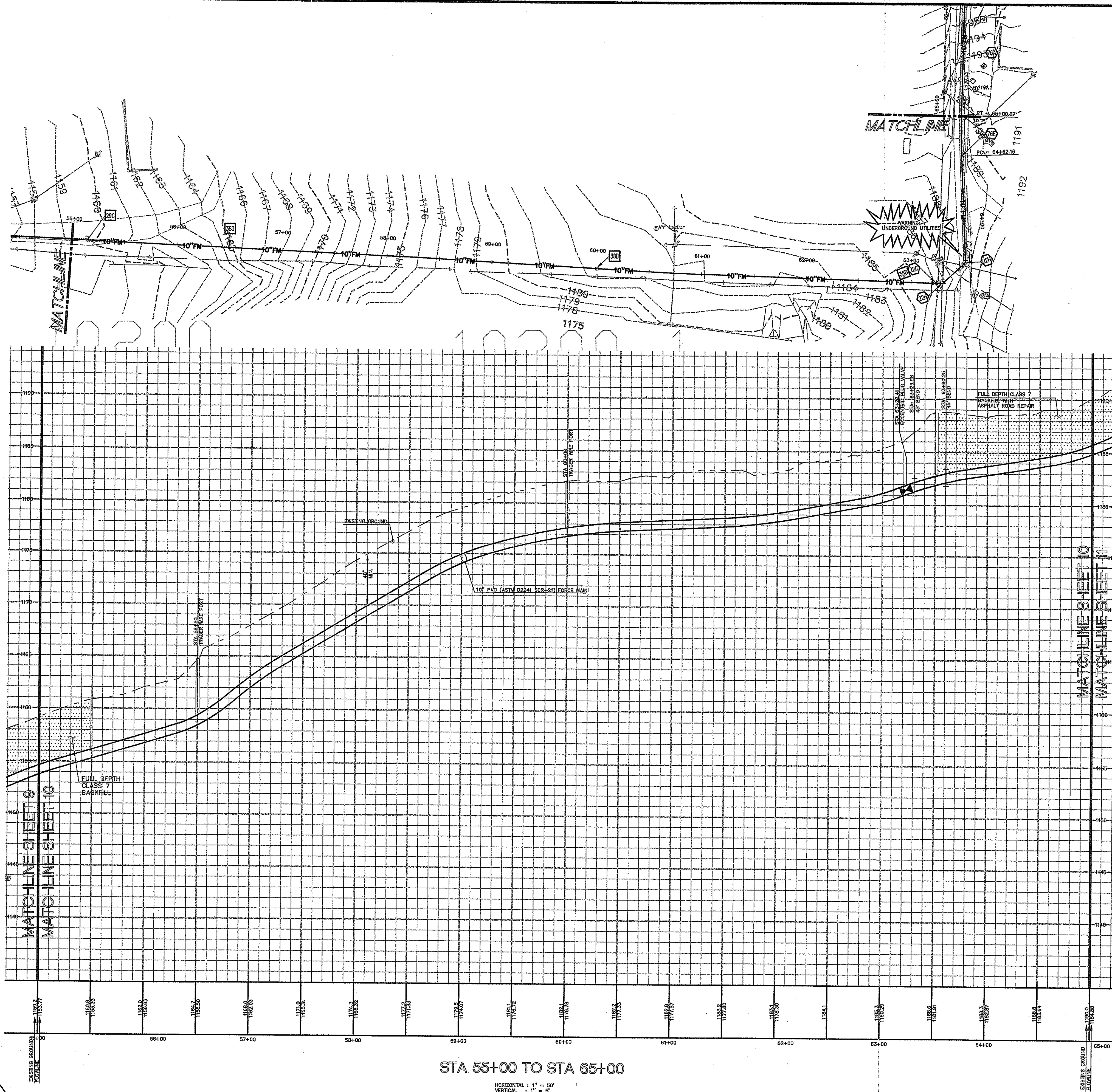
- UTILITY NOTES**
- 19A EXISTING TO REMAIN
 - 22C M.J. ECCENTRIC PLUG VALVE WITH ADJUSTABLE VALVE BOX (SEE SIZES THIS SHEET)
 - 22D M.J. TEE WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
 - 22E M.J. ECCENTRIC REDUCER, FLAT SIDE ON TOP (SEE SIZES THIS SHEET)
 - 22F M.J. ORB PLUG WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
 - 22H 45° M.J. BEND WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
 - 51D PROTECT EXISTING STRUCTURES AND/OR PIPES DURING DEMOLITION AND CONSTRUCTION PHASES.
 - 76A ASPHALT PAVEMENT STRIP WITH FULL DEPTH CLASS 7 BACKFILL
 - 76B CONNECT TO TREATMENT PLANT TANK (REFER TO CONSTRUCTION DRAWINGS PREPARED BY ESI, INC.)
 - 76C FLOW CONTROL VALVE
 - 76D SOLENOID VALVE

- UTILITY DETAILS**
- 29A ASPHALT DRIVE CUT/REPAIR
 - 29C GRAVEL DRIVE CUT/REPAIR
 - 30B JACK & BORE
 - 35A AIR/VACUUM RELIEF VALVE (SANITARY SEWER)
 - 76A SANITARY SEWER FORCE MAIN CLEAN-OUT WITH CHECK VALVE
 - 76B LIFT STATION
 - 76C CONCRETE CHANNEL WITH DISSIPATORS
 - 38D TRACER WIRE INSTALLATION



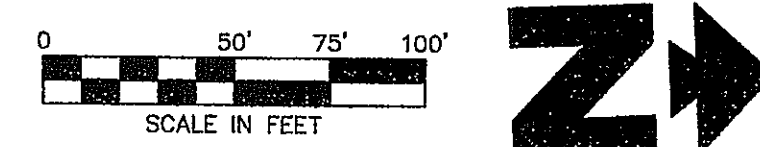
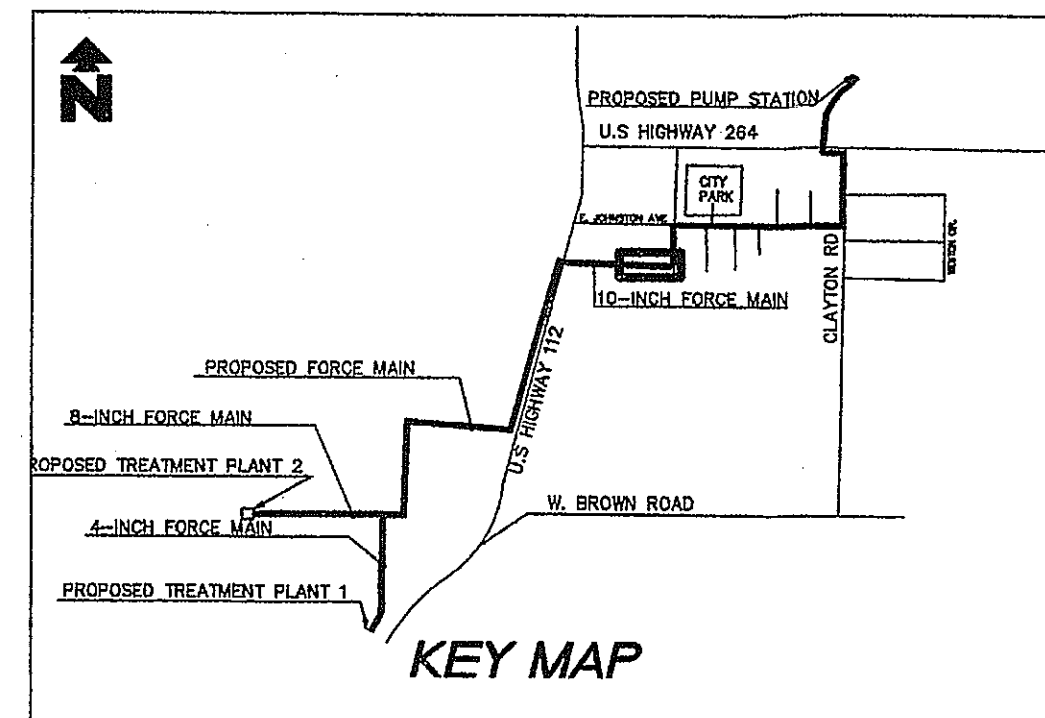
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7944
DAVID A. TODD
14 Sept 2006

INITIAL DESIGN	4-26-05	DAT	FF	FF	FF
DATE	EOR	PM	DES	DRW	
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
CAVE SPRINGS			ARKANSAS		
CEI ENGINEERS			ASSOCIATES, INC.		
3317 S.W. 1 Street Bentonville, AR 72712			(479) 273-0472 FAX (479) 273-0844		
CAVE SPRINGS INTERCEPTOR #1			DATE 09-13-06 1:38 PM REV6		
PLAN AND PROFILE #5			JOB NO.: 20733.0 DWG NAME: 20733PRO-05 SHEET NO. 9 OF 43		



STA 55+00 TO STA 65+00

HORIZONTAL : 1" = 50'
VERTICAL : 1" = 5'



LEGEND

EXISTING

- BOUNDARY LINE
- RIGHT OF WAY LINE
- STORM DRAIN
- GAS
- OHE
- OHE&T
- OHT
- OHTV
- SEWER
- UGS
- UG&T
- UGT
- UGTV
- WATER
- TREE INFO
- 5-10-11 50.5
- 5 = DIAMETER OF TRUNK IN FEET
- 10 = HEIGHT OF TREE IN FEET
- 11 = CANOPY DIAMETER IN FEET
- 50.5 = ELEVATION AT BASE OF TREE
- EDGE OF ROADWAY

PROPOSED

- PROPERTY LINE
- RIGHT OF WAY LINE
- EASEMENT
- SANITARY SEWER SERVICE
- WATER SERVICE

GENERAL UTILITY NOTES

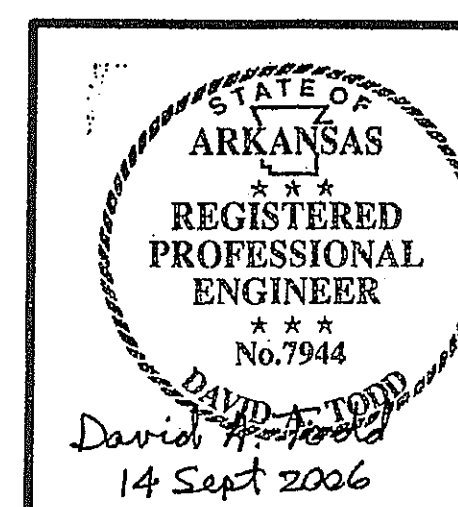
- A. ALL WASTEWATER LINES 4" AND SMALLER SHALL BE PVC (ASTM D2241 SDR-21) WITH 20' MIN. COVER. ALL WASTEWATER LINES LARGER THAN 4" SHALL BE PVC (ASTM D2241 SDR-21) WITH 48" MIN. COVER.
- B. ALL SANITARY SEWER LINES AT CREEK AND ROAD CROSSING SHALL BE PVC (ASTM D2241 DR-14) WITH 60" MIN. COVER.
- A. ALL WATER LINES SHALL BE PVC (AWWA C-900) WITH 48" MIN. COVER.
- C. CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO EXISTING UTILITY SERVICES WITH ADJACENT PROPERTY OWNERS.
- D. CONSTRUCTION SHALL NOT START ON ANY PUBLIC UTILITY SYSTEM UNTIL WRITTEN APPROVAL HAS BEEN RECEIVED BY THE ENGINEER FROM THE APPROPRIATE GOVERNING AUTHORITY AND CONTRACTOR HAS BEEN NOTIFIED BY THE ENGINEER.
- E. PRIOR TO THE CONSTRUCTION OF OR CONNECTION TO ANY STORM DRAIN, SANITARY SEWER, WATER MAIN OR ANY OF THE DRY UTILITIES, THE CONTRACTOR SHALL EXCAVATE, VERIFY AND CALCULATE ALL POINTS OF CONNECTION AND ALL UTILITY CROSSINGS AND INFORM CD ENGINEERING AND THE OWNER/DEVELOPER OF ANY CONFLICT OR REQUIRED DEVIATIONS FROM THE PLAN. NOTIFICATION SHALL BE MADE A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION. CD ENGINEERING AND ITS CLIENTS SHALL BE HELD HARMLESS IN THE EVENT THAT THE CONTRACTOR FAILS TO MAKE SUCH NOTIFICATION.
- F. UNLESS OTHERWISE SHOWN, CALLED OUT OR SPECIFIED HEREON OR WITHIN SPECIFICATIONS:
 - ALL SANITARY SEWER PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.
 - ALL SANITARY FORCE MAIN FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 - ALL WATER LINE FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 - ALL WATER LINE PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.

UTILITY NOTES

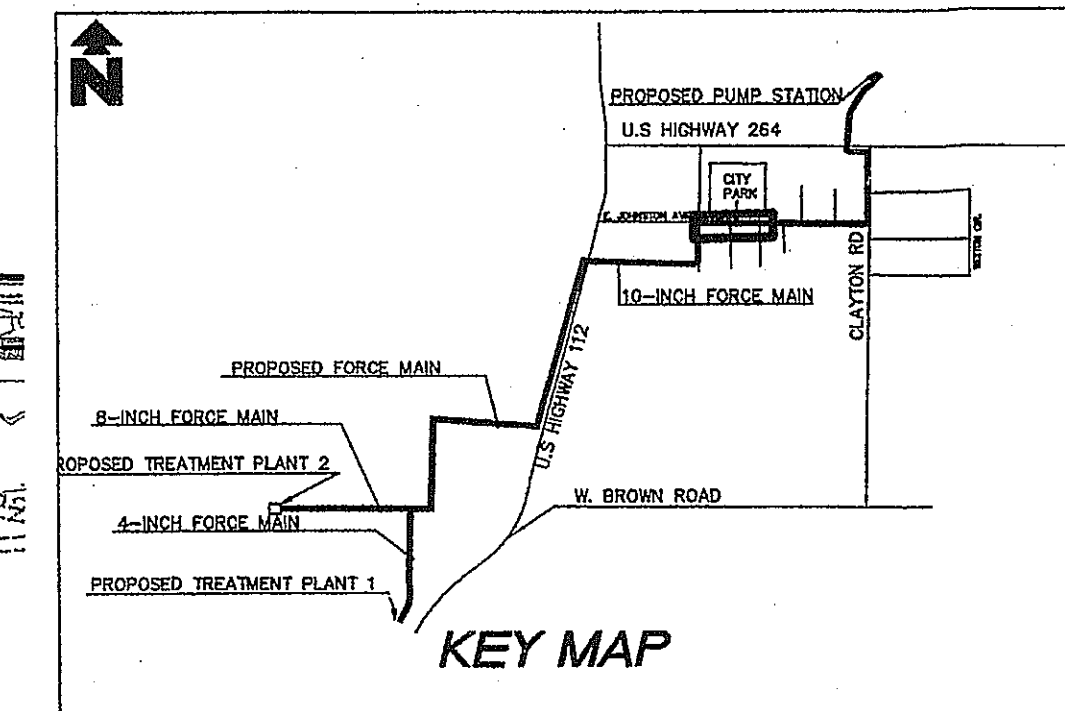
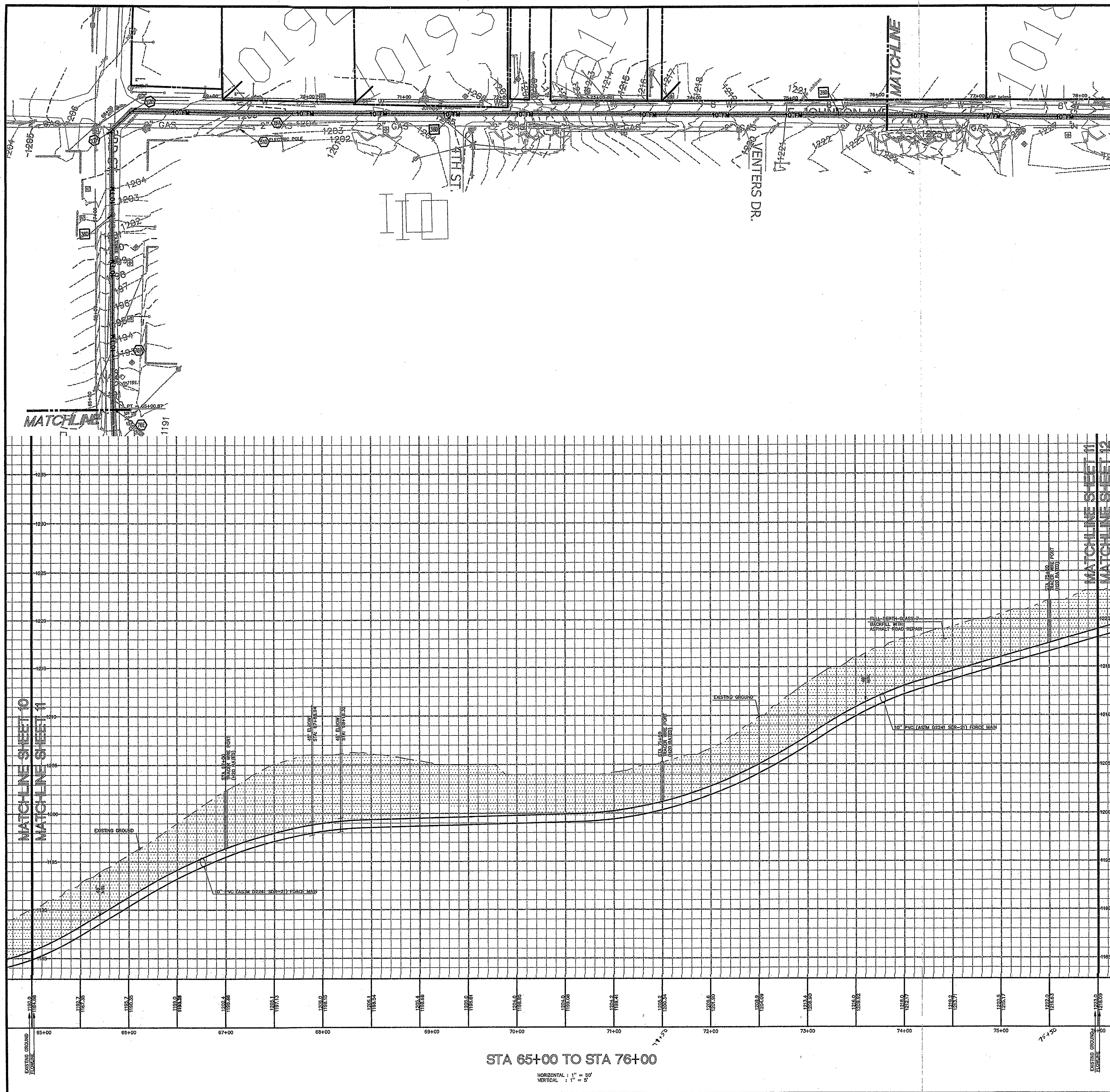
- 19A EXISTING TO REMAIN
- 22C M.J. ECCENTRIC PLUG VALVE WITH ADJUSTABLE VALVE BOX (SEE SIZES THIS SHEET)
- 22D M.J. TEE WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- 22E M.J. ECCENTRIC REDUCER, FLAT SIDE ON TOP (SEE SIZES THIS SHEET)
- 22F M.J. CAP/PLUG WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- 22H 45° M.J. BEND WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
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- 76C FLOW CONTROL VALVE
- 76S SOLENOID VALVE

UTILITY DETAILS

- 29A ASPHALT DRIVE CUT/REPAIR
- 29C GRAVEL DRIVE CUT/REPAIR
- 30D JACK & BORE
- 35A AIR/VACUUM RELIEF VALVE (SANITARY SEWER)
- 76S SANITARY SEWER FORCE MAIN CLEAN-OUT WITH CHECK VALVE
- 76S LIFT STATION
- 76C CONCRETE CHANNEL WITH DISSIPATORS
- 38D TRACER WIRE INSTALLATION



INITIAL DESIGN	4-26-05	DAT	FF	FF	FF
DATE	EOR	PM	DES	DRW	
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
CAVE SPRINGS ARKANSAS					
CEI ENGINEERING ASSOCIATES, INC. ENGINEERS PLANNERS SURVEYORS					
3317 S.W. I Street (478) 273-9472 JOB NO.: 20733.0 Bentonville, AR 72712 FAX (478) 273-0844 DWG NAME: 20733PROJ.05					
CAVE SPRINGS INTERCEPTOR #1					
PLAN AND PROFILE #6					
DATE 09-13-06 SHEET NO. 10 OF 43 1:38 PM REV.6					



0 50' 75' 100'
SCALE IN FEET

LEGEND

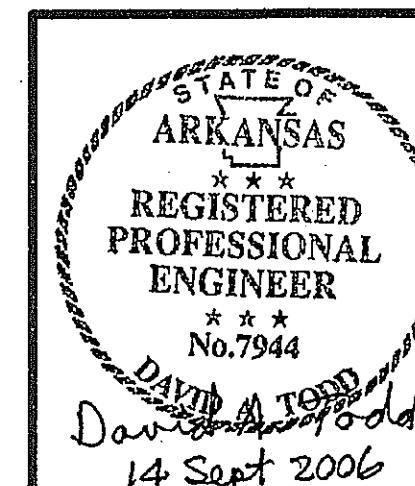
EXISTING	
---	BOUNDARY LINE
---	RIGHT OF WAY LINE
---	STORM DRAIN
---	GAS
---	OHE
---	OHE&T
---	OHT
---	OHTV
---	SEWER
---	UGE
---	UGE&T
---	UGT
---	UGTV
---	WATER
---	TREE INFO
---	2" = DIAMETER OF TRUNK IN FEET
---	10" = HEIGHT OF TREE IN FEET
---	11" = CANOPY DIAMETER IN FEET
---	50.5 = ELEVATION AT BASE OF TREE
---	EDGE OF ROADWAY


PROPOSED	
---	PROPERTY LINE
---	RIGHT OF WAY LINE
---	EASEMENT
---	SANITARY SEWER SERVICE
---	WATER SERVICE

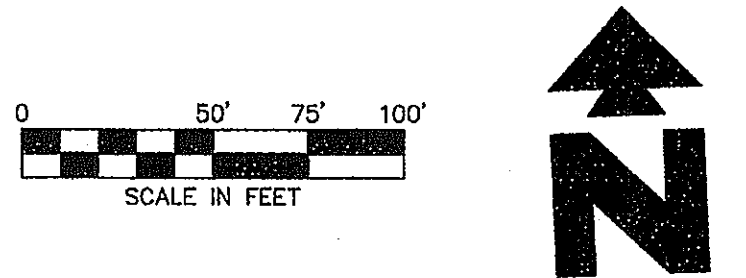
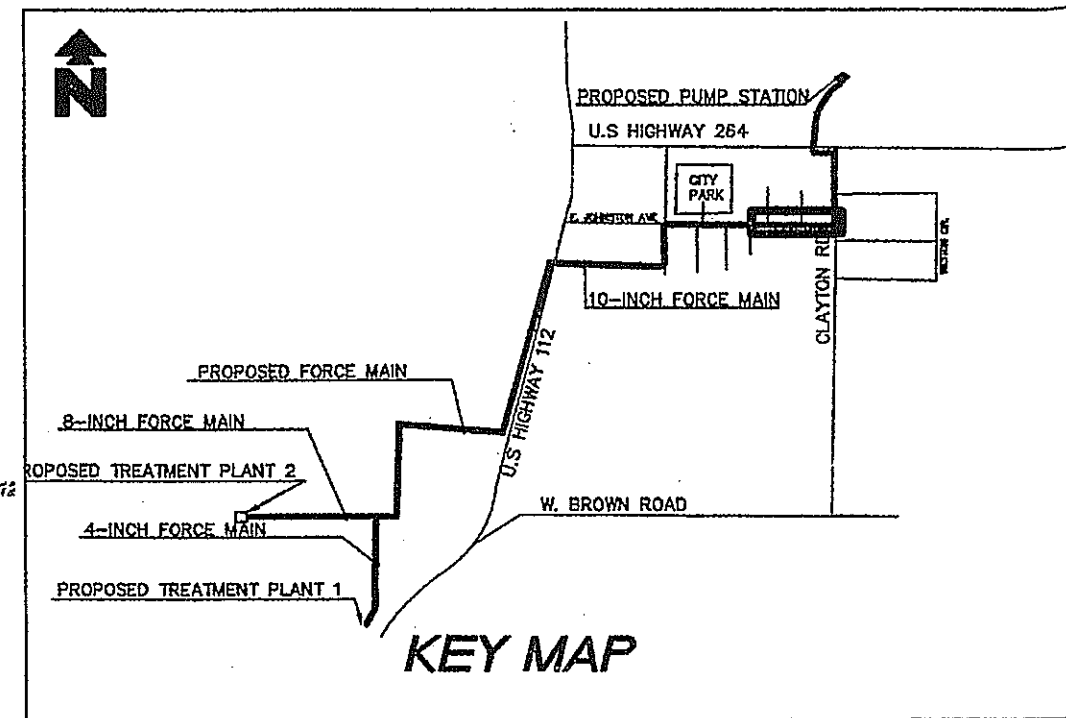
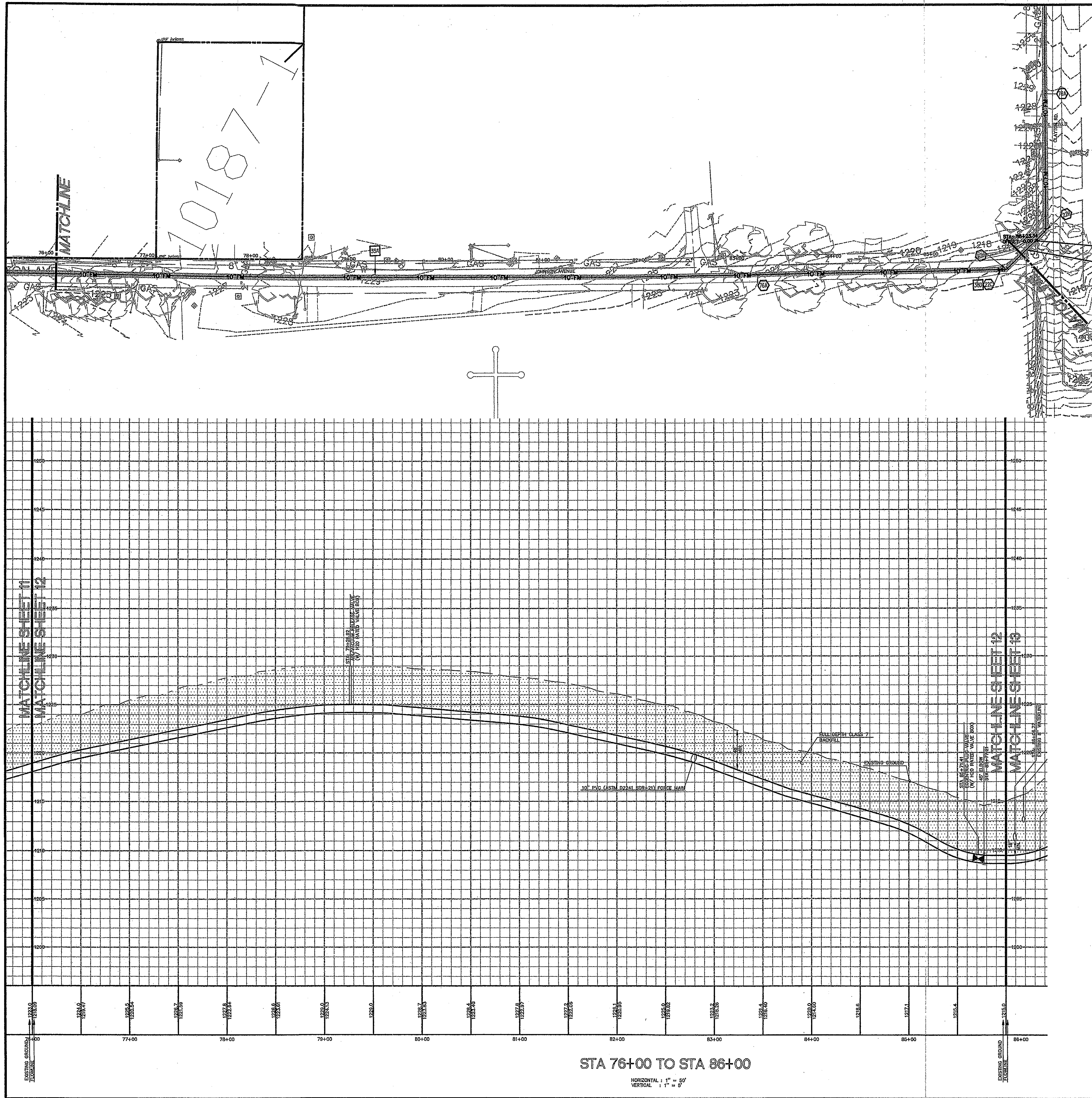
- GENERAL UTILITY NOTES**
- ALL WASTEWATER LINES 4" AND SMALLER SHALL BE PVC (ASTM D2241 SDR-21) WITH 36" MIN. COVER. ALL WASTEWATER LINES LARGER THAN 4" SHALL BE PVC (ASTM D2241 SDR-21) WITH 48" MIN. COVER.
 - ALL SANITARY SEWER LINES AT CHECK AND ROAD CROSSING SHALL BE PVC (ASTM D2241 SDR-21) WITH 60" MIN. COVER.
 - ALL WATER LINES SHALL BE PVC (AWWA C-900) WITH 48" MIN. COVER.
 - CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO EXISTING UTILITY SERVICES WITH ADJACENT PROPERTY OWNERS.
 - CONSTRUCTION SHALL NOT START ON ANY PUBLIC UTILITY SYSTEM UNTIL WRITTEN APPROVAL HAS BEEN RECEIVED BY THE ENGINEER FROM THE APPROPRIATE COVERING AUTHORITY AND CONTRACTOR HAS BEEN NOTIFIED BY THE ENGINEER.
 - PRIOR TO THE CONSTRUCTION OF OR CONNECTION TO ANY STORM DRAIN, SANITARY SEWER, WATER MAIN OR ANY OF THE DRY UTILITIES, THE CONTRACTOR SHALL EXAMINE, VERIFY AND CALCULATE ALL POINTS OF CONNECTION AND ALL UTILITY CROSSINGS AND INFORM THE ENGINEER AND THE OWNER/DEVELOPER OF ANY CONFLICT OR REQUIRED DEVIATIONS FROM THE PLAN. NOTIFICATION SHALL BE MADE A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION. THE ENGINEER AND ITS CLIENTS SHALL BE HELD HARMLESS IN THE EVENT THAT THE CONTRACTOR FAILS TO MAKE SUCH NOTIFICATION.
 - UNLESS OTHERWISE SHOWN, CALLED OUT OR SPECIFIED HEREON OR WITHIN SPECIFICATIONS:
 - ALL SANITARY SEWER PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.
 - ALL SANITARY FORCE MAIN FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 - ALL WATER LINE FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 - ALL WATER LINE PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.

- UTILITY NOTES**
- EXISTING TO REMAIN
 - M.E. ECCENTRIC PLUG VALVE WITH ADJUSTABLE VALVE BOX (SEE SIZES THIS SHEET)
 - M.E. TEE WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
 - M.E. ECCENTRIC REDUCER, FLAT SIDE ON TOP (SEE SIZES THIS SHEET)
 - M.E. CAP/PLUG WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
 - 45° M.E. BEND WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
 - PROTECT EXISTING STRUCTURES AND/OR PIPES DURING DEMOLITION AND CONSTRUCTION PHASES.
 - ASPHALT PAVEMENT STRIP WITH FULL DEPTH CLASS 7 BACKFILL
 - CONNECT TO TREATMENT PLANT TANK (REFER TO CONSTRUCTION DRAWINGS PREPARED BY ESI, INC.)
 - FLOW CONTROL VALVE
 - SOLENOID VALVE

- UTILITY DETAILS**
- ASPHALT DRIVE CUT/REPAIR
 - GRAVEL DRIVE CUT/REPAIR
 - JACK & BORE
 - AIR/WATERSHED RELIEF VALVE (SANITARY SEWER)
 - SANITARY SEWER FORCE MAIN CLEAN-OUT WITH CHECK VALVE
 - LIFT STATION
 - CONCRETE CHANNEL WITH DISSIPATORS
 - TRACER WIRE INSTALLATION



INITIAL DESIGN	4-26-05	DAT	FF	FF	FF
	DATE	EOR	PM	DES	DRW
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
CAVE SPRINGS			ARKANSAS		
 ENGINEERING ASSOCIATES, INC.					
ENGINEERS		PLANNERS		SURVEYORS	
3317 S.W. 1 Street Bentonville, AR 72712		(479) 273-9472 FAX (479) 273-0844		JOB NO.: 20733.0 DWG NAME: 20733PROJ.R5	
CAVE SPRINGS INTERCEPTOR #1				DATE 09-13-06 1:38 PM REV 6	SHEET NO. 11 OF 43
PLAN AND PROFILE #7					



LEGEND	
EXISTING	
BOUNDARY LINE	---
RIGHT OF WAY LINE	---
STORM DRAIN	---
GAS	---
OHE	---
OHE&T	---
OHT	---
OHTV	---
X'S	---
UGE	---
UGE&T	---
UGT	---
UGTV	---
X"W	---
WATER	---
5-10-11 50.5	---
TREE INFO	---
25 = DIAMETER OF TRUNK IN FEET	---
10 = HEIGHT OF TREE IN FEET	---
11 = CANOPY DIAMETER IN FEET	---
50.5 = ELEVATION AT BASE OF TREE	---
EDGE OF ROADWAY	---
PROPOSED	
PROPERTY LINE	---
RIGHT OF WAY LINE	---
EASEMENT	---
X'S	---
SANITARY SEWER SERVICE	---
X"W	---
WATER SERVICE	---

GENERAL UTILITY NOTES

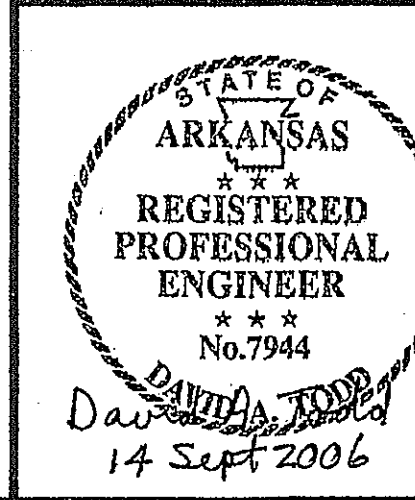
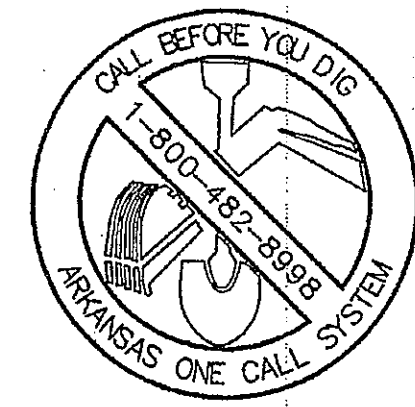
- ALL WASTEWATER LINES 4" AND SMALLER SHALL BE PVC (ASTM D2241 SDR-21) WITH 36" MIN. COVER. ALL WASTEWATER LINES LARGER THAN 4" SHALL BE PVC (ASTM D2241 SDR-21) WITH 48" MIN. COVER.
- ALL SANITARY SEWER LINES AT CREEK AND ROAD CROSSING SHALL BE PVC (ASTM D2241 DR-14) WITH 60" MIN. COVER.
- ALL WATER LINES SHALL BE PVC (AWWA C-900) WITH 48" MIN. COVER.
- CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO EXISTING UTILITY SERVICES WITH ADJACENT PROPERTY OWNERS.
- CONSTRUCTION SHALL NOT START ON ANY PUBLIC UTILITY SYSTEM UNTIL WRITTEN APPROVAL HAS BEEN RECEIVED BY THE ENGINEER FROM THE APPROPRIATE GOVERNING AUTHORITY AND CONTRACTOR HAS BEEN NOTIFIED BY THE ENGINEER.
- PRIOR TO THE CONSTRUCTION OF OR CONNECTION TO ANY STORM DRAIN, SANITARY SEWER, WATER MAIN OR ANY OF THE USE UTILITIES, THE CONTRACTOR SHALL EXCAVATE, VERIFY AND CALCULATE ALL POINTS OF CONNECTION AND ALL UTILITY CROSSINGS AND INFORM CE ENGINEERING AND THE OWNER/DEVELOPER OF ANY CONFLICT OR REQUIRED DEVIATIONS FROM THE PLAN. NOTIFICATION SHALL BE MADE A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION. CE ENGINEERING AND ITS CLIENTS SHALL BE HELD HARMLESS IN THE EVENT THAT THE CONTRACTOR FAILS TO MAKE SUCH NOTIFICATION.
- UNLESS OTHERWISE SHOWN, CALLED OUT OR SPECIFIED HEREON OR WITHIN SPECIFICATIONS:
 - ALL SANITARY SEWER PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.
 - ALL SANITARY FORCE MAIN FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 - ALL WATER LINE FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 - ALL WATER LINE PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.


UTILITY NOTES

- | | |
|-----|--|
| 19A | EXISTING TO REMAIN |
| 22C | M.J. ECCENTRIC PLUS VALVE WITH ADJUSTABLE VALVE BOX (SEE SIZES THIS SHEET) |
| 22D | M.J. TEE WITH THRUST BLOCKING (SEE SIZES THIS SHEET) |
| 22E | M.J. ECCENTRIC REDUCER, FLAT SIDE ON TOP (SEE SIZES THIS SHEET) |
| 22F | M.J. END PLUS WITH THRUST BLOCKING (SEE SIZES THIS SHEET) |
| 22H | 45° M.J. BEND WITH THRUST BLOCKING (SEE SIZES THIS SHEET) |
| 510 | PROTECT EXISTING STRUCTURES AND/OR PIPES DURING DEMOLITION AND CONSTRUCTION PHASES |
| 76A | ASPHALT PAVEMENT STRIP WITH FULL DEPTH CLASS 7 BACKFILL |
| 76B | CONNECT TO TREATMENT PLANT TANK (REFER TO CONSTRUCTION DRAWINGS PREPARED BY ESI, INC.) |
| 76C | FLOW CONTROL VALVE |
| 76G | SOLENOID VALVE |

UTILITY DETAILS

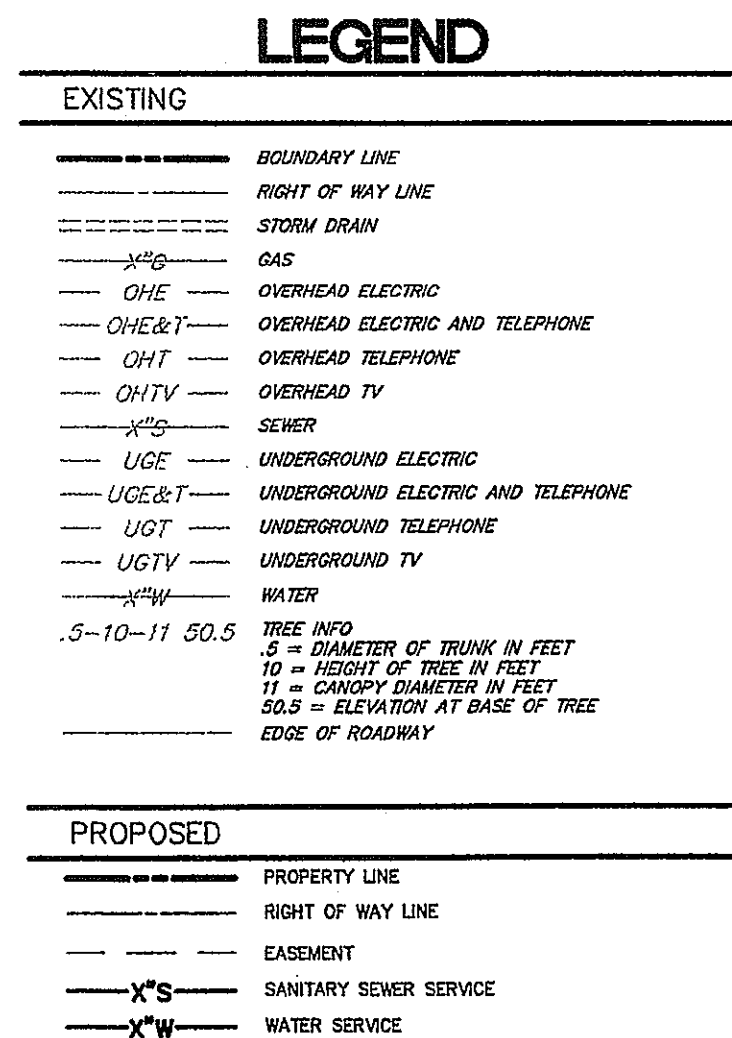
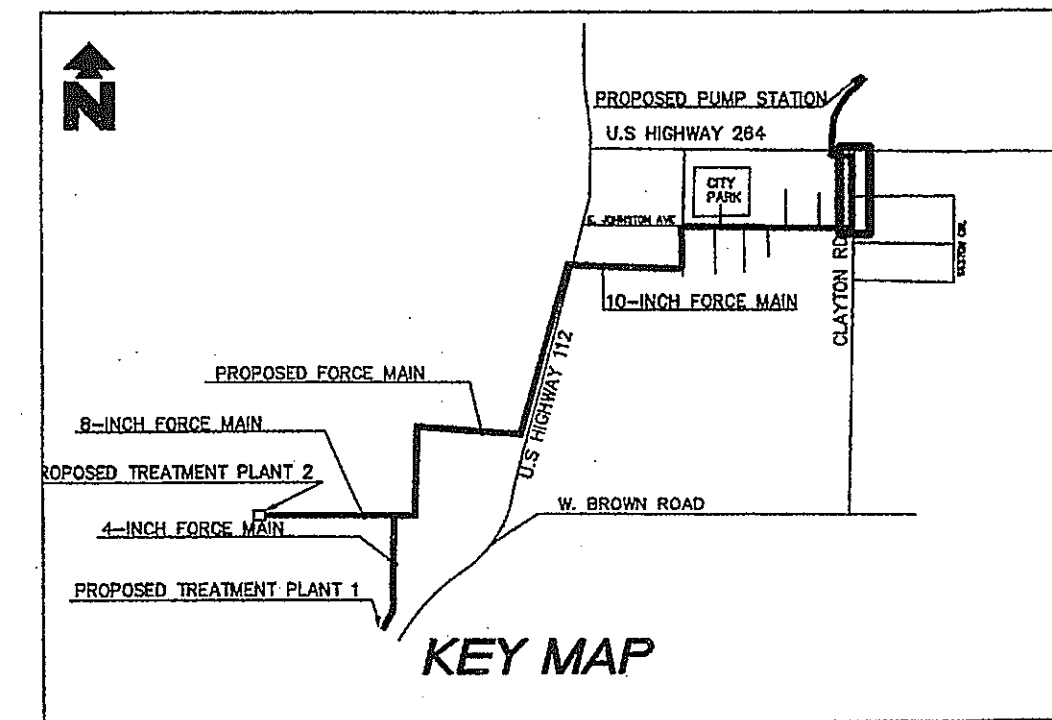
- | | |
|-----|--|
| 29A | ASPHALT DRIVE CUT/REPAIR |
| 29C | GRAVEL DRIVE CUT/REPAIR |
| 30B | JACK & BORE |
| 35A | AIR/VACUUM RELIEF VALVE (SANITARY SEWER) |
| 76A | SANITARY SEWER FORCE MAIN CLEAN-OUT WITH CHECK VALVE |
| 76B | LIFT STATION |
| 76C | CONCRETE CHANNEL WITH DISSIPATORS |
| 38D | TRACER WIRE INSTALLATION |



INITIAL DESIGN	4-26-05	DAT	FF	FF	FF
DATE	FOR	PM	DES	DRW	
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
CAVE SPRINGS			ARKANSAS		
 ENGINEERING ASSOCIATES, INC.					
ENGINEERS		PLANNERS		SURVEYORS	
3317 S.W. 1 Street		(479) 273-9472		JOB NO.: 207333.0	
Bentonville, AR 72712		FAX (479) 273-0844		DWG NAME: 207333PROJ.05	
CAVE SPRINGS INTERCEPTOR #1					
			DATE	SHEET NO.	
			09-13-06	12 OF 43	
PLAN AND PROFILE #8			1:38 PM		
			REV6		

STA 76+00 TO STA 86+00

HORIZONTAL : 1" = 50'
VERTICAL : 1" = 5'



GENERAL UTILITY NOTES

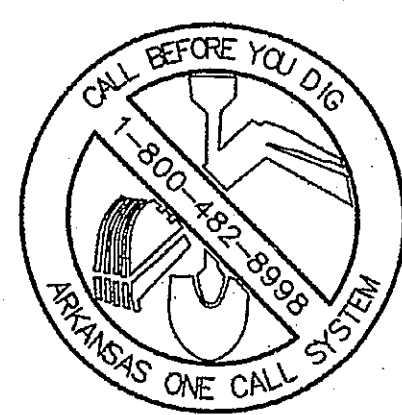
- A. ALL WASTEWATER LINES 4" AND SMALLER SHALL BE PVC (ASTM D2241) SD WITH 20' MIN. COVER. ALL WASTEWATER LINES LARGER THAN 4" SHALL SD WITH 24" MIN. COVER.
- B. ALL SANITARY SEWER LINES AT GREEK AND ROAD CROSSING SHALL BE PVC (ASTM D2241 DR-14) WITH 30" MIN. COVER.
- C. ALL WATER LINES SHALL BE PVC (AWWA C-900) WITH 48" MIN. COVER.
- D. CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO DISTURB UTILITY SERVICES WITH APPROPRIATE PROPERTY OWNERS.
- E. CONSTRUCTION SHALL NOT START ON ANY PUBLIC UTILITY SYSTEM WITHOUT THE APPROVAL OF THE CITY ENGINEER AND THE ENGINEER FROM THE APPROPRIATE GOVERNING AUTHORITY AND CONTRACTOR HAS BEEN NOTIFIED THE ENGINEER HAS BEEN NOTIFIED.
- F. PRIOR TO THE CONSTRUCTION OR CONNECTION TO ANY STORM DRAIN, SANITARY SEWER, WATER MAIN OR ANY OF THE DRY UTILITIES, THE CONTRACTOR SHALL LOCATE, VERIFY AND CALCULATE ALL POINTS OF EXISTING AND ALL UTILITY CROSSINGS AND INFORM CITY ENGINEERING AND THE OWNER/DEVELOPER OF ANY CONFLICT OR REQUIRED DEVIATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CITY ENGINEERING AND ITS CLIENTS SHALL BE NOTIFIED IN WRITING IN THE EVENT THAT THE CONTRACTOR FAILS TO MAKE SUCH NOTIFICATION.
- G. UNLESS OTHERWISE SHOWN, CALLED OUT OR SPECIFIED HEREIN OR WITHIN SPECIFICATIONS:
 1. ALL SANITARY SEWER PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.
 2. ALL SANITARY FORCE MAIN FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 3. ALL WATER LINE FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 4. ALL WATER LINE PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.

UTILITY NOTES

- | | |
|-----|---|
| 19A | EXISTING TO REMAIN |
| 22C | M.J. ECCENTRIC PLUG VALVE WITH ADJUSTABLE VALVE
(SEE SIZES THIS SHEET) |
| 22D | M.J. TEE WITH THRUST BLOCKING (SEE SIZES THIS
SHEET) |
| 22E | M.J. ECCENTRIC REDUCER, FLAT SIDE ON TOP (SEE SIZES
THIS SHEET) |
| 22F | M.J. CAP/PLUG WITH THRUST BLOCKING (SEE SIZES
THIS SHEET) |
| 22H | 45° W. END WITH THRUST BLOCKING (SEE SIZES
THIS SHEET) |
| 51D | PROTECT EXISTING STRUCTURES AND/OR PIPES DURING
DEMOLITION AND CONSTRUCTION PHASES |
| 76A | ASPHALT PAYMENT STRIP WITH FULL DEPTH CLASS 7
BACFILL. |
| 76B | CONNECT TO TREATMENT PLANT PIPING |
| 76C | CONFORM TO CONSTRUCTION DRAWINGS PREPARED BY ES,
FLOW CONTROL |
| 76G | SOLENOID VALVE |

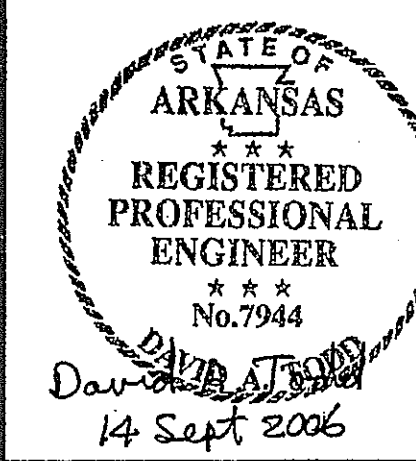
UTILITY DETAILS

- 29A ASPHALT DRIVE CUT/REPAIR
29C GRAVEL DRIVE CUT/REPAIR
30B JACK & BORE
35A AIR/VACUUM RELIEF VALVE (SANITARY SEWER)
76A SANITARY SEWER FORCE MAIN CLEAN-OUT WITH CHECK VALVE
76B LIFT STATION
76C CONCRETE CHANNEL WITH DISSIPATORS



STA 86+00 TO STA 95+00

HORIZONTAL : 1" = 50'
VERTICAL : 1" = 5'



INITIAL DESIGN	4-26-05	DAT	FF	FF	FF
	DATE	EOR	PM	DES	DRW

CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - Phase I

CAVE SPRINGS ARKANSAS

CEI[®] ENGINEERING ASSOCIATES, INC

ENGINEERS PLANNERS SURVEYORS

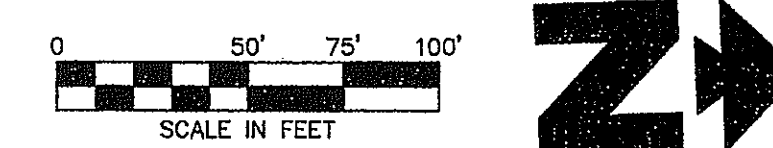
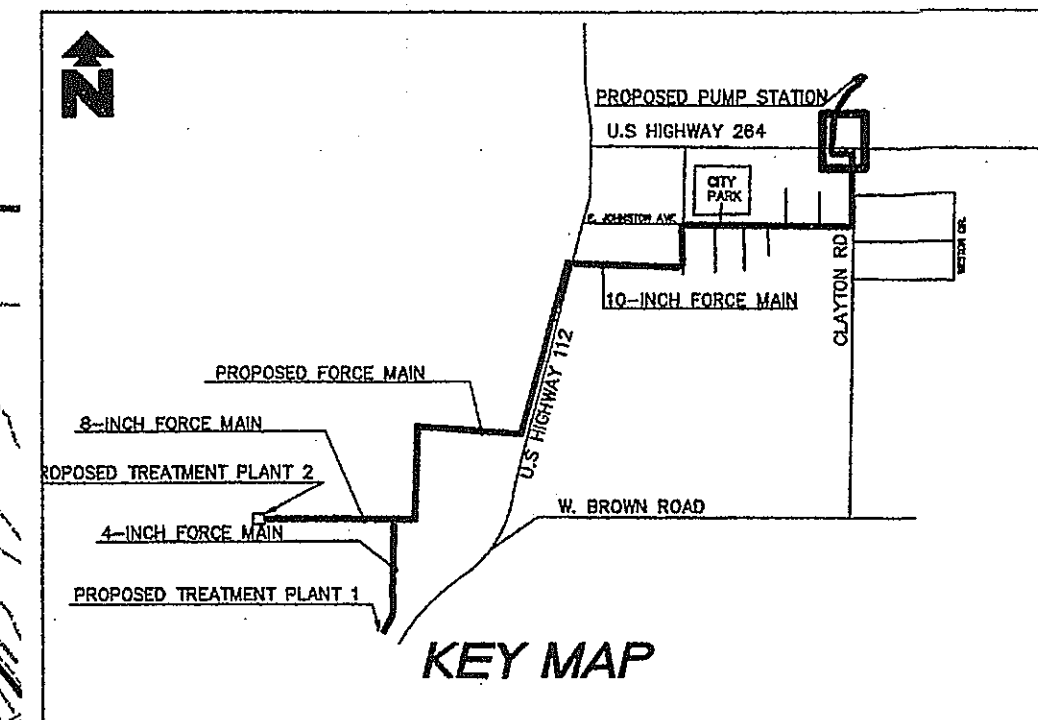
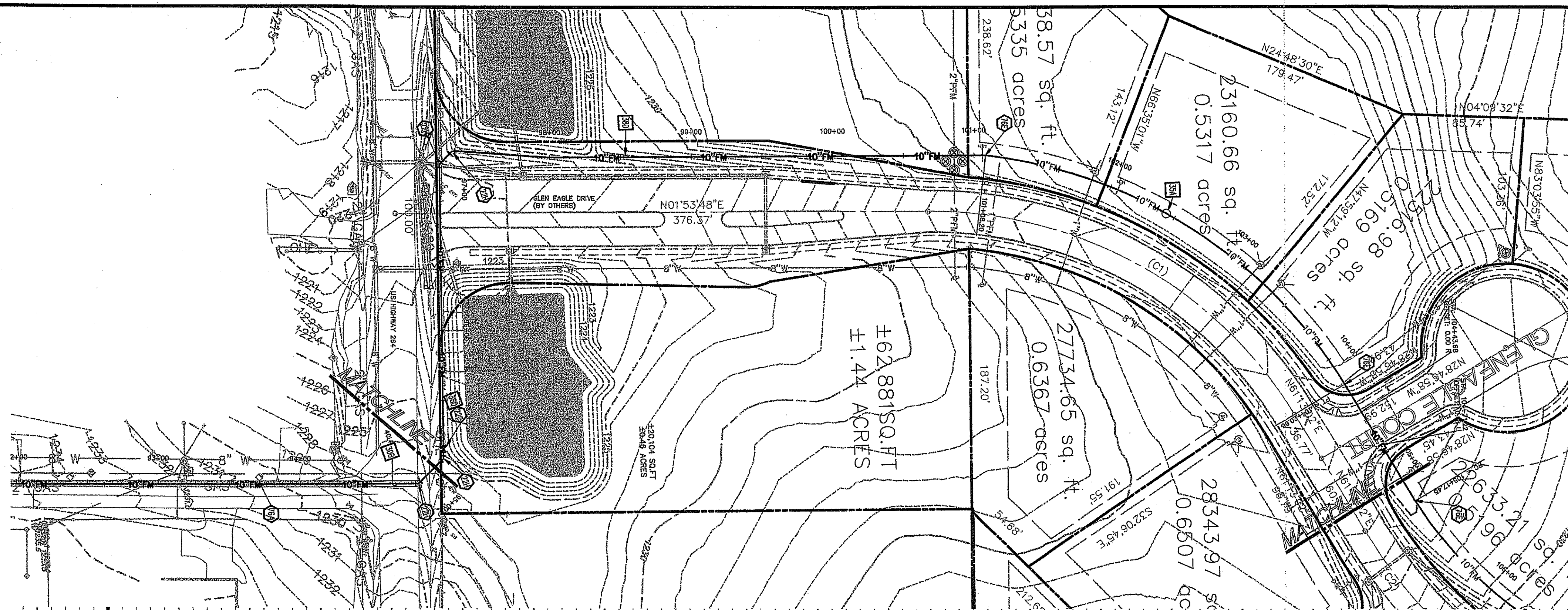
3317 S.W. I Street (479) 273-9472 JOB NO: 20733.0
 Bentonville, AR 72712 FAX (479) 273-0844 DWG NAME: 20733PRO.

CAVE SPRINGS INTERCEPTOR #1

DATE SHEET NO.
 09-13-06
 1:38 PM
 REV.6 13 of 43

PLAN AND PROFILE #9

© 2005 CEI ENGINEERING ASSOCIATES, INC.



LEGEND

EXISTING

- BOUNDARY LINE
- RIGHT OF WAY LINE
- STORM DRAIN
- GAS
- OHE OVERHEAD ELECTRIC
- OHE&T OVERHEAD ELECTRIC AND TELEPHONE
- OHT OVERHEAD TELEPHONE
- OHTV OVERHEAD TV
- SEWER
- UGE UNDERGROUND ELECTRIC
- UGE&T UNDERGROUND ELECTRIC AND TELEPHONE
- UGT UNDERGROUND TELEPHONE
- UGTV UNDERGROUND TV
- WATER
- TREE INFO
5 = DIAMETER OF TRUNK IN FEET
10 = HEIGHT OF TREE IN FEET
17 = CROWN DIAMETER IN FEET
50.5 = ELEVATION AT BASE OF TREE
EDGE OF ROADWAY

PROPOSED

- PROPERTY LINE
- RIGHT OF WAY LINE
- EASEMENT
- X'S SANITARY SEWER SERVICE
- X'W WATER SERVICE

GENERAL UTILITY NOTES

- ALL WASTEWATER LINES 4" AND SMALLER SHALL BE PVC (ASTM D2241 SDR-21) WITH 36" MIN. COVER. ALL WASTEWATER LINES LARGER THAN 4" SHALL BE PVC (ASTM D2241 SDR-11) WITH 48" MIN. COVER.
- ALL SANITARY SEWER LINES AT CREEK AND ROAD CROSSING SHALL BE PVC (ASTM D2241 SDR-11) WITH 60" MIN. COVER.
- ALL WATER LINES SHALL BE PVC (AWWA C-900) WITH 48" MIN. COVER.
- CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO EXISTING UTILITY SERVICES WITH ADJACENT PROPERTY OWNERS.
- CONSTRUCTION SHALL NOT START ON ANY PUBLIC UTILITY SYSTEM UNTIL WRITTEN APPROVAL HAS BEEN RECEIVED BY THE ENGINEER FROM THE APPROPRIATE GOVERNING AUTHORITY AND CONTRACTOR HAS BEEN NOTIFIED BY THE ENGINEER.
- PRIOR TO THE CONSTRUCTION OF OR CONNECTION TO ANY STORM DRAIN, SANITARY SEWER, WATER MAIN OR ANY OF THE DRY UTILITIES, THE CONTRACTOR SHALL EXCAVATE, VERIFY AND CALCULATE ALL POINTS OF CONNECTION AND ALL UTILITY CROSSINGS AND INFORM C&E ENGINEERING AND THE OWNER/DEVELOPER OF ANY CONFLICT OR REQUIRED REVISIONS FROM THE PLAN. NOTIFICATION SHALL BE MADE A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION. C&E ENGINEERING AND ITS CLIENTS SHALL BE HELD HARMLESS IN THE EVENT THAT THE CONTRACTOR FAILS TO MAKE SUCH NOTIFICATION.
- UNLESS OTHERWISE SHOWN, CALLED OUT OR SPECIFIED HEREON OR WITHIN SPECIFICATIONS:
 - ALL SANITARY SEWER PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.
 - ALL SANITARY FORCE MAIN FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 - ALL WATER LINE FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 - ALL WATER LINE PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.

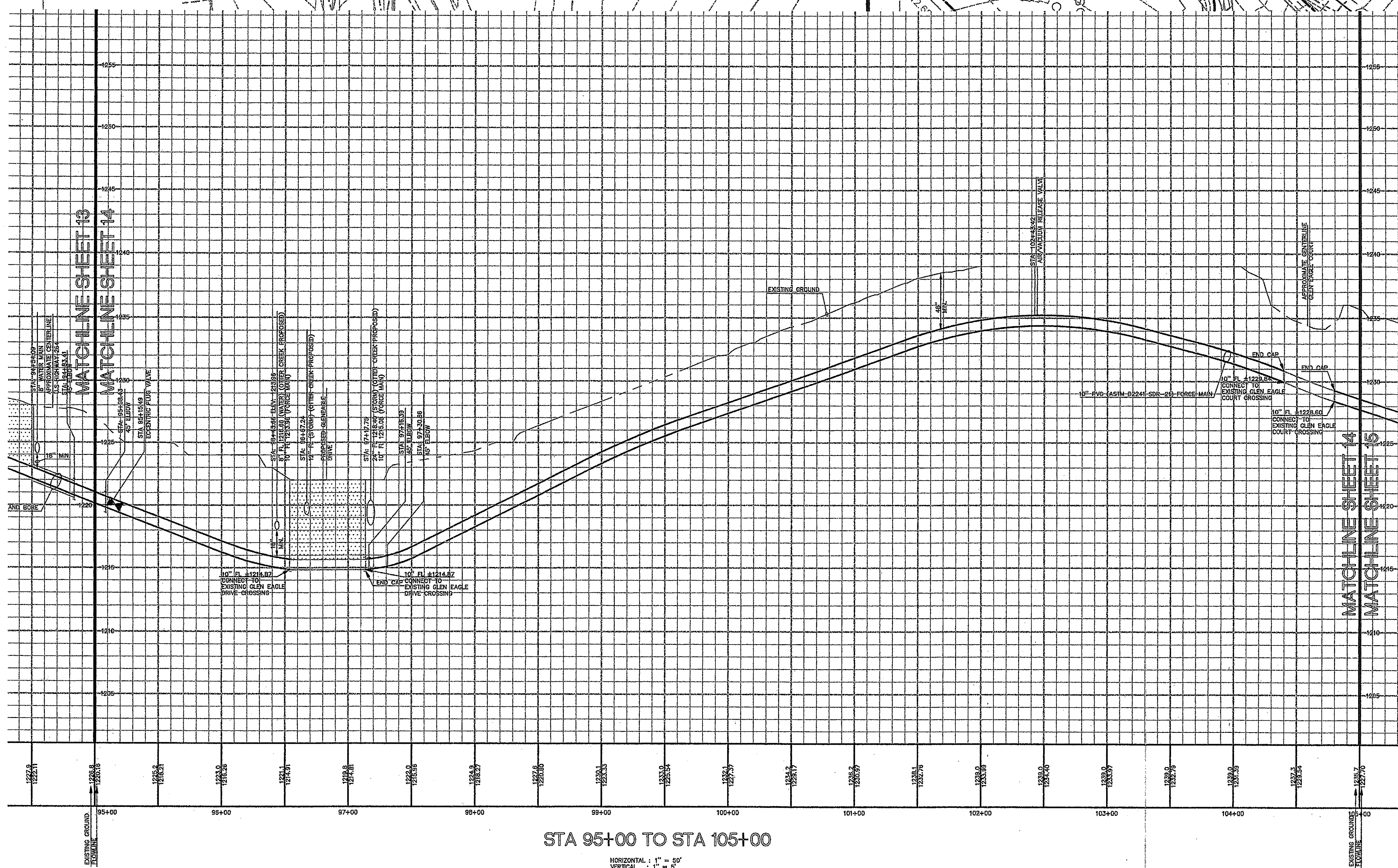
UTILITY NOTES

- 19A EXISTING TO REMAIN
- 22C M.J. ECCENTRIC PLUG VALVE WITH ADJUSTABLE VALVE BOX (SEE SIZES THIS SHEET)
- 22D M.J. TEE WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- 22E M.J. ECCENTRIC REDUCER, FLAT SIDE ON TOP (SEE SIZES THIS SHEET)
- 22F M.J. CAP/PLUG WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- 22H 45° M.J. BEND WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- 51D PROTECT EXISTING STRUCTURES AND/OR PIPES DURING DEMOLITION AND CONSTRUCTION PHASES.
- 76A ASPHALT PAVEMENT STRIP WITH FULL DEPTH CLASS 7 BACKFILL
- 76B CONNECT TO TREATMENT PLANT TANK (REFER TO CONSTRUCTION DRAWINGS PREPARED BY ESI, INC.)
- 76C FLOW CONTROL VALVE
- 76G SOLENOID VALVE

UTILITY DETAILS

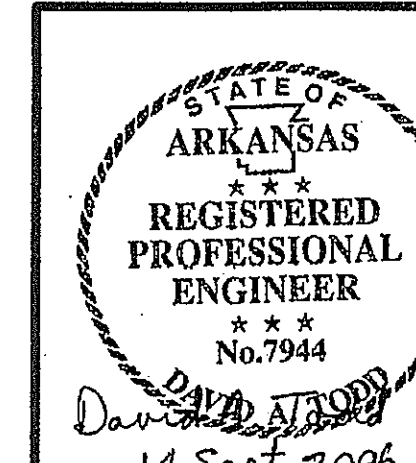
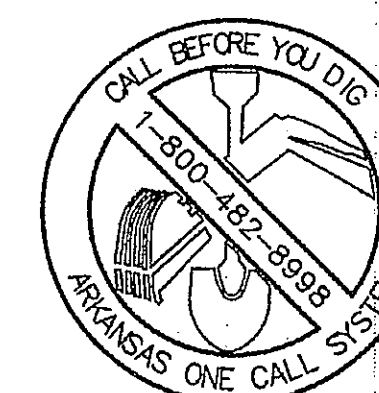
- 29A ASPHALT DRIVE CUT/REPAIR
- 29C GRAVEL DRIVE CUT/REPAIR
- 30B JACK & BORE
- 35A AIR/VACUUM RELIEF VALVE (SANITARY SEWER)
- 76A SANITARY SEWER FORCE MAIN CLEAN-OUT WITH CHECK VALVE
- 76B LIFT STATION
- 76C CONCRETE CHANNEL WITH DISSIPATORS
- 30B TRAPPED WOOD SHUTTER & BOX

NOTE:
CONTRACTOR SHALL COORDINATE WITH OTTER CREEK CONTRACTOR DURING CONSTRUCTION.

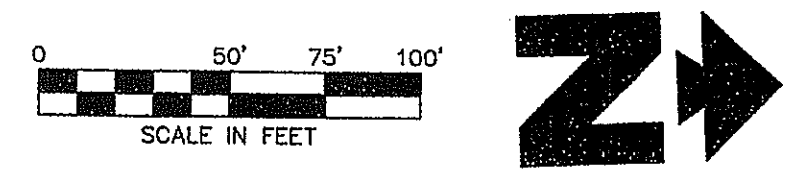
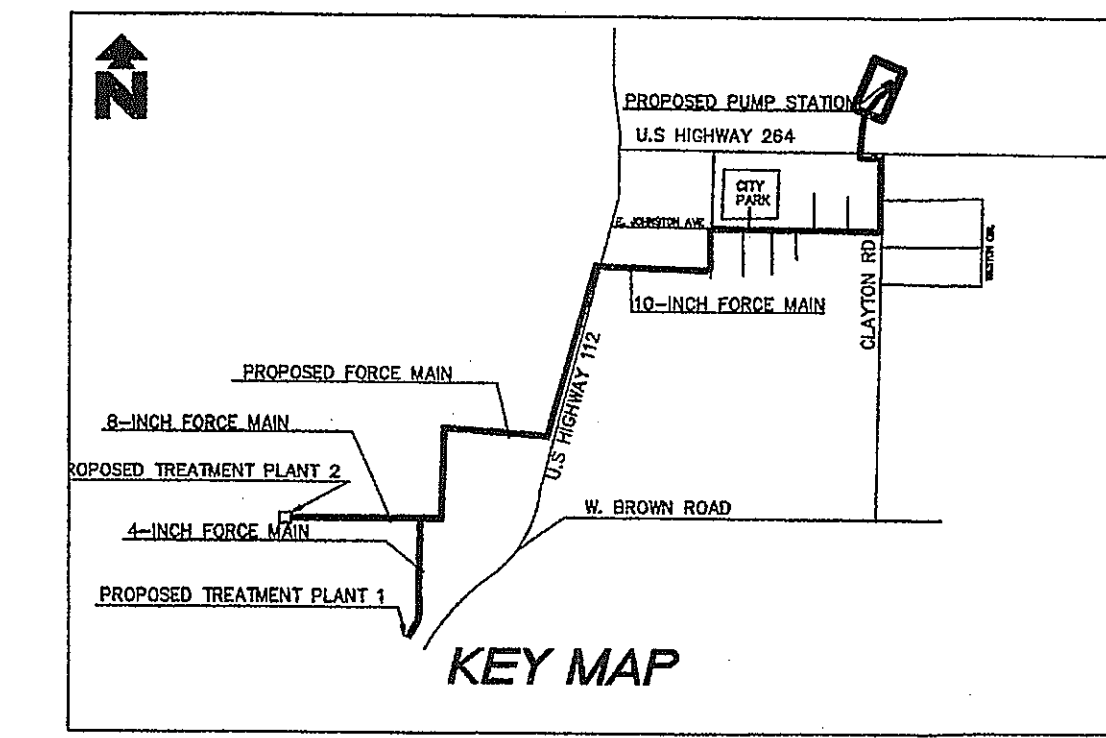
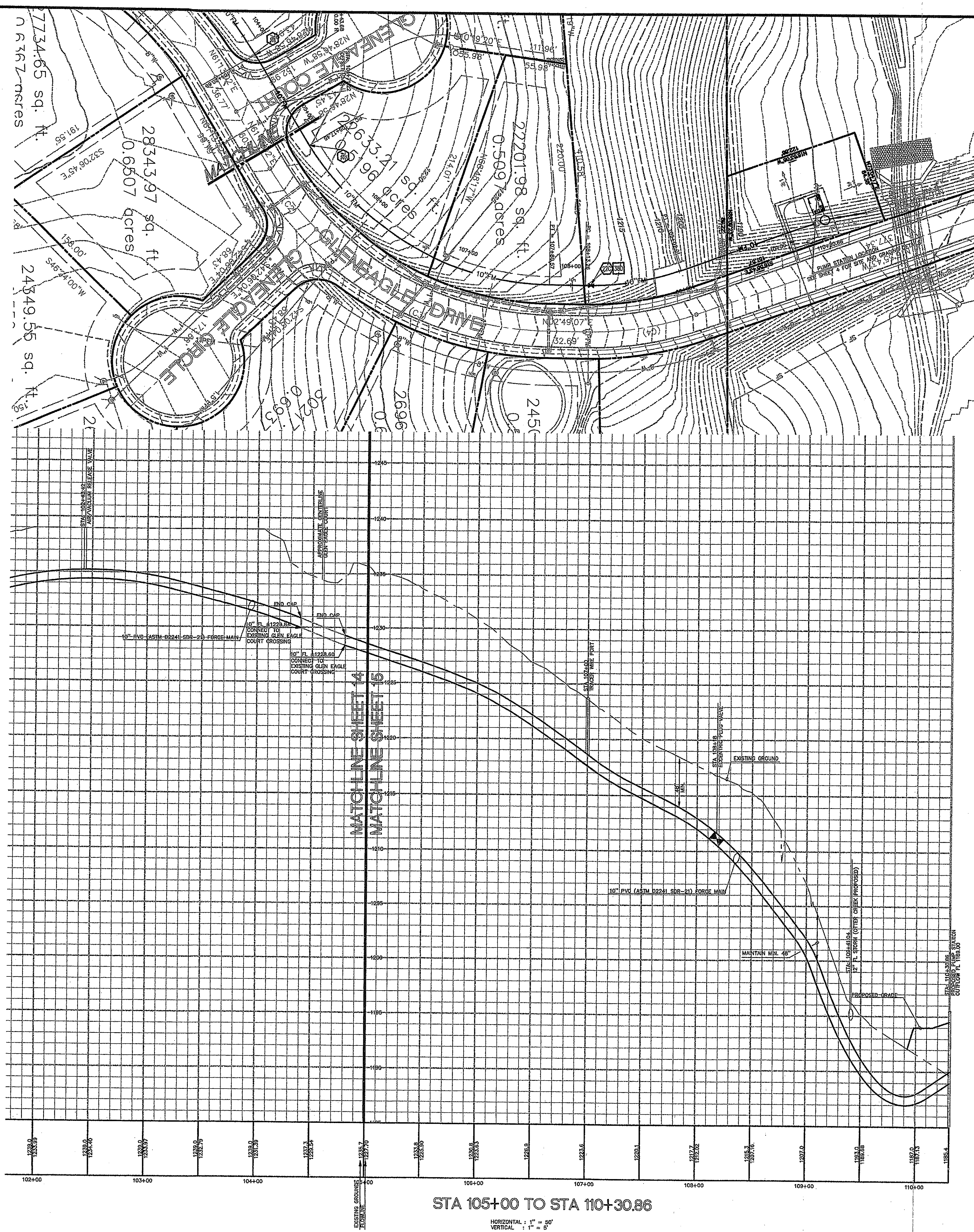


STA 95+00 TO STA 105+00

HORIZONTAL : 1" = 50'
VERTICAL : 1" = 5'



INITIAL DESIGN	4-26-05	DAT	FF	FF	FF
DATE	EOR	PM	DES	DRW	
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
CAVE SPRINGS			ARKANSAS		
CEI ENGINEERING ASSOCIATES, INC.			PLANNERS SURVEYORS		
3317 S.W. 1 Street Bentonville, AR 72712			(479) 273-9472 FAX (479) 273-0844		
JOB NO.: 20733.0 DWG NAME: 20733PRO.25			DATE 09-13-06 1:38 PM REV.6		
CAVE SPRINGS INTERCEPTOR #1			SHEET NO. 14 OF 43		
PLAN AND PROFILE #10					

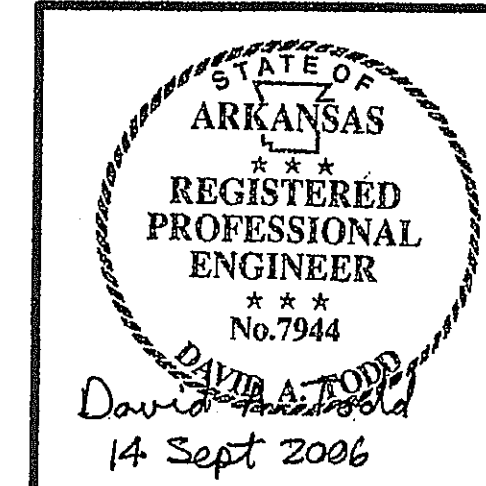
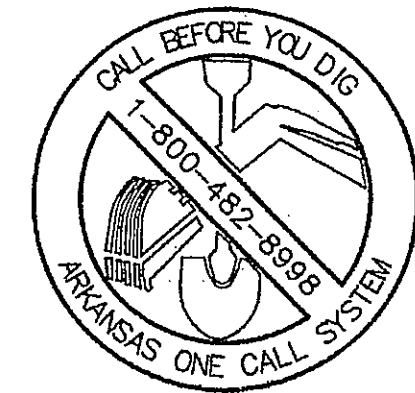


- ### LEGEND
- EXISTING**
- BOUNDARY LINE
 - RIGHT OF WAY LINE
 - STORM DRAIN
 - GAS
 - OHE
 - OHE&T
 - OHT
 - OHTV
 - SEWER
 - UGE
 - UGE&T
 - UGT
 - UGTV
 - WATER
- PROPOSED**
- PROPERTY LINE
 - RIGHT OF WAY LINE
 - EASEMENT
 - SANITARY SEWER SERVICE
 - SANITARY SEWER SERVICE
 - WATER SERVICE

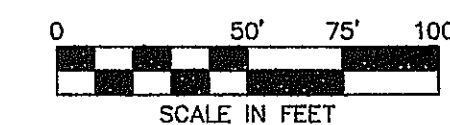
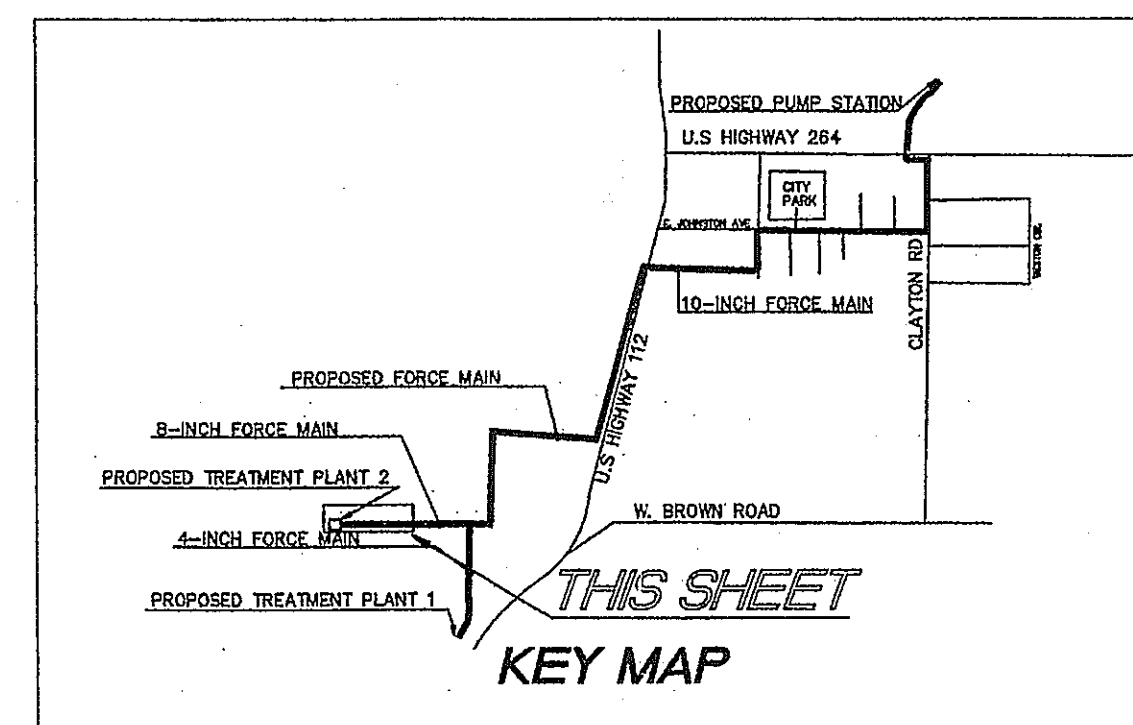
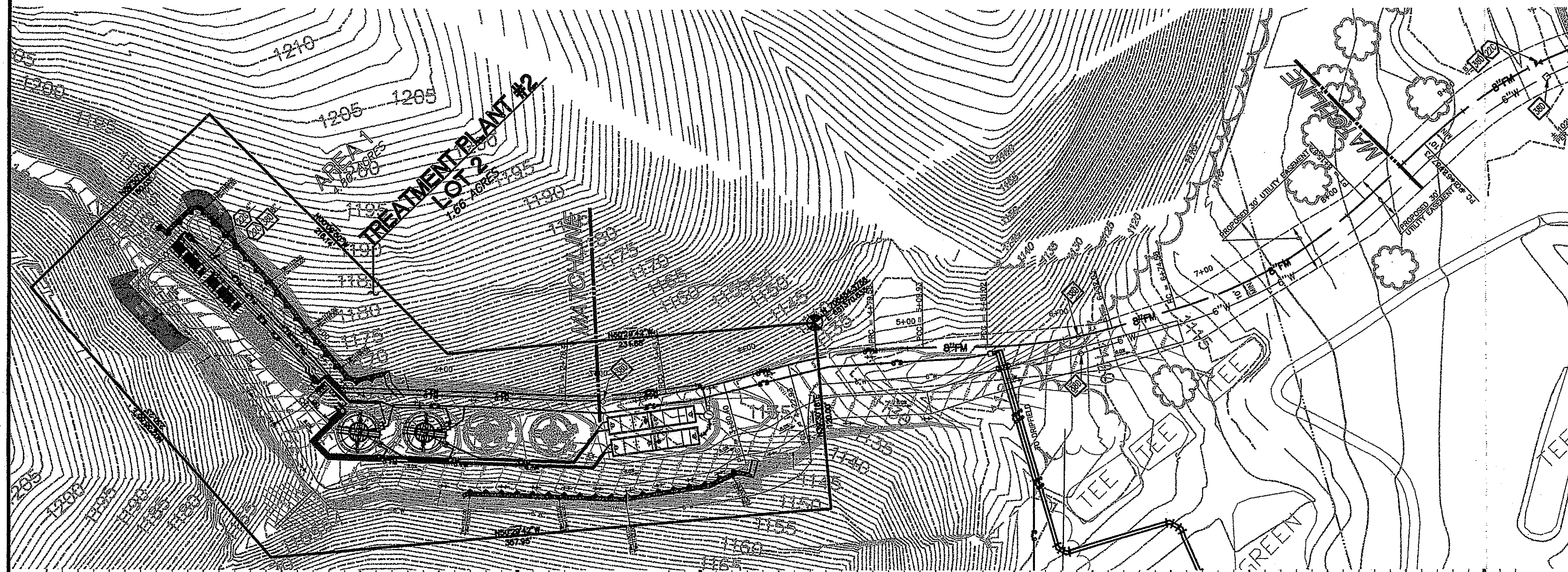
- ### GENERAL UTILITY NOTES
- A. ALL WASTEWATER LINES 4" AND SMALLER SHALL BE PVC (ASTM D2241 SDR-21) WITH 36" MIN. COVER. ALL WASTEWATER LINES LARGER THAN 4" SHALL BE PVC (ASTM D2241 SDR-21) WITH 48" MIN. COVER.
- B. ALL SANITARY SEWER LINES AT CREEK AND ROAD CROSSING SHALL BE PVC (ASTM D2241 SDR-21) WITH 60" MIN. COVER.
- A. ALL WATER LINES SHALL BE PVC (AWWA C-900) WITH 48" MIN. COVER.
- C. CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO EXISTING UTILITY SERVICES WITH ADJACENT PROPERTY OWNERS.
- D. CONSTRUCTION SHALL NOT START ON ANY PUBLIC UTILITY SYSTEM UNTIL WRITTEN APPROVAL HAS BEEN RECEIVED BY THE ENGINEER FROM THE APPROPRIATE GOVERNING AUTHORITY AND CONTRACTOR HAS BEEN NOTIFIED BY THE ENGINEER.
- E. PRIOR TO THE CONSTRUCTION OF OR CONNECTION TO ANY STORM DRAIN, SANITARY SEWER, WATER MAIN OR ANY OF THE DRY UTILITIES, THE CONTRACTOR SHALL EXCAVATE, VERIFY, AND CALCULATE ALL POINTS OF CONNECTION AND ALL UTILITY CROSSINGS AND INFORM C&E ENGINEERING AND THE OWNER/DEVELOPER OF ANY CONFLICT OR REQUIRED DEVIATIONS FROM THE PLAN. NOTIFICATION SHALL BE MADE A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION. C&E ENGINEERING AND ITS CLIENTS SHALL BE HELD HARMLESS IN THE EVENT THAT THE CONTRACTOR FAILS TO MAKE SUCH NOTIFICATION.
- F. UNLESS OTHERWISE SHOWN, CALLED OUT OR SPECIFIED HEREON OR WITHIN SPECIFICATIONS:
- ALL SANITARY SEWER PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.
 - ALL SANITARY FORCE MAIN FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 - ALL WATER LINE FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 - ALL WATER LINE PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.

- ### UTILITY NOTES
- 18A EXISTING TO REMAIN
- 22C M.J. ECCENTRIC PLUG VALVE WITH ADJUSTABLE VALVE BOX (SEE SIZES THIS SHEET)
- 22D M.J. TEE WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- 22E M.J. ECCENTRIC REDUCER, FLAT SIDE ON TOP (SEE SIZES THIS SHEET)
- 22F M.J. CAP PLUG WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- 22H 45° M.J. BEND WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- 51D PROTECT EXISTING STRUCTURES AND/OR PIPES DURING DEMOLITION AND CONSTRUCTION PHASES.
- 76A ASPHALT PAVEMENT STRIP WITH FULL DEPTH CLASS 7 BACKFILL.
- 76B CONNECT TO TREATMENT PLANT TANK (REFER TO CONSTRUCTION DRAWINGS PREPARED BY CSI, INC.)
- 76C FLOW CONTROL VALVE
- 76D SOLENOID VALVE

- ### UTILITY DETAILS
- 29A ASPHALT DRIVE CUT/REPAIR
- 29C GRAVEL DRIVE CUT/REPAIR
- 32B JACK & BORE
- 35A AIR/VACUUM RELIEF VALVE (SANITARY SEWER)
- 76A SANITARY SEWER FORCE MAIN CLEAN-OUT WITH CHECK VALVE
- 76B LIFT STATION
- 76C CONCRETE CHANNEL WITH DISSIPATORS
- 38D TRACER WIRE INSTALLATION



INITIAL DESIGN	4-26-05	DAT	FF	FF	FF
	DATE	EOR	PM	DES	DRW
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
CAVE SPRINGS			ARKANSAS		
CEI ENGINEERING ASSOCIATES, INC.			PLANNERS SURVEYORS		
3317 S.W. 1 Street Bentonville, AR 72712			(479) 273-9472 FAX (479) 273-0844		
JOB NO.: 20733.0			DWG NAME: 20733PRD.05		
CAVE SPRINGS INTERCEPTOR #1			DATE: 09-13-06 1:38 PM		
PLAN AND PROFILE #11			SHEET NO.: 15 OF 43		



LEGEND

EXISTING

- BOUNDARY LINE
- RIGHT OF WAY LINE
- STORM DRAIN
- CAS
- OHE
- OHE&T
- OHT
- OHTV
- SEWER
- UGCE
- UGCE&T
- UGT
- UGTV
- WATER
- TREE INFO
- 5" = DIAMETER OF TRUNK IN FEET
- 10" = HEIGHT OF TREE IN FEET
- 11" = CHANGY DIAMETER IN FEET
- 20.5" = ELEVATION AT BASE OF TREE
- EDGE OF ROADWAY

PROPOSED

- PROPERTY LINE
- RIGHT OF WAY LINE
- EASEMENT
- SANITARY SEWER SERVICE
- WATER SERVICE

GENERAL UTILITY NOTES

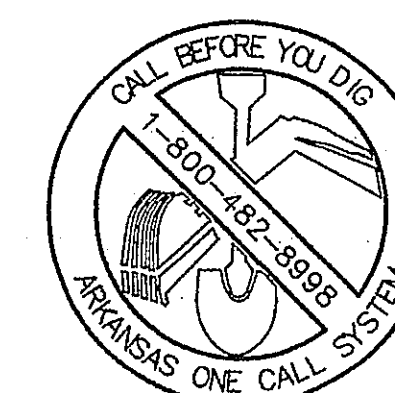
- A. ALL WASTEWATER LINES 4" AND SMALLER SHALL BE PVC (ASTM D2241 SDR-21) WITH 36" MIN. COVER. ALL WASTEWATER LINES LARGER THAN 4" SHALL BE PVC (ASTM D2241 SDR-21) WITH 48" MIN. COVER.
- B. ALL SANITARY SEWER LINES AT CREEK AND ROAD CROSSING SHALL BE PVC (ASTM D2241 DR-14) WITH 60" MIN. COVER.
- C. ALL WATER LINES SHALL BE PVC (AWWA C-900) WITH 48" MIN. COVER.
- D. CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO EXISTING UTILITY SERVICES WITH ADJACENT PROPERTY OWNERS.
- E. CONSTRUCTION SHALL NOT START ON ANY PUBLIC UTILITY SYSTEM UNTIL WRITTEN APPROVAL HAS BEEN RECEIVED BY THE ENGINEER FROM THE APPROPRIATE GOVERNING AUTHORITY AND CONTRACTOR HAS BEEN NOTIFIED BY THE ENGINEER.
- F. PRIOR TO THE CONSTRUCTION OF OR CONNECTION TO ANY STORM DRAIN, SANITARY SEWER, WATER MAIN OR ANY OF THE DRY UTILITIES, THE CONTRACTOR SHALL EXCAVATE, VERIFY AND CALCULATE ALL POINTS OF CONNECTION AND ALL UTILITY CROSSINGS AND INFORM C&E ENGINEERING AND THE OWNER/DEVELOPER OF ANY CONFLICT OR REQUIRED DEVIATIONS FROM THE PLAN. NOTIFICATION SHALL BE MADE A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION. C&E ENGINEERING AND ITS CLIENTS SHALL BE HELD HARMLESS IN THE EVENT THAT THE CONTRACTOR FAILS TO MAKE SUCH NOTIFICATION.
- G. UNLESS OTHERWISE SHOWN, CALLED OUT OR SPECIFIED HEREON OR WITHIN SPECIFICATIONS:
 - ALL SANITARY SEWER PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.
 - ALL SANITARY FORCE MAIN FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 - ALL WATER LINE FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 - ALL WATER LINE PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.

UTILITY NOTES

- 19A EXISTING TO REMAIN
- 22C M.J. ECCENTRIC PLUG VALVE WITH ADJUSTABLE VALVE BOX (SEE SIZES THIS SHEET)
- 22D M.J. TEE WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- 22E M.J. ECCENTRIC REDUCER, FLAT SIDE ON TOP (SEE SIZES THIS SHEET)
- 22F M.J. CUP PLUG WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- 22H 45° M.J. BEND WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- 28A WASTEWATER EXISTING STRUCTURE PARALLEL PIPES DURING DEMOLITION AND CONSTRUCTION PHASES
- 76A ASPHALT PAVEMENT STRIP WITH FULL DEPTH CLASS 7 BACKFILL
- 76B CONNECT TO TREATMENT PLANT TANK (REFER TO CONSTRUCTION DRAWINGS PREPARED BY ESI, INC.)
- 76C FLOW CONTROL VALVE
- 76D SOLENOID VALVE

UTILITY DETAILS

- 29A ASPHALT DRIVE CUT/REPAIR
- 29C GRAVEL DRIVE CUT/REPAIR
- 30B JACK & BORE
- 35A AIR/VACUUM RELIEF VALVE (SANITARY SEWER)
- 76A SANITARY SEWER FORCE MAIN CLEAN-OUT WITH CHECK VALVE
- 76B LIFT STATION
- 76C CONCRETE CHANNEL WITH DISSIPATORS
- 38D TRACER WIRE INSTALLATION

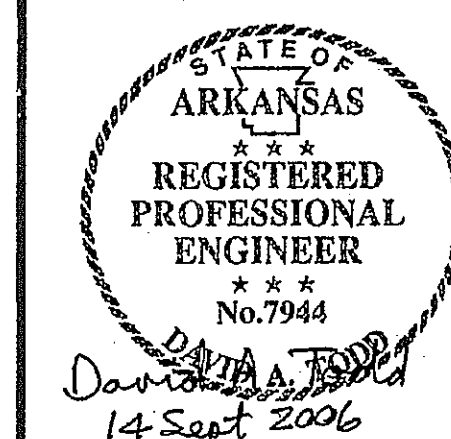


TREATMENT PLANT #2 INTERCEPTOR LINE
STA 0+00 TO STA 3+00

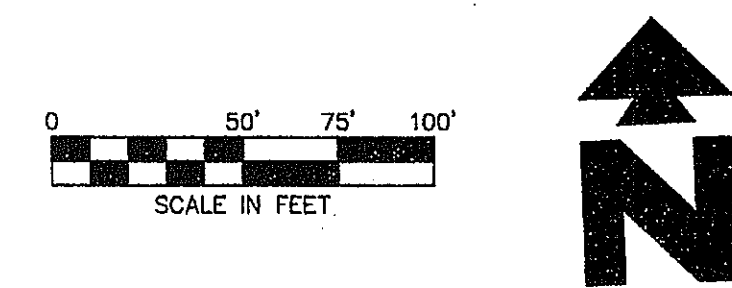
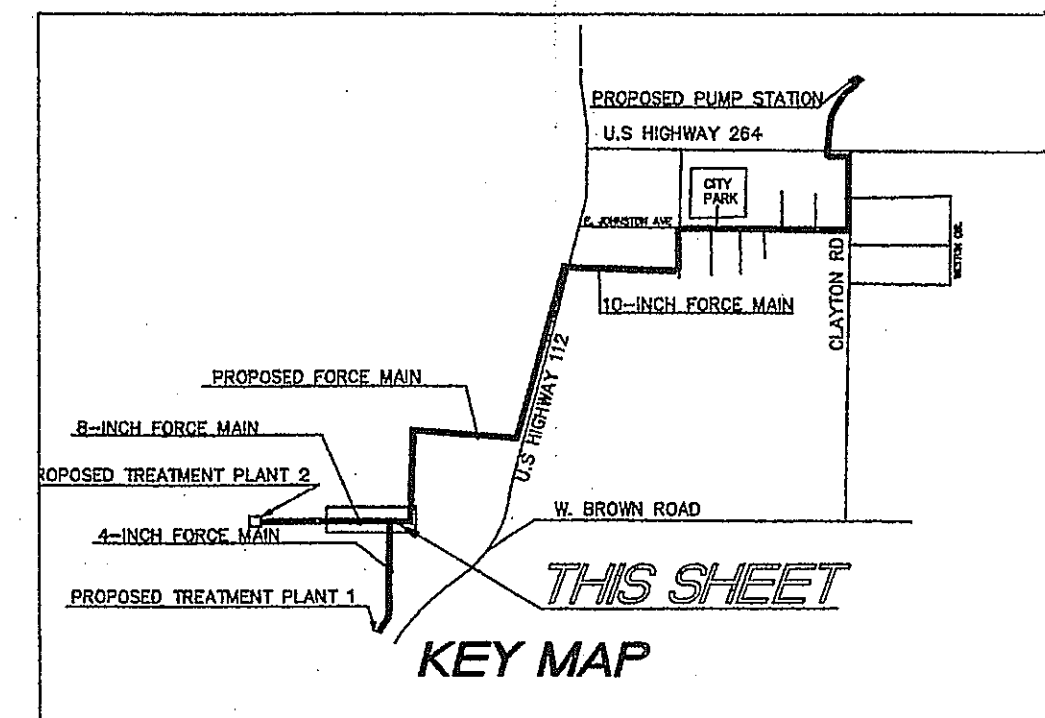
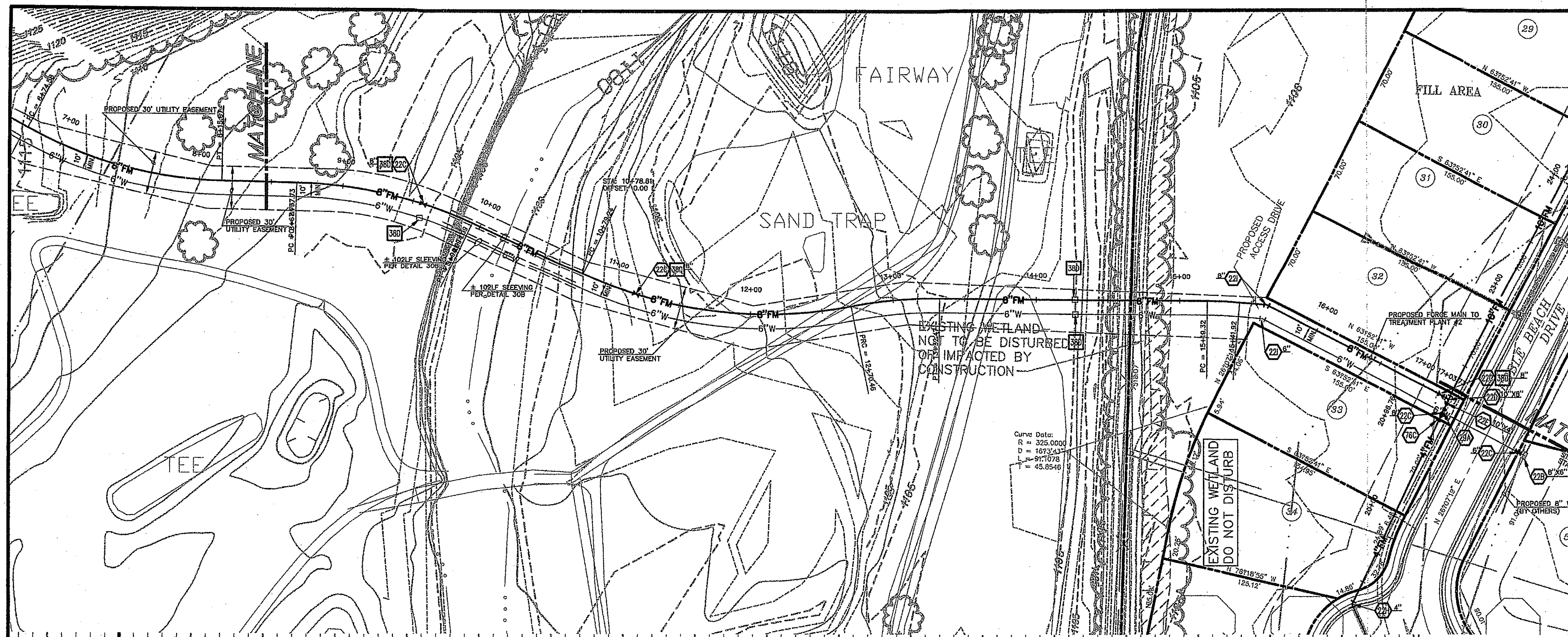
HORIZONTAL : 1" = 50'
VERTICAL : 1" = 5'

TREATMENT PLANT #2 INTERCEPTOR LINE
STA 3+00 TO STA 8+00

HORIZONTAL : 1" = 50'
VERTICAL : 1" = 5'



INITIAL DESIGN	4-26-05	DAT	FF	FF	FF
	DATE	EOR	PM	DES	DRW
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
CEI ENGINEERING ASSOCIATES, INC.			ENGINEERS PLANNERS SURVEYORS		
3317 S.W. 1 Street Bentonville, AR 72712			(479) 273-0472 FAX (479) 273-0844		
8-INCH INTERCEPTOR (TP2) PLAN AND PROFILE 1			JOB NO.: 20733.0 DWG NAME: 20733PROJ. DATE: 09-14-06 REV: 09:23 AM REV: 6		
14 Sept 2006			SHEET NO. 16 OF 43		



LEGEND	
EXISTING	
---	BOUNDARY LINE
---	RIGHT OF WAY LINE
---	STORM DRAIN
---	GAS
---	OVERHEAD ELECTRIC
---	OVERHEAD ELECTRIC AND TELEPHONE
---	OVERHEAD TELEPHONE
---	OVERHEAD TV
---	UNDERGROUND ELECTRIC
---	UNDERGROUND ELECTRIC AND TELEPHONE
---	UNDERGROUND TELEPHONE
---	UNDERGROUND TV
---	WATER
---	TREE INFO
---	5-10-11 50.5
---	5 = DIAMETER OF TRUNK IN FEET
---	10 = HEIGHT OF TREE IN FEET
---	11 = CANOPY DIAMETER IN FEET
---	50.5 = ELEVATION AT BASE OF TREE
---	EDGE OF ROADWAY
PROPOSED	
---	PROPERTY LINE
---	RIGHT OF WAY LINE
---	EASEMENT
---	SANITARY SEWER SERVICE
---	WATER SERVICE

GENERAL UTILITY NOTES

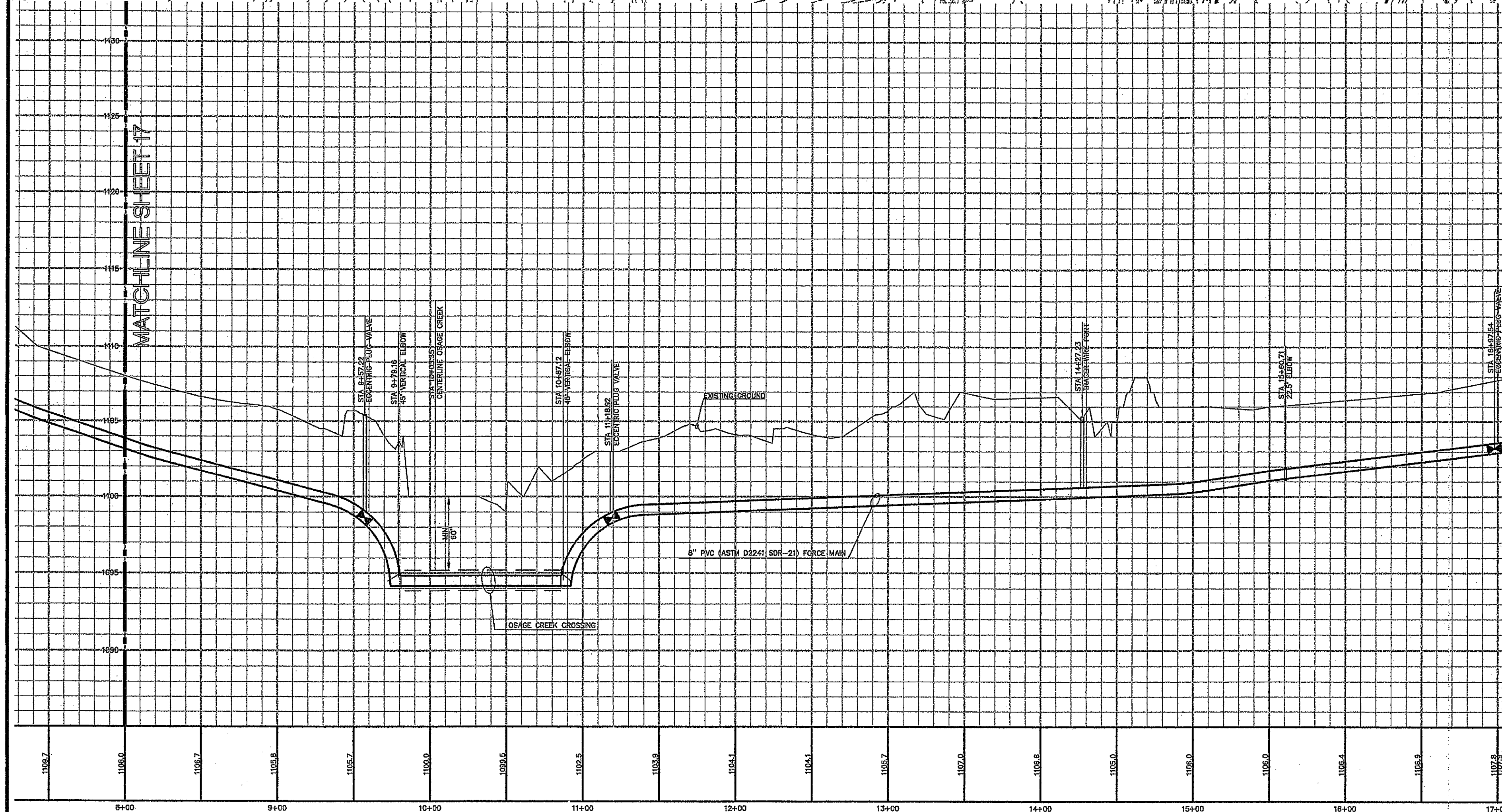
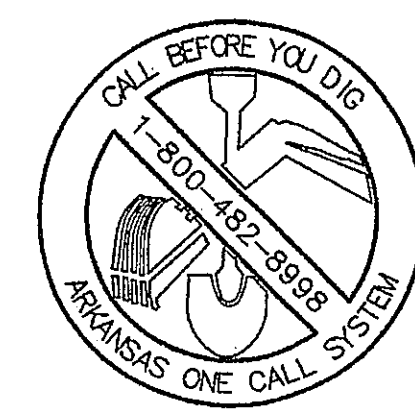
- ALL WASTEWATER LINES 4" AND SMALLER SHALL BE PVC (ASTM D2241 SDR-21) WITH 36" MIN. COVER. ALL WASTEWATER LINES LARGER THAN 4" SHALL BE PVC (ASTM D2241 SDR-21) WITH 48" MIN. COVER.
- ALL SANITARY SEWER LINES AT CREEK AND ROAD CROSSING SHALL BE PVC (ASTM D2241 DR-14) WITH 60" MIN. COVER.
- ALL WATER LINES SHALL BE PVC (AWWA C-900) WITH 48" MIN. COVER.
- CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO EXISTING UTILITY SERVICES WITH ADJACENT PROPERTY OWNERS.
- CONSTRUCTION SHALL NOT START ON ANY PUBLIC UTILITY SYSTEM UNTIL WRITTEN APPROVAL HAS BEEN RECEIVED BY THE ENGINEER FROM THE APPROPRIATE GOVERNING AUTHORITY AND CONTRACTOR HAS BEEN NOTIFIED BY THE ENGINEER.
- PRIOR TO THE CONSTRUCTION OF OR CONNECTION TO ANY STORM DRAIN, SANITARY SEWER, WATER MAIN OR ANY OF THE DRY UTILITIES, THE CONTRACTOR SHALL EXCAVATE, VERIFY AND CALCULATE ALL POINTS OF CONNECTION AND ALL UTILITY CROSSINGS AND INFORM CE ENGINEERING AND THE OWNER/DEVELOPER OF ANY CONFLICT OR REQUIRED DEVIATIONS FROM THE PLAN. NOTIFICATION SHALL BE MADE A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION. CE ENGINEERING AND ITS CLIENTS SHALL BE HELD HARMLESS IN THE EVENT THAT THE CONTRACTOR FAILS TO MAKE SUCH NOTIFICATION.
- UNLESS OTHERWISE SHOWN, CALLED OUT OR SPECIFIED HEREON OR WITHIN SPECIFICATIONS:
 - ALL SANITARY SEWER PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.
 - ALL SANITARY FORCE MAIN FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 - ALL WATER LINE FITTINGS SHALL BE INSTALLED WITH THRUST BLOCKING PER DETAIL 31C.
 - ALL WATER LINE PIPE BEDDING SHALL BE INSTALLED PER DETAIL 42A.

UTILITY NOTES

- EXISTING TO REMAIN
- M.A. ECCENTRIC PLUG VALVE WITH ADJUSTABLE VALVE BOX (SEE SIZES THIS SHEET)
- M.A. TEE WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- M.A. REDUCER, FLAT SIDE ON TOP (SEE SIZES THIS SHEET)
- M.A. CAP/PLUG WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- 45° M.A. BEND WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- PROTECT EXISTING STRUCTURES AND/OR PIPES DURING DEMOLITION AND CONSTRUCTION PHASES
- ASPHALT PAVEMENT STRIP WITH FULL DEPTH CLASS 7 BACKFILL
- CONNECT TO TREATMENT PLANT TANK (REFER TO CONSTRUCTION DRAWINGS PREPARED BY ESI, INC.)
- FLOW CONTROL VALVE
- SOLENOID VALVE

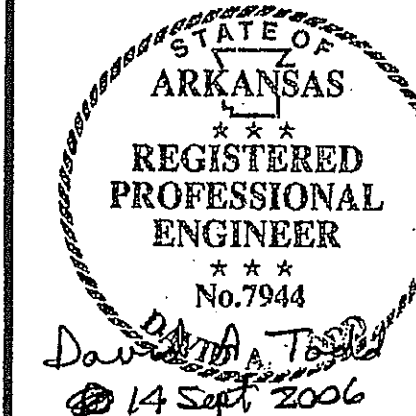
UTILITY DETAILS

- ASPHALT DRIVE CUT/REPAIR
- GRAVEL DRIVE CUT/REPAIR
- JACK & BORE
- AIR/VACUUM RELIEF VALVE (SANITARY SEWER)
- SANITARY SEWER FORCE MAIN CLEAN-OUT WITH CHECK VALVE
- LIFT STATION
- CONCRETE CHANNEL WITH DISSIPATORS
- TRACER WIRE INSTALLATION



TREATMENT PLANT #2 INTERCEPTOR LINE STA 8+00 TO STA 14+35.41

HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

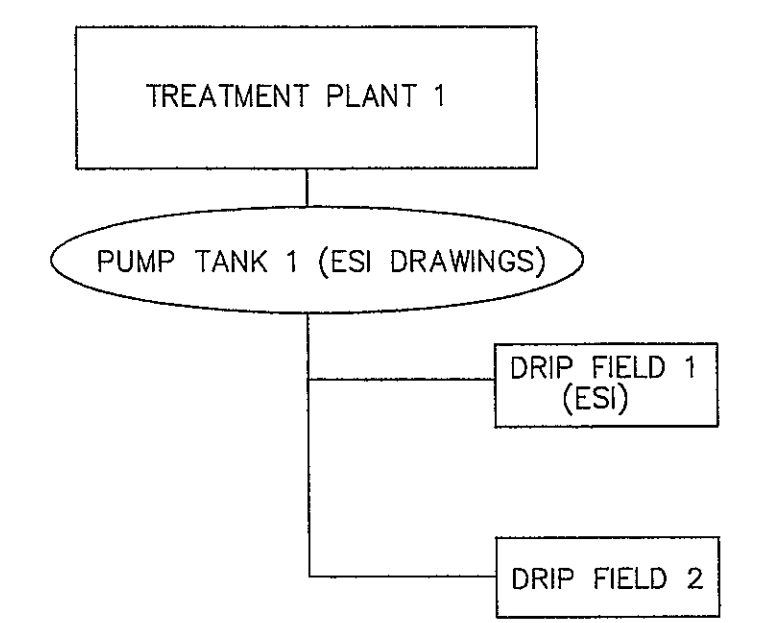
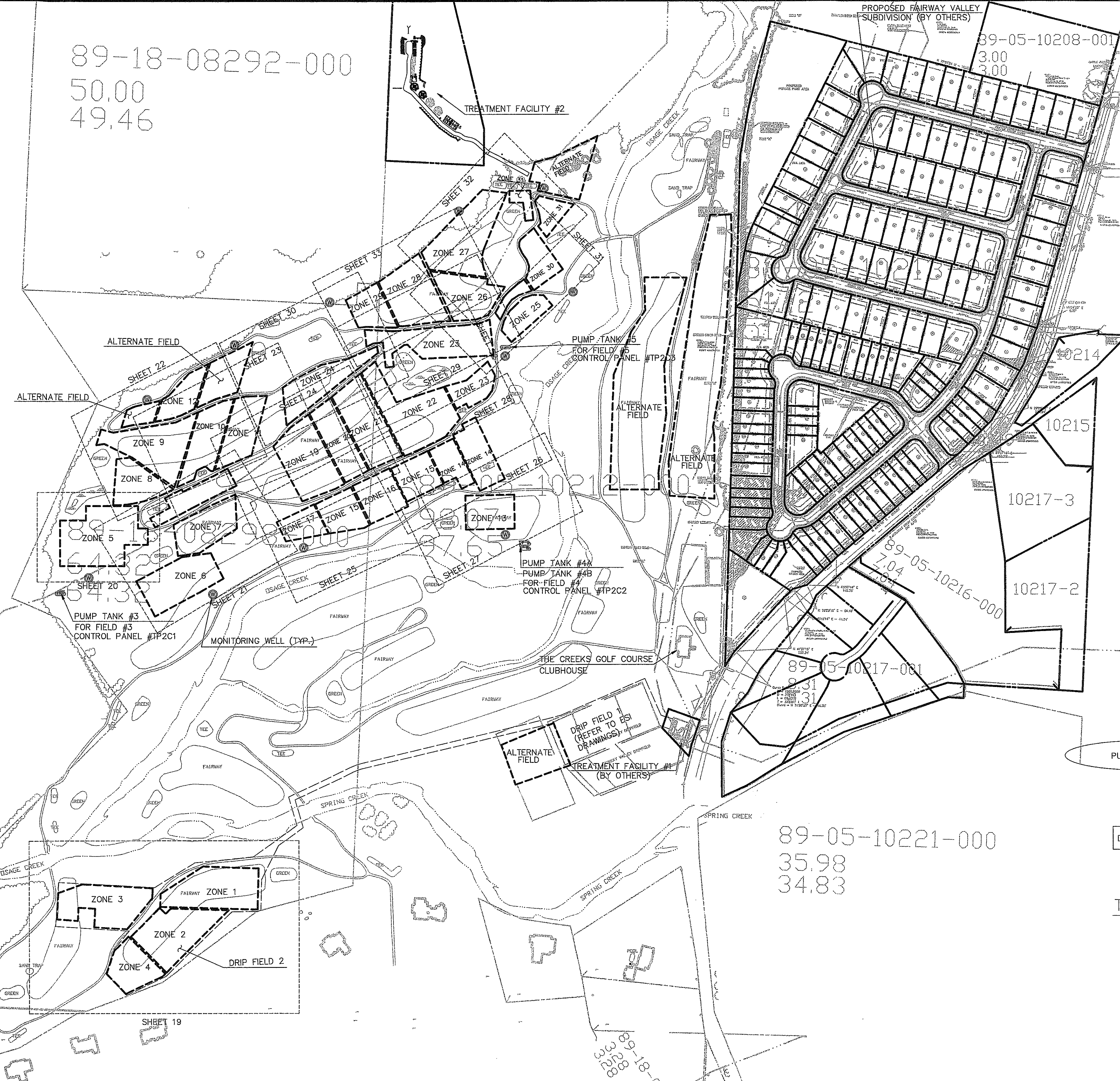
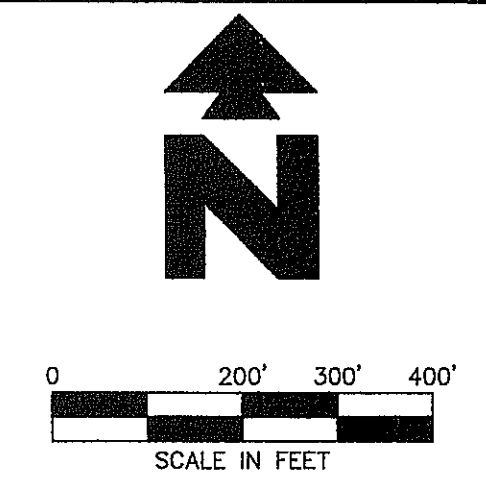


INITIAL DESIGN	4-26-05	DAT	FF	FF	FF
	DATE	EOR	PM	DES	DRW
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
CEI ENGINEERING ASSOCIATES, INC.					
ENGINEERS PLANNERS SURVEYORS					
3317 S.W. 1 Street	(479) 273-9472	JOB NO.: 20733.0			
Bentonville, AR 72712	FAX (479) 273-0844	DWG NAME: 20733PROJ.DWG			
8-INCH INTERCEPTOR (TP2)		DATE	SHEET NO.		
PLAN AND PROFILE 2		09-13-06	17 OF 43		
		1:38 PM	REV6		

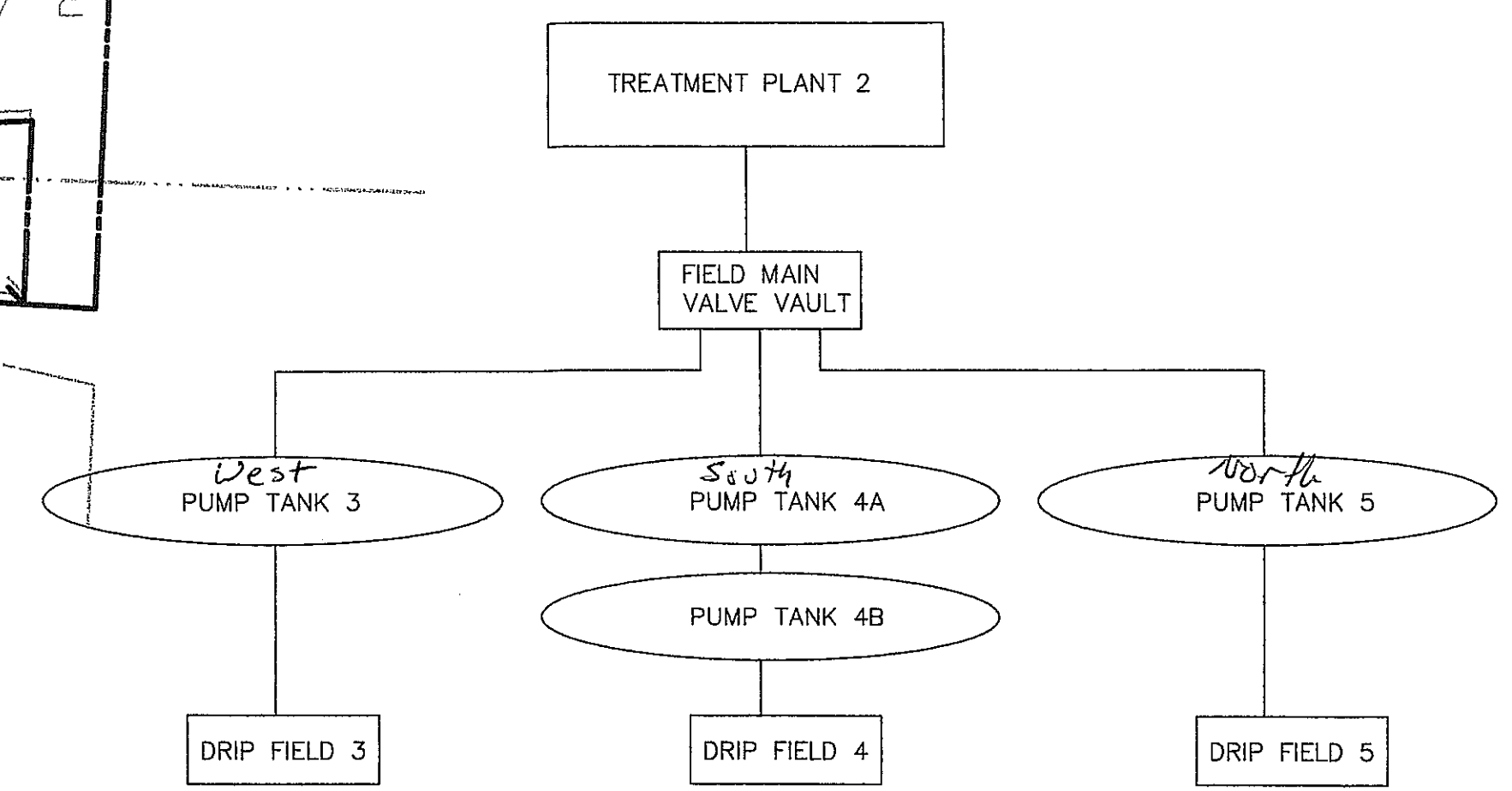
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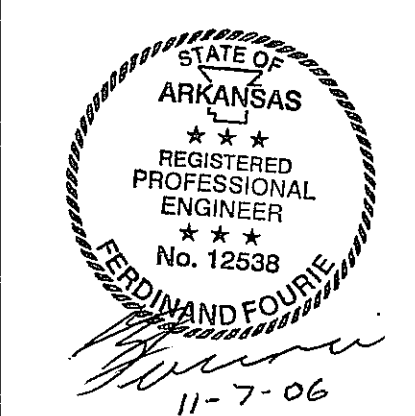
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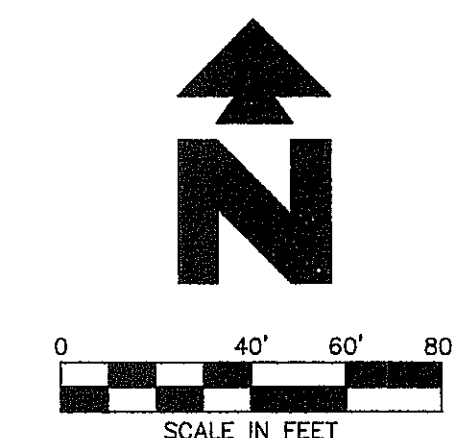
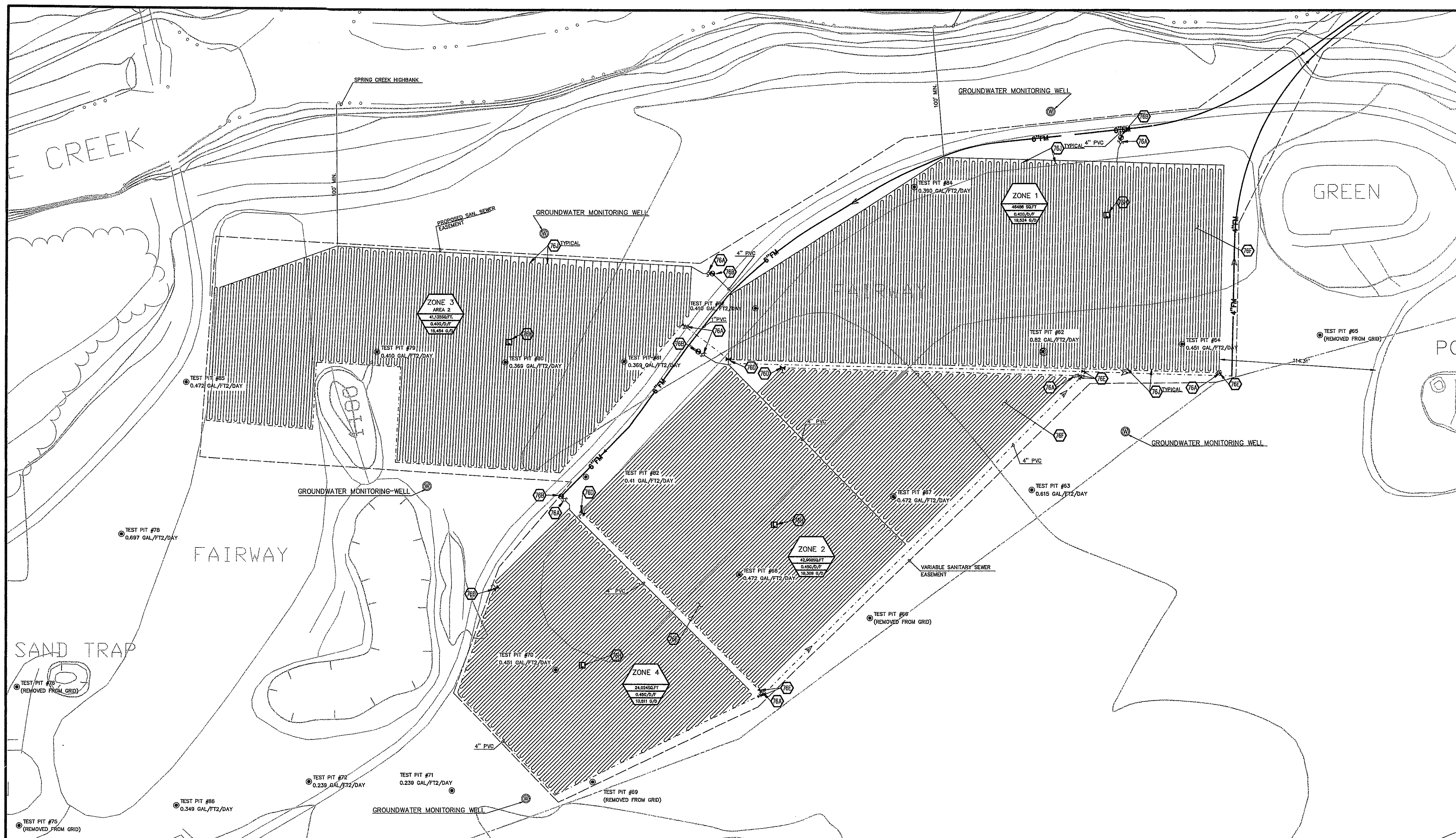
TREATMENT PLANT 1 - DRIP FIELD SCHEMATIC



TREATMENT PLANT 2 - DRIP FIELD SCHEMATIC



INITIAL DESIGN	2-25-06	DAT	FF	FF	FF
	DATE	EOR	PM	DES	DRW
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1 U.S. HIGHWAY 12					
 ENGINEERING ASSOCIATES, INC. ENGINEERS * PLANNERS * SURVEYORS					
3317 S.W. 1 Street Bentonville, AR 72712		(479) 273-9472 FAX (479) 273-0844		JOB NO.: 20733.0 DWG NAME: 20733OVERALL	
DRIP FIELD OVERALL LAYOUT		DATE 08-21-06 10:56 AM REV5		SHEET NO. 18 OF 43	
		© 2006 CEI ENGINEERING ASSOCIATES, INC.			



LEGEND

---	BOUNDARY LINE
---	RIGHT OF WAY LINE
---	STORM DRAIN
---	GAS
---	OVERHEAD ELECTRIC
---	OVERHEAD ELECTRIC AND TELEPHONE
---	OVERHEAD TELEPHONE
---	OVERHEAD TV
---	SEWER
---	UNDERGROUND ELECTRIC
---	UNDERGROUND ELECTRIC AND TELEPHONE
---	UNDERGROUND TELEPHONE
---	UNDERGROUND TV
---	WATER

5-10-11 50.5 TREE INFO
 5 = DIAMETER OF TRUNK IN FEET
 10 = HEIGHT OF TREE IN FEET
 11 = CHESTY DIAMETER IN FEET
 50.5 = ELEVATION AT BASE OF TREE

PROPOSED

---	BOUNDARY LINE
---	RIGHT OF WAY LINE
---	EASEMENT
---	PVC SUPPLY MANIFOLD
---	PVC RETURN MANIFOLDS
---	DIRECTION OF FLOW

GENERAL UTILITY NOTES

A. ALL DRIPLINE SHALL BE 1/2" GEOPLOW WASTEFLOW PC (MODEL NO. WPC16-2-24) WITH DRIP EMITTERS SPACED EVERY 2'.

B. DRIPLINE AND MANIFOLDS SHALL BE INSTALLED 10"-12" BELOW SOIL SURFACE.

C. ALL CONNECTIONS WITH DRIPLINE SHALL BE MADE WITH LOCKSLIP ADAPTERS. USE OF ADHESIVES ON DRIPLINE IS NOT ALLOWED.

D. DO NOT USE TOOLS ON LOCKSLIP ADAPTERS. HAND TIGHTEN ONLY.

E. TRENCH WIDTH FOR DRIPLINE BURIAL SHALL NOT EXCEED 4".

F. ALL SECTIONS OF SUPPLY AND RETURN MANIFOLDS NOT TIED DIRECTLY TO THE DRIPLINE SHALL BE INSTALLED AT A MINIMUM OF 24" BELOW GRADE.

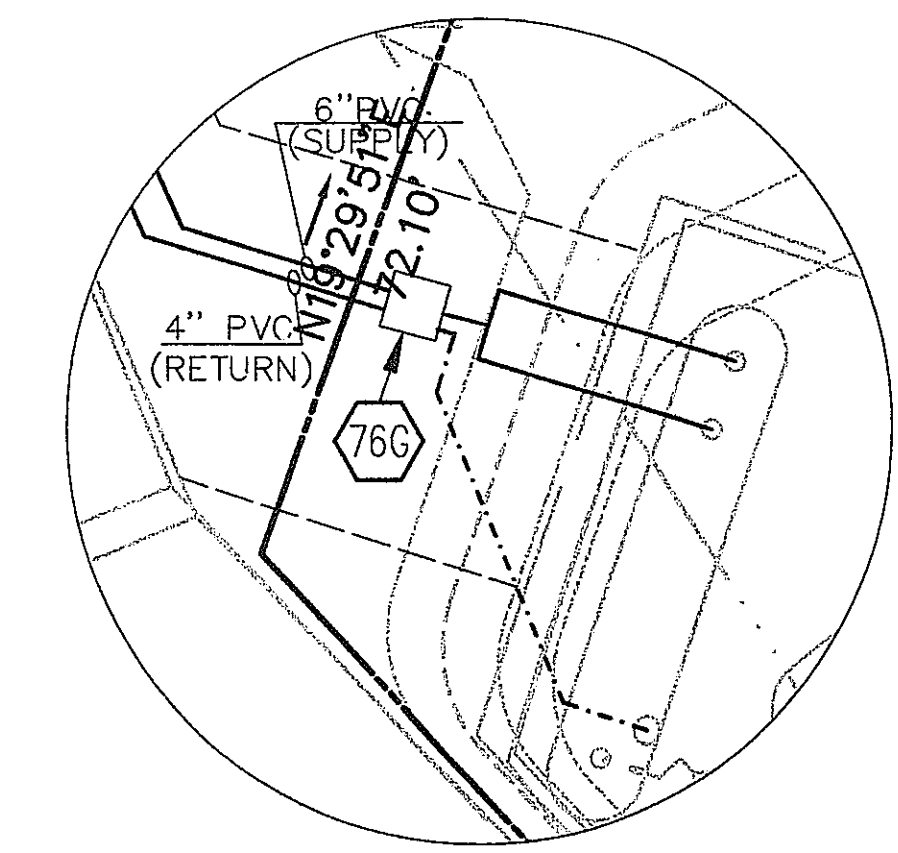
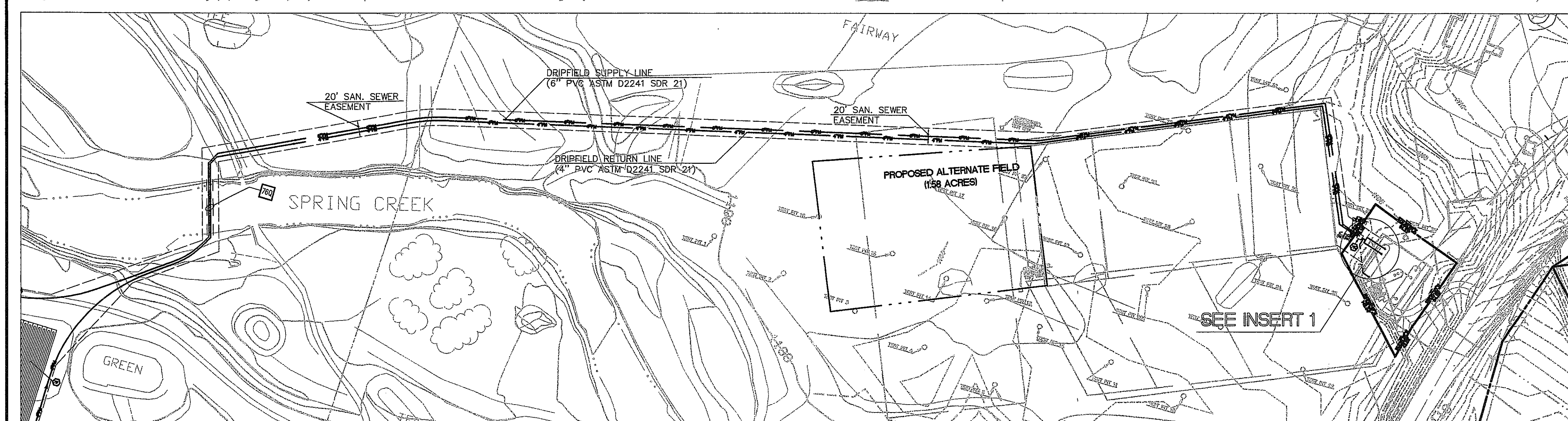
G. VACUUM BREAKER/AIR RELEASE VALVES SHALL BE INSTALLED AT ALL HIGH POINTS IN SUPPLY AND RETURN MANIFOLD LINES.

H. TERRAIN IN DRIP FIELD IS NEARLY FLAT. LAY DRIP TUBING AS CLOSE TO PARALLEL WITH CONTOURS AS POSSIBLE.

I. ALL MANIFOLDS SHALL BE 4-INCH PVC, UNLESS OTHERWISE INDICATED.

UTILITY NOTES

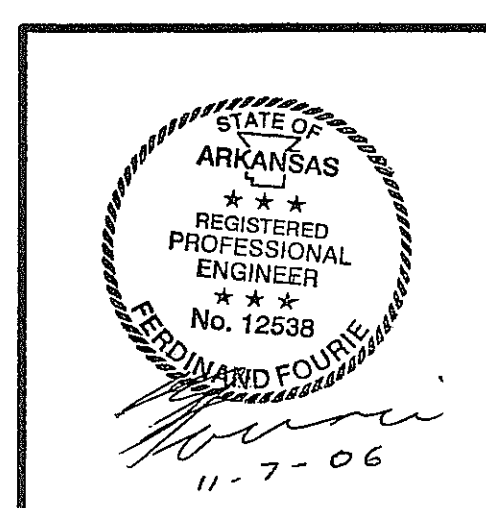
5	76A	PRESSURE INDICATING DEVICE
6	76B	ZONE VALVE (ZOLLER)
7	76C	AIR/VACUUM RELEASE VALVE
8	76D	CHECK VALVE
9	76E	GEOPLOW DRIP LINE (SPACED 2' O.C.)
10	76F	ULTRA HEADWORKS BOX W/ GEOWAC FILTER
11	76G	FIELD LYSIMETER
12	76I	SOLENOID VALVE FOR FLUSHING
13	76J	FIELD LINE LOOP
14	76K	PUMP TANK (SEE SPECIFICATIONS)



FAIRWAY VALLEY - FAIRWAYS #13 AND #14

NO.	DESCRIPTION	LOADING RATE (GAL/FT2/DAY)
62	BRIEF SWT 040"	0.820
63	BRIEF SWT 030"	0.615
64	BRIEF SWT 022"	0.451
65	DELETED	-
66	DELETED	-
67	BRIEF SWT 023"	0.472
68	BRIEF SWT 023"	0.472
69	DELETED	-
70	BRIEF SWT 022"	0.451
71	BSWT 022" MSWT 035"	0.239
72	BSWT 020" MSWT 035"	0.239
73	BSWT 020" MSWT 029"	0.198
74	BRIEF SWT 021"	0.431
75	DELETED	-
76	DELETED	-
77	BSWT 019" MSWT 033"	0.226
78	BRIEF SWT 34"	0.697
79	BRIEF SWT 20"	0.410
80	BRIEF SWT 18"	0.369
81	BRIEF SWT 18"	0.369
82	BRIEF SWT 20"	0.410
83	BRIEF SWT 15"	0.390
84	BRIEF SWT 15"	0.390
85	BRIEF SWT 23"	0.472
86	BRIEF SWT 17"	0.348

INSERT 1
 SCALE: 1" = 20'



INITIAL DESIGN	1-15-06	DAT	FF	FF	FF
DATE	EOR	PM	DES	DRW	

CAVE SPRINGS WASTEWATER TRANSFER SYSTEM-PHASE 1

CAVE SPRINGS **ARKANSAS**

CEI ENGINEERING ASSOCIATES, INC.

ENGINEERS PLANNERS SURVEYORS

3317 S.W. 1 Street
 Bentonville, AR 72712

(479) 273-9472
 FAX (479) 273-0844

JOB NO.: 20733.0
 DWG NAME: 20733.LEAC.LREV2

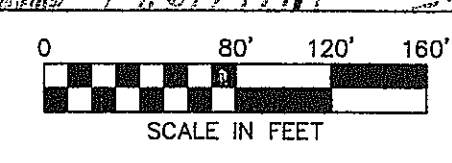
DRIP FIELD LAYOUT 1

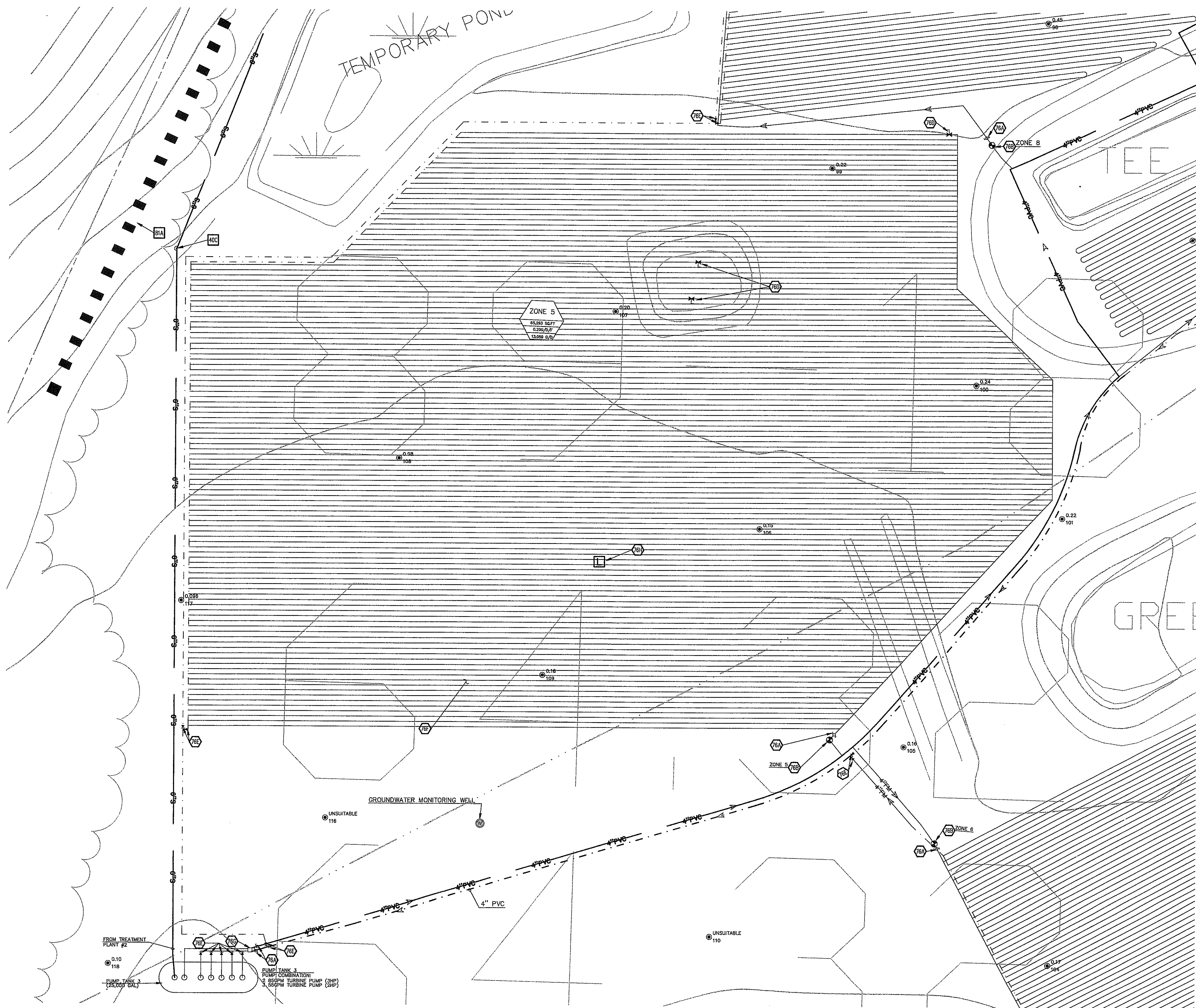
DATE: 11-06-06
 TIME: 10:07 PM

SHEET NO.: 19 OF 43

REV5

PROPOSED LINE FROM TREATMENT PLANT #1 TO EXPANDED DRIPFIELD (FAIRWAY 13)



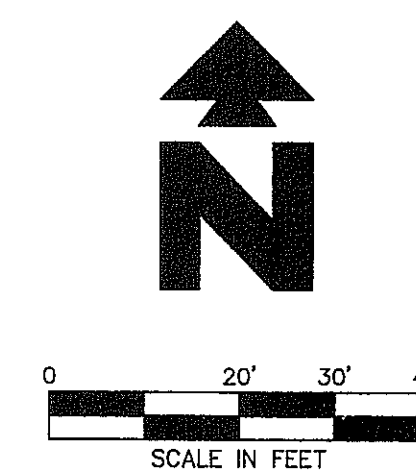


EFFLUENT DISPOSAL FIELD #3
ZONE 5

NOTE:
OVERALL EFFLUENT DISPOSAL FIELD
LAYOUT IS ON SHEET 18

TOTAL DRIPFIELD REQUIRED (TREATMENT PLANT #2)
TOTAL ALTERNATE FIELD PROVIDED (TREATMENT PLANT #2)
ALTERNATE FIELD RATIO (TREATMENT PLANT #2)

917,038 SQ.FT
273,377 SQ.FT
32%



LEGEND

EXISTING

- BOUNDARY LINE
- RIGHT OF WAY LINE
- STORM DRAIN
- GAS
- OVERHEAD ELECTRIC
- OVERHEAD ELECTRIC AND TELEPHONE
- OVERHEAD TELEPHONE
- OVERHEAD TV
- SEWER
- UNDERGROUND ELECTRIC
- UNDERGROUND ELECTRIC AND TELEPHONE
- UNDERGROUND TELEPHONE
- UNDERGROUND TV
- WATER

5-10-11 50.5 TREE INFO
5 = DIAMETER OF TRUNK IN FEET
10 = HEIGHT OF TREE IN FEET
11 = CANOPY DIAMETER IN FEET
50.5 = ELEVATION AT BASE OF TREE

PROPOSED

- BOUNDARY LINE
- RIGHT OF WAY LINE
- EASEMENT
- PVC SUPPLY MANIFOLD
- PVC RETURN MANIFOLDS
- DIRECTION OF FLOW
- PERC TEST LOCATION

GENERAL UTILITY NOTES

- A. ALL DRIPLINE SHALL BE 1/2" GEOWELL WASTEFLOW PC (MODEL NO. WPC16-2-24) WITH DRIP EMITTERS SPACED EVERY 2'.
- B. DRIPLINE AND MANIFOLDS SHALL BE INSTALLED 10"-12" BELOW SOIL SURFACE.
- C. ALL CONNECTIONS WITH DRIPLINE SHALL BE MADE WITH LOCKSLIP ADAPTERS. USE OF ADHESIVES ON DRIPLINE IS NOT ALLOWED.
- D. DO NOT USE TOOLS ON LOCKSLIP ADAPTERS. HAND TIGHTEN ONLY.
- E. TRENCH WIDTH FOR DRIPLINE BURIAL SHALL NOT EXCEED 4".
- F. ALL SECTIONS OF SUPPLY AND RETURN MANIFOLDS NOT TIED DIRECTLY TO THE DRIPLINE SHALL BE INSTALLED AT A MINIMUM OF 24" BELOW GRADE.
- G. VACUUMBREAKER/AIR RELEASE VALVES SHALL BE INSTALLED AT ALL HIGH POINTS IN SUPPLY AND RETURN MANIFOLD LINES.
- H. TERRAIN IN DRIP FIELD IS NEARLY FLAT. LAY DRIP TUBING AS CLOSE TO PARALLEL WITH CONTOURS AS POSSIBLE.
- I. ALL MANIFOLDS SHALL BE 4-INCH PVC, UNLESS OTHERWISE INDICATED.

UTILITY DETAILS

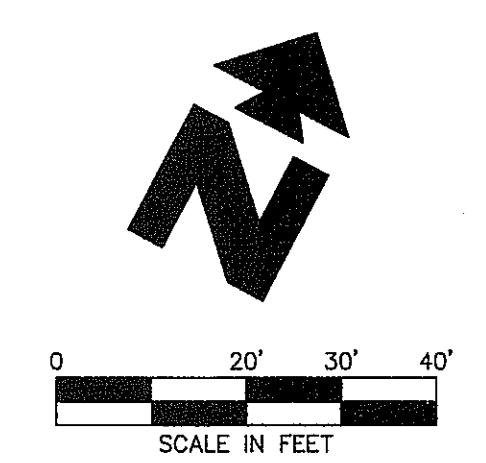
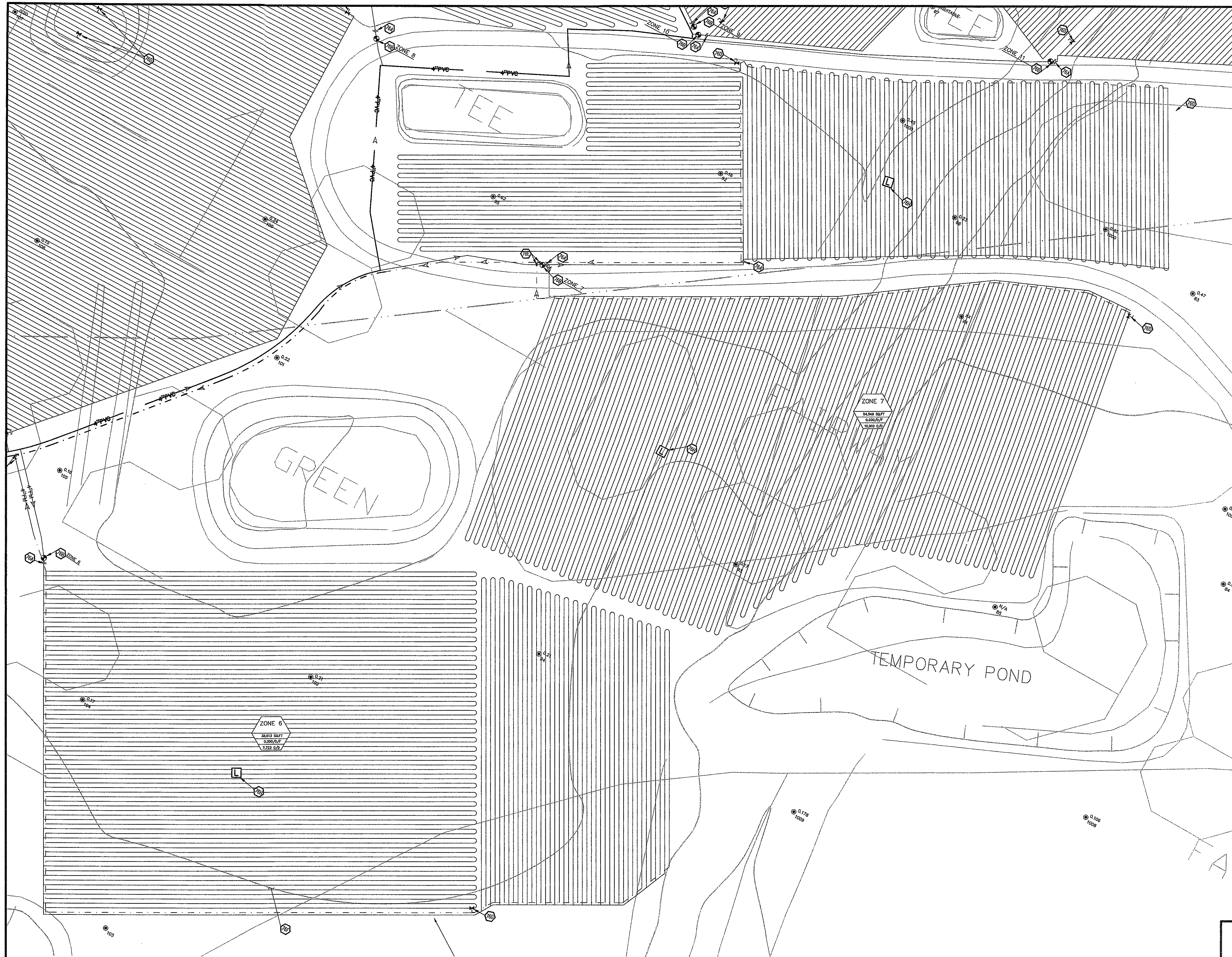
- BIA TEMPORARY DIVERSION DIKE

UTILITY NOTES

- 76A PRESSURE INDICATING DEVICE
- 76B ZONE VALVE (ZOLLER)
- 76D AIR/VACUUM RELEASE VALVE
- 76E CHECK VALVE
- 76F GEOWELL DRIP LINE (SPACED 2' O.C.)
- 76G ULTRA HEADWORKS BOX W/ GEOWELL FILTER
- 76H FIELD LYNSMETER
- 76I SOLENOID VALVE FOR FLUSHING
- 76J FIELD LINE LOOP
- 76K PUMP TANK (SEE SPECIFICATIONS)



INITIAL DESIGN	2-9-06	DAT	FF	FF	FF
	DATE	EOR	PM	DES	DRW
CAVE SPRINGS WASTEWATER SYSTEM - PHASE 1					
CAVE SPRINGS ARKANSAS					
CEI ENGINEERING ASSOCIATES, INC.					
ENGINEERS PLANNERS SURVEYORS					
3317 S.W. 1 Street Bentonville, AR 72712	(479) 273-9472 FAX (479) 273-0844	JOB NO.: 20733.0 DWG NAME: 20733LEAC1 REV2			
DRIP FIELD LAYOUT 2				DATE 11-06-06 10:24 PM REV5	SHEET NO. 20 OF 43



LEGEND

- EXISTING
- BOUNDARY LINE
 - RIGHT OF WAY LINE
 - STORM DRAIN
 - GAS
 - OVERHEAD ELECTRIC
 - OVERHEAD ELECTRIC AND TELEPHONE
 - OVERHEAD TELEPHONE
 - OVERHEAD TV
 - SEWER
 - UNDERGROUND ELECTRIC
 - UNDERGROUND ELECTRIC AND TELEPHONE
 - UNDERGROUND TELEPHONE
 - UNDERGROUND TV
 - WATER
- TREE INFO
- 5-10-11 50.5
 - 5 = DIAMETER OF TRUNK IN FEET
 - 10 = HEIGHT OF TREE IN FEET
 - 11 = CANOPY DIAMETER IN FEET
 - 50.5 = ELEVATION AT BASE OF TREE

- PROPOSED
- BOUNDARY LINE
 - RIGHT OF WAY LINE
 - EASEMENT
 - PVC SUPPLY MANHOLE
 - PVC RETURN MANHOLE
 - DIRECTION OF FLOW
 - PERC TEST LOCATION

GENERAL UTILITY NOTES

A. ALL DRIPLINE SHALL BE 1/2" GEOWELL WASTEWATER PC (MODEL NO. WPC16-2-24) WITH DRIP EMITTERS SPACED EVERY 2'.

B. DRIPLINE AND MANIFOLDS SHALL BE INSTALLED 10"-12" BELOW SOIL SURFACE.

C. ALL CONNECTIONS WITH DRIPLINE SHALL BE MADE WITH LOCKSLIP ADAPTERS. USE OF ADHESIVES ON DRIPLINE IS NOT ALLOWED.

D. DO NOT USE TOOLS ON LOCKSLIP ADAPTERS. HAND TIGHTEN ONLY.

E. TRENCH WIDTH FOR DRIPLINE BURIAL SHALL NOT EXCEED 4".

F. ALL SECTIONS OF SUPPLY AND RETURN MANIFOLDS NOT RIED DIRECTLY TO THE DRIPLINE SHALL BE INSTALLED AT A MINIMUM OF 24" BELOW GRADE.

G. VACUUM BREAKER/AIR RELEASE VALVES SHALL BE INSTALLED AT ALL HIGH POINTS IN SUPPLY AND RETURN MANIFOLD LINES.

H. TERRAIN IN DRIP FIELD IS NEARLY FLAT. LAY DRIP TUBING AS CLOSE TO PARALLEL WITH CONTOURS AS POSSIBLE.

I. ALL MANIFOLDS SHALL BE 4-INCH PVC, UNLESS OTHERWISE INDICATED.

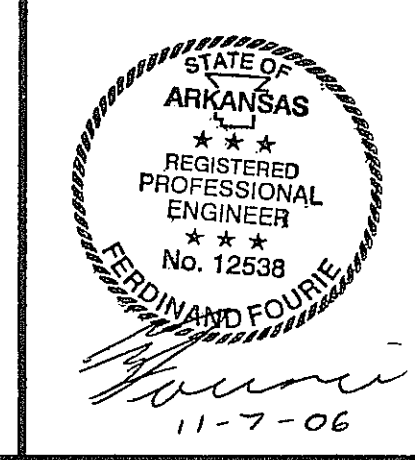
- UTILITY DETAILS
- 81A TEMPORARY DIVERSION DIKE

- UTILITY NOTES
- 76A PRESSURE INDICATING DEVICE
 - 76B ZONE VALVE (ZOELEK)
 - 76D AIR/VACUUM RELEASE VALVE
 - 76E CHECK VALVE
 - 76F GEOWELL DRIP LINE (SPACED 2' O.C.)
 - 76G ULTRA HEADWORKS BOX W/ GEOWELL FILTER
 - 76H FIELD CYCLOMETER
 - 76I SOLENOID VALVE FOR FLUSHING
 - 76J FIELD LINE LOOP
 - 76K PUMP TANK (SEE SPECIFICATIONS)

NOTE:
OVERALL EFFLUENT DISPOSAL FIELD
LAYOUT IS ON SHEET 18

EFFLUENT DISPOSAL FIELD #3
ZONE 6 AND ZONE 7

TOTAL DRIPFIELD REQUIRED (TREATMENT PLANT #2)	917,038 SQ.FT
TOTAL ALTERNATE FIELD PROVIDED (TREATMENT PLANT #2)	273,377 SQ.FT
ALTERNATE FIELD RATIO (TREATMENT PLANT #2)	30%



INITIAL DESIGN	2-9-06	DAT	FF	FF	FF
DATE	FOR	PM	DES	DRW	

CAVE SPRINGS WASTEWATER SYSTEM - PHASE 1
CAVE SPRINGS ARKANSAS

CEI ENGINEERING ASSOCIATES, INC
ENGINEERS PLANNERS SURVEYORS

3317 S.W. 1 Street
Bentonville, AR 72712

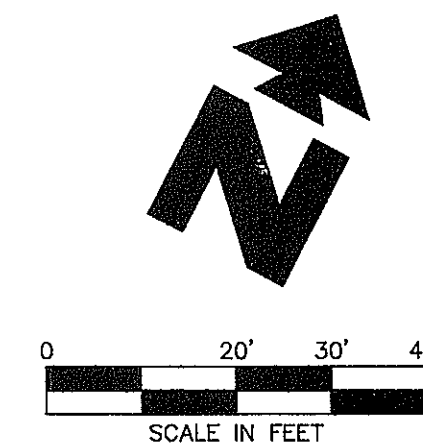
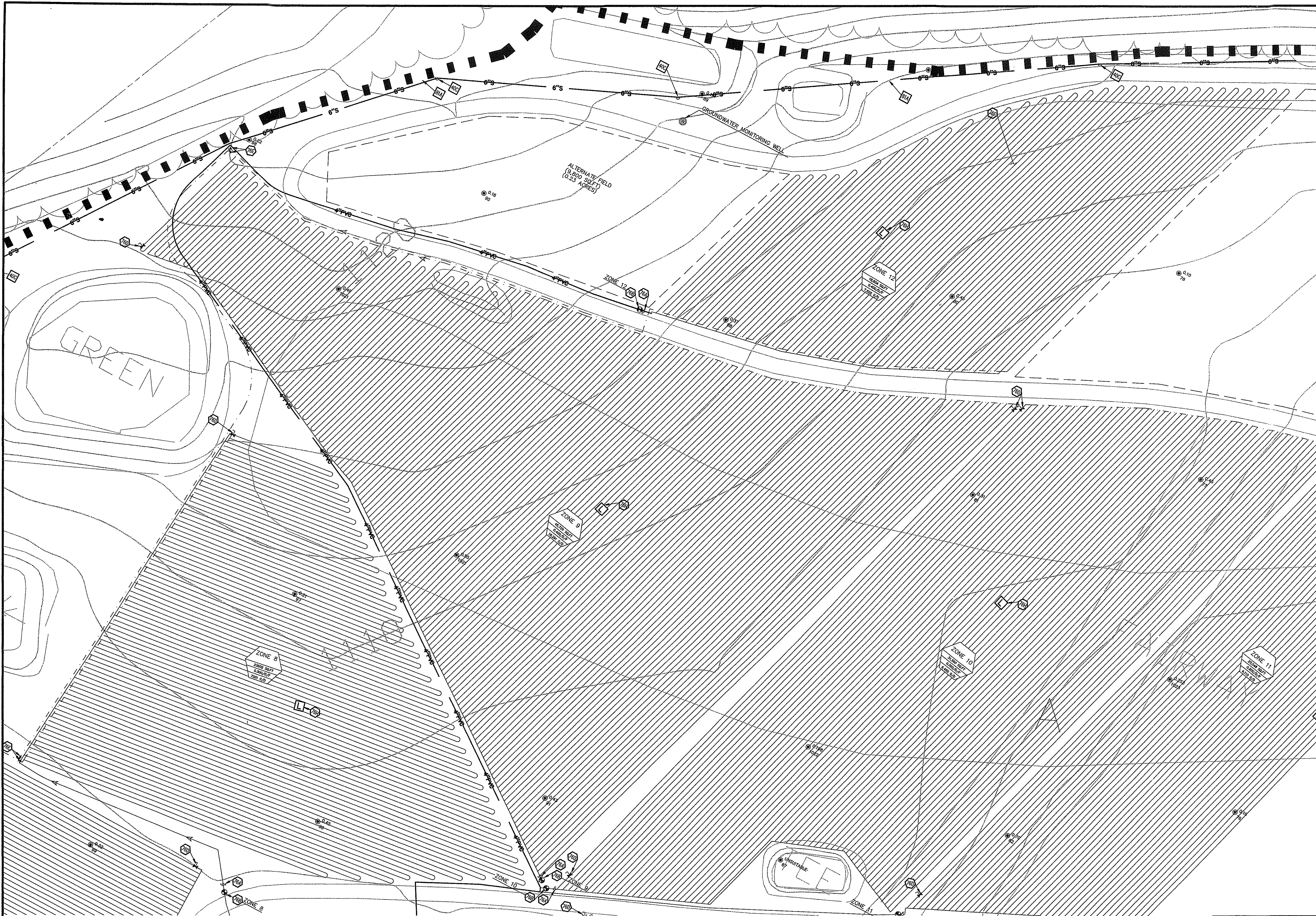
(479) 273-8472
FAX (479) 273-0844

JOB NO.: 20733.0
DWG NAME: 20733LEACH_REV2

DATE: 11-06-06
10:24 PM
REV5

SHEET NO. 21 OF 43

DRIP FIELD LAYOUT 3



LEGEND

- EXISTING**
- BOUNDARY LINE
 - RIGHT OF WAY LINE
 - STORM DRAIN
 - GAS
 - OVERHEAD ELECTRIC
 - OVERHEAD ELECTRIC AND TELEPHONE
 - OVERHEAD TELEPHONE
 - OVERHEAD TV
 - SEWER
 - UNDERGROUND ELECTRIC
 - UNDERGROUND ELECTRIC AND TELEPHONE
 - UNDERGROUND TELEPHONE
 - UNDERGROUND TV
 - WATER
- TREE INFO**
- 5-10-11 50.5
 - .5 = DIAMETER OF TRUNK IN FEET
 - 10 = HEIGHT OF TREE IN FEET
 - 11 = CANOPY DIAMETER IN FEET
 - 50.5 = ELEVATION AT BASE OF TREE

PROPOSED

- BOUNDARY LINE
- RIGHT OF WAY LINE
- EASEMENT
- PVC SUPPLY MANIFOLD
- PVC RETURN MANIFOLD
- DIRECTION OF FLOW
- PERC TEST LOCATION

GENERAL UTILITY NOTES

- A. ALL DRIFLINE SHALL BE 1/2" GEOWELL WASTEWATER PC (MODEL NO. WFC16-2-24) WITH DRIP EMITTERS SPACED EVERY 2'.
- B. DRIFLINE AND MANIFOLDS SHALL BE INSTALLED 10"-12" BELOW SOIL SURFACE. CALL CONNECTIONS WITH DRIFLINE SHALL BE MADE WITH LOCKSLIP ADAPTERS. USE OF ADAPTERS ON DRIFLINE IS NOT ALLOWED.
- C. DO NOT USE TOOLS ON LOCKSLIP ADAPTERS. HAND TIGHTEN ONLY.
- D. TRENCH WIDTH FOR DRIFLINE BURIAL SHALL NOT EXCEED 4".
- E. ALL SECTIONS OF SUPPLY AND RETURN MANIFOLDS NOT TIED DIRECTLY TO THE DRIFLINES SHALL BE INSTALLED AT A MINIMUM OF 24" BELOW GRADE.
- F. VACUUMBREAKER/AIR RELEASE VALVES SHALL BE INSTALLED AT ALL HIGH POINTS IN SUPPLY AND RETURN MANIFOLD LINES.
- G. TRENCH IN DRIP FIELD IS NEARLY FLAT. LAY DRIP TUBING AS CLOSE TO PARALLEL WITH CONTOURS AS POSSIBLE.
- H. ALL MANIFOLDS SHALL BE 4-INCH PVC, UNLESS OTHERWISE INDICATED.

UTILITY DETAILS

- 81A TEMPORARY DIVERSION DIKE

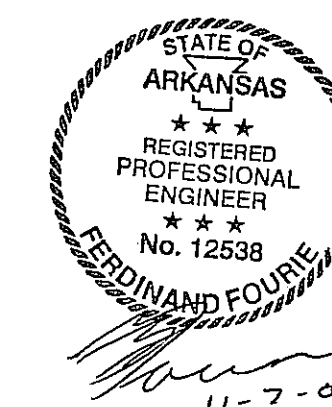
UTILITY NOTES

- 76A PRESSURE INDICATING DEVICE
- 76B ZONE VALVE (ZOLLER)
- 76C AIR/VACUUM RELEASE VALVE
- 76D CHECK VALVE
- 76E GEOWELL DRIP LINE (SPACED 2' O.C.)
- 76F ULTRA HEADWORKS BOX W/ GEOWELL FILTER
- 76H FIELD LYSETER
- 76I SOLENOID VALVE FOR FLUSHING
- 76J FIELD LINE LOOP
- 76K PUMP TANK (SEE SPECIFICATIONS)

NOTE:
OVERALL EFFLUENT DISPOSAL FIELD
LAYOUT IS ON SHEET 18

EFFLUENT DISPOSAL FIELD #3
ZONE 8, ZONE 9, ZONE 10, ZONE 12

TOTAL DRIFIELD REQUIRED (TREATMENT PLANT #2) 917,038 SQ.FT
TOTAL ALTERNATE FIELD PROVIDED (TREATMENT PLANT #2) 273,377 SQ.FT
ALTERNATE FIELD RATIO (TREATMENT PLANT #2) 30%



INITIAL DESIGN	2-9-06	DAT	FF	FF	FF
DATE	EOR	PM	DES	DRW	

CAVE SPRINGS WASTEWATER SYSTEM - PHASE 1
CAVE SPRINGS ARKANSAS

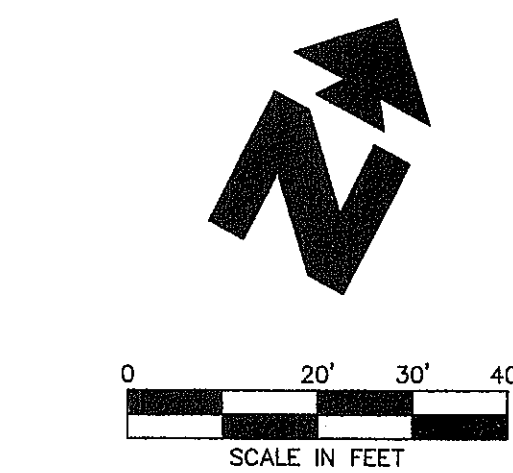
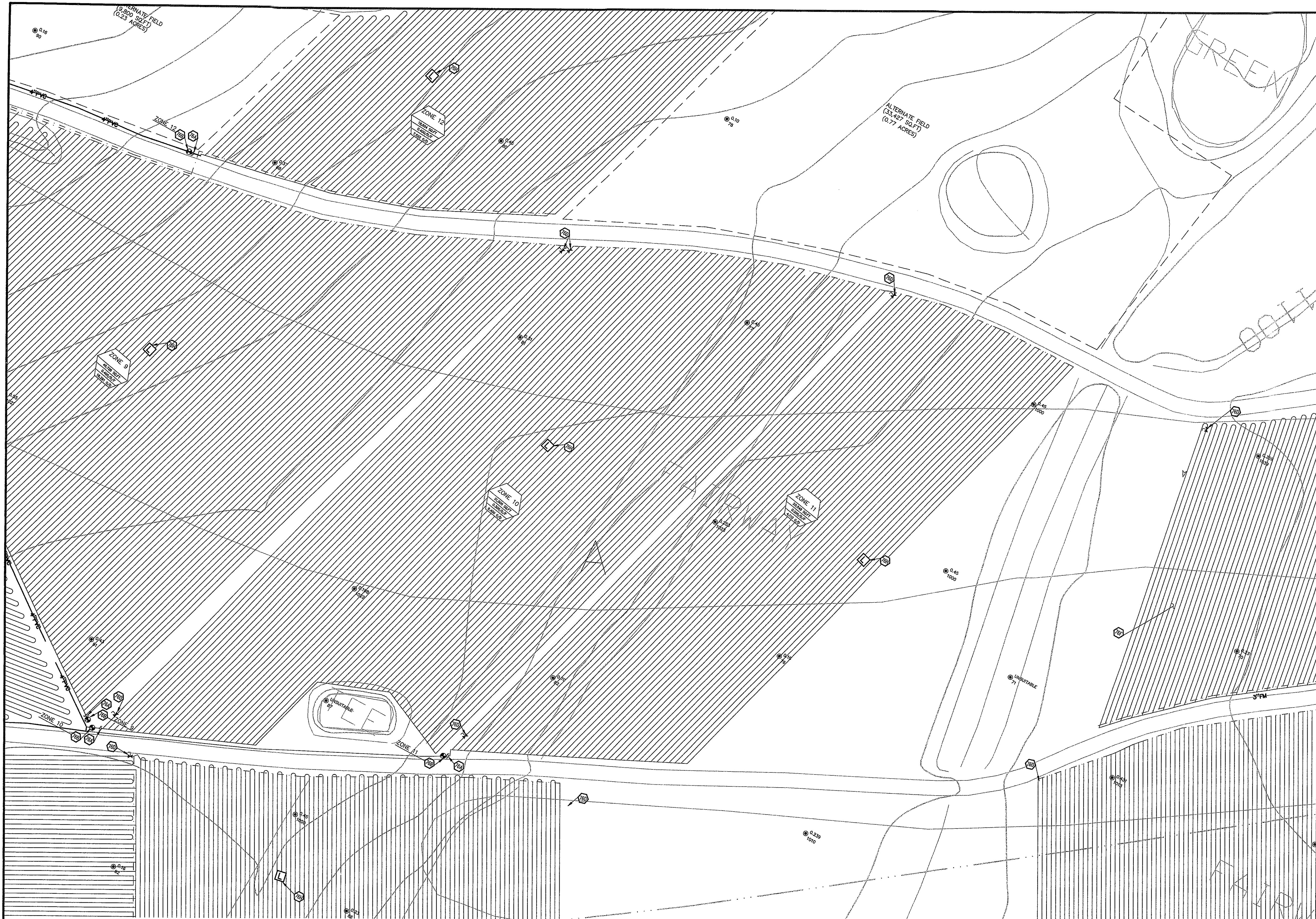
CEI ENGINEERING ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS

3317 S.W. 1 Street (479) 273-9472 JOB NO.: 20733.0
Bentonville, AR 72712 FAX (479) 273-0844 DWG NAME: 20733L.EAGL-REV2

DATE 11-06-06 SHEET NO. 22 OF 43
10:24 PM
REV5

DRIP FIELD LAYOUT 4

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- LEGEND**
- EXISTING**
- BOUNDARY LINE
 - RIGHT OF WAY LINE
 - STORM DRAIN
 - GAS
 - OVERHEAD ELECTRIC
 - OVERHEAD ELECTRIC AND TELEPHONE
 - OVERHEAD TELEPHONE
 - OVERHEAD TV
 - SEWER
 - UNDERGROUND ELECTRIC
 - UNDERGROUND ELECTRIC AND TELEPHONE
 - UNDERGROUND TELEPHONE
 - UNDERGROUND TV
 - WATER
- PROPOSED**
- BOUNDARY LINE
 - RIGHT OF WAY LINE
 - EASEMENT
 - PVC SUPPLY MANIFOLD
 - PVC RETURN MANIFOLDS
 - DIRECTION OF FLOW
 - PERC TEST LOCATION
- EXISTING**
- 75A PRESSURE INDICATING DEVICE
 - 75B ZONE VALVE (ZOEILLER)
 - 75C AIR/VACUUM RELEASE VALVE
 - 75D CHECK VALVE
 - 75E GEOWELL DRAIN LINE (SPACED 2' O.C.)
 - 75F ULTRA HEADWORKS BOX W/ GEOWELL FILTER
 - 75G FIELD LYSIMETER
 - 75H SOLIDWELL VALVE FOR FLUSHING
 - 75I FIELD LINE LOOP
 - 75K PUMP TANK (SEE SPECIFICATIONS)

GENERAL UTILITY NOTES

A. ALL DRIFTLINE SHALL BE 1/2" GEOWELL WASTEFLOW PC (MODEL NO. WPC10-2-24) WITH DRIP EMITTERS SPACED EVERY 2'.

B. DRIFTLINE AND MANIFOLDS SHALL BE INSTALLED 10"-12" BELOW SOIL SURFACE.

C. ALL CONNECTIONS WITH DRIFTLINE SHALL BE MADE WITH LOCKSLIP ADAPTERS. USE OF ADHESIVES ON DRIFTLINE IS NOT ALLOWED.

D. DO NOT USE TOOLS ON LOCKSLIP ADAPTERS. HAND TIGHTEN ONLY.

E. TRENCH WIDTH FOR DRIFTLINE BURIAL SHALL NOT EXCEED 4".

F. ALL SECTIONS OF SUPPLY AND RETURN MANIFOLDS NOT TIED DIRECTLY TO THE DRIFTLINES SHALL BE INSTALLED AT A MINIMUM OF 24" BELOW GRADE.

G. VACUUMBREAKER/AIR RELEASE VALVES SHALL BE INSTALLED AT ALL HIGH POINTS IN SUPPLY AND RETURN MANIFOLD LINES.

H. TERRAIN IN DRIP FIELD IS NEARLY FLAT. LAY DRIP TUBING AS CLOSE TO PARALLEL WITH CONTOURS AS POSSIBLE.

I. ALL MANIFOLDS SHALL BE 4-INCH PVC, UNLESS OTHERWISE INDICATED.

UTILITY DETAILS

81A TEMPORARY DIVERSION DIKE

UTILITY NOTES

75A PRESSURE INDICATING DEVICE

75B ZONE VALVE (ZOEILLER)

75C AIR/VACUUM RELEASE VALVE

75D CHECK VALVE

75E GEOWELL DRAIN LINE (SPACED 2' O.C.)

75F ULTRA HEADWORKS BOX W/ GEOWELL FILTER

75G FIELD LYSIMETER

75H SOLIDWELL VALVE FOR FLUSHING

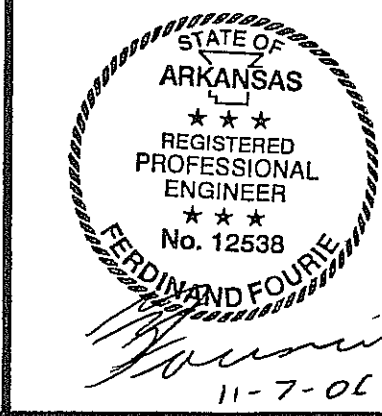
75I FIELD LINE LOOP

75K PUMP TANK (SEE SPECIFICATIONS)

EFFLUENT DISPOSAL FIELD #3
ZONE 10, ZONE 11

NOTE:
OVERALL EFFLUENT DISPOSAL FIELD
LAYOUT IS ON SHEET 18

TOTAL DRIFTLINE REQUIRED (TREATMENT PLANT #2)	917,038 SQ.FT.
TOTAL ALTERNATE FIELD PROVIDED (TREATMENT PLANT #2)	923,377 SQ.FT.
ALTERNATE FIELD RATIO (TREATMENT PLANT #2)	30%



INITIAL DESIGN	2-9-06	DAT	FF	FF	FF
DATE	EOR	PM	DES	DRW	

CAVE SPRINGS WASTEWATER SYSTEM - PHASE 1
CAVE SPRINGS **ARKANSAS**

CEI ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS

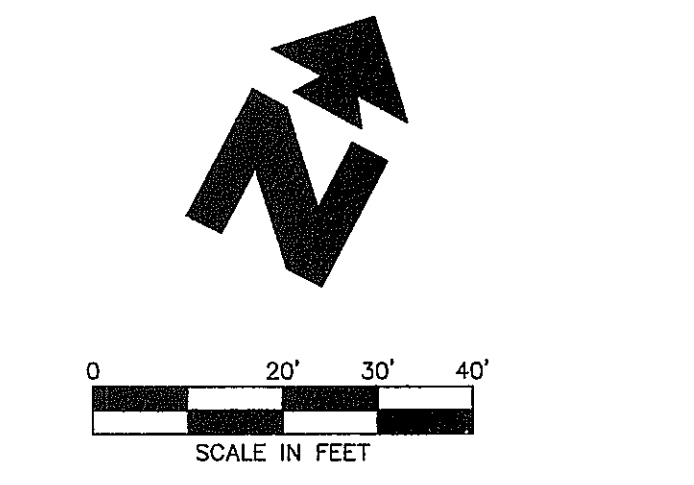
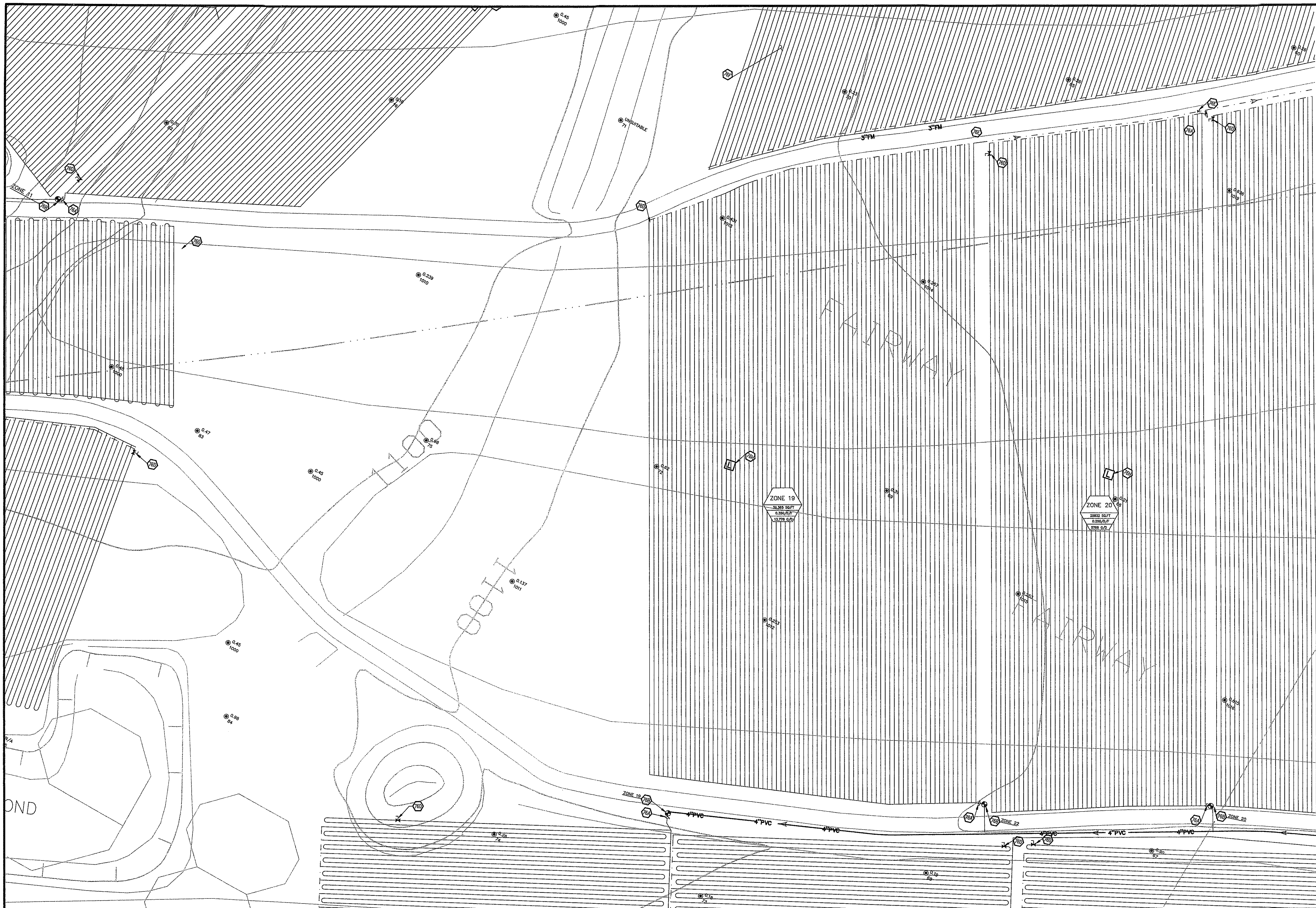
3317 S.W. 1 Street
Santonville, AR 72712

(479) 273-9472
FAX (479) 273-0844

JOB NO.: 20733.0
DWG NAME: 20733LEAD_REV2

DATE: 11-06-06
10:24 PM
REV: 23 OF 43

DRIP FIELD LAYOUT 5



LEGEND	
EXISTING	
---	BOUNDARY LINE
---	RIGHT OF WAY LINE
---	STORM DRAIN
---	GAS
---	OVERHEAD ELECTRIC
---	OVERHEAD ELECTRIC AND TELEPHONE
---	OVERHEAD TELEPHONE
---	OVERHEAD TV
---	SEWER
---	UNDERGROUND ELECTRIC
---	UNDERGROUND ELECTRIC AND TELEPHONE
---	UNDERGROUND TELEPHONE
---	UNDERGROUND TV
---	WATER
5-10-11 50.5	TREE INFO 5 = DIAMETER OF TRUNK IN FEET 10 = HEIGHT OF TREE IN FEET 11 = CROPPY DIAMETER IN FEET 50.5 = ELEVATION AT BASE OF TREE

PROPOSED	
---	BOUNDARY LINE
---	RIGHT OF WAY LINE
---	EASEMENT
---	PVC SUPPLY MANIFOLD
---	PVC RETURN MANIFOLDS
---	DIRECTION OF FLOW
XX	PERC TEST LOCATION

GENERAL UTILITY NOTES

A. ALL DRIPLINE SHALL BE 1/2" GEOWELL WASTEFLOW PC (MODEL NO. WPC16-2-24) WITH DRIP EMITTERS SPACED EVERY 2'.

B. DRIPLINE AND MANIFOLDS SHALL BE INSTALLED 10"-12" BELOW SOIL SURFACE.

C. ALL CONNECTIONS WITH DRIPLINE SHALL BE MADE WITH LOCKSLIP ADAPTERS. USE OF ADHESIVES ON DRIPLINE IS NOT ALLOWED.

D. DO NOT USE TOOLS ON LOCKSLIP ADAPTERS. HAND TIGHTEN ONLY.

E. TRENCH WIDTH FOR DRIPLINE BURIAL SHALL NOT EXCEED 4".

F. ALL SECTIONS OF SUPPLY AND RETURN MANIFOLDS NOT TIED DIRECTLY TO THE DRIPLINES SHALL BE INSTALLED AT A MINIMUM OF 24" BELOW GRADE.

G. VACUUMBREAKER/AIR RELEASE VALVES SHALL BE INSTALLED AT ALL HIGH POINTS IN SUPPLY AND RETURN MANIFOLD LINES.

H. TERRAIN IN DRIP FIELD IS NEARLY FLAT. LAY DRIP TUBING AS CLOSE TO PARALLEL WITH CONTOURS AS POSSIBLE.

I. ALL MANIFOLDS SHALL BE 4-INCH PVC, UNLESS OTHERWISE INDICATED.

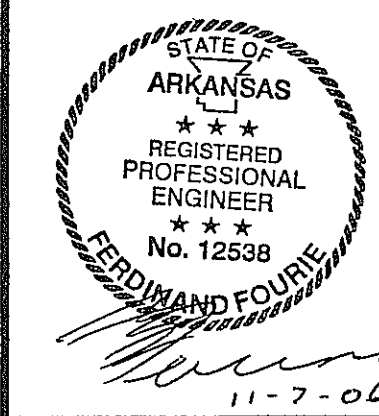
UTILITY DETAILS	
■	81A TEMPORARY DIVERSION DIKE

UTILITY NOTES	
5	75A PRESSURE INDICATING DEVICE
9	75B ZONE VALVE (ZORLER)
14	75D AIR/VACUUM RELEASE VALVE
14	75E CHECK VALVE
14	75F GEOWELL DRIPLINE (SPACED 2' O.D.)
14	75G ULTRA HEADWORKS BOX W/ GEOWELL FILTER
14	75H FIELD LYSMETER
14	75I SOLENOID VALVE FOR FLUSHING
14	75J FIELD LINE LOOP
14	75K PUMP TANK (SEE SPECIFICATIONS)

EFFLUENT DISPOSAL FIELD #4
ZONE 18, ZONE 19, ZONE 20

NOTE:
OVERALL EFFLUENT DISPOSAL FIELD
LAYOUT IS ON SHEET 18

TOTAL DRIPLINE REQUIRED (TREATMENT PLANT #2)	917,038 SO.FT
TOTAL ALTERNATE FIELD PROVIDED (TREATMENT PLANT #2)	273,377 SO.FT
ALTERNATE FIELD RATIO (TREATMENT PLANT #2)	30%



INITIAL DESIGN	2-9-06	DAT	FF	FF	FF
DATE	EOR	PM	DES	DRW	

CAVE SPRINGS WASTEWATER SYSTEM - PHASE 1
CAVE SPRINGS ARKANSAS

CEI ENGINEERING ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS

3317 S.W. 1 Street
Bentonville, AR 72712

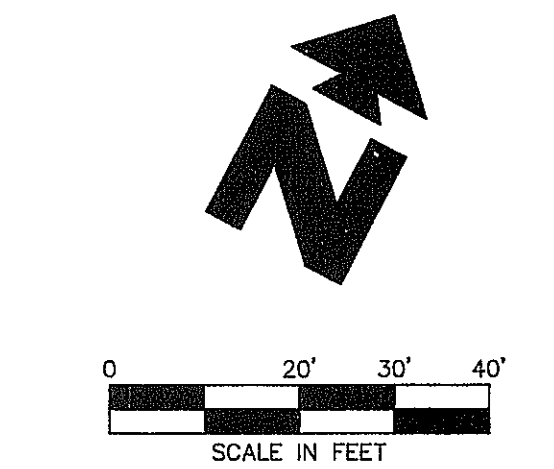
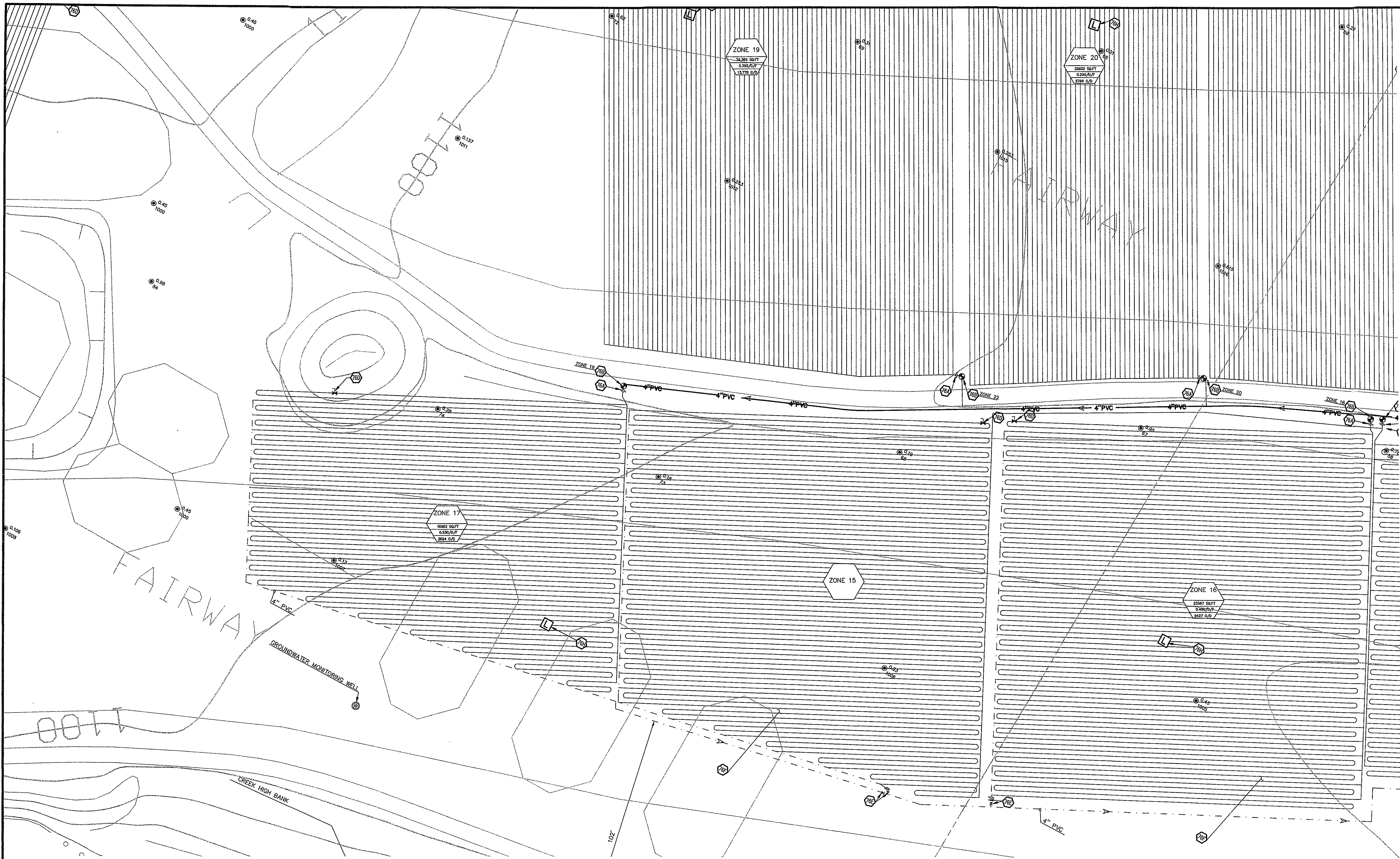
(479) 273-9472
FAX (479) 273-0844

JOB NO: 20733.0
DWG NAME: 20733LEAD_REV2

DATE: 11-06-06
TIME: 10:24 PM
REV: 5

SHEET NO: 24 OF 43

DRIP FIELD LAYOUT 6



LEGEND

- EXISTING
- BOUNDARY LINE
 - RIGHT OF WAY LINE
 - STORM DRAIN
 - GAS
 - OVERHEAD ELECTRIC
 - OVERHEAD ELECTRIC AND TELEPHONE
 - OVERHEAD TELEPHONE
 - OVERHEAD TV
 - SEWER
 - UNDERGROUND ELECTRIC
 - UNDERGROUND ELECTRIC AND TELEPHONE
 - UNDERGROUND TELEPHONE
 - UNDERGROUND TV
 - WATER
- TREE INFO
- 5-10-11 50.5
 - 5 = DIAMETER OF TRUNK IN FEET
 - 10 = HEIGHT OF TREE IN FEET
 - 11 = CANOPY DIAMETER IN FEET
 - 50.5 = ELEVATION AT BASE OF TREE

PROPOSED

- BOUNDARY LINE
- RIGHT OF WAY LINE
- EASEMENT
- PVC SUPPLY MANIFOLD
- PVC RETURN MANIFOLD
- DIRECTION OF FLOW
- PERC TEST LOCATION

GENERAL UTILITY NOTES

- ALL DRIPLINE SHALL BE 1/2" GEOPOLYMER WASTEFLOW PC (MODEL NO. WPC16-2-24) WITH DRIP EMITTERS SPACED EVERY 2'.
- DRIPLINE AND MANIFOLDS SHALL BE INSTALLED 10"-12" BELOW SOIL SURFACE.
- ALL CONNECTIONS WITH DRIPLINE SHALL BE MADE WITH LOCKSLIP ADAPTERS. USE OF ADHESIVES ON DRIPLINE IS NOT ALLOWED.
- DO NOT USE TOOLS ON LOCKSLIP ADAPTERS. HAND TIGHTEN ONLY.
- TRENCH WIDTH FOR DRIPLINE BURIAL SHALL NOT EXCEED 4".
- ALL SECTIONS OF SUPPLY AND RETURN MANIFOLDS NOT TIED DIRECTLY TO THE DRIPLINES SHALL BE INSTALLED AT A MINIMUM OF 24" BELOW GRADE.
- VACUUMBREAKER/AIR RELEASE VALVES SHALL BE INSTALLED AT ALL HIGH POINTS IN SUPPLY AND RETURN MANIFOLD LINES.
- IRRIGATION IN DRIP FIELD IS NEARLY FLAT. LAY DRIP TUBING AS CLOSE TO PARALLEL WITH CONTOURS AS POSSIBLE.
- ALL MANIFOLDS SHALL BE 4-INCH PVC, UNLESS OTHERWISE INDICATED.

UTILITY DETAILS

- 81A TEMPORARY DIVERSION DIKE

UTILITY NOTES

- 76A PRESSURE INDICATING DEVICE
- 76B ZONE VALVE (ZOLLER)
- 76C AIR/VACUUM RELEASE VALVE
- 76E CHECK VALVE
- 76F GEOPOLYMER DRIPLINE (SPACED 2' O.C.)
- 76G ULTRA HEADWORKS BOX W/ GEOWAC FILTER
- 76H FIELD LYSMETER
- 76I SOLENOID VALVE FOR FLUSHING
- 76J FIELD LINE LOOP
- 76K PUMP TANK (SEE SPECIFICATIONS)

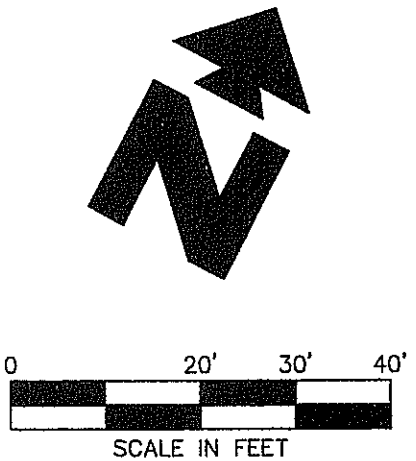
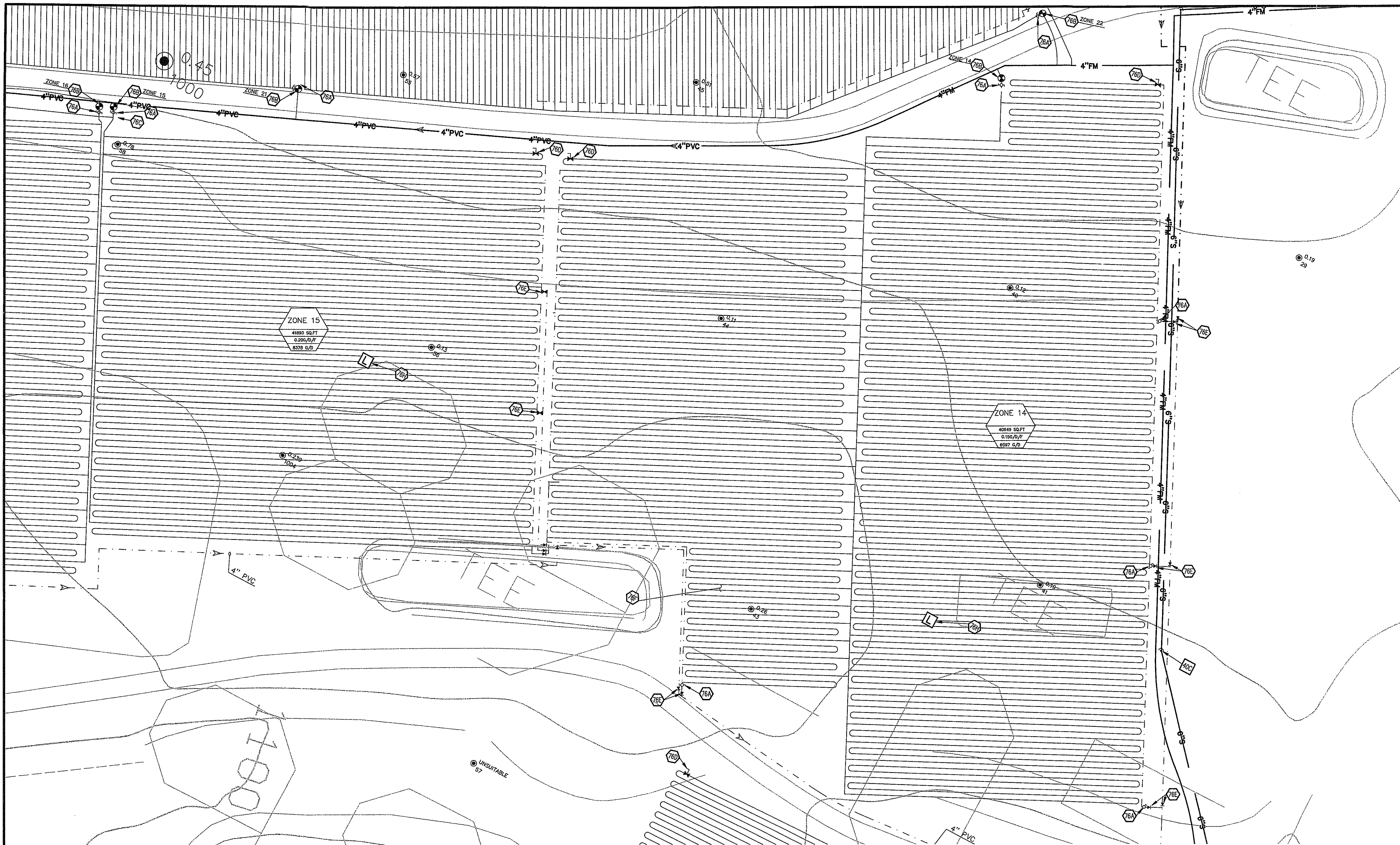
EFFLUENT DISPOSAL FIELD #4
ZONE 15B, ZONE 16, ZONE 17

NOTE:
OVERALL EFFLUENT DISPOSAL FIELD
LAYOUT IS ON SHEET 18

TOTAL DRIPLINE REQUIRED (TREATMENT PLANT #2)	917,038 SQ.FT
TOTAL ALTERNATE FIELD PROVIDED (TREATMENT PLANT #2)	273,377 SQ.FT
ALTERNATE FIELD RATIO (TREATMENT PLANT #2)	30%



INITIAL DESIGN	2-9-06	DAT	FF	FF	FF
DATE	EOR	PM	DES	DRW	
CAVE SPRINGS WASTEWATER SYSTEM - PHASE 1 CAVE SPRINGS					
CEI ENGINEERING ASSOCIATES, INC.					
3317 S.W. 1 Street (479) 273-9472 JOB NO.: 20733.0					
Bentonville, AR 72712 FAX (479) 273-0844 DWG NAME: 20733LEAC-REV2					
DRIP FIELD LAYOUT 7					
DATE 11-06-06 SHEET NO. 25 of 43					
REV 10:24 PM					



LEGEND

EXISTING	
---	BOUNDARY LINE
---	RIGHT OF WAY LINE
---	STEAM DRAIN
---	GAS
---	OVERHEAD ELECTRIC
---	OVERHEAD ELECTRIC AND TELEPHONE
---	OVERHEAD TELEPHONE
---	OVERHEAD TV
---	SEWER
---	UNDERGROUND ELECTRIC
---	UNDERGROUND ELECTRIC AND TELEPHONE
---	UNDERGROUND TELEPHONE
---	UNDERGROUND TV
---	WATER
TREE INFO	
5-10-11 50.5	5 = DIAMETER OF TRUNK IN FEET
	10 = HEIGHT OF TREE IN FEET
	11 = CANOPY DIAMETER IN FEET
	50.5 = ELEVATION AT BASE OF TREE
PROPOSED	
---	BOUNDARY LINE
---	RIGHT OF WAY LINE
---	EASEMENT
---	PVC SUPPLY MANIFOLD
---	PVC RETURN MANIFOLD
---	DIRECTION OF FLOW
XX	PERC TEST LOCATION

GENERAL UTILITY NOTES

- ALL DRIPLINE SHALL BE 1/2" GEOWASTE WASTEFLOW PC (MODEL NO. WPC16-2-24) WITH DRIP EMITTERS SPACED EVERY 2'.
- DRIPLINE AND MANIFOLDS SHALL BE INSTALLED 10"-12" BELOW SOIL SURFACE.
- ALL CONNECTIONS WITH DRIPLINE SHALL BE MADE WITH LOCKSLIP ADAPTERS. USE OF ADHESIVES ON DRIPLINE IS NOT ALLOWED.
- DO NOT USE TOOLS ON LOCKSLIP ADAPTERS. HAND TIGHTEN ONLY.
- TRENCH WIDTH FOR DRIPLINE BURIAL SHALL NOT EXCEED 4".
- ALL SECTIONS OF SUPPLY AND RETURN MANIFOLDS NOT TIED DIRECTLY TO THE DRIPLINES SHALL BE INSTALLED AT A MINIMUM OF 24" BELOW GRADE.
- VACUUMBREAKER/AIR RELEASE VALVES SHALL BE INSTALLED AT ALL HIGH POINTS IN SUPPLY AND RETURN MANIFOLD LINES.
- TERRAIN IN DRIP FIELD IS NEARLY FLAT. LAY DRIP TUBING AS CLOSE TO PARALLEL WITH CONTOURS AS POSSIBLE.
- ALL MANIFOLDS SHALL BE 4-INCH PVC, UNLESS OTHERWISE INDICATED.

UTILITY DETAILS

- 81A TEMPORARY DIVERSION DIKE

UTILITY NOTES

- 76A PRESSURE INDICATING DEVICE
- 76B ZONE VALVE (ZOBELL)
- 76C AIR/VACUUM RELEASE VALVE
- 76E CHECK VALVE
- 76F GEOWASTE DRIP LINE (SPACED 2' O.C.)
- 76G ULTRA HEADWORKS BOX W/ GEOWASTE FILTER
- 76H FIELD LYSMETER
- 76I SOLENOID VALVE FOR FLUSHING
- 76J FIELD LINE LOOP
- 76K PUMP TANK (SEE SPECIFICATIONS)

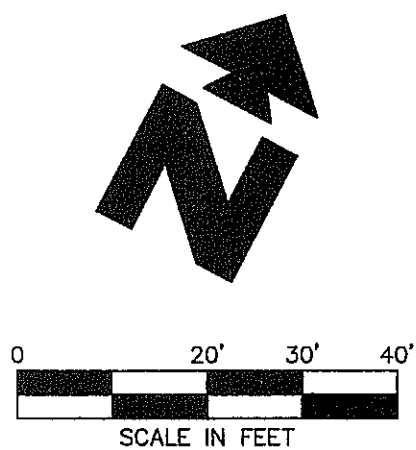
NOTE:
OVERALL EFFLUENT DISPOSAL FIELD
LAYOUT IS ON SHEET 18

EFFLUENT DISPOSAL FIELD #4 ZONE 14, ZONE 15A

TOTAL DRIPFIELD REQUIRED (TREATMENT PLANT #2)	917,038 SQ. FT.
TOTAL ALTERNATE FIELD PROVIDED (TREATMENT PLANT #2)	273,377 SQ. FT.
ALTERNATE FIELD RATIO (TREATMENT PLANT #2)	30%



INITIAL DESIGN	2-9-06	DAT	FF	FF	FF
	DATE	EOR	PM	DES	DRW
CAVE SPRINGS WASTEWATER SYSTEM - PHASE 1 CAVE SPRINGS					
CEI ENGINEERS			ENGINEERING ASSOCIATES, INC.		
3317 S.W. 1 Street Bentonville, AR 72712			(479) 273-9472 FAX (479) 273-0844		
JOB NO.: 20733.0 DWG NAME: 20733/LEACH_REV2			DATE: 11-06-06 10:24 PM REV5		
DRIP FIELD LAYOUT 8			SHEET NO. 26 OF 43		



LEGEND

EXISTING

- BOUNDARY LINE
- RIGHT OF WAY LINE
- STORM DRAIN
- GAS
- OVERHEAD ELECTRIC
- OVERHEAD ELECTRIC AND TELEPHONE
- OVERHEAD TELEPHONE
- OVERHEAD TV
- SEWER
- UNDERGROUND ELECTRIC
- UNDERGROUND ELECTRIC AND TELEPHONE
- UNDERGROUND TELEPHONE
- UNDERGROUND TV
- WATER
- WATER INFO
- 5-10-11 50.5
- 5 = DIAMETER OF TRUNK IN FEET
- 10 = HEIGHT OF TREE IN FEET
- 11 = CANOPY DIAMETER IN FEET
- 50.5 = ELEVATION AT BASE OF TREE

PROPOSED

- BOUNDARY LINE
- RIGHT OF WAY LINE
- EASEMENT
- PVC SUPPLY MANFOLD
- PVC RETURN MANFOLDS
- DIRECTION OF FLOW
- PERC TEST LOCATION

GENERAL UTILITY NOTES

- A. ALL DRIPLINE SHALL BE 1/2" GEOPOLYMER WASTEFLOW PC (MODEL NO. WPC16-2-24) WITH DRIP EMITTERS SPACED EVERY 2'.
- B. DRIPLINE AND MANFOLDS SHALL BE INSTALLED 10"-12" BELOW SOIL SURFACE.
- C. ALL CONNECTIONS WITH DRIPLINE SHALL BE MADE WITH LOCKSLIP ADAPTERS. USE OF ADHESIVES ON DRIPLINE IS NOT ALLOWED.
- D. DO NOT USE TOOLS ON LOCKSLIP ADAPTERS. HAND TIGHTEN ONLY.
- E. TRENCH WIDTH FOR DRIPLINE BURIAL SHALL NOT EXCEED 4".
- F. ALL SECTIONS OF SUPPLY AND RETURN MANFOLDS NOT TIED DIRECTLY TO THE DRIPLINES SHALL BE INSTALLED AT A MINIMUM OF 24" BELOW GRADE.
- G. VACUUMBREAKER/AIR RELEASE VALVES SHALL BE INSTALLED AT ALL HIGH POINTS IN SUPPLY AND RETURN MANFOLD LINES.
- H. TERRAIN IN DRIP FIELD IS NEARLY FLAT. LAY DRIP TUBING AS CLOSE TO PARALLEL WITH CONTOURS AS POSSIBLE.
- I. ALL MANFOLDS SHALL BE 4-INCH PVC, UNLESS OTHERWISE INDICATED.

UTILITY DETAILS

- 81A TEMPORARY DIVERSION DIKE

UTILITY NOTES

- 76A PRESSURE INDICATING DEVICE
- 76B ZONE VALVE (ZOELEK)
- 76D AIR/VACUUM RELEASE VALVE
- 76E CHECK VALVE
- 76F GEOPOLYMER DRIPLINE (SPACED 2' O.C.)
- 76G ULTRA HEADWORKS BOX W/ GEOPOLYMER FILTER
- 76H FIELD LYNETER
- 76I SOLENOID VALVE FOR FLUSHING
- 76J FIELD LINE LOOP
- 76K PUMP TANK (SEE SPECIFICATIONS)

EFFLUENT DISPOSAL FIELD #4 ZONE 13

TOTAL DRIFIELD REQUIRED (TREATMENT PLANT #2) 917,038 SQ.FT.
TOTAL ALTERNATE FIELD PROVIDED (TREATMENT PLANT #2) 273,377 SQ.FT.
ALTERNATE FIELD RATIO (TREATMENT PLANT #2) 30%



INITIAL DESIGN	2-9-06	DAT	FF	FF	FF
DATE	EOR	PM	DES	DRW	

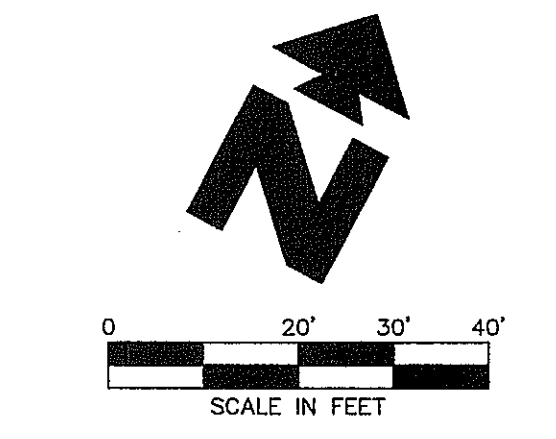
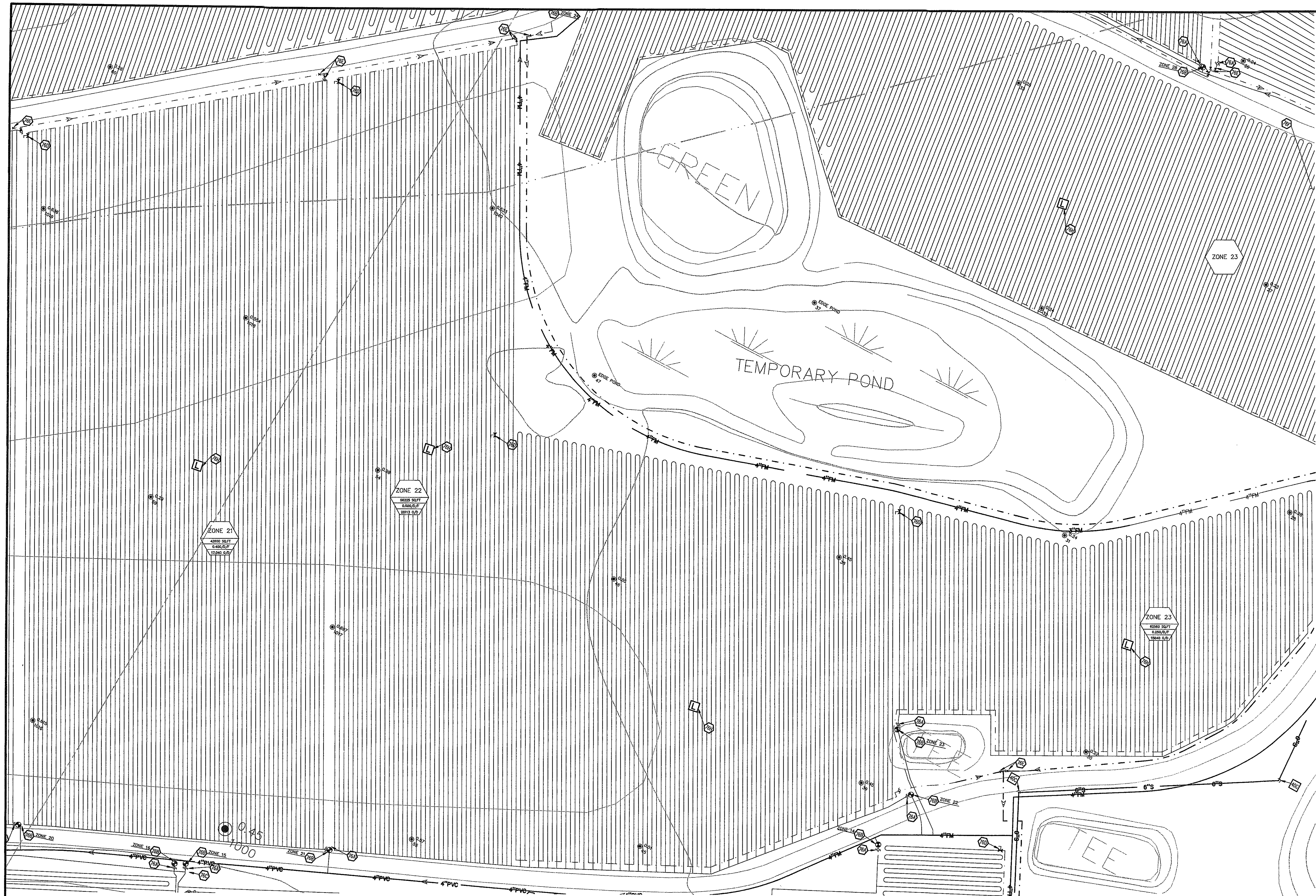
CAVE SPRINGS WASTEWATER SYSTEM - PHASE 1
CAVE SPRINGS ARKANSAS

CEI ENGINEERING ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS

3317 S.W. 1 Street (479) 273-9472 JOB NO.: 20733.0
Bentonville, AR 72712 FAX (479) 273-0844 DWG NAME: 20733LEACH_REV2

DATE 11-06-06 SHEET NO. 27 OF 43
REV5 10:24 PM

DRIP FIELD LAYOUT 9



LEGEND	
EXISTING	
---	BOUNDARY LINE
---	RIGHT OF WAY LINE
---	STORM DRAIN
---	GAS
---	OVERHEAD ELECTRIC
---	OVERHEAD ELECTRIC AND TELEPHONE
---	OVERHEAD TELEPHONE
---	OVERHEAD TV
---	SEWER
---	UNDERGROUND ELECTRIC
---	UNDERGROUND ELECTRIC AND TELEPHONE
---	UNDERGROUND TELEPHONE
---	UNDERGROUND TV
---	WATER
TREE INFO	
5-10-11 50.5	5 = DIAMETER OF TRUNK IN FEET
	10 = HEIGHT OF TREE IN FEET
	11 = CANOPY DIAMETER IN FEET
	50.5 = ELEVATION AT BASE OF TREE

PROPOSED	
---	BOUNDARY LINE
---	RIGHT OF WAY LINE
---	EASEMENT
---	PVC SUPPLY MANIFOLD
---	PVC RETURN MANIFOLDS
---	DIRECTION OF FLOW
---	PERC TEST LOCATION

GENERAL UTILITY NOTES

A. ALL DRIPLINE SHALL BE 1/2" GEOPOLYMER WASTEWATER PC (MODEL NO. WPC16-2-24) WITH DRIP EMITTERS SPACED EVERY 2'.

B. DRIPLINE AND MANIFOLDS SHALL BE INSTALLED 10"-12" BELOW SOIL SURFACE.

C. ALL CONNECTIONS WITH DRIPLINE SHALL BE MADE WITH LOCKSPIC ADAPTERS. USE OF ADAPTERS ON DRIPLINE IS NOT ALLOWED.

D. DO NOT USE TOOLS ON LOCKSPIC ADAPTERS. HAND TIGHTEN ONLY.

E. TRENCH WIDTH FOR DRIPLINE BURIAL SHALL NOT EXCEED 4".

F. ALL SECTIONS OF SUPPLY AND RETURN MANIFOLDS NOT TIED DIRECTLY TO THE DRIPLINES SHALL BE INSTALLED AT A MINIMUM OF 24" BELOW GRADE.

G. VACUUMBREAKER/AIR RELEASE VALVES SHALL BE INSTALLED AT ALL HIGH POINTS IN SUPPLY AND RETURN MANIFOLD LINES.

H. TERRAIN IN DRIP FIELD IS NEARLY FLAT. LAY DRIP TUBING AS CLOSE TO PARALLEL WITH CONTOURS AS POSSIBLE.

I. ALL MANIFOLDS SHALL BE 4-INCH PVC, UNLESS OTHERWISE INDICATED.

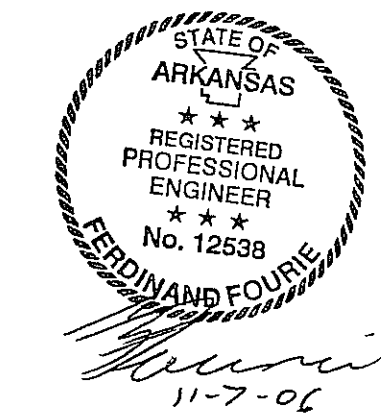
UTILITY DETAILS	
---	81A TEMPORARY DIVERSION DIKE

UTILITY NOTES	
5	76A PRESSURE INDICATING DEVICE
5	76B ZONE VALVE (ZOBELLER)
5	76C AIR/VACUUM RELEASE VALVE
5	76E CHECK VALVE
5	76F GEOPOLYMER DRIPLINE (SPACED 2' O.C.)
5	76G ULTRA HEADWORKS BOX W/ GEOWAC FILTER
5	76H FIELD TYSMETER
5	76I SOLENOID VALVE FOR FLUSHING
5	76J FIELD LINE LOOP
5	76K PUMP TANK (SEE SPECIFICATIONS)

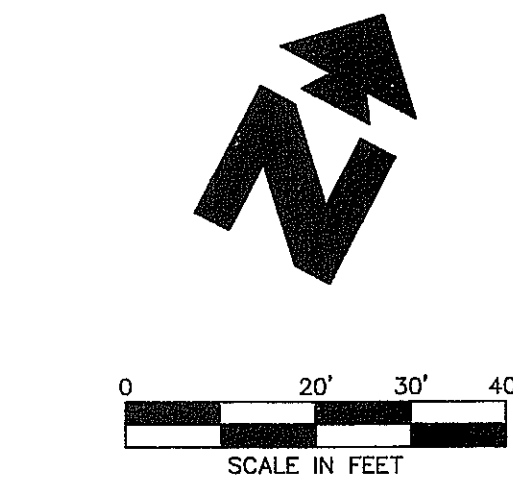
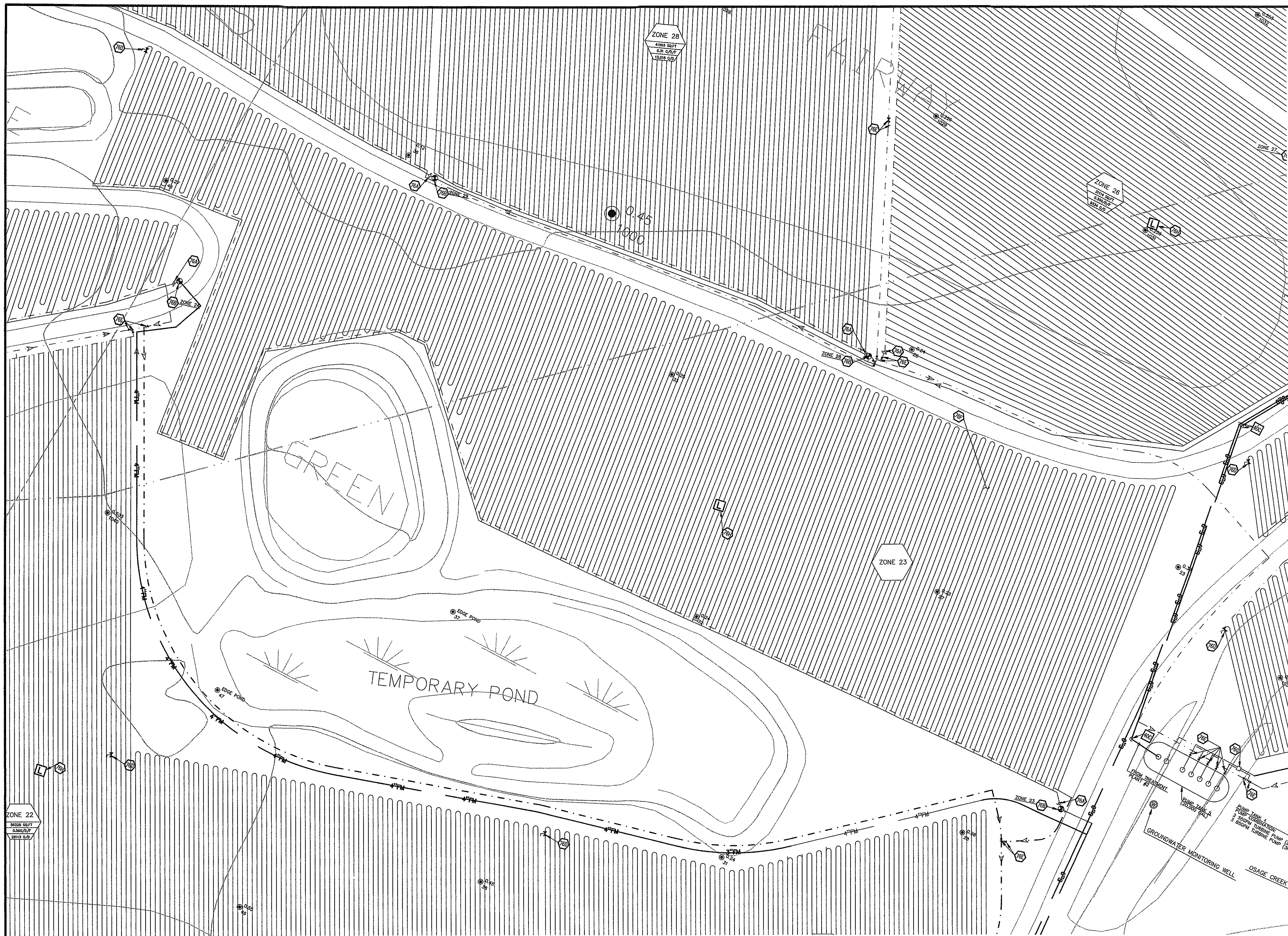
NOTE:
OVERALL EFFLUENT DISPOSAL FIELD
LAYOUT IS ON SHEET 18

EFFLUENT DISPOSAL FIELD #4
ZONE 21, ZONE 22, ZONE 23A

TOTAL DRIPLINE REQUIRED (TREATMENT PLANT #2)	917,036 SQ.FT.
TOTAL ALTERNATE FIELD PROVIDED (TREATMENT PLANT #2)	273,377 SQ.FT.
ALTERNATE FIELD RATIO (TREATMENT PLANT #2)	30%



INITIAL DESIGN	2-9-06	DAT	FF	FF	FF
DATE	EOR	PM	DES	DRW	
CAVE SPRINGS WASTEWATER SYSTEM - PHASE 1 CAVE SPRINGS ARKANSAS					
CEI ENGINEERING ASSOCIATES, INC.			ENGINEERS PLANNERS SURVEYORS		
3317 S.W. 1 Street Bentonville, AR 72712			(479) 273-9472 FAX (479) 273-0844		
JOB NO.: 20733.0 DWG NAME: 20733LEAC_LREV2			DATE 11-06-06 10:24 PM REV5		
SHEET NO. 28 OF 43			DRIP FIELD LAYOUT 10		



LEGEND

EXISTING

- BOUNDARY LINE
- RIGHT OF WAY LINE
- STORM DRAIN
- GAS
- OVERHEAD ELECTRIC
- OVERHEAD ELECTRIC AND TELEPHONE
- OVERHEAD TELEPHONE
- OVERHEAD TV
- SEWER
- UNDERGROUND ELECTRIC
- UNDERGROUND ELECTRIC AND TELEPHONE
- UNDERGROUND TELEPHONE
- UNDERGROUND TV
- WATER
- TREE INFO
5-10-11 50.5
5 = DIAMETER OF TRUNK IN FEET
10 = HEIGHT OF TREE IN FEET
11 = CAVITY DIAMETER IN FEET
50.5 = ELEVATION AT BASE OF TREE

PROPOSED

- BOUNDARY LINE
- RIGHT OF WAY LINE
- EASEMENT
- PVC SUPPLY MANIFOLD
- PVC RETURN MANIFOLDS
- DIRECTION OF FLOW
- PERC TEST LOCATION

GENERAL UTILITY NOTES

- ALL DRIPLINE SHALL BE 1/2" GEOPLOW WASTEFLOW PC (MODEL NO. WPC16-2-24) WITH DRIP EMITTERS SPACED EVERY 2'.
- DRIPLINE AND MANIFOLDS SHALL BE INSTALLED 10"-12" BELOW SOL SURFACE.
- ALL CONNECTIONS WITH DRIPLINE SHALL BE MADE WITH LOCKSLIP ADAPTERS. USE OF ADHESIVES ON DRIPLINE IS NOT ALLOWED.
- DO NOT USE TOOLS ON LOCKSLIP ADAPTERS. HAND TIGHTEN ONLY.
- TRENCH WIDTH FOR DRIPLINE BURIAL SHALL NOT EXCEED 4".
- ALL SECTIONS OF SUPPLY AND RETURN MANIFOLDS NOT TIED DIRECTLY TO THE DRIPLINES SHALL BE INSTALLED AT A MINIMUM OF 24" BELOW GRADE.
- VACUUMBREAKER/RR RELEASE VALVES SHALL BE INSTALLED AT ALL HIGH POINTS IN SUPPLY AND RETURN MANIFOLD LINES.
- TERRAIN IN DRIP FIELD IS NEARLY FLAT. LAY DRIP TUBING AS CLOSE TO PARALLEL WITH CONTOURS AS POSSIBLE.
- ALL MANIFOLDS SHALL BE 4-INCH PVC, UNLESS OTHERWISE INDICATED.

UTILITY DETAILS

- 81A TEMPORARY DIVERSION DIKE

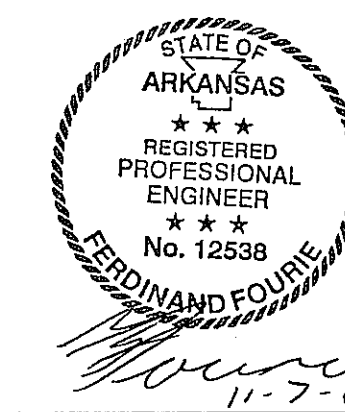
UTILITY NOTES


- 76A PRESSURE INDICATING DEVICE
- 76B ZONE VALVE (ZUELLER)
- 76D AIR/VACUUM RELEASE VALVE
- 76E CHECK VALVE
- 76F GEOPLOW DRIP LINE (SPACED 2' O.C.)
- 76G ULTRA HEADWORKS BOX W/ GEOVAC FILTER
- 76H FIELD LYSIMETER
- 76I SOLENOID VALVE FOR FLUSHING
- 76J FIELD LINE LOOP
- 76K PUMP TANK (SEE SPECIFICATIONS)

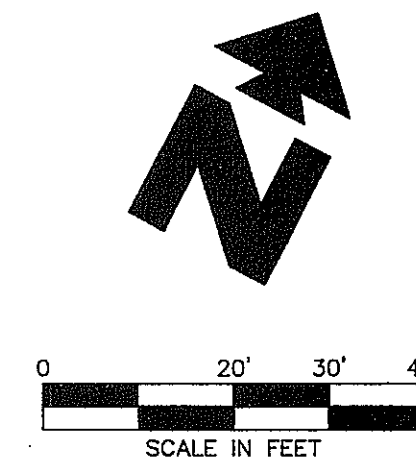
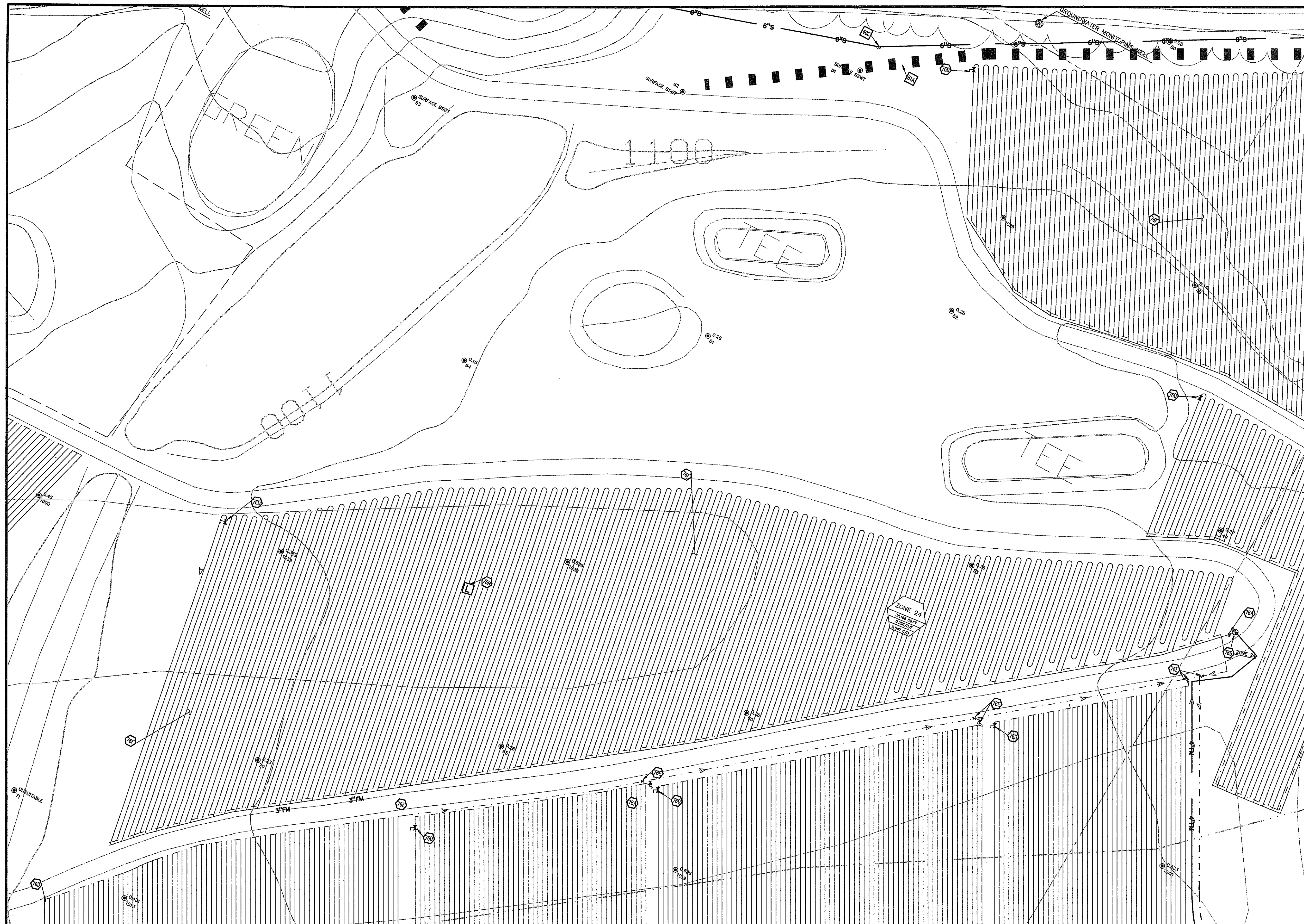
NOTE:
OVERALL EFFLUENT DISPOSAL FIELD
LAYOUT IS ON SHEET 18

EFFLUENT DISPOSAL FIELD #4 ZONE 23B

TOTAL DRIPFIELD REQUIRED (TREATMENT PLANT #2) 817,038 SQ.FT
TOTAL ALTERNATE FIELD PROVIDED (TREATMENT PLANT #2) 273,377 SQ.FT
ALTERNATE FIELD RATIO (TREATMENT PLANT #2) 33%



INITIAL DESIGN	2-9-06	DAT	FF	FF	FF
DATE	EOR	PM	DES	DRW	
CAVE SPRINGS WASTEWATER SYSTEM - PHASE 1					
CAVE SPRINGS			ARKANSAS		
		ENGINEERING ASSOCIATES, INC			
ENGINEERS		PLANNERS		SURVEYORS	
3317 S.W. 1 Street		(479) 273-9472		JOB NO.: 20733.0	
Bentonville, AR 72712		FAX (479) 273-0844		DWG NAME: 20733LEAC	
DATE		11-06-08		SHEET NO.	
10:24 PM				29 of 43	
DRIP FIELD LAYOUT 11					
REV'S					



LEGEND

EXISTING

- BOUNDARY LINE
- RIGHT OF WAY LINE
- STORM DRAIN
- GAS
- OVERHEAD ELECTRIC
- OVERHEAD ELECTRIC AND TELEPHONE
- OVERHEAD TELEPHONE
- OVERHEAD TV
- SEWER
- UNDERGROUND ELECTRIC
- UNDERGROUND ELECTRIC AND TELEPHONE
- UNDERGROUND TELEPHONE
- UNDERGROUND TV
- WATER

TREE INFO
 5 = DIAMETER OF TRUNK IN FEET
 10 = HEIGHT OF TREE IN FEET
 11 = CANOPY DIAMETER IN FEET
 50.5 = ELEVATION AT BASE OF TREE

PROPOSED

- BOUNDARY LINE
- RIGHT OF WAY LINE
- EASEMENT
- PVC SUPPLY MANIFOLD
- PVC RETURN MANIFOLDS
- DIRECTION OF FLOW
- PERC TEST LOCATION

GENERAL UTILITY NOTES

- ALL DRIPLINE SHALL BE 1/2" GEOWEAVE WASTEWATER PC (MODEL NO. WPC16-2-24) WITH DRIP EMITTERS SPACED EVERY 2'.
- DRIPLINE AND MANIFOLDS SHALL BE INSTALLED 10"-12" BELOW SOIL SURFACE.
- CALL CONNECTIONS WITH DRIPLINE SHALL BE MADE WITH LOOKSLIP ADAPTERS. USE OF ADHESIVES ON DRIPLINE IS NOT ALLOWED.
- DO NOT USE TOOLS ON LOOKSLIP ADAPTERS. HAND TIGHTEN ONLY.
- TRENCH WIDTH FOR DRIPLINE BURIAL SHALL NOT EXCEED 4".
- ALL SECTIONS OF SUPPLY AND RETURN MANIFOLDS NOT TIED DIRECTLY TO THE DRIPLINES SHALL BE INSTALLED AT A MINIMUM OF 24" BELOW GRADE.
- VACUUMBREAKER/AIR RELEASE VALVES SHALL BE INSTALLED AT ALL HIGH POINTS IN SUPPLY AND RETURN MANIFOLD LINES.
- TERRAIN IN DRIP FIELD IS NEARLY FLAT. LAY DRIP TUBING AS CLOSE TO PARALLEL WITH CONTOURS AS POSSIBLE.
- ALL MANIFOLDS SHALL BE 4-INCH PVC, UNLESS OTHERWISE INDICATED.

UTILITY DETAILS

- 81A TEMPORARY DIVERSION DIKE

UTILITY NOTES

- 76A PRESSURE INDICATING DEVICE
- 76B ZONE VALVE (ZOELEK)
- 76D AIR/VACUUM RELEASE VALVE
- 76E CHECK VALVE
- 76F GEOWEAVE DRIP LINE (SPACED 2' O.C.)
- 76G ULTRA HEADWORKS BOX W/ GEOWEAVE FILTER
- 76H FIELD LYSETER
- 76I SOLENOID VALVE FOR FLUSHING
- 76J FIELD LINE LOOP
- 76K PUMP TANK (SEE SPECIFICATIONS)

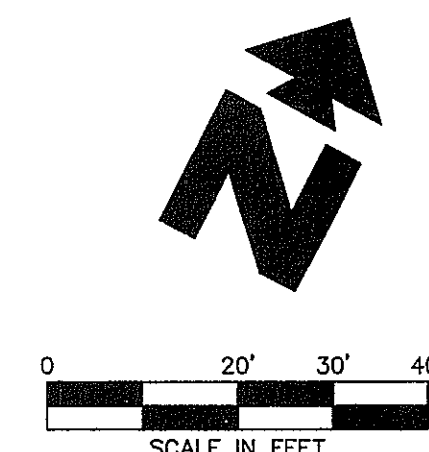
EFFLUENT DISPOSAL FIELD #4 ZONE 24

NOTE:
 OVERALL EFFLUENT DISPOSAL FIELD
 LAYOUT IS ON SHEET 18

TOTAL DRIPFIELD REQUIRED (TREATMENT PLANT #2) 917,038 SQ.FT.
 TOTAL ALTERNATE FIELD PROVIDED (TREATMENT PLANT #2) 273,377 SQ.FT.
 ALTERNATE FIELD RATIO (TREATMENT PLANT #2) 30%



INITIAL DESIGN	2-9-06	DAT	FF	FF	FF
	DATE	EOR	PM	DES	DRW
CAVE SPRINGS WASTEWATER SYSTEM - PHASE 1 CAVE SPRINGS ARKANSAS					
CEI [®]			ENGINEERING ASSOCIATES, INC		
ENGINEERS		PLANNERS		SURVEYORS	
3317 S.W. 1 Street Bentonville, AR 72712		(479) 273-9472 FAX (479) 273-0844		JOB NO: 20733.0 DWG NAME: 20733LEAC	
DATE 11-06-06 10:24 PM		SHEET NO. 30 OF 43		REV#	
DRIP FIELD LAYOUT 12					



LEGEND

- EXISTING
- BOUNDARY LINE
 - RIGHT OF WAY LINE
 - STORM DRAIN
 - GAS
 - OVERHEAD ELECTRIC
 - OVERHEAD ELECTRIC AND TELEPHONE
 - OVERHEAD TELEPHONE
 - OVERHEAD TV
 - SEWER
 - UNDERGROUND ELECTRIC
 - UNDERGROUND ELECTRIC AND TELEPHONE
 - UNDERGROUND TELEPHONE
 - UNDERGROUND TV
 - WATER
- TREE INFO
- .5-10-11 50.5
 - .5 = DIAMETER OF TRUNK IN FEET
 - 10 = HEIGHT OF TREE IN FEET
 - 11 = CANOPY DIAMETER IN FEET
 - 50.5 = ELEVATION AT BASE OF TREE

- PROPOSED
- BOUNDARY LINE
 - RIGHT OF WAY LINE
 - EASEMENT
 - PVC SUPPLY MANIFOLD
 - PVC RETURN MANIFOLD
 - DIRECTION OF FLOW
 - PERC TEST LOCATION

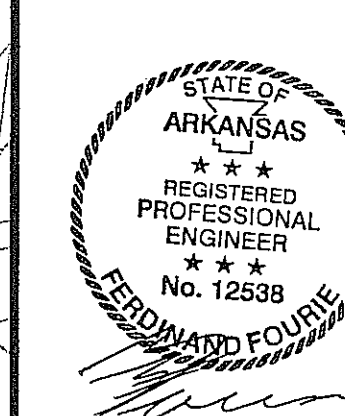
- GENERAL UTILITY NOTES
- A. ALL DRIPLINE SHALL BE 1/2" GEOPLOW WASTEFLOW PG (MODEL NO. WPG16-2-24) WITH DRIP EMITTERS SPACED EVERY 2'.
- B. DRIPLINE AND MANIFOLDS SHALL BE INSTALLED 10"-12" BELOW SOIL SURFACE. CALL CONNECTIONS WITH DRIPLINE SHALL BE MADE WITH LOCKSLIP ADAPTERS. USE OF ADHESIVES ON DRIPLINE IS NOT ALLOWED.
- C. DO NOT USE TOOLS ON LOCKSLIP ADAPTERS. HAND TIGHTEN ONLY.
- D. TRENCH WIDTH FOR DRIPLINE BURIAL SHALL NOT EXCEED 4".
- E. ALL SECTIONS OF SUPPLY AND RETURN MANIFOLDS NOT TIED DIRECTLY TO THE DRIPLINES SHALL BE INSTALLED AT A MINIMUM OF 24" BELOW GRADE.
- G. VACUUMBREAKER/AIR RELEASE VALVES SHALL BE INSTALLED AT ALL HIGH POINTS IN SUPPLY AND RETURN MANIFOLD LINES.
- H. TERRAIN IN DRIP FIELD IS NEARLY FLAT. LAY DRIP TUBING AS CLOSE TO PARALLEL WITH CONTOURS AS POSSIBLE.
- I. ALL MANIFOLDS SHALL BE 4-INCH PVC, UNLESS OTHERWISE INDICATED.


- UTILITY DETAILS
- 81A TEMPORARY DIVERSION DIKE

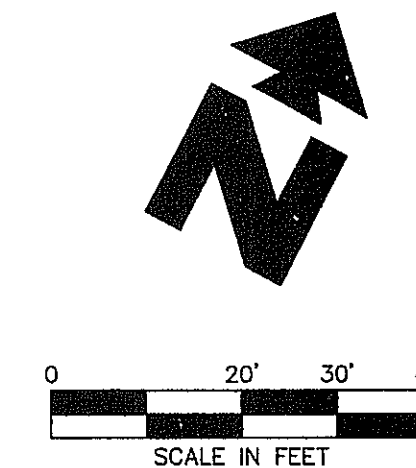
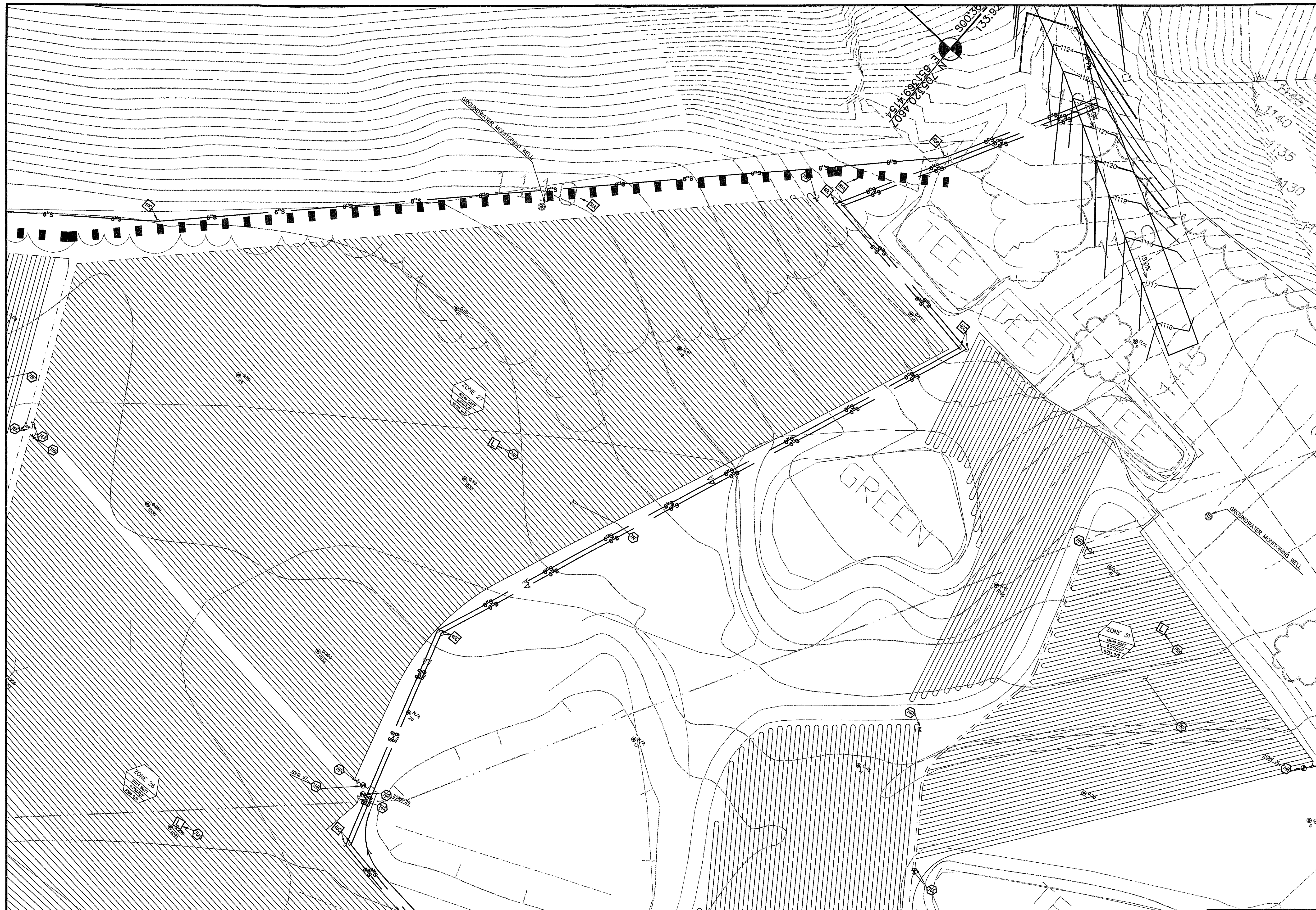
- UTILITY NOTES
- 76A PRESSURE INDICATING DEVICE
 - 76B ZONE VALVE (ZOBELER)
 - 76C AIR/VACUUM RELEASE VALVE
 - 76E CHECK VALVE
 - 76F GEOPLOW DRIP LINE (SPACED 2' O.C.)
 - 76G ULTRA HEADWORKS BOX W/ GEOPAC FILTER
 - 76H FIELD LYSMETER
 - 76I SOLENOID VALVE FOR FLUSHING
 - 76J FIELD LINE LOOP
 - 76K PUMP TANK (SEE SPECIFICATIONS)

ZONE 25, ZONE 26, ZONE 30
EFFLUENT DISPOSAL FIELD #5

TOTAL DRIPLINE REQUIRED (TREATMENT PLANT #2) 917,038 SQ.FT.
TOTAL ALTERNATE FIELD PROVIDED (TREATMENT PLANT #2) 273,377 SQ.FT.
ALTERNATE FIELD RATIO (TREATMENT PLANT #2) 30%



INITIAL DESIGN	2-9-06	DAT	FF	FF	FF
	DATE	FOR	PM	DES	DRW
CAVE SPRINGS WASTEWATER SYSTEM - PHASE 1					
CAVE SPRINGS ARKANSAS					
		ENGINEERING ASSOCIATES, INC			
ENGINEERS		PLANNERS		SURVEYORS	
3317 S.W. 1 Street		(479) 273-9472		JOB NO.: 20733.0	
Bentonville, AR 72712		FAX (479) 273-0844		DWG NAME: 20733LEAC1.DWG	
DATE		11-09-06		SHEET NO.	
REV'S		10:24 PM		31 of 43	
DRIP FIELD LAYOUT 13					



LEGEND

- EXISTING**
- BOUNDARY LINE
 - RIGHT OF WAY LINE
 - STORM DRAIN
 - GAS
 - OVERHEAD ELECTRIC
 - OVERHEAD ELECTRIC AND TELEPHONE
 - OVERHEAD TELEPHONE
 - OVERHEAD TV
 - SEWER
 - UNDERGROUND ELECTRIC
 - UNDERGROUND ELECTRIC AND TELEPHONE
 - UNDERGROUND TELEPHONE
 - UNDERGROUND TV
 - WATER
- TREE INFO**
- 5-10-11 50.5 = DIAMETER OF TRUNK IN FEET
 - 10 = HEIGHT OF TREE IN FEET
 - 11 = CANOPY DIAMETER IN FEET
 - 50.5 = ELEVATION AT BASE OF TREE

- PROPOSED**
- BOUNDARY LINE
 - RIGHT OF WAY LINE
 - EASEMENT
 - PVC SUPPLY MANIFOLD
 - PVC RETURN MANIFOLDS
 - DIRECTION OF FLOW
 - PERC TEST LOCATION

GENERAL UTILITY NOTES

- A. ALL DRIPLINE SHALL BE 1/2" GEOWASTEFLOW PC (MODEL NO. WFC16-2-24)
- B. WITH DRIP EMITTERS SPACED EVERY 2'
- C. DRIPLINE AND MANIFOLDS SHALL BE INSTALLED 10"-12" BELOW SOIL SURFACE
- D. ALL CONNECTIONS WITH DRIPLINE SHALL BE MADE WITH LOCKSLIP ADAPTERS. USE OF ADHESIVES ON DRIPLINE IS NOT ALLOWED.
- E. DO NOT USE TOOLS ON LOCKSLIP ADAPTERS. HAND TIGHTEN ONLY.
- F. TRENCH WIDTH FOR DRIPLINE BURIAL SHALL NOT EXCEED 4"
- G. ALL SECTIONS OF SUPPLY AND RETURN MANIFOLDS NOT TIED DIRECTLY TO THE DRIPLINE SHALL BE INSTALLED AT A MINIMUM OF 24" BELOW GROUND.
- H. VACUUMBREAKER/AIR RELEASE VALVES SHALL BE INSTALLED AT ALL HIGH POINTS IN SUPPLY AND RETURN MANIFOLD LINES.
- I. TERRAIN IN DRIP FIELD IS NEARLY FLAT. LAY DRIP TUBING AS CLOSE TO PARALLEL WITH CONTOURS AS POSSIBLE.
- J. ALL MANIFOLDS SHALL BE 4-INCH PVC, UNLESS OTHERWISE INDICATED.

UTILITY DETAILS

- 61A TEMPORARY DIVERSION DIKE

UTILITY NOTES

- 76A PRESSURE INDICATING DEVICE
- 76B ZONE VALVE (ZOBELER)
- 76C AIR/VACUUM RELEASE VALVE
- 76E CHECK VALVE
- 76F GEOWASTEFLOW DRIP LINE (SPACED 2' O.C.)
- 76G ULTRA HEADWORKS BOX W/ GEOWAC FILTER
- 76H FIELD LYSIMETER
- 76I SOLENOID VALVE FOR FLUSHING
- 76J FIELD LINE LOOP
- 76K PUMP TANK (SEE SPECIFICATIONS)

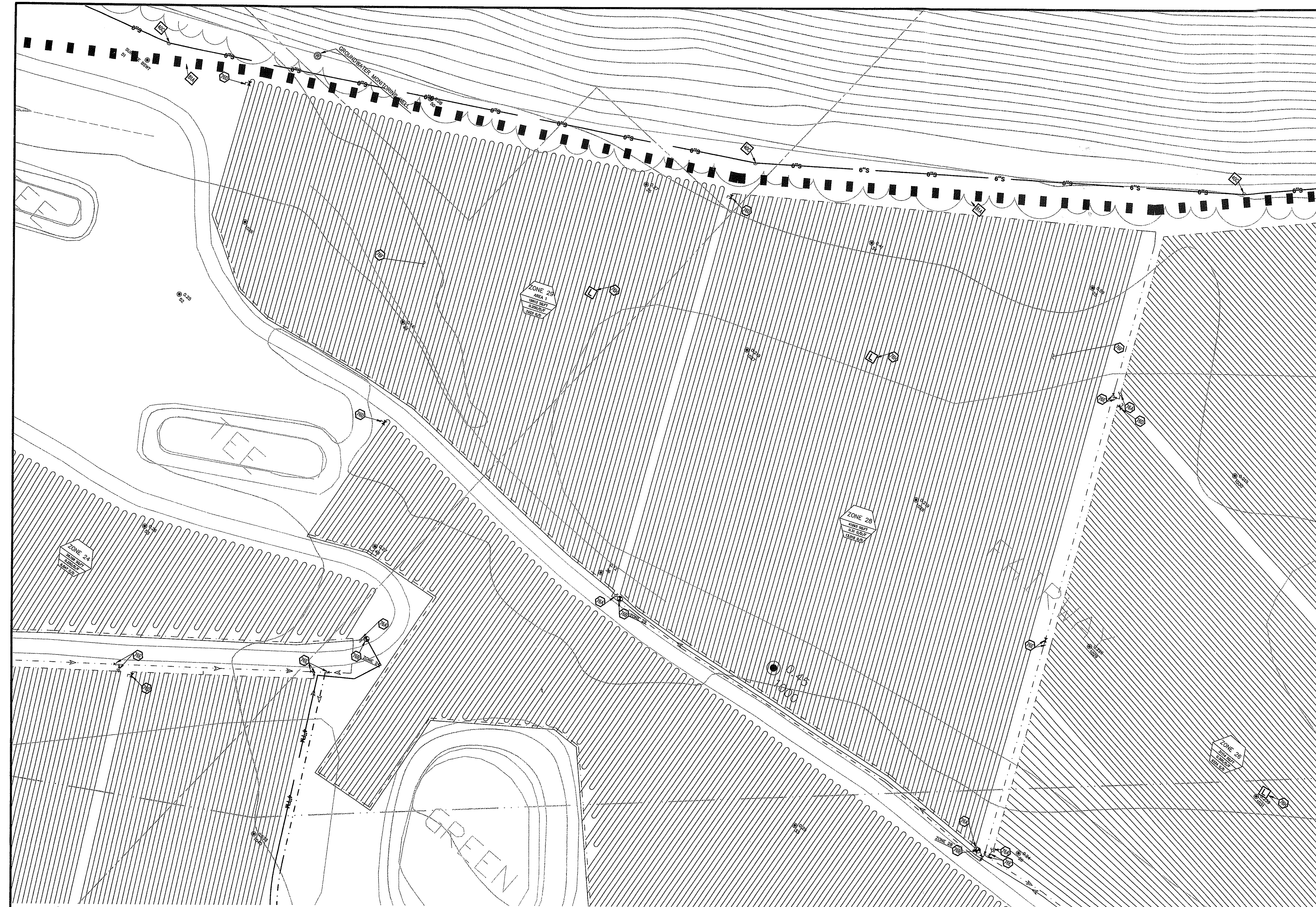
ZONE 27, ZONE 31 EFFLUENT DISPOSAL FIELD #5

NOTE:
OVERALL EFFLUENT DISPOSAL FIELD
LAYOUT IS ON SHEET 18

TOTAL DRIPFIELD REQUIRED (TREATMENT PLANT #2)	917,038 SQ.FT.
TOTAL ALTERNATE FIELD PROVIDED (TREATMENT PLANT #2)	273,377 SQ.FT.
ALTERNATE FIELD RATIO (TREATMENT PLANT #2)	30%



INITIAL DESIGN	2-9-06	DAT	FF	FF	FF
DATE	EOR	PM	DES	DRW	
CAVE SPRINGS WASTEWATER SYSTEM - PHASE 1 CAVE SPRINGS ARKANSAS					
CEI ENGINEERING ASSOCIATES, INC.			ENGINEERS PLANNERS SURVEYORS		
3317 S.W. 1 Street Bentonville, AR 72712			(479) 273-9472 FAX (479) 273-0844		
JOB NO.: 20733.0 DWG NAME: 20733LEACH			DATE 11-06-06 10:24 PM		
DRIP FIELD LAYOUT 14			SHEET NO. 32 OF 43		
			REV'S		



LEGEND

- EXISTING**
- BOUNDARY LINE
 - RIGHT OF WAY LINE
 - STORM DRAIN
 - GAS
 - OVERHEAD ELECTRIC
 - OVERHEAD ELECTRIC AND TELEPHONE
 - OVERHEAD TELEPHONE
 - OVERHEAD TV
 - SEWER
 - UNDERGROUND ELECTRIC
 - UNDERGROUND ELECTRIC AND TELEPHONE
 - UNDERGROUND TELEPHONE
 - UNDERGROUND TV
 - WATER
- TREE INFO**
- 5-10-11 50.5
 - .5 = DIAMETER OF TRUNK IN FEET
 - 10 = HEIGHT OF TREE IN FEET
 - 11 = CANOPY DIAMETER IN FEET
 - 50.5 = ELEVATION AT BASE OF TREE

- PROPOSED**
- BOUNDARY LINE
 - RIGHT OF WAY LINE
 - EASEMENT
 - PVC SUPPLY MANFOLD
 - PVC RETURN MANFOLDS
 - DIRECTION OF FLOW
 - PERC TEST LOCATION

GENERAL UTILITY NOTES

- ALL DRIPLINE SHALL BE 1/2" GEOPOLYMER WASTEFLOW PC (MODEL NO. WPC16-2-24) WITH DRIP EMITTERS SPACED EVERY 2'.
- DRIPLINE AND MANFOLDS SHALL BE INSTALLED 10"-12" BELOW SOIL SURFACE.
- ALL CONNECTIONS WITH DRIPLINE SHALL BE MADE WITH LOCKSLIP ADAPTERS. USE OF ADHESIVES ON DRIPLINE IS NOT ALLOWED.
- DO NOT USE TOOLS ON LOCKSLIP ADAPTERS. HAND TIGHTEN ONLY.
- TRENCH WIDTH FOR DRIPLINE BURIAL SHALL NOT EXCEED 4".
- ALL SECTIONS OF SUPPLY AND RETURN MANFOLDS NOT TIED DIRECTLY TO THE DRIPLINES SHALL BE INSTALLED AT A MINIMUM OF 24" BELOW GRADE.
- VACUUMBREAKER/AIR RELEASE VALVES SHALL BE INSTALLED AT ALL HIGH POINTS IN SUPPLY AND RETURN MANFOLD LINES.
- TERRAIN IN DRIP FIELD IS NEARLY FLAT. LAY DRIP TUBING AS CLOSE TO PARALLEL WITH CONTOURS AS POSSIBLE.
- ALL MANFOLDS SHALL BE 4-INCH PVC, UNLESS OTHERWISE INDICATED.

UTILITY DETAILS

- 81A TEMPORARY DIVERSION DIKE

UTILITY NOTES

- 76A PRESSURE INDICATING DEVICE
- 76B ZONE VALVE (ZOSLER)
- 76D AIR/VACUUM RELEASE VALVE
- 76E CHECK VALVE
- 76F GEOPOLYMER DRIP LINE (SPACED 2' O.C.)
- 76G ULTRA HEADWORKS BOX W/ GEOWAC FILTER
- 76H FIELD LYSIMETER
- 76I SOLENOID VALVE FOR FLUSHING
- 76J FIELD LINE LOOP
- 76K PUMP TANK (SEE SPECIFICATIONS)

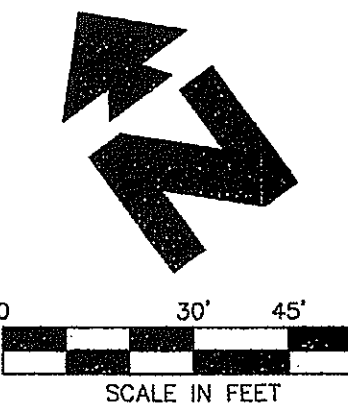
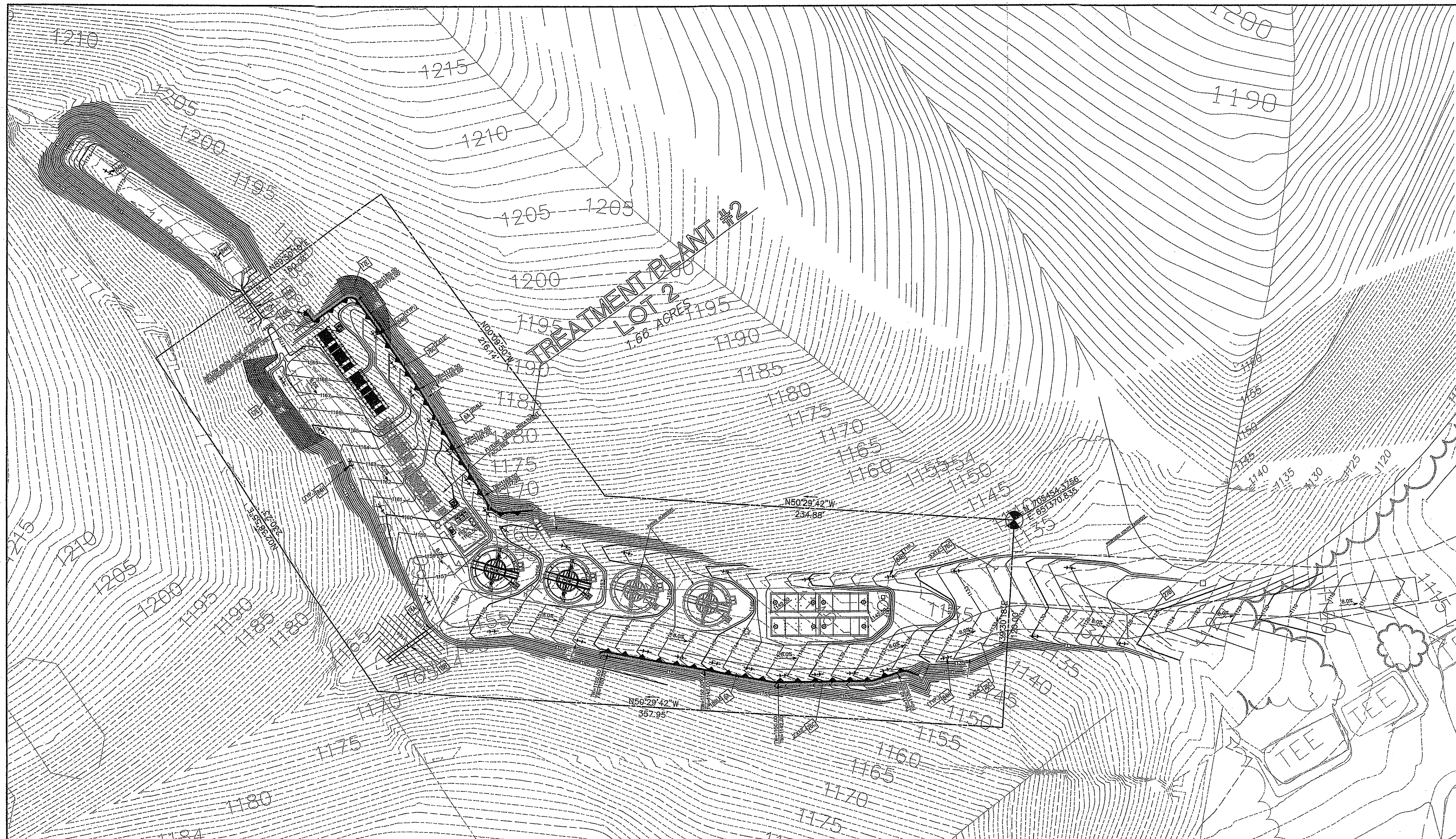
ZONE 28, ZONE 29 EFFLUENT DISPOSAL FIELD #5

NOTE:
OVERALL EFFLUENT DISPOSAL FIELD
LAYOUT IS ON SHEET 18

TOTAL DRIPFIELD REQUIRED (TREATMENT PLANT #2) 917,038 SQ.FT.
TOTAL ALTERNATE FIELD PROVIDED (TREATMENT PLANT #2) 273,377 SQ.FT.
ALTERNATE FIELD RATIO (TREATMENT PLANT #2) 30%



INITIAL DESIGN	2-9-06	DAT	FF	FF	FF
DATE	EOR	PM	DES	DRW	
CAVE SPRINGS WASTEWATER SYSTEM - PHASE 1 CAVE SPRINGS ARKANSAS					
CEI ENGINEERING ASSOCIATES, INC. ENGINEERS PLANNERS SURVEYORS					
3317 S.W. 1 Street Bentonville, AR 72712			(479) 273-9472 FAX (479) 273-0844		
JOB NO.: 20733.0 DWG NAME: 20733LEAD			DATE 11-06-06 10:24 PM REV5		
DRIP FIELD LAYOUT 15			SHEET NO. 33 OF 43		

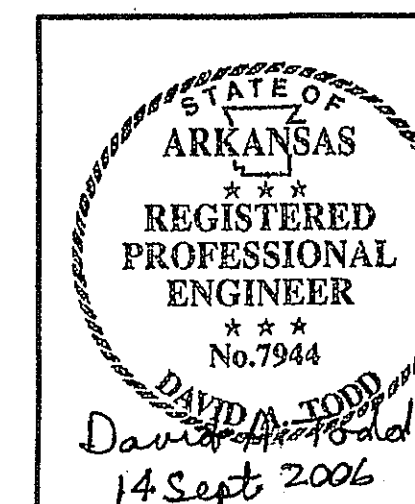


LEGEND

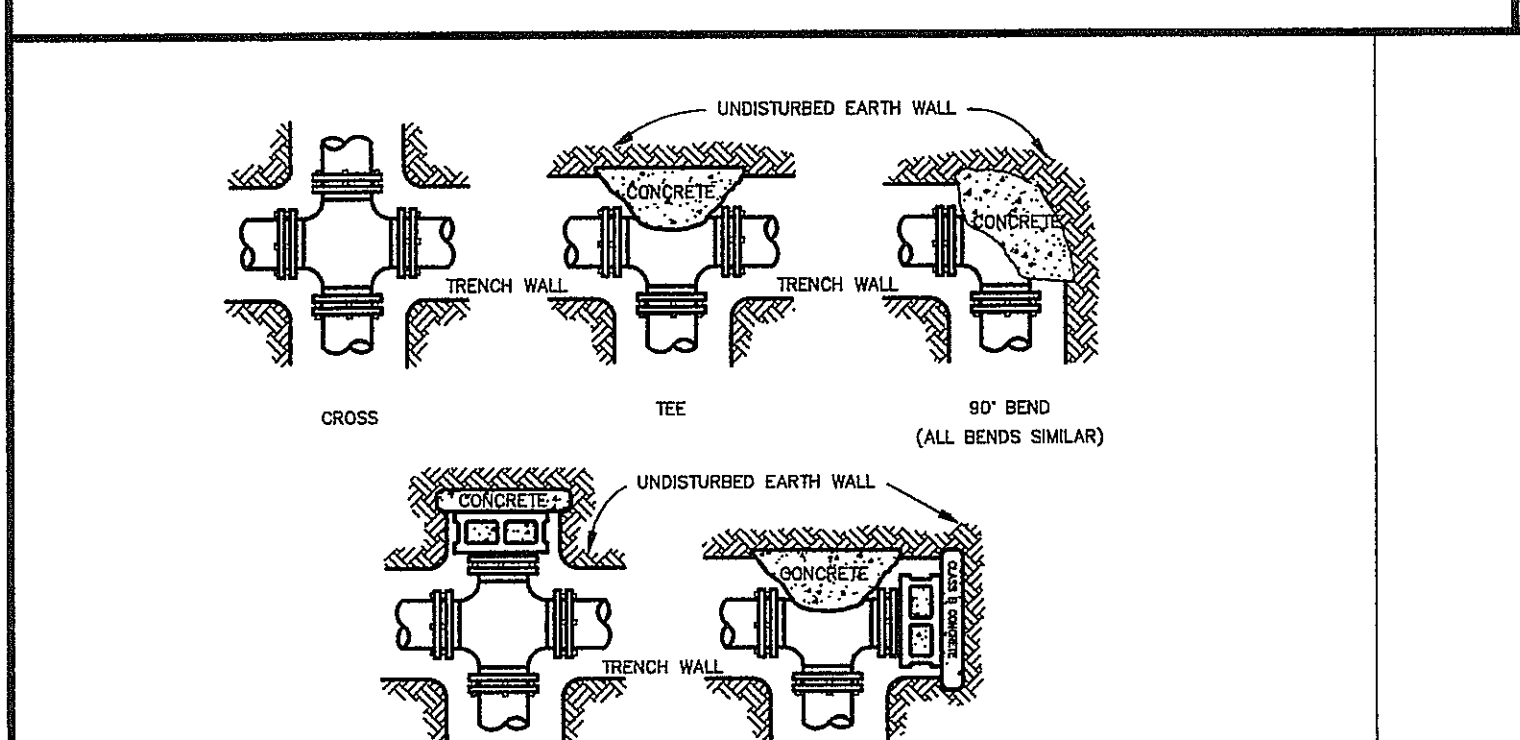
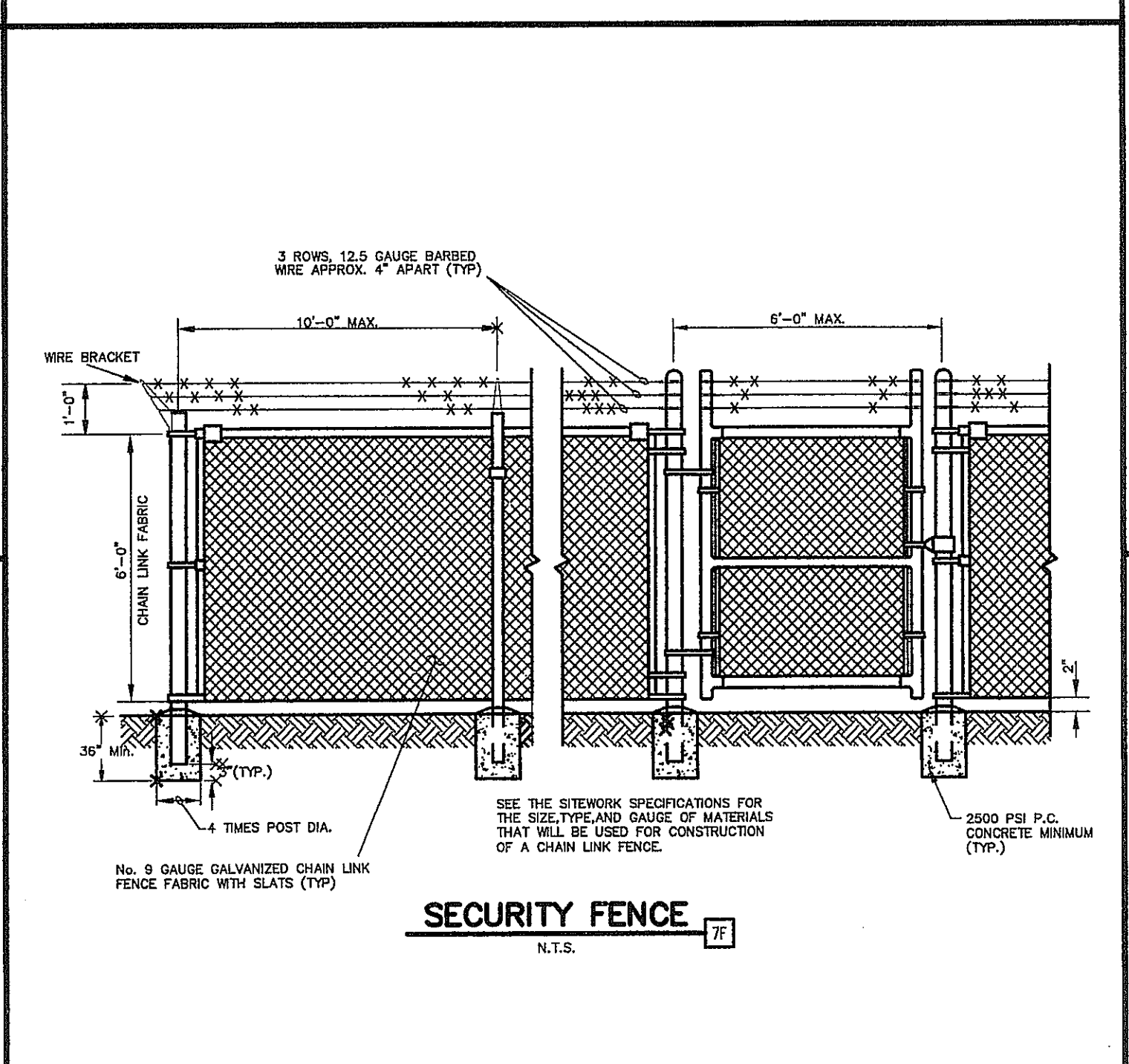
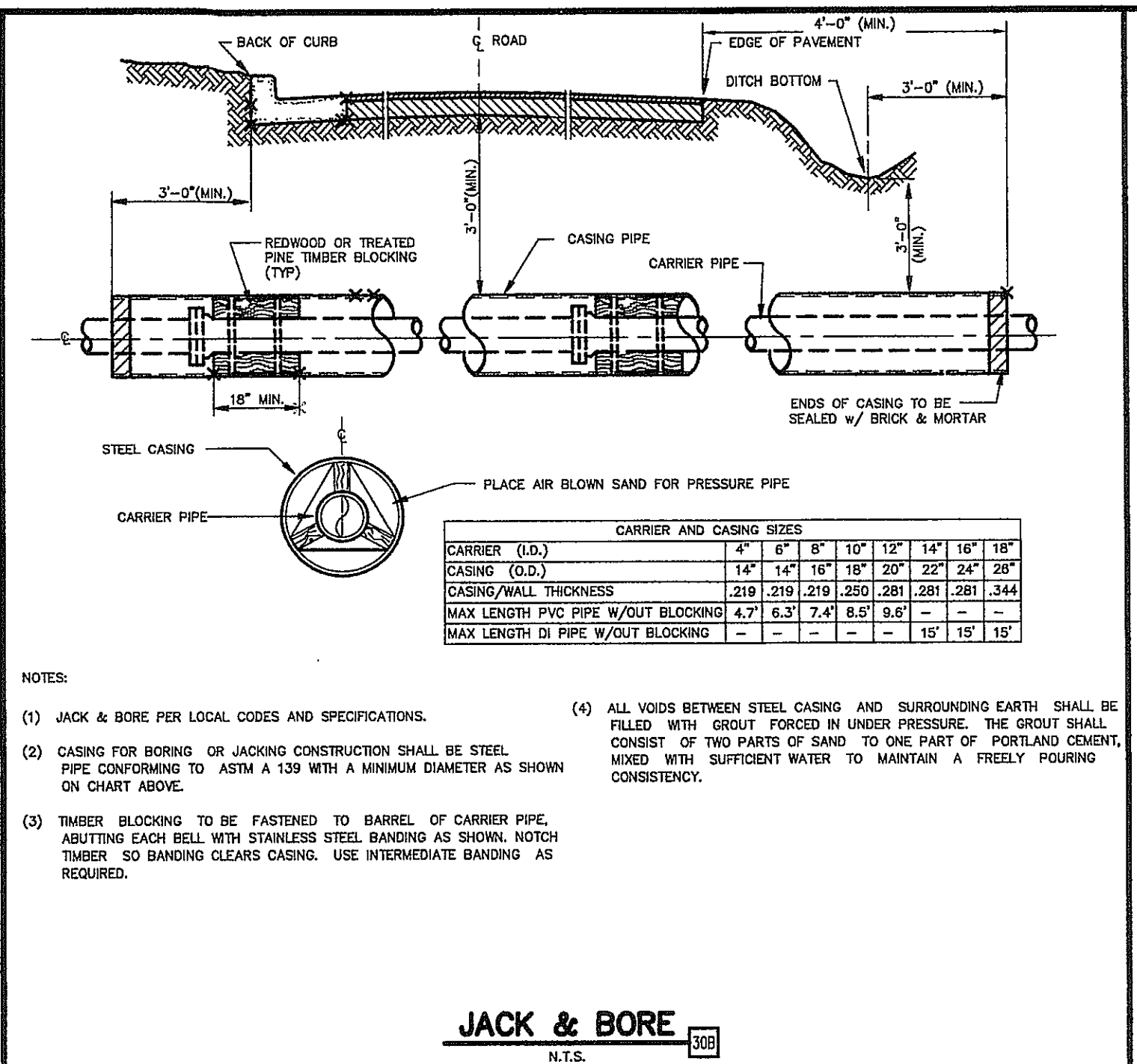
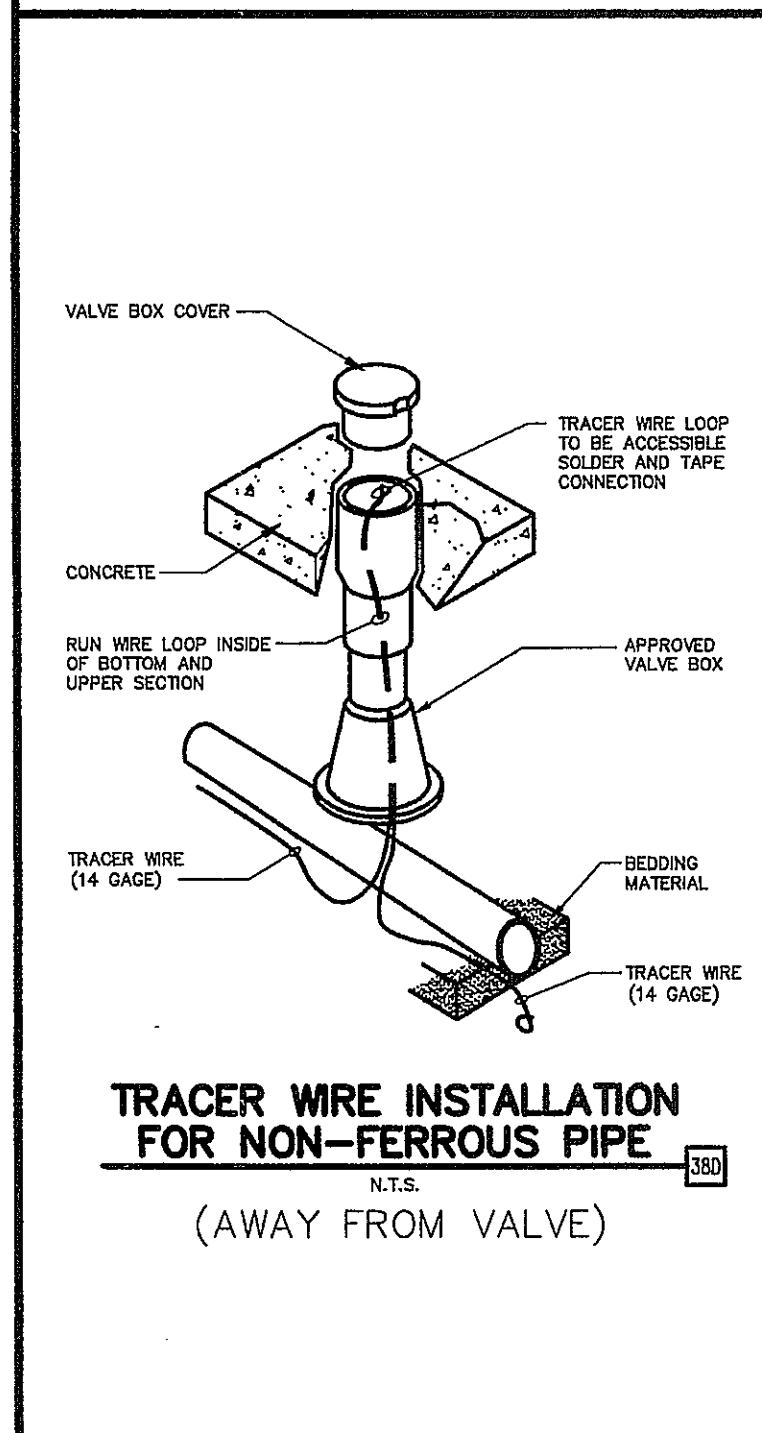
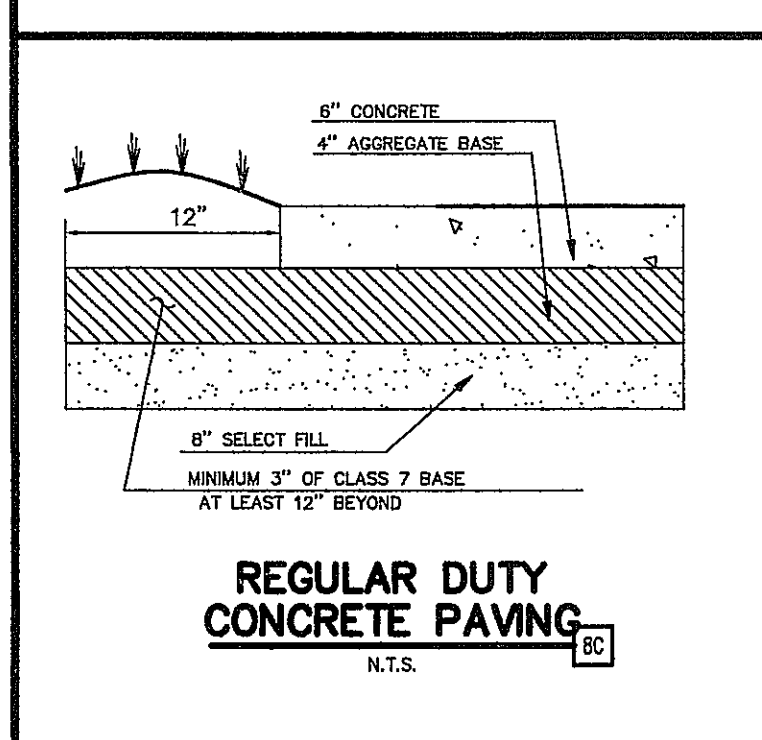
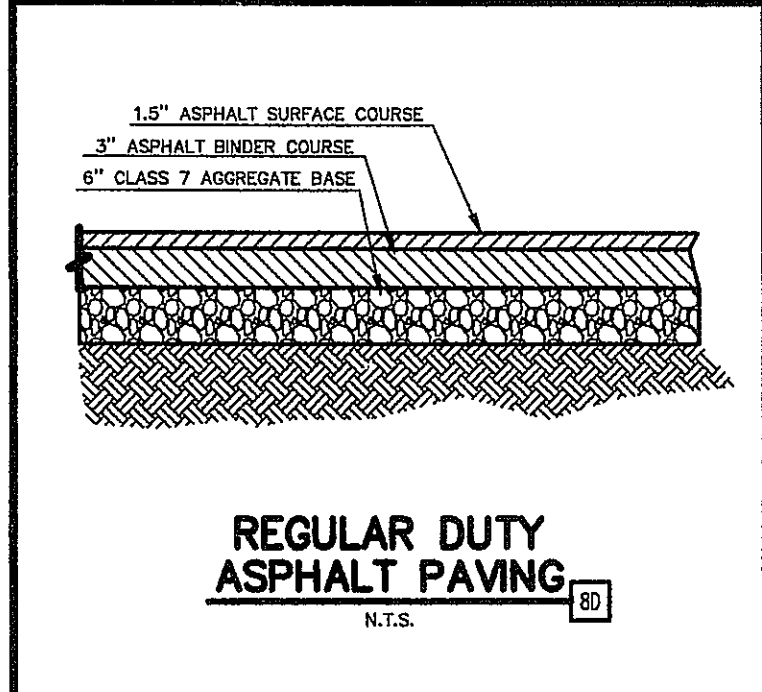
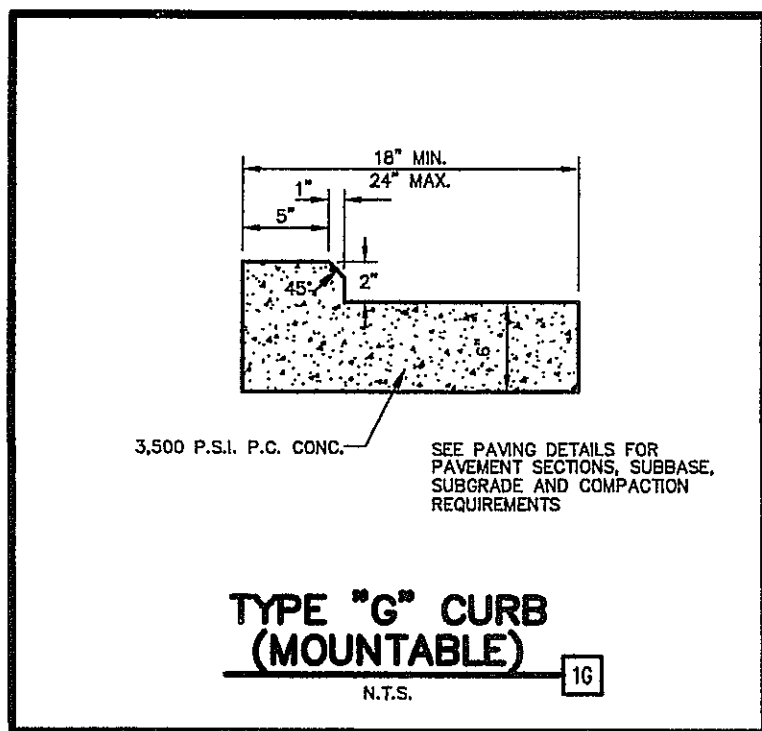
EXISTING	
c	EAST OR ELECTRIC
n	NORTH
oh	OVERHEAD
s	SOUTH OR SEWER
t	TELEPHONE
u	UNDERGROUND
w	WEST OR WATER
---	BOUNDARY LINE
---	RIGHT OF WAY LINE
---	STORM DRAIN
---	GAS
---	OVERHEAD ELECTRIC
---	OVERHEAD ELECTRIC AND TELEPHONE
---	OVERHEAD TELEPHONE
---	OVERHEAD TV
---	SEWER
---	UNDERGROUND ELECTRIC
---	UNDERGROUND ELECTRIC AND TELEPHONE
---	UNDERGROUND TELEPHONE
---	UNDERGROUND TV
---	WATER
5-10-11 50.5	TREE INFO 5 = DIAMETER OF TRUNK IN FEET 10 = HEIGHT OF TREE IN FEET 11 = CANOPY DIAMETER IN FEET 50.5 = ELEVATION AT BASE OF TREE
●	SOIL BORING LOCATION
PROPOSED	
---	BOUNDARY LINE
---	RIGHT OF WAY LINE
---	GRADE BREAK
XXX	CONTOUR ELEVATIONS
---	STORM DRAIN
---	LIMITS OF PAVING
XX.XX	SPOT ELEVATIONS: TO = TOP OF CURB G = GUTTER

- GENERAL GRADING NOTES**
- A. PRIOR TO INSTALLATION OF WATERLINE OR SANITARY SEWER, THE CONTRACTOR SHALL EXCAVATE, VERIFY, AND CALCULATE ALL CROSSINGS AND INFORM THE OWNER AND THE ENGINEER OF ANY CONFLICTS PRIOR TO CONSTRUCTION. THE ENGINEER WILL BE HELD HARMLESS IN THE EVENT THE ENGINEER IS NOT NOTIFIED OF DESIGN CONFLICTS.
- B. ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED SMOOTH AND 4" OF TOPSOIL APPLIED. IF ADEQUATE TOPSOIL IS NOT AVAILABLE ON SITE, THE CONTRACTOR SHALL PROVIDE TOPSOIL APPROVED BY THE OWNER, AS NEEDED. THE AREA SHALL THEN BE SEED, FERTILIZED, MULCHED, WATERED AND MAINTAINED UNTIL HARDY GRASS GROWTH IS ESTABLISHED IN ALL AREAS (SEE LANDSCAPE PLAN FOR SEED MIX AND PROPER APPLICATION RATE). ANY AREAS DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE PROJECT SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- C. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES.

GRADING DETAILS	
BA	SEGMENTAL RETAINING WALL (BY GENERAL CONTRACTOR)
1A	CONCRETE SWALE
17D	RIP-RAP (GROUTED IN PLACE)
17P	MORTARED RIP-RAP
27B	TRENCH DRAIN
76C	CONCRETE CHANNEL
84H	ROCK DITCH CHECK



INITIAL DESIGN	7-17-06	DAT	FF	FF	FF
	DATE	EOR	PM	DES	DRW
CAVE SPRINGS WASTEWATER TRANSFER AND TREATMENT SYSTEM					
CEI ENGINEERING ASSOCIATES, INC.					
ENGINEERS		PLANNERS		SURVEYORS	
3317 S.W. 1 Street Bentonville, AR 72712		(479) 273-9472 FAX (479) 273-0844		JOB NO.: 20733.0 DWG. NAME: 20733.TREATMENTSITE	
GRADING PLAN		DATE		SHEET NO.	
TREATMENT PLANT 2		08-24-06 3:55 PM REV4		35 OF 43	



CROSS WITH PLUG

TEE WITH PLUG

HORIZONTAL FITTINGS

HORIZONTAL THRUST BLOCKING TABLE

SIZE	REQUIRED SQ. FT. OF UNDISTURBED EARTH WALL FOR REACTION BACKING	PIPE SIZE	ANCHOR STRAPS	CONCRETE VOLUME	PIPE SIZE	ANCHOR STRAPS	CONCRETE VOLUME
TYPE OF FITTINGS		NO.	SIZE		NO.	SIZE	
3EE	90C	45C	22.5"	11.5"	2.0	1	#40
2"	1	1	1	1	2.0	1	#40
3"	1	1	1	1	2.0	1	#40
4"	1	1	1	1	2.0	1	#40
5"	1	1	1	1	2.0	1	#40
6"	1.5	2	1	1	1	1	#40
6.5	1.5	2	1	1	1	1	#40
7"	2.5	3.5	1.8	1	1	1	#40
7.5	4	5.5	2.8	1.5	1	1	#40
8"	8	4	4	2	1.5	1	#40
8.5	11	5.5	5	3	1.5	1	#40
10"	10	14.2	7	4	3	1.5	#40
10.5	11	21	11	6	4	3	#40
12"	20	28	26	14	7	5	#40
12.5	24	34	32	16	8	6	#40
13"	30	59	59	32	16	9	#40
13.5	35	85	46	23	12	12	#40

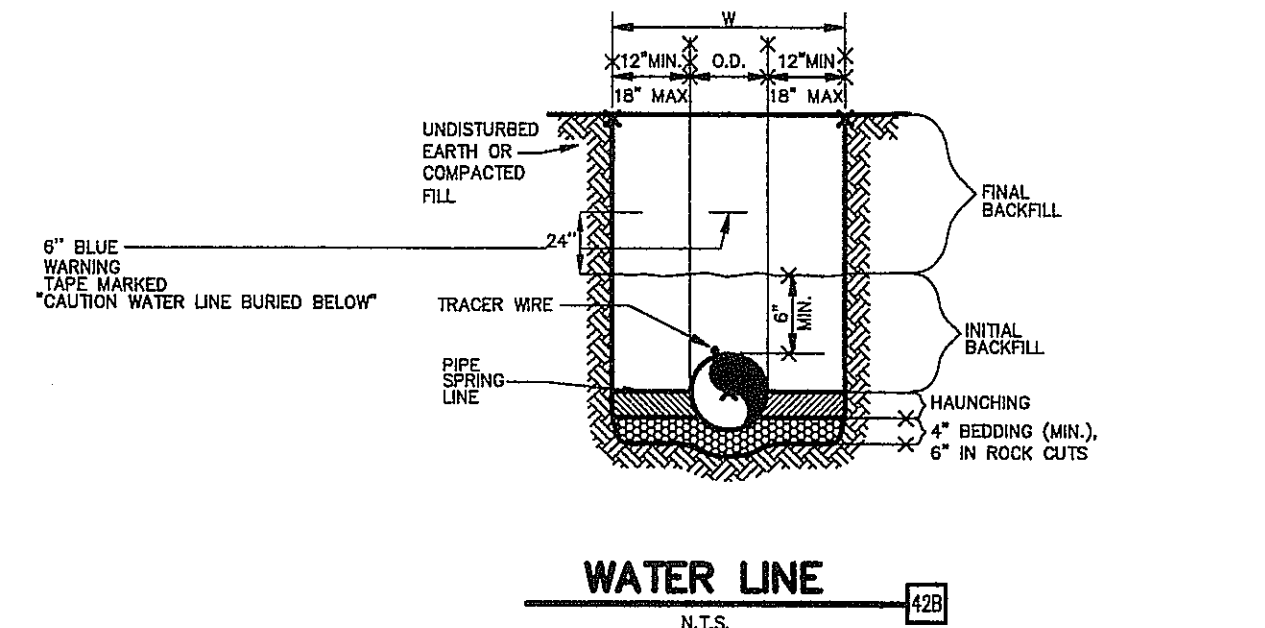
MINIMUM CONCRETE VOLUMES FOR UPWARD THRUST

PIPE SIZE	ANCHOR STRAPS	CONCRETE VOLUME	PIPE SIZE	ANCHOR STRAPS	CONCRETE VOLUME
INCHES	NO.	SIZE	INCHES	NO.	SIZE
2.0	1	#40	0.04	1	#40
2.0	1	#40	0.04	1	#40
2.0	1	#40	0.04	1	#40
2.0	1	#40	0.04	1	#40
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2.0	1	#40	0.04	1	#40
2.0	1	#40	0.04	1	#40
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2.0	1	#40	0.04	1	#40
2.0	1	#40	0.04	1	#40
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2.0	1	#40	0.04	1	#40
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2.0	1	#40	0.04	1	#40
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2.0	1	#40	0.04	1	#40

SEGMENTAL RETAINING WALL
GENERAL NOTES

- THE GENERAL CONTRACTOR SHALL PROVIDE THE SEGMENTAL RETAINING WALL SYSTEM DESIGN AND SUPPORTING SIGNED AND SEALED STRUCTURAL CALCULATIONS TO THE OWNER PRIOR TO THE START OF WORK. THE DESIGN SUBMITTED SHALL BE BASED ON SOIL PARAMETERS, FOUNDATION CONDITIONS, AND LOADING AS OUTLINED IN THE GEOTECHNICAL REPORT. GENERAL CONTRACTOR'S ENGINEER/MANUFACTURER SHALL PROVIDE WALL DESIGN AND ANALYSES UTILIZING SRW COMPUTER SOFTWARE.
- NOTARIZED CERTIFICATE FROM GENERAL CONTRACTOR SHALL BE PROVIDED TO THE OWNER PRIOR TO START OF WORK STATING THAT THE SRW SYSTEM COMPLIES WITH THE CRITERIA REFERENCED IN THIS SECTION.
- SUBMITTAL PACKAGES TO OWNER SHALL INCLUDE THE FOLLOWING:
 - PRODUCT LITERATURE INDICATING SPECIFICALLY WHICH SEGMENTAL RETAINING WALL UNITS ARE PROPOSED FOR USE ON PROJECT, INCLUDING COLOR, FACE STYLE AND TEXTURE.
 - PRODUCT SPECIFICATIONS INDICATING COMPRESSIVE STRENGTH, UNIT WEIGHT, MIX AND PERCENT ABSORPTION FOR THE UNITS PROPOSED.
 - RETAINING WALL DRAWINGS SHOWING COMPLETE WALL PROFILES, REINFORCEMENT ELEVATIONS, REINFORCEMENT LENGTHS, REINFORCEMENT TYPES, TOP OF WALL, BOTTOM OF WALL, PROPOSED GRADES AT TOP OF WALL, PROPOSED GRADES AT BOTTOM OF WALL, AND STATIONS SHOWING BEGINNING AND END OF WALL AS WELL AS BEGINNING AND END OF TURNS AND RADII. DRAWINGS SHALL INCLUDE DETAIL DRAWINGS FOR FACING CONNECTIONS, WALL PENETRATIONS, GUARD RAILS, HAND RAILS, LEVELING PAD, DRAINAGE SWALES, TYPICAL SECTIONS AND CONSTRUCTION DETAILS.
 - RETAINING WALL DRAWINGS SHALL SHOW DESIGN PARAMETERS FOR RETAINING WALL, REQUIRED BEARING CAPACITY OF FOUNDATION SOILS ALONG WITH PROVIDED FACTOR SAFETY AGAINST BEARING CAPACITY FAILURES WALL SUBGRADE AND CONSTRUCTION DETAILS.
 - RETAINING WALL DRAWINGS SHALL BE ACCOMPANIED BY A COMPLETE SET OF CONSTRUCTION SPECIFICATIONS.
 - RETAINING WALL DRAWINGS AND SPECIFICATIONS SHALL BE ACCOMPANIED BY ENGINEER'S/MANUFACTURER'S DESIGN CALCULATIONS AND/OR COMPUTER OUTPUT ADDRESSING REQUIRED DESIGN PARAMETERS ACCORDING TO NATIONAL CONCRETE MASONRY ASSOCIATION RECOMMENDATIONS.
- SOIL DESIGN PARAMETERS SHALL BE AS PROVIDED IN THE MANUFACTURER'S CONSTRUCTION DOCUMENTS. WALL DESIGN ENGINEER/MANUFACTURER OF RECORD SHALL BE RESPONSIBLE FOR SELECTING AND SPECIFYING REINFORCED FILL MATERIAL. GENERAL CONTRACTOR IS RESPONSIBLE FOR ENSURING AND DOCUMENTING THE REINFORCED FILL MEETS THE SPECIFIED PARAMETERS FOR BOTH STRENGTH AND COMPACTION.
- DESIGNS FOR SRWS USING EXTENSIBLE (GEOSYNTHETIC) REINFORCEMENT SHALL BE PREPARED ACCORDING TO DESIGN METHODOLOGY PRESENTED IN NATIONAL CONCRETE MASONRY ASSOCIATION "DESIGN MANUAL FOR SEGMENTAL RETAINING WALLS" AND CONFORM TO THE MINIMUM SAFETY FACTORS AS SPECIFIED. OWNER RESERVES ALL RIGHTS IN DETERMINING COMPLIANCE FOR PLAN APPROVAL AND MAY REJECT ANY SUBMITTALS.
- RETAINING WALL UNITS, REINFORCING, AND ACCESSORIES SHALL BE SUPPLIED AS INDICATED. UNITS PRODUCED UNDER LICENSE FROM APPROVED PROPRIETARY SYSTEM SHALL BE MANUFACTURED IN FACILITY MEETING REQUIREMENTS OF LICENSING SYSTEM WITH ADEQUATE CAPACITY TO SUPPLY PRODUCT TO SITE IN TIMELY MANNER. MATERIALS SHALL BE STORED AS REQUIRED TO PREVENT DAMAGE AND STAINING.
- ACCEPTABLE RETAINAGE SYSTEMS INCLUDE THE FOLLOWING PRODUCTS OR APPROVED EQUAL:
 - REINFORCED EARTH® RETAINING WALL UNITS AS MANUFACTURED BY LICENSED DISTRIBUTOR FOR THE REINFORCED EARTH COMPANY, BEDFORD, TEXAS.
 - KEYSTONE® RETAINING WALL UNITS AS MANUFACTURED BY LICENSED DISTRIBUTOR FOR KEYSTONE RETAINING WALL SYSTEMS, INC., MINNEAPOLIS, MINNESOTA.
 - VERSA-LOK® RETAINING WALL UNITS AS MANUFACTURED BY LICENSED DISTRIBUTOR FOR VERSA-LOK RETAINING WALL SYSTEMS, NORTH ST. PAUL, MINNESOTA.
 - MESA RETAINING WALL UNITS AS MANUFACTURED BY LICENSED DISTRIBUTOR FOR MESA RETAINING WALL SYSTEMS, CARMEL, NEW YORK.
 - ROCKWOOD RETAINING WALL UNITS AS MANUFACTURED BY LICENSED DISTRIBUTOR FOR ROCKWOOD RETAINING WALLS, INC., ROCHESTER, MINNESOTA.
 - ANCHOR WALLS UNITS AS MANUFACTURED BY LICENSED DISTRIBUTOR FOR ANCHOR WALL SYSTEMS, MINNETONKA, MINNESOTA.
- GENERAL CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THE DESIGN AND CONSTRUCTION OF ALL SEGMENTAL RETAINING WALLS AS SHOWN IN THE CONSTRUCTION DOCUMENTS. CEI ENGINEERING ASSOCIATES, INC. ASSUMES NO LIABILITY OR RESPONSIBILITY FOR DESIGN OR CONSTRUCTION OF ANY SEGMENTAL RETAINING WALL SYSTEM RELATED TO THESE SITE IMPROVEMENTS.

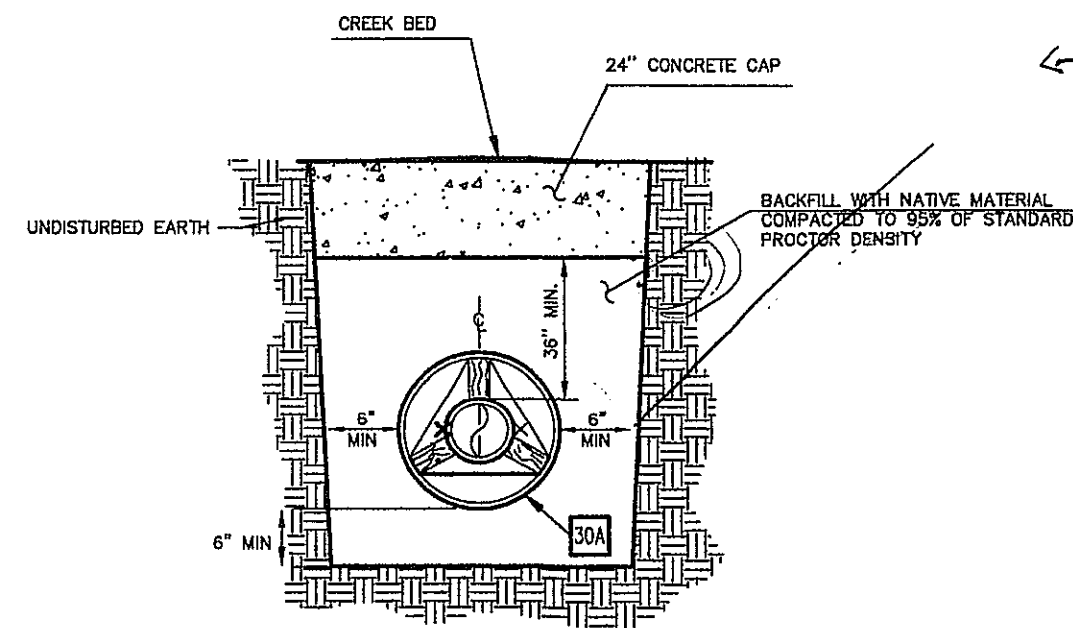
SEGMENTAL RETAINING WALL
N.T.S.



WATER LINE
N.T.S.

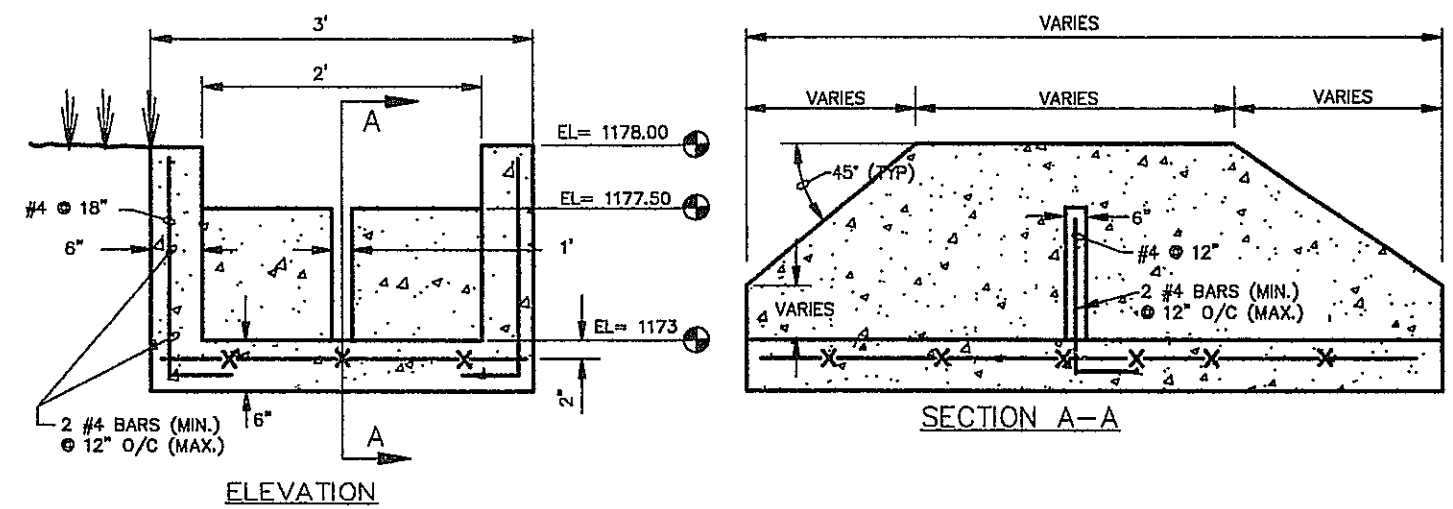
- GENERAL NOTES
- BEDDING SHALL BE CLASS I-A WORKED BY HAND. IF GROUNDWATER IS ANTICIPATED, THEN BEDDING SHALL BE CLASS I-B OR CLASS II COMPACTED TO 85% STANDARD PROCTOR. (SEE SPECIFICATIONS FOR GRADATION)
 - HAUNCHING SHALL BE WORKED AROUND THE PIPE BY HAND TO ELIMINATE VOIDS AND SHALL BE CLASS I-A OR CLASS I-B OR CLASS II COMPACTED TO 85% PROCTOR.
 - INITIAL BACKFILL SHALL BE CLASS I-A WORKED BY HAND, OR CLASS I-B OR CLASS II COMPACTED TO 85% PROCTOR.
 - INITIAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS II COMPACTED TO 90% STANDARD PROCTOR.
 - FINAL BACKFILL SHALL BE CLASS I, II, OR III COMPACTED AS NOTED IN NOTES 3, AND 4.
 - FINAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS IV-A COMPACTED TO 95% STANDARD PROCTOR.
 - ALL MATERIALS ARE CLASSIFIED IN ACCORDANCE WITH ASTM D 2321, LATEST EDITION.
 - ALL MATERIALS SHALL BE INSTALLED IN MAXIMUM 6\"/>
 - FILL SALVAGED FROM EXCAVATION SHALL BE FREE OF DEBRIS, ORGANICS AND ROCKS LARGER THAN 3\"/>
 - ALL TRENCH EXCAVATIONS SHALL BE SLOPED, SHORED, SHEETED, BRACED, OR OTHERWISE SUPPORTED IN COMPLIANCE WITH OSHA REGULATIONS AND LOCAL ORDINANCES. (SEE SPECIFICATIONS)

WATER LINE
TRENCHING AND BEDDING
N.T.S.



OPEN TRENCH CREEK CROSSING
N.T.S.

NOTE:
CASING SHALL BE LAID IN OPEN TRENCH, NOT JACKED AND BORED. FORCE MAIN SHALL THEN BE INSTALLED IN CASING PER DETAIL 30A.



GENERAL NOTES

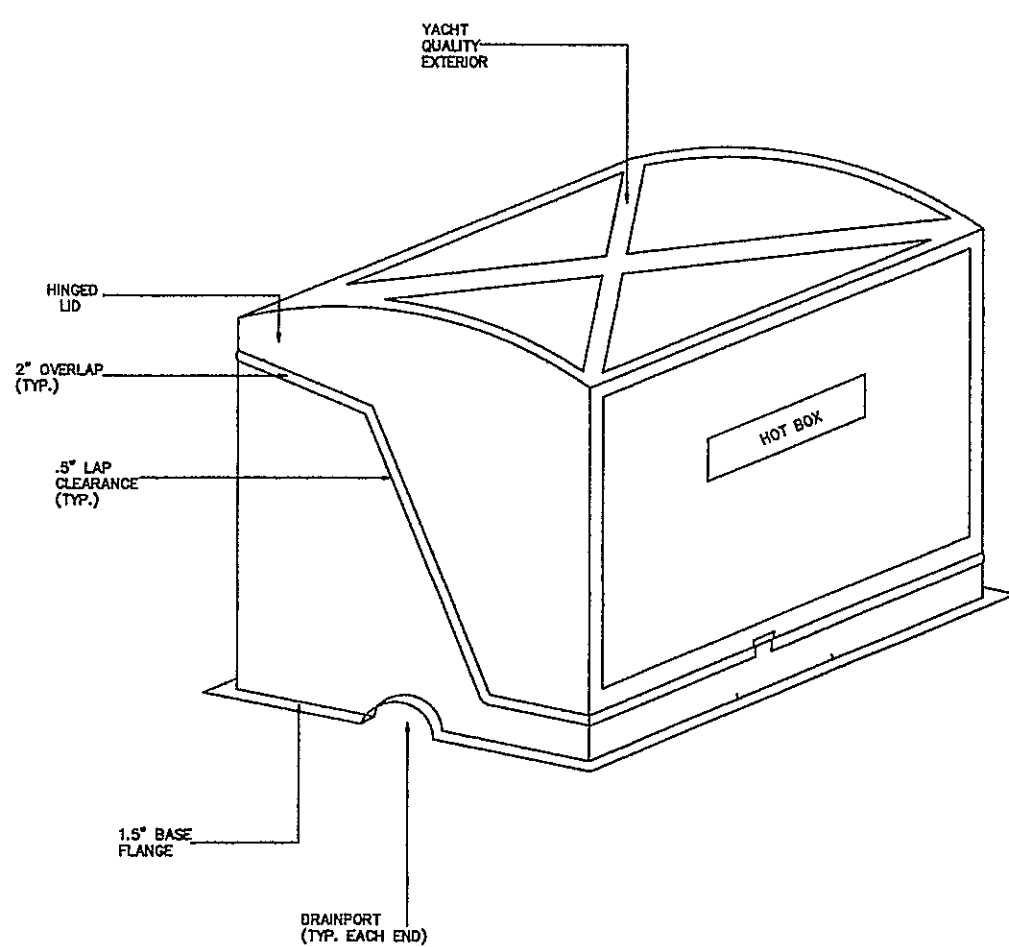
SUBGRADE

- COMPACT TO 95% MAXIMUM DRY DENSITY AS DETERMINED BY A.S.T.M. D-698-78 (STANDARD PROCTOR) AT \pm 2% OF PROCTOR OPTIMUM MOISTURE VALUE.

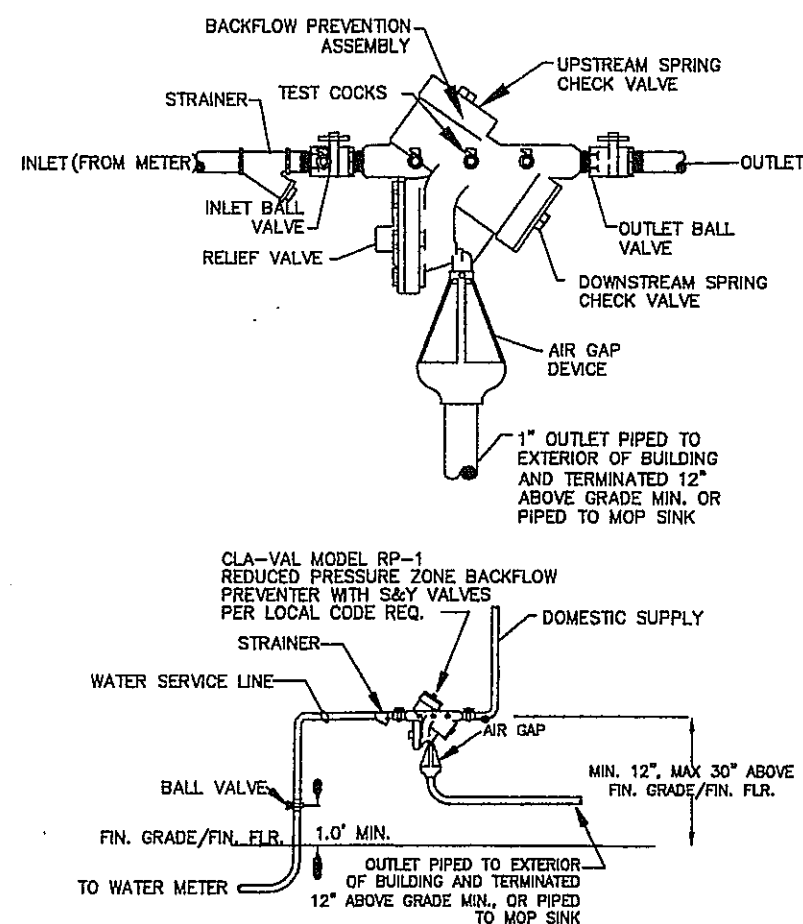
CONCRETE

- COMPRESSIVE STRENGTH: 3,500 P.S.I. MINIMUM AT 28 DAYS. WITH 5%-6% AIR ENTRAINMENT.
- REINFORCEMENT: WELDED WIRE FABRIC - 6"x6" - W 2.1 X W 2.1.
- WEAKENED - PLANE CONTROL JOINTS TO BE 15" O.C. AND FILLED/SEALED. SEE SPECIFICATIONS FOR APPROVED FILLER / SEALER.
- CHAMFER ALL EXPOSED EDGES.

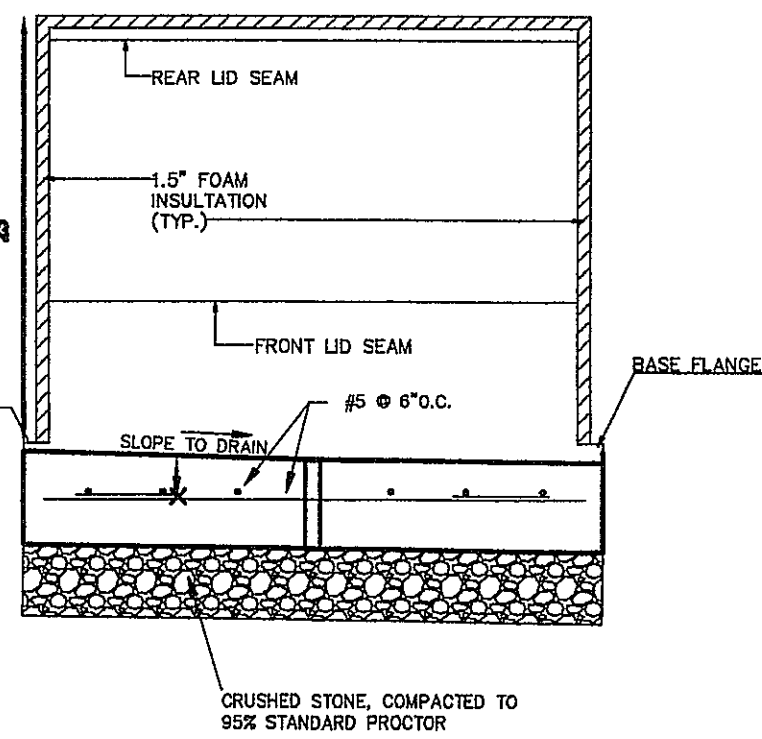
CONCRETE WEIR
N.T.S.



- NOTE:
- INSIDE DIMENSIONS 27" L X 13" W X 23" H
 - REQUIRED SLAB SIZE: 36" L X 22" W X 6" MINIMUM THICKNESS
 - ANCHORING IS INTERNAL. ANCHOR KIT IS INCLUDED
 - HEAT: 60W, 120V, SINGLE-PHASE HEATER
 - 1.5" INSULATION: POLYISOCYANURATE, SPRAY APPLIED AND BONDED
 - UNIT IS A HBI (LOK BOX)



REDUCED PRESSURE ZONE
ASSEMBLY
N.T.S.



GENERAL NOTES

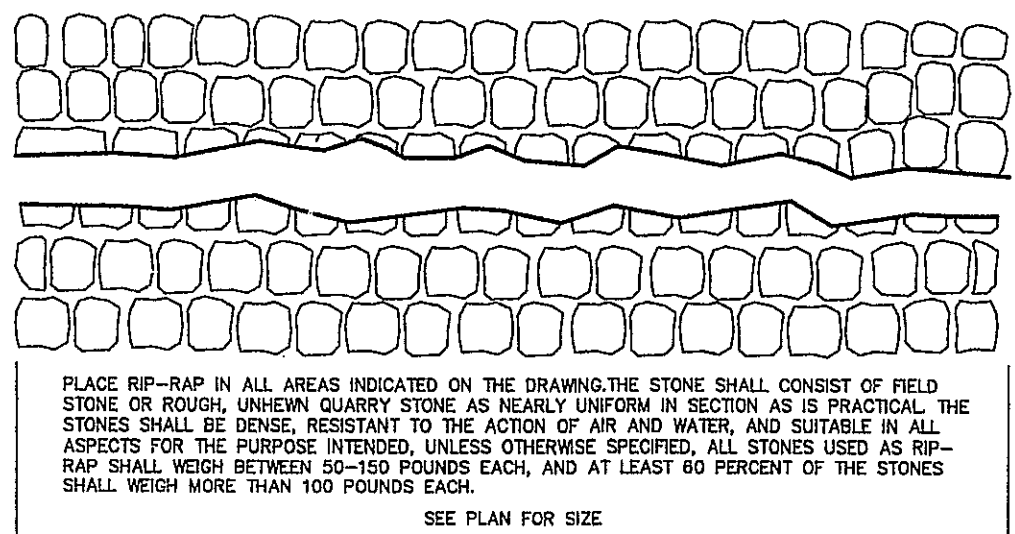
SUBGRADE

- COMPACT TO 95% MAXIMUM DRY DENSITY AS DETERMINED BY A.S.T.M. D-698-78 (STANDARD PROCTOR) AT \pm 2% OF PROCTOR OPTIMUM MOISTURE VALUE.

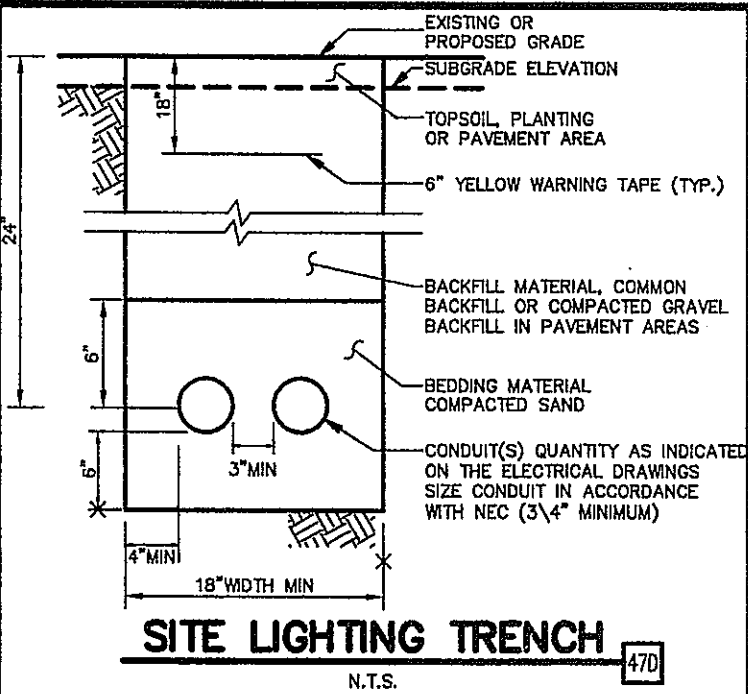
CONCRETE

- COMPRESSIVE STRENGTH: 3,500 P.S.I. MINIMUM AT 28 DAYS. WITH 5%-6% AIR ENTRAINMENT.
- REINFORCEMENT: WELDED WIRE FABRIC - 6"x6" - W 2.1 X W 2.1.
- WEAKENED - PLANE CONTROL JOINTS TO BE 15" O.C. AND FILLED/SEALED. SEE SPECIFICATIONS FOR APPROVED FILLER / SEALER.
- CHAMFER ALL EXPOSED EDGES.

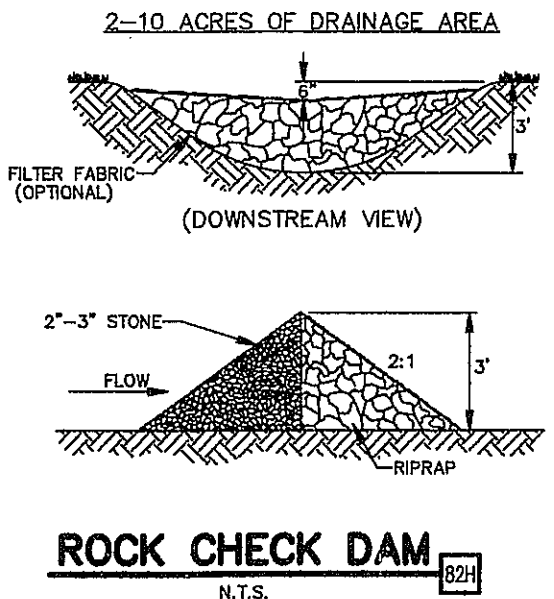
CONCRETE WEIR
N.T.S.



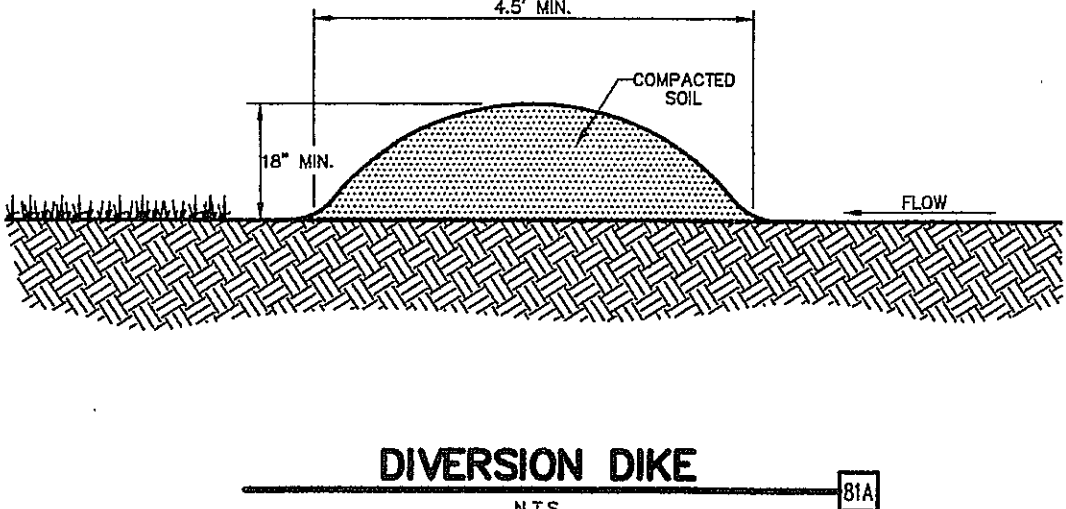
RIP-RAP PAD
FOR SLOPE PROTECTION
N.T.S.



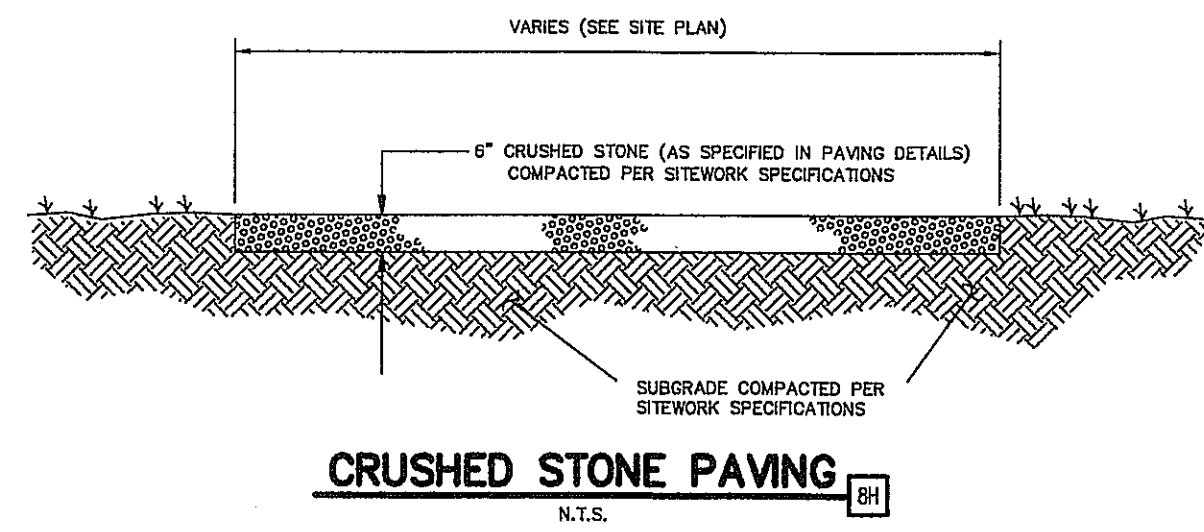
SITE LIGHTING TRENCH
N.T.S.



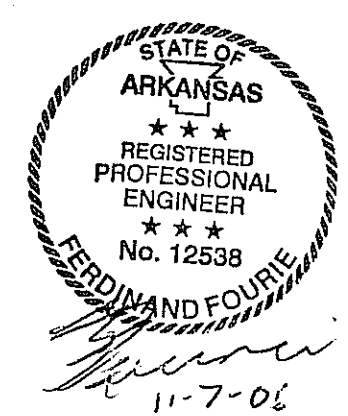
ROCK CHECK DAM
N.T.S.



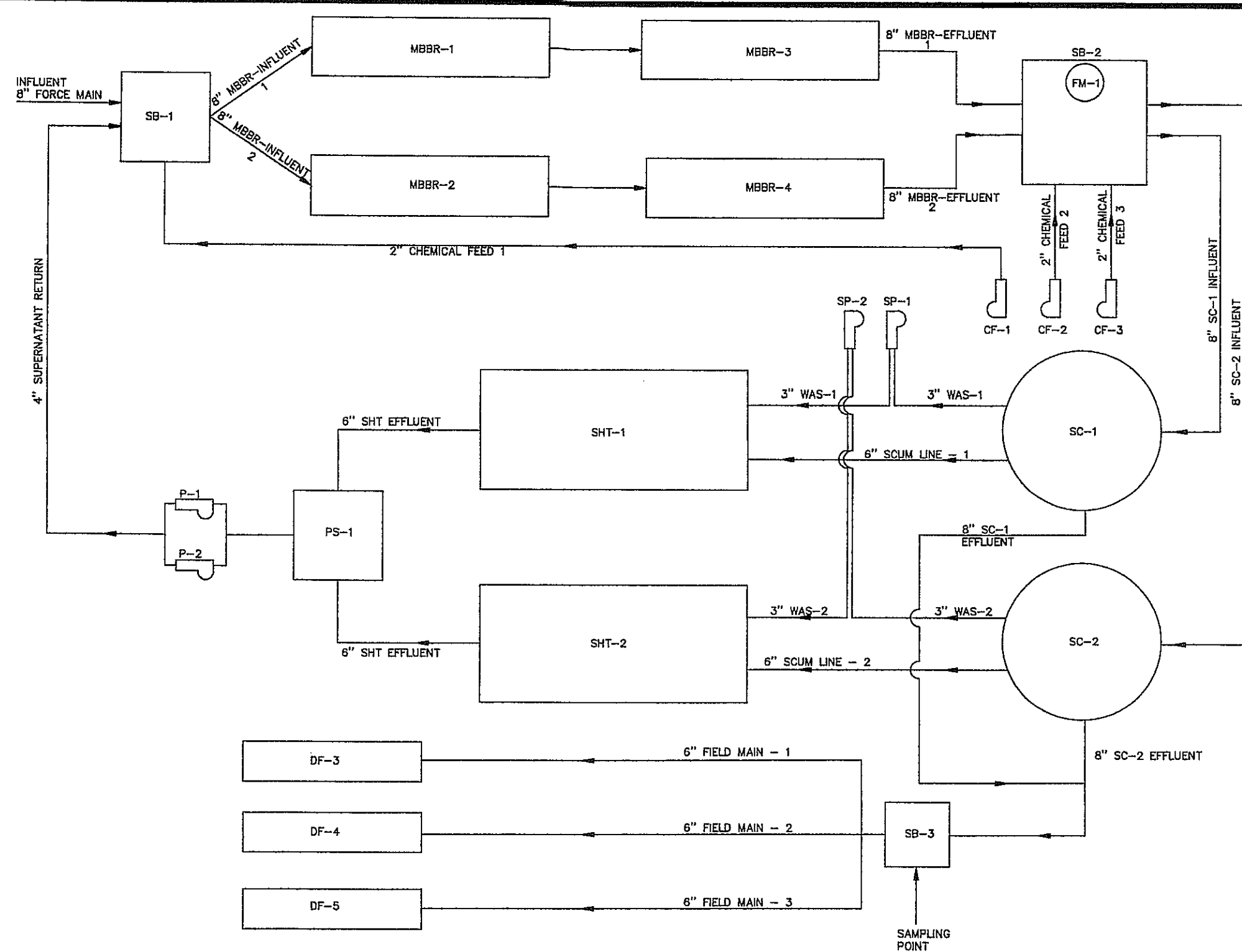
DIVERSION DIKE
N.T.S.



CRUSHED STONE PAVING
N.T.S.



INITIAL DESIGN		10-16-05	DATE	EOR	FF	FF	FF
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1							
CEI ENGINEERING ASSOCIATES, INC.							
ENGINEERS PLANNERS SURVEYORS							
3317 S.W. 1 Street Bentonville, AR 72712		(479) 273-9472 FAX (479) 273-0944		JOB NO: 20733.0 DWG NAME: 20733DET			
DETAIL SHEET 2		DATE 09-14-06 08:59 AM REV 6		SHEET NO. 37 of 43			

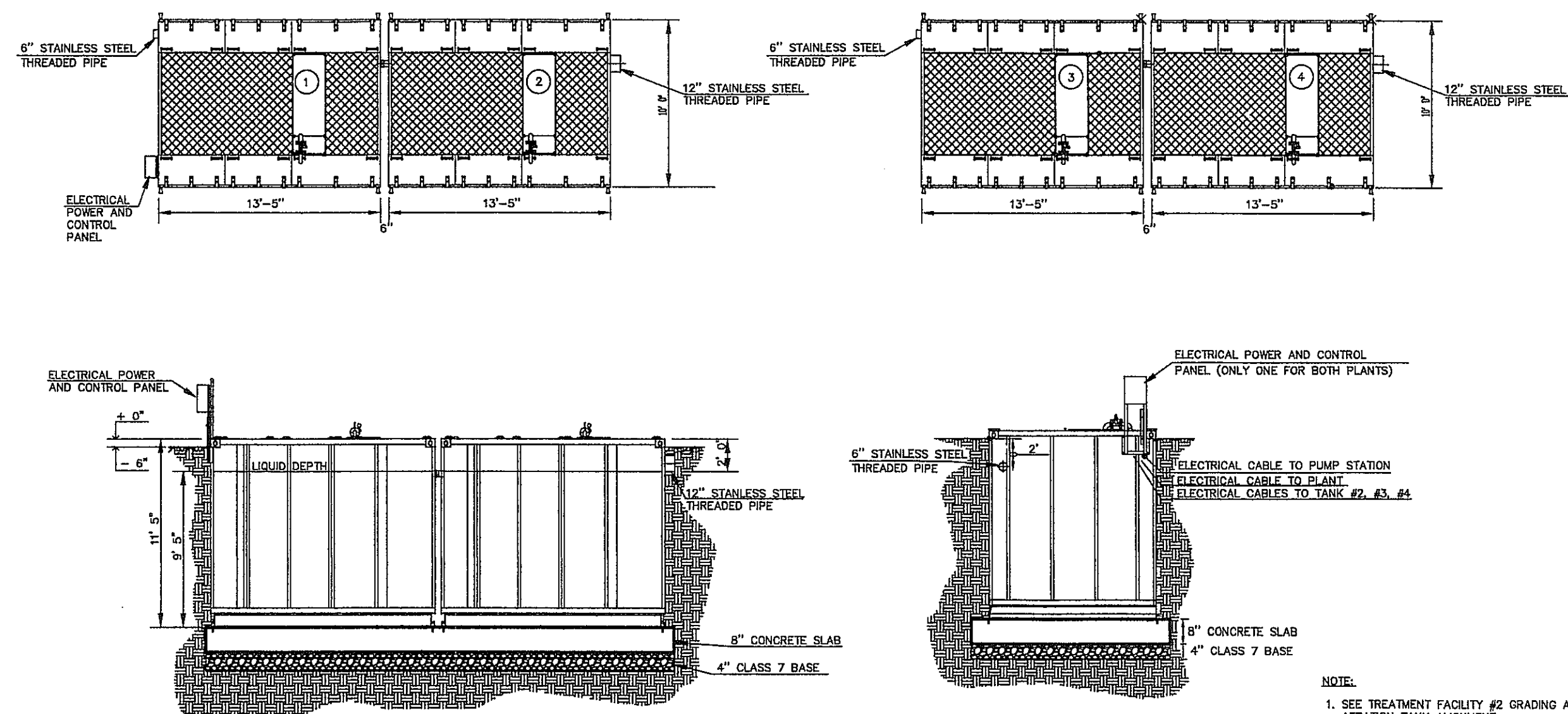


TREATMENT PLANT #2 - EQUIPMENT LIST

SB-1 : SPLITTER BOX 1
 MBBR-1 : MOVING BED BIOLOGICAL REACTOR 1: LOTUS-OH 27'X10'X11.5'
 MBBR-2 : MOVING BED BIOLOGICAL REACTOR 2: LOTUS-OH 27'X10'X11.5'
 MBBR-3 : MOVING BED BIOLOGICAL REACTOR 3: LOTUS-OH 27'X10'X11.5'
 MBBR-4 : MOVING BED BIOLOGICAL REACTOR 4: LOTUS-OH 27'X10'X11.5'
 SB-2 : SPLITTER BOX 2
 CF-1 : CHEMICAL FEED PUMP 1
 CF-2 : CHEMICAL FEED PUMP 2
 CF-3 : CHEMICAL FEED PUMP 3
 SP-1 : SLUDGE PUMP 1
 SP-2 : SLUDGE PUMP 2
 SC-1 : LAKESIDE 26'X12' SMD DIAMETER SECONDARY CLARIFIER 1
 SC-2 : LAKESIDE 26'X12' SMD DIAMETER SECONDARY CLARIFIER 2
 SHT-1 : 30,000 GAL. SLUDGE HOLDING TANK 1
 SHT-2 : 30,000 GAL. SLUDGE HOLDING TANK 2
 SB-3 : SPLITTER BOX 3
 PS-1 : SUPERNATANT SLUDGE PUMPING STATION 1
 PS-2 : SLUDGE TANK DECANT PUMP 2
 P-1 : SLUDGE TANK DECANT PUMP 1
 P-2 : SLUDGE TANK DECANT PUMP 2
 DF-3 : DRIP DISPOSAL FIELD 3
 DF-4 : DRIP DISPOSAL FIELD 4
 DF-5 : DRIP DISPOSAL FIELD 5
 FM-1 : INFLUENT DOPPLER ULTRA SONIC FLOW METER 1

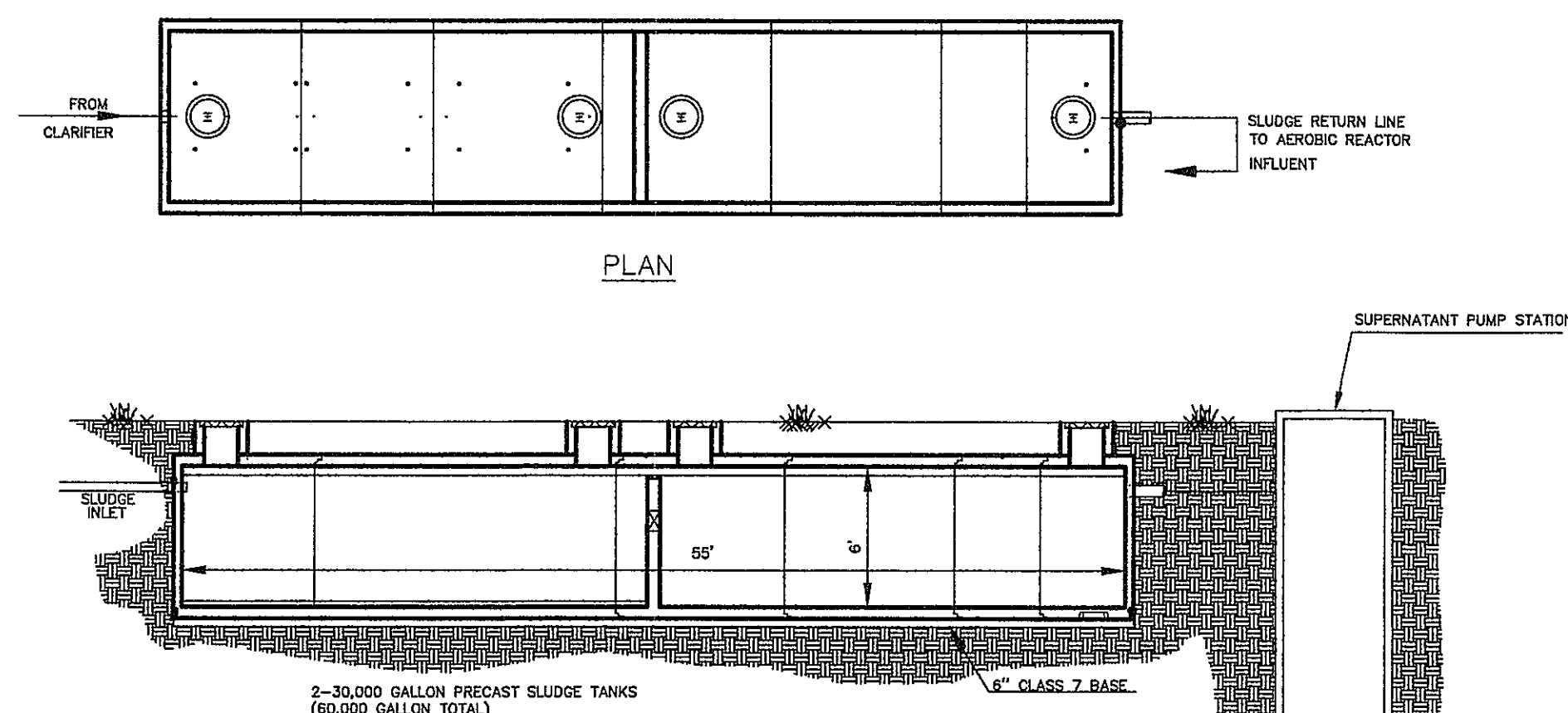
TREATMENT PLANT #2 FLOW SCHEMATIC

N.T.S.



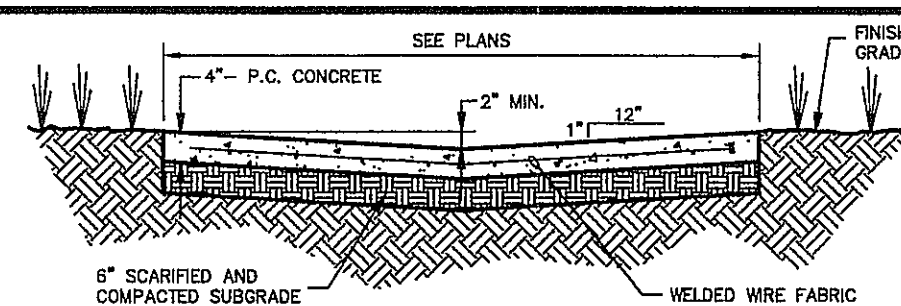
CONTAINERIZED "LOTUS" AEROBIC REACTOR TANK

N.T.S.



30,000 GALLON CONCRETE SLUDGE TANKS

N.T.S.



SUBGRADE NOTES

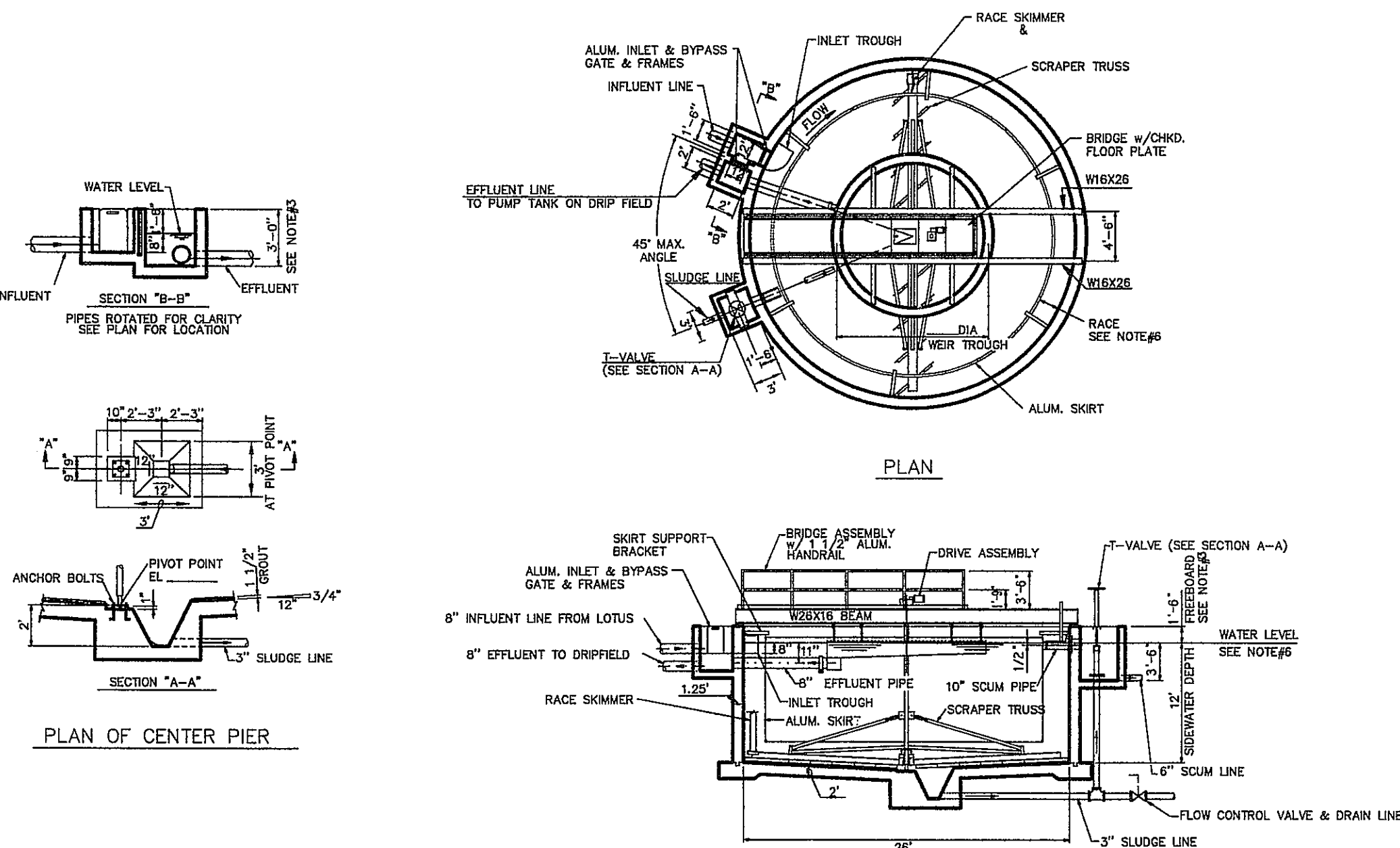
1. COMPACT TO 95% MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 698 (STANDARD PROCTOR) AT $\pm 2\%$ OF PROCTOR OPTIMUM MOISTURE CONTENT.

CONCRETE NOTES

1. COMPRESSIVE STRENGTH: 3,500 P.S.I. MINIMUM AT 28 DAYS.
 2. FLOAT OR SMOOTH FINISH.
 3. REINFORCEMENT: WELDED WIRE FABRIC - 6"X6" - W 2.1 X W 2.1, 2" FROM BOTTOM.
 4. WEAR-RESISTANT SURFACE CONTROL JOINTS 18' O.C. AND FILLED/SEALED. SEE SPECIFICATIONS FOR APPROVED FILLER/SEALERS.

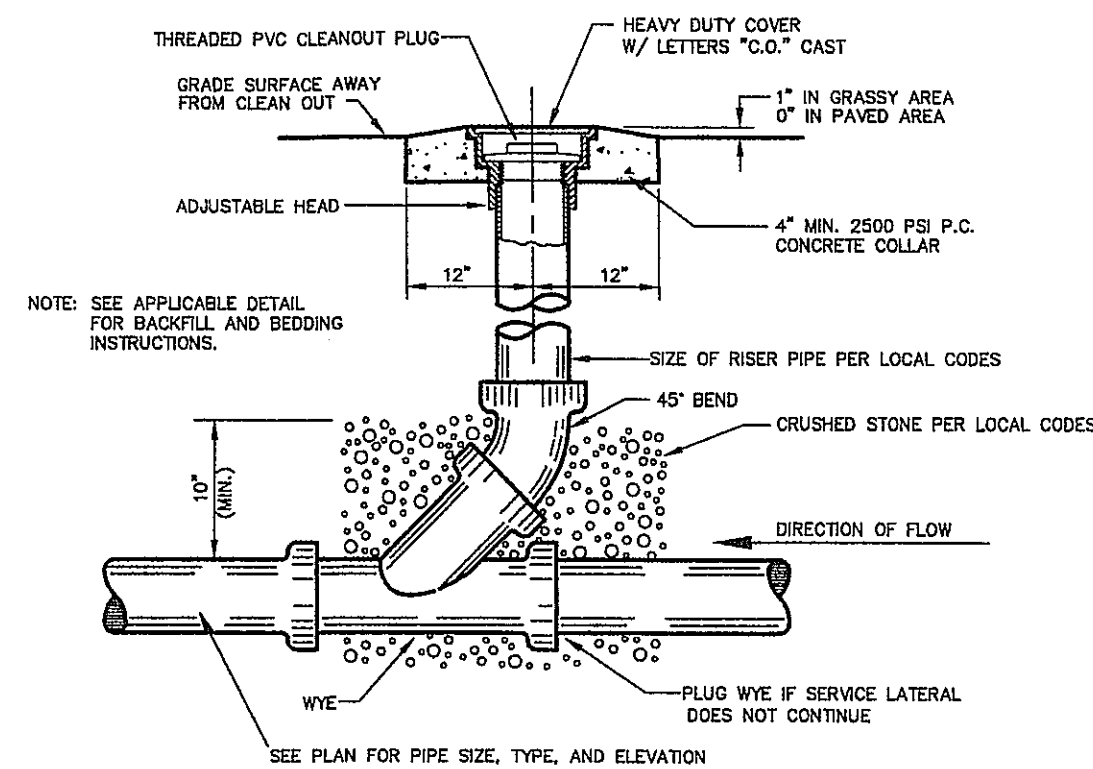
CONCRETE SWALE

N.T.S.



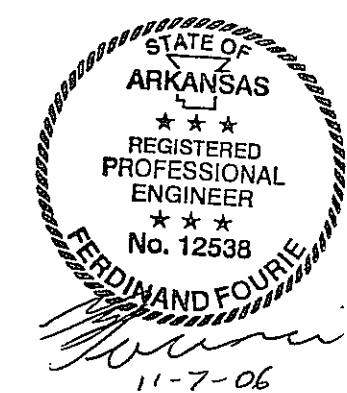
26' DIAMETER CLARIFIER DETAIL LAKESIDE SPIROFLOW

N.T.S.

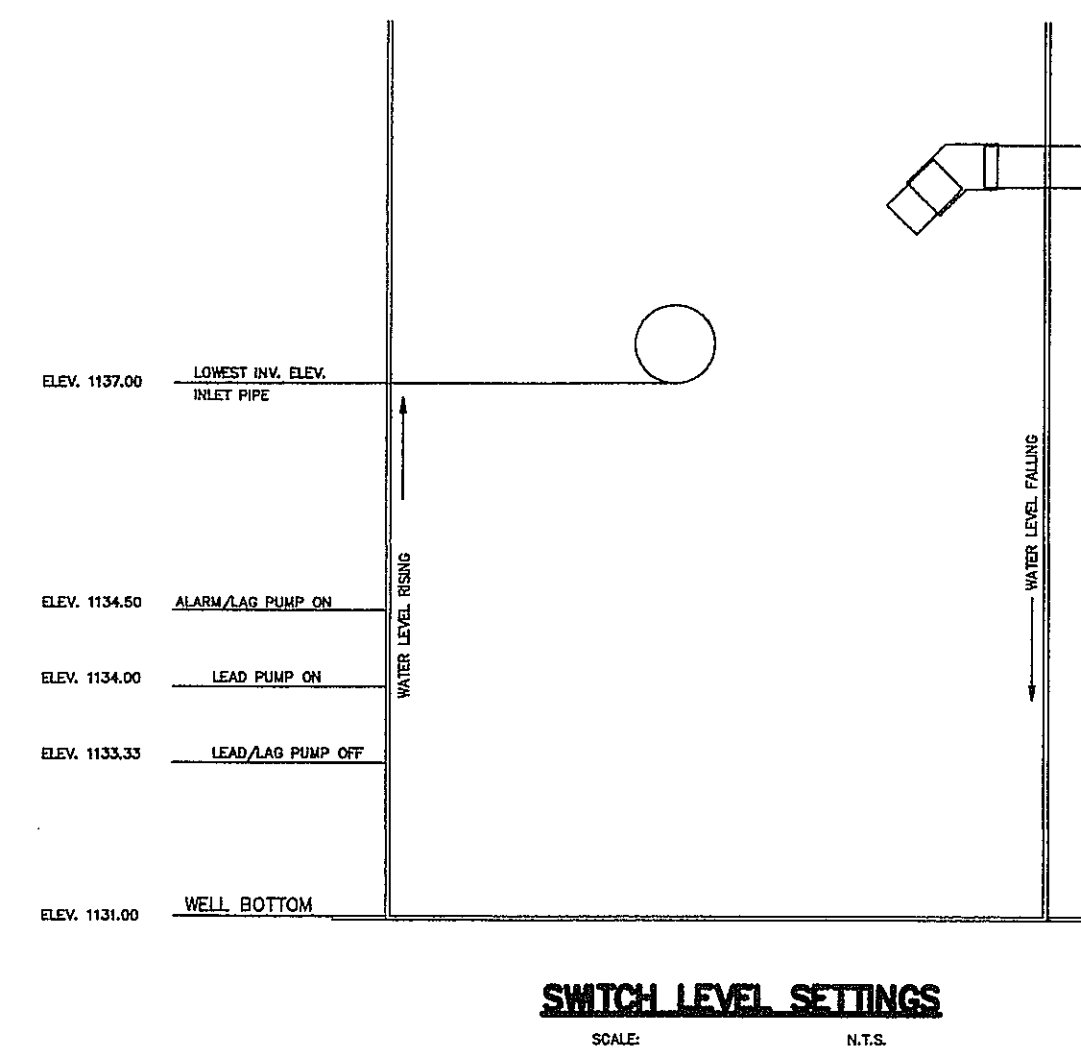
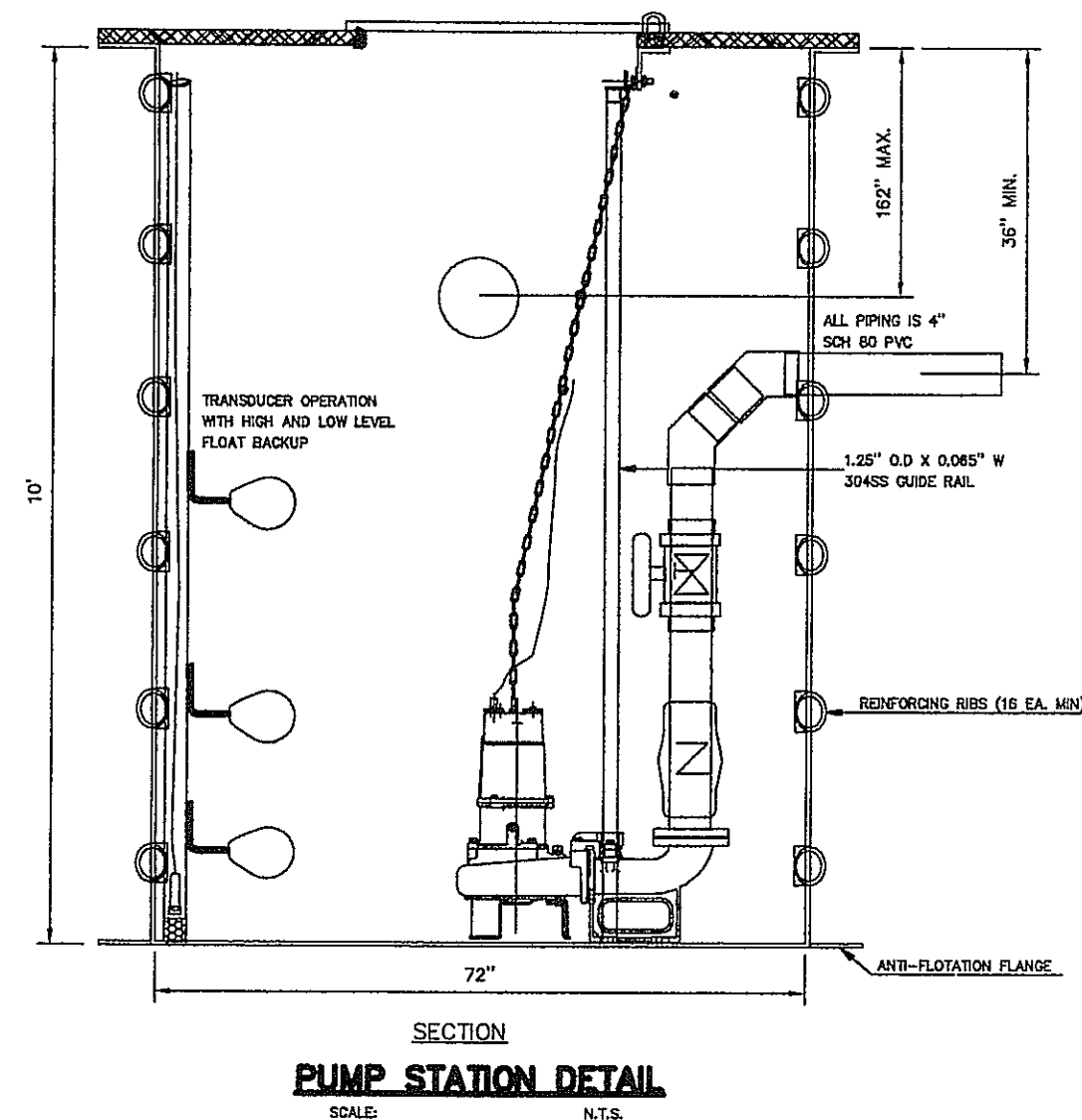
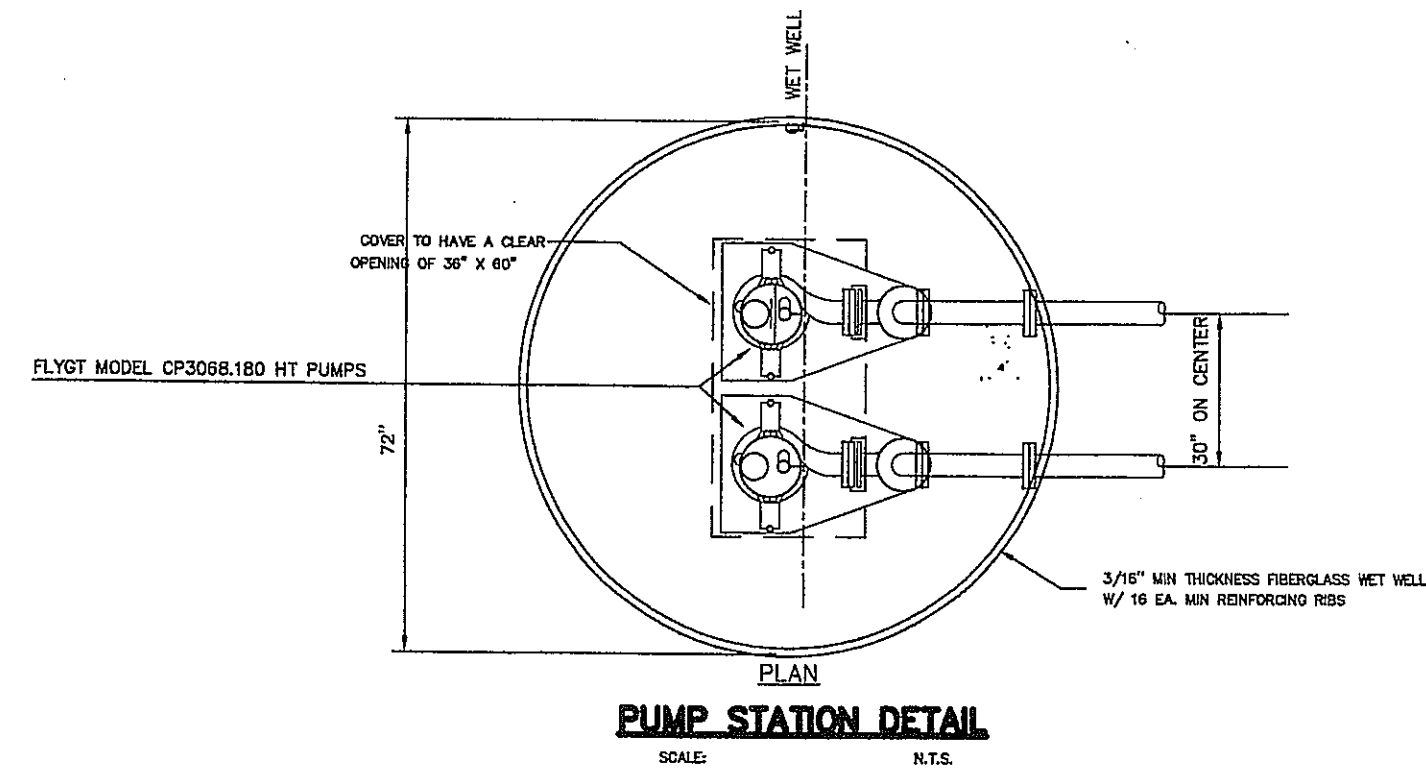


SANITARY SEWER CLEAN-OUT

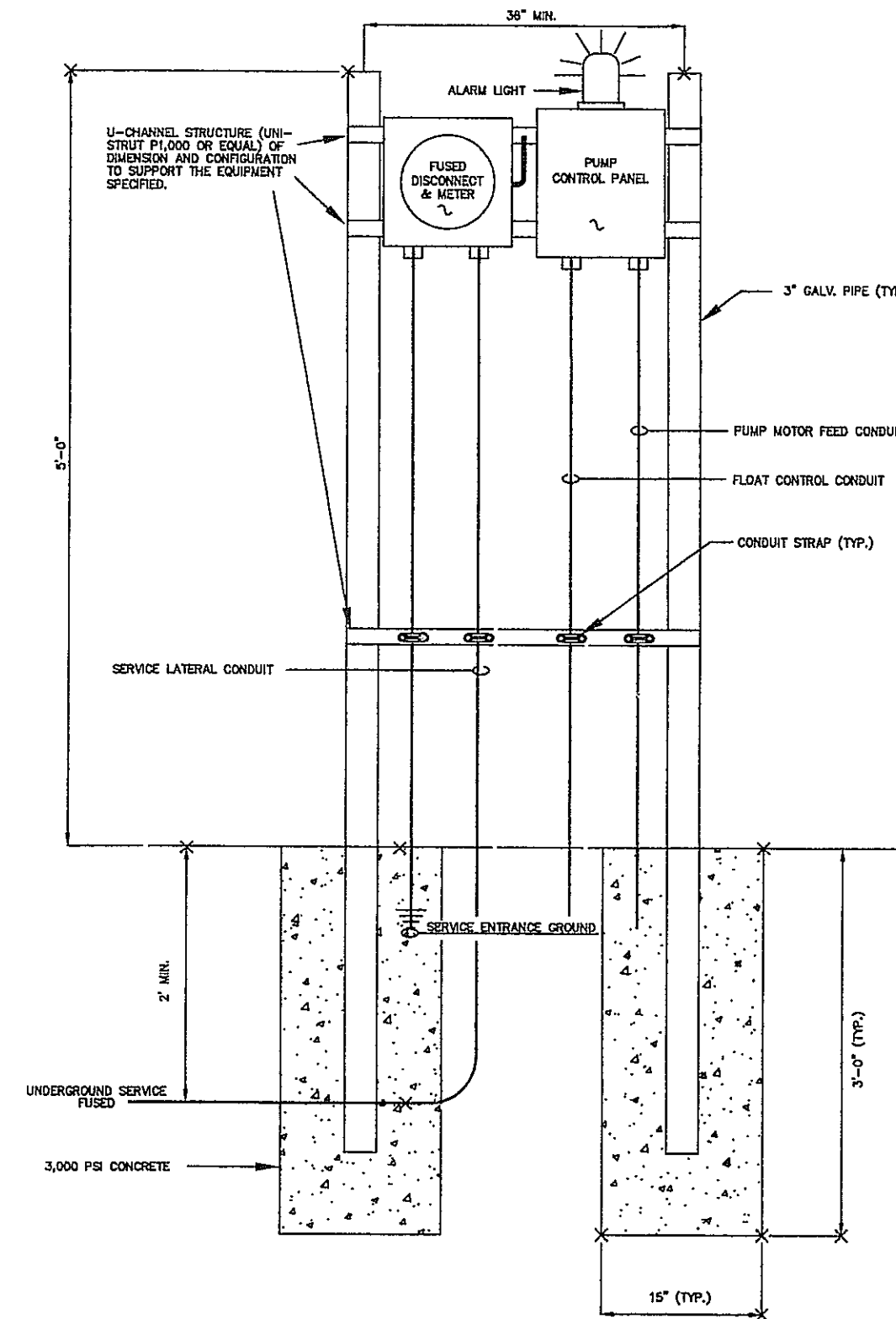
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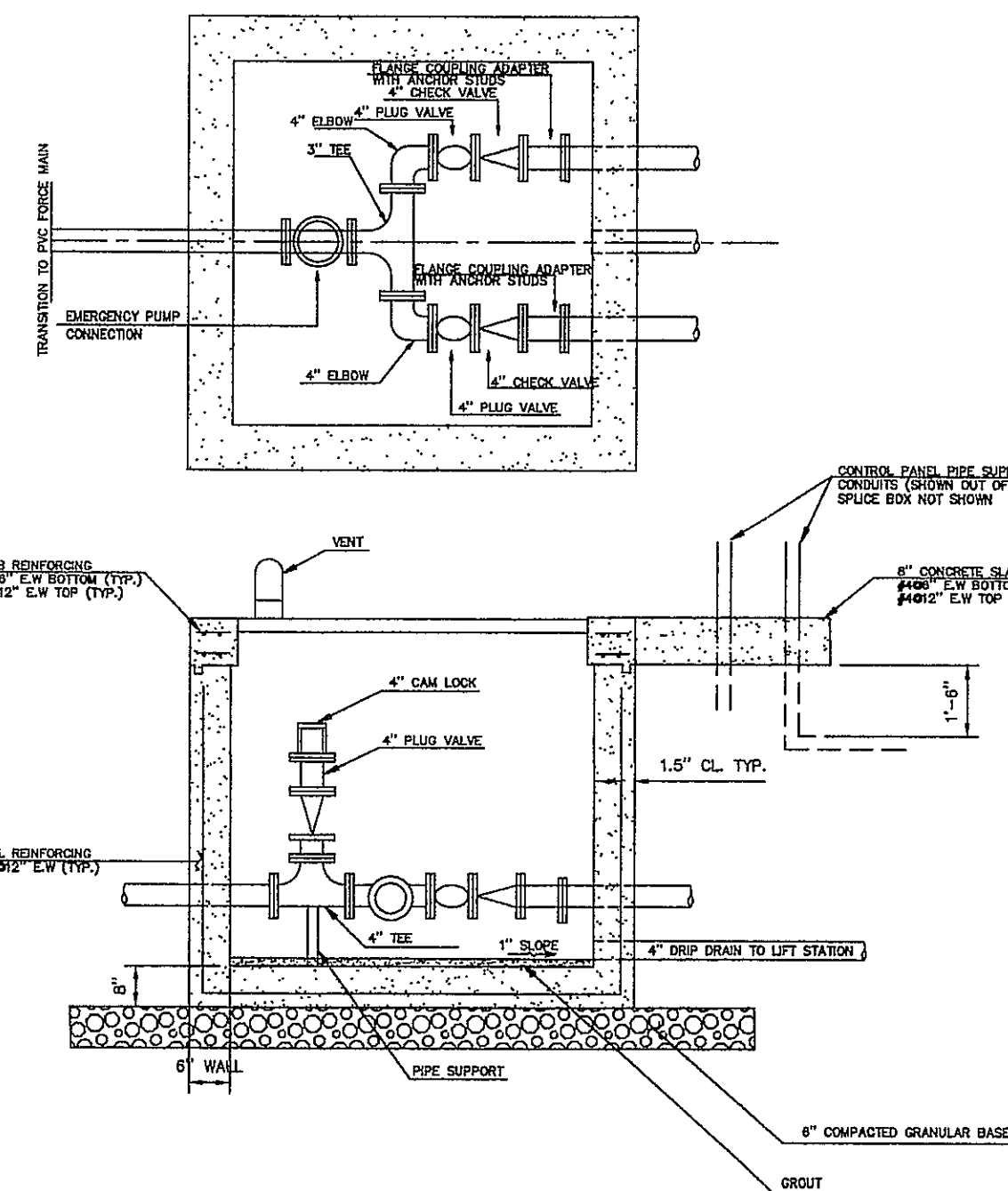
INITIAL DESIGN	10-16-05	DAT	FF	FF	FF
	DATE	EOR	PM	DES	DRW
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
CEI ENGINEERING ASSOCIATES, INC.					
ENGINEERS PLANNERS SURVEYORS					
3317 S.W. 1 Street Bentonville, AR 72712		(478) 273-9472 FAX (478) 273-0844		JOB NO.: 20733.0 DWG NAME: 20733DET	
DETAIL SHEET 3		DATE 09-14-06 08:59 AM		SHEET NO. 38 OF 43	
REV.6		11-7-06			



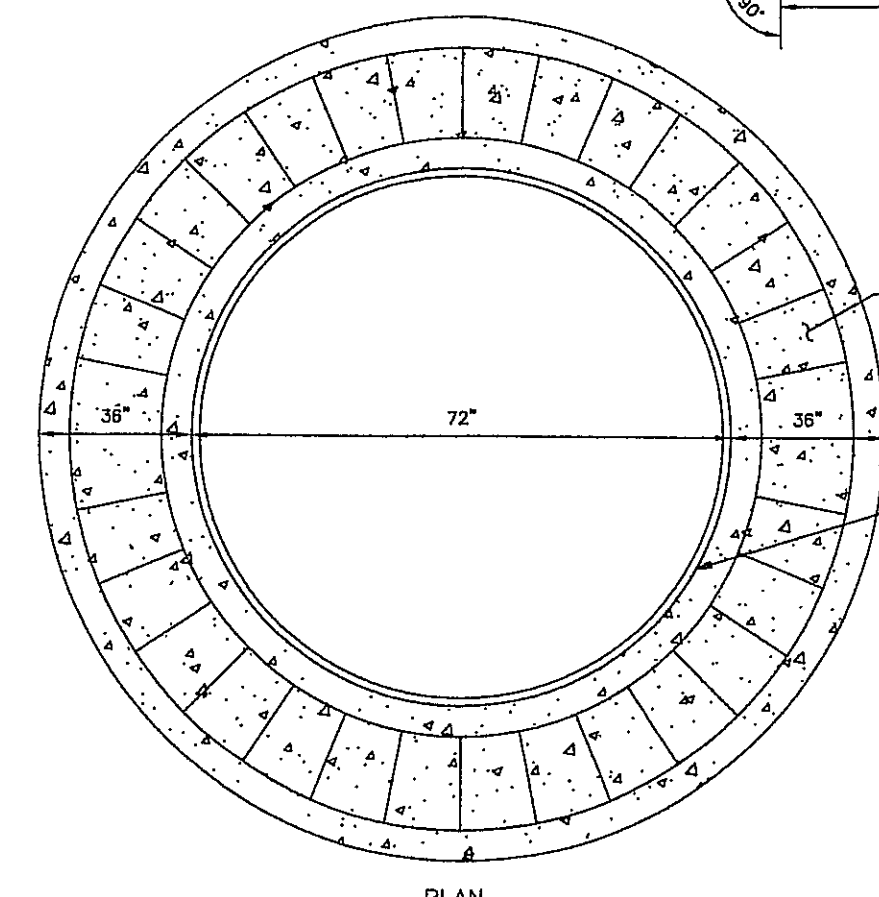
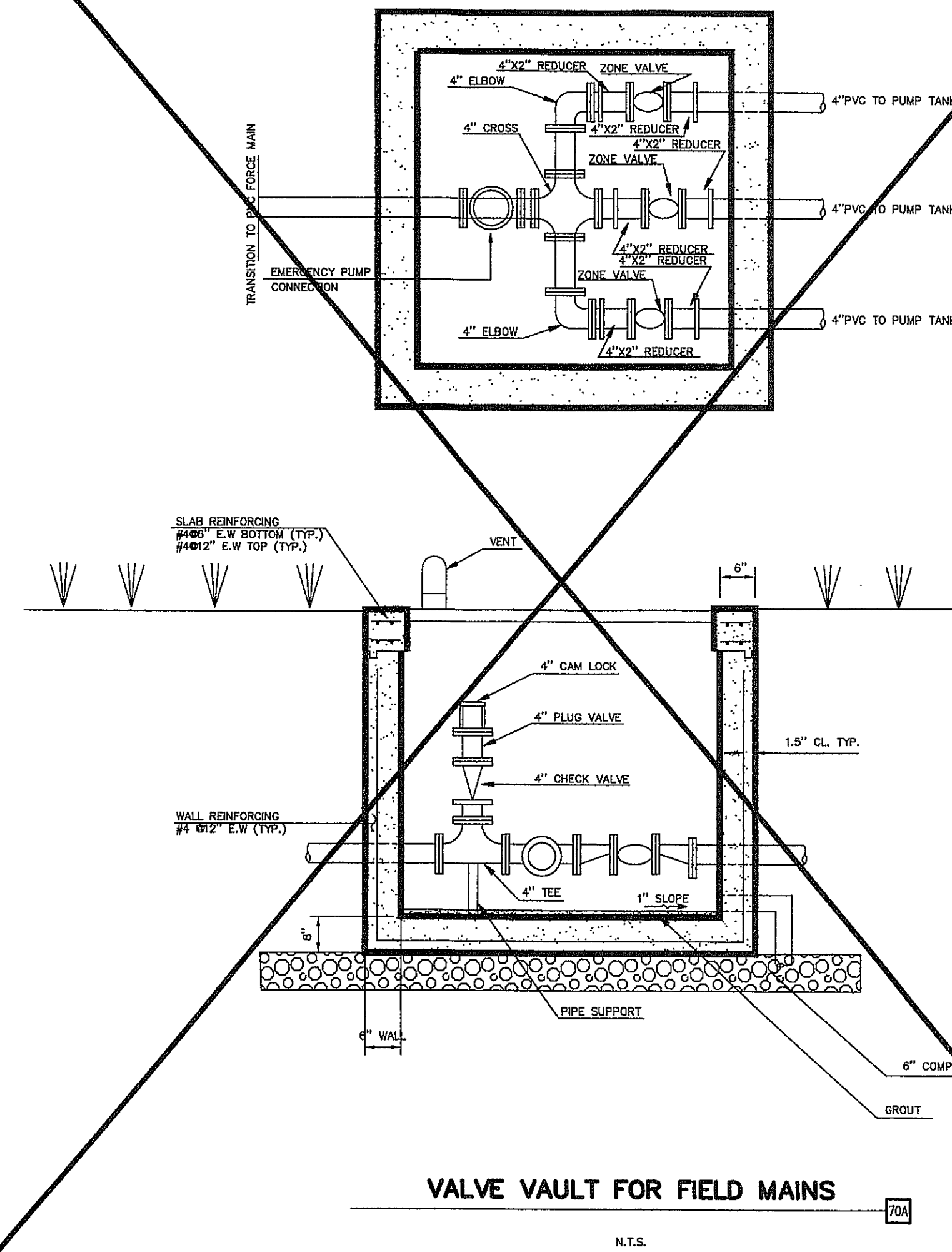
SUPERNATANT PUMP STATION
N.T.S.



UNDERGROUND SERVICE METER INSTALLATION
THREE PHASE - 4 WIRE 480 VOLTS
SCALE: N.T.S.



PIPING CONVERGENCE
SCALE: N.T.S.



ANTI-FLOTATION COLLAR
PLAN
SCALE: N.T.S.

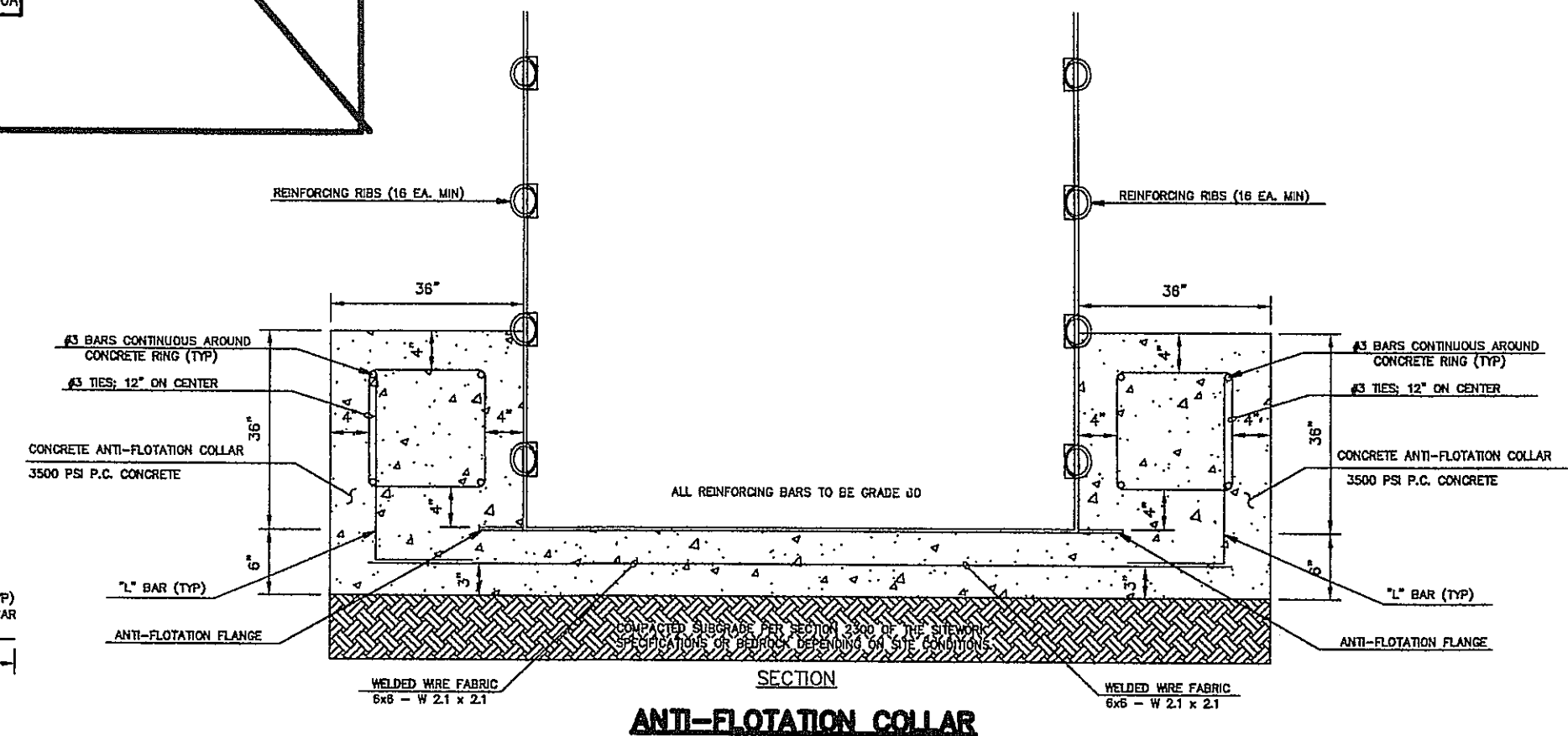
NOTE:
INFORMATION PROVIDED ON THIS SHEET WAS PROVIDED BY PACIFIC SOUTHWEST INDUSTRIES OF LAKE ELSINORE, CALIFORNIA. CEI SHALL NOT BE RESPONSIBLE FOR OMISSIONS, CONSTRUCTION OR ACCURACY OF THIS INFORMATION.



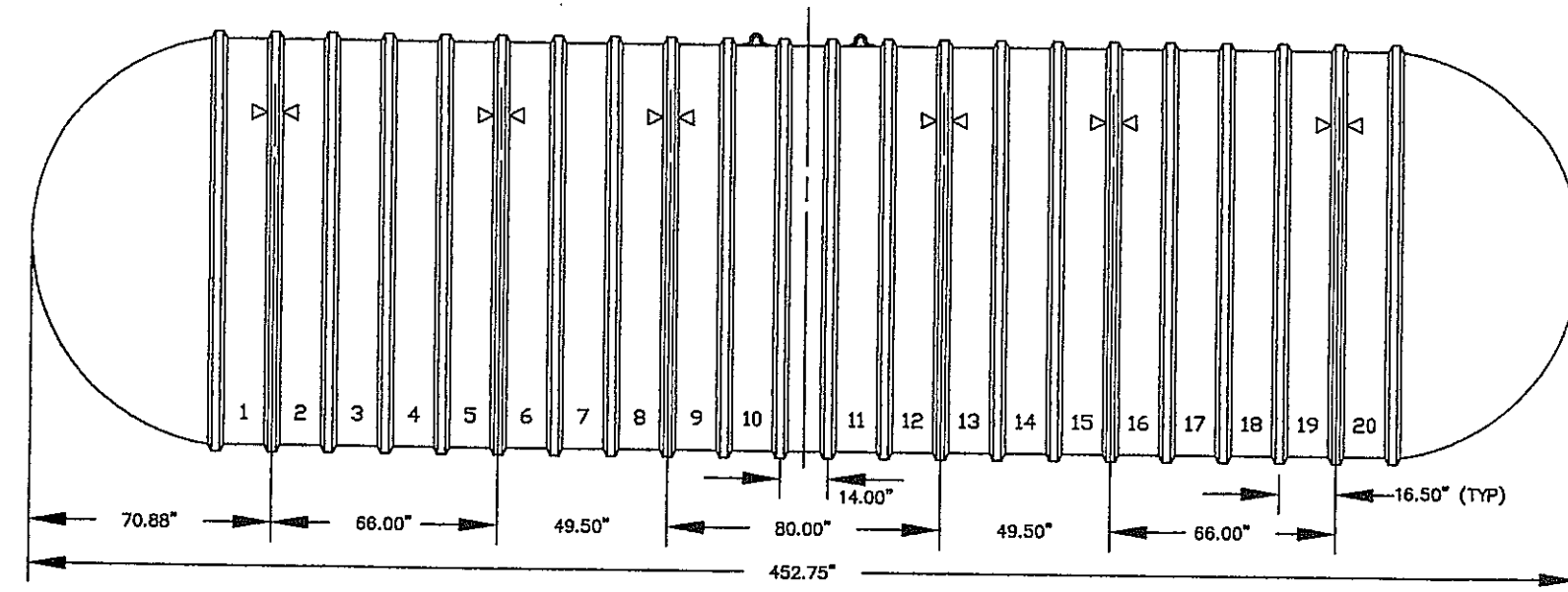
- ELECTRICAL NOTES:**
1. INSTALL METER SOCKET IN ENCLOSURE IN ACCORDANCE WITH ELECTRIC COMPANY REQUIREMENTS AND THE NATIONAL ELECTRIC CODE.
 2. INSTALL SERVICE LATERAL CONDUIT SERVICE ENTRANCE GROUND, SERVICE ENTRANCE CONDUCTORS AND FUSED DISCONNECT IN ACCORDANCE WITH ELECTRIC COMPANY REQUIREMENTS AND THE NATIONAL ELECTRIC CODE.
 3. MAKE CONNECTIONS IN THE CONTROL PANEL IN ACCORDANCE WITH INSTRUCTIONS PROVIDED BY EQUIPMENT MANUFACTURER.
 4. ALL CONDUIT BURIED IN EARTH, IN OR UNDER CONCRETE SLABS OR IN CONTACT WITH EARTH SHALL BE PVC SCHEDULE 40, UL LABELED.
 5. ALL CONDUIT ABOVE GRADE SHALL BE RIGID GALVANIZED STEEL, 1/2" MINIMUM SIZE.
 6. POWER WIRE SHALL BE COPPER, MINIMUM SIZE SHALL BE #12 AWG. MINIMUM INSULATION RATING SHALL BE 600V 75 DEG. C.
 7. CONTROL WIRE SHALL BE AS FURNISHED OR SPECIFIED BY THE CONTROLS MANUFACTURER.
 8. THE CONTRACTOR SHALL SUBMIT, PRIOR TO BEGINNING OF CONSTRUCTION, MANUFACTURER'S DATA FOR ALL MATERIALS AND EQUIPMENT ITEMS. THE CONTRACTOR SHALL FURNISH MANUFACTURER'S DESCRIPTIONS AND SCHEMATICS TO THE ENGINEER FOR HIS REVIEW AND APPROVAL.
 9. THE CONTRACTOR SHALL VERIFY AND CONFORM TO ANY ADDITIONAL ELECTRIC COMPANY REQUIREMENTS. ANY ELECTRIC COMPANY INSTALLATION COSTS AND ARRANGING SERVICE WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
 10. THE COST OF ALL NECESSARY PERMITS, FEES AND INSPECTIONS REQUIRED BY ELECTRIC COMPANY OR ANY PUBLIC AUTHORITY HAVING JURISDICTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
 11. ALL ELECTRIC MATERIALS AND WORK SHALL CONFORM TO THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE FOR SERVICES IN CORROSIVE ATMOSPHERE WITH FLAMMABLE GASES AND SHALL MEET LOCAL AND ELECTRIC COMPANY CODES AND REGULATIONS.

PUMP STATION NOTES:

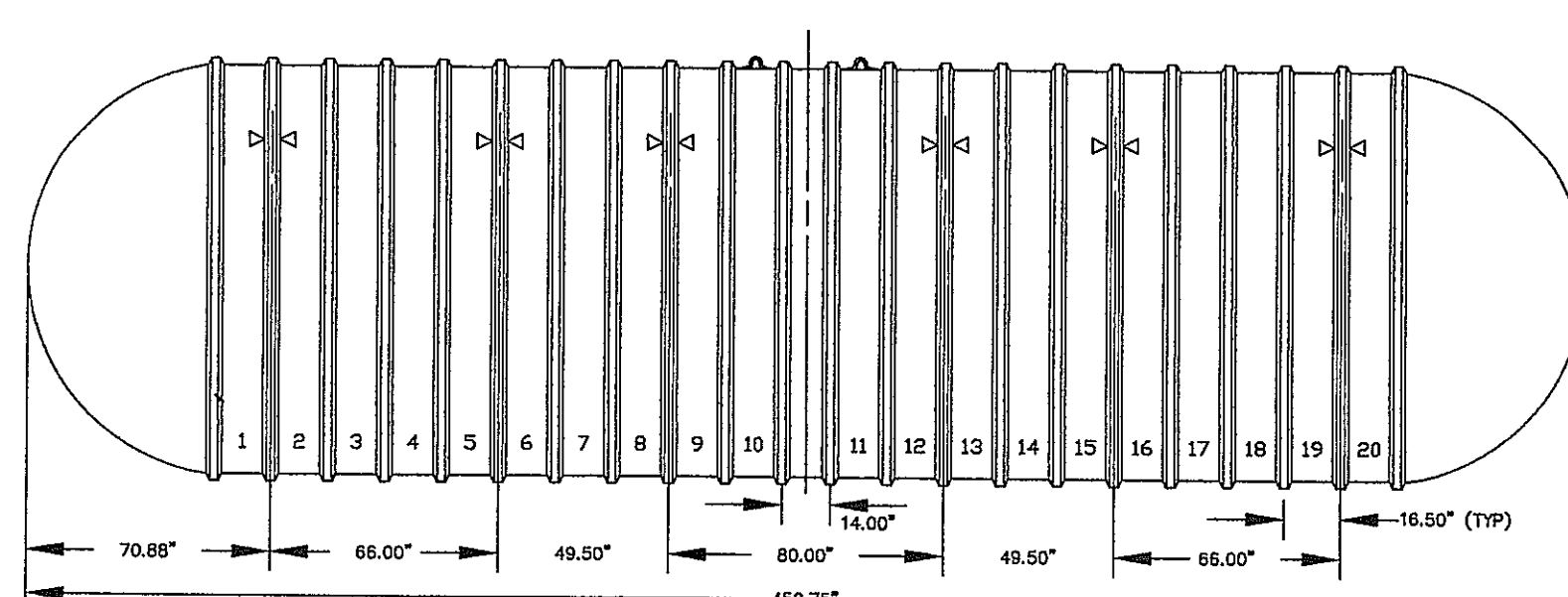
1. SITE SHALL BE GRADED TO CHANNEL WATER AWAY FROM THE PUMP STATION.
2. BACKFILL AROUND WET-WELL SHALL BE CLASS II, OR III MATERIAL AS DESCRIBED BY ASTM D2487. MATERIAL SHALL BE COMPACTED TO BOX MOUNTED PROCTOR. BACKFILL TO BE PLACED IN 6" LIFTS.
3. ALL PIPE JOINTS INSIDE WET WELL TO BE FLANGED UNLESS OTHERWISE SPECIFIED. ALL BURIED PIPE JOINTS TO BE MECHANICAL JOINT.
4. VERIFY ALL OPENINGS THROUGH FLOOR AND WALLS WITH MECHANICAL, ELECTRICAL, AND PIPING REQUIREMENTS.
5. FORCE MAIN SHALL BE AIR TESTED BY THE CONTRACTOR AND WITNESSED BY VILLAGE WASTE WATER COMPANY.
6. THIS STATION SHALL BE A PRODUCT OF A MANUFACTURER'S REPRESENTATIVE AND REGIONAL VENDOR THAT HAS A MINIMUM OF FIVE YEARS EXPERIENCE IN BUILDING UNDERGROUND PUMP STATIONS.
7. NO SUBSTITUTIONS OR CHANGES ARE TO BE MADE TO THIS DESIGN WITHOUT WRITTEN CONSENT OF CEI ENGINEERING ASSOCIATES TO INCLUDE USE OF SPECIFIC BRAND AND MODEL NUMBERS SPECIFIED ON THESE PLANS AND THE WRITTEN SPECIFICATIONS. ALL CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE SPECIFICATIONS FOR THE WAL-MART STORE AT JANE, MISSOURI.



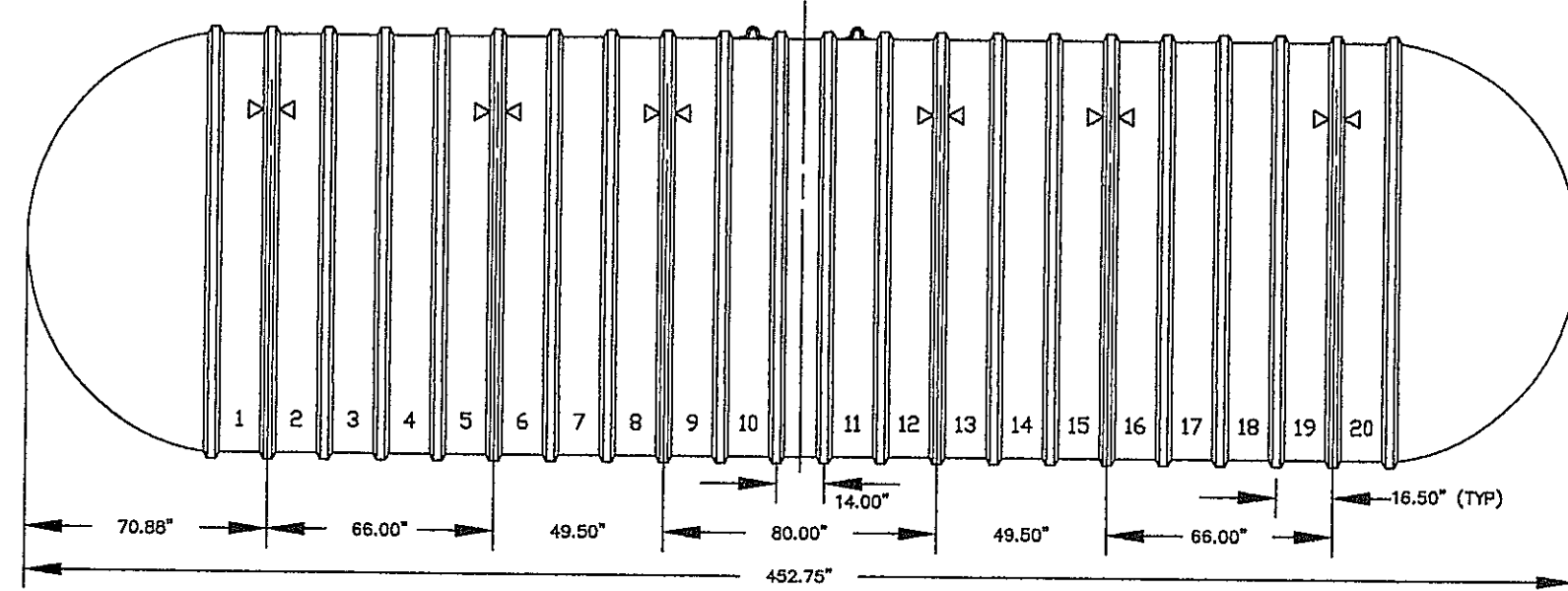
INITIAL DESIGN	9-16-04	DAT	FF	FF	FF
	DATE	EOR	PM	DES	DRW
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
CEI ENGINEERING ASSOCIATES, INC.					
ENGINEERS PLANNERS SURVEYORS					
3317 SW "I" Street (479) 273-9472 JOB NO.: 20733					
Bentonville, AR 72712 FAX (479) 273-0844 DWG NAME: 20730007					
DETAIL SHEET 4					
DATE: 09-14-06 SHEET NO. 39 OF 43					
REV: 08:59 AM					



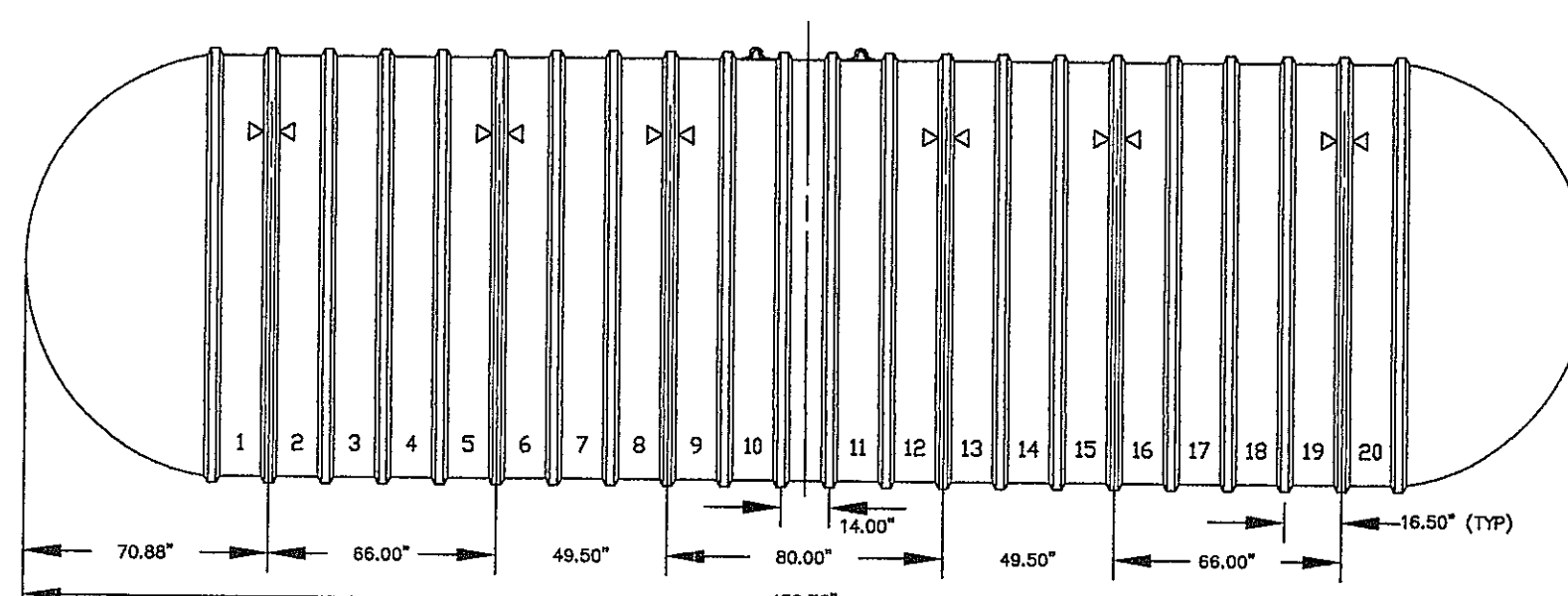
PUMP TANK 3
(25,000 GAL)
N.T.S.



PUMP TANK 4A
(20,000 GAL)
N.T.S.

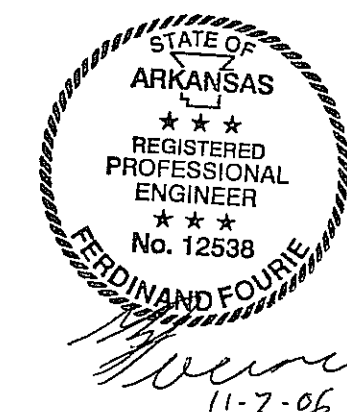


PUMP TANK 4B
(20,000 GAL)
N.T.S.

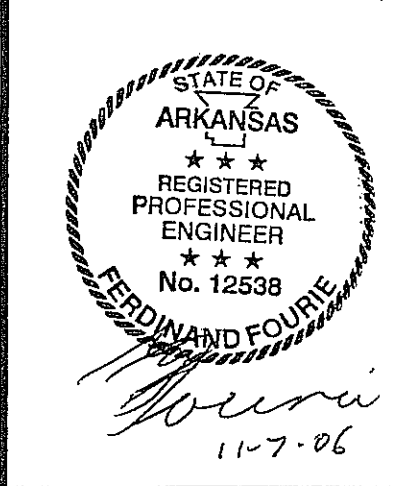
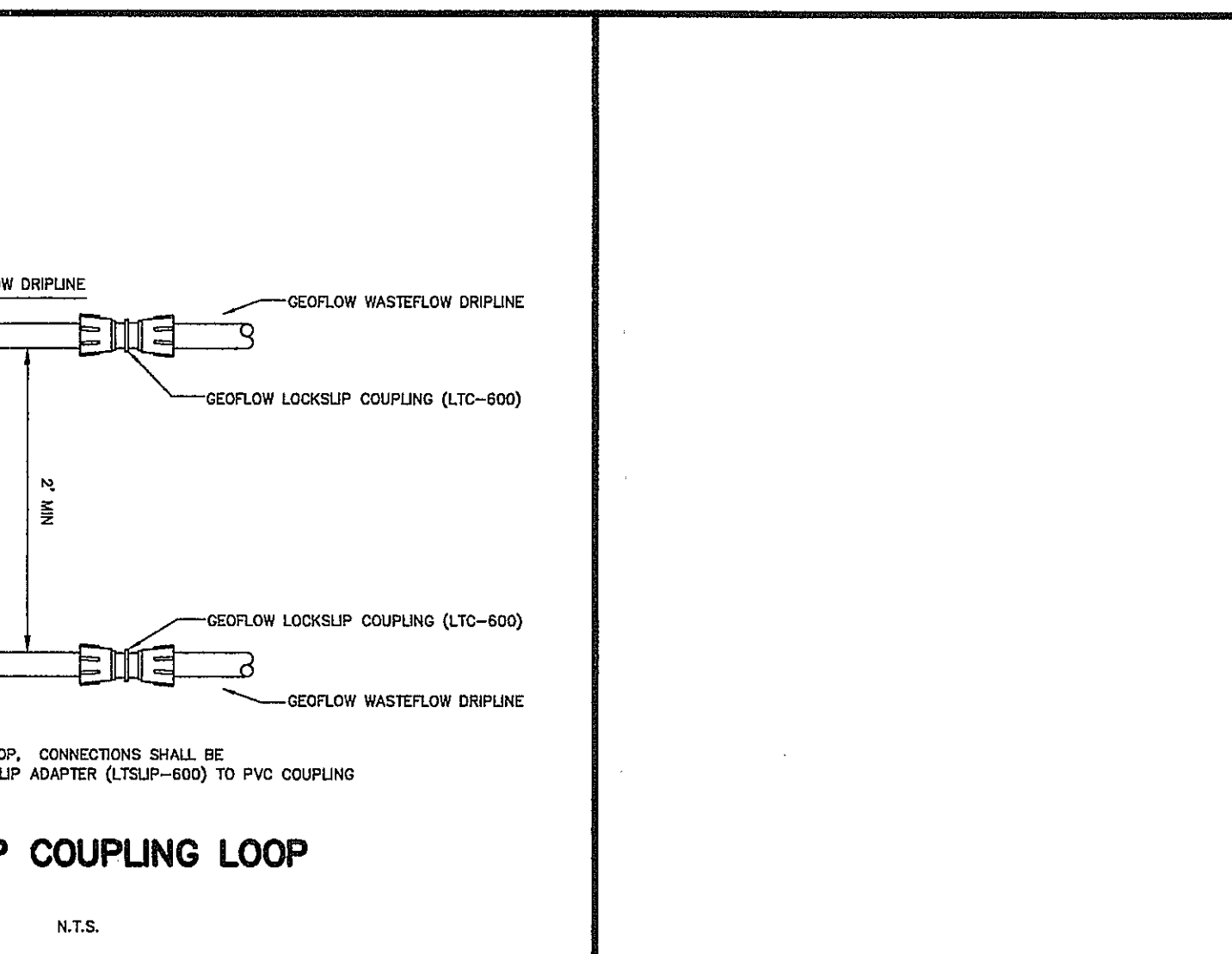
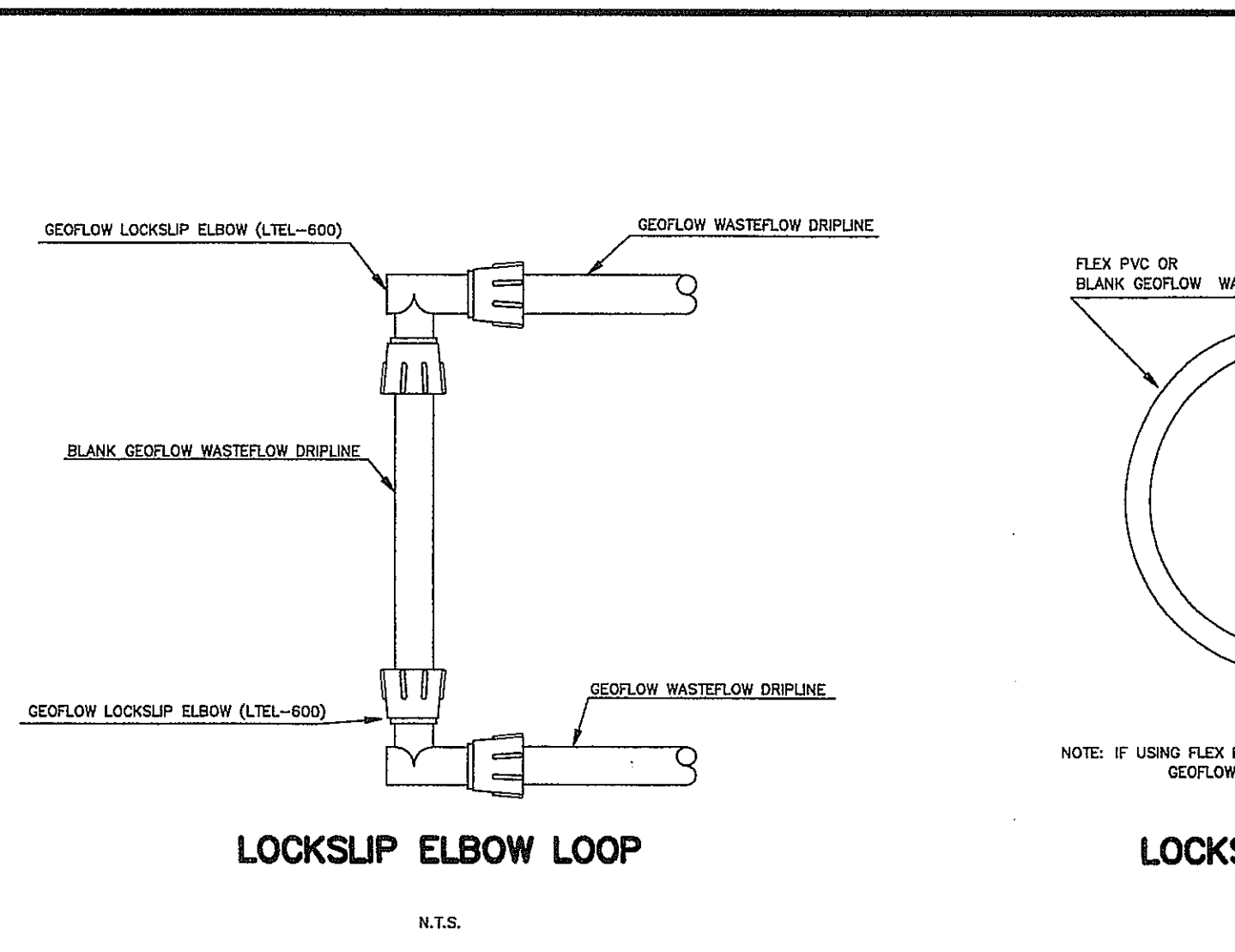
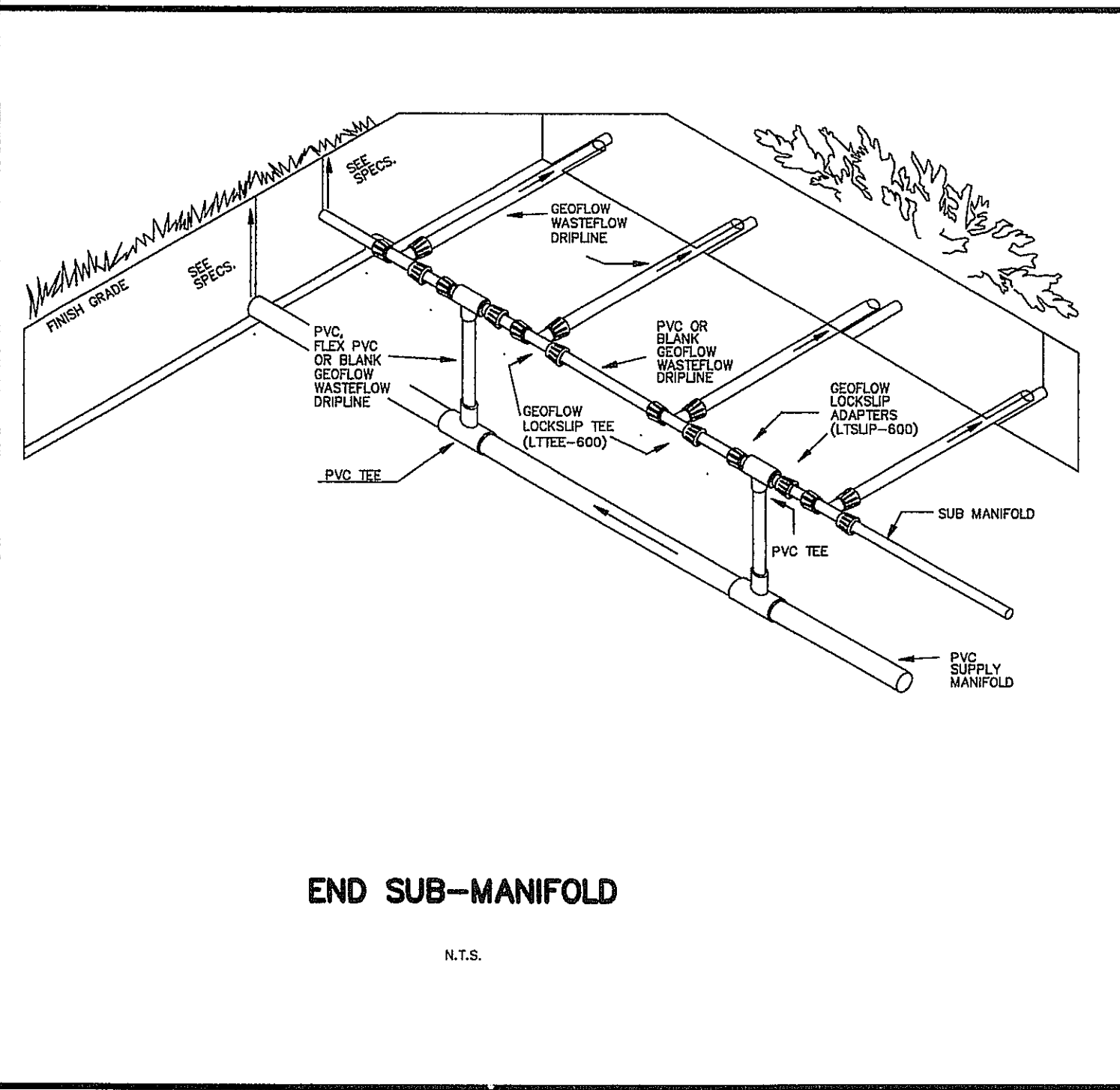
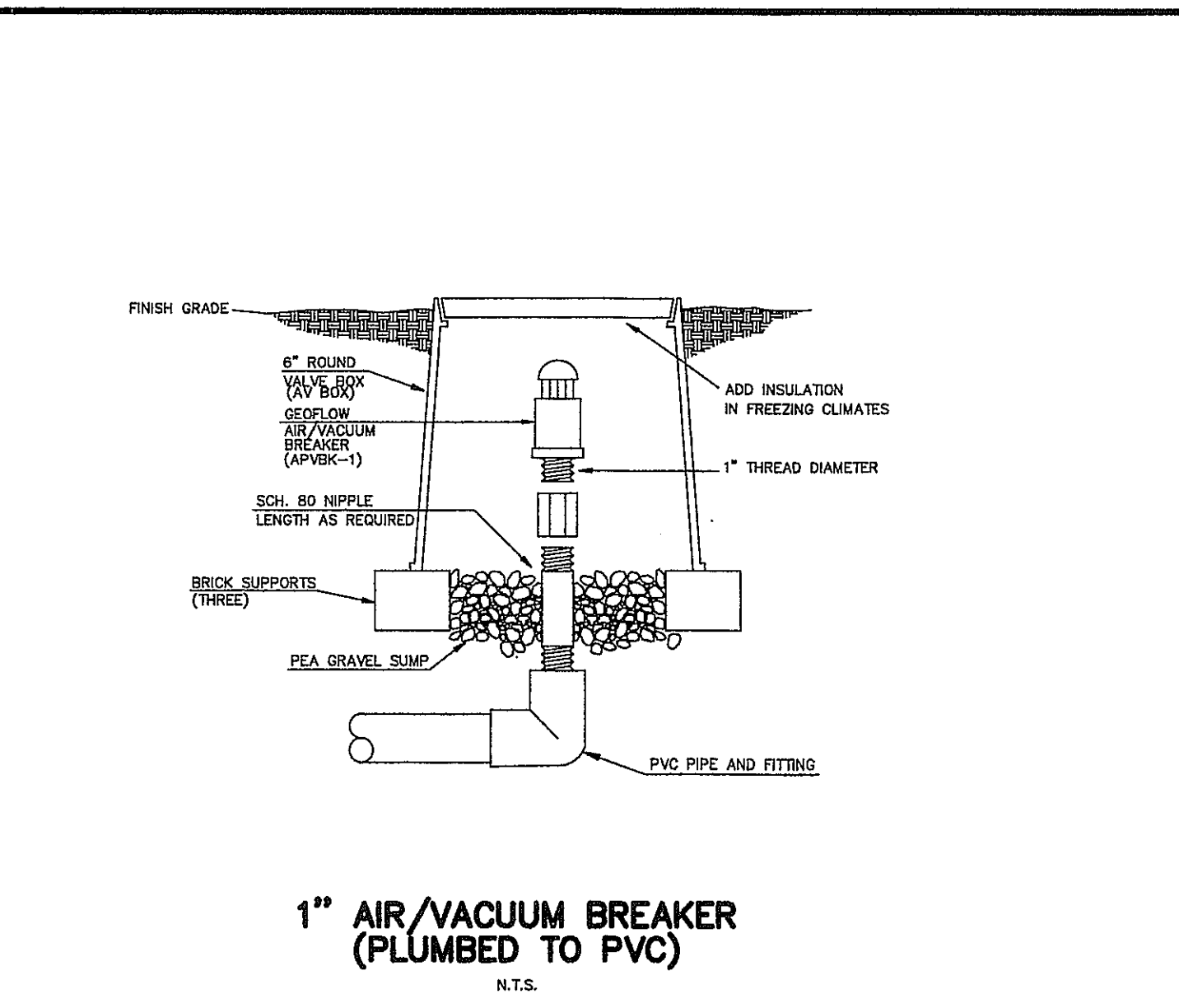
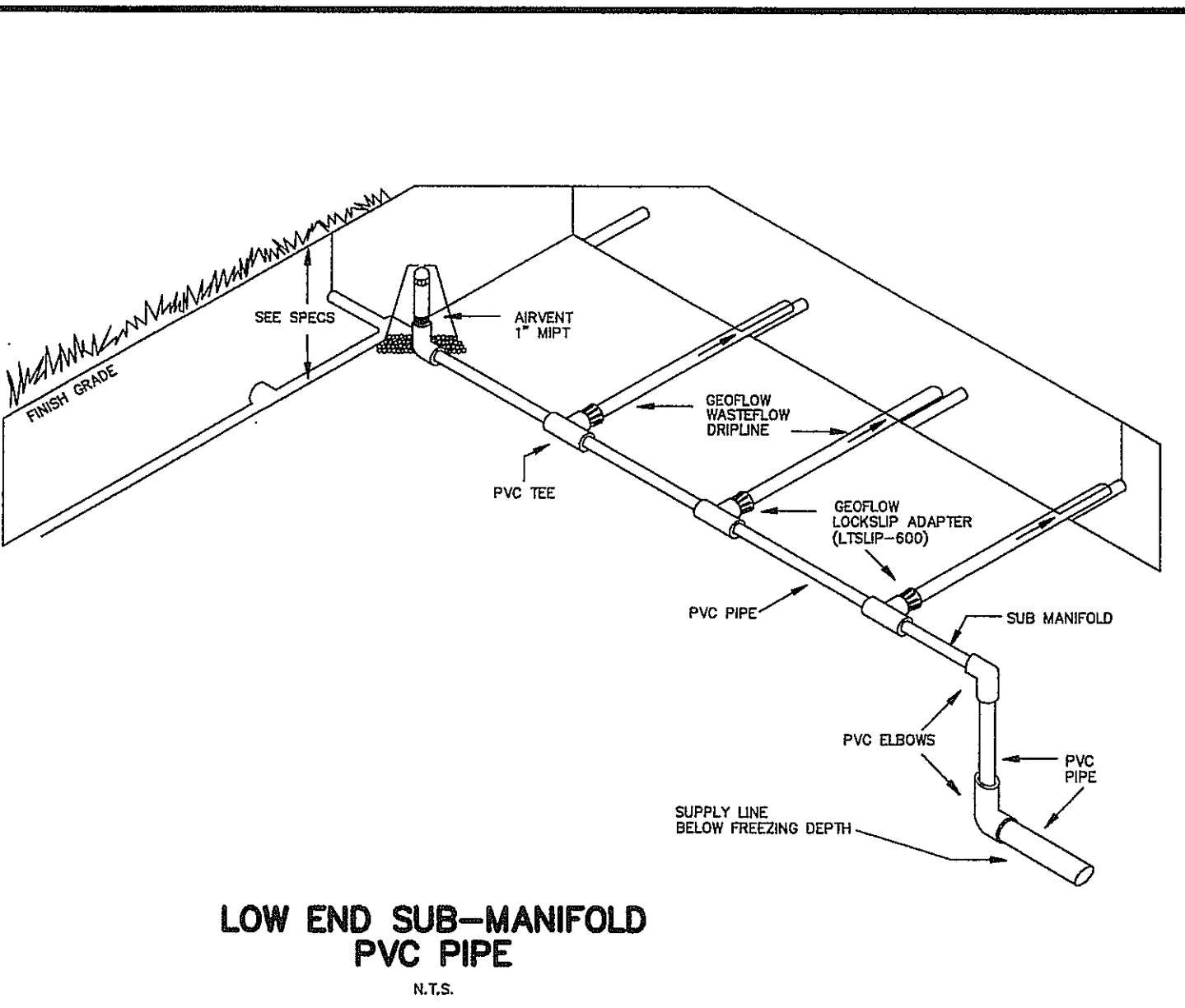
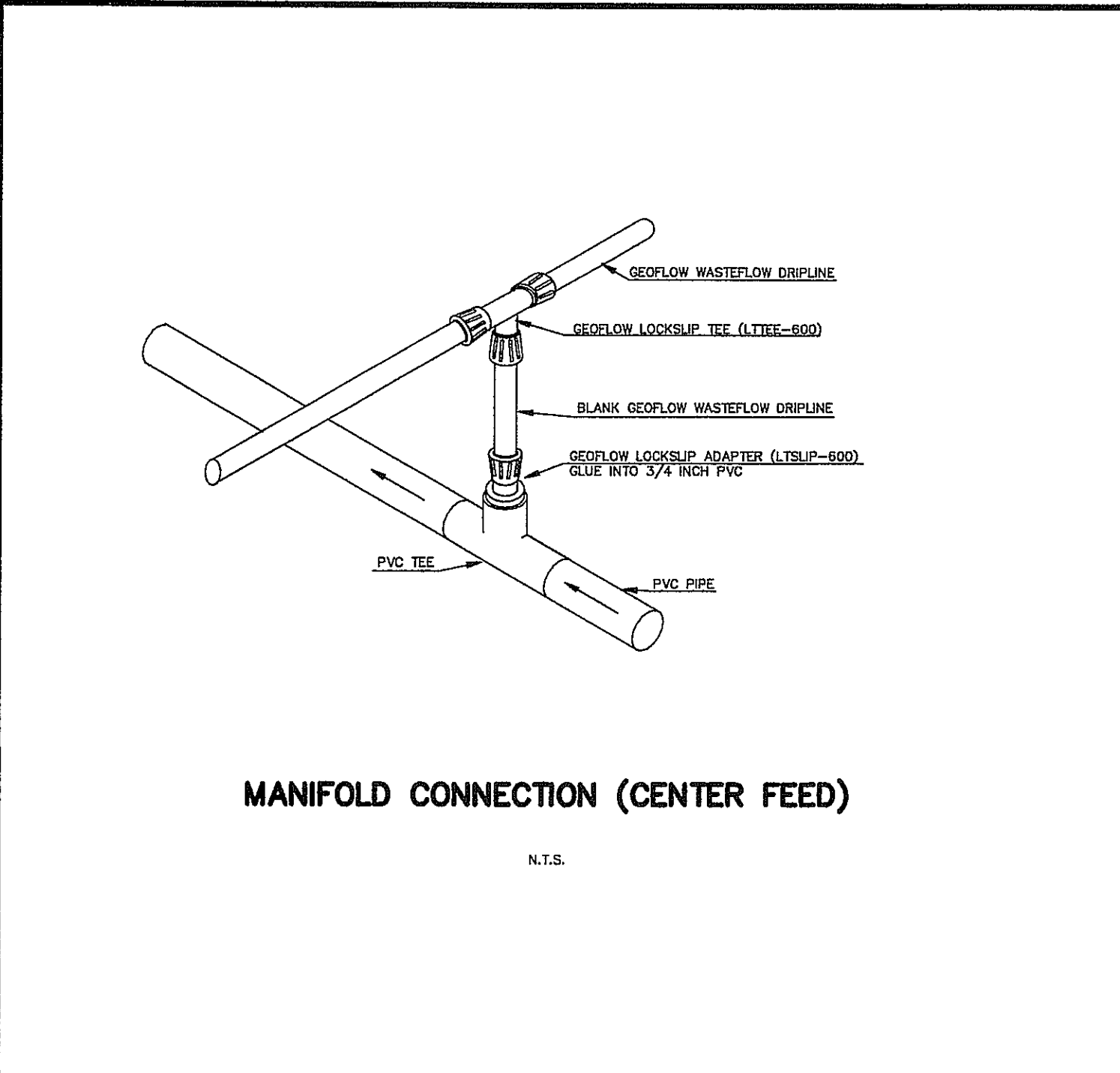
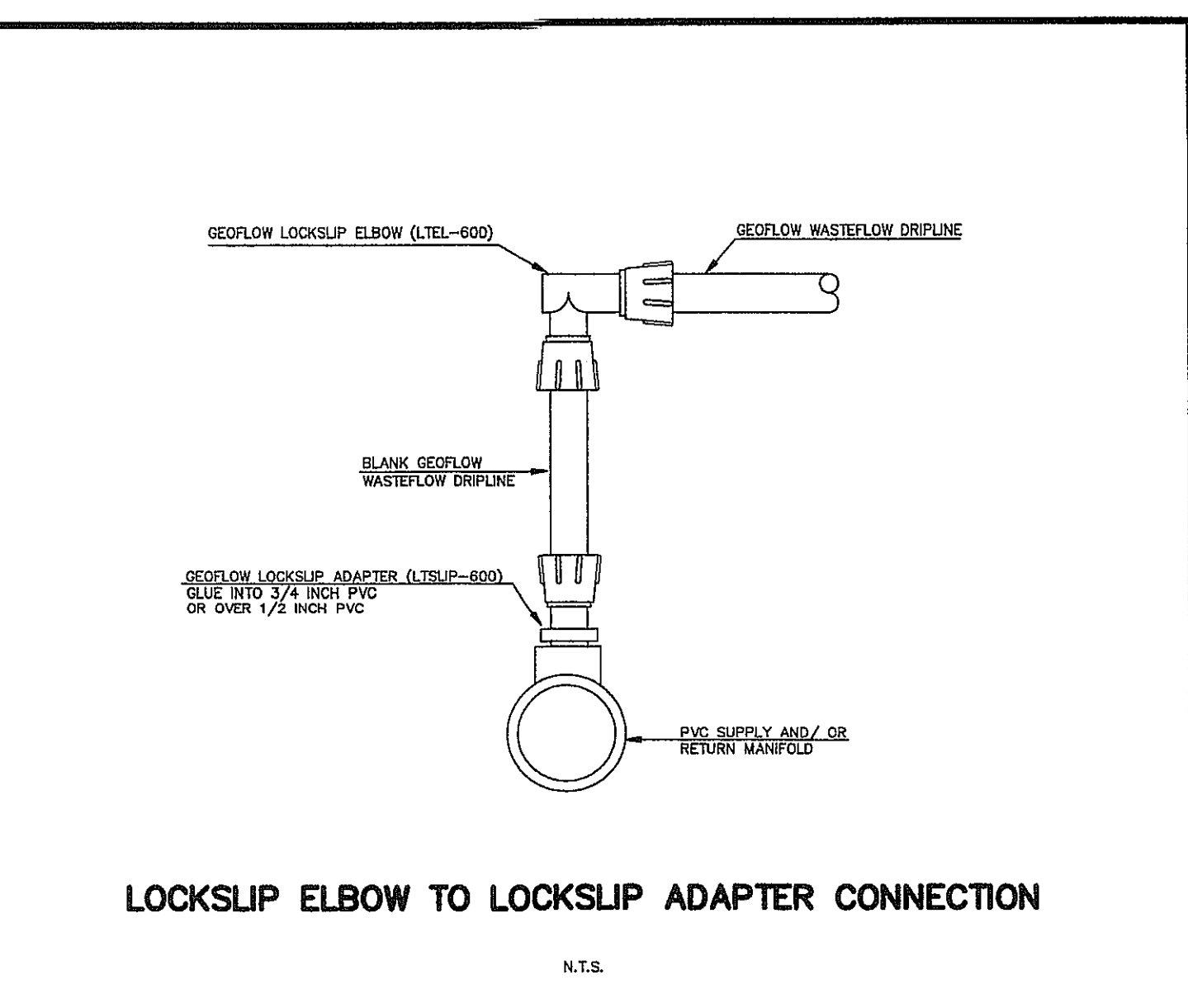
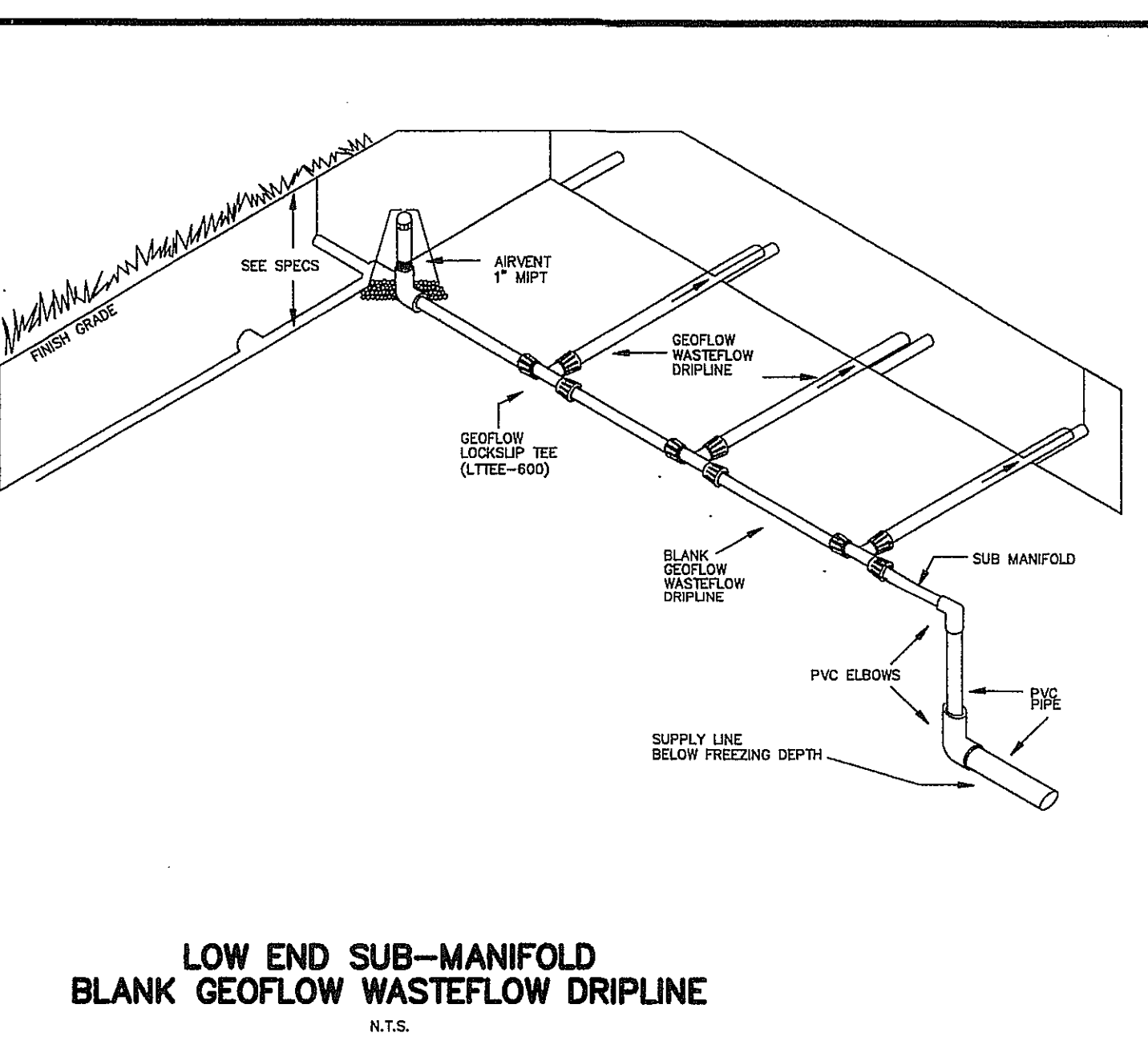
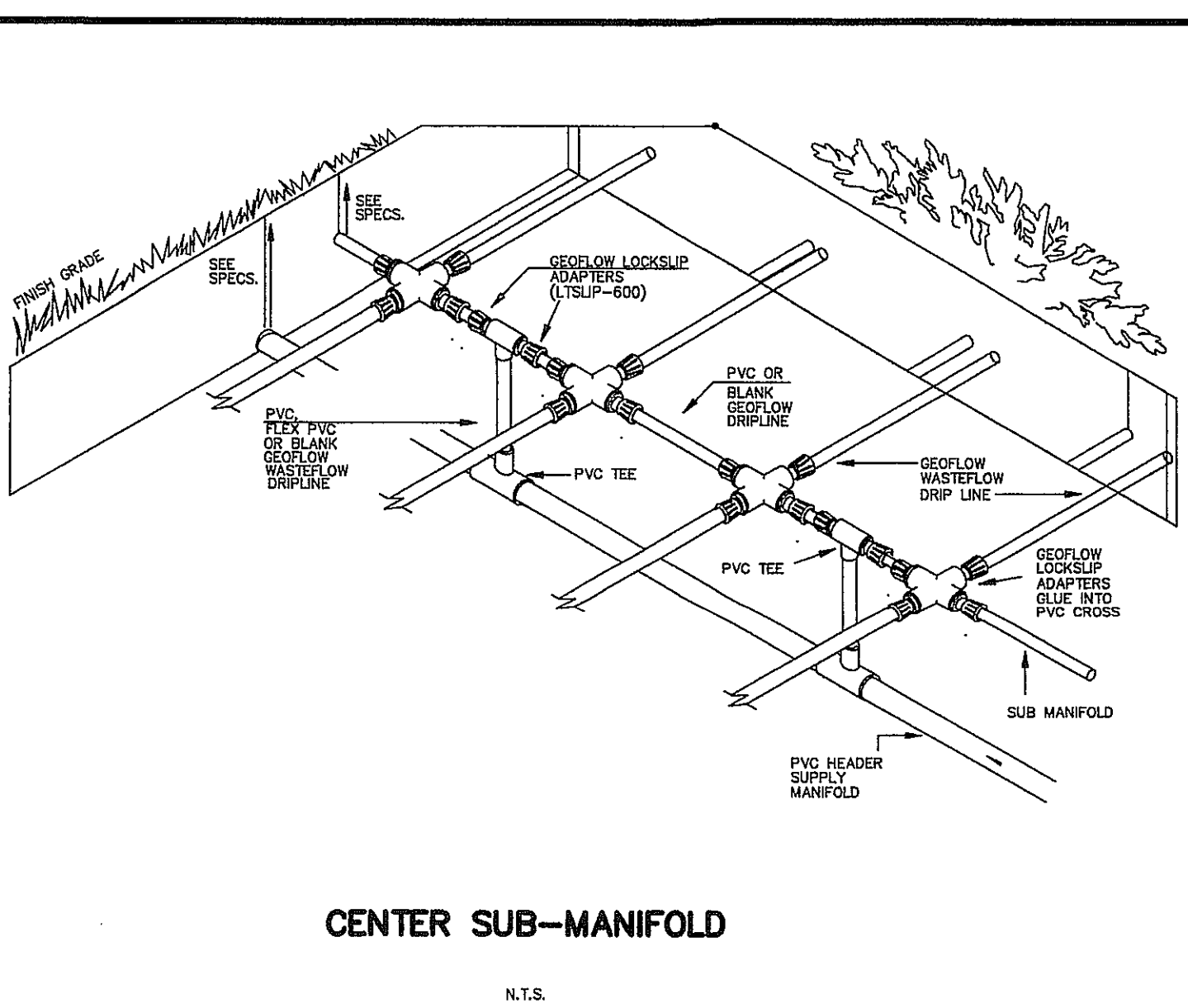
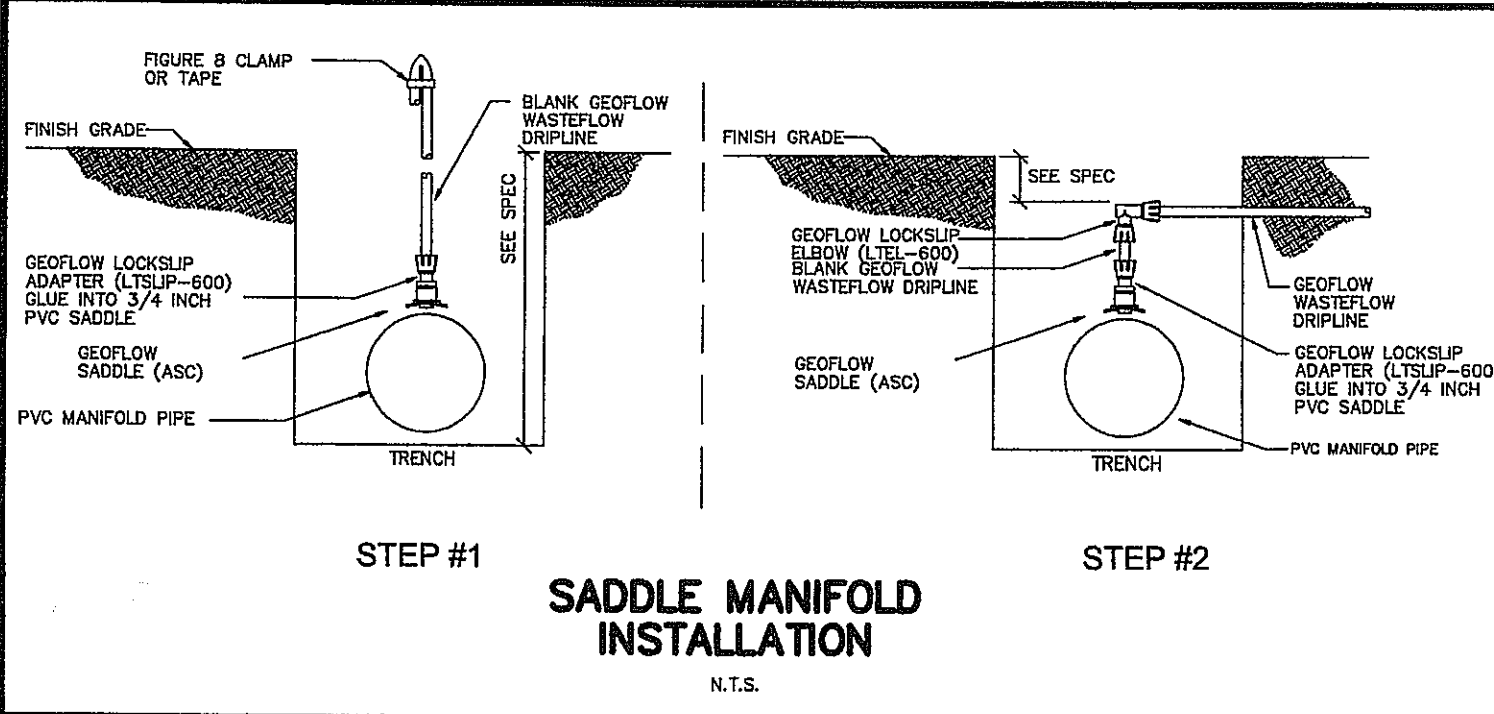
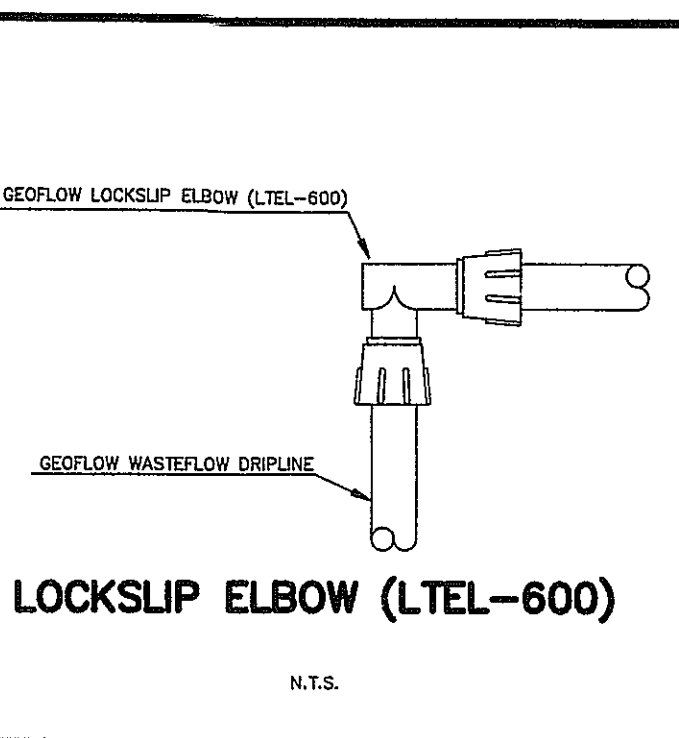
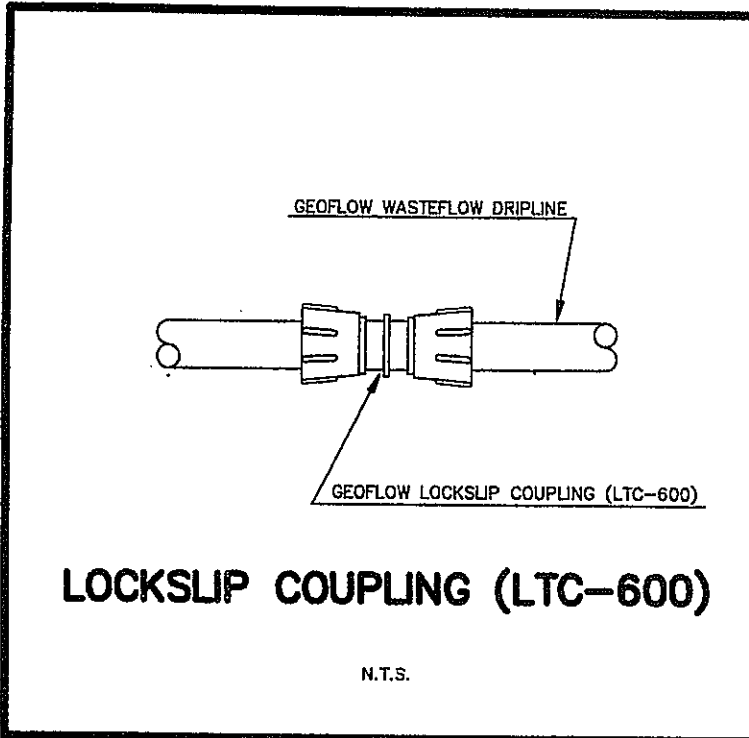


PUMP TANK 5
(20,000 GAL)
N.T.S.

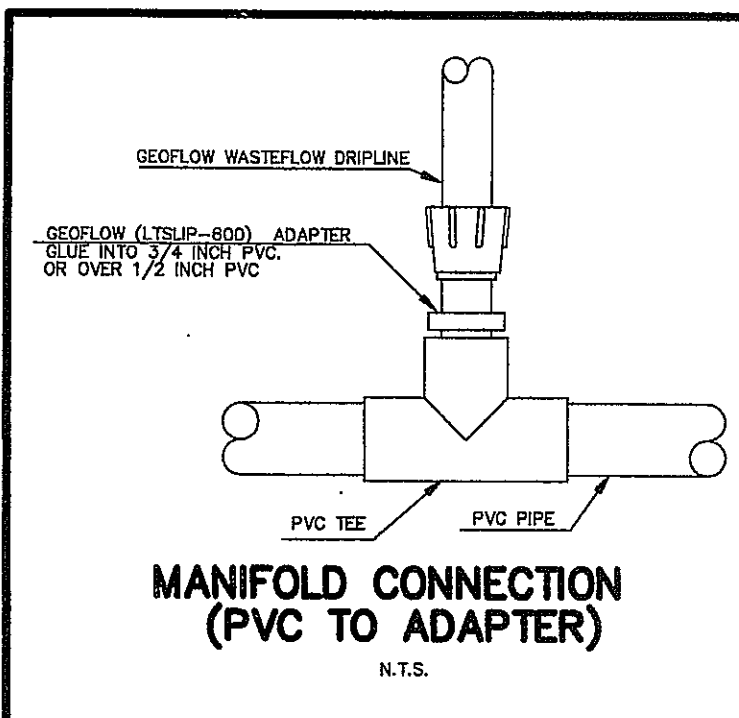
NOTE:
PUMP TANK DRAWINGS WILL BE PRODUCED BY XERXES CORPORATION AFTER
PUMP TANK ORDER IS PLACED BY OWNER UNDER CONTRACT 1. THESE DRAWINGS
WILL BE UPDATED AFTER THIS INFORMATION BECOMES AVAILABLE.



INITIAL DESIGN	10-16-05	DATE	FF	FF	FF
	DATE	FOR	PM	DES	DRW
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
CEI[®] ENGINEERING ASSOCIATES, INC.					
<u>ENGINEERS</u>		<u>PLANNERS</u>		<u>SURVEYORS</u>	
3317 S.W. 1 Street Bentonville, AR 72712		(479) 273-9472 FAX (479) 273-0844		JOB NO.: 20733.0 DWG NAME: 20733DET	
DETAIL SHEET 5				DATE 09-14-06 08:59 AM REV.6	SHEET NO. 40 OF 43

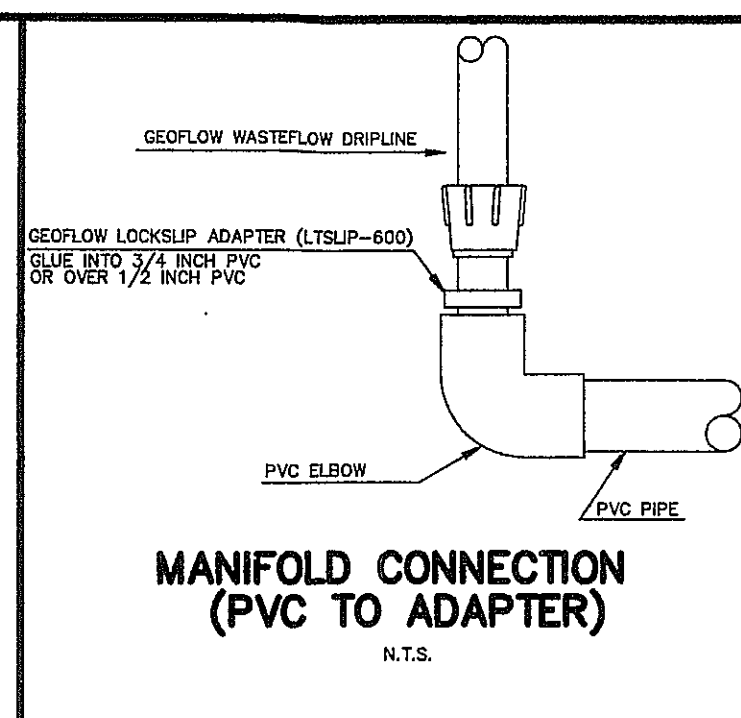


INITIAL DESIGN	10-16-05	DATE	FF	FF	FF
	DATE	EOR	PM	DES	DRW
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
CEI[®] ENGINEERING ASSOCIATES, INC					
<u>ENGINEERS</u>		<u>PLANNERS</u>		<u>SURVEYORS</u>	
3317 S.W. 1 Street		(479) 273-9472		JOB NO.: 207330.0	
Bentonville, AR 72712		FAX (479) 273-0844		DWG NAME: 207330DET	
DATE		09-14-06		SHEET NO.	
REV		08:59 AM		41 of 43	
DETAIL SHEET 6					



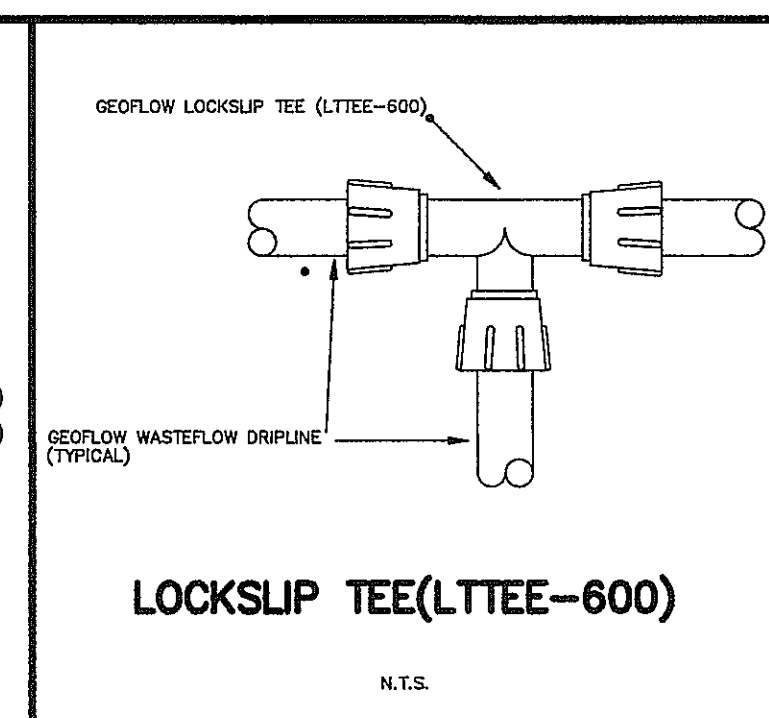
MANIFOLD CONNECTION
(PVC TO ADAPTER)

N.T.S.



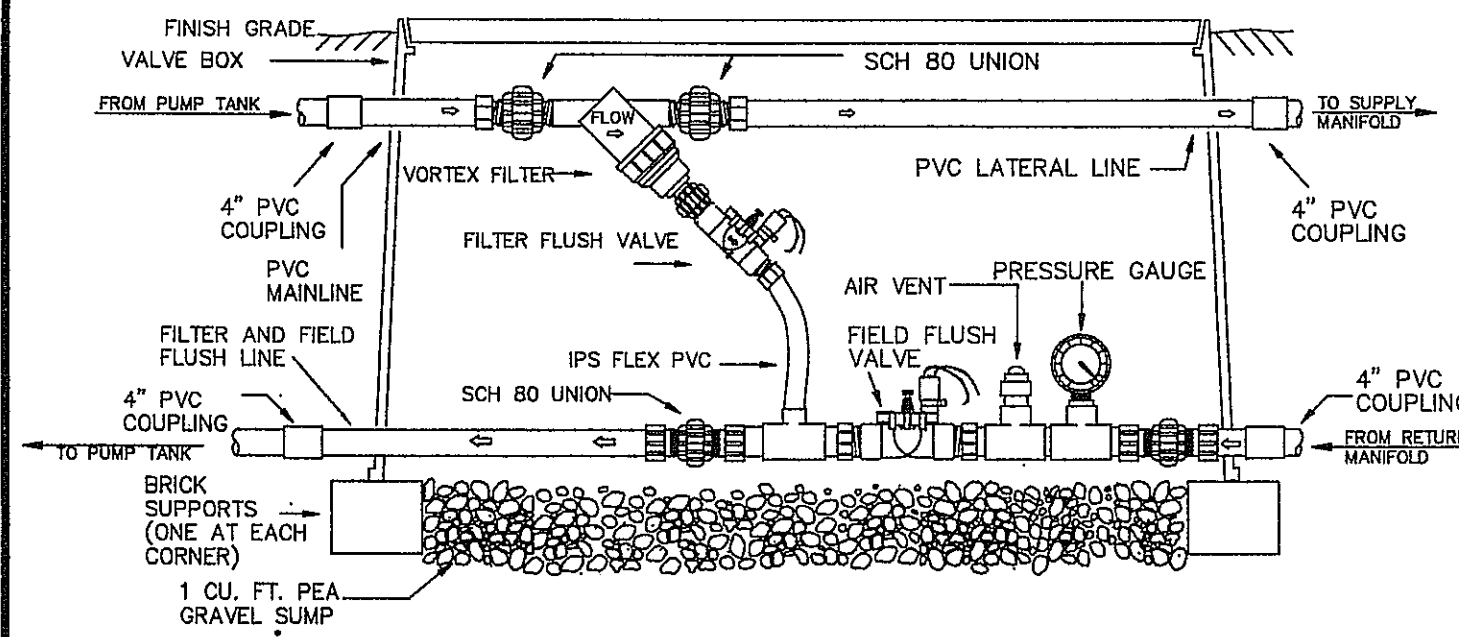
MANIFOLD CONNECTION
(PVC TO ADAPTER)

N.T.S.



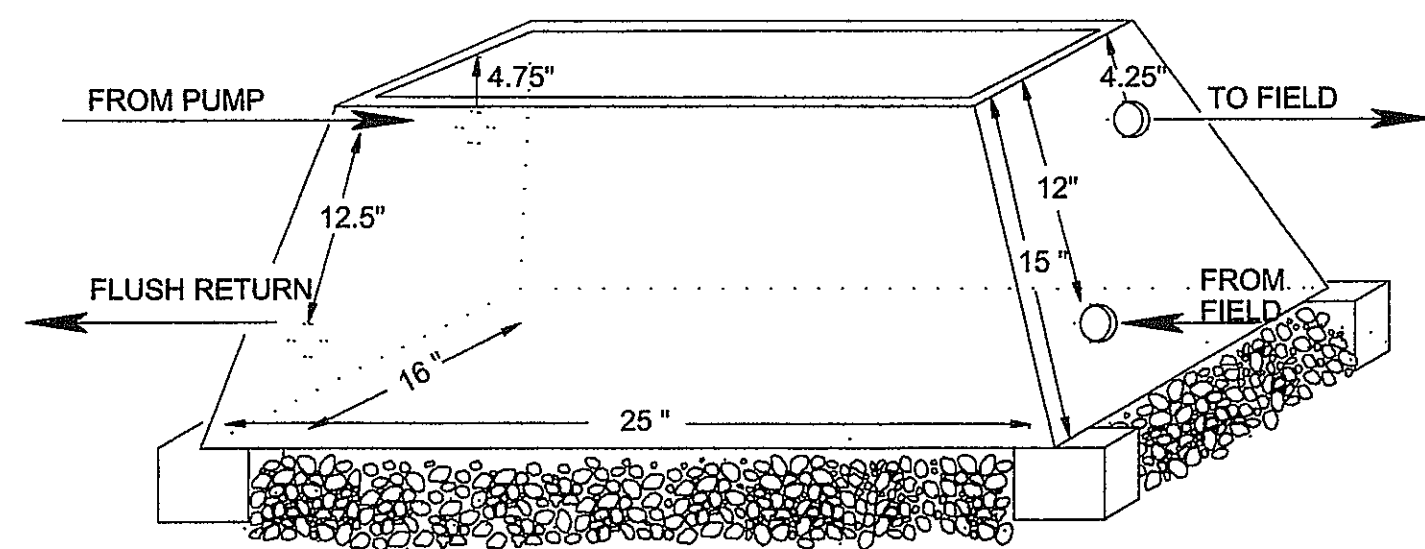
LOCKSLIP TEE(LTTEE-600)

N.T.S.



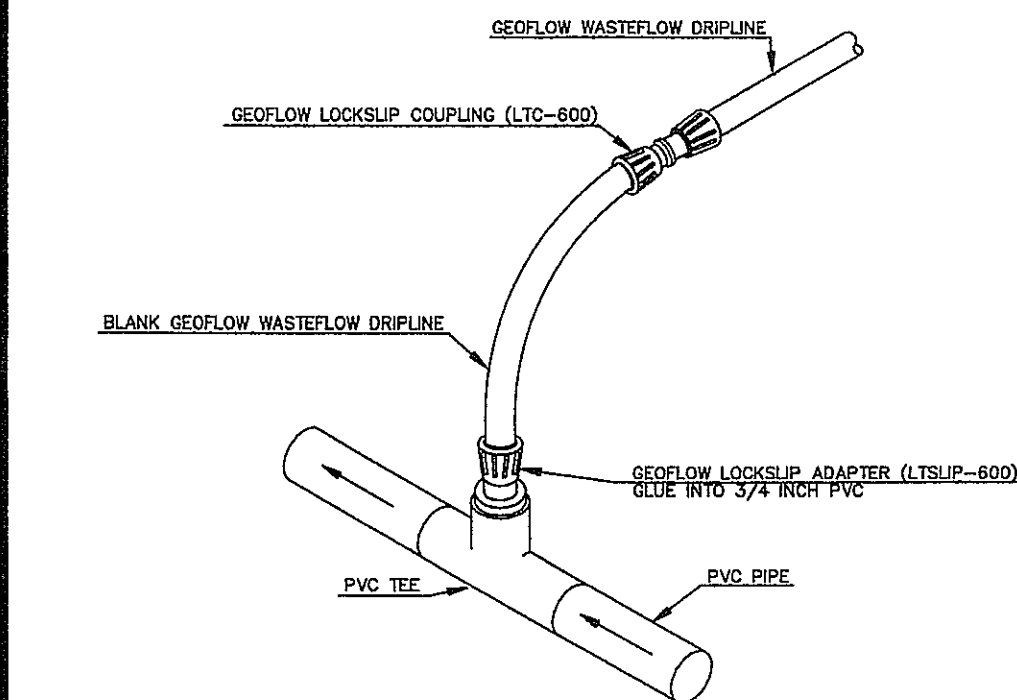
SIMPLE WASTEFLOW HEADWORKS BOX - AUTOMATIC
SCHEMATIC

N.T.S.



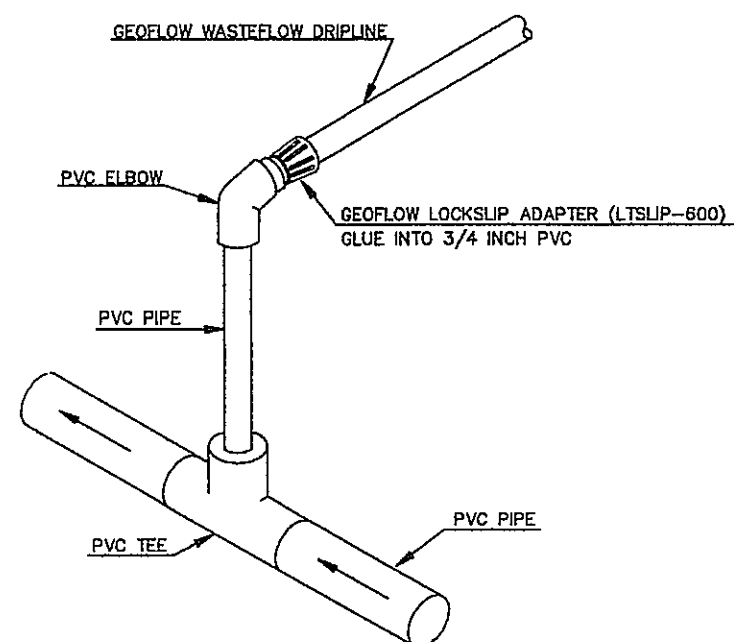
SIMPLE WASTEFLOW HEADWORKS BOX - DIMENSIONS
1\"/>

N.T.S.



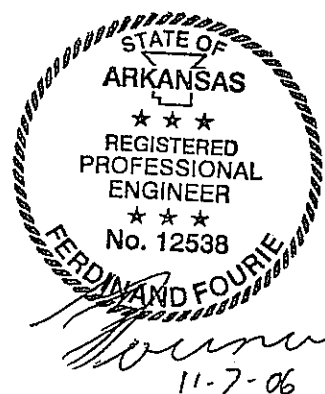
MANIFOLD CONNECTION (END FEED)
BLANK GEOFLOW WASTEFLOW DRIPLINE RISER

N.T.S.

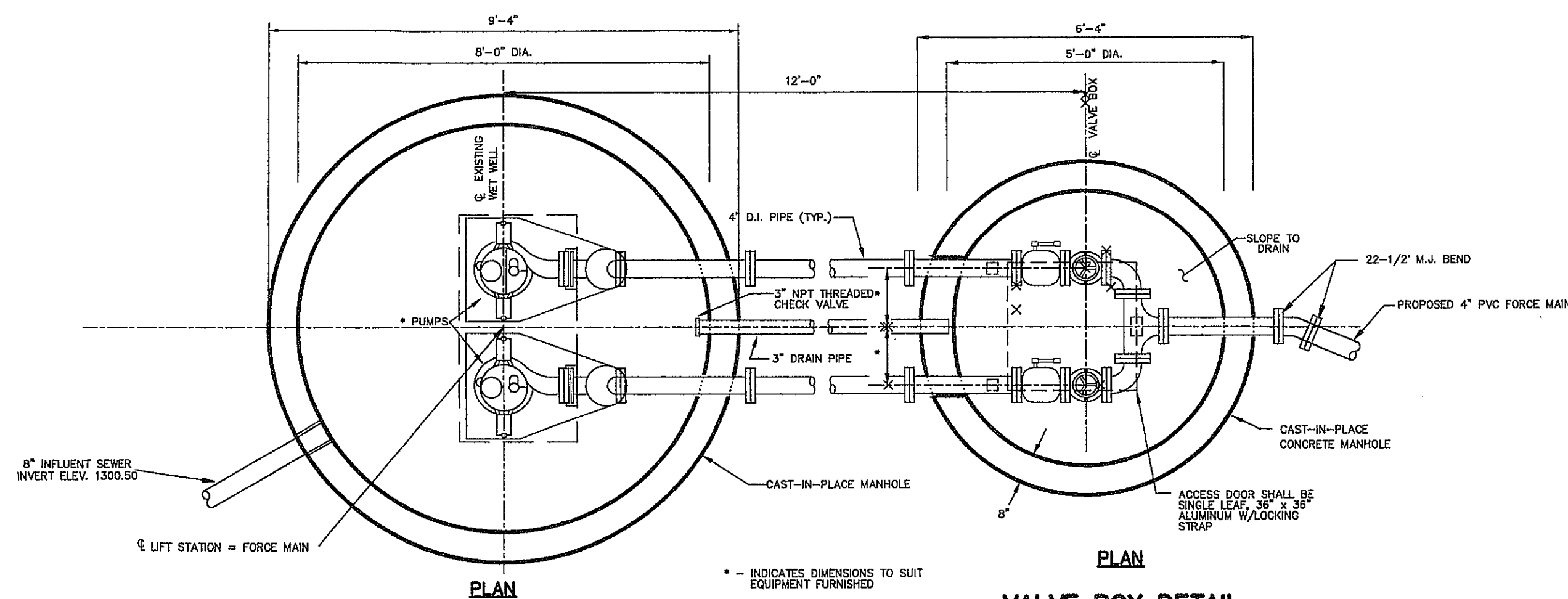


MANIFOLD CONNECTION (END FEED)
PVC RISER

N.T.S.

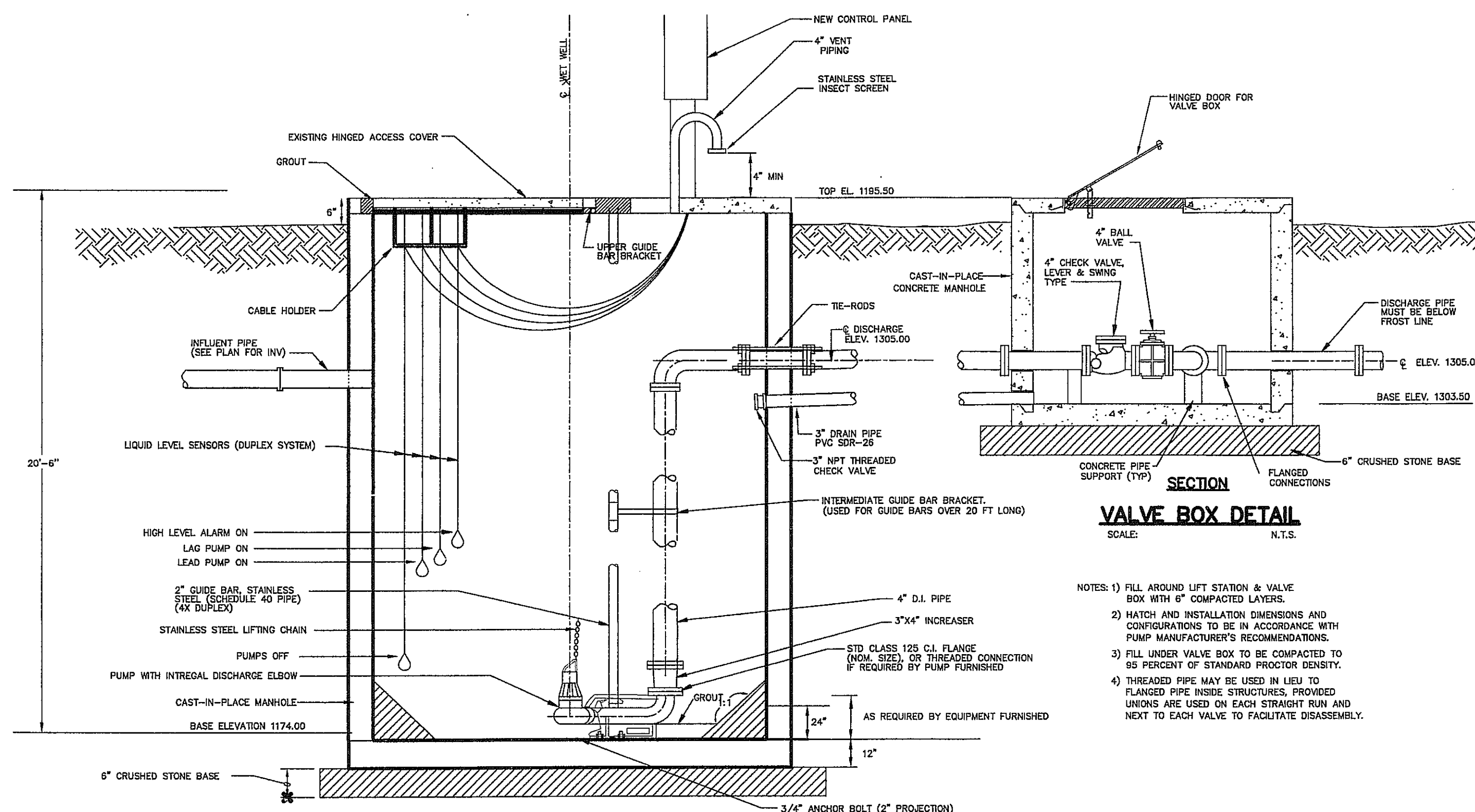


INITIAL DESIGN	10-16-05	DAT	FF	FF	FF
DATE	EOR	PM	DES	DRW	
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
CEI ENGINEERING ASSOCIATES, INC.					
ENGINEERS PLANNERS SURVEYORS					
3317 S.W. 1 Street Bentonville, AR 72712		(479) 273-9472 FAX (479) 273-0844		JOB NO.: 20733.0 DWG NAME: 20733DET	
DETAIL SHEET 7		DATE 09-14-06 08:59 AM		SHEET NO. 42 of 43	
		REV 6			



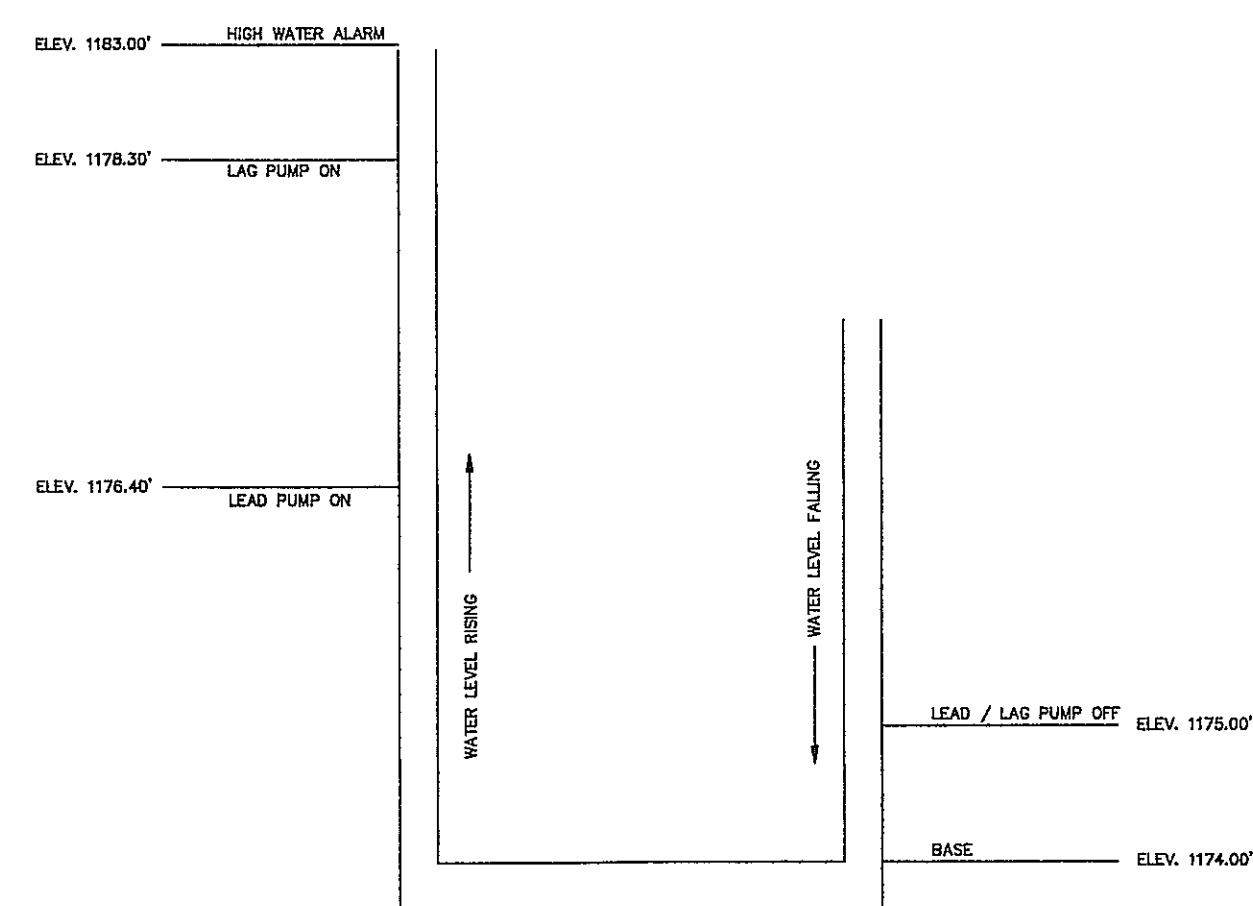
PLAN
LIFT STATION DETAIL
SCALE: N.T.S.

PLAN
VALVE BOX DETAIL
SCALE: N.T.S.



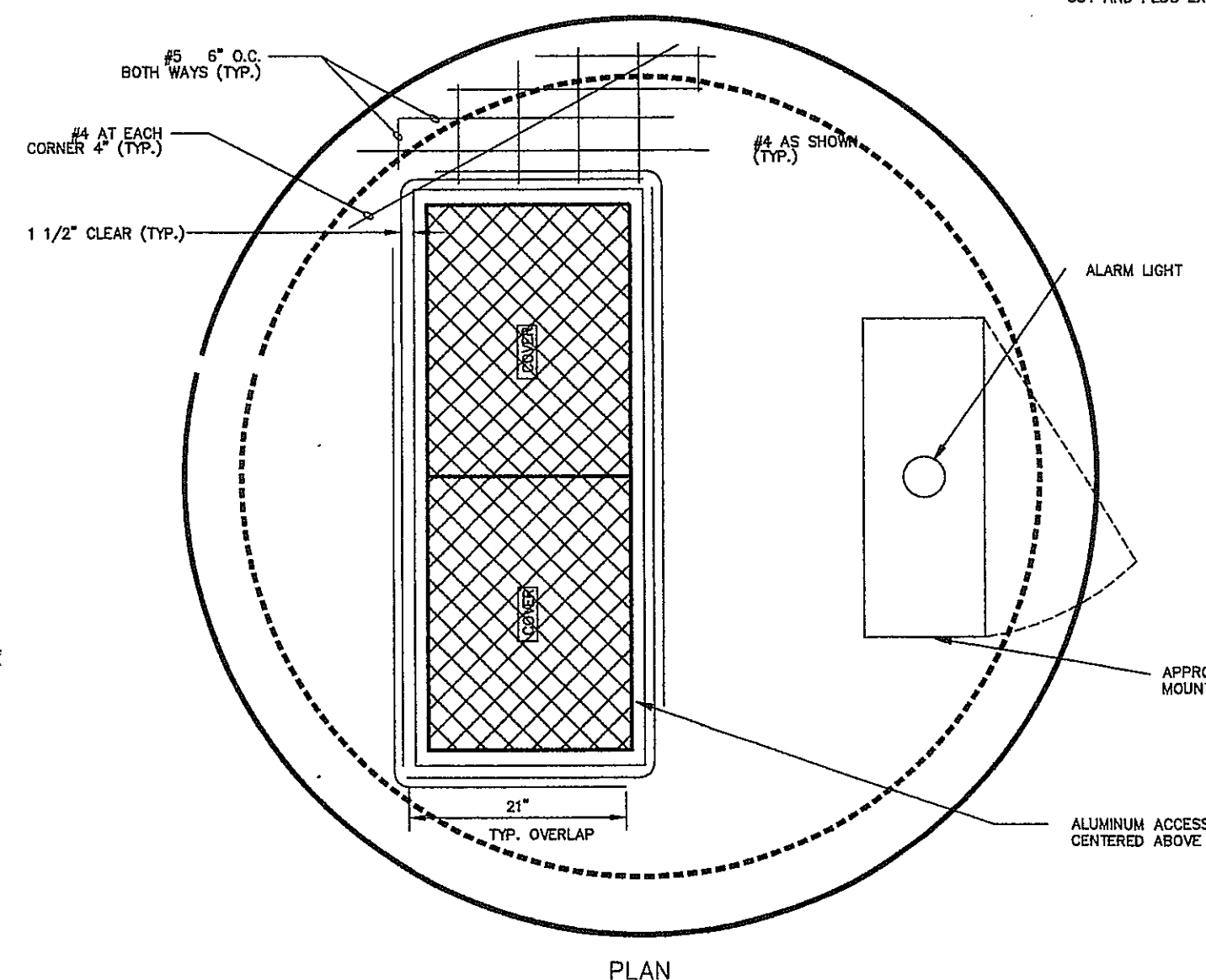
SECTION
LIFT STATION DETAIL
SCALE: N.T.S.

- NOTES: 1) FILL AROUND LIFT STATION & VALVE BOX WITH 6" COMPACTED LAYERS.
2) HATCH AND INSTALLATION DIMENSIONS AND CONFIGURATIONS TO BE IN ACCORDANCE WITH PUMP MANUFACTURER'S RECOMMENDATIONS.
3) FILL UNDER VALVE BOX TO BE COMPACTED TO 95 PERCENT OF STANDARD PROCTOR DENSITY.
4) THREADED PIPE MAY BE USED IN LIEU TO FLANGED PIPE INSIDE STRUCTURES, PROVIDED UNIONS ARE USED ON EACH STRAIGHT RUN AND NEXT TO EACH VALVE TO FACILITATE DISASSEMBLY.

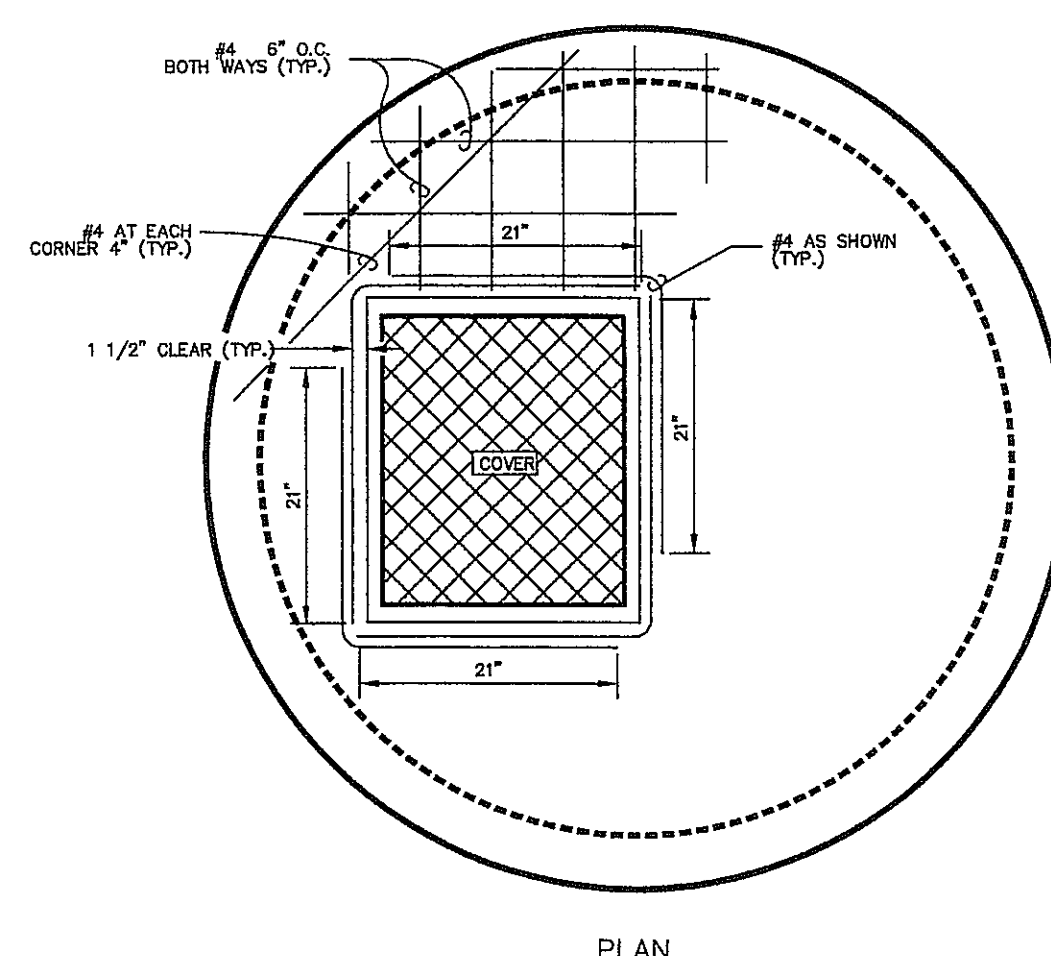


SWITCH LEVEL SETTINGS

SANITARY SEWER LIFT STATION DETAIL
N.T.S.



PLAN
LIFT STATION WETWELL TOP SLAB REINFORCEMENT DETAIL
SCALE: N.T.S.



PLAN
VALVE BOX TOP SLAB REINFORCEMENT DETAIL
SCALE: N.T.S.

LIFT STATION NOTES:

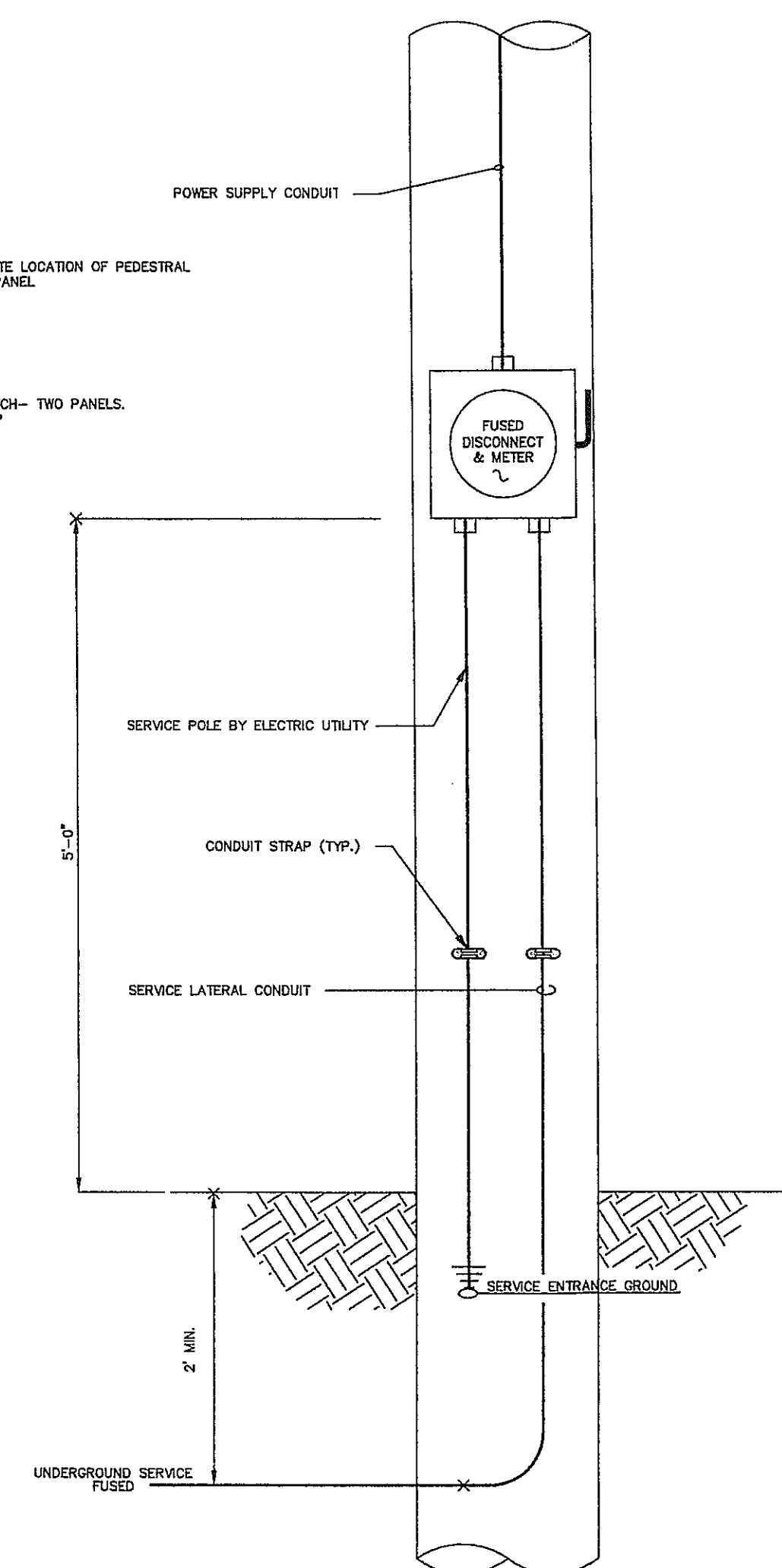
1. SITE SHALL BE GRADED TO CHANNEL WATER AWAY FROM THE PUMP STATION.
2. BACKFILL AROUND WETWELL SHALL BE CLASS I, II, OR III MATERIAL AS DESCRIBED BY ASTM D2487. MATERIAL SHALL BE COMPACTED TO 95% STANDARD PROCTOR. BACKFILL TO BE PLACED IN 6" LIFTS.
3. ALL PIPE JOINTS INSIDE WETWELL TO BE FLANGED UNLESS OTHERWISE SPECIFIED. ALL BURIED PIPE JOINTS TO BE MECHANICAL JOINT.
4. VERIFY ALL OPENINGS THROUGH FLOOR AND WALLS WITH MECHANICAL, ELECTRICAL, AND PIPING REQUIREMENTS.
5. WETWELL SHALL BE CAST-IN-PLACE CONCRETE.
6. FORCE MAIN SHALL BE AIR TESTED BY THE CONTRACTOR AND WITNESSED BY THE CITY.
7. THIS STATION RETROFITTING SHALL BE A PRODUCT OF A MANUFACTURER'S REPRESENTATIVE AND REGIONAL VENDOR THAT HAS A MINIMUM OF FIVE YEARS EXPERIENCE IN BUILDING UNDERGROUND PUMP STATIONS.
8. NO SUBSTITUTIONS OR CHANGES ARE TO BE MADE TO THIS DESIGN WITHOUT WRITTEN CONSENT OF CEI ENGINEERING ASSOCIATES TO INCLUDE USE OF SPECIFIC BRAND AND MODEL NUMBERS SPECIFIED ON THESE PLANS AND THE WRITTEN SPECIFICATIONS FOR THE SEWAGE LIFT STATION. ALL CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE WATER AND SEWER SPECIFICATIONS FOR THE BENTONVILLE, ARKANSAS.
9. LIQUID LEVEL SENSORS SHALL BE PER SPECIFICATIONS.
10. TELEMETRY UNIT TO BE PURCHASED FROM CITY OF BENTONVILLE AND INSTALLED BY CONTRACTOR.
11. THE LEVEL CONTROLS SHALL BE SET BY THE VENDOR REPRESENTATIVE AND WITNESSED BY CITY AND CEI ENGINEERING REPRESENTATIVES.
12. THE EXISTING LEVEL CONTROLS, ELECTRICAL CONTROLS, PANELS, AND ALL ASSOCIATED WIRES SHALL BE REMOVED AND REPLACED CONSTRUCT PROPOSED 4" FORCEMAIN PARALLEL AND WITHIN 5 FT OF EXISTING FORCEMAIN.
13. CUT AND PLUG EXISTING FORCEMAIN.

CONCRETE NOTES:

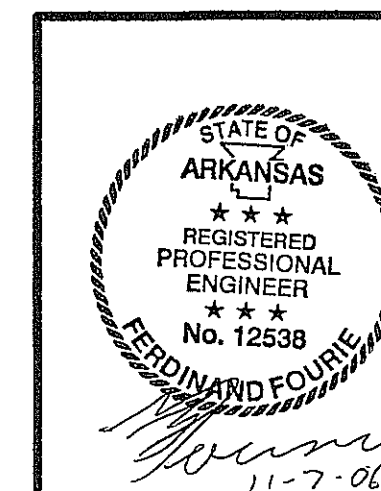
1. ALL CONCRETE UNLESS NOTED SHALL BE STONE AGGREGATE, TYPE I PORTLAND CEMENT WITH A COMPRESSIVE STRENGTH OF 3500 PSI AT 28 DAYS AND 4% TO 6% AIR ENTRAINMENT WITH A SLUMP RANGE OF 3" TO 4".
2. ALL REINFORCING NOT OTHERWISE NOTED SHALL BE HIGH STRENGTH DEFORMED BARS (ASTM A615 - GRADE 60).
3. ALL FORMS SHALL BE INSPECTED AND APPROVED FOR GRADE, ALIGNMENT, AND WORKMANSHIP BY THE ENGINEER PRIOR TO PLACING ANY CONCRETE.
4. THE STEEL REINFORCEMENT SHALL BE DEFORMED BARS FREE FROM DEFECTS, SCALES, RUST, OIL, OR COATING WHICH WILL REDUCE THE BOND OF THE CONCRETE. THE REBARS SHALL BE ACCURATELY BENT AND PLACED AS INDICATED ON THE PLANS AND SECURELY SUPPORTED AND FASTENED TO PREVENT MOVEMENT DURING THE PLACEMENT OF CONCRETE.
5. CONCRETE SHALL BE ADEQUATELY VIBRATED USING MECHANICAL VIBRATORS TO ENSURE THE PROPER DISTRIBUTION OF CONCRETE WITHIN THE FORMS. CONCRETE WHICH IS ADVERSELY HONEYCOMBED SHALL BE REMOVED AS DIRECTED BY THE ENGINEER.
6. REINFORCEMENT PROTECTION UNLESS OTHERWISE NOTED:
 - (A) CONCRETE POURED AGAINST EARTH, 3-INCHES.
 - (B) CONCRETE POURED IN FORMS, BUT EXPOSED TO WEATHER OR EARTH, 2-INCHES.
 - (C) BARS LARGER THAN #5, 2-INCHES.
7. NO SPLICES OF REINFORCEMENT SHALL BE MADE, EXCEPT AS DETAILED OR AUTHORIZED BY ENGINEER. SPLICES SHALL BE MADE BY CONTACT LAPS A MINIMUM OF 36-BAR DIAMETERS, UNLESS NOTED OTHERWISE.
8. DETAIL BARS IN ACCORDANCE WITH CRSI DETAILING MANUAL AND ACI BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, LATEST EDITIONS ONLY.
9. PROVIDE ALL ACCESSORIES NECESSARY TO SUPPORT REINFORCING AT POSITIONS SHOWN ON PLANS.
10. SLAB SHALL NOT HAVE JOINTS IN A HORIZONTAL PLANE. ALL CONSTRUCTION JOINTS SHALL BE AS DETAILED OR AS APPROVED BY THE ENGINEER.
11. ALL REINFORCING CHAIRS SHALL HAVE ALUMINUM LEGS, OR THE LEGS SHALL BE RUBBER TIPPED TO PREVENT RUST MARKS.
12. ALL CONCRETE IN DIRECT CONTACT WITH SEWAGE SHALL BE COATED WITH MASTER BUILDERS CELOGUARD 863 IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS (MASTER BUILDERS' PH 1-800-227-3350) OR SIKAGUARD, MANUFACTURED BY THE SIKAGUARD COMPANY.

ELECTRICAL NOTES:

1. INSTALL METER SOCKET IN ENCLOSURE IN ACCORDANCE WITH ELECTRIC COMPANY REQUIREMENTS AND THE NATIONAL ELECTRIC CODE.
2. INSTALL SERVICE LATERAL CONDUIT SERVICE ENTRANCE GROUND, SERVICE ENTRANCE CONDUCTORS AND FUSED DISCONNECT IN ACCORDANCE WITH THE ELECTRIC UTILITY REQUIREMENTS AND THE NATIONAL ELECTRIC CODE.
3. MAKE CONNECTIONS IN THE CONTROL PANEL IN ACCORDANCE WITH INSTRUCTIONS PROVIDED BY EQUIPMENT MANUFACTURER.
4. ALL CONDUIT BURIED IN EARTH, IN OR UNDER CONCRETE SLABS OR IN CONTACT WITH EARTH SHALL BE PVC SCHEDULE 40, UL LABELED.
5. ALL CONDUIT ABOVE GRADE SHALL BE RIGID GALVANIZED STEEL, 1/2" MINIMUM SIZE.
6. POWER WIRE SHALL BE COPPER. MINIMUM SIZE SHALL BE #12 AWG. MINIMUM INSULATION RATING SHALL BE 600V 75 DEG. C.
7. CONTROL WIRE SHALL BE AS FURNISHED OR SPECIFIED BY THE CONTROLS MANUFACTURER.
8. THE CONTRACTOR SHALL SUBMIT PRIOR TO BEGINNING OF CONSTRUCTION ALL MATERIALS AND EQUIPMENT ITEMS. THE CONTRACTOR SHALL FURNISH MANUFACTURER'S DESCRIPTIONS AND SCHEMATICS TO THE ENGINEER FOR REVIEW AND APPROVAL.
9. THE CONTRACTOR SHALL VERIFY AND CONFORM TO ANY ADDITIONAL ELECTRIC UTILITY REQUIREMENTS. ANY ELECTRIC UTILITY INSTALLATION COSTS AND ARRANGING SERVICE WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. THE COST OF ALL NECESSARY PERMITS, FEES AND INSPECTIONS REQUIRED BY ELECTRIC UTILITY OR ANY PUBLIC AUTHORITY HAVING JURISDICTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
11. ALL ELECTRIC MATERIALS AND WORK SHALL CONFORM TO THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE AND SHALL MEET LOCAL AND ELECTRIC UTILITY CODES AND REGULATIONS.



UNDERGROUND SERVICE METER INSTALLATION
ONE PHASE - 240 VOLTS
SCALE: N.T.S.



INITIAL DESIGN	9-16-04	DAT	FF	FF	FF
	DATE	EOR	PM	DES	DRW
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
CEI[®] ENGINEERING ASSOCIATES, INC					
ENGINEERS		PLANNERS		SURVEYORS	
3317 SW 11 th Street Bentonville, AR 72712		(479) 273-9472 FAX (479) 273-0844		JOB NO.: 20733 DWG NAME: 20730301	
		DATE		SHEET NO.	
		09-14-06		43 OF 43	
		REV 6			
PUMP STATION DETAIL					

From: [McWilliams, Katherine](#)
To: [Deardoff, Amy](#)
Subject: FW: Cave Springs WWTP Design Drawings
Date: Thursday, July 13, 2017 3:29:45 PM
Attachments: [image003.png](#)
[CAVE SPRINGS WWTP FULL PLAN SET.pdf](#)

4893-WR-3

Cave Springs WWTP Plans

From: Barret Knutson [mailto:bknutson@mce.us.com]
Sent: Thursday, July 13, 2017 3:23 PM
To: McWilliams, Katherine
Subject: Cave Springs WWTP Design Drawings

Katherine,

As I mentioned a while back: I was gone on vacation for 2-weeks. Upon my arrival, I went to the City, got the original plans, and scanned them into a single pdf file. Previously, we did not have an electronic version of plan set, but I was hoping that they would help clear up some of the issues that were preventing the permit from being fully approved.

Please call or email me back with any questions or if I need to provide you with additional information.

Barret Knutson, EI
Project Engineer



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