

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.

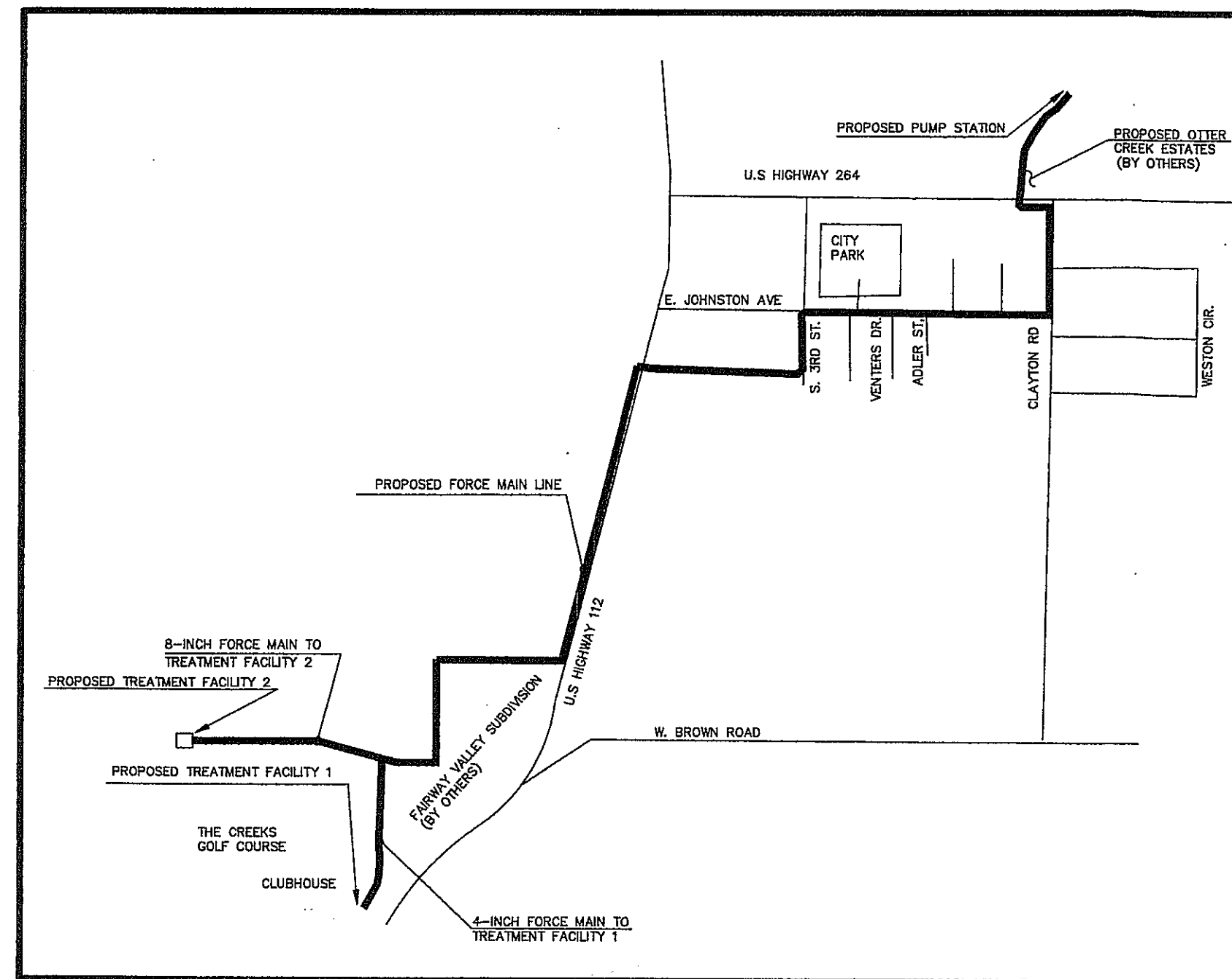
- H. ALL CONSTRUCTION IN STATE HIGHWAY DEPARTMENT RIGHT-OF-WAY SHALL BE COORDINATED WITH THE HIGHWAY DEPARTMENT RESIDENT MAINTENANCE ENGINEER.

- 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.

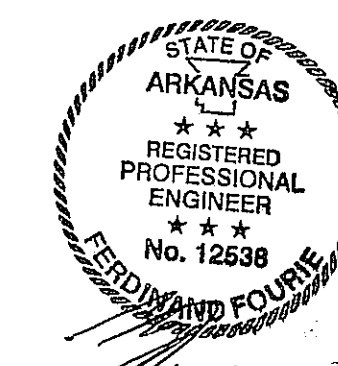
ARKANSAS HWY. & TRANS. DEPT.
P.O. BOX 610
HIGHWAY 65 SOUTH
HARRISON AR 72601
(870) 743-2100
MR. BOBBY KEETON

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

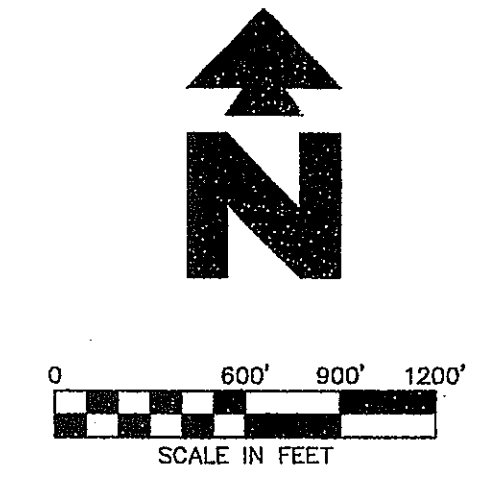
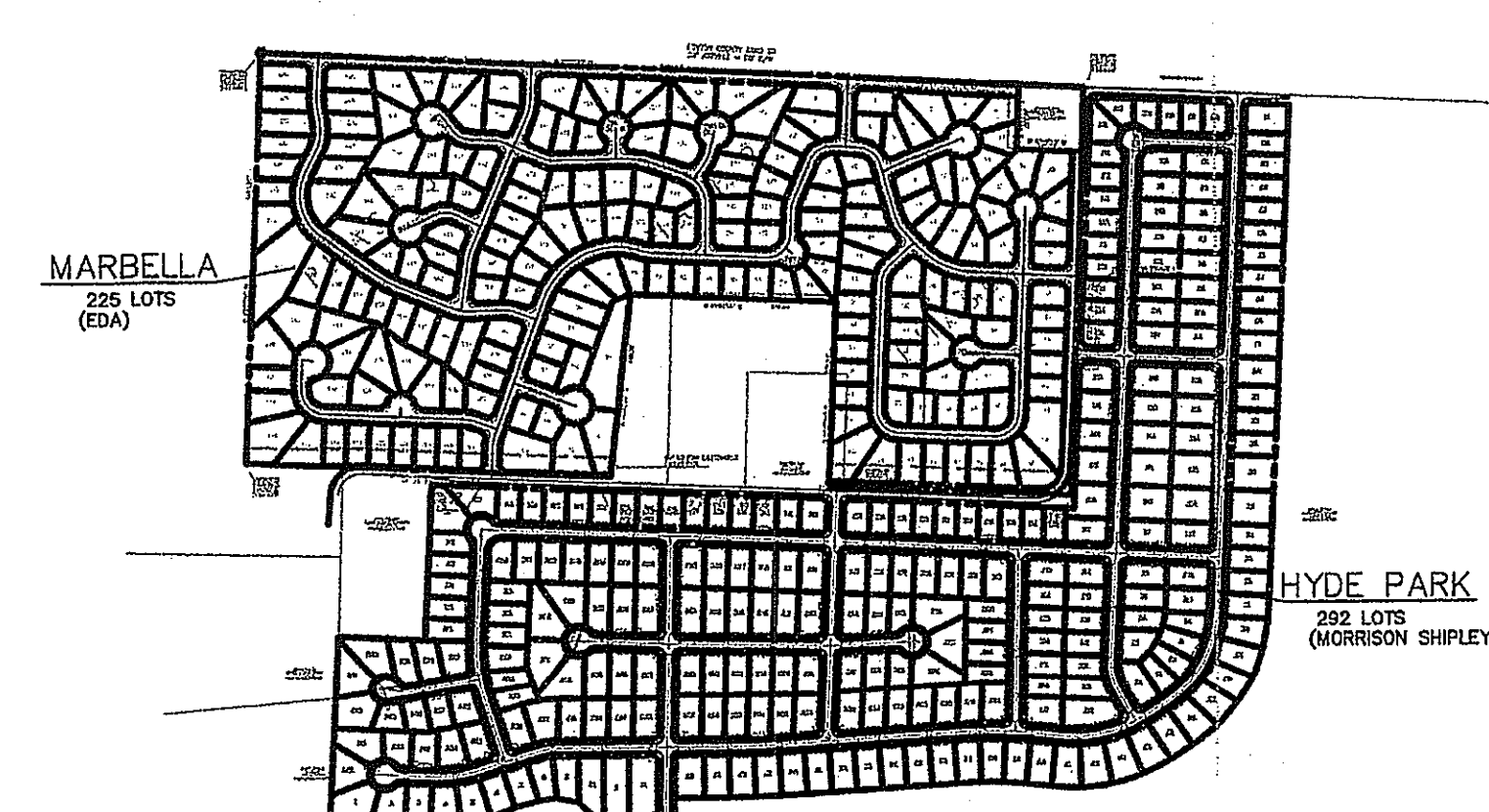
COX COMMUNICATIONS
4901 S. 48th STREET
SPRINGDALE, AR 72762
(479) 717-3738
MR. RYAN BUTLER

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

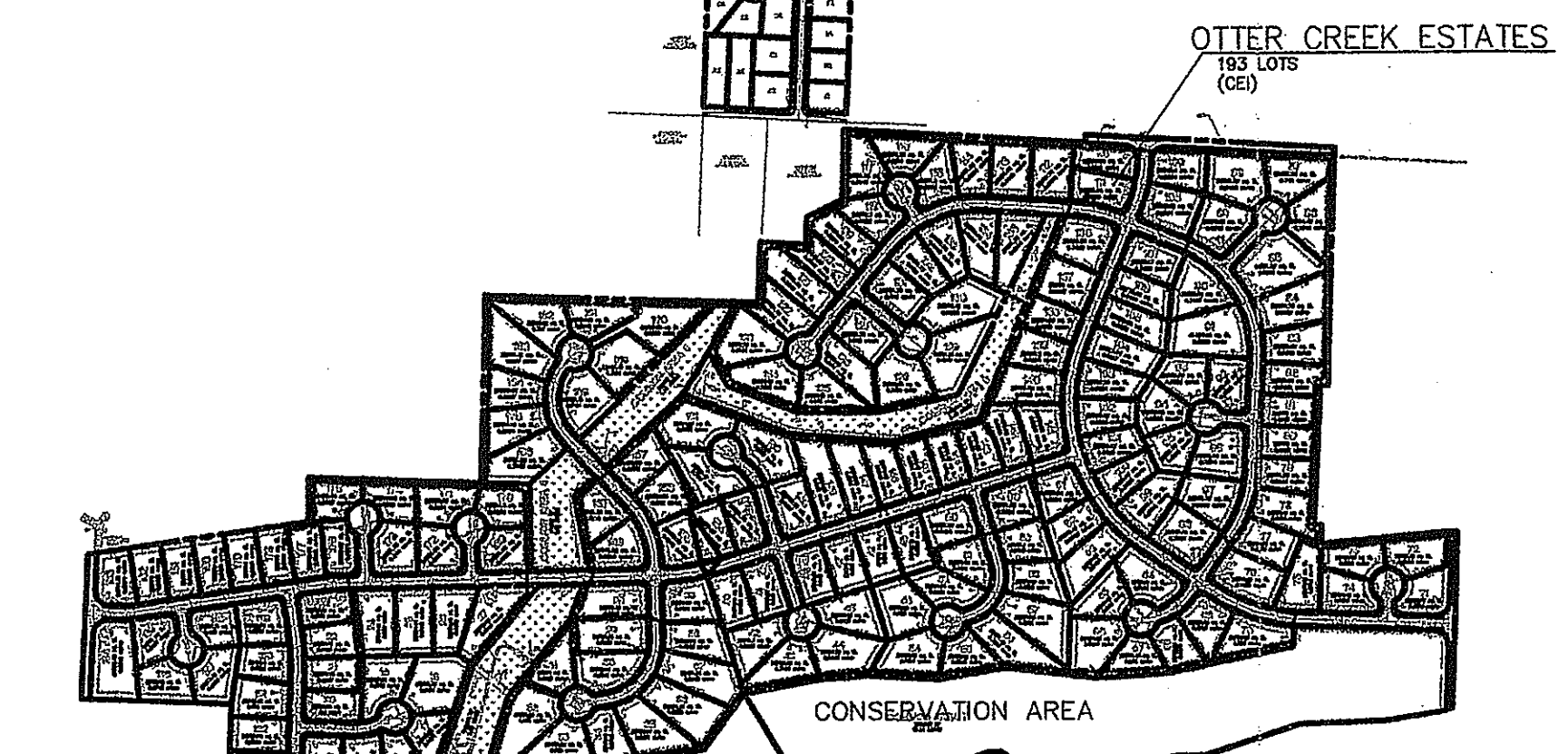
DEVELOPER
CAVE SPRINGS MUNICIPAL PROPERTY OWNERS
IMPROVEMENT DISTRICT #1 / THE CREEKS SPECIAL
SEWER DISTRICT
(479)601-5687
MR. BRETT HASH



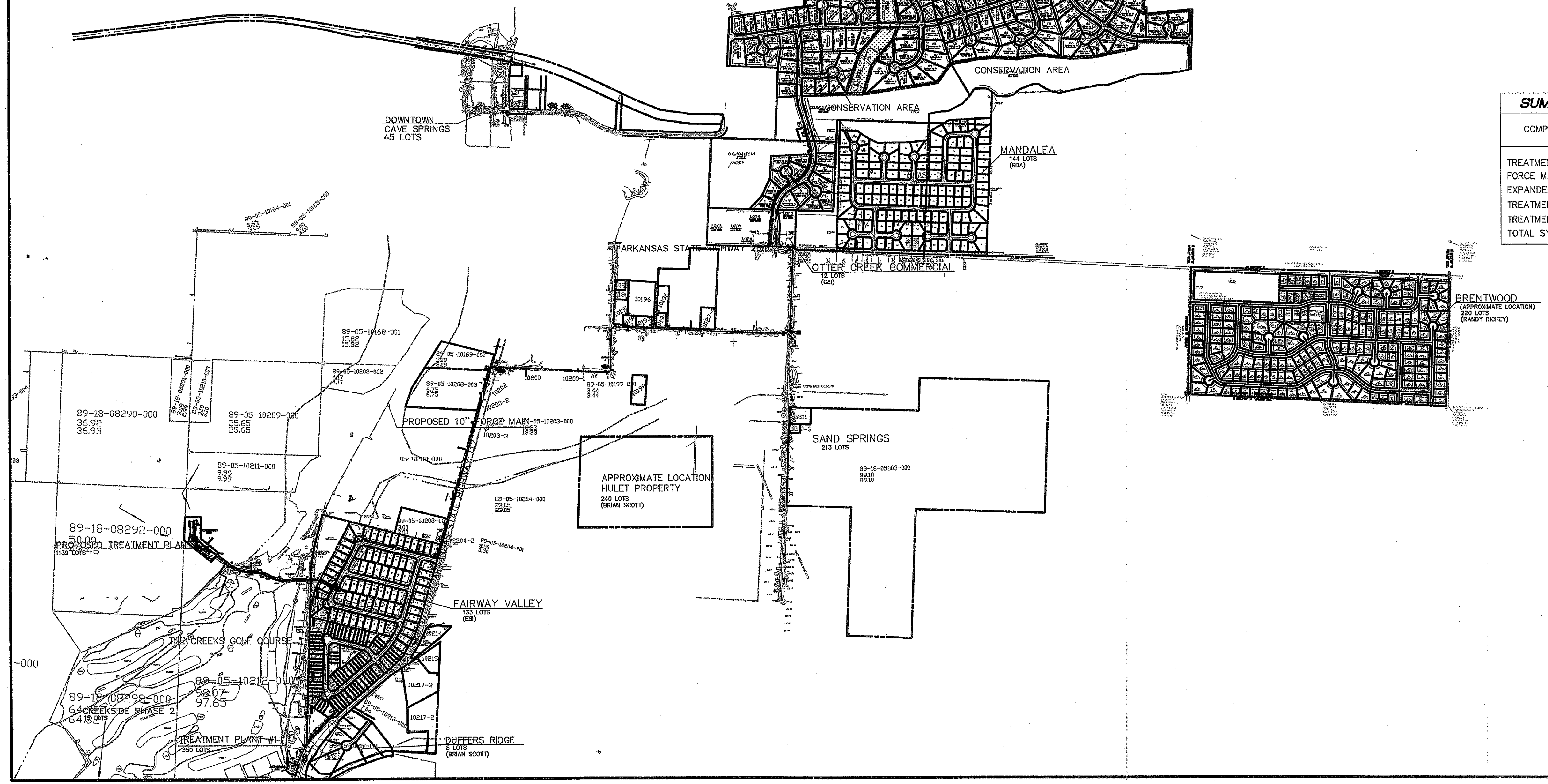
Arkansas * California * Florida * Georgia * Minnesota * Pennsylvania * Tennessee * Texas



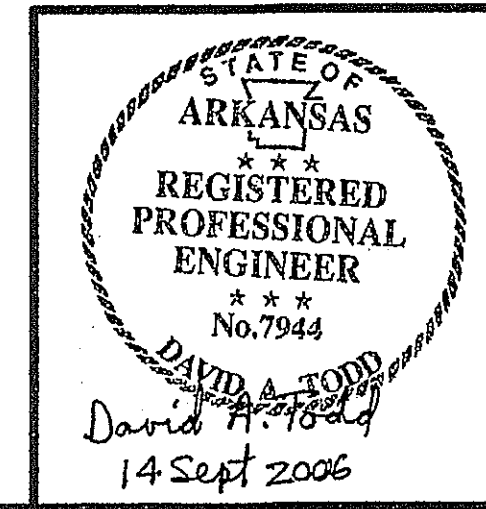
WASTEWATER DISTRICT SUMMARY			
DEVELOPMENT	EQ. # LOTS	AVG. DAILY WASTEWATER (G/DAY)	ENGINEER
MARBELLA	225	58,500	EDA
HYDE PARK	292	75,920	MORRISON SHIPLEY
OTTER CREEK ESTATES	193	50,180	CEI
MANDALEA	144	37,440	EDA
OTTER CREEK COMMERCIAL	12	3,120	CEI
BRENTWOOD	220	57,200	RANDY RICHEY
DOWNTOWN CAVE SPRINGS	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	



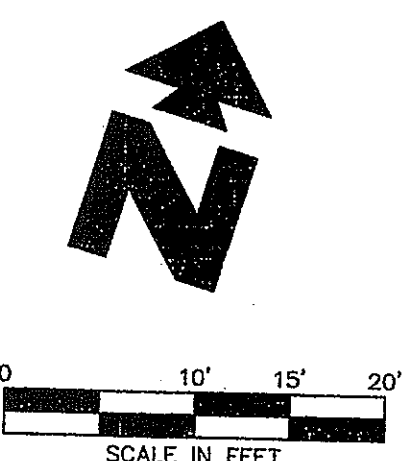
SUMMARY OF WASTEWATER COMPONENT CAPACITIES		
COMPONENT	NO. LOTS	AVERAGE DAILY FLOW (G/DAY)
TREATMENT PLANT NO. 1	350	91,000
FORCE MAIN LINE	2600	676,000
EXPANDED DRIPFIELD	250	66,000
TREATMENT PLANT #2	1231	320,000
TREATMENT PLANT #2 FIELD	1231	320,000
TOTAL SYSTEM CAPACITY	1584	412,000



350
1231
1581



INITIAL DESIGN	10-10-05	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 DWG NAME: 20733OVERALL2	
OVERALL LAYOUT 2			DATE 08-21-06 11:01 AM	SHEET NO. 3 OF 43	
			REV 5		



LEGEND	
EXISTING	
—	EAST OR ELECTRIC
—	WORTH
—	OVERHEAD
—	SOUTH OR SEWER
—	TELEPHONE
—	UNDERGROUND
—	REST 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

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.

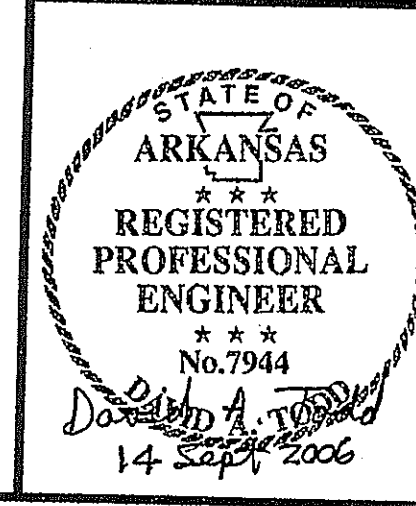
C. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE 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	
220	M.A. TEE WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
22E	M.A. REDUCER (SEE SIZES THIS SHEET)
22G	80' M.A. BEND WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
22Y	INTERIOR BACKFLOW PREVENTER
73A	SLIDING 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.

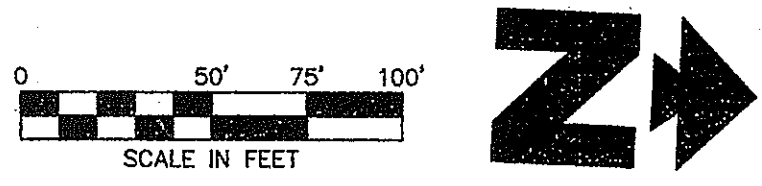
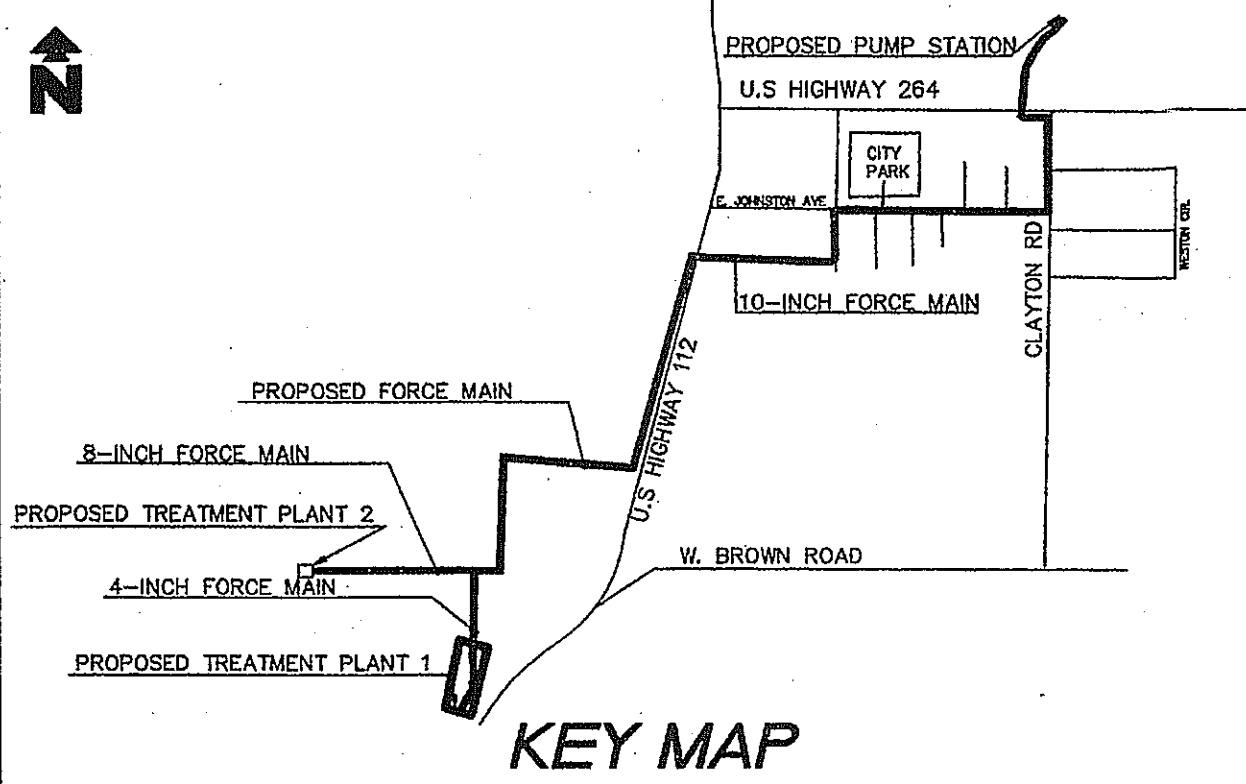
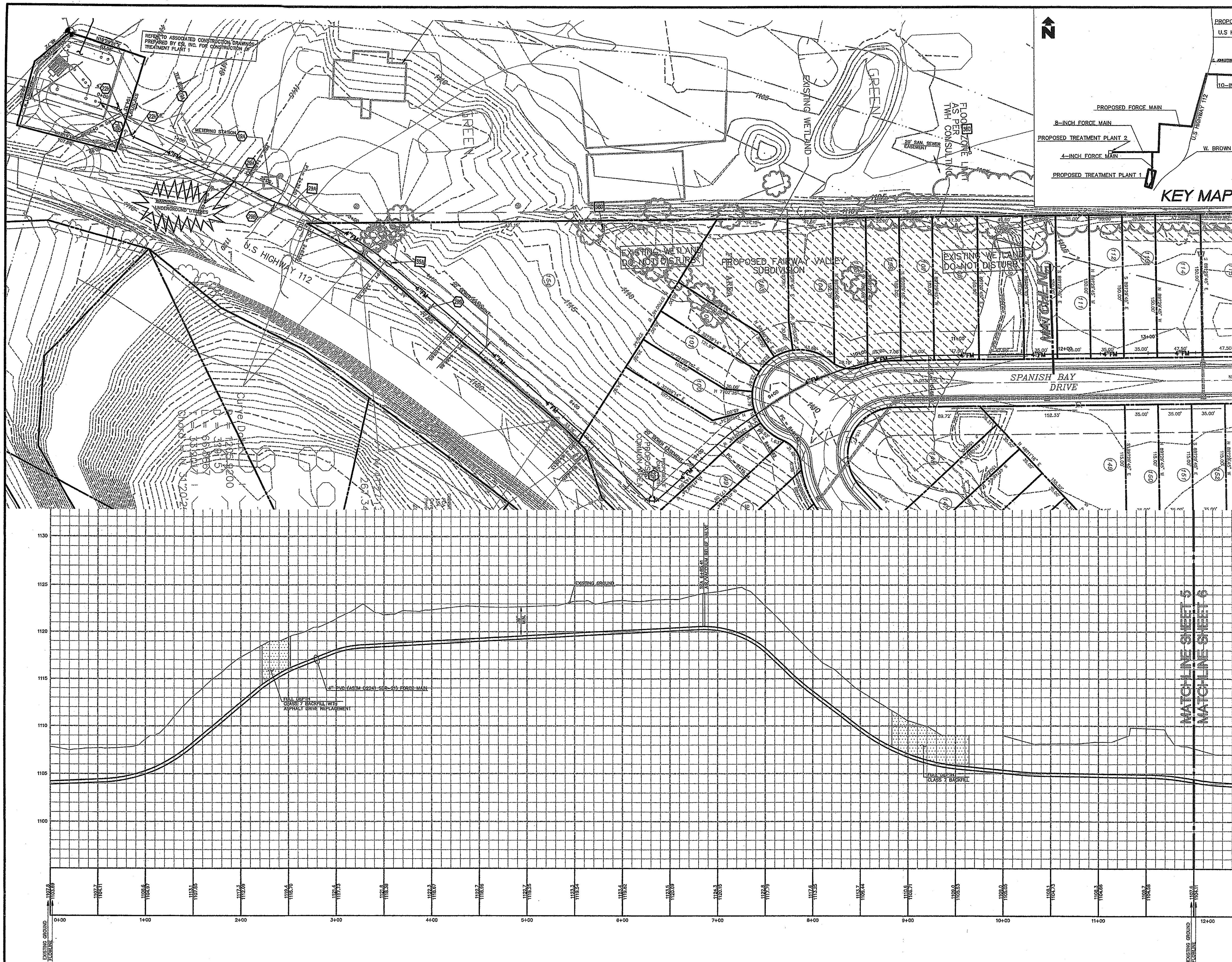
NOTE:
CONTRACTOR SHALL COORDINATE WITH OTTER CREEK ESTATES CONTRACTOR DURING CONSTRUCTION

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			JOB NO.: 20733		
08-21-05			DWG NAME: 20733-0844		
10:33 AM			SHEET NO.		
REV. 5			4 OF 43		





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
---	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

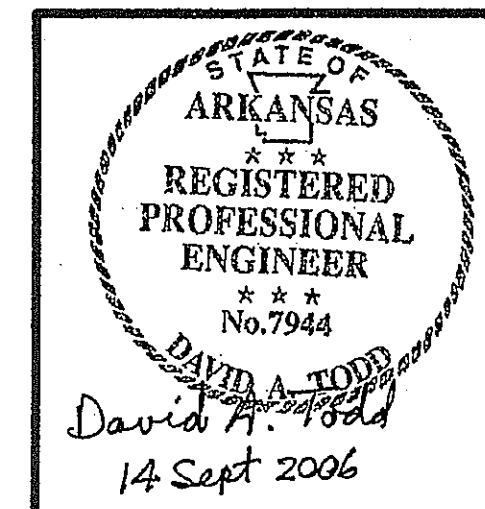
- ASPHALT DRIVE CUT/REPAIR
- GRAVEL DRIVE CUT/REPAIR
- JACK & BORE
- AIR/VACUUM RELIEF VALVE (SANITARY SEWER)
- SANITARY SEWER FORCE MAIN CLEAN-OUT WITH CHECK VALVE
- LIFT STATION
- CONCRETE CHANNEL WITH DISSIPATORS
- TRACER WIRE INSTALLATION



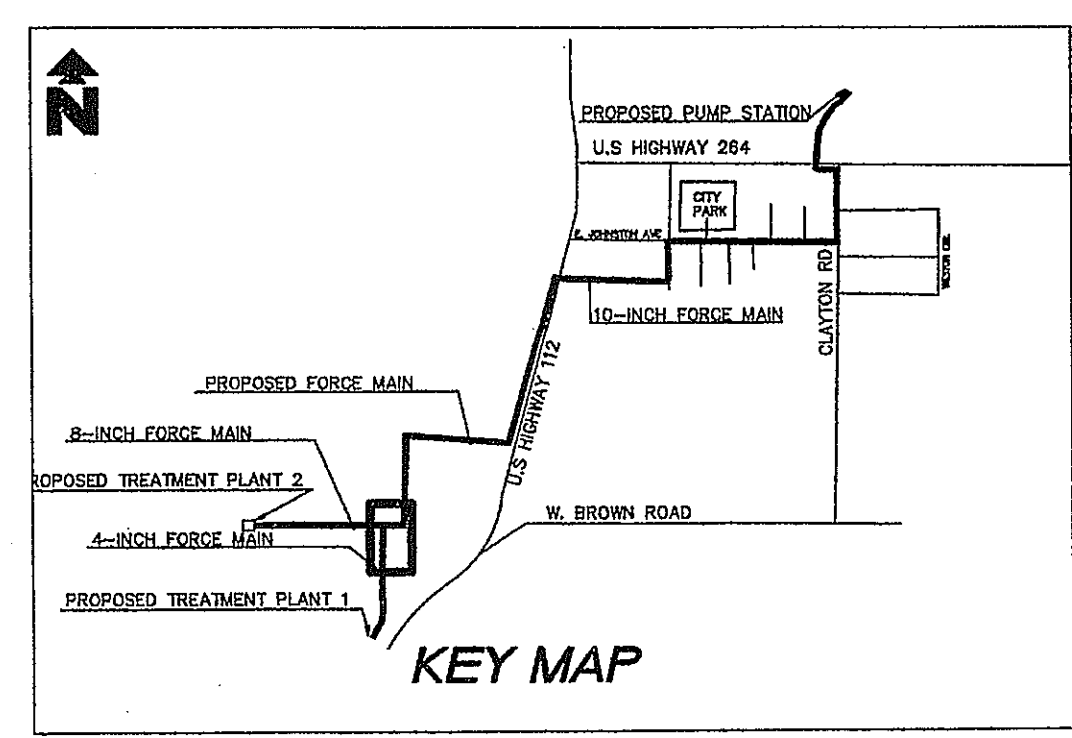
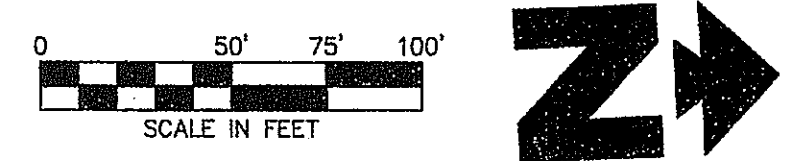
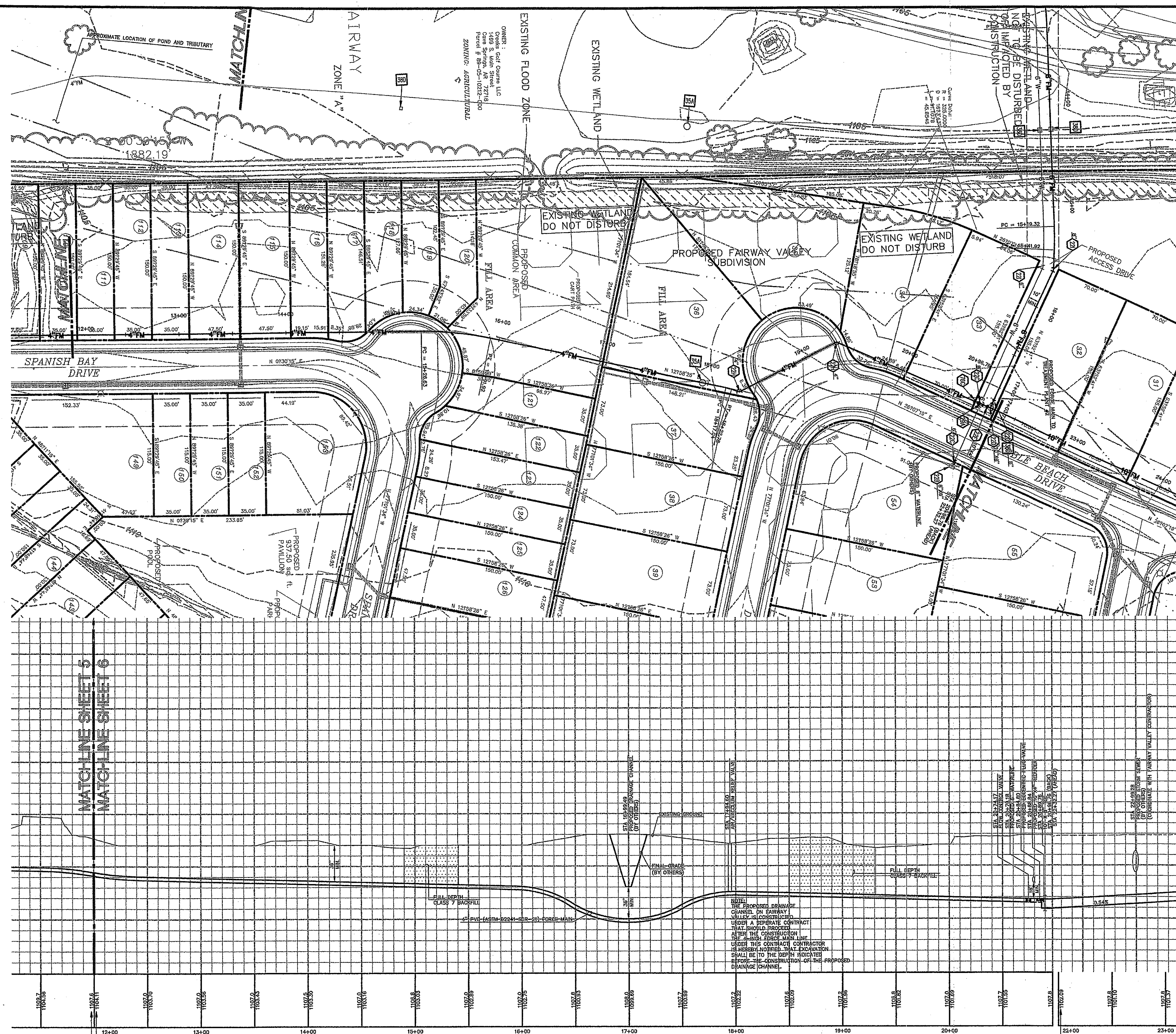
STA 0+00 TO STA 12+00

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 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
 - 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 SDR-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 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 GE 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. GE 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

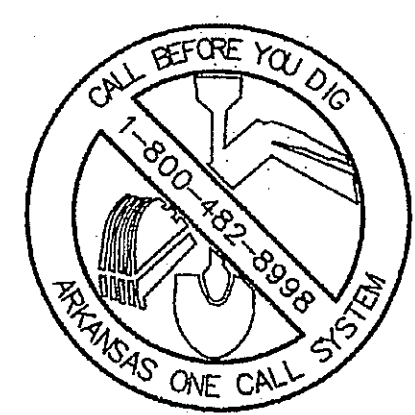
HORIZONTAL : 1" = 50'
VERTICAL : 1" = 5'

UTILITY NOTES

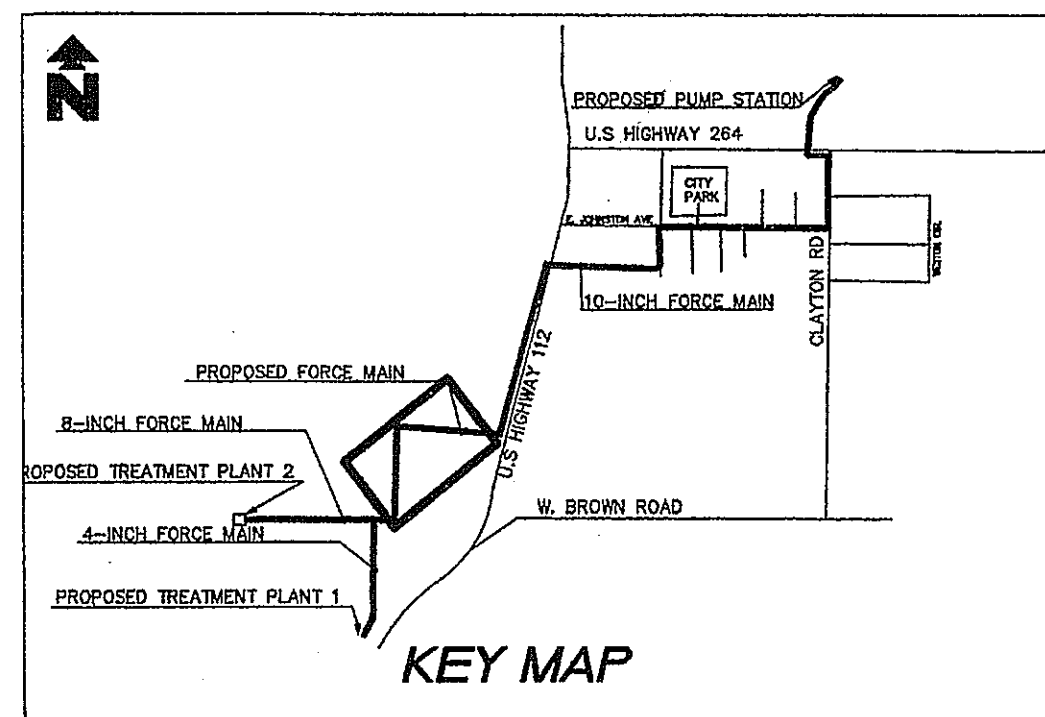
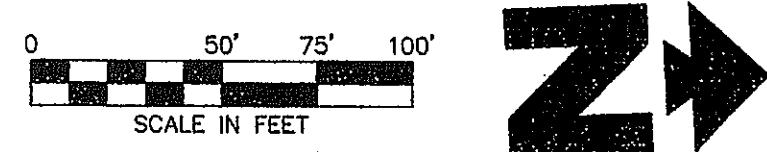
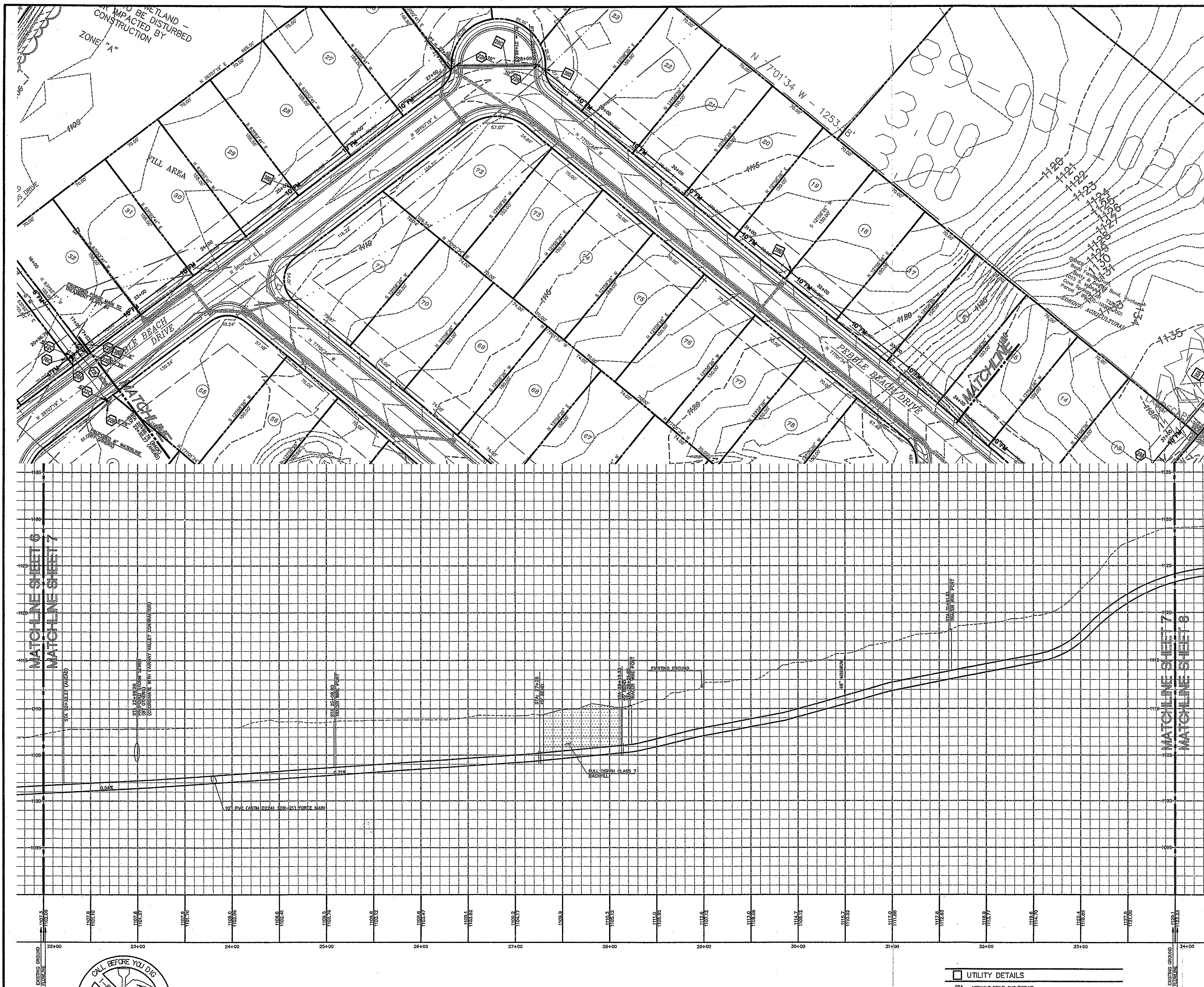
- 19A EXISTING TO REMAIN
- 22C M.A. EXISTING FLUX VALVE WITH ADJUSTABLE VALVE BOX (SEE SIZES THIS SHEET)
- 22D M.A. TEE WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- 22E M.A. ECCENTRIC REDUCER, FLAT SIDE ON TOP (SEE SIZES THIS SHEET)
- 22F M.A. CAP/PLUG WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- 22H 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		
			ENGINEERING ASSOCIATES, INC.		
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			PLAN AND PROFILE #2		
DATE: 09-13-06			SHEET NO.: 6 OF 43		
REV: 6					



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
- S&S SEWER
- UGE UNDERGROUND ELECTRIC
- UGE&T UNDERGROUND ELECTRIC AND TELEPHONE
- UGT UNDERGROUND TELEPHONE
- UGTV UNDERGROUND TV
- W&W 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
EDGE OF ROADWAY

PROPOSED

- PROPERTY LINE
- RIGHT OF WAY LINE
- EASEMENT
- S&S SANITARY SEWER SERVICE
- W&W 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.
- 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

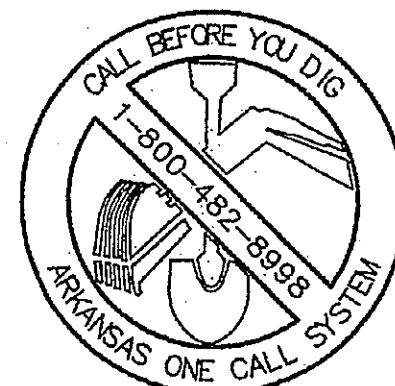
- 19A EXISTING TO REMAIN
- 22C M.I. ECCENTRIC PLUS VALVE WITH ADJUSTABLE VALVE BOX (SEE SIZES THIS SHEET)
- 22D M.I. TEE WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- 22E M.I. ECCENTRIC REDUCER, FLAT SIDE ON TOP (SEE SIZES THIS SHEET)
- 22F M.I. CAP/PLUG WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
-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

UTILITY DETAILS

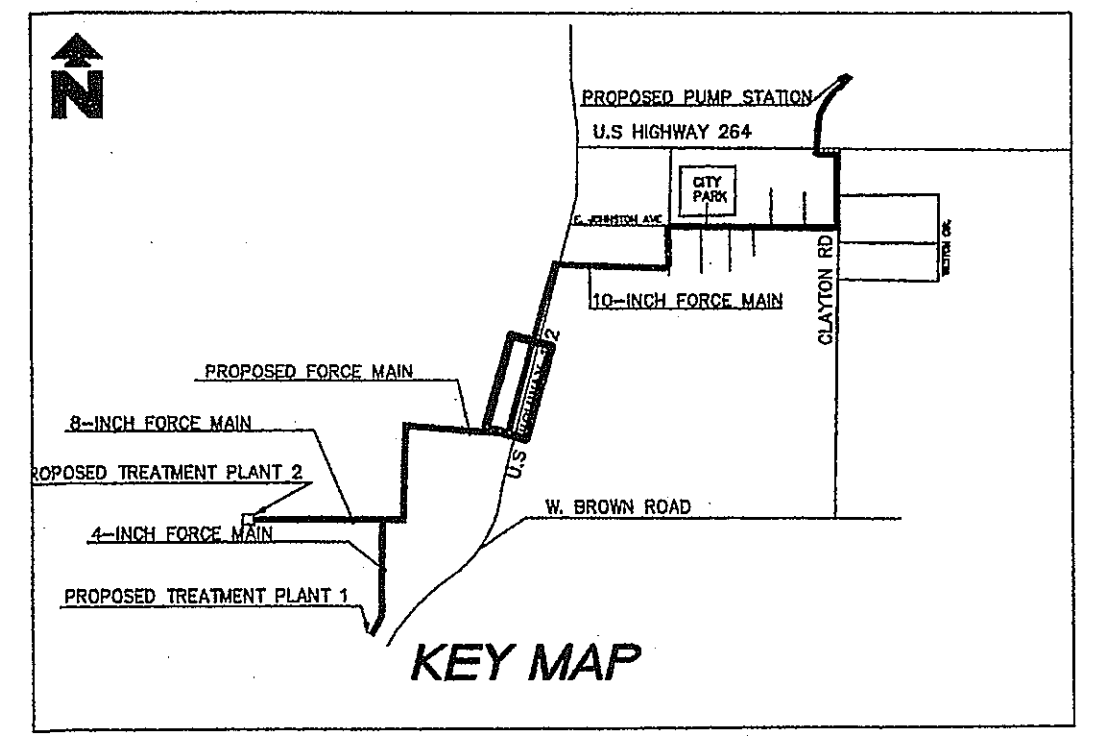
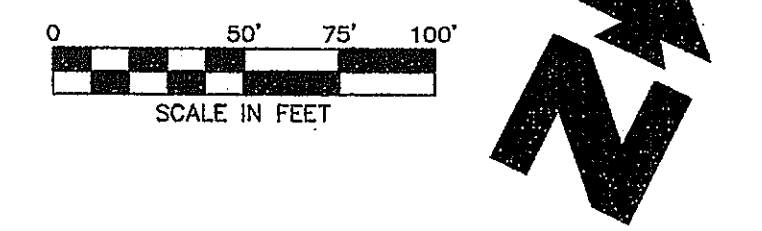
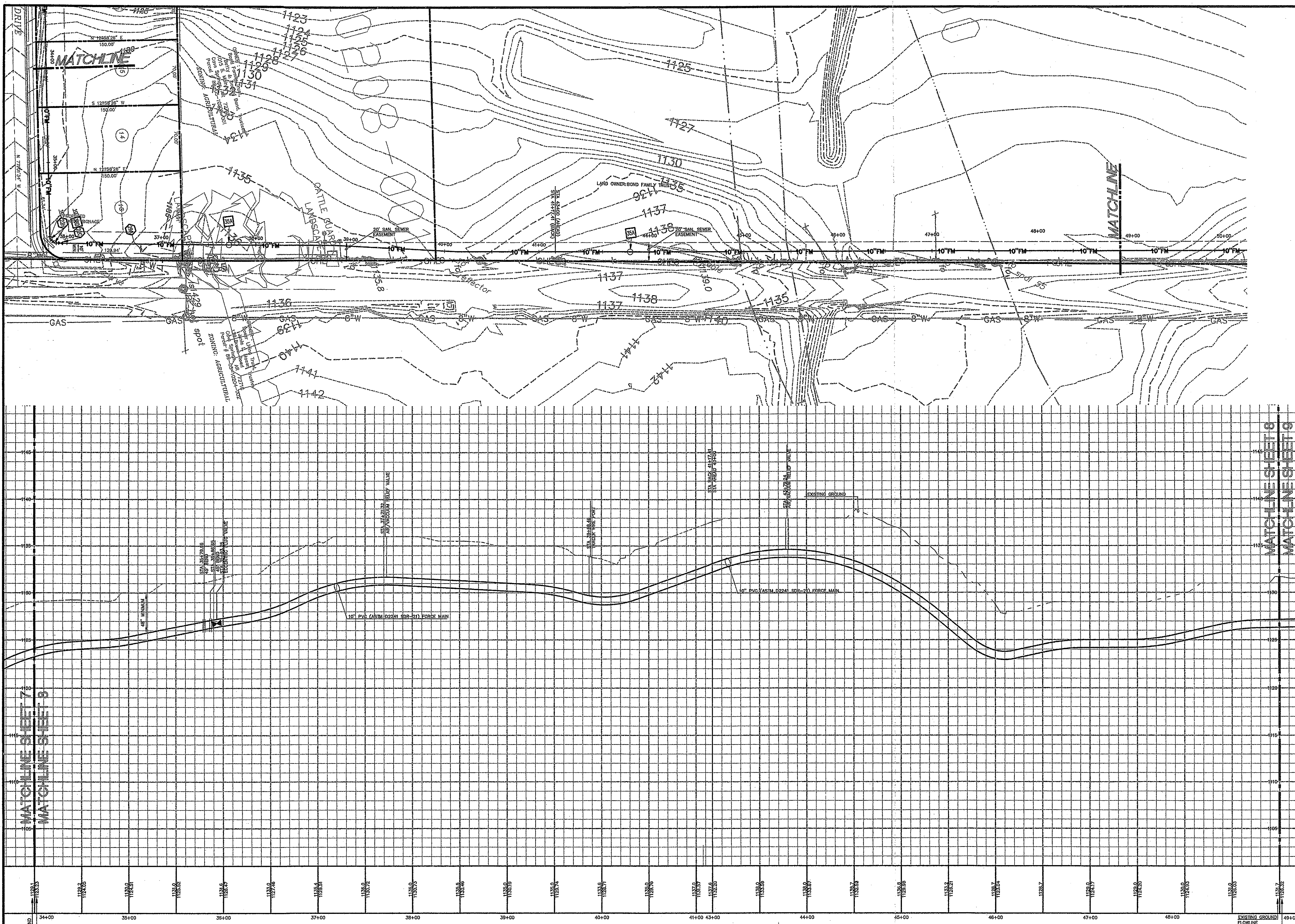
- 29A ASPHALT DRIVE CUT/REPAIR
- 29C GRAVEL DRIVE CUT/REPAIR
- 30B JACK & BORE
- 35A AIR/VACUUM RELIEF VALVE (SANITARY SEWER)
- 76A SANITARY SEWER FORCE MAIN CLEAN-OUT WITH CHECK VALVE
- 76B LIFT STATION
- 76C CONCRETE CHANNEL WITH DISSIPATORS
- 38D TRADER WIRE INSTALLATION

STA 22+00 TO STA 34+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 ENGINEERS			ENGINEERING 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		
CAVE SPRINGS INTERCEPTOR #1			DATE: 09-13-06		
PLAN AND PROFILE #3			1:38 PM		
			REV6		
			SHEET NO. 7 OF 43		



LEGEND	
EXISTING	
BOUNDARY LINE	---
RIGHT OF WAY LINE	---
STORM DRAIN	---
GAS	---
OHE	---
OHE&T	---
OHT	---
OHTV	---
SEWER	---
UGE	---
UGE&T	---
UGT	---
UGTV	---
WATER	---
TREE AND	---
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-14) WITH 40" MIN. COVER.
- ALL SANITARY SEWER LINES AT CREEK AND ROAD CROSSING SHALL BE PVC (ASTM D2241 SDR-14) WITH 40" 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.

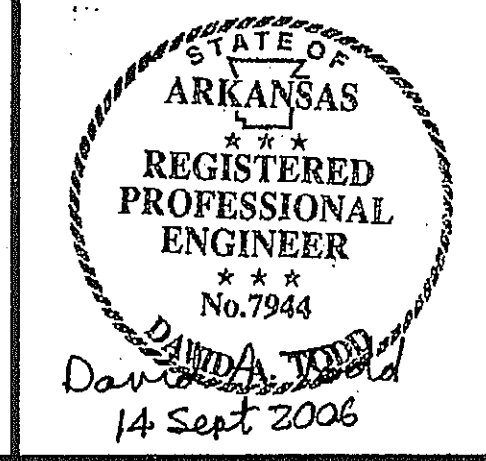
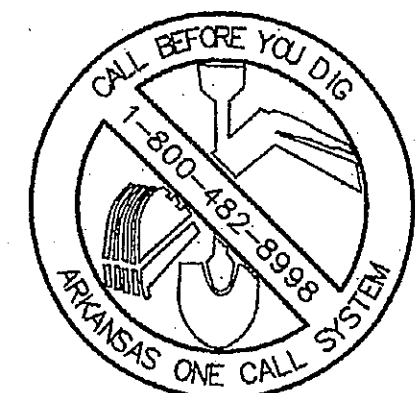
- #### UTILITY NOTES
- EXISTING TO REMAIN
 - M.E. ECCENTRIC PLUG VALVE WITH ADJUSTABLE VALVE BOX (SEE SIZES THIS SHEET)
 - M.E. TIE WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
 - M.E. ECCENTRIC REDUCER, FLAT SIDE ON TOP (SEE SIZES THIS SHEET)
 - M.E. CAP/PLUG WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
 - 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 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

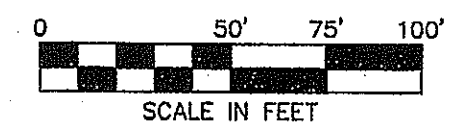
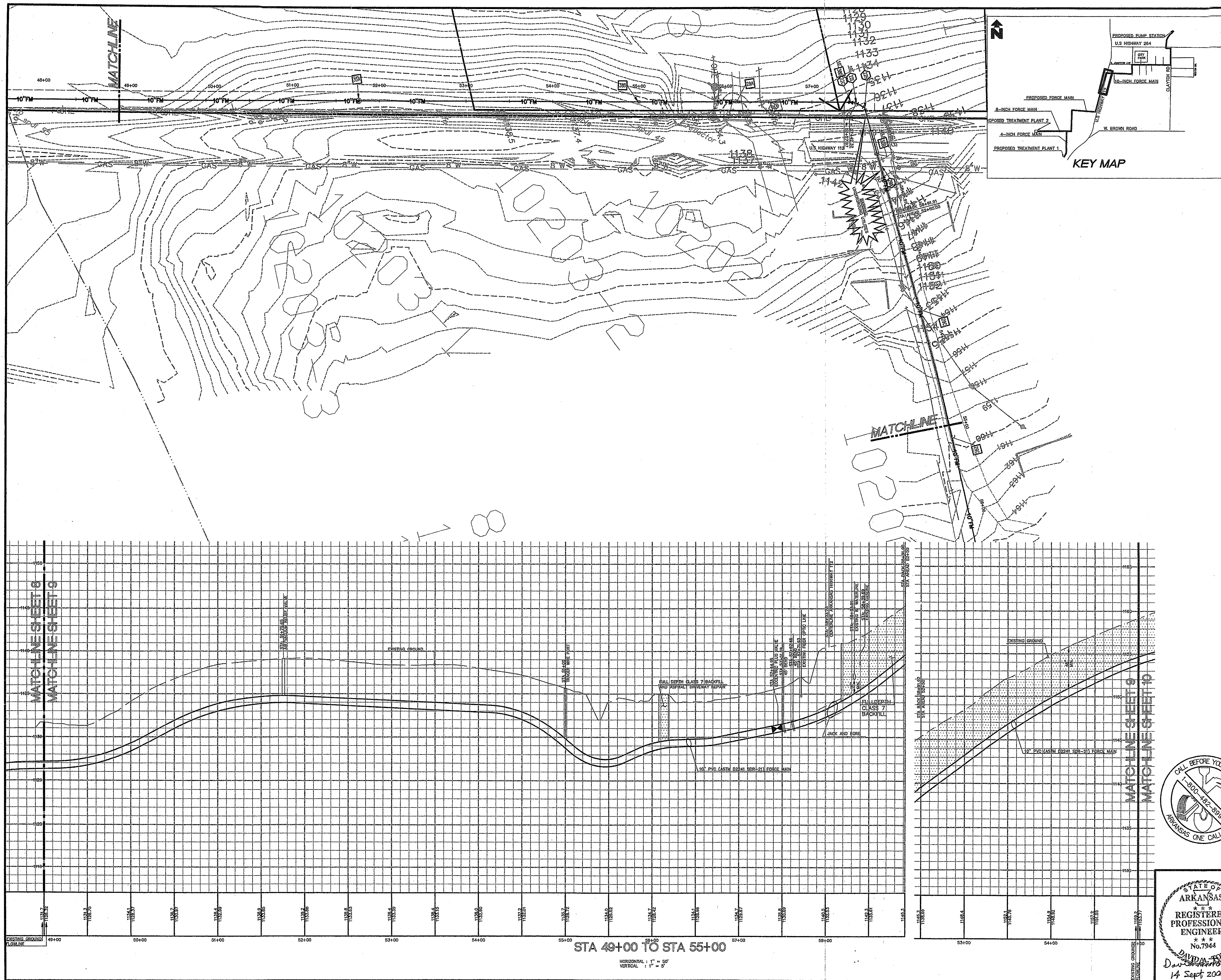
STA 34+00 TO STA 49+00

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			(479) 273-9472		
Bentonville, AR 72712			FAX (479) 273-0844		
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
 - WATER
- 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 DOCUMENT, 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.J. ECCENTRIC PLUG VALVE WITH ADJUSTABLE VALVE BOX (SEE SIZES THIS SHEET)
- M.J. TEE WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- M.J. ECCENTRIC REDUCER, FLAT SIDE ON TOP (SEE SIZES THIS SHEET)
- M.J. ORB PLUG WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- 45° M.J. 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

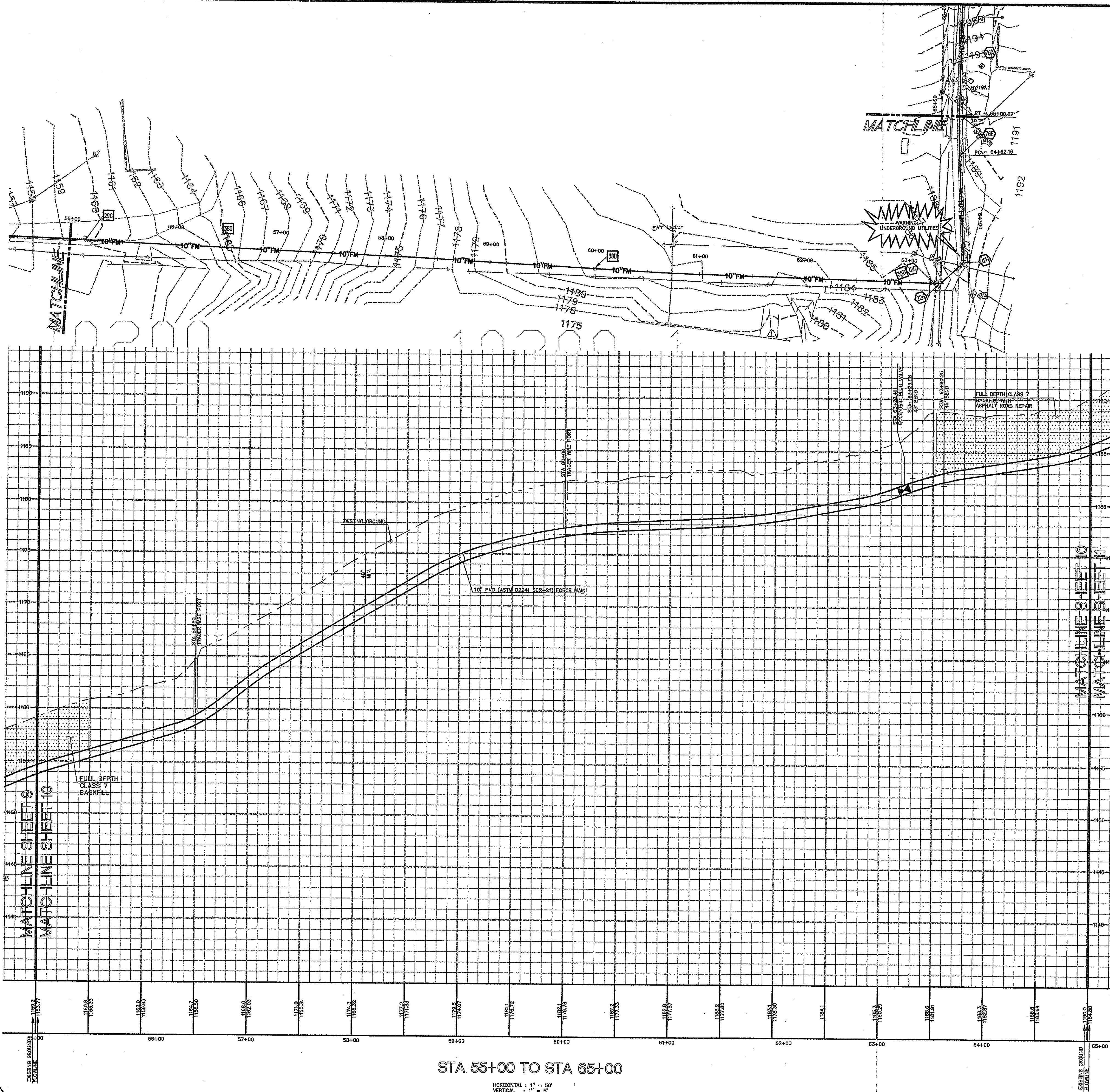
UTILITY DETAILS

- 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



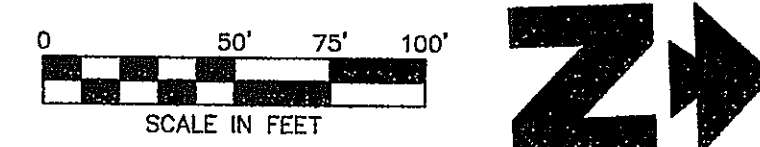
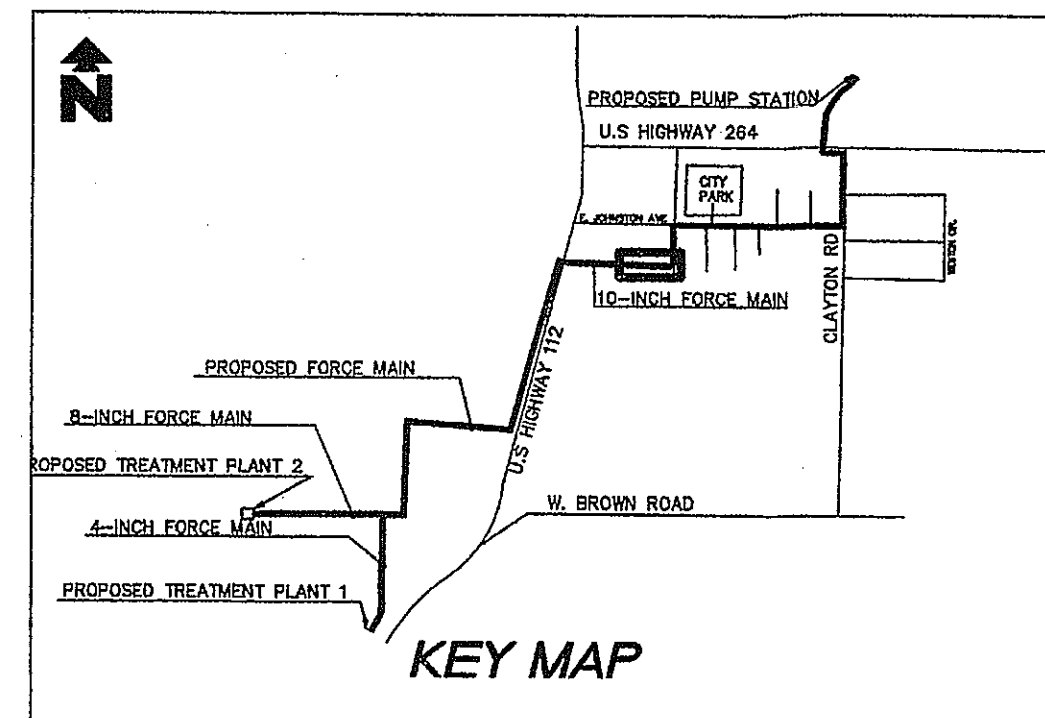
INITIAL DESIGN	DATE	FOR	PM	DES	DRW
4-26-05					

CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1	
CAVE SPRINGS	ARKANSAS
CEI	ENGINEERING ASSOCIATES, INC.
ENGINEERS	PLANNERS
3317 S.W. 1 Street Bentonville, AR 72712	(479) 273-0472 FAX (479) 273-0844
JOB NO.: 20733.0 DWG NAME: 20733PRO.05	
CAVE SPRINGS INTERCEPTOR #1	
PLAN AND PROFILE #5	
DATE 09-13-06 1:38 PM REV6	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
- UGS&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

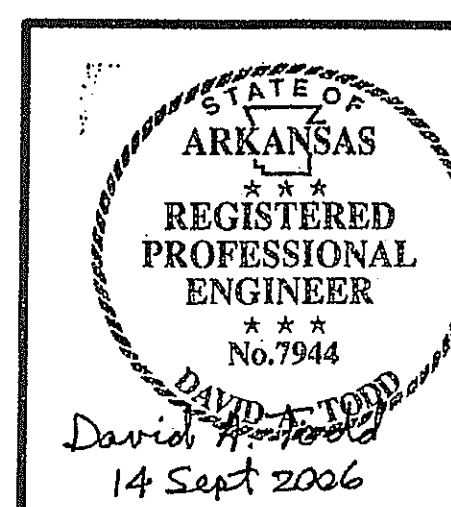
- A. ALL WASTEWATER LINES 4" AND SMALLER SHALL BE PVC (ASTM D2241 SDR-21) WITH 36" MIN. COVER. ALL WASTEWATER LINES LARGER THAN 4" SHALL BE PVC (ASTM D2241 SDR-21) WITH 48" MIN. COVER.
- B. ALL SANITARY SEWER LINES AT CREEK AND ROAD CROSSING SHALL BE PVC (ASTM D2241 DR-14) WITH 60" MIN. COVER.
- A. ALL 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 31C.
 - 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 32A.

UTILITY NOTES

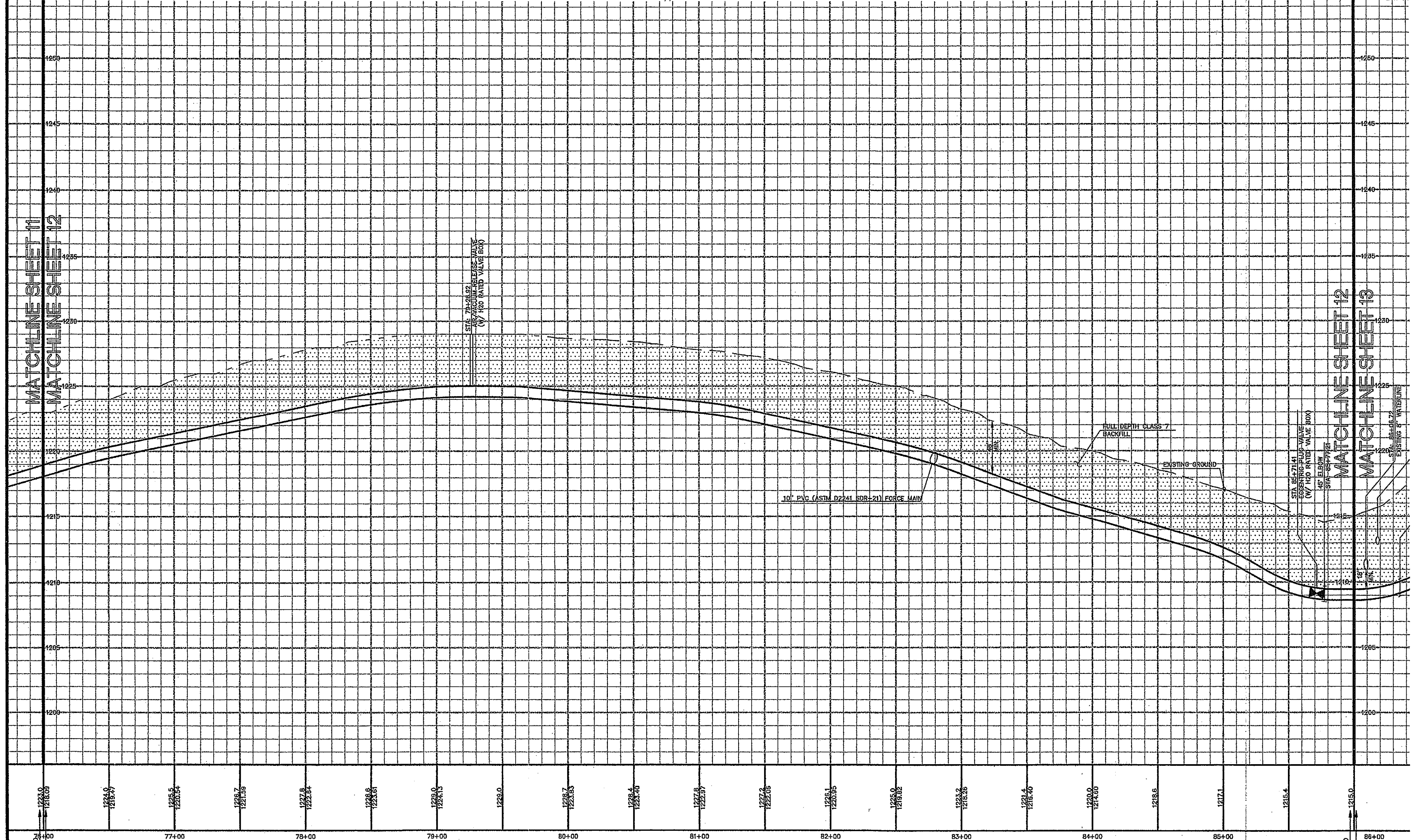
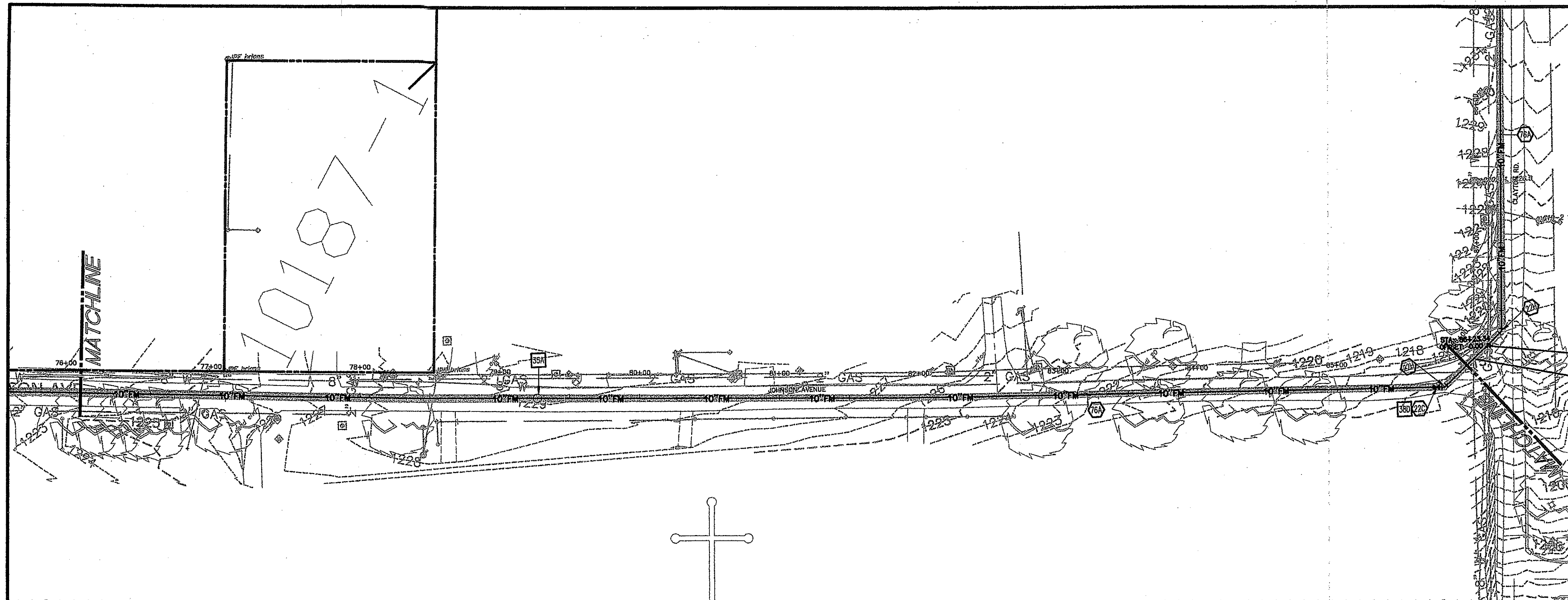
- 19A EXISTING TO REMAIN
- 22C M.J. ECCENTRIC PLUG VALVE WITH ADJUSTABLE VALVE BOX (SEE SIZES THIS SHEET)
- 22D M.J. TEE WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
- 22E M.J. ECCENTRIC REDUCER, FLAT SIDE ON TOP (SEE SIZES THIS SHEET)
- 22F M.J. CAP/PLUG WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
-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

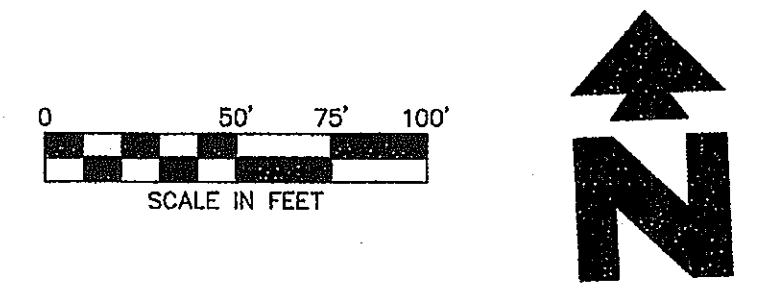
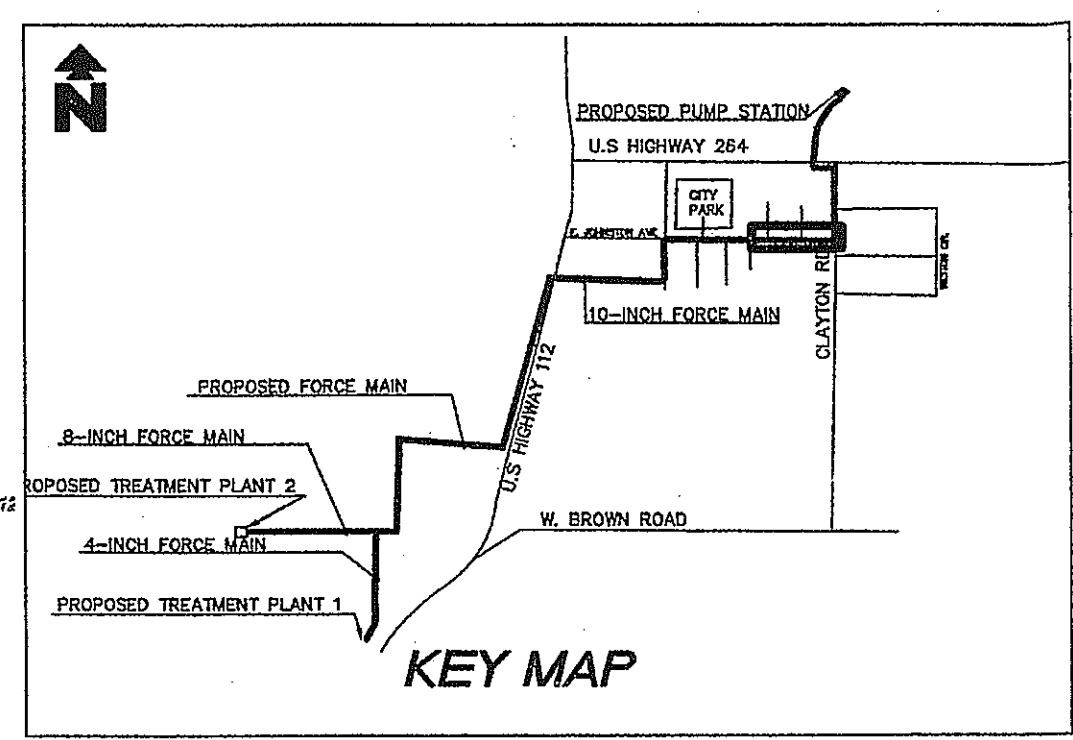


INITIAL DESIGN	4-26-05	DAT	FF	FF	FF
DATE	EOR	PM	DES	DRW	
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
CAVE SPRINGS			ARKANSAS		
CEI[®] ENGINEERING ASSOCIATES, INC.					
ENGINEERS		PLANNERS		SURVEYORS	
3317 S.W. I Street	(479) 273-9472	JOB NO.: 20733.0			
Bentonville, AR 72712	FAX (479) 273-0844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



STA 76+00 TO STA 86+00

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



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	---
5' - DIAMETER OF TRUNK IN FEET	
10' - HEIGHT OF TREE IN FEET	
11' - CHANTRY 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

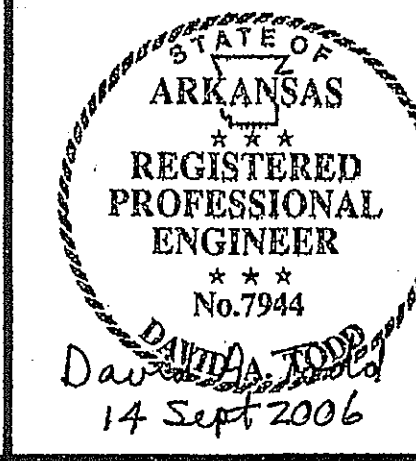
- ALL WASTEWATER LINES 4" AND SMALLER SHALL BE PVC (ASTM D2241 SDR-21) WITH 36" MIN. COVER. ALL WASTEWATER LINES LARGER THAN 4" SHALL BE PVC (ASTM D2241 SDR-21) WITH 48" MIN. COVER.
- ALL SANITARY SEWER LINES AT CREEK AND ROAD CROSSING SHALL BE PVC (ASTM D2241 DR-14) WITH 60" MIN. COVER.
- ALL WATER 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

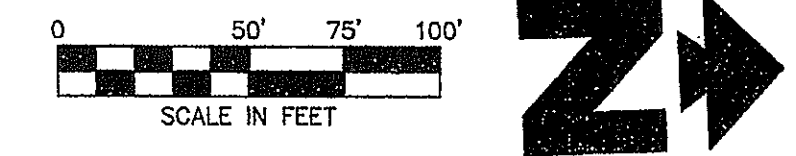
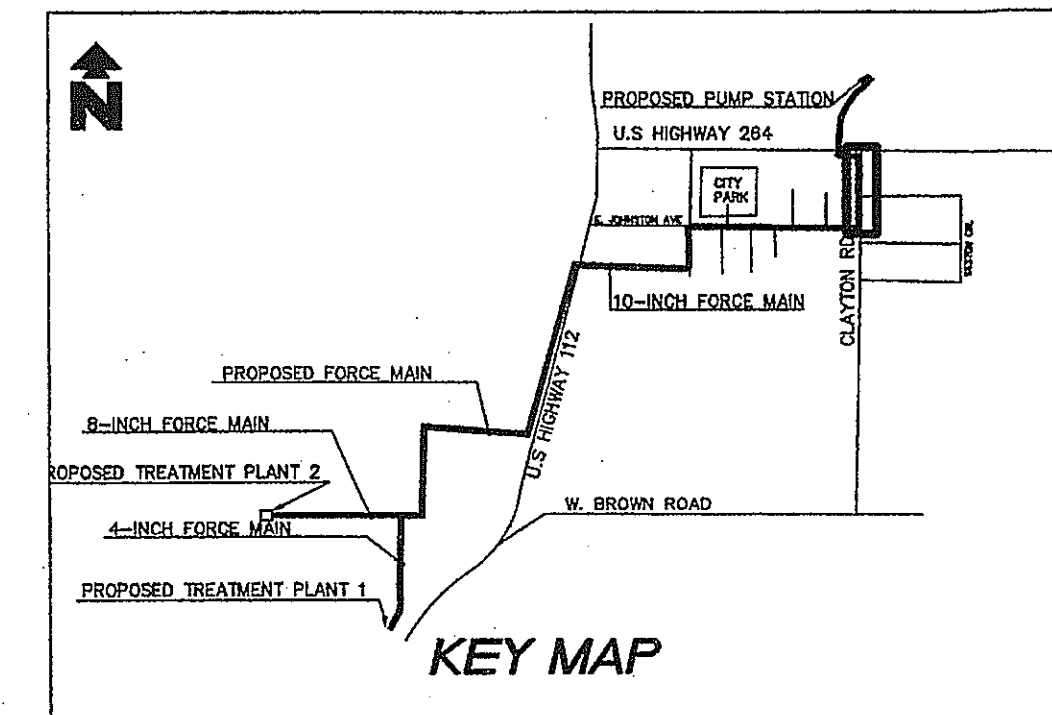
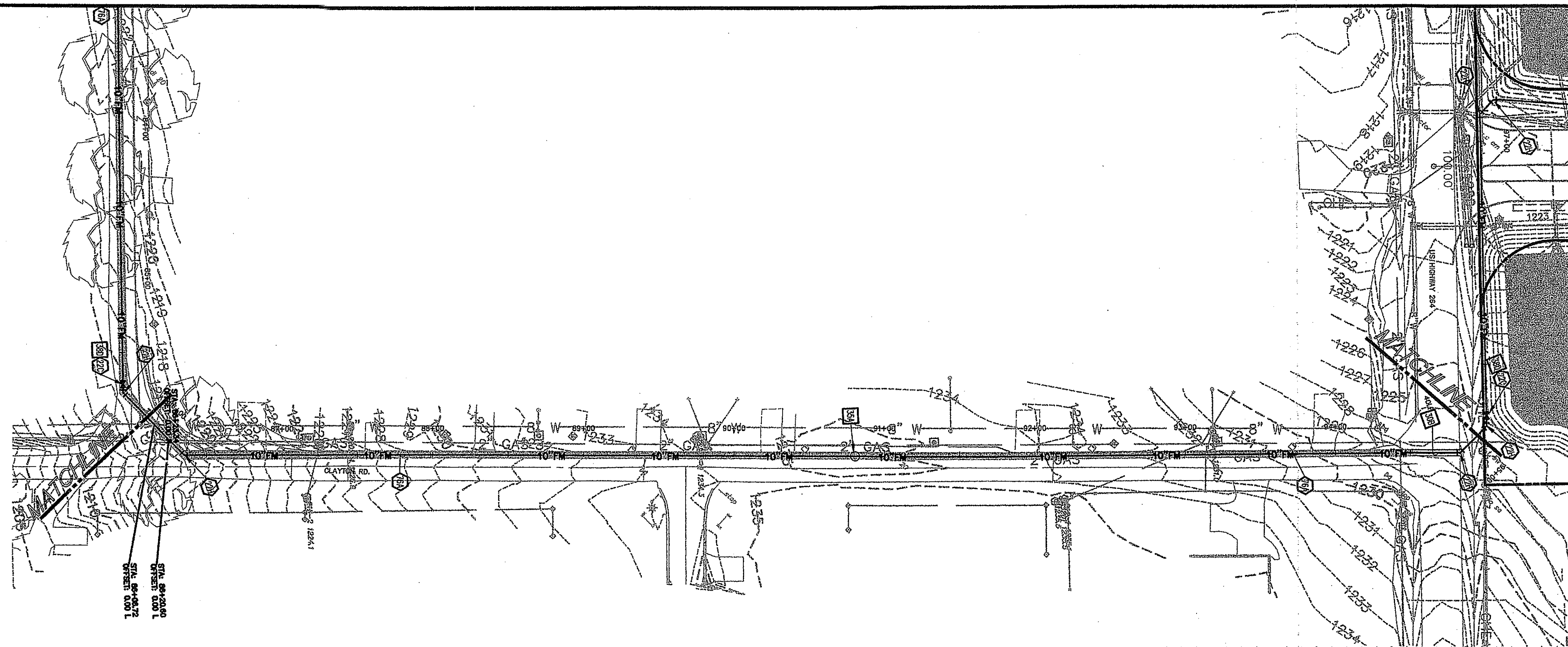
- | | |
|-----|--|
| 19A | EXISTING TO REMAIN |
| 22C | M.J. ECCENTRIC PLUS VALVE WITH ADJUSTABLE VALVE BOX (SEE SIZES THIS SHEET) |
| 22D | M.J. TEE WITH THRUST BLOCKING (SEE SIZES THIS SHEET) |
| 22E | M.J. ECCENTRIC REDUCER, FLAT SIDE ON TOP (SEE SIZES THIS SHEET) |
| 22F | M.J. CAP PLUS WITH THRUST 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 |
| 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. 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 REV6	SHEET NO. 12 OF 43
PLAN AND PROFILE #8					



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
- 5-10-11 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
- S-S SANITARY SEWER SERVICE
- W-W WATER SERVICE

GENERAL UTILITY NOTES

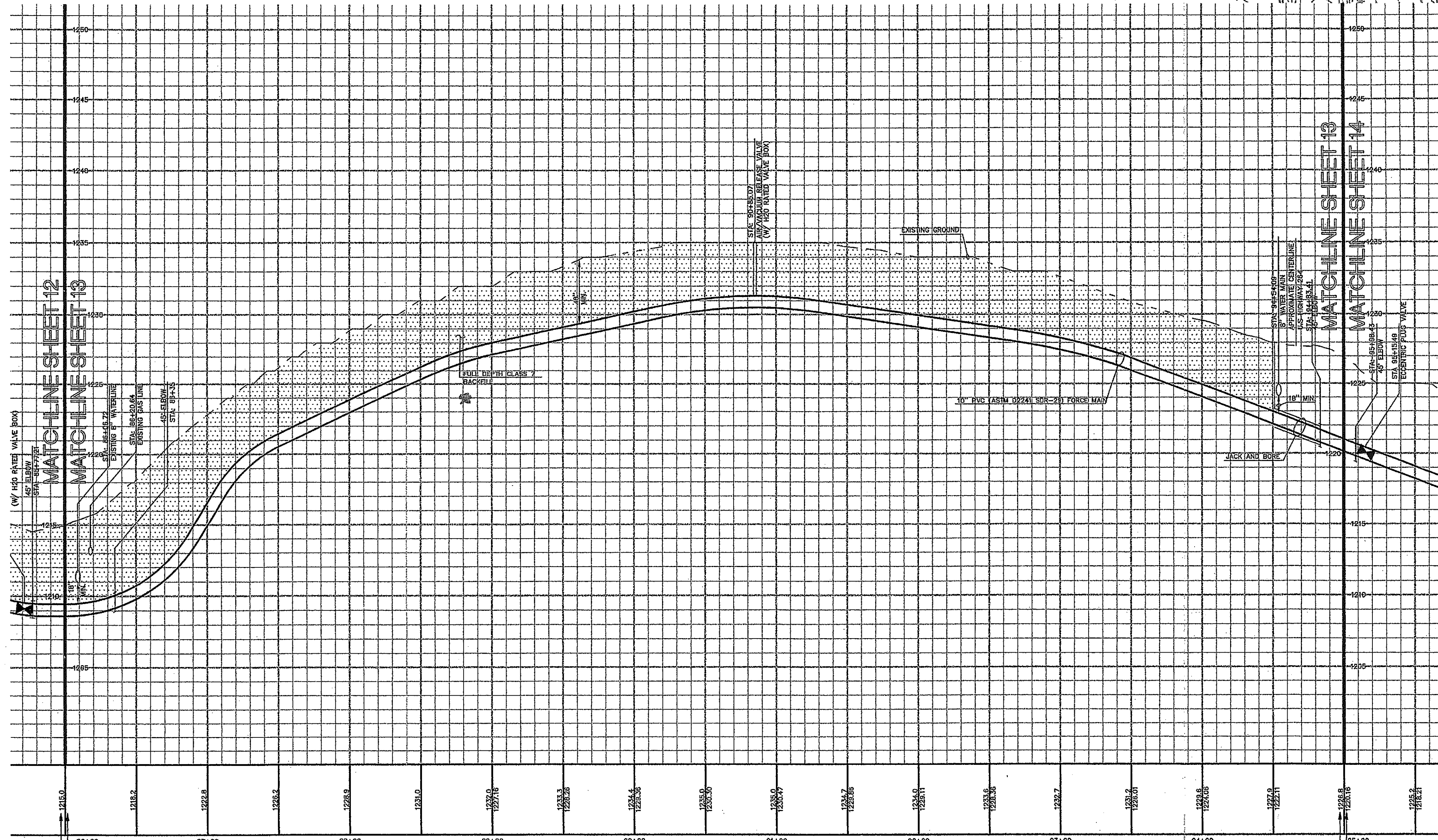
- A. ALL WASTEWATER LINES 4" AND SMALLER SHALL BE PVC (ASTM D2241 SDR-21) WITH 36" MIN. COVER. ALL WASTEWATER LINES LARGER THAN 4" SHALL BE PVC (ASTM D2241 SDR-35) WITH 48" MIN. COVER.
- B. ALL SANITARY SEWER LINES AT CREEK AND ROAD CROSSING SHALL BE PVC (ASTM D2241 DR-14) WITH 60" MIN. COVER.
- A. ALL 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 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.
- 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.A. ECCENTRIC PLUG 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 CEI, INC.)
- 76C FLOW CONTROL VALVE
- 76D SOLENOID VALVE

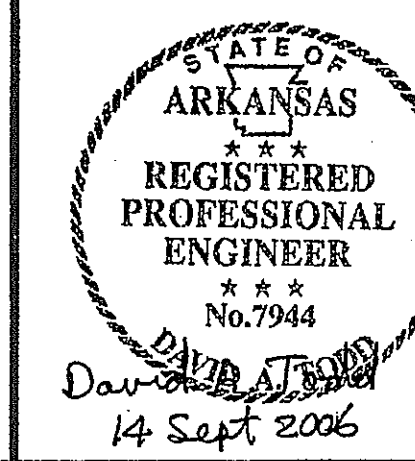
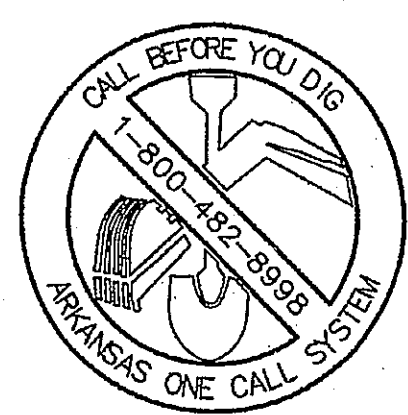
UTILITY DETAILS

- 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

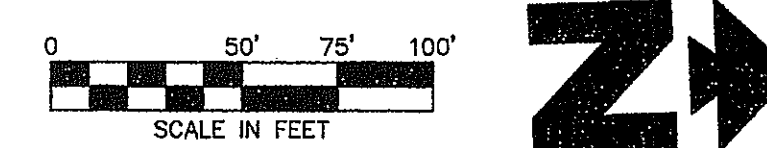
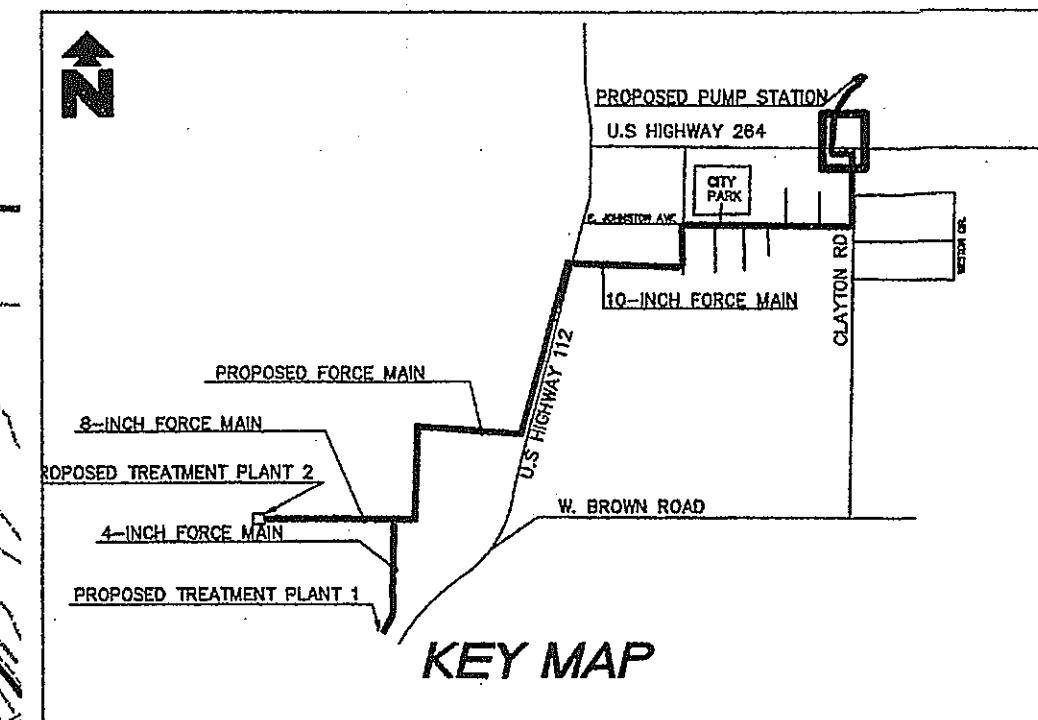
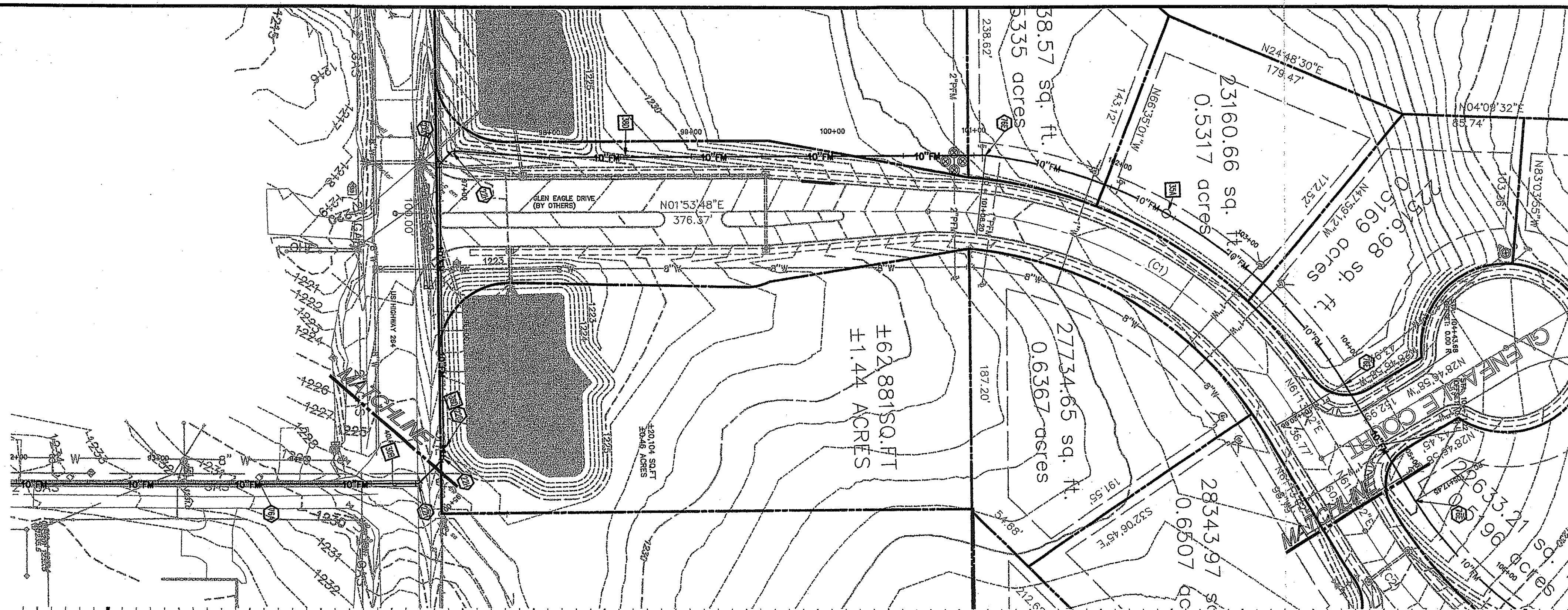


STA 86+00 TO STA 95+00

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



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			(479) 273-9472		
Bentonville, AR 72712			FAX (479) 273-0844		
JOB NO.: 20733.0			DWG NAME: 20733PRO.05		
CAVE SPRINGS INTERCEPTOR #1			DATE		
PLAN AND PROFILE #9			09-13-06		
			1:38 PM		
			REV 6		
			13 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
- TREE INFO
5 = DIAMETER OF TRUNK IN FEET
10 = HEIGHT OF TREE IN FEET
17 = CANYON 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.

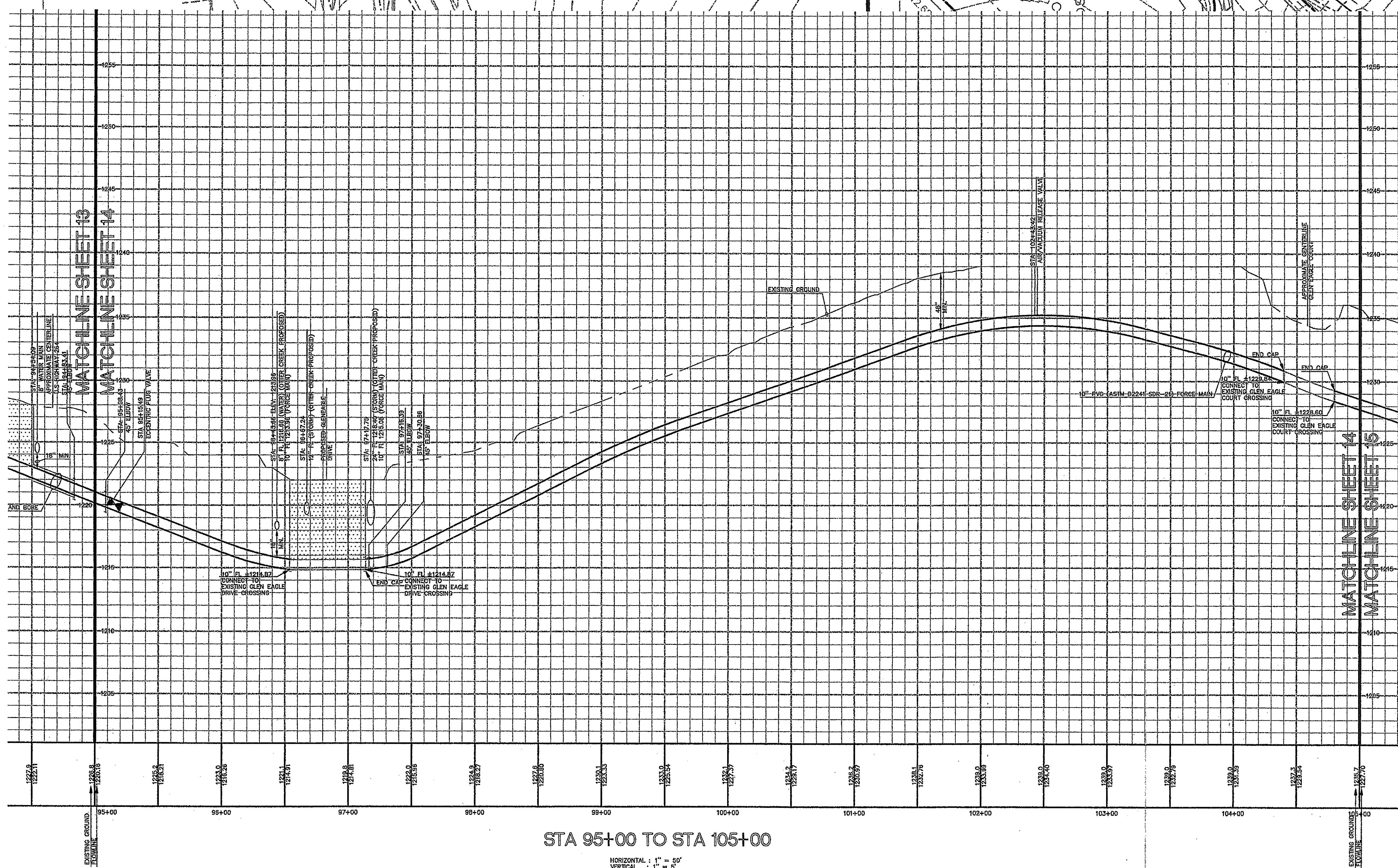
UTILITY NOTES

- 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

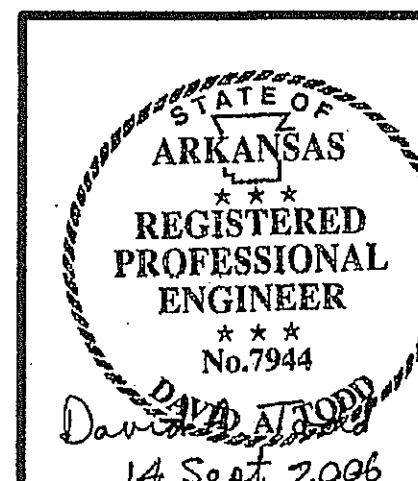
- 29A ASPHALT DRIVE CUT/REPAIR
- 29C GRAVEL DRIVE CUT/REPAIR
- 30B JACK & BORE
- 35A AIR/VACUUM RELIEF VALVE (SANITARY SEWER)
- 76A SANITARY SEWER FORCE MAIN CLEAN-OUT WITH CHECK VALVE
- 76B LIFT STATION
- 76C CONCRETE CHANNEL WITH DISSIPATORS
- 30B TRAPPED WOOD SHUTTER & VALVE

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

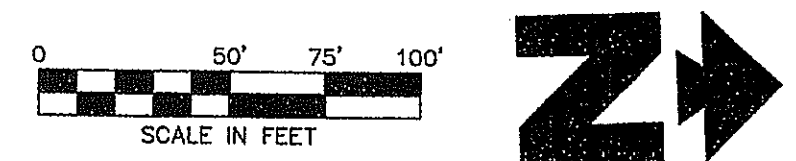
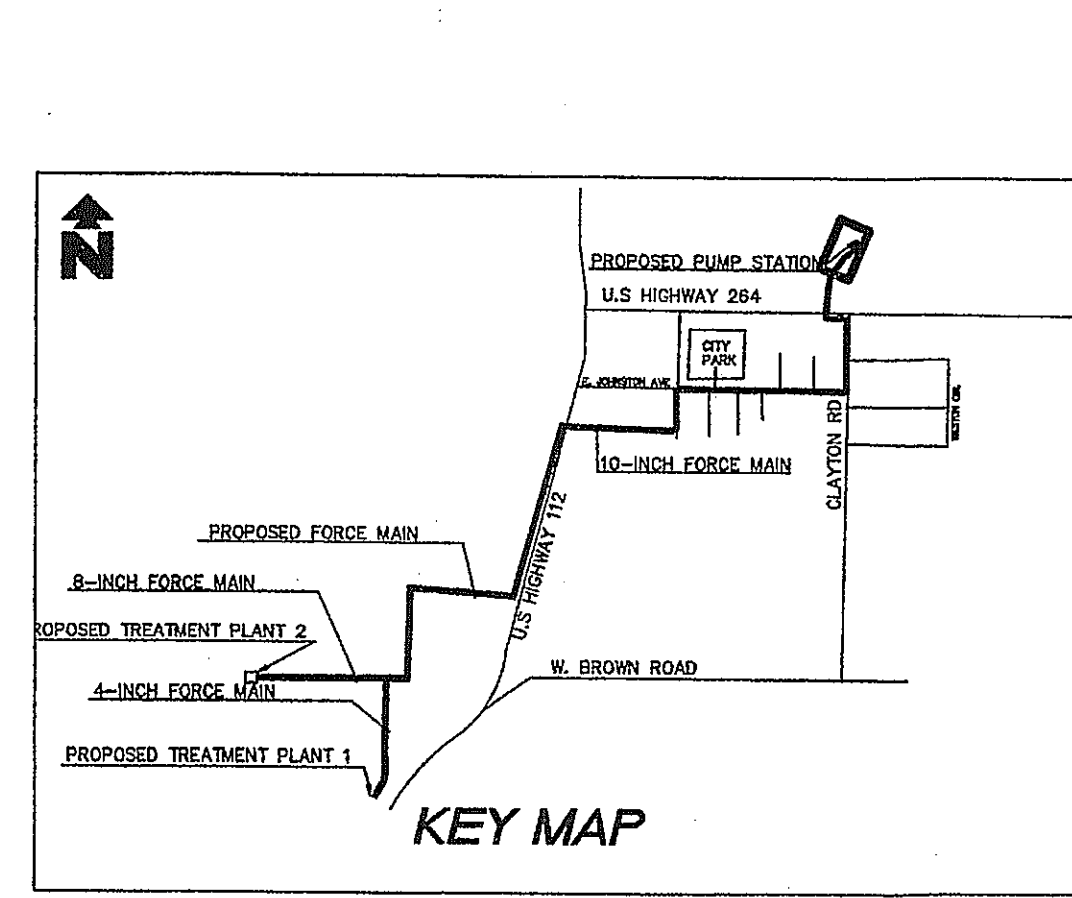
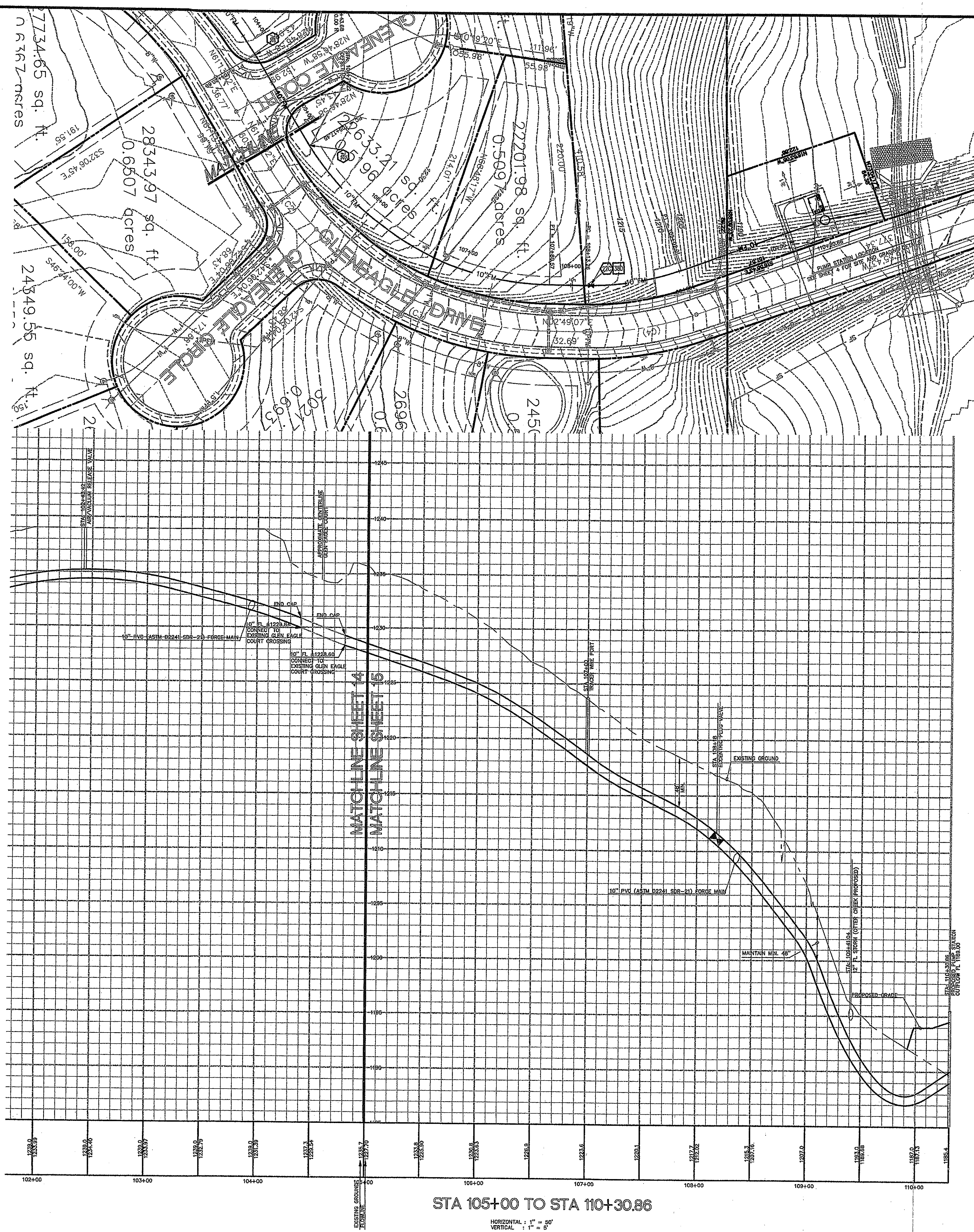


STA 95+00 TO STA 105+00

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	---
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	

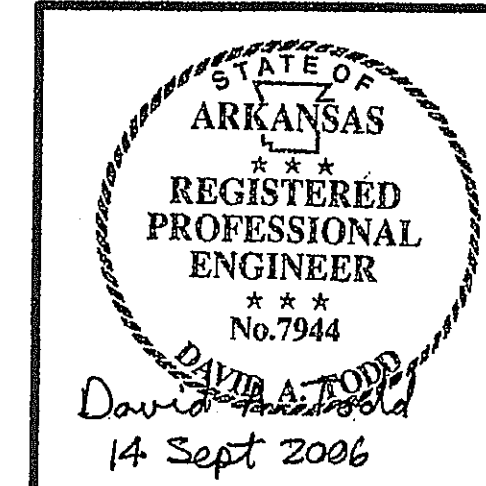
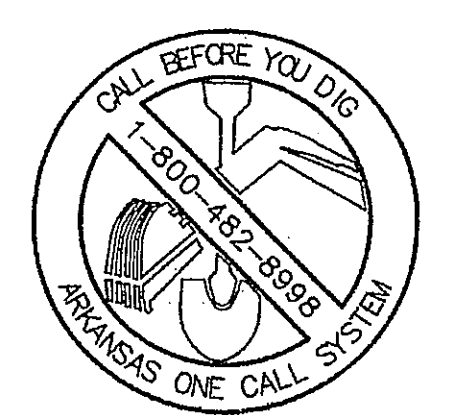
PROPOSED	
PROPERTY LINE	---
RIGHT OF WAY LINE	---
EASEMENT	---
SANITARY SEWER SERVICE	X'S
WATER SERVICE	X'W

- 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-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 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.
- 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.

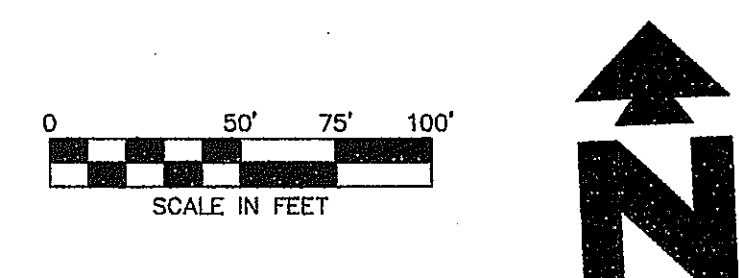
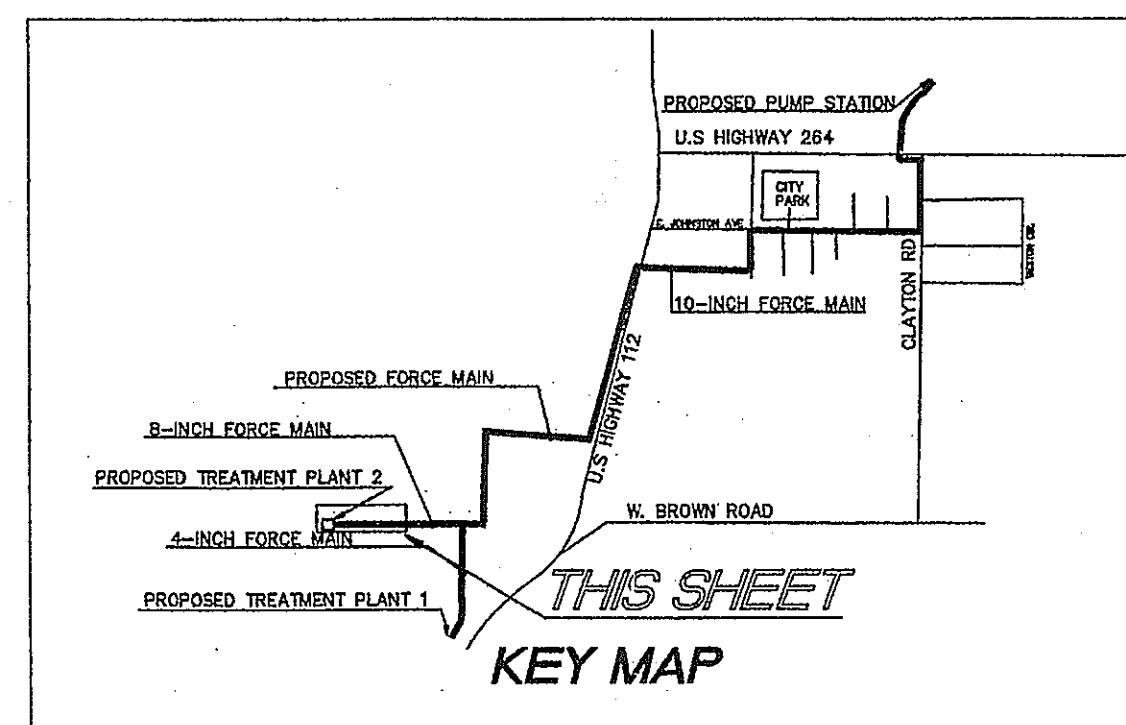
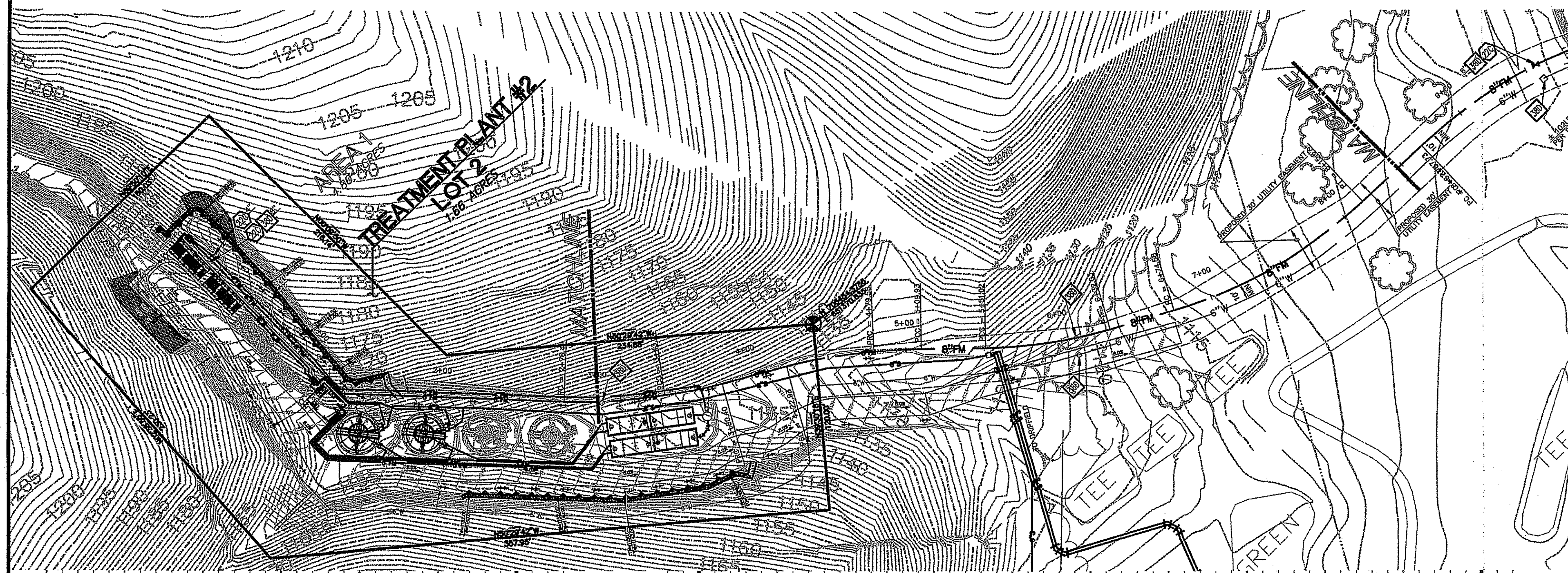
- UTILITY NOTES**
- 18A EXISTING TO REMAIN
 - 22C M.I. ECCENTRIC PLUG VALVE WITH ADJUSTABLE VALVE BOX (SEE SIZES THIS SHEET)
 - 22D M.I. TEE WITH THRUST BLOCKING (SEE SIZES THIS SHEET)
 - 22E M.I. ECCENTRIC REDUCER, FLAT SIDE ON TOP (SEE SIZES THIS SHEET)
 - 22F M.I. CUP PLUG WITH THRUST BLOCKING (SEE 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 CEI, 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
 - 35D TRACER WIRE INSTALLATION

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



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			REV: 15 OF 43		



LEGEND

EXISTING

- BOUNDARY LINE
- RIGHT OF WAY LINE
- STORM DRAIN
- CAS
- OHE OVERHEAD ELECTRIC
- OHE&T OVERHEAD ELECTRIC AND TELEPHONE
- OHT OVERHEAD TELEPHONE
- OHTV OVERHEAD TV
- SEWER
- UG&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
- 11" = CROWN 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 24" 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. 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.
- 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. 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
- 36D TRACER WIRE INSTALLATION

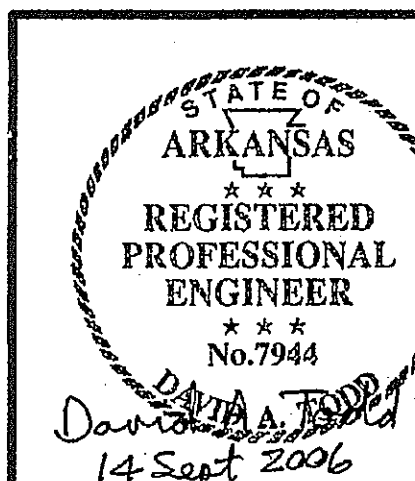


TREATMENT PLANT #2 INTERCEPTOR LINE
STA 0+00 TO STA 3+00

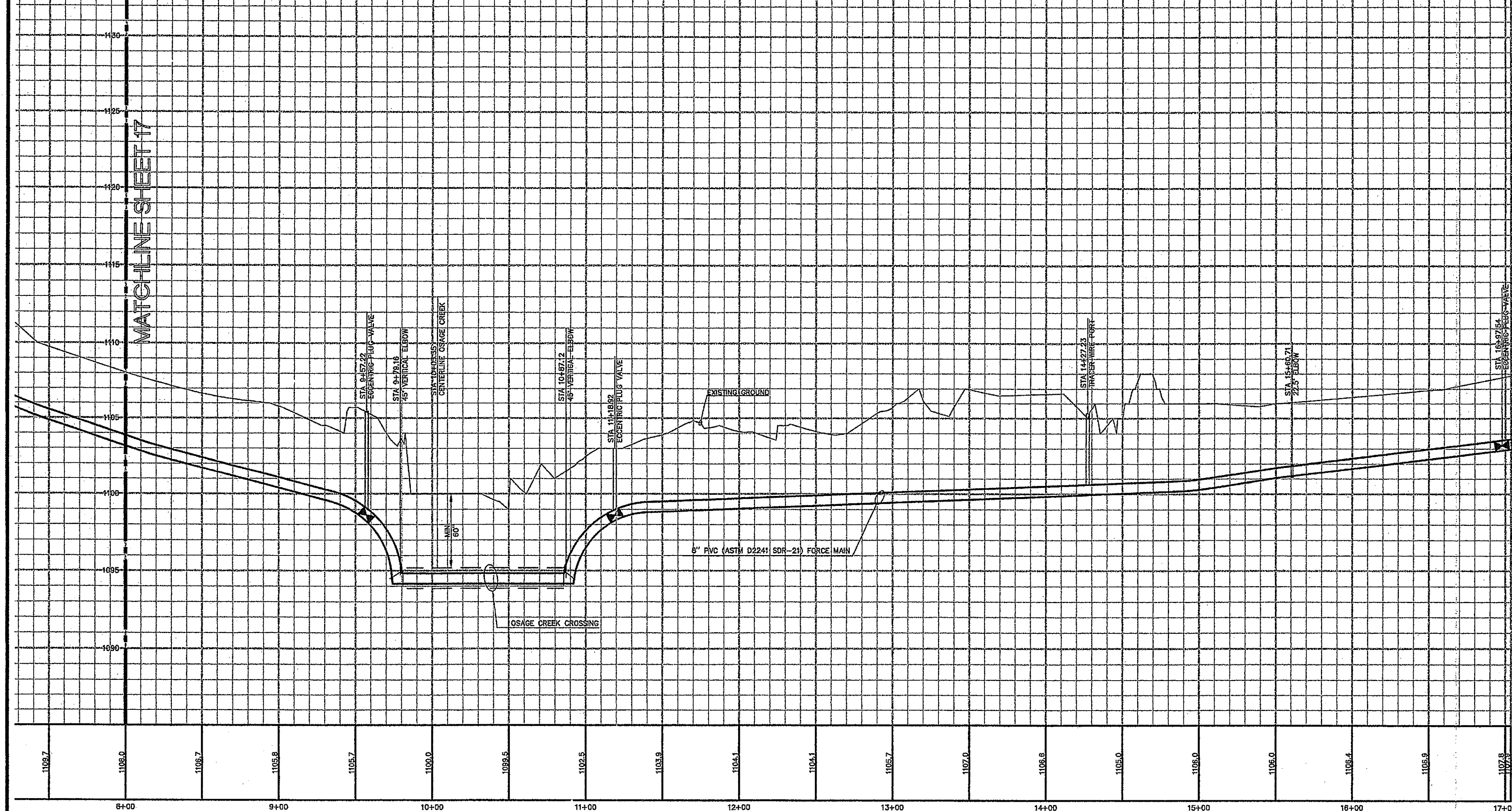
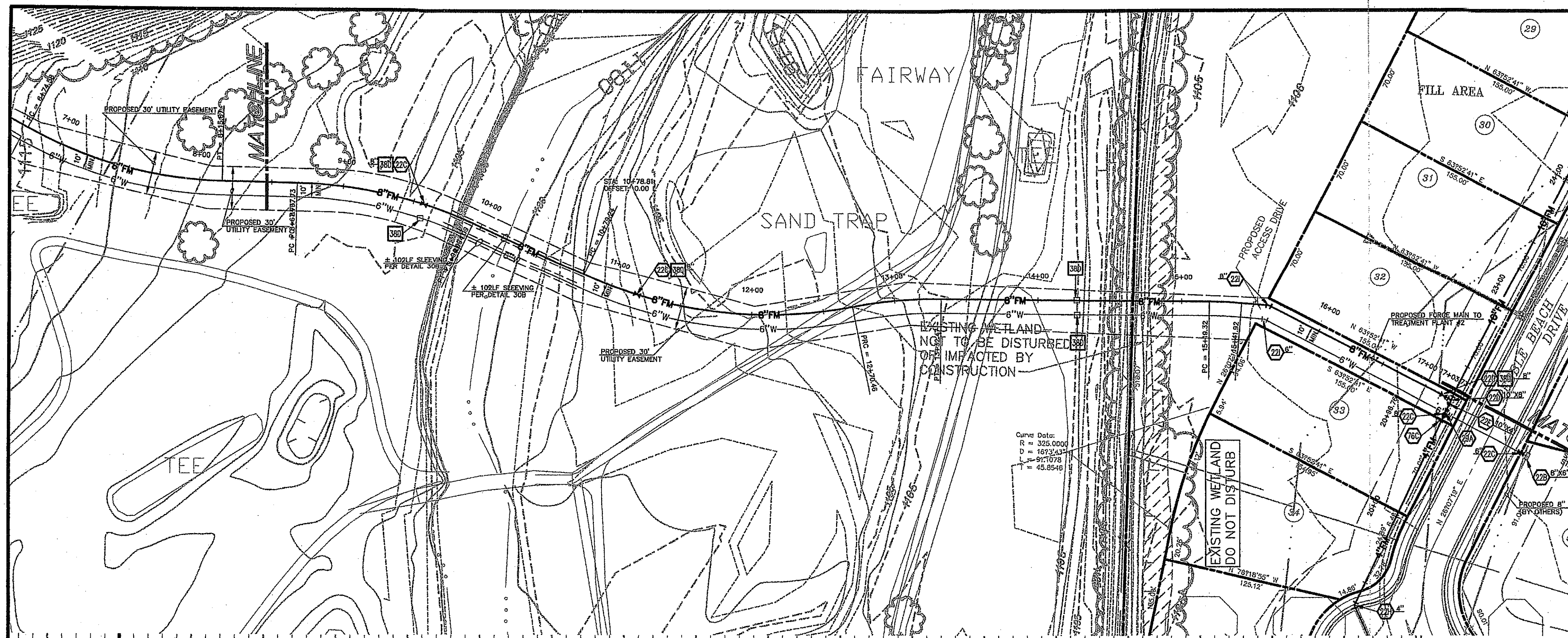
HORIZONTAL : 1" = 50'
VERTICAL : 1" = 5'

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

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

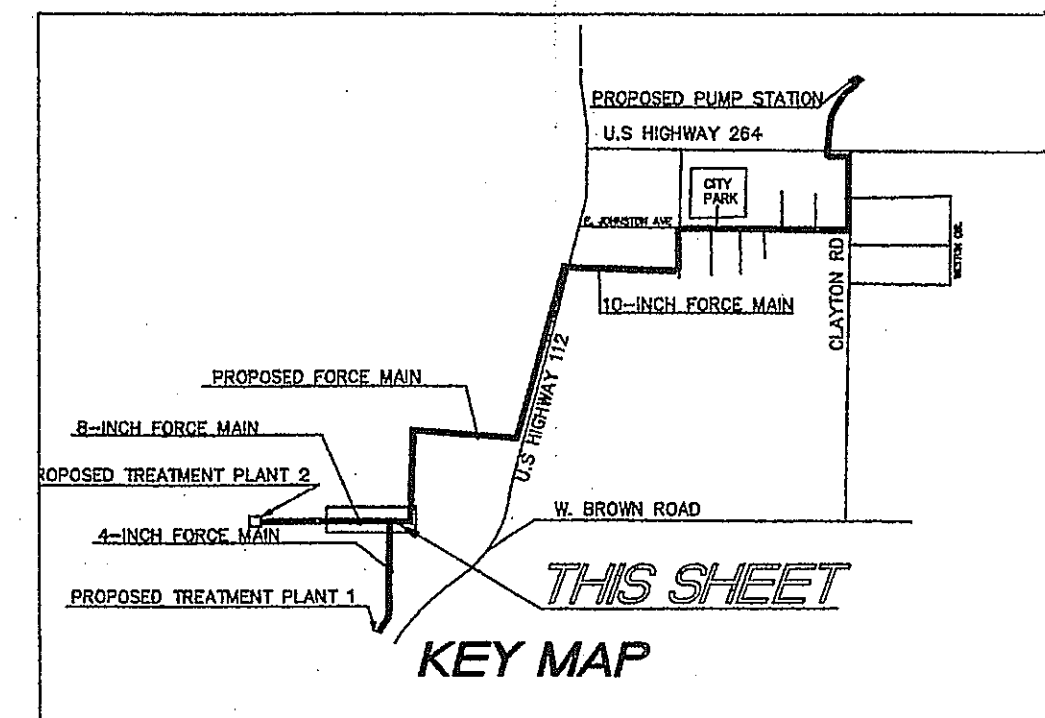


INITIAL DESIGN	4-28-05	DAT	FF	FF	FF
DATE	EOR	PM	DES	DRW	
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
CEI ENGINEERING ASSOCIATES, INC			ENGINEERS PLANNERS SURVEYORS		
3317 S.W. I Street Bentonville, AR 72712			(479) 273-9472 FAX (479) 273-0844		
8-INCH INTERCEPTOR (TP2) PLAN AND PROFILE 1			JOB NO.: 20733.0 DWG NAME: 20733PROJ.		
DATE 09-14-06 09:23 AM REV.6			SHEET NO. 16 OF 43		



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

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



0 50' 75' 100'
SCALE IN FEET



LEGEND

EXISTING

- BOUNDARY LINE
- RIGHT OF WAY LINE
- STORM DRAIN
- GAS
- OVERHEAD ELECTRIC
- OVERHEAD ELECTRIC AND TELEPHONE
- OVERHEAD TELEPHONE
- OVERHEAD TV
- SEREN
- 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
- S-S SANITARY SEWER SERVICE
- W-W WATER SERVICE

GENERAL UTILITY NOTES

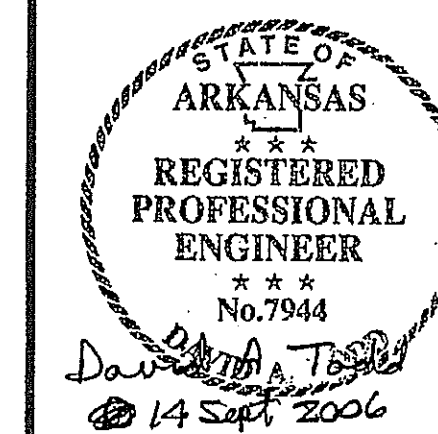
- A. ALL WASTEWATER LINES 4" AND SMALLER SHALL BE PVC (ASTM D2241 SDR-21) WITH 36" MIN. COVER. ALL WASTEWATER LINES LARGER THAN 4" SHALL BE PVC (ASTM D2241 SDR-21) WITH 48" MIN. COVER.
- B. ALL SANITARY SEWER LINES AT CREEK AND ROAD CROSSING SHALL BE PVC (ASTM D2241 DR-14) WITH 60" MIN. COVER.
- A. ALL 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 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.
- 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.A. ECCENTRIC PLUG 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 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

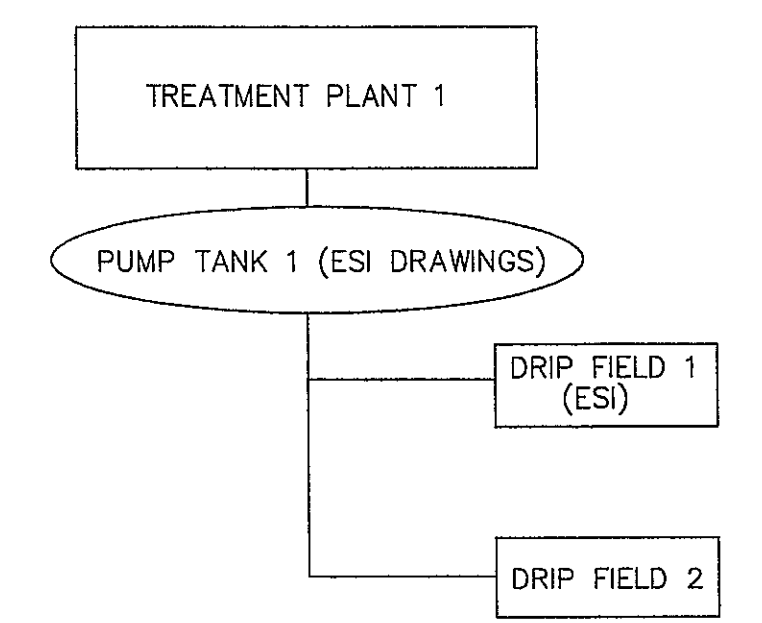
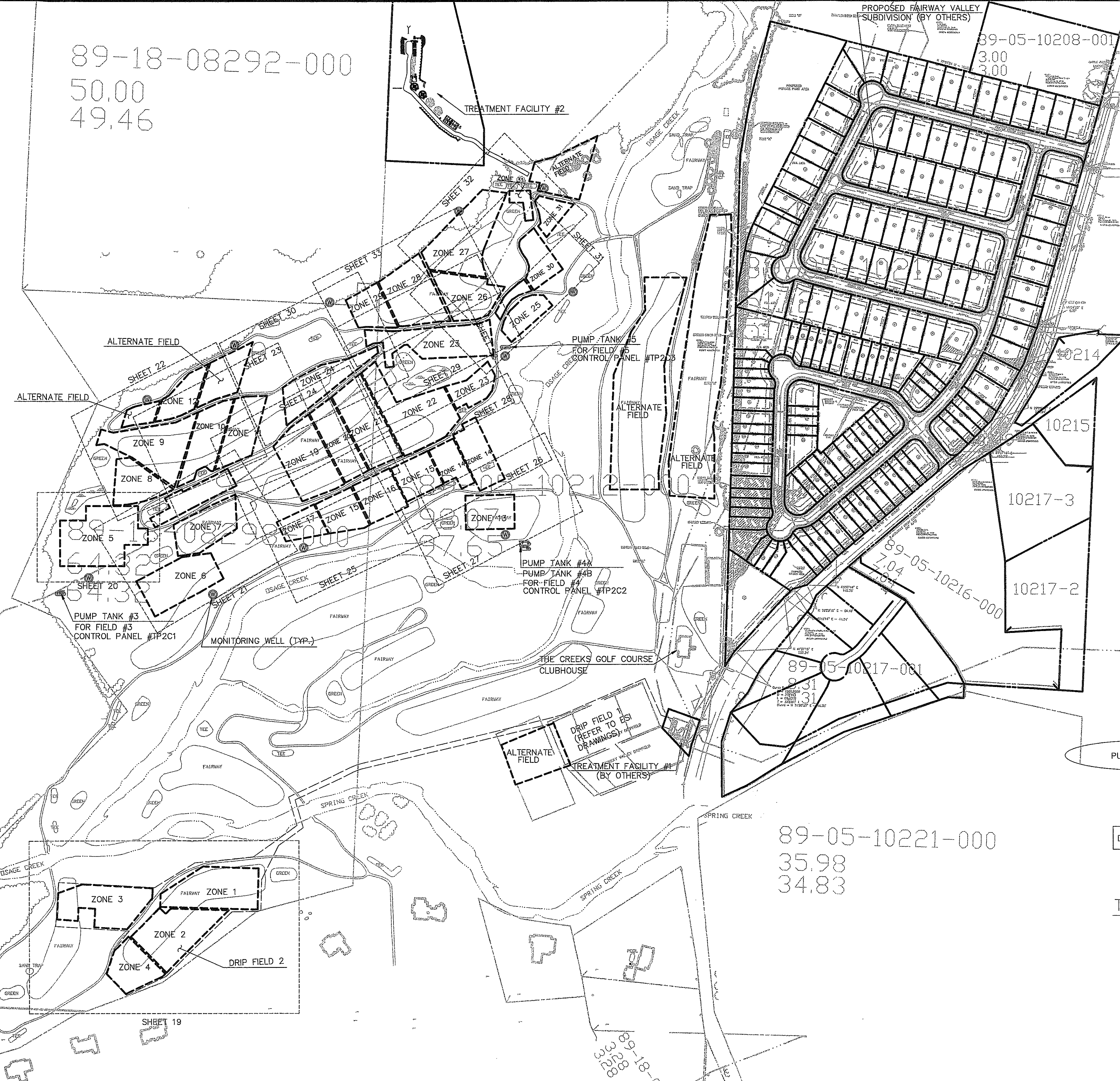
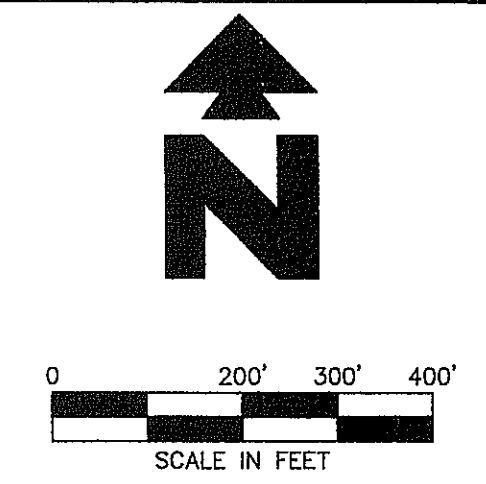


INITIAL DESIGN	4-26-05	DAT	FF	FF	FF
	DATE	EOR	PM	DES	DRW
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
ENGINEERING ASSOCIATES, INC.					
ENGINEERS PLANNERS SURVEYORS					
3317 S.W. 1 Street Bentonville, AR 72712			(479) 273-9472 FAX (479) 273-0844		JOB NO.: 20733.0 DWG NAME: 20733PROJ.05
8-INCH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

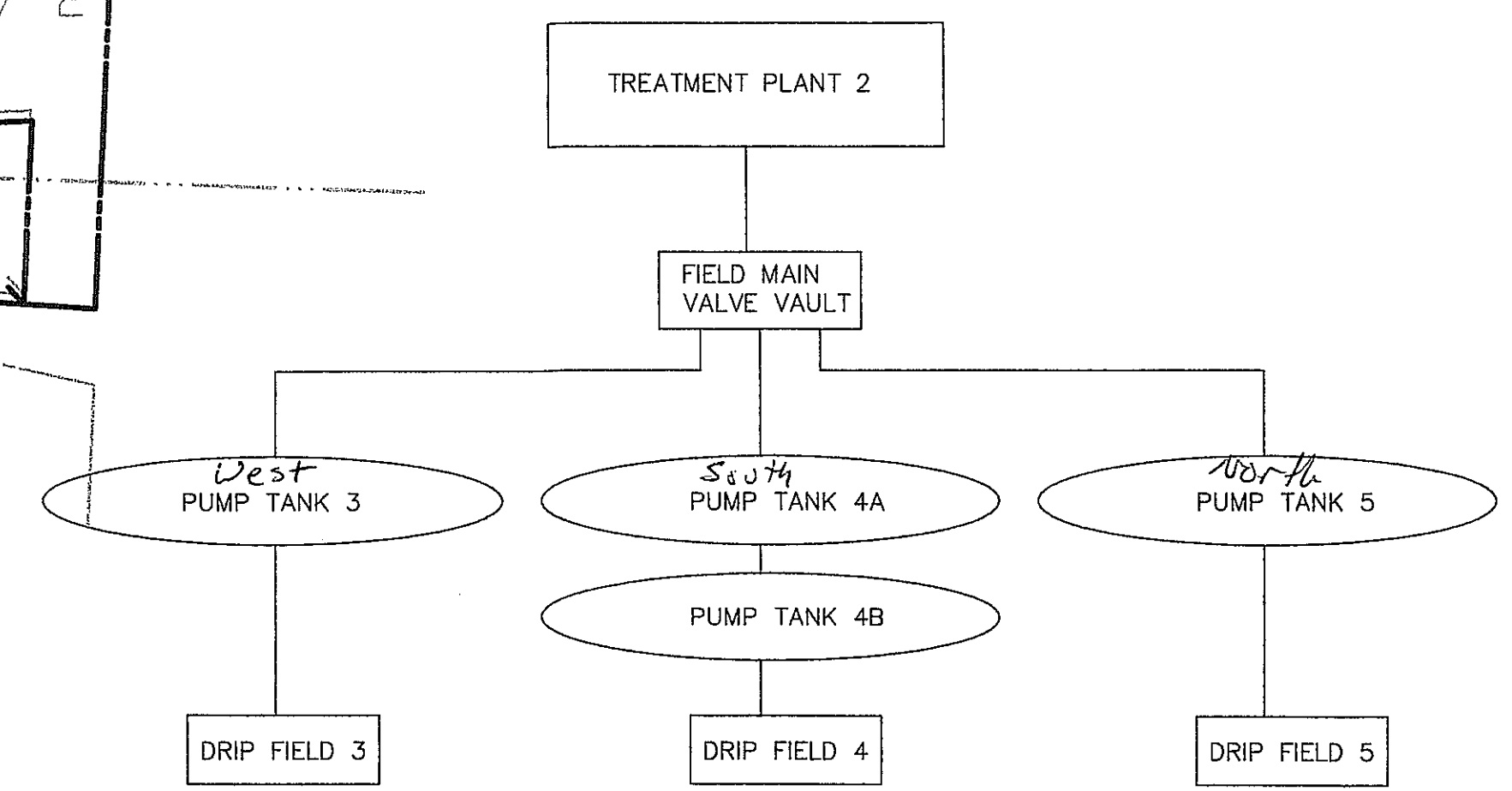
89-18-08292-000
50.00
49.46

-18-08297-000
3.00
3.50

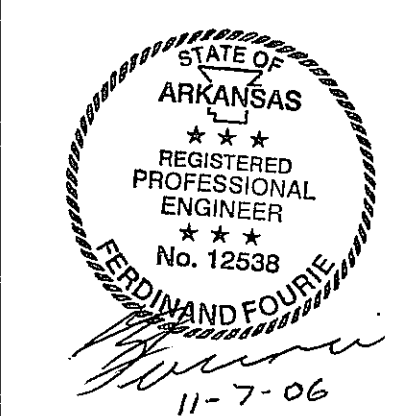
89-05-10221-000
35.98
34.83



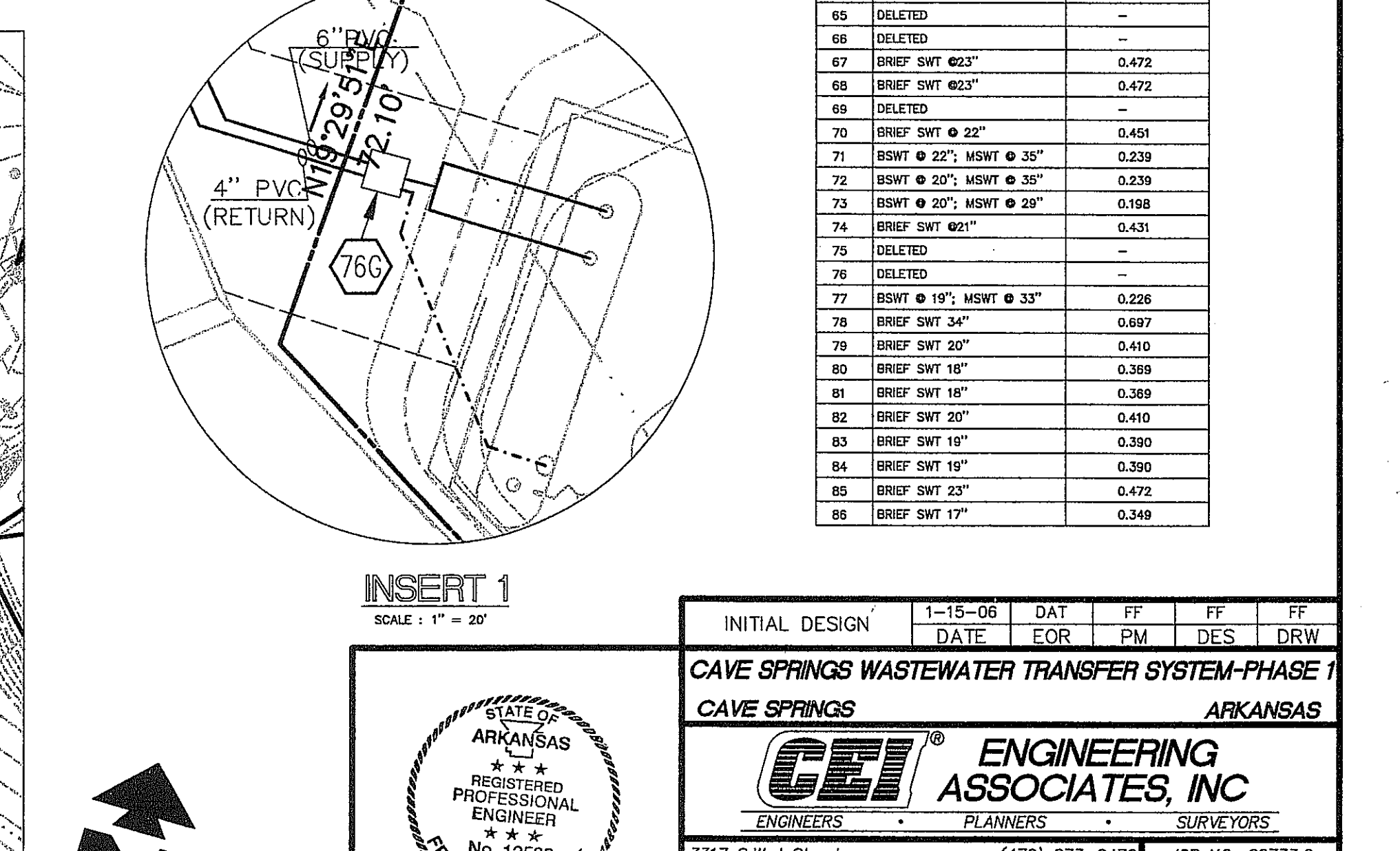
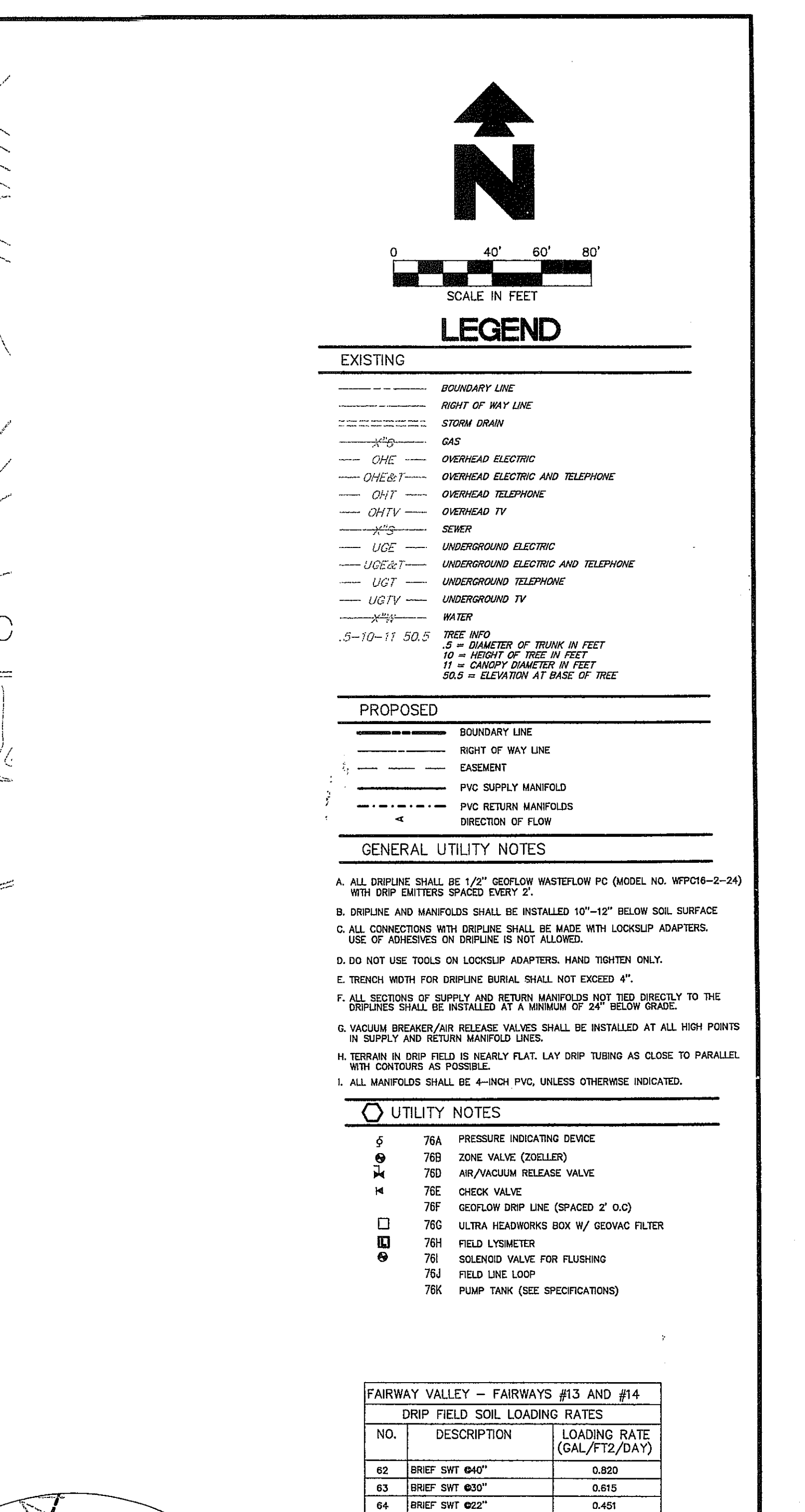
TREATMENT PLANT 1 - DRIP FIELD SCHEMATIC



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.			



0 80' 120' 160'

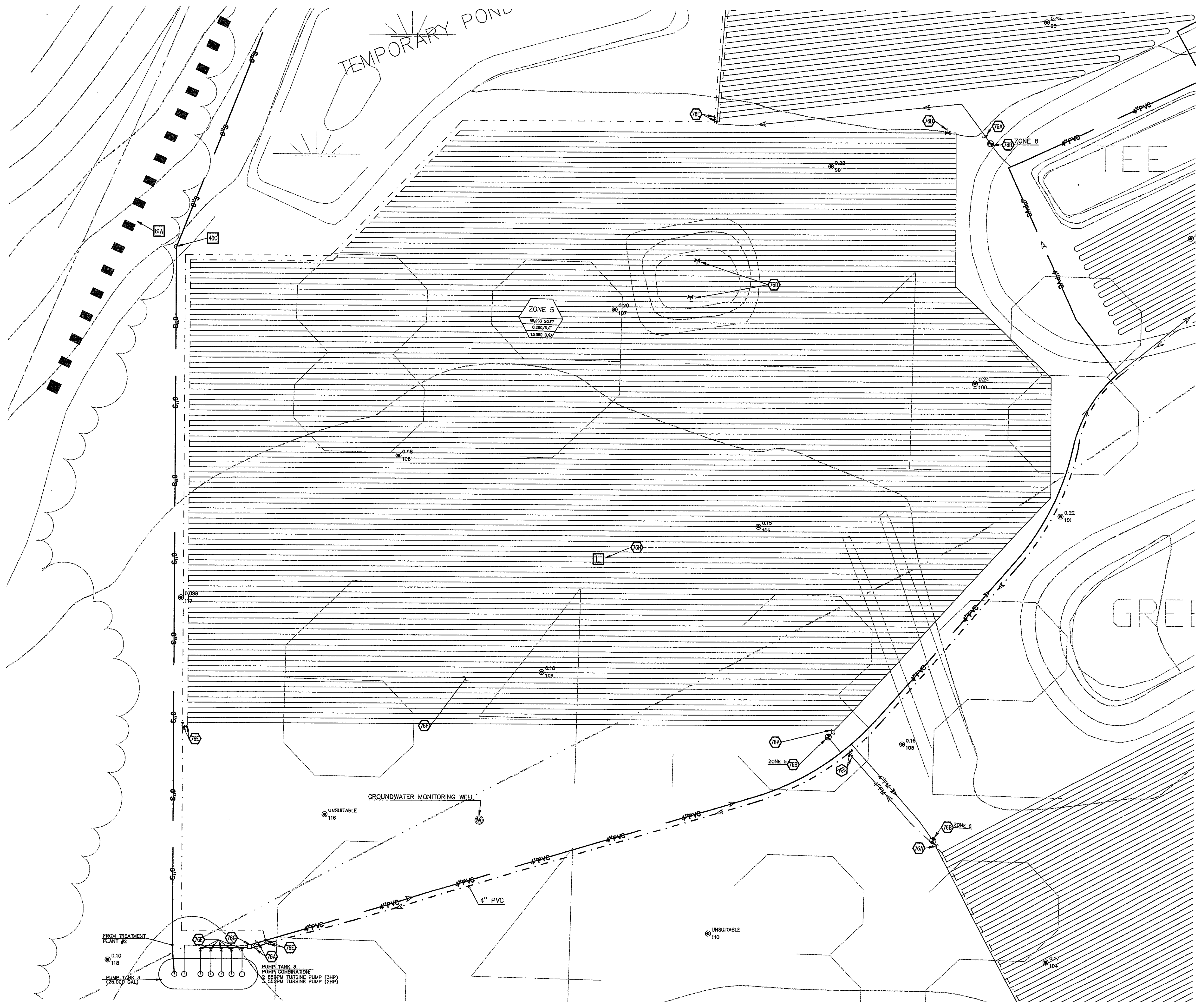
SCALE IN FEET

STATE OF
ARKANSAS

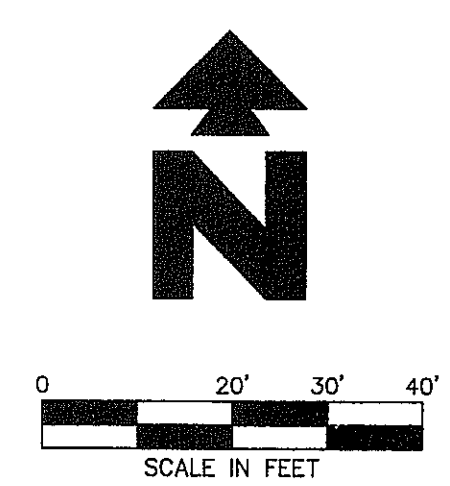
REGISTERED
PROFESSIONAL
ENGINEER

No. 12538
FERDINAND FOURIE
11-7-06

© 2005 CEI ENGINEERING ASSOCIATES, INC.



EFFLUENT DISPOSAL FIELD #3
ZONE 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 = 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" 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

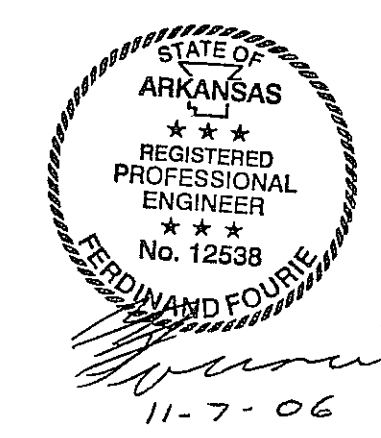
- BIA TEMPORARY DIVERSION DIKE

UTILITY NOTES

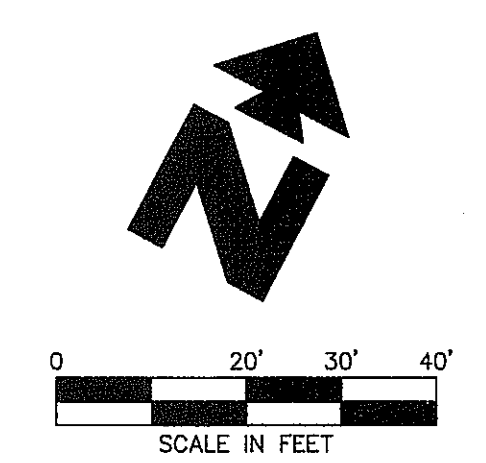
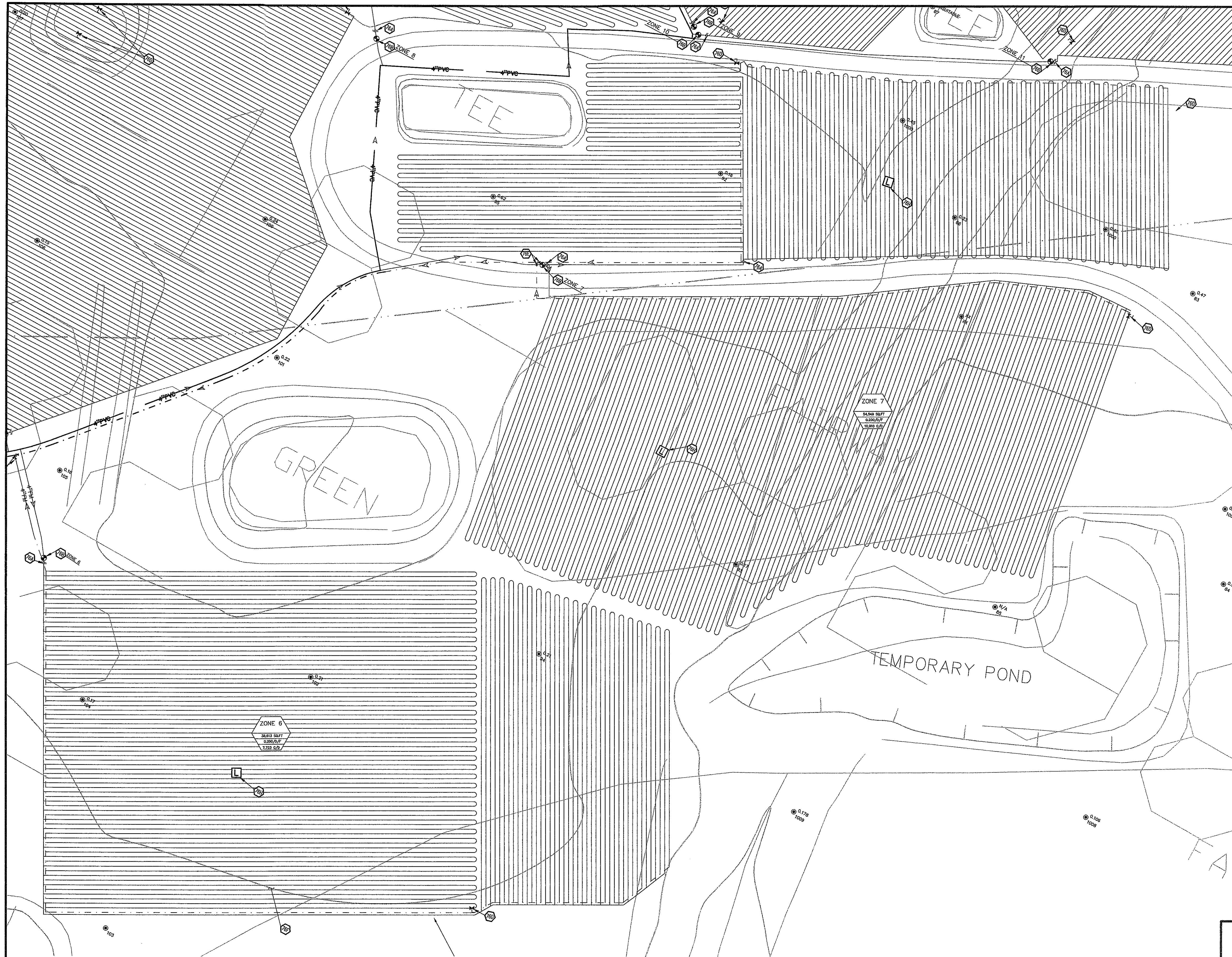
- 76A PRESSURE INDICATING DEVICE
- 76B ZONE VALVE (ZOEHLER)
- 76C AIR/VACUUM RELEASE VALVE
- 76D CHECK VALVE
- 76E GEOWELL DRIP LINE (SPACED 2' O.C.)
- 76F ULTRA HEADWORKS BOX W/ GEOWELL FILTER
- 76H FIELD LYSMETER
- 76I SOLENOID VALVE FOR FLUSHING
- 76J FIELD LINE LOOP
- 76K PUMP TANK (SEE SPECIFICATIONS)

NOTE:
OVERALL EFFLUENT DISPOSAL FIELD
LAYOUT IS ON SHEET 18

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: 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.

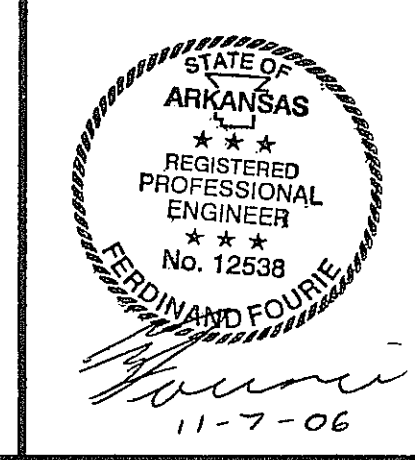
- UTILITY DETAILS
- 81A TEMPORARY DIVERSION DIKE

- 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

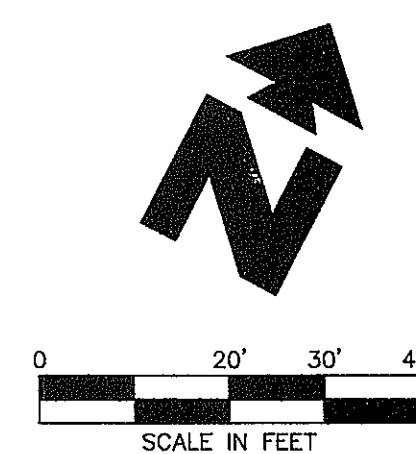
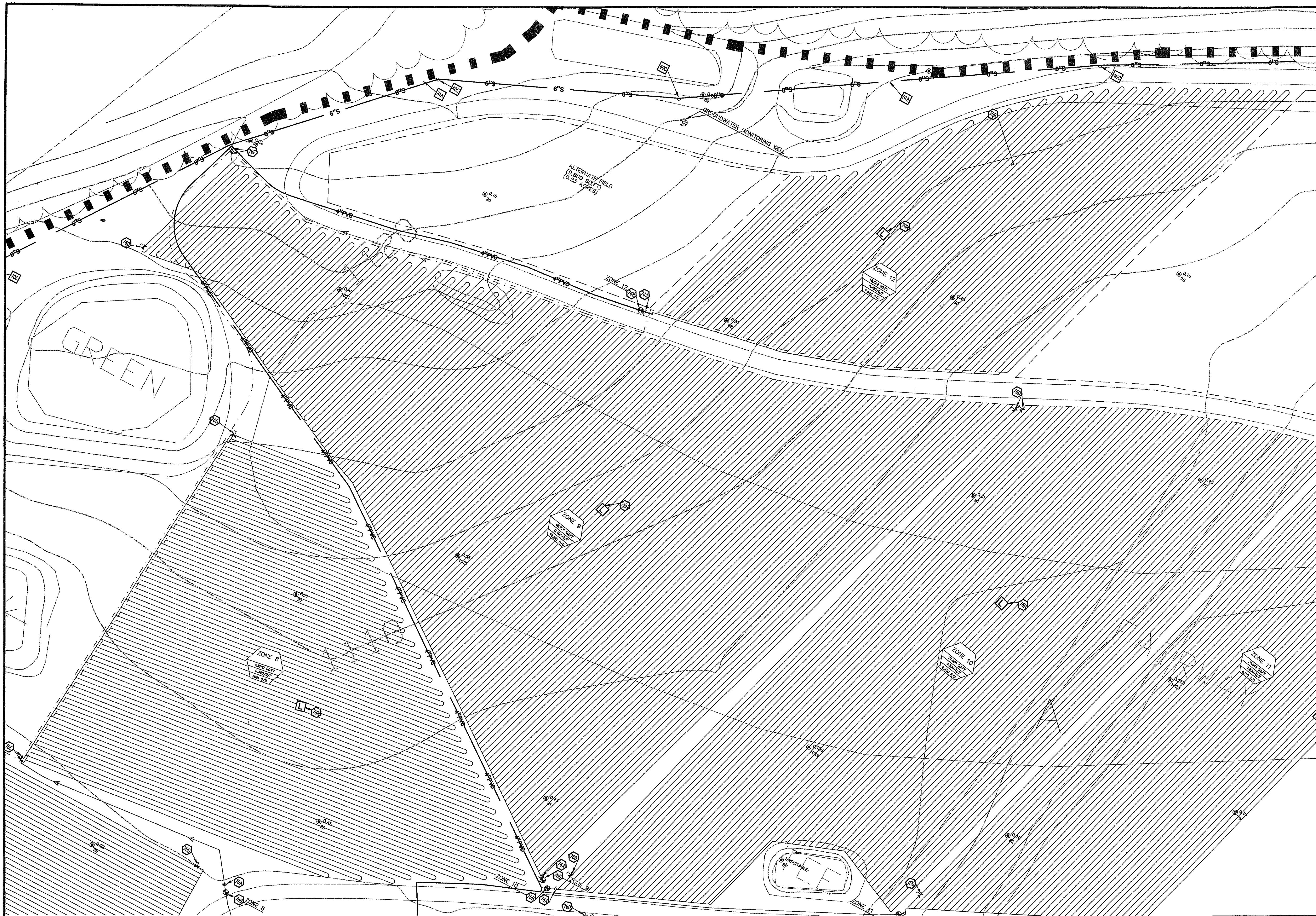
(479) 273-8472
FAX (479) 273-0844

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
	WATERS
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 DRIFLINE SHALL BE 1/2" GEOWFLOW WASTEFLOW PG (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.

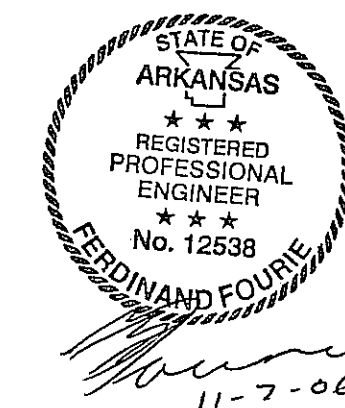
UTILITY DETAILS	
	81A TEMPORARY DIVERSION DIKE

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

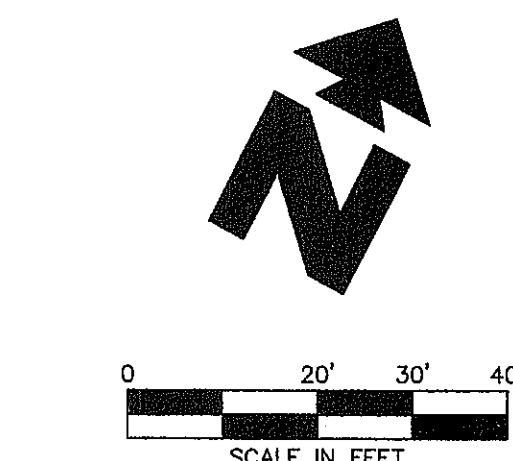
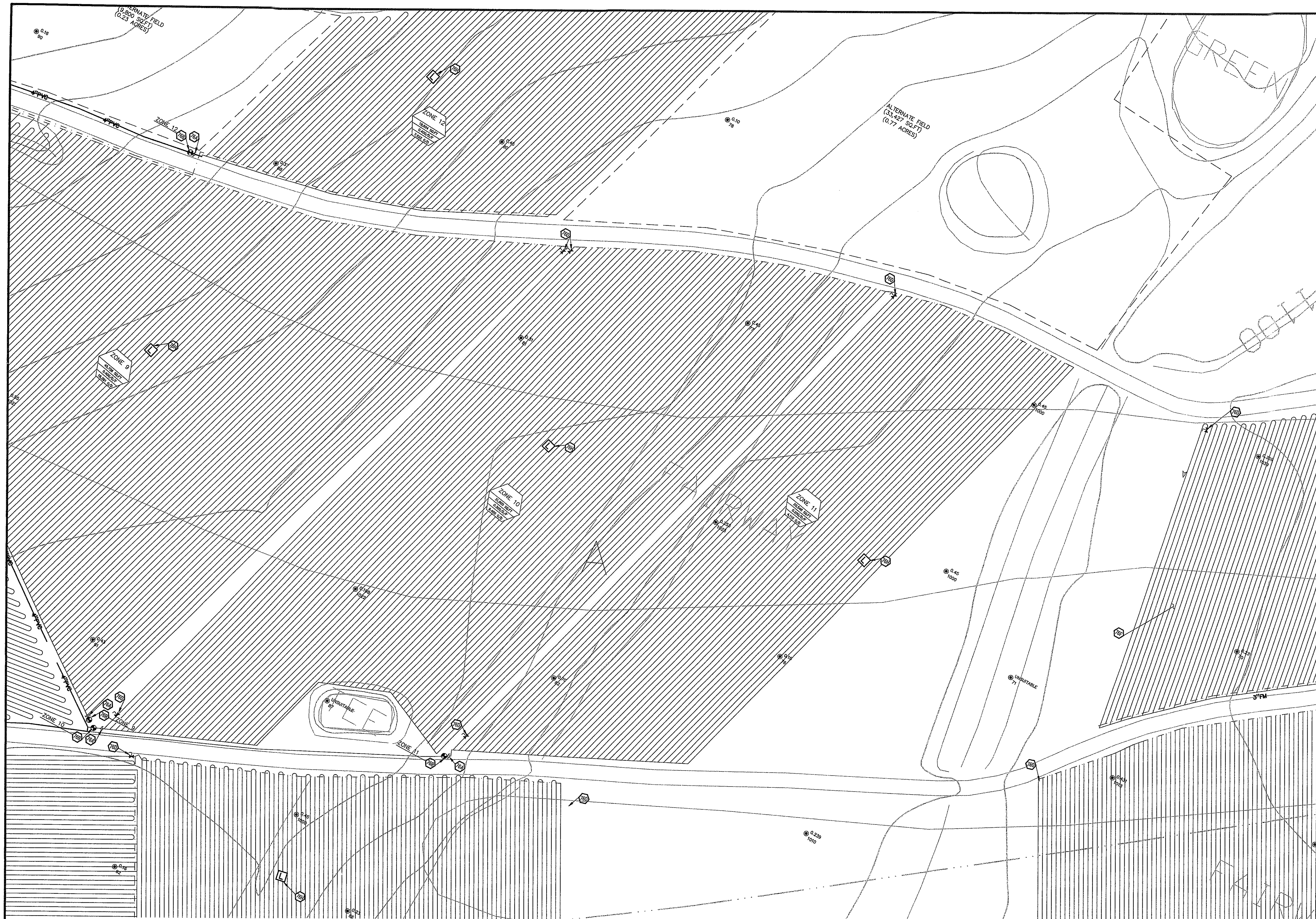
EFFLUENT DISPOSAL FIELD #3
ZONE 8, ZONE 9, ZONE 10, ZONE 12

NOTE:
OVERALL EFFLUENT DISPOSAL FIELD
LAYOUT IS ON SHEET 18

TOTAL DRIFFIELD 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)	30X



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.		
3317 S.W. 1 Street Bentonville, AR 72712			(479) 273-9472 FAX (479) 273-0844		
JOB NO.: 20733.0 DWG NAME: 20733L.EAGL-REV2			DATE: 11-06-06 10:24 PM REV5		
DRIP FIELD LAYOUT 4			SHEET NO. 22 OF 43		



- LEGEND**
- EXISTING**
- BOUNDARY LINE
 - RIGHT OF WAY LINE
 - STORM DRAIN
 - GAS
 - OHE OVERHEAD ELECTRIC
 - OHE/T OVERHEAD ELECTRIC AND TELEPHONE
 - OHTV OVERHEAD TELEPHONE
 - OHTV OVERHEAD TV
 - SEWER
 - UG/E UNDERGROUND ELECTRIC
 - UG/E/T UNDERGROUND ELECTRIC AND TELEPHONE
 - UG/T UNDERGROUND TELEPHONE
 - UG/TV UNDERGROUND TV
 - WATER
- 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" GEOPLOW WASTEFLOW PC (MODEL NO. WPC10-2-24) WITH DRIPLINE 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 DRIPLINE FIELD IS NEARLY FLAT. LAY DRIPLINE TUBING AS CLOSE TO PARALLEL WITH CONTOURS AS POSSIBLE.

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

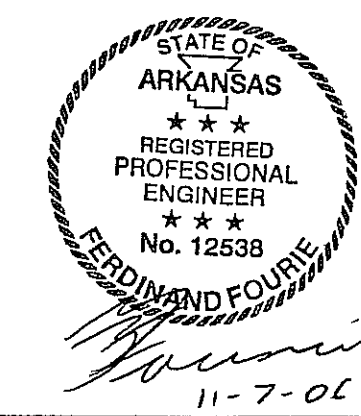
- UTILITY DETAILS**
- 81A TEMPORARY DIVERSION DIKE

- UTILITY NOTES**
- 75A PRESSURE INDICATING DEVICE
 - 75B ZONE VALVE (ZOEILLER)
 - 75C AIR/VACUUM RELEASE VALVE
 - 75D CHECK VALVE
 - 75E GEOPLOW DRIPLINE (SPACED 2' O.C.)
 - 75F ULTRA HEADWORKS BOX W/ GEOPLOW FILTER
 - 75G FIELD LYSIMETER
 - 75H SOLIDWORKS VALVE FOR FLUSHING
 - 75I FIELD LINE LOOP
 - 75J PUMP TANK (SEE SPECIFICATIONS)

**EFFLUENT DISPOSAL FIELD #3
ZONE 10, ZONE 11**

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)	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

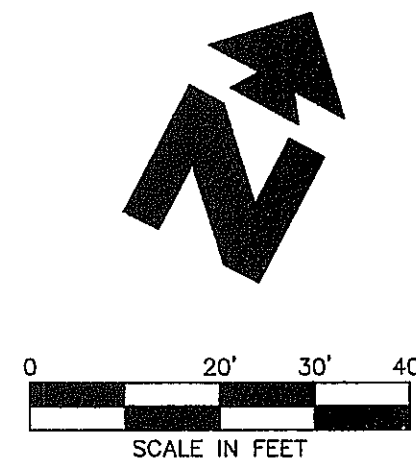
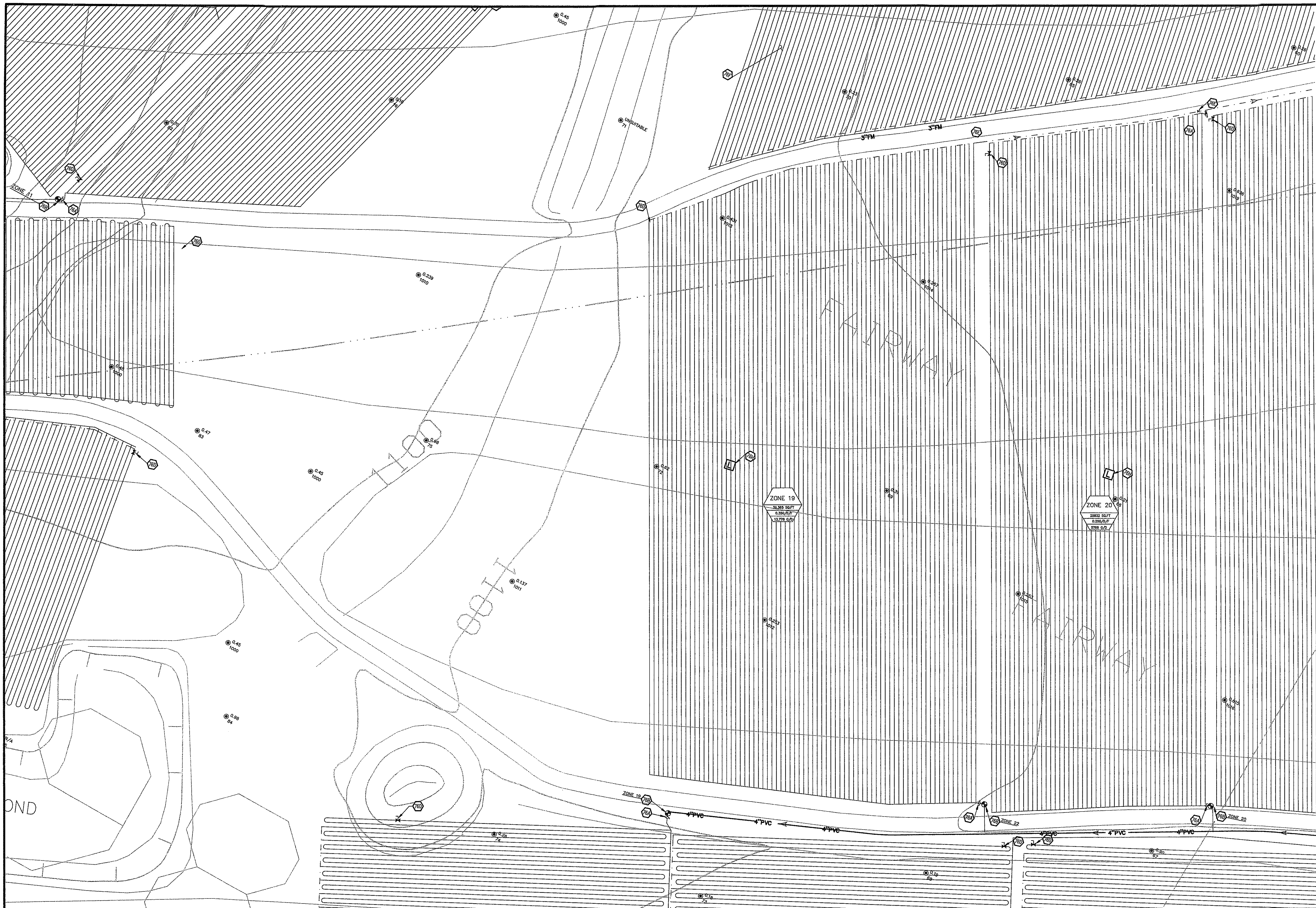
3317 S.W. 1 Street
Santonville, AR 72712

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

JOB NO.: 20733.0
DWG NAME: 20733LEAC_LREV2

DATE: 11-06-06
TIME: 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
	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" GEOWEAVE 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 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.

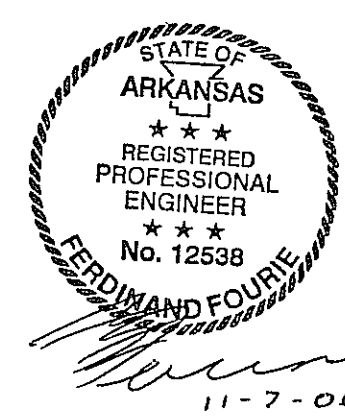
UTILITY DETAILS	
	81A TEMPORARY DIVERSION DIKE

UTILITY NOTES	
	75A PRESSURE INDICATING DEVICE
	75B ZONE VALVE (ZORLER)
	75C AIR/VACUUM RELEASE VALVE
	75E CHECK VALVE
	75F GEOWEAVE DRIPLINE (SPACED 2' O.D.)
	75G ULTRA HEADWORKS BOX W/ GEOWEAVE FILTER
	75H FIELD LYSIMETER
	75I SOLENOID VALVE FOR FLUSHING
	75J FIELD LINE LOOP
	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	

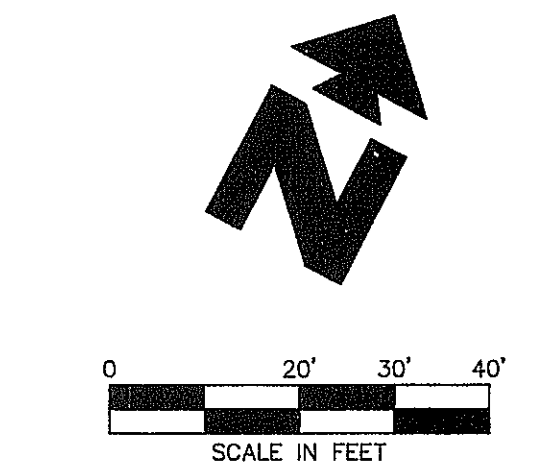
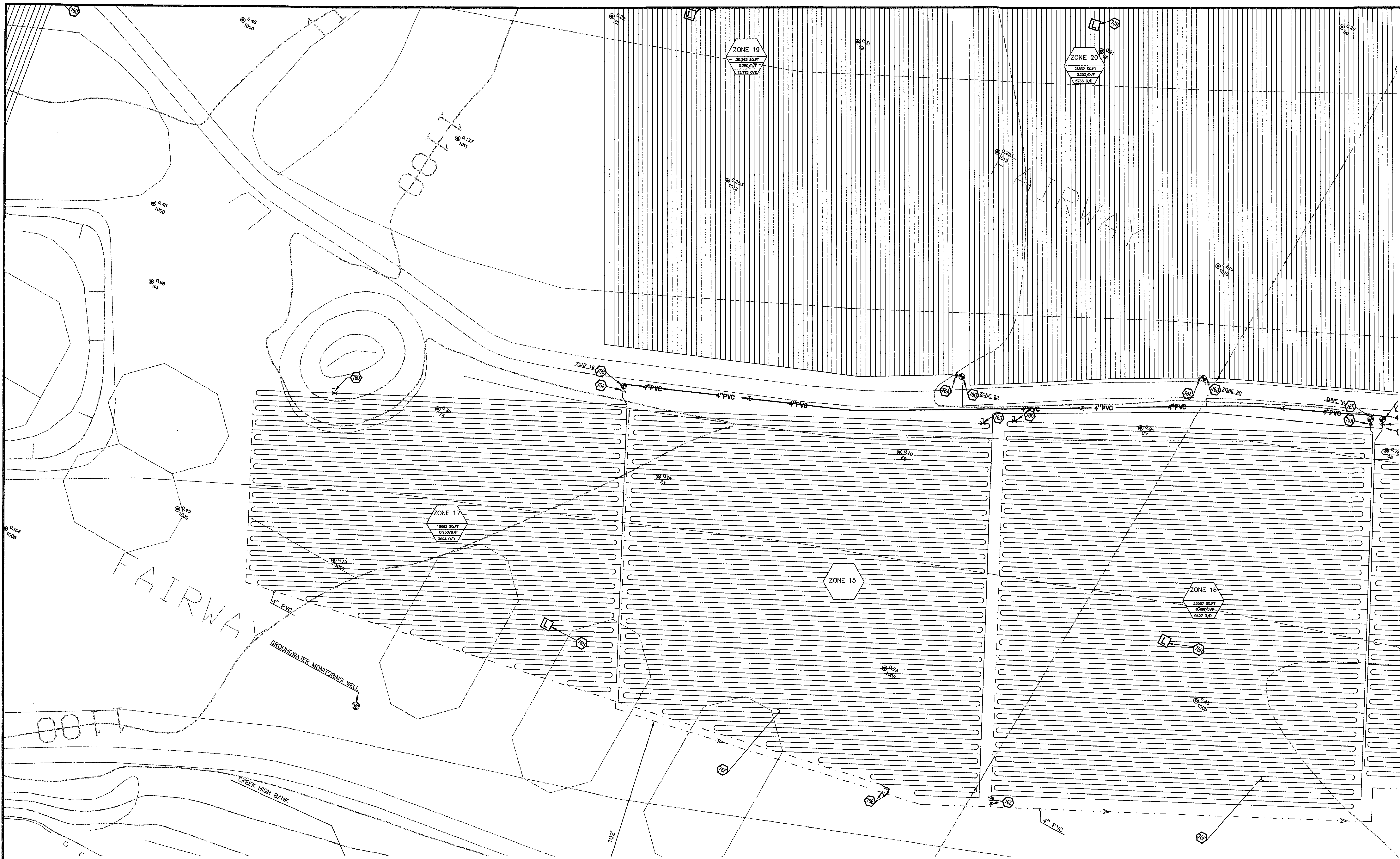
CAVE SPRINGS WASTEWATER SYSTEM - PHASE 1
CAVE SPRINGS ARKANSAS

CEI ENGINEERING ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS

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

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

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)

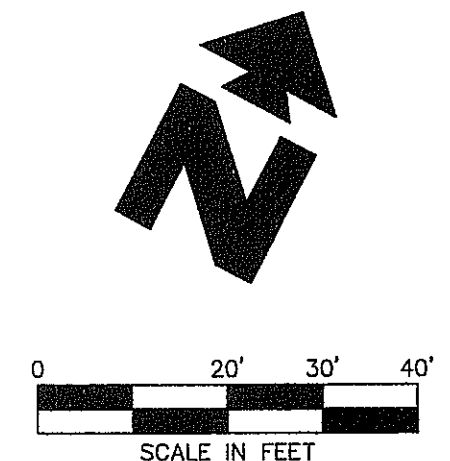
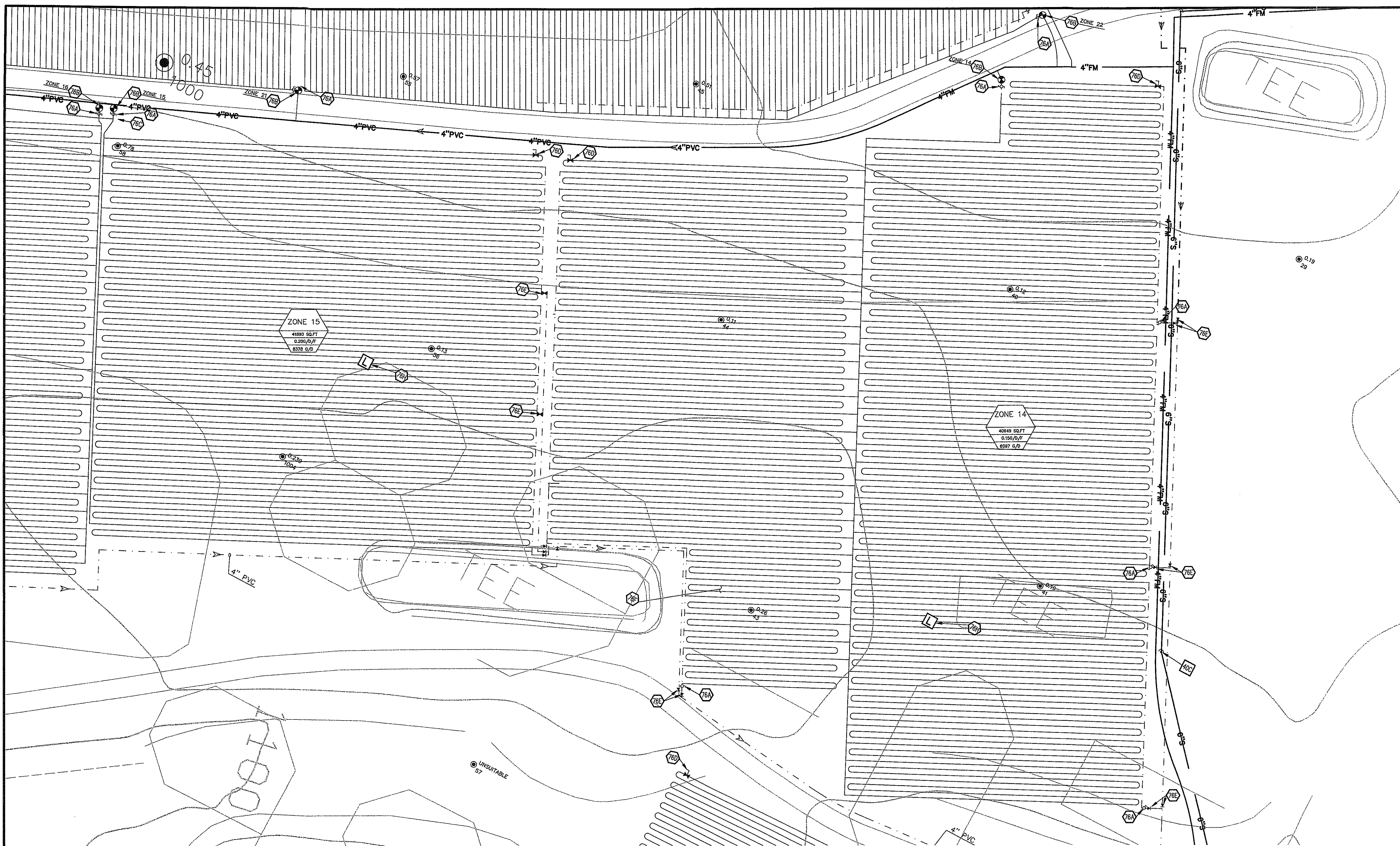
EFFLUENT DISPOSAL FIELD #4
ZONE 15B, ZONE 16, ZONE 17

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					
TIME: 10:24 PM REV: 11-7-06					



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	5 = DIAMETER OF TRUNK IN FEET
10	10 = HEIGHT OF TREE IN FEET
11	11 = CANOPY DIAMETER IN FEET
50.5	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

A. ALL DRIPLINE SHALL BE 1/2" GEOWELL WASTEFLOW PC (MODEL NO. WPC16-2-24) WITH DRIPLINE 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 2" 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 DRIPLINE AS CLOSE TO PARALLEL WITH CONTOURS AS POSSIBLE.

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

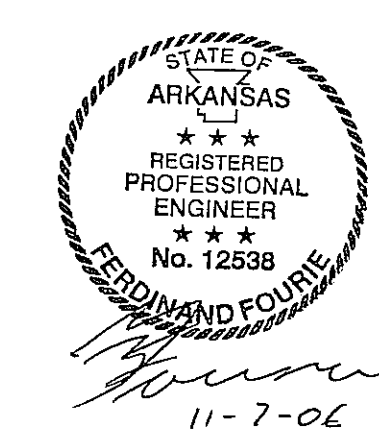
UTILITY DETAILS	
■	81A TEMPORARY DIVERSION DIKE

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

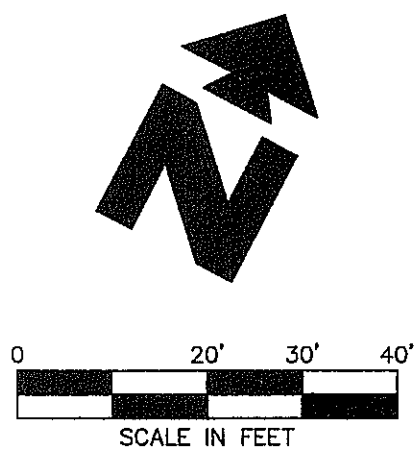
EFFLUENT DISPOSAL FIELD #4
ZONE 14, ZONE 15A

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					
3317 S.W. 1 Street Bentonville, AR 72712					
(479) 273-9472 FAX (479) 273-0844					
JOB NO.: 20733.0 DWG NAME: 20733LEACH_REV2					
DRIP FIELD LAYOUT 8					
DATE: 11-06-06 TIME: 10:24 PM REV: 5					
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

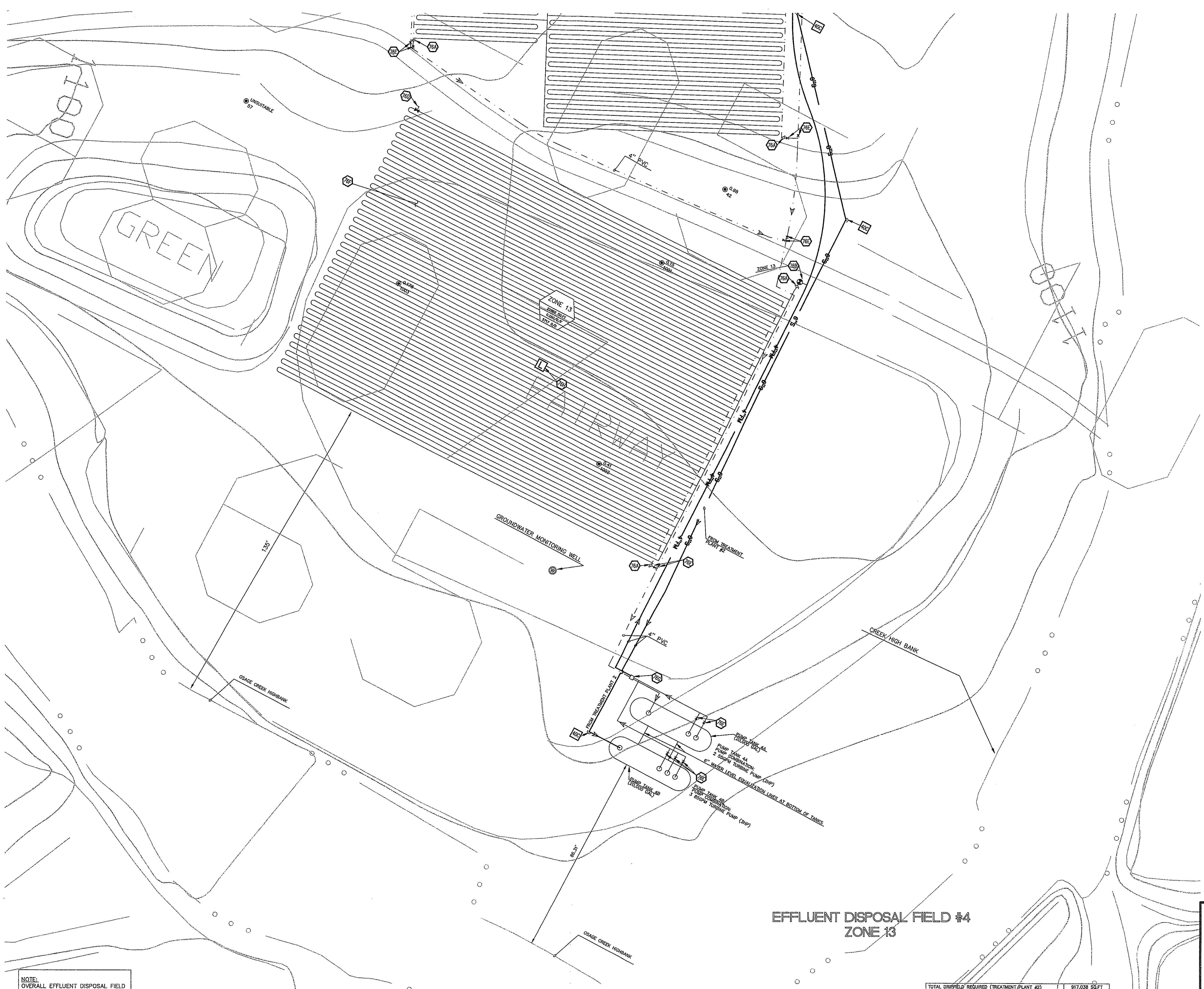
- A. ALL DRIPLINE SHALL BE 1/2" GEOWELL WASTEWATER PG (MODEL NO. WPC16-2-24) WITH DRIPLINE SPACED EVERY 2'.
- B. DRIPLINE AND MANFOLDS SHALL BE INSTALLED 10"-12" BELOW SOIL SURFACE.
- C. ALL CONNECTIONS WITH DRIPLINE SHALL BE MADE WITH LOCKSLIP ADAPTERS. USE OF ADHESIVES ON DRIPLINE IS NOT ALLOWED.
- 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 DRIPLINE 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

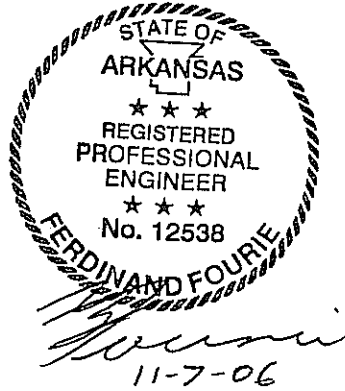
- 76A PRESSURE INDICATING DEVICE
- 76B ZONE VALVE (ZOLLER)
- 76D AIR/VACUUM RELEASE VALVE
- 76E CHECK VALVE
- 76F GEOWELL DRIPLINE (SPACED 2' O.C.)
- 76G ULTRA HEADWORKS BOX W/ GEOWELL FILTER
- 76H FIELD LYMETER
- 76I SOLENOID VALVE FOR FLUSHING
- 76J FIELD LINE LOOP
- 76K PUMP TANK (SEE SPECIFICATIONS)



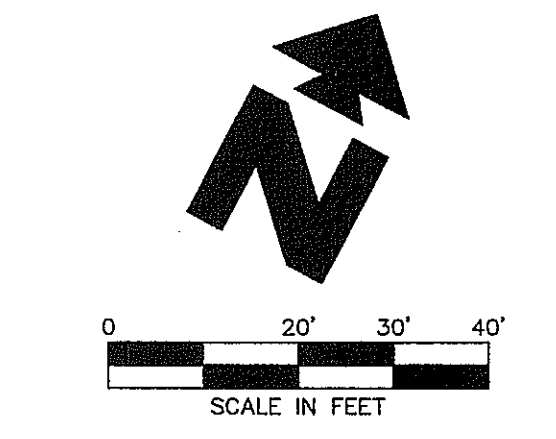
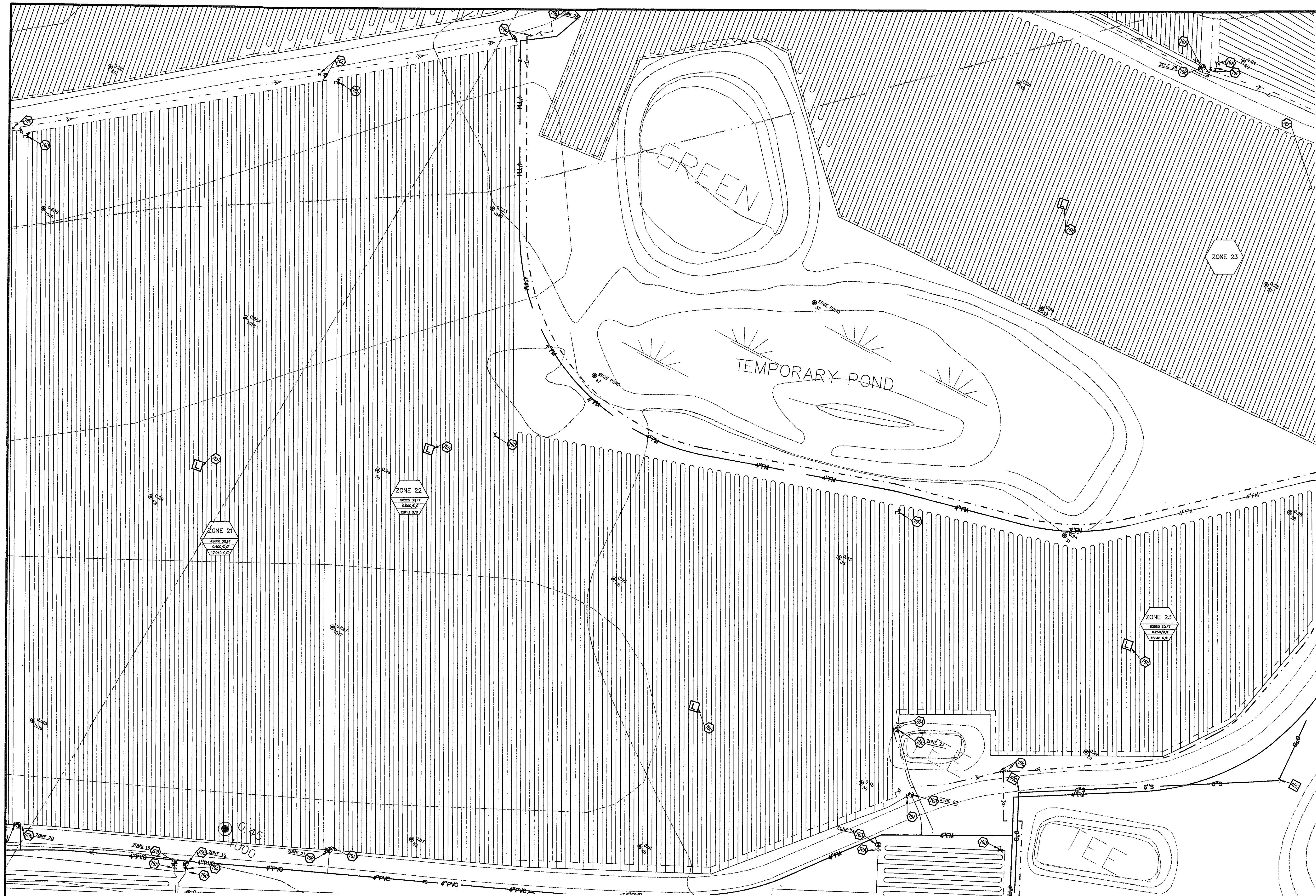
NOTE:
OVERALL EFFLUENT DISPOSAL FIELD
LAYOUT IS ON SHEET 18

EFFLUENT DISPOSAL FIELD #4
ZONE 13

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	DATE	FF	FF	FF
	DATE	EOR	PM	DES	DRW
CAVE SPRINGS WASTEWATER SYSTEM - PHASE 1					
CAVE SPRINGS					
 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	
DATE		11-06-06		SHEET NO.	
10:24 PM		REV5		27 OF 43	
DRIPLINE 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
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" GEOPOLYMER WASTEWATER PC (MODEL NO. WPC16-2-24) WITH DRIPLINE 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 DRP FIELD IS NEARLY FLAT. LAY DRIPLINE AS CLOSE TO PARALLEL WITH CONTOURS AS POSSIBLE.

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

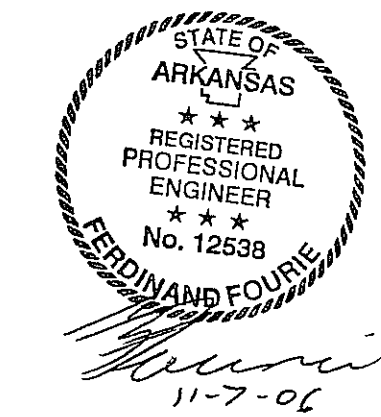
UTILITY DETAILS	
---	81A TEMPORARY DIVERSION DIKE

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 LYSMETER
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

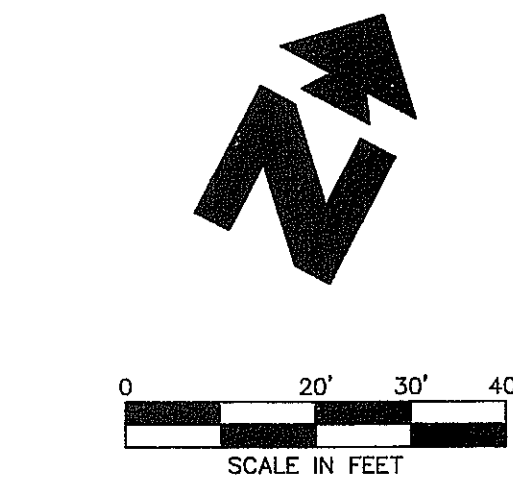
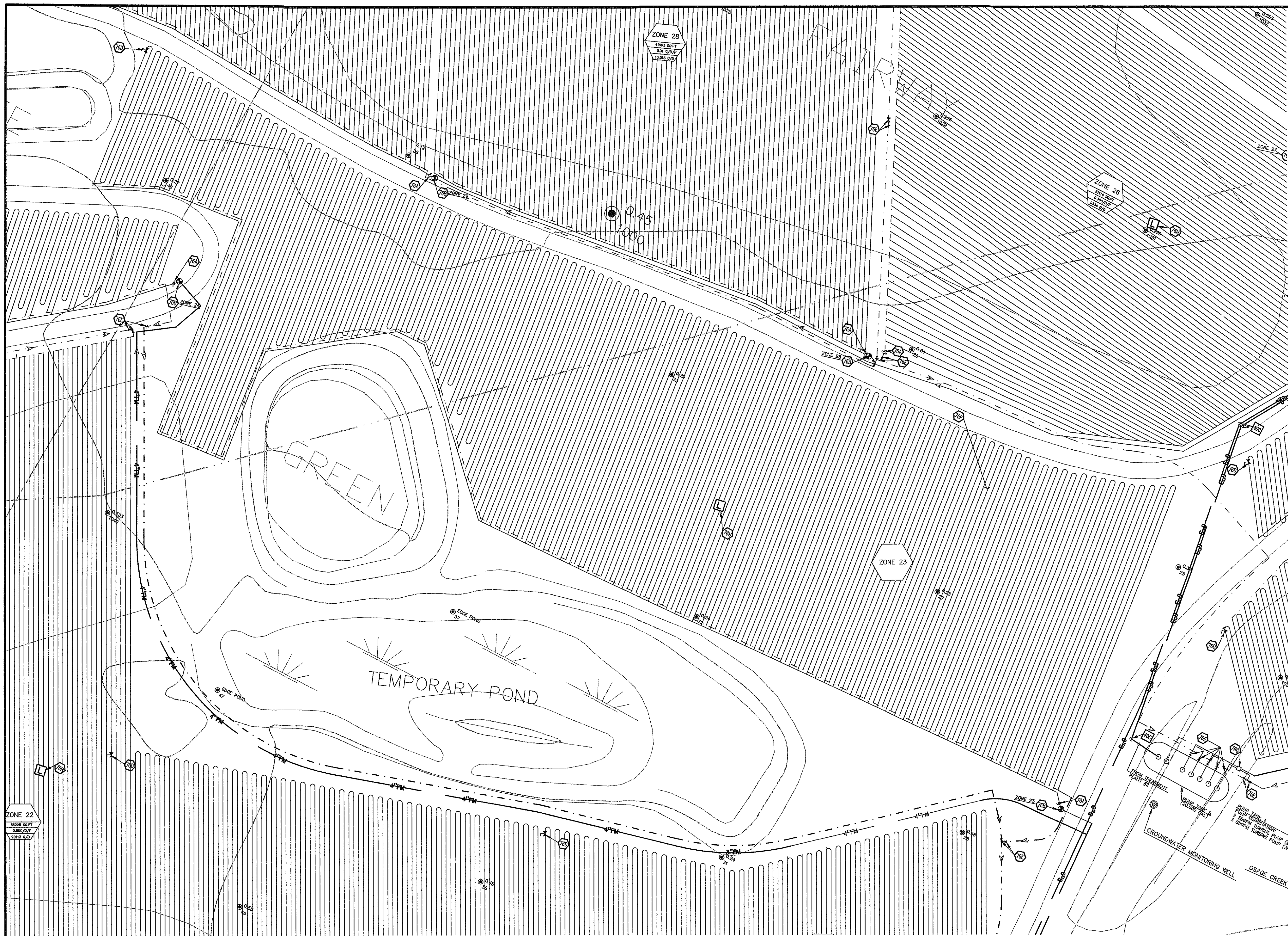
3317 S.W. 1 Street
Bentonville, AR 72712

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

JOB NO.: 20733.0
DWG NAME: 20733LEAC_LREV2

DATE	SHEET NO.
11-06-06	28 OF 43
10:24 PM	REV5

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

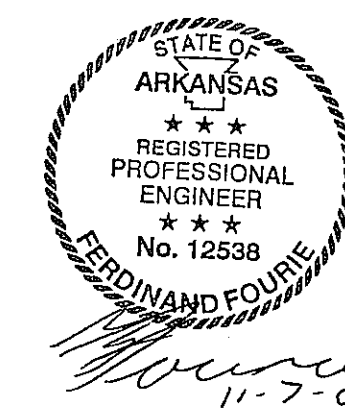
UTILITY NOTES

- 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	

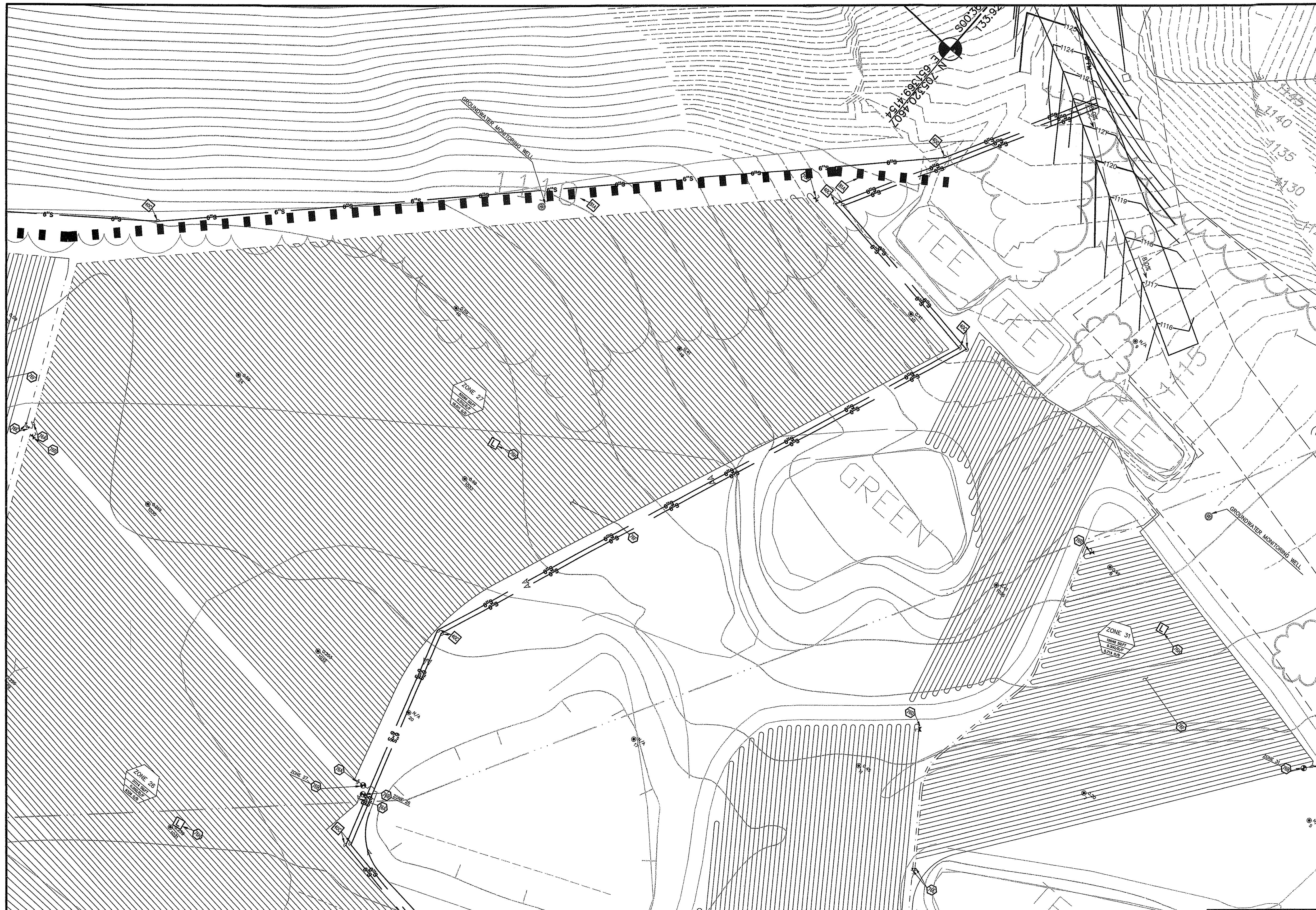
CAVE SPRINGS WASTEWATER SYSTEM - PHASE 1
CAVE SPRINGS ARKANSAS

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: 20733LEAC

DATE 11-06-08 SHEET NO. 29 OF 43
TIME 10:24 PM
REV 5

© 2005 CEI ENGINEERING ASSOCIATES, INC.



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

GENERAL UTILITY NOTES

B. ALL DRIPLINE SHALL BE 1/2" GEORFLOW WASTEFLOW PC (MODEL NO. WFC16-2-24)

C. WITH DRIP EMITTERS SPACED EVERY 2'

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

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

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

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

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

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

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

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

UTILITY DETAILS

- 61A TEMPORARY DIVERSION DIKE

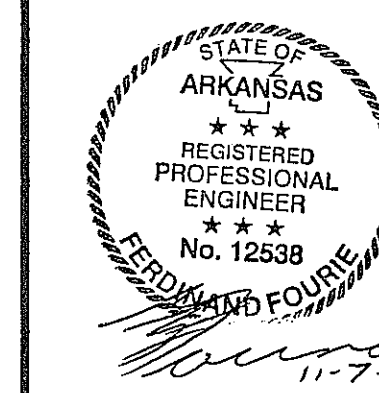
UTILITY NOTES

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

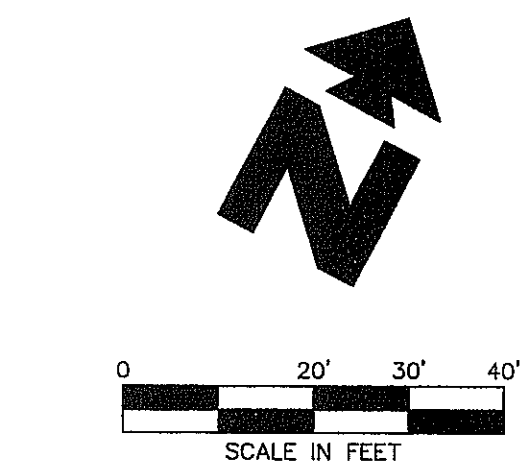
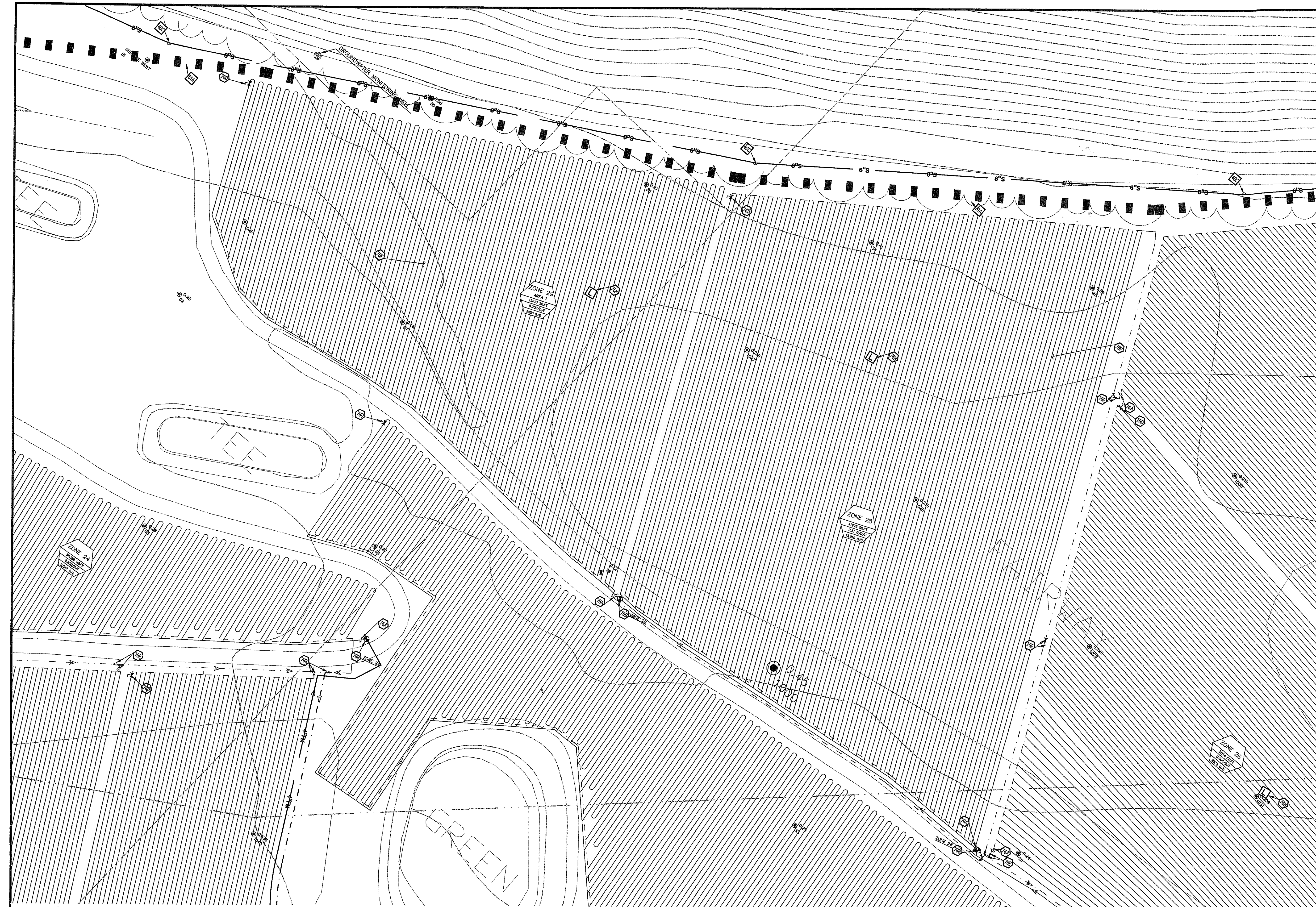
NOTE:
OVERALL EFFLUENT DISPOSAL FIELD
LAYOUT IS ON SHEET 18

ZONE 27, ZONE 31
EFFLUENT DISPOSAL FIELD #5

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		



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

- A. ALL DRIPLINE SHALL BE 1/2" GEOWELL 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

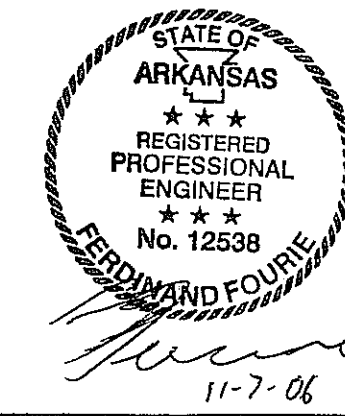
UTILITY NOTES

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

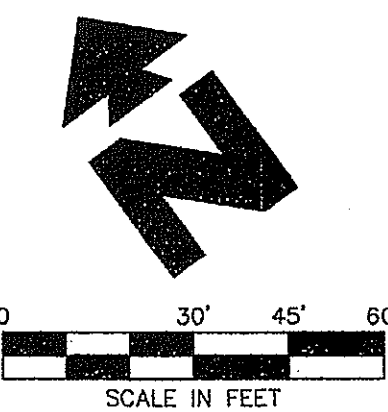
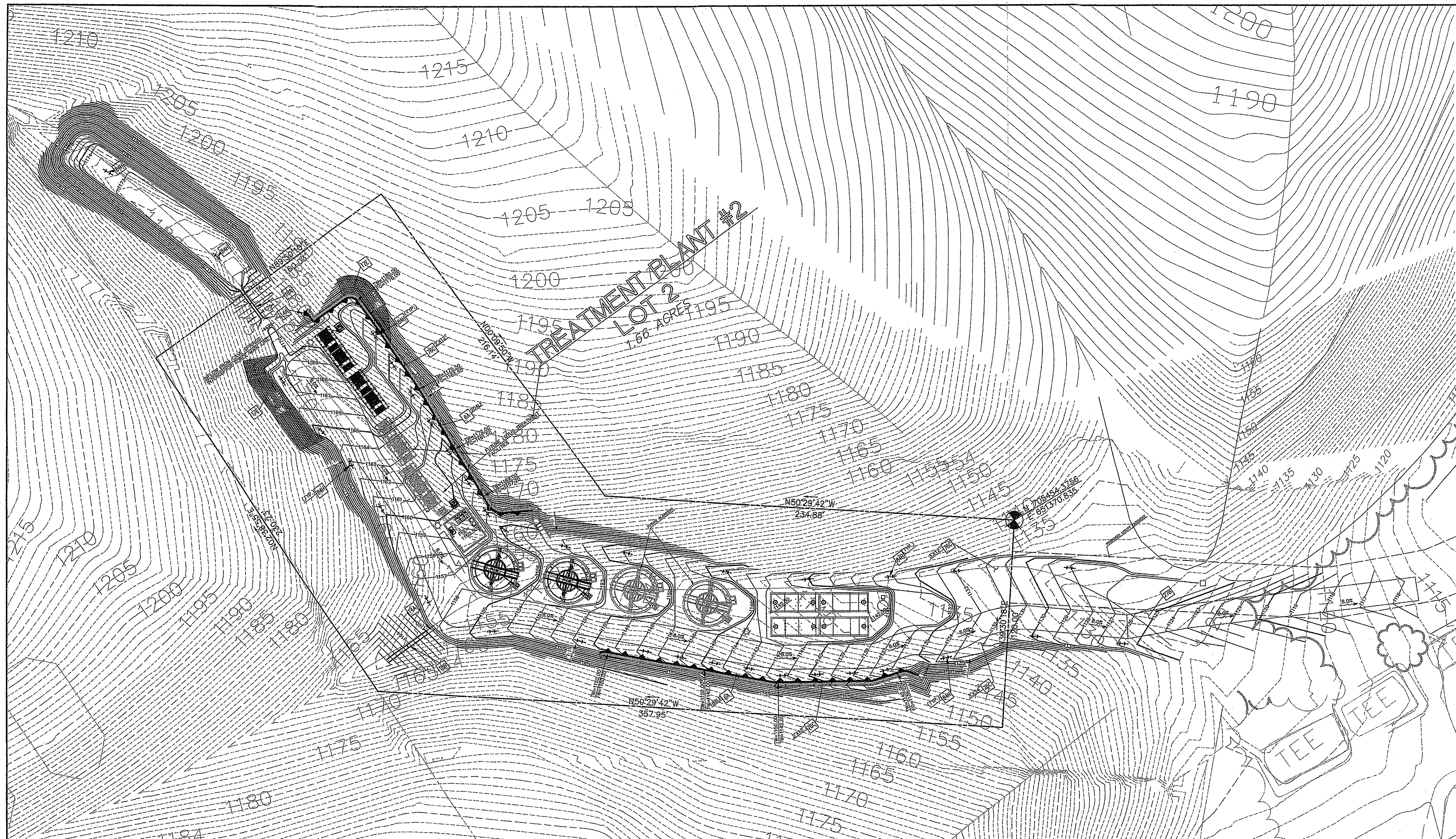
**ZONE 28, ZONE 29
EFFLUENT DISPOSAL FIELD #5**

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 (479) 273-9472 JOB NO.: 20733.0					
Bentonville, AR 72712 FAX (479) 273-0844 DWG NAME: 20733LEAD					
DATE SHEET NO.					
11-06-05 11:24 PM 33 OF 43					
REV5					
DRIP FIELD LAYOUT 15					



LEGEND

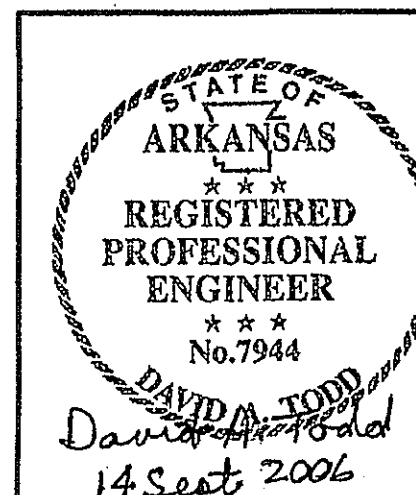
EXISTING	
—	EAST OR ELECTRIC
—	NORTH
—	OVERHEAD
—	SOUTH OR SEWER
—	TELEPHONE
—	UNDERGROUND
—	WEST OR WATER
---	BOUNDARY LINE
---	RIGHT OF WAY LINE
---	STORM DRAIN
---	GAS
---	OVERHEAD ELECTRIC
---	OVERHEAD ELECTRIC AND TELEPHONE
---	OVERHEAD TELEPHONE
---	OVERHEAD TV
---	SEWER
---	UNDERGROUND ELECTRIC
---	UNDERGROUND ELECTRIC AND TELEPHONE
---	UNDERGROUND TELEPHONE
---	UNDERGROUND TV
---	WATER
---	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
---	SOIL BORING LOCATION

PROPOSED	
---	BOUNDARY LINE
---	RIGHT OF WAY LINE
---	GRADE BREAK
---	CONTOUR ELEVATIONS
---	STORM DRAIN
---	LIMITS OF PAVING
---	SPOT ELEVATIONS:
---	TO = TOP OF CURB
---	G = GUTTER

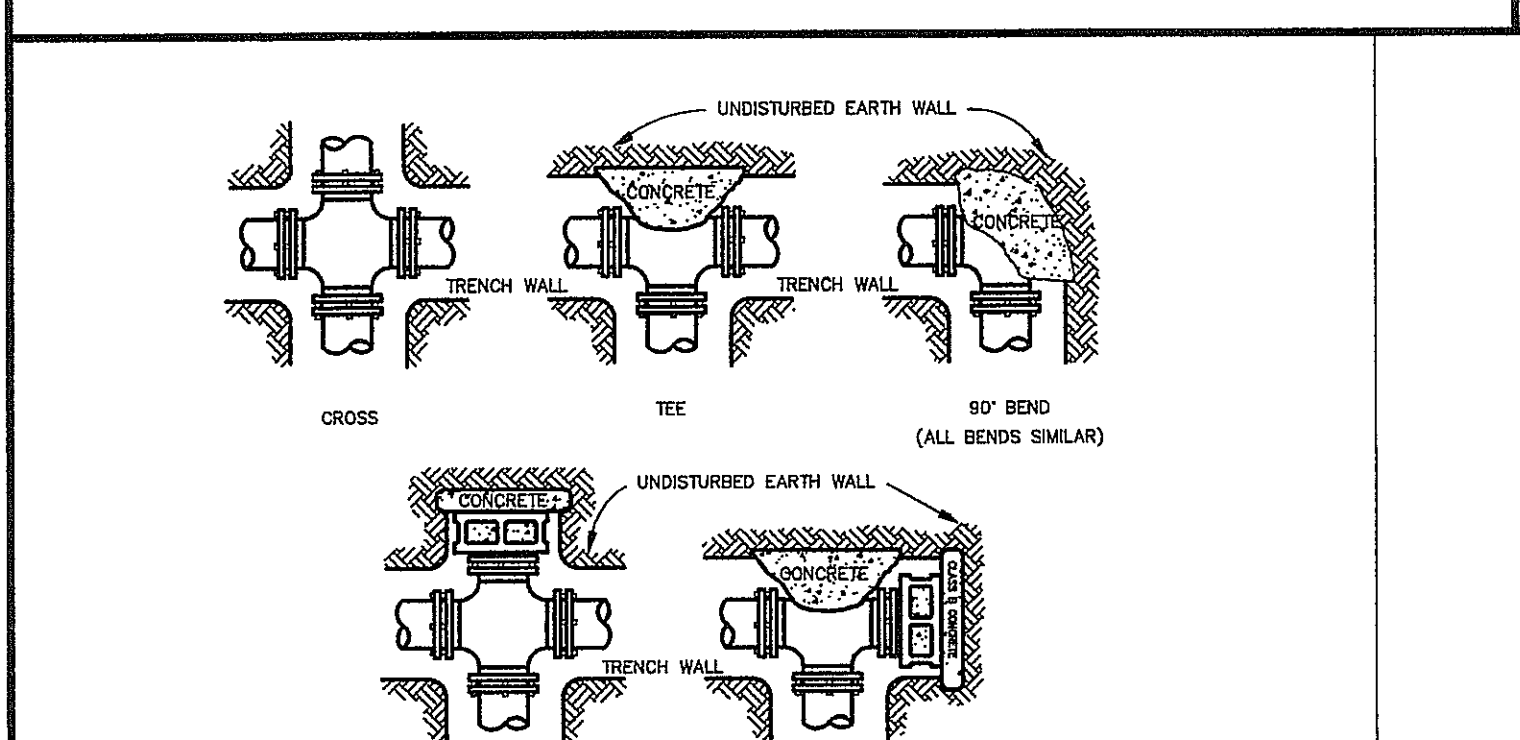
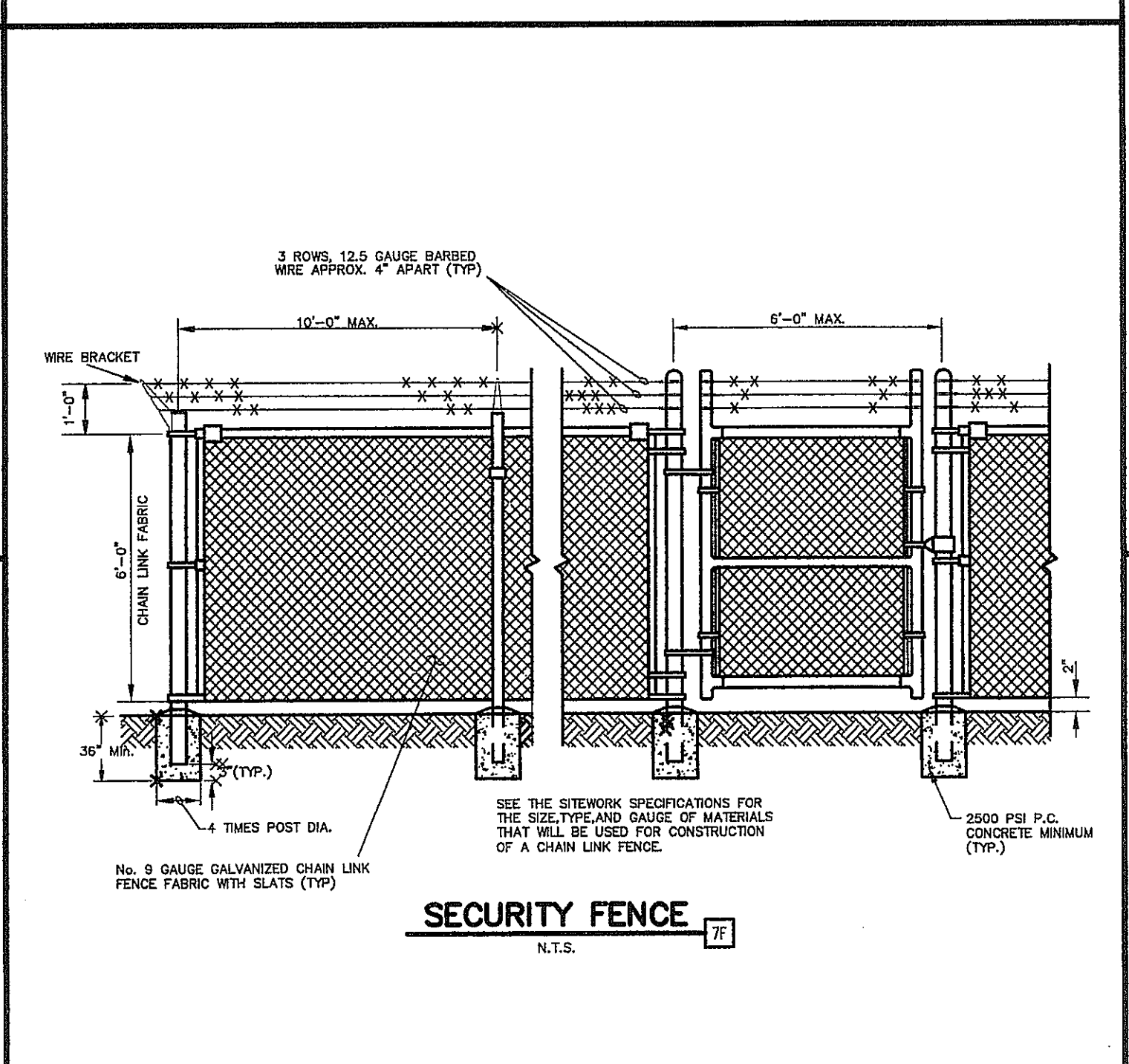
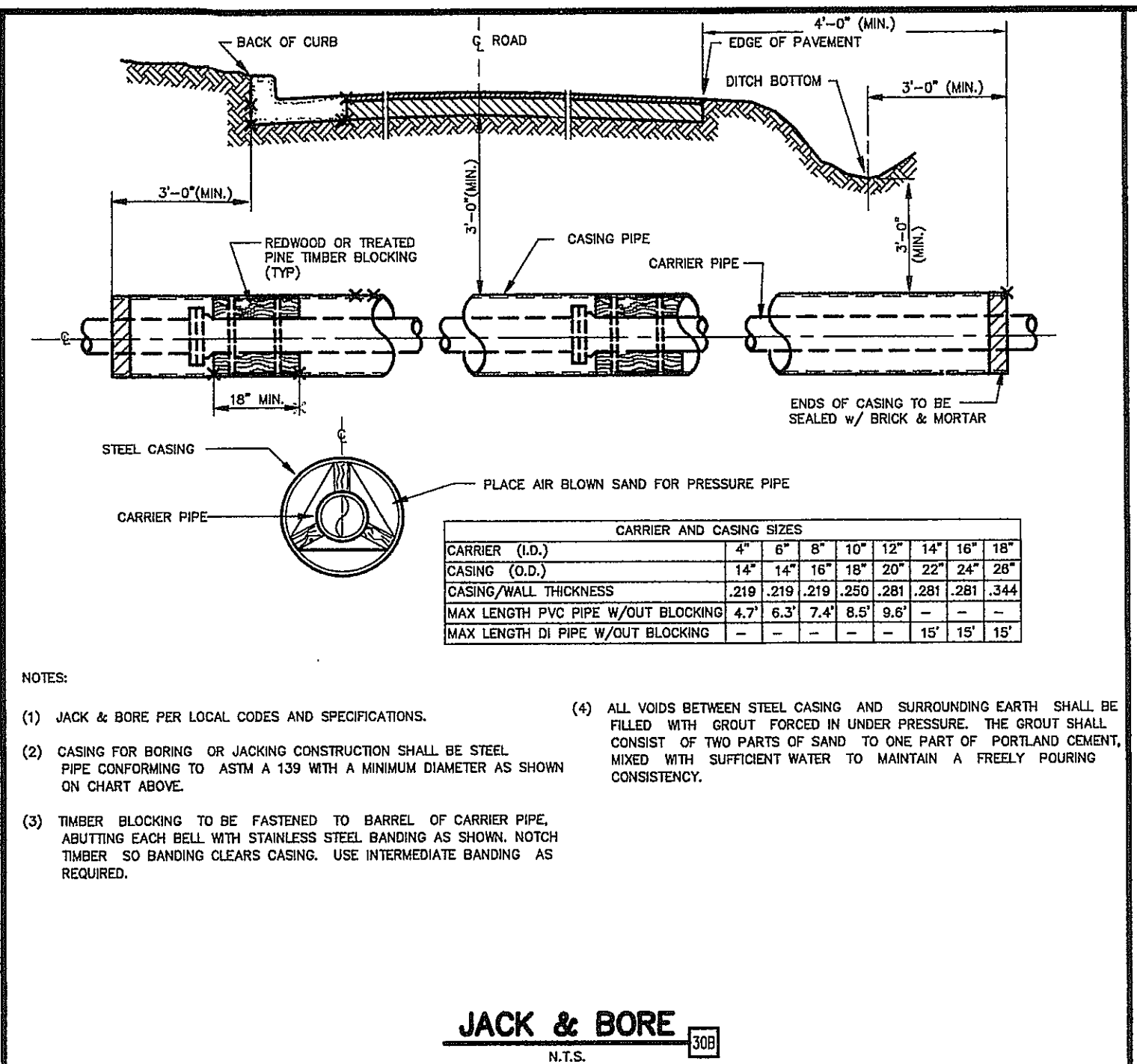
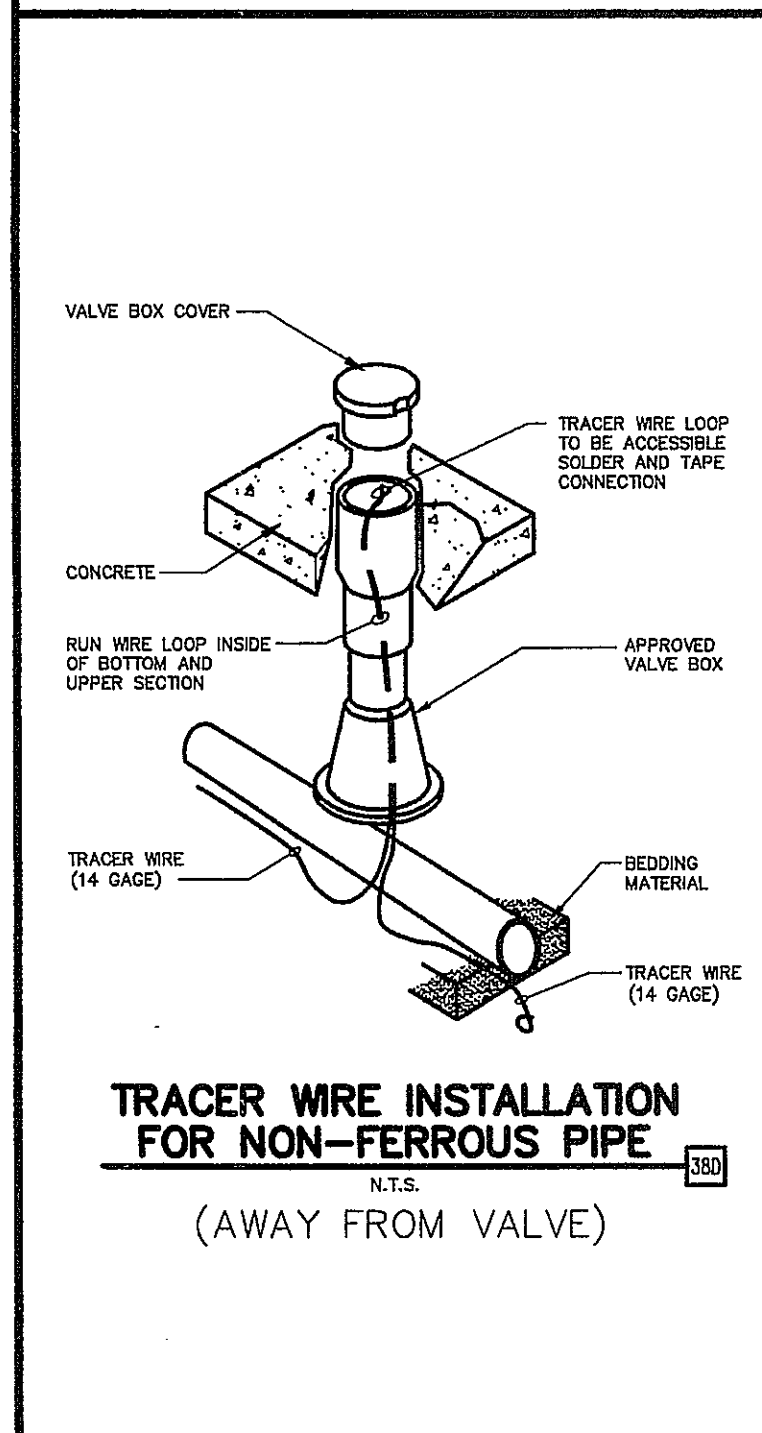
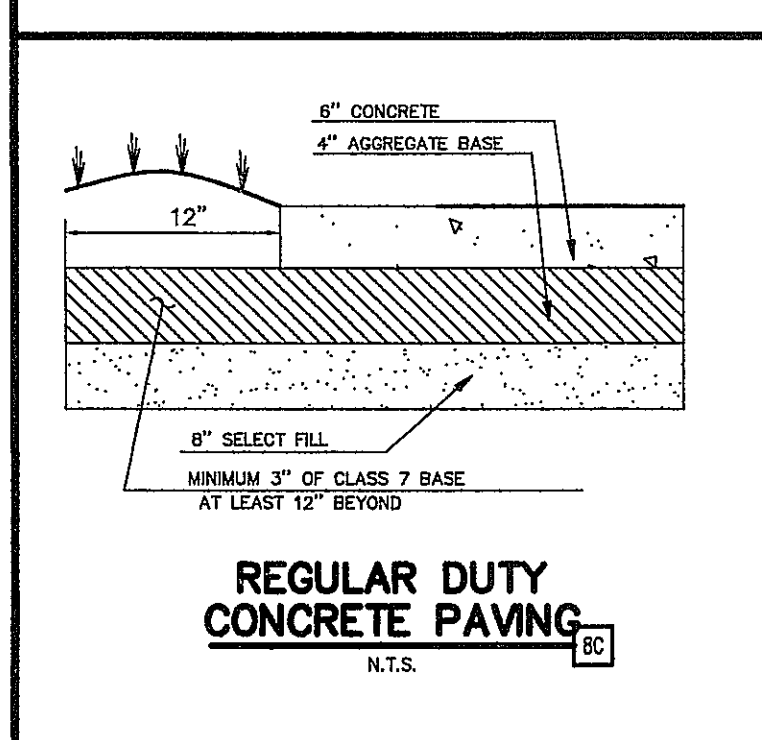
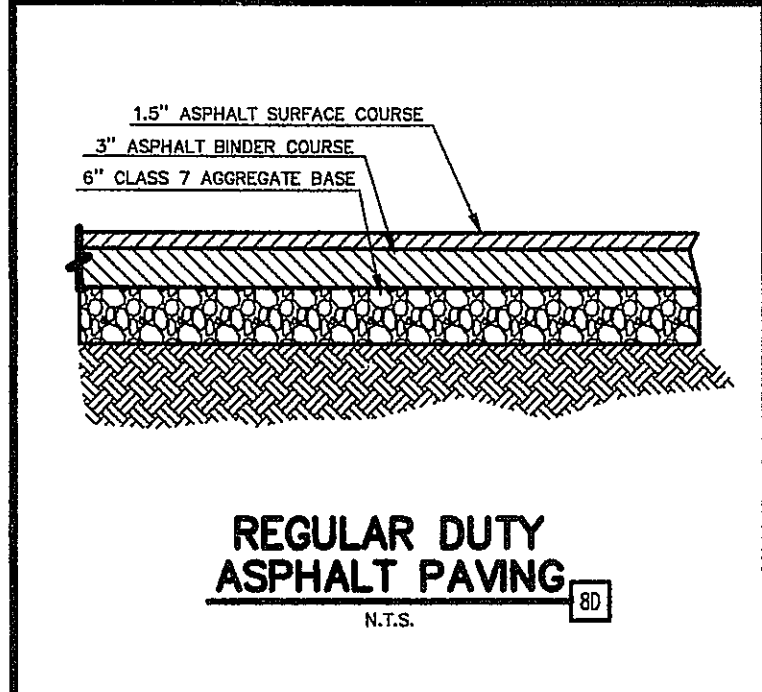
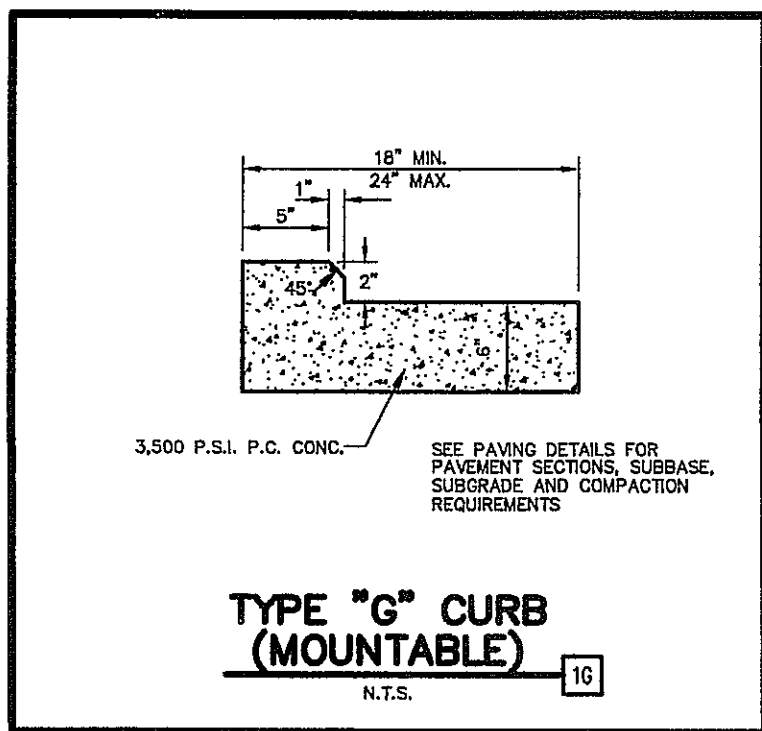
GENERAL GRADING NOTES

- 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.
- 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 FERTILIZER 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.
- 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

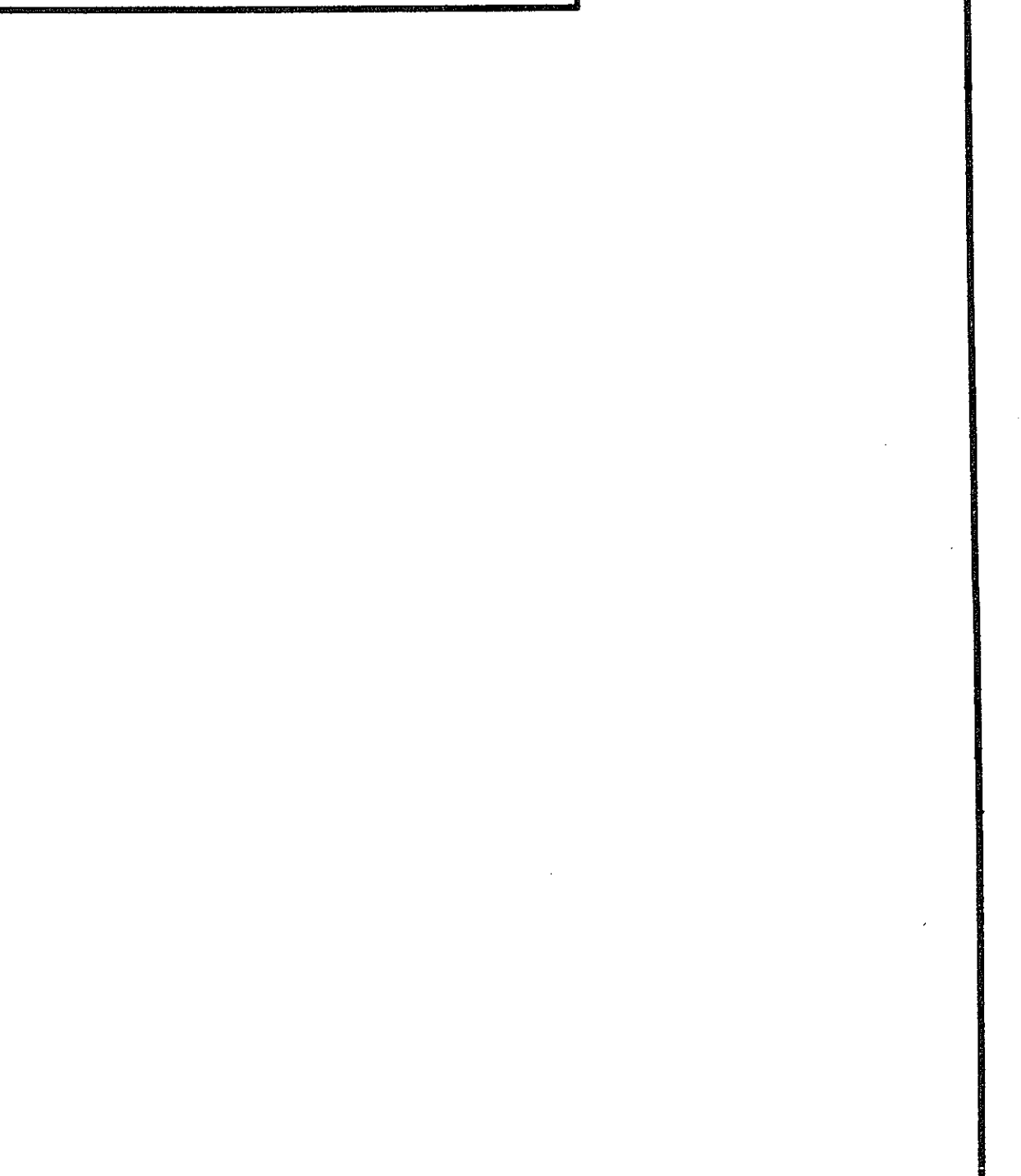
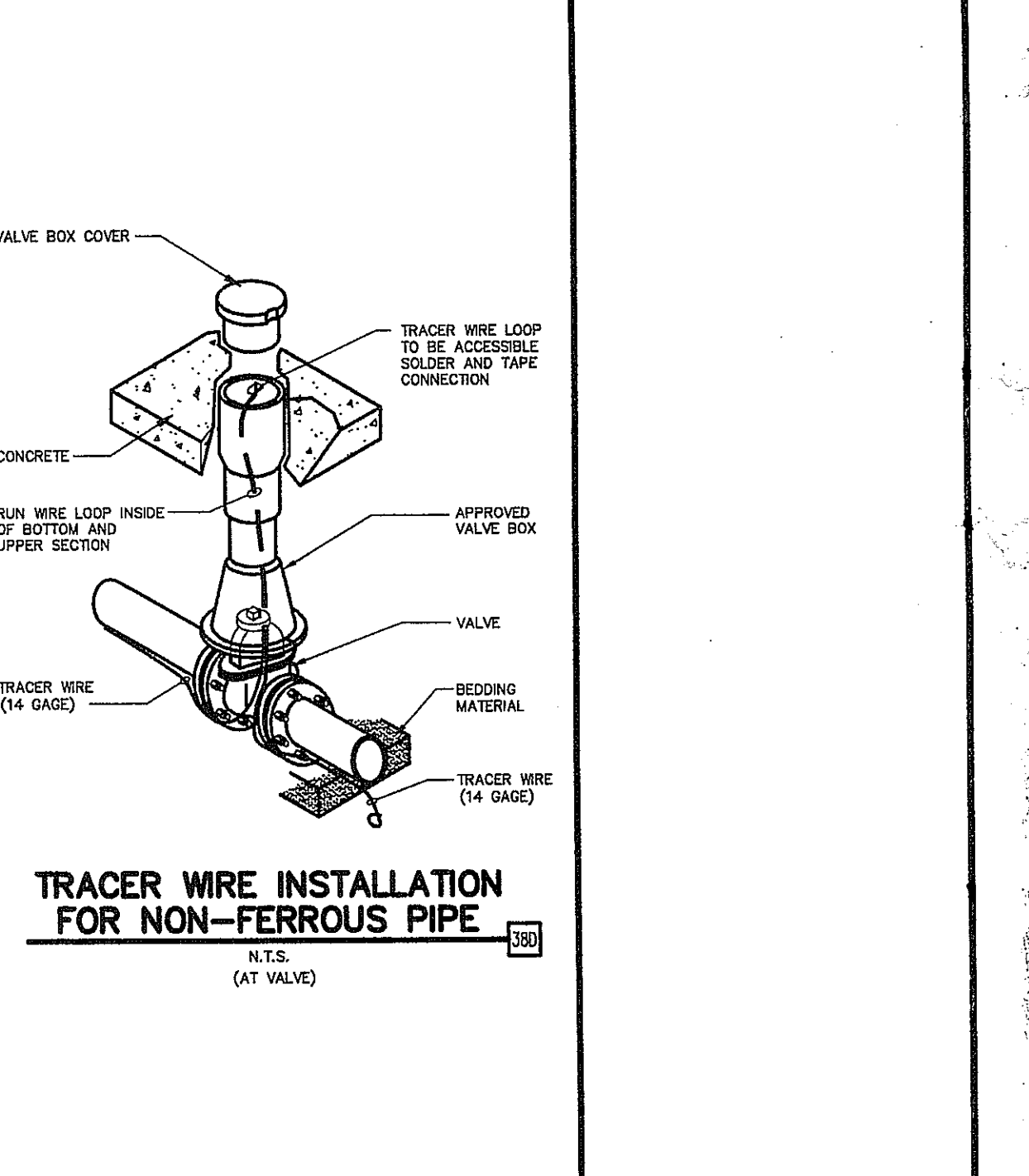
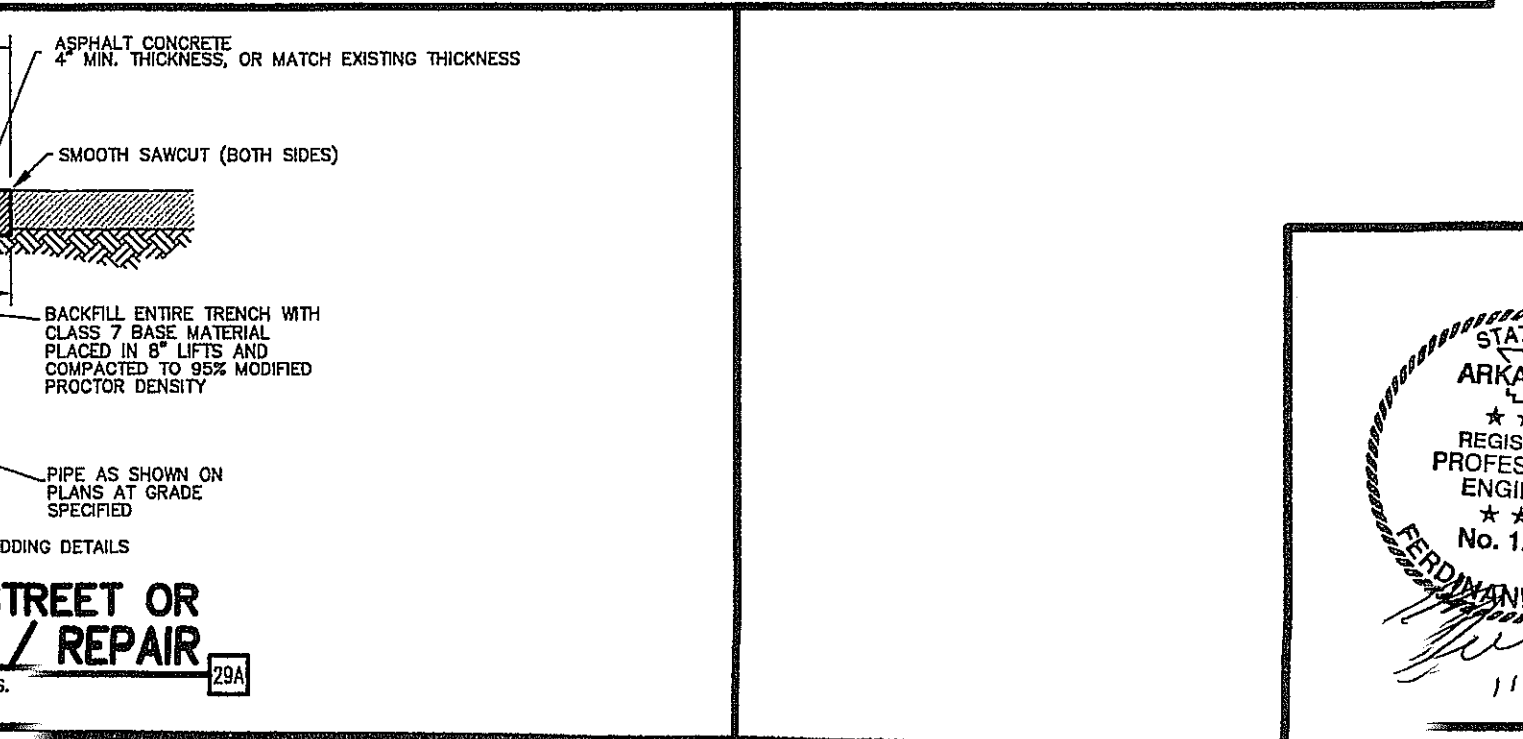
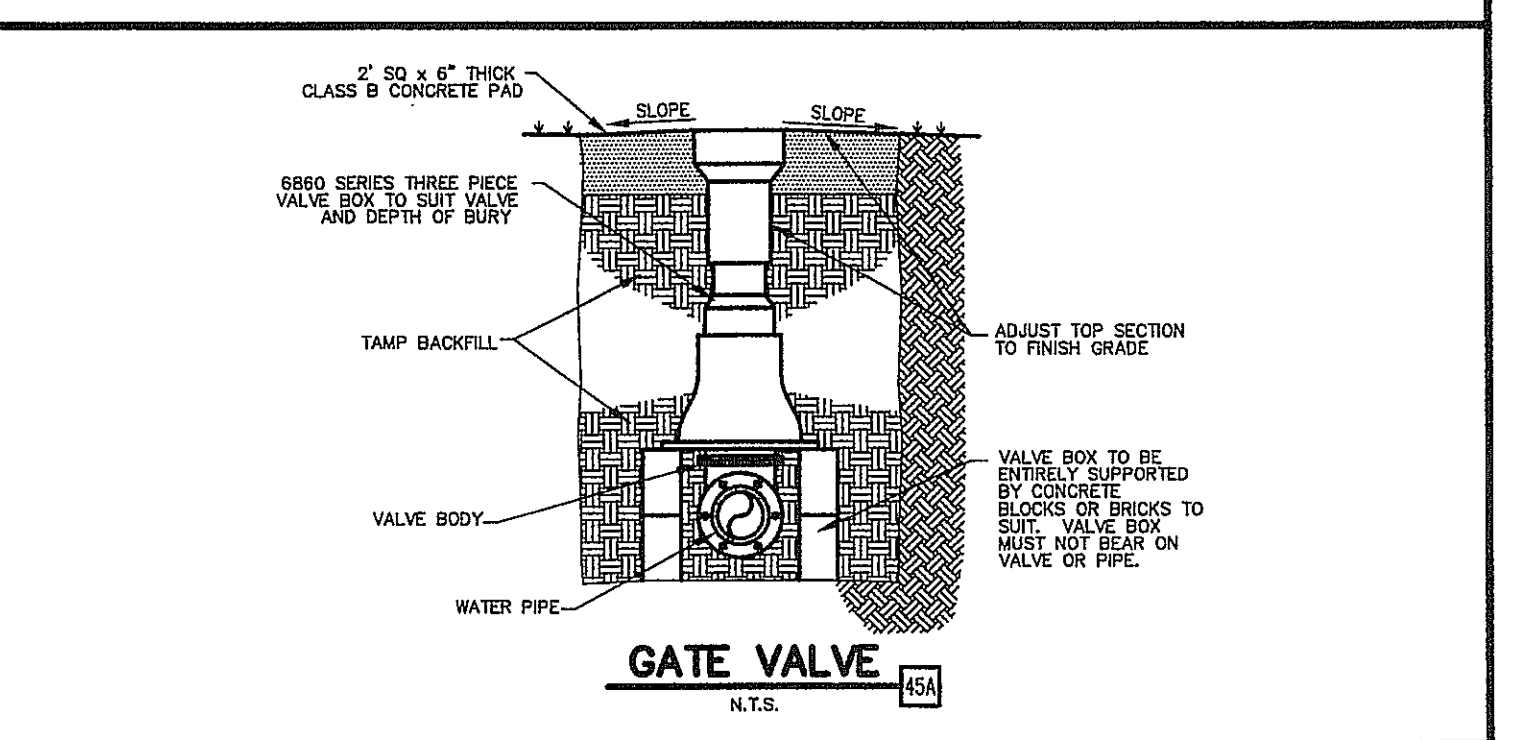
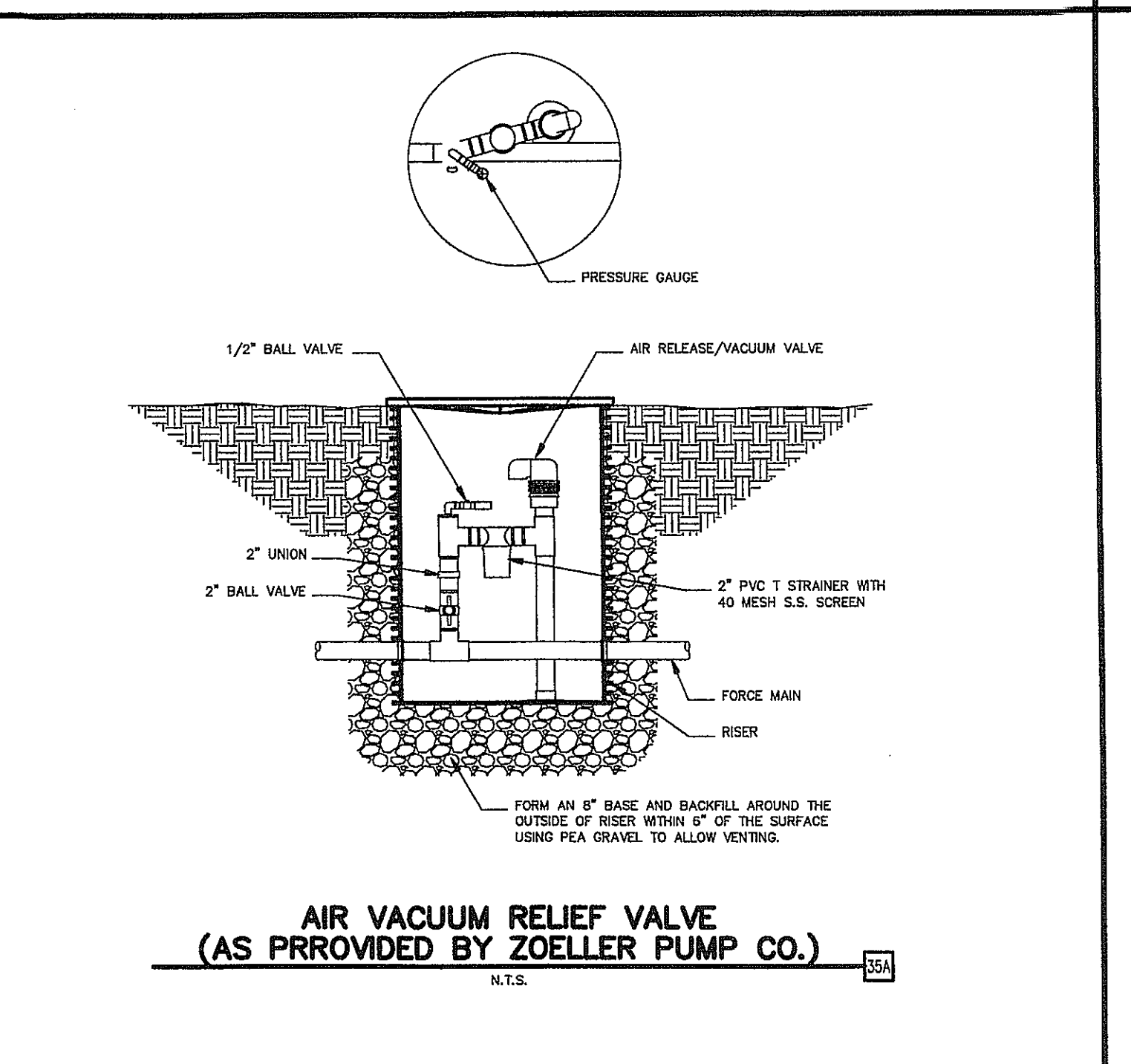
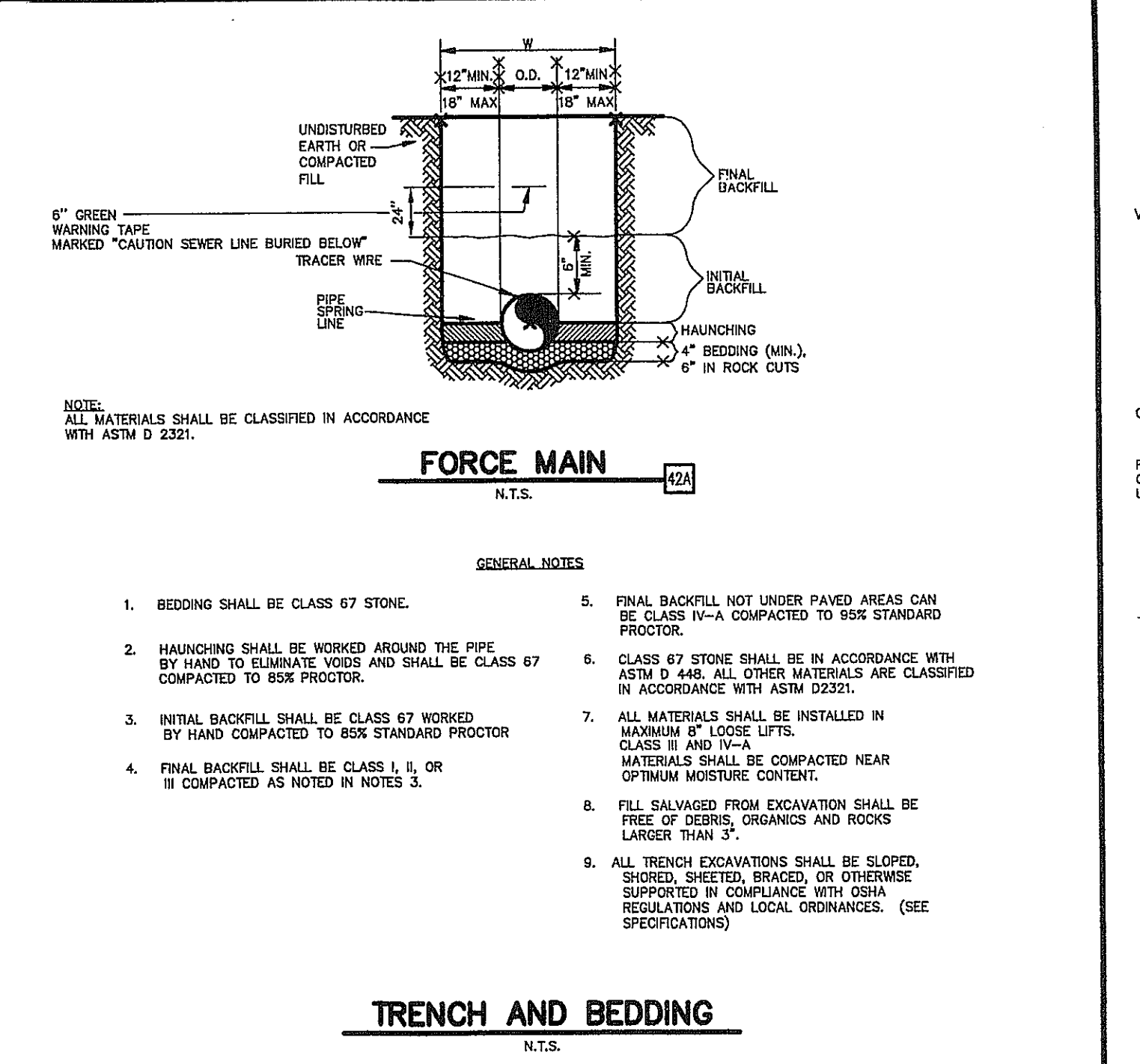
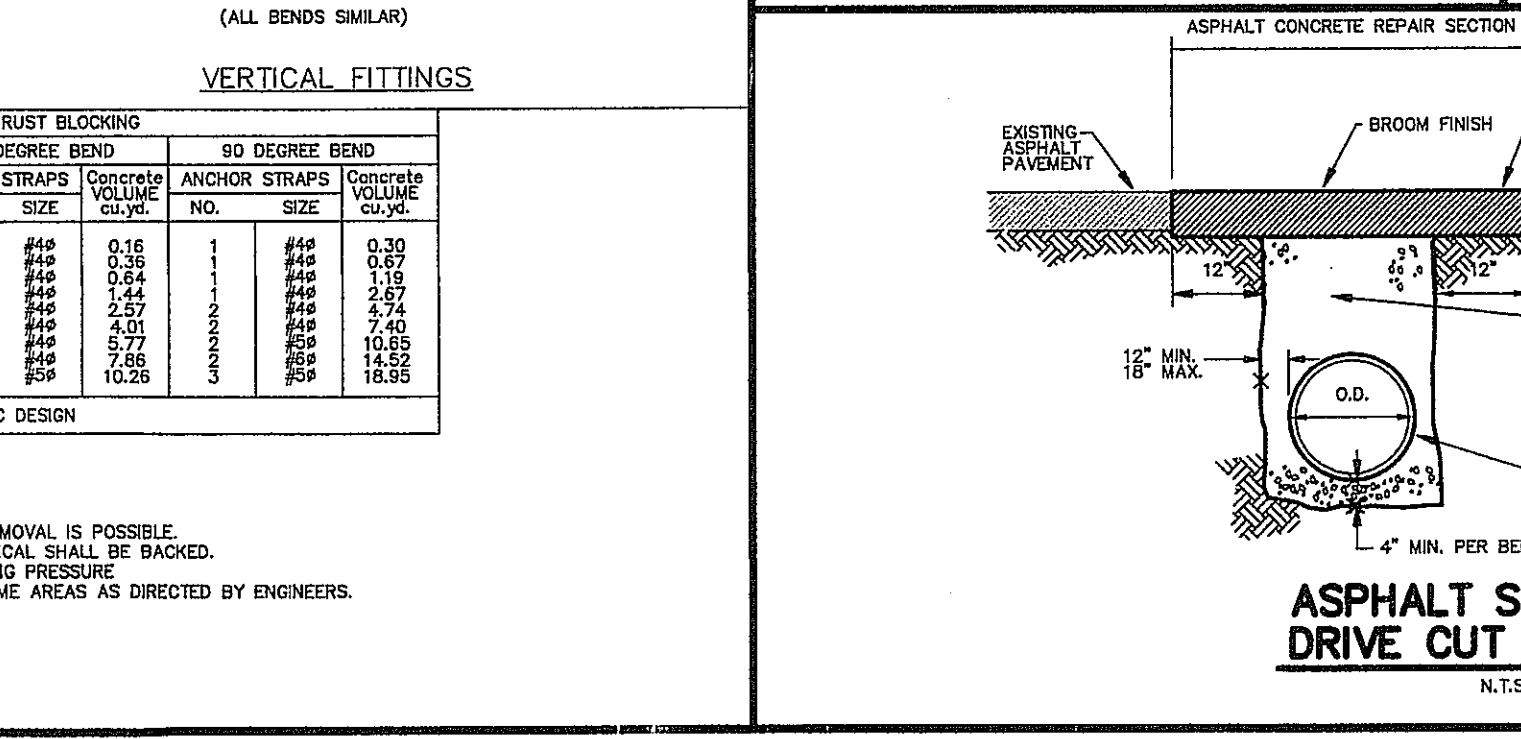
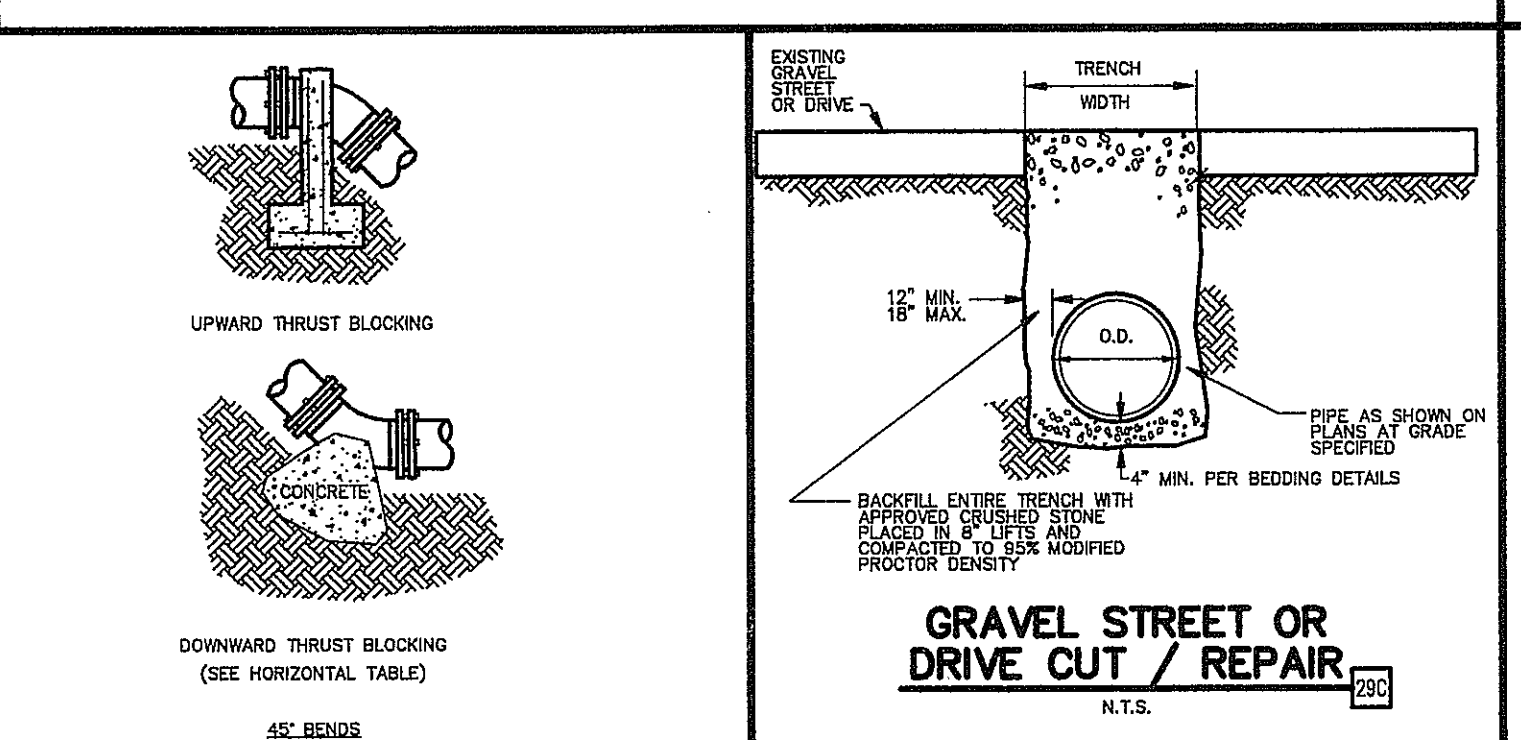
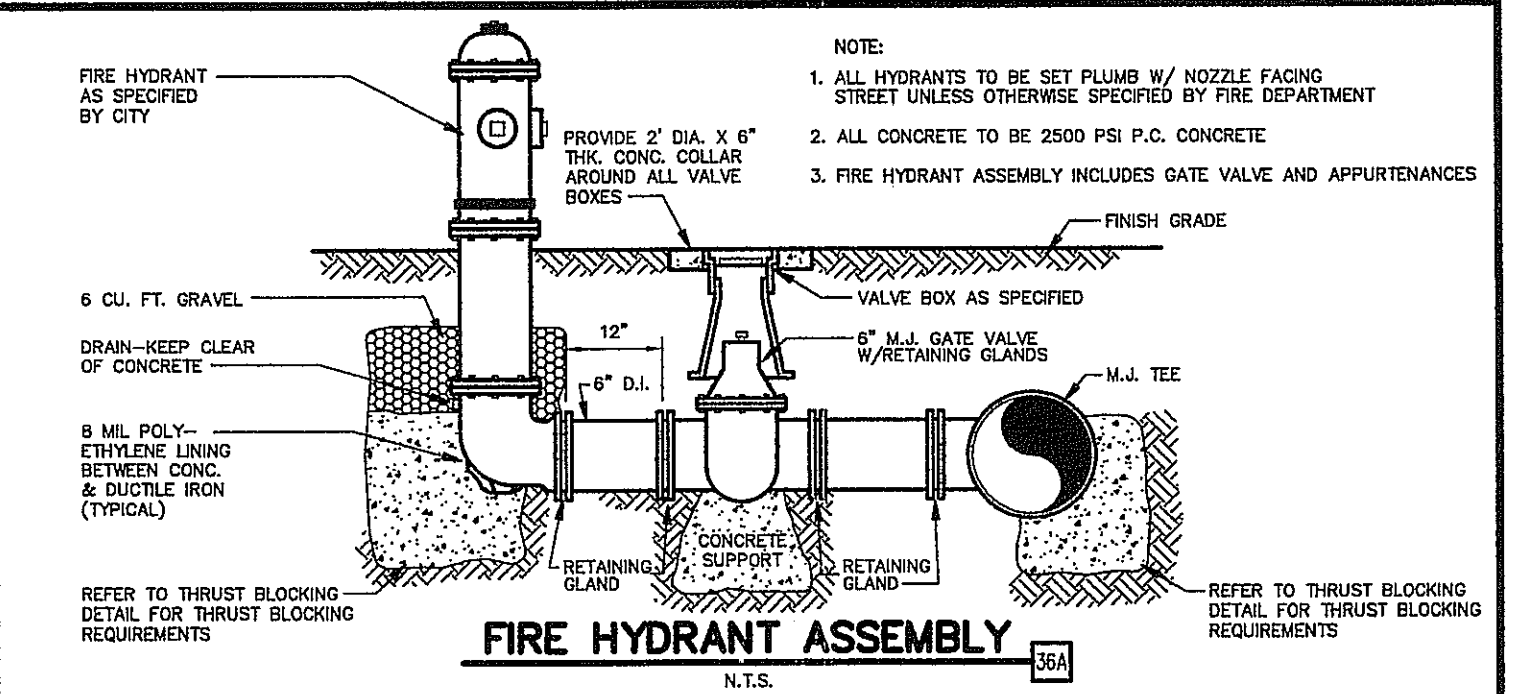
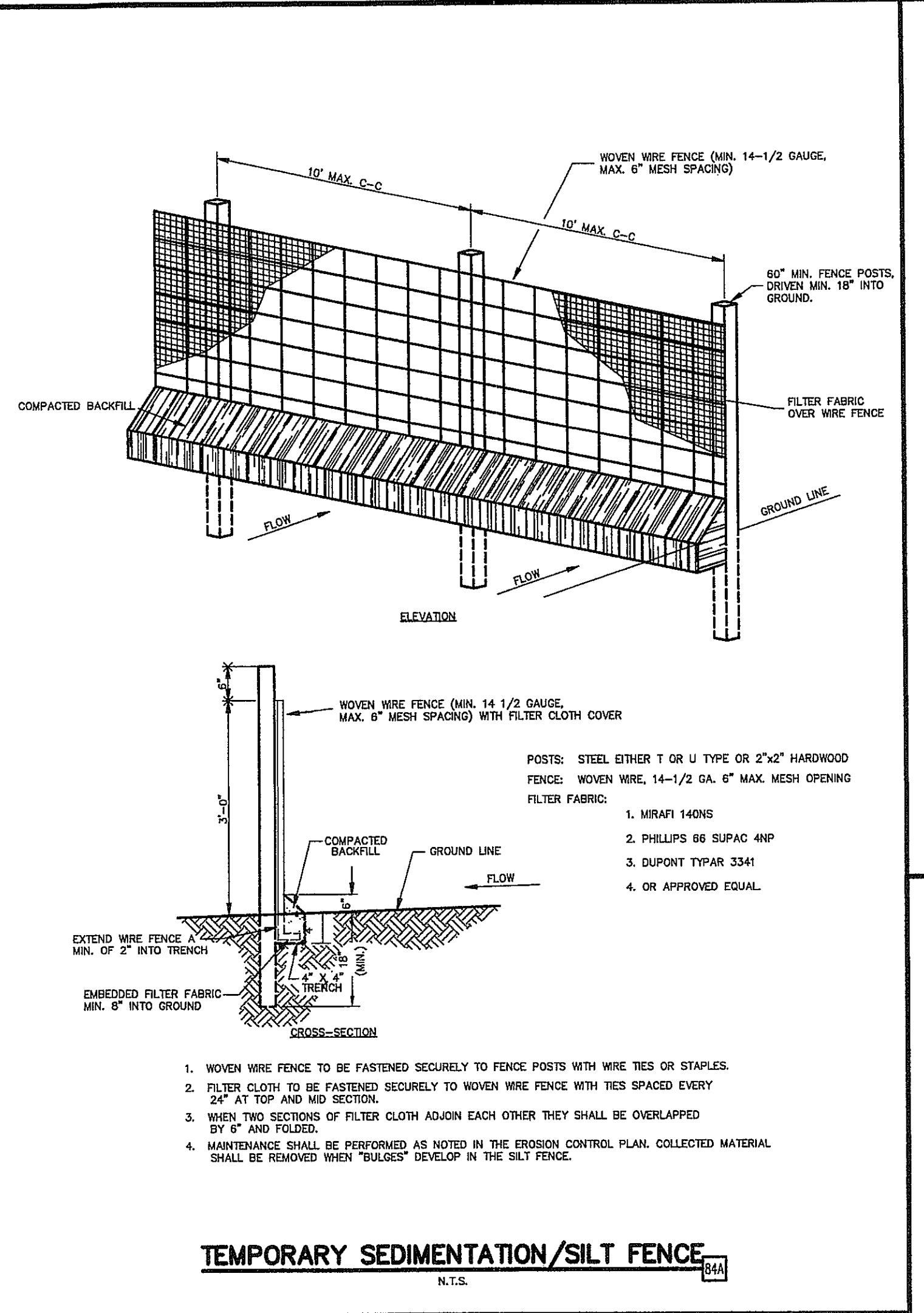


INITIAL DESIGN	7-17-06	DAT	FF	FF	FF
DATE	EOR	PM	DES	DRW	
CAVE SPRINGS WASTEWATER TRANSFER AND TREATMENT SYSTEM					
CEI ENGINEERING ASSOCIATES, INC.					
ENGINEERS PLANNERS SURVEYORS					
3317 S.W. 1 Street Bentonville, AR 72712	(479) 273-0472 FAX (479) 273-0844	JOB NO.: 20733.0 DWG. NAME: 20733.TREATMENTSITE			
GRADING PLAN		DATE	08-24-06	SHEET NO.	
TREATMENT PLANT 2		TIME	3:55 PM	35 OF 43	
		REV	REV4		



HORIZONTAL THRUST BLOCKING TABLE		MINIMUM CONCRETE VOLUMES FOR UPWARD THRUST BLOCKING	
REQUIRED SQ. FT. OF UNDISTURBED EARTH WALL FOR REACTION BACKING	TYPE OF FITTINGS	PIPE SIZE	ANCHOR STRAPS
SIZE	TYPE OF FITTINGS	NO.	SIZE
1"	1"	1	1"
1.5"	1.5"	1	1.5"
2"	2"	1	2"
2.5"	2.5"	1	2.5"
3"	3"	1	3"
3.5"	3.5"	1	3.5"
4"	4"	1	4"
4.5"	4.5"	1	4.5"
5"	5"	1	5"
5.5"	5.5"	1	5.5"
6"	6"	1	6"
6.5"	6.5"	1	6.5"
7"	7"	1	7"
7.5"	7.5"	1	7.5"
8"	8"	1	8"
8.5"	8.5"	1	8.5"
9"	9"	1	9"
9.5"	9.5"	1	9.5"
10"	10"	1	10"
10.5"	10.5"	1	10.5"
11"	11"	1	11"
11.5"	11.5"	1	11.5"
12"	12"	1	12"
12.5"	12.5"	1	12.5"
13"	13"	1	13"
13.5"	13.5"	1	13.5"
14"	14"	1	14"
14.5"	14.5"	1	14.5"
15"	15"	1	15"
15.5"	15.5"	1	15.5"
16"	16"	1	16"
16.5"	16.5"	1	16.5"
17"	17"	1	17"
17.5"	17.5"	1	17.5"
18"	18"	1	18"
18.5"	18.5"	1	18.5"
19"	19"	1	19"
19.5"	19.5"	1	19.5"
20"	20"	1	20"
20.5"	20.5"	1	20.5"
21"	21"	1	21"
21.5"	21.5"	1	21.5"
22"	22"	1	22"
22.5"	22.5"	1	22.5"
23"	23"	1	23"
23.5"	23.5"	1	23.5"
24"	24"	1	24"
24.5"	24.5"	1	24.5"
25"	25"	1	25"
25.5"	25.5"	1	25.5"
26"	26"	1	26"
26.5"	26.5"	1	26.5"
27"	27"	1	27"
27.5"	27.5"	1	27.5"
28"	28"	1	28"
28.5"	28.5"	1	28.5"
29"	29"	1	29"
29.5"	29.5"	1	29.5"
30"	30"	1	30"
30.5"	30.5"	1	30.5"
31"	31"	1	31"
31.5"	31.5"	1	31.5"
32"	32"	1	32"
32.5"	32.5"	1	32.5"
33"	33"	1	33"
33.5"	33.5"	1	33.5"
34"	34"	1	34"
34.5"	34.5"	1	34.5"
35"	35"	1	35"
35.5"	35.5"	1	35.5"
36"	36"	1	36"
36.5"	36.5"	1	36.5"
37"	37"	1	37"
37.5"	37.5"	1	37.5"
38"	38"	1	38"
38.5"	38.5"	1	38.5"
39"	39"	1	39"
39.5"	39.5"	1	39.5"
40"	40"	1	40"
40.5"	40.5"	1	40.5"
41"	41"	1	41"
41.5"	41.5"	1	41.5"
42"	42"	1	42"
42.5"	42.5"	1	42.5"
43"	43"	1	43"
43.5"	43.5"	1	43.5"
44"	44"	1	44"
44.5"	44.5"	1	44.5"
45"	45"	1	45"
45.5"	45.5"	1	45.5"
46"	46"	1	46"
46.5"	46.5"	1	46.5"
47"	47"	1	47"
47.5"	47.5"	1	47.5"
48"	48"	1	48"
48.5"	48.5"	1	48.5"
49"	49"	1	49"
49.5"	49.5"	1	49.5"
50"	50"	1	50"
50.5"	50.5"	1	50.5"
51"	51"	1	51"
51.5"	51.5"	1	51.5"
52"	52"	1	52"
52.5"	52.5"	1	52.5"
53"	53"	1	53"
53.5"	53.5"	1	53.5"
54"	54"	1	54"
54.5"	54.5"	1	54.5"
55"	55"	1	55"
55.5"	55.5"	1	55.5"
56"	56"	1	56"
56.5"	56.5"	1	56.5"
57"	57"	1	57"
57.5"	57.5"	1	57.5"
58"	58"	1	58"
58.5"	58.5"	1	58.5"
59"	59"	1	59"
59.5"	59.5"	1	59.5"
60"	60"	1	60"
60.5"	60.5"	1	60.5"
61"	61"	1	61"
61.5"	61.5"	1	61.5"
62"	62"	1	62"
62.5"	62.5"	1	62.5"
63"	63"	1	63"
63.5"	63.5"	1	63.5"
64"	64"	1	64"
64.5"	64.5"	1	64.5"
65"	65"	1	65"
65.5"	65.5"	1	65.5"
66"	66"	1	66"
66.5"	66.5"	1	66.5"
67"	67"	1	67"
67.5"	67.5"	1	67.5"
68"	68"	1	68"
68.5"	68.5"	1	68.5"
69"	69"	1	69"
69.5"	69.5"	1	69.5"
70"	70"	1	70"
70.5"	70.5"	1	70.5"
71"	71"	1	71"
71.5"	71.5"	1	71.5"
72"	72"	1	72"
72.5"	72.5"	1	72.5"
73"	73"	1	73"
73.5"	73.5"	1	73.5"
74"	74"	1	74"
74.5"	74.5"	1	74.5"
75"	75"	1	75"
75.5"	75.5"	1	75.5"
76"	76"	1	76"
76.5"	76.5"	1	76.5"
77"	77"	1	77"
77.5"	77.5"	1	77.5"
78"	78"	1	78"
78.5"	78.5"	1	78.5"
79"	79"	1	79"
79.5"	79.5"	1	79.5"
80"	80"	1	80"
80.5"	80.5"	1	80.5"
81"	81"	1	81"
81.5"	81.5"	1	81.5"
82"	82"	1	82"
82.5"	82.5"	1	82.5"
83"	83"	1	83"
83.5"	83.5"	1	83.5"
84"	84"	1	84"
84.5"	84.5"	1	84.5"
85"	85"	1	85"
85.5"	85.5"	1	85.5"
86"	86"	1	86"
86.5"	86.5"	1	86.5"
87"	87"	1	87"
87.5"	87.5"	1	87.5"
88"	88"	1	88"
88.5"	88.5"	1	88.5"
89"	89"	1	89"
89.5"	89.5"	1	89.5"
90"	90"	1	90"
90.5"	90.5"	1	90.5"
91"	91"	1	91"
91.5"	91.5"	1	91.5"
92"	92"	1	92"
92.5"	92.5"	1	92.5"
93"	93"	1	93"
93.5"	93.5"	1	93.5"
94"	94"	1	94"
94.5"	94.5"	1	94.5"
95"	95"	1	95"
95.5"	95.5"	1	95.5"
96"	96"	1	96"
96.5"	96.5"	1	96.5"
97"	97"	1	97"
97.5"	97.5"	1	97.5"
98"	98"	1	98"
98.5"	98.5"	1	98.5"
99"	99"	1	99"
99.5"	99.5"	1	99.5"
100"	100"	1	100"

NOTES:
1. DO NOT COVER BELLS OR FLANGES WITH CONCRETE.
2. WRAP ALL FITTINGS WITH MESH.
3. BACK ALL TEES ACCORDING TO SIZE OF BRANCH.
4. BACKING FUTURE LINE EXTENSIONS SHALL BE SUCH THAT LATER REMOVAL IS POSSIBLE.
5. ALL BENDS WHERE FITTINGS ARE USED, BOTH HORIZONTAL OR VERTICAL SHALL BE BACKED.
6. REACTION BACKING TABLE IS BASED ON 100 P.S.I. AND 3000 LB. BEARING PRESSURE OF 2,500 LB./sq. ft. ADDITIONAL BACKING MAY BE REQUIRED IN SOME AREAS AS DIRECTED BY ENGINEERS.
7. ALL CONCRETE SHALL BE 2500 P.S.I.



INITIAL DESIGN 10-18-05 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: 20733DET

DATE 08-14-06 SHEET NO. 36 OF 43
REV 6

11-7-06

A. 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/MANUFACTURE SHALL PROVIDE WALL DESIGN AND ANALYSES UTILIZING SRW COMPUTER SOFTWARE.

B. 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.

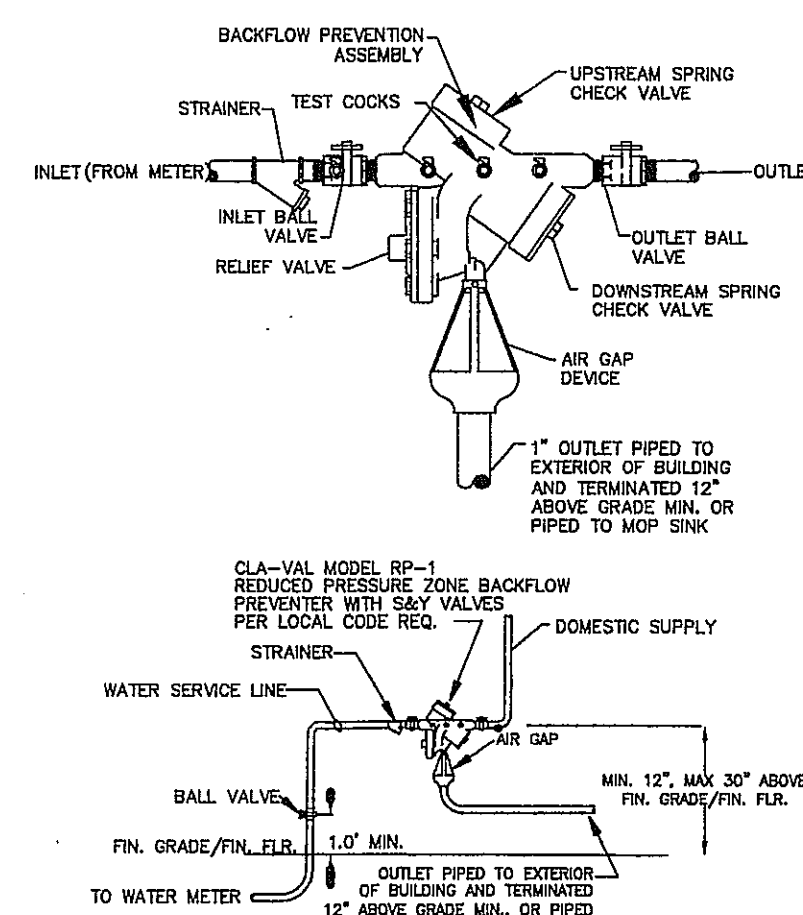
C. SUBMITTAL PACKAGES TO OWNER SHALL INCLUDE THE FOLLOWING:

- SEGMENTAL RETAINING WALL** 6A

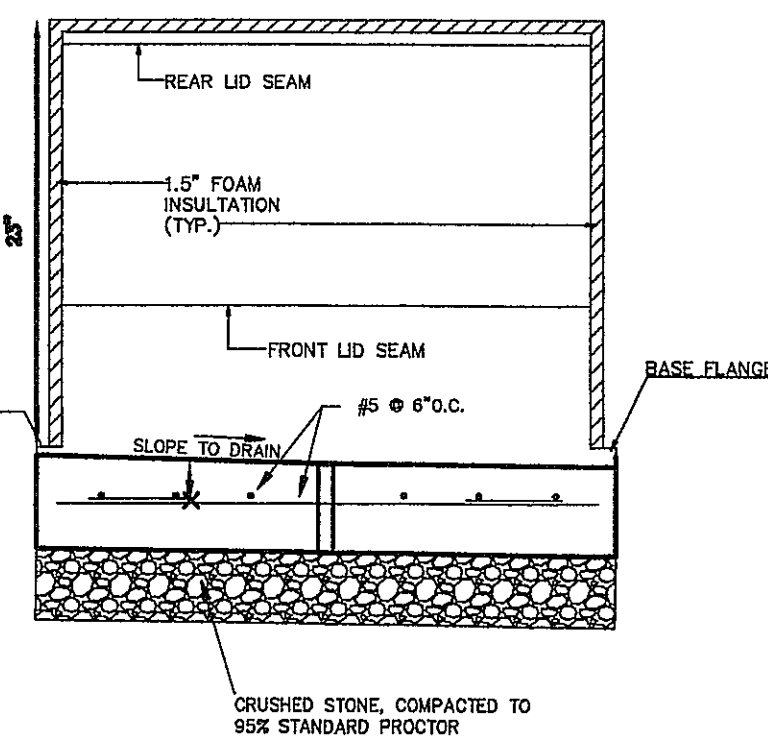
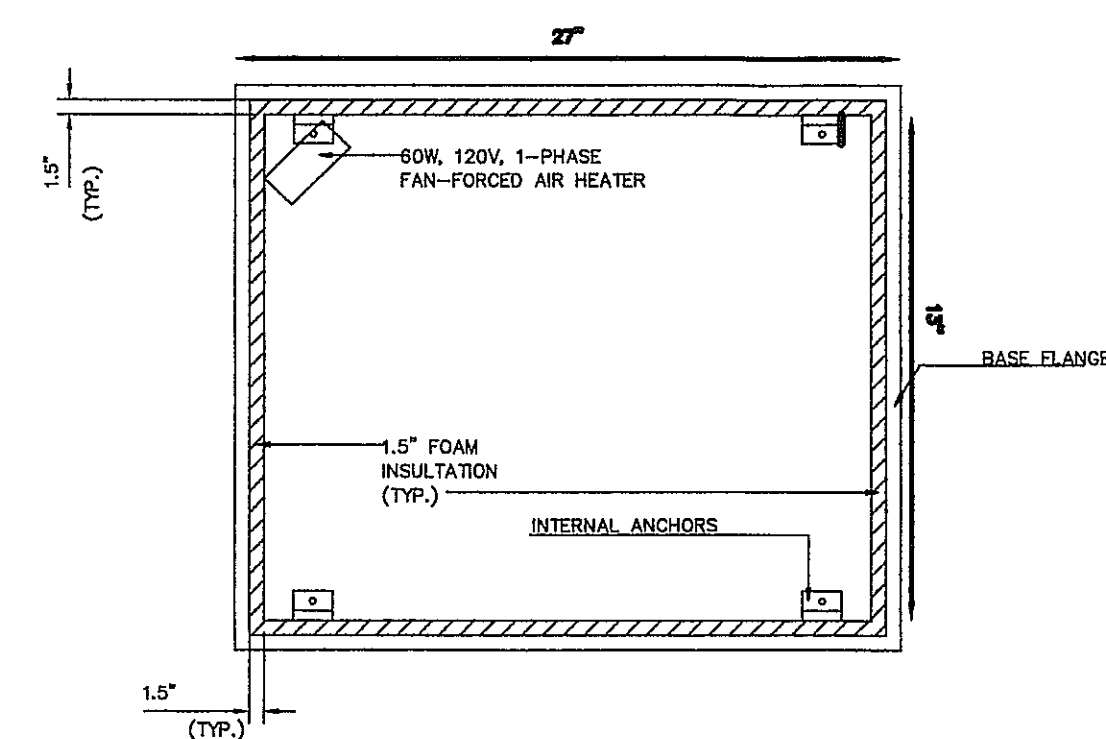


1. BEDDING SHALL BE CLASS I-A WORKED BY HAND. IF GROUNDWATER IS ANTICIPATED, THEN BEDDING SHALL BE CLASS II OR CLASS II COMPACTED TO 85% STANDARD PROCTOR. (SEE SPECIFICATIONS FOR FURTHER INFORMATION.)
2. HAUNCHING SHALL BE WORKED AROUND THE PIPE BY HAND TO ELIMINATE VOIDING AND SHALL BE CLASS II OR CLASS II-B OR CLASS II COMPACTED TO 85% PROCTOR.
3. INITIAL BACKFILL SHALL BE CLASS I-A WORKED BY HAND OR CLASS II OR CLASS II COMPACTED TO 85% STANDARD PROCTOR.
4. INITIAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS II COMPACTED TO 90% STANDARD PROCTOR.
5. FINAL BACKFILL SHALL BE CLASS II, I, OR II COMPACTED AS NOTED IN NOTES 3, AND 4.
6. FINAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS IV-A COMPACTED TO 95% STANDARD PROCTOR.
7. ALL MATERIALS ARE CLASSIFIED IN ACCORDANCE WITH ASTM D 2922, LATEST EDITION.
8. ALL MATERIALS SHALL BE INSTALLED IN MAXIMUM 12" LORNS LAYER.
9. ALL MATERIALS SHALL BE CLASSIFIED IN ACCORDANCE WITH ASTM D 698. CLASS II-B AND IV-A MATERIALS SHALL BE COVERED WITH NEAR OPTIMUM MOISTURE CONTENT.
10. FILL SAVED FROM EXCAVATION SHALL BE FREE OF DEBRIS, ORGANICS AND ROCKS LARGER THAN 3".
11. ALL TRENCH EXCAVATIONS SHALL BE SLOPED, SHORED, SHIELDED, BRACED, OR OTHERWISE SUPPORTED IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS AND LOCAL ORDINANCES. (SEE SPECIFICATIONS.)

- NOTE:**
1. INSIDE DIMENSIONS 27" L X 13" W X 23" H
 2. REQUIRED SLAB SIZE: 36" L X 22" W X 6" MINIMUM THICKNESS
 3. ANCHORING IS INTERNAL. ANCHOR KIT IS INCLUDED
 4. HEAT: 60W, 120V, SINGLE-PHASE HEATER
 5. 1.5" INSULATION: POLYCYCLOPURATE, SPRAY APPLIED AND BONDED
 6. UNIT IS A HBI (OK BOX)



N.T.S.



GENERAL NOTES

SUBGRADE

- CONCRETE**
1. 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**
1. COMPRESSIVE STRENGTH: 3,500 P.S.I. MINIMUM AT 28 DAYS. WITH 5%-8% AIR ENTRAINMENT
 2. REINFORCEMENT: WELDED WIRE FABRIC - 6"x6" - W 2.1 X W 2.1.
 3. WEAKENED - PLANE CONTROL JOINTS TO BE 15' O.C. AND FILLED/SEALED. SEE SPECIFICATIONS FOR APPROVED FILLER / SEALER.
 4. CHAMFER ALL EXPOSED EDGES.

[illegible]

GENERAL NOTES

SUBGRADE

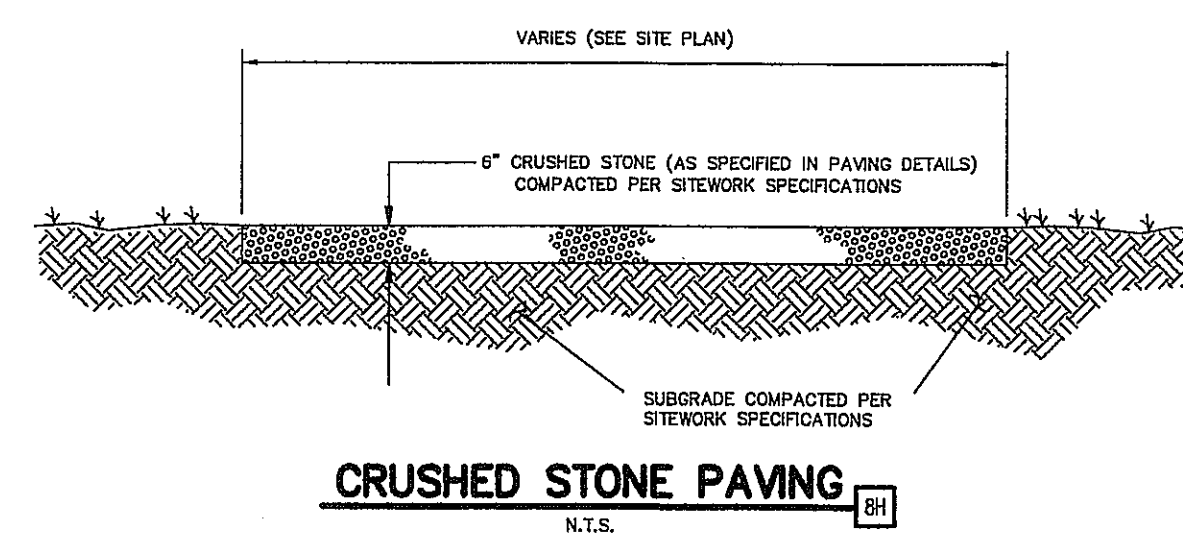
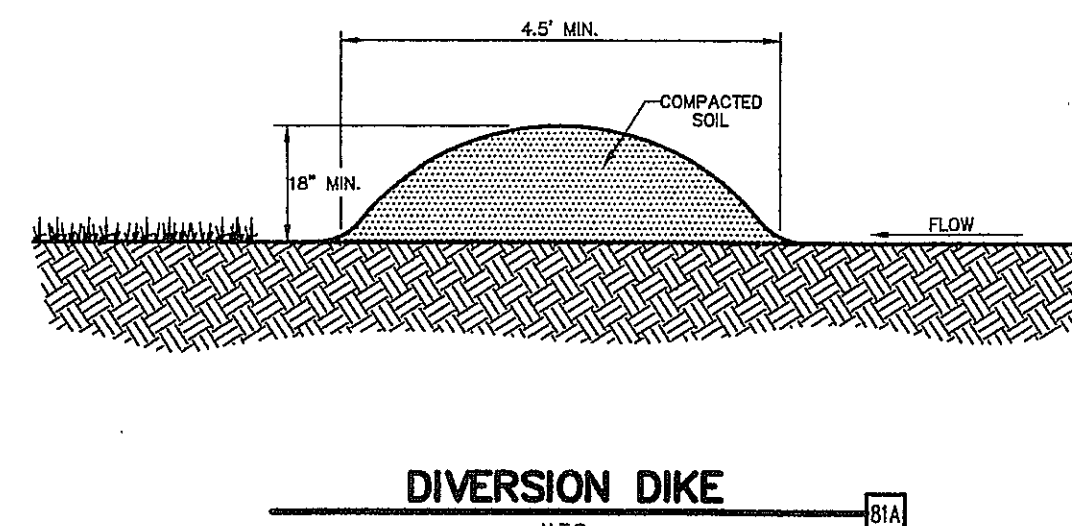
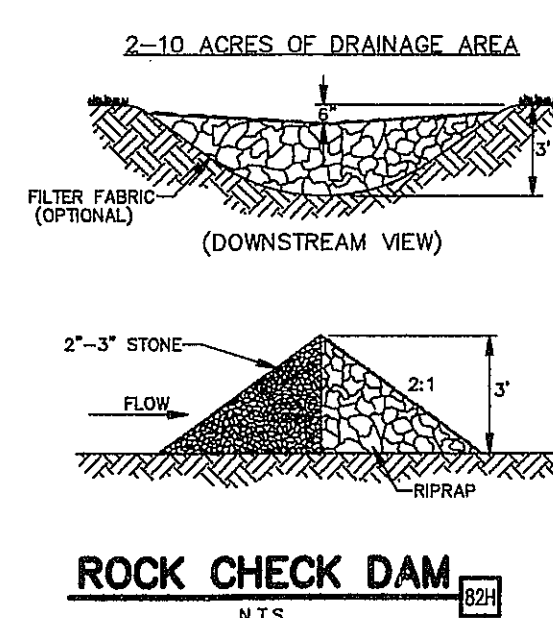
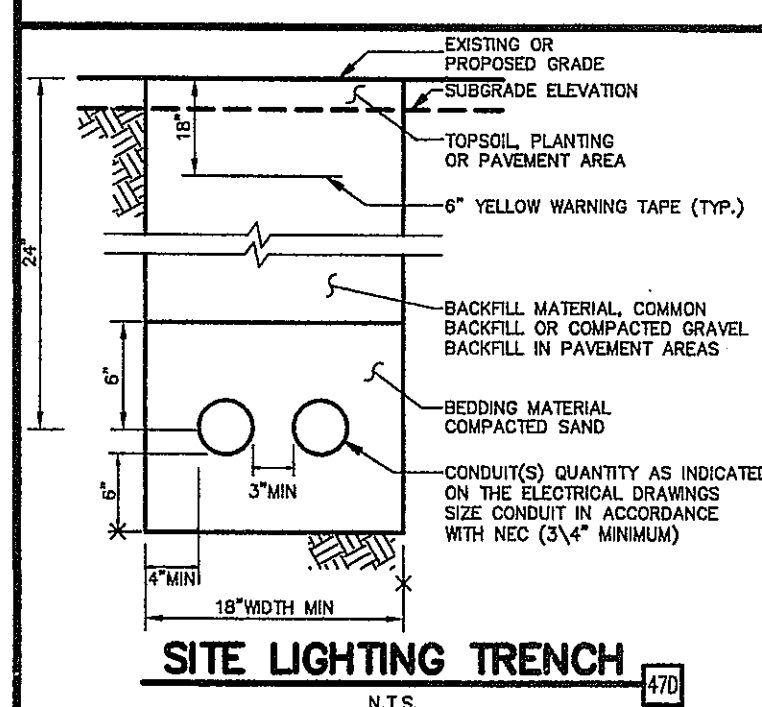
- CONCRETE
1. COMPACT TO 95% MAXIMUM DRY DENSITY AS DETERMINED BY A.S.T.M. D-698-78 (STANDARD PROCTOR) AT $\pm 2\%$ OF PROCTOR OPTIMUM MOISTURE VALUE.
- CONCRETE
1. COMPRESSIVE STRENGTH: 3,500 P.S.I. MINIMUM AT 28 DAYS. WITH 5%-8% AIR ENTRAINMENT
2. REINFORCEMENT: WELDED WIRE FABRIC - 6"x6" - W 2.1 X W 2.1,
3. WEAKENED - PLANE CONJOINT JOINTS TO BE 15' O.C. AND FILLED/SEALED.
SEE SPECIFICATIONS FOR APPROVED FILLER / SEALER.
4. CHAMFER ALL EXPOSED EDGES.

PLACE RIP-RAP IN ALL AREAS INDICATED ON THE DRAWING. THE STONE SHALL CONSIST OF FIELD STONE OR ROUGH, UNHEWEN QUARRY STONE AS NEARLY UNIFORM IN SECTION AS IS PRACTICAL. THE STONES SHALL BE DENSE, RESISTANT TO THE ACTION OF AIR AND WATER, AND SUITABLE IN ALL ASPECTS FOR THE PURPOSE INTENDED. UNLESS OTHERWISE SPECIFIED, ALL STONES USED AS RIP-RAP SHALL WEIGH BETWEEN 65-140 POUNDS EACH, AND AT LEAST 60 PERCENT OF THE STONES SHALL WEIGH MORE THAN 100 POUNDS EACH.

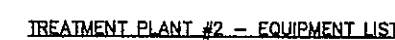
SEE PLAN FOR SIZE

STATE OF
ARKANSAS
★ ★
REGISTERED
PROFESSIONAL
ENGINEER
★ ★ ★
No. 12538
FERDINAND FOURIE

Ferdinand Fourie
11-7-08

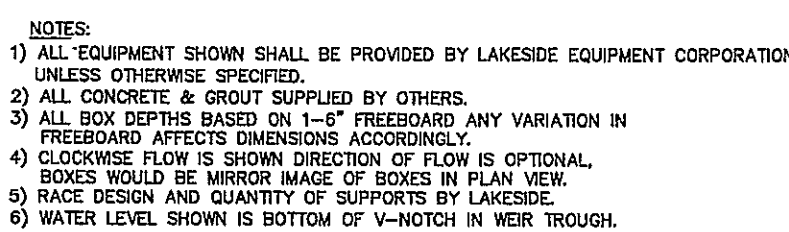


INITIAL DESIGN	10-16-05	DAT	FF	FF	FF
	DATE	EOR	PM	DES	DRW
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
 ENGINEERING ASSOCIATES, INC					
ENGINEERS		PLANNERS		SURVEYORS	
3317 S.W. 1 Street Bentonville, AR 72712	(479) 273-9472 FAX (479) 273-0944	JOB NO. 20733.0 DWG NAME: 20733.0E			
DETAIL SHEET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

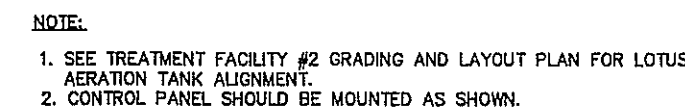


- | | | | |
|--------|---------------------------------|----------|------------|
| SB-1 | SPILLER BOX 1 | | |
| MEBR-1 | MOVING BED BIOLOGICAL REACTOR 1 | LOTUS-CH | 27X10X11.5 |
| MEBR-2 | MOVING BED BIOLOGICAL REACTOR 2 | LOTUS-CH | 27X10X11.5 |
| MEBR-3 | MOVING BED BIOLOGICAL REACTOR 3 | LOTUS-CH | 27X10X11.5 |
| MEBR-4 | MOVING BED BIOLOGICAL REACTOR 4 | LOTUS-CH | 27X10X11.5 |
| CP-1 | CHEMICAL FEED PUMP 1 | | |
| CP-2 | CHEMICAL FEED PUMP 2 | | |
| CP-3 | CHEMICAL FEED PUMP 3 | | |
| CP-4 | CHEMICAL FEED PUMP 4 | | |
| SC-1 | SLUDGE PUMP 1 | | |
| SC-2 | SLUDGE PUMP 2 | | |
| SC-3 | SLUDGE PUMP 3 | | |
| SC-4 | SLUDGE PUMP 4 | | |
| SC-5 | SLUDGE PUMP 5 | | |
| SC-6 | SLUDGE PUMP 6 | | |
| SC-7 | SLUDGE PUMP 7 | | |
| SC-8 | SLUDGE PUMP 8 | | |
| SC-9 | SLUDGE PUMP 9 | | |
| SC-10 | SLUDGE PUMP 10 | | |
| SC-11 | SLUDGE PUMP 11 | | |
| SC-12 | SLUDGE PUMP 12 | | |
| SC-13 | SLUDGE PUMP 13 | | |
| SC-14 | SLUDGE PUMP 14 | | |
| SC-15 | SLUDGE PUMP 15 | | |
| SC-16 | SLUDGE PUMP 16 | | |
| SC-17 | SLUDGE PUMP 17 | | |
| SC-18 | SLUDGE PUMP 18 | | |
| SC-19 | SLUDGE PUMP 19 | | |
| SC-20 | SLUDGE PUMP 20 | | |
| SC-21 | SLUDGE PUMP 21 | | |
| SC-22 | SLUDGE PUMP 22 | | |
| SC-23 | SLUDGE PUMP 23 | | |
| SC-24 | SLUDGE PUMP 24 | | |
| SC-25 | SLUDGE PUMP 25 | | |
| SC-26 | SLUDGE PUMP 26 | | |
| SC-27 | SLUDGE PUMP 27 | | |
| SC-28 | SLUDGE PUMP 28 | | |
| SC-29 | SLUDGE PUMP 29 | | |
| SC-30 | SLUDGE PUMP 30 | | |
| SC-31 | SLUDGE PUMP 31 | | |
| SC-32 | SLUDGE PUMP 32 | | |
| SC-33 | SLUDGE PUMP 33 | | |
| SC-34 | SLUDGE PUMP 34 | | |
| SC-35 | SLUDGE PUMP 35 | | |
| SC-36 | SLUDGE PUMP 36 | | |
| SC-37 | SLUDGE PUMP 37 | | |
| SC-38 | SLUDGE PUMP 38 | | |
| SC-39 | SLUDGE PUMP 39 | | |
| SC-40 | SLUDGE PUMP 40 | | |
| SC-41 | SLUDGE PUMP 41 | | |
| SC-42 | SLUDGE PUMP 42 | | |
| SC-43 | SLUDGE PUMP 43 | | |
| SC-44 | SLUDGE PUMP 44 | | |
| SC-45 | SLUDGE PUMP 45 | | |
| SC-46 | SLUDGE PUMP 46 | | |
| SC-47 | SLUDGE PUMP 47 | | |
| SC-48 | SLUDGE PUMP 48 | | |
| SC-49 | SLUDGE PUMP 49 | | |
| SC-50 | SLUDGE PUMP 50 | | |
| SC-51 | SLUDGE PUMP 51 | | |
| SC-52 | SLUDGE PUMP 52 | | |
| SC-53 | SLUDGE PUMP 53 | | |
| SC-54 | SLUDGE PUMP 54 | | |
| SC-55 | SLUDGE PUMP 55 | | |
| SC-56 | SLUDGE PUMP 56 | | |
| SC-57 | SLUDGE PUMP 57 | | |
| SC-58 | SLUDGE PUMP 58 | | |
| SC-59 | SLUDGE PUMP 59 | | |
| SC-60 | SLUDGE PUMP 60 | | |
| SC-61 | SLUDGE PUMP 61 | | |
| SC-62 | SLUDGE PUMP 62 | | |
| SC-63 | SLUDGE PUMP 63 | | |
| SC-64 | SLUDGE PUMP 64 | | |
| SC-65 | SLUDGE PUMP 65 | | |
| SC-66 | SLUDGE PUMP 66 | | |
| SC-67 | SLUDGE PUMP 67 | | |
| SC-68 | SLUDGE PUMP 68 | | |
| SC-69 | SLUDGE PUMP 69 | | |
| SC-70 | SLUDGE PUMP 70 | | |
| SC-71 | SLUDGE PUMP 71 | | |
| SC-72 | SLUDGE PUMP 72 | | |
| SC-73 | SLUDGE PUMP 73 | | |
| SC-74 | SLUDGE PUMP 74 | | |
| SC-75 | SLUDGE PUMP 75 | | |
| SC-76 | SLUDGE PUMP 76 | | |
| SC-77 | SLUDGE PUMP 77 | | |
| SC-78 | SLUDGE PUMP 78 | | |
| SC-79 | SLUDGE PUMP 79 | | |
| SC-80 | SLUDGE PUMP 80 | | |
| SC-81 | SLUDGE PUMP 81 | | |
| SC-82 | SLUDGE PUMP 82 | | |
| SC-83 | SLUDGE PUMP 83 | | |
| SC-84 | SLUDGE PUMP 84 | | |
| SC-85 | SLUDGE PUMP 85 | | |
| SC-86 | SLUDGE PUMP 86 | | |
| SC-87 | SLUDGE PUMP 87 | | |
| SC-88 | SLUDGE PUMP 88 | | |
| SC-89 | SLUDGE PUMP 89 | | |
| SC-90 | SLUDGE PUMP 90 | | |
| SC-91 | SLUDGE PUMP 91 | | |
| SC-92 | SLUDGE PUMP 92</ | | |

N.T.S.



N.T.S



N.T.S.



N.T.S.



1. COMPACT TO 85% 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. WEAKENED-PLANE CONTROL JOINTS 15' O.C. AND FILLED/SEALED. SEE SPECIFICATIONS FOR APPROVED FILLER/SEALERS.

NTS



NTS

CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1



GEI[®] 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: 20733.DET

DATE		SHEET NO.	
------	--	-----------	--

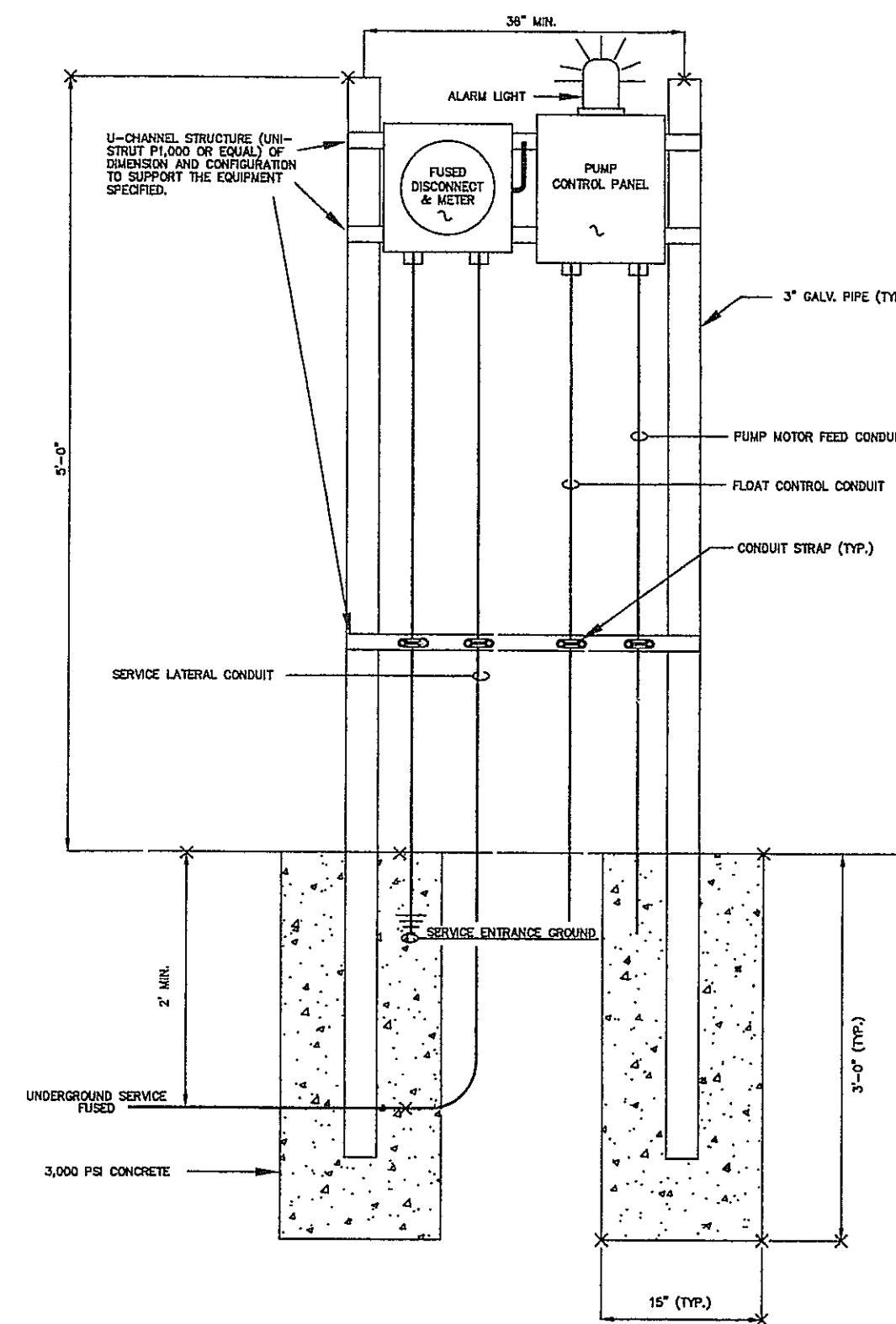
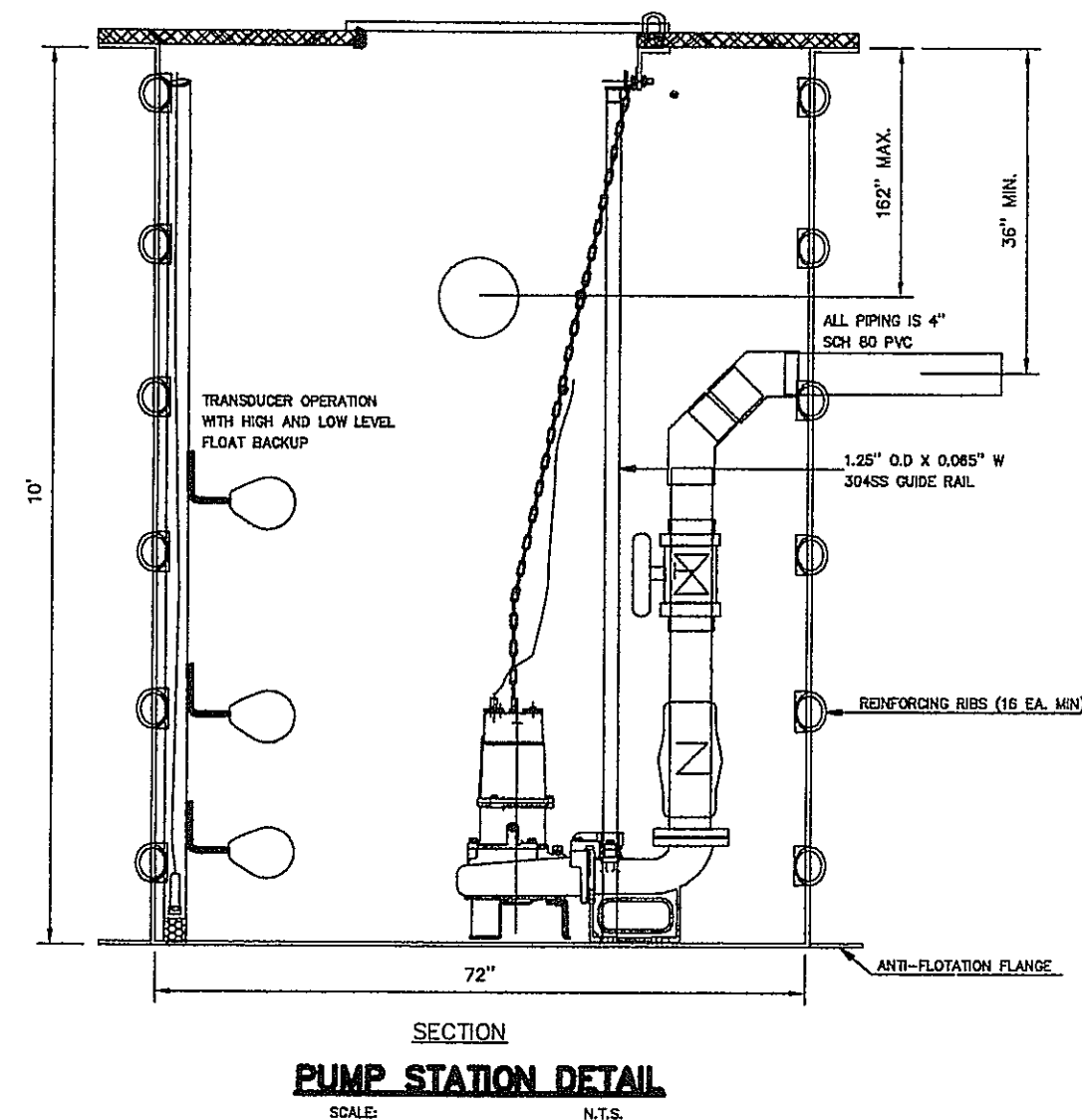
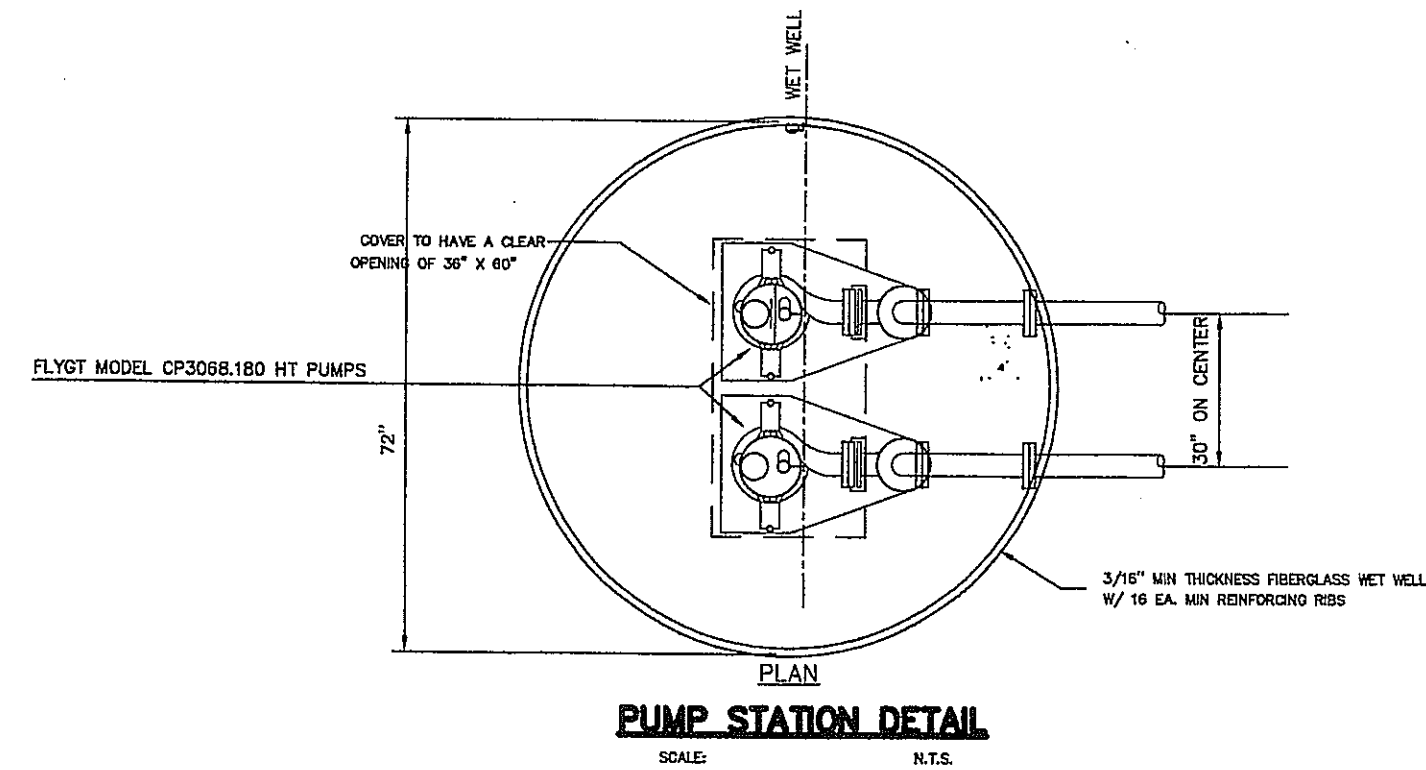
DETAIL SHEET 3

DATE	SHEET NO.
------	-----------

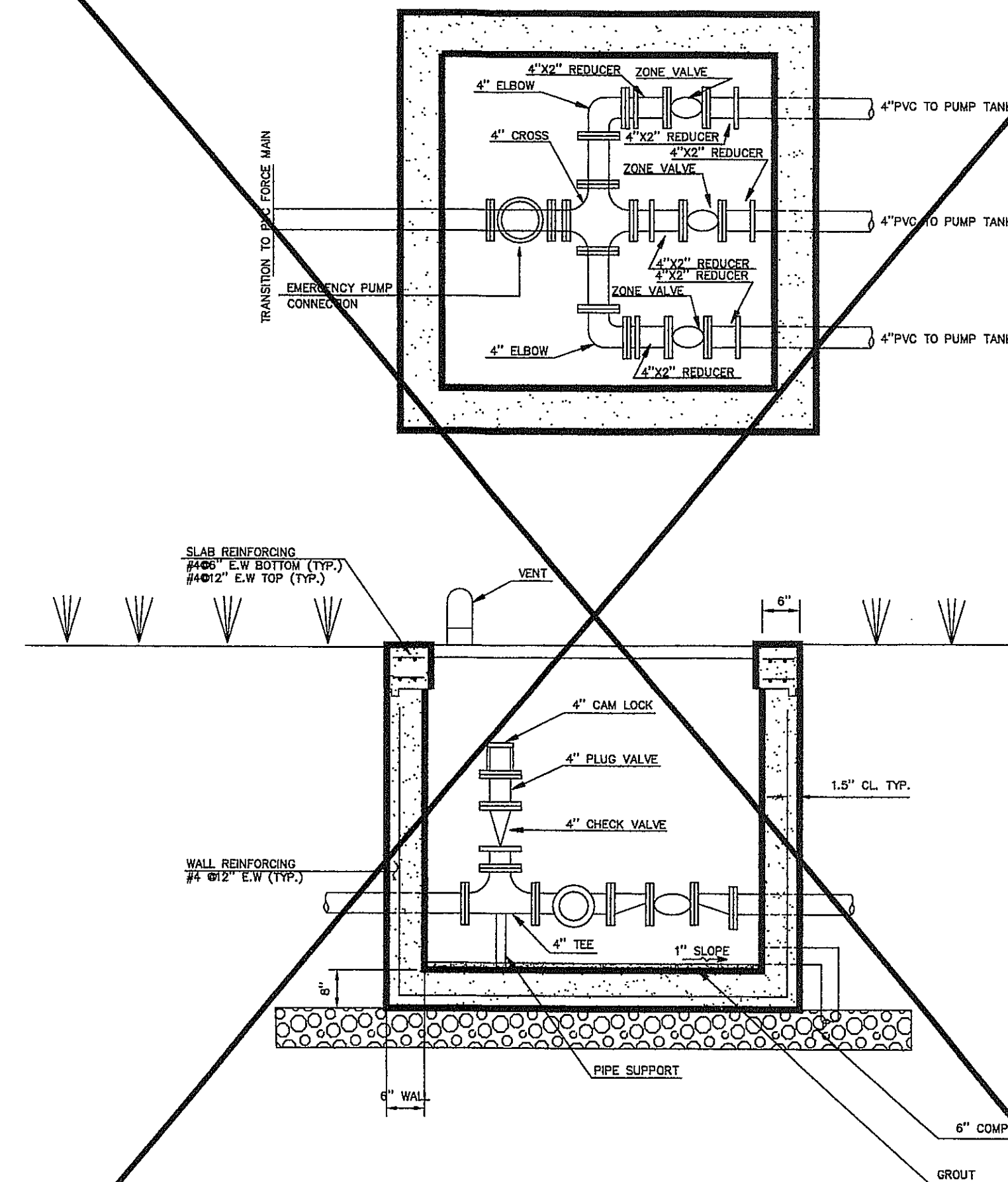
09-14-06 280542

08:59 AM 38 OF 43
REV6

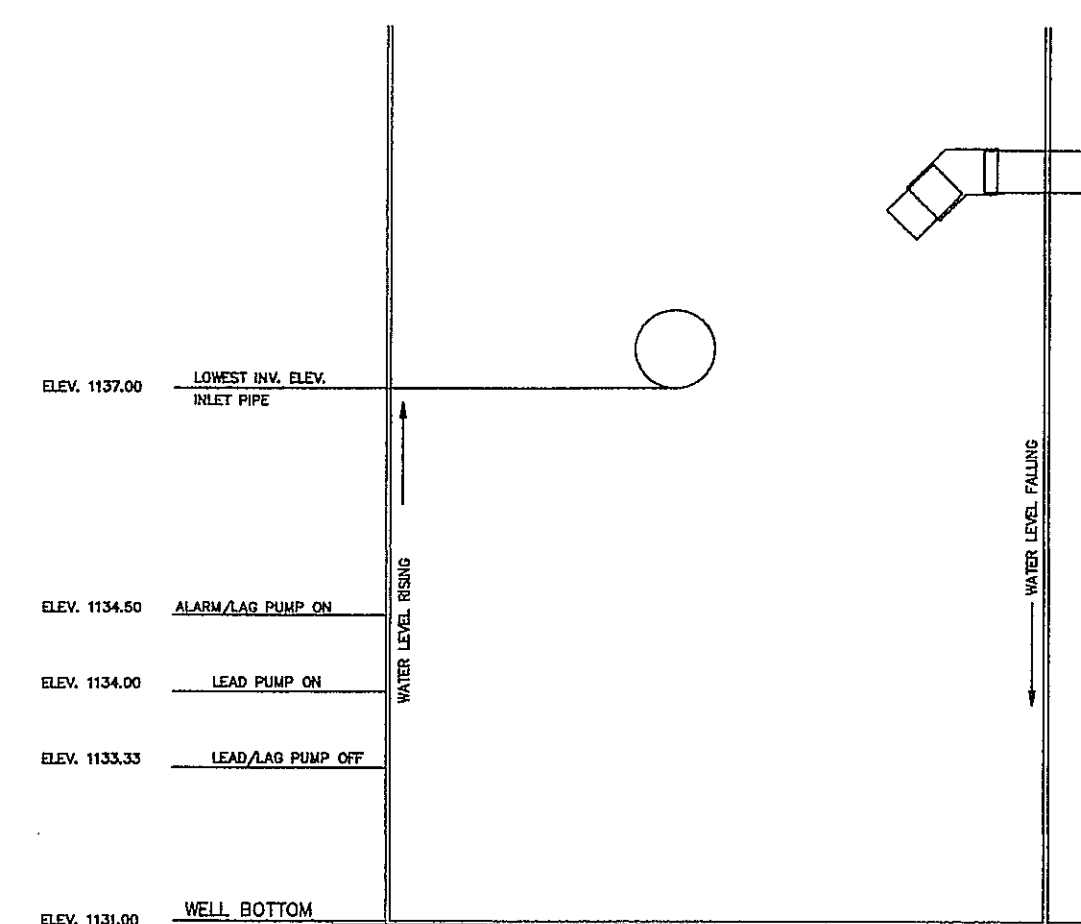
© 2005 CEI ENGINEERING ASSOCIATES, INC.



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

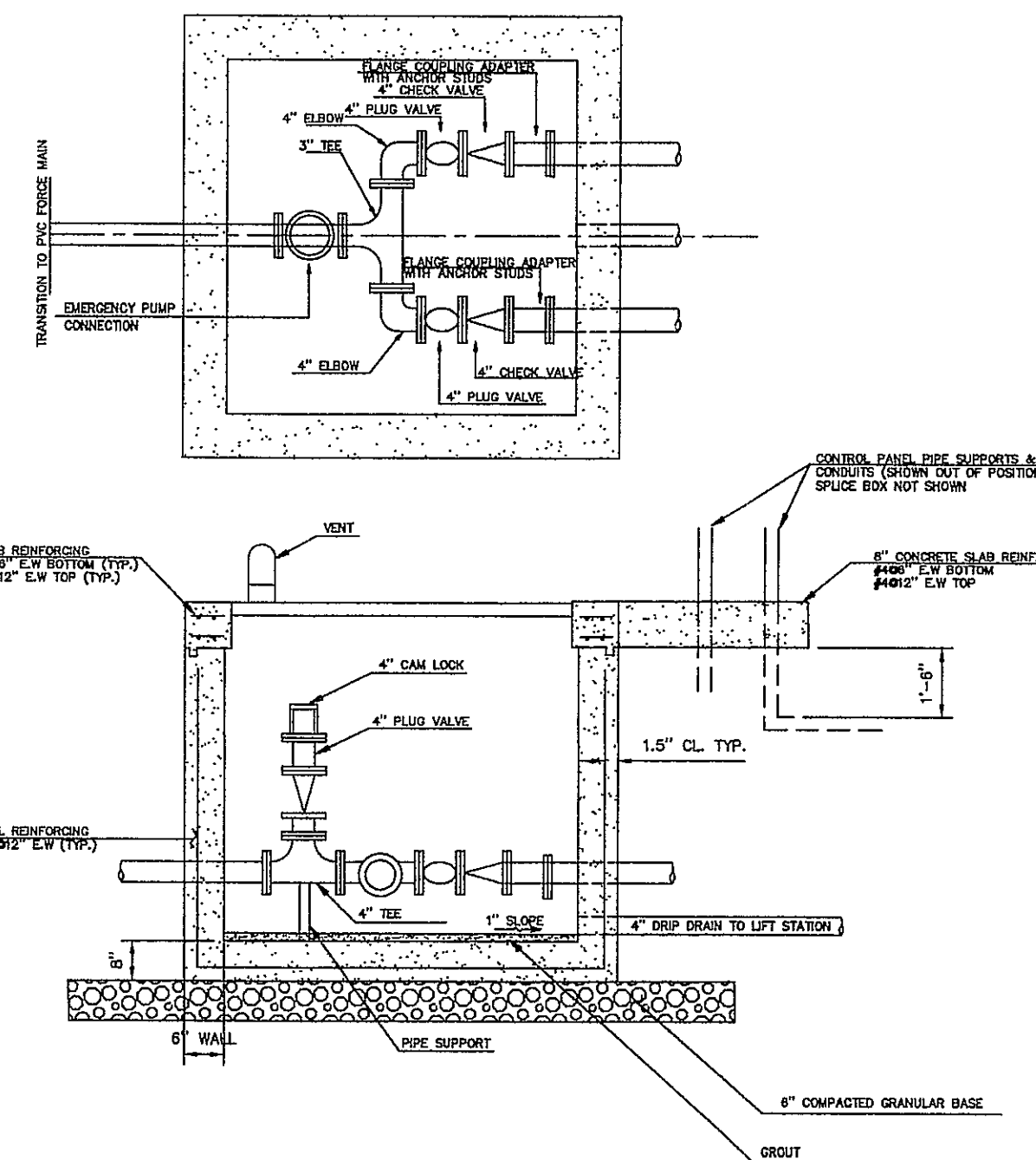


VALVE VAULT FOR FIELD MAINS
SCALE: N.T.S.

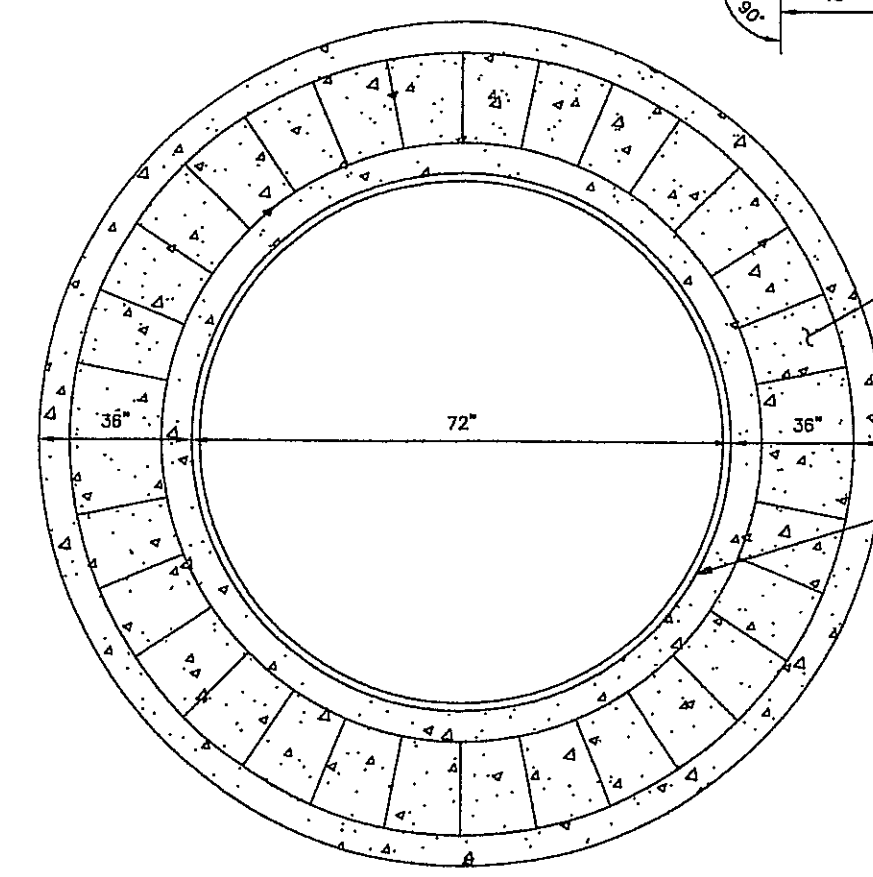


SWITCH LEVEL SETTINGS
SCALE: N.T.S.

SUPERNATANT PUMP STATION
SCALE: N.T.S.



PIPING CONVERGENCE
SCALE: N.T.S.



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

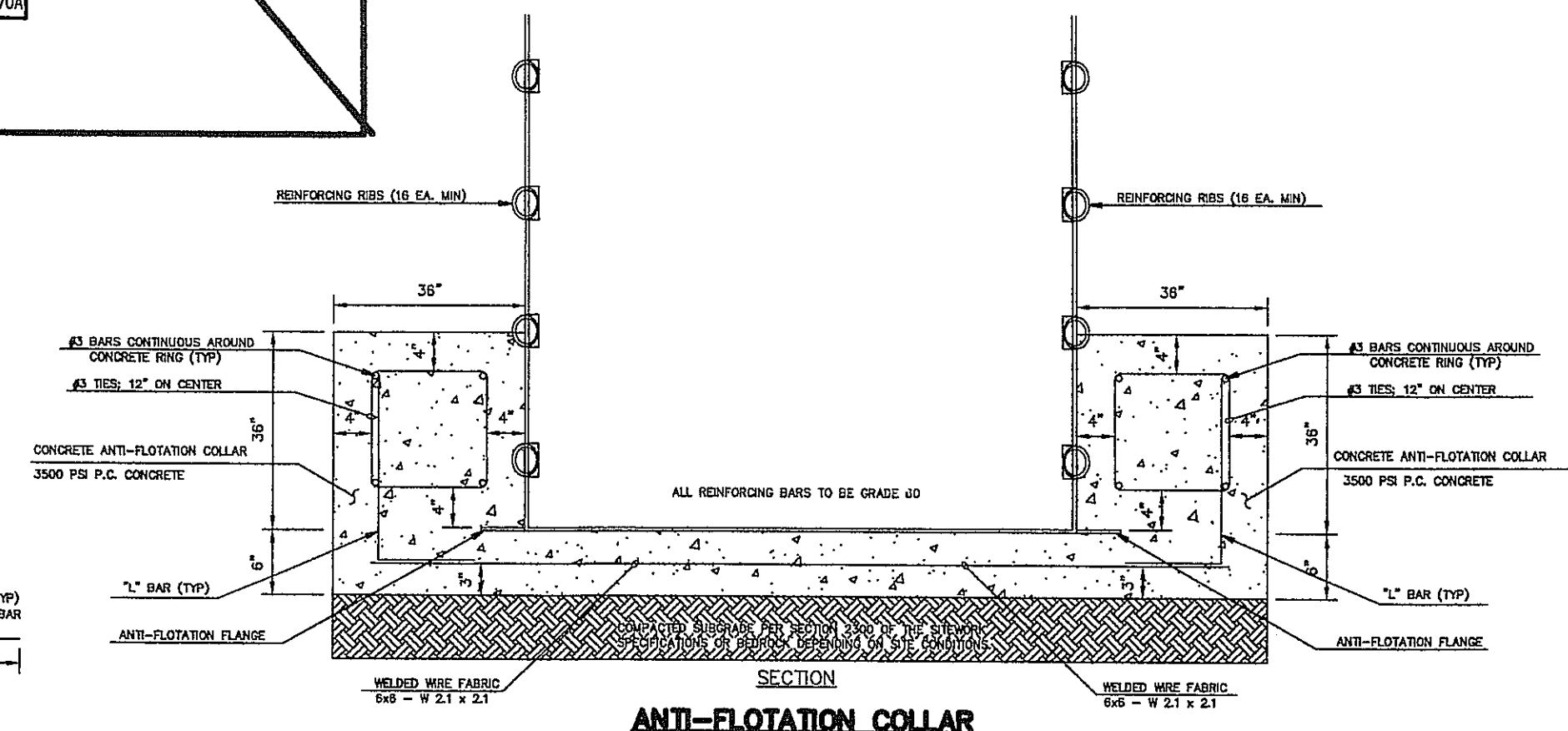
NOTE:
INFORMATION PROVIDED ON THIS SHEET WAS PROVIDED BY PACIFIC SOUTHWEST INDUSTRIES OF LAKE ELSINORE, CALIFORNIA. CEI SHALL NOT BE RESPONSIBLE FOR OMISSIONS, CONSTRUCTION OR ACCURACY OF THIS INFORMATION.



- 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.

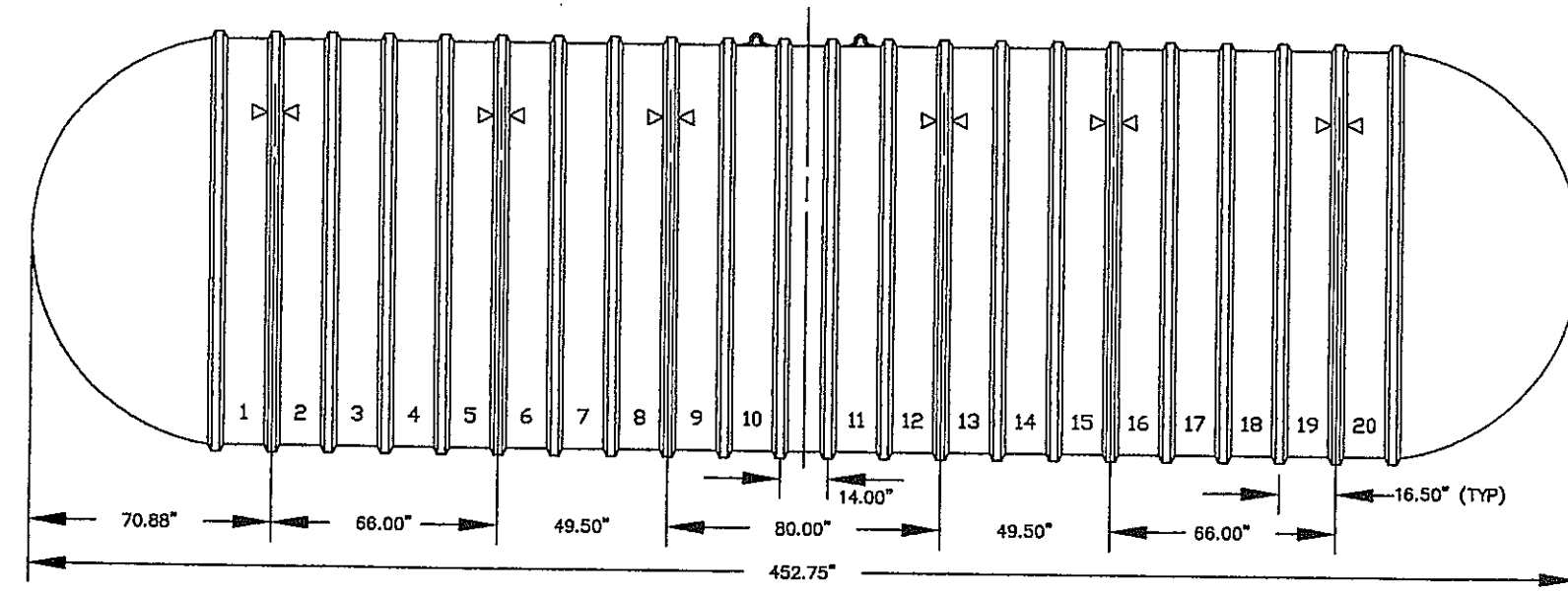
PUMP STATION NOTES:

1. SITE SHALL BE GRADED TO CHANNEL WATER AWAY FROM THE PUMP STATION.
2. BACKFILL AROUND WET-CELL 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.

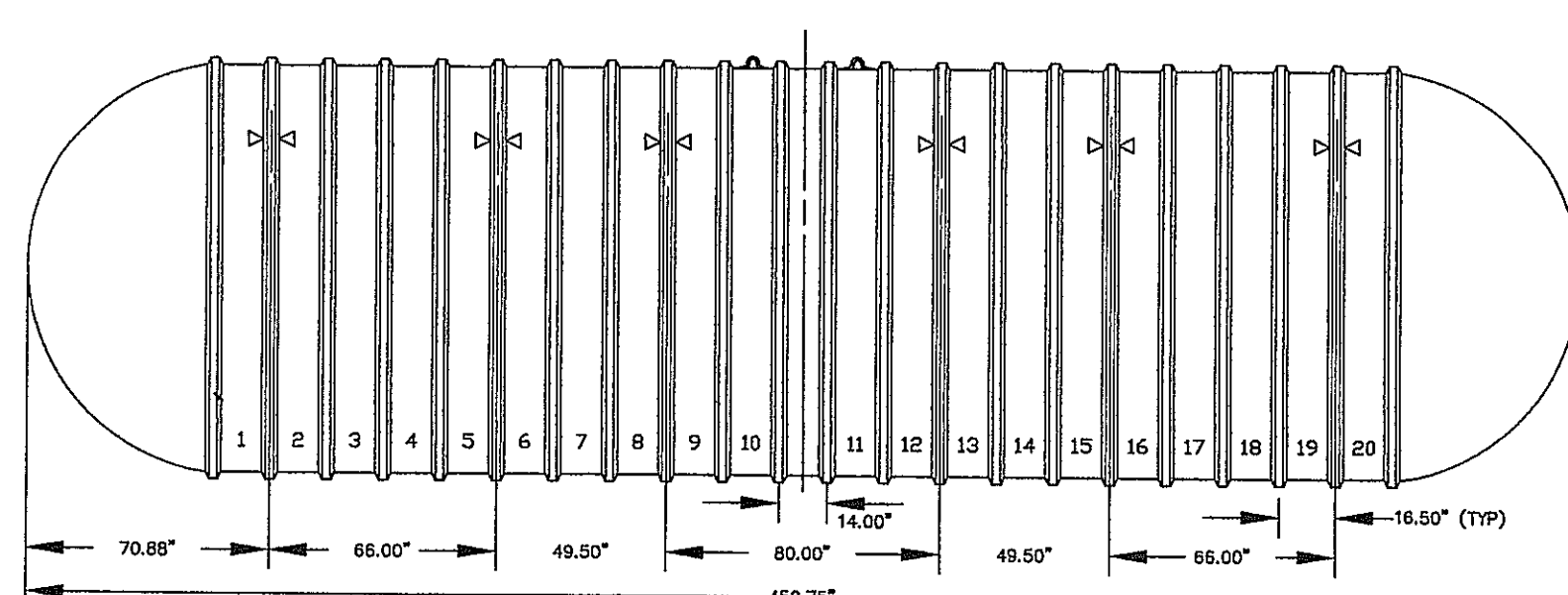


ANTI-FLOTATION COLLAR
SCALE: N.T.S.

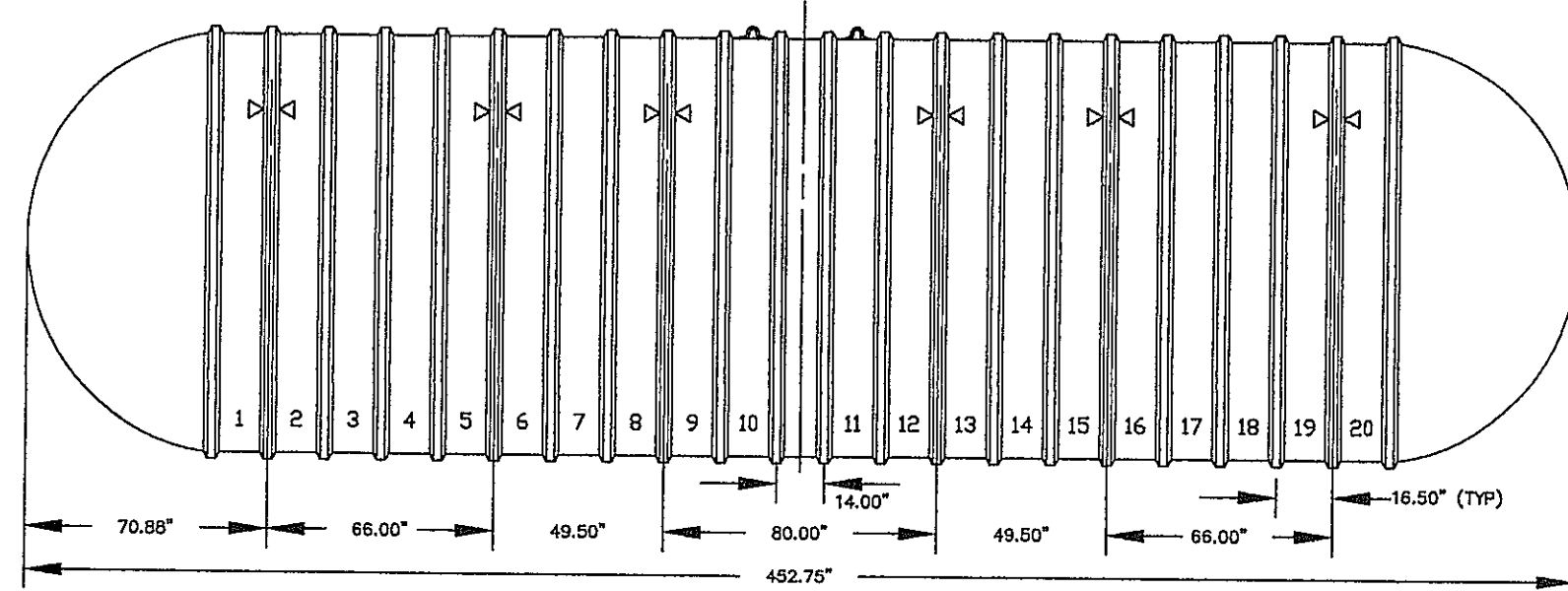
INITIAL DESIGN	9-16-04	DAT	FF	FF	FF
	DATE	EOR	PM	DES	DRW
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1					
CEI ENGINEERING ASSOCIATES, INC.					
ENGINEERS PLANNERS SURVEYORS					
3317 SW "I" Street Bentonville, AR 72712			(479) 273-9472 FAX (479) 273-0844		
JOB NO.: 20733			DWG NAME: 20730007		
DATE: 09-14-06 08:59 AM			SHEET NO.: 39 OF 43		
REV: 6			DETAIL SHEET 4		



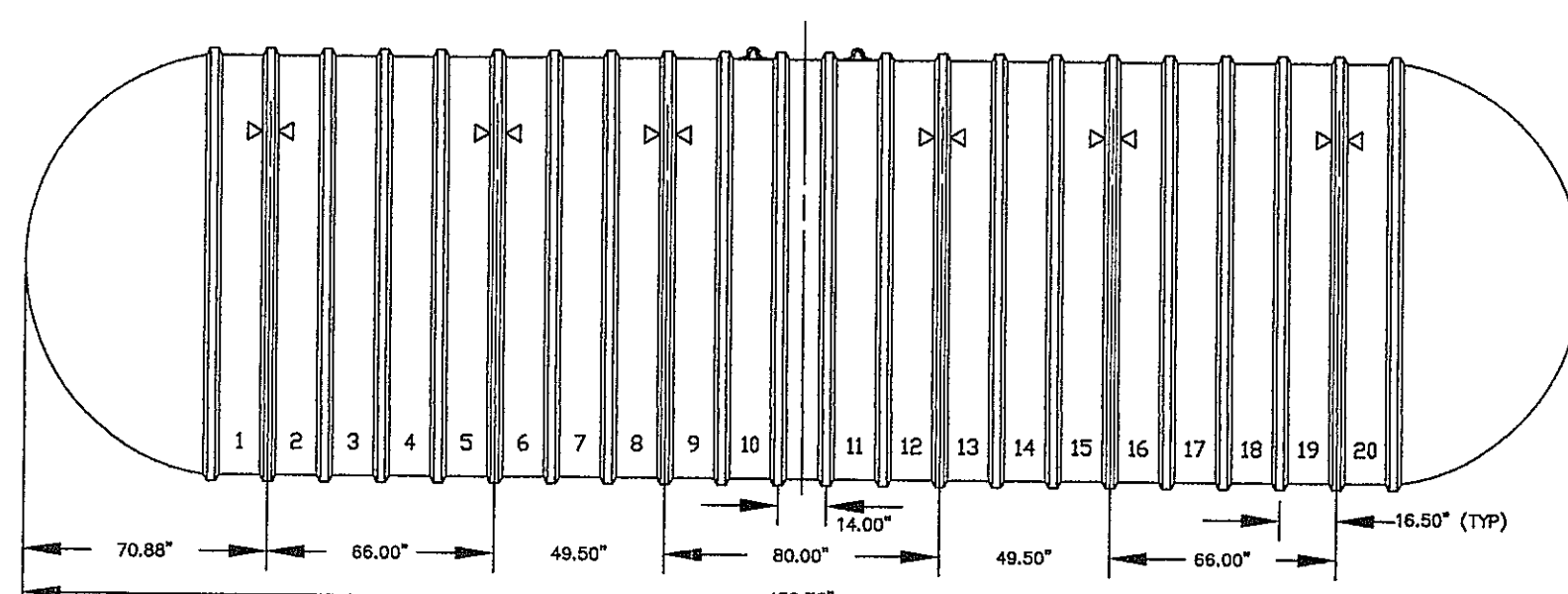
PUMP TANK 3
(25,000 GAL)
N.T.S.



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

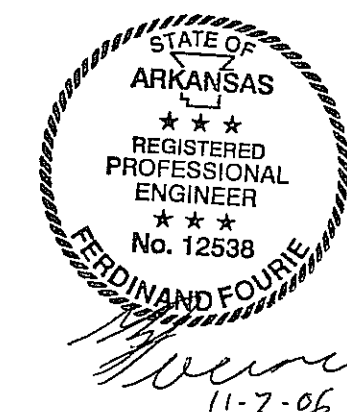


PUMP TANK 4B
(20,000 GAL)
N.T.S.

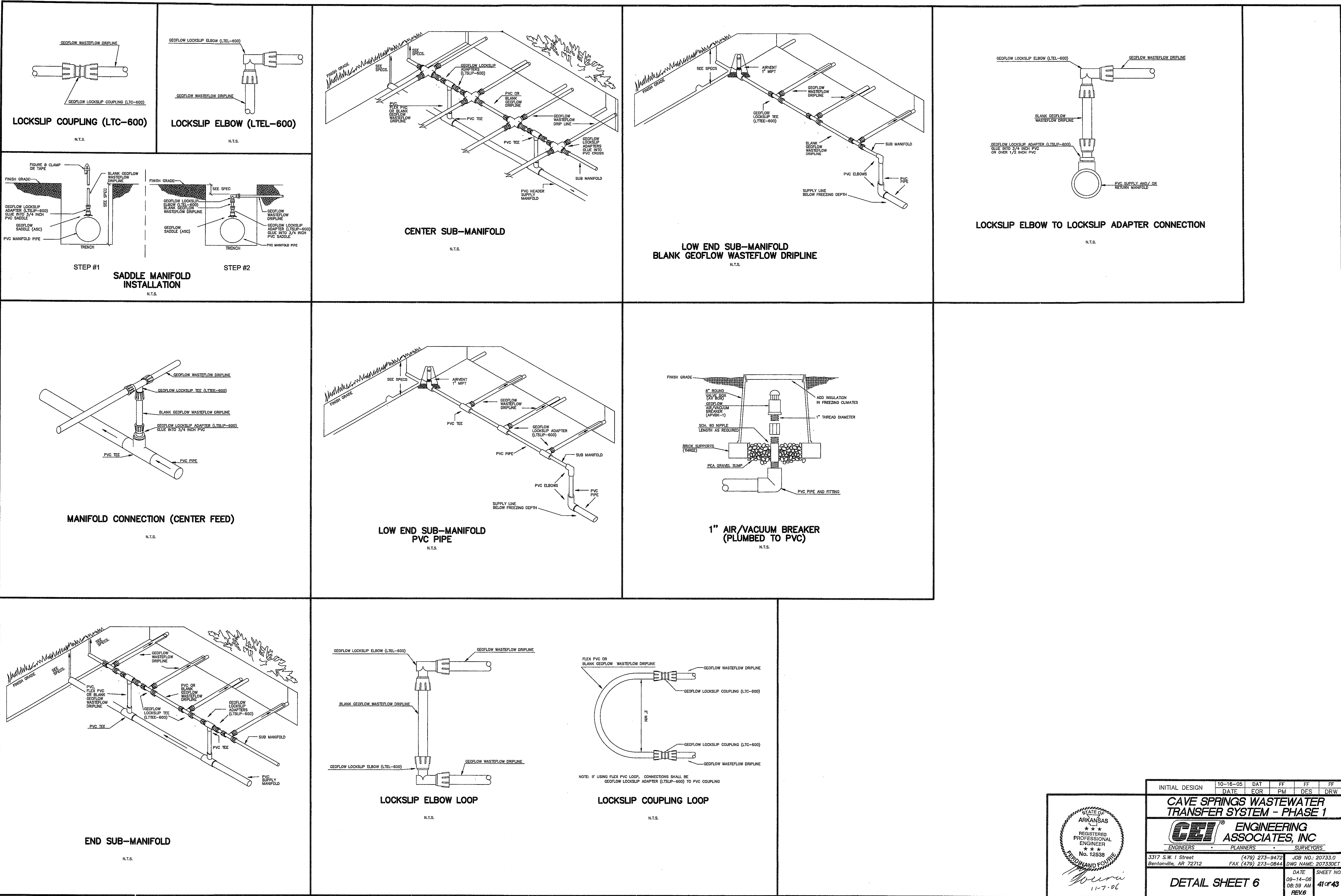


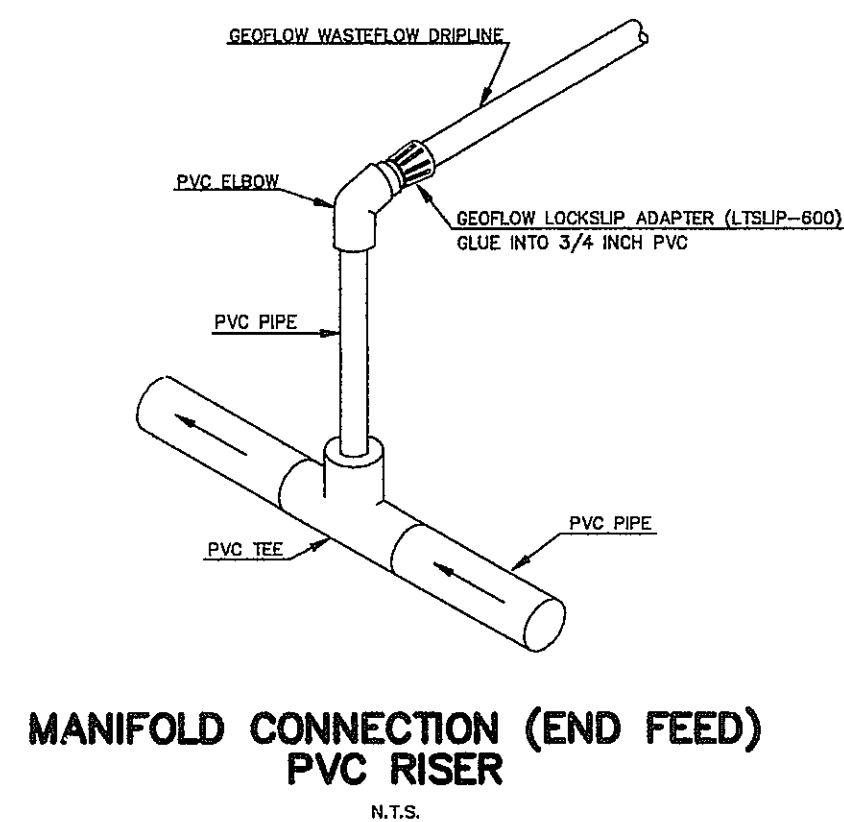
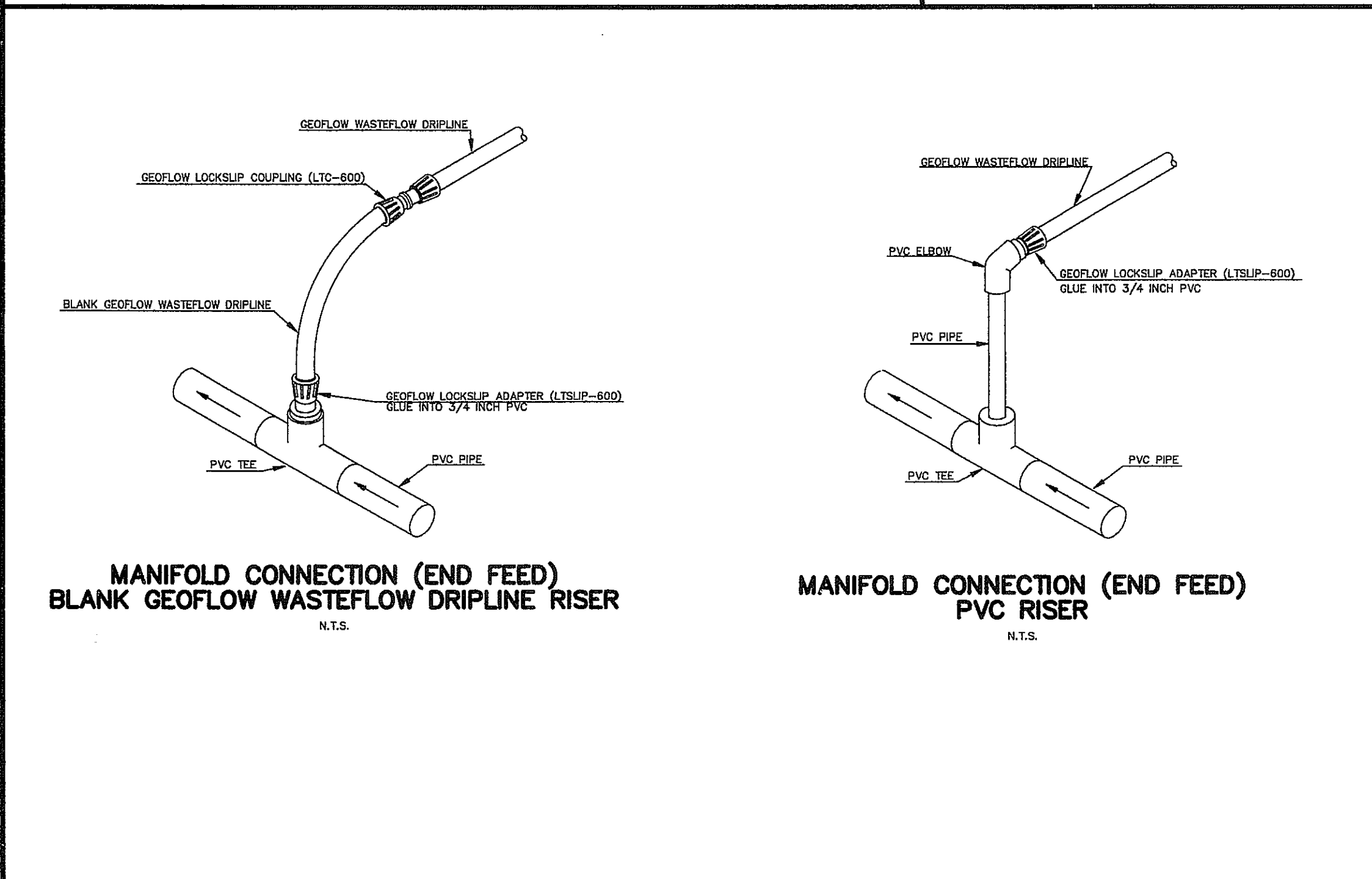
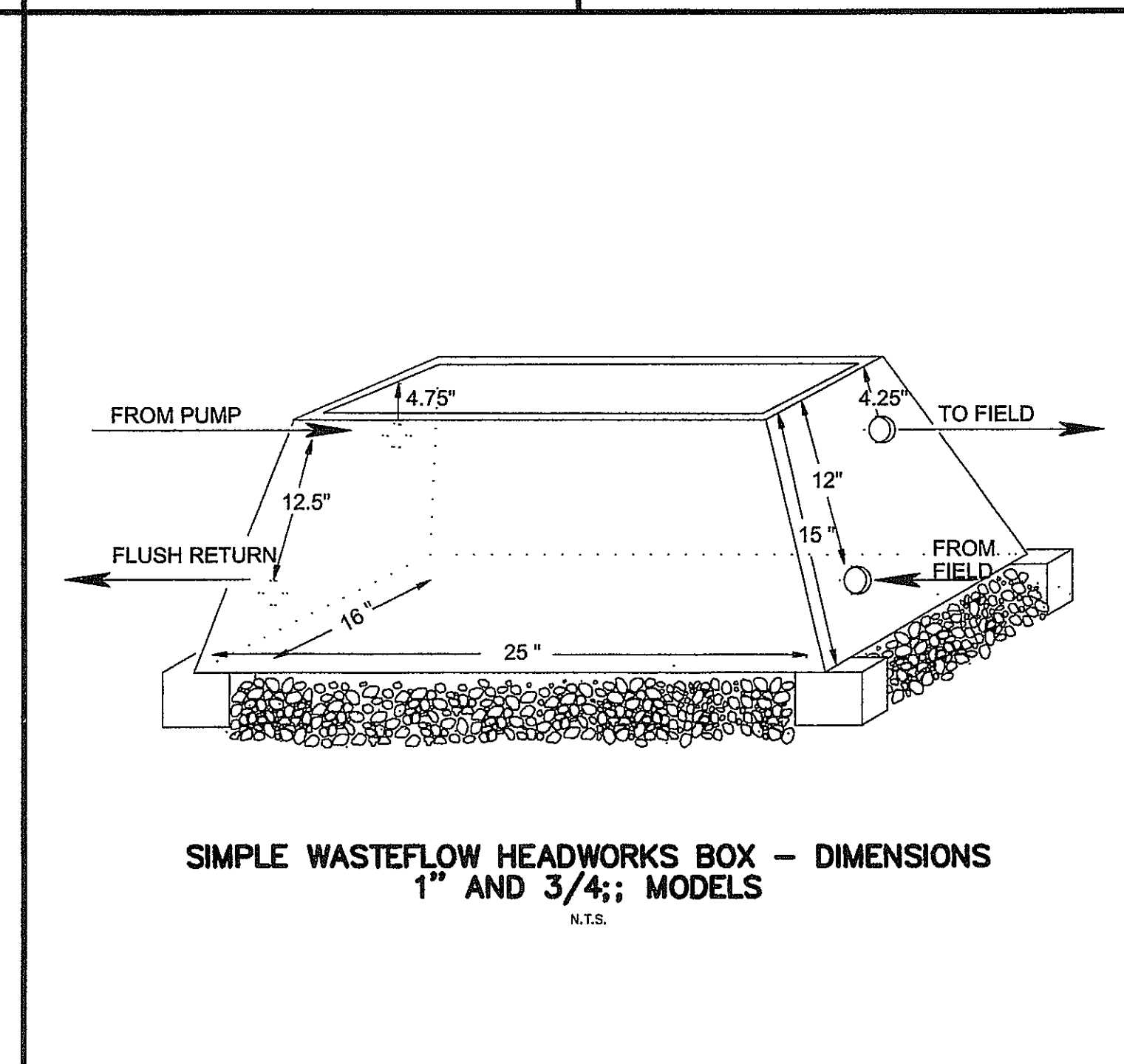
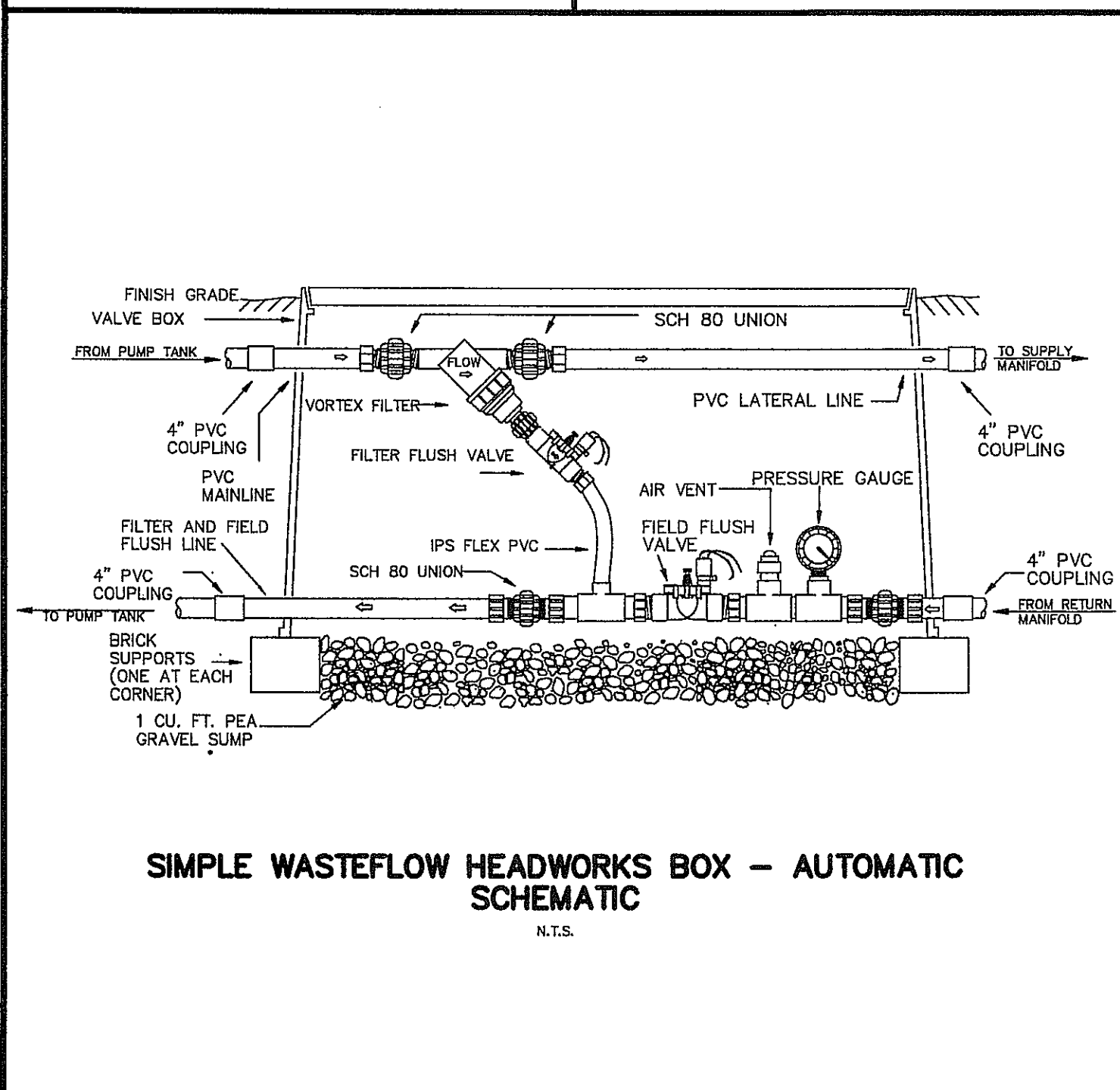
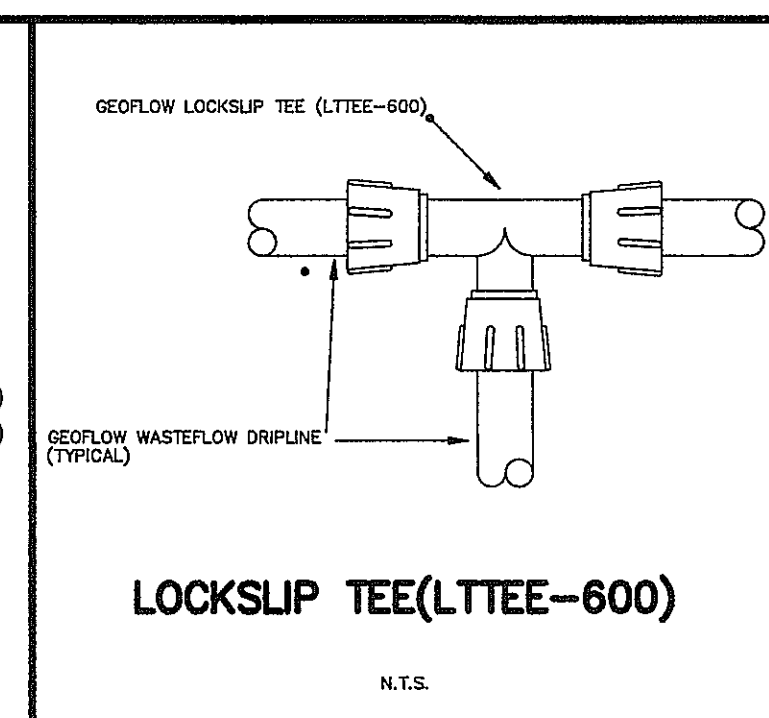
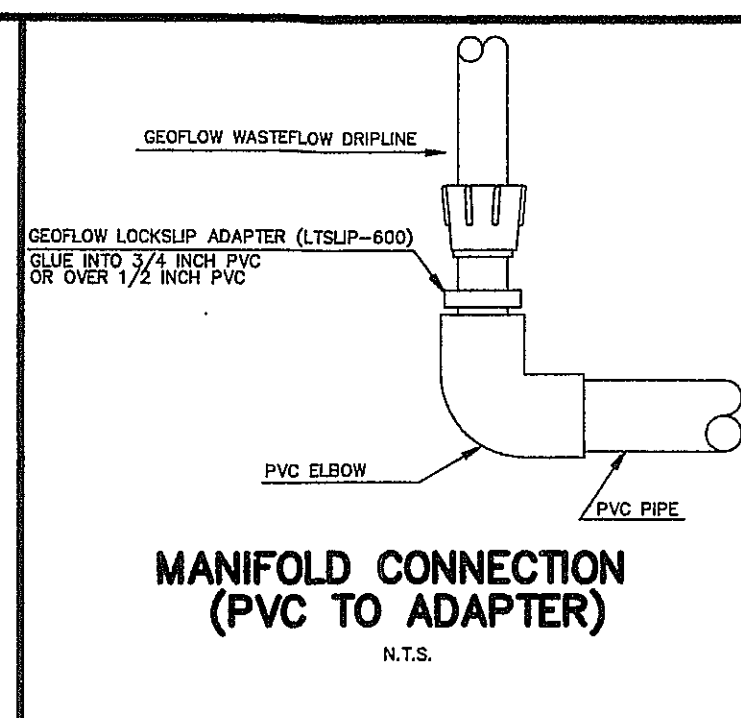
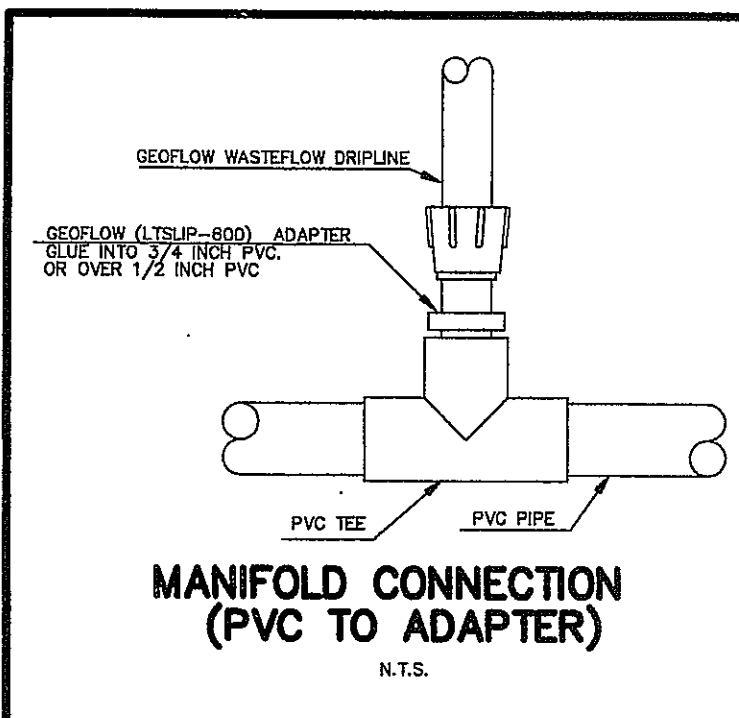
PUMP TANK 5
(20,000 GAL)
N.T.S.

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.

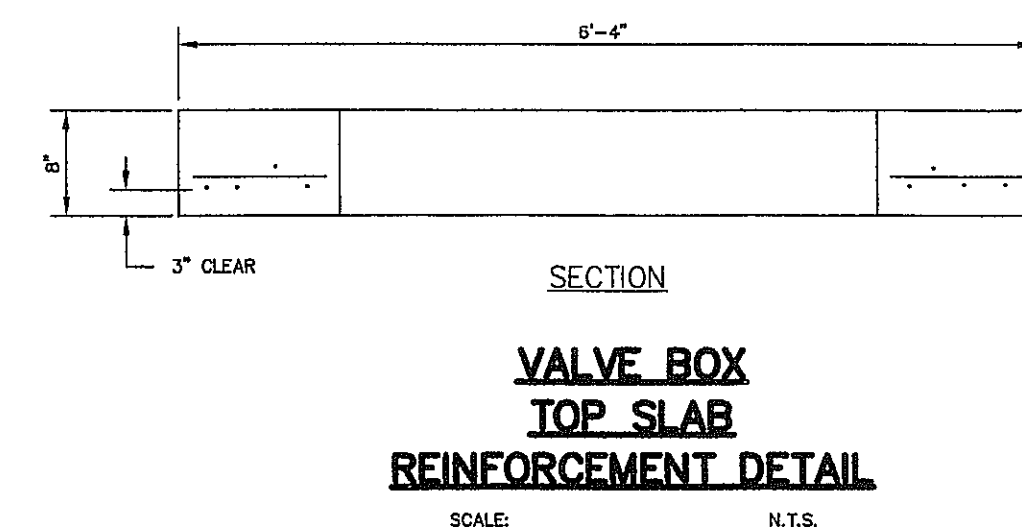
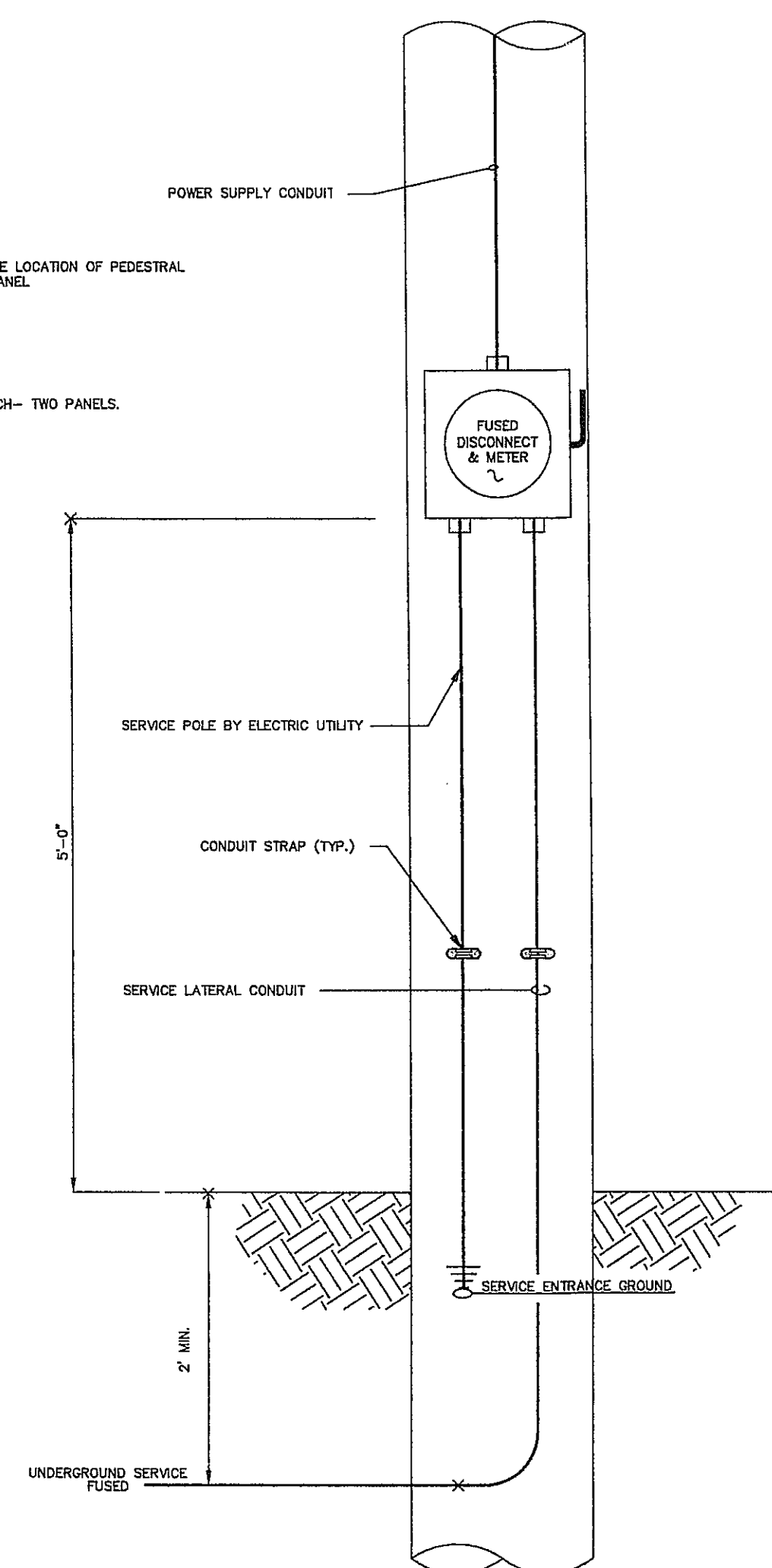
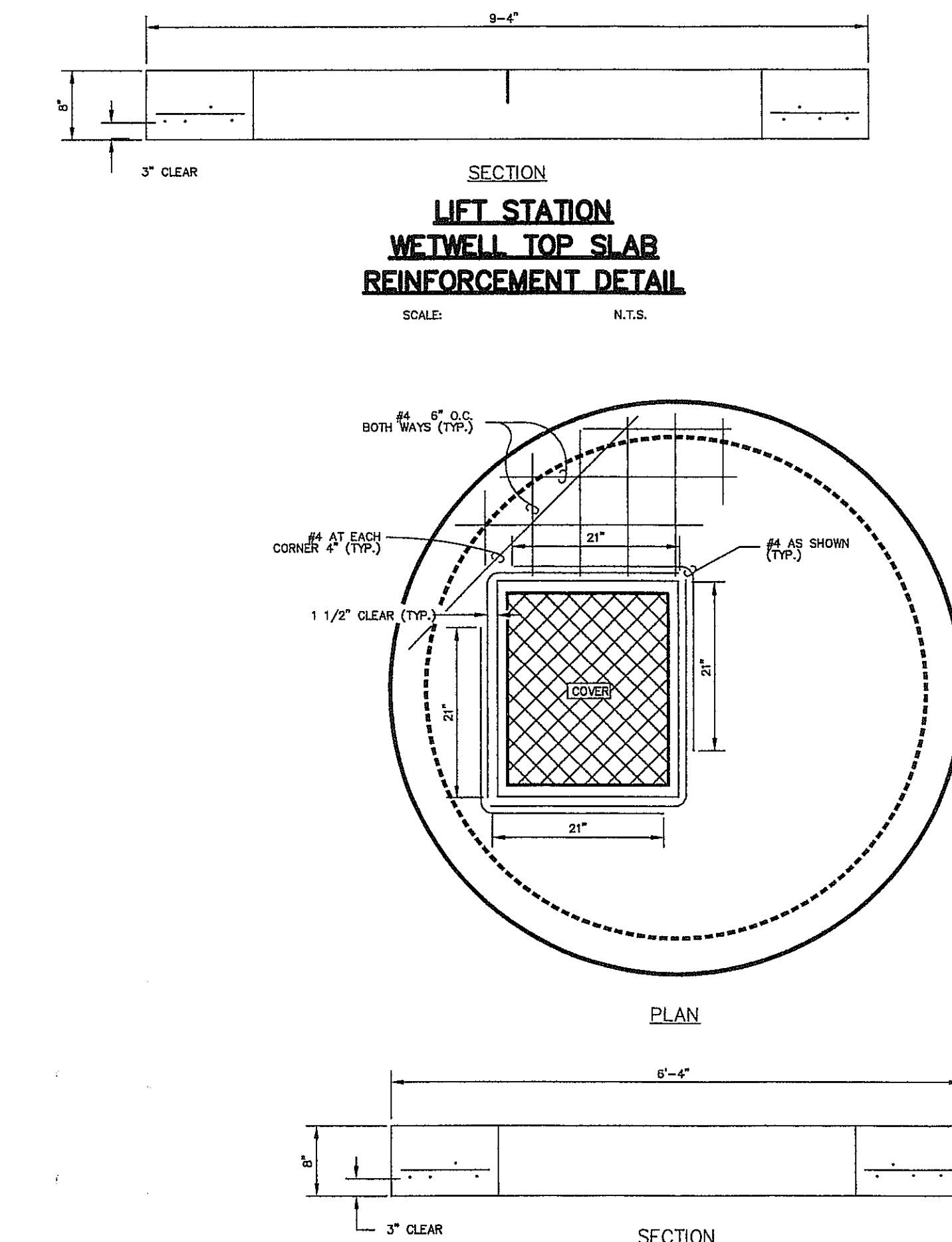
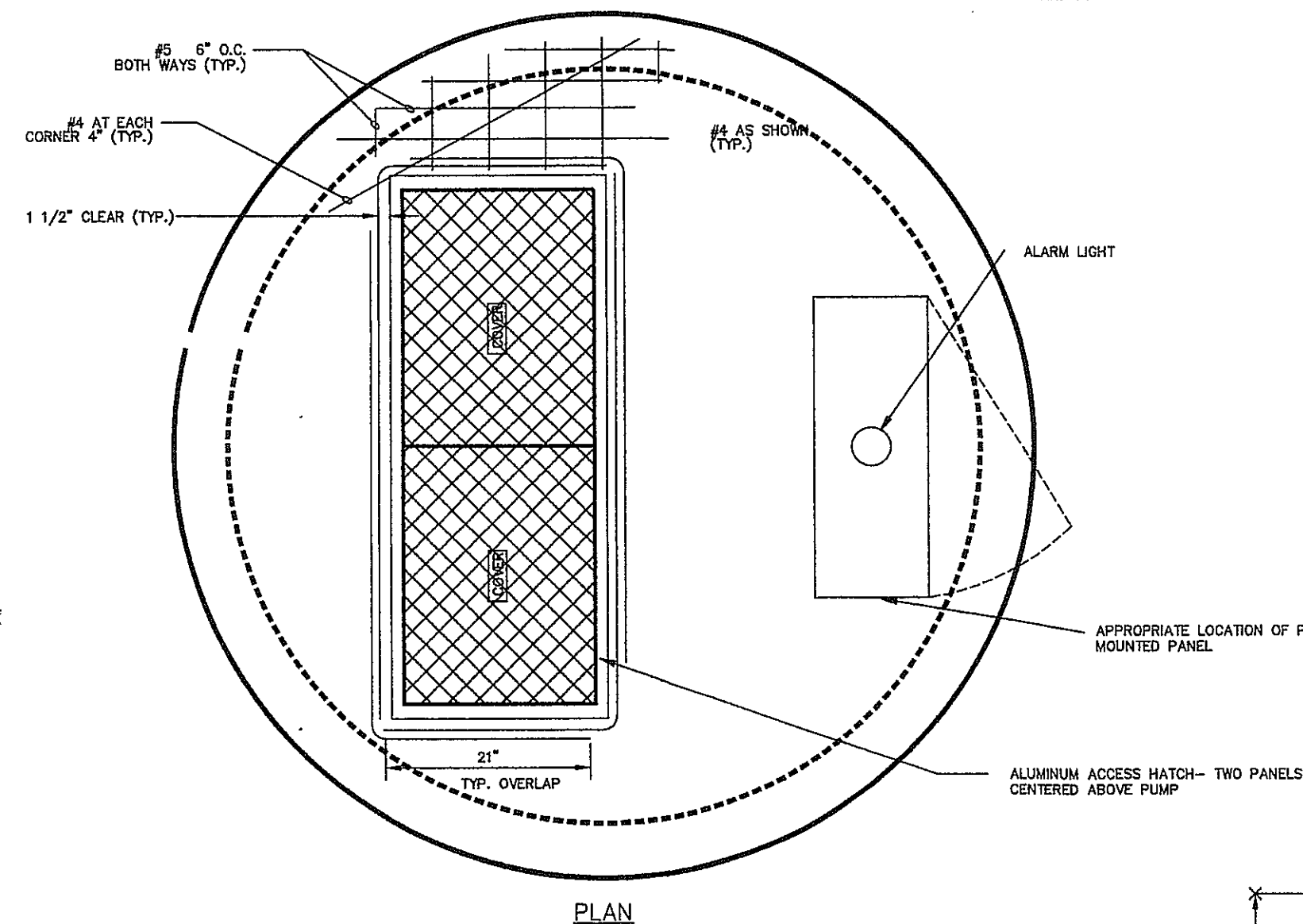


INITIAL DESIGN	10-16-06	DATE	FF	FF	FF	FF
	DATE	FOR	PM	DES	DRW	
CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1						
CEI ENGINEERING ASSOCIATES, INC.						
ENGINEERS PLANNERS SURVEYORS						
3317 S.W. 1 Street Bentonville, AR 72712			(479) 273-9472 FAX (479) 273-0844		JOB NO.: 20733.0 DWG NAME: 20733DET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





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



- ## CONCRETE NOTES:
1. ALL CONCRETE UNLESS NOTED SHALL BE STONE AGGREGATE, TYPE 1 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 BARS 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 VIBRATOR TO OBTAIN 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 EXTERIOR, 3-INCHES.
 - (b) CONCRETE POURED IN FORMS, BUT EXPOSED TO WEATHER OR EXTERIOR, 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 38-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. CONCRETE JOINTS IN JOISTS 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 CELUWAG 663 IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. MASTER BUILDERS, P.O. BOX 13350, OMAHA, NE 68113 OR Sika Guard, MANUFACTURED BY THE Sika COMPANY.

- ## ELECTRICAL NOTES:
1. INSTALL WIRE SOCKET IN ENCLOSURE IN ACCORDANCE WITH ELECTRIC COMPANY REQUIREMENTS AND THE NATIONAL ELECTRIC CODE.
 2. INSTALL SERVICE LATERAL CONDUIT SERVICE ENTRANCE INCLUDING 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 THE CONTRACTOR'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 ANY OTHER 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, THE NATIONAL WIRE LOCAL AND ELECTRIC CODES AND REGULATIONS.

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

INITIAL DESIGN	9-16-04	DAT	FF	FF
	DATE	EOR	PM	DES
				DRW

CAVE SPRINGS WASTEWATER TRANSFER SYSTEM - PHASE 1



ENGINEERING ASSOCIATES, INC

ENGINEERS
PLANNERS
SURVEYORS

3317 SW 1 st Street Bentonville, AR 72712	(479) 273-6472 FAX (479) 273-0844	JOB NO: 20733 DRAW NAME:
	DATE	SHEET NO.
	09-14-06	
	08:59 AM	
	REV. 6	

PUMP STATION DETAIL

43 of 43

