

ENGINEERS

Waterfront Plaza Suite 710 325 West Main Street Louisville, KY 40202 Phone. 502-583-7020 Fax. 502-583-7026

Office Locations

Madison, WI Joliet, IL Louisville, KY Lexington, KY Mobile, AL Columbus, IN Columbus, OH Indianapolis, IN Milwaukee, WI Cincinnati, OH Phoenix, AZ

www.strand.com

March 15, 2010

RECEIVED

Linda Faulkner

Public Service Commission

211 Sower Blvd.

MAR 17 2010

PUBLIC SERVICE

COMMISSION

P.O. Box 615

Frankfort, Kentucky 40602

Re: McCreary County Water District

New Liberty Water Main Extensions and Storage Tank Projects

Contracts 2 & 2A - 2007

Dear Ms. Faulkner:

On behalf of McCreary County Water District, we are responding to your letter dated March 8, 2010 for Case No. 2008-00138. In this letter you requested the following items or answer to questions.

- 1) A copy of as-built drawings and a written statement confirming that plans have been constructed in accordance with the contract plans and specifications. Enclosed you will find a half size copies of plans and a letter regarding completion in accordance with the contract plans and specifications.
- 2) McCreary County shall notify the commission to the actual start of construction and the 50% completion point. The Start of construction was on May 16, 2008 and the 50% completion point was approximately August 22, 2008.

If you have any questions or need any additional information please do not hesitate to give me a call.

Sincerely,

cc:

STRAND ASSOCIATES, INC.

Mark C. Askin, P.E.

Stephen T. Owens, Manager, MCWD

File



ENGINEERS

Waterfront Plaza Suite 710 325 West Main Street Louisville, KY 40202 Phone: 502-583-7020 Fax: 502-583-7026

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Madison, WI Joliet, fL Louisville, KY Lexington, KY Mobile, AL Columbus, IN Columbus, OH Indianapolis, IN Milwaukee, WI Cincinnati, OH Phoenix, AZ December 7, 2009

Stephen T. Owens, Manager McCreary County Water District P.O. Box 488 Whitley City, Kentucky 42653

Re: McCreary County Water District

New Liberty Water Main Extensions and Storage Tank Projects

Contracts 2 & 2A - 2007

Certification

Dear Mr. Owens:

www.strand.com

We hereby state to the best of our knowledge and belief that the referenced projects have been completed in accordance with the plans and specifications.

Sincerely,

cc:

STRAND ASSOCIATES, INC.

Mark C. Askin, P.E.

Tom Partin, Rural Development

File



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Office Locations

Madison, WI Joliet, IL Louisville, KY Lexington, KY Mobile, AL Columbus, IN Columbus, OH Indianapolis, IN Milwaukee, WI Cincinnati, OH Phoenix, AZ

www.strand.com

December 7, 2009

Dear Owens:

Stephen T. Owens, Manager McCreary County Water District P.O. Box 488 Whitley City, Kentucky 42653

Re: McCreary County Water District

New Liberty Water Main Extensions and Storage Tank Projects

Contracts 2 & 2A - 2007

Substantial Completion & Warranty

We hereby state that items planned and specified in Contract 2 - 2007 (performed by Southern Kentucky Construction Company) as bid originally, and change orders, were operational as of November 19, 2009. The warranty period for all items are for one year and expires November 19, 2010.

We hereby state that items planned and specified in Contract 2A - 2007 (performed by Caldwell Tanks, Inc.) as bid originally, and change orders, were operational as of April 22, 2009. The warranty period for all items are for one year and expires on April 22, 2010.

The record drawings for both of these projects were completed and sent to your office on April 22, 2009.

If you have any questions or need any additional information please do not hesitate to give me a call.

Sincerely,

STRAND ASSØC

10411

cc:

Tom Partin, Rural Development

File

Steven L. Beshear Governor

Leonard K. Peters Secretary Energy and Environment Cabinet



Commonwealth of Kentucky
Public Service Commission
211 Sower Blvd.
P.O. Box 615
Frankfort, Kentucky 40602-0615
Telephone: (502) 564-3940
Fax: (502) 564-3460
psc.ky.gov

David L. Armstrong Chairman

James W. Gardner Vice Chairman

Charles R. Borders Commissioner

March 8, 2010

Raymond Taylor Chairman of The Commission McCreary County Water District P.O. Box 488 Whitley City, KY 42653

Dear Mr. Taylor:

The order issued by the Kentucky Public Service Commission on Case No. 2008-00138 dated May 15, 2008 stipulates the following:

- McCreary District shall file a copy of the "as-built" drawings and a certified statement that the construction has been satisfactorily completed in accordance with the contract plans and specifications within 60 days of the substantial completion of the construction certified herein.
- McCreary District shall notify the Commission one week prior to the actual start of construction and at the 50 percent completion point.

Please report to us in writing the status of these issues by March 22, 2010.

Sincerely

Linda Faulkner

Division Director Filings



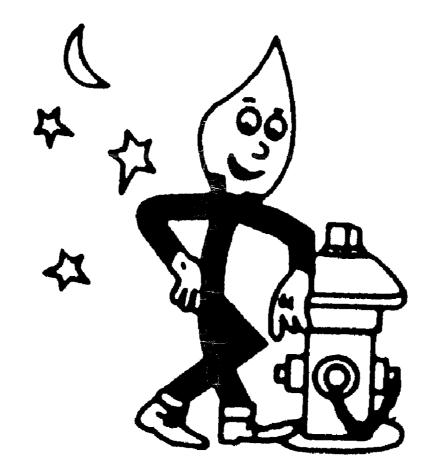
5-108.019 - NEW LIBERTY WATER MAIN EXTENSIONS PROJECT

NEW LIBERTY WATER MAIN EXTENSIONS PROJECT

FOR THE

McCreary County Water District Whitley City, Kentucky

DECEMBER 2007



COMMISSIONERS

RAYMOND TAYLOR, CHAIRMAN
LARRY CAMPBELL BUTLER WATTERS
COY TAYLOR DOUG SEXTON

MANAGER

STEPHEN T. OWENS

LOCAL COUNSEL

TIM LAVENDER



SHEET **1**JOB NO. 5-108.019

325 West Main Street, Suite 710 Louisville, KY 40202 502 583-7020 502 583-7026 FAX

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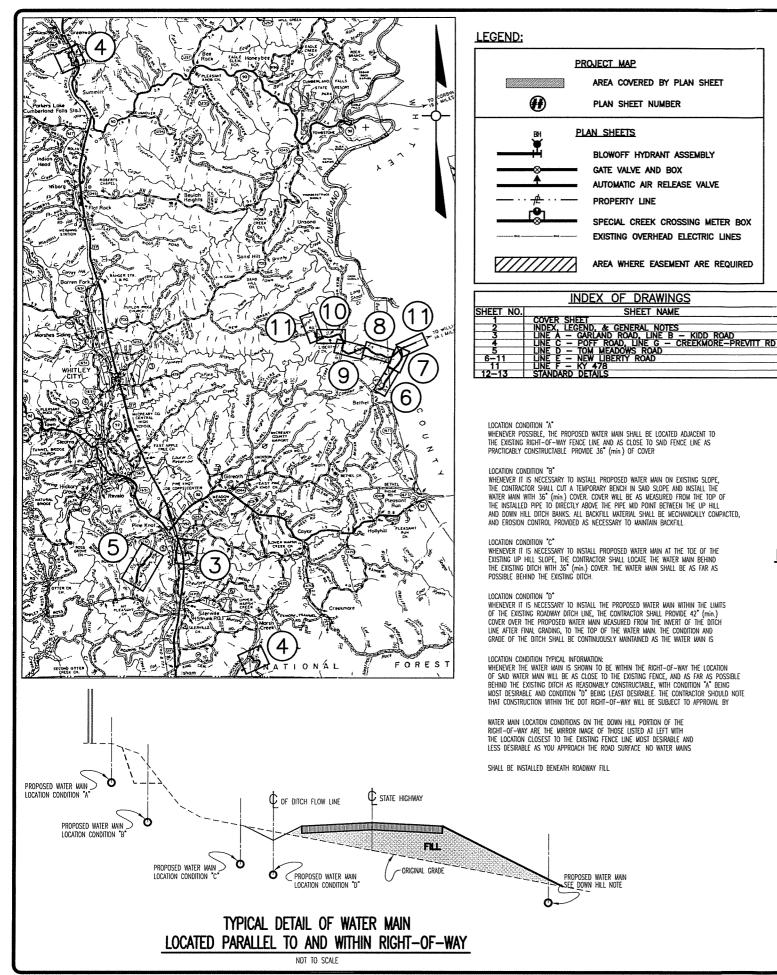
CONTRACT NO. 2 - 2007

2008-00138 RECEIVED

MAR 17 2010

PUBLIC SERVICE COMMISSION

RECORD DRAWINGS



CONSTRUCTION ON RIGHT-OF-WAY NOTES:

01 - WATER LINES TO BE CONSTRUCTED WITHIN THE KENTUCKY DEPARTMENT OF TRANSPORTATION RIGHT-OF-WAY:

Trenches shall be of a depth sufficient to provide a minimum cover of 42° from the existing ground surface to the top of the pipe and be located approximately 5 feet from the edge of the povement or on the back side of ditch line, unless otherwise noted See individual sheets for details

See individual sheets for details.

O2 - ALL BORES UNDER STATE HIGHWAYS RIGHT-OF-WAY:

Shall be a minimum of 42" depth under bottom of ditch line to top of the proposed bore and/or casing pipe on both sides of the highway.

03 - ROCK BLASTING

There shall be NO blasting within State Right-of-Way without written consent from the

04 - PROTECTION OF EXISTING PAVING

Care shall be taken by the CONTRACTOR to avoid cracking or breaking the bituminaus paving All damage to the existing paving caused by the CONTRACTOR'S operation shall be repaired by the CONTRACTOR at no cost to the owner Paving protection shall be accomplished by the use of rubber-lired and street padded machinery or other approved equipment well suited for this type of construction.

05 - BANK AND DITCH PROTECTION EXCAVATION:

During construction, all embankments, refills and excavations shall be kept shaped and drained by the CONTRACTOR Ditches and drains along the highways shall be maintained in such a manner as to drain effectively at all times.

- PRIVATE ENTRANCE ROAD:

All roadways and driveways within the work limits of state Right-of-Ways shall be refilled to the natural surface of the ground with approved material. The material shall be placed and compacted to a smoothness suitable for traffic The CONTRACTOR shall be totally responsible for maintaining these roadways until the restoration is approved by the ENGINEER. The CONTRACTOR shall note that all private businesses and residences along the route of the proposed water main must have access to their properties at all times during construction.

— PROTECTION OF EXISTING DRAINAGE CULVERTS:

07 - PROTECTION OF EXISTING DRAINAGE CULYERTS: At locations where the proposed water main is parallel with or crossing an existing storm sever, the cost of relaying existing culvert pipes or the extra depth required to avoid the

existing culvert is considered incidental to the construction and is not a pay item

8. EXISTING UTILITIES HAVE NOT BEEN SHOWN:

The CONTRACTOR shall be responsible for locating all existing utilities. The CONTRACTOR shall coordinate with the representatives of the various utilities when working near any existing

The CONTRACTOR shall be responsible for locating all existing utilities. The CONTRACTOR shall condinate with the representatives of the various utilities when working near any existing utility. No additional payment to the CONTRACTOR will be made for extra depth required to avoid any existing utility.

09 - FITTINGS:

Unless otherwise noted, a separate bid item has not been established for fittings. The fittings involved are, but not limited to, the following; tees, bends, plugs, reducers, couplings, soddles, crosses, etc. The CONTRACTOR shall include the cost of these items in the unit price for the pipe. All tees and bends shall be thrust blocked as shown on the detail sheets of the contract drawings.

10 - CONSTRUCTION LIMITS:

The CONTRACTOR shall confine all construction activity to the area within existing easements and construction limits, unless otherwise approved in writing by the OWNER

11 - ROCK SOUNDINGS:

Rock soundings were not performed by the ENGINEER The CONTRACTOR shall take appropriate action to determine subsurface conditions

12 - FINAL LOCATIONS OF APPURTENANCES:

The final location of services, line valves, air release valves, blowoffs, hydrants (location and orientation) shall be field located during construction and approved by the ENGINEER All meters, valves, air releases, blowoffs and hydrants shall only be located on the backside of

KTC-DEPARTMENT OF HIGHWAYS GENERAL NOTES:

underground utilities installed inside state right-of-way shall be located within 3–5 feet from the edge of the right-of-way unless otherwise shown on the plans.

UNDERGROUND UTILITIES SHOWN MORE THAN 5 FEET FROM THE EDGE OF THE RIGHT-OF-WAY SHALL BE INSTALLED WITH A MINIMUM DEPTH OF COVER OF 36 INCHES WITH PRIOR APPROVAL ON A CASE BY CASE BASIS

Underground utilities crossing any entrance or crossroad paved with concrete or asphalt surface inside state right-of-way shall be installed by Boring Unless written permission to open cut is obtained from the property owner and approved by the ktc district permits engineer.

UNDERGROUND UTILITIES SHALL NOT BE INSTALLED IN EMBANKMENT FILLS OR BETWEEN EDGE OF PAVEMENT AND DITCHLINE UNLESS SPECIFICALLY NOTED ON PERMITTED PLANS

CONTACT THE DISTRICT PERMITS ENGINEER AT KTC-DOH DISTRICT ∄8, SOMERSET, KY AT (606) 677-4017 PRIOR TO BEGINNING WORK

ALL EFFECTED KTC DITCHLINES SHALL REMAIN FREE OF EXCESS SILT OR EROSION AND CONSTRUCTED TO THE NORMAL TYPICAL SECTION OF THE ROADWAY WITH A MINIMUM DEPTH OF 18 INCHES FROM THE SHOULDER BREAK POINT.

ALL NECESSARY STEPS SHALL BE TAKEN TO PREVENT EROSION OR SILTATION OF THE PUBLIC RIGHT-OF-WAY, ADJUMING PROPERTY AND WATERWAYS.

GENERAL NOTES:

- 01. EFFORTS HAVE BEEN MADE TO INDICATE ACCURATE LOCATIONS OF EXISTING STRUCTURES, PIPING AND UTILITIES. HOWEVER, THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE SITE AND OTHER EXISTING CONDITIONS AND NOTHEY THE FORENEER OF ANY DISCREPANCIES BETWEEN INFORMATION DEPICTED BY THE CONSTRUCTION DRAWINGS AND ACTUAL FIELD CONDITIONS WHICH WOULD SIGNIFICANTLY ALTER THE DESIGN INTENT OF THE CONSTRUCTION DRAWINGS PRIOR TO COMMENCING HIS CONSTRUCTION OPERATIONS. DIMENSIONS OF EXISTING STRUCTURES AND/OR SITE RESTRICTIONS ARE APPROXIMATE. IT IS THE CONTRACTORS RESPONSIBILITY TO OBTAIN AND CONFIRM ALL DIMENSIONS AND ELEVATIONS OF EXISTING STRUCTURES AND TOPOGRAPHY IN THE FIELD NECESSARY FOR HIS CONSTRUCTION OPERATION.
- 02 THE CONTRACTOR SHALL USE ALL POSSIBLE CARE DURING EXCAVATION ON THIS PROJECT SO AS NOT TO DISTURB OR DAMAGE ANY EXISTING UTILITY OR STRUCTURE NOT SCHEDULED FOR DEMOLITION WHETHER DEPICETED OR NOT IN THE CONSTRUCTION DRAWINGS ANY DAMAGE TO THE AFORE MENTIONED ITEMS CAUSED DIRECTLY OR INDIRECTLY BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO COST TO THE OWNER TO A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO BEND DAMAGED.

03 IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL EXISTING UTILITY OWNERS AND HAVE THEM FIELD LOCATE THEIR EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION ACTIVITIES

04 EXISTING UTILITIES DEPICTED IN THE CONSTRUCTION DRAWINGS WERE LOCATED FROM ACTUAL FIELD EVIDENCE, EXISTING UTILITY AGENCIES RECORDS OR OTHER AVAILABLE EVIDENCE. OTHER UTILITIES MAY EXIST AND NOT BE SHOWN OR MAY VARY FROM WHERE SHOWN. NO GUARANTEE IS EXPRESSED OR IMPLIED AS TO ACTUAL LOCATION OF UTILITIES SHOWN HEREON, BUT NOT VISIBLE FROM THE SURFACE.

OS THE CONTRACTOR SHALL CONFINE ALL CONSTRUCTION ACTIVITIES TO THE AREA WITHIN EXISTING RESEMENTS AND CONSTRUCTION LIMITS UNUESS OTHERWISE APPROVED IN WRITING BY THE OWNER OF THE CONTRACTOR SHALL BE SOLELY LIABLE FOR ANY WORK HE PERFORMS OUTSIDE OF LEGAL

06 THE CONTRACTOR SHALL BE SOLELY LIABLE FOR ANY WORK HE PERFORMS OUTSIDE OF LEGAL EASEMENTS OR CONSTRUCTION LIMITS.

07 THE CONTRACTOR SHALL CONTACT AND OBTAIN THE PERMISSION OF THE OWNER 48 HOURS (MIN.)

07 THE CONTRACTOR SHALL CONTACT AND OBTAIN THE PERMISSION OF THE OWNER 48 HOURS (MIN) PRIOR TO ANY CONSTRUCTION ACTIVITY INTERRUPTING OPERATION OF THE DISTRIBUTION SYSTEM. ALL MATERIALS, EQUIPMENT AND PERSONNEL REQUIRED SHALL BE ON SITE PRIOR TO ANY CONSTRUCTION ACTIVITY THAT DISRUPTS OPERATION OF THE EXISTING DISTRIBUTION SYSTEM.

08. UNLESS OTHERWISE NOTED, ALL BURIED PIPES SHALL HAVE 30" (MIN) COVER AS MEASURED FROM FINISHED GRADE TO THE OUTSIDE SURFACE OF THE PIPE.

09 IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO WORK ALL APPLICABLE DRAWINGS AND THE APPROPRIATE SPECIFICATIONS AS A UNIT. ANY OMISSIONS, DELETIONS, OR CONFLICTS ARISING AS A RESULT OF FAILURE TO INCORPORATE ALL DRAWINGS AND SPECIFICATIONS WHICH APPLY SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDED COST TO THE OWNER.

10. ALL PROPOSED WATER MAINS LOCATED WITHIN THE LIMITS OF THE EXISTING HIGHWAY R.O.W SHALL BE INSTALLED WITH 42" (MIN.) OF COVER ABOVE THE PROPOSED WATER MAIN. THE DIMENSION OF COVER WILL BE MEASURED FROM THE TOP EXTERIOR SUPFACE OF THE PROPOSED WATER MAIN AT THE POINT OF MEASURING DIAMETER OF THE PROPOSED WATER MAIN (JOINT, BELL, FITTING, ETC.) TO THE INVERT OF THE HIGHWAY DICH LINE AFTER THE SAID DICH LINE HAS BEEN DRESSED TO FINAL GRADE. SEE DETAIL THIS SHEET FOR ADDITIONAL INFORMATION.

11 THE CONTRACTOR SHALL NOTE THAT THE LENGTH OF BORES AND CASINGS REFERRED TO ON THE

11 THE CONTRACTOR SHALL NOTE THAT THE LENGTH OF BORES AND CASINGS REFERRED TO ON TI CONTRACT DRAWINGS IS APPROXIMATE AND MAY BE INCREASED OR DECREASED BY THE OWNER AND/OR THE ENGINEER AS REQUIRED BY FIELD REQUIREMENTS DURING CONSTRUCTION OF THIS CONTRACT.

12 THE CONTRACTOR SHALL NOTE THAT MANY WATERWAY CROSSINGS (CREEKS, STREAMS, DRAINS, ETC.) REQUIRE PROTECTION BY PLACEMENT OF EITHER A CRUSHED ROCK OR CONCRETE CAP ABOVE THE PROPOSED WATERMAIN. MOST OF THESE CROSSINGS HAVE BEEN IDENTIFIED, HOWEVER ADDITIONAL CAPS MAY BE REQUIRED AS ACTUAL FIELD CONSTRUCTION DICTATES FURTHER THE LENGTH AND MATERIAL (STONE OR CONCRETE) MAY BE CHANGED AS REQUIRED BY ACTUAL FIELD CONDITIONS DURING CONSTRUCTION OF THIS CONTRACT ALL CHANGES SHALL BE PAID FOR AT THE UNIT PRICE BID FOR SAID WATERWAY CROSSINGS UNDER THIS CONTRACT AND SHALL BE APPROVED BY OR DIRECTED BY THE OWNER AND/OR THE ENGINEER PRIOR TO INSTALLATION

3 THE CONTRACTOR SHALL NOTE THAT THE APPROXIMATE LOCATION OF MANY OF THE EXISTING HIGHWAY COLVERTS AND APPURTENANCES HAVE BEEN DEPICTED ON THE CONTRACT DRAWINGS, HOWEVER ADDITIONAL SUCH ITEMS MAY EXIST. FURTHER MORE IN SOME CIRCUMSTANCES THE EXISTING CULVERTS HAVE BEEN REFERRED TO AS BROKEN OR DAMAGED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND DOCUMENT THE CONDITION OF ALL EXISTING APPURTENANCES (HIGHWAY AND UTILITY) TO PREVENT CLAIMS THAT SAID ITEMS WERE DAMAGED DIRECTLY OR INDIRECTLY BY THE CONTRACTOR DURING CONSTRUCTION OF THIS CONTRACT.

14 ALL PAVED SURFACES CROSSED BY THE PROPOSED WATER MAIN SHALL BE SAW CUT TO PROVIDE A CLEAN, TRUE EDGE FOR PAVEMENT REPLACEMENT

15 ALL EXCAVATION UNDER THIS CONTRACT IS UNCLASSIFIED NO EXTRA COMPENSATION SHALL BE ALLOWED FOR ROCK EXCAVATION ADDITIONALLY, NO EXTRA COMPENSATION WILL BE ALLOWED FOR EXTRA TRENCH DEPTH THAT MAY BE REQUIRED TO AVOID EXISTING UTILITIES, ETC OR REQUIRED BY GRADE TRANSITIONS SUCH AS CREEK CROSSINGS, ETC THE CONTRACTOR SHALL INCLUDE ALL SUCH COSTS IN THE UNIT PRICE BID.

THE CONTRACTOR SHALL NOTE THAT SOME PROPERTIES ALONG THE PROPOSED WATER MAIN ROUTE MAY HAVE EXISTING ON—SITE SEWAGE DISPOSAL SYSTEMS (SEPTIC TANKS, LEACH FICLDS, ETC.) THE CONTRACTOR SHALL ASSESS FIELD CONDITIONS AHEAD OF HIS EXCAVATION AS REQUIRED TO AVOID DISTURBING ALL SUCH SYSTEMS HOWEVER IF DISTURBANCE IS UNAVOIDABLE OR ACCIDENTAL, THE CONTRACTOR SHALL HAVE ON CALL A LICENSED PLUMBER TO REPAIR ANY AND ALL DAMAGE CAUSED DIRECTLY OR INDIRECTLY BY THE CONTRACTOR SHALL CONTRACT THE CONTRACTOR SHALL CONTACT THE OWNER AND/OR THE ENGINEERING PRIOR TO BACK FILLING THE PROPOSED WATERMAIN TO ALLOW ASSESSMENT OF FIELD CONDITIONS WHICH MAY REQUIRE FURTHER PROTECTION OF THE PROPOSED WATER MAIN ANY REPAIRS MADE TO EXISTING SEPTIC SYSTEMS SHALL BE PERMANENT, IN ACCORDANCE WITH ALL GOVERNING CODES, AND SHALL BE COMPLETED THE SAME DAY

 ALL FITTINGS SHALL BE DUCTILE IRON MECHANICAL JOINT, CEMENT LINED, BITUMINOUS COATED, AND THRUST BLOCKED AS DETAILED.

 Contractor shall be responsible for any temporary easements that is requires for any construction activities or storage.
 The New Water Main Shall be located in the existing row and temporary easements shall

BE THE CONTRACTORS RESPONSIBILITY.
20 THE PROPERTY LINES ARE BASED ON PVA MAPS ONLY NOT A BOUNDARY SURVEY. THE ACCURACY
OF THE PROPERTY LINES ARE APPROXIMATE ONLY.

21. CONTRACTOR TO BE SURE BMP'S FOR RIPARIAN ZONE IMPACTS ARE UTILIZED PROPERLY AND MAINTAINED.

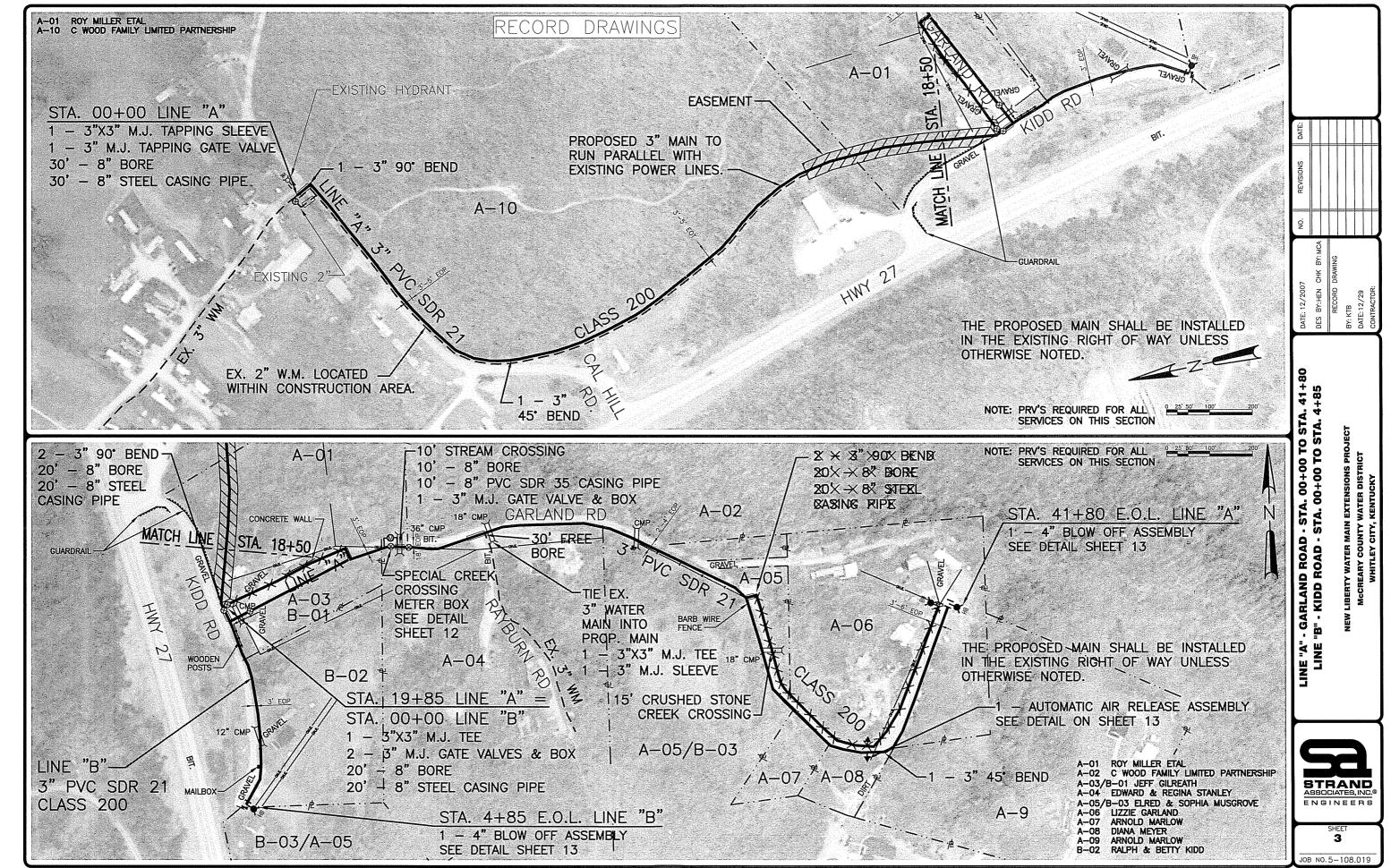
22 THE CONTRACTOR SHALL AVOID REMOVING ANY TREES GREATER THAN 9 INCHES IN DIAMETER
THESE TREES CAN ONLY BE REMOVED FROM NOVEMBER 15, 2007 TO MARCH 31, 2008

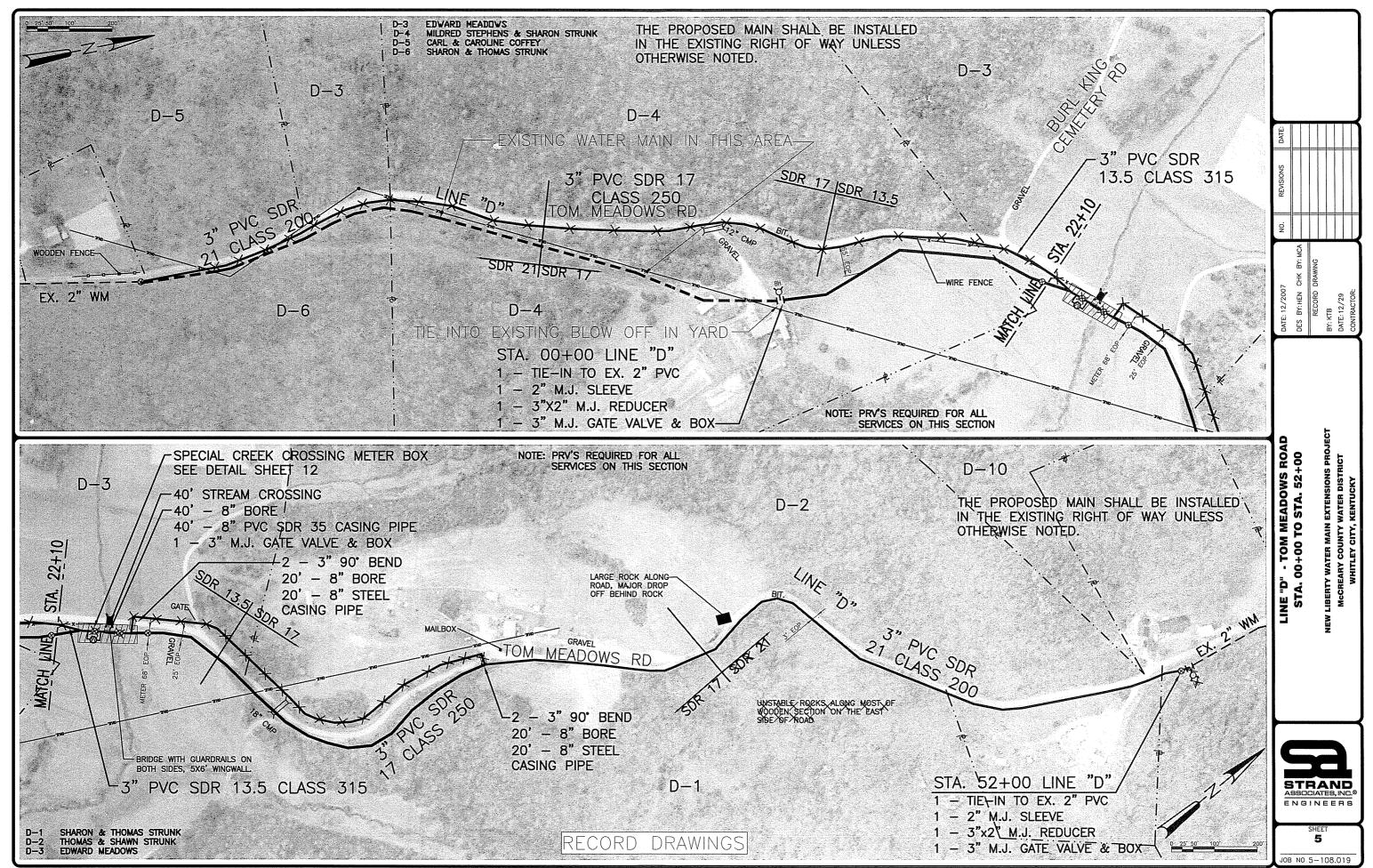
STRAND ABBOCIATES,INC.® ENGINEERS

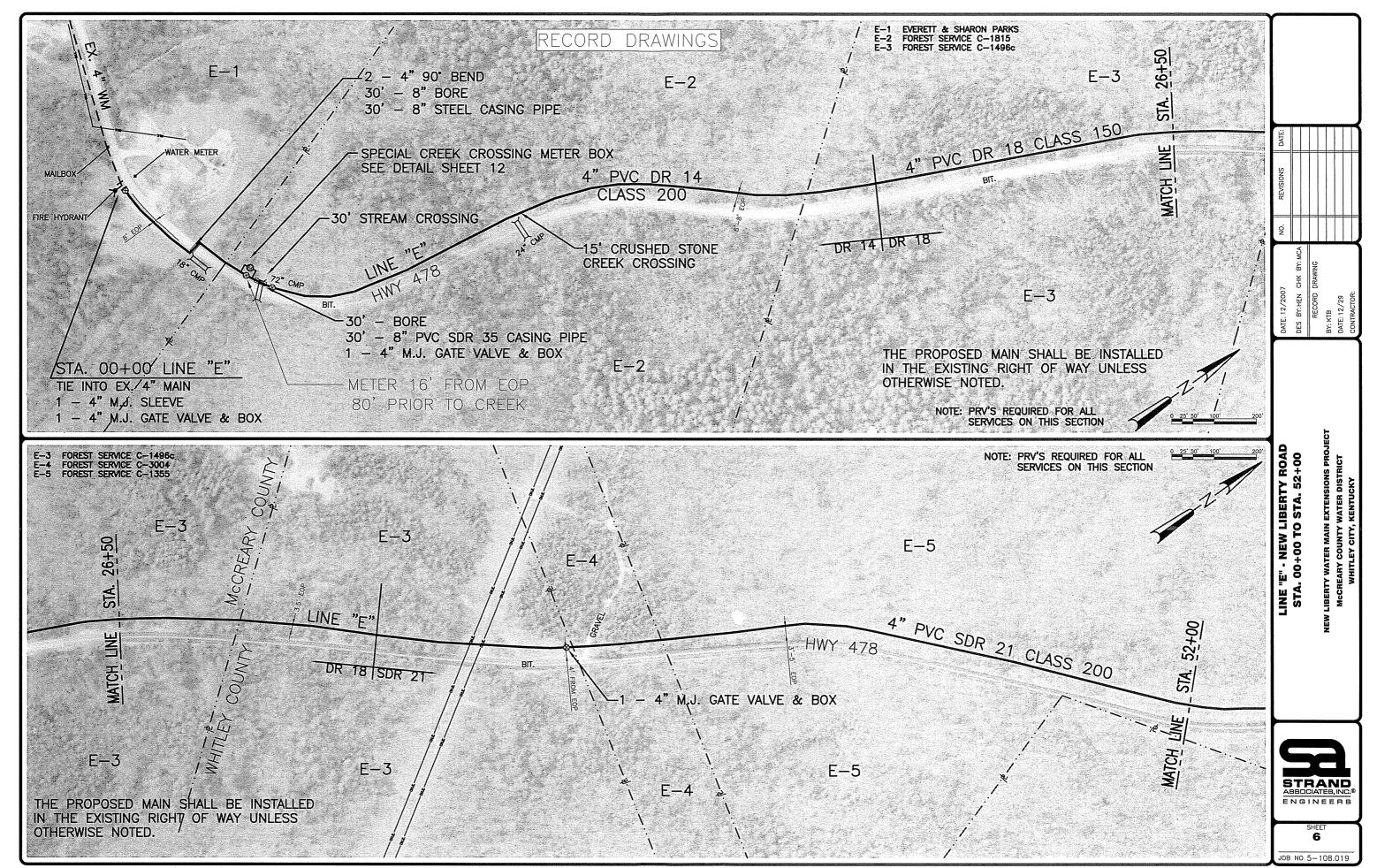
TER MAIN

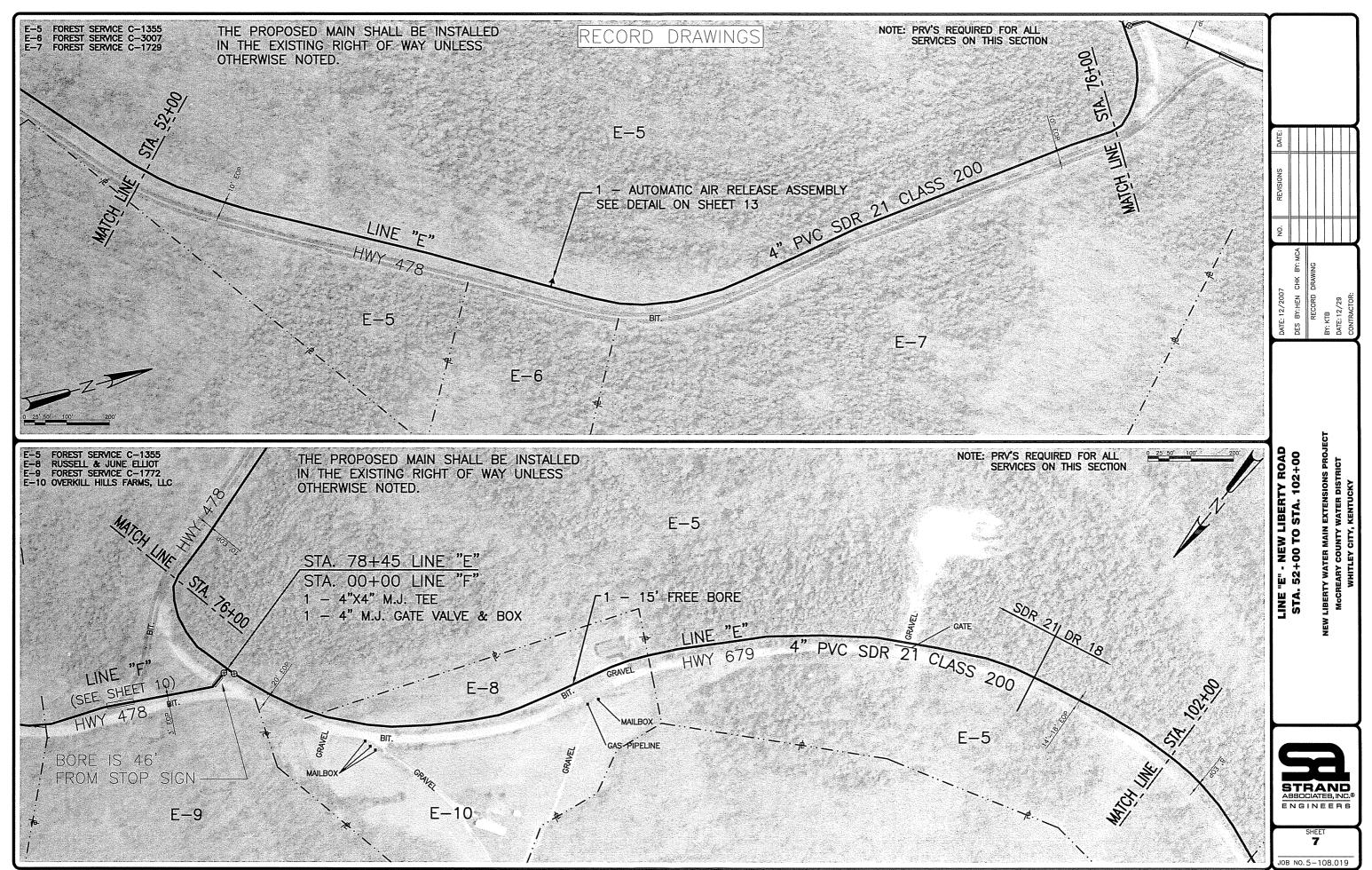
NOT

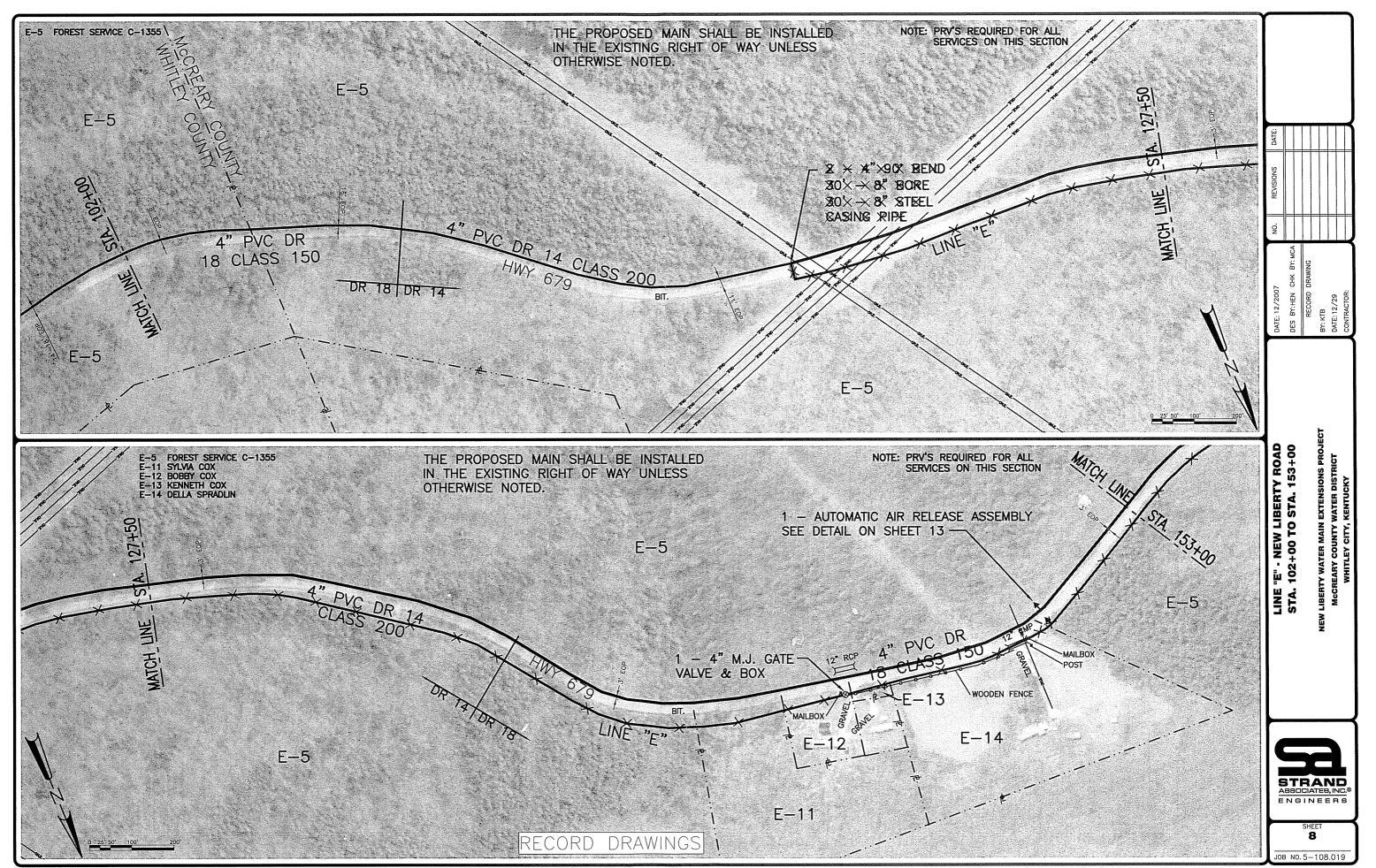
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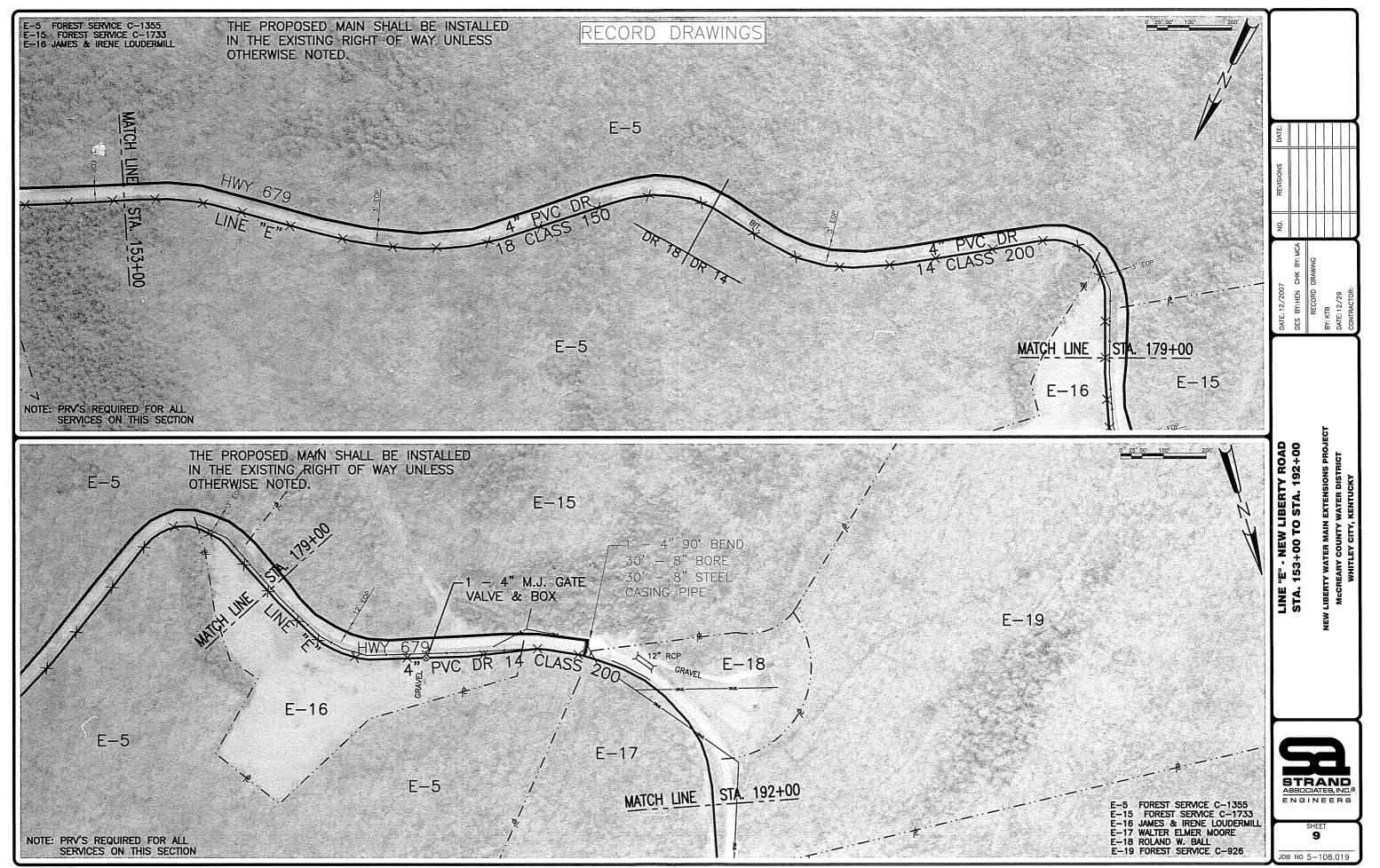


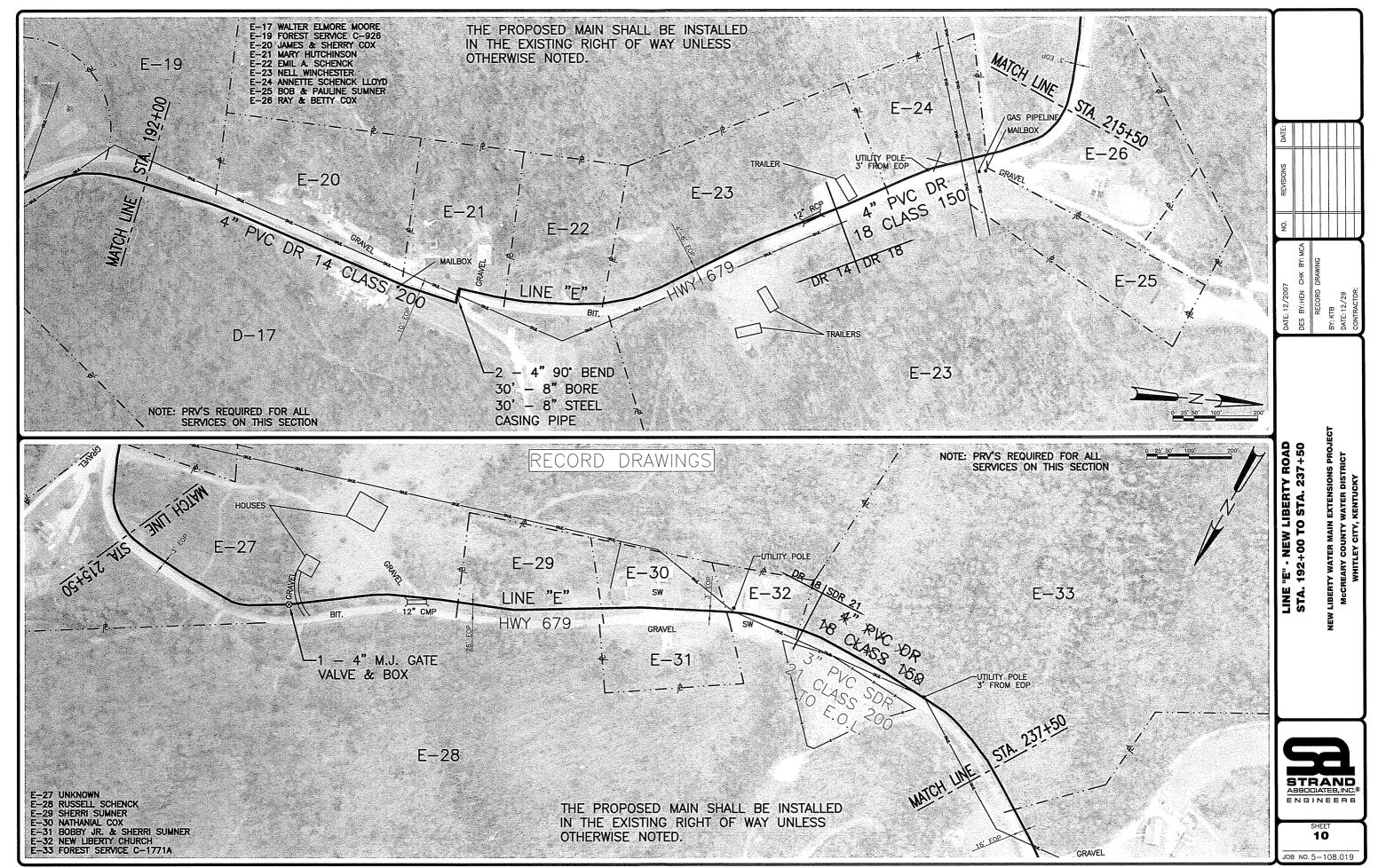


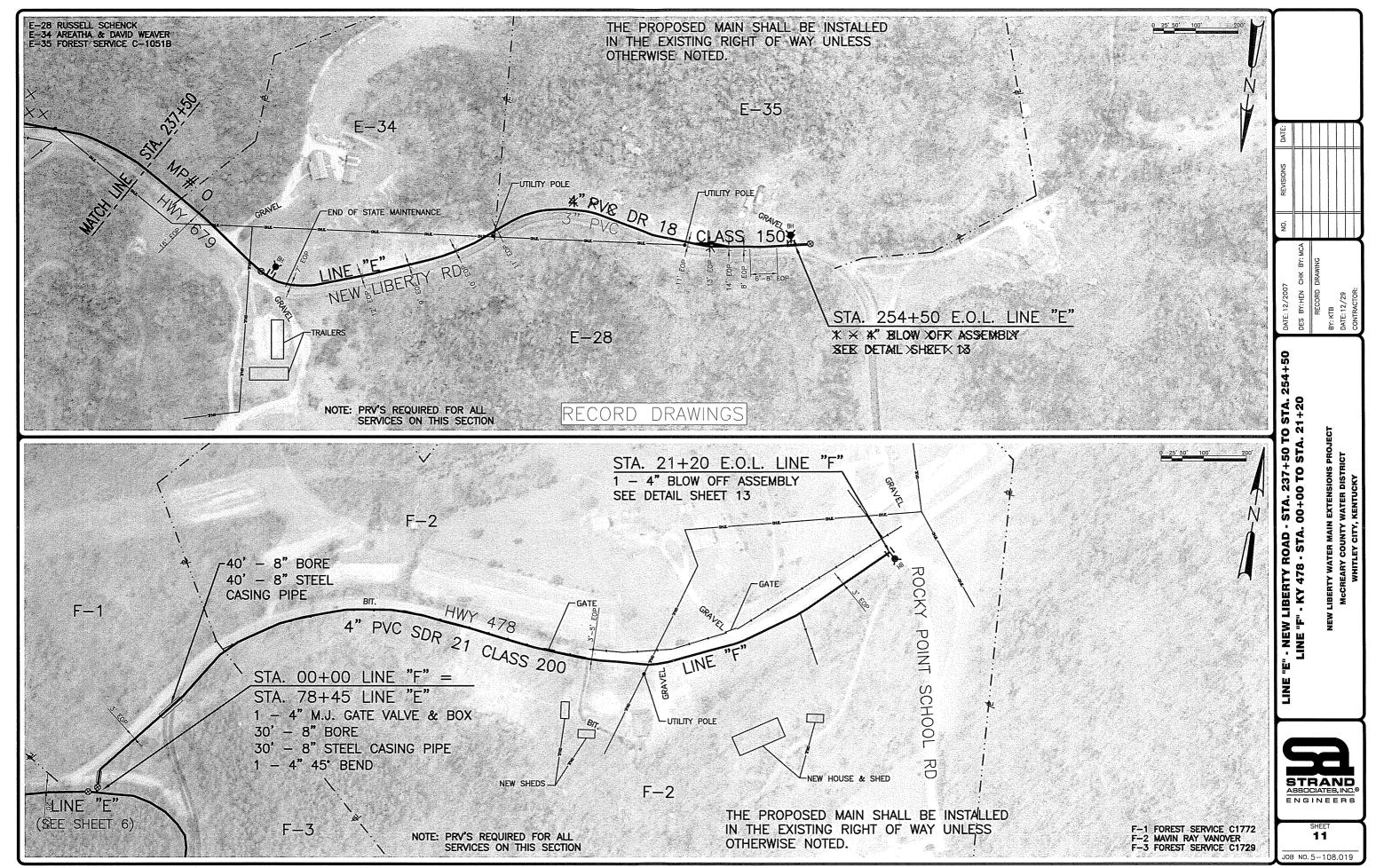


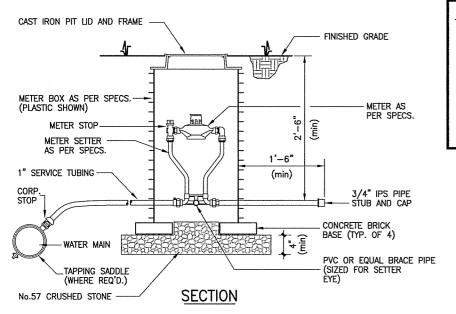












TYPICAL METER SETTING w/ PLASTIC METER BOX NOT TO SCALE

CAST IRON METER BOX FRAME AND LID. LID SHALL BE MFR'ED. TO ACCEPT ELECTRONICS PIT LID ANTENNA OF AUTOMATIC METER READING SYSTEM. FINISHED GRADE AUTOMATIC METER READING SYSTEM TRANSPONDER UNIT METER BOX AS PER SPECS. METER AS (PLASTIC SHOWN) PER SPECS. METER STOP METER SETTER AS PER SPECS. 1'-6" 1" SERVICE TUBING (min) CORP 3/4" IPS PIPE - STUB AND CAP CONCRETE BRICK BASE (TYP. OF 4) WATER MAIN PVC OR EQUAL BRACE PIPE TAPPING SADDLE (SIZED FOR SETTER EYE) (WHERE REQ'D.) **SECTION** No.57 CRUSHED STONE -

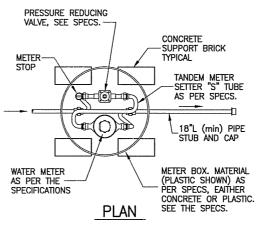
> TYPICAL METER SETTING WITH AUTOMATIC READING SYSTEM

NOT TO SCALE

ITEMS INCLUDED IN TYPICAL METER SETTING:

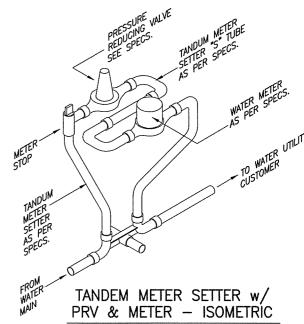
- 01. 5/8"x3/4" METER
 02. COPPER METTER SETTER WITH OUTLET EXTENDED.
 03. METER BOX, BOX EXTENTION (IF REQ'D.) AND
- COVER.

 04. 1" SERVICE TUBING AS FOLLOWS: 10 FT. MAXIMUM, SAME SIDE OF ROAD AS MAIN. 70 FT. MAXIMUM OPPOSITE SIDE OF ROAD AS MAIN (PUSHED OR BORE & JACK UNDER ROAD).
- 05. 1" CORPORATION STOP.
 06. TAPPING SADDLE (WHEN REQ'D.)
 07. UNCLASSIFIED EXCAVATION AND BACKFILL.
- 08. COMPLETE AND IN PLACE.

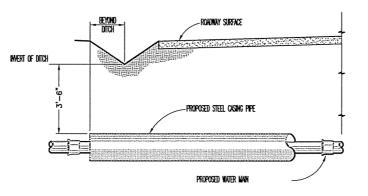


TYPICAL METER SETTING WITH PRESSURE REDUCING VALVE

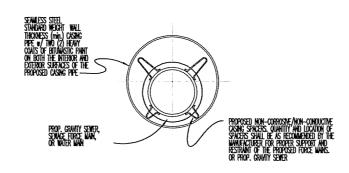
NOT TO SCALE



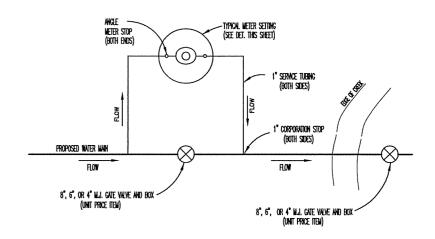
NOT TO SCALE



TYPICAL HIGHWAY BORE DETAIL NOT TO SCALE



SINGLE CARRIER PIPE CASING DETAIL

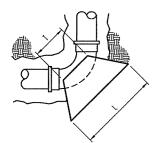


SPECIAL CREEK CROSSING METER BOX NOT TO SCALE

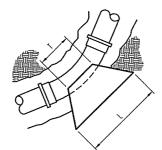
STRAND ENGINEERS

STANDARD DETAILS

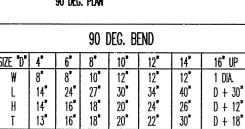
12 JOB NO.5-108.019



90 DEG. PLAN

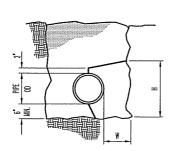


45 & 22 1/2 DEG. PLAN



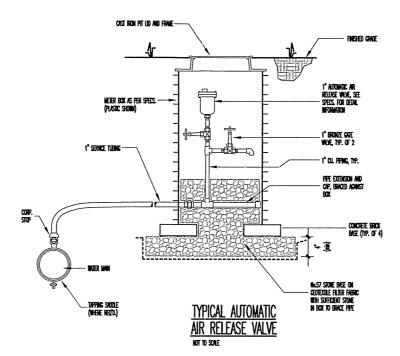
45 DEG. BEND												
SIZE "D"	4"	6"	8"	10"	12"	14"	16" UP					
W	8"	8"	10"	12"	12"	12"	1 DIA.					
L	14"	18"	10" 20" 18" 16"	12" 22" 20" 18"	12" 24"	12" 30" 26"	D + 24"					
H	14"	16"	18"	20"	24"	26*	D + 12°					
T	13"	16"	16"	18"	18"	22"	D + 12"					

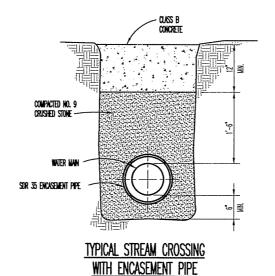
22 1/2 DEG. BEND											
SIZE "D"	4"	6*	8"	10"	12"	14"	16" UP				
₩	8"	8*	10"	12"	12"	12"	1 DIA.				
L	14"	18"	10" 20" 18" 16"	12" 22" 20" 18"	24" 24"	12" 30" 26" 22"	D + 24"				
H	14"	16"	18"	20"	24"	26*	D + 12°				
T	13"	16"	16"	18"	18"	22*	D + 12"				



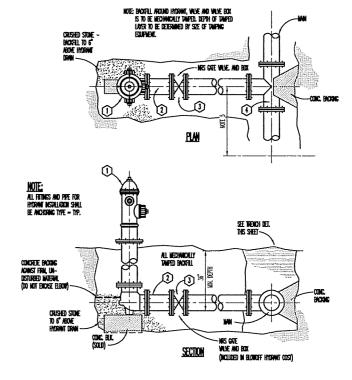
TYPICAL SECTION

ALL CONCRETE SHALL BE 3500 PSI HAMMAN DEPTH "W" MAY BE GREATER OR LESS THAN SPECIFIED TO ALLOW WORKING SPACE. THRUST BLOCK MUST BE PLACED AGAINST UNDISTURBED EARTH OR ROCK.



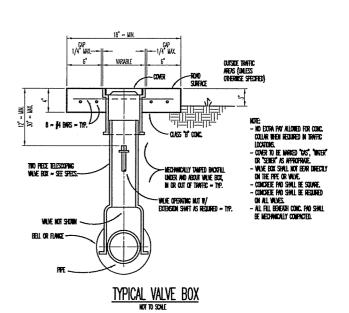


NOT TO SCALE



HYDRANT ASSEMBLY SCHEDULE FIRE HYD'T. BLOWOFF HYD'T. (1) MUBILER A-423, OR EQ. A-422, OR EQ. (2) 6" DWWEDER 4" DIMIETER (3) 6" GOTE WAVE 4" GATE WENT (4) 6° BRANCH 4° BRWICH OR LINE SIZE W/ REDUCER FOR Z & 3 WWG. (\$) WHEN LINE GATE WAVES ARE SHOWN ON THE PLANS MEAR THE OR BLORDET HYDRAWS ASSEMBLES, THE CONTRAINE OF THE GATE WAVE TO THE CONTRA-LINE OF THE HYDRAWS SHALL BE 5 FEET.

TYPICAL FIRE OR BLOWOFF HYDRANT DETAIL NOT TO SOME



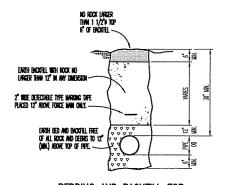


STRAND ENGINEERS

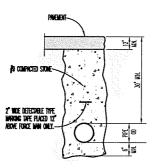
SHEET 13 JOB NO.5-108.019

CONCRETE THRUST BLOCK DETAIL NOT TO SCALE

D + 18°



BEDDING AND BACKFILL FOR PRESSURE PIPES 3" AND LARGER NOT TO SOME



BEDDING AND BACKFILL FOR PRESSURE PIPES 3" AND LARGER