

HARRIMAN UTILITY BOARD

Roane County, Tennessee

GREEN RIDGE HILLS SUBDIVISION

PHASE 1

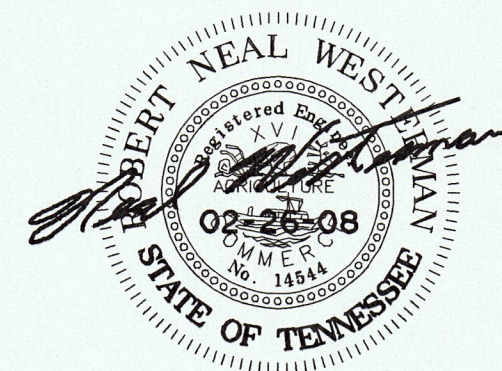
WATER LINE ADDITIONS

APPROVAL EXPIRES
MAR 24 2009
TENN. DEPT. OF ENVIRONMENT & CONSERVATION
DIVISION OF WATER SUPPLY

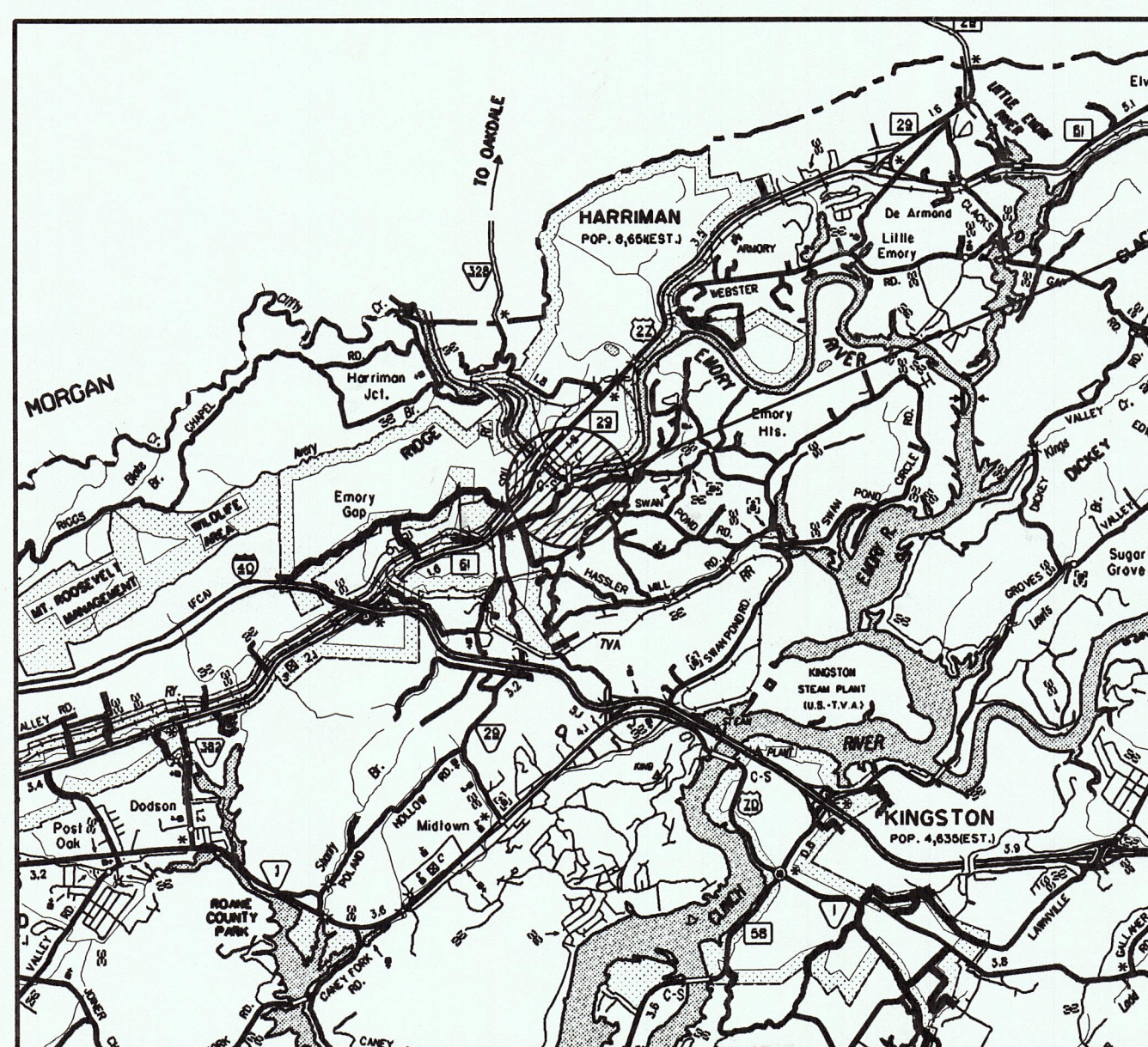
APPROVED FOR CONSTRUCTION
HARRIMAN UTILITY BOARD
TENNESSEE DEPARTMENT OF ENVIRONMENT & CONSERVATION
DIVISION OF WATER SUPPLY
MAR 24 2008
THE APPROVAL SHALL NOT BE CONSIDERED A GUARANTEE OF THE ACCURACY OF THE INFORMATION PROVIDED OR A GUARANTEE OF THE QUALITY OF THE WORK. THE USER SHALL BE RESPONSIBLE FOR THE PROPER USE OF THE INFORMATION PROVIDED.

2007

Project Engineer



LOCATION MAP



PROJECT LOCATION

SHEET INDEX

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WATER LINE ADDITION - F3	2
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HARRIMAN UTILITY BOARD APPROVED
CONTRACTOR: CK CONSTRUCTION

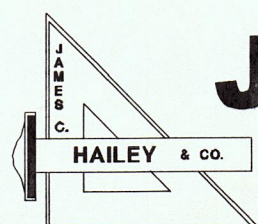
PLANS REVIEWED AND APPROVED BY HARRIMAN UTILITY BOARD

Frankie Davis

02-26-08
DATE

WS 08 362

SET NUMBER



JAMES C. HAILEY & CO.

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2622 OLD LEBANON ROAD - SUITE 200

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NASHVILLE, TENNESSEE

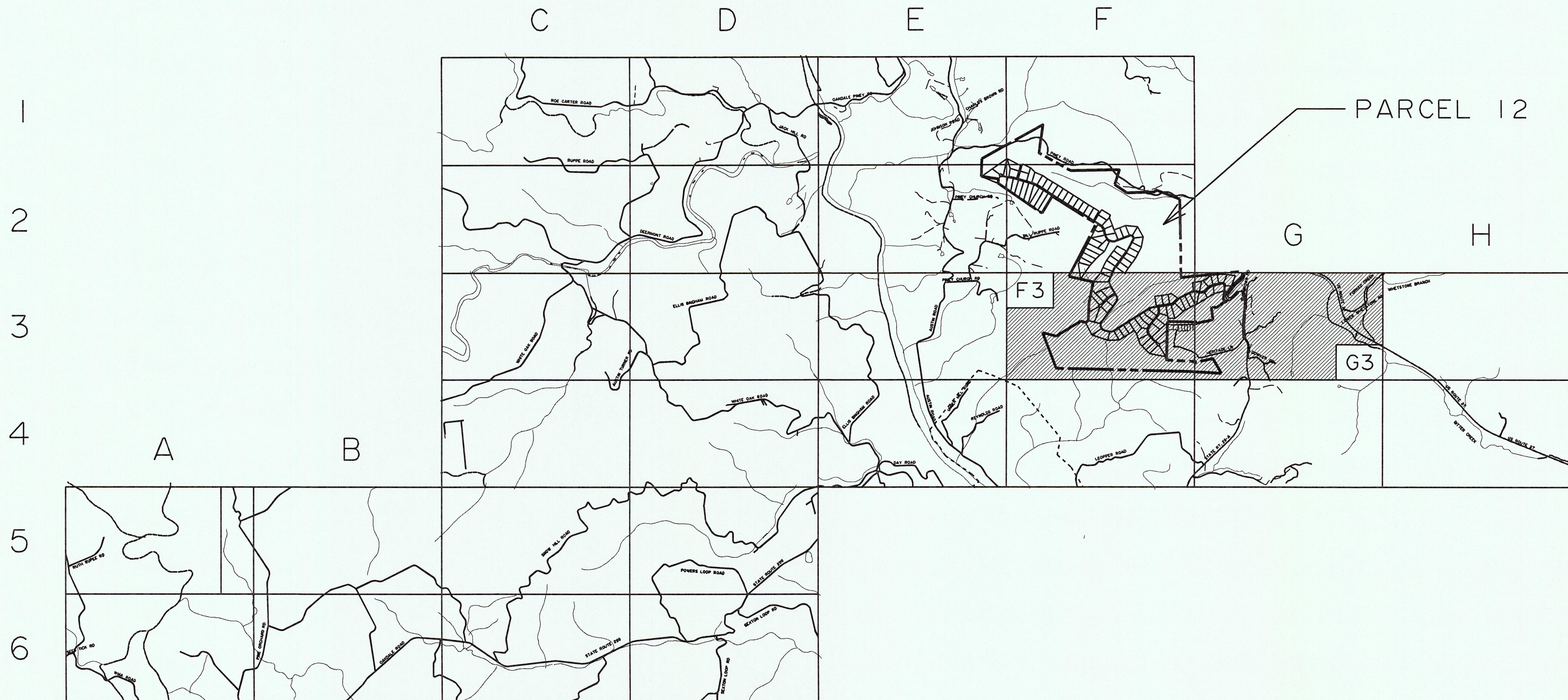
<http://www.jchengr.com>

JCH PROJECT NO. 07197

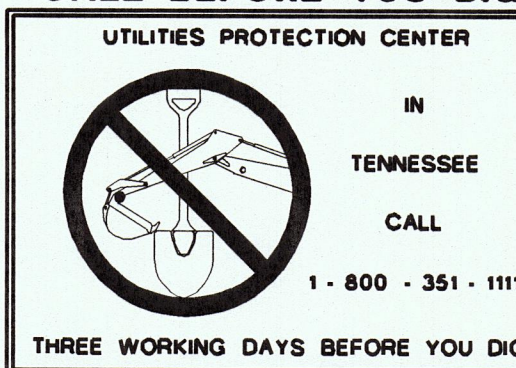
HARRIMAN - COOKE KNOB SUBDIVISION - WATER LINE ADDITION

GENERAL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATION OF ALL EXISTING UTILITIES AND CONSIDERATION OF SUCH IN BIDDING THE PROJECT. CONTRACTOR SHALL COORDINATE WITH APPROPRIATE UTILITY (GAS, WATER, TELEPHONE, ETC.) PRIOR TO EXCAVATION TO AVOID EXISTING UTILITIES AND TO ALLOW FOR POSSIBLE INSTALLATION MODIFICATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO ANY UTILITIES AND SHALL REPAIR AT ONCE.
2. PROVIDE ADEQUATE EROSION CONTROL MEASURES (SILT FENCE, HAY BALES, ROCK CHECK DAMS, SILT DETENTION BASINS, ETC.) TO PROTECT STREAMS AND WETLANDS FROM SILTATION ASSOCIATED WITH RUN-OFF AND STREAM DISTURBANCE. FAILURE OF THE CONTRACTOR TO INSTALL ADEQUATE EROSION CONTROL FACILITIES SHALL BE CAUSE FOR WORK TO BE STOPPED BY THE OWNER UNTIL SUCH FACILITIES ARE IN PLACE.
3. IF NOT NOTED ON PLANS, A 4'-0" MINIMUM CLEARANCE BETWEEN THE EDGE OF PAVEMENT AND THE EDGE TO TRENCH SHALL BE MAINTAINED. IF AN OBSTRUCTION IS ENCOUNTERED, CONTRACTOR MAY, WITH THE RESIDENT INSPECTORS APPROVAL, CLOSE TO A 2'-0" CLEARANCE TO CLEAR THE OBSTACLE. AT NO TIME WILL THE CLEARANCE BE LESS THAN 2'-0" WITHOUT THE PRIOR APPROVAL OF THE COUNTY ROAD SUPERINTENDENT.
4. WATER LINES CROSSING CONCRETE OR ASPHALT DRIVES SHALL BE INSTALLED IN A MINIMUM OF 20 FEET OF PVC OR POLYETHYLENE CASING. CASING ACROSS ASPHALT OR CONCRETE DRIVES SHALL BE INSTALLED BY BORE AND JACK WHERE SUBGRADE CONDITIONS PERMIT OR UNLESS OTHERWISE NOTED ON PLANS. WATER LINES CROSSING ASPHALT OR CONCRETE PARKING LOTS OR GRAVEL DRIVES SHALL BE INSTALLED BY OPEN CUT AND BACKFILLED WITH CRUSHED STONE. PAVEMENT SHALL BE NEATLY SAW-CUT AND REPLACED.
5. CASING AND BORE LENGTHS ARE TO BE FIELD VERIFIED BY THE CONTRACTOR.
6. PROVIDE CONCRETE CAPS ON CREEK AND DRAINAGE DITCH CROSSINGS AND RIP-RAP ON CREEK BANK CROSSINGS WHERE DIRECTED BY ENGINEER.
7. UTILITY SHALL PROVIDE WATER FOR INITIAL FLUSHING AND TESTING. AFTER INITIAL FLUSHING AND TESTING OF LINES, CONTRACTOR SHALL COMPENSATE THE OWNER FOR WATER USED AT THE CURRENT RATE PER 1,000 GALLONS UNTIL THE OWNER ACCEPTS THE SYSTEM. IN THE ABSENCE OF ADEQUATE METERING THE ENGINEER SHALL BE RESPONSIBLE FOR ESTIMATING THE CONSUMPTION OF WATER.
8. SERVICES WITHIN THE PROJECT AREA WITH STATIC PRESSURE GREATER THAN 80 PSI SHALL BE EQUIPPED BY THE CUSTOMER WITH PRESSURE REDUCING VALVE, LOCATED OUTSIDE OF THE UTILITY'S METER BOX.
9. AIR RELEASE VALVE ASSEMBLIES SHALL BE FIELD LOCATED AT THE HIGH POINT OF THE WATER MAIN.
10. REPLACE FENCES IN-KIND FROM POST TO POST TO EQUAL OR BETTER CONDITION. PROVIDE TEMPORARY FENCING DURING CONSTRUCTION AS NEEDED TO INSURE THAT FENCED ANIMALS DO NOT ESCAPE.
11. ROUGH CLEAN-UP OF LARGE DEBRIS IN DISTURBED AREAS SUCH AS BOULDER'S, TREES, BRUSH, ETC. SHALL BE PERFORMED NO MORE THAN SEVEN (7) CALENDAR DAYS AFTER WATER LINE IS INSTALLED, WEATHER PERMITTING. FINAL CLEAN-UP, TOPSOILING, SEEDING, MULCHING AND FERTILIZING SHALL BE DONE NO LATER THAN THIRTY (30) DAYS AFTER WATER LINE IS INSTALLED, WEATHER PERMITTING. PROVIDE TEMPORARY SEEDING WHERE THERE IS A POTENTIAL FOR EROSION.
12. PROPERTY OWNERS SHALL HAVE ACCESS TO DRIVEWAYS AND FIELD ROADS AT ALL TIMES. ROAD CUT REPAIRS ARE SUBJECT TO APPROVAL OF THE MARSHALL COUNTY HIGHWAY DEPARTMENT. ALL ROAD CUT CROSSINGS SHALL HAVE A CONCRETE SURFACE PER THE STANDARD DETAILS.

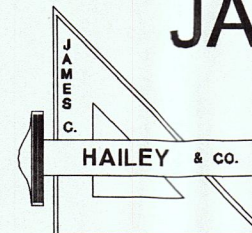


CALL BEFORE YOU DIG



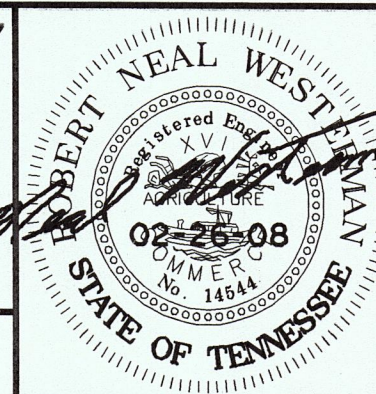
IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT UTILITY COMPANIES PRIOR TO ANY CONSTRUCTION. THE LOCATION OF UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE AND POSSIBLY INCOMPLETE. THEREFORE CERTIFICATION TO THE LOCATION OF ALL UNDERGROUND UTILITIES IS WITHHELD.

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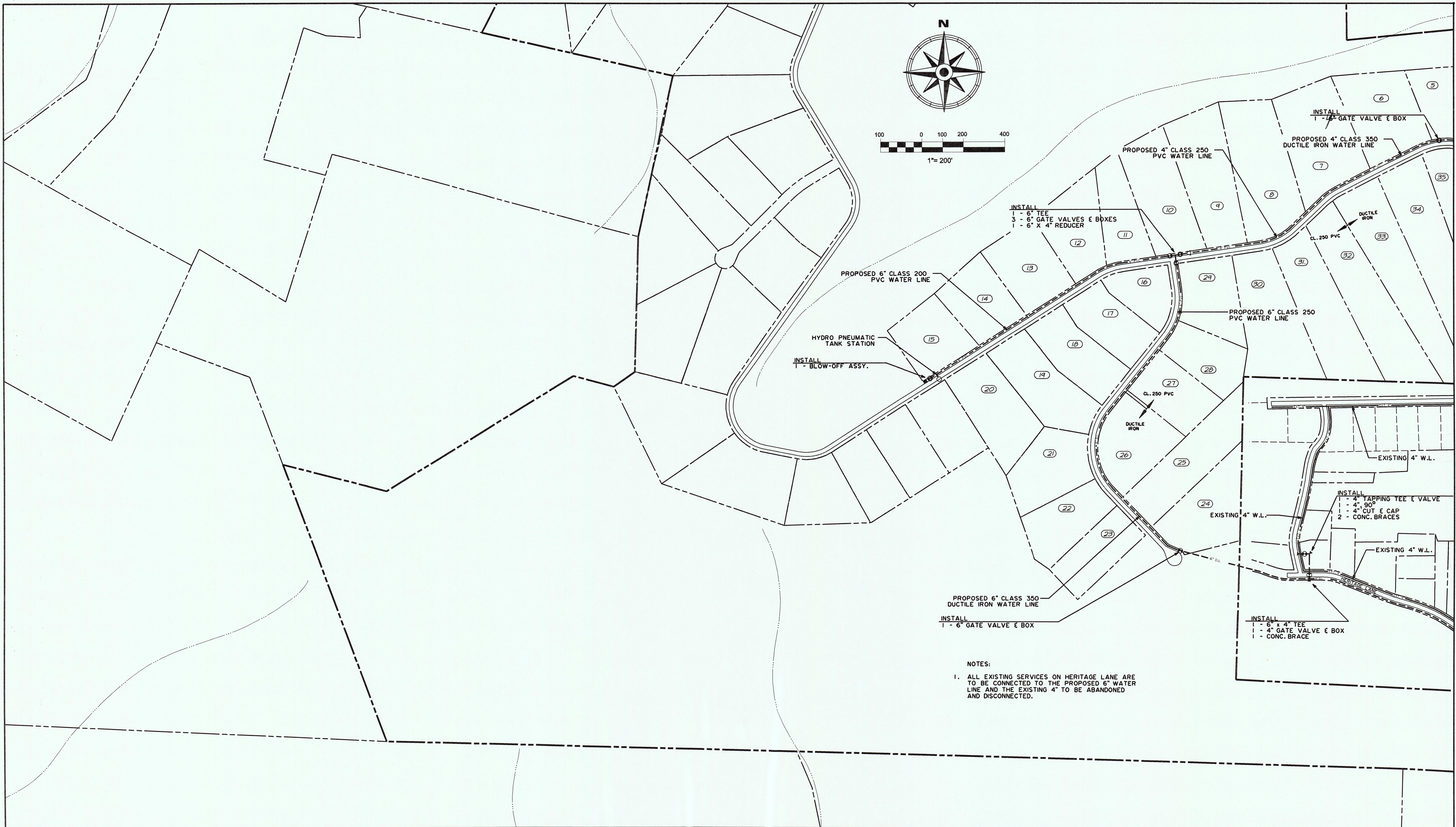
COOKE KNOB SUBDIVISION
Roane County, Tennessee

DESIGN	DRAWN	CHECKED	DATE	SCALE	PROJECT NO.
RNW	BKQ	RNW	JUNE 2007	NONE	07197

KEY MAP

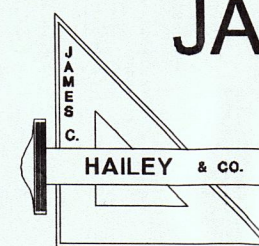
SHEET

1



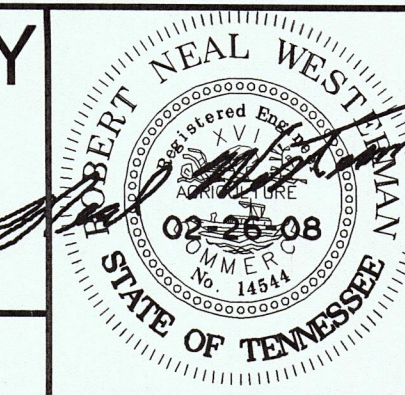
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E-2	F-2	
E-3	F-3	G-3
E-4	F-4	G-4



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GREEN RIDGE TRAILS SUBDIVISION
PHASE 1
Roane County, Tennessee

DESIGN RNW
DRAWN BKQ
CHECKED RNW

WATER LINE ADDITIONS - F3

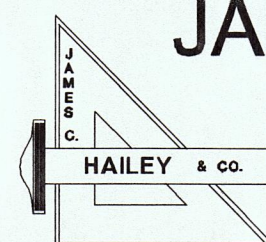
DATE JUNE 2007
SCALE 1" = 200'
PROJECT NO. 07197

SHEET
2
148 NE



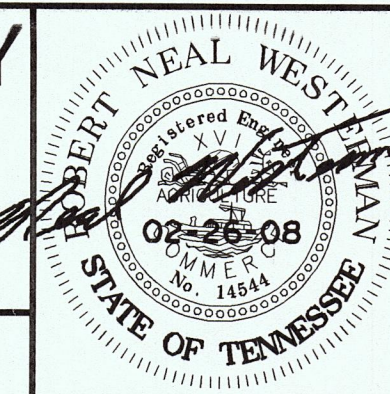
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E-2		
F-3	G-3	H-3
E-4	G-4	H-4



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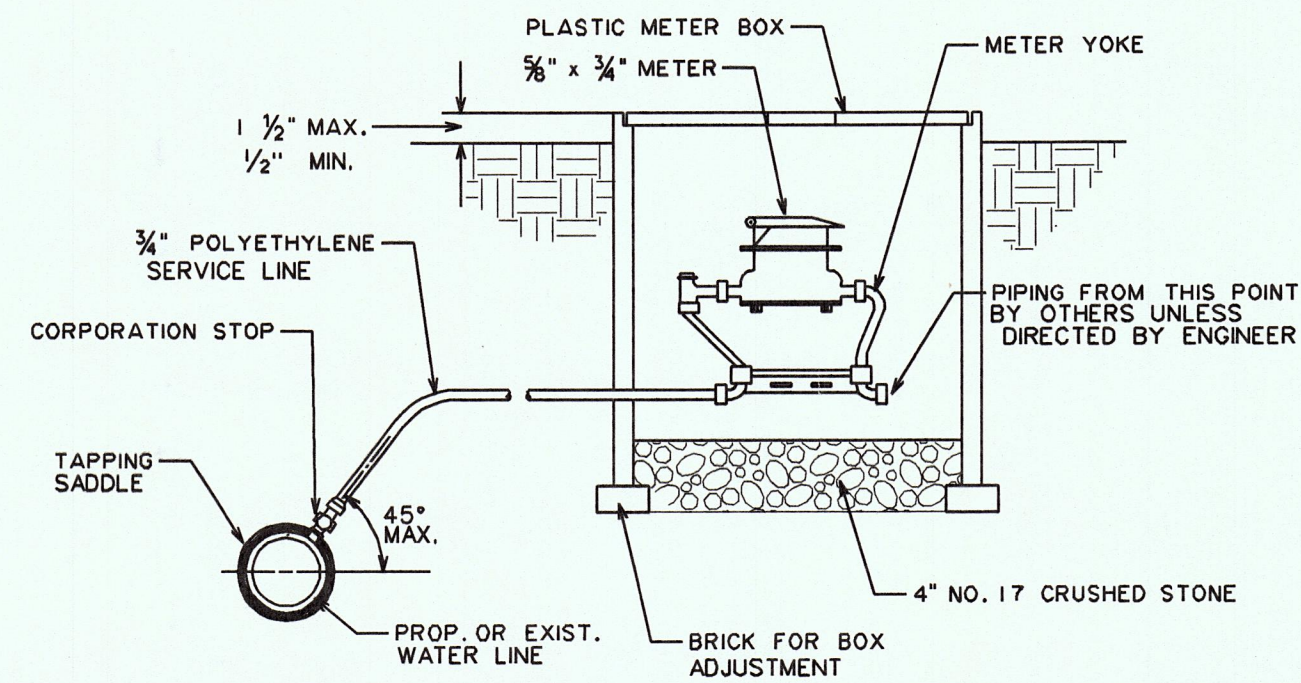


GREEN RIDGE TRAILS SUBDIVISION
PHASE 1
Roane County, Tennessee

DESIGN	DRAWN	CHECKED	DATE	SCALE	PROJECT NO.
RNW	BKQ	RNW	JUNE 2007	1" = 200'	07197

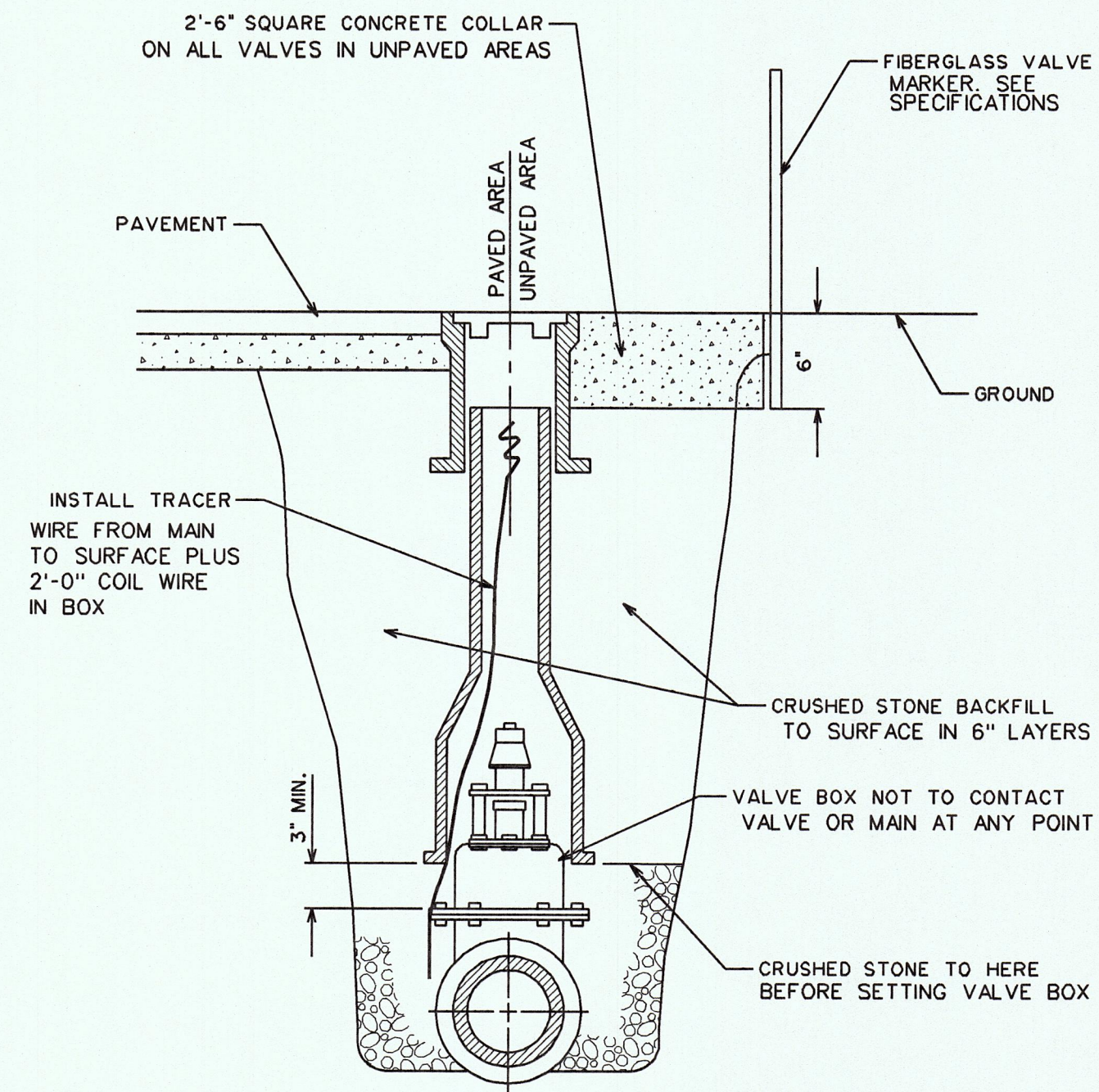
WATER LINE ADDITIONS - G3

SHEET
3
149 NW

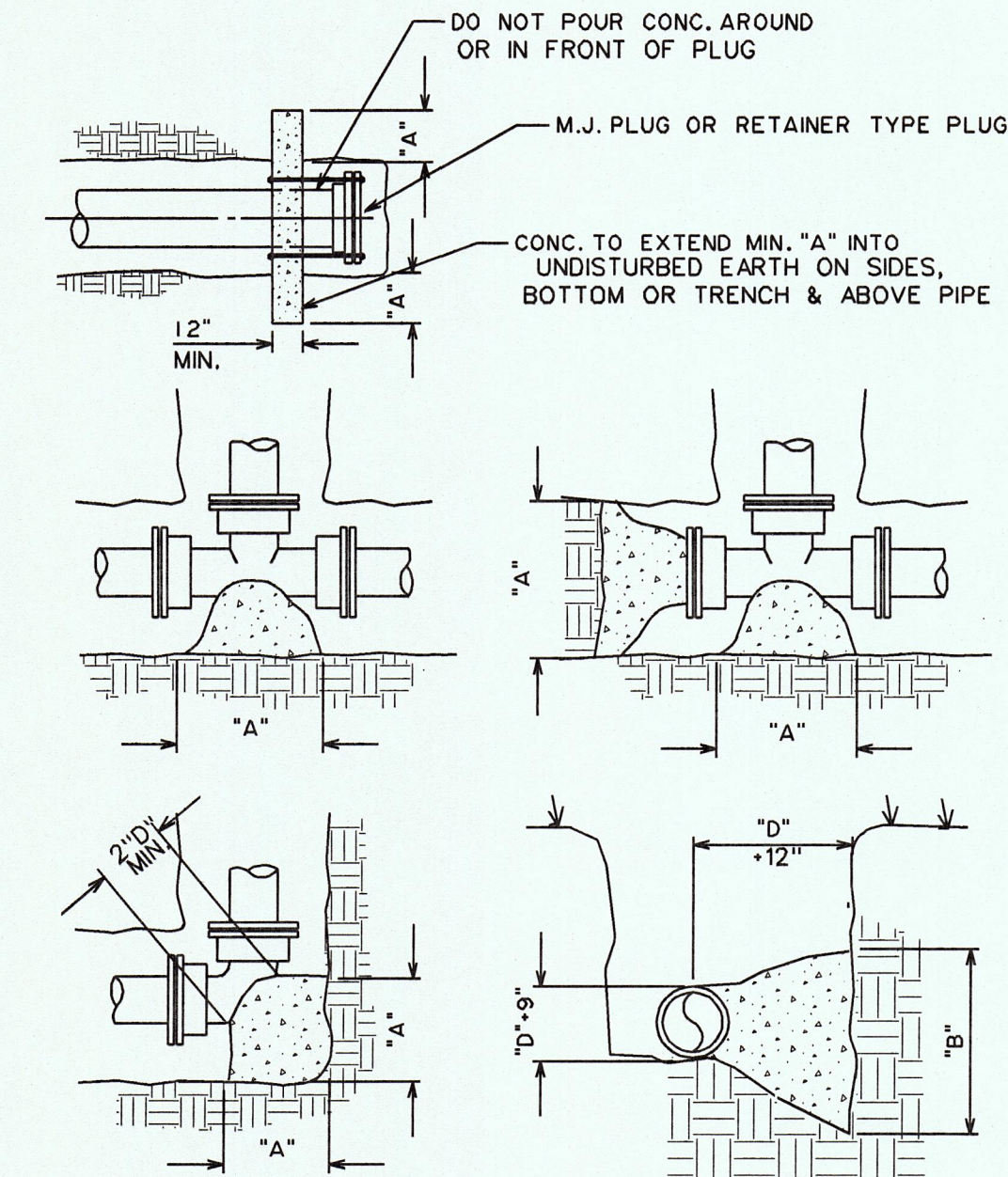


- NOTES:
1. NO. 17 CRUSHED STONE TO BE PROVIDED FOR METER SUPPORT IF PLASTIC SERVICE LINE IS USED.
 2. SERVICE LINE TO RUN FROM MAIN TO METER BOX ALONG THE SHORTEST, MOST DIRECT ROUTE POSSIBLE UNLESS OTHERWISE DIRECTED BY RESIDENT INSPECTOR.
 3. SERVICE LINE TO BE CONTINUOUS FROM MAIN LINE TO METER YOKE WITHOUT COUPLINGS.

TYPICAL SERVICE CONNECTION



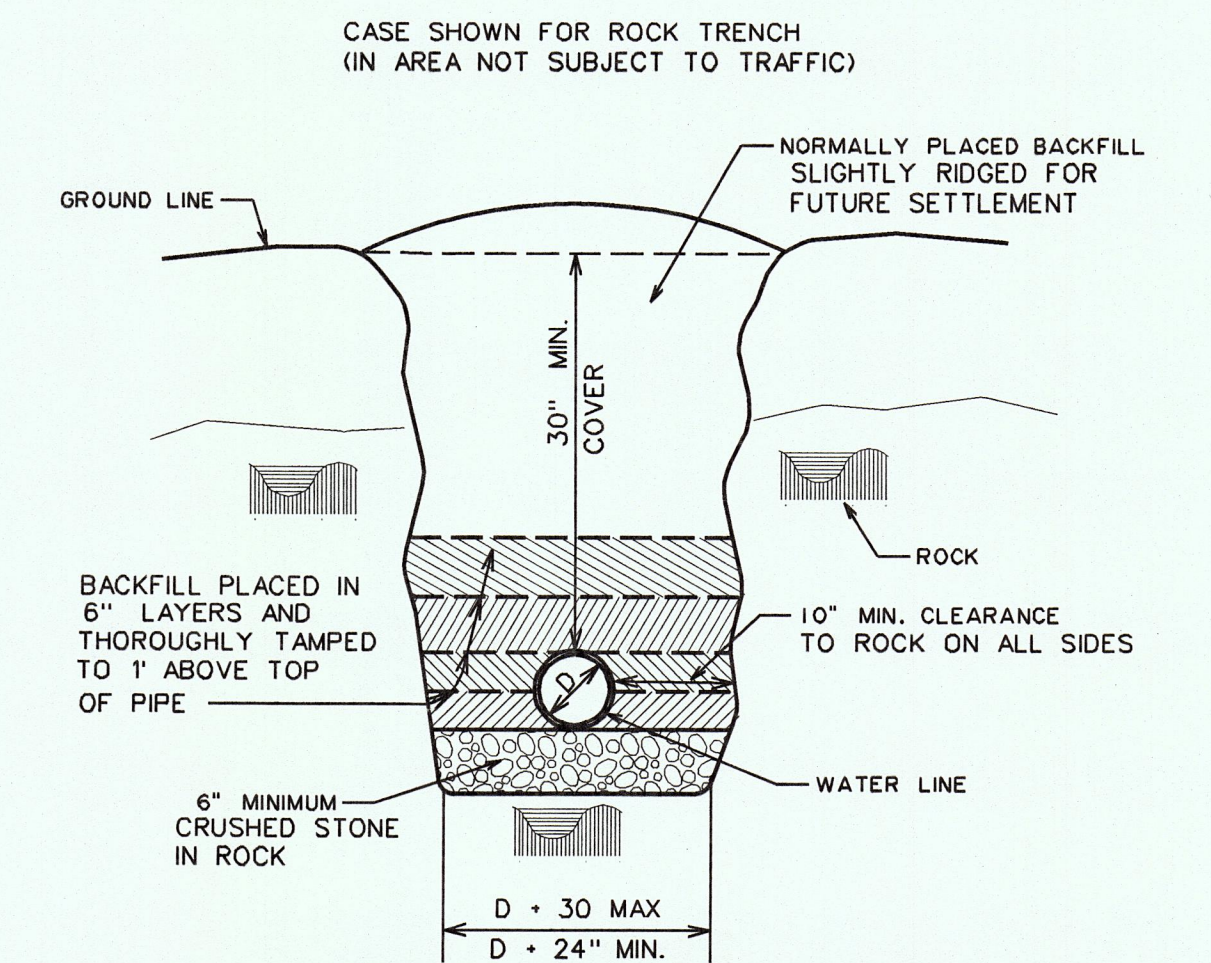
TYPICAL VALVE BOX SETTING



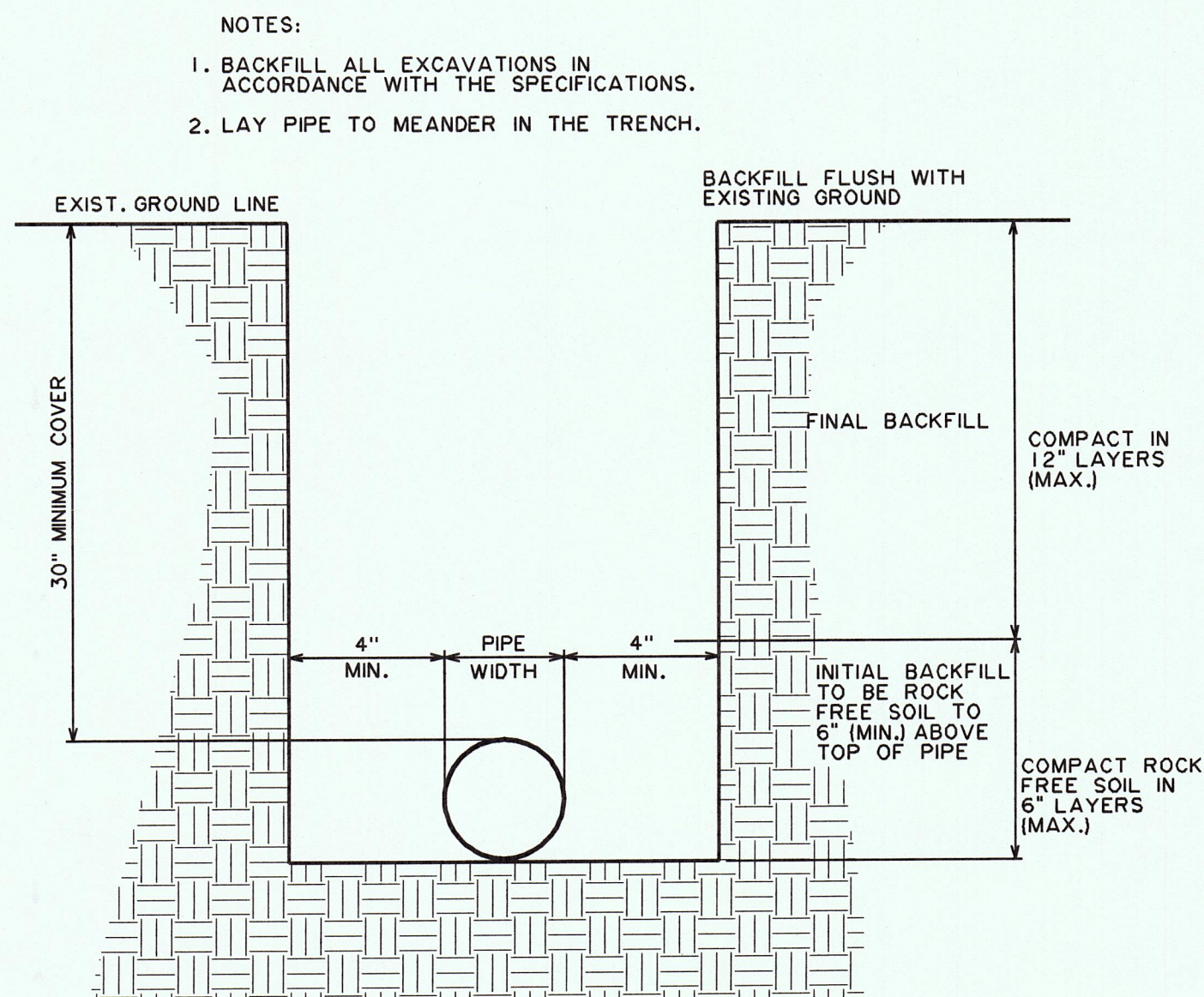
CONCRETE BRACE DIMENSION SCHEDULE

PIPE SIZE	90° BEND		45° BEND		22 1/2° BEND		TEE		DEAD END	
	A	B	A	B	A	B	A	B	A	B
6" OR UNDER	2'-0"	2'-0"	1'-6"	1'-6"	1'-6"	1'-6"	2'-0"	2'-0"	1'-6"	1'-6"
8"	2'-3"	2'-3"	1'-9"	1'-9"	1'-9"	1'-9"	2'-6"	2'-6"	2'-0"	2'-0"
10"	2'-6"	2'-6"	2'-0"	2'-0"	2'-0"	2'-0"	3'-0"	3'-0"	2'-4"	2'-4"
12"	3'-6"	3'-0"	2'-6"	2'-6"	2'-3"	2'-3"	4'-0"	3'-6"	2'-9"	2'-9"
16"	4'-0"	4'-0"	3'-0"	3'-0"	2'-6"	2'-6"	5'-6"	4'-0"	4'-0"	3'-0"
20"	5'-6"	4'-6"	4'-0"	3'-6"	3'-0"	3'-0"	6'-6"	5'-0"	5'-0"	3'-6"
24"	7'-0"	5'-0"	5'-0"	4'-0"	3'-6"	3'-6"	8'-0"	6'-0"	6'-0"	4'-0"
30"	9'-0"	6'-0"	6'-6"	4'-6"	4'-0"	4'-0"	12'-0"	6'-0"	7'-9"	5'-0"

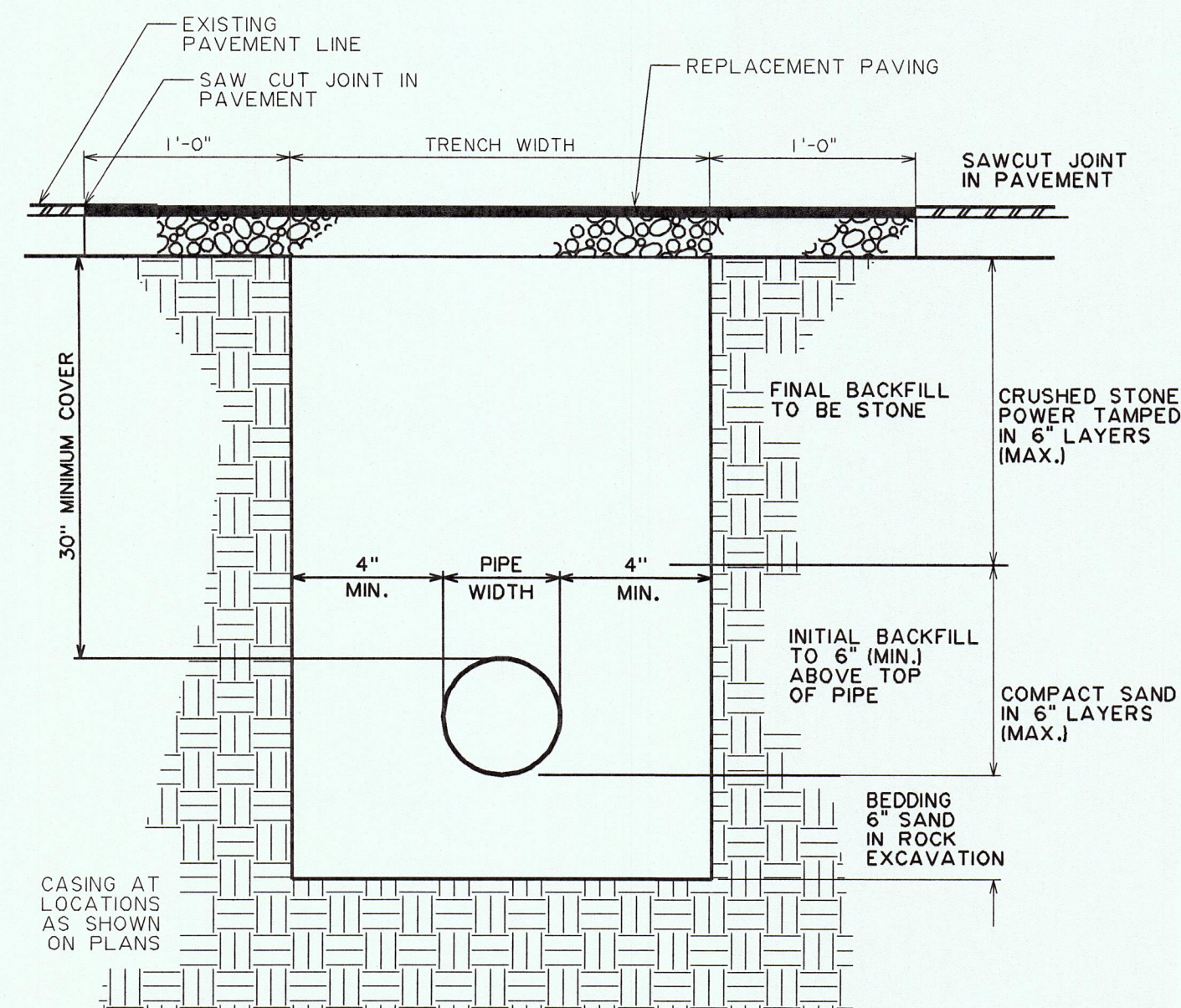
CONC. THRUST BLOCK (BRACE)



TYPICAL TRENCH SECTION

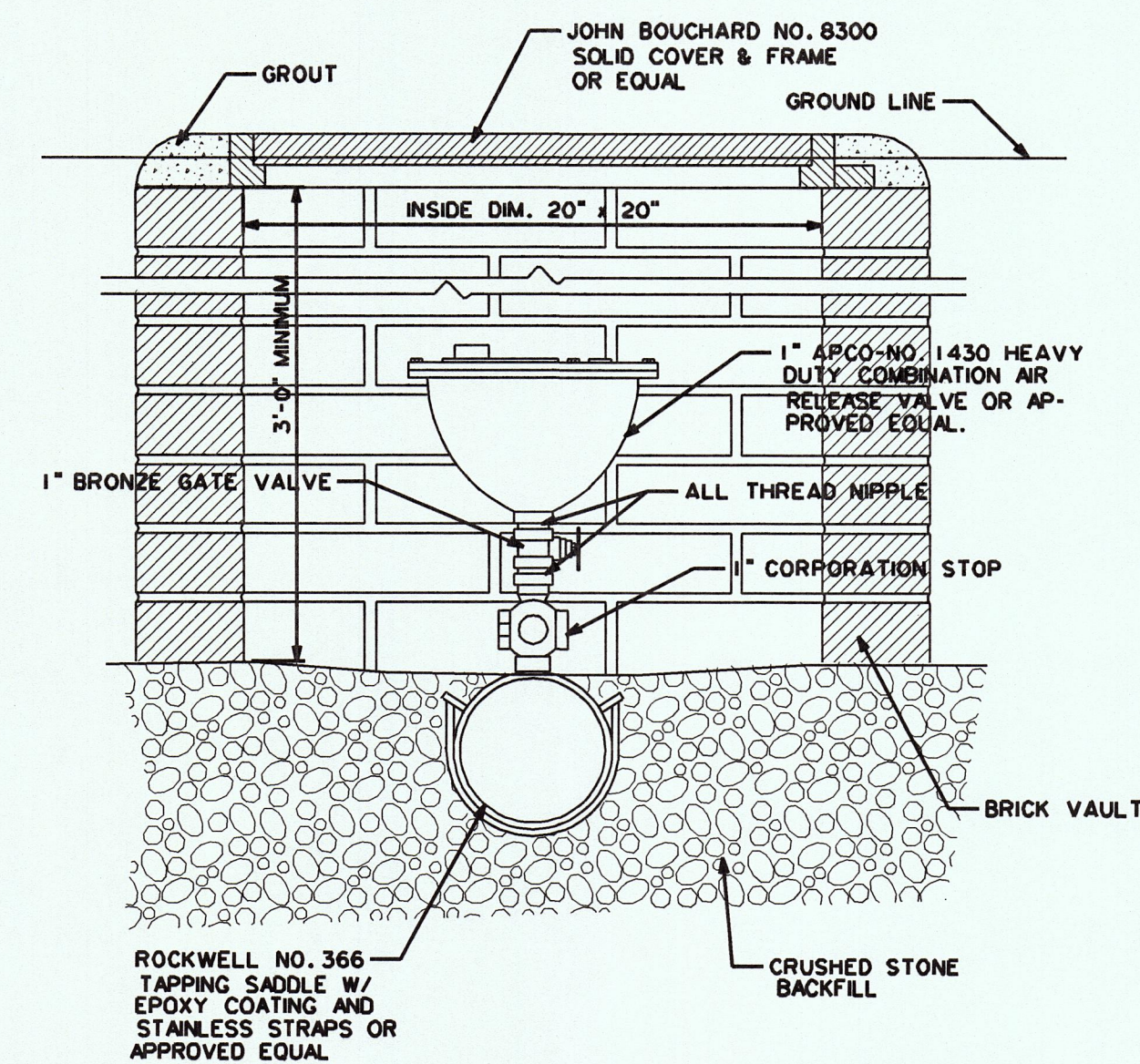


TYPICAL TRENCH SECTION
IN SOIL EXCAVATION



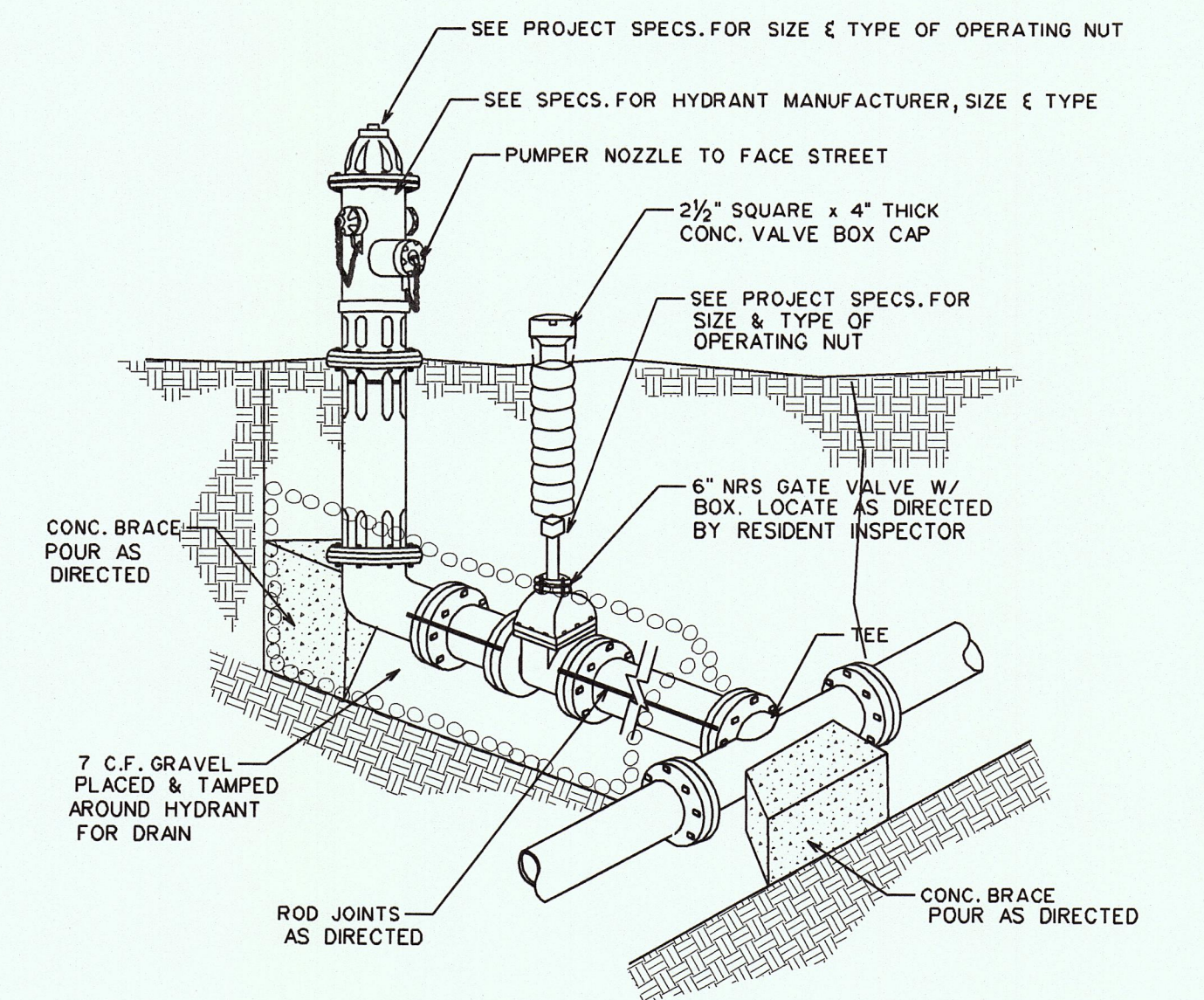
- NOTES:
1. CRUSHED STONE DRIVES SHALL BE PREPARED IN ACCORDANCE WITH THIS DETAIL EXCEPT THAT THE REPLACEMENT PAVING SHALL BE DELETED.
 2. WHEN CASING IS REQUIRED, THE PIPE WIDTH AND MINIMUM COVER SHALL REFER TO THE CASING DIAMETER.

TYPICAL TRENCH SECTION
UNDER PAVEMENT

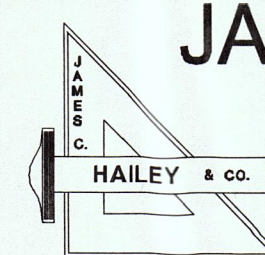


NOTE:
ALL FITTINGS AND VALVES TO BE BRASS

AIR RELEASE VALVE ASSEMBLY

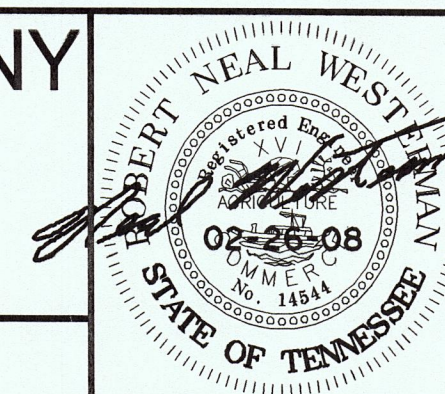


TYPICAL FIRE HYDRANT INSTALLATION



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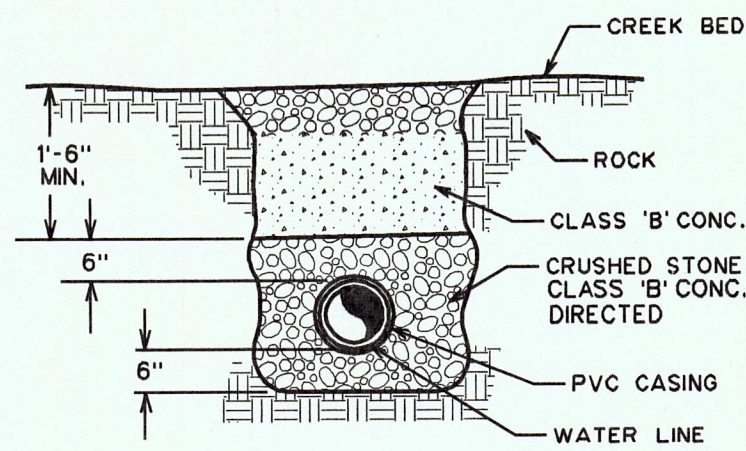
HARRIMAN UTILITY BOARD
Roane County, Tennessee

STANDARD WATER DETAILS

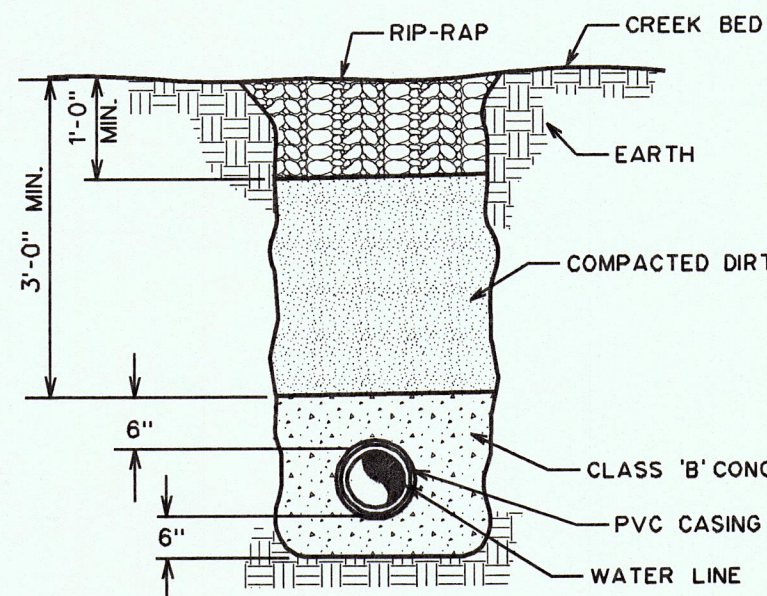
DESIGN	DRAWN	CHECKED	DATE	SCALE	PROJECT NO.
RNW	BKQ	RNW	JUNE 2007	NONE	07197

SHEET

4

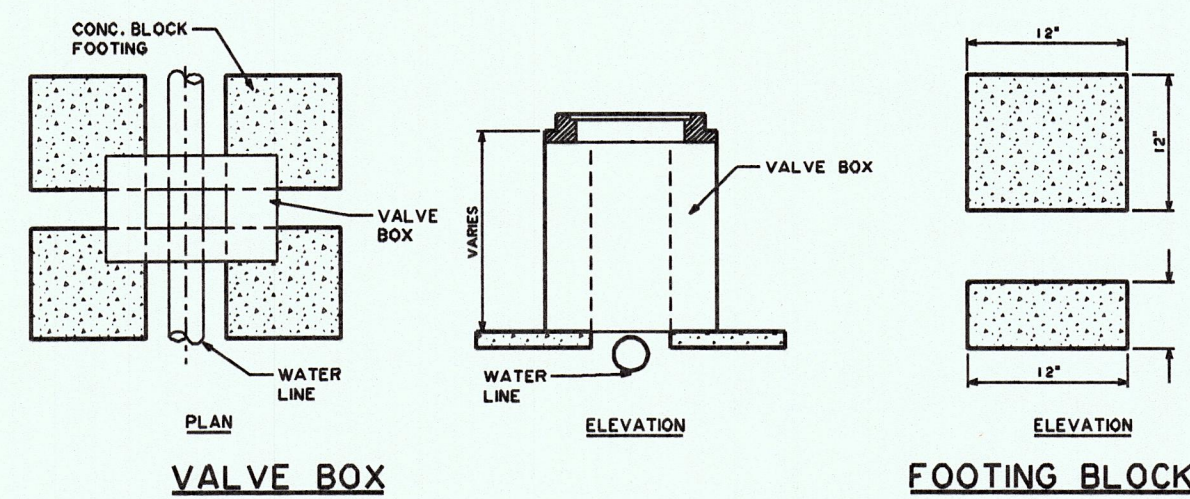


IN ROCK



IN EARTH

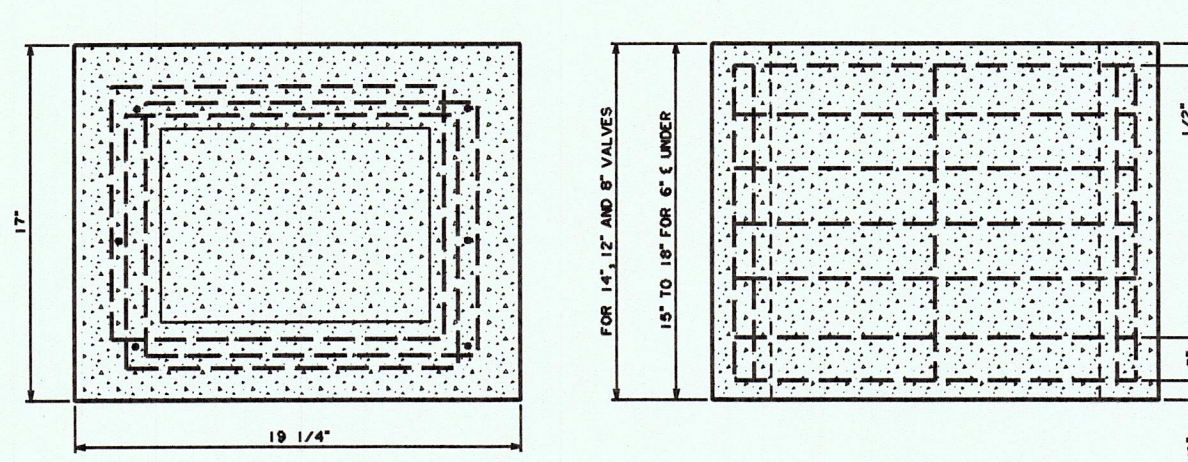
TYPICAL STREAM CROSSING DETAIL



VALVE BOX

NOTES:

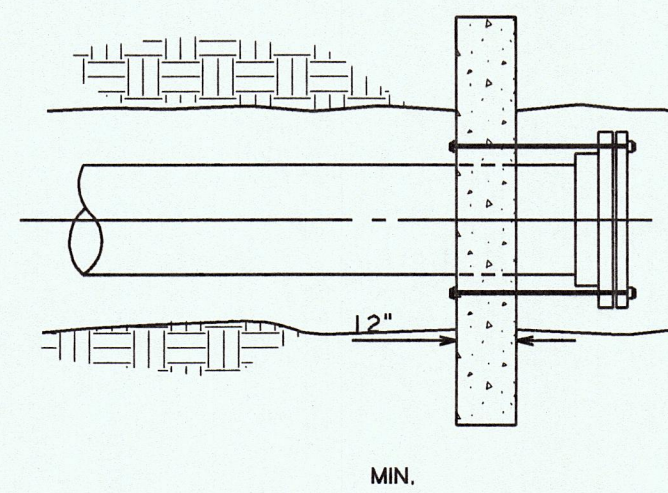
- FOUR (4) CONCRETE BLOCKS OF THE SIZE AND SHAPE SHOWN ARE TO BE PLACED UNDER EACH BOX, ONE UNDER EACH CORNER OF BOX.
- NO REINFORCING STEEL IN FOOTING BLOCKS. CONCRETE MIX TO BE (1) PART CEMENT, (2) PARTS SAND AND (4) PARTS NO. 2 CRUSHED STONE OR GRAVEL. VOLUME FOR ONE BLOCK = .333 CU. FT. WEIGHT OF ONE BLOCK = 90 LBS. WEIGHT FOR ALL FOUR BLOCKS = 360 LBS. BEARING AREA ON SOL = 576 SQ. IN.



NOTES:

- REINFORCING TO BE 1/4" STEEL REINFORCING RODS PLACED HORIZONTALLY IN SQUARES 16 1/4" x 14" AND TO BE STAGGERED APPROXIMATELY AS SHOWN ON PLAN, ONE FOR EVERY 3" OF HEIGHT OF BOX. VERTICAL BARS ARE TO BE 1" SHORTER THAN THE HEIGHT OF THE BOX AND SHALL BE PLACED IN EACH CORNER OF THE BOX AND AT THE HALFWAY POINT TO EACH SIDE OF THE BOX USING 8 RISERS TO THE BOX. TOTAL LENGTH OF REINFORCING ROD FOR BOX APPROX. 47'
- CONCRETE MIXTURE TO BE (1) PART CEMENT, (2) PARTS SAND AND (4) PARTS NO. 2 CRUSHED STONE OR GRAVEL. TOTAL VOLUME OF MIXTURE FOR BOX APPROXIMATELY 2 CU. FT.

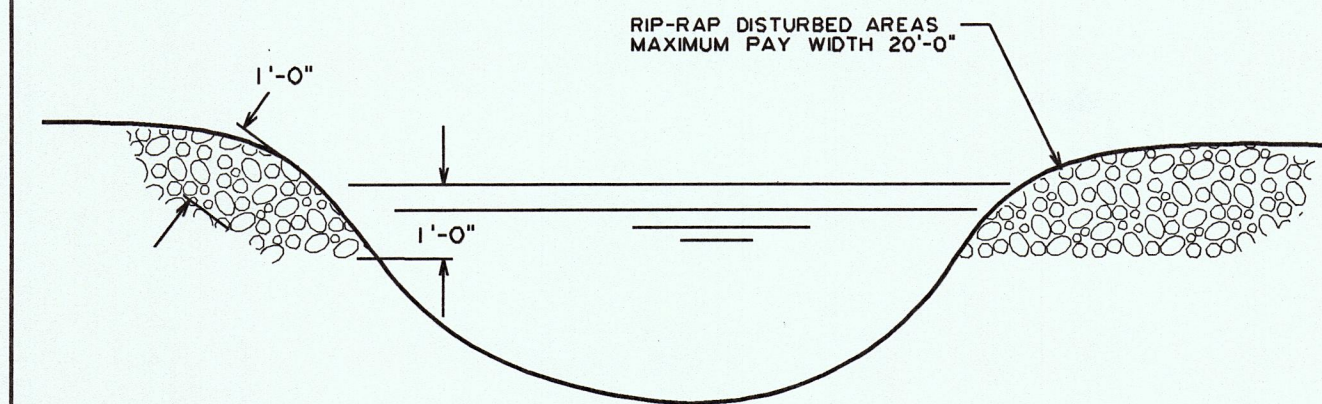
STANDARD CONCRETE VALVE BOX



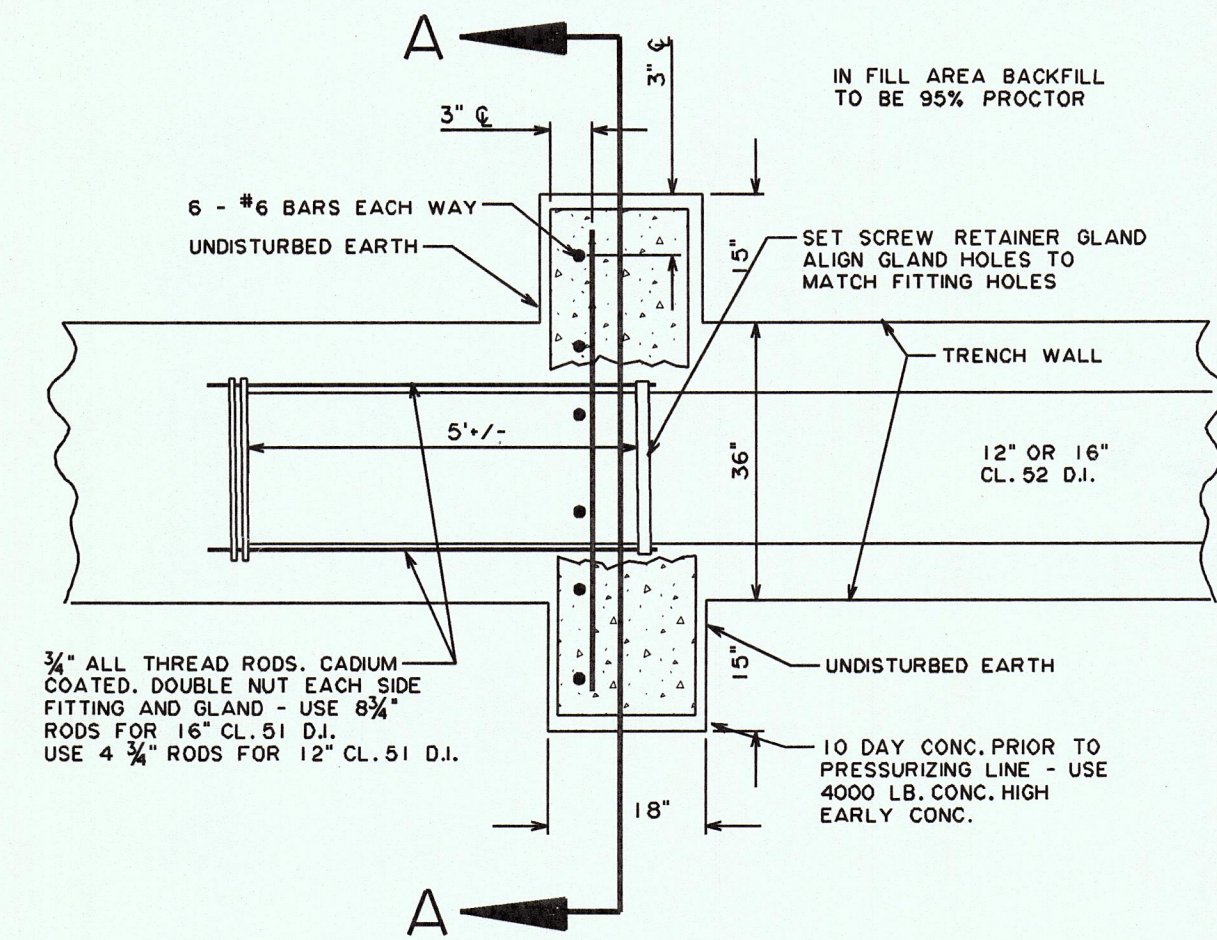
MIN.

SIZE	2	4	6	8	10	12	16	20
# OF RODS	2	2	4	5	7	10	16	24

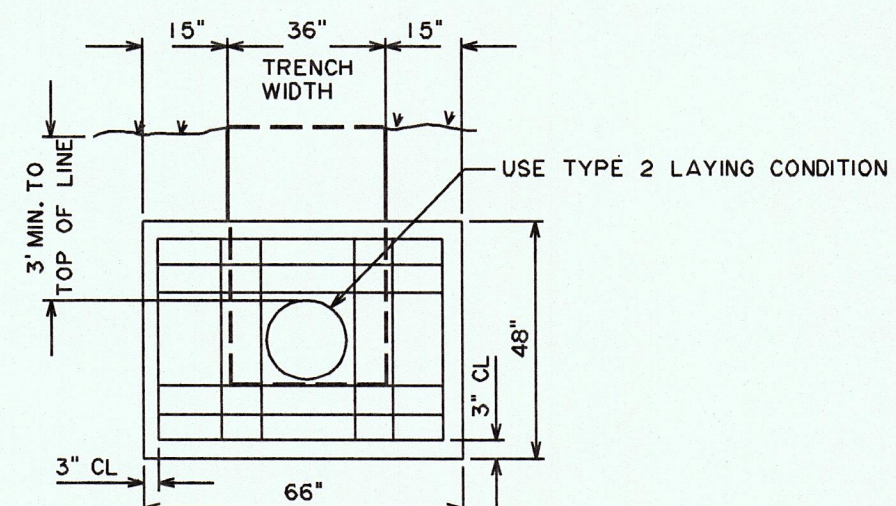
CONC. THRUST BLOCK (BRACE)
3/4" RODS - DEAD END



RIP-RAP DETAIL
STREAM CROSSING SECTION

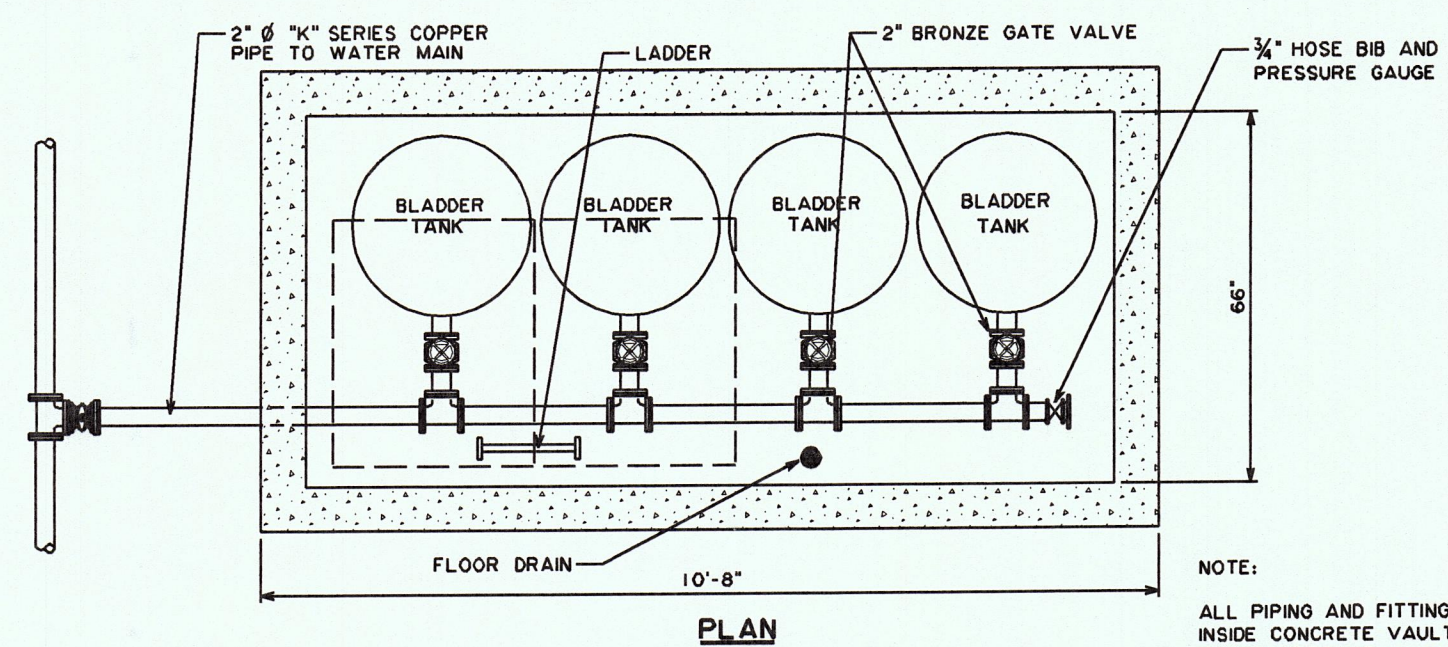


PLAN



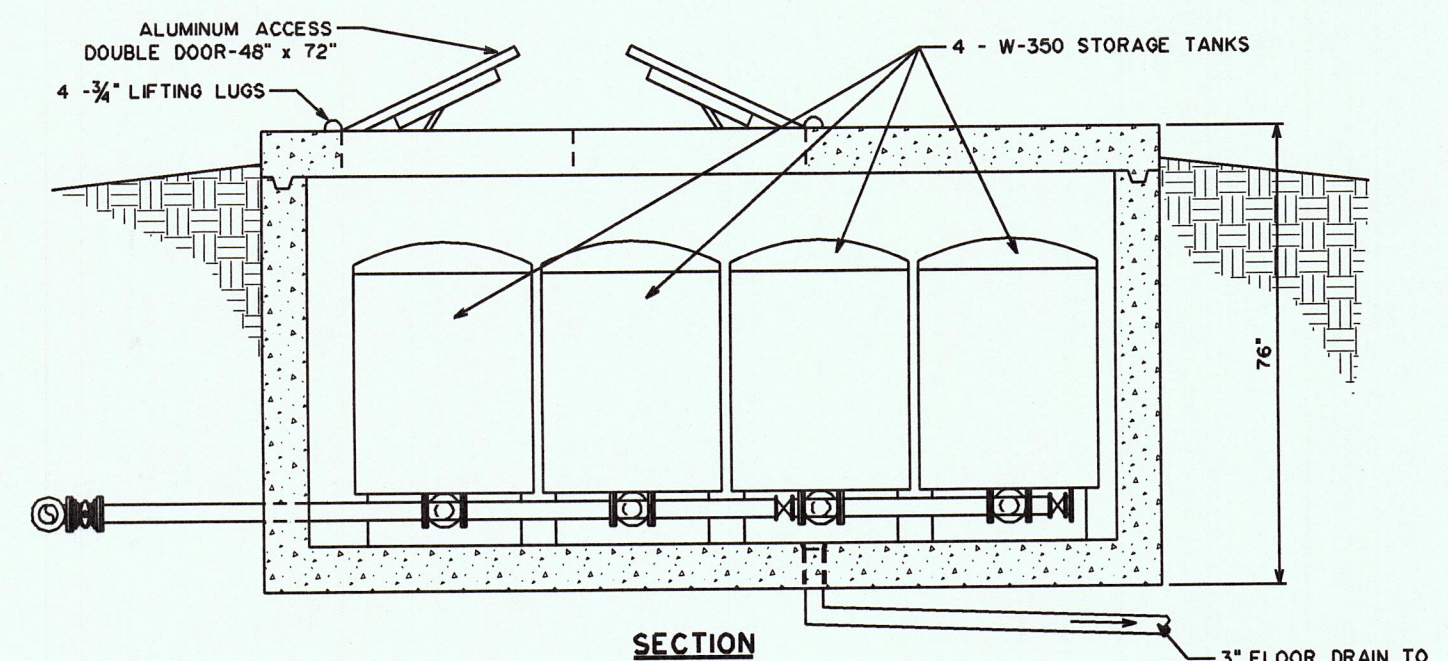
SECTION A-A

TYPICAL REINFORCED
CONCRETE REVERSE KICKER



PLAN

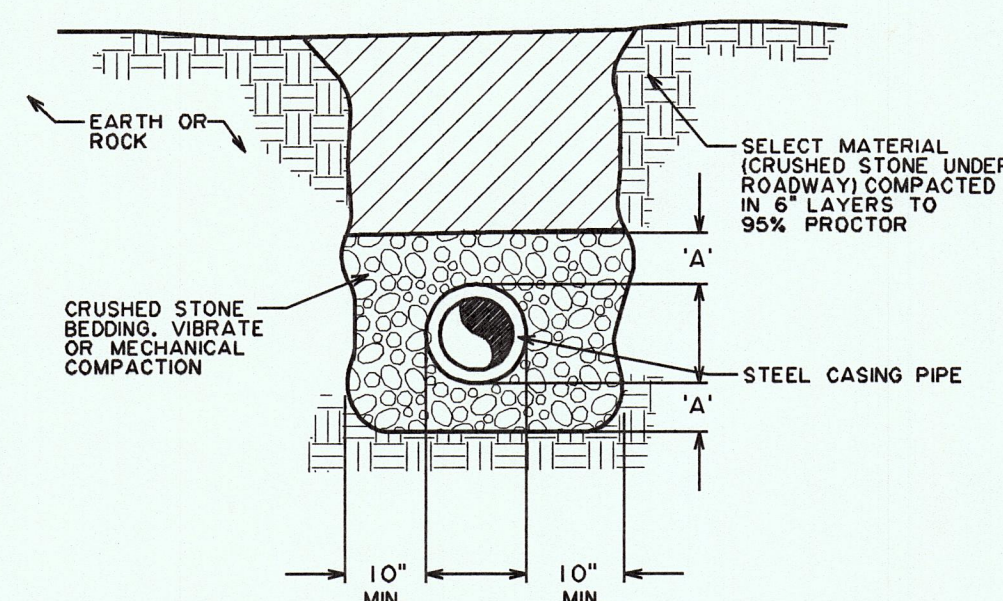
NOTE:
ALL PIPING AND FITTINGS
INSIDE CONCRETE VAULT
TO BE 2" BRASS



SECTION

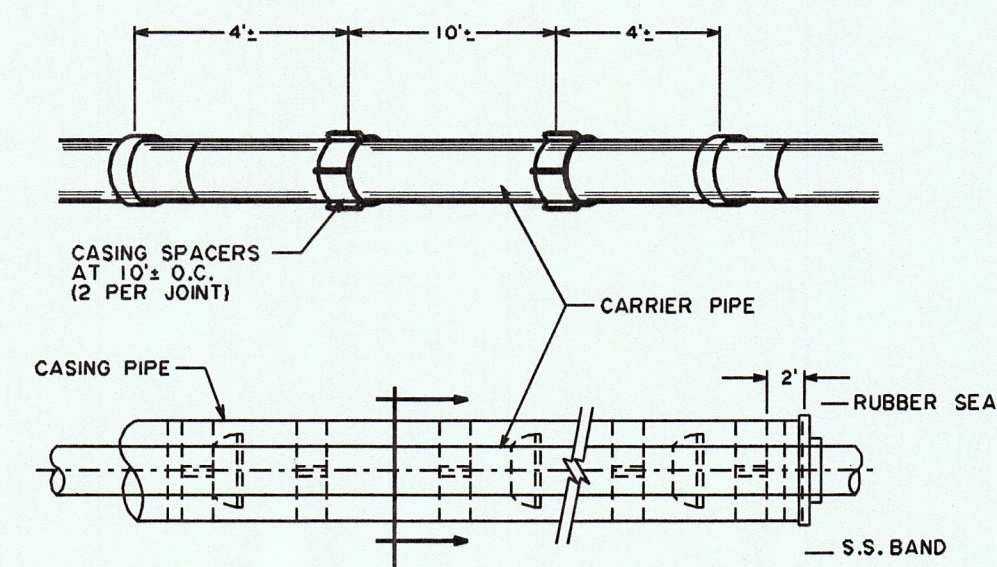
CONCRETE VAULT WITH ALUMINUM DOOR
FOR BLADDER TANKS

(SCHEMATIC) NOT TO SCALE

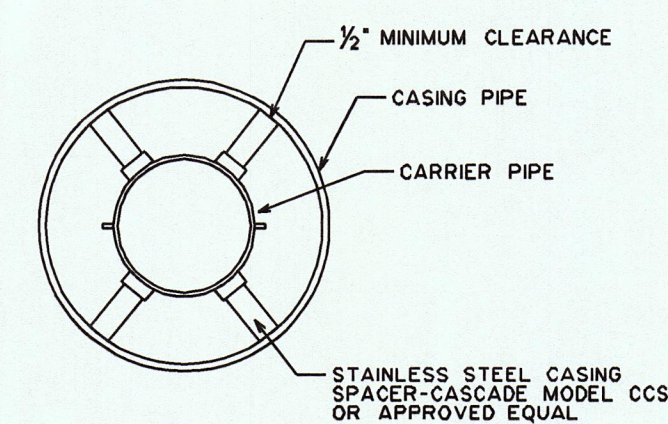


DIMENSION 'A' - FOR UNDER 12" PIPE = 6" MINIMUM
FOR 12" AND OVER PIPE = 12" MINIMUM

TRENCH SECTION FOR CASING
BY OPEN CUT



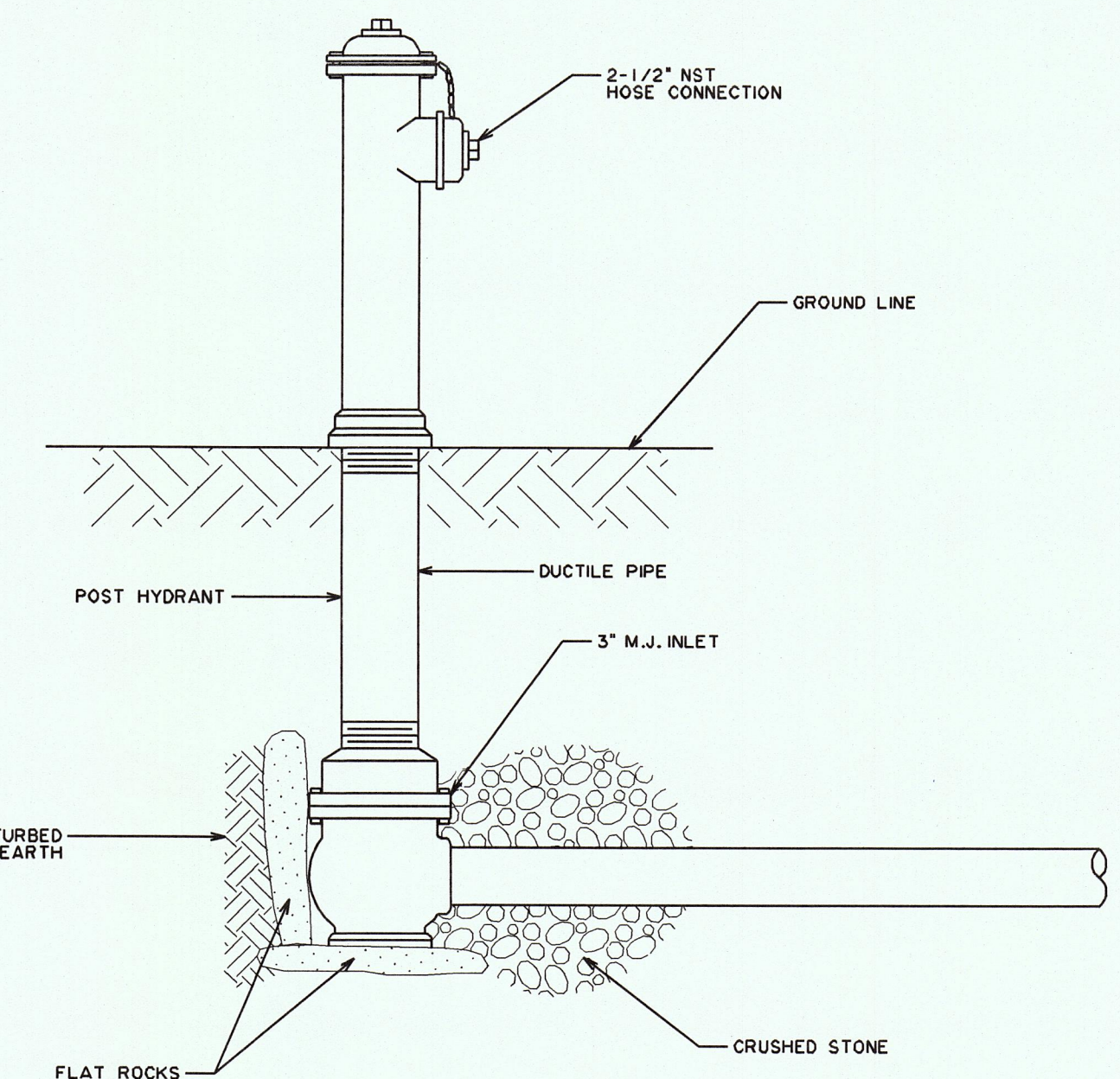
TYPICAL SECTION



NOTES:

- ALL JOINTS WITHIN CASING TO BE RESTRAINED.
- CARRIER PIPE TO BE IN CENTER OF CASING TO PROVIDE RESTRAINT AGAINST MOVEMENT

WATER LINE CASING DETAIL



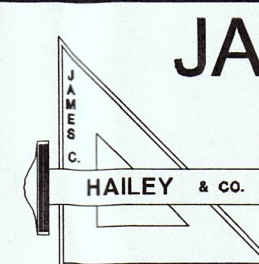
POST HYDRANT

NOTES:

- Hydrants shall be self-draining, non-freezing, compression type with 2-3/16" main valve opening. Inlet connection shall be 3" M.J. Outlet shall be 2-1/2" NST.

Hydrants shall have a 3" ductile iron pipe riser with a cast iron stock top, and non-turning operating rod. Principal interior operating parts shall be brass and removable from the hydrant for servicing without excavating the hydrant.

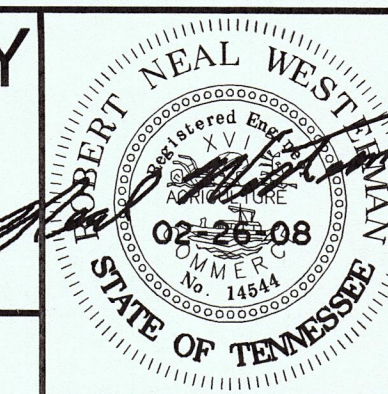
Hydrants shall be set in 4 cubic feet of crushed stone to allow for proper drainage of the hydrant. Recommendations of the AWWA should be followed when installing the hydrants.



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STANDARD WATER DETAILS

DESIGN	DRAWN	CHECKED	DATE	SCALE	PROJECT NO.
RNW	BKQ	RNW	JUNE 2007	NONE	07197

SHEET

5