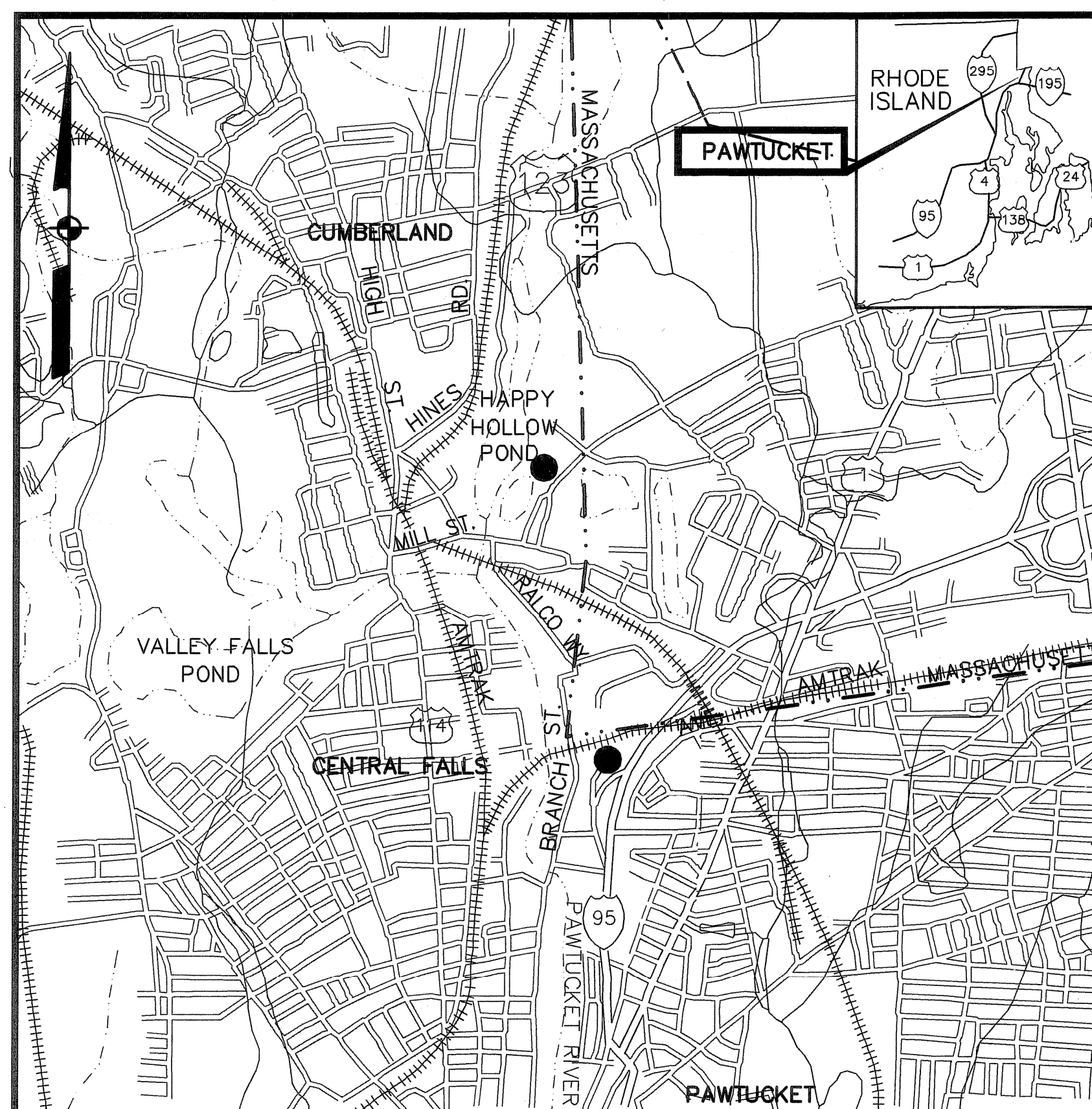


# CONTRACT DRAWINGS - FOR - Pawtucket Regional Water Treatment Facility Pkg 2 - Construction

Pawtucket, Rhode Island

INDEX

OCTOBER 31, 2006



DWG.

TITLE

LA-1  
LA-2  
LA-3  
LA-4  
LA-4B

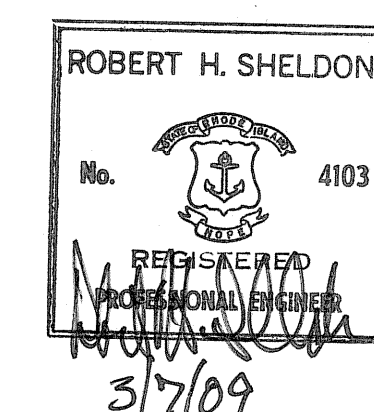
COVER

SITE

EXISTING CONDITIONS PLAN  
CONSTRUCTION STAGING PLAN  
EARLY SITEWORK PLAN  
DETAILS  
TANK SITE PREPARATION DETAILS

LOCUS  
NOT TO SCALE

 **EarthTech**  
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**GENERAL NOTES**

LOCATIONS OF ALL UTILITIES AND SUB-SURFACE STRUCTURES ARE FROM SURVEY AND RECORDS OF TOWN, CORPORATIONS, ETC., AND ARE CONSIDERED APPROXIMATE BOTH AS TO SIZE AND LOCATION AND ARE INDICATED ON THESE DRAWINGS TO GIVE BIDDERS A GENERAL IDEA OF EXISTING CONDITIONS TO BE INVESTIGATED BY THE BIDDER. IT IS UNDERSTOOD AND AGREED THAT EACH BIDDER WILL NOT RELY UPON THESE DRAWINGS FOR SUCH INFORMATION, BUT THAT EACH BIDDER SHALL MAKE EXAMINATIONS IN THE FIELD BY VARIOUS AVAILABLE METHODS AND SHALL OBTAIN INFORMATION FROM UTILITY CORPORATIONS AND INDIVIDUALS AS TO THE LOCATION OF ALL SUB-SURFACE STRUCTURES.

ALL ELEVATIONS REFER TO NATIONAL GEODETIC VERTICAL DATUM OF 1929.

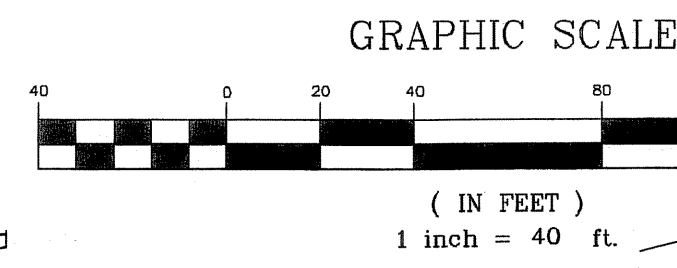
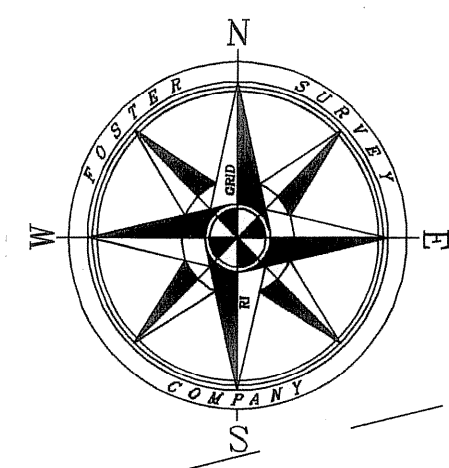
**EARTH TECH**  
AS-BUILT FILE  
MAY 2008

**NOTES:**

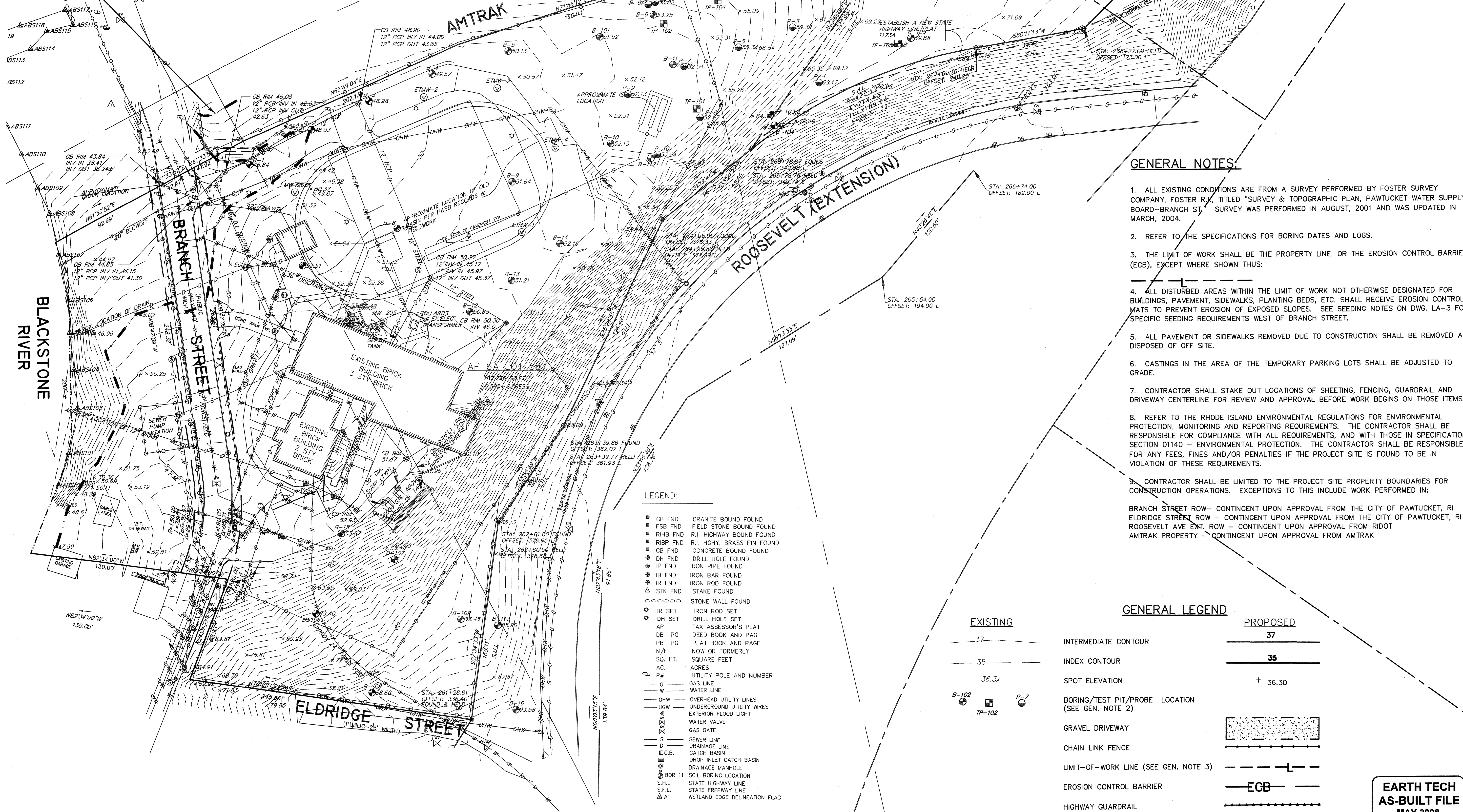
- 1) THE CITY OF PAWTUCKET CONSIDERS BRANCH STREET TO BE AN EASEMENT OVER THE SUBJECT PARCEL.
- 2) SEE STATE HIGHWAY PLAT 1173.
- 3) SEE CITY OF PAWTUCKET PLAN NO. 02915 DATED OCT. 6, 1899.
- 4) SEE FC #149 & #296.
- 5) REFERENCE IS MADE TO PLANS PROVIDED BY THE PAWTUCKET WATER SUPPLY BOARD. UNDERGROUND UTILITY, STRUCTURE, AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES OR GOVERNMENTAL AGENCIES, FROM PAROLE TESTIMONY AND FROM OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO THE SURVEYOR. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL 1-888-DIGSAFE.
- 6) HORIZONTAL & VERTICAL COORDINATES DETERMINED BY GPS SURVEY. HORZ. DATUM IS NAD'83 AND VERTICAL DATUM IS NGVD'29.

**ZONING:**

ZONED: RM - RESIDENTIAL MULTIFAMILY



100 YEAR FLOODPLAIN  
(EL. 48.0)



**LEGEND:**

- GB FND GRANITE BOUND FOUND
- FSB FND FIELD STONE BOUND FOUND
- RHB FND R.I. HIGHWAY BOUND FOUND
- RIBP FND R.I. HGHY. BRASS PIN FOUND
- CB FND CONCRETE BOUND FOUND
- DH FND DRILL HOLE FOUND
- IP FND IRON PIPE FOUND
- IB FND IRON BAR FOUND
- IR FND IRON ROD FOUND
- △ STK FND STAKE FOUND
- ○ ○ ○ ○ STONE WALL FOUND
- IR SET IRON ROD SET
- DH SET DRILL HOLE SET
- AP TAX ASSESSOR'S PLAT
- DB PG DEED BOOK AND PAGE
- PB PG PLAT BOOK AND PAGE
- N/F NOW OR FORMERLY
- SQ. FT. SQUARE FEET
- AC. ACRES
- U UTILITY POLE AND NUMBER
- G GAS LINE
- W WATER LINE
- OHW OVERHEAD UTILITY LINES
- UGW UNDERGROUND UTILITY WIRES
- EL EXTERIOR FLOOD LIGHT
- WV WATER VALVE
- G GAS GATE
- S SEWER LINE
- D DRAINAGE LINE
- C.B. CATCH BASIN
- MB.C. DROP INLET CATCH BASIN
- DM DRAINAGE MANHOLE
- BOR 11 SOIL BORING LOCATION
- S.H.L. STATE HIGHWAY LINE
- S.F.L. STATE FREEWAY LINE
- △ W1 WETLAND EDGE DELINEATION FLAG

**EXISTING**

- 37 --- INTERMEDIATE CONTOUR
- 35 --- INDEX CONTOUR
- 36.3x SPOT ELEVATION
- B-102 BORING/TEST PIT/PROBE LOCATION (SEE GEN. NOTE 2)
- TP-102 GRAVEL DRIVEWAY
- CHAIN LINK FENCE
- LIMIT-OF-WORK LINE (SEE GEN. NOTE 3)
- EROSION CONTROL BARRIER
- HIGHWAY GUARDRAIL

**GENERAL LEGEND**

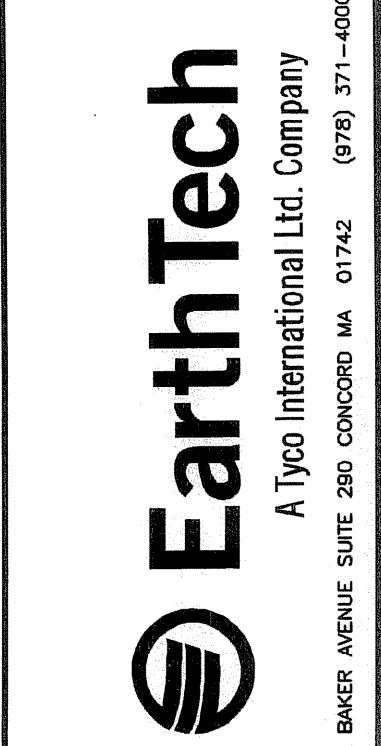
**PROPOSED**

- 37
- 35
- + 36.30
- ECB

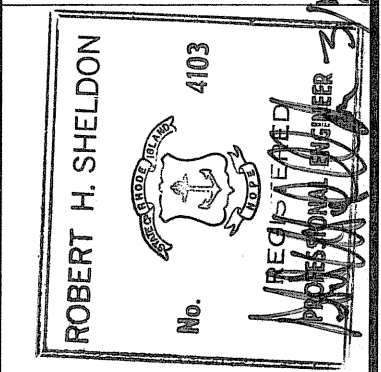
**GENERAL NOTES:**

1. ALL EXISTING CONDITIONS ARE FROM A SURVEY PERFORMED BY FOSTER SURVEY COMPANY, FOSTER R.I., TITLED "SURVEY & TOPOGRAPHIC PLAN, PAWTUCKET WATER SUPPLY BOARD-BRANCH ST. SURVEY WAS PERFORMED IN AUGUST, 2001 AND WAS UPDATED IN MARCH, 2004.
2. REFER TO THE SPECIFICATIONS FOR BORING DATES AND LOGS.
3. THE LIMIT OF WORK SHALL BE THE PROPERTY LINE, OR THE EROSION CONTROL BARRIER (ECB), EXCEPT WHERE SHOWN THUS:
4. ALL DISTURBED AREAS WITHIN THE LIMIT OF WORK NOT OTHERWISE DESIGNATED FOR BUILDINGS, PAVEMENT, SIDEWALKS, PLANTING BEDS, ETC. SHALL RECEIVE EROSION CONTROL MATS TO PREVENT EROSION OF EXPOSED SLOPES. SEE SEEDING NOTES ON DWG. LA-3 FOR SPECIFIC SEEDING REQUIREMENTS WEST OF BRANCH STREET.
5. ALL PAVEMENT OR SIDEWALKS REMOVED DUE TO CONSTRUCTION SHALL BE REMOVED AND DISPOSED OF OFF SITE.
6. CASTINGS IN THE AREA OF THE TEMPORARY PARKING LOTS SHALL BE ADJUSTED TO GRADE.
7. CONTRACTOR SHALL STAKE OUT LOCATIONS OF SHEETING, FENCING, GUARDRAIL AND DRIVEWAY CENTERLINE FOR REVIEW AND APPROVAL BEFORE WORK BEGINS ON THOSE ITEMS.
8. REFER TO THE RHODE ISLAND ENVIRONMENTAL REGULATIONS FOR ENVIRONMENTAL PROTECTION, MONITORING AND REPORTING REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS, AND WITH THOSE IN SPECIFICATION SECTION 01140 - ENVIRONMENTAL PROTECTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FEES, FINES AND/OR PENALTIES IF THE PROJECT SITE IS FOUND TO BE IN VIOLATION OF THESE REQUIREMENTS.
9. CONTRACTOR SHALL BE LIMITED TO THE PROJECT SITE PROPERTY BOUNDARIES FOR CONSTRUCTION OPERATIONS. EXCEPTIONS TO THIS INCLUDE WORK PERFORMED IN:
  - BRANCH STREET ROW - CONTINGENT UPON APPROVAL FROM THE CITY OF PAWTUCKET, RI
  - ELDRIDGE STREET ROW - CONTINGENT UPON APPROVAL FROM THE CITY OF PAWTUCKET, RI
  - ROOSEVELT AVE EXT. ROW - CONTINGENT UPON APPROVAL FROM RIDOT
  - AMTRAK PROPERTY - CONTINGENT UPON APPROVAL FROM AMTRAK

**EARTH TECH**  
AS-BUILT FILE  
MAY 2008



DATE	BY	REVISIONS
01/23/08	CBW	ISSUED FOR CONSTRUCTION
10/21/08	CBW	AS-BUILT DRAWING FILE
04/03	DPB	AC-BUILT DRAWING FILE



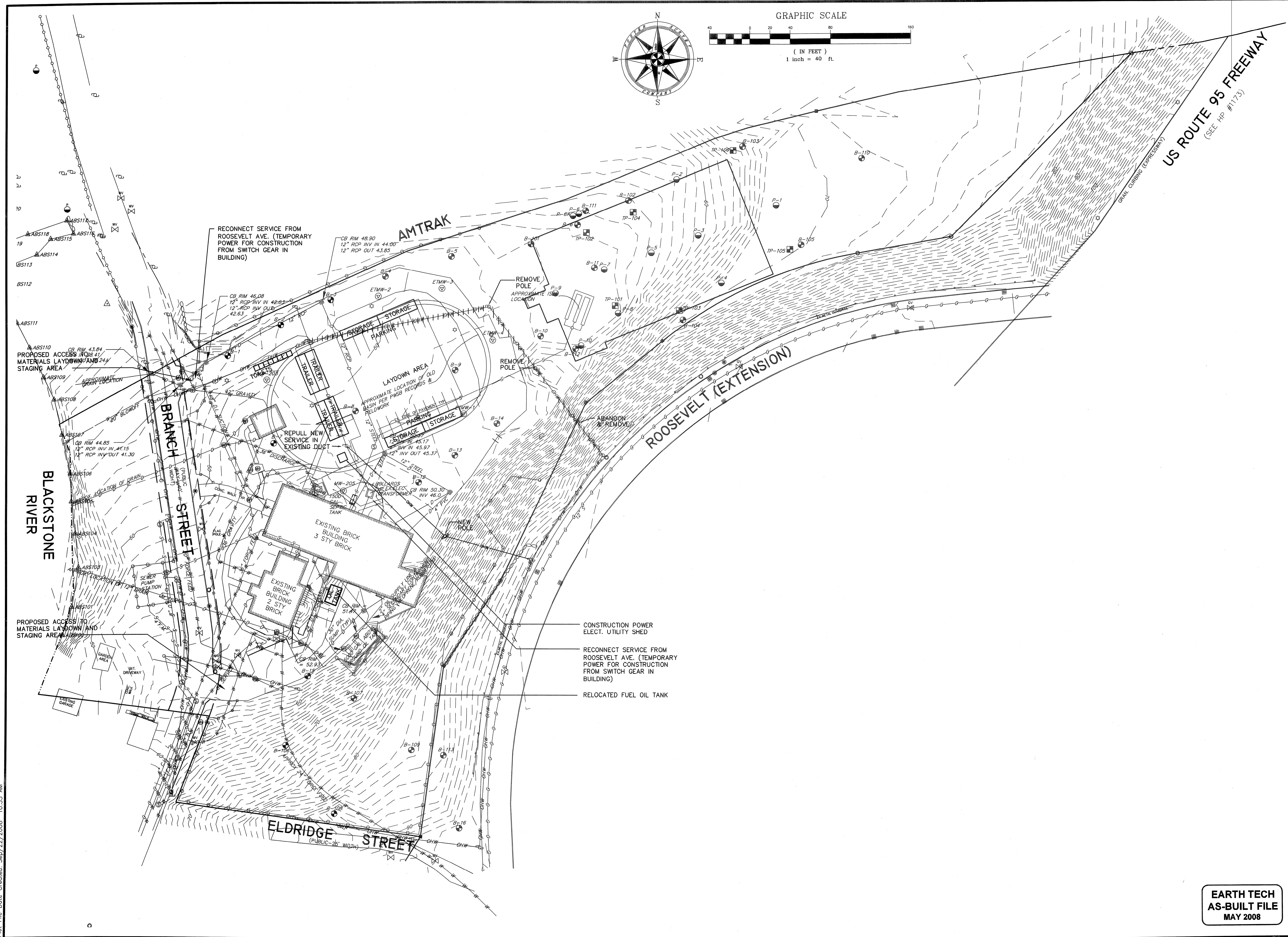
PAWTUCKET, RHODE ISLAND  
PAWTUCKET REGIONAL  
WATER TREATMENT FACILITY  
**PKG 2 - CONSTRUCTION**  
BRANCH STREET WTP AND 5MG TANK  
EXISTING CONDITIONS PLAN

DESIGNED BY	DWG SCALE
DRAWN BY	AS NOTED
CHECKED BY	CONTRACT NO.
	DATE
	OCTOBER 31, 2008

LA-1  
SHEET 2 OF

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 Plot File Date Created: Sep/22/2008 10:35 AM

Filename: L:\WORK\69993\CAD\AS-BUILT\2) WTP\69993 - BRANCH ST WTP - EARLY SITEWORK.DWG  
 Plot File Date Created: Sep/22/2008 10:35 AM



FULL SIZE DRAWING = 4"

NO.	DATE	BY	REVISIONS
2	MAY 2008	DPB	AS-BUILT DRAWING FILE
1	10/31/06	CBM	ISSUED FOR RFI POSTED SET
0	02/25/06	CBM	ISSUED FOR CONSTRUCTION

ROBERT H. SHELDON  
 No. 4103  
 REGISTERED PROFESSIONAL ENGINEER  
 STATE OF RHODE ISLAND  
 EXPIRES 3/31/09

PAWTUCKET, RHODE ISLAND  
**PAWTUCKET REGIONAL WATER TREATMENT FACILITY**  
**PKG 2 - CONSTRUCTION**  
 BRANCH STREET WTP AND 5MG TANK  
 CONSTRUCTION STAGING PLAN

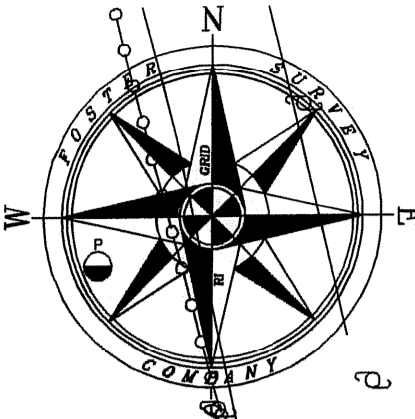
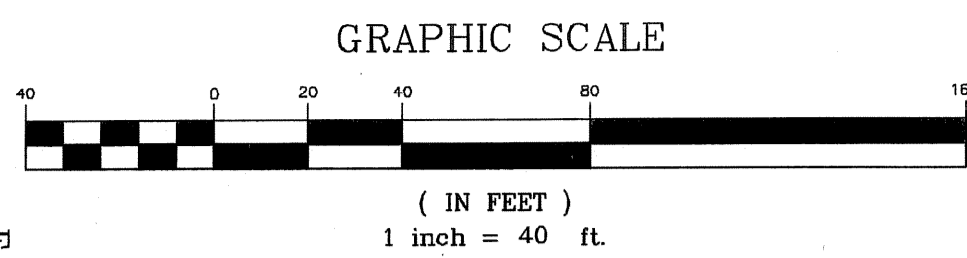
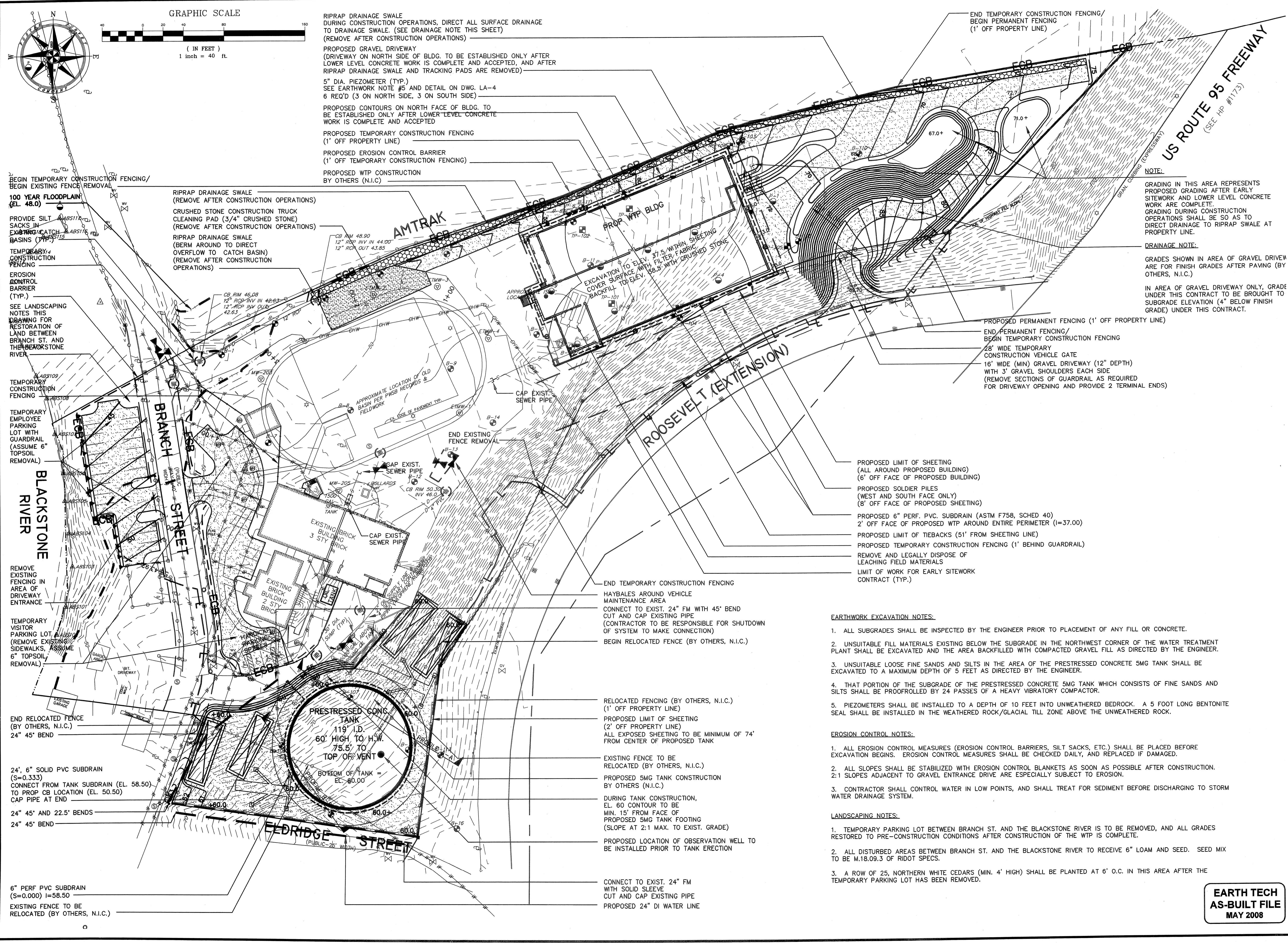
DESIGNED BY	DWG SCALE
DRAWN BY	AS NOTED
CHECKED BY	CONTRACT NO.
	DATE
	OCTOBER 31, 2008

**EARTH TECH**  
 AS-BUILT FILE  
 MAY 2008

LA-2  
 SHEET 3 OF

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 300 BAKER AVENUE SUITE 200 CONCORD MA 01742 (978) 371-4000

Filename: L:\WORK\69993\CAD\AS-BUILT\2) WTP\69993 - BRANCH ST WTP - EARLY SITEWORK.DWG  
 Plot File Date Created: Sep/22/2008 10:35 AM



RIPRAP DRAINAGE SWALE DURING CONSTRUCTION OPERATIONS, DIRECT ALL SURFACE DRAINAGE TO DRAINAGE SWALE. (SEE DRAINAGE NOTE THIS SHEET) (REMOVE AFTER CONSTRUCTION OPERATIONS)

PROPOSED GRAVEL DRIVEWAY (DRIVEWAY ON NORTH SIDE OF BLDG. TO BE ESTABLISHED ONLY AFTER LOWER LEVEL CONCRETE WORK IS COMPLETE AND ACCEPTED, AND AFTER RIPRAP DRAINAGE SWALE AND TRACKING PADS ARE REMOVED)

5" DIA. PIEZOMETER (TYP.) SEE EARTHWORK NOTE #5 AND DETAIL ON DWG. LA-4

6 REQ'D (3 ON NORTH SIDE, 3 ON SOUTH SIDE)

PROPOSED CONTOURS ON NORTH FACE OF BLDG. TO BE ESTABLISHED ONLY AFTER LOWER LEVEL CONCRETE WORK IS COMPLETE AND ACCEPTED

PROPOSED TEMPORARY CONSTRUCTION FENCING (1' OFF PROPERTY LINE)

PROPOSED EROSION CONTROL BARRIER (1' OFF TEMPORARY CONSTRUCTION FENCING)

PROPOSED WTP CONSTRUCTION BY OTHERS (N.I.C.)

BEGIN TEMPORARY CONSTRUCTION FENCING/  
 BEGIN EXISTING FENCE REMOVAL

100 YEAR FLOODPLAIN (EL. 48.0)

PROVIDE SILT SACKS IN EXISTING CATCH BASINS (TYP.)

TEMPORARY CONSTRUCTION FENCING

EROSION CONTROL BARRIER (TYP.)

SEE LANDSCAPING NOTES THIS DRAWING FOR RESTORATION OF LAND BETWEEN BRANCH ST. AND THE BLACKSTONE RIVER.

TEMPORARY CONSTRUCTION FENCING

TEMPORARY EMPLOYEE PARKING LOT WITH GUARDRAIL (ASSUME 6" TOPSOIL REMOVAL)

REMOVE EXISTING FENCING IN AREA OF DRIVEWAY ENTRANCE

TEMPORARY VISITOR PARKING LOT (REMOVE EXISTING SIDEWALKS. ASSUME 6" TOPSOIL REMOVAL)

END RELOCATED FENCE (BY OTHERS, N.I.C.) 24" 45° BEND

24", 6" SOLID PVC SUBDRAIN (S=0.333) CONNECT FROM TANK SUBDRAIN (EL. 58.50) TO PROP CB LOCATION (EL. 50.50) CAP PIPE AT END

24" 45° AND 22.5° BENDS

24" 45° BEND

6" PERF PVC SUBDRAIN (S=0.000) I=58.50

EXISTING FENCE TO BE RELOCATED (BY OTHERS, N.I.C.)

RIPRAP DRAINAGE SWALE (REMOVE AFTER CONSTRUCTION OPERATIONS)

CRUSHED STONE CONSTRUCTION TRUCK CLEANING PAD (3/4" CRUSHED STONE) (REMOVE AFTER CONSTRUCTION OPERATIONS)

RIPRAP DRAINAGE SWALE (BERM AROUND TO DIRECT OVERFLOW TO CATCH BASIN) (REMOVE AFTER CONSTRUCTION OPERATIONS)

APPROXIMATE LOCATION OF OLD BASIN PER PWS RECORDS & FIELDWORK

END EXISTING FENCE REMOVAL

EXISTING BRICK BUILDING 3 STY BRICK

EXISTING BRICK BUILDING 2 STY BRICK

PRESTRESSED CONG. TANK 119' I.D. 60' HIGH TO H.W. 75.5' TO TOP OF VENT BOTTOM OF TANK = EL. 60.00

ELDRIDGE STREET (PUBLIC - 25' WIDTH)

AMTRAK

PROPOSED WTP BLDG

PROPOSED LIMIT OF SHEETING (ALL AROUND PROPOSED BUILDING) (6' OFF FACE OF PROPOSED BUILDING)

PROPOSED SOLDIER PILES (WEST AND SOUTH FACE ONLY) (8' OFF FACE OF PROPOSED SHEETING)

PROPOSED 6" PERF. PVC SUBDRAIN (ASTM F758, SCHED 40) 2' OFF FACE OF PROPOSED WTP AROUND ENTIRE PERIMETER (I=37.00)

PROPOSED LIMIT OF TIEBACKS (51' FROM SHEETING LINE)

PROPOSED TEMPORARY CONSTRUCTION FENCING (1' BEHIND GUARDRAIL)

REMOVE AND LEGALLY DISPOSE OF LEACHING FIELD MATERIALS

LIMIT OF WORK FOR EARLY SITEWORK CONTRACT (TYP.)

END TEMPORARY CONSTRUCTION FENCING

HAYBALES AROUND VEHICLE MAINTENANCE AREA

CONNECT TO EXIST. 24" FM WITH 45° BEND CUT AND CAP EXISTING PIPE (CONTRACTOR TO BE RESPONSIBLE FOR SHUTDOWN OF SYSTEM TO MAKE CONNECTION)

BEGIN RELOCATED FENCE (BY OTHERS, N.I.C.)

RELOCATED FENCING (BY OTHERS, N.I.C.) (1' OFF PROPERTY LINE)

PROPOSED LIMIT OF SHEETING (2' OFF PROPERTY LINE)

ALL EXPOSED SHEETING TO BE MINIMUM OF 74' FROM CENTER OF PROPOSED TANK

EXISTING FENCE TO BE RELOCATED (BY OTHERS, N.I.C.)

PROPOSED 5MG TANK CONSTRUCTION BY OTHERS (N.I.C.)

DURING TANK CONSTRUCTION, EL. 60 CONTOUR TO BE MIN. 15' FROM FACE OF PROPOSED 5MG TANK FOOTING (SLOPE AT 2:1 MAX. TO EXIST. GRADE)

PROPOSED LOCATION OF OBSERVATION WELL TO BE INSTALLED PRIOR TO TANK ERECTION

CONNECT TO EXIST. 24" FM WITH SOLID SLEEVE CUT AND CAP EXISTING PIPE

PROPOSED 24" DI WATER LINE

EXCAVATION TO ELEV. 57.5 WITHIN SHEETING COVER SURFACE WITH FILTER FABRIC BACKFILL TO ELEV. 58.5 WITH CRUSHED STONES

PROPOSED PERMANENT FENCING (1' OFF PROPERTY LINE)

END PERMANENT FENCING/  
 BEGIN TEMPORARY CONSTRUCTION FENCING

28' WIDE TEMPORARY CONSTRUCTION VEHICLE GATE

16' WIDE (MIN) GRAVEL DRIVEWAY (12" DEPTH) WITH 3' GRAVEL SHOULDERS EACH SIDE (REMOVE SECTIONS OF GUARDRAIL AS REQUIRED FOR DRIVEWAY OPENING AND PROVIDE 2 TERMINAL ENDS)

PROPOSED TEMPORARY CONSTRUCTION FENCING (1' OFF PROPERTY LINE)

END TEMPORARY CONSTRUCTION FENCING/  
 BEGIN PERMANENT FENCING (1' OFF PROPERTY LINE)

PROPOSED PERMANENT FENCING (1' OFF PROPERTY LINE)

END PERMANENT FENCING/  
 BEGIN TEMPORARY CONSTRUCTION FENCING

PROPOSED PERMANENT FENCING (1' OFF PROPERTY LINE)

END PERMANENT FENCING/  
 BEGIN TEMPORARY CONSTRUCTION FENCING

PROPOSED PERMANENT FENCING (1' OFF PROPERTY LINE)

END PERMANENT FENCING/  
 BEGIN TEMPORARY CONSTRUCTION FENCING

PROPOSED PERMANENT FENCING (1' OFF PROPERTY LINE)

END PERMANENT FENCING/  
 BEGIN TEMPORARY CONSTRUCTION FENCING

ROOSEVELT (EXTENSION)

US ROUTE 95 FREEWAY (SEE HP #1173)

PROPOSED PERMANENT FENCING (1' OFF PROPERTY LINE)

END PERMANENT FENCING/  
 BEGIN TEMPORARY CONSTRUCTION FENCING

PROPOSED PERMANENT FENCING (1' OFF PROPERTY LINE)

END PERMANENT FENCING/  
 BEGIN TEMPORARY CONSTRUCTION FENCING

PROPOSED PERMANENT FENCING (1' OFF PROPERTY LINE)

END PERMANENT FENCING/  
 BEGIN TEMPORARY CONSTRUCTION FENCING

PROPOSED PERMANENT FENCING (1' OFF PROPERTY LINE)

END PERMANENT FENCING/  
 BEGIN TEMPORARY CONSTRUCTION FENCING

PROPOSED PERMANENT FENCING (1' OFF PROPERTY LINE)

END PERMANENT FENCING/  
 BEGIN TEMPORARY CONSTRUCTION FENCING

PROPOSED LIMIT OF SHEETING (ALL AROUND PROPOSED BUILDING) (6' OFF FACE OF PROPOSED BUILDING)

PROPOSED SOLDIER PILES (WEST AND SOUTH FACE ONLY) (8' OFF FACE OF PROPOSED SHEETING)

PROPOSED 6" PERF. PVC SUBDRAIN (ASTM F758, SCHED 40) 2' OFF FACE OF PROPOSED WTP AROUND ENTIRE PERIMETER (I=37.00)

PROPOSED LIMIT OF TIEBACKS (51' FROM SHEETING LINE)

PROPOSED TEMPORARY CONSTRUCTION FENCING (1' BEHIND GUARDRAIL)

REMOVE AND LEGALLY DISPOSE OF LEACHING FIELD MATERIALS

LIMIT OF WORK FOR EARLY SITEWORK CONTRACT (TYP.)

**EARTHWORK EXCAVATION NOTES:**

- ALL SUBGRADES SHALL BE INSPECTED BY THE ENGINEER PRIOR TO PLACEMENT OF ANY FILL OR CONCRETE.
- UNSATURABLE FILL MATERIALS EXISTING BELOW THE SUBGRADE IN THE NORTHWEST CORNER OF THE WATER TREATMENT PLANT SHALL BE EXCAVATED AND THE AREA BACKFILLED WITH COMPACTED GRAVEL FILL AS DIRECTED BY THE ENGINEER.
- UNSATURABLE LOOSE FINE SANDS AND SILTS IN THE AREA OF THE PRESTRESSED CONCRETE 5MG TANK SHALL BE EXCAVATED TO A MAXIMUM DEPTH OF 5 FEET AS DIRECTED BY THE ENGINEER.
- THAT PORTION OF THE SUBGRADE OF THE PRESTRESSED CONCRETE 5MG TANK WHICH CONSISTS OF FINE SANDS AND SILTS SHALL BE PROOFROLLED BY 24 PASSES OF A HEAVY VIBRATORY COMPACTOR.
- PIEZOMETERS SHALL BE INSTALLED TO A DEPTH OF 10 FEET INTO UNWEATHERED BEDROCK. A 5 FOOT LONG BENTONITE SEAL SHALL BE INSTALLED IN THE WEATHERED ROCK/GLACIAL TILL ZONE ABOVE THE UNWEATHERED ROCK.

**EROSION CONTROL NOTES:**

- ALL EROSION CONTROL MEASURES (EROSION CONTROL BARRIERS, SILT SACKS, ETC.) SHALL BE PLACED BEFORE EXCAVATION BEGINS. EROSION CONTROL MEASURES SHALL BE CHECKED DAILY, AND REPLACED IF DAMAGED.
- ALL SLOPES SHALL BE STABILIZED WITH EROSION CONTROL BLANKETS AS SOON AS POSSIBLE AFTER CONSTRUCTION. 2:1 SLOPES ADJACENT TO GRAVEL ENTRANCE DRIVE ARE ESPECIALLY SUBJECT TO EROSION.
- CONTRACTOR SHALL CONTROL WATER IN LOW POINTS, AND SHALL TREAT FOR SEDIMENT BEFORE DISCHARGING TO STORM WATER DRAINAGE SYSTEM.

**LANDSCAPING NOTES:**

- TEMPORARY PARKING LOT BETWEEN BRANCH ST. AND THE BLACKSTONE RIVER IS TO BE REMOVED, AND ALL GRADES RESTORED TO PRE-CONSTRUCTION CONDITIONS AFTER CONSTRUCTION OF THE WTP IS COMPLETE.
- ALL DISTURBED AREAS BETWEEN BRANCH ST. AND THE BLACKSTONE RIVER TO RECEIVE 6" LOAM AND SEED. SEED MIX TO BE M.18.09.3 OF RIDOT SPECS.
- A ROW OF 25 NORTHERN WHITE CEDARS (MIN. 4' HIGH) SHALL BE PLANTED AT 6' O.C. IN THIS AREA AFTER THE TEMPORARY PARKING LOT HAS BEEN REMOVED.

**NOTE:**

GRADING IN THIS AREA REPRESENTS PROPOSED GRADING AFTER EARLY SITEWORK AND LOWER LEVEL CONCRETE WORK ARE COMPLETE. GRADING DURING CONSTRUCTION OPERATIONS SHALL BE SO AS TO DIRECT DRAINAGE TO RIPRAP SWALE AT PROPERTY LINE.

**DRAINAGE NOTE:**

GRADES SHOWN IN AREA OF GRAVEL DRIVEWAY ARE FOR FINISH GRADES AFTER PAVING (BY OTHERS, N.I.C.)

IN AREA OF GRAVEL DRIVEWAY ONLY, GRADE UNDER THIS CONTRACT TO BE BROUGHT TO SUBGRADE ELEVATION (4" BELOW FINISH GRADE) UNDER THIS CONTRACT.

NO.	DATE	BY	REVISIONS
1	MAY 2008	AS-BUILT DRAWING FILE	
2	MAY 2008	ISSUED FOR RFI POSTED SET	
3	MAY 2008	REVISED SITEWORK UTILITIES IN TANK AREA	
4	MAY 2008	ADDED TANK PREPARATION, 24" W/ RELOCATION	
5	MAY 2008	ISSUED FOR CONSTRUCTION	

ROBERT H. SHELDON  
 No. 4103  
 REG. PROFESSIONAL ENGINEER  
 STATE OF RHODE ISLAND

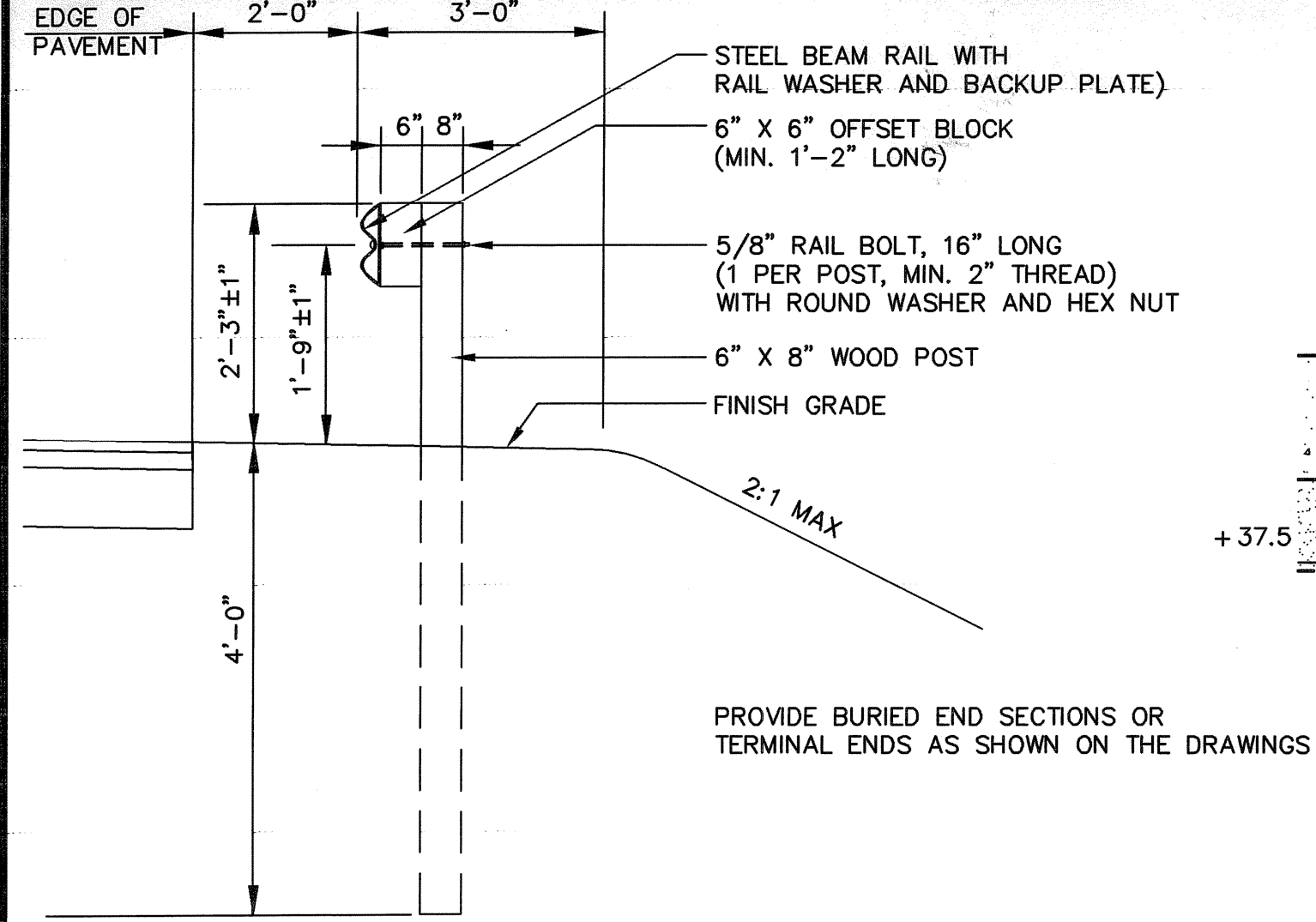
PAWTUCKET, RHODE ISLAND  
**PAWTUCKET REGIONAL WATER TREATMENT FACILITY**  
**PKG 2 - CONSTRUCTION**  
 BRANCH STREET WTP AND 5MG TANK  
 EARLY SITEWORK PLAN

DESIGNED BY: DWG SCALE: AS NOTED  
 DRAWN BY: CONTRACT NO.  
 CHECKED BY: DATE: OCTOBER 31, 2008

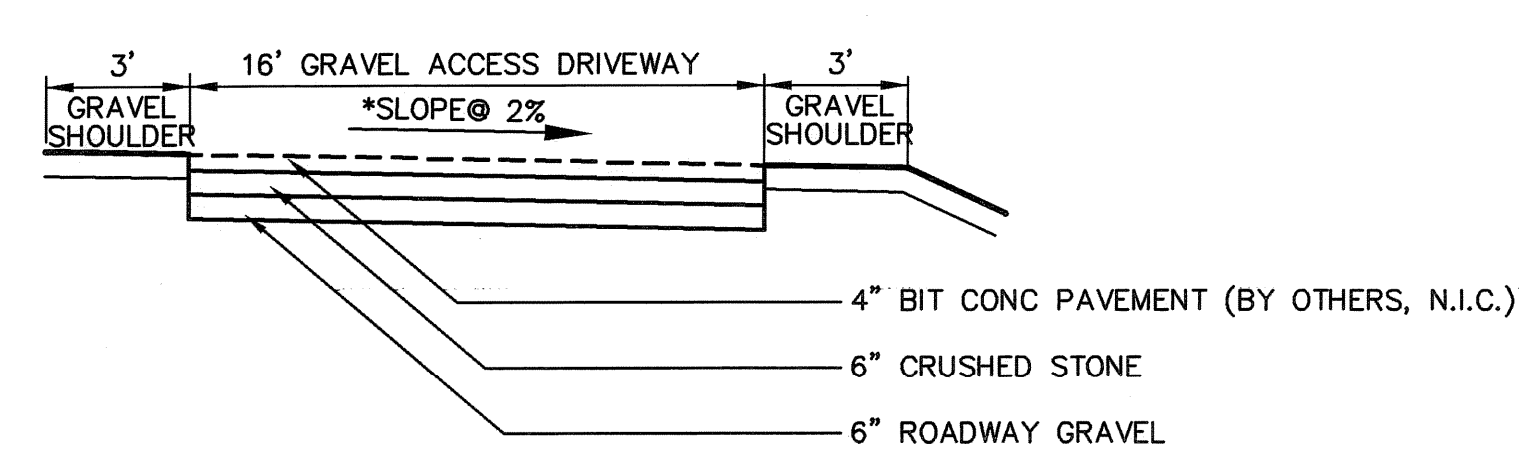
**EARTH TECH**  
 AS-BUILT FILE  
 MAY 2008

LA-3  
 SHEET 4 OF

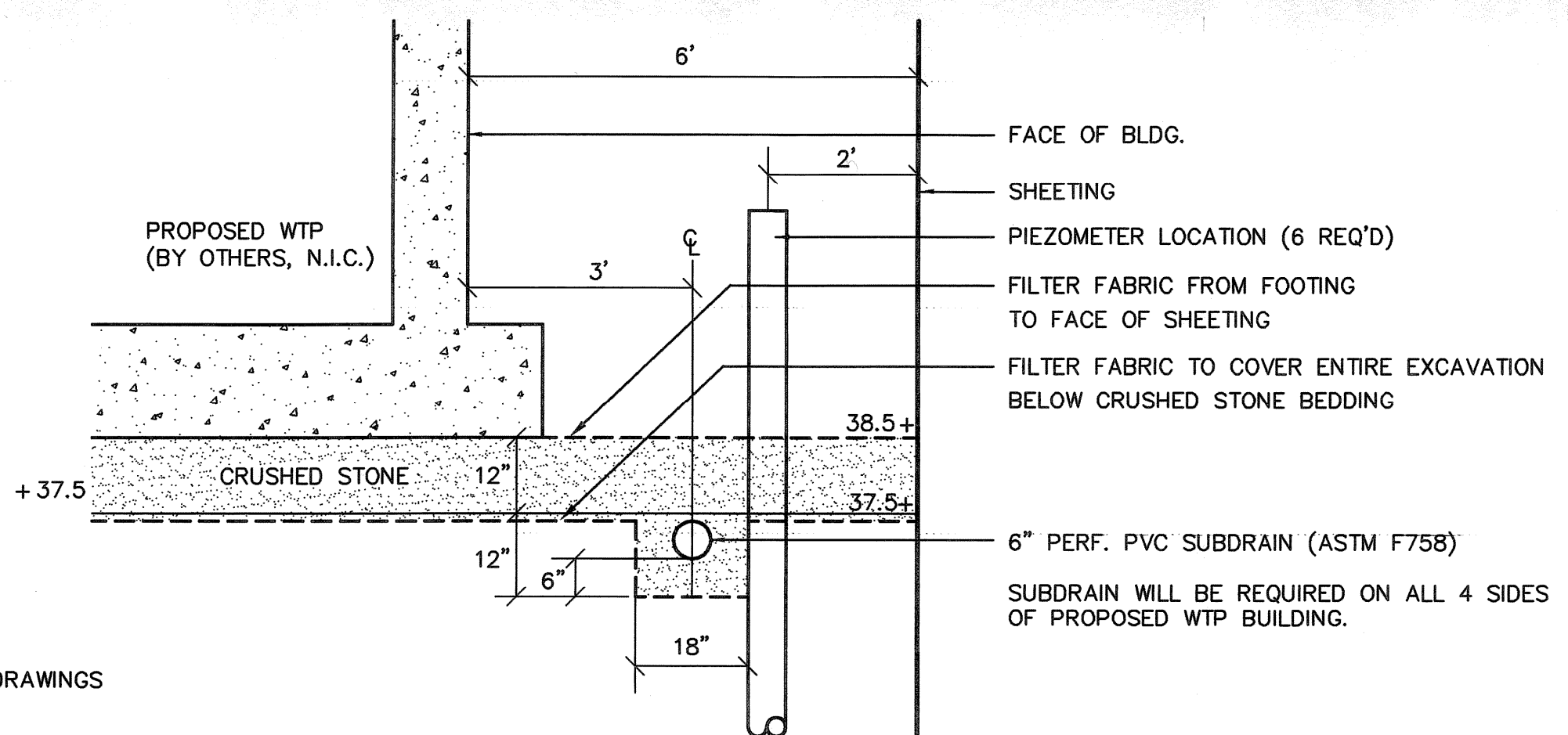
**EarthTech**  
 A Tyco International Ltd. Company  
 300 BAKER AVENUE SUITE 200 CONCORD MA 01742 (978) 371-4000



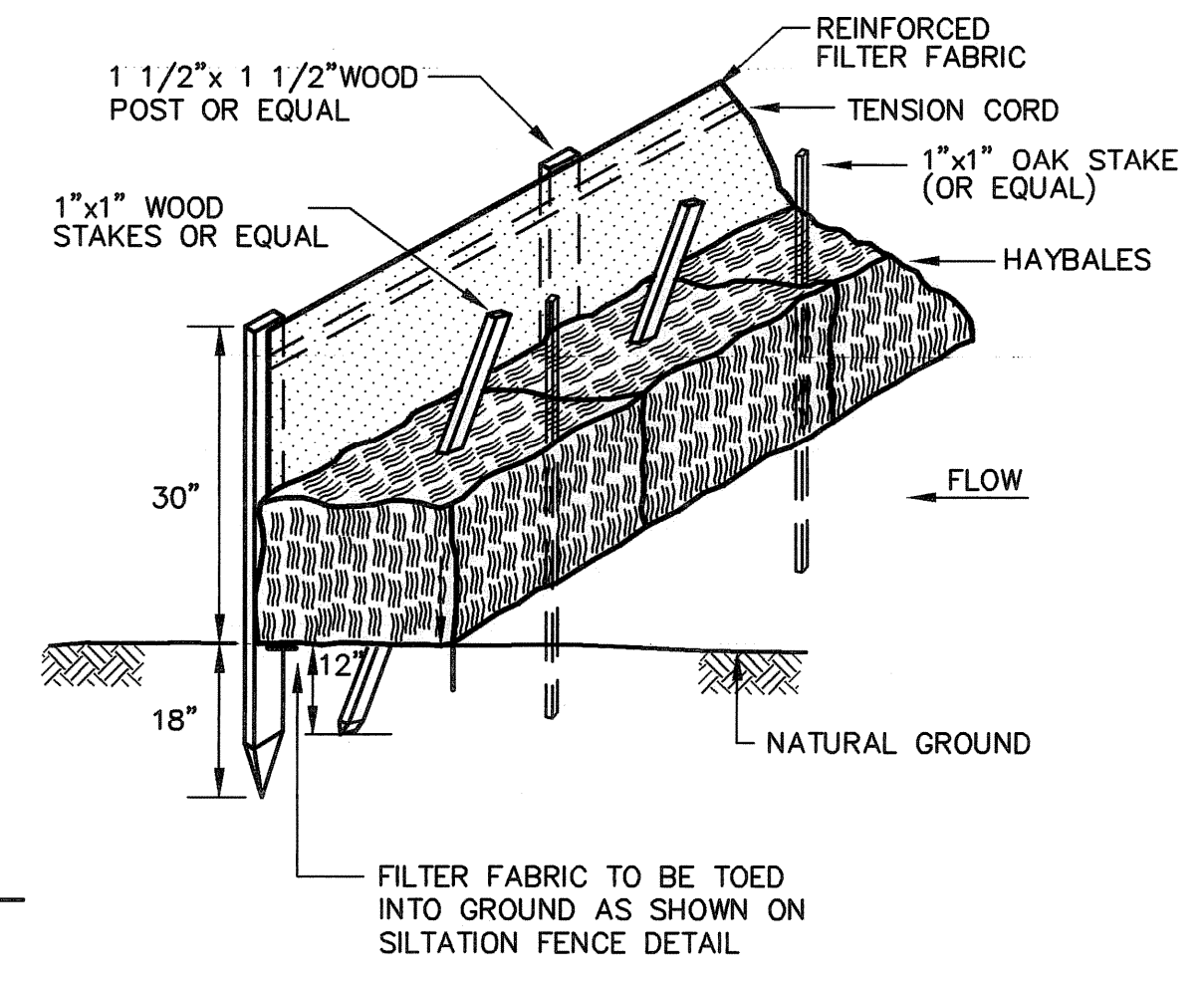
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NOT TO SCALE



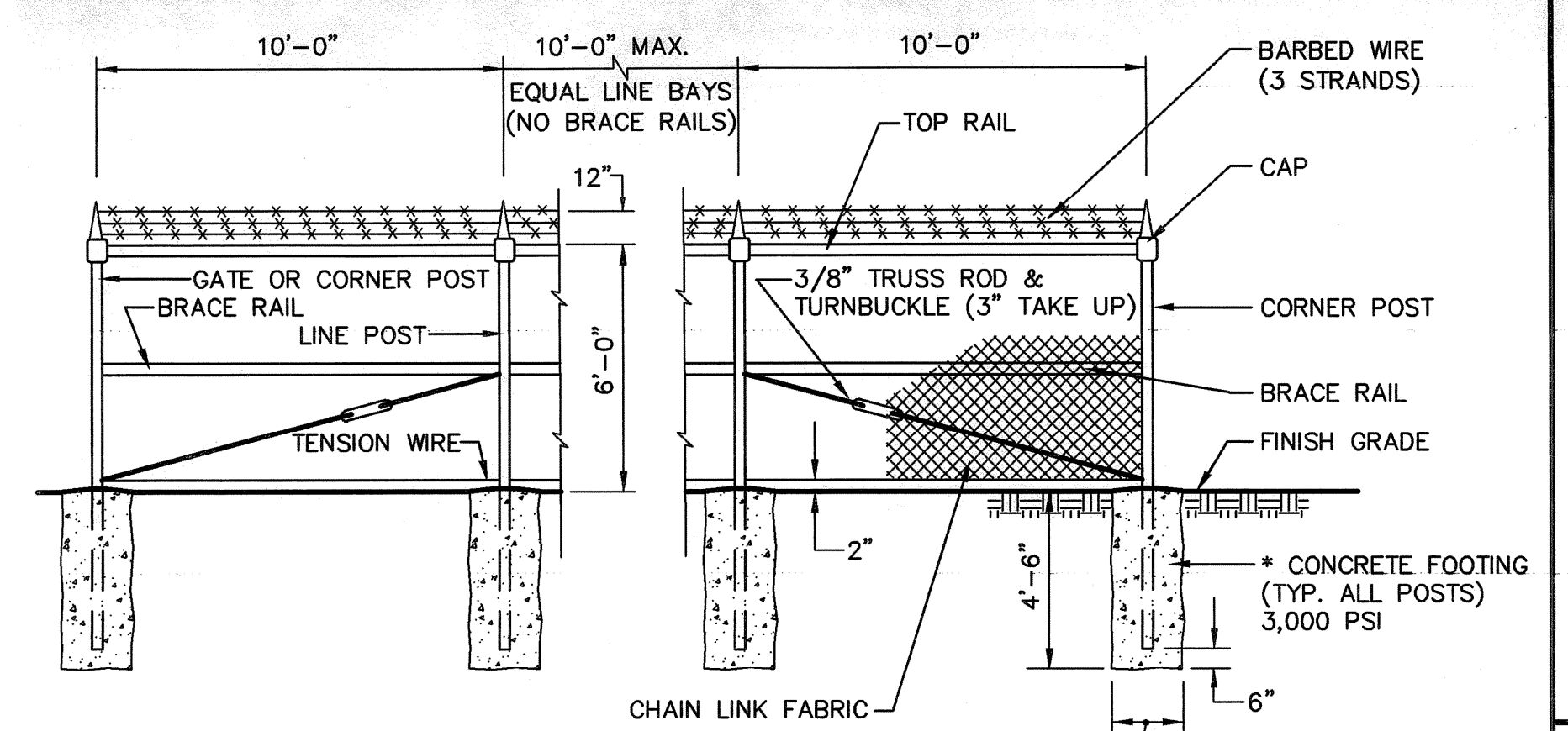
**GRAVEL ACCESS DRIVEWAY SECTION**  
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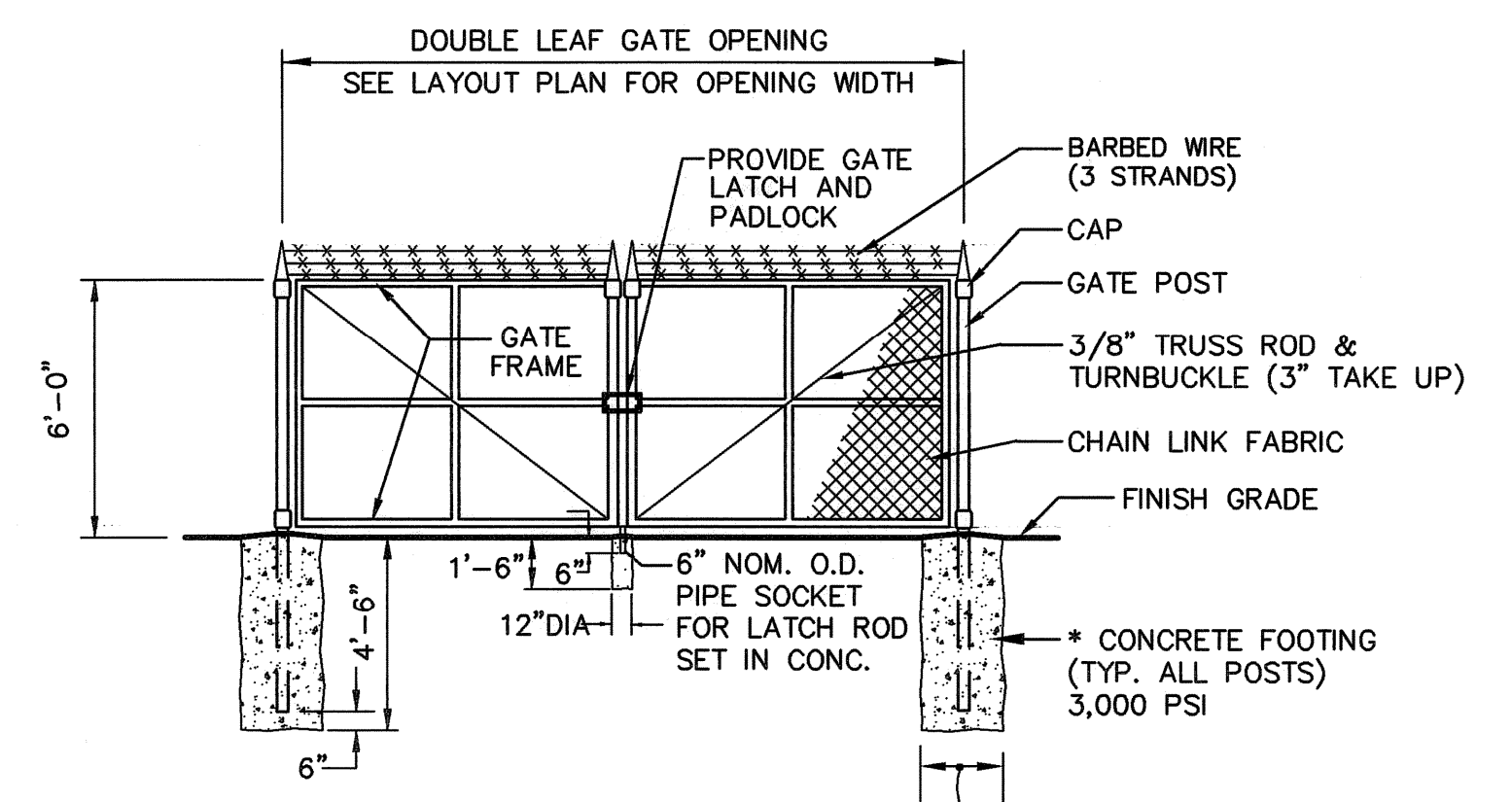
**BUILDING SUBDRAIN DETAIL**  
NOT TO SCALE



**EROSION CONTROL BARRIER**  
NOT TO SCALE



**CHAIN LINK FENCE WITH BARBED WIRE**  
NOT TO SCALE



**DOUBLE LEAF GATE WITH BARBED WIRE**  
NOT TO SCALE

BENDS	MINIMUM RESTRAINED LENGTH (FEET)									
	4	6	8	10	12	14	16	18	20	24
11.25	1	1	2	2	3	3	3	4	4	5
22.5	2	3	4	5	6	7	8	9	10	11
45	4	6	8	10	11	13	15	16	18	21
90	10	15	19	23	27	31	35	39	43	50

TEES	MINIMUM RESTRAINED LENGTH (FEET)									
	4	6	8	10	12	14	16	18	20	24
4	8	0	0	0	0	0	0	0	0	0
6	18	13	8	2	0	0	0	0	0	0
8	29	25	21	16	12	8	3	0	0	0
10	38	35	32	28	25	21	14	0	0	0
12	48	46	43	40	37	31	0	0	0	0
14	58	56	53	51	45	0	0	0	0	0
16	68	66	64	59	0	0	0	0	0	0
18	78	76	72	0	0	0	0	0	0	0
20	87	84	0	0	0	0	0	0	0	0
24	106	0	0	0	0	0	0	0	0	0

REDUCER	MINIMUM RESTRAINED LENGTH (FEET)									
	4	6	8	10	12	14	16	18	20	24
4	18	32	45	56	60	72	77	81	84	87
6	19	34	47	60	72	81	87	91	94	97
8	18	34	49	62	74	81	87	91	94	97
10	19	36	50	64	77	81	87	91	94	97
12	19	36	51	65	77	81	87	91	94	97
14	19	36	52	65	77	81	87	91	94	97
16	19	37	53	67	77	81	87	91	94	97
18	19	37	53	67	77	81	87	91	94	97
20	19	37	53	67	77	81	87	91	94	97

VERTICAL OFFSETS (DOWN)	MINIMUM RESTRAINED LENGTH (FEET)									
	11.25	22.5	45	67.5	90	112.5	135	157.5	180	202.5
0	0	3	6	9	12	15	18	21	24	27
3	0	15	20	26	31	36	42	47	52	57
6	0	15	20	26	31	36	42	47	52	57
9	0	15	20	26	31	36	42	47	52	57
12	0	15	20	26	31	36	42	47	52	57
15	0	15	20	26	31	36	42	47	52	57
18	0	15	20	26	31	36	42	47	52	57
21	0	15	20	26	31	36	42	47	52	57
24	0	15	20	26	31	36	42	47	52	57

DEAD END	MINIMUM RESTRAINED LENGTH (FEET)									
	4	6	8	10	12	14	16	18	20	24
4	24	34	45	55	65	75	85	95	104	124

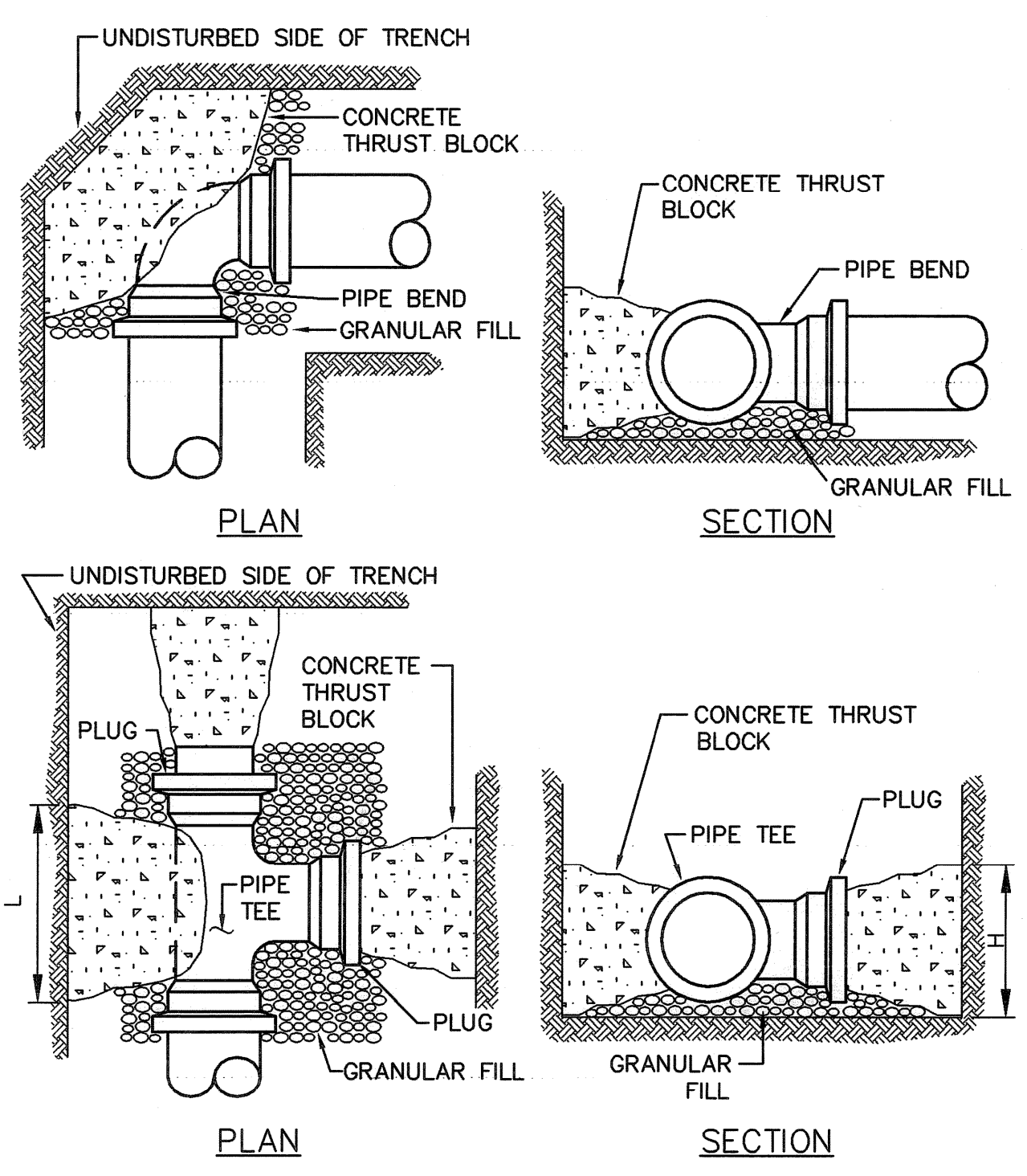
- VALUES WERE CALCULATED ASSUMING A MINIMUM OF 5 FEET OF COVER OVER THE PIPE, TYPE 5 LAYING CONDITION AND A TOTAL PRESSURE OF 250 PSI (150 PSI TEST PRESSURE WITH A 100 PSI SURGE ALLOWANCE).
- THE VALUES LISTED FOR BENDS IS THE LENGTH OF RESTRAINED JOINT PIPING REQUIRED FOR EACH SIDE OF THE FITTING.
- THE VALUES LISTED FOR TEES IS THE LENGTH OF RESTRAINED JOINT PIPING REQUIRED FOR THE TEE BRANCH. VALUES WERE CALCULATED BASED ON A MINIMUM LENGTH OF 10 FEET BETWEEN THE NEAREST JOINTS ON BOTH SIDES OF THE TEE.
- THE VALUES LISTED FOR REDUCERS IS THE LENGTH OF RESTRAINED JOINT PIPING REQUIRED FOR THE LARGER PIPE.
- THE VALUES LISTED FOR VERTICAL OFFSETS ARE THE LENGTHS OF THE RESTRAINED JOINT PIPING REQUIRED FOR THE HIGHER PIPE AND THE LOWER PIPE, RESPECTIVELY, AND ASSUMING A VERTICAL OFFSET OF 3 FEET.
- WHERE THE RESTRAINED LENGTH OF TWO OR MORE FITTINGS OVERLAP, THE LARGER RESTRAINED LENGTH SHALL GOVERN.
- BACKFILL SHOULD BE COMPACTED TO AT LEAST 90 PERCENT OF MAXIMUM DRY UNIT WEIGHT DETERMINED BY ASTM TEST DESIGNATION D-1557.
- VALUES LISTED ARE FOR THE SPECIFIC LAYING CONDITIONS LISTED ABOVE. FOR THE LENGTH OF RESTRAINED JOINT PIPING FOR OTHER CONDITIONS, SEE THE ENGINEER.

**MINIMUM RESTRAINED JOINT PIPE LENGTH - WATER MAINS**

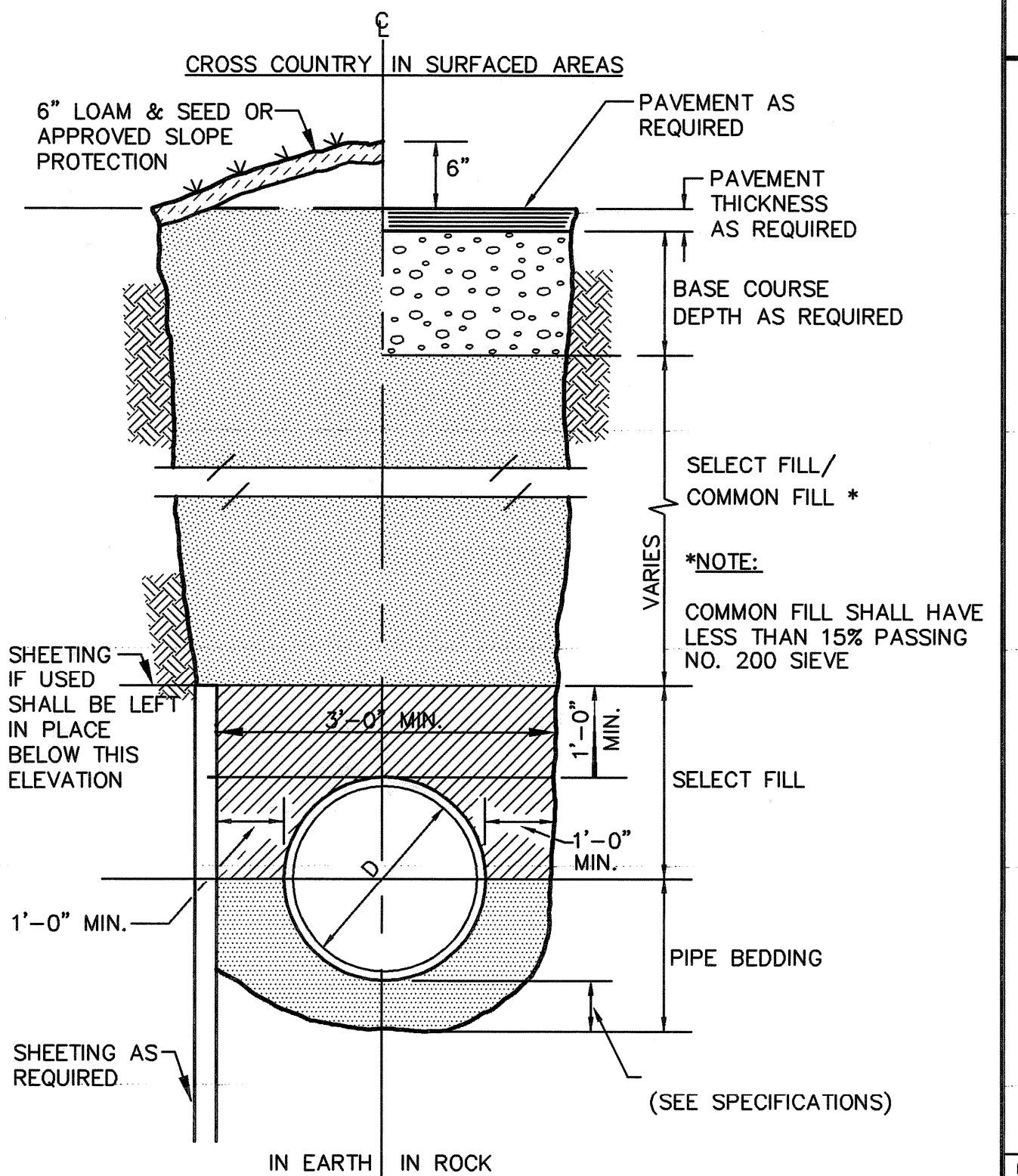
PIPE DIAMETER (INCHES)	MINIMUM BEARING AREA - FT. <sup>2</sup>				
	TEES, DEAD ENDS	90° BENDS	45° BENDS	22 1/2° BENDS	11 1/4° BENDS
4	2.0	2.0	2.0	2.0	2.0
6	2.5	3.6	2.0	2.0	2.0
8	4.4	6.2	3.3	2.0	2.0
10	6.5	9.2	5.0	2.6	2.0
12	8.9	12.6	6.8	3.4	2.0
14	12.0	16.9	9.2	4.6	2.3
16	14.8	20.0	11.4	5.8	2.9
18	17.7	23.1	13.6	7.0	3.5
20	20.6	26.2	15.8	8.2	4.2
24	27.5	34.9	21.1	10.5	5.1
30	35.4	43.7	27.4	13.2	6.4
36	43.3	52.5	33.7	16.0	7.8
42	51.2	61.3	40.0	18.8	9.2

- BEARING AREAS, BASED ON SOIL BEARING CAPACITY OF 4,000 PSF. MINIMUM BEARING AREA IS 2.0 SQUARE FEET.
- IF SOIL HAS DIFFERENT BEARING CAPACITY THAN NOTED, NEW BEARING AREA CAN BE CALCULATED BY RATIO I.E., IF SOIL HAS BEARING OF 2,000 PSF, MULTIPLY TABULATED VALUE BY 4/2.
- TABLE IS FOR HORIZONTAL RESTRAINT ONLY.
- VALUES SHOWN ARE FOR TEST PRESSURE OF 150 PSI WITH A 100 PSI SURGE ALLOWANCE.
- THRUST BLOCKS SHALL NOT BE PLACED AGAINST THE FOLLOWING SOILS: A) PEAT, ORGANIC SILT AND ORGANIC SOILS; B) SOFT CLAY; C) RUBBISH FILL AND OTHER UNSUITABLE ARTIFICIAL FILL; D) SHATTERED SHALE; E) INORGANIC SILT AND VERY FINE SANDS.
- WHERE POSSIBLE, POUR CONCRETE ANCHOR BLOCKS AGAINST UNDISTURBED EARTH. OTHERWISE, PLACE COMPACTED BACKFILL USING GRAVEL AND WELL GRADED SAND AFTER REMOVING FORMS.
- BACKFILL SHOULD BE COMPACTED TO AT LEAST 90 PERCENT OF MAXIMUM DRY UNIT WEIGHT DETERMINED BY ASTM TEST DESIGNATION D-1557.

**MINIMUM THRUST BLOCK SIZING**



**TYPICAL THRUST BLOCK PLACEMENT ON BENDS, TEES AND PLUGS**  
NOT TO SCALE



**TYPICAL TRENCH SECTION**  
NOT TO SCALE

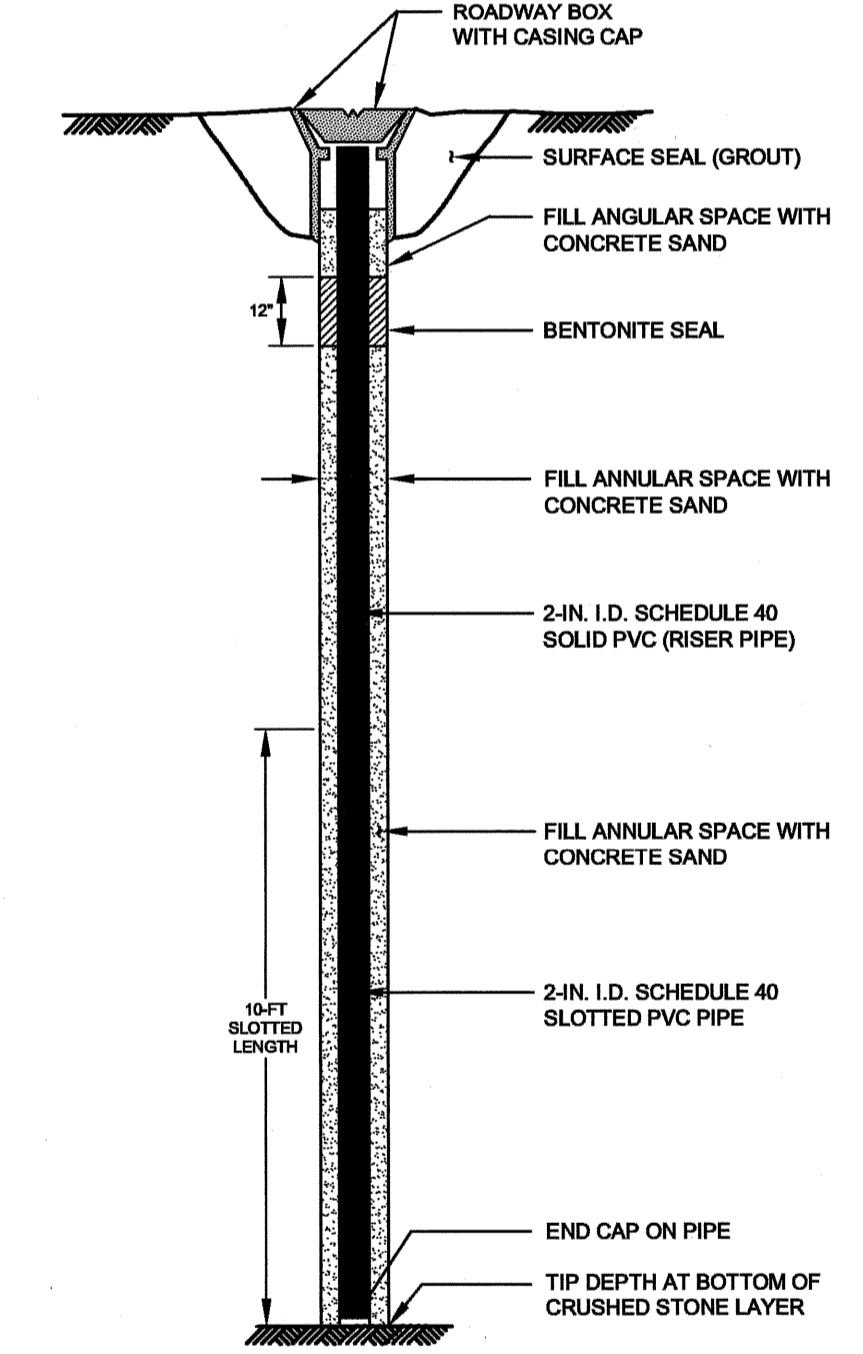
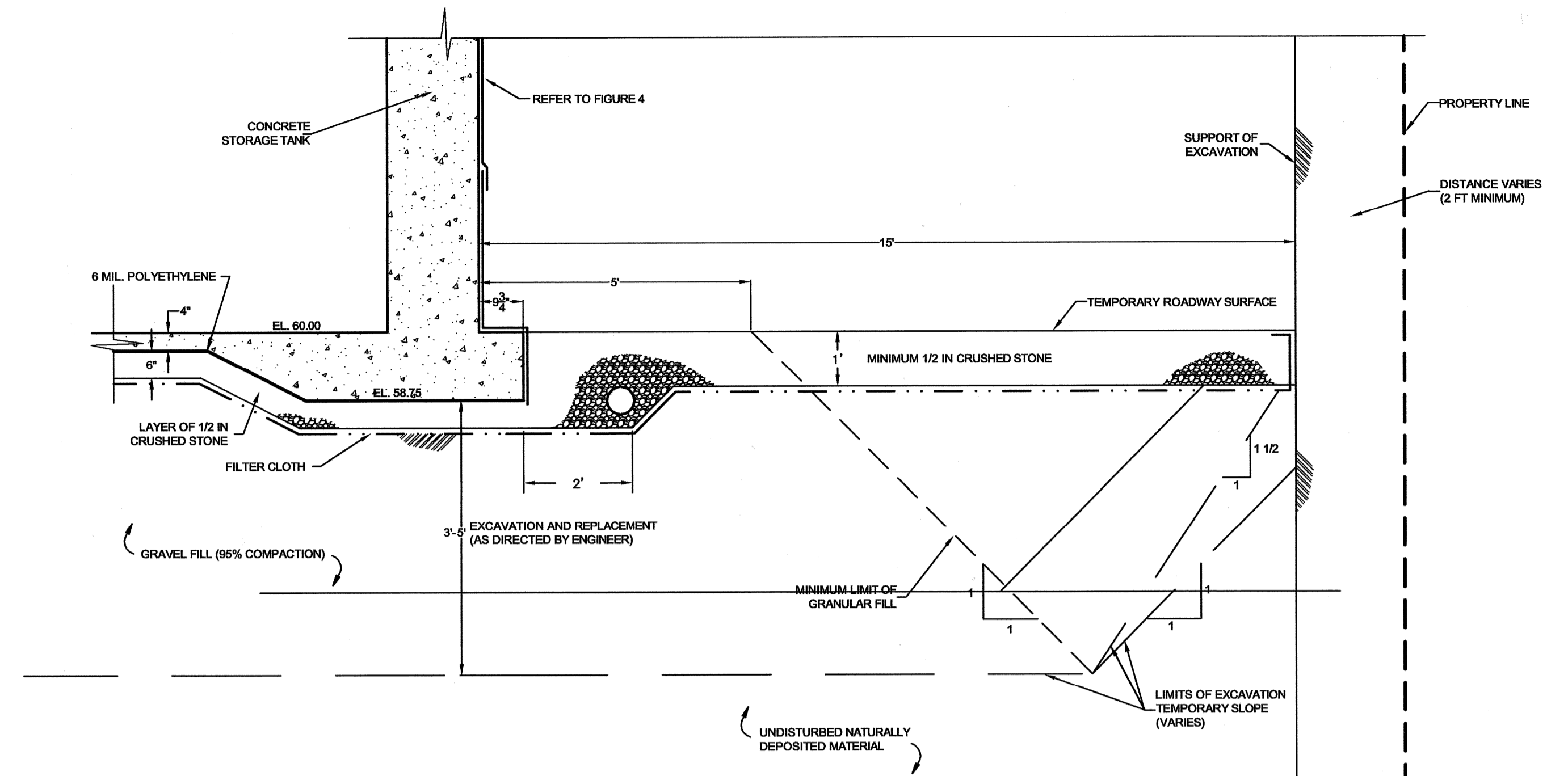
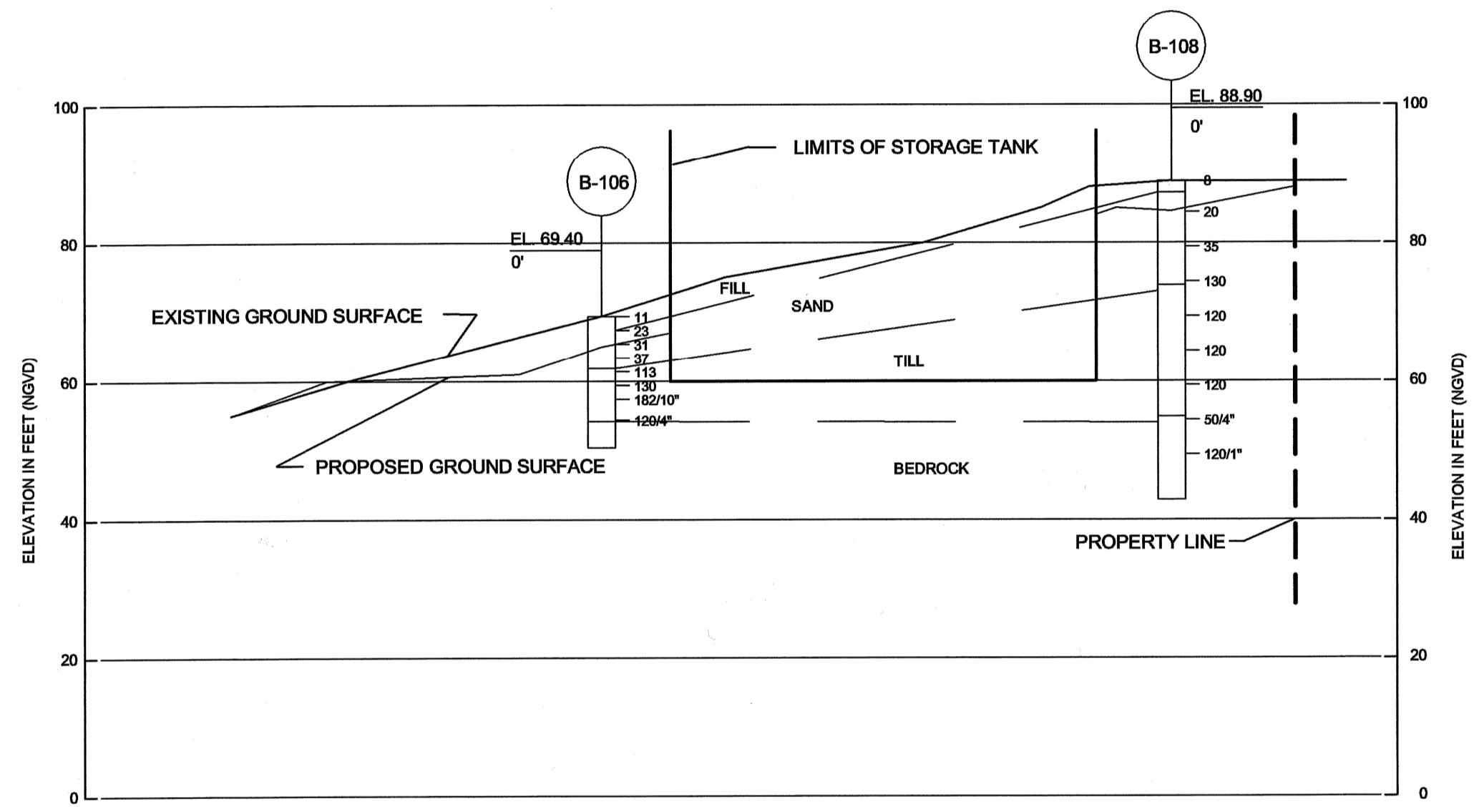
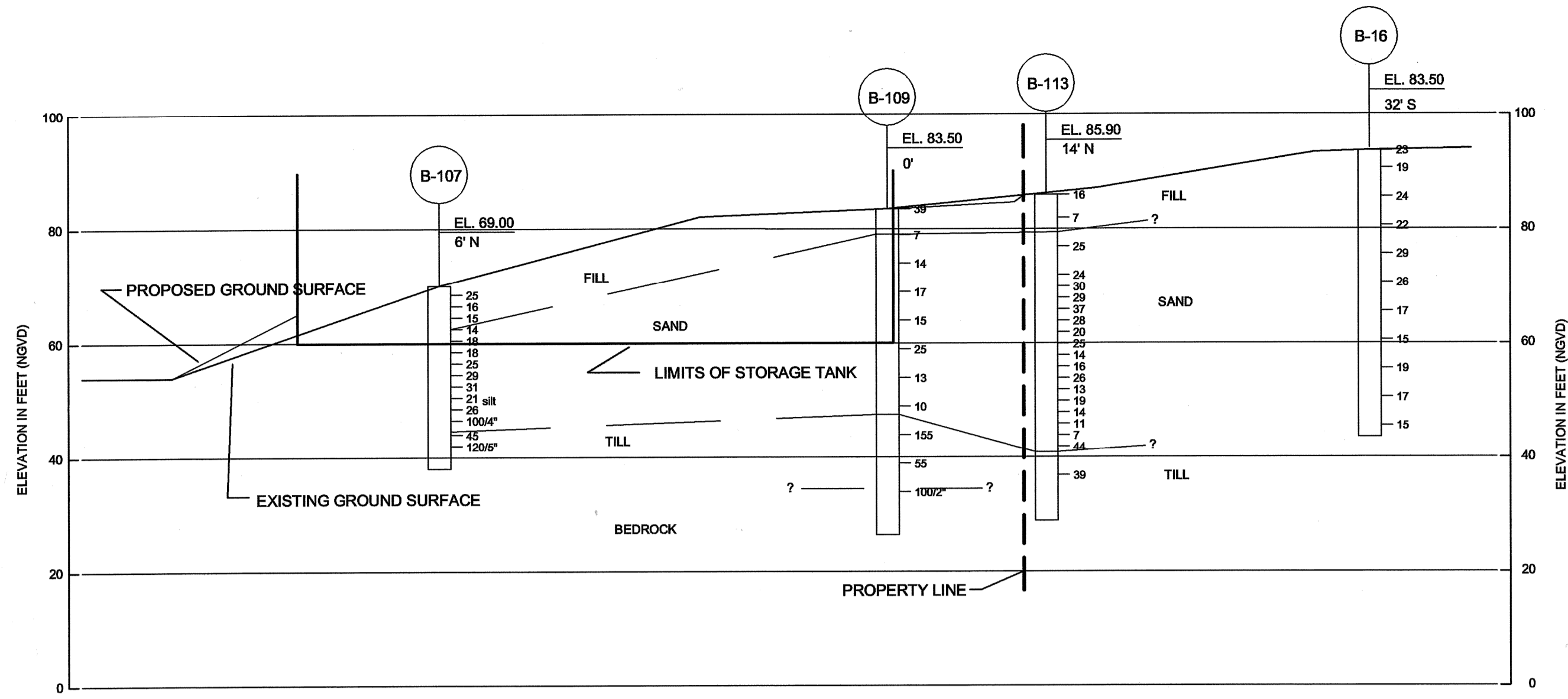
**EARTH TECH AS-BUILT FILE MAY 2008**

**EarthTech**  
A Tyco International Ltd. Company  
300 BAKER AVENUE SUITE 200 CONCORD MA 01742 (978) 371-4000

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CHECKED BY	DATE
	OCTOBER 31, 2008

PAWTUCKET, RHODE ISLAND  
**PAWTUCKET REGIONAL WATER TREATMENT FACILITY**  
**PKG 2 - CONSTRUCTION**  
BRANCH STREET WTP AND 5MG TANK  
DETAILS

LA-4  
SHEET 5 OF



NO.	DATE	BY	REVISIONS
3	MAY 2008	DPB	AS-BUILT DRAWING FILE
2	10/21/06	GBW	ISSUED FOR RFT POSTED SET
1	03/20/05	GBW	ADDED NEW DETAIL SHEET
0	09/23/04	GBW	ISSUED FOR CONSTRUCTION

ROBERT H. SHELDON  
No. 4103  
3/17/09

PAWTUCKET, RHODE ISLAND  
**PAWTUCKET REGIONAL WATER TREATMENT FACILITY**  
**PKG 2 - CONSTRUCTION**  
BRANCH STREET WTP AND 5MG TANK  
TANK SITE PREPARATION DETAILS

DESIGNED BY	DWG SCALE
DRAWN BY	AS NOTED
CHECKED BY	CONTRACT NO.
	DATE
	OCTOBER 31, 2008

**EARTH TECH**  
AS-BUILT FILE  
MAY 2008

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