TEST PIT DATA

STORMWATER

TP-106 GR 137.6

0-1' TOPSOIL
1-8.5' SANDY LOAM

ESHW BASED ON REDOX
AT 2.2' (EL 135.4)

TP-107 GR 138.4

0-1' TOPSOIL
1-2' SANDY LOAM
2-7.5' SANDY LOAM

ESHW BASED ON REDOX
AT 2.5' (EL 135.9)

FIELD PERMEABILITY 62.36 IN/HR

SEPTIC

TP-2A GR 154.0
0-14" SANDY LOAM
14-26" LOAMY SAND
26-124"+ FINE SANDY LOAM

NO REDOX, ESHW = 143.7

PERC. RATE = 4 MIN/INCH

TP-3A GR 152.9
0-48" FILL
48-60" SANDY LOAM
60-70" LOAMY SAND
70-124"+ LOAMY SAND

ESHW BASED ON REDOX
AT 103" (EL 144.3)

PERC RATE = 7 MIN/INCH

TP-4A GR 152.0
0-18" FILL
18-22" LOAMY SAND
22-54" MEDIUM/COARSE SAND
54-112"+ LOAMY SAND

ESHW BASED ON REDOX
AT 84" (EL 145.0)

PERC RATE = 6 MIN/INCH

NAD 83

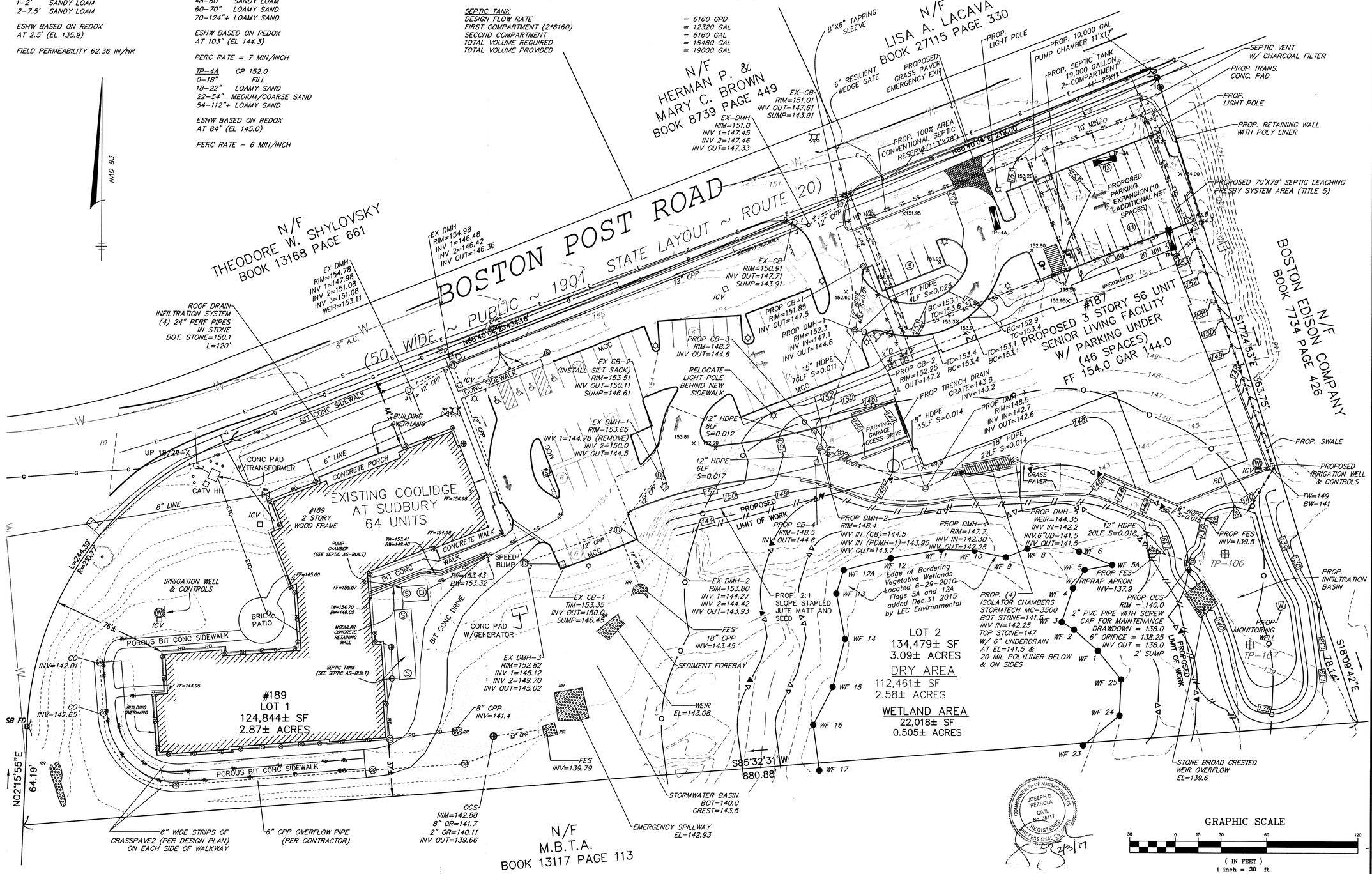
SEPTIC DESIGN CRITERIA

LEACHING AREA	
56 1 BEDROOM UNITS @ 110 GPD (TITLE 5 DESIGN FLOW)	= 6160 GPD
PERCOLATION RATE	= 7 MIN/INCH (TP-3A)
LOADING RATE (TITLE 5)	= 0.68 GPD/SF OF LEACHING AREA
REQUIRED LEACHING AREA (6160/0.68)	= 9059 SQUARE FEET
AREA REDUCTION USING PRESBY SYSTEM	= 40%
REQUIRED LEACHING AREA FOR PRESBY (0.6*9059)	= 5435 SQUARE FEET
LEACHING AREA PROVIDED	= 5530 SQUARE FEET

RESERVE LEACHING AREA	
PERCOLATION RATE	= 6 MIN/INCH (TP-4A)
LOADING RATE (TITLE 5)	= 0.70 GPD/SF OF LEACHING AREA
REQUIRED RESERVE AREA (6160/0.7)	= 8800 SQUARE FEET
RESERVE AREA PROVIDED	= 8814 SQUARE FEET

SEPTIC TANK	
DESIGN FLOW RATE	= 6160 GPD
FIRST COMPARTMENT (2*6160)	= 12320 GAL
SECOND COMPARTMENT	= 6160 GAL
TOTAL VOLUME REQUIRED	= 18480 GAL
TOTAL VOLUME PROVIDED	= 19000 GAL

PUMP CHAMBER	
ONE DAY STORAGE	= 6160 GAL
DOSING FREQUENCY (SANDS/LOAMY SANDS)	= 4 TIMES PER DAY
DOSING VOLUME (6160/4)	= 1540 GAL
FORCE MAIN VOLUME	= 1± GAL
DESIGN DOSING VOLUME (1540+4)	= 1541 GAL
VOL. REQUIRED BELOW INLET INVERT	= 7701 GAL
VOL. PROVIDED BELOW INLET INVERT	= 8393± GAL



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Revision:

THE COOLIDGE AT SUDBURY 2

187-189 BOSTON POST RD
SUDBURY, MA

Drawn: JTL
Checked: JP
Scale: 1"=30'
Key Plan:

Sheet Name:
PRELIMINARY GRADING AND UTILITY PLAN

Project Number: 15526
Project Name:

Issue Date: JUNE 29, 2016
Revision Date: FEBRUARY 2, 2017

Sheet Number:
C6

15526

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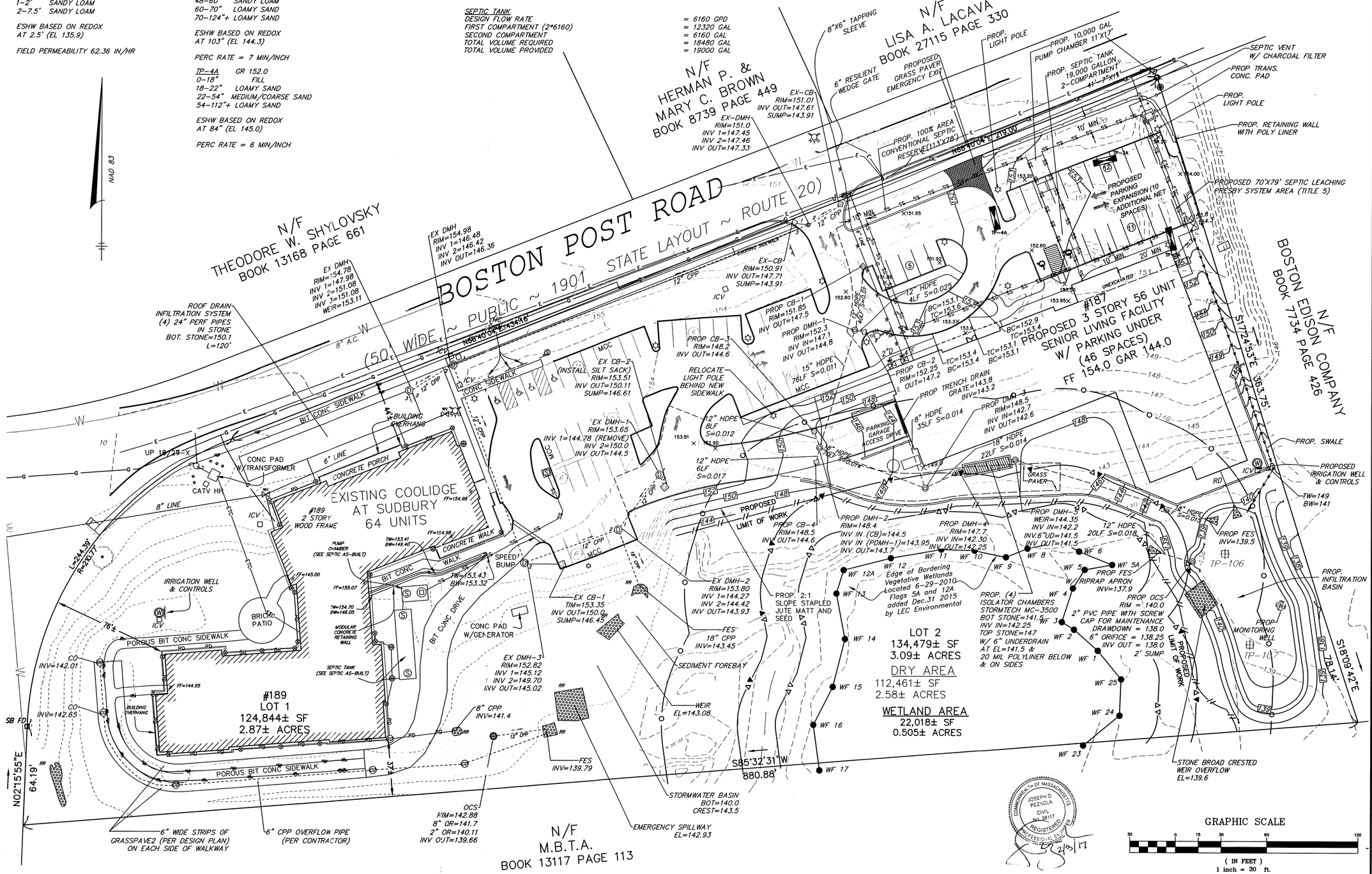

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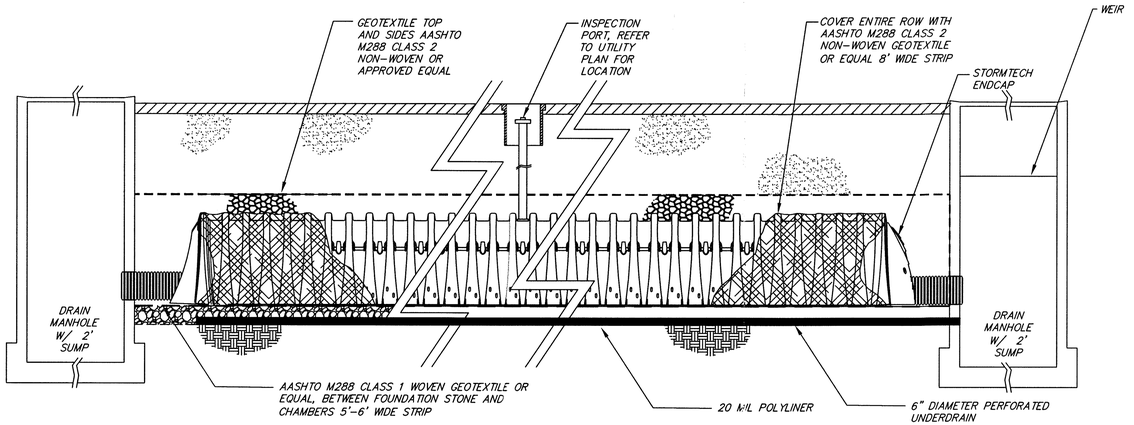
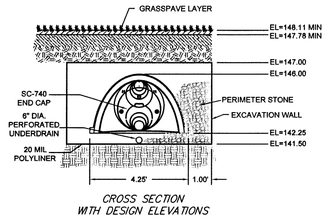
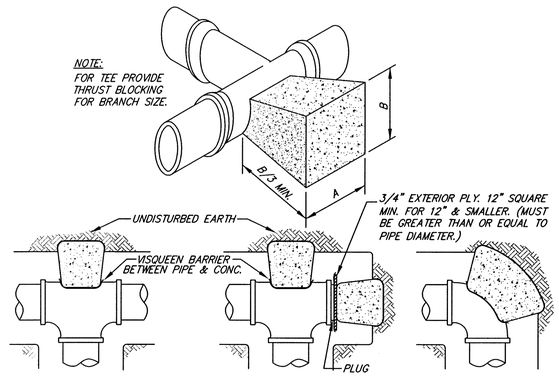


STORMTECH CHAMBERS - ISOLATOR ROW

NOT TO SCALE



CROSS SECTION WITH DESIGN ELEVATIONS

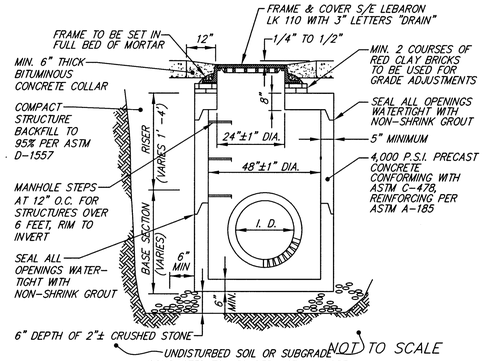


DIMENSION FOR THRUST BLOCKING								
FITTING	TEES & PLUGS		90° BENDS		45° BENDS & "Y's"		22 1/2° BENDS	
SIZES	A	B	A	B	A	B	A	B
4"	1'-6"	1'-6"	1'-6"	1'-9"	1'-3"	0'-6"	1'-0"	0'-6"
6"	2'-0"	1'-0"	2'-0"	2'-0"	1'-3"	1'-6"	1'-0"	1'-5"
8"	2'-0"	1'-6"	2'-3"	2'-3"	1'-8"	1'-8"	1'-0"	1'-3"
10"	2'-6"	2'-3"	2'-9"	2'-10"	2'-3"	1'-10"	1'-3"	2'-0"
12"	3'-0"	2'-9"	3'-6"	3'-3"	2'-6"	2'-4"	2'-0"	1'-6"
14"	3'-5"	3'-0"	4'-0"	3'-8"	3'-6"	2'-4"	2'-0"	2'-3"

1. THIS TABLE IS BASED ON 200 P.S.I. MAIN PRESSURE AND 2000 P.S.F. SOIL-BEARING PRESSURE. ADJUST BEARING AREAS IN ACCORDANCE WITH SOIL CONDITIONS AND PRESSURES ENCOUNTERED.
2. USE VISQUEEN BARRIER BETWEEN PIPE AND CONCRETE AS SHOWN IN DETAIL ABOVE.
3. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS.
4. BLOCKING SIZE/FREQUENCY SHALL BE INCREASED IF REQUIRED BY ENGINEER.

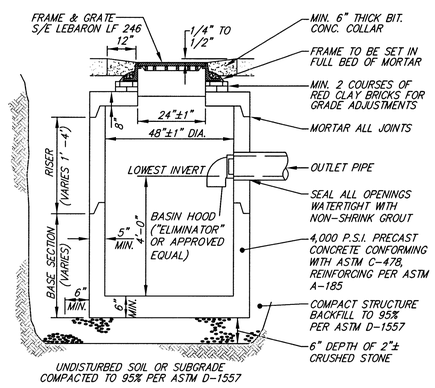
THRUST BLOCK SCHEDULE

NOT TO SCALE



NOTE: CONICAL TOP MAY ALSO BE USED

DRAIN MANHOLE

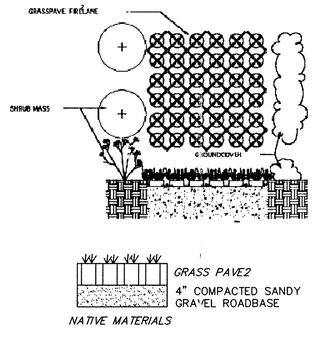


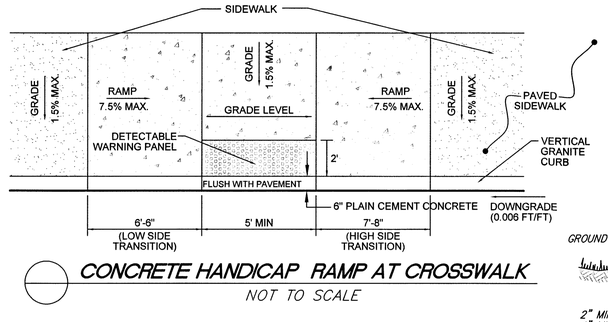
NOTE: CONICAL TOP MAY ALSO BE USED.

CATCH BASIN WITH HOOD

TYPICAL CROSS SECTION

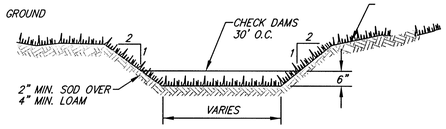
NOT TO SCALE





CONCRETE HANDICAP RAMP AT CROSSWALK

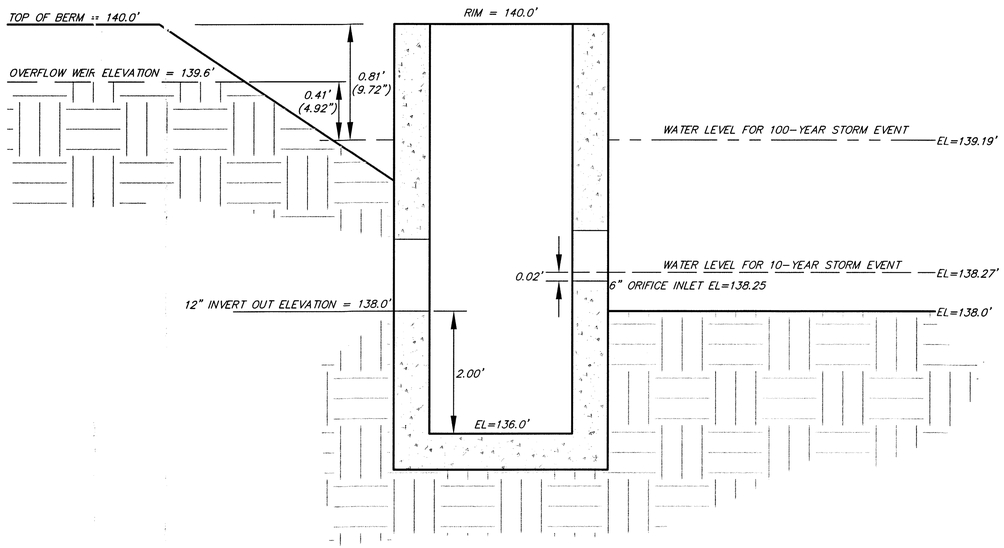
NOT TO SCALE



GRASSED SWALE

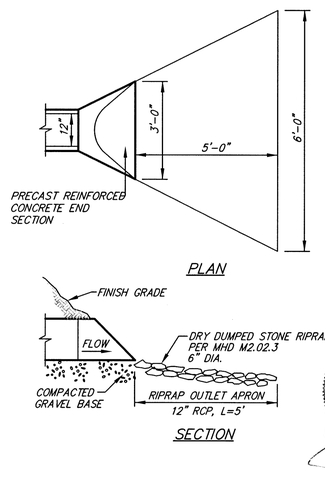
NOT TO SCALE

PHASE 2 GRASSPAVE2 FIRELANE



PHASE 2 OCS STRUCTURE AND INFILTRATION BASIN CROSS SECTION

NOT TO SCALE



DRAIN OUTLET AND APRON

TYPICAL CROSS SECTION

NOT TO SCALE

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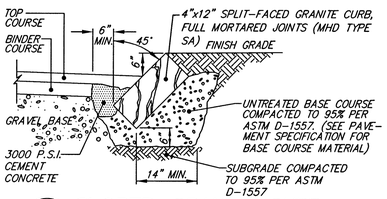
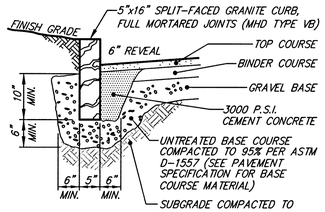
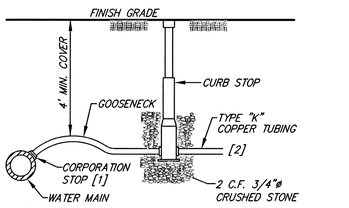


SLOPED GRANITE CURB
CROSS SECTION
NOT TO SCALE

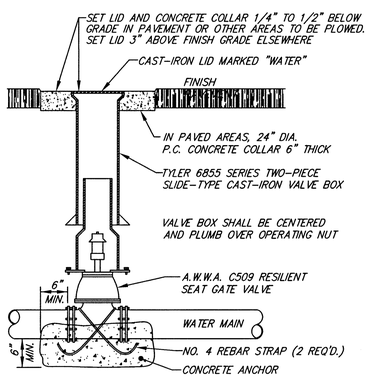


VERTICAL GRANITE CURB
CROSS SECTION
NOT TO SCALE

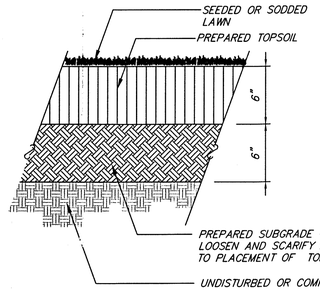


NOTES:
[1] WATER SERVICES LARGER THAN ONE INCH ARE TO BE RESTRAINED TO MAIN WITH APPROVED SADDLE.
[2] COORDINATE BUILDING CONNECTION WITH PLUMBING DRAWINGS.

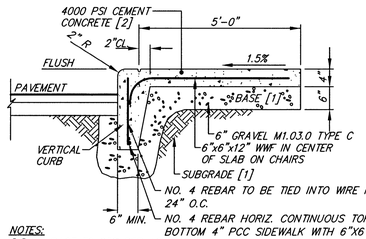
WATER SERVICE
TYPICAL PROFILE
NOT TO SCALE



GATE VALVE
TYPICAL CROSS SECTION
NOT TO SCALE

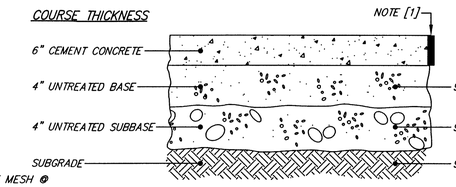


LOAM AND SEED
NOT TO SCALE



NOTES:
[1] COMPACT TO 95% PER ASTM D-1557
[2] CONTROL JOINT EVERY 5 LF, EXPANSION JOINT EVERY 30 LF.

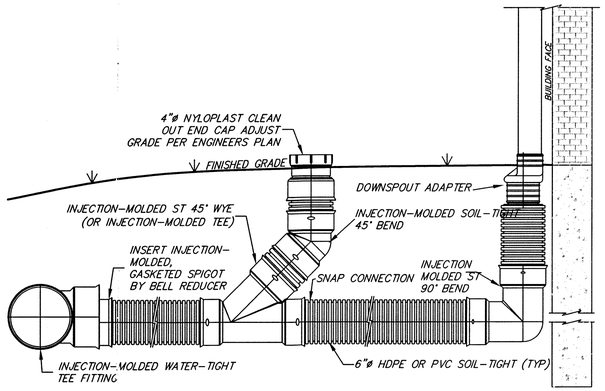
SIDEWALK WITH INTEGRATED CURB
CROSS SECTION
NOT TO SCALE



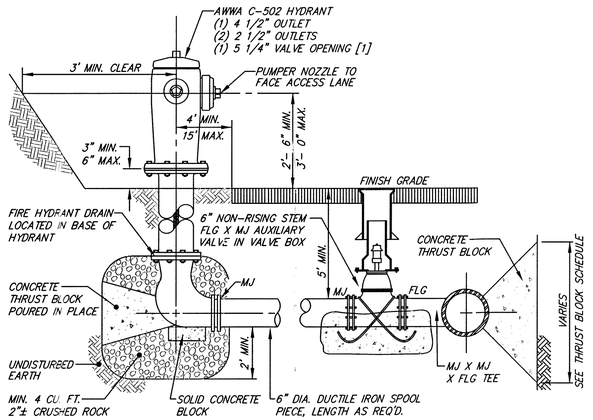
NOTES:
[1] CONTROL JOINT EVERY 10 FEET, EXPANSION JOINT EVERY 50 FEET.
[2] COMPACT TO TEST AVERAGE OF 95%, NO TEST LOWER THAN 93%

MATERIAL	SPECIFICATION	MAXIMUM AGGREGATE OR PARTICLE SIZE (IN.)
TOP - CEMENT CONCRETE	MHD M4.02.00 4000 PSI AT 28 DAYS	3/4
BASE - SAND BORROW	MHD M1.04.0 TYPE b	3/8
SUBBASE - GRAVEL BORROW	MHD M1.03.0 TYPE c	2
UNSUITABLE SUBGRADE - ORDINARY BORROW	MHD M1.01.0	12

CEMENT CONCRETE PAVEMENT
TYPICAL CROSS SECTION
NOT TO SCALE

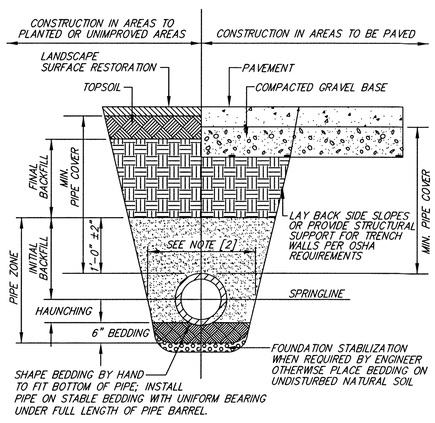


ROOF DRAIN DETAIL WITH CLEANOUT
NOT TO SCALE



NOTES:
[1] DANVERS STANDARD: DARLING B-84-B

FIRE HYDRANT ASSEMBLY
TYPICAL CROSS SECTION



FOUNDATION, BEDDING, & BACKFILL MATERIALS		
PIPE MATERIAL	HDP, PVC	RC, DI
FOUNDATION STABILIZATION	[6]	[6]
BEDDING	[1]	[1]
HAUNCHING	[1]	[1]
INITIAL BACKFILL	[1]	[1]
FINAL BACKFILL	[4]	[4]
MIN. PIPE COVER	[5]	[5]

NOTES:
[1] PLACE 3/4"± GRADED GRANULAR BACKFILL AT OPTIMUM MOISTURE IN HORIZONTAL, 8"-DEEP, LOOSE LAYERS; COMPACT TO 95% PER ASTM D-1557.
[2] MINIMUM WIDTH OF TRENCH MEASURED AT THE SPRINGLINE OF THE PIPE, INCLUDING ANY NECESSARY SHEATHING:

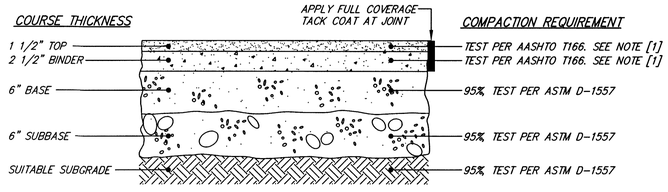
PIPE I.D.	WIDTH
LESS THAN 21"	O.D. + 12"
21" TO 42"	O.D. + 24"
GREATER THAN 42"	O.D. + 30"

[3] INSTALL PIPE IN CENTER OF TRENCH.
[4] IN PLANTED OR UNIMPROVED AREAS, USE ON-SITE EXCAVATED MATERIAL FOR FINAL BACKFILL. COMPACT TO 95% PER ASTM D-1557. IN PAVED AREAS, OBTAIN ENGINEER APROVAL OF ON-SITE EXCAVATED MATERIALS FOR USE AS FINAL BACKFILL.
[5] MINIMUM COVER OVER TOP OF PIPE:

PIPE MATERIAL	HDP, PVC	RC, DI
WATER	5'-0"	5'-0"
SEWER	4'-0"	4'-0"
DRAIN	1'-6"	1'-0"

[6] FOR FOUNDATION STABILIZATION, USE 2"± CRUSHED STONE.

PIPE TRENCH
TYPICAL CROSS SECTION
NOT TO SCALE



NOTES:
[1] COMPACT TO TEST AVERAGE OF 96%, NO TEST LOWER THAN 94%

MATERIAL	SPECIFICATION	MAXIMUM AGGREGATE OR PARTICLE SIZE (IN.)
TOP - BITUMINOUS CONCRETE	MHD M3.11.03 CLASS I, TYPE I-1	1/2
BINDER- BITUMINOUS CONCRETE	MHD M3.11.03 CLASS I, TYPE I-1	1
BASE - DENSE GRADED CRUSHED STONE	MHD M2.01.7	1 1/2
SUBBASE - GRAVEL BORROW	MHD M1.03.0 TYPE C	2

BITUMINOUS CONCRETE PAVEMENT
TYPICAL CROSS SECTION
NOT TO SCALE

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