

# RESIDENTIAL SITE DEVELOPMENT PERMIT PLAN SET

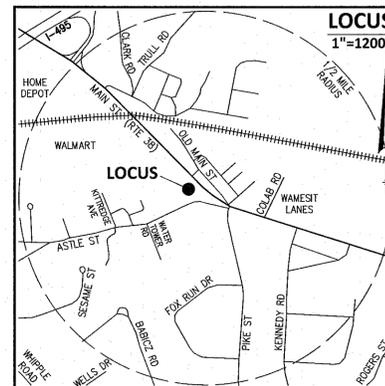
357 MAIN STREET  
TEWKSBURY, MASSACHUSETTS

## LEGEND

---o---o---o---o---	STONEWALL
---	EASEMENT LINE
☆	TRAFFIC CONTROL LIGHT POLE
⊙	SEWER MANHOLE
⊕	DRAIN MANHOLE
⊞	CATCH BASIN
⊗	HYDRANT
⊗	WATER GATE VALVE
⊗	GAS GATE VALVE
⊗	UTILITY POLE
⊗	SIGN
---CHW---CHW---CHW---	OVERHEAD WIRE LINE
---S---S---S---	SEWER PIPE
---W---W---W---	WATER PIPE
---D---D---D---	DRAIN PIPE
---RD---RD---RD---	ROOF DRAIN PIPE
---172---	2-FOOT CONTOUR
x173.3	ELEVATION SPOT GRADE

## ABBREVIATIONS

BIT.	BITUMINOUS
BWL	BROKEN WHITE LINE
CB	CATCH BASIN
CCB	CAPE COD BERM
CONC.	CONCRETE
DMH	DRAIN MANHOLE
DYL	DOUBLE YELLOW LINE
ELEV	ELEVATION
ESHWT	ESTIMATED SEASONAL HIGH WATER TABLE
FES	FLARED END SECTION
INV	INVERT
R24	24' RADIUS (TYP)
RET.WALL	RETAINING WALL
SF	SQUARE FEET
SIS	SUBSURFACE INFIL. SYSTEM
SMH	SEWER MANHOLE
SOS	SEDIMENT & OIL SEPARATOR
SWK	SIDEWALK
SWL	SOLID WHITE LINE
UP	UTILITY POLE
WCR	WHEEL CHAIR RAMP



## SHEET INDEX

1. TITLE SHEET
2. EXISTING CONDITIONS & REMOVALS PLAN
3. LAYOUT, LIGHTING, & MATERIALS PLAN
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6. DETAILS SHEET 1 OF 3
7. DETAILS SHEET 2 OF 3
8. DETAILS SHEET 3 OF 3

## ASSESSORS

MAP 22, LOT 9 (#41 ASTLE STREET)  
MAP 22, LOT 11 (#15 ASTLE STREET)

## PROPERTY OWNER

BLJB HOLDINGS, LLC  
70 JOHN E. SMITH DRIVE  
TEWKSBURY, MASSACHUSETTS

## DEED REFERENCE

MIDDLESEX NORTH REGISTRY OF DEEDS  
BOOK 32462, PAGE 83  
BOOK 32736, PAGE 167 (MA DOT "STREET ACCESS PERMIT")

## PLAN REFERENCES

MIDDLESEX NORTH REGISTRY OF DEEDS  
PLAN BOOK 245, PLAN 120

## NOTES

1. EXISTING CONDITIONS AND BOUNDARY LOCATION SHOWN HEREON FROM AN INSTRUMENT SURVEY IN JANUARY OF 2018. TOPOGRAPHY SHOWN HEREON REFERS TO APPROXIMATE NAVD88 DATUM, TRANSFERRED FROM GPS BENCHMARK UTILIZING MAINE TECHNICAL SOURCE BASE STATION.
2. NO PORTION OF THE PREMISES SHOWN HEREON IS LOCATED WITHIN A FLOOD HAZARD AREA AS SHOWN ON DEPARTMENT H.U.D. FEDERAL INSURANCE ADMINISTRATION MAPS, PER COMMUNITY PANEL FM2501700257F, EFFECTIVE DATE JULY 7, 2014.
3. NO UTILITIES ARE SHOWN. CALL DIG-SAFE AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION OR CONSTRUCTION.

## ZONING

CURRENT ZONING:	
GENERAL BUSINESS DISTRICT	
DESCRIPTION	REQUIRED
MIN. LOT AREA	43,560±SF
MIN. FRONTAGE	150'
MIN. FRONT SETBACK	25'
MIN. SIDE SETBACK	15'
MIN. REAR SETBACK	15'
MIN. OPEN SPACE	20%
MAX. BUILDING COVER.	30%
MAX. STORIES	2.5
MAX. HEIGHT	35'

PER ZONING IN EFFECT AT "ZONING FREEZE" ENDORSEMENT DATE OF 3/28/2022:

COMMERCIAL DISTRICT		
DESCRIPTION	REQUIRED	PROPOSED
MIN. LOT AREA	43,560±SF	144,882±SF (3.326±ACRES)
MIN. FRONTAGE	150'	622.72'(MAIN)/413.21'(ASTLE)
MIN. FRONT YARD	40'(DWELLINGS)	41.0'
MIN. SIDE & REAR	15'(DWELLINGS)	16.0'
MAX. BDG. STORIES	2.5	5 **
MAX. BDG. HEIGHT	35'	53.4'(BDG1)/52.6'(BDG2)/53.3'(BDG3) **
MAX. BDG. COVERAGE	30%	18%

\*\* SPECIAL PERMIT REQUIRED PER ZONING SPECIAL DIMENSIONAL REGULATIONS SECTION 4210 FOR COMMERCIAL DISTRICTS WHICH ALLOWS FOR STRUCTURES UP TO 60 FEET OR 5 STORIES, SEE ALSO SECTION 5.3.3 BUSINESS DISTRICTS, (A) TABLE OF REQUIREMENTS, FOOTNOTE (E) A HEIGHT OF FIVE STORIES AND 60 FEET MAY BE ALLOWED BY SPECIAL PERMIT FROM THE PLANNING BOARD IF STEPPED BACK FROM THE 4TH FLOOR BY A MINIMUM OF SIX FEET.

## PARKING

CURRENT ZONING:	
REQUIRED PARKING	
= 1.5 SPACES/UNIT FOR 1-BEDROOM & 2-BEDROOM UNITS, + 10% FOR VISITOR PARKING	

PROPOSED UNITS=75 X 1.5=113 SPACES  
VISITOR SPACES=113 X 10% = 11 SPACES  
TOTAL=124 SPACES

PROP. PARKING SPACES = 182

## TITLE SHEET

357 MAIN STREET  
TEWKSBURY, MASSACHUSETTS

PLAN PREPARED FOR:

BLJB HOLDINGS, LLC  
70 JOHN E. SMITH DRIVE  
TEWKSBURY, MASSACHUSETTS

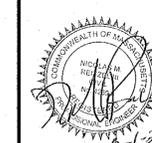
PLAN PREPARED BY:

**LANDPLEX**  
CIVIL ENGINEERING • SURVEYING  
10 GEORGE STREET, UNIT 208  
LOWELL, MASSACHUSETTS 01852  
978-201-9390 - LANDPLEX.COM

SHEET: 1 OF 8

SCALE: AS SHOWN

FEBRUARY 5, 2025



2	PER SUBCONSULTANT REVIEW	8/1/2025
1	PER SUBCONSULTANT REVIEW	4/25/2025
NO.	REVISION DESCRIPTION	DATE

**ASSESSORS**

MAP 22, LOT 9 (#41 ASTLE STREET)  
 MAP 22, LOT 11 (#15 ASTLE STREET)

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**NOTES**

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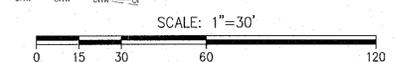
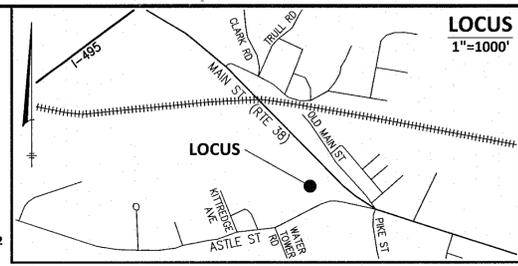
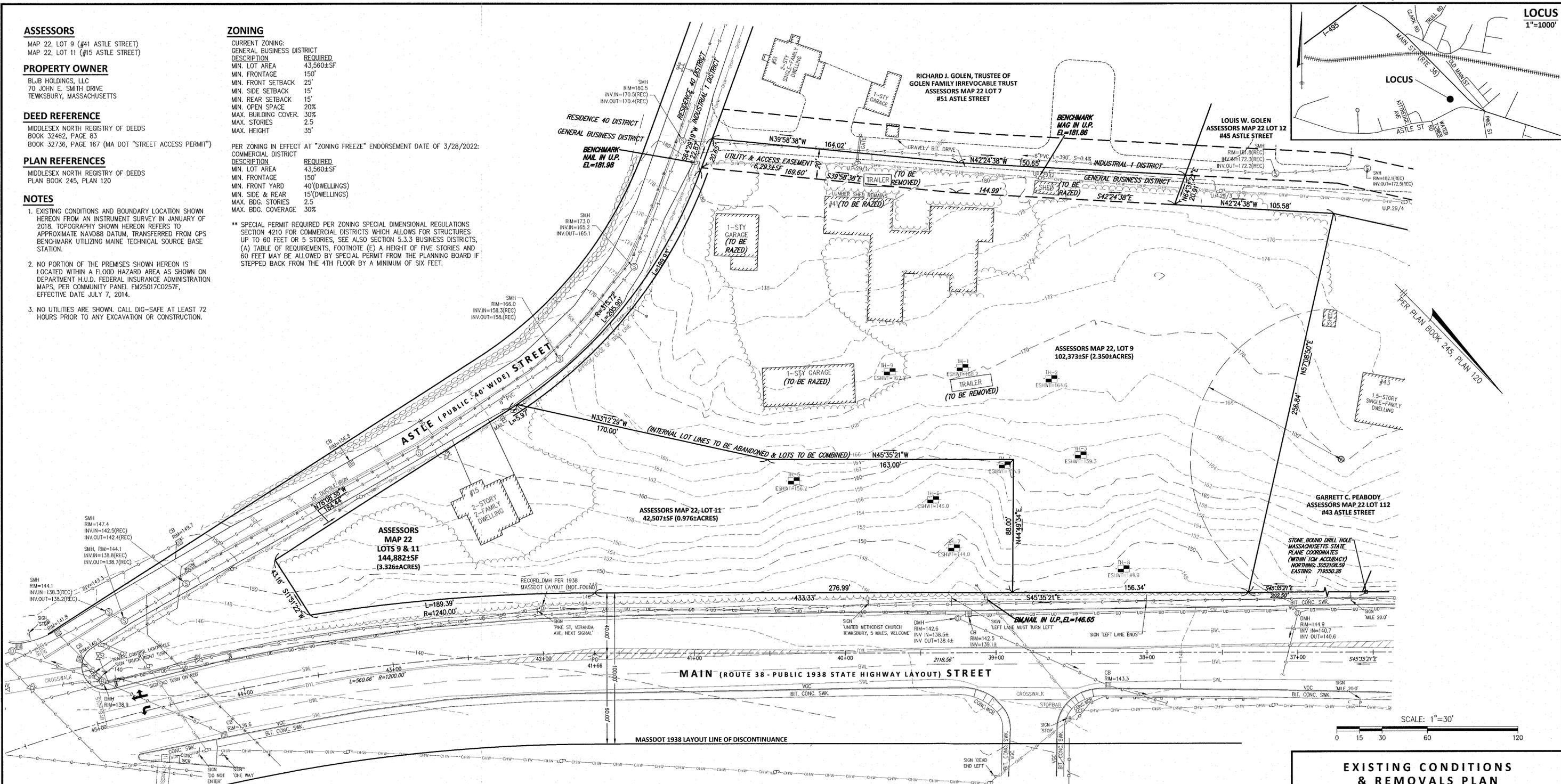
**ZONING**

CURRENT ZONING: GENERAL BUSINESS DISTRICT  
 DESCRIPTION: REQUIRED  
 MIN. LOT AREA: 43,560±SF  
 MIN. FRONTAGE: 150'  
 MIN. FRONT SETBACK: 25'  
 MIN. SIDE SETBACK: 15'  
 MIN. REAR SETBACK: 15'  
 MIN. OPEN SPACE: 20%  
 MAX. BUILDING COVER: 30%  
 MAX. STORIES: 2.5  
 MAX. HEIGHT: 35'

PER ZONING IN EFFECT AT "ZONING FREEZE" ENDORSEMENT DATE OF 3/28/2022:

COMMERCIAL DISTRICT  
 DESCRIPTION: REQUIRED  
 MIN. LOT AREA: 43,560±SF  
 MIN. FRONTAGE: 150'  
 MIN. FRONT YARD: 40'(DWELLINGS)  
 MIN. SIDE & REAR: 15'(DWELLINGS)  
 MAX. BDC. STORIES: 2.5  
 MAX. BDC. COVERAGE: 30%

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**LEGEND**

- STONEWALL
- ZONING SETBACK LINE
- EASEMENT LINE
- TRAFFIC CONTROL LIGHT POLE
- SEWER MANHOLE
- DRAIN MANHOLE
- CATCH BASIN
- HYDRANT
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- GAS GATE VALVE
- UTILITY POLE
- SIGN
- OVERHEAD WIRE LINE
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- WATER PIPE
- DRAIN PIPE
- ROOF DRAIN PIPE
- 2-FOOT CONTOUR

**ABBREVIATIONS**

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- SOS SEDIMENT & OIL SEPARATOR
- SWK SIDEWALK
- SWL SOLID WHITE LINE
- UP UTILITY POLE
- WCR WHEEL CHAIR RAMP

**SOIL TESTING DATA**

SOIL SCIENTIST: STEVE ERIKSEN, NORSE ENVIRONMENTAL SERVICES  
 DATE: MARCH 5, 2018

TEST HOLE 1 (TH-1)				TEST HOLE 3 (TH-3)				TEST HOLE 5 (TH-5)				TEST HOLE 7 (TH-7)				TEST HOLE 9 (TH-9)			
DEPTH	HORIZON	COLOR	DESCRIPTION	DEPTH	HORIZON	COLOR	DESCRIPTION	DEPTH	HORIZON	COLOR	DESCRIPTION	DEPTH	HORIZON	COLOR	DESCRIPTION	DEPTH	HORIZON	COLOR	DESCRIPTION
0-16"	Ap	10Y2/2	FINE SANDY LOAM	0-14"	Ap	10Y2/2	FINE SANDY LOAM	0-11"	Ap	10Y2/2	FINE SANDY LOAM	0-11"	Ap	10Y2/2	FINE SANDY LOAM	0-20"	Ap	10Y2/2	FINE SANDY LOAM
16-36"	Bw	10Y4/4	FINE SANDY LOAM	14-35"	Bw	10Y4/4	FINE SANDY LOAM	11-30"	Bw	10Y4/4	FINE SANDY LOAM	11-36"	Bw	10Y4/4	FINE SANDY LOAM	20-50"	Bw	10Y4/4	FINE SANDY LOAM
36-79"	C1	2.5Y5/4	LOAMY SAND	35-90"	C1	2.5Y5/4	LOAMY SAND	30-60"	C1	2.5Y5/4	LOAMY SAND	36-72"	C1	2.5Y5/4	MEDIUM SAND	50-83"	C1	2.5Y4/4	MEDIUM-FINE SAND
79-136"	C2	2.5Y4/4	SANDY LOAM: FIRM, MASSIVE, & COMPACT WEeping 54", STANDING 136", ESHWT 45"	90-150"	C2	2.5Y4/4	SANDY LOAM: FIRM, MASSIVE, & COMPACT. FEW STONES & BOULDERS. WEeping 60", STANDING 144"	60-105"	C2	2.5Y4/4	SANDY LOAM: FIRM & STONES & BOULDERS. WEeping 65", STANDING 105", ESHWT 58"	72-137"	C2	2.5Y4/4	MED.-COURSE SAND. STANDING 137", ESHWT 56"	83-143"	C2	2.5Y5/6	MED.-COURSE LOAMY SAND. NO WEeping, NO STANDING, ESHWT 108"
<b>TEST HOLE 2 (TH-2)</b>				<b>TEST HOLE 4 (TH-4)</b>				<b>TEST HOLE 6 (TH-6)</b>				<b>TEST HOLE 8 (TH-8)</b>							
0-14"	Ap	10Y2/2	FINE SANDY LOAM	0-12"	Ap	10Y2/2	FINE SANDY LOAM	0-12"	Ap	10Y2/2	FINE SANDY LOAM	0-10"	Ap	10Y2/2	FINE SANDY LOAM	0-10"	Ap	10Y2/2	FINE SANDY LOAM
14-30"	Bw	10Y4/4	FINE SANDY LOAM	12-30"	Bw	10Y4/4	FINE SANDY LOAM	12-38"	Bw	10Y4/4	FINE SANDY LOAM	10-30"	Bw	10Y4/4	FINE SANDY LOAM	10-30"	Bw	10Y4/4	FINE SANDY LOAM
30-85"	C1	2.5Y5/4	LOAMY SAND	30-68"	C1	2.5Y5/4	LOAMY SAND	38-92"	C1	2.5Y3/4	MEDIUM SAND	30-115"	C1	2.5Y5/6	COURSE SAND, GRAVEL, STONES, COBBLES, & BOULDERS. STANDING 89", ESHWT 40"	30-115"	C1	2.5Y5/6	COURSE SAND, GRAVEL, STONES, COBBLES, & BOULDERS. STANDING 89", ESHWT 40"
85-145"	C2	2.5Y4/4	SANDY LOAM: FIRM, MASSIVE, & COMPACT WEeping 55", STANDING 145", ESHWT 48"	68-136"	C2	2.5Y4/4	SANDY LOAM: FIRM & MASSIVE. FEW STONES. WEeping 65", STANDING 136", ESHWT 50"	92-160"	C2	2.5Y5/6	MED.-COURSE SAND. STANDING 160", ESHWT 77"								

**EXISTING CONDITIONS & REMOVALS PLAN**

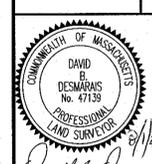
357 MAIN STREET  
 TEWKSBURY, MASSACHUSETTS

PLAN PREPARED FOR: **BLJB HOLDINGS, LLC**  
 70 JOHN E. SMITH DRIVE  
 TEWKSBURY, MASSACHUSETTS

PLAN PREPARED BY: **LANDPLEX**  
 CIVIL ENGINEERING • SURVEYING  
 10 GEORGE STREET, UNIT 208  
 LOWELL, MASSACHUSETTS 01852  
 978-201-8390 - LANDPLEX.COM

SHEET: 2 OF 8      SCALE: 1"=30'      FEBRUARY 5, 2025

NO.	REVISION DESCRIPTION	DATE
2	PER SUBCONSULTANT REVIEW	8/1/2025
1	PER SUBCONSULTANT REVIEW	4/25/2025
	REVISION DESCRIPTION	DATE



**ASSESSORS**

MAP 22, LOT 9 (#41 ASTLE STREET)  
 MAP 22, LOT 11 (#15 ASTLE STREET)

**PROPERTY OWNER**

BLJB HOLDINGS, LLC  
 70 JOHN E. SMITH DRIVE  
 TEWKSBURY, MASSACHUSETTS

**DEED REFERENCE**

MIDDLESEX NORTH REGISTRY OF DEEDS  
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**PLAN REFERENCES**

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**NOTES**

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- NO UTILITIES ARE SHOWN. CALL DIG-SAFE AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION OR CONSTRUCTION.

**BUILDING HEIGHT CALCULATIONS**

PER TOWN OF TEWKSBURY ZONING DEFINITIONS, BUILDING HEIGHT IS DEFINED AS THE VERTICAL DISTANCE FROM THE GRADE PLANE TO THE HIGHEST POINT OF THE ROOF. NOT INCLUDED ARE SPIRES, CUPOLAS, ANTENNAE, OR SIMILAR PARTS OF STRUCTURES WHICH DO NOT ENCLOSE POTENTIALLY HABITABLE FLOOR SPACE.

FOR 'BUILDING 1':  
 BASED ON THE PROPOSED GRADING, GRADE PLANE (GP)=168.1. SINCE THE ROOF ELEVATION=221.5 (NOT INCLUDING TOPMOST KNEE WALLS WHICH DO NOT ENCLOSE POTENTIALLY HABITABLE FLOOR SPACE), BUILDING HEIGHT = 221.5 - 168.1 = 53.4'.

FOR 'BUILDING 2':  
 BASED ON THE PROPOSED GRADING, GRADE PLANE (GP)=175.9. SINCE THE ROOF ELEVATION=228.5 (NOT INCLUDING TOPMOST KNEE WALLS WHICH DO NOT ENCLOSE POTENTIALLY HABITABLE FLOOR SPACE), BUILDING HEIGHT = 228.5 - 175.9 = 52.6'.

FOR 'BUILDING 3':  
 BASED ON THE PROPOSED GRADING, GRADE PLANE (GP)=176.2. SINCE THE ROOF ELEVATION=229.5 (NOT INCLUDING TOPMOST KNEE WALLS WHICH DO NOT ENCLOSE POTENTIALLY HABITABLE FLOOR SPACE), BUILDING HEIGHT = 229.5 - 176.2 = 53.3'.

**ZONING**

CURRENT ZONING: GENERAL BUSINESS DISTRICT  
 DESCRIPTION REQUIRED  
 MIN. LOT AREA 43,560±SF  
 MIN. FRONTAGE 150'  
 MIN. FRONT SETBACK 25'  
 MIN. SIDE SETBACK 15'  
 MIN. REAR SETBACK 15'  
 MIN. OPEN SPACE 20%  
 MAX. BUILDING COVER. 30%  
 MAX. STORIES 2.5  
 MAX. HEIGHT 35'

PER ZONING IN EFFECT AT "ZONING FREEZE" ENDORSEMENT DATE OF 3/28/2022:

COMMERCIAL DISTRICT DESCRIPTION REQUIRED PROPOSED  
 MIN. LOT AREA 144,882±SF (3.326±ACRES)  
 MIN. FRONTAGE 150'  
 MIN. FRONT YARD 40'(DWELLINGS) 41.0'  
 MIN. SIDE & REAR 15'(DWELLINGS) 16.0'  
 MAX. BDG. STORIES 2.5 5 \*\*  
 MAX. BDG. HEIGHT 35' 53.4'(BDG1)/52.6'(BDG2)/53.3'(BDG3) \*\*  
 MAX. BDG. COVERAGE 30% 18%

\*\* SPECIAL PERMIT REQUIRED PER ZONING SPECIAL DIMENSIONAL REGULATIONS SECTION 4210 FOR COMMERCIAL DISTRICTS WHICH ALLOWS FOR STRUCTURES UP TO 60 FEET OR 5 STORIES. SEE ALSO SECTION 5.3.3 BUSINESS DISTRICTS, (A) TABLE OF REQUIREMENTS, FOOTNOTE (E) A HEIGHT OF FIVE STORIES AND 60 FEET MAY BE ALLOWED BY SPECIAL PERMIT FROM THE PLANNING BOARD IF STEPPED BACK FROM THE 4TH FLOOR BY A MINIMUM OF SIX FEET.

**PARKING**

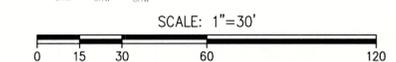
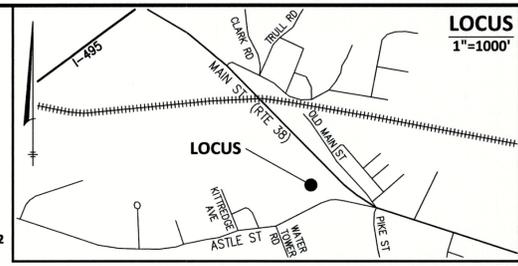
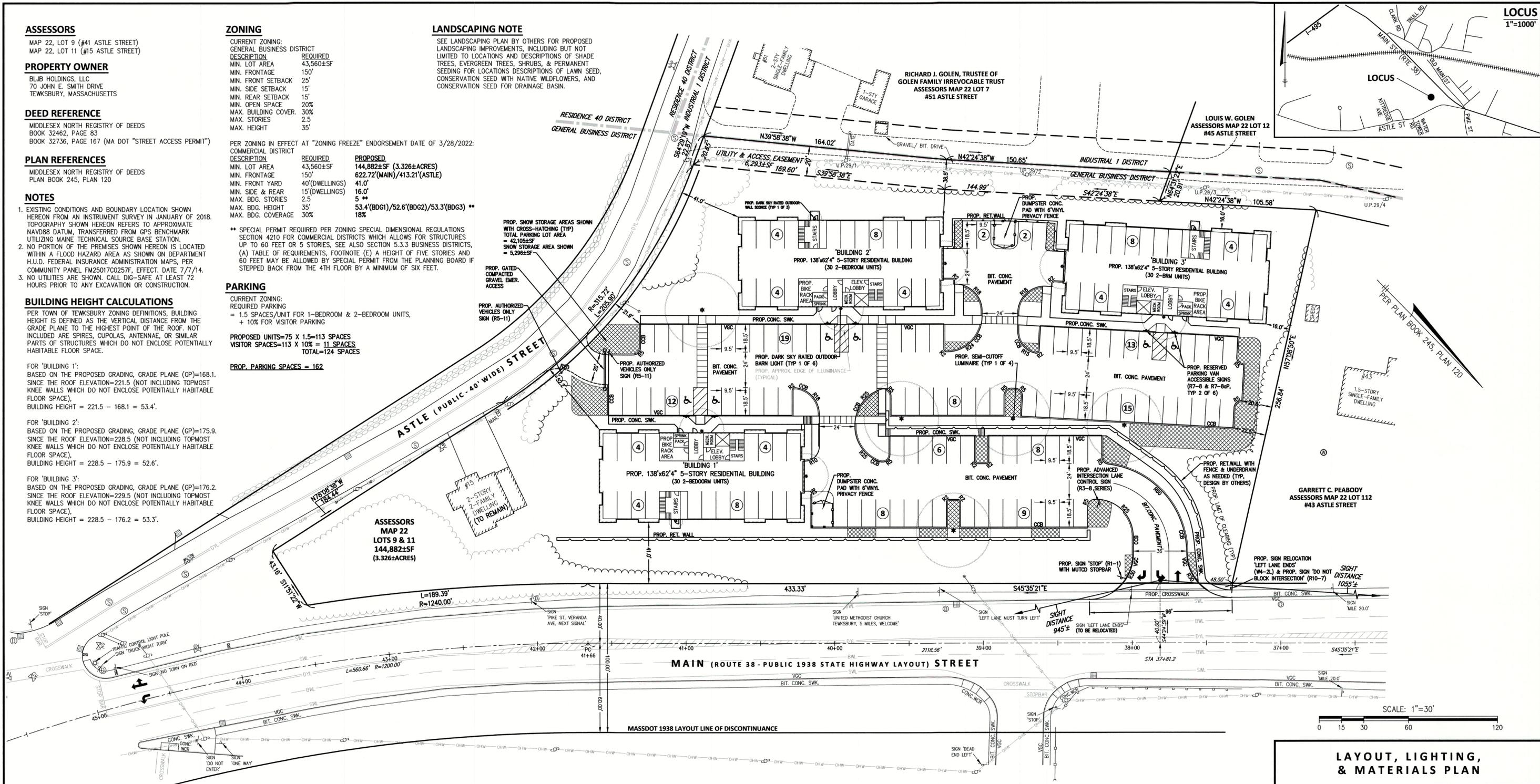
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PROPOSED UNITS=75 X 1.5=113 SPACES  
 VISITOR SPACES=113 X 10% = 11 SPACES  
 TOTAL=124 SPACES

PROP. PARKING SPACES = 162

**LANDSCAPING NOTE**

SEE LANDSCAPING PLAN BY OTHERS FOR PROPOSED LANDSCAPING IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO LOCATIONS AND DESCRIPTIONS OF SHADE TREES, EVERGREEN TREES, SHRUBS, & PERMANENT SEEDING FOR LOCATIONS DESCRIPTIONS OF LAWN SEED, CONSERVATION SEED WITH NATIVE WILDFLOWERS, AND CONSERVATION SEED FOR DRAINAGE BASIN.



**LEGEND**

- STONEWALL
- ZONING SETBACK LINE
- EASEMENT LINE
- TRAFFIC CONTROL LIGHT POLE
- SEWER MANHOLE
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**ABBREVIATIONS**

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**LIGHTING**

LIGHTING SYMBOL KEY:

- DARK SKY RATED OUTDOOR BARN LIGHT (HINKLEY 12070BK OR APPROVED EQUAL)
- DARK SKY RATED OUTDOOR WALL SCONCE (BALTHUS WS-W28516 OR APPROVED EQUAL)
- SEMI-CUTOFF LUMINAIRE (ANTIQUE STREET LAMPS DS7-W OR APPROVED EQUAL)

**SIGNAGE SUMMARY TABLE**

ALL PROPOSED SIGNAGE SHOWN HEREON IS TO COMPLY WITH TOWN OF TEWKSBURY, MASSDOT, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.) STANDARDS.

M.U.T.C.D. SIGN DESIGNATION:	R1-1	R3-8 SERIES	W4-2L	R10-7	R5-11	R7-8 WITH R7-8aP
M.U.T.C.D. SIGN NAME:	STOP	ADVANCE INTERSECTION CONTROL, LEFT LANE ONLY LEFT, RIGHT LANE ONLY RIGHT	LEFT LANE ENDS	DO NOT BLOCK INTERSECTION	AUTHORIZED VEHICLES ONLY	ACCESSIBLE RESERVED PARKING WITH VAN ACCESSIBLE
NUMBER OF PROP. SIGNS:	1	1	1	1	2	6 EACH
SIGN IMAGE:						

**LAYOUT, LIGHTING, & MATERIALS PLAN**

357 MAIN STREET  
 TEWKSBURY, MASSACHUSETTS

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 70 JOHN E. SMITH DRIVE  
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SHEET: 3 OF 8    SCALE: 1"=30'    FEBRUARY 5, 2025

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**ASSESSORS**

MAP 22, LOT 9  
MAP 22, LOT 11

**PROPERTY OWNER**

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**ZONING**

CURRENT ZONING:  
GENERAL BUSINESS DISTRICT

PER ZONING IN EFFECT AT "ZONING FREEZE" ENDORSEMENT DATE OF 3/28/2022:  
COMMERCIAL DISTRICT

**STORY ABOVE GRADE PLANE CALCULATIONS**

PER TOWN OF TEWKSBURY ZONING DEFINITIONS, A "STORY ABOVE GRADE PLANE" IS ANY STORY WITH ITS FINISHED FLOOR ABOVE GRADE PLANE, OR IN WHICH THE FINISHED FLOOR OF THE NEXT FLOOR ABOVE IS MORE THAN SIX (6) FEET ABOVE GRADE PLANE, OR IN WHICH THE FINISHED FLOOR OF THE NEXT FLOOR ABOVE IS MORE THAN TWELVE (12) FEET ABOVE THE FINISHED GROUND LEVEL AT ANY POINT.

FOR 'BUILDING 1':  
BASED ON THE PROPOSED GRADING SHOWN HEREON, GRADE PLANE=168.1.  
SINCE FF=174.0, & 174.0-168.1=5.9, & SINCE THE LOWEST ADJACENT FINISHED GRADE IS 164.0, & 174.0-164.0=10.0,  
THEREFORE THE GARAGE FLOOR IS NOT A STORY ABOVE GRADE.

FOR 'BUILDING 2':  
BASED ON THE PROPOSED GRADING SHOWN HEREON, GRADE PLANE=175.9.  
SINCE FF=181.0, & 181.0-175.9=5.1, & SINCE THE LOWEST ADJACENT FINISHED GRADE IS 171.0, & 181.0-171.0=10.0,  
THEREFORE THE GARAGE FLOOR IS NOT A STORY ABOVE GRADE.

FOR 'BUILDING 3':  
BASED ON THE PROPOSED GRADING SHOWN HEREON, GRADE PLANE=176.2.  
SINCE FF=182.0, & 182.0-176.2=5.8, & SINCE THE LOWEST ADJACENT FINISHED GRADE IS 172.0, & 182.0-172.0=10.0,  
THEREFORE THE GARAGE FLOOR IS NOT A STORY ABOVE GRADE.

**DEED REFERENCE**

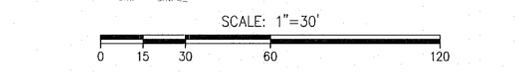
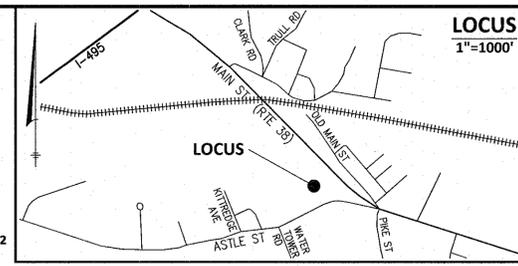
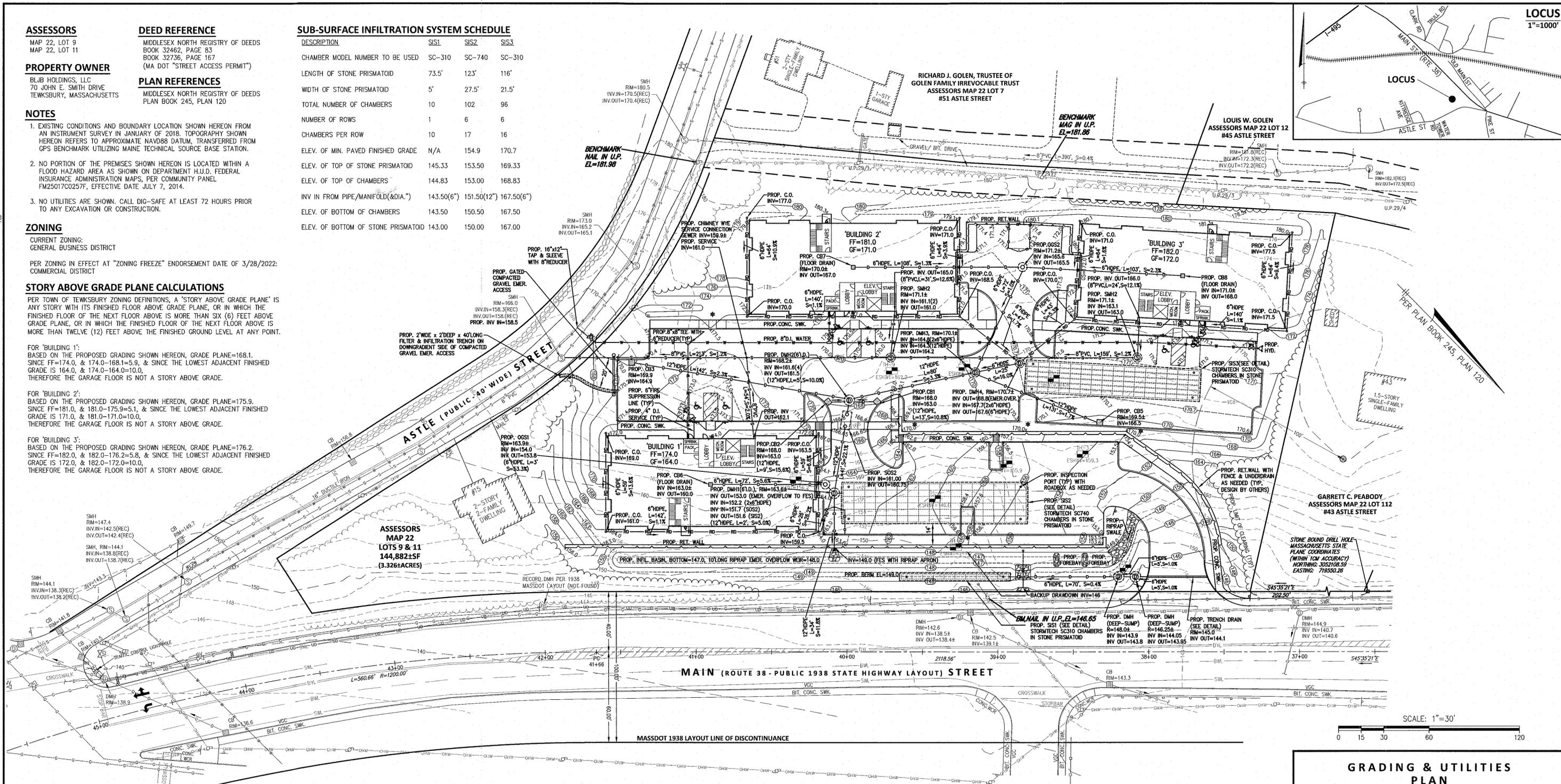
MIDDLESEX NORTH REGISTRY OF DEEDS  
BOOK 32462, PAGE 83  
BOOK 32736, PAGE 167  
(MA DOT "STREET ACCESS PERMIT")

**PLAN REFERENCES**

MIDDLESEX NORTH REGISTRY OF DEEDS  
PLAN BOOK 245, PLAN 120

**SUB-SURFACE INFILTRATION SYSTEM SCHEDULE**

DESCRIPTION	SIS1	SIS2	SIS3
CHAMBER MODEL NUMBER TO BE USED	SC-310	SC-740	SC-310
LENGTH OF STONE PRISMATOID	73.5'	123'	116'
WIDTH OF STONE PRISMATOID	5'	27.5'	21.5'
TOTAL NUMBER OF CHAMBERS	10	102	96
NUMBER OF ROWS	1	6	6
CHAMBERS PER ROW	10	17	16
ELEV. OF MIN. PAVED FINISHED GRADE	N/A	154.9	170.7
ELEV. OF TOP OF STONE PRISMATOID	145.33	153.50	169.33
ELEV. OF TOP OF CHAMBERS	144.83	153.00	168.83
INV IN FROM PIPE/MANIFOLD(80A.)	143.50(6")	151.50(12")	167.50(6")
ELEV. OF BOTTOM OF CHAMBERS	143.50	150.50	167.50
ELEV. OF BOTTOM OF STONE PRISMATOID	143.00	150.00	167.00



**GRADING & UTILITIES PLAN**

357 MAIN STREET  
TEWKSBURY, MASSACHUSETTS

PLAN PREPARED FOR:  
**BLJB HOLDINGS, LLC**  
70 JOHN E. SMITH DRIVE  
TEWKSBURY, MASSACHUSETTS

PLAN PREPARED BY:  
**LANDPLEX**  
CIVIL ENGINEERING • SURVEYING  
10 GEORGE STREET, UNIT 208  
LOWELL, MASSACHUSETTS 01852  
978-201-9390 - LANDPLEX.COM

SHEET: 4 OF 8	SCALE: 1"=30'	FEBRUARY 5, 2025
2	PER SUBCONSULTANT REVIEW	8/1/2025
1	PER SUBCONSULTANT REVIEW	4/25/2025
NO.	REVISION DESCRIPTION	DATE

**LEGEND**

- STONEWALL
- ZONING SETBACK LINE
- EASEMENT LINE
- ⊙ TRAFFIC CONTROL LIGHT POLE
- ⊙ SEWER MANHOLE
- ⊙ DRAIN MANHOLE
- ⊙ CATCH BASIN
- ⊙ HYDRANT
- ⊙ WATER GATE VALVE
- ⊙ GAS GATE VALVE
- ⊙ UTILITY POLE
- ⊙ SIGN
- OVERHEAD WIRE LINE
- SEWER PIPE
- WATER PIPE
- DRAIN PIPE
- ROOF DRAIN PIPE
- 2-FOOT CONTOUR
- ⊙ ELEVATION SPOT GRADE

**ABBREVIATIONS**

- BIT. BITUMINOUS
- BWL BROKEN WHITE LINE
- CB CATCH BASIN
- CBM CAPE COD BERM
- CONC. CONCRETE
- DMH DRAIN MANHOLE
- DYL DOUBLE YELLOW LINE
- ELEV. ELEVATION
- ESHWT ESTIMATED SEASONAL HIGH WATER TABLE
- FES FLARED END SECTION
- INV INVERT
- R24 24' RADIUS (TYP)
- RET.WALL RETAINING WALL
- SF SQUARE FEET
- SIS SUBSURFACE INFIL. SYSTEM
- SMH SEWER MANHOLE
- SOS SEDIMENT & OIL SEPARATOR
- SWK SIDEWALK
- SWL SOLID WHITE LINE
- UP UTILITY POLE
- WCR WHEEL CHAIR RAMP

**SOIL TESTING DATA**

SOIL SCIENTIST: STEVE ERIKSEN, NORSE ENVIRONMENTAL SERVICES  
DATE: MARCH 5, 2018

TEST HOLE 1 (TH-1)	TEST HOLE 3 (TH-3)	TEST HOLE 5 (TH-5)	TEST HOLE 7 (TH-7)	TEST HOLE 9 (TH-9)
DEPTH HORIZON COLOR DESCRIPTION	DEPTH HORIZON COLOR DESCRIPTION	DEPTH HORIZON COLOR DESCRIPTION	DEPTH HORIZON COLOR DESCRIPTION	DEPTH HORIZON COLOR DESCRIPTION
0-14" Ap 10Y2/2 FINE SANDY LOAM	0-14" Ap 10Y2/2 FINE SANDY LOAM	0-11" Ap 10Y2/2 FINE SANDY LOAM	0-11" Ap 10Y2/2 FINE SANDY LOAM	0-20" Ap 10Y2/2 FINE SANDY LOAM
16-36" Bw 10Y4/4 FINE SANDY LOAM	14-35" Bw 10Y4/4 FINE SANDY LOAM	11-30" Bw 10Y4/4 FINE SANDY LOAM	11-36" Bw 10Y4/4 FINE SANDY LOAM	20-50" Bw 10Y4/4 FINE SANDY LOAM
36-79" C1 2.5Y5/4 LOAMY SAND	35-90" C1 2.5Y5/4 LOAMY SAND	30-60" C1 2.5Y5/4 LOAMY SAND	36-72" C1 2.5Y5/4 MEDIUM SAND	50-83" C1 2.5Y4/4 MEDIUM-FINE SAND
79-150" C2 2.5Y4/4 SANDY LOAM: FIRM, MASSIVE, & COMPACT	90-150" C2 2.5Y4/4 SANDY LOAM: FIRM, MASSIVE, & COMPACT, FEW STONES & BOULDERS.	60-105" C2 2.5Y4/4 SANDY LOAM: FIRM & MASSIVE, FEW STONES & BOULDERS.	72-137" C2 2.5Y4/4 STONES & BOULDERS.	83-143" C2 2.5Y5/6 MED.-COURSE LOAMY SAND
WEEPING 54", STANDING 136", ESHWT 45"	WEEPING 60", ESHWT 44"	WEEPING 65", STANDING 105", ESHWT 58"	STANDING 137", ESHWT 56"	NO WEEPING, NO STANDING, ESHWT 108"

TEST HOLE 2 (TH-2)	TEST HOLE 4 (TH-4)	TEST HOLE 6 (TH-6)	TEST HOLE 8 (TH-8)
DEPTH HORIZON COLOR DESCRIPTION	DEPTH HORIZON COLOR DESCRIPTION	DEPTH HORIZON COLOR DESCRIPTION	DEPTH HORIZON COLOR DESCRIPTION
0-14" Ap 10Y2/2 FINE SANDY LOAM	0-12" Ap 10Y2/2 FINE SANDY LOAM	0-12" Ap 10Y2/2 FINE SANDY LOAM	0-10" Ap 10Y2/2 FINE SANDY LOAM
14-30" Bw 10Y4/4 FINE SANDY LOAM	12-30" Bw 10Y4/4 FINE SANDY LOAM	12-38" Bw 10Y4/4 FINE SANDY LOAM	10-30" Bw 10Y4/4 FINE SANDY LOAM
30-85" C1 2.5Y5/4 LOAMY SAND	30-68" C1 2.5Y5/4 LOAMY SAND	38-92" C1 2.5Y5/4 MEDIUM SAND	30-115" C1 2.5Y5/6 COURSE SAND, GRAVEL.
85-145" C2 2.5Y4/4 SANDY LOAM: FIRM, MASSIVE, & COMPACT	68-136" C2 2.5Y4/4 SANDY LOAM: FIRM & MASSIVE, FEW STONES.	92-160" C2 2.5Y5/6 MED.-COURSE SAND, STONES & BOULDERS.	STANDING 89", ESHWT 40"
WEEPING 55", STANDING 145", ESHWT 48"	WEEPING 65", STANDING 136", ESHWT 50"	STANDING 160", ESHWT 77"	

**EROSION AND SEDIMENT CONTROL NOTES**

- GENERAL PERFORMANCE STANDARDS**
1. THE CONTRACTOR SHALL INSTALL, ROUTINELY INSPECT AND MAINTAIN ALL SEDIMENT AND EROSION CONTROLS SUCH THAT THEY ARE IN PROPER WORKING ORDER AT ALL TIMES DURING THE CONSTRUCTION PROJECT UNTIL SUCH TIME AS ALL AREAS OF THE SITE TRIBUTARY TO THOSE EROSION CONTROLS ARE IN A PERMANENTLY STABILIZED CONDITION.
  2. THE PLAN VIEWS IN THIS PLAN SET SHOW PRIMARILY THE LOCATIONS OF THE PERIMETER EROSION CONTROLS AND ARE NOT INTENDED TO SHOW ALL EROSION CONTROLS NECESSARY FOR MANAGEMENT OF THE SITE. THE CONTRACTOR SHALL MANAGE THE SITE SUCH THAT EROSION AND SEDIMENT FROM RUNOFF AND WIND BLOWN DUST ARE CONTROLLED AND MINIMIZED AT ALL TIMES. THE EROSION CONTROLS SHOWN ON THIS PLAN INCLUDE THE INITIAL SETUP OF EROSION CONTROLS AND BASIC INFORMATION TO MEET THE REQUIREMENT OF BEST MANAGEMENT PRACTICES. THE CONTRACTOR MUST EMPLOY STRATEGIES TO MAKE THE SITE PROPERLY, WHICH MAY INCLUDE, BUT ARE NOT LIMITED TO MINIMIZING AREAS OF EXPOSED SOILS, INSTALLING TEMPORARY COVER, MAKE NECESSARY ADJUSTMENTS TO THE EROSION CONTROL. INSTALLATIONS TO IMPROVE FUNCTION, PROVIDE TEMPORARY SEDIMENT CONTROL, AND INSTALL ADDITIONAL EROSION CONTROL WHERE NECESSARY.
  3. THE EROSION CONTROL WORK IS SUBJECT TO PERMITS AND APPROVALS UNDER THE MUNICIPAL STORMWATER BYLAWS, WETLANDS BYLAWS, AND ASSOCIATED REGULATIONS, AS APPLICABLE. THE PROJECT MAY ALSO BE SUBJECT TO OTHER LOCAL, STATE, AND FEDERAL APPROVALS. THE CONTRACTOR SHALL OBTAIN AND BE RESPONSIBLE FOR COMPLIANCE WITH THE CONDITIONS AND REQUIREMENTS OF THOSE PERMITS.
  4. DESIGN, INSTALLATION AND MAINTENANCE OF SEDIMENT AND EROSION CONTROLS SHALL BE IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES FOLLOWING THE GUIDELINES INCLUDED IN THE FOLLOWING: "MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS, A GUIDE FOR PLANNERS, DESIGNERS AND MUNICIPAL OFFICIALS" BY THE MASS. EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS, MAY 2003, AND "STORMWATER MANAGEMENT FOR CONSTRUCTION ACTIVITIES, DEVELOPING POLLUTION PREVENTION PLANS AND BEST MANAGEMENT PRACTICES" BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY, OCTOBER 1992.

- PERIMETER EROSION AND SEDIMENT CONTROL AND LIMIT OF WORK**
1. PRIOR TO ANY DISTURBANCE OR ALTERATIONS OF ANY AREA ON THE SITE, AN EROSION CONTROL BARRIER SHALL BE INSTALLED IN THE LOCATIONS SHOWN ON THE PLAN. THIS ALSO INCLUDES MAKING REPAIRS AND UPGRADES OF EXISTING EROSION CONTROLS INSTALLED UNDER ANY SITE-ENABLING WORK AS APPLICABLE. APPLICABLE PORTIONS OF THOSE EROSION CONTROLS TO CONTINUE TO BE UTILIZED SHALL BE MADE FULLY FUNCTIONAL AND MAINTAINED GOOD CONDITION.
  2. ONCE INSTALLED, THE EROSION CONTROL BARRIER SHALL BE MAINTAINED IN PLACE UNTIL ALL AREAS UPGRADIENT FROM THE BARRIERS HAVE BEEN PERMANENTLY STABILIZED.
  3. ALL DISTURBED AREAS NOT OTHERWISE DEVELOPED OR WHERE SPECIAL STABILIZATION MEASURES OR LANDSCAPE PLANTINGS ARE PROPOSED SHALL BE LOAMED AND SEEDED OR SOODED. SIX INCHES OF LOAM TOPSOIL (MIN. COMPACTED DEPTH) SHALL BE APPLIED UNLESS OTHERWISE SPECIFIED. (SEE LANDSCAPE PLAN AND OTHER PLANS AS APPLICABLE).
  4. THE EROSION CONTROL BARRIER MAY ALSO DELINEATE THE LIMIT OF WORK. ALL AREAS OUTSIDE THE LIMIT ARE TO BE LEFT UNDISTURBED. DURING THE SITE WORK, ALL PERSONS AND EQUIPMENT SHALL STAY OUT OF THESE AREAS TO PRESERVE THE EXISTING VEGETATION AND SOIL COVER.

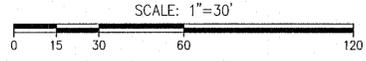
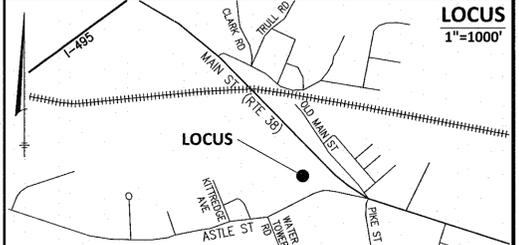
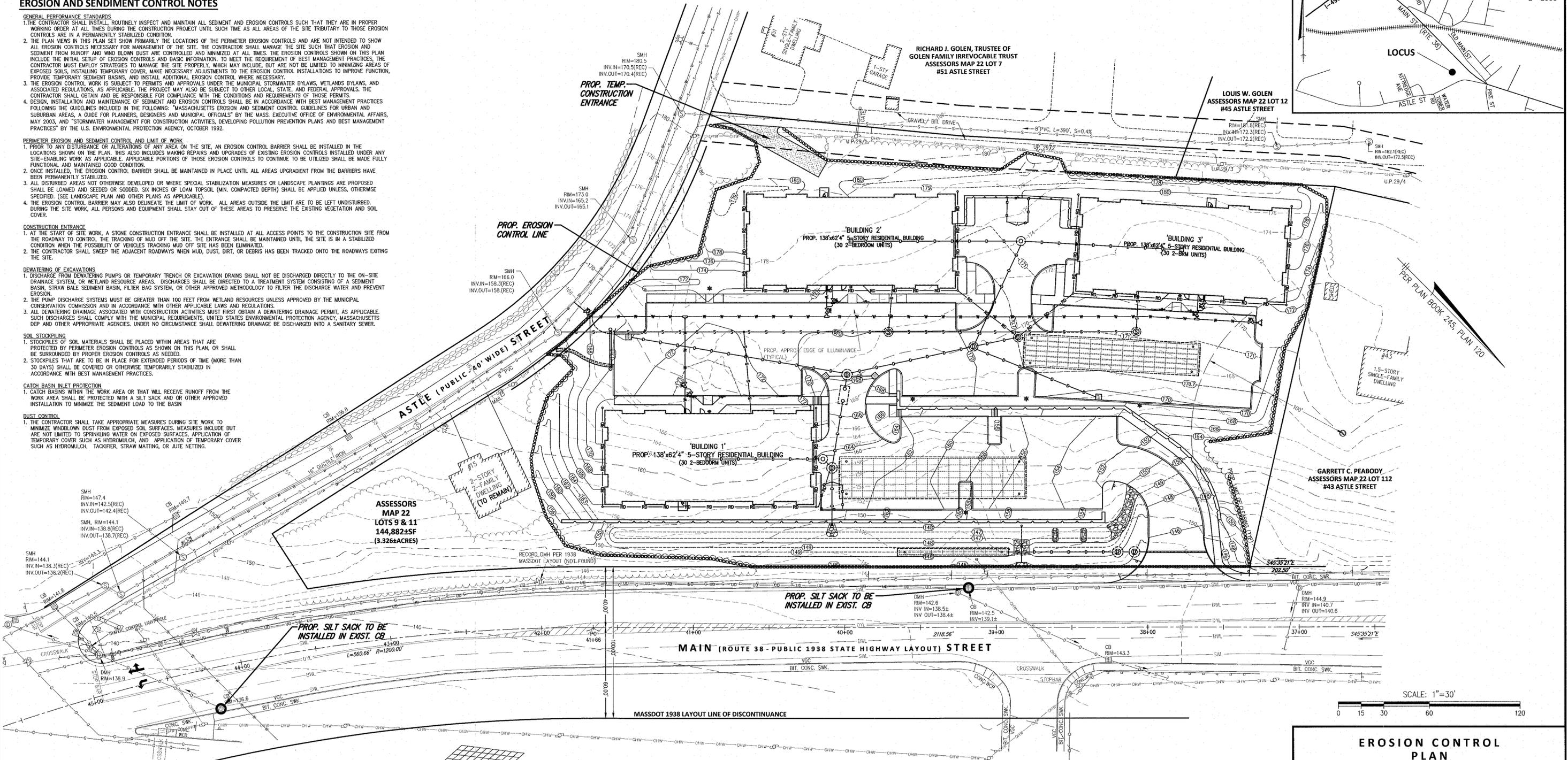
- CONSTRUCTION ENTRANCE**
1. AT THE START OF SITE WORK, A STONE CONSTRUCTION ENTRANCE SHALL BE INSTALLED AT ALL ACCESS POINTS TO THE CONSTRUCTION SITE FROM THE ROADWAY TO CONTROL THE TRACKING OF MUD OFF THE SITE. THE ENTRANCE SHALL BE MAINTAINED UNTIL THE SITE IS IN A STABILIZED CONDITION WHEN THE POSSIBILITY OF VEHICLES TRACKING MUD OFF SITE HAS BEEN ELIMINATED.
  2. THE CONTRACTOR SHALL SWEEP THE ADJACENT ROADWAYS WHEN MUD, DUST, DIRT, OR DEBRIS HAS BEEN TRACKED ONTO THE ROADWAYS EXITING THE SITE.

- DEWATERING OF EXCAVATIONS**
1. DISCHARGE FROM DEWATERING PUMPS OR TEMPORARY TRENCH OR EXCAVATION DRAINS SHALL NOT BE DISCHARGED DIRECTLY TO THE ON-SITE DRAINAGE SYSTEM, OR WETLAND RESOURCE AREAS. DISCHARGES SHALL BE DIRECTED TO A TREATMENT SYSTEM CONSISTING OF A SEDIMENT BASIN, STRAW BALE SEDIMENT BASIN, FILTER BAG SYSTEM, OR OTHER APPROVED METHODOLOGY TO FILTER THE DISCHARGE WATER AND PREVENT EROSION.
  2. THE PUMP DISCHARGE SYSTEMS MUST BE GREATER THAN 100 FEET FROM WETLAND RESOURCES UNLESS APPROVED BY THE MUNICIPAL CONSERVATION COMMISSION AND IN ACCORDANCE WITH OTHER APPLICABLE LAWS AND REGULATIONS.
  3. ALL DEWATERING DRAINAGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES MUST FIRST OBTAIN A DEWATERING DRAINAGE PERMIT, AS APPLICABLE. SUCH DISCHARGES SHALL COMPLY WITH THE MUNICIPAL REQUIREMENTS, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, MASSACHUSETTS DEP AND OTHER APPROPRIATE AGENCIES. UNDER NO CIRCUMSTANCE SHALL DEWATERING DRAINAGE BE DISCHARGED INTO A SANITARY SEWER.

- SOIL STOCKPILING**
1. STOCKPILES OF SOIL MATERIALS SHALL BE PLACED WITHIN AREAS THAT ARE PROTECTED BY PERIMETER EROSION CONTROLS AS SHOWN ON THIS PLAN, OR SHALL BE SURROUNDED BY PROPER EROSION CONTROLS AS NEEDED.
  2. STOCKPILES THAT ARE TO BE IN PLACE FOR EXTENDED PERIODS OF TIME (MORE THAN 30 DAYS) SHALL BE COVERED OR OTHERWISE TEMPORARILY STABILIZED IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES.

- CATCH BASIN INLET PROTECTION**
1. CATCH BASINS WITHIN THE WORK AREA OR THAT WILL RECEIVE RUNOFF FROM THE WORK AREA SHALL BE PROTECTED WITH A SILT SACK AND OR OTHER APPROVED INSTALLATION TO MINIMIZE THE SEDIMENT LOAD TO THE BASIN.

- DUST CONTROL**
1. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASURES DURING SITE WORK TO MINIMIZE WINDBLOWN DUST FROM EXPOSED SOIL SURFACES. MEASURES INCLUDE BUT ARE NOT LIMITED TO SPRINKLING WATER ON EXPOSED SURFACES, APPLICATION OF TEMPORARY COVER SUCH AS HYDROMULCH, AND APPLICATION OF TEMPORARY COVER SUCH AS HYDROMULCH, TACKIFIER, STRAW MATTING, OR JUTE NETTING.

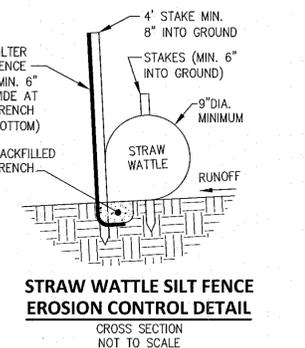
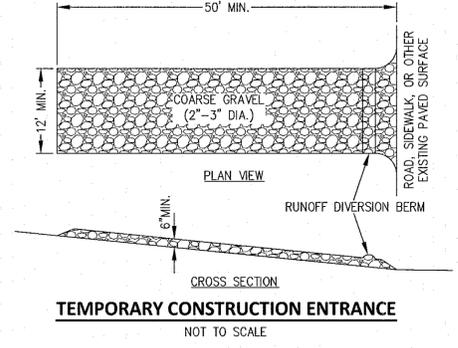
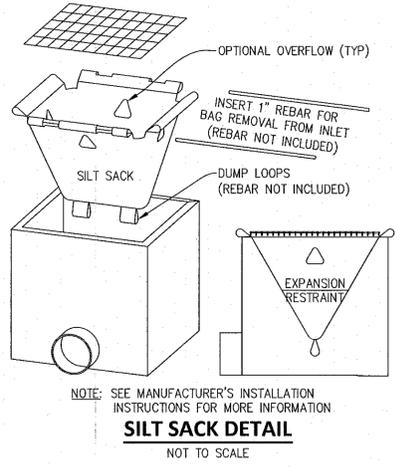


**LEGEND**

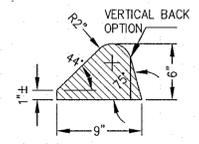
- STONEWALL
- - - ZONING SETBACK LINE
- - - EASEMENT LINE
- ⊙ TRAFFIC CONTROL LIGHT POLE
- ⊙ SEWER MANHOLE
- ⊙ DRAIN MANHOLE
- ⊙ CATCH BASIN
- ⊙ HYDRANT
- ⊙ WATER GATE VALVE
- ⊙ GAS GATE VALVE
- ⊙ UTILITY POLE
- ⊙ SIGN
- OVERHEAD WIRE LINE
- SEWER PIPE
- WATER PIPE
- DRAIN PIPE
- ROOF DRAIN PIPE
- - - 2-FOOT CONTOUR
- x173.3 ELEVATION SPOT GRADE

**ABBREVIATIONS**

- BIT. BITUMINOUS
- BWL BROKEN WHITE LINE
- CB CATCH BASIN
- CCB CAPE COD BERM
- CONC. CONCRETE
- DMH DRAIN MANHOLE
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- ELEV. ELEVATION
- ESHWT ESTIMATED SEASONAL HIGH WATER TABLE
- FES FLARED END SECTION
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- SWK SIDEWALK
- SWL SOLID WHITE LINE
- UP UTILITY POLE
- WCR WHEEL CHAIR RAMP

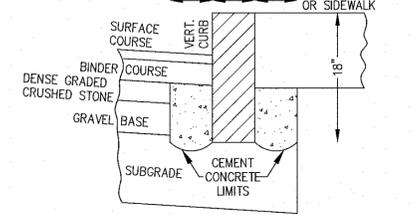


EROSION CONTROL PLAN											
357 MAIN STREET TEWKSBURY, MASSACHUSETTS											
PLAN PREPARED FOR:	PLAN PREPARED BY:										
BLIB HOLDINGS, LLC 70 JOHN E. SMITH DRIVE TEWKSBURY, MASSACHUSETTS	 CIVIL ENGINEERING • SURVEYING 10 GEORGE STREET, UNIT 208 LOWELL, MASSACHUSETTS 01852 978-201-9390 - LANDPLEX.COM										
SHEET: 5 OF 8	SCALE: 1"=30'	FEBRUARY 5, 2025									
	<table border="1"> <tr> <td>2</td> <td>PER SUBCONSULTANT REVIEW</td> <td>8/1/2025</td> </tr> <tr> <td>1</td> <td>PER SUBCONSULTANT REVIEW</td> <td>4/25/2025</td> </tr> <tr> <td>NO.</td> <td>REVISION DESCRIPTION</td> <td>DATE</td> </tr> </table>		2	PER SUBCONSULTANT REVIEW	8/1/2025	1	PER SUBCONSULTANT REVIEW	4/25/2025	NO.	REVISION DESCRIPTION	DATE
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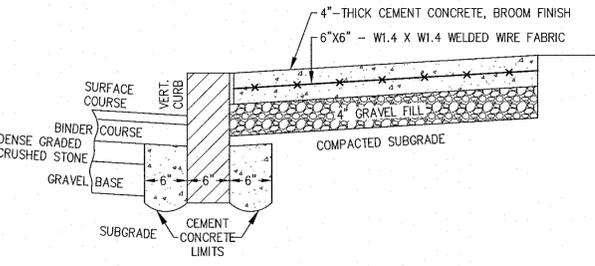


**CAPE COD BERM DETAIL**  
CROSS SECTION NOT TO SCALE

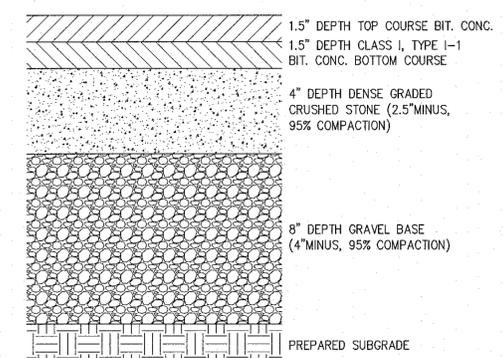
MIN. 7" REVEAL FOR FULL ROADWAY/SIDEWALK RECONSTRUCTION OR MIN. 6" REVEAL FOR MODIFICATIONS TO EXISTING ROADWAYS (EXCEPT ON BRIDGES)



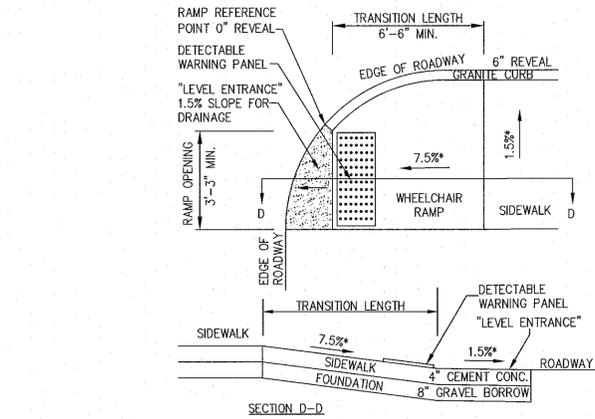
**VERTICAL GRANITE CURB DETAIL**  
CROSS SECTION NOT TO SCALE



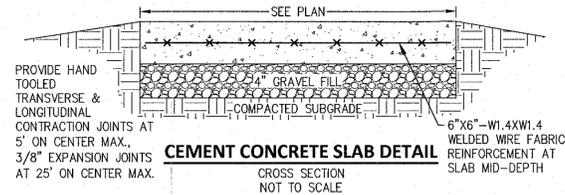
**VERTICAL GRANITE CURB WITH CEMENT CONCRETE SIDEWALK DETAIL**  
CROSS SECTION NOT TO SCALE



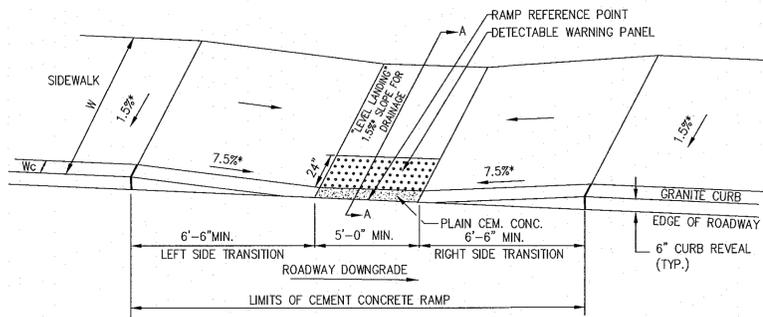
**TYPICAL BITUMINOUS CONCRETE PAVEMENT**  
CROSS SECTION NOT TO SCALE



SECTION D-D



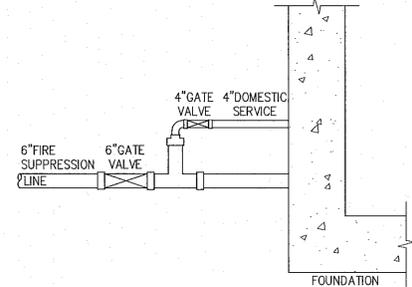
**CEMENT CONCRETE SLAB DETAIL**  
CROSS SECTION NOT TO SCALE



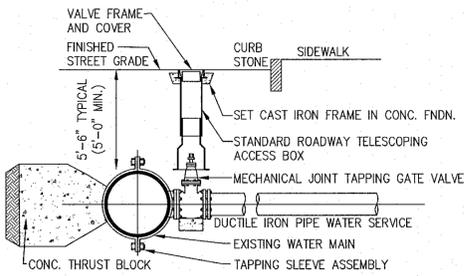
SECTION A-A

**LEGEND:**  
HSL = HIGH SIDE TRANSITION LENGTH  
W = SIDEWALK WIDTH  
Wc = CURB WIDTH  
\* = TOLERANCE FOR CONSTRUCTION ±0.5%  
W-Wc = USABLE SIDEWALK WIDTH PER AAB  
USABLE SIDEWALK WIDTH PER AAB IS NOT TO BE LESS THAN 4'-0"

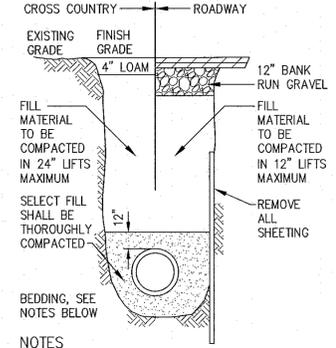
**WHEEL CHAIR RAMP DETAILS**  
NOT TO SCALE



**WATER SERVICE CONNECTION**  
NOT TO SCALE

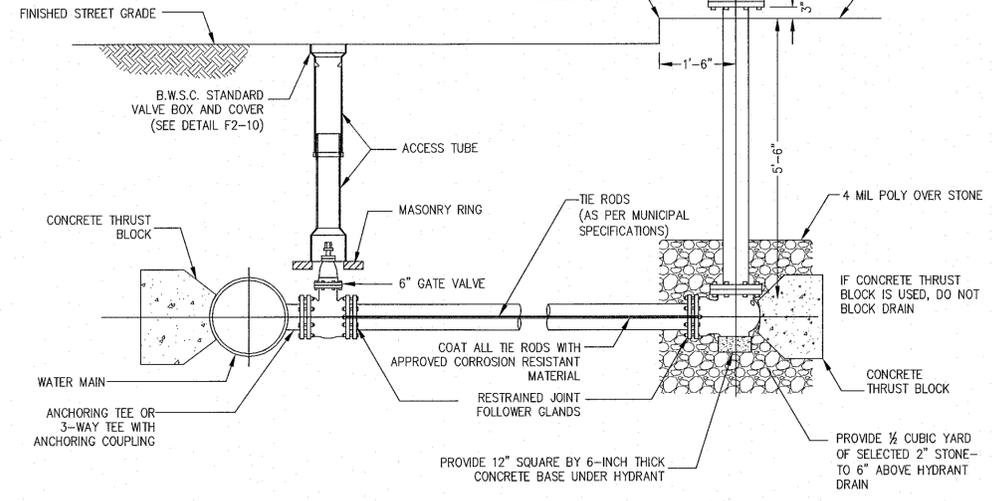


**TAPPING SLEEVE DETAIL**  
CROSS SECTION NOT TO SCALE

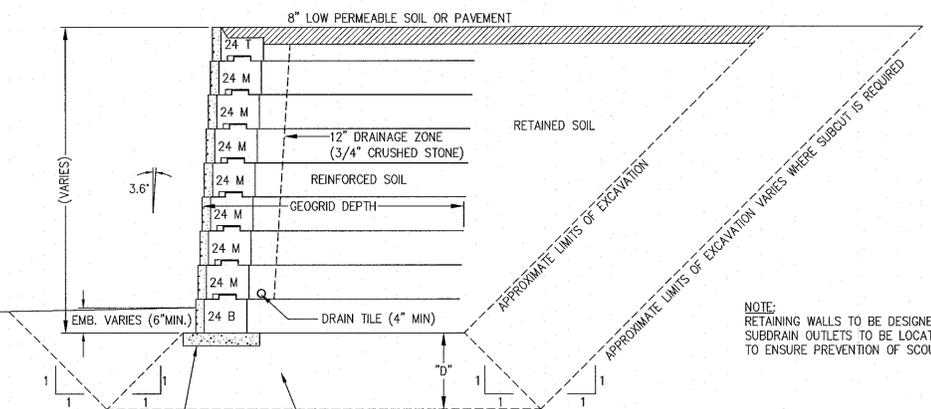


**WATER MAIN TRENCH DETAIL**  
CROSS SECTION NOT TO SCALE

**NOTES:**  
1. ANY DEVIATIONS OF THIS TYPICAL CONNECTION TO MEET FIELD CONDITIONS SHALL BE APPROVED BY THE ENGINEER.  
2. USE RESTRAINED JOINT FOLLOWER GLANDS, OR THE RODS IN ACCORDANCE WITH SECTION C-1 OF BWSG SPECIFICATIONS, WHERE CONCRETE THRUST BLOCK IS UNACCEPTABLE TO THE ENGINEER.  
3. CONCRETE THRUST BLOCK TO BE USED ONLY WHERE IT WILL BEAR ON UNDISTURBED EARTH AND WHERE APPROVED BY THE ENGINEER.  
4. SIZE OF BLOCK OR FITTING TO BE DESIGNED FOR SPECIFIC CONDITIONS, OR ANY NECESSARY BENDS.

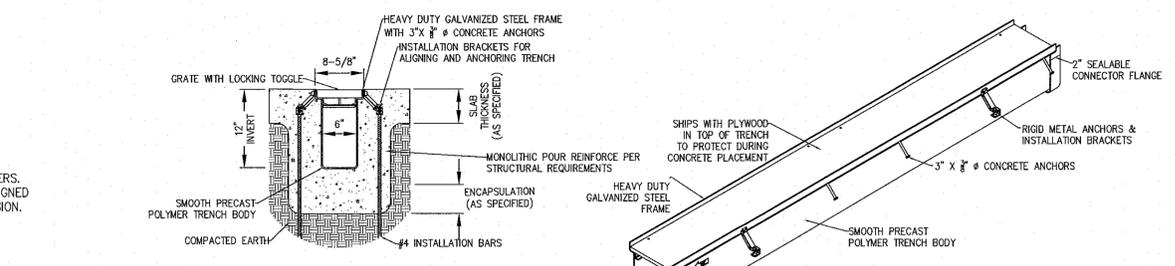


**TYPICAL FIRE HYDRANT CONNECTION**  
CROSS SECTION NOT TO SCALE



**TYPICAL GEO-GRID WALL CROSS SECTION**  
NOT TO SCALE

NOTE: DESIGN IS FOR INTERNAL STABILITY OF THE WALL STRUCTURE ONLY (E.F. SHEA OR EQUIVALENT). EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY IS THE RESPONSIBILITY OF THE OWNER. THE DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIALS WITHIN THE RETAINED MASS, METHODS OF CONSTRUCTION, AND QUALITY OF MATERIALS CONFORM TO E.F. SHEA'S (OR EQUIVALENT) SPECIFICATION FOR THIS PROJECT.



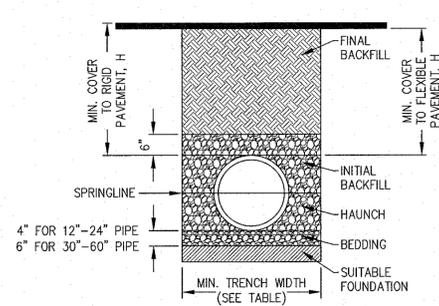
**PRE-FABRICATED 6"-WIDE TRENCH DRAIN DETAIL (DURA TRENCH HEAVY DUTY OR APPROVED EQUAL)**  
NOT TO SCALE

**NOTES:**  
1. STANDARD SLOPE IS 0.5% UNLESS OTHERWISE SPECIFIED  
2. REINFORCE ACCORDING TO STRUCTURAL REQUIREMENTS  
3. TRENCH DRAIN MUST BE 1/8" BELOW FINISHED CONCRETE GRADE

**DETAILS NOTE**

ALL CONSTRUCTION SHALL CONFORM TO THE TEWKSBURY DPW STANDARD CONSTRUCTION DETAILS. WHERE THOSE DETAILS CONFLICT WITH THE DETAILS IN THIS PLAN SET, THE TEWKSBURY DPW STANDARD CONSTRUCTION DETAILS SHALL SUPERCEDE THOSE SHOWN HEREON.

DETAILS (SHEET 1 OF 3)		
357 MAIN STREET TEWKSBURY, MASSACHUSETTS		
PLAN PREPARED FOR:	PLAN PREPARED BY:	
BLJB HOLDINGS, LLC 70 JOHN E. SMITH DRIVE TEWKSBURY, MASSACHUSETTS	 LANDPLEX CIVIL ENGINEERING • SURVEYING 10 GEORGE STREET, UNIT 208 LOWELL, MASSACHUSETTS 01852 978-201-3390 - LANDPLEX.COM	
SHEET: 6 OF 8	SCALE: AS NOTED	FEBRUARY 5, 2025
 2-1-2025	2 PER SUBCONSULTANT REVIEW 1 PER SUBCONSULTANT REVIEW NO. REVISION DESCRIPTION	8/1/2025 4/25/2025 DATE

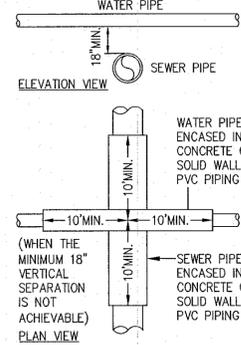


RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
54"	88"
60"	96"

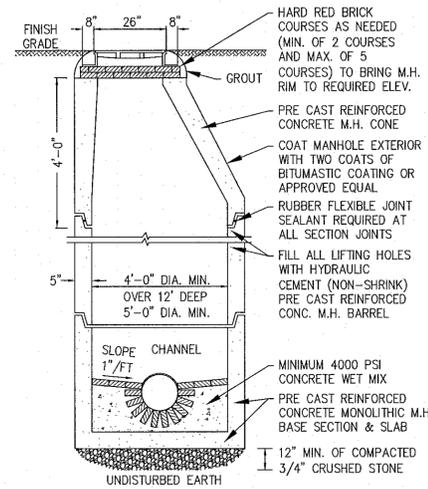
- NOTES:**
- ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION.
  - MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
  - FOUNDATION:** WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
  - BEDDING:** SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" FOR 12"-24" PIPE, 6" FOR 30"-60" PIPE.
  - INITIAL BACKFILL:** SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
  - MINIMUM COVER:** MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 36" MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

**TYPICAL PIPE TRENCH DETAIL**  
CROSS SECTION  
NOT TO SCALE



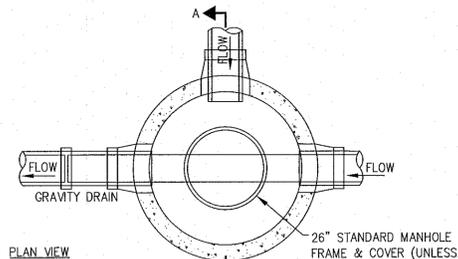
- NOTES:**
- THE SEWER PIPE CROWN SHALL BE 18" MINIMUM BELOW THE INVERT OF THE WATER PIPE. BOTH PIPES SHALL BE CLASS 150 PRESSURE PIPE.
  - WHERE AN 18" SEPARATION AS DESCRIBED ABOVE IS NOT POSSIBLE, BOTH PIPES SHALL BE ENCASED IN CONCRETE OR SOLID WALL PVC PIPING FOR 10 FEET MINIMUM TO EITHER SIDE OF THE CROSSING, AND ALL WATER PIPE JOINTS WITHIN THAT DISTANCE SHALL HAVE MECHANICAL FITTINGS.

**PIPE CROSSING DETAIL**  
NOT TO SCALE

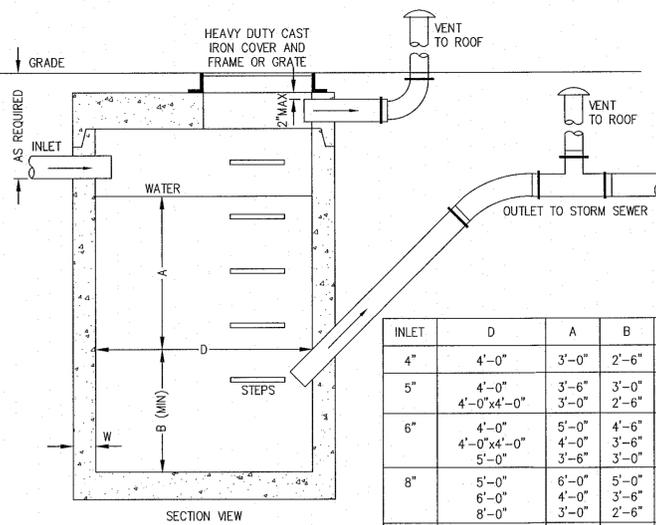


- NOTES:**
- TYPICAL SANITARY MANHOLE TO BE 4 FEET IN DIAMETER.
  - 5'-0" DIAMETER FOR ALL MANHOLE DEPTHS GREATER THAN 12 FEET OR WHEN ORDERED BY THE ENGINEER.
  - 6" MIN. WALL THICKNESS AND 7" MIN. BASE THICKNESS WITH 5'-0" DIAMETER MANHOLES.
  - INNER EDGE OF BRICK TABLE TO BE AT ELEVATION OF CROWN OF TOP OF PIPE.
  - DESIGN LOAD-HS20.
  - ALL INVERTS SHALL BE 4,000 PSI CEMENT CONCRETE IN VOID AREAS AND RED SEWER BRICK CONSTRUCTION.
  - INVERTS SHALL NOT BE BUILT ABOVE GRADE. ALL INVERTS SHALL BE BUILT IN PLACE AFTER ALL PIPES HAVE BEEN INSTALLED.

**TYPICAL SEWER MANHOLE DETAIL**  
CROSS SECTION  
NOT TO SCALE



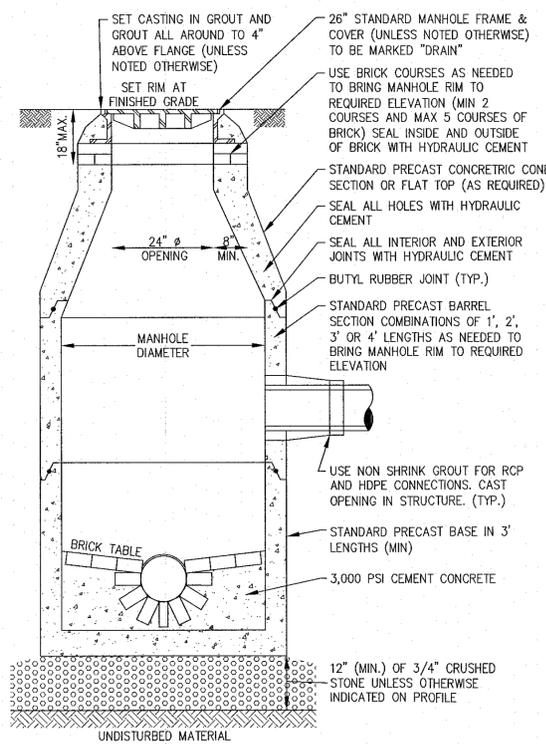
**PLAN VIEW**



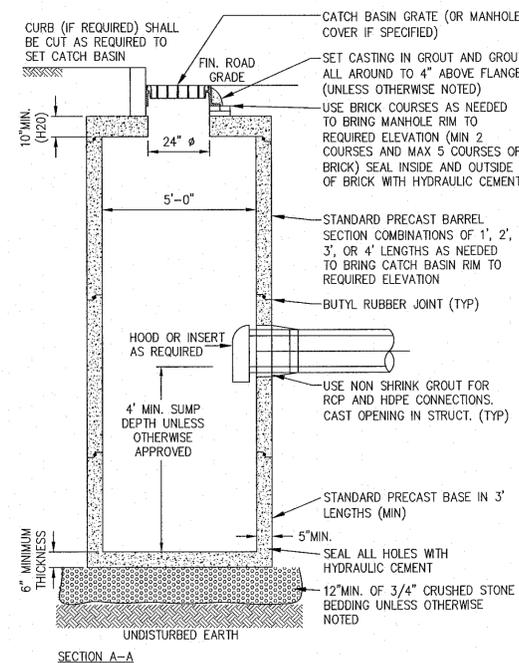
INLET	D	A	B	W
4"	4'-0"	3'-0"	2'-6"	5"
5"	4'-0"	3'-6"	3'-0"	5"
6"	4'-0"x4'-0"	3'-0"	2'-6"	6"
6"	4'-0"	5'-0"	4'-6"	5"
6"	4'-0"x4'-0"	4'-0"	3'-6"	6"
8"	5'-0"	6'-0"	5'-0"	6"
8"	4'-0"	4'-0"	3'-6"	7"
8"	8'-0"	3'-0"	2'-6"	9"
10"	6'-0"	6'-6"	5'-6"	7"
10"	8'-0"	5'-0"	4'-0"	9"

- NOTES:**
- CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
  - MANHOLE DESIGN SPECIFICATIONS CONFORM TO LATEST ASTM C478 SPEC FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS."
  - BUTYL RESIN SECTION JOINT CONFORMS TO LATEST ASTM C443 SPEC.
  - STEEL REINFORCED COPOLYMER POLYPROPYLENE PLASTIC STEP CONFORMS TO LATEST ASTM C478 SPEC.
  - PIPE NOT SUPPLIED. 6. CONE SECTION AVAILABLE IN 4'-0" I.D. ONLY. 7. FOR INLETS LARGER THAN 10" THE DESIGN AND DIMENSION WILL BE DETERMINED FOR EACH PARTICULAR CASE.

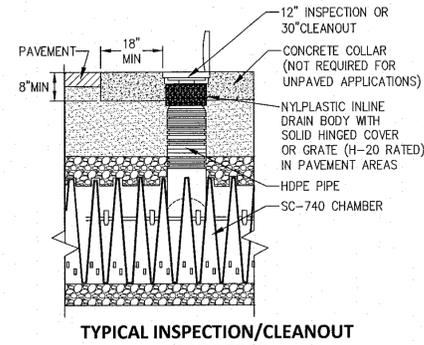
**TYP. OIL & GREASE SEPARATOR**  
CROSS SECTION  
NOT TO SCALE



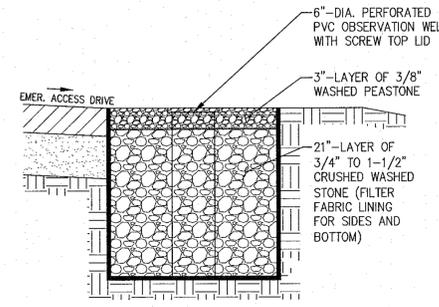
**SECTION A-A DRAIN MANHOLE DETAIL**  
NOT TO SCALE



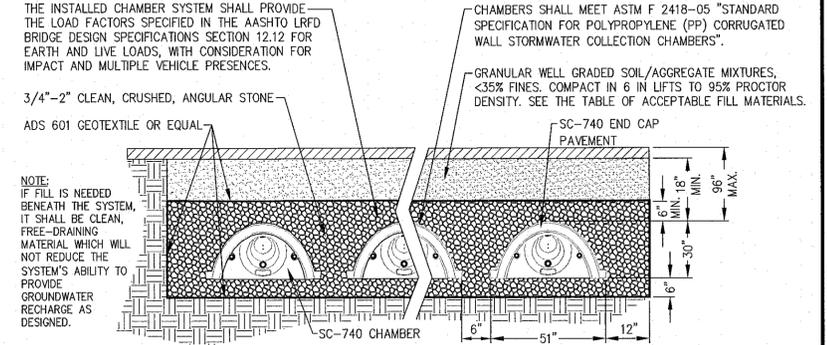
**SECTION A-A DEEP SUMP DRAINAGE STRUCTURE**  
NOT TO SCALE



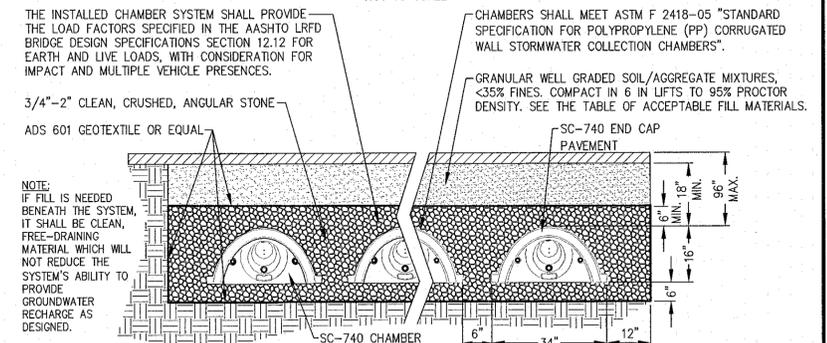
**TYPICAL INSPECTION/CLEANOUT PORT DETAIL**  
CROSS SECTION  
NOT TO SCALE



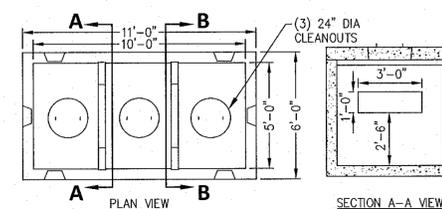
**FILTER AND INFILTRATION TRENCH**  
CROSS SECTION  
SCALE: 1"=1'



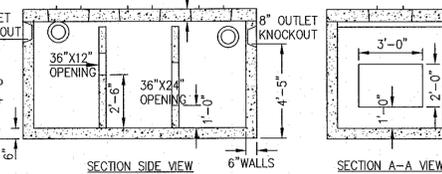
**SUB-SURFACE INFILTRATION SYSTEM (STORMTECH SC-740 OR APPROVED EQUAL)**  
CROSS SECTION  
NOT TO SCALE



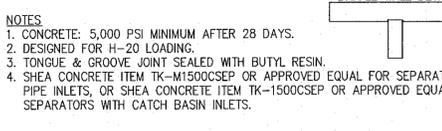
**SUB-SURFACE INFILTRATION SYSTEM (STORMTECH SC-310 OR APPROVED EQUAL)**  
CROSS SECTION  
NOT TO SCALE



**PLAN VIEW**



**SECTION SIDE VIEW**



**BAFFLE WALL DETAIL**  
TYPICAL  
NOT TO SCALE

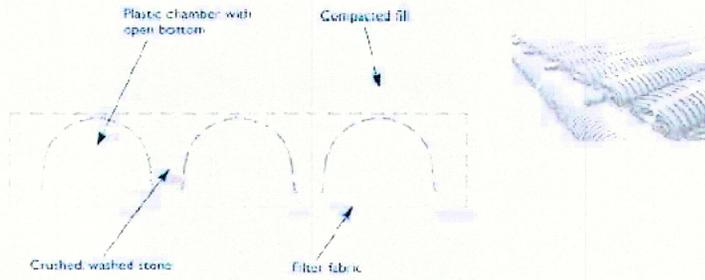
**DETAILS NOTE**  
ALL CONSTRUCTION SHALL CONFORM TO THE TEWKSBURY DPW STANDARD CONSTRUCTION DETAILS. WHERE THOSE DETAILS CONFLICT WITH THE DETAILS IN THIS PLAN SET, THE TEWKSBURY DPW STANDARD CONSTRUCTION DETAILS SHALL SUPERCEDE THOSE SHOWN HEREON.

**DETAILS (SHEET 2 OF 3)**

357 MAIN STREET  
TEWKSBURY, MASSACHUSETTS

PLAN PREPARED FOR:	PLAN PREPARED BY:	
<b>BLJB HOLDINGS, LLC</b> 70 JOHN E. SMITH DRIVE TEWKSBURY, MASSACHUSETTS	<b>LANDPLEX</b> CIVIL ENGINEERING • SURVEYING 10 GEORGE STREET, UNIT 208 LOWELL, MASSACHUSETTS 01852 978-201-3390 - LANDPLEX.COM	
SHEET: 7 OF 8	SCALE: AS NOTED	
FEBRUARY 5, 2025		
NO.	REVISION DESCRIPTION	DATE
2	PER SUBCONSULTANT REVIEW	8/1/2025
1	PER SUBCONSULTANT REVIEW	4/25/2025

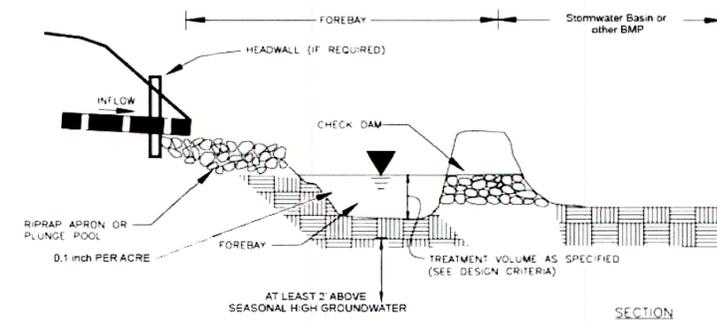
**Underground Plastic Chamber System**



**Elevation**

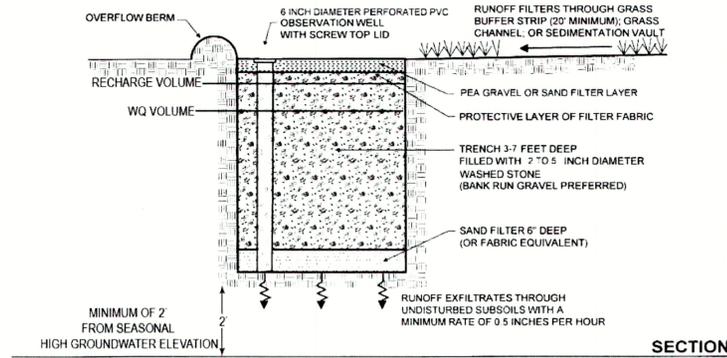
adapted from the CT State Stormwater Manual

MASSDEP STORMWATER HANDBOOK  
VOLUME 2 CHAPTER 2: STRUCTURAL BMP SPECIFICATIONS  
SUBSURFACE STRUCTURES DETAIL  
NOT TO SCALE



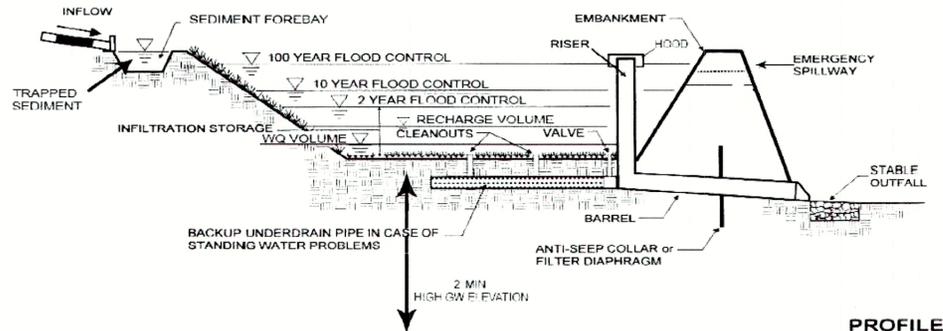
**SECTION**

MASSDEP STORMWATER HANDBOOK  
VOLUME 2 CHAPTER 2: STRUCTURAL BMP SPECIFICATIONS  
SEDIMENT FOREBAYS DETAIL  
NOT TO SCALE



**SECTION**

MASSDEP STORMWATER HANDBOOK  
VOLUME 2 CHAPTER 2: STRUCTURAL BMP SPECIFICATIONS  
INFILTRATION TRENCHES DETAIL  
NOT TO SCALE



**PROFILE**

MASSDEP STORMWATER HANDBOOK  
VOLUME 2 CHAPTER 2: STRUCTURAL BMP SPECIFICATIONS  
INFILTRATION BASINS DETAIL  
NOT TO SCALE

**FLARED END SECTION SPECIFICATION**

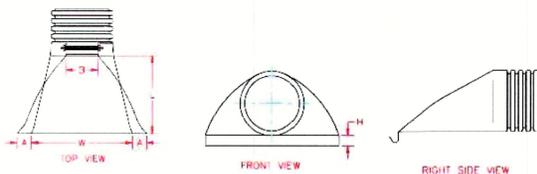
**Scope**  
This specification describes 12- through 36-inch (300 to 900mm) Flared End Sections for use in culvert and drainage outlet applications.

**Requirements**  
The Flared End Section shall be high density polyethylene meeting ASTM D3350 minimum cell classification 213320C; contact manufacturer for additional cell classification information. When provided, the metal threaded fastening rod shall be stainless steel.

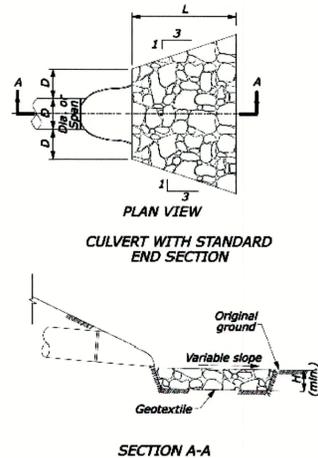
**Installation**  
Installation shall be in accordance with ADS installation instructions and with those issued by state or local authorities. Contact your local ADS representative or visit [www.adspipe.com](http://www.adspipe.com) for the latest installation instructions.

	PIPE DIAMETER, in (mm)			
12 (300)	15 (375)	18 (450)	24 (600)	
15 (375)	18 (450)	24 (600)	30 (750)	
18 (450)	24 (600)	30 (750)	36 (900)	
24 (600)	30 (750)	36 (900)	42 (1050)	
30 (750)	36 (900)	42 (1050)	48 (1200)	
36 (900)	42 (1050)	48 (1200)	54 (1350)	
42 (1050)	48 (1200)	54 (1350)	60 (1500)	
48 (1200)	54 (1350)	60 (1500)	72 (1800)	
54 (1350)	60 (1500)	72 (1800)	84 (2100)	
60 (1500)	72 (1800)	84 (2100)	96 (2400)	

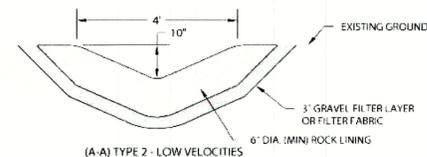
\*Product detail may differ slightly from actual product appearance



**FLARED END SECTION DETAIL**  
NOT TO SCALE



**RIPRAP APRON DETAIL**  
NOT TO SCALE



**RIPRAP SWALE CROSS-SECTION DETAIL**  
NOT TO SCALE

- NOTES:**
- ROCK LINING TO BE INSTALLED TO FORM A STABLE STRUCTURE WITH A MINIMUM OF VOIDS, AND EACH PLACED IN CONTACT WITH ADJACENT ROCKS.
  - ROCK LINING SHALL BE SOUND, DENSE, AND DURABLE ANGULAR ROCK WITH A MINIMUM SPECIFIC GRAVITY OF 2.6.
  - ROCK LINED CHANNELS LARGER THAN THE DIMENSIONS SHOWN, OR ON SLOPES STEEPER THAN 3% SHALL BE DESIGNED BY A CIVIL ENGINEER.
  - IF A GRAVEL FILTER LAYER IS SUBSTITUTED FOR FILTER FABRIC, MATERIAL SHALL BE A MIXTURE OF CLEAN, WASHED SAND AND GRAVEL, COMPRISED OF MATERIAL LESS THAN 1/2" DIA. IN SIZE.

**DETAILS NOTE**

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**DETAILS (SHEET 3 OF 3)**

357 MAIN STREET  
TEWKSBURY, MASSACHUSETTS

PLAN PREPARED FOR:  
**BLJB HOLDINGS, LLC**  
70 JOHN E. SMITH DRIVE  
TEWKSBURY, MASSACHUSETTS

PLAN PREPARED BY:  
**LANDPLEX**  
CIVIL ENGINEERING + SURVEYING  
10 GEORGE STREET, UNIT 208  
LOWELL, MASSACHUSETTS 01852  
978-201-9390 - LANDPLEX.COM

SHEET: 8 OF 8

SCALE: AS NOTED

FEBRUARY 5, 2025



NO.	REVISION DESCRIPTION	DATE
2	PER SUBCONSULTANT REVIEW	8/1/2025
1	PER SUBCONSULTANT REVIEW	4/25/2025