

DEFINITIVE SITE PLAN OF LAND AT 36 BUTLER STREET

IN

WORCESTER, MASSACHUSETTS

OWNER AND APPLICANT:

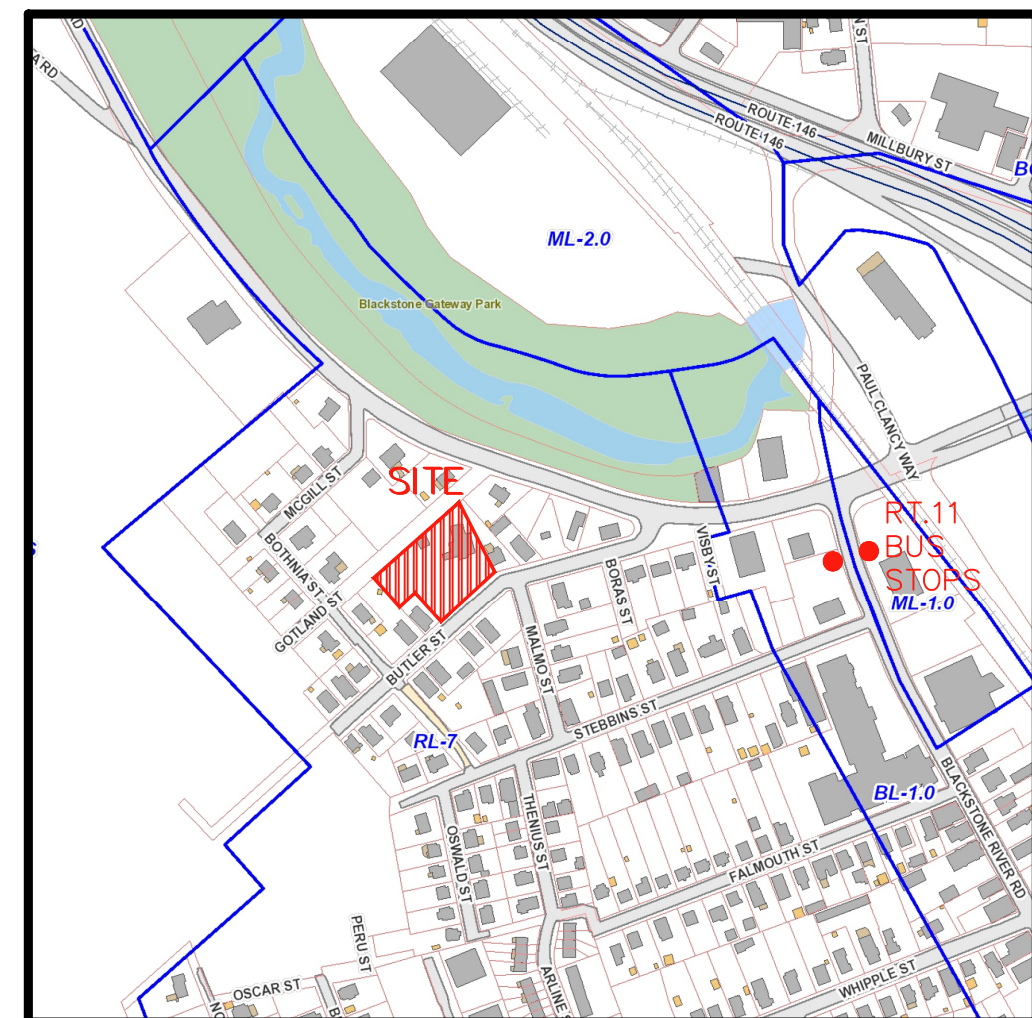
GM PROPERTIES, LLC

234 SPRING STREET

SHREWSBURY, MASSACHUSETTS 01545



CLIENT NUMBER: 501
JOB NUMBER: 224-501
DRAWING : RICEROADCURRENT.DWG



LOCUS MAP

PREPARED BY

EXPEDITED ENGINEERING, LLC

118 TURNPIKE ROAD, SUITE 300

SOUTHBOROUGH, MASSACHUSETTS 01772

TELEPHONE (508) 399-9993

EMAIL: james@expeditedengineers.com

SHEET DIRECTORY

TITLE SHEET	(THIS SHEET)
EXISTING CONDITIONS PLAN	E1
SITE LAYOUT PLAN	S2
GRADING PLAN	G3
UTILITY PLAN	U4
EROSION & SEDIMENT CONTROL PLAN	ESC5
LANDSCAPING & LIGHTING PLANS	LS6 - LS7
DETAIL SHEETS	D8 - D10

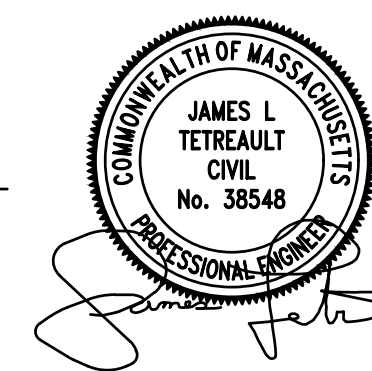
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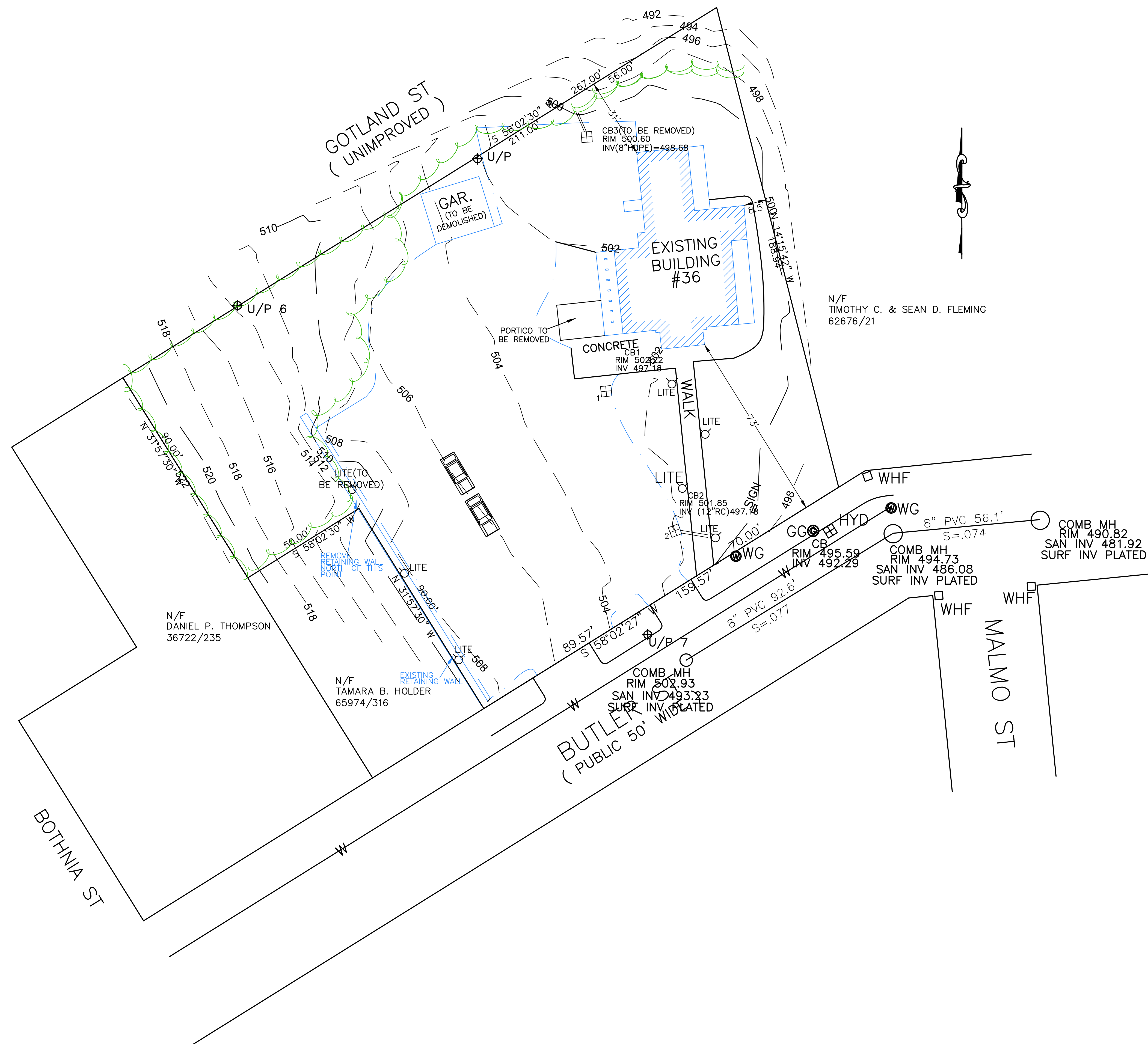
JULY 15, 2024

REVISED AUGUST 14, 2024

REVISED AUGUST 23, 2024

REVISED SEPTEMBER 20, 2024

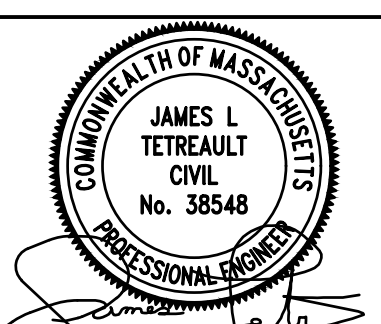




KEY

	EXISTING 2' CONTOUR
	EXISTING 10' CONTOUR
	EXISTING EDGE OF PAVEMENT
	UTILITY POLE
	OVERHEAD WIRES
	EXISTING HYDRANT
	EXISTING LIGHT
	STONE WALL
	EXISTING CATCH BASIN
	EXISTING TREELINE

- NOTES:**
1. THE APPLICANT'S OWNERSHIP OF THE PROPERTY IS DERIVED FROM THE DEED RECORDED AT BOOK 70087 PAGE 335 AT THE WORCESTER DISTRICT REGISTRY OF DEEDS. SHOWN.
 2. THE SITE IS LOCATED IN THE RL-7 ZONING D.
 3. BOTH NEW LOTS WILL BE SUBJECT TO ACCESS AND UTILITY EASEMENTS.
 4. EXISTING TOPOGRAPHY AND PROPERTY LINE INFORMATION ARE THE WORK PRODUCT OF HS&T GROUP, INC.

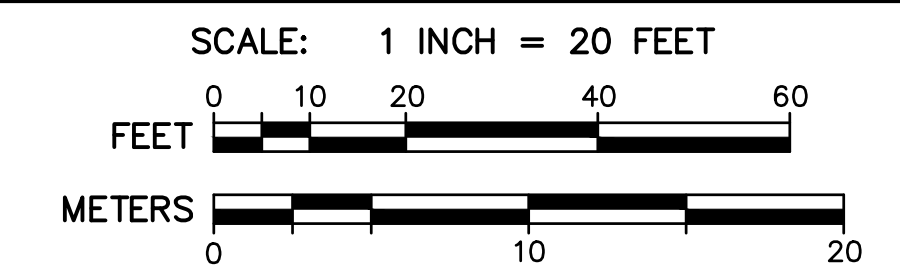


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 Telephone (508)-399-9993 james@expeditedengineers.com

CLT. NO.	525	JOB NO.	348-525
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DATE:	JULY 15, 2024	DWG NO.	36BUTLERSTREETCURRENT
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REVISIONS	
DATE:	DESCRIPTION
8/14/24	INITIAL REVIEW
8/23/24	INITIAL REVIEW
9/20/24	CITY REVIEW



**SITE PLAN OF LAND
 AT 36 BUTLER STREET
 IN
 WORCESTER, MASSACHUSETTS**
 PREPARED FOR APPLICANT/OWNER:
GM PROPERTIES, LLC
 234 SPRING STREET
 SHREWSBURY, MA 01545

THIS SITE IS LOCATED IN THE RL-7 ZONING DISTRICT. THE REQUIREMENTS OF THE RL-7 ZONING DISTRICT FOR SINGLE-FAMILY ATTACHED (TOWNHOUSE STYLE) HOUSING ARE AS FOLLOWS:

3,000 S.F. PER DWELLING UNIT AND ALSO 25 FEET OF FRONTAGE PER DWELLING UNIT.

THIS PLAN PROPOSES 11 NEW HOUSING UNITS, 2 IN THE EXISTING BUILDING AND 9 IN SINGLE-FAMILY ATTACHED, TOWNHOUSE STYLE UNITS.

ZONING COMPLIANCE TABLES

LOT A -- EXISTING BUILDING

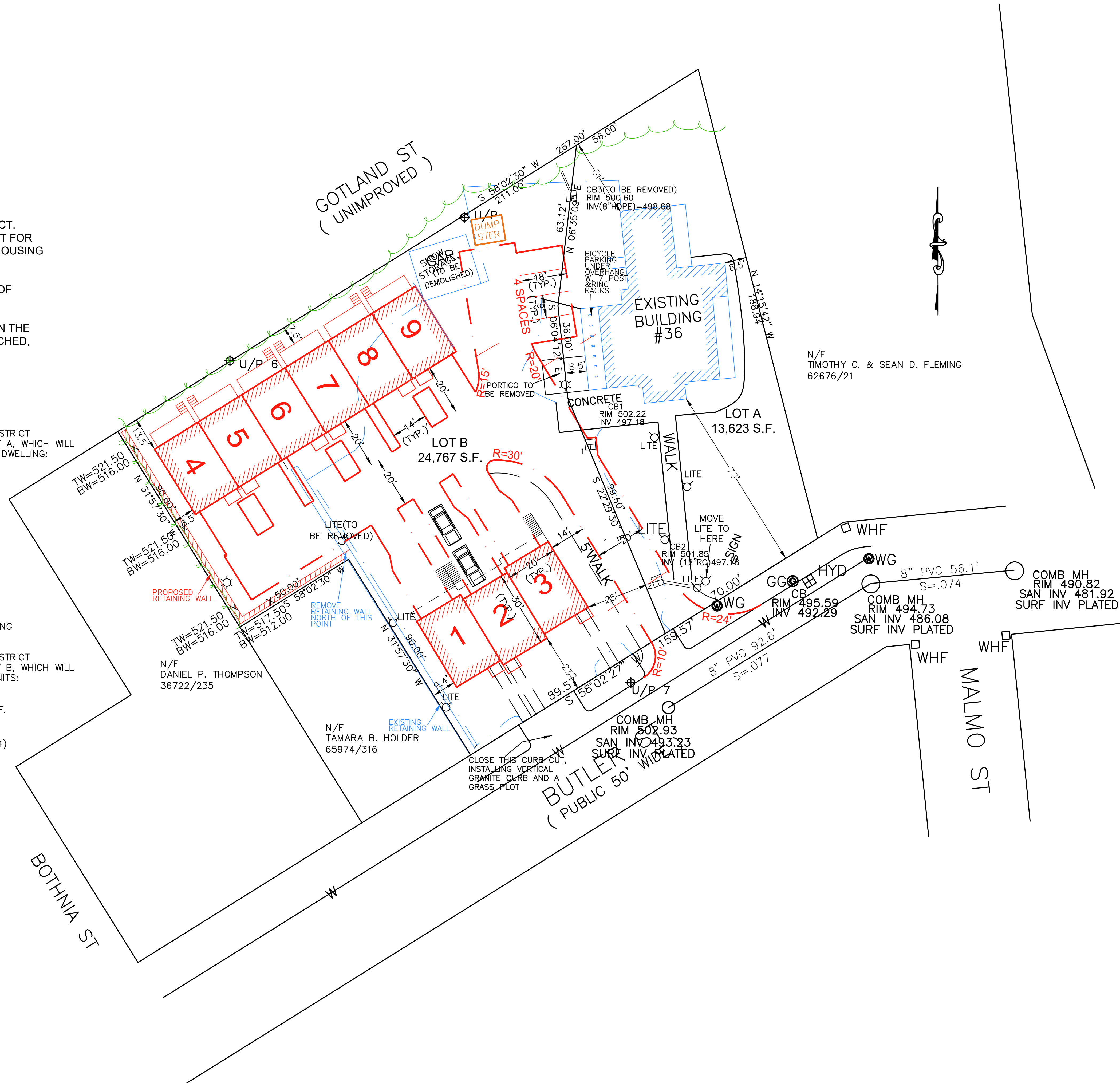
THE SITE IS LOCATED IN THE RL-7 ZONING DISTRICT. THE FOLLOWING TABLE COMPARES THE RL-7 ZONING DISTRICT REQUIREMENTS AND THE DIMENSIONS PROPOSED AT LOT A, WHICH WILL CONTAIN THE EXISTING BUILDING, TO BE A TWO FAMILY DWELLING:

DIMENSION	REQUIREMENT	PROPOSED
MIN. LOT AREA(S.F.)	8,000	13,623 S.F.
MIN. FRONTAGE (FT.)	70'	70'
MIN. FRONT YARD(FT.)	20'	73'
MIN. SIDE YARD(FT.)	8'	8.5'
MIN. REAR YARD(FT.)	20'	31'
MAX. # OF STORIES	2+	2+
MAX. BUILDING HEIGHT(FT.)	35'	~35'
FLOOR TO AREA RATIO	N/A	0.34
REGULARITY FACTOR	0.40	0.83
PARKING (2 SPACES PER D.U.)	4	0
FRONT SETBACK IMPERVIOUS	<50%	27.0%

LOT B -- PROPOSED SINGLE-FAMILY, ATTACHED HOUSING

THE SITE IS LOCATED IN THE RL-7 ZONING DISTRICT. THE FOLLOWING TABLE COMPARES THE RL-7 ZONING DISTRICT REQUIREMENTS AND THE DIMENSIONS PROPOSED AT LOT B, WHICH WILL CONTAIN 9 NEW SINGLE-FAMILY, ATTACHED HOUSING UNITS:

DIMENSION	REQUIREMENT	PROPOSED
MIN. LOT AREA(S.F.)(3K PER D.U.)	27,000	24,767 S.F.
MIN. FRONTAGE (FT.)(25 PER D.U.)	225'	89.57'
MIN. FRONT YARD(FT.)	20'	23'
MIN. SIDE YARD(FT.)	8'	8.5'(Unit 4)
MIN. REAR YARD(FT.)	20'	7.5'
MAX. # OF STORIES	2+	2+
MAX. BUILDING HEIGHT(FT.)	35'	~30'
FLOOR TO AREA RATIO	N/A	0.44
REGULARITY FACTOR	0.40	0.75
PARKING (2 SPACES PER D.U.)	18	22
FRONT SETBACK IMPERVIOUS	<50%	30.1%



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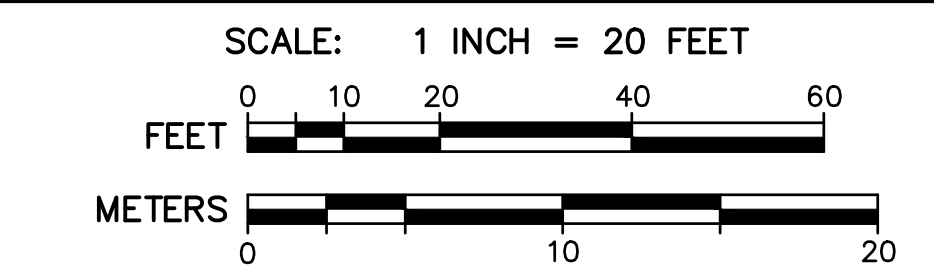
	EXISTING 2' CONTOUR
	EXISTING 10' CONTOUR
	EXISTING EDGE OF PAVEMENT
	UTILITY POLE
	OVERHEAD WIRES
	EXISTING HYDRANT
	EXISTING LIGHT
	STONE WALL
	EXISTING CATCH BASIN
	PROPOSED PAVEMENT CURB
	PROPOSED LIGHT
	PROPOSED TREELINE

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 2. THE SITE IS LOCATED IN THE RL-7 ZONING DISTRICT.
 3. BOTH NEW LOTS WILL BE SUBJECT TO ACCESS AND UTILITY EASEMENTS.
 4. THE EXISTING PAVED PARKING SURFACE THAT SERVED THE FUNERAL HOME WILL BE REMOVED.

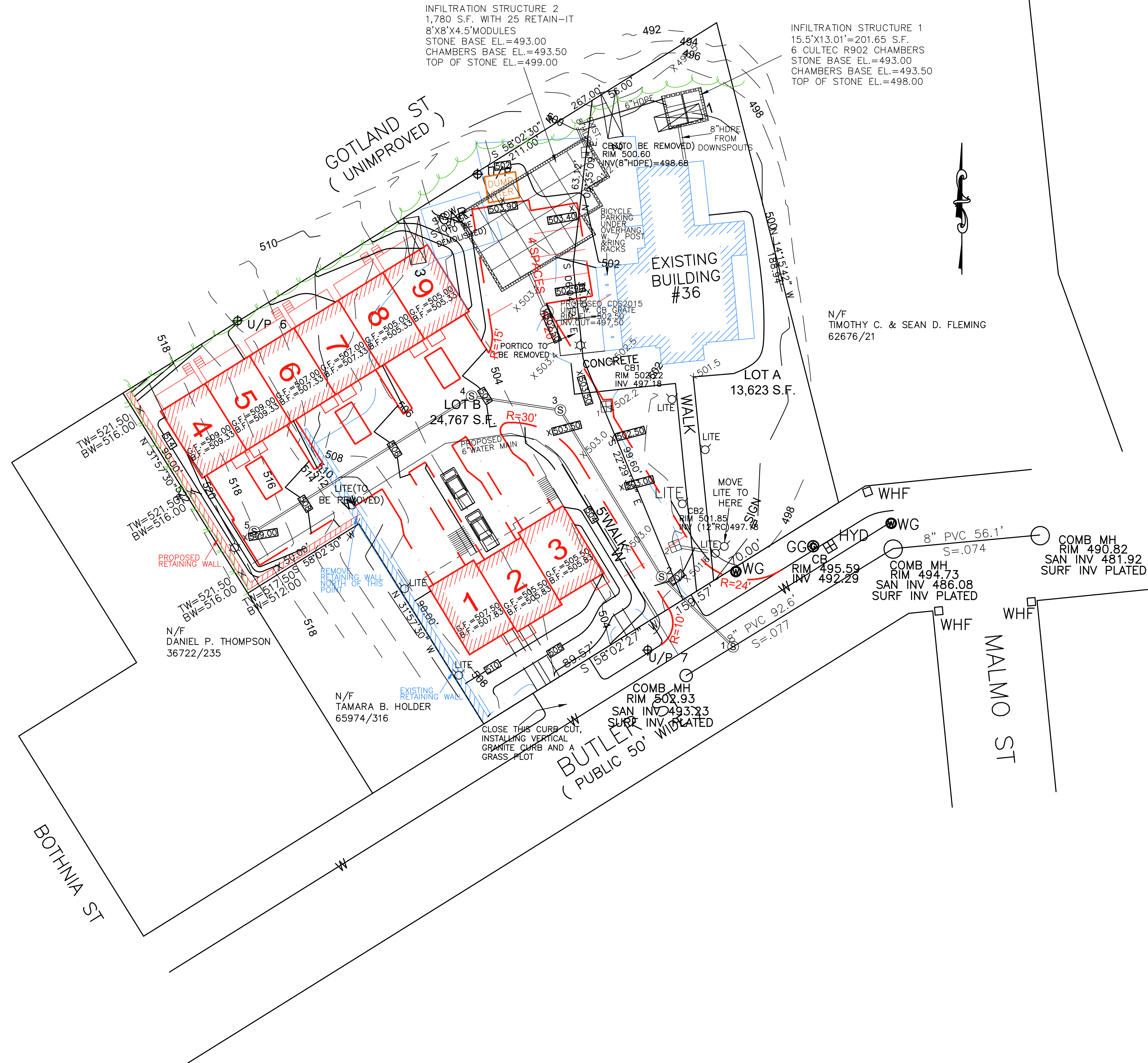
EXPEDITED ENGINEERING, LLC
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 SHREWSBURY, MA 01545



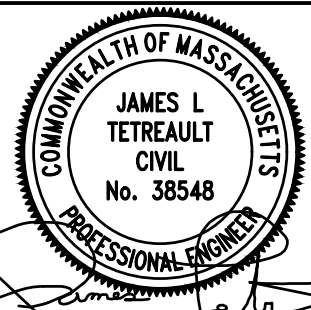
INFILTRATION STRUCTURE 2
 1,780 S.F. WITH 25 RETAIN-IT
 8'X8'X4.5'M MODULES
 STONE BASE EL.=493.00
 CHAMBERS BASE EL.=493.50
 TOP OF STONE EL.=499.00

INFILTRATION STRUCTURE 1
 15.5'X13.01'=201.65 S.F.
 6 CULTEC R902 CHAMBERS
 STONE BASE EL.=493.00
 CHAMBERS BASE EL.=493.50
 TOP OF STONE EL.=498.00

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	OVERHEAD WIRES
	EXISTING HYDRANT
	STONE WALL
	EXISTING CATCH BASIN
	PROPOSED PAVEMENT CURB
	PROPOSED CONTOUR
	PROPOSED LIGHT
	PROPOSED SANITARY SEWER MANHOLE
	PROPOSED 6" WATER MAIN
	DEEP OBSERVATION HOLE EXCAVATED ON 4-19-24
	PROPOSED TREELINE

NOTES:
 1. SEE SHEET D8 FOR DETAILS OF THE TWO PROPOSED INFILTRATION STRUCTURES.
 2. SEE SHEET D9 FOR A DETAIL OF THE PROPOSED CDS STORMWATER FILTRATION UNIT WITH A CATCH BASIN TOP.

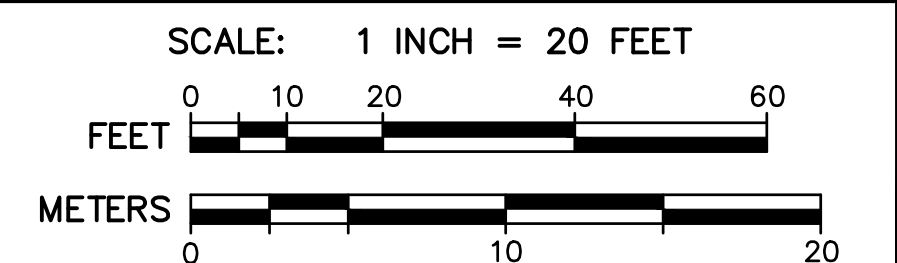


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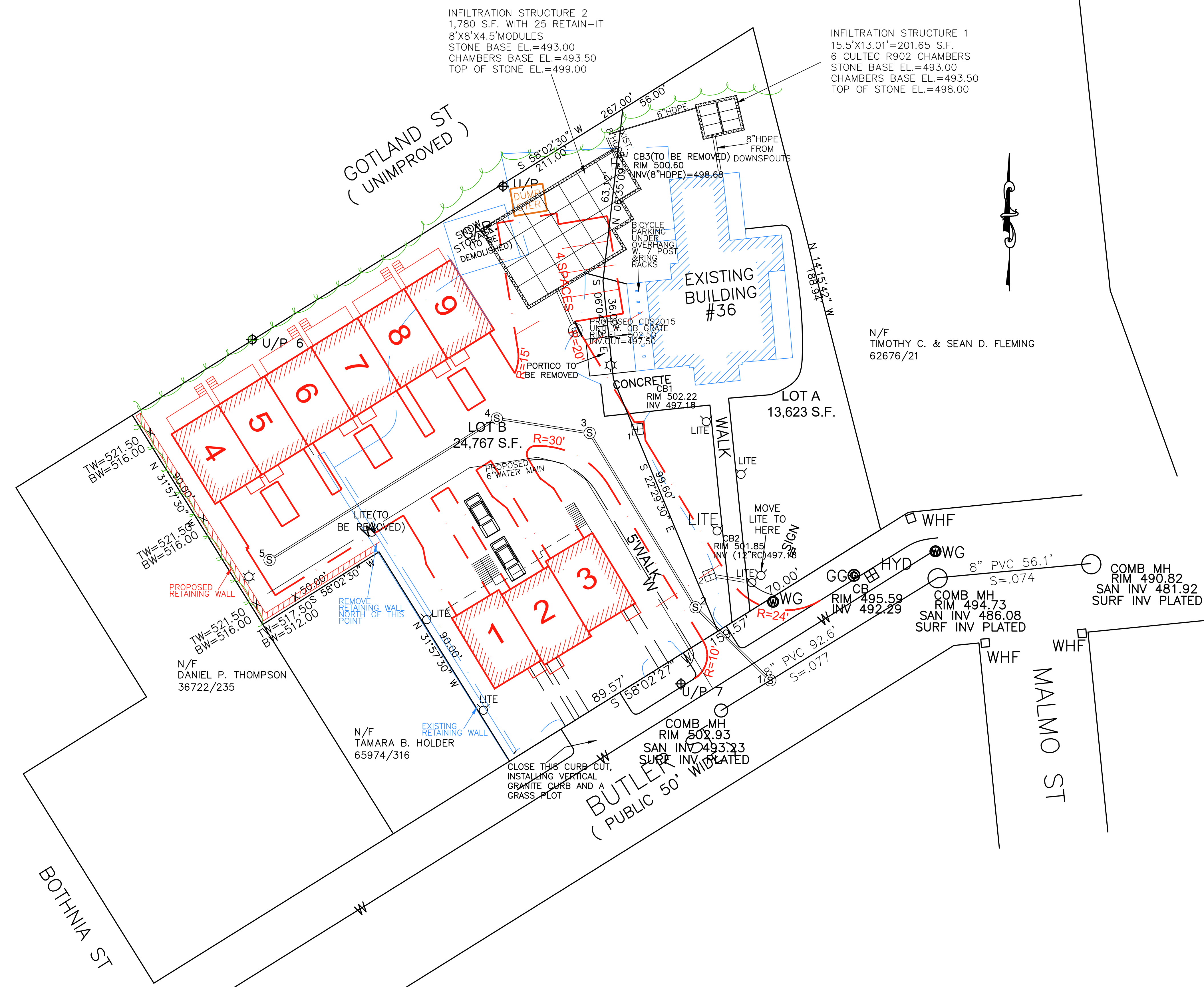
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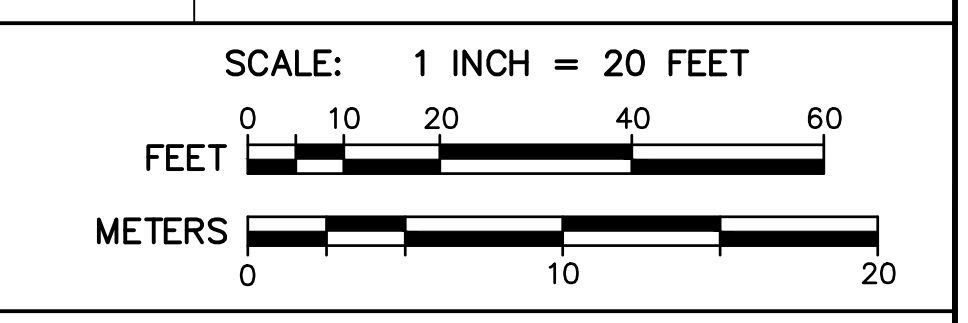
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- EXISTING CATCH BASIN
- PROPOSED PAVEMENT CURB
- PROPOSED LIGHT
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED 6" WATER MAIN
- PROPOSED TREELINE

NOTES:

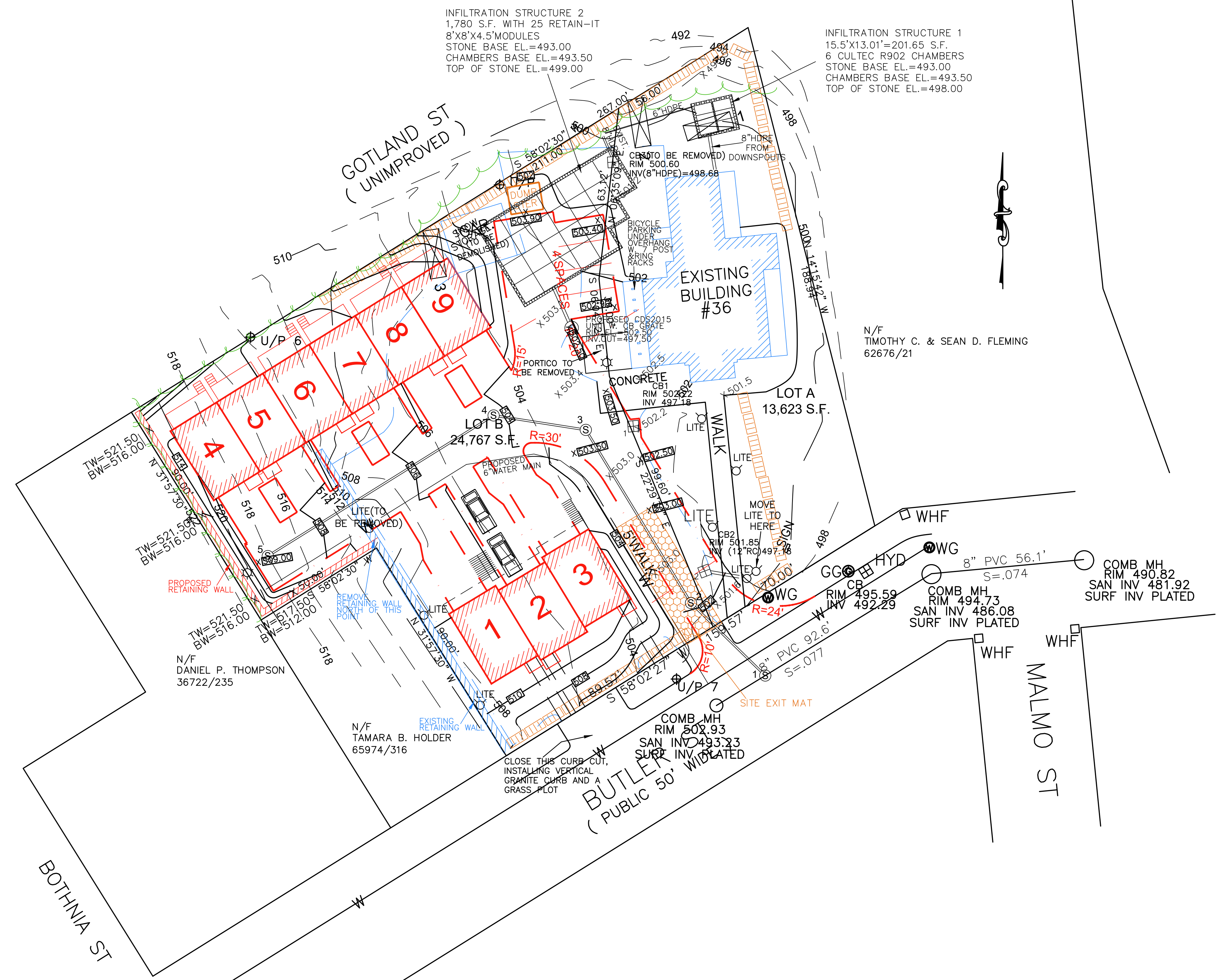
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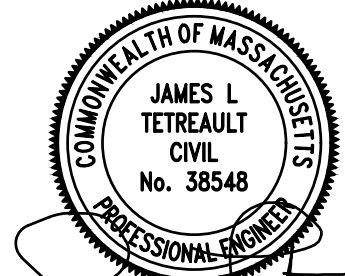


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 UTILITY PLAN U4

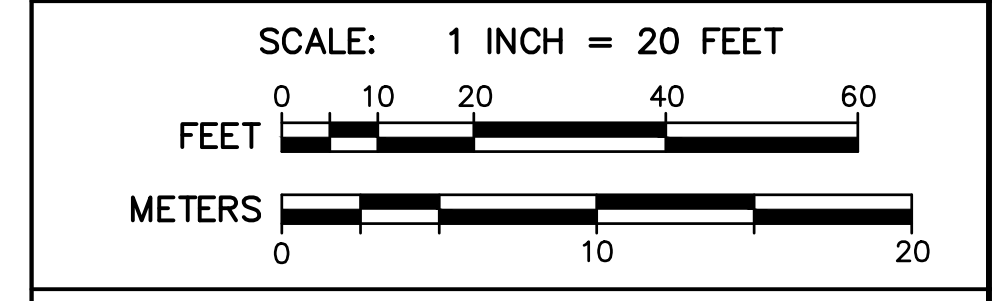


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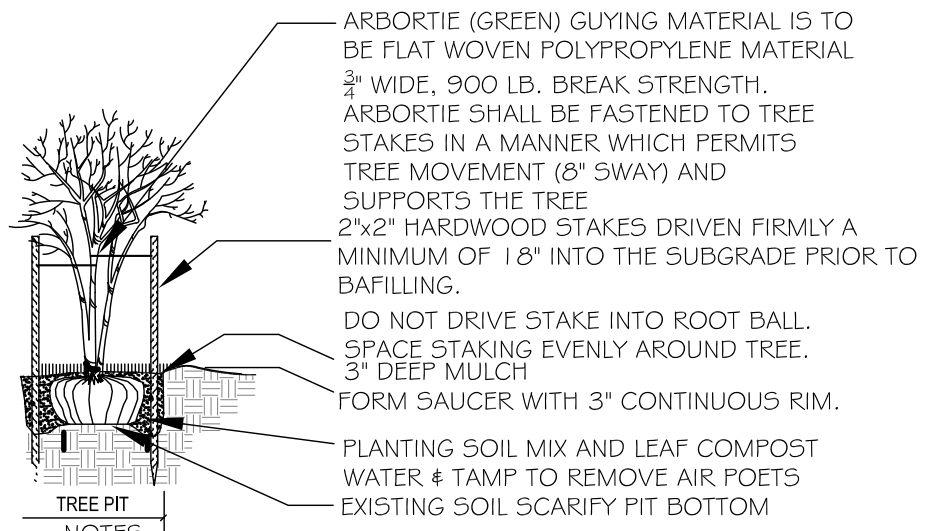
- — — — — EXISTING 2' CONTOUR
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- — — — — EXISTING EDGE OF PAVEMENT
- — — — — UTILITY POLE
- — — — — OHW — — — — — OVERHEAD WIRES
- — — — — EXISTING HYDRANT
- — — — — STONE WALL
- — — — — EXISTING CATCH BASIN
- — — — — PROPOSED PAVEMENT CURB
- 502 — — — — — PROPOSED CONTOUR
- — — — — PROPOSED LIGHT
- — — — — PROPOSED SANITARY SEWER MANHOLE
- W — — — — — PROPOSED 6" WATER MAIN
- — — — — DEEP OBSERVATION HOLE EXCAVATED ON 4-19-24
- — — — — PROPOSED SEDIMENT CONTROL BARRIER
- — — — — PROPOSED TREELINE


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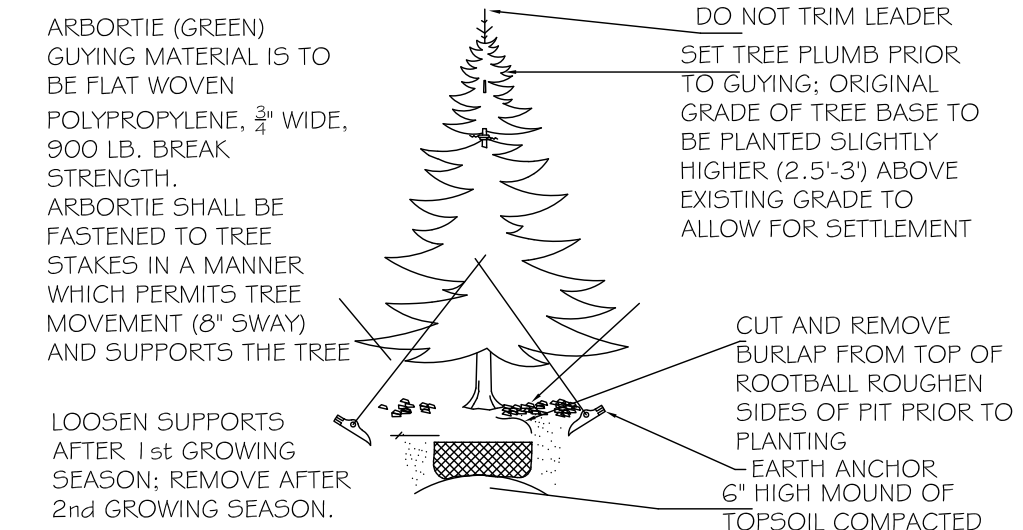


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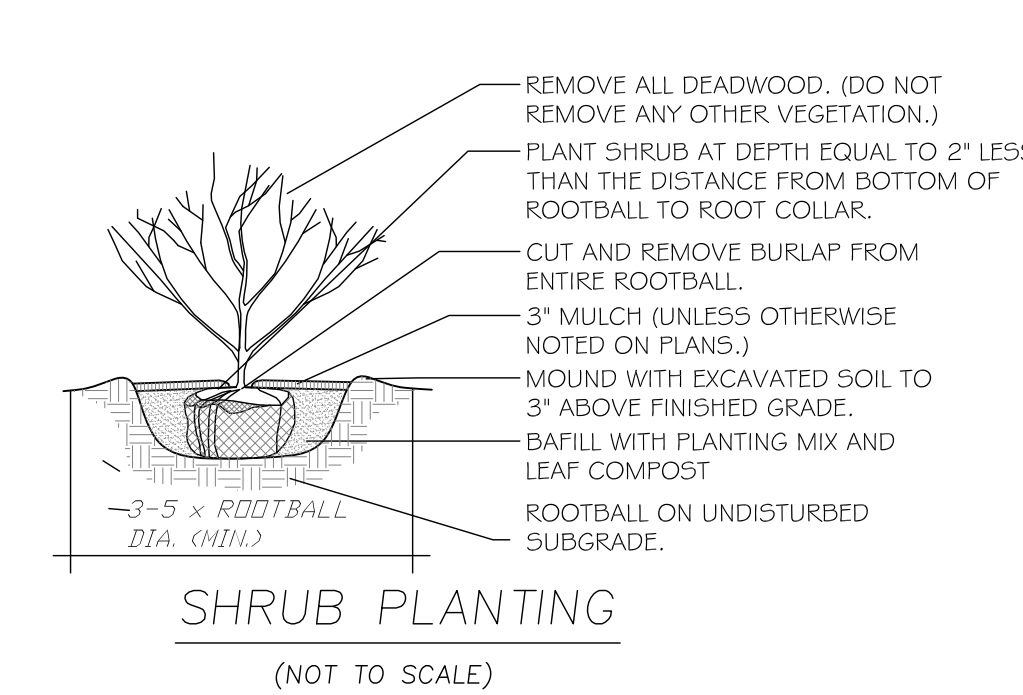
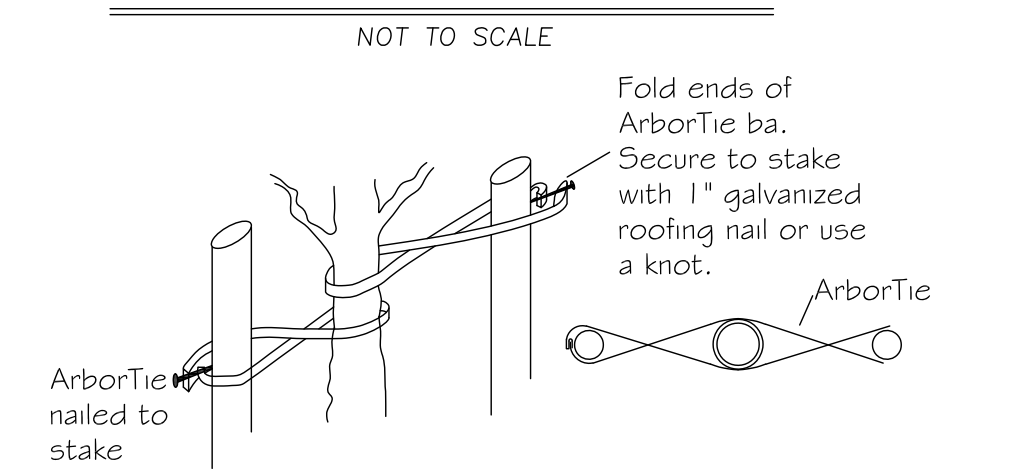


- NOTES:
1. STAKE TO MAIN BRANCHES AS NECESSARY FOR FIRM SUPPORT.
 2. PLANT SO THAT TOP OF ROOT BALL IS EVEN WITH THE FINISHED GRADE.
 3. GUY WIRE SHALL NOT TOUCH OR RUB ADJACENT TRUNKS OR BRANCHES.
 4. REMOVE ALL CONTAINERS AND BASKETS FROM ROOT BALL.
 5. REMOVE BURLAP FROM TOP ONE THIRD OF ROOT BALL.
 6. LOOSEN ROOTBALL PRIOR TO PLANTING.

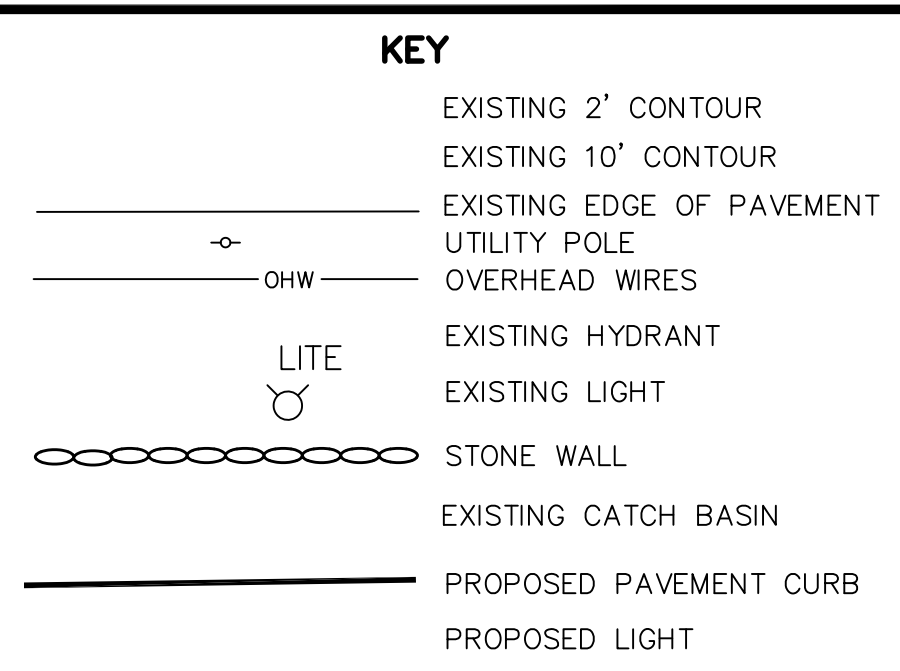
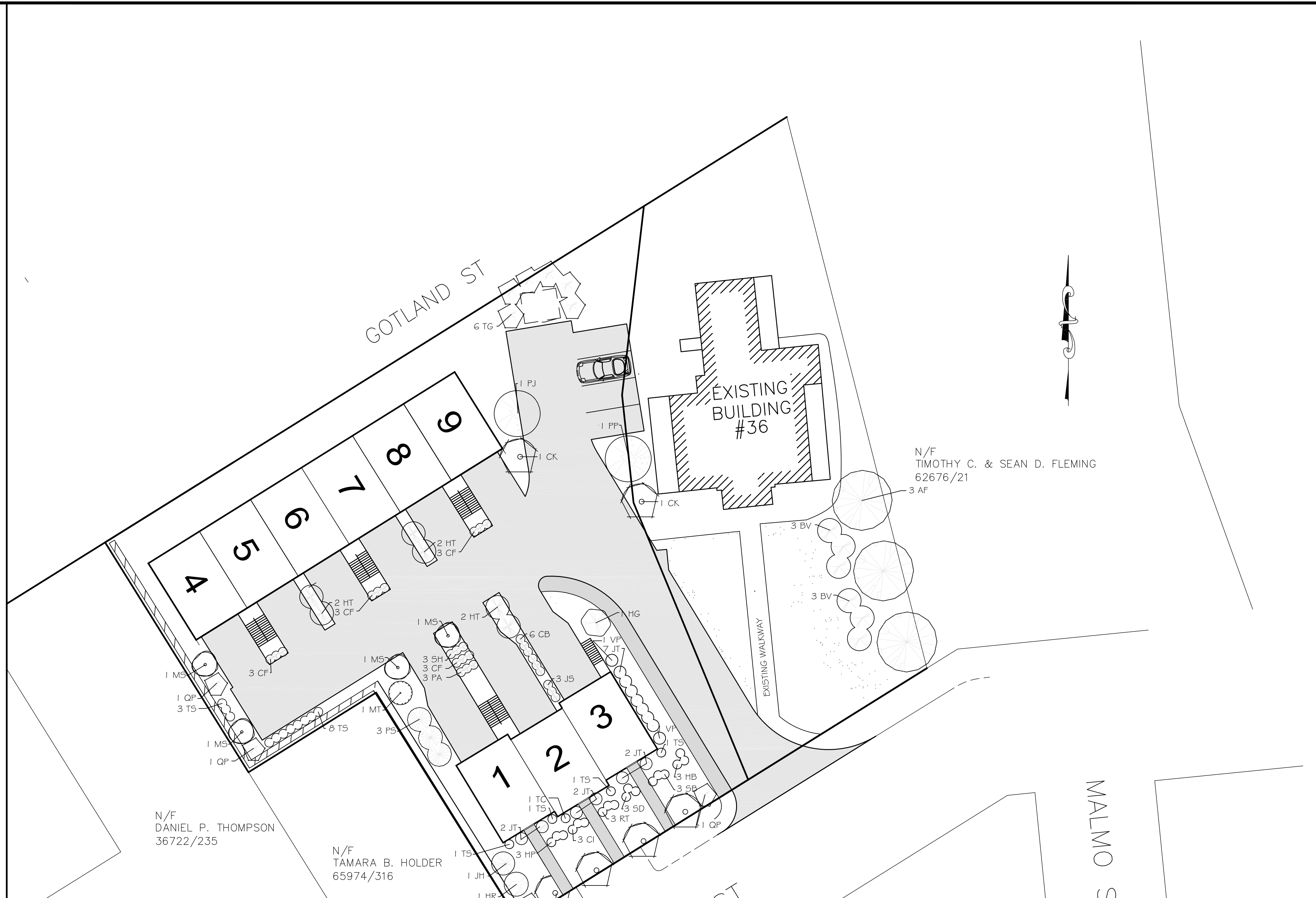
DECIDUOUS TREE PLANTING
NOT TO SCALE



EVERGREEN TREE PLANTING
NOT TO SCALE



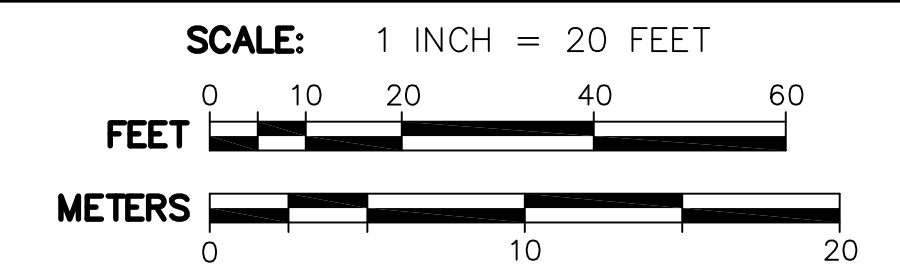
- LANDSCAPING NOTES**
1. NOTIFY DIG-SAFE AT 1-888-DIG-SAFE AND LOCAL AUTHORITIES PRIOR TO ANY TYPE OF SITE PREPARATION OR CONSTRUCTION.
 2. THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIAL AND MULCH IN SUFFICIENT QUANTITIES TO COMPLETE PLANTING AS SHOWN ON THE DRAWINGS.
 3. DRAWING QUANTITIES TAKE PRECEDENCE OVER PLANT LIST QUANTITIES.
 4. ALL PLANT MATERIAL SHALL CONFORM TO THE GUIDELINES SET FORTH BY THE AMERICAN NURSERY & LANDSCAPE ASSOCIATION.
 5. ALL TREES AND SHRUBS SHALL BE PLANTED WITH THE "BEST FACE" SHOWING. ALL PLANTS SHALL BE BALLED AND BURLAPPED OR CONTAINER GROWN, UNLESS OTHERWISE APPROVED BY THE LANDSCAPE ARCHITECT.
 6. ALL CONTAINER GROWN STOS SHALL BE HEALTHY, VIGOROUS, WELL ROOTED AND ESTABLISHED IN THE CONTAINER IN WHICH THEY ARE GROWING. THEY SHALL HAVE TOPS OF GOOD QUALITY, NO APPARENT INJURY AND BE IN A HEALTHY GROWING CONDITION. A CONTAINER GROWN PLANT SHALL HAVE A WELL ESTABLISHED ROOT SYSTEM REACHING THE SIDES OF THE CONTAINER TO MAINTAIN A FIRM BALL.
 7. THE QUALITY OF ALL TREES & SHRUBS IS TO BE NORMAL FOR THE SPECIES. ALL PLANTS ARE TO HAVE DEVELOPED ROOT SYSTEMS, TO BE FREE OF INSECTS AND DISEASES AS WELL AS MECHANICAL INJURIES, AND IN ALL RESPECTS BE SUITABLE FOR PLANTINGS.
 8. ALL CONIFERS SHALL HAVE DORMANT BUDS AND SECONDARY NEEDLES.
 9. WHERE SPECIFIED, CALIPER SIZE IS TO BE THE OVERRIDING FACTOR IN TREE SELECTION. CALIPER SIZE SHALL BE MEASURED 12\"/>
 - 10. ALL DISTURBED AREAS NOT SHOWN OTHERWISE SHALL BE LOAMED AND SEEDED AND BLENDED INTO EXISTING GRADE AND CONDITIONS.
 - 11. PRIOR TO INSTALLING ANY PLANT MATERIAL, THE CONTRACTOR SHALL SUBMIT A LOAM SOIL SAMPLE FOR A ROUTINE, ORGANIC, SALTS, AND NITRATE SOIL TEST. UPON THE RESULTS OF THIS TEST, THE CONTRACTOR SHALL AMEND THE LOAM AS RECOMMENDED.
 - 12. LAWN SEED MIX SHALL BE THE PREVIOUS YEARS CROP: 35% JEFFERSON KENTUW BLUEGRASS, 35% CARMEN CHEWING FESCUE AND 30% STALLION PERENNIAL RYEGRASS, OR APPROVED EQUAL PLANT AT A RATE OF 1 LB. PER 150 SQUARE FEET.
 - 13. SLOPE SEED MIX SHALL BE THE PREVIOUS YEARS CROP: PLANT AT A RATE OF 1 LB. PER 150. SQUARE FEET. SEED MIX SHALL BE STALLION PERENNIAL RYE 10%, CREEPING RED FESCUE 50%, ANNUAL RYE GRASS 15%, JEFFERSON KENTUW BLUE GRASS 10%, RED TOP CLOVER 5%, AND LADINO CLOVER 5%, OR APPROVED EQUAL PLANT AT A RATE OF 1 LB. PER 150SF.
 - 14. LAWN SEED AREAS SHALL NOT BE DEEMED ACCEPTABLE UNTIL IN EXCESS OF 90% OF EACH AREA, INDEPENDENTLY, IS GERMINATED, GROWING AND DISPLAYING HEALTHY, UNIFORM GROWTH AND HAS BEEN CUT TWICE. THE SITE CONTRACTOR IS RESPONSIBLE FOR APPLYING AT A MINIMUM 1\"/>
 - 15. THE HYDRO SEED SLURRY SHALL BE A WOOD BASED BONDED FIBER MATRIX. THE APPLICATION RATE SHALL BE 3,500-4,000LB. PER ACRE SPRAYED IN A LEAST TWO DIRECTIONS. DO NOT APPLY HYDRO SEED SLURRY IF RAIN IS EXPECTED WITHIN 12 HOURS, AND WHEN TEMPERATURES ARE BELOW 50 DEGREES.
 - 16. PRIOR TO PLANTING, THE LANDSCAPER SHALL REVIEW AND COORDINATE WITH THE SITE UTILITY PLAN AND GRADING PLAN.
 - 17. THE ROOTS OF NEWLY PLANTED TREES AND SHRUBS MUST BE KEPT STEADILY MOIST, AS THE DEVELOPING ROOTS ESTABLISH IN THE NEW SOIL. AT PLANTING, WATER THOROUGHLY TO SOAK THE ROOTS AND TO SETTLE THE NEW SOIL AROUND THE ROOT BALL THE AMOUNT OF SUPPLEMENTAL WATER NEEDED EACH WEEK DURING THE FIRST GROWING SEASON AFTER PLANTING DEPENDS ON RECENT RAINFALL, TEMPERATURE, AND WIND. IF LESS THAN ONE-INCH OF RAIN HAS FALLEN OVER THE PAST FIVE TO SEVEN DAYS, THE NEW PLANTINGS MUST BE WATERED. LAWNS, TREES, AND SHRUBS WATERING SHALL OCCUR AT A MINIMUM OF TWO (2) TIMES A DAY FOR THE FIRST TWO (2) MONTHS; ONCE IN THE EARLY MORNING AND THEN THE OTHER IN THE LATE AFTERNOON. IN GENERAL TEN GALLONS OF WATER APPLIED TWICE A WEEK WILL WET A 20'-24\"/>
 - 18. WITHIN THE LANDSCAPE BEDS ADJACENT TO THE BUILDING FOUNDATIONS, NO (HEMLO, PINE, SPRUCE, OR CEDAR) MULCH OR OTHER COMBUSTIBLE LANDSCAPE MATERIALS SHALL BE INSTALLED WITHIN 18\"/>
 - 19. ALL LANDSCAPE BEDS SHALL RECEIVE THREE-INCHES OF BARK MULCH.
 - 20. LANDSCAPE AREAS SHALL BE DEEP TILLED TO A DEPTH OF TWELVE INCHES TO FACILITATE DEEP WATER PENETRATION.
 - 21. ALL TREE AND VEGETATION REMOVAL SHALL BE IN COORDINATION WITH THE PROJECT LANDSCAPE ARCHITECT.



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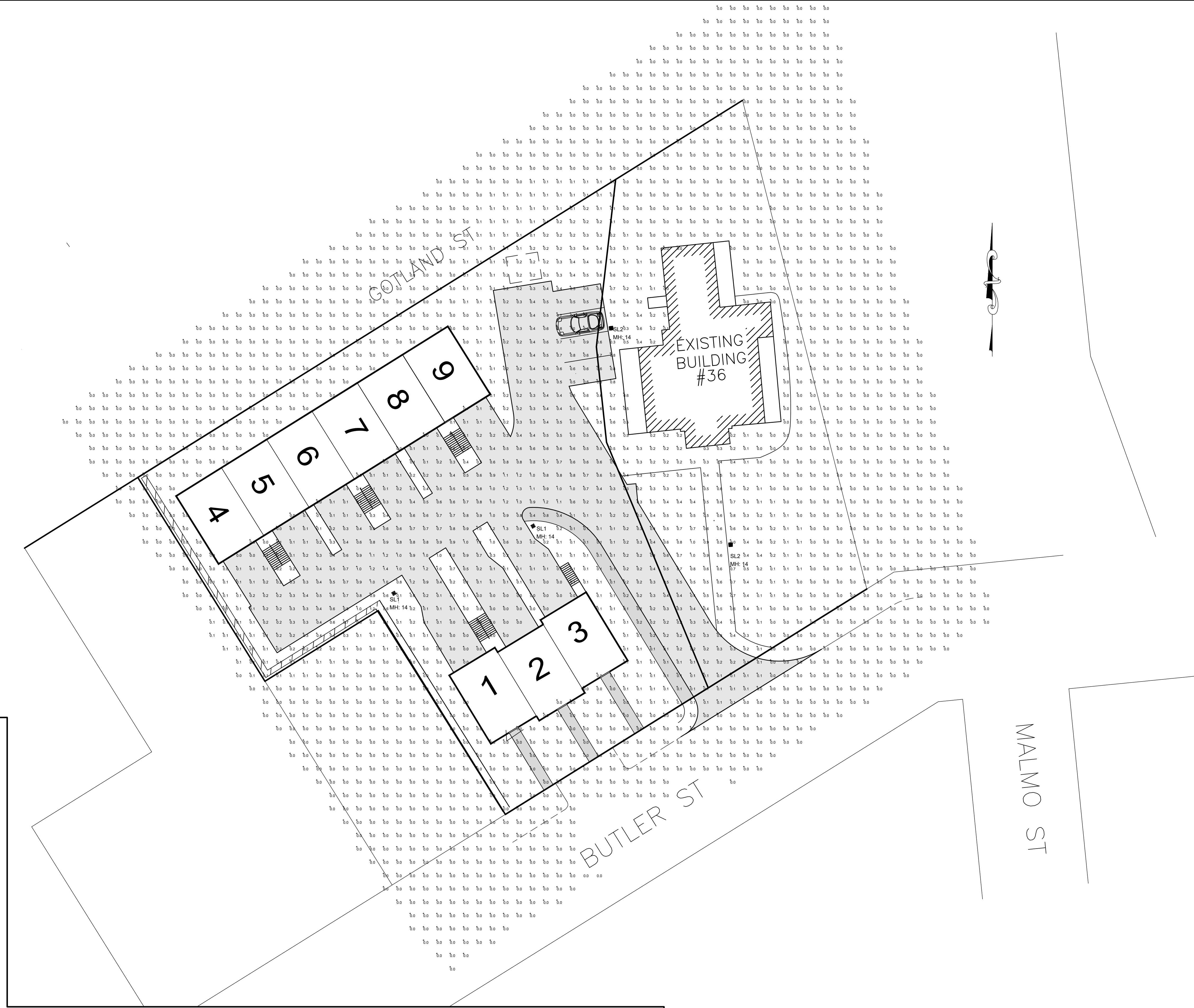
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LANDSCAPE PLAN LS6

Qty.	Key	Common Name	Botanical Name	Size	Remarks
TREES					
3	AF	'Freeman' Maple	<i>Acer x freemanii</i>	3" Cal.	B&B
6	BV	'Fox Valley' Birch	<i>Betula nigra 'Little King' Fox Valley</i>	6'Ht.	B&B multi-stem
6	CK	Chinese Dogwood	<i>Cornus kousa chinensis</i>	3" Cal.	B&B
1	HG	'Gracilis' Hinoki Cypress	<i>Cham. obtusa 'Gracilis'</i>	6' Ht.	B&B
6	HT	'Tardiva' Hydrangea	<i>Hydrangea paniculata 'Tardiva' treeform</i>	3" Cal.	B&B
1	JH	'Hollywood' Juniper	<i>Juniperus chinensis 'Hollywood'</i>	48" Ht.	B&B
4	MS	'Sargent' Crabapple	<i>Malus sp. 'Sargent'</i>	3" Cal.	B&B
1	MT	'Jane' Magnolia	<i>Magnolia x 'Jane'</i>	8" Ht.	B&B
1	PJ	White Spruce	<i>Picea glauca</i>	6" Ht.	B&B
1	PP	Blue Spruce	<i>Picea pungens</i>	6" Ht.	B&B
3	PS	Columnar White Pine	<i>Pinus strobus 'Fastigiata'</i>	6" Ht.	B&B
4	QP	'Green Pillar' Oak	<i>Quercus palustris 'Green Pillar'</i>	3" Cal.	B&B
6	TG	'Green Giant' Arborvitae	<i>Thuja standishii 'Green Giant'</i>	8" Ht.	B&B
15	TS	'Degroots Spire' Arborvitae	<i>Thuja occidentalis 'Degroots spire'</i>	8" Ht.	B&B
SHRUBS					
3	CI	'Farrow' Artic Fire Dogwood	<i>Cornus stolonifera 'Farrow'</i>	24" Ht.	B&B
3	HB	'Endless Summer' Hydrangea	<i>Hydrangea macro. 'Endless Summer'</i>	24" Ht.	B&B
5	HP	'Golden Cup St. John's Wort	<i>Hypericum Hideout</i>	24" Ht.	B&B
1	HR	'Blue Chiffon' Hibiscus	<i>Hibiscus syriacus 'Rose Satin'</i>	5" Ht.	B&B
3	JS	'Sky Pencil' Holly	<i>Ilex crenata 'Sky pencil'</i>	48" Ht.	B&B
6	JT	'Steed's' Holly	<i>Ilex crenata 'Steed's'</i>	48" Ht.	B&B
3	RT	'Blushing Drift' Rose	<i>Rosa sp. 'Blushing Drift'</i>	48" Ht.	B&B
1	TC	Irish Yew	<i>Taxus baccata 'Fastigiata'</i>	48" Ht.	B&B
3	SB	'Double Play Artist' Spirea	<i>Spirea japonica 'Double Play Artist'</i>	24" Ht.	B&B
3	SD	'Boomerang' Lilac	<i>Syringa x penda 'Boomerang'</i>	24" Ht.	B&B
2	VP	'Popcorn' Viburnum	<i>Viburnum plicatum 'Popcorn'</i>	48" Ht.	B&B
PERENNIALS					
6	CB	'Caspian' Reed Grass	<i>Calamagrostis brachytricha 'Caspian'</i>	#3 Pot	Container Grown
9	CF	'Foerester's' Feather Reed Grass	<i>Calamagrostis x acuti. 'Karl Foerester'</i>	#3 Pot	Container Grown
3	PA	'Red Head' Fountain Grass	<i>Pennisetum alopecuroides 'Red Head'</i>	#1 Pot	Container Grown
3	SH	'Hameln' Fountain Grass	<i>Pennisetum alopecuroides 'Hameln'</i>	#1 Pot	Container Grown



KEY

	EXISTING 2' CONTOUR
	EXISTING 10' CONTOUR
	EXISTING EDGE OF PAVEMENT
	UTILITY POLE
	OVERHEAD WIRES
	EXISTING HYDRANT
	EXISTING LIGHT
	STONE WALL
	EXISTING CATCH BASIN
	PROPOSED PAVEMENT CURB
	PROPOSED LIGHT

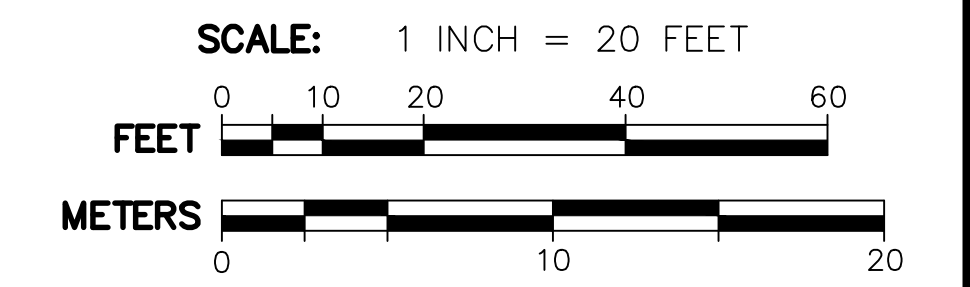
NOTES:

1. THE APPLICANT'S OWNERSHIP OF THE PROPERTY IS DERIVED FROM THE DEED RECORDED AT BOOK 70087 PAGE 335 AT THE WORCESTER DISTRICT REGISTRY OF DEEDS. SHOWN.
2. THE SITE IS LOCATED IN THE RL-7 ZONING DISTRICT.
3. BOTH NEW LOTS WILL BE SUBJECT TO ACCESS AND UTILITY EASEMENTS.



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 Professional Engineers & Erosion Control Specialists
 118 Turnpike Road, Suite 300, Southborough, MA 01772
 Telephone (508)-399-9993 james@expeditedengineers.com

CLT. NO.	525	JOB NO.	348-525
DATE:	JULY 15, 2024	DWG. NO.	36BUTLERSTREETCURRENT
REVISIONS			
DATE:	DESCRIPTION		
8/14/24	NO REVISION		
8/23/24	NO REVISION		



SITE PLAN OF LAND
 AT 36 BUTLER STREET
 IN
 WORCESTER, MASSACHUSETTS

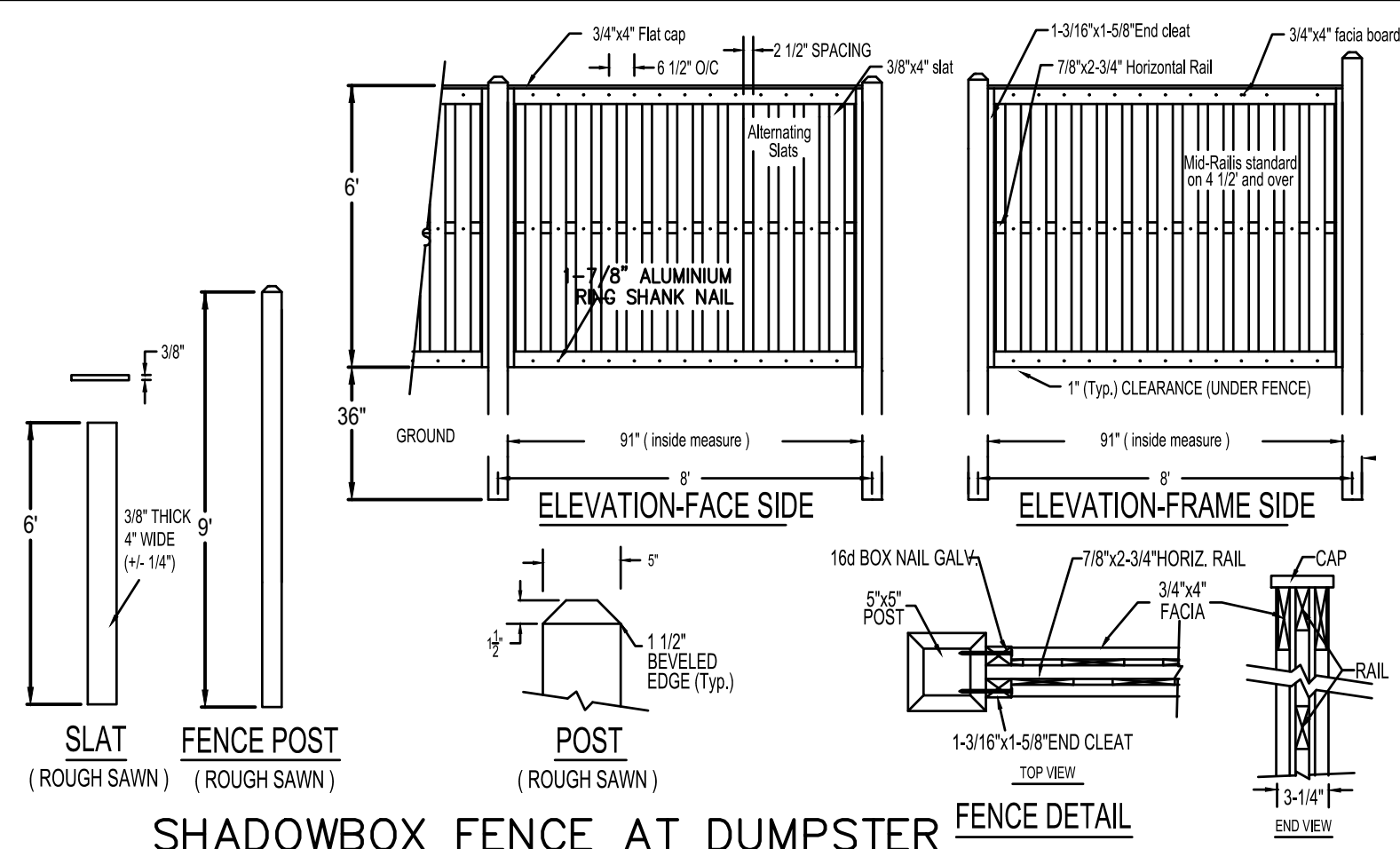
PREPARED FOR APPLICANT/OWNER:
 GM PROPERTIES, LLC
 234 SPRING STREET
 SHREWSBURY, MA 01545



PROPOSED LIGHT FIXTURE

Calculation Summary						
Label	Units	Avg	Max	Min	Avg/Min	Max/Min
SITE (ALL POINTS)	Fc	0.12	1.5	0.0	N.A.	N.A.
DRIVE	Fc	0.57	1.4	0.1	5.70	14.00

Luminaire Schedule				
Symbol	Label	Description	Lum. Watts	LLF
	SL1	STREETWORKS: UTLD-PA1-20-730-U-SL3-CL	21	0.900
	SL2	STREETWORKS: UTLD-PA1-20-730-U-T4W-CL	21	0.900

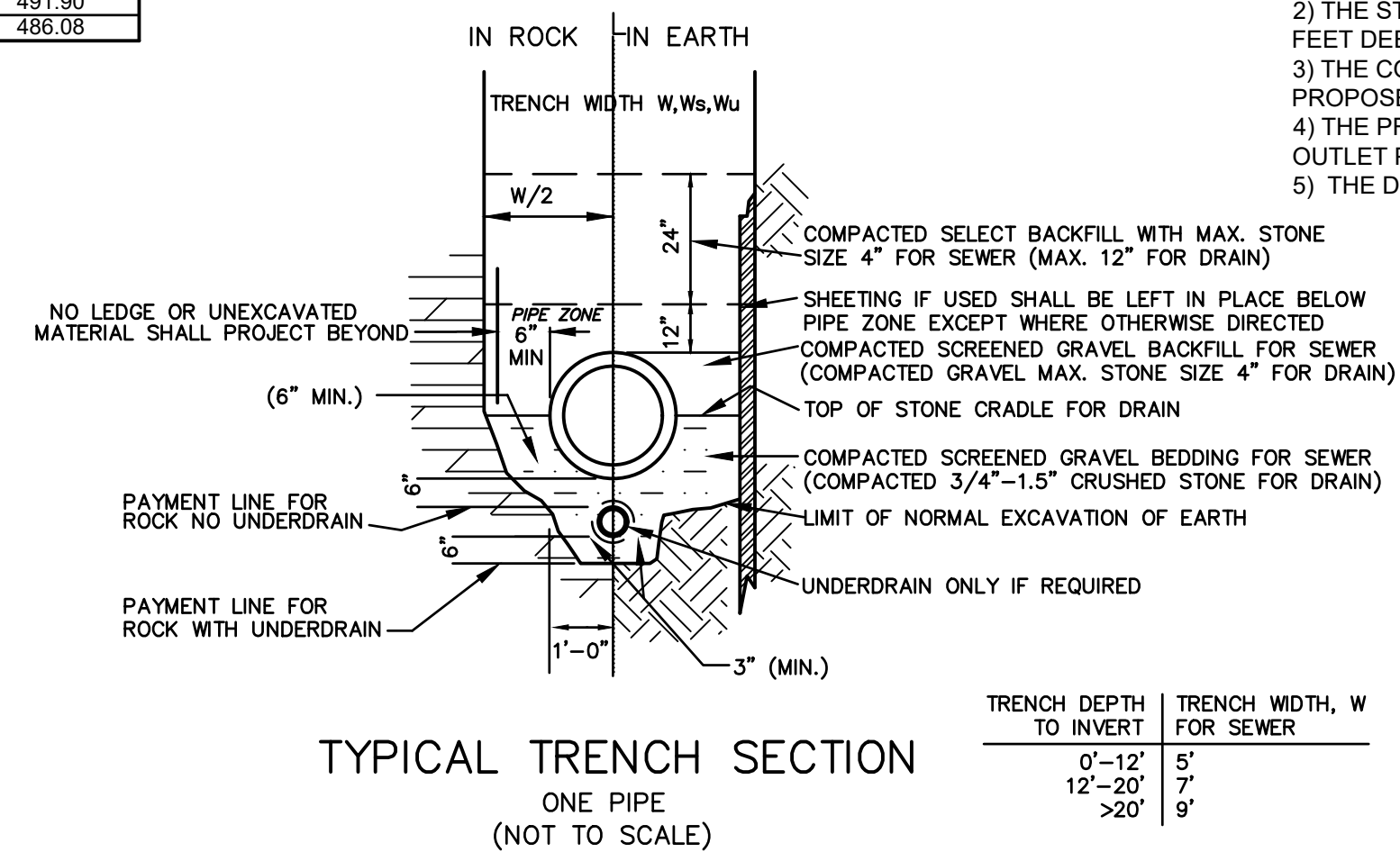
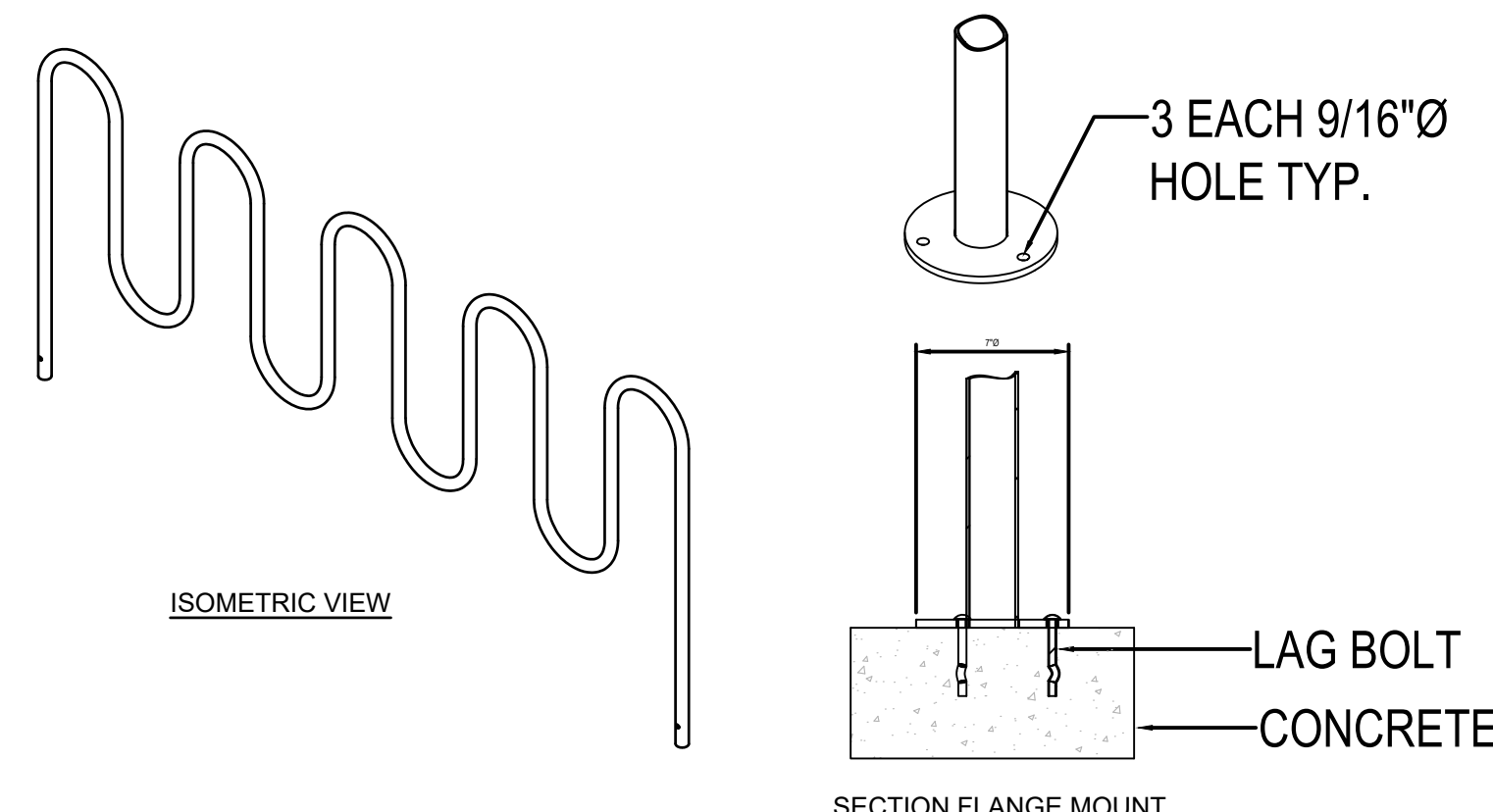


SHADOWBOX FENCE AT DUMPSTER FENCE DETAIL

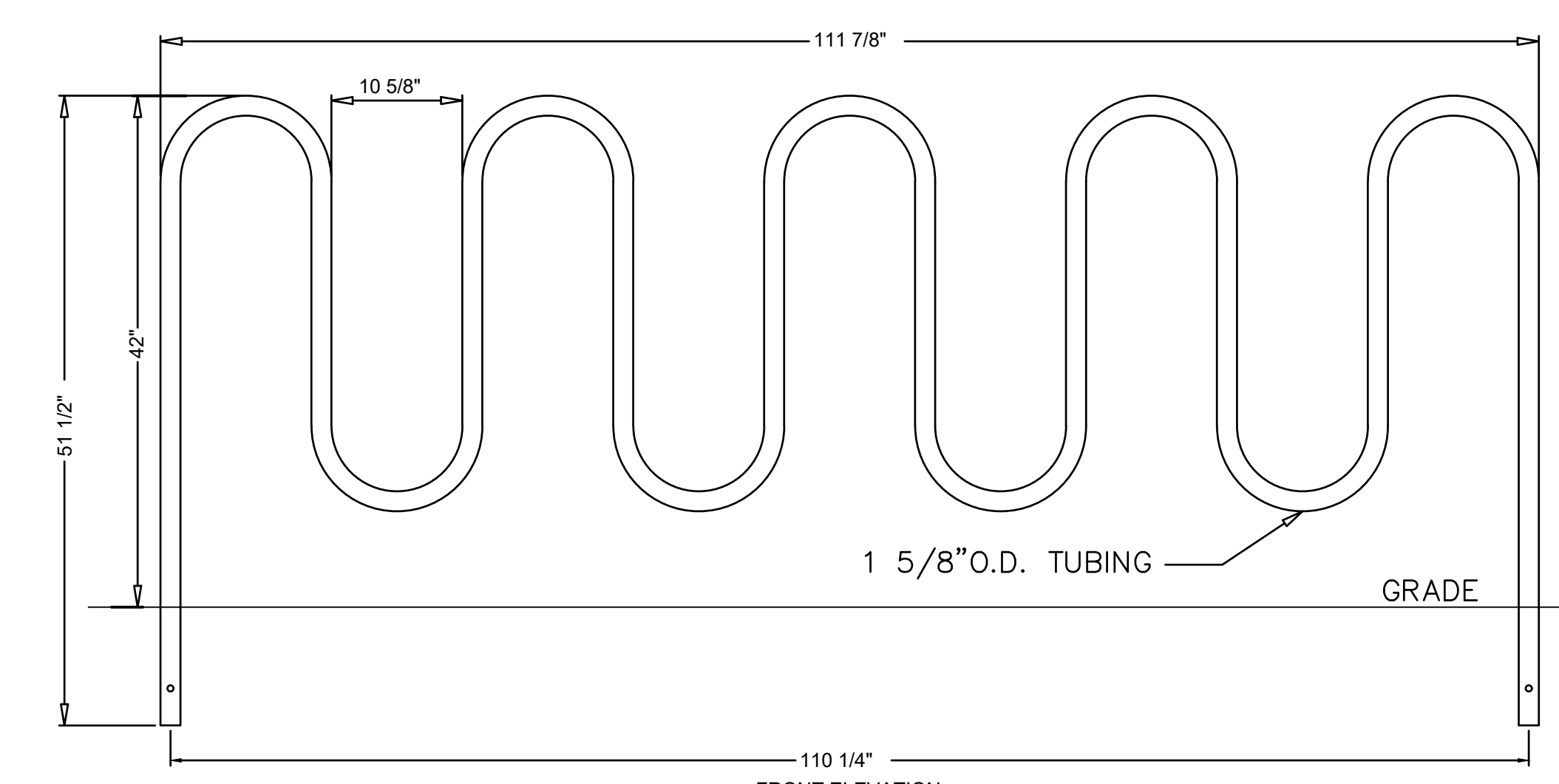
- NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
 2. SHADOWBOX FENCE TO BE 6' WALPOLE SHADOWBOX SCREEN FENCE, WALPOLE WOODWORKERS, O.O. BOX 151 WALPOLE, MA 02081, PHONE 1-800-343-6948, OR APPROVED EQUAL
 3. WOOD MATERIAL TO BE NORTHERN WHITE CEDAR
 4. THE FENCING SHALL BE GATED ON THE PARKING LOT SIDE FOR ACCESS.

SANITARY SEWER PIPE AND INVERT TABLE

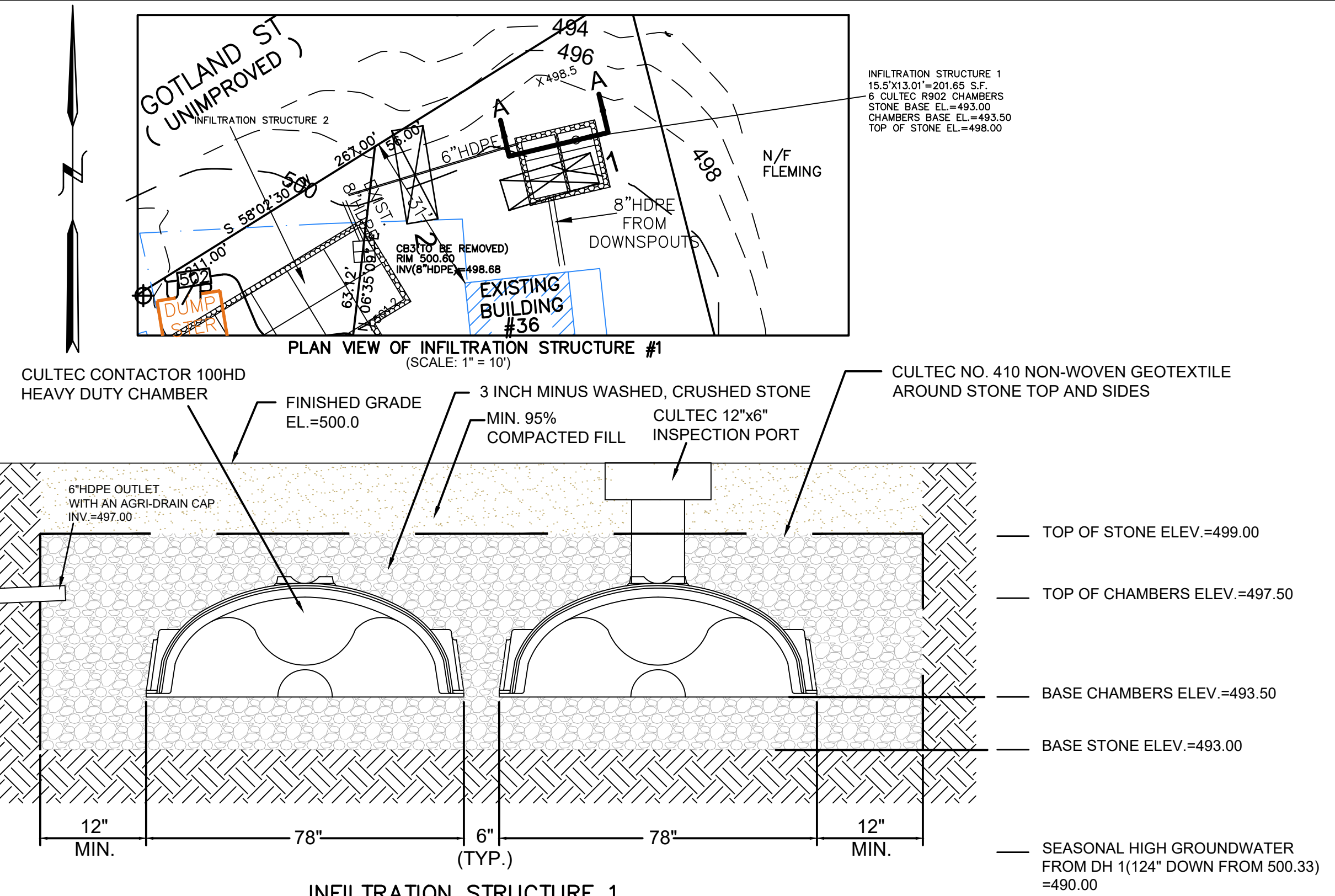
FROM STRUCTURE	RIM/GRATE	INVERT OUT	PIPE LENGTH (FT.)	SIZE (IN.)	SLOPE (FT/FT)	TYPE	TO STRUCTURE	INVERT IN	
TO PROPOSED SEWER MANHOLE IN BUTLER STREET									
SMH	5	508.85	503.00	95'	8"	0.061	PVC	SMH 4	497.20
SMH	4	504.10	497.00	31'	8"	0.032	PVC	SMH 3	496.00
SMH	3	503.50	495.80	71'	8"	0.028	PVC	SMH 2	493.80
SMH	2	502.15	493.60	35'	8"	0.049	PVC	SMH 1	491.90
SMH	1	501.07	491.61	68'	8"	0.081	PVC	EXISTING SMH	486.08



TRENCH DEPTH TO INVERT	TRENCH WIDTH, W FOR SEWER
0'-12"	5'
12'-20"	7'
>20'	9'

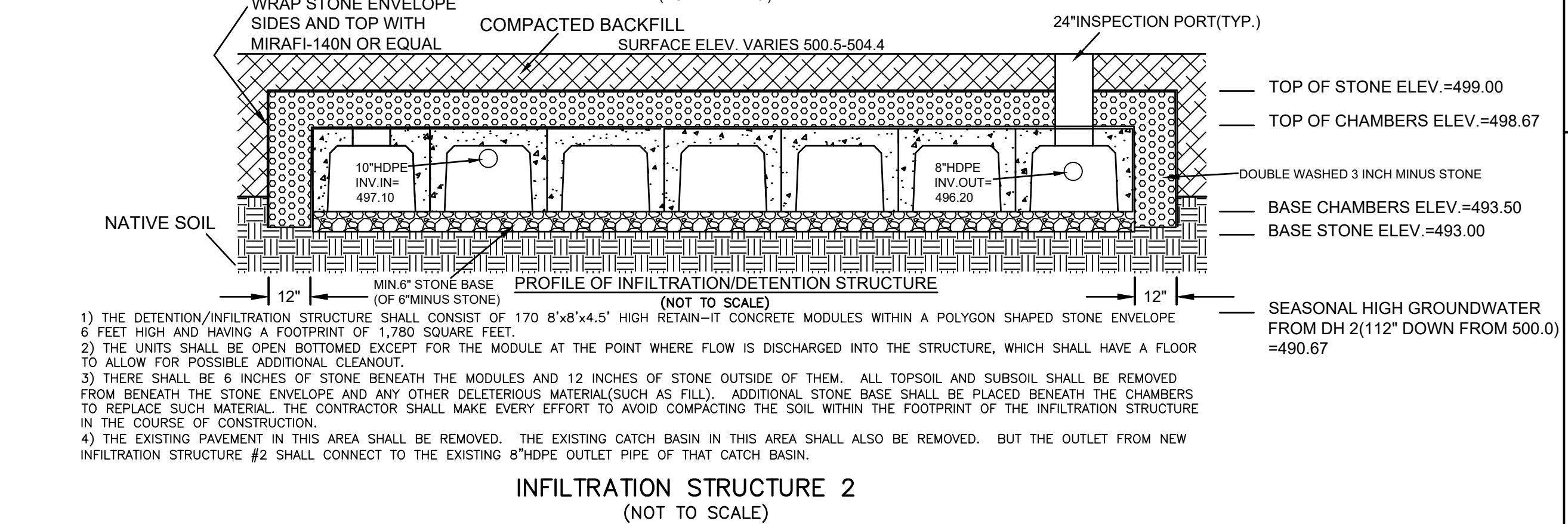
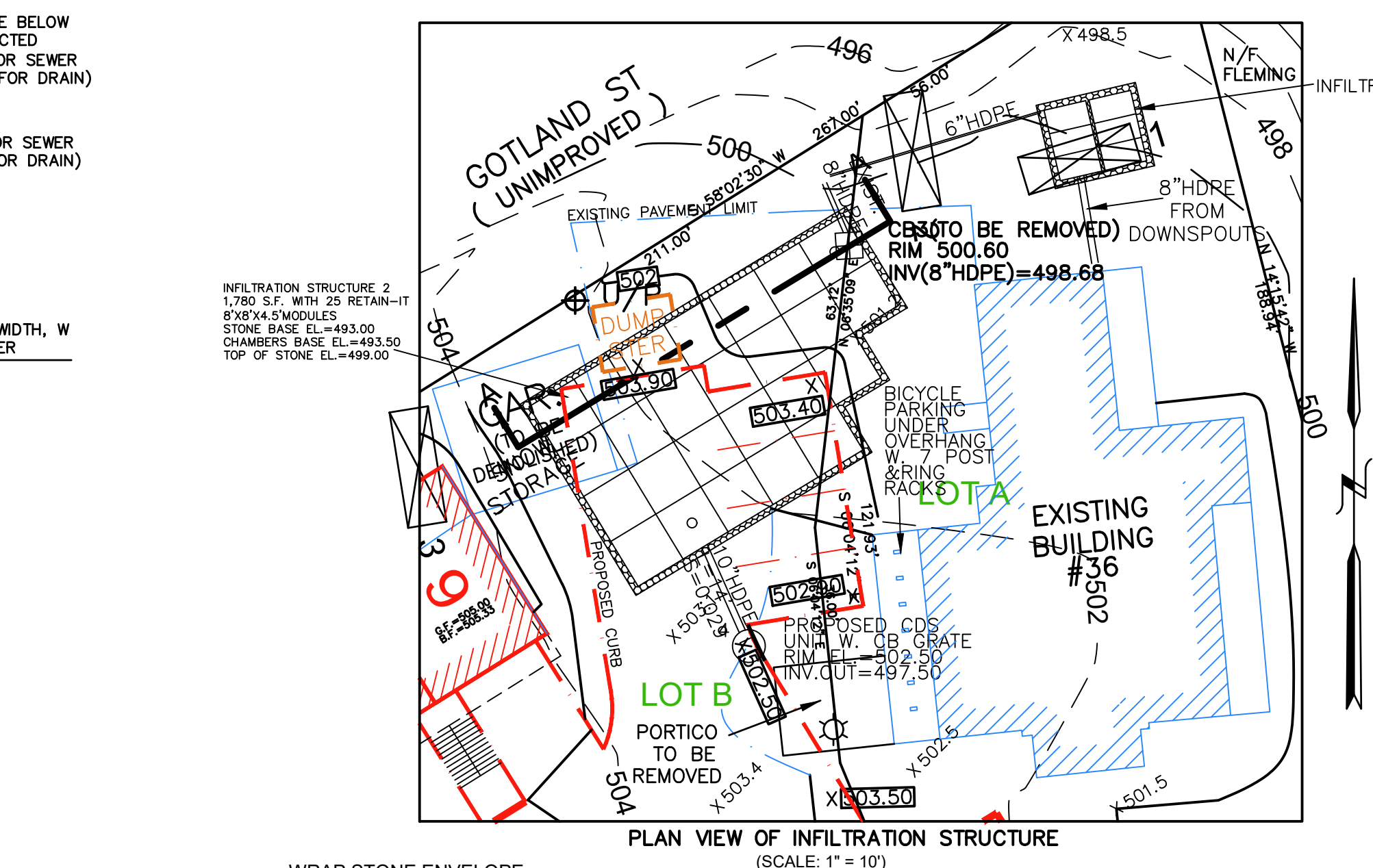


BIKE RACK DETAIL (NOT TO SCALE)



INFILTRATION STRUCTURE 1 (NOT TO SCALE)

- NOTES:
- 1) INFILTRATION STRUCTURE #1 SHALL RECEIVE ROOF RUNOFF FROM THE DOWNSPOUTS AT THE BACK HALF OF THE EXISTING FUNERAL HOME BUILDING.
 - 2) THE STRUCTURE SHALL CONSIST OF SIX CULTEC R902 CHAMBERS (IN TWO ROWS OF THREE) WITHIN A STONE ENVELOPE MEASURING 15.50 FEET WIDE, 13.01 FEET LONG AND 5 FEET DEEP.
 - 3) THE CONTRACTOR SHALL REMOVE ANY TOPSOIL, SUBSOIL, FILL OR OTHER INAPPROPRIATE MATERIAL FROM BENEATH THE PROPOSED STRUCTURES AND REPLACE IT WITH ADDITIONAL WASHED STONE AS NECESSARY.
 - 4) THE PROPOSED 6\"/>



INFILTRATION STRUCTURE 2 (NOT TO SCALE)

- NOTES:
- 1) THE DETENTION/INFILTRATION STRUCTURE SHALL CONSIST OF 170 8\"/>

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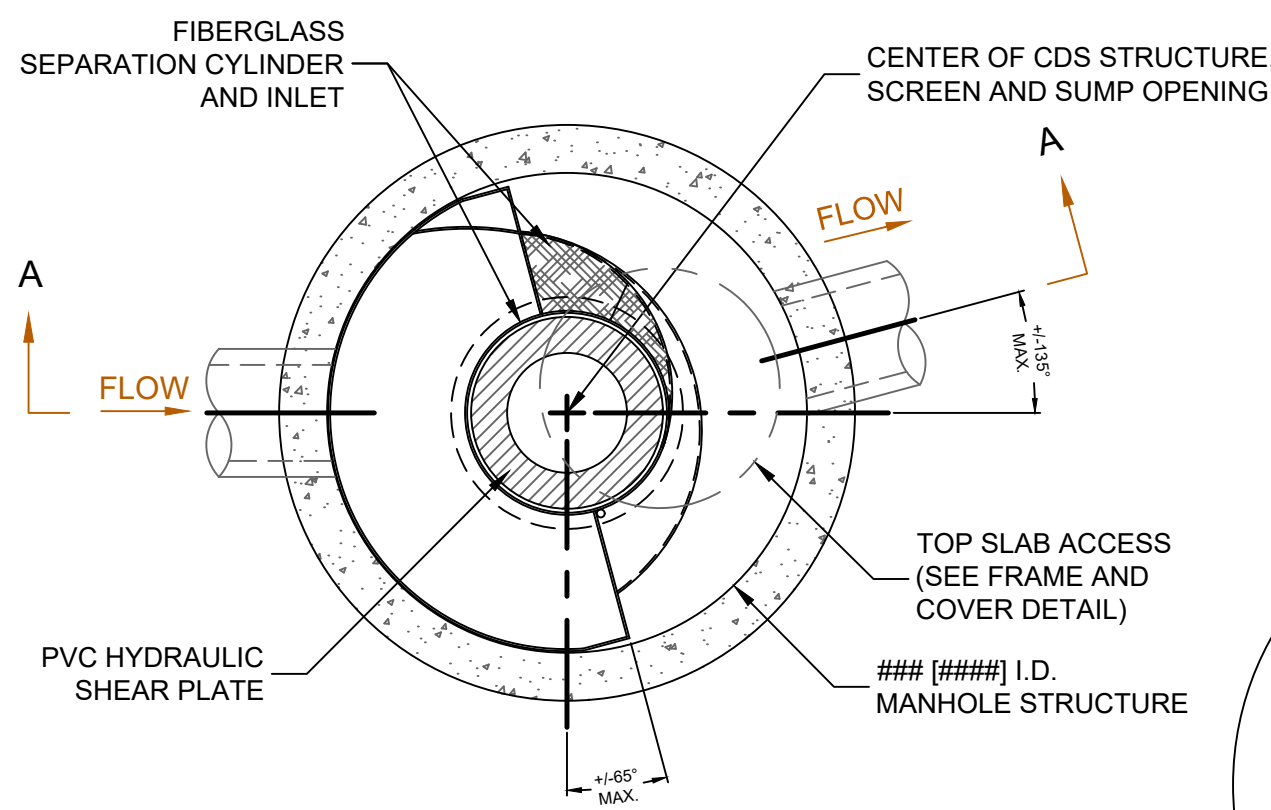
CLT. NO.	523	JOB NO.	348-523
DATE:	JULY 15, 2024	DWG NO.	36BUTLERSTREETCURRENT
REVISIONS			
DATE:		DESCRIPTION	
8-14-24		INITIAL REVIEW	
8-23-24		INITIAL REVIEW	
9-20-24		CITY REVIEW	

SCALE: AS NOTED

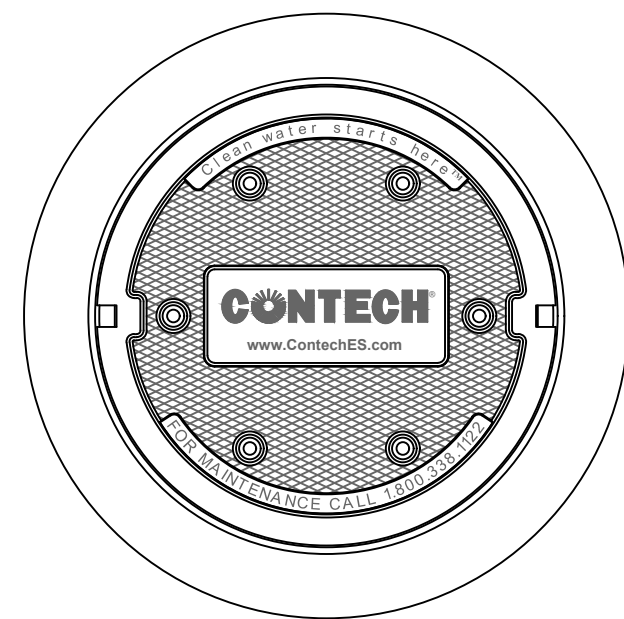
SITE PLAN OF LAND AT 36 BUTLER STREET IN WORCESTER, MASSACHUSETTS

PREPARED FOR APPLICANT/OWNER:
GM PROPERTIES, LLC
234 SPRING STREET
SHREWSBURY, MA 01545

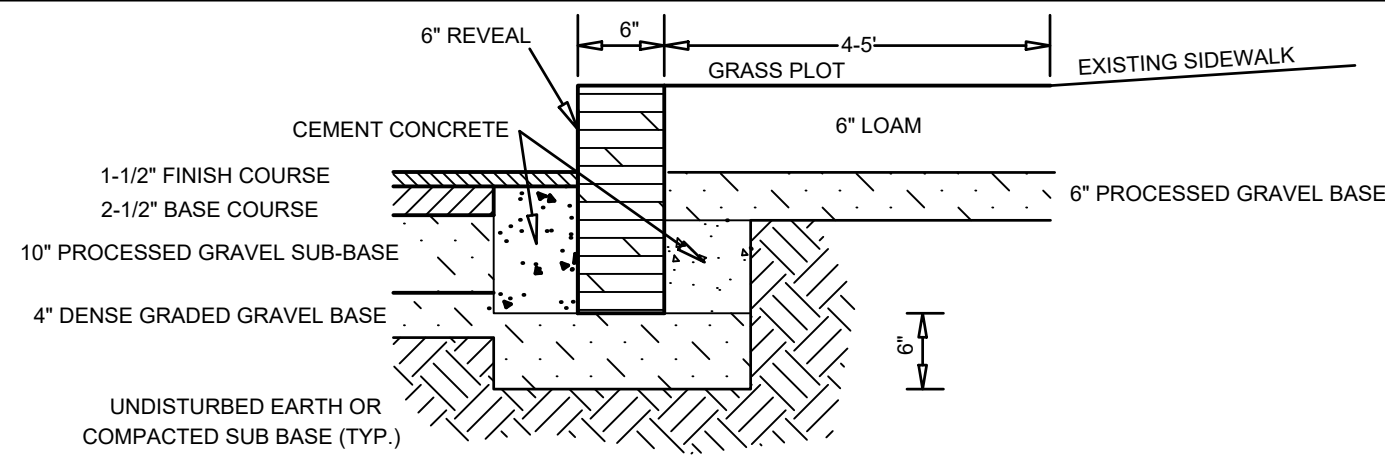
DETAIL SHEET D8



PLAN VIEW B-B
N.T.S.



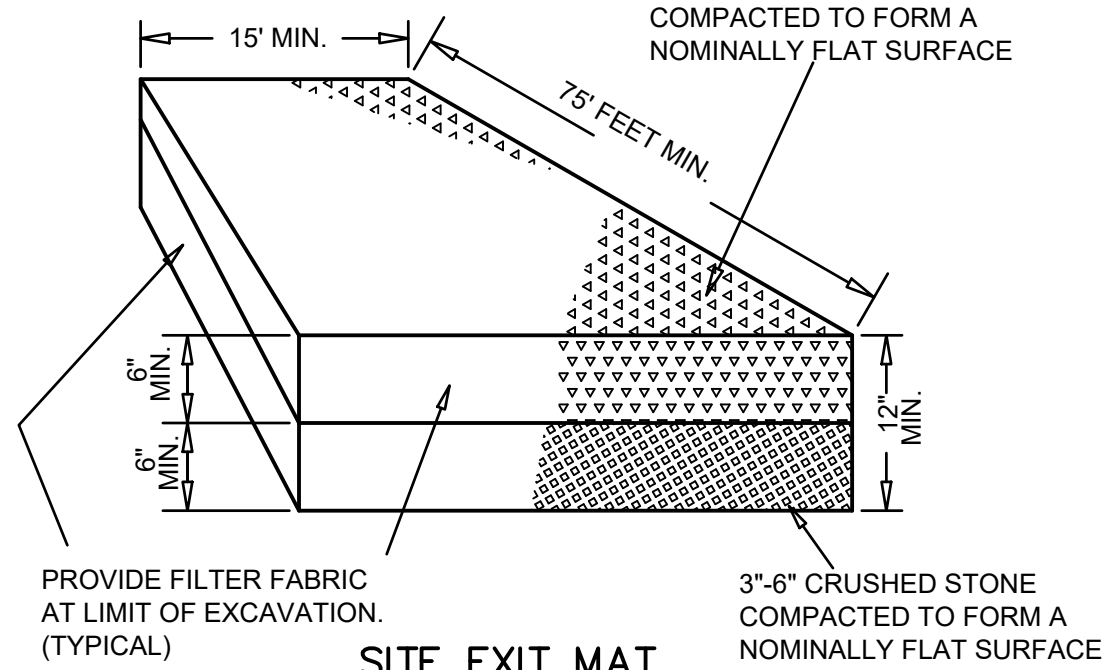
FRAME AND COVER
(DIAMETER VARIES)
N.T.S.



VERTICAL GRANITE CURB
(NOT TO SCALE)

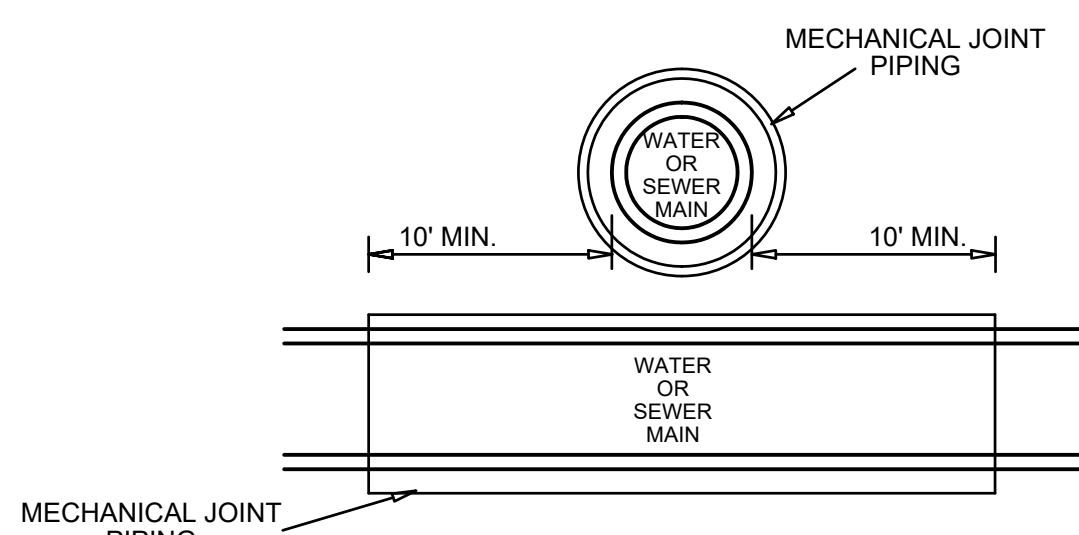
NOTE: VGC IS ONLY TO BE USED TO CLOSE THE SITE'S UPPER CURB CUT

NOTE: THE PROPOSED LOCATION OF THE SITE ENTRANCE MAT WILL BE IN THE LOCATION OF THE PROPOSED DRIVEWAY ENTRANCE OFF BUTLER STREET.



SITE EXIT MAT
(NOT TO SCALE)

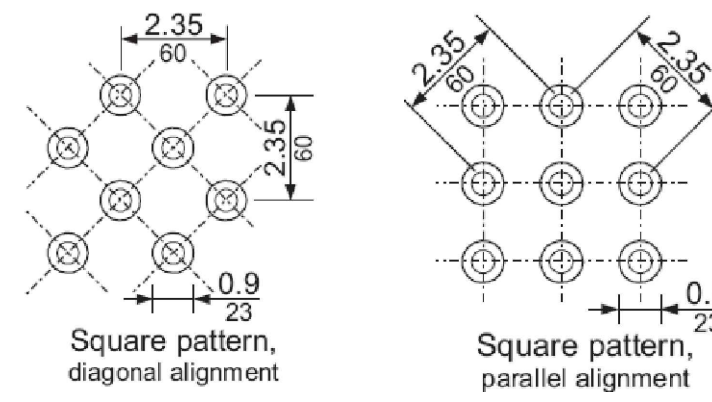
BUTLER STREET WILL BE SWEEPED DAILY WHEN HAULING IS IN PROGRESS.



MECHANICAL JOINT PIPING OF BOTH WATER AND SEWER SHALL EXTEND FOR 10 FEET FROM THE INTERSECTION OF THE MAINS AND ALONG EACH MAIN. CENTER ONE FULL PIPE LENGTH OF BOTH WATER AND SEWER OVER THE INTERSECTION.

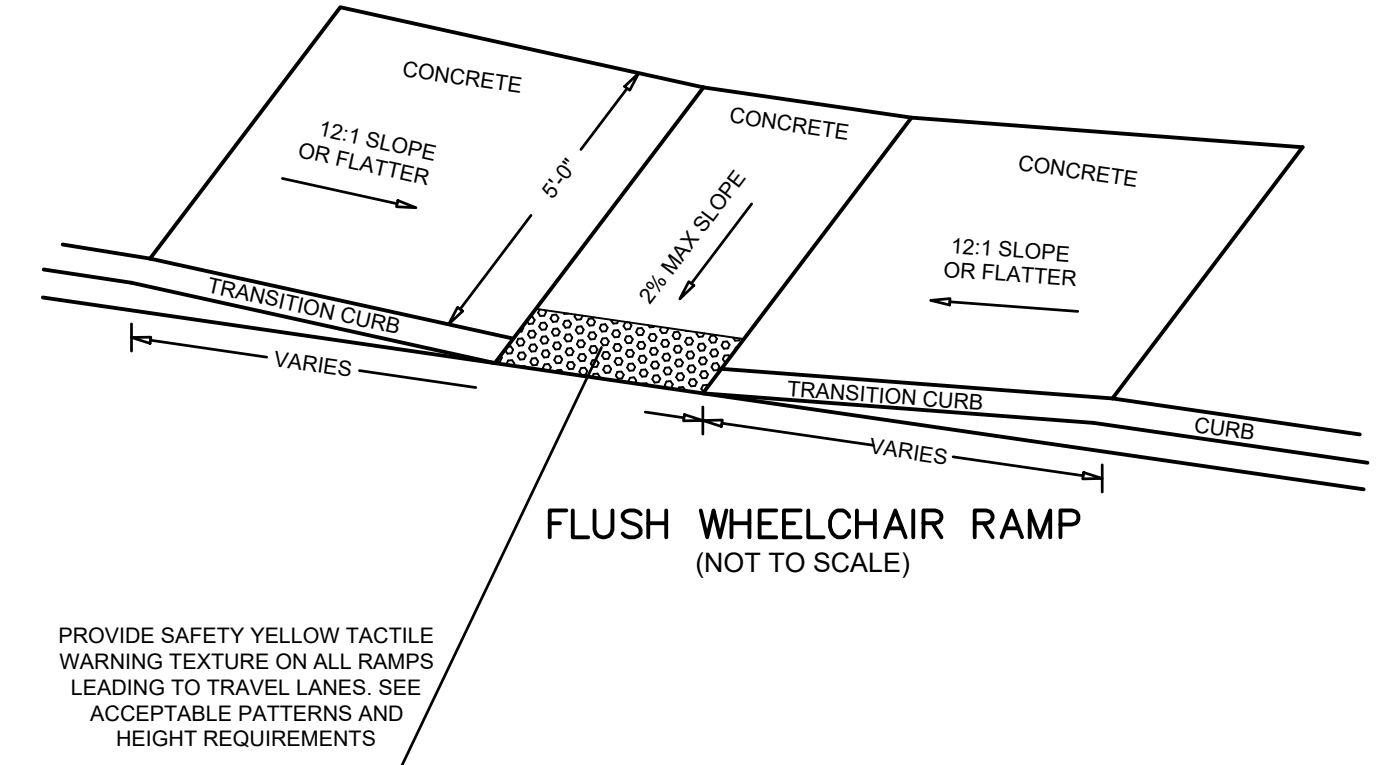
WATER MAIN/SEWER MAIN CROSSING
WHERE 18" VERTICAL CLEARANCE IS NOT PROVIDED
(NOT TO SCALE)

NOTE: SANITARY SEWER SHALL BE INSTALLED WITH A MINIMUM HORIZONTAL SEPARATION OF 10 FEET TO ALL WATER SUPPLY LINES. WHEN A 10 FOOT HORIZONTAL SEPARATION BETWEEN THE SEWER AND WATER CANNOT BE MAINTAINED, THE WATER MAIN SHALL BE INSTALLED IN A SEPARATE TRENCH ABOVE THE SEWER WITH AN 18 INCH VERTICAL SEPARATION BETWEEN THE CROWN OF THE SEWER AND THE INVERT OF THE WATER MAIN. HOWEVER, WHEN THE ELEVATION OF THE SEWER CANNOT BE VARIED TO MEET THIS REQUIREMENT, THE WATER MAIN SHOULD BE RELOCATED TO PROVIDE THIS SEPARATION OR CONSTRUCTED WITH MECHANICAL JOINT PIPE FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE SEWER. ONE FULL LENGTH OF WATER MAIN SHOULD BE CENTERED OVER THE SEWER SO THAT BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE. SEE DETAIL.



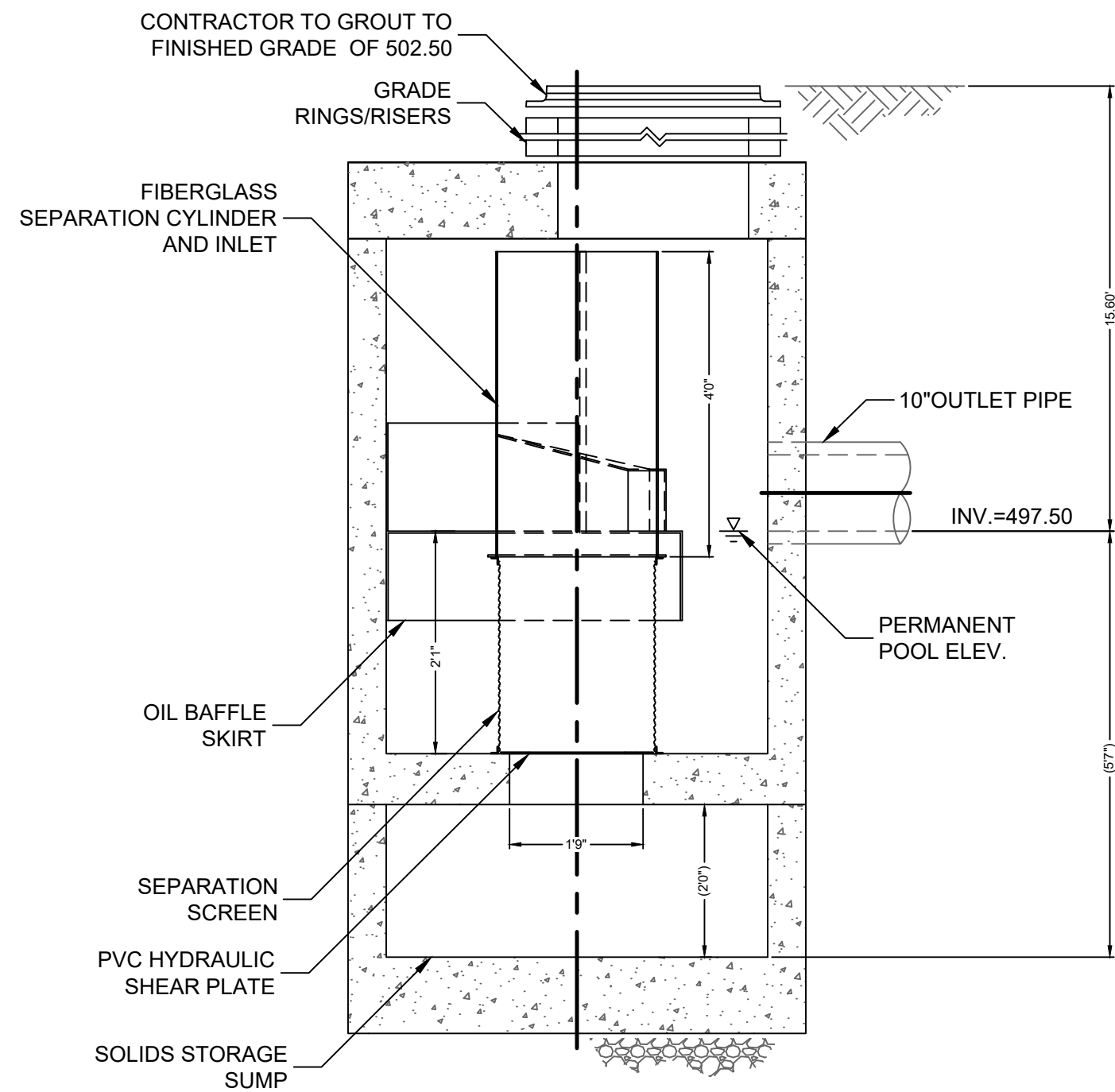
Square pattern, diagonal alignment
Square pattern, parallel alignment

Detectable warnings shall consist of raised truncated domes with a diameter of nominal 0.9 in (23 mm), a height of nominal 0.2 in (5 mm) and a center-to-center spacing of nominal 2.35 in (60 mm) and shall contrast visually with adjoining surfaces, either light-on-dark or dark-on-light. The material used to provide contrast shall be an integral part of the walking surface. Detectable warnings used on interior surfaces shall differ from adjoining walking surfaces in resiliency or sound-on-cane contact. ADAAG 4.29.2



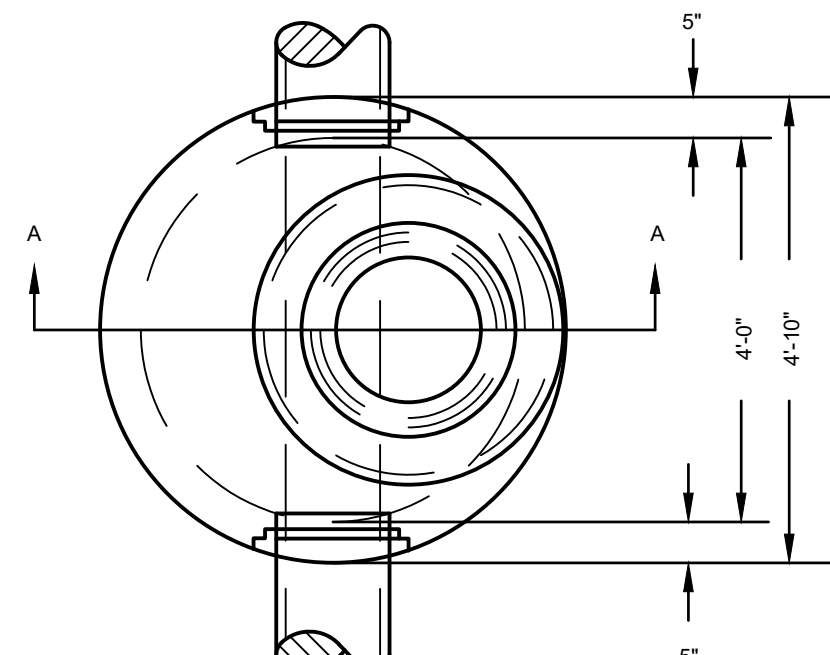
FLUSH WHEELCHAIR RAMP
(NOT TO SCALE)

PROVIDE SAFETY YELLOW TACTILE WARNING TEXTURE ON ALL RAMP LEADING TO TRAVEL LANES. SEE ACCEPTABLE PATTERNS AND HEIGHT REQUIREMENTS

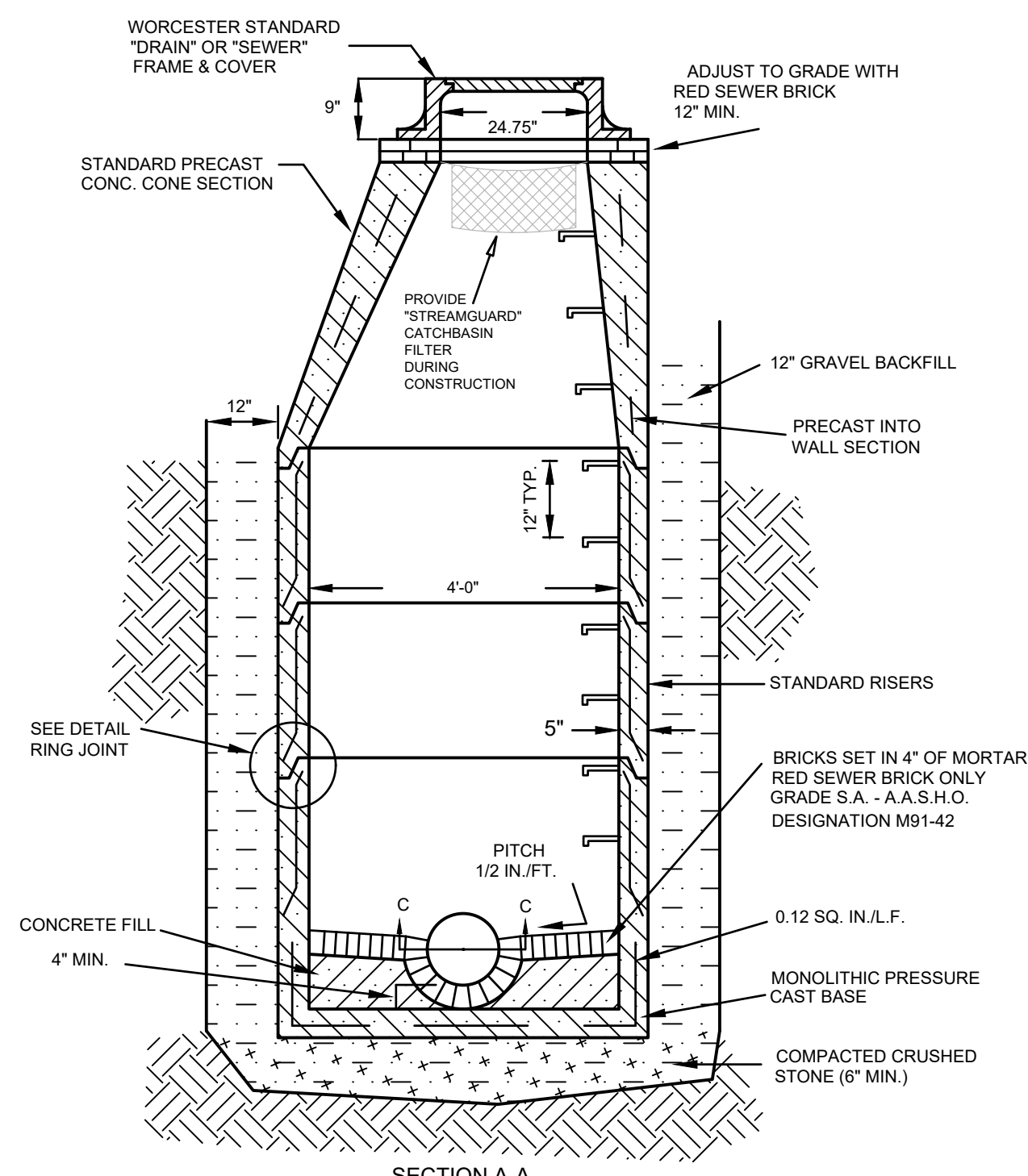


ELEVATION A-A
N.T.S.

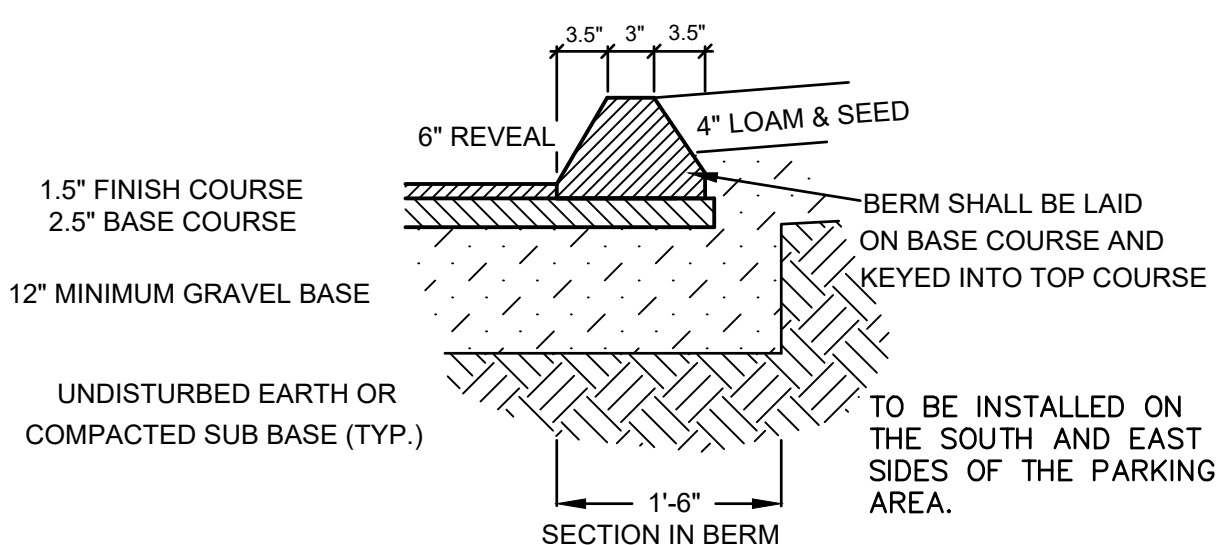
CONTECH CDS MODEL 2015
STORMWATER FILTRATION UNIT
(NOT TO SCALE)



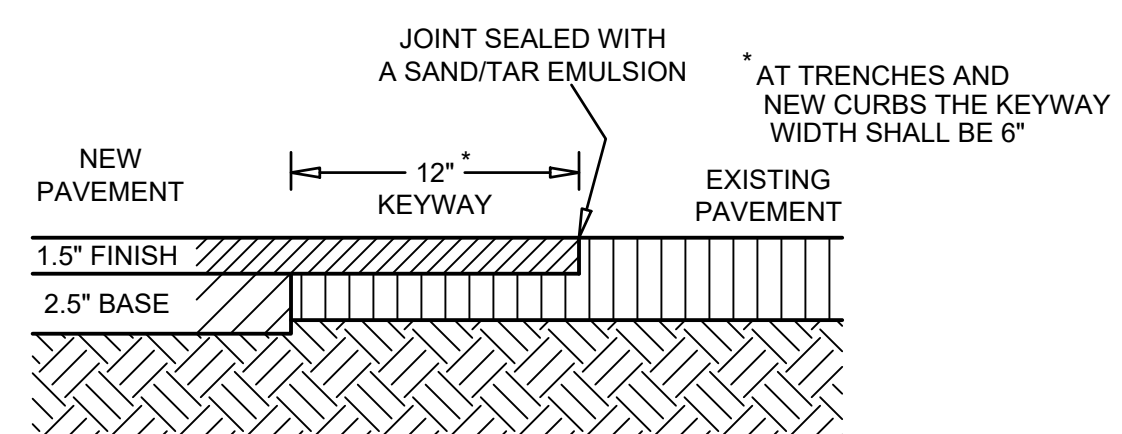
PLAN VIEW OF TYPICAL PRE-CAST MANHOLE
(NOT TO SCALE)



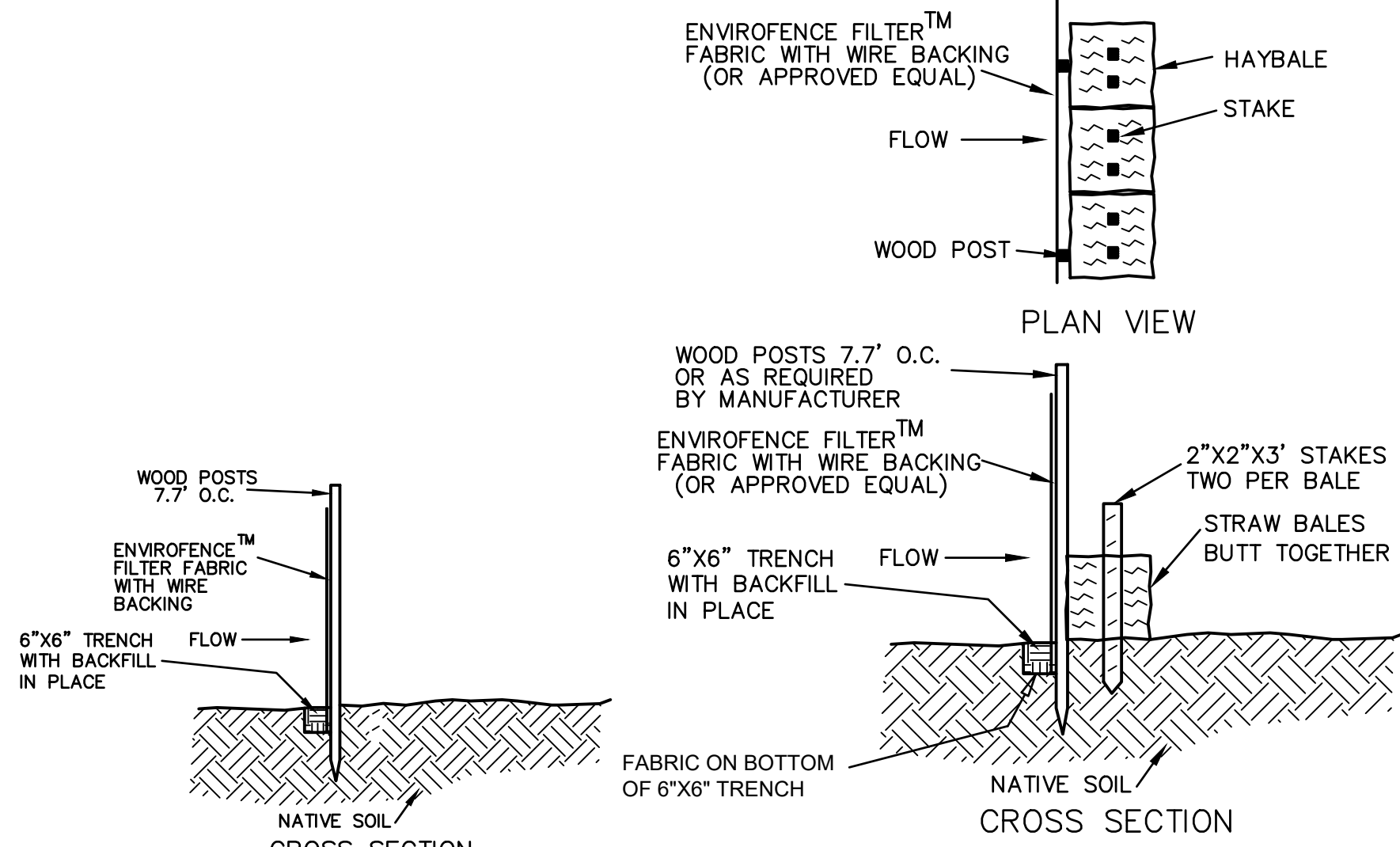
TYPICAL PRE-CAST MANHOLE
(NOT TO SCALE)



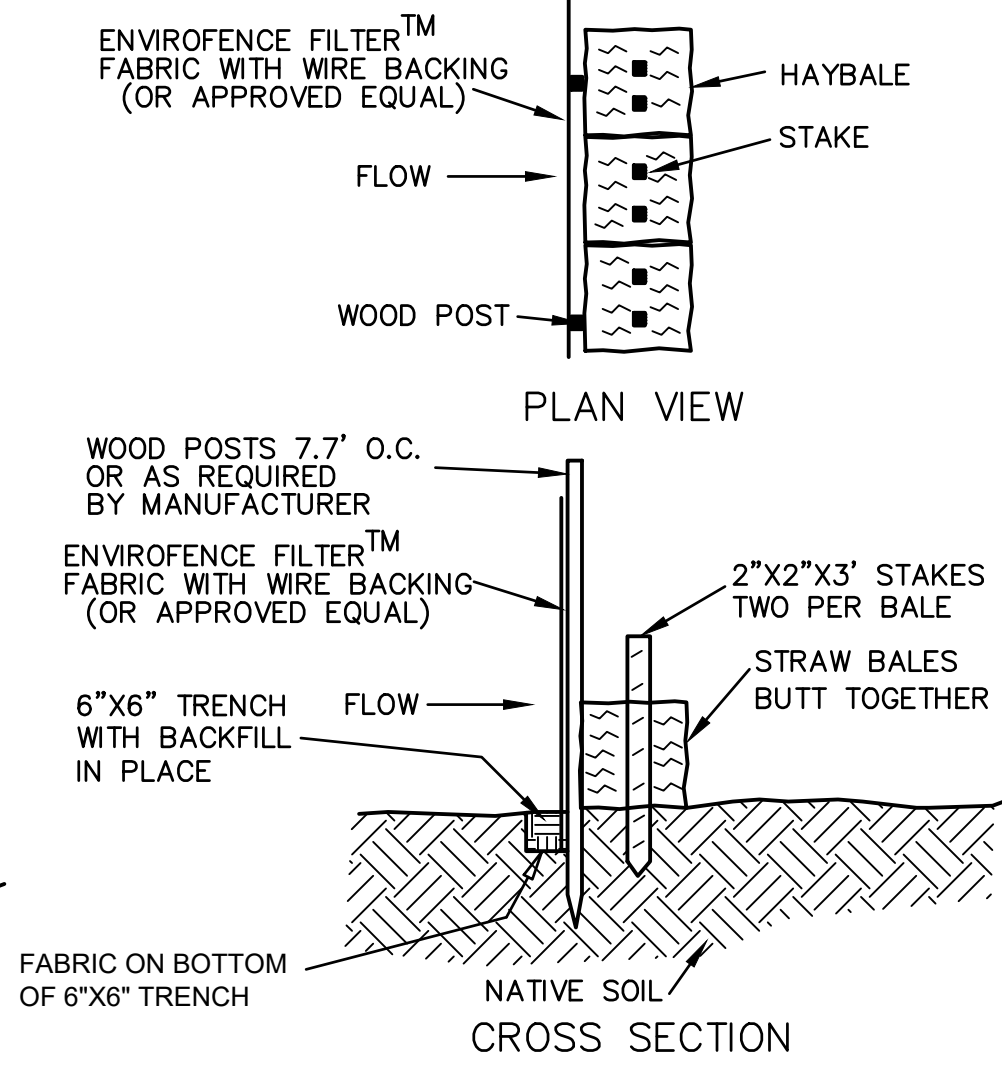
WORCESTER STANDARD BITUMINOUS CONCRETE BERM
NOT TO SCALE



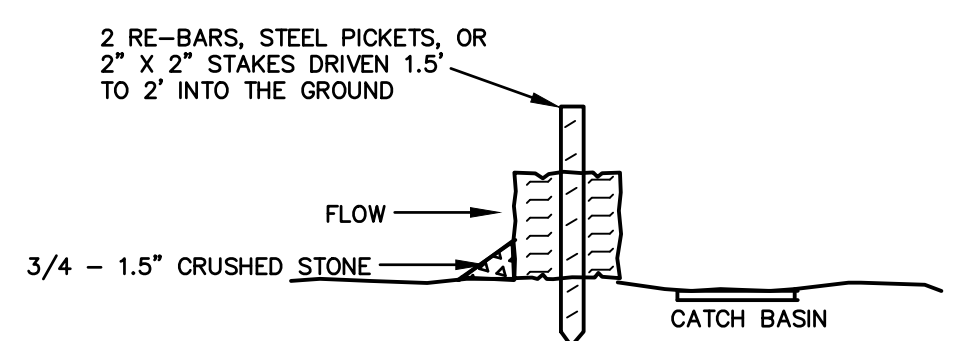
PAVEMENT BLEND DETAIL
(NOT TO SCALE)



SEDIMENTATION CONTROL FENCING
(NOT TO SCALE)



SEDIMENT CONTROL BARRIER
(NOT TO SCALE)



STRAW BALE DIKE
(NOT TO SCALE)

TO BE PLACED AROUND CATCH BASINS DURING CONSTRUCTION



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CLT. NO.	523	JOB NO.	348-523
DATE:	JULY 15, 2024	DWG NO.	36BUTLERSTREETCURRENT

REVISIONS	
DATE	DESCRIPTION
8-14-24	INITIAL REVIEW
8-23-24	INITIAL REVIEW
9-20-24	CITY REVIEW

SCALE: AS NOTED

SITE PLAN OF LAND
AT 36 BUTLER STREET
IN
WORCESTER, MASSACHUSETTS

PREPARED FOR APPLICANT/OWNER:
GM PROPERTIES, LLC
234 SPRING STREET
SHREWSBURY, MA 01545

**POLLUTION PREVENTION PLAN
FOR
36 BUTLER STREET, WORCESTER, MA**

PROJECT DESCRIPTION

This is a proposal to develop this site and construct nine additional townhouse rental units while refurbishing the existing building's interior to create two more rental units within it on this 38,391 square foot site.

Construction will take place in a single phase and is expected to last from the autumn 2024 into the summer of 2025. Total site alteration will be approximately 0.7 acres of which approximately 0.6 acres was previously altered.

Construction Process

Before construction begins, erosion control barriers consisting of silt fencing attached to posts and backed by staked straw bales will be placed at the limit of work as shown on the Erosion & Sediment Control Plan, Sheet ESC5.

The first step of the construction process will be the cutting of any trees within the limits of proposed development. After this has been accomplished in the demarcated areas, clearing and grubbing will take place and loam will be stockpiled.

The time of construction requiring the most attention and care occurs between the stripping of natural overburden and the stabilization of construction areas. Cut and fill areas create additional risk by increasing the possibility of stormwater runoff causing erosion.

The contractor will, to the extent possible, leave natural cover untouched at the edges of the property. The contractor will limit to the shortest time possible the time that areas are exposed. The landscaping will be completed as early as weather and building construction allow. During the times between clearing and landscaping, soils will be stabilized with a combination of stump grindings, wood chips, hay/straw mulch, temporary grass seeding and other measures as necessary to prevent any significant erosion of soils.

Soil stockpile areas will be kept out of the 100 foot buffer zone associated with catch basins in Butler Street. Soil stockpiles shall be surrounded by staked silt fence placed at least 5 foot off the toe of slope of the stockpile. One suitable stockpile location is in the area south of building 2.

In conjunction with the site grading process, a number of sedimentation control procedures will be followed. The object of the procedures is to prevent the erosion of soils and the transport of sediments to adjacent properties and eventually to wetland resource areas off site.

Stabilization

Temporary and permanent stabilization of disturbed surfaces is the most reliable method of preventing the erosion and transport of site soils. Toward that end, the areas that are disturbed will be provided temporary stabilization within two weeks after the last disturbance when:

- Work is not complete in that area,
- Work will remain incomplete for a period of three weeks or more, and
- The planting season has not been reached in areas which will be re-vegetated.

Permanent stabilization will take place when:

- Work is complete in that area and
- The planting season has been reached and areas can be revegetated.

Best Management Practices Employed

To guard against the transport of soils offsite several Best Management Practices (BMP's) may be employed. Sediment control barriers, sediment sumps, temporary settling basins, straw bale check dikes, swales, a site entrance mat, flocculants in both crystal and block forms, and organic media for capture of silt below flocculants may be used on this site as appropriate. All of these measures are temporary. The site's permanent protection against erosion and the deposition of sediment off site at resource areas is the permanent stabilization of formerly exposed surfaces with pavement, lawn and other landscaping.

Soils

According to the MassGIS Oliver web site the soils underlying this site are almost entirely Paxton series soils which are categorized as hydrologic soil group C soils.

Resource Areas

There are no bordering vegetated wetlands or other wetland resource areas on or adjacent to this site.

SITE PLAN DEVELOPMENT

As part of the Site Plans submitted to the City of Worcester, Expedited Engineering, LLC has prepared this erosion and sediment control plan calling for permanent and temporary erosion control measures. The site has an existing drainage system consisting of two catch basins that discharge captured runoff to the drainage system in Butler Street. We propose no changes to those two catch basins.

PHASING

Construction of the project will take place in one phase. Total site alteration will be approximately 0.7 acres.

POLLUTION PREVENTION SITE PLAN

The Site Plans prepared by Expedited Engineering, LLC include an Erosion & Sediment Control Plan. Various Best Management Practices (BMP's) are described herein and/or shown on sheet ESC5 or the Detail Sheets and will be used to prevent or to mitigate erosion and pollution.

INSPECTION AND MAINTENANCE OF EROSION CONTROLS

1. At all times, siltation fabric fencing, straw bales and stakes sufficient to construct an erosion control barrier a minimum 25 feet long will be stockpiled on the site in order to repair established barriers which may have been damaged or breached.
2. The Developer will designate as Inspector a person or entity other than the site supervisor. The Inspector must be accessible seven days a week and be responsible for inspecting and coordinating the maintenance and repair of all erosion control systems on the site.
3. An inspection of all erosion control measures shall be conducted by the Inspector at least once each week until the completion of construction of the subdivision. The Contractor shall inspect all erosion control systems daily and shall notify the Inspector of any breaches or failures. In case of any noted breach or failure, the Contractor shall immediately make appropriate repairs.
4. In addition to weekly inspections, the Inspector shall inspect all erosion control systems on the site before, during and after any storm event reaching one of the following thresholds:
 - a. Any storm in which rain is predicted to last for 12 consecutive hours or more.
 - b. Any storm for which a flash flood watch or warning is issued.
 - c. Any single storm predicted to have a cumulative rainfall greater than 1/2 inch.
 - d. Any storm event not meeting the previous three thresholds but which would mark the third consecutive day of measurable rainfall.
5. The Inspector shall inspect erosion control measures at times of significant increase in runoff due to rapid thawing when the risk of failure of those measures is significant.
6. In such instances as remedial action is necessary, the Inspector shall cause to be repaired within seven days, any and all significant deficiencies in erosion control measures.
7. The Worcester Conservation Commission shall be notified of any significant failure of erosion control measures and shall be notified of any release of pollutants.

SOIL TEST RESULTS:

UNOFFICIAL SOIL TEST RESULTS

- DH1 - SANDY LOAM WITH WEEPING AT 124"
- DH2 - SANDY LOAM WITH WEEPING AT 112"
- DH3 - SANDY LOAM WITH MOTTLING 66"

PARKING CALCULATION

PER THE WORCESTER ZONING ORDINANCE, 2 PARKING SPACES ARE REQUIRED PER DWELLING UNIT. 11 UNITS ARE PROPOSED WHICH REQUIRE A TOTAL OF 22 PARKING SPACES.

EACH TOWNHOUSE UNIT WILL HAVE ONE GARAGE PARKING SPACE AND ONE DRIVEWAY PARKING SPACE IN FRONT OF ITS GARAGE DOOR. THERE WILL BE 4 PARKING SPACES IN FRONT OF THE EXISTING BUILDING. THIS GIVES A TOTAL OF 22 PARKING SPACES, SATISFYING THE REQUIREMENT.

EROSION CONTROL DEVICES OR PROCESSES

1. Sediment Control Barrier
The sediment control barrier will consist of an approved siltation fabric fencing installed on posts according to the manufacturer's instructions and backed by staked straw wattles. The barriers will be placed in a manner that prevents the passage of soil materials under, around or over it. Sediment will be removed from against the barrier when the accumulated sediment has reached one third of the original installed height of the barrier.
2. Straw Bale Diversion Dike
Straw bales will be placed in other locations on the site in order to further prevent the flow of sediment from the site or reduce the velocity of runoff crossing open land or running off stockpile or fill areas. Straw bale diversion dikes will also be placed within developing rills to reduce surface runoff velocities and to shift the path of the water flow. The locations where straw bale diversion dikes are installed will be determined in the field at the Inspector's discretion.
3. Slope Stabilization
Slopes or surfaces that are created due to excavation or filling along the edge of the parking or loading areas will be temporarily stabilized with one or more of the following:
 - Hay or straw mulch with tackifier
 - Soft wood and hard wood chips or stump grindings.
 Permanent stabilization of slopes and surfaces will employ one or more of the following:
 - 6 inches of loam and grass
 - Sod
 - Riprap
 - Erosion control blankets such as Tensar North American Green C125BN or approved equal and vegetation
 - Mulch and landscaping plantings
 - A combination of grasses, riprap and/or plants and shrubbery
 - In areas that will be steeper than 2:1, after construction, the slope will be stabilized by the placement of heavy riprap or by the installation of erosion control matting specifically rated by the manufacturer for use on a 1:1 slope. The riprap slope will be formed by placing heavy stone on a one foot thick layer of gravel that is covered by an approved filter fabric.

4. Diversion Swale
Runoff diversion swales may be provided in order to intercept sheet and concentrated flows above areas of cut, above abutting properties or Rice Road. The swales will direct runoff to sediment sumps or temporary settling basins. The swales will be approximately 5 feet wide and one foot deep. Straw bale diversion dikes may be installed on the downhill side of the swales to assist in containing the water flow.

5. Sediment Sumps
Sediment sumps are excavated depressions of 10 foot diameter and 2 foot depth. The sumps will collect runoff from unfinished drives and slopes and will allow sediment to settle out before flow continues to a detention area or siltation control barrier. Sediment sumps will be cleaned whenever the accumulated sediment has reached one half of the original depth of the sump.

6. Temporary Settling Basins
Temporary settling basins (TSB's) are larger excavations made at locations that will receive significant stormwater runoff flow. They are used to capture and detain stormwater in the construction phase to settle out some eroded material and to lessen the rate of flow of stormwater from construction phase work areas. Temporary settling basins are larger than sediment sumps and shall have silt fence or straw bale dikes at their entrance and exit to control flow. They shall be sized according to the DEP Stormwater management standards which requires that they have sufficient capacity to hold 1 inch of runoff from the watershed contributing flow to them. For example, a TSB receiving flow from 1 acre of land should have a volume capacity of at least 3,630 square feet. TSB's should have flocculant blocks and jute mesh matting at their outlet. TSB's should be cleaned out whenever the accumulated sediment has reached more than 6 inches deep. No TSB shall be located where the proposed infiltration structure is to be installed. Expected locations for TSB's include both east and west of that proposed infiltration structure location.

7. Flocculants

If the capture of flows in sediment sumps and temporary settling basins does not sufficiently reduce the turbidity of runoff before it leaves the site, flocculant blocks shall be installed at the outlet of any sediment sump, TSB or swale discharge flow to the site's drainage system. Immediately downstream of the flocculant blocks, a suitable organic media such as jute mesh matting shall be installed over stone for runoff that has contacted the flocculant blocks to flow. This will allow capture of silts.

In addition, crystal flocculants may be used to reduce turbidity of captured runoff in sediment sumps and temporary settling basins.

SEQUENCE OF INSTALLATION AND CONSTRUCTION

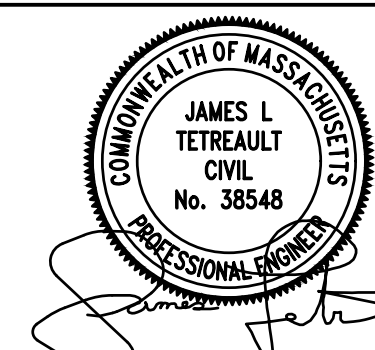
The following is a schedule for the construction of the project. The actual schedule may vary somewhat from that stated if site or weather conditions require.

An example of a logical change to the schedule would be deviating from the sequence below to allow the laying of berms prior to a freeze in order to better control the site drainage.

1. The Developer will hold a preconstruction meeting with representatives of the City of Worcester in order to review permits, procedures and construction methods.
2. The Developer will hold a preconstruction meeting with the Engineer, Contractor's employees and the Inspector in order to review permits, procedures and construction methods.
3. Establish the construction entrance(s) to the site off Butler Street.
4. Install the site entrance mat in the location of the proposed entrance of Butler Street and sediment control barriers at the limit of work as shown on the Erosion & Sediment Control Plan.
5. Demolish the existing garage and remove the overhang on the west side of the existing building. Also remove the pavement of the existing parking area and dispose of all these waste materials at appropriate facilities according to applicable regulations.
6. Cut trees as necessary for the proposed development but no further. Chip wood and then remove existing pavement and dispose of it at an appropriate facility. Then, clear and grub where trees were cut.
7. Stockpile and compact excavated loam in an area surrounded by staked straw bales or siltation fencing. We suggest the proposed location at the corner of unit #9. Place the straw bales or fencing at least five feet from the base of the loam pile.
8. Begin earthwork to bring grades to the subgrade elevations for the proposed access drive and parking spaces.
9. Begin construction of the new townhouse units and install the utility connections to the proposed buildings.
10. Install the new drainage system, new sanitary sewer, new water line services to the buildings and new electric connections and, when complete, lay the binder course of pavement.
11. Continue construction of the buildings and close the site's upper existing curb cut on the traveled way of Butler Street.
12. Permanently stabilize exposed slopes with 6 inches of loam and grass, erosion control matting, other vegetation and landscaping.
13. Finish interior construction of the proposed buildings and lay a finish course of pavement.
14. Remove accumulated sediment and temporary erosion control measures after all slopes have been permanently stabilized and the risk of erosion has passed.
15. Prepare and submit an as-built survey of the work to the City of Worcester.

GENERAL NOTES:

- 1) THERE ARE NO FEMA FLOOD ZONES ON THIS SITE.
- 2) ACCORDING TO THE MASS GIS OLIVER WEB SITE, THERE ARE NO ENDANGERED SPECIES HABITATS AND NO VERNAL POOLS ON OR ADJACENT TO THIS SITE.
- 3) TOTAL SITE ALTERATION WILL BE LESS THAN 1 ACRE SO AN ENOI WILL NOT BE FILED WITH THE U.S.EPA.
- 4) THE PROPOSED 6 INCH WATER MAIN EXTENDED INTO THE SITE SHALL MEET THE REQUIREMENTS OF ANSI/AWWA A21.5/C151 CLASS 52.
- 5) PROPOSED RETAINING WALLS SHALL BE COMPRISED OF CONIGLIARO BLOCK COMPONENTS, OR APPROVED EQUAL. ENGINEERED, STAMPED DESIGNS SHALL BE SUBMITTED TO THE CITY FOR APPROVAL BEFORE ANY INSTALLATION BEGINS.
- 6) A 4 FOOT CHAIN LINK SAFETY FENCE SHALL BE MOUNTED ON TOP OF THE PROPOSED RETAINING WALLS. PROPOSED CHAIN LINK FENCES SHALL BE BLACK, VINYL COATED.



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Telephone (508)-899-9993 james@expeditedengineers.com

CLT. NO. 523	JOB NO. 348-523
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DATE: JULY 15, 2024	DWG NO. 36BUTLERSTREETCURRENT
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REVISIONS	
DATE:	DESCRIPTION
8-14-24	INITIAL REVIEW
8-23-24	INITIAL REVIEW
9-20-24	CITY REVIEW

SCALE: AS NOTED

**SITE PLAN OF LAND
AT 36 BUTLER STREET
IN
WORCESTER, MASSACHUSETTS**

PREPARED FOR APPLICANT/OWNER:
GM PROPERTIES, LLC
234 SPRING STREET
SHREWSBURY, MA 01545