

SITE DATA

LOT AREA: 15.17± AC. (660,575 SF)
WATER SUPPLY: MUNICIPAL
APPROXIMATE WATER USE: 3,720 GPD
SEWAGE DISPOSAL: ONSITE SEWAGE DISPOSAL SYSTEM
APPROXIMATE SEWAGE FLOW: 3,720 GPD [SEE SHEET C3.1]
ZONING DISTRICT: RESIDENTIAL
OVERLAY DISTRICT: AQUIFER & WATER RESOURCE

ASSESSORS REFERENCE

ASSESSORS PARCEL MAP U19, PARCEL 38
RECORD OWNER: CRAIG C. GRUSKOWSKI & HEIDI PLATT GRUSKOWSKI
338 KING ST. LITTLETON, MA 01460
ASSESSORS PARCEL MAP U19, PARCEL 38-1
RECORD OWNER: CRAIG C. GRUSKOWSKI & HEIDI PLATT GRUSKOWSKI,
TRUSTEES OF PAINLESS REALTY TRUST
338 KING ST. LITTLETON, MA 01460

SENIOR RESIDENTIAL DEVELOPMENT

PARAMETER	FORMULA	VARIABLE	REQUIRED	PROVIDED
Two-Family Dwelling Units	4 Units/Acre	6 Units	1.5 AC.	
Townhouse Dwelling Units	8 Units/Acre	3 Units	0.38 AC.	
Independent Living Units	20 Units/Acre	24 Units	0.75 AC.	
Total Site Area			2.63 AC.	15.17 AC.
Minimum Open Space	30% Parcel Area	660,575± SF	198,173± SF	608,537± SF
Contiguous Upland Area	80% Min. Open Space Area	198,173± SF	158,535± SF	168,545± SF

PARKING COMPUTATIONS

USE	FORMULA	VARIABLE	REQUIRED SPACES	PROVIDED SPACES
Town House & Cottage Dwellings	2 Spaces per Unit	9 Units	18	
Independent Living Units	1 Space per Unit	15 Units	15	
Guest Parking	1 Space per 3 Units	24 Units	8	

Total Parking Spaces 41 42

NOTES: 1. See Zoning Bylaw section 173-148(F).

COVERAGE COMPUTATIONS

PARAMETER	AREA (AC)	AREA (SF)	% OF TOTAL LOT AREA
EXISTING CONDITION			
Lot Area	15.17±	660,575±	100%
Buildings & Decks	0.17±	7,251±	1.1%
Pavement, Walks, and Misc. Impervious	0.42±	18,495±	2.8%
Pond	0.28±	11,183±	1.7%
TOTAL IMPERVIOUS AREA	0.85±	36,929±	5.6%
PROPOSED CONDITION			
Lot Area	15.17±	660,575±	100%
Buildings & Decks	0.62±	27,095±	4.1%
Pavement, Walks, and Misc. Impervious	0.50±	21,997±	3.3%
Pond	0.26±	11,183±	1.7%
TOTAL IMPERVIOUS AREA	1.38±	60,278±	9.1%

PLAN REFERENCES

- "ORDER OF RESOURCE AREA DELINEATION" PREPARED FOR MASSACHUSETTS COHOUSING LLC. BY THE LITTLETON CONSERVATION COMMISSION. DATED MARCH 23, 2020. RECORDED AT THE MIDDLESEX SOUTH REGISTRY OF DEEDS BK: 74331 PG: 23.
- "SEWAGE DISPOSAL SYSTEM-338 KING STREET LITTLETON, MA" DESIGNED FOR CRAIG & HEIDI GRUSKOWSKI BY DAVID E. ROSS ASSOCIATES, INC. DATED JULY 1997.
- "SUBSURFACE SEWAGE DISPOSAL SYSTEM-336 KING STREET LITTLETON, MA" DESIGNED FOR RONALD COOPER BY WHITMAN & BINGHAM ASSOCIATES, INC. DATED MAY 31, 1993.
- "LEACHING SYSTEM REPAIR-CONGREGATIONAL CHURCH OF LITTLETON-308 KING STREET LITTLETON, MA" DESIGNED FOR CONGREGATIONAL CHURCH OF LITTLETON BY WARREN W. TERRELL, P.E. DATED AUGUST 1990. REVISED THROUGH 4/20/91.
- "SUBSURFACE SEWAGE DISPOSAL SYSTEM-NEW CONSTRUCTION-HAGER HOMESTEAD-336-338 KING STREET LITTLETON, MA" PREPARED FOR MASSACHUSETTS COHOUSING, LLC. BY GOLDSMITH, PREST & RINGWALL, INC. DATED TBD.

EXISTING CONDITION NOTES:

- EXISTING CONDITION INFORMATION SHOWN IS BASED ON AN INSTRUMENT SURVEY PERFORMED BY GOLDSMITH, PREST & RINGWALL, INC. DURING OCTOBER 2019.
- THE EDGE OF WETLAND AND RIVER HAS BEEN DELINEATED BY OXBOW ASSOCIATES, INC. OCTOBER 2019 THROUGH NOVEMBER 2019, AND APPROVED BY THE LITTLETON CONSERVATION COMMISSION MARCH 23, 2020 [SEE PLAN REFERENCE #1].
- DELINEATION OF EXISTING POND AND TRENCHES WITHIN THE WETLANDS ARE APPROXIMATE AND ARE BASED ON ARIEL IMAGES FROM GOOGLE EARTH.

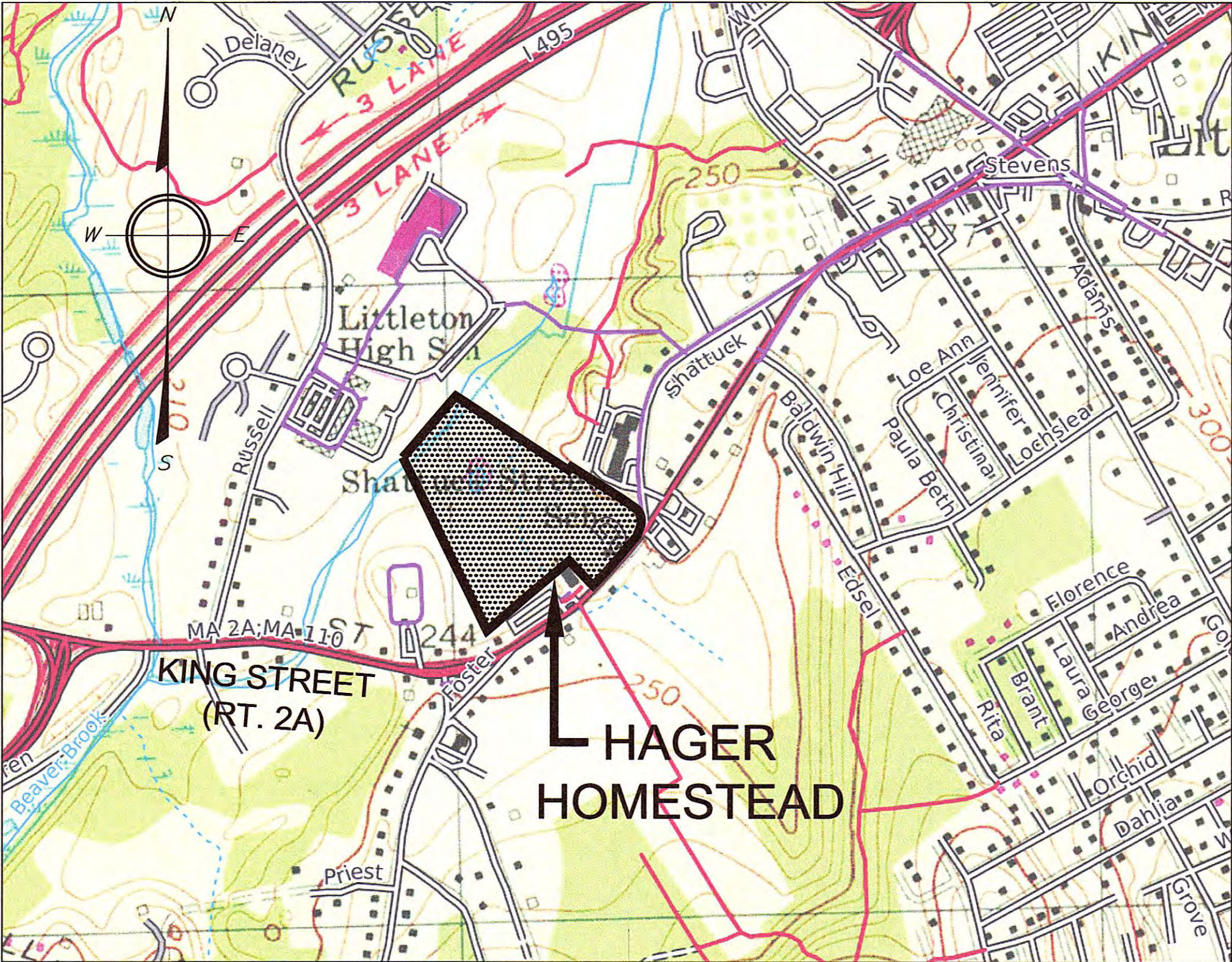
GENERAL NOTES

- LOCATIONS OF EXISTING UNDERGROUND UTILITIES/OBSTRUCTIONS/SYSTEMS SHOWN HEREON ARE APPROXIMATE ONLY. ALL UTILITIES/OBSTRUCTIONS/SYSTEMS MAY NOT BE SHOWN. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL UNDERGROUND UTILITIES/OBSTRUCTIONS/SYSTEMS, WHETHER OR NOT SHOWN HEREON.
- UNLESS OTHERWISE SHOWN, ALL NEW UTILITIES SHALL BE UNDERGROUND.
- BURIED UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THEIR RESPECTIVE COMPANY SPECIFICATIONS.
- CONSTRUCTION LAYOUT OF SITE IMPROVEMENTS SHALL BE PERFORMED BY A LICENSED PROFESSIONAL LAND SURVEYOR. LOCATIONS OF EXISTING FEATURES OR PROPOSED IMPROVEMENTS DERIVED BY SCALING DRAWINGS MAY NOT BE ACCURATE. PROPERTY LINES SHOWN HEREON ARE APPROXIMATE. SEE PLAN REFERENCE HEREON.
- SAFETY MEASURES, CONSTRUCTION METHODS, AND CONTROL OF WORK SHALL BE RESPONSIBILITY OF CONTRACTOR.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT OF ANY EXISTING UTILITY OR STRUCTURE DAMAGED DURING CONSTRUCTION THAT ARE NOT DESIGNATED FOR DEMOLITION AND/OR REMOVAL HEREON. DAMAGED UTILITY OR STRUCTURE SHALL BE REPAIRED TO THE SATISFACTION OF THEIR RESPECTIVE OWNERS.
- ANY INTENDED REVISION OF THE HORIZONTAL AND/OR VERTICAL LOCATION OF IMPROVEMENTS TO BE CONSTRUCTED AS SHOWN HEREON SHALL BE REVIEWED AND APPROVED BY ENGINEER PRIOR TO IMPLEMENTATION.
- CONTRACTOR SHALL NOTIFY ENGINEER UPON COMMENCEMENT OF CONSTRUCTION IN ORDER TO ENSURE THAT REQUIRED INSPECTIONS ARE PERFORMED IN A TIMELY AND EFFICIENT MANNER.
- CONTRACTOR SHALL PROMPTLY NOTIFY ENGINEER UPON DISCOVERY OF ANY UNFORESEEN SURFACE OR SUBSURFACE CONDITIONS THAT MAY IMPACT SITE CONSTRUCTION.
- FINISH RIM ELEVATIONS SHOULD MATCH PAVEMENT, GRADING OR LANDSCAPING, UNLESS SPECIFICALLY INDICATED OTHERWISE.
- WHERE EXISTING UTILITY LINES/STRUCTURES ARE TO BE CUT/BROKEN DOWN/ABANDONED, LINES/STRUCTURES SHALL BE PLUGGED/CAPPED/FILLED IN ACCORDANCE WITH UTILITY OWNER REQUIREMENTS.
- EROSION CONTROL MEASURES, SUCH AS SILT FENCE OR STRAW BALES AS MAY BE SHOWN HEREON, SHALL BE INSTALLED BEFORE EARTH DISTURBANCE OCCURS WITHIN BUFFER ZONE, AND SHALL SERVE AS THE LIMIT OF WORK.
- WHERE THE WORD "INSTALL" IS USED HEREIN, IT IS INTENDED TO DIRECT CONTRACTOR TO "FURNISH, INSTALL, AND PLACE IN OPERATION" THE COMPONENT REFERRED TO.
- LIMITS OF WORK SHALL BE STAKED IN THE FIELD PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- ALL STORM DRAIN PIPE TO BE SMOOTH INTERIOR HDPE PIPE, 2.0 PSI GASKETED JOINT, UNLESS OTHERWISE NOTED.
- WHERE SHOWN, CONSTRUCTION NOTES ARE INTENDED TO SUMMARIZE AND CLARIFY MAJOR ITEMS OF WORK. THESE NOTES SHOULD NOT BE CONSIDERED AS AN EXHAUSTIVE LISTING OF ALL WORK REQUIRED. CONTRACTOR SHOULD CONTACT ENGINEER WHEN FURTHER CLARIFICATION OF DEPICTED WORK IS DESIRED.
- CONSTRUCTION OF FIRE AND DOMESTIC WATER SUPPLY IMPROVEMENTS SHALL CONFORM TO TOWN OF LITTLETON REQUIREMENTS.
- WHERE DIMENSIONS INVOLVE CURB, DIMENSIONS ARE TO FACE OF CURB, WHERE SLOPED GRANITE CURB OR CAPE COD BERM SPECIFIED, FACE OF CURB IS EDGE OF FINISH PAVEMENT AT TOE OF CURB.
- NO DEBRIS, JUNK, RUBBISH OR OTHER NON-BIODEGRADABLE MATERIALS, FILL CONTAINING HAZARDOUS MATERIALS OR WASTES, OR STUMPS SHALL BE BURIED ON ANY LAND ON THIS SITE, OR LEFT ON ANY LOT OR ON THE STREET RIGHT OF WAY.

REGULATORY NOTES

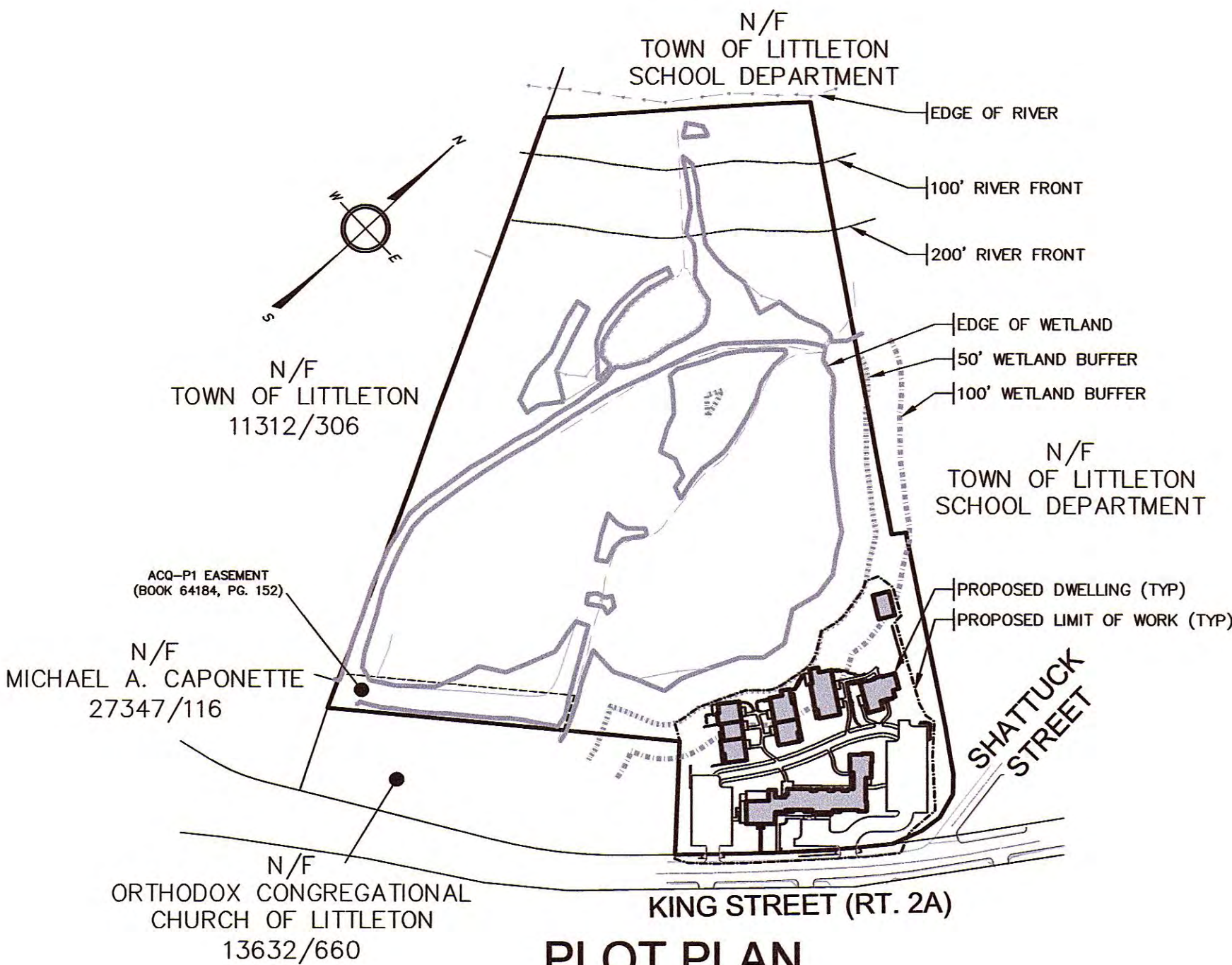
- CONTRACTOR SHALL CONTACT DIG-SAFE FOR UNDERGROUND UTILITY MARKING AT 888.344.7233 AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF ANY WORK. CONTRACTOR SHALL GIVE TWENTY-FOUR (24)-HOUR NOTICE TO PERTINENT TOWN DEPARTMENTS BEFORE COMMENCING ANY WORK IN THE FIELD.
- CONTRACTOR SHALL COORDINATE AND OBTAIN ALL CONSTRUCTION PERMITS REQUIRED BY REGULATORY AUTHORITIES.
- CONTRACTOR SHALL BE AWARE OF ALL CONSTRUCTION REQUIREMENTS, CONDITIONS, AND LIMITATIONS IMPOSED BY PERMITS AND APPROVALS ISSUED BY REGULATORY AUTHORITIES TO COMMENCEMENT OF ANY WORK.
- ALL WORK OUTSIDE OF BUILDING THAT IS LESS THAN 10 FEET FROM THE INSIDE FACE OF BUILDING FOUNDATION SHALL CONFORM WITH THE UNIFORM STATE PLUMBING CODE OF MASSACHUSETTS, 248 CMR 2.00.
- GENERAL COMPLIANCE WITH 28 CFR PART 36 - 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN AND 521 CMR PART C, EXTERIOR OF THE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD REGULATIONS IS INTENDED. CONTRACTOR SHALL VERIFY COMPLIANCE DURING CONSTRUCTION AND SHALL NOTIFY THE OWNER OF ANY NON-COMPLIANCE ISSUES AS SOON AS DISCOVERED.

SENIOR RESIDENTIAL DEVELOPMENT
HAGER HOMESTEAD
LITTLETON, MA



VICINITY MAP

SCALE: 1" = 600'



PLOT PLAN

SCALE: 1" = 200'

ZONING

Senior Residential Housing			
Parameter	Zoning Section [1]	Requirement	Remarks
Zoning District	Littleton Zoning Map Article XV	Residential	
Overlay District	173-61	SP for 70% Disturbed Area	N/A
Aquifer Protection District	173-61	30% > SP > 15% Impervious Area or 2,500 sq ft SP	5.79 GPD/1,000 SF Lot Area
Proposed Use	173-61	SP for Septic Over 6 GPD/1,000 SF Lot Area	N/A
Lot Area	173-61	SP for Parking Area w/ 100 Spaces or More	See section 173-146-1,2,3,4.
Frontage	173-146	Allowed	
Lot Coverage	173-146(B)	>2 Acres	Two Acres or more
Common Open Space	173-146(E)	100 FT	100 FT of frontage on a public way
Yard	173-146(C)	35% max. (Building coverage)	
Cottage/ Town House	Street Side & Rear	30% min.	Not more than 20% of the required min. common open space shall consist of wetlands
Independent Living Units	Street Side & Rear	30 FT	
Side & Rear-Accessory Building	Street Side & Rear	50 FT	
Townhouse or Two-Family	173-146(A)	50 FT	
Independent Living Units	173-146(A)	32 FT	
Parking	173-146(F)	55 FT	
Two-family and Town house	173-146(F)	two spaces per unit	
Independent Living Units	173-146(F)	one space per unit	
Guest parking	173-146(F)	one space per three units	
Wetlands Bylaw	local bylaw	100 ft buffer, 50 ft no disturb	From edge of wetlands
FEMA Floodplain	25017C 0238F	Zone X	No Flood Zone within Development
Board of Health	BOH Regulations;	SP for Septic Over 6 GPD/1,000 SF Lot Area	5.79 GPD/1,000 SF Lot Area
	Regulation 10		

NOTES:

- [1] Reference to section of Zoning Bylaw, where applicable.
[2] Per §173-62(A), Planning Board shall be Special Permit Granting Authority for the Aquifer Protection District

ABBREVIATIONS:

SF=Square feet; FT=feet; SP=special permit; MDEP=Massachusetts Department of Environmental Protection; FEMA=Federal Emergency Management Agency; ACEC=Area of Critical Environmental Concern; WIPA=Interim Wetland Protection Area

SHEET INDEX

CIVIL DRAWINGS

- C1.1 TITLE SHEET
- C2.1 EXISTING CONDITIONS PLAN
- C2.2 DEMOLITION AND EROSION & SEDIMENT CONTROL PLAN
- C2.3 EROSION AND SEDIMENT CONTROL DETAILS
- C3.1 SITE LAYOUT AND UTILITIES PLAN
- C3.2 SITE LAYOUT AND ACCESS PLAN
- C4.1 GRADING, DRAINAGE AND PAVING PLAN
- C5.1 CONSTRUCTION DETAILS
- C5.2 CONSTRUCTION DETAILS
- C5.3 CONSTRUCTION DETAILS

LANDSCAPE DRAWINGS

BY: COPLEY WOLFF DESIGN GROUP

L300 PLANTING AND LIGHTING PLAN

ARCHITECTURAL DRAWINGS

BY: SHELDON PENNOYER ARCHITECTS

- A0.1 RENDERED SITE EXTERIOR ELEVATIONS
- A1.1 CH BASEMENT-MS GARDEN LEVEL FLOOR PLAN
- A1.2 CH MAIN-MS FIRST LEVEL FLOOR PLAN
- A1.3 CH SECOND-MS SECOND LEVEL FLOOR PLAN
- A1.4 CH THIRD-MS ROOF PLAN
- A1.5 C1, C2, C3 FLOOR PLANS
- A1.6 RU PLANS
- A1.7 SITE ROOF PLAN W/ MECHANICAL AREAS
- A1.8 EXTERIOR BUILDING LIGHTING
- A2.1 CH-MS EXTERIOR ELEVATIONS & COMMUNITY SIGN
- A2.2 CH-MS EXTERIOR ELEVATIONS
- A2.3 C1 & C2 EXTERIOR ELEVATIONS
- A2.4 C3 EXTERIOR ELEVATIONS
- A2.5 RU EXTERIOR ELEVATIONS
- A3.1 CARPORT 1 PLANS & ELEVATIONS
- A3.2 CARPORT 2 PLANS & ELEVATIONS

APPROVED BY THE
LITTLETON PLANNING BOARD

CHAIR
APPLICATION FILED
HEARING DATE
PLAN APPROVED

PROJECT TEAM:

SHELDON
PENNOYER
ARCHITECTS
ARCHITECTURE
PLANNING+DESIGN

64 NORTH MAIN STREET, SUITE 1, CONCORD, NH 03301

CW
DG

Copley Wolff Design Group
Landscape Architects & Planners

10 POST OFFICE SQUARE, SUITE 1315, BOSTON, MA 02109

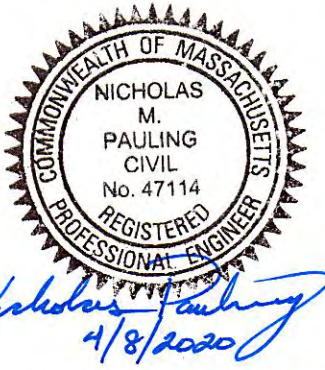
FITCH ARCHITECTURE
& COMMUNITY DESIGN
home • community • planet

110 PULPIT HILL ROAD AMHERST, MA 01002

DRAWING ISSUED FOR:

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☒ PERMIT ☐ CONSTRUCTION RECORD

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NO.	DATE	BY	APP.	REVISION	DESCRIPTION

GPR

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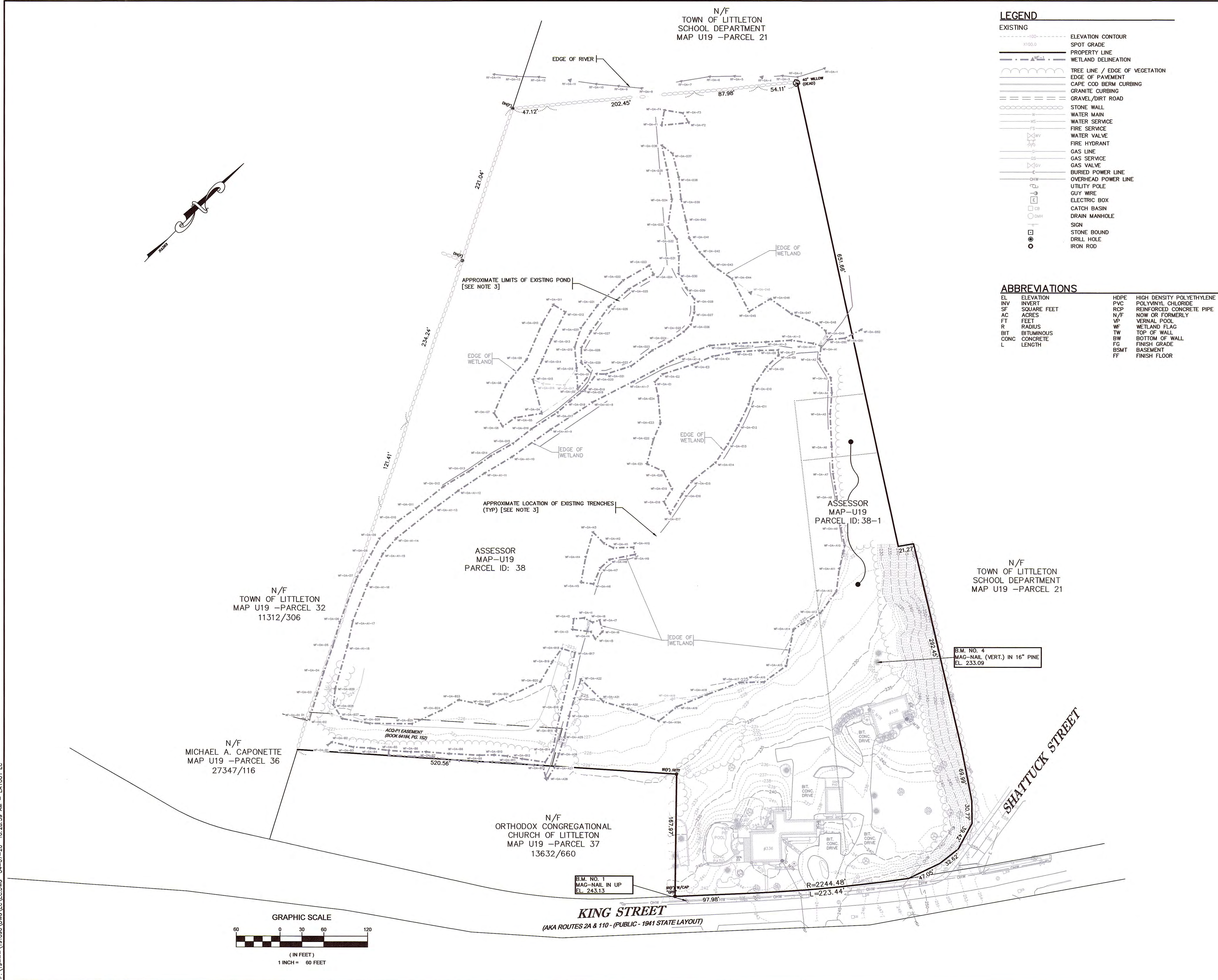
SPECIAL PERMIT
SENIOR RESIDENTIAL DEVELOPMENT

TITLE SHEET

HAGER HOMESTEAD
336 KING STREET
LITTLETON, MA

PREPARED FOR:
MASSACHUSETTS COHOUSING, LLC.
200 SUMMIT DRIVE, SUITE 210
BURLINGTON, MA 01803

DES. BY: MCL/LT
CHK. BY: NMP
DATE: APRIL 2020
JOB 191096
C1.1



ELEVATION DATUM

DATUM: NAVD 1988

B.M. NO.1

ASSESSORS REFERENCE:

ASSESSORS PARCEL MAP U19, PARCEL 38
RECORD OWNER: CRAIG C. GRUSKOWSKI & HEIDI PLATT GRUSKOWSKI
338 KING ST. LITTLETON, MA 01460

ASSESSORS PARCEL MAP U19, PARCEL 38-1
RECORD OWNER: CRAIG C. GRUSKOWSKI & HEIDI PLATT GRUSKOWSKI,
TRUSTEES OF PAINLESS REALTY TRUST
338 KING ST. LITTLETON, MA 01460

DEED REFERENCE:

- "THE PAINLESS REALTY TRUST" CRAIG C. GRUSKOWSKI & HEIDI PLATT GRUSKOWSKI, TRUSTEES. BOOK 43979 PAGE 197.
- CRAIG C. GRUSKOWSKI & HEIDI PLATT GRUSKOWSKI BOOK 56305 PAGE 245.
- CRAIG C. GRUSKOWSKI & HEIDI PLATT GRUSKOWSKI BOOK 56305 PAGE 247.
- CRAIG C. GRUSKOWSKI & HEIDI PLATT GRUSKOWSKI BOOK 29945 PAGE 603.

REFERENCES

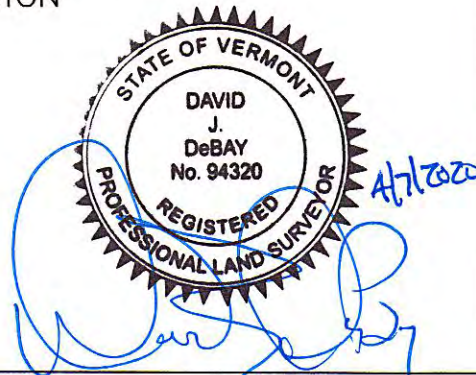
- PLAN RECORDED AS PLAN #1034 OF 1997, MIDDLESEX SOUTH REGISTRY OF DEEDS.
- PLAN RECORDED AS PLAN #34 OF 2011, MIDDLESEX SOUTH REGISTRY OF DEEDS.
- "ORDER OF RESOURCE AREA DELINEATION" PREPARED FOR MASSACHUSETTS COHOUSING, LLC. DATED MARCH 23, 2020. RECORDED AT THE MIDDLESEX SOUTH REGISTRY OF DEEDS BOOK 74331-PAGE 23.

NOTES:

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- THE EDGE OF WETLAND AND RIVER FRONT HAS BEEN DELINEATED BY OXBOW ASSOCIATES, INC. DURING OCTOBER & NOVEMBER 2019. [SEE REFERENCE #3].
- DELINEATION OF EXISTING POND AND TRENCHES AREA SHOWN AS APPROXIMATE AND ARE BASED ON AERIAL IMAGES.

DRAWING ISSUED FOR:

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EXISTING CONDITIONS PLAN

HAGER HOMESTEAD
336-338 KING STREET
LITTLETON, MA

PREPARED FOR:
MASSACHUSETTS COHOUSING, LLC.
200 SUMMIT DRIVE, SUITE 210
BURLINGTON, MA 01803

DRAFT: MCL
CHK. BY: DSB
DATE: APRIL 2020
JOB 191096
C2.1

DEMOLITION NOTES

1. CONTRACTORS (IN ACCORDANCE WITH MASS. G.L. CHAPT. 82 SECT. 40 AS AMENDED) MUST CONTACT ALL UTILITY COMPANIES BEFORE EXCAVATING AND DRILLING. ALSO CALL "DIG-SAFE" AT 811 OR 1-888-344-7233.
2. EXISTING SEPTIC AND WATER SERVICES SHOWN HEREON ARE BASED ON AVAILABLE RECORD DATA FROM THE TOWN OF LITTLETON AND LAND OWNER RECORDS, RESPECTIVELY, AND ARE TO BE CONSIDERED APPROXIMATE. CONTRACTOR TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES PRIOR TO DEMOLITION.
3. PROPERLY DISPOSE OF NON-SALVAGEABLE MATERIAL/DEBRIS INCLUDING TREE STUMPS AND OTHER UNSUITABLE FILL MATERIAL OFF SITE.
4. CONTRACTOR SHALL TAKE MEASURES TO CONTROL DUST DURING EARTH REMOVAL AND CONTAIN DIRT ON SITE. STREET SWEEPING AND SWEEPING OF EXISTING PAVEMENT MAY BE REQUIRED DURING CONSTRUCTION.
5. COORDINATE WITH OWNER REGARDING DISPOSITION OF SALVAGEABLE MATERIALS.
6. WHERE EXISTING UTILITY LINES/STRUCTURES ARE TO BE CUT/BROKEN DOWN/ABANDONED, LINES/STRUCTURES SHALL BE PLUGGED/CAPPED/FILLED IN ACCORDANCE WITH UTILITY OWNER REQUIREMENTS.
7. ALL TREES AND LANDSCAPING SHOWN HEREON ARE INTENDED TO BE REMOVED, UNLESS OTHERWISE NOTED. SEE SHEET L300.
8. ALL EXISTING BITUMINOUS CONCRETE PAVEMENT AND CURBING ONSITE TO BE REMOVED.

LEGEND

EXISTING		PROPOSED
100	ELEVATION CONTOUR	1000
X100.0	SPOT GRADE	1000
	PROPERTY LINE	
	WETLAND DELINEATION	
	WETLAND BUFFER ZONE	
	SHORELINE	
	100-YEAR FLOODPLAIN LIMIT	
	TREE LINE / EDGE OF VEGETATION	
	EDGE OF PAVEMENT	
	CAPE COD BERM CURBING	
	GRANITE CURBING	
	GRAVEL/DIRT ROAD	
	STOCKADE FENCE	
	STONE WALL	
	WATER MAIN	W
	WATER SERVICE	WS
	FIRE SERVICE	FS
	WATER VALVE	WV
	FIRE HYDRANT	FW
	FORCE MAIN	FM
	GRAVITY SEWER LINE	SS
	SEWER MANHOLE	SMH
	GAS LINE	GS
	GAS SERVICE	GS
	GAS VALVE	GSV
	BURIED POWER LINE	B
	OVERHEAD POWER LINE	OHW
	UTILITY POLE	U
	GUY WIRE	GW
	ELECTRIC BOX	E
	STORM DRAIN	SD
	UNDERDRAIN	UD
	ROOF DRAIN	RD
	FOUNDATION DRAIN	FD
	CATCH BASIN	CB
	DRAIN MANHOLE	DMH
	SILT FENCE BARRIER	SFB
	STRAW WATTLES	SW
	DEEP SOIL OBSERVATION HOLE	DSOH
	SITE LUMINAIRE	L
	SIGN	S
	SURFACE RUNOFF DIRECTION	SRD
	STONE BOUND	SB
	DRILL HOLE	DH
	IRON ROD	IR

ABBREVIATIONS

EL	ELEVATION	HDPE	HIGH DENSITY POLYETHYLENE
INV	INVERT	PVC	POLYVINYL CHLORIDE
SF	SQUARE FEET	RCP	REINFORCED CONCRETE PIPE
AC	ACRES	N/F	NOW OR FORMERLY
FT	FEET	VP	VERNAL POOL
R	RADIUS	WF	WETLAND FLAG
DIA	DIAMETER	TW	TOP OF WALL
BIT	BITUMINOUS	BW	BOTTOM OF WALL
CONC	CONCRETE	FS	FINISH GRADE
L	LENGTH	BSMT	BASEMENT
S	SLOPE	FF	FINISH FLOOR

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☒ PERMIT ☐ CONSTRUCTION RECORD

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REVISION DESCRIPTION

NO.	DATE	BY	APP.	REVISION DESCRIPTION
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DEMOLITION AND EROSION &
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PREPARED FOR:
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200 SUMMIT DRIVE, SUITE 210
BURLINGTON, MA 01803

DES. BY: MCL/LT	DATE: APRIL 2020	JOB 191096	C2.2
CHK. BY: NMP			

Structure	FROM		TO		Pipe Size (in)	Pipe Type	Length (ft)	Slope (%)	
	Rim El.	Lowest Stab El.	Invert (out)	To					Invert (in)
BLDG. CH	—	237.00	235.08	GREASE TRAP	234.48	6	SDR 35	29.90	2.0%
GREASE TRAP	—	—	234.23	CO 1	234.13	8	SDR 35	5.00	2.0%
BLDG. CT	—	237.00	234.97	CO 2	234.87	6	SDR 35	5.00	2.0%
CO 1	—	234.13	234.13	CO 2	234.00	8	SDR 35	8.58	2.0%
CO 2	—	—	234.87	CO 3	234.00	6	SDR 35	42.73	2.0%
CO 3	—	—	234.00	SMH 1	233.39	8	SDR 35	30.67	2.0%
BLDG. MS	—	241.00	236.37	CO 4	236.17	6	SDR 35	10.25	2.0%
CO 4	—	—	236.17	SMH 1	235.59/233.39 ⁺	6	SDR 35	28.37	2.0%
SMH 1	240.20	—	233.22	CO 6	231.76	8	SDR 35	72.93	2.0%
BLDG. C2	—	237.00	232.42	CO 5	232.32	6	SDR 35	5.00	2.0%
CO 5	—	—	232.32	CO 6	231.76	6	SDR 35	28.24	2.0%
CO 6	—	—	231.76	SMH 2	231.70	8	SDR 35	2.91	2.0%
SMH 2	239.30	—	231.54	CO 8	231.13	8	SDR 35	20.17	2.0%
BLDG. C3	—	237.50	231.42	CO 7	231.32	6	SDR 35	5.00	2.0%
CO 7	—	—	231.32	CO 8	231.13	8	SDR 35	3.39	2.0%
CO 8	—	—	231.13	SMH 3	230.76	8	SDR 35	18.31	2.0%
SMH 3	239.20	—	230.60	CO 10	229.90	8	SDR 35	34.51	2.0%
BLDG. RU	—	236.00	230.33	CO 9	230.23	6	SDR 35	5.00	2.0%
CO 9	—	—	230.23	CO 10	229.9	6	SDR 35	16.24	2.0%
CO 10	—	—	229.90	SMH 4	229.80	8	SDR 35	5.00	2.0%
SMH 4	242.50	—	229.63	SEPTIC TANK	229.06	8	SDR 35	28.42	2.0%

WF-OA-A17

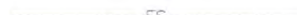
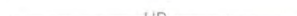
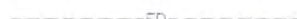
WF-OA-A18

WF-OA-A19

WF-OA-A19A

WF-OA-A20

EDGE OF WETLAND BUFFER

EXISTING	PROPOSED
 100'  X100.0	 100'
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	

EL	INVERT	HDPE	HIGH DENSITY POLYETHYLENE
INV	ELEVATION	PVC	POLYVINYL CHLORIDE
FT	SQUARE FEET	RCF	REINFORCED CONCRETE PIPE
AC	ACRES	N/F	NOW OR FORMERLY
FT	FEET	VP	VERNAL POOL
R	RADIUS	WF	WETLAND FLAG
DIA	DIAMETER	TW	TOP OF WALL
BIT	BITUMINOUS	SW	BOTTOM OF WALL
CONC	CONCRETE	FG	FINISH GRADE
L	LENGTH	BSMT	BASEMENT
S	SLOPE	FF	FINISH FLOOR
F	FIRE	BS	BASED UNDER SEWER

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☒ PERMIT ☐ CONSTRUCTION
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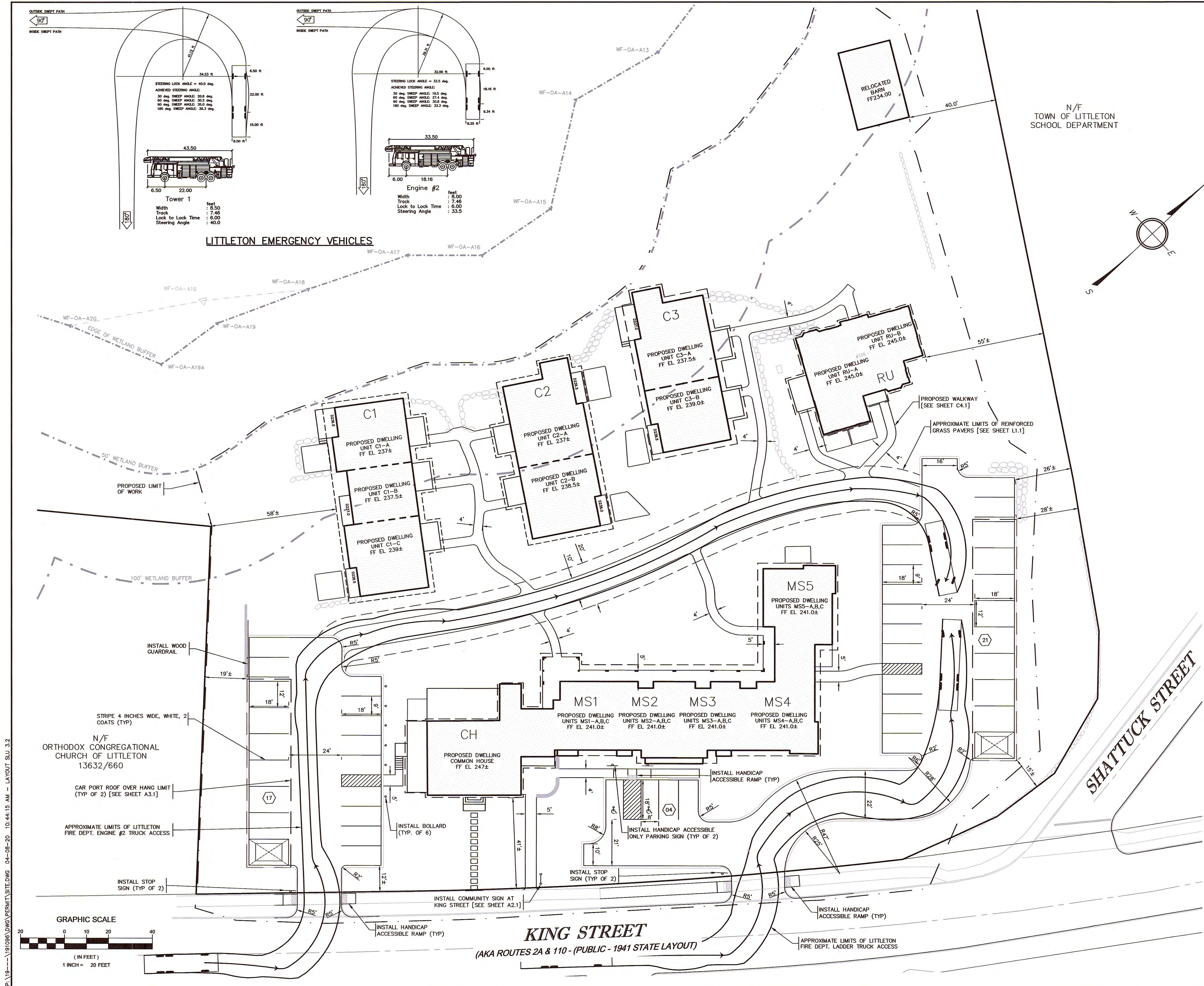
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SITE LAYOUT AND UTILITIES PLAN

HAGER HOMESTEAD
336 KING STREET
LITTLETON, MA

PREPARED FOR:
MASSACHUSETTS COHOUSING, LLC.
200 SUMMIT DRIVE, SUITE 210
BURLINGTON, MA 01803

DES. BY: MCL/LT	DATE: APRIL 2020	JOB 191096	C3.1
CHK. BY: NMP			



LEGEND	
EXISTING	PROPOSED

ABBREVIATIONS	
EL ELEVATION	HDPE HIGH DENSITY POLYETHYLENE
INV INVERT	PVC POLYVINYL CHLORIDE
SF SQUARE FEET	RCP REINFORCED CONCRETE PIPE
AC ACRES	N/F NOW OR FORMERLY
FT FEET	VP VERNAL POOL
R RADIUS	WF WETLAND FLAG
DIA DIAMETER	TW TOP OF WALL
BIT BITUMINOUS	BW BOTTOM OF WALL
CONC CONCRETE	FG FINISH GRADE
L LENGTH	BSMT BASEMENT
S SLOPE	FF FINISH FLOOR
	BS BUILDING SEWER

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SITE LAYOUT AND ACCESS PLAN

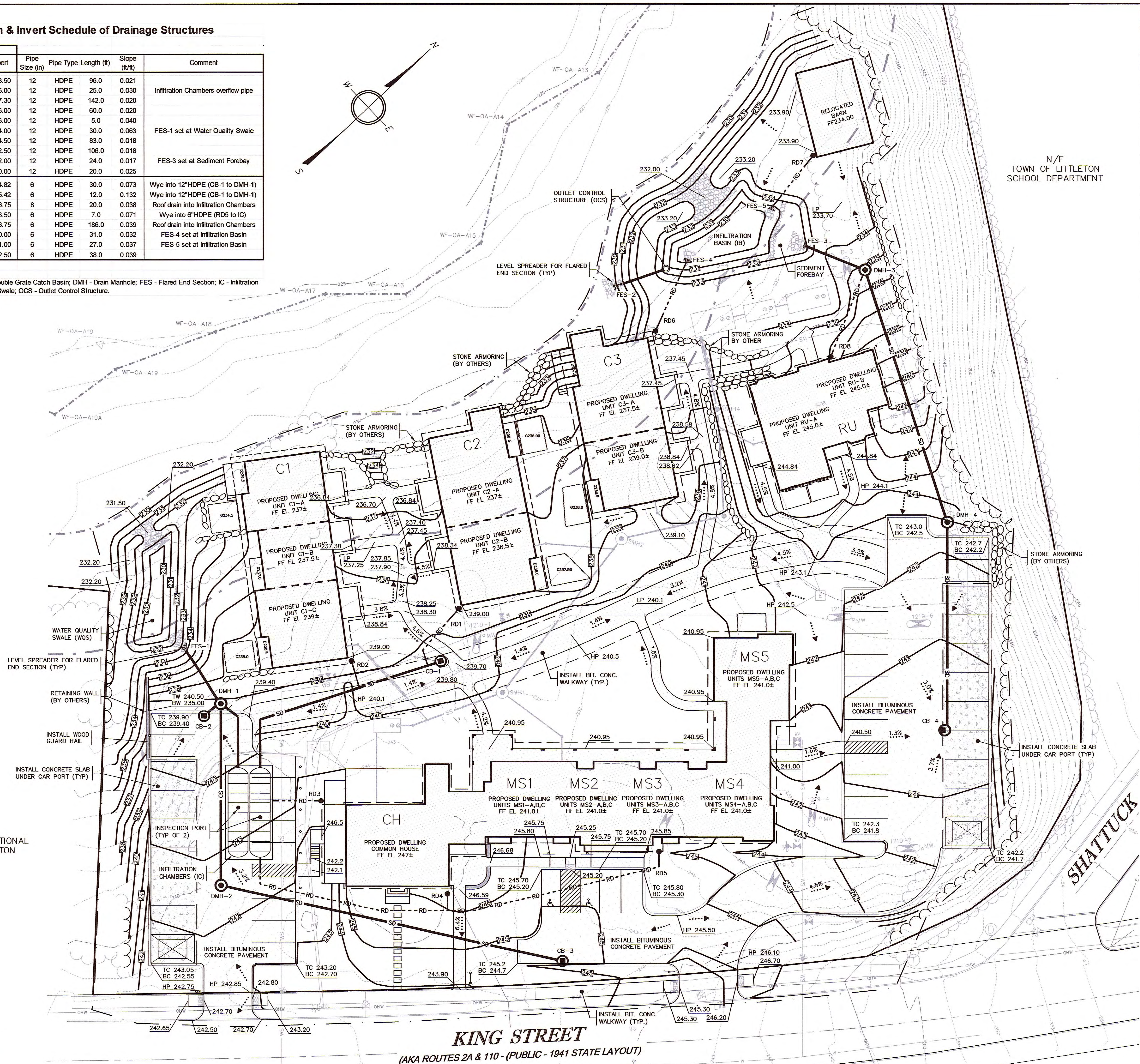
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200 SUMMIT DRIVE, SUITE 210
BURLINGTON, MA 01803

DES. BY: MCL/LT DATE: APRIL 2020 JOB 191096 C3.2
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FROM			TO		Pipe Size (in)	Pipe Type	Length (ft)	Slope (ft/ft)	Comment
Structure	Rim	Invert	Structure	Invert					
CB-1	239.50	235.50	IC	233.50	12	HDPE	96.0	0.030	Infiltration Chambers overflow pipe
IC	-	236.75	DMH-1	236.00	12	HDPE	25.0	0.021	
CB-3	244.40	240.14	DMH-2	237.30	12	HDPE	142.0	0.020	
DMH-2	241.40	237.20	DMH-1	236.00	12	HDPE	60.0	0.020	FES-1 set at Water Quality Swale
CB-2	239.20	236.20	DMH-1	236.00	12	HDPE	5.0	0.040	
DMH-1	239.50	235.90	FES-1	234.00	12	HDPE	30.0	0.063	
CB-4	240.00	236.00	DMH-4	234.50	12	HDPE	83.0	0.018	
DMH-4	243.00	234.40	DMH-3	232.50	12	HDPE	106.0	0.018	FES-3 set at Sediment Forebay
DMH-3	235.10	232.40	FES-3	232.00	12	HDPE	24.0	0.017	
OCS	232.00	230.50	FES-2	230.00	12	HDPE	20.0	0.025	
RD1	-	237.00	12"HDPE	234.82	6	HDPE	30.0	0.073	Wye into 12"HDPE (CB-1 to DMH-1)
RD2	-	237.00	12"HDPE	235.42	6	HDPE	12.0	0.132	Wye into 12"HDPE (CB-1 to DMH-1)
RD3	-	237.50	IC	236.75	8	HDPE	20.0	0.038	Roof drain into Infiltration Chambers
RD4	-	244.00	6"HDPE	243.50	6	HDPE	7.0	0.071	Wye into 6"HDPE (RD5 to IC)
RD5	-	244.00	IC	236.75	6	HDPE	186.0	0.039	Roof drain into Infiltration Chambers
RD6	-	231.00	FES-4	230.00	6	HDPE	31.0	0.032	FES-4 set at Infiltration Basin
RD7	-	232.00	FES-5	231.00	6	HDPE	27.0	0.037	FES-5 set at Infiltration Basin
RD8	-	234.00	DMH-3	232.50	6	HDPE	38.0	0.039	

Abbreviations:
CB - Deep Sump Catch Basin with Silt Prison; DCB - Double Grate Catch Basin; DMH - Drain Manhole; FES - Flared End Section; IC - Infiltration Chambers; IB - Infiltration Basin; WQS - Water Quality Swale; OCS - Outlet Control Structure.



LEGEND	PROPOSED
ELEVATION CONTOUR	
SPOT GRADE	
PROPERTY LINE	
WETLAND DELINEATION	
WETLAND BUFFER ZONE	
SHORELINE	
100-YEAR FLOODPLAIN LIMIT	
TREE LINE / EDGE OF VEGETATION	
EDGE OF PAVEMENT	
CAPE COD BERM CURBING	
GRANITE CURBING	
GRAVEL/DIRT ROAD	
STOCKADE FENCE	
STONE WALL	
WATER MAIN	
WATER SERVICE	
FIRE SERVICE	
WATER VALVE	
FIRE HYDRANT	
FORCE MAIN	
GRAVITY SEWER LINE	
SEWER MANHOLE	
GAS LINE	
GAS SERVICE	
GAS VALVE	
BURIED POWER LINE	
OVERHEAD POWER LINE	
UTILITY POLE	
GUY WIRE	
ELECTRIC BOX	
STORM DRAIN	
UNDERDRAIN	
ROOF DRAIN	
FOUNDATION DRAIN	
CATCH BASIN	
DRAIN MANHOLE	
SILT FENCE BARRIER	
STRAW WATTLES	
DEEP SOIL OBSERVATION HOLE	
SITE LUMINAIRE	
SIGN	
SURFACE RUNOFF DIRECTION	
STONE BOUND	
DRILL HOLE	
IRON ROD	

ABBREVIATIONS

ELV	ELEVATION	HDPE	HIGH DENSITY POLYETHYLENE
IN	INVERT	PVC	POLYVINYL CHLORIDE
SF	SQUARE FEET	RCP	REINFORCED CONCRETE PIPE
FT	FEET	N/F	NOW OR FORMERLY
FE	FEET	VP	VERNAL POOL
R	RADIUS	WF	WETLAND FLAG
DIA	DIAMETER	TW	TOP OF WALL
BIT	BITUMINOUS	BTW	BOTTOM OF WALL
CONC	CONCRETE	FG	FINISH GRADE
L	LENGTH	BSMT	BASEMENT
S	SLOPE	FF	FINISH FLOOR
TC	TOP OF CURB	HP	HIGH POINT
BT	BOTTOM OF CURB	LP	LOW POINT

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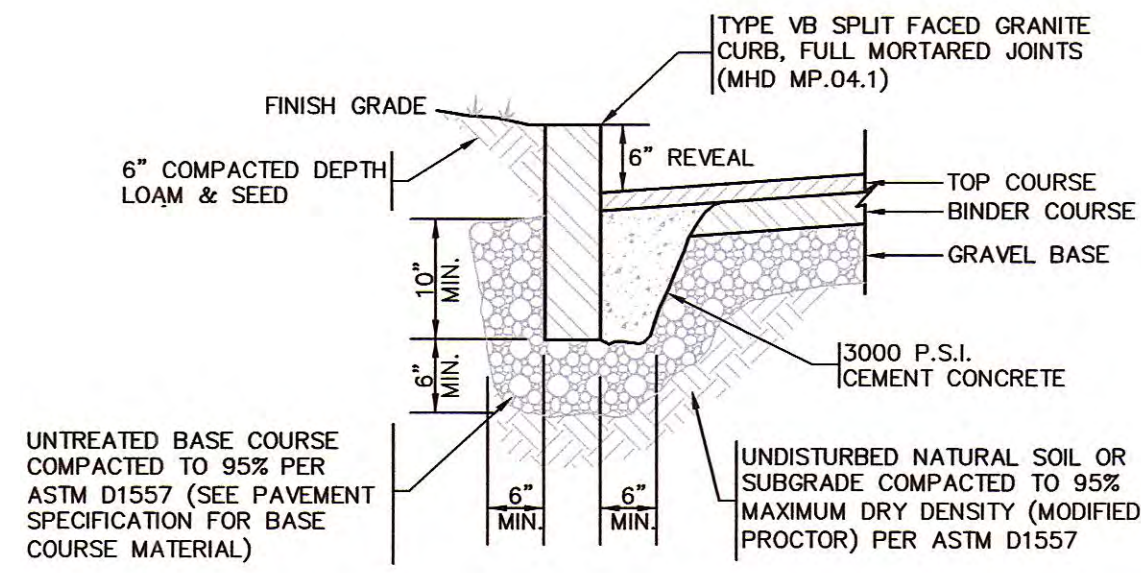
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GRADING, DRAINAGE AND PAVING PLAN

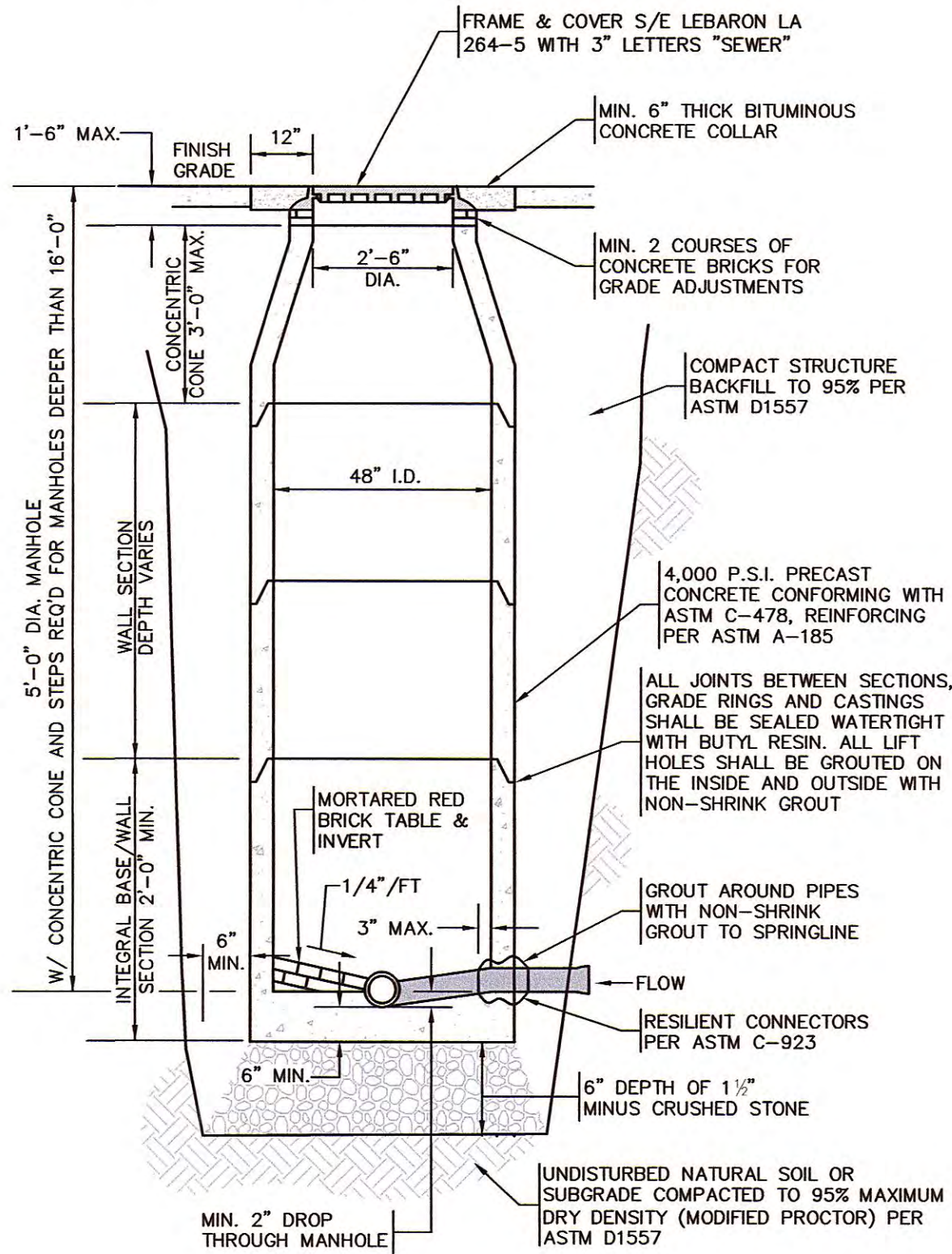
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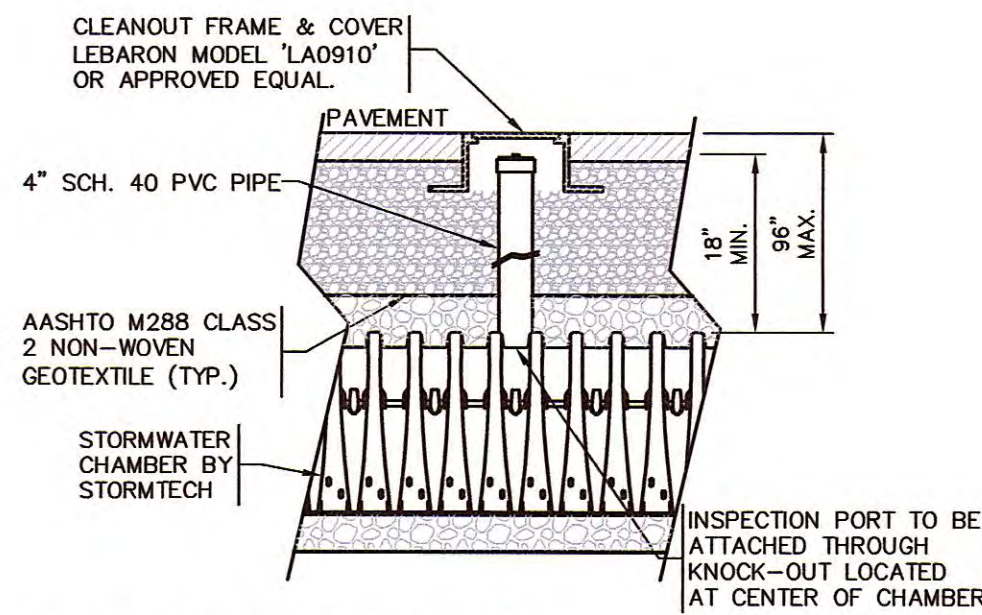
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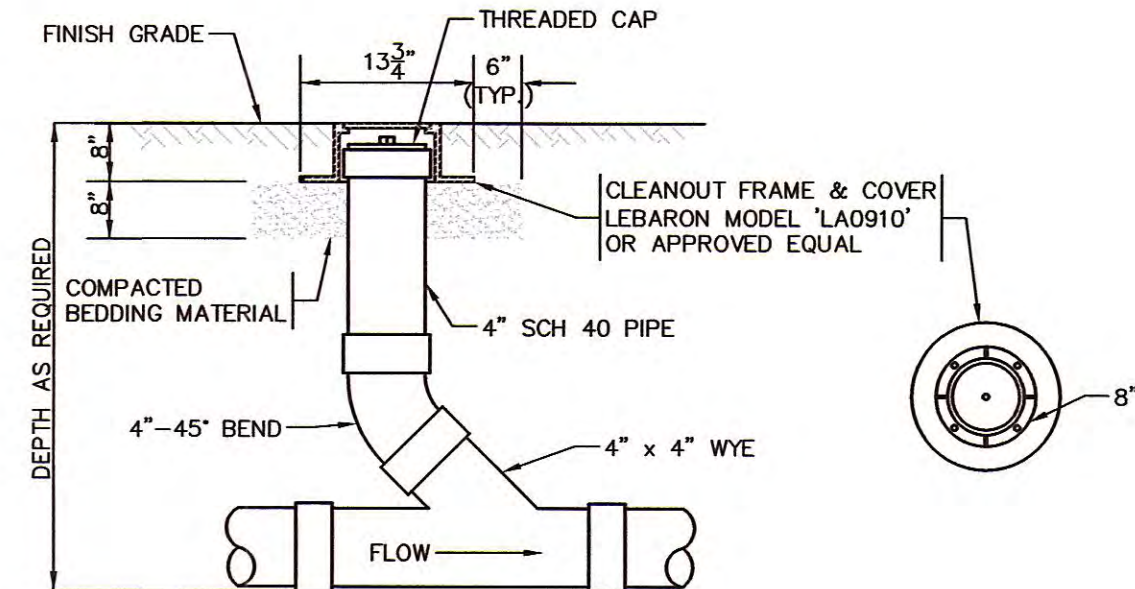
VERTICAL GRANITE CURB
TYPICAL CROSS SECTION
NOT TO SCALE



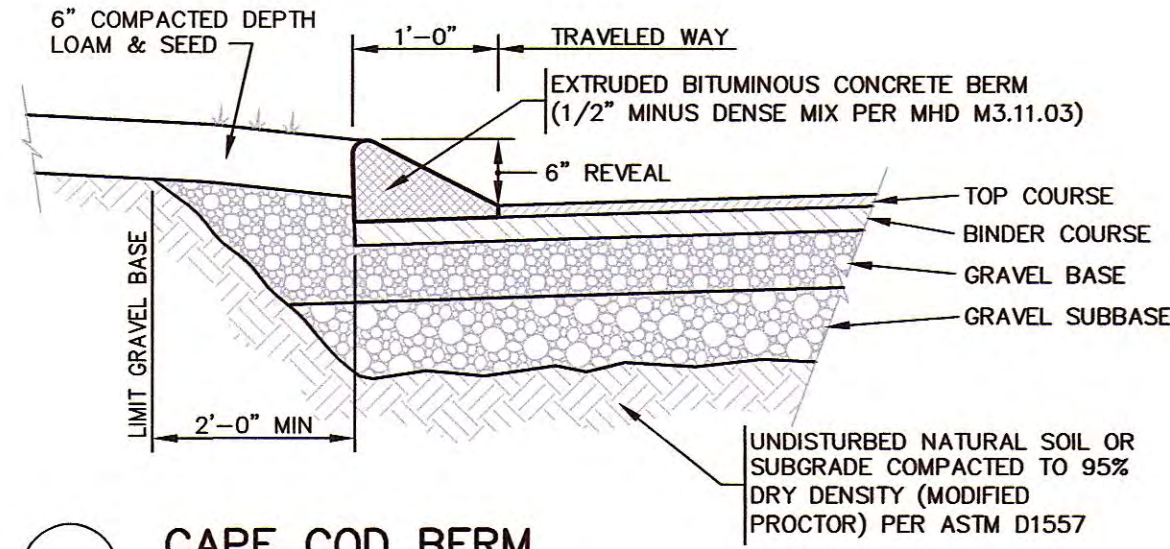
SEWER MANHOLE
TYPICAL CROSS SECTION
NOT TO SCALE



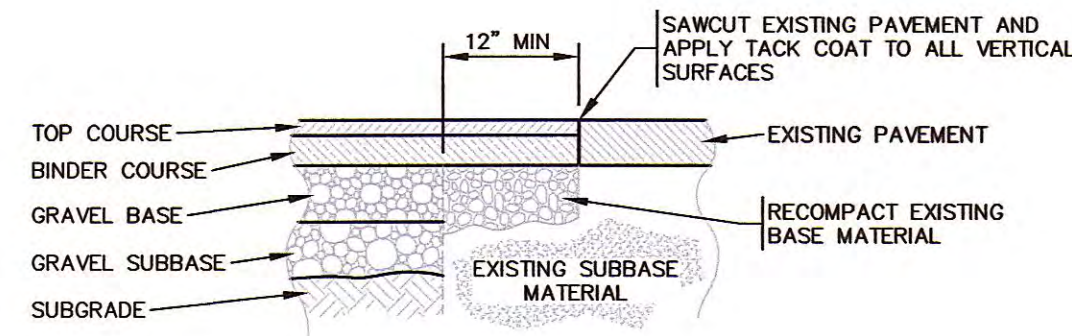
INSPECTION PORT
TYPICAL CROSS SECTION
NOT TO SCALE



CLEANOUT
TYPICAL CROSS SECTION
NOT TO SCALE

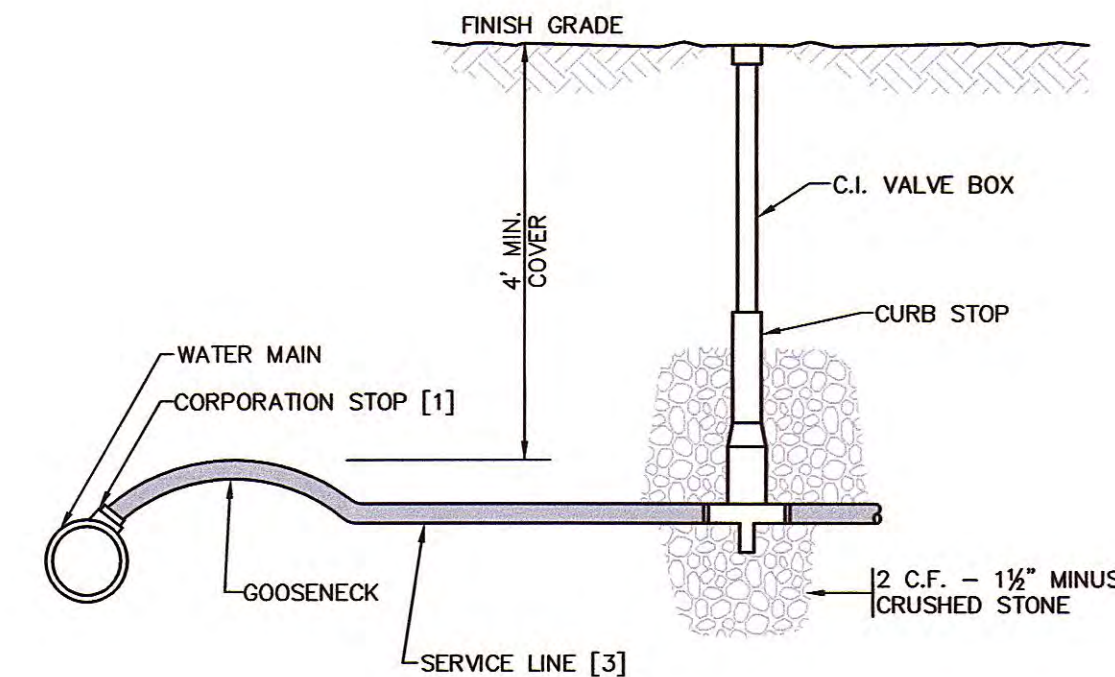


CAPE COD BERM
TYPICAL CROSS SECTION
NOT TO SCALE



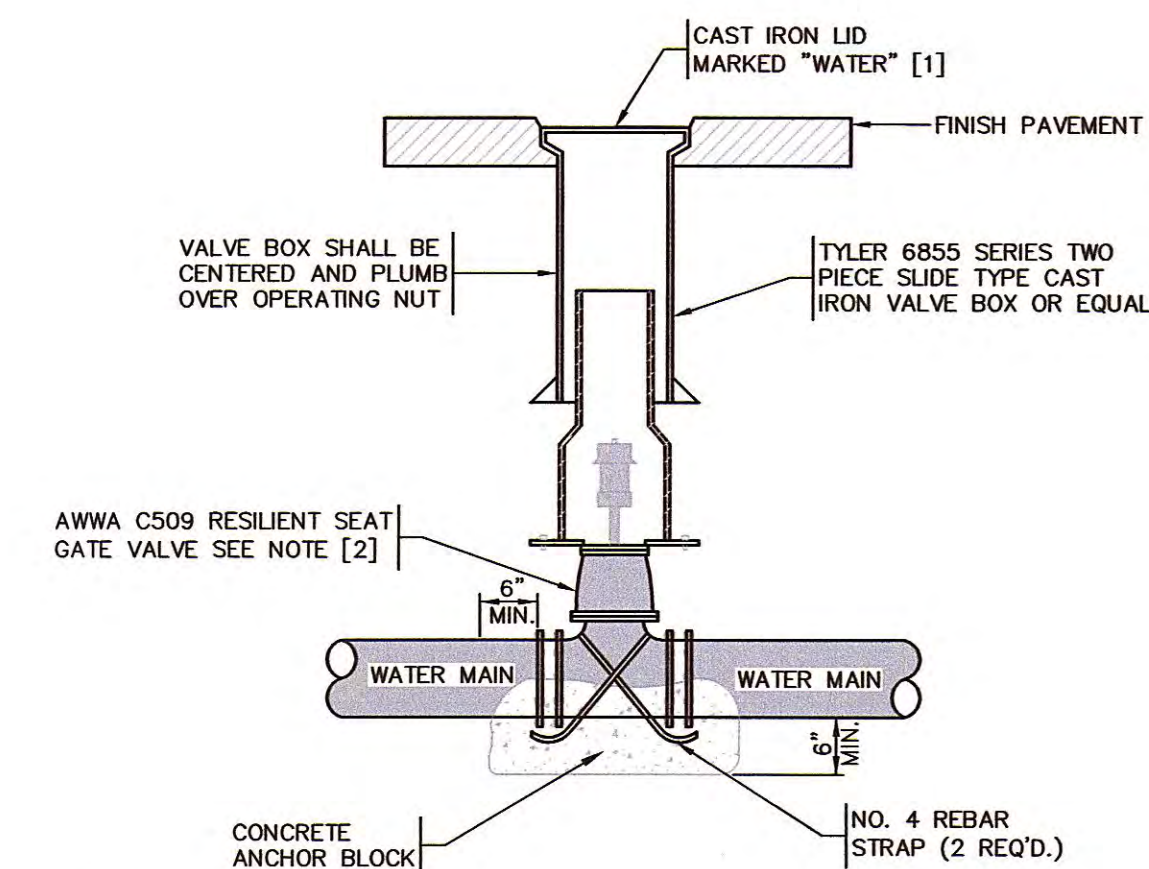
- NOTES:
- [1] FLEXIBLE PAVEMENT REMOVAL SHALL BE INITIATED BY MAKING A FULL-DEPTH VERTICAL SAWCUT AT THE LOCATIONS INDICATED ON THE PLANS. SAWCUTS SHALL BE ACCOMPLISHED USING A STANDARD DIAMOND-TYPE BLADE SAW.
 - [2] IF SAWCUT IS WITHIN THREE (3) FEET OF AN EXISTING BUILDING, CURB LINE OR EXISTING FENCE, COMPLETELY REMOVE EXISTING PAVEMENT AND REPLACE ACCORDING TO THE REQUIREMENTS OF THE BITUMINOUS CONCRETE PAVEMENT SECTION.

FLEXIBLE PAVEMENT SAWCUT DETAIL
TYPICAL CROSS SECTION
NOT TO SCALE



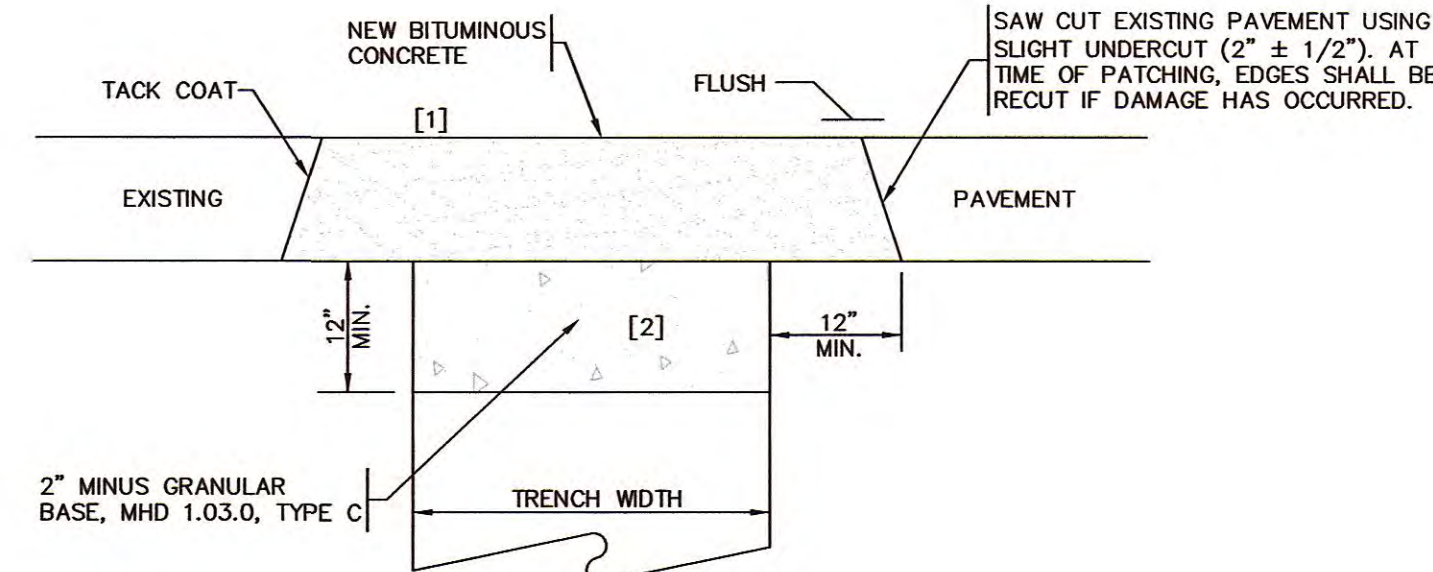
- NOTES:
- [1] WATER SERVICES LARGER THAN 1" ARE TO BE RESTRAINED TO MAIN WITH APPROVED SADDLE.
 - [2] COORDINATE BUILDING CONNECTION WITH PLUMBING DRAWINGS.
 - [3] ALL MATERIALS PER MUNICIPAL STANDARDS.

WATER SERVICE
TYPICAL CROSS SECTION
NOT TO SCALE



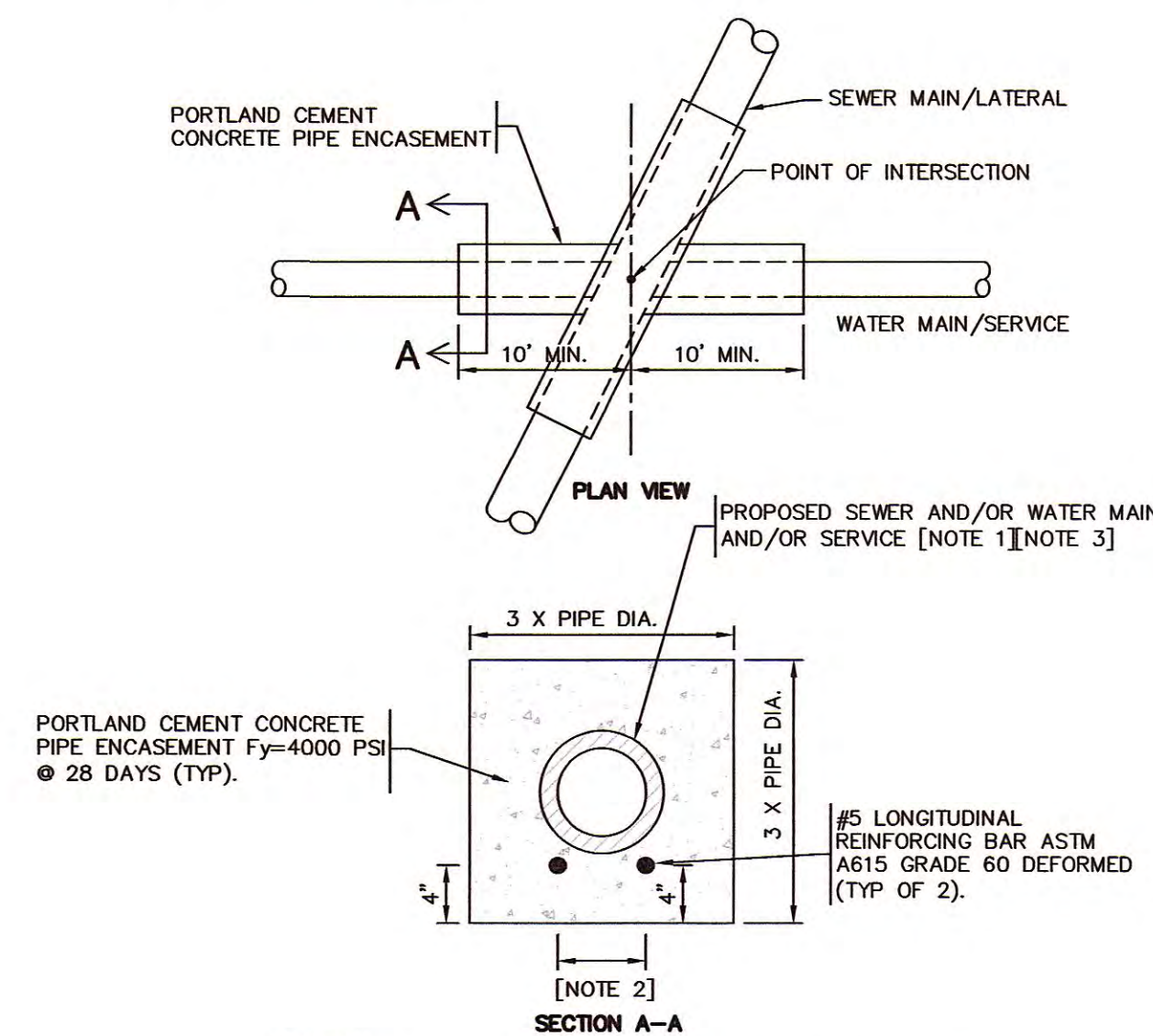
- NOTES:
- [1] SET LID AND CONCRETE COLLAR 1/4" TO 1/2" BELOW GRADE IN PAVEMENT OR OTHER AREAS TO BE PLOWED. SET LID 3" ABOVE FINISHED GRADE ELSEWHERE.
 - [2] VALVE SHALL OPEN IN DIRECTION AS SPECIFIED BY THE LOCAL WATER DEPARTMENT.

GATE VALVE
TYPICAL CROSS SECTION
NOT TO SCALE



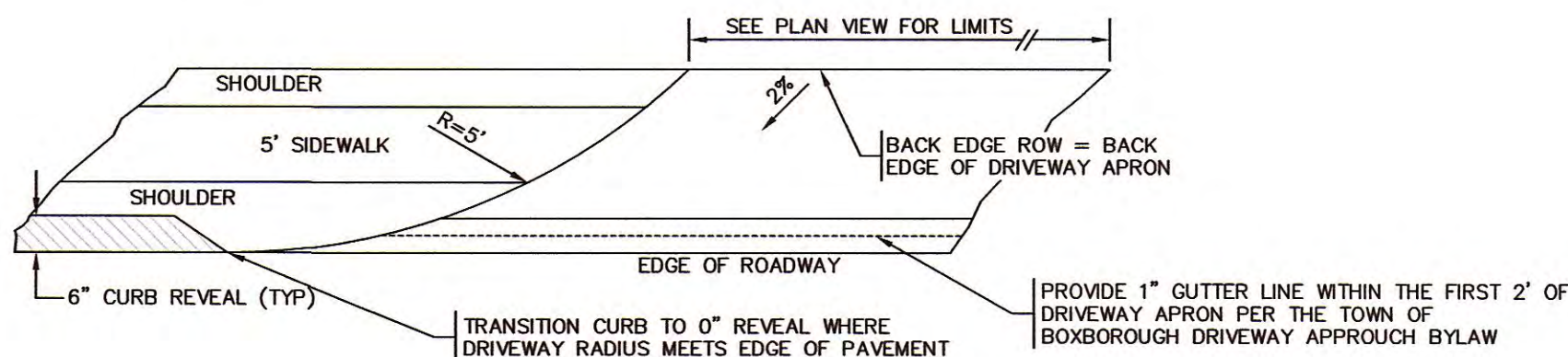
- NOTES:
- [1] GRANULAR BASE COMPACTION: 95% PER ASTM D-1557 MODIFIED PROCTOR METHOD.
 - [2] BIT. CONCRETE COMPACTION: 95%

TRENCH PATCH
TYPICAL CROSS SECTION
NOT TO SCALE

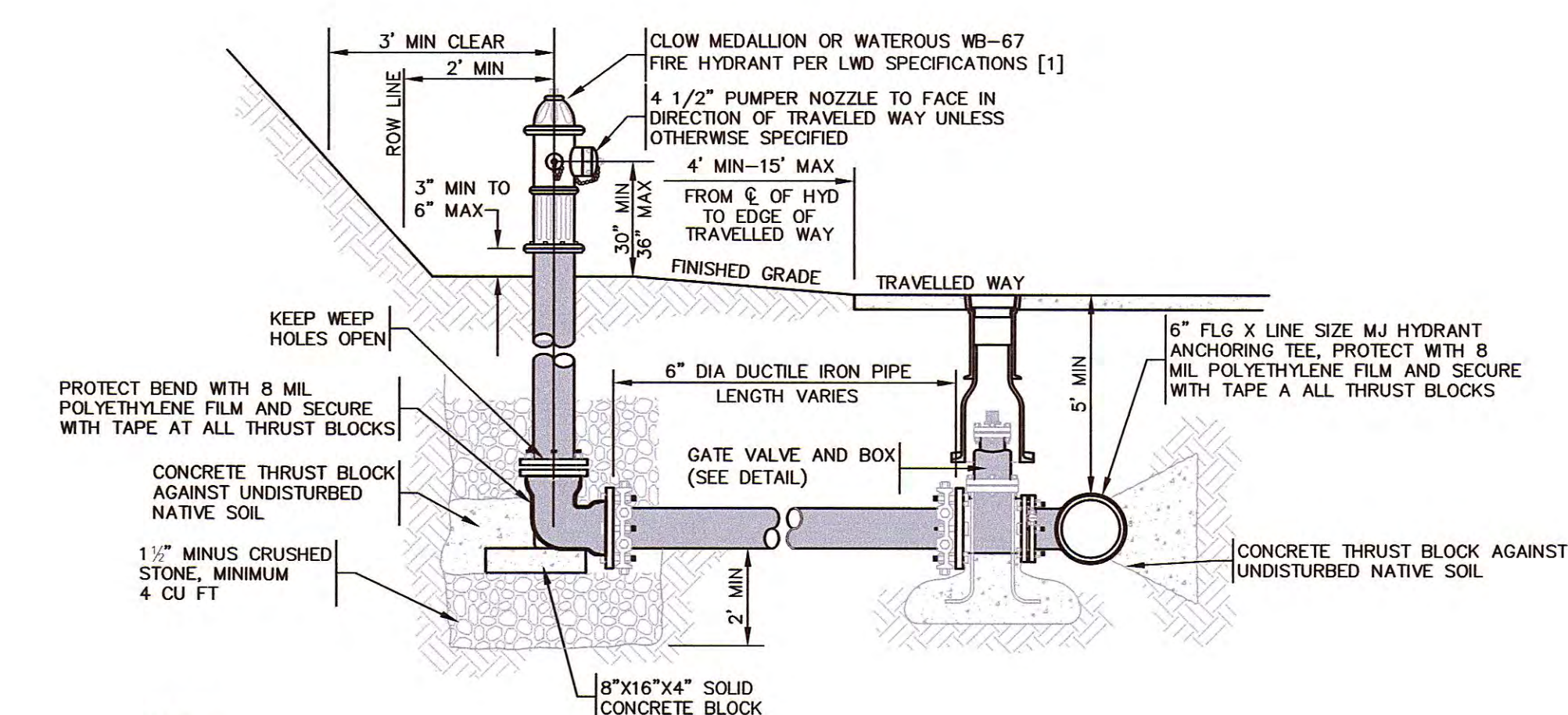


- NOTES:
- [1] CONCRETE PIPE ENCASEMENT TO EXTEND 10 FT ALONG SEWER LINE AND WATER LINE FROM POINT OF INTERSECTION.
 - [2] DISTANCE EQUAL TO PIPE DIAMETER.
 - [3] CONCRETE PIPE ENCASEMENT REQUIRED WHENEVER PROPOSED SEWER MAIN/LATERAL IS WITHIN 10' OF PROPOSED WATER MAIN/SERVICE.

PIPE ENCASEMENT
NOT TO SCALE

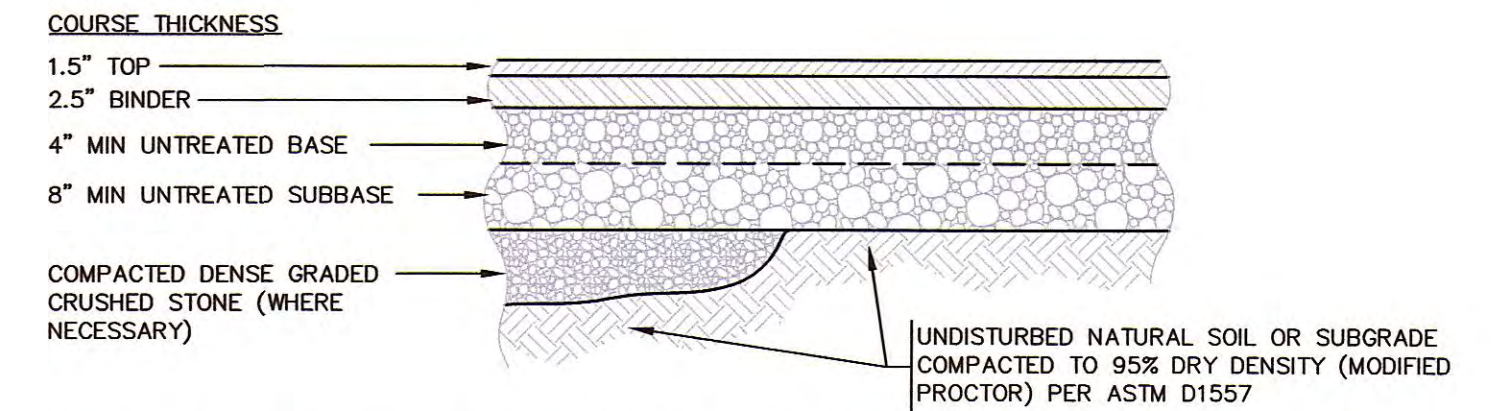


DRIVEWAY APRON
TYPICAL PLAN VIEW
NOT TO SCALE



- NOTES:
- [1] HYDRANT SHALL MEET ALL TOWN AND AWWA STANDARDS AND BE UL/FM APPROVED AND EQUIPPED WITH (1) 4 1/2" PUMPER NOZZLE AND (2) 2 1/2" HOSE NOZZLES.
 - [2] HYDRANT SHALL OPEN IN DIRECTION AS SPECIFIED BY THE LOCAL FIRE DEPARTMENT.
 - [3] WHERE HYDRANT IS SHOWN BEHIND SIDEWALK, SET CENTER OF HYDRANT 2- FEET BEHIND SIDEWALK.

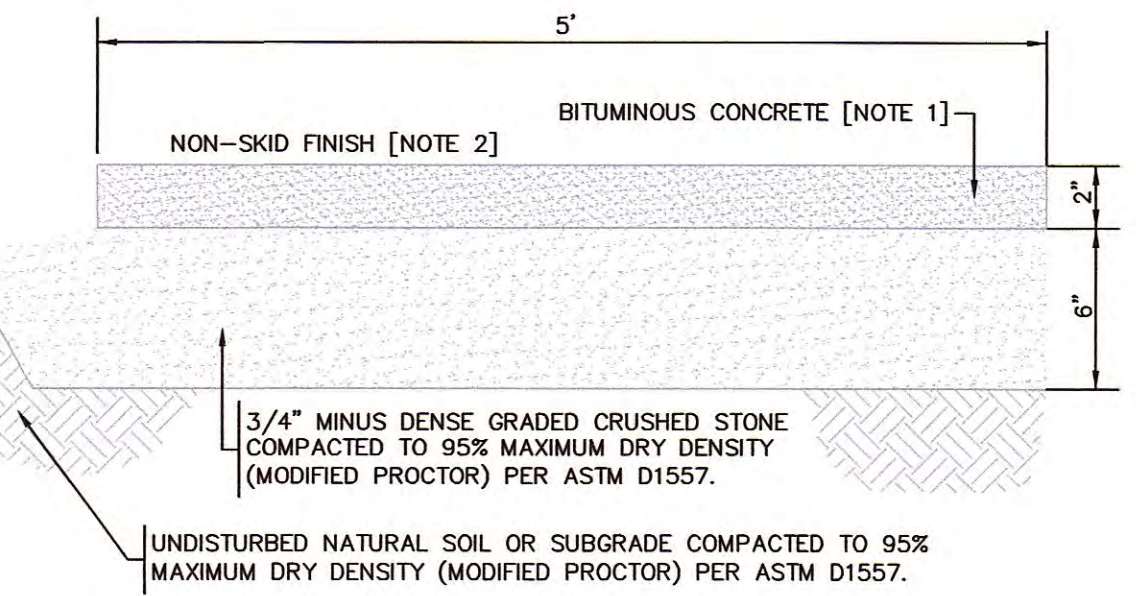
FIRE HYDRANT ASSEMBLY
TYPICAL CROSS SECTION
NOT TO SCALE



COURSE	MATERIAL	SPECIFICATION PER MASS HIGHWAY DEPARTMENT (MHD)	MAX AGG. SIZE (INCH)	COMPACTION REQUIREMENTS	TEST DESIGNATION
TOP	HOT MIX ASPHALT	SURFACE COURSE TYPE B	1/2	[NOTE 1]	AASHTO-T166
BINDER	HOT MIX ASPHALT	BINDER COURSE TYPE A	3/4	[NOTE 1]	AASHTO-T166
BASE	CRUSHED STONE	DENSE GRADED TYPE B	2	95% [NOTE 3]	ASTM D1557/AASHTO-T99
SUBBASE	GRAVEL BORROW	M1.03.0 TYPE B	3	95% [NOTE 3]	ASTM D1557/AASHTO-T99
SUBGRADE	ORDINARY BORROW	M1.01.0 [SEE NOTE 2]	8	95% [NOTE 3]	ASTM D1557/AASHTO-T99

- NOTES:
- [1] COMPACT TO TEST AVERAGE OF 95%; TEST SHALL NOT BE LOWER THAN 93%.
 - [2] UNSUITABLE MATERIAL IN THE SUBGRADE SHALL BE REMOVED AND REPLACED WITH AN ACCEPTABLE SUBSTITUTE MATERIAL: 3/4" MINUS DENSE GRADED CRUSHED STONE.
 - [3] MATERIAL SHALL BE SPREAD AND COMPACTED IN LAYERS NOT EXCEEDING 8-INCHES IN DEPTH, COMPACTED MEASUREMENT; LAST LAYER OF MATERIAL SHALL NOT EXCEED 4-INCHES IN DEPTH, COMPACTED MEASUREMENT.

BITUMINOUS CONCRETE PAVEMENT
TYPICAL CROSS SECTION
NOT TO SCALE



- NOTES:
- [1] MHD M3.11.03 CLASS 1, TYPE I-1 BITUMINOUS CONCRETE. 1/2" MAXIMUM AGGREGATE OR PARTICLE SIZE. COMPACT TO TEST AVERAGE OF 95%. NO TEST LOWER THAN 93%.
 - [2] SLOPE 5% MAXIMUM.

BITUMINOUS CONCRETE WALK
TYPICAL CROSS SECTION
NOT TO SCALE

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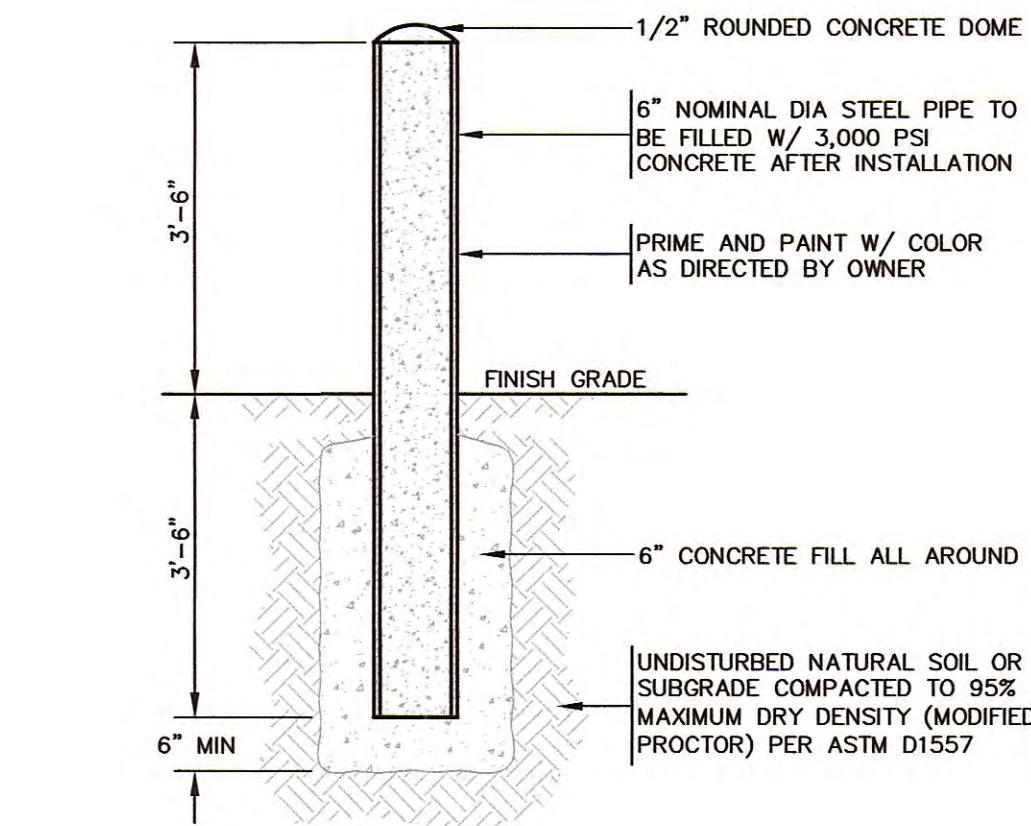
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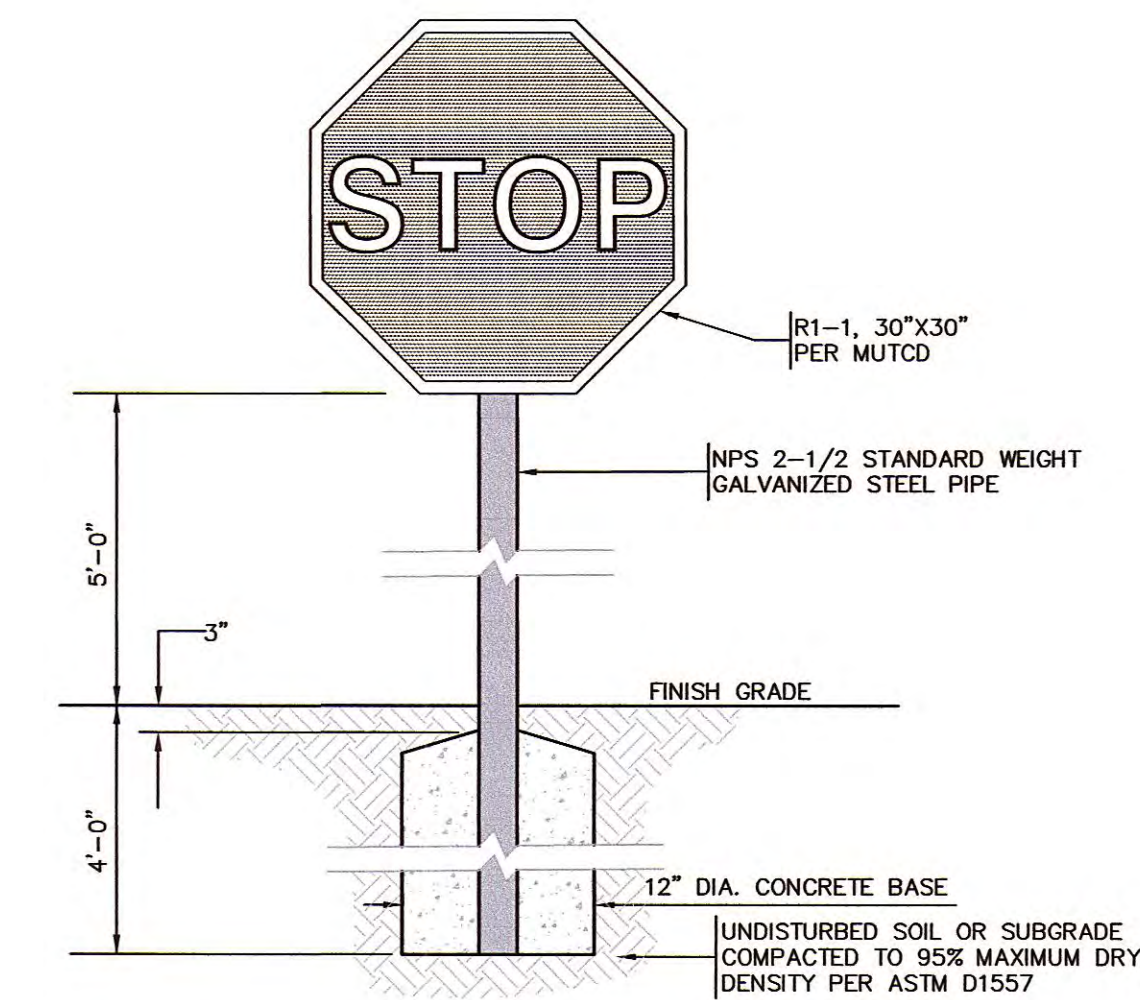
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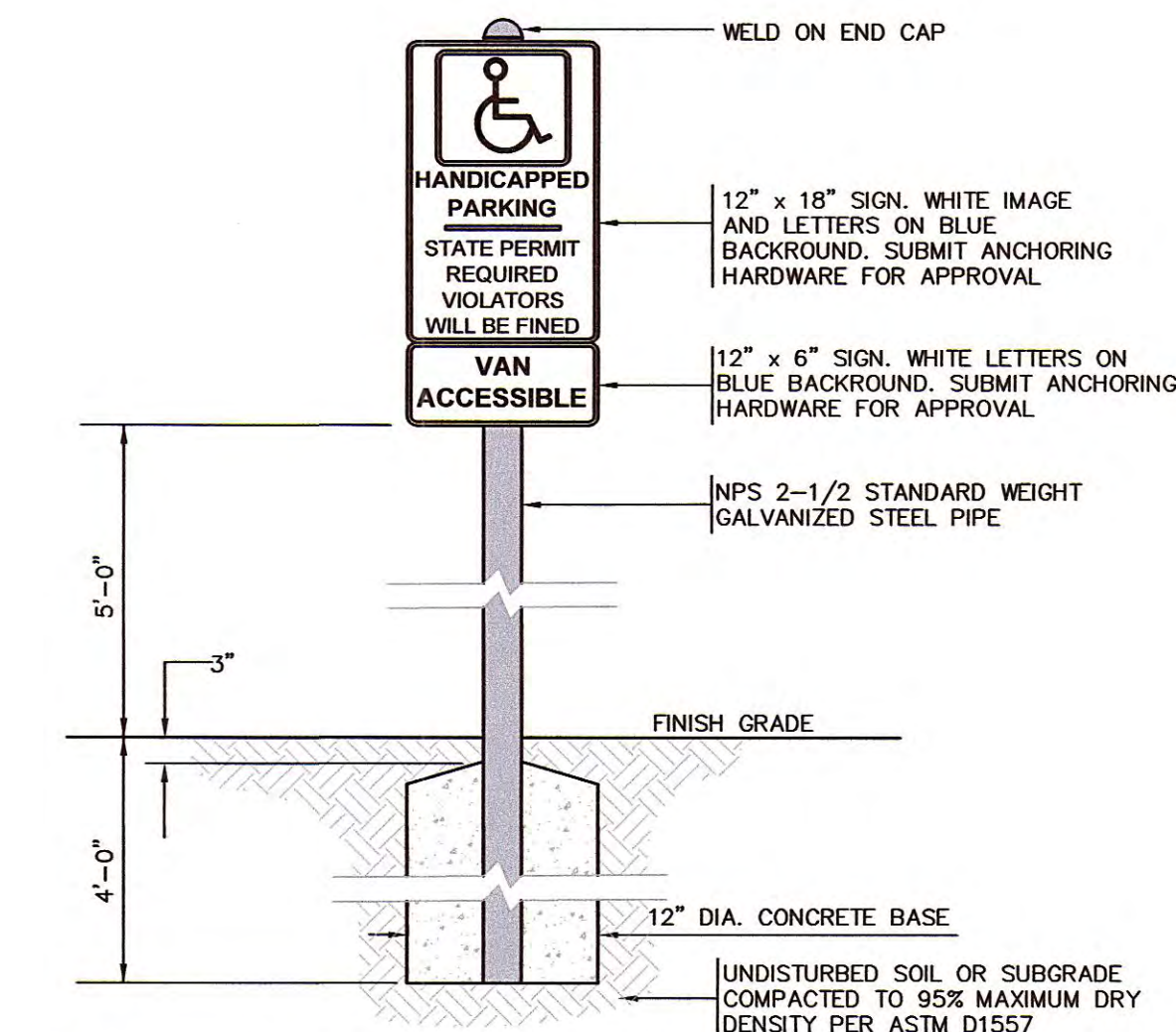
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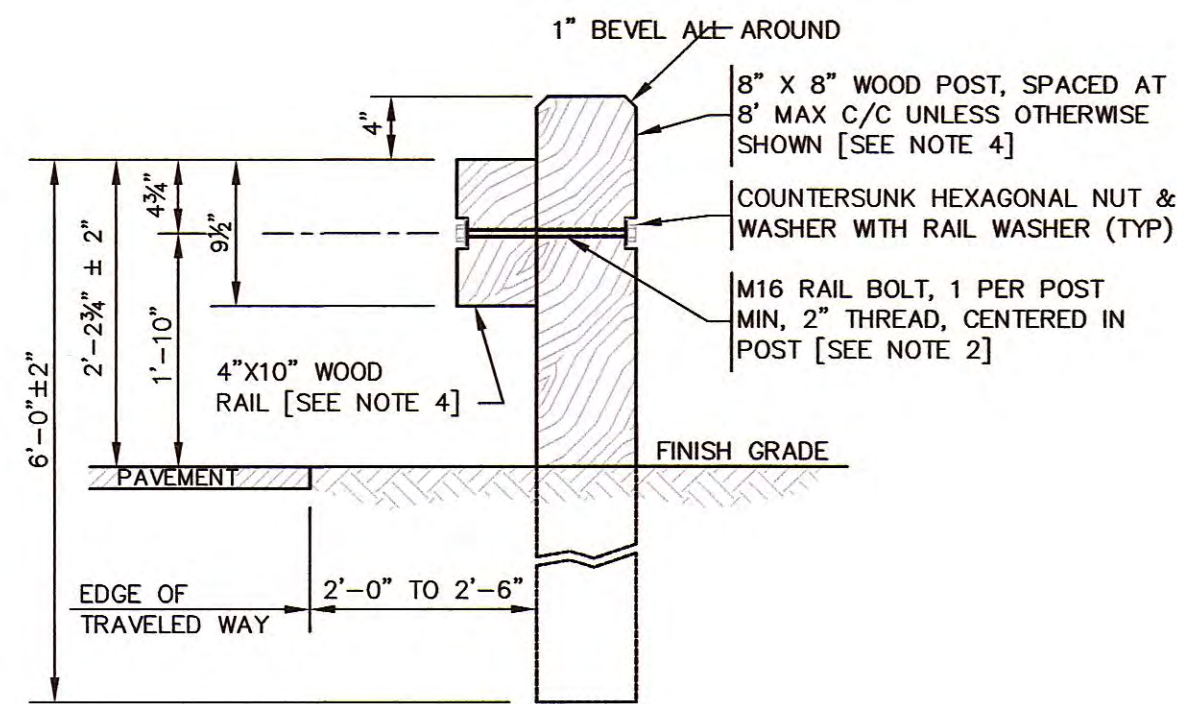
BOLLARD
TYPICAL CROSS SECTION
NOT TO SCALE



STOP SIGN
NOT TO SCALE

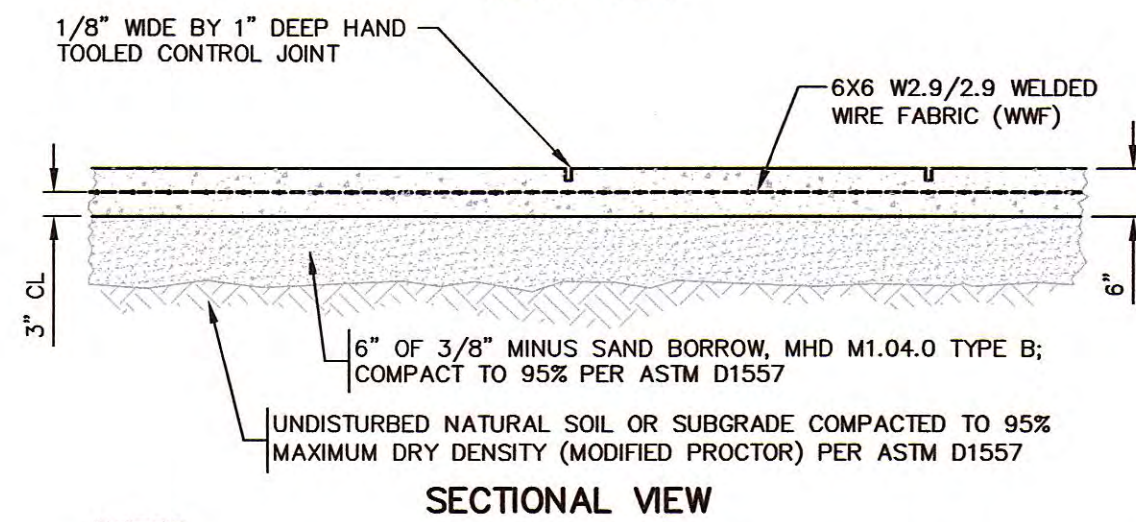
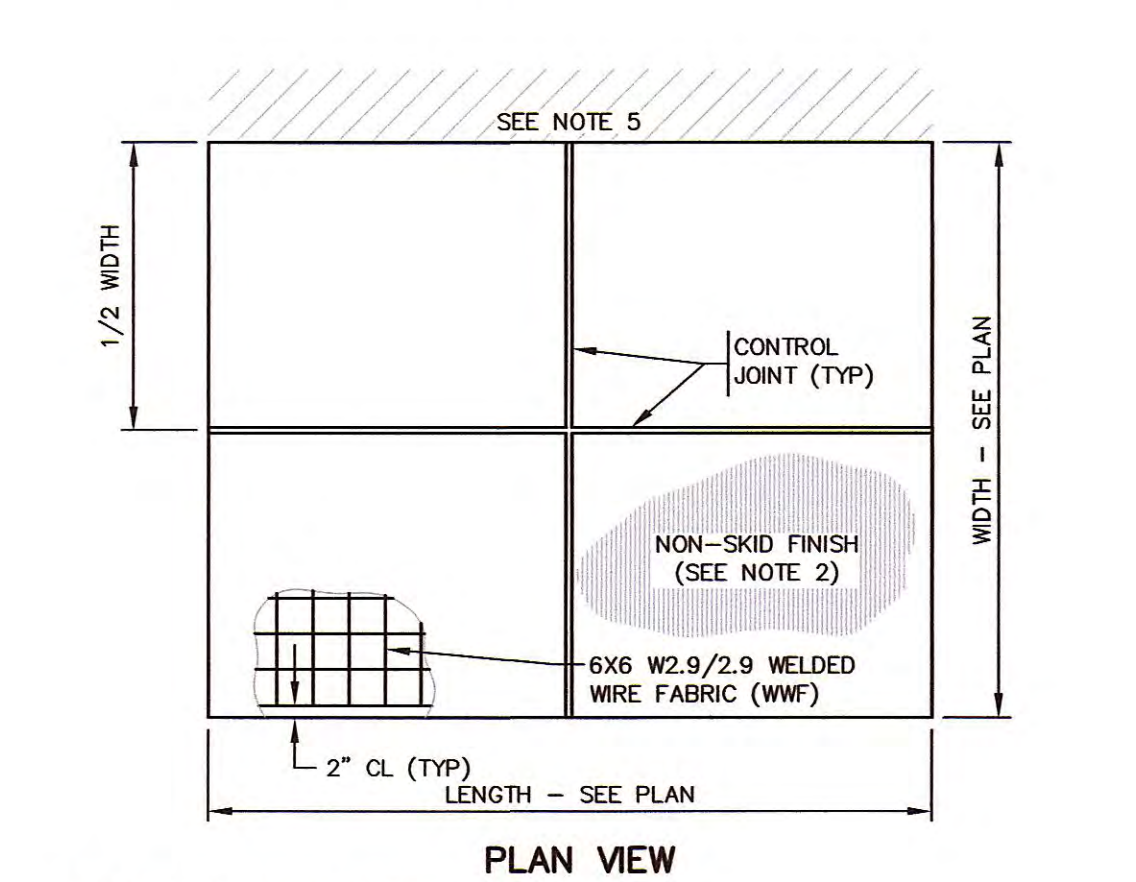


HANDICAP PARKING SIGN
NOT TO SCALE



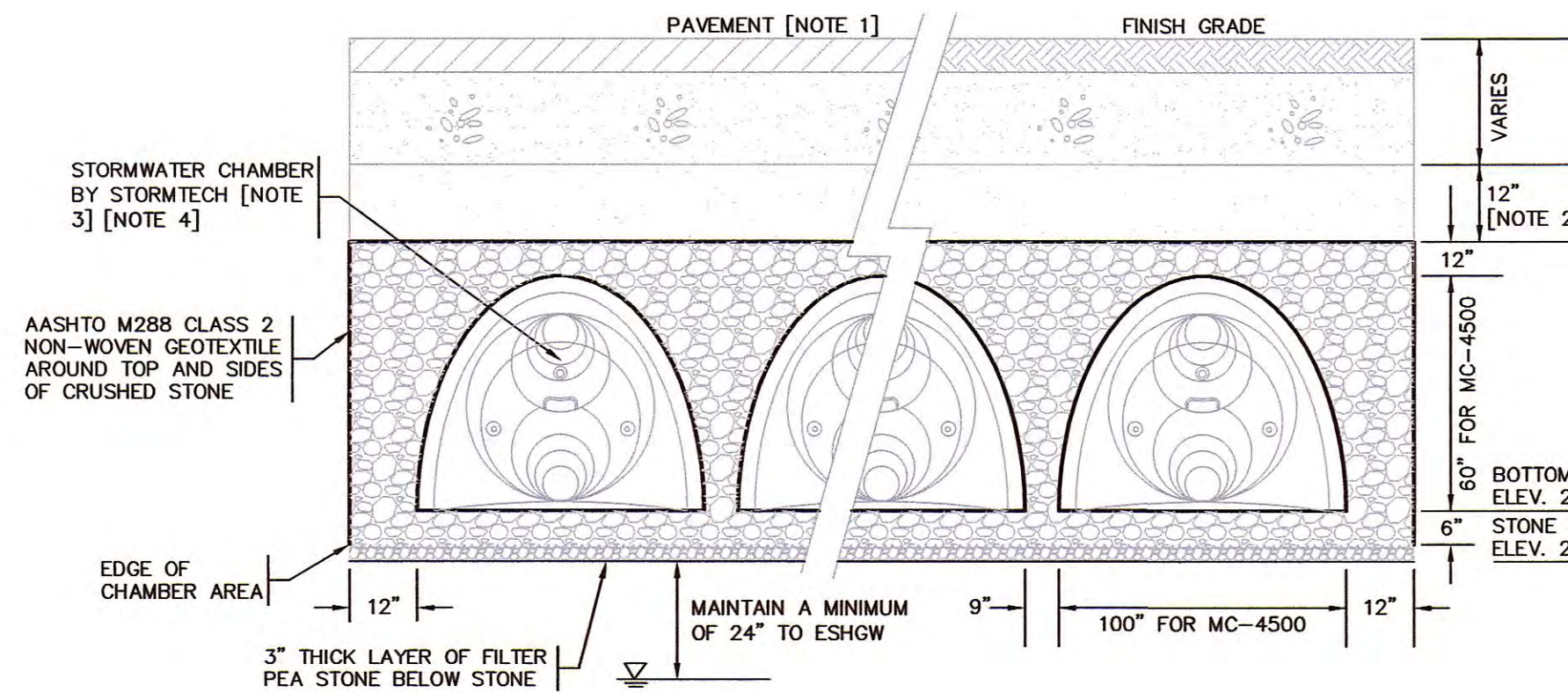
- NOTES:**
- [1] ALL NUTS, BOLTS & WASHERS ARE TO BE HIGH STRENGTH GALVANIZED STEEL.
 - [2] ALL SPLICES ARE TO BE MADE AT POST; FOUR (4) BOLTS EACH SPLICE.
 - [3] BACK-UP PLATE IS TO BE PLACED BEHIND RAIL ELEMENTS AT NON SPLICE LOCATIONS (INTERMEDIATE POSTS).
 - [4] WOOD AND WOOD TREATMENT SHALL COMPLY WITH MASSACHUSETTS HIGHWAY DEPARTMENT SPECIFICATIONS AND STANDARDS.
 - [5] TERMINAL SECTIONS SHALL BE IN ACCORDANCE WITH MASSACHUSETTS HIGHWAY DEPARTMENT SPECIFICATIONS AND STANDARDS.

WOOD GUARDRAIL
TYPICAL CROSS SECTION
NOT TO SCALE



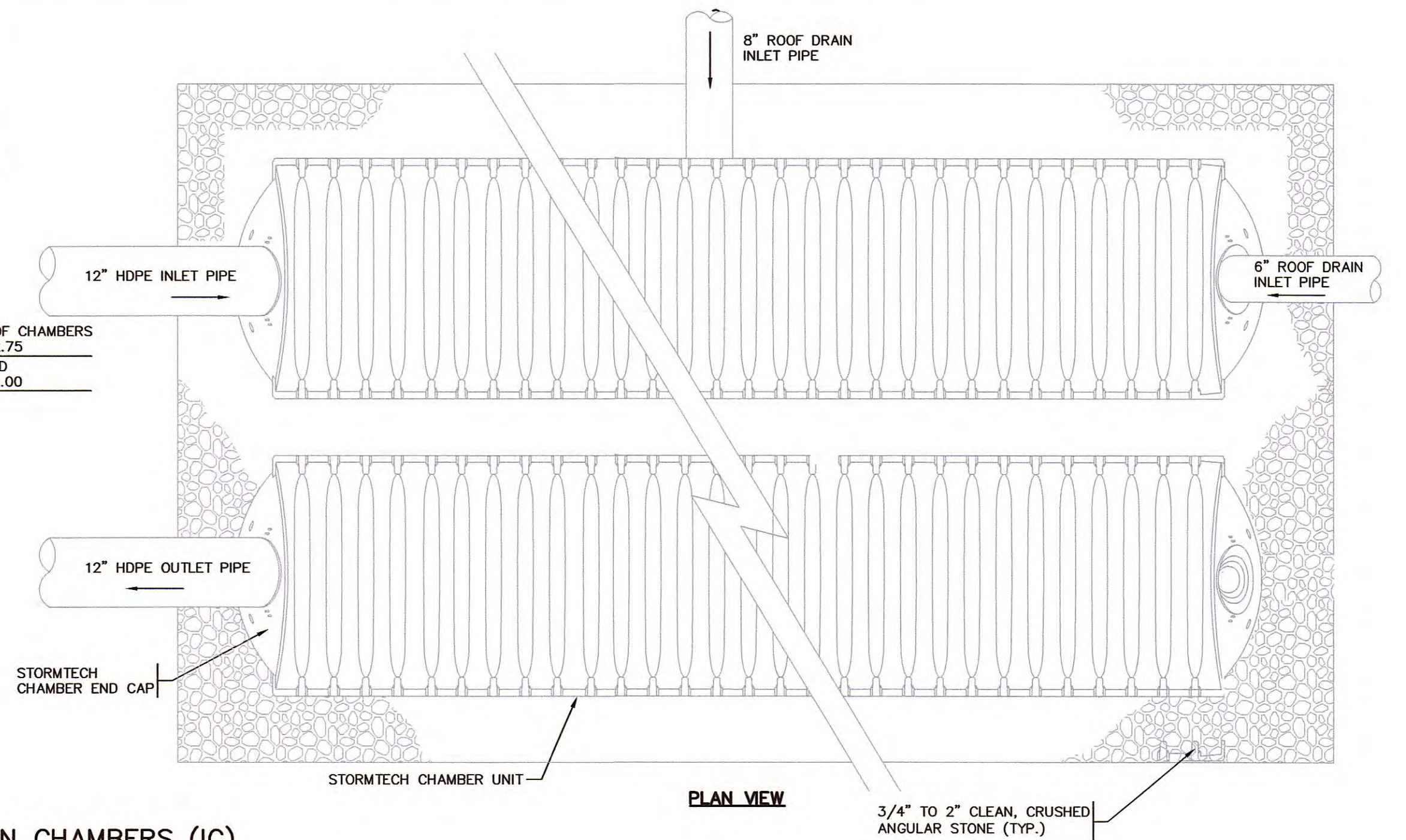
- NOTES:**
- [1] CEMENT CONCRETE: 4000 PSI AT 28 DAYS W/ 3/8" MINUS MAXIMUM PARTICLE SIZE (MHD M4.02.00).
 - [2] PROVIDE MEDIUM HAIR BROOM FINISH TO ALL EXPOSED SURFACES. USE ROUGH HAIR BROOM ON GRADES OVER 6%.
 - [3] WHERE SLAB ABUTS FACE OF BUILDING, AN ISOLATION JOINT SHALL BE USED BETWEEN SLAB AND BUILDING.

CEMENT CONCRETE SLAB
NOT TO SCALE



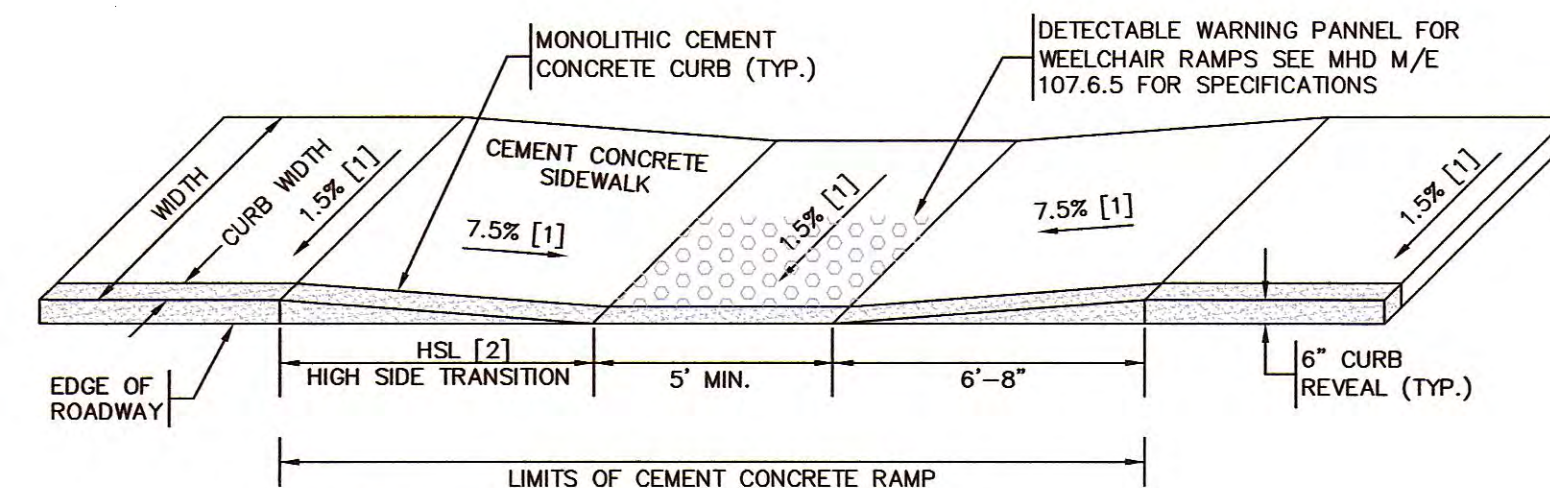
- NOTES:**
- [1] SEE BITUMINOUS CONCRETE PAVEMENT DETAIL FOR MATERIALS AND SPECIFICATIONS
 - [2] GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES. COMPACT IN 6" LIFTS TO MINIMUM 95% STANDARD PROCTOR DENSITY.
 - [3] SEE STORMTECH CHAMBER SYSTEMS DESIGN MANUAL FOR MANUFACTURERS SPECIFICATIONS AND MATERIAL SPECIFICATIONS.
 - [4] ALL CHAMBERS MAY NOT BE SHOWN, SEE SITE PLAN FOR NUMBER AND CONFIGURATION.
 - [5] SEE SHEET C4.1 FOR INLET AND OUTLET INVERT ELEVATIONS.

PROFILE VIEW



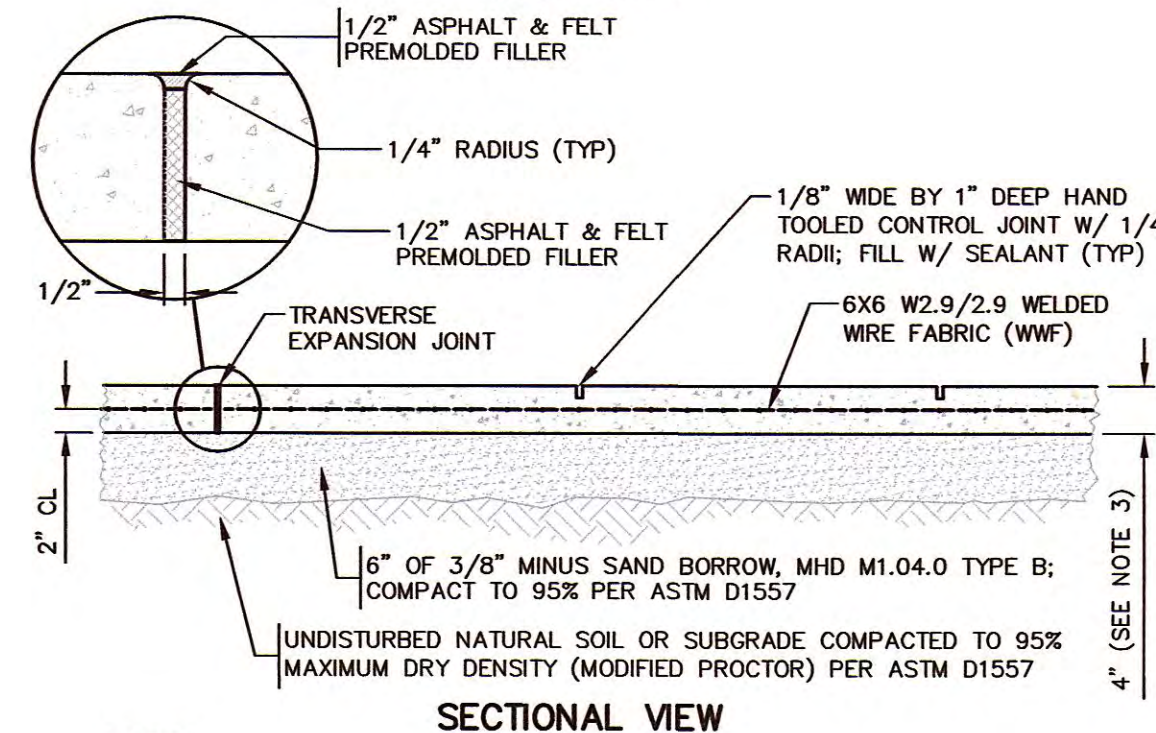
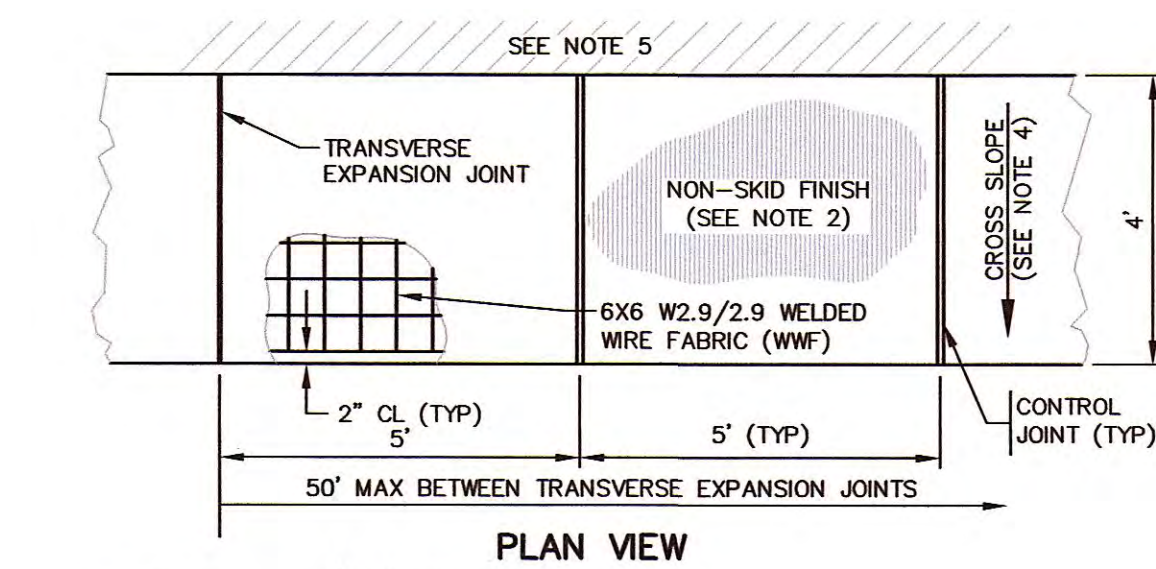
PLAN VIEW

INFILTRATION CHAMBERS (IC)
TYPICAL CROSS SECTION
NOT TO SCALE



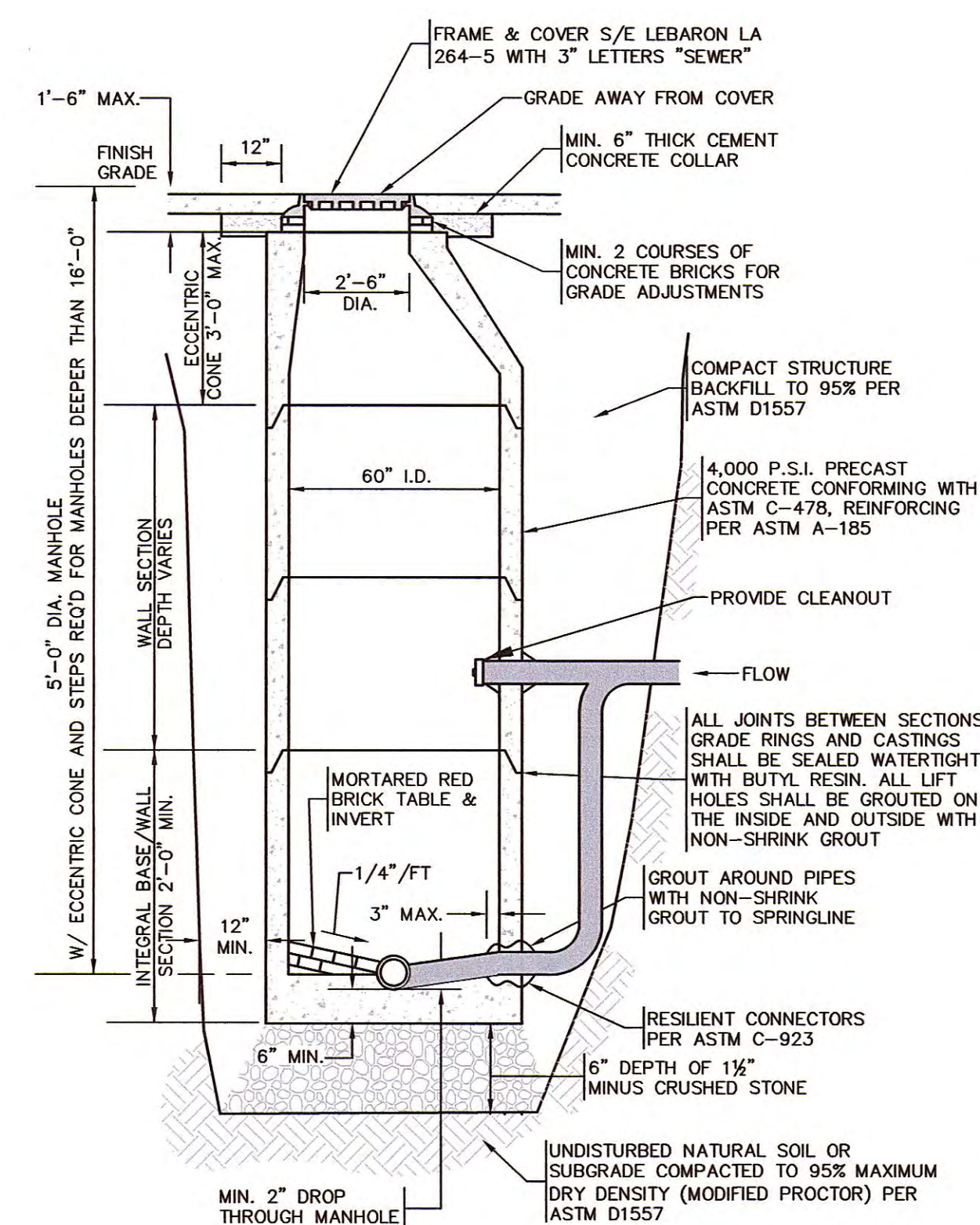
- NOTES:**
- [1] TOLERANCE FOR CONSTRUCTION 0.5%
 - [2] HSL - HIGH SIDE TRANSITION LENGTH (SEE M/E 107.9.0)
 - [3] USABLE SIDEWALK WIDTH PER AAB = WIDTH - CURB WIDTH

HANDICAP ACCESSIBLE RAMP
TYPICAL PLAN VIEW
NOT TO SCALE



- NOTES:**
- [1] CEMENT CONCRETE: 4000 PSI AT 28 DAYS W/ 3/8" MINUS MAXIMUM PARTICLE SIZE (MHD M4.02.00).
 - [2] PROVIDE MEDIUM HAIR BROOM FINISH TO ALL EXPOSED SURFACES. USE ROUGH HAIR BROOM ON GRADES OVER 6%.
 - [3] A 6-INCH DEPTH IS REQUIRED AT LOCATIONS OF DRIVEWAY CROSSINGS AND STREET INTERSECTIONS.
 - [4] 5% MAXIMUM CROSS SLOPE UNLESS OTHERWISE SHOWN. MAXIMUM CROSS SLOPE SHALL NOT EXCEED 2% IN AREAS DICTATED BY MAAB AND/OR ADA.
 - [5] WHERE SIDEWALK ABUTS FACE OF BUILDING, AN ISOLATION JOINT, SIMILAR TO TRANSVERSE EXPANSION JOINT, SHALL BE USED BETWEEN SIDEWALK AND BUILDING.

CEMENT CONCRETE WALK
NOT TO SCALE



ECCENTRIC DROP SEWER MANHOLE
TYPICAL CROSS SECTION
NOT TO SCALE

DRAWING ISSUED FOR:

- ☐ CONCEPT ☐ CONSTRUCTION
☒ PERMIT ☐ CONSTRUCTION RECORD

THIS DRAWING MAY NOT SHOW CONSTRUCTION DETAILS AND SPECIFICATIONS FOR ALL PROPOSED IMPROVEMENTS, AND MAY NOT IDENTIFY ALL CONSTRUCTION WORK ITEMS/AREAS OF CONTRACTOR JURISDICTION.

PER 250 CMR 5.03(13), THE FOLLOWING ARE EXCLUDED FROM THE PROFESSIONAL ENGINEER'S RESPONSIBILITY: ALL BOUNDARY INFORMATION; LOCATION OF EXISTING STRUCTURES, TREES, UTILITIES, TOPOGRAPHY OR SIMILAR FEATURES; DESIGN OF RETAINING WALLS, PROPRIETARY EQUIPMENT. SEE EXISTING CONDITION NOTES.

NO.	DATE	BY	APP.	REVISION	DESCRIPTION

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for Land & Structures

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336 KING STREET
LITTLETON, MA**

PREPARED FOR:
MASSACHUSETTS COHOUSING, LLC.
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BURLINGTON, MA 01803

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CHK. BY: NMP			