

LOCUS MAP
(NOT TO SCALE)

SITE DEVELOPMENT PLANS FOR THE PINES RESIDENCES 41 NORTH MAIN STREET SHERBORN, MA 01770

OWNER/APPLICANT:
BARKSKY ESTATE REALTY TRUST
23 HUNTING LANE
SHERBORN, MA 01770

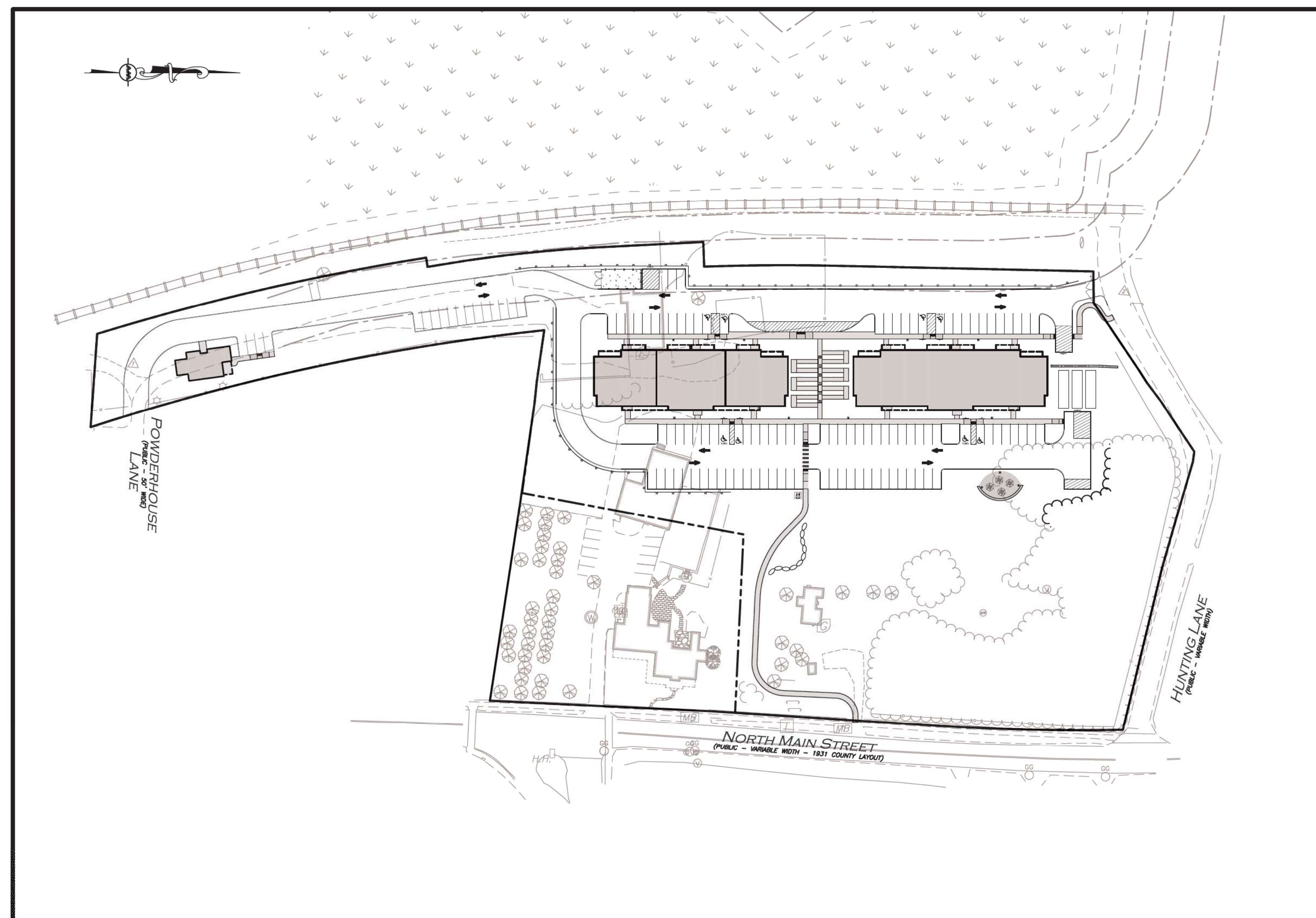
SITE ENGINEER & LAND SURVEYOR:
ALLEN & MAJOR ASSOCIATES, INC.
100 COMMERCE WAY
WOBBURN, MA 01801

40B CONSULTANT
LDS CONSULTING GROUP, LLC
233 NEEDHAM STREET
NEWTON, MA 02464

ARCHITECT:
DREAM COLLABORATIVE
31 ST. JAMES AVENUE, 6TH FLOOR
BOSTON, MA 02116

TRAFFIC ENGINEER:
VANASSE & ASSOCIATES INC
35 NEW ENGLAND BUSINESS CENTER DR.
SUITE 140
ANDOVER, MA 01810

WASTEWATER & DRINKING WATER ENGINEER:
ONSITE ENGINEERING, INC.
279 EAST CENTRAL STREET, PMB 241
FRANKLIN, MA 02038



LIST OF DRAWINGS

DRAWING TITLE	SHEET NO.	ISSUED	REVISED
EXISTING CONDITIONS	V-101	09-01-20	-
BY-RIGHT SUBDIVISION PLAN	C-101	10-01-20	-
LAYOUT & MATERIALS PLAN	C-102	10-01-20	-
GRADING & DRAINAGE PLAN	C-103	10-01-20	-
UTILITIES PLAN	C-104	10-01-20	-
DETAILS	C-501	10-01-20	-
DETAILS	C-502	10-01-20	-
DETAILS	C-503	10-01-20	-
DETAILS	C-504	10-01-20	-
DETAILS	C-505	10-01-20	-
DETAILS	C-506	10-01-20	-



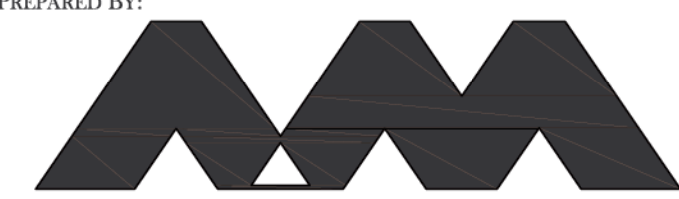
PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

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1-888-DIG-SAFE
1-888-344-7233

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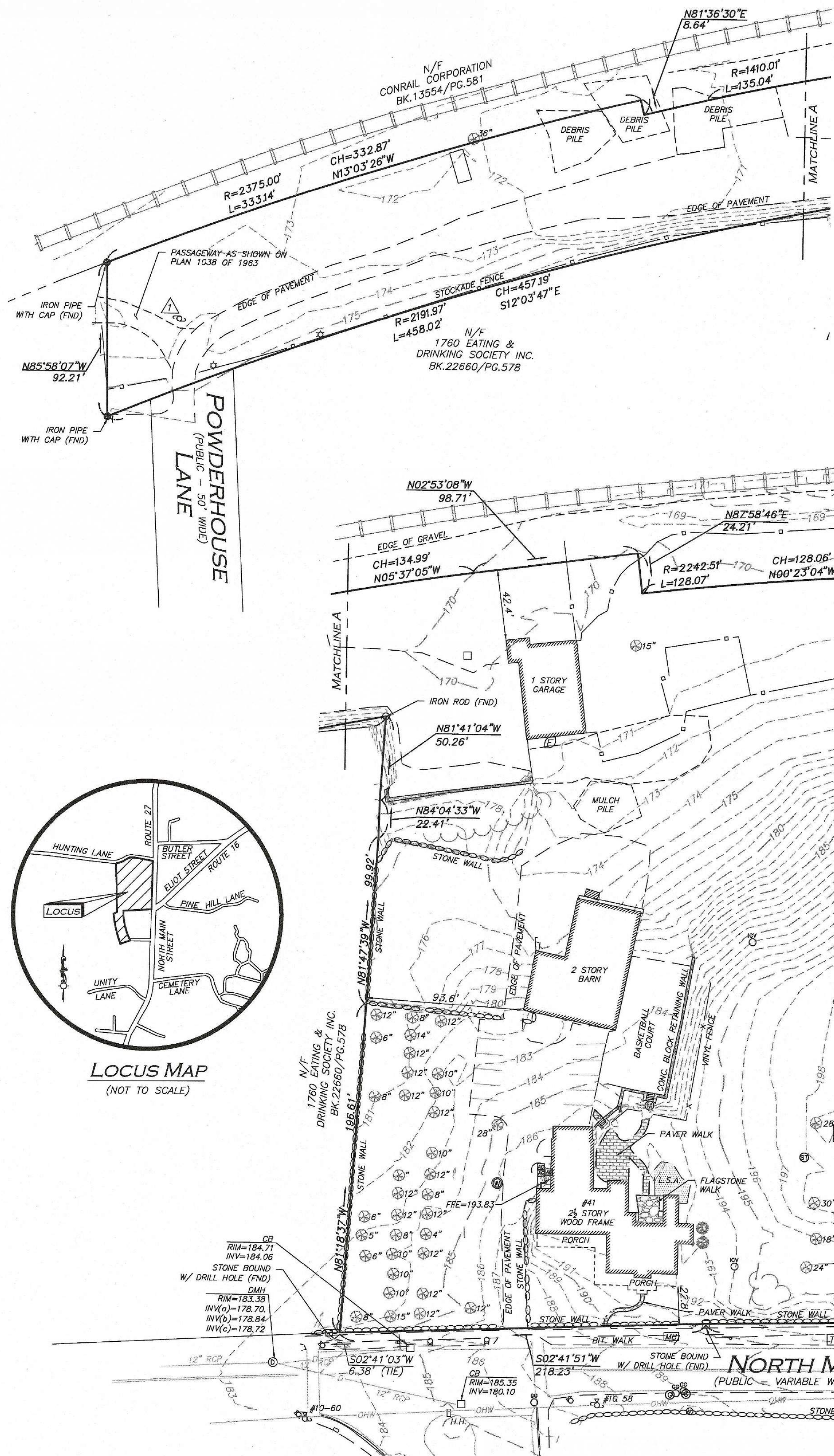


**ALLEN & MAJOR
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ISSUED FOR ZBA APPLICATION: OCTOBER 1, 2020

R:\PROJECTS\2513-01A\CIVIL\DRAWINGS\CURRENT\C-2513-01A_COVER_SHEET.DWG



LOCUS REFERENCES

- RECORD OWNER: BARSKY ESTATE REALTY TRUST
- TOWN OF SHERBORN ASSESSORS MAP 11, LOTS 41 & 43
- DEED BOOK 66954, PAGE 354

PLAN REFERENCES

- 1931 COUNTY LAYOUT OF NORTH MAIN STREET
- PLAN 201 OF 1940
- PLAN 1038 OF 1963
- PLAN 427 OF 1981
- PLAN 1330 OF 1981

NOTES

1. NORTH ARROW IS BASED ON MASSACHUSETTS GRID COORDINATE SYSTEM (MAINLAND ZONE) (NAD 83).
2. BOOK/PAGE AND PLAN REFERENCES ARE TAKEN FROM MIDDLESEX (SOUTH) REGISTRY OF DEEDS IN CAMBRIDGE, MA.
3. VERTICAL DATUM IS NAVD 88.
4. CONTOUR INTERVAL IS ONE FOOT (1').

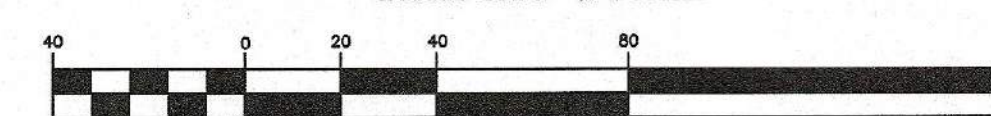
BENCHMARK SUMMARY

TBM #	DESCRIPTION	ELEV.
1	RAILROAD SPIKE SET IN UTILITY POLE	175.46
2	RAILROAD SPIKE SET IN UTILITY POLE	173.33

LEGEND

DRILL HOLE (DH)	⊙
STONE BOUND (SB)	□
IRON PIPE (IP)	⊙
SEPTIC COVER	⊙
MISC. MANHOLE (MH)	⊙
CATCH BASIN (CB)	⊙
UTILITY POLE	⊙
UTILITY POLE W/LIGHT	⊙
GUY WIRE	—
GAS GATE	⊙
INVERT (INV)	⊙
LIGHT	⊙
TRAFFIC MAST	⊙
AIR CONDITIONER	⊙
IRRIGATION CONTROL VALVE	⊙
TELEPHONE BOX	⊙
SIGN	⊙
VENT	⊙
MAILBOX	⊙
TREE	⊙
BRICK	⊙
LANDSCAPED AREA (LSA)	⊙
FLAGSTONE WALK	⊙
BUILDING	⊙
BUILDING OVERHANG	⊙
1' CONTOUR	—
5' CONTOUR	—
PROPERTY LINE	⊙
ABUTTERS LINE	⊙
STONE WALL	⊙
CONCRETE RETAINING WALL	⊙
TREE LINE	⊙
EDGE OF PAVEMENT	⊙
EDGE OF GRAVEL	⊙
EDGE OF BRICK	⊙
CURB	⊙
CHAIN LINK FENCE	⊙
STOCKADE FENCE	⊙
VINYL FENCE	⊙
OVERHEAD WIRES	⊙
FINISHED FLOOR ELEVATION	FFE
BITUMINOUS	BIT.
CONCRETE	CONC.
GRANITE	GRAN.
FOUND	FND
NOW OR FORMERLY	N/F
BOOK	BK.
PAGE	PG.

GRAPHIC SCALE



R:\PROJECTS\2513-01\DRAWINGS\CURRENT\5-2513-01-EC-SITE1.DWG

WE HEREBY CERTIFY THAT:

THIS PLAN IS THE RESULT OF AN ACTUAL ON THE GROUND SURVEY PERFORMED ON OR BETWEEN JULY 11, 2018 AND JULY 16, 2018. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS DATED JANUARY 1, 1976 AND REVISED JANUARY 12, 1988. ACCORDING TO DEEDS AND PLANS OF RECORD, THE PROPERTY LINES SHOWN ON THIS PLAN ARE THE LINES DIVIDING EXISTING OWNERSHIP, AND THE LINES OF THE STREETS OR WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS AND WAYS ALREADY ESTABLISHED, AND THAT NO NEW LINES FOR THE DIVISION OF EXISTING OWNERSHIP OR FOR NEW WAYS ARE SHOWN. THE ABOVE CERTIFICATION IS INTENDED TO MEET REGISTRY OF DEEDS REQUIREMENTS FOR THE RECORDING OF PLANS AND IS NOT A CERTIFICATION TO THE TITLE OR OWNERSHIP OF THE PROPERTY SHOWN. OWNERS OF ADJOINING PROPERTIES ARE SHOWN ACCORDING TO CURRENT TOWN OF SHERBORN ASSESSOR'S INFORMATION. THE ABOVE IS CERTIFIED TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION AND BELIEF.

ALLEN & MAJOR ASSOCIATES, INC.

PROFESSIONAL LAND SURVEYOR FOR ALLEN & MAJOR ASSOCIATES, INC.



REV DATE DESCRIPTION

APPLICANT/OWNER:

BARSKY ESTATE REALTY TRUST
23 HUNTING LANE
SHERBORN, MA 01770

PROJECT:

41-43 NORTH MAIN STREET
SHERBORN, MA

PROJECT NO. 2513-01 DATE: 09/01/2020

SCALE: 1" = 40' DWG. NAME: 5-2513-01

DRAFTED BY: AJR CHECKED BY: NIL

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil & structural engineering • land surveying
environmental consulting • landscape architecture
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DRAWING TITLE: EXISTING CONDITONS SHEET NO. V-101

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**ZONING SUMMARY TABLE
RESIDENTIAL A (RA) DISTRICT**

ITEM	REQUIRED	PROPOSED MAP 11 LOT 41A
MINIMUM LOT AREA	1 ACRE	6.24 ACRE
MINIMUM FRONTAGE	150 FEET	347±FT (MAIN ST) 491±FT (HUNTING LN)
MINIMUM LOT WIDTH	150 FEET 1	276 FEET
MINIMUM LOT DEPTH	N/A	N/A
MINIMUM FRONT SETBACK	60 FEET	301.0 FT (MAIN ST) 67.2 FT (HUNTING LN)
MINIMUM SIDE SETBACK	30 FEET	52.1 FEET
MINIMUM REAR SETBACK	30 FEET	N/A
MAXIMUM HEIGHT (STORIES)	2.5	3 (LOWSIDE)* 2.5 (HIGHSIDE)
MAXIMUM HEIGHT (FEET)	35	>35*
MAXIMUM LOT COVERAGE	N/A	N/A

ZONING SUMMARY TABLE NOTES:

1. MINIMUM LOT WIDTH SHALL BE MEASURED AT FRONT SETBACK LINE AND AT BUILDING LINE. AT NO POINT BETWEEN THE REQUIRED FRONTAGE AND THE BUILDING LINE SHALL LOT WIDTH BE REDUCED TO LESS THAN 50 FEET, WITHOUT EXCEPTION FROM THE PLANNING BOARD.

* RELIEF REQUIRED

OFF-STREET PARKING SUMMARY TABLE

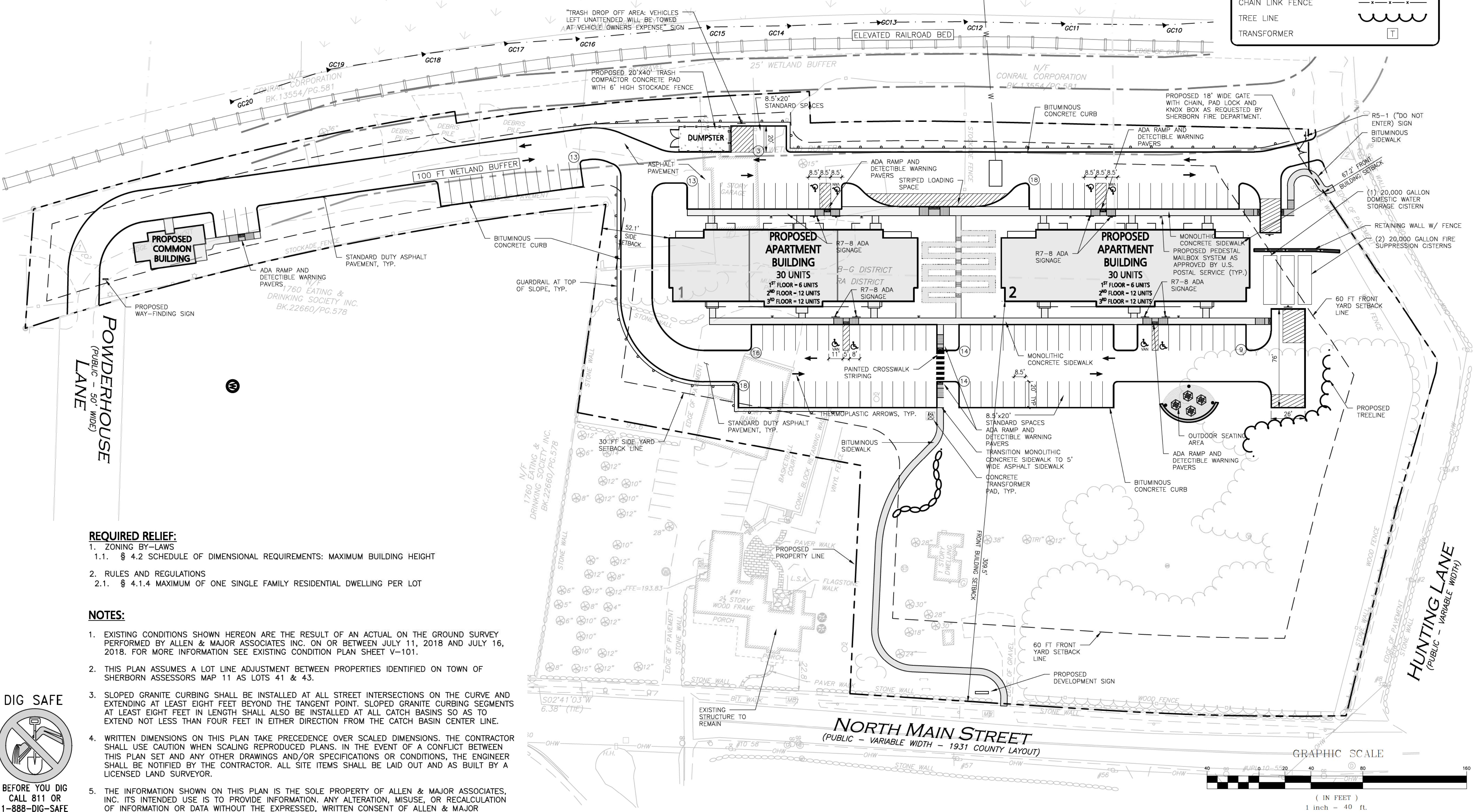
USE	CALCULATION	MIN. REQUIRED	PROPOSED
MULTI-FAMILY 60 UNITS	1.75 SPACES PER UNIT 60 UNITS * 1.75 = 105	105	118
TOTAL		105	118

NOTES:

1. STANDARD PARKING SPACES SHALL BE 8.5' X 20'
2. PARALLEL PARKING SPACES SHALL BE 8.5' X 22'.
3. ADA SPACES REQUIRED:
(101 - 150) TOTAL PARKING SPACES PROVIDED REQUIRES 5 ADA SPACES, 1 BEING VAN ACCESSIBLE
4. 8 ADA SPACE PROVIDED, 4 BEING VAN SPACES

LEGEND

PROP. PROPERTY LINE	---
SIGN	+
BOLLARD	•
BUILDING	[Symbol]
BUILDING ARCHITECTURE	[Symbol]
BUILDING INTERIOR WALLS	[Symbol]
CURB	[Symbol]
RETAINING WALL	[Symbol]
PARKING STRIPING	[Symbol]
ROADWAY STRIPING	[Symbol]
SIDEWALK	[Symbol]
ADA ACCESSIBLE RAMP	[Symbol]
ADA DET. WARNING SURFACE	[Symbol]
SETBACK LINE	---
BASELINE	---
SAW-CUT LINE	---
PARKING COUNT	(10)
STEEL GUARDRAIL	[Symbol]
CHAIN LINK FENCE	[Symbol]
TREE LINE	[Symbol]
TRANSFORMER	[Symbol]



REQUIRED RELIEF:

1. ZONING BY-LAWS
1.1. § 4.2 SCHEDULE OF DIMENSIONAL REQUIREMENTS: MAXIMUM BUILDING HEIGHT
2. RULES AND REGULATIONS
2.1. § 4.1.4 MAXIMUM OF ONE SINGLE FAMILY RESIDENTIAL DWELLING PER LOT

NOTES:

1. EXISTING CONDITIONS SHOWN HEREON ARE THE RESULT OF AN ACTUAL ON THE GROUND SURVEY PERFORMED BY ALLEN & MAJOR ASSOCIATES INC. ON OR BETWEEN JULY 11, 2018 AND JULY 16, 2018. FOR MORE INFORMATION SEE EXISTING CONDITION PLAN SHEET V-101.
2. THIS PLAN ASSUMES A LOT LINE ADJUSTMENT BETWEEN PROPERTIES IDENTIFIED ON TOWN OF SHERBORN ASSESSORS MAP 11 AS LOTS 41 & 43.
3. SLOPED GRANITE CURBING SHALL BE INSTALLED AT ALL STREET INTERSECTIONS ON THE CURVE AND EXTENDING AT LEAST EIGHT FEET BEYOND THE TANGENT POINT. SLOPED GRANITE CURBING SEGMENTS AT LEAST EIGHT FEET IN LENGTH SHALL ALSO BE INSTALLED AT ALL CATCH BASINS SO AS TO EXTEND NOT LESS THAN FOUR FEET IN EITHER DIRECTION FROM THE CATCH BASIN CENTER LINE.
4. WRITTEN DIMENSIONS ON THIS PLAN TAKE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN THE EVENT OF A CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWINGS AND/OR SPECIFICATIONS OR CONDITIONS, THE ENGINEER SHALL BE NOTIFIED BY THE CONTRACTOR. ALL SITE ITEMS SHALL BE LAID OUT AND AS BUILT BY A LICENSED LAND SURVEYOR.
5. THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. ITS INTENDED USE IS TO PROVIDE INFORMATION. ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.



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1-888-344-7233



PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

3	10-01-2020	ISSUED FOR ZBA APPLICATION
2	05-21-2020	MISCELLANEOUS REVISIONS
1	01-21-2020	MISCELLANEOUS REVISIONS

APPLICANT/OWNER:

BARSKY ESTATE REALTY TRUST
23 HUNTING LANE
SHERBORN, MA 01770

PROJECT:

**THE PINES
RESIDENCES**
41 NORTH MAIN STREET
SHERBORN, MA

PROJECT NO. 2513-01A DATE: 11-14-19

SCALE: 1" = 30' DWG. NAME: C2513-01A

DESIGNED BY: ARM CHECKED BY: MAM

PREPARED BY:

**ALLEN & MAJOR
ASSOCIATES, INC.**
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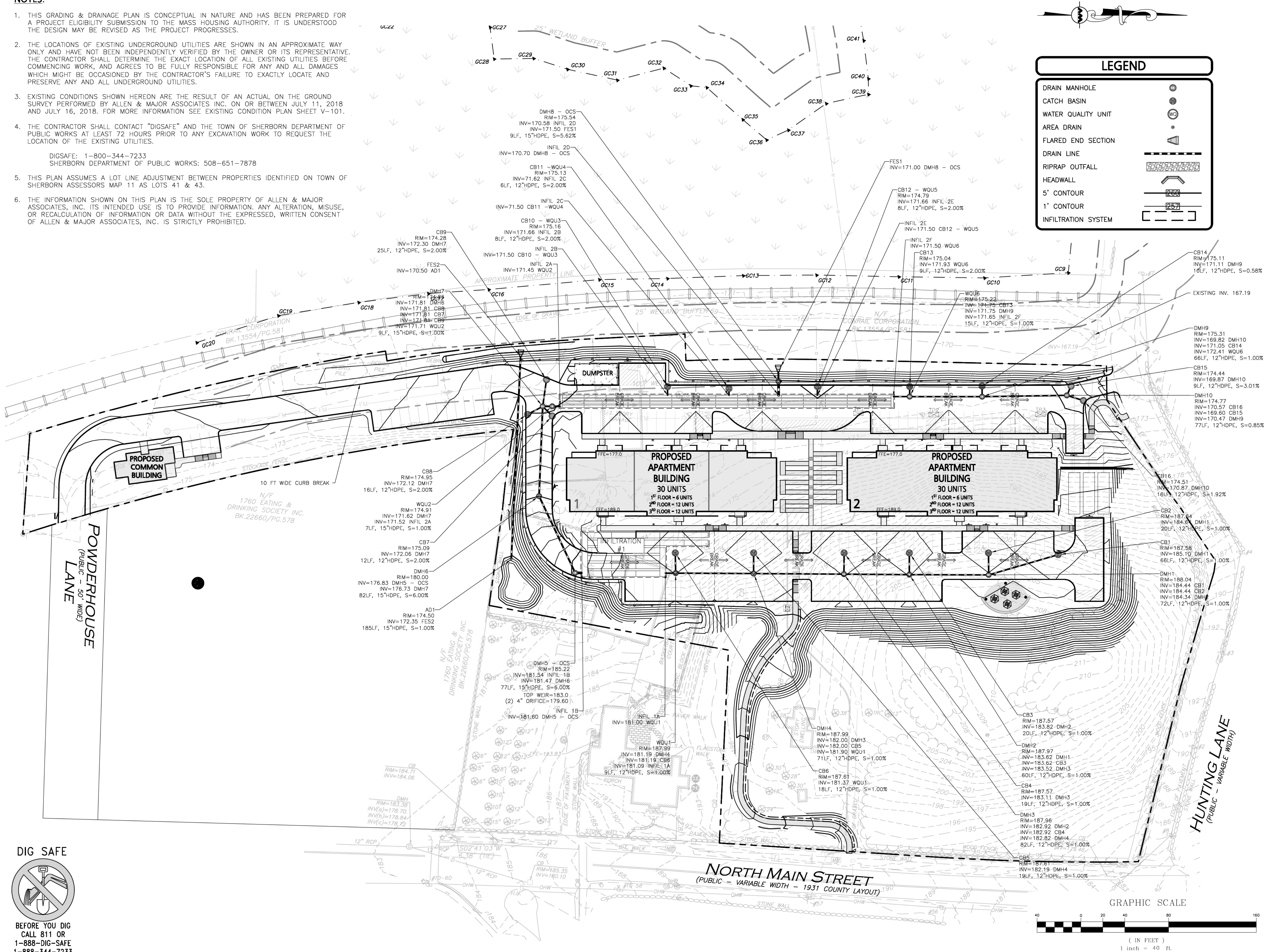
DRAWING TITLE: LAYOUT & MATERIALS PLAN	SHEET No. C-102
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NOTES:

1. THIS GRADING & DRAINAGE PLAN IS CONCEPTUAL IN NATURE AND HAS BEEN PREPARED FOR A PROJECT ELIGIBILITY SUBMISSION TO THE MASS HOUSING AUTHORITY. IT IS UNDERSTOOD THE DESIGN MAY BE REVISED AS THE PROJECT PROGRESSES.
2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
3. EXISTING CONDITIONS SHOWN HEREON ARE THE RESULT OF AN ACTUAL ON THE GROUND SURVEY PERFORMED BY ALLEN & MAJOR ASSOCIATES INC. ON OR BETWEEN JULY 11, 2018 AND JULY 16, 2018. FOR MORE INFORMATION SEE EXISTING CONDITION PLAN SHEET V-101.
4. THE CONTRACTOR SHALL CONTACT "DIGSAFE" AND THE TOWN OF SHERBORN DEPARTMENT OF PUBLIC WORKS AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST THE LOCATION OF THE EXISTING UTILITIES.

DIGSAFE: 1-800-344-7233
SHERBORN DEPARTMENT OF PUBLIC WORKS: 508-651-7878
5. THIS PLAN ASSUMES A LOT LINE ADJUSTMENT BETWEEN PROPERTIES IDENTIFIED ON TOWN OF SHERBORN ASSESSORS MAP 11 AS LOTS 41 & 43.
6. THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. ITS INTENDED USE IS TO PROVIDE INFORMATION. ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.



PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
3	10-01-2020	ISSUED FOR ZBA APPLICATION
2	05-21-2020	MISCELLANEOUS REVISIONS
1	01-21-2020	MISCELLANEOUS REVISIONS

APPLICANT/OWNER:

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23 HUNTING LANE
SHERBORN, MA 01770

PROJECT:

THE PINES
RESIDENCES
41 NORTH MAIN STREET
SHERBORN, MA

PROJECT NO. 2513-01A DATE: 11-14-19

SCALE: 1" = 40' DWG. NAME: C2513-01A

DESIGNED BY: ARM CHECKED BY: MAM

PREPARED BY:

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environmental consulting • landscape architecture
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DRAWING TITLE:

GRADING &
DRAINAGE PLAN

SHEET NO.

C-103

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UTILITY NOTES:

- THE CONTRACTOR SHALL CONTACT "DIGSAFE" AND THE TOWN OF SHERBORN DEPARTMENT OF PUBLIC WORKS AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST THE LOCATION OF THE EXISTING UTILITIES.
DIGSAFE: 800-344-7233
SHERBORN DEPARTMENT OF PUBLIC WORKS: 508-651-7878
- A MINIMUM OF 10 FEET CLEAR HORIZONTALLY SHALL BE MAINTAINED BETWEEN WATER MAINS AND SANITARY SEWER MAINS AND/OR STORM DRAINS. WHENEVER CONDITIONS PREVENT A LATERAL SEPARATION OF 10 FEET TO A WATER MAIN, THE WATER MAIN SHALL BE LAID IN A SEPARATE TRENCH AND THE DIFFERENCE IN ELEVATION BETWEEN THE WATER MAIN AND THE SEWER MAIN SHALL BE AT LEAST 18 INCHES.
- IN THE CASE THAT WATER MAINS CROSS SANITARY SEWER MAINS AND ARE SEPARATED BY LESS THAN 18" OF VERTICAL CLEARANCE, THE SEWER MAIN SHALL BE ENCASED IN CONCRETE FOR THE ENTIRE WIDTH OF THE TRENCH AND FOR A DISTANCE OF 8 LINEAR FEET CENTERED ON THE CROSSING.
- THE CONTRACTOR SHALL REFER TO ARCHITECTS PLANS AND SPECIFICATIONS FOR ACTUAL LOCATION OF ALL ROOF DRAIN LATERALS AND UTILITY ENTRANCES TO INCLUDE SANITARY SEWER LATERALS, DOMESTIC AND FIRE PROTECTION WATER SERVICE, ELECTRIC, TELEPHONE, AND GAS SERVICE. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND COORDINATE WITH THE PROPER AGENCY THE LOCATION AND SCHEDULING OF CONNECTIONS WITH THEIR FACILITIES.
- WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION. THE ENGINEER WILL THEN PROVIDE RESOLUTION TO UTILITY CONFLICTS WITHOUT DELAY.
- ALL CONSTRUCTION SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS INCLUDING THE TOWN OF SHERBORN, MA DOT, MA DEP, MUTCD, AND AASHTO.
- THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS OF THE SITE. THESE PLANS PREPARED BY ALLEN & MAJOR ASSOCIATES, INC., DO NOT EXTEND TO, NOR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THE EMPLOYEES, AGENTS OF REPRESENTATIVES IN PERFORMANCE OF THE WORK. THE SEAL OF THE ARCHITECT OR ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OF OBTAIN THE APPROPRIATE SAFETY SYSTEMS THAT MAY BE REQUIRED BY THE US OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.

- ALL ELEVATIONS REFER TO NAVD 88.
- PIPE DIMENSIONS ARE MEASURED FROM THE INSIDE FACE OF THE STRUCTURE.
- CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF EXISTING STRUCTURES INCLUDING REMOVAL OF ANY EXISTING UTILITIES SERVING THE STRUCTURE. UTILITIES ARE TO BE REMOVED TO THE RIGHT-OF-WAY.
- LOCATION OF PROPOSED ELECTRICAL/COMMUNICATION SERVICE IS SCHEMATIC IN NATURE AND FOR COORDINATION PURPOSES ONLY. SPECIFIC ALIGNMENTS ARE TO BE DESIGNED BY OTHERS AND REVIEWED BY THE UTILITY PROVIDING SERVICE. PROPOSED ELECTRICAL SERVICE TO BE BURIED IN ACCORDANCE WITH THE CITY OF DOVER REGULATIONS AND ELECTRIC COMPANY.
- LOCATION OF PROPOSED GAS MAIN IS SCHEMATIC IN NATURE AND FOR COORDINATION PURPOSES ONLY. SPECIFIC ALIGNMENTS ARE TO BE DESIGNED BY OTHERS AND REVIEWED BY THE UTILITY PROVIDING SERVICE. THIS WORK TO BE INCLUDED AS PART OF BASE BID FOR SITE WORK.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THE PROJECT WORK SCOPE PRIOR TO THE START OF CONSTRUCTION. SHOULD THE CONTRACTOR FIND A CONFLICT WITH THE DRAWINGS, SPECIFICATIONS, OR RELATIVE CODES, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER AND/OR ARCHITECT PRIOR TO START OF CONSTRUCTION. FAILURE BY THE CONTRACTOR TO NOTIFY THE ENGINEER AND/OR ARCHITECT SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO COMPLETE THE SCOPE OF WORK AND/OR DESIGN INTENT OF THE DRAWINGS AND IN FULL COMPLIANCE WITH LOCAL REGULATIONS AND CODES.
- THE DESIGN ENGINEER WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS WHICH ARISE FROM FAILURE TO FOLLOW THESE PLANS, SPECIFICATIONS, AND/OR THE DESIGN INTENT THEY CONVEY, OR FOR PROBLEMS WHICH ARISE FROM OTHERS' FAILURE TO OBTAIN AND/OR FOLLOW THE GUIDANCE OF THE DESIGN ENGINEER WITH RESPECT TO ANY ERRORS, OMISSIONS, INCONSISTENCIES, AMBIGUITIES, OR CONFLICTS WHICH ARE DISCOVERED OR ALLEGED.

LEGEND

SEWER MANHOLE

SEWER CLEANOUT

SEWER LINE

SEWER FORCEMAIN

CONCRETE PIPE ENCASEMENT

WATER LINE

WATER VALVE

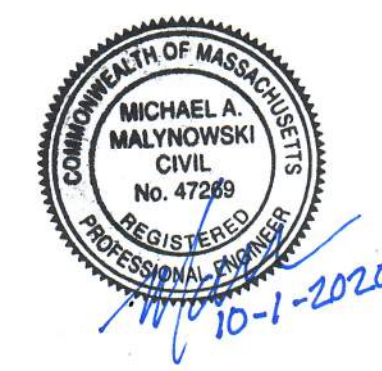
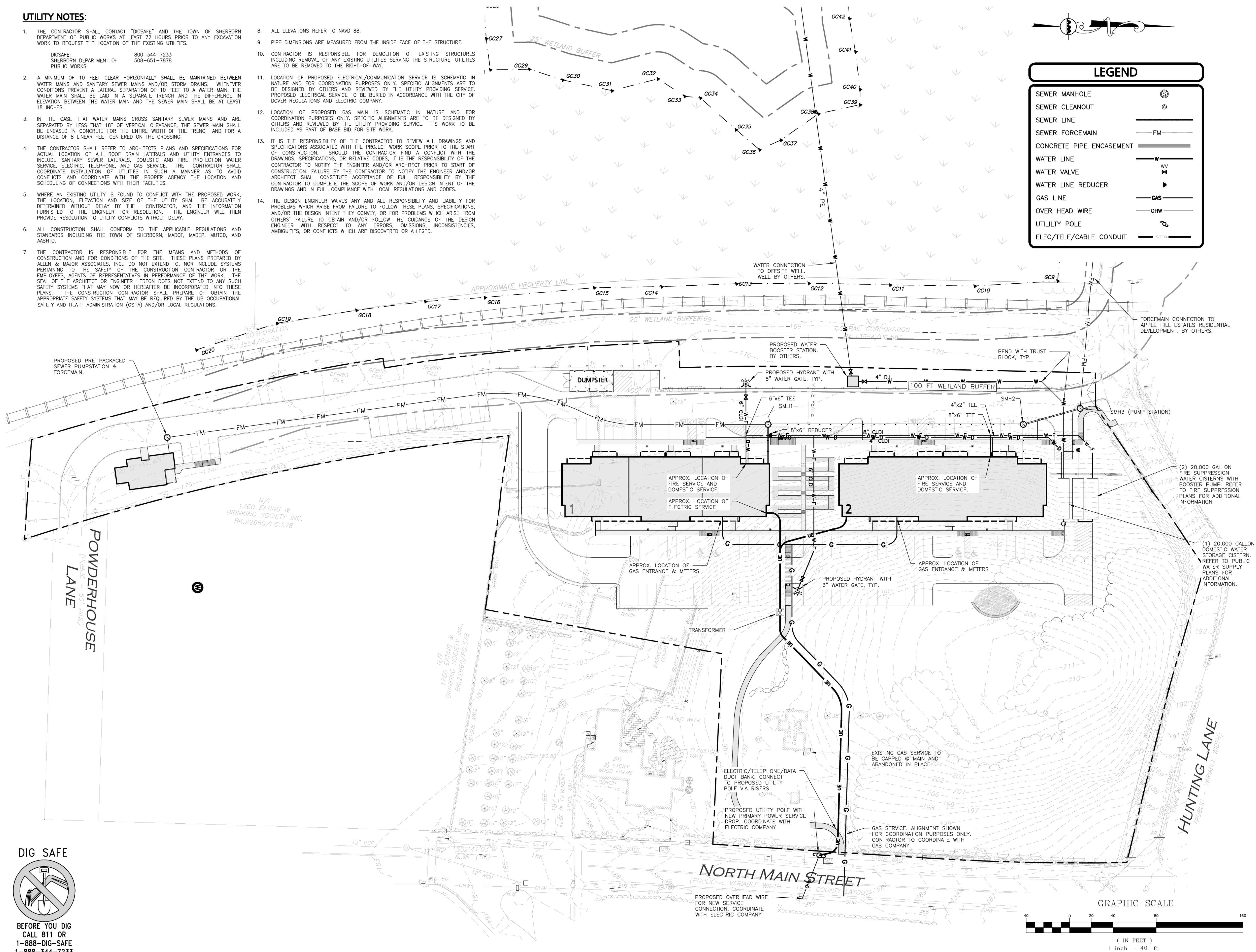
WATER LINE REDUCER

GAS LINE

OVER HEAD WIRE

UTILITY POLE

ELEC/TELE/CABLE CONDUIT



PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

3	10-01-2020	ISSUED FOR ZBA APPLICATION
2	05-21-2020	MISCELLANEOUS REVISIONS
1	01-21-2020	MISCELLANEOUS REVISIONS
REV	DATE	DESCRIPTION

APPLICANT/OWNER:
BARSKY ESTATE REALTY TRUST
23 HUNTING LANE
SHERBORN, MA 01770

PROJECT:
THE PINES RESIDENCES
41 NORTH MAIN STREET
SHERBORN, MA

PROJECT NO.	2513-01A	DATE:	11-14-19
SCALE:	1" = 40'	DWG. NAME:	C2513-01A
DESIGNED BY:	ARM	CHECKED BY:	MAM

PREPARED BY:

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DRAWING TITLE:	SHEET NO.
UTILITIES PLAN	C-104

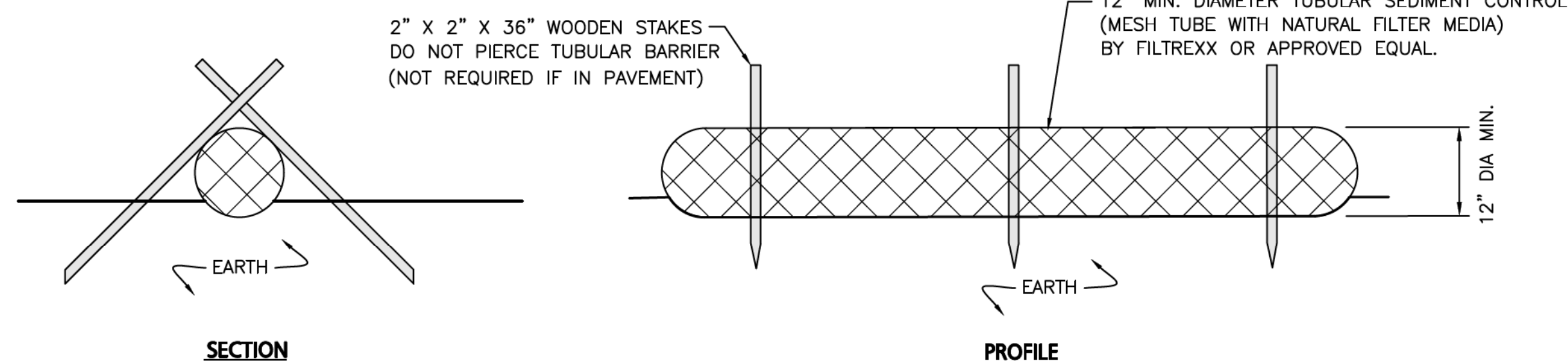
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R:\PROJECTS\2513-01A\CIVIL DRAWINGS\CURRENT\C-2513-01A UTILITIES.DWG

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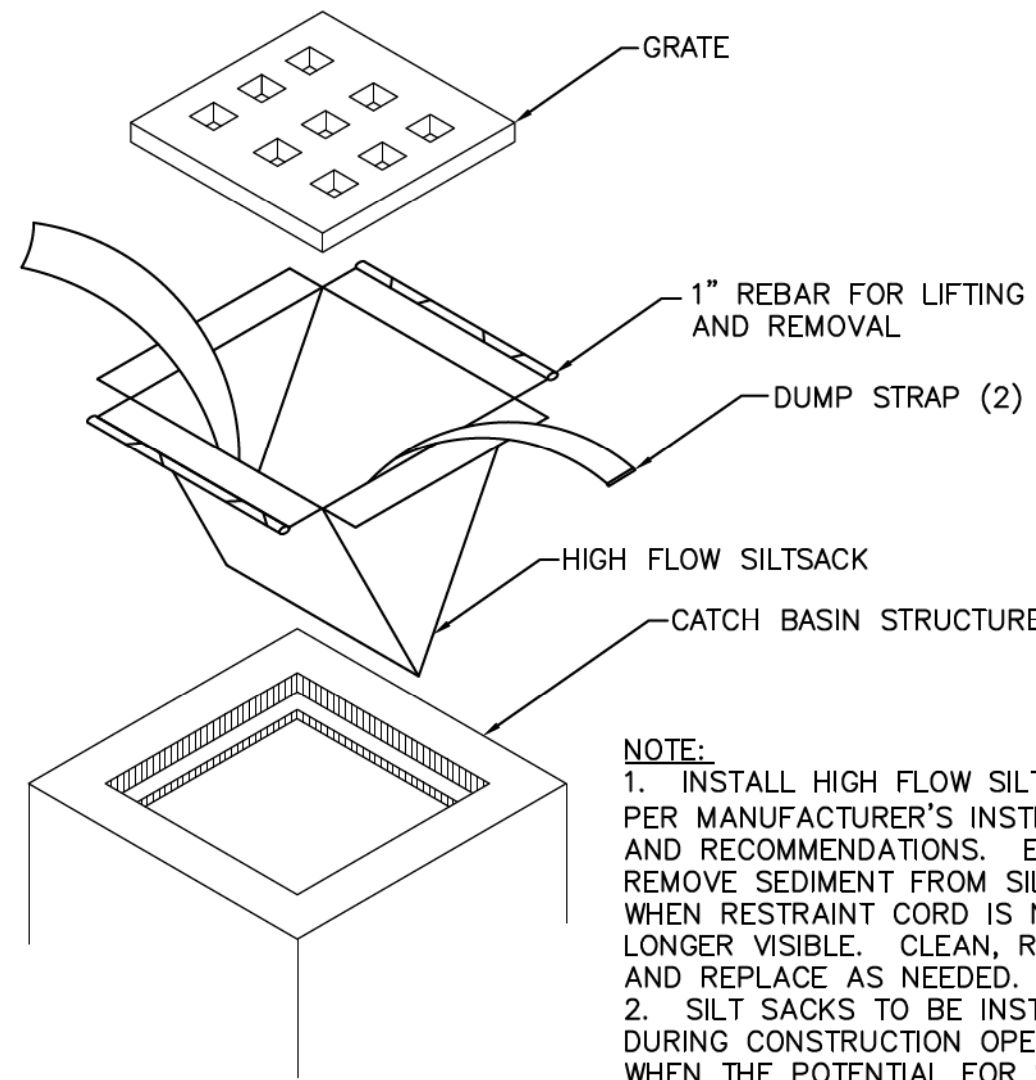
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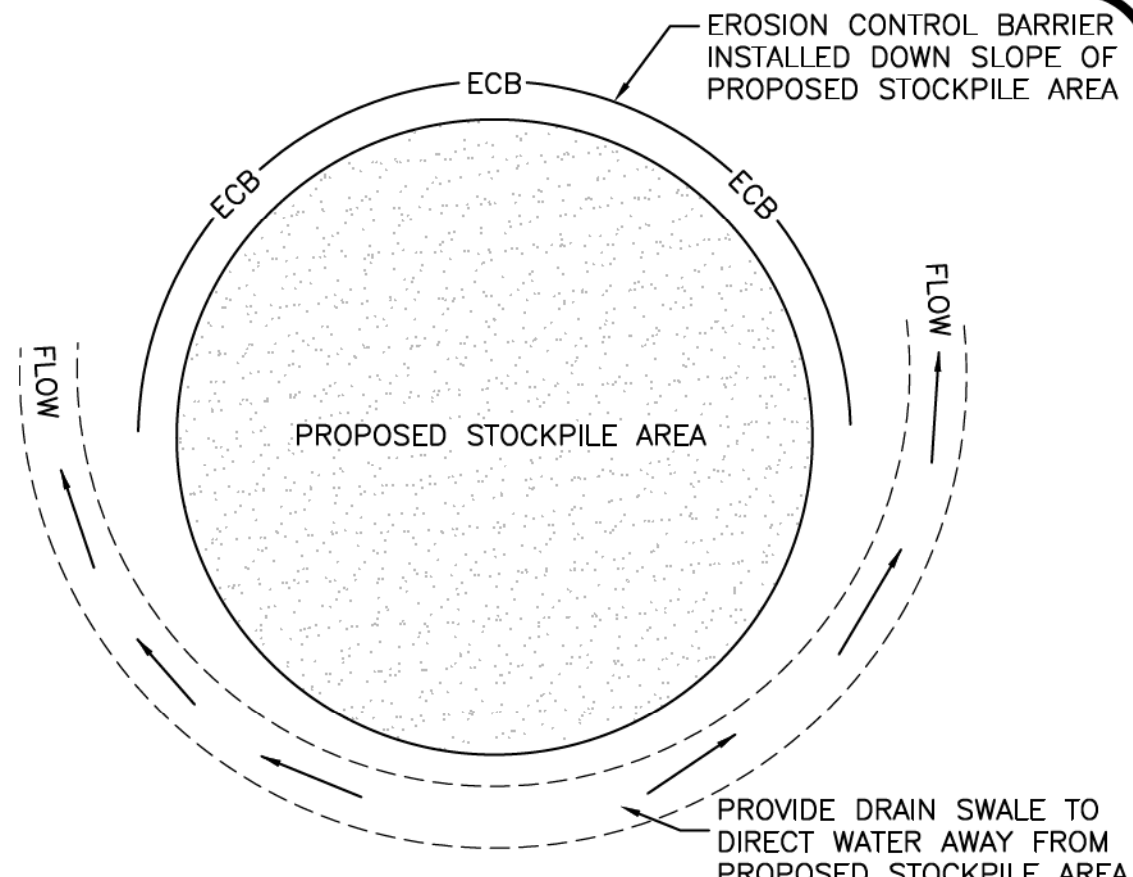
- NOTES:
1. ALL MATERIALS TO MEET MANUFACTURERS SPECIFICATIONS.
 2. INSTALL WOODEN STAKES IN A CRISS-CROSS PATTERN EVERY 8' ON CENTER.
 3. OVERLAP TUBULAR BARRIER SEGMENTS A MINIMUM OF 12".
 4. THE CONTRACTOR SHALL MAINTAIN THE TUBULAR BARRIERS IN A FUNCTIONAL CONDITION AT ALL TIMES. THE CONTROLS SHALL BE ROUTINELY INSPECTED BY THE CONTRACTOR.
 5. WHERE THE TUBULAR BARRIERS REQUIRE REPAIR OR SEDIMENT REMOVAL, IT WILL BE COMPLETED BY THE CONTRACTOR AT NO ADDITIONAL COST.
 6. AT A MINIMUM, THE CONTRACTOR SHALL REMOVE SEDIMENTS COLLECTED AT THE BASE WHEN THEY REACH 1/3 THE EXPOSED HEIGHT OF THE BARRIER.

TUBULAR SEDIMENT BARRIER
NOT TO SCALE



- NOTE:
1. INSTALL HIGH FLOW SILTSACK PER MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. EMPTY OR REMOVE SEDIMENT FROM SILTSACK WHEN RESTRAINT CORD IS NO LONGER VISIBLE. CLEAN, RINSE, AND REPLACE AS NEEDED.
 2. SILT SACKS TO BE INSTALLED DURING CONSTRUCTION OPERATIONS WHEN THE POTENTIAL FOR SEDIMENT TO ENTER EXISTING & PROPOSED BASINS EXISTS.

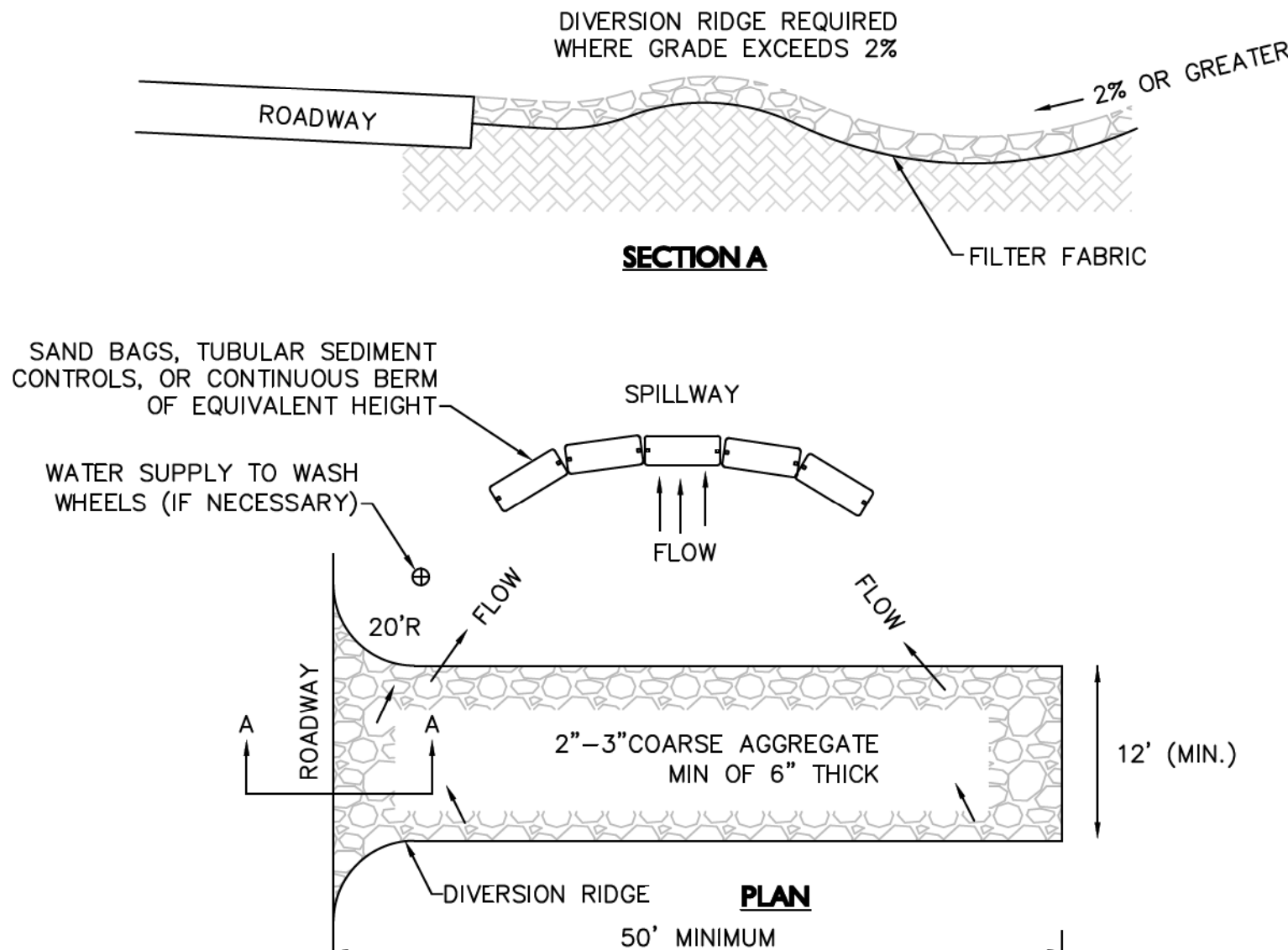
SILTSACK INLET DETAIL
NOT TO SCALE



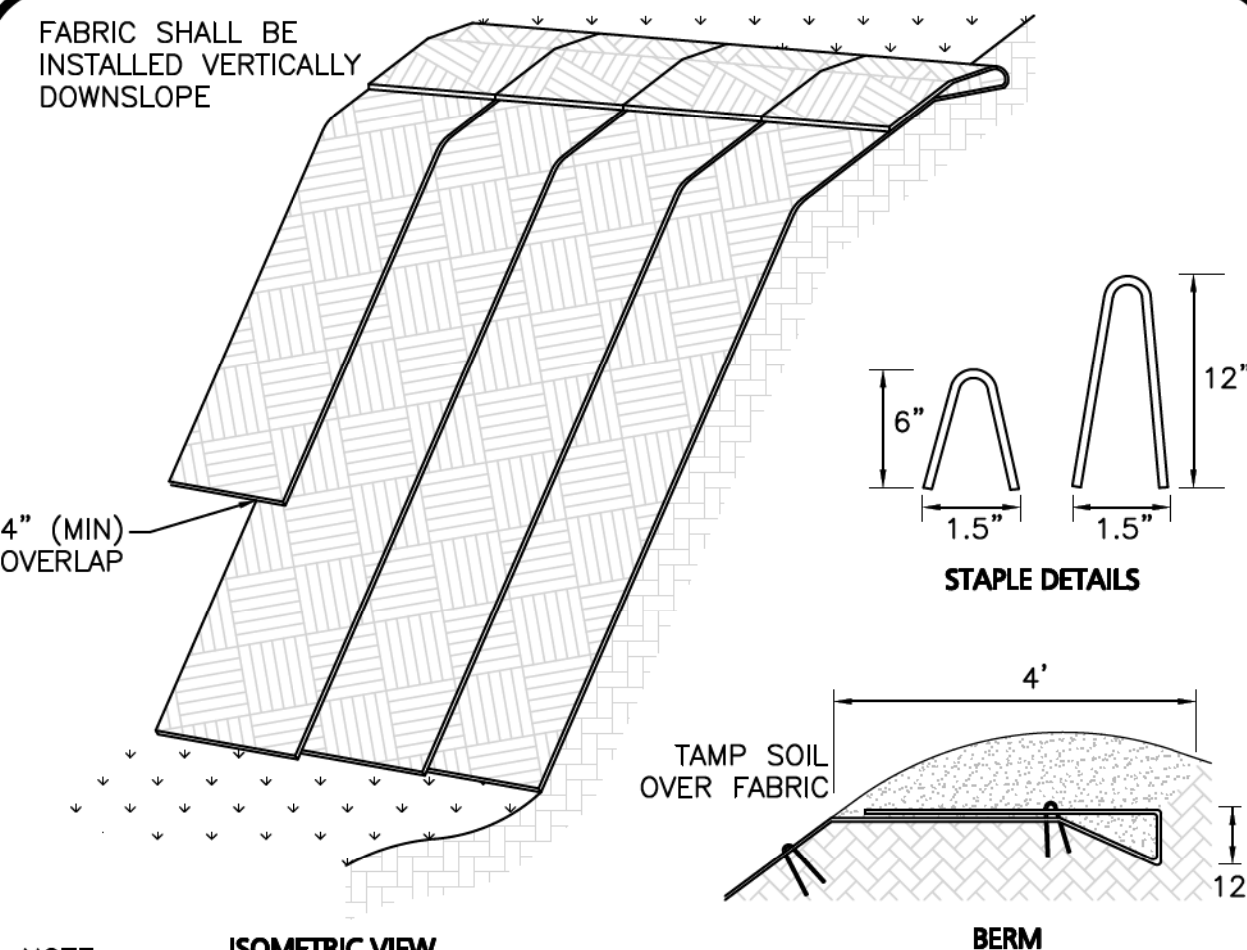
- NOTES:
1. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR LESS THAN 90 DAYS SHALL BE COVERED WITH STRAW AND MULCH (AT 100LBS/1,000 SF), OR WITH AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.
 2. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR 90 DAYS OR MORE SHALL BE SEEDED WITH WINTER RYE (FOR FALL SEEDING AT 1LB/1,000 SF) OR OATS (FOR SUMMER SEEDING AT 2LB/1,000 SF) AND THEN COVERED WITH STRAW MULCH (AT 100LB/1,000 SF) OR AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.

STOCKPILE PROTECTION DETAIL
NOT TO SCALE

- NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
 2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTERING THE PUBLIC RIGHT-OF-WAY.
 3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
 4. USE SANDBAGS, TUBULAR SEDIMENT CONTROLS, OR OTHER APPROVED METHODS TO CHANNELIZE RUNOFF TO BASIN AS REQUIRED.

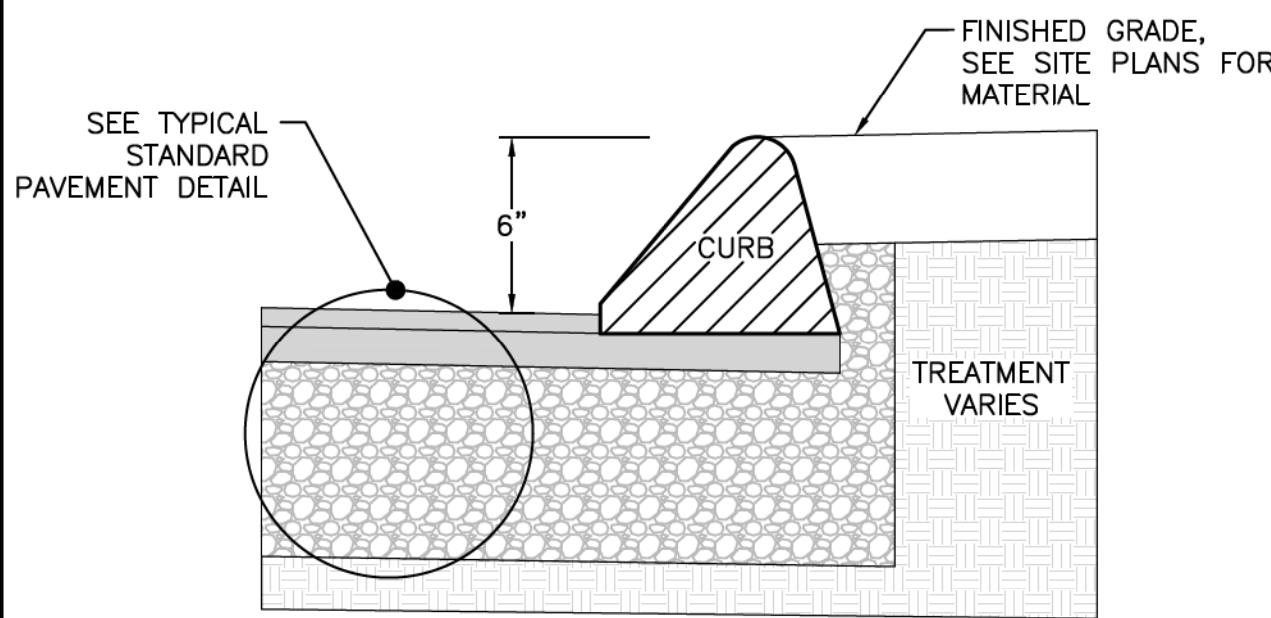
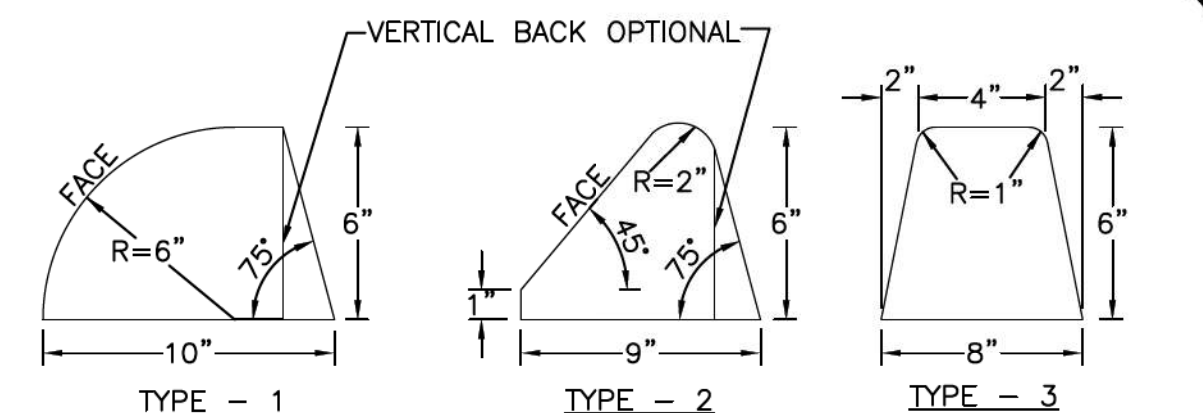


TEMPORARY CONSTRUCTION ENTRANCE/EXIT
NOT TO SCALE

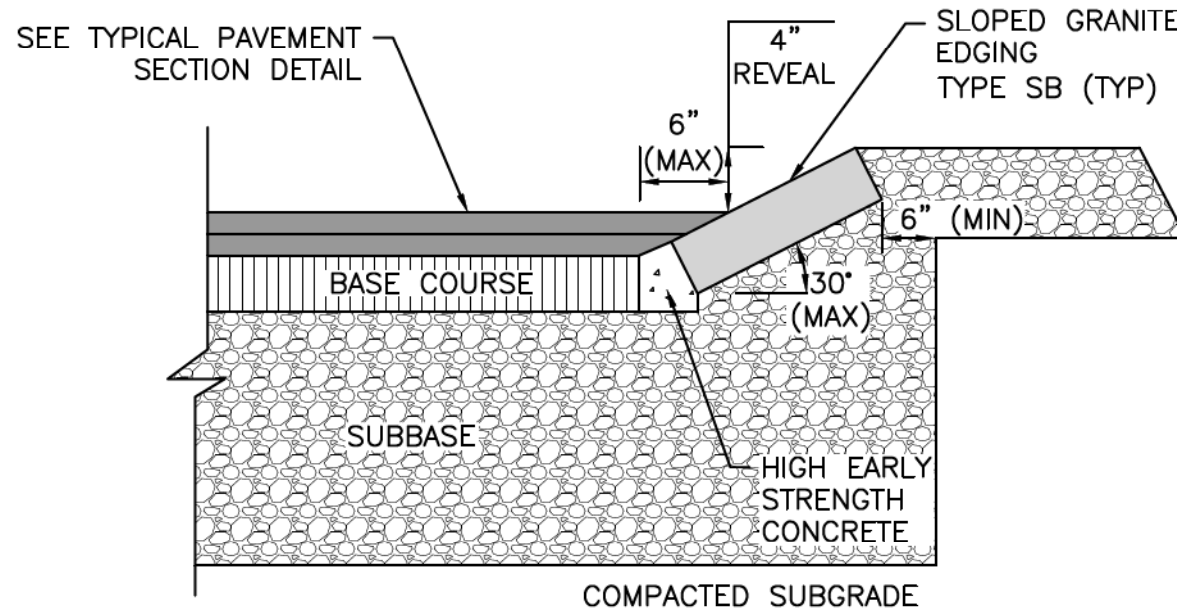


- NOTE:
1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. FABRIC SHALL HAVE GOOD SOIL CONTACT.
 2. APPLY PERMANENT SEEDING BEFORE PLACING FABRIC.
 3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
 4. CHOOSE MATERIAL BASED ON SLOPE, SOILS, AND APPLICATION.

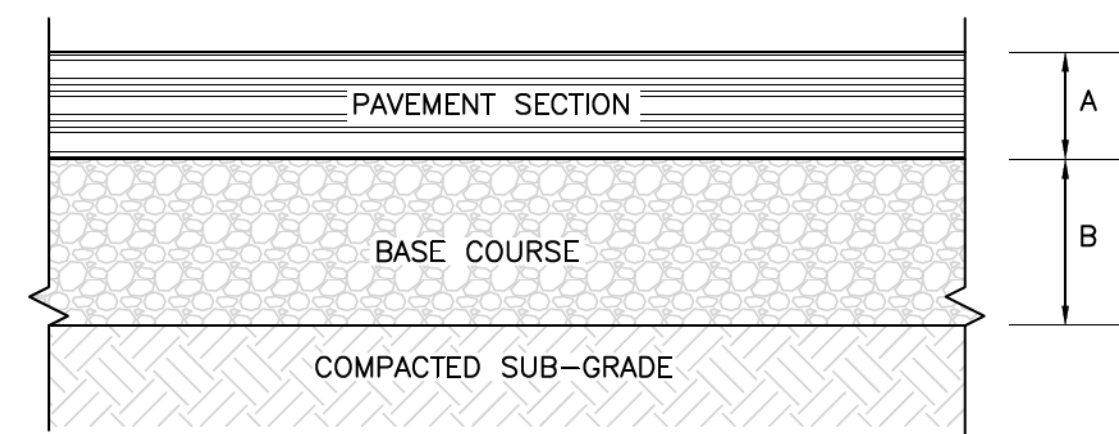
EROSION CONTROL FABRIC
NOT TO SCALE



BITUMINOUS CONCRETE CURB
NOT TO SCALE



SLOPED GRANITE CURB
NOT TO SCALE

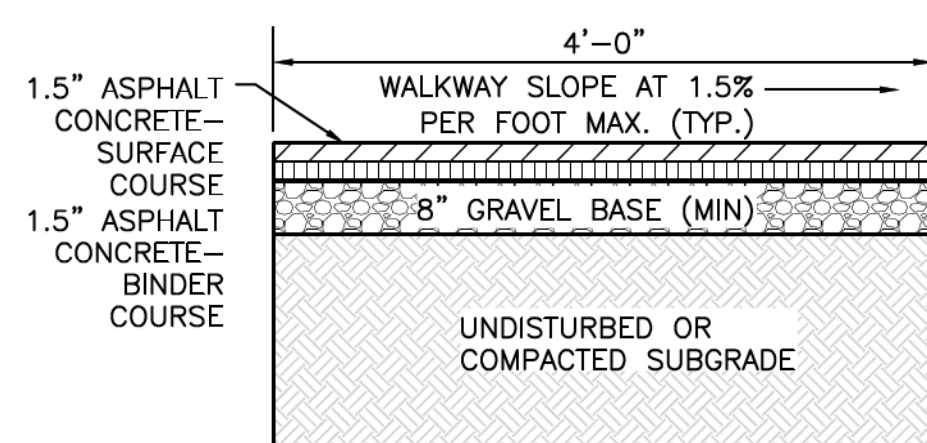


- NOTES:
1. PAVEMENT SECTION, BASE COURSE, AND SUBGRADE SHALL BE PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. IN THE ABSENCE OF A GEOTECHNICAL ENGINEER'S RECOMMENDATION, THE MATERIALS AND THICKNESS SHALL BE AS SHOWN HEREON.
 2. SUBGRADE SHALL BE COMPACTED TO 95% OF PROCTOR
 3. EXISTING SUBSURFACE SOILS SHALL BE PROOF-ROLLED.

MATERIALS AND THICKNESSES:

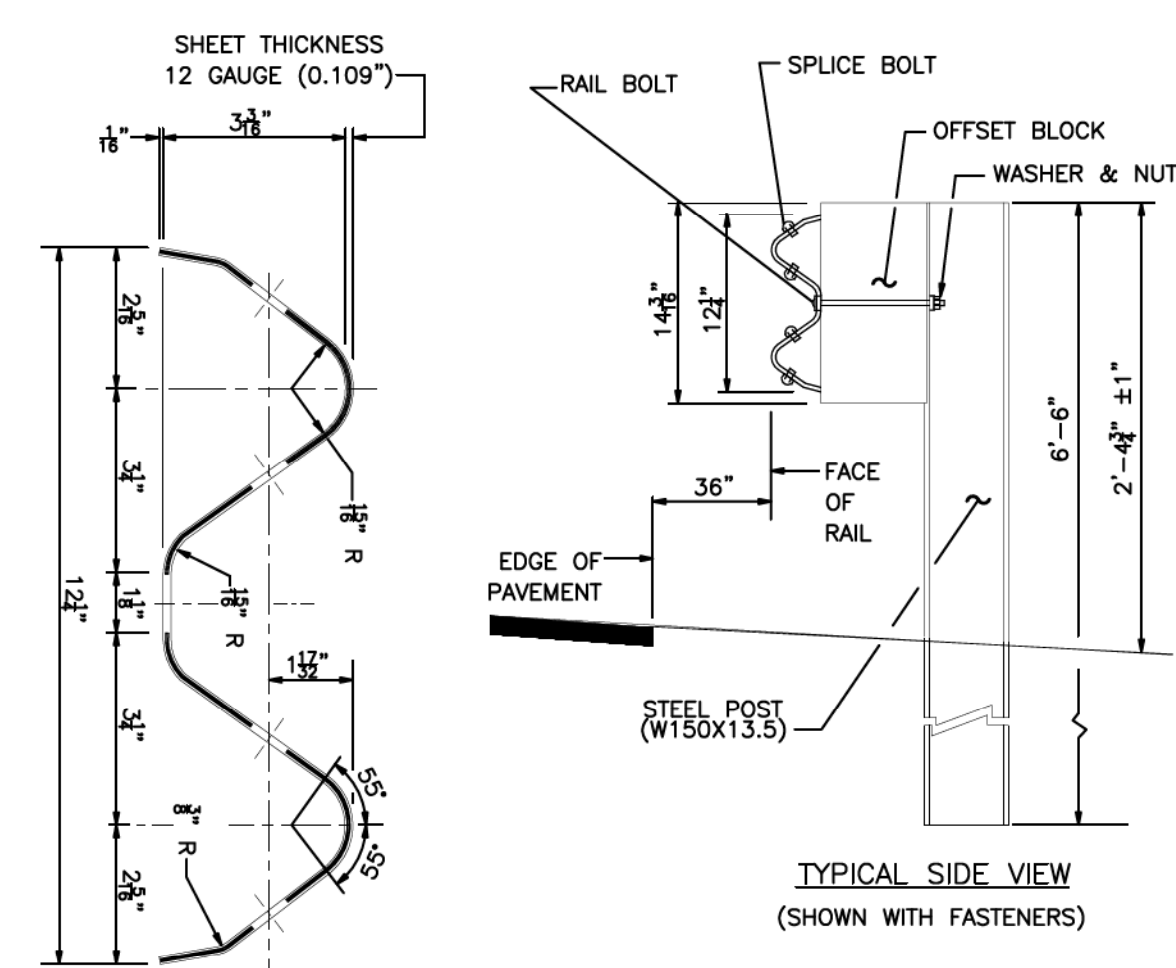
- A = 1.5" ASPHALT CONCRETE - SURFACE COURSE (M3.11.0, TABLE A, TOP COURSE)
3.0" ASPHALT CONCRETE - BINDER COURSE (M3.11.0, TABLE A, BINDER COURSE)
B = 14" PROCESSED GRAVEL BASE (MHD M2.01.7)

ASPHALT PAVEMENT SECTION
NOT TO SCALE



- NOTES:
1. REFERENCE PLANS FOR ELEVATIONS.
 2. COMPACT SOIL SUBGRADE UNIFORMLY TO AT LEAST 95% OF ASTM D 1557 LABORATORY DENSITY.
 3. PROOF-ROLL. PREPARED SUBGRADE TO IDENTIFY SOFT POCKETS AND AREAS OF EXCESS YIELDING. EXCAVATE SOFT SPOTS, UNSATISFACTORY SOILS, AND AREAS OF EXCESSIVE PUMPING OR RUTTING, AS DETERMINED BY GEOTECHNICAL ENGINEER AND REPLACE WITH COMPACTED BACKFILL OR FILL AS DIRECTED.
 4. CONTRACTOR SHALL COORDINATE SURFACE, BINDER, AND BASE COURSES WITH GEOTECHNICAL OR SOILS REPORT. REFER TO REPORT FOR RECOMMENDATIONS FOR LOCAL SOILS OR DRAINAGE CONDITIONS AND/OR METHODS.
 5. BASE COURSE SHALL EXTEND 6 INCHES BEYOND WALKWAY EDGE WHERE WALKWAY DOES NOT ABUT DEEP CURB, WALL, STEPS, OR FIXED OBJECT.
 6. WALKWAY EDGES SHALL BE TAMPED WHERE WALKWAY DOES NOT ABUT DEEP CURB, WALL, STEPS, OR FIXED OBJECT.

BITUMINOUS CONCRETE SIDEWALK
NOT TO SCALE



STEEL GUARDRAIL DETAIL
NOT TO SCALE



PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

3	10-01-2020	ISSUED FOR ZBA APPLICATION
2	05-21-2020	MISCELLANEOUS REVISIONS
1	01-21-2020	MISCELLANEOUS REVISIONS
REV	DATE	DESCRIPTION

APPLICANT/OWNER:

BARSKY ESTATE REALTY TRUST
23 HUNTING LANE
SHERBORN, MA 01770

PROJECT:
THE PINES RESIDENCES
41 NORTH MAIN STREET
SHERBORN, MA

PROJECT NO. 2513-01A DATE: 11-14-19

SCALE: AS SHOWN DWG. NAME: C2513-01A

DESIGNED BY: ARM CHECKED BY: MAM

PREPARED BY:



ALLEN & MAJOR ASSOCIATES, INC.
civil engineering • land surveying
environmental consulting • landscape architecture
www.allenmajor.com

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WOBURN MA 01801
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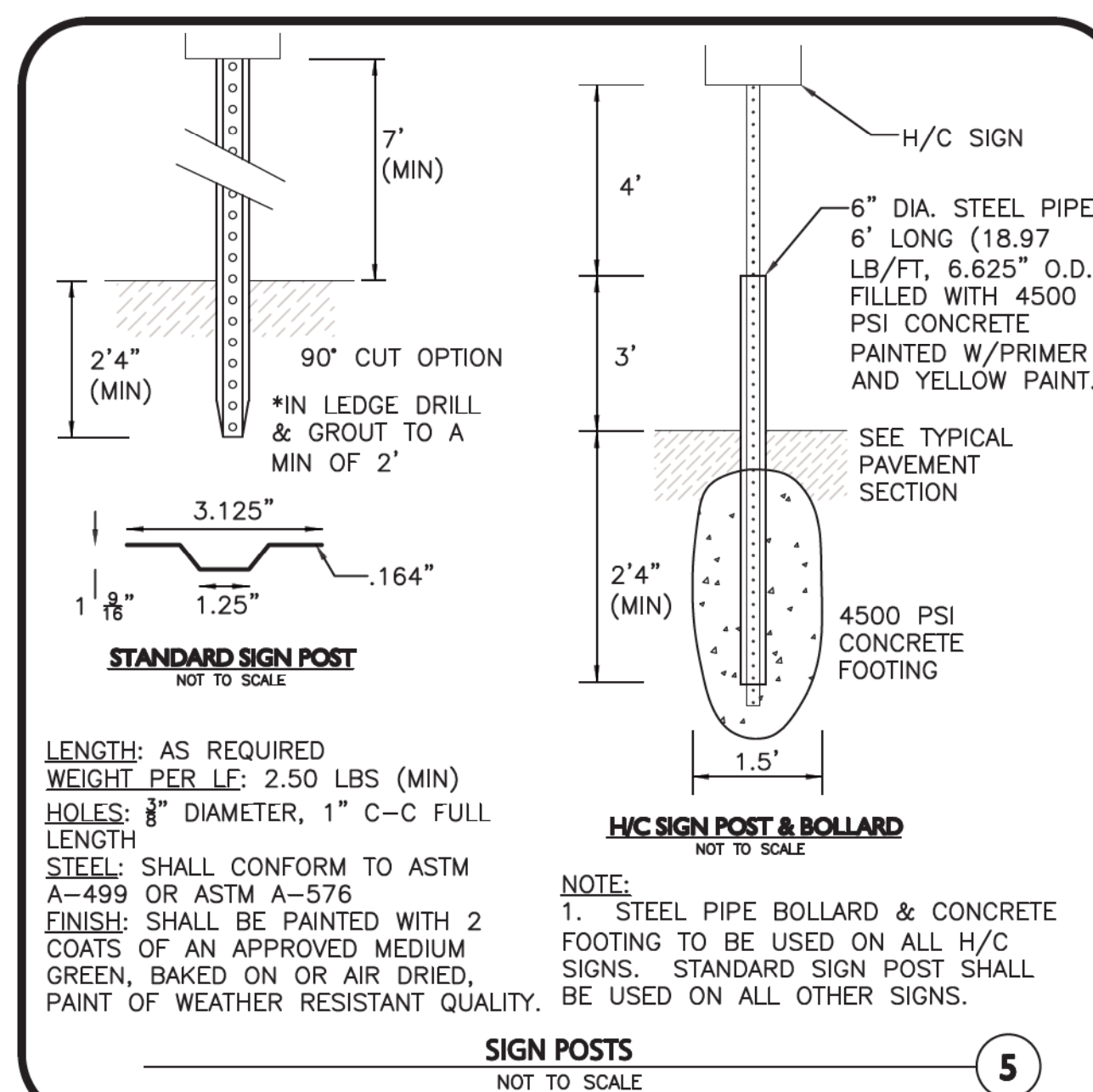
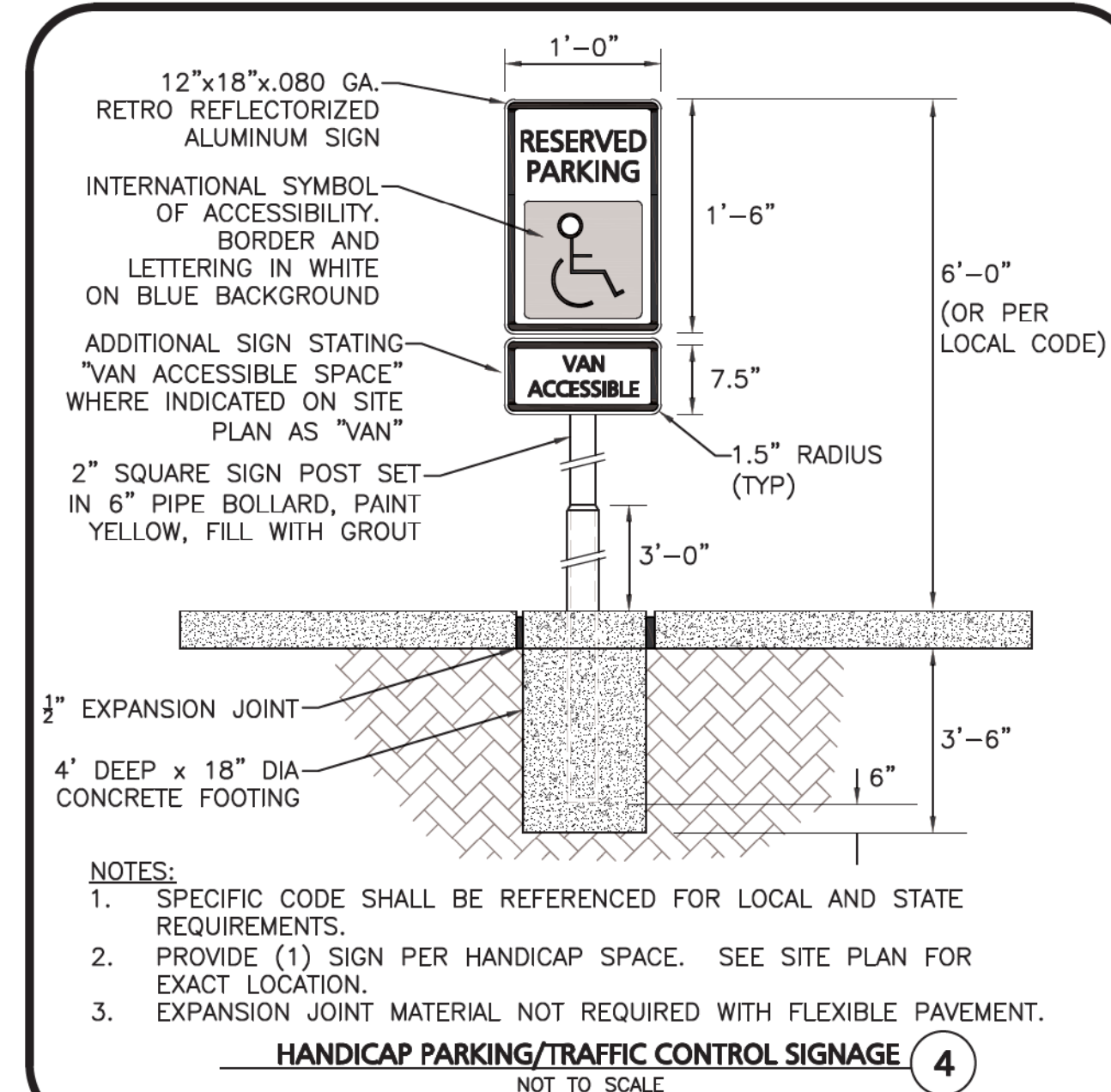
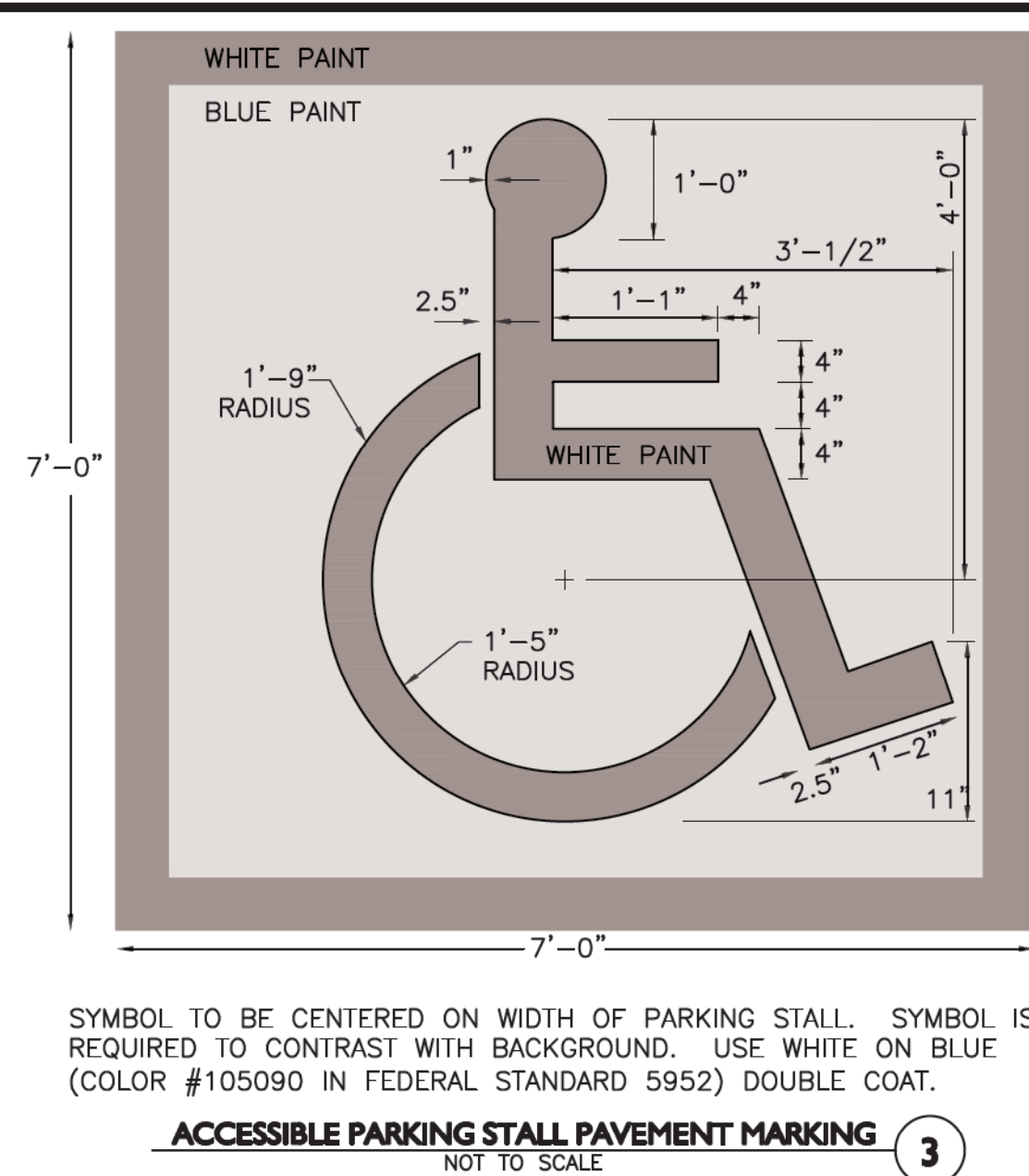
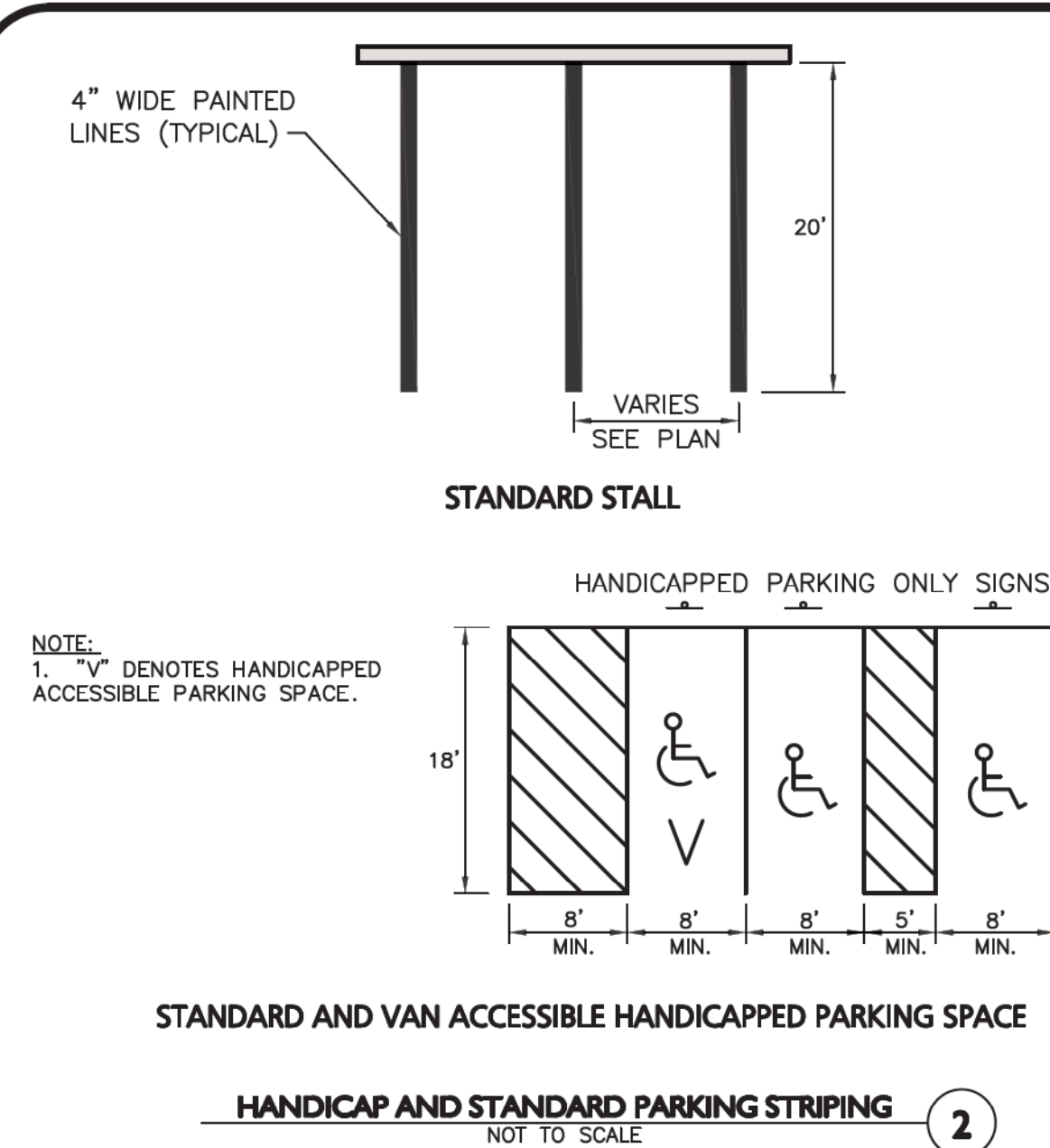
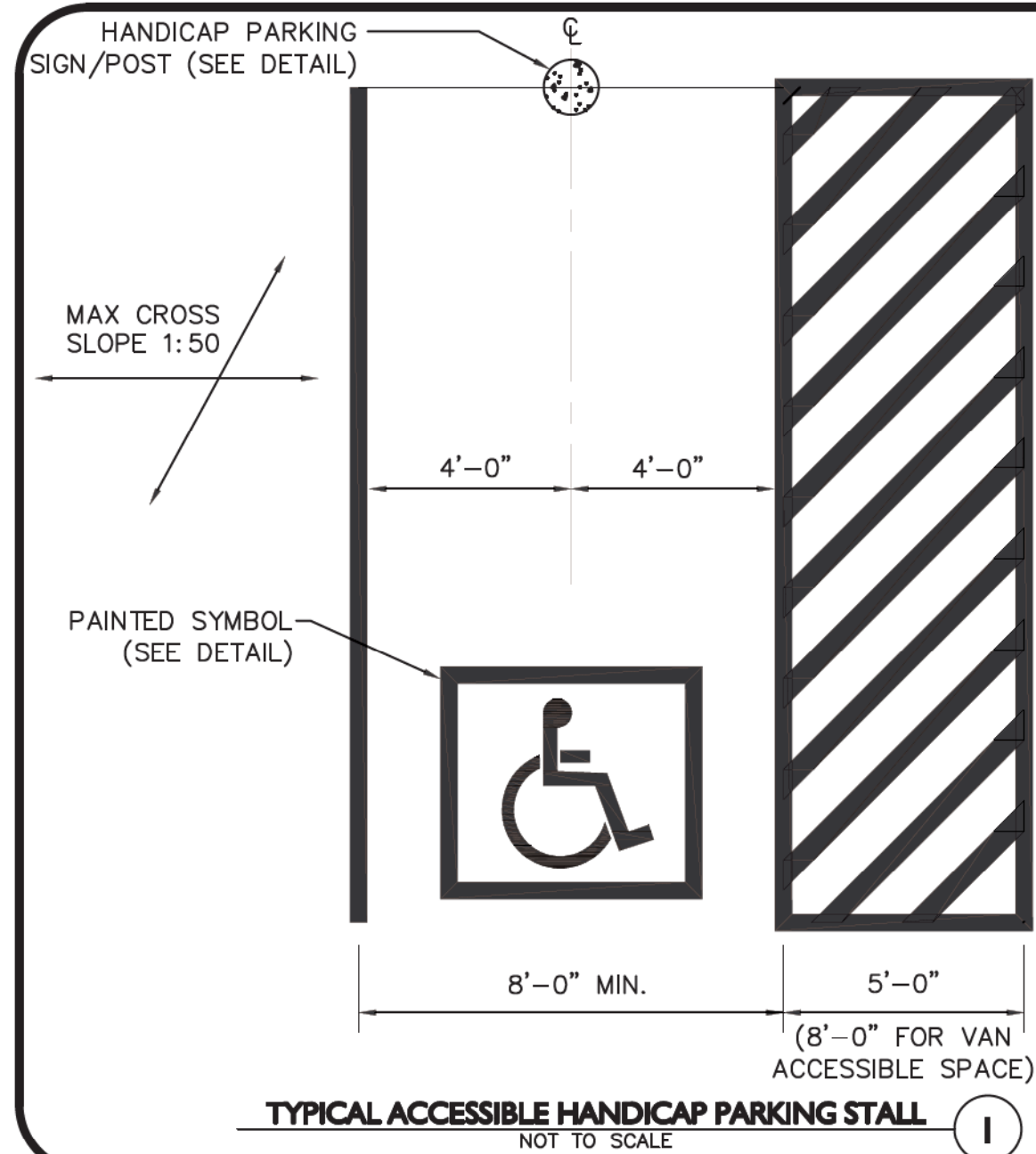
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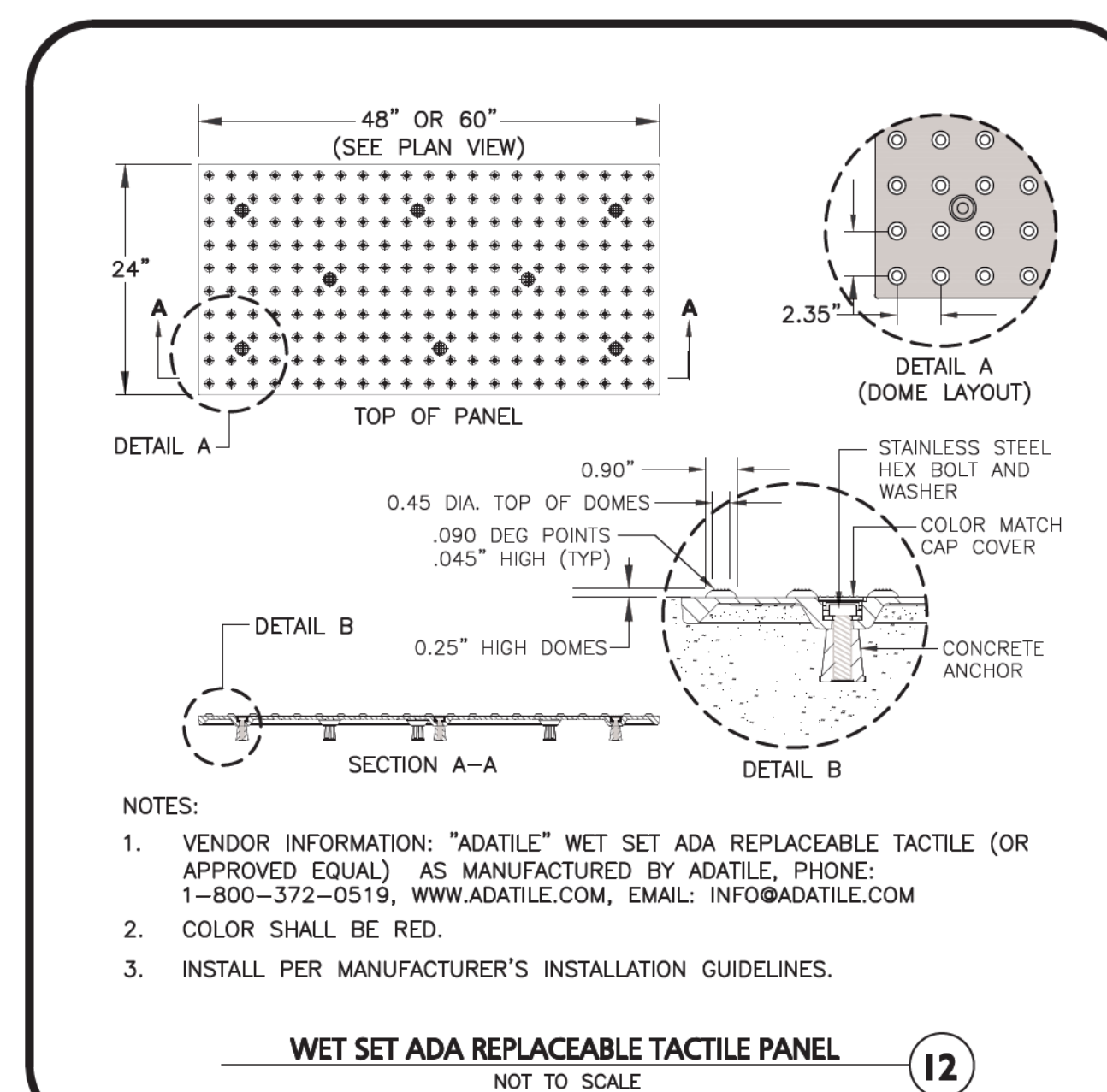
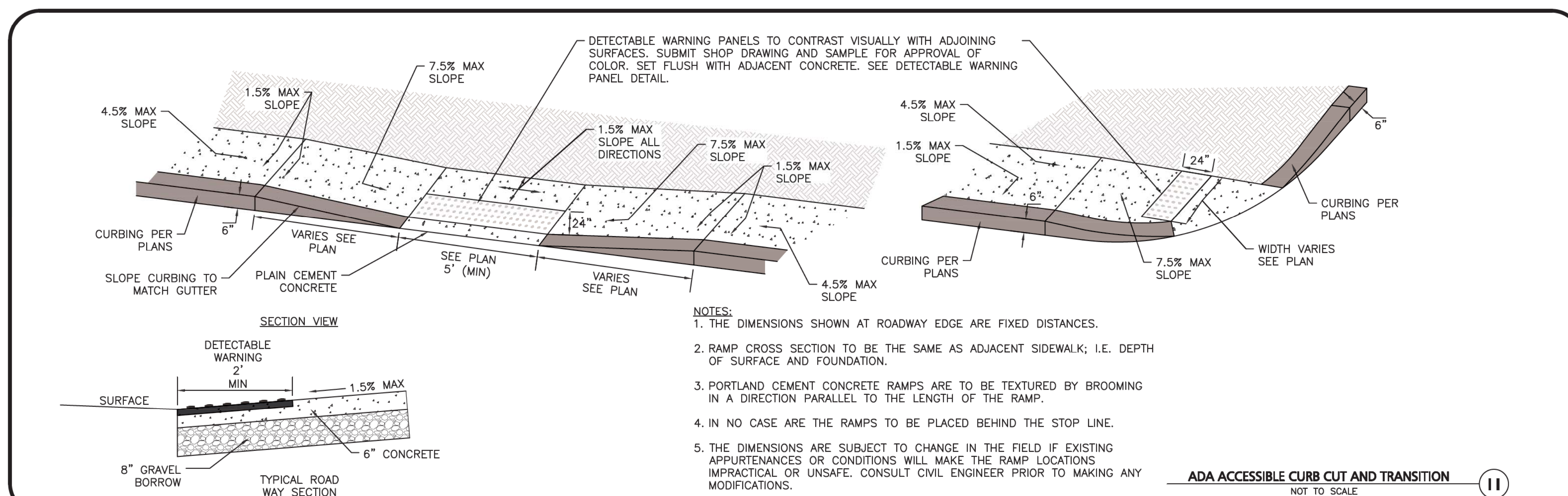
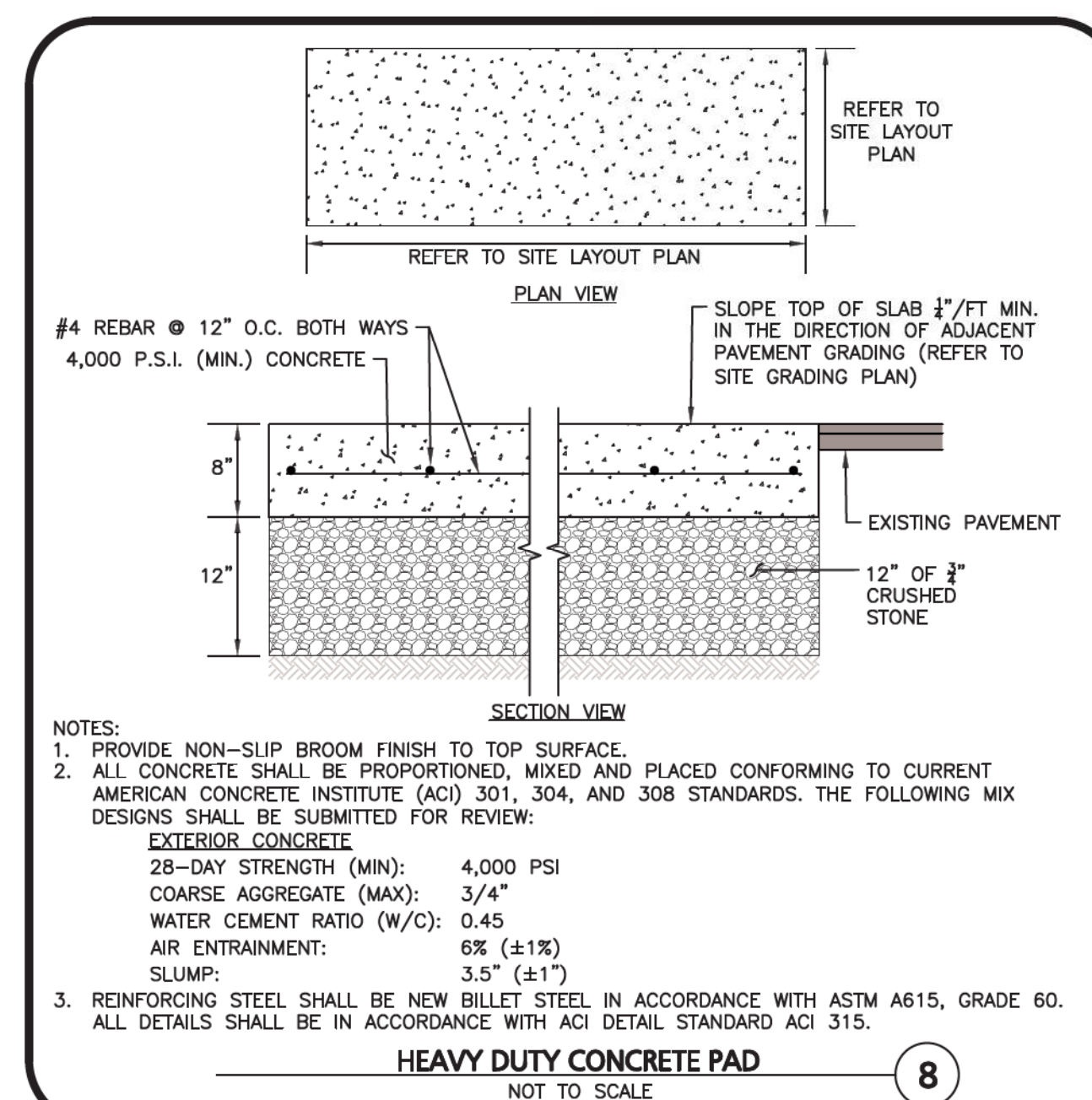
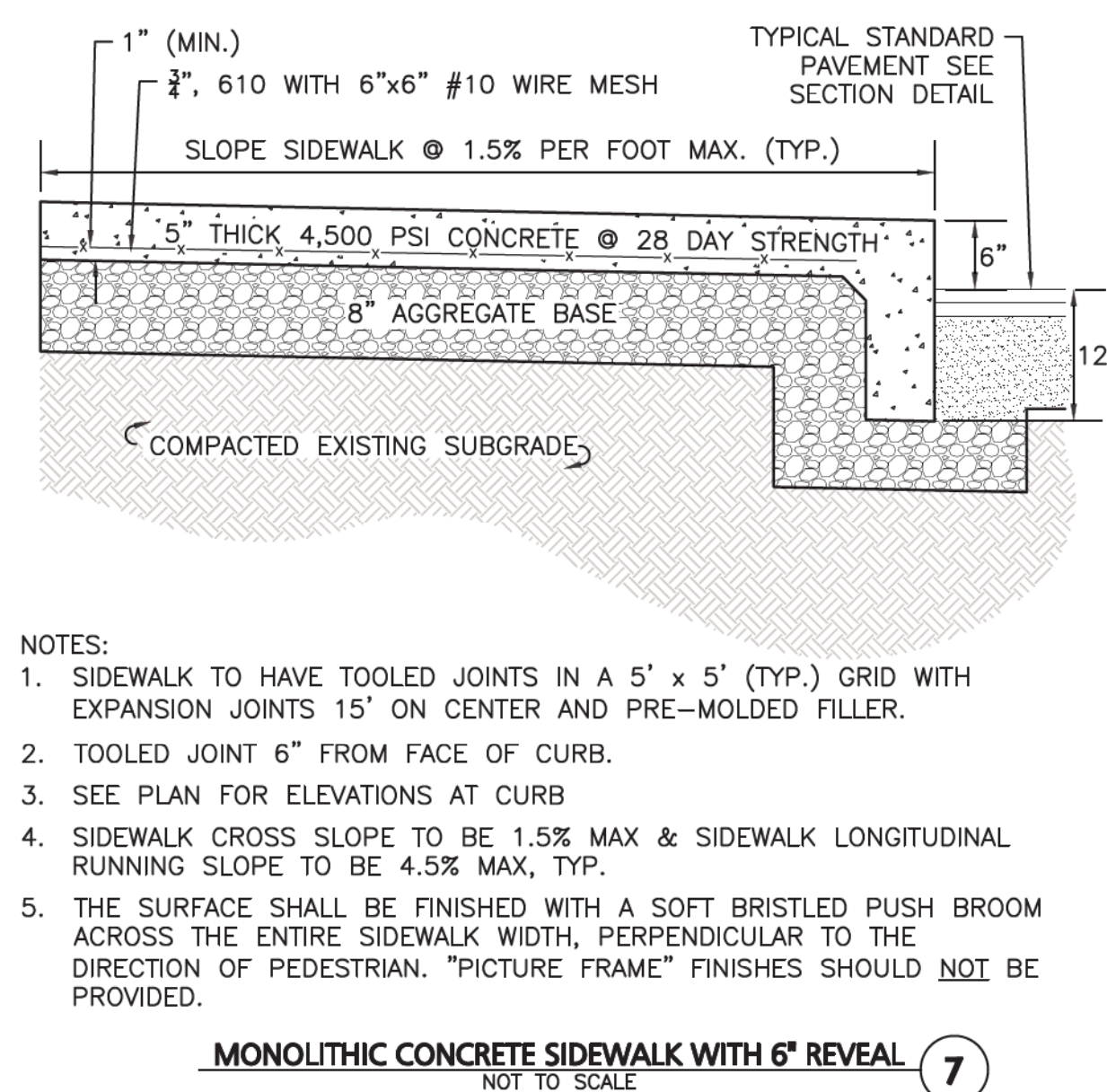
DRAWING TITLE: SHEET NO.

DETAILS C-501

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DESC.	SIGN	SIZE	MOUNTING HEIGHT	DESCRIPTION	REFLEC- TORIZED
R7-8		12" x 20"	7' - 0"	GREEN & BLUE ON WHITE	NO
R7-8 (MODIFIED)		12" x 20"	7' - 0"	GREEN & BLUE ON WHITE	NO
R1-1		30" x 30"	7' - 0"	WHITE ON RED	YES
R5-1		30" x 30"	7'-0"	RED ON WHITE	YES



PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

3	10-01-2020	ISSUED FOR ZBA APPLICATION
2	05-21-2020	MISCELLANEOUS REVISIONS
1	01-21-2020	MISCELLANEOUS REVISIONS
REV	DATE	DESCRIPTION

APPLICANT\OWNER:

BARSKY ESTATE REALTY TRUST
23 HUNTING LANE
SHERBORN, MA 01770

PROJECT:

THE PINES
RESIDENCES
1 NORTH MAIN STREET
SHERBORN, MA

PROJECT NO.	2513-01A	DATE:	11-14-19
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SCALE:	AS SHOWN	DWG. NAME:	C2513-01A
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DESIGNED BY:	ARM	CHECKED BY:	MAM
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PREPARED BY:



WOBURN, MA ♦ LAKEVILLE, MA ♦ MANCHESTER, NH

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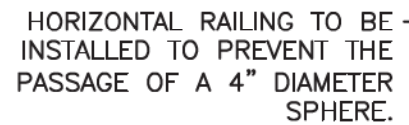
C-502

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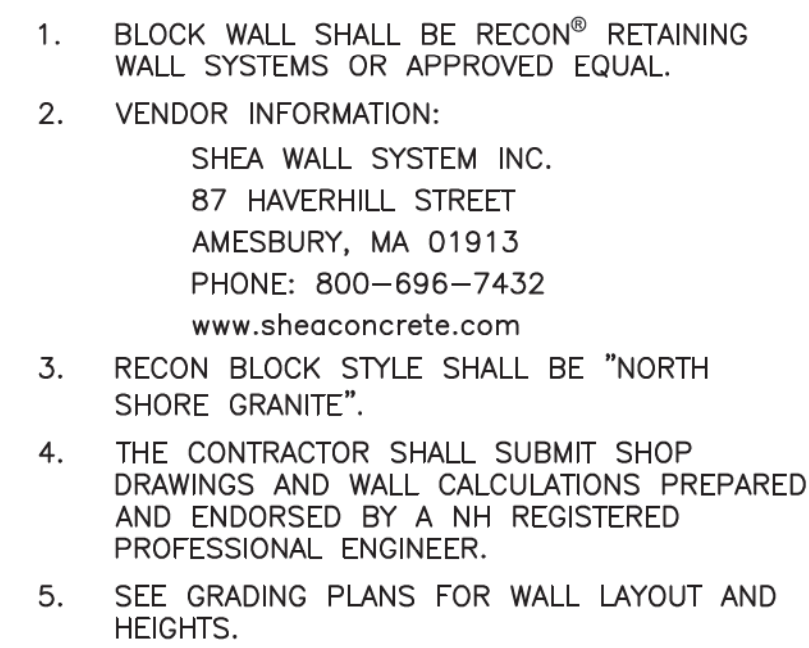
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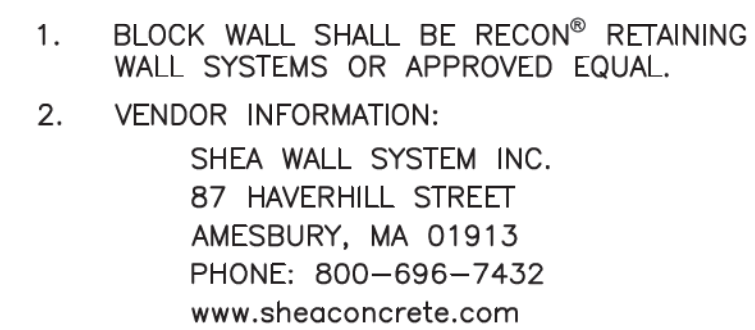
1. HANDRAILS SHALL BE AT A CONSISTENT HEIGHT ABOVE WALKING SURFACES, STAIR NOSINGS AND RAMP SURFACES.
2. HANDRAIL SURFACES SHALL BE CONTINUOUS ALONG THEIR LENGTH AND SHALL NOT BE OBSTRUCTED ALONG THEIR TOPS OR SIDES. THE BOTTOMS OF HANDRAIL GRIPPING SURFACES SHALL NOT BE OBSTRUCTED FOR MORE THAN 20% OF THEIR LENGTH.
3. UPPER AND LOWER HANDRAIL ENDS TO JOIN SMOOTHLY AT ENDS WITH 6" RADII & EXTEND 12" BEYOND TOP AND BOTTOM OF EACH RAMP SECTION.
4. MAINTAIN 7.5% MAX RUNNING SLOPE ON RAMP SEGMENTS AND 1.5% MAX. RUNNING SLOPE IN ALL DIRECTIONS ON LEVEL LANDINGS. MAINTAIN 1.5% MAX CROSS SLOPE ON ALL RAMPING SECTIONS.
5. ALL RAILINGS, POSTS, HANDRAILS TO BE PAINTED METAL.
6. SIDEWALK TO HAVE TOOLED JOINTS IN A 5' x 5' (TYP.) GRID WITH EXPANSION JOINTS 12' ON CENTER AND PREMOLDED FILLER.



TYPICAL UTILITY EQUIPMENT PAD
NOT TO SCALE



BLOCK RETAINING WALL SECTION
NOT TO SCALE



FENCE CONNECTION TO TOP OF WALL
NOT TO SCALE



SCREENED DUMPSTER ENCLOSURE
NOT TO SCALE

APPLICANT\OWNER:

BARSKY ESTATE REALTY TRUST
23 HUNTING LANE
SHERBORN, MA 01770

PROJECT:

THE PINES
RESIDENCES
41 NORTH MAIN STREET
SHERBORN, MA

PROJECT NO.	2513-01A	DATE:	11-14-19
SCALE:	AS SHOWN	DWG. NAME:	C2513-01A
DESIGNED BY:	ARM	CHECKED BY:	MAM

PREPARED BY:



100 COMMERCE WAY
WOBURN MA 01801
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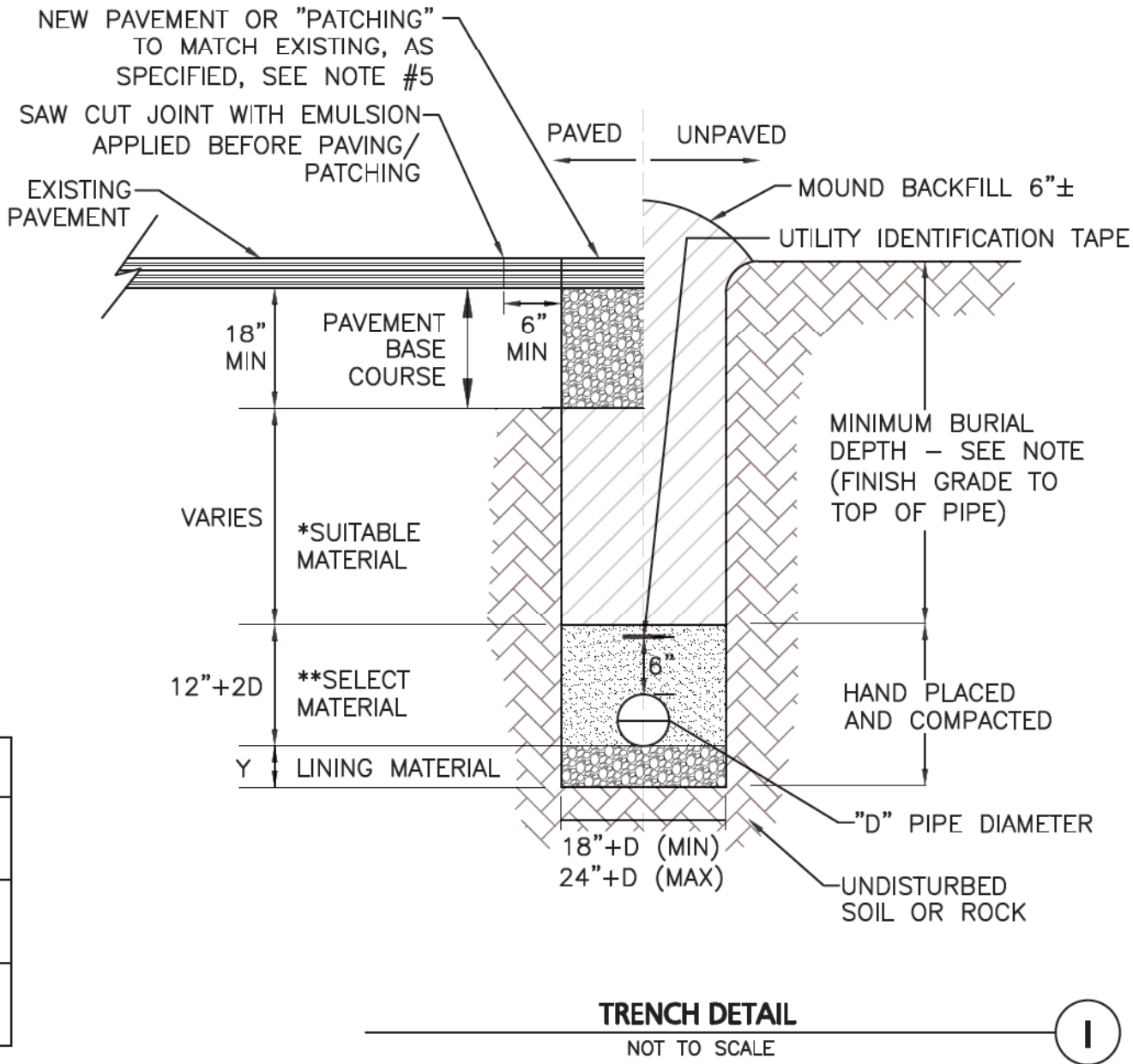
DETAILS

C-503

NOTES:

1. MINIMUM BURIAL DEPTH (FINISH GRADE TO TOP OF PIPE)
GRAVITY PIPE (SEWER & DRAIN) - SEE PLAN OR PROFILE
PRESSURE PIPE UNDER PAVING - 4'
PRESSURE PIPE BENEATH UNPAVED - 3'
WATER PIPE - 5'
2. WHERE BACKFILL IS DESIGNATED AS COMPACTED, THIS MEANS 90 TO 95% STANDARD PROCTOR, AASHTO T-99. ALL FILL PLACED BELOW PIPES AND STRUCTURES MUST MEET THIS REQUIREMENT.
3. TRENCHES WITHIN PUBLIC RIGHT OF WAY MAY REQUIRE FLOWABLE FILL. VERIFY WITH MUNICIPAL ENGINEER.
4. WHERE WASTE FILLS ARE ENCOUNTERED AT SUBGRADE LEVEL FOR NEW UTILITIES, THE FILL SHOULD BE OVER-EXCAVATED, THE SUBGRADE SHOULD BE RE-COMPACTED, AND BACKFILL CONSISTING OF PIPE BEDDING MATERIAL, CRUSHED STONE OR OTHER SUITABLE GRANULAR FILL SHOULD BE PLACED TO A SUFFICIENT DEPTH TO CREATE A FIRM AND STABLE SUBGRADE (TYPICALLY 12 TO 18 INCHES OVER-EXCAVATION).
5. REFER TO PAVING, CURBS, WALKS AND DRIVEWAY DETAILS.
6. REFER TO LANDSCAPING DETAILS.

	FILTER FABRIC USE	
	SOIL TYPE	
	SILT OR CLAY	GRANULAR SOIL
ABOVE GROUND WATER	FILTER FABRIC NOT REQUIRED	FILTER FABRIC NOT REQUIRED
BELOW GROUND WATER	FILTER FABRIC REQUIRED	FILTER FABRIC NOT REQUIRED



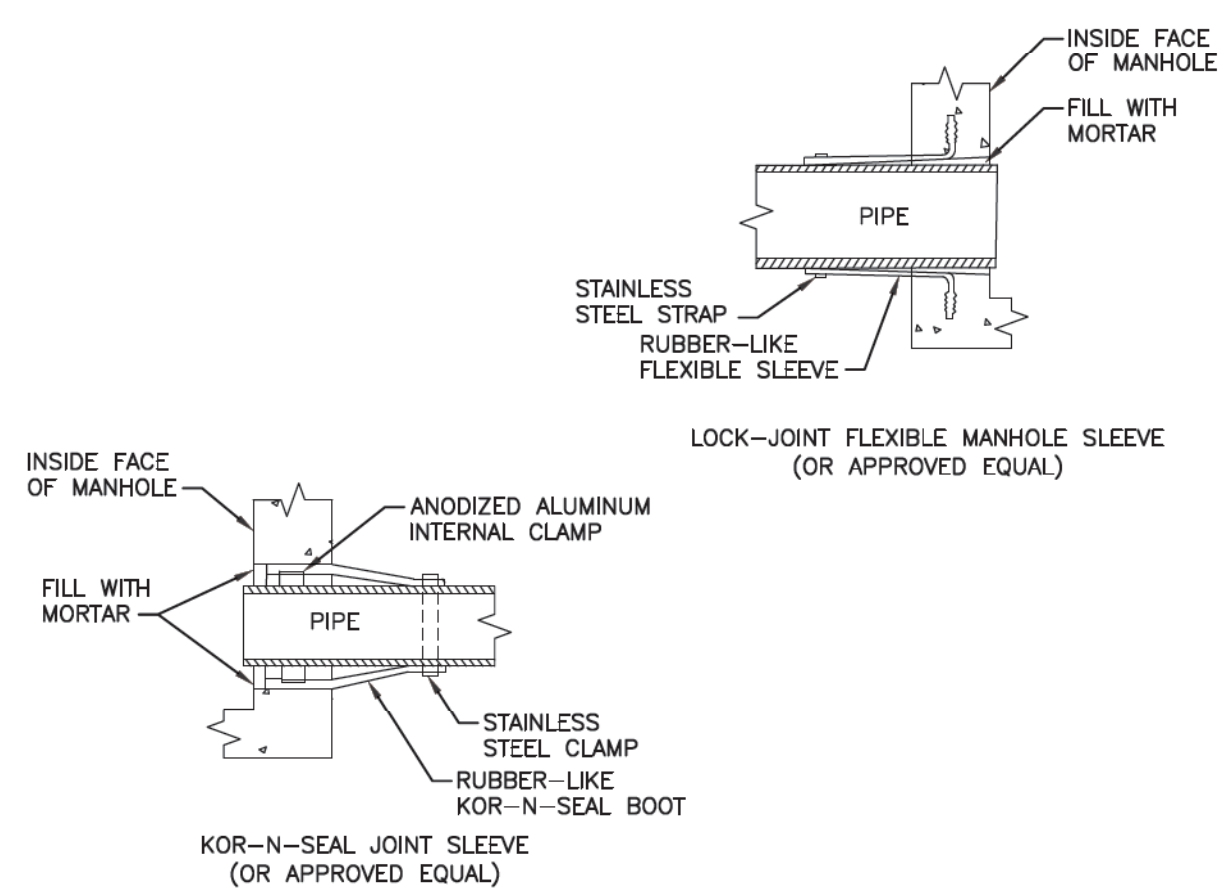
CONDITION & PIPE	**SELECT MATERIAL	LINING MATERIAL	Y-DIMENSION
DUCTILE IRON "ORDINARY SOIL"	TYPE I, II, OR III	SAND OR TYPE III	3"
RCP "ORDINARY SOIL"	TYPE II OR III	SAND OR TYPE III	3"
ALL PIPE OVER BEDROCK OR LEDGE	TYPE II OR III	SAND OR TYPE III	12"
DUCTILE IRON IN CLAY OR MUCK	TYPE II OR III	SAND	4"
RCP IN CLAY	TYPE II OR III	SAND	8"
ALL PLASTICS	TYPE III	SAND OR TYPE III	6"

SUITABLE MATERIAL SHALL CONTAIN NO STONE GREATER THAN 4" IN DIAMETER, NO FROZEN LUMPS, AND ONLY MINOR AMOUNTS OF CLAY OR ORGANIC MATERIAL. ALL MATERIAL TO BE PLACED IN MAX 12" LIFTS AND COMPACTED BEFORE PLACING NEXT LIFT.

**TYPE I MATERIAL SHALL BE EITHER GRAVEL OR EXCAVATED MATERIAL CONTAINING NO STONES GREATER THAN 1.5" DIAMETER, NO FROZEN LUMPS, CLAY OR ORGANIC MATERIAL.

**TYPE II MATERIAL SHALL BE CLEAN, HARD, CRUSHED OR NATURAL STONE WITH A GRADATION BY WEIGHT OF 100% PASSING A 1.5" SQUARE OPENING, NOT MORE THAN 25% PASSING A 3/4" OPENING, AND NOT MORE THAN 5% PASSING A 1/2" SQUARE OPENING.

**TYPE III MATERIAL SHALL BE CLEAN, HARD, CRUSHED STONE FREE FROM COATINGS AND THOROUGHLY WASHED WITH A GRADATION BY WEIGHT OF 100% PASSING A 1" SQUARE OPENING, AND 0 TO 5% PASSING A 1/2" SQUARE OPENING.



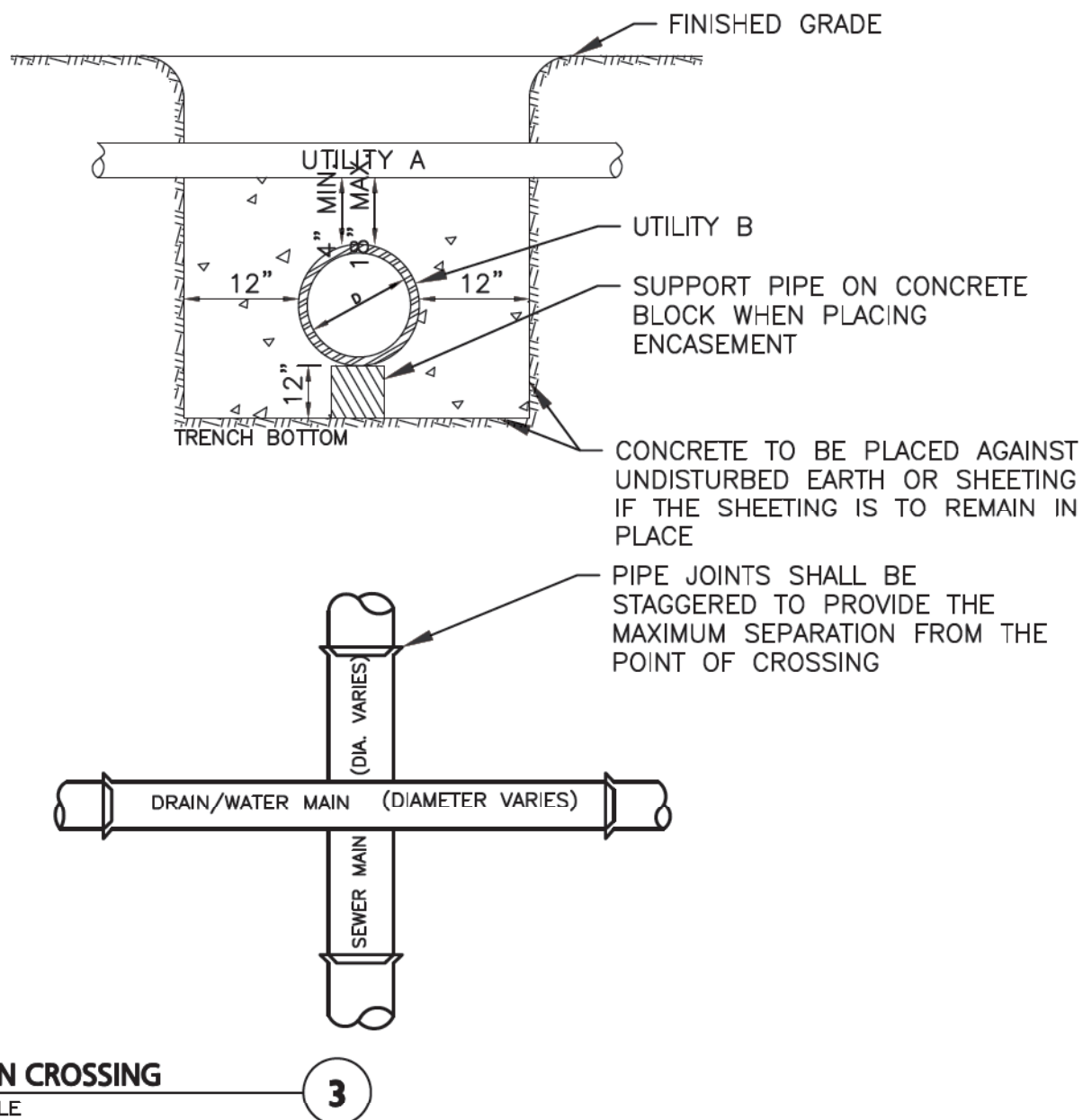
- NOTES:
1. PIPE TO MANHOLE JOINTS SHALL BE ONLY AS APPROVED BY THE ENGINEER AND IN GENERAL, WILL DEPEND FOR WATER TIGHTNESS UPON ELASTOMERIC SEALANT
 2. NON-SHRINKING MORTAR SHALL ONLY BE USED WHERE SPECIFICALLY APPROVED BY THE ENGINEER.

PIPE CONNECTIONS TO SEWER MANHOLE
NOT TO SCALE

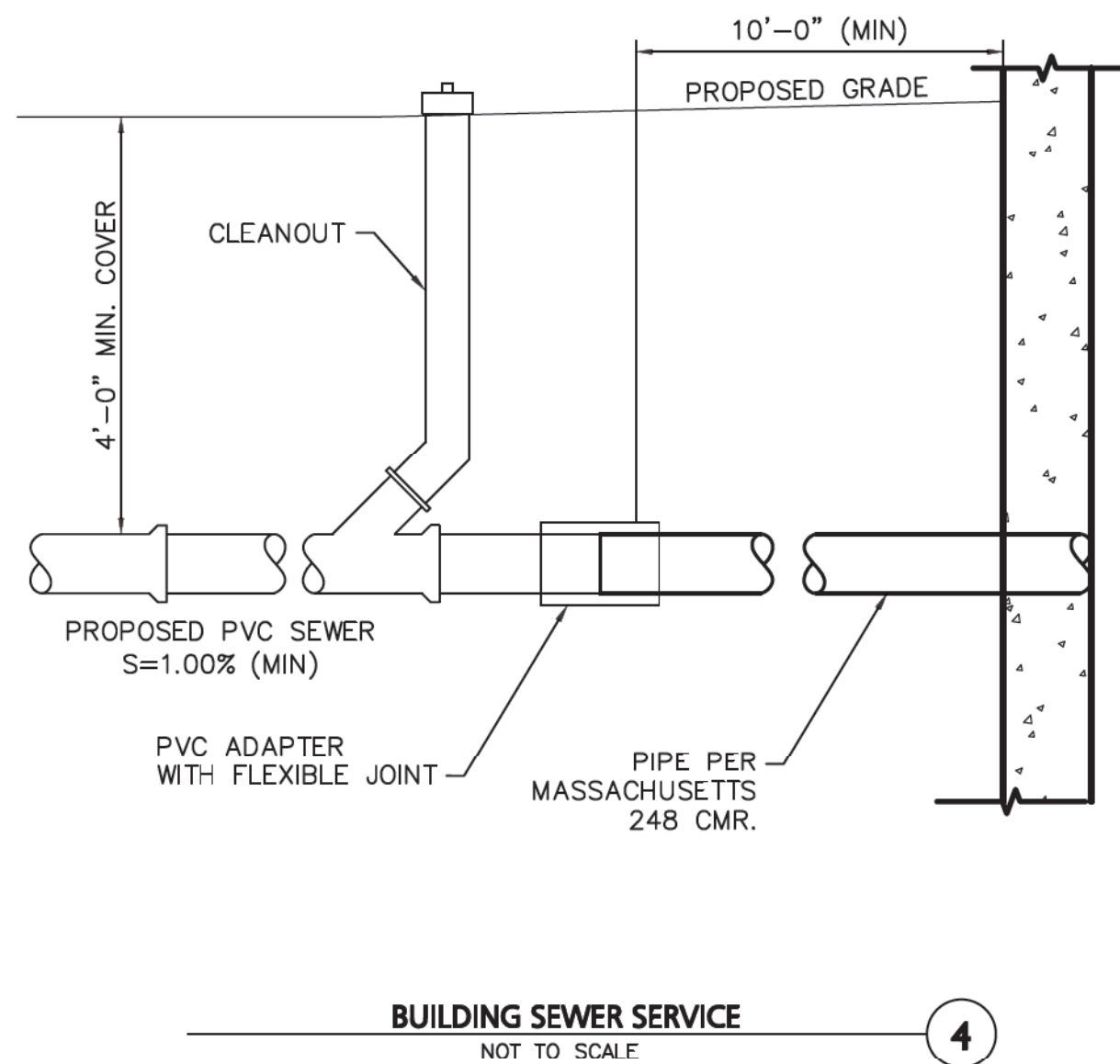
NOTES:

WHENEVER CONDITIONS PREVENT A LATERAL SEPARATION OF 10 FEET BETWEEN A SEWER MAIN AND A WATER/RAIN MAIN:

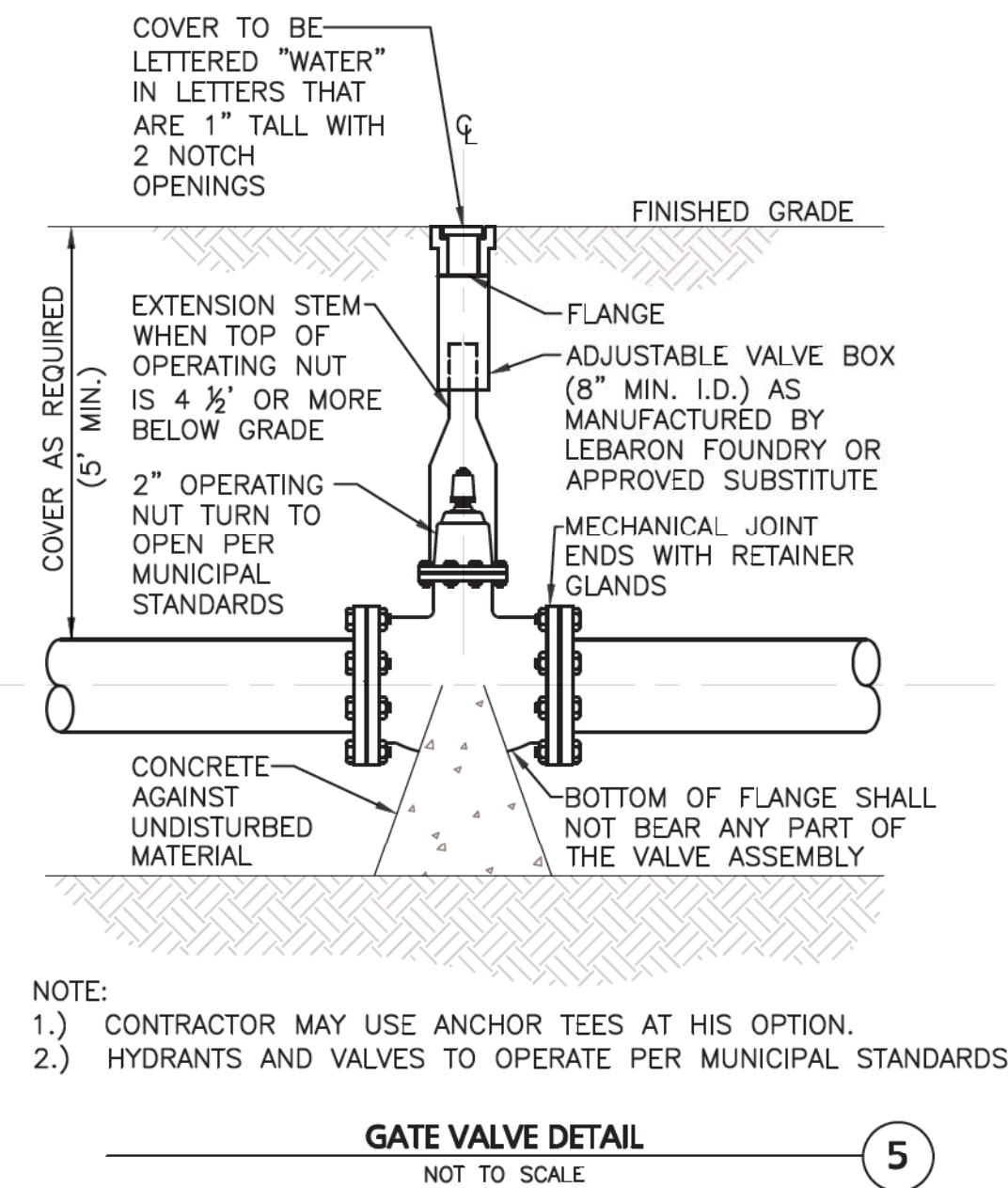
1. THE WATER/DRAIN MAIN SHALL BE LAID IN A SEPARATE TRENCH AND THE DIFFERENCE IN ELEVATION BETWEEN THE WATER/DRAIN MAIN AND THE SEWER MAIN SHALL BE AT LEAST 18 INCHES.
2. THE PIPE CROSSING SHALL OCCUR AS CLOSE TO 90° AS PRACTICABLE.
3. THE PIPE JOINTS SHALL BE STAGGERED TO PROVIDE THE MAXIMUM SEPARATION FROM THE POINT OF CROSSING.
4. THE CROSSING SHALL BE ENCASED IN CONCRETE FOR THE ENTIRE WIDTH OF THE TRENCH AND FOR A DISTANCE OF 10 LINEAR FEET CENTERED ON THE CROSSING.
5. UTILITIES A AND B CAN BE EITHER NEW OR EXISTING.
6. WHEN ONE UTILITY IS A SANITARY SEWER, IT IS PREFERABLE TO BE POSITIONED AS SHOWN FOR UTILITY B.
7. ENCASEMENT EXTENDS 10'-0" ON EACH SIDE OF THE CENTERLINE OF UTILITY A.
8. PIPE MUST BE BRACED VERTICALLY AND HORIZONTALLY TO PREVENT FLOATATION DURING PLACEMENT OF CONCRETE.



SEWER/WATER/DRAIN CROSSING
NOT TO SCALE



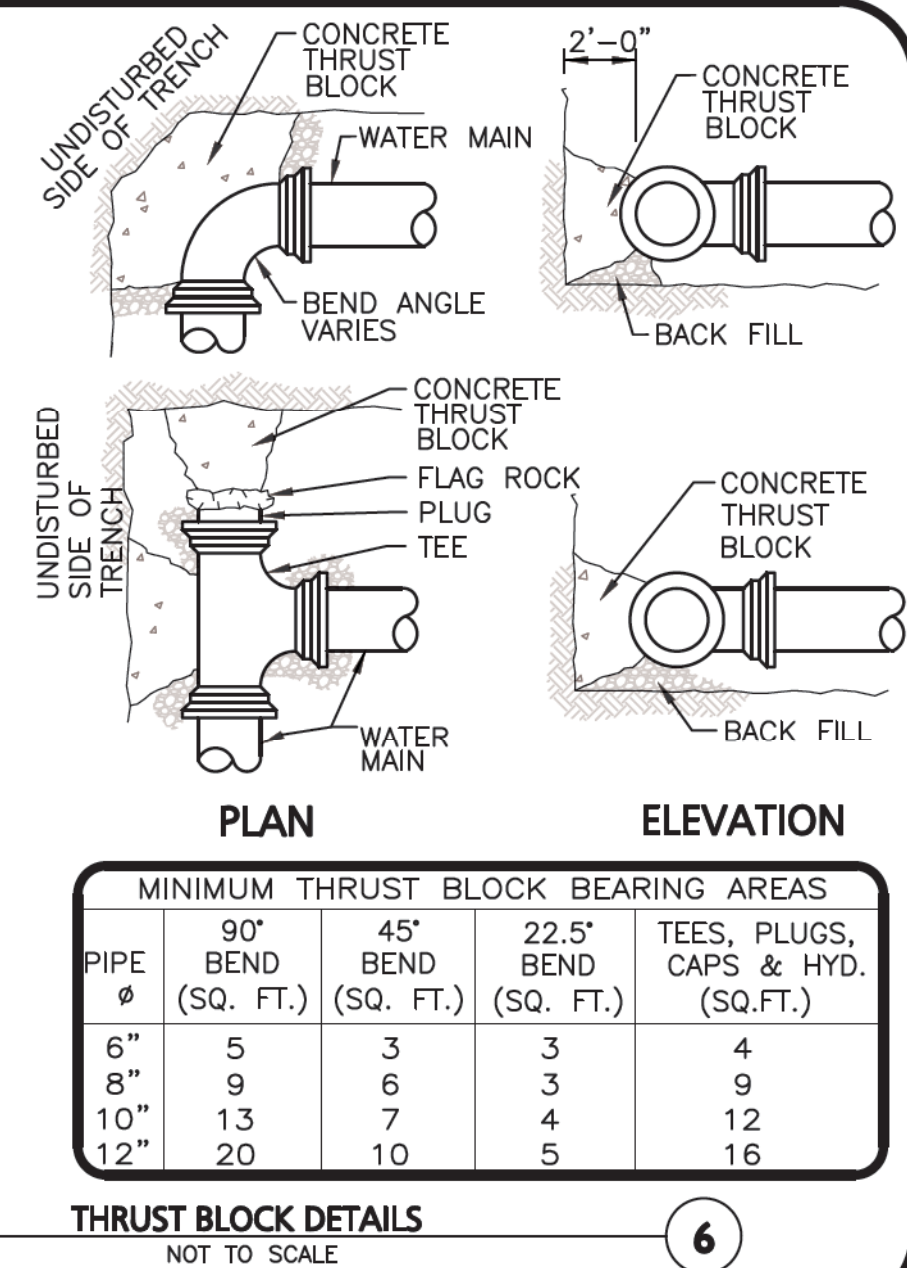
BUILDING SEWER SERVICE
NOT TO SCALE



GATE VALVE DETAIL
NOT TO SCALE

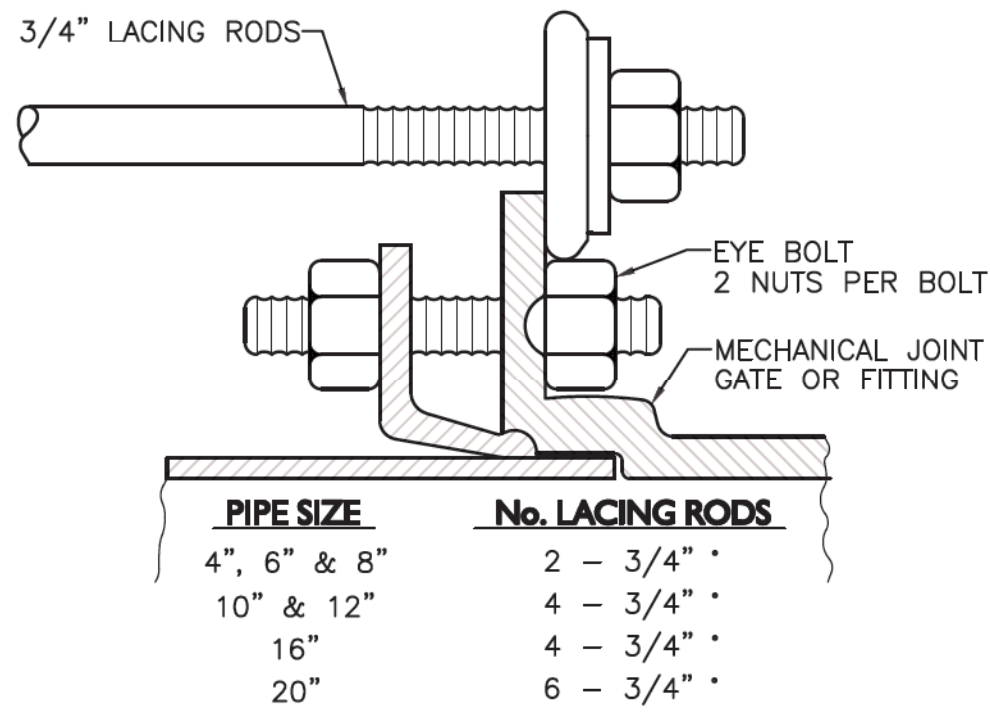
NOTES:

1. ALL WATER MAIN FITTINGS, BENDS, TEES, PLUGS ETC. SHALL BE RESTRAINED W/ THRUST BLOCKS EXCEPT WHERE NOTED.
2. ALL THRUST BLOCKS & COLLARS SHALL BE INSTALLED SO THAT THEY BEAR AGAINST UNDISTURBED EARTH.
3. SIZE OF CONCRETE THRUST BLOCKS SHALL BE AS NOTED BELOW.
4. MINIMUM COMPRESSIVE STRENGTH OF THRUST BLOCK CONCRETE SHALL BE 3,000 P.S.I. 5. KEEP CONCRETE CLEAR OF MECHANICAL JOINTS.



PIPE Ø	MINIMUM THRUST BLOCK BEARING AREAS		TEES, PLUGS, CAPS & HYD. (SQ.FT.)
	90° BEND (SQ. FT.)	45° BEND (SQ. FT.)	
6"	5	3	4
8"	9	6	9
10"	13	7	12
12"	20	10	16

THRUST BLOCK DETAILS
NOT TO SCALE



NOTES:

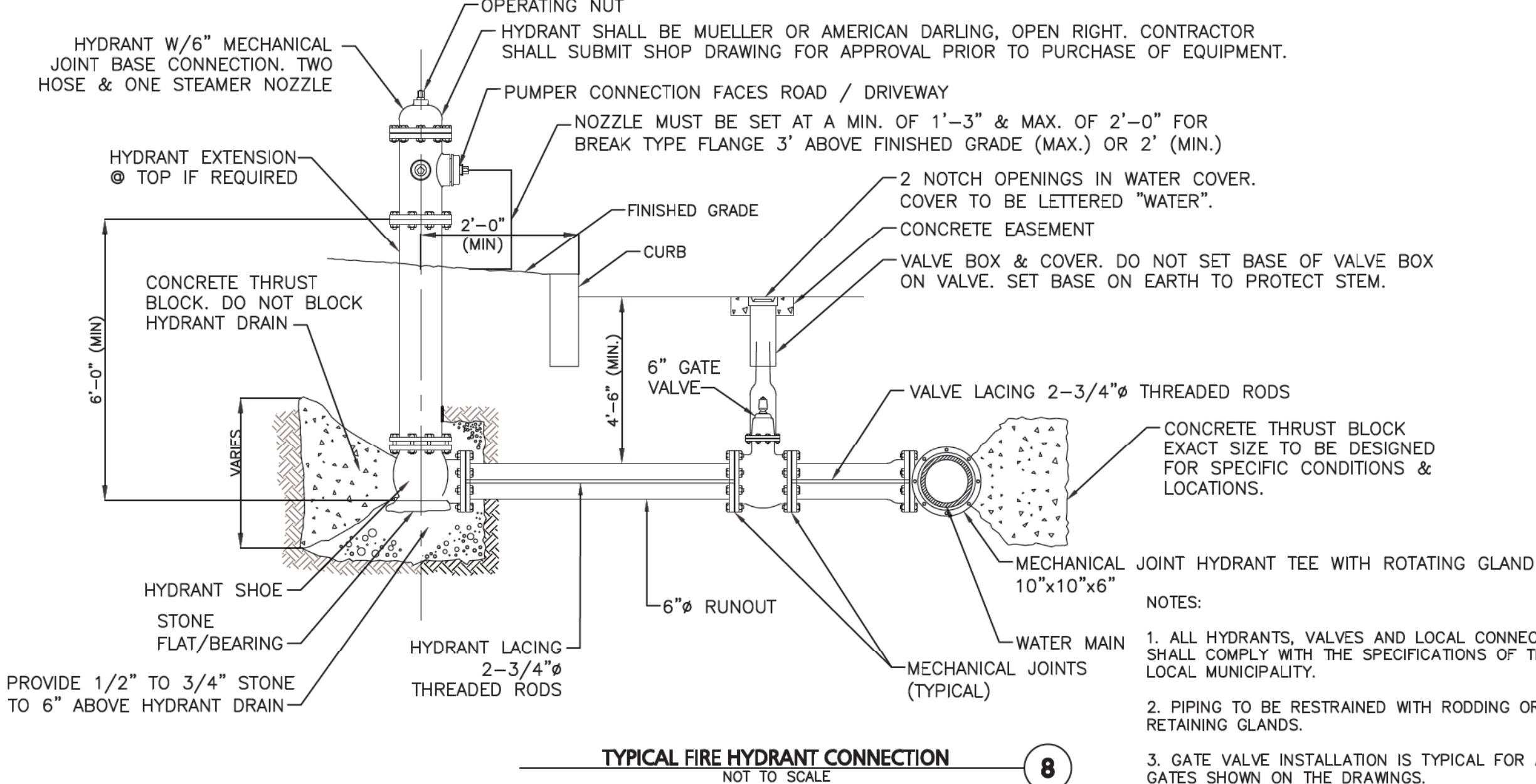
NUMBER OF LACING RODS IS BASED ON MAXIMUM PRESSURE OF 125 P.S.I. IN MAIN.

EYE-BOLTS AND LACING RODS ARE TO BE FABRICATED FROM A-36 STEEL.

STEEL LACING RODS SHALL HAVE A YIELD STRESS OF NOT LESS THAN 36,000 P.S.I.

EYE-BOLTS SHALL HAVE A MINIMUM TENSILE STRENGTH OF 7,000 LBS. EACH.

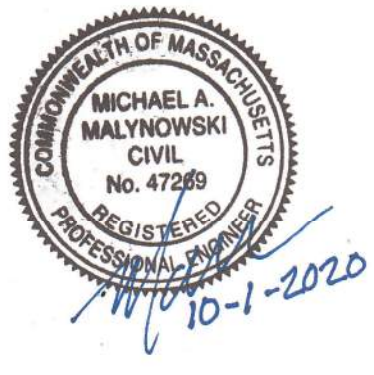
MECHANICAL JOINT LACING DETAIL
NOT TO SCALE



TYPICAL FIRE HYDRANT CONNECTION
NOT TO SCALE

NOTES:

1. ALL HYDRANTS, VALVES AND LOCAL CONNECTIONS SHALL COMPLY WITH THE SPECIFICATIONS OF THE LOCAL MUNICIPALITY.
2. PIPING TO BE RESTRAINED WITH RODDING OR RETAINING GLANDS.
3. GATE VALVE INSTALLATION IS TYPICAL FOR ALL GATES SHOWN ON THE DRAWINGS.



PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
3	10-01-2020	ISSUED FOR ZBA APPLICATION
2	05-21-2020	MISCELLANEOUS REVISIONS
1	01-21-2020	MISCELLANEOUS REVISIONS

APPLICANT/OWNER:

BARSKY ESTATE REALTY TRUST
23 HUNTING LANE
SHERBORN, MA 01770

PROJECT:

THE PINES
RESIDENCES
41 NORTH MAIN STREET
SHERBORN, MA

PROJECT NO. 2513-01A DATE: 11-14-19

SCALE: AS SHOWN DWG. NAME: C2513-01A

DESIGNED BY: ARM CHECKED BY: MAM

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
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environmental consulting • landscape architecture
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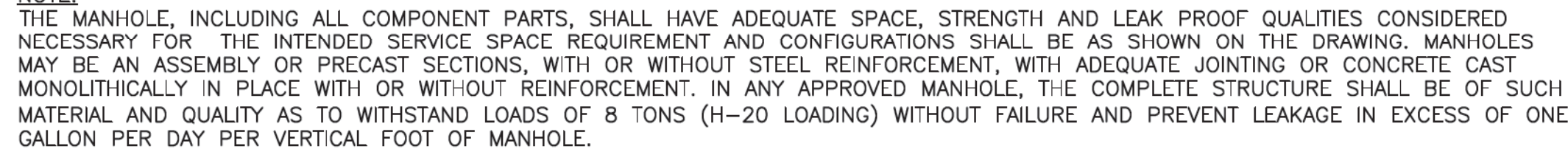
DRAWING TITLE:

DETAILS

SHEET No.

C-504

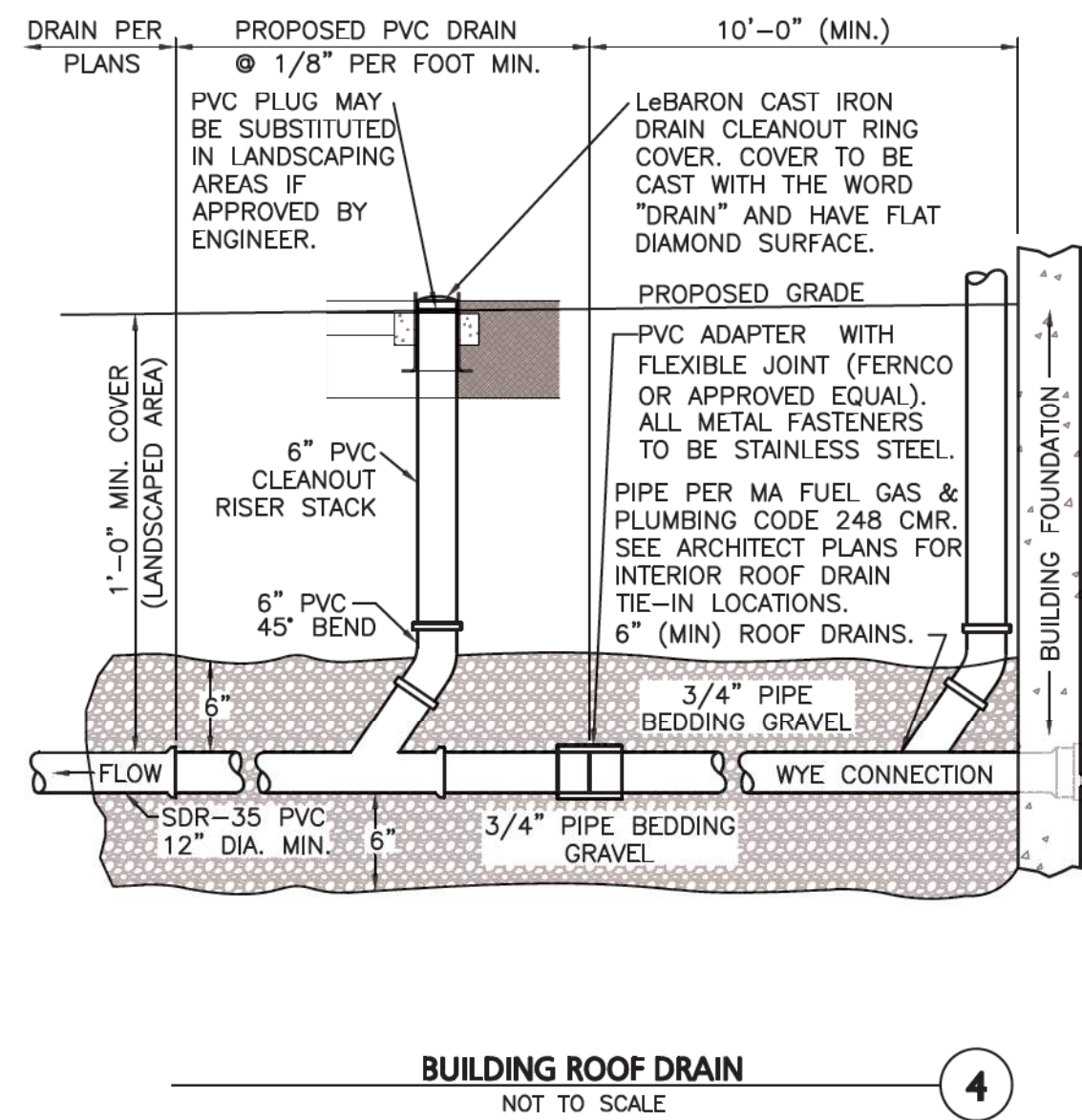
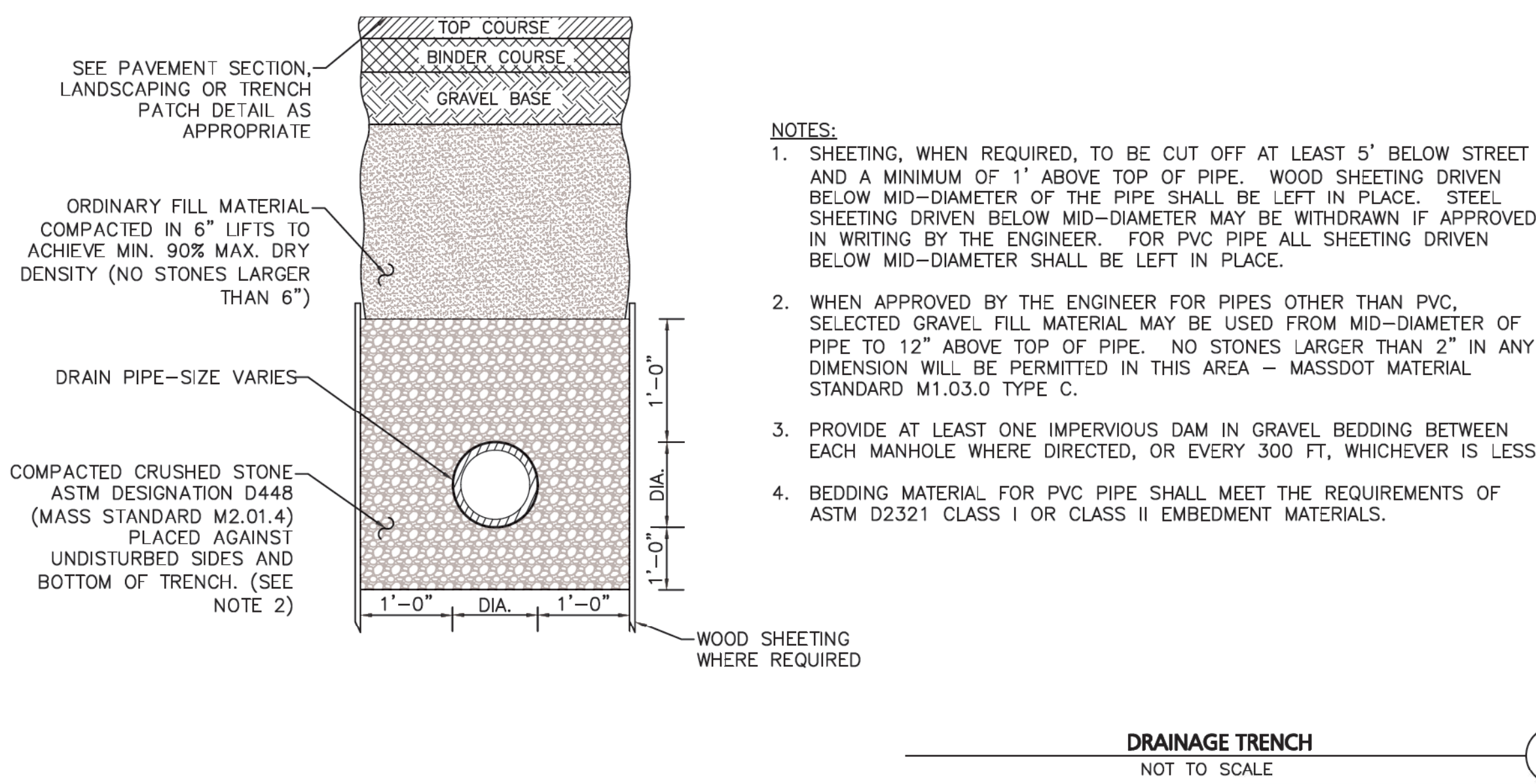
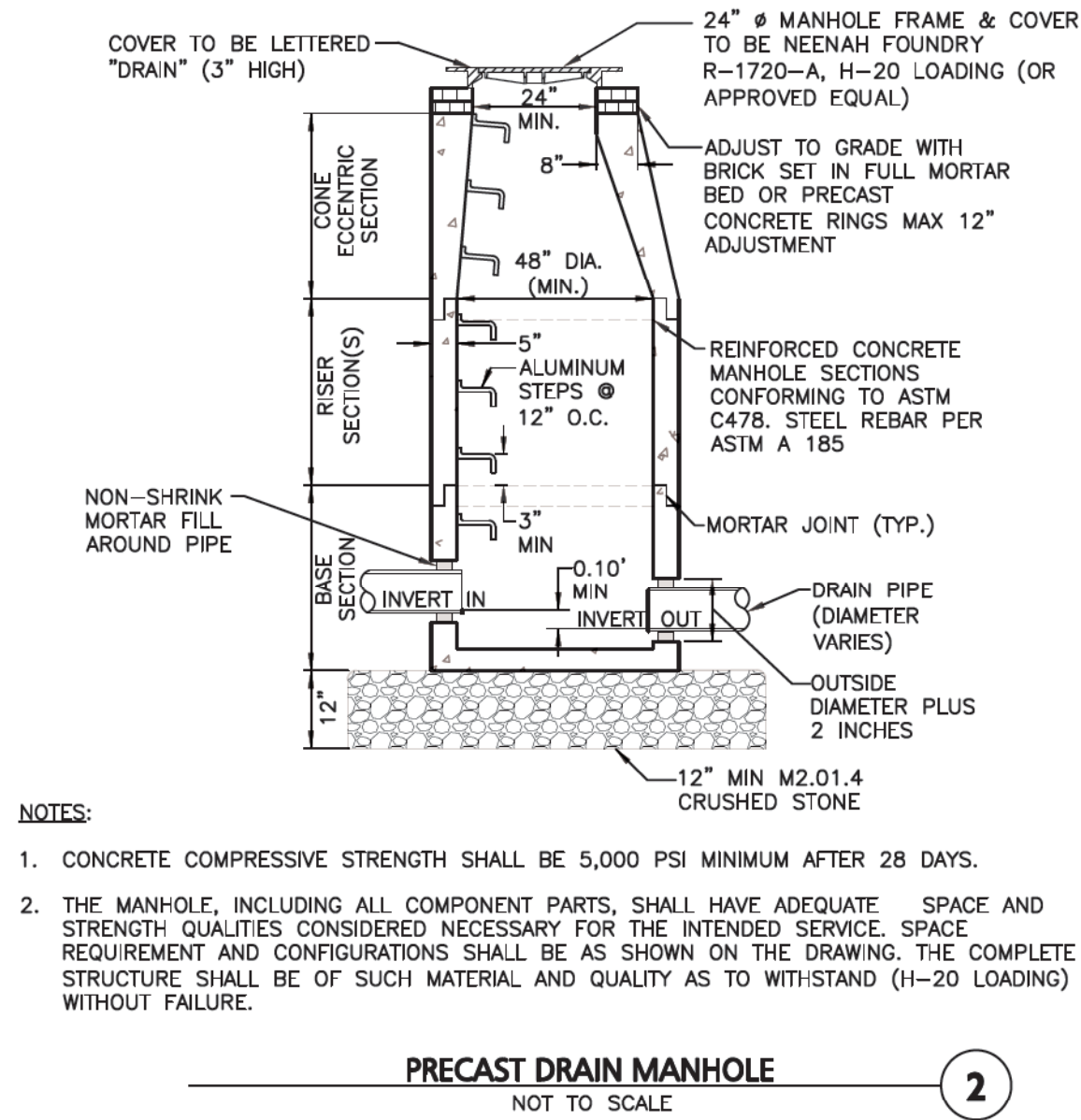
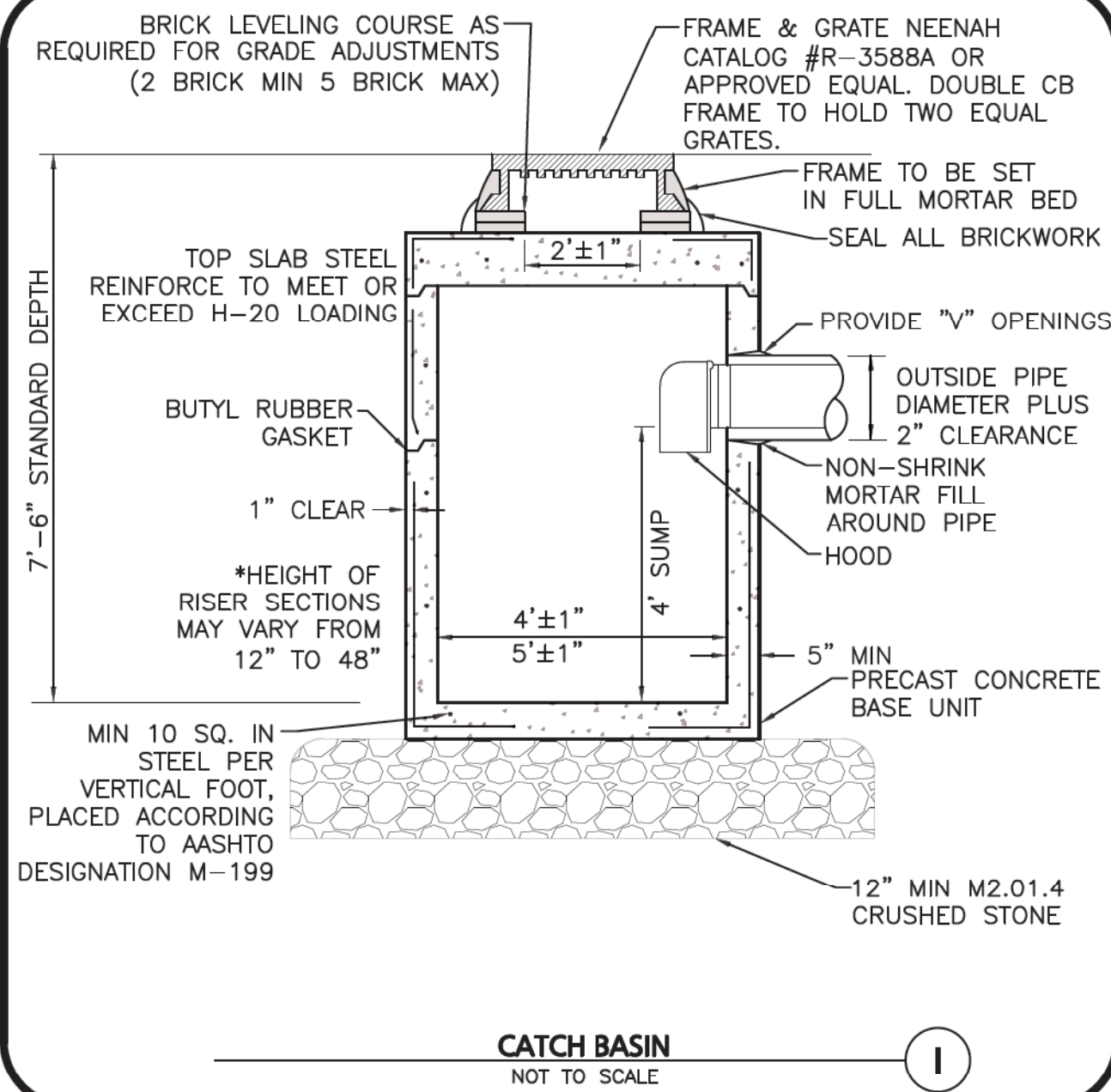
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2

3





1. MINIMUM WIDTH DEPENDS ON SITE CONDITIONS AND ENGINEERING JUDGMENT.

FOUNDATION/BEDDING PREPARATION

2. PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND BROUGHT BACK TO THE GRADE WITH A FILL MATERIAL AS APPROVED BY THE ENGINEER.

3. HAUNCH ZONE MATERIAL SHALL BE PLACED AND UNIFORMLY COMPACTED WITHOUT SOFT SPOTS.

BACKFILL

MATERIAL SHALL BE PLACED IN 8"-10" MAXIMUM LIFTS. INADEQUATE COMPACTION CAN LEAD TO EXCESSIVE DEFLECTIONS WITHIN THE SYSTEM AND SETTLEMENT OF THE SOILS OVER THE SYSTEM. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO-LIFT DIFFERENTIAL BETWEEN THE SIDES OF ANY PIPE IN THE SYSTEM AT ALL TIMES DURING THE BACKFILL PROCESS. BACKFILL SHALL BE ADVANCED ALONG THE LENGTH OF THE SYSTEM AT THE SAME RATE TO AVOID DIFFERENTIAL LOADING ON ANY PIPES IN THE SYSTEM.

EQUIPMENT USED TO PLACE AND COMPACT THE BACKFILL SHALL BE OF A SIZE AND TYPE SO AS NOT TO DISTORT, DAMAGE, OR DISPLACE THE PIPE. ATTENTION MUST BE GIVEN TO PROVIDING ADEQUATE MINIMUM COVER FOR SUCH EQUIPMENT. MAINTAIN BALANCED LOADING ON ALL PIPES IN THE SYSTEM DURING ALL SUCH OPERATIONS.

CALCULATION DETAILS

- LENGTH PER BARREL = TBD FT
- LENGTH PER HEADER = TBD FT
- LOADING = H20KH25
- APPROX. CMP FOOTAGE = TBD

PIPE DETAILS

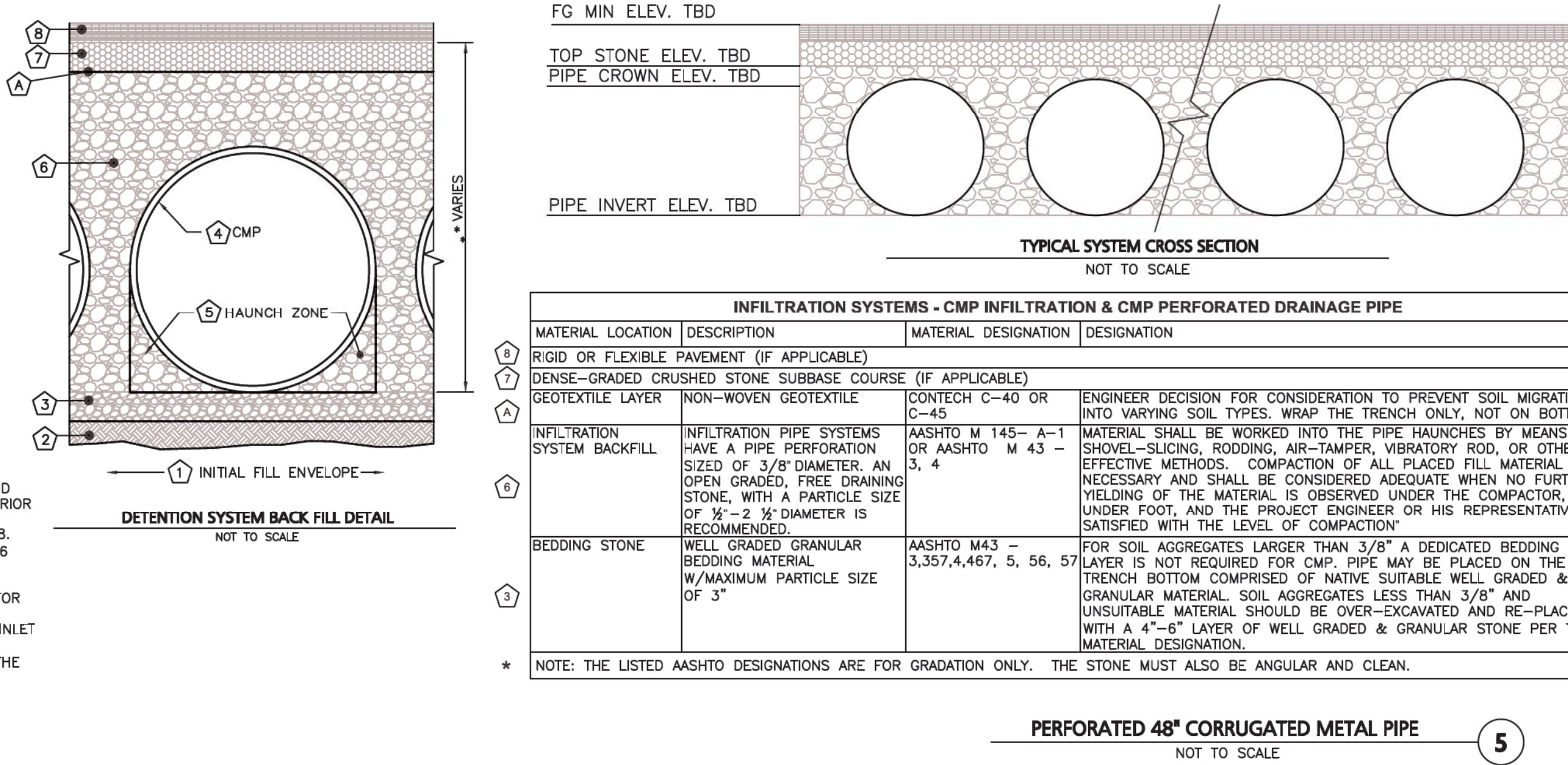
- DIAMETER = TBD
- CORRUIGATION = 2-2/3"x1/2"
- GAGE = 16
- COATING = ALUMINIZED STEEL (TYPE 2)
- WALL TYPE = PERFORATED
- BARREL SPACING = TBD IN

BACKFILL DETAILS

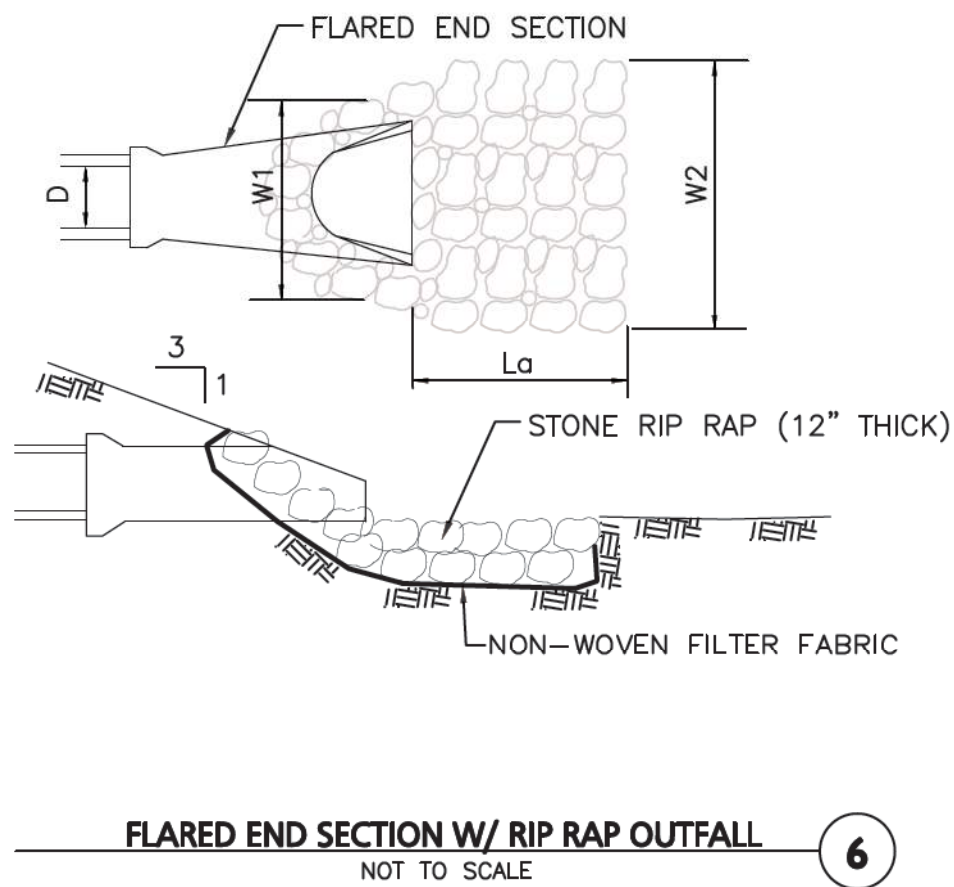
- WIDTH AT ENDS = 12 IN
- ABOVE PIPE = 6 IN
- WIDTH AT SIDES = 12 IN
- BELOW PIPE = 0 IN

NOTES

- ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE 22" x 1/2" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAILED PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
- BAND TYPE TO BE DETERMINED UPON FINAL DESIGN.



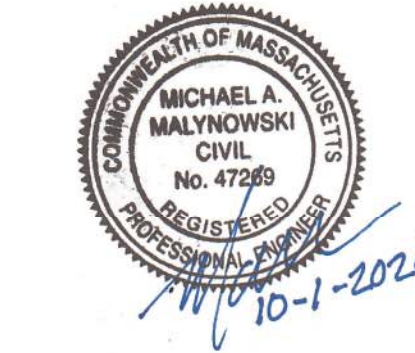
RIP RAP APRON SIZING CHART			
STRUCTURE	La	W1	W2
FES-01	TBD	TBD	TBD
FES-02	TBD	TBD	TBD



NOT USED
NOT TO SCALE

NOT USED
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DRAWING TITLE:	SHEET No.
DETAILS	C-506