

LOCUS MAP
(NOT TO SCALE)

SITE DEVELOPMENT PLANS FOR OVER 55 RESIDENTIAL DEVELOPMENT 470 BOSTON STREET TOPSFIELD, MA

OWNER/APPLICANT:
SARKIS DEVELOPMENT COMPANY
2 ELM SQUARE
ANDOVER, MA 01810
978.475.4055

ARCHITECT:
THE MZO GROUP
335 MAIN STREET, SUITE 201
STONEHAM, MA 02180
781.279.4446

LAND SURVEYOR & CIVIL ENGINEER
ALLEN & MAJOR ASSOCIATES, INC.
100 COMMERCE WAY
WOBURN, MA 01888-0118
781.935.6889

SANITARY SEWER ENGINEER:
EAGLEBROOK ENGINEERING AND
SURVEY, LCC
491 MAPLE STREET, SUITE 304
DANVERS, MA 01923
978.777.0494

LANDSCAPE ARCHITECT:
BROWN SARDINA
24 ROLAND STREET
BOSTON, MA 02129
617.482.4703

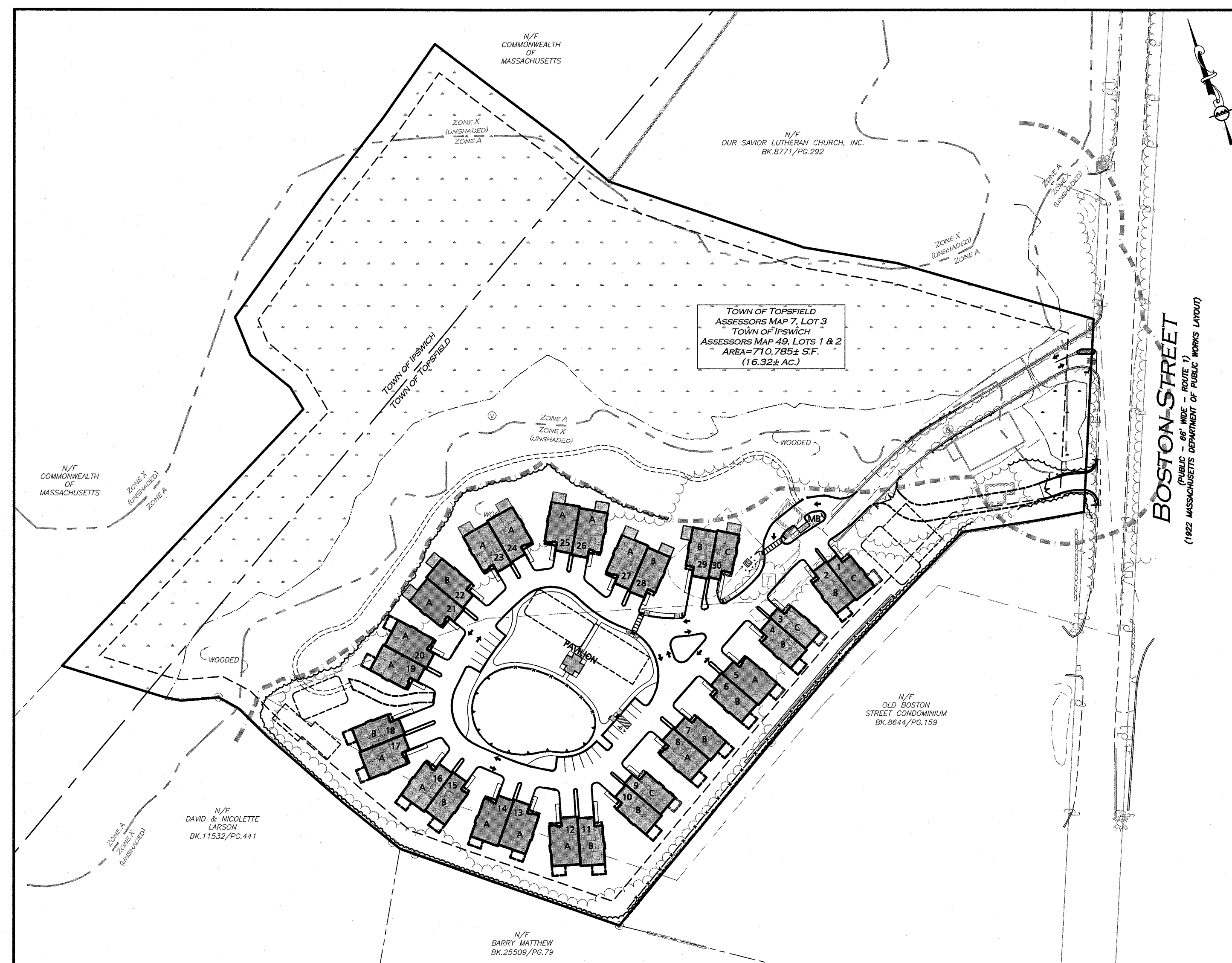
TRAFFIC ENGINEER:
VANASSE & ASSOCIATES, INC.
35 NEW ENGLAND BUSINESS CENTER DRIVE
SUITE 140
978.688.6508

WETLAND SCIENTIST:
SEEKAMP ENVIRONMENTAL CONSULTANTS
129 ROUTE 125
KINGSTON, NH 03848
603.642.8300

DIG SAFE



BEFORE YOU DIG
CALL 811 OR
1-888-DIG-SAFE
1-888-344-7233



PREPARED BY:

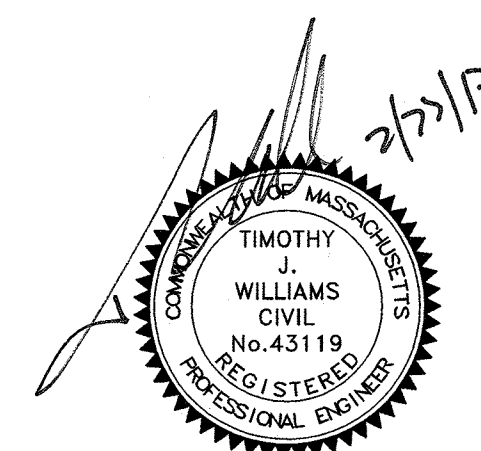


**ALLEN & MAJOR
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PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

CIVIL LIST OF DRAWINGS

DRAWING TITLE	SHEET NO.	ISSUED	LAST REVISED
EXISTING CONDITIONS PLAN	I	10-13-2016	2-27-17
ABBREVIATIONS & NOTES	ABB-1 - ABB-3	10-13-2016	2-27-17
DEMOLITION & EROSION CONTROL PLAN	C-1	10-13-2016	2-27-17
LAYOUT & MATERIALS PLAN	C-2	10-13-2016	2-27-17
GRADING & SPOT GRADES PLAN	C-3A - C3B	10-13-2016	2-27-17
DRAINAGE PLAN	C-4A - C4-B	10-13-2016	2-27-17
DRAINAGE PROFILES	C-4C - C-4D	10-13-2016	2-27-17
WATER & GAS UTILITIES PLAN	C-5A	10-13-2016	2-27-17
SITE ELECTRIC PLAN	C-5B	10-13-2016	2-27-17
FIRE TRUCK TURNING PLAN	C-6	10-13-2016	2-27-17
SNOW STORAGE PLAN	C-7	10-13-2016	2-27-17
TEST PITS PLAN	TPP-1	10-13-2016	2-27-17
DETAILS	D-1 - D-10	10-13-2016	2-27-17

LANDSCAPE ARCHITECTS LIST OF DRAWINGS

DRAWING TITLE	SHEET NO.	ISSUED	LAST REVISED
PLANTING AND LIGHTING PLAN	L-1	10-13-2016	2-27-17
PLANT LIST AND SEEDING PLAN	L-2	10-13-2016	2-27-17
LIGHTING CUT SHEETS	L-3	2-27-17	-----
LIGHTING CUT SHEETS	L-4	2-27-17	-----

SANITARY SEWER LIST OF DRAWINGS

DRAWING TITLE	SHEET NO.	ISSUED	LAST REVISED
SDS PLAN	SDS-1	10-13-2016	2-27-17
SDS PLAN	SDS-1.1	10-13-2016	2-27-17
SDS PLAN	SDS-2.1	10-13-2016	2-27-17
SDS PLAN	SDS-3.1	10-13-2016	2-27-17
SDS PLAN	SDS-4	10-13-2016	2-27-17
SDS PLAN	SDS-5	10-13-2016	2-27-17

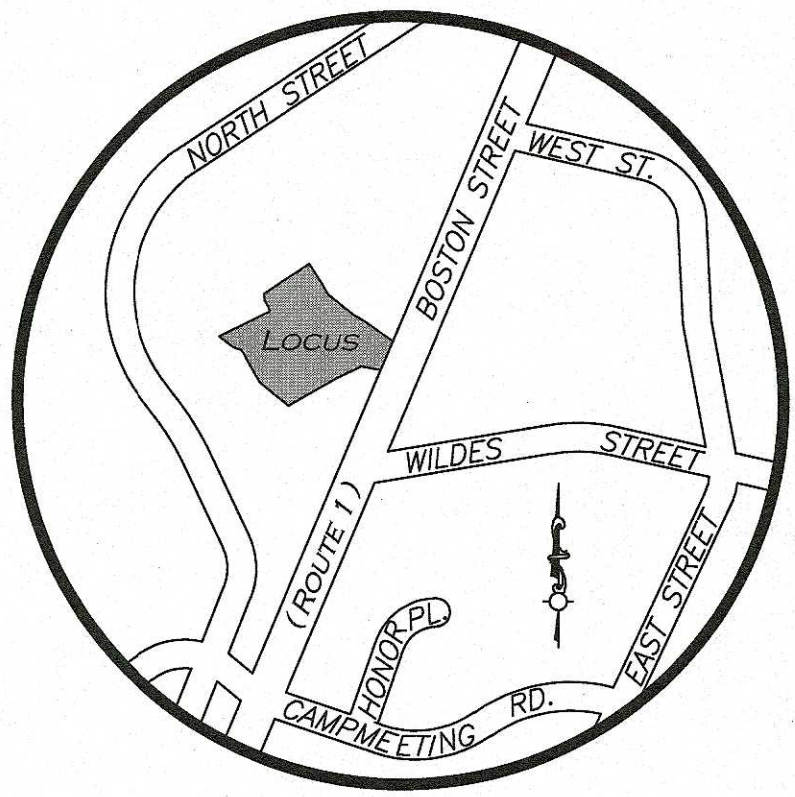
ARCHITECTURAL LIST OF DRAWINGS

DRAWING TITLE	SHEET NO.	ISSUED	LAST REVISED
COVER	COVER	10-05-16	11-23-16
UNIT A ELEVATIONS I	A-1	10-05-16	11-23-16
UNIT A ELEVATIONS II	A-2	10-05-16	11-23-16
UNIT A FIRST FLOOR	A-3	10-05-16	11-23-16
UNIT A SECOND FLOOR	A-4	10-05-16	11-23-16
UNIT B ELEVATIONS I	A-5	10-05-16	11-23-16
UNIT B ELEVATIONS II	A-6	10-05-16	11-23-16
UNIT B FIRST FLOOR	A-7	10-05-16	11-23-16
UNIT B SECOND FLOOR	A-8	10-05-16	11-23-16
UNIT C ELEVATIONS I	A-9	10-05-16	11-23-16
UNIT C ELEVATIONS II	A-10	10-05-16	11-23-16
UNIT C FIRST FLOOR	A-11	10-05-16	11-23-16
UNIT C SECOND FLOOR	A-12	10-05-16	11-23-16

RE-ISSUED FOR SPECIAL PERMIT,
SITE PLAN REVIEW & NOTICE OF INTENT :
FEBRUARY 27, 2017

RE-ISSUED FOR SPECIAL PERMIT & SITE PLAN REVIEW : JANUARY 17, 2017
ISSUED FOR SPECIAL PERMIT, SITE PLAN REVIEW & NOTICE OF INTENT: OCTOBER 13, 2016

N:\PROJECTS\2165-01A\CIVIL\DRAWINGS\CURRENT\C-2165-01A - COVER.DWG

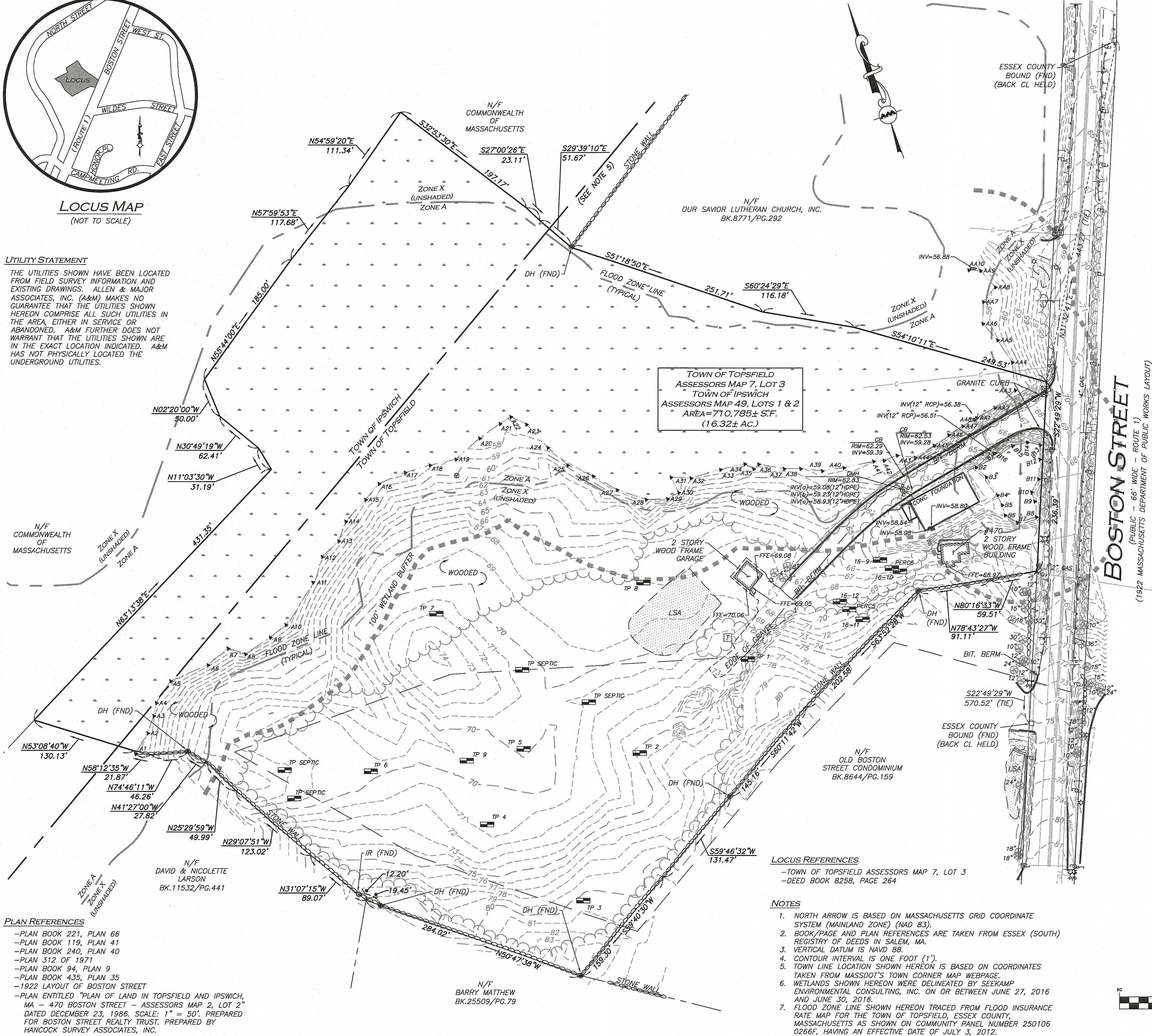


LOCUS MAP
(NOT TO SCALE)

UTILITY STATEMENT

THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. ALLEN & MAJOR ASSOCIATES, INC. (A&M) MAKES NO GUARANTEE THAT THE UTILITIES SHOWN HEREON COMPREHEND ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. A&M FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. A&M HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

N/F COMMONWEALTH OF MASSACHUSETTS



PLAN REFERENCES

- PLAN BOOK 221, PLAN 66
- PLAN BOOK 119, PLAN 41
- PLAN BOOK 240, PLAN 40
- PLAN 312 OF 1971
- PLAN BOOK 94, PLAN 9
- PLAN BOOK 435, PLAN 35
- 1922 LAYOUT OF BOSTON STREET
- PLAN ENTITLED "PLAN OF LAND IN TOPSFIELD AND IPSWICH, MA - 470 BOSTON STREET - ASSESSORS MAP 2, LOT 2" DATED DECEMBER 23, 1986. SCALE: 1" = 50'. PREPARED FOR BOSTON STREET REALTY TRUST. PREPARED BY HANCOCK SURVEY ASSOCIATES, INC.

LOCUS REFERENCES

- TOWN OF TOPSFIELD ASSESSORS MAP 7, LOT 3
- DEED BOOK 8258, PAGE 264

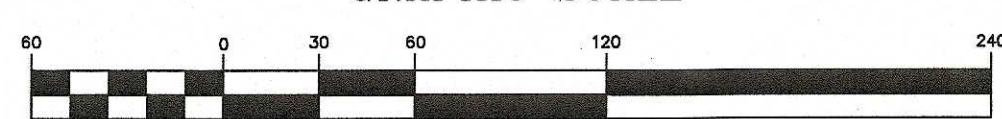
NOTES

- NORTH ARROW IS BASED ON MASSACHUSETTS GRID COORDINATE SYSTEM (MAINLAND ZONE) (NAD 83).
- BOOK/PAGE AND PLAN REFERENCES ARE TAKEN FROM ESSEX (SOUTH) REGISTRY OF DEEDS IN SALEM, MA.
- VERTICAL DATUM IS NAVD 88.
- CONTOUR INTERVAL IS ONE FOOT (1').
- TOWN LINE LOCATION SHOWN HEREON IS BASED ON COORDINATES TAKEN FROM MASSDOT'S TOWN CORNER MAP WEBSITE.
- WETLANDS SHOWN HEREON WERE DELINEATED BY SEEKAMP ENVIRONMENTAL CONSULTING, INC. ON OR BETWEEN JUNE 27, 2016 AND JUNE 30, 2016.
- FLOOD ZONE LINE SHOWN HEREON TRACED FROM FLOOD INSURANCE RATE MAP FOR THE TOWN OF TOPSFIELD, ESSEX COUNTY, MASSACHUSETTS AS SHOWN ON COMMUNITY PANEL NUMBER 250106 0266F, HAVING AN EFFECTIVE DATE OF JULY 3, 2012.

LEGEND

- DRILL HOLE (DH)
- IRON ROD (IR)
- DRAIN MANHOLE (DMH)
- CATCH BASIN (CB)
- ROUND CATCH BASIN (RCB)
- UTILITY POLE
- UTILITY POLE W/ RISER
- FIRE HYDRANT
- GAS GATE
- INVERT (INV)
- FLARED END SECTION
- LIGHT
- TREE
- TEST PIT LOCATION
- SIGN
- MAILBOX
- WETLAND FLAG
- HAND HOLE
- CABLE BOX
- TELEPHONE BOX
- ELECTRIC BOX
- ELECTRIC METER
- CONCRETE
- LANDSCAPED AREA (LSA)
- WETLAND AREA
- BUILDING
- WETLAND
- BUFFER ZONE
- 1' CONTOUR
- 5' CONTOUR
- PROPERTY LINE
- ABUTTERS LINE
- TOWN LINE
- STONE WALL
- CONCRETE RETAINING WALL
- TREE LINE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- CURB
- STEEL GUARDRAIL
- DRAIN LINE
- TELEPHONE LINE
- WATER LINE
- GAS LINE
- COMCAST LINE
- OVERHEAD WIRES
- DUCTILE IRON
- FINISHED FLOOR ELEVATION
- BITUMINOUS
- CONCRETE
- HIGH DENSITY POLYETHYLENE PIPE HDPE
- FOUND
- NOW OR FORMERLY
- BOOK
- PAGE
- PLAN
- CERTIFICATE OF TITLE
- LAND COURT
- LAND COURT CASE

GRAPHIC SCALE



N:\PROJECTS\2165-01A\SURVEY\DRAWINGS\S-2165-01A-EC.DWG
FB# 1707 PG. 104

WE HEREBY CERTIFY THAT:

THIS PLAN IS THE RESULT OF AN ACTUAL ON THE GROUND SURVEY PERFORMED ON OR BETWEEN JUNE 30, 2016 AND JULY 12, 2016. 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 TOPSFIELD AND TOWN OF IPSWICH ASSESSORS' INFORMATION. THE ABOVE IS CERTIFIED TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION AND BELIEF.

ALLEN & MAJOR ASSOCIATES, INC.



REV	DATE	DESCRIPTION
3.	02/27/17	VARIOUS REVISIONS
2.	01/17/17	WATER LINE PER TOWN COMMENTS
1.	10/13/16	FLOOD ZONE LINE ADDED

APPLICANT/OWNER:

SARKIS DEVELOPMENT COMPANY
2 ELM SQUARE
ANDOVER, MA 01810

PROJECT:

470 BOSTON STREET
(ROUTE 1)
TOPSFIELD, MA

PROJECT NO.	2165-01A	DATE:	08/02/16
SCALE:	1" = 60'	DWG. NAME:	S-2165-01A-EC
DRAFTED BY:	COB/MSM	CHECKED BY:	KJK

PREPARED BY:



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DRAWING TITLE:	SHEET NO.
EXISTING CONDITIONS	1

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1. FOR EXISTING CONDITIONS SURVEY, SEE PLAN ENTITLED "EXISTING CONDITIONS", AS PREPARED BY ALLEN & MAJOR ASSOCIATES, INC. ON THE GROUND SURVEY WAS PERFORMED ON OR BETWEEN JUNE 30, 2016 & JULY 12, 2016.
2. ZONING DISTRICT IS BUSINESS PARK DISTRICT (BP), AS WELL AS AN ELDERLY HOUSING DISTRICT (EHD) OVERLAY, TOPSFIELD, AND INDUSTRIAL (I) IN IPSWICH.
3. PER THE TOWN OF TOPSFIELD ENGINEERING DEPARTMENT, IT IS THE CONTRACTOR'S RESPONSIBILITY TO:
 - SCHEDULE A PRECONSTRUCTION MEETING WITH THE TOPSFIELD ENGINEERING DEPARTMENT TO REVIEW THE CONSTRUCTION SCHEDULE, PERMITTED DRAWINGS AND PERMIT CONDITIONS AT LEAST ONE (1) WEEK PRIOR TO THE COMMENCEMENT OF EARTH DISTURBING ACTIVITIES AT NO ADDITIONAL COST TO OWNER.
 - GIVE REASONABLE NOTICE TO THE TOPSFIELD ENGINEERING DEPARTMENT FOR INSPECTION PRIOR TO INSTALLING ANY PROPOSED STORMWATER MANAGEMENT SYSTEMS OR INSTALLATION OF ANY OTHER CRITICAL DESIGN COMPONENTS IDENTIFIED DURING THE ABOVE MENTIONED PRECONSTRUCTION MEETING.
 - PROVIDE AS-BUILT PLANS IN ACCORDANCE WITH THE TOWN OF TOPSFIELD STORMWATER MANAGEMENT REGULATIONS.
4. OVERALL LOT SIZE: 16.32± ACRES. TOWN OF TOPSFIELD ASSESSORS MAP #7 PARCEL #3. TOWN OF IPSWICH ASSESSORS MAP # 49 PARCELS # 1 & #2.
5. DURING CONSTRUCTION, ALL VEHICLES MUST BE PARKED ON SITE.
6. DURING CONSTRUCTION, ALL STAGING AND DELIVERIES WILL OCCUR ON SITE.
7. EXTERIOR CONSTRUCTION ACTIVITIES ON THE SITE SHALL FOLLOW ALL APPLICABLE REGULATIONS PER THE TOWN OF TOPSFIELD, AS IT RELATES TO CONSTRUCTION HOURS, NOISE AND CONSTRUCTION SCREENING AND FENCING.
8. THIS PROJECT WILL BE SERVED BY PUBLIC WATER, NATURAL GAS, TELEPHONE, CABLE AND ELECTRIC. ALL UTILITY LINES WILL BE INSTALLED UNDERGROUND UNLESS OTHERWISE NOTED.
9. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES AND THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS AT NO ADDITIONAL COST.
10. ALL MAIN BUILDING ENTRANCES AND WALKS SHALL BE HANDICAP ACCESSIBLE PER FEDERAL ADA & MA AAB REGULATIONS AT NO ADDITIONAL COST TO THE OWNER.
11. ALL SITE WORK DONE FOR THIS PROJECT SHALL BE IN STRICT ACCORDANCE WITH THE SITE PLANS AND SITE WORK SPECIFICATIONS FOR CONSTRUCTION.
12. ANY DAMAGE TO PRIVATE OR PUBLIC PROPERTIES DUE TO THE CONTRACTOR'S ACTIVITIES SHALL BE REPAIRED AND RESTORED BY THE CONTRACTOR AT THEIR OWN EXPENSE.
13. ALL PROPERTY MARKERS AND STREET LINE MONUMENTS SHALL BE PROPERLY PROTECTED DURING CONSTRUCTION. ANY DAMAGE TO THESE ITEMS SHALL BE REPAIRED AND RESTORED BY A SURVEYOR REGISTERED IN THE STATE OF MASSACHUSETTS AT THE CONTRACTOR'S EXPENSE.
14. ALL APPLICABLE PERMITS AND AN APPROVED SET OF PLANS SHALL BE AVAILABLE AT THE CONSTRUCTION SITE.
15. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING A PRECONSTRUCTION MEETING WITH THE APPROPRIATE TOWN DEPARTMENTS, THE APPROPRIATE UTILITY COMPANIES, THE OWNER AND OWNER'S REPRESENTATIVE. THE MEETING SHALL TAKE PLACE PRIOR TO THE START OF CONSTRUCTION AND THE CONTRACTOR MUST PROVIDE 48 HOURS NOTICE TO ALL ATTENDEES PRIOR TO THE START OF THE MEETING.
16. APPROPRIATE WARNING SIGNS, MARKERS, BARRICADES AND/OR FLAG MEN SHALL BE PROVIDED TO REGULATE TRAFFIC. CONSTRUCTION TRAFFIC CONTROLS SHALL BE IMPLEMENTED AND OPERATED ACCORDING TO THE MASS DEPARTMENT OF TRANSPORTATION, THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE LOCAL AUTHORITY.
17. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ADDITIONAL BENCHMARK INFORMATION IF REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING BENCHMARKS. IF IT IS NECESSARY TO RELOCATE A BENCHMARK, IT SHALL BE RELOCATED BY A MASSACHUSETTS PROFESSIONAL LAND SURVEYOR AND DONE SO AT THE CONTRACTOR'S EXPENSE.
18. ALL BUILDING DIMENSIONS ARE MEASURED TO THE OUTSIDE FACE OF THE BUILDING.
19. ALL RADII ARE 3 FEET UNLESS OTHERWISE NOTED.
20. ALL PARKING LOT AND AISLE DIMENSIONS ARE TAKEN FROM THE FACE OF CURB AND INDICATE EDGE OF PAVEMENT.
21. CONSTRUCTION DURING WET WEATHER OR WINTER CONDITIONS IS TO BE ANTICIPATED AND PROVISIONS TO ADEQUATELY ADDRESS THESE CONDITIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO ADDITIONAL COST.
22. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND PAYING FOR ANY PERMITS AND/OR CONNECTION FEES REQUIRED TO CARRY OUT THE WORK INCLUDING BUT NOT LIMITED TO DEMOLITION.
23. DISPOSAL OF ALL DEMOLISHED MATERIALS INCLUDING EXISTING MISC. CONSTRUCTION DEBRIS FILL IS THE RESPONSIBILITY OF THE CONTRACTOR AND MUST BE DISPOSED OF OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL MUNICIPAL REQUIREMENTS AT NO ADDITIONAL COST.
24. ALL DISTURBED AREAS NOT NEEDED TO RECEIVE OTHER TREATMENT ARE TO RECEIVE SIX INCHES (6") MINIMUM OF TOPSOIL & SEED, AND BE MAINTAINED UNTIL ESTABLISHED & ACCEPTED.
25. EXISTING STRUCTURES WITHIN CONSTRUCTION LIMITS ARE TO BE ABANDONED, REMOVED OR RELOCATED AS NECESSARY.
26. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATIONS, INCLUDING BUT NOT LIMITED TO, ALL UTILITIES, STORM DRAINAGE, SIGNS, TRAFFIC SIGNALS & POLES, ETC. AS REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH THE TOWN OF TOPSFIELD'S GOVERNING AUTHORITY'S SPECIFICATIONS AND SHALL BE APPROVED BY SUCH.
27. THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO DETERMINE EXACT POINT OF SERVICE CONNECTION AND DISCONNECTION AT EXISTING UTILITY.
28. ALL ELEVATIONS SHOWN ARE IN REFERENCE TO THE BENCHMARK AND MUST BE VERIFIED BY THE GENERAL CONTRACTOR AT GROUND BREAKING.
29. EXISTING AND PROPOSED GAS SERVICE LOCATIONS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL CONFIRM WITH THE GAS COMPANY THAT THE GAS LINE INSTALLATION & DISCONNECTION SHALL BE BY THE LOCAL GAS COMPANY. THE CONTRACTOR SHALL GIVE THE GAS COMPANY ADVANCE NOTICE OF WHEN THE GAS LINE CAN BE INSTALLED.

30. EXISTING & PROPOSED ELECTRIC AND COMMUNICATIONS (TELEPHONE AND CABLE) SYSTEMS LOCATIONS ARE APPROXIMATE ONLY AND SHALL BE COORDINATED AND SCHEDULED WITH THE APPROPRIATE UTILITY COMPANY SERVICING THE PROJECT SITE.
31. CONTRACTOR IS RESPONSIBLE FOR DIGGING TEST HOLES AND VERIFYING ANY EXISTING UTILITY OR STRUCTURE PRIOR TO CONSTRUCTION. CONTRACTOR SHALL VERIFY THAT BASED ON EXACT LOCATION OF EXISTING UTILITIES, THERE ARE NO CONFLICTS BETWEEN THEM AND THE PROPOSED UTILITIES.
32. THE CONTRACTOR SHALL ADHERE TO ALL PERMIT CONDITIONS PROVIDED BY ALL GOVERNING AGENCIES AT NO ADDITIONAL COSTS. THIS INCLUDES BUT IS NOT LIMITED TO BUILDING PERMITS, DEMOLITION PERMITS, PLUMBING, GAS, AND ELECTRICAL PERMITS.
33. THE CONTRACTOR SHALL BE FAMILIAR WITH AND ADHERE TO THE TOPSFIELD CONSERVATION COMMISSION'S ORDER OF CONDITIONS (OOC), TOPSFIELD PLANNING BOARD DECISION, AND TOPSFIELD ZONING BOARD OF APPEALS DECISION, CONDITIONS, AND REQUIREMENTS AT NO ADDITIONAL COST TO OWNER.
34. IT IS THE CONTRACTORS RESPONSIBILITY TO PROPERLY DISPOSE OF AND ABATE ALL BUILDING MATERIALS OR ANY HAZARDOUS MATERIALS ONSITE IN ACCORDANCE WITH ALL STATE, FEDERAL, AND LOCAL LAWS AND REGULATIONS AT NO ADDITIONAL COST TO THE OWNER.
35. DURING EXCAVATION, ANY EXISTING LOAM WHICH DOES NOT MEET THE STANDARD LOAM DETAIL SHALL BE REMOVED OFFSITE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

1. EXISTING PAVEMENT SHALL BE SAW-CUT AND PAVEMENT JOINT SHALL BE INSTALLED WHERE NECESSARY TO ENSURE A SMOOTH CONTINUOUS GRADE.
2. THE ARCHITECTURAL PLANS SHALL BE REFERRED TO IN ORDER TO DETERMINE THE EXACT LOCATIONS OF VESTIBULE, SLOPED PAVING, EXIT PORCHES, LANDSCAPE, TEMP. TRUCK DOCKS, COMPACTOR PAD, ROOF DRAIN LATERALS AND PRECISE BUILDING DIMENSIONS.
3. ALL GRADING OPERATIONS SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANIES.
4. IN LANDSCAPED AREAS THE TOP ELEVATION OF MANHOLES SHALL MATCH THE FINISH GRADE OF THE TOPSOIL. IN PAVED AREAS THE TOP ELEVATIONS OF MANHOLES SHALL MATCH FINISH GRADE.
5. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE STABILIZED AS SOON AS POSSIBLE UPON COMPLETION OF CONSTRUCTION WORK IN THE AREA.
6. TEMPORARY STRAW BALE PROTECTION AND/OR SILT SACK SHALL BE INSTALLED AND MAINTAINED AT EXISTING DRAINAGE STRUCTURES DURING CONSTRUCTION, TO PREVENT SEDIMENT LADEN RUNOFF FROM ENTERING THE DRAINAGE SYSTEM. SILT SACKS ARE REQUIRED AT ALL EXISTING DRAINAGE STRUCTURE INLETS DURING CONSTRUCTION.
7. CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF EXISTING STRUCTURES INCLUDING REMOVAL OF ANY EXISTING UTILITIES SERVING THE STRUCTURE.
8. ALL CATCH BASINS, MANHOLES, INFILTRATION SYSTEM, AND WATER QUALITY STRUCTURES ARE TO BE CLEANED OUT PRIOR TO FINAL APPROVAL TO REMOVE ALL CONSTRUCTION SILT AND DEBRIS.
9. IF ANY EXISTING UTILITY STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER AT NO ADDITIONAL COST.
10. ALL STORM PIPE ENTERING STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AT STRUCTURE IS WATERTIGHT.
11. ALL STORM DRAIN MANHOLES SHALL HAVE TRAFFIC BEARING RING & COVERS & SHALL BE LABELED "DRAIN".
12. THE CONTRACTOR SHALL ADHERE TO ALL TERMS & CONDITIONS AS OUTLINED IN THE GENERAL N.P.D.E.S. PERMIT FOR STORM WATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
13. CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
14. ALL UNSURFACED AREAS DISTURBED BY GRADING OPERATION SHALL RECEIVE SIX INCHES (6") OF TOPSOIL. CONTRACTOR SHALL GRASS DISTURBED AREAS IN ACCORDANCE WITH LANDSCAPE & CIVIL SPECIFICATIONS & DRAWINGS UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
15. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER.
16. ALL DRAINAGE SHALL CONFORM TO LOCAL REQUIREMENTS.

1. THE LATEST STANDARDS OF THE TOWN OF TOPSFIELD SHALL BE FOLLOWED WHEN INSTALLING ANY SANITARY SEWER AND STORM DRAIN WORK. BOTH SEWER AND STORM DRAIN WORK WILL BE INSPECTED BY TOWN OF TOPSFIELD PERSONNEL AND ALL COSTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. THE LATEST STANDARDS OF THE TOWN OF TOPSFIELD SHALL BE FOLLOWED WHEN INSTALLING ANY WATER LINE WORK. WATER LINE WORK WILL BE INSPECTED BY TOWN OF TOPSFIELD PERSONNEL AND ALL COSTS SHALL INCLUDE PRESSURE TESTING, DISINFECTING, AND FLUSHING OF LINES. INSPECTION COSTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND REMOVAL OF ALL NECESSARY DISINFECTING AND FLUSHING TAPS AS DIRECTED BY THE TOWN.
3. THE CONTRACTOR SHALL REFER TO ARCHITECTURAL & PLUMBING DRAWINGS 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 NATURAL 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.
4. 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.
5. ABANDONED EXISTING UTILITIES AND UTILITIES TO BE ABANDONED SHALL EITHER BE ABANDONED IN PLACE AS NOTED OR SHALL BE REMOVED AND DISPOSED OF AS SPECIFIED. ANY UTILITIES 4" OR LARGER ARE TO BE REMOVED. ALL UTILITIES SCHEDULED FOR ABANDONMENT OR REMOVAL AND DISPOSAL MUST BE COORDINATED BY THE CONTRACTOR WITH THE RESPECTIVE UTILITY OWNER. WHEN ABANDONED UTILITIES ARE TO BE LEFT IN PLACE, PLUG OR CAP THE ENDS OF THE CONDUITS AND PIPES. REMOVE ABANDONED UTILITY MANHOLES, JUNCTION BOXES AND SIMILAR STRUCTURES TO A MINIMUM DEPTH OF 4 FEET BELOW FINISHED GRADE AND PUNCTURE OR BREAK THE BOTTOM SLABS OF MANHOLES AND SIMILAR STRUCTURE TO ALLOW DRAINAGE. BACKFILL AND COMPACT EXCAVATIONS RESULTING FROM REMOVAL OF UTILITY FACILITIES, AS REQUIRED TO RESTORE THE ORIGINAL GRADE.
6. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENTS OF NATURAL GAS, ELECTRIC, TELEPHONE AND ANY OTHER UTILITY BY THE UTILITY OWNER.

7. THE CONTRACTOR SHALL USE THE FOLLOWING PIPE MATERIALS (UNLESS OTHERWISE NOTED)
 - SEWER — PVC (POLYVINYL CHLORIDE), SDR 35
 - DRAIN — HDPE (HIGH DENSITY CORRUGATED POLYETHYLENE PIPE WITH SMOOTH INNER WALL), ASTM D2321 (UNLESS OTHERWISE SPECIFIED ON PLAN)
 - DRAIN — RCP CLASS IV (REINFORCED CONCRETE PIPE, WHERE SPECIFIED ON PLAN)
 - WATER — C.L.D.I. (CEMENT LINED DUCTILE IRON)
8. REFER TO DEMOLITION PLAN FOR EXISTING ITEMS TO BE REMOVED AND FOR UTILITY ABANDONMENT.
9. BEFORE UTILITY WORK BEGINS, THE CONTRACTOR WILL COORDINATE WITH THE TOWN OF TOPSFIELD THE APPROPRIATE PERMIT AND INSPECTION FEES.
10. ALL UTILITY CONNECTIONS THROUGH THE BUILDING WALL SHALL BE BY MEANS OF FLEXIBLE JOINTS.
11. ALL WATER GATES TO PROPOSED HYDRANTS ARE 6" DIAMETER UNLESS NOTED.
12. 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.
13. ALL FILL MATERIAL IS TO BE IN PLACE, AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.
14. CONTRACTOR SHALL NOTIFY THE UTILITY AUTHORITY'S INSPECTORS 72 HOURS BEFORE CONNECTING TO ANY EXISTING LINE.
15. MINIMUM TRENCH WIDTH SHALL BE 2 FEET.
16. ALL WATER JOINTS ARE TO BE MECHANICAL JOINTS WITH THRUST BLOCKING AT BENDS.
17. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 5'-0" COVER ON ALL WATERLINES AND A MAXIMUM OF 8'-0" COVER.
18. IN THE EVENT OF A VERTICAL CONFLICT BETWEEN WATERLINES, SANITARY LINES, STORM LINES AND GAS LINES (EXISTING AND PROPOSED), THE SANITARY LINE SHALL BE DUCTILE IRON PIPE WITH MECHANICAL JOINTS AT LEAST 10 FEET ON BOTH SIDES OF CROSSING, THE WATERLINE SHALL HAVE MECHANICAL JOINTS WITH APPROPRIATE THRUST BLOCKING AS REQUIRED TO PROVIDE A MINIMUM OF 18" CLEARANCE BETWEEN THE PIPES. WHERE THE WATERLINE IS LESS THAN THE 18" VERTICAL CLEARANCE AND MEETING 10' HORIZONTAL CLEARANCE CANNOT BE MET, THE WATER MUST BE ENCASED IN CONCRETE TO MEET THE REQUIREMENTS OF ANSI A21.10 OR ANSI 21.11 (AWWA C-151) (CLASS 50).
19. ALL CONCRETE FOR ENCASEMENTS SHALL HAVE A MINIMUM 28 DAY COMPRESSION STRENGTH OF 3000 P.S.I.
20. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH THE SPECIFICATIONS OF THE LOCAL AUTHORITIES WITH REGARDS TO MATERIALS AND INSTALLATION OF THE WATER, SEWER, GAS AND ELECTRICAL AND TELECOMMUNICATIONS LINES.
21. ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO ANNOUNCED BUILDING POSSESSION AND THE FINAL CONNECTION OF SERVICE.
22. ALL HYDRANTS SHALL MEET LOCAL MUNICIPAL SPECIFICATION REQUIREMENTS AND SHALL BE INSTALLED IN ACCORDANCE WITH THE TOWN OF TOPSFIELD REQUIREMENTS.
23. DOMESTIC WATER SERVICES SHALL BE INSTALLED WITH APPROPRIATELY SIZED GATE, BOX, AND TEE FITTINGS.
24. ALL WATER MAIN APPURTENANCES, MATERIALS, METHODS OF INSTALLATION AND TESTING REQUIREMENTS SHALL MEET OR EXCEED THE TOWN OF TOPSFIELD REQUIREMENTS.
25. PRESSURE AND LEAKAGE TEST, DISINFECTION AND FLUSHING SHALL BE IN ACCORDANCE WITH ALL LOCAL AND MUNICIPAL STANDARDS AND REQUIREMENTS.
26. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS IN CONNECTION WITH THE UTILITY TESTS, FLUSHING AND INSPECTIONS AS REQUIRED BY THE LOCAL MUNICIPALITY.
27. SEWER PIPE BEDDING MATERIAL SHALL BE AS SPECIFIED ON THE DRAWINGS. IF LOCAL OR STATE AUTHORITIES REQUIRE DIFFERENT BEDDING OR BACKFILL MATERIAL, THEN THE MORE STRINGENT SHALL APPLY.
28. DRAWINGS DO NOT NECESSARILY SHOW ALL EXISTING UTILITIES.

SIGNATURE _____ DATE _____

NOT FOR CONSTRUCTION - FOR PERMITTING ONLY



EROSION & SEDIMENTATION CONTROL NOTES:

1. EROSION CONTROL SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND SHALL BE ADEQUATE TO MAINTAIN SEDIMENT ON SITE. ANY MODIFICATIONS TO SILT CONTROLS SHOWN ON THE APPROVED PLANS AS A RESULT OF ACTUAL FIELD CONDITIONS OR CONSTRUCTION PRACTICES SHALL BE INSTALLED IN ACCORDANCE WITH B.M.P. (BEST MANAGEMENT PRACTICES) PER THE E.P.A. 2012 "CONSTRUCTION GENERAL PERMIT" MANUAL, AND MASSACHUSETTS 2003 EROSION & SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS, ANY SUCH MODIFICATIONS FROM THE ABOVE MANUALS SHALL BE INSTALLED AS APPROVED BY THE ENGINEER.
2. AREAS OF EXPOSED SOIL UNDERGOING CONSTRUCTION THAT WILL NOT BE COVERED AND OR FINISHED GRADED SHALL BE STABILIZED AS SOON AS PRACTICABLE BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY (UNLESS TOWN HAS STRICTER REQUIREMENTS WHICH SHALL BE FOLLOWED) IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. TEMPORARY EROSION CONTROL MEASURES SHALL INCLUDE EROSION CONTROL MESH, NETTING OR MULCH AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND SHOWN ON THE DESIGN PLANS. IF MULCH IS USED, STRAW MULCH SHALL BE APPLIED AT THE RATE OF 4 BALES PER 1,000 SQUARE FEET. APPLICATION AREA SHALL BE SUFFICIENTLY COVERED WITH MULCH TO AVOID ANY VISIBLE SOIL EXPOSURE. MULCH SHALL BE KEPT MOIST TO AVOID LOSS DUE TO WIND. MULCH AND NETTING SHALL BE APPLIED IN THE BASE OF ALL GRASSED WATERWAYS, IN VEGETATIVE SLOPES WHICH EXCEED 15% AND DISTURBED AREAS WITHIN 100 FEET OF WETLANDS OR STREAMS.
3. IF DISTURBED AREAS DO NOT RECEIVE FINAL SEEDING BY OCTOBER 1ST OF THE CONSTRUCTION YEAR, THEN ALL DISTURBED AREAS SHALL BE SEEDED WITH A WINTER COVER CROP AT THE RATE OF 3 LBS PER 1,000 SQUARE FEET. WINTER SEEDING SHALL BE COVERED WITH EROSION CONTROL MESH (MULCH AND NETTING). HEAVY SHADE MATS SHALL BE USED IN THE BASE OF ALL GRASSED WATERWAYS ON VEGETATED SLOPES IN EXCESS OF 15%, AND ANY DISTURBED AREAS WITHIN 100 FEET OF WETLANDS OR STREAMS. MULCH AND NETTING SHALL ALSO BE PROVIDED FOR ADDITIONAL WINTER PROTECTION.
4. ALL TOPSOIL SHALL BE COLLECTED, STOCKPILED, SEEDED WITH RYE AT 3LBS PER 1,000 SQUARE FOOT AND MULCHED, AND REUSED AS REQUIRED. SILTATION FENCING SHALL BE PLACED DOWN GRADIENT FROM STOCKPILED LOAM. LOAM SHALL BE STOCKPILED AT LOCATIONS DESIGNATED BY THE OWNER AND ENGINEER.
5. ALL FILTER BARRIERS, SILT SACKS, AND EROSION CONTROL BERMS SHALL BE INSTALLED ACCORDING TO THE EROSION CONTROL PLAN. THESE SHALL BE MAINTAINED DURING DEVELOPMENT TO REMOVE SEDIMENT FROM RUNOFF WATER. ALL THE FILTER BARRIERS AND EROSION CONTROL BERMS SHALL BE INSPECTED AFTER ANY RAINFALL OR RUNOFF EVENT, MAINTAINED AND CLEANED UNTIL ALL AREAS HAVE AT LEAST 85-90% VIGOROUS PERENNIAL COVER OF GRASSES.
6. ADJACENT ROADS SHALL BE PERIODICALLY SWEEPED OR WASHED TO AVOID TRACKING MUD, DUST OR DEBRIS FROM THE CONSTRUCTION AREA AS OFTEN AS NECESSARY (WHICH COULD BE ON A DAILY BASIS) TO REMOVE ANY SOIL OR SEDIMENTS AT NO ADDITIONAL COST TO THE OWNER. A WATERING TRUCK WILL BE USED TO PERIODICALLY SPRINKLE CONSTRUCTION AREAS IN ORDER TO KEEP THE LEVEL OF DUST TO A MINIMUM DURING THE DRY MONTHS AT NO ADDITIONAL COST TO THE OWNER.
7. THE CONTRACTOR SHALL USE EXTREME CAUTION TO AVOID ALLOWING SEDIMENTS TO ENTER THE STORM DRAIN SYSTEM DURING CONSTRUCTION. BOTH EXISTING AND PROPOSED CATCH BASIN INLETS SHALL BE PROTECTED DURING CONSTRUCTION BY THE USE SILT SACKS AND OR STRAW BALE BARRIERS AROUND EACH INLET AS NOTED ON THE PLANS. INLET PROTECTION MAY BE REMOVED ONLY AFTER FINISHED AREAS ARE PAVED AND THE VEGETATED SLOPES ARE ESTABLISHED WITH AT LEAST 85-90% OF VIGOROUS PERENNIAL GROWTH.
8. AS APPLICABLE, EROSION CONTROL MESH SHALL BE APPLIED IN ACCORDANCE WITH THE PLANS OVER ALL FINISHED SEEDED AREAS AS SPECIFIED ON THE DESIGN PLANS.
9. AT A MINIMUM, ALL STRAW BALES, SILT FENCE AND FILTER FABRIC SHALL REMAIN IN PLACE UNTIL SEEDINGS OR PLANTINGS HAVE BECOME 85-90% ESTABLISHED. THE TOWN OF TOPSFIELD CONSERVATION COMMISSION MUST APPROVE THE REMOVAL OR RELOCATION OF ANY OF THE STRAW BALES AND FILTER FABRIC. ONCE THE STRAWBALES AND SILT FENCE IS REMOVED THE AREAS ARE TO BE LOAM AND SEEDED TO ACHIEVE FULL STABILIZATION.
10. AT THE OWNER'S DISCRETION ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED TO MAINTAIN STABILITY OF EARTHWORKS AND FINISHED GRADED AREAS. THE CONTRACTOR, AT HIS EXPENSE, WILL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ANY ADDITIONAL MEASURES AS SPECIFIED BY THE OWNER. THIS INCLUDES BUT IS NOT LIMITED TO REQUESTS BY MA DEP, THE ENGINEER AND THE MUNICIPALITY, AS AUTHORIZED BY THE OWNER. FAILURE TO COMPLY WITH THE OWNER'S DIRECTIONS WILL RESULT IN DISCONTINUATION OF CONSTRUCTION ACTIVITIES.
11. INSPECTIONS AND MONITORING MAINTENANCE MEASURES SHALL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION CYCLE. WEEKLY INSPECTIONS SHALL BE HELD THROUGH THE DURATION OF CONSTRUCTION ACTIVITY. WEEKLY INSPECTION REPORTS SHALL BE MAINTAINED BY THE CONTRACTOR AND LOCATED IN THE CONTRACTORS FIELD OFFICE ONSITE. IN ADDITION TO THE NORMAL WEEKLY INSPECTIONS, THE CONTRACTOR SHALL PERFORM AN INSPECTION OF ALL EROSION CONTROL MEASURES AFTER EACH RAINFALL OR RUNOFF EVENT, AND PERFORM THE NECESSARY REPAIRS. THE INSPECTIONS SHALL INCLUDE BUT NOT BE LIMITED TO THE SITE'S DOWN STREAM DISCHARGE POINTS.
12. IF ANY EVIDENCE OF SEDIMENTATION IS OBSERVED AT THE STORMWATER MANAGEMENT AREA INLETS, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, PROVIDE A PLAN TO THE ENGINEER TO REMOVE ANY ACCUMULATED SEDIMENT IN THESE AREAS. THE CONTRACTOR SHALL ALSO IMMEDIATELY PROVIDE ADDITIONAL ON SITE EROSION AND SEDIMENTATION CONTROL MEASURES TO PREVENT FURTHER DEGRADATION OF THE AREA.
13. FOLLOWING THE TEMPORARY OR FINAL SEEDINGS, THE CONTRACTOR SHALL INSPECT THE WORK AREA SEMI-MONTHLY TO ENSURE THE AREAS HAVE A MINIMUM OF 85-90% VEGETATED VIGOROUS GROWTH. RE-SEEDING SHALL BE CARRIED OUT BY THE CONTRACTOR WITH FOLLOW UP INSPECTIONS IN THE EVENT OF ANY FAILURES UNTIL VEGETATION IS ADEQUATELY ESTABLISHED.
14. CONTRACTOR & ALL SITE SUBCONTRACTORS SHALL BE FAMILIAR WITH & FOLLOW ALL APPROVED PERMITS AND CONDITIONS. CONTRACTOR SHALL MAINTAIN A COPY OF ALL APPROVED PERMITS ONSITE, INCLUDING THE ORDER OF CONDITIONS FROM THE TOPSFIELD CONSERVATION COMMISSION, ALL CONDITIONS & RECOMMENDATIONS WITHIN THE APPROVED PERMITS SHALL BE COMPLETED.
15. ALL EROSION MEASURES SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND SHALL BE ADEQUATE TO MAINTAIN SEDIMENT ON SITE. ANY MODIFICATIONS SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER OR THE TOWN OF TOPSFIELD.
16. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE MAINTAINED DURING CONSTRUCTION, AND SHALL REMAIN IN PLACE UNTIL ALL SITE WORK IS COMPLETE AND GROUND COVER IS ESTABLISHED.
17. TOP OF STOCKPILES SHALL BE COVERED IN SUCH MANNER THAT STORMWATER DOES NOT INFILTRATE THE MATERIALS AND THEREBY RENDER THE SAME UNSUITABLE FOR FILL USE.

EROSION & SEDIMENTATION CONTROL NOTES (CONTINUED):

18. ALL DISTURBED OR EXPOSED AREAS SUBJECT TO EROSION SHALL BE STABILIZED WITH MULCH OR SEEDED FOR TEMPORARY VEGETATIVE COVER. NO AREA SUBJECT TO EROSION SHALL BE LEFT DISTURBED AND UNSTABILIZED FOR PERIODS LONGER THAN IS ABSOLUTELY NECESSARY TO CARRY OUT THAT PORTION OF THE CONSTRUCTION WORK OR SIX MONTHS AFTER SOIL HAS BEEN DISTURBED WHICHEVER IS LESS.
19. CULVERT/PIPE INLETS AND OUTFALLS SHALL BE PROTECTED BY STRAW BALE FILTERS AND STONE CHECK DAMS UNTIL DISTURBED AREAS ARE PERMANENTLY STABILIZED.
20. STRAW BALE DIKES SHALL BE CONSTRUCTED AT ALL EXISTING & PROPOSED CATCH BASINS. NO SEDIMENTATION SHALL ENTER THE ON-SITE OR OFF-SITE DRAINAGE SYSTEMS AT ANY TIME.
21. ALL EROSION CONTROL MEASURES SHALL BE ROUTINELY INSPECTED, CLEANED AND REPAIRED OR REPLACED AS NECESSARY THROUGHOUT ALL PHASES OF CONSTRUCTION. IN ADDITION, INSPECTION SHALL TAKE PLACE WEEKLY AND BEFORE AND AFTER EACH RAINFALL EVENT.
22. ALL PROPOSED SLOPES EQUAL TO OR GREATER THAN 3:1 SHALL BE STABILIZED WITH JUTE MESH AND PROTECTED FROM EROSION UNTIL WORK IS COMPLETE AND GROUND COVER IS ESTABLISHED.
23. THE CONTRACTOR SHALL KEEP ON SITE AT ALL TIMES ADDITIONAL STRAW BALES AND EXTRA SILTATION FENCING FOR INSTALLATION AT THE DIRECTION OF THE ENGINEER OR THE TOWN ENGINEER TO MITIGATE ANY EMERGENCY CONDITION.
24. AS CONSTRUCTION DISTURBANCE IS GREATER THAN 1 ACRE, A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION GENERAL PERMIT NOI, AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP) WILL NEED TO BE SUBMITTED TO THE EPA. THE NPDES PERMIT FOR STORM WATER DISCHARGE, & CONSTRUCTION GENERAL PERMIT NOI WILL BE REQUIRED TO BE SUBMITTED AT LEAST 14 DAYS PRIOR TO COMMENCING CONSTRUCTION BY THE CONTRACTOR.
25. OWNER AND CONTRACTOR ARE RESPONSIBLE FOR COMPLIANCE WITH THE CONSTRUCTION GENERAL PERMIT NOI. WEEKLY SWPPP INSPECTION REPORTS TO BE PERFORMED BY CONTRACTOR. COPIES OF ALL SWPPP INSPECTION REPORTS SHALL BE PROVIDED TO THE TOWN OF TOPSFIELD, EPA, DEP, OR ANY OTHER AUTHORITY REQUESTING WITHIN 3 DAYS OF EACH INSPECTION.
26. APPLICABLE WORK AND MATERIALS SHALL COMPLY WITH ALL TOWN OF TOPSFIELD, MA DEP, EPA CONSTRUCTION GENERAL PERMIT STANDARDS. ALL CONSTRUCTION SHALL CONFORM TO THE APPLICABLE SITE PLAN REGULATIONS FROM THE TOWN OF TOPSFIELD AND USDA SOIL CONSERVATION SERVICE VEGETATIVE PRACTICES IN SITE DEVELOPMENT.
27. A WATERING TRUCK SHALL BE USED TO PERIODICALLY SPRINKLE CONSTRUCTION AREAS IN ORDER TO KEEP THE LEVEL OF DUST TO A MINIMUM DURING THE DRY MONTHS AND AS REQUIRED.
28. IF DEWATERING IS NECESSARY IT SHALL ONLY BE COMPLETED AS FOLLOWS: THE DISCHARGE SHALL BE STOPPED IMMEDIATELY IF THE RECEIVING AREA SHOWS ANY SIGN OF INSTABILITY OR EROSION. ALL CHANNELS, SWALES, AND DITCHES DUG FOR DISCHARGING WATER FROM THE EXCAVATED AREA SHALL BE STABLE PRIOR TO DIRECTING DISCHARGE TO THEM. IF A CONSTRUCTION EQUIPMENT BUCKET IS USED, IT SHALL EMPTY THE MATERIAL TO A STABLE AREA. NO DEWATERING SHALL OCCUR DURING PERIODS OF INTENSE, HEAVY RAIN. FLOW TO THE SEDIMENT REMOVAL STRUCTURE SHALL NOT EXCEED THE STRUCTURES CAPACITY TO SETTLE AND FILTER FLOW OR IS VOLUME CAPACITY. WHENEVER POSSIBLE, THE DISCHARGE FROM THE SEDIMENT REMOVAL STRUCTURE SHALL DRAIN TO A WELL-VEGETATED BUFFER BY SHEET FLOW WHILE MAXIMIZING THE DISTANCE TO THE NEAREST WATER RESOURCE AND MINIMIZING THE SLOPE OF THE BUFFER AREA. THERE SHALL BE NO DIRECT DISCHARGE TO EXISTING WETLANDS OR STREAMS. ALL DISCHARGE SHALL BE IN COMPLIANCE WITH STATE, LOCAL, AND FEDERAL REQUIREMENTS.
29. INITIATE STABILIZATION IMMEDIATELY IF CONSTRUCTION WORK TEMPORARILY OR PERMANENTLY CEASES.
30. ALL DISCHARGES FROM POLLUTION SOURCES IS PROHIBITED ONSITE SUCH AS FUELS, WASTEWATER FROM WASH OUT OF CONCRETE, WASTEWATER FROM CLEAN OUT OF PAINTS, FORM RELEASE OILS, SOLVENTS, ADHESIVES, CURING COMPOUNDS, POLLUTANTS USED FOR MAINTENANCE OF VEHICLES AND EQUIPMENT, SOAPS & SOLVENTS, TOXIC OR HAZARDOUS SUBSTANCES, CHEMICALS AND OILS. IF A POLLUTANT IS DISCHARGED IT NEEDS TO BE IMMEDIATELY CLEANED UP BY REMOVING THE CHEMICAL AND AFFECTED SOIL OR AREA OF SPILL FROM THE SITE IN ACCORDANCE WITH BOTH THE MANUFACTURER RECOMMENDATIONS, FEDERAL, STATE, AND LOCAL REQUIREMENTS. DO NOT HOSE DOWN AND SPREAD SPILLED ITEM. ALL CHEMICALS USED ON THE SITE SHALL BE IN LEAK-PROOF CONTAINERS STORED AWAY FROM WETLANDS, SURFACE WATERS, STORMWATER INLETS, AND DRAINAGE MEASURES. SPILL KITS SHALL BE AVAILABLE ONSITE FOR EMERGENCY USE. THERE SHALL BE A SECONDARY CONTAINMENT MEASURE OF ALL CHEMICALS IN ADDITION TO SPILL-PROOF CONTAINERS.
31. PRIOR TO COMMENCEMENT OF CONSTRUCTION, APPLICABLE CONTRACTOR PERSONNEL MUST HAVE AN UNDERSTANDING OF THE EPA CONSTRUCTION GENERAL PERMIT REQUIREMENTS AND THEIR SPECIFIC RESPONSIBILITIES UNDER THE PERMIT. AT A MINIMUM, PERSONNEL MUST BE TRAINED AND UNDERSTAND THE FOLLOWING: LOCATION OF ALL STORMWATER CONTROLS AND HOW TO MAINTAIN THEM, PROCEDURES FOR COMPLYING WITH THE POLLUTION PREVENTION REQUIREMENTS, PROCEDURES FOR CONDUCTING INSPECTIONS, RECORDING FINDINGS, AND TAKING CORRECTIVE ACTION.
32. ALL SEDIMENT TRACKED ONTO ROADWAYS MUST BE REMOVED AT END OF EACH WORK DAY.
33. ALL USE OF CATIONIC TREATMENT CHEMICALS (EXAMPLES INCLUDE POLYMERS, CHITOSAN, CATIONIC PAM, FLOCCULANTS OR OTHER CHEMICAL UTILIZED FOR STABILIZATION) ARE PROHIBITED. IF ALL OTHER AVAILABLE STABILIZATION MEASURES ARE NOT POSSIBLE AND USE OF CATIONIC CHEMICALS IS ABSOLUTELY NECESSARY THE CONTRACTOR WILL NEED TO CONTACT THE EPA NEW ENGLAND OFFICE IN WRITING FOR APPROVAL AND SPECIFIC REQUIREMENTS (MAXIMUM DOSAGE RATE, RESIDUAL TESTING, SPECIFIC LIMITATIONS, ETC) PRIOR TO USE.
34. IF USING NON-VEGETATIVE STABILIZATION MEASURES, IT MUST BE COMPLETED NO LATER THAN 14 DAYS AFTER INITIATING STABILIZATION. ALL AREAS OF EXPOSED SOILS MUST BE COVERED.
35. INSPECTIONS OF EROSION CONTROL MEASURES SHALL BE AT LEAST ONCE EVERY 7 DAYS BY THE CONTRACTOR. AT A MINIMUM INSPECTIONS SHALL INCLUDE ALL DISTURBED AREAS, ALL STORMWATER CONTROLS AND POLLUTION PREVENTION MEASURES, ALL LOCATIONS WHERE STABILIZATION MEASURES HAVE BEEN IMPLEMENTED, EQUIPMENT AND MATERIAL STORAGE AREAS, ALL AREAS WHERE STORMWATER FLOWS AND ALL POINTS OF DISCHARGE. WHEN CORRECTIVE ACTIONS ARE REQUIRED, THE CONTRACTOR MUST IMMEDIATELY TAKE ALL STEPS TO PREVENT POLLUTANT DISCHARGES UNTIL A PERMANENT SOLUTION IS IMPLEMENTED. AS NECESSARY NEW OR MODIFIED CONTROLS MUST BE INSTALLED AND OPERATIONAL. THE REPAIR MUST BE COMPLETED WITHIN 7 DAYS FROM THE TIME OF DISCOVERY. WITHIN 24 HOURS OF A TRIGGERING CONDITION OCCURRING THAT REQUIRES A CORRECTIVE ACTION, A CORRECTIVE ACTION REPORT MUST BE COMPLETED.

MAINTENANCE:

ALL MEASURES STATED ON THE STORMWATER POLLUTION PREVENTION PLANS, SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION BY CONTRACTOR UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON IN ACCORDANCE WITH THE CONTRACT DOCUMENTS OR THE APPLICABLE PERMIT, WHICHEVER IS MORE STRINGENT, AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:

1. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR DETERIORATION.
2. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A HEALTHY STAND OF GRASS IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED, AND RESEEDED AS NEEDED.
3. ALL SEDIMENT CONTROLS SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE TUBULAR SEDIMENT CONTROLS WHEN IT REACHES HALF THE HEIGHT OF THE CONTROL MEASURE OR AS REQUESTED BY THE OWNER OR ENGINEER.
4. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
5. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AS CONDITIONS DEMAND.
6. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES. SEDIMENT SHALL BE REMOVED FROM SEDIMENT BASINS OR TRAPS WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY 50%.

ABBREVIATIONS:

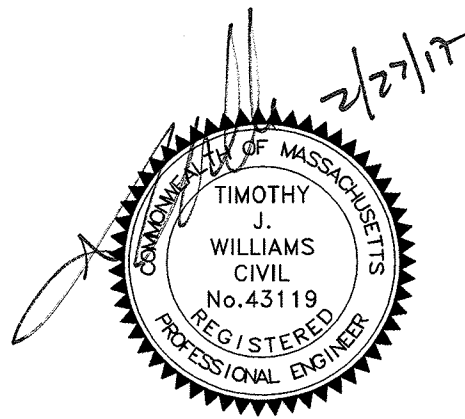
ABAN	ABANDON		
ADA	AMERICANS WITH DISABILITIES ACTS		
ADJ	ADJUST		
B	BORING		
BC	BOTTOM OF CURB		
BIT	BITUMINOUS		
BLDG	BUILDING	L	LENGTH
BM	BENCH MARK	LP	LIGHT POLE
BOS	BOTTOM OF SLOPE		
BOW	BOTTOM OF WALL	MAT	MATERIAL
BY&B	BUTTERFLY VALVE & BOX	MAX	MAXIMUM
BVW	BORDERING VEGETATED WETLAND	MH	MANHOLE
		MIN	MINIMUM
		MISC	MISCELLANEOUS
CATV	CABLE TELEVISION	MTD	MOUNTED
CB	CATCH BASIN	MW	MONITORING WELL
CF	CUBIC FEET		
CFS	CUBIC FEET PER SECOND		
CI	CAST IRON (PIPE)	N	NORTH
CL	CENTERLINE	NIC	NOT IN CONTRACT
CLDI	CEMENT LINED DUCTILE IRON (PIPE)	NO	NUMBER
CLF	CHAIN LINK FENCE	NTS	NOT TO SCALE
CMP	CORRUGATED METAL PIPE		
CO	CLEAN OUT	OC	ON CENTER
CONC	CONCRETE	OD	OUTSIDE DIAMETER
CONST	CONSTRUCTION	OHV	OVERHEAD WIRE
		OVHD	OVERHEAD
		OW	OBSERVATION WELL
CONT	CONTRACTOR		
CRD	COORDINATE	PC	POINT OF CURVATURE
CUL	CULVERT	PCC	PRECAST CONCRETE CURB
CY	CUBIC YARD	PI	POINT OF INTERSECTION
		PL	PROPERTY LINE
DB	DISTRIBUTION BOX	POC	POINT ON CURVATURE
DBL	DOUBLE	POT	POINT ON TANGENT
DEM	DEMOLISH	PRC	POINT OF REVERSE CURVATURE
DET	DETENTION	PROP, P	PROPOSED
DIA	DUCTILE IRON (PIPE)	PT	POINT (OR POINT OF TANGENT)
DIM	DIMENSION	PVC	POLYVINYL CHLORIDE (PIPE)
DMH	DRAIN MANHOLE		
DW	DOMESTIC WATER (OR DRY WELL)	R&R	REMOVE & RESET/REPLACE
DWG	DRAWING	R&S	REMOVE & STACK
DYCL	DOUBLE YELLOW CENTERLINE	RCP	REINFORCED CONCRETE PIPE
		RD	ROAD (OR ROOF DRAIN)
		RELOC	RELOCATE
EHH	ELECTRIC HANDHOLE	REM	REMOVE
EL	ELEVATION	RET	RETAIN, RETAINING OR RETENTION
ELEC	ELECTRIC	ROW	RIGHT OF WAY
EMH	ELECTRIC MANHOLE	RR	RAILROAD
EOP	EDGE OF PAVEMENT	RWY	ROADWAY
EOR	EDGE OF ROAD		
EW	EDGE OF WETLANDS	SD	SUBDRAIN
ETC	ELECTRIC, TELEPHONE, CABLE	SF	SQUARE FEET
EXIST	EXISTING	SGC	SLOPED GRANITE CURB
EXT	EXTERIOR	SMH	SEWER MANHOLE
FCC	FLUSH CONCRETE CURB	SP	STANDPIPE
FES	FLARED END SECTION	SPEC	SPECIFICATION
FFE	FINISH FLOOR ELEVATION	STA	STATION
FPS	FEET PER SECOND	STD	STANDARD
FS	FIRE SERVICE	SWEL	SOLID WHITE EDGE LINE
FT	FOOT/FEET	SW	SIDEWALK
		SWLL	SOLID WHITE LANE LINE
		SYCL	SOLID YELLOW CENTERLINE
GC	GENERAL CONTRACTOR		
GEN	GENERAL	TB	TEST BORING
GG	GAS GATE	TC	TOP OF CURB
GR	GUIDE RAIL	TD	TRENCH DRAIN
GRAN	GRANITE	TEL, T	TELEPHONE
GV	GATE VALVE	TMH	TELEPHONE MANHOLE
GV&B	GATE VALVE & BOX	TOS	TOP OF SLOPE
GW	GROUND WATER	TOW	TOP OF WALL
		TP	TEST PIT
		TYP	TYPICAL
H	HORIZONTAL		
HOR	HORIZONTAL	UD	UNDERDRAIN
HT	HEIGHT	UP	UTILITY POLE
HW	HEADWALL		
HWY	HIGHWAY	V	VERTICAL
HYD	HYDRANT	VCP	VITRIFIED CLAY PIPE
		VERT	VERTICAL
		VGC	VERTICAL GRANITE CURB
ID	INSIDE DIAMETER		
IN	INCHES	WG	WATER GATE
INCL	INCLUDE	WM	WATER MAIN
INST	INSTALLED	WMH	WATER MANHOLE
INV, I.E.	INVERT, INVERT ELEVATION	WSO	WATER SHUTOFF

CONSTRUCTION GENERAL PERMIT NOTES AND NARRATIVE:

NARRATIVE: THE STORMWATER POLLUTION PREVENTION PLANS CONSIST OF THE EROSION CONTROL PLANS TOGETHER WITH AN EXISTING CONDITIONS PLANS, GRADING PLANS, ABBREVIATIONS AND NOTES SHEETS, AND DETAIL SHEETS.

THE EROSION CONTROL PLAN WILL BE IMPLEMENTED TO:

- A. TREAT EROSION AS SOON AS POSSIBLE AFTER DISTURBANCE.
- B. PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION AREA AND ENTERING THE RECEIVING WATERS.
- C. CONSTRUCTION ACTIVITIES SHALL BE SCHEDULED TO MINIMIZE EROSION.
- D. ONLY DISTURB, CLEAR, OR GRADE AREAS NECESSARY FOR CONSTRUCTION.



PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

2	2-27-2017	REVISIONS PER TOWN COMMENTS
1	1-17-2017	REVISED PER PEER REVIEW & TOWN COMMENTS
REV	DATE	DESCRIPTION

APPLICANT/OWNER:

SARKIS DEVELOPMENT COMPANY
2 ELM SQUARE
ANDOVER, MA 01810

PROJECT:

RESIDENTIAL DEVELOPMENT
470 BOSTON STREET (ROUTE 1)
TOPSFIELD, MA

PROJECT NO.	2165-01A	DATE:	10-13-2016
SCALE:	NONE	DWG. NAME:	C-2165-01A
DESIGNED BY:	DMR	CHECKED BY:	RB

PREPARED BY:



ALLEN & MAJOR
ASSOCIATES, INC.

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DRAWING TITLE:	SHEET No.
ABBREVIATIONS & NOTES	ABB-2

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STORMWATER POLLUTION PREVENTION PLAN

2.1 GENERAL

FOR GRADING AND DRAINAGE SEE DRAWING SHEETS C-3A & C-3B.

2.1.1. THE FIRST STAGE INVOLVES ACTIVITIES NEEDED TO ADDRESS STORMWATER MANAGEMENT; EXCAVATING MATERIAL DESIGNATED FOR OFF-SITE REMOVAL OR ON-SITE RELOCATION; AND FENCING SELECTED AREAS. STAGE ONE WILL PREPARE SITE FOR CONVENTIONAL CONSTRUCTION.

2.1.2. THE SECOND STAGE WILL CONSIST OF ROUTINE CONSTRUCTION INVOLVING DEMOLITION, PAVING, LANDSCAPING AND UTILITIES.

2.1.3. THERE ARE GENERAL PHASES OF CONSTRUCTION AS IDENTIFIED BELOW. IN EACH PHASE OF CONSTRUCTION, IMPLEMENT STANDARD EROSION AND SEDIMENT CONTROL PRACTICES PRIOR TO INITIATING EARTH DISTURBING ACTIVITIES, AND MAINTAIN THESE PRACTICES THROUGHOUT THE COURSE OF CONSTRUCTION.

TYPICAL PRACTICES TO BE APPLIED TO THE SITE INCLUDE THE FOLLOWING:

PRIOR TO DEMOLITION AND EARTH DISTURBANCE IN ANY WORK AREA, INSTALL SILTATION BARRIERS (BALES OR SILT FENCE WITH BALES) BETWEEN THE WORK AREA AND THE AREA(S) TO WHICH IT DRAINS.

DISCHARGE WATER FROM DEWATERING OPERATIONS TO A TEMPORARY SILTATION TRAP OR SEDIMENTATION BASIN.

PROVIDE TEMPORARY BERMS AND SWALES TO DIVERT SURFACE WATER AWAY FROM THE AREAS THAT WILL BE EXPOSED BY CONSTRUCTION ACTIVITY TO MINIMIZE THE AMOUNT OF SURFACE WATER COMING INTO CONTACT WITH EXPOSED SOILS. PROVIDE STABLE OUTLETS FOR THESE DEVICES, AND LINE OR VEGETATE THESE DIVERSIONS TO PROVIDE FOR DEVICES, AND LINE OR VEGETATE THESE DIVERSIONS TO PROVIDE FOR THEIR STABILITY DURING CONSTRUCTION.

LIMIT THE EXTENT OF EXPOSED SOILS TO AREAS THAT CAN BE WORKED AND RESTABILIZED WITHIN THE CONSTRUCTION SEASON AND DURING THE SPECIFIC CONSTRUCTION PHASE. WHEN EARTHWORK CONSTRUCTION ACTIVITY IN AN AREA IS COMPLETE, STABILIZE THE AREA WITH A SUITABLE SURFACE AS DESCRIBED BELOW.

IN ADDITION TO THESE PRACTICES, FOLLOW THE SPECIAL PRACTICES DESCRIBED BELOW. COMPLY WITH THE DIRECTIONS OF THE OWNER'S REPRESENTATIVE TO ADDRESS EROSION AND SEDIMENTATION CONDITIONS THAT MAY ARISE ON A CASE BY CASE BASIS DURING CONSTRUCTION.

THE FOLLOWING IS A DESCRIPTION OF MINIMUM CONSTRUCTION REQUIREMENTS AND DOES NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES WITH REGARD TO DETERMINING THE ADEQUACY OF MEANS AND METHODS OF CONSTRUCTION.

2.2 ESTIMATED CONSTRUCTION SEQUENCING.

THE FOLLOWING IS AN ESTIMATED CONSTRUCTION SEQUENCING. SOME ACTIVITIES MAY OCCUR AT THE SAME TIME RATHER THAN AT SEPARATE TIMES OR OUT OF SEQUENCE DUE TO ACTUAL FIELD CONDITIONS OR OTHER FACTORS. ACTUAL SCHEDULING WILL BE COMPLETED BY THE SITE CONTRACTOR.

(CONTRACTOR TO FOLLOW ANY ADDITIONAL PERMIT REQUIREMENTS OR STEPS AT NO ADDITIONAL COST TO THE OWNERS FROM EITHER STATE OR LOCAL PERMITS, THIS INCLUDES BUT IS NOT LIMITED TO THE ORDER OF CONDITIONS FROM THE TOPSFIELD CONSERVATION COMMISSION)

- INSTALL ALL EROSION CONTROL MEASURES INCLUDING BUT NOT LIMITED TO TEMPORARY STRAW BALE FILTERS, SILT SACKS, CONSTRUCTION ENTRANCES, AND STRAWBALES AND SILT FENCE.
- SETUP STAGING AND MATERIAL STORAGE / STOCKPILE AREAS.
- IF REQUIRED, CONSTRUCT TEMPORARY SILT / DEWATERING BASINS.
- PROTECT AND MARK ALL EXISTING ITEMS NOTED TO REMAIN.
- PERFORM DEMOLITION WORK. SURVEY AND IDENTIFY LIMITS OF SITE CLEARING. CONDUCT SITE CLEARING.
- PULVERIZE EXISTING PAVEMENT TO BE REMOVED AND DEMO EXISTING BUILDING SECTIONS AND MATERIALS AS NOTED.
- REMOVE EXISTING LOAM AND SUBSOIL AND STOCKPILE FOR REUSE.
- PERFORM ROUGH GRADING.
- INSTALL UNDERGROUND UTILITIES.
- PERFORM FINE GRADING; PLACE BINDER PAVEMENT COURSE.
- PLACE PAVEMENT TOP COURSE; CONSTRUCT SIDEWALKS AND ALL OTHER SITE IMPROVEMENTS.
- ERADICATE EXISTING PAVEMENT MARKINGS ON REMAINING PAVEMENT.
- INSTALL NEW PAVEMENT MARKINGS, SITE SIGNAGE & COMPLETE LANDSCAPING.
- REMOVE TEMPORARY SILT CONTROLS AFTER ONCE GIVEN APPROVAL BY TOPSFIELD CONSERVATION COMMISSION AND SITE IS STABILIZED.

OPERATION AND MAINTENANCE CONSTRUCTION ACTIVITIES:

- CONTACT THE TOPSFIELD CONSERVATION COMMISSION AGENT AT LEAST THREE (3) DAYS PRIOR TO START OF CONSTRUCTION.
- INSTALL STRAWBALES AND SILT FENCE AS SHOWN ON THE EROSION CONTROL PLAN. INSTALL CONSTRUCTION FENCING IF DETERMINED TO BE NECESSARY AT THE COMMENCEMENT OF CONSTRUCTION.
- INSTALL THE CONSTRUCTION ENTRANCES AT THE LOCATIONS SHOWN ON THE EROSION AND CONTROL PLAN.
- SITE ACCESS SHALL BE ACHIEVED ONLY FROM THE DESIGNATED CONSTRUCTION ENTRANCES.
- STOCKPILES SHALL BE STABILIZED WITH EROSION CONTROL MATTING OR TEMPORARY SEEDING WHENEVER PRACTICABLE, BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.
- INSTALL SILT SACKS AND STRAWBALES AROUND EACH DRAIN INLET AS SOON AS PRACTICABLE.
- ALL EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EVERY RAINFALL EVENT.
- ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED, REPAIRED OR REPLACED AS REQUIRED OR AT THE DIRECTION OF THE OWNER'S ENGINEER, THE TOWN ENGINEER, OR THE TOWN CONSERVATION AGENT.
- SEDIMENT ACCUMULATION UP--GRADIENT OF THE STRAWBALES AND SILT FENCE GREATER THAN 6" IN DEPTH SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.
- IF IT APPEARS THAT SEDIMENT IS EXITING THE SITE, SILT SACKS SHALL BE INSTALLED IN ALL CATCH BASINS ADJACENT TO THE SITE. SEDIMENT ACCUMULATION ON ALL ADJACENT CATCH BASIN INLETS SHALL BE REMOVED AND THE SILT SACK REPLACED IF TORN OR DAMAGED.
- INSTALL STONE OR DIVERSION SWALE STRAW BALE CHECK DAMS ON SITE AS REQUIRED DURING CONSTRUCTION. REFER TO THE EROSION CONTROL DRAWING, DETAIL SHEETS D-1 THRU D-8.
- THE CONTRACTOR SHALL COMPLY WITH THE GENERAL AND EROSION NOTES AS SHOWN ON THE SITE DEVELOPMENT PLANS AND SPECIFICATIONS.
- THE STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSPECTED WEEKLY. THE ENTRANCES SHALL BE MAINTAINED BY ADDING ADDITIONAL CLEAN, ANGULAR, DURABLE STONE TO REMOVE THE SOIL FROM THE CONSTRUCTION VEHICLE TIRES WHEN EXITING THE SITE. IF SOIL IS STILL LEAVING THE SITE VIA THE CONSTRUCTION VEHICLE TIRES, ADJACENT ROADWAYS SHALL BE KEPT CLEAN BY STREET SWEEPING.
- DUST POLLUTION SHALL BE CONTROLLED USING ON-SITE WATER TRUCKS AND OR AN APPROVED SOIL STABILIZATION PRODUCT.
- CARE SHOULD BE TAKEN TO PREVENT DISCHARGE OF SEDIMENT TO ABUTTERS.

2.3 MAINTENANCE

2.3.1 DURING THE PERIOD OF CONSTRUCTION AND/OR UNTIL LONG TERM VEGETATION IS ESTABLISHED: SEEDED AREAS WILL BE FERTILIZED AND RESEEDED AS NECESSARY TO INSURE VEGETATION ESTABLISHMENT.

2.3.2 TEMPORARY SEDIMENTATION BASINS WILL BE CHECKED AFTER EACH SIGNIFICANT RAINFALL AND NO LESS THAN WEEKLY, AND CLEANED AS NEEDED TO RETAIN STORAGE CAPACITY.

2.3.3 TEMPORARY DRAINAGE SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY.

2.3.4 THE HAYBALE AND SILTATION FENCING BARRIERS AND OTHER EROSION AND SEDIMENT CONTROL MEASURES/DEVICES SHALL BE INSPECTED, CLEANED, REPLACED AND/OR REPAIRED AS NECESSARY, AND NO LESS THAN WEEKLY, AND AFTER EACH SIGNIFICANT RAINFALL. ACCUMULATED SEDIMENTS SHALL BE REMOVED WHEN THEY REACH HALF THE HEIGHT OF THE BARRIER.

2.4 GENERAL

2.4.1. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH (USDA) NATURAL RESOURCES CONSERVATION SERVICE (NRCS, FORMERLY SCS) GUIDELINES AND ALL LOCAL MUNICIPAL REGULATIONS.

2.4.2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL CONTROL POINTS AND BENCH MARKS NECESSARY FOR THE WORK.

2.4.3. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF ANY SITEWORK OR EARTHWORK OPERATIONS, SHALL BE MAINTAINED DURING CONSTRUCTION, AND SHALL REMAIN IN PLACE UNTIL ALL SITEWORK IS COMPLETE AND GROUND COVER IS ESTABLISHED.

2.4.4. ALL WORK SHALL BE IN ACCORDANCE WITH THE PERMITS AND APPROVALS ISSUED BY THE LOCAL PLANNING BOARD, THEIR AGENTS, AND THE CONSTRUCTION SPECIFICATIONS.

2.4.5. STOCKPILES SHALL BE SURROUNDED ON THEIR PERIMETERS WITH STAKED BALES AND/OR SILTATION FENCES TO PREVENT AND/OR CONTROL SILTATION AND EROSION.

2.4.6. TOPS OF STOCKPILES SHALL BE COVERED IN SUCH A MANNER THAT STORMWATER DOES NOT INFILTRATE THE MATERIALS AND THEREBY RENDER THE SAME UNSUITABLE FOR FILL USE.

IF APPLICABLE, EFFORTS SHALL BE MADE TO AVOID STOCKPILING CUT GLACIAL TILL SOILS SINCE STOCKPILING INCREASES EXPOSURE TO PRECIPITATION AND PROVIDES GREATER OPPORTUNITY FOR FROST PENETRATION. SOME OF THE STEPS IN SEQUENCING MAY OCCUR SIMULTANEOUSLY, PARTICULARLY CUT AND FILL OPERATIONS, IN AN EFFORT TO AVOID STOCKPILING.

2.4.7. ALL DISTURBED OR EXPOSED AREAS SUBJECT TO EROSION SHALL BE STABILIZED WITH MULCH OR SEEDED FOR TEMPORARY VEGETATIVE COVER. NO AREA, SUBJECT TO EROSION SHALL BE LEFT DISTURBED AND UNSTABILIZED FOR PERIODS LONGER THAN IS ABSOLUTELY NECESSARY TO CARRY OUT THAT PORTION OF THE CONSTRUCTION WORK.

2.4.8. THE LOCATION OF TEMPORARY DRAINAGE SWALES AND SEDIMENTATION TRAPS ARE APPROXIMATE ONLY AND SHALL BE RELOCATED AS REQUIRED AS CONSTRUCTION PROGRESSES.

2.4.9. BALE DIKES SHALL BE CONSTRUCTED AT ALL EXISTING & PROPOSED CATCH BASINS LOCATED IN AREAS SUBJECT TO STORMWATER RUN-OFF FROM PROPOSED CONSTRUCTION, OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE. NO SEDIMENTS SHALL ENTER THE OFF-SITE DRAINAGE SYSTEMS AT ANY TIME. SEDIMENT DISCHARGE TO OFF-SITE PROPERTY IS PROHIBITED.

2.4.10. CULVERT/PIPE INLETS AND OUTFALLS SHALL BE PROTECTED FROM INCOMING SILT UNTIL ALL DISTURBED AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED.

2.4.11. ANY DEWATERING REQUIRED DURING CONSTRUCTING ON THE SITE SHALL DISCHARGE INTO A DEWATERING FILTER OR THE TEMPORARY SILT BASIN PRIOR TO DISCHARGE TO THE EXISTING DETENTION BASIN OR TO OFF-SITE .

2.4.12. BALES AND SILTATION FENCING AND TEMPORARY SILT BASIN SHALL BE INSPECTED NO LESS THAN WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL AND REPLACED AS REQUIRED.

2.4.13. ALL PROPOSED NON-RIPRAP SLOPES STEEPER THAN 3:1 SHALL BE STABILIZED WITH EROSION CONTROL FABRIC AND PROTECTED FROM EROSION.

2.4.14. THE CONTRACTOR SHALL KEEP ON SITE AT ALL TIMES ADDITIONAL BALES AND EXTRA SILTATION FENCING FOR INSTALLATION AT THE DIRECTION OF THE OWNER'S REPRESENTATIVE OR THE MUNICIPAL AGENTS TO MITIGATE ANY EMERGENCY CONDITION.

2.4.15. BORINGS WERE TAKEN FOR THE PURPOSE OF DESIGN AND SHOW CONDITIONS AT BORING POINTS ONLY. THEY DO NOT NECESSARILY SHOW THE NATURE OF ALL MATERIALS TO BE ENCOUNTERED DURING CONSTRUCTION.

2.4.16. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND PAYING FOR ANY PERMITS AND/OR CONNECTION FEES REQUIRED TO CARRY OUT THE WORK INCLUDING BUT NOT LIMITED TO DEMOLITION.

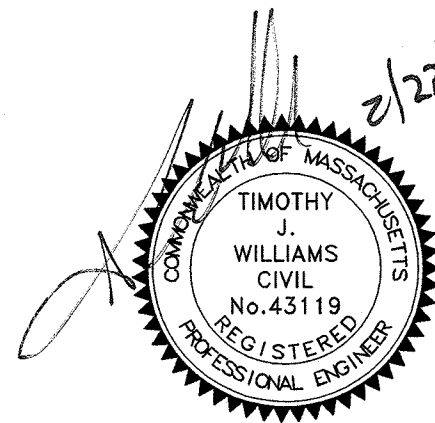
2.4.17. DISPOSAL OF ALL DEMOLISHED MATERIALS IS THE RESPONSIBILITY OF THE CONTRACTOR AND MUST BE OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL MUNICIPAL REQUIREMENTS.

2.4.18. THE CONTRACTOR SHALL PROTECT AND/OR CAP OFF ALL EXISTING ON-SITE UTILITY SERVICES DESIGNATED ON THESE DRAWINGS. SERVICES SHALL BE CAPPED OFF WHERE SAME ENTER THE PERIMETER PROPERTY LINE.

2.4.19. THE LIMIT OF WORK LINE FOR THE AREA TO BE CLEARED AND GRUBBED SHALL BE THE SAME AS THE LIMIT OF WORK LINE NECESSARY FOR GRADING PURPOSES, (I.E., THE GRADING LIMITS AROUND THE PERIMETER OF THE PROJECT AREA).

2.4.20. THE AREA OR AREAS OF ENTRANCE AND EXIT TO AND FROM THE SITE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY.

2.4.21. FOLLOWING THE ADDITION OF A BINDER COURSE, THE CONTRACTOR SHALL SWEEP ALL ON-SITE PAVEMENT, IF NECESSARY, UNTIL ALL SITE CONSTRUCTION IS COMPLETED.



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ALLEN & MAJOR ASSOCIATES, INC.

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REV	DATE	DESCRIPTION

APPLICANT/OWNER:

SARKIS DEVELOPMENT COMPANY
2 ELM SQUARE
ANDOVER, MA 01810

PROJECT:

RESIDENTIAL DEVELOPMENT
470 BOSTON STREET (ROUTE 1)
TOPSFIELD, MA

PROJECT NO.	2165-01A	DATE:	10-13-2016
SCALE:	NONE	DWG. NAME:	C-2165-01A
DESIGNED BY:	DMR	CHECKED BY:	RB

PREPARED BY:



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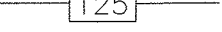
DRAWING TITLE:	SHEET No.
ABBREVIATIONS & NOTES	ABB-3

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LEGEND:

SILT FENCE & MULCH COIR LOG	—SF—
HAYBALE FILTER W/ SILT SACK	
STABILIZED CONST. ENTRANCE	
PROPOSED GRADING	
STOCKPILE/CONSTRUCTION STAGING AREA	
SAW CUT	-----

- NOTES:**
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 2. THIS PLAN WAS PREPARED USING AVAILABLE SITE INFORMATION FROM SEVERAL SOURCES, SOME OF WHICH IS UNCONFIRMED. AS THE SITE PLAN IS FURTHER REFINED, THERE MAY BE CHANGES BASED ON ADDITIONAL INFORMATION.
 3. 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.
 4. ALL ELEVATIONS REFER TO NAVD 88.
 5. ALTHOUGH CERTAIN ITEMS HAVE BEEN NOTED ON THIS DRAWING FOR DEMOLITION, NO ATTEMPT HAS BEEN MADE TO DELINEATE EACH AND EVERY ITEM THAT REQUIRES DEMOLITION FOR THE COMPLETION OF THE PROJECT. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL NECESSARY DEMOLITION WORK TO COMPLETE THE PROJECT. ALLEN & MAJOR ASSOCIATES, INC. IS NOT RESPONSIBLE FOR SITE DEMOLITION ITEMS NOT SHOWN ON THE SURVEY, OR SPECIFICALLY NOTED. THE DEMOLITION NOTES AND ARROWS ON THIS PLAN ARE TYPICAL AND DO NOT REFLECT QUANTITY.
 6. PORTIONS OF THE SITE ARE LOCATED WITHIN FEMA FLOODPLAIN ZONE A - AREAS SUBJECT TO INUNDATION BY THE 1-PERCENT-ANNUAL-CREAS FLOOD EVENT AS SHOWN ON FEMA MAP 25009C0266F, EFFECTIVE DATE JULY 3, 2012.
 7. THE CONTRACTOR SHALL CONTACT "DIGSAFE" AND THE TOWN OF TOPSFIELD DEPARTMENT OF PUBLIC WORKS AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORKS TO REQUEST THE LOCATION OF THE EXISTING UTILITIES.

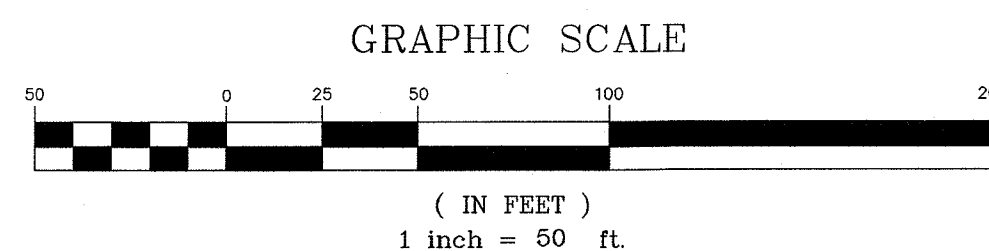
DIGSAFE: 1-800-344-7233
TOPSFIELD DEPT. OF PUBLIC WORKS:
978-887-1517 (WATER DEPT.)
978-887-1542 (HIGHWAY DEPT.)
 8. SEE THE ABBREVIATIONS AND NOTES PLAN, SHEETS ABB-1, ABB-2, & ABB-3 FOR GENERAL NOTES, AND EROSION CONTROL NOTES.
 9. TYPICALLY, THE LIMIT OF WORK COINCIDES WITH COIR LOG AND SILT FENCE LINE UNLESS INDICATED OTHERWISE. IN THE INSTANCE A STABILIZED CONSTRUCTION ENTRANCE, CURB REMOVAL OR SILT SACK IS LOCATED BEYOND THE STRAW BALE AND SILT FENCE LINE IN WHICH CASE THAT IS THE LIMIT OF WORK LINE.
 10. FOR OPERATIONS AND MAINTENANCE (O&M) INFORMATION BOTH DURING CONSTRUCTION AND POST CONSTRUCTION SEE SECTION 2 (O&M PLAN) IN THE REPORT ENTITLED "SITE DEVELOPMENT DRAINAGE REPORT" PREPARED BY A&M.
 11. PRIOR TO AND DURING CONSTRUCTION, CONTRACTOR RESPONSIBLE FOR FOLLOWING THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP). SEE SWPPP FOR ADDITIONAL SITE RESPONSIBILITIES.

TOWN OF TOPSFIELD, MA SITE PLAN REVIEW AND SPECIAL PERMIT

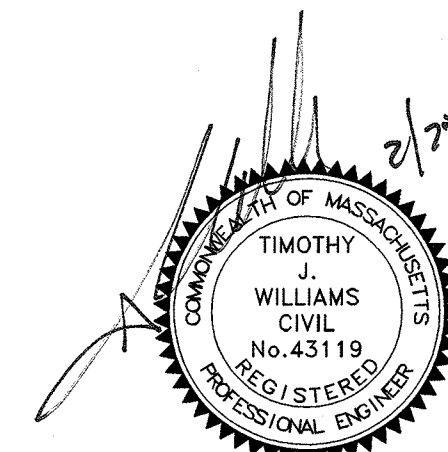
SITE PLAN AND SPECIAL PERMIT APPROVAL

SIGNATURE

DATE _____



N:\PROJECTS\2165-01A\CIVIL\DRAWINGS\CURRENT\C-2165-01A - EROSION CONTROL PLAN.DWG



PROFESSIONAL ENGINEER FOR
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PROJECT NO.	2165-01A	DATE:	10-13-2016
SCALE:	1"=50'	DWG. NAME:	C-2165-01A
DESIGNED BY:	DMR	CHECKED BY:	RB

PREPARED BY:



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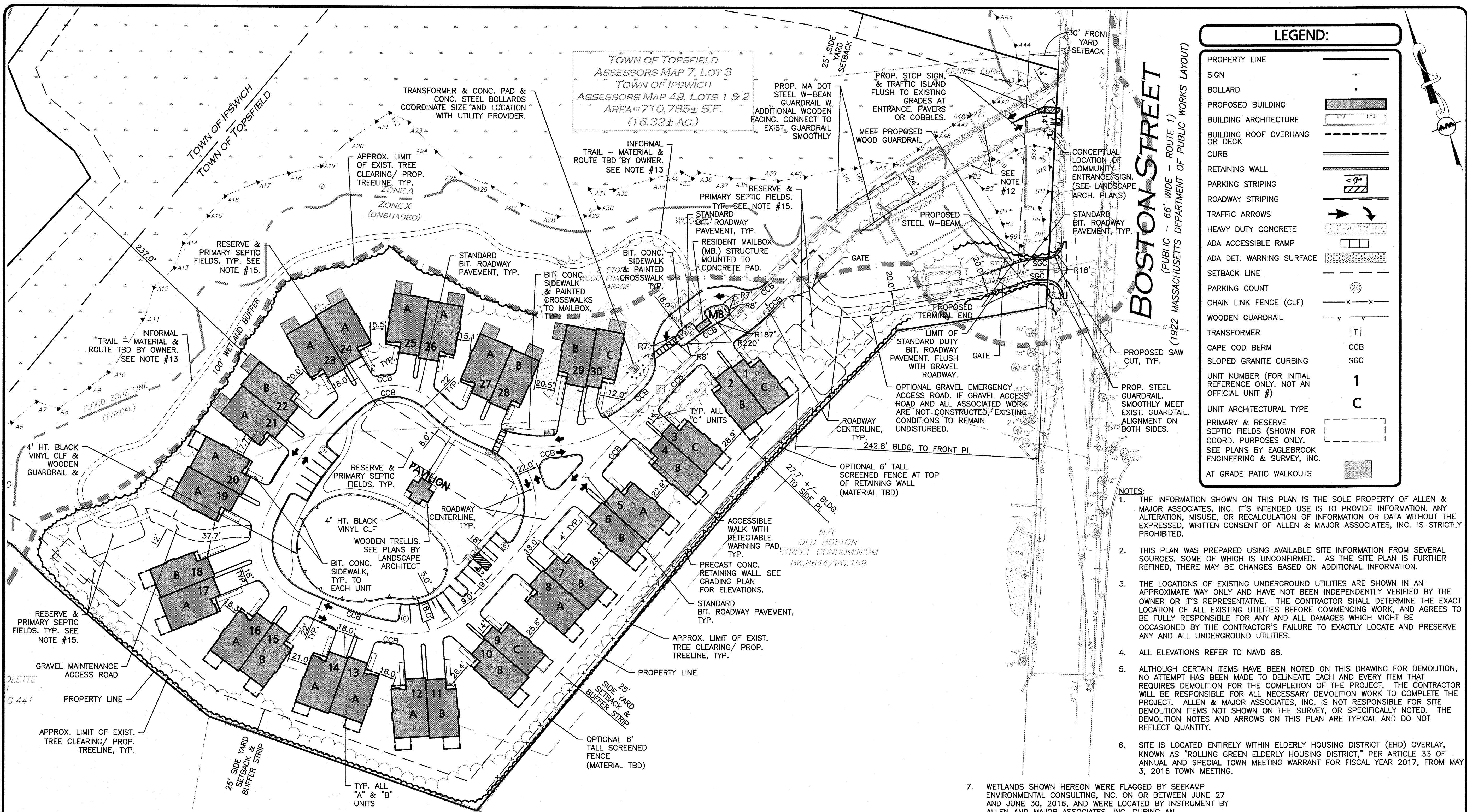
DEMOLITION & EROSION CONTROL PLAN

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SHEET No. _____

C-1

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470 BOSTON STREET
LAND USAGE TABLE - ELDERLY HOUSING DISTRICT (EHD)

ITEM	REQUIRED/ALLOWED	EXISTING	PROPOSED
LOT SIZE	435,600 S.F. 10.0 ACRES MIN.	TOTAL= 710,785± S.F. 16.32± ACRES	TOTAL = 710,785± S.F. 16.32± ACRES TOPSFIELD= 576,508± S.F. 13.24± ACRES
LOT WIDTH (MIN.)	125 FEET	198.9± FEET	198.9± FEET
STREET FRONTAGE	50 FEET	236.39± FEET	236.39± FEET
FRONT YARD SETBACK	30 FEET	85.3± FEET	242.8± FEET
SIDE YARD SETBACK	25 FEET	22.5± FEET	27.7± FEET
REAR YARD SETBACK	25 FEET	524.2± FEET	237.0± FEET
BUILDING HEIGHT (MAX.)	35 FEET	<35 FEET	<35 FEET
BUILDING STORIES	2-1/2 STORIES	<2-1/2 STORIES	2-1/2 STORIES
BUILDING COVERAGE (MAX.)	30%	0.26%	10.0%±
ABUTTING LOT BUFFER ZONE	25' MIN.	0'	25.0±'
UNITS PER BUILDABLE ACRE* (MAX.)	5 UNITS/ACRE	0.2 UNITS/ACRE	3.2 UNITS/ACRE ± *

*9.45+/- BUILDABLE ACRES (UPLAND) CALCULATED (MAX. 47 UNITS)

OFF-STREET PARKING SUMMARY

REQUIRED PARKING FOR ELDERLY HOUSING DEVELOPMENT:
NOT LESS THAN SIX (6) NOR MORE THAN EIGHT (8) PARKING SPACES FOR EACH THREE (3) ELDERLY DWELLING UNITS CONTAINED IN THE DEVELOPMENT. (*SEE NOTES)

30 UNITS / 3 = 10

10*6 = 60 (MINIMUM)

10*8 = 80 (MAXIMUM)

PROPOSED 2 GARAGE SPACES PER UNIT FOR A & B UNITS, 1 SPACE FOR C UNITS
TOTAL 30 UNITS, (15) A UNITS, (11) B UNITS, (4) C UNITS

THEREFORE, 56 PROPOSED PARKING SPACES AT UNITS

PROVIDED PARKING:
COMMON PUBLIC SURFACE PARKING SPACES
= (17) 9' x 18' & (1) ACCESSIBLE 8' x 18' = 18 TOTAL COMMON SURFACE SPACES
GARAGE PARKING SPACES = 56
TOTAL PROPOSED PARKING SPACES = 18+56=74

EXISTING PARKING	PROPOSED PARKING	
	TOTAL PROVIDED	TOTAL REQUIRED
2	74	60 (MIN) - 80 (MAX)

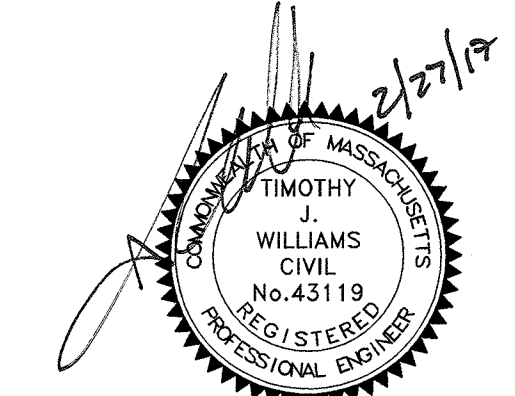
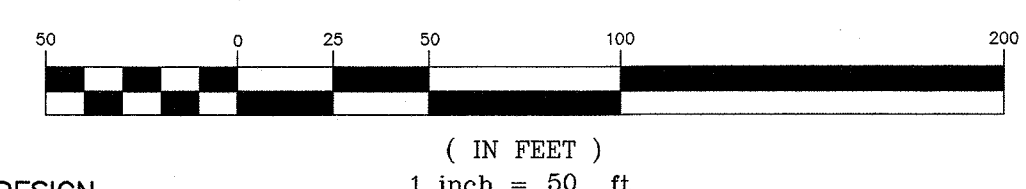
PARKING NOTES:
*PARKING SPACES WITHIN A GARAGE SHALL BE COUNTED TOWARD THE REQUIRED NUMBER OF PARKING SPACES

TOWN OF TOPSFIELD, MA
SITE PLAN REVIEW
AND SPECIAL PERMIT

SITE PLAN AND SPECIAL PERMIT APPROVAL

SIGNATURE DATE

GRAPHIC SCALE



PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
2	2-27-2017	REVISIONS PER TOWN COMMENTS
1	1-17-2017	REVISED PER PEER REVIEW & TOWN COMMENTS

APPLICANT/OWNER:

SARKIS DEVELOPMENT COMPANY
2 ELM SQUARE
ANDOVER, MA 01810

PROJECT:

RESIDENTIAL DEVELOPMENT
470 BOSTON STREET (ROUTE 1)
TOPSFIELD, MA

PROJECT NO.	2165-01A	DATE:	10-13-2016
SCALE:	1"=50'	DWG. NAME:	C-2165-01A
DESIGNED BY:	DMR	CHECKED BY:	RB

PREPARED BY:



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DRAWING TITLE:	SHEET No.
LAYOUT & MATERIALS PLAN	C-2

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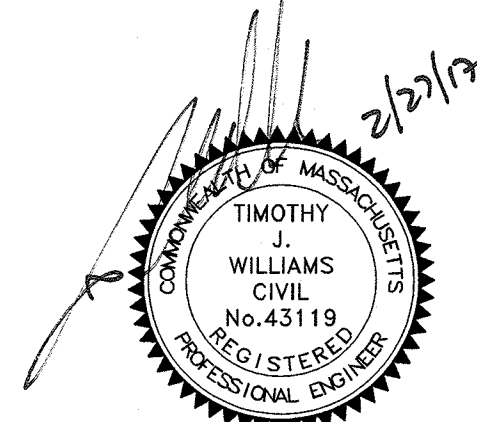
TOWN OF TOPSFIELD
ASSESSORS MAP 7, LOT 3
TOWN OF IPSWICH
ASSESSORS MAP 49, LOTS 1 & 2
AREA=710,785± S.F.
(16.32± Ac.)



LEGEND:

10' CONTOUR	70
2' CONTOUR	72
SPOT GRADE	x68.50
TOP OF BERM	
DETENTION BASIN	
SAW-CUT LINE	

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 4. ALL ACCESSIBLE ROUTES SHALL BE NO STEEPER THAN 4.5% LONGITUDINALLY AND 1.5% CROSS-SLOPE.



PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

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ANDOVER, MA 01810**

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TOPSFIELD, MA**

PROJECT NO.	2165-01A	DATE:	10-13-2016
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DESIGNED BY:	DMR	CHECKED BY:	RB

PREPARED BY:

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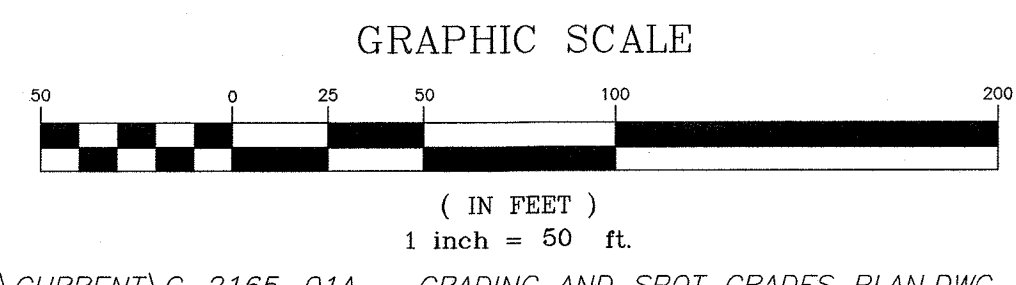
DRAWING TITLE:
GRADING AND SPOT GRADES PLAN
SHEET No.
C-3A

**TOWN OF TOPSFIELD, MA
SITE PLAN REVIEW
AND SPECIAL PERMIT**

SITE PLAN AND SPECIAL PERMIT APPROVAL

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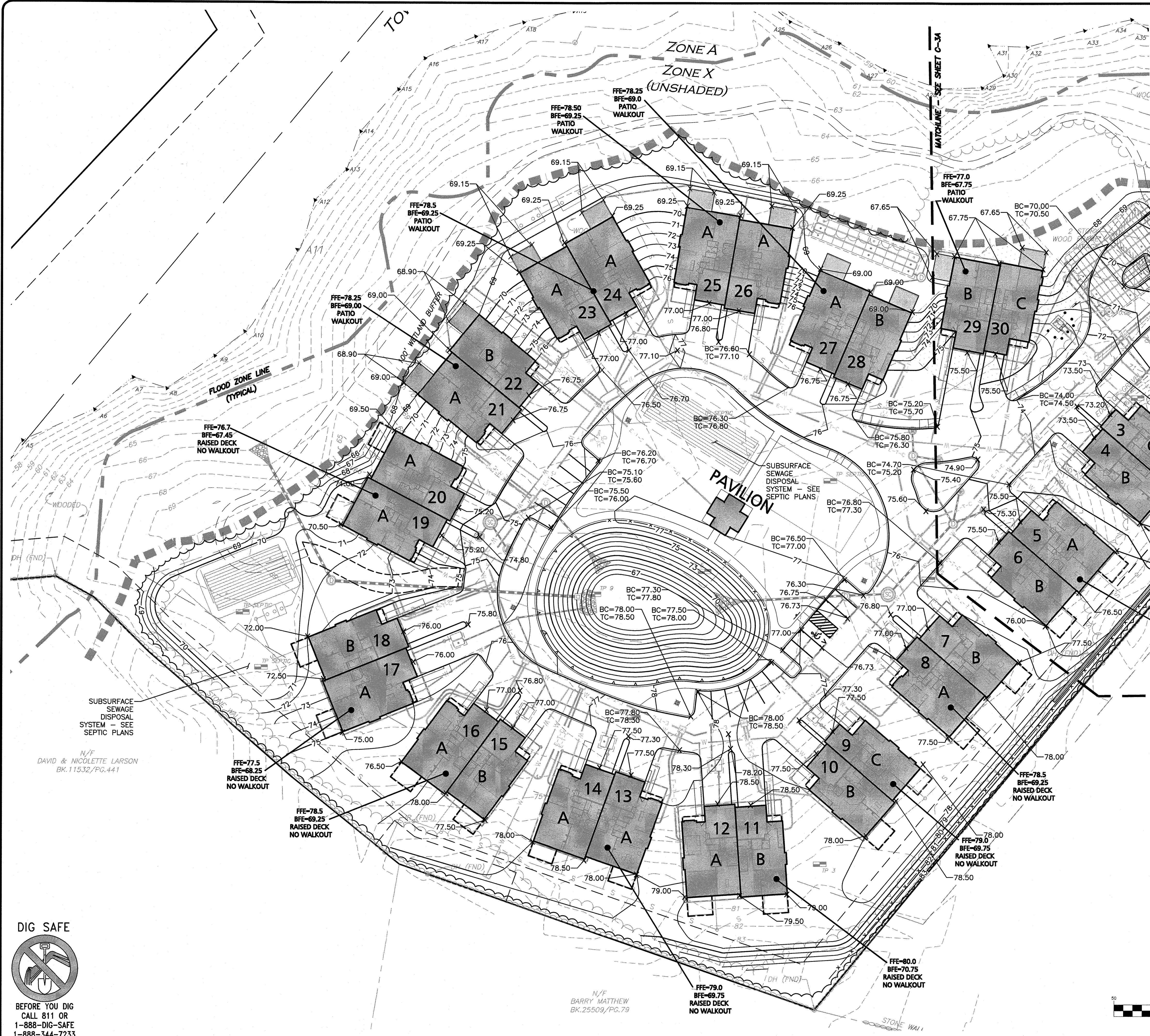
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LEGEND:

10' CONTOUR	70
2' CONTOUR	72
SPOT GRADE	x 68.50
TOP OF BERM	
DETENTION BASIN	
SAW-CUT LINE	

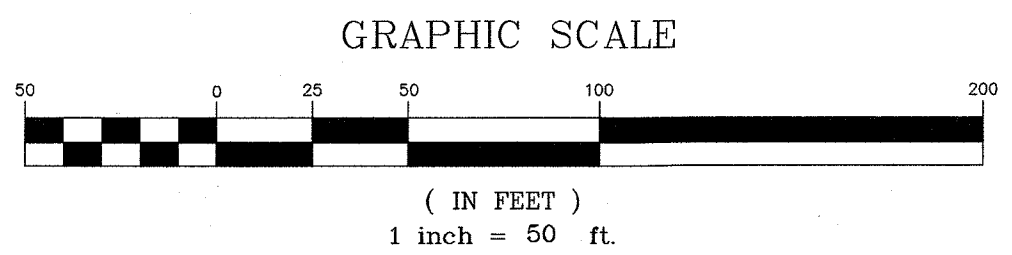
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MATCHLINE - SEE SHEET C-3A

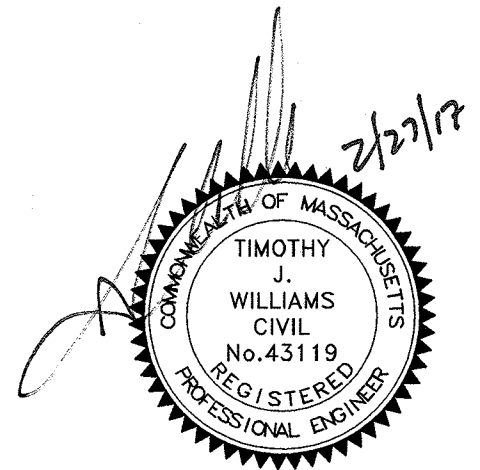
**TOWN OF TOPSFIELD, MA
SITE PLAN REVIEW
AND SPECIAL PERMIT**

SITE PLAN AND SPECIAL PERMIT APPROVAL

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PROFESSIONAL ENGINEER FOR
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2 ELM SQUARE
ANDOVER, MA 01810**

PROJECT:
**RESIDENTIAL DEVELOPMENT
470 BOSTON STREET (ROUTE 1)
TOPSFIELD, MA**

PROJECT NO.	2165-01A	DATE:	10-13-2016
SCALE:	1"=30'	DWG. NAME:	C2165-01A
DESIGNED BY:	DMR	CHECKED BY:	RB

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SHEET No. **C-3B**

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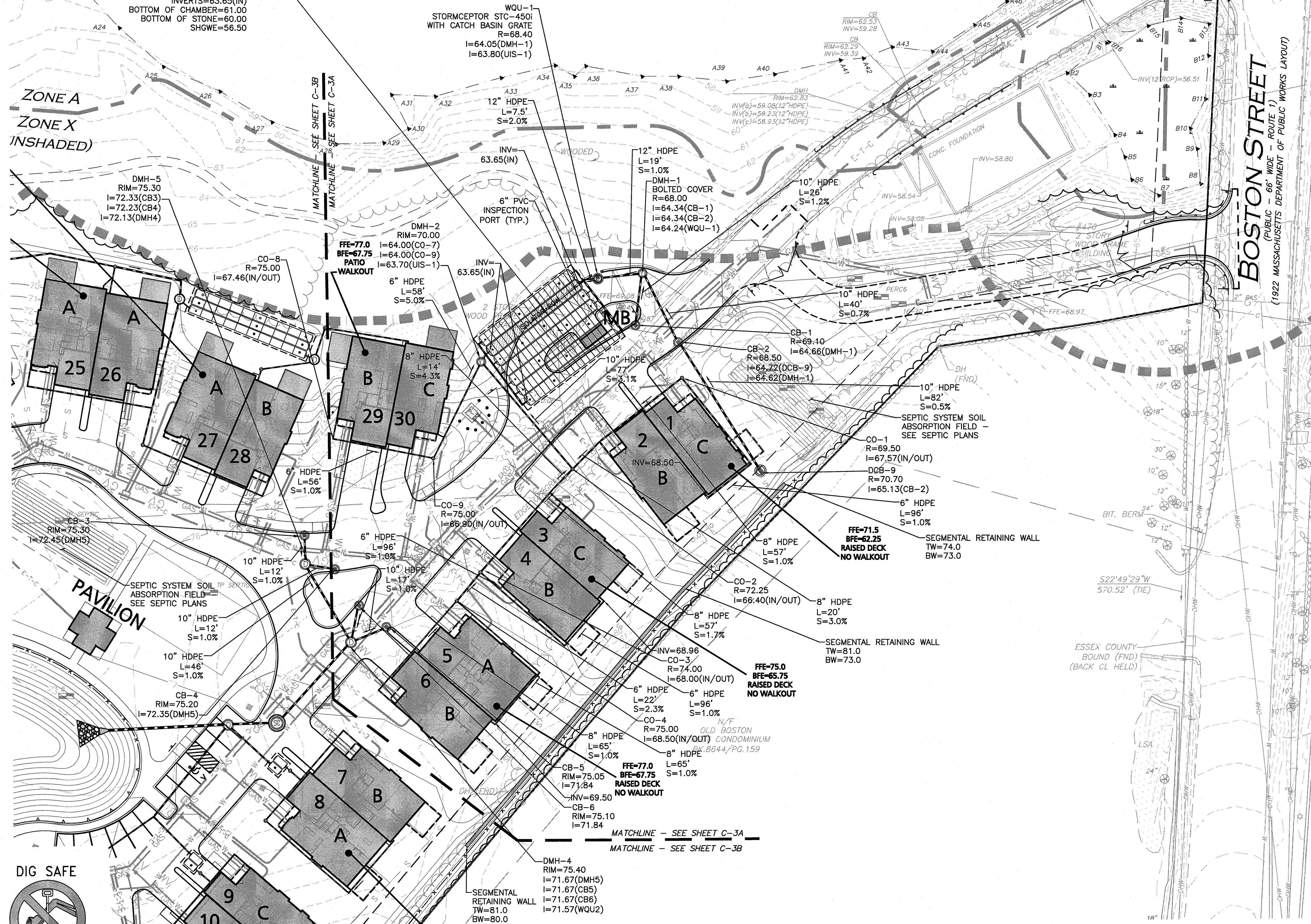
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TOWN OF TOPSFIELD
ASSESSORS MAP 7, LOT 3
TOWN OF IPSWICH
ASSESSORS MAP 49, LOTS 1 & 2
AREA=710,785± S.F.
(16.32± Ac.)

UNDERGROUND INFILTRATION SYSTEM #1
(126) CULTEC R-902HD CHAMBERS
3,486 S.F. FOOTPRINT
MIN. FINISH GRADE=68.00
TOP OF STONE=66.50
TOP OF CHAMBER=65.00
INVERTS=63.65(IN)
BOTTOM OF CHAMBER=61.00
BOTTOM OF STONE=60.00
SHGW=56.50

ZONE A
ZONE X
(INSHADED)



LEGEND:

DRAIN MANHOLE	
CATCH BASIN	
CATCH BASIN - DOUBLE GRATE	
FLARED END SECTION	
DRAIN LINE	
RIPRAP OUTFALL	
OUTLET CONTROL STRUCT.	
5' CONTOUR	
1' CONTOUR	
SPOT GRADE	
TOP OF BERM	
DETENTION BASIN	
SAW-CUT LINE	
INFILTRATION SYSTEM	

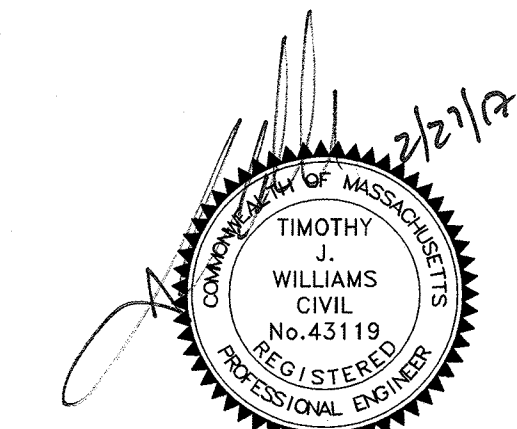
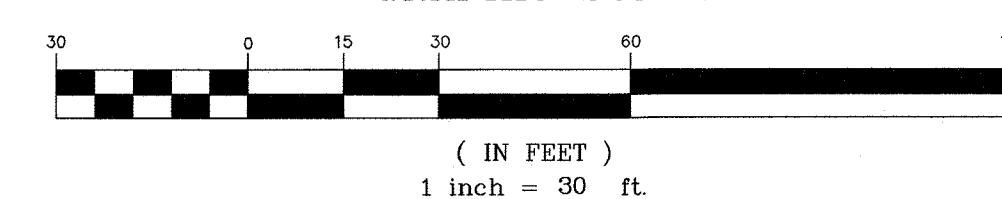
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TOWN OF TOPSFIELD, MA
SITE PLAN REVIEW
AND SPECIAL PERMIT

SITE PLAN AND SPECIAL PERMIT APPROVAL

SIGNATURE _____ DATE _____

GRAPHIC SCALE



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2 ELM SQUARE
ANDOVER, MA 01810

PROJECT:
RESIDENTIAL DEVELOPMENT
470 BOSTON STREET (ROUTE 1)
TOPSFIELD, MA

PROJECT NO.	2165-01A	DATE:	10-13-2016
SCALE:	1"=30'	DWG. NAME:	C-2165-01A
DESIGNED BY:	DMR	CHECKED BY:	RB

PREPARED BY:

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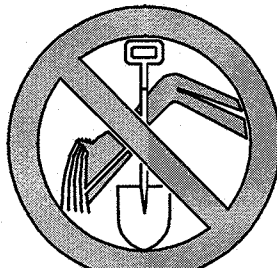
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DRAINAGE PLAN	C-4A

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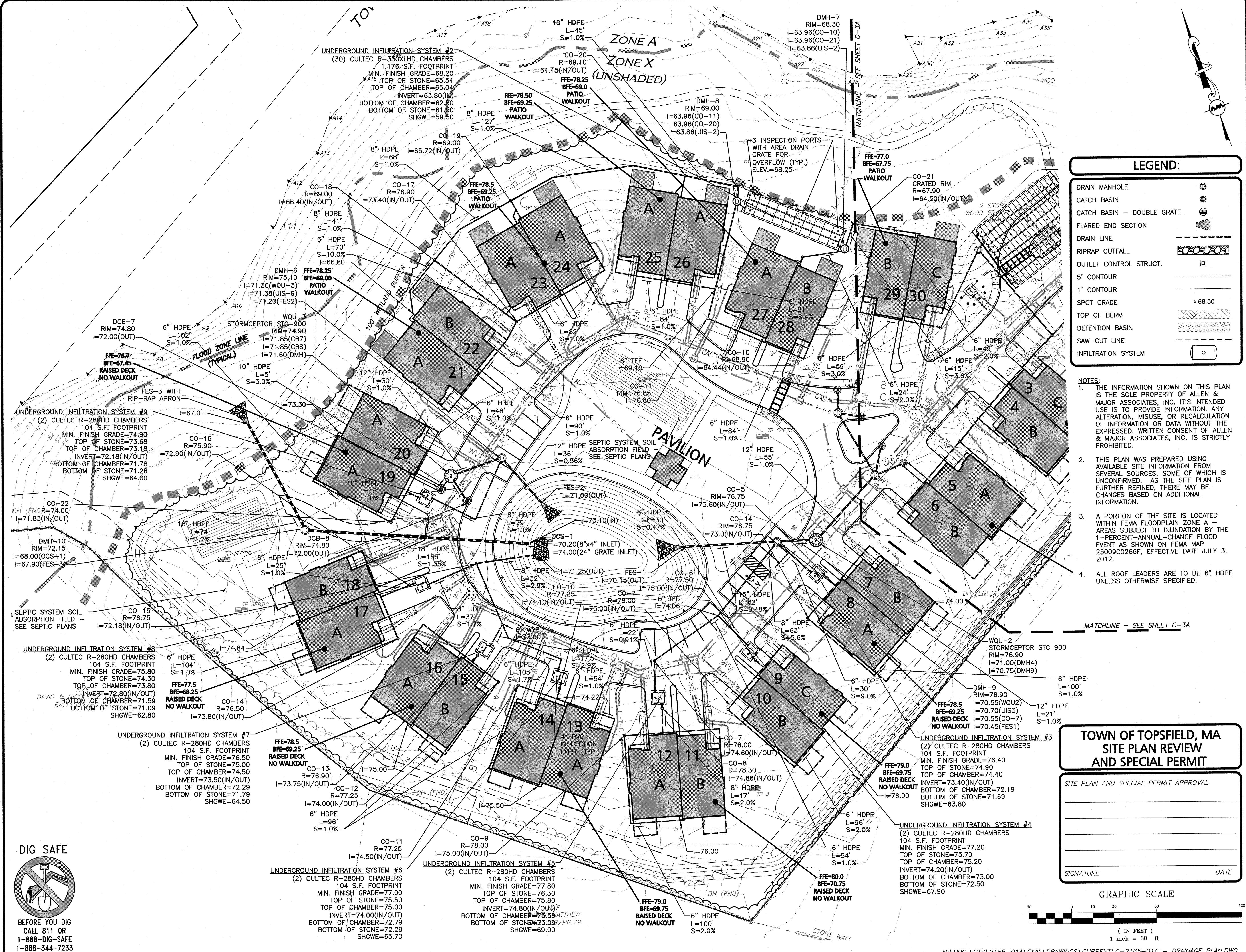
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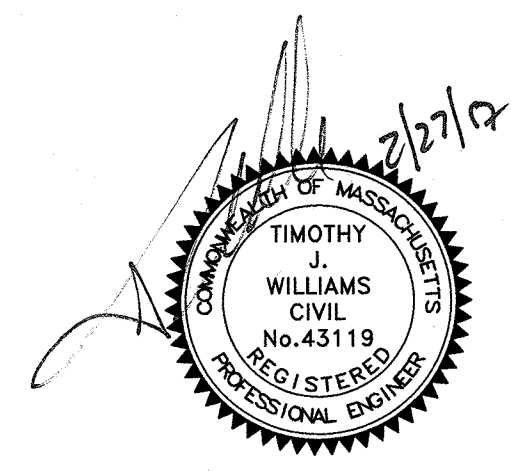
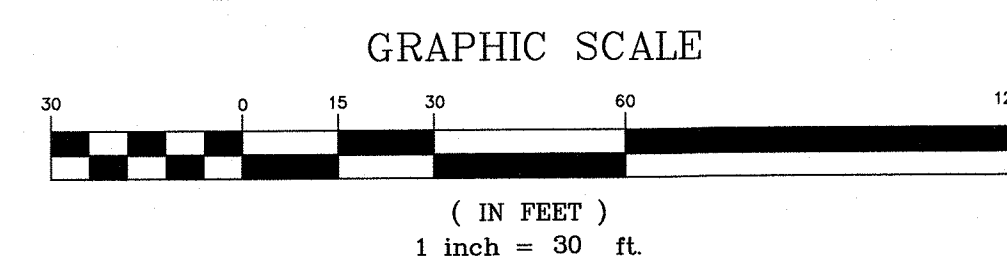
- DRAIN MANHOLE
- CATCH BASIN
- CATCH BASIN - DOUBLE GRATE
- FLARED END SECTION
- DRAIN LINE
- RIPRAP OUTFALL
- OUTLET CONTROL STRUCT.
- 5' CONTOUR
- 1' CONTOUR
- SPOT GRADE
- TOP OF BERM
- DETENTION BASIN
- SAW-CUT LINE
- INFILTRATION SYSTEM

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 - ALL ROOF LEADERS ARE TO BE 6" HDPE UNLESS OTHERWISE SPECIFIED.

**TOWN OF TOPSFIELD, MA
SITE PLAN REVIEW
AND SPECIAL PERMIT**

SITE PLAN AND SPECIAL PERMIT APPROVAL

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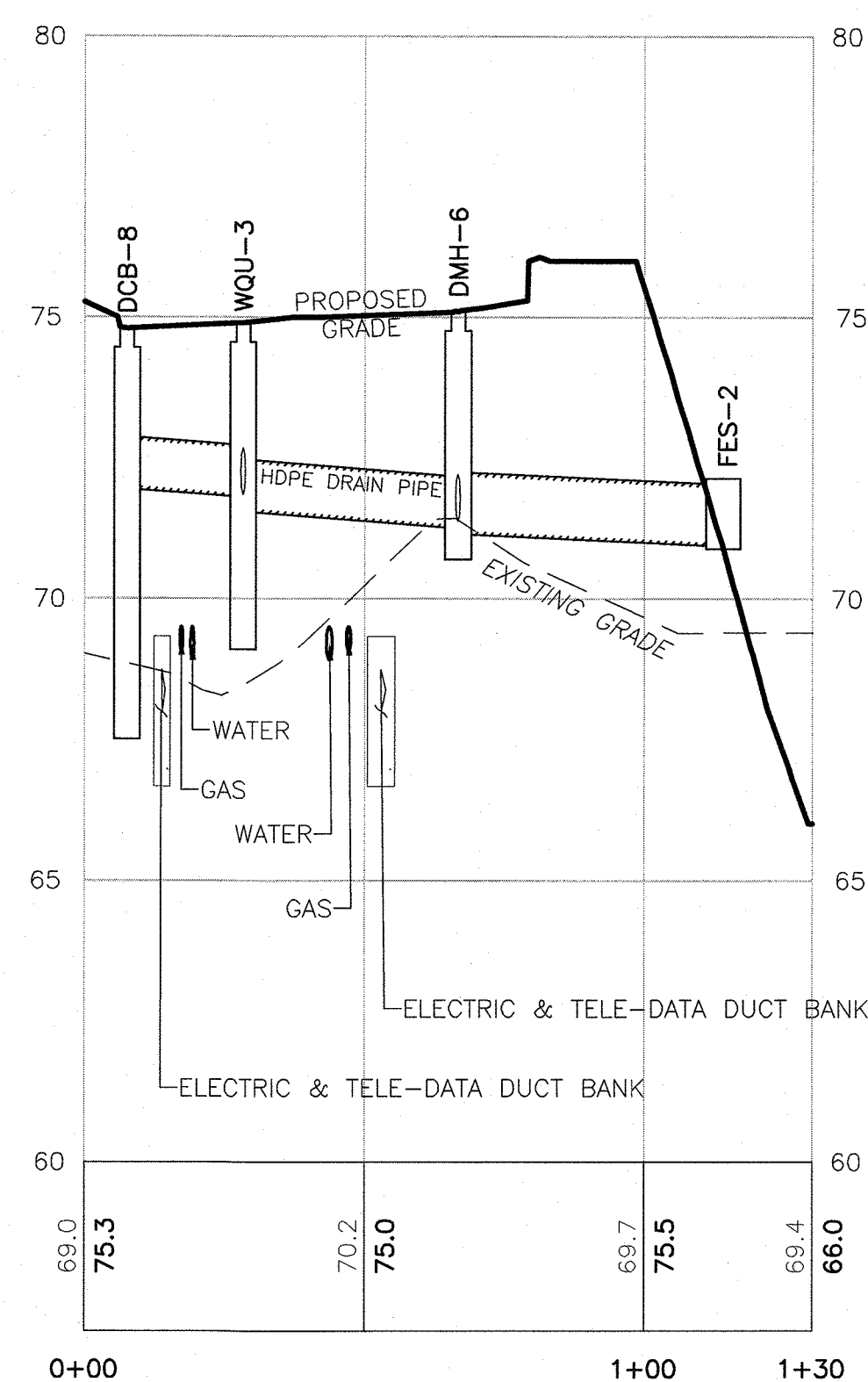
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DRAINAGE PLAN	C-4B

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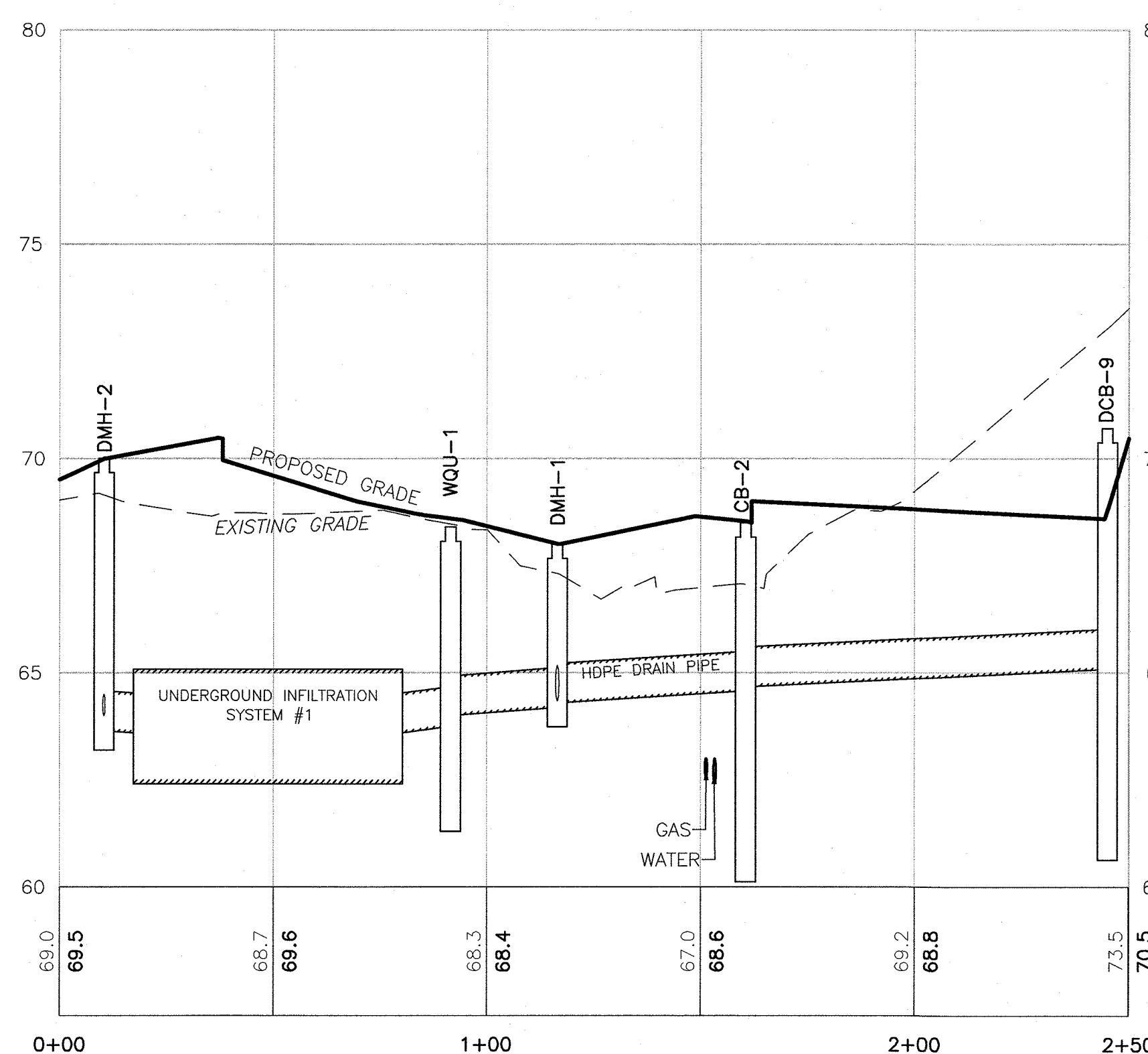
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DRAINAGE 02 PROFILE



DRAINAGE 03 PROFILE



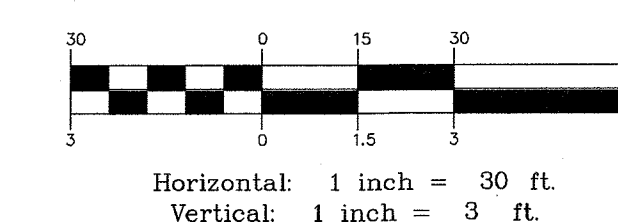
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DATE

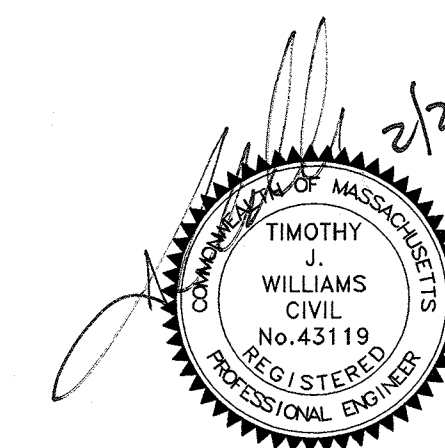
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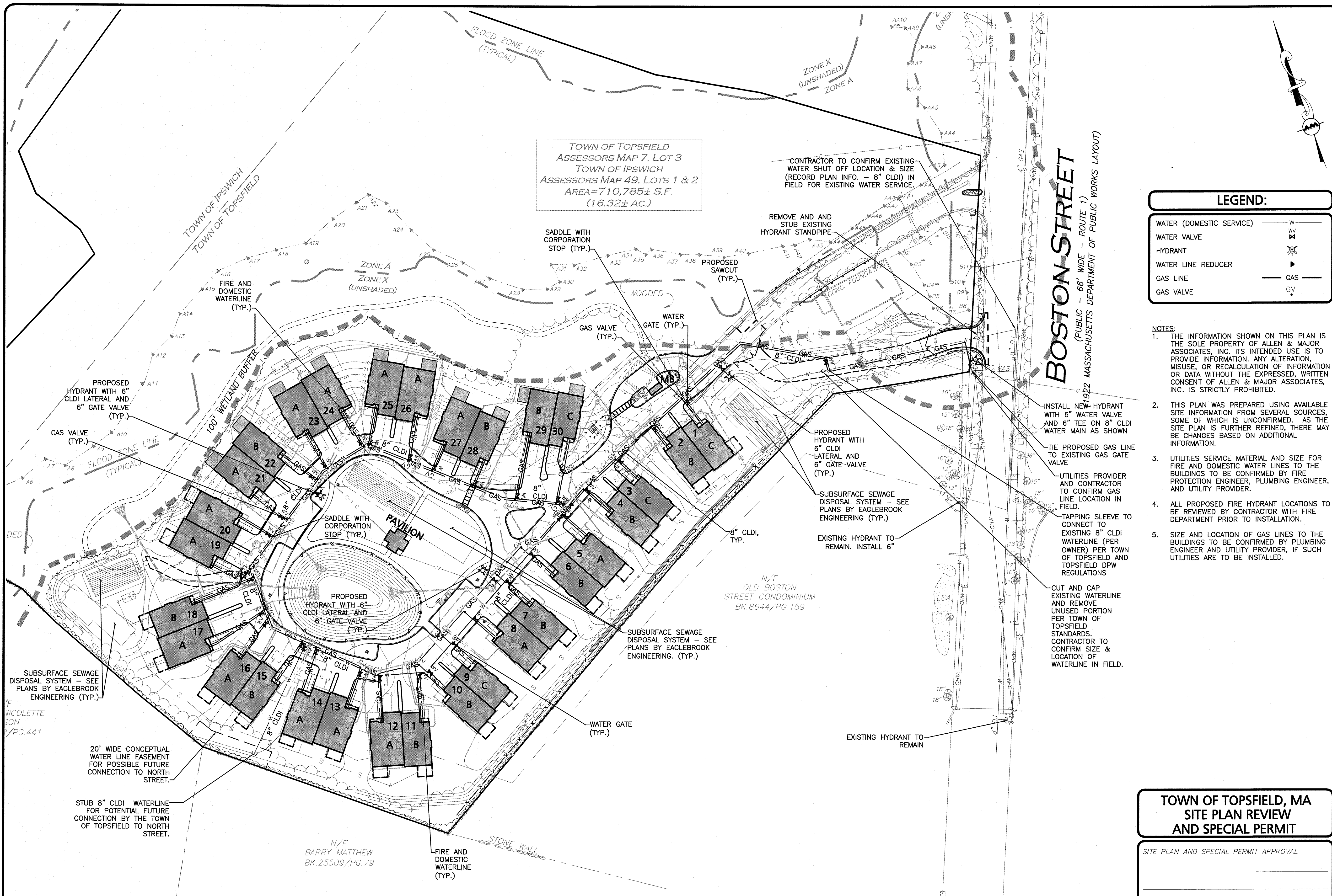
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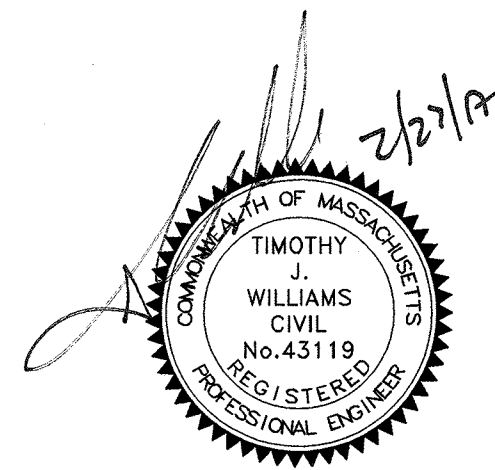
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LEGEND:	
WATER (DOMESTIC SERVICE)	W
WATER VALVE	WV
HYDRANT	H
WATER LINE REDUCER	WLR
GAS LINE	G
GAS VALVE	GV

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 3. UTILITIES SERVICE MATERIAL AND SIZE FOR FIRE AND DOMESTIC WATER LINES TO THE BUILDINGS TO BE CONFIRMED BY FIRE PROTECTION ENGINEER, PLUMBING ENGINEER, AND UTILITY PROVIDER.
 4. ALL PROPOSED FIRE HYDRANT LOCATIONS TO BE REVIEWED BY CONTRACTOR WITH FIRE DEPARTMENT PRIOR TO INSTALLATION.
 5. SIZE AND LOCATION OF GAS LINES TO THE BUILDINGS TO BE CONFIRMED BY PLUMBING ENGINEER AND UTILITY PROVIDER, IF SUCH UTILITIES ARE TO BE INSTALLED.



PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
2	2-27-2017	REVISIONS PER TOWN COMMENTS
1	1-17-2017	REVISED PER PEER REVIEW & TOWN COMMENTS

APPLICANT/OWNER:
SARKIS DEVELOPMENT COMPANY
2 ELM SQUARE
ANDOVER, MA 01810

PROJECT:
RESIDENTIAL DEVELOPMENT
470 BOSTON STREET (ROUTE 1)
TOPSFIELD, MA

PROJECT NO.	2165-01A	DATE:	10-13-2016
SCALE:	1"=50'	DWG. NAME:	C-2165-01A
DESIGNED BY:	DMR	CHECKED BY:	RB



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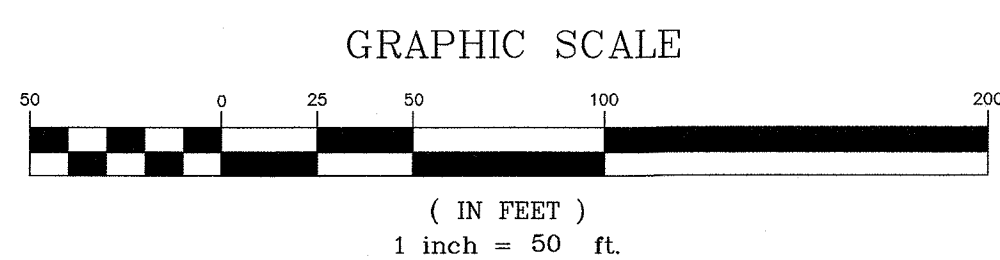
DRAWING TITLE:	SHEET NO.
WATER & GAS UTILITIES PLAN	C-5A

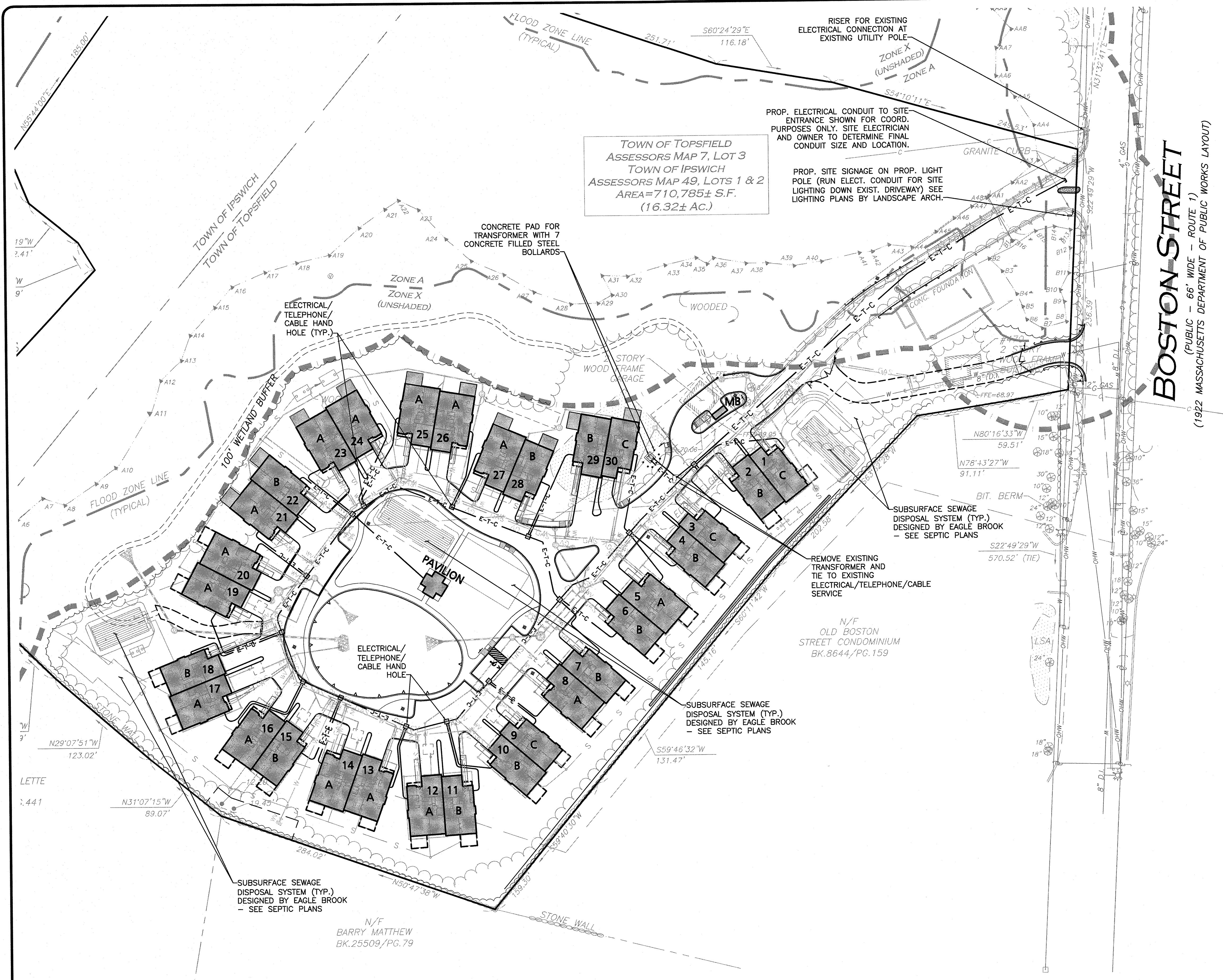
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SITE PLAN REVIEW
AND SPECIAL PERMIT**

SITE PLAN AND SPECIAL PERMIT APPROVAL

SIGNATURE	DATE





LEGEND:

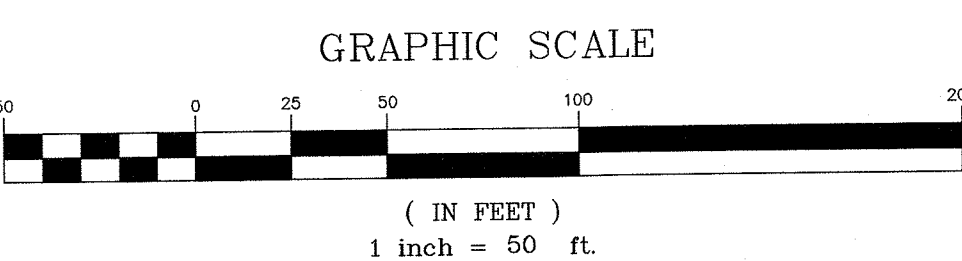
TRANSFORMER	— T —
OVER HEAD WIRE	— OHW —
UTILITY POLE	— U —
ELECTRIC MANHOLE/SPLICE BOX	— M —
SWITCHING STATION	— S —
HAND HOLE	— H —
ELEC/TELE/CABLE CONDUIT	— E-T-C —

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 3. TRANSFORMER FINAL LOCATION AND SIZE TO BE DETERMINED BY ELECTRICAL SERVICE PROVIDER.
 4. MOUNTED LIGHTS AND LIGHT POLE LOCATIONS SHOWN FOR COORDINATION PURPOSES ONLY. FINAL CONDUIT LOCATIONS AND SIZES TO BE DETERMINED BY LIGHTING CONSULTANT AND LANDSCAPE ARCHITECT.
 5. SIGN AT FRONT ENTRANCE IS TO BE LIT. CONDUIT SIZE AND LOCATION TO BE DETERMINED BY LIGHTING CONSULTANT AND LANDSCAPE ARCHITECT.
 6. LIGHT CONTROLS AND ALL REQUIRED ELECTRICAL EQUIPMENT TO BE COORDINATED BY LIGHTING CONSULTANT AND LANDSCAPE ARCHITECT.
 7. SEE LANDSCAPE ARCHITECT'S PLANS FOR ALL SITE LIGHTING, INCLUDING LIGHT MODELS, LIGHT POLE BASE DETAIL, AND PROPOSED ELECTRICAL ROUTING PLAN.

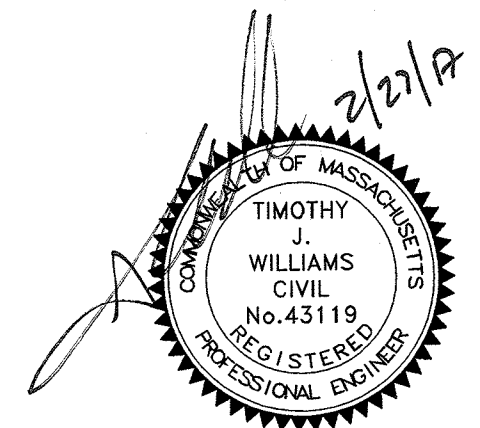
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DRAWING TITLE:	SHEET No.
SITE ELECTRICAL PLAN	C-5B

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BOSTON STREET
(PUBLIC - 66' WIDE - ROUTE 1)
(1922 MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS LAYOUT)

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SNOW STORAGE AREA

NOTES:

1. SNOW WILL BE STOCKPILED ON SITE UNTIL THERE IS NOT ENOUGH SPACE. AS NECESSARY, THE SNOW WILL BE REMOVED AND DISPOSED OF OFF-SITE. IT WILL BE THE RESPONSIBILITY OF THE SNOW REMOVAL CONTRACTOR TO PROPERLY DISPOSE OF TRANSPORTED SNOW ACCORDING TO MASSACHUSETTS DEP. BUREAU OF RESOURCE PROTECTION - SNOW DISPOSAL GUIDELINE #BRPG01-01, GOVERNING THE PROPER DISPOSAL OF SNOW. IT WILL BE THE RESPONSIBILITY OF THE SNOW REMOVAL CONTRACTOR TO FOLLOW THESE GUIDELINES AND ALL APPLICABLE LAWS AND REGULATIONS.
2. APPROXIMATE TOTAL SNOW STORAGE AREA ON SITE: 17,500± S.F.

3,800± S.F.
SNOW STORAGE

6,200± S.F.
SNOW STORAGE

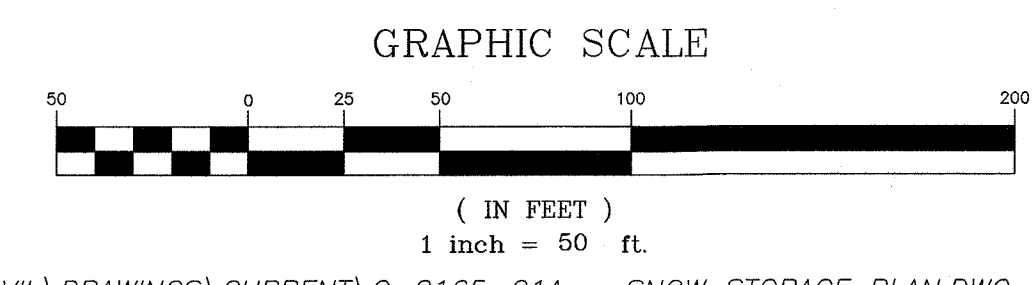
4,500± S.F.
SNOW STORAGE

3,000± S.F.
SNOW STORAGE

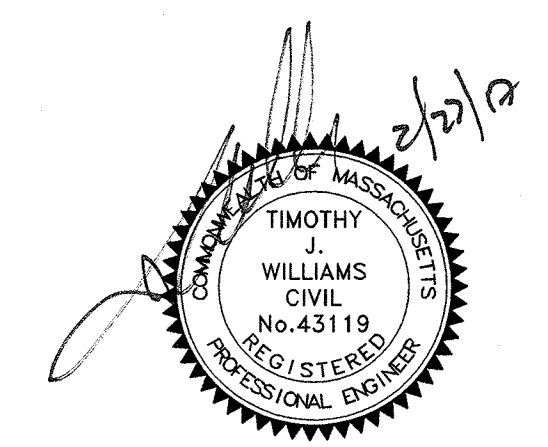
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ANDOVER, MA 01810**

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TOPSFIELD, MA**

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DESIGNED BY:	DMR	CHECKED BY:	RB

PREPARED BY:

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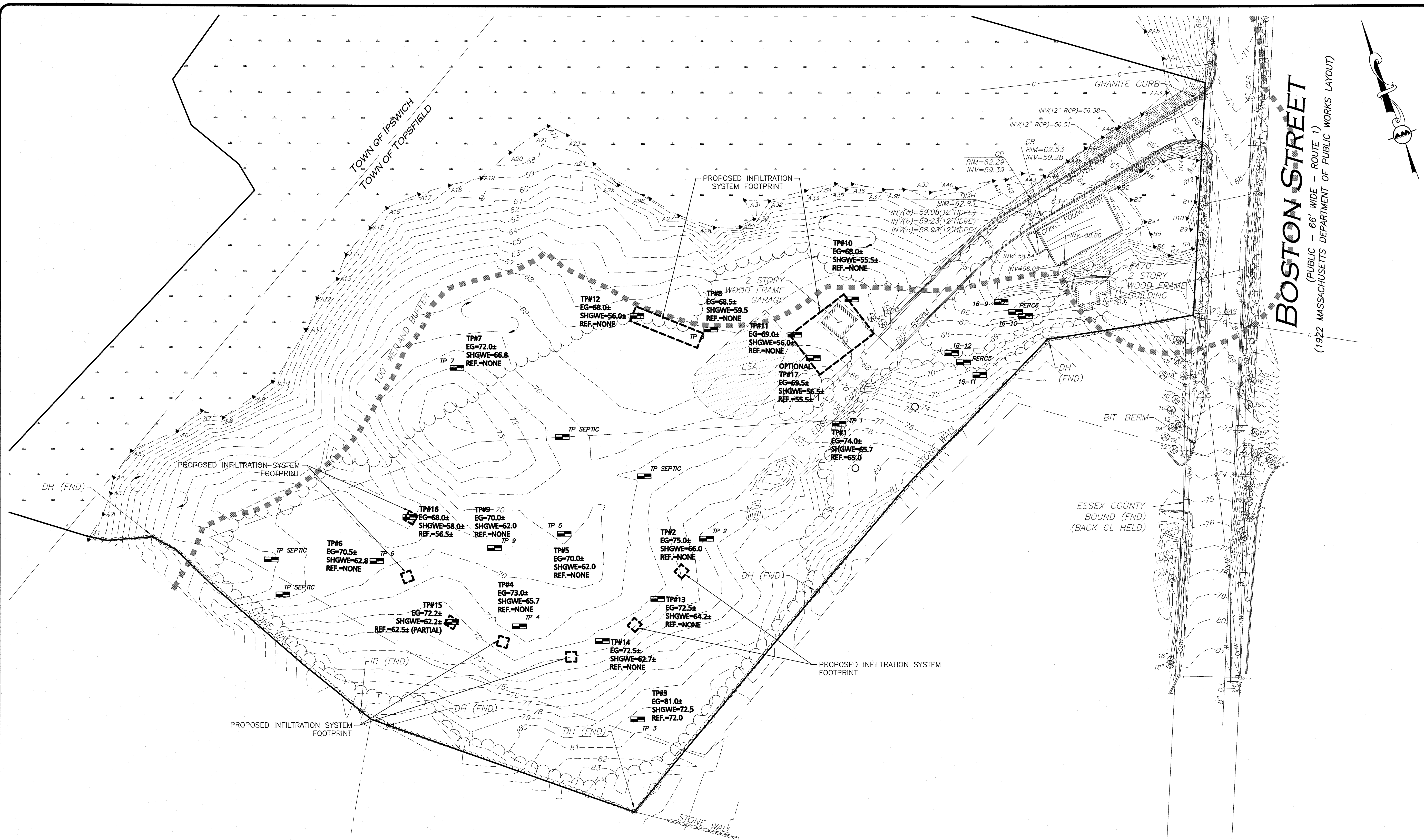
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DRAWING TITLE:	SHEET No.
SNOW STORAGE PLAN	C-7

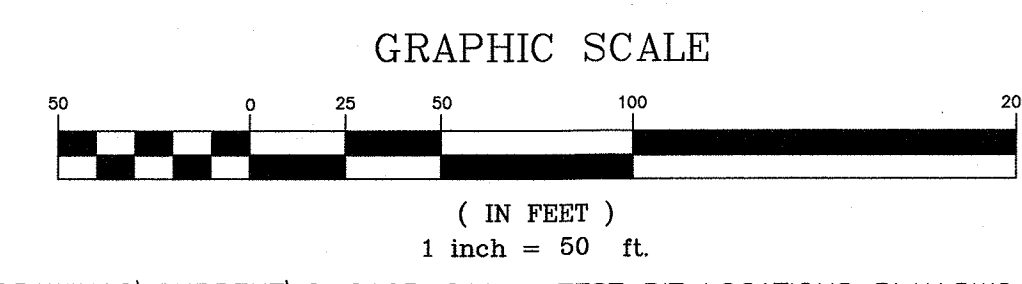
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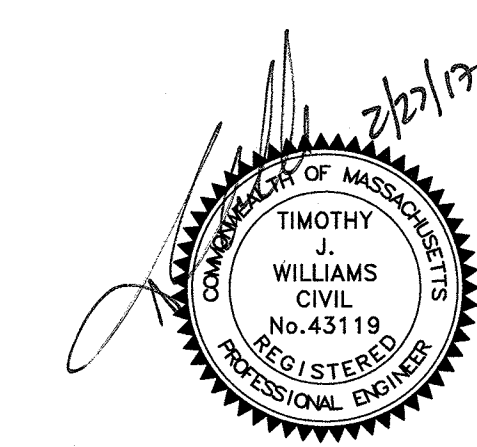
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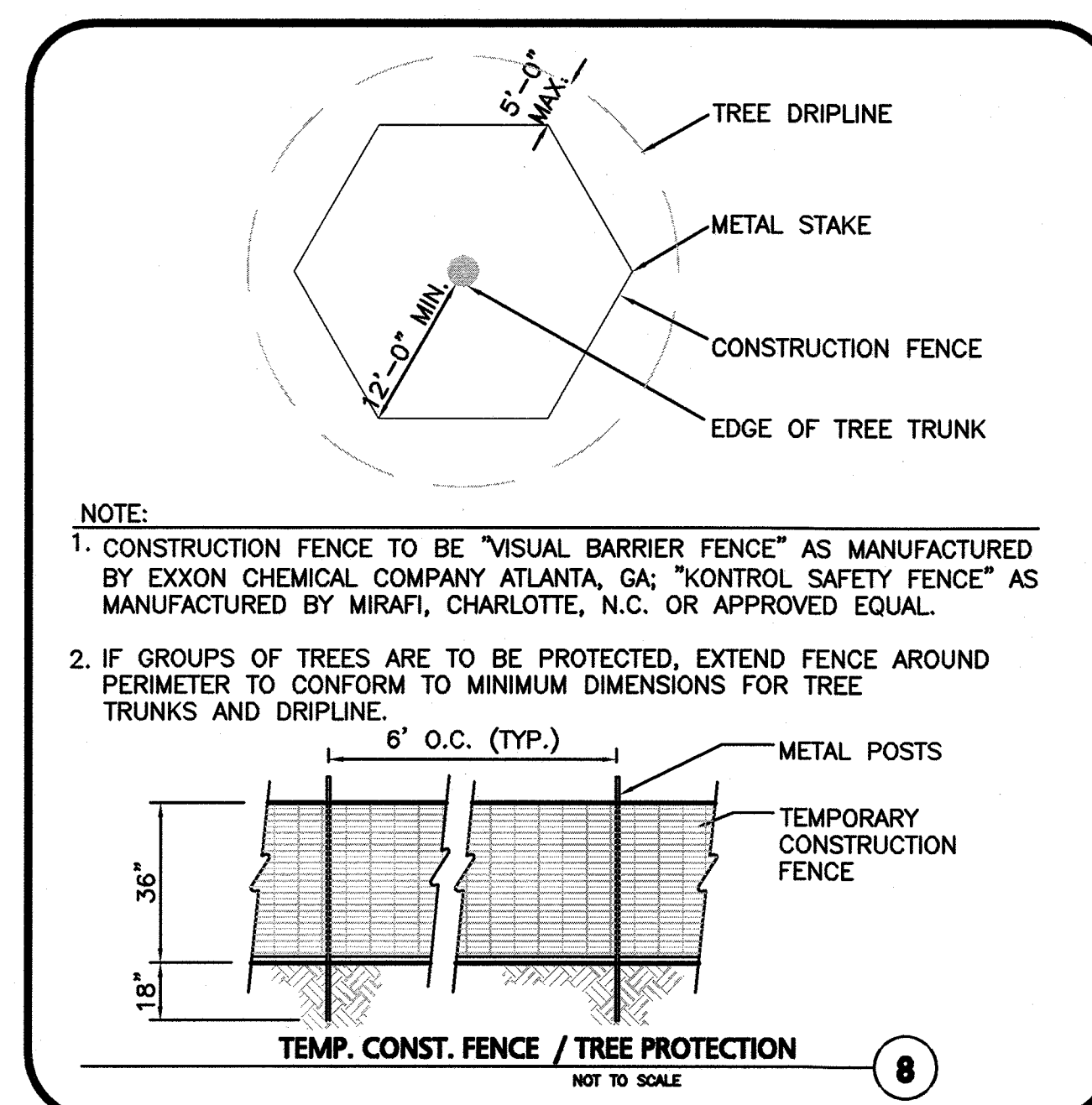
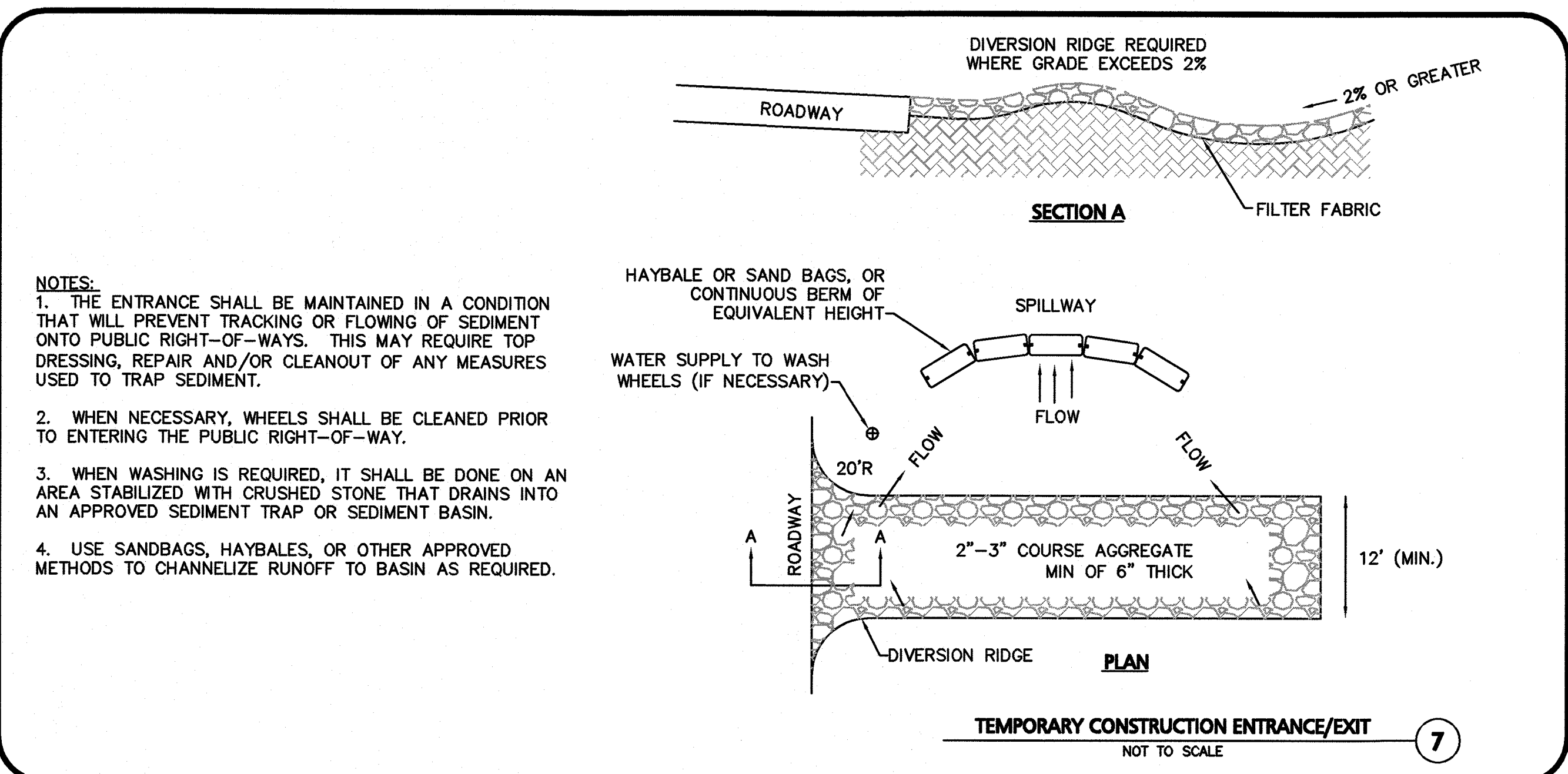
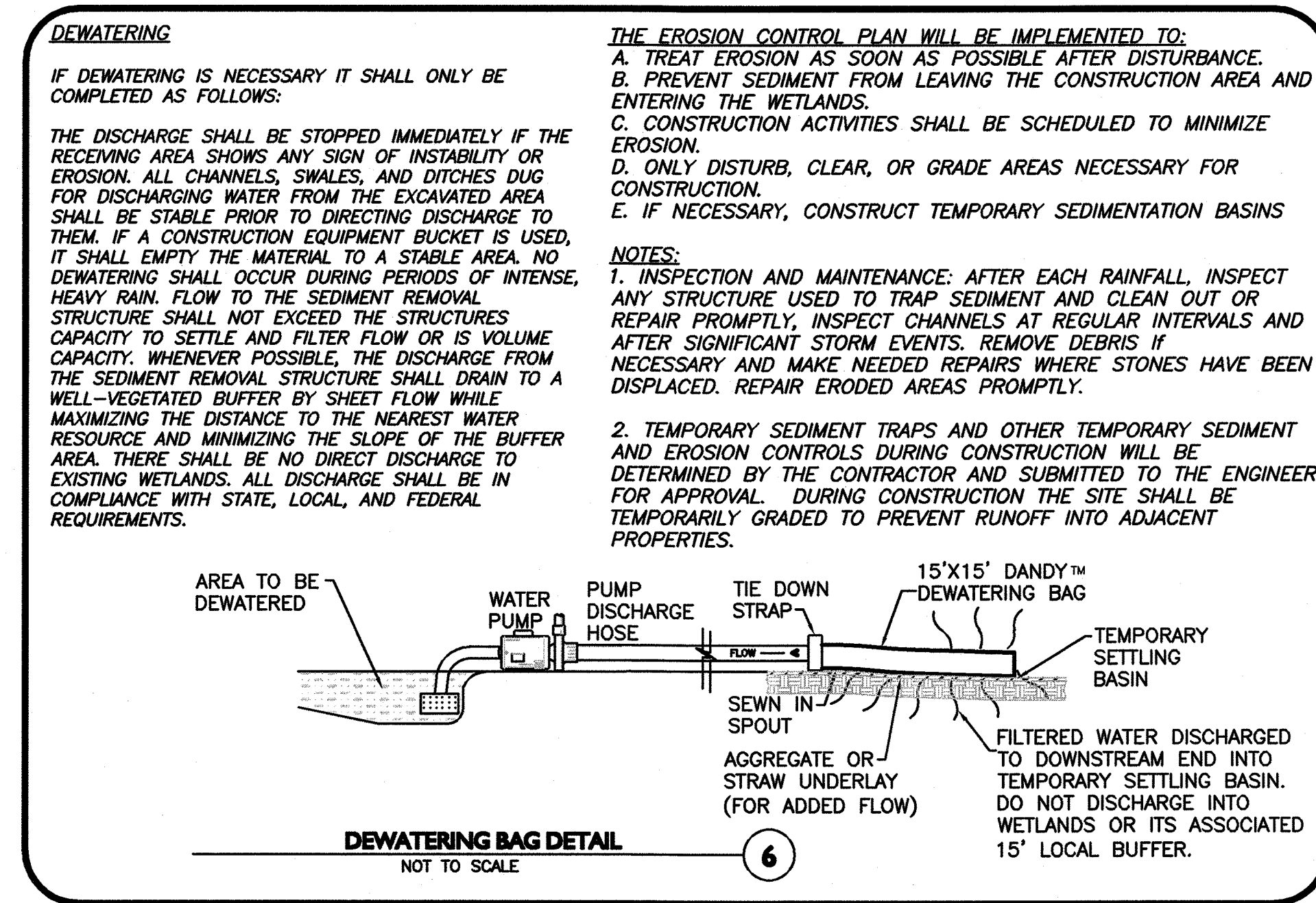
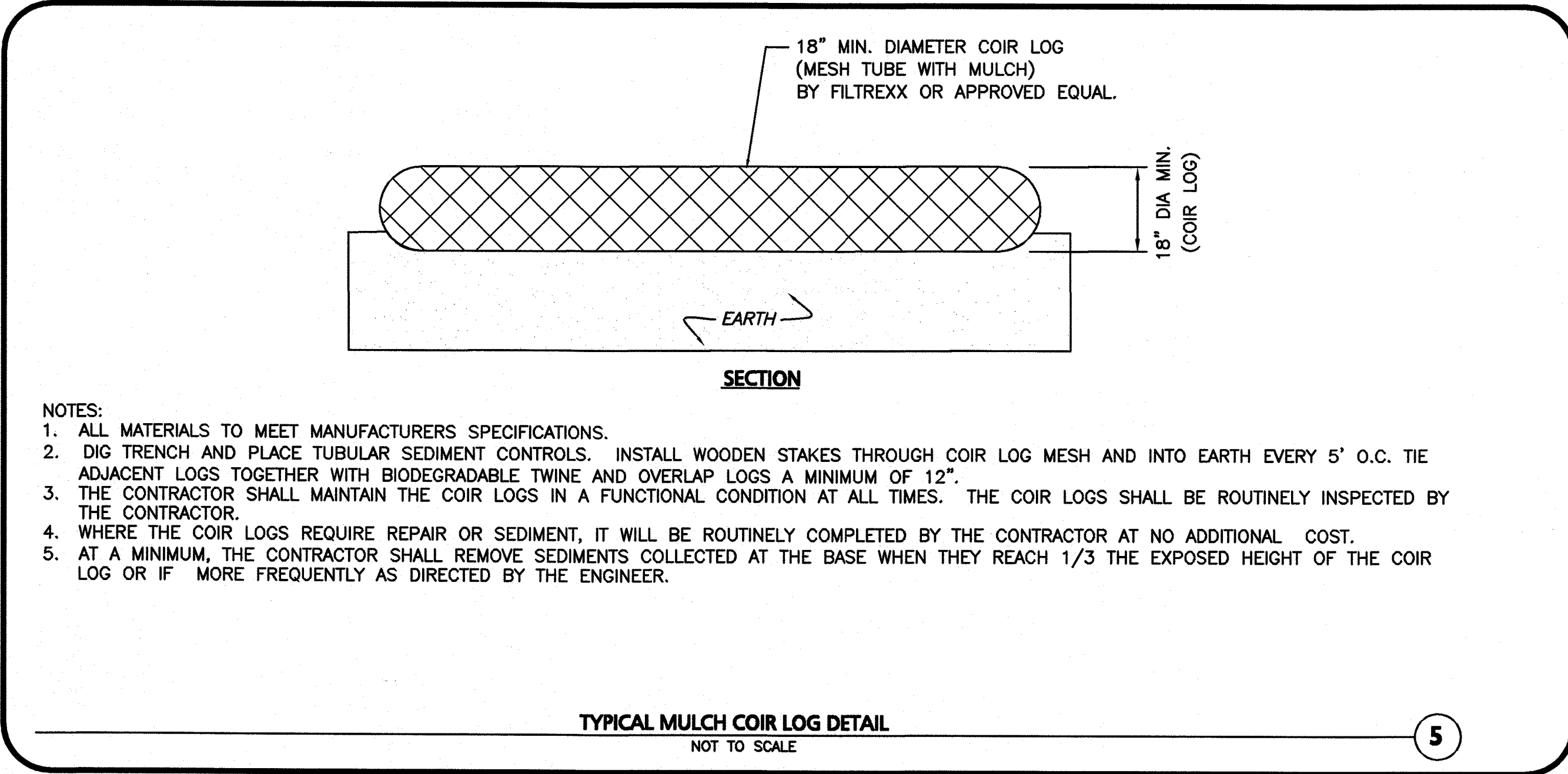
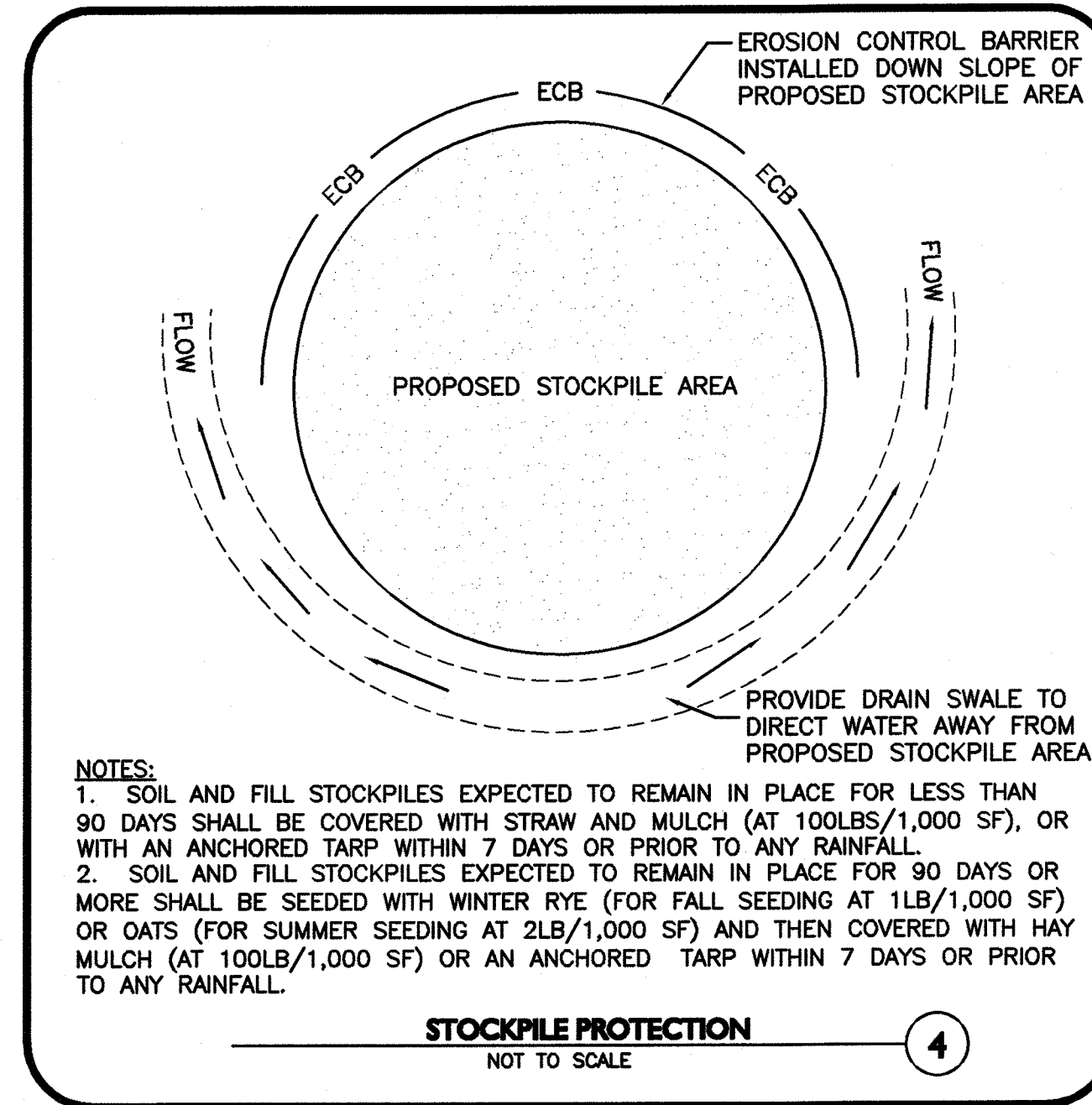
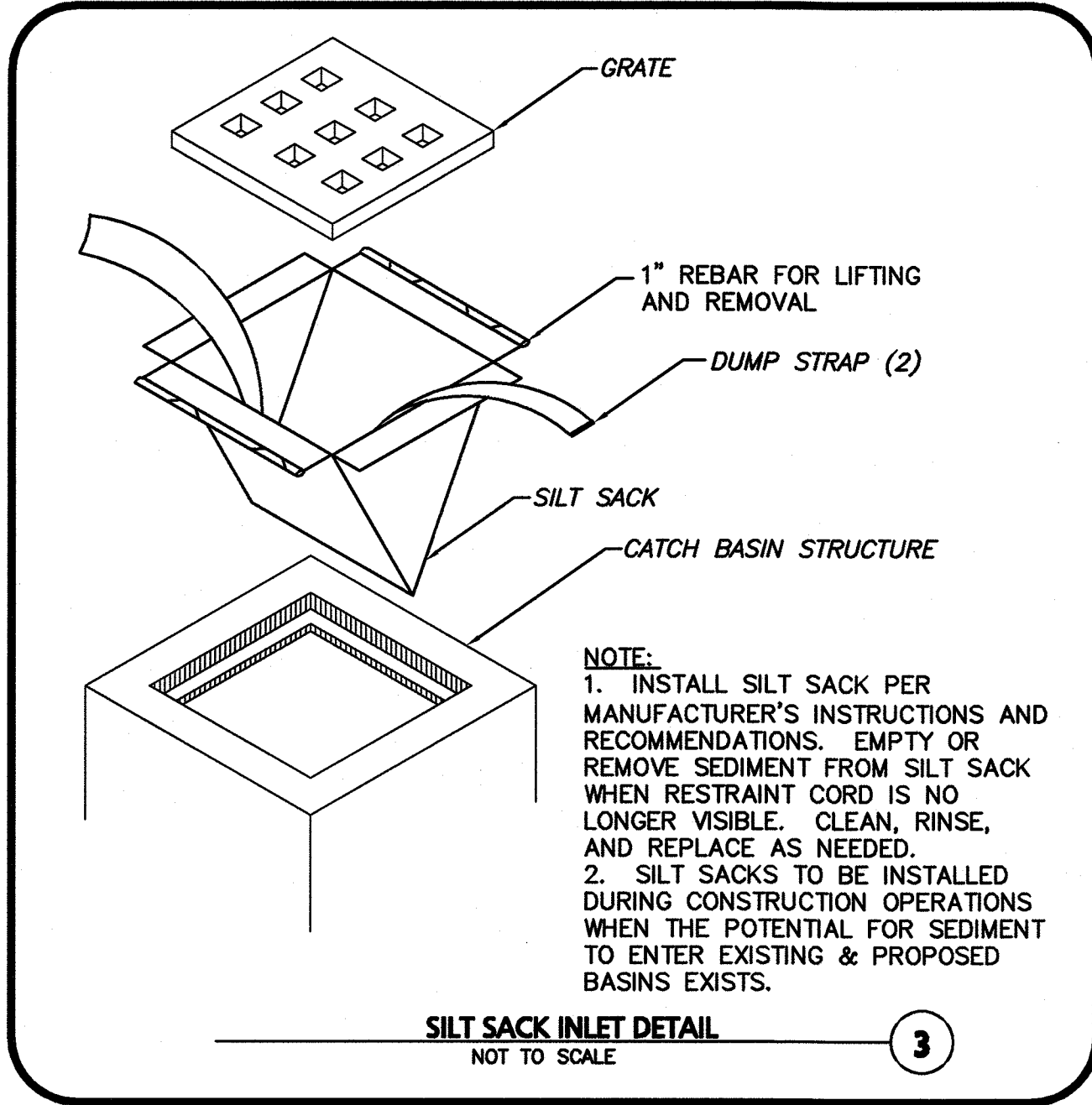
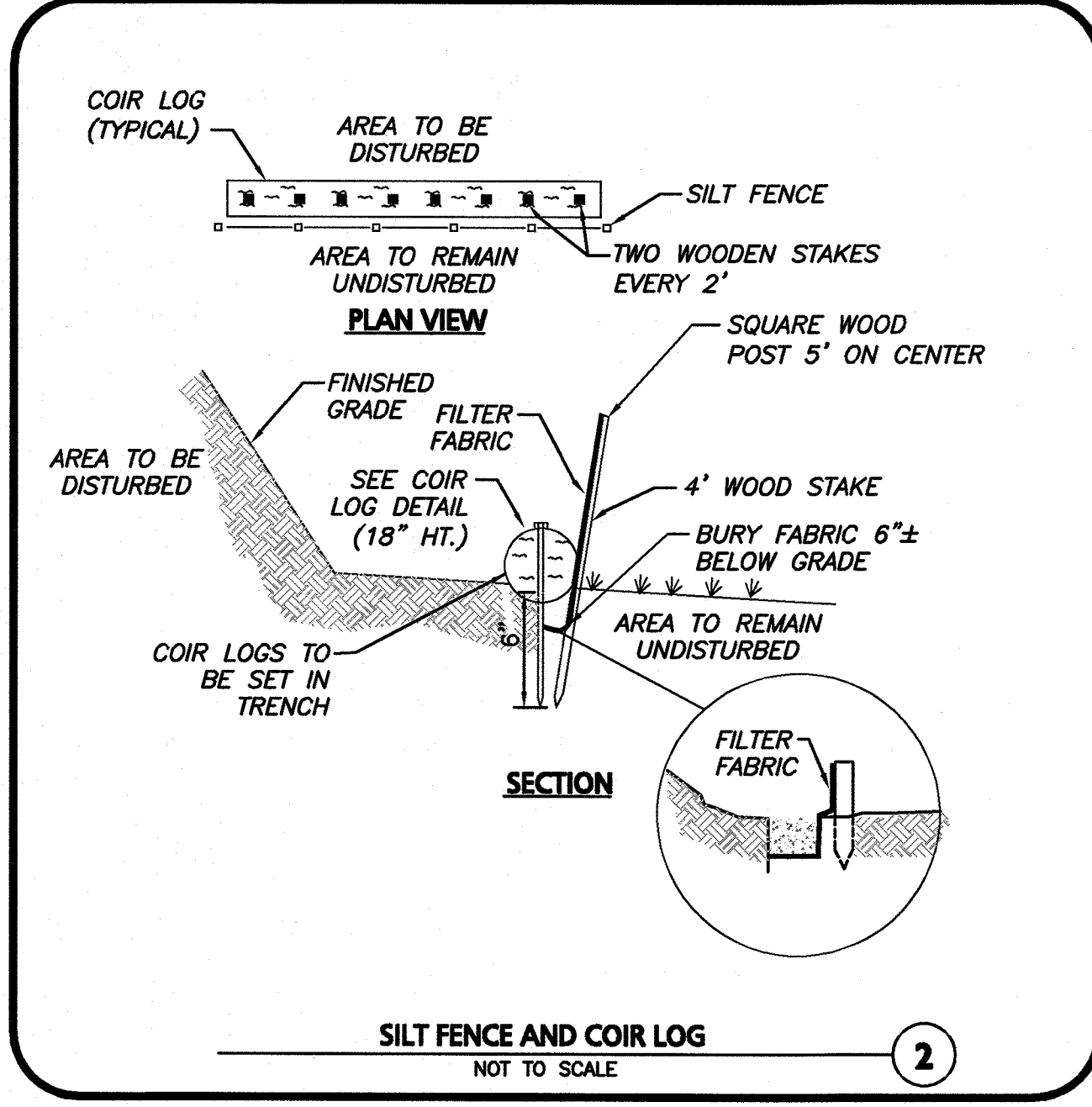
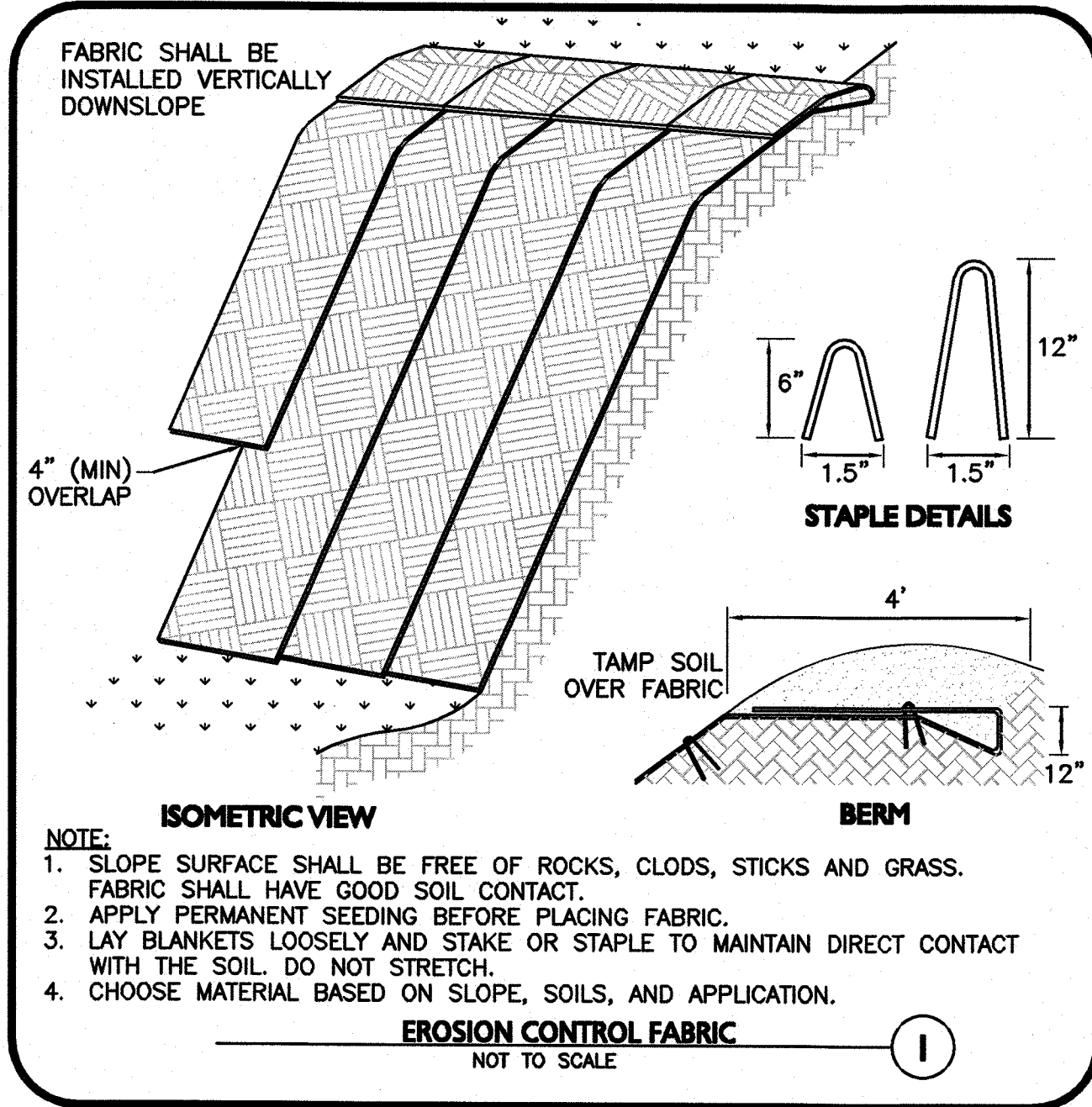
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DRAWING TITLE:	SHEET No.
TEST PITS PLAN	TTP-1

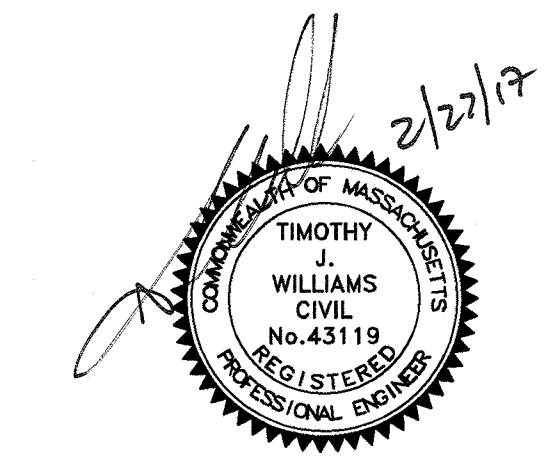
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TOWN OF TOPSFIELD, MA SITE PLAN REVIEW AND SPECIAL PERMIT

SITE PLAN AND SPECIAL PERMIT APPROVAL

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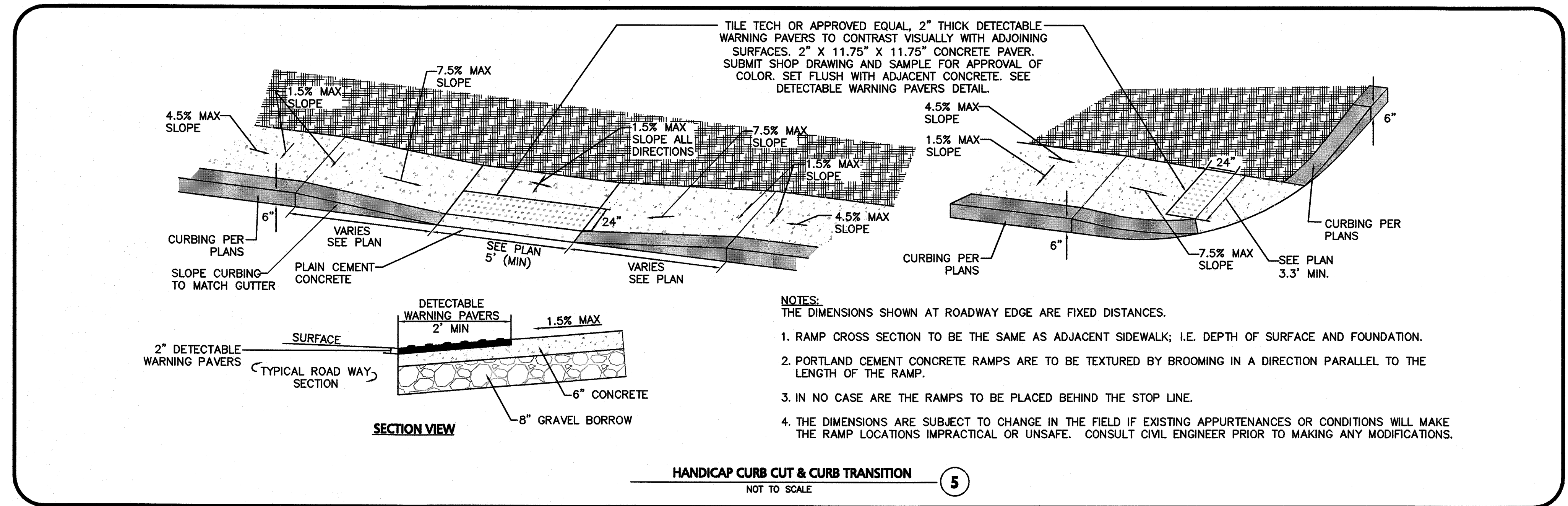
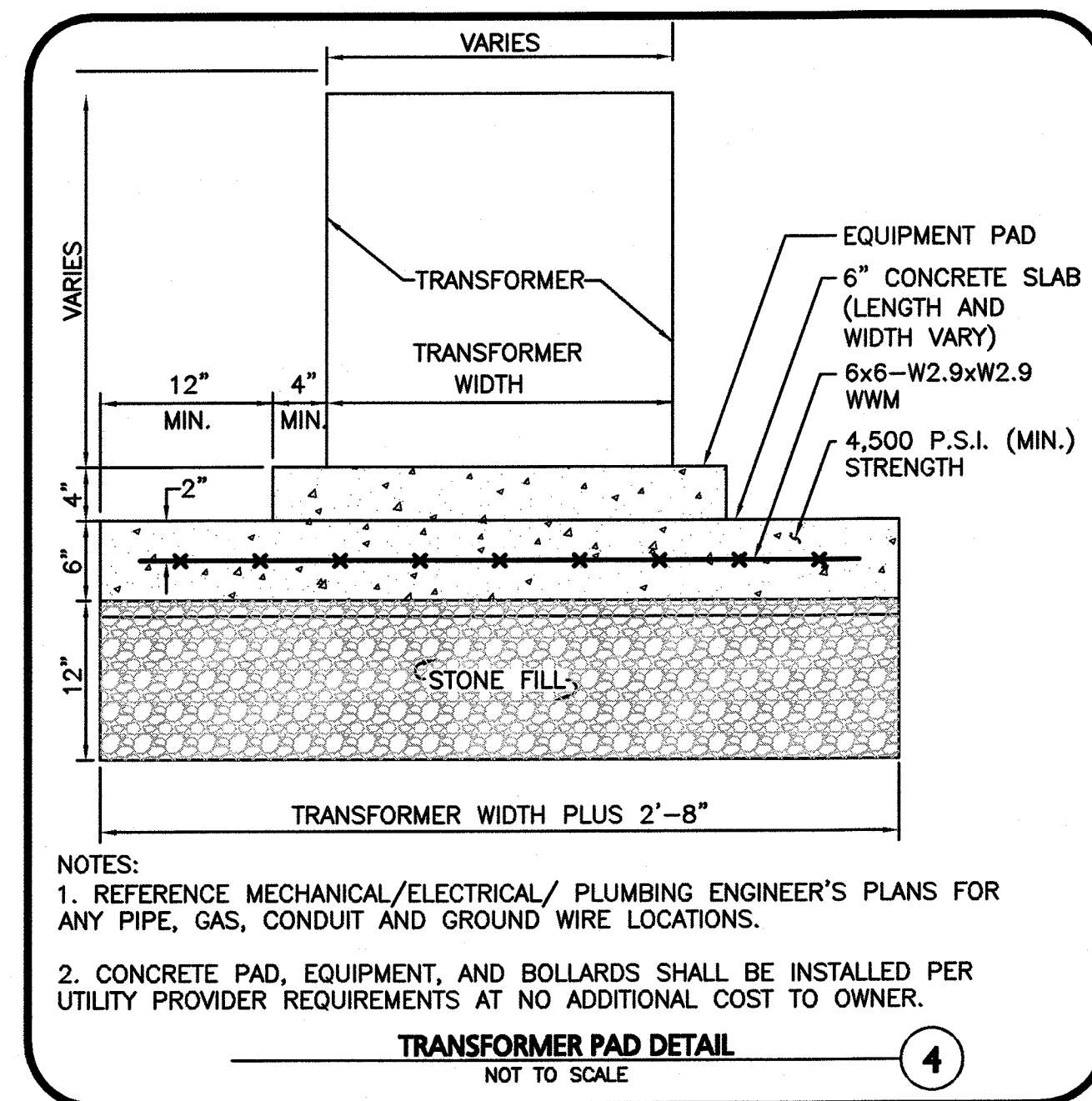
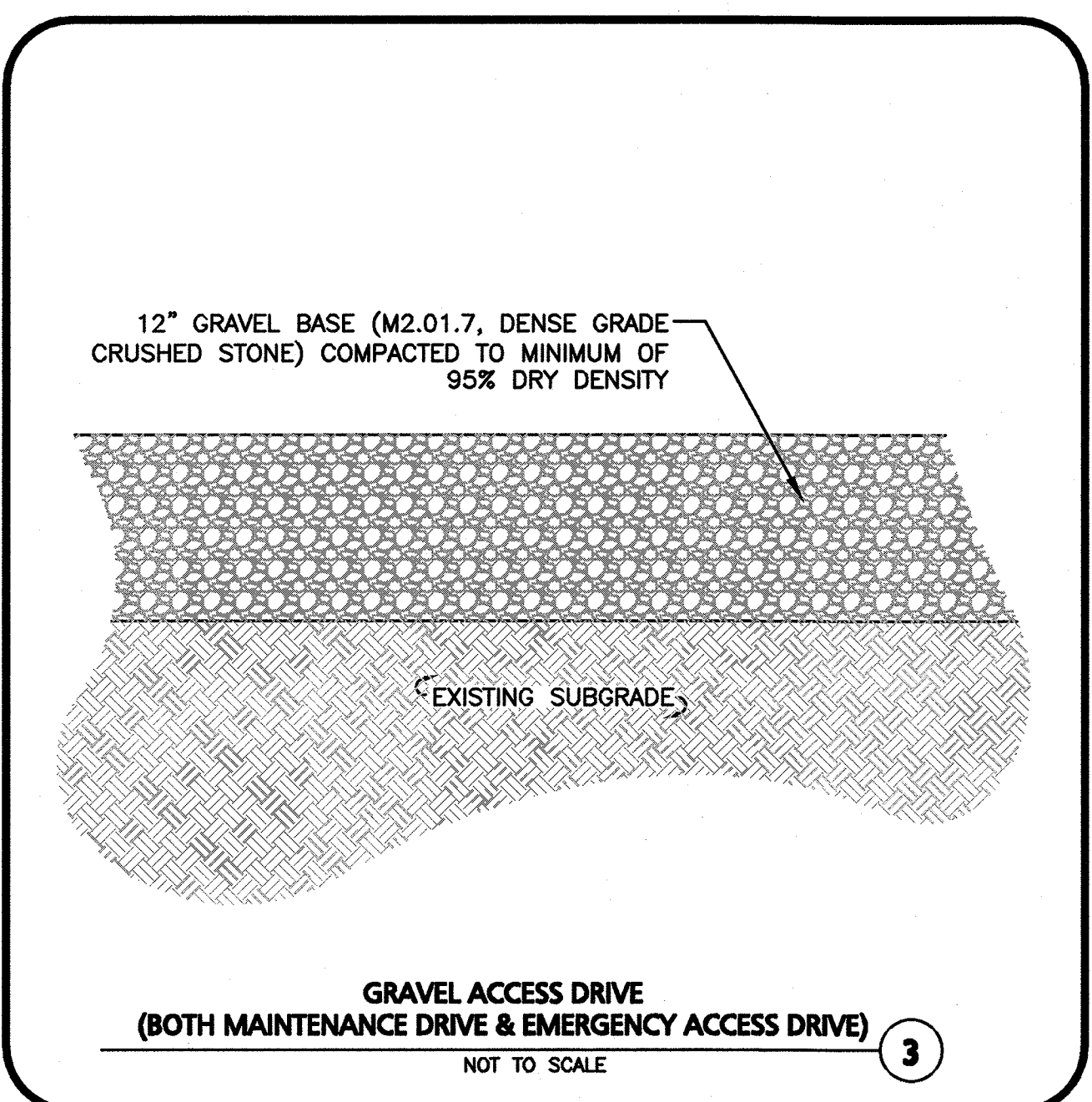
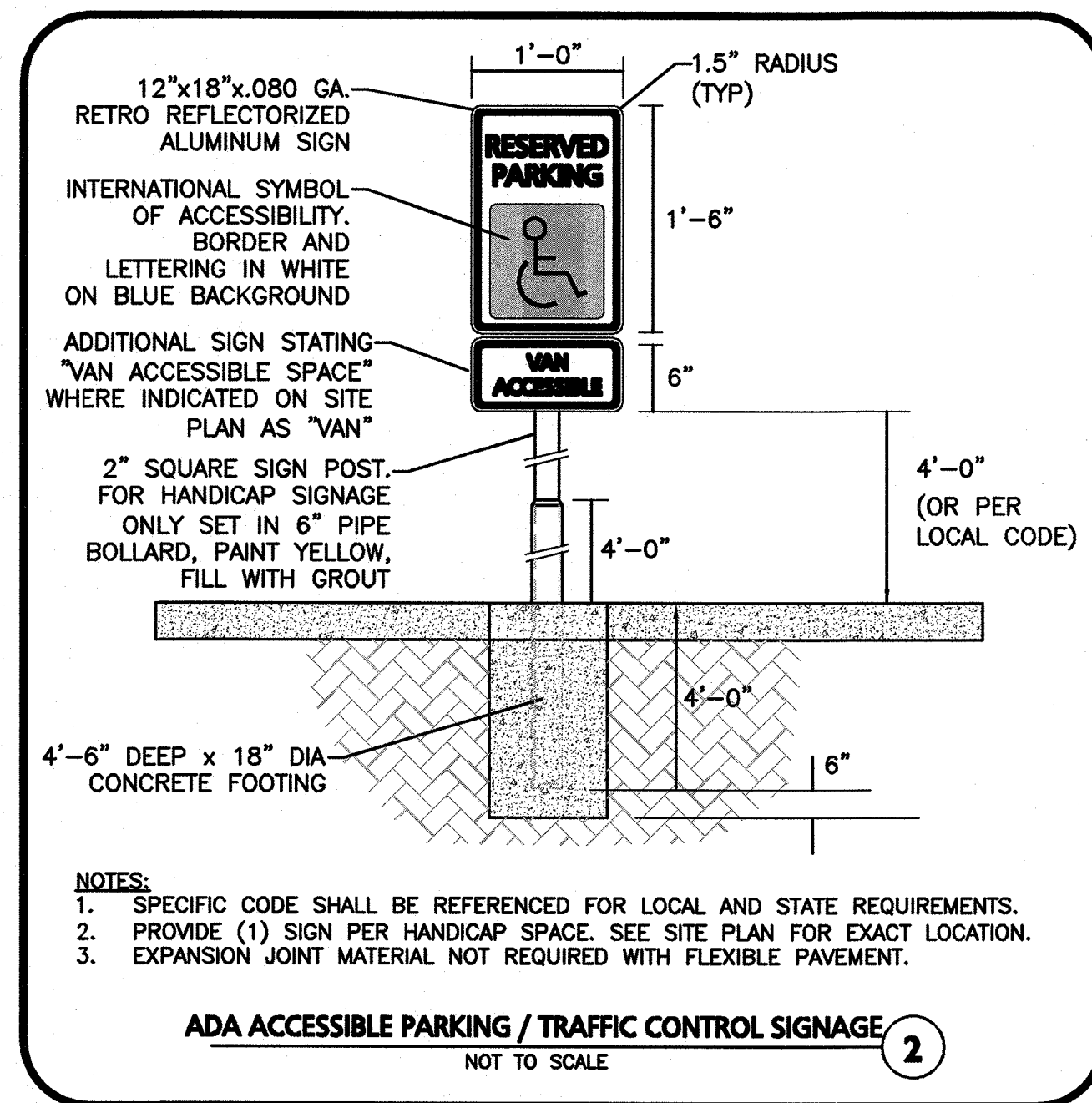
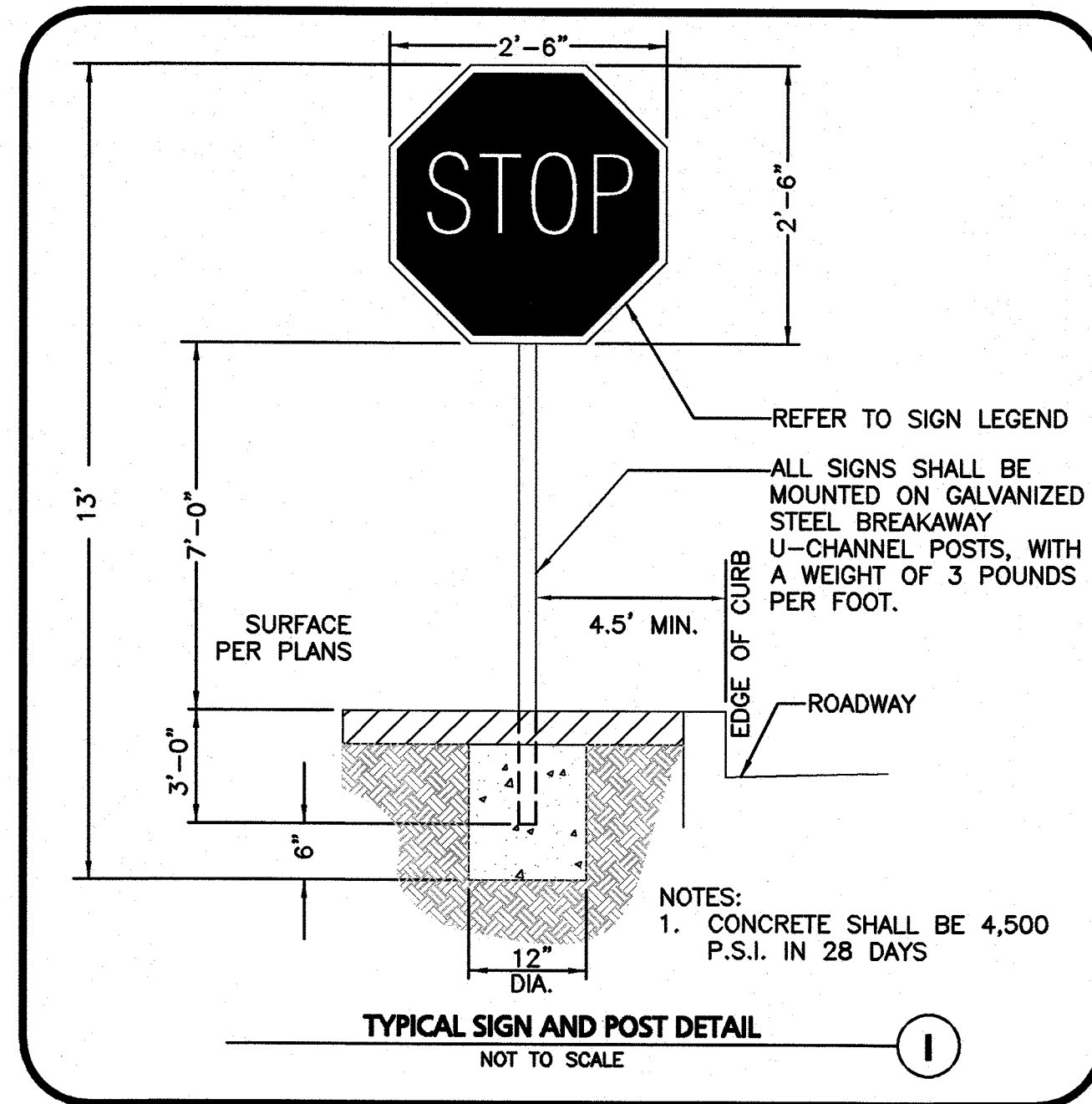
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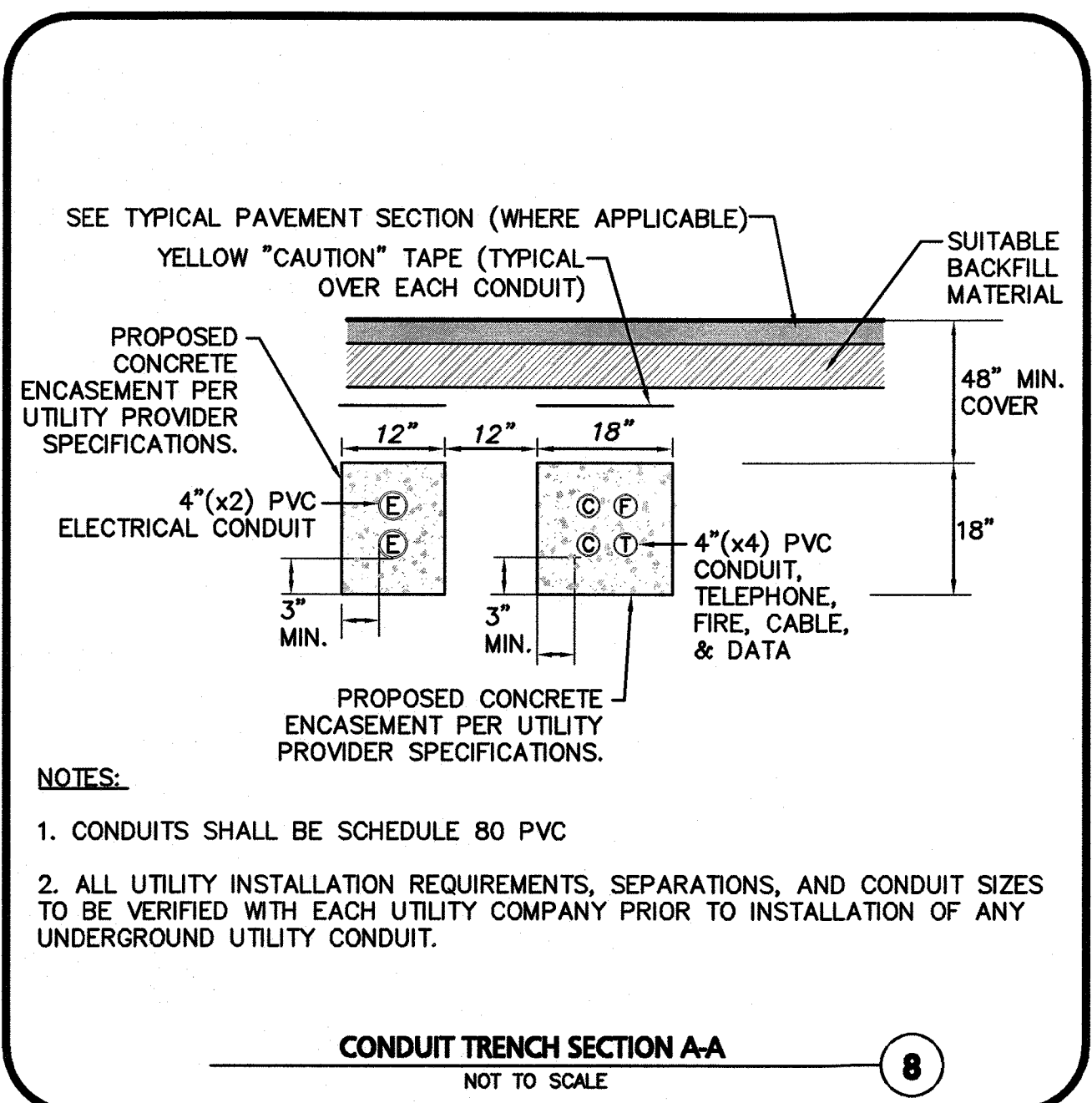
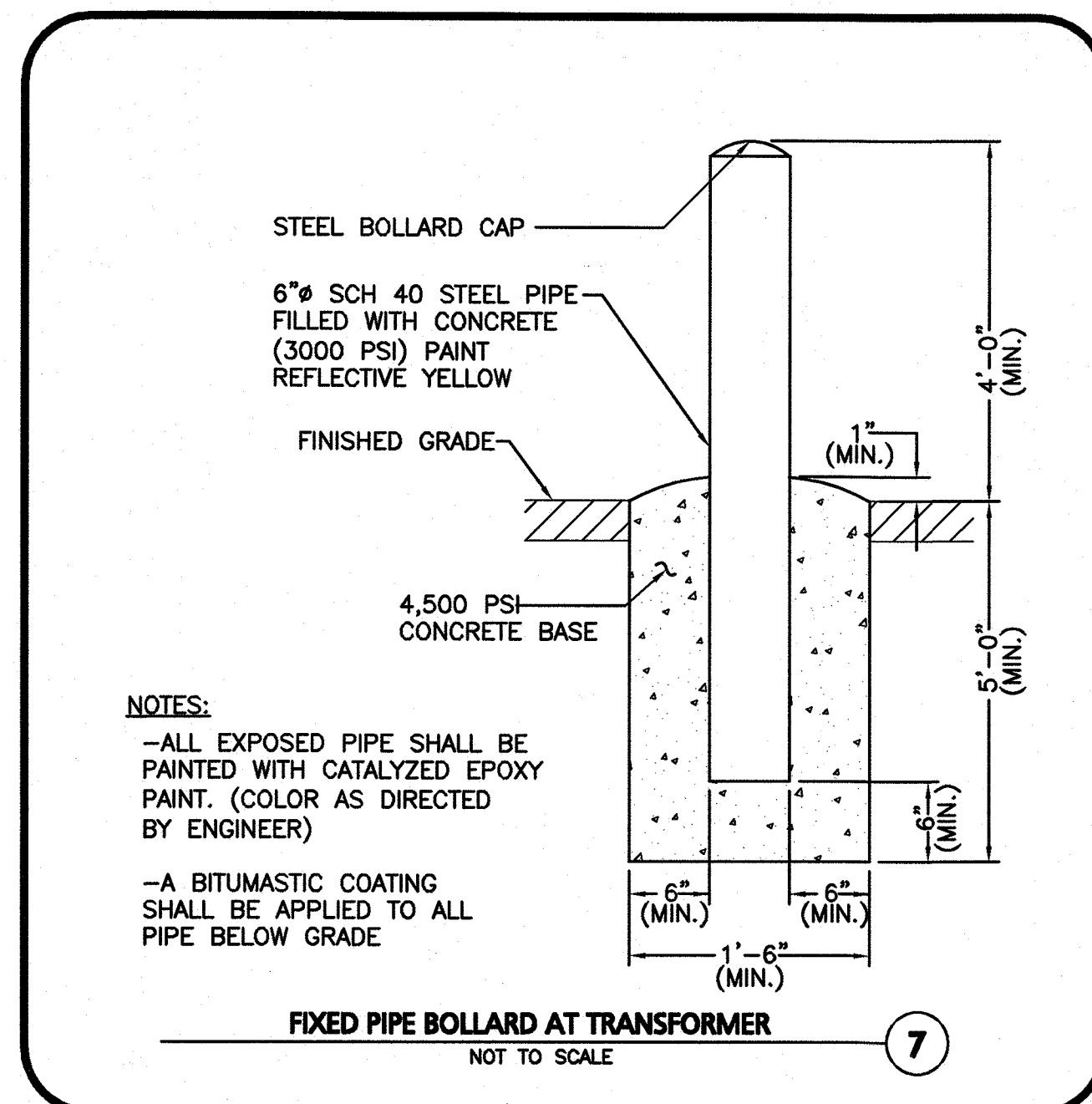
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DESC.	SIGN	SIZE	MOUNTING HEIGHT	DESCRIPTION	REFLEC-TORIZED
R1-1		30"x30"	7' - 0"	WHITE ON RED	YES
R7-8		12"x20"	7' - 0"	WHITE ON BLUE	YES
R7-8 (MODIFIED)		12"x20"	7' - 0"	WHITE ON BLUE	YES
R5-1		30"x30"	7' - 0"	RED ON WHITE	YES
R6-1		36" x 12"	7' - 0"	BLACK ON WHITE	YES
E		24" x 36"	7' - 0"	BLACK ON WHITE	YES

SIGN TABLE
NOT TO SCALE

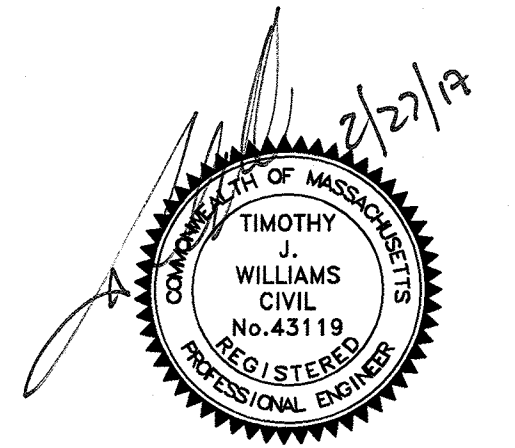
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**TOWN OF TOPSFIELD, MA
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AND SPECIAL PERMIT**

SITE PLAN AND SPECIAL PERMIT APPROVAL

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PREPARED BY:



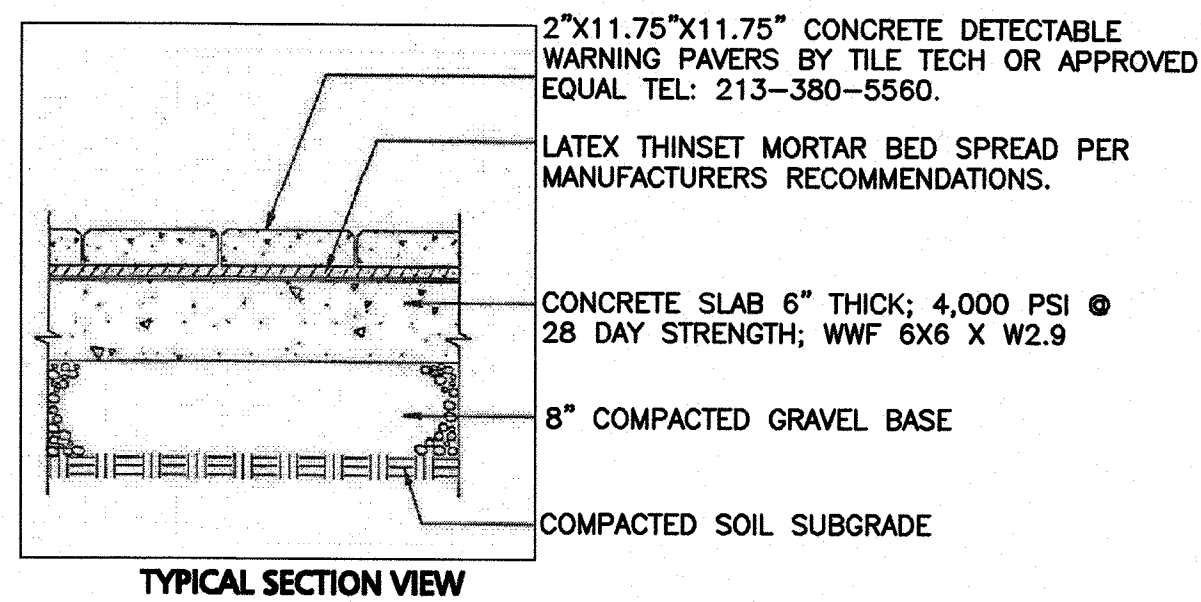
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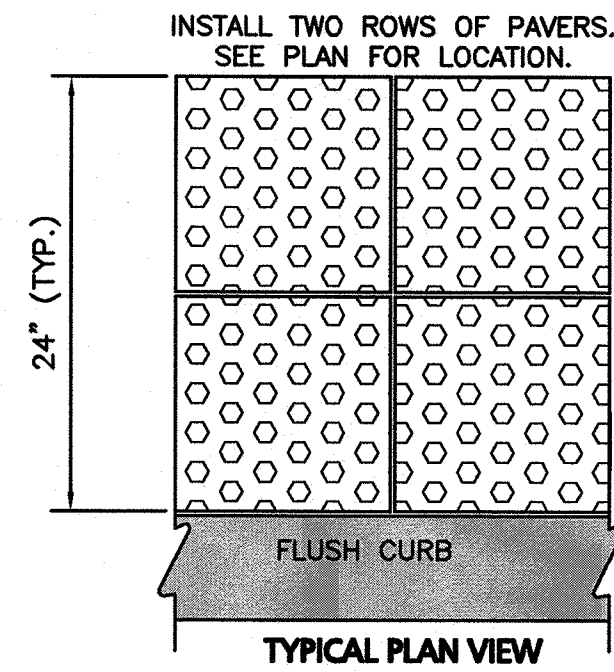
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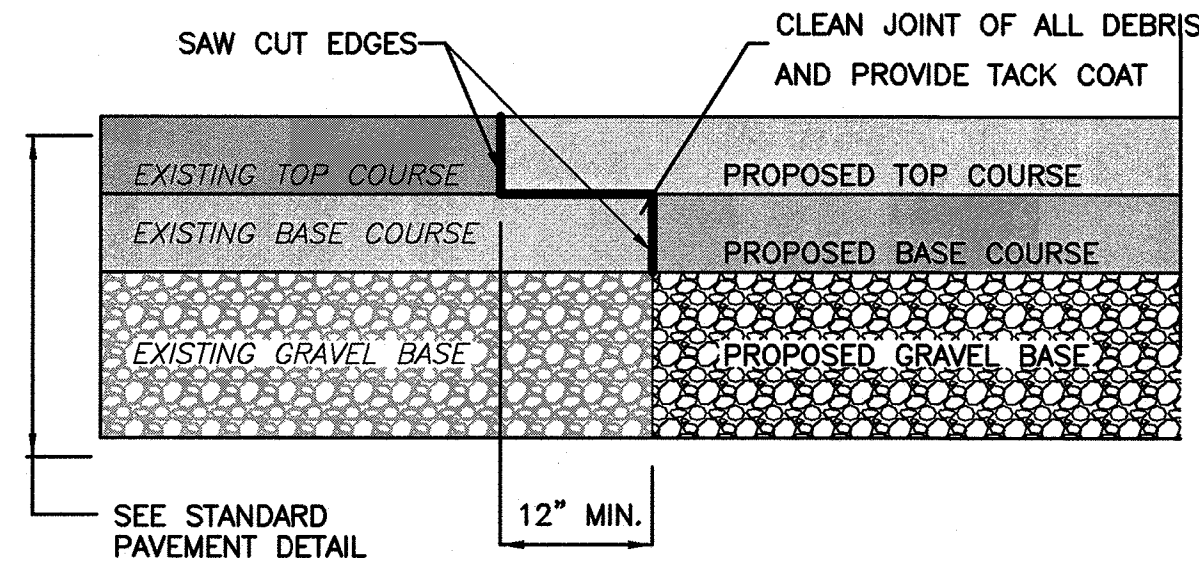


- NOTES:
1. CONCRETE SLAB SHALL BE SLOPED 1.5% CROSS PITCH MAX TO PROVIDE COMPLETE SURFACE DRAINAGE. SEE GRADING PLAN & HANDICAP CURB CUT / CURB TRANSITION DETAIL.
 2. SLAB TO HAVE STEEL TROWEL AND FINE BROOM FINISH. DO NOT USE CURING COMPOUNDS. CONTRACTOR TO ADD EXPANSION JOINTS AND PREMOLDED FILLER AT EDGE OF TILES AND ADJACENT MATERIAL.
 3. SET TILES FLUSH WITH ADJACENT MATERIALS.
 4. SUBMIT SHOP DRAWINGS OF TILES AND SAMPLE FOR APPROVAL OF COLOR TO OWNER / ARCH.
 5. INSTALL DETECTABLE WARNING PAVERS PER MANUFACTURER'S RECOMMENDATIONS.

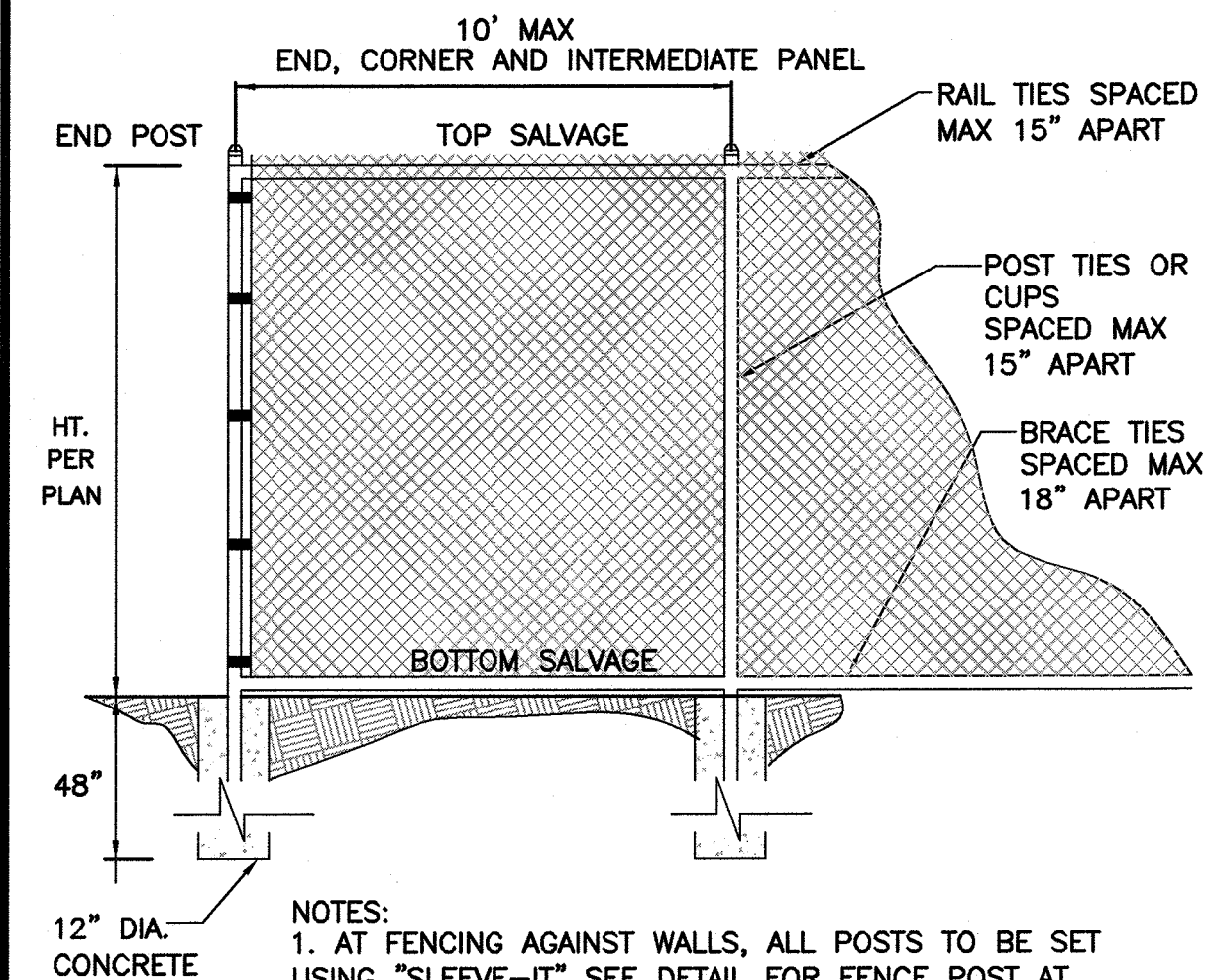


DETECTABLE WARNING PAVERS
NOT TO SCALE

NOTE:
TACK COAT - PROVIDE EMULSIFIED ASPHALT WHICH CONFORMS TO THE REQUIREMENTS OF THE STATE SPECIFICATIONS, DILUTED WITH ONE PART WATER TO ONE PART ASPHALT FOLLOWING AASHTO M140/ASTM D997, OR AASHTO M208/ASTM D2397, SS-1H, CSS-1, OR CSS-1H.



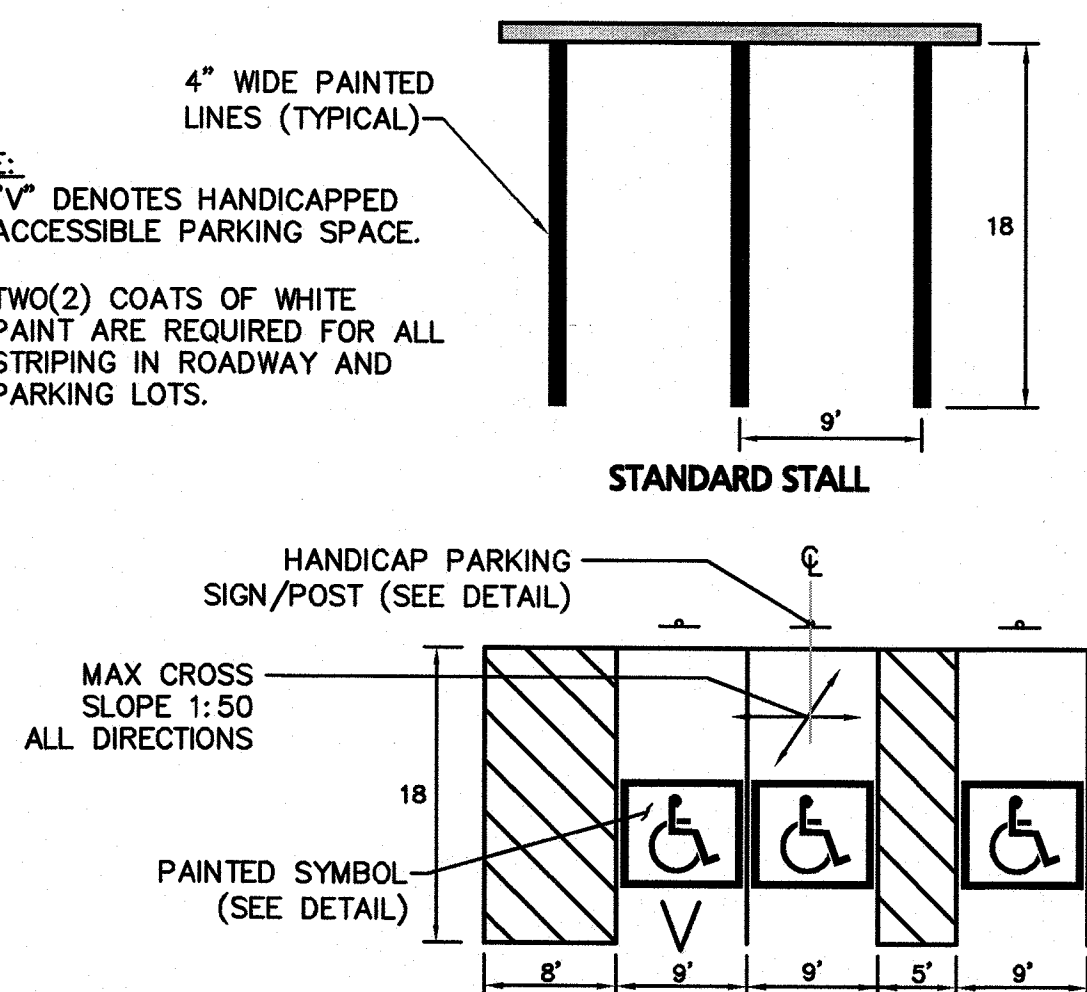
TYPICAL PAVEMENT KEY CUT DETAIL
NOT TO SCALE



- NOTES:
1. AT FENCING AGAINST WALLS, ALL POSTS TO BE SET USING "SLEEVE-IT" SEE DETAIL FOR FENCE POST AT MODULAR BLOCK WALL.
 2. ALL FENCE MATERIALS TO BE BLACK VINYL COATED.

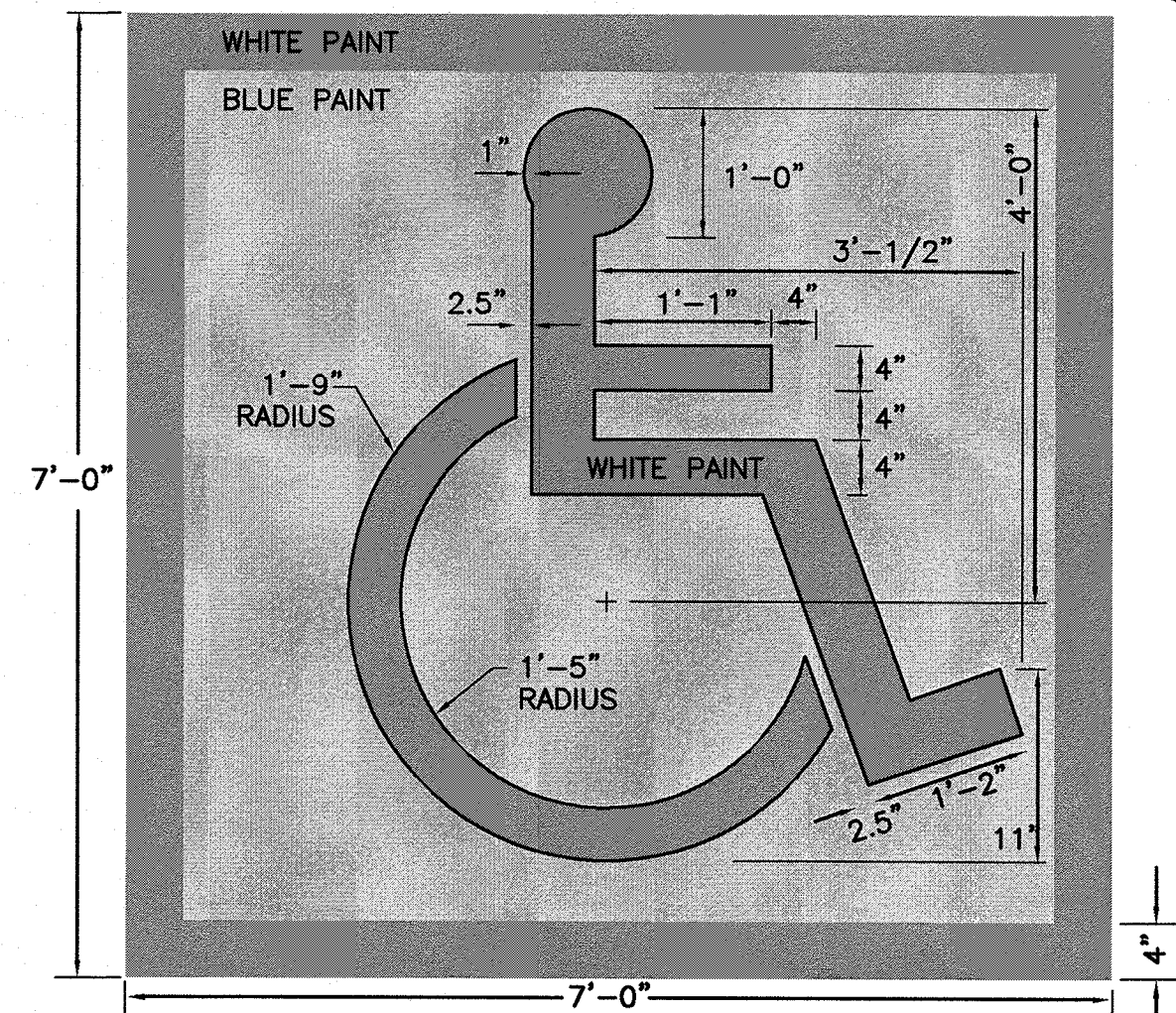
BLACK VINYL COATED CHAIN LINK FENCE
NOT TO SCALE

- NOTE:
1. "V" DENOTES HANDICAPPED ACCESSIBLE PARKING SPACE.
 2. TWO(2) COATS OF WHITE PAINT ARE REQUIRED FOR ALL STRIPING IN ROADWAY AND PARKING LOTS.



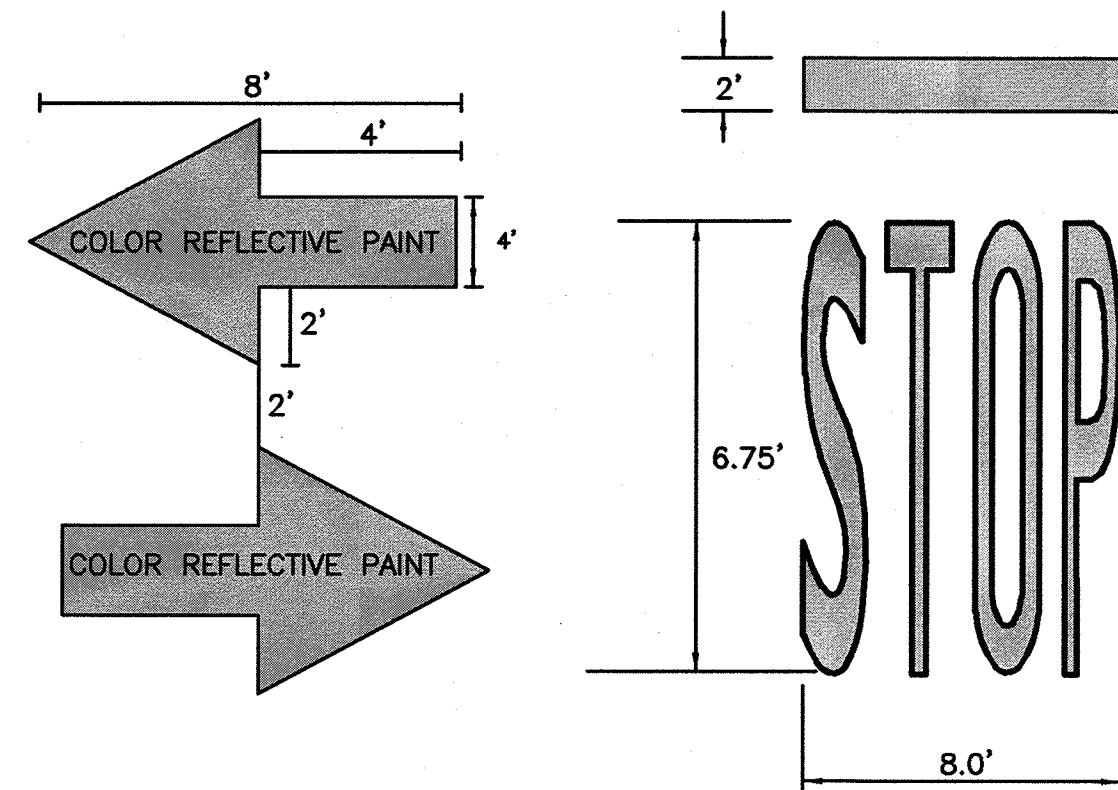
STANDARD AND VAN ACCESSIBLE HANDICAPPED PARKING SPACE

HANDICAPPED AND STANDARD STALL DETAIL
NOT TO SCALE



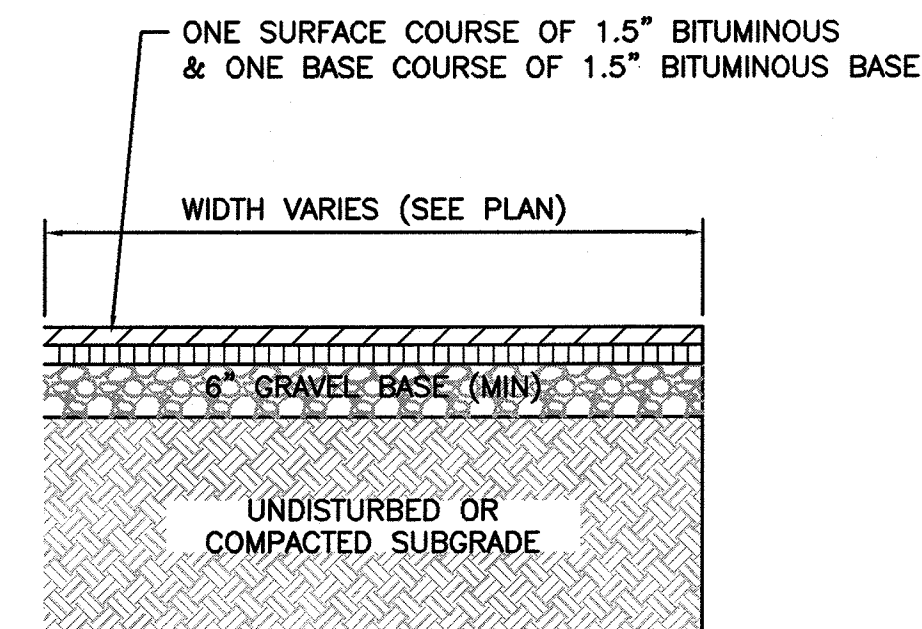
SYMBOL TO BE CENTERED ON WIDTH OF PARKING STALL. SYMBOL IS REQUIRED TO CONTRAST WITH BACKGROUND. USE WHITE ON BLUE (COLOR #105090 IN FEDERAL STANDARD 5952) DOUBLE COAT.

ACCESSIBLE PARKING STALL PAVEMENT MARKING
NOT TO SCALE



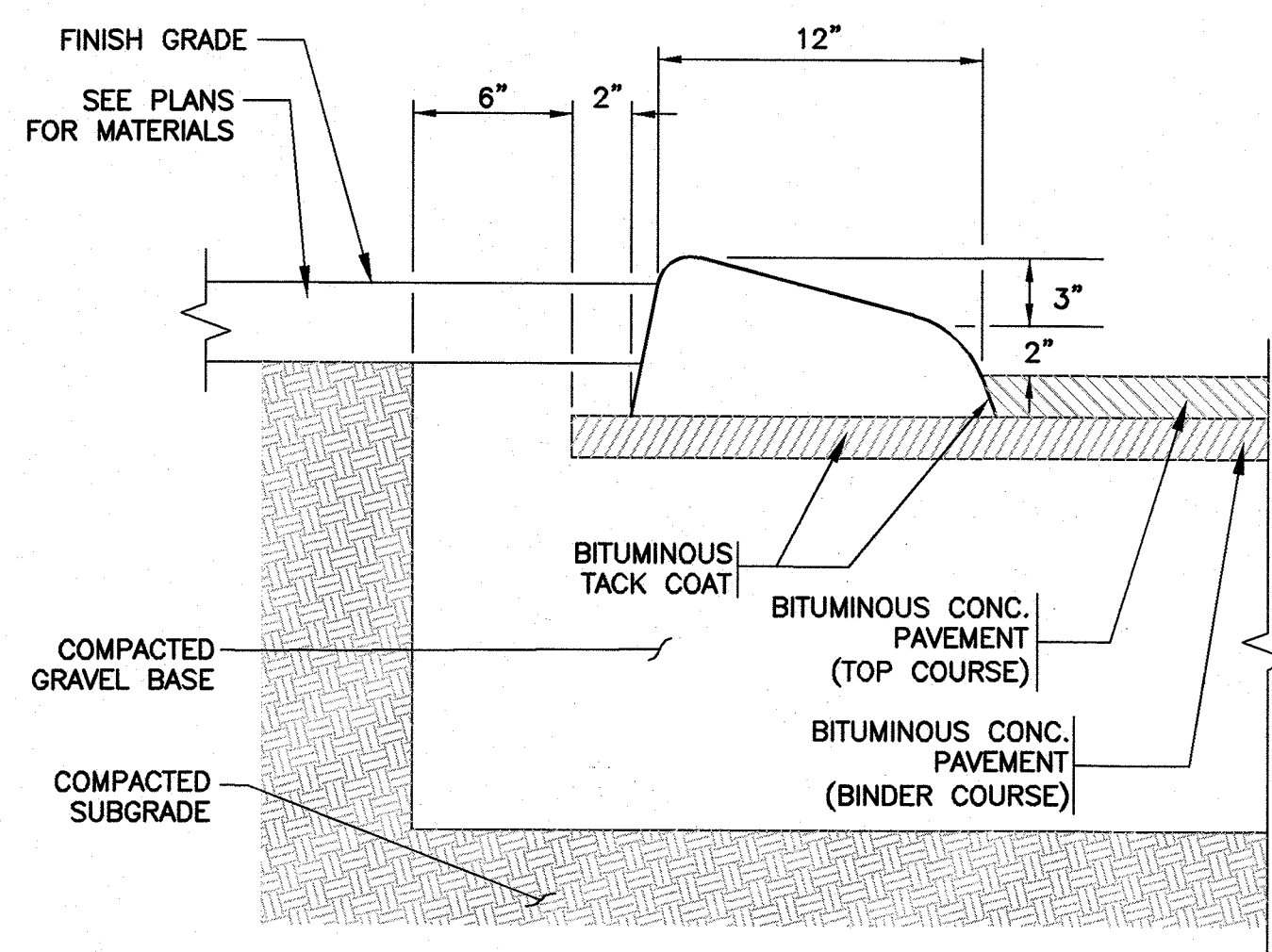
- NOTE:
1. TWO(2) COATS OF THERMOPLASTIC ARE REQUIRED FOR ALL STRIPING IN ROADWAY AND PARKING LOTS.

WHITE THERMOPLASTIC LETTERING/ARROWS
NOT TO SCALE



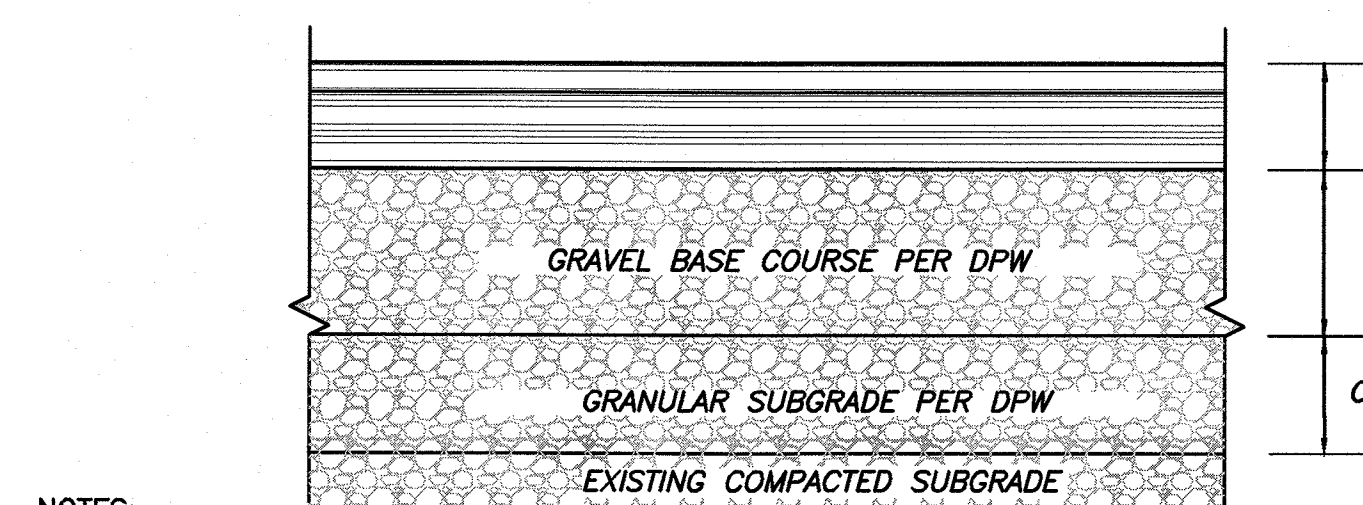
- NOTES:
1. SEE PLAN FOR ELEVATIONS.

BITUMINOUS WALKWAY
NOT TO SCALE



- NOTE:
1. SEE ROADWAY DETAIL FOR BIT. PAVEMENT & GRAVEL BASE.

CAPE COD BERM
NOT TO SCALE



- NOTES:
1. SURFACE COURSE, BASE, AND SUBGRADE SHALL BE PER DWP & GEO-TECHNICAL ENGINEER'S RECOMMENDATIONS FOR LOCAL SOILS OR DRAINAGE CONDITIONS AND/OR METHODS.
 2. BOTH B GRAVEL BASE COURSE & C GRANULAR SUBGRADE SHALL BE COMPACTED TO 95% OF PROCTOR.
 3. COORDINATE PAVEMENT DETAIL WITH GEO-TECH, ENGINEER & DPW. PROVIDE SHOP DRAWINGS FOR APPROVAL PRIOR TO PURCHASE OF ASPHALT CONCRETE AND GRAVEL BASE COURSES.
 4. FOR ANY PAVING IN ROUTE 1 RIGHT OF WAY (BOSTON STREET), CONTRACTOR TO FOLLOW ALL MA DOT STANDARDS AT NO ADDITIONAL COST TO THE OWNER (INCLUDING BUT NOT LIMITED TO PAVEMENT & BASE COURSE DETAIL, POLICE DETAILS, TEMPORARY TRAFFIC MEASURES, AND REQUIREMENTS OF MA DOT ACCESS PERMIT DECISION) COORD. WITH MA DOT & TOWN OF TOPSFIELD DPW.

STANDARD DUTY PAVING

- A = 1.5" ASPHALT CONCRETE - SURFACE COURSE (M3.11.03, TABLE A, TOP COURSE)
2.5" ASPHALT CONCRETE - BINDER COURSE (M3.11.03, TABLE A, BINDER COURSE)
- B = 12" 3/4" MINUS GRAVEL BASE COURSE STONE PER TOWN OF TOPSFIELD DPW STANDARD. CONTRACTOR TO COORD. DIRECTLY WITH DPW & PROVIDE SIEVE TESTS FOR APPROVAL TO GEOTECH, A&M & DPW PRIOR TO PURCHASE & PLACEMENT.
- C = 12" 4" MINUS GRANULAR SUBGRADE PER TOWN OF TOPSFIELD DPW STANDARD. CONTRACTOR CAN USE ONSITE GRANULAR MATERIAL IF IT MEETS DPW STANDARD. CONTRACTOR TO COORD. DIRECTLY WITH DPW & PROVIDE SIEVE TESTS FOR APPROVAL TO GEOTECH, A&M & DPW PRIOR TO PURCHASE & PLACEMENT.

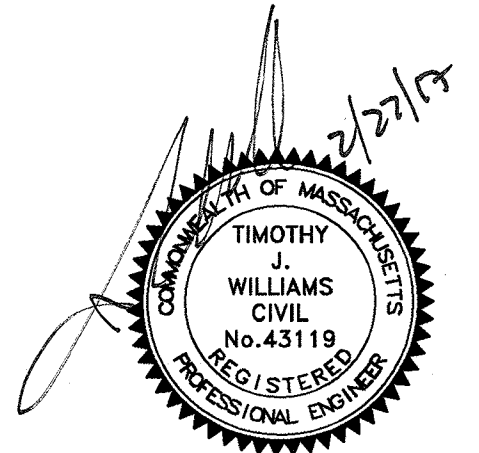
STANDARD DUTY BITUMINOUS ROADWAY (ONSITE ONLY)
NOT TO SCALE

**TOWN OF TOPSFIELD, MA
SITE PLAN REVIEW
AND SPECIAL PERMIT**

SITE PLAN AND SPECIAL PERMIT APPROVAL

SIGNATURE

DATE



PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
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1	1-17-2017	REVISED PER PEER REVIEW & TOWN COMMENTS

APPLICANT/OWNER:
**SARKIS DEVELOPMENT COMPANY
2 ELM SQUARE
ANDOVER, MA 01810**

PROJECT:
**RESIDENTIAL DEVELOPMENT
470 BOSTON STREET (ROUTE 1)
TOPSFIELD, MA**

PROJECT NO.	2165-01A	DATE:	10-13-2016
SCALE:	N.T.S.	DWG. NAME:	C-2165-01A
DESIGNED BY:	DMR	CHECKED BY:	RB

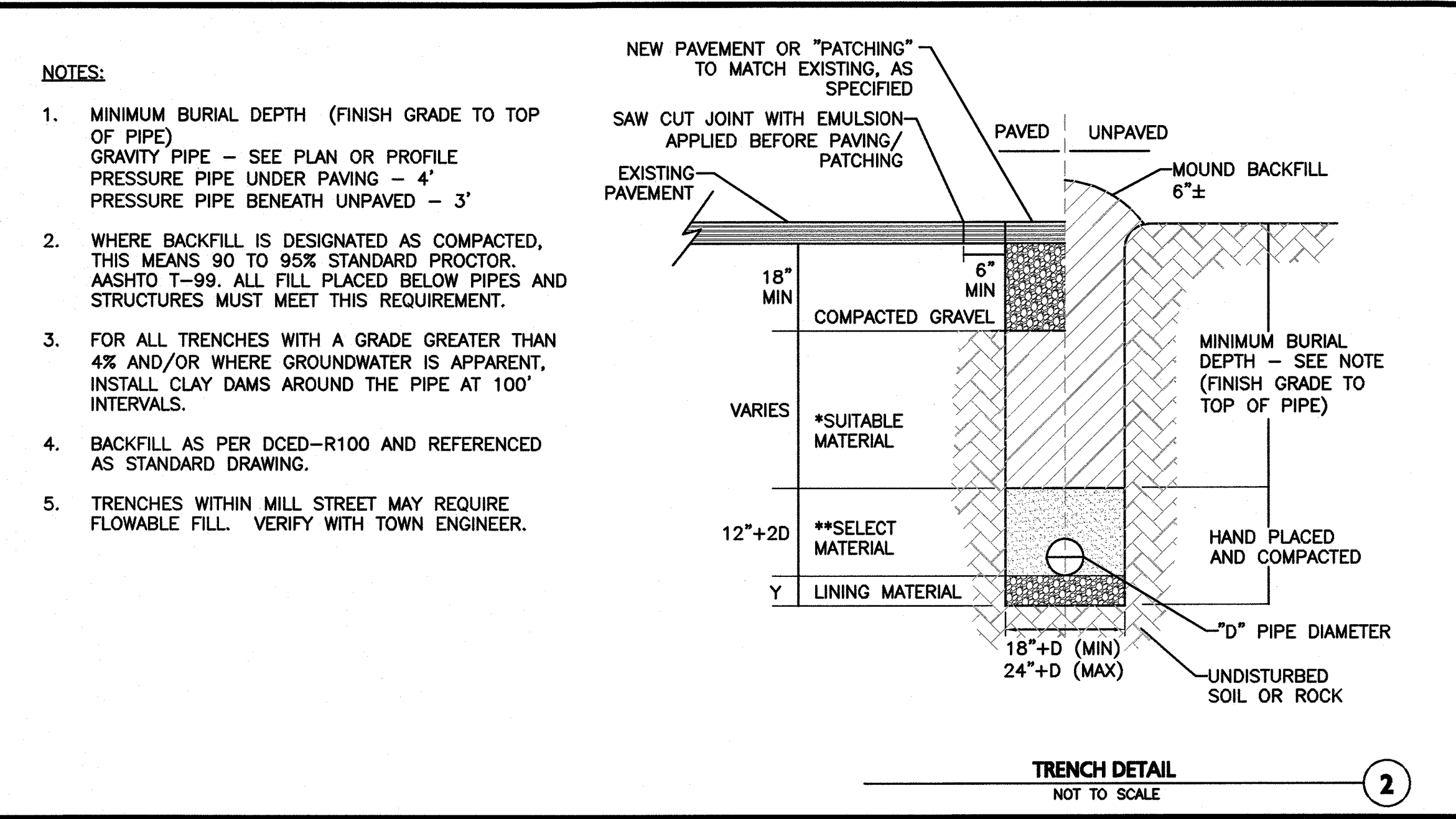
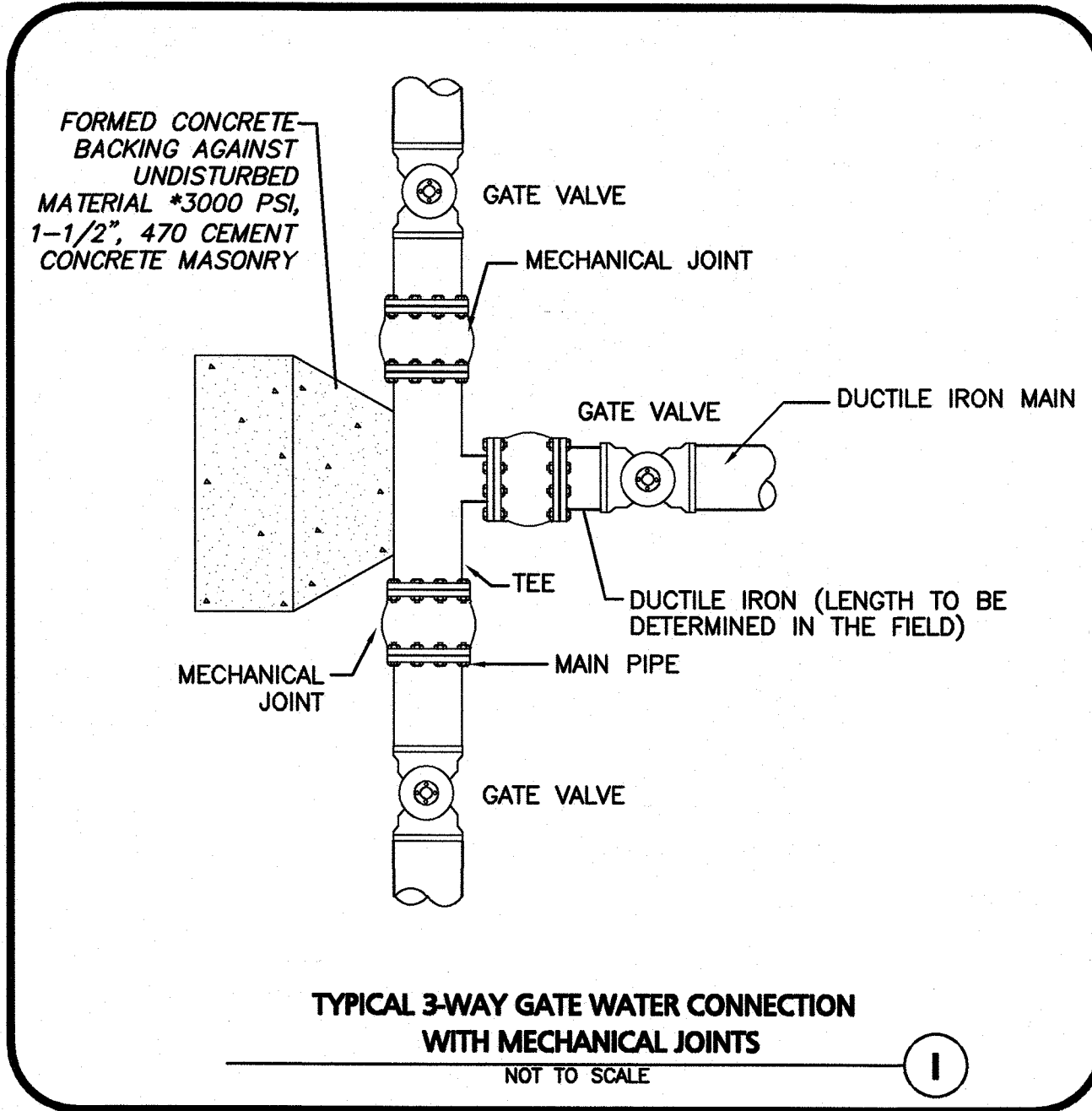
PREPARED BY:
ALLEN & MAJOR ASSOCIATES, INC.
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environmental consulting • landscape architecture
www.allenmajor.com

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DETAILS	D-3



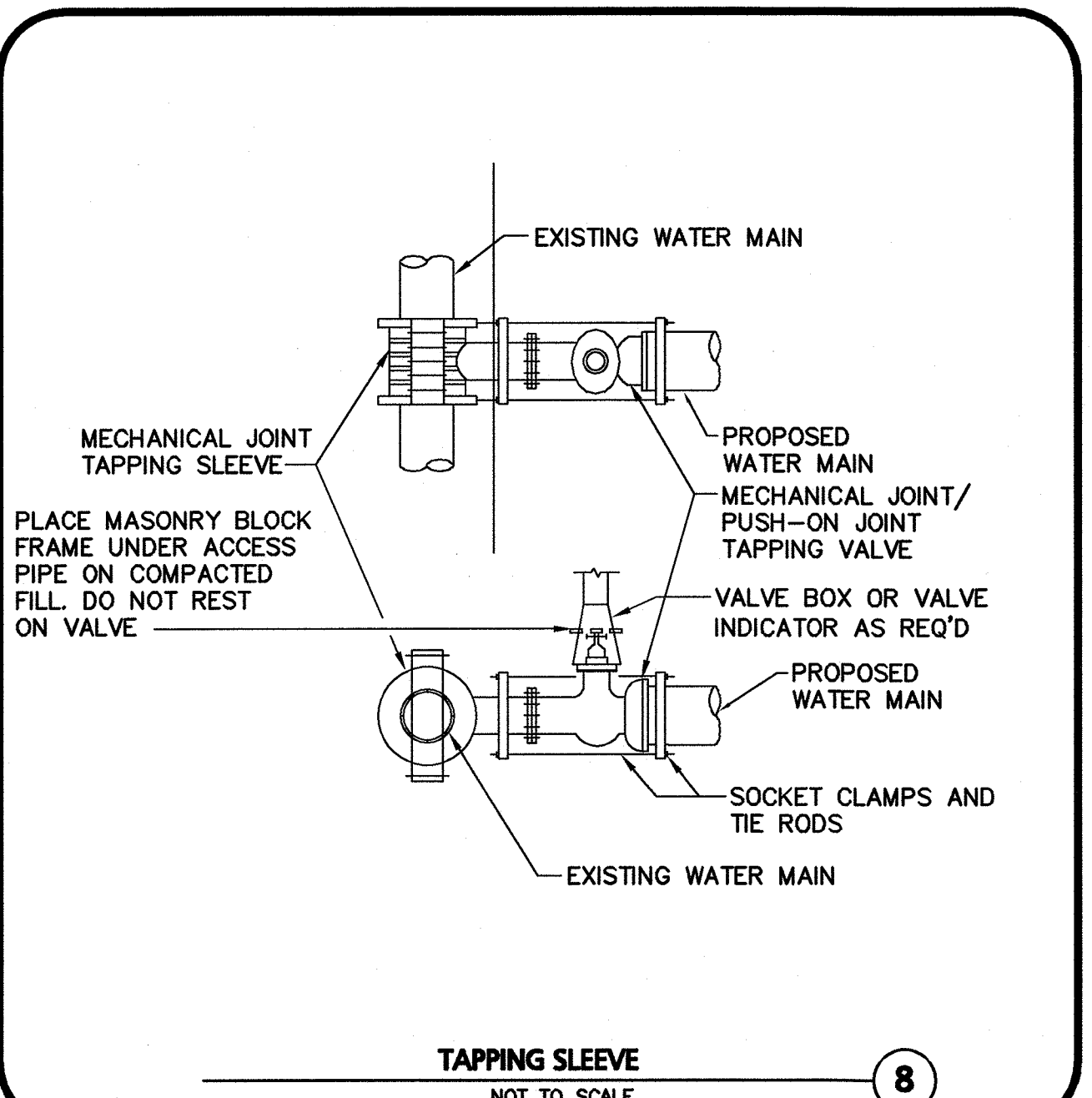
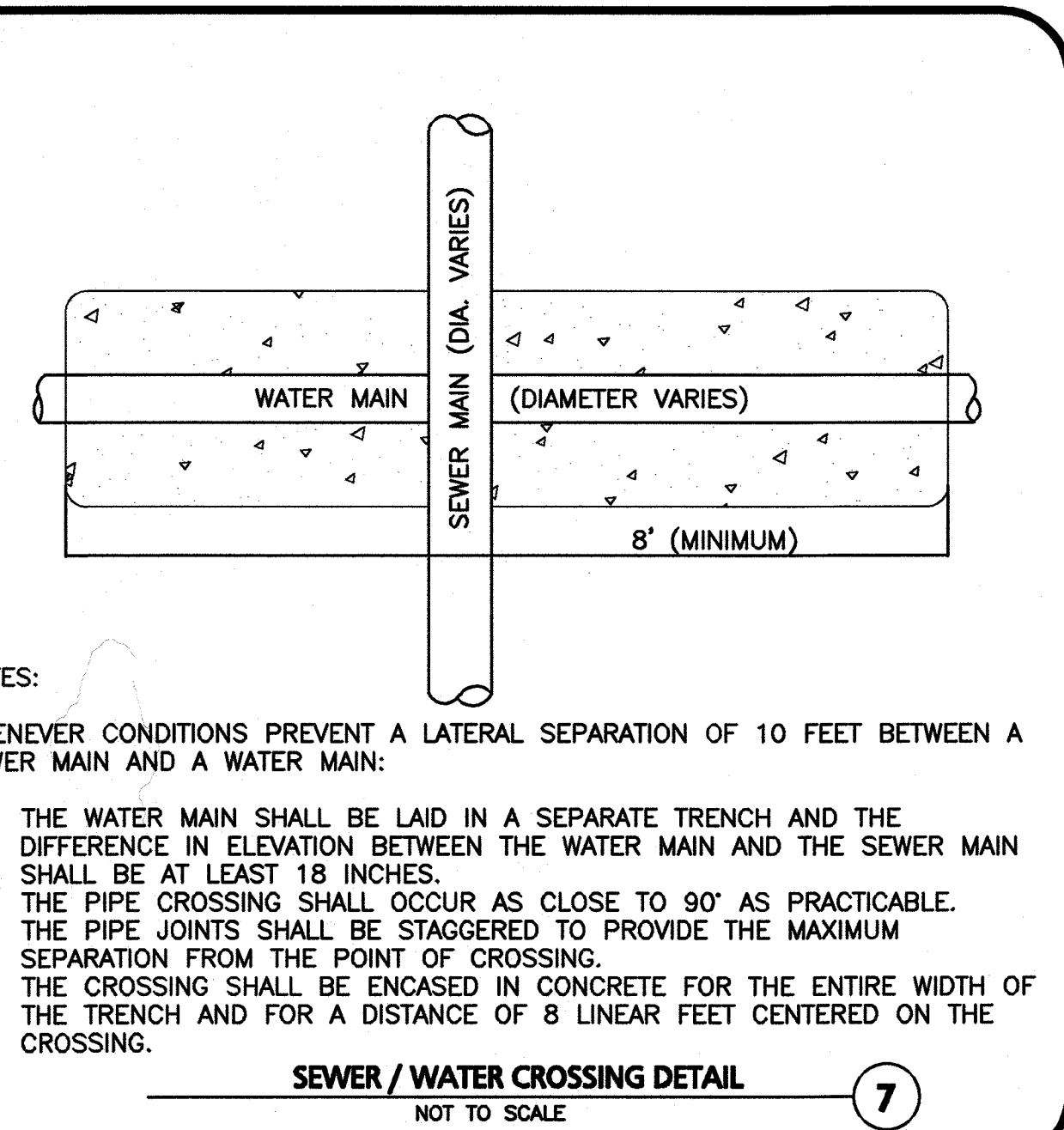
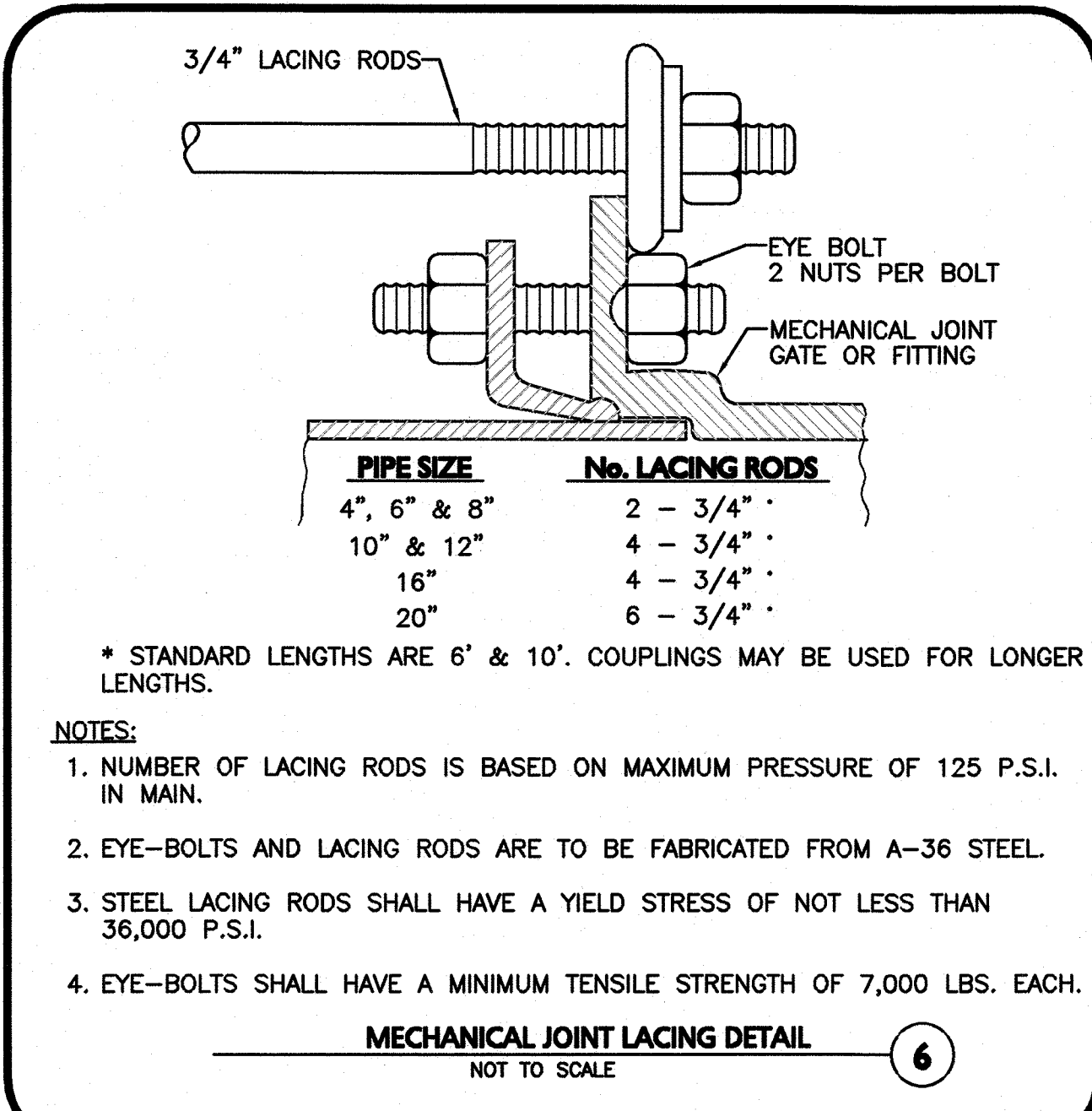
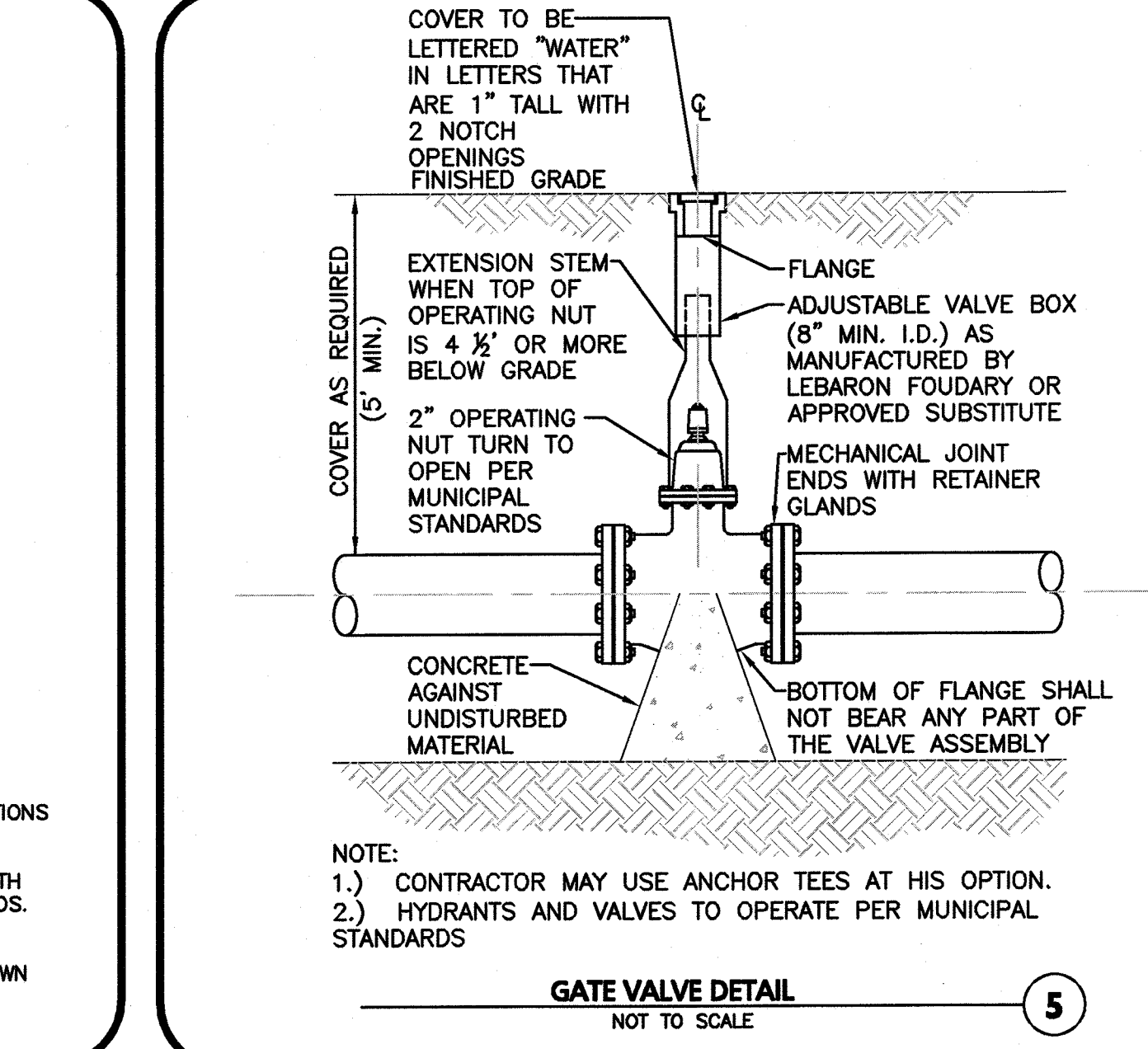
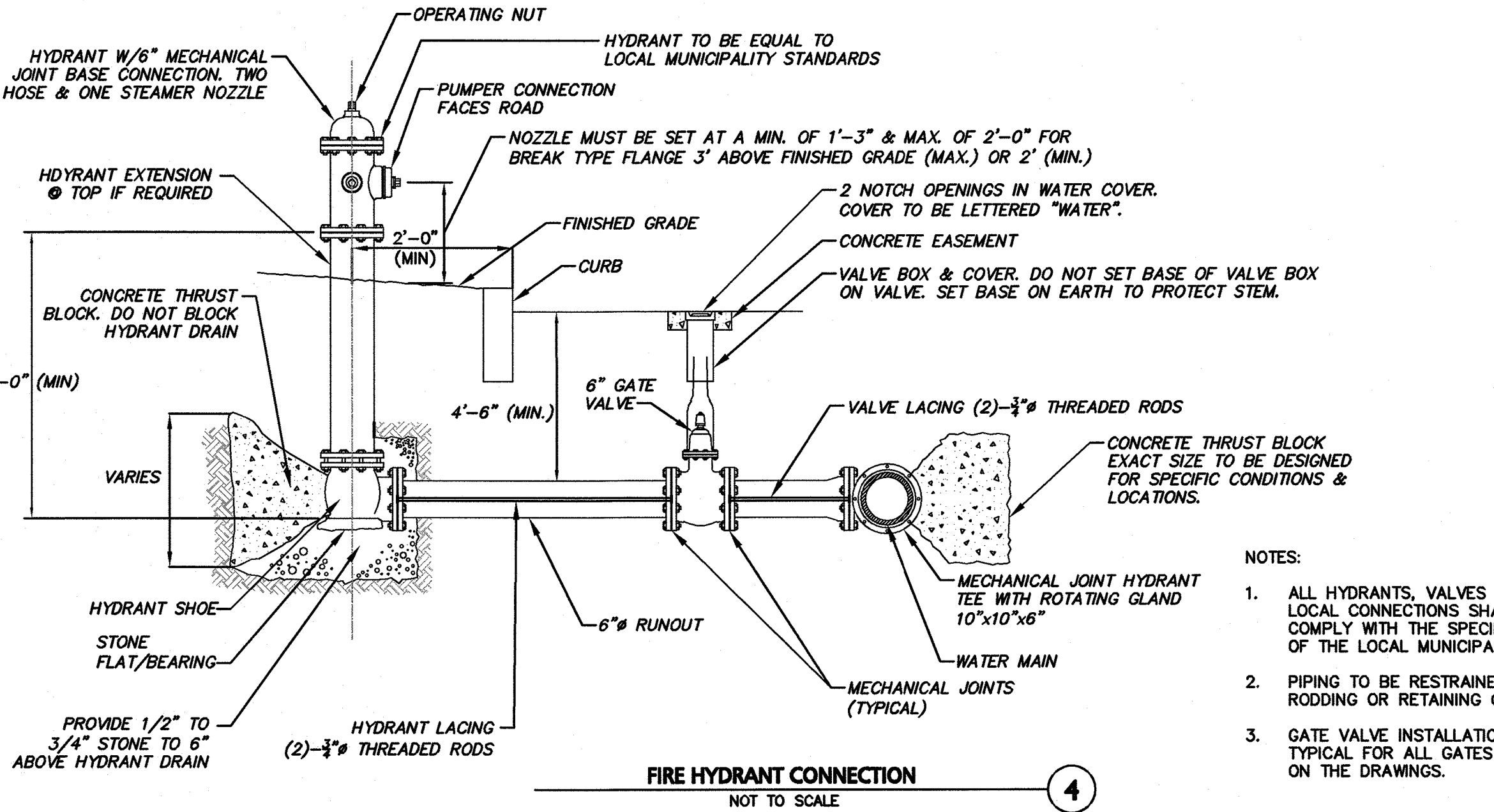
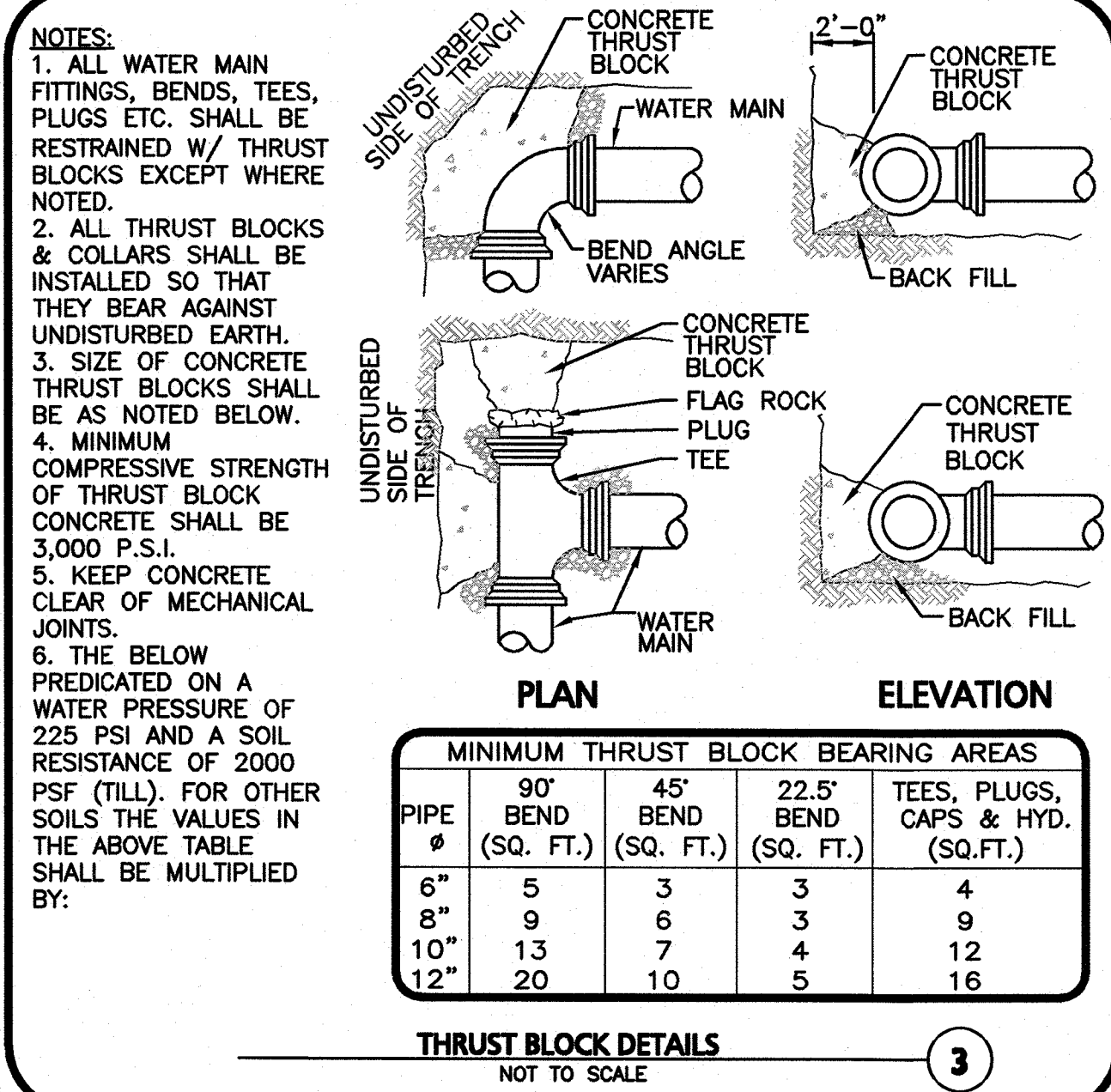
CONDITION & PIPE	**SELECT MATERIAL	LINING MATERIAL	Y-DIMENSION
DUCTILE IRON "ORDINARY SOIL"	TYPE I, II, OR III	SAND OR TYPE III	3"
RCP "ORDINARY SOIL"	TYPE II OR III	SAND OR TYPE III	3"
ALL PIPE OVER BEDROCK OR LEDGE	TYPE II OR III	SAND OR TYPE III	8"
DUCTILE IRON IN CLAY OR MUCK	TYPE II OR III	SAND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



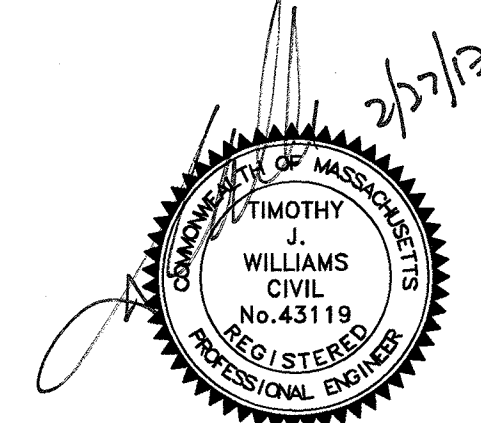
**TOWN OF TOPSFIELD, MA
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SITE PLAN AND SPECIAL PERMIT APPROVAL

SIGNATURE

DATE

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DESIGNED BY:	DMR	CHECKED BY:	RB

PREPARED BY:

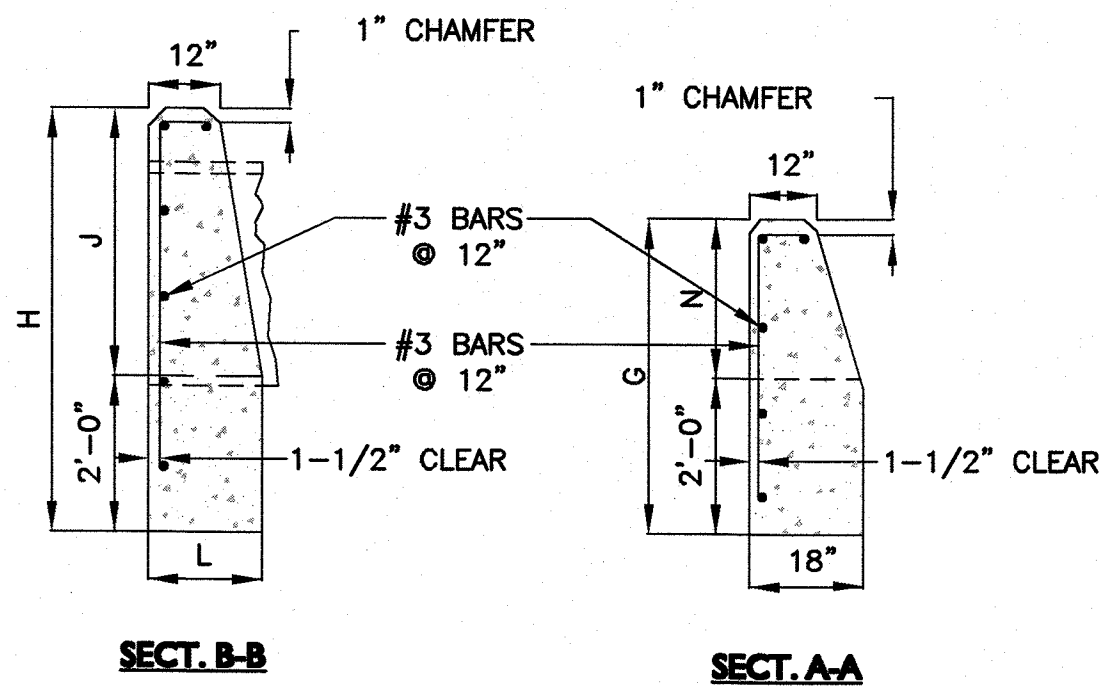


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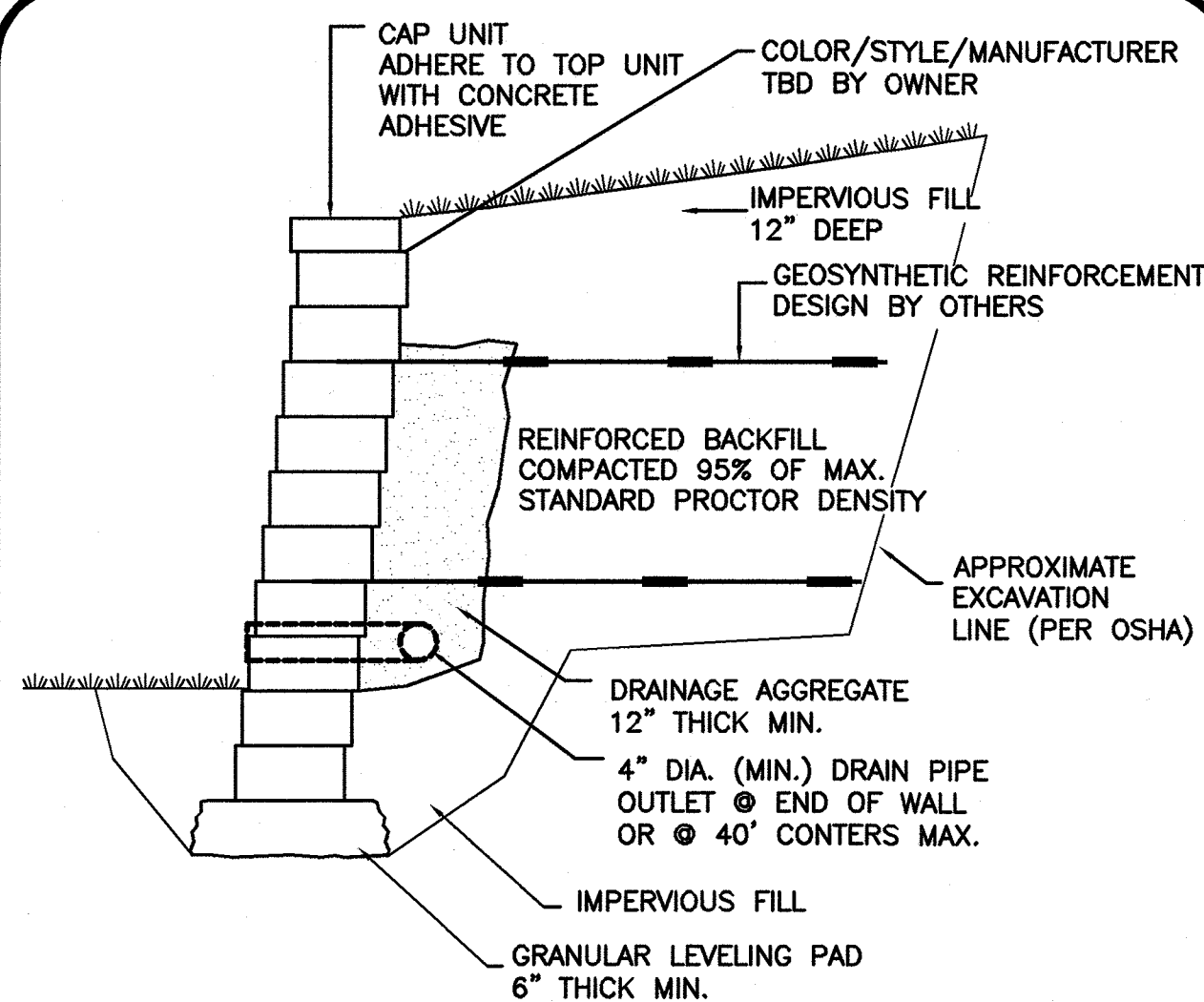
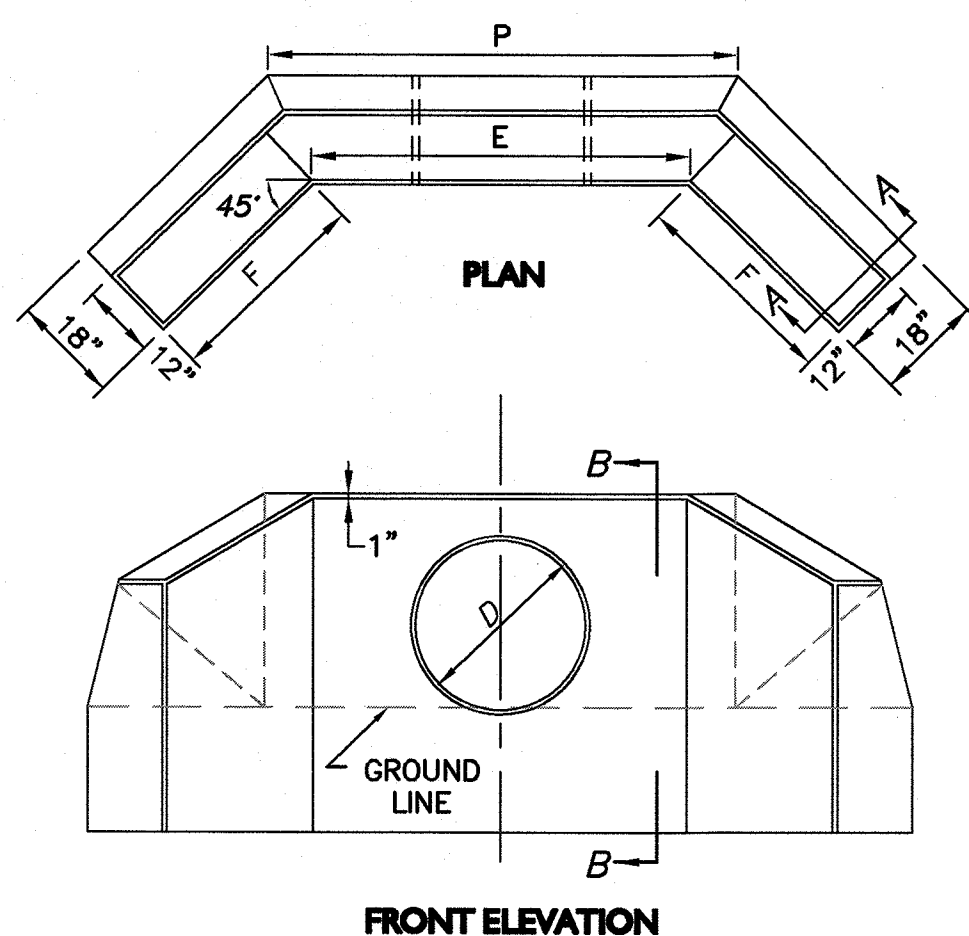
DRAWING TITLE: DETAILS SHEET No. D-4



1-1/2:1 AND 2:1 SLOPE										1-1/2:1 SLOPE		2:1 SLOPE	
D	E	G	H	J	L	N	P	F	CU	F	CU	F	CU
30"	4'-0"	4'-0"	5'-6"	3'-6"	1'-6"	2'-0"	5'-3"	3'-0"	2.60	45	4'-3"	3.16	54
36"	4'-6"	4'-3"	6'-0"	4'-0"	1'-8"	2'-3"	5'-11"	3'-6"	3.35	54	5'-0"	4.15	64
42"	5'-0"	4'-6"	6'-6"	4'-6"	1'-10"	2'-6"	6'-6"	4'-0"	4.20	59	5'-9"	5.25	70
48"	5'-6"	4'-9"	7'-0"	5'-0"	2'-0"	2'-9"	7'-2"	4'-6"	5.19	65	6'-6"	6.50	83

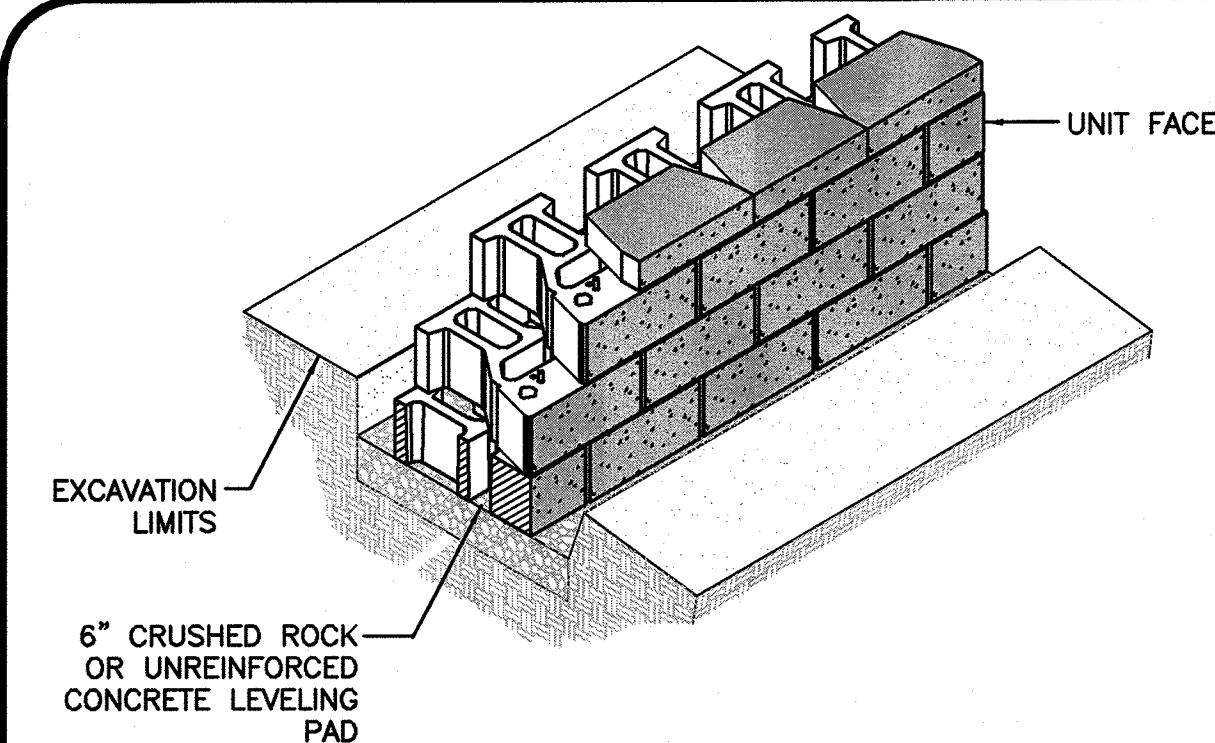
NOTE: ALL CONCRETE DIMENSIONS SHOWN ARE MINIMUM.

CONCRETE HEADWALL
NOT TO SCALE



GENERAL NOTES:
1. STRUCTURAL ENGINEER LICENSED IN THE STATE OF MASSACHUSETTS TO REVIEW & APPROVE FINAL WALL DESIGN FOR STRUCTURAL INTEGRITY AT CONTRACTOR COST. CONTRACTOR TO INCORPORATE ANY NECESSARY REVISIONS AT NO ADDITIONAL COST.
2. PROVIDE SHOP DRAWING FOR MANUFACTURERS WALL DESIGN, GEOREINFORCEMENT BLOCK STYLE & COLOR, DRAIN PIPE, LEVELING PAD, (DETAILS & SECTIONS & ELEVATIONS) FOR APPROVAL PRIOR TO PURCHASE.
3. INSTALL PER MANUFACTURERS, GEOTECHNICAL ENGINEERS & STRUCTURAL ENGINEERS RECOMMENDATIONS AT CONTRACTOR COST.

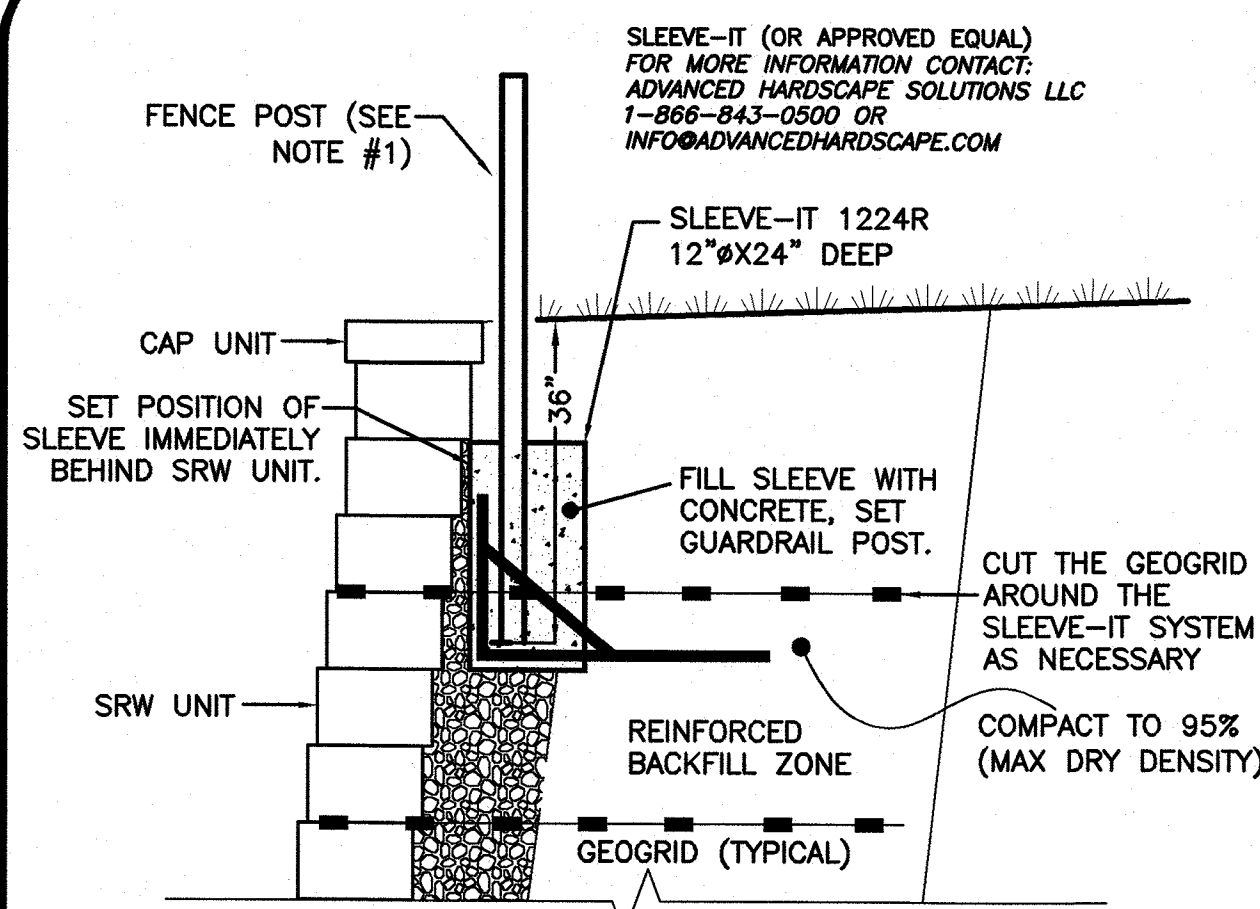
TYPICAL PRECAST CONC. SEGMENTAL
RETAINING WALL
NOT TO SCALE



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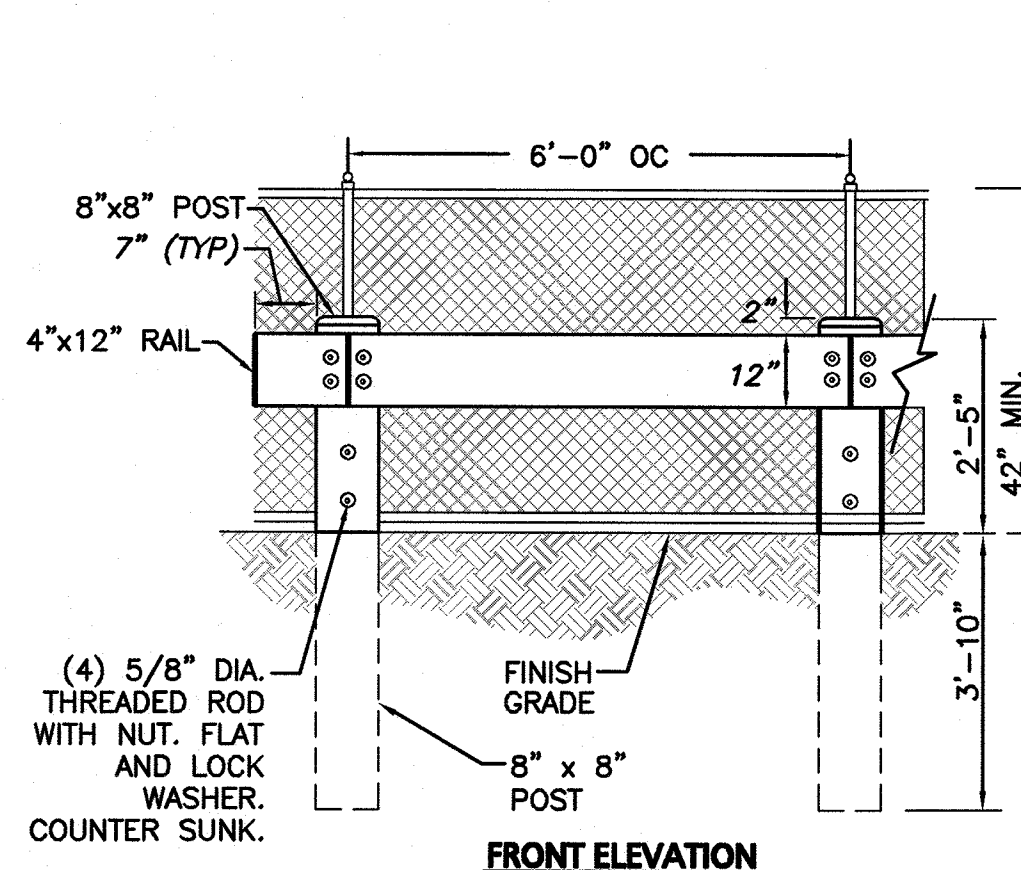
BASE LEVELING PAD NOTES:
1. THE LEVELING PAD IS TO BE CONSTRUCTED OF CRUSHED STONE OR 4000 PSI UNREINFORCED CONCRETE.
2. THE BASE FOUNDATION IS TO BE APPROVED BY THE SITE GEOTECHNICAL ENGINEER AT CONTRACTOR COST PRIOR TO PLACEMENT OF THE LEVELING PAD.

STANDARD PRECAST CONC. UNIT/BASE PAD
ISOMETRIC SECTION VIEW
NOT TO SCALE



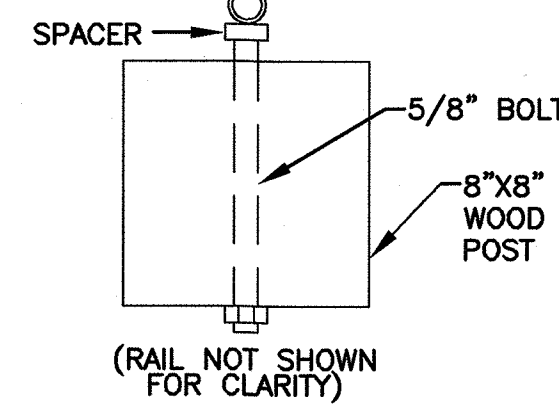
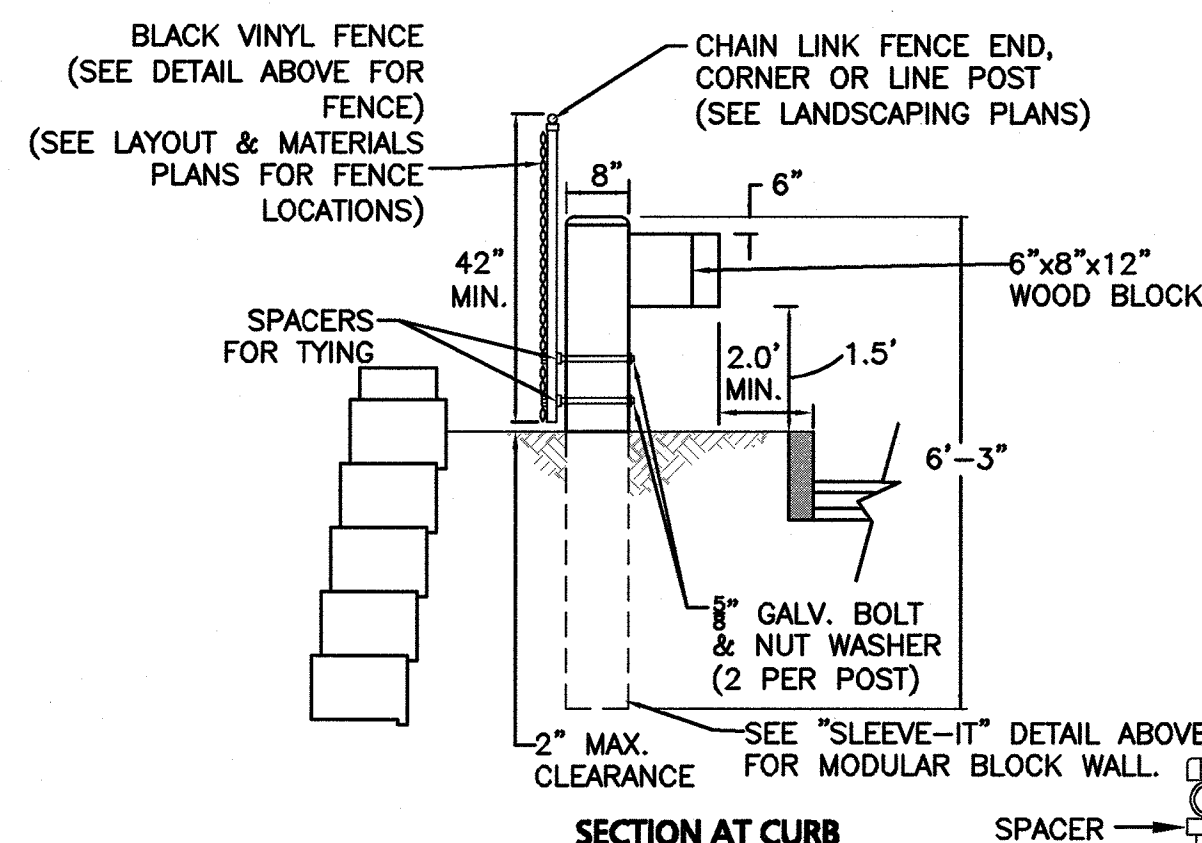
NOTES:
1. FENCING SYSTEMS APPROVED FOR USE WITH SLEEVE-IT 1224R ARE LIMITED TO THE FOLLOWING HEIGHTS:
A. CHAIN LINK - UP TO 8'-FT.
B. PRIVACY - UP TO 6'-FT (WOODEN, PVC, METAL).

FENCE POST AT TOP OF MODULAR BLOCK RETAINING WALL
NOT TO SCALE



NOTES:
1. ALL PRESSURE TREATED TIMBERS SHALL BE SOUTHERN YELLOW PINE TREATED WITH CAA AND HAVE A MINIMUM 0.60 RETENTION. PRESSURE TREATED TIMBERS SHALL BE "SUPATIMBER" BY CHEMICAL SPECIALTIES, INC., CHARLOTTE, NC OR EQUAL.
2. ALL HARDWARE TO BE GALVANIZED STEEL.

WOOD BEAM GUARD RAIL W/ BLACK VINYL FENCE
AT PORTION OF DETENTION BASIN
NOT TO SCALE



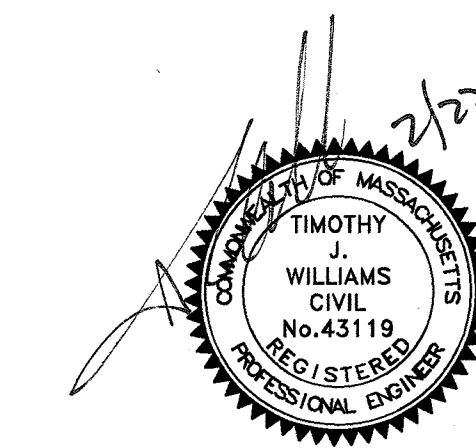
5

TOWN OF TOPSFIELD, MA
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SITE PLAN AND SPECIAL PERMIT APPROVAL

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PROFESSIONAL ENGINEER FOR
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2 ELM SQUARE
ANDOVER, MA 01810

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DESIGNED BY:	DMR	CHECKED BY:	RB

PREPARED BY:



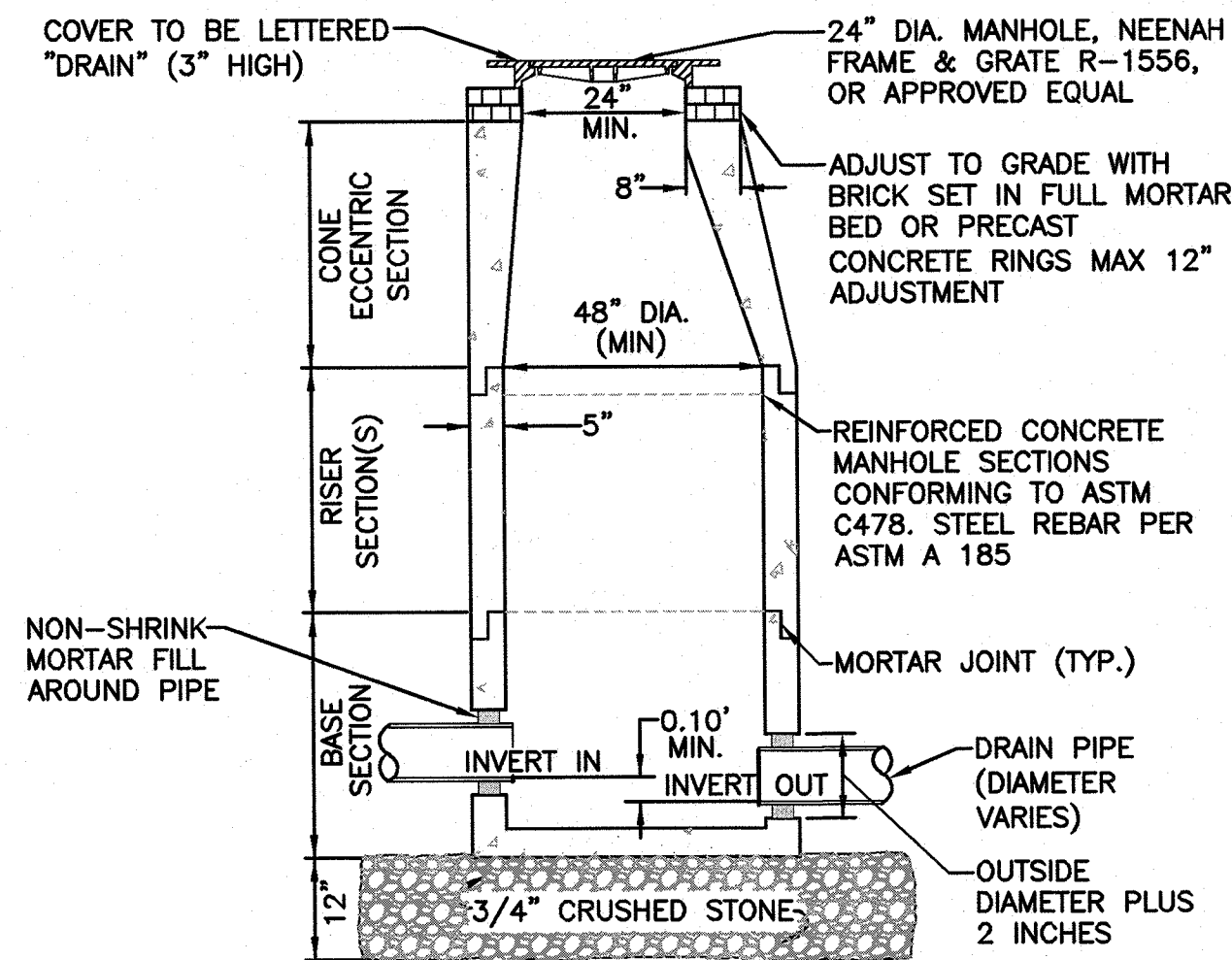
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DETAILS	D-6

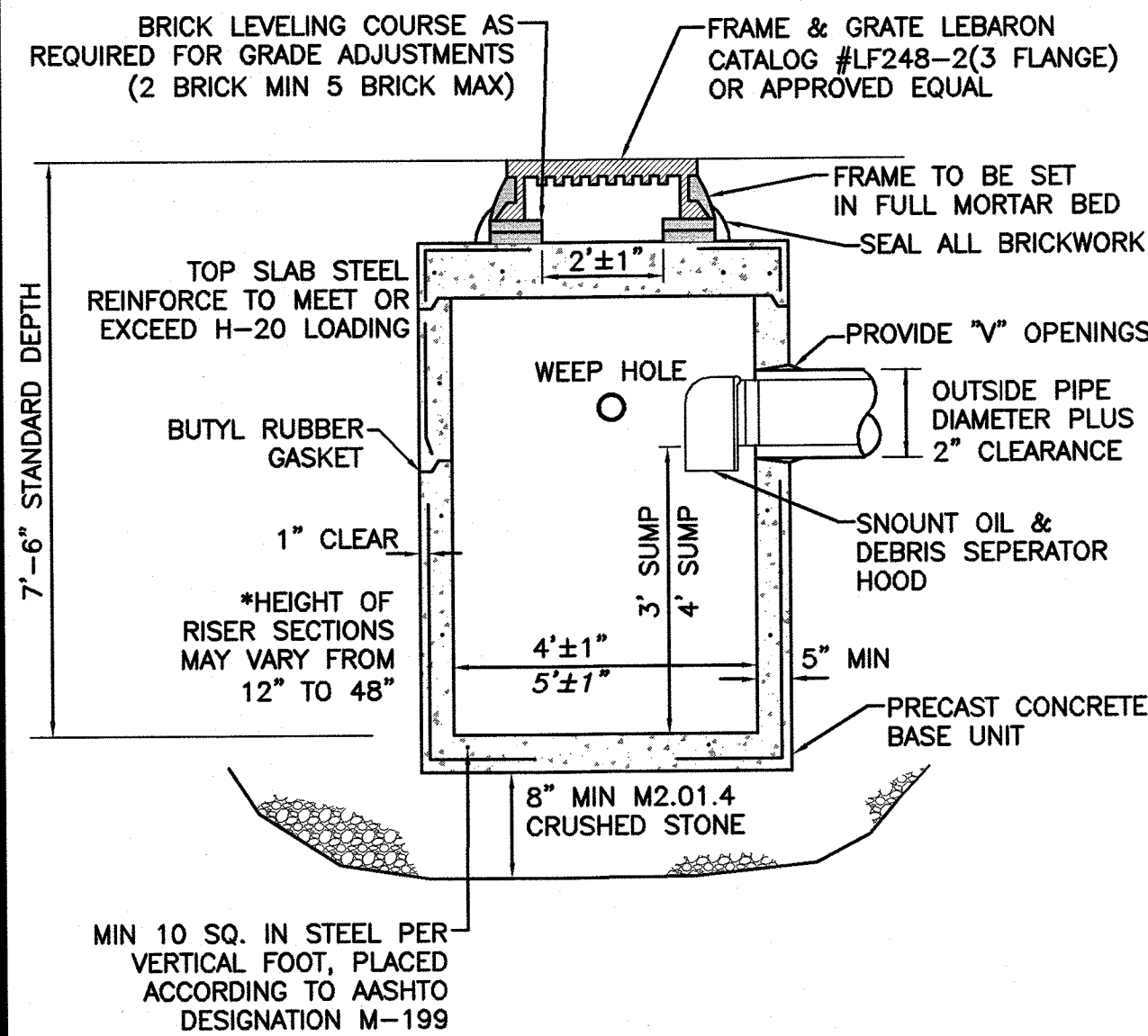
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NOTE:
1. THE MANHOLE, INCLUDING ALL COMPONENT PARTS, SHALL HAVE ADEQUATE SPACE AND STRENGTH QUALITIES CONSIDERED NECESSARY FOR THE INTENDED SERVICE. SPACE REQUIREMENT AND CONFIGURATIONS SHALL BE AS SHOWN ON THE DRAWING. THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND (HS20-44 LOADING) WITHOUT FAILURE. VERTICAL FOOT OF MANHOLE.

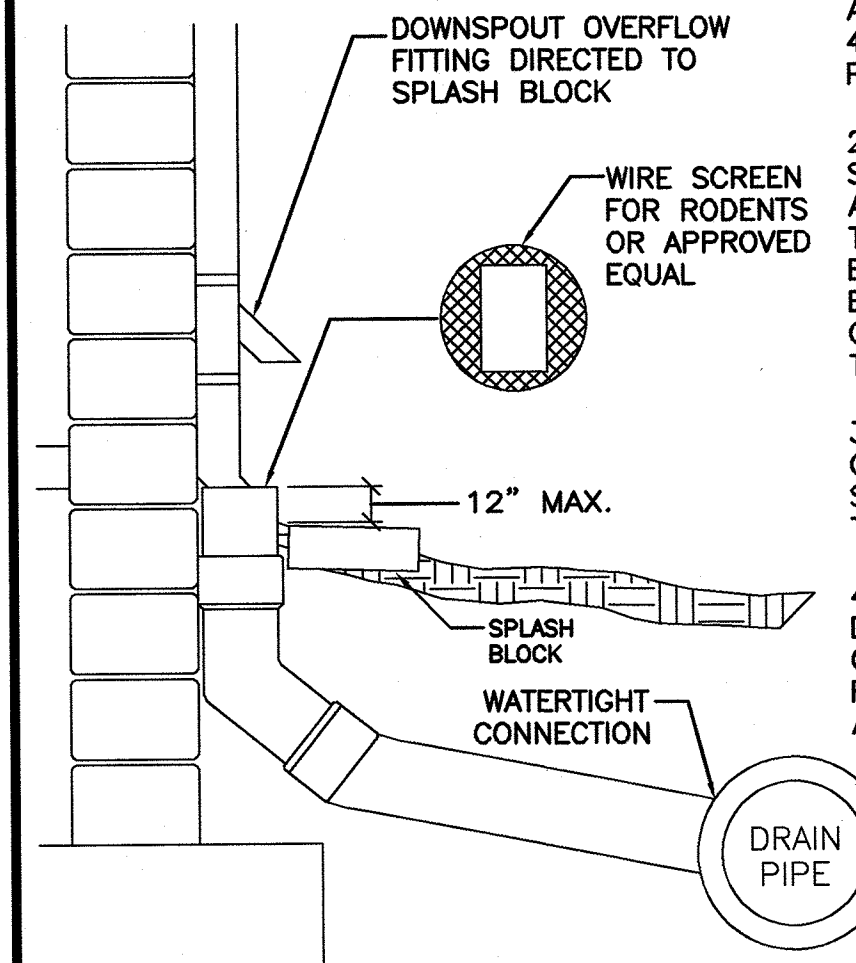
PRECAST DRAIN MANHOLE
NOT TO SCALE

1



CATCH BASIN
NOT TO SCALE

2



TYPICAL ROOF DRAIN (RD) DOWNSPOUT COLLECTOR
NOT TO SCALE

3

NOTES:

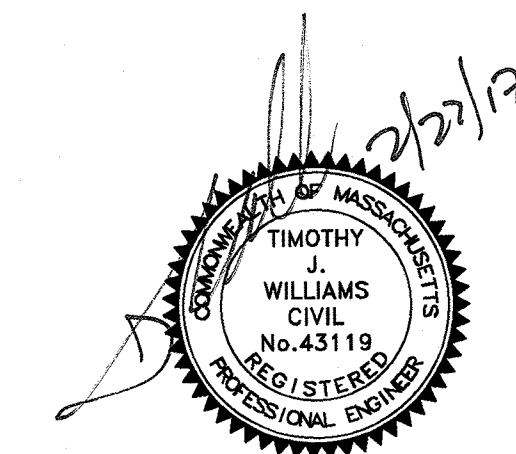
- 1) A WATERTIGHT CONNECTION SHALL BE MAINTAINED FROM ANY TRANSITION FROM SCH. 40 PVC PIPE TO ANY OTHER PIPE TYPE.
- 2) SITEWORK CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK TO AND INCLUDING THE RODENT SCREEN. BUILDING CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONNECTION AT THE POINT OF THE RODENT SCREEN.
- 3) DOWNSPOUTS SHALL BE CONNECTED IN THE MANNER SHOWN AND CONVEYED TO THE NEAREST STORM DRAIN.
- 4) SUBMIT SHOP DRAWINGS FOR DOWNSPOUT OVERFLOW, SPLASH BACK, RODENT SCREEN, FITTINGS AND PIPE.

**TOWN OF TOPSFIELD, MA
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DETAILS	D-7

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CULTEC RECHARGER® 280HD SPECIFICATIONS

GENERAL
CULTEC RECHARGER 280HD CHAMBERS ARE DESIGNED FOR UNDERGROUND STORMWATER MANAGEMENT. THE CHAMBERS MAY BE USED FOR RETENTION, RECHARGING, DETENTION OR CONTROLLING THE FLOW OF ON-SITE STORMWATER RUNOFF.

CHAMBER PARAMETERS
1. THE CHAMBERS WILL BE MANUFACTURED IN THE U.S.A. BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)

2. THE CHAMBER WILL BE VACUUM THERMOFORMED OF BLACK HIGH MOLECULAR WEIGHT HIGH DENSITY POLYETHYLENE (HMWHDPE).
3. THE CHAMBER WILL BE ARCHED IN SHAPE.
4. THE CHAMBER WILL BE OPEN-BOTTOMED.

5. THE CHAMBER WILL BE JOINED USING AN INTERLOCKING OVERLAPPING RIB METHOD. CONNECTIONS MUST BE FULLY SHOULDERED OVERLAPPING RIBS, HAVING NO SEPARATE COUPLINGS OR SEPARATE END WALLS.
6. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC RECHARGER 280HD SHALL BE 28.5 INCHES (673 mm) TALL, 47 INCHES (1194 mm) WIDE AND 8 FEET (2.44 m) LONG. THE INSTALLED LENGTH OF A JOINED RECHARGER 280HD SHALL BE 7 FEET (2.13 m).

7. MAXIMUM INLET OPENING ON THE CHAMBER ENDWALL IS 18 INCHES (450 mm).
8. THE CHAMBER WILL HAVE TWO SIDE PORTALS TO ACCEPT CULTEC HVLV® FC-24 FEED CONNECTORS TO CREATE AN INTERNAL MANIFOLD. NOMINAL INSIDE DIMENSIONS OF THE SIDE PORTAL SHALL HAVE A WIDTH OF 11.25" [286 mm] AND HEIGHT OF 11.5" [292 mm]. THE SIDE PORTAL CAN ACCEPT A MAXIMUM OUTER DIAMETER (O.D.) PIPE SIZE OF 12.25 INCHES [311 mm].

9. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC HVLV® FC-24 FEED CONNECTOR SHALL BE 12 INCHES (305 mm) TALL, 16 INCHES (406 mm) WIDE AND 24.2 INCHES (614 mm) LONG.
10. THE NOMINAL STORAGE VOLUME OF THE RECHARGER 280HD CHAMBER WILL BE 6.079 FT³ / FT (0.565 m³ / m) - WITHOUT STONE. THE NOMINAL STORAGE VOLUME OF A JOINED RECHARGER 280HD SHALL BE 42.553 FT³ / UNIT (1.205 m³ / UNIT) - WITHOUT STONE.

11. THE NOMINAL STORAGE VOLUME OF THE HVLV FC-24 FEED CONNECTOR WILL BE 0.913 FT³ / FT (0.085 m³ / m) - WITHOUT STONE.
12. THE RECHARGER 280HD CHAMBER WILL HAVE EIGHTY-TWO DISCHARGE HOLES BORED INTO THE SIDEWALLS OF THE UNITS CORE TO PROMOTE LATERAL CONVEYANCE OF WATER.

13. THE RECHARGER 280HD CHAMBER SHALL HAVE 15 CORRUGATIONS.
14. THE ENDWALL OF THE CHAMBER, WHEN PRESENT, WILL BE AN INTEGRAL PART OF THE CONTINUOUSLY FORMED UNIT. SEPARATE END PLATES CANNOT BE USED WITH THIS UNIT.

15. THE RECHARGER 280HD STAND ALONE UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO FULLY FORMED INTEGRAL ENDWALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS.
16. THE RECHARGER 280SHD STARTER UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY FORMED INTEGRAL ENDWALL AND ONE PARTIALLY FORMED INTEGRAL ENDWALL WITH A LOWER TRANSFER OPENING OF 9 INCHES (229 mm) HIGH X 35 INCHES (889 mm) WIDE.

17. THE RECHARGER 280HD INTERMEDIATE UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY OPEN ENDWALL AND ONE PARTIALLY FORMED INTEGRAL ENDWALL WITH A LOWER TRANSFER OPENING OF 9 INCHES (229 mm) HIGH X 35 INCHES (889 mm) WIDE.
18. THE RECHARGER 280EHD END UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY FORMED INTEGRAL ENDWALL AND ONE FULLY OPEN END WALL AND HAVING NO SEPARATE END PLATES OR END WALLS.

19. THE HVLV FC-24 FEED CONNECTOR MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO OPEN END WALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS. THE UNIT WILL FIT INTO THE SIDE PORTALS OF THE RECHARGER 280HD AND ACT AS CROSS FEED CONNECTIONS.
20. CHAMBERS MUST HAVE HORIZONTAL STIFFENING FLEX REDUCTION STEPS BETWEEN THE RIBS.

21. HEAVY DUTY UNITS ARE DESIGNATED BY A COLORED STRIPE FORMED INTO THE PART ALONG THE LENGTH OF THE CHAMBER.
22. THE CHAMBER WILL HAVE A RAISED INTEGRAL CAP AT THE TOP OF THE ARCH IN THE CENTER OF EACH UNIT TO BE USED AS AN OPTIONAL INSPECTION PORT OR CLEAN-OUT.

23. THE UNITS MAY BE TRIMMED TO CUSTOM LENGTHS BY CUTTING BACK TO ANY CORRUGATION.
24. THE CHAMBER SHALL BE MANUFACTURED IN AN IN AN ISO 9001:2008 CERTIFIED FACILITY
25. THE CHAMBER WILL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S INSTALLATION INSTRUCTIONS.

26. MAXIMUM ALLOWED COVER OVER TOP OF UNIT SHALL BE 12 FEET (3.65 m).

CULTEC HVLV® FC-24 FEED CONNECTOR PRODUCT SPECIFICATIONS

GENERAL
CULTEC HVLV FC-24 FEED CONNECTORS ARE DESIGNED TO CREATE AN INTERNAL MANIFOLD FOR CULTEC RECHARGER 280HD STORMWATER CHAMBERS.

CHAMBER PARAMETERS
1. THE CHAMBERS WILL BE MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)

2. THE CHAMBER WILL BE VACUUM THERMOFORMED OF BLACK HIGH MOLECULAR WEIGHT HIGH DENSITY POLYETHYLENE (HMWHDPE).
3. THE CHAMBER WILL BE ARCHED IN SHAPE.
4. THE CHAMBER WILL BE OPEN-BOTTOMED.

5. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC HVLV FC-24 FEED CONNECTOR SHALL BE 12 INCHES (305 mm) TALL, 16 INCHES (406 mm) WIDE AND 24.2 INCHES (614 mm) LONG.
6. THE NOMINAL STORAGE VOLUME OF THE HVLV FC-24 FEED CONNECTOR WILL BE 0.913 FT³ / FT (0.085 m³ / m) - WITHOUT STONE.

7. THE HVLV FC-24 FEED CONNECTOR CHAMBER SHALL HAVE 2 CORRUGATIONS.
8. THE HVLV FC-24 FEED CONNECTOR MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO OPEN END WALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS. THE UNIT WILL FIT INTO THE SIDE PORTALS OF THE CULTEC RECHARGER STORMWATER CHAMBER AND ACT AS CROSS FEED CONNECTIONS CREATING AN INTERNAL MANIFOLD.

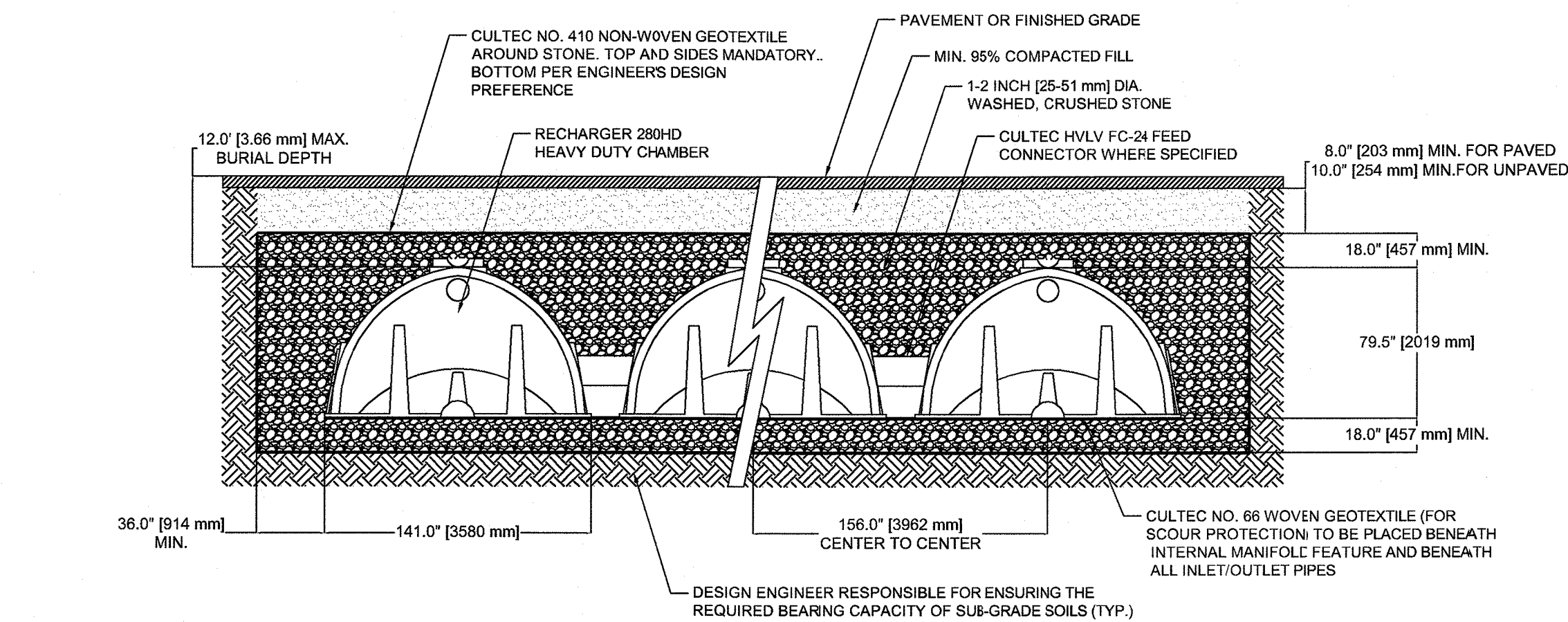
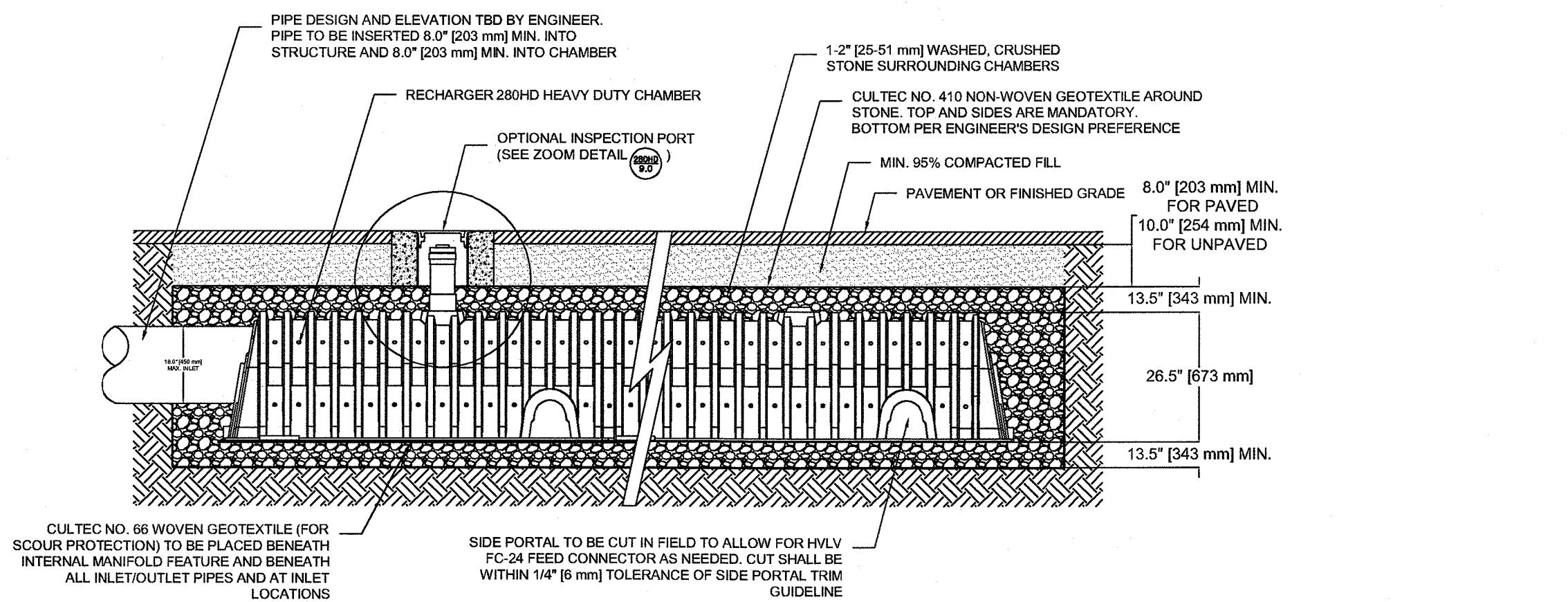
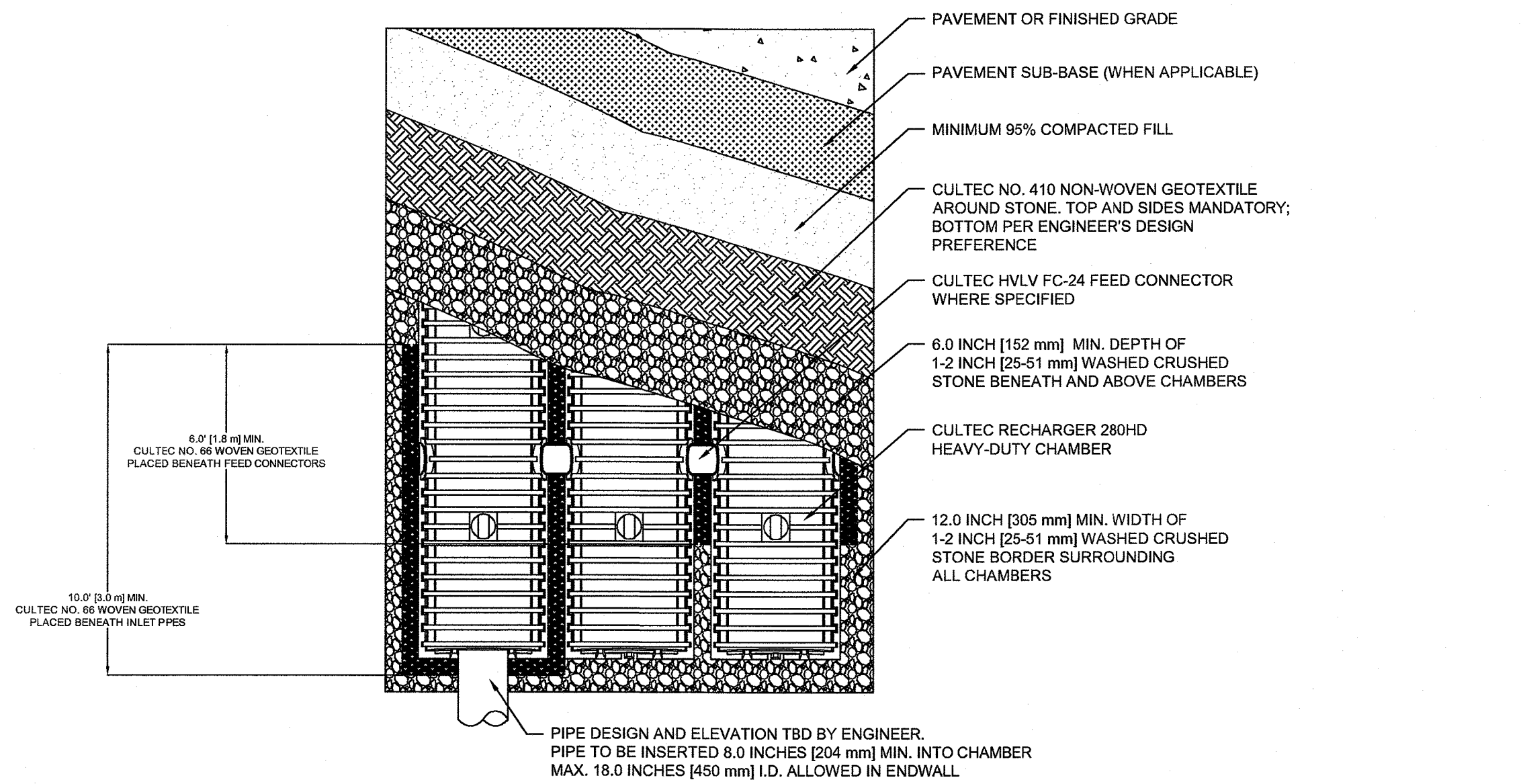
9. THE CHAMBER WILL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.
10. THE CHAMBER SHALL BE MANUFACTURED IN AN ISO 9001:2008 CERTIFIED FACILITY.

CULTEC NO. 66™ WOVEN GEOTEXTILE

GENERAL
CULTEC NO. 66™ WOVEN GEOTEXTILE IS UTILIZED AS AN UNDERLAYMENT TO PREVENT SCOURING CAUSED BY WATER MOVEMENT WITHIN THE CULTEC CHAMBERS AND FEED CONNECTORS UTILIZING THE CULTEC MANIFOLD FEATURE.

GEOTEXTILE PARAMETERS

- THE GEOTEXTILE SHALL BE PROVIDED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
- THE GEOTEXTILE SHALL BE BLACK IN APPEARANCE.
- THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH OF 315 LBS (1.40KN) PER ASTM D4632 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A TENSILE ELONGATION RESISTANCE OF 15% PER ASTM D4632 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A MULLEN BURST RESISTANCE OF 600PSI (4138 KPA) PER ASTM D3786 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A TEAR RESISTANCE OF 115 LBS (0.51 KN) PER ASTM D4533 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A PUNCTURE RESISTANCE OF 150 LBS (0.66 KN) PER ASTM D4833 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE RESISTANCE OF 900 LBS (4.00 KN) PER ASTM D6241 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A UV RESISTANCE OF 70% @ 500 HRS. PER ASTM D4355 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A PERMITTIVITY RATING OF 0.05 SEC-1 PER ASTM D4491 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A WATER FLOW RATING OF 4 GPM/FT² (160 LPM/M²) PER ASTM D4491 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A PERCENT OPEN AREA OF <1% PER CW-02215 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE AN APPARENT OPENING SIZE OF 40 US STD. SIEVE (0.425 MM) PER ASTM D4751 TESTING METHOD.
- THE GEOTEXTILE SHALL CONSIST OF A 100% HIGH-TENACITY, SILT-FILM POLYPROPYLENE YARNS.



GENERAL NOTES
RECHARGER 280HD BY CULTEC, INC. OF BROOKFIELD, CT. STORAGE PROVIDED = 4.21 CF/FT [1.83 m³/m] PER DESIGN UNIT. REFER TO CULTEC, INC.'S CURRENT RECOMMENDED INSTALLATION GUIDELINES. MAXIMUM ALLOWED COVER OVER TOP OF UNIT SHALL BE 12 (3.65 m) THE CHAMBER WILL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.

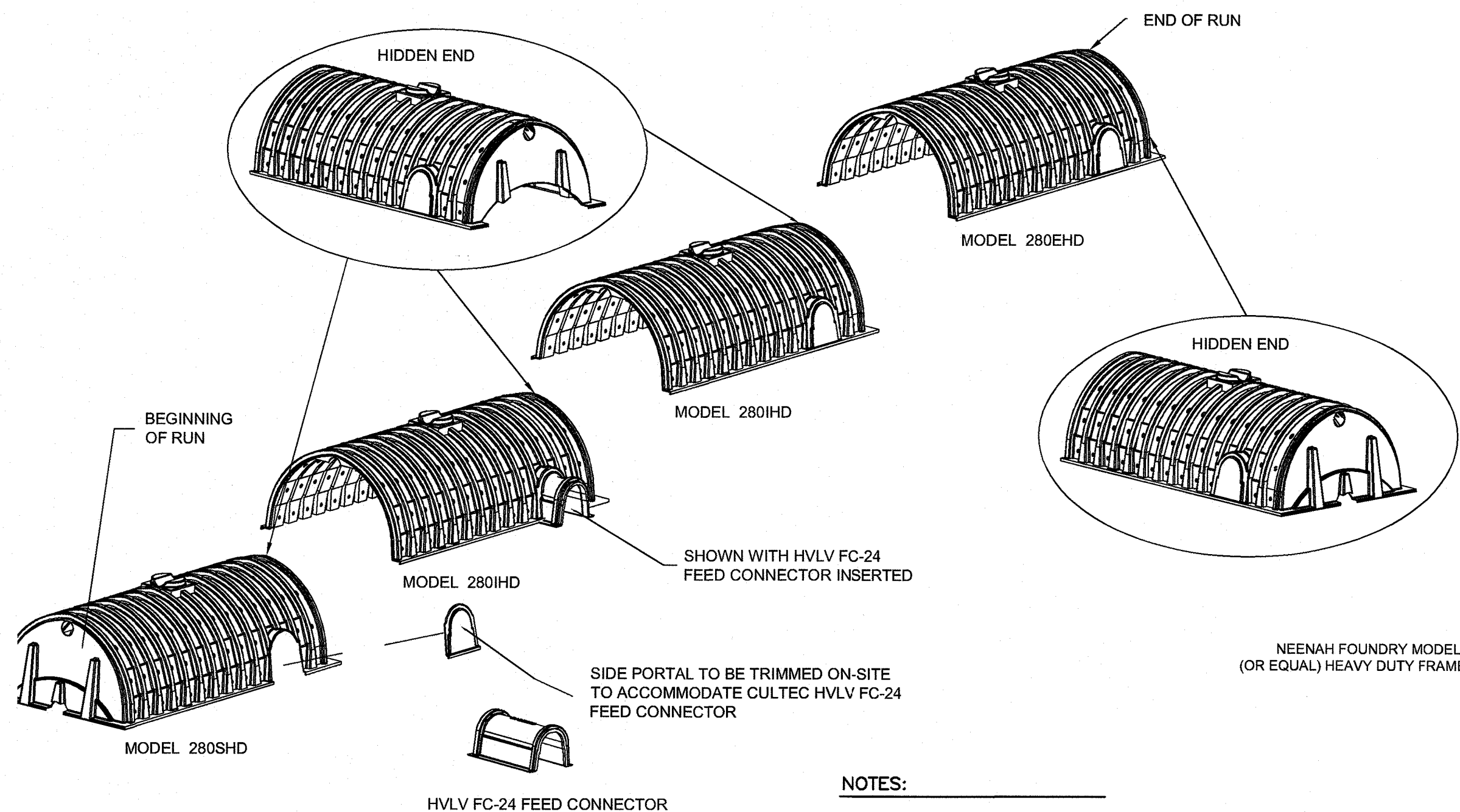
ALL RECHARGER 280HD -HEAVY DUTY UNITS ARE MARKED WITH A COLOR STRIPE FORMED INTO THE PART ALONG THE LENGTH OF THE CHAMBER.
ALL RECHARGER 280HD CHAMBERS MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

TOWN OF TOPSFIELD, MA SITE PLAN REVIEW AND SPECIAL PERMIT

SITE PLAN AND SPECIAL PERMIT APPROVAL

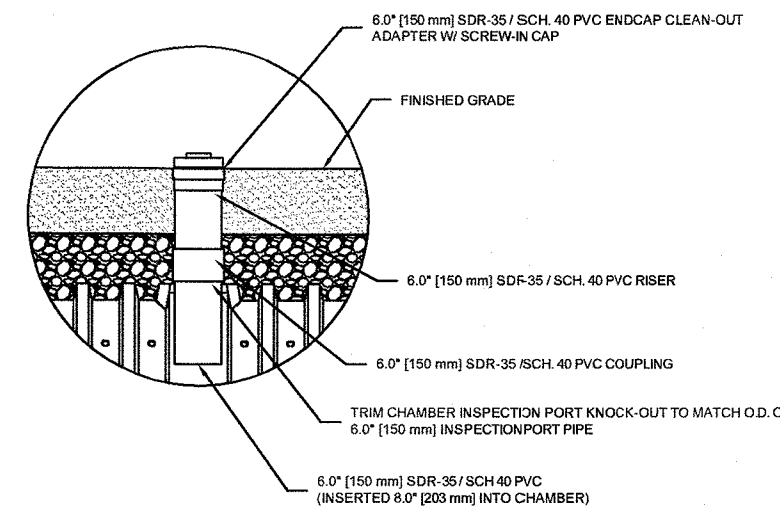
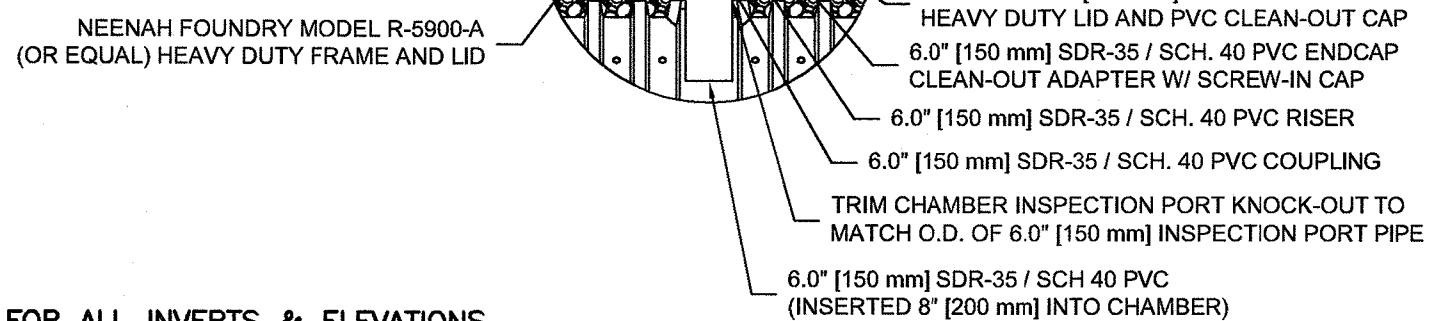
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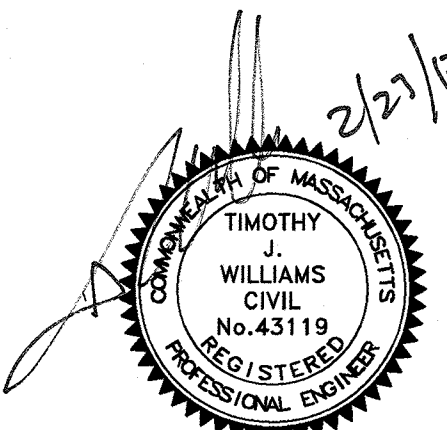


NOTES:

- SEE A&M GRADING & DRAINAGE PLANS FOR ALL INVERTS & ELEVATIONS.



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PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
2	2-27-2017	REVISIONS PER TOWN COMMENTS
1	1-17-2017	REVISED PER PEER REVIEW & TOWN COMMENTS

APPLICANT/OWNER:

SARKIS DEVELOPMENT COMPANY
2 ELM SQUARE
ANDOVER, MA 01810

PROJECT:

RESIDENTIAL DEVELOPMENT
470 BOSTON STREET (ROUTE 1)
TOPSFIELD, MA

PROJECT NO.	2165-01A	DATE:	10-13-2016
SCALE:	N.T.S.	DWG. NAME:	C-2165-01A
DESIGNED BY:	DMR	CHECKED BY:	RB

PREPARED BY:



ALLEN & MAJOR
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DRAWING TITLE:

DETAILS

SHEET No.

D-9

CULTEC RECHARGER®902HD PRODUCT SPECIFICATIONS

GENERAL
CULTEC RECHARGER®902HD CHAMBERS ARE DESIGNED FOR UNDERGROUND STORMWATER MANAGEMENT. THE CHAMBERS MAY BE USED FOR RETENTION, RECHARGING, DETENTION OR CONTROLLING THE FLOW OF ON-SITE STORMWATER RUNOFF.

CHAMBER PARAMETERS

- THE CHAMBERS SHALL BE MANUFACTURED IN THE U.S.A. BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
- THE CHAMBERS SHALL BE DESIGNED AND TESTED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS."
- THE CHAMBER SHALL PROVIDE RESISTANCE TO THE LOADS AND LOAD FACTORS AS DEFINED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12.
- THE CHAMBER SHALL BE STRUCTURAL FOAM INJECTION MOLDED OF BLUE VIRGIN HIGH MOLECULAR WEIGHT IMPACT-MODIFIED POLYPROPYLENE.
- THE CHAMBER SHALL BE ARCHED IN SHAPE.
- THE CHAMBER SHALL BE OPEN-BOTTOMED.
- THE CHAMBER SHALL BE JOINED USING AN INTERLOCKING OVERLAPPING RIB METHOD. CONNECTIONS MUST BE FULLY SHOULDERED OVERLAPPING RIBS, HAVING NO SEPARATE COUPLINGS.
- THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC RECHARGER®902HD SHALL BE 48 INCHES (1219 mm) TALL, 78 INCHES (1981 mm) WIDE AND 4.10 FEET (1.25 m) LONG. THE INSTALLED LENGTH OF A JOINED RECHARGER®902HD SHALL BE 3.67 FEET (1.12 m).
- MULTIPLE CHAMBERS MAY BE CONNECTED TO FORM DIFFERENT LENGTH ROWS. EACH ROW SHALL BEGIN AND END WITH A SEPARATELY FORMED CULTEC RECHARGER®902HD END CAP. MAXIMUM INLET OPENING ON THE END CAP IS 24 INCHES (600 mm).
- THE CHAMBER SHALL HAVE TWO SIDE PORTALS TO ACCEPT CULTEC HVLV™FC-48 FEED CONNECTORS TO CREATE AN INTERNAL MANIFOLD. MAXIMUM ALLOWABLE PIPE SIZE IN THE SIDE PORTAL IS 11.5 INCHES (292 mm).
- THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC HVLV™FC-48 FEED CONNECTOR SHALL BE 12 INCHES (305 mm) TALL, 16 INCHES (406 mm) WIDE AND 49 INCHES (1245 mm) LONG.
- THE NOMINAL STORAGE VOLUME OF THE RECHARGER®902HD CHAMBER SHALL BE 17.66 FT³ / FT (1.641 m³ / m) - WITHOUT STONE. THE NOMINAL STORAGE VOLUME OF A JOINED RECHARGER®902HD SHALL BE 64.75 FT³ / UNIT (1.834 m³ / UNIT) - WITHOUT STONE.
- THE NOMINAL STORAGE VOLUME OF THE HVLV™FC-48 FEED CONNECTOR SHALL BE 0.913 FT³ / FT (0.085 m³ / m) - WITHOUT STONE.
- THE RECHARGER®902HD CHAMBER SHALL HAVE TWENTY-FOUR DISCHARGE HOLES BORED INTO THE SIDEWALLS OF THE UNIT'S CORE TO PROMOTE LATERAL CONVEYANCE OF WATER.
- THE RECHARGER®902HD CHAMBER SHALL HAVE 7 CORRUGATIONS.
- THE CHAMBER SHALL HAVE A RAISED INTEGRAL CAP AT THE TOP OF THE ARCH NEAR THE CENTER OF EACH UNIT TO BE USED AS AN OPTIONAL INSPECTION PORT OR CLEAN-OUT.
- THE UNITS MAY BE TRIMMED TO CUSTOM LENGTHS BY CUTTING BACK TO ANY CORRUGATION.
- THE CHAMBER SHALL BE MANUFACTURED IN A FACILITY EMPLOYING CULTEC'S QUALITY CONTROL AND ASSURANCE PROCEDURES.
- MAXIMUM ALLOWABLE COVER OVER THE TOP OF THE CHAMBER SHALL BE 8.3 FEET (2.53 m).

END CAP PARAMETERS

- THE CULTEC RECHARGER®902HD END CAP (REFERRED TO AS 'END CAP') SHALL BE MANUFACTURED IN THE U.S.A. BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
- THE END CAP SHALL BE TWIN-SHEET THERMOFORMED OF BLACK VIRGIN HIGH MOLECULAR WEIGHT POLYETHYLENE.
- THE END CAP SHALL BE JOINED AT THE BEGINNING AND END OF EACH ROW OF CHAMBERS USING AN INTERLOCKING OVERLAPPING RIB METHOD. CONNECTIONS MUST BE FULLY SHOULDERED OVERLAPPING RIBS, HAVING NO SEPARATE COUPLINGS.
- THE NOMINAL DIMENSIONS OF THE END CAP SHALL BE 48.5 INCHES (1231 mm) TALL, 78 INCHES (1982 mm) WIDE AND 9.7 INCHES (246 mm) LONG. WHEN JOINED WITH A RECHARGER 902HD CHAMBER, THE INSTALLED LENGTH OF THE END CAP SHALL BE 6.2 INCHES (157 mm).
- MAXIMUM INLET OPENING ON THE END CAP IS 24 INCHES (600 mm).
- THE END CAP SHALL PROVIDE RESISTANCE TO THE LOADS AND LOAD FACTORS AS DEFINED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12.

CULTEC HVLV FC-48 FEED CONNECTOR PRODUCT SPECIFICATIONS

GENERAL
CULTEC HVLV FC-48 FEED CONNECTORS ARE DESIGNED TO CREATE AN INTERNAL MANIFOLD FOR CULTEC RECHARGER MODEL 902HD STORMWATER CHAMBERS.

FEED CONNECTOR PARAMETERS

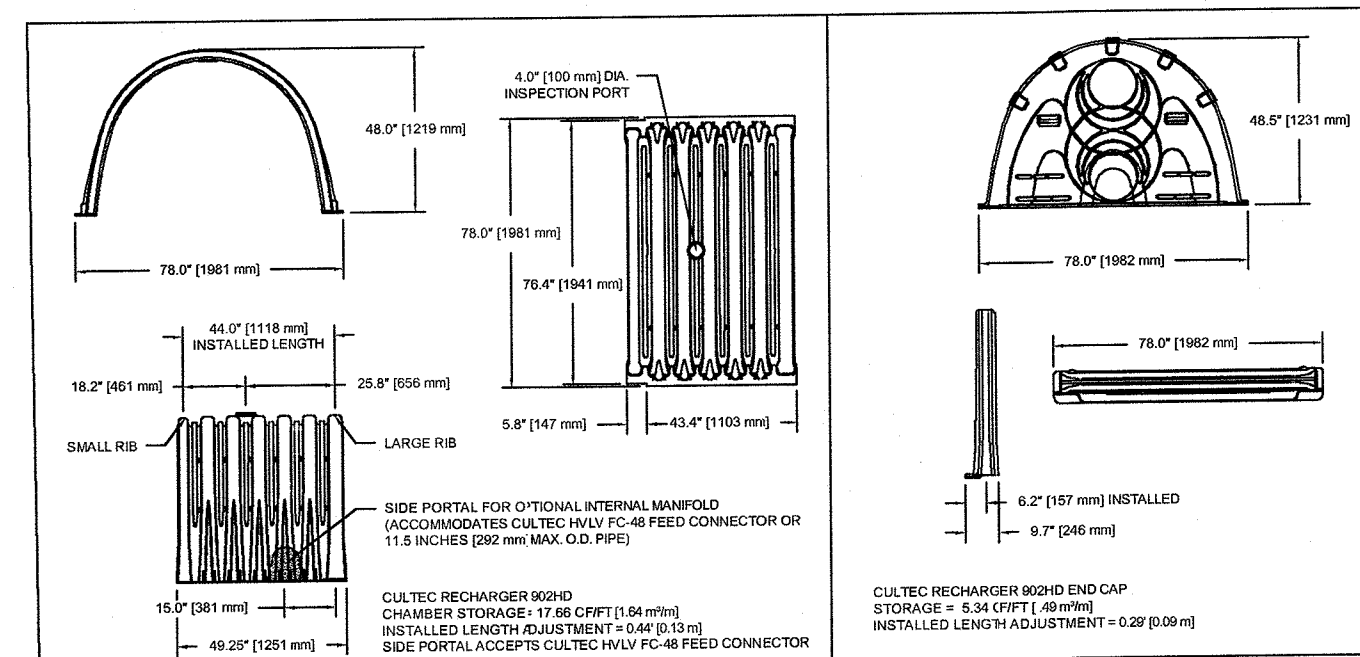
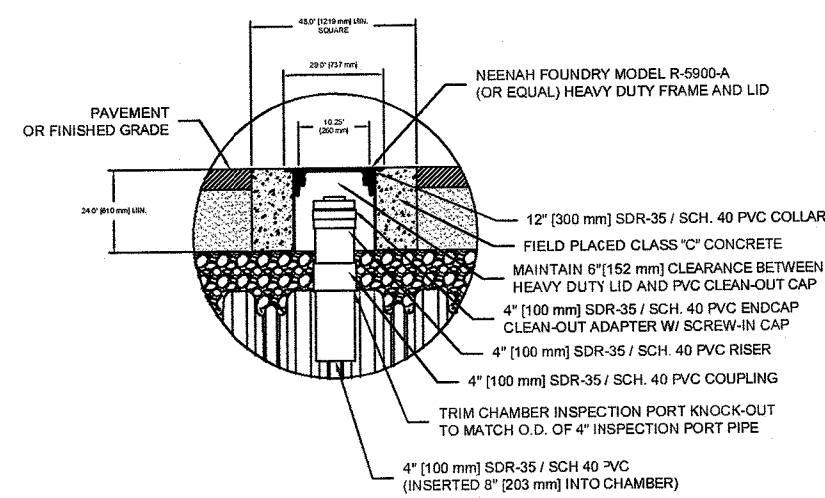
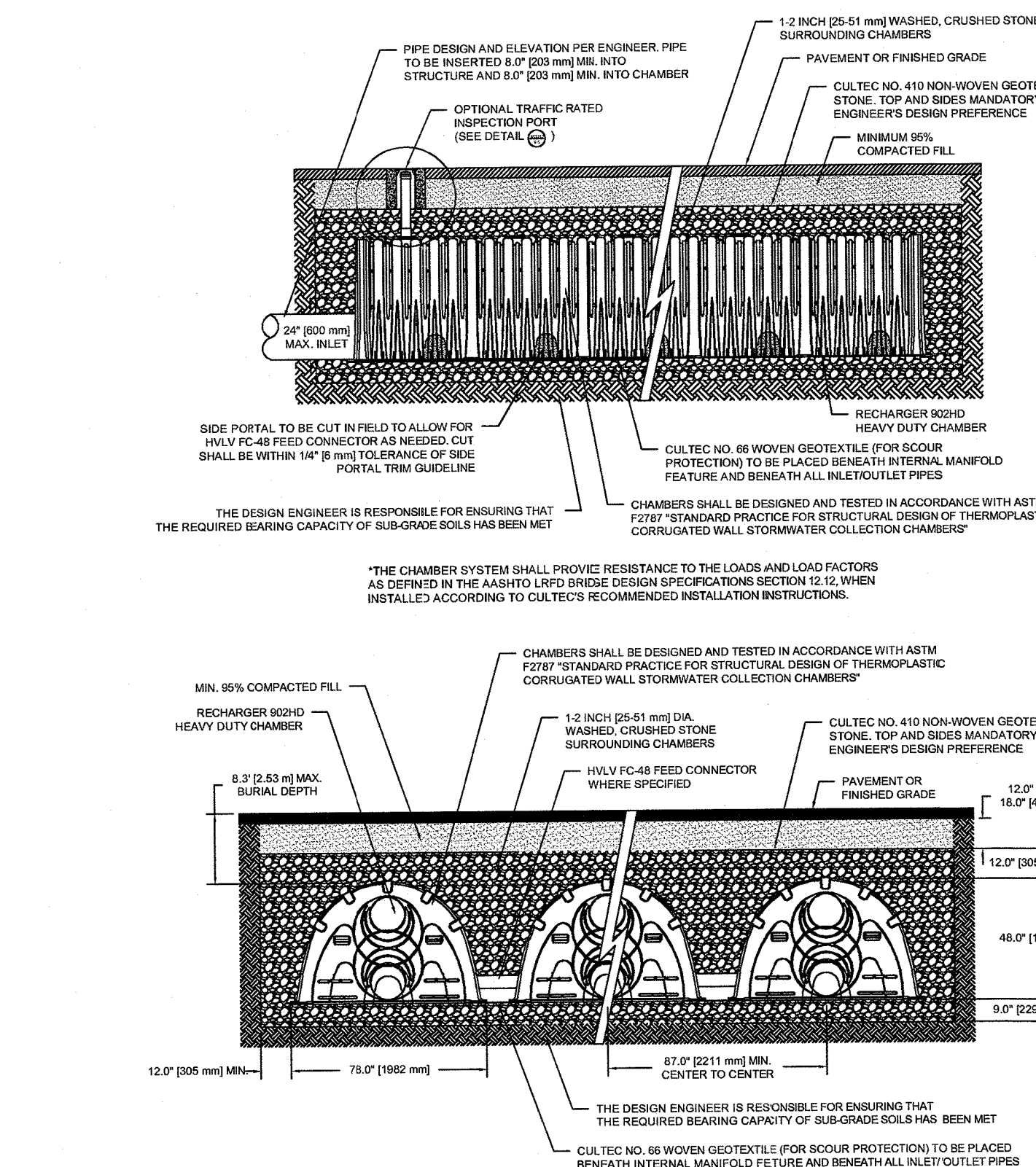
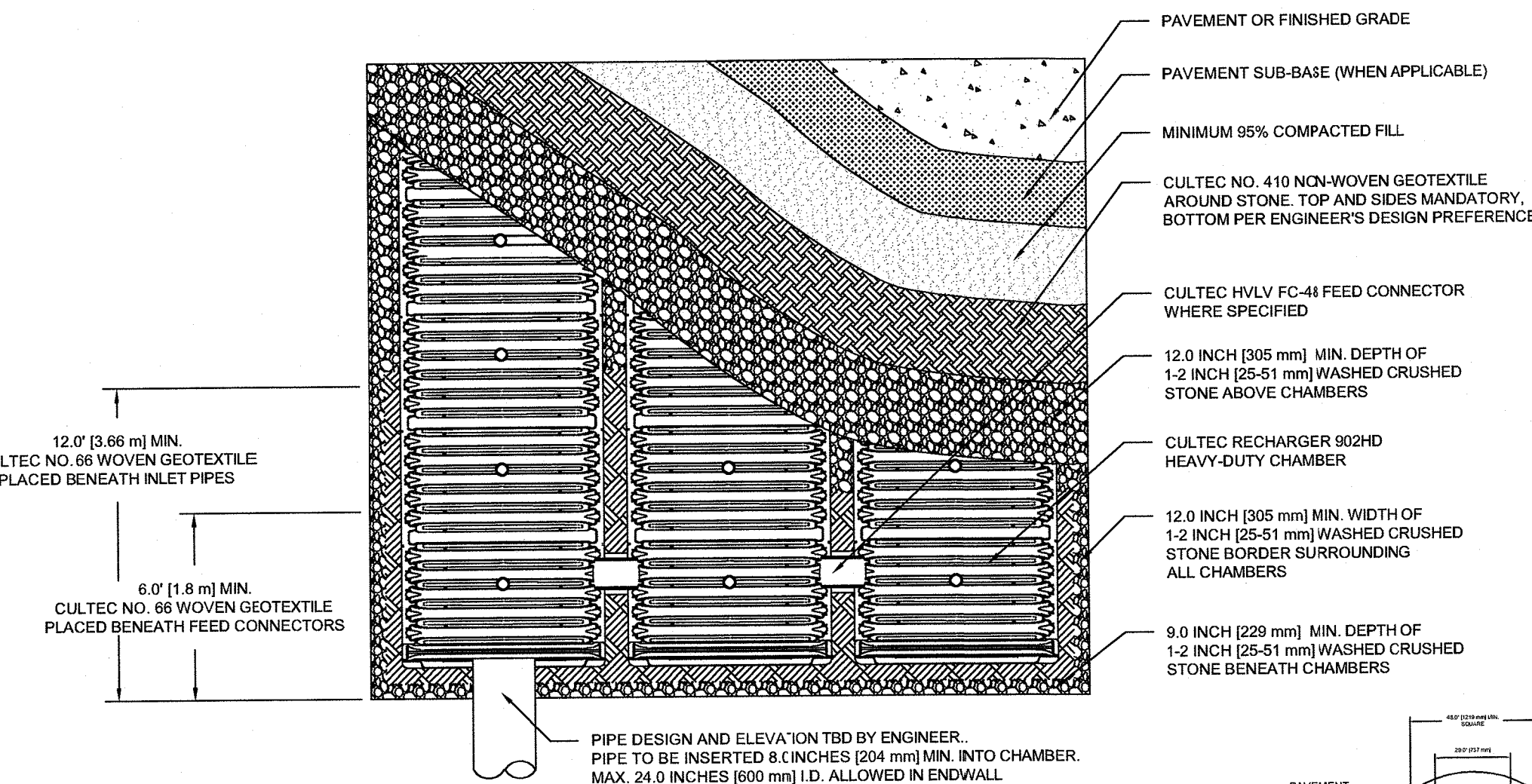
- THE FEED CONNECTOR SHALL BE MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
- THE FEED CONNECTOR SHALL BE VACUUM THERMOFORMED OF BLACK HIGH MOLECULAR WEIGHT HIGH DENSITY POLYETHYLENE (HMWHDPE).
- THE FEED CONNECTOR SHALL BE ARCHED IN SHAPE.
- THE FEED CONNECTOR SHALL BE OPEN-BOTTOMED.
- THE NOMINAL DIMENSIONS OF THE CULTEC HVLV FC-48 FEED CONNECTOR SHALL BE 12 INCHES (305 mm) TALL, 16 INCHES (406 mm) WIDE AND 49 INCHES (1245 mm) LONG.
- THE NOMINAL STORAGE VOLUME OF THE HVLV FC-48 FEED CONNECTOR SHALL BE 0.913 FT³ / FT (0.085 m³ / m) - WITHOUT STONE.
- THE HVLV FC-48 FEED CONNECTOR SHALL HAVE 4 CORRUGATIONS.
- THE HVLV FC-48 FEED CONNECTOR MUST BE FORMED AS A WHOLE UNIT HAVING TWO OPEN END WALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS. THE UNIT SHALL FIT INTO THE SIDE PORTALS OF THE CULTEC RECHARGER STORMWATER CHAMBER AND ACT AS CROSS FEED CONNECTIONS CREATING AN INTERNAL MANIFOLD.
- THE FEED CONNECTOR SHALL BE DESIGNED TO WITHSTAND AASHTO HS-25 DEFINED LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.
- THE FEED CONNECTOR SHALL BE MANUFACTURED IN AN ISO 9001:2008 CERTIFIED FACILITY.

CULTEC NO. 66™ WOVEN GEOTEXTILE

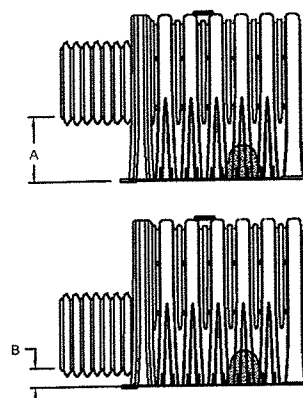
GENERAL
CULTEC NO. 66™ WOVEN GEOTEXTILE IS UTILIZED AS AN UNDERLAYMENT TO PREVENT SCOURING CAUSED BY WATER MOVEMENT WITHIN THE CULTEC CHAMBERS AND FEED CONNECTORS UTILIZING THE CULTEC MANIFOLD FEATURE.

GEOTEXTILE PARAMETERS

- THE GEOTEXTILE SHALL BE PROVIDED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
- THE GEOTEXTILE SHALL BE BLACK IN APPEARANCE.
- THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH OF 315 LBS (1.40KN) PER ASTM D4632 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A TENSILE ELONGATION RESISTANCE OF 15% PER ASTM D4632 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A MULLEN BURST RESISTANCE OF 600PSI (4138 KPA) PER ASTM D3786 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A TEAR RESISTANCE OF 115 LBS (0.51 KN) PER ASTM D4533 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A PUNCTURE RESISTANCE OF 150 LBS (0.66 KN) PER ASTM D4833 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE RESISTANCE OF 900 LBS (4.00 KN) PER ASTM D6241 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A UV RESISTANCE OF 70% @ 500 HRS. PER ASTM D4355 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A PERMITTIVITY RATING OF 0.05 SEC-1 PER ASTM D4911 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A WATER FLOW RATING OF 4 GPM/FT² (160 LPM/M²) PER ASTM D4911 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A PERCENT OPEN AREA OF <1% PER OW-02215 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE AN APPARENT OPENING SIZE OF 40 US STD. SIEVE (0.425 MM) PER ASTM D4751 TESTING METHOD.
- THE GEOTEXTILE SHALL CONSIST OF A 100% HIGH-TENACITY, SILT-FILM POLYPROPYLENE YARNS.

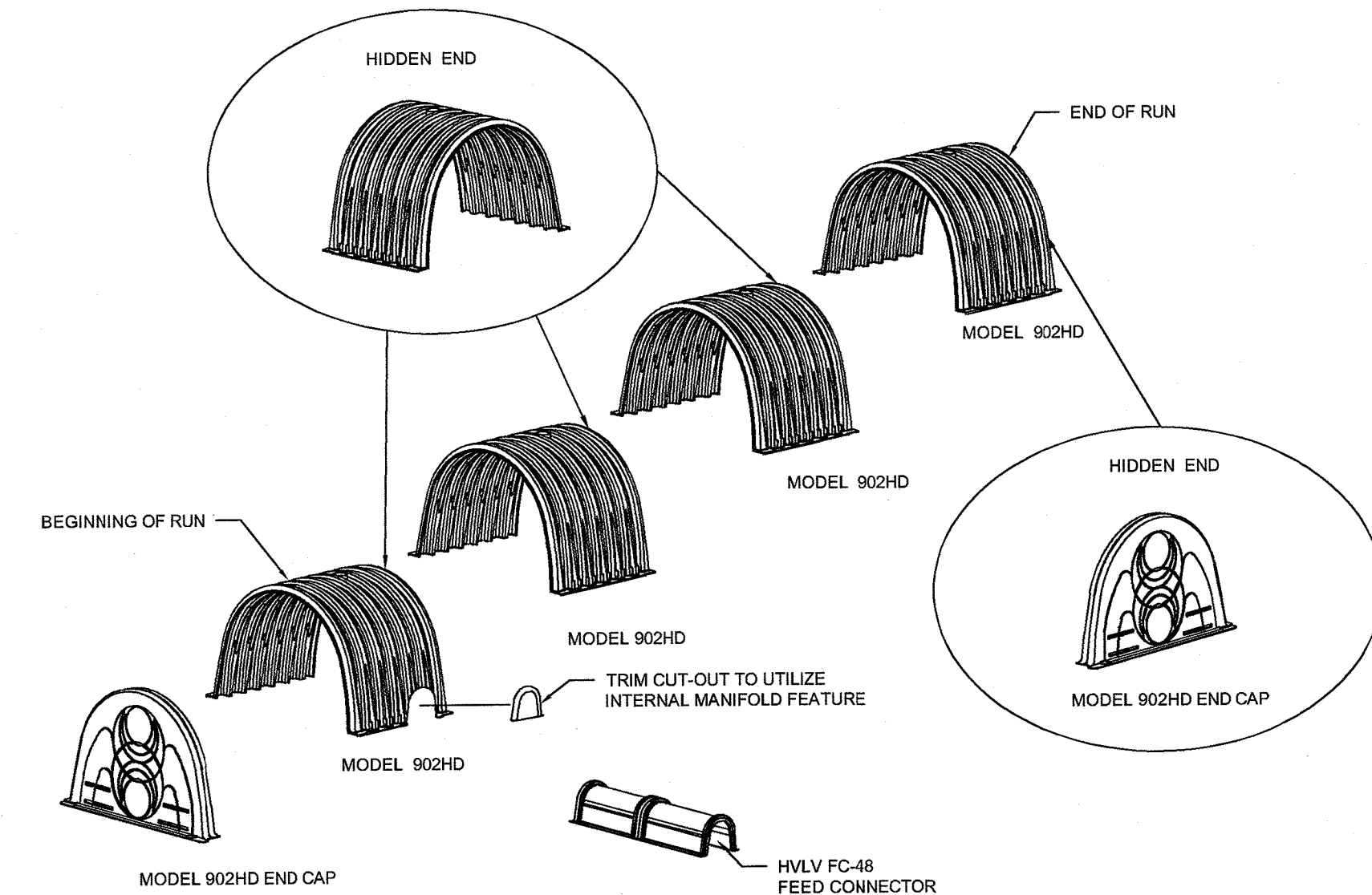
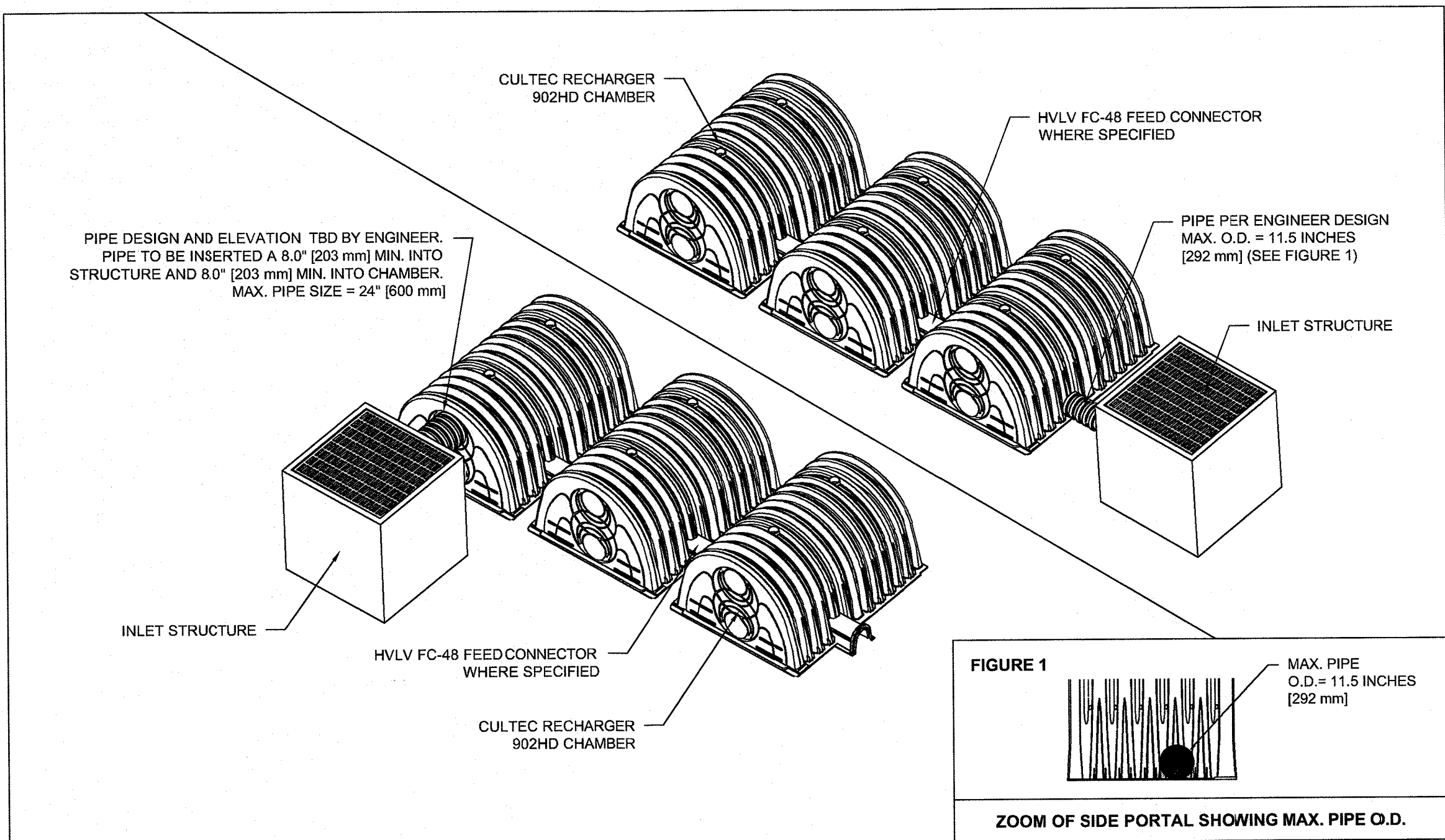


PIPE	A	B
6" (150 mm)	N/A	N/A
8" (200 mm)	N/A	N/A
10" (250 mm)	N/A	N/A
12" (300 mm)	26.50" (669 mm)	2.22" (57 mm)
15" (375 mm)	35.50" (903 mm)	2.22" (57 mm)
18" (450 mm)	39.50" (1003 mm)	2.50" (64 mm)
24" (600 mm)	46.50" (1181 mm)	3.00" (76 mm)



GENERAL NOTES
RECHARGER 902HD BY CULTEC, INC. OF BROOKFIELD, CT.
THE CHAMBER SYSTEM SHALL PROVIDE RESISTANCE TO THE LOADS AND LOAD FACTORS AS DEFINED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12, WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS. ALL RECHARGER 902HD CHAMBERS MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

REFER TO CULTEC, INC.'S CURRENT RECOMMENDED INSTALLATION GUIDELINES. CALL CULTEC, INC. AT 800-428-5832 TO ARRANGE A PRE-CONSTRUCTION MEETING. USE RECHARGER 902HD HEAVY DUTY FOR TRAFFIC APPLICATIONS.

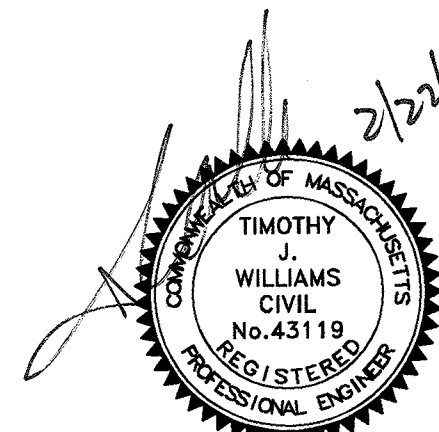


TOWN OF TOPSFIELD, MA SITE PLAN REVIEW AND SPECIAL PERMIT

SITE PLAN AND SPECIAL PERMIT APPROVAL

SIGNATURE

DATE



PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
2	2-27-2017	REVISIONS PER TOWN COMMENTS
1	1-17-2017	REVISED PER PEER REVIEW & TOWN COMMENTS

APPLICANT/OWNER:

SARKIS DEVELOPMENT COMPANY
2 ELM SQUARE
ANDOVER, MA 01810

PROJECT:

RESIDENTIAL DEVELOPMENT
470 BOSTON STREET (ROUTE 1)
TOPSFIELD, MA

PROJECT NO.	2165-01A	DATE:	10-13-2016
SCALE:	N.T.S.	DWG. NAME:	C-2165-01A
DESIGNED BY:	DMR	CHECKED BY:	RB

PREPARED BY:



ALLEN & MAJOR
ASSOCIATES, INC.

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environmental consulting • landscape architecture
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DETAILS	D-10

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TOWN OF TOPSFIELD, MA
SITE PLAN REVIEW
AND SPECIAL PERMIT

SITE PLAN AND SPECIAL PERMIT APPROVAL

SIGNATURE DATE



REGISTERED LANDSCAPE ARCHITECT FOR
BROWN SARDINA, INC.

REV	DATE	DESCRIPTION
2	2-27-17	REVISIONS PER TOWN COMMENTS
1	2-7-17	REVISED PER PEER REVIEW AND TOWN COMMENTS

APPLICANT/OWNER:
SARKIS DEVELOPMENT COMPANY
2 ELM SQUARE
ANDOVER, MA 01810

PROJECT:
RESIDENTIAL DEVELOPMENT
470 BOSTON STREET (ROUTE 1)
TOPSFIELD, MA

PROJECT NO.	2165-01A	DATE:	10-13-2016
SCALE:	1" = 30'-0"	DWG. NAME:	L-1.dwg
DESIGNED BY:	BDB	CHECKED BY:	WB

PREPARED BY:

Brown | Sardina
Brown Sardina, Inc.
Landscape Architecture, Planning, Urban Design
24 Roland Street Boston, MA 02129
Tel: 617.482.4703
www.brownsardina.com

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DRAWING TITLE:
PLANTING AND LIGHTING PLAN
SHEET No.
L-1

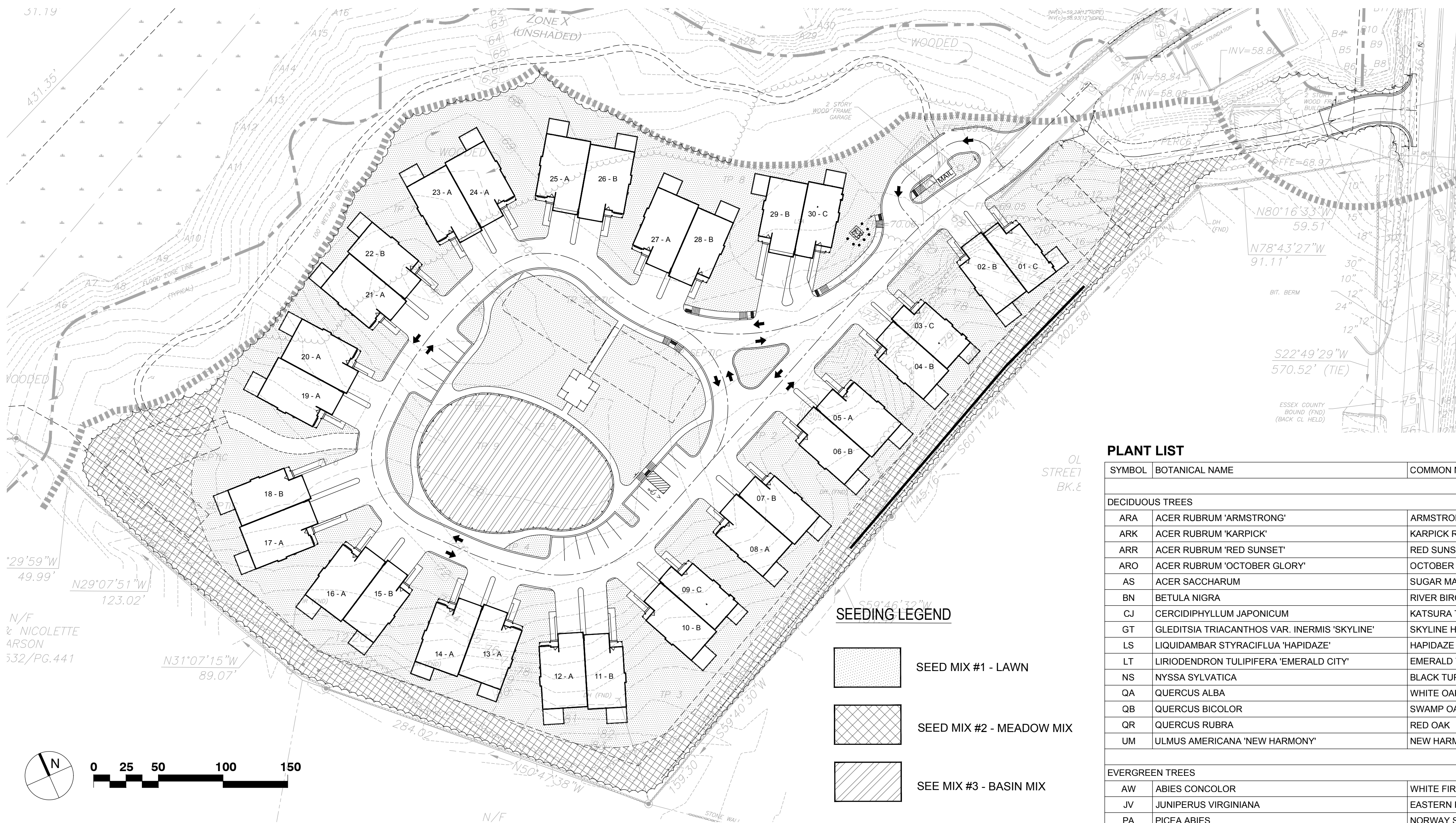


1
L-1
PLANTING AND LIGHTING PLAN
SCALE: 1" = 30'-0"

2
L-1
COMMUNITY ENTRANCE SIGN
SCALE: 1" = 30'-0"

\\BSI-NAS\\DATA\\ACTIVE FILES\\SDC - SARKIS\\1501 TOPSFIELD\\DWGS\\L-1.DWG

NOT FOR CONSTRUCTION - FOR PERMITTING ONLY



1 SEEDING PLAN
L-2 SCALE: 1" = 50'-0"

SEEDING LEGEND

- SEED MIX #1 - LAWN
- SEED MIX #2 - MEADOW MIX
- SEE MIX #3 - BASIN MIX

PLANTING LEGEND

CAL	CALIPER
B&B	BALLED IN BURLAP
TRIA. SP.	TRIANGULAR SPACING
O.C.	ON CENTER
#3 CONT	#3 SIZED CONTAINER
HT	HEIGHT
SPR	SPREAD
	PROPOSED TREES
	PROPOSED SHRUBS

PLANTING NOTES

- REFER TO LAWNS AND GRASSES SPECIFICATIONS FOR FURTHER INFORMATION ON SEED MIXES.
- ANY AREAS OF THE SITE, NOT OTHERWISE DESIGNATED, WHICH ARE DISTURBED DURING CONSTRUCTION SHALL BE HYDROSEEDDED SEED MIXES, UNLESS OTHERWISE DIRECTED.
- PLACE A 2" LAYER OF SHREDDED PINE BARK MULCH OVER ALL BEDS AND OVER ALL TREE PITS.
- CONTRACTOR SHALL VERIFY PLANT COUNTS BY CONFIRMING PLANTING PLAN AND PLANT LIST FOR ACCURACY DURING THE BIDDING PROCESS. REPORT ANY DISCREPANCIES IMMEDIATELY FOR CLARIFICATION BY THE LANDSCAPE ARCHITECT DURING THE ADDENDUM PHASE OF THE PROJECT.

PLANT LIST

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
DECIDUOUS TREES				
ARA	ACER RUBRUM 'ARMSTRONG'	ARMSTRONG RED MAPLE	2 - 2 1/2" CAL.	B&B, NO BRANCHES BELOW 6' MIN.
ARK	ACER RUBRUM 'KARPICK'	KARPICK RED MAPLE	2 - 2 1/2" CAL.	B&B, NO BRANCHES BELOW 6' MIN.
ARR	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	2 - 2 1/2" CAL.	B&B, NO BRANCHES BELOW 6' MIN.
ARO	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	2 - 2 1/2" CAL.	B&B, NO BRANCHES BELOW 6' MIN.
AS	ACER SACCHARUM	SUGAR MAPLE	2 - 2 1/2" CAL.	B&B, NO BRANCHES BELOW 6' MIN.
BN	BETULA NIGRA	RIVER BIRCH	6' - 8' HT.	B&B, MULTI-STEM.
CJ	CERCIDIPHYLLUM JAPONICUM	KATSURA TREE	2 - 2 1/2" CAL.	B&B, NO BRANCHES BELOW 6' MIN.
GT	GLEDITSIA TRIACANTHOS VAR. INERMIS 'SKYLINE'	SKYLINE HONEYLOCUST	2 - 2 1/2" CAL.	B&B, NO BRANCHES BELOW 6' MIN.
LS	LIQUIDAMBAR STYRACIFLUA 'HAPIDAZE'	HAPIDAZE SWEETGUM	2 - 2 1/2" CAL.	B&B, NO BRANCHES BELOW 6' MIN.
LT	LIRIODENDRON TULIPIFERA 'EMERALD CITY'	EMERALD TULIP TREE	2 - 2 1/2" CAL.	B&B, NO BRANCHES BELOW 6' MIN.
NS	NYSSA SYLVATICA	BLACK TUPELO	2 - 2 1/2" CAL.	B&B, NO BRANCHES BELOW 6' MIN.
QA	QUERCUS ALBA	WHITE OAK	2 - 2 1/2" CAL.	B&B, NO BRANCHES BELOW 6' MIN.
QB	QUERCUS BICOLOR	SWAMP OAK	2 - 2 1/2" CAL.	B&B, NO BRANCHES BELOW 6' MIN.
QR	QUERCUS RUBRA	RED OAK	2 - 2 1/2" CAL.	B&B, NO BRANCHES BELOW 6' MIN.
UM	ULMUS AMERICANA 'NEW HARMONY'	NEW HARMONY ELM	2 - 2 1/2" CAL.	B&B, NO BRANCHES BELOW 6' MIN.

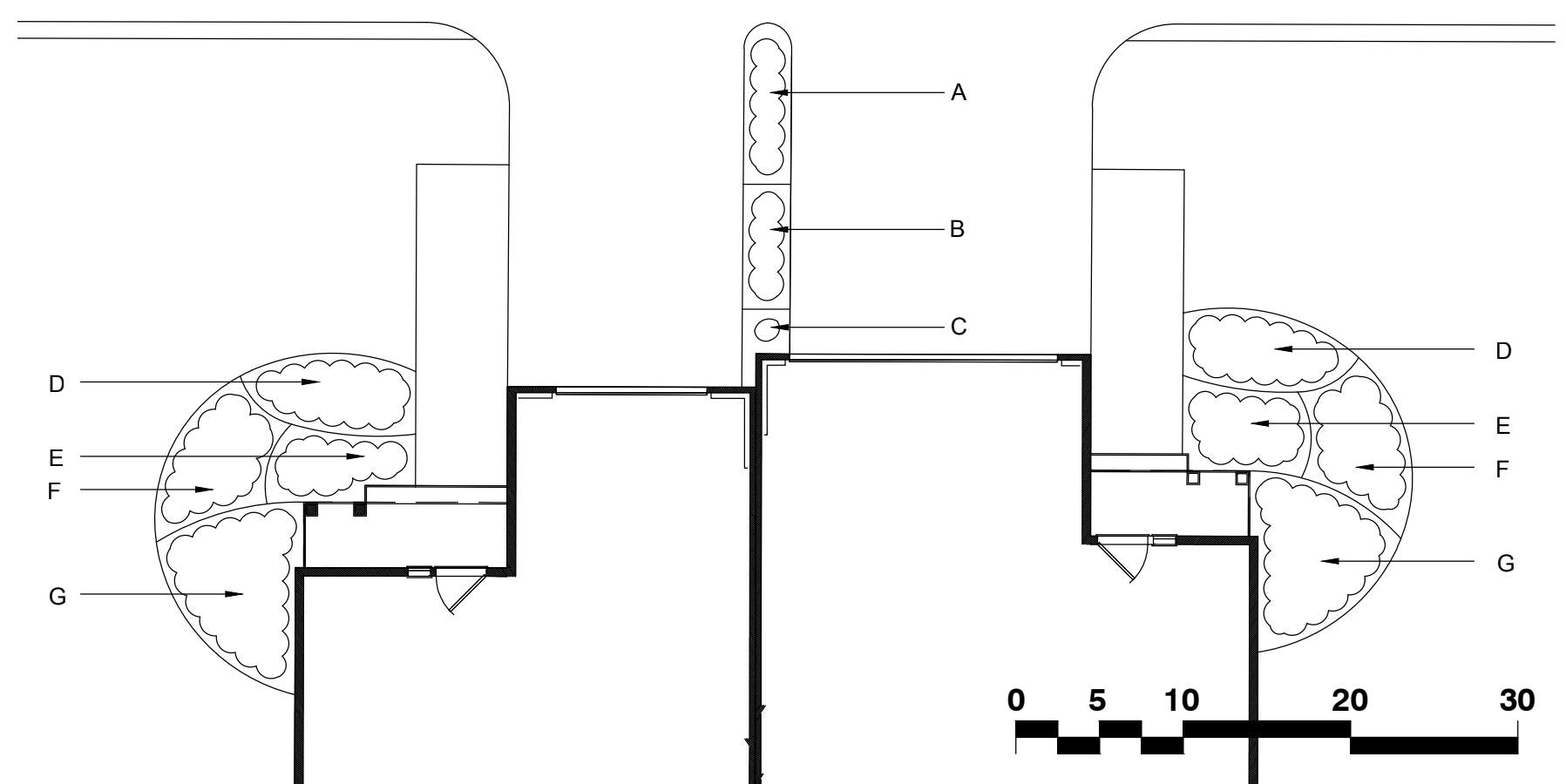
EVERGREEN TREES				
AW	ABIES CONCOLOR	WHITE FIR	8' - 10' HT.	B&B, BRANCHED TO GROUND
JV	JUNIPERUS VIRGINIANA	EASTERN RED CEDAR	7' - 8' HT.	B&B, BRANCHED TO GROUND
PA	PICEA ABIES	NORWAY SPRUCE	9' - 10' HT.	B&B, BRANCHED TO GROUND
PG	PICEA GLAUCA	WHITE SPRUCE	8' - 10' HT.	B&B, BRANCHED TO GROUND
PS	PINUS STROBUS	EASTERN WHITE PINE	8' - 10' HT.	B&B, BRANCHED TO GROUND

FLOWERING TREES				
AC	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE APPLE SERVICEBERRY	6' - 8' HT.	B&B, MULTI-STEM
CF	CORNUS FLORIDA	FLOWERING DOGWOOD	6' - 8' HT.	B&B, HEAVY
HJ	HAMAMELIS X INTERMEDIA 'JELENA'	JELENA WITCHHAZEL	6' - 7' HT.	B&B, HEAVY
MDW	MAGNOLIA 'DONALD WYMAN'	DONALD WYMAN CRABAPPLE	2 - 2 1/2" CAL.	B&B, NO BRANCHES BELOW 4'
ML	MAGNOLIA X LOEBNERI 'LEONARD MESSEL'	LEONARD MESSEL MAGNOLIA	6' - 8' HT.	B&B, HEAVY
PSC	PRUNUS SARGENTI 'COLUMNARIS'	COLUMNAR SARGENT CHERRY	2 - 2 1/2" CAL.	B&B, HEAVY
PYO	PRUNUS YEDOENSIS	YOSHINO CHERRY	2 - 2 1/2" CAL.	B&B, HEAVY

DECIDUOUS SHRUBS				
CAE	CLETHRA ALNIFOLIA	SUMMERSWEET	18"-24" HT.	
CS	CORNUS SERICEA	RED TWIG DOGWOOD	36"-48" HT.	
MP	MYRICA PENSYLVANICA	NORTHERN BAYBERRY	24"- 30" HT.	
RK	ROSA KNOCK OUT BLUSHING PINK	BLUSHING PINK KNOCK OUT ROSE	18"- 24" HT.	30" O.C., TRIA. SP.
SAW	SPIREA JAPONICA 'ANTHONY WATERER'	ANTHONY WATERER SPIREA	24"- 30" HT.	42" O.C., TRIA. SP.
VT	VIBURNUM TRILOBUM	CRANBERRY VIBURNUM	24" HT./SPR.	

EVERGREEN SHRUBS				
IG	ILEX GLABRA	INKBERRY	30" HT./SPR.	
IGS	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY - COMPACT	30" HT./SPR.	
JC	JUNIPERUS CHINENSIS SARGENTII	SARGENTII JUNIPER	18" HT./SPR.	42" O.C., TRIA. SP.
JHB	JUNIPERUS HORIZONTALIS	JUNIPER	18"- 24" HT.	42" O.C., TRIA. SP.
KL	KALMIA LATIFOLIA 'ELF'	ELF MOUNTAIN LAUREL	18"- 24" HT.	36" O.C., TRIA. SP.
RM	RHODODENDRON CATAWBIENSE 'LODER'S WHITE'	LODER'S WHITE RHODODENDRON	24"-30" HT.	48" O.C., TRIA. SP.

GRASSES / PERENNIALS				
AQ	HEMEROCALLIS	DAYLILLIES	#1 CONT	18" O.C., TRIA. SP.
CSS	CAREX STRICTA	TUSsock SEDGE	# 3 CONT	18" O.C., TRIA. SP.
EP	ECHINACEA PURPUREA	PURPLE CONEFLOWER	#1 CONT	18" O.C., TRIA. SP.
MS	MISCANTHUS SINENSIS 'LITTLE KITTEN'	LITTLE KITTEN MAIDEN GRASS	#2 CONT	18" O.C., TRIA. SP.
NF	NEPETA X FAASSENII 'BLUE WHISPER'	BLUE WHISPER CATMINT	#2 CONT	18" O.C., TRIA. SP.
PA	PENNISETUM ALOPECUROIDES 'HAMELN'	HAMELN DWARF FOUNTAIN GRASS	#2 CONT	24" O.C., TRIA. SP.
RF	RUDBECKIA FULGIDA 'GOLDSTRUM'	BLACK EYED SUSAN	#1 CONT	18" O.C., TRIA. SP.
SN	SYMPHYOTRICHUM NOVAE-ANGLIAE	NEW ENGLAND ASTER	# 3 CONT	24" O.C., TRIA. SP.

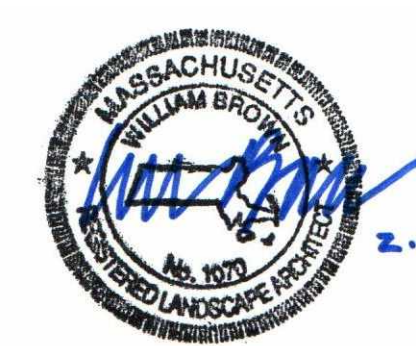


2 FOUNDATION PLANTING PALETTES
L-2 SCALE: 1" = 10'-0"

TOWN OF TOPSFIELD, MA
SITE PLAN REVIEW
AND SPECIAL PERMIT

SITE PLAN AND SPECIAL PERMIT APPROVAL

SIGNATURE DATE



REGISTERED LANDSCAPE ARCHITECT FOR
BROWN SARDINA, INC.

2	2-27-17	REVISIONS PER TOWN COMMENTS
1	2-7-17	REVISED PER PEER REVIEW AND TOWN COMMENTS
REV	DATE	DESCRIPTION

APPLICANT/OWNER:
SARKIS DEVELOPMENT COMPANY
2 ELM SQUARE
ANDOVER, MA 01810

PROJECT:
RESIDENTIAL DEVELOPMENT
470 BOSTON STREET (ROUTE 1)
TOPSFIELD, MA

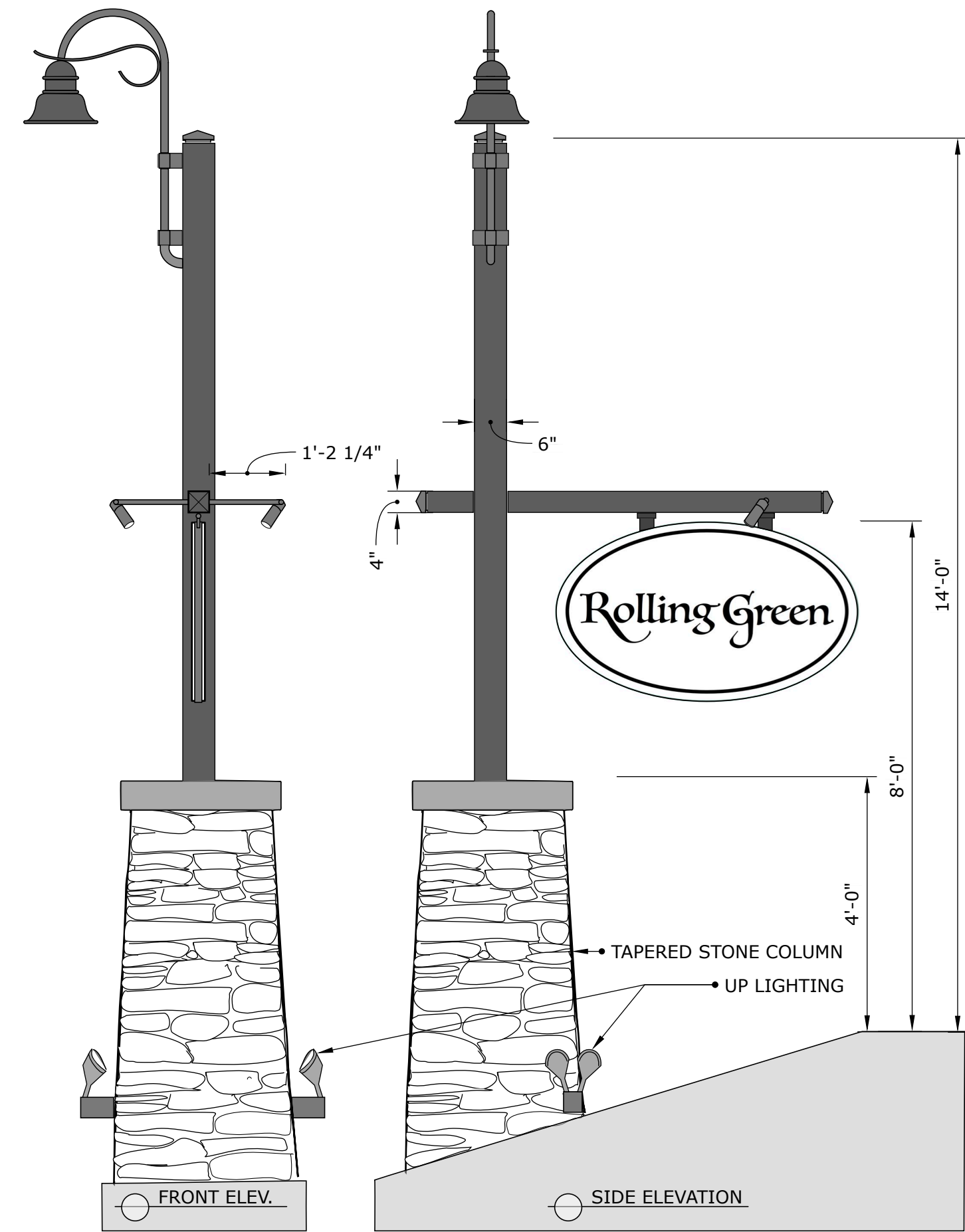
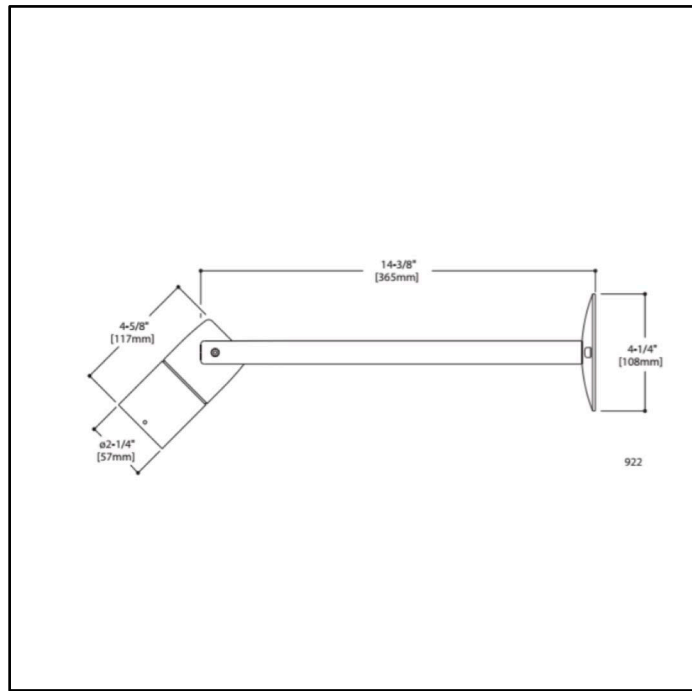
PROJECT NO.	2165-01A	DATE:	10-13-2016
SCALE:	AS SHOWN	DWG. NAME:	L-1.dwg
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DRAWING TITLE:	SHEET NO.
PLANT LIST AND SEEDING PLAN	L-2
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Rolling Green
Lighting Fixture Schedule
Not for Bidding or Construction

Date: 22-Feb
LLD Project #: 1702
By: nd/rwl

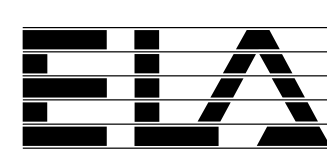
Type	Description	Fixture Catalog #	Light Source	Notes
G01	Exterior surface wall mounted LED decorative lantern, integral electronic driver, wall mounting bracket.	• ELA: BEL-30-CR34-H4-40LED--DSFG-MN-HSS	• INTEGRAL LED, 40W	1, 5, @ Rte 1 Intersection
G02	Exterior pole mounted LED area light, 14 7/8" wide, 23", 15 pole, Type 3 distribution, corrosion resistant cast aluminum alloy, powder coat finish, and IP65 rated.	• ELA: BEL-30-CA-HZ-40LED--DSFG-MN-CR-17A-P3011B-16'	• INTEGRAL LED, 40W	1, 5, @ Road
G03	Exterior ground stake mounted spotlight, 2-1/2" diameter aperture, silicone O-ring, thermoplastic PVC, black polyester powder coat finish, 12" adjustable stake, integral electronic transformer, ul 1838 rating.	• Vision 3: FL1A-BLT-RND-C4-K1-117-L2-0-0-M015-BL-S3-12-voltage-0	• INTEGRAL LED, 10W	1, @ Gazebo
G04	Exterior wall surface mounted led sign light, 33 1/16" straight arm, center rear swivel, single head, painted black finish, linear spread lens, 21 degree narrow downlight, [x] delivered lm, 2700K CCT, 80+ CRI, remote electronic transformer.	• Lumiere: 922-10LED2741-12-BK-LSL T60	• Integral LED, 10W	1, @ Entry Sign

Notes:

1. Provide a complete and operable system including all necessary mounting hardware, power feeds, wiring connections, ballasts, drivers, and control interfaces.
2. Provide overall lighted lengths as shown on architectural drawings.
3. Provide overall lighted lengths as shown on architectural drawings using 4" and 8" fixture bodies.
4. Mounted in an architectural detail. See drawings for mounting configuration and hardware requirements.
5. Provide remote astronomical timeclock - see construction documents for location details.

	SARKIS DEVELOPMENT	ROLLING GREEN CONDOMINIUMS	TOWN of TOPSFIELD MA.	PROPOSED STREET SIGN 2/22/17	
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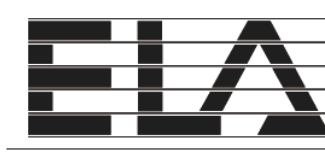
lewis · lighting design | fixture type: G01 G02 - Option A



Project Name:	Type:
Notes:	Order Matrix Number:

Environmental Lighting for Architecture, Inc.

lewis · lighting design | fixture type: G01 G02 - Option A

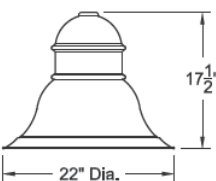
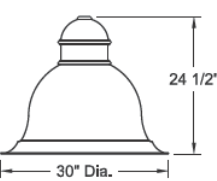


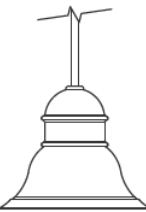





Environmental Lighting for Architecture, Inc.

Ordering Matrix

Bell - BEL

1	2	3	4	5	6	7	8	9
Fixture	Size	Mounting	Optics	Ballast	Voltage	Lens	Color	Option
BEL	/ 22	/ CP	/ H5	/ 150MH	/ 120	/ FG	/ CY	/ --

1. Fixture: BEL									
2. Size									
									
Matrix #:				22	30				
Description:				Max Wattage 150W	Max Wattage 400W				
Notes:				1.3	2.6				
EPA:				22 lbs.	30 lbs.				
Weight:									
3. Mounting									
									
Matrix #:				CA	CP	SP	WB		
Description:				Cross Arm	Chain Pendant	Stem Pendant	Wall Bracket		
Notes: 1. Please consult factory for Poles, Wall Brackets, and other mounting options.									
4. Optics									
Vertical				Horizontal					
				Matrix #:		V3	V5		
Description:				Description:		TYPE 3	TYPE 5		
				Matrix #:		H2	H3	H4	H5
Description:				Description:		TYPE 2	TYPE 3	TYPE 4	TYPE 5
5. Ballast									
Description: Pulse Start Metal Halide (Watts / Type)									
Matrix #:									
50P-SMH 50MH 70P-SMH 70MH 100P-SMH T5 70MH 150P-SMH 100MH 175P-SMH T5 150MH 200P-SMH 200P-SMH* 260P-SMH 300P-SMH 350P-SMH 400P-SMH									
Incandescent (Watts / Type)									
LED (Watts / Type)									
46LED 78LED 144LED									
Notes: 1. Electronic ballast available for 50, 70, 100, and 150 watt MH lamps. 2. Other voltages and ballasts available. Consult factory.									
* See ball-esp-30									
Stamp Applied on 02/07/12									
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ball-esp-30 Page 3									

Notes:
1. Electronic ballast available for 50, 70, 100, and 150 watt ball lamps.
2. Other wattages and ballasts available. Consult factory.

* Fits Bell size 30.

Stamp Applied on 02/07/2017

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bell-spec • Page 2

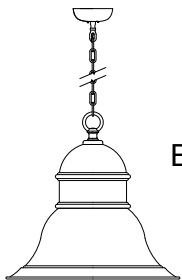
lewis · lighting design | fixture type: G01 G02 - Option A



Environmental Lighting for Architecture, Inc.

Ordering Matrix

Bell - BEL

6. Voltage		Matrix #:		120 *	120V	208	208V	240	240V	277 *	277V	347V	347V	480V	480V																																				
* Only these voltages are available with LED.																																																			
7. Lens																																																			
Notes 1. Glass is tempered flat glass.		Matrix #:		DSCG Clear Glass (Dark Skies)				DSFG Frosted Glass (Dark Skies)																																											
		Description:																																																	
8. Color		Powder Coat Finish				Matrix #				Hand-Applied Finish																																									
Notes Consult factory for custom colors.		Matrix #		Description		Matrix #		Description		Matrix #		Description																																							
		AG		Augustine Green		MG		Malaga Green		CH		Cracked Hide																																							
		GY		Architectural Grey		MN		Midnight		LV		Light Verde																																							
		CC		Charcoal		PW		Pewter		OR		Old Iron																																							
		CY		Clay		SB		Sand Storm		R		Rust																																							
		DB		Dark Bronze		SB		Statuary Bronze		V		Verde																																							
		HR		Harbor Blue		VL		Village Green																																											
		HP		Hammered Pewter		W		White																																											
9. Options																																																			
Notes 1) BBU option is available for fluorescent lamp only. 2) Test button location shall have visibility for placement location.		Matrix #:		BBU Battery Backup		PCB Photocell Button		TB Terminal Block		HSS House Side Shield																																									
		Description:																																																	
Photocell Options Photocell is available in 120 thru 480 volts. Photocell receptacle fits its some cross arms. Consult factory. Specify when ordering.																																																			
Fixture Ordering Example:																																																			
																																																			
BEL/22/CP/H5/150MH/120/DSFG/CY																																																			
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Fixture Ordering Form:																																																			
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TOWN OF TOPSFIELD, MA SITE PLAN REVIEW AND SPECIAL PERMIT

SITE PLAN AND SPECIAL PERMIT APPROVAL

SIGNATURE

DATE



REGISTERED LANDSCAPE ARCHITECT FOR
BROWN SARDINA, INC.

2	2-27-17	REVISIONS PER TOWN COMMENTS
1	2-7-17	REVISED PER PEER REVIEW AND TOWN COMMENTS
REV	DATE	DESCRIPTION

APPLICANT/OWNER:

SARKIS DEVELOPMENT COMPANY
2 ELM SQUARE
ANDOVER, MA 01810

PROJECT:
RESIDENTIAL DEVELOPMENT
470 BOSTON STREET (ROUTE 1)
TOPSFIELD, MA

PROJECT NO.	2165-01A	DATE:	10-13-2016
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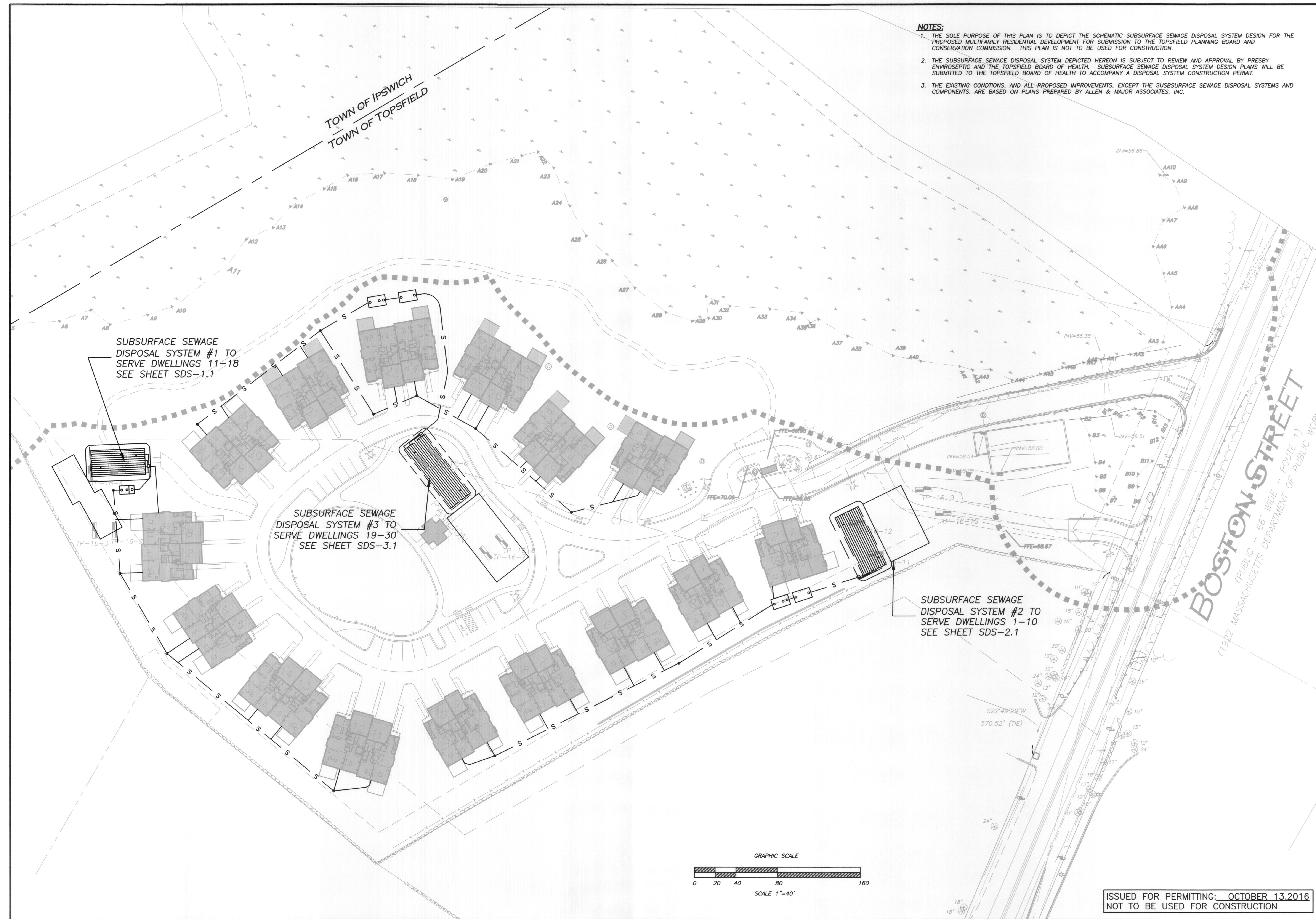
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DRAWING TITLE:	SHEET NO.
LIGHTING CUT SHEETS	L-3

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\\BSI-NAS\\DATA\\ACTIVE FILES\\SDC - SARKIS\\1501 TOPSFIELD\\DWGS\\L-1.DWG



- NOTES:**
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 3. THE EXISTING CONDITIONS, AND ALL PROPOSED IMPROVEMENTS, EXCEPT THE SUBSURFACE SEWAGE DISPOSAL SYSTEMS AND COMPONENTS, ARE BASED ON PLANS PREPARED BY ALLEN & MAJOR ASSOCIATES, INC.



EAGLEBROOK

EAGLEBROOK ENGINEERING
& SURVEY, LLC

491 MAPLE STREET, SUITE 304
DANVERS, MASS. 01923
TEL: (978) 777-0494

470 BOSTON STREET
LOCATED IN
TOPSFIELD, MASSACHUSETTS
PREPARED FOR
SARKIS DEVELOPMENT COMPANY
2 ELM SQUARE
ANDOVER, MASSACHUSETTS

STAMP:



DATE:

OCTOBER 13, 2016

REVISIONS:

NO.	DESCRIPTION:	DATE:
3	REVISIONS PER TOWN COMMENTS	2/27/17
2	MOVED SDS 1 LEACH FIELD	2/1/17
1	MOVED SDS 1 LEACH FIELD	1/12/17

DRAWN BY: BSM

CHECKED BY: KCK

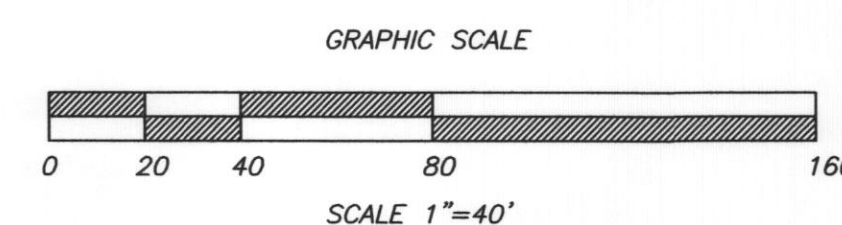
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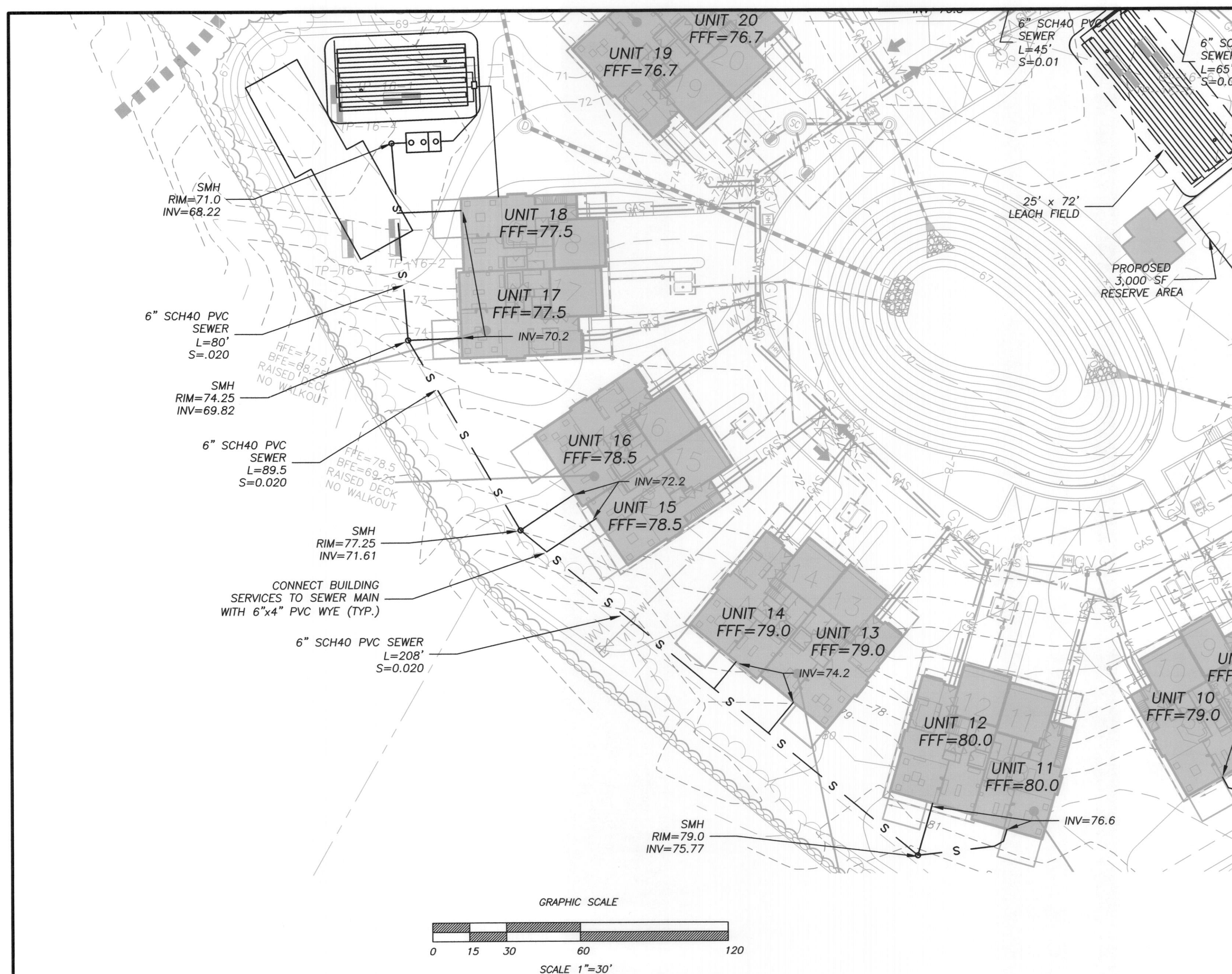
PROJECT NO. 15-023

TITLE:

**SDS
PLAN
SDS-1**

ISSUED FOR PERMITTING: OCTOBER 13, 2016
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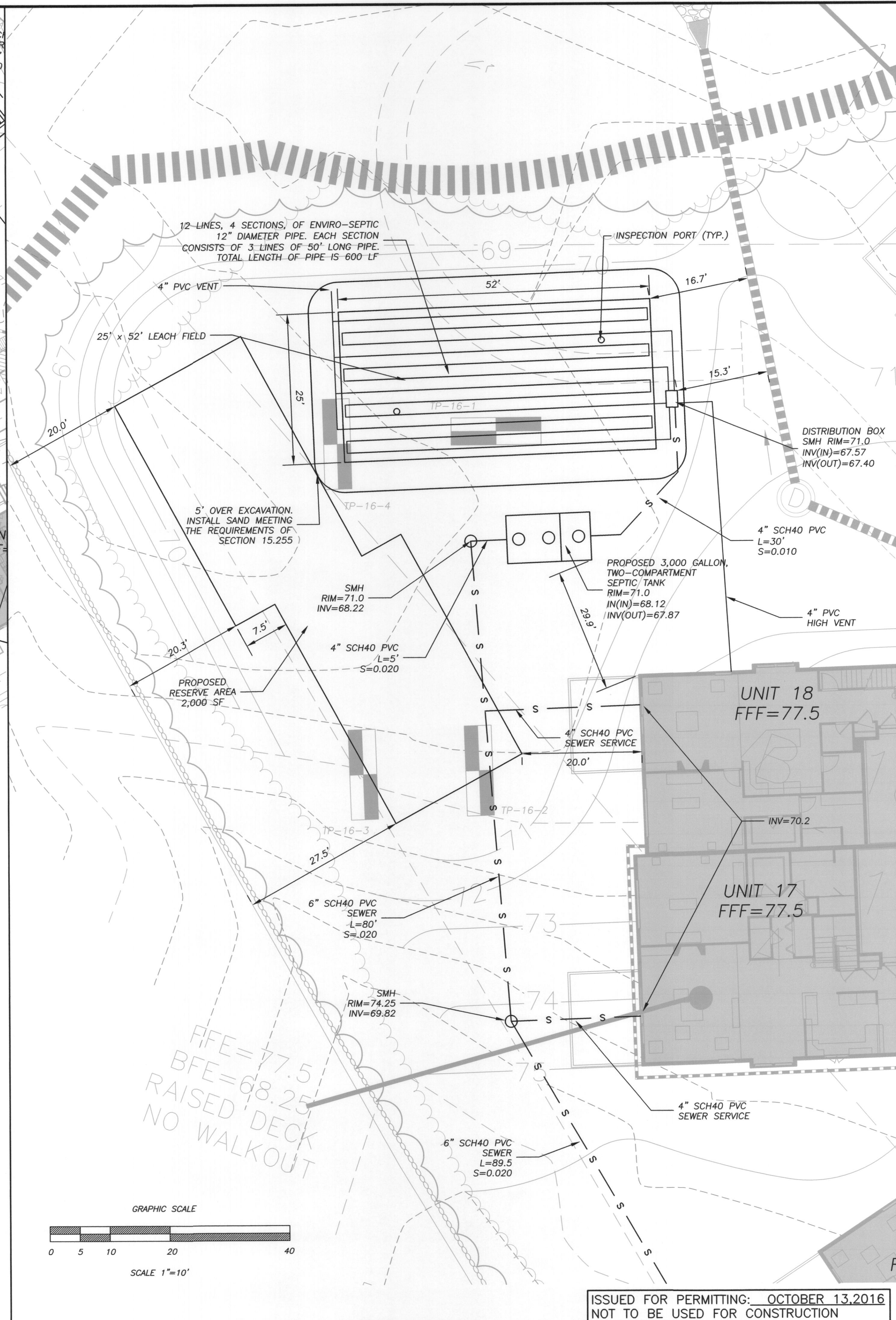


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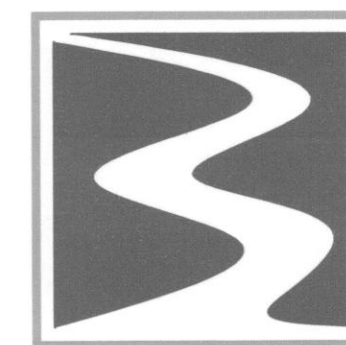
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12. THERE ARE NO KNOWN POTABLE DRINKING WATER WELLS WITHIN 100 FEET OF THE PROPOSED SEPTIC SYSTEM.
13. PROVIDE A MINIMUM OF FIVE (5) FEET OF OVER EXCAVATION TO REMOVE ALL TOPSOIL, SUBSOIL AND OTHER UNSUITABLE MATERIALS TO THE TOP OF THE NATURALLY OCCURRING C HORIZON AND REPLACE WITH SAND MEETING THE REQUIREMENTS OF THE STATE ENVIRONMENTAL CODE, TITLE 5 SECTION 15.255.
14. THE PERCOLATION TEST AND THE DEEP EXCAVATION HOLES WERE WITNESSED BY MR. JOHN COULON ON JULY 6, 2016.
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MATERIAL SPECIFICATIONS

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5. ALL AGGREGATE PLACED SHALL MEET THE REQUIREMENTS OF SECTION 15.247 OF THE STATE ENVIRONMENTAL CODE, TITLE 5.



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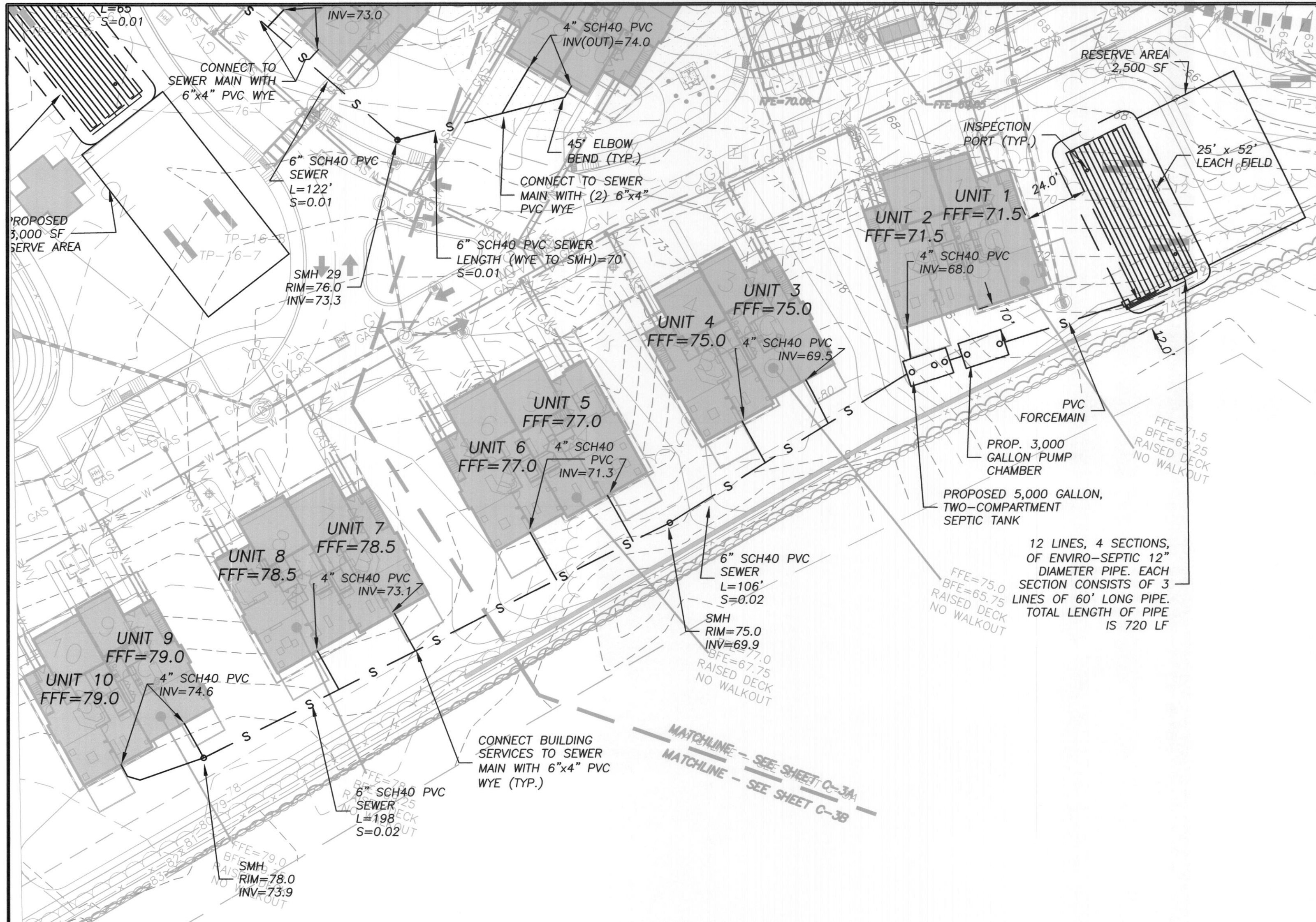
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SCALE: AS NOTED

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SDS
PLAN
SDS 1.1

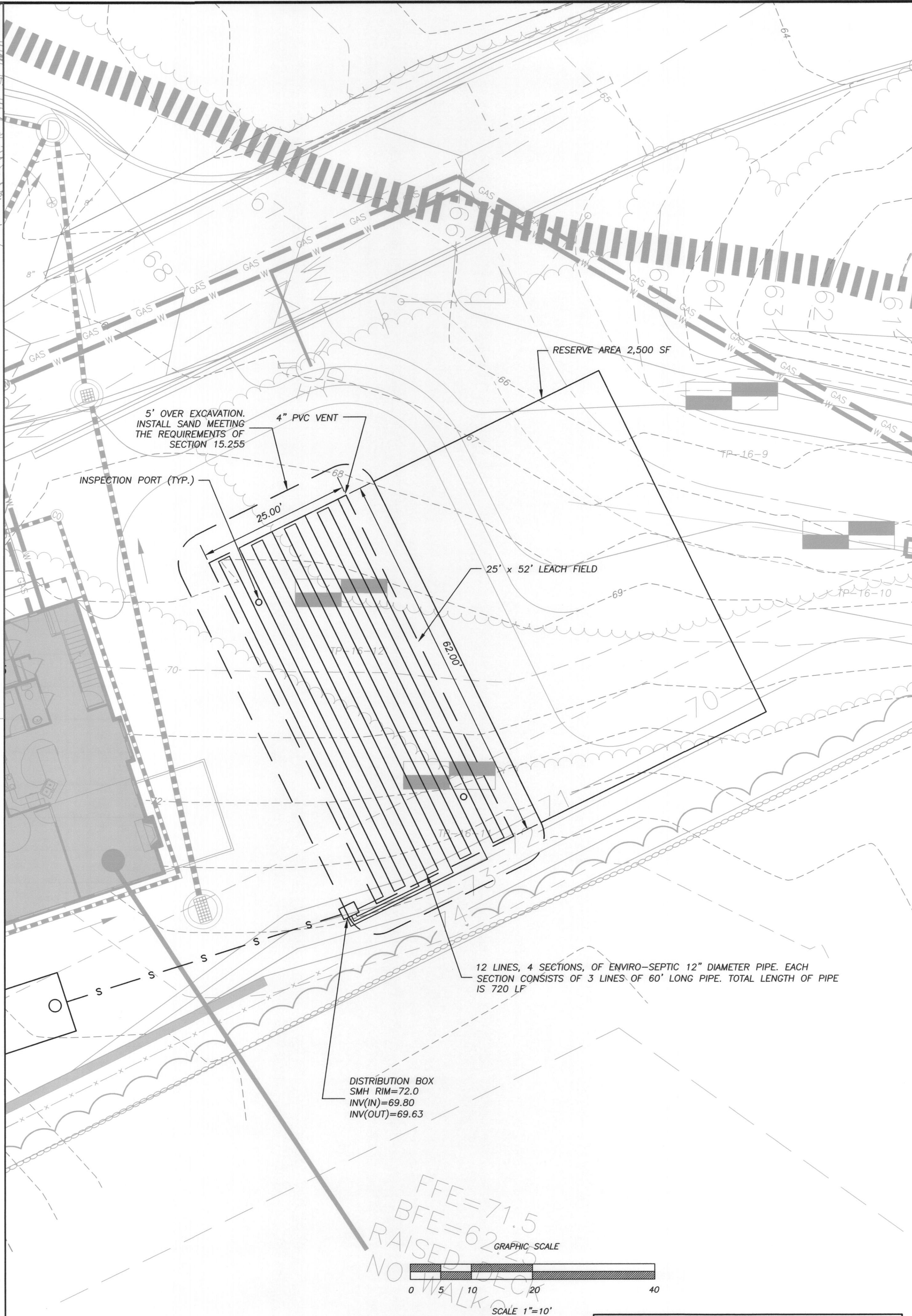


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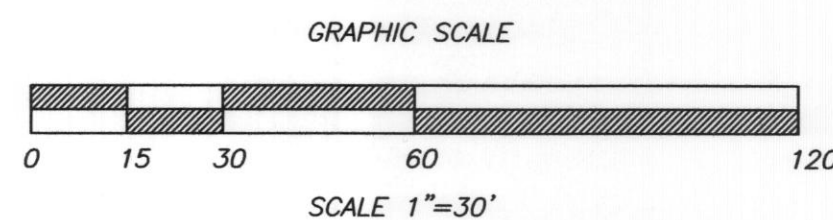
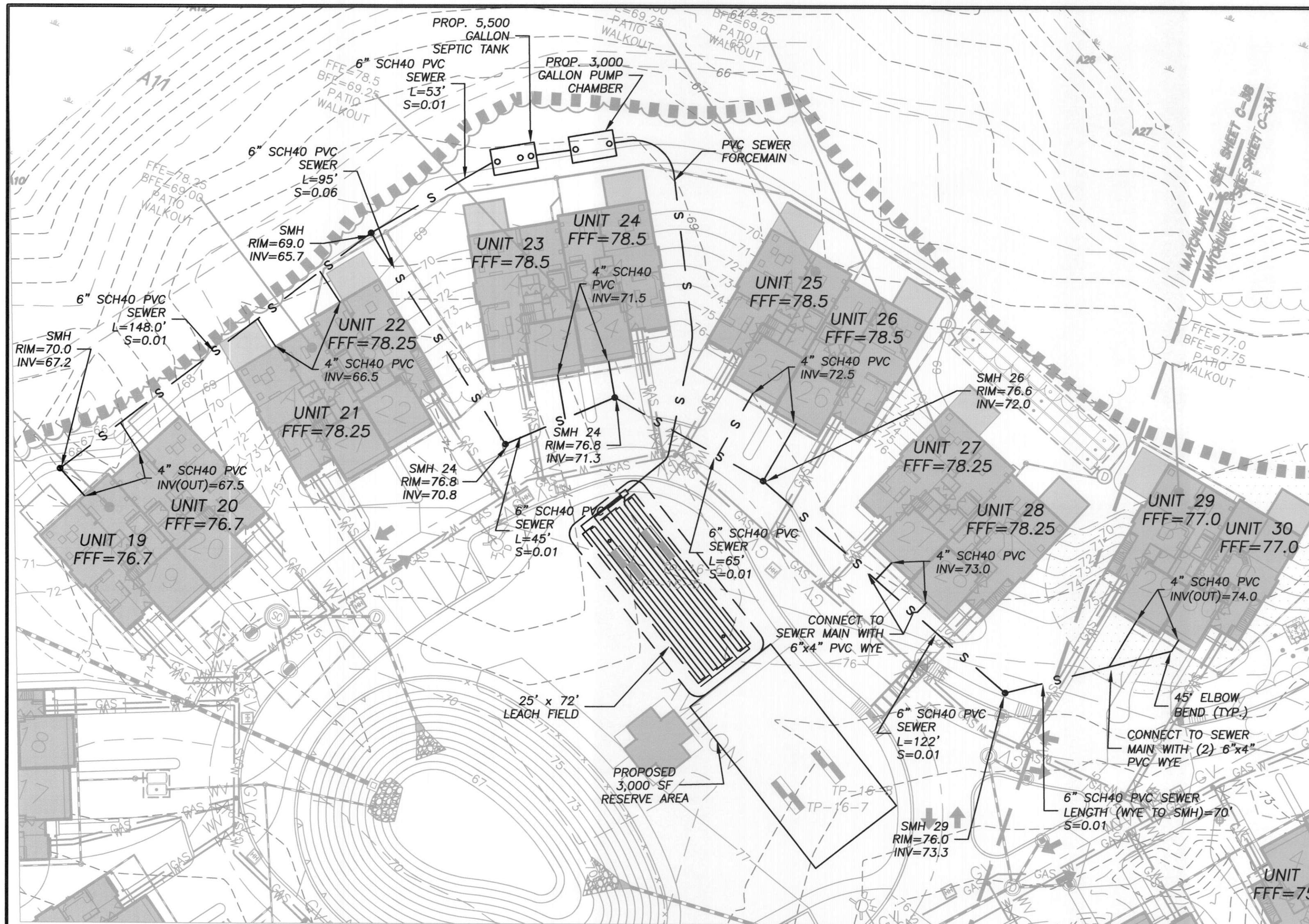
SCALE: AS NOTED

PROJECT NO. 15-023

TITLE:

**SDS
PLAN
SDS 2.1**

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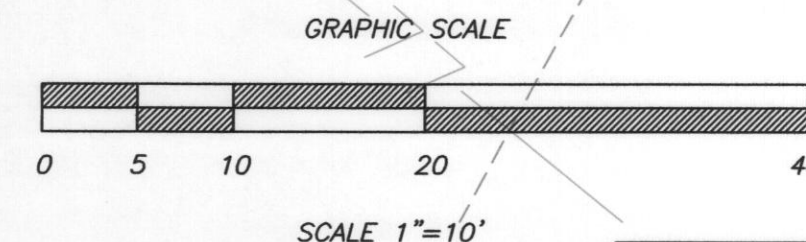
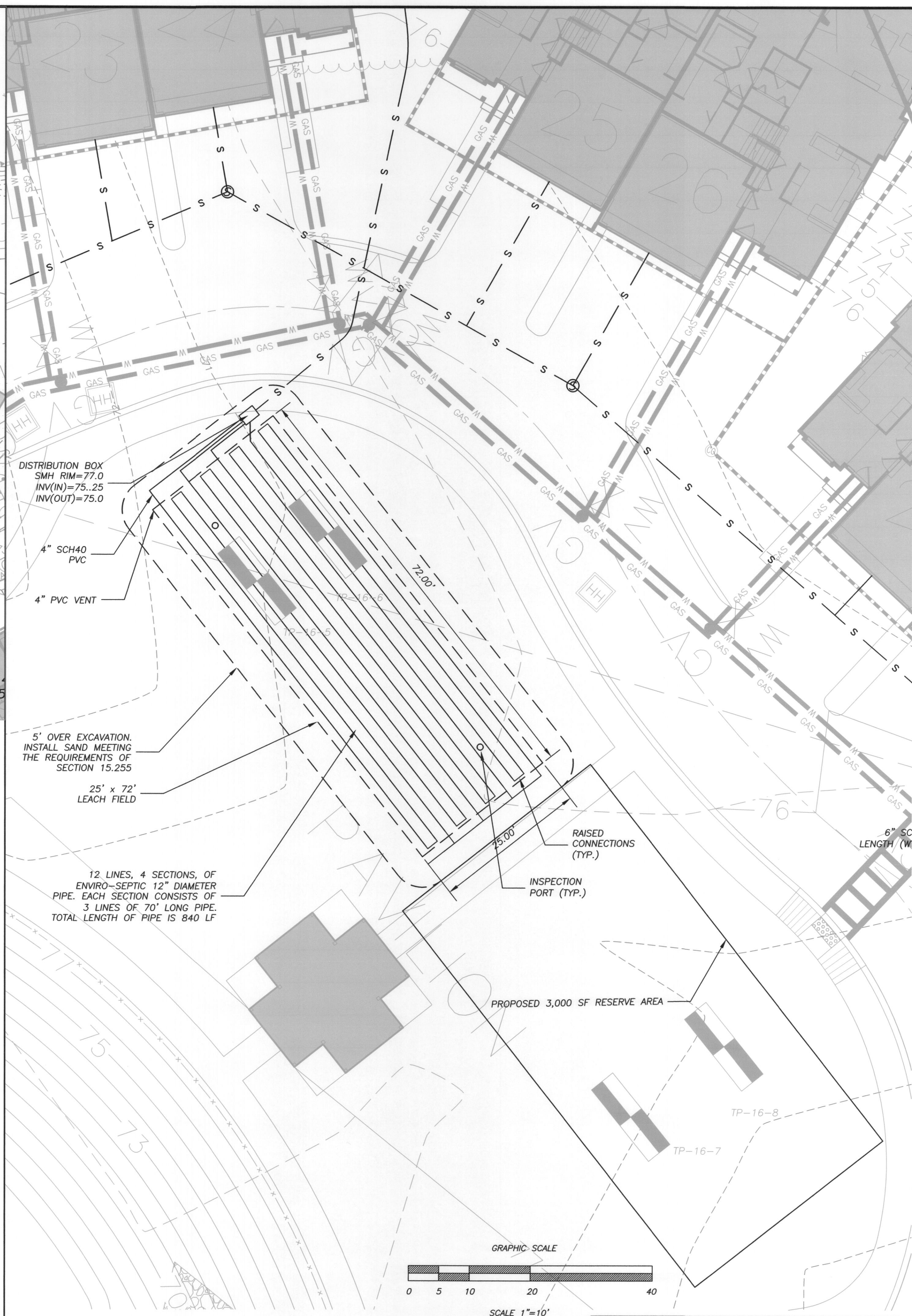


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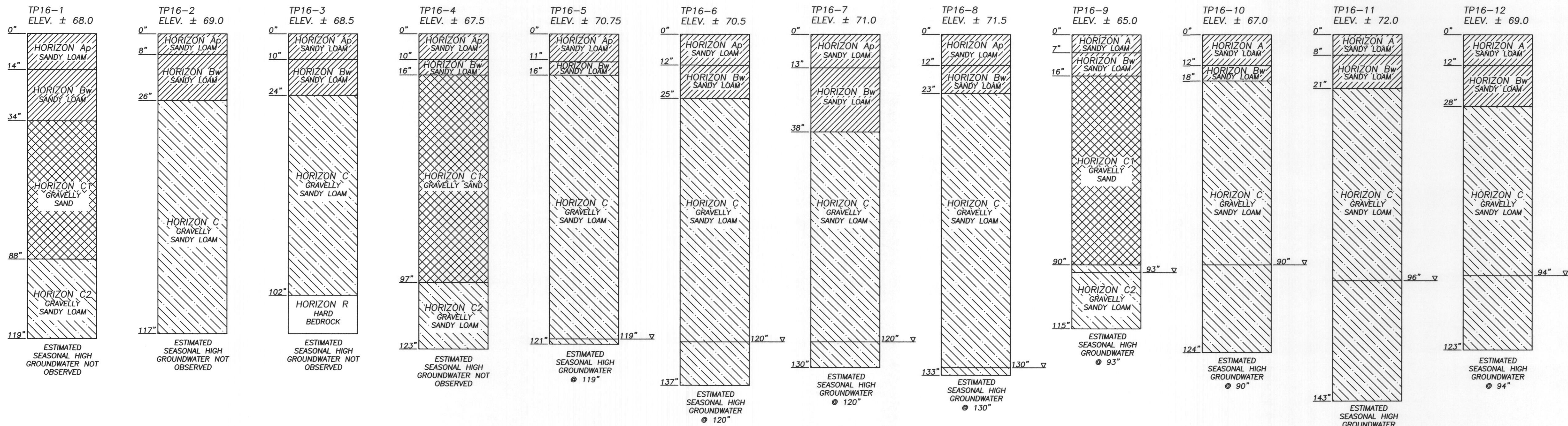
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SCALE: AS NOTED

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TITLE:

SDS
PLAN
SDS 3.1



PERCOLATION TEST #1
LOCATION: TP16-2
DEPTH OF PERC: 66"
PERC RATE: 1.66 MPI

PERCOLATION TEST #2
LOCATION: TP16-4
DEPTH OF PERC: 42"
PERC RATE: 1.00 MPI

PERCOLATION TEST #4
LOCATION: TP16-5
DEPTH OF PERC: 54"
PERC RATE: 1.00 MPI

PERCOLATION TEST #3
LOCATION: TP16-8
DEPTH OF PERC: 63"
PERC RATE: 4.66 MPI

PERCOLATION TEST #6
LOCATION: TP16-10
DEPTH OF PERC: 54"
PERC RATE: 7.33 MPI

PERCOLATION TEST #5
LOCATION: TP16-12
DEPTH OF PERC: 54"
PERC RATE: 2.33 MPI

TEST PIT NOTES:
1. SOIL SUITABILITY ASSESSMENT WAS PERFORMED BY ALEXANDER F. PARKER ON JULY 6, 2016. THE ASSESSMENT WAS WITNESSED BY THE TOPSFIELD DIRECTOR OF PUBLIC HEALTH, MR. JOHN COULON.

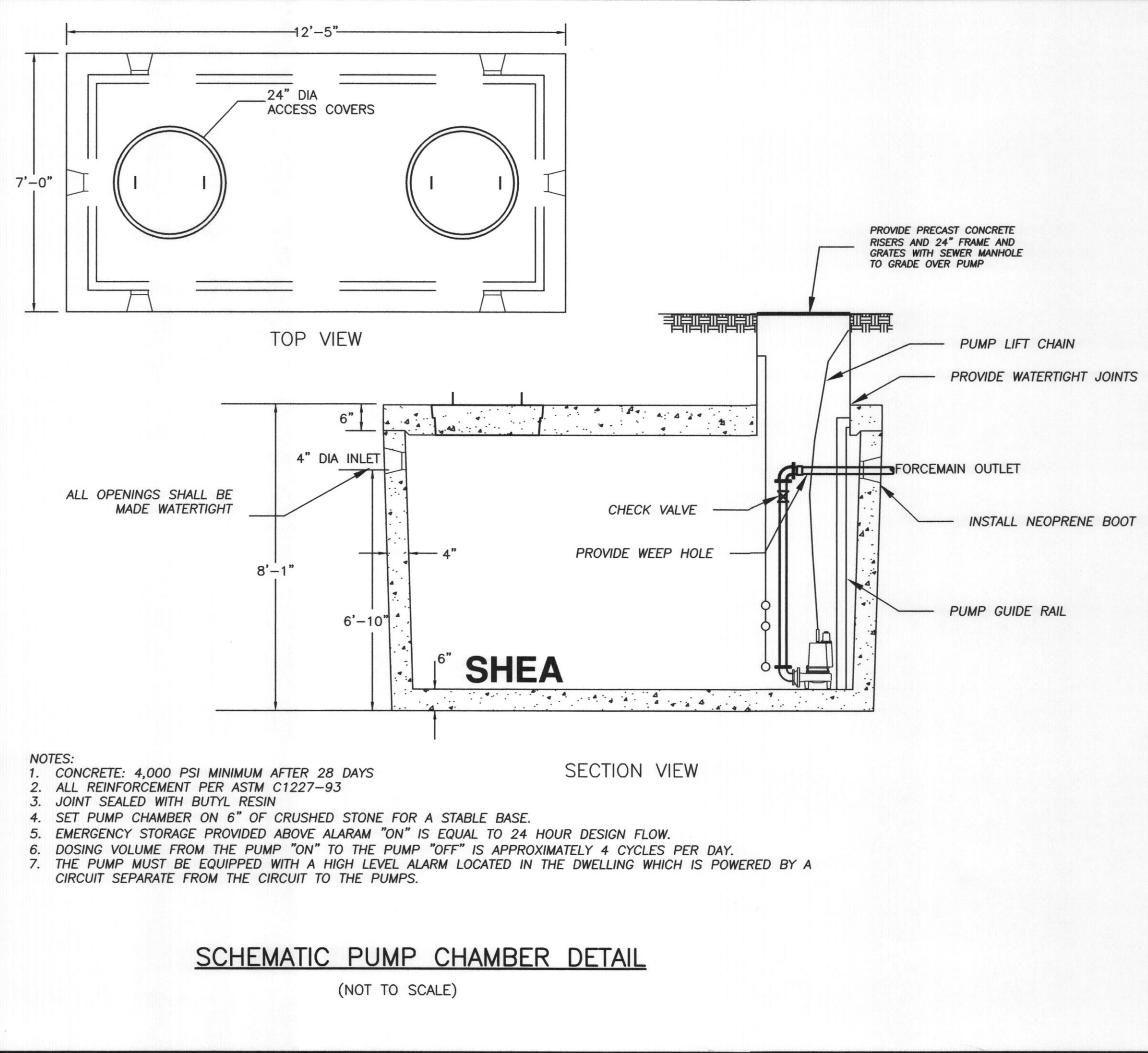
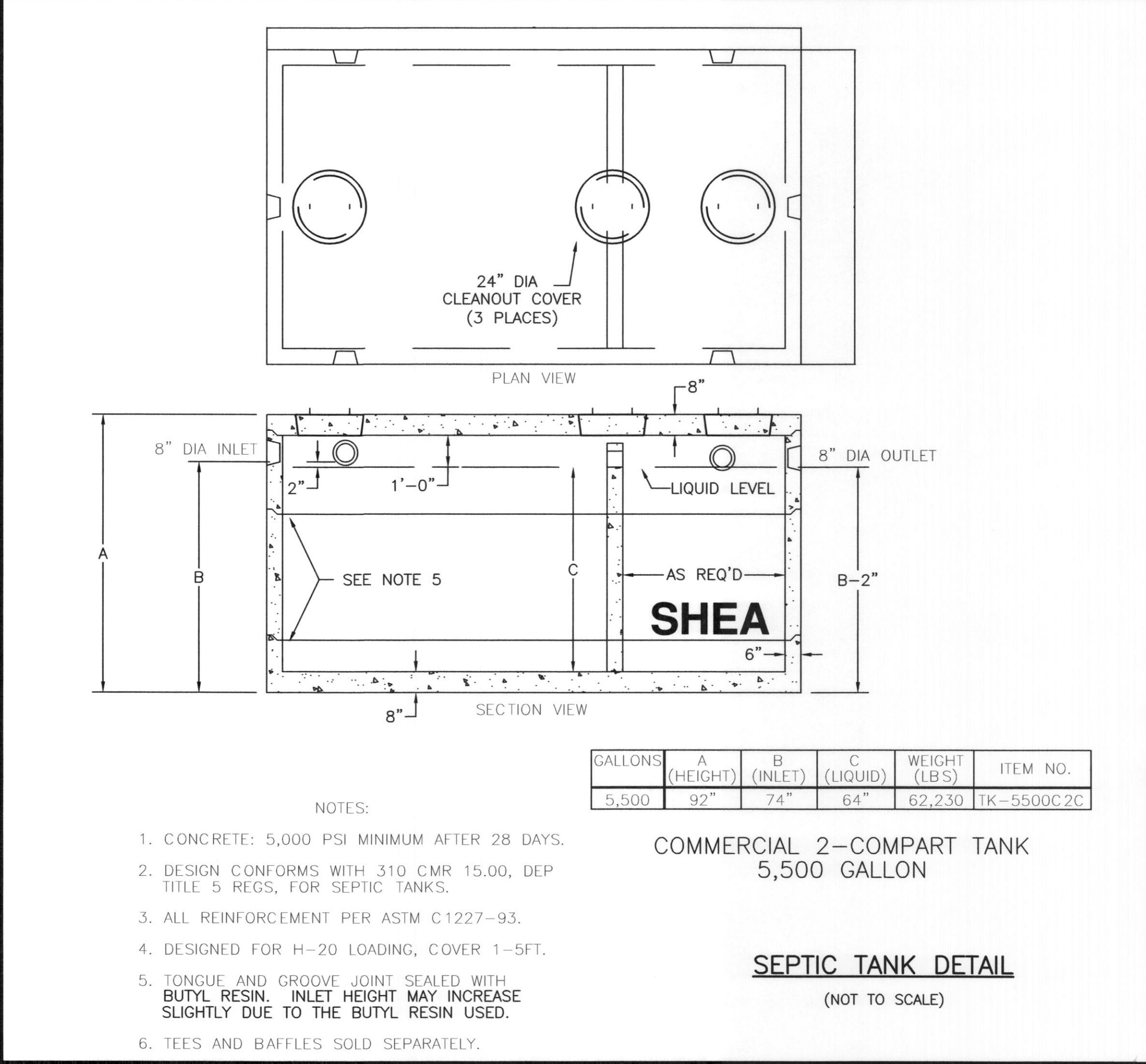
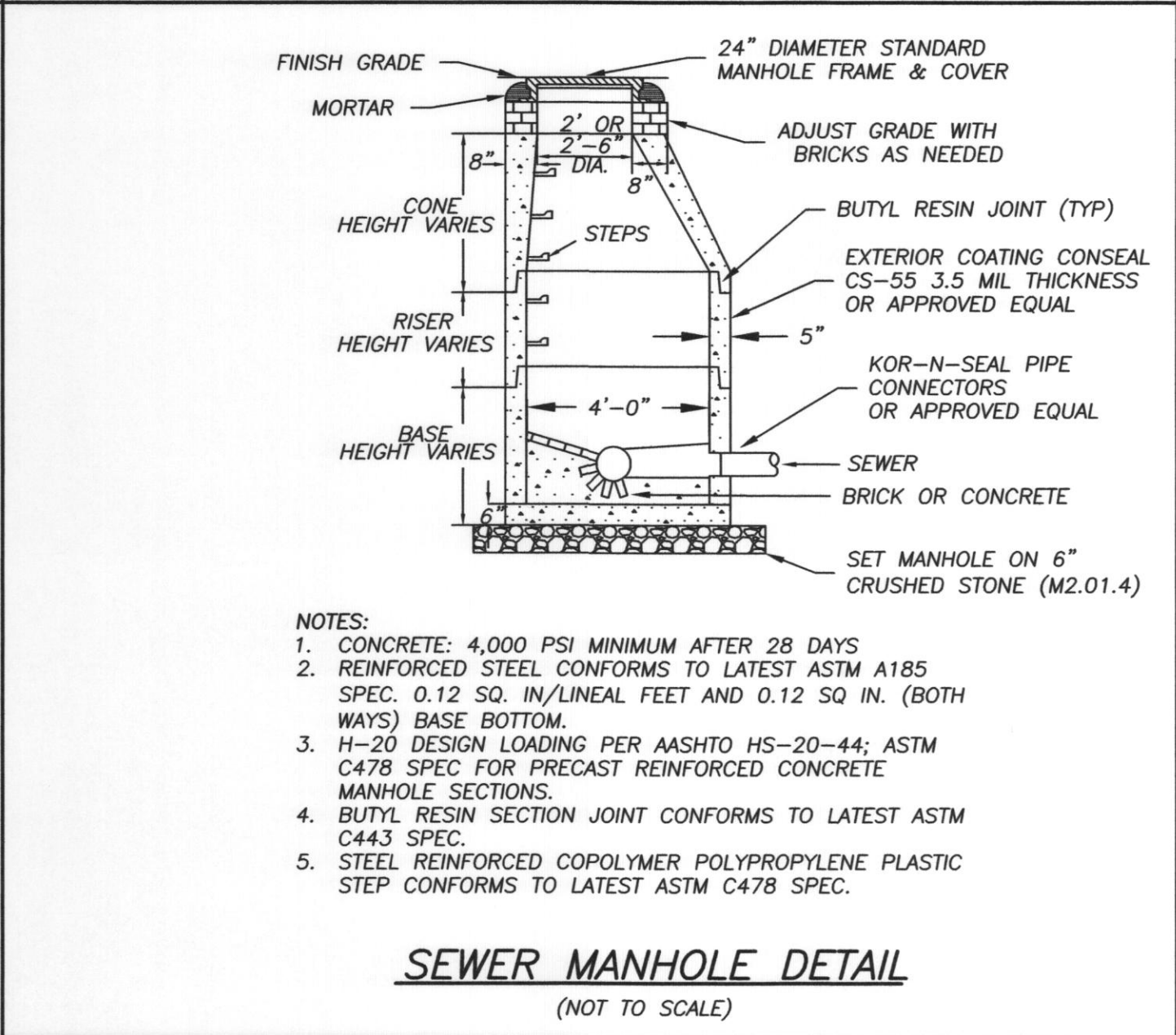
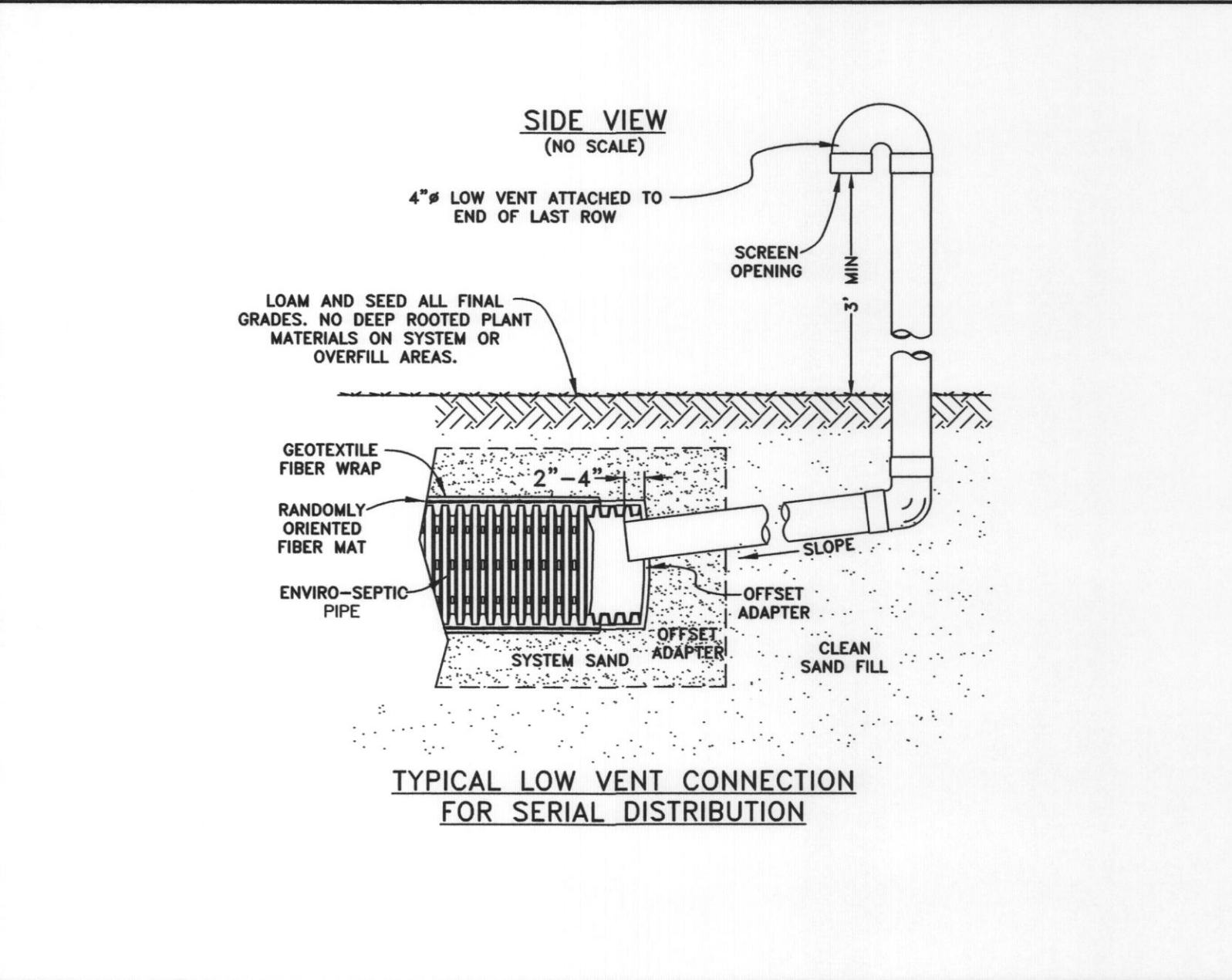
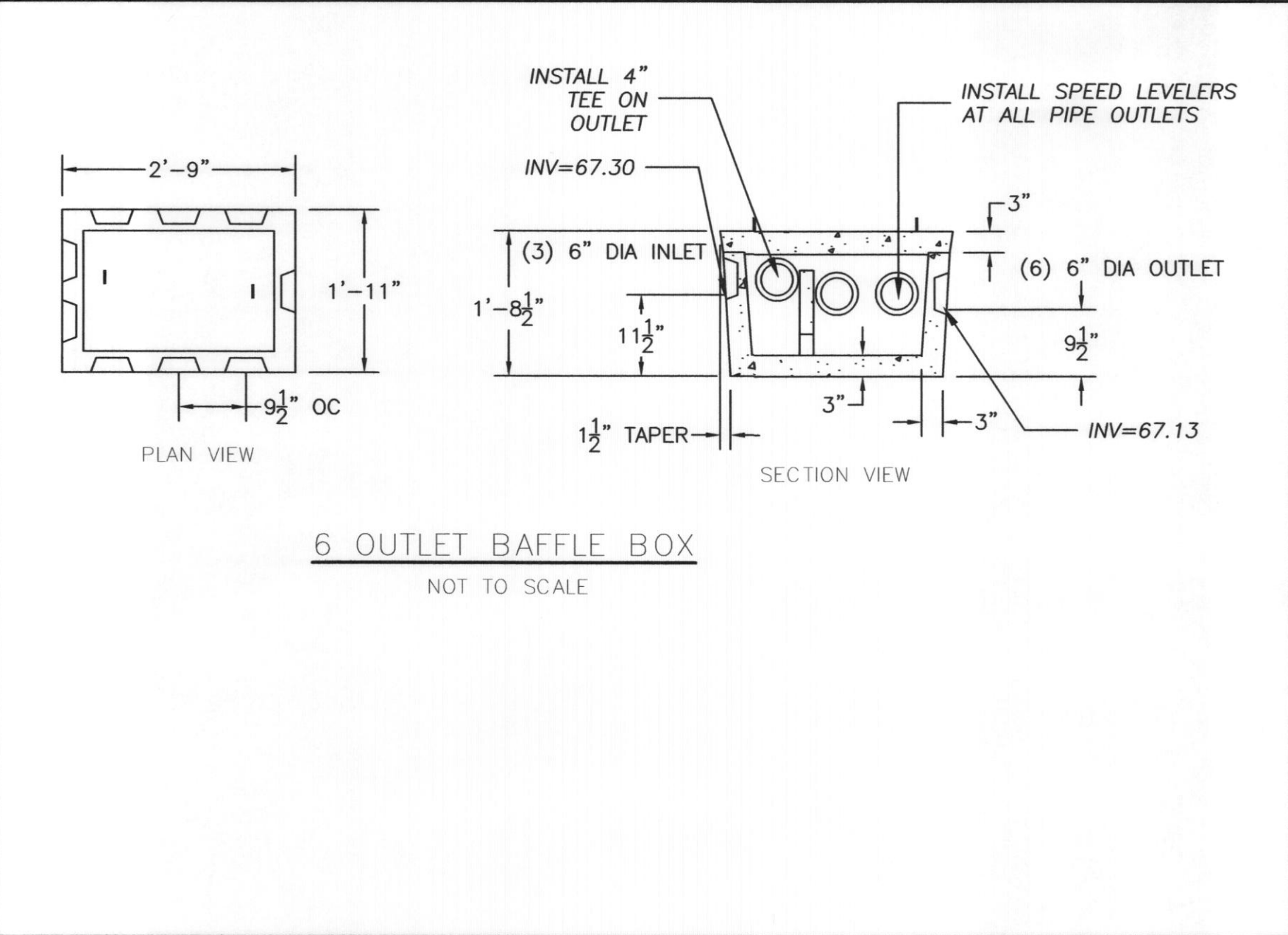
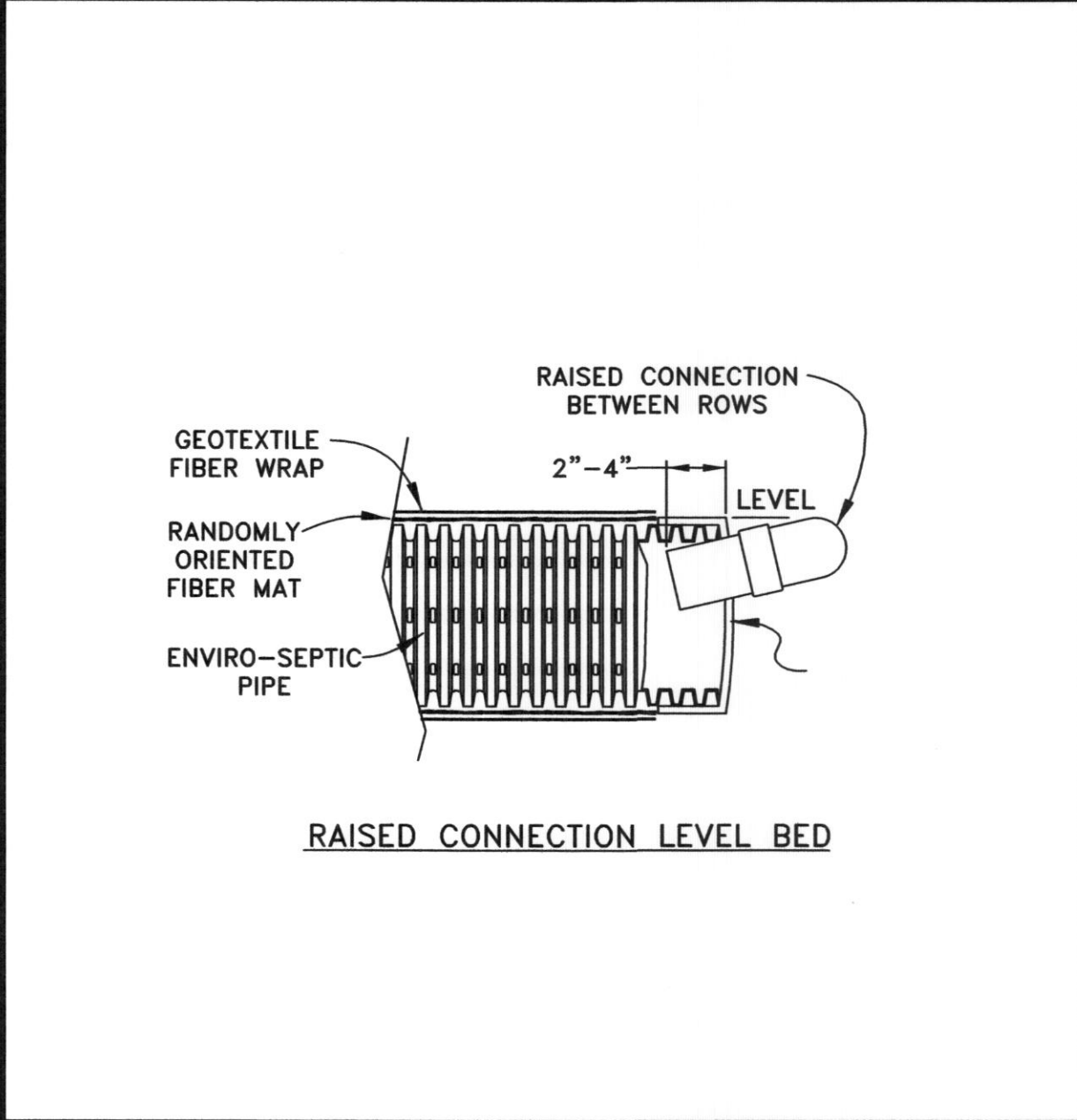
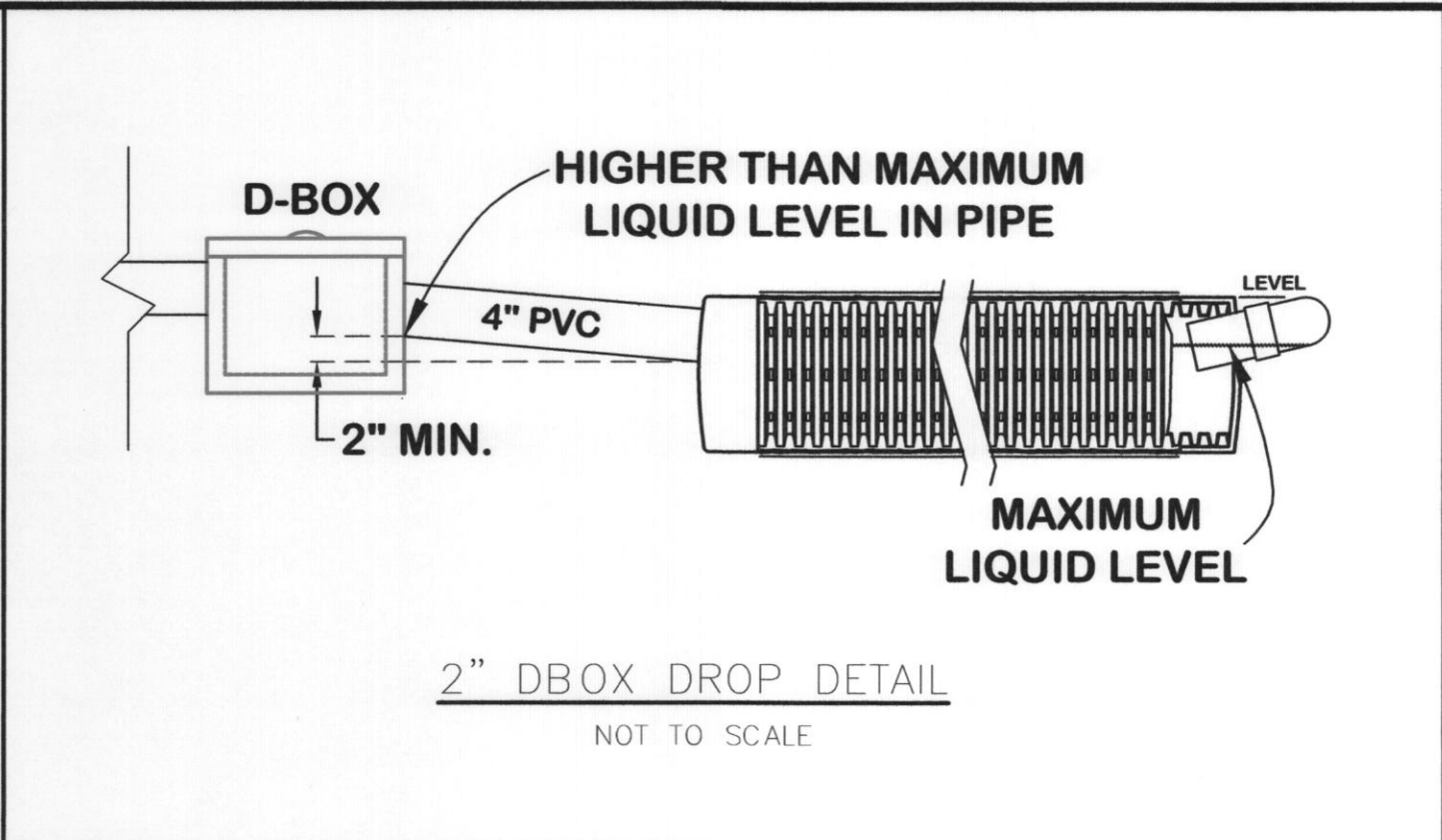
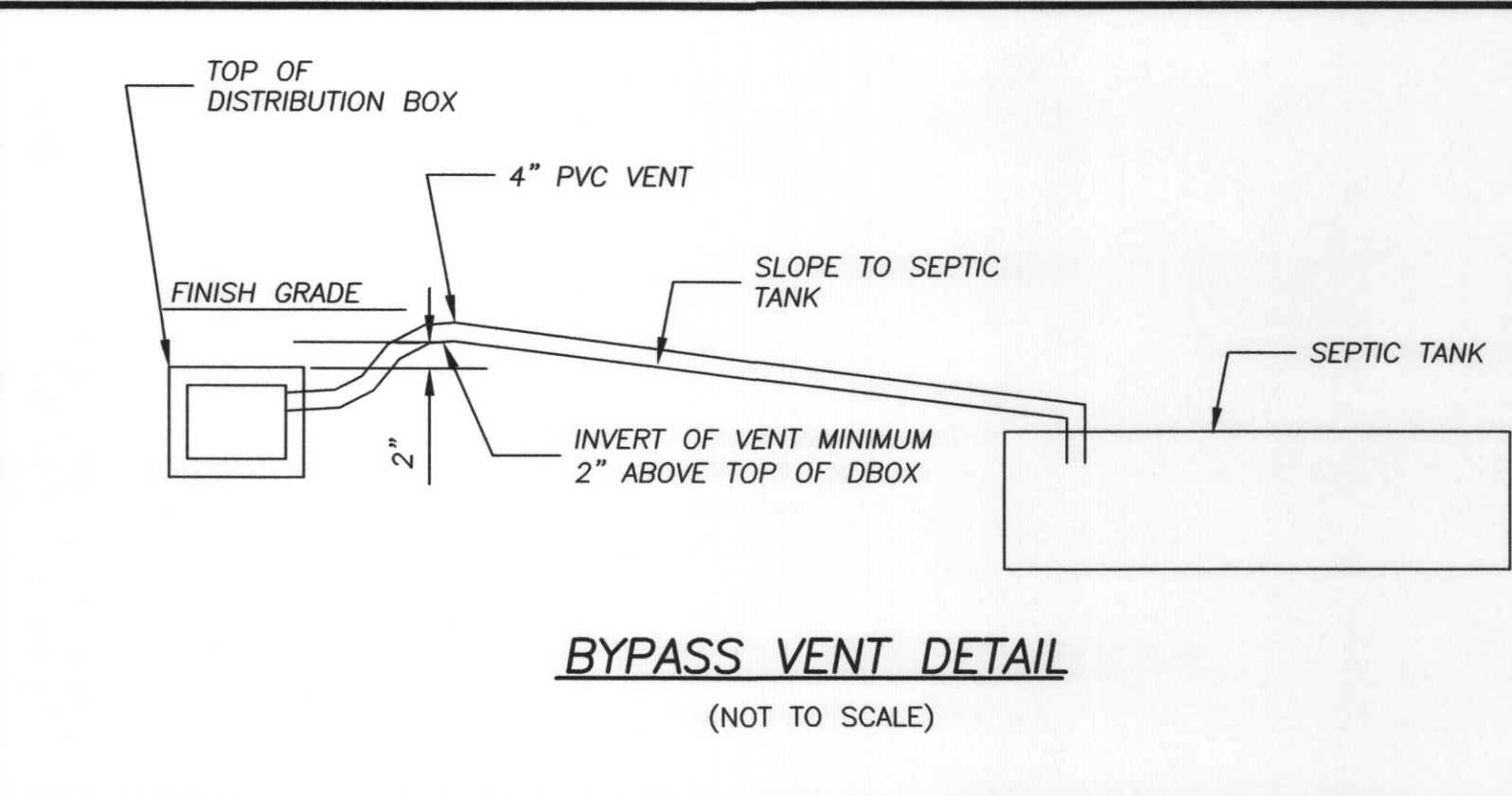
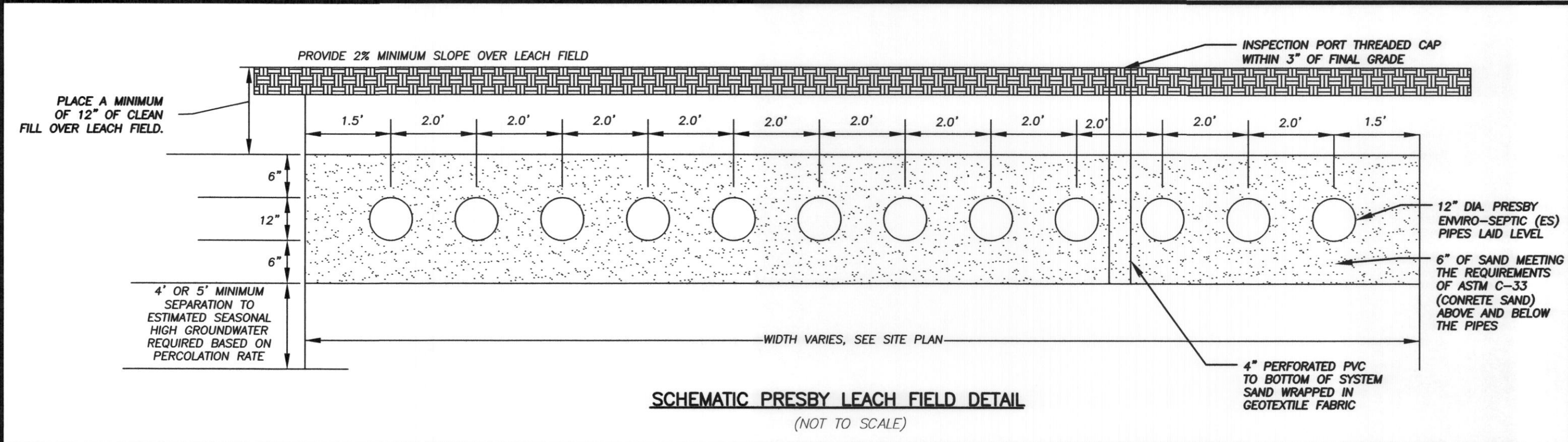
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[Professional Seal of Kenneth C. Knowles, Civil Engineer, No. 45679, State of Massachusetts]
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PRELIMINARY DESIGN CALCULATIONS:

SYSTEM #1


BUILDING/FACILITY: EIGHT (8) ELDERLY DWELLING UNITS
NUMBER OF BEDROOMS: TWO (2) BEDROOMS PER UNIT, 16 TOTAL
DESIGN FLOW RATE: 150 GPD PER TWO BEDROOM ELDERLY UNIT
PERCOLATION RATE: 1.66 MPI (PERC-1 AT TP-2)
TOTAL DESIGN FLOW: 1,200 GPD
LEACHING AREA REQUIREMENTS (GPD/SF): 0.60 GPD PER SF
(1,200 GPD)/(0.6 GPD/SF)=2,000 SF PER TITLE 5 REQUIREMENT
(2,000 SF) x (40% REDUCTION FOR PRESBY SYSTEM) = 1,200 SF
MINIMUM SAND BED AREA:
(8 UNITS)x(150 GPD)/(1 GPD/SF FOR PRESBY SYSTEM) = 1,200 SF
LEACHING PROVIDED IN THE DESIGN:
PRESBY SYSTEM USE 12 ROWS, 50' LONG PIPES, WITH 2' SPACING
3 ROWS OF PIPES ARE CONNECTED AT END TO MAKE 4 TREATMENT SECTIONS
LEACH FIELD 25' x 52' = 1,300 SF (BOTTOM AREA ONLY)
REQUIRED PIPE LENGTH IS 546 L.F.; DESIGN 600 LF

SYSTEM #2

BUILDING/FACILITY: TEN (10) ELDERLY DWELLING UNITS
NUMBER OF BEDROOMS: TWO (2) BEDROOMS PER UNIT, 20 TOTAL
DESIGN FLOW RATE: 150 GPD PER TWO BEDROOM ELDERLY UNIT
PERCOLATION RATE: 7.33 MPI (PERC-6 AT TP-10)
TOTAL DESIGN FLOW: 1,500 GPD
LEACHING AREA REQUIREMENTS (GPD/SF):
(1,500 GPD)/(0.6 GPD/SF)=2,500 SF PER TITLE 5 REQUIREMENT
(2,500 SF) x (40% REDUCTION FOR PRESBY SYSTEM) = 1,500 SF
MINIMUM SAND BED AREA:
(10 UNITS)x(150 GPD)/(1 GPD/SF FOR PRESBY SYSTEM) = 1,500 SF
LEACHING PROVIDED IN THE DESIGN:
PRESBY SYSTEM USE 12 ROWS, 60' LONG PIPES, WITH 2' SPACING
3 ROWS OF PIPES ARE CONNECTED AT END TO MAKE 4 TREATMENT SECTIONS
LEACH FIELD 25' x 62' = 1,550 SF (BOTTOM AREA ONLY)
REQUIRED PIPE LENGTH IS 682 L.F.; DESIGN 720 LF

SYSTEM #3


BUILDING/FACILITY: TWELVE (12) ELDERLY DWELLING UNITS
NUMBER OF BEDROOMS: TWO (2) BEDROOMS PER UNIT, 24 TOTAL
DESIGN FLOW RATE: 150 GPD PER TWO BEDROOM ELDERLY UNIT
PERCOLATION RATE: 1.00 MPI (PERC-4 AT TP-5)
TOTAL DESIGN FLOW: 1,800 GPD
LEACHING AREA REQUIREMENTS (GPD/SF):
(1,800 GPD)/(0.6 GPD/SF)=3,000 SF PER TITLE 5 REQUIREMENT
(3,000 SF) x (40% REDUCTION FOR PRESBY SYSTEM) = 1,800 SF
MINIMUM SAND BED AREA:
(12 UNITS)x(150 GPD)/(1 GPD/SF FOR PRESBY SYSTEM) = 1,800 SF
LEACHING PROVIDED IN THE DESIGN:
PRESBY SYSTEM USE 12 ROWS, 70' LONG PIPES, WITH 2' SPACING
3 ROWS OF PIPES ARE CONNECTED AT END TO MAKE 4 TREATMENT SECTIONS
LEACH FIELD 25' x 72' = 1,800 SF (BOTTOM AREA ONLY)
REQUIRED PIPE LENGTH IS 818 L.F.; DESIGN 840 LF



EAGLEBROOK
EAGLEBROOK ENGINEERING & SURVEY, LLC
491 MAPLE STREET, SUITE 304
DANVERS, MASS. 01923
TEL: (978) 777-0494

470 BOSTON STREET
LOCATED IN
TOPSFIELD, MASSACHUSETTS
PREPARED FOR
SARKIS DEVELOPMENT COMPANY
2 ELM SQUARE
ANDOVER, MASSACHUSETTS

STAMP:



DATE:
OCTOBER 13, 2016

REVISIONS:			
NO.	REVISIONS PER TOWN COMMENTS	DATE:	DATE:
1		2/27/17	

DRAWN BY: BSM
CHECKED BY: KCK
SCALE: AS NOTED
PROJECT NO. 15-023

TITLE:
**SDS
DETAIL
SDS-5**

ROLLING GREEN

TOPSFIELD, MASSACHUSETTS

JANUARY 17, 2017

PROJECT TEAM: ANDREW T. ZALEWSKI, AIA

THE MZO GROUP
STONEHAM, MA

LIST OF DRAWINGS

A-1 UNIT A ELEVATIONS I
A-2 UNIT A ELEVATIONS II
A-3 UNIT A FIRST FLOOR
A-4 UNIT A SECOND FLOOR
A-5 UNIT B ELEVATIONS I
A-6 UNIT B ELEVATIONS II
A-7 UNIT B FIRST FLOOR
A-8 UNIT B SECOND FLOOR
A-9 UNIT C ELEVATIONS I
A-10 UNIT C ELEVATIONS II
A-11 UNIT C FIRST FLOOR
A-12 UNIT C SECOND FLOOR





FRONT ELEVATION

1/4" = 1'-0"

Unit A

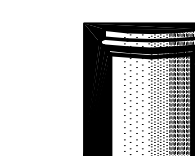
Approx. 2,500 s.f. of total finished space

Rolling Green

470 Boston Street, Topsfield, MA

January 17, 2017

Sheet A-1



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IN THE *MIQUELLE* TRADITION

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LEFT SIDE ELEVATION

1/4" = 1'-0"



BACK ELEVATION

1/4" = 1'-0"

Unit A



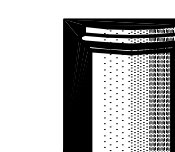
RIGHT SIDE ELEVATION

1/4" = 1'-0"

Rolling Green

470 Boston Street, Topsfield, MA

January 17, 2017

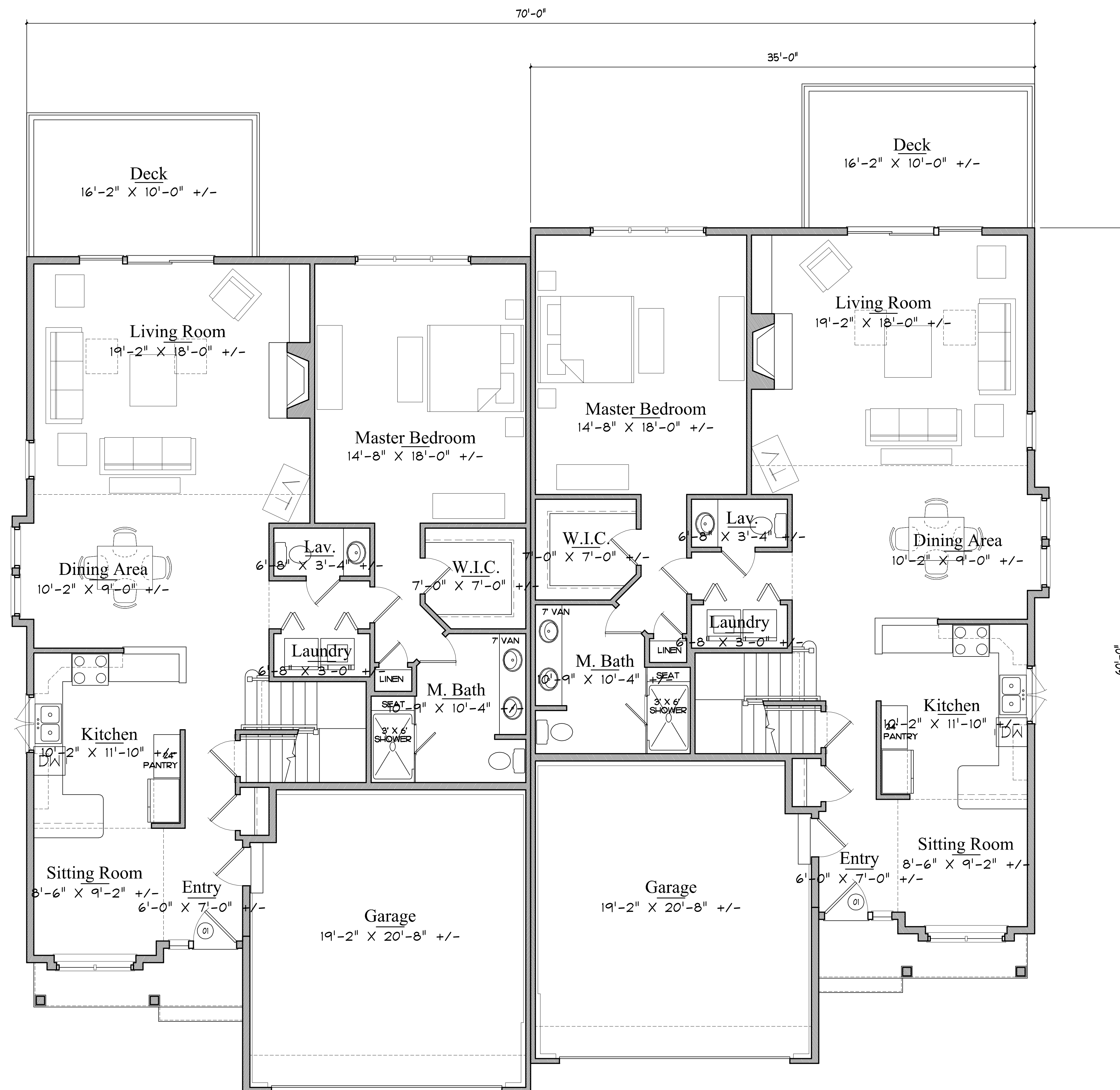


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FIRST FLOOR

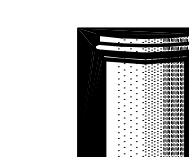
1/4" = 1'-0"

Unit A

Approx. 1,400 s.f. of finished space on first floor

Rolling Green

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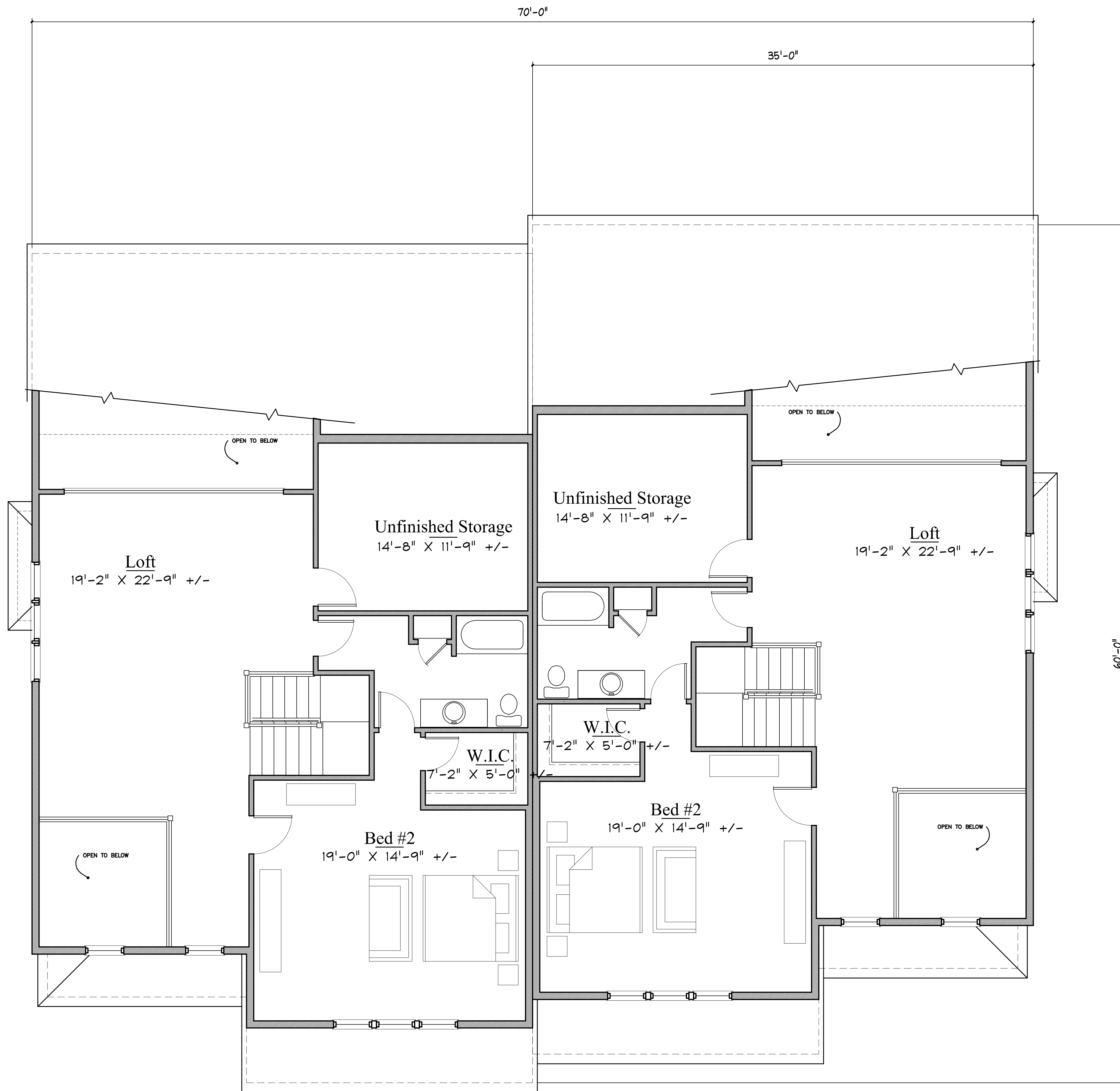
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SECOND FLOOR

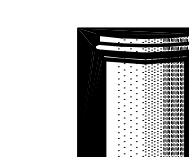
1/4" = 1'-0"

Unit A

Approx. 1,120 s.f. of finished space on second floor

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FRONT ELEVATION

1/4" = 1'-0"

Unit B

Approx. 2,100 s.f. of total finished space

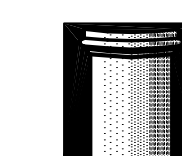


LEFT SIDE ELEVATION

1/4" = 1'-0"

Rolling Green

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BACK ELEVATION

1/4" = 1'-0"



RIGHT SIDE ELEVATION

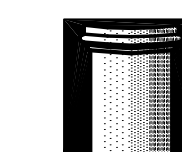
1/4" = 1'-0"

Unit B

Rolling Green

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FIRST FLOOR

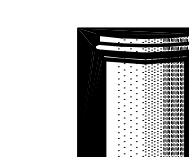
1/4" = 1'-0"

Unit B

Approx. 1,200 s.f. of finished space on first floor

Rolling Green

470 Boston Street, Topsfield, MA



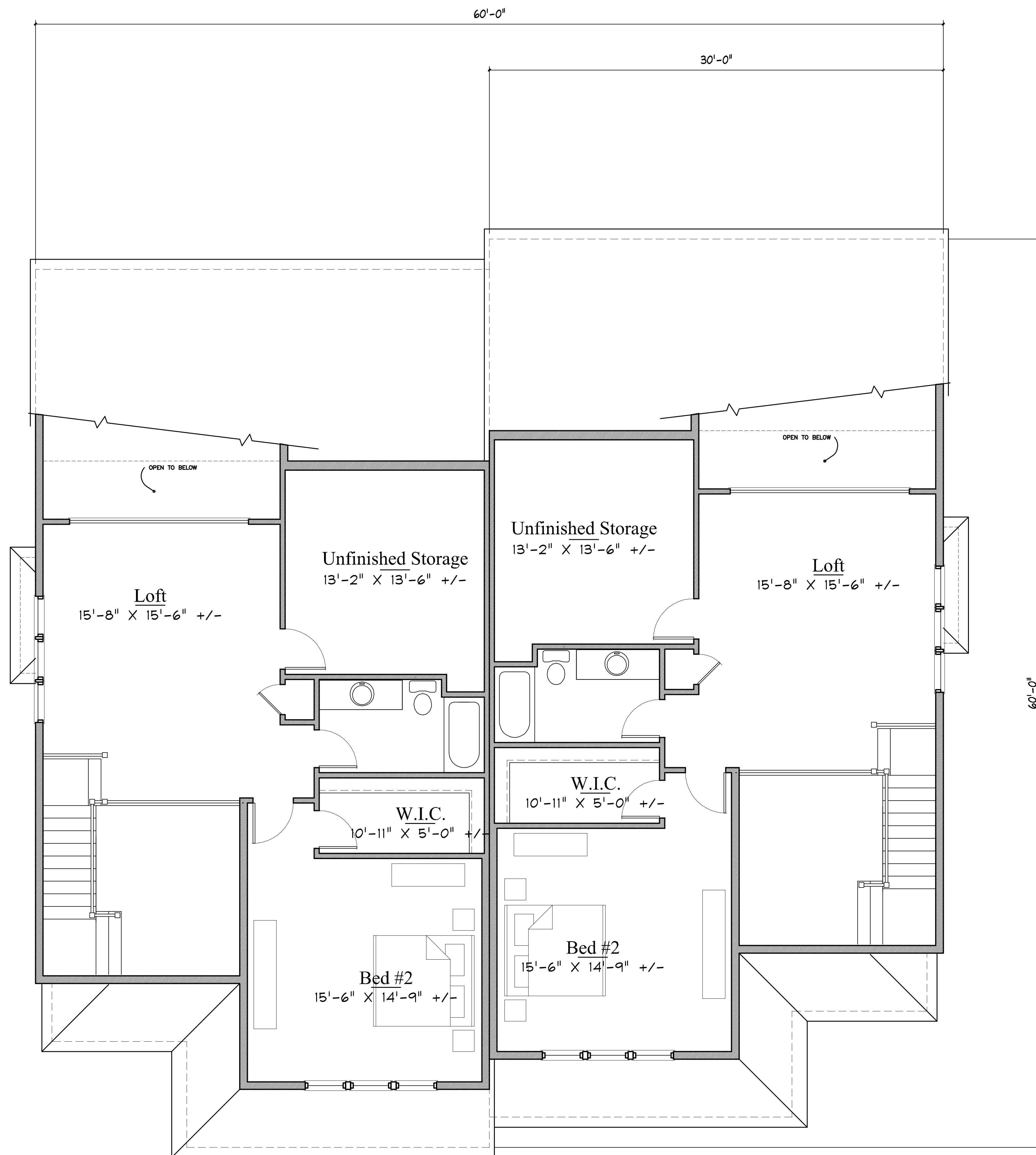
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SECOND FLOOR

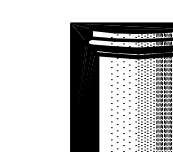
1/4" = 1'-0"

Unit B

Approx. 900 s.f. of finished space on second floor

Rolling Green

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FRONT ELEVATION

1/4" = 1'-0"

Unit C

Approx. 1,825 s.f. of total finished space

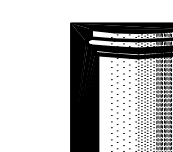


LEFT SIDE ELEVATION

1/4" = 1'-0"

Rolling Green

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BACK ELEVATION

1/4" = 1'-0"



RIGHT SIDE ELEVATION

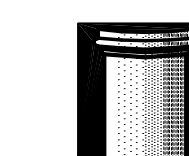
1/4" = 1'-0"

Unit C

Rolling Green

470 Boston Street, Topsfield, MA

January 17, 2017

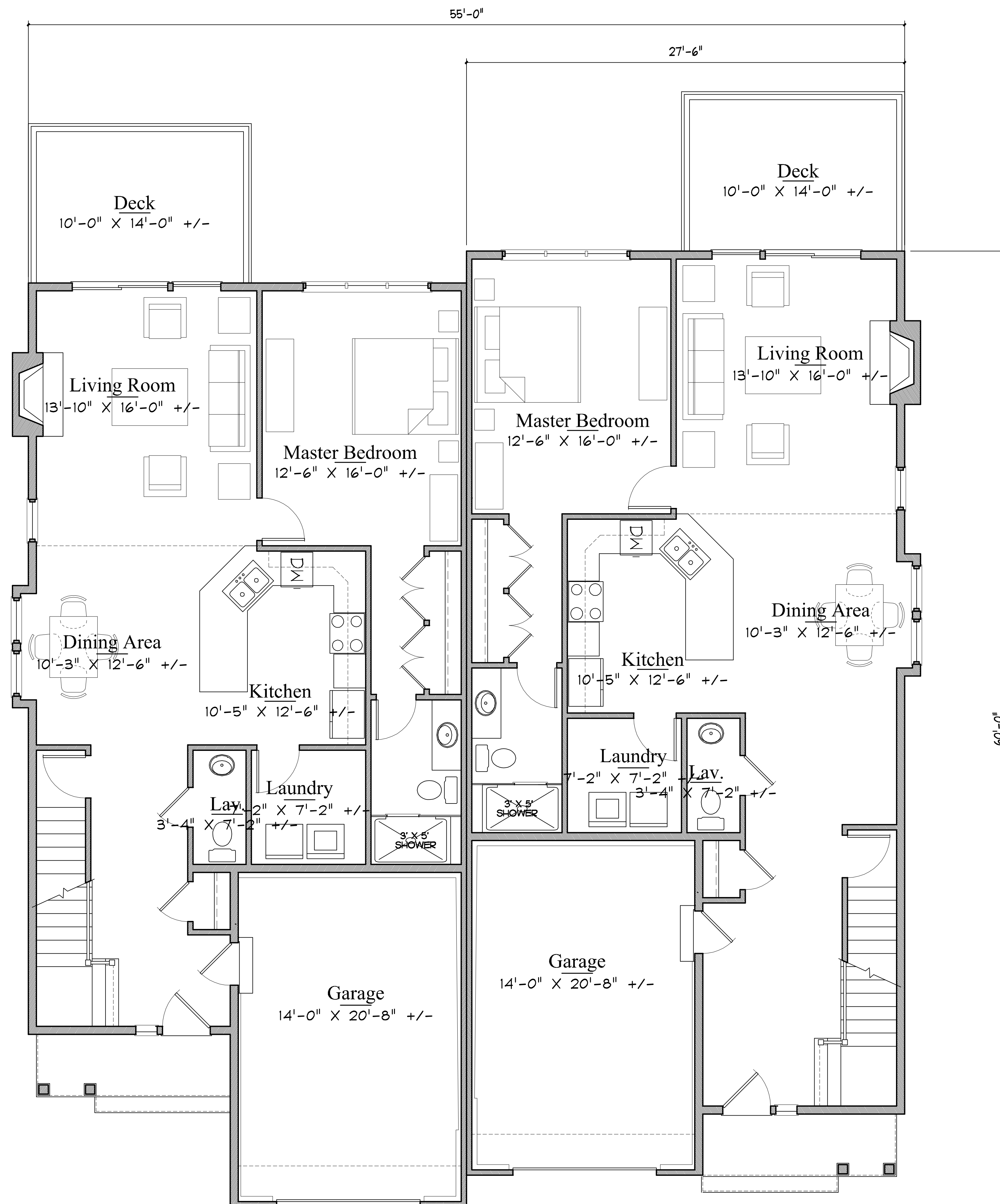


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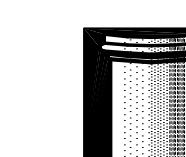
1/4" = 1'-0"

Unit C

Approx. 1,100 s.f. of finished space on first floor

Rolling Green

470 Boston Street, Topsfield, MA



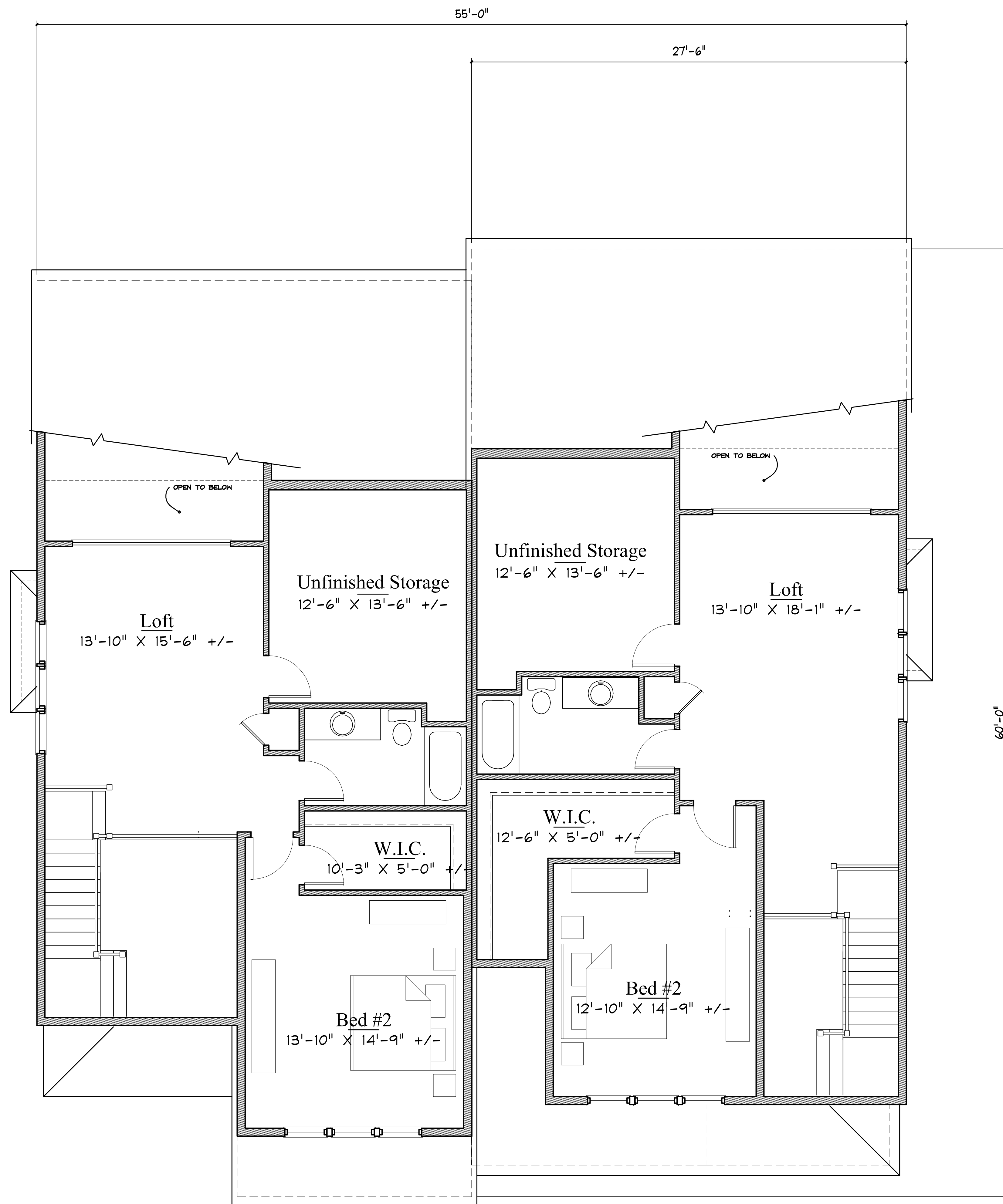
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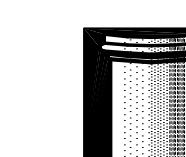
1/4" = 1'-0"

Unit C

Approx. 725 s.f. of finished space on second floor

Rolling Green

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