

PROPOSED HINDU TEMPLE

866 SOUTH MAIN STREET

BELLINGHAM, MASSACHUSETTS

PREPARED FOR:

**SRI SHIVA TEMPLE, INC.
15 NORTH MAIN STREET
BELLINGHAM, MA 02019**

PREPARED BY:

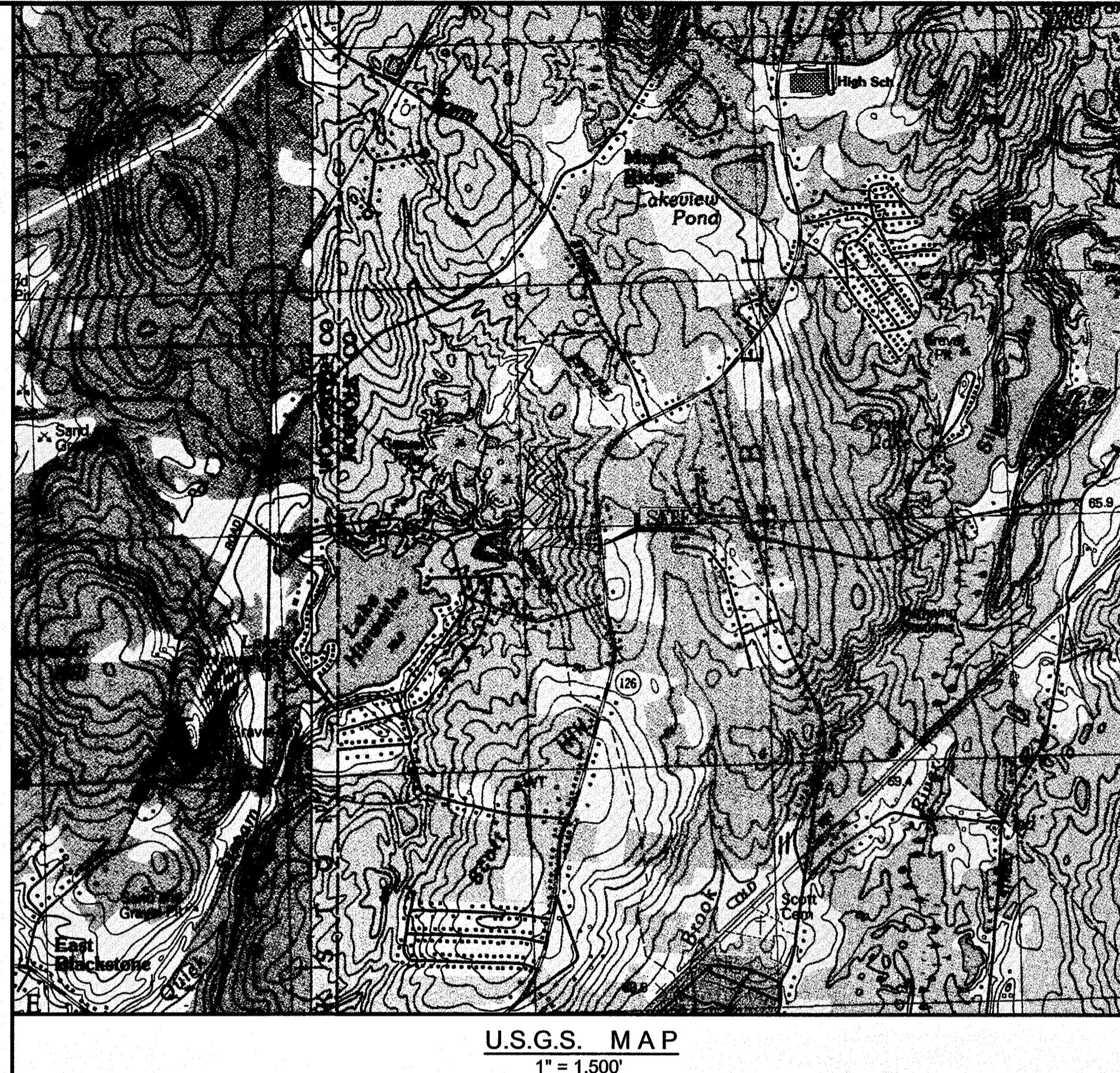
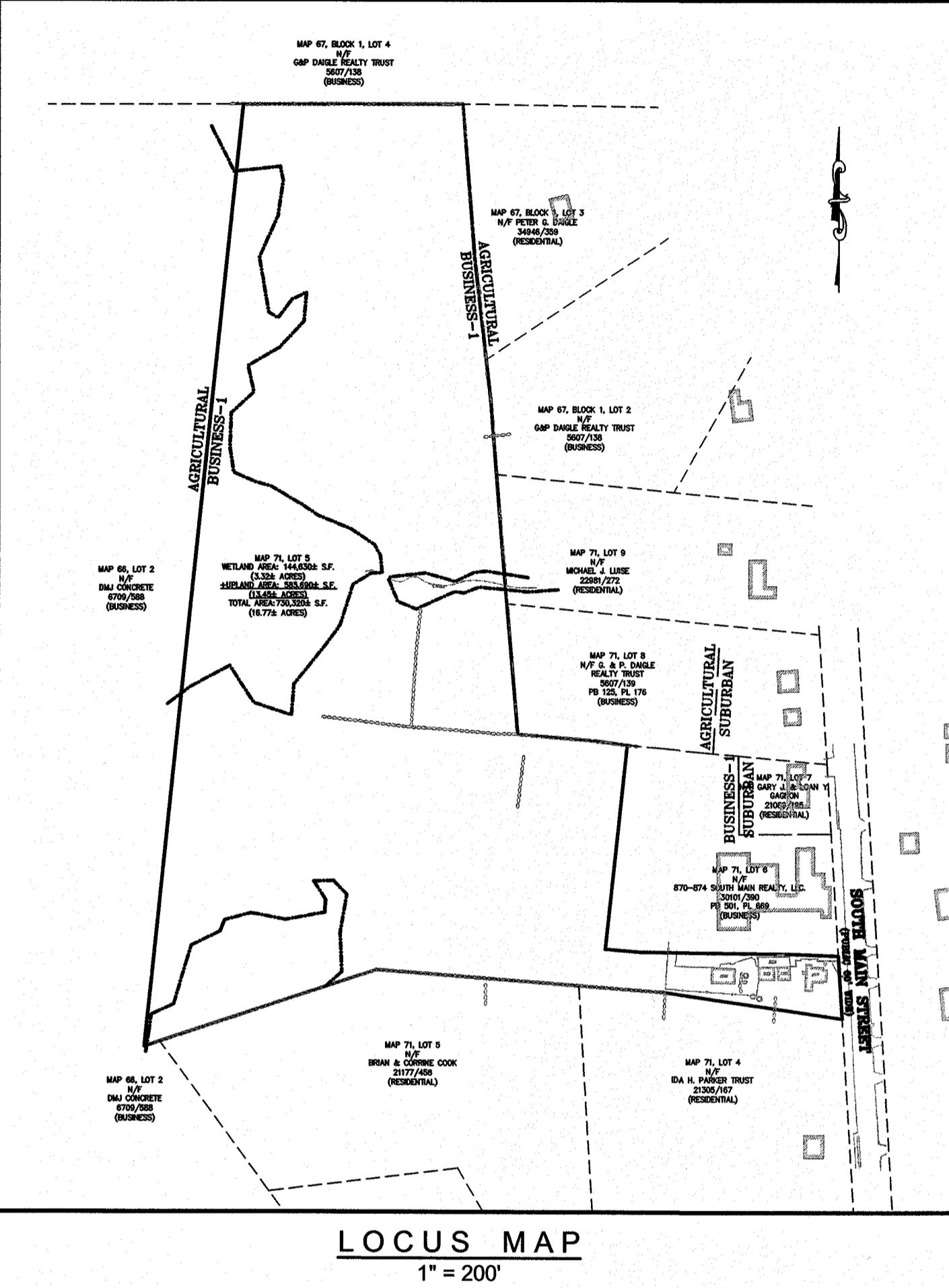
**ANDREWS SURVEY &
ENGINEERING, INC.
104 MENDON STREET
P.O. BOX 312
UXBRIDGE, MA 01569
P: 508.278.3897
F: 508.278.2289**

LAND SURVEYING:

ANDREWS SURVEY & ENGINEERING, INC.
104 MENDON STREET
P.O. BOX 312
UXBRIDGE, MA 01569
P: 508.278.3897
F: 508.278.2289

ENVIRONMENTAL:

**B&C ASSOCIATES, INC.
2 RICE STREET
HUDSON, MA 01749
P: 978 568 0135**



DRAWING DATE	LAST REVISION	SHEET NO.	SHEET TITLE
5/15/18	10/02/18	C-0.0	COVER SHEET
5/15/18	10/02/18	C-1.0	LEGEND, ABBREVIATIONS & GENERAL NOTES
5/15/18	10/02/18	C-1.1	INDEX SHEET
5/15/18	10/02/18	C-2.1 - C-2.2	EXISTING CONDITIONS & DEMOLITION PLAN
5/15/18	10/02/18	C-3.1 - C-3.2	LAYOUT & MATERIALS PLAN
5/15/18	10/02/18	C-4.1 - C-4.2	UTILITY PLAN
5/15/18	10/02/18	C-5.1 - C-5.2	GRADING & DRAINAGE PLAN
5/15/18	10/02/18	C-6.1 - C-6.2	ROADWAY PLAN AND PROFILE SHEETS
5/15/18	10/02/18	C-7.1 - C-7.2	LANDSCAPING & LIGHTING PLAN
5/15/18	10/02/18	C-8.1 - C-8.6	CONSTRUCTION DETAILS
5/15/18	10/02/18	C-9.1 - C-9.2	EROSION & SEDIMENT CONTROL PLAN
5/15/18	10/02/18	C-9.3	EROSION & SEDIMENT CONTROL NOTES & DETAILS
5/15/18	10/02/18	C-10.1 - C-10.2	WETLAND CROSSING & REPLICATION PLAN
5/15/18	10/02/18	C-10.3	BUFFER ZONE ENHANCEMENT PLAN
5/15/18	10/02/18	C-11.1 - C-11.2	FIRE ACCESS EXHIBIT PLAN

GOVERNMENT/UTILITY CONTACTS

BELLINGHAM POLICE DEPT.
6 MECHANIC STREET
P: 508.966.1515
F: 508.966.4669
ATTN: GERARD L. DAIGLE, JR., CHIEF

BELLINGHAM FIRE DEPT.
28 BLACKSTONE STREET
P: 508.966.1112
F: 508.966.5835
ATTN: STEVEN P. GENTILE, CHIEF

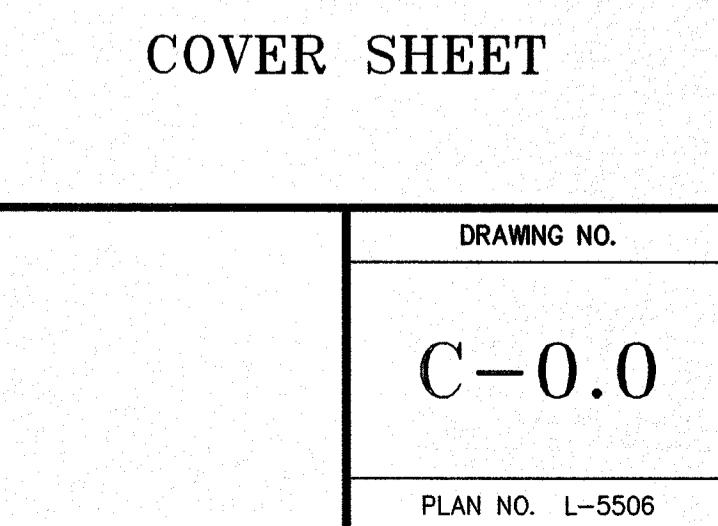
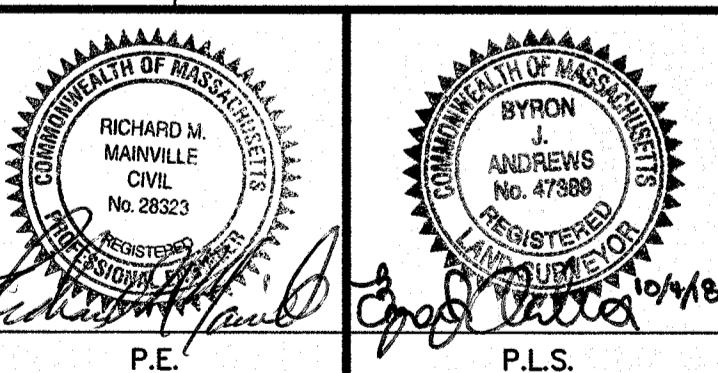
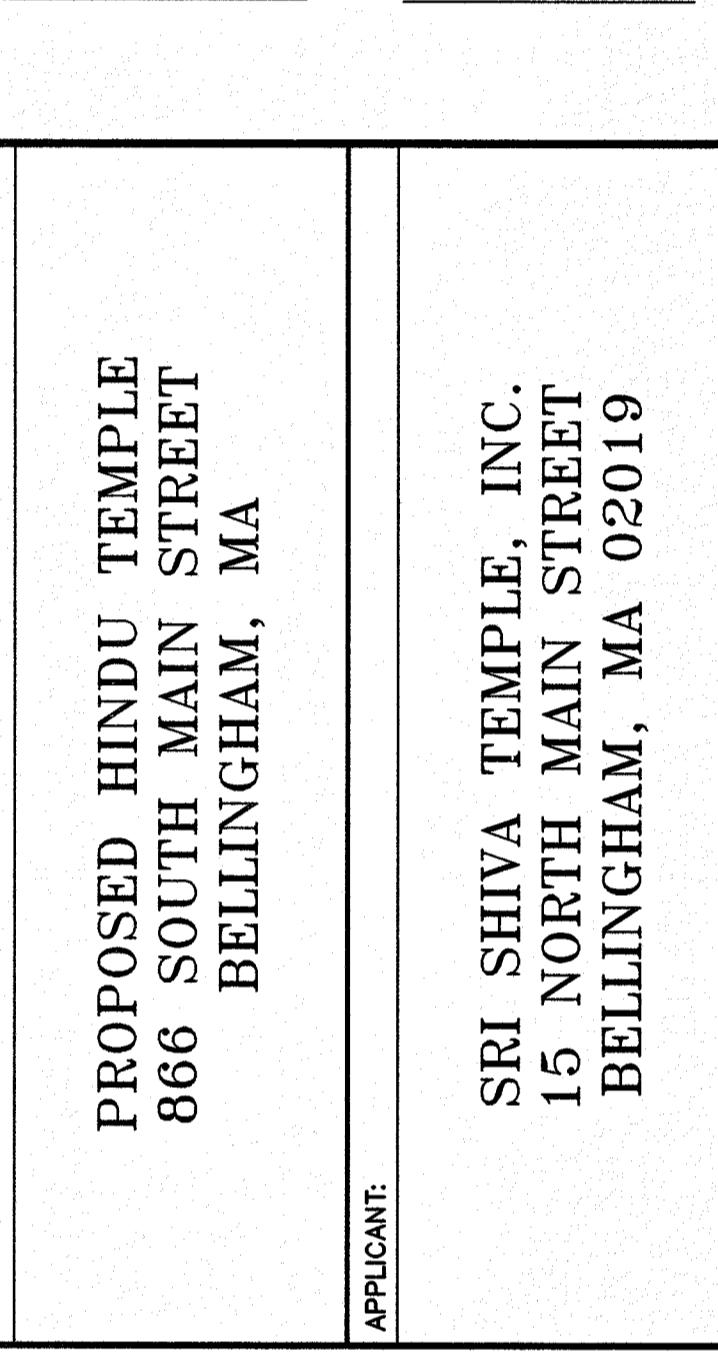
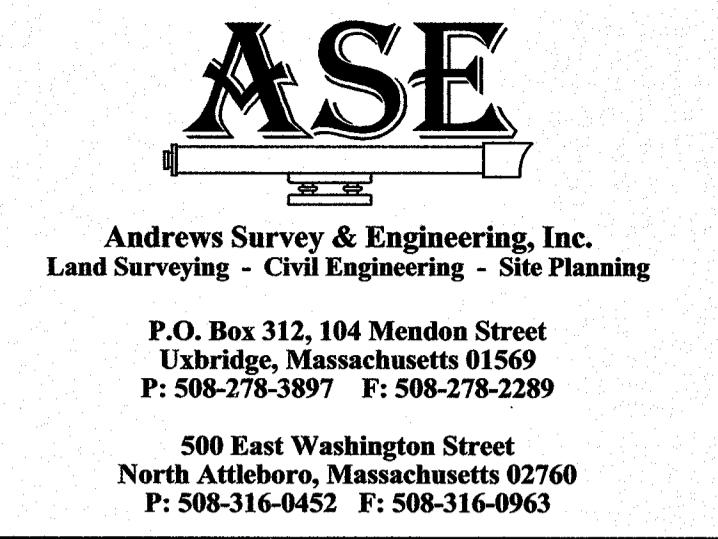
BELLINGHAM PLANNING DEPARTMENT
2 MECHANIC STREET
P: 508.657.2892
F: 508.966.2317
ATTN: JAMES S. KUPFER, PLANNER

BELLINGHAM D.P.W.
26 BLACKSTONE STREET
P: 508.966.5813 (DPW)
P: 508.966.5813 (WATER DIVISION)
P: 508.966.5816 (HIGHWAY DIVISION)
ATTN: DONALD DIMARTINO, DIRECTOR

BELLINGHAM BUILDING DEPT.
10 MECHANIC STREET
P: 508.657.2851
F: 508.966.5844
ATTN: TIM AICARDI, BUILDING INSPECTOR

BELLINGHAM CONSERVATION COMMISSION
2 MECHANIC STREET
P: 508.657.2858
F: 508.966.4425
ATTN: ANNE MATTHEWS

MASSACHUSETTS ELECTRIC CO.
1.800.322.3223
VERIZON COMMUNICATIONS
1.800.870.9999



GENERAL NOTES

PART 1 - TOPOGRAPHIC AND PROPERTY LINE INFORMATION

A. NOTICE TO CONTRACTOR: 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 AND ANY GOVERNING PERMITTING AUTHORITY, AND AT LEAST 24 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION SHALL BE 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 PLAN.

B. PROPERTY LINE AND TOPOGRAPHY:

- EXISTING PROPERTY BOUNDARY INFORMATION BASED UPON AN ON THE GROUND SURVEY PERFORMED BY ANDREWS SURVEY & ENGINEERING, INC.
- EXISTING TOPOGRAPHIC INFORMATION BASED UPON AN ON THE GROUND SURVEY PERFORMED BY ANDREWS SURVEY & ENGINEERING, INC.

C. WETLAND DELINEATION BY B&C ASSOCIATES, INC. ON MARCH 5, 2018.

D. DATUM: NAVD88

E. COORDINATE SYSTEM: TRUE NORTH

F. CONSTRUCTION STAKING CONTROL: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL CONTROL POINTS AND BENCH MARKS NECESSARY TO PERFORM THE WORK.

G. FLOODPLAIN: PROPERTY IS NOT LOCATED IN A FLOOD HAZARD AREA OR 100-YEAR FLOODPLAIN ACCORDING TO THE MOST RECENT FLOOD INSURANCE RATE MAPS FOR BELLINGHAM.

PART 2 - EXECUTION

2.1 DEMOLITION, SEDIMENTATION, AND EROSION CONTROL

A. 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.

B. THE SECOND STAGE WILL CONSIST OF ROUTINE CONSTRUCTION INVOLVING BUILDING, PAVING, LANDSCAPING, AND UTILITIES.

C. THERE ARE GENERAL PHASES OF CONSTRUCTION. 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.

D. DURING DEMOLITION, EXCAVATIONS AS MUCH AS 20 FEET MAY BE REQUIRED FOR THE INSTALLATION OF FOUNDATIONS, RETAINING WALLS, AND OTHER CONSTRUCTION. EXCAVATIONS SHALL BE CUT TO A STABILIZED OR TEMPORARILY BRACED DEPENDING ON THE EXCAVATION DEPTHS AND THE ENCOUNTERED SUBSURFACE CONDITIONS. THE CONTRACTOR MAY BE REQUIRED TO SUBMIT EXCAVATION AND SLOPE STABILIZATION METHODS PRIOR TO THE START OF CONSTRUCTION TO THE ENGINEER FOR REVIEW.

E. BASED ON THE COMPOSITION OF SOILS ENCOUNTERED DURING THE EXPLORATION PROGRAM, SITE SOILS ARE GENERALLY CLASSIFIED AS TYPES B AND C SOILS AS DEFINED BY (USGS) NATIONAL RESOURCES CONSERVATION SERVICE (NRCS), FORMERLY SOIL CONSERVATION SURVEY (SCS). TEMPORARY CONSTRUCTION SLOPES SHOULD BE DESIGNED IN STRICT COMPLIANCE WITH THE MOST RECENT GOVERNING REGULATIONS. STOCKPILES SHOULD BE PLACED WELL AWAY FROM THE EDGE OF THE EXCAVATION AND THEIR HEIGHT SHOULD BE CONTROLLED TO PREVENT SURCHARGE TO THE SIDES OF THE EXCAVATION. SURFACE DRAINAGE SHOULD BE CONTROLLED TO AVOID FLOW OF SURFACE WATER INTO THE EXCAVATIONS.

F. CONSTRUCTION SLOPES SHOULD BE REVIEWED FOR MASS MOVEMENT. IF POTENTIAL STABILITY PROBLEMS ARE OBSERVED, WORK SHOULD CEASE AND A GEOTECHNICAL ENGINEER SHOULD BE CONTACTED IMMEDIATELY. THE RESPONSIBILITY FOR EXCAVATION SAFETY AND STABILITY OF TEMPORARY CONSTRUCTION SLOPES SHOULD LIE SOLELY WITH THE CONTRACTOR.

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

A. PRIOR TO EARTH DISTURBANCE IN ANY WORK AREA, INSTALL EROSION CONTROL BARRIERS BETWEEN THE WORK AREA AND THE SURFACE WATER RESOURCE TO WHICH IT DRAINS.

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

C. PROVIDE TEMPORARY BERM AND SWALES TO DIVERT SURFACE WATER AWAY FROM THE AREAS WHERE SOILS 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 THEIR STABILITY DURING CONSTRUCTION.

D. LIMIT THE EXTENT OF EXPOSED SOILS TO AREAS THAT CAN BE WORKED AND RESTABILIZED WITHIN THE CONSTRUCTION SEASON AND DURING THE SPECIFIC CONSTRUCTION PHASE.

E. WHEN EARTHWORK CONSTRUCTION ACTIVITY IN AN AREA IS COMPLETE, STABILIZE THE AREA WITH A SUITABLE SURFACE AS DESCRIBED BELOW.

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

G. 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.

2.3 - CONSTRUCTION SEQUENCING

A. SEQUENCING SHALL BE AS SHOWN ON THE PLAN AND AS DICTATED BY THE REQUIREMENTS OF CONSTRUCTION.

2.4 - MAINTENANCE

A. DURING THE PERIOD OF CONSTRUCTION AND/OR UNTIL LONG TERM VEGETATION IS ESTABLISHED:

B. SEEDED AREAS WILL BE FERTILIZED AND RESEED AS NECESSARY TO INSURE VEGETATION ESTABLISHMENT.

C. TEMPORARY SEDIMENTATION BASINS WILL BE CHECKED AFTER EACH SIGNIFICANT RAINFALL AND CLEANED AS NEEDED TO RETAIN STORAGE CAPACITY.

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

E. THE EROSION CONTROL BARRIERS AND OTHER EROSION AND SEDIMENT CONTROL MEASURES/DEVICES SHALL BE INSPECTED, CLEANED, REPLACED AND/OR REPAIRED AS NECESSARY, PERIODICALLY AND AFTER EACH SIGNIFICANT RAINFALL.

F. SWEEP ON-SITE AREAS AND OFF-SITE STREETS AS NECESSARY TO PREVENT SILT AND DEBRIS ORIGINATING ON-SITE FROM ENTERING CLOSED DRAINAGE SYSTEMS AND/OR ENVIRONMENTALLY SENSITIVE AREAS. WHEN NECESSARY UTILIZE WATER SPRAYING, SURFACE ROUGHENING AND/OR APPLY POLYMERS, SPRAY-ON TACKIFIERS, CHLORIDES AND BARRIERS FOR DUST CONTROL.

2.5 - GENERAL

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

B. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF ANY SITE WORK OR EARTHWORK OPERATIONS. SHALL BE MAINTAINED DURING CONSTRUCTION, AND SHALL REMAIN IN PLACE UNTIL ALL SITE WORK IS COMPLETE AND GROUNDCOVER IS ESTABLISHED.

C. ALL WORK SHALL BE IN ACCORDANCE WITH THE PERMITS AND APPROVALS ISSUED AND THE CONSTRUCTION SPECIFICATIONS. PRIOR TO ANY BLASTING, THE CONTRACTOR SHALL CONDUCT A PRE-BLAST SURVEY OF ALL DWELLINGS WITHIN THREE HUNDRED (300') FEET OF THE SITE.

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

PART 2 - CONTINUED

E. 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.

F. ALL DISTURBED OR EXPOSED AREAS SHALL BE PERMANENTLY STABILIZED WITHIN FIVE (5) BUSINESS DAYS OF COMPLETION OF CONSTRUCTION OF A GIVEN AREA. EXPOSED AREAS WHERE NO WORK HAS OCCURRED FOR FOURTEEN (14) DAYS SHALL BE TEMPORARILY STABILIZED WITH HYDROSEED OR OTHER APPROVED METHOD.

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

H. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF ANY SITE WORK OR EARTHWORK OPERATIONS. SHALL BE MAINTAINED DURING CONSTRUCTION, AND SHALL REMAIN IN PLACE UNTIL ALL SITE WORK IS COMPLETE AND GROUNDCOVER IS ESTABLISHED.

I. HAYBALE DIKES SHALL BE CONSTRUCTED AT ALL EXISTING & PROPOSED CATCH BASINS LOCATED IN FILL AREAS & SUBJECT TO STORMWATER RUN-OFF FROM PROPOSED FILL AREAS DURING CONSTRUCTION, OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE. NO SEDIMENTS SHALL ENTER THE ON-SITE OR OFF-SITE DRAINAGE SYSTEMS AT ANY TIME.

J. CULVERT/PIPE INLETS AND OUTLETS SHALL BE PROTECTED BY HAYBALE FILTERS UNTIL DISTURBED AREAS ARE PERMANENTLY STABILIZED.

K. EROSION CONTROLS SHALL BE PERIODICALLY INSPECTED AND REPLACED AS REQUIRED.

L. ALL PROPOSED NON-RIPRAP SLOPES STEEPER THAN 3:1 SHALL BE STABILIZED WITH EXCLOSER BLANKETS AND PROTECTED FROM EROSION.

M. THE CONTRACTOR SHALL KEEP ON SITE AT ALL TIMES ADDITIONAL HAYBALES AND EXTRA SILTATION FENCING FOR INSTALLATION AT THE DIRECTION OF THE OWNER'S REPRESENTATIVE OR LOCAL OFFICIALS TO MITIGATE ANY EMERGENCY CONDITION.

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

O. HE CONTRACTOR SHALL PROTECT AND/OR CAP OFF ALL EXISTING ON-SITE UTILITY SERVICES DESIGNATED AS SUCH ON THESE DRAWINGS.

P. HE 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).

Q. HE 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 INTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

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

S. E MATERIALS AND METHODS USED IN THE CONSTRUCTION OF ROADWAYS SHALL CONFORM TO THE REQUIREMENTS OF "TOWN OF BELLINGHAM SUBDIVISION REGULATIONS". WHEN NO TOWN SPECIFICATION IS PROVIDED THE MATERIALS AND METHODS USED IN THE CONSTRUCTION OF ROADWAYS SHALL CONFORM TO THE REQUIREMENTS OF "THE COMMONWEALTH OF MASSACHUSETTS, DEPARTMENT OF PUBLIC WORKS, STANDARDS & SPECIFICATIONS FOR HIGHWAYS & BRIDGES," LATEST EDITION.

T. FOUNDATION DRAINS SHALL BE PROVIDED AND SHALL DISCHARGE BY GRAVITY OR MECHANICAL MEANS INTO AN APPROVED DRAINAGE SYSTEM THAT COMPLIES WITH THE INTERNATIONAL PLUMBING CODE.

PART 3 - STORM DRAINS

A. A STORM DRAIN PIPING (INDICATED BY LETTER "D") SHALL BE CORRUGATED POLYETHYLENE PIPE (HDPE) AS INDICATED, PER ASHTO M284 AND M282 MANUFACTURED WITH HIGH DENSITY POLYETHYLENE PLASTIC. HDPE SHALL BE ADS N-12 PIPE AS MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS, INC. OR HANCO IRON Q PIPE AS MANUFACTURED BY HANCO, INC. OR APPROVED EQUAL.

B. STORM DRAIN MANHOLES (INDICATED BY LETTERS "DM") SHALL BE PRECAST 4', 5' OR 6' DIAMETER CONCRETE PIPE AS INDICATED PER ASTM C479 (AS CALLED FOR ON DRAMINS OR FIELD CONDITIONS REQUIRE) WITH RUBBER GASKET JOINTS CONFORMING TO ASTM C443. PIPE TO MANHOLE CONNECTIONS SHALL BE MORTARED PIPE OPENINGS.

C. CATCH BASINS (INDICATED BY LETTERS "CB") SHALL BE PRECAST 5' DIAMETER CONCRETE PER ASTM C479, (ALTERNATE TOP SLAB WHERE NECESSARY) AND RUBBER GASKET JOINTS CONFORMING TO ASTM C443, WITH 4' FOOT Sumps AND GAS TRAP OUTLET ELBOW. PIPE TO STRUCTURE CONNECTIONS SHALL BE MORTARED PIPE OPENINGS.

D. COORDINATES OF MANHOLES REFER TO CENTERS OF STRUCTURES AND CATCH BASINS REFER TO THE CENTER BACK OF THE FRAME AND GRATE.

E. FLARED END SECTIONS (FES) SHALL BE CORRUGATED POLYETHYLENE PIPE AS INDICATED, MANUFACTURED WITH HIGH DENSITY POLYETHYLENE PLASTIC. ADS N-12 OR APPROVED EQUAL.

PART 4 - UTILITIES

4.1 - WATER DISTRIBUTION AND FIRE PROTECTION

A. WATER MAINS 3" dia. and larger shall have 5'-0" MINIMUM COVER AND SHALL BE CONCRETE LINED DUCTILE IRON (LDI), CLASS 52 MINIMUM, CONFORMING TO AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) A21.50, A21.4, A21.10 AND A21.51. JOINTS AT FITTINGS, VALVES AND HYDRANT LATERALS SHALL BE MECHANICAL JOINT PER ANSI A21.11, WITH GASKETS. JOINTS AT OTHER LOCATIONS SHALL BE PUSH-ON TYPE WITH GASKETS PER ANSI A21.11. ALL FITTINGS, VALVES, HYDRANTS AND CAPS SHALL BE CLASS 350 PROVIDED WITH THRUST RESTRAINTS (THRUST BLOCKS AND RETAINING RODS) IN CONFORMANCE WITH THE DETAILS.

B. GENERALLY, WATER MAIN FITTINGS IDENTIFIED ON THIS DRAWING ARE SHOWN FOR INSTALLATION LOCATION PURPOSES. THE CONTRACTOR IS ADVISED THAT NOT ALL FITTINGS AND SUPPLY LINES ARE NOTED, SHOWN, OR INDICATED.

C. ALL HYDRANTS SHALL BE INSTALLED WITH A 6" CLO LATERAL AND SHALL BE INSTALLED WITH A 6" GATE VALVE, BOX, AND TEE FITTING. ALL HYDRANTS SHALL MEET AND BE INSTALLED IN ACCORDANCE WITH ALL LOCAL MUNICIPAL STANDARDS.

D. ALL WATER MAIN APPURTEANCES, MATERIALS, AND METHODS OF INSTALLATION SHALL MEET OR EXCEED ALL LOCAL MUNICIPAL REQUIREMENTS.

E. PRESSURE AND LEAKAGE TEST, DISINFECTION AND FLUSHING SHALL BE IN ACCORDANCE WITH ALL LOCAL MUNICIPAL STANDARDS AND REQUIREMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS IN CONNECTIONS WITH UTILITY TESTS, FLUSHING, AND INSPECTIONS AS REQUIRED BY THE LOCAL MUNICIPALITY.

F. EXISTING SERVICES SHALL BE CUT AND A WATERTIGHT PLUG SHALL BE INSTALLED. EXISTING GATE VALVES SHALL BE ABANDONED SHALL BE PERMANENTLY CLOSED AND CAPPED, AND WATER SERVICES SHOULD BE SHUT OFF AT THE MAIN CORPORATION.

4.2 - GAS

INSTALLATION OF GAS LINES & EQUIPMENT SHALL BE COORDINATED AND SCHEDULED BY THE CONTRACTOR WITH THE APPROPRIATE GAS COMPANY SERVING THE PROJECT SITE AND SHALL BE INSTALLED PER THE GAS COMPANY SPECIFICATIONS.

4.3 - UTILITY SEPARATION

A. A MINIMUM 10 FEET CLEAR HORIZONTAL DISTANCE SHALL BE MAINTAINED BETWEEN SANITARY SEWERS AND WATER MAINS. WHENEVER CONDITIONS PREVENT A LATERAL SEPARATION OF 10 FEET, THE WATER MAIN SHALL BE LAID IN A SEPARATE TRENCH AND THE ELEVATION OF THE CROWN OF THE SEWER SHALL BE AT LEAST 18 INCHES BELOW THE INVERT OF THE WATER MAIN.

B. A MINIMUM OF 18" VERTICAL CLEARANCE SHALL BE MAINTAINED WHERE WATER MAINS CROSS STORM DRAIN LINES.

PART 4 - CONTINUED

C. WHERE SANITARY SEWERS CROSS WATER MAINS, THE SEWER SHALL BE LAID AT SUCH AN ELEVATION THAT THE CROWN OF THE SEWER IS AT LEAST TWO FEET BELOW THE INVERT OF THE WATER MAIN. IF THE ELEVATION OF THE SEWER CANNOT BE VARIED TO MEET THIS REQUIREMENT, THE CONTRACTOR SHALL DO THE FOLLOWING:

D. THE WATER MAIN SHALL BE RELOCATED TO PROVIDE THIS SEPARATION OR CONSTRUCTED WITH MECHANICAL-JOINT PIPE FOR A DISTANCE OF TEN FEET ON EACH SIDE OF THE SEWER. ONE FULL LENGTH OF PIPE SHALL BE CENTERED OVER THE SEWER SO THAT THE JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE. IN ADDITION, THE WATER MAIN SHALL BE ENCASED IN CONCRETE, AS PER TOWN OF BELLINGHAM DPW STANDARDS.

E. PRIMARY ELECTRICAL ENCASED CONDUIT MUST BE SEPARATED FROM GAS BY 3' MIN. AND FROM OTHER UTILITIES BY 2' MINIMUM.

F. GAS MAINS MUST BE SEPARATED FROM OTHER UTILITIES BY 2' MINIMUM.

4.3 - ELECTRIC AND COMMUNICATIONS

A. INSTALLATION OF COMMUNICATIONS (TELEPHONE, CABLE AND FIRE ALARM) SYSTEMS SHALL BE COORDINATED AND SCHEDULED BY THE CONTRACTOR WITH THE APPROPRIATE UTILITY COMPANY SERVICING THE PROJECT SITE.

B. COORDINATES REFER TO THE CENTER OF STRUCTURES UNLESS OTHERWISE NOTED OR DETAILED. CONTRACTOR SHALL COORDINATE LIGHT BASE LOCATIONS WITH PROPOSED CURBING AND PARKING LOT STRIPING.

C. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ELECTRICAL SERVICE PRIOR TO ORDERING ANY EQUIPMENT.

4.4 - STREET LIGHTING

A. CONTRACTOR SHALL SUPPLY ALL LIGHTING PRODUCTS (OR APPROVED EQUALS) AS SHOWN ON THE DRAWINGS. THE CONTRACTOR MAY BE REQUIRED FOR LIGHTING ENTRANCEWAYS, SIGNS OR OTHER OUTDOOR AREAS OF SPECIAL LIGHTING INTEREST. IN NO CASE SHALL THE CONTRACTOR USE LESS LIGHTS THAN SHOWN.

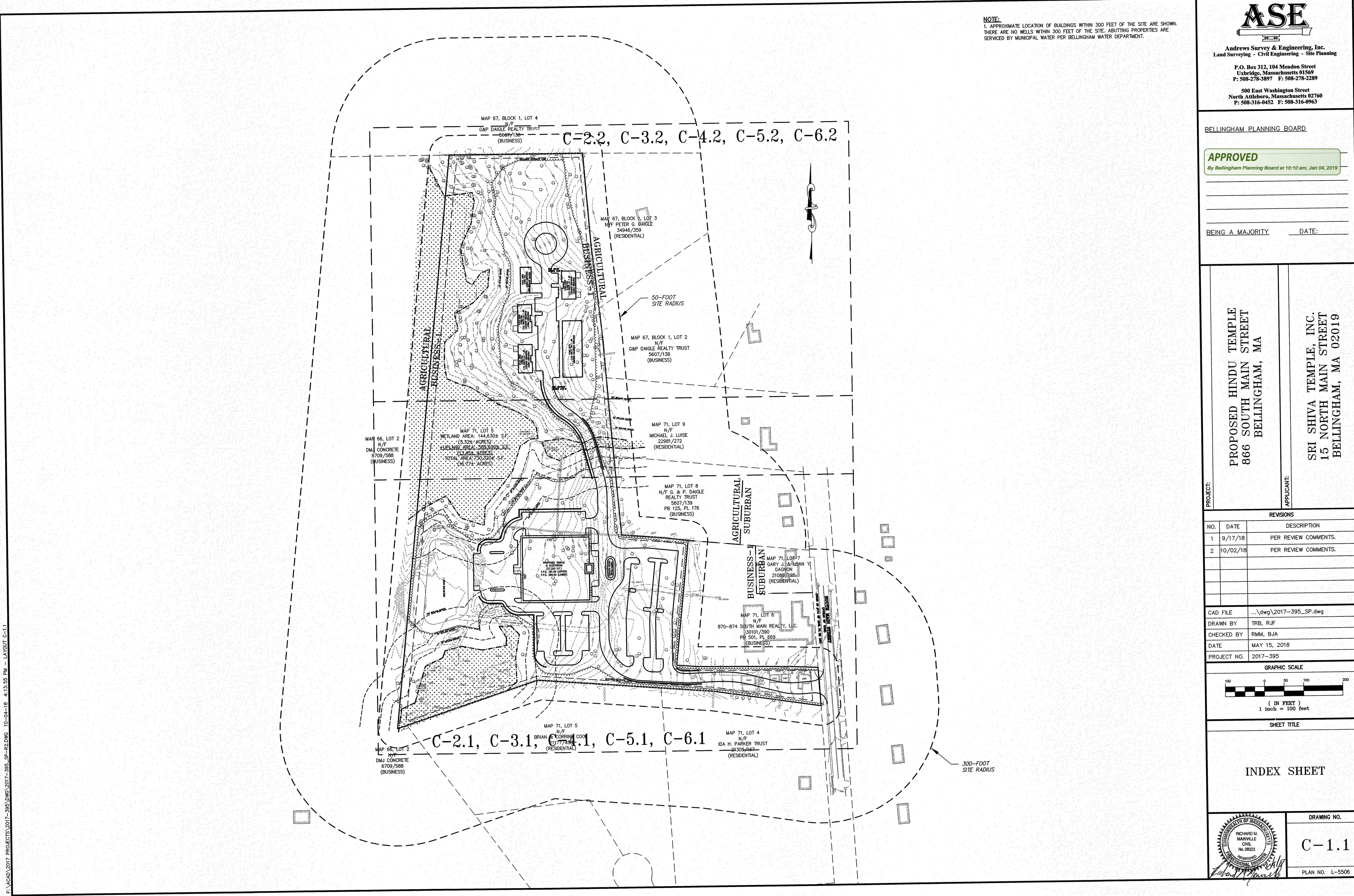
B. ALL LIGHTING PRODUCTS AND ACCESSORIES, INCLUDING POLES AND MOUNTING UNITS, SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. ALTERNATIVE PRODUCTS MAY BE USED IN LIGHTING ASSEMBLY AS LONG AS IT IS APPROVED BY THE MANUFACTURER.

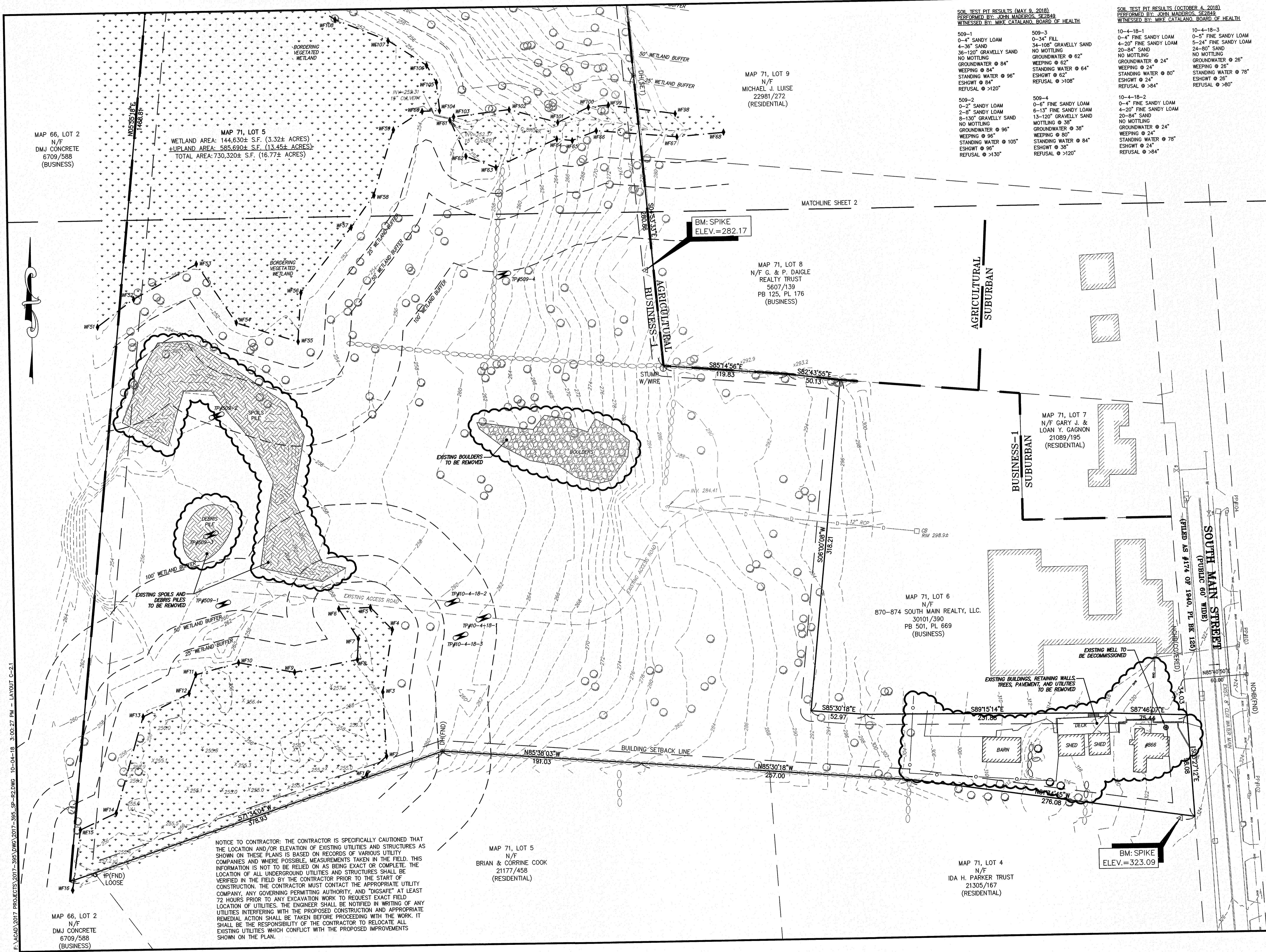
C. EACH LIGHTING POLE IS TO BE EQUIPPED WITH LIGHTING PROTECTION AS ESTABLISHED BY NFPA 70 (NATIONAL FIRE PROTECTION ASSOCIATION).

D. LIGHT TYPES AS INDICATED ON THIS PLAN ARE SUGGESTIONS ONLY. FINAL SELECTION OF LIGHT TYPES AND ASSEMBLY TO BE DETERMINED AT TIME OF PURCHASE, DEPENDING ON AVAILABLE BALLAST WATTAGE, QUANTITY AND POLE HEIGHT ARE NOT TO CHANGE WITHOUT PRIOR APPROVAL OF THE PLANNING BOARD.

PART 5 - PAVEMENT AND CURBING

A. JOINTS BETWEEN NEW BITUMINOUS CONCRETE PAVEMENT AND SAWCUT EXISTING PAVEMENT SHALL BE SEA





MAP 66, LOT 2
N/F
DMJ CONCRETE
6709/588
(BUSINESS)

MAP 71, LOT 5
WETLAND AREA: 144,630± S.F. (3.32± ACRE)
UPLAND AREA: 585,690± S.F. (13.45± ACR)
TOTAL AREA: 730,320± S.F. (16.77± ACRES)

MAP 67, BLOCK 1, LOT 4
N/F
G&P DAIGLE REALTY TRUST
5607/138
(BUSINESS)

MAP 67, BLOCK 1, LOT 3
N/F PETER G. DAIGLE
34946/359
(RESIDENTIAL)

MAP 67, BLOCK 1, LOT 2
N/F
G&P DAIGLE REALTY TRUST
5607/138
(BUSINESS)

MAP 71, LOT 9
N/F
MICHAEL J. LUISE
22981/272
(RESIDENTIAL)

MAP 71, LOT 5
WETLAND AREA: 144,630± S.F. (3.32± ACRES)
+ UPLAND AREA: 585,690± S.F. (13.45± ACRES)
TOTAL AREA: 730,320± S.F. (16.77± ACRES)

P 67, BLOCK 1, LOT 3
I/F PETER G. DAIGLE
34946/359
(RESIDENTIAL)

N/F
&P DAIGLE REALTY TRUST
5607/138
(BUSINESS)

MAP 71, LOT 9
N/F
MICHAEL J. LUISE
22981/272
(RESIDENTIAL)

MATCHLINE SHEET 1

NOTICE TO CONTRACTOR: 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. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION SHALL BE 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 PLAN.



Andrews Survey & Engineering, Inc.
Land Surveying - Civil Engineering - Site Planning

P.O. Box 312, 104 Mendon Street
Uxbridge, Massachusetts 01569
P: 508-278-3897 F: 508-278-2289

500 East Washington Street
North Attleboro, Massachusetts 02760
P: 508-316-0452 F: 508-316-0963

BELLINGHAM PLANNING BOARD

APPROVED

By Bellingham Planning Board at 10:11 am, Jan 04, 2019

BEING A MAJORITY

DATE:

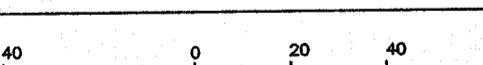
PROPOSED HINDU TEMPLE
866 SOUTH MAIN STREET
BELLINGHAM, MA

SRI SHIVA TEMPLE, INC.
15 NORTH MAIN STREET
BELINGHAM, MA 02019

PROJECT:		
NO.	DATE	
1	9/17/18	
2	10/03/18	

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VIEW COMMENTS.
VIEW COMMENTS.

CAD FILE	... \dwg \2017-395_SP.dwg
DRAWN BY	TRB, RJF
CHECKED BY	RMM, BJA
DATE	MAY 15, 2018

PROJECT NO.	2017-395
GRAPHIC SCALE	
	
(IN FEET)	
1 inch = 40 feet	

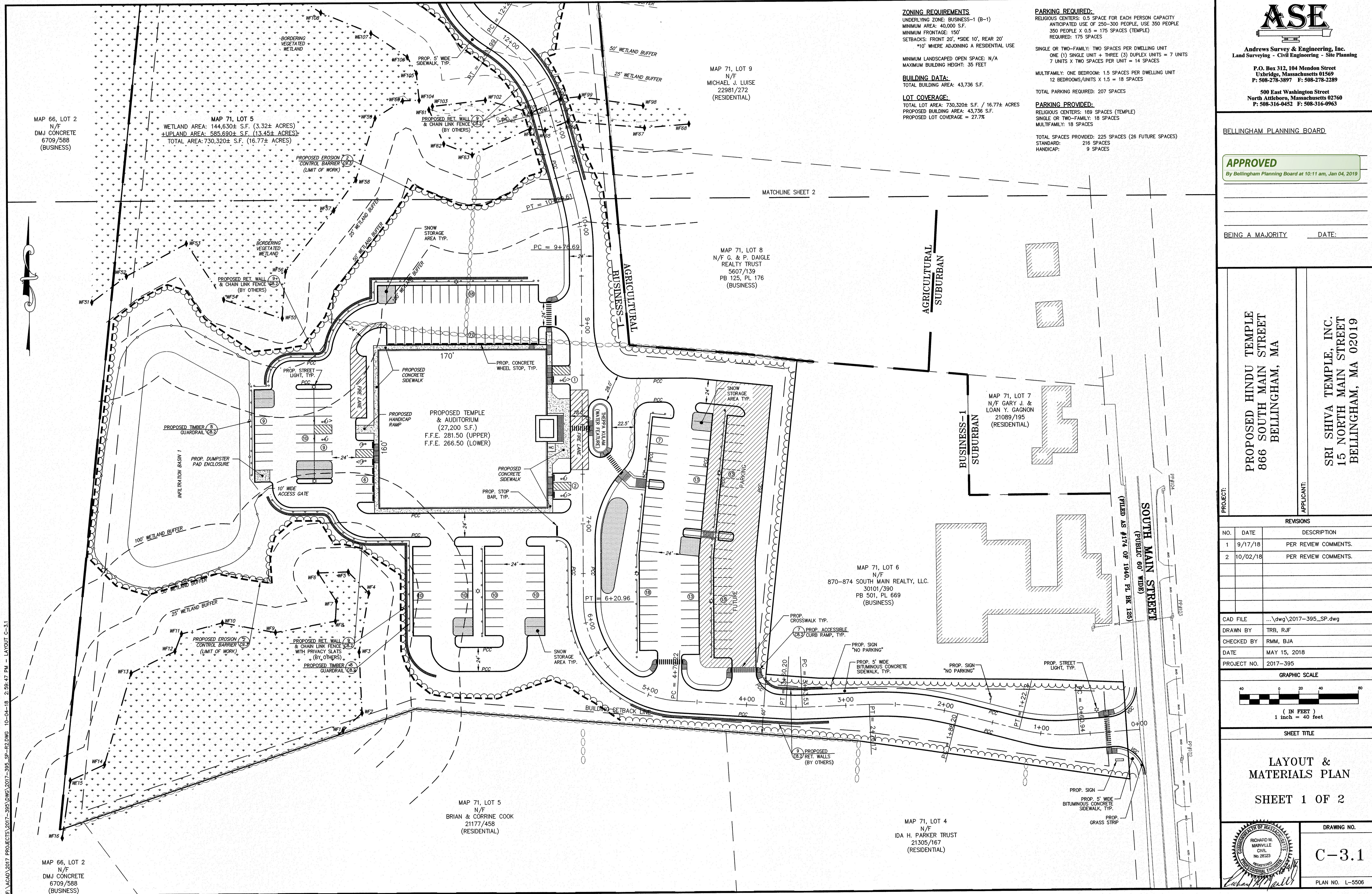
EXISTING CONDITIONS & DEMOLITION PLAN

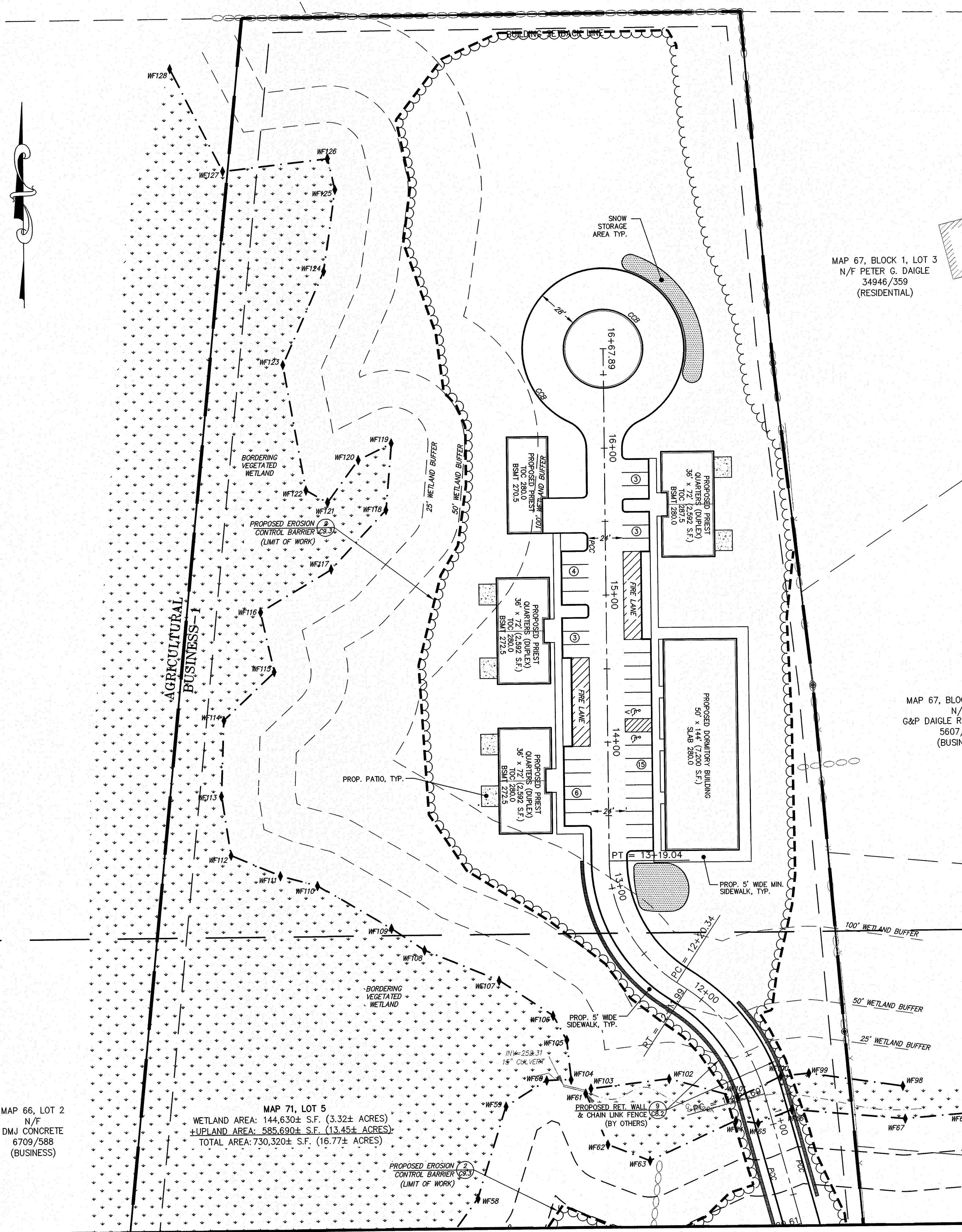
SHEET 2 OF 2

DRAWING NO.

C-2.

NS
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506





MAP 66, LOT 2
N/F
DMJ CONCRETE
6709/588
(BUSINESS)

MAP 71, LOT 5
WETLAND AREA: 144,630± S.F. (16)
UPLAND AREA: 585,690± S.F. (16)
TOTAL AREA: 730,320± S.F. (16)

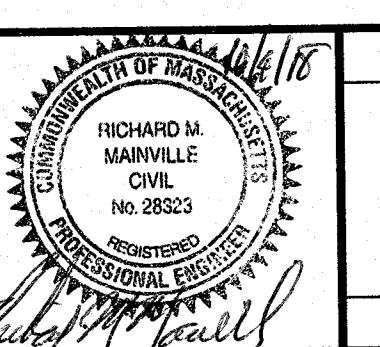
PROPOSED EROSION CONTROL BARRIER (2 C9.3)
(LIMIT OF WORK)

MAP 67, BLOCK 1, LOT 3
N/F PETER G. DAIGLE
34946/359
(RESIDENTIAL)

MAP 67, BLOCK 1, LOT 2
N/F
G&P DAIGLE REALTY TRUST
5607/138
(BUSINESS)

MAP 71, LOT 9
N/F
MICHAEL J. LUISE
22981/272
(RESIDENTIAL)

MATCHLINE SHEET 1



DRAWING NO. C 32

PLAN NO. 1-5506

BELLINGHAM PLANNING BOARD

APPROVED

By Bellingham Planning Board at 10:11 am, Jan 04, 2019

BEING A MAJORITY

DATE: _____

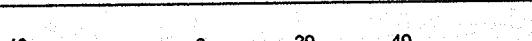
PROPOSED HINDU TEMPLE
866 SOUTH MAIN STREET
BELLINGHAM, MA

SRI SHIVA TEMPLE, INC.
15 NORTH MAIN STREET
BELLINGHAM, MA 02019

PROJECT:

REVISIONS		
NO.	DATE	DESCRIPTION
1	9/17/18	PER REVIEW COMMENTS.
2	10/02/18	PER REVIEW COMMENTS.

CAD FILE	... \dwg \2017-395_SP.dwg
DRAWN BY	TRB, RJF
CHECKED BY	RMM, BJA
DATE	MAY 15 2018

PROJECT NO.	2017-395			
GRAPHIC SCALE				
40	0	20	40	80
				
(IN FEET)				
1 inch = 40 feet				

LAYOUT & MATERIALS PLAN

SHEET 2 OF 2

BELLINGHAM PLANNING BOARD

APPROVED

By Bellingham Planning Board at 10:11 am, Jan 04, 2019

BEING A MAJORITY

DATE:

PROPOSED HINDU TEMPLE
866 SOUTH MAIN STREET
BELLINGHAM, MA

PROJECT:

NO.	DATE	DESCRIPTION
1	9/17/18	PER REVIEW COMMENTS.
2	10/02/18	PER REVIEW COMMENTS.

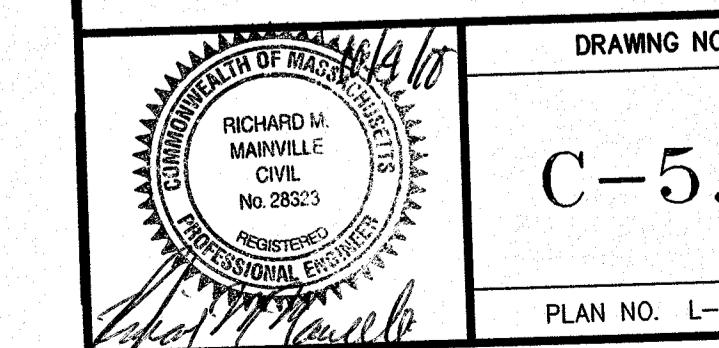
CAD FILE	...dwg\2017-395_SP.dwg
DRAWN BY	TRB, RJF
CHECKED BY	RMM, BJA
DATE	MAY 15, 2018
PROJECT NO.	2017-395

GRAPHIC SCALE	
40	0 20 40 80 (IN FEET) 1 inch = 40 feet

SHEET TITLE

GRADING & DRAINAGE PLAN

SHEET 1 OF 2



DRAWING NO.

C-5.1

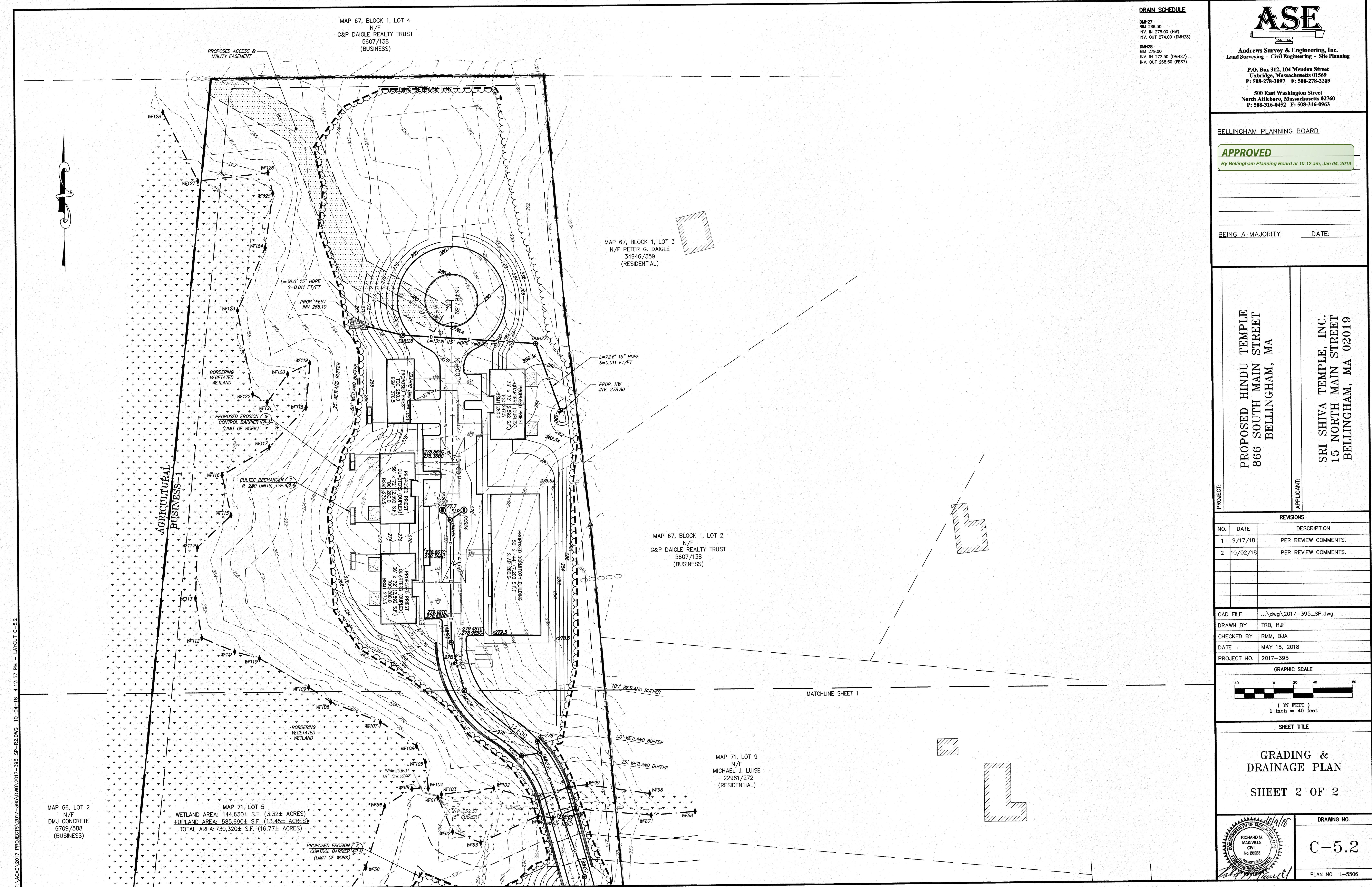
PLAN NO. L-5506

MAP 66, LOT 2
N/F
DMU CONCRETE
6709/588
(BUSINESS)

MAP 66, LOT 5
N/F
WETLAND AREA: 144,630± S.F. (3.32± ACRES)
+ UPLAND AREA: 585,690± S.F. (13.45± ACRES)
TOTAL AREA: 730,320± S.F. (16.77± ACRES)

MAP 71, LOT 5
N/F
BORDERING VEGETATED WETLAND
PROPOSED EROSION CONTROL BARRIER (2.83)
(SURROUNDING REPLICATION AREA)

EXISTING PIPE TO BE REMOVED
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Andrews Survey & Engineering, Inc.
and Surveying - Civil Engineering - Site Planning

**P.O. Box 312, 104 Mendon Street
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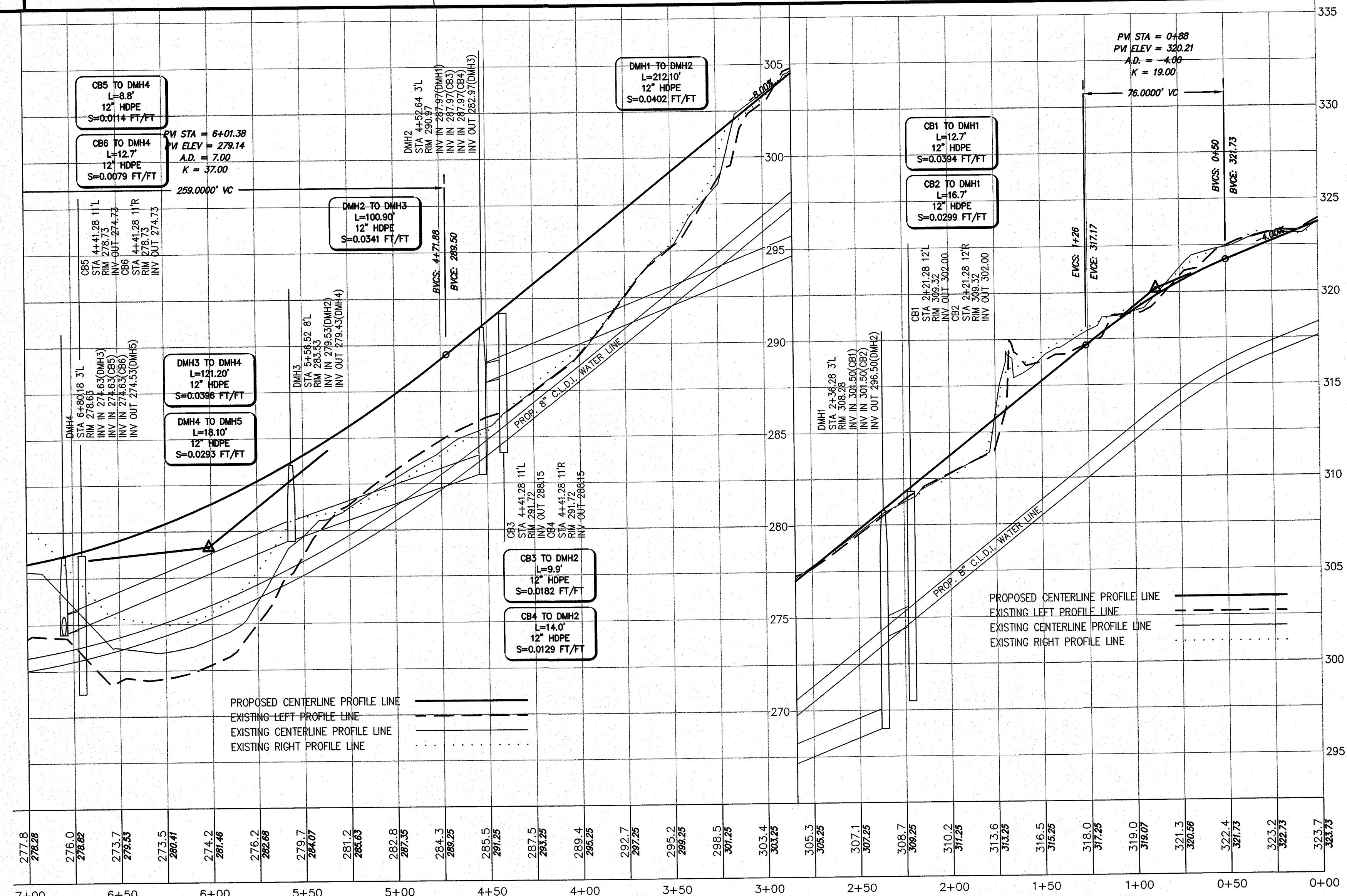
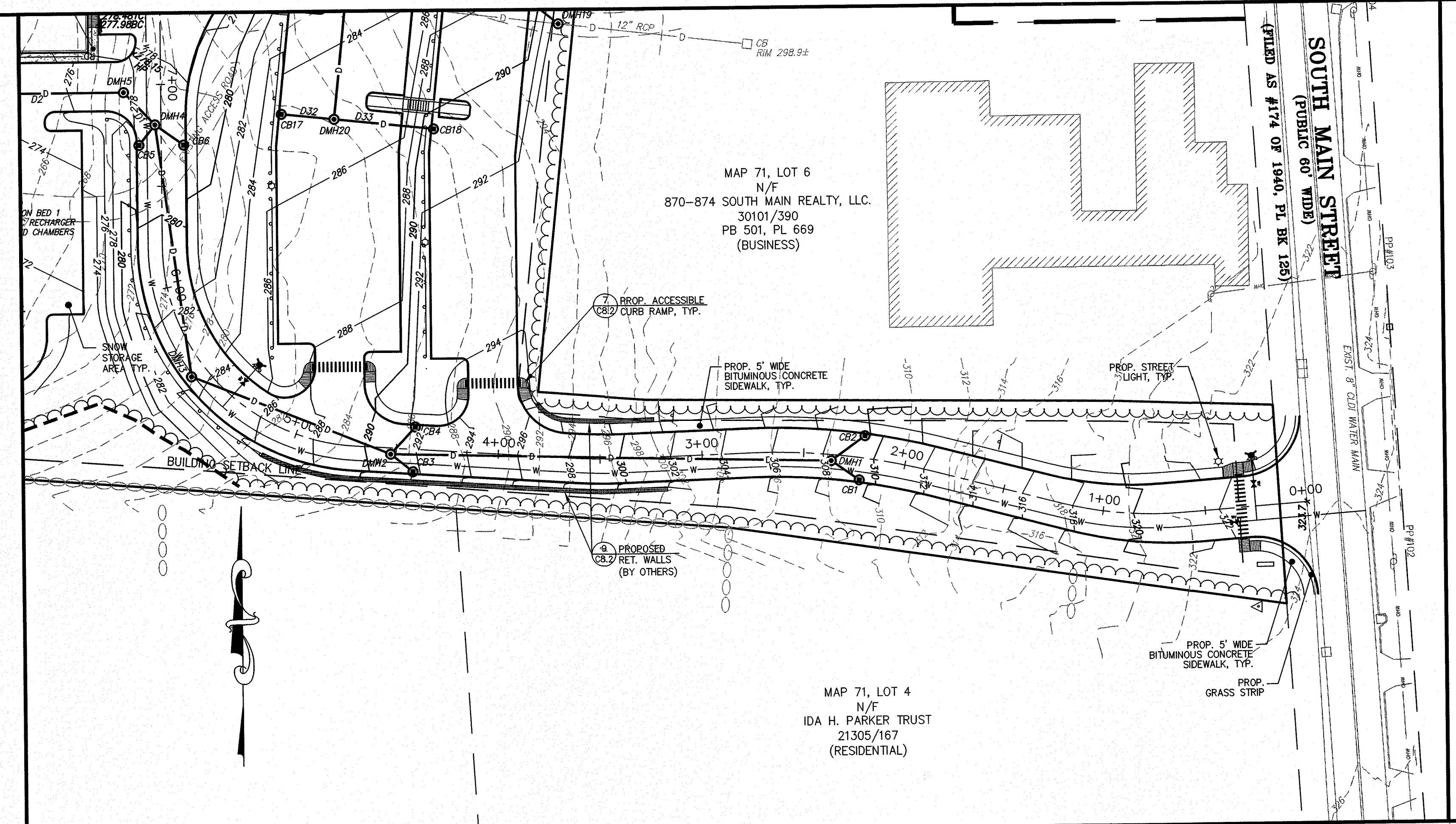
BELLINGHAM PLANNING BOARD

APPROVED

By Bellingham Planning Board at 10:12 am, Jan 04, 2019

BEING A MAJORITY

DATE:



PROPOSED HINDU TEMPLE
866 SOUTH MAIN STREET
BELLINGHAM, MA

SRI SHIVA TEMPLE, INC.
15 NORTH MAIN STREET
BELLINGHAM, MA 02019

PROJECT	APPLICANT	
REVISIONS		
NO.	DATE	DESCRIPTION
1	9/17/18	PER REVIEW COMMENTS.
2	10/02/18	PER REVIEW COMMENTS.

CAD FILE	... \dwg \2017-395_SP.dwg
DRAWN BY	TRB, RJF
CHECKED BY	RMM, BJA
DATE	MAY 15, 2018
PROJECT NO.	2017-395

(IN FEET)

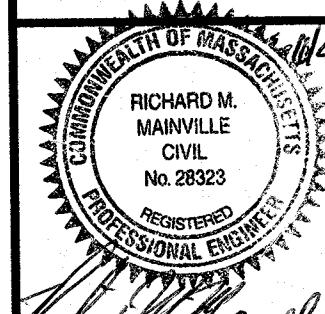
HORIZONTAL: 1 inch = 40 feet

VERTICAL: 1 inch = 4 feet

SHEET TITLE

PLAN & PROFILE
STA. 0+00 - 7+00

SHEET 1 OF 2



1/18 DRAWING NO. C-6 1

BELLINGHAM PLANNING BOARD

APPROVED

By Bellingham Planning Board at 10:12 am, Jan 04, 2019

BEING A MAJORITY

DATE:

PROPOSED HINDU TEMPLE, INC.
866 SOUTH MAIN STREET
BELLINGHAM, MASRI SHIVA TEMPLE, INC.
15 NORTH MAIN STREET
BELLINGHAM, MA 02019PROJECT:
REVISIONS

NO.	DATE	DESCRIPTION
1	9/17/18	PER REVIEW COMMENTS.
2	10/02/18	PER REVIEW COMMENTS.

CAD FILE ...\\dwg\\2017-395_SP.dwg
DRAWN BY TRB, RJE
CHECKED BY RMM, BJA
DATE MAY 15, 2018
PROJECT NO. 2017-395

GRAPHIC SCALE

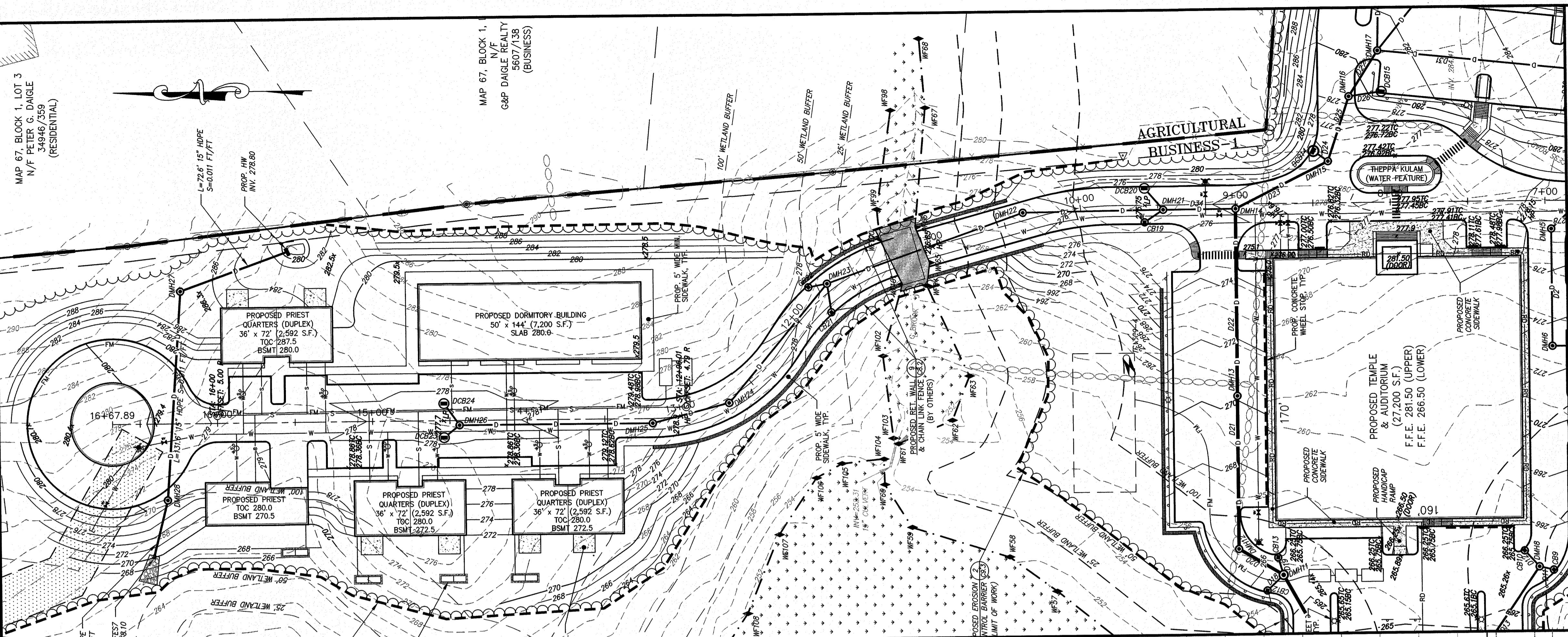
(IN FEET)
HORIZONTAL: 1 inch = 40 feet
VERTICAL: 1 inch = 4 feet

SHEET TITLE

PLAN & PROFILE STA. 7+00 - END

SHEET 2 OF 2

DRAWING NO. C-6.2
PLAN NO. L-5506
RICHARD M.
MAINEVILLE
CIVIL
No. 28523
THE PROFESSIONAL SURVEYOR
MASSACHUSETTS STATE BOARD OF SURVEYORS
REGISTRATION NO. 10018



BELLINGHAM PLANNING BOARD

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By Bellingham Planning Board at 10:12 am, Jan 04, 2019

BEING A MAJORITY DATE:

 PROPOSED HINDU TEMPLE, INC.
 866 SOUTH MAIN STREET
 BELLINGHAM, MA

 PROJECT:
 APPLICANT:

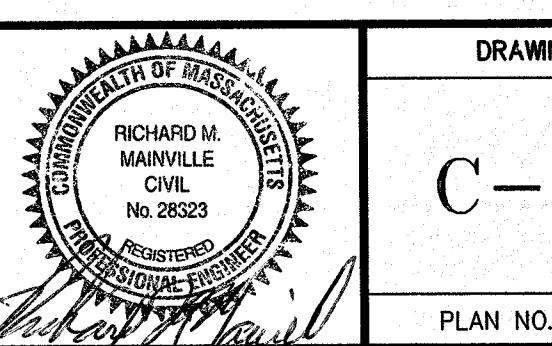
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NO.	DATE	DESCRIPTION
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 CAD FILE: ...\\dwg\\2017-395_SP.dwg
 DRAWN BY: TRB, RfJ
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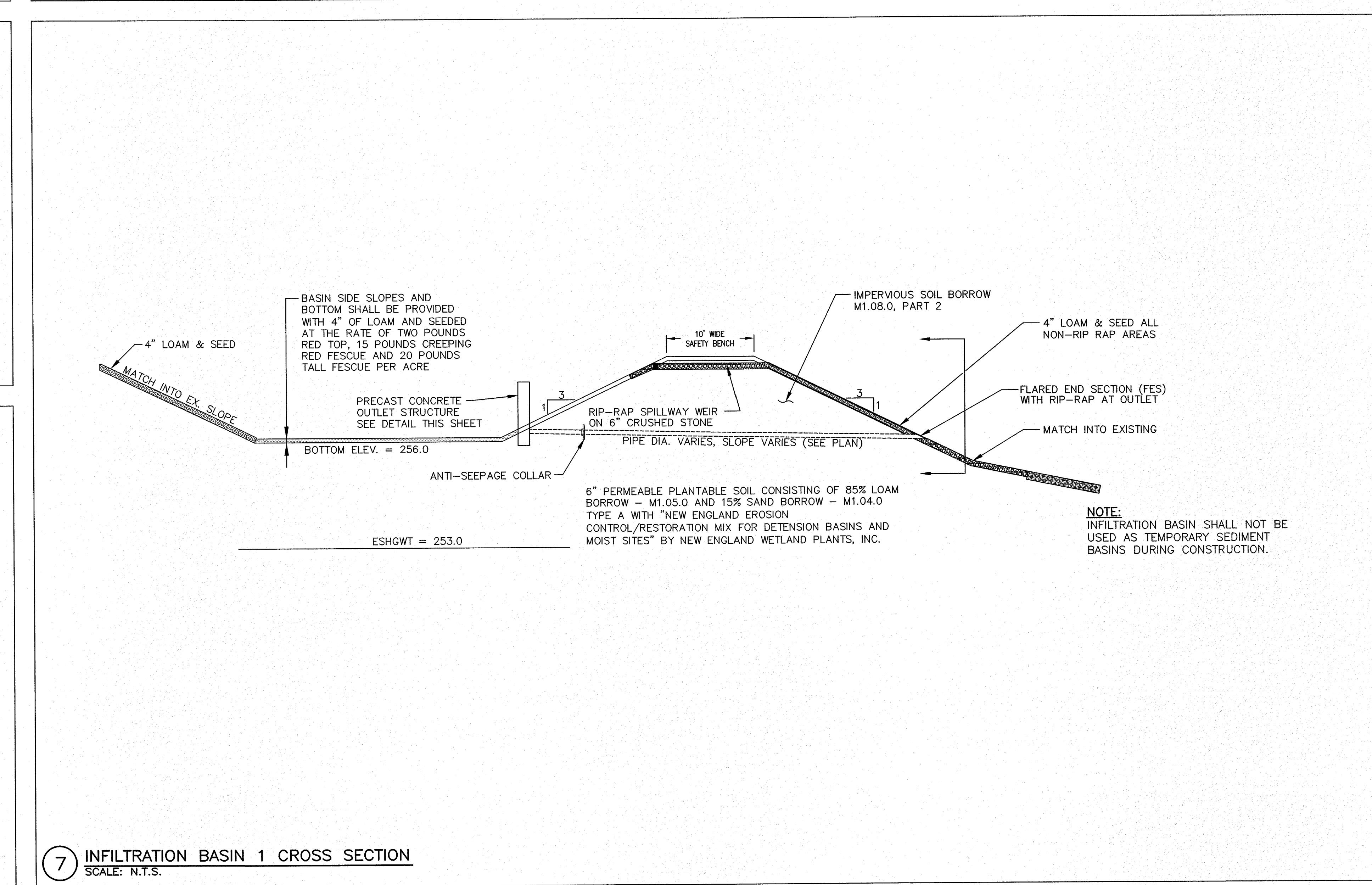
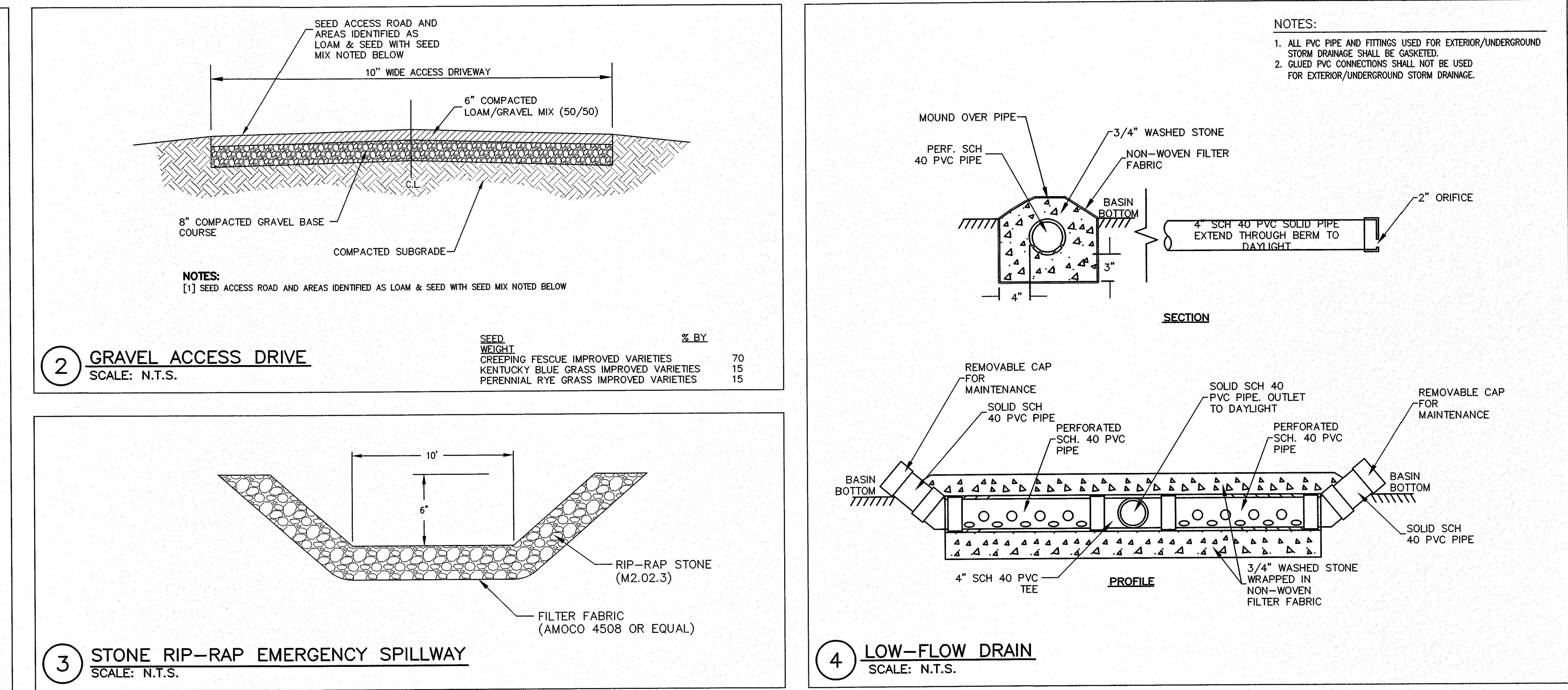
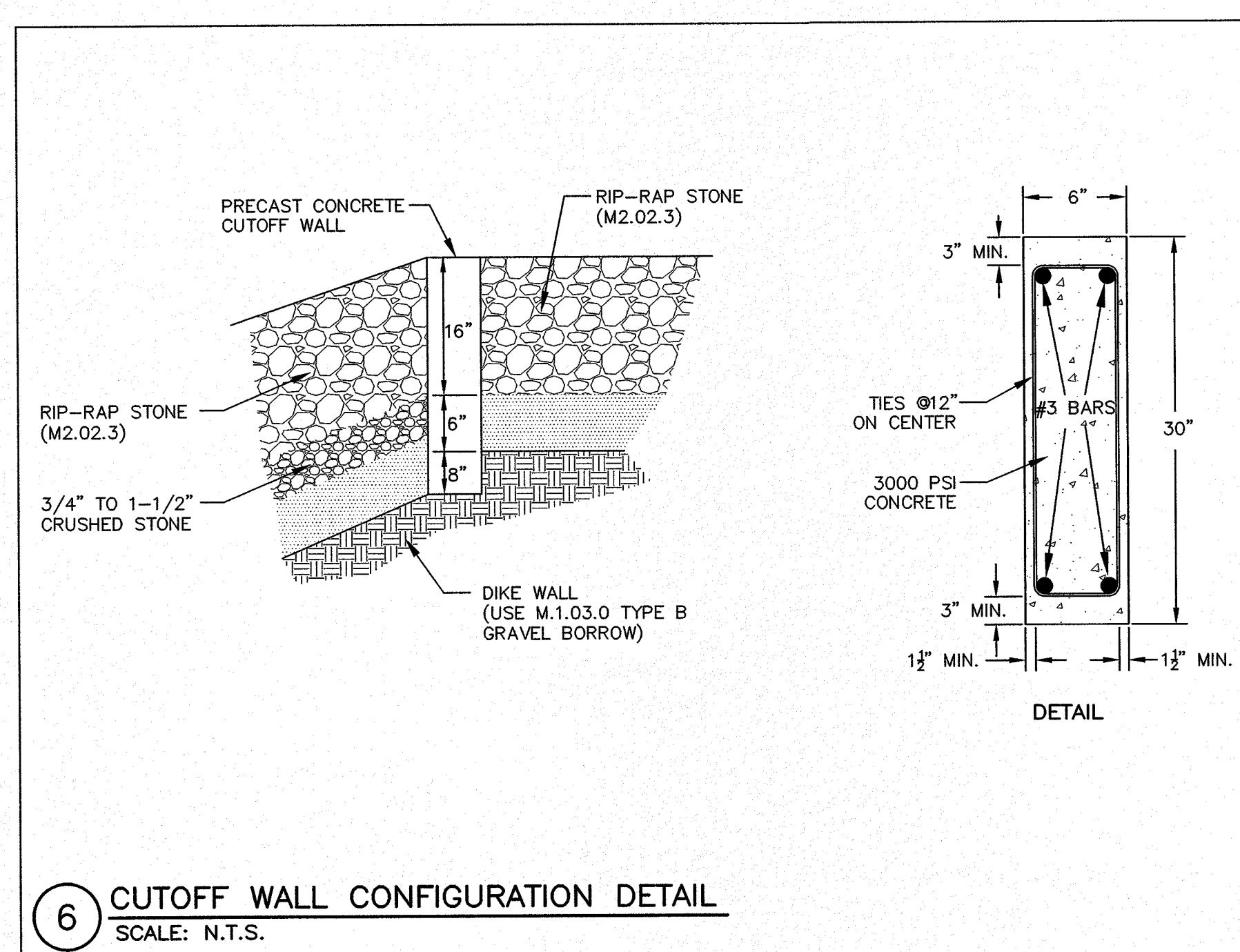
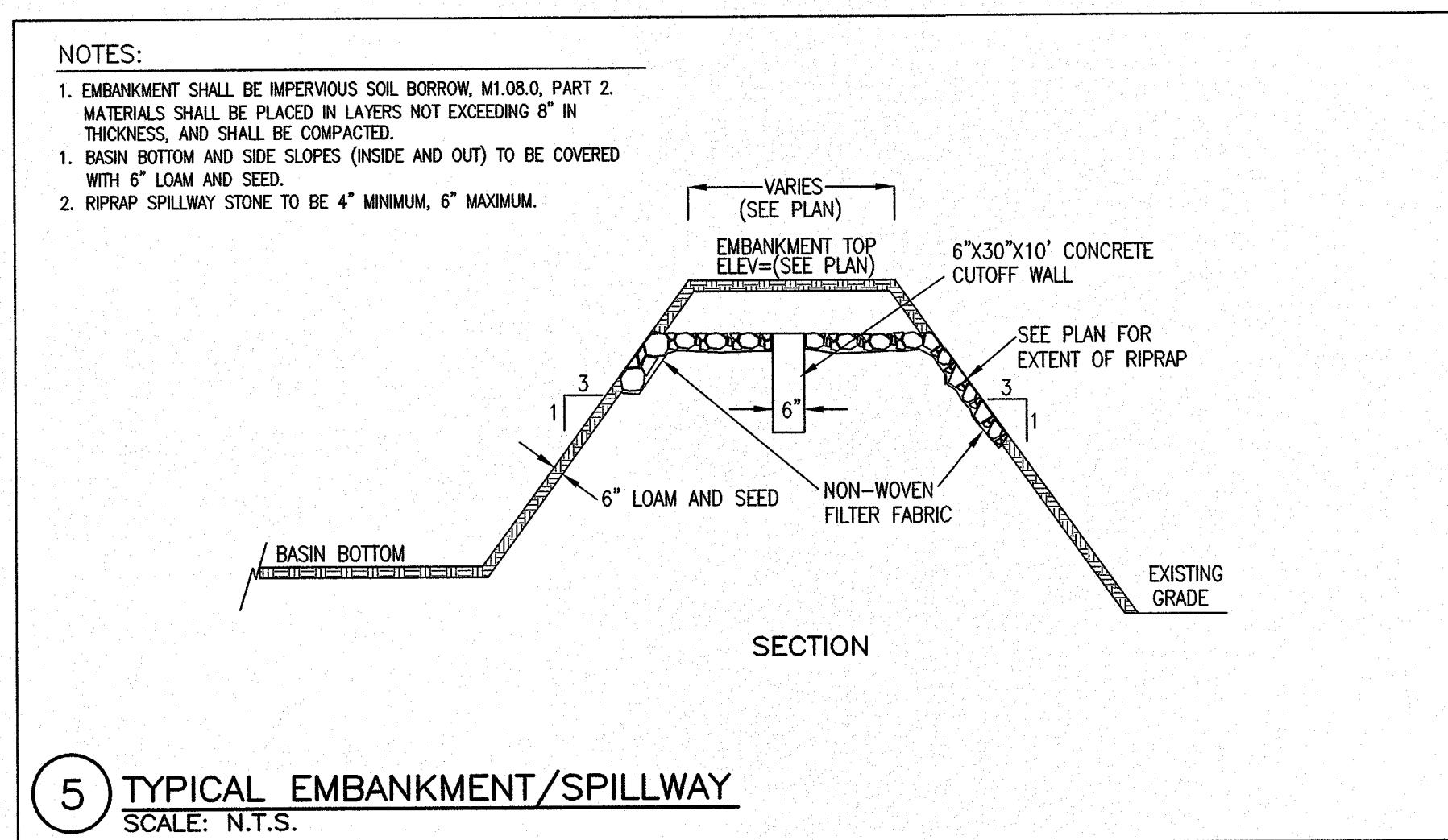
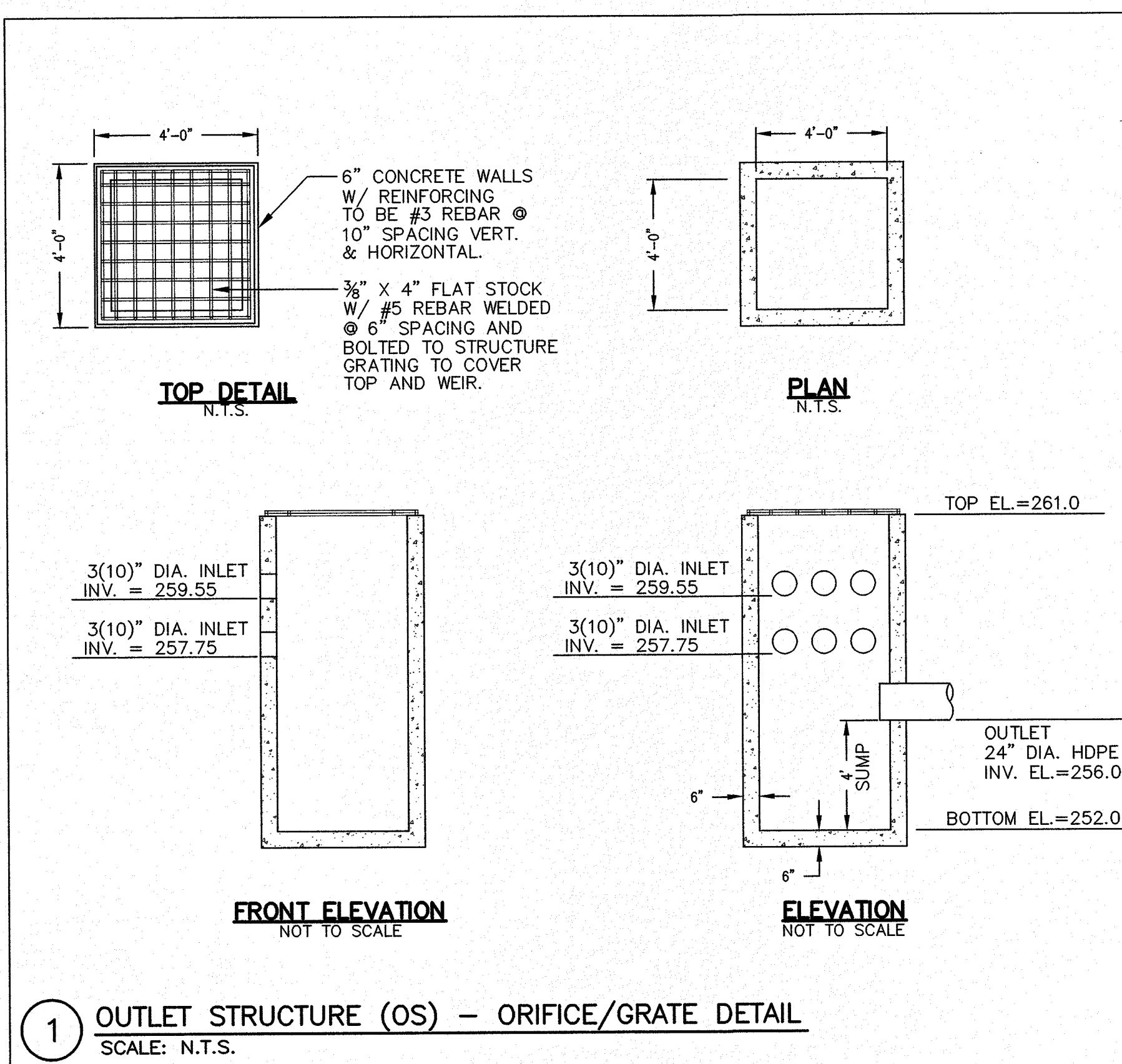
SHEET TITLE

CONSTRUCTION DETAILS

SHEET 3 OF 6


 DRAWING NO.
 C-8.3

PLAN NO. L-5506



BELLINGHAM PLANNING BOARD

APPROVED

By Bellingham Planning Board at 10:13 am, Jan 04, 2019

BEING A MAJORITY

DATE:

PROPOSED HINDU TEMPLE, INC.
866 SOUTH MAIN STREET
BELLINGHAM, MA

SRI SHIVA TEMPLE, INC.
15 NORTH MAIN STREET
BELLINGHAM, MA 02019

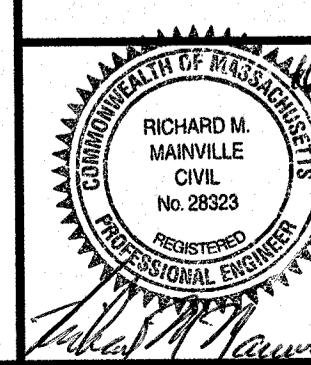
PROJECT: _____
APPLICANT: _____

REVISIONS		
NO.	DATE	DESCRIPTION
1	9/17/18	PER REVIEW COMMENTS.
2	10/02/18	PER REVIEW COMMENTS.

CAD FILE: ... \dwg\2017-395_SP.dwg
DRAWN BY: TRB, RJF
CHECKED BY: RMM, BJA
DATE: MAY 15, 2018
PROJECT NO.: 2017-395

SHEET TITLE
CONSTRUCTION DETAILS
SHEET 5 OF 6

DRAWING NO.: C-8.5
PLAN NO.: L-5506



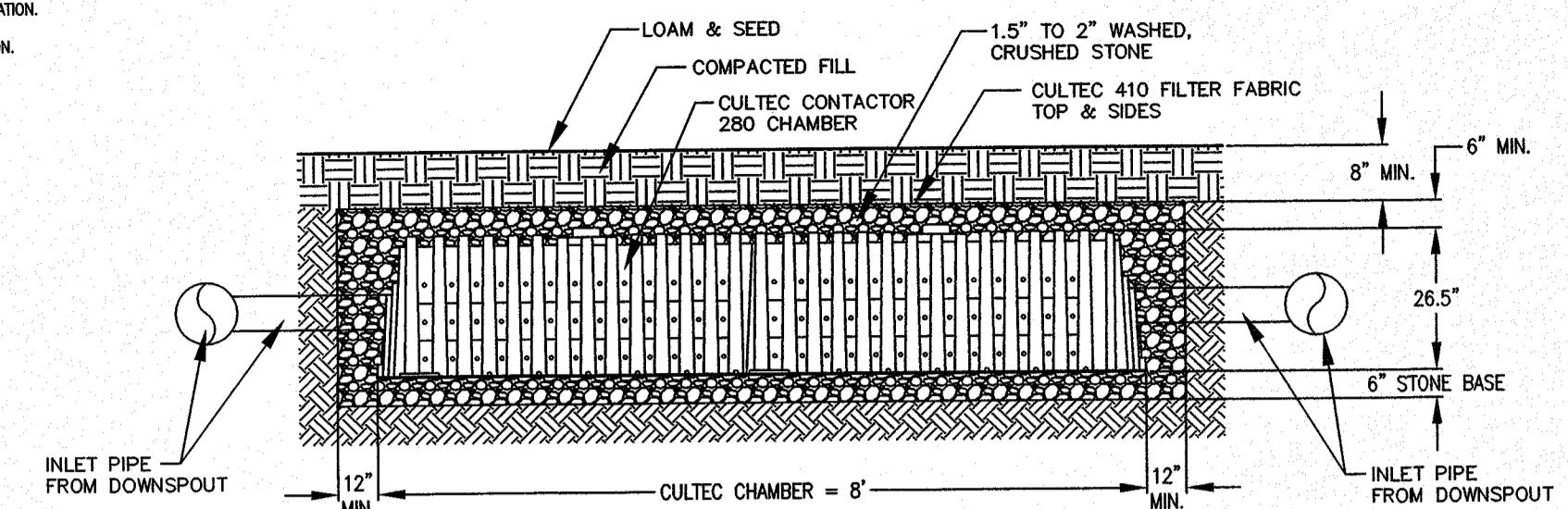
RICHARD M.
MANNILLE
CIVIL
PROFESSIONAL ENGINEER
No. 28323

RECEIVED
ANDREWS SURVEY & ENGINEERING, INC.

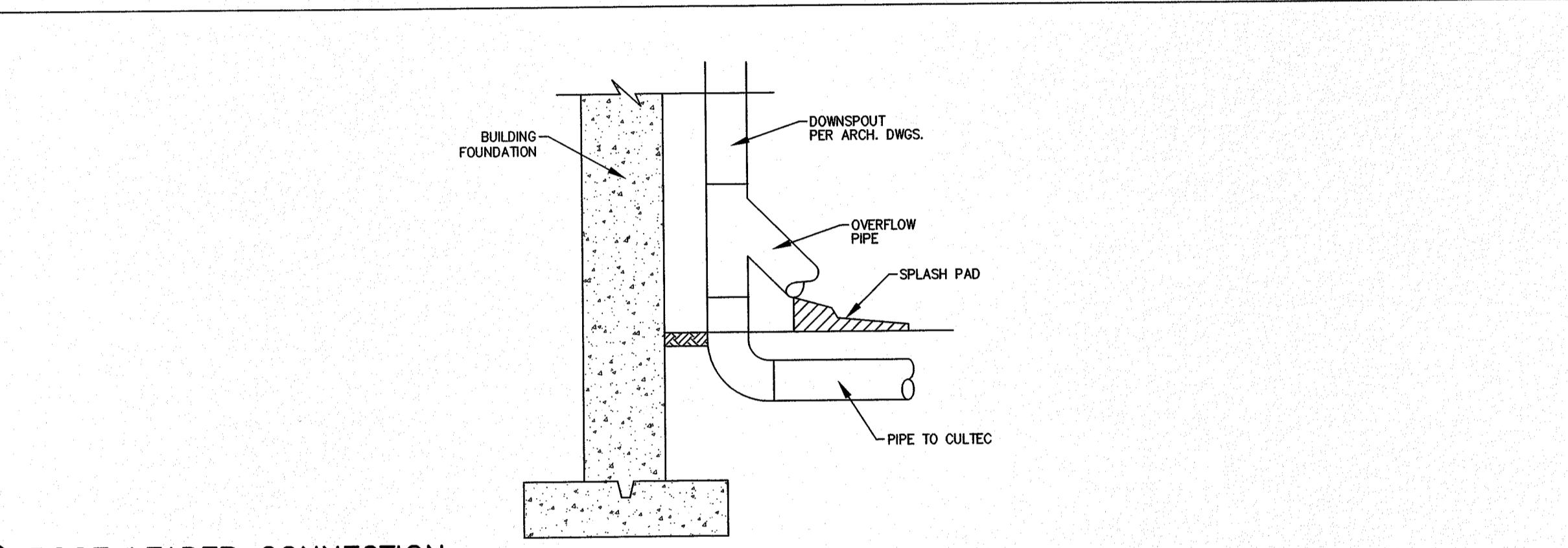
1/4/2019

© 2018 ANDREWS SURVEY & ENGINEERING, INC.

NOTES:
1. USE RECHARGER R-280 AS MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT, OR APPROVED EQUAL.
2. ALL RECHARGER CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
3. CHAMBER SIZING CALCULATIONS ARE BASED ON 40% STONE VOID.
4. CULTEC RECHARGER R-280 CHAMBERS ARE TO BE INSTALLED IN A HORIZONTAL POSITION FROM THE POSITION OF STORM AND SEASONAL HIGH GROUND WATER ELEVATION. CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER TO DETERMINE GROUNDBREAK ELEVATION AT EACH LOCATION PRIOR TO INSTALLATION.

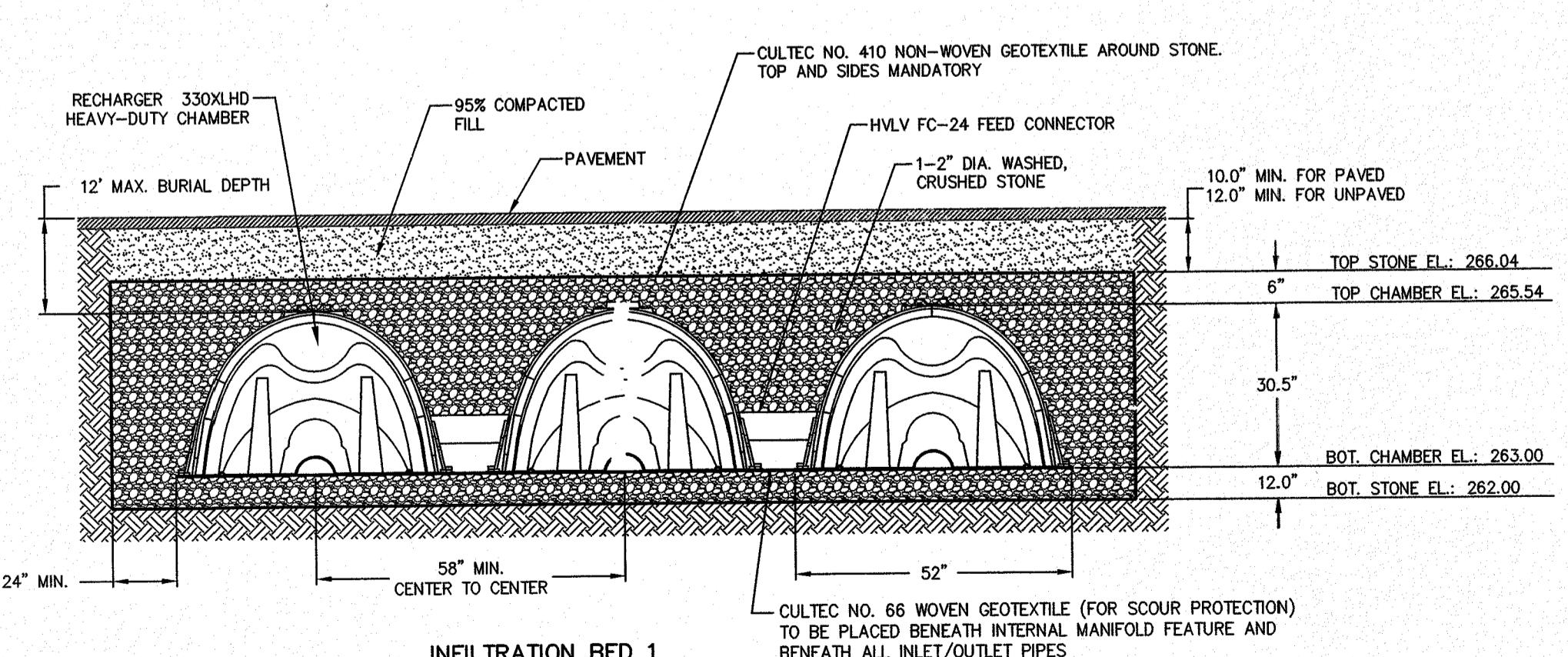


2 ROOF STORMWATER RECHARGE SYSTEM
CULTEC RECHARGER R-280 CHAMBER
SCALE: N.T.S.

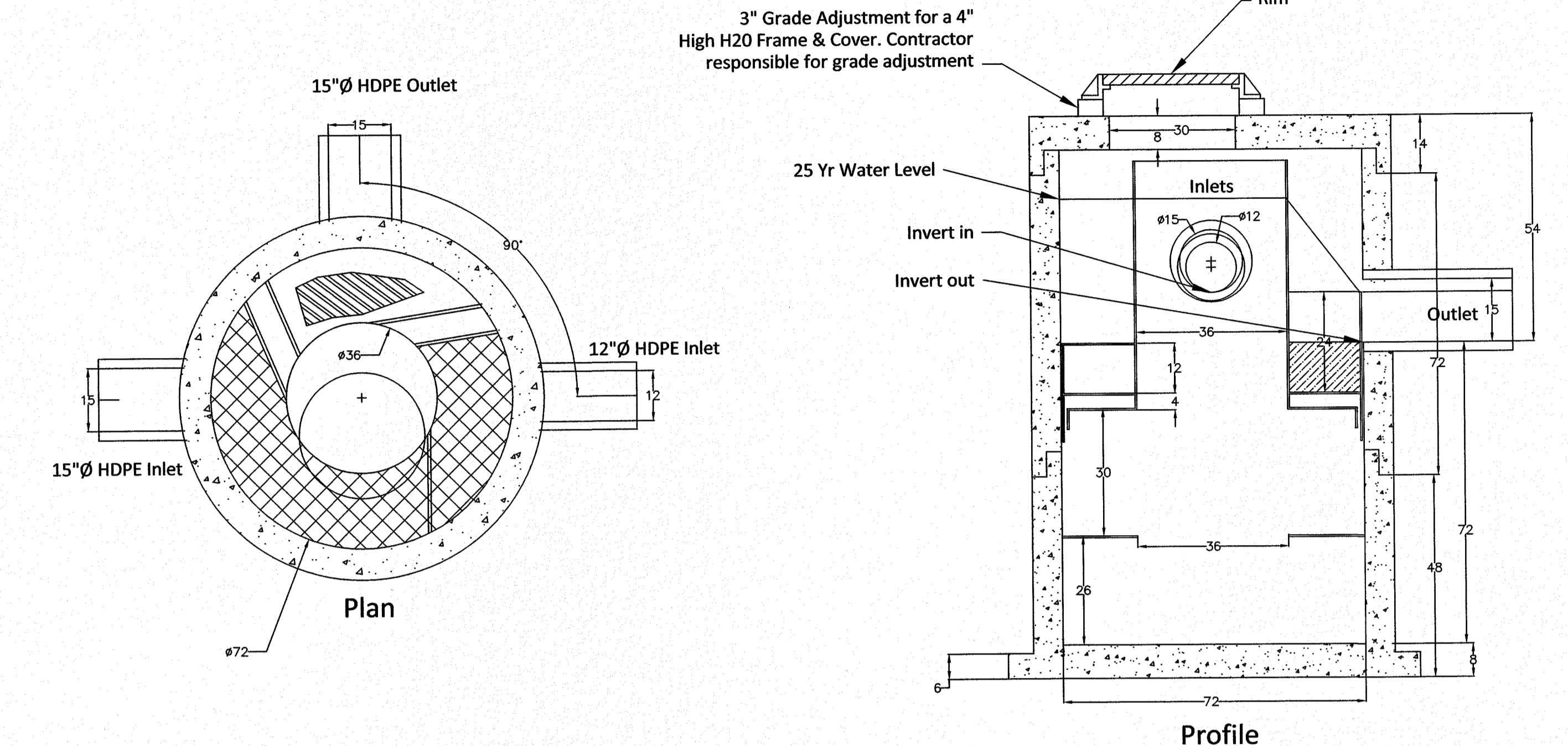


3 ROOF LEADER CONNECTION
SCALE: N.T.S.

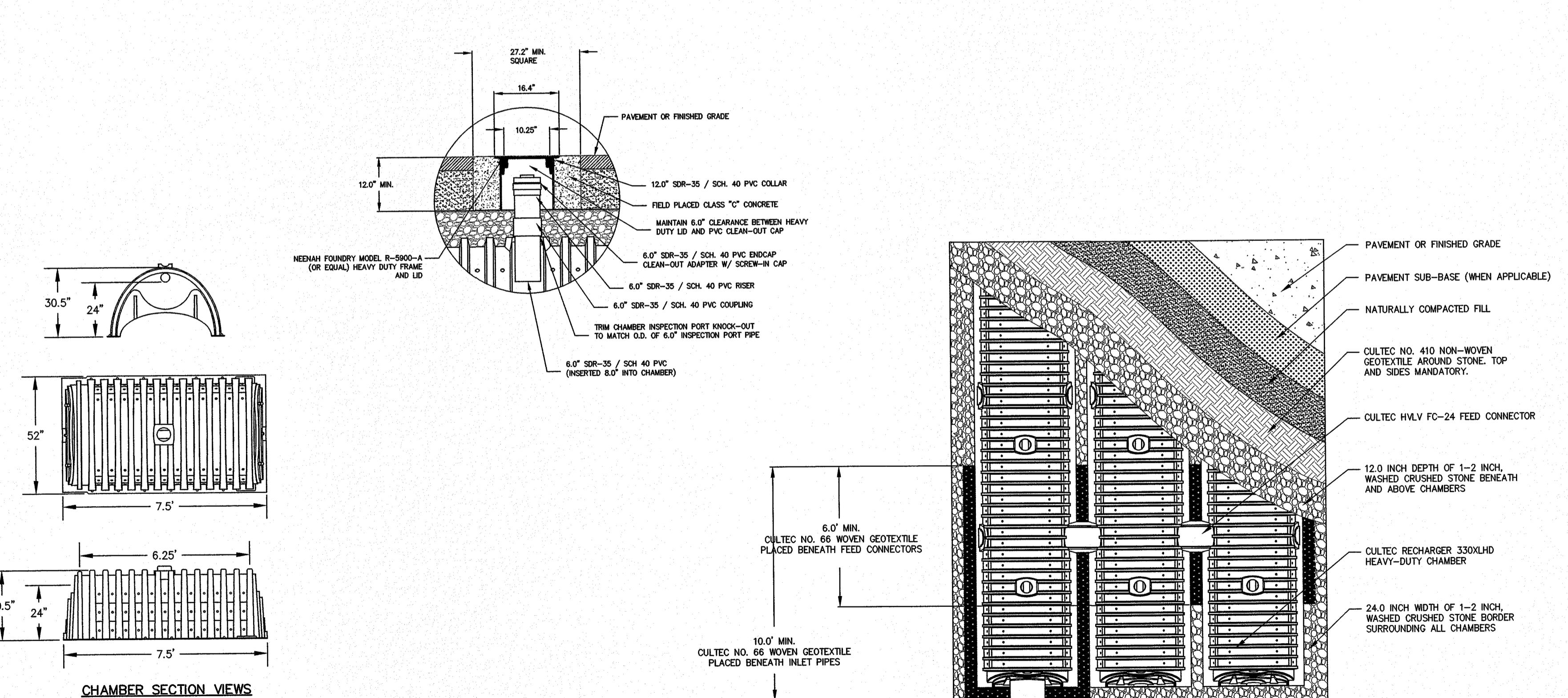
NOTES:
1. USE RECHARGER 330XLHD AS MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT, OR APPROVED EQUAL.
2. ALL RECHARGER CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
3. CALCULATIONS ARE BASED ON 40% STONE VOID.
4. CLEANOUT PORTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
5. THE CHAMBER WILL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.
6. ALL RECHARGER 330XL HD HEAVY DUTY UNITS ARE MARKED WITH A COLOR STRIPE FORMED INTO THE PART ALONG THE LENGTH OF THE CHAMBER.



INFILTRATION BED 1
CROSS-SECTION



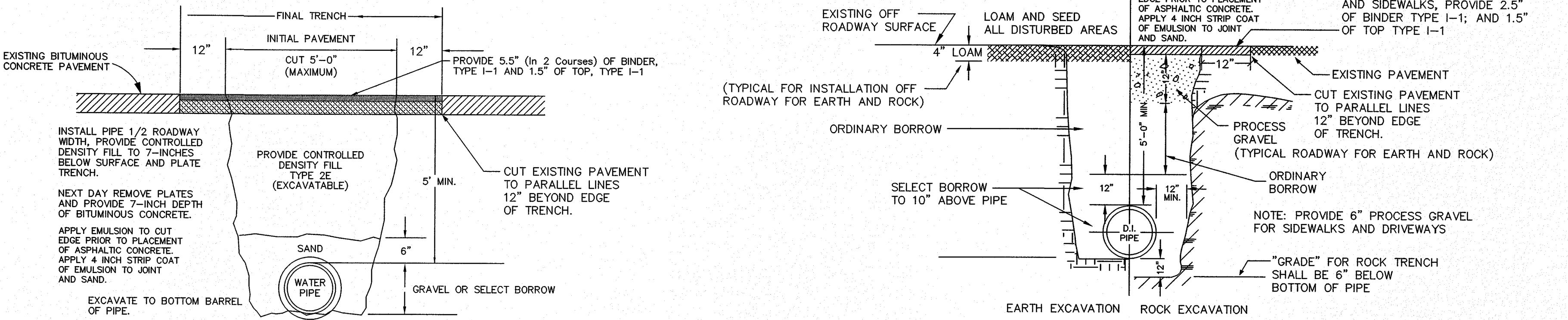
1 HYDROWORKS HS6 (72"")
SCALE: N.T.S.



4 CULTEC RECHARGER R-330XLHD CHAMBER (INFILTRATION BED 1)
SCALE: N.T.S.

NOTES:

1. ALL NEW WATER MAINS FROM 6" THRU 12" DIAMETER SHALL BE DUCTILE IRON PRESSURE CLASS 350 PIPE.
2. TEFLON TAPE SHALL BE REQUIRED FOR ALL DIRECT TAPS
3. NO DIRECT TAPS GREATER THAN 1" SHALL BE ALLOWED ON 6" THRU 12" DIAM. PIPE
4. ANY BRANCH OR SERVICES LARGER THAN 1" MUST BE ACCOMPLISHED BY INSTALLATION OF APPROPRIATE DUCTILE IRON FITTING
5. ALL WATER LINES & APPURTANENCES TO BE INSTALLED PER BELLINGHAM WATER DEPARTMENT SPECIFICATIONS.



ALL PIPES INSTALLED UNDER BROOKS, CULVERTS OR WITHIN 6" OF ANY STRUCTURES (CB, MH, PITS, VAULTS) MUST BE DUCTILE IRON.

TYPICAL TRENCH SECTION FOR DUCTILE IRON WATER MAINS

BEING A MAJORITY DATE:

 PROPOSED HINDU TEMPLE, INC.
 866 SOUTH MAIN STREET
 BELLINGHAM, MA 02019
 APPLICANT:

 SRI SHIVA TEMPLE, INC.
 15 NORTH MAIN STREET
 BELLINGHAM, MA 02019

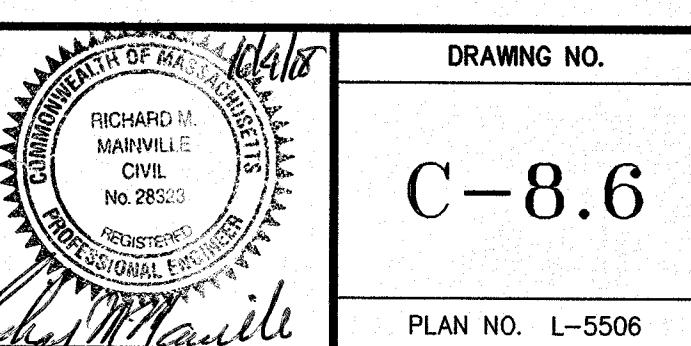
PROJECT:	REVISIONS
1	DATE 9/17/18 DESCRIPTION PER REVIEW COMMENTS.
2	DATE 10/02/18 DESCRIPTION PER REVIEW COMMENTS.

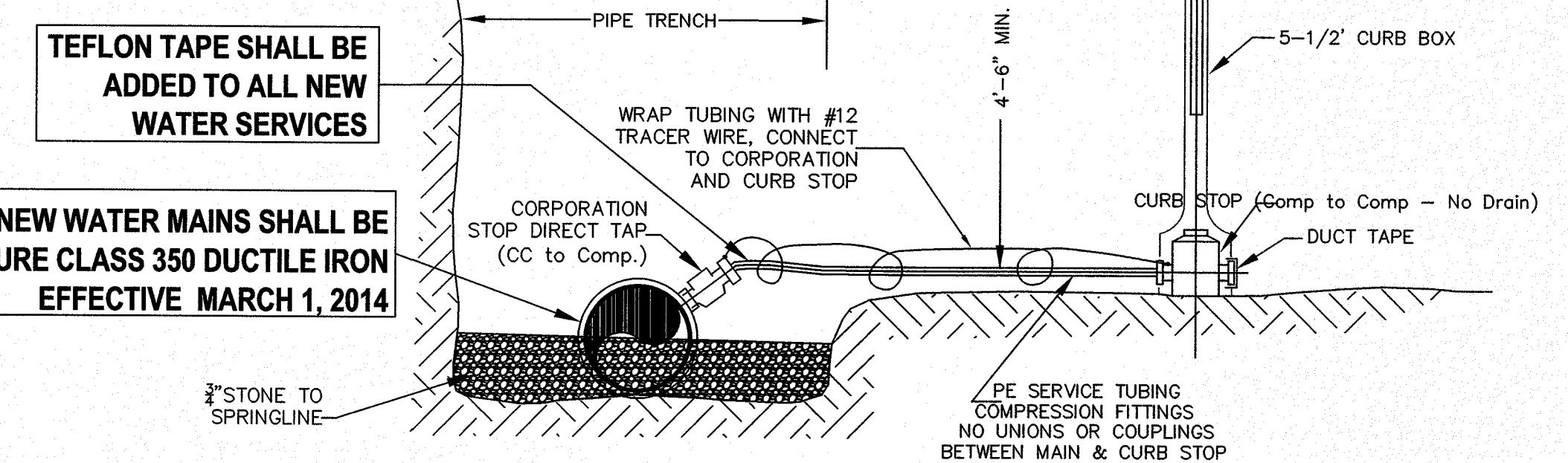
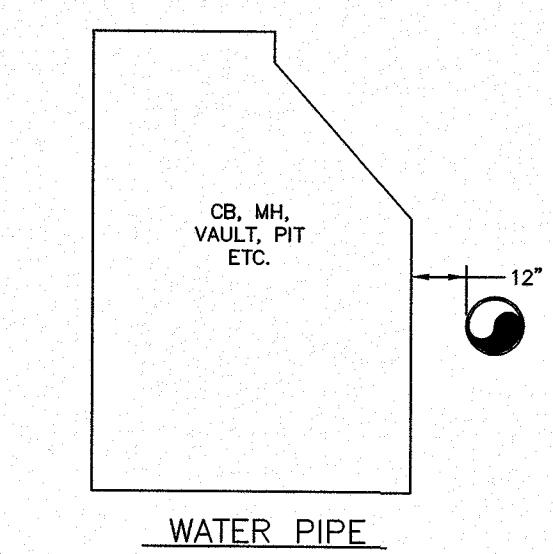
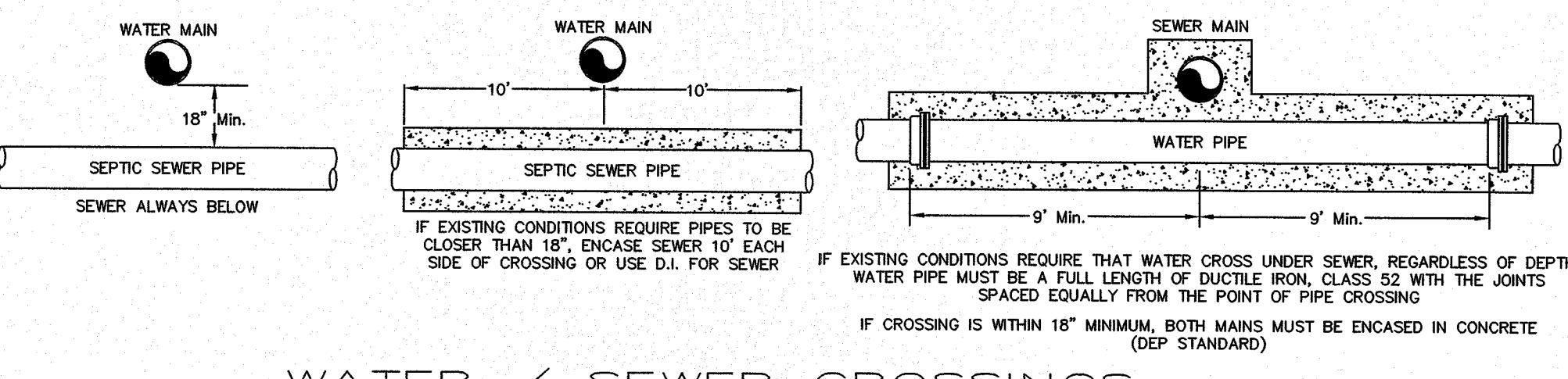
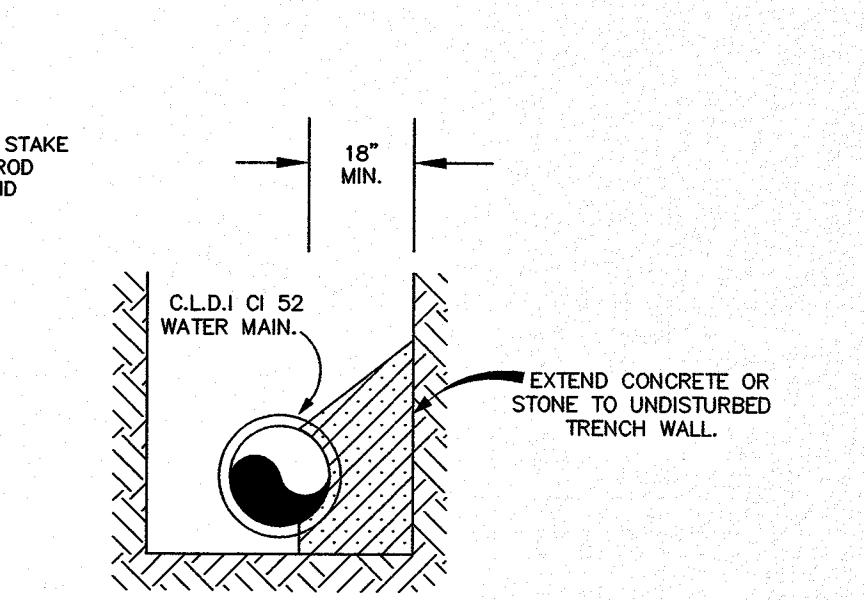
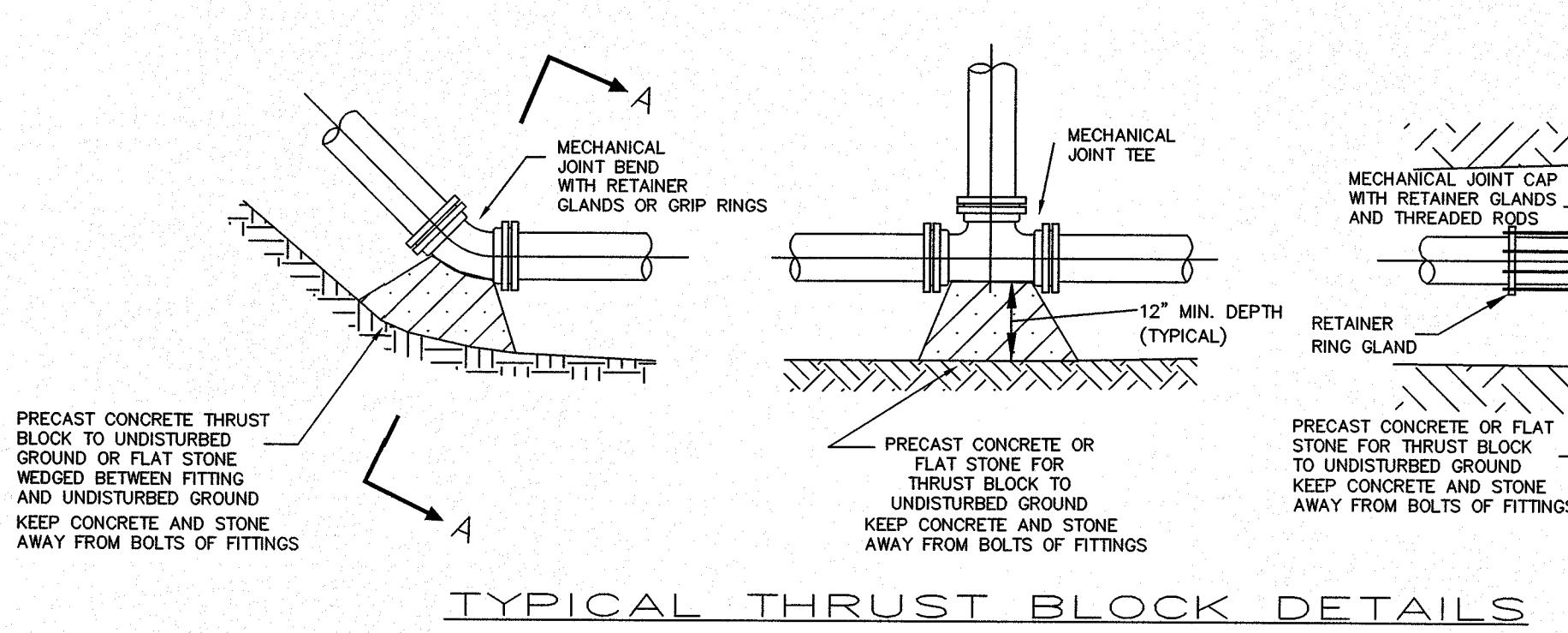
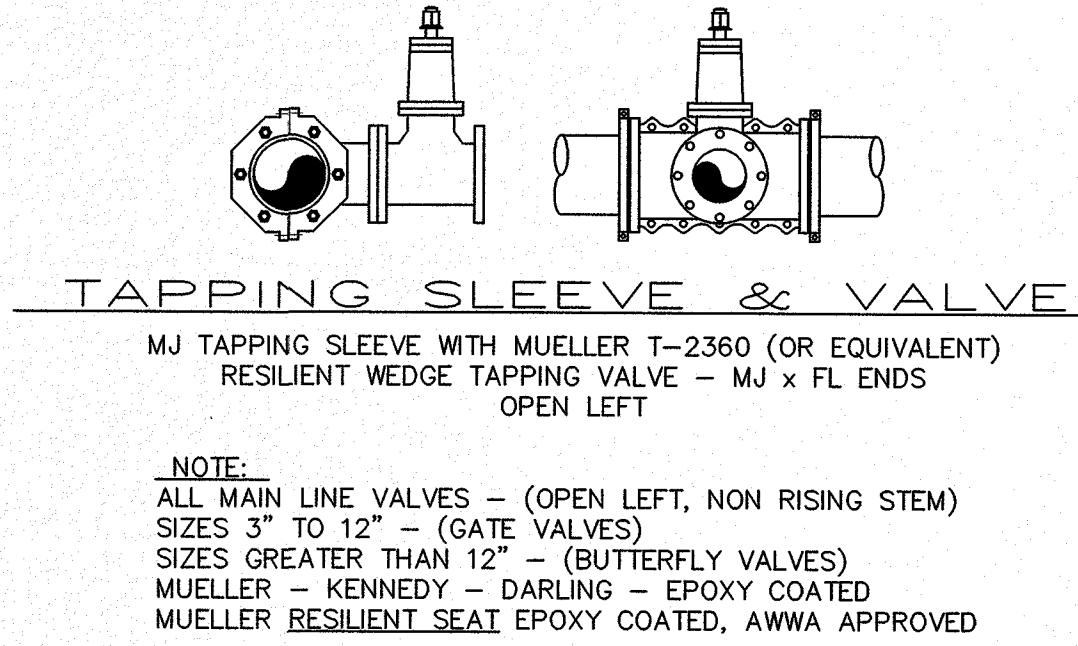
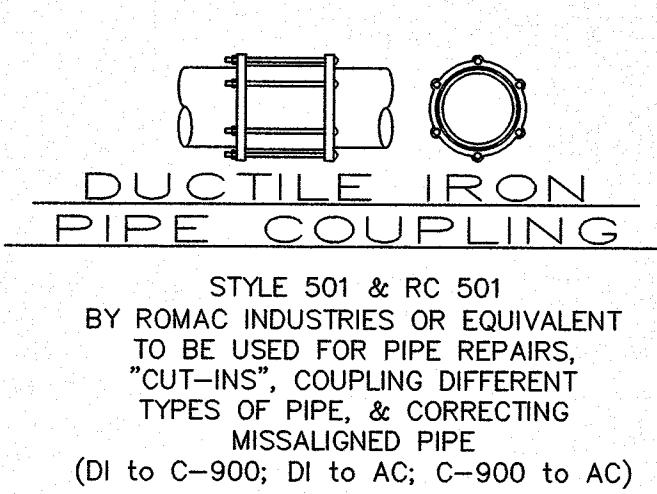
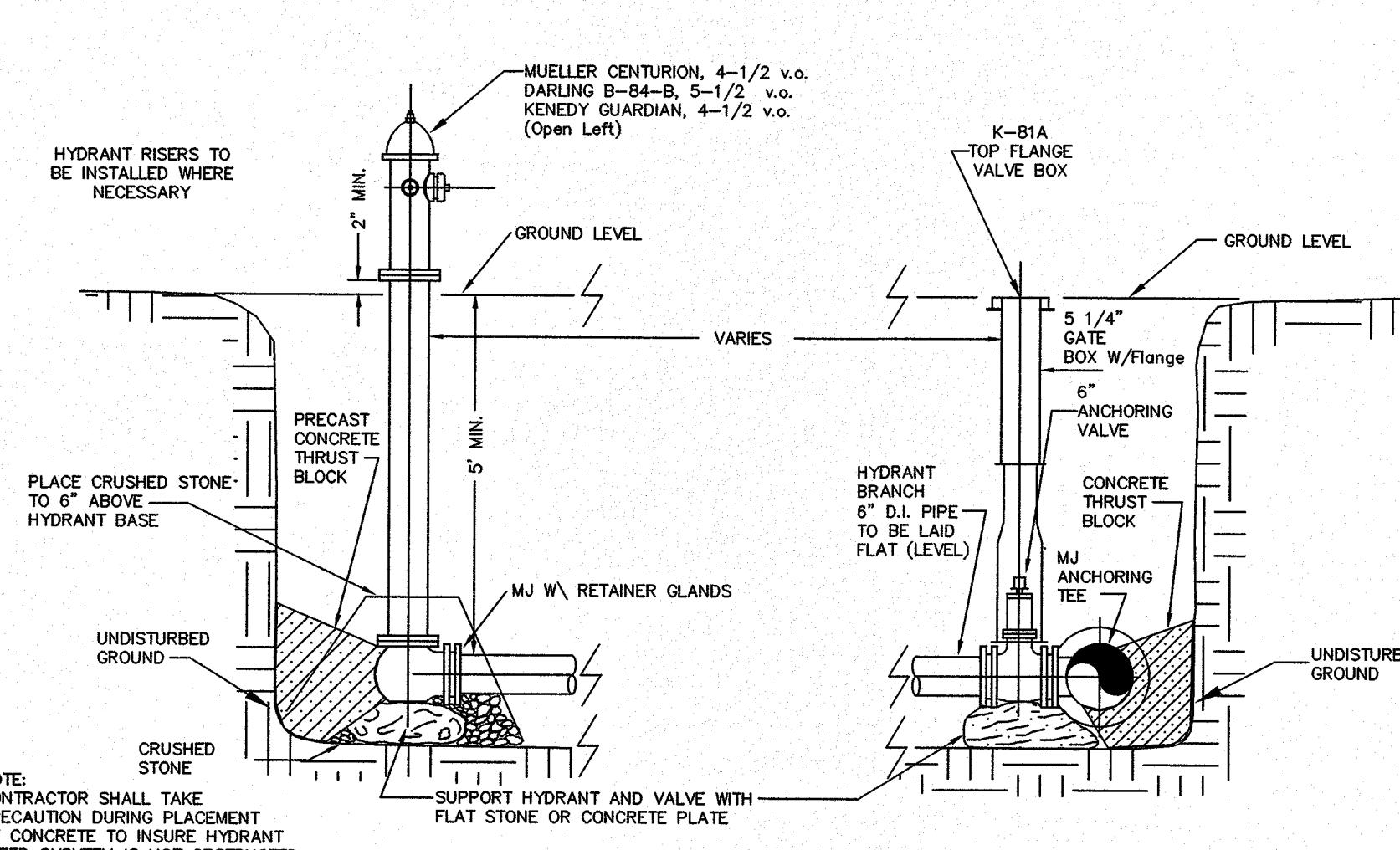
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 DRAWN BY: TRB, RJA
 CHECKED BY: RMM, BJA
 DATE: MAY 15, 2018
 PROJECT NO: 2017-395

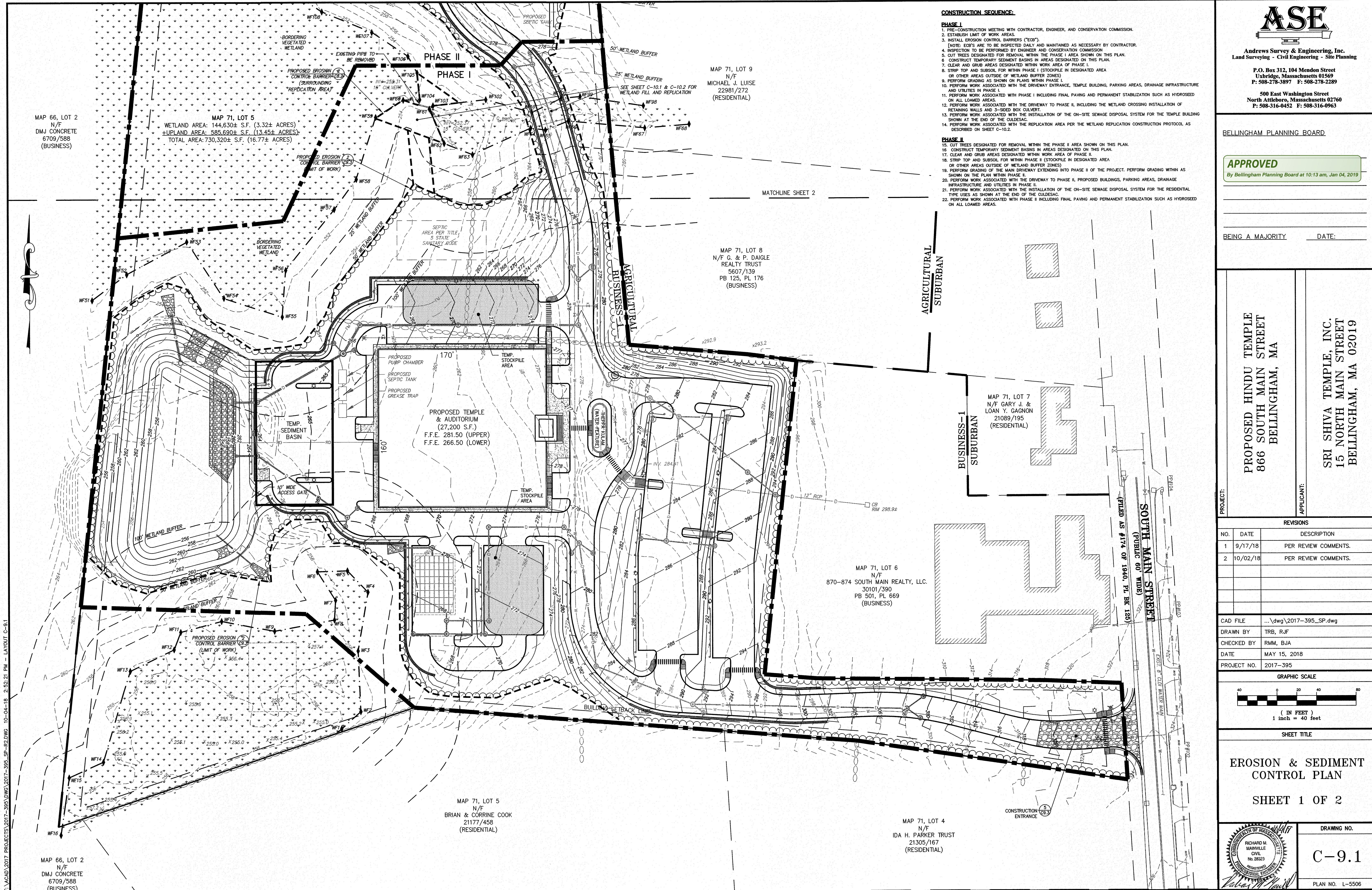
SHEET TITLE

CONSTRUCTION DETAILS

SHEET 6 OF 6

	DRAWING NO.
	C-8.6
PLAN NO. L-5506	


 TYPICAL SERVICE CONNECTION
 SEE SPEC. SHEET

 WATER SERVICE CONNECTION
 WITH
 SECOND METER
 (LAWN SPRINKLER SYSTEMS)



BELLINGHAM PLANNING BOARD

APPROVED

By Bellingham Planning Board at 10:13 am, Jan 04, 2019

BEING A MAJORITY

DATE:

PROPOSED HINDU TEMPLE
866 SOUTH MAIN STREET
BELLINGHAM, MA

SRI SHIVA TEMPLE, INC.
15 NORTH MAIN STREET
BELLINGHAM, MA 02019

PROJECT: _____
APPLICANT: _____

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CAD FILE: ...\\dwg\\2017-395_SP.dwg
DRAWN BY: TRB, RJF
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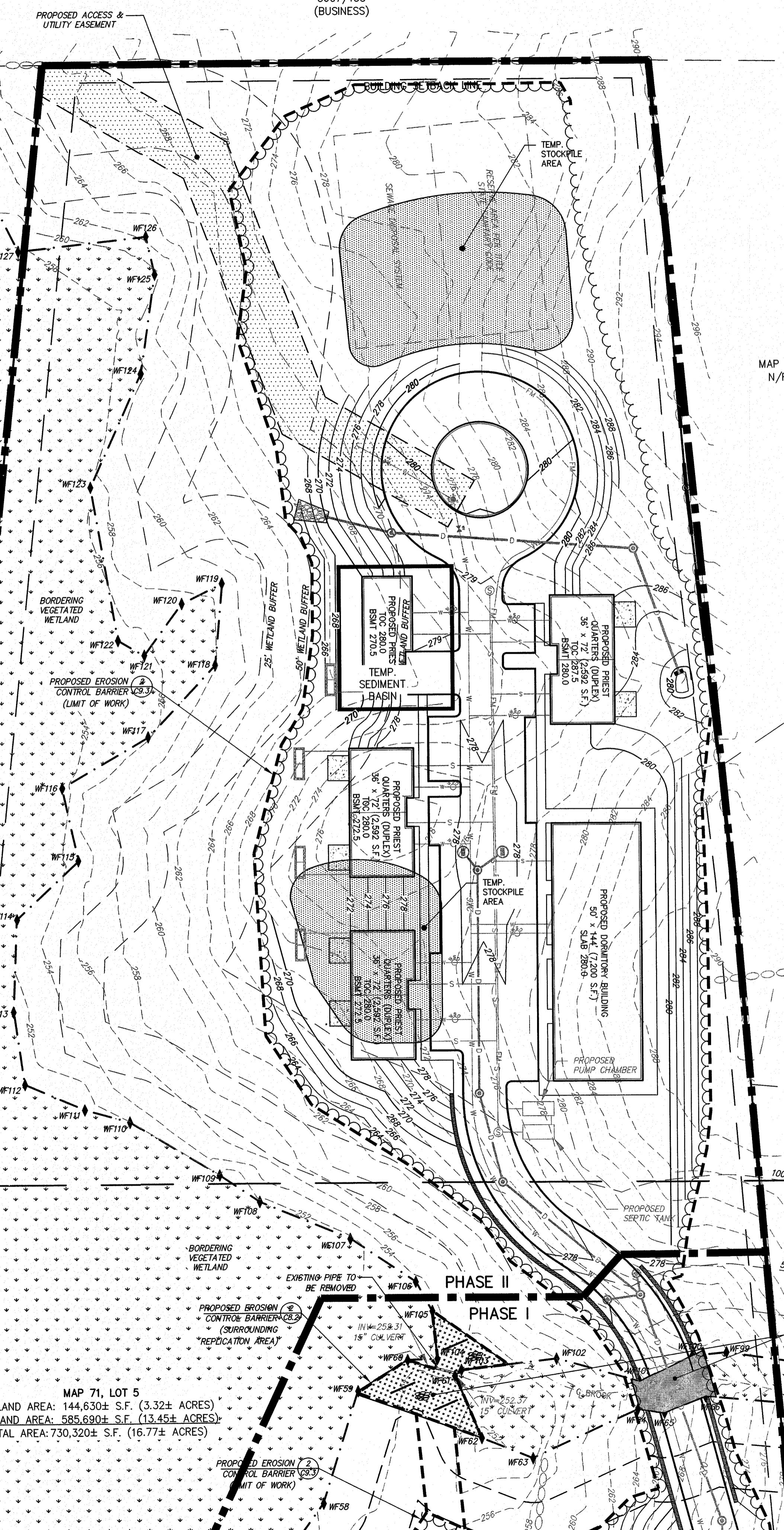
GRAPHIC SCALE
40 20 40 80
(IN FEET)
1 inch = 40 feet

SHEET TITLE

EROSION & SEDIMENT
CONTROL PLAN

SHEET 2 OF 2

DRAWING NO. C-9.2
PLAN NO. L-5506
RICHARD M.
MAINEVILLE
CIVIL
NO. 26523
PROFESSIONAL ENGINEER
Mass. Reg. No. 26523
1/14/18



MAP 67, BLOCK 1, LOT 3
N/F PETER G. DAIGLE
34946/359
(RESIDENTIAL)

MAP 67, BLOCK 1, LOT 2
N/F
G&P DAIGLE REALTY TRUST
5607/138
(BUSINESS)

MATCHLINE SHEET 1

MAP 71, LOT 9
N/F
MICHAEL J. LUISE
22981/272
(RESIDENTIAL)

1/14/18

EROSION AND SEDIMENT CONTROL REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. FURNISH, INSTALL, AND MAINTAIN TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL MEASURES, SUCH AS, BUT NOT NECESSARILY LIMITED TO, STRAW BALES AND SILT FENCE BARRIERS, RIPRAP, VEHICLE TRACKING PAWS, DIVERSION CHANNELS AND BERMS, CHECK DAMS, STRATEGICALLY LOCATED STOCKPILES, SEDIMENT BASINS, MULCH, AND SEED MIX (HEREINAFTER "CONTROL MEASURES") ADEQUATE TO PREVENT THE CONVEYANCE OF EROSION PRODUCTS (E.G. SOIL, MULCH, SOD) OFF SITE, OR INTO ENVIRONMENTALLY SENSITIVE AREAS, OR INTO AREAS WHERE WORK WILL BE ADVERSELY IMPACTED. ENVIRONMENTALLY SENSITIVE AREAS INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, WETLANDS, TRIBUTARIES TO WETLANDS, WETLAND BUFFER ZONES, INTERTIDAL AND PERENNIAL STREAMS / RIVERS, AND THEIR ATTENDANT BUFFER ZONES.

ALL METHODS AND MATERIALS USED FOR EROSION CONTROL SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN "EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS A GUIDE FOR PLANNERS, DESIGNERS, AND MUNICIPAL OFFICIALS" AS PUBLISHED BY THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION, BUREAU OF RESOURCE PROTECTION, UNLESS OTHERWISE APPROVED IN WRITING.

1. REFER TO DRAWINGS FOR LOCATION AND DETAILS OF LIMITS OF DISTURBANCE AND CONTROL MEASURES REQUIRED TO COMMENCE WORK. LIMITS OF DISTURBANCE SHALL BE MARKED WITH TAPE, SIGNS, OR ORANGE CONSTRUCTION FENCE PRIOR TO COMMENCING ANY LAND DISTURBANCE ACTIVITIES. CONTROL MEASURES WILL BE ADEQUATE ONLY FOR VEGETATION CLEARING. THE DRAWINGS ARE NOT INTENDED TO GRAPHICALLY DEPICT ALL CONTROL MEASURES THAT WILL BE REQUIRED TO MEET THE REQUIREMENTS DESCRIBED IN 1.01A.

2. DEVISE AND EMPLOY CONTROL MEASURES THROUGHOUT THE DURATION OF PROJECT, OVER ALL AREAS DISTURBED OR UNDISTURBED BY CONSTRUCTION, AS NECESSARY TO MEET THE REQUIREMENTS DESCRIBED IN 1.01A.

3. DEVISE AND EMPLOY TEMPORARY CONTROL MEASURES AS NECESSARY TO MEET THE REQUIREMENTS DESCRIBED IN 1.01A, WHILE ALLOWING WORK TO PROCEED IN AN EFFICIENT, COST-EFFECTIVE MANNER.

4. DEVISE, EMPLOY AND MAINTAIN CONTROL MEASURES UNTIL SUCH TIME AS THE ENTIRE SITE IS PERMANENTLY STABILIZED BY ESTABLISHED VEGETATION, FINISH LANDSCAPE MATERIALS, PAVED SURFACES, AND/OR ROOF AREA.

5. ONCE THE SITE IS PERMANENTLY STABILIZED AND CERTIFIED AS SUCH BY ENGINEER, REMOVE TEMPORARY CONTROL MEASURES WHILE PROTECTING STABILIZED SURFACES.

1.02 SUBMITTALS

A. SUBMIT PRODUCT DATA, WARRANTY, AND TEST REPORTS AS INDICATED ON THE DRAWINGS.

B. SUBMIT SKETCH SHOWING LOCATIONS OF PROPOSED STOCKPILE AREAS, CONSTRUCTION ENTRANCES AND EROSION CONTROLS IF NOT SHOWN ON THE SITE PLAN OR DIFFERENT FROM THOSE LOCATIONS SHOWN ON THE SITE PLAN.

C. A SITE SPECIFIC SEQUENCE OF CONSTRUCTION FOR EACH PORTION OF THE SITE. NO PORTION OF THE SITE SHALL EXCEED FIVE (5) ACRES.

1.03 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS FROM ACCEPTABLE MANUFACTURERS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. CONFORM TO CONDITIONS OF APPROVAL ISSUED BY REGULATORY AGENCIES INCLUDING, BUT NOT NECESSARILY LIMITED TO, LOCAL PLANNING BOARD, CONSERVATION COMMISSION, CITY COUNCIL, BOARD OF HEALTH, PUBLIC WORKS / HIGHWAY DEPARTMENT, STATE ENVIRONMENTAL PROTECTION DEPARTMENT, AND U.S. GOVERNMENT, ENVIRONMENTAL PROTECTION AGENCY, WHERE CONDITIONS OF REGULATORY APPROVAL DIFFER FROM REQUIREMENTS CONTAINED HEREIN OR ON THE DRAWINGS, COMPLY WITH THE MORE STRINGENT REQUIREMENT.

PART 2 - PRODUCTS

2.01 MATERIALS

A. STRAW BALES: NEED FREE DRY GRASS OR STRAW, MACHINE BOUND WITH JUTE OR WIRE. APPROXIMATE SIZE EACH BALE: 42" X 16" X 16". EACH BALE SHALL BE STAKED WITH A MINIMUM OF TWO 24" LONG HARDWOOD STAKES. NOTE: HAY SHALL NOT BE USED.

B. STRAW WATTLES: NORTH AMERICAN GREEN MODEL WS1210 OR APPROVED EQUAL.

C. SILT FENCE: NON-WOVEN, UV-RESISTANT, POLYPROPYLENE FABRIC, FLOW RATED AT 10 CPM/S MINIMUM, GRAB TENSILE RATED AT 124 POUNDS MINIMUM, WITH INTEGRAL STAKE LOOPS, AND HARDWOOD STAKES. USE NO. 2130 BY AMOCO FABRICS & FIBERS, OR APPROVED EQUAL.

D. MULCH: ORGANICS INCLUDING STRAW, PROCESSED PINE / HEMLOCK TWIGS AND NEEDLES.

E. SEED MIXES: SHALL MEET THE REQUIREMENTS OF MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, LATEST EDITION SECTION 6.03.0 OR 6.03.1 AS APPROPRIATE.

F. EXCELSIOR BLANKET: CURLED WOOD FIBER ON PHOTODEGRADABLE EXTRUDED PLASTIC MATRIX, 80% OF FIBERS 6-INCHES LONG OR LONGER, WEIGHT 0.975 POUNDS / SY, CONTAINING NO CHEMICAL ADDITIVES. USE CURLEX I BLANKET BY AMERICAN EXCELSIOR COMPANY, OR APPROVED EQUAL.

G. ROCK RIPRAP: SOUND, ANGULAR, 6-INCH MINUS PROCESSED ROCK, BLAST ROCK, OR TAILINGS.

H. CRUSHED STONE: SOUND, ANGULAR, 2-INCH MINUS PROCESSED CRUSHED STONE.

PART 3 - EXECUTION

3.01 THROUGHOUT CONSTRUCTION

A. DEVISE WORK SEQUENCE SO AS TO LIMIT DRAINAGE AREA THAT IS TRIBUTARY TO DISTURBED AREAS. DEVISE, EMPLOY, AND MAINTAIN CONTROL MEASURES SUCH AS DIVERSION CHANNELS AND BERMS, STRATEGICALLY LOCATED STOCKPILES, AND SEDIMENT BASINS TO SUBDIVIDE THE DRAINAGE AREAS INTO SMALL, MANAGEABLE SUBAREAS, THEREBY MINIMIZING RUNOFF AND THE POTENTIAL FOR EROSION.

B. MAINTAIN BARRIER AT LIMIT OF WORK AND PROTECT EXISTING VEGETATION / FACILITIES OUTSIDE OF LIMIT OF WORK.

C. MAINTAIN SPARE MATERIAL STOCKPILES FOR IMMEDIATE EMPLOYMENT / REPAIR / EXPANSION OF CONTROL MEASURES. AT A MINIMUM, SUCH MATERIALS SHALL INCLUDE HAY BALES, SILT FENCE AND STAKES, AND CRUSHED STONE.

D. INSPECT AND MAINTAIN EFFECTIVENESS OF CONTROL MEASURES BY REPAIRING AS NECESSARY TO ENSURE INTENDED FUNCTION, BY SUPPLEMENTING AS NECESSARY FOR ADEQUATE EXTENT, BY REMOVING TRAPPED PRODUCTS OF EROSION AS NECESSARY TO MAINTAIN EFFECTIVE TRAP VOLUME.

E. LIMIT EXTENT OF WORK AREA SO THAT ALL DISTURBED AREAS CAN BE STABILIZED WITH CONTROL MEASURES WITHIN A 24-HOUR PERIOD.

F. INSTALL CONTROL MEASURES AS SOON AS PRACTICABLE AFTER EACH MANAGEABLE PORTION OF EARTHWORK IS COMPLETE. EMPLOY TEMPORARY MEASURES AS NECESSARY TO STABILIZE DISTURBED AREAS, EVEN WHERE SUBSEQUENT CONSTRUCTION OPERATIONS MAY REQUIRE RE-DISTURBANCE.

PART 3 - CONTINUED

G. WHEN INTENSE RAINFALL IS EXPECTED, CONSIDER, DEVISE, AND EMPLOY REINFORCING CONTROL MEASURES PRIOR TO THE RAINFALL EVENT TO MEET THE REQUIREMENTS DESCRIBED IN 1.01A. IF NECESSARY, EMPLOY TEMPORARY CONTROL MEASURES ON MATERIAL STOCKPILES TO COUNTERACT POTENTIAL SEDIMENT TRANSPORT DURING INTENSE RAINFALL.

H. WHEN VEHICLE REFUELING IS REQUIRED ON SITE, CONDUCT REFUELING OPERATIONS OUTSIDE OF ENVIRONMENTALLY SENSITIVE AREAS.

I. PROPERLY DISPOSE OF DEBRIS, SOLID WASTE, TRASH, AND CONSTRUCTION WASTE / BYPRODUCTS OFF SITE.

J. SWEEP ON-SITE PAVED AREAS AND OFF-SITE STREETS AS NECESSARY TO PREVENT SILT AND DEBRIS ORIGINATING ON SITE FROM ENTERING CLOSED DRAINAGE SYSTEMS AND / OR ENVIRONMENTALLY SENSITIVE AREAS. WHEN NECESSARY UTILIZE WATER SPRAYING, SURFACE ROUGHENING AND / OR APPLY POLYMERS, SPRAY-ON TACKIFIERS, CHLORIDES AND BARRIERS FOR DUST CONTROL.

K. INSPECT EROSION CONTROLS DAILY THROUGHOUT CONSTRUCTION REPAIR DAMAGED CONTROLS IMMEDIATELY.

3.02 SITE PREPARATION AND ACCESS

A. WALK SITE AND IDENTIFY LOCATIONS OF LIMIT OF WORK AND ENVIRONMENTALLY SENSITIVE AREAS. ESTABLISH CONSTRUCTION STAGING AREA, LOCATED BEYOND ENVIRONMENTALLY SENSITIVE AREAS.

B. INSTALL CONTROL MEASURES AS SHOWN ON THE DRAWINGS, INCLUDING THOSE DEFINING THE LIMIT OF WORK.

C. LIMIT VEHICULAR TRAFFIC TO AND FROM SITE TO MINIMIZE TRANSPORT OF SEDIMENT.

3.03 CLEARING, GRUBBING, AND STRIPPING

A. SCHEDULE GRUBBING AND STRIPPING TO OCCUR IMMEDIATELY PRIOR TO EARTH DISTURBANCE, DEPENDING ON SITE AREA, CONSIDER MULTIPLE GRUBBING PHASES, SEQUENCED TO TAKE ADVANTAGE OF THE EROSION PREVENTION POTENTIAL OF EXISTING VEGETATIVE COVER.

B. MINIMIZE THE AREA OF EXISTING VEGETATION REMOVED WHEREVER POSSIBLE. NO GREATER THAN FIVE (5) ACRES SHALL BE UNSTABLE AT ANY TIME.

C. LOCATE AND SIZE STOCKPILES TO MINIMIZE EROSION POTENTIAL, TAKING ADVANTAGE OF TERRAIN SLOPE AND ASPECT, WHERE APPROPRIATE.

D. PROTECT VEGETATION, INCLUDING ROOT SYSTEMS, BEYOND LIMIT OF CLEARING.

E. PROCESS TIMBER, STUMPS, SLASH, AND BRUSH SO AS TO PROTECT ENVIRONMENTALLY SENSITIVE AREAS AND INSTALLED CONTROL MEASURES. PROPERLY DISPOSE OF EXCESS OFF SITE. BURIAL OF STUMPS ON SITE IS PROHIBITED.

F. 3.04 EXCAVATION FOR BUILDING FOUNDATIONS AND UTILITIES

A. DEVISE AND INSTALL CONTROL MEASURES ADEQUATE TO HANDLE DISCHARGES AND TRAP SEDIMENT FROM FOOTING SUMP AND WELL POINT PUMPS PRIOR TO EXCAVATION.

B. ARMOR SUMP PUMP DISCHARGE LOCATIONS TO PREVENT EROSION AT POINT OF DISCHARGE AND AREAS DOWNSTREAM.

C. IF FOUNDATION EXCAVATIONS GRADE TO DAYLIGHT ON THE LOW SIDE, DEVISE AND INSTALL CONTROL MEASURES TO HANDLE SURFACE AND GROUNDWATER FLOW FROM EXCAVATION LOW POINT.

D. STOCKPILE EXCAVATED MATERIALS TO BAFFLE OVERLAND RUNOFF. STOCKPILE SLOPES SHALL NOT EXCEED 2:1.

E. BACKFILL UTILITY TRENCHES AS SOON AS PRACTICABLE TO PREVENT FLOODING, SLOUGHING, POTENTIAL OVERFLOW, AND REPETITIVE EARTH DISTURBANCE.

3.05 SITE GRADING

A. WHERE APPLICABLE, FOLLOW EXCAVATION AND FILL PRACTICES SHOWN ON DRAWINGS TO LOCALIZE AND MINIMIZE EROSION.

B. MONITOR SEDIMENT VOLUME IN TEMPORARY SEDIMENT BASINS AND AT DIVERSION BERMS AND CHECK DAMS. IN ALL AREAS EXCEPT THOSE THAT DO NOT PRESENT POTENTIAL PROBLEMS WITH REGARD TO FUTURE SOIL STABILITY, DRAINAGE, OR BEARING CAPACITY, REMOVE AND PROPERLY DISPOSE OF TRAPPED SEDIMENT BEFORE BRINGING SITE TO FINAL SUBGRADE.

C. EXPOSED SOILS SHALL BE PERMANENTLY STABILIZED WITHIN FIVE (5) BUSINESS DAYS OF COMPLETION OF CONSTRUCTION OF A GIVEN AREA. EXPOSED AREAS WHERE NO WORK HAS OCCURRED FOR FOURTEEN (14) DAYS SHALL BE TEMPORARILY STABILIZED WITH HYDROSEED OR OTHER APPROVED METHOD.

D. SLOPES STEEPER THAN 3:1 SHALL BE STABILIZED IMMEDIATELY AFTER COMPLETION.

3.06 LANDSCAPING

A. COMPLETE LANDSCAPING AS SOON AS POSSIBLE AFTER COMPLETION OF FINAL SUBGRADE.

B. IMMEDIATELY AFTER PLACEMENT OF TOPSOIL, STABILIZE WITH CONTROL MEASURES INCLUDING, BUT NOT NECESSARILY LIMITED TO, SEED MIX, MULCH, AND / OR BLANKET.

C. PERMANENT SEEDING MAY BE PERFORMED IN THE SPRING PRIOR TO JULY 1 AND IN BETWEEN AUGUST 1 AND OCTOBER 15. PERMANENT SEEDING AT OTHER TIMES SHALL BE APPROVED AND SHALL ONLY BE ALLOWED WITH AN APPROVED MULCHING AND IRRIGATION PROGRAM.

3.07 CONSTRUCTION ENTRANCES

A. DIVIDE WORK SEQUENCE SO AS TO LIMIT DRAINAGE AREA THAT IS TRIBUTARY TO DISTURBED AREAS. DEVISE, EMPLOY, AND MAINTAIN CONTROL MEASURES SUCH AS DIVERSION CHANNELS AND BERMS, STRATEGICALLY LOCATED STOCKPILES, AND SEDIMENT BASINS TO SUBDIVIDE THE DRAINAGE AREAS INTO SMALL, MANAGEABLE SUBAREAS, THEREBY MINIMIZING RUNOFF AND THE POTENTIAL FOR EROSION.

B. MAINTAIN BARRIER AT LIMIT OF WORK AND PROTECT EXISTING VEGETATION / FACILITIES OUTSIDE OF LIMIT OF WORK.

C. MAINTAIN SPARE MATERIAL STOCKPILES FOR IMMEDIATE EMPLOYMENT / REPAIR / EXPANSION OF CONTROL MEASURES. AT A MINIMUM, SUCH MATERIALS SHALL INCLUDE HAY BALES, SILT FENCE AND STAKES, AND CRUSHED STONE.

D. INSPECT AND MAINTAIN EFFECTIVENESS OF CONTROL MEASURES BY REPAIRING AS NECESSARY TO ENSURE INTENDED FUNCTION, BY SUPPLEMENTING AS NECESSARY FOR ADEQUATE EXTENT, BY REMOVING TRAPPED PRODUCTS OF EROSION AS NECESSARY TO MAINTAIN EFFECTIVE TRAP VOLUME.

E. LIMIT EXTENT OF WORK AREA SO THAT ALL DISTURBED AREAS CAN BE STABILIZED WITH CONTROL MEASURES WITHIN A 24-HOUR PERIOD.

F. INSTALL CONTROL MEASURES AS SOON AS PRACTICABLE AFTER EACH MANAGEABLE PORTION OF EARTHWORK IS COMPLETE. EMPLOY TEMPORARY MEASURES AS NECESSARY TO STABILIZE DISTURBED AREAS, EVEN WHERE SUBSEQUENT CONSTRUCTION OPERATIONS MAY REQUIRE RE-DISTURBANCE.

3.08 CONSTRUCTION ENTRANCES

A. DIVIDE WORK SEQUENCE SO AS TO LIMIT DRAINAGE AREA THAT IS TRIBUTARY TO DISTURBED AREAS. DEVISE, EMPLOY, AND MAINTAIN CONTROL MEASURES SUCH AS DIVERSION CHANNELS AND BERMS, STRATEGICALLY LOCATED STOCKPILES, AND SEDIMENT BASINS TO SUBDIVIDE THE DRAINAGE AREAS INTO SMALL, MANAGEABLE SUBAREAS, THEREBY MINIMIZING RUNOFF AND THE POTENTIAL FOR EROSION.

B. MAINTAIN BARRIER AT LIMIT OF WORK AND PROTECT EXISTING VEGETATION / FACILITIES OUTSIDE OF LIMIT OF WORK.

C. MAINTAIN SPARE MATERIAL STOCKPILES FOR IMMEDIATE EMPLOYMENT / REPAIR / EXPANSION OF CONTROL MEASURES. AT A MINIMUM, SUCH MATERIALS SHALL INCLUDE HAY BALES, SILT FENCE AND STAKES, AND CRUSHED STONE.

D. INSPECT AND MAINTAIN EFFECTIVENESS OF CONTROL MEASURES BY REPAIRING AS NECESSARY TO ENSURE INTENDED FUNCTION, BY SUPPLEMENTING AS NECESSARY FOR ADEQUATE EXTENT, BY REMOVING TRAPPED PRODUCTS OF EROSION AS NECESSARY TO MAINTAIN EFFECTIVE TRAP VOLUME.

E. LIMIT EXTENT OF WORK AREA SO THAT ALL DISTURBED AREAS CAN BE STABILIZED WITH CONTROL MEASURES WITHIN A 24-HOUR PERIOD.

F. INSTALL CONTROL MEASURES AS SOON AS PRACTICABLE AFTER EACH MANAGEABLE PORTION OF EARTHWORK IS COMPLETE. EMPLOY TEMPORARY MEASURES AS NECESSARY TO STABILIZE DISTURBED AREAS, EVEN WHERE SUBSEQUENT CONSTRUCTION OPERATIONS MAY REQUIRE RE-DISTURBANCE.

3.09 CONSTRUCTION ENTRANCES

A. DIVIDE WORK SEQUENCE SO AS TO LIMIT DRAINAGE AREA THAT IS TRIBUTARY TO DISTURBED AREAS. DEVISE, EMPLOY, AND MAINTAIN CONTROL MEASURES SUCH AS DIVERSION CHANNELS AND BERMS, STRATEGICALLY LOCATED STOCKPILES, AND SEDIMENT BASINS TO SUBDIVIDE THE DRAINAGE AREAS INTO SMALL, MANAGEABLE SUBAREAS, THEREBY MINIMIZING RUNOFF AND THE POTENTIAL FOR EROSION.

B. MAINTAIN BARRIER AT LIMIT OF WORK AND PROTECT EXISTING VEGETATION / FACILITIES OUTSIDE OF LIMIT OF WORK.

C. MAINTAIN SPARE MATERIAL STOCKPILES FOR IMMEDIATE EMPLOYMENT / REPAIR / EXPANSION OF CONTROL MEASURES. AT A MINIMUM, SUCH MATERIALS SHALL INCLUDE HAY BALES, SILT FENCE AND STAKES, AND CRUSHED STONE.

D. INSPECT AND MAINTAIN EFFECTIVENESS OF CONTROL MEASURES BY REPAIRING AS NECESSARY TO ENSURE INTENDED FUNCTION, BY SUPPLEMENTING AS NECESSARY FOR ADEQUATE EXTENT, BY REMOVING TRAPPED PRODUCTS OF EROSION AS NECESSARY TO MAINTAIN EFFECTIVE TRAP VOLUME.

E. LIMIT EXTENT OF WORK AREA SO THAT ALL DISTURBED AREAS CAN BE STABILIZED WITH CONTROL MEASURES WITHIN A 24-HOUR PERIOD.

F. INSTALL CONTROL MEASURES AS SOON AS PRACTICABLE AFTER EACH MANAGEABLE PORTION OF EARTHWORK IS COMPLETE. EMPLOY TEMPORARY MEASURES AS NECESSARY TO STABILIZE DISTURBED AREAS, EVEN WHERE SUBSEQUENT CONSTRUCTION OPERATIONS MAY REQUIRE RE-DISTURBANCE.

3.10 CONSTRUCTION ENTRANCES

A. DIVIDE WORK SEQUENCE SO AS TO LIMIT DRAINAGE AREA THAT IS TRIBUTARY TO DISTURBED AREAS. DEVISE, EMPLOY, AND MAINTAIN CONTROL MEASURES SUCH AS DIVERSION CHANNELS AND BERMS, STRATEGICALLY LOCATED STOCKPILES, AND SEDIMENT BASINS TO SUBDIVIDE THE DRAINAGE AREAS INTO SMALL, MANAGEABLE SUBAREAS, THEREBY MINIMIZING RUNOFF AND THE POTENTIAL FOR EROSION.

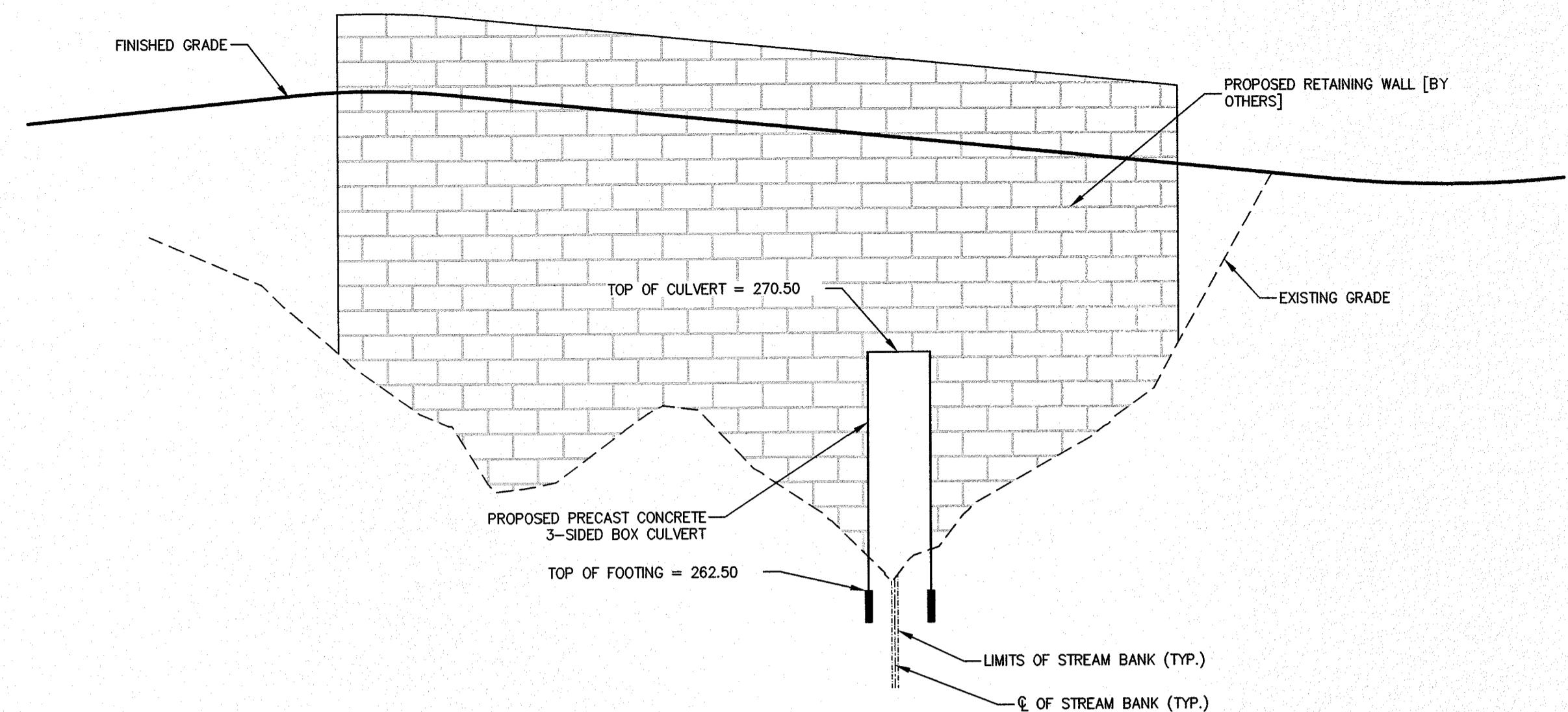
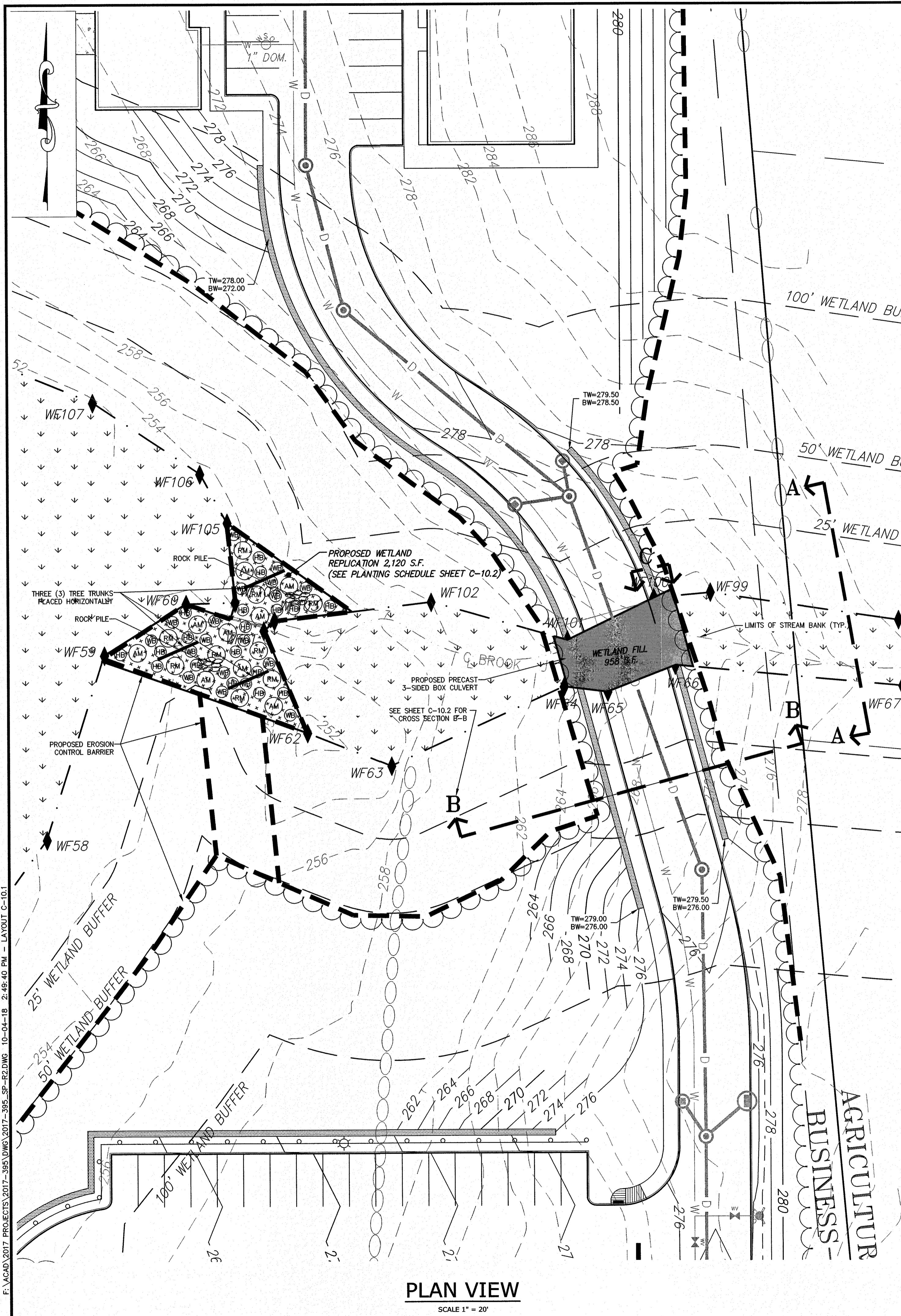
B. MAINTAIN BARRIER AT LIMIT OF WORK AND PROTECT EXISTING VEGETATION / FACILITIES OUTSIDE OF LIMIT OF WORK.

C. MAINTAIN SPARE MATERIAL STOCKPILES FOR IMMEDIATE EMPLOYMENT / REPAIR / EXPANSION OF CONTROL MEASURES. AT A MINIMUM, SUCH MATERIALS SHALL INCLUDE HAY BALES, SILT FENCE AND STAKES, AND CRUSHED STONE.

D. INSPECT AND MAINTAIN EFFECTIVENESS OF CONTROL MEASURES BY REPAIRING AS NECESSARY TO ENSURE INTENDED FUNCTION, BY SUPPLEMENTING AS NECESSARY FOR ADEQUATE EXTENT, BY REMOVING TRAPPED PRODUCTS OF EROSION AS NECESSARY TO MAINTAIN EFFECTIVE TRAP VOLUME.

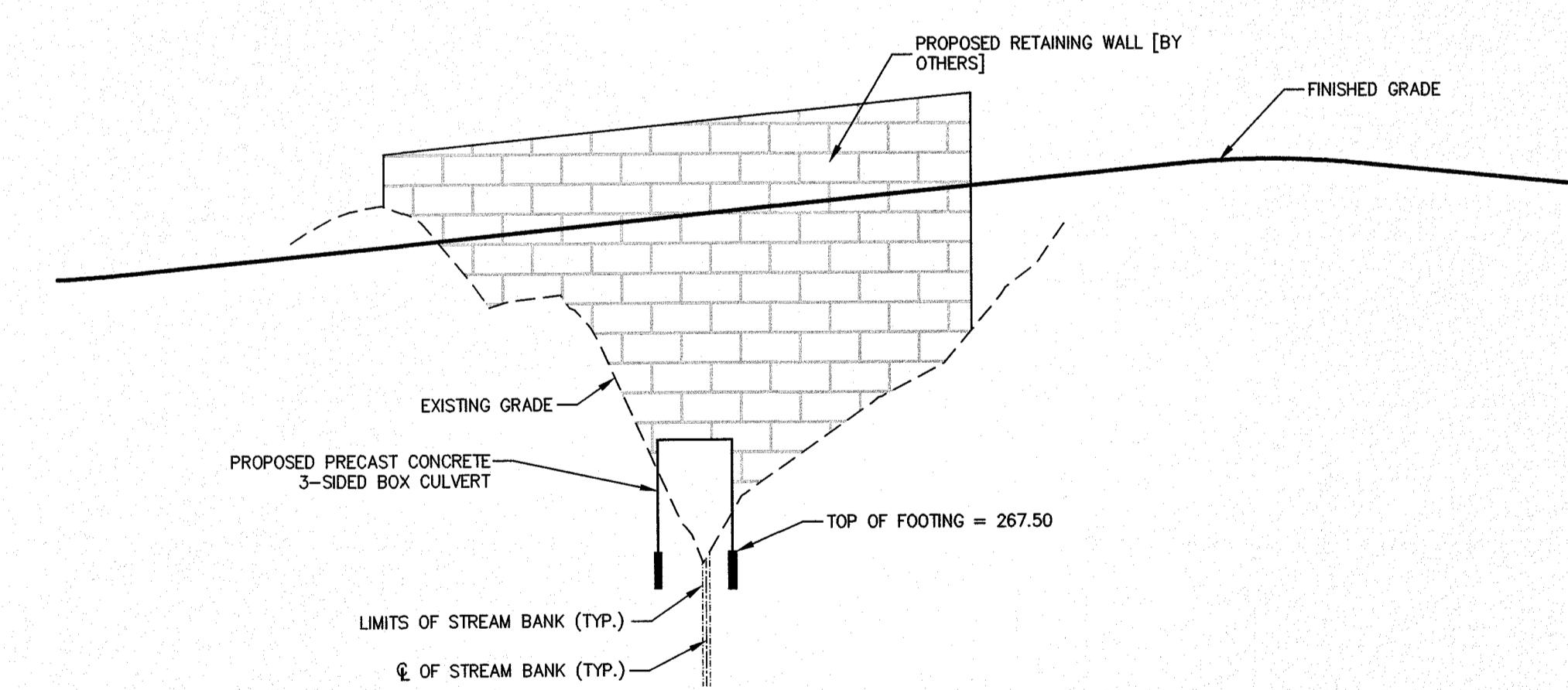
E. LIMIT EXTENT OF WORK AREA SO THAT ALL DISTURBED AREAS CAN BE STABILIZED WITH CONTROL MEASURES WITHIN A 24-HOUR PERIOD.

F. INSTALL CONTROL MEASURES AS SOON AS PRACTICABLE AFTER EACH MANAGEABLE PORTION OF EARTHWORK IS COMPLETE. EMPLOY TEMPORARY MEASURES AS NECESSARY TO STABILIZE DISTURBED AREAS, EVEN WHERE SUBSEQUENT CONSTRUCTION OPERATIONS MAY REQUIRE RE-DISTURBANCE.



CROSS SECTION A-A

LOOKING EAST AT WEST RETAINING WALL
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



CROSS SECTION A-A

LOOKING WEST AT EAST RETAINING WALL
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

WETLAND REPLICATION CONSTRUCTION PROTOCOL:

1. THE FOLLOWING PROTOCOL CONFORMS TO THE GENERAL PERFORMANCE STANDARDS IN THE MA WETLANDS PROTECTION ACT REGULATIONS AT 310 CMR 10.55(4)(B) AS SUMMARIZED IN TABLE 2. PLEASE NOTE THAT THE REPLICATION AREA WILL BE BROUGHT TO SUB-GRADE PRIOR TO INITIATING WORK AT THE WETLAND CROSSING.
2. THE WETLAND BOUNDARIES (I.E., DOWN GRADIENT EDGES OF THE WETLAND REPLICATION AREA) WILL BE MARKED IN THE FIELD.
3. PRIOR TO THE START OF EARTH-MOVING ACTIVITIES IN THE REPLICATION AREA, AN EROSION CONTROL BARRIER OF PROPERLY INSTALLED SILTATION FENCE (I.E., THE BOTTOM FEW INCHES OF THE SILTATION FENCE INSTALLED IN A NARROW, TRENCH AND THE TRENCH FILLED WITH SOIL AROUND THE SILTATION FENCE) WILL BE INSTALLED ALONG THE WETLAND BOUNDARIES BETWEEN THE WETLAND AND THE WETLAND REPLICATION AREA. THE WETLAND REPLICATION AREA WILL THEN BE CLEARED AND GRUBBED, WITH THE EXCEPTION OF THE TREES THAT HAVE BEEN MARKED TO BE SAVED.
4. THE PROPOSED FINAL GRADE FOR THE REPLICATION AREA SHOULD APPROXIMATE THE ELEVATION OF THE ADJACENT WETLAND AREAS, AS NOTED ON THE SITE PLANS. THE REPLICATION AREA WILL BE EXCAVATED TO A DEPTH OF 12 INCHES BELOW THE PROPOSED FINAL GRADE. THE EXCAVATION AND PLANTING WORK WILL BE CLOSELY SUPERVISED BY A QUALIFIED WETLAND SCIENTIST. MINOR MODIFICATIONS TO THE PROPOSED GRADING MAY BE MADE IN THE FIELD BY THE WETLAND SCIENTIST IN RESPONSE TO OBSERVED SUBSURFACE HYDROLOGIC CONDITIONS. ALL EXCAVATED MATERIAL WILL BE DISPOSED OF AWAY FROM ALL WETLAND RESOURCE AREAS. EIGHT TO TEN BOULDERS (1 TO 2 FOOT DIAMETER) WILL BE PLACED IN TWO (2) PILES, AT SUBGRADE, WITHIN THE REPLICATION AREA TO PROVIDE WILDLIFE SHELTERS. THREE (3) TREE TRUNKS, APPROXIMATELY 15 TO 20 FEET IN LENGTH, WILL BE PLACED WITHIN THE REPLICATION AREA, TO PROVIDE NESTING CAVITIES AND FORAGE OPPORTUNITIES.
5. EXISTING TOPSOILS WITHIN THE IMPACT AREA WILL BE EXCAVATED, STOCKPILED AND KEPT MOIST BY WATERING AND/OR COVERING.
6. RELOCATED WETLAND TOPSOILS WILL BE SUPPLEMENTED WITH A 1:1 MIXTURE OF HIGH QUALITY, LOAMY TOPSOIL AND LEAF MOLD COMPOST, AS NECESSARY, TO APPROXIMATE 12 INCHES IN THICKNESS THROUGHOUT THE REPLICATION AREA. THE SUBSTRATE WILL BE ROUGHLY GRADED TO PROVIDE AN APPROPRIATE MICROTOPOGRAPHY. A MINIMUM OF 4 INCHES OF LOAMY TOPSOIL WILL BE APPLIED TO THE SIDE-SLOPES OF THE WETLAND REPLICATION AREA. THE SIDE SLOPES SHOULD BE STABILIZED AS NECESSARY TO PREVENT EROSION.
7. WILDLIFE ENHANCEMENT MEASURES INCLUDING THREE (3) TREE TRUNKS AND TWO (2) ROCK PILES WILL BE INSTALLED WITHIN EACH REPLICATION AREA. THE TREE TRUNKS WILL CONSIST OF 15 TO 20 FOOT LOGS PLACED ON THE FINISHED SURFACE. THE TREE TRUNKS WILL PROVIDE FOOD, FORAGE AND CAVITY NESTING OPPORTUNITIES. THE ROCK PILES WILL CONSIST OF EIGHT TO TEN BOULDERS EACH (1 TO 2 FOOT DIAMETER) PILED AT SUB-GRADES SO AS TO CREATE CREVICES AND CAVITIES FOR SHELTER AND NESTING.
8. AN EROSION CONTROL BARRIER COMPRISING ONLY TOED-IN SILTATION FENCE WILL BE PROPERLY INSTALLED BETWEEN THE COMPLETED REPLICATION AREA AND THE ADJACENT UPLAND SIDESLOPES.
9. PLANTING WILL BE DONE ONLY DURING THE BEGINNING (APRIL 15 THROUGH JUNE) OR END (SEPTEMBER 1 TO NOVEMBER 15) OF THE GROWING SEASON. PLANTING IN THE MID-GROWING SEASON IS ONLY ACCEPTABLE IF IRRIGATION IS PROVIDED. THE PLANT SPECIES IDENTIFIED IN THE TABLE BELOW WILL BE PLANTED IN THE REPLICATION AREA EITHER BY TRANSPLANT OR FROM NURSERY STOCK. THE SAPLINGS WILL BE DISTRIBUTED THROUGHOUT THE AREA. THE SHRUBS WILL BE PLANTED RANDOMLY THROUGHOUT THE AREA WITH THE AVERAGE SPACING BETWEEN SHRUBS APPROXIMATELY 5 FEET ON-CENTER. THE WOODY VEGETATION SHOULD NOT BE PLANTED IN ROWS. THE FERNS WILL BE PLANTED BETWEEN THE SHRUBS AND SAPLINGS.
10. THE REPLICATION AREA WILL BE SEADED WITH "NEW ENGLAND WETMIX" AS PER NEW ENGLAND WETLAND PLANTS, INC SPECIFICATIONS OR APPROVED EQUAL TO PROVIDE FOR TEMPORARY EROSION CONTROL AND MOISTURE RETENTION.
11. THE SIDE-SLOPES OF THE WETLAND REPLICATION AREA WILL BE SEADED WITH A GRASS/WILDFLOWER MIXTURE DESIGNED TO PROVIDE PERMANENT COVER. AFTER SEADED, THE SIDE-SLOPES WILL BE MULCHED WITH A THIN LAYER OF STRAW TO PROVIDE FOR TEMPORARY EROSION CONTROL.
12. THE REPLICATION AREAS WILL BE INSPECTED, BY A QUALIFIED WETLAND SCIENTIST, AT THE END OF EACH GROWING SEASON FOR A MINIMUM OF TWO YEARS OR UNTIL SUCH TIME AS THE REQUIRED 75% OF VEGETATIVE COVER WITH WETLAND SPECIES HAS BEEN ESTABLISHED. WRITTEN RESULTS OF THESE INSPECTIONS WILL BE SUBMITTED TO THE CONSERVATION COMMISSION.
13. AFTER THE WETLAND REPLICATION AREA HAS BECOME VEGETATIVELY STABILIZED, AND FOLLOWING APPROVAL OF THE ISSUING AUTHORITY, THE SILTATION FENCE AND ALL WOODEN STAKES WILL BE REMOVED AND DISPOSED OF PROPERLY.

TABLE 1

PUBLIC INTERESTS:	VALUE OF AREAS TO BE ALTERED:	VALUE OF REPLICATION AREAS:
PUBLIC AND PRIVATE WATER SUPPLY, GROUNDWATER SUPPLY	YES. RECHARGES GROUNDWATER THROUGH INFILTRATION. SEASONALLY RECHARGES SURFACE WATER THROUGH OVERLAND FLOW. OVERLAND FLOW WILL BE MAINTAINED THROUGH CULVERTS.	YES. WILL ALSO RECHARGE GROUNDWATER THROUGH INFILTRATION IN FRIABLE SUBSOIL AND SUBSTRATE.
FLOOD CONTROL AND STORM DAMAGE PREVENTION	YES. SOME STORAGE OF RUNOFF IN SEASONALLY SATURATED SOILS	YES SEASONALLY SATURATED SOILS WILL STORE EQUAL OR GREATER VOLUMES OF RUNOFF.
PREVENTION OF POLLUTION	YES. CONTAMINANTS AND EXCESS NUTRIENTS RETAINED IN, AND DEGRADED BY, MINERAL AND ORGANIC COMPONENTS OF HYDRIC SOILS.	YES. CONTAMINANTS AND EXCESS NUTRIENTS RETAINED IN, AND DEGRADED BY, MINERAL AND ORGANIC COMPONENTS OF HYDRIC SOILS.
FISHERIES	N/A. NO PERENNIAL WATERWAY OR WATERBODY	N/A. NO PERENNIAL WATERWAY OR WATERBODY
WILDLIFE HABITAT	YES, EXISTING VEGETATIVE LAYERS, SOIL STRUCTURE, DEADWOOD AND SURFACE STONES PROVIDE FORAGING AND SHELTER OPPORTUNITIES.	YES. REPLICATED SOIL STRUCTURE, PLANTING, BOULDER PLACEMENT AND TREE SNAGS WILL PROVIDE OPPORTUNITIES FOR WILDLIFE SHELTER AND FORAGE.

TABLE 2

PERFORMANCE STANDARD:	STANDARDS MET WITHIN REPLICATION AREA:
EQUAL SURFACE AREAS (958 S.F. ALTERED).	YES. 2.2 TIMES GREATER SURFACE AREA (2,120 S.F. REPLICATED)
SIMILAR GROUNDWATER AND SURFACE ELEVATIONS.	YES SIMILAR ELEVATIONS.
LOCATION RELATIVE TO BANK	YES. SIMILAR PROXIMITY TO STREAM BANK
UNRESTRICTED HYDRAULIC CONNECTION.	YES. UNRESTRICTED CONNECTION TO SAME BORDERING WETLAND
SAME GENERAL LOCATION.	YES. AS CLOSE AS POSSIBLE TO IMPACTED WETLAND
MINIMUM 75% COVER OF NATIVE WETLAND PLANTS WITHIN TWO GROWING SEASONS AND PREVENTION OF SOIL EROSION.	YES. TO BE INSURED BY FOLLOWING CONSTRUCTION AND PLANTING PROTOCOL COMBINED WITH ANNUAL MONITORING AND RE-PLANTING AND/OR MODIFICATION AS NECESSARY. PLANTING DESIGNED TO REPLICATE LOST AREA(S) IN-KIND. EROSION PREVENTED WITH SILTATION BARRIERS, 3:1 SIDE SLOPES AND MULCH.

TABLE 3. STREAM CROSSING STANDARDS

PERFORMANCE STANDARD:	STANDARDS MET WITHIN REPLICATION AREA:
<p>1. TYPE OF CROSSING</p> <ul style="list-style-type: none"> GENERAL: SPANS (BRIDGES, 3-SIDED BOX CULVERTS, OPEN BOTTOM CULVERTS OR ARCHES) ARE STRONGLY PREFERRED. OPTIMUM: USE A BRIDGE. 	<p>A 3-SIDED BOX CULVERT THAT SPANS THE EXISTING STREAM HAS BEEN PROPOSED.</p>
<p>2. EMBEDMENT</p> <ul style="list-style-type: none"> ALL CULVERTS SHOULD BE EMBEDDED (SUNK INTO STREAM) A MINIMUM OF 2 FEET, AND ROUND PIPE CULVERTS AT LEAST 25%. IF PIPE CULVERT CANNOT BE EMBEDDED THIS DEEP, THEN THEY SHOULD NOT BE USED WHEN EMBEDMENT MATERIAL INCLUDED ELEMENTS > 15 INCHES IN DIAMETER, EMBEDMENT DEPTHS SHOULD BE AT LEAST TWICE THE D84 (PARTICLE WIDTH LARGER THAN 84% OF PARTICLES) OF THE EMBEDMENT MATERIAL. 	<p>A 3-SIDED BOX CULVERT THAT SPANS THE EXISTING STREAM HAS BEEN PROPOSED. THERE IS NO EMBEDDING THAT WILL BE INCORPORATED INTO THIS STREAM CROSSING.</p>
<p>3. CROSSING SPAN</p> <ul style="list-style-type: none"> GENERAL: SPANS CHANNEL WIDTH (A MINIMUM OF 1.2 TIMES THE BANKFULL WIDTH OF THE STREAM). OPTIMUM: SPANS THE STREAMBED AND BANKS (AT LEAST 1.2 TIMES BANKFULL WIDTH) WITH SUFFICIENT HEADROOM TO PROVIDE DRY PASSAGE FOR WILDLIFE. 	<p>THE EXISTING BANKFULL WIDTH OF THE STREAM IS APPROXIMATELY 2 FEET. THE PROPOSED SPAN OF THE 3-SIDED BOX CULVERT IS 20 FEET WHICH IS 10 TIMES THE WIDTH OF THE EXISTING BANKFULL STREAM.</p>
<p>4. OPENNESS</p> <ul style="list-style-type: none"> GENERAL: OPENNESS RATIO (CROSS SECTIONAL AREA/CROSSING LENGTH) OF AT LEAST 0.82 FEET (0.25 METERS). THE CROSSING SHOULD BE WIDE AND HIGH RELATIVE TO ITS LENGTH. OPTIMUM: OPENNESS RATIO OF AT LEAST 1.64 FEET (0.5 METERS) AND MINIMUM HEIGHT OF 6 FEET. IF CONDITION SIGNIFICANTLY REDUCE WILDLIFE PASSAGE NEAR A CROSSING (E.G. STEEP EMBANKMENTS, HIGH TRAFFIC VOLUMES, AND PHYSICAL BARRIERS), MAINTAIN A MINIMUM HEIGHT OF 8 FEET (2.4 METERS) AND OPENNESS RATIO OF 2.46 FEET (0.75 METERS). 	<p><u>X-SEC CULVERT AREA PRE-EMBED - EMBEDDED AREA CULVERT LENGTH</u></p> <p><u>49.4 S.F. - 18.6 S.F.</u> = 0.88 FEET (UPSTREAM END) 35 FEET</p> <p><u>140.0 S.F. - 12.3 S.F.</u> = 3.65 FEET (DOWNSTREAM END) 35 FEET</p> <p>THE PROPOSED 3-SIDED BOX CULVERT MEETS STREAM CROSSING STANDARDS. DUE TO THE SLOPE ON WHICH THE STREAM CROSSING IS LOCATED THE APPROXIMATE HEIGHT ON THE UPSTREAM END IS 2 FEET AND ON THE DOWNSTREAM END IS 7 FEET. THE AVERAGE OPENNESS RATIO FOR THE CULVERT IS 2.26 FEET.</p>
<p>5. CROSSING SPAN</p> <ul style="list-style-type: none"> NATURAL BOTTOM SUBSTRATE SHOULD BE USED WITHIN THE CROSSING AND IT SHOULD MATCH THE UPSTREAM AND DOWNSTREAM SUBSTRATES. THE SUBSTRATE AND DESIGN SHOULD RESIST DISPLACEMENT DURING FLOWS AND MAINTAIN APPROPRIATE BOTTOM DURING NORMAL FLOWS. 	<p>A 3-SIDED BOX CULVERT THAT SPANS THE EXISTING STREAM HAS BEEN PROPOSED. THERE IS NO EMBEDDING THAT WILL BE INCORPORATED INTO THIS STREAM CROSSING AND THE NATURAL STREAM BED WILL BE UTILIZED.</p>
<p>6. WATER DEPTH AND VELOCITY</p> <ul style="list-style-type: none"> WATER DEPTHS AND VELOCITIES ARE COMPARABLE TO THOSE FOUND IN THE NATURAL CHANNEL AT A VARIETY OF FLOWS. 	<p>A 3-SIDED BOX CULVERT THAT SPANS THE EXISTING STREAM HAS BEEN PROPOSED AND THE NATURAL STREAM BED WILL BE UTILIZED. WATER DEPTH AND VELOCITY ARE COMPARABLE TO UPSTREAM AND DOWNSTREAM CONDITIONS.</p>

SEQUENCE OF CONSTRUCTION:

ALL DRAINAGE STRUCTURES INCLUDING DETENTION PONDS, CROSS CULVERTS, STORM WATER MANHOLES, CATCH BASINS, AND ALL OTHER UNDERGROUND UTILITIES SHALL BE CONSTRUCTED AND STABILIZED PRIOR TO ANY LOT DEVELOPMENT. IMMEDIATELY FOLLOWING CATCH BASIN INSTALLATION, HAY BALES SHALL BE PLACED AROUND RIMS AND ALL DISTURBED AREAS SHALL BE HYDROSEEDED, MULCHED OR COVERED WITH ENVIRONMENTAL MATTING AND CHECKED REGULARLY TO PREVENT EROSION FROM TAKING PLACE.



WETLAND FILL AREA FROM ROAD CROSSING: 958± S.F.
WETLAND REPLICATION AREA: 2,120± S.F.

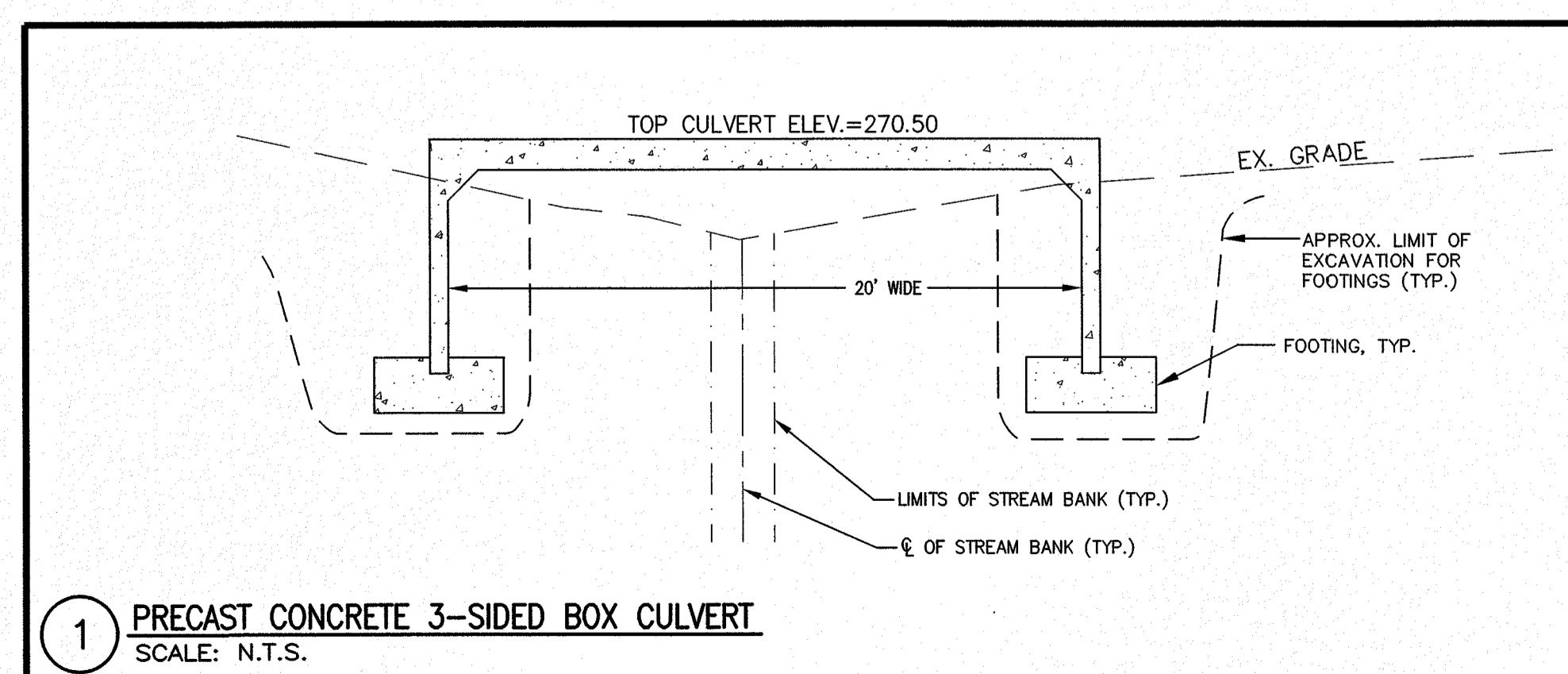
SIGNAGE: NO SIGNAGE, WHETHER TEMPORARY OR PERMANENT, IS ALLOWED IN THE EXCAVATION AREA. EXCAVATION AREA PROTECTED BY

GENERAL NOTES.

PRIOR TO CONSTRUCTION AND INSTALLATION OF THE PROPOSED ALUMINUM ARCH CULVERT AND RETAINING WALLS SEPARATE APPROVALS AND/OR PERMITS SHALL BE OBTAINED FROM THE FOLLOWING; INCLUDING BUT NOT LIMITED TO THE TOWN OF BELLINGHAM CONSERVATION COMMISSION, DEPARTMENT OF PUBLIC WORKS, INSPECTOR OF BUILDINGS, TOWN OF BELLINGHAM PLANNING BOARD AND CONSULTING ENGINEER(S).

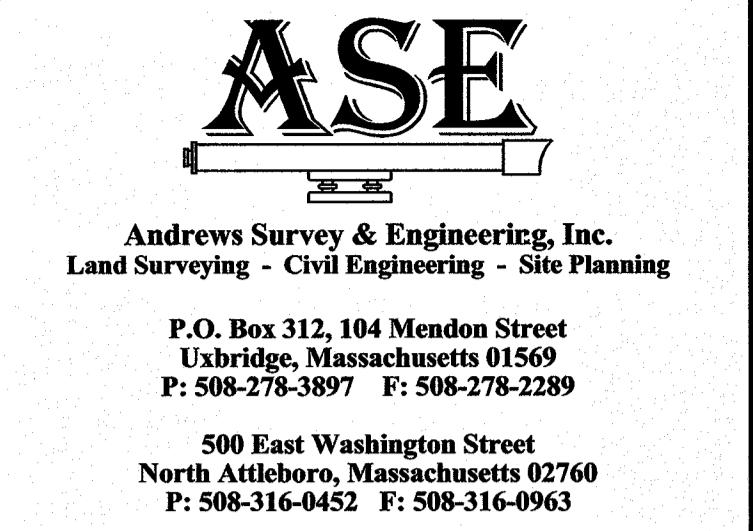
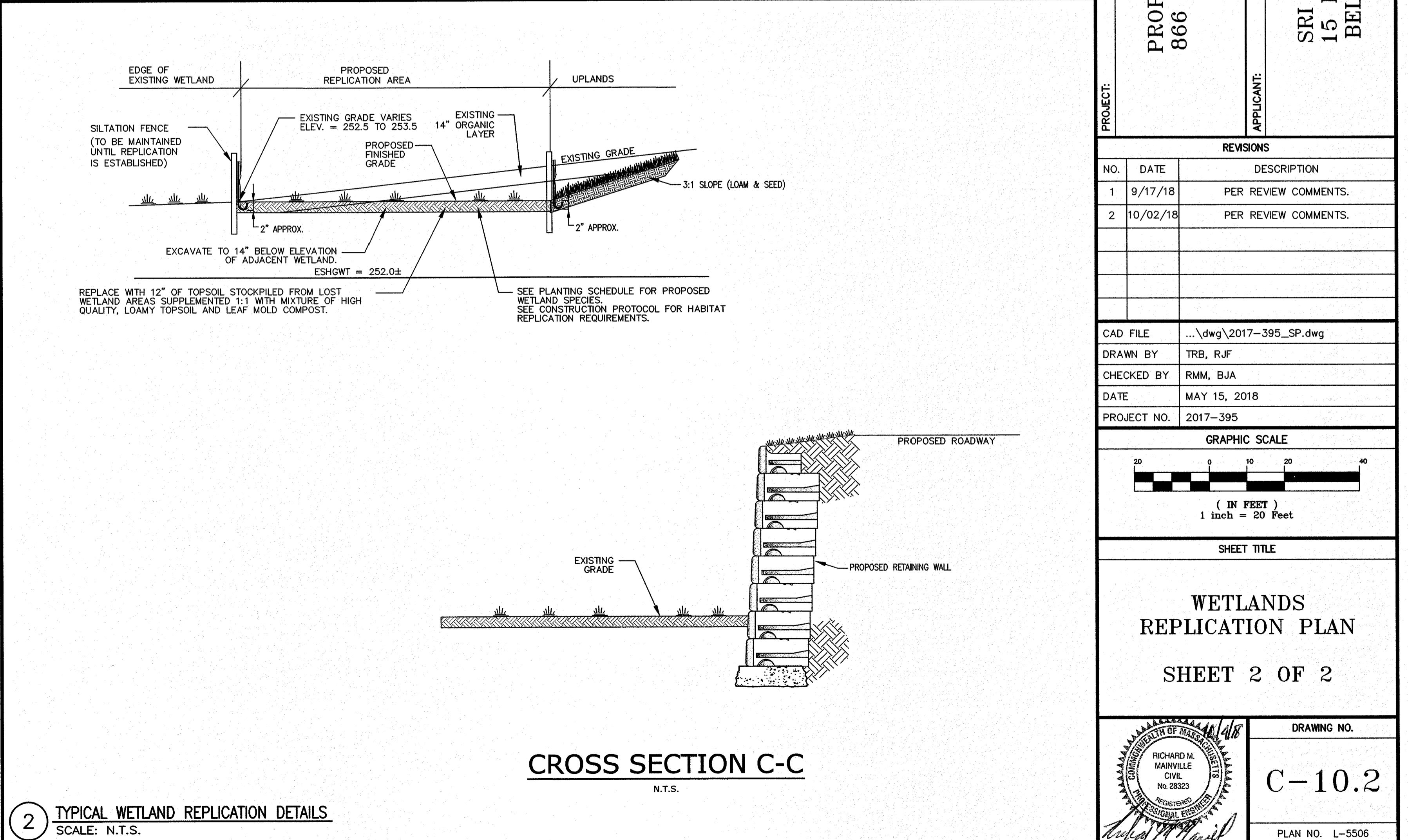
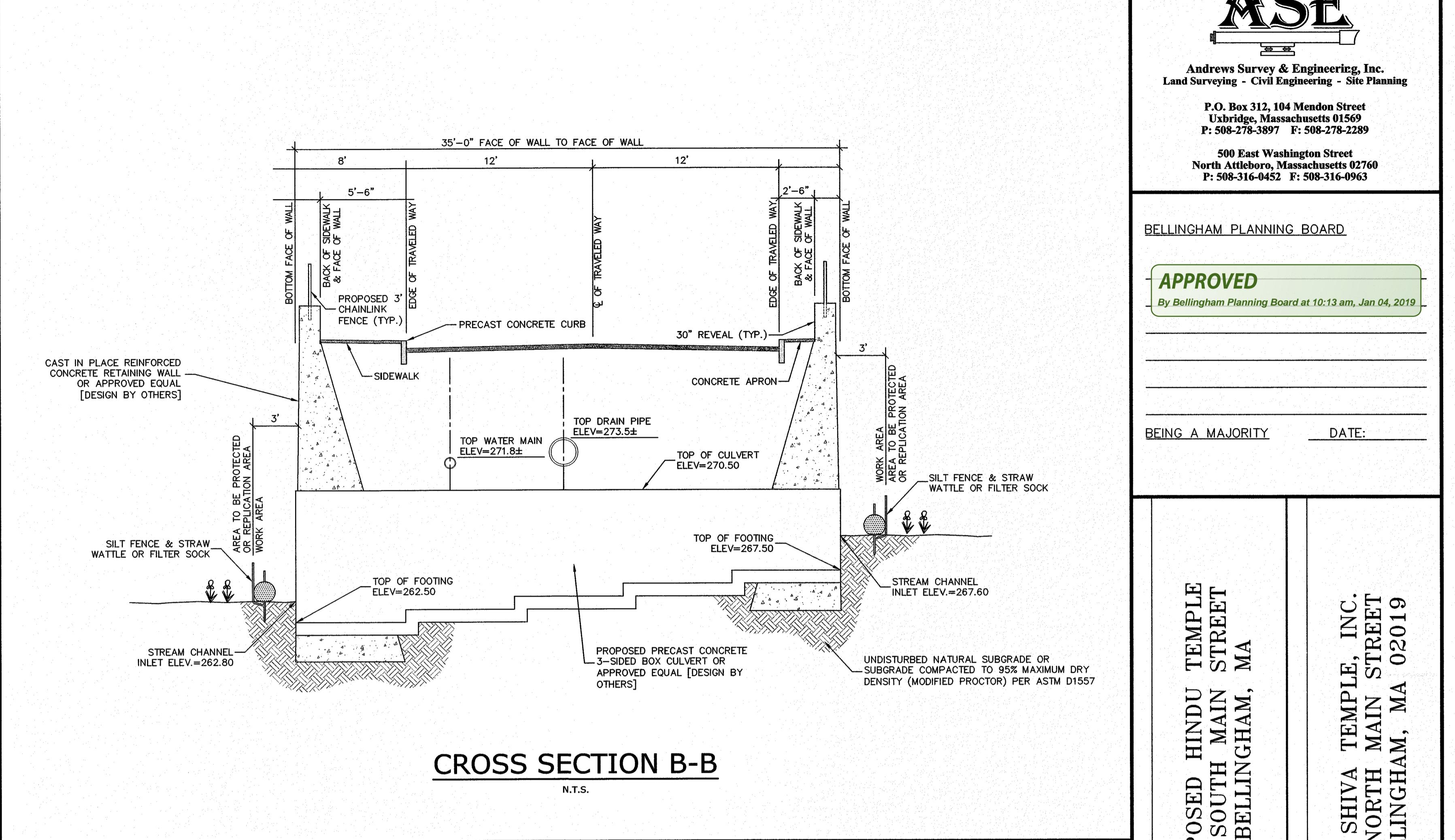
WETLAND REPLICATION PLANTING SCHEDULE

TREES	QTY.
AMERICAN ELM ULMUS AMERICANA	9
RED MAPLE ACER RUBRUM	9
SHRUBS	
Highbush Blueberry VACCINIUM CORYMBOSUM	18
Winterberry ILEX VERTICILLATA	18



1 PRECAST CONCRETE 3-SIDED BOX CULVERT
SCALE: N.T.S.

2 TYPICAL WETLAND REPLICATION DETAILS
SCALE: N.T.S.



Andrews Survey & Engineering, Inc.
Land Surveying - Civil Engineering - Site Planning

P.O. Box 312, 104 Mendon Street
Uxbridge, Massachusetts 01569
P: 508-278-3897 F: 508-278-2289

500 East Washington Street
North Attleboro, Massachusetts 02760
P: 508-316-0452 F: 508-316-0963

BELLINGHAM PLANNING BOARD

APPROVED

By Bellingham Planning Board at 10:13 am, Jan 04, 2019

BEING A MAJORITY DATE:

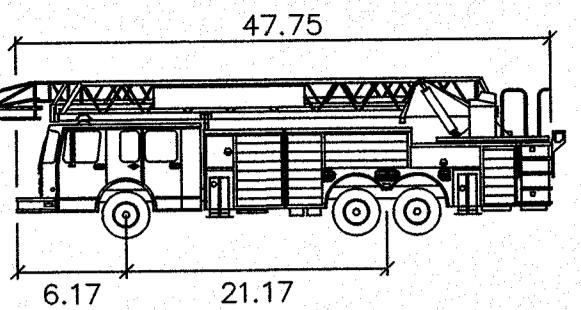
PROPOSED HINDU TEMPLE
866 SOUTH MAIN STREET
BELLINGHAM, MA

SRI SHIVA TEMPLE, INC.
115 NORTH MAIN STREET
BELLINGHAM, MA 02019

MAP 66, LOT 2
N/F
DMJ CONCRETE
6709/588
(BUSINESS)

MAP 71, LOT 5
WETLAND AREA: 144,630± S.F. (3.32± ACRES)
+ UPLAND AREA: 585,690± S.F. (13.45± ACRES)
TOTAL AREA: 730,320± S.F. (16.77± ACRES)

MAP 71, LOT 9
N/F
MICHAEL J. LUISE
22981/272
(RESIDENTIAL)



NOTES:

1. FIRE TRUCK DIMENSIONS, TURNING RADII AND SPECIFICATIONS PROVIDED BY THE TOWN OF BELLINGHAM.
2. AUTOTURN SOFTWARE WAS UTILIZED TO PROVIDE PATH ANALYSIS AND TURN SIMULATION.

APPROVE

By Bellingham Planning Board at 10:14 am, Jan 04, 2019

PROPOSED HINDU TEMPLE
866 SOUTH MAIN STREET
BELLINGHAM, MA

SRI SHIVA TEMPLE, INC.
115 NORTH MAIN STREET
BELLINGHAM, MA 02019

REVISIONS	
DATE	DESCRIPTION
9/17/18	PER REVIEW COMMENTS.
10/02/18	PER REVIEW COMMENTS.

FILE	... \dwg \2017-395_SP.dwg
AWN BY	TRB, RJF
ECHECKED BY	RMM, BJA
ATE	MAY 15, 2018
ROJECT NO.	2017-395

SHEET TITLE

SHEET 1 OF 2

PLAN NO. 1 E-3

MATCHLINE SHEET 2

AGRICULTURAL BUSINESS-1

AGRICULTURAL SUBURBAN

BUSINESS-1
SUBURBAN

SOUTH MAIN STREET
(PUBLIC 60' WIDE)
D AS #174 OF 1940, PL BK 125

MAP 71, LOT 6
N/F
870-874 SOUTH MAIN REALTY, LLC.
30101/390
PB 501, PL 669
(BUNIMCO)

MAP 71, LOT 5
N/F
BRIAN & CORRINE COO
21177/458
(RESIDENTIAL)

MAP 66, LOT 2
N/F
DMJ CONCRETE
6709/588
(BUSINESS)

MAP 71, LOT 4
N/F
IDA H. PARKER TRUST
21305/167
(RESIDENTIAL)

