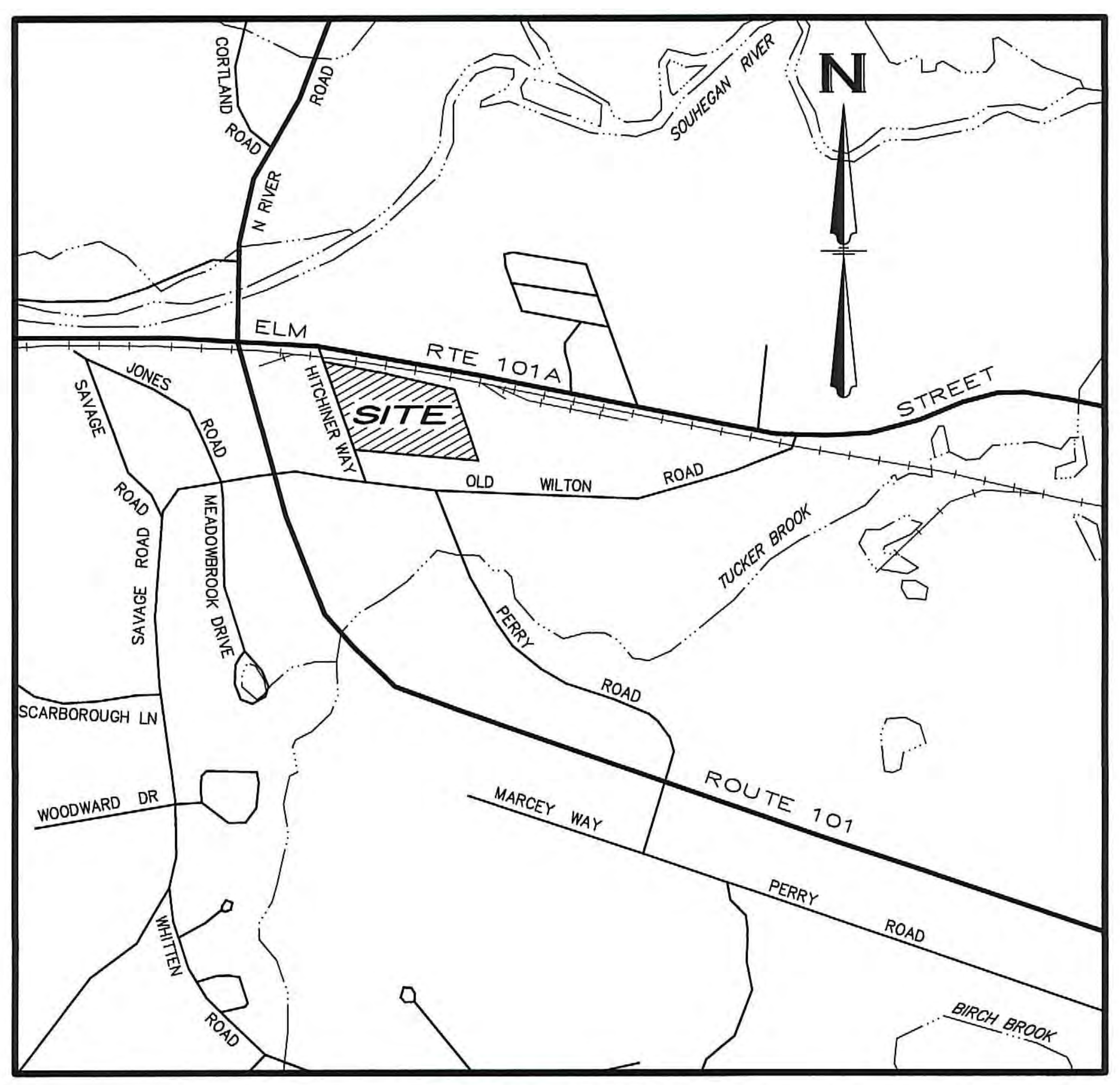
MAP D-2, LOT 13-6

SITE PLAN

PROPOSED PLANT No. 3 BUILDING

594 ELM STREET

MILFORD, NEW HAMPSHIRE



VICINITY PLAN SCALE: 1" = 1,000'±

PREPARED FOR/RECORD OWNER

HITCHINER MANUFACTURING COMPANY, INC.

594 ELM STREET
MILFORD, NEW HAMPSHIRE 03055
(603) 673-1100
www.hitchiner.com

11 APRIL 2018

FOR REVIEW
NOT FOR CONSTRUCTION

INDEX OF PLANS

SHEET No.	TITLE	
1 OF 20	MASTER SITE PLAN	1"= 50'
2-3 OF 20	EXISTING CONDITIONS PLAN	1"= 20'
4-5 OF 20	SITE DEMOLITION PLAN	1"= 20'
6-7 OF 20	SITE GRADING & UTILITY PLAN	1"= 20'
8-9 OF 20	SITE LAYOUT PLAN	1"=20'
10-11 OF 20	SEDIMENT AND EROSION CONTROL PLAN	1"= 20'
12 OF 20	UTILITY PROFILES	1"= 20' H 1"= 4' V
13-14 OF 20	DETAIL SHEET - GENERAL SITE	
15 OF 20	DETAIL SHEET - SEWER PUMP STATION	
16 OF 20	DETAIL SHEET - SEWER	
17 OF 20	DETAIL SHEET - WATER	
18 OF 20	DETAIL SHEET - EROSION CONTROL	
19 OF 20	LANDSCAPE PLAN	1"= 40'
20 OF 20	DETAIL SHEET - LANDSCAPE	
	PHOTOMETRIC LIGHTING PLANS BUILDING ELEVATIONS	

STATE OF NEW HAMPSHIRE
JAMES N. PETROPULOS
No. 10274
LICENSED
PROFESSIONAL ENGINEER

HSI Hayner/Swanson, Inc.

Civil Engineers/Land Surveyors

Three Congress Street Nashua, New Hampshire 03062-3301
Tel (603) 883-2057 Fax (603) 883-5057

www.hayner-swanson.com

STATE OF NEW HAMPSHIRE
No. 860
LEE B. GAGNON
LICENSED LAND SURVEYOR
SIGNATURE

4/23/18

APPROVED
MILFORD PLANNING BOARD

CHAIRMAN DATE

SECRETARY DATE

Three Congress Street Nashua, New Hampshire 03062-3301
Tel (603) 883-2057 Fax (603) 883-5057
www.hayner-swanson.com

Hayner/Swanson, Inc.

HSI

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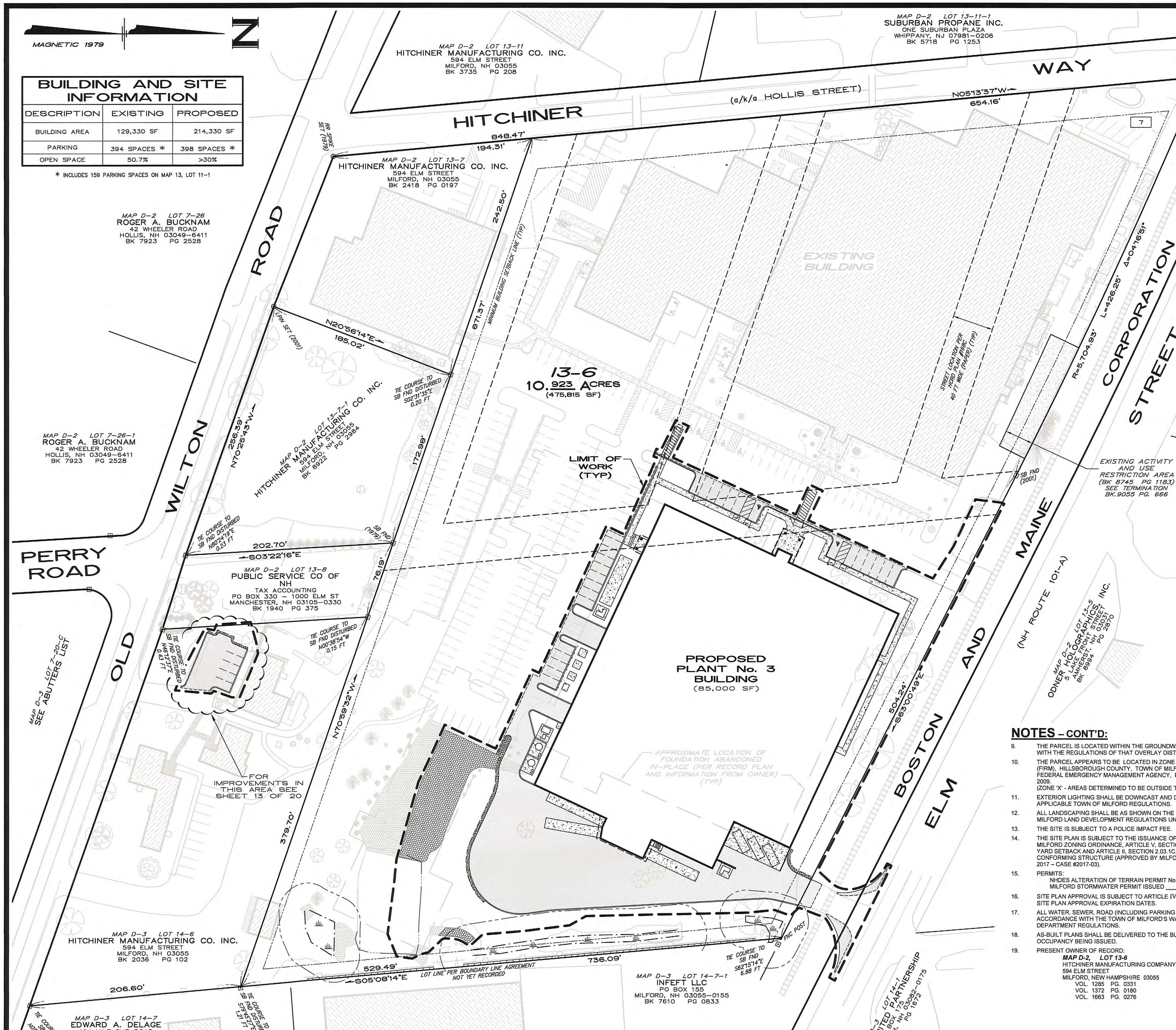


BUILDING AND SITE INFORMATION

DESCRIPTION	EXISTING	PROPOSED
BUILDING AREA	129,330 SF	214,330 SF
PARKING	394 SPACES *	398 SPACES *
OPEN SPACE	50.7%	>30%

* INCLUDES 159 PARKING SPACES ON MAP 13, LOT 11-1

ABUTTERS LIST:
MAP D-3, LOT 7-20-C

MAP D-3, LOT 7-20-C-11
MAP D-3, LOT 7-20-C-12
MAP D-3, LOT 7-20-C-2
STANFORD REALTY, LLC
13 LAKEVIEW CIRCLE
GREENFIELD, NH 03047
BK 8669 PG 1153
BK 8330 PG 0912

MAP D-3, LOT 7-20-C-4
CARDOZA REALTY, LLC
318 NASHUA STREET
MILFORD, NH 03055
BK 8062 PG 2805

MAP D-3, LOT 7-20-C-3
MAP D-3, LOT 7-20-C-5
MAP D-3, LOT 7-20-C-6
MAP D-3, LOT 7-20-C-7
MAP D-3, LOT 7-20-C-8
MAP D-3, LOT 7-20-C-9
KBRE DEVELOPMENT, LLC
15 PARKER ROAD
BROOKLINE, NH 03033-2009
BK 8326 PG 2281
BK 8330 PG 0508
BK 8624 PG 1771

NOTES – CONT'D:

9. THE PARCEL IS LOCATED WITHIN THE GROUNDWATER (LEVEL 1) PROTECTION AREA AND SHALL COMPLY WITH THE REGULATIONS OF THAT OVERLAY DISTRICT.
10. THE PARCEL APPEARS TO BE LOCATED IN ZONE 'X' AS DETERMINED FROM THE FLOOD INSURANCE STUDY (FIRM), HILLSBOROUGH COUNTY, TOWN OF MILFORD, NH, COMMUNITY No. 330096, PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, PANEL NUMBER: 330096 0454 D, DATED: SEPTEMBER 25, 2009.
(ZONE 'X' - AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN)
11. EXTERIOR LIGHTING SHALL BE DOWNCAST AND DIRECTED ONTO THE SITE AND SHALL CONFORM WITH ALL APPLICABLE TOWN OF MILFORD REGULATIONS.
12. ALL LANDSCAPING SHALL BE AS SHOWN ON THE PLAN AND CONFORM TO THE APPLICABLE TOWN OF MILFORD LAND DEVELOPMENT REGULATIONS UNDER SECTION 6.08 OF THE LANDSCAPING STANDARDS.
13. THE SITE IS SUBJECT TO A POLICE IMPACT FEE.
14. THE SITE PLAN IS SUBJECT TO THE ISSUANCE OF A SPECIAL EXCEPTION PERMIT PURSUANT TO THE MILFORD ZONING ORDINANCE, ARTICLE V, SECTION 5.06.2.A.3 TO ALLOW THE REDUCTION OF THE FRONT YARD SETBACK AND ARTICLE II, SECTION 2.03.1C.1 TO ALLOW THE EXPANSION OF A PRE-EXISTING NON-CONFORMING STRUCTURE (APPROVED BY MILFORD ZONING BOARD OF ADJUSTMENT ON FEBRUARY 16, 2017 – CASE #2017-03).
15. PERMITS:
NHDES ALTERATION OF TERRAIN PERMIT No. __________, ISSUED ________________.
MILFORD STORMWATER PERMIT ISSUED _______________.
16. SITE PLAN APPROVAL IS SUBJECT TO ARTICLE IV, SECTION 2.011, GOVERNING CONDITIONAL AND FINAL SITE PLAN APPROVAL EXPIRATION DATES.
17. ALL WATER, SEWER, ROAD (INCLUDING PARKING LOT) AND DRAINAGE WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE TOWN OF MILFORD'S WATER UTILITIES DEPARTMENT AND PUBLIC WORKS DEPARTMENT REGULATIONS.
18. AS-BUILT PLANS SHALL BE DELIVERED TO THE BUILDING DEPARTMENT PRIOR TO A CERTIFICATE OF OCCUPANCY BEING ISSUED.
19. PRESENT OWNER OF RECORD:
MAP D-2, LOT 13-6
HITCHINER MANUFACTURING COMPANY, INC.
594 ELM STREET
MILFORD, NEW HAMPSHIRE 03055
VOL. 1285 PG. 0331
VOL. 1372 PG. 0180
VOL. 1663 PG. 0276

CERTIFICATION

I HEREBY CERTIFY, TO MY KNOWLEDGE, INFORMATION AND BELIEF, THAT THIS PLAN SHOWS THE RESULTS OF AN ON THE GROUND "STANDARD PROPERTY SURVEY" AND THAT SAID SURVEY MEETS THE MINIMUM PRECISION AND/OR ACCURACY MEASUREMENTS FOR SURVEY CLASSIFICATION "U" (URBAN) AS SET FORTH IN TABLE 500.1 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS ADOPTED 08/23/01, EFFECTIVE 01/01/09.

I FURTHER CERTIFY THAT THIS PLAN IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS A MAXIMUM ERROR OF CLOSURE OF ONE PART IN FIFTEEN THOUSAND ON ALL PROPERTY LINES WITHIN AND BORDERING THE SUBJECT PROPERTY.

4/23/18
DATE

STATE OF NEW HAMPSHIRE
LEE B. GAGNON
No. 860
LICENSED LAND SURVEYOR

* ZONING NOTE *

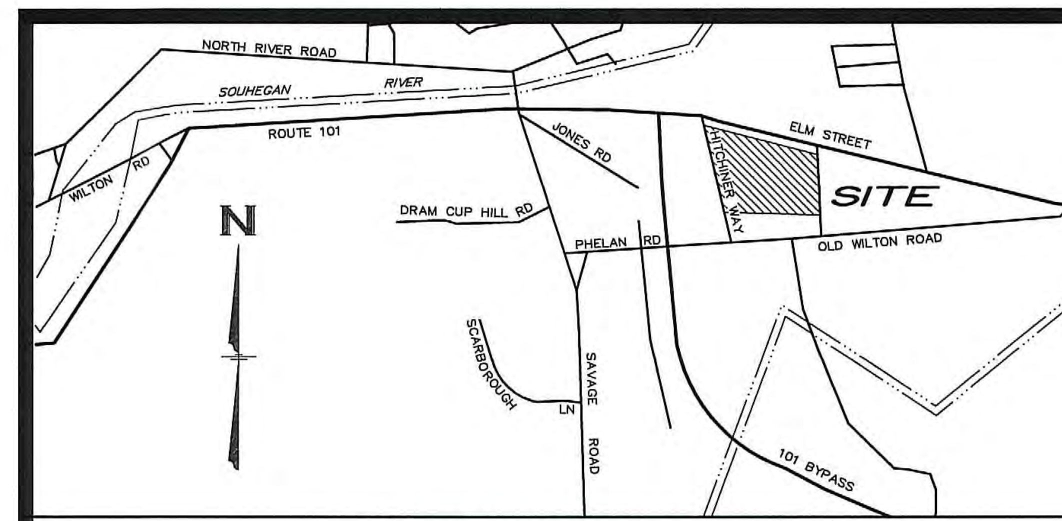
THE ZONING/BUILDING SETBACKS DEPICTED ON THIS PLAN ARE THOSE WE HAVE INTERPRETED FROM THE LATEST ZONING ORDINANCE OF THE MUNICIPALITY AND, AS SUCH, ARE ONLY OPINIONS EXPRESSED BY HAYNER/SWANSON, INC. THE FINAL INTERPRETATION OF THE ORDINANCE CAN ONLY BE MADE BY THE APPROPRIATE ZONING AUTHORITY. SINCE BUILDING ORIENTATION, PROPOSED USES, AND OTHER FACTORS CAN AFFECT THE SETBACKS, PRIOR TO ANY DEVELOPMENT OF THIS PROPERTY, THE BUILDER/OWNER MUST CONSULT WITH THE TOWN/CITY TO INSURE THE CORRECT APPLICATION OF THE ZONING ORDINANCE.

APPROVED
MILFORD PLANNING BOARD

CHAIRMAN ____________ DATE ________

SECRETARY ____________ DATE ________

FOR HITCHINER MANUF. CO. INC. — 4/23/2018 DATE



VICINITY MAP

PLAN REFERENCES:

1. SITE PLAN,(MAP 13, LOT 6)(12 SHEETS), PROPOSED BUILDING ADDITION, MILFORD, NEW HAMPSHIRE, PREPARED FOR/RECORD OWNER: HITCHINER MANUFACTURING COMPANY, INC, MILFORD, NEW HAMPSHIRE, DATED: 24 SEPTEMBER 2010 WITH REVISIONS THRU 22 OCTOBER, 2010, AND PREPARED THIS OFFICE.
2. BOUNDARY PLAN ELM STREET (RTE101) MILFORD, NEW HAMPSHIRE PREPARED FOR HITCHINER MANUFACTURING, DATED: APRIL 3 1979 SCALE: 1"= 50 FT BY ALAN H. SWANSON, INC.
3. PLAN ENTITLED: PROPERTY OF JOSEPH E. & AMELIA DEVINE OLD WILTON ROAD MILFORD N.H. SCALE: 1" = 40 FT, SURVEYED BY E.F. BET SR., JUNE 1974
RECORDED: HCRD No. 7898.
4. RIGHT OF WAY AND TRACT MAP, WILTON RR CO. , OPERATED BY THE BOSTON AND MAINE RR COMPANY STA 680+60 TO STA. 733+40 , SCALE; 1"= 100 FT, JUNE 30, 1914
5. PLAN ENTITLED: GUY HOLLIS LOTS, MILFORD, NH BY W. FALCONER, SCALE: 1"= 50' DATED: AUGUST 1947
RECORDED: HCRD No. 168C
6. ACTIVITY AND USE RESTRICTION PLAN, MAP 13, LOT 6, HITCHINER WAY, MILFORD, NEW HAMPSHIRE, PREPARED FOR: GEOINSIGHT, INC., RECORD OWNER: HITCHINER MANUFACTURING CO., INC., DATED: 1 APRIL 2015 AND PREPARED BY THIS OFFICE.
RECORDED: HCRD No. 38434
7. BOUNDARY LINE AGREEMENT PLAN, HITCHINER MANUFACTURING CO. INC., MAP 13 LOT 6 & MAP 14 LOT 6, 83 OLD WILTON ROAD, LLC, MAP 14 LOT 7 AND INFEFT, LLC MAP 14 LOT 7-1, ELM STREET AND OLD WILTON ROAD, TOWN OF MILFORD, NEW HAMPSHIRE, PREPARED BY: SANDFORD SURVEYING AND ENGINEERING, DATED " JANUARY 18, 2018.
RECORDED: HCRD No.____________________

NOTES:

1. TOTAL SITE AREA: = 10.923 ACRES (475,815 SF)
2. PRESENT ZONING: INDUSTRIAL
MINIMUM LOT REQUIREMENTS:
- LOT SIZE 0 SF
- FRONTAGE 0 FT
MINIMUM BUILDING SETBACKS
- FRONT YARD 30 FT
- SIDE YARD 15 FT
- REAR YARD 15 FT
THE MILFORD ZONING BOARD OF ADJUSTMENT APPROVED ON APRIL 19, 2018 A SPECIAL EXCEPTION OF ARTICLE VI, SECTION 6.02.6.B OF THE ZONING ORDINANCE TO ALLOW PERMANENT AND TEMPORARY ENCROACHMENT INTO THE 25 FT WETLAND BUFFER ADJACENT TO THE EASTERLY PROPERTY LINE.
3. LOT NUMBERS REFER TO TOWN OF MILFORD ASSESSORS MAPS D-2 AND D-3.
4. PURPOSE OF PLAN:
TO SHOW A PROPOSED 85,000 SF PARTIAL 3-STORY MANUFACTURING BUILDING WITH ASSOCIATED PARKING, LIGHTING, UTILITY, STORMWATER MANAGEMENT/DRAINAGE, AND LANDSCAPING IMPROVEMENTS. ALSO TO SHOW MINOR PARKING IMPROVEMENTS AT "THE BARN".
5. SITE IS CURRENTLY SERVICED BY MUNICIPAL WATER AND SEWER, TELEPHONE, ELECTRIC AND GAS.
6. MONUMENTS, WHERE REQUIRED, TO BE SET BY A LICENSED LAND SURVEYOR.
7. REQUIRED PARKING:

USE:		EXISTING:	PROPOSED:
1.	EXISTING MANUFACTURING: (130,695 SF X 1 SPACE/600 SF)	219 SPACES	219 SPACES
2.	PROPOSED MANUFACTURING: (85,000 SF X 1 SPACE/600 SF)	------------------	142 SPACES
3.	OFFICE: (46,770 SF X 3 SPACES/1,000 SF)	141 SPACES	141 SPACES
4.	RESTAURANT: (50 SEATS X 1 SPACE/ 3 SEATS)	17 SPACES	17 SPACES
TOTAL PARKING REQUIRED		377 SPACES	519 SPACES

PARKING PROVIDED:

LOCATION:		EXISTING:	PROPOSED:
1.	PLANTS 1 & 3 (594 ELM STREET)	235 SPACES	239 SPACES
2.	SUBURBAN PROPANE LEASE LOT	159 SPACES	159 SPACES
3.	METAL CASTING TECHNOLOGY	37 SPACES	37 SPACES
4.	ADMINISTRATION	7 SPACES	7 SPACES
5.	BARN	7 SPACES	5 SPACES
6.	WHITE HOUSE	10 SPACES	10 SPACES
TOTAL PARKING PROVIDED		455 SPACES	457 SPACES

8. OPEN SPACE:
REQUIRED: 30 %
EXISTING: 50.7 %
PROPOSED: >30 %

No.	DATE	REVISION	BY
		FOR REVIEW NOT FOR CONSTRUCTION	

MASTER SITE PLAN

(MAP D-2, LOT 13-6)

PROPOSED PLANT No. 3 BUILDING
594 ELM STREET
MILFORD, NEW HAMPSHIRE

PREPARED FOR/RECORD OWNER:

HITCHINER MANUFACTURING COMPANY, INC.
594 ELM STREET MILFORD, NEW HAMPSHIRE 03055 (603) 673-1100

SCALE: 1"=50 Feet
1"=15.240 Meters

11 APRIL 2018

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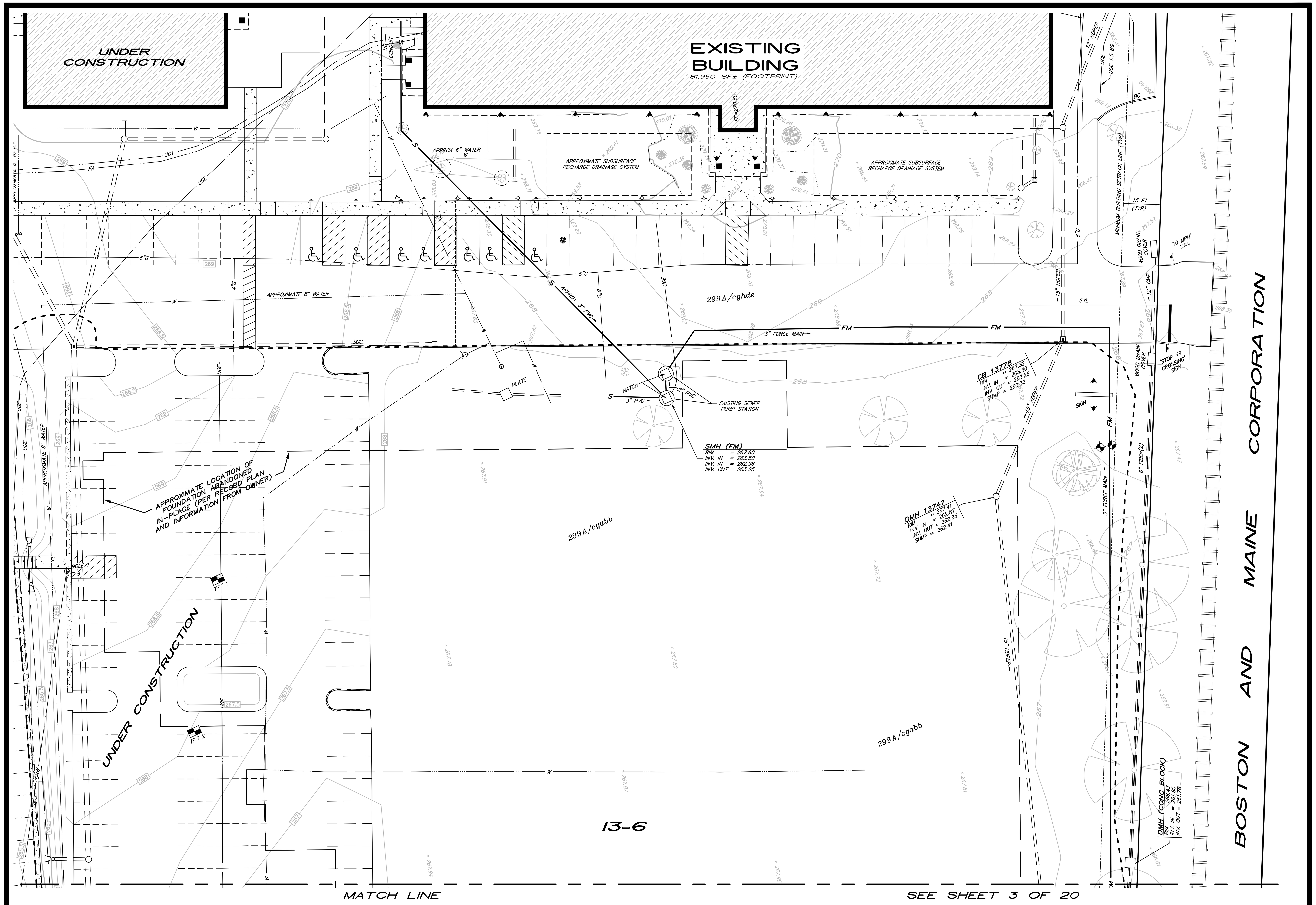

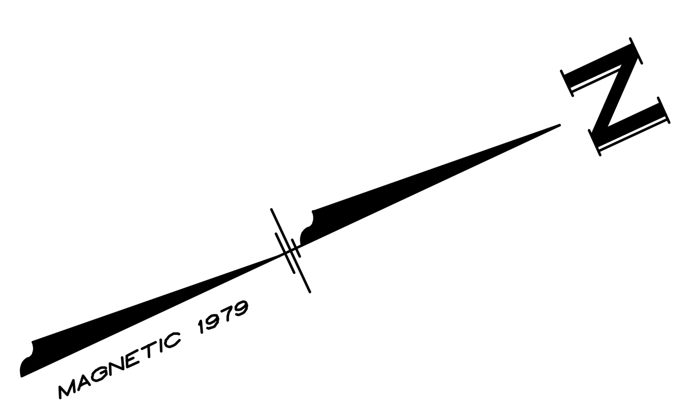

LEGEND

	EXISTING GROUND CONTOUR		TREE LINE		PAVEMENT SAWCUT
	EXISTING SPOT ELEVATION		STONE BOUND		CONCRETE
	PROPOSED GRADE		IRON PIN		PROPOSED PAVEMENT
	PROPOSED SPOT GRADE		DRILL HOLE & STONE WALL		RIPRAP / STONE
	STORM DRAIN & CATCH BASIN		BUILDING SETBACK LINE		BORING LOCATION & IDENTIFIER
	STORM DRAIN & MANHOLE		WETLAND FLAGGING LIMIT		TEST PIT LOCATION & IDENTIFIER
	STORM DRAIN & HEADWALL		WETLAND BUFFER LINE		RETAINING WALL
	STORM DRAIN & END SECTION		CHAINLINK FENCE		ROCK/BOULDER
	SANITARY SEWER & MANHOLE		CURBING		CONIFEROUS TREE
	WATER MAIN & HYDRANT		VERTICAL GRANITE CURBING		DECIDUOUS TREE
	WATER MAIN & GATE VALVE		SLOPE GRANITE CURBING	299A/cgabb	SOIL BOUNDARY & IDENTIFIER
	GAS LINE & GATE VALVE		STORMWATER RUNOFF DIRECTION		
	UTILITY POLE WITH GUY SUPPORT		HANDICAP PARKING SPACE		
	STREET LIGHT		HANDICAP SIDEWALK RAMP		
	OVERHEAD ELECTRIC & TELEPHONE		PARKING SPACE COUNT		
	UNDERGROUND ELEC/TEL		GUARD RAIL		
	SIGN				

NOTES:

1. THE EXISTING TOPOGRAPHY, AS SHOWN ON THE PLANS, IS BASED ON AN ACTUAL FIELD SURVEY MADE ON THE GROUND IN SEPTEMBER 2010 AND FEBRUARY 2018 AND IS IN ACCORDANCE WITH THE TOWN OF MILFORD, NEW HAMPSHIRE SITE PLAN REGULATIONS.
2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE ACCURACY OF THE EXISTING TOPOGRAPHY PRIOR TO EARTHWORK OPERATIONS. NO CLAIM FOR EXTRA WORK DUE TO TOPOGRAPHIC INACCURACY SHALL BE CONSIDERED AFTER EARTHWORK HAS COMMENCED.
3. NGVD29 DATUM HAS BEEN USED FOR THIS PROJECT.
4. THE CONTRACTOR SHALL ONLY USE BENCHMARKS AS PROVIDED BY THE ENGINEER.
5. UTILITY SERVICE LOCATIONS AS SHOWN ON THIS PLAN ARE APPROXIMATE AND SHALL BE VERIFIED PRIOR TO ANY CONSTRUCTION.

TOWN OF MILFORD CONTACTS

1. **PLANNING DEPARTMENT**
   MILFORD PLANNING BOARD
   TOWN HALL – ONE UNION SQUARE
   MILFORD, NH 03055

   ATT: LINCOLN DALEY
   (603) 249-0620
2. **ENGINEERING DEPARTMENT**
   MILFORD DEPT. OF
   PUBLIC WORKS / ENGINEERING
   289 SOUTH STREET
   MILFORD, NH 03055

   ATT: RICK RIENDEAU, DIRECTOR
   (603) 673-1662
3. **FIRE DEPARTMENT**
   MILFORD FIRE DEPARTMENT
   39 SCHOOL STREET
   MILFORD, NH 03055

   ATT: JASON SMEDICK
   (603) 249-0680
4. **CODE ENFORCEMENT OFFICE:**
   TOWN HALL
   ONE UNION SQUARE
   MILFORD, NH 03055

   ATT: TIM HERLIHY,
   BUILDING INSPECTOR
   (603) 249-0620

UTILITY COMPANY CONTACTS

1. **WATER:**
   MILFORD WATER UTILITIES
   AND WASTE WATER TREATMENT
   FACILITY
   564 NASHUA STREET
   MILFORD, NH 03055

   ATT: DAVID BOUCHER, SUPT.
   (603) 249-0660
2. **GAS:**
   NATIONAL GRID
   PO BOX 329
   1260 ELM STREET
   MANCHESTER, NH 03105
   (877) 696-4743
3. **TELEPHONE:**
   FAIRPOINT COMMUNICATIONS, INC.
   237 DANIEL WEBSTER HWY.
   MERRIMACK, NH 03054
   (603) 595-1134
4. **POWER:**
   EVERSOURCE
   138 ELM STREET
   MILFORD, NH 03055
   (603) 673-0108

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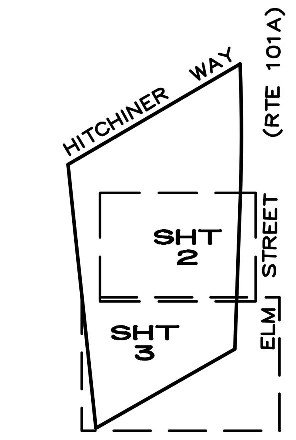

SHEET KEY

UTILITY NOTE

THE UNDERGROUND UTILITIES DEPICTED HEREON HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND PLOTTED FROM EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES DEPICTED COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND PORTIONS OF THE UTILITIES.

No.	DATE	REVISION	BY

FOR REVIEW
NOT FOR CONSTRUCTION

EXISTING CONDITIONS PLAN

(MAP D-2, LOT 13-6)

PROPOSED PLANT No. 3 BUILDING

594 ELM STREET
MILFORD, NEW HAMPSHIRE

PREPARED FOR/RECORD OWNER:

HITCHINER MANUFACTURING COMPANY, INC.
594 ELM STREET MILFORD, NEW HAMPSHIRE 03055 (603) 673-1100

20 0 20 40 60 80 FEET
10 0 10 20 METERS
SCALE: 1"=20 Feet
1"=6.096 Meters

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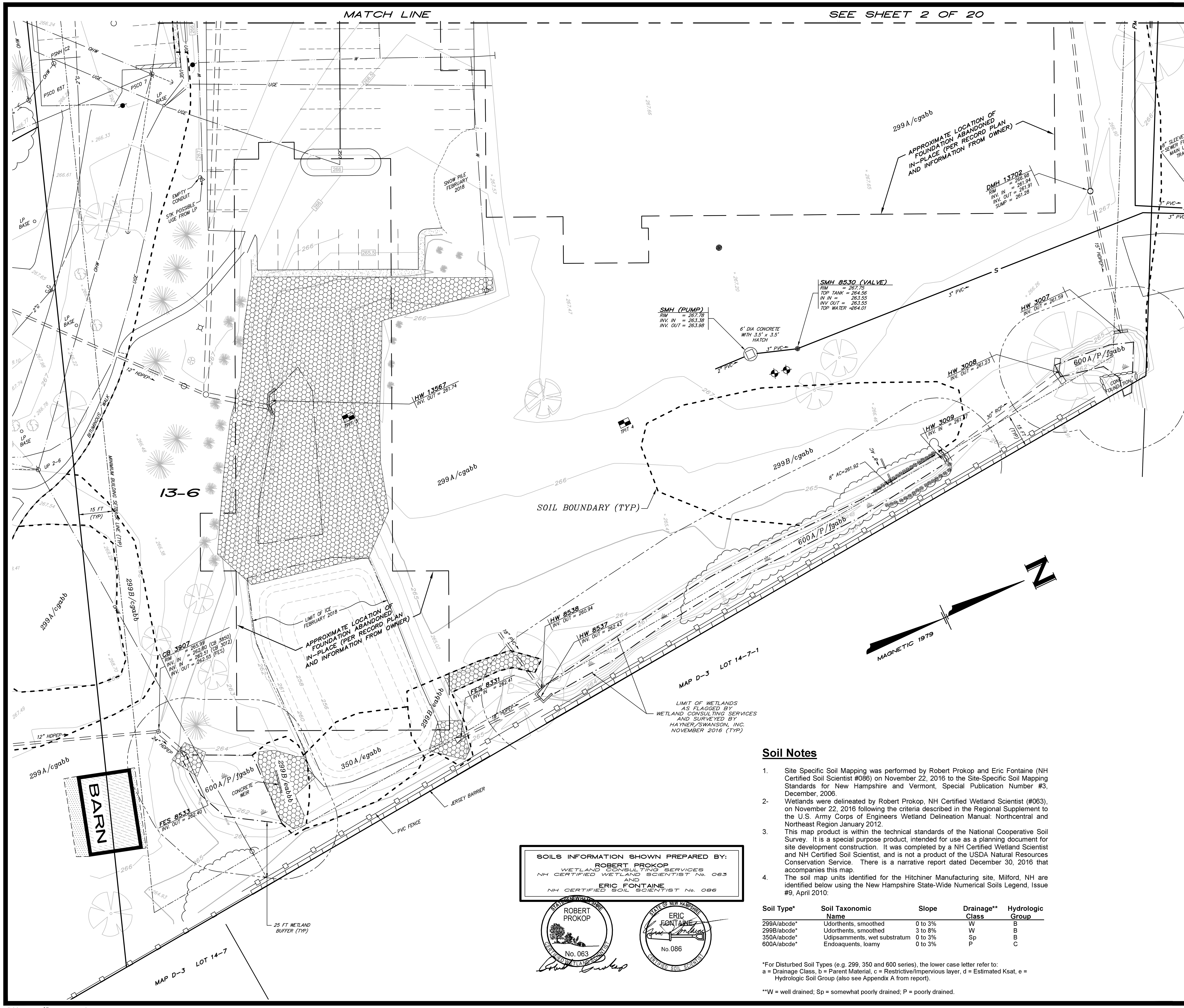

SOILS INFORMATION SHOWN PREPARED BY:
ROBERT PROKOP
WETLAND CONSULTING SERVICES
NH CERTIFIED WETLAND SCIENTIST No. 063
AND
ERIC FONTAINE
NH CERTIFIED SOIL SCIENTIST No. 086

STATE OF NEW HAMPSHIRE ROBERT PROKOP No. 063 CERTIFIED WETLAND SCIENTIST

STATE OF NEW HAMPSHIRE ERIC FONTAINE No.086 CERTIFIED SOIL SCIENTIST

Soil Notes

1. Site Specific Soil Mapping was performed by Robert Prokop and Eric Fontaine (NH Certified Soil Scientist #086) on November 22, 2016 to the Site-Specific Soil Mapping Standards for New Hampshire and Vermont, Special Publication Number #3, December, 2006.
2- Wetlands were delineated by Robert Prokop, NH Certified Wetland Scientist (#063), on November 22, 2016 following the criteria described in the Regional Supplement to the U.S. Army Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region January 2012.
3. This map product is within the technical standards of the National Cooperative Soil Survey. It is a special purpose product, intended for use as a planning document for site development construction. It was completed by a NH Certified Wetland Scientist and NH Certified Soil Scientist, and is not a product of the USDA Natural Resources Conservation Service. There is a narrative report dated December 30, 2016 that accompanies this map.
4. The soil map units identified for the Hitchiner Manufacturing site, Milford, NH are identified below using the New Hampshire State-Wide Numerical Soils Legend, Issue #9, April 2010:

Soil Type*	Soil Taxonomic Name	Slope	Drainage** Class	Hydrologic Group
299A/abcde*	Udorthents, smoothed	0 to 3%	W	B
299B/abcde*	Udorthents, smoothed	3 to 8%	W	B
350A/abcde*	Udipsamments, wet substratum	0 to 3%	Sp	B
600A/abcde*	Endoaquents, loamy	0 to 3%	P	C

*For Disturbed Soil Types (e.g. 299, 350 and 600 series), the lower case letter refer to:
a = Drainage Class, b = Parent Material, c = Restrictive/Impervious layer, d = Estimated Ksat, e = Hydrologic Soil Group (also see Appendix A from report).

**W = well drained; Sp = somewhat poorly drained; P = poorly drained.

FOR REVIEW
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No.	DATE	REVISION	BY

EXISTING CONDITIONS PLAN

(MAP D-2, LOT 13-6)

PROPOSED PLANT No. 3 BUILDING

594 ELM STREET
MILFORD, NEW HAMPSHIRE

PREPARED FOR/RECORD OWNER:

HITCHINER MANUFACTURING COMPANY, INC.
594 ELM STREET MILFORD, NEW HAMPSHIRE 03055 (603) 673-1100

20 0 20 40 60 80 FEET
10 0 10 20 METERS
SCALE: 1"=20 Feet
1"=6.096 Meters

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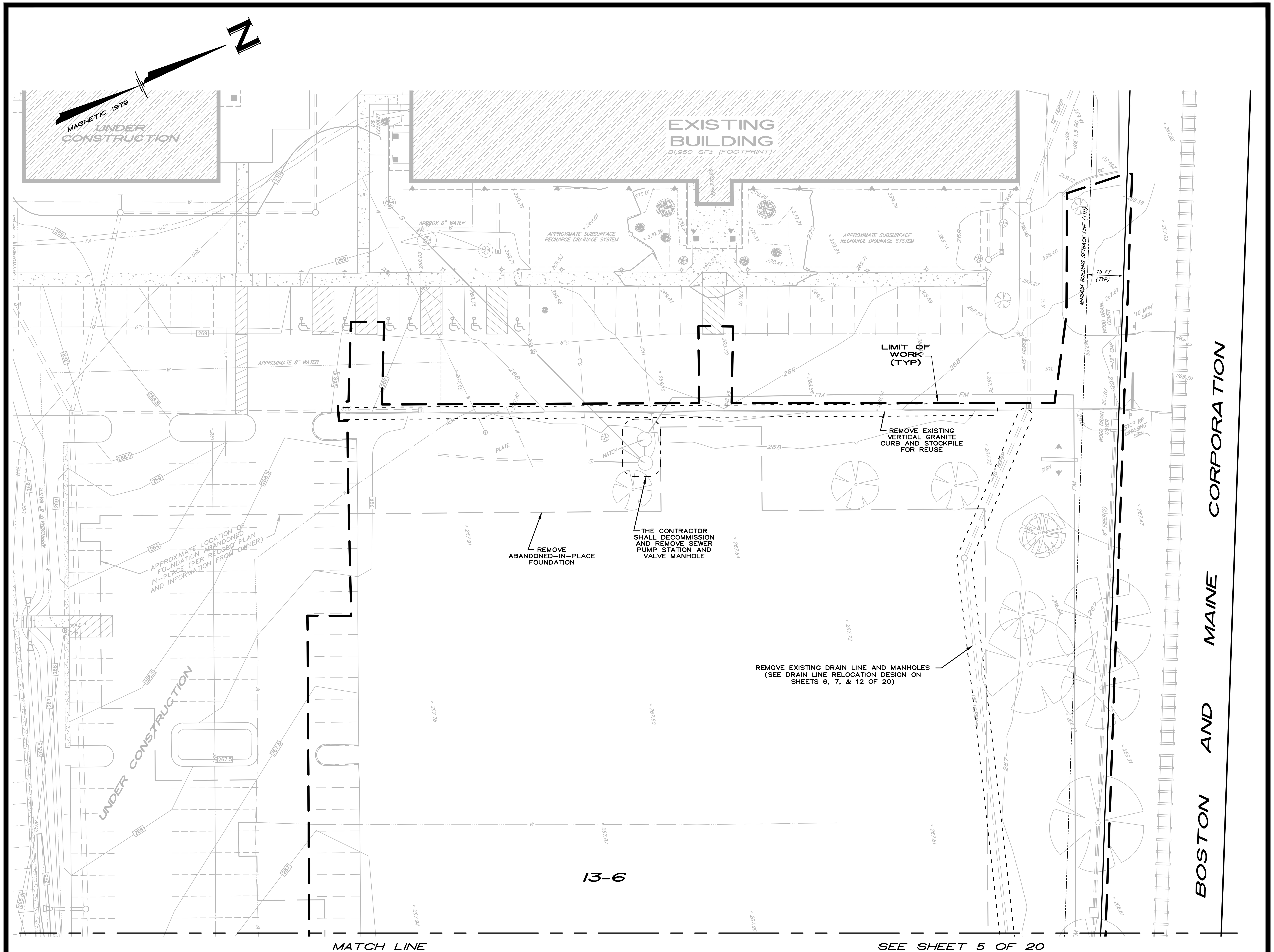
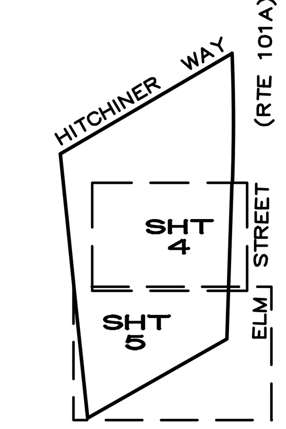


SITE DEMOLITION NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION, REMOVAL, AND DISPOSING IN A LOCATION APPROVED BY ALL GOVERNING AUTHORITIES, OF ALL STRUCTURES, PADS, WALLS, FLUMES, FOUNDATIONS, PARKING, DRIVES, DRAINAGE, STRUCTURES, UTILITIES, ETC., SUCH THAT THE IMPROVEMENTS SHOWN ON THE REMAINING PLANS CAN BE CONSTRUCTED. ALL FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER THE GEOTECHNICAL SPECIFICATIONS.
2. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL DEBRIS FROM THE SITE AND DISPOSING THE DEBRIS IN A LAWFUL MANNER. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION AND DISPOSAL.
3. THE CONTRACTOR SHALL COORDINATE WITH RESPECTIVE UTILITY COMPANIES PRIOR TO THE REMOVAL AND/OR RELOCATION OF UTILITIES. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY CONCERNING PORTIONS OF WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY'S FORCES AND ANY FEES WHICH ARE TO BE PAID TO THE UTILITY COMPANY FOR THEIR SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR PAYING ALL FEES AND CHARGES. THE CONTRACTOR SHALL COORDINATE WITH TOWN OF MILFORD OFFICIALS ALL WORK INVOLVING WATER SUPPLY, SANITARY SEWER, AND IF NECESSARY STORMWATER MANAGEMENT.
4. THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY DEMOLITION ACTIVITY, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES FOR ON SITE LOCATIONS OF EXISTING UTILITIES.
5. ALL EXISTING SEWERS, PIPING AND UTILITIES SHOWN ARE NOT TO BE INTERPRETED AS THE EXACT LOCATION, OR AS THE ONLY OBSTACLES THAT MAY OCCUR ON THE SITE. VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES. GIVE NOTICE TO ALL UTILITY COMPANIES REGARDING DESTRUCTION AND REMOVAL OF ALL SERVICE LINES AND CAP ALL LINES BEFORE PROCEEDING WITH THE WORK.
6. ELECTRICAL, TELEPHONE, CABLE, WATER, FIBERGLASS PIPE (HEAT), FIBER OPTIC CABLE AND/OR GAS LINES NEEDING TO BE REMOVED OR RELOCATED SHALL BE COORDINATED WITH THE AFFECTED UTILITY COMPANY. ADEQUATE TIME SHALL BE PROVIDED FOR RELOCATION AND CLOSE COORDINATION WITH THE UTILITY COMPANY IS NECESSARY TO PROVIDE A SMOOTH TRANSITION IN UTILITY SERVICE. CONTRACTOR SHALL PAY CLOSE ATTENTION TO EXISTING UTILITIES WITHIN THE ANY ROAD RIGHT OF WAY DURING CONSTRUCTION.
7. CONTINUOUS ACCESS SHALL BE MAINTAINED FOR THE SURROUNDING PROPERTIES AT ALL TIMES DURING DEMOLITION OF THE EXISTING FACILITIES.



SHEET KEY

FOR REVIEW
NOT FOR CONSTRUCTION

No.	DATE	REVISION	BY

SITE DEMOLITION PLAN

(MAP D-2, LOT 13-6)

PROPOSED PLANT No. 3 BUILDING

594 ELM STREET
MILFORD, NEW HAMPSHIRE

PREPARED FOR/RECORD OWNER:

HITCHINER MANUFACTURING COMPANY, INC.
594 ELM STREET MILFORD, NEW HAMPSHIRE 03055 (603) 673-1100

20 0 20 40 60 80 FEET
10 0 10 20 METERS
SCALE: 1"=20 Feet
1"=6.096 Meters

11 APRIL 2018

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Civil Engineers/Land Surveyors
Three Congress Street Nashua, New Hampshire 03062-3301
Tel (603) 883-2057 Fax (603) 883-5057
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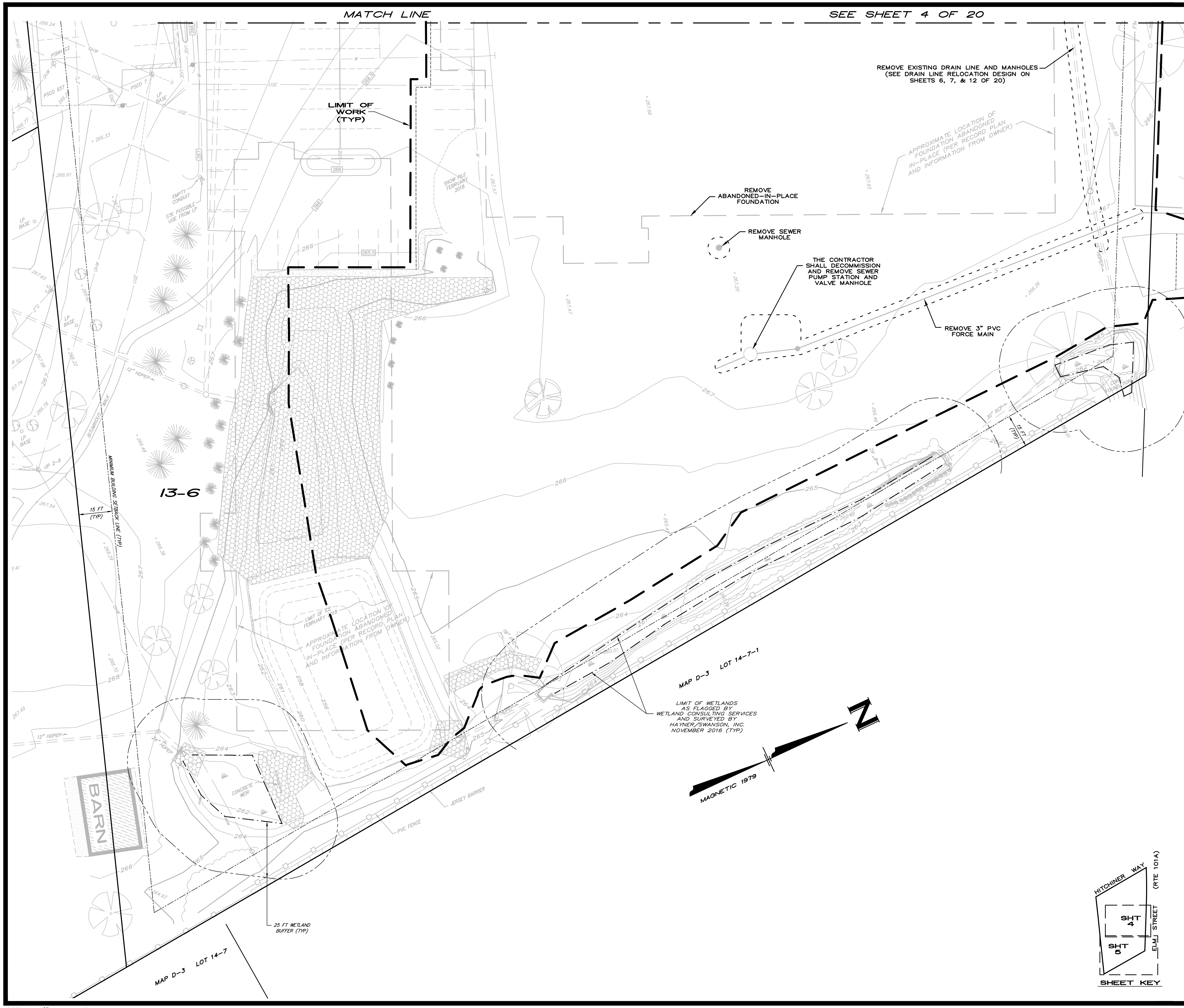
FIELD BOOK: 1219	DRAWING NAME: 1109-MM_DM21	1109-MM	4 OF 20
DRAWING LOCATION: R:\1109\DWG\1109-2018 MM		File Number	Sheet



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SITE DEMOLITION PLAN

(MAP D-2, LOT 13-6)

PROPOSED PLANT No. 3 BUILDING

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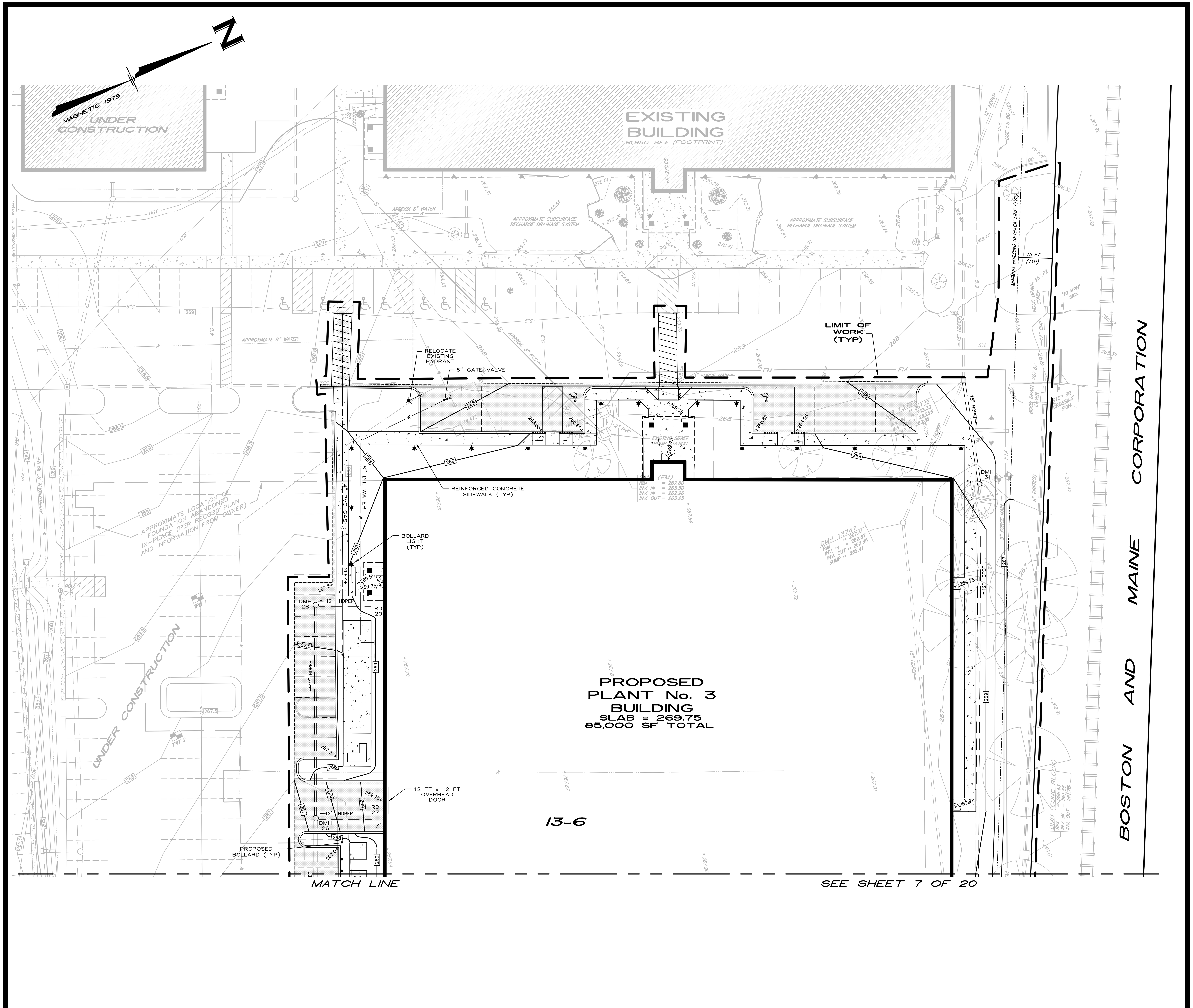
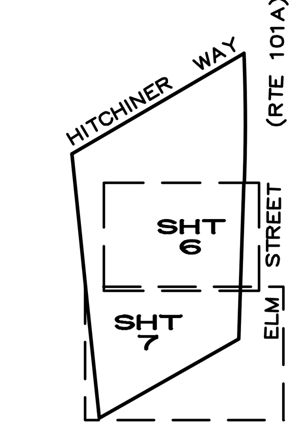


CONSTRUCTION NOTES:

1. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE TOWN OF MILFORD, AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, STATE OF NEW HAMPSHIRE, DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS, APPROVED AND ADOPTED, LATEST EDITION, ARE HEREBY INCORPORATED BY REFERENCE.
2. ROAD AND DRAINAGE CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS, AND SHALL MEET THE REQUIREMENTS AND SPECIFICATIONS FOR ROAD CONSTRUCTION, BOARD OF PUBLIC WORKS, MILFORD, NEW HAMPSHIRE, AND THE STANDARD SPECIFICATIONS FOR SEWERS AND DRAINS, BOARD OF PUBLIC WORKS, MILFORD, NEW HAMPSHIRE. ALL DRAINAGE PIPES SHALL BE CLASS IV 3000 D (RCP). CATCH BASINS SHALL BE TYPE B, AND HAVE 3 FT SUMPS UNLESS OTHERWISE NOTED.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION, AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING "DIG SAFE" AT 1-888-344-7233 AT LEAST 72 HOURS BEFORE DIGGING.
4. ALL TRAFFIC CONTROL SIGNS SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
5. SEWER SHALL BE CONSTRUCTED IN ACCORDANCE WITH PLANS AND SPECIFICATIONS AND WITH THE REQUIREMENTS OF THE DEPARTMENT OF ENVIRONMENTAL SERVICES, WS & PCC, AND ANY STRICTER REQUIREMENTS OF THE WATER AND SEWER COMMISSION , WATER UTILITIES, STANDARD REGULATIONS AND SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF WATER AND SEWER INFRASTRUCTURE, LATEST EDITION.
6. ALL WATER LINE, HYDRANT VALVES AND APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE WATER AND SEWER COMMISSION , WATER UTILITIES, STANDARD REGULATIONS AND SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF WATER AND SEWER INFRASTRUCTURE, LATEST EDITION.
7. ALL STUMPS SHALL BE DISPOSED OF OFF-SITE IN A LEGAL MANNER.



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No.	DATE	REVISION	BY

SITE GRADING & UTILITY PLAN

(MAP D-2, LOT 13-6)

PROPOSED PLANT No. 3 BUILDING

594 ELM STREET
MILFORD, NEW HAMPSHIRE

PREPARED FOR/RECORD OWNER:

HITCHINER MANUFACTURING COMPANY, INC.
594 ELM STREET MILFORD, NEW HAMPSHIRE 03055 (603) 673-1100

SCALE: 1"=20 Feet
1"=6.096 Meters

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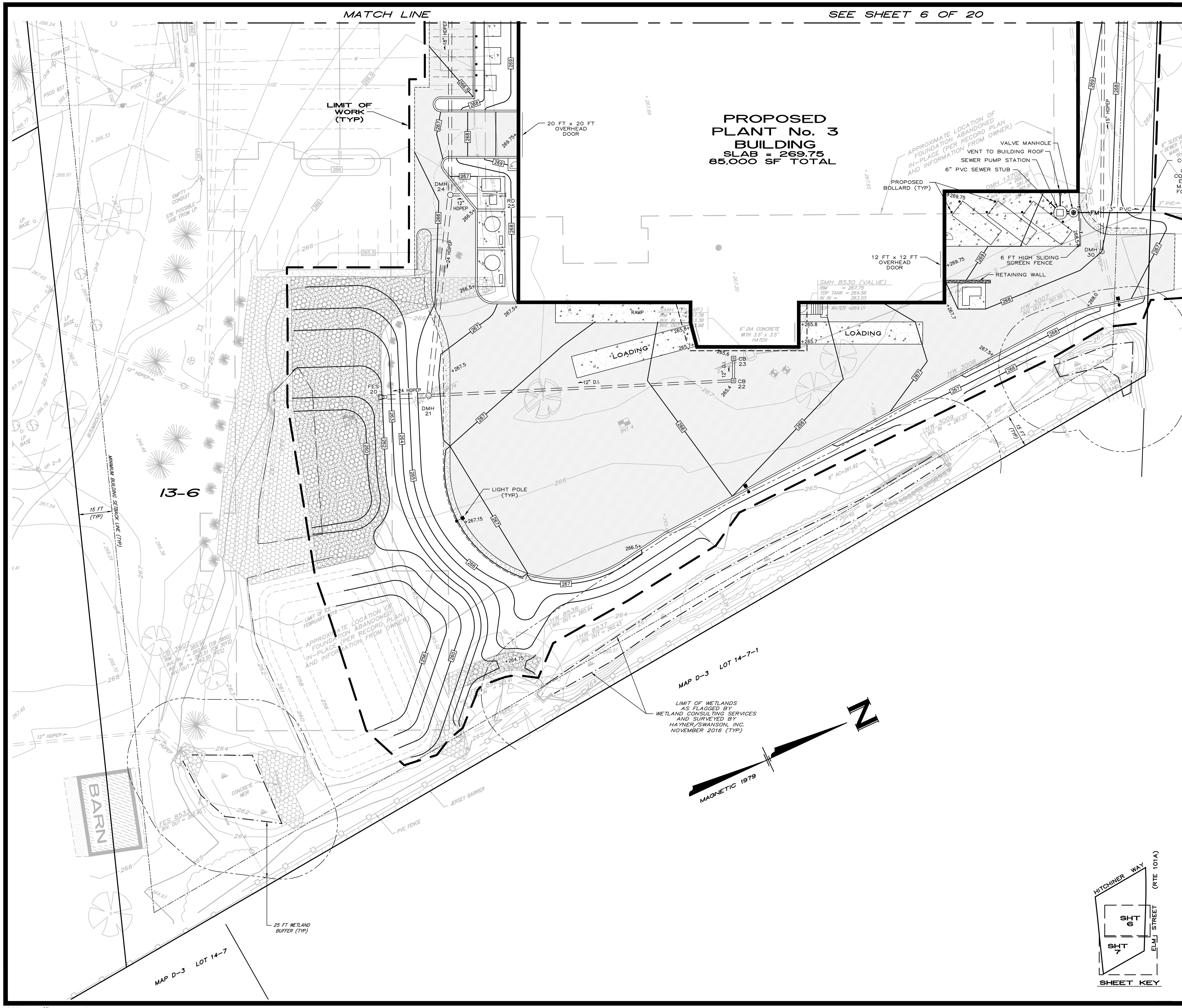
DRAWING LOCATION: R:\1109\DWG\1109-2018 MM		File Number	Sheet



No.	DATE	REVISION	BY

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SITE GRADING & UTILITY PLAN

(MAP D-2, LOT 13-6)

PROPOSED PLANT No. 3 BUILDING

594 ELM STREET
MILFORD. NEW HAMPSHIRE

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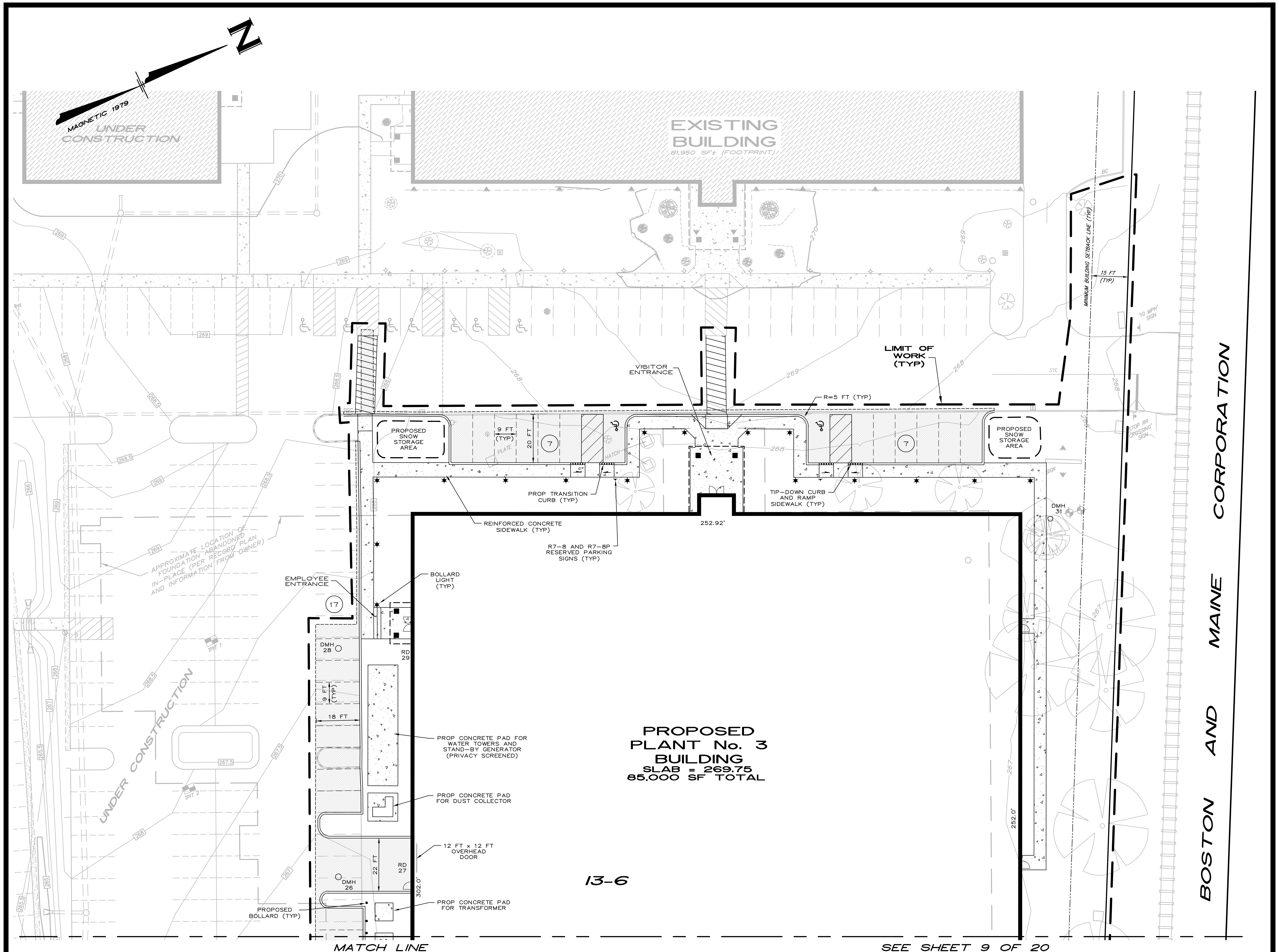

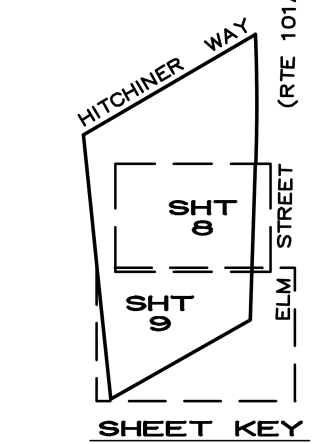

No.	DATE	REVISION	BY

FOR REVIEW
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SITE LAYOUT PLAN

(MAP D-2, LOT 13-6)

PROPOSED PLANT No. 3 BUILDING

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MILFORD, NEW HAMPSHIRE

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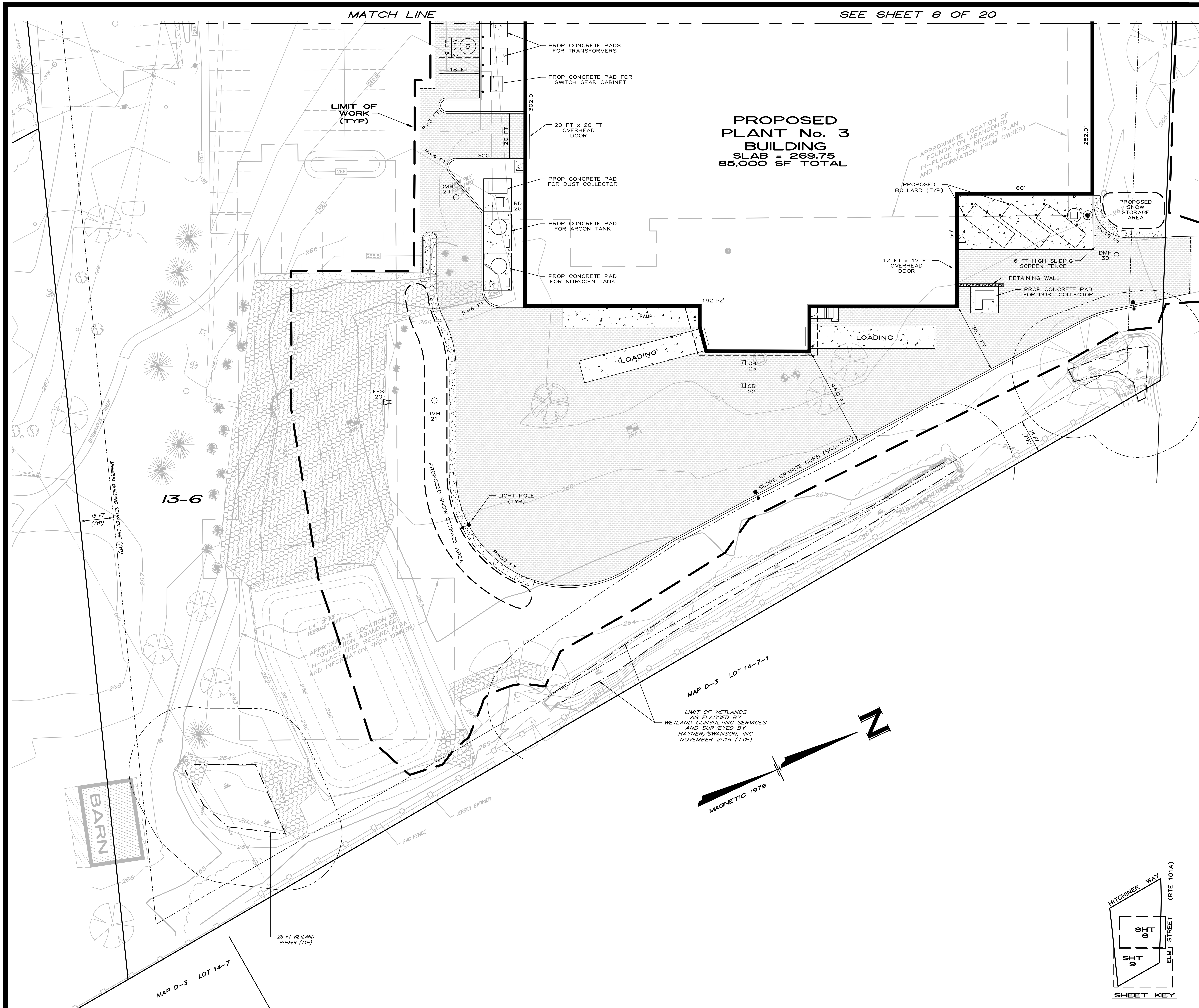

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No.	DATE	REVISION	BY

SITE LAYOUT PLAN

(MAP D-2, LOT 13-6)

PROPOSED PLANT No. 3 BUILDING

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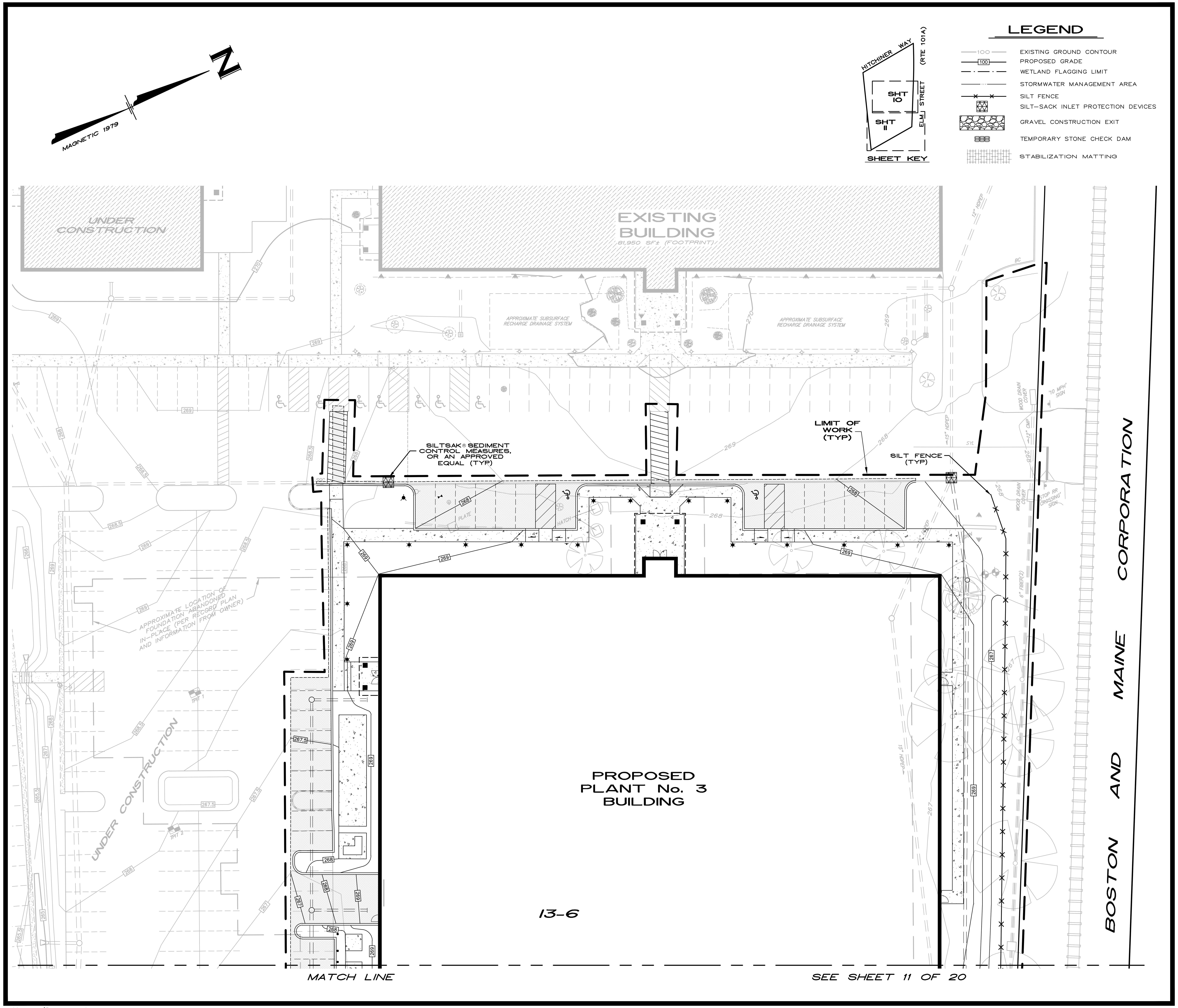

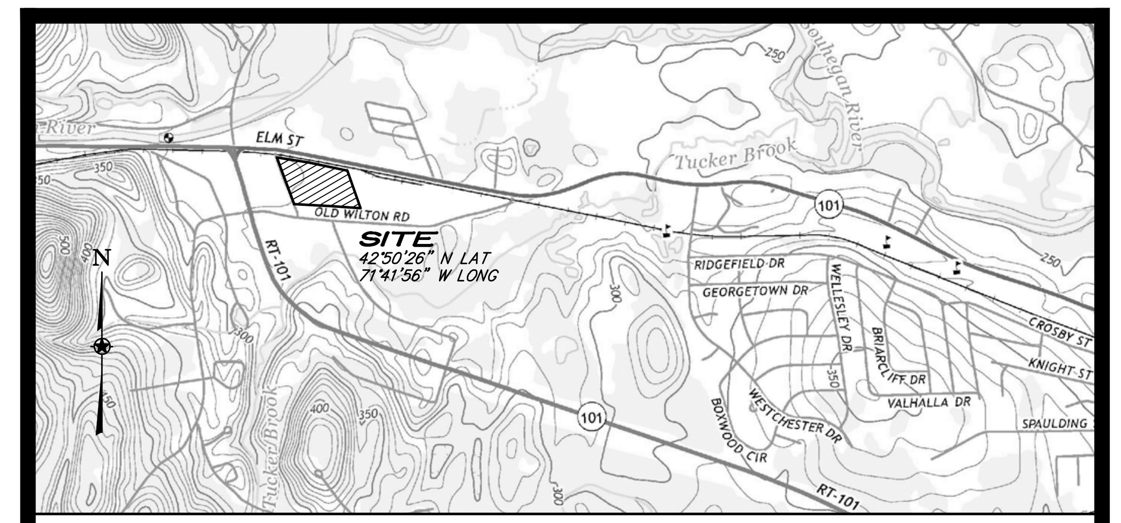

VICINITY MAP

CONSTRUCTION SEQUENCE:

1. CLEAR SITE ACCORDING TO PLAN.
2. CONSTRUCTION OF TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES, TO BE IN ACCORDANCE WITH THE PLANS. PERIMETER CONTROLS TO BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
3. GRUB SITE ACCORDING TO PLAN.
4. CUT AND DISPOSE OF ANY DEBRIS PRODUCED DURING THE CLEARING AND GRUBBING ACTIVITY.
5. CONSTRUCT DETENTION BASIN EXPANSION AND SWALES PRIOR TO ROUGH GRADING. SEED AND MULCH IMMEDIATELY.
6. SITE GRADING OF BUILDING AND PARKING AREAS. ALL CUT AND FILL SLOPES SHALL BE SEEDED AND MULCHED AFTER BEING CONSTRUCTED.
7. INSTALLATION OF UNDERGROUND UTILITIES AND CATCH BASINS SHALL BE PROTECTED FROM SEDIMENT IN ACCORDANCE WITH THE " SILTSACK DETAIL ". THE CONTROL SHALL REMAIN UNTIL THE SITE IS SUFFICIENTLY STABILIZED. RIPRAP SHALL BE PLACED AT EACH HEADWALL OUTLET.
8. AS THE BUILDING IS COMPLETED, ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED.
9. NO PORTION OF THE PROJECT SHALL BE LEFT DISTURBED AND UNSTABILIZED FOR A PERIOD OF 45 DAYS OR GREATER. ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED PRIOR TO WINTER CONDITIONS. STABILIZATION SHALL BE DEFINED AS 70% VEGETATIVE GROWTH BY NOVEMBER 1ST OR INSTALLATION OF EROSION CONTROL MATTING.
10. COMPLETED AREAS SHALL BE STABILIZED 72 HOURS AFTER COMPLETION.
11. ALL PERMANENT STORM WATER MANAGEMENT MEASURES SHALL HAVE A HEALTHY STAND OF VEGETATION ESTABLISHED PRIOR TO DIRECTING RUNOFF INTO THEM
12. FINAL PAVING OF PARKING LOT.
13. LOAM AND SEED ALL DISTURBED AREAS.
14. INSPECTION OF ALL SEDIMENT AND EROSION CONTROL MEASURES.
15. SITE LANDSCAPING ALONG WITH PERMANENT SEEDING OF ALL DISTURBED AREAS.
16. REMOVE ANY TEMPORARY EROSION CONTROL MEASURES NOT NEEDED.

GENERAL NOTES:

1. THE STORM WATER POLLUTION PREVENTION PLAN IS COMPRISED OF THIS DRAWING ("SITE MAP"), THE STANDARD DETAILS, THE PLAN NARRATIVE, ATTACHMENTS INCLUDED IN SPECIFICATIONS SECTION 02370 ("SWPPP"), PLUS THE PERMIT AND ALL SUBSEQUENT REPORTS AND RELATED DOCUMENTS.
2. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH STORM WATER POLLUTION PREVENTION SHALL OBTAIN A COPY OF THE STORM WATER POLLUTION PREVENTION PLAN AND THE STATE OF NEW HAMPSHIRE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT (NPDES PERMIT) AND BECOME FAMILIAR WITH THEIR CONTENTS.
3. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES AS REQUIRED BY THE SWPPP. ADDITIONAL BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED AS DICTATED BY CONDITIONS AT NO ADDITIONAL COST OF OWNER THROUGHOUT ALL PHASES OF CONSTRUCTION.
4. BEST MANAGEMENT PRACTICES (BMP'S) AND CONTROLS SHALL CONFORM TO FEDERAL, STATE, OR LOCAL REQUIREMENTS OR MANUAL OF PRACTICE, AS APPLICABLE. CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY PERMITTING AGENCY OR OWNER.
5. LOAM AND MATERIAL STOCKPILE AREAS AS SHOWN ARE APPROXIMATE AND SUBJECT TO CHANGE. STOCKPILE AREAS SHALL BE SURROUNDED BY SILT FENCE AND RE-SEEDED IF THEY ARE LEFT UNTOUCHED FOR MORE THAN TEN (10) DAYS.
6. AN AREA SHALL BE CONSIDERED STABLE ONLY IF THE FOLLOWING HAS OCCURRED:
   - BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED.
   - A MINIMUM OF 85 PERCENT VEGETATED GROWTH HAS BE ESTABLISHED.
   - A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED.
   - OR, EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

FOR REVIEW
NOT FOR CONSTRUCTION

No.	DATE	REVISION	BY

SEDIMENT & EROSION CONTROL PLAN

(MAP D-2, LOT 13-6)

PROPOSED PLANT No. 3 BUILDING

594 ELM STREET
MILFORD, NEW HAMPSHIRE

PREPARED FOR/RECORD OWNER:

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20 0 20 40 60 80 FEET
10 0 10 20 METERS
SCALE: 1"=20 Feet
1"=6.096 Meters

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SEDIMENT & EROSION CONTROL PLAN

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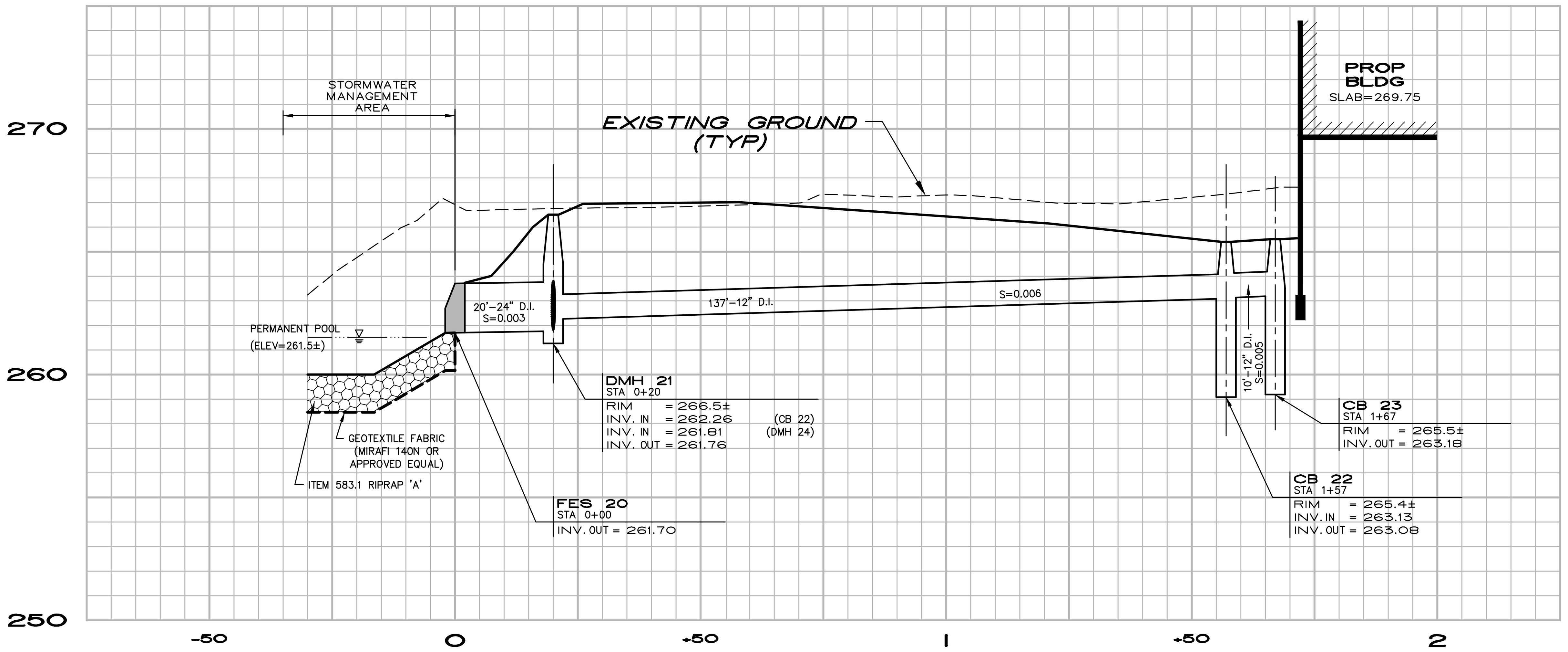
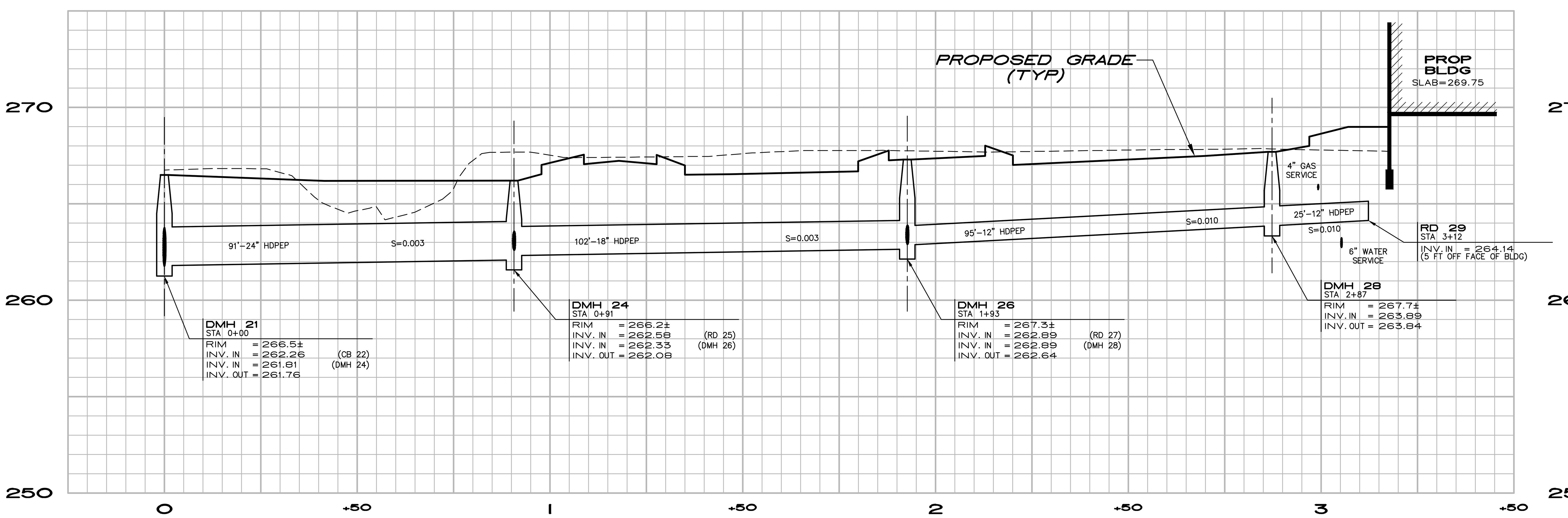
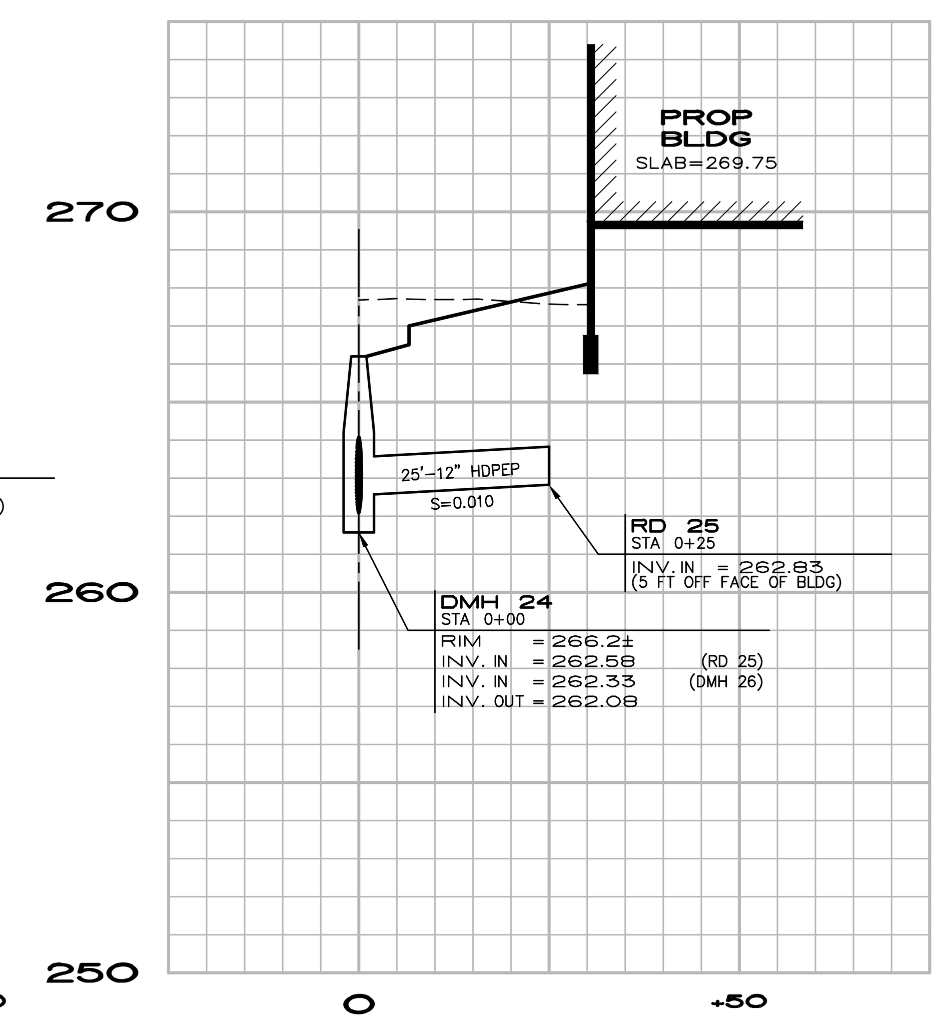
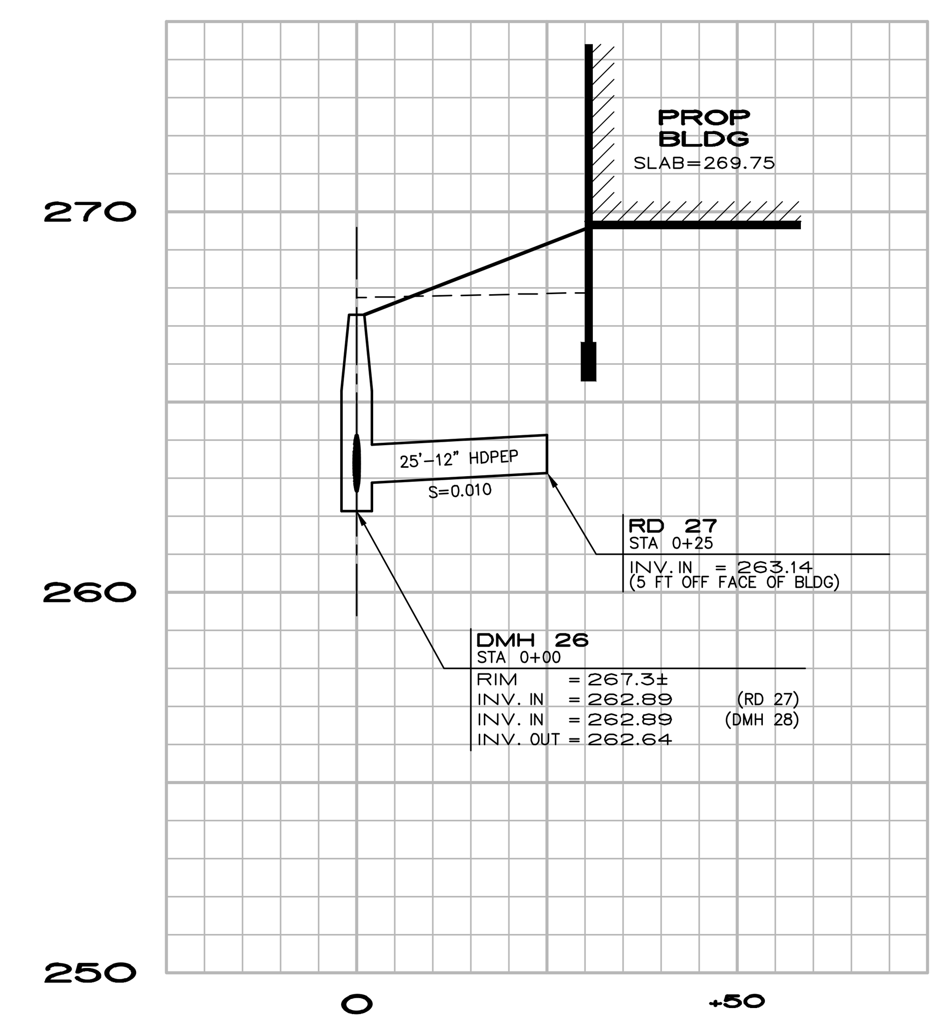


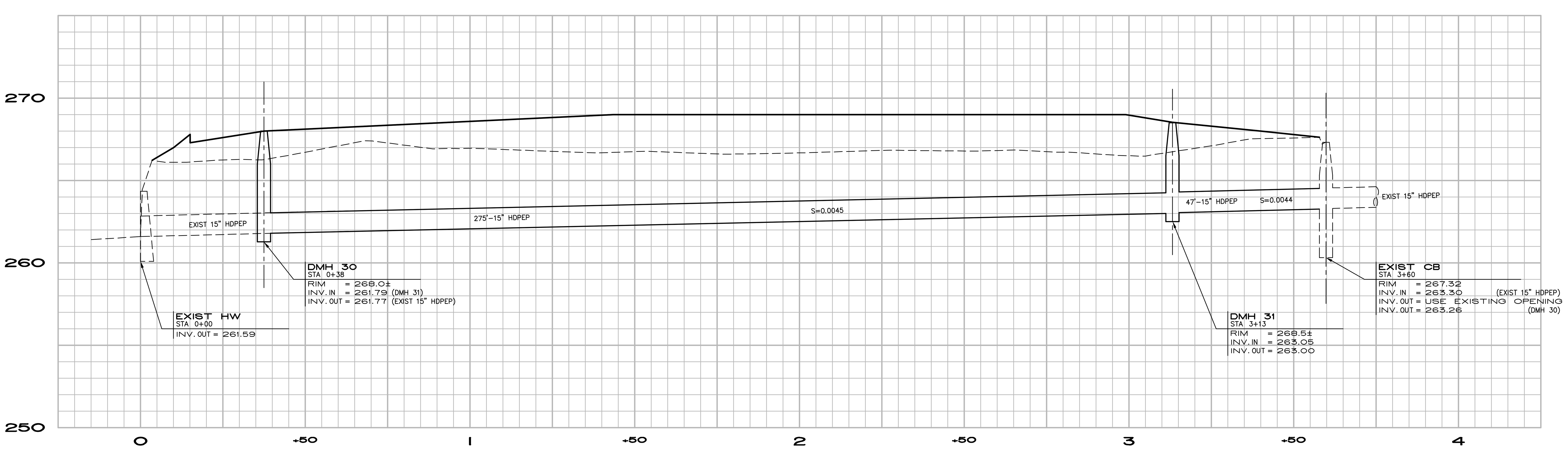
NOTES

1. STRUCTURE DIAMETERS AS SHOWN ON DRAINAGE PROFILES ARE CONSIDERED TO BE MINIMUM INSIDE DIMENSIONS. ALL STRUCTURES SHALL BE A MINIMUM INSIDE DIAMETER OF 48" UNLESS OTHERWISE INDICATED. LARGER STRUCTURES MAY BE NECESSARY DUE TO ALIGNMENT AND/OR PIPE SIZES. STRUCTURE MANUFACTURER SHALL DETERMINE FINAL SIZE.
2. PIPE LENGTHS ARE MEASURED FROM CENTERLINE OF STRUCTURE TO CENTERLINE OF STRUCTURE.
3. EXTERIOR FOUNDATION WALLS AND FOOTINGS AS SHOWN ARE APPROXIMATE.
4. DRAINAGE PIPE SHALL BE HDPE PIPE (ADS-N-12, WATERTIGHT JOINTS, H-20 LOADING), UNLESS OTHERWISE NOTED. PIPE ALTERNATIVES SHALL BE APPROVED BY THE ENGINEER.









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No.	DATE	REVISION	BY

UTILITY PROFILES

(MAP D-2, LOT 13-6)

PROPOSED PLANT No. 3 BUILDING

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MILFORD, NEW HAMPSHIRE

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SCALE: HORIZ. 1" = 20
VERT. 1" = 4

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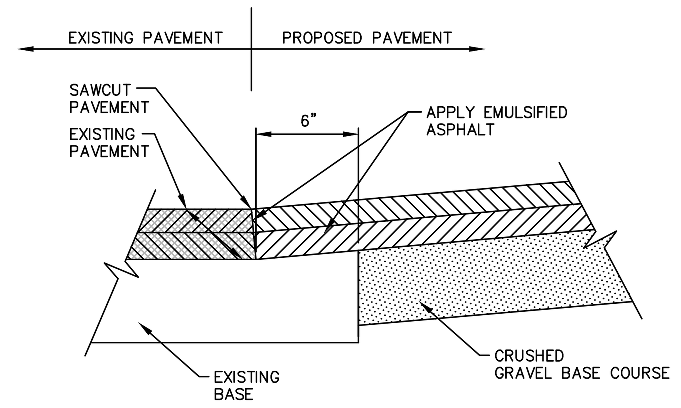
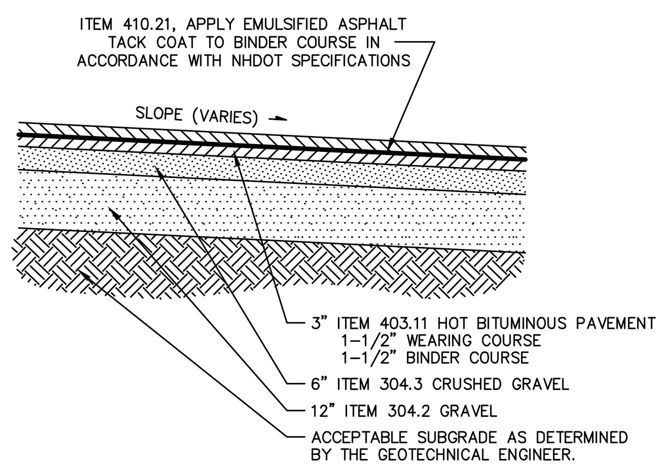
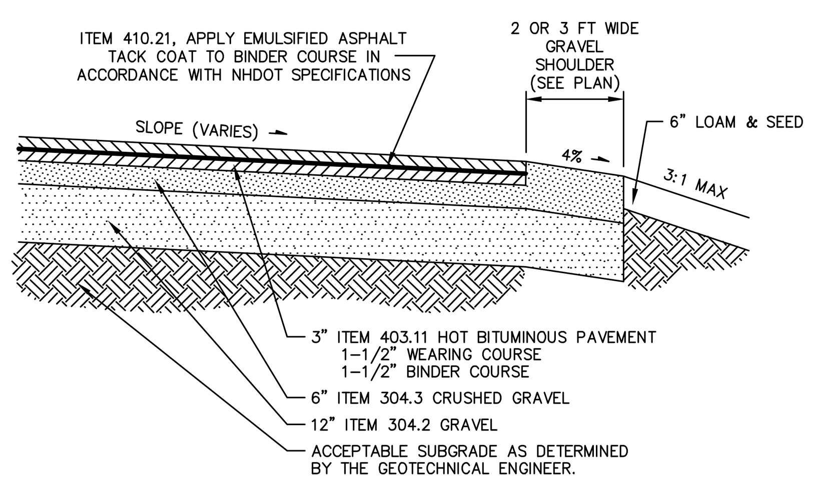


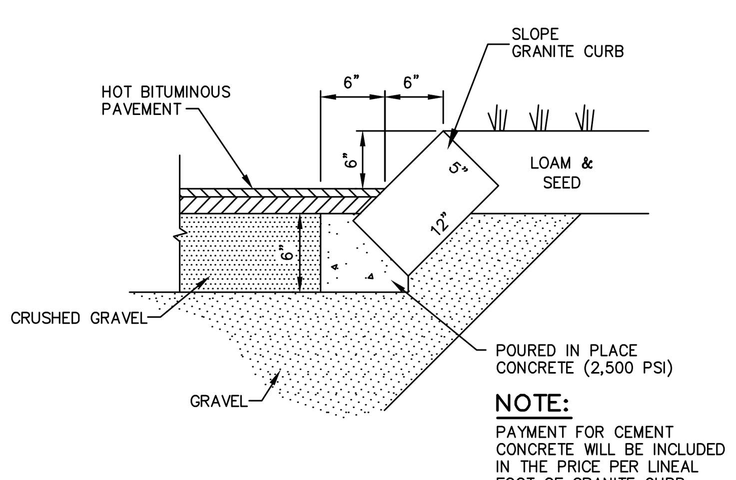
SAWCUT PAVEMENT DETAIL
NOT TO SCALE



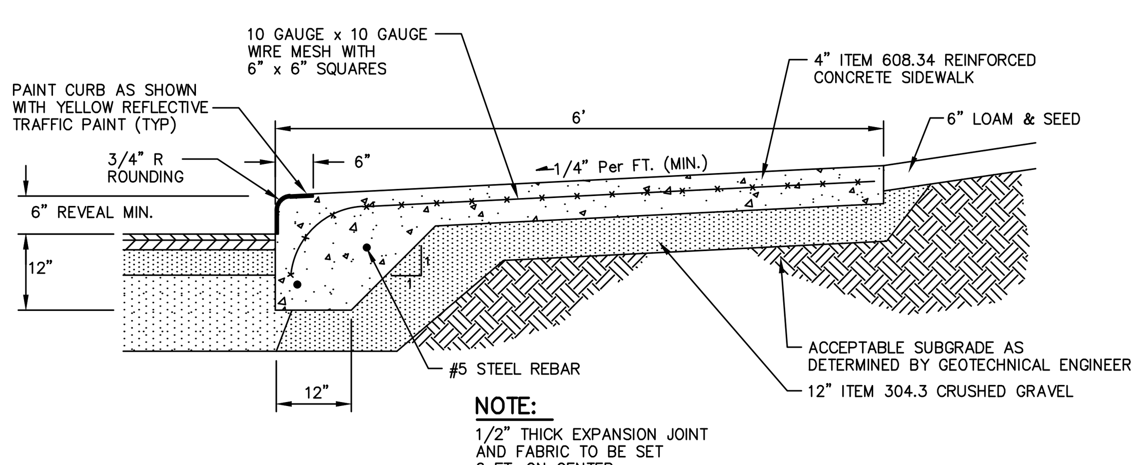
TYPICAL PAVEMENT SECTION
NOT TO SCALE



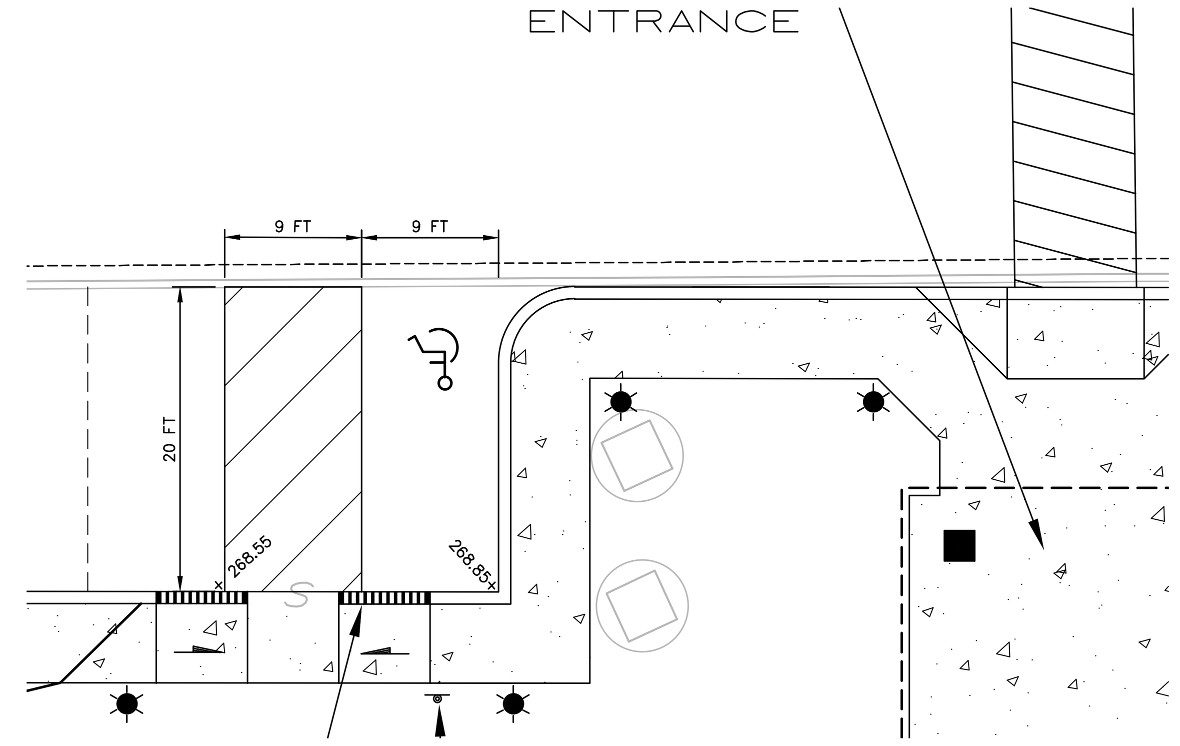
GRAVEL SHOULDER DETAIL
NOT TO SCALE



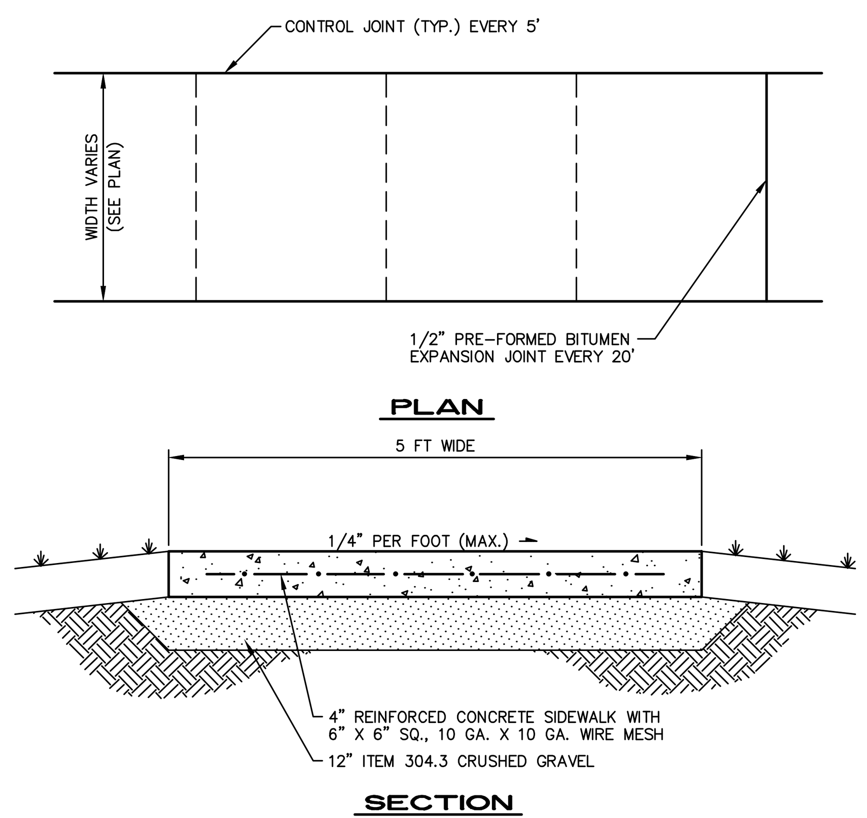
SLOPE GRANITE CURB DETAIL
NOT TO SCALE



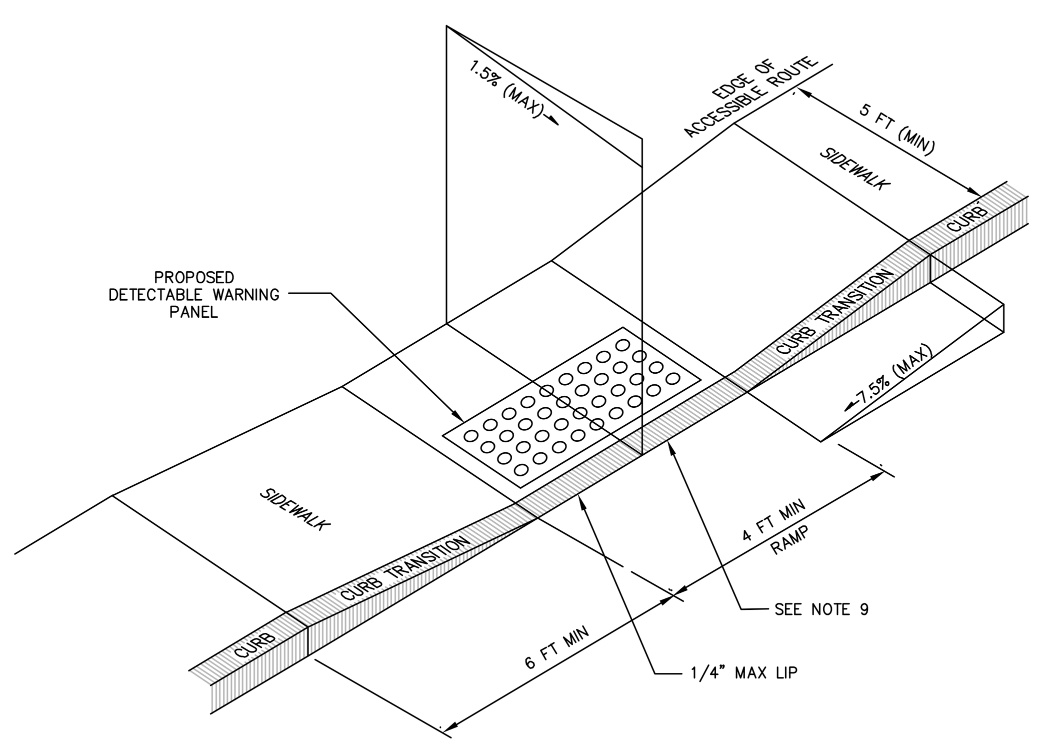
CONCRETE SIDEWALK AND CURB DETAIL
NOT TO SCALE



HANDICAP PARKING DETAIL
SCALE: 1" = 10'



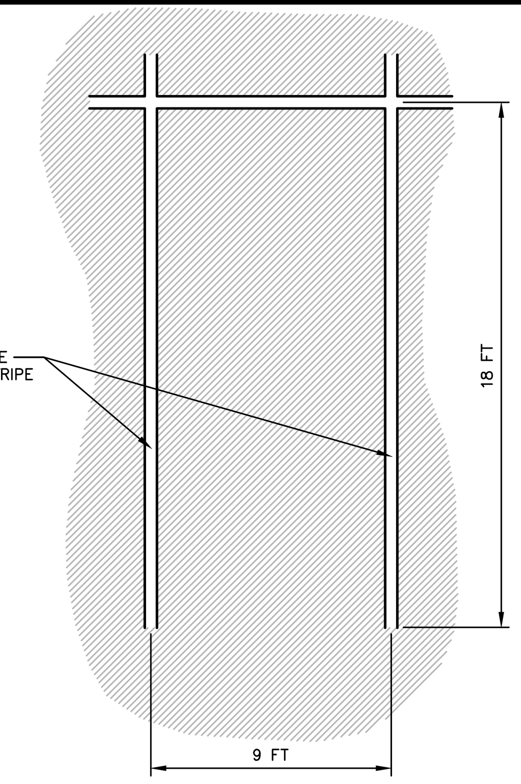
REINFORCED CONCRETE SIDEWALK DETAIL
NOT TO SCALE



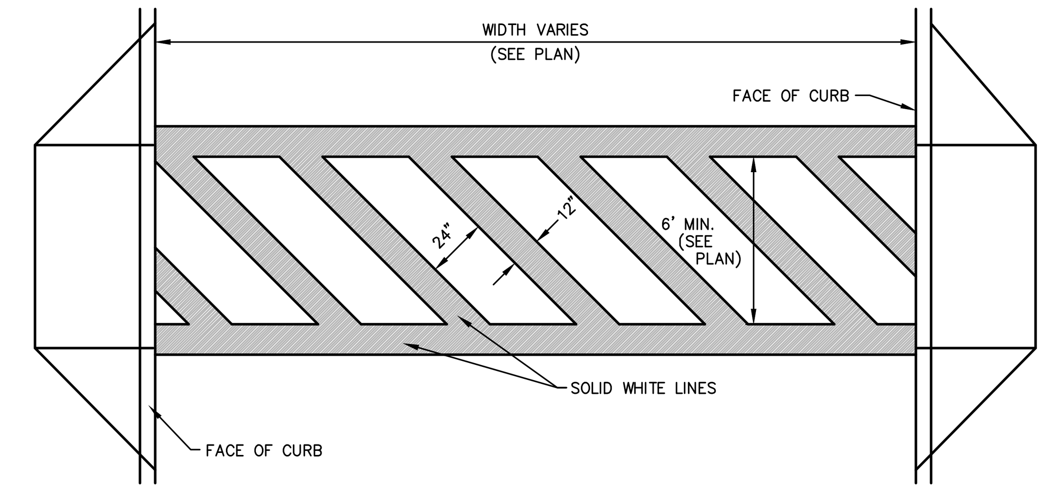
NOTES

1. THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 1.5% (1% MIN).
2. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
3. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE CURB RAMPS SHALL BE 7.5%.
4. A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.)
5. CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE.
6. BASE OF RAMP SHALL BE GRADED TO PREVENT PONDING.
7. SEE TYPICAL SIDEWALK SECTION FOR RAMP CONSTRUCTION.
8. WHERE ACCESSIBLE ROUTES ARE LESS THAN 5 FT IN WIDTH (EXCLUDING CURB) A 5 FT x 5 FT PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
9. ELIMINATE ALL CURBING AT RAMP (OTHER THAN VERTICAL CURBING, WHICH SHALL BE SET FLUSH) WHERE IT ABUTS PAVEMENT.

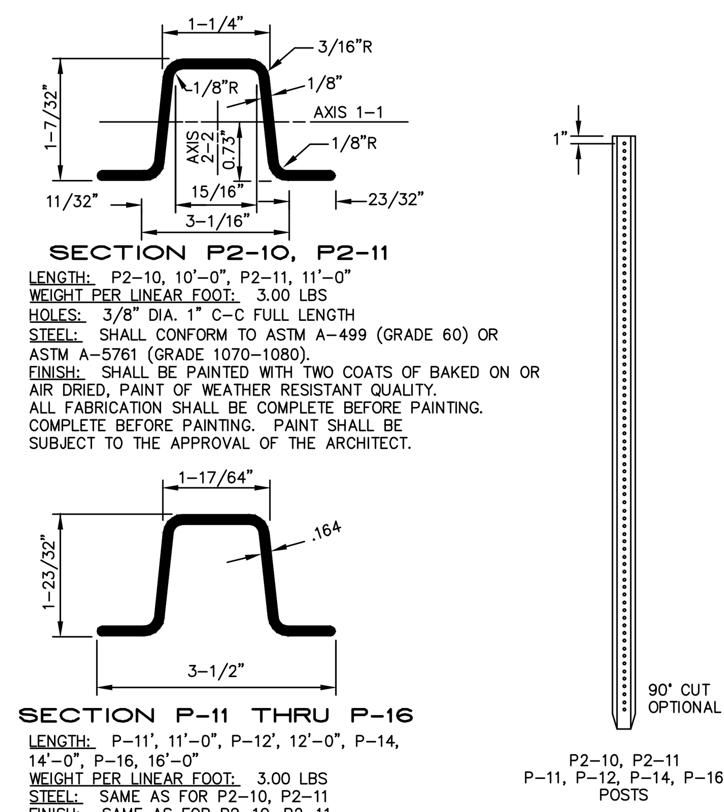
HANDICAP ACCESSIBLE CURB RAMP DETAIL
NOT TO SCALE



TYP. PARKING STALL DETAIL
NOT TO SCALE



TYPICAL CROSSWALK DETAIL
NOT TO SCALE



SECTION P2-10, P2-11

LENGTH: P2-10, 10'-0", P2-11, 11'-0"
WEIGHT PER LINEAR FOOT: 3.00 LBS
HOLES: 3/8" DIA. 1" C-C FULL LENGTH
STEEL: SHALL CONFORM TO ASTM A-499 (GRADE 60) OR ASTM A-5761 (GRADE 1070-1080).
FINISH: SHALL BE PAINTED WITH TWO COATS OF BAKED ON OR AIR DRIED, PAINT OF WEATHER RESISTANT QUALITY.
ALL FABRICATION SHALL BE COMPLETE BEFORE PAINTING.
COMPLETE BEFORE PAINTING. PAINT SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT.

SECTION P-11 THRU P-16

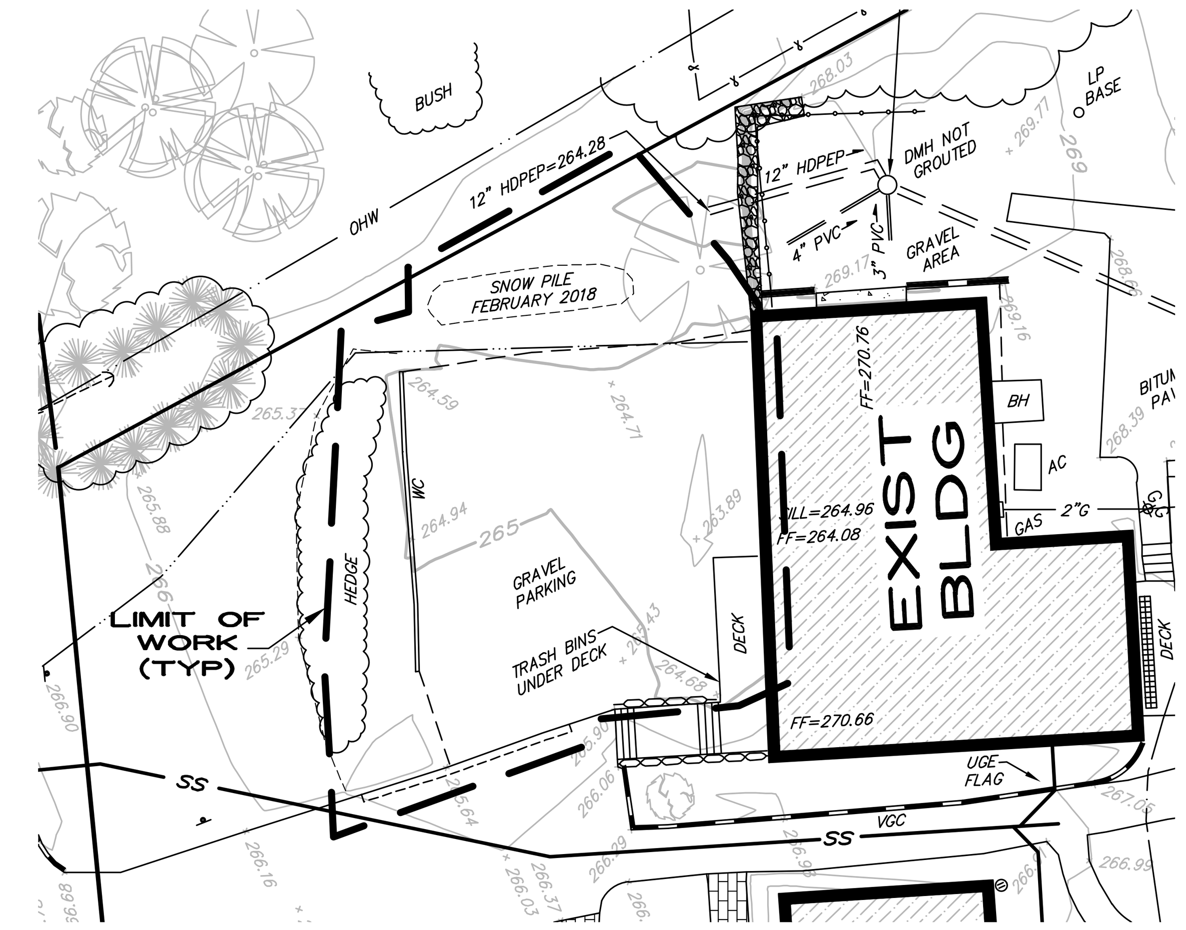
LENGTH: P-11', 11'-0", P-12', 12'-0", P-14, 14'-0", P-16, 16'-0"
WEIGHT PER LINEAR FOOT: 3.00 LBS
STEEL: SAME AS FOR P2-10, P2-11
FINISH: SAME AS FOR P2-10, P2-11

DIMENSIONS SHOWN ARE NOMINAL. ALTERNATE SECTIONS MUST BE APPROVED PRIOR TO USE.

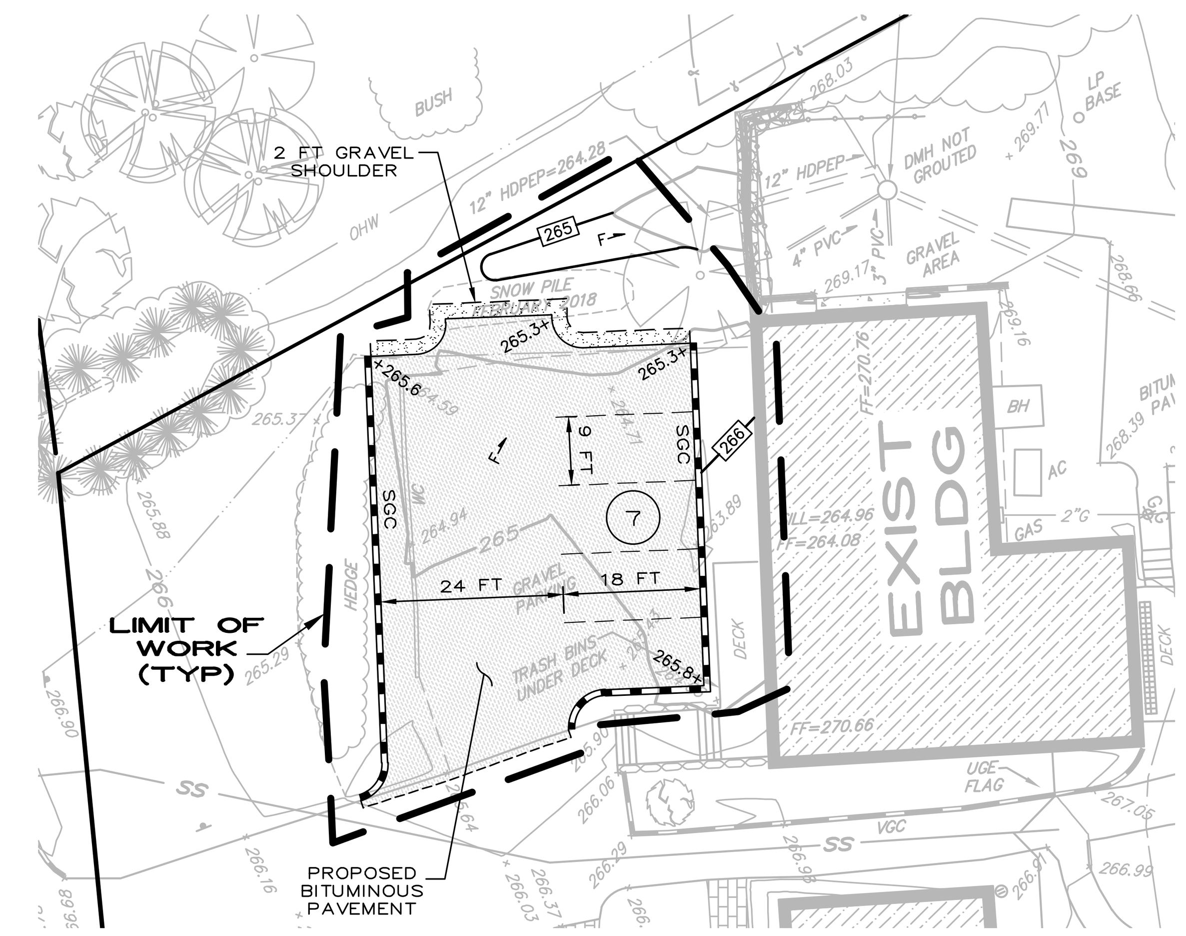
TRAFFIC SIGN SUPPORT DETAIL
NOT TO SCALE

SIGN LEGEND

TEXT SEE MUTCD FOR TEXT DIMENSIONS	IDENTIFICATION NUMBER	SIZE WIDTH/HEIGHT
	TEXT DIMENSIONS	
RESERVED PARKING	R7-8	12"/18"
	SEE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS	
VAN ACCESSIBLE	R7-8P	18"/9"
	SEE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS	



EXISTING CONDITIONS
SCALE: 1" = 20'



SITE GRADING
SCALE: 1" = 20'

FOR REVIEW
NOT FOR CONSTRUCTION

No.	DATE	REVISION	BY

DETAIL SHEET - GENERAL SITE

(MAP D-2, LOT 13-6)

PROPOSED PLANT No. 3 BUILDING

594 ELM STREET
MILFORD, NEW HAMPSHIRE

PREPARED FOR/RECORD OWNER:

HITCHINER MANUFACTURING COMPANY, INC.
594 ELM STREET MILFORD, NEW HAMPSHIRE 03055 (603) 673-1100

SCALE AS SHOWN

11 APRIL 2018

HSI Hayner/Swanson, Inc.
Civil Engineers/Land Surveyors
Three Congress Street Nashua, New Hampshire 03062-3301
Tel (603) 883-2057 Fax (603) 883-5057
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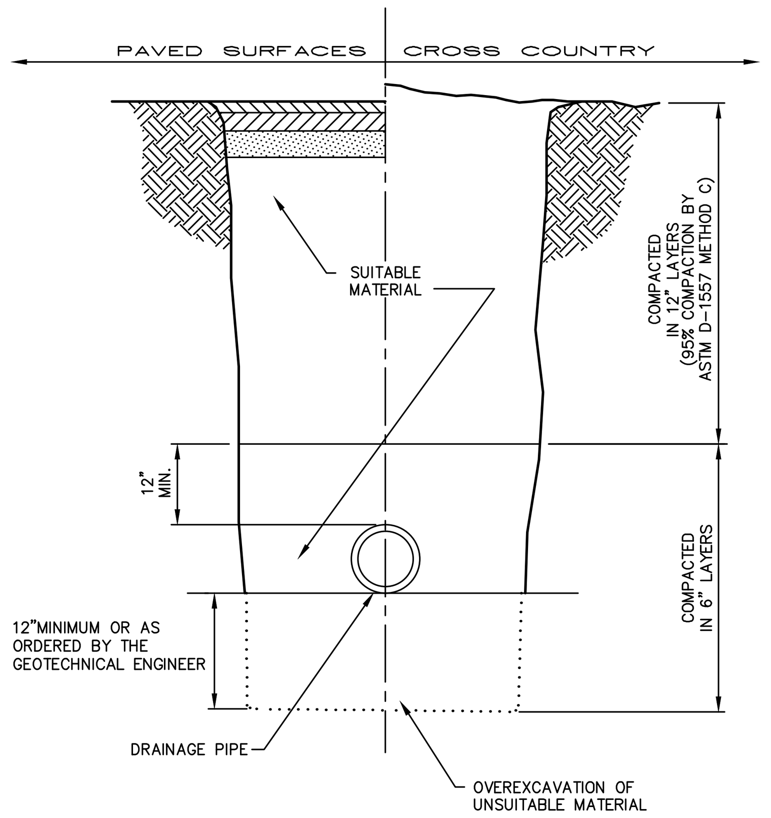
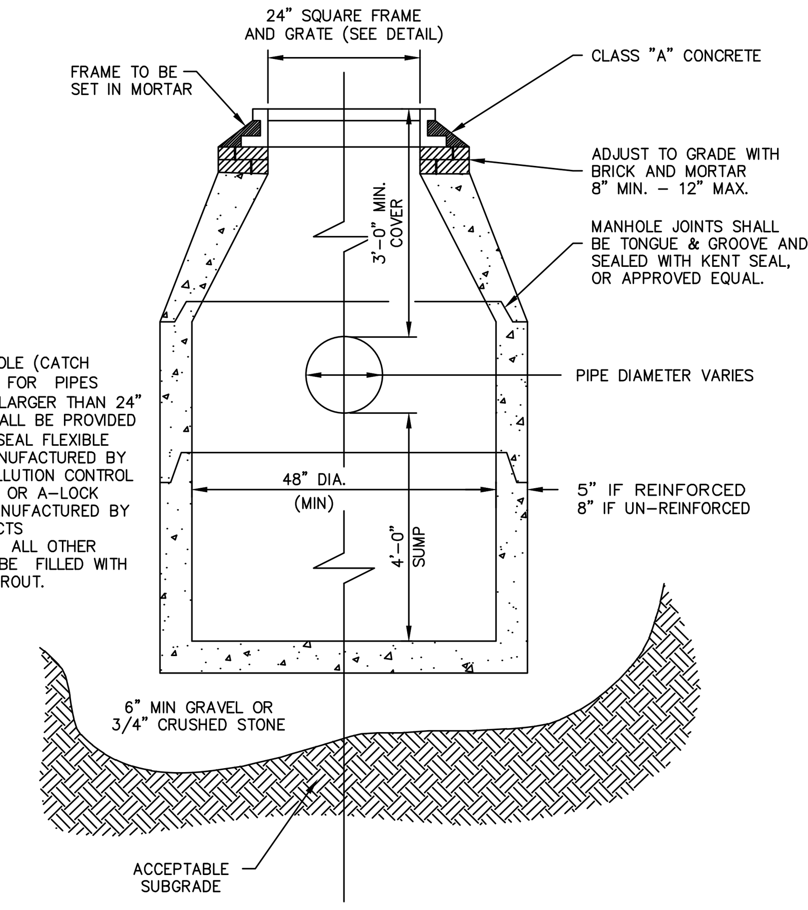
FIELD BOOK: 1219	DRAWING NAME: 1109-MM_DET1	1109-MM	13 OF 20
DRAWING LOCATION: R:\1109\DWG\1109-2018 MM		File Number	Sheet



TYPICAL DRAINAGE TRENCH SECTION

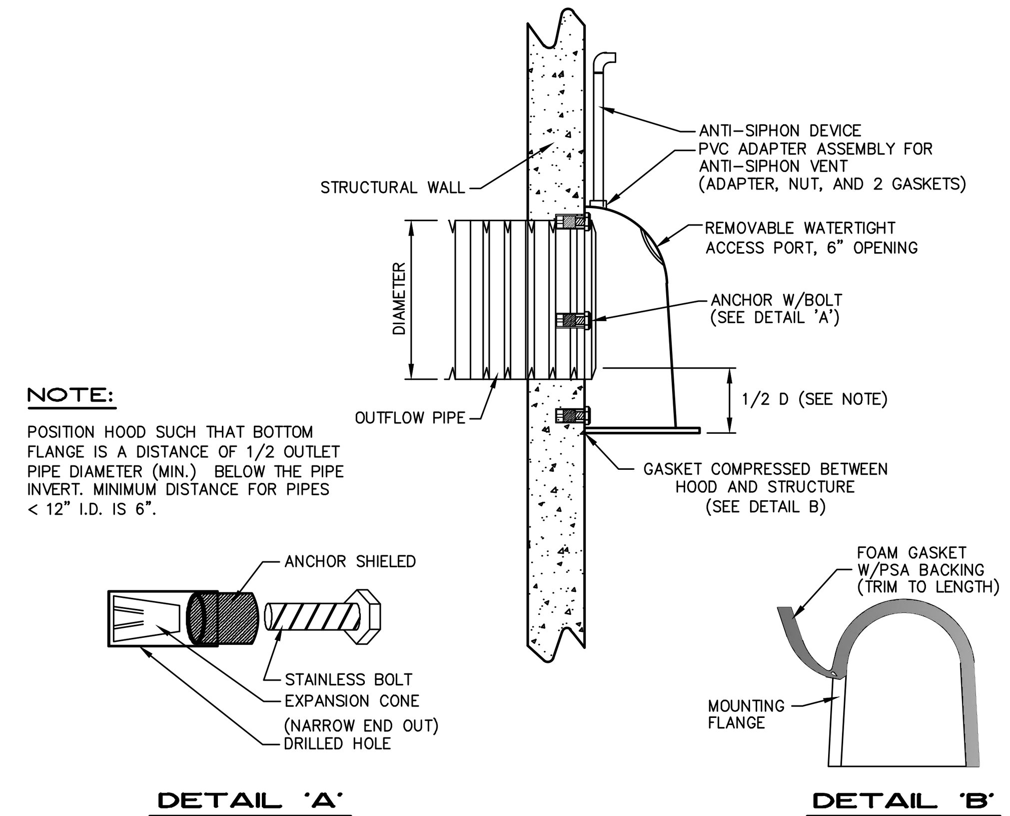
NOT TO SCALE



NOTE:
PIPE TO MANHOLE (CATCH BASIN) JOINTS, FOR PIPES EQUAL TO OR LARGER THAN 24" DIAMETER, SHALL BE PROVIDED WITH A KOR'N'SEAL FLEXIBLE SLEEVE AS MANUFACTURED BY NATIONAL POLLUTION CONTROL SYSTEMS, INC., OR A-LOCK GASKET AS MANUFACTURED BY A-LOK PRODUCTS CORPORATION. ALL OTHER JOINTS SHALL BE FILLED WITH NON-SHRINK GROUT.

CATCH BASIN DETAIL

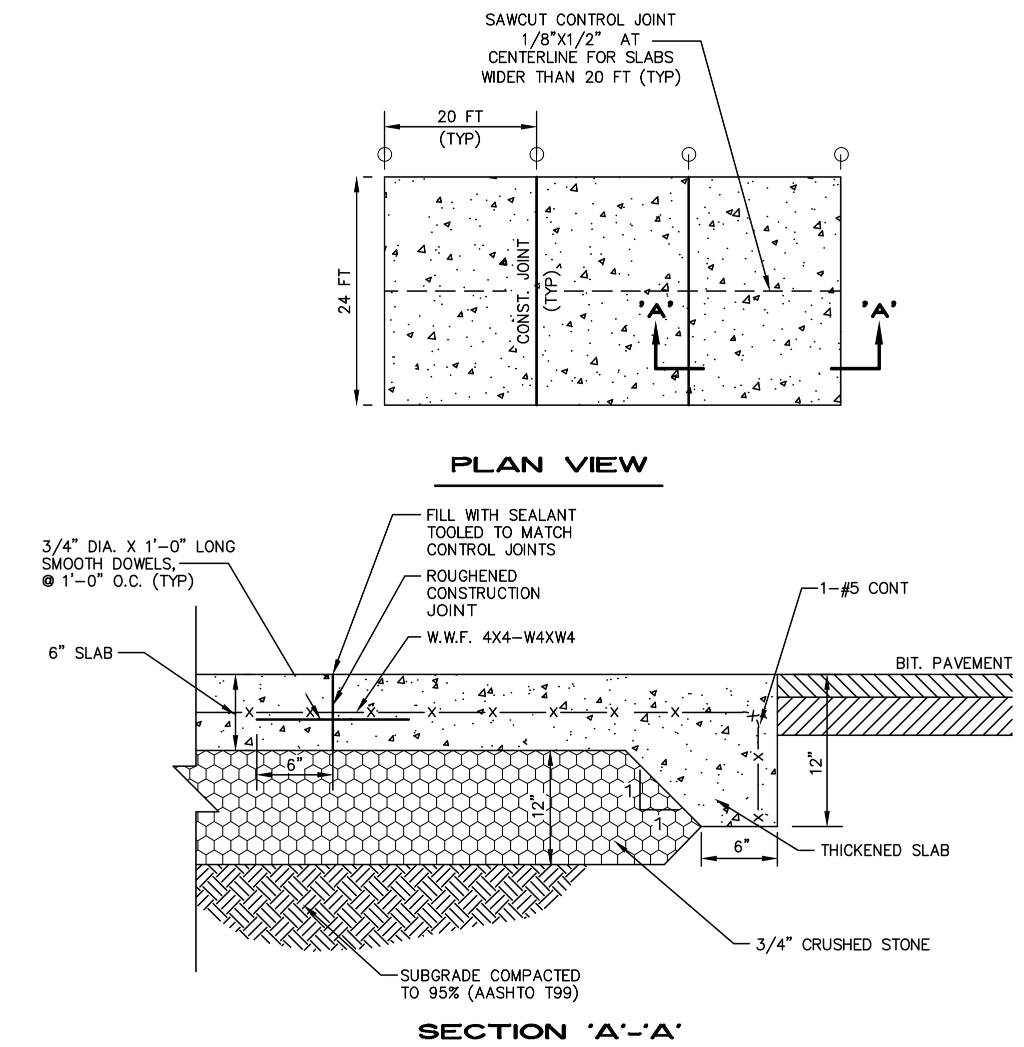
NOT TO SCALE



NOTE:
POSITION HOOD SUCH THAT BOTTOM FLANGE IS A DISTANCE OF 1/2 OUTLET PIPE DIAMETER (MIN.) BELOW THE PIPE INVERT. MINIMUM DISTANCE FOR PIPES < 12" I.D. IS 6".

SNOUT® OIL AND DEBRIS STOP DETAIL

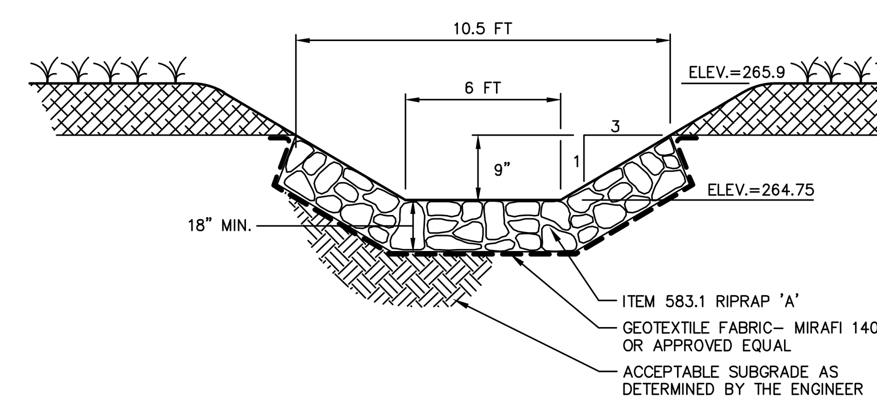
NOT TO SCALE



NOTE:
CONCRETE SHALL BE 4000 PSI.

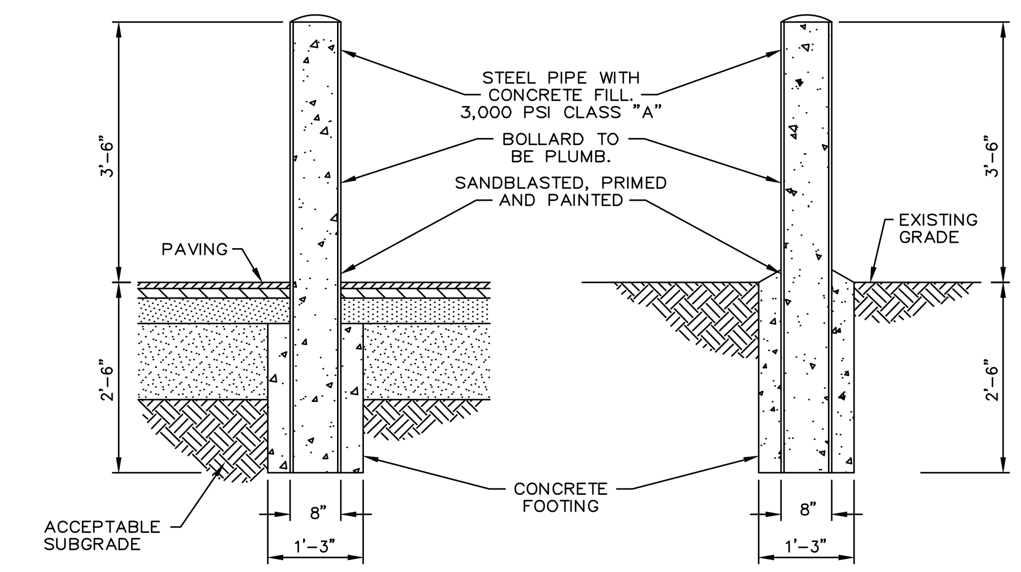
CONCRETE SLAB DETAIL

NOT TO SCALE



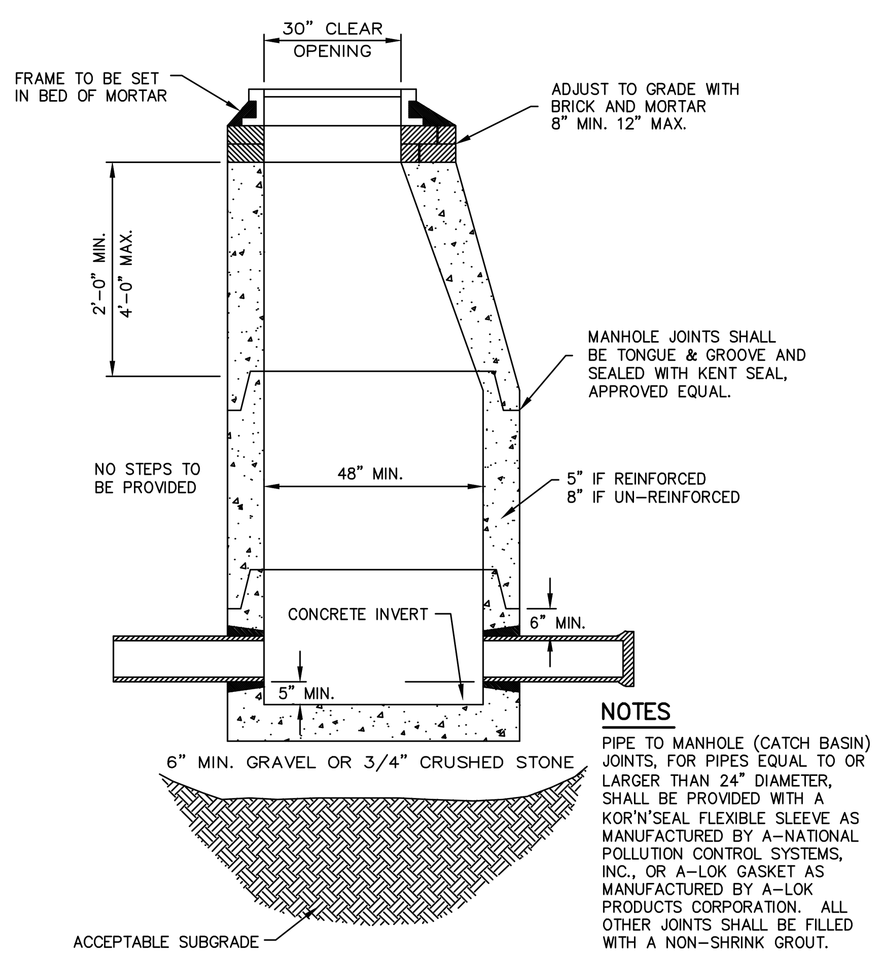
RIPRAP SPILLWAY AT STORMWATER MANAGEMENT AREA OUTLET

NOT TO SCALE



BOLLARD DETAIL

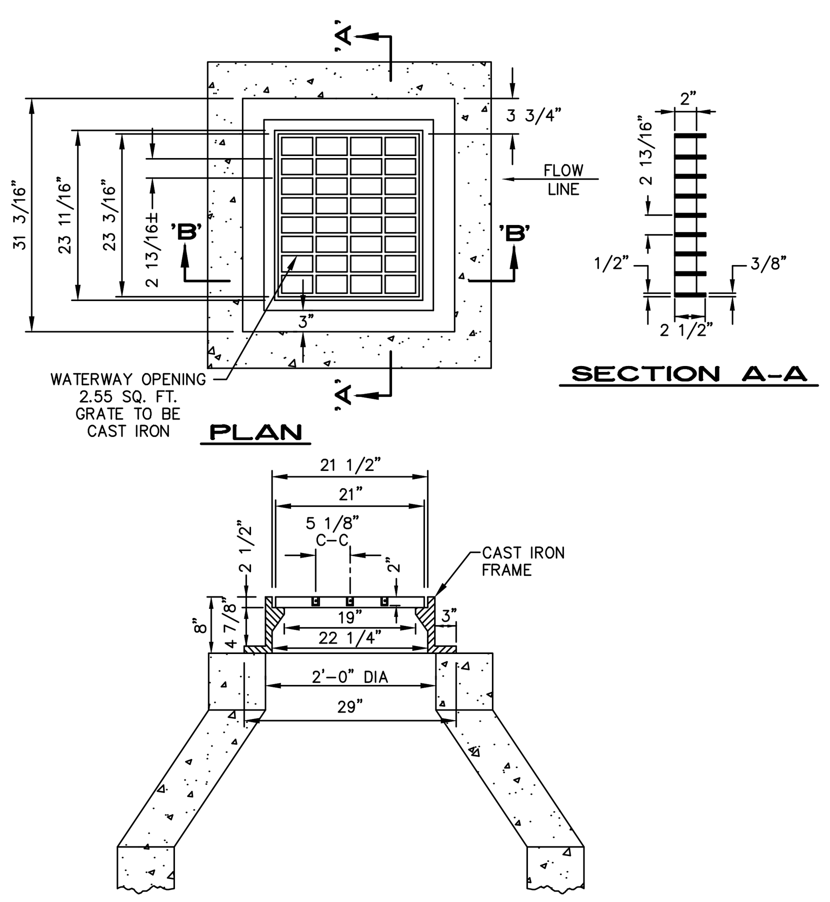
NOT TO SCALE



NOTES
PIPE TO MANHOLE (CATCH BASIN) JOINTS, FOR PIPES EQUAL TO OR LARGER THAN 24" DIAMETER, SHALL BE PROVIDED WITH A KOR'N'SEAL FLEXIBLE SLEEVE AS MANUFACTURED BY A-NATIONAL POLLUTION CONTROL SYSTEMS, INC., OR A-LOK GASKET AS MANUFACTURED BY A-LOK PRODUCTS CORPORATION. ALL OTHER JOINTS SHALL BE FILLED WITH A NON-SHRINK GROUT.

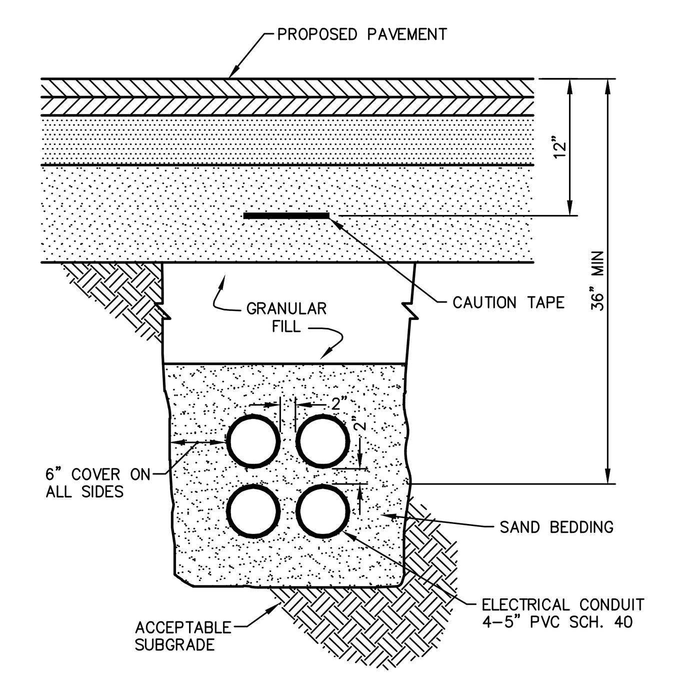
DRAIN MANHOLE DETAIL

NOT TO SCALE



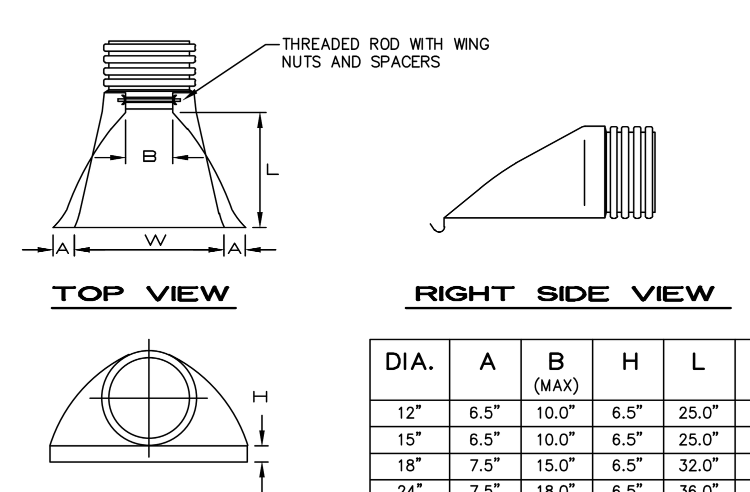
CATCH BASIN - TYPE B FRAME AND COVER DETAIL

(NHDOT STANDARD)
NOT TO SCALE



GTO BUILDING ADDITION ELECTRICAL CONDUIT TYPICAL TRENCH SECTION

NOT TO SCALE



DIA.	A	B (MAX)	H	L	W
12"	6.5"	10.0"	6.5"	25.0"	29.0"
15"	6.5"	10.0"	6.5"	25.0"	29.0"
18"	7.5"	15.0"	6.5"	32.0"	35.0"
24"	7.5"	18.0"	6.5"	36.0"	45.0"
30"	7.5"	12.0"	8.6"	58.0"	63.0"
36"	7.5"	25.0"	8.6"	58.0"	63.0"

FLARED END SECTION FOR ADS PIPE

NOT TO SCALE

FOR REVIEW
NOT FOR CONSTRUCTION

No.	DATE	REVISION	BY

DETAIL SHEET - GENERAL SITE

(MAP D-2, LOT 13-6)

PROPOSED PLANT No. 3 BUILDING

594 ELM STREET
MILFORD, NEW HAMPSHIRE

PREPARED FOR/RECORD OWNER:

HITCHINER MANUFACTURING COMPANY, INC.
594 ELM STREET MILFORD, NEW HAMPSHIRE 03055 (603) 673-1100

SCALE AS SHOWN

11 APRIL 2018

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FIELD BOOK: 1219 | DRAWING NAME: 1109-MM_DET1
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1109-MM (File Number) | 14 OF 20 (Sheet)

GENERAL NOTES

[A] GENERAL

THE CONTRACTOR SHALL FURNISH ALL PLANT, LABOR, EQUIPMENT, APPLIANCES AND MATERIALS; OBTAIN ALL NECESSARY PERMITS; PERFORM ALL OPERATIONS IN CONNECTION WITH THE SATISFACTORY INSTALLATION OF THE PUMP STATION AND INCIDENTAL WORK; AND COMPLETE THE INSTALLATION IN STRICT ACCORDANCE WITH THE SPECIFICATIONS, DRAWINGS, AND STANDARD DETAILS AND CONDITIONS OF THE CONTRACT. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES, CODE OF ADMINISTRATIVE RULES, ENV-WS 700.

THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH FOUR (4) COPIES OF SHOP DRAWINGS OF THE FOLLOWING ITEMS FOR APPROVAL PRIOR TO CONSTRUCTION:

[A] DETAILS ON INSTALLATION OF PUMPS AND PUMP PERFORMANCE CURVES.
[B] RAIL SYSTEMS AND QUICK DISCONNECT FITTING DATA.
[C] PIPING AND VALVES.
[D] CONTROL PANEL DATA AND STATION WIRING SCHEMATIC.
[E] PUMP CHAMBER STRUCTURE, ACCESS DOOR, AND VENT PIPING DATA.
[F] EMERGENCY GENERATOR DETAILS

[B] MATERIALS

1. PUMP AND APPURTENANCES: DUPLEX PUMPS SHALL BE BARNES SERIES 4XSHM, SUBMERSIBLE NON-CLOG WASTEWATER, EXPLOSION PROOF, SOLIDS HANDLING PUMPS WITH A CAPACITY OF 175 GPM AGAINST A TDH OF 33 FEET. A SUBMERSIBLE TYPE ELECTRIC MOTOR OF 7.5 HP, 1,750 RPM, 208/460 VOLT, THREE PHASE, 60 HERTZ, THERMALLY PROTECTED AND UNDERWRITER LISTED FOR CLASS I, DIVISION I, HAZARDOUS AREAS SHALL BE FURNISHED FOR EACH PUMP. CONTRACTOR TO CONFIRM AVAILABILITY OF POWER PRIOR TO ORDERING PUMPS.

THE PUMP STATION SHALL BE PROVIDED WITH A LIFTING WINCH WITH BRAKE, STAINLESS STEEL LIFTING CHAIN AND STAINLESS STEEL LIFTING RAIL ASSEMBLIES FOR REMOVAL OF THE PUMPS WITHOUT ENTRY INTO THE PUMP CHAMBER.

AN UNDERWRITER LISTED DUPLEX CONTROL PANEL IN A NEMA 3R ENCLOSURE SHALL BE REMOTE MOUNTED IN THE MECHANICAL ROOM OF THE BUILDING. FLOAT SWITCHES SHALL BE WIRED INTO THE CONTROL PANEL FOR PUMP OFF, LEAD PUMP ON, LAG PUMP ON, AND ALARM WATER LEVELS. THE PUMPS SHALL OPERATE ALTERNATELY AND SHALL BE PROVIDED WITH RUNNING TIME METERS THAT INDICATE THE CUMULATIVE RUNNING TIME OF EACH PUMP (IN HOURS AND TENTHS OF HOURS) OR CONTINUOUS FLOW RECORDING AND TOTALIZER CAPABILITY. BOTH AUDIBLE (LOCAL ENUNCIATOR) AND VISUAL (LIGHT) HIGH WATER ALARMS SHALL BE MOUNTED IN A CONSPICUOUS PLACE ADJACENT TO THE PUMP CONTROL PANEL AND PUMP STATION. THE POWER SOURCE FOR THE ALARM SYSTEM SHALL BE AN INDEPENDENT BATTERY, WITH CONTINUOUS CHARGE OR MAIN LINE POWER WITH A BACK-UP BATTERY SYSTEM WHICH SHALL BE CONNECTED AUTOMATICALLY SHOULD MAIN POWER FAIL. THE ALARM SIGNAL SHALL BE TRANSMITTED THROUGH A 24 HOUR, 7 DAY A WEEK NOTIFICATION SYSTEM (TELEMETRY) TO THE APPROPRIATE UTILITY OPERATOR.

CONDUIT AND FITTINGS SHALL MEET EXPLOSION PROOF REQUIREMENTS. LIFTING RAILS, CONTROLS AND APPURTENANCES SHALL BE FURNISHED AS SPECIFIED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE BY ELECTRICIANS LICENSED IN THE STATE OF NEW HAMPSHIRE. ALL ANCHOR BOLTS SHALL BE STAINLESS STEEL. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.

2. PIPE FITTINGS AND APPURTENANCES: ALL PIPING AND FITTINGS SHALL BE SCHEDULE 40, POLYVINYL CHLORIDE OR DUCTILE IRON, CLASS 53, AS SHOWN ON PLANS.

3. PUMP CHAMBER: THE PUMP CHAMBER SHALL BE PRECAST, REINFORCED CONCRETE WITH 6 INCH MINIMUM WALLS. THE CEILING AND FLOOR THICKNESS SHOULD BE A MINIMUM OF 8 INCHES AND DESIGNED BY A STRUCTURAL ENGINEER FOR H-20 LOADING. THE BASE SLAB SHOULD BE A MINIMUM OF TWELVE (12) INCHES WITH STAINLESS STEEL ANCHOR BOLTS AND ANGLE CONNECTIONS DESIGNED BY A STRUCTURAL ENGINEER FOR HYDROSTATIC LOADS. THE SHOP DRAWINGS SHALL BE STAMPED BY A REGISTERED PROFESSIONAL ENGINEER IN NEW HAMPSHIRE.

MANHOLE JOINTS SHALL BE SEALED IN AN APPROVED MANNER AND SUBJECT TO THE SAME WATER TIGHTNESS TESTING AS REQUIRED FOR SEWER MANHOLES. AN ACCESS COVER, WITH LOCK, APPROVED BY THE ENGINEER, SHALL BE CAST INTO THE TOP SLAB AS SHOWN ON THE PLANS. MANHOLE SHALL BE TESTED USING EXFILTRATION METHOD ACI 350.1 METHOD SST-NML.

OPENINGS FOR PIPES AND OTHER APPURTENANCES SHALL BE CAST OR CORED BY THE MANUFACTURER AND FURNISHED WITH AN APPROVED PIPE TO MANHOLE JOINT.

4. VALVE MANHOLE: THE VALVE MANHOLE SHALL BE PRECAST REINFORCED CONCRETE, 6'-0" INSIDE DIAMETER, WITH 6 INCH MINIMUM WALLS AND FLOOR. THE CEILING THICKNESS SHOULD BE A MINIMUM OF 8 INCHES AND DESIGNATED FOR H-20 LOADING WITH A 30 INCH DIAMETER FRAME AND COVER.

VALVE MANHOLES SHOULD MEET THE DESIGN REQUIREMENTS OF SANITARY MANHOLES.

OPENINGS FOR PIPES AND OTHER APPURTENANCES SHALL BE CAST OR CORED BY THE MANUFACTURER AND FURNISHED WITH AN APPROVED PIPE TO MANHOLE JOINT.

5. PUMP CHAMBER COVER: THE PUMP CHAMBER COVER SHALL BE A STANDARD SINGLE ALUMINUM COVER WITH A LOADING CAPACITY OF 300 LBS/SF AND CLEAR OPENING SHALL BE 38" x 48". HINGES SHALL BE STAINLESS STEEL WITH STAINLESS STEEL HARDWARE AND LOCKING MECHANISM. SIGN ON UNDERSIDE OF ACCESS DOOR TO READ; "WARNING, HAZARDOUS AREA, ENTER ONLY WITH PROPER EQUIPMENT".

6. UTILITIES: THIS WORK SHALL CONSIST OF PROVIDING ALL REQUIRED PUBLIC UTILITY SERVICES AND CONNECTIONS AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN. ELECTRICAL SERVICE SHALL BE PROVIDED, AS REQUIRED, TO RESULT IN A FULLY OPERABLE SYSTEM.

7. FIELD ACCEPTANCE TEST: AFTER INSTALLATION OF THE EQUIPMENT AND AFTER COMPLETION OF THE SERVICES OF THE MANUFACTURER'S REPRESENTATIVE, THE CONTRACTOR SHALL CONDUCT A FIELD ACCEPTANCE TEST AS DIRECTED BY THE ENGINEER. FOUR (4) COPIES OF INSTALLATION AND OPERATION MANUALS FOR ALL ELECTRICAL AND MECHANICAL COMPONENTS SHALL BE PROVIDED.

ALL FINAL ADJUSTMENTS NECESSARY TO PLACE THE EQUIPMENT IN SATISFACTORY ORDER SHALL BE MADE AT THE TIME OF THE ABOVE TEST.

ALL LABOR AND MATERIALS NECESSARY FOR THE TEST, INCLUDING WATER, SHALL BE FURNISHED BY THE CONTRACTOR.

AFTER INSTALLATION, ALL PIPING SHALL BE TESTED FOR TIGHTNESS IN AN APPROVED MANNER. SHOULD LEAKS BE FOUND, FAULTY JOINTS SHALL BE REPAIRED, EVEN TO THE EXTENT OF DISASSEMBLY AND REMAKING THE JOINT. ALL DEFECTIVE PIPES AND FITTINGS SHALL BE REMOVED AND REPLACED IN A MANNER SATISFACTORY TO THE ENGINEER.

8. GUARANTEE: THE PUMP STATION SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE BY THE ENGINEER

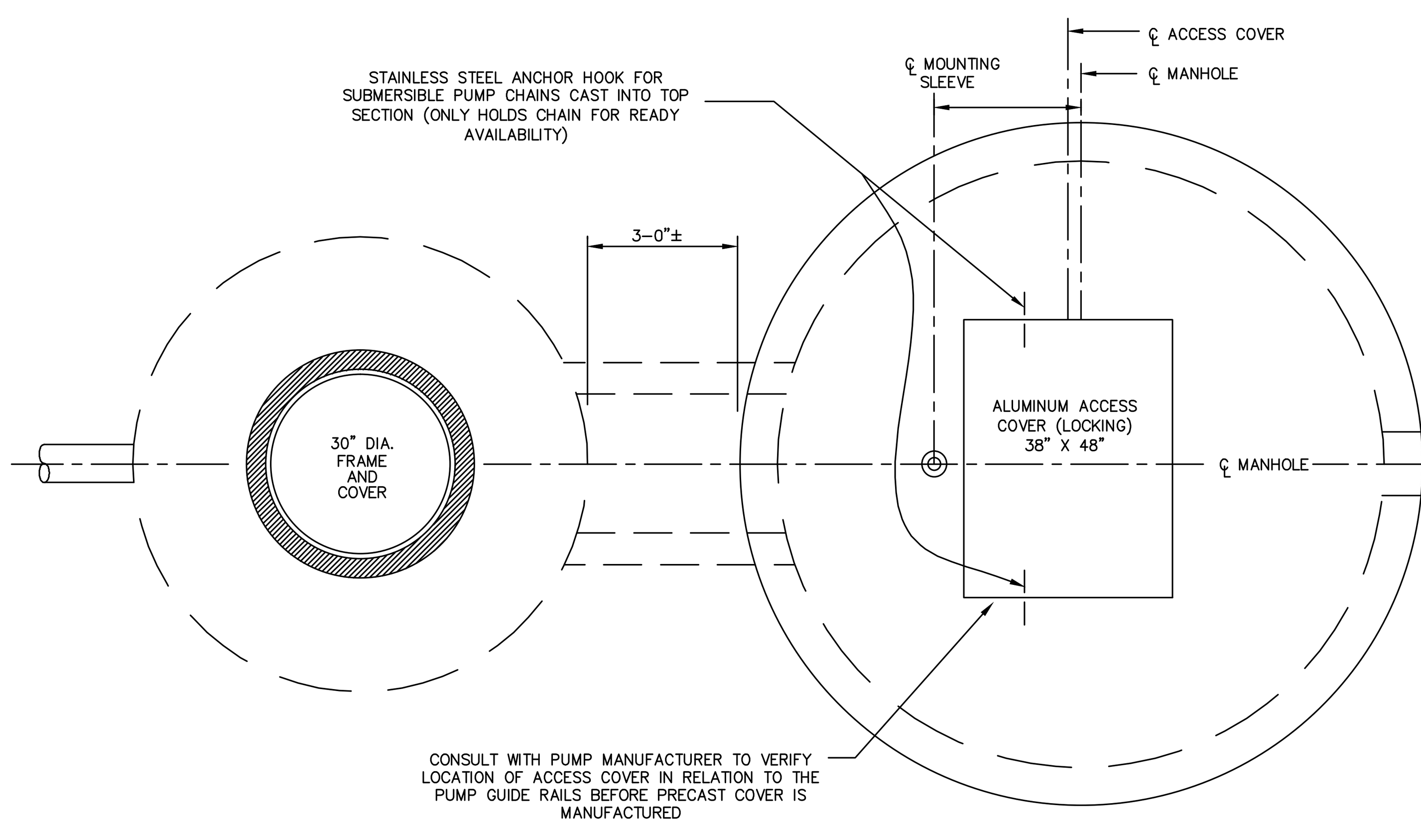
9. FLOOD ELEVATION: THE NEAREST FEDERAL EMERGENCY MANAGEMENT AGENCY MAPPED SPECIAL FLOOD HAZARD AREA ZONE AE IS 250' AWAY FROM THIS SITE WITH A DETERMINED ELEVATION OF 267.0 (NAVD88)(DESIGN ELEVATION IS ON NGVD29).

10. ELECTRICAL SYSTEM: ELECTRICAL SYSTEMS AND COMPONENTS INCLUDING MOTORS, LIGHTS, CABLE, CONDUITS SWITCH BOXES, AND CONTROL CIRCUITS IN ENCLOSED OR PARTIALLY ENCLOSED SPACES WHERE FLAMMABLE MIXTURES OCCASIONALLY MAY BE PRESENT, INCLUDING RAW SEWAGE WET WELLS, SHALL BE CERTIFIED BY THEIR MANUFACTURER AS:

[A] COMPLYING WITH THE NEC REQUIREMENTS ADOPTED BY REFERENCE IN THE STATE BUILDING CODE PURSUANT TO RSA 155-A:A:1,IV, FOR CLASS 1, DIVISION 1 LOCATIONS; OR

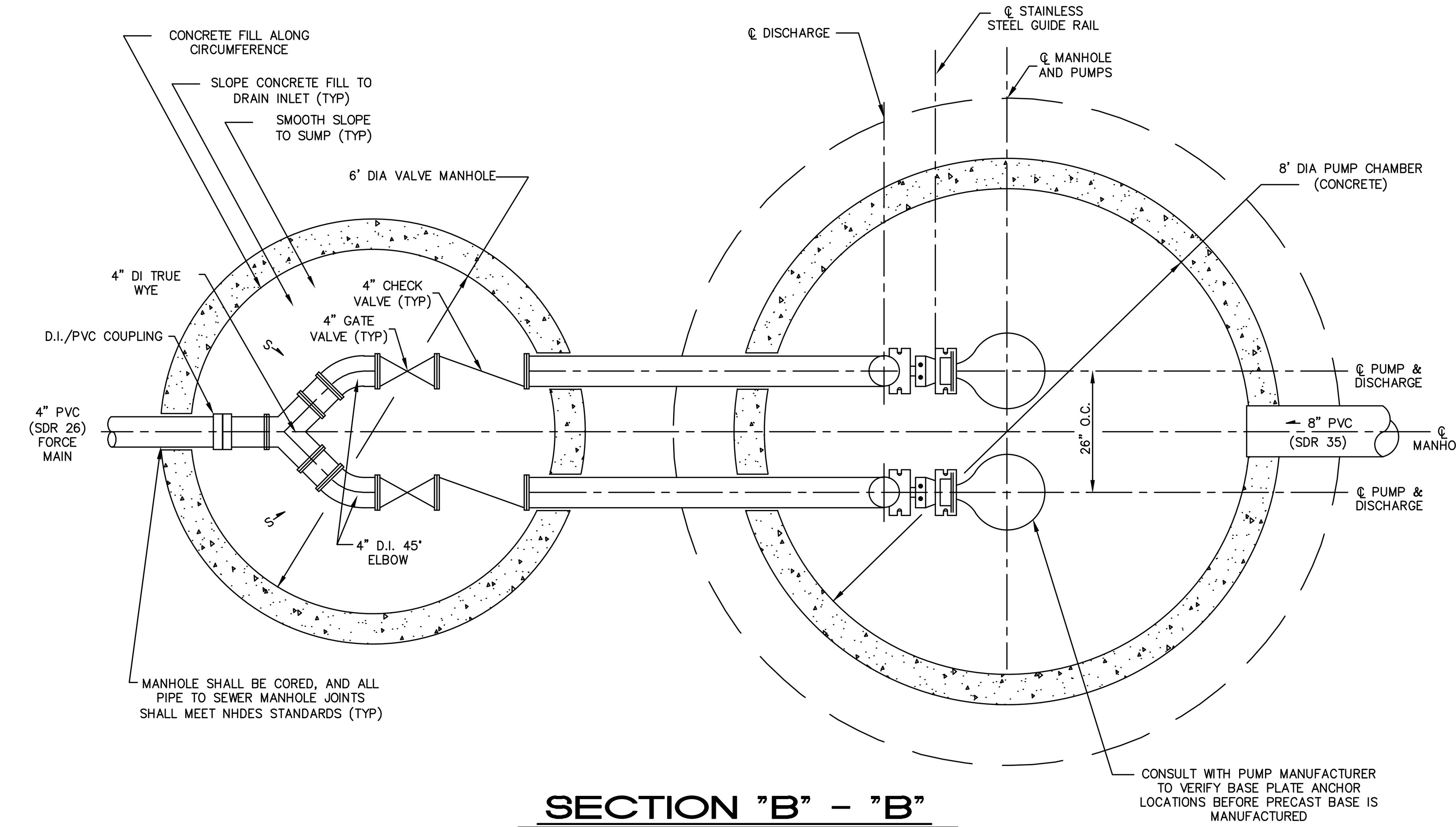
[B] BEING RATED FOR CLASS 1 DIVISION 2 REQUIREMENTS WHERE MECHANICAL VENTILATION IS PROVIDED IN ACCORDANCE WITH THE NFPA AS ADOPTED IN THE STATE FIRE CODE IN SAF-C 6000.

11. EMERGENCY GENERATOR: AN EMERGENCY GENERATOR MEETING THE REQUIREMENTS OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES Env-Wq 705.11 SHALL BE PROVIDED.



SECTION "A" - "A"

NOT TO SCALE

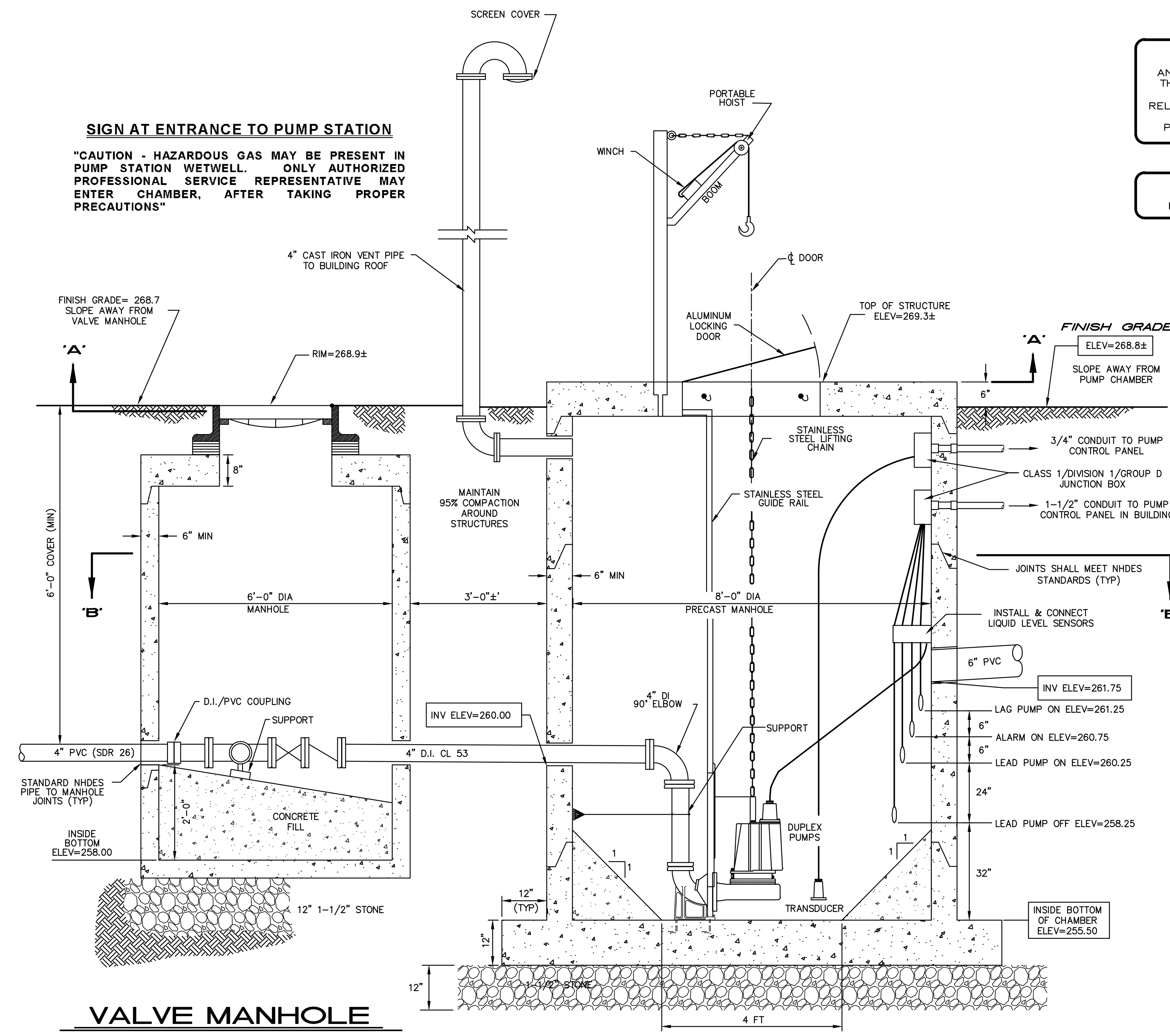


SECTION "B" - "B"

NOT TO SCALE

SIGN AT ENTRANCE TO PUMP STATION

"CAUTION - HAZARDOUS GAS MAY BE PRESENT IN PUMP STATION WETWELL. ONLY AUTHORIZED PROFESSIONAL SERVICE REPRESENTATIVE MAY ENTER CHAMBER, AFTER TAKING PROPER PRECAUTIONS"



VALVE MANHOLE

NOT TO SCALE

PUMP CHAMBER

NOT TO SCALE

NOTE

AN ADDITIONAL JUNCTION BOX WITHIN THE PUMP CHAMBER IS NEEDED FOR THE FLOAT'S INTRINSICALLY SAFE RELAYS. A 3/4" PVC CONDUIT TO THE PUMP CONTROL PANEL SHALL BE PROVIDED FOR THIS JUNCTION BOX.

NOTE

MANHOLE STEPS ARE PROHIBITED.

VALVE MANHOLE & PUMP CHAMBER DETAIL

No.	DATE	REVISION	BY
		FOR REVIEW NOT FOR CONSTRUCTION	

DETAIL SHEET - SEWER PUMP STATION

(MAP D-2, LOT 13-6)

PROPOSED PLANT No. 3 BUILDING

594 ELM STREET

MILFORD. NEW HAMPSHIRE

PREPARED FOR/RECORD OWNER:

HITCHINER MANUFACTURING COMPANY, INC.

594 ELM STREET MILFORD, NEW HAMPSHIRE 03055 (603) 673-1100

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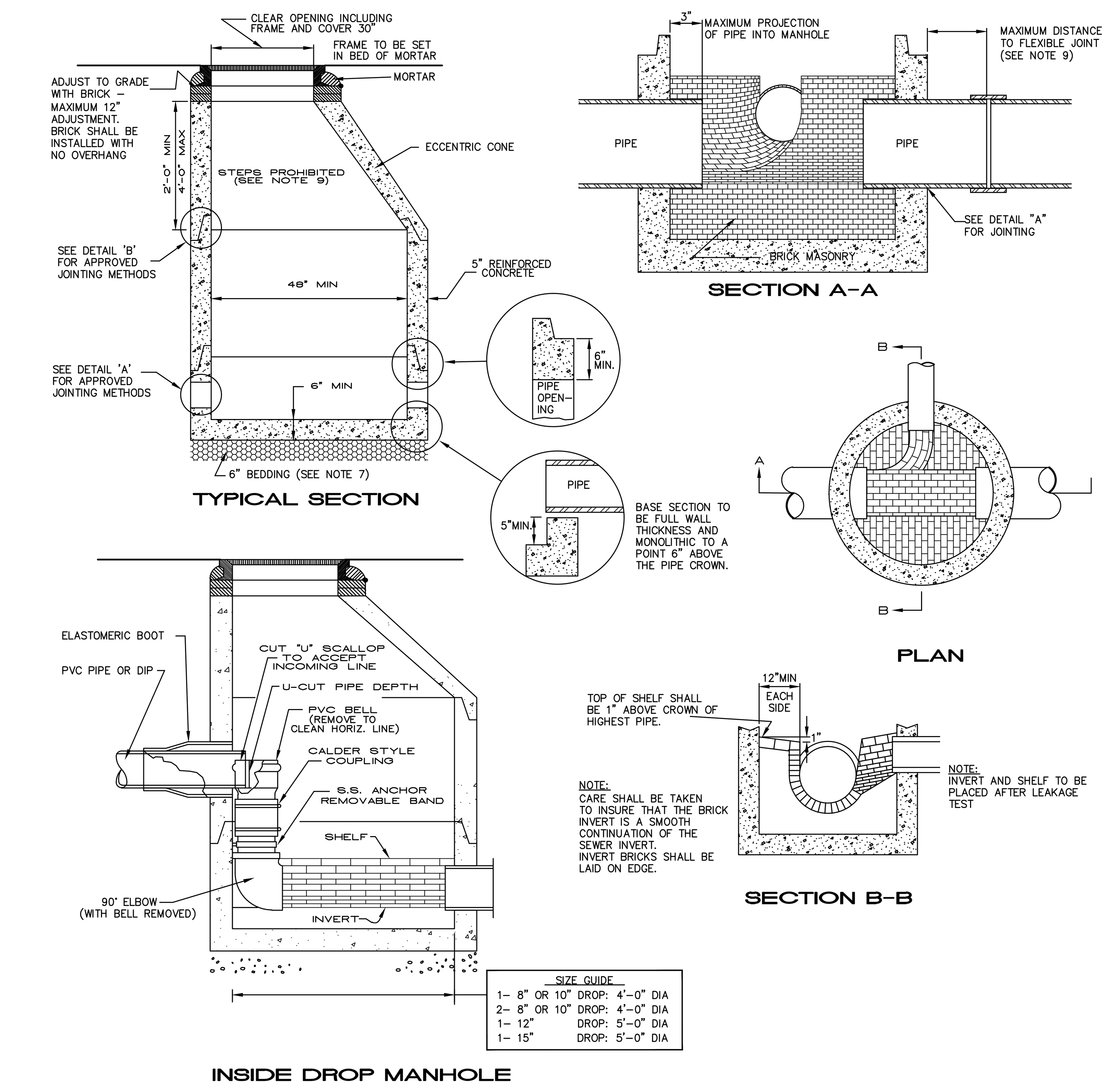


TYPICAL SECTION

SECTION A-A

PLAN

SECTION B-B

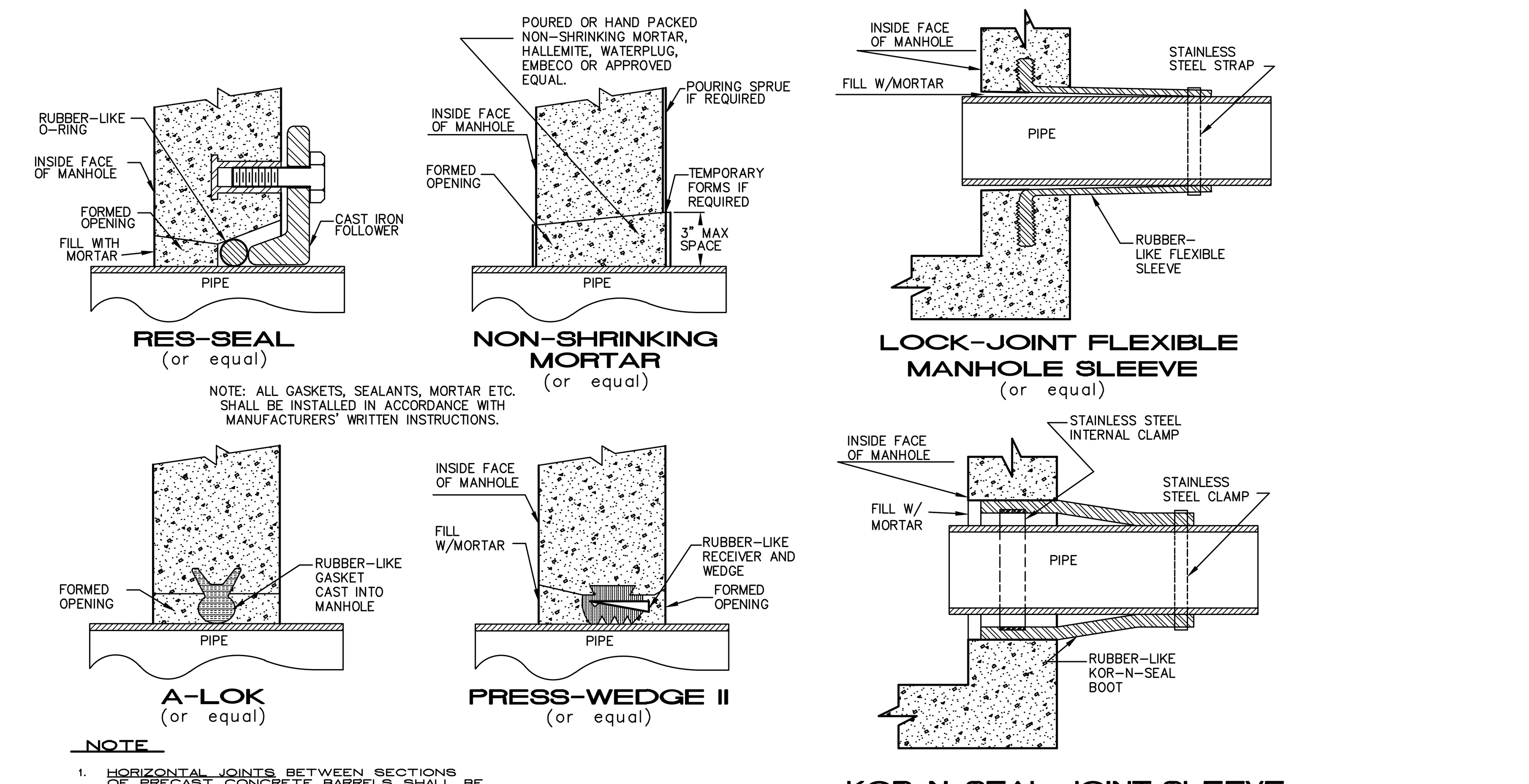
SIZE GUIDE	
1- 8" OR 10" DROP:	4'-0" DIA
2- 8" OR 10" DROP:	4'-0" DIA
1- 12" DROP:	5'-0" DIA
1- 15" DROP:	5'-0" DIA

INSIDE DROP MANHOLE

NOTES

1. IT IS INTENDED THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH AND LEAKPROOF QUALITIES CONSIDERED NECESSARY FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS, SHALL BE AS SHOWN ON THE DRAWING. MANHOLES MAY BE AN ASSEMBLY OF PRECAST SECTIONS, WITH STEEL REINFORCEMENT, WITH ADEQUATE JOINTING, OR CONCRETE CAST MONOLITHICALLY IN PLACE WITH REINFORCEMENT. IN ANY APPROVED MANHOLE, THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND LOADS OF 8 TONS (H-20 LOADING) WITHOUT FAILURE AND PREVENT LEAKAGE IN EXCESS OF ONE GALLON PER DAY PER VERTICAL FOOT OF MANHOLE, CONTINUOUSLY FOR THE LIFE OF THE STRUCTURE A PERIOD GENERALLY IN EXCESS OF 25 YEARS IS TO BE UNDERSTOOD IN BOTH CASES.
2. BARRELS AND CONE SECTIONS SHALL BE PRECAST REINFORCED CONCRETE, OR POURED IN PLACE REINFORCED CONCRETE.
3. PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C 478.
4. INVERTS AND SHELVES MANHOLES SHALL HAVE A BRICK PAVED OR PRECAST CONCRETE SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF THE PIPE AND FLOW. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE. CROWN AND SLOPE TO DRAIN TOWARD THE FLOW THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY OR PRECAST CONCRETE.
5. FRAMES AND COVERS MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30 INCH CLEAR OPENING. A 3 INCH (MINIMUM HEIGHT) LETTER "S" FOR SEWER OR "D" FOR DRAINS SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.
6. BEDDING SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33 SIZE # 67
   100% PASSING 1 INCH SCREEN
   90-100% PASSING 3/4 INCH SCREEN
   20-55% PASSING 3/8 INCH SCREEN
   0-10% PASSING #4 SIEVE
   0-5% PASSING #8 SIEVE
   WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE. SCREENED GRAVEL OR CRUSHED STONE 1-1/2 TO 1/2 INCH SHALL BE USED.
7. FLEXIBLE JOINT A FLEXIBLE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES:
   RCP & CI PIPE (ALL SIZES): 48"
8. SHALLOW MANHOLE IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED. IT MUST HAVE AN ECCENTRIC ENTRANCE OPENING AND BE CAPABLE OF SUPPORTING H-20 LOADING.
9. MANHOLE STEPS ARE PROHIBITED.
10. HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF AN OVERLAPPING TYPE, SEALED FOR WATER-TIGHTNESS USING A DOUBLE ROW OF AN ELASTOMERIC OR MASTIC-LIKE SEALANTS.
11. PIPE TO MANHOLE JOINTS SHALL BE ONLY AS APPROVED BY THE ENGINEER AND IN GENERAL, WILL DEPEND FOR WATERTIGHTNESS UPON EITHER AN APPROVED NON-SHRINKING MORTAR OR ELASTOMERIC SEALANT.
12. SEPARATE CONSTRUCTION SPECIFICATIONS ARE ATTACHED OR INCLUDED IN THE CONTRACT DOCUMENTS. THESE STANDARD MANHOLE DRAWINGS ARE NOT COMPLETE WITHOUT THESE SPECIFICATIONS.

STANDARD MANHOLE - PART A



RES-SEAL (or equal)

NON-SHRINKING MORTAR (or equal)

LOCK-JOINT FLEXIBLE MANHOLE SLEEVE (or equal)

NOTE: ALL GASKETS, SEALANTS, MORTAR ETC. SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS.

A-LOK (or equal)

PRESS-WEDGE II (or equal)

KOR-N-SEAL JOINT SLEEVE (or equal)

NOTE

1. HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF A TYPE APPROVED BY THE ENGINEER, WHICH TYPE SHALL BE, IN GENERAL, DEPEND FOR WATERTIGHTNESS UPON AN ELASTOMERIC GASKET.

DETAIL A

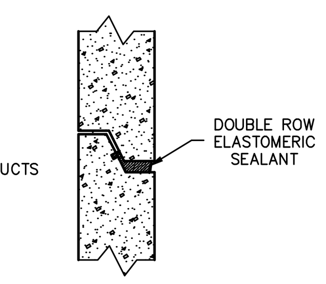
NOTE

1. PIPE TO MANHOLE JOINTS SHALL BE ONLY AS APPROVED BY THE ENGINEER AND, IN GENERAL, WILL DEPEND FOR WATERTIGHTNESS UPON EITHER AN APPROVED NON-SHRINKING MORTAR OR ELASTOMERIC SEALANT.

NOTE:
ALL GASKETS AND SEALANTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS.

STATE OF NEW HAMPSHIRE APPROVED PRODUCTS

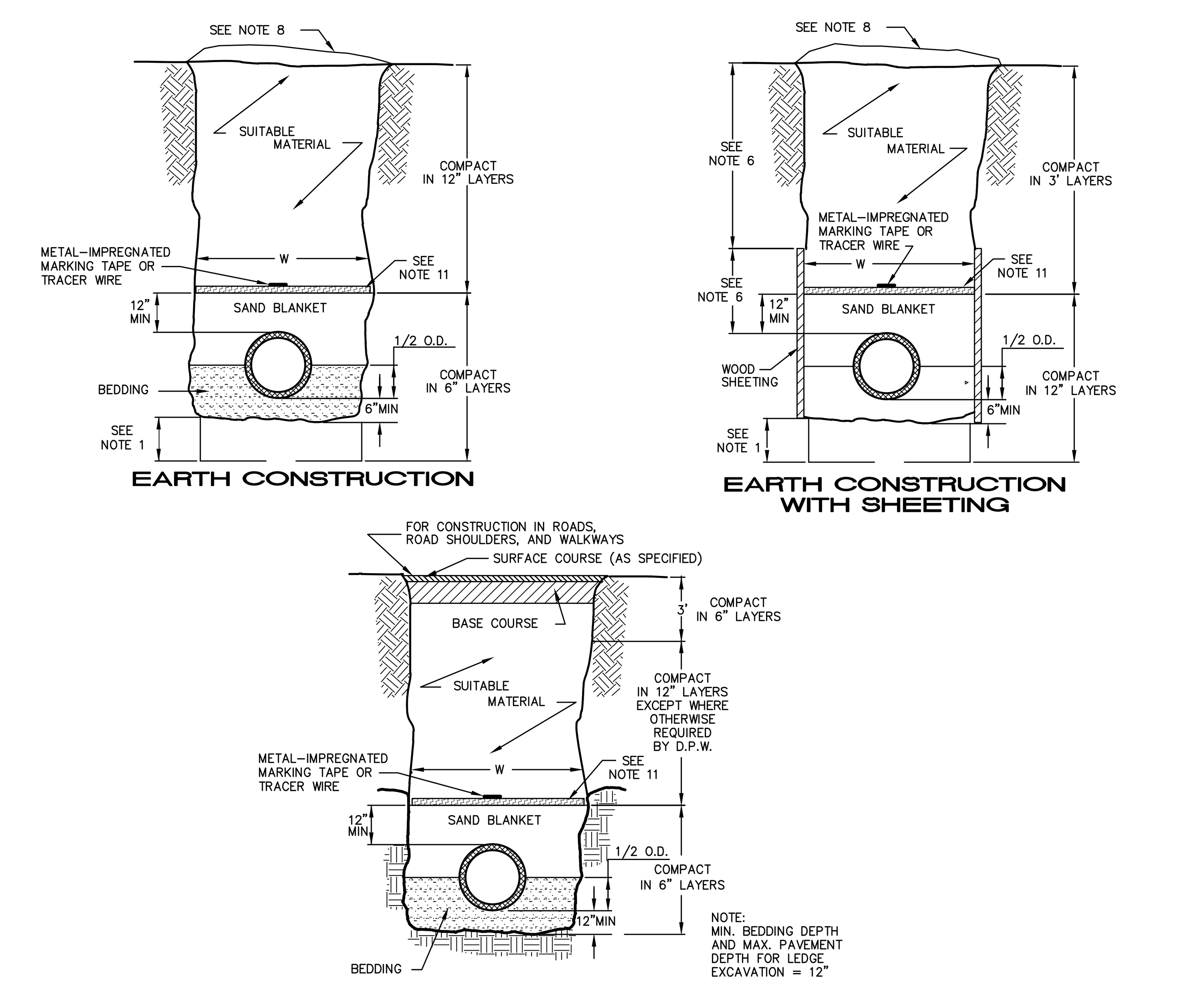
[A] SIKAFLEX-12-SL
[B] SONNEBORN BUILDING PRODUCTS SONOLASTIC SL-1



ELASTOMERIC SEALANT

DETAIL B

STANDARD MANHOLE - PART B



EARTH CONSTRUCTION

EARTH CONSTRUCTION WITH SHEETING

LEDGE CONSTRUCTION

NOTES:

1. ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE, REFILL WITH BEDDING MATERIAL. (SEE ALSO NOTE 7)
2. BEDDING SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33. STONE SIZE #67
   100% PASSING 1 INCH SCREEN
   90-100% PASSING 3/4 INCH SCREEN
   20-50% PASSING 3/8 INCH SCREEN
   0-10% PASSING #4 SIEVE
   0-5% PASSING #8 SIEVE
   WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE. GRADED SCREENED GRAVEL OR CRUSHED STONE 1/2 TO 1-1/2 INCH SHALL BE USED.
3. SAND BLANKET CLEAN SAND, FREE FROM ORGANIC MATTER, SO GRADED THAT 100% PASSES A 1/2 INCH SIEVE AND NOT MORE THAN 15% WILL PASS A #200 SIEVE. BLANKET MAY BE OMITTED FOR DUCTILE IRON AND REINFORCED CONCRETE PIPE PROVIDED THAT NO STONE LARGER THAN 2" IS IN CONTACT WITH THE PIPE.
4. SUITABLE MATERIAL IN ROADS, ROAD SHOULDERS, WALK WAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOPSOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX INCHES, IN LARGEST DIMENSION OR ANY MATERIAL WHICH AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED IN CROSS COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP-SOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE SEWER FOR MAINTENANCE (AND POSSIBLY RECONSTRUCTION, WHEN NECESSARY) WILL BE PRESERVED.
5. BASE COURSE IF ORDERED BY THE ENGINEER SHALL MEET THE REQUIREMENTS OF DIVISION 300 OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUC- TION OF THE STATE OF N.H. DEPT. OF TRANSPORTATION.
6. WOOD SHEETING, IF REQUIRED, IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID-DIAMETER. IT SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE. WHERE THE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISH GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.
7. W = MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES, FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D.. W SHALL ALSO BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE.
8. FOR CROSS COUNTRY CONSTRUCTION, BACKFILL OR FILL SHALL BE MOUNDED TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
9. CONCRETE FOR ENCASEMENT SHALL CONFORM TO THE REQUIREMENTS FOR CLASS A (3000#) CONCRETE OF THE N.H. DEPT. OF TRANSPORTATION STANDARD SPECIFICATIONS AS FOLLOWS:
   CEMENT: 6.0 BAGS PER CUBIC YARD
   WATER: 5.75 GALLONS PER BAG OF CEMENT
   MAXIMUM AGGREGATE SIZE: 1 INCH
10. ALL SEWERS SHALL BE MARKED USING METAL-IMPREGNATED MARKING TAPE OR TRACER WIRE THAT CAN BE LOCATED USING METAL DETECTION EQUIPMENT.
11. INSTALL 2" RIGID INSULATION IF LESS THAN 6 FEET OF COVER OR WHERE SHOWN ON THE PLANS. INSULATION SHALL BE INSTALLED ABOVE THE SAND BLANKET AND EXTEND THE WIDTH OF THE TRENCH.

REV: 11/30/16

STANDARD TRENCH SECTION

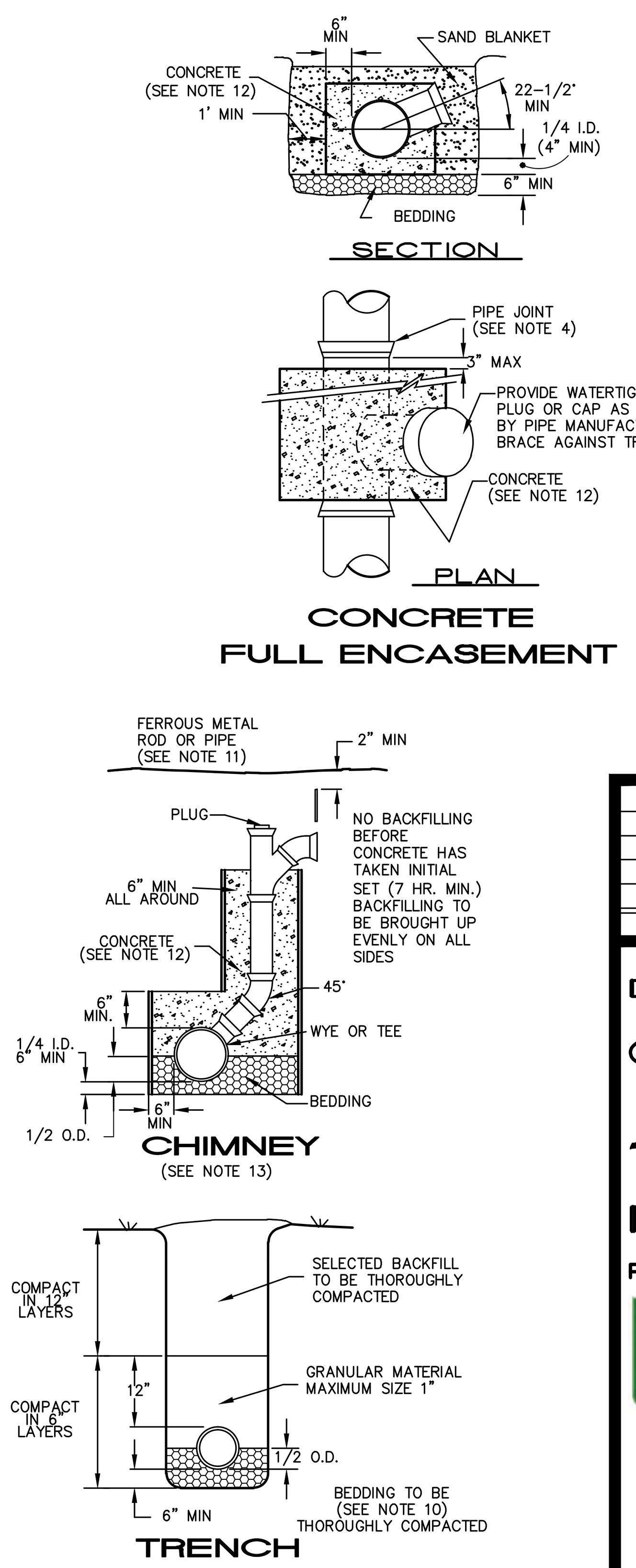
NOTES

1. MINIMUM SIZE PIPE FOR HOUSE SERVICE SHALL BE 4 INCHES.
2. PIPE AND JOINT MATERIALS
   A. PLASTIC SEWER PIPE
   1. PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034	PVC (SOLID WALL)*	8" THROUGH 15" (SDR 35)
F679	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F789	PVC (SOLID WALL)	4" THROUGH 18" (T-1 TO T-3)
F794	PVC (RIBBED WALL)	8" THROUGH 36"
D2680	ABS (COMPOSITES WALL)*	8" THROUGH 15"

   *PVC: POLY VINYL CHLORIDE
   *ABS: ACRYLONITRILE-BUTADIENE-STYRENE

   2. JOINTS SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212 AND SHALL BE PUSH-ON, BELL AND SPIGOT TYPE.
   ABS TRUSS PIPE AND FITTINGS SHALL CONFORM TO ASTM D-2680, POLYMER COMPOUNDING SHALL BE TO ASTM D-1788 (CLASS 322).
   JOINTS FOR ABS TRUSS PIPE SHALL BE CHEMICAL WELDED COUPLINGS TYPE SC IN ACCORDANCE WITH ASTM D-2680, FORMING A CHEMICAL WELDED JOINT.
   B. DUCTILE-IRON PIPE, FITTINGS AND JOINTS.
   1. DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE UNITED STATES OF AMERICA STANDARDS INSTITUTE:
   A21.50 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A-536 DUCTILE IRON CASTINGS.
   A21.51 DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL MOLDS OR SAND-LINED MOLDS FOR WATER OR OTHER LIQUIDS.
   2. JOINTS SHALL BE OF THE MECHANICAL OR PUSH-ON TYPE. JOINTS AND GASKETS SHALL CONFORM TO:
   A21.11 RUBBER GASKETS JOINTS FOR CAST IRON PRESSURE PIPE AND FITTINGS.
3. DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
4. JOINTS SHALL BE BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATERTIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER "Y" OR AT THE FOUNDATION WALL, APPROPRIATE ADAPTERS SHALL BE USED.
5. "T" AND "Y" WHERE A "T" OR "Y" IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE IN THE SEWER, FOLLOWING MANUFACTURERS INSTRUCTIONS (USING A BOLTED, CLAMPED OR EPOXY CEMENTED SADDLE TAPPED INTO A SMOOTHLY DRILLED OR SAWN OPENING. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH (OR OTHER SUCH MATERIAL) AROUND THE JOINT, OR APPLYING MORTAR TO HOLD THE CONNECTION AND ANY OTHER SIMILAR CRUDE PRACTICES OR INEPT OR HASTY IMPROVISATIONS WILL NOT BE PERMITTED. THE CONNECTION SHALL BE CONCRETE ENCASED, AS SHOWN IN THE DETAIL, UP TO AND INCLUDING 15" DIAMETER.*
6. HOUSE SEWER INSTALLATION THE PIPE SHALL BE HANDLED, PLACED AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 4 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL, AS SPECIFIED IN NOTE 10, BEDDING AND RE-FILL FOR A DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH APPROPRIATE MECHANICAL DEVICES.
   THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE HOUSE FOUNDATION AT A GRADE OF NOT LESS THAN 1/4 INCH PER FOOT. PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.
7. TESTING THE COMPLETED HOUSE SEWER SHALL BE SUBJECTED TO A LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS (PRIOR TO BACKFILLING):
   A. AN OBSERVATION "T" SHALL BE INSTALLED AS SHOWN. WHEN READY TESTING , AN INFLATABLE BLADDER OR PLUG SHALL BE INSERTED JUST UPSTREAM FROM THE OPENING IN THE "T". AFTER INFLATION, WATER SHALL BE INTRODUCED INTO THE SYSTEM ABOVE THE PLUG TO A HEIGHT OF 5 FEET ABOVE THE LEVEL OF THE PLUG.
   B. THE PIPE SHALL BE LEFT EXPOSED AND LIBERALLY HOSED WITH WATER TO SIMULATE, AS NEARLY AS POSSIBLE, WET TRENCH CONDITIONS. IF THE TRENCH IS WET, THE GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. INSPECT-IONS FOR LEAKS SHALL BE MADE THROUGH THE CLEANOUT WITH A FLASHLIGHT.
   C. DRY FLUORESCENT DYE SHALL BE SPRINKLED INTO THE TRENCH OVER THE PIPE. IF THE TRENCH IS DRY, THE PIPE SHALL BE LIBERALLY HOSED WITH WATER. IF THE TRENCH IS WET, GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. OBSERVATION FOR LEAKS SHALL BE MADE IN THE FIRST MANHOLE DOWNSTREAM. LEAKAGE OBSERVED IN ANY OF THE ABOVE, ALTER-NATE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG UP, IF NECESSARY, AND RELAID SO AS TO ASSURE WATERTIGHTNESS.
8. ILLEGAL CONNECTION NOTHING BUT SANITARY WASTE FLOW FROM THE HOUSE TOILETS, SINKS, LAUNDRY ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS, SUMP PUMPS OR ANY OTHER SIMILAR CONNECTION CARRYING RAIN WATER, DRAINAGE OR GROUND WATER SHALL NOT BE PERMITTED.
9. HOUSE WATER SERVICE SHALL NOT BE LAID IN THE SAME TRENCH AS THE SEWER SERVICE.
10. BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL AND MEETING ASTM C33-67.
    100%-PASSING 1 INCH SCREEN 90-100%-PASSING 3/4 INCH SCREEN
    20-55%-PASSING 3/8 INCH SCREEN 0-10%-PASSING #4 SIEVE
    0-5%-PASSING #8 SIEVE
    WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, SCREENED GRAVEL OR CRUSHED STONE (1-1/2 TO 1/2 INCH) SHALL BE USED.
11. LOCATION THE LOCATION OF THE "T" OR "Y" SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS METAL ROD OR PIPE SHALL BE PLACED OVER THE "T" OR "Y", AS DESCRIBED IN THE TYPICAL "CHIMNEY" DETAIL, TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPEFINDER.
12. CONCRETE CONCRETE SHALL CONFORM TO THE REQUIREMENTS FOR CLASS A (3000 PSI) CONCRETE OF THE N.H. DEPT. OF TRANSPORTATION STANDARD SPECIFICATIONS AS FOLLOWS:
    CEMENT: 6.0 BAGS/C.Y. WATER: 5.75 GALS./BAG CEMENT
    AGGREGATE: 1 INCH MAX.
13. CHIMNEYS IF VERTICAL DROP INTO THE SEWER IS GREATER THAN 4 FEET, A CHIMNEY SHALL BE CONSTRUCTED FOR THE HOUSE CONNECTION. CHIMNEY INSTALLATION AS RECOMMENDED BY THE PIPE MANUFACTURER MAY BE USED IF APPROVED BY THE ENGINEER.



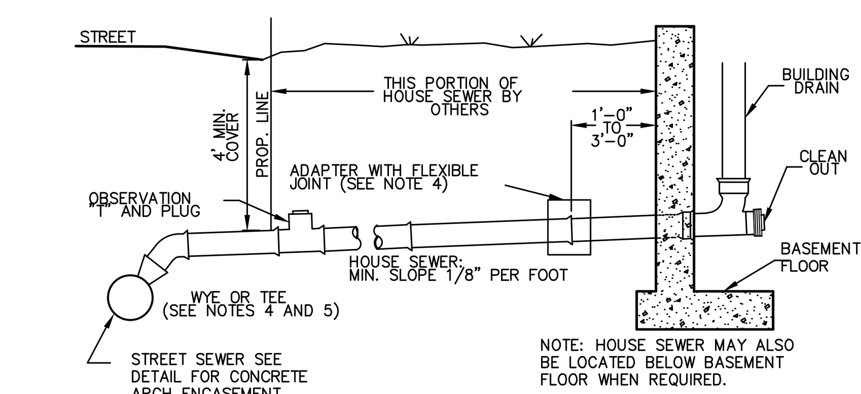
SECTION

PLAN

CONCRETE FULL ENCASEMENT

CHIMNEY (SEE NOTE 13)

TRENCH CROSS-SECTION



SEWER AND HOUSE SEWER

HOUSE SEWER DETAILS

FOR REVIEW
NOT FOR CONSTRUCTION

No.	DATE	REVISION	BY

DETAIL SHEET - SEWER

(MAP D-2, LOT 13-6)

PROPOSED PLANT No. 3 BUILDING

594 ELM STREET

MILFORD, NEW HAMPSHIRE

PREPARED FOR/RECORD OWNER:

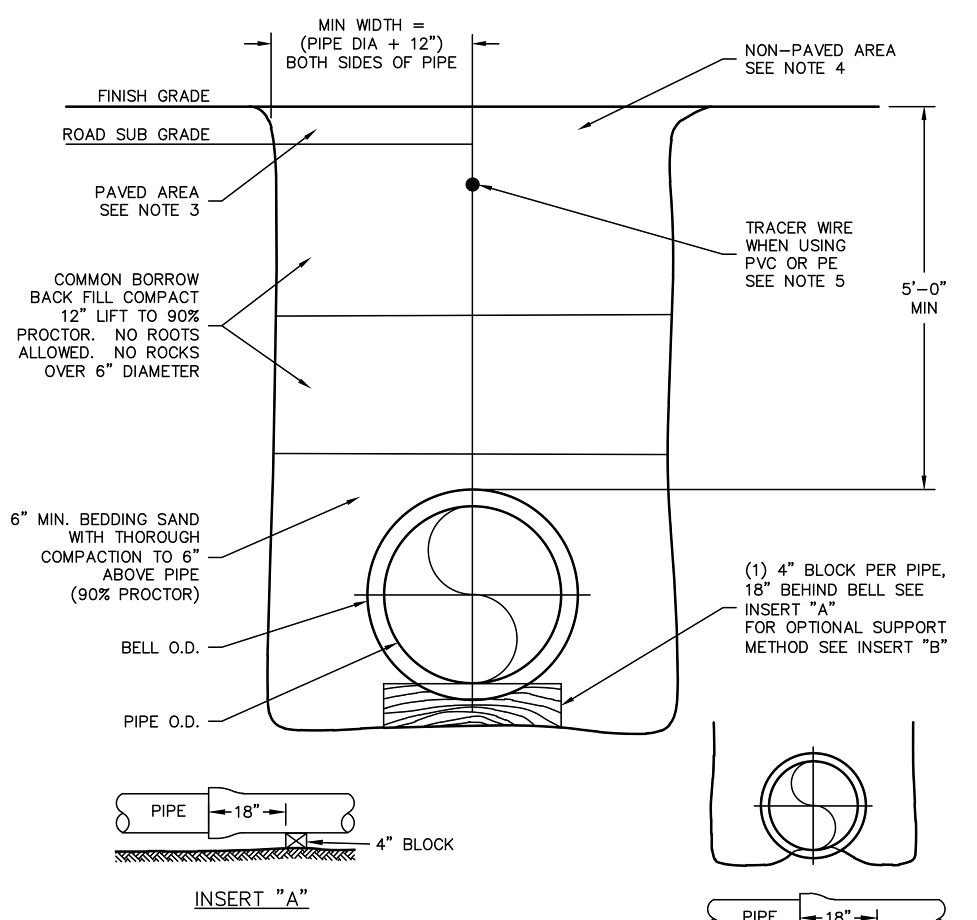
HITCHINER MANUFACTURING COMPANY, INC.
594 ELM STREET MILFORD, NEW HAMPSHIRE 03055 (603) 673-1100

SCALE AS SHOWN

11 APRIL 2018

HSI Hayner/Swanson, Inc.
Civil Engineers/Land Surveyors
Three Congress Street Nashua, New Hampshire 03062-3301
Tel (603) 883-2057 Fax (603) 883-5057
www.hayner-swanson.com

FIELD BOOK: 1219	DRAWING NAME: 1109-MM_DET1	1109-MM (File Number)	16 OF 20 (Sheet)
DRAWING LOCATION: R:\1109\DWG\1109-2018 MM			



INSERT "A"

PIPE 18"

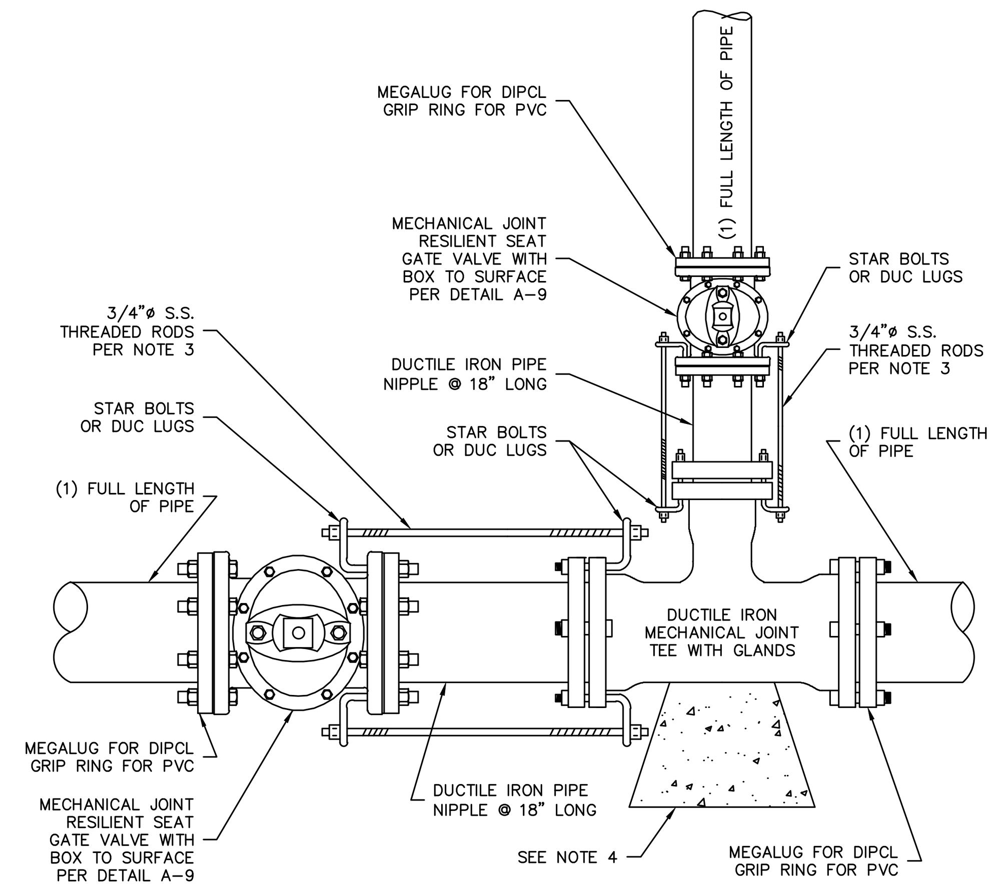
INSERT "B"

OPTIONAL ONLY WHEN SOIL CONDITIONS ARE EQUAL TO 6" MIN. BEDDING SAND WITH THOROUGH COMPACTION

NOTES:
1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO THE TOWN OF MILFORD PUBLIC WORKS TECHNICAL SPECIFICATIONS.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.
3. REQUIREMENTS FOR SUBBASE AND BASE MATERIAL TYPE ARE TO BE IN ACCORDANCE WITH LOCAL AUTHORITY HAVING LOCAL JURISDICTION IN PAVED AREAS.
4. REQUIREMENTS FOR GRAVEL, LOAM AND/OR SEED ARE TO BE IN ACCORDANCE WITH LOCAL AUTHORITY HAVING LOCAL JURISDICTION IN NON-PAVED AREAS.
5. 10 GAUGE TRACER WIRE AS MANUFACTURED BY BMS, DIVISION OF ALBESTAR CORP., AVON, MA OR EQUIVALENT.

TYPICAL TRENCH DETAIL

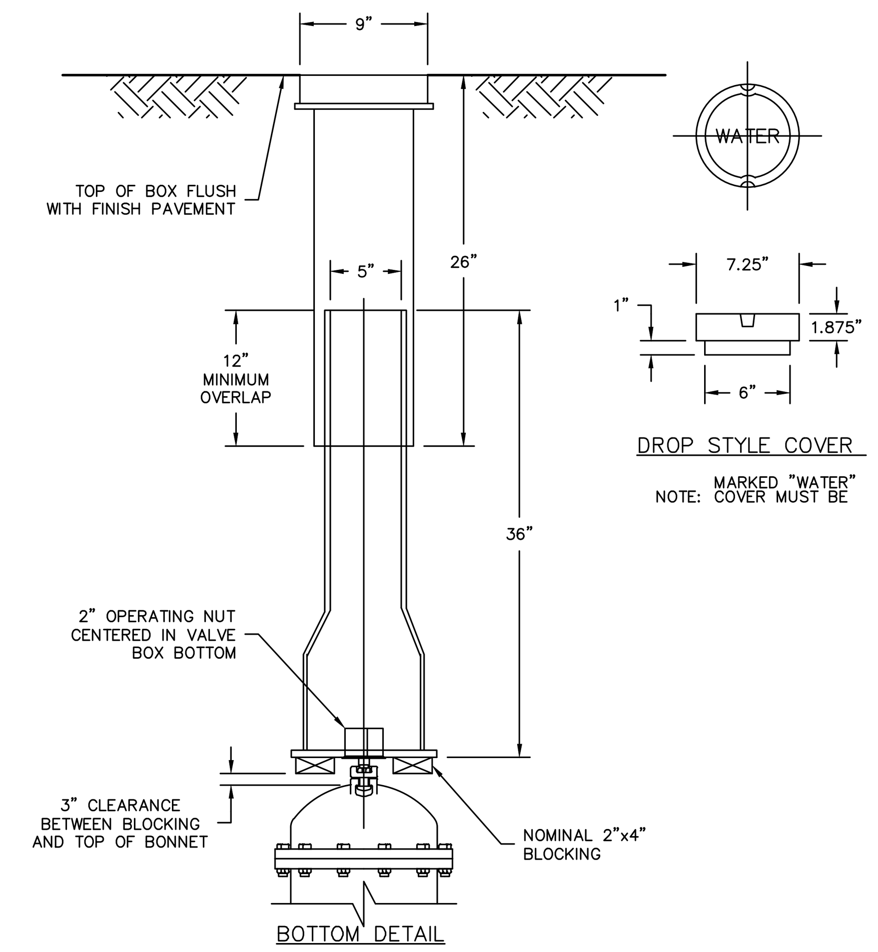
NOT TO SCALE



NOTES:
1. ALL MATERIAL AND INSTALLATION PROCEDURES WILL CONFORM TO THE TOWN OF MILFORD PUBLIC WORKS TECHNICAL SPECIFICATIONS.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTHS OF 5' FROM TOP OF PIPE TO FINISH GRADE.
3. 3/4"ø S.S. RODS SHALL BE USED IN CONJUNCTION WITH REQUIRED S.S. NUTS. RODS ARE TO BE ATTACHED TO FITTINGS WITH EITHER STAR BOLTS OR DUC LUGS.
10" FITTING OR SMALLER = (2) 3/4"ø S.S. RODS & ASSOC. HARDWARE.
12" FITTING OR LARGER = (4) 3/4"ø S.S. RODS & ASSOC. HARDWARE.
4. MIN 3'x3'x3' PRE CAST CONCRETE THRUST BLOCK MAY BE USED WITH THE TOWN OF MILFORD PUBLIC WORKS APPROVAL OR CONCRETE THRUST BLOCK POURED AGAINST UNDISTURBED EARTH – SIZE TO BE BASED ON SIZE OF FITTING AND PRESSURE IN WATER MAIN. SEE DETAIL A-7.

TYPICAL TEE INSTALLATION

NOT TO SCALE



NOTES:
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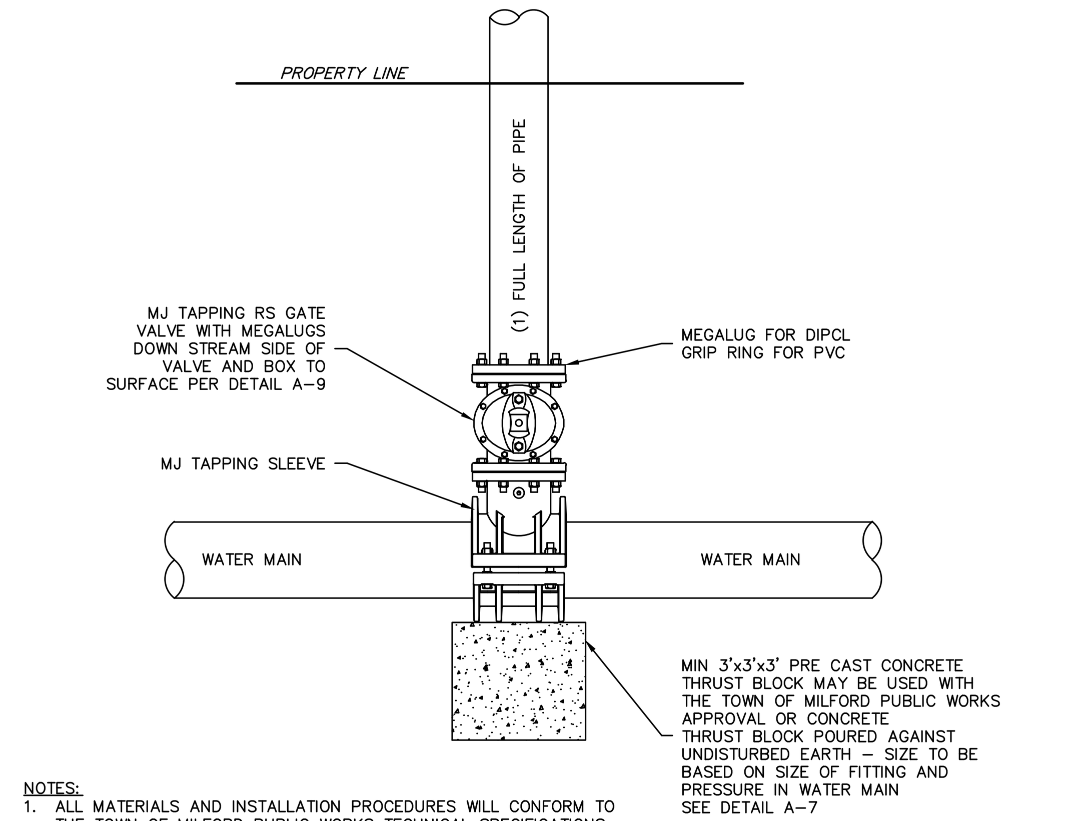
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.

TYPICAL VALVE BOX DETAIL

NOT TO SCALE



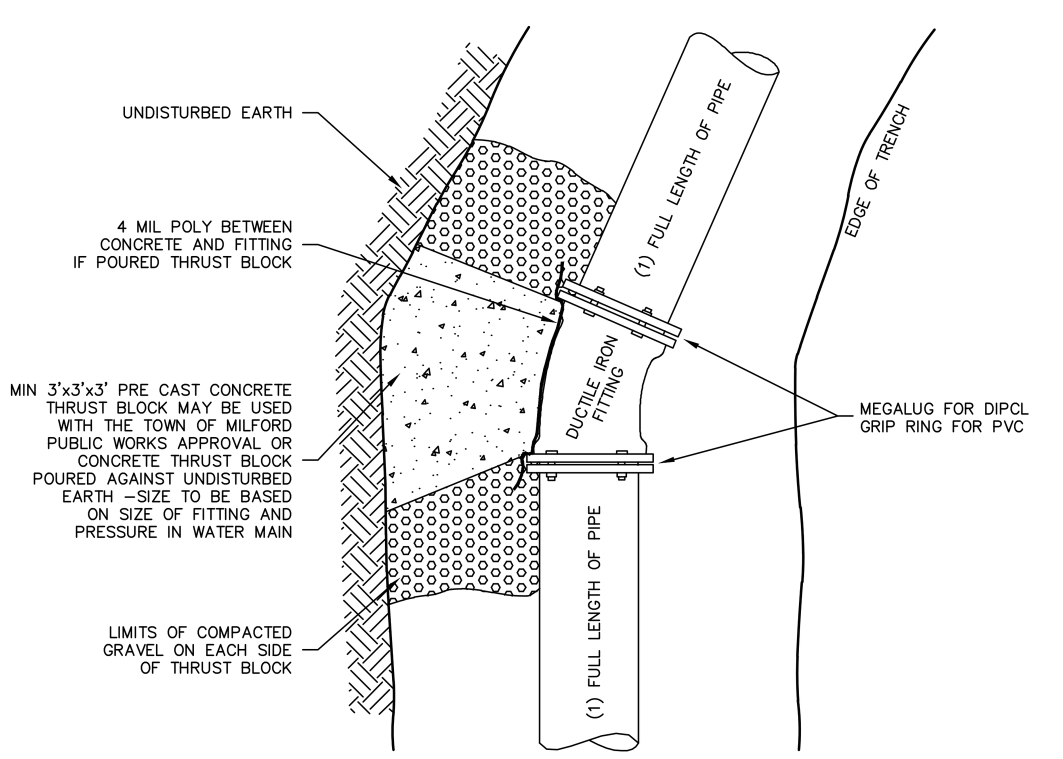
NOTES:
1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO THE TOWN OF MILFORD PUBLIC WORKS TECHNICAL SPECIFICATIONS.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.
3. SEE DETAIL A-22 FOR CROSS-SECTIONAL VIEW.

TYPICAL LARGE SERVICE AND/OR TAPPING SLEEVE DETAIL

NOT TO SCALE

WATER NOTES

1. REFERENCE TOWN OF MILFORD PUBLIC WORKS SPECIFICATIONS FOR INSTALLATION OF ALL WATER LINES.
2. ALL SPRINKLER AND DOMESTIC LEADS TO BUILDING SHALL END 5'-0" OUTSIDE THE FACE OF BUILDING WALL, UNLESS NOTED, AND SHALL BE PROVIDED WITH A TEMPORARY PLUG AT END (FOR OTHERS TO REMOVE AND EXTEND AS NECESSARY).
3. THRUST BLOCKS AND MEGALUG RESTRAINTS SHALL BE PROVIDED AT ALL HORIZONTAL BENDS, TEES, AND FIRE HYDRANTS. SEE DETAIL.
4. MINIMUM COVER ON ALL WATER LINES IS 5'-6".
5. CONTRACTOR SHALL MAINTAIN A 5'-0" HORIZONTAL (UNLESS OTHERWISE NOTED) AND 12" VERTICAL SEPARATION BETWEEN WATER SERVICE AND UTILITIES OTHER THAN SANITARY SEWER.
6. INSPECTIONS ON WATER SERVICE INSTALLATION DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE SITE CONTRACTOR AND SHALL BE COORDINATED WITH THE TOWN OF MILFORD PUBLIC WORKS, AND ALL INSPECTION FEES SHALL BE PAID BY THE CONTRACTOR.
7. CONTRACTOR SHALL HAVE BACTERIOLOGICAL AND PRESSURE TESTING PERFORMED. CONTRACTOR SHALL GIVE TOWN OF MILFORD PUBLIC WORKS A COPY OF RESULTS. TOWN OF MILFORD PUBLIC WORKS SHALL BE ON-SITE TO WITNESS TEST.
8. ALL PIPE, VALVES, MISCELLANEOUS MATERIALS AND INSTALLATION SHALL CONFORM WITH TOWN OF MILFORD PUBLIC WORKS SPECIFICATIONS.
9. ALL FIRE HYDRANTS, VALVES, FITTINGS, PIPES, ETC. SHALL BE IN ACCORDANCE WITH TOWN OF MILFORD PUBLIC WORKS REQUIREMENTS.
10. METALLIC TAPE OR DETECTOR WIRE SHALL BE INSTALLED IN THE SAME TRENCH WITH ALL NONMETALLIC PIPE SUCH THAT THE PIPE MAY BE LOCATED WITH ELECTRONIC LOCATING EQUIPMENT. DETECTOR WIRE OR METALLIC TAPE SHALL BE INSTALLED APPROXIMATELY 12" TO 18" BELOW GRADE DIRECTLY ABOVE THE TOP OF THE PIPE. DETECTOR WIRE SHALL BE 14 – GAUGE SOLID COPPER, SIMPLEX BW3001, OR EQUAL. METALLIC TAPE SHALL BE 2" MINIMUM METALIZED TAPE, GRIFFOLYN COMPANY, INC. TERRATAPE OR EQUAL.
11. CONTRACTOR SHALL ENSURE ALL WATER VALVES ARE IN A FULLY-OPEN POSITION UPON COMPLETION OF PROJECT.
12. CONTRACTOR SHALL COORDINATE ALL WATER INTERRUPTIONS WITH THE TOWN OF MILFORD PUBLIC WORKS AND AFFECTED PROPERTY OWNERS



NOTES:
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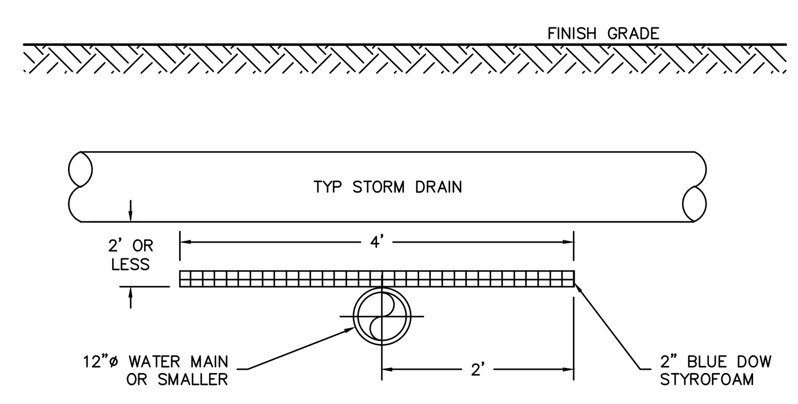
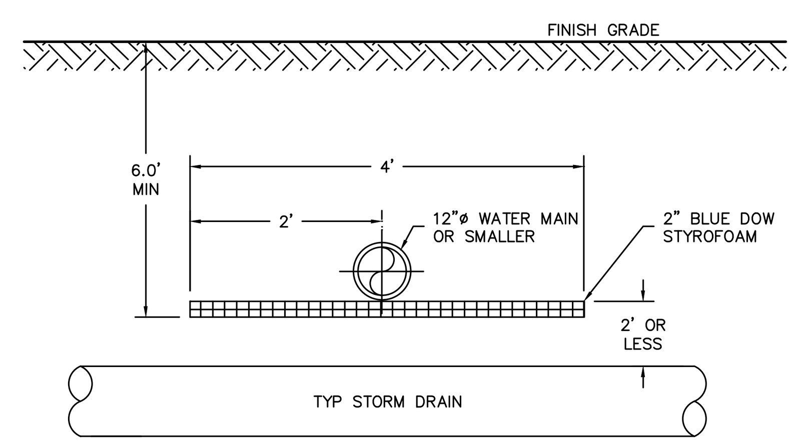
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTHS OF 5' FROM TOP OF PIPE TO FINISH GRADE.
3. 3/4"ø S.S. RODS SHALL BE USED IN CONJUNCTION WITH REQUIRED S.S. NUTS. RODS ARE TO BE ATTACHED TO FITTINGS WITH EITHER STAR BOLTS OR DUC LUGS.
10" FITTING OR SMALLER = (2) 3/4"ø S.S. RODS & ASSOC. HARDWARE.
12" FITTING OR LARGER = (4) 3/4"ø S.S. RODS & ASSOC. HARDWARE.
4. MIN 3'x3'x3' PRE CAST CONCRETE THRUST BLOCK MAY BE USED WITH P.W.W. APPROVAL OR CONCRETE THRUST BLOCK POURED AGAINST UNDISTURBED EARTH – SIZE TO BE BASED ON SIZE OF FITTING AND PRESSURE IN WATER MAIN.

TYPICAL THRUST BLOCK BEHIND FITTINGS INSTALLATION

NOT TO SCALE



CONDITION I

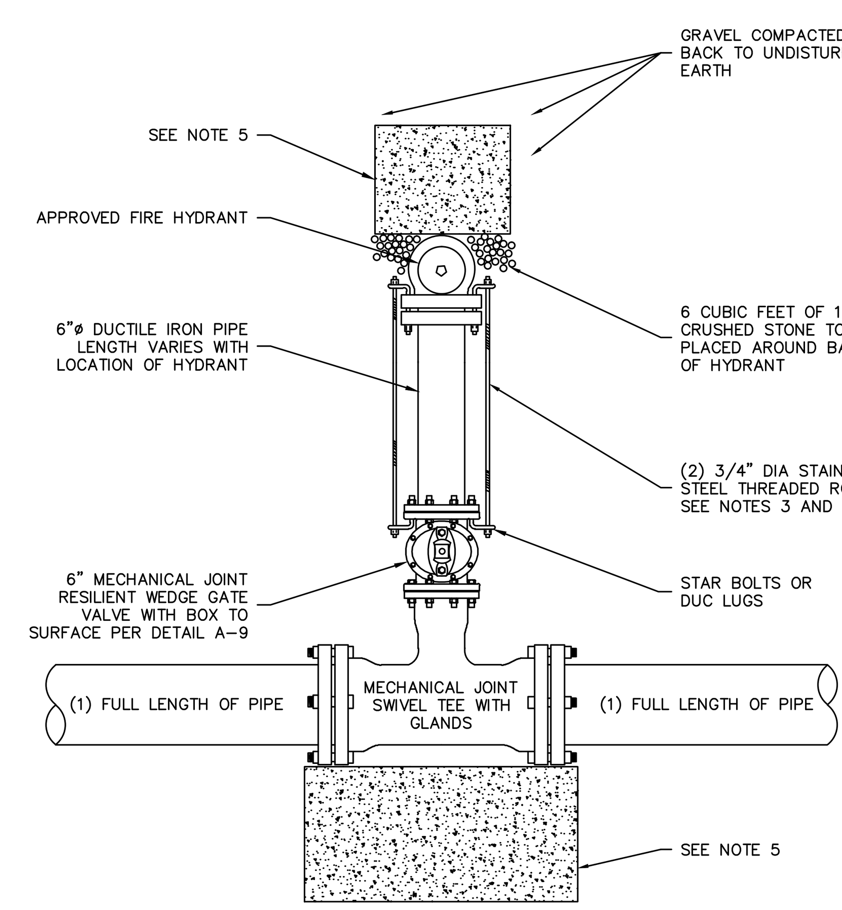


CONDITION II

NOTES:
1. THE TOWN OF MILFORD PUBLIC WORKS RESERVES THE RIGHT TO MODIFY INSULATION REQUIREMENTS AS NECESSARY BASED ON FIELD CONDITIONS, ETC.
2. THE LENGTH OR WIDTH OF INSULATION SHALL EXTEND 1 STORM DRAIN PIPE DIAMETER BEYOND THE EDGE OF STORM DRAIN PIPE IN EACH DIRECTION OR A MINIMUM OF 2' BEYOND THE CENTERLINE OF THE STORM DRAIN PIPE, WHICHEVER IS GREATER.
3. ALL BUTT JOINT SEAMS TO BE OVERLAPPED WITH A 1' PIECE OF INSULATION CENTERED OVER SEAM.

STORM DRAIN/WATER MAIN INTERSECTING RUNS-ELEV. VIEW

NOT TO SCALE



NOTES:
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10" FITTING OR SMALLER = (2) 3/4"ø S.S. RODS & ASSOC. HARDWARE.
12" FITTING OR LARGER = (4) 3/4"ø S.S. RODS & ASSOC. HARDWARE.
4. WHEN DISTANCE FROM WATER MAIN TO HYDRANT IS MORE THAN 10' SUBSTITUTE MEGALUGS (OR GRIP RINGS) IN LIEU OF THREADED RODS.
5. MIN 3'x3'x3' PRE CAST CONCRETE THRUST BLOCK MAY BE USED WITH THE TOWN OF MILFORD PUBLIC WORKS APPROVAL OR CONCRETE THRUST BLOCK POURED AGAINST UNDISTURBED EARTH – SIZE TO BE BASED ON SIZE OF FITTING AND PRESSURE IN WATER MAIN. SEE DETAIL A-7.

TYPICAL HYDRANT INSTALLATION

NOT TO SCALE

FOR REVIEW
NOT FOR CONSTRUCTION

No.	DATE	REVISION	BY

DETAIL SHEET - WATER

(MAP D-2, LOT 13-6)

PROPOSED PLANT No. 3 BUILDING

594 ELM STREET
MILFORD, NEW HAMPSHIRE

PREPARED FOR/RECORD OWNER:

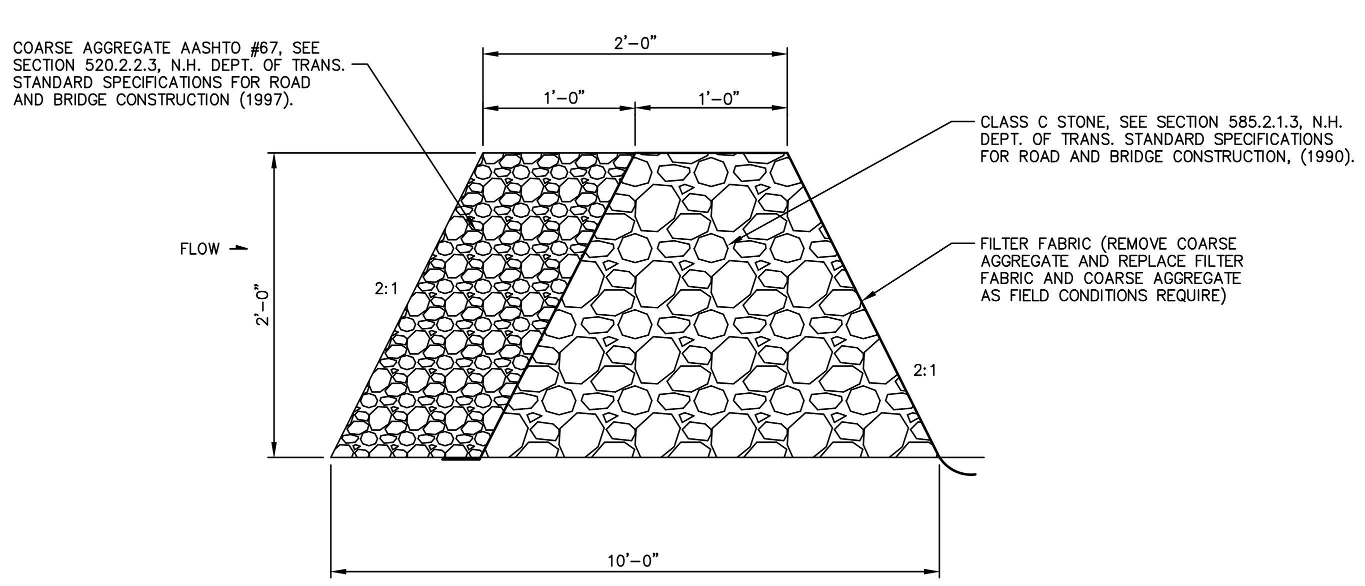
HITCHINER MANUFACTURING COMPANY, INC.
594 ELM STREET MILFORD, NEW HAMPSHIRE 03055 (603) 673-1100

SCALE AS SHOWN

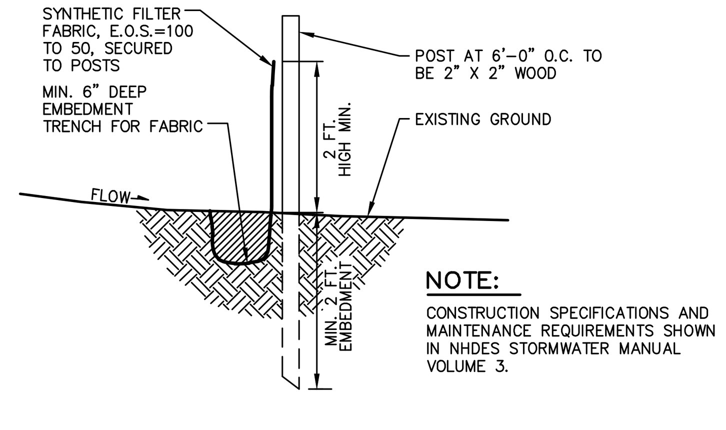
11 APRIL 2018

HSI Hayner/Swanson, Inc.
Civil Engineers/Land Surveyors
Three Congress Street Nashua, New Hampshire 03062-3301
Tel (603) 883-2057 Fax (603) 883-5057
www.hayner-swanson.com

FIELD BOOK: 1219	DRAWING NAME: 1109-MM_DET1	1109-MM	17 OF 20
DRAWING LOCATION: R:\1109\DWG\1109-2018 MM		File Number	Sheet

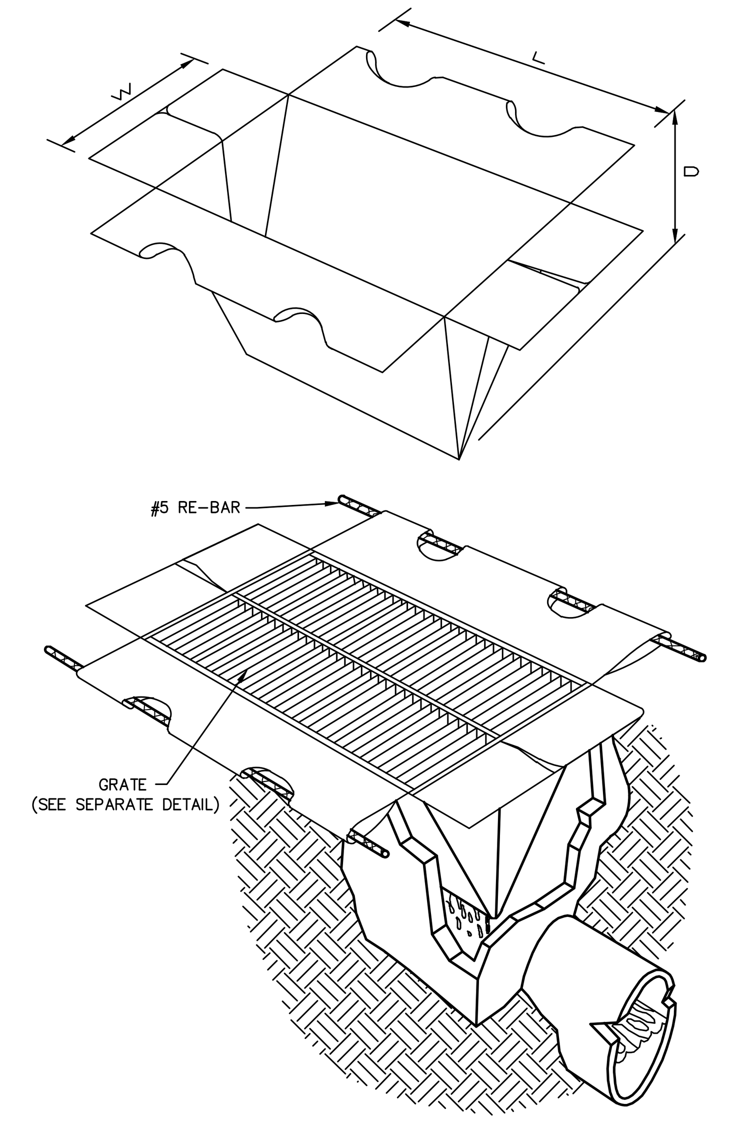


TEMPORARY STONE CHECK DAM TYPICAL SECTION



SILT FENCE DETAIL

NOT TO SCALE



SILTSAK® NOTES

1.0 THE SILTSAK® SHALL BE MANUFACTURED FROM WOVEN POLYPROPYLENE AND SEWN BY A DOUBLE NEEDLE MACHINE, USING A HIGH STRENGTH NYLON THREAD.

2.0 THE SILTSAK® SEAMS SHALL HAVE A CERTIFIED AVERAGE WIDE WIDTH STRENGTH PER ASTM D-4884 STANDARDS AS FOLLOWS:

SILTSAK® STYLE	*TEST METHOD*	*TEST METHOD*
REGULAR FLOW	ASTM D-4884	165.O LBS/IN
HI-FLOW	ASTM D-4884	114.6 LBS/IN

3.0 THE SILTSAK® WILL BE MANUFACTURED TO FIT THE OPENING OF THE CATCH BASIN OR DROP INLET. THE SILTSAK® WILL HAVE THE FOLLOWING FEATURES: TWO DUMP STRAPS ATTACHED AT THE BOTTOM TO FACILITATE THE EMPTYING OF THE SILTSAK®; THE SILTSAK® SHALL HAVE LIFTING LOOPS AS AN INTEGRAL PART OF THE SYSTEM TO BE USED TO LIFT THE SILTSAK® FROM THE BASIN; THE SILTSAK® SHALL HAVE A RESTRAINT CORD APPROXIMATELY HALFWAY UP THE SACK TO KEEP THE SIDES AWAY FROM THE CATCH BASIN WALLS, THIS YELLOW CORD IS ALSO A VISIBLE MEANS OF INDICATING WHEN THE SACK SHOULD BE EMPTIED, CLEANED, AND PLACED BACK INTO THE BASIN.

4.0 THE GEOTEXTILE FABRIC SHALL BE WOVEN POLYPROPYLENE FABRIC WITH THE FOLLOWING PROPERTIES:

SILTSAK® REGULAR FLOW

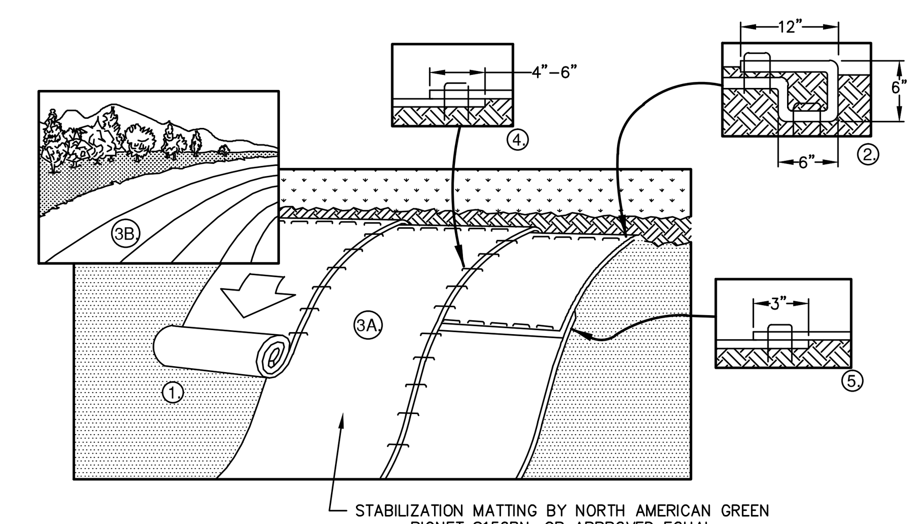
PROPERTY	*TEST METHOD*	*TEST RESULT*
GRAB TENSILE	ASTM D-4632	300 LBS
GRAB ELONGATION	ASTM D-4631	20%
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80%
APPARENT OPENING	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/FT2
PERMITTIVITY	ASTM D-4491	0.55 SEC

OR **SILTSAK® HI-FLOW**

PROPERTY	*TEST METHOD*	*TEST RESULT*
GRAB TENSILE	ASTM D-4632	265 LBS
GRAB ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90%
APPARENT OPENING	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/FT2
PERMITTIVITY	ASTM D-4491	1.5 SEC

SILTSAK® DETAIL

NOT TO SCALE

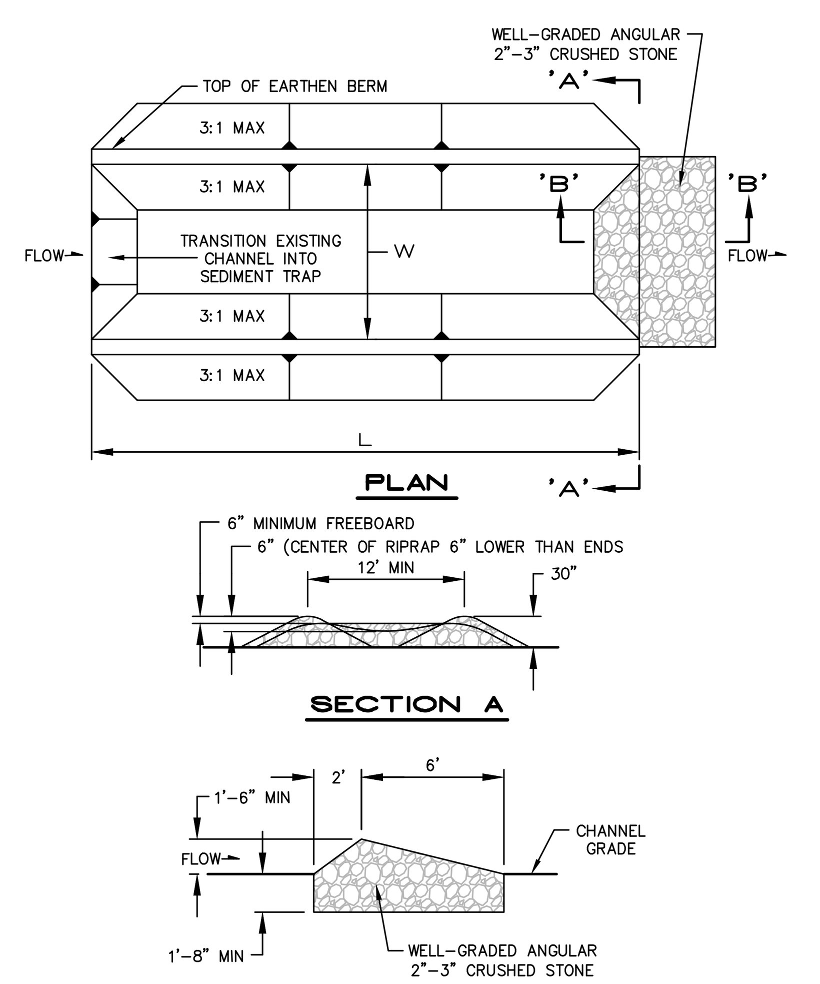


1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS PER MANUFACTURES RECOMMENDATION.
4. 4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH MINIMUM 6" OVERLAP. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.
6. PLACE STAPLES/STAKES PER MANUFACTURE RECOMMENDATION FOR THE APPROPRIATE SLOPE BEING APPLIED.

NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

STABILIZATION MATTING DETAIL

NOT TO SCALE



SEDIMENT TRAP INSTALLATION NOTES

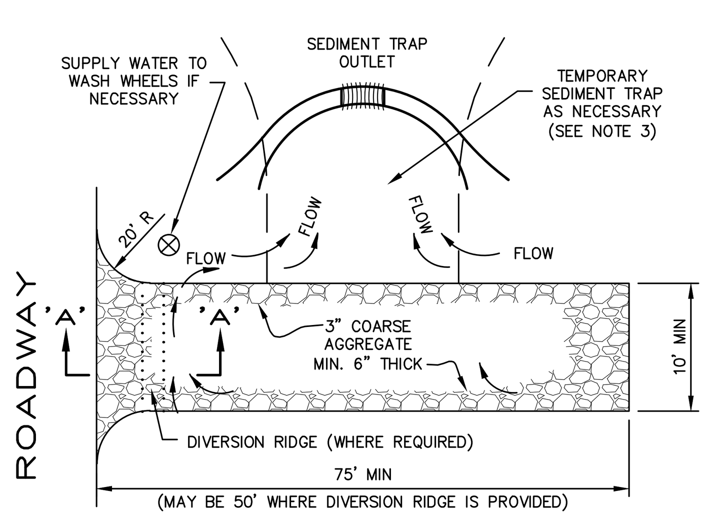
1. SEE PLAN VIEW FOR:
   -LOCATION, LENGTH AND WIDTH OF SEDIMENT TRAP.
2. SEDIMENT TRAPS SHALL BE SIZED TO PROVIDE A VOLUME OF 3,600 PER ACRE OF CONTRIBUTING DRAINAGE AREA.
3. SEDIMENT TRAPS SHALL BE INSTALLED PRIOR TO ANY UPGRADIENT LAND-DISTURBING ACTIVITIES.
4. SEDIMENT TRAP BERM SHALL BE CONSTRUCTED FROM MATERIAL FROM EXCAVATION. THE BERM SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.
5. SEDIMENT TRAP OUTLET TO BE CONSTRUCTED OF WELL-GRADED ANGULAR 2"-3" CRUSHED STONE.
6. THE TOP OF THE EARTHEN BERM SHALL BE A MINIMUM OF 6" HIGHER THAN THE TOP OF THE OUTLET STRUCTURE.
7. THE ENDS OF THE OUTLET STRUCTURE SHALL BE A MINIMUM OF 6" HIGHER THAN THE CENTER OF THE OUTLET STRUCTURE.

SEDIMENT TRAP MAINTENANCE NOTES

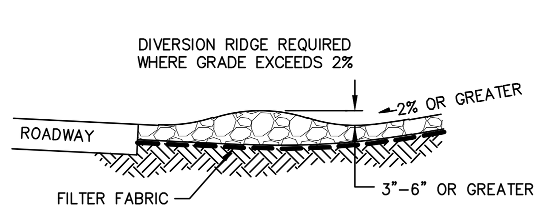
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED. REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. REMOVE SEDIMENT ACCUMULATED IN TRAP AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP. TYPICALLY WHEN THE SEDIMENT DEPTH REACHES 1/2 THE HEIGHT OF THE OUTLET.
5. SEDIMENT TRAPS SHALL REMAIN IN PLACE UNTIL THE CONTRIBUTING DISTURBED AREA IS STABILIZED.
6. WHEN SEDIMENT TRAPS ARE REMOVED. THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED.

SEDIMENT TRAP DETAIL

NOT TO SCALE



PLAN VIEW



SECTION 'A'-'A' VIEW

NOTES

1. THE EXIT SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO EXITING THE SITE ONTO A PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
4. CONSTRUCTION SPECIFICATIONS AND MAINTENANCE REQUIREMENTS SHOWN IN NHDES STORMWATER MANUAL VOLUME 3.

TEMPORARY GRAVEL CONSTRUCTION EXIT

NOT TO SCALE

GENERAL NOTES

1. ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS THEREOF IN NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES STORMWATER MANUALS, VOLUME 1-3, LATEST EDITION.
2. THE WORK AREA SHALL BE GRADED, SHAPED, AND OTHERWISE DRAINED IN SUCH A MANNER AS TO MINIMIZE SOIL EROSION, SILTATION OF DRAINAGE CHANNELS, DAMAGE TO EXISTING VEGETATION, AND DAMAGE TO PROPERTY OUTSIDE THE LIMITS OF THE WORK AREA. SILT FENCES, STRAW BALES AND/OR DETENTION BASINS WILL BE NECESSARY TO ACCOMPLISH THIS END.
3. STRIPPED TOPSOIL SHALL BE STOCKPILED, WITHOUT COMPACTION, AND STABILIZED AGAINST EROSION IN ACCORDANCE WITH "TEMPORARY STABILIZATION OF DISTURBED AREAS", AS OUTLINED IN NOTE No. 4.
4. TEMPORARY STABILIZATION OF DISTURBED AREAS:
   SEED BED PREPARATION: 10-10-10 FERTILIZATION TO BE SPREAD AT THE RATE OF 7 LBS PER 1,000 SF AND AGRICULTURAL LIMESTONE AT A RATE OF 90 LBS PER 1,000 SF AND INCORPORATED INTO THE SOIL. THE SOIL, FERTILIZER AND LIMESTONE SHALL BE TILLED TO PREPARE FOR SEEDING.

   A. SEED MIXTURE: USE ANY OF THE FOLLOWING:

SPECIES	RATE PER 1,000 SF	DEPTH	SEEDING DATES
WINTER RYE	2.5 LBS	1"	08/15 TO 09/15
OATS	2.5 LBS	1"	04/15 TO 10/15
ANNUAL RYE GRASS	1.0 LBS	0.25"	08/15 TO 09/15

   B. MULCHING: MULCH SHOULD BE USED ON HIGHLY ERODABLE AREAS, AND WHERE CONSERVATION OF MOISTURE WILL FACILITATE PLANT ESTABLISHMENT AS FOLLOWS:

TYPE	RATE PER 1,000 SF	USE & COMMENTS
STRAW	70 TO 90 LBS	MAY BE USED WITH PLANTINGS, MUST BE ANCHORED TO BE USED ALONE
WOOD CHIPS OR BARK MULCH	460 TO 920 LBS	USED WITH TREE AND SHRUB PLANTINGS
FIBROUS MATTING	AS RECOMMENDED BY MANUFACTURER	MUST BE BIODEGRADABLE. USE IN SLOPE AREAS AND AREAS DIFFICULT TO VEGETATE.
CRUSHED STONE ¼" TO 1 ½" DIA	SPREAD TO GREATER THAN ½" THICKNESS	USE IN SPECIFIC AREAS AS SHOWN ON PLAN OR AS NEEDED.

5. PERMANENT STABILIZATION OF DISTURBED AREAS:
   A. ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
   B. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
6. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
7. AN AREA SHALL BE CONSIDERED STABILIZED IF ONE OF THE FOLLOWING HAS OCCURRED:
   A. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED.
   B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED.
   C. A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED.
   D. OR, EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED
8. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
9. NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES ALTERATION OF TERRAIN PERMIT No. AOT-________________
10. SITE LOCATION:
    42° 50' 26" N LATITUDE, 71° 41' 56" W LONGITUDE (PER GOOGLE EARTH)
11. TOTAL AREA OF DISTURBED SOILS: 152,000 SF±
12. REFERENCE IS MADE TO THE LATEST EDITION OF THE FEDERAL REGISTER (63 FR 7857), ENVIRONMENTAL PROTECTION AGENCY NPDES GENERAL PERMITS FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES. FOR ADDITIONAL INFORMATION CONTACT (202) 564-9545 OR www.epa.gov/npdes/stormwater.
13. THE ENTIRE CONTENTS OF THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE RETAINED ON-SITE FOR THE DURATION OF THE CONTRACT AND BE MADE AVAILABLE TO LOCAL, STATE AND FEDERAL CODE ENFORCEMENT PERSONNEL.
14. THIS PROJECT SHALL BE MANAGED TO MEET THE REQUIREMENTS AND INTENT OF RSA 430:63 AND AGR 3800 RELATIVE TO INVASIVE SPECIES; AND FUGITIVE DUST IS CONTROLLED IN ACCORDANCE WITH ENV-A 1000.
15. TEMPORARY WATER DIVERSIONS (SWALES, BASINS, ETC) MUST BE USED AS NECESSARY UNTIL AREAS AREA STABILIZED.

CONSTRUCTION SEQUENCE

1. CLEAR SITE ACCORDING TO PLAN.
2. CONSTRUCTION OF TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES, TO BE IN ACCORDANCE WITH THE PLANS. PERIMETER CONTROLS TO BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
3. GRUB SITE ACCORDING TO PLAN.
4. CUT AND DISPOSE OF ANY DEBRIS PRODUCED DURING THE CLEARING AND GRUBBING ACTIVITY.
5. CONSTRUCT DETENTION BASIN EXPANSION AND SWALES PRIOR TO ROUGH GRADING. SEED AND MULCH IMMEDIATELY.
6. SITE GRADING OF BUILDING AND PARKING AREAS. ALL CUT AND FILL SLOPES SHALL BE SEEDED AND MULCHED AFTER BEING CONSTRUCTED.
7. INSTALLATION OF UNDERGROUND UTILITIES AND CATCH BASINS SHALL BE PROTECTED FROM SEDIMENT IN ACCORDANCE WITH THE " SILTSACK DETAIL ". THE CONTROL SHALL REMAIN UNTIL THE SITE IS SUFFICIENTLY STABILIZED. RIPRAP SHALL BE PLACED AT EACH HEADWALL OUTLET.
8. AS THE BUILDING IS COMPLETED, ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED.
9. NO PORTION OF THE PROJECT SHALL BE LEFT DISTURBED AND UNSTABILIZED FOR A PERIOD OF 45 DAYS OR GREATER. ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED PRIOR TO WINTER CONDITIONS. STABILIZATION SHALL BE DEFINED AS 70% VEGETATIVE GROWTH BY NOVEMBER 1ST OR INSTALLATION OF EROSION CONTROL MATTING.
10. COMPLETED AREAS SHALL BE STABILIZED 72 HOURS AFTER COMPLETION.
11. ALL PERMANENT STORM WATER MANAGEMENT MEASURES SHALL HAVE A HEALTHY STAND OF VEGETATION ESTABLISHED PRIOR TO DIRECTING RUNOFF INTO THEM
12. FINAL PAVING OF PARKING LOT.
13. LOAM AND SEED ALL DISTURBED AREAS.
14. INSPECTION OF ALL SEDIMENT AND EROSION CONTROL MEASURES.
15. SITE LANDSCAPING ALONG WITH PERMANENT SEEDING OF ALL DISTURBED AREAS.
16. REMOVE ANY TEMPORARY EROSION CONTROL MEASURES NOT NEEDED.

WINTER CONDITION NOTES

1. ALL PROPOSED POST-DEVELOPMENT VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE PLACEMENT OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOR OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
2. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
3. AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES SHALL BE PROTECTED WITH A MINIMUM OF 3-INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.

EPA

THE CONTRACTOR SHALL FILE THE EPA NOTICE OF INTENT (NOI) FORM AT LEAST 14 DAYS PRIOR TO CONSTRUCTION

SITE MAINTENANCE/INSPECTION PROGRAM

THE FOLLOWING PROVIDES AN ITEMIZATION OF SPECIFIC SITE MAINTENANCE PRACTICES THAT WILL BE EMPLOYED ON THE SITE TO MINIMIZE POLLUTANT GENERATION AND TRANSPORT FROM THE SITE. THE SITE MAINTENANCE PROGRAM INCLUDES ROUTINE INSPECTIONS, PREVENTATIVE MAINTENANCE AND "GOOD HOUSEKEEPING" PRACTICES.

ROUTINE INSPECTIONS

1. THE CONTRACTOR SHALL INSPECT ALL CONTROL MEASURES AT LEAST ONCE A WEEK AND WITHIN TWELVE (12) HOURS OF THE END OF A STORM WITH RAINFALL AMOUNT GREATER THAN 0.5 INCHES. THE INSPECTIONS WILL VERIFY THAT THE STRUCTURAL BMPs DESCRIBED IN THE PLANS ARE IN GOOD CONDITION AND ARE MINIMIZING EROSION. A MAINTENANCE INSPECTION REPORT WILL BE MADE WITH EACH INSPECTION. COMPLETED INSPECTION FORMS SHALL BE KEPT ON-SITE FOR THE DURATION OF THE PROJECT. FOLLOWING CONSTRUCTION, THE COMPLETED FORMS SHALL BE RETAINED AT THE CONTRACTOR'S OFFICE FOR A MINIMUM OF ONE YEAR.

PREVENTATIVE MAINTENANCE

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF ALL TEMPORARY AND PERMANENT CONTROLS THROUGHOUT THE DURATION OF THIS CONTRACT. MAINTENANCE PRACTICES SHALL INCLUDE, BUT ARE NOT LIMITED TO:

1. CLEANING OF CATCH BASINS TWICE PER YEAR OR MORE FREQUENTLY AS DICTATED BY QUARTERLY INSPECTIONS.
2. CLEANING OF SEDIMENT AND DEBRIS FROM STORMWATER MANAGEMENT AREA FOREBAY TWICE PER YEAR OR MORE FREQUENTLY AS DICTATED BY MONTHLY INSPECTIONS.
3. IMPLEMENTATION OF OTHER MAINTENANCE OR REPAIR ACTIVITIES AS DEEMED NECESSARY BASED UPON WEEKLY INSPECTIONS.
4. REMOVAL OF BUILT UP SEDIMENT ALONG SILT FENCES AND/OR STRAW BALE BARRIERS.
5. REMOVAL OF BUILT UP SEDIMENT IN BOTH TEMPORARY AND PERMANENT CONTROLS SUCH AS GRASS SWALES, SEDIMENT FOREBAYS AND RECHARGE/DETENTION BASINS.
6. RECONSTRUCTING THE TEMPORARY GRAVEL CONSTRUCTION EXIT IF NOT WORKING PROPERLY.
7. TREATMENT OF NON-STORM WATER DISCHARGES SUCH AS WATER FROM WATER LINE FLUSHINGS OR GROUNDWATER FROM DEWATERING EXCAVATIONS. SUCH FLOWS SHOULD BE DIRECTED TO A TEMPORARY SEDIMENTATION BASIN OR STORMWATER MANAGEMENT AREA.
8. SWEEP PARKING LOTS AND DRIVES REGULARLY TO MINIMIZE SEDIMENT ACCUMULATION. FREQUENCY WILL VARY SEASONALLY ACCORDING TO SEDIMENT ACCUMULATION ON PAVE SURFACES (E.G., MORE FREQUENT SWEEPING DURING THE WINTER AND SPRING).

GOOD HOUSEKEEPING PRACTICES

1. THE CONTRACTOR SHALL EMPLOY MEASURES AND PRACTICES TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS TO STORM AND WATER RUNOFF. THE CONTRACTOR SHALL PAY SPECIAL ATTENTION TO THE HANDLING, USE AND DISPOSAL OF MATERIALS SUCH AS PETROLEUM PRODUCTS, FERTILIZERS AND PAINTS TO ENSURE THAT THE RISK ASSOCIATED WITH THE USE OF THESE PRODUCTS IS MINIMIZED. THE FOLLOWING "GOOD HOUSEKEEPING" PRACTICES SHALL BE FOLLOWED DURING CONSTRUCTION OF THE PROJECT:
   A. AN EFFORT SHALL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB.
   B. ALL MATERIALS STORED ON-SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
   C. PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THEIR MANUFACTURERS' LABELS.
   D. WHENEVER POSSIBLE, ALL OF A PRODUCT SHALL BE USED BEFORE DISPOSING OF THE CONTAINER.
   E. MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED.
   F. THE CONTRACTOR SHALL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS.

SPILL PREVENTION AND CLEANUP PRACTICES

A. MANUFACTURERS' RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.

B. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ON-SITE. EQUIPMENT AND MATERIAL WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.

C. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.

D. THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.

E. SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE.

F. THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.

FOR REVIEW
NOT FOR CONSTRUCTION

No.	DATE	REVISION	BY

DETAIL SHEET - EROSION CONTROL

(MAP D-2, LOT 13-6)

PROPOSED PLANT No. 3 BUILDING

594 ELM STREET

MILFORD. NEW HAMPSHIRE

PREPARED FOR/RECORD OWNER:

HITCHINER MANUFACTURING COMPANY, INC.

594 ELM STREET MILFORD, NEW HAMPSHIRE 03055 (603) 673-1100

SCALE AS SHOWN

11 APRIL 2018

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FIELD BOOK: 1219	DRAWING NAME: 1109-MM_DET1	1109-MM	18 OF 20
DRAWING LOCATION: R:\1109\DWG\1109-2018 MM		File Number	Sheet

NOTES:

THE FOLLOWING APPLIES TO THE NEW PARKING LOT SOUTHEAST OF THE PROPOSED BUILDING ADDITION:

1. INTERIOR OPEN SPACE:
   REQUIRED: = 5%
   PROVIDED: = 6.5%
2. INTERIOR TREE/COUNT:
   REQUIRED: = 125 PARKING SPACES x 1 TREE/15 SPACES = 9 TREES
   PROVIDED: = 9 TREES

MATERIAL LIST

3/ACE	ACER FREEMANII (ARMSTRONG MAPLE)	2.5"-3"CAL.
8/BET	BETULA NIGRA (HERITAGE RIVER BIRCH)	14'-16'BB MULTI-STEM
9/JUN	JUNIPERUS CHINENSIS (SEAGREEN JUNIPER)	2'-2.5'BB
17/MIC	MICROBIOTA DECUSSATA (RUSSIAN CYPRESS)	#5GAL.
14/PIC	PICEA ORIENTALIS (ORIENTAL SPRUCE)	7'-8'BB
2/PLA	PLATANUS ACERIFOLIA (EXCLAMATION PLANETREE)	2.5"-3"CAL.
4/PRU	PRUNUS SARGENTII (PINK FLAIR SARGENT CHERRY)	2"-2.5"CAL.
38/TAX	TAXUS MEDIA (EVERLOW YEW)	2"-2.5"BB
9/THU	THUJA OCCIDENTALIS (TECHNY MISSION ARBORVITAE)	7'-8'BB
4/ULM	ULMUS PARVIFOLIA ALEE (ALLEE CHINESE ELM)	2"-2.5"CAL.

BARK MULCH TO MATCH EXISTING CONDITIONS

LAWN SEED TO MATCH EXISTING CONDITIONS

No.	DATE	REVISION	BY
		FOR REVIEW NOT FOR CONSTRUCTION	

LANDSCAPE PLAN

(MAP D-2, LOT 13-6)

PROPOSED PLANT No. 3 BUILDING

594 ELM STREET

MILFORD, NEW HAMPSHIRE

PREPARED FOR/RECORD OWNER:

HITCHINER MANUFACTURING COMPANY, INC.

594 ELM STREET MILFORD, NEW HAMPSHIRE 03055 (603) 673-1100

40 0 40 80 120 160 FEET

20 0 20 40 METERS

SCALE: 1"=40 Feet
1"=12.192 Meters

11 APRIL 2018

PREPARED BY :

BLACKWATER DESIGN

PHONE (603) 648 - 6500 FAX (603) 648 - 6506

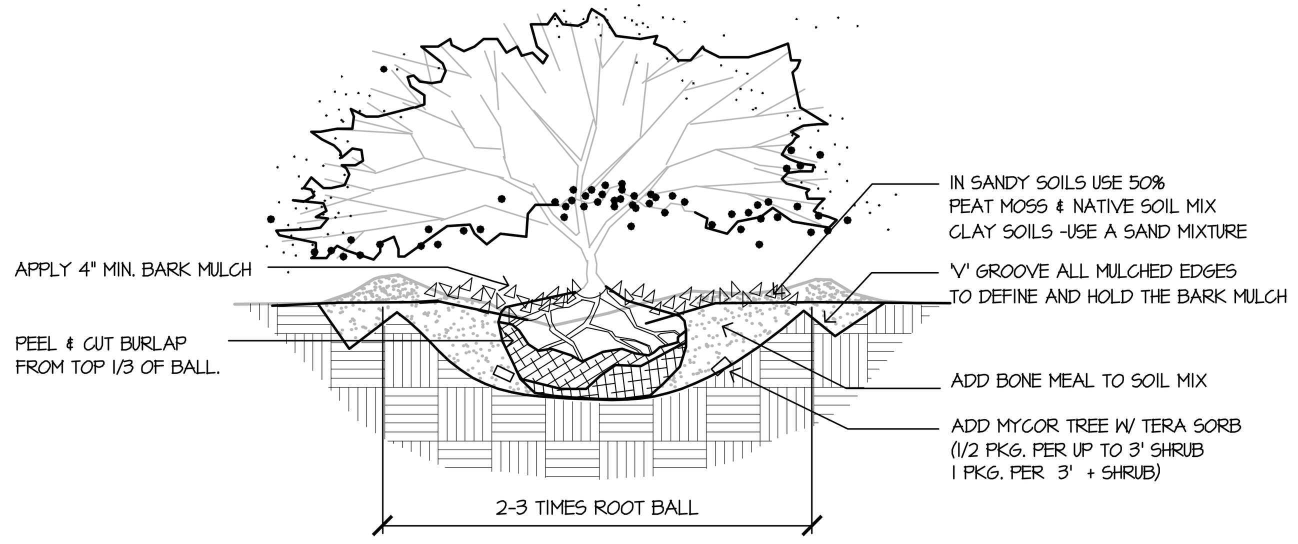
Land Planning - Landscape Architecture

85 Frost Lane - Webster, NH 03303

FIELD BOOK: 1219	DRAWING NAME: 1109-MM_LS41	1109-MM (File Number)	19 OF 20 (Sheet)
DRAWING LOCATION: R:\1109\DWG\1109-2018 MM			

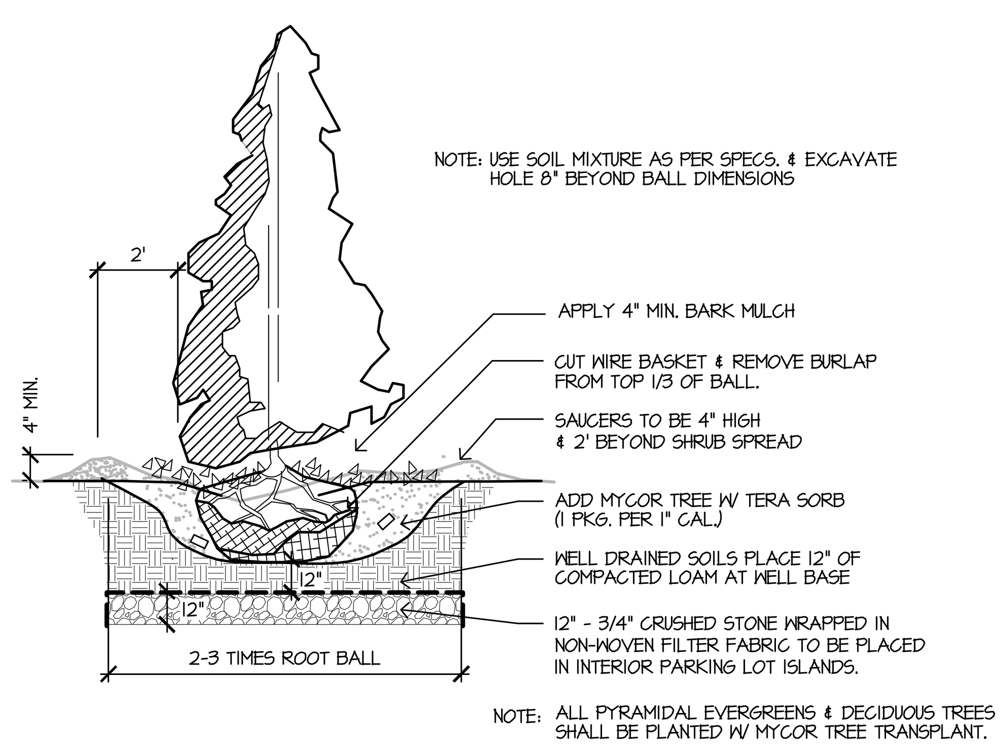
General Specifications

1. The contractor shall at his expense furnish all the materials, supplies, machinery, equipment, tool, superintendent, labor, insurance, & other accessories and services necessary to complete the said project within the unit costs stated within the bid price.
2. The work to be done under this contract is as shown and described on the drawings. Each bidder shall make a careful examination of the plans and specifications (the plan shall dictate quantities) and acquaint himself with all conditions before making his proposal. He will be held responsible for errors in his proposal resulting from his failure to make such an examination. All bidders shall visit the site and inform themselves of all conditions.
3. The bids shall be based on materials and equipment complying with the drawings and the specifications. The contractor shall be responsible under this contract price, for furnishing and installing materials confirming to the bid items. Under no circumstances may a species `hybrid' be substituted or size changed without written consent of the landscape architect.
4. The contractor shall be responsible for the protection of such existing utilities as water mains, sewer systems, gas mains, electrical conduits, telephone lines and any other utilities and if any damage or destruction may occur to these utilities, he shall be responsible for their repair and/or replacement at his expense.
5. The contractor shall make payment for all damages to buildings, structures, trees, shrubs and/or any other property outside the construction area or located within those limits but not designated for removal or reconstructed providing such damage shall result from accident caused by negligence for which the contractor shall be legally liable.
6. If additional labor and/or materials is requested or required, the contractor shall submit a price to the owner. If the owner approves the price he shall prepare a change order for approval and signature. The contractor shall not proceed without a written authorization from the owner for the additional work. If the contractor proceeds with the additional work without this authorization he shall forfeit any claim for additional compensation.
7. The landscape architect shall reserve the right to inspect the project work at any time deemed necessary to Insure that the specifications and plans and any other contract documents are being followed.
8. The L.A. shall have the right to reject any plant on-site based upon condition, size, or incorrect species or hybrid. LA must be contacted prior to install, to inspect materials delivered to the site, and to insure that soil amendments, bark mulch, roof ballust, etc. are to the written specifications.
9. All seeded areas shall receive a minimum 6" topsoil blanket (by site contractor) w/site preparation, raking and general clean up prior to application. Operations shall include a preemergence type herbicide, 12 -25 -12 granular fertilizer @ 10 lbs./1000 sf., and pelletized limestone @ 25 1bs. /1000 s/f power raked into the top 2" of soil prior to hydro-seeding. Ratios & application rates may change based upon the required soil analysis.
10. Contractor is responsible for establishing a thick, weed free lawn. Seed shall be spread @ 4lbs./1000. Lawn germination shall be 95% free of noxious weeds for acceptance. Define differences in seed mixes (if applicable) with irrigation flagging until 2nd mowing. Site review by LA is required.
11. Review of the installed irrigation system by the designer is required prior to release of final payment.
12. Hydroseeding operations shall be a one part process with a paper fiber mulch; a tackifier shall be applied on all slopes greater than 3:1, Excelsor Drainage mat shall be applied to all 2:1 slopes and drainage swales per plan.
13. Contractor shall maintain, from acceptance date, the lawn areas through the first mowing. Contractor is not responsible for the first mowing.
14. All plant materials shall be installed in accordance with A.L.C.C. Trees and shrubs shall have appropriate soil mixtures, fertilizer and soil retention granules.
15. If the soil conditions are extremely sandy, all trees shall have a 6" layer of compacted topsoil (verify with Landscape Architect) placed in the base of the plant pit as a moisture retention layer. The plant pit sidewalls shall be over excavated by an additional 12" beyond the normal outside radius of the hole. A topsoil planting mixture shall be used to backfill as per spec # 22.
16. Landscape architect shall have the right to reject and have ground removed any plant material not of proper size or of weak quality, ie. thin, no lower branching, etc. Contractor must submit shipping lists (billing invoices) for verification, prior to installation.
17. All plant material shall be guaranteed for a period of one (1) year from date of installation. Any material which dies or does not show a healthy appearance within this time shall be replaced at the contractors expense; with same warranty requirements as the original. Warranty does not cover loss due mechanical damage, Ie. snow storage. Contractor should protect susceptable species from insect infestation. Use a liquid systemic application on birch, etc.
18. Plant beds and saucers vary in dia. (refer to dwg). Trees and shrubs shall receive a 4ò (settled) covering of pine/hemlock bark mulch; saucer diameters per drawing & details. Deciduous trees shall have a 6ôdia. saucer (typ.), evergreen trees shall have a saucer 2ômin. beyond itô outter branches. All edges shall have a 'V' groove.
19. All B&B material which are encased in wire baskets shall have the wires cut loose and the top third removed prior to backfill operation.
20. If road base is encountered in any plant bed areas, ie. parking islands, it shall be removed and suitable amended soil installed per drawings and specifications.
21. Soil planting mixture shall be a 6%-10% organic topsoil, amended with 10% wood ash, 10%%% manure, & 30%%% peatmoss or incorporate a dehydrated compost material. If planting in sand, gravel or other well drained soils, a 50% peatmoss to excavated soil. Other soil amendments shall include; Agriform tablets, Hydro-Gel or equal, and Roots growth enhancer to all trees and shrubs listed, per manufacturers specifications. All plant material pits will receive a min. 20%%% in volume mix of a compost soil amendment. Submittal required. 'Roots' STEP 1 can be substituted for the individual supplements. Install per manufacturer's specs.
22. Landscape contractor shall not be responsible for topsoil spreading but shall coordinate with the site contractor adherence to the mound grades, plant bed soil depths and soil type per dwgs & spec. Landscape contractor shall power rake-out for seed.
23. Landscape contractor shall provide a soil analysis of the topsoil planting mixture. Analysis to show soil classification (min. sandy loam) and nutrients.
24. Contractor shall protect all B&B materials left above grade prior to installation from drying out. All plants shall be stored, covered in mulch, and irrigated until planted. Any plant left on the ground and whose outter ball surface drys out, shall be rejected by the landscape architect. Plants stored in shade and off pavement.
25. Plan dictates, contractor shall alert Landscape Architect if any discrepancies exist between the plan, the material list, and as-built site conditions.
26. Installer shall notify landscape architect prior to planting, to review plant locations and bedline configurations. If contractor installs without the placement approval of the L.A., said architect shall have the right to relocate any installed plants at the contractor's expense.
27. Installer shall notify landscape architect prior to plant installation to review all materials. Any plants of poor condition, improper size, or species will be rejected.
28. Upon one year review, contractor shall straighten any trees that have shifted. Any weak or bare spots in lawn shall be reseeded.
29. All bedlines shall have a deep 'V' groove to define lawn to mulch edge. No 'Beehive" mounding of mulch is allowed, also keep mulch away from base of perennials.
30. Do not plant materials too close to the edge of bedlines. Refer to drawings for center of plant to bedline. At a minimum no outter branching of a shrub or perennial shall be closer than two feet from the bedlines. If the as-built does not comply contractor shall adjust the plant location or bedline at his expense.
31. Seed mixes include: Sandy Soil Lawn Mix by: deercreekseed.com; New England Wetland Plants, Amherst, Ma. refer to planting plan for designations.
32. Any items not completed to the specifications will be required at contractors expense prior to final approvals. Contractor is to bid the work according to the specifications and not to what they may do under their standard practices. Special attention will be payed to soils, amendments, guy stakes, bedline & saucer configurations, seed mixtures, etc.
33. Certain designated foundation edging is rood ballust (washed rounds, non-crushed, natural) Size of stone is a range of 3/4"-1.5"dia. placed to a depth of 3", upon placement apply a coating of granular Preen (preemergent).
34. Any questions concerning this drawing shall be directed to Joseph Hochrein c/o Blackwater Design, 85 Frost Lane, Webster, NH 03303, 603-648-2541.



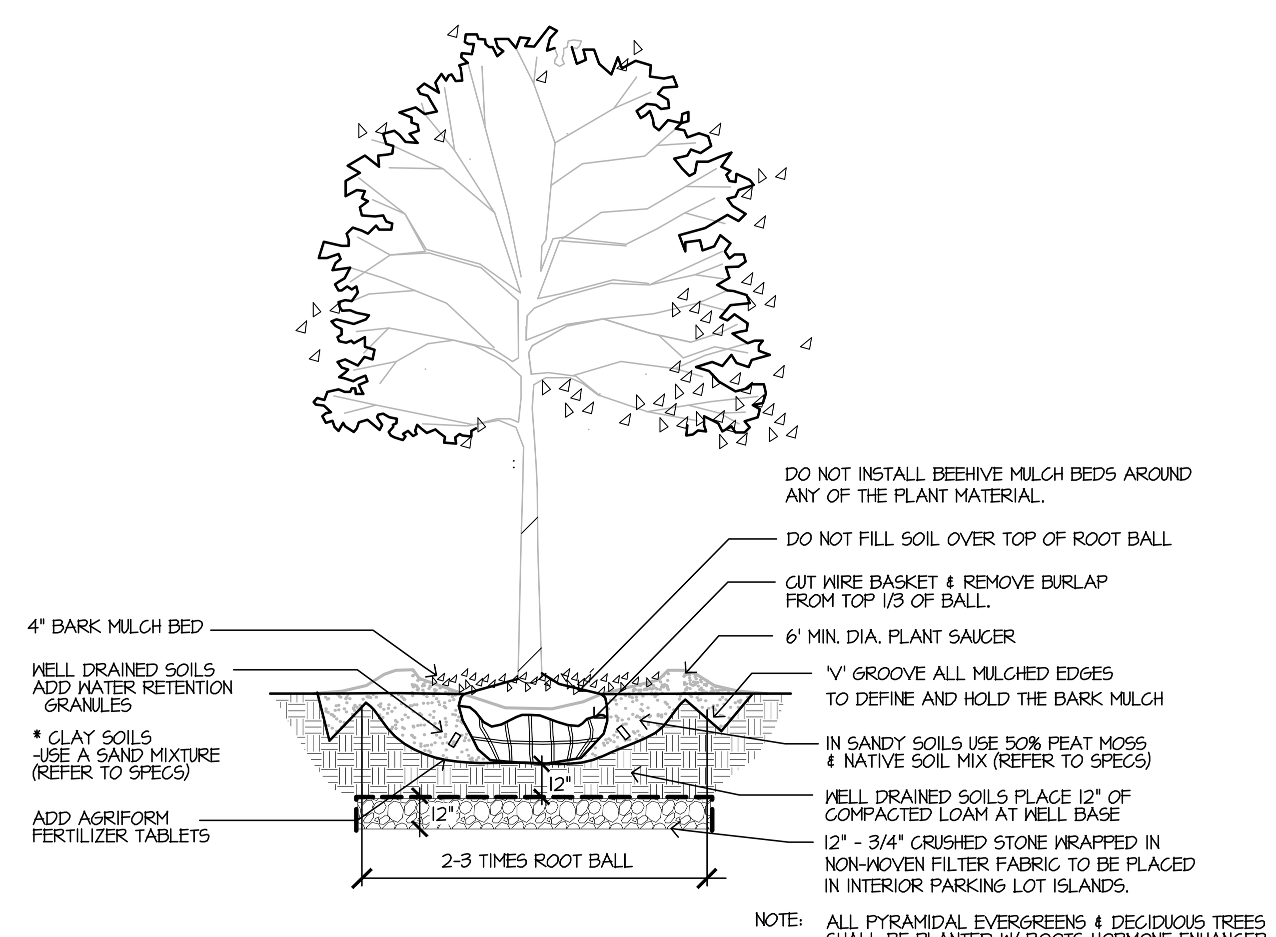
B&B SHRUB PLANTING

NOT TO SCALE



PYRAMIDAL EVERGREEN TREE PLANTING

NOT TO SCALE



TREE PLANTING 2" + CAL.

NOT TO SCALE

FOR REVIEW
NOT FOR CONSTRUCTION

No.	DATE	REVISION	BY

DETAIL SHEET - LANDSCAPE

(MAP D-2, LOT 13-6)

PROPOSED PLANT No. 3 BUILDING

594 ELM STREET

MILFORD, NEW HAMPSHIRE

PREPARED FOR/RECORD OWNER:

HITCHINER MANUFACTURING COMPANY, INC.
594 ELM STREET MILFORD, NEW HAMPSHIRE 03055 (603) 673-1100

SCALE AS SHOWN

11 APRIL 2018

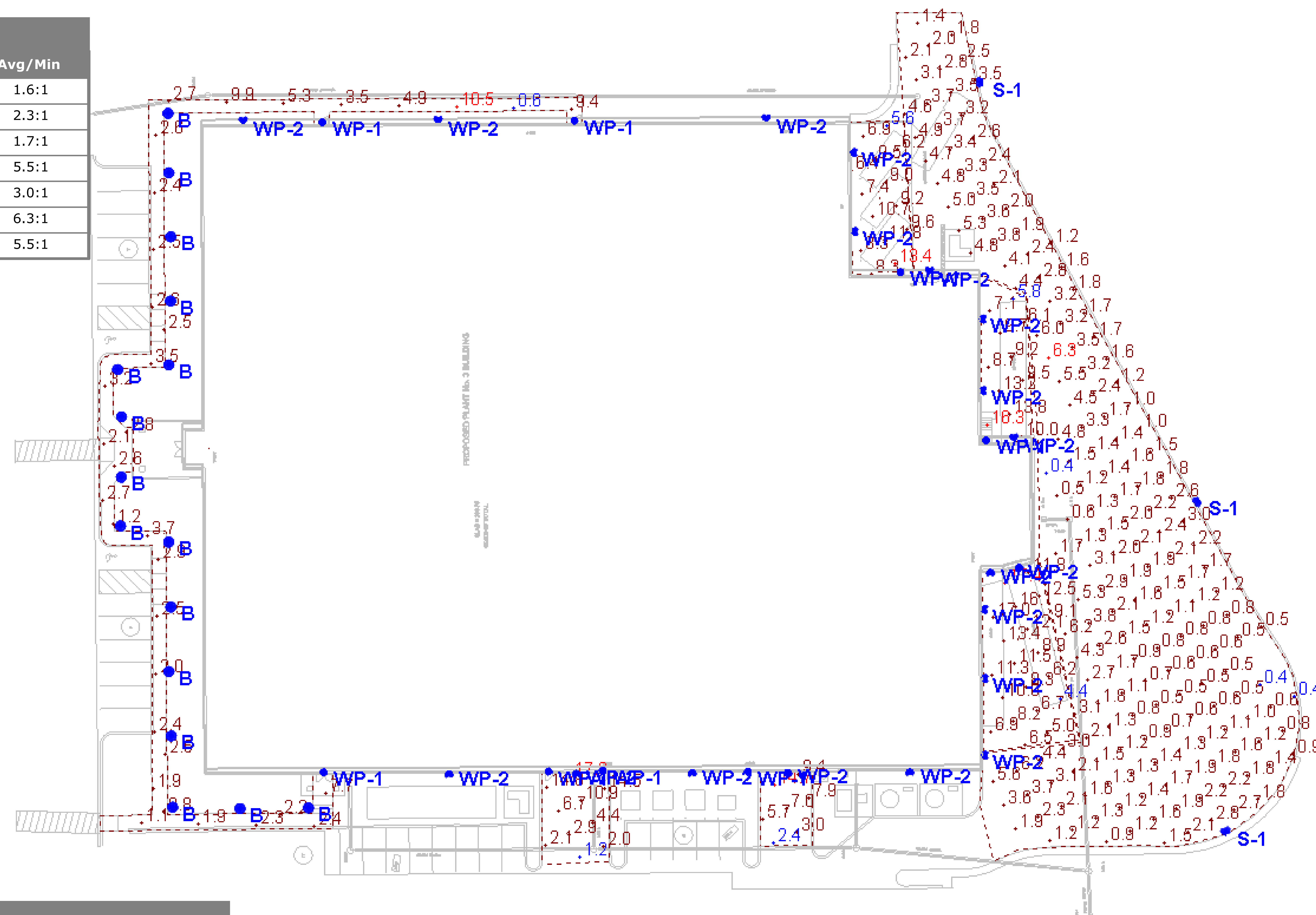
PREPARED BY :

BLACKWATER DESIGN
PHONE (603) 648 - 6500 FAX (603) 648 - 6506
Land Planning - Landscape Architecture
85 Frost Lane - Webster, NH 03303

FIELD BOOK: 1219	DRAWING NAME: 1109-MM_LS41	1109-MM	20 OF 20
DRAWING LOCATION: R:\1109\DWG\1109-2018 MM		File Number	Sheet

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
DUMPSTER AREA (5fc)	+	8.7 fc	13.4 fc	5.6 fc	2.4:1	1.6:1
LOADING DOCK (10fc)	+	10.2 fc	17.4 fc	4.4 fc	4.0:1	2.3:1
LOADING DOCK (10fc)	+	9.9 fc	16.3 fc	5.8 fc	2.8:1	1.7:1
ROADWAY (Avg/Min 6fc)	+	2.2 fc	6.3 fc	0.4 fc	15.8:1	5.5:1
ROLL UP DOOR 1 (5fc)	+	7.2 fc	14.7 fc	2.4 fc	6.1:1	3.0:1
ROLL UP DOOR 2 (5fc)	+	7.6 fc	17.0 fc	1.2 fc	14.2:1	6.3:1
SIDEWALK (Max/Avg 4fc)	+	3.3 fc	10.5 fc	0.6 fc	17.5:1	5.5:1



Schedule

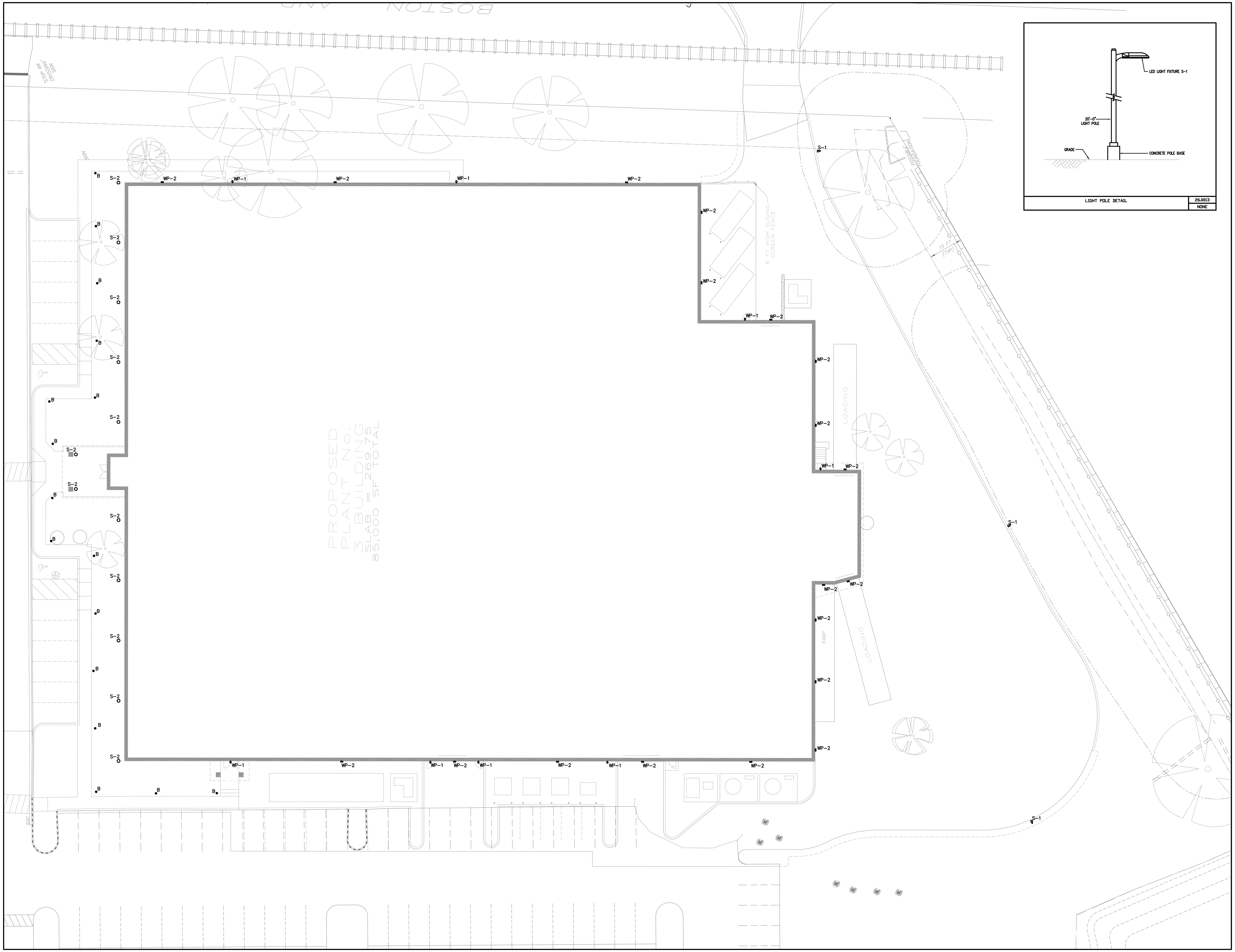
Symbol	Label	QTY	Catalog Number	Description	Lamp	Number Lamps	Lumens per Lamp	LLF	Wattage	Polar Plot
	WP-1	8	TLED-NFM-42-VS-4K	LED Medium Wallpack with glass lens	18 LEDs. LUMINAIRE OUTPUT: 3713 Lms.	1	3713	0.9	41.6	Max: 1590cd
	WP-2	19	DSXW2 LED 30C 1000 40K TFTM MVOLT	DSXW2 LED WITH 3 LIGHT ENGINES, 30 LED's, 1000mA DRIVER, 4000K LED, TYPE FORWARD THROW MEDIUM OPTIC	LED	1	11120	0.9	109	Max: 7284cd
	B	16	BL30B-SUE-T40	7" ROUND BOLLARD - CONE REFLECTOR (ROUND TOP) 2000 LM		1	2317	0.9	27.66	Max: 548cd
	S-1	3	DSX0 LED P6 40K T5W MVOLT HS	DSX0 LED P6 40K T5W MVOLT with houseside shield	LED	1	10881	0.9	134	Max: 6216cd

VISUAL

180039 - HITCHINER - NEW MANUFACTURING FACILITY - LIGHTING CALC

Designer
KAT
Date
4/17/2018
Scale
Not to Scale
Drawing No.

Summary



FITZEMEYER &TOCCI ASSOCIATES, INC.
MECHANICAL/ELECTRICAL/IT/CX ENGINEERS
300 Unicorn Park Drive, 5th Floor
Woburn, MA 01801
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Web: www.f-t.com

Thoughtful
Practical
Engineering

F&T Job # 140136.02

Rev.	Description	Date

Project

HITCHINER
NEW MANUFACTURING
FACILITY

Drawing Title

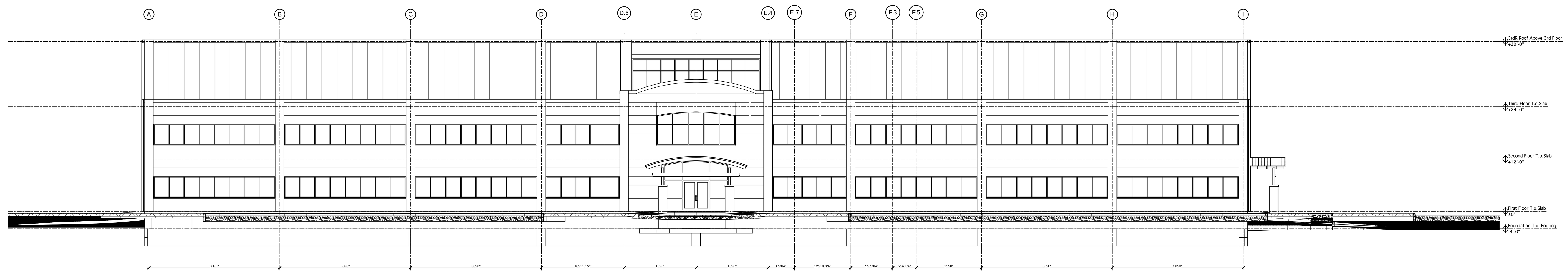
ELECTRICAL
SITE PLAN

DATE: 04/18/2018
SCALE: 1"-0" = 12'-0"
DRAWN: SND
CHECKED: CMB
PROJ. #: 180039.01

REGISTRATION STAMP

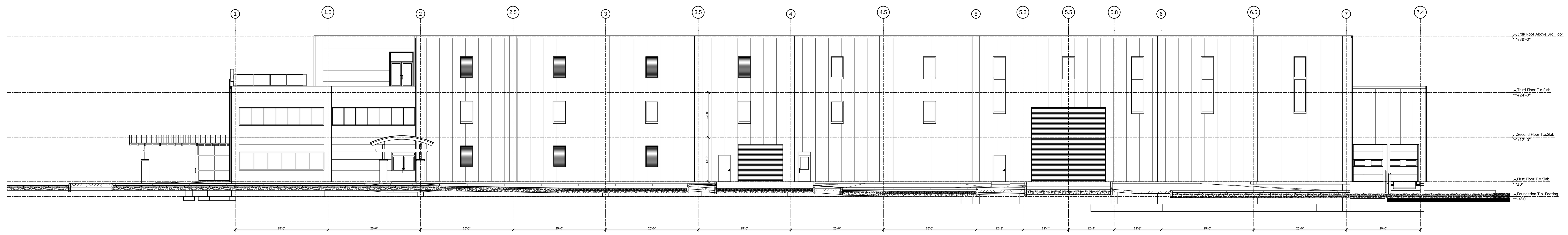
DRAWING NO.

E001



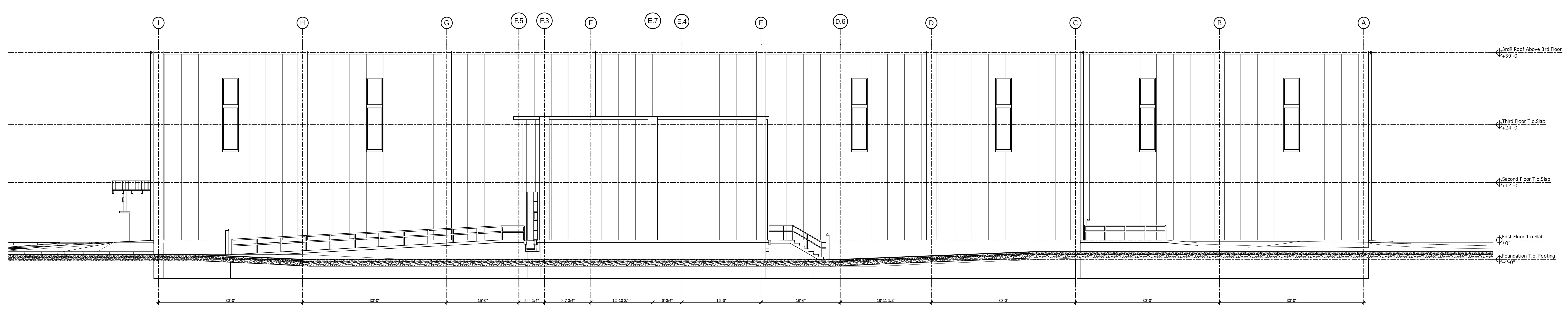
West Elevation-Main Entry - New Building

SCALE: 1/16" = 1'-0"



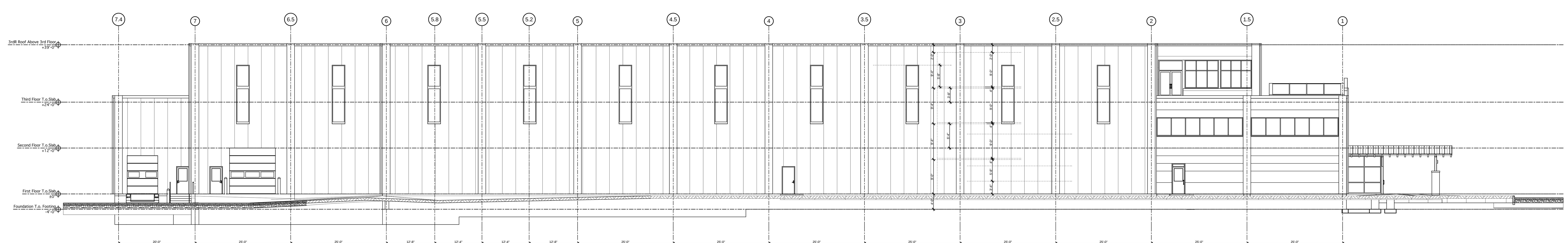
South Elevation - New Building

SCALE: 1/16" = 1'-0"



East Elevation - New Building

SCALE: 1/16" = 1'-0"



North Elevation - New Building

SCALE: 1/16" = 1'-0"

/Volumes/ActiveProjects/0 - Proposals/Hitchiner New Building - 2017110/Drawings/ArchiCAD/Hitchiner New Building 3v20-2017110.pln Friday, April 20, 2018

HITCHINER Manufacturing Co., Inc.
NEW BUILDING
117 Old Wilton Road
Milford, New Hampshire

REGISTERED ARCHITECT
DENNIS B. MIRES
No. 1018
STATE OF NEW HAMPSHIRE

DENNIS MIRES, P.A.
THE ARCHITECTS
697 Union Street, Manchester NH
603-625-4548 FAX 603-625-1067

Elevations

revisions:

date: APRIL 20, 2018

proj. no.: 2017-110

A201