

CLIENT
 TURBOCAM INTERNATIONAL
 607 CALEF HIGHWAY
 BARRINGTON, NH 03825

OWNER
 TOWN OF BARRINGTON
 P.O. BOX 660
 BARRINGTON, NH 03825

CIVIL ENGINEER
 EMANUEL ENGINEERING, INC.
 118 PORTSMOUTH AVENUE, SUITE A202
 STRATHAM, NH 03885

LAND SURVEYOR & WETLANDS SCIENTIST
 JONES & BEACH ENGINEERS, INC.
 85 PORTSMOUTH AVENUE
 STRATHAM, NH 03885

SOIL SCIENTIST
 GOVE ENVIRONMENTAL SERVICES, INC.
 8 CONTINENTAL DRIVE, BUILDING 2, UNIT H
 EXETER, NH 03833

STORMWATER CONSULTANT
 WATERSTONE ENGINEERING, PLLC
 9 GRETA'S WAY
 STRATHAM, NH 03885

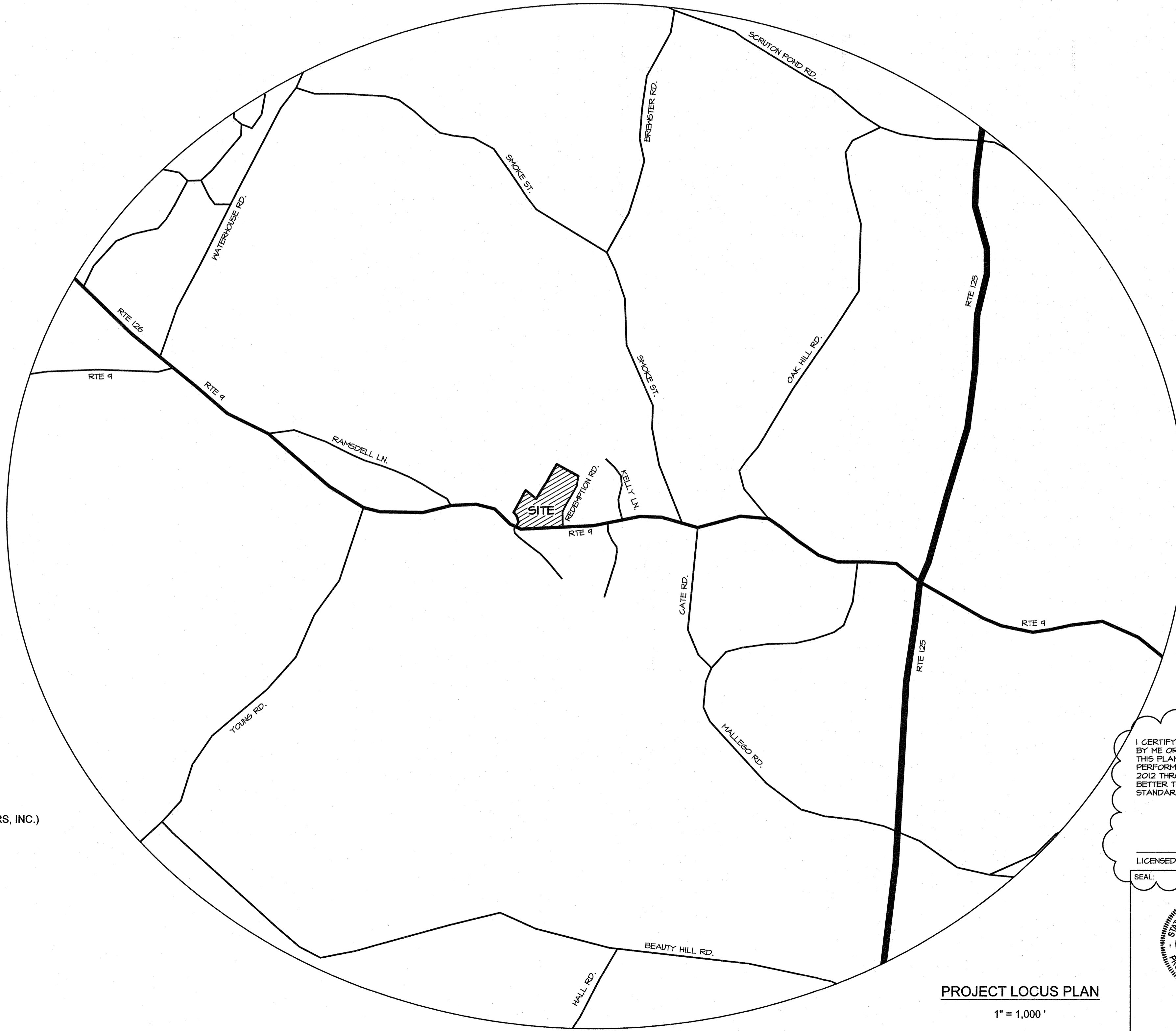
SITE PLAN FOR TURBOCAM INTERNATIONAL

BARRINGTON TAX MAP 233 LOT 77 AND TAX MAP 234 LOTS 1.2 & 1.4

ROUTE 9 / REDEMPTION ROAD

BARRINGTON, NH 03825

- SHEETS TO BE RECORDED:**
- COVER SHEET
 - C3 - SITE PLAN
- REQUIRED PERMITS/APPROVALS:**
- NHDES ALTERATION OF TERRAIN PERMIT (PENDING)
 - NHDES SUBSURFACE CONSTRUCTION PERMIT
 - NHDES PUBLIC WATER SYSTEMS
 - NHDOT DRIVEWAY PERMIT # 06-027-501 DATED JANUARY 8, 2013
 - EPA NPDES GENERAL CONSTRUCTION PERMIT
 - BARRINGTON CONDITIONAL USE PERMIT (APPROVED NOVEMBER 5, 2019)
 - BARRINGTON SPECIAL PERMIT FOR CONSTRUCTION IN WETLAND BUFFER (APPROVED NOVEMBER 5, 2019)



- PROJECT DRAWING SET:**
- COVER SHEET
 - C1.1 & C1.2 EXISTING CONDITIONS PLAN (BY JONES & BEACH ENGINEERS, INC.) (C1.1 INCLUDES REFERENCE PLANS)
 - C2 SITE SPECIFIC SOILS & TOPOGRAPHY PLAN
 - C3 SITE PLAN
 - C4 GRADING & DRAINAGE PLAN
 - C5 UTILITIES PLAN
 - C6 PAVING PLAN
 - C7 TURNING TEMPLATE (WB-65 ENTERING SITE)
 - C8 TURNING TEMPLATE (WB-65 EXITING SITE)
 - SD1 SUBSURFACE DISPOSAL SYSTEM
 - D1 NOTES
 - D2- D7 DETAILS

I CERTIFY THAT THIS SURVEY PLAT WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION. THIS PLAN IS A RESULT OF FIELD SURVEY WORK PERFORMED BY JONES & BEACH ENGINEERS INC. IN 2012 THROUGH 2019. THE ERROR OF CLOSURE IS BETTER THAN 1/10,000. SURVEY PER NHLSA STANDARDS, CATEGORY 1 CONDITION 1.

LICENSED LAND SURVEYOR, DATE _____

SEAL:

Designer of Subsurface Dispose Systems ***
 Bruce D. Scamman No. 1426
 Water Supply & Pollution Control

Bruce D. Scamman 1/7/20

PLANNING BOARD APPROVAL BLOCK

4	JAN 6, 2020	FOR APPROVAL	
3	DEC 3, 2019	FOR APPROVAL	
1	SEP 13, 2019	FOR APPROVAL	
ISS. DATE:	DESCRIPTION OF ISSUE:		CHK.
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EMANUEL ENGINEERING
 civil & structural consultants, land planners
 118 PORTSMOUTH AVENUE, A202
 STRATHAM, NH 03885
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 WWW.EMANUELENGINEERING.COM

CLIENT:

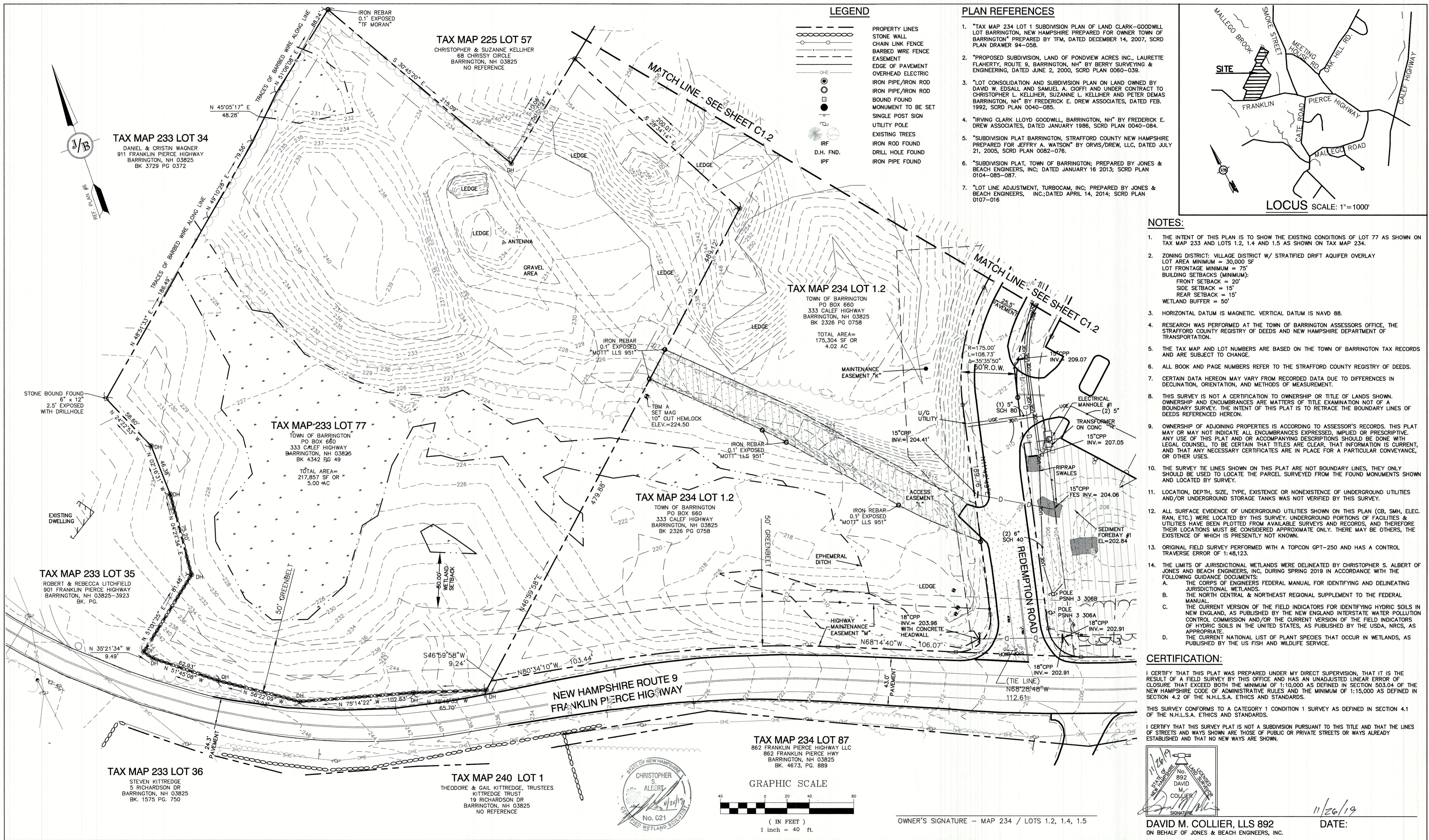
TURBOCAM INTERNATIONAL
 607 CALEF HIGHWAY
 BARRINGTON, NH 03825

TITLE: **COVER SHEET**

FOR
 TAX MAP 233 LOT 77
 AND TAX MAP 234 LOTS 1.2 & 1.4
 TURBOCAM INTERNATIONAL
 ROUTE 9 / REDEMPTION ROAD (SITE)
 BARRINGTON, NH 03825
 & TOWN OF BARRINGTON
 P.O. BOX 660
 BARRINGTON, NH 03825

PROJECT: 19-020	SCALE: AS SHOWN	SHEET: COVER
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PROJECT LOCUS PLAN
 1" = 1,000'

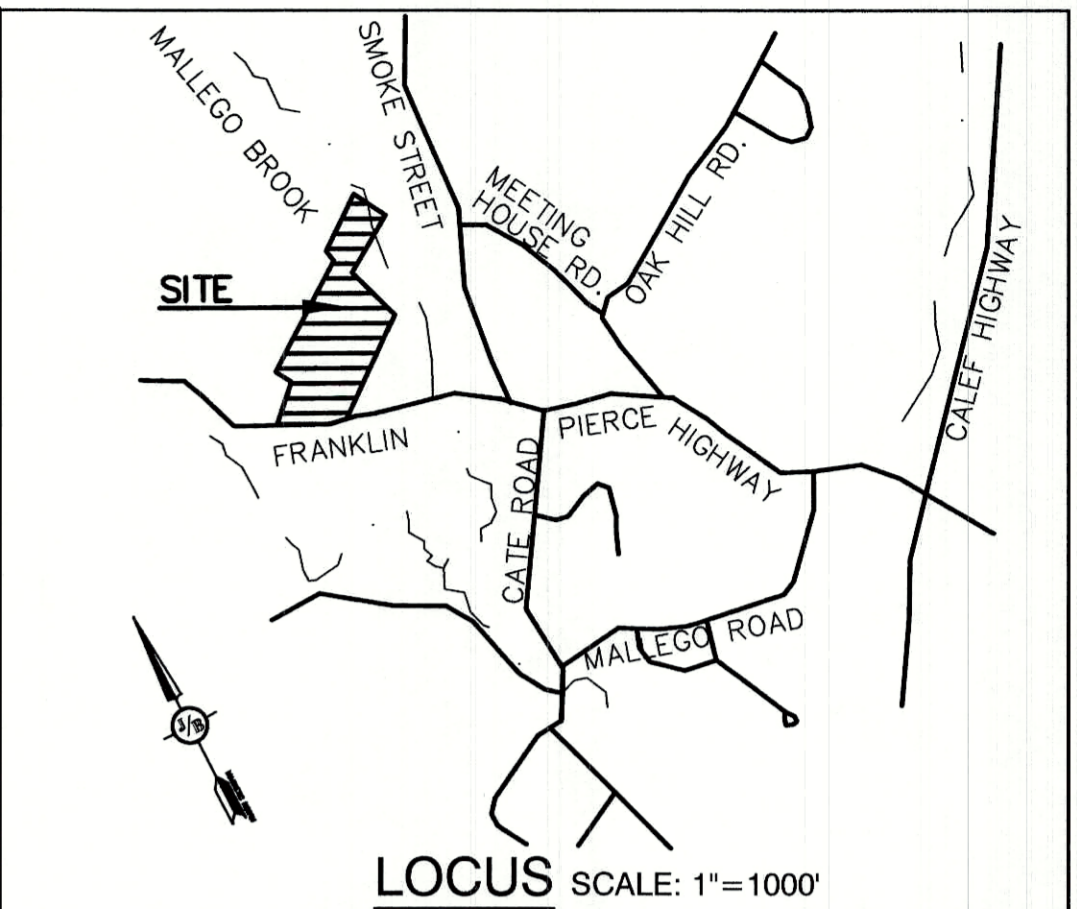


LEGEND

- PROPERTY LINES
- STONE WALL
- CHAIN LINK FENCE
- BARBED WIRE FENCE
- EASEMENT
- EDGE OF PAVEMENT
- OVERHEAD ELECTRIC
- IRON PIPE/IRON ROD
- IRON PIPE/IRON ROD
- BOUND FOUND
- MONUMENT TO BE SET
- SINGLE POST SIGN
- UTILITY POLE
- EXISTING TREES
- IRON ROD FOUND
- DRILL HOLE FOUND
- IRON PIPE FOUND

PLAN REFERENCES

1. "TAX MAP 234 LOT 1 SUBDIVISION PLAN OF LAND CLARK-GOODWILL LOT BARRINGTON, NEW HAMPSHIRE PREPARED FOR OWNER TOWN OF BARRINGTON" PREPARED BY TFM, DATED DECEMBER 14, 2007, SCRD PLAN DRAWER 94-058.
2. "PROPOSED SUBDIVISION, LAND OF PONDVIEW ACRES INC., LAURETTE FLAHERTY, ROUTE 9, BARRINGTON, NH" BY BERRY SURVEYING & ENGINEERING, DATED JUNE 2, 2000, SCRD PLAN 0060-039.
3. "LOT CONSOLIDATION AND SUBDIVISION PLAN ON LAND OWNED BY DAVID W. EDSELL AND SAMUEL A. GIOFFI AND UNDER CONTRACT TO CHRISTOPHER L. KELLIHER, SUZANNE L. KELLIHER AND PETER DEMAS BARRINGTON, NH" BY FREDERICK E. DREW ASSOCIATES, DATED FEB. 1992, SCRD PLAN 0040-085.
4. "IRVING CLARK LLOYD GOODWILL, BARRINGTON, NH" BY FREDERICK E. DREW ASSOCIATES, DATED JANUARY 1986, SCRD PLAN 0040-084.
5. "SUBDIVISION PLAT BARRINGTON, STRAFFORD COUNTY NEW HAMPSHIRE PREPARED FOR JEFFREY A. WATSON" BY ORVIS/DREW, LLC, DATED JULY 21, 2005, SCRD PLAN 0082-076.
6. "SUBDIVISION PLAT, TOWN OF BARRINGTON; PREPARED BY JONES & BEACH ENGINEERS, INC; DATED JANUARY 16 2013; SCRD PLAN 0104-085-087.
7. "LOT LINE ADJUSTMENT, TURBOCAM, INC; PREPARED BY JONES & BEACH ENGINEERS, INC.; DATED APRIL 14, 2014; SCRD PLAN 0107-016



NOTES:

1. THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS OF LOT 77 AS SHOWN ON TAX MAP 233 AND LOTS 1.2, 1.4 AND 1.5 AS SHOWN ON TAX MAP 234.
2. ZONING DISTRICT: VILLAGE DISTRICT W/ STRATIFIED DRIFT AQUIFER OVERLAY
LOT AREA MINIMUM = 30,000 SF
LOT FRONTAGE MINIMUM = 75'
BUILDING SETBACKS (MINIMUM):
FRONT SETBACK = 20'
SIDE SETBACK = 15'
REAR SETBACK = 15'
WETLAND BUFFER = 50'
3. HORIZONTAL DATUM IS MAGNETIC. VERTICAL DATUM IS NAVD 88.
4. RESEARCH WAS PERFORMED AT THE TOWN OF BARRINGTON ASSESSORS OFFICE, THE STRAFFORD COUNTY REGISTRY OF DEEDS AND NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.
5. THE TAX MAP AND LOT NUMBERS ARE BASED ON THE TOWN OF BARRINGTON TAX RECORDS AND ARE SUBJECT TO CHANGE.
6. ALL BOOK AND PAGE NUMBERS REFER TO THE STRAFFORD COUNTY REGISTRY OF DEEDS.
7. CERTAIN DATA HEREON MAY VARY FROM RECORDED DATA DUE TO DIFFERENCES IN DECLINATION, ORIENTATION, AND METHODS OF MEASUREMENT.
8. THIS SURVEY IS NOT A CERTIFICATION TO OWNERSHIP OR TITLE OF LANDS SHOWN. OWNERSHIP AND ENCUMBRANCES ARE MATTERS OF TITLE EXAMINATION NOT OF A BOUNDARY SURVEY. THE INTENT OF THIS PLAN IS TO RETRACE THE BOUNDARY LINES OF DEEDS REFERENCED HEREON.
9. OWNERSHIP OF ADJOINING PROPERTIES IS ACCORDING TO ASSESSOR'S RECORDS. THIS PLAN MAY OR MAY NOT INDICATE ALL ENCUMBRANCES EXPRESSED, IMPLIED OR PRESCRIPTIVE. ANY USE OF THIS PLAN AND OR ACCOMPANYING DESCRIPTIONS SHOULD BE DONE WITH LEGAL COUNSEL, TO BE CERTAIN THAT TITLES ARE CLEAR, THAT INFORMATION IS CURRENT, AND THAT ANY NECESSARY CERTIFICATES ARE IN PLACE FOR A PARTICULAR CONVEYANCE, OR OTHER USES.
10. THE SURVEY TIE LINES SHOWN ON THIS PLAT ARE NOT BOUNDARY LINES, THEY ONLY SHOULD BE USED TO LOCATE THE PARCEL SURVEYED FROM THE FOUND MONUMENTS SHOWN AND LOCATED BY SURVEY.
11. LOCATION, DEPTH, SIZE, TYPE, EXISTENCE OR NONEXISTENCE OF UNDERGROUND UTILITIES AND/OR UNDERGROUND STORAGE TANKS WAS NOT VERIFIED BY THIS SURVEY.
12. ALL SURFACE EVIDENCE OF UNDERGROUND UTILITIES SHOWN ON THIS PLAN (CB, SMH, ELEC. RAN, ETC.) WERE LOCATED BY THIS SURVEY. UNDERGROUND PORTIONS OF FACILITIES & UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS, AND THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN.
13. ORIGINAL FIELD SURVEY PERFORMED WITH A TOPCON GPT-250 AND HAS A CONTROL TRAVERSE ERROR OF 1:48,123.
14. THE LIMITS OF JURISDICTIONAL WETLANDS WERE DELINEATED BY CHRISTOPHER S. ALBERT OF JONES AND BEACH ENGINEERS, INC. DURING SPRING 2019 IN ACCORDANCE WITH THE FOLLOWING GUIDANCE DOCUMENTS:
A. THE CORPUS OF ENGINEERS FEDERAL MANUAL FOR IDENTIFYING AND DELINEATING JURISDICTIONAL WETLANDS.
B. THE NORTH CENTRAL & NORTHEAST REGIONAL SUPPLEMENT TO THE FEDERAL MANUAL.
C. THE CURRENT VERSION OF THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, AS PUBLISHED BY THE NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION AND/OR THE CURRENT VERSION OF THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, AS PUBLISHED BY THE USDA, NRCS, AS APPROPRIATE.
D. THE CURRENT NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS, AS PUBLISHED BY THE US FISH AND WILDLIFE SERVICE.

CERTIFICATION:

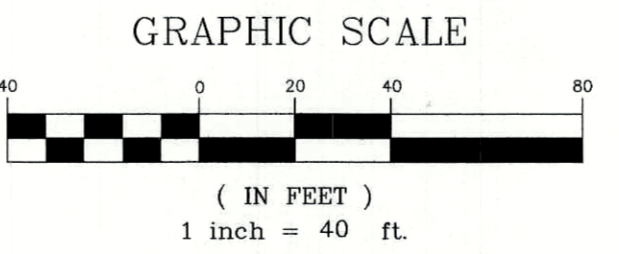
I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN UNADJUSTED LINEAR ERROR OF CLOSURE THAT EXCEEDS BOTH THE MINIMUM OF 1:10,000 AS DEFINED IN SECTION 503.04 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES AND THE MINIMUM OF 1:15,000 AS DEFINED IN SECTION 4.2 OF THE N.H.L.S.A. ETHICS AND STANDARDS.

THIS SURVEY CONFORMS TO A CATEGORY 1 CONDITION 1 SURVEY AS DEFINED IN SECTION 4.1 OF THE N.H.L.S.A. ETHICS AND STANDARDS.

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

11/26/19
DAVID M. COLLIER, LLS 892
ON BEHALF OF JONES & BEACH ENGINEERS, INC.

DATE: 11/26/19



OWNER'S SIGNATURE - MAP 234 / LOTS 1.2, 1.4, 1.5

Design: BWG	Draft: CWW	Date: 04/04/19
Checked: DMC	Scale: AS NOTED	Project No.: 19038
Drawing Name: 19038-EXISTING-CONDITIONS.dwg		
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.		

REV.	DATE	REVISION	BY
2	11/26/19	REVISED PER REVIEW COMMENTS	MJS
1	11/5/19	REVISED PER REVIEW COMMENTS	MJS
0	9/10/19	ISSUED FOR REVIEW	DMC

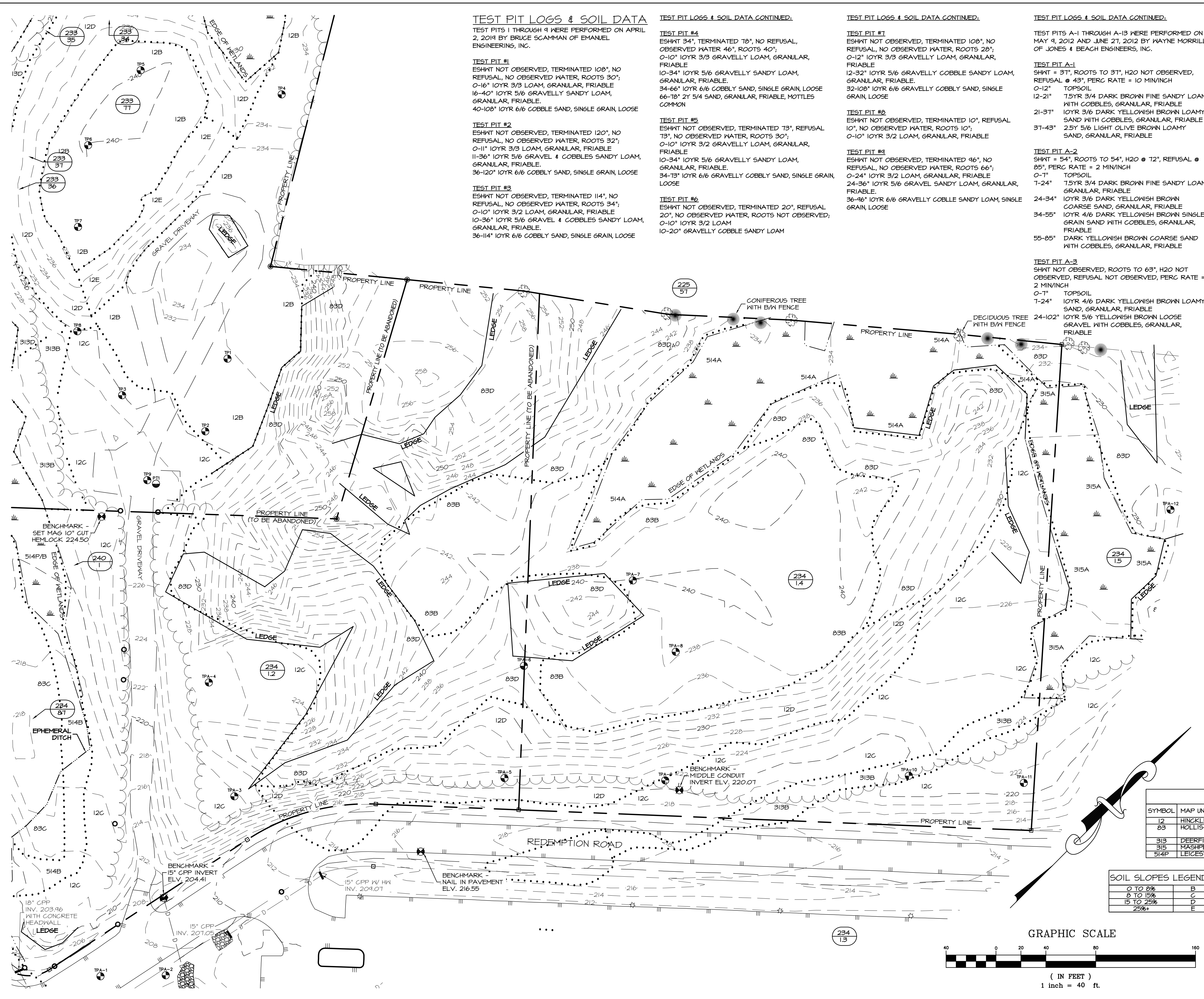
Designed and Produced in NH

J/B Jones & Beach Engineers, Inc.

85 Portsmouth Ave. Civil Engineering Services 603-772-4746
PO Box 219 603-772-0227
Stratham, NH 03885 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	EXISTING CONDITIONS PLAN
Project:	TAX MAP 233, LOT 77 & TAX MAP 234, LOTS 1.2, 1.4 & 1.5 ROUTE 9 & REDEMPTION ROAD, BARRINGTON, NH
Owner of Record:	TOWN OF BARRINGTON PO BOX 660 333 CALEF HIGHWAY BARRINGTON, NH 03825 BK 2326 PG 0758 & BK 4342 PG 49

DRAWING No.	C1.1
SHEET 1 OF 2	JBE PROJECT NO. 19038



TEST PIT LOGS & SOIL DATA

TEST PITS 1 THROUGH 9 WERE PERFORMED ON APRIL 2, 2019 BY BRUCE SCAMMAN OF EMANUEL ENGINEERS, INC.

TEST PIT #1
 ESHNT NOT OBSERVED, TERMINATED 108", NO REFUSAL, NO OBSERVED WATER, ROOTS 30";
 0-16" 10YR 3/3 LOAM, GRANULAR, FRIABLE
 16-40" 10YR 5/6 GRAVELLY SANDY LOAM, GRANULAR, FRIABLE
 40-108" 10YR 6/6 COBBLE SAND, SINGLE GRAIN, LOOSE

TEST PIT #2
 ESHNT NOT OBSERVED, TERMINATED 120", NO REFUSAL, NO OBSERVED WATER, ROOTS 32";
 0-11" 10YR 3/3 LOAM, GRANULAR, FRIABLE
 11-36" 10YR 5/6 GRAVEL & COBBLES SANDY LOAM, GRANULAR, FRIABLE
 36-120" 10YR 6/6 COBBLY SAND, SINGLE GRAIN, LOOSE

TEST PIT #3
 ESHNT NOT OBSERVED, TERMINATED 114", NO REFUSAL, NO OBSERVED WATER, ROOTS 34";
 0-10" 10YR 3/2 LOAM, GRANULAR, FRIABLE
 10-36" 10YR 5/6 GRAVEL & COBBLES SANDY LOAM, GRANULAR, FRIABLE
 36-114" 10YR 6/6 COBBLY SAND, SINGLE GRAIN, LOOSE

TEST PIT LOGS & SOIL DATA CONTINUED:

TEST PIT #4
 ESHNT 34", TERMINATED 78", NO REFUSAL, NO OBSERVED WATER, ROOTS 28";
 0-10" 10YR 3/3 GRAVELLY LOAM, GRANULAR, FRIABLE
 10-34" 10YR 5/6 GRAVELLY SANDY LOAM, GRANULAR, FRIABLE
 34-66" 10YR 6/6 COBBLY SAND, SINGLE GRAIN, LOOSE
 66-78" 2Y 5/4 SAND, GRANULAR, FRIABLE, MOTTLES COMMON

TEST PIT #5
 ESHNT NOT OBSERVED, TERMINATED 73", REFUSAL 73", NO OBSERVED WATER, ROOTS 30";
 0-10" 10YR 3/2 GRAVELLY LOAM, GRANULAR, FRIABLE
 10-34" 10YR 5/6 GRAVELLY SANDY LOAM, GRANULAR, FRIABLE
 34-73" 10YR 6/6 GRAVELLY COBBLY SAND, SINGLE GRAIN, LOOSE

TEST PIT #6
 ESHNT NOT OBSERVED, TERMINATED 20", REFUSAL 20", NO OBSERVED WATER, ROOTS NOT OBSERVED;
 0-10" 10YR 3/2 LOAM
 10-20" GRAVELLY COBBLE SANDY LOAM

TEST PIT LOGS & SOIL DATA CONTINUED:

TEST PIT #7
 ESHNT NOT OBSERVED, TERMINATED 108", NO REFUSAL, NO OBSERVED WATER, ROOTS 28";
 0-12" 10YR 3/3 GRAVELLY LOAM, GRANULAR, FRIABLE
 12-32" 10YR 5/6 GRAVELLY COBBLE SANDY LOAM, GRANULAR, FRIABLE
 32-108" 10YR 6/6 GRAVELLY COBBLY SAND, SINGLE GRAIN, LOOSE

TEST PIT #8
 ESHNT NOT OBSERVED, TERMINATED 10", REFUSAL 10", NO OBSERVED WATER, ROOTS 10";
 0-10" 10YR 3/2 LOAM, GRANULAR, FRIABLE

TEST PIT #9
 ESHNT NOT OBSERVED, TERMINATED 96", NO REFUSAL, NO OBSERVED WATER, ROOTS 66";
 0-24" 10YR 3/2 LOAM, GRANULAR, FRIABLE
 24-36" 10YR 5/6 GRAVEL SANDY LOAM, GRANULAR, FRIABLE
 36-96" 10YR 6/6 GRAVELLY COBBLE SANDY LOAM, SINGLE GRAIN, LOOSE

TEST PIT LOGS & SOIL DATA CONTINUED:

TEST PITS A-1 THROUGH A-13 WERE PERFORMED ON MAY 9, 2012 AND JUNE 21, 2012 BY WAYNE MORRILL OF JONES & BEACH ENGINEERS, INC.

TEST PIT A-1
 SHNT = 37", ROOTS TO 37", H2O NOT OBSERVED, REFUSAL @ 43", PERC RATE = 10 MIN/INCH
 0-12" TOPSOIL
 12-21" 7.5YR 3/4 DARK BROWN FINE SANDY LOAM WITH COBBLES, GRANULAR, FRIABLE
 21-37" 10YR 3/6 DARK YELLOWISH BROWN LOAMY SAND WITH COBBLES, GRANULAR, FRIABLE
 37-43" 2.5Y 5/6 LIGHT OLIVE BROWN LOAMY SAND, GRANULAR, FRIABLE

TEST PIT A-2
 SHNT = 54", ROOTS TO 54", H2O @ 72", REFUSAL @ 85", PERC RATE = 2 MIN/INCH
 0-7" TOPSOIL
 7-24" 7.5YR 3/4 DARK BROWN FINE SANDY LOAM, GRANULAR, FRIABLE
 24-34" 10YR 3/6 DARK YELLOWISH BROWN COARSE SAND, GRANULAR, FRIABLE
 34-55" 10YR 4/6 DARK YELLOWISH BROWN SINGLE GRAIN SAND WITH COBBLES, GRANULAR, FRIABLE
 55-85" DARK YELLOWISH BROWN COARSE SAND WITH COBBLES, GRANULAR, FRIABLE

TEST PIT A-3
 SHNT NOT OBSERVED, ROOTS TO 63", H2O NOT OBSERVED, REFUSAL NOT OBSERVED, PERC RATE = 2 MIN/INCH
 0-7" TOPSOIL
 7-24" 10YR 4/6 DARK YELLOWISH BROWN LOAMY SAND, GRANULAR, FRIABLE
 24-102" 10YR 5/6 YELLOWISH BROWN LOOSE GRAVEL WITH COBBLES, GRANULAR, FRIABLE

TEST PIT LOGS & SOIL DATA CONTINUED:

TEST PIT A-4
 DATA NOT AVAILABLE

TEST PIT A-5
 SHNT @ 48", ROOTS TO 48", H2O @ 58", REFUSAL @ 67", PERC RATE = 2 MIN/INCH
 0-4" TOPSOIL
 4-12" 10YR 3/6 DARK YELLOWISH BROWN FINE SANDY LOAM, GRANULAR, FRIABLE
 12-19" 10YR 4/6 DARK YELLOWISH BROWN LOAMY SAND, GRANULAR, FRIABLE
 19-38" 10YR 4/4 DARK YELLOWISH BROWN SINGLE GRAIN SAND, GRANULAR, FRIABLE
 38-46" 7.5YR 3/4 DARK BROWN COARSE SAND, GRANULAR, FRIABLE
 46-67" 2.5Y 5/3 LIGHT OLIVE BROWN FINE SAND, GRANULAR, FRIABLE

TEST PIT A-6
 REFUSAL @ 24"

TEST PIT A-7
 REFUSAL @ 30"

TEST PIT A-8
 SHNT @ 24", ROOTS TO 24", H2O NOT OBSERVED, REFUSAL @ 36", PERC RATE = 12 MIN/INCH
 0-7" TOPSOIL
 7-24" 10YR 5/6 YELLOWISH BROWN FINE SANDY LOAM, GRANULAR, FRIABLE
 24-36" 2.5Y 5/3 LIGHT OLIVE BROWN LOAMY SAND, GRANULAR, FRIABLE

TEST PIT A-9
 SHNT @ 46", ROOTS TO 46", H2O @ 52", REFUSAL NOT OBSERVED, PERC RATE = 2 MIN/INCH
 0-7" TOPSOIL
 7-17" 2.5Y 5/4 LIGHT OLIVE BROWN FINE SANDY LOAM, GRANULAR, FRIABLE
 17-28" 10YR 4/6 DARK YELLOWISH BROWN FINE SAND, GRANULAR, FRIABLE
 28-46" 10YR 5/6 YELLOWISH BROWN COARSE SAND, GRANULAR, FRIABLE
 46-45" 2.5Y 5/6 LIGHT OLIVE BROWN COARSE SAND, GRANULAR, FRIABLE

TEST PIT A-10
 SHNT NOT OBSERVED, ROOTS TO 102", H2O NOT OBSERVED, REFUSAL NOT OBSERVED, PERC RATE = 2 MIN/INCH
 0-8" TOPSOIL
 8-20" 10YR 5/6 YELLOWISH BROWN LOAMY SAND, GRANULAR, FRIABLE
 20-65" 10YR 4/6 DARK YELLOWISH BROWN GRAVELLY SAND, GRANULAR, FRIABLE
 65-122" 10YR 5/6 YELLOWISH BROWN LOOSE GRAVEL WITH COBBLES, GRANULAR, FRIABLE

TEST PIT A-11
 SHNT NOT OBSERVED, ROOTS TO 40", H2O @ 81", REFUSAL NOT OBSERVED, PERC RATE = 2 MIN/INCH
 0-4" TOPSOIL
 4-14" 10YR 4/6 DARK YELLOWISH BROWN LOAMY SAND, GRANULAR, FRIABLE

TEST PIT A-12
 SHNT @ 24", ROOTS TO 38", H2O @ 28", REFUSAL NOT OBSERVED, PERC RATE = 8 MIN/INCH
 0-6" TOPSOIL
 6-18" 10YR 4/4 DARK YELLOWISH BROWN LOAMY SAND, GRANULAR, FRIABLE
 18-24" 10YR 5/8 YELLOWISH BROWN LOAMY SAND, GRANULAR, FRIABLE
 24-60" 2.5Y 6/1 GRAY LOAMY SAND, GRANULAR FIRM

TEST PIT A-13
 SHNT NOT OBSERVED, ROOTS TO 67", H2O NOT OBSERVED, REFUSAL NOT OBSERVED, PERC RATE = 2 MIN/INCH
 0-7" TOPSOIL
 7-19" 10YR 4/6 DARK YELLOWISH BROWN LOAMY SAND, GRANULAR, FRIABLE
 19-117" 2.5Y 5/6 LIGHT OLIVE BROWN LOOSE GRAVEL WITH COBBLES, GRANULAR, FRIABLE

NOTES:

- OWNER OF RECORD: TAX MAP 233 LOT 77 & TAX MAP 234 LOTS 1.2 & 1.4 TOWN OF BARRINGTON P.O. BOX 660 BARRINGTON, NH 03825 SCRD BK4342 P60044 (MAP 233 LOT 77) SCRD BK2326 P60758 (MAP 234 LOT 1.2)
- THE INTENT OF THIS PLAN IS TO DELINEATE SOIL TYPES AND SHOW TOPOGRAPHY OF THE SITE FOR NIDES AOT PERMIT APPLICATION.
- PARCEL IS ZONED VILLAGE DISTRICT (VD) PER THE TOWN OF BARRINGTON, NH ZONING MAP AMENDED JUNE 6, 2014.
- PARCEL IS NOT IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 5301C0285D, DATED MAY 17, 2005.
- FIELDWORK CONDUCTED BY JONES & BEACH ENGINEERS, INC. IN SPRING 2014.
- WETLANDS WERE DELINEATED BY JONES & BEACH ENGINEERS INC. IN SPRING 2014
- SOILS WERE DELINEATED BY GOVE ENVIRONMENTAL SERVICES, INC. IN SPRING 2014.

LEGEND:

○	GRANITE BOUND FOUND
●	IRON PIPE FOUND
○	DRILL HOLE FOUND
(TYP)	TYPICAL
(TR)	TO BE REMOVED
YGC	VERTICAL GRANITE CURB
SGC	SLOPED GRANITE CURB
PPP	PROPOSED POROUS PAVEMENT
PTP	PROPOSED TRADITIONAL PAVEMENT
---	PROPERTY LINE
---	EDGE OF PAVEMENT (EOP)
---	SUBSURFACE INFILTRATION
---	TRAFFIC DIRECTION
---	SOIL DELINEATION (NOT TO BE PAINTED)
---	OVERHEAD UTILITIES
---	UNDERGROUND UTILITIES
---	UTILITY POLE
---	GUY WIRE
○	LIGHT FIXTURE
○	WELL
---	WATER LINE
---	DRAIN LINE
---	SEPTIC LINE
---	GAS LINE
---	STONEWALL
---	GUARD RAIL
---	CHAINLINK FENCE
---	WETLANDS
---	SILT SOXX
---	TREELINE
---	TREE
---	NUMBER OF PARKING SPOTS IN AREA

SOIL MAPPING STANDARDS:

SITE-SPECIFIC SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE AND VERMONT. 556NNE SPECIAL PUBLICATION NO. 3, VERSION 5.0, DECEMBER 2017. THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PRODUCT, INTENDED FOR THE SUBMISSION TO THE NH DES ALTERATION OF TERRAIN. IT WAS PRODUCED BY A PROFESSIONAL SOIL SCIENTIST AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCE CONSERVATION SERVICE.

4	JAN 6, 2020	FOR APPROVAL	
3	DEC 3, 2019	FOR APPROVAL	
1	SEP 13, 2019	FOR APPROVAL	
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 civil & structural consultants, land planners
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 STRATHAM, NH 03885
 P: 603-772-4400 F: 603-772-4487
 WWW.EMANUELENGINEERING.COM

CIENT:
TURBOCAM INTERNATIONAL
 607 CALEF HIGHWAY
 BARRINGTON, NH 03825

TITLE:
SITE-SPECIFIC SOILS PLAN
 FOR
 TAX MAP 233 LOT 77
 AND TAX MAP 234 LOTS 1.2 & 1.4
 TURBOCAM INTERNATIONAL
 ROUTE 9 / REDEMPTION ROAD (SITE)
 BARRINGTON, NH 03825
 & TOWN OF BARRINGTON
 PO BOX 660
 BARRINGTON, NH 03825

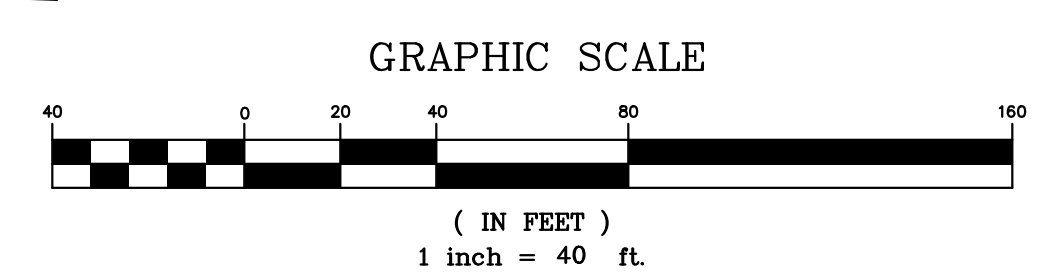
PROJECT:	SCALE:	SHEET:
19-020	1"=40'	C2

SOIL IDENTIFICATION LEGEND

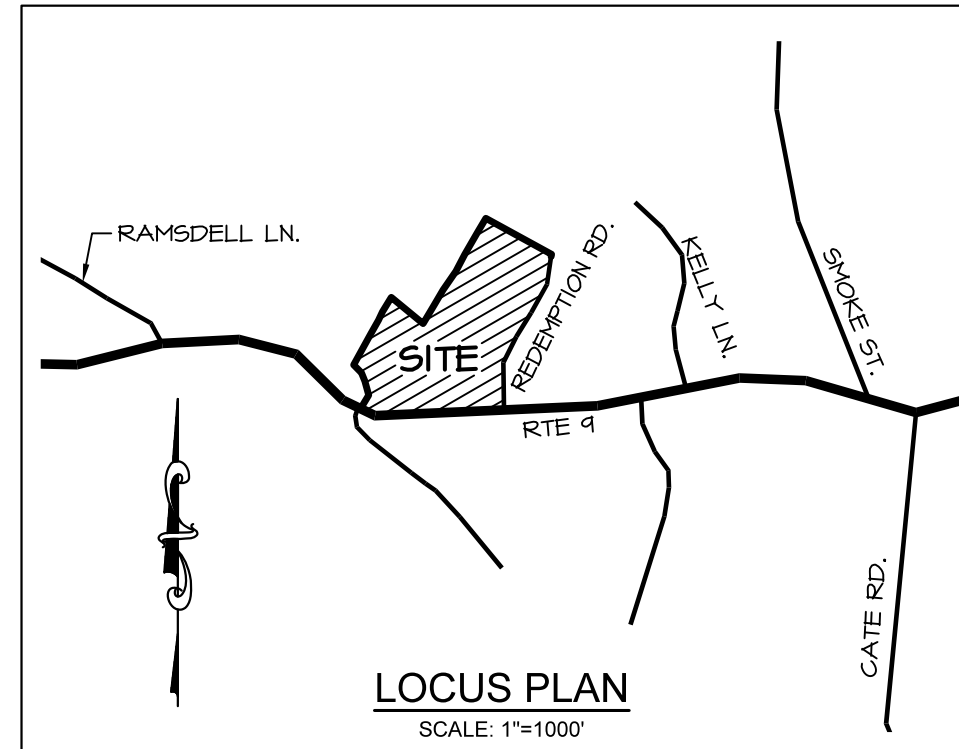
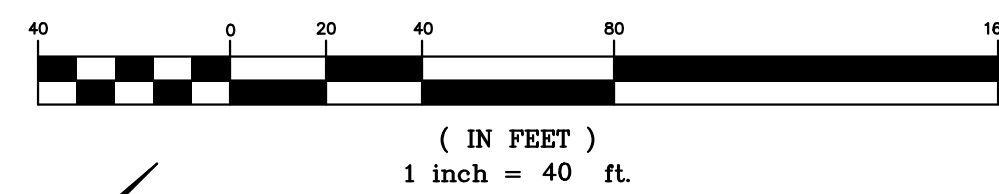
SYMBOL	MAP UNIT	HYDROLOGIC SOIL GROUP
12	HINKLEY, FINE SANDY LOAM	A
83	HOLLIS-CANTON-ROCK OUTCROP	HOLLIS - C/D CANTON - B
313	DEERFIELD, LOAMY SAND	B
315	MASHPÉE	C
514P	LEICESTER, FINE SANDY LOAM	B

SOIL SLOPES LEGEND

0 TO 8%	B
8 TO 15%	C
15 TO 25%	D
25%	E



GRAPHIC SCALE



ADDITIONAL ABUTERS:

- 233 34
NF DANIEL & CRISTIN WAGNER
411 FRANKLIN PIERCE HWY
BARRINGTON, NH 03825
SCRD 3124-0312
- 233 35
NF ROBERT & REBECCA LITCHFIELD
901 FRANKLIN PIERCE HWY
BARRINGTON, NH 03825
- 233 36
NF STEVEN KITTREDGE
5 RICHARDSON DR
BARRINGTON, NH 03825
SCRD 1575-0750
- 233 37
NF WILLIAM L. & KARLA A. COOPER
8 RICHARDSON DR
BARRINGTON, NH 03825
SCRD 4245-0763
- 234 87
NF ADAM J. REEVES & MATHEW F. YOUNG
262 FRANKLIN PIERCE HWY
STRAFFORD, NH 03804
SCRD 4368-0465
- 240 1
NF THEODORE & GAIL KITTREDGE
KITTREDGE TRUST
14 RICHARDSON DR
BARRINGTON, NH 03825

NOTES:

1. OWNER OF RECORD: TAX MAP 233 LOT 77 & TAX MAP 234 LOTS 1.2 & 1.4 TOWN OF BARRINGTON P.O. BOX 660 BARRINGTON, NH 03825 SCR D BK4342 P60044 (MAP 233 LOT 77) SCR D BK2326 P60758 (MAP 234 LOT 1.2)
2. THE INTENT OF THIS PLAN IS TO SHOW THE CONSTRUCTION OF A 100FT X 250FT BUILDING WITH A 12FT WIDE DOCKING AREA (21,175 SF) TOTAL FOOTPRINT AND 6,250 SF MEZZANINE, AND ASSOCIATED IMPROVEMENTS.
3. PARCEL IS ZONED VILLAGE DISTRICT (VD) PER THE TOWN OF BARRINGTON, NH ZONING MAP AMENDED JUNE 6, 2014.
4. PARCEL IS NOT IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33017C0285D, DATED MAY 17, 2005.
5. FIELDWORK CONDUCTED BY JONES & BEACH ENGINEERS, INC. IN SPRING 2019.
6. WETLANDS WERE DELINEATED BY JONES & BEACH ENGINEERS, INC. IN SPRING 2019.
7. PROPERTY TO BE SERVICED BY ON-SITE WELL AND SEPTIC.
8. ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
9. THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
10. BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 12 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.
11. ALL UTILITIES SHALL BE LOCATED UNDERGROUND EXCEPT AS NOTED ON PLAN APPROVED BY THE PLANNING BOARD.
12. TOWN OF BARRINGTON, NEW HAMPSHIRE ZONING ORDINANCE AS AMENDED MARCH 13, 2018 DIMENSIONAL REQUIREMENTS FOR THE VILLAGE DISTRICT (NON-RESIDENTIAL):
 - MINIMUM LOT SIZE = 30,000 SF
 - MINIMUM LOT FRONTAGE = 75 FT
 - MINIMUM FRONT SETBACK = 20 FT
 - MINIMUM SIDE SETBACK = 15 FT
 - MINIMUM REAR SETBACK = 15 FT
 - MAXIMUM BUILDING HEIGHT = 35 FT
 - MAXIMUM BUILDING STORIES = 3
 - MAXIMUM LOT COVERAGE = 60%
 - MAXIMUM BUILDING SIZE = 50,000 SF
 - BUFFER FOR EXISTING RESIDENTIAL USES = 50 FT
 - GREENBELT BUFFER = 50 FT
 - WETLAND BUFFER = 50 FT
13. 2013 SITE PLAN OFF-STREET PARKING AND LOADING STANDARDS:
 - PARKING SPACE DIMENSIONS:
 - MINIMUM 4 FT WIDE IS FT LONG
 - MINIMUM AISLE WIDTHS SHALL BE 22 FT FOR ONE-WAY AND 24 FT FOR TWO-WAY AISLES.
 - SEE NOTE 14 FOR REQUIRED PARKING SPACES.
14. PARKING REQUIRED/PROPOSED:
 - PROPOSED BUILDING (LEFT INDUSTRY) GROSS FLOOR AREA = 33,965 SF
 - REQUIREMENT = 1.5 SPACES/1,000 SF = 50.9 SPACES
 - 33,965 SF x 1.5 SPACES/1,000 SF = 50.9 SPACES
 - TOTAL SPACES PROVIDED = 15 SPACES
15. ALL KNOX BOX, FIRE ALARM SYSTEM AND FIRE SPRINKLER INSTALLATION & INSPECTIONS TO BE COORDINATED WITH THE BARRINGTON FIRE DEPARTMENT.
16. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT DEFICIENCIES EXIST IN THE APPROVED DESIGN DRAWINGS, THE CONTRACTOR SHALL BE REQUIRED TO CORRECT THE DEFICIENCIES TO MEET THE REQUIREMENTS OF THE REGULATIONS AT NO EXPENSE TO THE TOWN.
17. REQUIRED EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY DISTURBANCE OF THE SITE'S SURFACE AREA AND SHALL BE MAINTAINED THROUGH THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEASURES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SITE DUE TO ACTUAL SITE CONDITIONS, THE OWNER SHALL BE REQUIRED TO INSTALL THE NECESSARY EROSION PROTECTION AT NO EXPENSE TO THE TOWN.
18. IN ACCORDANCE WITH TOWN REGULATIONS AND RSA 676:13, ALL IMPROVEMENTS SPECIFIED ON THESE SITE PLANS SHALL BE CONSTRUCTED, COMPLETED, INSPECTED AND APPROVED BY THE TOWN OF BARRINGTON PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
19. THE PROPOSED WORK WILL RESULT IN 11,520SF OF DISTURBANCE WITHIN THE 50' WETLAND BUFFER.

LEGEND:

- GRANITE BOUND FOUND
- IRON PIPE FOUND
- DRILL HOLE FOUND
- (TYP) TYPICAL
- (TYP) TO BE REMOVED
- VSG VERTICAL GRANITE CURB
- S6C SLOPED GRANITE CURB
- PPP PROPOSED POROUS PAVEMENT
- PTP PROPOSED TRADITIONAL PAVEMENT
- PROPERTY LINE
- EDGE OF PAVEMENT (EOP)
- SUBSURFACE INFILTRATION
- TRAFFIC DIRECTION
- (NOT TO BE PAINTED)
- SOIL DELINEATION
- OVERHEAD UTILITIES
- UNDERGROUND UTILITIES
- UTILITY POLE
- GUY WIRE
- LIGHT FIXTURE
- WELL
- WATER LINE
- DRAIN LINE
- SEPTIC LINE
- GAS LINE
- STONEMALL
- GUARD RAIL
- CHAINLINK FENCE
- WETLANDS
- SILT SOXX
- TREELINE
- TREE
- NUMBER OF PARKING SPOTS IN AREA

PLANNING BOARD APPROVAL BLOCK

4	JAN 6, 2020	FOR APPROVAL	
3	DEC 3, 2019	FOR APPROVAL	
1	SEP 13, 2019	FOR APPROVAL	
ISS. DATE:	DESCRIPTION OF ISSUE:		CHK.
DRAWN: JJM	DESIGN: JJM		
CHECKED: BDS	CHECKED: BDS		

I CERTIFY THAT THIS SURVEY PLAT WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION. THIS PLAN IS A RESULT OF FIELD SURVEY WORK PERFORMED BY JONES & BEACH ENGINEERS INC. IN 2012 THROUGH 2019. THE ERROR OF CLOSURE IS BETTER THAN 1/10,000. SURVEY PER NHLSA STANDARDS; CATEGORY 1 CONDITION 1.

LICENSED LAND SURVEYOR, DATE
SEAL:

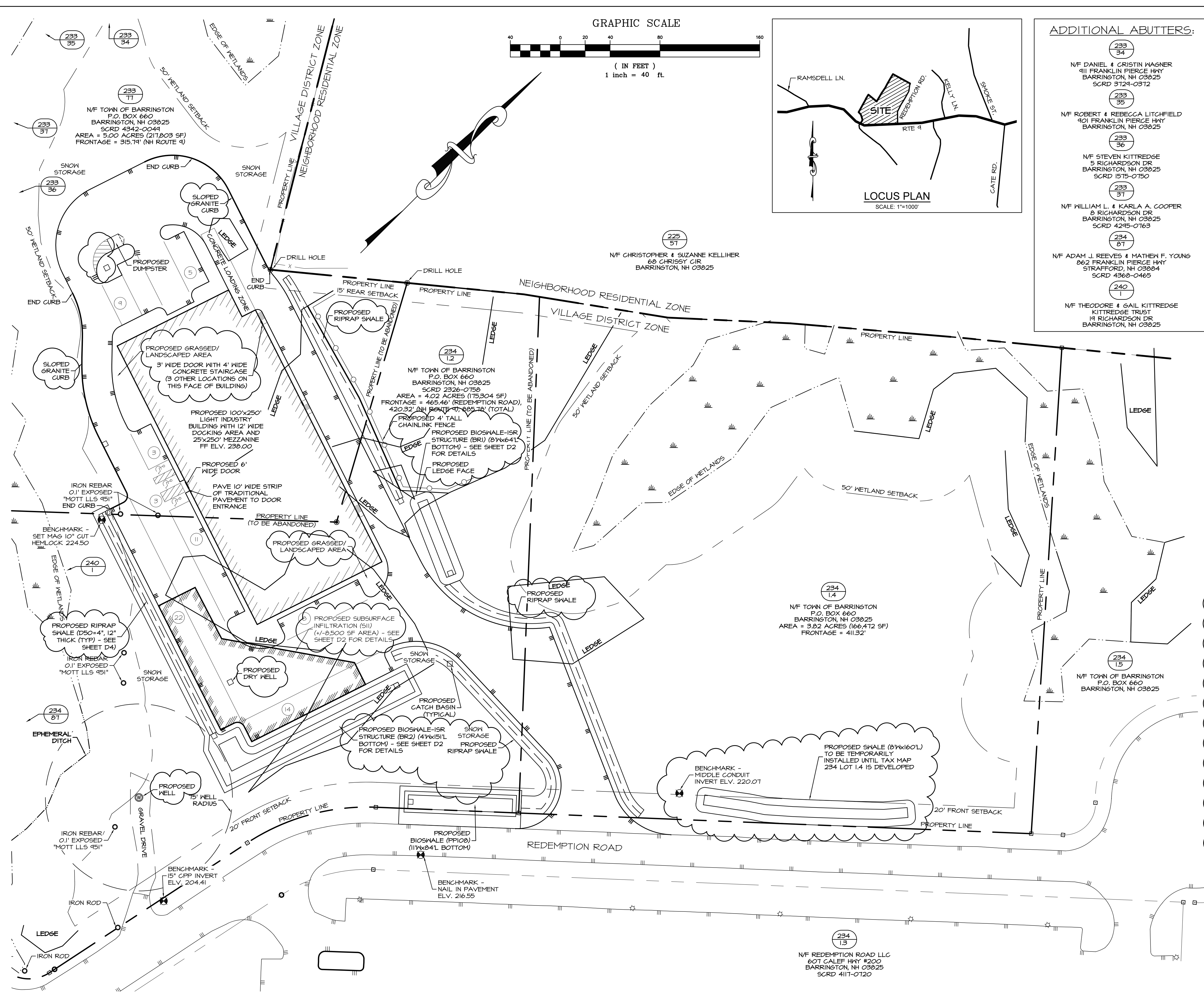
4	JAN 6, 2020	FOR APPROVAL	
3	DEC 3, 2019	FOR APPROVAL	
1	SEP 13, 2019	FOR APPROVAL	
ISS. DATE:	DESCRIPTION OF ISSUE:		CHK.
DRAWN: JJM	DESIGN: JJM		
CHECKED: BDS	CHECKED: BDS		

CLIENT:
EMANUEL ENGINEERING
civil & structural consultants, land planners
118 PORTSMOUTH AVENUE, A202
STRATHAM, NH 03855
P: 603-772-4400 F: 603-772-4487
WWW.EMANUELENGINEERING.COM

TURBOCAM INTERNATIONAL
607 CALEF HIGHWAY
BARRINGTON, NH 03825

TITLE: **SITE PLAN**
FOR
TAX MAP 233 LOT 77
AND TAX MAP 234 LOTS 1.2 & 1.4
TURBOCAM INTERNATIONAL
ROUTE 9 / REDEMPTION ROAD (SITE)
BARRINGTON, NH 03825
& TOWN OF BARRINGTON
PO BOX 660
BARRINGTON, NH 03825

PROJECT:	SCALE:	SHEET:
19-020	1"=40'	C3

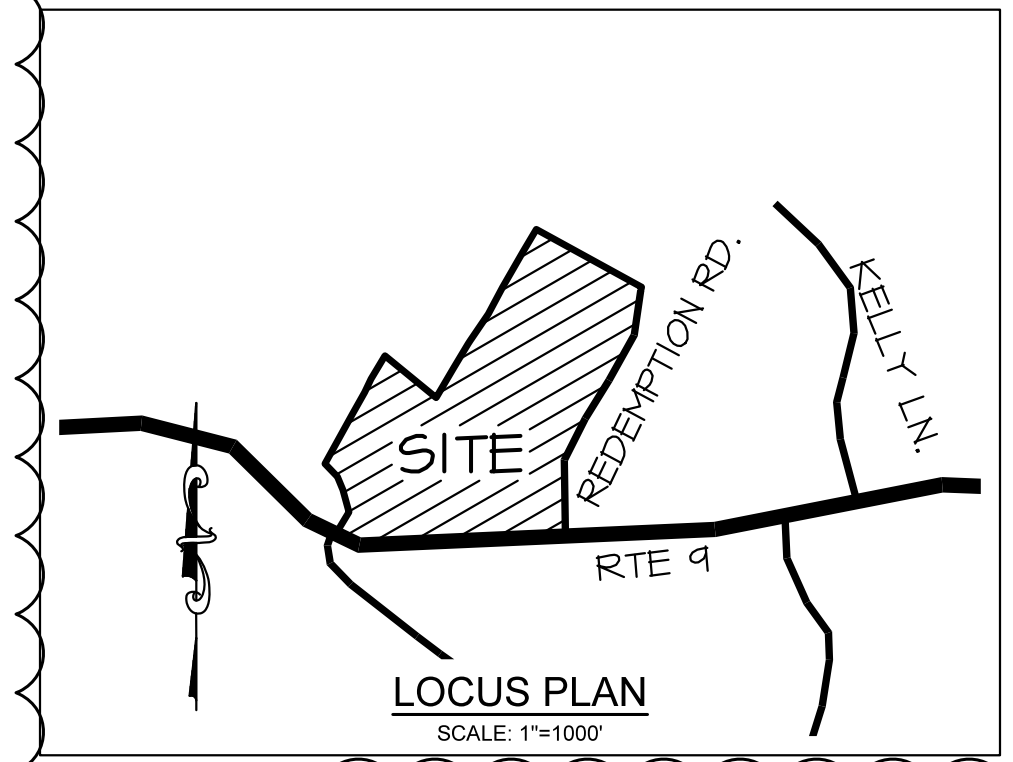


Drainage Structure Chart							
Structure #	Structure	Size	Lid/Rim	Rim Elevation	Sump	Inlet	Inlet Elevation
CB1	Concrete Catch Basin	4' Diameter	NEENAH #R-3570	227.75	None	Lid/Rim	Same as Rim
CB2	Concrete Catch Basin	4' Diameter	Concrete Cover	217.50	None	(2) 4"x24" Knockouts	216.30
CB3	See Sheet D2	4' Diameter	NEENAH #R-1550-A	229.75	See Sheet D2	(1) 8"x24" Knockout	229.67
CB4	Concrete Catch Basin	4' Diameter	NEENAH #R-3570	235.00	None	Lid/Rim	Same as Rim
CB5	See Sheet D2	4' Diameter	NEENAH #R-1550-A	230.75	See Sheet D2	(1) 8"x24" Knockout	228.67
DW1	Concrete Drywell	4' Diameter	NEENAH #R-1550-A	Field Locate	3'	Drywell Perforations	Varies
SMH1	Concrete Catch Basin	4' Diameter	NEENAH #R-1550-A	236.50	None	Pipe	See Pipe Listing
PT1	PRETX-Curb	See Note 4	See Note 4	See Note 4	See Note 4	See Note 4	232.20
PT2	PRETX-Curb	See Note 4	See Note 4	See Note 4	See Note 4	See Note 4	233.00
PT3	PRETX-Drop	4' Diameter	NEENAH #R-3570	235.40	None	Lid/Rim	Same as Rim

Notes:
 1. Proposed catch basins to be by Shea Concrete or equal.
 2. Use temporary SiltSack Type C on CB1, CB4, and CB5 during construction (see detail on sheet D3).
 3. See sheets D2 and D5 for knockout details.
 4. For more details on PT1, PT2, and PT3 see sheets D6-D8.

Pipe Listing							
Pipe #	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	Material	Diameter (inches)	Pipe Type
PDL1A	226.50	225.00	50	0.030	HDPE	12	Solid
PDL1B	224.90	224.00	35	0.026	HDPE	12	Solid
PDL2	212.60	212.00	85	0.007	HDPE	12	Solid
PDL3	228.75	228.00	110	0.007	HDPE	12	Solid
PDL4	228.00	227.50	80	0.006	SDR-25	6	Solid
PDL5	227.67	226.20	170	0.009	HDPE	12	Solid
PDL6	227.00	225.50	150	0.010	SDR-25	6	Solid
PDL7	227.15	221.00	70	0.088	HDPE	12	Solid
PDL8	231.91	231.40	205	0.002	HDPE	15	Solid
PDL9	232.03	231.91	50	0.002	HDPE	15	Solid
PDL10	232.37	232.03	135	0.003	HDPE	15	Solid
PUD1	232.5	231.50	90	0.011	SDR-35	8	Solid
PUD2	236.5	232.50	120	0.033	SDR-35	8	Perforated
PUD3	234.3	233.20	40	0.028	SDR-35	8	Solid
PUD4A	235.5	234.30	55	0.022	SDR-35	8	Perforated
PUD4B	236.5	235.35	65	0.018	SDR-35	8	Perforated
PUD5	232.5	232.40	40	0.002	SDR-35	6	Solid
PUD6	232.5	232.5	70	0.000	SDR-35	6	Perforated
PUD7	232.60	232.30	35	0.009	SDR-35	6	Solid
PUD8	234.15	232.60	80	0.019	SDR-35	6	Perforated
PUD9	231	230.00	35	0.029	SDR-35	6	Solid
PUD10	232.65	231.00	40	0.041	SDR-35	6	Perforated
PUD11	213.8	212.7	80	0.014	SDR-35	6	Perforated

Notes:
 1. All perforated pipe shall be solid outside of bioswale or drip edge areas.
 2. Pipes PDL1A, PDL1B, PDL2, PDL7, and PDL8 to have end section trash guard installed where it daylight (see pipe grate protection detail on sheet D4).
 3. Pipes PUD1, PUD5, PUD7, and PUD9 to have animal guard grates where it daylight (see pipe grate protection detail on sheet D4).
 4. Pipes PDL1A, PDL1B, PDL2, PDL7, and PDL8 to have flared entrance/exit where it daylight (see flared end section detail on sheet D4).
 5. Pipes PDL4 and PDL6 to have orifice plate and pipe screen (see typical outlet control structure detail on sheet D2).
 6. Pipes PDL3, PDL4, PDL5, and PDL6 outlet to be modified (see typical pipe end detail on sheet D2).
 7. See bioswale detail on sheet D5 for additional information on the bioswale.



LEGEND:

- ⊙ GRANITE BOUND FOUND
- IRON PIPE FOUND
- (TYP) TYPICAL TO BE REMOVED
- ▬ VERTICAL GRANITE CURB
- ▬ SLOPED GRANITE CURB
- ▬ PROPOSED POROUS PAVEMENT
- ▬ PROPOSED TRADITIONAL PAVEMENT
- ▬ PROPERTY LINE
- ▬ EDGE OF PAVEMENT (EOP)
- ▬ SUBSURFACE INFILTRATION TRAFFIC DIRECTION (NOT TO BE PAINTED)
- ⋯ SOIL DELINEATION
- OH— OVERHEAD UTILITIES
- UG— UNDERGROUND UTILITIES
- UT— UTILITY POLE
- ⊙ GUY WIRE
- ⊙ LIGHT FIXTURE
- ⊙ WELL
- W— WATER LINE
- S— DRAIN LINE
- SE— SEPTIC LINE
- G— GAS LINE
- ST— STONEWALL
- GR— GUARD RAIL
- CF— CHAINLINK FENCE
- W— WETLANDS
- S— SILT SOXX
- T— TREELINE
- ⊙ NUMBER OF PARKING SPOTS IN AREA

- NOTES:**
- OWNER OF RECORD, TAX MAP 233 LOT 77 & TAX MAP 234 LOTS 1.2 & 1.4 TOWN OF BARRINGTON, NH 03825 SCRD BK4342 P60044 (MAP 233 LOT 77) SCRD BK2326 P60758 (MAP 234 LOT 1.2)
 - THE INTENT OF THIS PLAN IS TO SHOW THE DRAINAGE STRUCTURES AND PROPOSED GRADING ASSOCIATED WITH THE SITE IMPROVEMENTS.
 - PARCEL IS ZONED VILLAGE DISTRICT (VD) PER THE TOWN OF BARRINGTON, NH ZONING MAP AMENDED JUNE 6, 2014.
 - PARCEL IS NOT IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 50107C0285D, DATED MAY 17, 2005.
 - FIELDWORK CONDUCTED BY JONES & BEACH ENGINEERS, INC. IN SPRING 2019.
 - WETLANDS WERE DELINEATED BY JONES & BEACH ENGINEERS, INC. IN SPRING 2019.
 - PROPERTY TO BE SERVICED BY ON-SITE WELL AND SEPTIC.
 - ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
 - THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
 - BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 72 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.
 - ALL UTILITIES SHALL BE LOCATED UNDERGROUND EXCEPT AS NOTED ON PLAN APPROVED BY THE PLANNING BOARD.
 - IN THE EVENT OF A CUT INTO LEDGE, A VERTICAL FACE MAY BE USED. IF THIS IS DONE, A 4FT TALL CHAINLINK FENCE MUST BE INSTALLED AT THE TOP OF THE SLOPE.
 - REQUIRED EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY DISTURBANCE OF THE SITE'S SURFACE AREA AND SHALL BE MAINTAINED THROUGH THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES. IF DURING CONSTRUCTION IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEASURES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SITE DUE TO ACTUAL SITE CONDITIONS, THE OWNER SHALL BE REQUIRED TO INSTALL THE NECESSARY EROSION PROTECTION AT NO EXPENSE TO THE TOWN.
 - FILL BELOW BIORETENTIONS SYSTEMS MUST HAVE AN INFILTRATION RATE GREATER THAN OR EQUAL TO 10"/HOUR. IF NATIVE SOIL IS USED AS THE SUBGRADE THEN TESTING IS REQUIRED TO CONFIRM THIS VALUE.
 - FOR EARTHEN SLOPES BETWEEN 3:1 AND 1:1, NORTH AMERICAN GREEN SCIBOEN SHALL BE INSTALLED. SEE DETAIL ON SHEET D4. FOR ANY SLOPES STEEPER THAN 1:1, CONSULT ENGINEER.

4	JAN 6, 2020	FOR APPROVAL	
3	DEC 3, 2019	FOR APPROVAL	
1	SEPT 13, 2019	FOR APPROVAL	

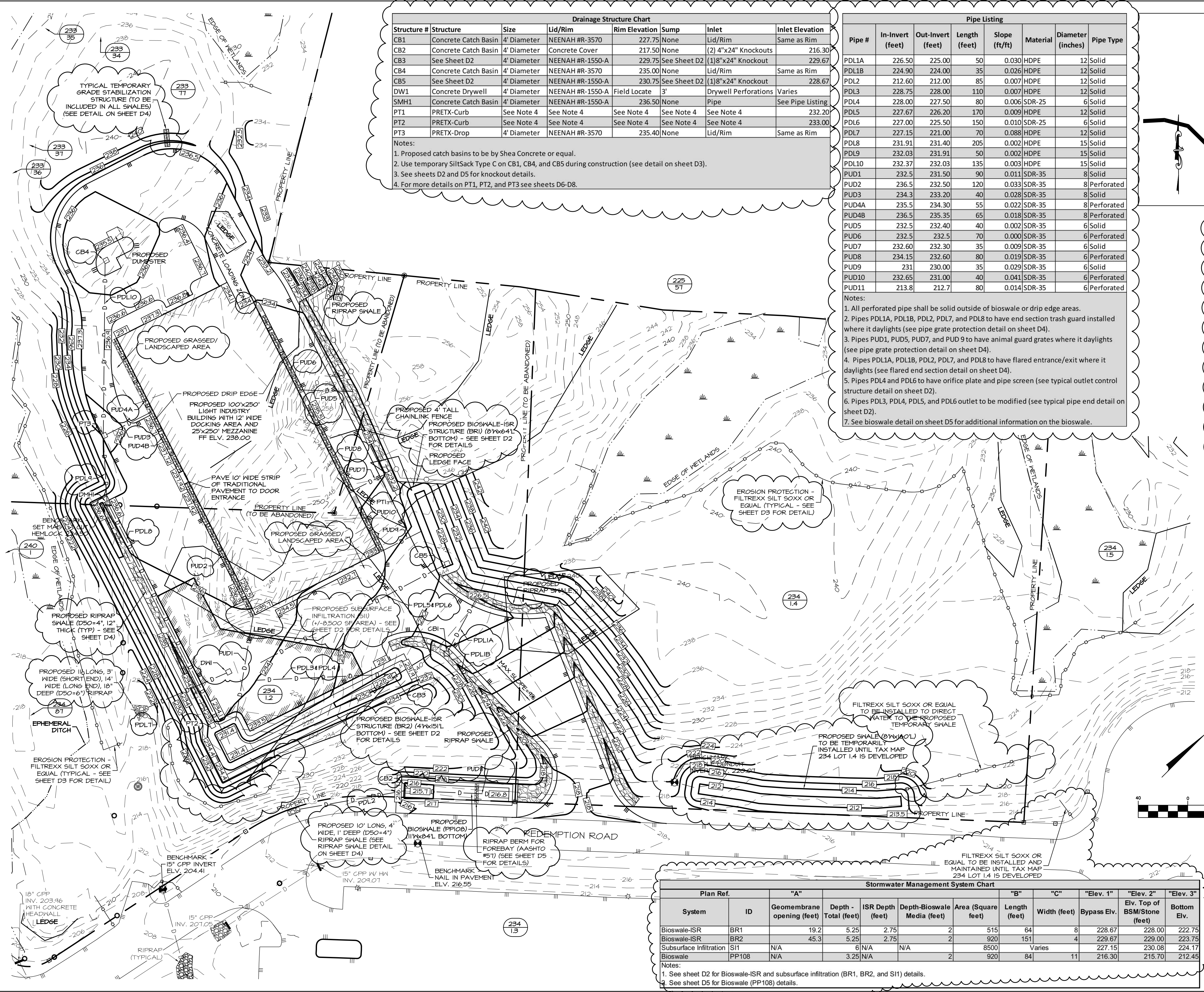
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 CHECKED: RMR CHECKED: BDS

EMANUEL ENGINEERING
 civil & structural consultants, land planners
 118 PORTSMOUTH AVENUE, A202
 STRATHAM, NH 03885
 P: 603-772-4400 F: 603-772-4487
 WWW.EMANUELENGINEERING.COM

CLIENT:
TURBOCAM INTERNATIONAL
 607 CALEF HIGHWAY
 BARRINGTON, NH 03825

TITLE:
GRADING & DRAINAGE PLAN
 FOR
 TAX MAP 233 LOT 77
 AND TAX MAP 234 LOTS 1.2 & 1.4
 TURBOCAM INTERNATIONAL
 ROUTE 9 / REDEMPTION ROAD (SITE)
 BARRINGTON, NH 03825
 & TOWN OF BARRINGTON
 PO BOX 660
 BARRINGTON, NH 03825

PROJECT: 19-020 SCALE: 1"=40' SHEET: C4

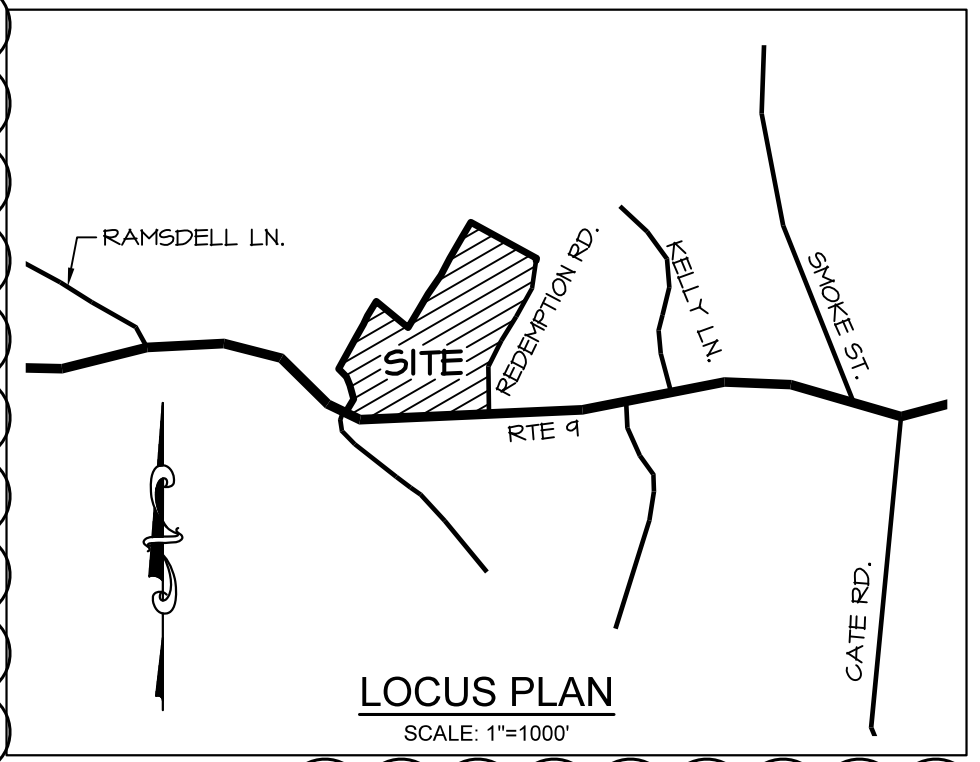


Drainage Structure Chart							
Structure #	Structure	Size	Lid/Rim	Rim Elevation	Sump	Inlet	Inlet Elevation
CB1	Concrete Catch Basin	4' Diameter	NEENAH #R-3570	227.75	None	Lid/Rim	Same as Rim
CB2	Concrete Catch Basin	4' Diameter	Concrete Cover	217.50	None	(2) 4"x24" Knockouts	216.30
CB3	See Sheet D2	4' Diameter	NEENAH #R-1550-A	229.75	See Sheet D2	(1) 8"x24" Knockout	229.67
CB4	Concrete Catch Basin	4' Diameter	NEENAH #R-3570	235.00	None	Lid/Rim	Same as Rim
CB5	See Sheet D2	4' Diameter	NEENAH #R-1550-A	230.75	See Sheet D2	(1) 8"x24" Knockout	228.67
DW1	Concrete Drywell	4' Diameter	NEENAH #R-1550-A	Field Locate	3'	Drywell Perforations	Varies
SMH1	Concrete Catch Basin	4' Diameter	NEENAH #R-1550-A	236.50	None	Pipe	See Pipe Listing
PT1	PRETX-Curb	See Note 4	See Note 4	See Note 4	See Note 4	See Note 4	232.20
PT2	PRETX-Curb	See Note 4	See Note 4	See Note 4	See Note 4	See Note 4	233.00
PT3	PRETX-Drop	4' Diameter	NEENAH #R-3570	235.40	None	Lid/Rim	Same as Rim

Notes:
 1. Proposed catch basins to be by Shea Concrete or equal.
 2. Use temporary SiltSack Type C on CB1, CB4, and CB5 during construction (see detail on sheet D3).
 3. See sheets D2 and D5 for knockout details.
 4. For more details on PT1, PT2, and PT3 see sheets D6-D8.

Pipe Listing							
Pipe #	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	Material	Diameter (inches)	Pipe Type
PDL1A	226.50	225.00	50	0.030	HDPE	12	Solid
PDL1B	224.90	224.00	35	0.026	HDPE	12	Solid
PDL2	212.60	212.00	85	0.007	HDPE	12	Solid
PDL3	228.75	228.00	110	0.007	HDPE	12	Solid
PDL4	228.00	227.50	80	0.006	SDR-25	6	Solid
PDL5	227.67	226.20	170	0.009	HDPE	12	Solid
PDL6	227.00	225.50	150	0.010	SDR-25	6	Solid
PDL7	227.15	221.00	70	0.088	HDPE	12	Solid
PDL8	231.91	231.40	205	0.002	HDPE	15	Solid
PDL9	232.03	231.91	50	0.002	HDPE	15	Solid
PDL10	232.37	232.03	135	0.003	HDPE	15	Solid
PUD1	232.5	231.50	90	0.011	SDR-35	8	Solid
PUD2	236.5	232.50	120	0.033	SDR-35	8	Perforated
PUD3	234.3	233.20	40	0.028	SDR-35	8	Solid
PUD4A	235.5	234.30	55	0.022	SDR-35	8	Perforated
PUD4B	236.5	235.35	65	0.018	SDR-35	8	Perforated
PUD5	232.5	232.40	40	0.002	SDR-35	6	Solid
PUD6	232.5	232.5	70	0.000	SDR-35	6	Perforated
PUD7	232.60	232.30	35	0.009	SDR-35	6	Solid
PUD8	234.15	232.60	80	0.019	SDR-35	6	Perforated
PUD9	231	230.00	35	0.029	SDR-35	6	Solid
PUD10	232.65	231.00	40	0.041	SDR-35	6	Perforated
PUD11	213.8	212.7	80	0.014	SDR-35	6	Perforated

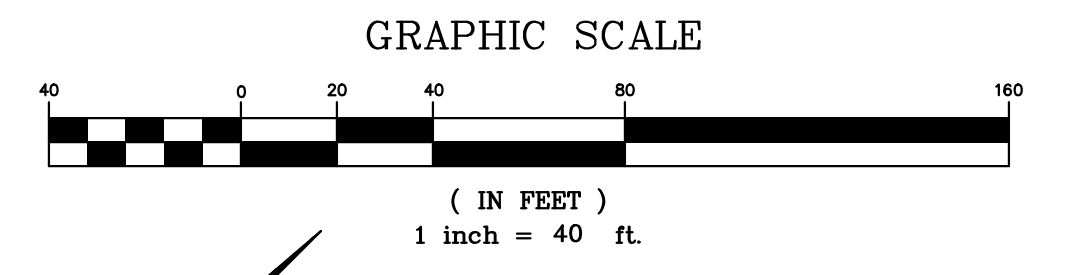
Notes:
 1. All perforated pipe shall be solid outside of bioswale or drip edge areas.
 2. Pipes PDL1A, PDL1B, PDL2, PDL7, and PDL8 to have end section trash guard installed where it daylights (see pipe grate protection detail on sheet D4).
 3. Pipes PUD1, PUD5, PUD7, and PUD 9 to have animal guard grates where it daylights (see pipe grate protection detail on sheet D4).
 4. Pipes PDL1A, PDL1B, PDL2, PDL7, and PDL8 to have flared entrance/exit where it daylights (see flared end section detail on sheet D4).
 5. Pipes PDL4 and PDL6 to have orifice plate and pipe screen (see typical outlet control structure detail on sheet D2).
 6. Pipes PDL3, PDL4, PDL5, and PDL6 outlet to be modified (see typical pipe end detail on sheet D2).
 7. See bioswale detail on sheet D5 for additional information on the bioswale.



- NOTES:**
- OWNER OF RECORD, TAX MAP 233 LOT 77 & TAX MAP 234 LOTS 1.2 & 1.4 TOWN OF BARRINGTON, NH 03825 SCRD BK4342 P60044 (MAP 233 LOT 77) SCRD BK2326 P60758 (MAP 234 LOT 1.2)
 - THE INTENT OF THIS PLAN IS TO SHOW THE ASSOCIATED UTILITIES REQUIRED FOR THE PROPOSED LIGHT INDUSTRIAL BUILDING.
 - PARCEL IS ZONED VILLAGE DISTRICT (VD) PER THE TOWN OF BARRINGTON, NH ZONING MAP AMENDED JUNE 6, 2014.
 - PARCEL IS NOT IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 3301C0285D, DATED MAY 17, 2005.
 - FIELDWORK CONDUCTED BY JONES & BEACH ENGINEERS, INC. IN SPRING 2019.
 - WETLANDS WERE DELINEATED BY JONES & BEACH ENGINEERS INC. IN SPRING 2014.
 - PROPERTY TO BE SERVICED BY ON-SITE WELL AND SEPTIC.
 - ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
 - THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
 - BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 72 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.
 - ALL UTILITIES SHALL BE LOCATED UNDERGROUND EXCEPT AS NOTED ON PLAN APPROVED BY THE PLANNING BOARD.

LEGEND:

- GRANITE BOUND FOUND
- IRON PIPE FOUND
- DRILL HOLE FOUND
- TYPICAL
- (TYP) TO BE REMOVED
- VERTICAL GRANITE CURB
- SLOPED GRANITE CURB
- PROPOSED POROUS PAVEMENT
- PROPOSED TRADITIONAL PAVEMENT
- PROPERTY LINE
- EDGE OF PAVEMENT (EOP)
- SUBSURFACE INFILTRATION
- TRAFFIC DIRECTION (NOT TO BE PAINTED)
- SOIL DELINEATION
- OVERHEAD UTILITIES
- UNDERGROUND UTILITIES
- UTILITY POLE
- GUY WIRE
- LIGHT FIXTURE
- WELL
- WATER LINE
- DRAIN LINE
- SEPTIC LINE
- GAS LINE
- STONEWALL
- GUARD RAIL
- CHAINLINK FENCE
- WETLANDS
- SILT SOXX
- TREELINE
- TREE
- NUMBER OF PARKING SPOTS IN AREA



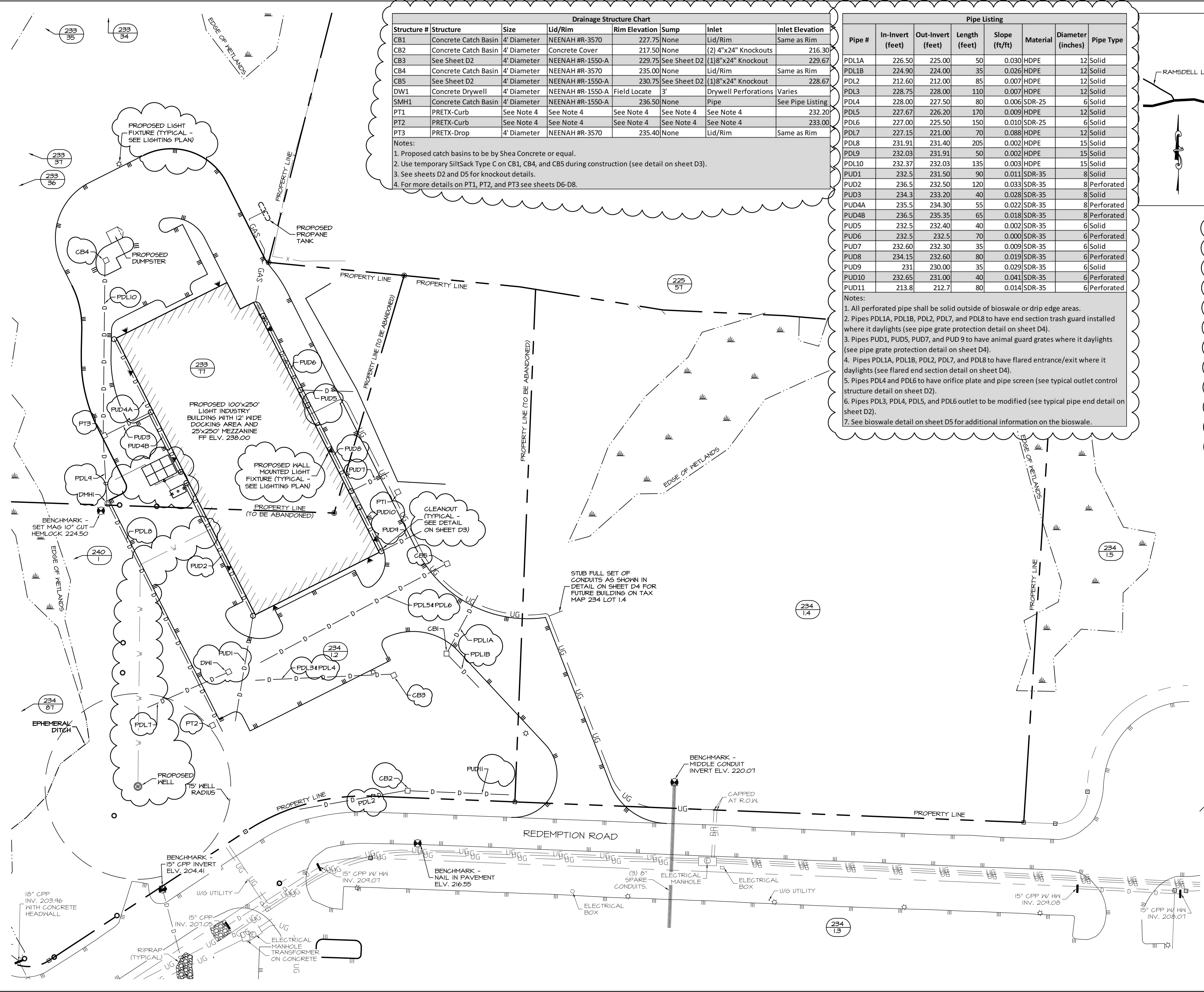
4	JAN 6, 2020	FOR APPROVAL	
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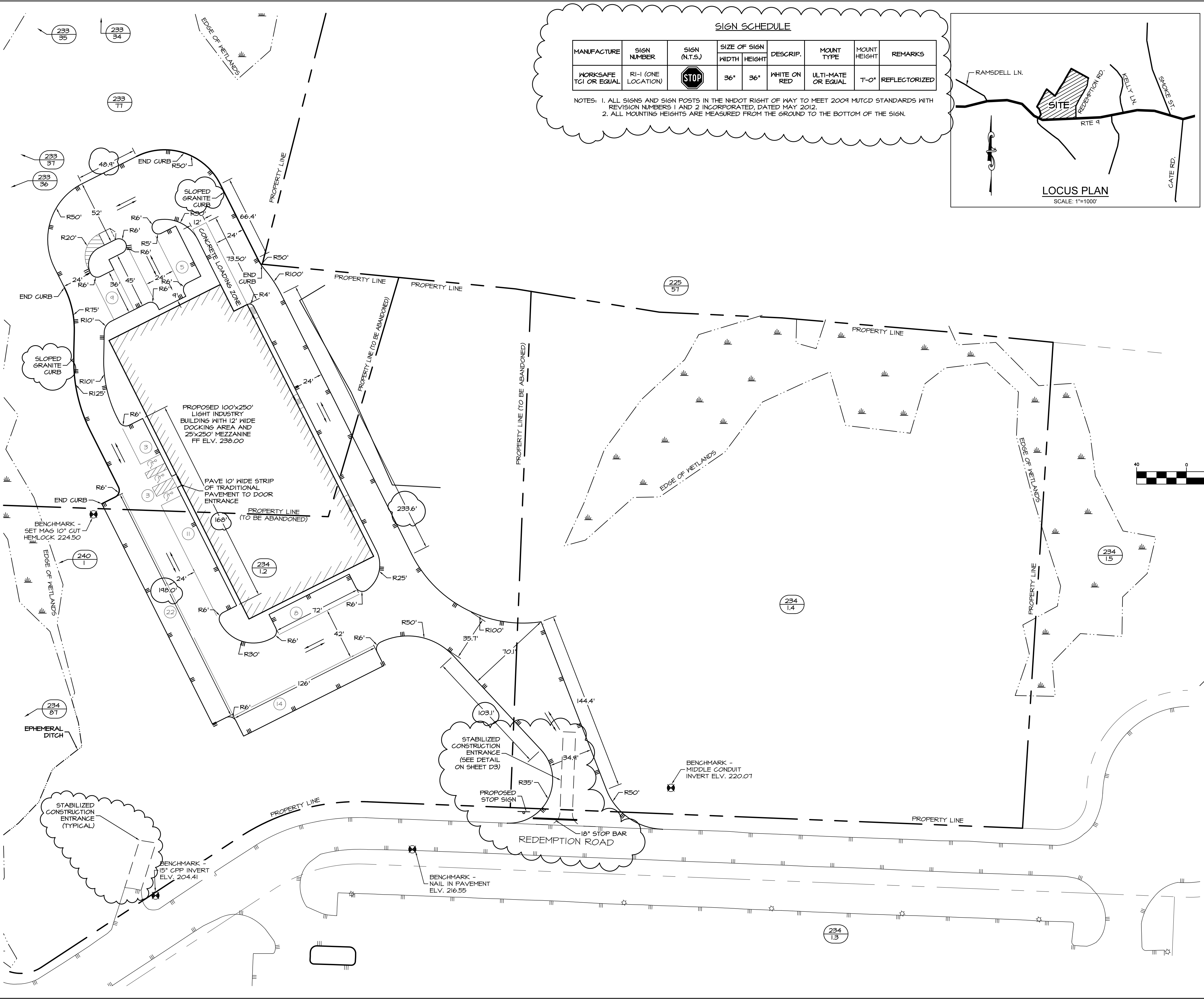
EMANUEL ENGINEERING
 civil & structural consultants, land planners
 118 PORTSMOUTH AVENUE, A202
 STRATHAM, NH 03885
 P: 603-772-4400 F: 603-772-4487
 WWW.EMANUELENGINEERING.COM

CLIENT:
TURBOCAM INTERNATIONAL
 607 CALEF HIGHWAY
 BARRINGTON, NH 03825

TITLE:
UTILITIES PLAN
 FOR
 TAX MAP 233 LOT 77
 AND TAX MAP 234 LOTS 1.2 & 1.4
 TURBOCAM INTERNATIONAL
 ROUTE 9 / REDEMPTION ROAD (SITE)
 BARRINGTON, NH 03825
 & TOWN OF BARRINGTON
 PO BOX 660
 BARRINGTON, NH 03825

PROJECT:	SCALE:	SHEET:
19-020	1"=40'	C5

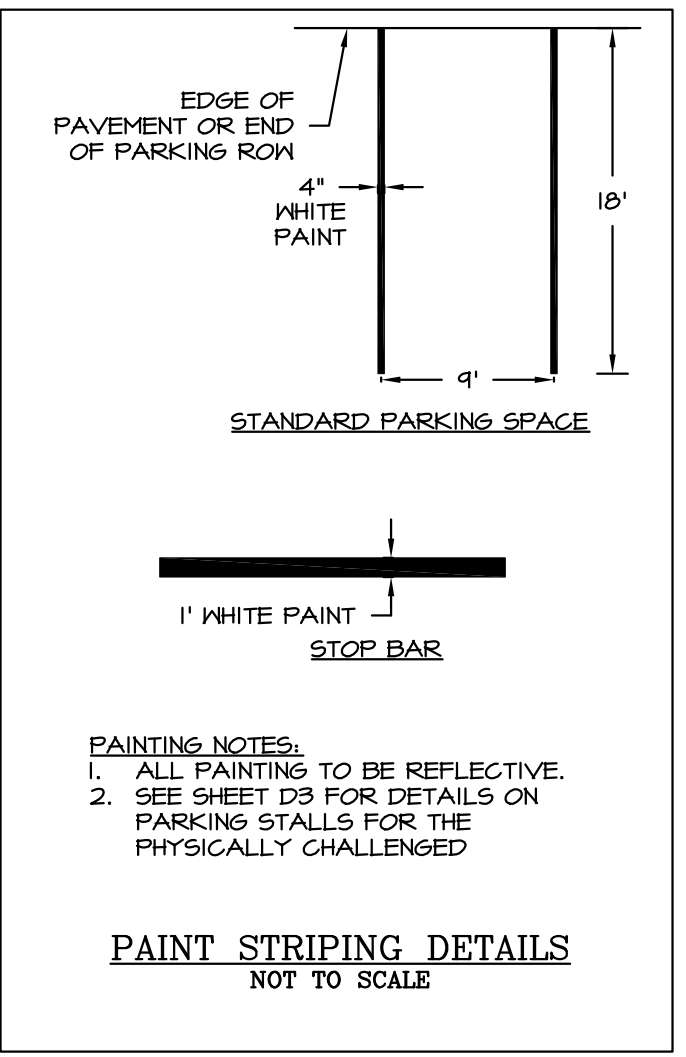
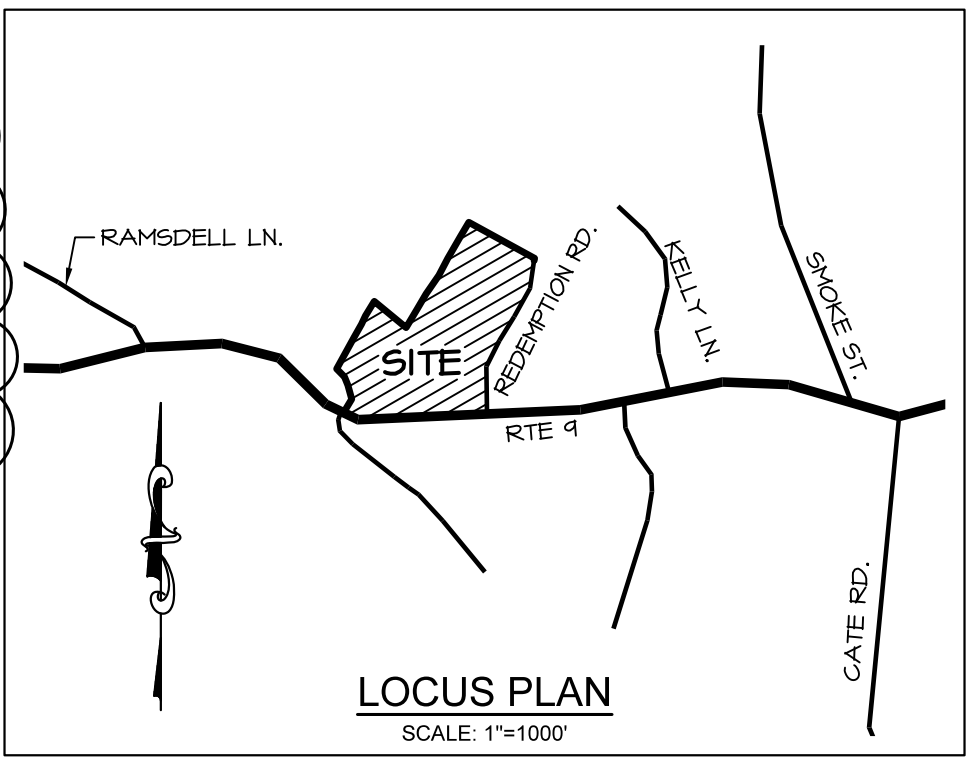




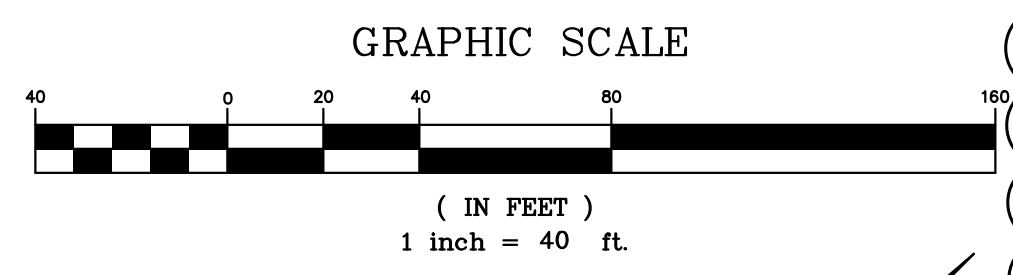
SIGN SCHEDULE

MANUFACTURE	SIGN NUMBER	SIGN (N.T.S.)	SIZE OF SIGN WIDTH HEIGHT	DESCRIP.	MOUNT TYPE	MOUNT HEIGHT	REMARKS
WORKSAFE TCI OR EQUAL	R1-1 (ONE LOCATION)		36" 36"	WHITE ON RED	ULTI-MATE OR EQUAL	7'-0"	REFLECTORIZED

NOTES: 1. ALL SIGNS AND SIGN POSTS IN THE W/HDOT RIGHT OF WAY TO MEET 2004 MUTCD STANDARDS WITH REVISION NUMBERS 1 AND 2 INCORPORATED, DATED MAY 2012.
2. ALL MOUNTING HEIGHTS ARE MEASURED FROM THE GROUND TO THE BOTTOM OF THE SIGN.



- NOTES:**
- OWNER OF RECORD: TAX MAP 233 LOT 11 & TAX MAP 234 LOTS 1.2 & 1.4 TOWN OF BARRINGTON, NH 03825 BARRINGTON, NH 03825 SCRD BK4342 P60044 (MAP 233 LOT 11) SCRD BK2326 P60758 (MAP 234 LOT 1.2)
 - THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION, SIZE, PAVING, AND RADII OF DRIVEWAY AND PARKING LOT WITHIN THE SITE.
 - PARCEL IS ZONED VILLAGE DISTRICT (VD) PER THE TOWN OF BARRINGTON, NH ZONING MAP AMENDED JUNE 6, 2014.
 - PARCEL IS NOT IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 3301C0285D, DATED MAY 17, 2005.
 - FIELDWORK CONDUCTED BY JONES & BEACH ENGINEERS, INC. IN SPRING 2019.
 - WETLANDS WERE DELINEATED BY JONES & BEACH ENGINEERS INC. IN SPRING 2019.
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LEGEND:

- GRANITE BOUND FOUND
- IRON PIPE FOUND
- DRILL HOLE FOUND
- TYPICAL
- TO BE REMOVED
- VERTICAL GRANITE CURB
- SLOPED GRANITE CURB
- PROPOSED POROUS PAVEMENT
- PROPOSED TRADITIONAL PAVEMENT
- PROPERTY LINE
- EDGE OF PAVEMENT (EOP)
- SUBSURFACE INFILTRATION
- TRAFFIC DIRECTION
- (NOT TO BE PAINTED)
- SOIL DELINEATION
- OVERHEAD UTILITIES
- UNDERGROUND UTILITIES
- UTILITY POLE
- GUY WIRE
- LIGHT FIXTURE
- WELL
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- CHAINLINK FENCE
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- SILT SOXX
- TREELINE
- TREE
- NUMBER OF PARKING SPOTS IN AREA

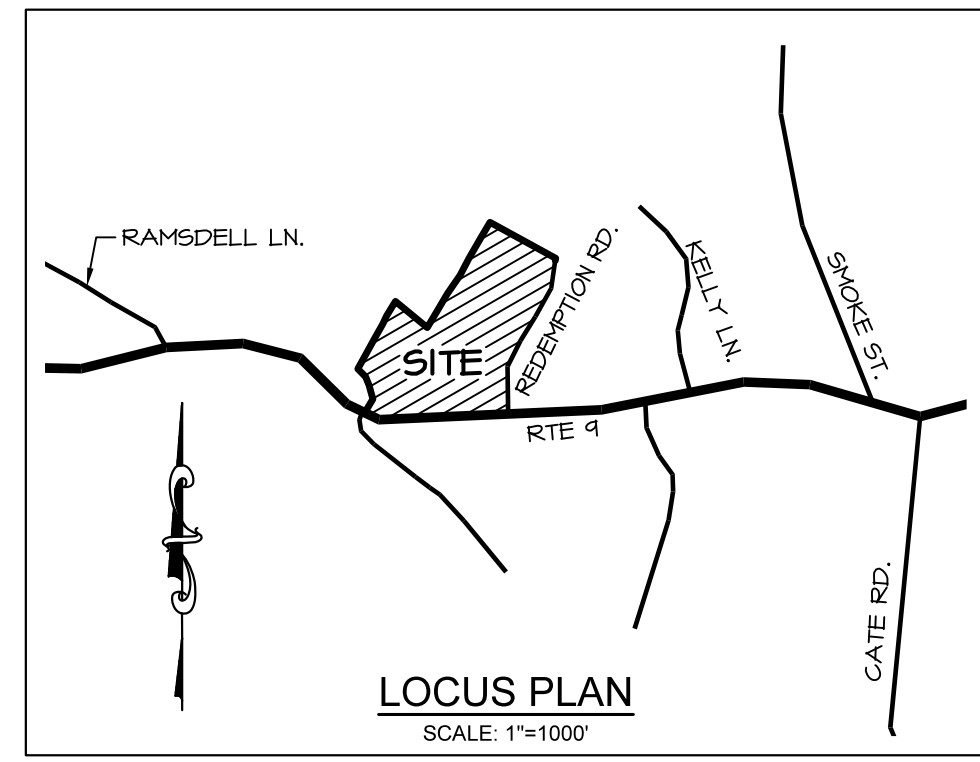
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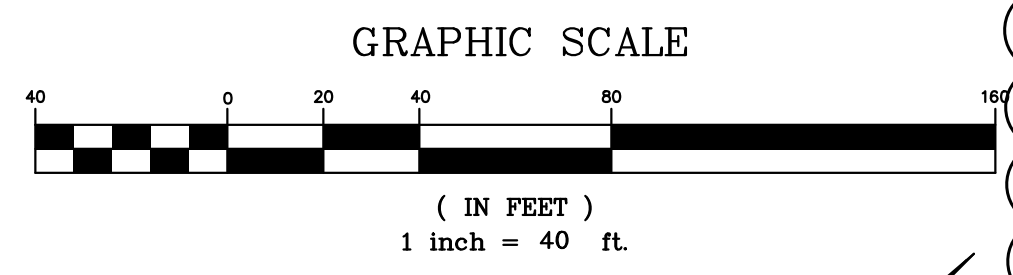
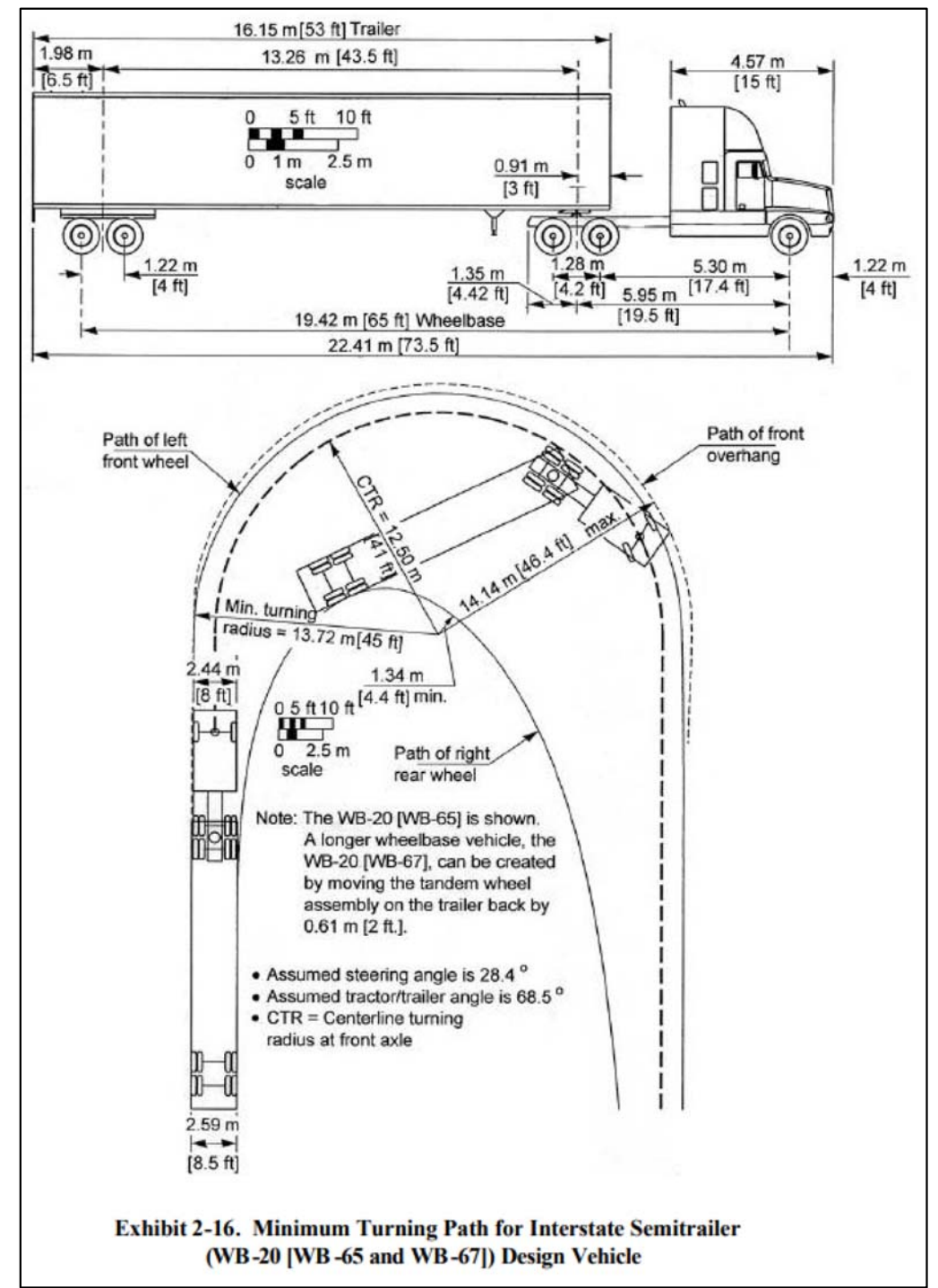
CLIENT:
TURBOCAM INTERNATIONAL
 607 CALEF HIGHWAY
 BARRINGTON, NH 03825

TITLE:
PAVING PLAN
 FOR
 TAX MAP 233 LOT 77
 AND TAX MAP 234 LOTS 1.2 & 1.4
 TURBOCAM INTERNATIONAL
 ROUTE 9 / REDEMPTION ROAD (SITE)
 BARRINGTON, NH 03825
 & TOWN OF BARRINGTON
 PO BOX 660
 BARRINGTON, NH 03825

PROJECT:	SCALE:	SHEET:
19-020	1"=40'	C6



- NOTES:**
- OWNER OF RECORD:
TAX MAP 233 LOT 11 & TAX MAP 234 LOTS 1.2 & 1.4
TOWN OF BARRINGTON
P.O. BOX 660
BARRINGTON, NH 03825
SCRD BK4342 PG0044 (MAP 233 LOT 11)
SCRD BK2326 PG0558 (MAP 234 LOT 1.2)
 - THE INTENT OF THIS PLAN IS TO SHOW VERIFY THAT A WB-65 INTERSTATE SEMITRAILER CAN ENTER THE PROPOSED SITE AND ALIGN WITH THE LOADING DOCK.
 - THE VEHICLE PATH TRACKING FEATURE FROM CARLSON CIVIL 2019 WAS USED TO DEMONSTRATE THE APPROXIMATE VEHICLE PATH.
 - FIELDWORK CONDUCTED BY JONES & BEACH ENGINEERS, INC. IN SPRING 2019.



LEGEND:

- GRANITE BOUND FOUND
- IRON PIPE FOUND
- ⊙ DRILL HOLE FOUND
- (TYP) TYPICAL
- (TBR) TO BE REMOVED
- VGC VERTICAL GRANITE CURB
- SGC SLOPED GRANITE CURB
- PPP PROPOSED POROUS PAVEMENT
- PTP PROPOSED TRADITIONAL PAVEMENT
- PROPERTY LINE
- ||| EDGE OF PAVEMENT (EOP)
- /// SUBSURFACE INFILTRATION
- TRAFFIC DIRECTION (NOT TO BE PAINTED)
- SOIL DELINEATION
- OHE- OVERHEAD UTILITIES
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- UTILITY POLE
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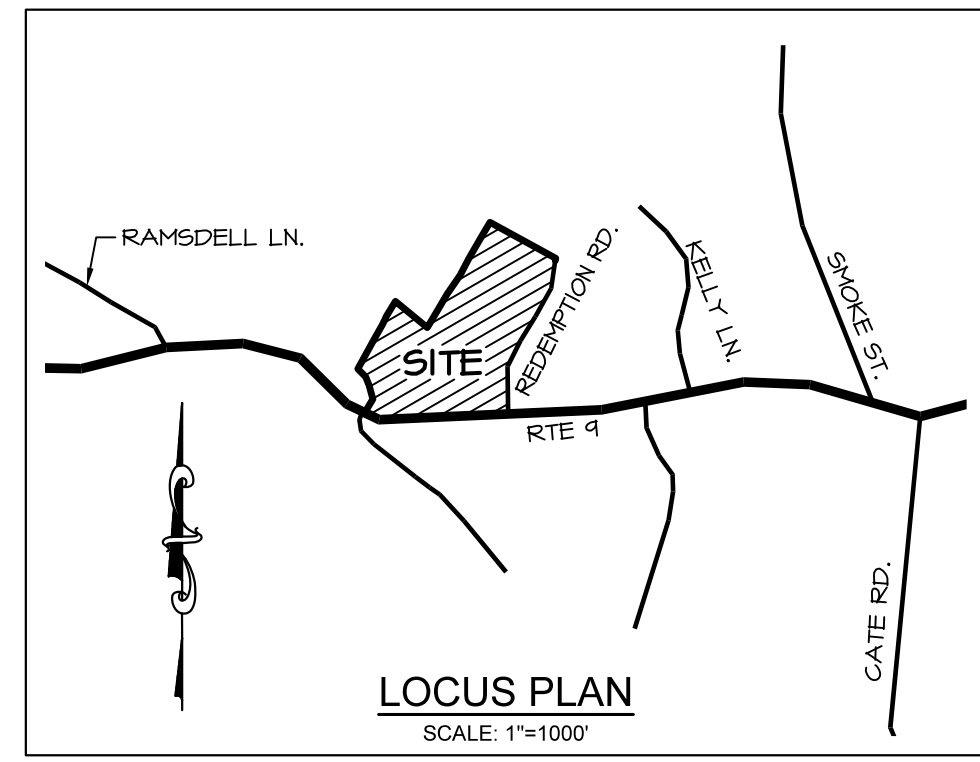
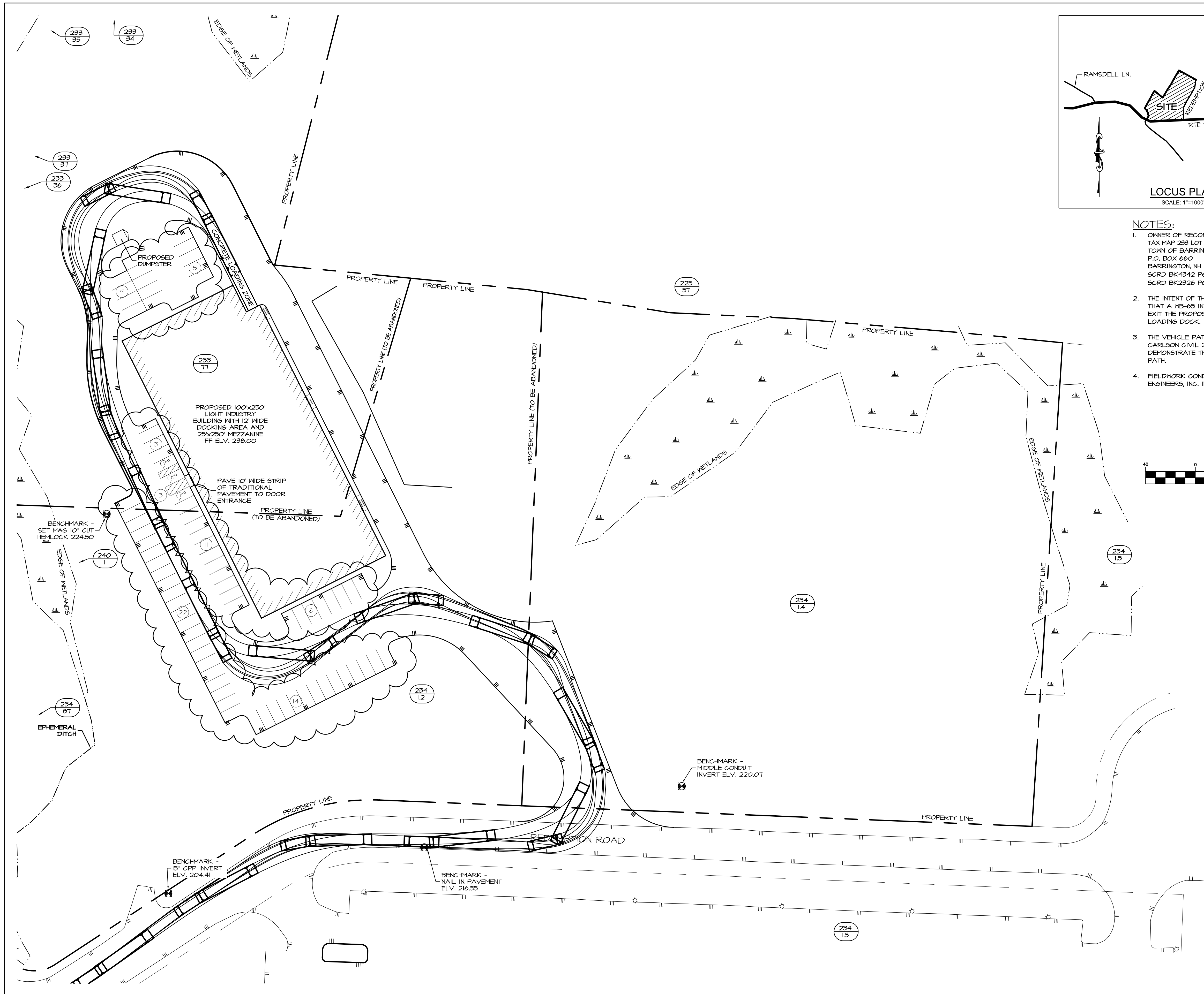
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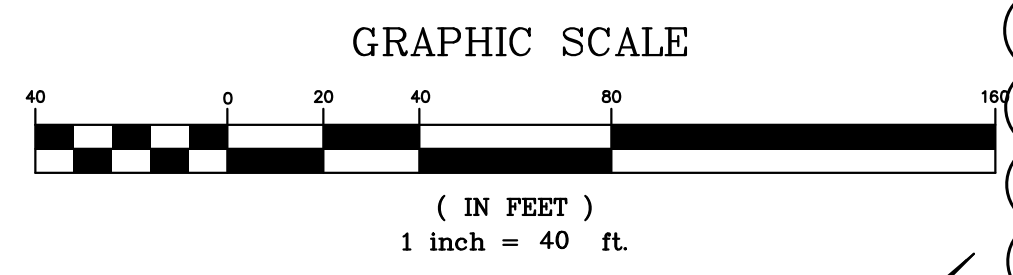
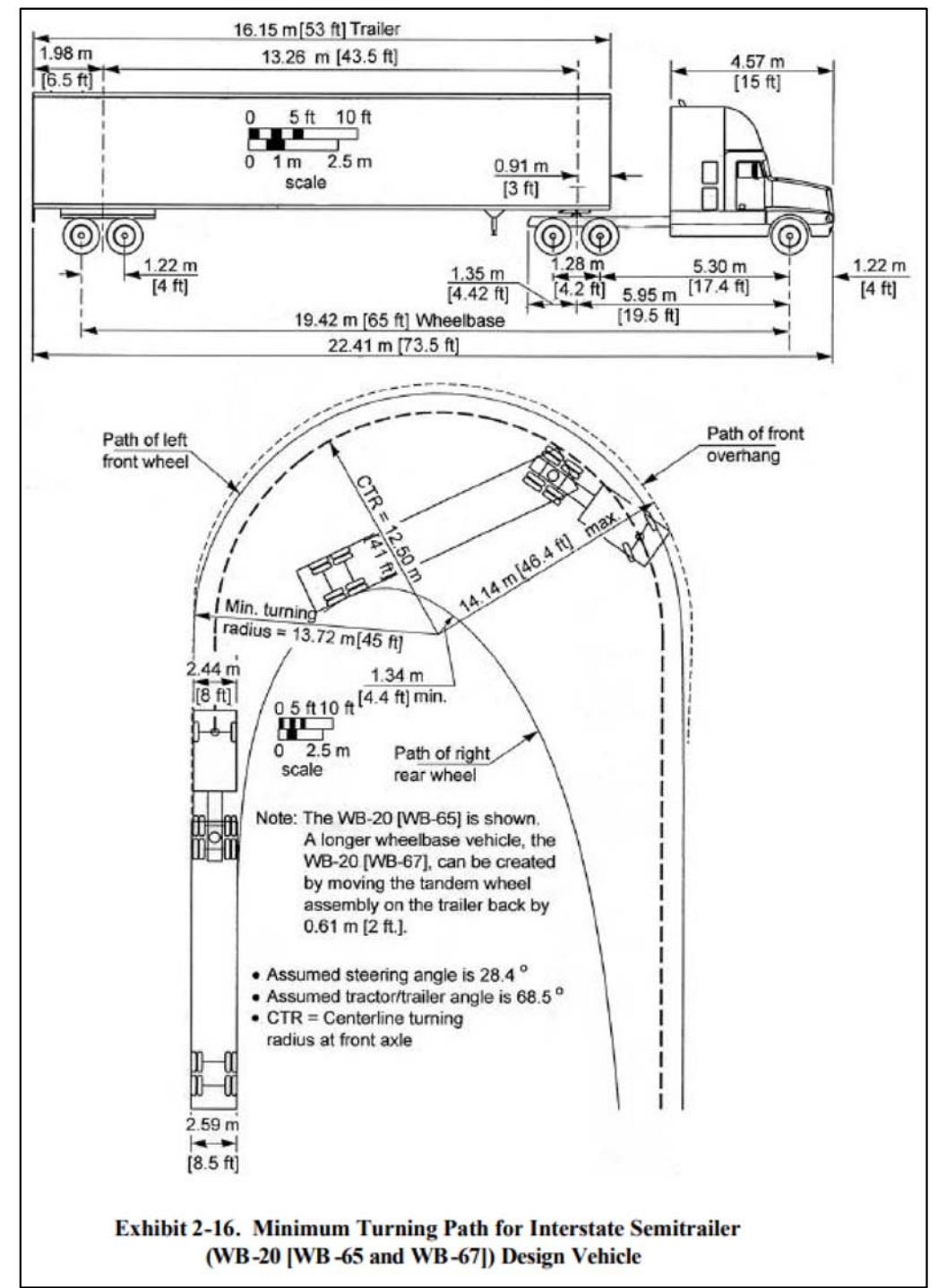
CLIENT:
TURBOCAM INTERNATIONAL
607 CALEF HIGHWAY
BARRINGTON, NH 03825

TITLE:
TURNING TEMPLATE
(WB-65 ENTERING SITE)
FOR
TAX MAP 233 LOT 11
AND TAX MAP 234 LOTS 1.2 & 1.4
TURBOCAM INTERNATIONAL
ROUTE 9 / REDEMPTION ROAD (SITE)
BARRINGTON, NH 03825
& TOWN OF BARRINGTON
PO BOX 660
BARRINGTON, NH 03825

PROJECT:	SCALE:	SHEET:
19-020	1"=40'	C7



- NOTES:**
- OWNER OF RECORD:
TAX MAP 233 LOT 11 & TAX MAP 234 LOTS 1.2 & 1.4
TOWN OF BARRINGTON
P.O. BOX 660
BARRINGTON, NH 03825
SCRD BK4342 PG0044 (MAP 233 LOT 11)
SCRD BK2326 PG0558 (MAP 234 LOT 1.2)
 - THE INTENT OF THIS PLAN IS TO SHOW VERIFY THAT A WB-65 INTERSTATE SEMITRAILER CAN EXIT THE PROPOSED SITE FROM THE PROPOSED LOADING DOCK.
 - THE VEHICLE PATH TRACKING FEATURE FROM CARLSON CIVIL 2019 WAS USED TO DEMONSTRATE THE APPROXIMATE VEHICLE PATH.
 - FIELDWORK CONDUCTED BY JONES & BEACH ENGINEERS, INC. IN SPRING 2019.



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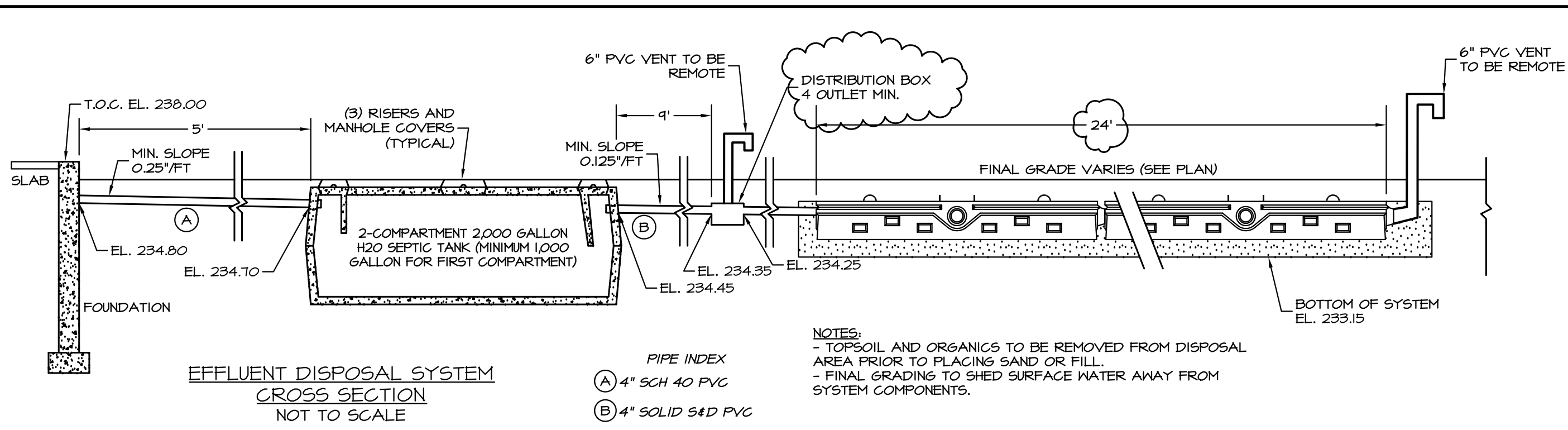
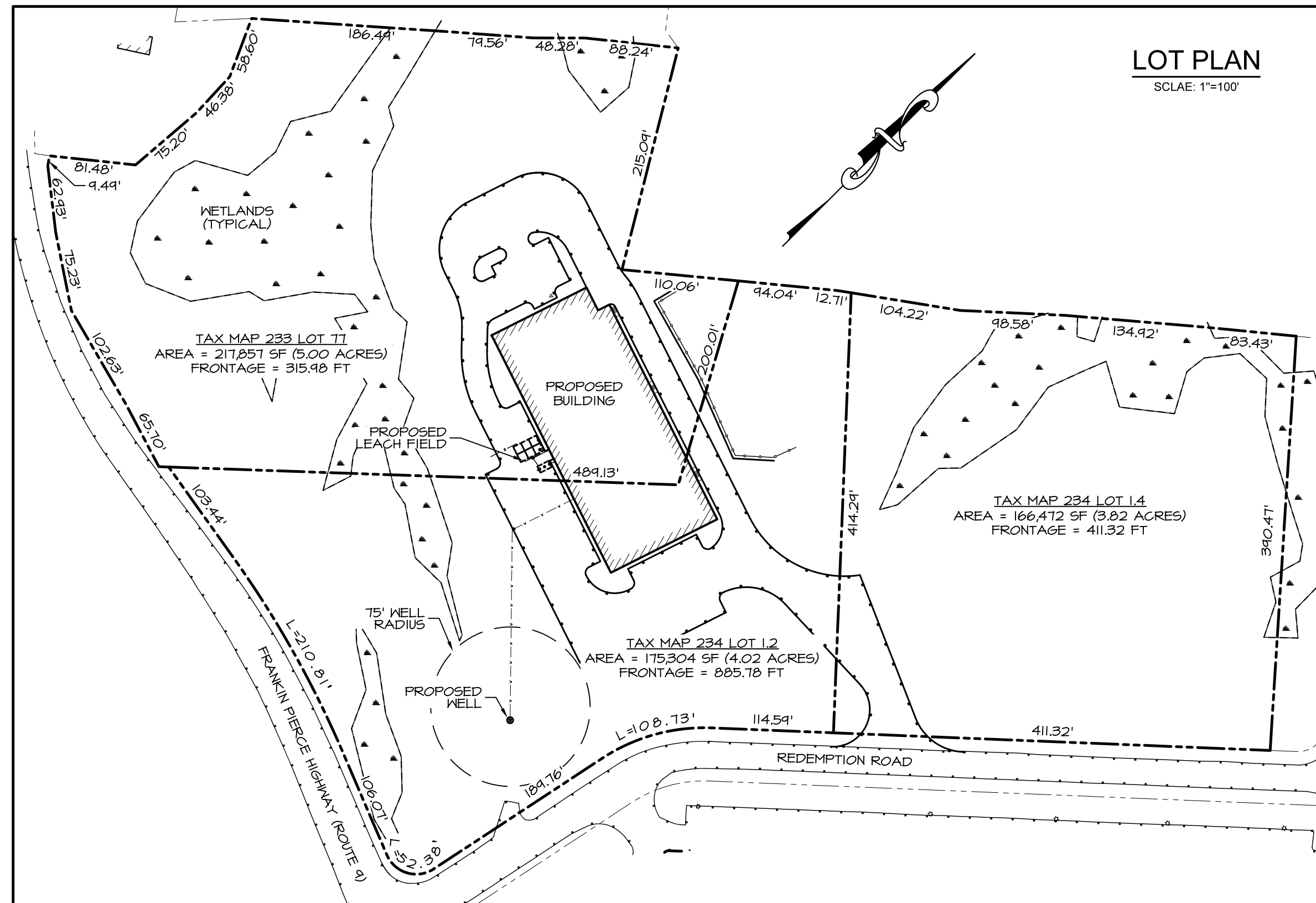
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CLIENT:
TURBOCAM INTERNATIONAL
607 CALEF HIGHWAY
BARRINGTON, NH 03825

TITLE:
TURNING TEMPLATE (WB-65 EXITING SITE)
FOR
TAX MAP 233 LOT 11
AND TAX MAP 234 LOTS 1.2 & 1.4
TURBOCAM INTERNATIONAL
ROUTE 9 / REDEMPTION ROAD (SITE)
BARRINGTON, NH 03825
& TOWN OF BARRINGTON
PO BOX 660
BARRINGTON, NH 03825

PROJECT:	SCALE:	SHEET:
19-020	1"=40'	C8



SOIL DATA:
PERFORMED BY: BRUCE SCAMMAN
WITNESSED BY: N/A
SOIL CLASSIFICATION: HINCKLEY

TEST PIT #2:
DATE: APRIL 2, 2019
*OBSERVED GROUND WATER @ NOT OBSERVED
*SEASONAL HIGH GROUND WATER (MOTTLING) @ NOT OBSERVED
*LEDGE, HARDPAN, CLAY/IMPERMEABLE SUBSTRATUM @ NOT OBSERVED
0-11" 10YR 3/3 LOAM, GRANULAR, FRIABLE
11-36" 10YR 5/6 GRAVEL & COBBLES SANDY LOAM, GRANULAR, FRIABLE
36-120" 10YR 6/6 COBBLY SAND, SINGLE GRAIN, LOOSE

TEST PIT #3:
DATE: APRIL 2, 2019
*OBSERVED GROUND WATER @ NOT OBSERVED
*SEASONAL HIGH GROUND WATER (MOTTLING) @ NOT OBSERVED
*LEDGE, HARDPAN, CLAY/IMPERMEABLE SUBSTRATUM @ NOT OBSERVED
0-10" 10YR 3/2 LOAM, GRANULAR, FRIABLE
10-36" 10YR 5/6 GRAVEL & COBBLES SANDY LOAM, GRANULAR, FRIABLE
36-114" 10YR 6/6 COBBLY SAND, SINGLE GRAIN, LOOSE

TEST PIT #4:
DATE: APRIL 2, 2019
*OBSERVED GROUND WATER @ NOT OBSERVED
*SEASONAL HIGH GROUND WATER (MOTTLING) @ NOT OBSERVED
*LEDGE, HARDPAN, CLAY/IMPERMEABLE SUBSTRATUM @ NOT OBSERVED
0-24" 10YR 3/2 LOAM, GRANULAR, FRIABLE
24-36" 10YR 5/6 GRAVEL SANDY LOAM, GRANULAR, FRIABLE
36-46" 10YR 6/6 GRAVELLY COBBLE SANDY LOAM, SINGLE GRAIN, LOOSE

PERC TEST #1:
DATE: APRIL 2, 2019
PERFORMED BY: BRUCE SCAMMAN
DEPTH: 24 INCHES RATE: 2 MIN/INCH

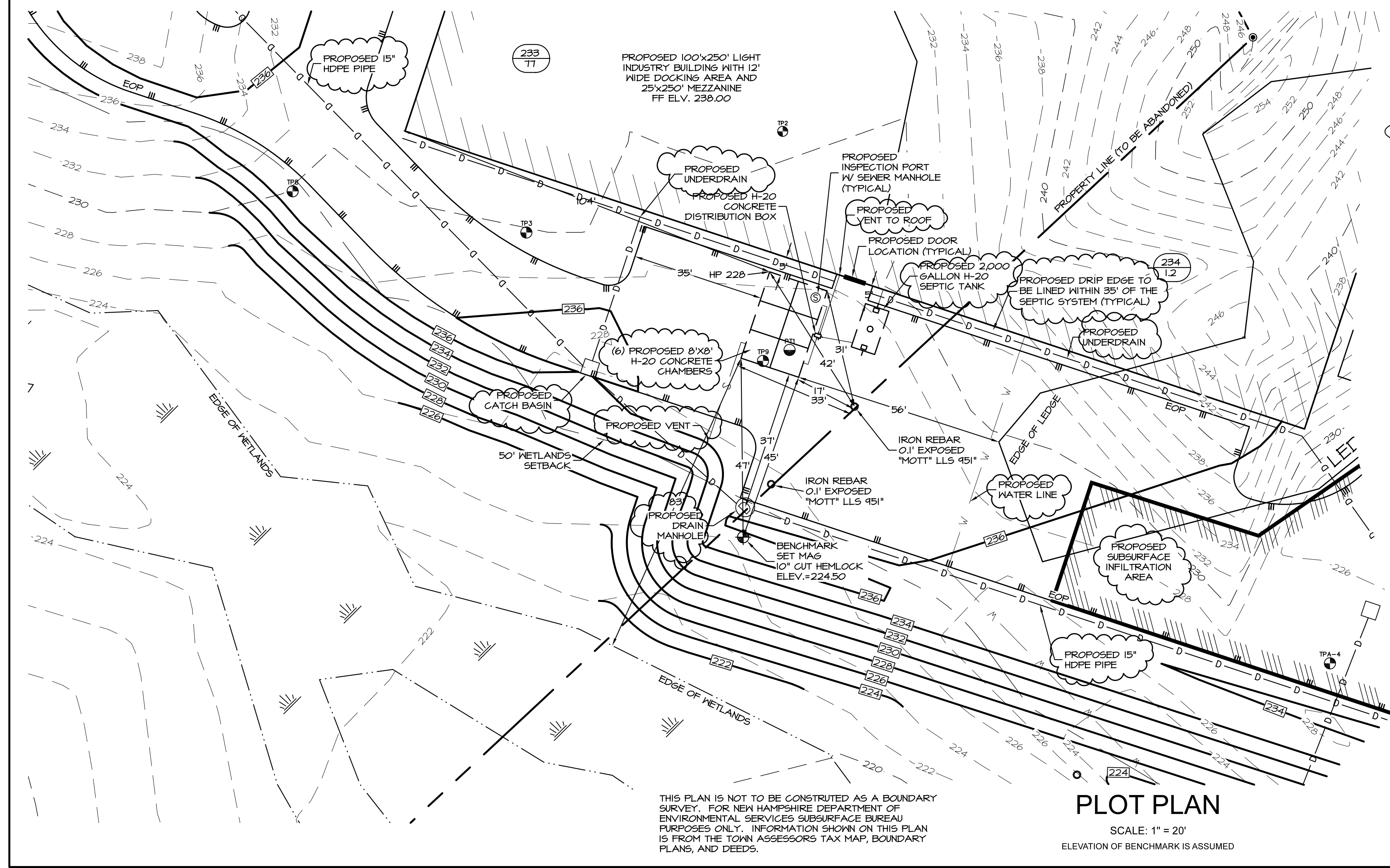
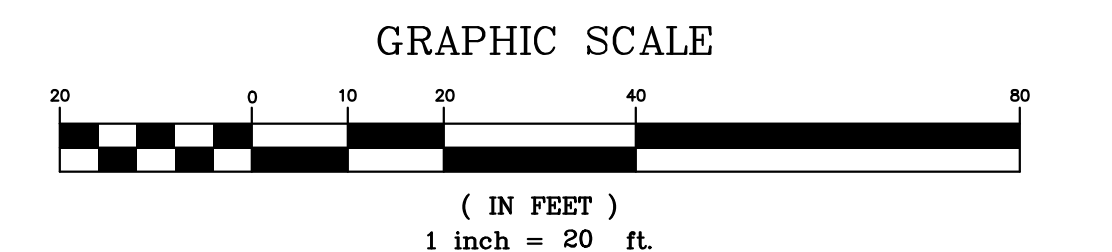


LOCATION:
COUNTY: STRAFFORD TOWN: BARRINGTON
SUBDIVISION TITLE: "SUBDIVISION PLAN OF LAND CLARK-GOODWILL LOT, BARRINGTON, NH, DATED 12/14/07 NH SUBDIVISION APPROVAL NO. 1 N/A
TAX MAP/LOT: MAP 233 LOT 11 & MAP 234 LOT 12
DEED: (MAP 233, LOT 11) BK 4342 PG 0044 (MAP 234, LOT 12) BK 2326 PG 0758

OWNER:
TOWN OF BARRINGTON
P.O. BOX 660
BARRINGTON, NH 03825
(603) 664-4001

SYSTEM DESIGN DATA:
BUILDING TYPE: 33,965 SF LIGHT INDUSTRIAL
SEWAGE LOAD: 420 GPD PER PERSON = 420 GPD
GARBAGE DISPOSAL: NONE
TYPE OF CELLAR: NONE FOUNDATION DRAINS: NO
SEPTIC TANK SIZE: 2000 GAL. DISTRIBUTION BOX: 4 OUTLET MIN.
LEACH FIELD COMPONENTS:
AREA REQUIRED: 420 GPD x 125 SF/100 GPD = 525 SF
CHAMBER REDUCTION FACTOR 60%: 525 SF x 0.6 = 315 SF
AREA PROVIDED: (6) 8' x 8' CONCRETE CHAMBERS = 384 SF
CHAMBER LAYOUT: 3 WIDE BY 3 LONG
SEWAGE PIPING: NONE
DRINKING WATER: PROPOSED WELL
WELL INSTALLED PRIOR TO 1984; NO NEAREST ABUTTING WELL: >> 75 FT AWAY
WETLAND SOILS: >> 50 FT AWAY TO POORLY DRAINED SOIL
WETLAND SOILS: >> 75 FT AWAY TO VERY POORLY DRAINED SOIL
NEAREST SURFACE WATER: >> 75 FT AWAY
NEAREST LEDGE OUTCROP: 56 FEET AWAY (SEE TEST PIT DATA)

DESIGN INTENT:
LEACH BED BOTTOM TO BE INSTALLED NO LESS THAN 61 INCHES ABOVE ORIGINAL GRADE, ON THE UPSLOPE SIDE, TO MAINTAIN 14 FEET ABOVE THE SEASONAL HIGH WATER TABLE AND 14 FEET ABOVE LEDGE, HARDPAN OR IMPERMEABLE MATERIAL.

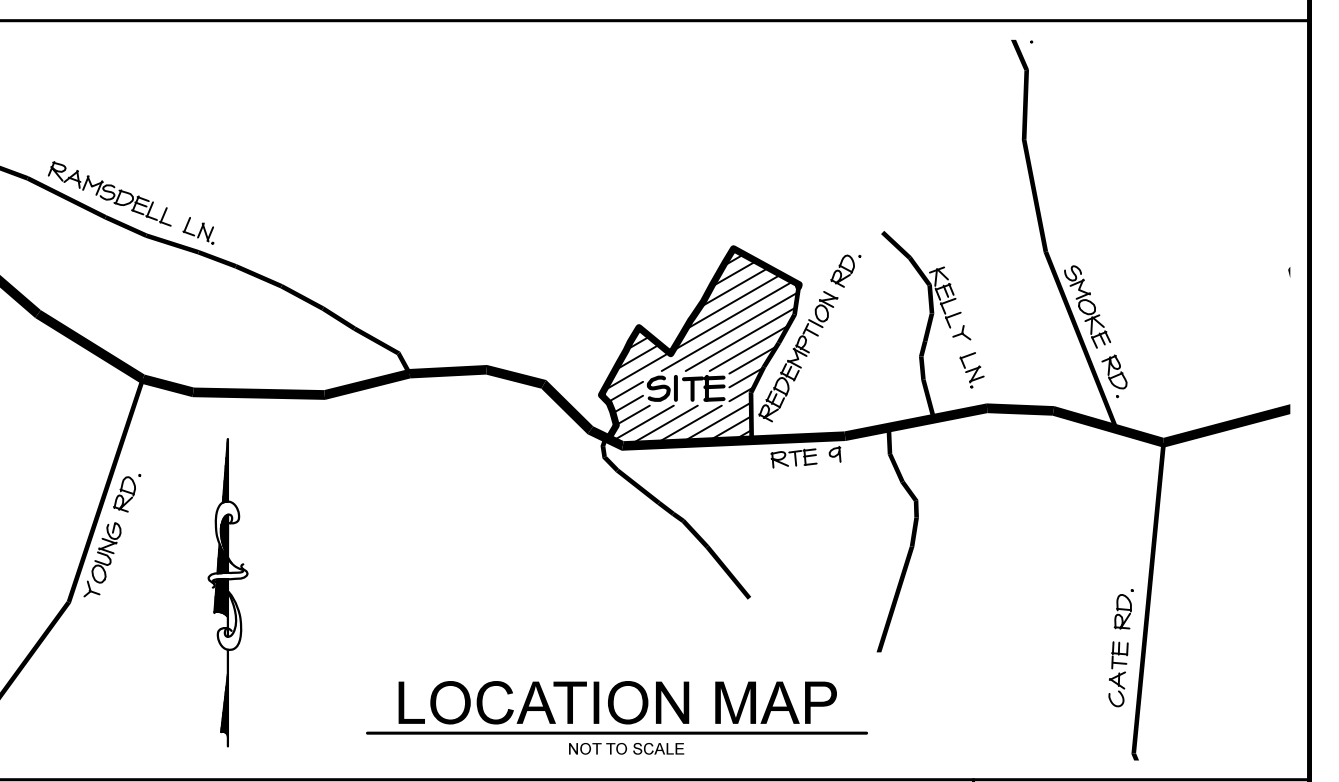
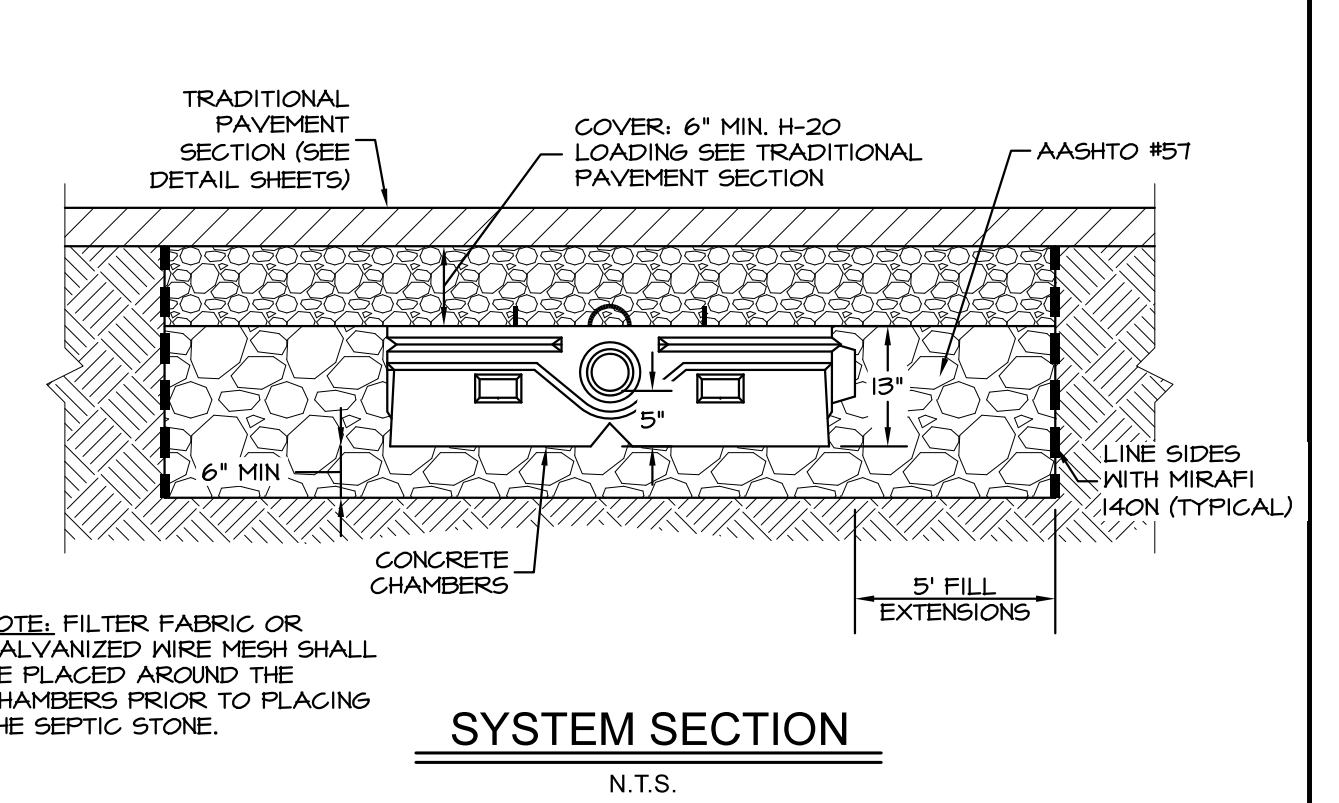


GENERAL NOTES:
1. SEE PLAN FOR ARRANGEMENT AND QUANTITY OF CHAMBERS.
2. CHAMBERS SHALL BE DESIGNED FOR H-20 LIVE LOADING.
3. ALL 4 INCH PVC PIPE SHALL BE SCHEDULE 80. PIPE OUTSIDE LEACHING AREA SHALL BE WATERTIGHT. PIPE BETWEEN DISTRIBUTION BOX AND CHAMBERS SHALL BE LAID LEVEL. ALL JOINTS, INLETS, OUTLETS, ETC. TO BE SEALED WITH A NON-SHRINK GROUT, "WATER-PLUS" OR EQUAL.
4. IN EVENT OF FUTURE SYSTEM FAILURE, REPLACEMENT SYSTEM SHALL BE BUILT IN THE SAME LOCATION AS THE ORIGINAL SYSTEM AFTER CONTAMINATED MATERIALS HAVE BEEN REMOVED.
5. ALL PRE CAST UNITS (TANKS, D-BOXES) SHALL BE MANUFACTURED BY SHEA CONCRETE OR EQUAL.
6. THIS PLAN DOES NOT REPRESENT A BOUNDARY SURVEY.
7. BOUNDARY INFORMATION TAKEN FROM PLAN ENTITLED: "EXISTING CONDITIONS PLAN ROUTE 9 BARRINGTON, NH BY JONES & BEACH ENGINEERS. RECORD DEED: BK 4342 PG 0044"
8. THE DESIGN AND INSTALLATION GUIDELINES FOR THE CONCRETE FLOW DIFFUSOR LEACHING CHAMBER FOR USE IN THE STATE OF NEW HAMPSHIRE SHALL BECOME A PART OF THIS DESIGN.
9. EQUALIZER FLOW INSERTS SHALL BE INSTALLED IN DISTRIBUTION BOX OUTLETS.
10. INSTALLER MUST CONTACT DIG SAFE PRIOR TO CONSTRUCTION.
11. DO NOT INSTALL SYSTEM ON FROZEN GROUND OR LEAVE SYSTEM UNCOVERED FOR EXTENDED PERIODS OF TIME.
12. THIS DOCUMENT IS FOR THE CONSTRUCTION OF THE EFFLUENT DISPOSAL SYSTEM SHOWN. ANYONE USING INFORMATION FROM THIS DOCUMENT FOR ANY OTHER PURPOSE DOES SO AT THEIR OWN RISK.
13. SYSTEM MUST BE CONSTRUCTED IN ACCORDANCE WITH ENV-HS 1000. APPROVAL FOR CONSTRUCTION IS VALID FOR 4 YEARS FROM DATE OF ISSUE.

SITE PREPARATION:
1. CHECK DESIGN INTENT AND VERIFY THE ELEVATION OF EXISTING GROUND-UPSLOPE SIDE BEFORE DISTURBING SITE. CONTACT THE DESIGNER SHOULD ANY DISCREPANCY OCCUR.
2. REMOVE ALL TREES, BRUSH, BOULDERS, AND DEBRIS FROM THE LEACH FIELD SITE.
3. REMOVE TOPSOIL. LEAVE SUBSOIL IN PLACE. DO NOT COMPACT SUBSOIL WITH MACHINERY; SCARIFY AS NEEDED BEFORE FILLING.
4. FILL FOR UNDER LEACHING AREA TO BE MATERIALS MEETING ASTM C-33 (AASHTO #51), AND FILL FOR FILL EXTENSION TO BE MEDIUM TO COARSE TEXTURED SAND (0.5-1.0 MM).
5. SAND FILL TO BE PUSHED ONTO PREPARED SURFACE FROM THE SIDE.
6. FILL FOR BACKFILLING SHALL BE CLEAN, PERMEABLE FILL, FREE OF STONES LARGER THAN 6 INCHES.
7. SIDE SLOPE OF FILL 3:1, (3' HORIZONTAL FOR EVERY 1' VERTICAL).
8. PLACE 6 INCHES OF LOAM AS A BLANKET ON SIDE SLOPES WHERE REQUIRED.
9. ENTIRE DISTURBED AREA SHALL BE LOAMED AND SEEDED OR PAVED AS SOON AS POSSIBLE AFTER BACKFILLING TO PREVENT EROSION.
10. BACKFILL DEPTH OVER SYSTEM TO BE 6 INCHES.
11. FINAL GRADING SHALL PROVIDE FOR DRAINAGE OF SURFACE RUNOFF AWAY FROM LEACHING AREA.

OPERATION AND MAINTENANCE:
1. SYSTEM IS NOT DESIGNED TO HANDLE A GARBAGE DISPOSAL UNIT OR DISCHARGE FROM A HOT TUB OR SIMILAR LARGE VOLUME WATER USES.
2. EVERY SYSTEM'S DESIGN CAPACITY IS LIMITED. CAREFUL AND REASONABLE WATER USE IS REQUIRED TO MAXIMIZE THE SYSTEM'S LIFE. DO NOT DISPOSE OF GREASE, CHEMICALS, SOLVENTS, ETC. VIA THIS SYSTEM.
3. SEPTIC TANK MUST BE PUMPED BY A LICENSED HAULER AT LEAST EVERY TWO YEARS. KEEP PUMPING RECEIPTS AS PROOF OF MAINTENANCE. CHECK TANK YEARLY. IF SLUDGE AND SURFACE SCUM EXCEED 1/3 OF LIQUID DEPTH, HAVE THE TANK PUMPED.
4. DO NOT ALLOW VEHICULAR TRAFFIC OVER ANY COMPONENT OF THE SYSTEM UNLESS THAT STRUCTURE IS DESIGNED TO WITHSTAND AN H-20 WHEEL LOAD.

REVISION 3	REVISION 2	REVISION 1
	MOVED AND RESIZED LEACH FIELD	REVISED SLOPE & REMOVED RETAINING WALL
	01/06/20	11/05/19
	BDS	JJM



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DESIGNED: JLM - 09-13-19
DRAWN: JLM - 09-13-19
CHECKED: BDS - 09-13-19
SCALE: 1" = 20'
DWG: SDI
JOB: 19-020

SUBSURFACE DISPOSAL SYSTEM

TURBOCAM INTERNATIONAL
ROUTE 9 / REDEMPTION ROAD (SITE)
BARRINGTON, NH 03825

MAINTENANCE REQUIRED:
RECOMMEND CLEANING SEPTIC TANK AT LEAST ONCE EVERY 2 YEARS

THIS PLAN IS NOT TO BE CONSTRUED AS A BOUNDARY SURVEY. FOR NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES SUBSURFACE BUREAU PURPOSES ONLY. INFORMATION SHOWN ON THIS PLAN IS FROM THE TOWN ASSESSORS TAX MAP, BOUNDARY PLANS, AND DEEDS.

EROSION AND SEDIMENTATION CONTROL CONSTRUCTION PHASING AND SEQUENCING:

- SEE "EROSION AND SEDIMENTATION CONTROL GENERAL NOTES" WHICH ARE TO BE AN INTEGRAL PART OF THIS PROCESS.
- INSTALL SILT FENCING AND/OR HAY BALE BARRIERS AS PER DETAILS AND AT SEDIMENT MIGRATION.
- CONSTRUCT TREATMENT SWALES, LEVEL SPREADERS AND DETENTION STRUCTURES AS DEPICTED ON DRAWINGS.
- INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCES(S) AS PER DETAIL AND AT LOCATIONS SHOWN ON THE DRAWINGS. MAINTAIN (TOP DRESS) REGULARLY TO PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC STREETS.
- STRIP AND STOCKPILE TOPSOIL. STABILIZE PILES OF SOIL CONSTRUCTION MATERIAL.
- ROUGH GRADE SITE. INSTALL CULVERTS AND ROAD DITCHES.
- FINISH GRADE AND COMPACT SITE.
- RE-SPREAD AND ADD TOPSOIL TO ALL ROADSIDE SLOPES. TOTAL TOPSOIL THICKNESS TO BE A MINIMUM OF FOUR TO SIX INCHES.
- STABILIZE ALL AREAS OF BARE SOIL WITH MULCH AND SEEDING.
- RE-SEED PER EROSION AND SEDIMENTATION CONTROL GENERAL NOTES.
- SILT FENCING AND HAY BALES TO REMAIN AND BE MAINTAINED FOR TWENTY FOUR MONTHS AFTER CONSTRUCTION TO INSURE ESTABLISHMENT OF ADEQUATE SOIL STABILIZATION AND VEGETATIVE COVER. ALL SILT FENCING, HAY BALES AND TRAPPED SILT ARE THEN TO BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
- PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
- PONDS AND SWALES SHALL BE INSTALLED EARLY ON IN THE CONSTRUCTION SEQUENCE - BEFORE ROUGH GRADING THE SITE.
- ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
- ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
- ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
- ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY HALF-INCH OF RAINFALL.

WINTER CONSTRUCTION NOTES (OCTOBER 15 TO MAY 1):

- ALL PROPOSED 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 INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAN OR SPRING MELT EVENT.
- 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 TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
- AFTER OCTOBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER MHDOT ITEM 304.3.

GRASS SWALE MAINTENANCE:

- TIMELY MAINTENANCE IS IMPORTANT TO KEEP THE VEGETATION IN THE SWALE IN GOOD CONDITION. MOWING SHOULD BE DONE FREQUENTLY ENOUGH TO KEEP THE VEGETATION IN VIGOROUS CONDITION AND TO CONTROL ENCRAGEMENT OF WEEDS AND WOODY VEGETATION, HOWEVER, IT SHOULD NOT BE MOWED TOO CLOSELY SO AS TO REDUCE THE FILTERING EFFECT. FERTILIZE ON AN "AS NEEDED" BASIS TO KEEP THE GRASS HEALTHY. OVER FERTILIZATION CAN RESULT IN THE SWALE BECOMING A SOURCE OF POLLUTION.
- THE SWALE SHOULD BE INSPECTED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE THE CONDITION OF THE SWALE. RILLS AND DAMAGED AREAS SHOULD BE PROMPTLY REPAIRED AND RE-VEGETATED AS NECESSARY TO PREVENT FURTHER DETERIORATION.

EROSION AND SEDIMENTATION CONTROL GENERAL NOTES:

- CONDUCT ALL CONSTRUCTION IN A MANNER AND SEQUENCE THAT CAUSES THE LEAST PRACTICAL DISTURBANCE OF THE PHYSICAL ENVIRONMENT, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
- ALL EROSION AND SEDIMENTATION CONTROL MEASURES IN THE PLAN SHALL MEET THE DESIGN BASED ON NEW HAMPSHIRE STORMWATER MANUAL, VOLUMES 1-3, DATED DECEMBER 2008, PREPARED BY NHDES.
- AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
 - BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
 - A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
 - A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED;
 - EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
- ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
- SEE WINTER CONSTRUCTION NOTES IF SCHEDULE AND DATES ARE APPLICABLE.
- ALL DITCHES, SWALES AND PONDS MUST BE STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
- ALL GROUND AREAS OPENED UP FOR CONSTRUCTION WILL BE STABILIZED IN THE SHORTEST PRACTICAL TIME. ALL SOILS FINISH GRADED MUST BE STABILIZED WITHIN SEVENTY TWO HOURS OF DISTURBANCE.
- EMPLOY TEMPORARY EROSION AND SEDIMENTATION CONTROL DEVICES AS DETAILED ON THIS PLAN AS NECESSARY UNTIL ADEQUATE STABILIZATION HAS BEEN ASSURED.
- TEMPORARY & LONG TERM SEEDINGS, USE SEED MIXTURES, FERTILIZER, LIME AND MULCHING AS RECOMMENDED (SEE SEEDING AND STABILIZATION NOTES).
- STRAW OR HAY BALE BARRIERS AND SILTATION FENCING TO BE SECURELY EMBEDDED AND STAKED AS DETAILED. WHEREVER POSSIBLE A VEGETATED STRIP OF AT LEAST TWENTY FIVE FEET IS TO BE KEPT BETWEEN SILT FENCE AND ANY EDGE OF WET AREA.
- SEEDING AREAS WILL BE FERTILIZED AND RE-SEEDING AS NECESSARY TO ENSURE VEGETATIVE ESTABLISHMENT.
- SEDIMENT BASIN(S), IF REQUIRED, TO BE CHECKED AFTER EACH SIGNIFICANT RAINFALL AND CLEANED AS NEEDED TO RETAIN DESIGN CAPACITY.
- STRAW BALE AND/OR SILT FENCE BARRIERS WILL BE CHECKED REGULARLY AND AFTER EACH SIGNIFICANT RAINFALL. NECESSARY REPAIRS WILL BE MADE TO CORRECT UNDERMINING OR DETERIORATION OF THE BARRIER AS WELL AS CLEANING, REMOVAL AND PROPER DISPOSAL OF TRAPPED SEDIMENT.
- TREATMENT SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY UNTIL ADEQUATE VEGETATIVE COVER HAS BEEN ESTABLISHED.
- THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430.53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.
- TEMPORARY WATER DIVERSION (SWALES, BASINS, ETC.) MUST BE USED AS NECESSARY UNTIL AREAS ARE STABILIZED.

SEEDING AND STABILIZATION FOR LOAMED SITE:

- FOR TEMPORARY & LONG TERM SEEDINGS (BY SEPTEMBER 15 OF THE SAME YEAR OF DISTURBANCE) USE AGWAY'S SOIL CONSERVATION GRASS SEED OR EQUAL.
- COMPONENTS: ANNUAL RYE GRASS, PERENNIAL RYE GRASS, WHITE CLOVER, 2 FESCUES, SEED AT A RATE OF 100 POUNDS PER ACRE.
- FERTILIZER & LIME: NITROGEN (N) 50 LBS/ACRE, PHOSPHATE (P2O5) 100 LBS/ACRE, POTASH (K2O) 100 LBS/ACRE, LIME 2000 LBS/ACRE.
- MULCH: HAY OR STRAW 15-2 TONS/ACRE.
- GRADING AND SHAPING: SLOPES SHALL NOT BE STEEPER THAN 2:1; 3:1 SLOPES OR FLATTER ARE PREFERRED. WHERE MOWING WILL BE DONE, 3:1 SLOPES OR FLATTER ARE RECOMMENDED.
- SEED BED PREPARATION
 - SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
 - STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEEDBED AND MIX FERTILIZER AND LIME INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.

STABILIZATION CONSTRUCTION ENTRANCE SPECIFICATIONS:

- STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 3 INCH STONE (MINIMUM), RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
- THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 75 FEET (OR 50 FEET WITH A 3 TO 6 INCH MOUNTABLE BERM).
- THE THICKNESS OF THE STONE FOR THE STABILIZATION ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
- THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS OR 10 FEET WHICH EVER IS GREATER.
- GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE.
- ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARDS THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANUP OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED PROMPTLY.
- WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

FILTREXX LAND IMPROVEMENT SYSTEMS INSPECTION & MAINTENANCE:

- CONSULT FILTREXX SWPP CUT SHEETS FOR ALL FILTREXX PRODUCTS PRIOR TO INSTALLATION AND FOR MAINTENANCE GUIDELINES. [HTTP://WWW.FILTREXX.COM/DESIGN_CUT_SHEETS.HTM](http://www.filtrexx.com/design_cut_sheets.htm)
- ROUTINE INSPECTION SHOULD BE CONDUCTED WITHIN 24 HRS OF A RUNOFF EVENT OR AS DESIGNATED BY THE REGULATING AUTHORITY. UNITS SHOULD BE REGULARLY INSPECTED TO MAKE SURE THEY MAINTAIN THEIR SHAPE AND ARE PRODUCING ADEQUATE HYDRAULIC FLOW-THROUGH, DITCH/CHANNEL EROSION CONTROL, AND SEDIMENT REMOVAL.
- IF PONDING BECOMES EXCESSIVE, ADDITIONAL CHECK DAMS, LEVEL SPREADERS, OR SEDIMENT CONTROL UNITS FOR SEDIMENT REMOVAL MAY BE REQUIRED.
- SEDIMENT ACCUMULATION SHOULD BE REMOVED ONCE IT REACHES THE HEIGHT OF THE CHECK DAM OR UNIT. ALTERNATIVELY, ANOTHER UNIT MAY BE INSTALLED SLIGHTLY UP-SLOPE ON TOP OF THE EXISTING ONE. THIS PROCESS IS NOT CONSIDERED A SOIL DISTURBING ACTIVITY.
- STORM DEBRIS ACCUMULATION BEHIND CHECK DAMS, LEVEL SPREADER, SEDIMENT CONTROL UNIT, ETC. SHOULD NEVER BE HIGHER THAN THE SIDES OF THE CHECK DAM/UNIT. STORM RUNOFF OVERFLOW SHALL MAINTAIN THE UNITS IN A FUNCTIONAL CONDITION AT ALL TIMES AND IT SHALL BE ROUTINELY INSPECTED.
- IF A UNIT HAS BEEN DAMAGED, IT SHALL BE REPAIRED, OR REPLACED IF BEYOND REPAIR.
- THE CONTRACTOR SHALL REMOVE SEDIMENT AT THE BASE OF THE UPSLOPE SIDE OF UNITS WHEN ACCUMULATION HAS REACHED 1/2 OF THE EFFECTIVE HEIGHT OF THE SOXX, OR AS DIRECTED BY THE ENGINEER.
- AS AN ALTERNATIVE, ANOTHER SOXX UNIT MAY BE INSTALLED ADJACENT AND PARALLEL TO THE UPSLOPE SIDE OF THE ORIGINAL TO INCREASE SEDIMENT STORAGE CAPACITY. SOXX SEDIMENT BACKUP IN CENTER OF THE DITCH/CHANNEL SHALL REMAIN LOWER THAN THE SIDES.
- IF SOXX UNIT BECOMES CLOGGED WITH DEBRIS AND SEDIMENT, IMMEDIATE REMOVAL OF DEBRIS AND SEDIMENT SHOULD BE CONDUCTED TO ASSURE PROPER DRAINAGE AND WATER FLOW THROUGH THE DITCH OR CHANNEL. STORM RUNOFF OVERFLOW OF THE SOXX UNIT IS ACCEPTABLE.
- SOXX UNITS SHALL BE MAINTAINED UNTIL DISTURBED AREA AROUND THE DEVICE HAS BEEN PERMANENTLY STABILIZED AND CONSTRUCTION ACTIVITY HAS CEASED.
- THE FILTERMEDIUM MAY BE DISPERSED ON SITE ONCE DISTURBED AREA HAS PERMANENTLY STABILIZED, CONSTRUCTION ACTIVITY CEASED, OR DETERMINED BY THE ENGINEER.
- PERMANENT VEGETATED FILTER STRIPS WILL BE LEFT INTACT.

BLASTING NOTES - BEST MANAGEMENT PRACTICES (Env-Wq 1510) 10.03 LOADING PRACTICES:

- THE DRILLER SHALL MAINTAIN DRILLING LOGS TO DOCUMENT:
 - THE DEPTHS AND LENGTHS OF VOIDS, CAVITIES, AND FAULT ZONES OR OTHER WEAK ZONES ENCOUNTERED; AND
 - GROUNDWATER CONDITIONS.
- THE DRILLER SHALL COMMUNICATE THE CONTENTS OF THE DRILLING LOGS DIRECTLY TO THE BLASTER.
- EXPLOSIVE PRODUCTS SHALL BE MANAGED ON SITE THAT THEY ARE:
 - USED IN BOREHOLE;
 - RETURNED TO THE DELIVERY VEHICLE; OR
 - PLACED IN SECURE CONTAINERS FOR OFF-SITE DISPOSAL.
- SPILLAGE AROUND THE BOREHOLE SHALL BE:
 - PLACED IN BOREHOLE; OR
 - CLEANED UP AND RETURNED TO AN APPROPRIATE VEHICLE FOR HANDLING OR PLACEMENT IN SECURED CONTAINERS FOR OFF-SITE DISPOSAL.
- LOADED EXPLOSIVES SHALL BE DETONATED AS SOON AS POSSIBLE AND NOT LEFT IN THE BLAST HOLES OVERNIGHT, UNLESS WEATHER OR OTHER SAFETY CONCERNS REASONABLY DICTATE THAT DETONATION SHOULD BE POSTPONED.
- LOADING EQUIPMENT SHALL BE CLEANED IN AN AREA WHERE WASTEWATER CAN BE PROPERLY CONTAINED AND HANDLED IN A MANNER THAT PREVENTS RELEASE OF CONTAMINANTS TO THE ENVIRONMENT.
- EXPLOSIVES SHALL BE LOADED IN ACCORDANCE WITH INDUSTRY STANDARD PRACTICES FOR PRIMING, STEMMING, DECKING AND COLUMN RISE TO MAINTAIN GOOD CONTINUITY IN THE COLUMN LOAD TO PROMOTE COMPLETE DETONATION.

10.04 EXPLOSIVE SELECTION:

- APPROPRIATE FOR SITE SITE CONDITIONS AND SAFE BLAST EXECUTION, AND
- HAVE THE APPROPRIATE WATER RESISTANCE FOR THE SITE CONDITIONS PRESENT.

10.05 PREVENTION OF MISFIRES:

- INDUSTRY-STANDARD PRACTICES SHALL BE IMPLEMENTED TO PREVENT MISFIRES.

10.06 MUCK AND ROCK MANAGEMENT:

- FOR PURPOSES OF THIS PART, THE FOLLOWING DEFINITIONS APPLY:
 - "BLASTED MATERIAL" MEANS ALL OF THE EARTH MATERIAL LOOSENED AS A RESULT OF THE BLASTING;
 - "MUCK" MEANS THE BLASTED MATERIAL REMAINING AFTER THE ROCKS HAVE BEEN REMOVED; AND
 - "ROCKS" MEANS THE LARGER PIECES OF BLASTED MATERIAL THAT ARE SEPARATED FROM THE MUCK FOR USE ELSEWHERE, INCLUDING FOR FEEDSTOCK OF A ROCK CRUSHING OPERATION.
- MUCK SHALL BE REMOVED FROM THE BLAST AREA AS SOON AS REASONABLY POSSIBLE.
- ROCKS SHALL BE MANAGED SO AS TO PREVENT WATER SUPPLY WELLS OR SURFACE WATERS FROM BEING CONTAMINATED BY RUNOFF.

10.07 SPILL PREVENTION MEASURES & MITIGATION:

- FUEL AND OTHER REGULATED SUBSTANCES SHALL BE MANAGED AS REQUIRED BY Env-Wq 401.04.
- PERSONNEL WORKING AT THE BLAST SITE SHALL BE TRAINED IN HOW TO RESPOND TO A SPILL OF THE REGULATED SUBSTANCES BEING USED AT THE SITE.

10.08 FUELING & MAINTENANCE OF CONSTRUCTION EQUIPMENT:

- IF ANY CONSTRUCTION EQUIPMENT, INCLUDING BUT NOT LIMITED TO EARTHMOVING, EXCAVATION, AND BORING EQUIPMENT, WILL BE FUELED FROM A TANK TRUCK OR OTHER CONTAINER THAT IS MOVED AROUND THE SITE, THE FOLLOWING SHALL APPLY:
 - PORTABLE CONTAINMENT EQUIPMENT THAT IS SIZED TO CONTAIN THE MOST LIKELY VOLUME OF FUEL TO BE SPILLED DURING A FUEL TRANSFER SHALL BE USED TO SHIELD THE MOST LIKELY VOLUME TO BE SPILLED IS DETERMINED BASED ON THE FUEL TRANSFER RATE, THE AMOUNT OF FUEL BEING TRANSFERRED, THE DISTANCE BETWEEN THE HOSE NOZZLE AND PUMP SHUT OFF SWITCH, AND THE RESPONSE TIME OR PERSONNEL AND EQUIPMENT AVAILABLE AT THE FACILITY;
 - THE CONTAINMENT EQUIPMENT SHALL BE POSITIONED TO CATCH ANY FUEL SPILLS DUE TO OVERFILLING THE EQUIPMENT AND ANY OTHER SPILLES THAT MIGHT OCCUR AT OR NEAR THE FUEL FILLER PORT TO THAT EQUIPMENT;
 - THE TYPE OF CONTAINMENT EQUIPMENT USED AND ITS POSITIONING AND USE SHALL ACCOUNT FOR ALL OF THE DRIP POINTS ASSOCIATED WITH THE FUEL FILLING PORT AND THE HOSE FROM THE DELIVERY TRUCK; AND
 - PERSONNEL SHALL NOT LEAVE THE IMMEDIATE AREA WHILE FUEL IS BEING TRANSFERRED. TO ENSURE THAT ANY SPILLS WILL BE OF LIMITED VOLUME.
- IF THE SITE WILL HAVE A FIXED LOCATION FOR FUELING CONSTRUCTION EQUIPMENT, THE FOLLOWING SHALL APPLY:
 - ALL FUEL CONTAINERS, INCLUDING BUT NOT LIMITED TO SKID-MOUNTED TANKS, DRUMS, AND FIVE GALLON GALS, SHALL HAVE SECONDARY CONTAINMENT THAT:
 - IS CAPABLE OF CONTAINING 10% OF THE VOLUME OF THE LARGEST FUEL STORAGE CONTAINER; AND
 - HAS AN IMPERVIOUS FLOOR.
 - SECONDARY CONTAINMENT FOR TANKS MAY COMPRISE A METAL OR PLASTIC POLYMER OR PRECAST CONCRETE VAULT PROVIDING 100% OF THE VOLUME OF THE LARGEST FUEL STORAGE CONTAINER;

(BLASTING NOTES CONTINUED)

- FOR FUEL CONTAINERS, SECONDARY CONTAINMENT MAY COMPRISE CONTAINMENT PALLETS;
- THE AREA WHERE FUEL IS TRANSFERRED SHALL BE A FLAT, IMPERVIOUS AREA THAT:
 - IS ADJACENT TO THE FUEL CONTAINER(S);
 - EXTENDS BEYOND THE FULL REACH, OR LENGTH, OF THE FUEL HOSE.
- SECONDARY CONTAINMENT AREAS MAY BE IN THE FORM OF A BASIN THAT IS:
 - SLOPED DOWN TO A CENTRAL LOW POINT OR BERMED ALONG THE PERIMETER;
 - LIED WITH A CONTINUOUS SHEET OF 20 MIL OR THICKER POLYMER MATERIAL OR APPROPRIATE GEOMEMBRANE LINER; AND
 - BACKFILLED WITH AT LEAST 6" OF SAND.

BIORETENTION SOIL MEDIA (BSM):

- BSM COMPONENTS SHALL BE MIXED THOROUGHLY AND UNIFORMLY IN BATCHES NOT TO EXCEED 20 CUBIC YARDS OR AT THE DISCRETION OF THE SUPERVISING ENGINEER. SOIL FILTER MEDIA SHALL BE PERMEABLE ENOUGH TO INSURE DRAINAGE OF THE STORMWATER PLANTER WITHIN 24 TO 48 HOURS MAXIMUM. NO OTHER MATERIALS OR SUBSTANCES THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS CAN BE MIXED WITHIN THE FILTER.
- THE BSM SHALL MEET THE SOIL COMPOSITION CRITERIA LISTED BELOW AND SUBMITTED TO REVIEW ENGINEER FOR APPROVAL.
 - 65% MEDIUM SAND.
 - 30% LOAM
 - 5% WATER TREATMENT RESIDUALS
 - 8-12% ORGANIC MATTER
- LOAM SHALL BE LANDSCAPE GRADE SOIL, DARK & RICH, WITH HIGH ORGANIC MATTER CONTENT. OFTEN REFERRED TO AS "SUPER LOAM." NOT TO BE CONFUSED WITH SCREENED TOPSOIL.
- PROVIDE A SOIL TEST OF THE BIORETENTION SOIL FOR CONFORMANCE TO THE FOLLOWING CRITERIA:

A) PH RANGE:	6.0-7.0.
B) MAGNESIUM:	MINIMUM 32 PPM.
C) PHOSPHOROUS (P2O5):	NOT TO EXCEED 40 PPM.
D) POTASSIUM (K2O):	MINIMUM 18 PPM.
E) SOLUBLE SALTS:	NOT TO EXCEED 500 PPM.
- IF THE SOIL PH IS NOT WITHIN THE ACCEPTABLE RANGE, AMEND WITH LIME TO RAISE THE PH OR WITH IRON SULFATE TO LOWER THE PH, AS NECESSARY. ALL TESTING SHOULD BE PERFORMED BY THE SAME TESTING FACILITY TO MAINTAIN CONSISTENT RESULTS. SUBMIT THE SOIL SAMPLE RESULTS TO THE ENGINEER REVIEW AND APPROVAL PRIOR TO DELIVERY TO THE PROJECT SITE.
- DO NOT MIX, DUMP OR STORE ANY OTHER MATERIALS OR SUBSTANCES THAT MAY BE HARMFUL TO PLANT GROWTH OR PROVE A HINDRANCE TO THE PLANTING MAINTENANCE OR OPERATIONS WITHIN THE BIORETENTION AREA.
 - CONNECTIONS TO STORM DRAIN SYSTEM.
 - UNDERDRAIN CLEANOUTS

BIORETENTION/ISR CONSTRUCTION SEQUENCE:

- THE FOLLOWING CONSTRUCTION SEQUENCE IS TO BE USED AS A GENERAL GUIDELINE. COORDINATE WITH THE OWNER, ENGINEERS, AND LANDSCAPE ARCHITECTS AND SUBMIT A PROPOSED CONSTRUCTION SEQUENCE FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
- CONDUCT A PRE-CONSTRUCTION MEETING.
- CHECK FOR EXISTING UTILITIES PRIOR TO ANY EXCAVATION.
- CLEAR AND GRUB THE PROPOSED BIORETENTION AREA.
- ROUGH GRADE THE BIORETENTION AREA DURING GENERAL CONSTRUCTION.
- EXCAVATE PRETREATMENT CELLS AND/OR SEDIMENT FOREBAYS PRIOR TO BIORETENTION CONSTRUCTION.
- DO NOT CONSTRUCT THE BIORETENTION AREA UNTIL ALL DISTURBED AREAS WITHIN THE CONTRIBUTING DRAINAGE AREAS HAVE BEEN GRADED AND STABILIZED.
- INSTALL TEMPORARY EROSION AND SEDIMENT CONTROLS TO DIVERT STORMWATER AWAY FROM THE BIORETENTION AREA.
- EXCAVATE THE BIORETENTION FACILITY TO THE BOTTOM INVERT OF THE SYSTEM.
- INSTALL THE FILTER FABRIC AND GEOMEMBRANE ALONG THE EXCAVATION SIDE WALLS.
- ENGINEER FIELD VISIT AND REPORT REQUIRED SEE NOTE (3) BELOW.
- INSTALL THE OVERFLOW OUTLET STRUCTURE AS SPECIFIED IN THE DRAWINGS.
- INSTALL GEOMEMBRANE SEPARATING PEA GRAVEL FROM DRAINAGE STONE AS INDICATED ON DRAWINGS. ENGINEER FIELD VISIT AND REPORT REQUIRED PRIOR TO COVERING THE UNDERDRAIN. SEE NOTE (3) BELOW.
- INSTALL PEA GRAVEL LAYER AS INDICATED ON DRAWINGS.
- DELIVER APPROVED BIORETENTION SOIL AND STORE ON ADJACENT IMPERVIOUS AREA OR PLASTIC SHEETING.

CONSTRUCTION SEQUENCE NOTES (CONTINUED):

- BACKFILL WITH APPROVED BIORETENTION SOIL TO THE DESIGN GRADE (UN-COMPACTED) AS INDICATED ON DRAWINGS. THE CONTRACTOR MUST SUBMIT A SOIL SAMPLE (1 GALLON) TO THE ENGINEER PRIOR TO SOIL DELIVERY TO THE SITE.
- STABILIZE ALL REMAINING DISTURBED AREAS AND SIDE SLOPES WITH SEEDING, HYDROSEEDING, AND/OR EROSION CONTROL BLANKETS AS INDICATED ON DRAWINGS.
- INSTALL BIORETENTION PLANTINGS AS INDICATED ON DRAWINGS. DO NOT PLANT BEFORE THE REMAINING DISTURBED AREAS SURROUNDING THE FACILITY ARE STABILIZED.
- CONDUCT FINAL CONSTRUCTION INSPECTION WITH ENGINEER. ENGINEER FIELD VISIT AND REPORT REQUIRED SEE NOTE (23) BELOW.
- REMOVE REMAINING EROSION AND SEDIMENT CONTROLS ONLY AFTER SURROUNDING DISTURBED AREAS HAVE BEEN PROPERLY STABILIZED.
- SEE GENERAL CONSTRUCTION NOTES FOR OVERALL CONSTRUCTION SEQUENCE.
- SEE GENERAL NOTES/SPECIFICATIONS/CONSTRUCTION DETAILS FOR DETAILED CONSTRUCTION REQUIREMENTS.
- MANDATORY NOTIFICATION/APPROVAL OF THE PROJECT ENGINEER IS REQUIRED PRIOR TO PROCEEDING WITH NEXT STAGE. CALL THE ENGINEER (MATERSTONE ENGINEERING) AT 603-686-2488.

3	JAN 6, 2020	FOR APPROVAL	
2	NOV 5, 2019	FOR APPROVAL	
1	SEP 13, 2019	FOR APPROVAL	
ISS. DATE:	DESCRIPTION OF ISSUE:		CHK.
DRAWN: JUM	DESIGN: RMR		
CHECKED: RMR	CHECKED: BDS		

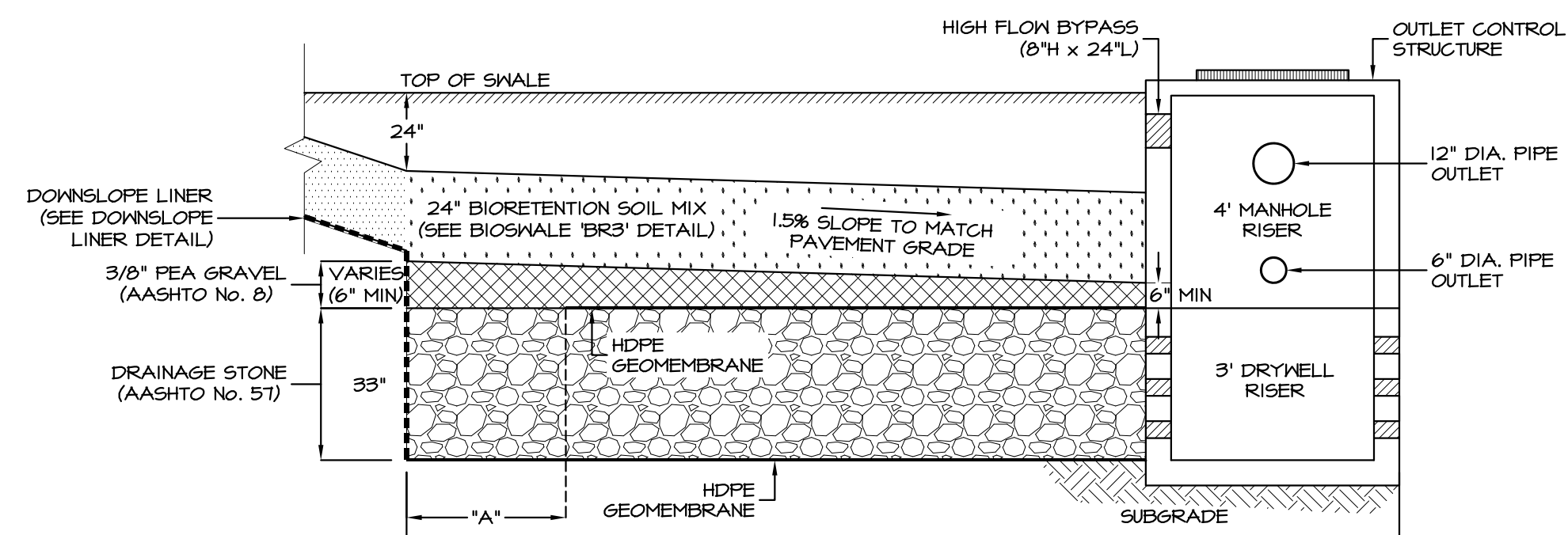


CLIENT: TURBOCAM INTERNATIONAL
607 CALEF HIGHWAY
BARRINGTON, NH 03825

TITLE: NOTES
FOR
TAX MAP 233 LOT 77
AND TAX MAP 234 LOTS 1.2 & 1.4
TURBOCAM INTERNATIONAL
ROUTE 9 / REDEMPTION ROAD (SITE)
BARRINGTON, NH 03825
& TOWN OF BARRINGTON
PO BOX 660
BARRINGTON, NH 03825

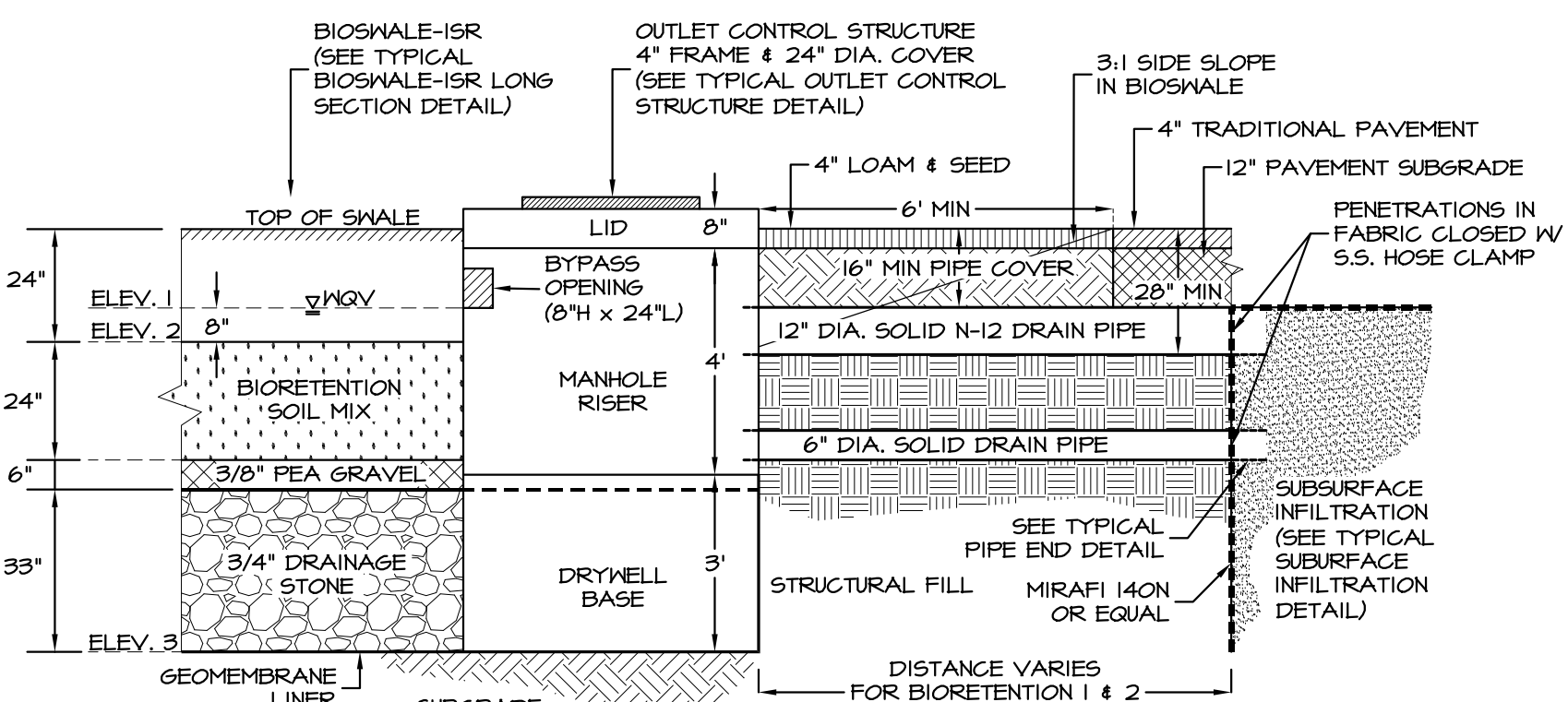
PROJECT: 19-020	SCALE: AS SHOWN	SHEET: D1
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SEAL

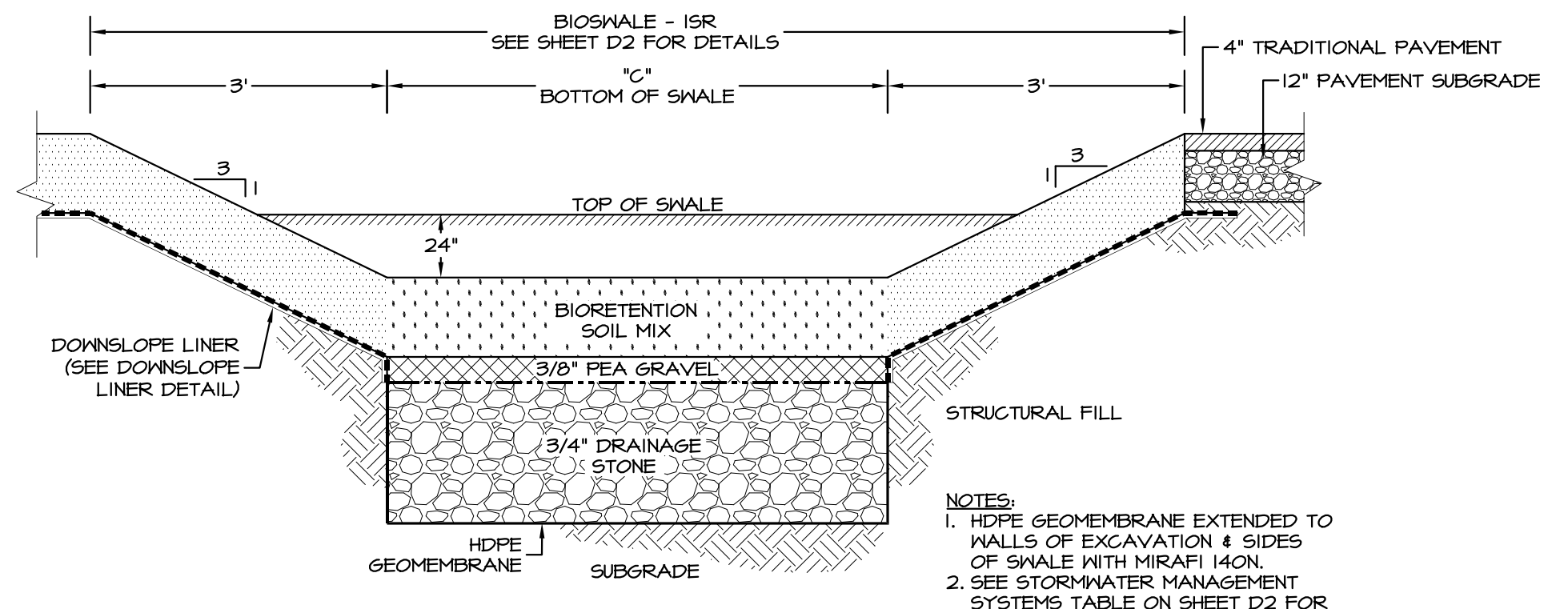


NOTES:
 1. HDPE GEOMEMBRANE EXTENDED TO WALLS OF EXCAVATION & SIDES OF SWALE WITH MIRAFI 140N.
 2. SEE STORMWATER MANAGEMENT SYSTEMS TABLE ON SHEET D2 FOR "A" & "B" DIMENSIONS.

**BIOSWALE-ISR (BR1 & BR2)
 LONG-SECTION TYPICAL DETAIL**
 N.T.S.

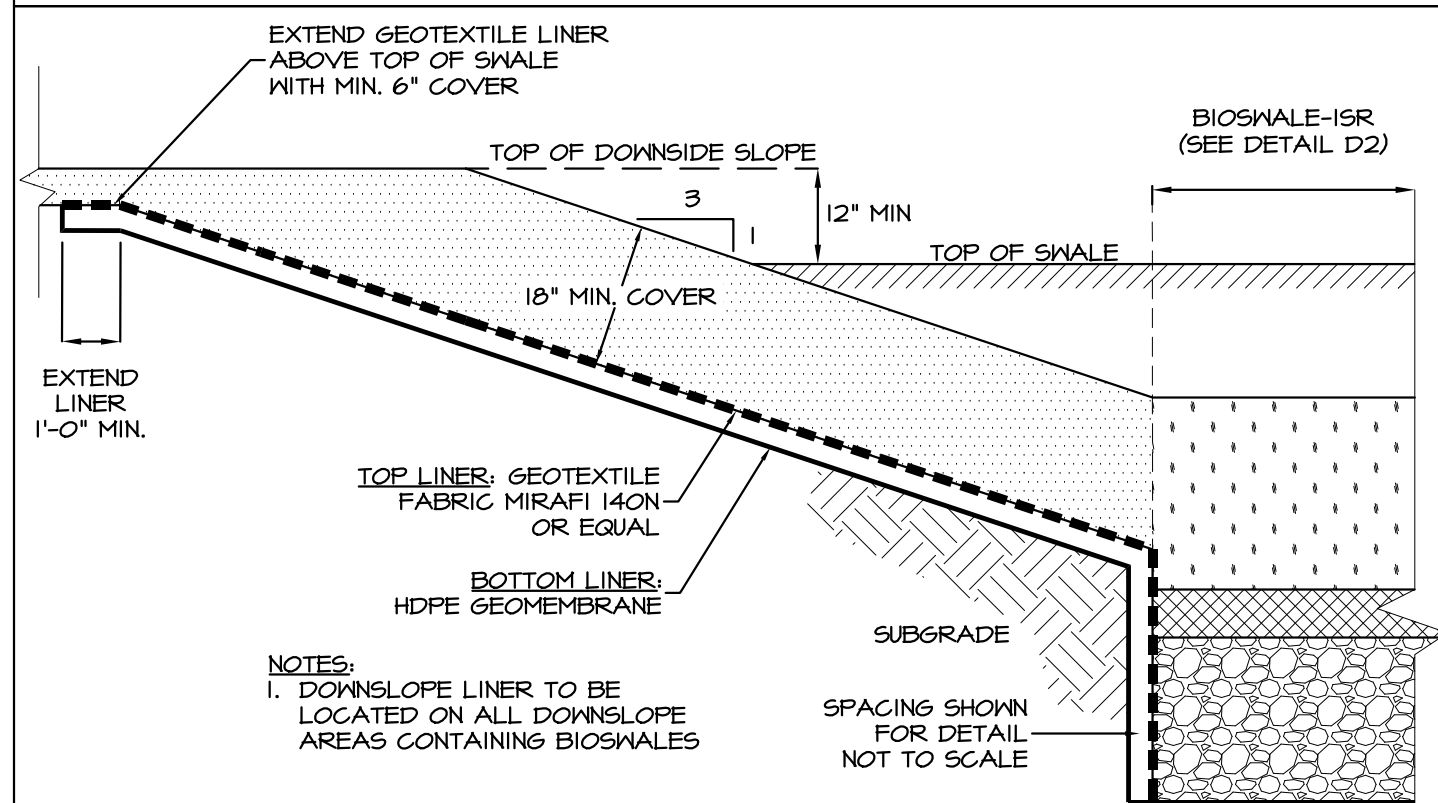


**BIOSWALE-ISR (BR1 & BR2)
 OUTLET STRUCTURE (CB3 & CB5)
 TYPICAL DETAIL**
 N.T.S.



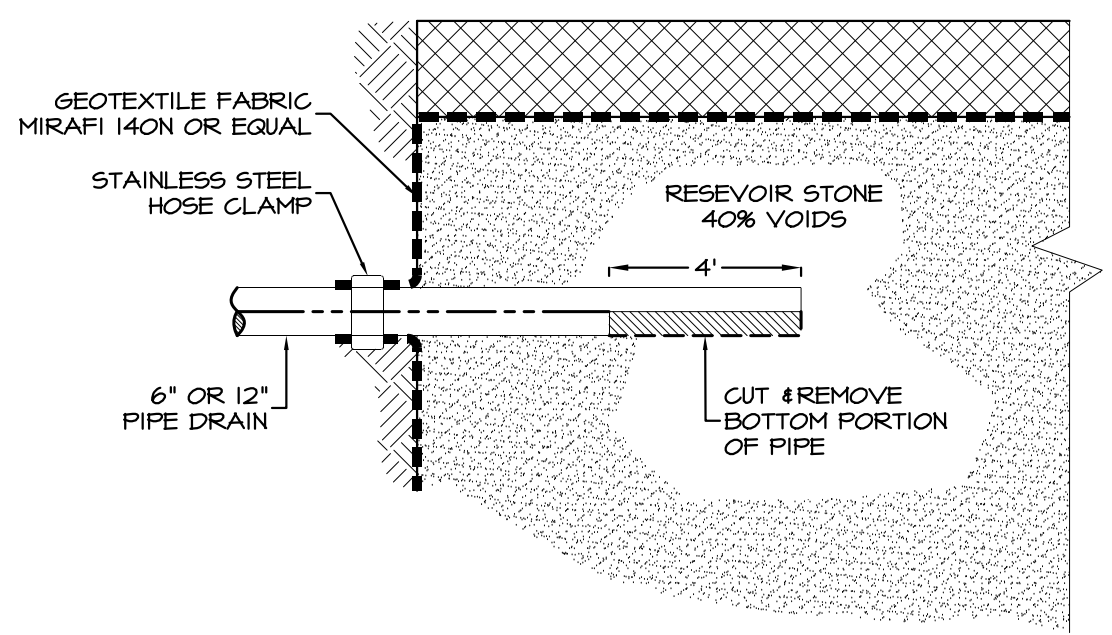
NOTES:
 1. HDPE GEOMEMBRANE EXTENDED TO WALLS OF EXCAVATION & SIDES OF SWALE WITH MIRAFI 140N.
 2. SEE STORMWATER MANAGEMENT SYSTEMS TABLE ON SHEET D2 FOR "C" DIMENSION.

**BIOSWALE-ISR (BR1, BR2)
 CROSS-SECTION TYPICAL DETAIL**
 N.T.S.

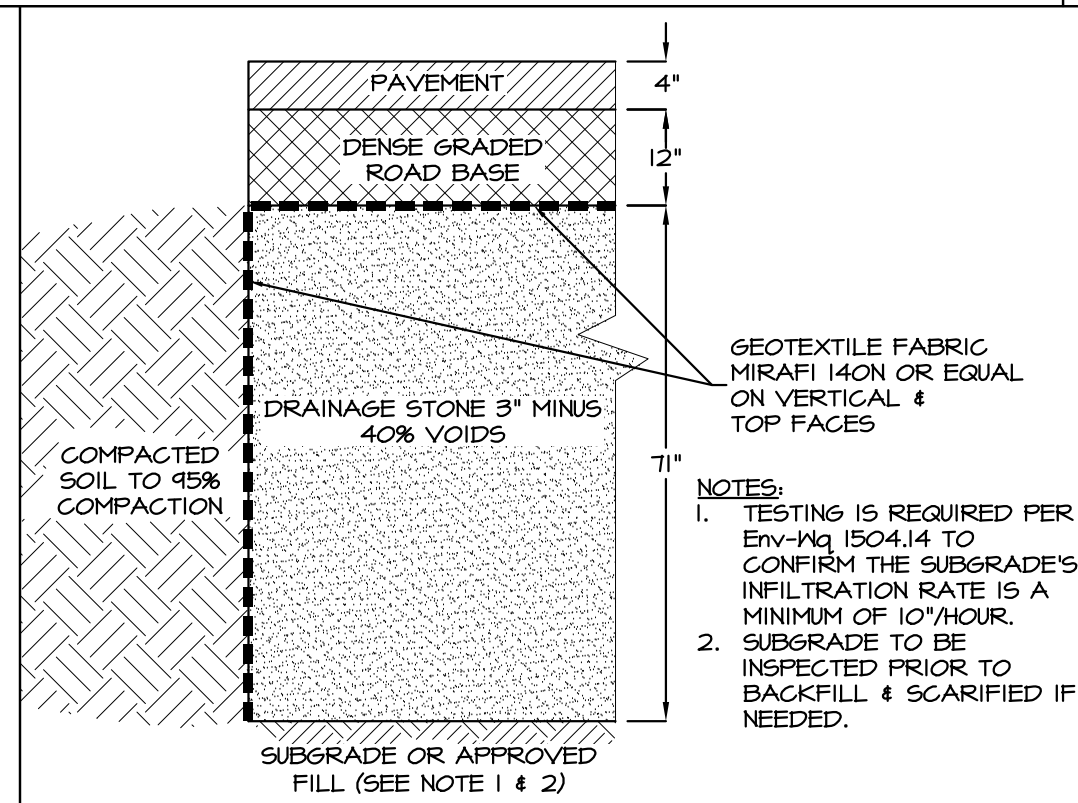


NOTES:
 1. DOWNSLOPE LINER TO BE LOCATED ON ALL DOWNSLOPE AREAS CONTAINING BIOSWALES

**BIOSWALE - ISR (BR1 & BR2)
 DOWNSLOPE LINER TYPICAL DETAIL**
 N.T.S.



**BIOSWALE - ISR (BR1 & BR2)
 PIPE END TYPICAL DETAIL**
 N.T.S.

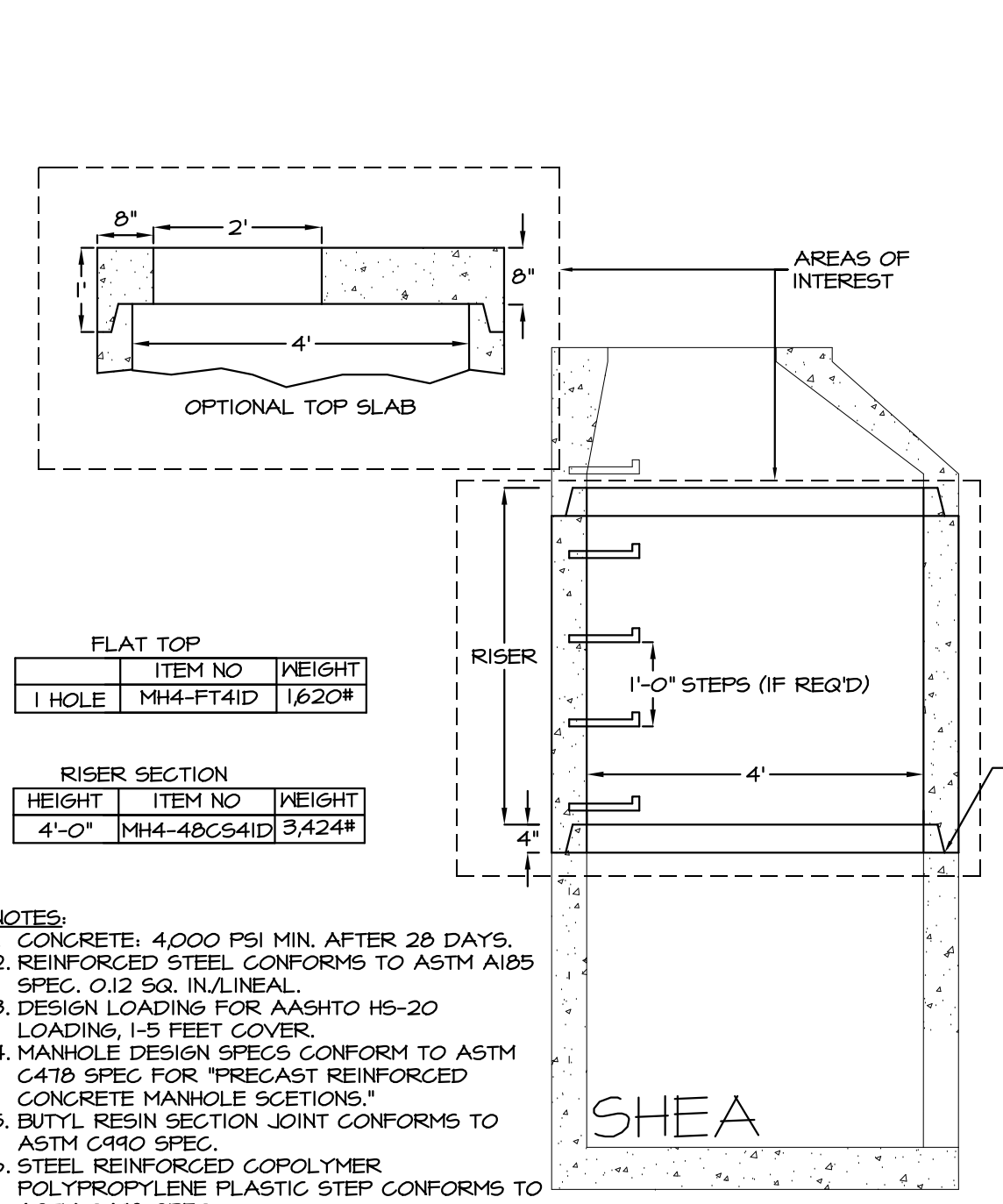


NOTES:
 1. TESTING IS REQUIRED PER Env-Nq 1504.14 TO CONFIRM THE SUBGRADE'S INFILTRATION RATE IS A MINIMUM OF 10\"/>

**SUBSURFACE INFILTRATION
 TYPICAL DETAIL**
 N.T.S.

Plan Ref.		Stormwater Management System Chart									
System	ID	"A" Geomembrane opening (feet)	"B" Depth - Total (feet)	"C" ISR Depth (feet)	"Elev. 1" Depth-Bioswale Media (feet)	"Elev. 2" Area (Square feet)	"Elev. 2" Length (feet)	"Elev. 2" Width (feet)	"Elev. 2" Bypass Elev.	"Elev. 2" Elev. Top of BSM/Stone (feet)	"Elev. 3" Bottom Elev.
Bioswale-ISR	BR1	19.2	5.25	2.75	2	515	64	8	228.67	228.00	222.75
Bioswale-ISR	BR2	45.3	5.25	2.75	2	920	151	4	229.67	229.00	223.75
Subsurface Infiltration	S11	N/A	6	N/A	N/A	8500	Varies		227.15	230.08	224.17
Bioswale	PP108	N/A	3.25	N/A	2	920	84	11	216.30	215.70	212.45

Notes:
 1. See sheet D2 for Bioswale-ISR and subsurface infiltration (BR1, BR2, and S11) details.
 2. See sheet D5 for Bioswale (PP108) details.

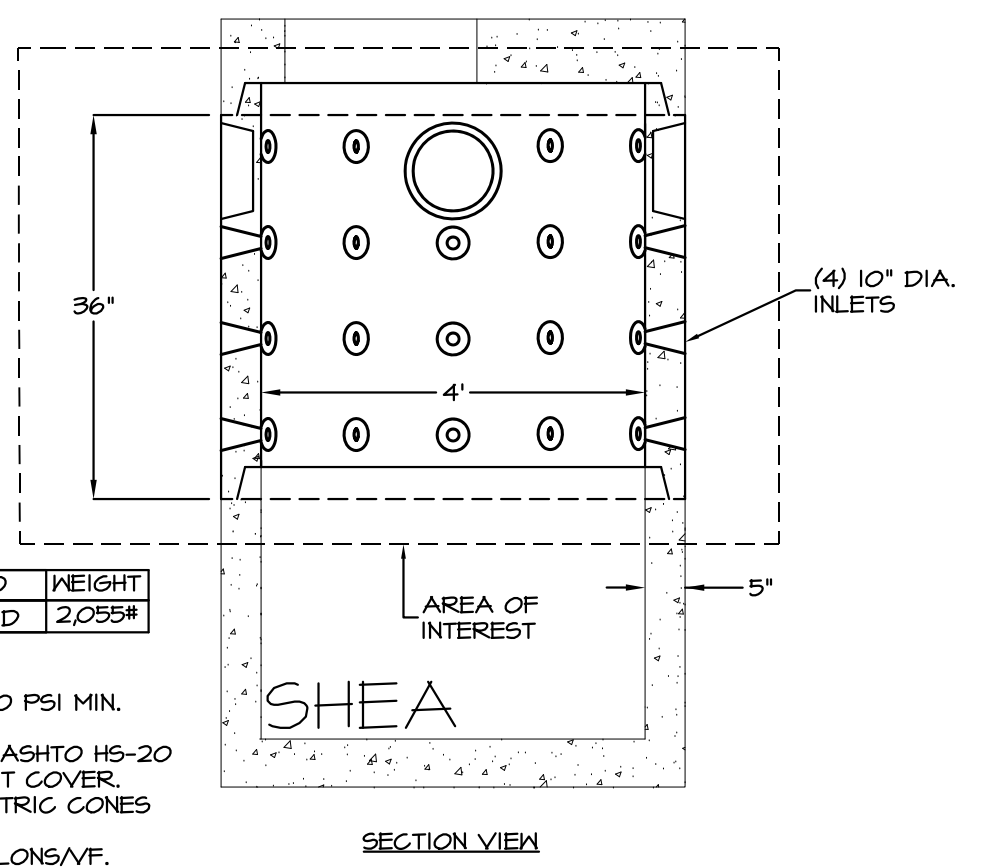
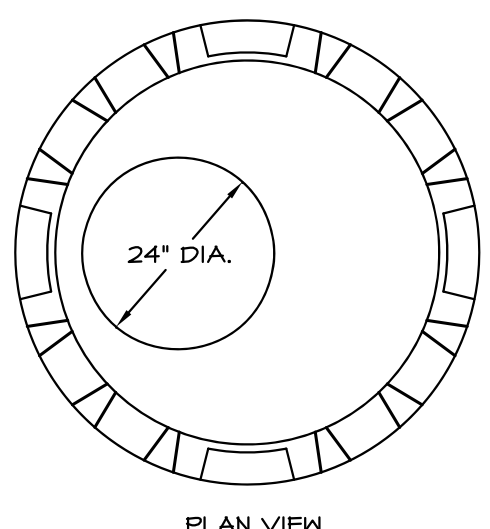


FLAT TOP		
ITEM NO	WEIGHT	
1 HOLE	MH4-FT41D	1,620#

RISER SECTION		
HEIGHT	ITEM NO	WEIGHT
4'-0"	MH4-48CS41D	3,424#

NOTES:
 1. CONCRETE: 4,000 PSI MIN. AFTER 28 DAYS.
 2. REINFORCED STEEL CONFORMS TO ASTM A195 SPEC. 0.12 SQ. IN. LINEAL.
 3. DESIGN LOADING FOR AASHTO H5-20 LOADING, 1-5 FEET COVER.
 4. MANHOLE DESIGN SPECS CONFORM TO ASTM C478 SPEC FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS."
 5. BUTYL RESIN SECTION JOINT CONFORMS TO ASTM C890 SPEC.
 6. STEEL REINFORCED COPOLYMER POLYPROPYLENE PLASTIC STEP CONFORMS TO ASTM C478 SPEC.

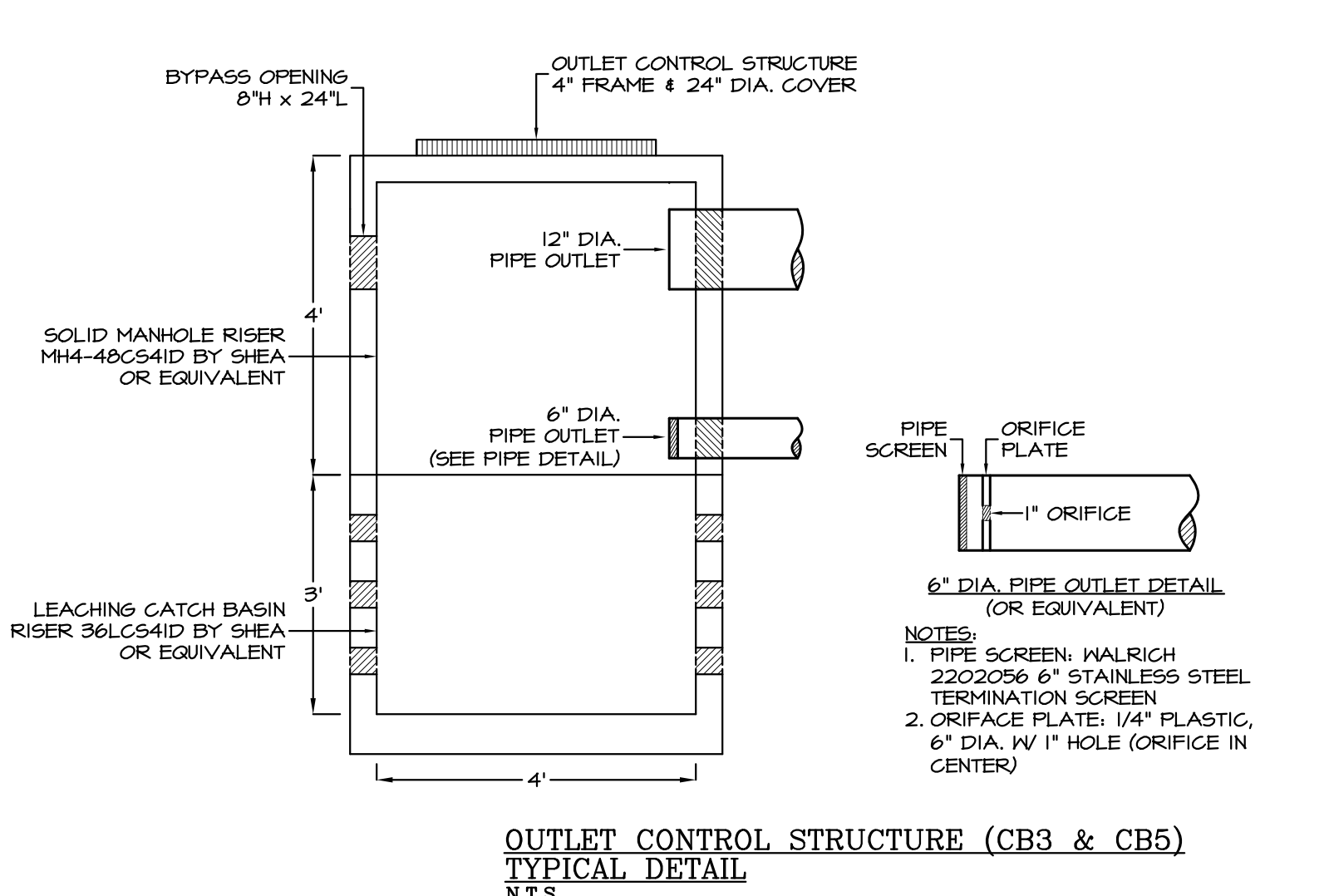
MANHOLE RISER 48" DIA. BY SHEA



RISER SECTION		
HEIGHT	ITEM NO	WEIGHT
3'-0"	36LCS41D	2,055#

NOTES:
 1. CONCRETE: 4,000 PSI MIN. AFTER 28 DAYS.
 2. DESIGNED FOR AASHTO H5-20 LOADING, 1-5 FEET COVER.
 3. OPTIONAL ECCENTRIC CONES AVAILABLE.
 4. VOLUME: 94 GALLONS/VF.

LEACHING CATCH BASIN RISER 48" DIA. BY SHEA



**OUTLET CONTROL STRUCTURE (CB3 & CB5)
 TYPICAL DETAIL**
 N.T.S.

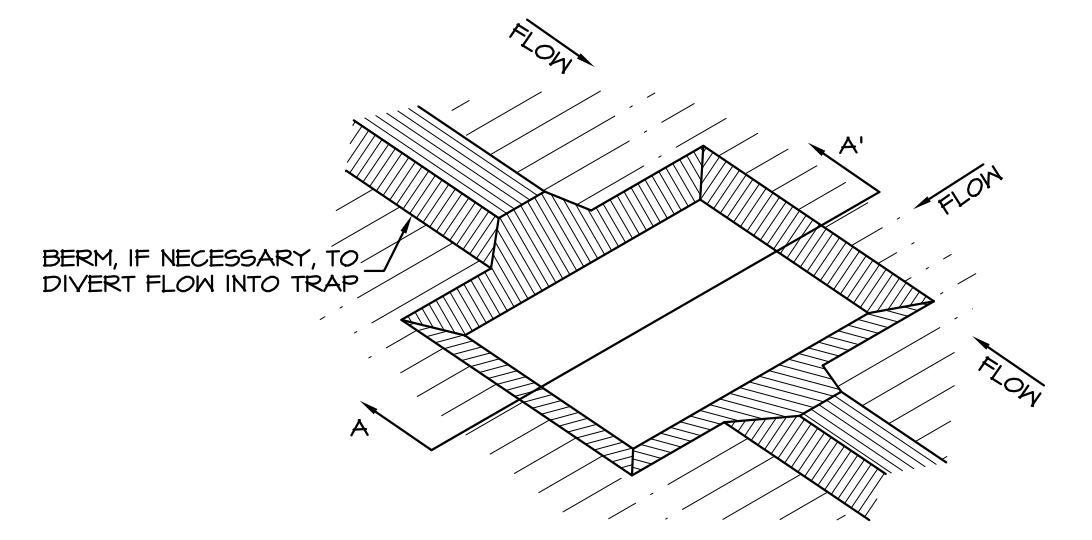
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2	NOV 5, 2019	FOR APPROVAL	
1	SEP 13, 2019	FOR APPROVAL	
ISS. DATE:	DESCRIPTION OF ISSUE:		CHK.
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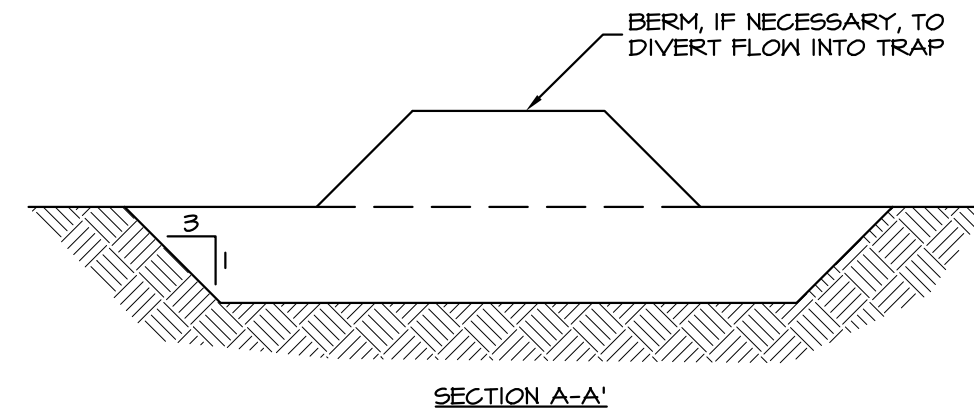
CLIENT:
TURBOCAM INTERNATIONAL
 607 CALEF HIGHWAY
 BARRINGTON, NH 03825

TITLE:
DETAILS
 FOR
 TAX MAP 233 LOT 77
 AND TAX MAP 234 LOTS 1.2 & 1.4
 TURBOCAM INTERNATIONAL
 ROUTE 9 / REDEMPTION ROAD (SITE)
 BARRINGTON, NH 03825
 & TOWN OF BARRINGTON
 PO BOX 660
 BARRINGTON, NH 03825

PROJECT:	SCALE:	SHEET:
19-020	AS SHOWN	D2

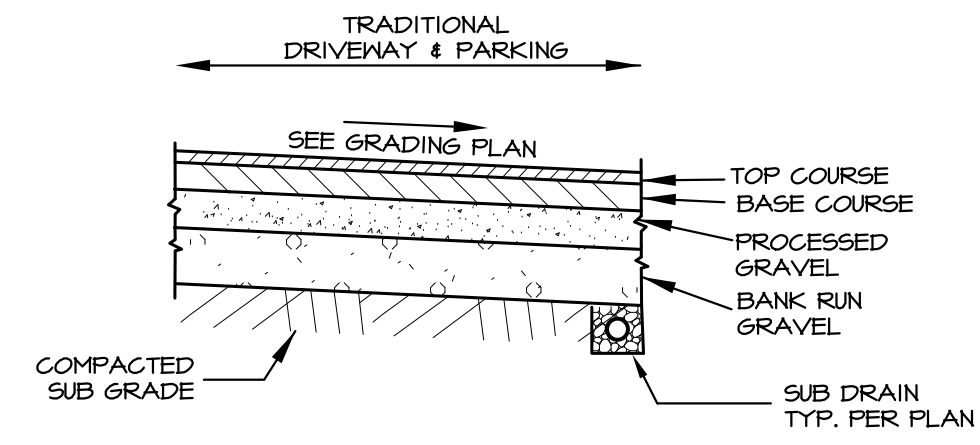


CREST LENGTH (FT) = 6 x DRAINAGE AREA



- NOTES:
1. SEDIMENT TRAP DETAIL IS IN ACCORDANCE WITH Env-Nq 1506.10.
 2. SEDIMENT TRAPS SHOULD BE LOCATED SO THAT THEY CAN BE INSTALLED PRIOR TO DISTURBING THE AREA THEY ARE TO PROTECT.
 3. THE TRAP SHOULD BE INSTALLED AS CLOSE TO THE DISTURBED AREA OR SOURCE OF SEDIMENT AS POSSIBLE.
 4. THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE TRAP SHOULD BE LESS THAN 5 ACRES.
 5. THE MINIMUM VOLUME OF THE TRAP SHOULD BE 3,600 CUBIC FEET OF STORAGE FOR EACH ACRE OF DRAINAGE AREA.
 6. THE SIDE SLOPES OF THE TRAP SHOULD BE 3:1 OR FLATTER, AND SHOULD BE STABILIZED IMMEDIATELY AFTER THEIR CONSTRUCTION.
 7. AN EARTH OUTLET SEDIMENT TRAP HAS A DISCHARGE POINT THAT IS EITHER OVER NATURAL GROUND OR CUT INTO NATURAL GROUND.
 8. THE OUTLET WIDTH SHOULD BE EQUAL TO 6 TIMES THE DRAINAGE AREA IN ACRES.
 9. THE EMBANKMENT AND OUTLET SHOULD BE VEGETATED WITHIN 3 DAYS OF CONSTRUCTION.

EARTH OUTLET SEDIMENT TRAP DETAIL
NOT TO SCALE

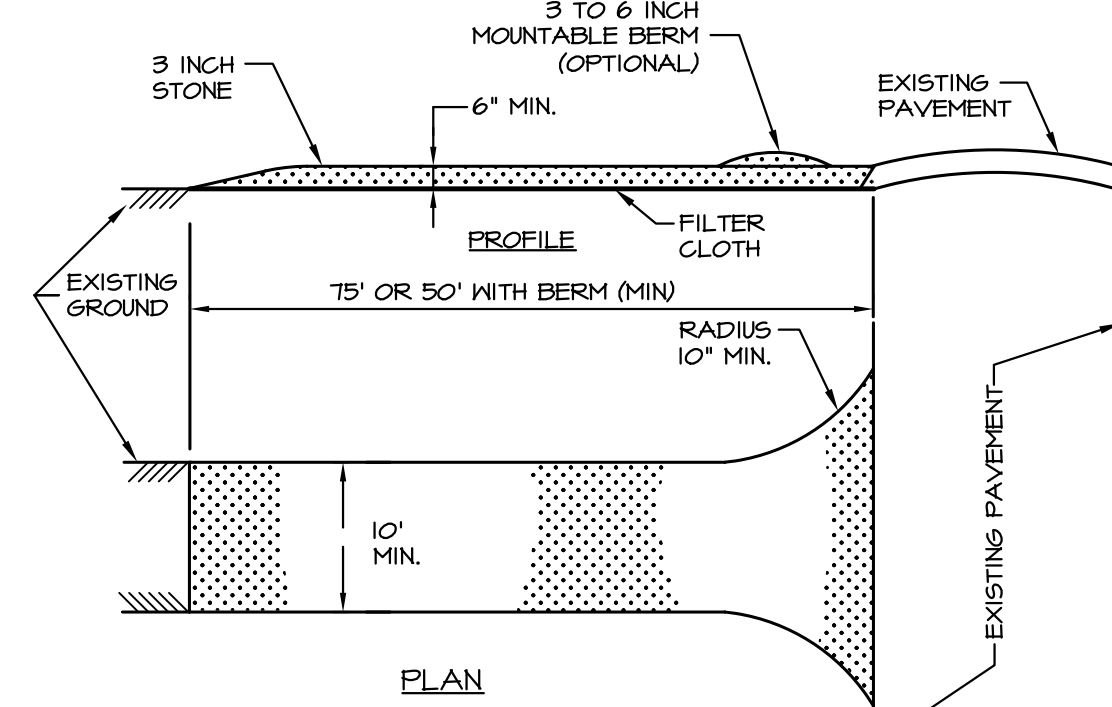


PAVEMENT COMPONENTS, MATERIALS AND PLACEMENT METHODS SHOULD MEET CURRENT NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) REQUIREMENTS.

DRIVEWAY:

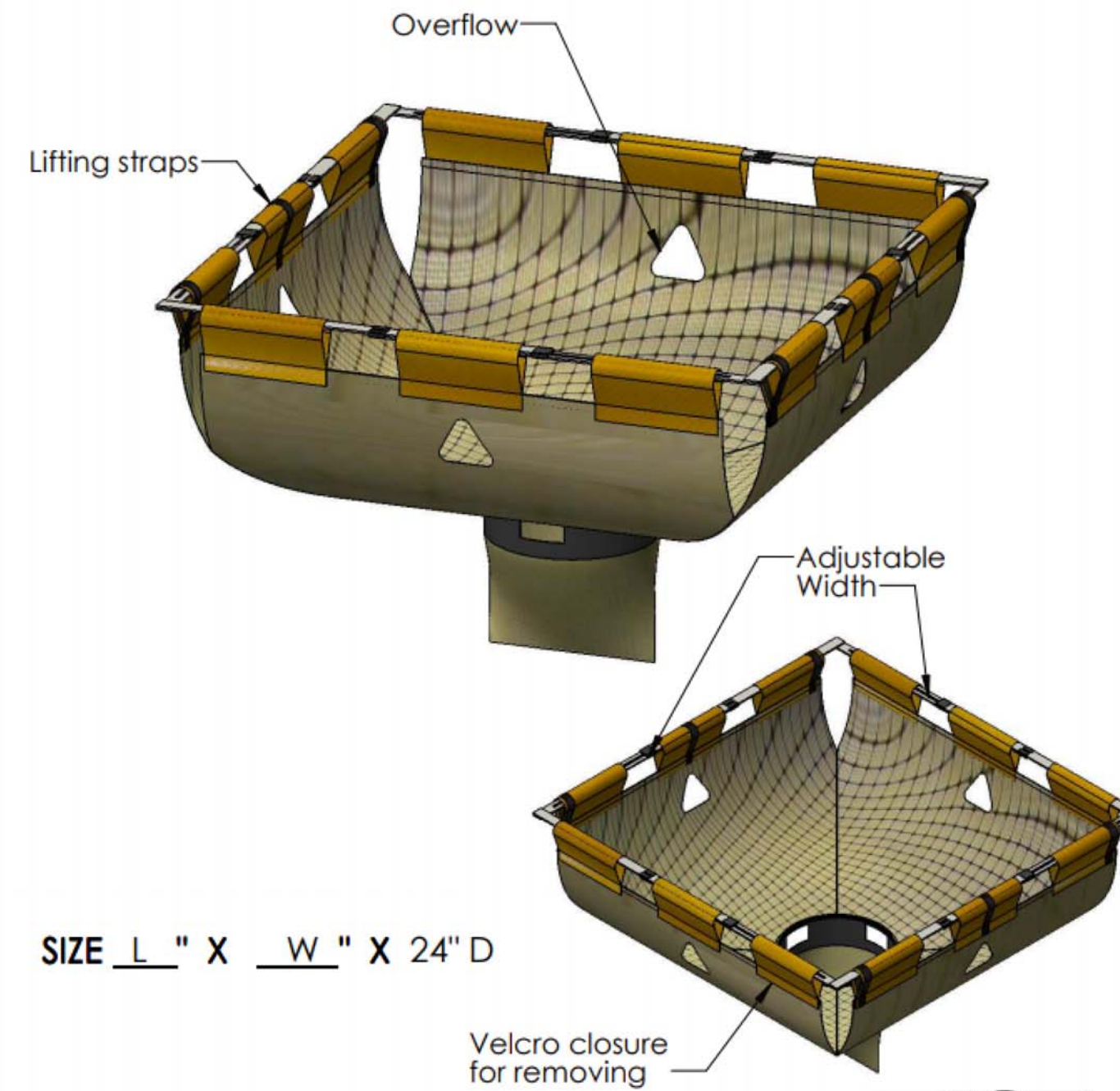
- 1" ASPHALT WEARING SURFACE, NHDOT 1/2" NOMINAL MAXIMUM AGGREGATE SIZE
- 3" ASPHALT BASE, NHDOT 3/4" NOMINAL MAXIMUM AGGREGATE SIZE
- 6" CRUSHED GRAVEL BASE, NHDOT TYPE 304.3
- 2" GRAVEL SUB BASE, NHDOT TYPE 304.2

TRADITIONAL DRIVEWAY & PARKING LOT SECTION
N.T.S.

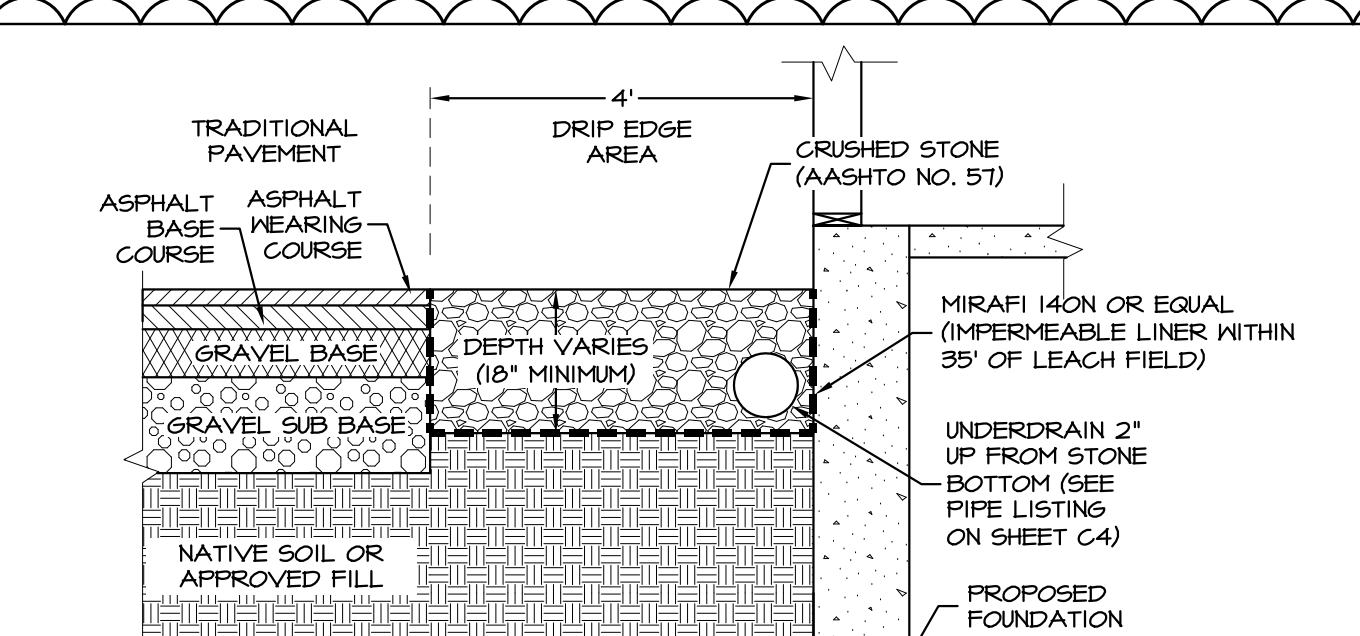


STABILIZED CONSTRUCTION ENTRANCE
N.T.S.

Silt Sack - Type C



ACF ENVIRONMENTAL
2831 Cardwell Road
Richmond, VA 23234
WWW.ACFENVIRONMENTAL.COM



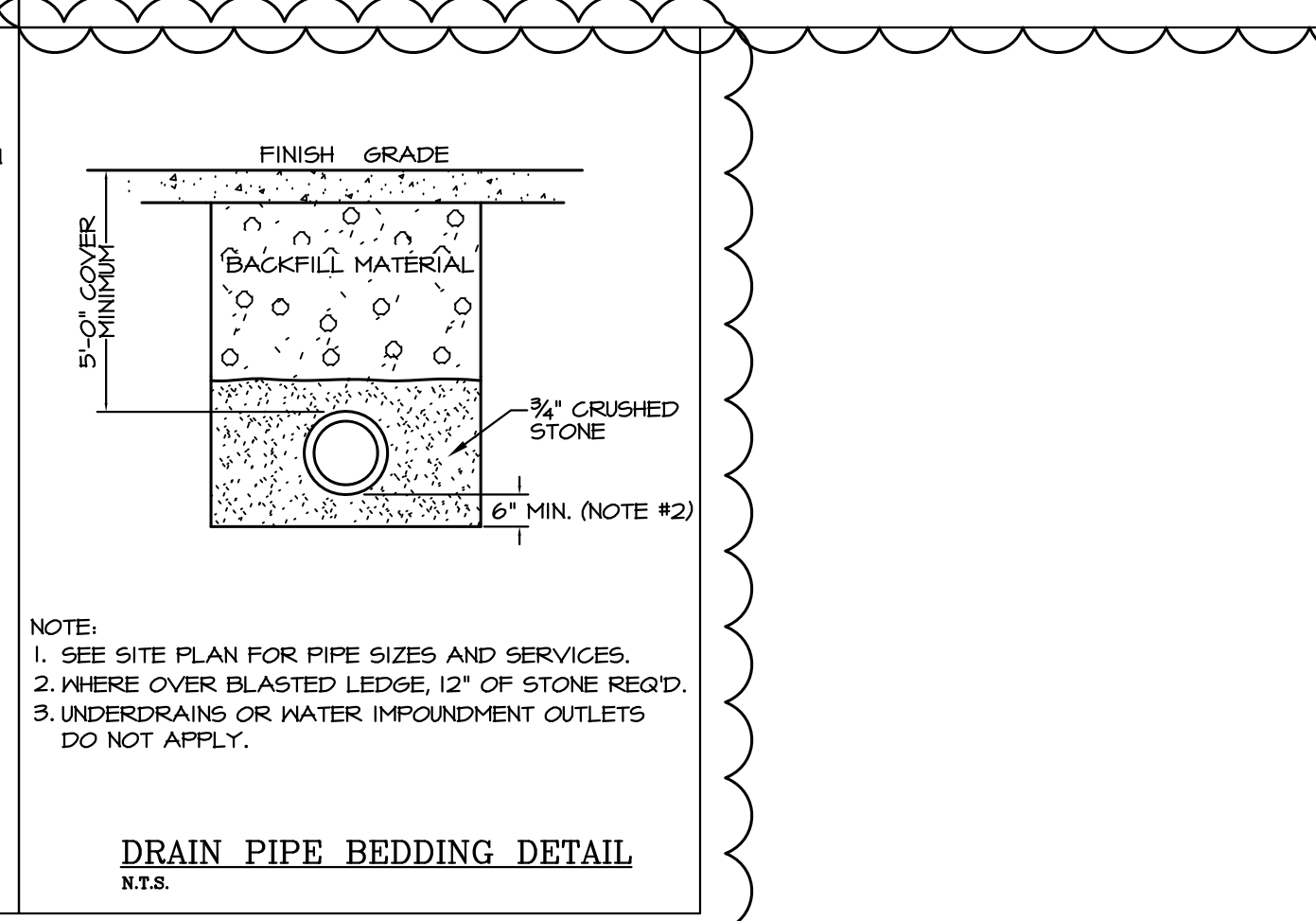
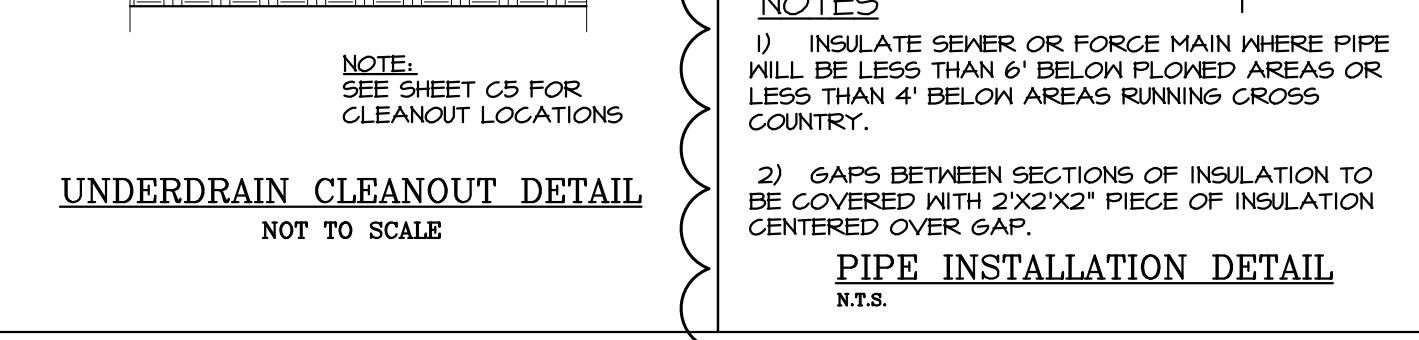
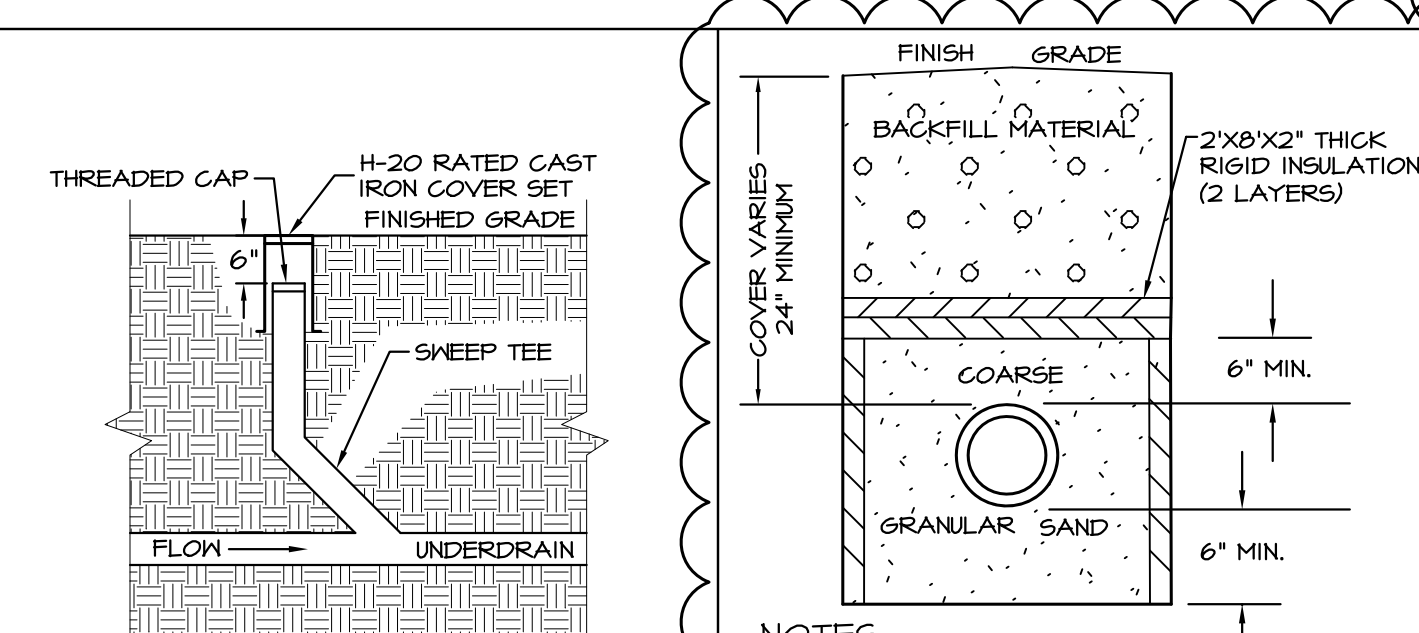
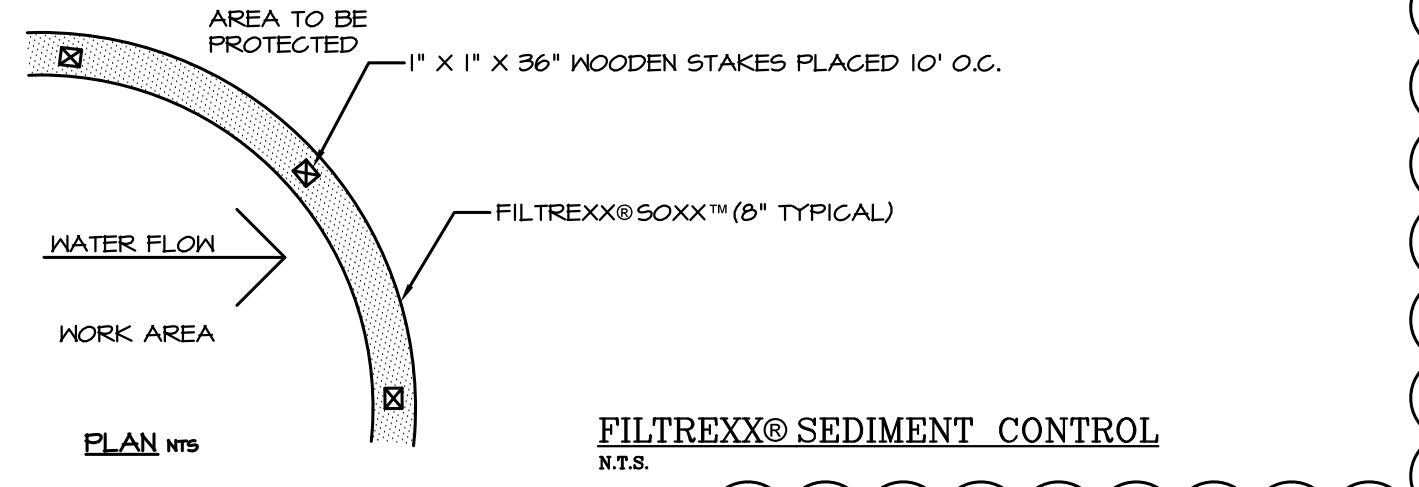
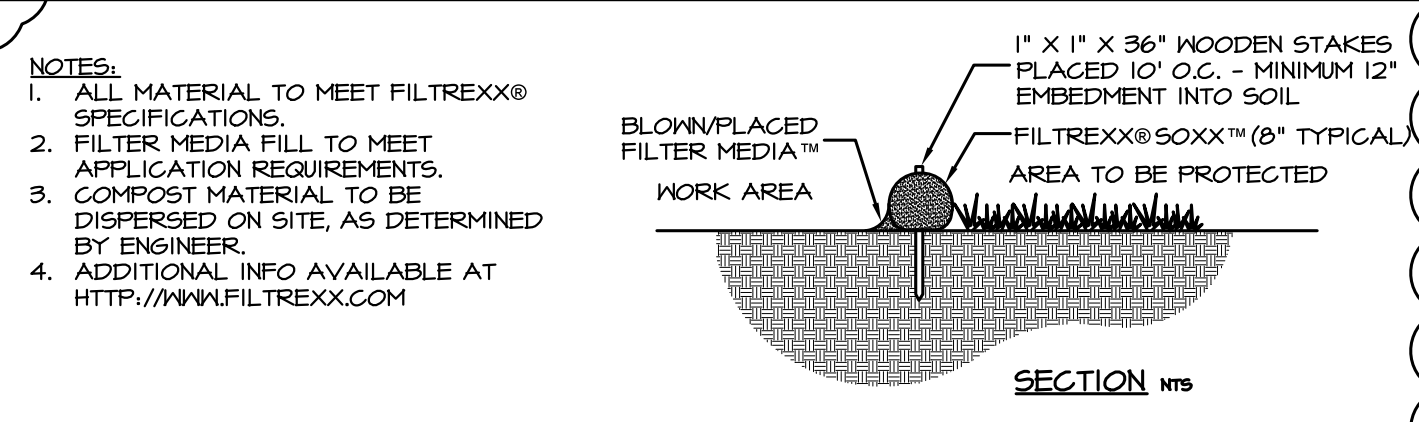
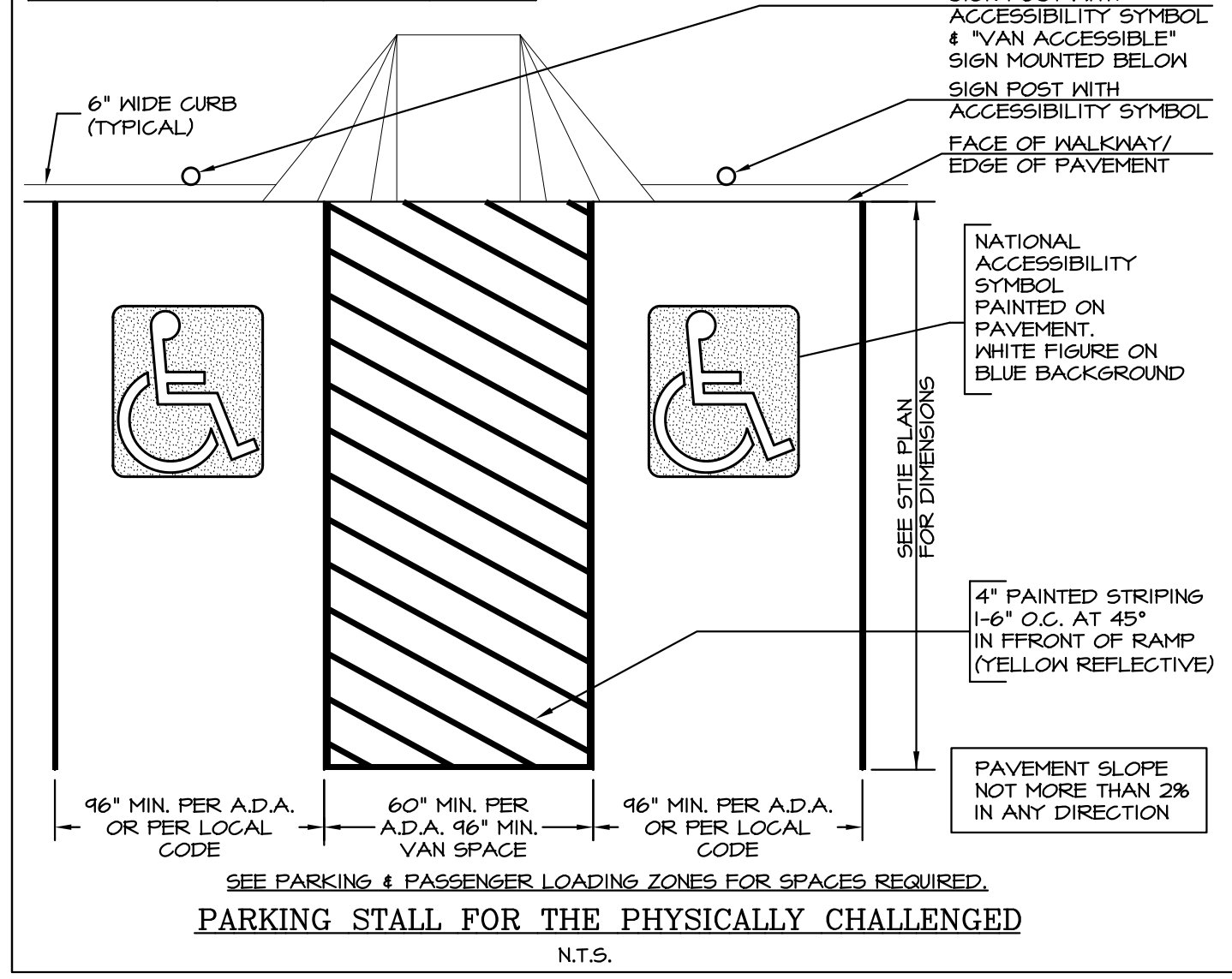
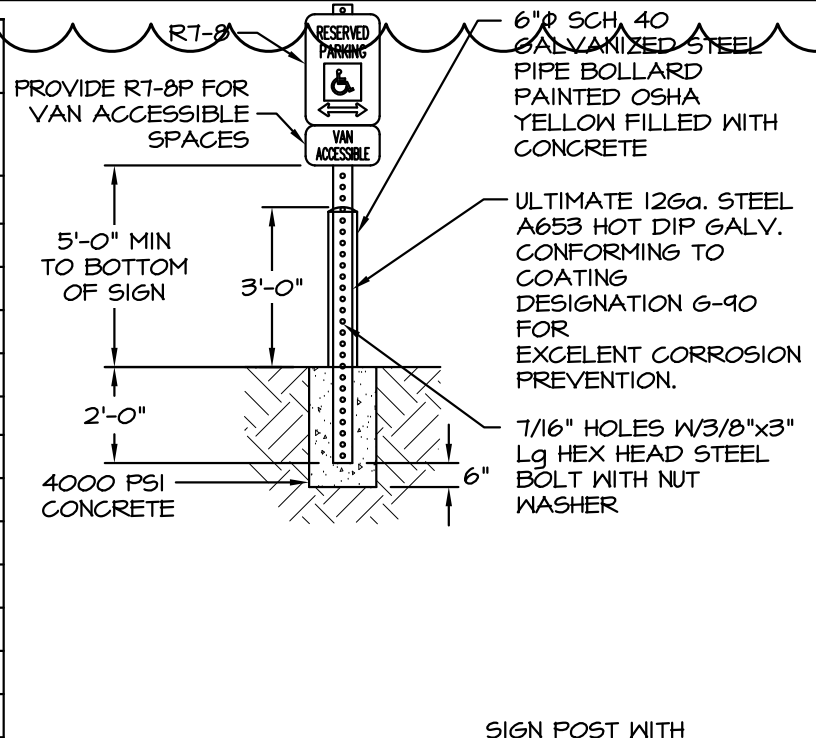
Drip Edge Detail
N.T.S.

NOTE:

1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS.
2. FILTER MEDIA FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.
4. ADDITIONAL INFO AVAILABLE AT [HTTP://WWW.FILTREXX.COM](http://WWW.FILTREXX.COM)

PARKING & PASSENGER LOADING ZONES

TOTAL # PARKING SPACES	STAND.	VAN	TOTAL
1 - 25	0	1	1
26 - 50	1	1	2
51 - 75	2	1	3
76 - 100	3	1	4
101 - 150	4	1	5
151 - 200	5	1	6
201 - 300	6	1	7
301 - 400	7	1	8
401 - 500	8	2	10
501 - 550	9	2	11
551 - 600	10	2	12



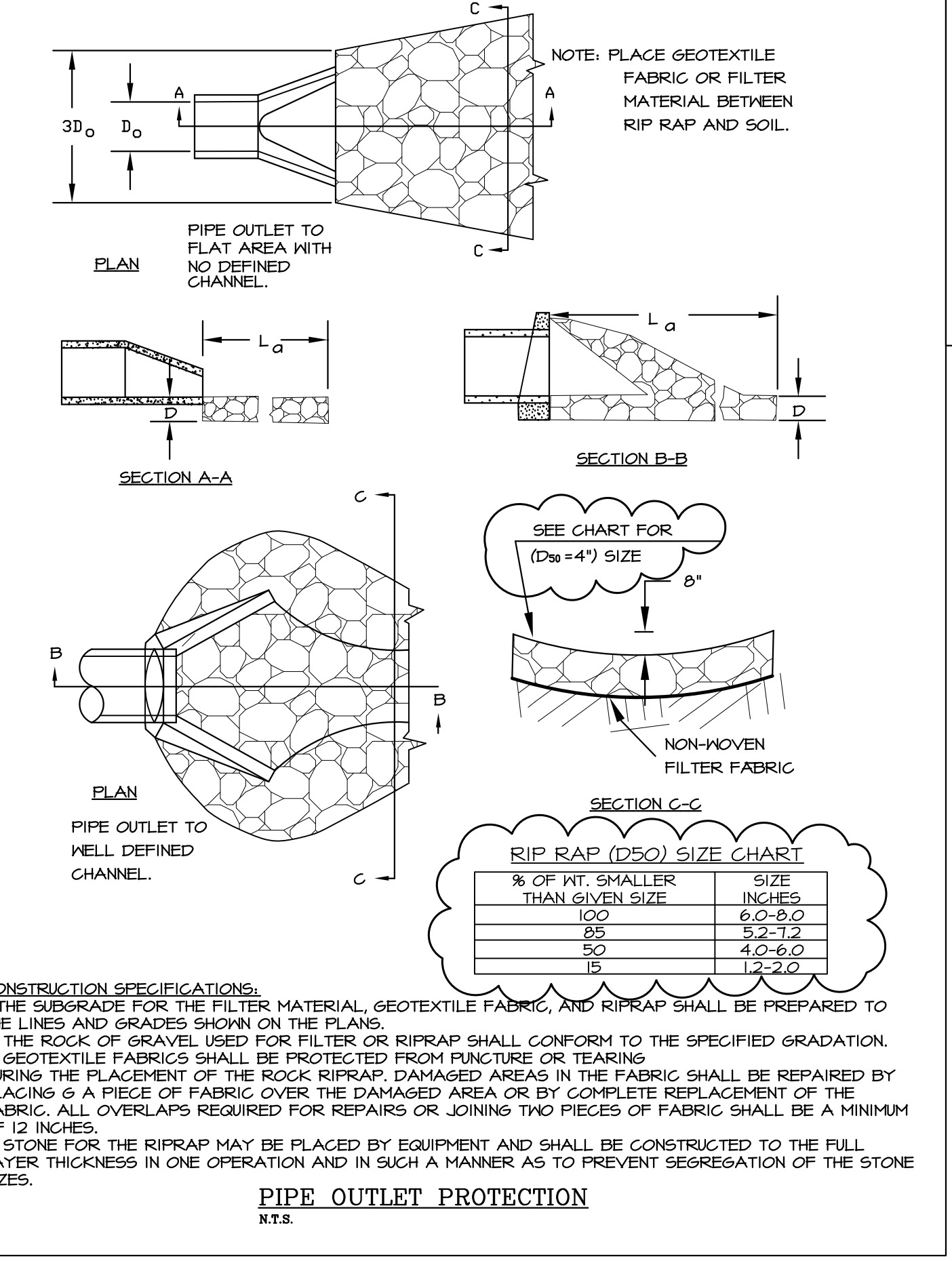
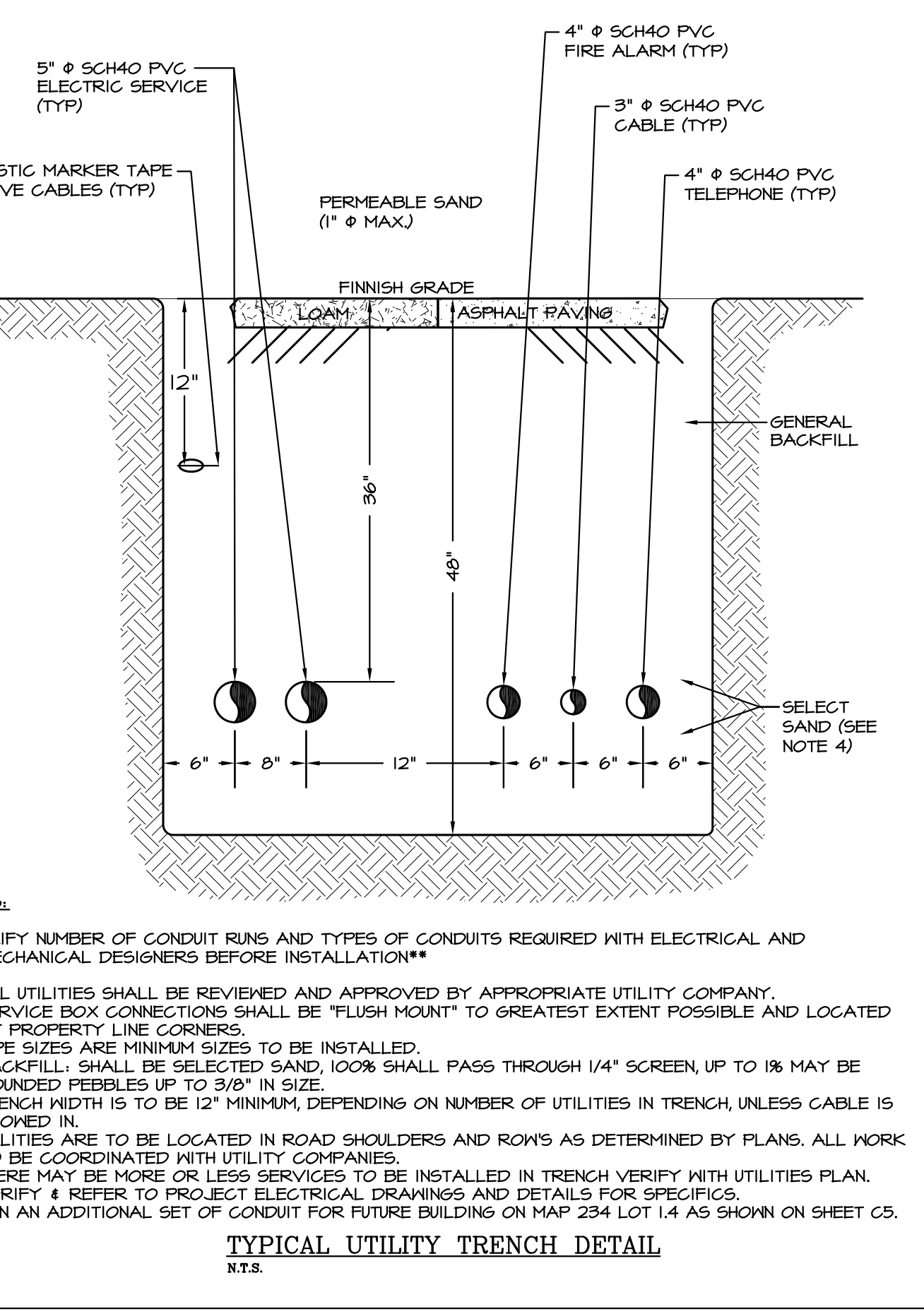
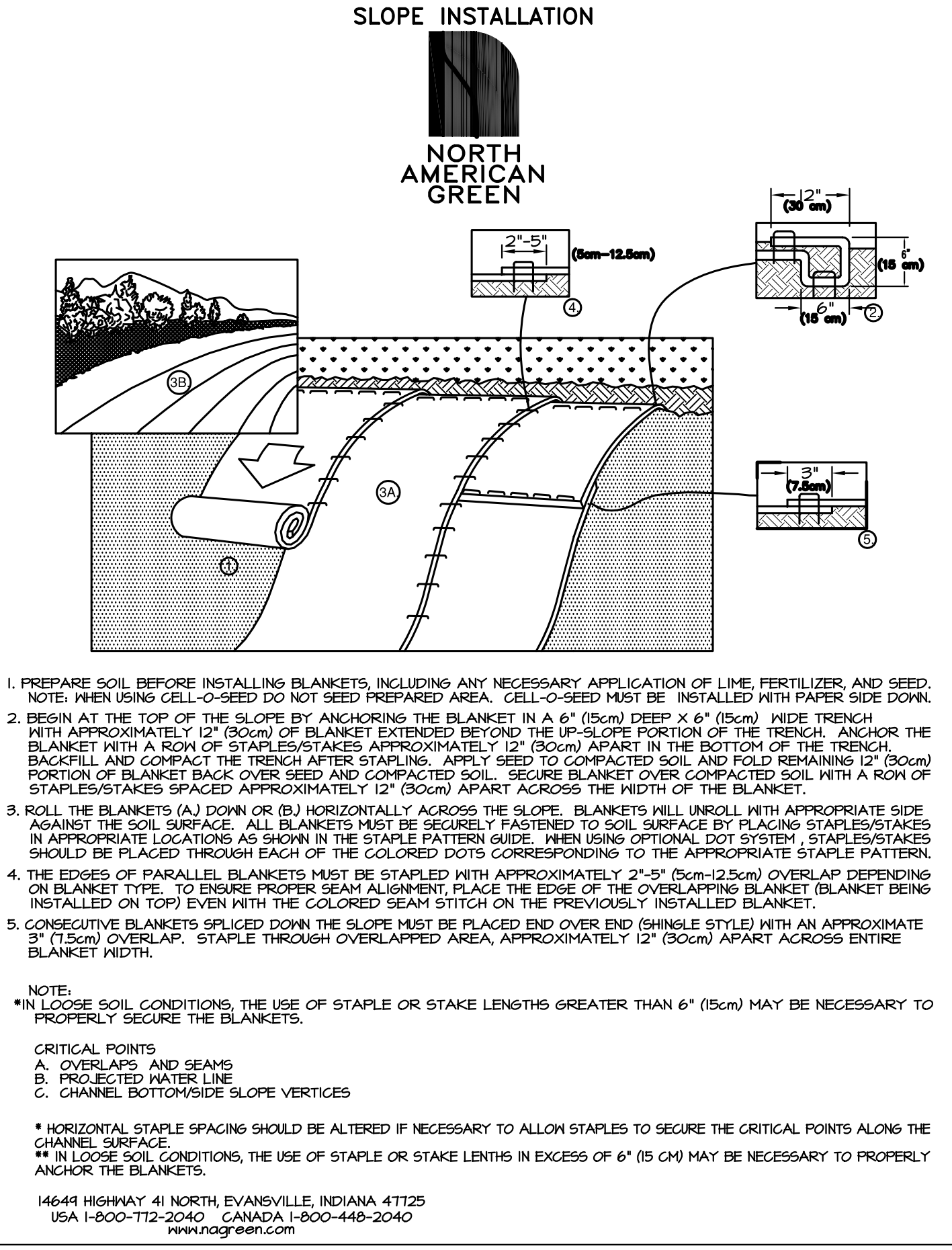
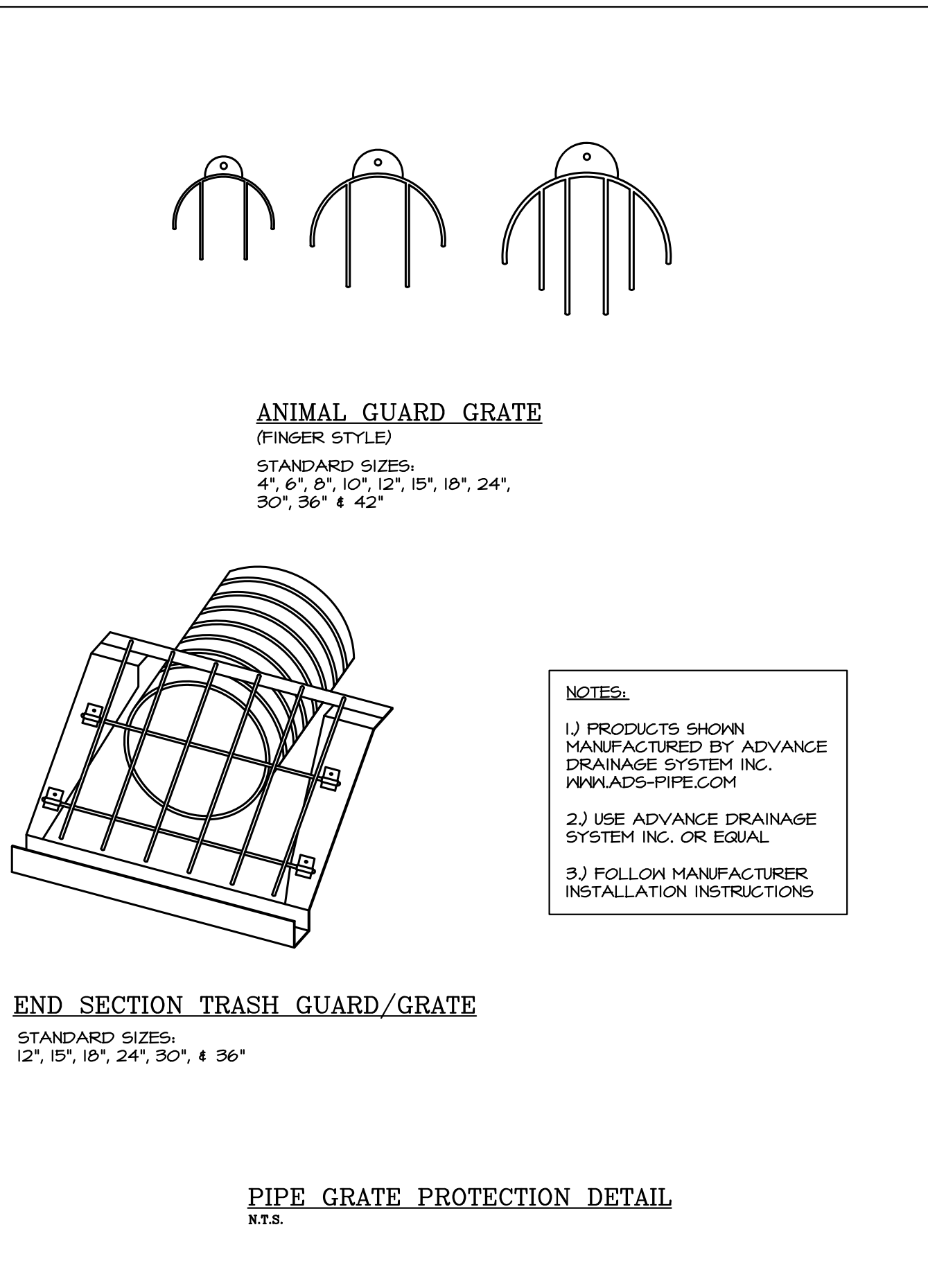
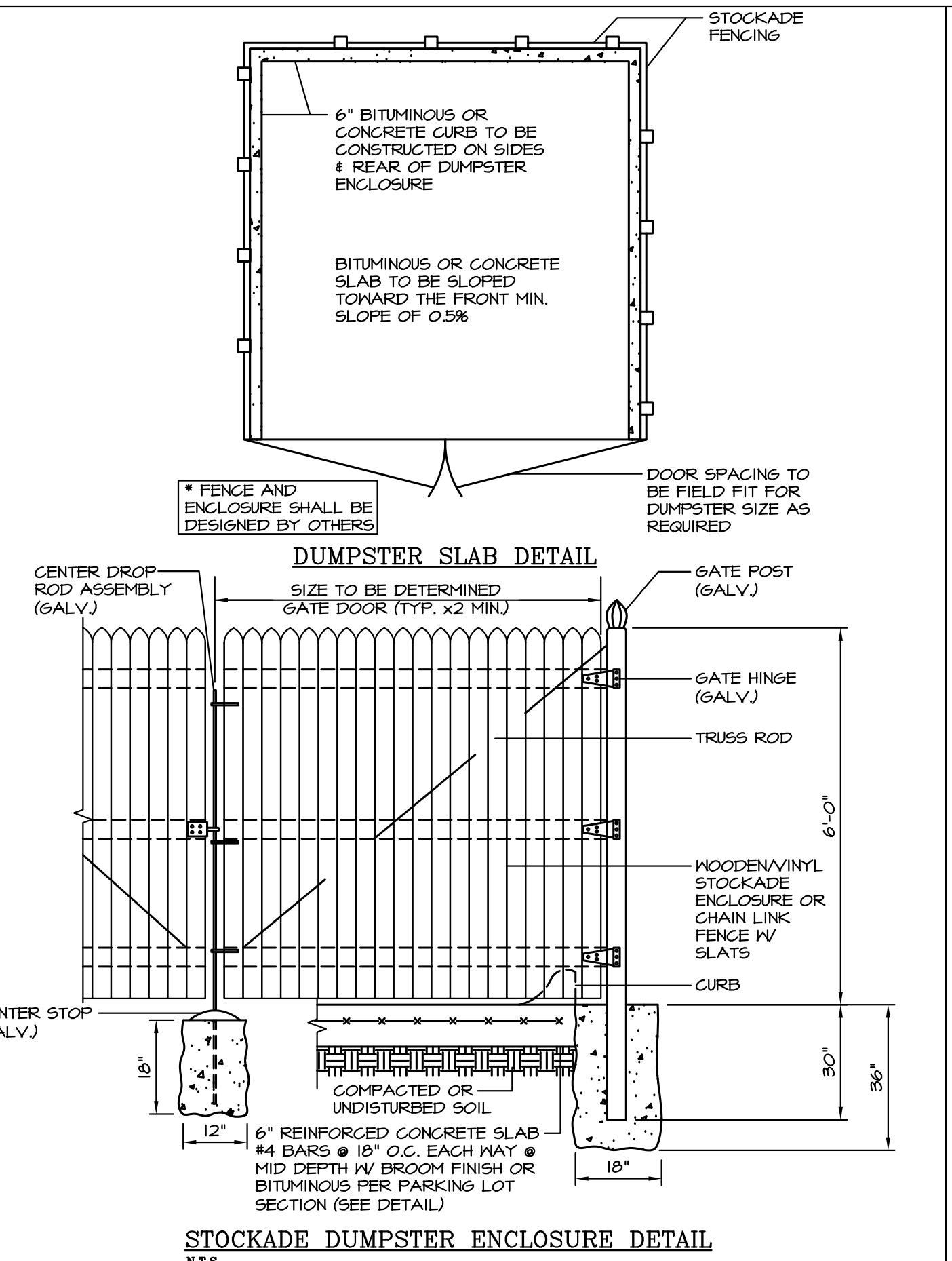
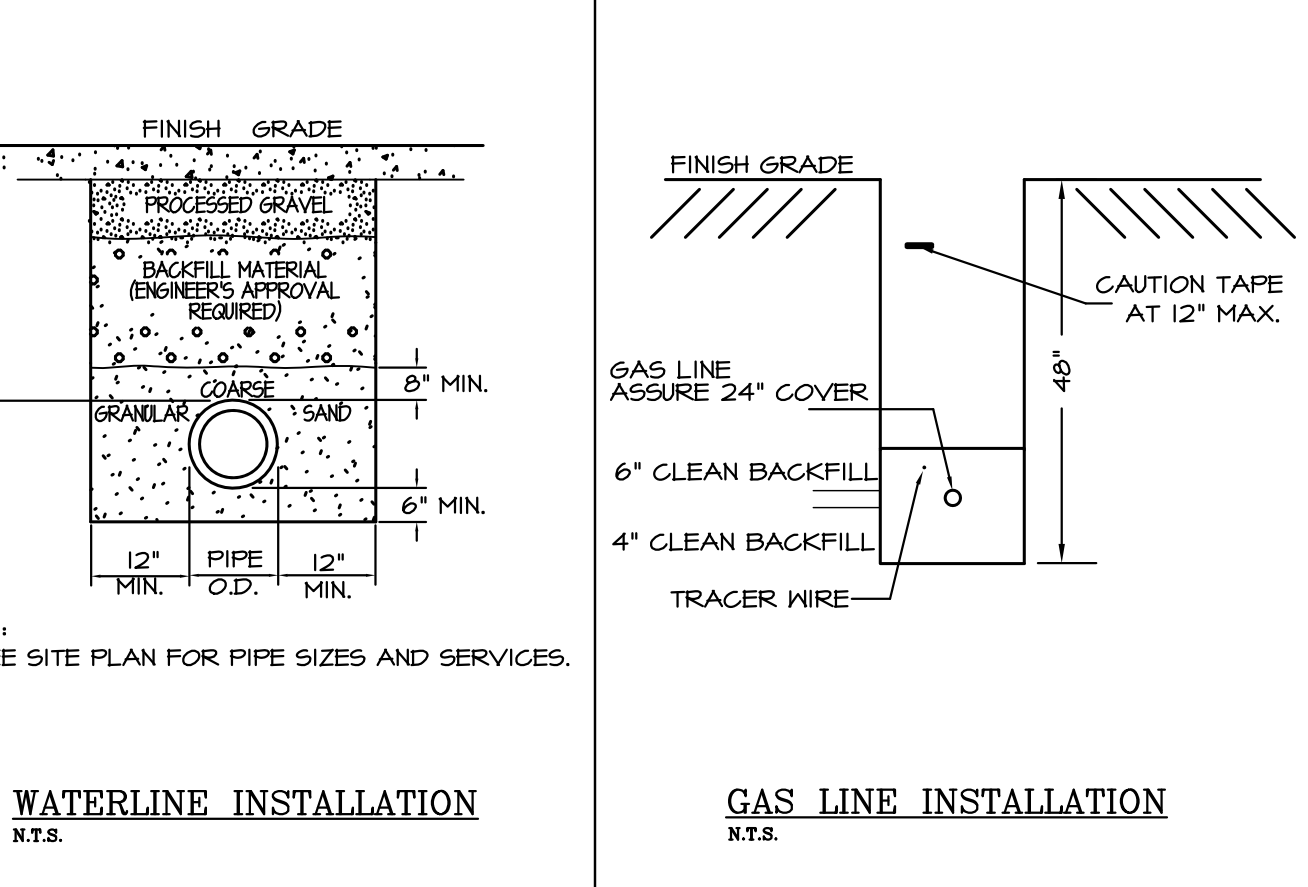
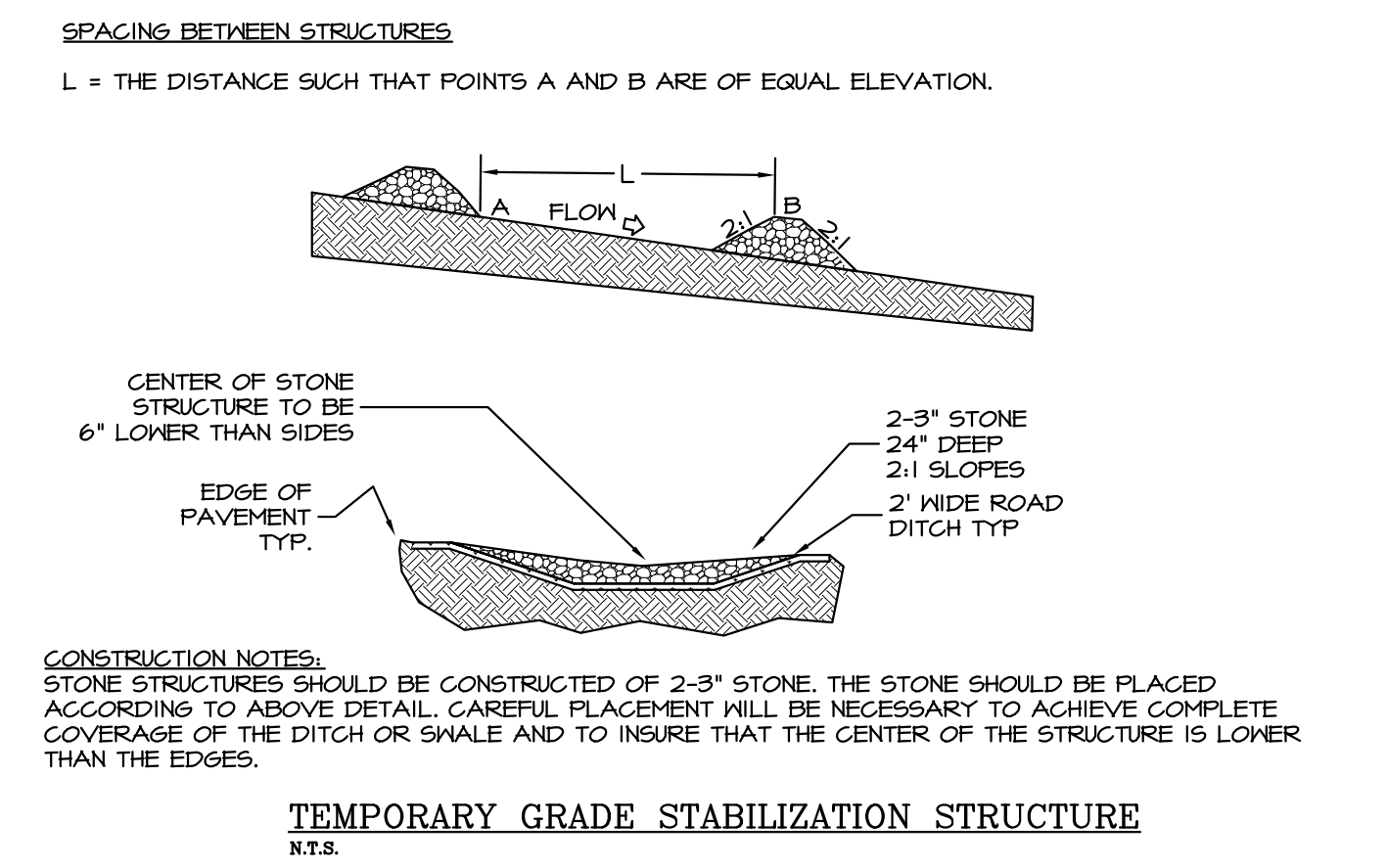
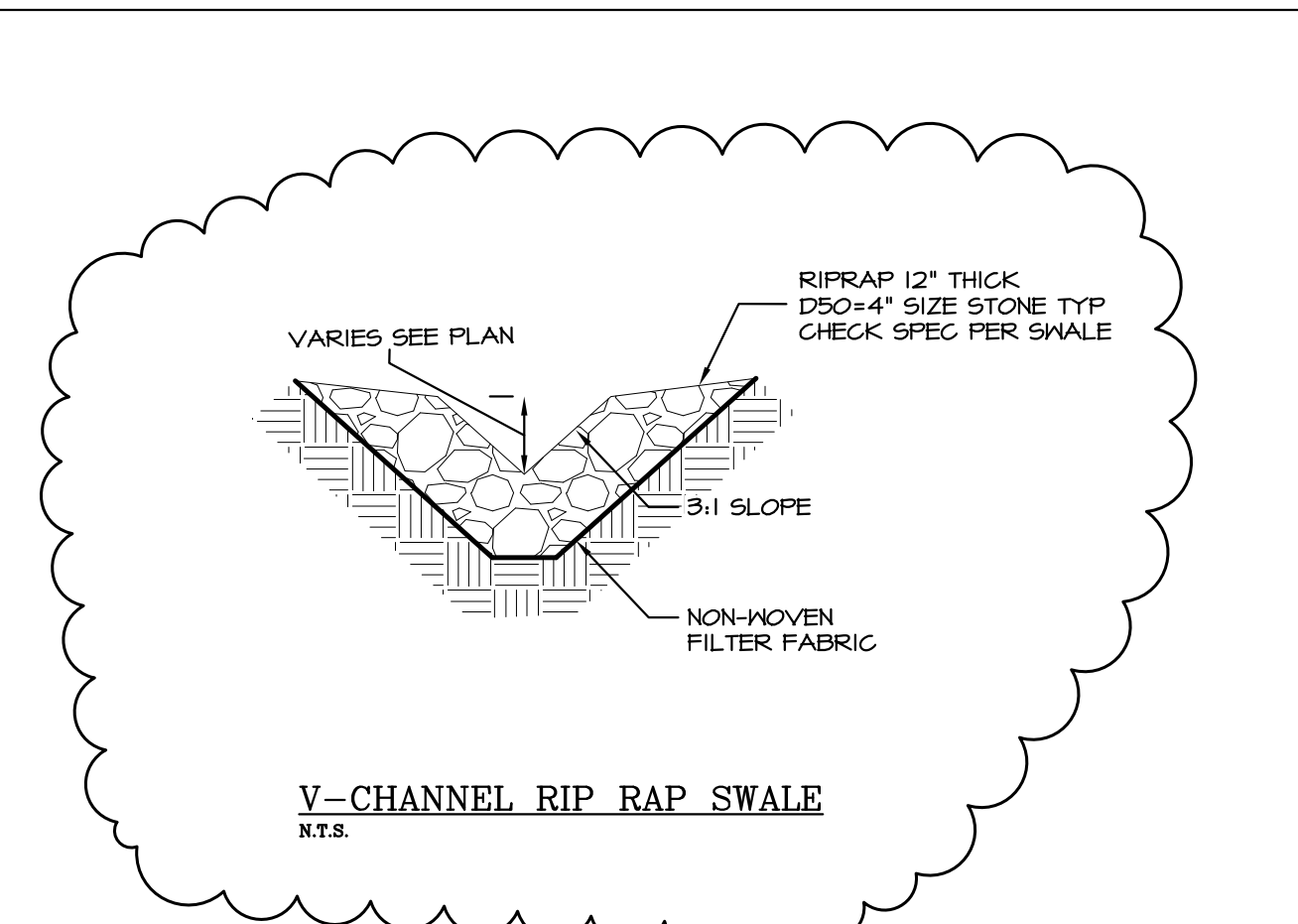
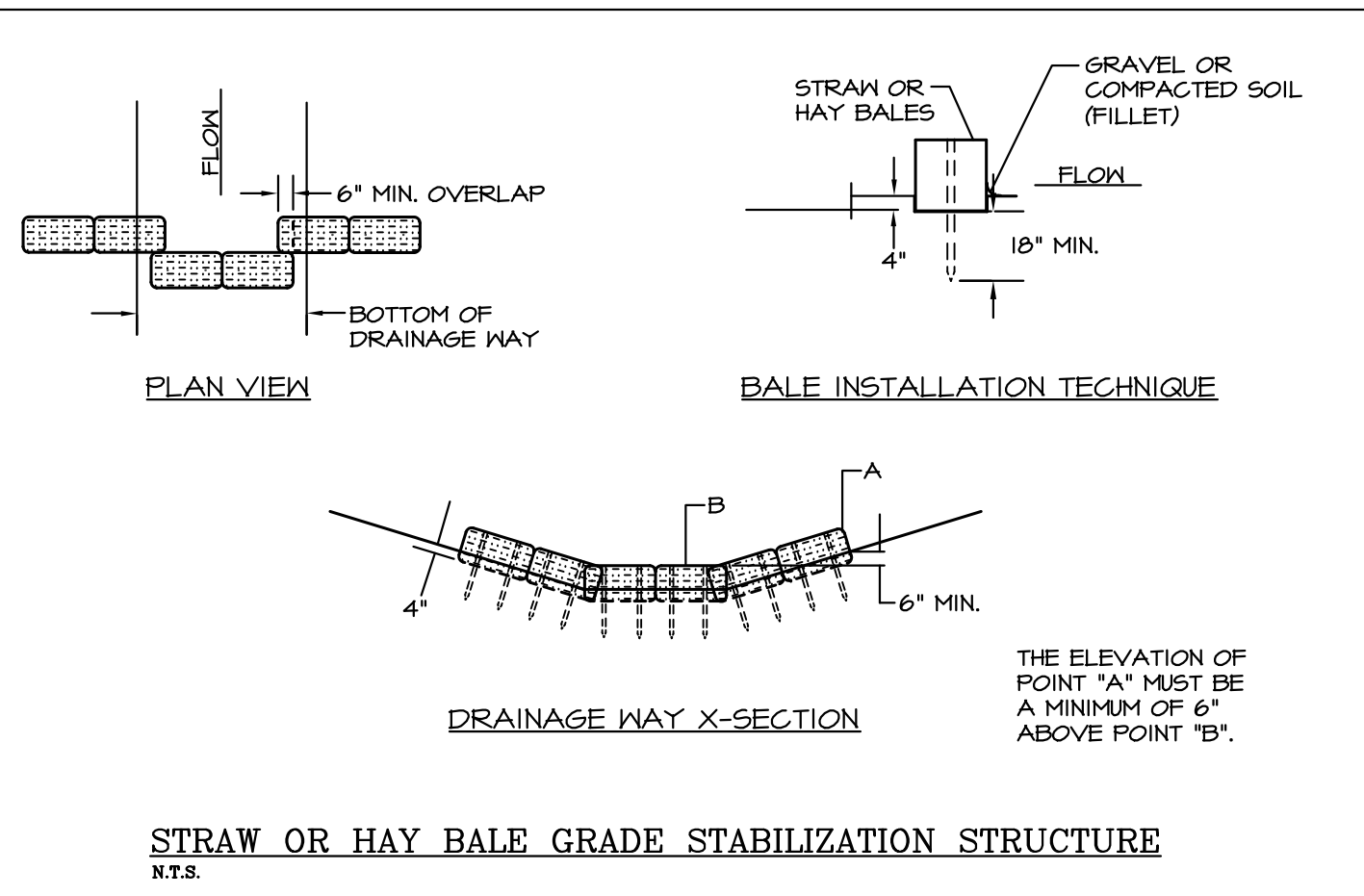
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Civil & structural consultants, land planners
118 PORTSMOUTH AVENUE, A202
STRATHAM, NH 03855
P: 603-772-4400 F: 603-772-4487
WWW.EMANUELENGINEERING.COM

CUSTOMER:
TURBOCAM INTERNATIONAL
607 CALEF HIGHWAY
BARRINGTON, NH 03825

TITLE:
DETAILS
FOR
TAX MAP 233 LOT 77
AND TAX MAP 234 LOTS 1.2 & 1.4
TURBOCAM INTERNATIONAL
ROUTE 9 / REDEMPTION ROAD (SITE)
BARRINGTON, NH 03825
& TOWN OF BARRINGTON
PO BOX 660
BARRINGTON, NH 03825

PROJECT: 19-020
SCALE: AS SHOWN
SHEET: D3



FLARED END SECTIONS

SIZE	PRODUCT CODE
10" (250mm)	1015NP
12" (300mm) / 15" (375mm)	1215NP
18" (450mm)	1810NP
24" (600mm)	2410NP
30" (750mm)	3015NP
36" (900mm)	3615NP

TOP VIEW
SIDE VIEW
FRONT VIEW
FLARED END SECTION

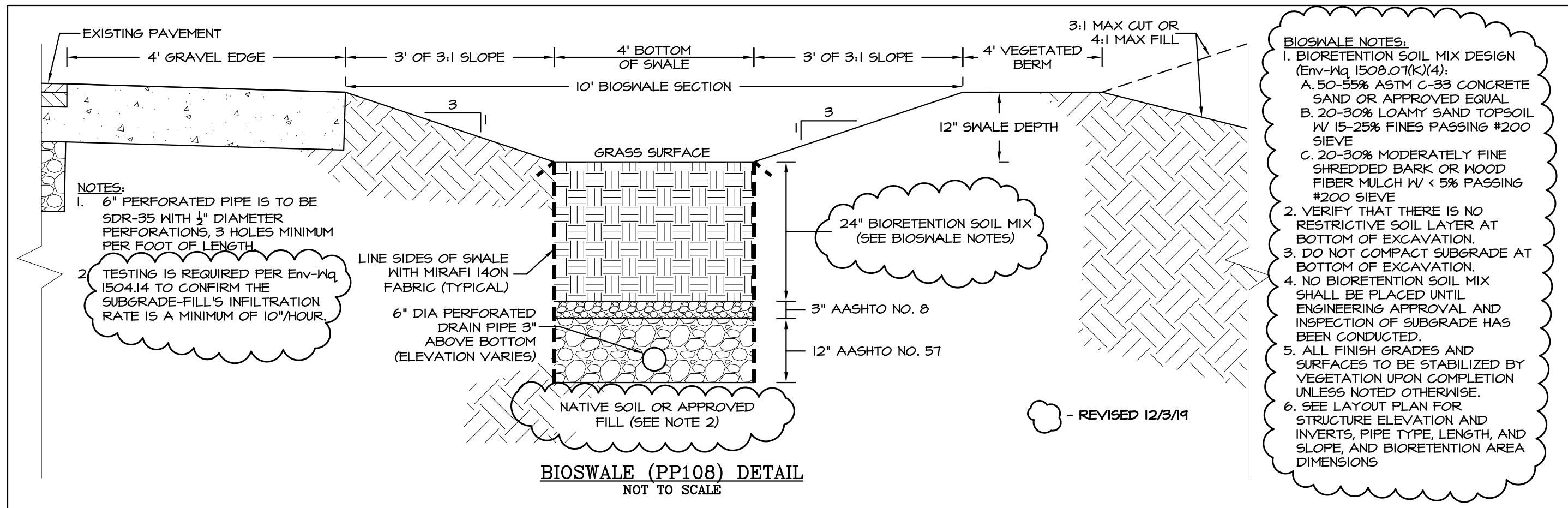
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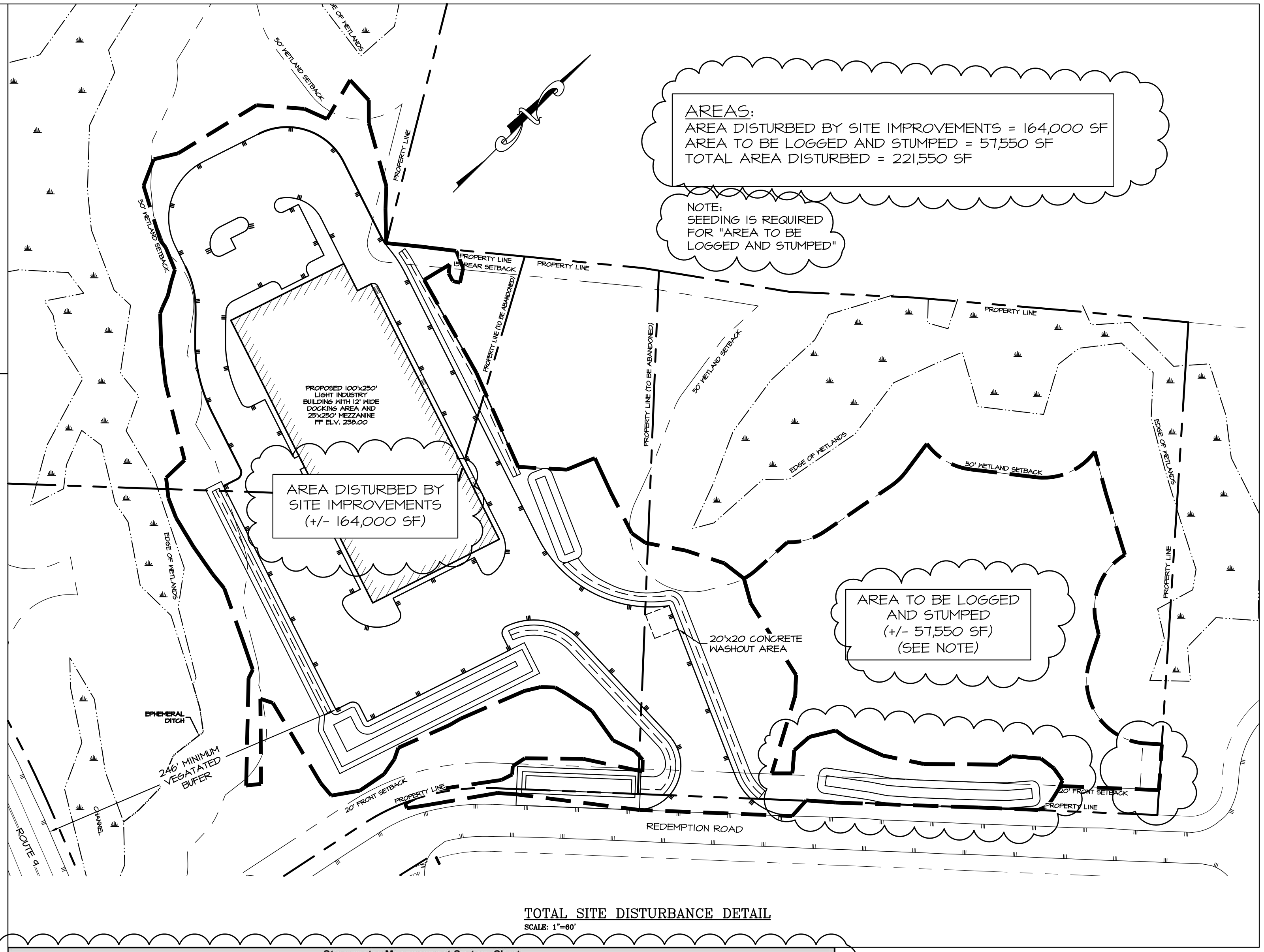
CLIENT: **TURBOCAM INTERNATIONAL**
607 CALEF HIGHWAY
BARRINGTON, NH 03825

TITLE: **DETAILS**
FOR
TAX MAP 234 LOT 77
AND TAX MAP 234 LOTS 1.2 & 1.4
TURBOCAM INTERNATIONAL
ROUTE 9 / REDEMPTION ROAD (SITE)
BARRINGTON, NH 03825
& TOWN OF BARRINGTON
PO BOX 660
BARRINGTON, NH 03825

PROJECT: 19-020
SCALE: AS SHOWN
SHEET: D4



BIOSWALE NOTES:
 1. BIORETENTION SOIL MIX DESIGN (Env-Mq 1508.07(K)(4)):
 A. 50-55% ASTM C-33 CONCRETE SAND OR APPROVED EQUAL
 B. 20-30% LOAMY SAND TOPSOIL W/ 15-25% FINES PASSING #200 SIEVE
 C. 20-30% MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH W/ < 5% PASSING #200 SIEVE
 2. VERIFY THAT THERE IS NO RESTRICTIVE SOIL LAYER AT BOTTOM OF EXCAVATION.
 3. DO NOT COMPACT SUBGRADE AT BOTTOM OF EXCAVATION.
 4. NO BIORETENTION SOIL MIX SHALL BE PLACED UNTIL ENGINEERING APPROVAL AND INSPECTION OF SUBGRADE HAS BEEN CONDUCTED.
 5. ALL FINISH GRADES AND SURFACES TO BE STABILIZED BY VEGETATION UPON COMPLETION UNLESS NOTED OTHERWISE.
 6. SEE LAYOUT PLAN FOR STRUCTURE ELEVATION AND INVERTS, PIPE TYPE, LENGTH, AND SLOPE, AND BIORETENTION AREA DIMENSIONS

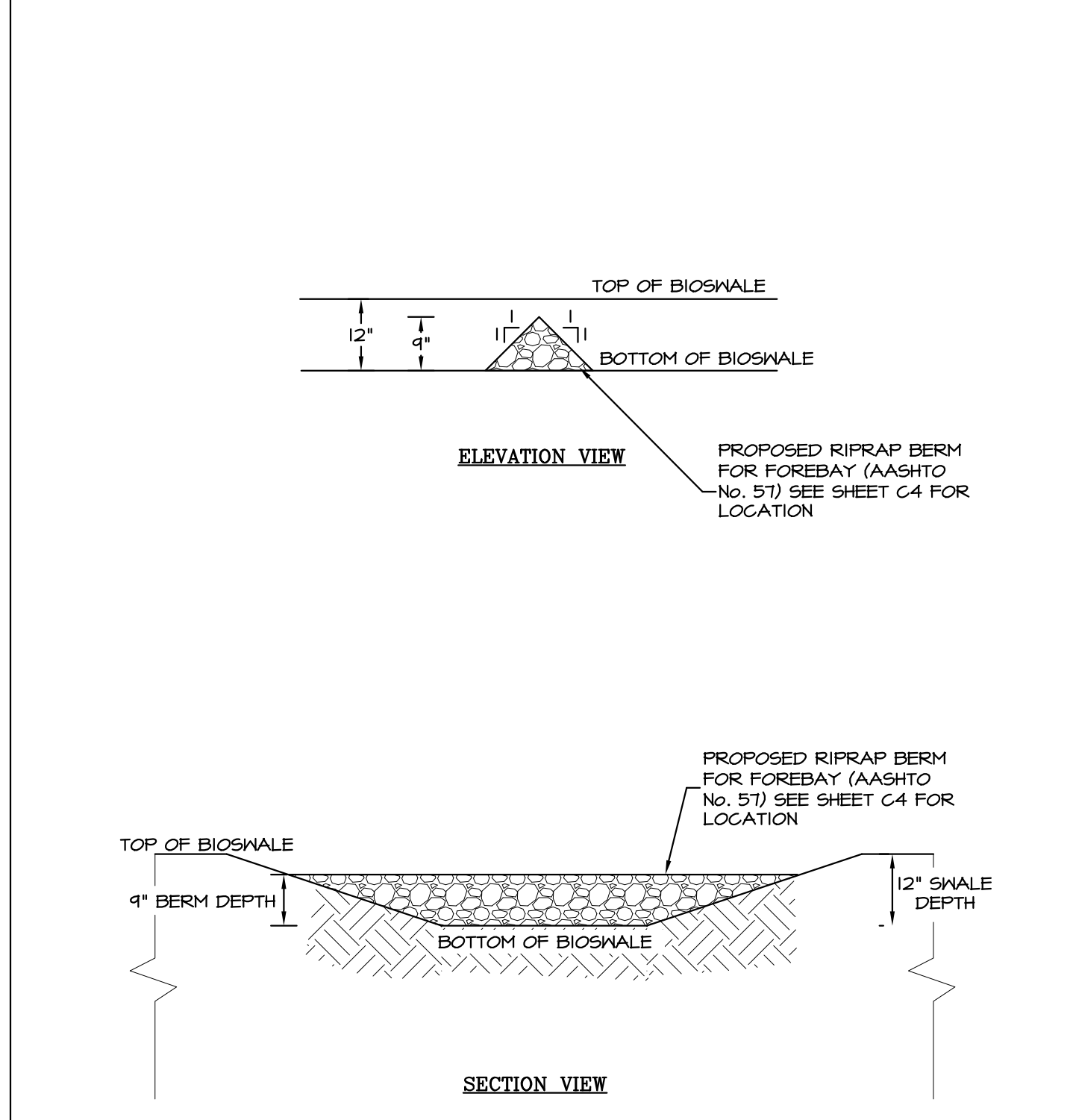


AREAS:
 AREA DISTURBED BY SITE IMPROVEMENTS = 164,000 SF
 AREA TO BE LOGGED AND STUMPED = 57,550 SF
 TOTAL AREA DISTURBED = 221,550 SF

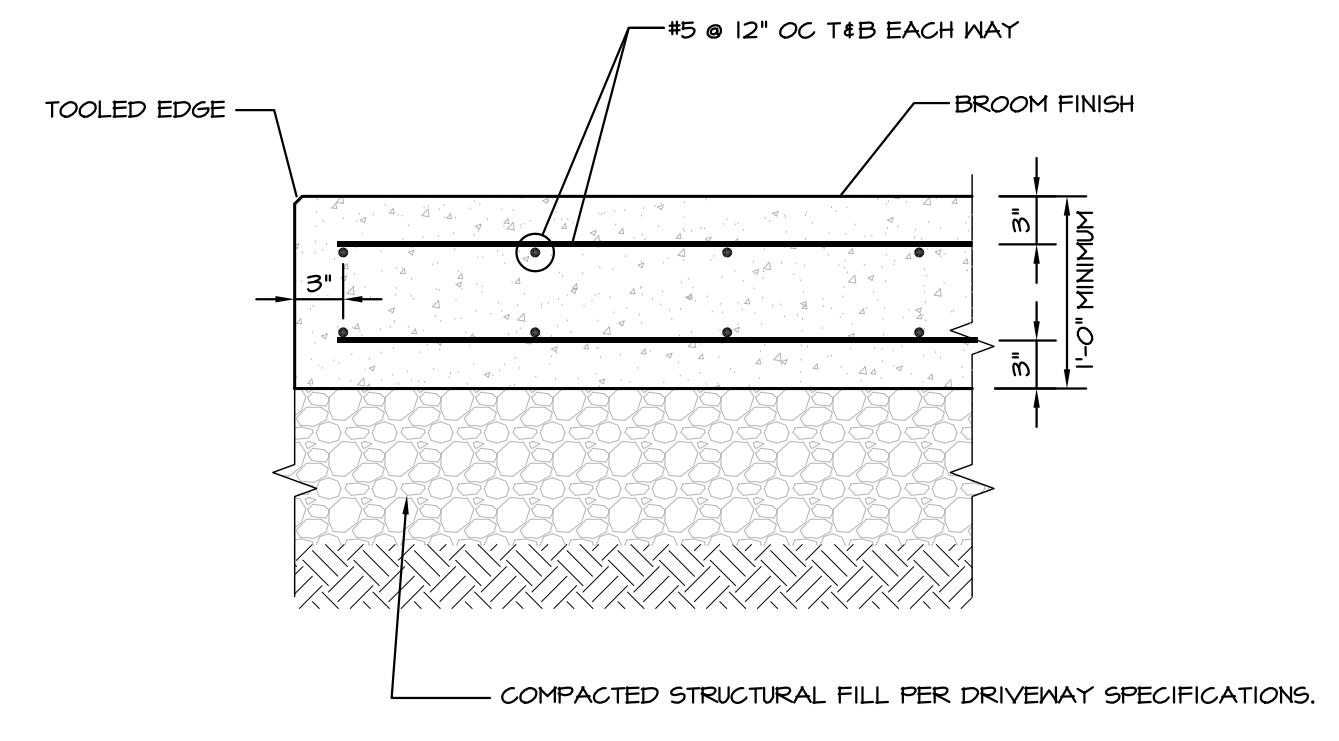
NOTE: SEEDING IS REQUIRED FOR "AREA TO BE LOGGED AND STUMPED"

AREA DISTURBED BY SITE IMPROVEMENTS (+/- 164,000 SF)

AREA TO BE LOGGED AND STUMPED (+/- 57,550 SF) (SEE NOTE)

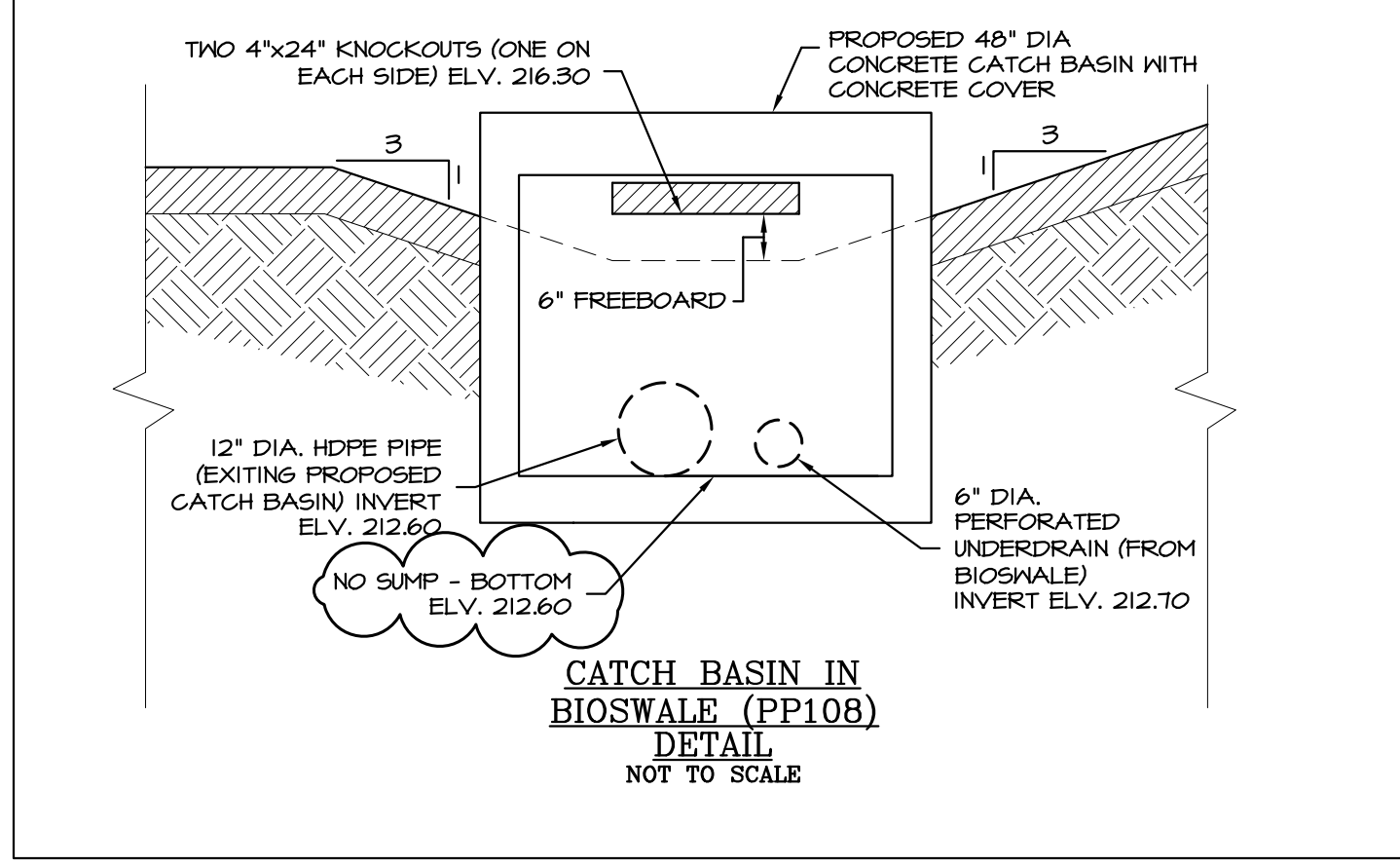


BIOSWALE (PP108) FOREBAY RIPRAP BERM DETAIL NOT TO SCALE



- CONCRETE:**
- CONCRETE WORK SHALL CONFORM TO THE FOLLOWING NOTES AND SPECIFICATIONS.
 - "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" - ACI 301-05.
 - "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" - ACI 318-05.
 - COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 4000 PSI AFTER 28 DAYS WITH 5 TO 7% AIR ENTRAINMENT FOR EXTERIOR SLABS, W.R. GRACE "ECLIPSE PLUS" SHRINKAGE ADMIXTURE, AND W.R. GRACE "DCI-5" CORROSION INHIBITOR, AND A MIDRANGE WATER REDUCER.
 - FINISH SLAB W/ BROOM FINISH AND TOOLED JOINT ALONG ALL EDGES OF SLAB.
 - SLAB SHALL BE WATER CURED FOR A MINIMUM OF 5 DAYS USING NET BURLAP.
 - J.W.F. SHALL BE SHEETS ONLY, LAP TWO SQUARES AT ALL JOINTS AND TIE @ 3'-0" ON CENTER.

CONCRETE LOADING ZONE DETAIL N.T.S.



CATCH BASIN IN BIOSWALE (PP108) DETAIL NOT TO SCALE

Stormwater Management System Chart
 SCALE: 1"=60'

Plan Ref.	"A"	"B"	"C"	"Elev. 1"	"Elev. 2"	"Elev. 3"					
System	ID	Geomembrane opening (feet)	Depth - Total (feet)	ISR Depth (feet)	Depth-Bioswale Media (feet)	Area (Square feet)	Length (feet)	Width (feet)	Bypass Elev.	Elev. Top of BSM/Stone (feet)	Bottom Elev.
Bioswale-ISR	BR1	19.2	5.25	2.75	2	515	64	8	228.67	228.00	222.75
Bioswale-ISR	BR2	45.3	5.25	2.75	2	920	151	4	229.67	229.00	223.75
Subsurface Infiltration	S11	N/A	6	N/A	N/A	8500	Varies		227.15	230.08	224.17
Bioswale	PP108	N/A	3.25	N/A	2	920	84	11	216.30	215.70	212.45

Notes:
 1. See sheet D2 for Bioswale-ISR and subsurface infiltration (BR1, BR2, and S11) details.
 2. See sheet D5 for Bioswale (PP108) details.

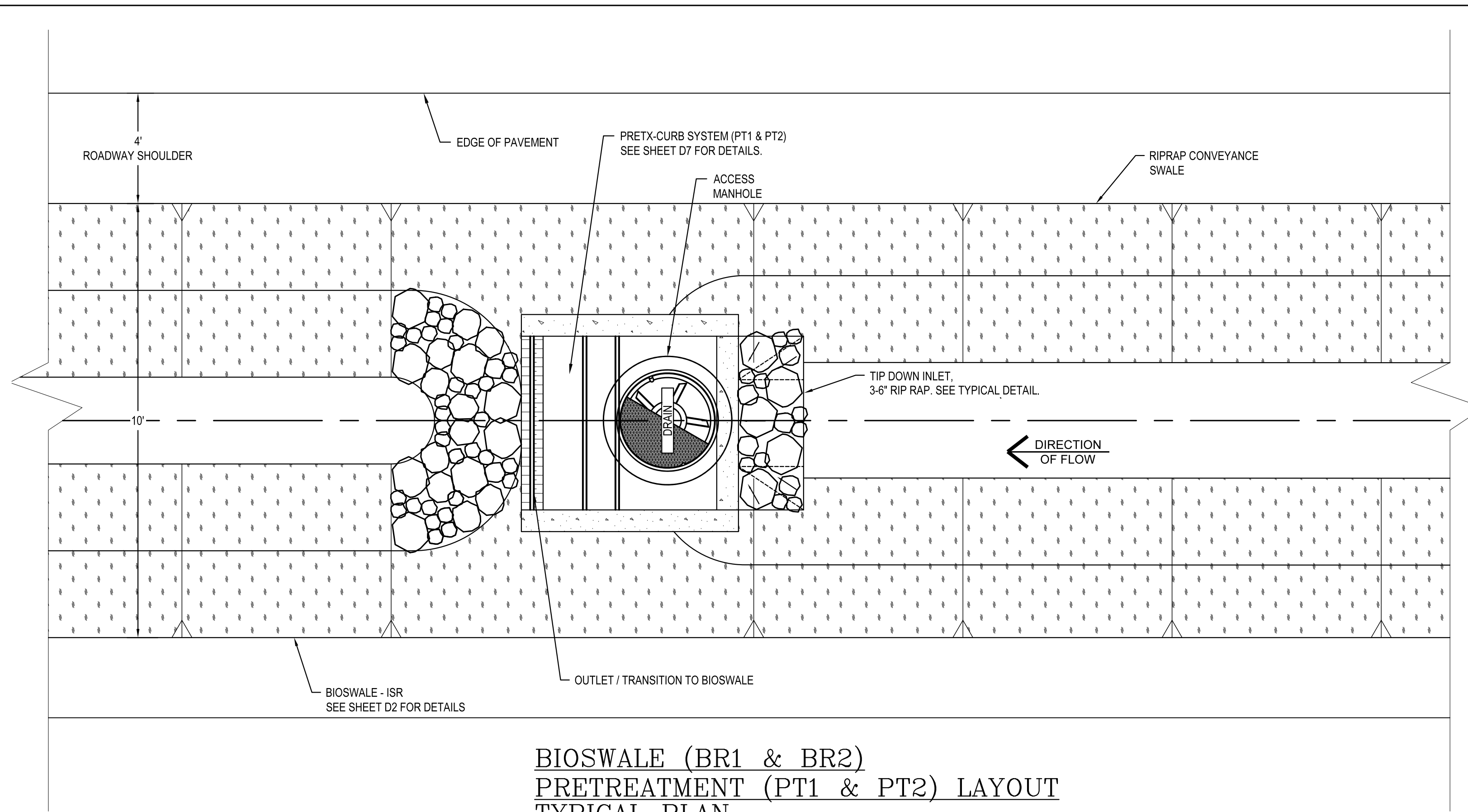
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 STRATHAM, NH 03885
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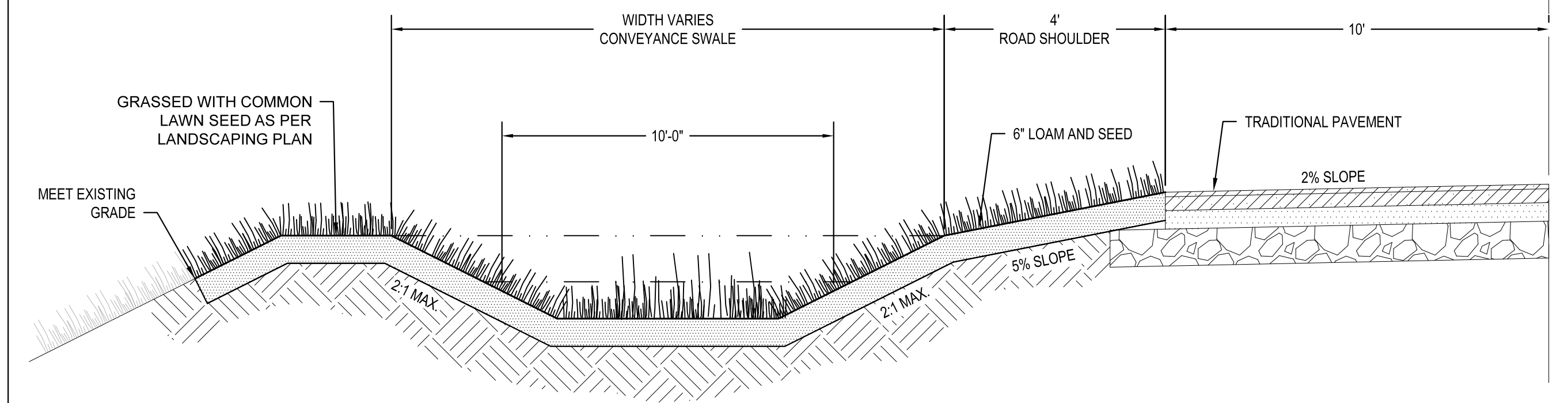
CLIENT:
TURBOCAM INTERNATIONAL
 607 CALEF HIGHWAY
 BARRINGTON, NH 03825

TITLE:
DETAILS
 FOR
 TAX MAP 233 LOT 77
 AND TAX MAP 234 LOTS 1.2 & 1.4
 TURBOCAM INTERNATIONAL
 ROUTE 9 / REDEMPTION ROAD (SITE)
 BARRINGTON, NH 03825
 & TOWN OF BARRINGTON
 PO BOX 660
 BARRINGTON, NH 03825

PROJECT: 19-020 SCALE: AS SHOWN SHEET: D5

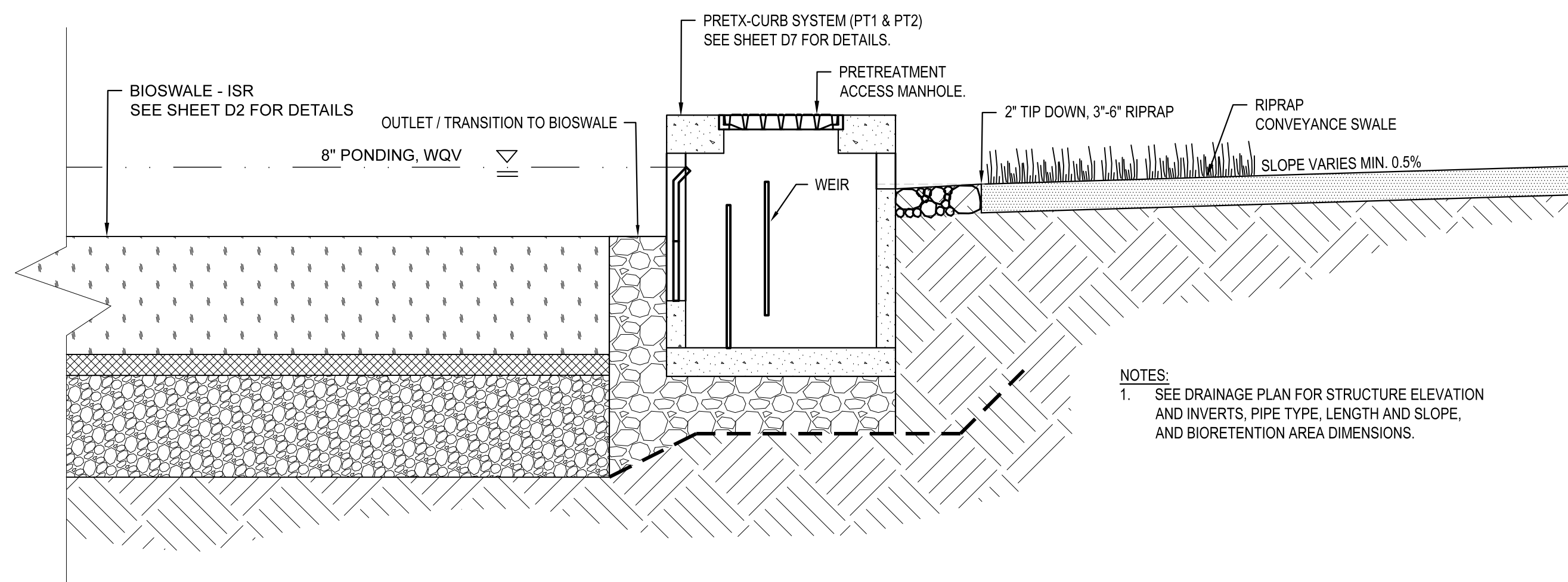


**BIOWALE (BR1 & BR2)
PRETREATMENT (PT1 & PT2) LAYOUT
TYPICAL PLAN
N.T.S.**



NOTES:
1. SEE DRAINAGE PLAN FOR STRUCTURE ELEVATION AND INVERTS, PIPE TYPE, LENGTH AND SLOPE, AND BIOWALE AREA DIMENSIONS.

**CONVEYANCE SWALE
TYPICAL CROSS-SECTION
N.T.S.**



NOTES:
1. SEE DRAINAGE PLAN FOR STRUCTURE ELEVATION AND INVERTS, PIPE TYPE, LENGTH AND SLOPE, AND BIOWALE AREA DIMENSIONS.

**BIOWALE (BR1 & BR2)
PRETREATMENT (PT1 & PT2) LAYOUT
TYPICAL LONG-SECTION
N.T.S.**

1	JAN 6, 2020	FOR APPROVAL	
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DRAWN:	MCV	DESIGN:	RMR
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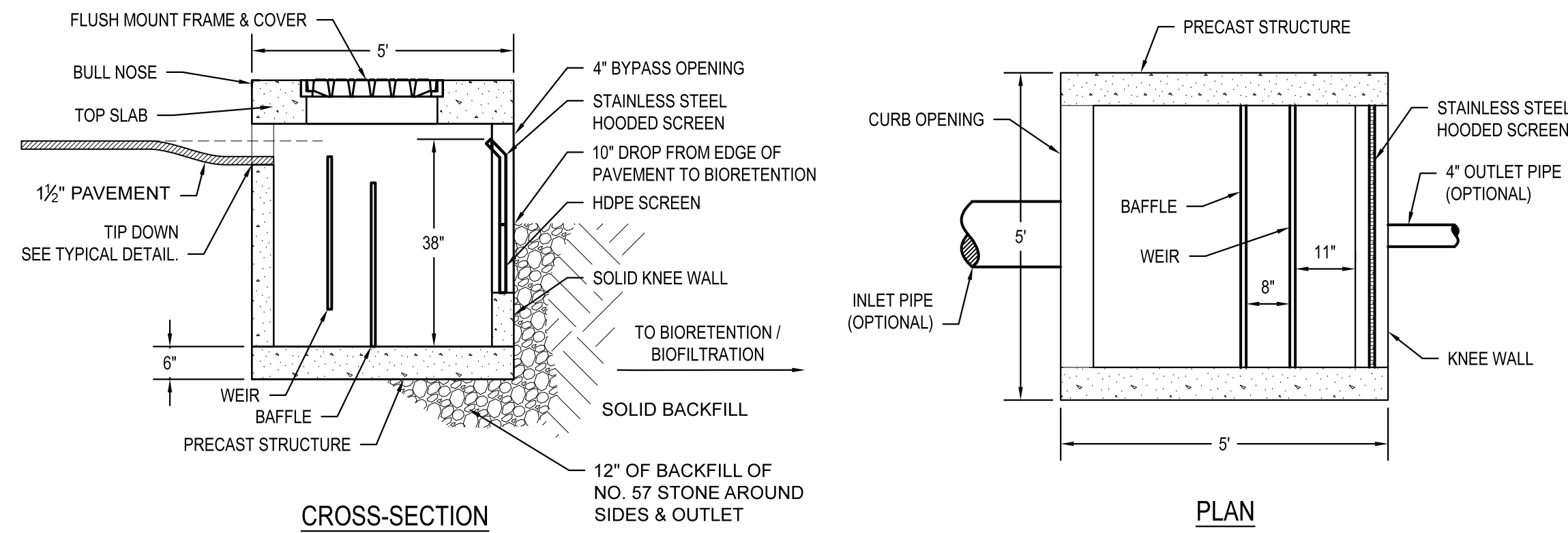
CLIENT:
**TURBOCAM INTERNATIONAL
607 CALEF HIGHWAY
BARRINGTON, NH 03825**

SEAL	TITLE: PRETX DETAILS FOR TAX MAP 233 LOT 77 AND TAX MAP 234 LOTS 1.2 & 1.4 TURBOCAM INTERNATIONAL ROUTE 9 / REDEMPTION ROAD (SITE) BARRINGTON, NH 03825 & TOWN OF BARRINGTON PO BOX 660 BARRINGTON, NH 03825	
PROJECT: 19-020	SCALE: AS SHOWN	SHEET: D6

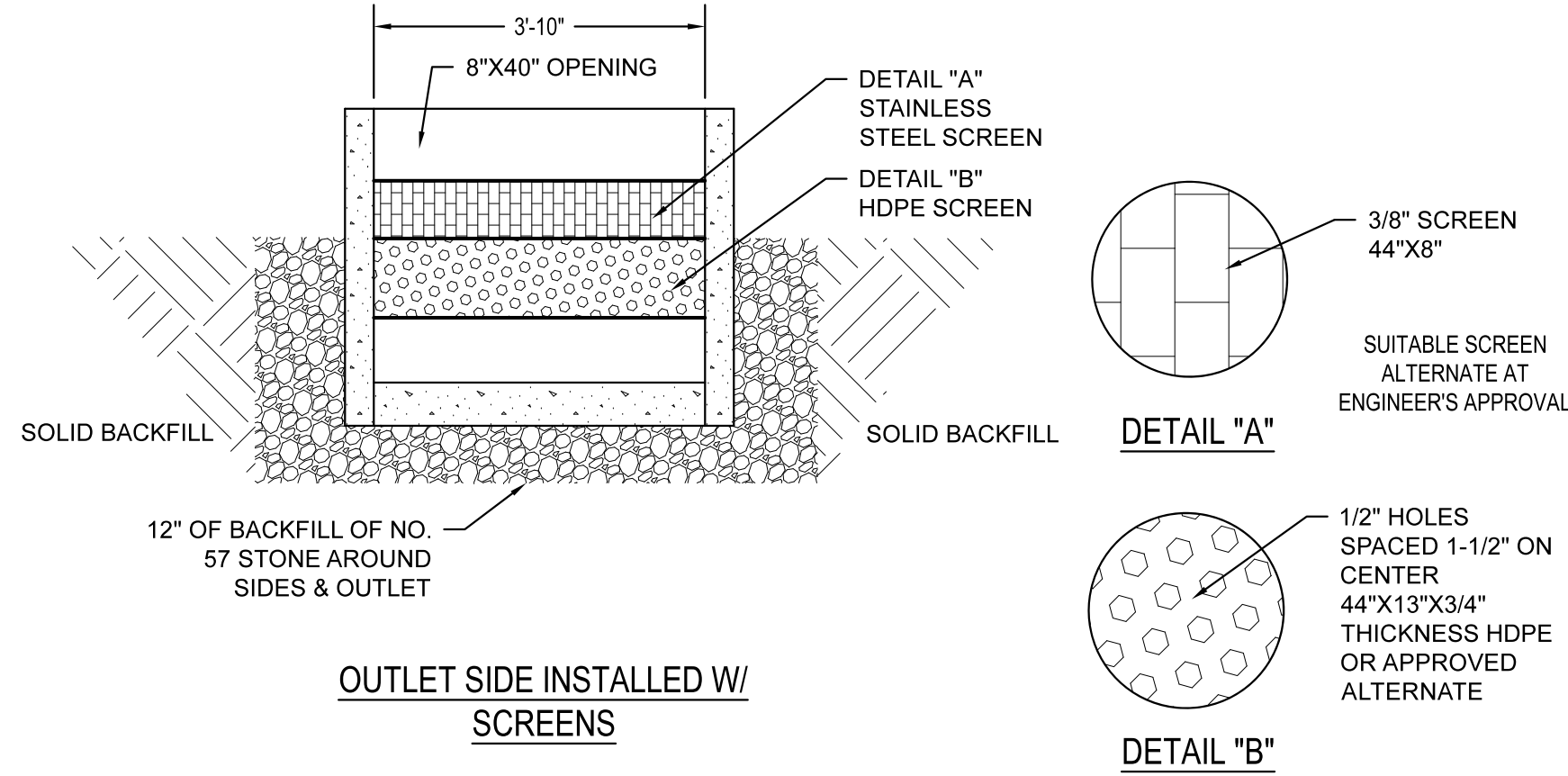
PRETX SPECIFICATIONS

- A. GENERAL**
 1. PRETX SYSTEMS ARE A PRE-FILTER AND CRITICAL MAINTENANCE DEVICE THAT EXTENDS THE OPERATING LIFE AND REDUCES THE MAINTENANCE BURDEN OF BIORETENTION SYSTEMS, RAIN GARDENS, BIOSWALES AND OTHER TYPES OF SURFACE BEST MANAGEMENT PRACTICES BY FILTERING OUT SEDIMENT, TRASH AND DEBRIS AT THE INLET.
- B. PRODUCTS**
 1. PRETX IS AVAILABLE IN 3 MODELS THAT MANAGE MOST BIORETENTION INLET CONFIGURATIONS: CURB, DROP, AND INLINE.
 2. PRETX-CURB IS FOR EDGE OF PAVEMENT RUNOFF AT A CURB CUT IN LIEU OF A STONE SPREADER.
 3. PRETX-DROP IS FOR USE AS A DROP INLET CONFIGURATION ALONG A CURB LINE AND WOULD BE INSTALLED WITH A STANDARD DROP INLET GRATE.
 4. PRETX-INLINE IS FOR USE WITH SUBSURFACE INLET AND OUTLET PIPE.
 5. PRETX IS SIZED TO PRETREAT WATER QUALITY FLOWS AND BYPASS LARGER FLOWS THAT HAVE MINIMAL TRASH AND DEBRIS. PRETX CAN BE USED BOTH IN RETROFIT OR NEW INSTALLATIONS.
 6. ACCEPTABLE SYSTEM SUPPLIER:
 CONVERGENT WATER TECHNOLOGIES, INC. OR ITS AUTHORIZED VALUE-ADDED RESELLER
 (800) 711-5428
 WWW.CONVERGENTWATER.COM
- C. SUBMITTALS**
 1. SUBMIT PROPOSED LAYOUT DRAWINGS. DRAWINGS SHALL INCLUDE TYPICAL SECTION DETAILS ANNOTED WITH SYSTEM ELEVATIONS (E.G., RIM, PIPE INVERTS, OUTSIDE BOTTOM OF STRUCTURE, ETC.).
 2. SUBMIT MATERIAL CERTIFICATES FOR FRAMES AND COVERS.
 3. ANY PROPOSED EQUAL ALTERNATE PRODUCT SUBSTITUTION TO THIS SPECIFICATION MUST BE SUBMITTED FOR REVIEW AND APPROVED PRIOR TO BID OPENING.
- D. EXECUTION**
 1. ALL PUBLIC STORM DRAINAGE SYSTEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS AND ACCORDING TO LOCAL MUNICIPAL REQUIREMENTS.
 2. ALL STORM DRAINAGE SYSTEM CONSTRUCTION IS SUBJECT TO INSPECTION AND APPROVAL BY THE PROJECT ENGINEER.
 3. THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER A MINIMUM OF TWO FULL BUSINESS DAYS PRIOR TO THE START OF CONSTRUCTION.
 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING AND OBTAINING APPROVAL FROM DIS-SAFE AND DETERMINING THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION EXCAVATION AND SHALL NOTIFY THE PROJECT ENGINEER OF ANY POTENTIAL CONFLICTS.
 5. TO PROTECT STORMWATER FLOW CONTROL AND QUALITY TREATMENT FACILITIES FROM SEDIMENTATION, THEY SHALL BE CONNECTED TO THE STORM CONVEYANCE SYSTEM ONLY AFTER ALL SITE WORK, ROAD CONSTRUCTION, UTILITY WORK AND LANDSCAPING ARE IN PLACE IN ALL AREAS ABOVE AND UPSTREAM OF THE FACILITY.
 6. THE EXISTING STORM SEWER SYSTEM SHALL STAY ISOLATED FROM THE NEW SYSTEM UNTIL THE NEW SYSTEM IS CLEANED, AND APPROVED FOR USE. THERE SHALL BE NO DEBRIS IN THE LINES OR FURTHER CLEANING WILL BE REQUIRED PRIOR TO ACCEPTANCE.
 7. PROVIDE A 15" MINIMUM GAP BETWEEN THE KNOCKOUT WALL AND THE OUTSIDE OF THE PIPE. AFTER THE PIPE IS INSTALLED, FILL THE GAP WITH JOINT MORTAR.
 8. THE OPENINGS SHALL BE MEASURED AT THE TOP OF THE PRECAST BASE SECTION.
 9. ALL PICKUP HOLES SHALL BE GROUTED FULL AFTER THE BASIN HAS BEEN PLACED.
 10. STANDARD CURB INLETS AND TIPDOWNS SHALL BE PRECAST CONCRETE OR ASPHALT.
 11. PIPE ENDS SHALL BE FLUSH WITH THE INNER WALL OR 1" MAXIMUM INTRUSION.
 12. MASONRY, CINDER BLOCKS, OR SIMILAR MATERIALS MAY BE USED TO ADJUST THE RISERS TO GRADE PRIOR TO GROUTING.
 13. GROUTING SHALL BE SUFFICIENT TO PREVENT LEAKS BETWEEN THE PRECAST COMPONENTS OF THE COMPLETED STRUCTURE & SHALL BE PERFORMED INSIDE, BETWEEN & OUTSIDE OF ALL RISERS, JOINTS & PIPE PENETRATIONS.
 14. MANHOLES TO BE CONSTRUCTED IN ACCORDANCE WITH ASHOTO M-199 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE STANDARD SPECIFICATIONS.
 15. ALL REINFORCED CAST IN PLACE CONCRETE SHALL BE CLASS 4000. ALL PRECAST CONCRETE SHALL BE CLASS 4000.
 16. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM.
 17. MATING SURFACES OF MANHOLE RINGS AND COVERS SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITIONS.
- E. CONSTRUCTION AND SEQUENCING**
 1. EXAMINATION
 A. VERIFY LAYOUT AND ORIENTATION OF PRE-TX SYSTEM AREA INCLUDING EDGE OF PAVEMENT, TIP DOWN, CURBS AND SIDEWALK, BIOFILTRATION SYSTEM, AND CONNECTIONS.
 B. VERIFY EXCAVATION BASE IS READY TO RECEIVE WORK AND EXCAVATIONS, DIMENSIONS, AND ELEVATIONS ARE AS INDICATED ON DRAWINGS.
2. PREPARATION
 A. CALL DIS-SAFE AND RECEIVE APPROVAL BEFORE PERFORMING WORK.
 B. REQUEST UNDERGROUND UTILITIES TO BE LOCATED AND MARKED WITHIN AND SURROUNDING CONSTRUCTION AREAS.
 C. IDENTIFY REQUIRED LINES, LEVELS, CONTOURS, AND DATUM.
 D. CLEAR AND GRUB THE PROPOSED PRE-TX SYSTEM AREA.
3. EXCAVATION AND INSTALLATION
 A. THE FOLLOWING CONSTRUCTION SEQUENCE IS TO BE USED AS A GENERAL GUIDELINE. COORDINATE WITH THE OWNER, AND ENGINEERS FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
 B. INSTALL TEMPORARY EROSION AND SEDIMENT CONTROLS TO DIVERT STORM WATER AWAY FROM THE PRE-TX SYSTEM AREA.
 C. EXCAVATE TO THE BOTTOM INVERT OF THE SYSTEM.
 D. TO MINIMIZE COMPACTION OF ADJACENT BIOFILTRATION SYSTEMS, WORK EXCAVATORS OR BACKHOES FROM THE SIDES TO EXCAVATE THE PRE-TX SYSTEM AREA TO ITS APPROPRIATE DESIGN DEPTH AND DIMENSIONS.
 E. ROUGH GRADE THE PRE-TX SYSTEM AREA DURING GENERAL CONSTRUCTION. EXCAVATE THE PRE-TX SYSTEM FACILITIES TO WITHIN 1 FOOT OF STRUCTURE BOTTOM.
 F. PLACE 1 FOOT BED OF COARSE STONE TO ELEVATION OF BASE OF STRUCTURE.
 G. ESTABLISH ELEVATIONS FOR ADJACENT CURBS, EDGE OF PAVEMENT AND TIP DOWN, SIDEWALK, PIPE INVERTS FOR INLETS AND OUTLETS AS INDICATED ON DRAWINGS.
4. INSTALLATION
 A. PLACE THE PRECAST SYSTEM TO NECESSARY ELEVATION.
 B. VERIFY ELEVATIONS FOR ADJACENT CURBS, EDGE OF PAVEMENT, PAVEMENT GRADING FOR INLET GRATE FOR PRETX-DROP, SIDEWALK, PIPE INVERTS FOR INLETS AND OUTLETS, OUTLET INVERT FOR KNEE WALL.
 C. FOR PRETX-SURFACE:
 a. VERIFY ELEVATIONS FOR ADJACENT CURBS.
 b. VERIFY EDGE OF PAVEMENT TIP DOWN PAVEMENT GRADING FOR INLET GRATE.
 c. VERIFY CURB ELEVATION IN RELATION TO PAVEMENT AND TIP DOWN.
 d. VERIFY OUTLET INVERT FOR KNEE WALL IN RELATION TO FILTER MEDIA.
 D. FOR PRETX-DROP:
 a. VERIFY ALL INLET PIPES ENTER THE STRUCTURE UPSTREAM OF BAFFLE.
 b. VERIFY FRAME AND GRATE OFFSET ON INLET SIDE AND UPSTREAM OF BAFFLE.
 c. VERIFY CURB LOCATION WITH RESPECT TO FRAME AND GRATE ORIENTATION.
 E. INSTALL BAFFLES, WEIR, AND SCREENS AS INDICATED ON DRAWINGS.
 F. VERIFY MAINTENANCE ACCESS THROUGH GRATE OR COVER AND CLEARANCE FOR VACTOR.
 G. INSTALL TOP OF STRUCTURE LEVEL WITH ADJACENT CURB OR SIDEWALK AS PER MANUFACTURERS SPECIFICATIONS. ENGINEER FIELD VISIT REQUIRED PRIOR TO BACKFILLING.
5. BACKFILLING
 A. BACKFILL WITH APPROVED SOIL AND STONE TO THE DESIGN GRADE AS SPECIFIED IN THE DRAWINGS.
 B. BACKFILL WITH 12" OF NO. 57 STONE AROUND REAR, LEFT, AND RIGHT SIDES TO LEVEL WITH TOP OF HDPE SCREEN.
 C. BACKFILL WITH BIORETENTION SOIL MIX BEYOND STONE BACKFILL TO EQUAL ELEVATION OF THE TOP OF HDPE SCREEN.
 D. DO NOT BACKFILL SOIL OR STONE AGAINST STAINLESS SCREEN.
 E. DO NOT COMPACT ADJACENT FILTRATION SYSTEM SOIL WITH MECHANICAL EQUIPMENT.
 F. STABILIZE ALL REMAINING DISTURBED AREAS AND SIDE SLOPES WITH SEEDING, HYDROSEEDING, AND/ OR EROSION CONTROL BLANKETS AS INDICATED ON DRAWINGS.
6. CLEAN UP
 A. AFTER COMPLETION OF THE WORK, REMOVE AND PROPERLY DISPOSE ALL DEBRIS, CONSTRUCTION MATERIALS, RUBBISH, EXCESS SOIL, ETC., FROM THE PROJECT SITE. REPAIR PROMPTLY ANY IDENTIFIED DEFICIENCIES AND LEAVE THE PROJECT SITE IN A CLEAN AND SATISFACTORY CONDITION.

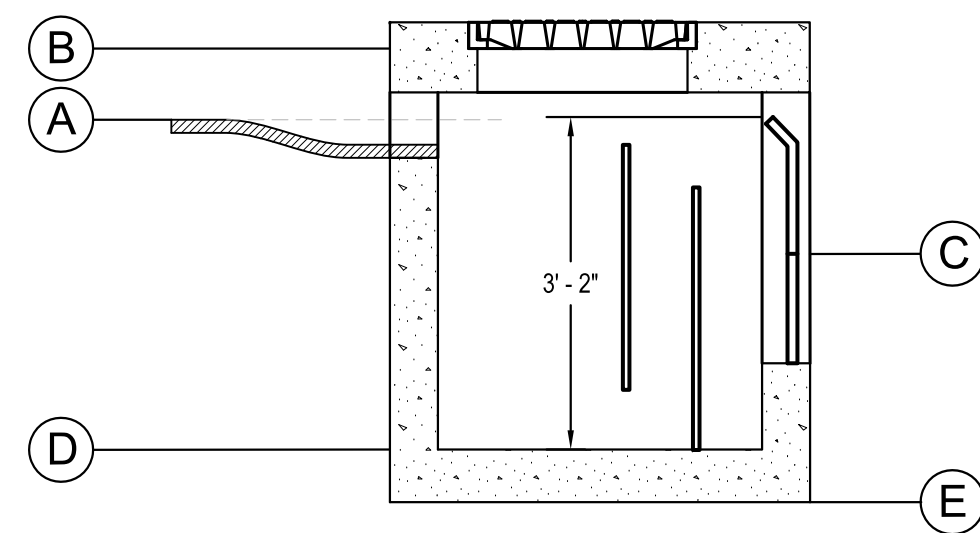
PRETX-CURB (PT1 & PT2) DETAILS



**PRETX-CURB (PT1 & PT2)
 CATCH BASIN DETAIL - BY ACF
 N.T.S.**



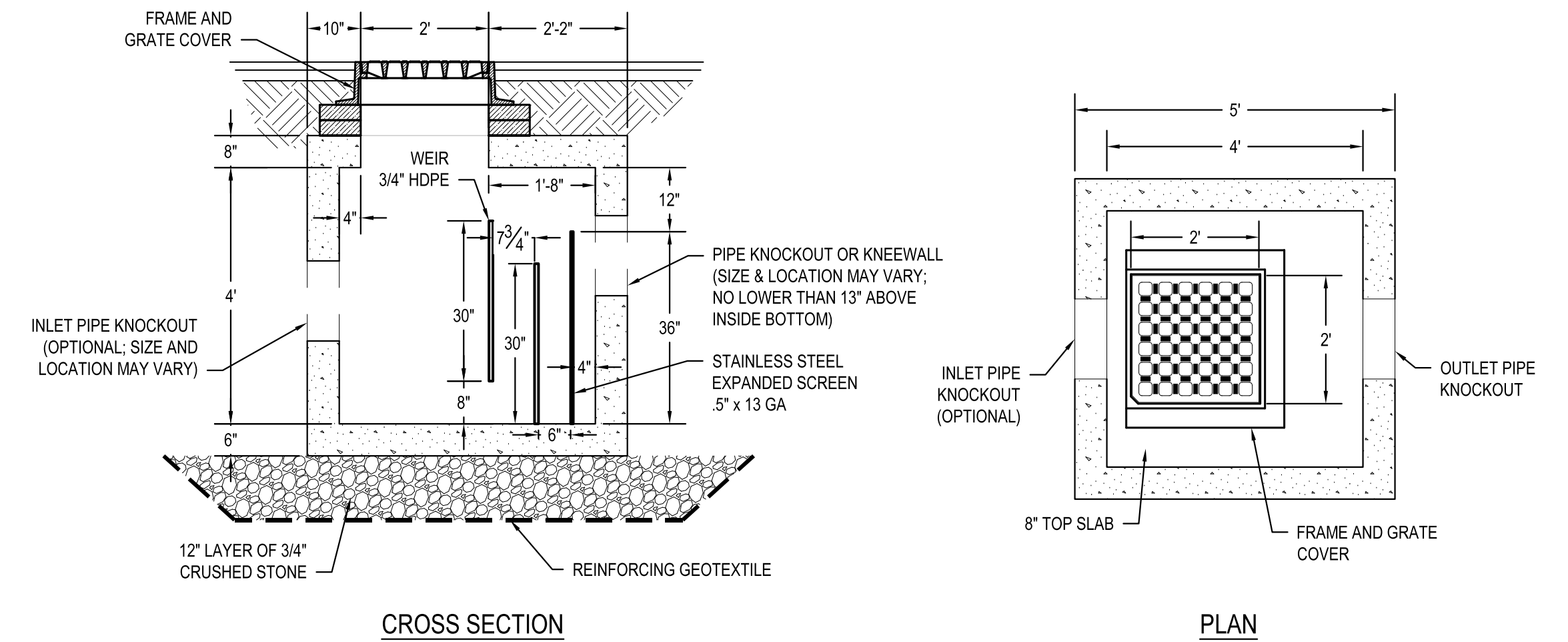
**PRETX-CURB (PT1 & PT2) DETAIL
 N.T.S.**



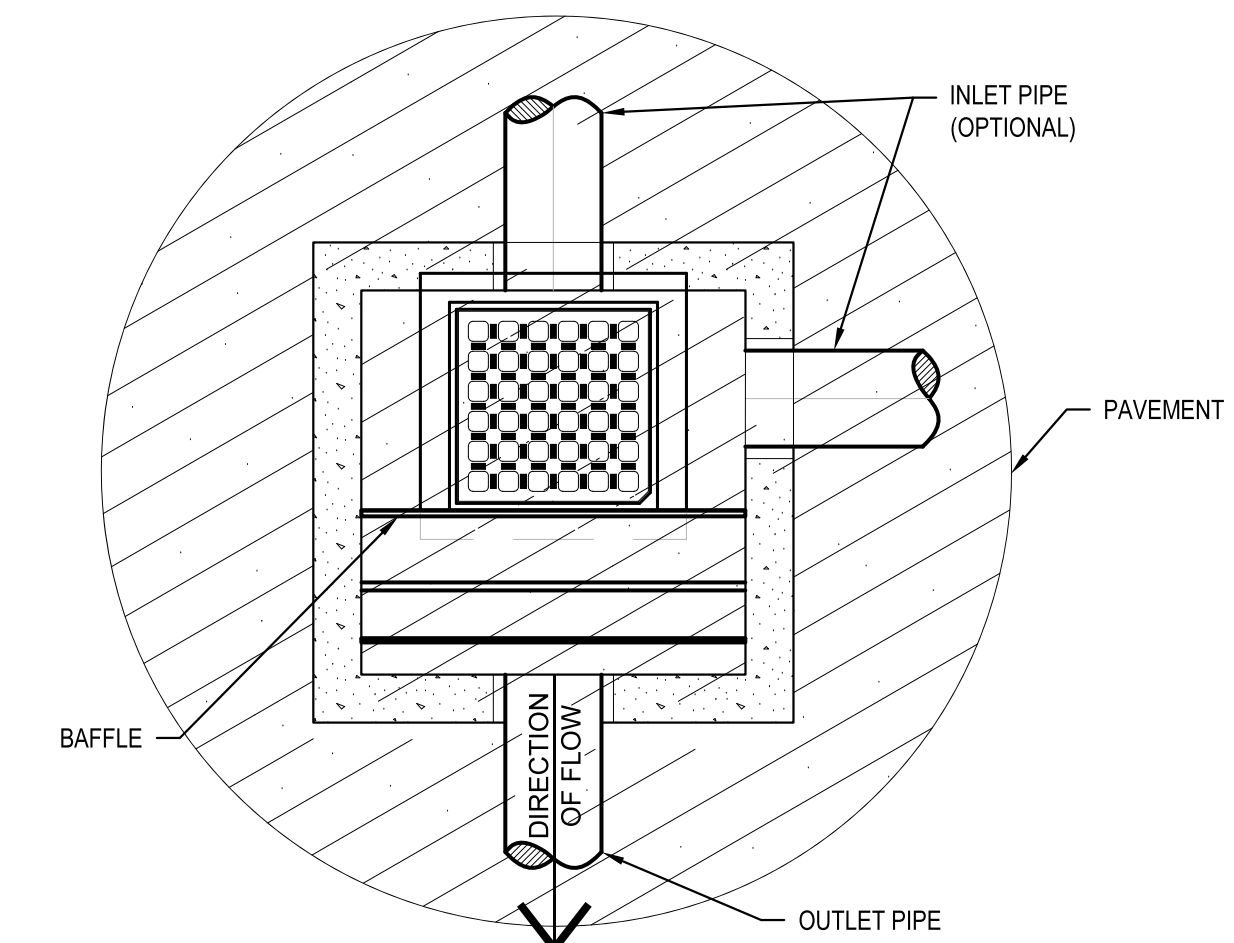
**PRETX-CURB ELEVATION GUIDE
 N.T.S.**

POINT	DESCRIPTION	HEIGHT IN REFERENCE TO PT. A
A	EDGE OF PAVEMENT	0 INCHES
B	OUTSIDE TOP SLAB	8 INCHES
C	TOP OF BIORETENTION	12 INCHES
D	SUMP INVERT	36 INCHES
E	OUTSIDE BOTTOM	42 INCHES

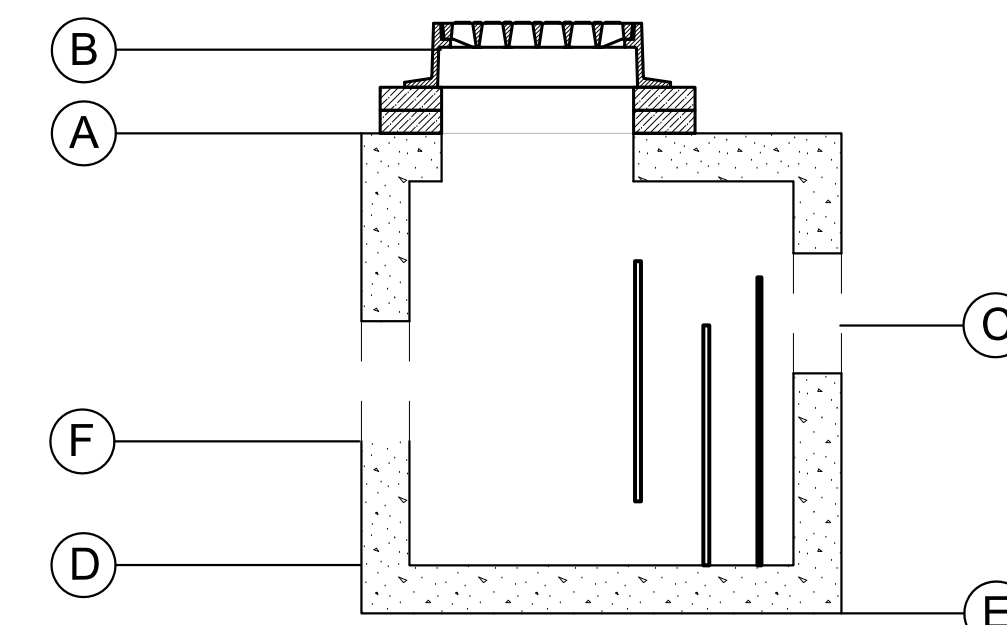
PRETX-DROP (PT3) DETAILS



**PRETX-DROP (PT3)
 CATCH BASIN DETAIL - BY ACF
 N.T.S.**



**PRETX DROP (PT3)
 OUTLET CONFIG. DETAIL
 N.T.S.**



**PRETX-DROP ELEVATION GUIDE
 N.T.S.**

POINT	DESCRIPTION	HEIGHT IN REFERENCE TO PT. A
A	OUTSIDE TOP SLAB	0"
B	EDGE OF PAVEMENT	5" MIN.
C	PIPE INVERT	14" FOR 6" PIPE 21" FOR 8" PIPE 25.5" FOR 12" PIPE
D	SUMP INVERT	36"
E	OUTSIDE BOTTOM	42"
F	OPTIONAL INLET PIPE KNOCKOUT	42"

1	JAN 6, 2020	FOR APPROVAL	
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 civil & structural consultants, land planners 118 PORTSMOUTH AVENUE, A202 STRATHAM, NH 03885 P: 603-772-4400 F: 603-772-4487 WWW.EMANUELENGINEERING.COM			
CLIENT:			
TURBOCAM INTERNATIONAL 607 CALEF HIGHWAY BARRINGTON, NH 03825			
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