

SITE DEVELOPMENT PLAN

CONTRACTOR YARD

65 WHITE POND ROAD

IN

STOW, MASSACHUSETTS

JUNE 16, 2023

APPLICANT:

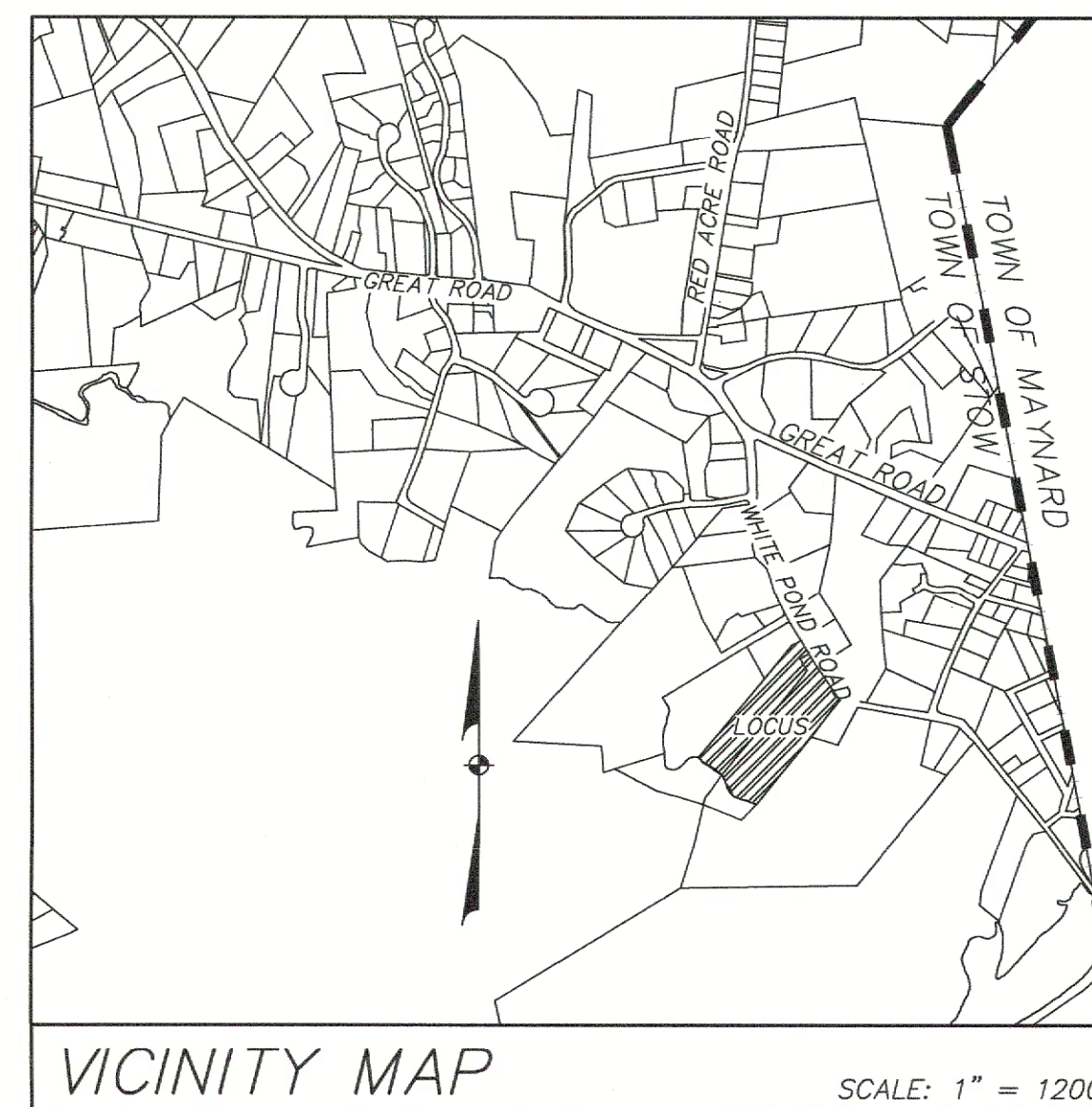
*BRANSFIELD TREE COMPANY
JONATHAN BRANSFIELD
65 WHITE POND ROAD
STOW, MASSACHUSETTS 01775*

OWNER

*MONEY BROOK FARM, LLC
JONATHAN BRANSFIELD
65 WHITE POND ROAD
STOW, MASSACHUSETTS 01775*

CIVIL ENGINEER & LAND SURVEYOR:

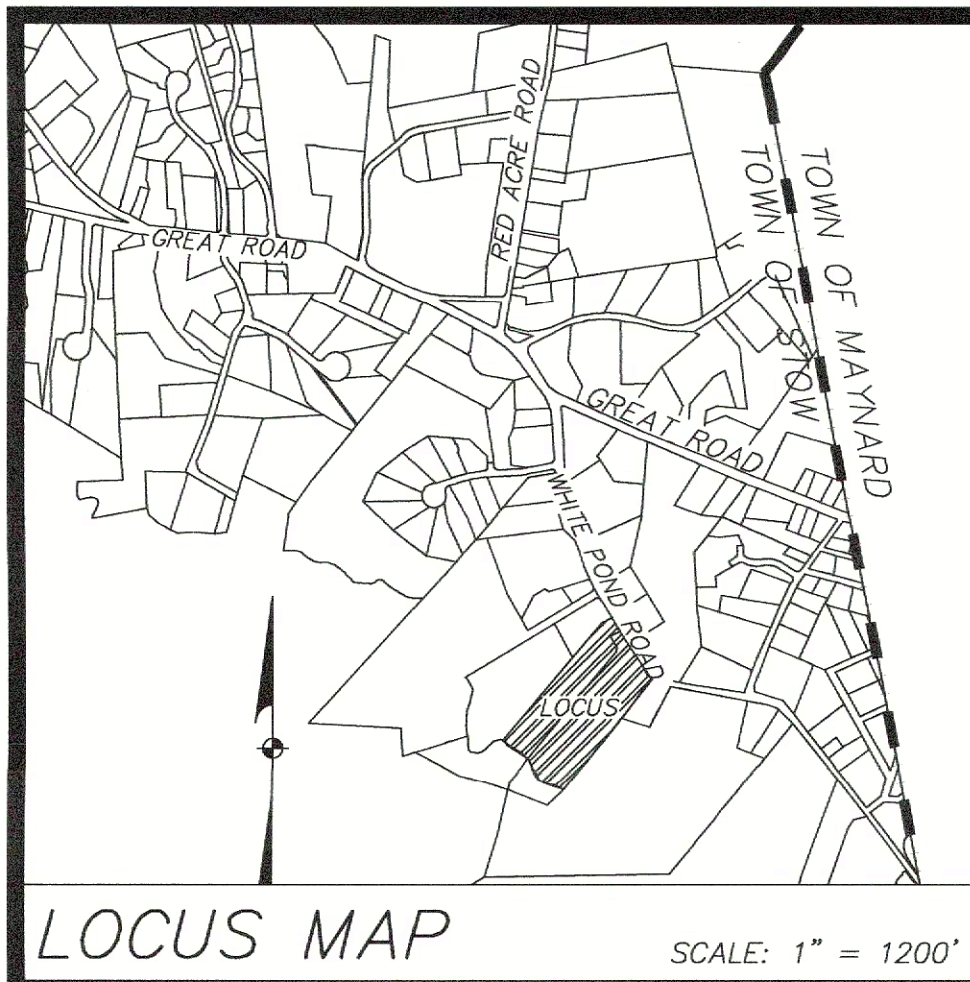
*HANNIGAN ENGINEERING, INC.
8 MONUMENT SQUARE
LEOMINSTER, MASSACHUSETTS 01453
TEL: (978) 534-1234*



PLAN INDEX

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<i>SHEET 2</i>	<i>SITE DEVELOPMENT PLAN</i>
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<i>SHEETS 4-5</i>	<i>CONSTRUCTION DETAILS</i>

PERMITTING SET - NOT FOR CONSTRUCTION



APPLICANT
BRANSFIELD TREE COMPANY
65 WHITE POND ROAD
STOW, MA 01775

OWNER
MONEY BROOK FARM, LLC
65 WHITE POND ROAD
STOW, MA 01775

N/F
BENJAMIN H. POULSON
& MARTIN E. WRIGHT, JR.
BK. 14360-79
PLAN NO. 1166 OF 1978
PARCEL X

N/F
RONALD JAGIELLO
& KATHERINE JAGIELLO
TRUSTEES OF THE
J & K TRUST
BK. 21520-468
PLAN NO. 979 OF 1980
PARCEL A

N/F
MONEY BROOK FARM LLC
BK. 68258-348
PARCEL 1
PLAN NO. 1090 OF 1954

N/F
MONEY BROOK FARM LLC
BK. 68258-348
PARCEL 2

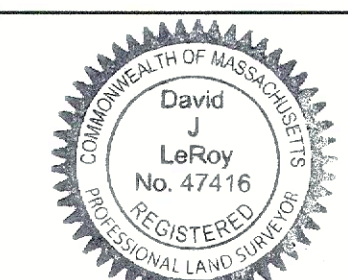
N/F
J. MELONE & SONS, INC.
BK. 10389-234

N/F
J. MELONE & SONS, INC.
BK. 10235-58
PLAN NO. 154 OF 2019
LOT 1

PROJECT INFORMATION

LAND INFORMATION		
MAP/PARCEL:	29/72: 29/73	
DEED BOOK/PAGE:	68258-348	
COMBINED FRONTAGE:	459.44 FT	
COMBINED AREA:	10.33 ACRES±	
ZONING INFORMATION		
ZONING DISTRICT:	COMMERCIAL	PROVIDED
DIMENSIONAL REQUIREMENTS:	REQUIRED	
MINIMUM AREA:	40,000 SF	10.33 AC±
MINIMUM FRONTAGE:	150 FEET	459.44 FT
MINIMUM HEIGHT:	N/A	28.16 FT
MINIMUM SETBACKS:		
FRONT YARD:	50 FT	80.78 FT
SIDE YARD:	25 FT*	172.64 FT
REAR YARD:	25 FT*	800 FT±
MINIMUM OPEN SPACE:	30%	55%
FLOOR AREA RATIO:	0.30	0.011

- *50 FT WHEN ABUTTING A RESIDENTIAL DISTRICT
- GENERAL NOTES:**
1. PROPERTY LINE INFORMATION BASED DEEDS AND PLANS OF RECORD. NO CERTIFICATION OF PROPERTY LINES SHOWN ON THIS PLAN IS INTENDED OR IMPLIED BY HANNIGAN ENGINEERING, INC. TOPOGRAPHIC INFORMATION IS THE RESULT OF AN ON-THE-GROUND TOPOGRAPHIC SURVEY BY HANNIGAN ENGINEERING, INC. IN SEPTEMBER OF 2022. VERTICAL DATUM BASED ON NAVD83.
 2. AREAS SUBJECT TO PROTECTION UNDER THE WETLANDS PROTECTION ACT HAVE BEEN FIELD LOCATED IN SEPTEMBER 2022. THESE AREAS ARE DEPICTED ON THE PLANS BASED ON FIELD SURVEY LOCATION DURING THE TOPOGRAPHIC SURVEY.
 3. LOCATION OF ALL UTILITIES ARE APPROXIMATE AS SHOWN AND BASED UPON VISIBLE STRUCTURES AT THE TIME OF THE FIELD SURVEY. LOCATION OF EXISTING UTILITIES AND SUBSURFACE STRUCTURES, WHETHER OR NOT SHOWN ON THESE PLANS, SHALL BE DETERMINED BY THE CONTRACTOR, MARKED IN THE FIELD, AND REVIEWED BY THE ENGINEER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL BE AWARE OF THE OBLIGATION TO ALL UTILITY COMPANIES AND AGENCY AS WELL AS DIG-SAFE PRIOR TO EXCAVATION. (SEE NOTE)
 4. NOTIFICATION REQUIREMENTS SHOWN ON THIS PLAN SHALL NOT RELIEVE THE CONTRACTOR OF ANY OTHER REQUIREMENTS WHICH MAY EXIST UNDER LOCAL, STATE, OR FEDERAL JURISDICTION TO WHICH THE CONTRACTOR IS OBLIGATED.
 5. RELOCATION OF AND/OR CONNECTION TO EXISTING UTILITIES SHALL BE PERFORMED IN ACCORDANCE WITH PROVISIONS OF THE APPROPRIATE UTILITY COMPANY AND/OR REGULATORY AGENCY.
 6. UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND WORKMANSHIP SHALL CONFORM WITH THE REQUIREMENTS OF THE TOWN OF STOW AND THE MASS DOT SPECIFICATIONS OF HIGHWAYS AND BRIDGES.
 7. ALL SLOPES UNLESS OTHERWISE SPECIFIED, SHALL BE LOAMED AND SEEDED FOR STABILIZATION.
 8. ANY DEVIATIONS IN DESIGN AS SHOWN SHALL REQUIRE A REVIEW AND APPROVAL OF THE DESIGN ENGINEER OR FIRM. CHANGES MADE IN THE FIELD MADE WITHOUT AUTHORIZATION SHALL BE SUBJECT TO REVIEW BY THE ENGINEER AND APPROPRIATE APPROVING AUTHORITY. EXPENSES INCURRED TO BRING THE UNAUTHORIZED CHANGES TO ACCEPTABLE CONFORMANCE SHALL BE BORNE BY THE COMPANY OR CONTRACTOR MAKING THE UNAUTHORIZED CHANGE.
 9. ANY MATERIALS DISCOVERED ON-SITE WHICH ARE NOT SUITABLE FOR USE IN THE PROJECT AS SHOWN ON THIS PLAN SHALL BE REMOVED AND HAULED OFF-SITE TO AN APPROPRIATELY LICENSED FACILITY.
 10. PLANS TO BE REVIEWED BY APPLICABLE UTILITY AGENCIES FOR COMPLIANCE WITH REGULATIONS. FINAL LOCATION IS SUBJECT TO CHANGE.
 11. APPLICANT SHOULD BE AWARE OF OBLIGATIONS TO COMPLY WITH CHAPTER 131, SECTION 40 OF THE MASSACHUSETTS GENERAL LAWS, OTHERWISE KNOWN AS THE WETLANDS PROTECTION ACT, AND THE ASSOCIATED REGULATIONS (310 CMR 10.00).
 12. STOCKPILING OF MATERIAL SHALL NOT BE PERMITTED WITHIN ANY AREAS SUBJECT TO PROTECTION UNDER THE WETLANDS PROTECTION ACT WITHOUT PRIOR APPROVAL BY THE LOCAL CONSERVATION COMMISSION. STOCKPILES SHALL BE PLACED IN A SUITABLE LOCATION AND SURROUNDED BY A ROW OF STAKED HAY BALES FOR EROSION CONTROL.
 13. AREAS OF FILL TO BE COMPACTED TO A MINIMUM 95% DRY DENSITY IN AREAS WITHIN ROADWAYS AND UTILITY EASEMENTS. OTHER AREAS OF FILL TO BE COMPACTED TO A MINIMUM 90% DRY DENSITY. ALL FILL MATERIALS ARE TO BE CLEAN FILL, FREE OF DELETERIOUS MATERIALS AND DEBRIS.
 14. ALL SIDEWALKS AND RAMPS TO CONFORM TO REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (ADA), AS REQUIRED. SEE ARCHITECTURAL PLANS FOR CONFORMANCE REQUIREMENTS FOR PROPOSED BUILDINGS.
 15. THE PROPERTY IS PARTLY WITHIN A 100 YEAR FLOOD PLAIN. THE AREA PROPOSED FOR DEVELOPMENT IS NOT WITHIN A 100 YEAR FLOOD PLAIN PER F.E.M.A. FIRM PANEL #20170-0361F, DATED: JULY 7, 2014. COMPLIANCE WITH APPLICABLE REGULATIONS IS REQUIRED.
 16. ALL REINFORCED CONCRETE PIPE TO BE CLASS III UNLESS OTHERWISE NOTED.
 17. PRE-CONSTRUCTION CONFERENCE SHALL BE HELD PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
 18. ALL UTILITIES ARE TO BE INSTALLED BY A LICENSED UTILITY CONTRACTOR LICENSED BY THE TOWN OF STOW.



David Lacey
No. 47416
REGISTERED
PROFESSIONAL LAND SURVEYOR
State of Massachusetts

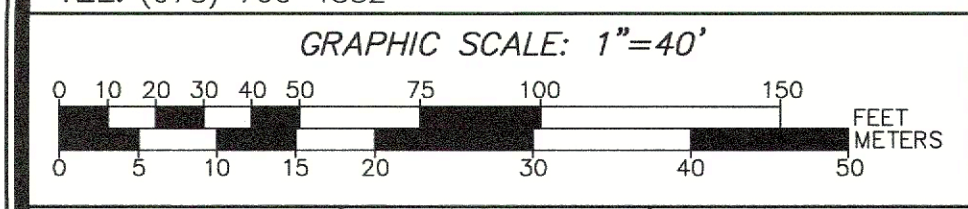
HANNIGAN ENGINEERING, INC.

CIVIL ENGINEERS & LAND SURVEYORS

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LEOMINSTER, MASSACHUSETTS 01453 (978) 534-6060 (F)
www.hanniganengineering.com

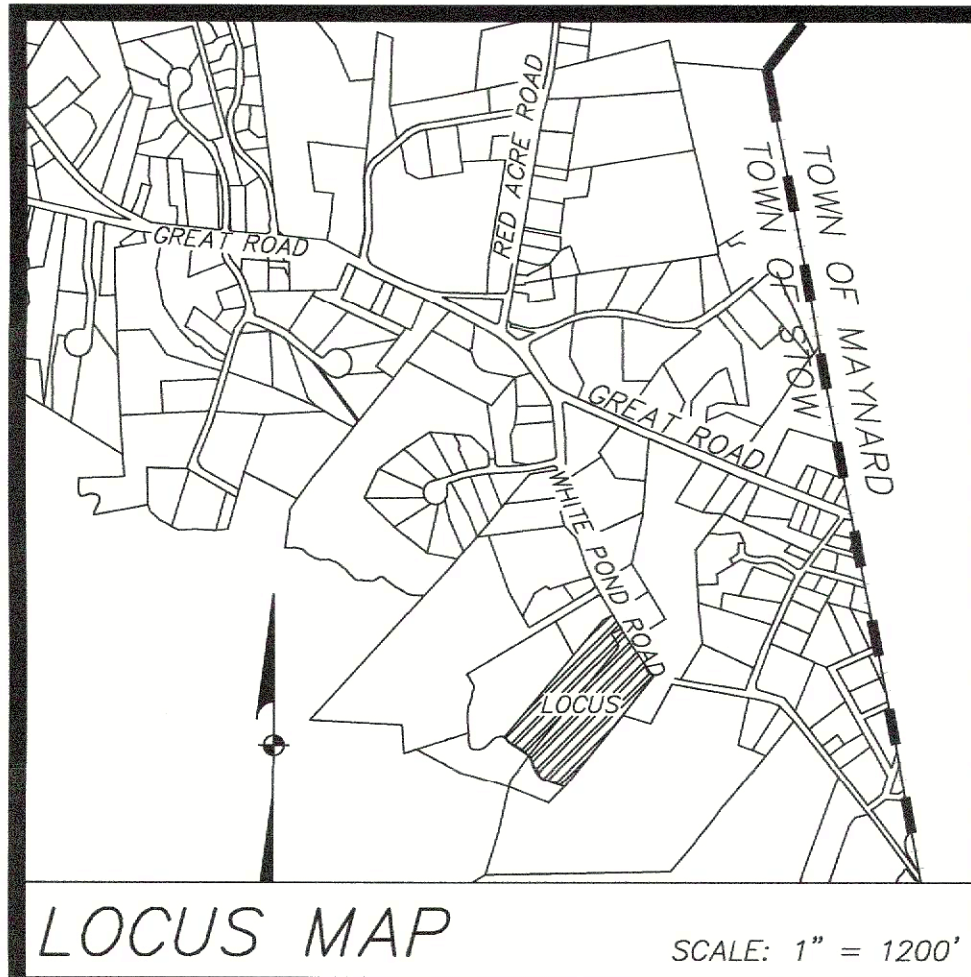
EXISTING CONDITIONS PLAN IN STOW, MASSACHUSETTS

PREPARED FOR:
JONATHAN BRANSFIELD
MONEY BROOK FARM, LLC
65 WHITE POND ROAD
STOW, MASSACHUSETTS 01775
TEL: (978) 760-1882



CALC: DJL	DRWN: DJL	SCALE: 1"=40'
CHKD: IEH	APPD: DJL	DATE: JUN 16, 2023
SRV: JHG/HCM	FB: 78-62	JOB NO: 3136
TAB: (1) EXCON	SHEET 1 OF 5	PLAN NO: D-1-22

LEGEND		
542	CONTOURS	280
PROPERTY LINES	SEWER	
DRAIN	WATER	
GAS	ELEC/TELE/CABLE	
ETC	ETC	
EDGE OF PAVEMENT	ETC	
BITUMINOUS CURB	ETC	
GUARDRAIL	ETC	
EROSION CONTROL	ETC	
FENCE	ETC	
FIRE SERVICE	ETC	
SEWER MANHOLE (SMH)	SEWER	
DRAIN MANHOLE (DMH)	WATER	
CATCH BASIN (DCB)	GAS	
SIGN	ETC	
UTILITY POLE	ETC	
LIGHT POLE	ETC	
WATER SHUT OFF	ETC	
WATER VALVE	ETC	
GAS VALVE	ETC	
HYDRANT	ETC	



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65 WHITE POND ROAD
STOW, MA 01775

OWNER
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STOW, MA 01775

PARKING CALCULATIONS
INDUSTRIAL USE (CONTRACTOR YARD)
1 SPACE PER 800 SF

4,000 SF / 800 SF = 5 SPACES
TOTAL SPACES REQUIRED = 5 SPACES
TOTAL SPACES PROVIDED = 24 SPACES

N/F
BENJAMIN H. POULSON
& MARTIN E. WRIGHT, JR.
BK. 14360-79
PLAN NO. 1166 OF 1978
PARCEL X

N/F
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TRUSTEES OF THE
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BK. 21520-46B
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PLAN NO. 1090 OF 1954

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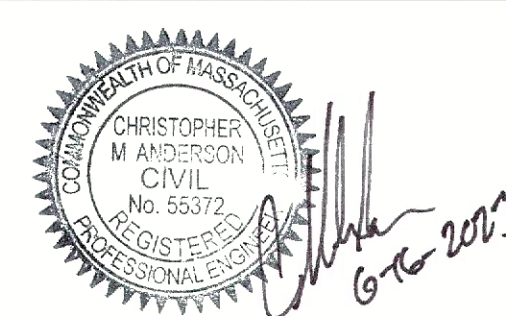
PROJECT INFORMATION

LAND INFORMATION		
MAP/PARCEL	29/72; 29/73	
DEED BOOK/PAGE	68258-348	
COMBINED FRONTAGE	459.44 FT	
COMBINED AREA	10.33 ACRES±	

ZONING INFORMATION		
ZONING DISTRICT:	COMMERCIAL	
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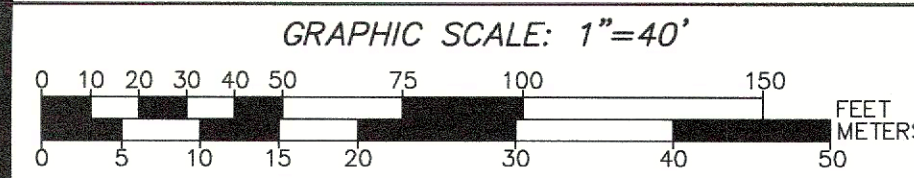


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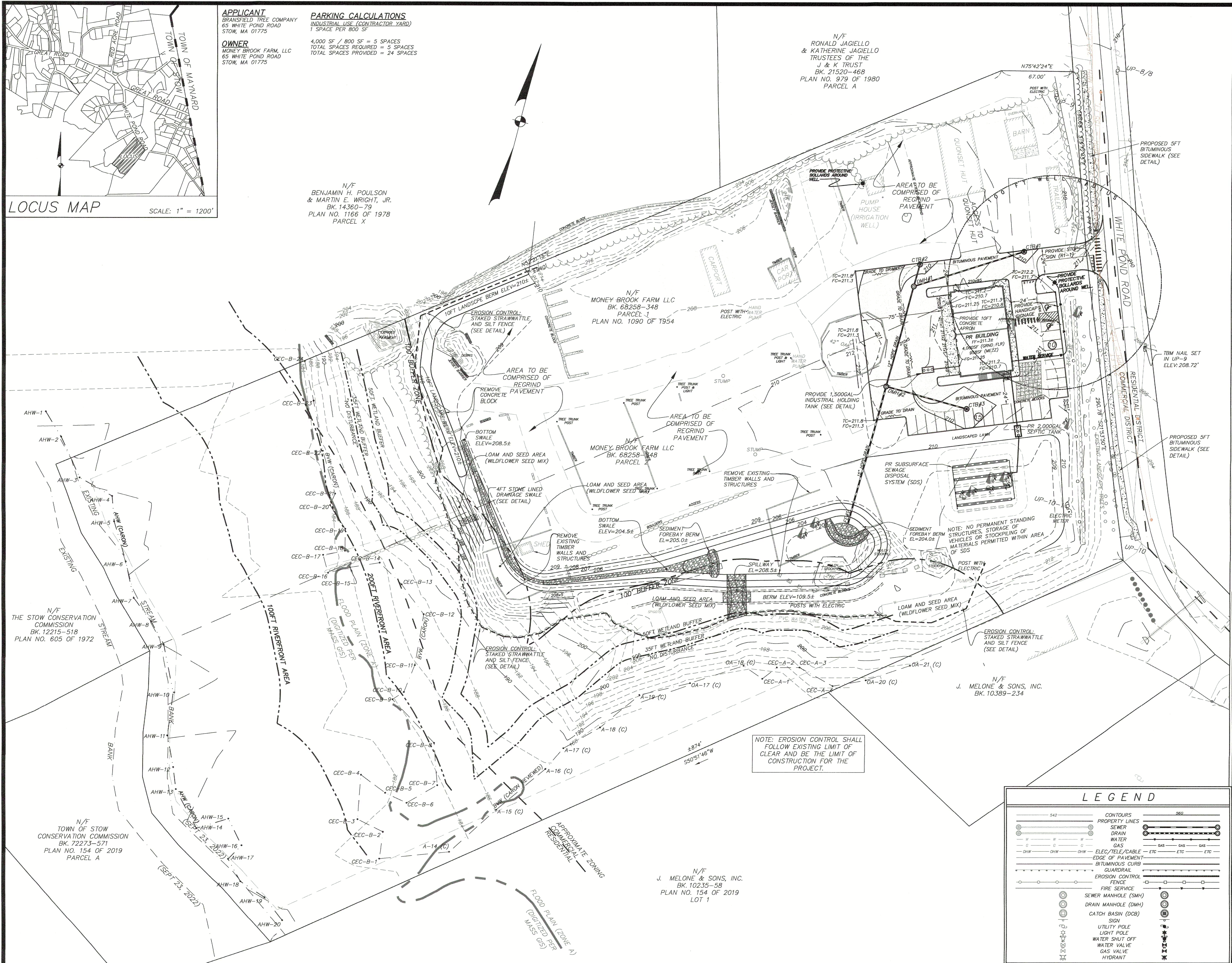
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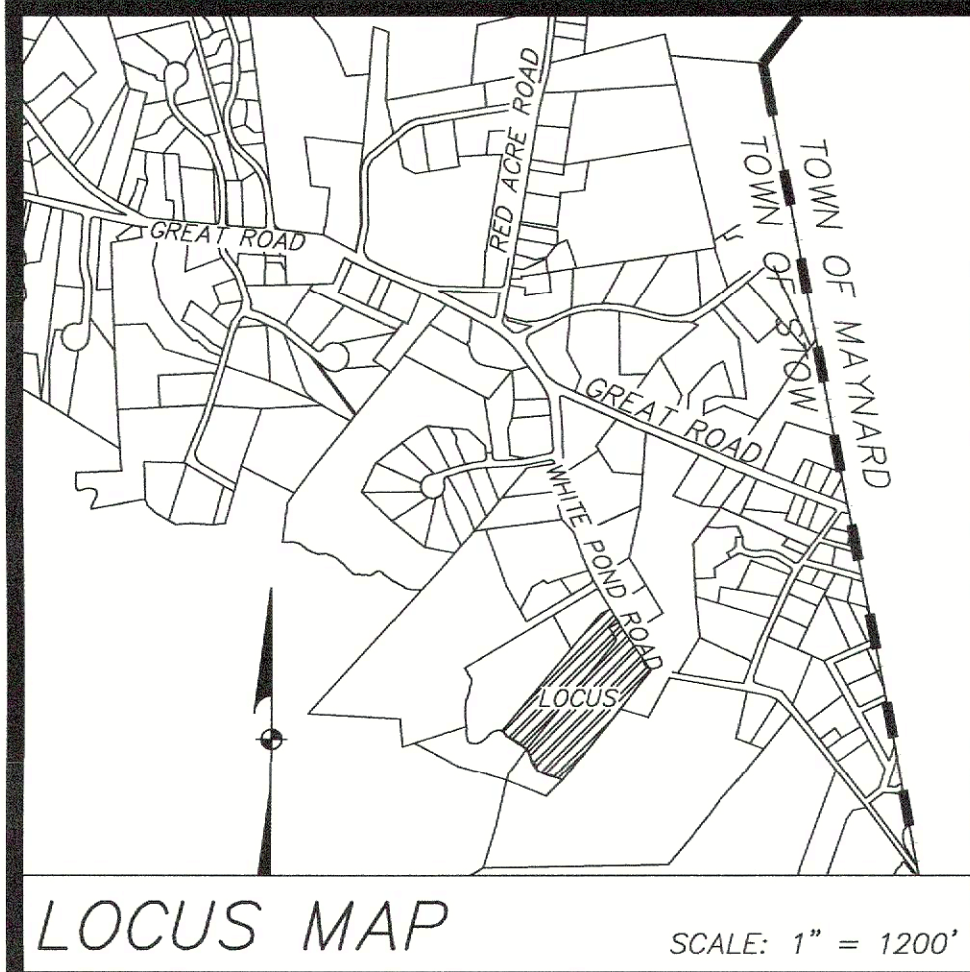
SITE DEVELOPMENT PLAN IN STOW, MASSACHUSETTS

PREPARED FOR:
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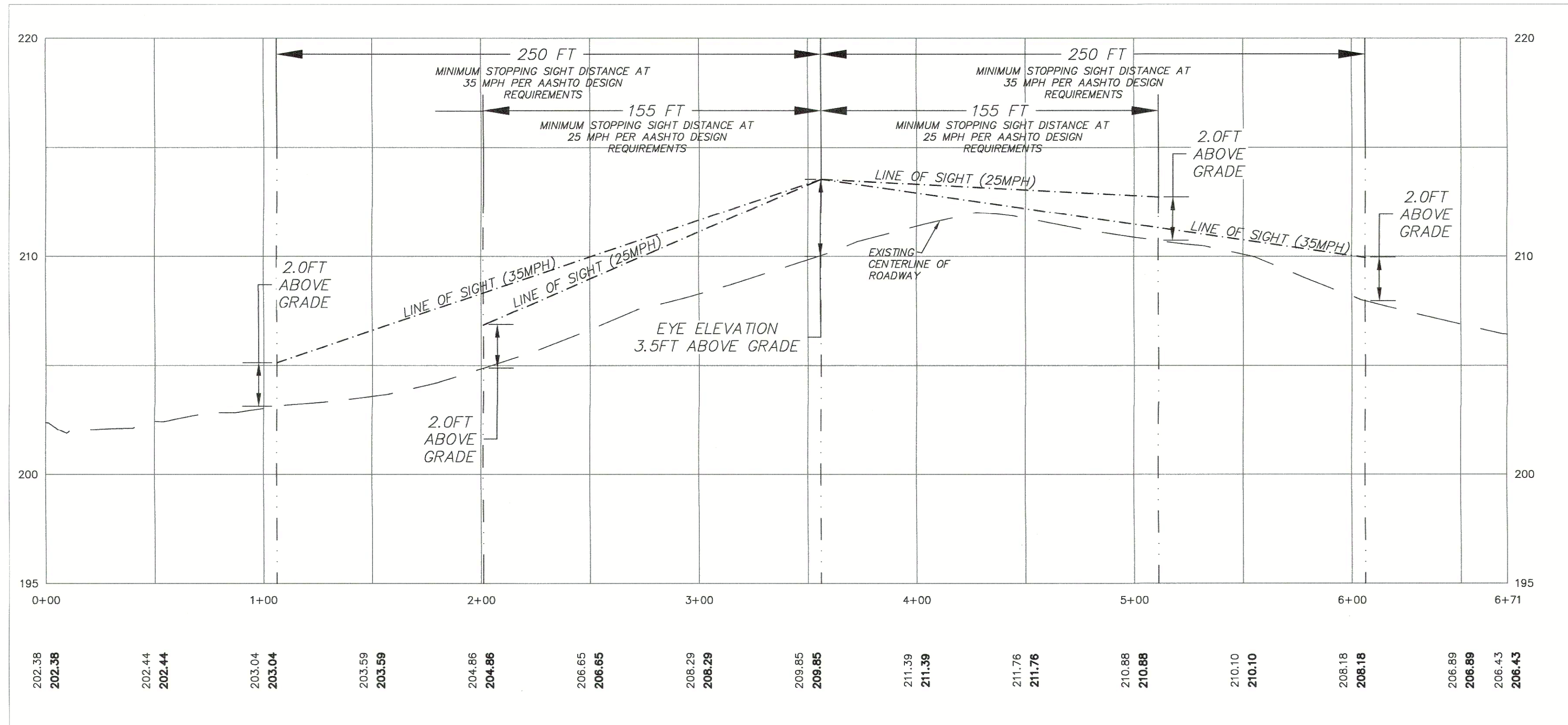
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CHKD: WDH	APPD: WDH	DATE: JUN 16, 2023
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TAB: (2) SDP	SHEET 2 OF 5	PLAN NO: D-1-22



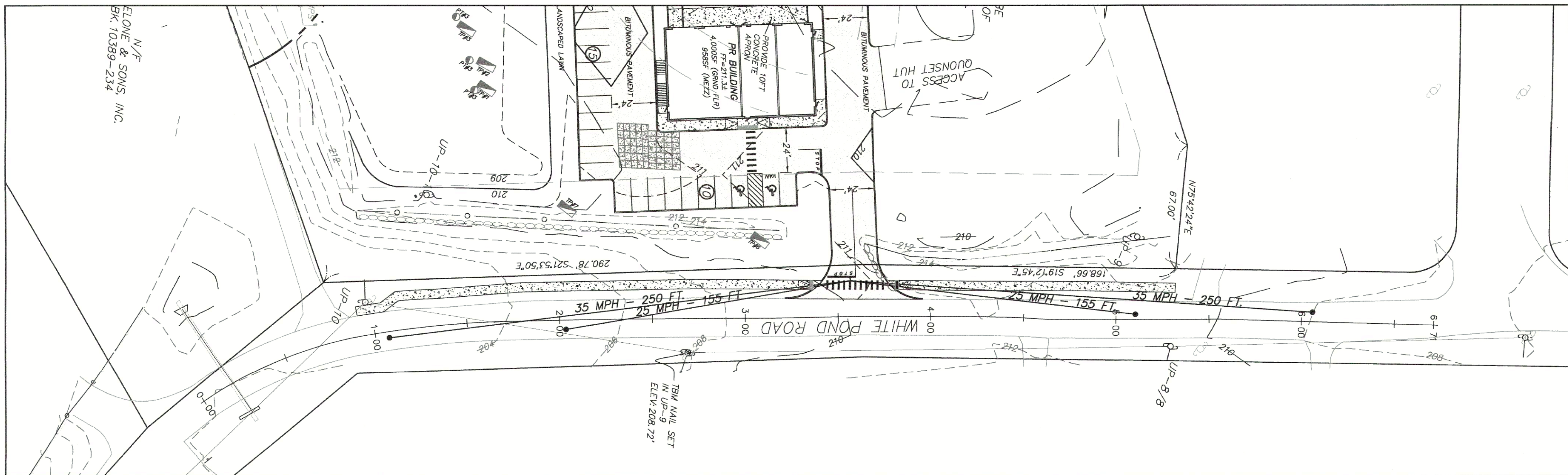


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65 WHITE POND ROAD
STOW, MA 01775

OWNER
MONEY BROOK FARM, LLC
65 WHITE POND ROAD
STOW, MA 01775



SITE ENTRANCE SIGHT LINE PROFILE
HORIZONTAL SCALE = 1"=40'
VERTICAL SCALE = 1"=4'



SITE ENTRANCE SIGHT LINE PLAN
HORIZONTAL SCALE = 1"=40'

PROJECT INFORMATION

LAND INFORMATION

MAP PARCEL: 29/72; 29/73
DEED BOOK/PAGE: 68258-348
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COMBINED AREA: 10.33 ACRES±

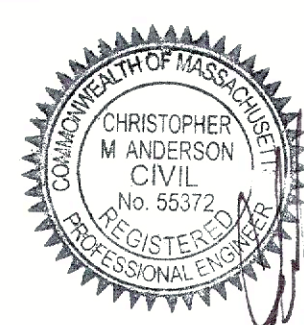
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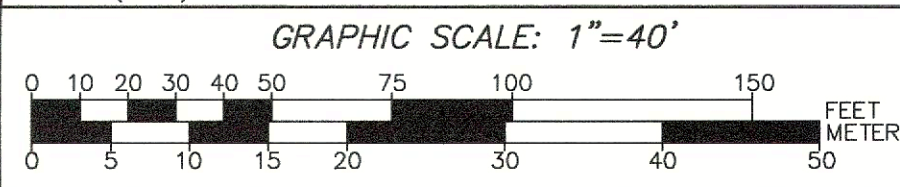
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SIGHT LINE PROFILE & PLAN IN STOW, MASSACHUSETTS

PREPARED FOR:
JONATHAN BRANSFIELD
MONEY BROOK FARM, LLC
65 WHITE POND ROAD
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CALC: CMA/WDH	DRWN: CMA/WDH	SCALE: 1"=40'
CHKD: WDH	APPD: WDH	DATE: JUN 16, 2023
SRV: JHG/HCM	FB: 78-62	JOB NO: 3136
TAB: (3)SIGHT	SHEET 3 OF 5	PLAN NO: D-1-22

EROSION & SEDIMENTATION CONTROL PLAN

GENERAL:

- THE PURPOSE OF THIS PLAN IS TO PRESENT A PREVENTIVE METHOD OF CONSTRUCTION TO MINIMIZE THE IMPACT OF THE CONSTRUCTION ACTIVITIES UPON WETLAND AND OTHER SENSITIVE AREAS. THE DATA CONTAINED ON THIS PLAN IS INTENDED TO SUPPLEMENT THE DEVELOPER OR CONTRACTOR'S EXPERIENCE AND NOT MEANT TO CIRCUMVENT LOGICAL DECISIONS REQUIRED BY A VARIETY OF FIELD CONDITIONS INCLUDING WEATHER AND THE TYPE OF EQUIPMENT AVAILABLE TO THE CONTRACTOR.
- THE CONTRACTOR IS TO BE AWARE OF THE REQUIREMENTS AND OBLIGATIONS TO COMPLY WITH CHAPTER 131, SECTION 40 OF THE MASSACHUSETTS GENERAL LAWS, OTHERWISE KNOWN AS THE WETLANDS PROTECTION ACT, AND ITS ASSOCIATED REGULATIONS (310 CMR 10.00). CERTAIN PERMITS IN THE FORM OF AN ORDER OF CONDITIONS, OR OTHER PERMITS MAY BE REQUIRED FOR THE CONSTRUCTION AS DEPICTED ON THIS PLAN. THESE PERMITS SHALL BE REVIEWED AND ADHERED TO BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION PROCESS. THE CONTRACTOR SHALL ALSO MAINTAIN COPIES OF ALL PERMITS ON SITE AT ALL TIMES.
- IF CHANGES IN THE PROJECT ARE REQUIRED DUE TO FIELD CONDITIONS THE DEVELOPER/CONTRACTOR SHALL PROMPTLY NOTIFY THE ENGINEER FOR REVIEW OF THESE CONDITIONS. UPON REVIEW, AND PRIOR TO THE IMPLEMENTATION OF ANY CHANGE, THE CONTRACTOR AND THE ENGINEER SHALL MEET WITH THE APPROPRIATE LOCAL AND/OR STATE OFFICIAL, OR ITS AGENT, TO DETERMINE IF THE CHANGE REQUIRES MODIFICATION TO EXISTING APPROVED PERMITS.
- ALTERATION AND/OR DESTRUCTION OF WETLAND AREAS WITHOUT PRIOR CONSENT OF THE CONSERVATION COMMISSION IS PROHIBITED. SILTATION PLUMES, ILLIOT DISCHARGES, OR INADVERTANT ALTERATION SHALL BE CONSIDERED AS ACTIVITIES NOT PERMITTED BY THE ORDER AND SHALL BE REPORTED TO THE CONSERVATION COMMISSION ALONG WITH THE PROPOSED MITIGATIVE MEASURES.
- PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE EROSION AND SEDIMENT CONTROL BARRIERS SHALL BE INSTALLED AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL MAINTAIN THE EROSION CONTROL BARRIER UNTIL ALL WORK IS COMPLETE AND ALL AREAS HAVE BEEN STABILIZED. THE REMOVAL OF SEDIMENT CONTROL DEVICES SHALL BE ONLY UPON THE APPROVAL OF THE CONSERVATION COMMISSION.
- EROSION AND SEDIMENTATION CONTROL DEVICES, SUCH AS CHECK DAMS, SEDIMENT BASINS, ETC. ARE TO BE INSTALLED AS SHOWN ON THE SITE DEVELOPMENT PLANS WITH ASSOCIATED DETAILS, AS APPROPRIATE.
- CONSTRUCTION OPERATIONS SHALL NOT CAUSE NOTICEABLE SEDIMENTATION PLUMES TO OCCUR ON OR SURROUNDING THE PROJECT. SHOULD BEHIND-SITE WELLS BE PROPOSED, CARE SHOULD BE TAKEN IN THE CONSTRUCTION OF THE WELL TO INSURE THAT DRILLING FLUID DOES NOT DISCHARGE TO A STREAM, WETLAND OR SENSITIVE AREA.
- NO MATERIAL SUBJECT TO EROSION SHALL BE STOCKPILED OVERNIGHT WITHIN 100 FEET OF ANY WETLAND AREAS WITHOUT PROPER EROSION AND SEDIMENTATION DEVICES IN PLACE.
- EQUIPMENT SHALL NOT BE PARKED WITHIN WETLAND OR BUFFER AREAS EXCEPT DURING ACTUAL OPERATIONS REQUIRING SAID EQUIPMENT.
- ACCUMULATED SEDIMENT ALONG EROSION CONTROL BARRIERS SHALL BE PERIODICALLY REMOVED AND DISPOSED OF BY THE CONTRACTOR AS REQUIRED BY THE CONSERVATION COMMISSION OR AS DIRECTED BY THE ENGINEER.

EROSION CONTROL METHODS:

- IT IS OF GREAT IMPORTANCE THAT CONCENTRATION OF RUNOFF BE AVOIDED IN ORDER TO PREVENT THE TRANSPORT OF SEDIMENT.
- THE PRIMARY EROSION CONTROL METHOD TO BE UTILIZED IS TO LIMIT THE AREA OF DISTURBANCE DURING CONSTRUCTION ACTIVITIES. THIS IS ACCOMPLISHED BY PROMPT STABILIZATION OF DISTURBED AREAS UPON COMPLETION OF SEQUENCES OF CONSTRUCTION.
- EROSION AND SEDIMENT CONTROL DEVICES SUCH AS HAY BALES, SILT FENCES, DIVERSION BERMS, ETC. SHALL BE UTILIZED FOR THE PROTECTION OF THE AREAS BEYOND THE LIMIT OF CONSTRUCTION.

DEMARCATION OF SENSITIVE AREAS:

- IT IS RECOMMENDED THAT BARRIERS BE PLACED ON THE SITE TO CONTROL THE LIMITS OF THE DISTURBANCE. AS AN EXAMPLE, HAY BALE BARRIERS PROVIDE SUCH DEMARCATION AND OTHER METHODS SUCH AS LOG BARRIERS, ROPE WITH FLAGGING, ETC. MAY BE UTILIZED.
- CARE SHOULD BE TAKEN IN THE OPERATION OF EQUIPMENT, SUCH THAT ONLY THE MINIMUM AREA NEEDED TO BE ALTERED IS DISTURBED.

ACCESS:

- ACCESS TO THE SITE SHALL BE MADE IN THE AREA OF A PERMANENT DRIVEWAY OR ROADWAY UNLESS DOING SO WOULD RESULT IN A TRAFFIC HAZARD.
- AN AREA OF CRUSHED STONE SHALL BE PLACED AT THE DRIVEWAY ENTRANCE TO INSURE THAT MUD IS NOT TRACKED ONTO THE EXISTING ROAD (SEE CONSTRUCTION ENTRANCE DETAIL). IF MUD IS INADVERTENTLY TRACKED ONTO THE ROAD, IT SHOULD BE PROMPTLY REMOVED.
- LABORER VEHICLES SHALL BE PARKED IN A DESIGNATED AREA AS TO MINIMIZE DISTURBED SURFACES AND TO INSURE THAT RUTS ARE NOT CREATED AND WHICH COULD CARRY WATER TO A WETLAND OR OTHER SENSITIVE AREA.
- SUITABLE MEASURES SHALL BE TAKEN TO INSURE THAT LARGE DELIVERY TRUCKS SERVICING THE SITE DO NOT DAMAGE TO AREAS OF EXISTING VEGETATION OR CAUSE DISTURBANCE TO STABILIZED AREAS.

ORDERLY CONSTRUCTION PROCEDURES:

- THE CONTRACTOR SHALL PERFORM SITE CONSTRUCTION IN A MANNER WHICH WILL INSURE THE STABILIZATION OF AREAS IN PROXIMITY OF OR TRIBUTARY TO WETLAND AREAS AS SOON AS POSSIBLE.
- EROSION CONTROL DEVICES SUCH AS HAY BALE BARRIERS, SILT FENCES AND MULCH SHALL BE BROUGHT TO THE SITE AND STOCKPILED PRIOR TO INITIATING CONSTRUCTION.
- THE CONTRACTOR SHALL PROVIDE AREAS FOR THE TEMPORARY STORAGE OF CONSTRUCTION DEBRIS. CONSTRUCTION DEBRIS SHALL NOT BE ALLOWED TO ACCUMULATE FOR AN EXTENDED PERIOD OF TIME.

CLEARING:

- LAND CLEARING SHALL BE PERFORMED IN PHASES CONSISTENT WITH ACTUAL CONSTRUCTION REQUIREMENTS. FINAL LAND CLEARING SHALL BE LIMITED TO RETURN TO GRADE SLOPES.
- TREES SHALL BE CUT AND STUMPS GROUND IN PLACE TO EXISTING GRADE TO MAINTAIN SOIL STABILIZATION.
- BRUSH AND BRANCHES SHOULD BE CHIPPED AND UTILIZED FOR WOOD MULCH IF PRACTICAL.
- VEHICLES UTILIZED IN THE CLEARING OPERATION SHOULD NOT TRAVERSE WETLANDS OR FLOWING BROOKS OR STREAMS WITHOUT PRIOR APPROVAL FROM THE LOCAL CONSERVATION COMMISSION OR AGENT.

GRUBBING AND STRIPPING:

- TOP SOIL SHALL BE RETAINED FOR LANDSCAPING PURPOSES.
- GRUBBING AND STRIPPING OF SLOPES LEADING TO WETLAND AREAS SHOULD NOT BE UNDERTAKEN DURING PERIODS OF INTENSE RAINFALL.
- TOP SOIL STOCKPILE LOCATIONS ARE DEPICTED ON THE SITE DEVELOPMENT PLAN, THE EROSION CONTROL PLAN, AND/OR THE CONSTRUCTION PHASING PLAN AND SHALL BE ADHERED TO.
- WHEN WORKING IN THE VICINITY OF WETLANDS, TOP SOIL SATURATED WITH WATER SHALL BE REMOVED, AND CONTAINED PRIOR TO BEING USED.
- AREAS LEADING TO WETLANDS SHALL HAVE HAY BALE BARRIERS INSTALLED ACROSS THEM IN ARCS POINTING DOWN THE HILL AT INTERVALS SUFFICIENT TO MITIGATE RUNOFF CARRYING SEDIMENT. DURING PERIODS OF INTENSE RAINFALL, OR IF THE PROJECT IS TO BE LEFT FOR A PERIOD OF TIME, CONSIDERATION SHOULD BE GIVEN TO SUPPLEMENT HAY BALE BARRIERS WITH EITHER CRUSHED STONE OR ARMORED BARRIERS. CONSIDERATION MAY ALSO BE GIVEN TO DIVERTING RUNOFF INTO TEMPORARY SEDIMENTATION CONTROL AREAS.
- WHENEVER PRACTICAL, NATURAL VEGETATION SHALL BE RETAINED, PROTECTED AND SUPPLEMENTED.

ROUGH GRADING:

- THE ROUGH GRADING OF THE ROADWAY SHALL FOLLOW THE FILL AND EXCAVATION SEQUENCES, RESULTING IN SLOPES BEING MAINTAINED AWAY FROM WETLANDS AND SENSITIVE AREAS AS MUCH AS PRACTICAL.
- ALTHOUGH THIS PROCESS THE EROSION POTENTIAL IS HIGH, SUFFICIENT EROSION CONTROL BARRIERS SHOULD BE KEPT IN PROXIMITY TO THE WORK AREA TO ALLOW QUICK ACTION SHOULD EROSION BECOME AN ISSUE AND TO INSURE THAT NO SEDIMENT REACHES WETLANDS OR OTHER SENSITIVE AREAS.
- IN AREAS OF CUT AND/OR FILL WHERE SLOPES COULD DIVERT WATER TOWARD WETLAND AREAS, DIVERSION TRENCHES AND/OR SWALES SHOULD BE CONSIDERED AND IMPLEMENTED TO DIVERT WATER AWAY FROM THESE AREAS.
- STEEP SLOPES IN EXCAVATION OR FILL SHOULD BE AVOIDED.
- DISTURBED AREAS SHALL BE STABILIZED BY LOAMING AND SEEDING OR RIPRAPPED IMMEDIATELY AFTER THE FINISH GRADE HAS BEEN MET. IF FINAL GRADING DOES NOT OCCUR DURING THE GROWING SEASON, THESE AREAS SHALL BE MULCHED BY HAY SECURED BY WEIGHTED SNOW FENCE, CHICKEN WIRE MESH OR JUTE NETTING WITH APPROPRIATE SECURING DEVICES.
- A GROUND COVER SUFFICIENT TO RETAIN SOILS IN A STABILIZED CONDITION MUST BE PROVIDED WITHIN 14 WORKING DAYS, SEASON PERMITTING, ON ANY PORTION OF THE TRACT UPON WHICH FURTHER ACTIVE CONSTRUCTION IS NOT BEING UNDERTAKEN.

DRAINAGE:

- IF DRAINAGE PIPES OR SWALES ARE TO BE INSTALLED, THEY SHALL BE CONSTRUCTED FROM DOWNSTREAM UP AND CONSTRUCTION SHALL INCLUDE THE PLACEMENT OF OUTFALL RIPRAP AND OTHER MITIGATIVE MEASURES SHOWN ON THE PLAN.
- PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, HAY BALES OR OTHER SUITABLE METHODS TO ENTRAP SEDIMENT SHALL BE PLACED DOWNSTREAM.
- THE TOP OF EMBANKMENTS SHALL BE STABILIZED IMMEDIATELY, MULCHED AND TACKED DOWN BY SUITABLE MEANS.
- IF THE PROPOSED ROADWAY IS NOT PAVED IMMEDIATELY AFTER THE INSTALLATION OF DRAINAGE STRUCTURES, HAY BALES SHALL BE PLACED TO PROTECT THE INTEGRITY OF THE STRUCTURES.

WATER SUPPLY:

- IF MUNICIPAL WATER SUPPLY IS TO BE UTILIZED, CARE SHOULD BE TAKEN TO INSURE THAT THE TRENCH DOES NOT DIVERT RUNOFF WATER TO A WETLAND AREA OR ONTO A ROAD WHERE IT WILL BE CARRIED INTO A WETLAND OR SENSITIVE AREA.
- IF PRIVATE ON-SITE WELLS ARE PROPOSED, CARE SHOULD BE TAKEN IN THE CONSTRUCTION OF THE WELL TO INSURE THAT DRILLING FLUID DOES NOT DISCHARGE TO A STREAM, WETLAND OR SENSITIVE AREA.
- IF DURING OPERATIONS SHALL BE SUCH THAT WETLANDS ARE NOT DISTURBED AND THE INSTALLATION OF THE WATER LINE WILL NOT DIRECT WATER TOWARDS A WETLAND AREA.

SUBSURFACE SEWAGE DISPOSAL SYSTEMS

- THE EXCAVATION AND FILL SEQUENCE SHALL BE UTILIZED IN THE CONSTRUCTION OF THE SOIL ABSORPTION SYSTEMS AND THOSE SPECIFICATIONS PURSUANT TO THE LATEST VERSION OF THE STATE ENVIRONMENTAL CODE, TITLE 5 OR ANY LOCAL REQUIREMENTS.
- LIMITED AMOUNTS OF MATERIALS SHALL BE STOCKPILED ON SITE FOR ON SITE SEWAGE DISPOSAL SYSTEM CONSTRUCTION AND SHOULD BE DELIVERED IN A TIMELY MANNER SO THAT THEY MAY BE IMMEDIATELY UTILIZED IN CONSTRUCTION.
- THE ON SITE SEWAGE DISPOSAL SYSTEM, ONCE INSPECTED, SHALL BE PROMPTLY BACK FILLED AND THE AREA STABILIZED ON EITHER A TEMPORARY OR PERMANENT BASIS.

BUILDING CONSTRUCTION:

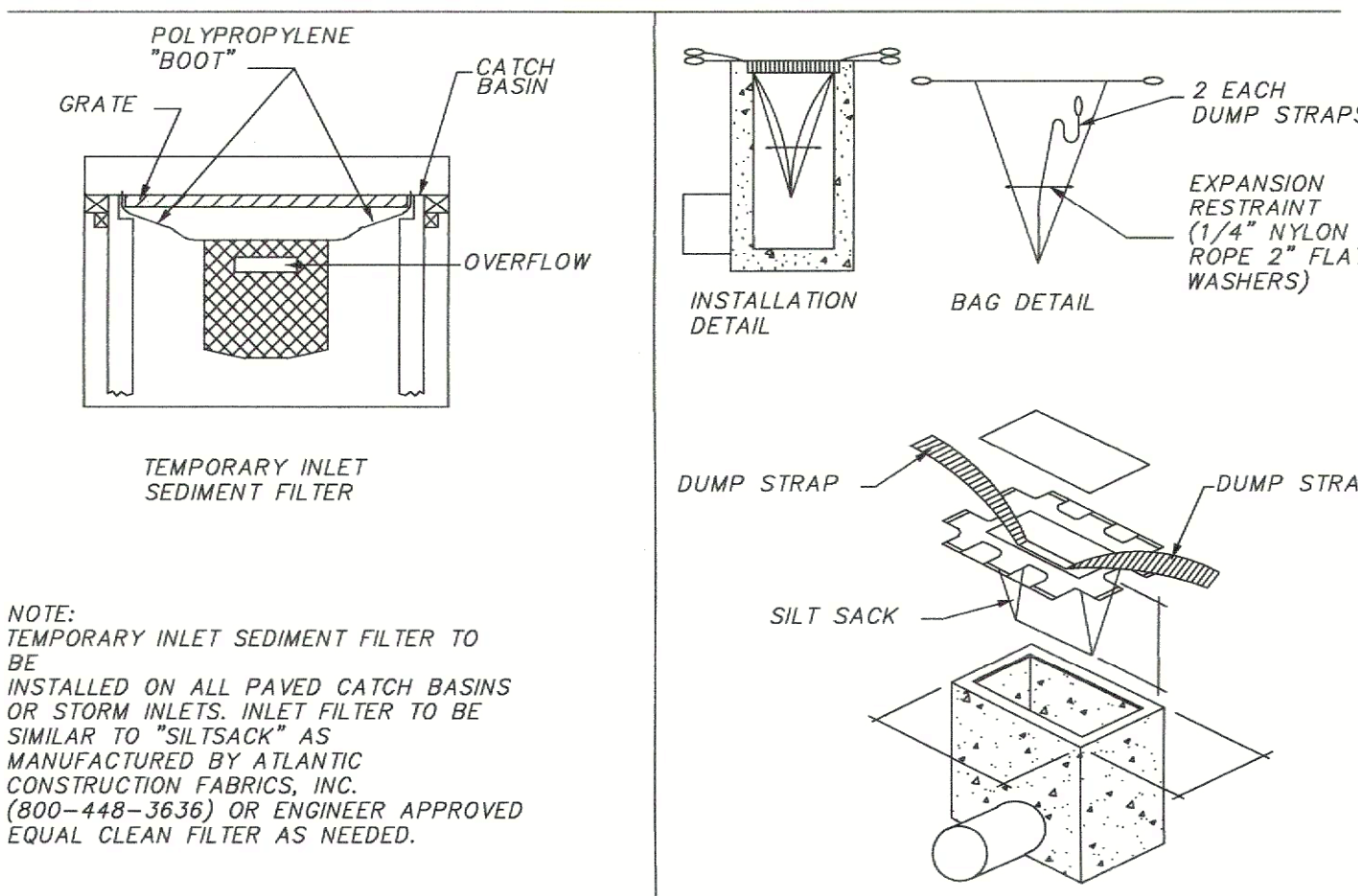
- DURING THE CONSTRUCTION OF BUILDINGS, MATERIALS SHALL BE STOCKPILED IN A MANNER AS NOT TO DIVERT OR CONCENTRATE RUNOFF IN ORDER TO PREVENT THE TRANSPORT OF SEDIMENT.
- THE LOT SHOULD BE KEPT LITTER FREE.
- NO FUELS, SOLVENTS, PAINTS, ETC. SHALL BE STORED ON SITE. THESE PRODUCTS SHALL BE REMOVED FROM THE SITE EACH EVENING AND RETURNED THE FOLLOWING DAY.
- BURIAL OF MATERIALS OR CONSTRUCTION DEBRIS IS PROHIBITED.
- PLASTERERS AND PAINTERS SHALL BE INFORMED THAT DISCHARGE OF LIQUIDS INTO A WETLAND OR RESOURCE AREA IS PROHIBITED.

LANDSCAPING:

- LANDSCAPING OF AREAS SHOULD OCCUR AS SOON AS POSSIBLE.
- IF THE SEASON OR ADVERSE WEATHER CONDITIONS DO NOT PERMIT THE ESTABLISHMENT OF VEGETATION, TEMPORARY HAY MULCH, OR OTHER MEANS OF STABILIZATION SHALL BE PERFORMED.
- USE OF HERBICIDES MAY BE SUBJECT TO OTHER REGULATIONS.
- CARE SHOULD BE TAKEN WITH FERTILIZERS SUCH THAT THEY ARE NOT CARRIED TO A WETLAND OR SENSITIVE AREA.
- TRUNKS OF TREES SHOULD NOT BE COVERED WITH MORE THAN TWO (2) INCHES OF SOIL.
- STUMPS SHALL BE GROUND DOWN INTO A WOOD MULCH AND UTILIZED OR REMOVED FROM THE SITE.

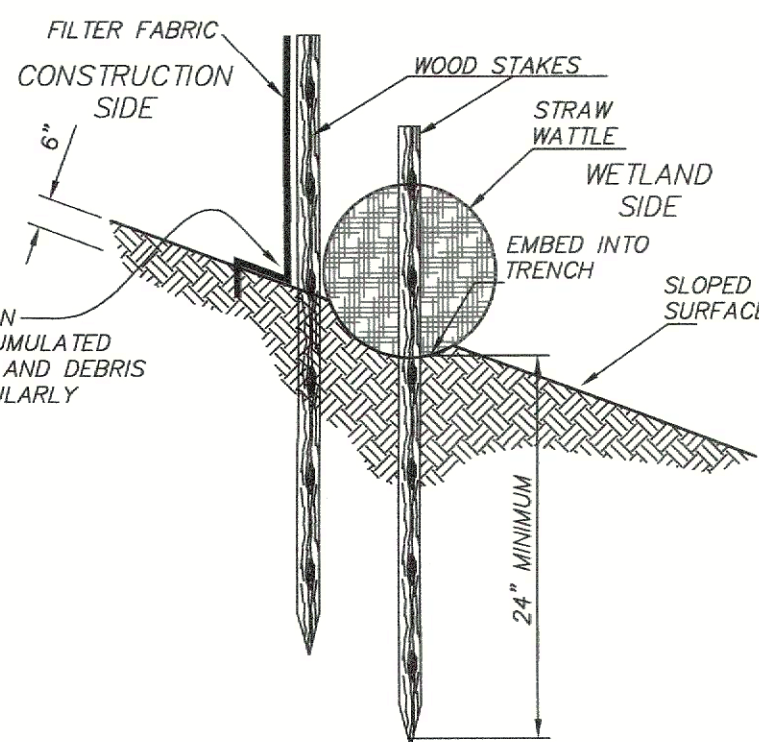
CREATION OF DETENTION BASIN:

- THE DETENTION BASIN HAS BEEN PLACED AS A SEPARATE ITEM TO EMPHASIZE THE IMPORTANCE OF EROSION CONTROL DURING ITS CONSTRUCTION.
- THE PRIMARY EROSION CONTROL METHOD FOR BASIN CONSTRUCTION, AS WELL AS FOR THE SITE IS THE RAPID STABILIZATION OF ALL SURFACES. SECONDARY IN IMPORTANCE IS THE CONCENTRATION OF RUNOFF BE AVOIDED IN ORDER TO PREVENT THE TRANSPORT OF SEDIMENT.
- DURING CONSTRUCTION, THE FILL AND EXCAVATION SEQUENCES SHOWN ON THIS PLAN SHOULD BE UTILIZED. THESE SEQUENCES REQUIRE THAT SLOPED AREAS LEFT FOR ANY PERIOD OF TIME NOT SLOPED TOWARDS THE WETLAND OR SENSITIVE AREA, BUT RATHER BACK INTO THE FILL MATERIAL.
- THE BASIN BERM IS TO BE CONSTRUCTED BY EQUIPMENT WORKING ON STABLE MATERIAL ONLY. HAY BALES SHALL BE PLACED AT THE TOP OF SLOPE UNTIL SURFACES ARE STABILIZED.
- NO EXCAVATION WITHIN THE BASIN SHALL COMMENCE UNTIL THE BERM IS IN PLACE.
- CARE SHOULD BE TAKEN TO INSURE THAT ORGANIC MATERIAL REMOVED FROM THE BASIN AREA IS RESERVED FOR FINISH GRADING AND THE STABILIZATION OF DISTURBED AREAS.
- IF DEWATERING IS NECESSARY, PUMPING TO A SETTLING BASIN SHALL BE PERMITTED IF SETTLING BASIN IS CONSTRUCTED, MAINTAINED AND OPERATED EFFECTIVELY.
- AT NO TIME SHALL RUNOFF CARRYING SEDIMENT BE ALLOWED TO FLOW TO THE WETLANDS OR SENSITIVE AREAS.
- THE WORK AREA SHALL REMAIN FREE OF LITTER AND DEBRIS AT ALL TIMES AND MONITORED ON A DAILY BASIS TO ENSURE COMPLIANCE.
- ALL MATERIALS STOCKPILED SHALL BE LOCATED, MULCHED OR OTHERWISE TREATED TO INSURE THAT MATERIALS CONTAINED, THEREIN, AREA NOT CARRIED INTO THE WETLANDS.
- ANY MATERIALS BLOWN OR CARRIED BY WATER AWAY FROM THE CONSTRUCTION SITE OR INTO THE WETLAND AREAS SHALL BE PROMPTLY REMOVED AS REQUIRED BY THE LOCAL CONSERVATION COMMISSION.
- A GEOTECHNICAL FILTER FABRIC SHALL BE PLACED OVER THE BASIN SUBDRAIN DURING CONSTRUCTION TO PREVENT SEDIMENT FROM ENTERING AND CLOGGING THE DRAIN. THE FABRIC SHALL BE REMOVED FOR CLOSING PREPARATION FOR FINAL STABILIZATION.



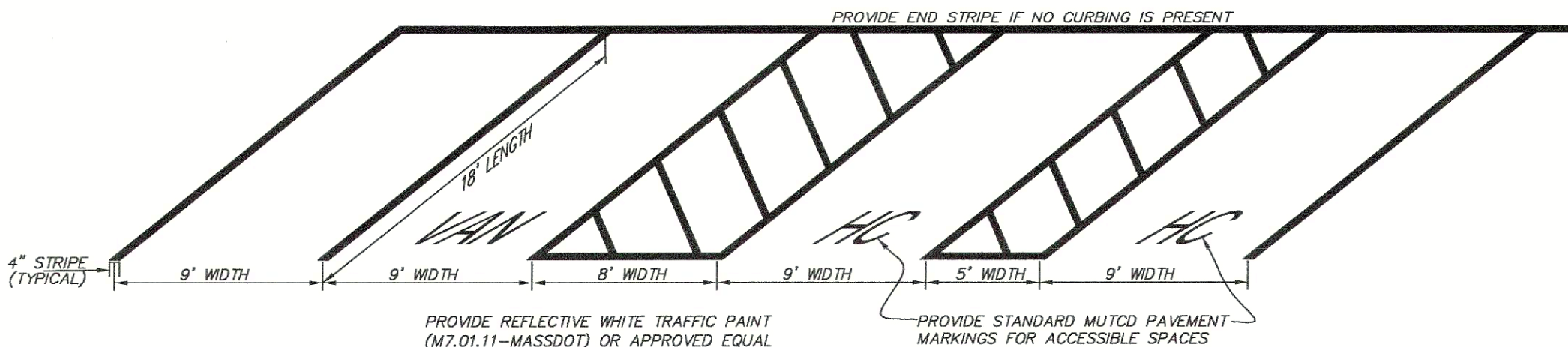
SILT SACK DETAIL

NO SCALE



STRAW WATTLE DETAIL

NO SCALE



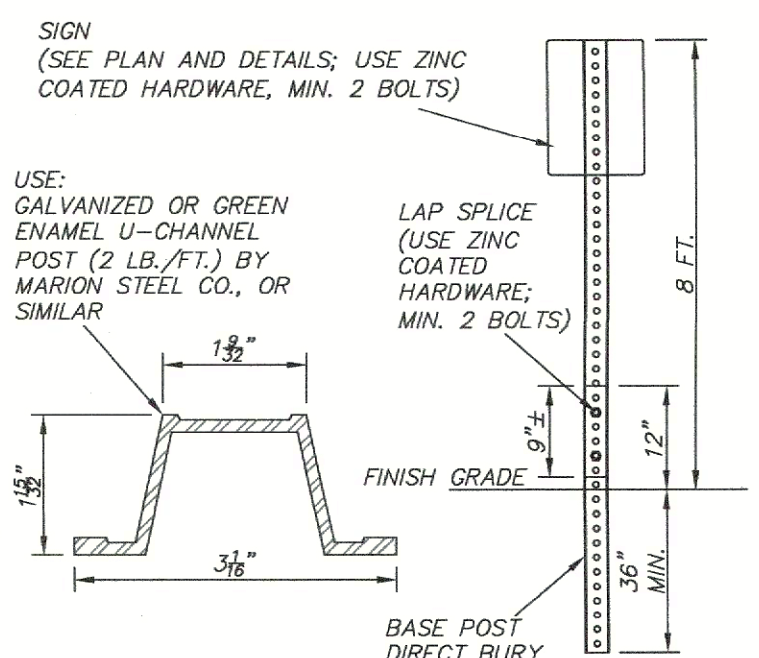
PARKING SPACE PAVEMENT MARKING

NO SCALE



STOP LINE PAVEMENT MARKING

NO SCALE



SIGN POST DETAIL

(NO SCALE)



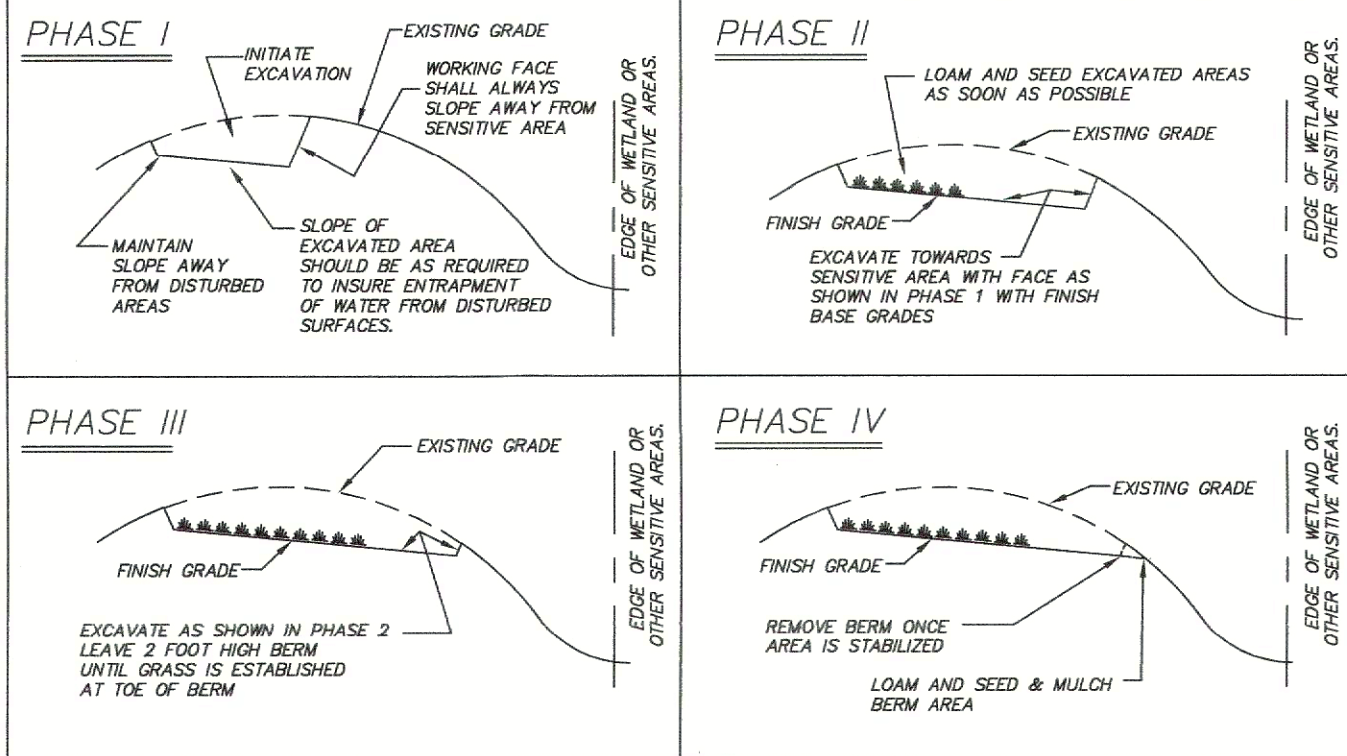
S-2
12" x 18"



S-3
30" x 30"

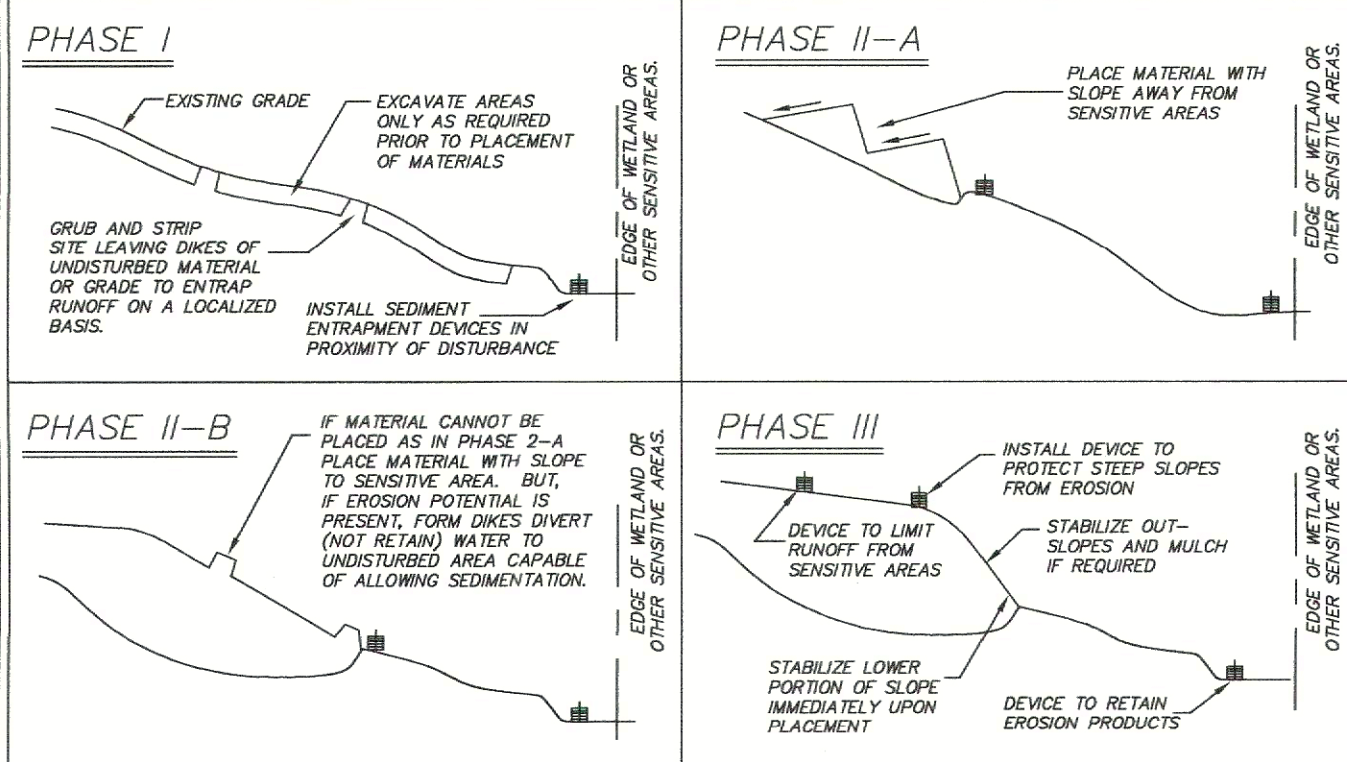
EXCAVATION SEQUENCE

NO SCALE



FILL SEQUENCE

NO SCALE



STORMWATER OPERATION AND MAINTENANCE PLAN

THE FOLLOWING SHALL BE CONSIDERED THE OPERATION & MAINTENANCE PLAN (OMP) FOR THE STORMWATER COLLECTION FACILITY FOR THIS DEVELOPMENT.

I. SYSTEM OWNERSHIP

THE SYSTEM SHALL INCLUDE THE DRAINAGE INFRASTRUCTURE AND ALL OF ITS COMPONENTS AS SHOWN ON THE SITE DEVELOPMENT PLANS. THE SYSTEM SHALL ALSO INCLUDE THE PIPING TO THE CONNECTION TO THE CITY OF WORCESTER DRAINAGE SYSTEM. THE STRUCTURES OF THE SYSTEM SHALL INCLUDE MANHOLES, CATCH BASINS, AND OUTFALL & CONTROL STRUCTURES, AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CONSTRUCTION DETAILS AND THE APPROVED PLANS.

UPON THE COMPLETION OF CONSTRUCTION, THE DRAINAGE SYSTEM SHALL REMAIN THE PROPERTY OF THE LANDOWNER AND INCLUDES RIGHTS AND RESPONSIBILITIES TO MAINTAIN, INSPECT, REPAIR, REPLACE, ETC., THE COMPONENTS OF THE DRAINAGE SYSTEM, INCLUDING OUTFALL & CONTROL STRUCTURES.

II. RESPONSIBLE PARTIES

THE LANDOWNER SHALL BE CONSIDERED THE RESPONSIBLE PARTY FOR THE OPERATION AND MAINTENANCE OF THE STORMWATER MANAGEMENT SYSTEM. THE SYSTEM SHALL INCLUDE THE DRAINAGE INFRASTRUCTURE AND ALL OF ITS COMPONENTS WITHIN DEVELOPMENT. THE LANDOWNER SHALL BE CONSIDERED THE RESPONSIBLE PARTY FOR THE OPERATION AND MAINTENANCE OF THE DETENTION FACILITIES AND THE OUTFALL AREAS OF THE DRAINAGE SYSTEM.

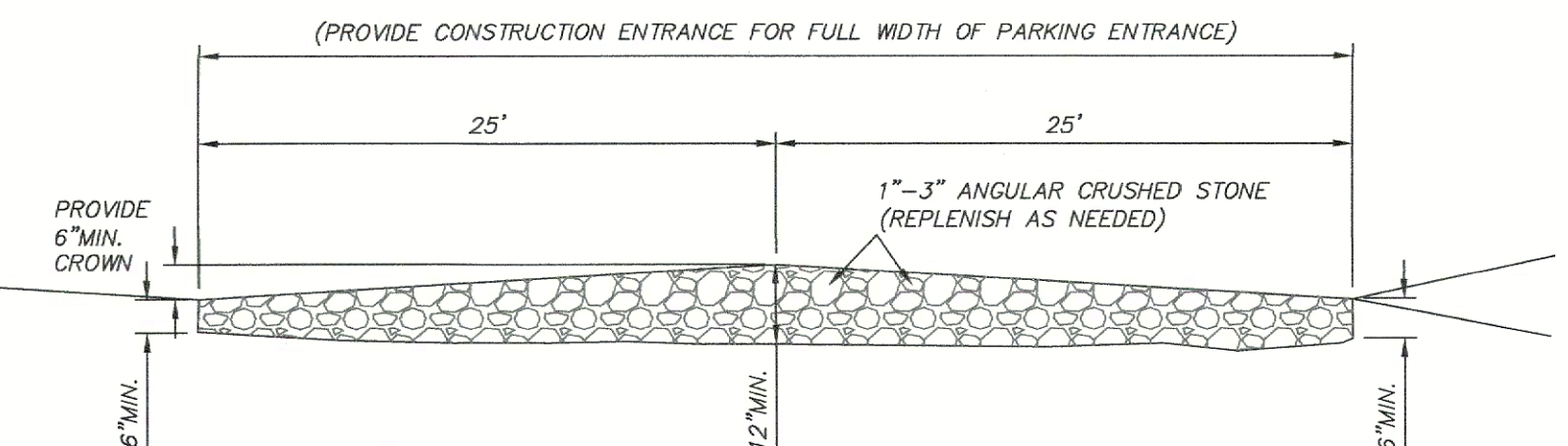
III. INSPECTION & MAINTENANCE SCHEDULE

THE FOLLOWING MAINTENANCE SCHEDULE SHALL BE FOLLOWED IN ORDER TO MAINTAIN THE EFFECTIVENESS OF THE STORMWATER MANAGEMENT SYSTEM.

STRUCTURE TYPE	INSPECTION	MAINTENANCE	TASK
CATCH BASINS	QUARTERLY AT THE END OF END OF THE FOLIAGE AND SNOW REMOVAL SEASONS	QUARTERLY, OR WHENEVER THE DEPTH OF DEPOSITS IS GREATER THAN OR EQUAL TO ONE HALF THE DEPTH FROM THE BOTTOM OF THE INVERT OF THE LOWEST PIPE	REMOVE SEDIMENT FROM SUMPS ***GRATES TO BE KEPT CLEAR THROUGHOUT THE YEAR***
MANHOLES	EVERY 2 YEARS	AS NEEDED	CLEAN/REGROUT
PIPING	EVERY 2 YEARS	AS NEEDED	CLEAN/REGROUT
STORMCEPTOR	ANNUALLY IN THE SPRING	WHENEVER THE DEPTH OF DEPOSITS IS GREATER THAN 15% OF THE TOTAL STORAGE CAPACITY (~8" OF SEDIMENT).	REMOVE SEDIMENT FROM SUMPS
PARKING LOT SWEEPING	N/A	ANNUALLY IN THE SPRING	REMOVE STREET SAND BUILDUP (SEE NOTE 4)

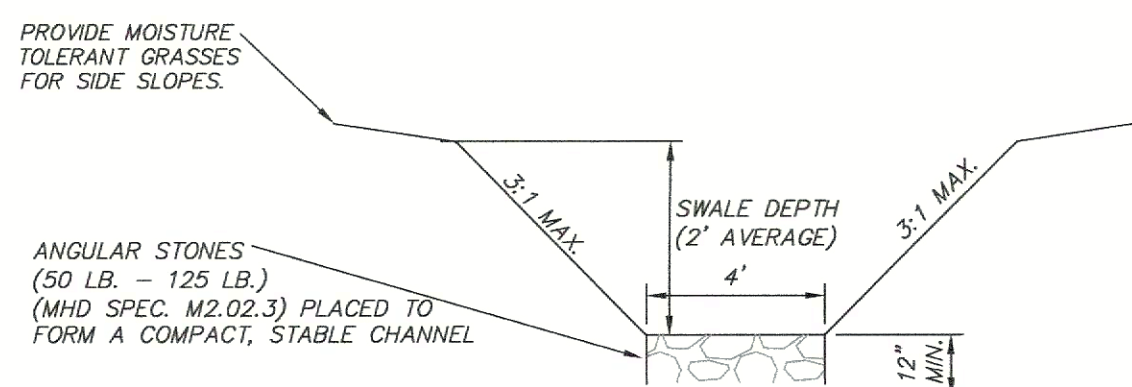
NOTES:

- A MAJOR STORM EVENT IS DEFINED AS A STORM THAT IS EQUAL TO OR GREATER THAN THE 2-YEAR, 24 HOUR STORM (THREE (3) INCHES IN A 24-HOUR PERIOD).
- ANY SEDIMENTS AND HYDROCARBONS REMOVED DURING MAINTENANCE OF STORMWATER MANAGEMENT SYSTEM SHOULD BE TRANSPORTED OFF SITE FOR DISPOSAL. DISPOSAL OF SEDIMENTS AND HYDROCARBONS SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE LAWS.
- IT IS RECOMMENDED THAT ICE REMOVAL/PREVENTION METHODS LIMIT OR AVOID THE USE OF SAND PRODUCTS ON THE PROJECT.



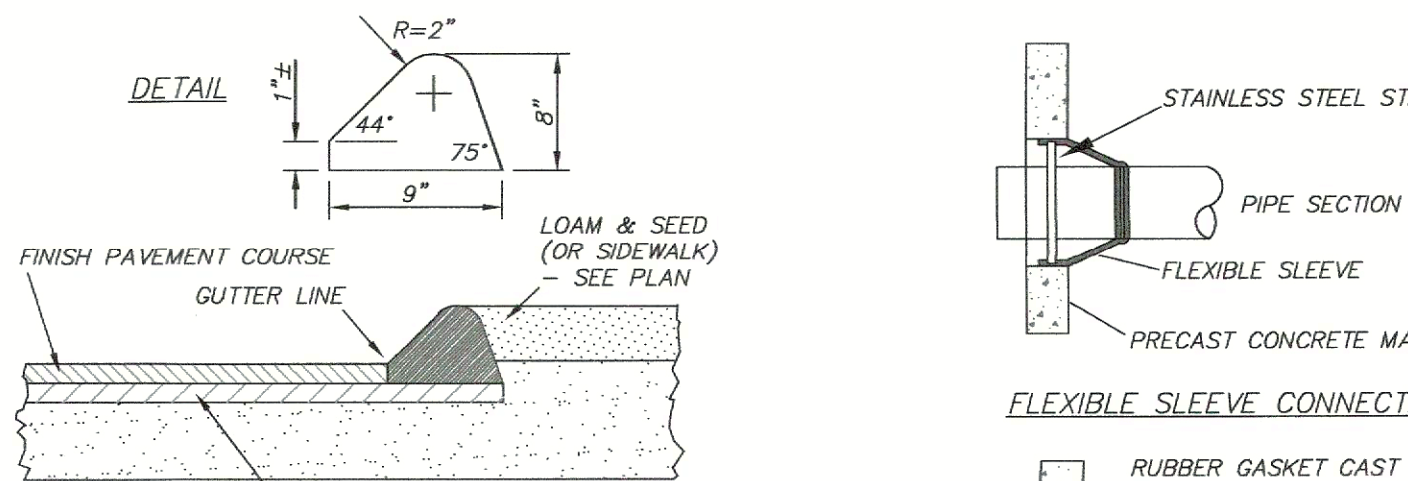
CONSTRUCTION ENTRANCE

NO SCALE



STONED BOTTOM DRAINAGE SWALE DETAIL

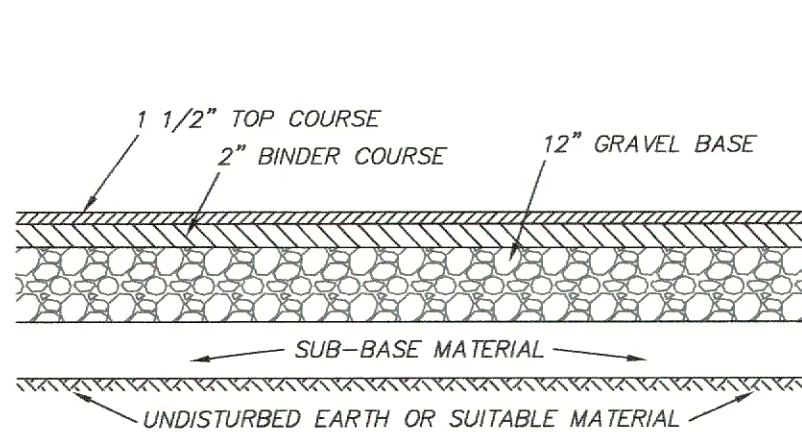
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BITUMINOUS CONCRETE CURB

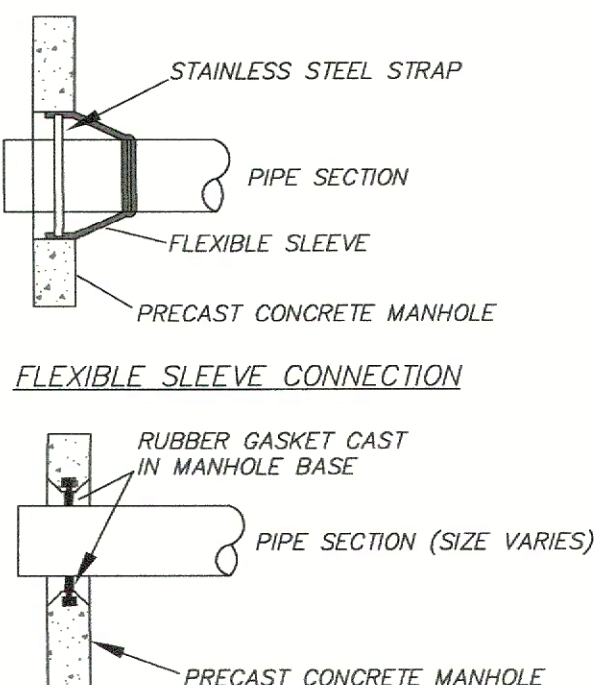
(MHD - TYPE 2)

NO SCALE



TYPICAL PAVEMENT SECTION

(NO SCALE)



MANHOLE CONNECTION DETAIL

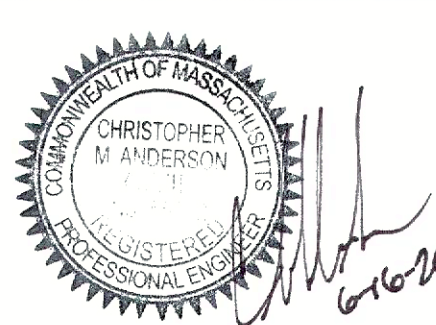
NO SCALE

APPLICANT

BRANSFIELD TREE COMPANY
65 WHITE POND ROAD
STOW, MA 01775

OWNER

MONEY BROOK FARM, LLC
65 WHITE POND ROAD
STOW, MA 01775



HANNIGAN ENGINEERING, INC.

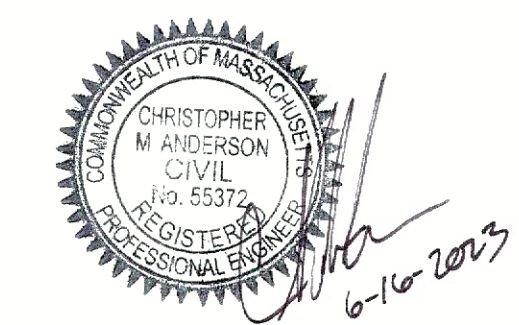
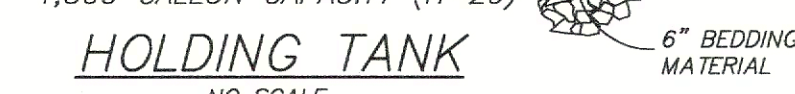
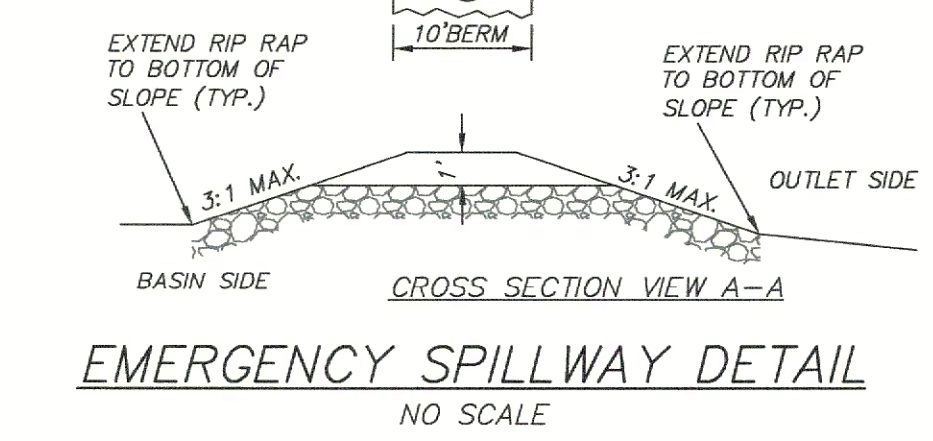
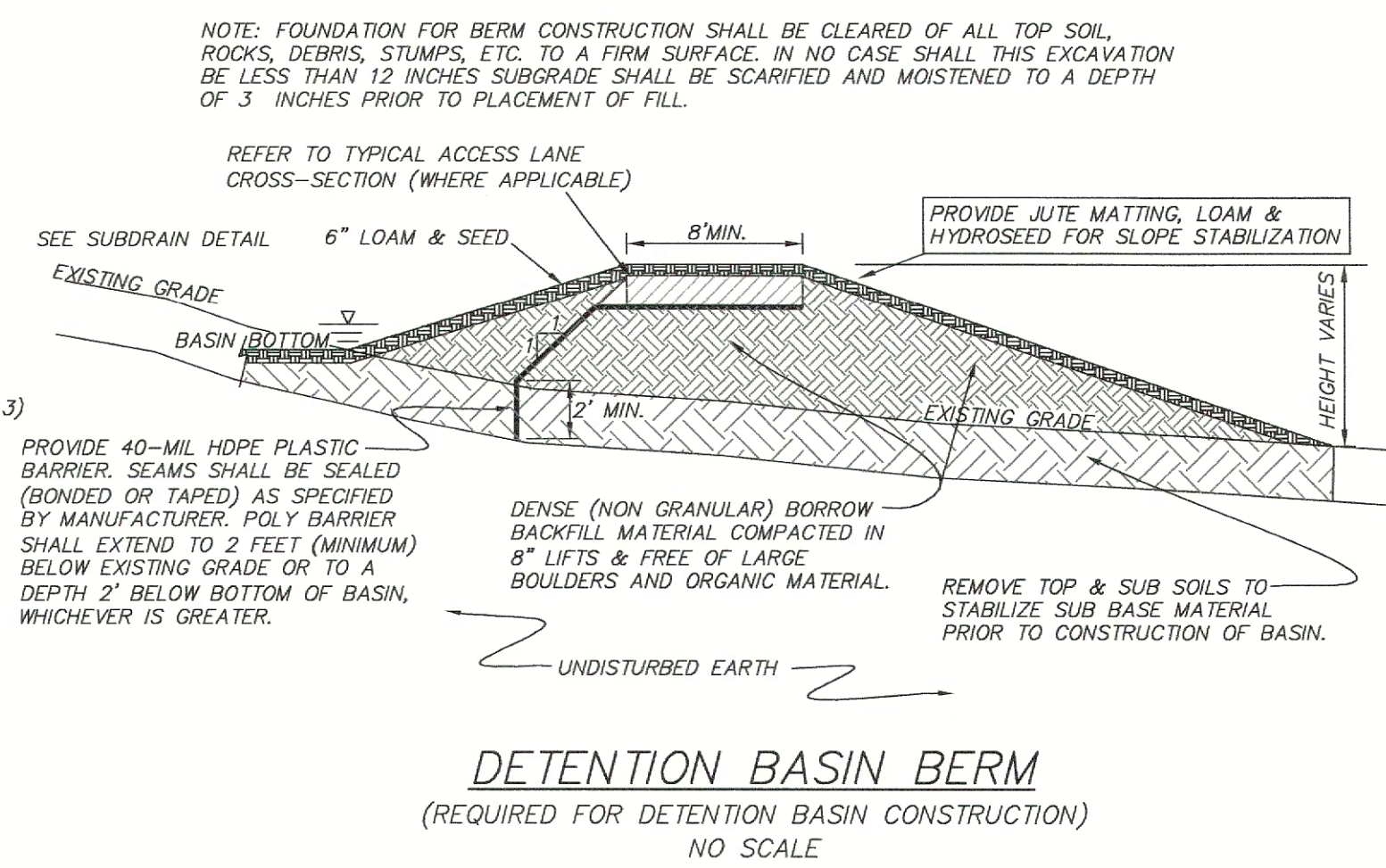
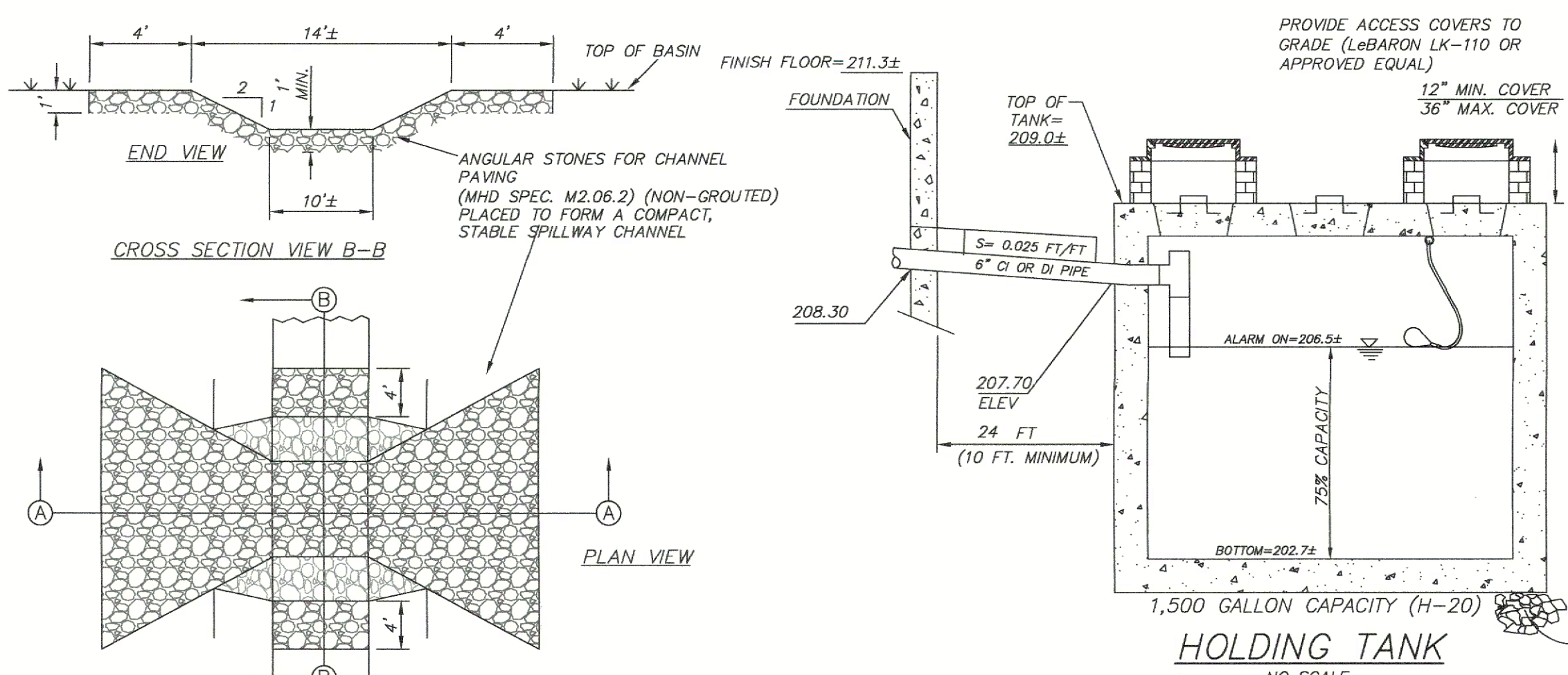
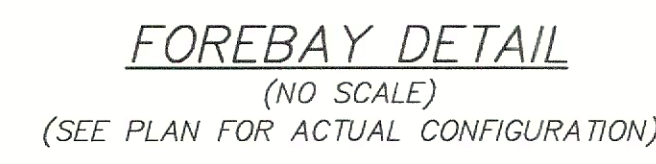
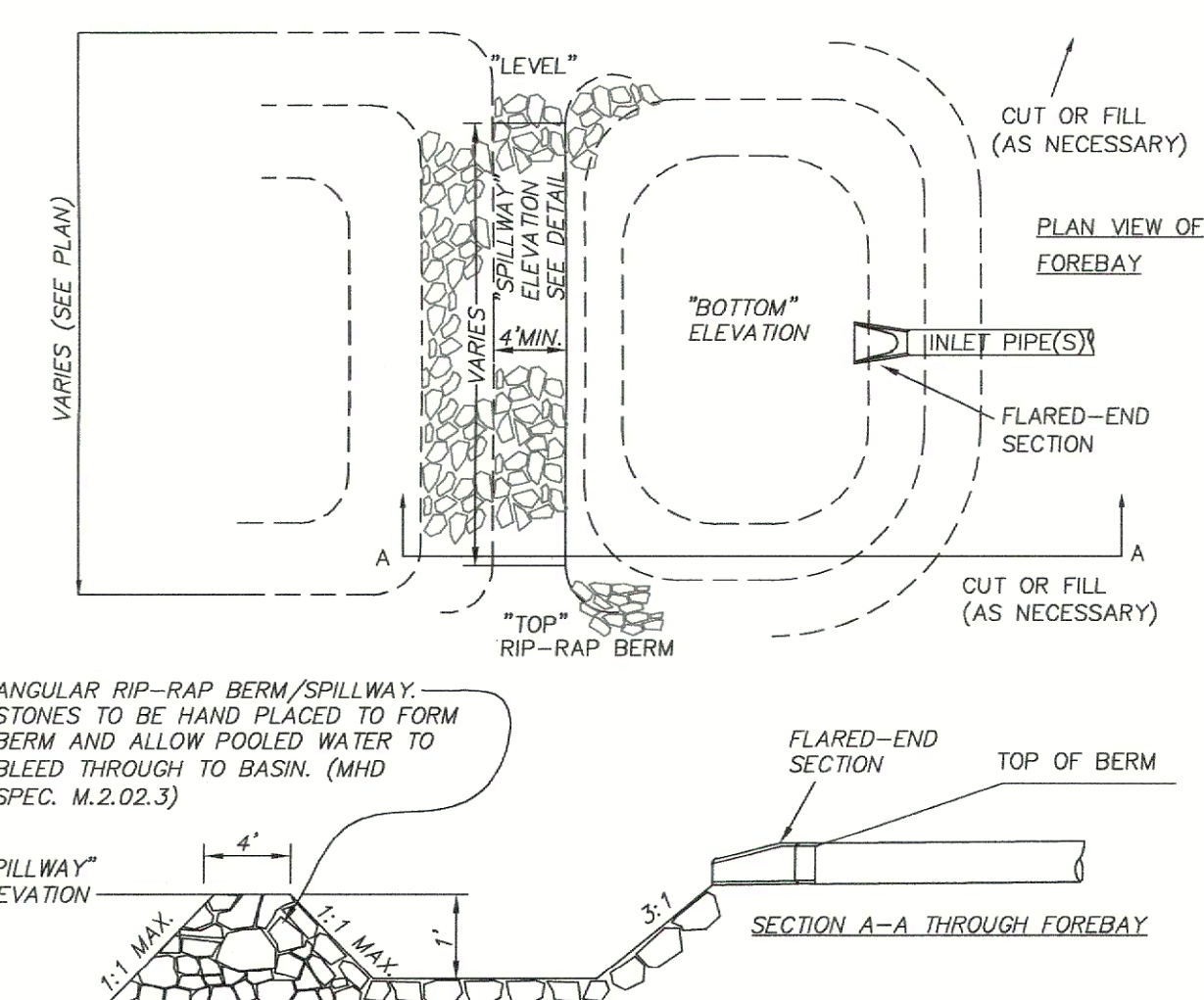
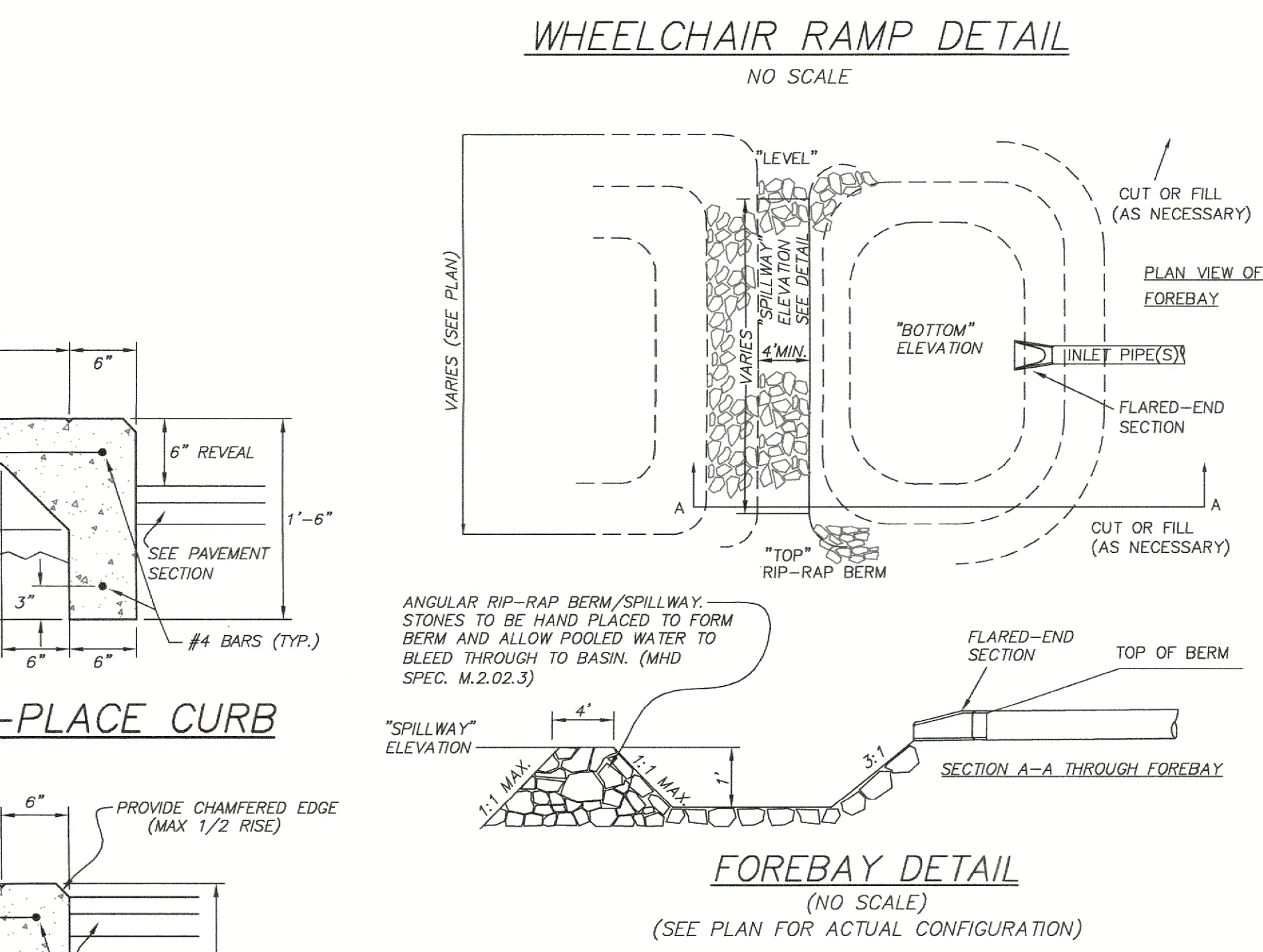
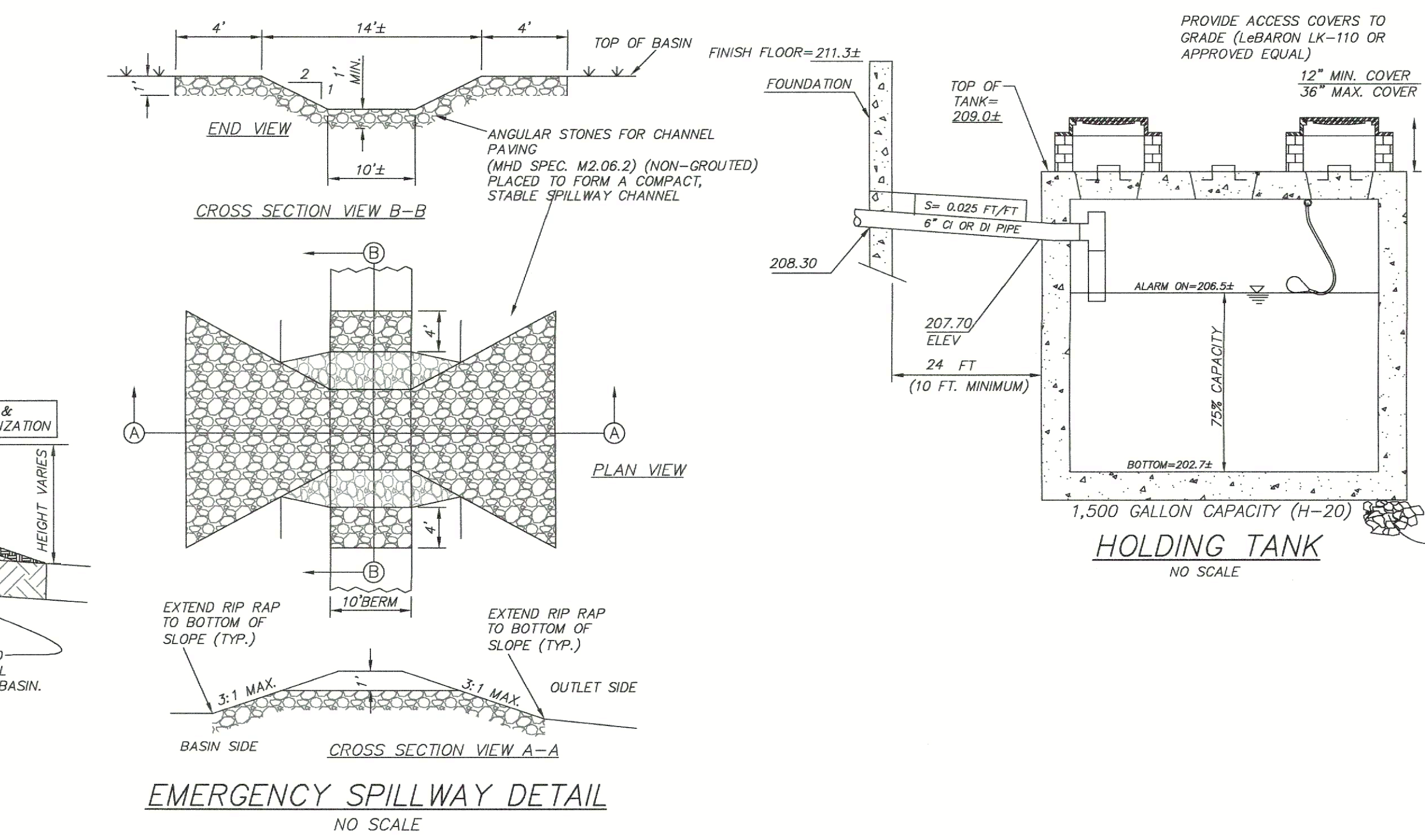
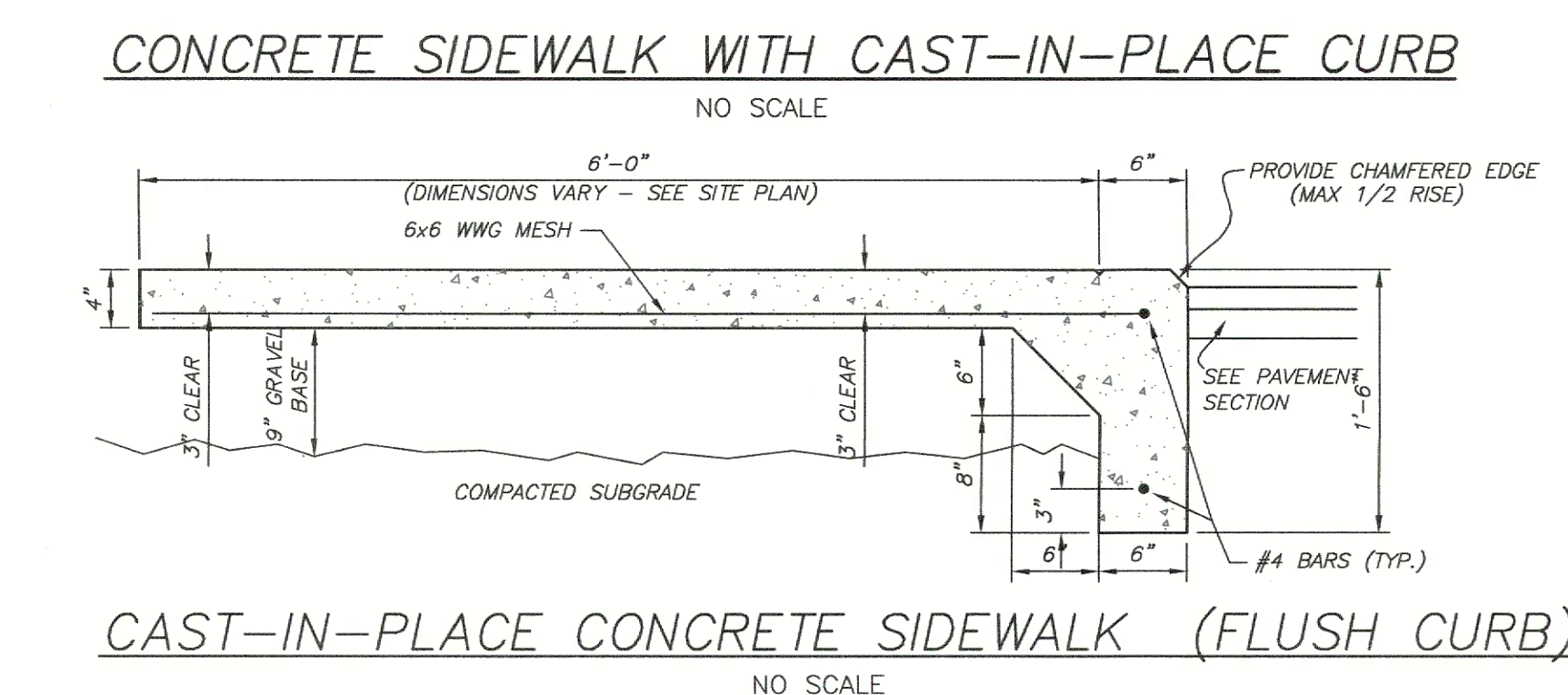
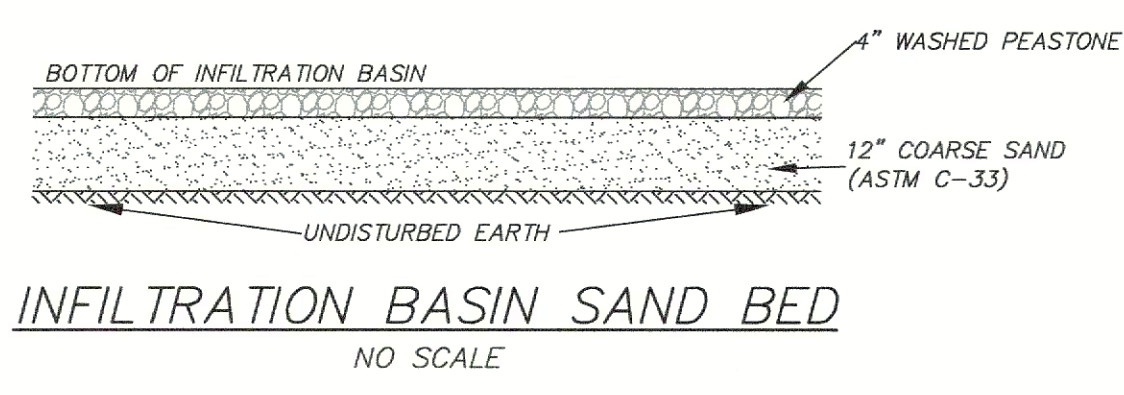
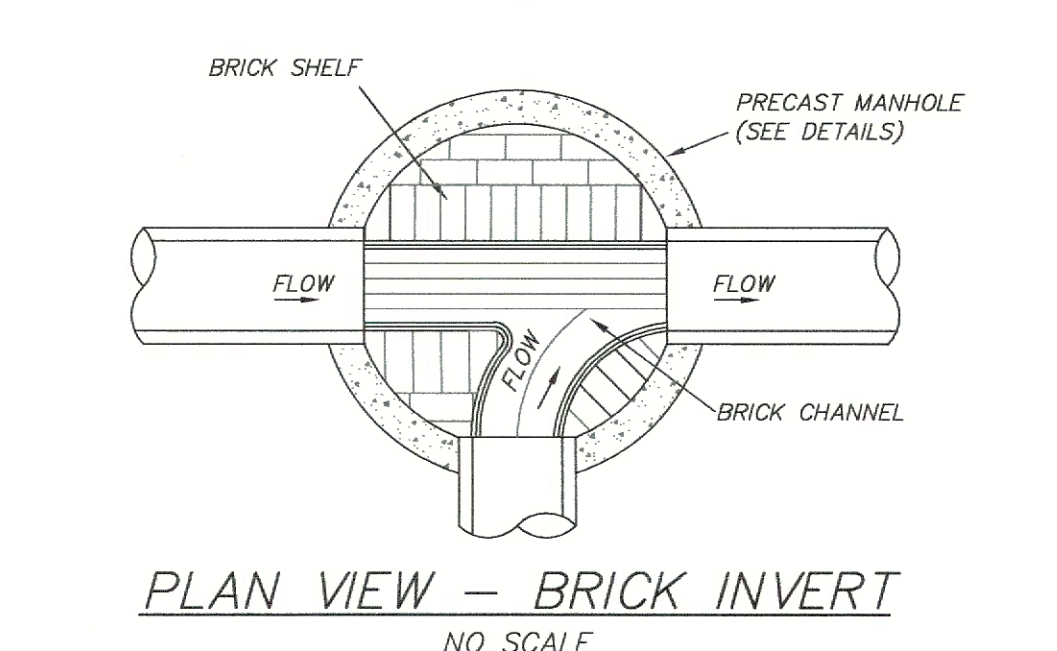
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CONSTRUCTION DETAILS IN STOW, MASSACHUSETTS

PREPARED FOR:
JONATHAN BRANSFIELD
MONEY BROOK FARM, LLC
65 WHITE POND ROAD
STOW, MASSACHUSETTS 01775
TEL: (978) 760-1882

CALC: CMA/WDH	DRWN: CMA/WDH	SCALE: NA
CHKD: WDH	APPD: WDH	DATE: JUN 16, 2023
SRV: JHG/HCM	FB: 78-62	JOB NO: 3136
TAB: (4-5) DET	SHEET 4 OF 5	PLAN NO: D-1-22



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ENGINEERING, INC.**
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CHKD: WDH	APPD: WDH	DATE: JUN 16, 2012
SRV: JHG/HCM	FB: 78-62	JOB NO: 3136
TAB: (4-5) DET	SHEET 5 OF 5	PLAN NO: D-1-2

APPLICANT
BRANSFIELD TREE COMPANY
65 WHITE POND ROAD
STOW, MA 01775

OWNER
MONEY BROOK FARM, LLC
65 WHITE POND ROAD
STOW, MA 01775