

WEST HILL ROAD SOLAR

WEST HILL ROAD
TORRINGTON, CONNECTICUT
PERMIT DRAWINGS

SLR#21617.00002
JANUARY 07, 2025
REVISED MAY 27, 2025



PROJECT SITE VICINITY MAP

PREPARED BY:



**99 REALTY DRIVE
CHESHIRE, CT 06410
203.271.1773
SLRCONSULTING.COM**

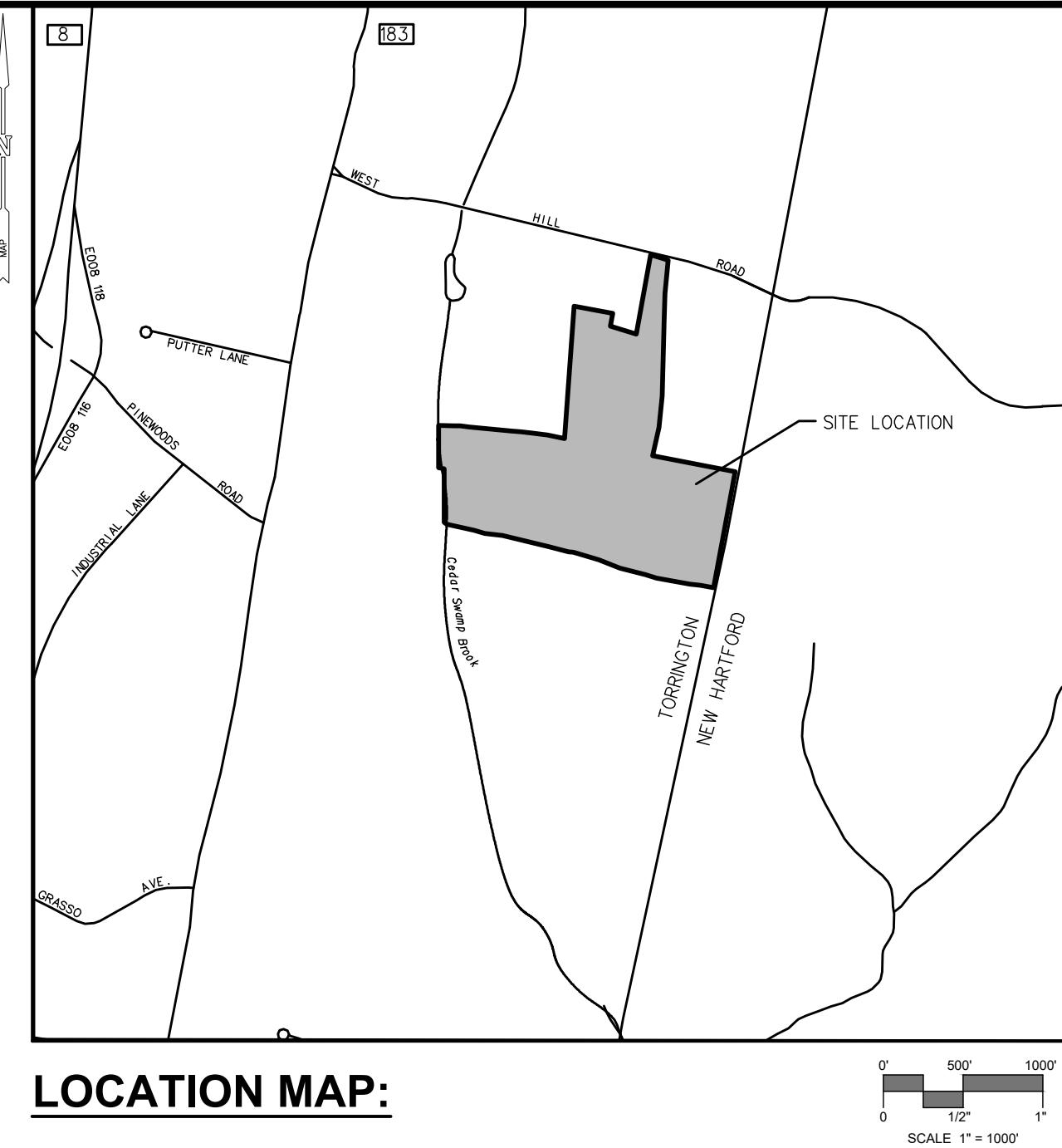


LIST OF DRAWINGS

<u>LIST OF DRAWINGS</u>		
NO.	NAME	TITLE
01	--	TITLE SHEET
02	LD	LEGEND & NOTES
03	IN	INDEX PLAN
04-06	EX-1 - EX-3	EXISTING CONDITIONS
07-08	SP-1 - SP-2	SITE PLAN
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16	--	ELECTRICAL ONE LINE DIAGRAM (BO)



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SURVEY NOTES

1. THIS PLAN IS BASED ON THE PLAN AND SURVEY PROVIDED BY DAVID J. LITTLE, LS, AS PREPARED FOR THE GREYSTONE RESUBDIVISION PLAN, 2005, AND SUBSEQUENTLY UPDATED BY GNSS CONTROL SURVEY BY SLR CONSULTING JANUARY 2024.
2. HORIZONTAL DATUM IS NAD83, VERTICAL DATUM IS NAVD88. BOTH WERE DERIVED FROM GPS OBSERVATIONS TAKEN ON SITE.
3. PER FIRM MAP CITY OF TORRINGTON, CONNECTICUT PANEL NO. 095081 0014B EFFECTIVE DATE: MAY 19, 1972 BY FEDERAL EMERGENCY MANAGEMENT AGENCY, THE PROPERTY IS NOT LOCATED IN THE 100 YEAR FLOOD HAZARD ZONE (ZONE A).
4. THE LODESTAR PROPERTY AND ALL ABUTTING PROPERTIES ARE LOCATED IN THE R-WP ZONING DISTRICT.
5. LOCATIONS OF UTILITIES SHOWN HEREIN ARE THE RESULT OF SURFACE EVIDENCE AS LOCATED BY FIELD SURVEY AND ANECDOTAL KNOWLEDGE OF THE SITE. THIS PLAN DOES NOT DEPICT THE EXACT LOCATIONS OF ALL UTILITIES WHICH MAY EXIST AT THIS TIME WITHIN THE PREMISES SURVEYED.
6. WETLAND DELINEATION PERFORMED BY IAN COLE, REGISTERED SOIL SCIENTIST, IN JUNE 2023.

GENERAL NOTES

1. ALL DIMENSIONS AND ELEVATIONS SHALL BE VERIFIED IN THE FIELD (V.I.F.) PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE.
2. THE CONTRACTOR SHALL PERFORM NECESSARY CONSTRUCTION NOTIFICATIONS, APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK AS REQUIRED BY THE CONTRACT DOCUMENTS.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND SAFETY OF TRAFFIC ON THE PUBLIC AND PRIVATE WAYS AFFECTED BY THE CONSTRUCTION OF THE PROJECT.
4. ALL SLOPES, VEGETATION, PAVING, WALKS, AND IMPROVEMENTS OUTSIDE THE AREAS TO BE AFFECTED BY THE CONSTRUCTION OF THE PROJECT SHALL BE PROTECTED. DAMAGES RESULTING FROM CONSTRUCTION ACTIVITIES OUTSIDE THE PROJECT LIMITS SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER.
5. THE CONTRACTOR IS RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. PERFORM CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH O.S.H.A. STANDARDS AND LOCAL REQUIREMENTS.
6. ALL STUMPS SHALL BE DISPOSED OF AT AN APPROVED OFFSITE LOCATION. THE BURYING OF STUMPS ON SITE SHALL NOT BE PERMITTED.
7. INFORMATION REGARDING THE LOCATION OF EXISTING UTILITIES HAS BEEN BASED UPON AVAILABLE INFORMATION AND MAY BE INCOMPLETE, AND WHERE SHOWN SHOULD BE CONSIDERED APPROXIMATE. THE LOCATION OF ALL EXISTING UTILITIES SHOULD BE CONFIRMED PRIOR TO BEGINNING CONSTRUCTION. CALL "CALL BEFORE YOU DIG", 1-800-922-4455. ALL UTILITY LOCATIONS THAT DO NOT MATCH THE VERTICAL OR HORIZONTAL CONTROL SHOWN ON THE PLANS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION.
8. SLR INTERNATIONAL CORPORATION ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF MAPS AND DATA WHICH HAVE BEEN SUPPLIED BY OTHERS.
9. A DEEP STORMWATER GENERAL PERMIT IS REQUIRED PRIOR TO INITIATION OF CONSTRUCTION.
10. ALL PROPOSED CONTOURS AND SPOT ELEVATIONS INDICATE FINISHED GRADE.
11. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ANY UTILITIES INCLUDING IRRIGATION PIPES PRIOR TO THE START OF CONSTRUCTION.
12. ALL CONSTRUCTION MATERIALS AND METHODS SHALL CONFORM TO THE CITY OF TORRINGTON REQUIREMENTS AND TO THE APPLICABLE SECTIONS OF THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS, BRIDGES, FACILITIES AND INCIDENTAL CONSTRUCTION, FORM 818 AND ADDENDUMS.
13. THE PLANS REQUIRE A CONTRACTOR'S WORKING KNOWLEDGE OF LOCAL, MUNICIPAL, WATER AUTHORITY, AND STATE CODES FOR UTILITY SYSTEMS. ANY CONFLICTS BETWEEN MATERIALS AND LOCATIONS SHOWN, AND LOCAL REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE EXECUTION OF WORK. THE ENGINEER WILL NOT BE HELD LIABLE FOR COSTS INCURRED TO IMPLEMENT OR CORRECT WORK WHICH DOES NOT CONFORM TO LOCAL CODE.
14. THE LIMIT OF WORK (LOW) AS SHOWN HEREIN IS APPROXIMATELY 19.0 ACRES AND INCLUDES TREE CLEARING LIMITS, GRADING, AND STORMWATER IMPROVEMENTS AS NECESSARY TO CONSTRUCT THE PROPOSED SOLAR FACILITY.
15. THESE PLANS HAVE BEEN PREPARED FOR REGULATORY APPROVAL ONLY. THEY ARE NOT INTENDED FOR USE DURING CONSTRUCTION.

CONSTRUCTION SEQUENCE AND SCHEDULE

CONSTRUCTION IS ANTICIPATED TO TAKE APPROXIMATELY 4 TO 6 MONTHS. THE GENERAL SEQUENCE OF CONSTRUCTION IS AS FOLLOWS:

1. STAKE OUT THE LIMIT OF WORK. NO DISTURBANCE IS TO TAKE PLACE BEYOND THE LIMITS OF WORK SHOWN ON THE DRAWINGS WITHOUT CONSENT OF THE ENGINEER.
2. INSTALL E&S CONTROLS FOR SITE CLEARING ACTIVITIES AS SHOWN ON THE DRAWINGS.
3. ALL SITE TREE CLEARING ACTIVITIES SHALL BE CONDUCTED BETWEEN THE PERIOD OF OCTOBER 31 THROUGH APRIL 15 DURING THE NORTHERN LONG EARED BAT HIBERNATION PERIOD. NO TREE CLEARING SHALL OCCUR OUTSIDE OF THE HIBERNATION PERIOD WINDOW.
4. CLEAR AND GRUB THE WOODED AREAS OF THE SITE WITHIN THE LIMITS SHOWN ON THE PLANS.
5. CONSTRUCT THE STORMWATER MANAGEMENT BASIN, OUTLET WEIR WALL, AND APPURTENANCES.
6. INSTALL PV SOLAR PANEL ARRAY RACKING, PANELS, ELECTRICAL COMPONENTS, CONDUIT, AND PERIMETER FENCING.
7. ANY DISTURBED SLOPES ARE TO BE ESTABLISHED TO FINISHED GRADE WITH PLACEMENT OF TOPSOIL AND SEED AS SOON AS PRACTICABLE. AREAS DISTURBED AND COMPACTED AS A RESULT OF PV ARRAY RACKING INSTALLATION SHALL BE AERATED BY APPROVED METHODS AND SEDED. INSTALL EROSION CONTROL BLANKETS AS SHOWN ON THE DRAWINGS.
8. REMOVE E&S CONTROLS ONCE ALL DISTURBED AREAS HAVE COMPLETELY STABILIZED.

GRADING NOTES

THE RESHAPING OF THE GROUND SURFACE WITH EXCAVATION AND FILLING OR A COMBINATION OF TO OBTAIN PLANNED GRADES, SHALL PROCEED IN ACCORDANCE WITH THE SEDIMENT AND EROSION MEASURES IN ADDITION THE FOLLOWING CRITERIA:

1. THE CUT FACE OF EARTH EXCAVATION SHALL NOT BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2:1).
2. THE PERMANENT EXPOSED FACES OF FILLS SHALL NOT BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2:1).
3. THE CUT FACE OF ROCK EXCAVATION SHALL NOT BE STEEPER THAN ONE HORIZONTAL TO TWO VERTICAL (1:2).
4. PROVISIONS SHOULD BE INCLUDED TO CONVEY SURFACE WATER SAFELY TO STORM DRAINS TO PREVENT SURFACE RUNOFF FROM DAMAGING CUT FACES AND FILL SLOPES.
5. NO FILL SHOULD BE PLACED WHERE IT WILL SLIDE OR WASH INTO ADJACENT WETLANDS, WATERCOURSES, OR WATER BODIES.
6. PRIOR TO ANY RE-GRADING, A STABILIZED CONSTRUCTION ENTRANCE SHALL BE PLACED AT THE ENTRANCE TO THE WORK AREA IN ORDER TO REDUCE MUD AND OTHER SEDIMENTS FROM LEAVING THE SITE.
7. GRADING SHALL BE COMPLETED TO 95% COMPACTION PER THE SPECIFICATIONS.

SEDIMENT & EROSION CONTROL NOTES

1. CONTRACTOR TO STAKE OUT LIMIT OF DISTURBANCE. NO DISTURBANCE IS TO TAKE PLACE BEYOND THE LIMITS OF WORK SHOWN.
2. CONTRACTOR TO INSTALL SEDIMENT AND EROSION CONTROLS ALONG THE PERIMETER, AS SHOWN ON THE SEDIMENT CONTROL PLAN, AND STABILIZED CONSTRUCTION ENTRANCES.
3. CLEAR AND GRUB SITE AND STOCKPILE TOPSOIL AS NECESSARY. PLACE COMPOST FILTER TUBES AROUND STOCKPILES.
4. CONSTRUCT STORMWATER MANAGEMENT BASIN IMMEDIATELY AFTER THE SITE IS CLEARED AND GRUBBED.
5. SLOPES ARE TO BE ESTABLISHED AS SOON AS PRACTICAL BEFORE PV ARRAY INSTALLATION. STABILIZE ALL SLOPES IMMEDIATELY AFTER THEIR ESTABLISHMENT.
6. THE SEDIMENT CONTROL PLAN SHALL BE MODIFIED BY THE CONTRACTOR AT THE DIRECTION OF THE OWNER'S REPRESENTATIVE AND THE MUNICIPALITY DESIGNATED REPRESENTATIVE AS NECESSITATED BY CHANGING SITE CONDITIONS.
7. ROUTINE SEDIMENT AND EROSION CONTROL INSPECTIONS SHALL CONTINUE UNTIL ALL DISTURBED AREAS HAVE STABILIZED PURSUANT TO THE CONNECTICUT STORMWATER GENERAL PERMIT.
8. ALL DEWATERING WASTE WATERS SHALL BE DISCHARGED IN A MANNER WHICH MINIMIZES THE DISCOLORATION OF THE RECEIVING WATERS.
9. THE SITE SHOULD BE KEPT CLEAN OF LOOSE DEBRIS, LITTER, AND BUILDING MATERIALS SUCH THAT NONE OF THE ABOVE ENTER WATERS OR WETLANDS.
10. A COPY OF ALL PLANS AND REVISIONS, AND THE SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON-SITE AT ALL TIMES DURING CONSTRUCTION.
11. SEDIMENT AND EROSION CONTROL MEASURES AS DEPICTED ON THESE PLANS AND DESCRIBED WITHIN THE SEDIMENT AND EROSION CONTROL NARRATIVE SHALL BE IMPLEMENTED AND MAINTAINED UNTIL PERMANENT COVER AND STABILIZATION IS ESTABLISHED. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL CONFORM TO THE 'GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, CONNECTICUT - 2024, CITY OF TORRINGTON REQUIREMENTS, AND IN ALL CASES BEST MANAGEMENT PRACTICES SHALL PREVAIL.

ZONING DATA

ZONING DISTRICT: R-WP (WATERSHED PROTECTION ZONE)	
<u>REQUIRED</u>	
MIN. LOT SIZE	65,000 SF
LOT WIDTH	200 FT
YARD SETBACKS FRONT SIDE REAR	50 FT 25 FT 100 FT
MAX HEIGHT	35 FT
MAX IMPERVIOUS SURFACE RATIO	0.3 FOR ANY USE
MAX BUILDING COVERAGE RATIO	0.1 FOR ANY USE
NET BUILDABLE AREA	30,000 SF RECTANGLE MIN LENGTH - 150 FT

EXISTING CONDITIONS LEGEND

BUILDING / STRUCTURE	
MAJOR CONTOUR	
MINOR CONTOUR	
TREELINE	
EDGE OF PAVEMENT	
PROPERTY LINE	
FLAGGED WETLAND LIMIT	
WETLAND FLAG	
WETLAND BUFFER	
ABUTTERS LINE	
BUILDING SETBACK LINE	
STONE WALL	
EASEMENT	
FENCE	
NOW OR FORMERLY	
IRON PIPE OR ROD FOUND	
UTILITY POLE	
CATCH BASIN	

SITE LAYOUT LEGEND

PROPOSED MAJOR CONTOUR	
PROPOSED MINOR CONTOUR	
SPOT ELEVATION	
GRAVEL SURFACE	
PROPOSED ELECTRICAL SERVICE (UNDERGROUND)	
PROPOSED ELECTRICAL SERVICE (OVERHEAD)	
PROPOSED WILDLIFE FENCE	
PROPOSED WILDLIFE FENCE WITH FABRIC SCREENING	
PHOTOVOLTAIC ARRAY	
PROPOSED UTILITY POLE	
PROPOSED TREE LINE	
POTENTIAL ARTIFICIAL ROOT LOCATION	
COMMON MILKWEED POLLINATOR PATCHES	

SEDIMENT & EROSION LEGEND

SEDIMENT FILTER FENCE	
COMPOST FILTER TUBE	
CONSTRUCTION ENTRANCE PAD	
SOIL STOCKPILE	
EROSION CONTROL BLANKET	
PROPOSED LIMIT OF WORK	

LEGEND & NOTES
LSE SERPENS LLC
WEST HILL ROAD
WEST HILL ROAD
TORRINGTON, CONNECTICUT

SMM SMM MRG
DESIGNED DRAWN CHECKED

AS NOTED

JANUARY 07, 2025

21617.00002

PROJECT NO.

02 OF 16

LD

SHEET NAME

FORMATION OF STORMWATER EMBANKMENTS

1. MATERIALS
ALL FILL MATERIALS SHALL BE OBTAINED FROM REQUIRED EXCAVATIONS OR DESIGNATED BORROW AREAS. FILL MATERIAL SHALL CONTAIN NO FROZEN MATERIAL, SOD, BRUSH, ROOTS, OR OTHER ORGANIC MATERIAL. EARTH EMBANKMENTS SHALL CONTAIN NO STONES OR ROCK PARTICLES OVER THREE INCHES IN DIAMETER. THE MATERIAL USED IN THE CENTER PORTION OF THE EMBANKMENT SHALL BE THE MOST IMPERVIOUS MATERIAL OBTAINED FROM THE BORROW AREAS IF REQUIRED. THE MORE PERVIOUS MATERIALS SHALL BE USED IN THE OUTER PORTION OF THE EMBANKMENT AS SHOWN ON THE PLANS.

A. IMPERVIOUS FILL MATERIALS
IMPERVIOUS FILL SHALL BE A GLACIAL TILL, AND TO BE PROVIDED FROM AN OFFSITE SOURCE IN THE QUANTITIES REQUIRED FOR COMPLETION. FILL TO BE APPROVED BY THE ENGINEER. GLACIAL TILL SHALL CONSIST OF HARD AND DURABLE PARTICLES OR FRAGMENTS AND SHALL BE FREE FROM ORGANIC MATTER AND OTHER OBJECTIONABLE MATERIALS. GLACIAL TILL SHALL GENERALLY CONFORM TO THE FOLLOWING GRADATION LIMITS:

U.S. STANDARD SIEVE SIZE	PERCENTAGE PASSING BY WEIGHT
3 INCH	100
NO. 4	60-95
NO. 10	50-95
NO. 40	30-75
NO. 100	20-65
NO. 200	10-40

2. EMBANKMENT FOUNDATION PREPARATION
AREAS WHERE EMBANKMENTS ARE TO BE FORMED SHALL BE CLEARED AND GRUBBED OF ALL TOPSOIL AND OTHER ORGANIC MATERIALS TO A DEPTH OF AT LEAST 24 INCHES. UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS, FOUNDATION AREAS SHALL BE SCARIFIED TO A DEPTH OF THREE INCHES PRIOR TO PLACEMENT OF FILL MATERIAL.

3. PLACEMENT
NO FILL SHALL BE PLACED UNTIL THE FOUNDATION PREPARATION AND EXCAVATIONS IN THE FOUNDATION HAVE BEEN COMPLETED. NO FILL SHALL BE PLACED ON A FROZEN SURFACE NOR SHALL FROZEN MATERIAL BE INCORPORATED.

A. EMBANKMENT
MATERIAL SHALL BE PLACED IN HORIZONTAL LAYERS. THE THICKNESS OF LAYERS SHALL BE SIX INCHES. DURING CONSTRUCTION, THE SURFACE OF THE FILL SHALL HAVE A CROWN OR CROSS-SLOPE OF NOT LESS THAN TWO PERCENT. EACH LAYER OR LIFT SHALL EXTEND OVER THE ENTIRE AREA OF THE FILL.

THE FILL SHALL BE FREE FROM LENSES, POCKETS, STREAKS, OR LAYERS OF MATERIAL DIFFERING SUBSTANTIALLY IN TEXTURE OR GRADATION FROM THE SURROUNDING MATERIAL. THE MORE PERVIOUS MATERIAL SHALL BE PLACED IN THE OUTSIDE PORTION OF THE EMBANKMENT OR AS INDICATED ON THE DRAWINGS. THE FINISHED FILL SHALL BE SHAPED AND GRADED TO THE LINES AND GRADE SHOWN ON THE DRAWINGS.

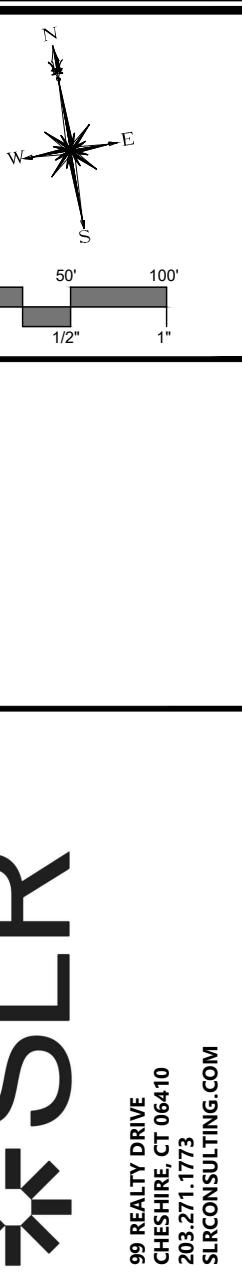
4. COMPACTION
A. EMBANKMENT
EMBANKMENT MATERIAL SHALL BE COMPACTED TO 95% OF THE STANDARD PROCTOR DENSITY AT NEAR OPTIMUM MOISTURE CONTENT AND BY THE COMPACTION EQUIPMENT SPECIFIED HEREIN. THE COMPACTION EQUIPMENT SHALL TRAVERSE THE ENTIRE SURFACE OF EACH LAYER OF FILL MATERIAL.

APPROVED TAMPING ROLLERS SHALL BE USED FOR COMPACTING ALL PARTS OF THE EMBANKMENTS WHICH THEY CAN EFFECTIVELY REACH. THE CONTRACTOR SHALL DEMONSTRATE THE EFFECTIVENESS OF THE ROLLER BY ACTUAL SOIL COMPACTION RESULTS OF THE SOIL TO BE USED IN THE EMBANKMENT WITH LABORATORY WORK PERFORMED BY AN APPROVED SOIL TESTING LABORATORY.

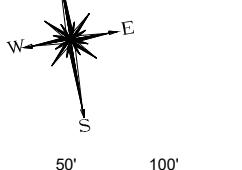
B. BACKFILL AT STRUCTURES
BACKFILL SHALL BE COMPACTED BY HAND TAMPING WITH MECHANICAL TAMPERS. HEAVY EQUIPMENT SHALL NOT BE OPERATED WITHIN TWO FEET OF ANY STRUCTURE.

5. FINISHING EMBANKMENTS
THE EMBANKMENTS SHALL BE CONSTRUCTED TO THE ELEVATIONS, LINES, GRADES AND CROSS-SECTIONS AS SHOWN ON THE DRAWINGS. THE EMBANKMENTS SHALL BE MAINTAINED IN A MANNER SATISFACTORY TO THE ENGINEER AND SURFACES SHALL BE COMPACT AND ACCURATELY GRADED BEFORE TOPSOIL IS PLACED ON THEM. THE CONTRACTOR SHALL CHECK THE EMBANKMENT SLOPES WITH STRING LINES TO INSURE THAT THEY CONFORM TO THE SLOPES GIVEN ON THE PLANS AND ARE UNIFORM FOR THE ENTIRE LENGTH OF THE SLOPE.

SHEET NAME



95 REALTY DRIVE
CHESTER, CT 06410
SLRCONSULTING.COM



INDEX PLAN
NOT FOR CONSTRUCTION

LS SERPENS LLC
WEST HILL ROAD SOLAR
WEST HILL ROAD
TORRINGTON, CONNECTICUT

SMM **SMM** **MRG**

DESIGNED DRAWN CHECKED

1"=100'

SCALE

JANUARY 07, 2025

DATE

21617.00002

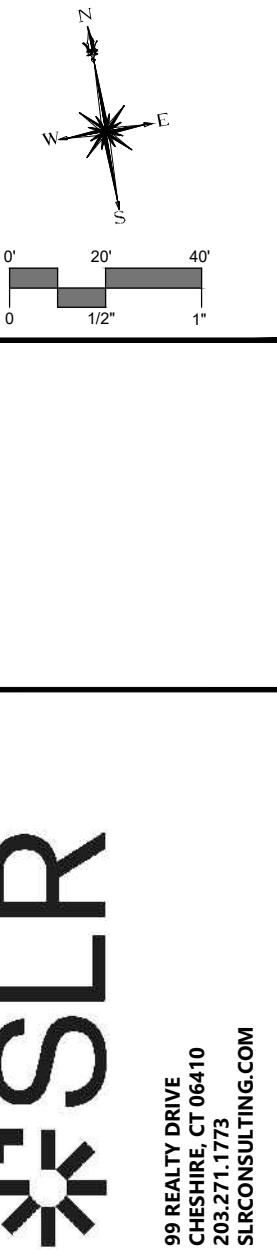
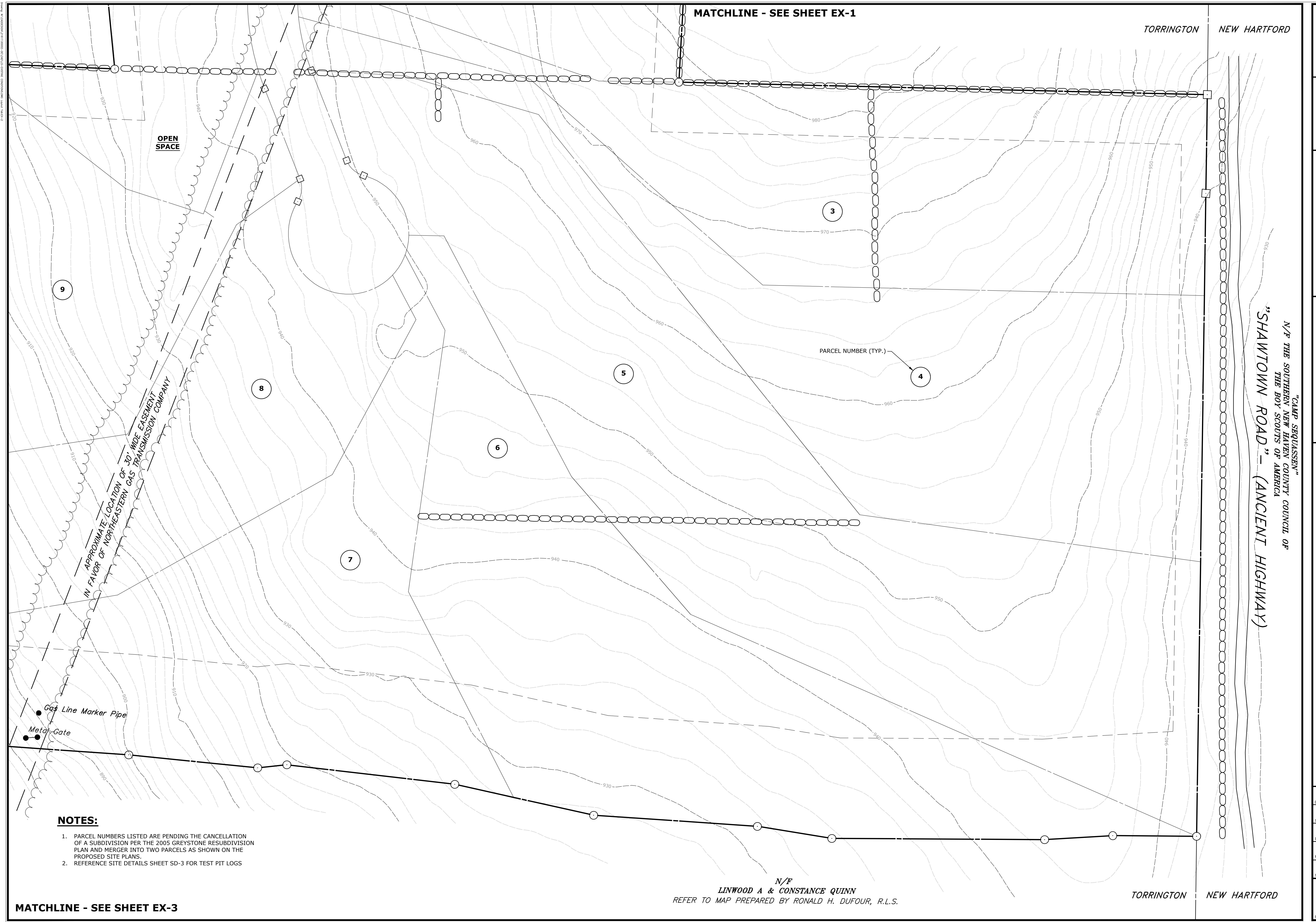
PROJECT NO.

03 OF 16

SHET NO.

IN

SHEET NAME



R
S
E

DESCRIPTION DATE BY

EXISTING CONDITIONS

LSE SERPENS LLC
WEST HILL ROAD SOLAR

WEST HILL ROAD
TORRINGTON, CONNECTICUT

SMM DESIGNED	SMM DRAWN	MRC CHECKED
1"=40'		
SCALE		
JANUARY 07, 2025		
DATE		
21617.00002		
PROJECT NO.		

EX-2

MATCHLINE - SEE SHEET EX-3

NOTES:

1. PARCEL NUMBERS LISTED ARE PENDING THE CANCELLATION OF A SUBDIVISION PER THE 2005 GREYSTONE RESUBDIVISION PLAN AND MERGER INTO TWO PARCELS AS SHOWN ON THE PROPOSED SITE PLANS.
2. REFERENCE SITE DETAILS SHEET SD-3 FOR TEST PIT LOGS

N/F
LINWOOD A & CONSTANCE QUINN
REFER TO MAP PREPARED BY RONALD H. DUFOUR, R.L.S.



SLR

99 REALTY DRIVE
CHESHIRE, CT 06410
203.271.1773
SLRCONSULTING.COM

SLRCONSULTING.COM

EXISTING CONDITIONS

LSE SERPENS LLC
WEST HILL ROAD SOLAR

WEST HILL ROAD
TORRINGTON, CONNECTICUT

SMM SIGNED	SMM DRAWN	MRC CHECKED
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1"=40'

JANUARY 07, 2025

21617.00002

PROJECT NO. 88-05-10

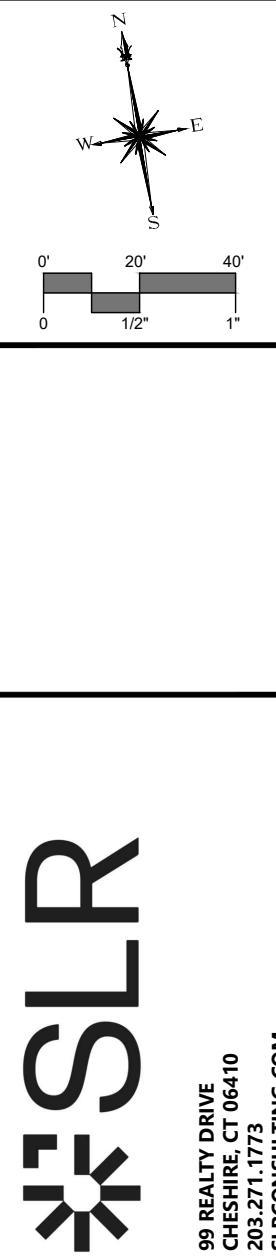
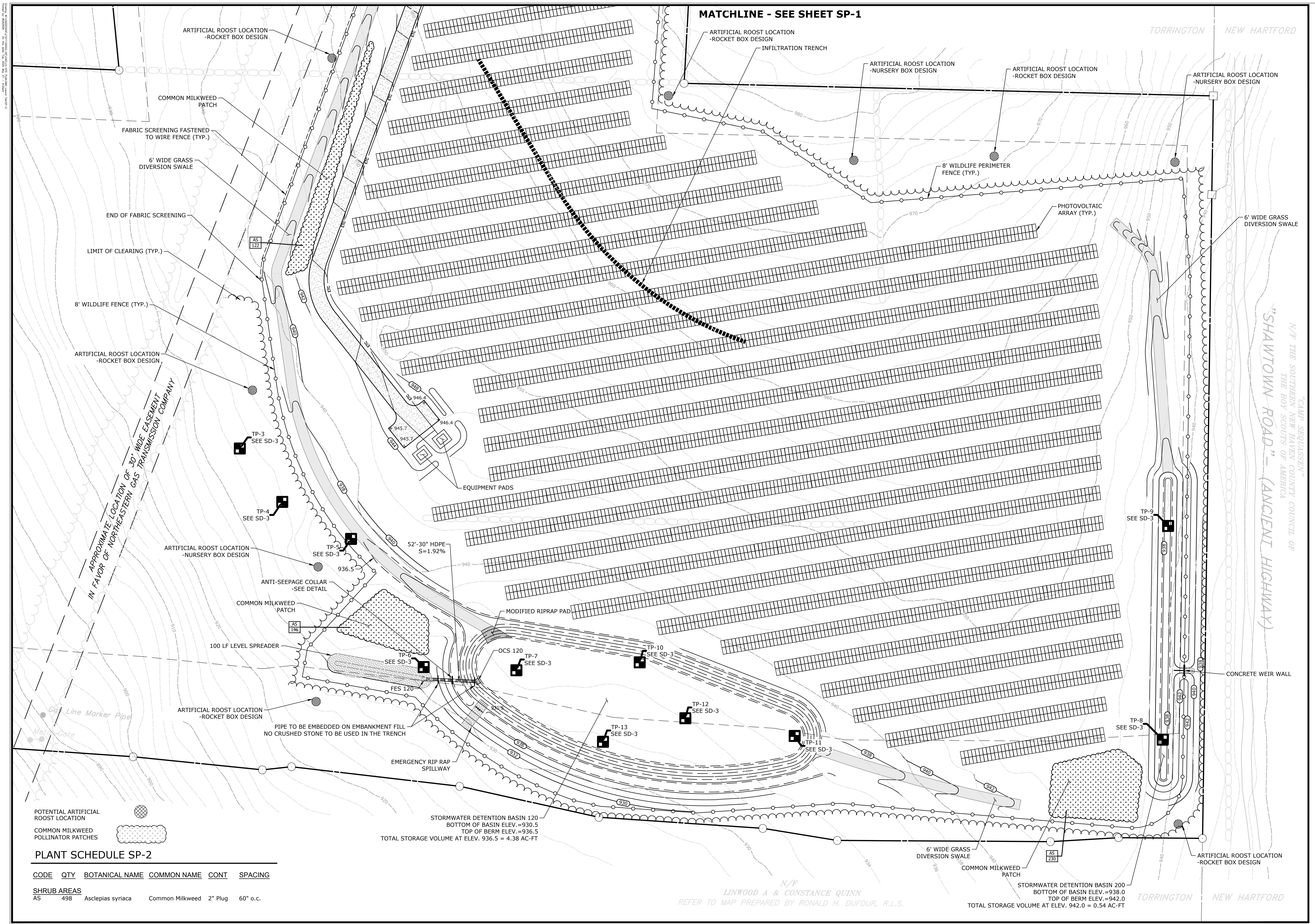
STREET NO.

EV 3

EX-3

ENTER NAME

STREET NAME



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S
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DESCRIPTION	DATE	B

NOT FOR CONSTRUCTION

THE PLAN

THE SERPENTS WEST HILL ROAD CORBRINGTON C

SMM IGNED	SMM DRAWN	MR CHECKED
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21617.00002
JECT NO.

08 OF 16

SP-2

SET NAME

86D

N/F
EDWIN GRENING, JR., TRUSTEE

86D

N/F
EDWIN GRENING, JR., TRUSTEE

N/F
KURT & CLARICE JOHNSON

N/F
NANCY A BLEAKNEY

N/F
CLARICE R. & KURT C. JOHNSON

N/F
BETH MOLLY ZUKOWSKI
REFER TO MAP PREPARED BY WILLIAM A. BERGLUND, R.L.S.

N/F
STEPHANIE SURV & MATTHEW CHASSE

N/F
KERRY HURLEY ODELL

N/F
FREDSALL BRADLEY TTE

N/F
CYNTHIA FASS

N/F
JOSEPH DUCOTEY

N/F
FREDSALL BRADLEY TTE

85B

86C

85B

84B

NRCS SOIL TYPES

84B: PAXTON AND MONTAUK FINE SANDY LOAMS, 3-8% SLOPES

85B: PAXTON AND MONTAUK FINE SANDY LOAMS, 3-8% SLOPES, VERY STONY

86C: PAXTON AND MONTAUK FINE SANDY LOAMS, 3-15% SLOPES, EXTREMELY STONY

86D: PAXTON AND MONTAUK FINE SANDY LOAMS, 15-35% SLOPES, EXTREMELY STONY

MATCHLINE - SEE SHEET SE-2

SEDIMENT & EROSION CONTROL PLAN

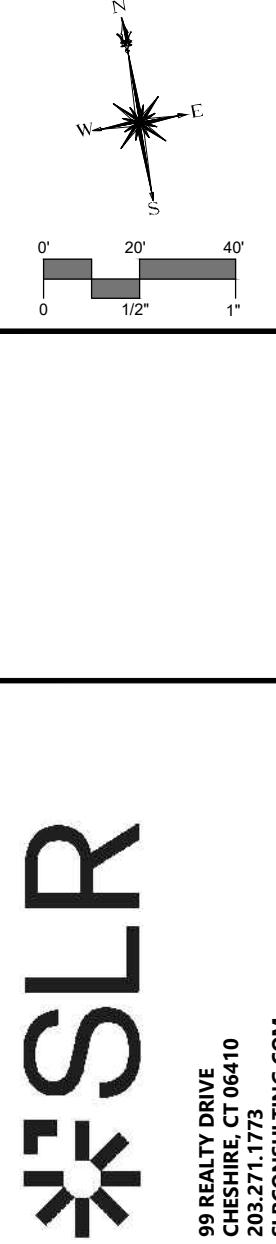
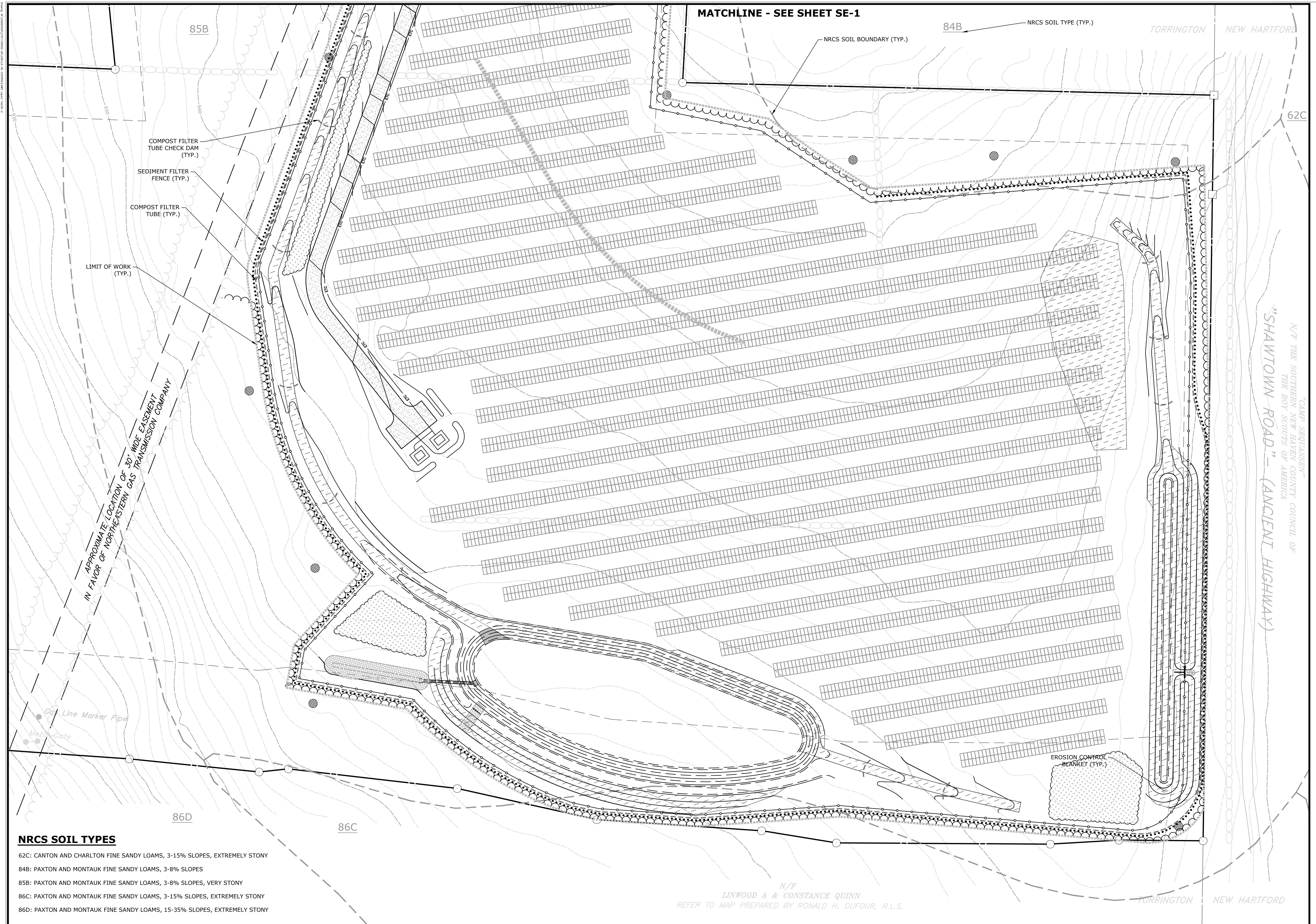
LSE SERPENS LLC
WEST HILL ROAD SOLAR

WEST HILL ROAD
TORRINGTON, CONNECTICUT

SMM	SMM	MR
SIGNED	DRAWN	CHECKED
1"=40'		
SCALE		
JANUARY 07, 2025		
DATE		
21617.00002		
OBJECT NO.		

SE-1

STREET NAME



SEDIMENT & EROSION CONTROL PLAN

**LSE SERPENS LLC
WEST HILL ROAD SOLAR
WEST HILL ROAD
TORRINGTON, CONNECTICUT**

SMM	SMM	MRG
DESIGNED	DRAWN	CHECKED
SCALE		
1"=40'		
JANUARY 07, 2025		
PROJECT NO.		
21617.00002		
SHEET NO.		
10 OF 16		
SHEET NAME		
SE-2		

SEDIMENT & EROSION CONTROL SPECIFICATIONS

GENERAL:

THESE GUIDELINES SHALL APPLY TO ALL WORK CONSISTING OF ANY AND ALL TEMPORARY AND/OR PERMANENT MEASURES TO CONTROL WATER POLLUTION AND SOIL EROSION, AS MAY BE REQUIRED, DURING THE CONSTRUCTION OF THE PROJECT.

IN GENERAL, ALL CONSTRUCTION ACTIVITIES SHALL PROCEED IN SUCH A MANNER SO AS NOT TO POLLUTE ANY WETLANDS, WATERCOURSE, WATERBODY, AND CONDUIT CARRYING WATER, ETC. THE CONTRACTOR SHALL LIMIT, INsofar AS POSSIBLE, THE SURFACE AREA OF EARTH MATERIALS EXPOSED BY CONSTRUCTION METHODS AND SHALL PROVIDE PERMANENT AND TEMPORARY POLLUTION CONTROL MEASURES TO PREVENT CONTAMINATION OF ADJACENT WETLANDS, WATERCOURSES, AND WATERBODIES, AND TO PREVENT, INsofar AS POSSIBLE, EROSION ON THE SITE.

ADDITIONAL TEMPORARY VEGETATIVE COVER MEASURES SUCH AS, FOR EXAMPLE, EROSION CONTROL MATS SHALL BE INSTALLED AS MAY BE DIRECTED BY THE TOWN PLANNER OR ZONING ENFORCEMENT OFFICER.

LAND GRADING

GENERAL:

1. THE RESHAPING OF THE GROUND SURFACE BY EXCAVATION AND FILLING OR A COMBINATION OF BOTH, TO OBTAIN PLANNED GRADES, SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING CRITERIA:
 2. THE CUT FACE OF EARTH EXCAVATION SHALL NOT BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2:1).
 3. THE PERMANENT EXPOSED FACES OF FILLS SHALL NOT BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2:1).
 4. THE CUT FACE OF ROCK EXCAVATION SHALL NOT BE STEEPER THAN ONE HORIZONTAL TO FOUR VERTICAL (1:4).
 5. PROVISION SHOULD BE MADE TO CONDUCT SURFACE WATER SAFELY TO STORM DRAINS TO PREVENT SURFACE RUNOFF FROM DAMAGING CUT FACES AND FILL SLOPES.
 6. EXCAVATIONS SHOULD NOT BE MADE SO CLOSE TO PROPERTY LINES AS TO ENDANGER ADJOINING PROPERTY WITHOUT PROTECTING SUCH PROPERTY FROM EROSION, SLIDING, SETTLING, OR CRACKING.
 7. NO FILL SHOULD BE PLACED WHERE IT WILL SLIDE OR WASH UPON THE PREMISES OF ANOTHER OWNER OR UPON ADJACENT WETLANDS, WATERCOURSES, OR WATERBODIES.
 8. PRIOR TO ANY REGRADING, A STABILIZED CONSTRUCTION ENTRANCE SHALL BE PLACED AT THE ENTRANCE TO THE WORK AREA IN ORDER TO REDUCE MUD AND OTHER SEDIMENTS FROM LEAVING THE SITE.

TOPSOILING

GENERAL:

1. TOPSOIL SHALL BE SPREAD OVER ALL EXPOSED AREAS IN ORDER TO PROVIDE A SOIL MEDIUM HAVING FAVORABLE CHARACTERISTICS FOR THE ESTABLISHMENT, GROWTH, AND MAINTENANCE OF VEGETATION.
2. UPON ATTAINING FINAL SUBGRADES, SCARIFY SURFACE TO PROVIDE A GOOD BOND WITH TOPSOIL.
3. REMOVE ALL LARGE STONES, TREE LIMBS, ROOTS AND CONSTRUCTION DEBRIS.
4. ACCORDING TO SOIL TEST OR AT THE RATE OF TWO (2) TONS PER ACRE, MATERIAL: 1. TOPSOIL SHOULD HAVE PHYSICAL, CHEMICAL, AND BIOLOGICAL CHARACTERISTICS FAVORABLE TO THE GROWTH OF PLANTS.
5. TOPSOIL SHOULD HAVE A SANDY OR LOAMY TEXTURE. 3. TOPSOIL SHOULD BE RELATIVELY FREE OF SUBSOIL MATERIAL AND MUST BE FREE OF STONES LARGER THAN 1.25", LUMPS OF SOIL, ROOTS, TREE LIMBS, TRASH, OR CONSTRUCTION DEBRIS. IT SHOULD BE FREE OF ROOTS OR RHIZOMES SUCH AS THISTLE, NUTGRASS, AND QUACKGRASS.
6. AN ORGANIC MATTER CONTENT OF SIX PERCENT (6%) IS REQUIRED. AVOID LIGHT COLORED SUBSOIL MATERIAL. SUITABLE AVOID TIDAL MARSH SOILS BECAUSE OF HIGH SALT CONTENT
7. SOLUBLE SALT CONTENT OF OVER 500 PARTS PER MILLION (PPM) IS LESS 6. THE pH SHOULD BE 5.5 TO 7 IF LESS, ADD LIME TO INCREASE pH TO AN ACCEPTABLE LEVEL.

EXECUTION

1. AVOID SPREADING WHEN TOPSOIL IS WET OR FROZEN.
2. SPREAD TOPSOIL UNIFORMLY TO A DEPTH OF AT LEAST SIX INCHES (6"), OR TO THE DEPTH SHOWN ON THE LANDSCAPING PLANS.

VEGETATIVE COVER SELECTION & MULCHING

TEMPORARY VEGETATIVE COVER:

PERENNIAL RYEGRASS 3 LBS/1,000 SQ.FT. (TOLIJUUM PERENNE)

PERMANENT VEGETATIVE COVER:

1. NEW ENGLAND CONSERVATION/WILDLIFE MIX OR EQUAL:

RECOMMENDED APPLICATION RATE: 1 POUND PER 1,750 SF
SEED MIX SPECIES: Virginia Wild Rye (*Elymus virginicus*), Little Bluestem (*Schizachyrium scoparium*), Big Bluestem (*Andropogon gerardii*), Creeping Red Fescue (*Festuca rubra*), Switch Grass (*Panicum virgatum*), Partridge Pea (*Chamissoa lasiocarpa*), Deer Tongue (*Panicum clandestinum*), Indian Grass (*Sorghastrum nutans*), Ox Eye Sunflower (*Helianthus annuus*), Common Milkweed (*Asclepias syriaca*), Spotted Joe Pye Weed (*Eupatorium maculatum*), Grass Leaved Goldenrod (*Euthamia graminifolia*), Blue Vervain (*Verbena hastata*), New England Aster (*Aster rosea-angustifolia*), Early Goldenrod (*Solidago juncea*).

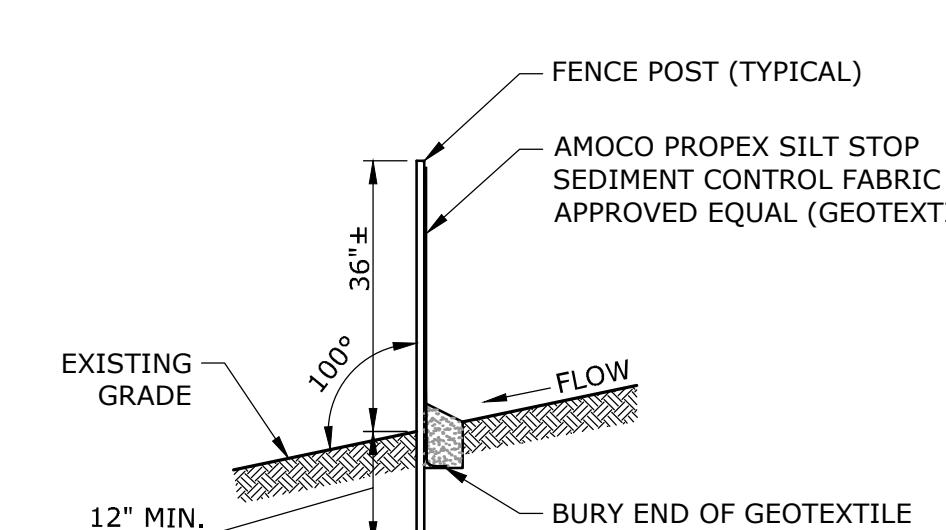
2. TEMPORARY MULCHING: STRAW AT 70-90 LBS/1,000 SQ.FT. (TEMPORARY VEGETATIVE AREAS) WOOD FIBER IN HYDROMULCH SLURRY 25-50 LBS/1,000 SQ.FT.

ESTABLISHMENT:

1. SMOOTH AND FIRM SEEDBED WITH CULTIPACKER OR OTHER SIMILAR EQUIPMENT PRIOR TO SEEDING (EXCEPT WHEN HYDROSEEDING).
2. SELECT ADAPTED SEED MIXTURE FOR THE SPECIFIC SITUATION. NOTE RATES AND THE SEEDING DATES (REFER TO TEMPORARY OR PERMANENT VEGETATIVE COVER REQUIREMENTS).
3. APPLY SEED UNIFORMLY ACCORDING TO RATE INDICATED, BY BROADCASTING, DRILLING, OR HYDRAULIC APPLICATION.
4. COVER GRASS AND LEGUME SEED WITH NOT MORE THAN 1/4 INCH OF SOIL. WITH SUITABLE EQUIPMENT (EXCEPT WHEN HYDROSEEDING).
5. MULCH IMMEDIATELY AFTER SEEDING, IF REQUIRED, ACCORDING TO TEMPORARY MULCHING SPECIFICATIONS. (REFER TO TEMPORARY OR PERMANENT VEGETATIVE COVER REQUIREMENTS).
6. USE PROPER INOCULANT ON ALL LEGUME SEEDINGS, USE FOUR (4) TIMES NORMAL RATES WHEN HYDROSEEDING.
7. THE USE OF SOD IS AN ACCEPTABLE ALTERNATIVE WHERE THERE IS A HEAVY CONCENTRATION OF WATER AND IN CRITICAL AREAS WHERE IT IS IMPORTANT TO GET A QUICK VEGETATIVE COVER TO PREVENT EROSION.

MAINTENANCE:

1. TEST FOR SOIL ACIDITY EVERY THREE (3) YEARS AND LIME AS REQUIRED.
2. ON SITES WHERE GRASSES PREDOMINATE, BROADCAST ANNUALLY 500 POUNDS OF 10-10-10 FERTILIZER PER ACRE (12 LBS. PER 1,000 SQ. FT.) OR AS NEEDED ACCORDING TO ANNUAL SOIL TESTS.
3. ON SITES WHERE LEGUMES PREDOMINATE, BROADCAST EVERY THREE (3) YEARS OR AS INDICATED BY SOIL TEST 300 POUNDS OF 0-20-20 OR EQUIVALENT PER ACRE (8 LBS PER 1,000 SQ. FT.).



SEDIMENT FILTER FENCE

NOT TO SCALE

EROSION CHECKS

GENERAL:

TEMPORARY PERVIOUS BARRIERS USING BALES OF HAY OR STRAW, HELD IN PLACE WITH STAKES DRIVEN THROUGH THE BALES AND INTO THE GROUND OR GEOTEXTILE FABRIC FASTENED TO A FENCE POST AND BURIED INTO THE GROUND, SHALL BE INSTALLED AND MAINTAINED AS REQUIRED TO CHECK EROSION AND REDUCE SEDIMENTATION.

CONSTRUCTION:

1. BALES SHOULD BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED INTO THE SOIL A MINIMUM OF FOUR (4") INCHES.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY WOOD STAKES OR REINFORCEMENT BARS DRIVEN THROUGH THE BALES AND INTO THE GROUND. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD THE PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
4. GEOTEXTILE FABRIC SHALL BE SECURELY ANCHORED AT THE TOP OF A THREE FOOT (3') HIGH FENCE AND BURIED A MINIMUM OF SIX INCHES (6") TO THE SOIL. SEAMS BETWEEN SECTIONS OF FILTER FABRIC SHALL OVERLAP A MINIMUM OF TWO FEET (2').

INSTALLATION AND MAINTENANCE:

1. BALED HAY EROSION BARRIERS SHALL BE INSTALLED AT ALL STORM SEWER INLETS.
2. BALED HAY EROSION BARRIERS AND GEOTEXTILE FENCE SHALL BE INSTALLED AT THE LOCATION INDICATED ON THE PLAN AND IN ADDITIONAL AREAS AS MAY BE DEEMED APPROPRIATE DURING CONSTRUCTION.
3. ALL EROSION CHECKS SHALL BE MAINTAINED UNTIL ADJACENT AREAS ARE STABILIZED.
4. INSPECTION SHALL BE FREQUENT (PER TABLE BELOW) AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED. EROSION CHECKS SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORMWATER FLOW OR DRAINAGE.

TEMPORARY VEGETATIVE COVER

TEMPORARY VEGETATIVE COVER SHALL BE ESTABLISHED ON ALL UNPROTECTED AREAS THAT PRODUCE SEDIMENT, AREAS WHERE FINAL GRADING HAS BEEN COMPLETED, AND AREAS WHERE THE ESTIMATED PERIOD OF BARE SOIL EXPOSURE IS LESS THAN 12 MONTHS. TEMPORARY VEGETATIVE COVER SHALL BE APPLIED IF AREAS WILL NOT BE PERMANENTLY SEEDED BY SEPTEMBER 1.

GENERAL:

1. INSTALL REQUIRED SURFACE WATER CONTROL MEASURES.
2. REMOVE LOOSE ROCK, STONE, AND CONSTRUCTION DEBRIS FROM AREA.
3. APPLY LIME ACCORDING TO SOIL TEST OR AT A RATE OF TWO (2) TON OF GROUND DOLOMITIC LIMESTONE PER ACRE (5 LBS. PER 100 SQ. FT.).
4. APPLY FERTILIZER ACCORDING TO SOIL TEST OR AT THE RATE OF 300 LBS. OF 10-10-10 PER ACRE (7 LBS. PER 1,000 SQ. FT.) AND SECOND APPLICATION OF 200 LBS. OF 10-10-10 (5 LBS. PER 1,000 SQ. FT.) WHEN GRASS IS FOUR INCHES (4") TO SIX INCHES (6") HIGH. APPLY ONLY WHEN GRASS IS DRY.
5. UNLESS HYDROSEEDED, WORK IN LIME AND FERTILIZER TO A DEPTH OF FOUR (4") INCHES USING A DISK OR ANY SUITABLE EQUIPMENT.
6. TILLAGE SHOULD ACHIEVE A REASONABLY UNIFORM LOOSE SEEDBED. WORK ON CONTOUR IF SITE IS SLOPING.

SITE PREPARATION:

1. SELECT APPROPRIATE SPECIES FOR THE SITUATION. NOTE RATES AND SEEDING DATES (SEE VEGETATIVE COVER SELECTION & MULCHING).
2. APPLY SEED UNIFORMLY ACCORDING TO THE RATE INDICATED BY BROADCASTING, DRILLING, OR HYDRAULIC APPLICATION.
3. UNLESS HYDROSEEDED, COVER RYEGRASS SEEDS WITH NOT MORE THAN 1/4 INCH OF SOIL USING SUITABLE EQUIPMENT.
4. MULCH IMMEDIATELY AFTER SEEDING IF REQUIRED. (SEE VEGETATIVE)

PERMANENT VEGETATIVE COVER

GENERAL:

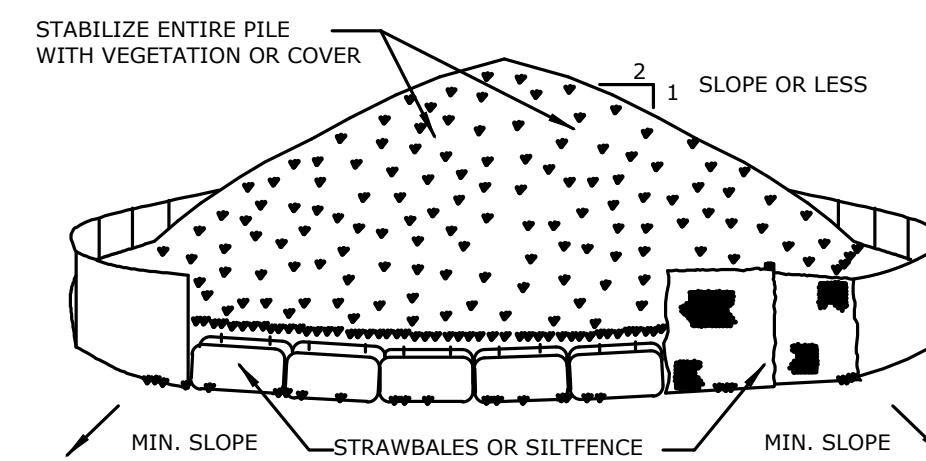
PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED AS VARIOUS SECTIONS OF THE PROJECT ARE COMPLETED IN ORDER TO STABILIZE THE SOIL, REDUCE DOWNSTREAM DAMAGE FROM SEDIMENT AND RUNOFF, AND TO ENHANCE THE AESTHETIC VALUE OF THE SITE. 2. THE AREAS ARE THE CONSTRUCTION AREAS SUBJECT TO EROSION WHERE FINAL GRADING HAS BEEN COMPLETED AND A PERMANENT COVER IS NEEDED.

SITE PREPARATION:

1. INSTALL REQUIRED SURFACE WATER CONTROL MEASURES.
2. REMOVE LOOSE ROCK, STONE, AND CONSTRUCTION DEBRIS FROM AREA.
3. PERFORM ALL PLANTING OPERATIONS PARALLEL TO THE CONTOURS OF THE SLOPE.
4. APPLY TOPSOIL AS INDICATED ELSEWHERE HEREIN.
5. APPLY FERTILIZER ACCORDING TO SOIL TEST OR PER THE TECHNICAL SPECIFICATIONS.

POLLINATOR VEGETATION COVER MANAGEMENT

1. MOWING SCHEDULE SHALL OCCUR OUTSIDE THE GROWING SEASON (BETWEEN OCTOBER 1 AND MAY 1) NO MORE THAN ONCE PER YEAR.
2. MOWER HEIGHT SHALL BE SET BETWEEN 7-12 INCHES ABOVE GROUND LEVEL.
3. MOWING PATTERN SHOULD BEGIN AT THE CENTER OF THE POLLINATOR PATCH, MOWING OUTWARD TOWARDS THE EDGES TO REDUCE WILDLIFE STRIKES.

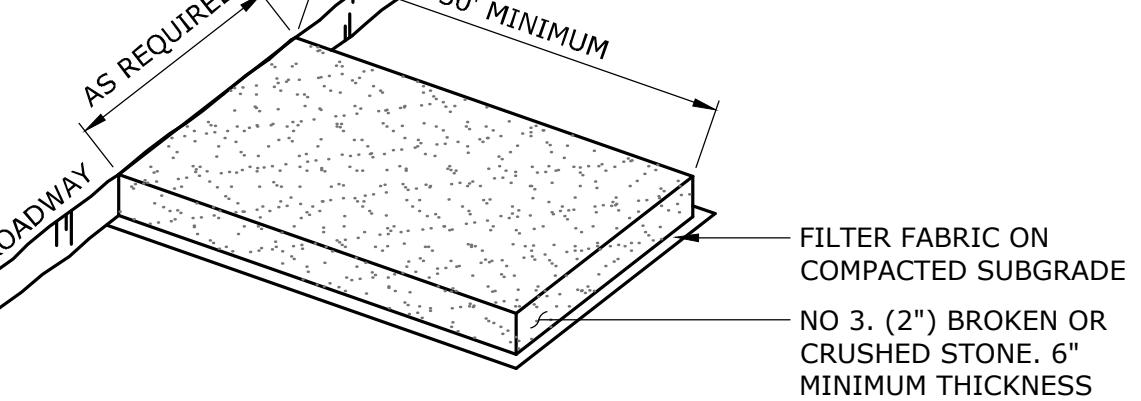
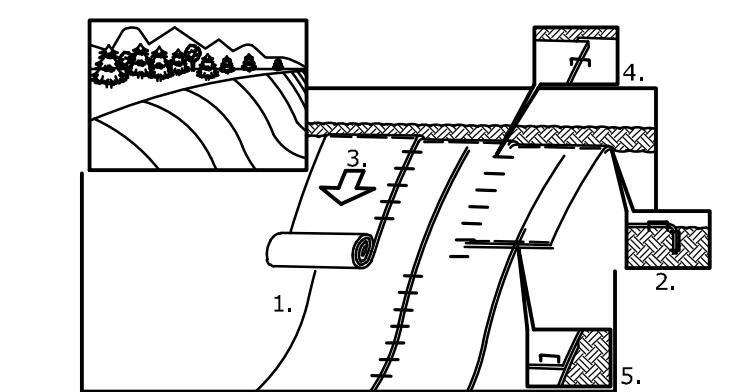


INSTALLATION NOTES

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1:2.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR STRAWBALES, THEN STABILIZED WITH VEGETATION OR COVERED.

STOCKPILE PROTECTION (STK)

NOT TO SCALE



NOTES:

1. CONSTRUCTION ENTRANCE PAD SHALL BE INSTALLED AND MAINTAINED DURING OPERATIONS WHICH GENERATE VEHICULAR TRACKING OF MUD.

CONSTRUCTION ENTRANCE PAD

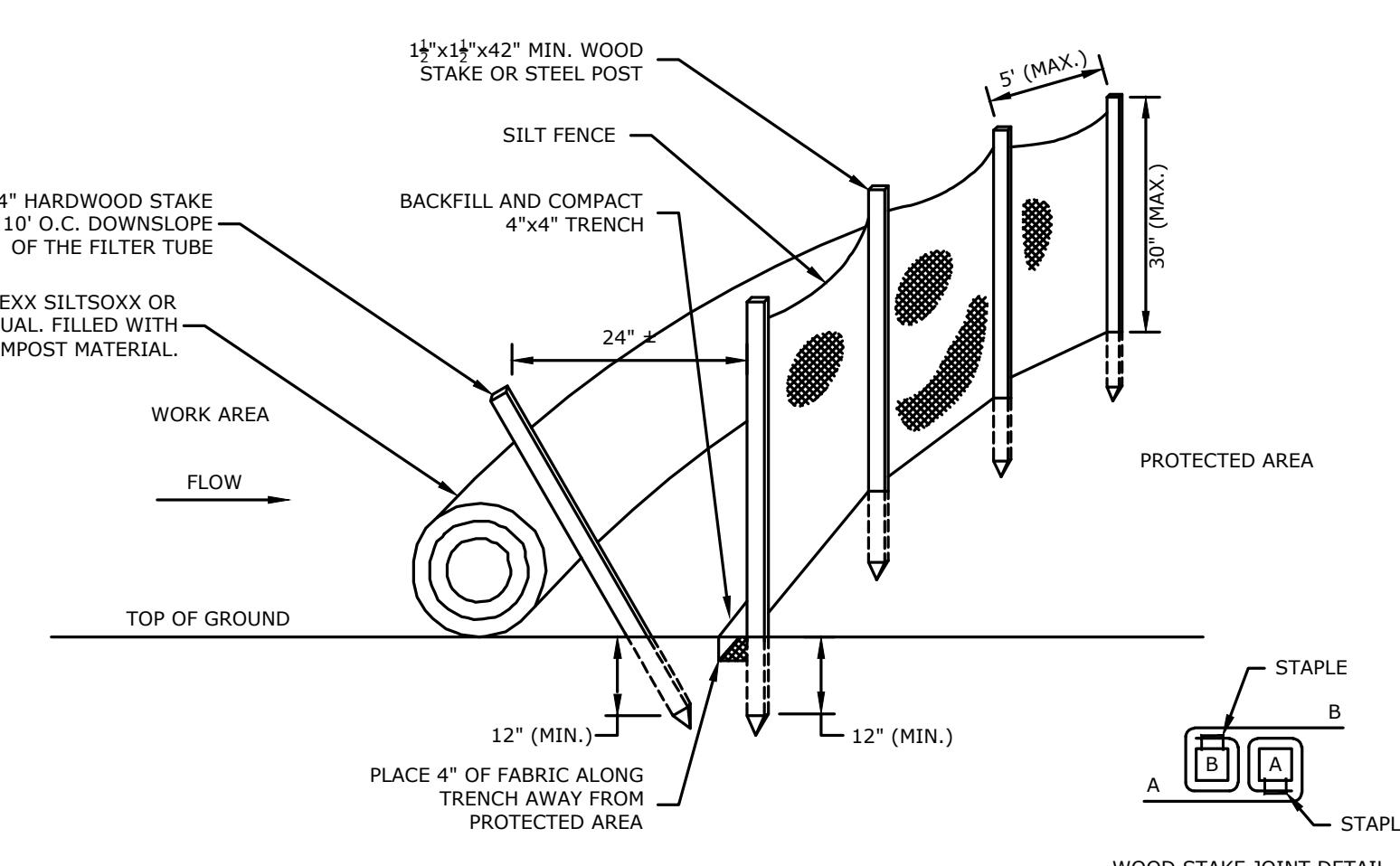
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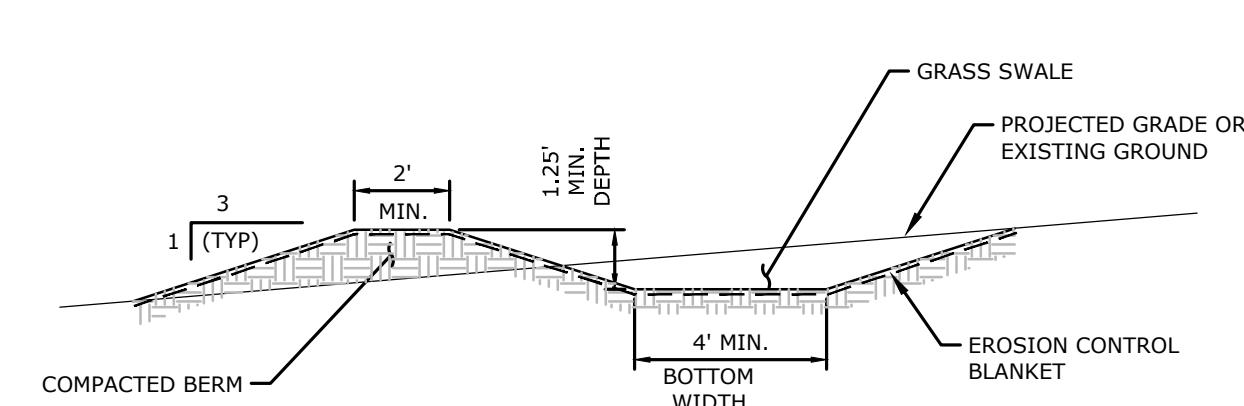
SEDIMENT & EROSION CONTROL NOTES & DETAILS

LSE SERPENS LLC
WEST HILL ROAD SOLAR
WEST HILL ROAD
TORRINGTON, CONNECTICUT



SILT FENCE BARRIER & COMPOST FILTER TUBE

NOT FOR CONSTRUCTION



1. ALL SLOPES TO BE LOAMED AND SEDED AS SHOWN.
2. THE INTENT IS TO USE EXCAVATED MATERIAL FROM THE SWALE TO SHAPE THE BERM.

GRASS DIVERSION SWALE

NOT TO SCALE

EROSION CONTROL MEASURE	CONTROL OBJECTIVE	INSPECTION/MAINTENANCE	FAILURE INDICATORS	REMOVAL
SILT FENCE	- INTERCEPT, AND REDIRECT/DETAIN SMALL AMOUNTS OF SEDIMENT FROM SMALL DISTURBED AREAS. - DECREASE VELOCITY OF SHEET FLOW. - PROTECT SENSITIVE SLOPES OR SOILS FROM EXCESSIVE WATER FLOW.	INSPECT AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL OF 0.5 INCHES OR MORE. ACCUMULATED SEDIMENT MUST BE REMOVED ONCE ITS DEPTH IS EQUAL TO 1/2 THE TRENCH HEIGHT. INSPECT FREQUENTLY DURING PUMPING OPERATIONS IF USED FOR Dewatering OPERATIONS.	- PHYSICAL DAMAGE OR DECOMPOSITION - EVIDENCE OF OVERTOPPED OR UNDERCUT FENCE - EVIDENCE OF SIGNIFICANT FLOWS EVADING CAPTURE - REPETITIVE FAILURE	SILT FENCE MAY BE REMOVED AFTER UPHILL AND SENSITIVE AREAS HAVE BEEN PERMANENTLY STABILIZED.
COMPOST FILTER TUBE	- INTERCEPT, AND REDIRECT/DETAIN SMALL AMOUNTS OF SEDIMENT FROM SMALL DISTURBED AREAS. - DECREASE VELOCITY OF SHEET FLOW. - PROTECT SENSITIVE SLOPES OR SOILS FROM EXCESSIVE WATER FLOW.	INSPECT AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL OF 0.5 INCHES OR MORE. ACCUMULATED SEDIMENT MUST BE REMOVED ONCE THE DEPTH OF SEDIMENT IS WITHIN 3" OF THE TOP OF THE BARRIER. INSPECT FREQUENTLY DURING PUMPING OPERATIONS IF USED FOR Dewatering OPERATIONS.	- PHYSICAL DAMAGE OR DECOMPOSITION - EVIDENCE OF OVERTOPPED OR UNDERCUT FENCE - EVIDENCE OF SIGNIFICANT FLOWS EVADING CAPTURE - REPETITIVE FAILURE	COMPOST FILTER TUBE MAY BE REMOVED AFTER UPHILL AREAS HAVE BEEN PERMANENTLY STABILIZED.
CONSTRUCTION ENTRANCE	- REDUCE THE TRACKING OF SEDIMENT OFF-SITE ONTO PAVED SURFACES.	INSPECT AT THE END OF EACH WORK DAY AND IMMEDIATELY REPAIR DAMAGES. PERIODIC ADDITION OF STONE, OR LENGTHENING OF ENTRANCE MAY BE REQUIRED AS CONDITIONS DEMAND. ALL SPILLAGE SPILLED, DROPPED, WASHED, OR TRACKED ONTO PAVED SURFACES AS A RESULT OF INEFFICIENCY OF CONSTRUCTION ENTRANCE SHALL BE IMMEDIATELY REMOVED.	- SEDIMENT IN ROADWAY ADJACENT TO SITE	CONSTRUCTION ENTRANCE MAY BE REMOVED ONCE THE SITE HAS BEEN PERMANENTLY STABILIZED,

FORMATION OF EMBANKMENTS FOR STORMWATER BASINS

1. MATERIALS

ALL FILL MATERIALS SHALL BE OBTAINED FROM REQUIRED EXCAVATIONS OR DESIGNATED BORROW AREAS. FILL MATERIAL SHALL CONTAIN NO FROZEN MATERIAL, SOD, BRUSH, ROOTS, OR OTHER ORGANIC MATERIAL. EARTH EMBANKMENTS SHALL CONTAIN NO STONES OR ROCK PARTICLES OVER THREE INCHES IN DIAMETER.

THE MATERIAL USED IN THE CENTER PORTION OF THE EMBANKMENT SHALL BE THE MOST IMPERVIOUS MATERIAL OBTAINED FROM THE BORROW AREAS IF REQUIRED. THE MORE PERVIOUS MATERIALS SHALL BE USED IN THE OUTER PORTION OF THE EMBANKMENT AS SHOWN ON THE PLANS.

A. IMPERVIOUS FILL MATERIALS

IMPERVIOUS FILL SHALL BE A GLACIAL TILL, AND TO BE PROVIDED FROM AN OFFSITE SOURCE IN THE QUANTITIES REQUIRED FOR COMPLETION. FILL TO BE APPROVED BY THE ENGINEER. GLACIAL TILL SHALL CONSIST OF HARD AND DURABLE PARTICLES OR FRAGMENTS AND SHALL BE FREE FROM ORGANIC MATTER AND OTHER OBJECTIONABLE MATERIALS. GLACIAL TILL SHALL GENERALLY CONFORM TO THE FOLLOWING GRADATION LIMITS:

U.S. STANDARD	PERCENTAGE PASSING
STIEVE SIZE	BY WEIGHT
3 INCH	100
NO. 4	60-95
NO. 10	50-95
NO. 40	30-75
NO. 100	20-65
NO. 200	10-40

2. EMBANKMENT FOUNDATION PREPARATION

AREAS WHERE EMBANKMENTS ARE TO BE FORMED SHALL BE CLEARED AND GRUBBED OF ALL TOPSOIL AND OTHER ORGANIC MATERIALS TO A DEPTH OF AT LEAST 24 INCHES. UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS, FOUNDATION AREAS SHALL BE SCARIFIED TO A DEPTH OF THREE INCHES PRIOR TO PLACEMENT OF FILL MATERIAL.

3. PLACEMENT

NO FILL SHALL BE PLACED UNTIL THE FOUNDATION PREPARATION AND EXCAVATIONS IN THE FOUNDATION HAVE BEEN COMPLETED. NO FILL SHALL BE PLACED ON A FROZEN SURFACE NOR SHALL FROZEN MATERIAL BE INCORPORATED.

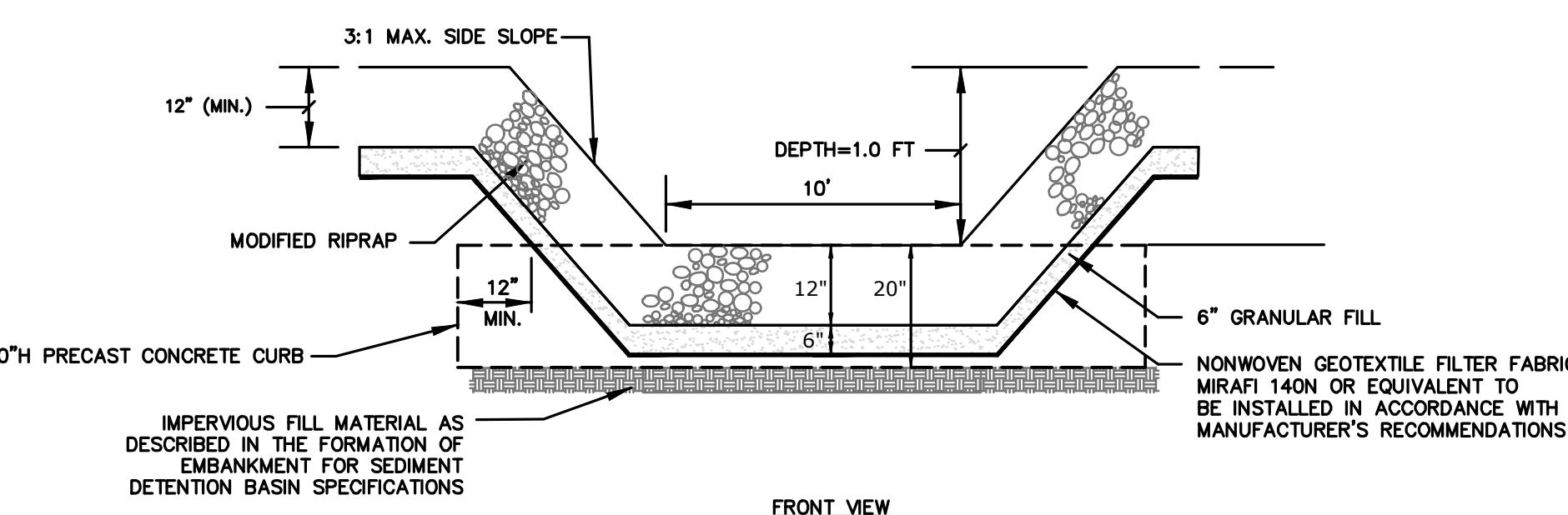
A. EMBANKMENT

MATERIAL SHALL BE PLACED IN HORIZONTAL LAYERS. THE THICKNESS OF LAYERS SHALL BE SIX INCHES. DURING CONSTRUCTION, THE SURFACE OF THE FILL SHALL HAVE A CROWN OR CROSS-SLOPE OF NOT LESS THAN TWO PERCENT. EACH LAYER OR LIFT SHALL EXTEND OVER THE ENTIRE AREA OF THE FILL.

THE FILL SHALL BE FREE FROM LENSES, POCKETS, STREAMS, OR LAYERS OF MATERIAL DIFFERING SUBSTANTIALLY IN TEXTURE OR GRADATION FROM THE SURROUNDING MATERIAL. THE MORE PERVIOUS MATERIAL SHALL BE PLACED IN THE OUTSIDE PORTION OF THE EMBANKMENT OR AS INDICATED ON THE DRAWINGS. THE FINISHED FILL SHALL BE SHAPED AND GRADED TO THE LINES AND GRADE SHOWN ON THE DRAWINGS.

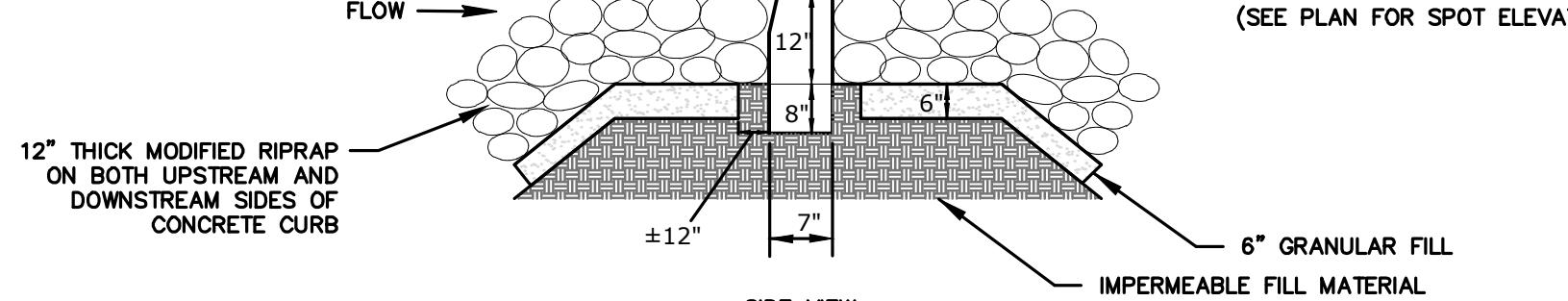
B. BACKFILL AT THE PIPE OUTLET

BACKFILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED THREE INCHES IN THICKNESS AND SHALL BE BROUGHT UP UNIFORMLY AROUND THE OUTLET PIPE AND FLARED END SECTION



EMERGENCY RIPRAP SPILLWAY

NOT TO SCALE



4. MOISTURE CONTROL

THE MOISTURE CONTENT OF MATERIALS IN THE EMBANKMENT SHALL BE CONTROLLED TO MEET THE REQUIREMENTS OF SECTION 5. "COMPACTION OF EMBANKMENT". WHEN NECESSARY, MOISTURE SHALL BE ADDED BY USE OF APPROVED SPRINKLING EQUIPMENT. WATER SHALL BE ADDED UNIFORMLY AND EACH LAYER SHALL BE THOROUGHLY DISKED OR HARRROWED TO PROVIDE PROPER MIXING. ANY LAYER FOUND TOO WET FOR PROPER COMPACTION SHALL BE ALLOWED TO DRY BEFORE ROLLING, PLACING OR ROLLING OF MATERIAL ON EARTH FILLS WILL NOT BE PERMITTED DURING OR IMMEDIATELY AFTER RAINFALLS WHICH INCREASE THE MOISTURE CONTENT BEYOND THE LIMIT OF SATISFACTORY COMPACTION. THE EARTH FILL SHALL BE BROUGHT UP UNIFORMLY AND IT'S TOP SHALL BE KEPT GRADED AND SLOPED SO THAT A MINIMUM OF RAINWATER WILL BE RETAINED THEREON. COMPACTED EARTH FILL DAMAGED BY WASHING SHALL BE ACCEPTABLY REPLACED BY THE CONTRACTOR.

5. COMPACTION

A. EMBANKMENT

EMBANKMENT MATERIAL SHALL BE COMPAKTED TO 95% OF THE STANDARD PROCTOR DENSITY AT NEAR OPTIMUM MOISTURE CONTENT AND BY THE COMPAKCTION EQUIPMENT SPECIFIED HEREIN. THE COMPAKCTION EQUIPMENT SHALL TRAVERSE THE ENTIRE SURFACE OF EACH LAYER OF FILL MATERIAL.

APPROVED TAMPING ROLLERS SHALL BE USED FOR COMPAKTING ALL PARTS OF THE EMBANKMENTS WHICH THEY CAN EFFECTIVELY REACH. THE CONTRACTOR SHALL DEMONSTRATE THE EFFECTIVENESS OF THE ROLLER BY ACTUAL SOIL COMPAKCTION RESULTS OF THE SOIL TO BE USED IN THE EMBANKMENT WITH LABORATORY WORK PERFORMED BY AN APPROVED SOIL TESTING LABORATORY.

B. BACKFILL AT OUTLET CONDUIT

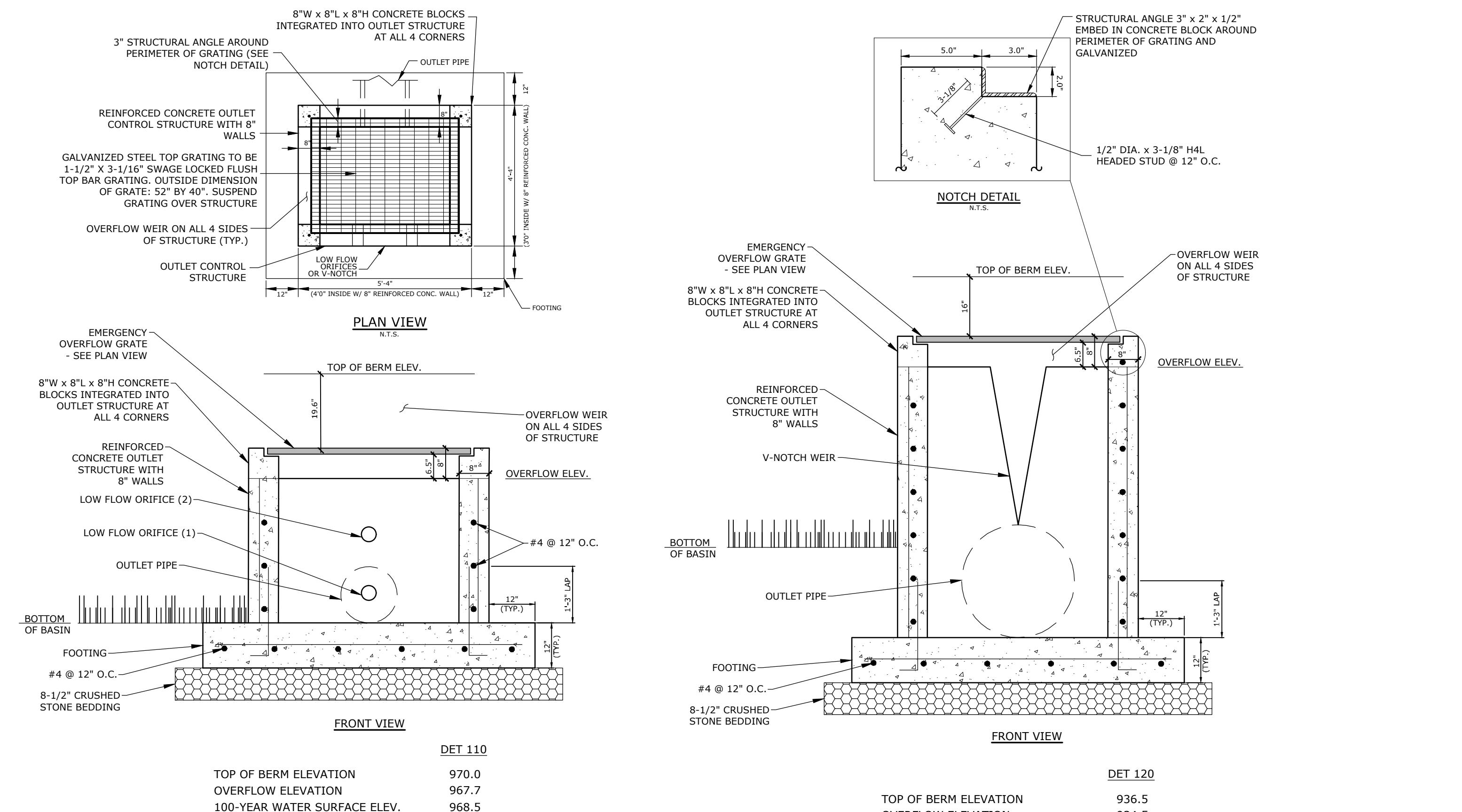
BACKFILL SHALL BE COMPAKTED BY HAND TAMPING WITH MECHANICAL TAMERS. HEAVY EQUIPMENT SHALL NOT BE OPERATED WITHIN TWO FEET OF ANY STRUCTURE. EQUIPMENT SHALL NOT BE ALLOWED TO OPERATE OVER THE OUTLET CONDUITS UNTIL THERE IS 24 INCHES OF FILL OVER THE PIPE CONDUITS.

6. FINISHING EMBANKMENTS

THE EMBANKMENTS SHALL BE CONSTRUCTED TO THE ELEVATIONS, LINES, GRADES AND CROSS-SECTIONS AS SHOWN ON THE DRAWINGS. THE EMBANKMENTS SHALL BE MAINTAINED IN A MANNER SATISFACTORY TO THE ENGINEER AND SURFACES SHALL BE COMPACT AND ACCURATELY GRADED BEFORE TOPSOIL IS PLACED ON THEM. THE CONTRACTOR SHALL CHECK THE EMBANKMENT SLOPES WITH STRING LINES TO INSURE THAT THEY CONFORM TO THE SLOPES GIVEN ON THE PLANS AND ARE UNIFORM FOR THE ENTIRE LENGTH OF THE SLOPE.

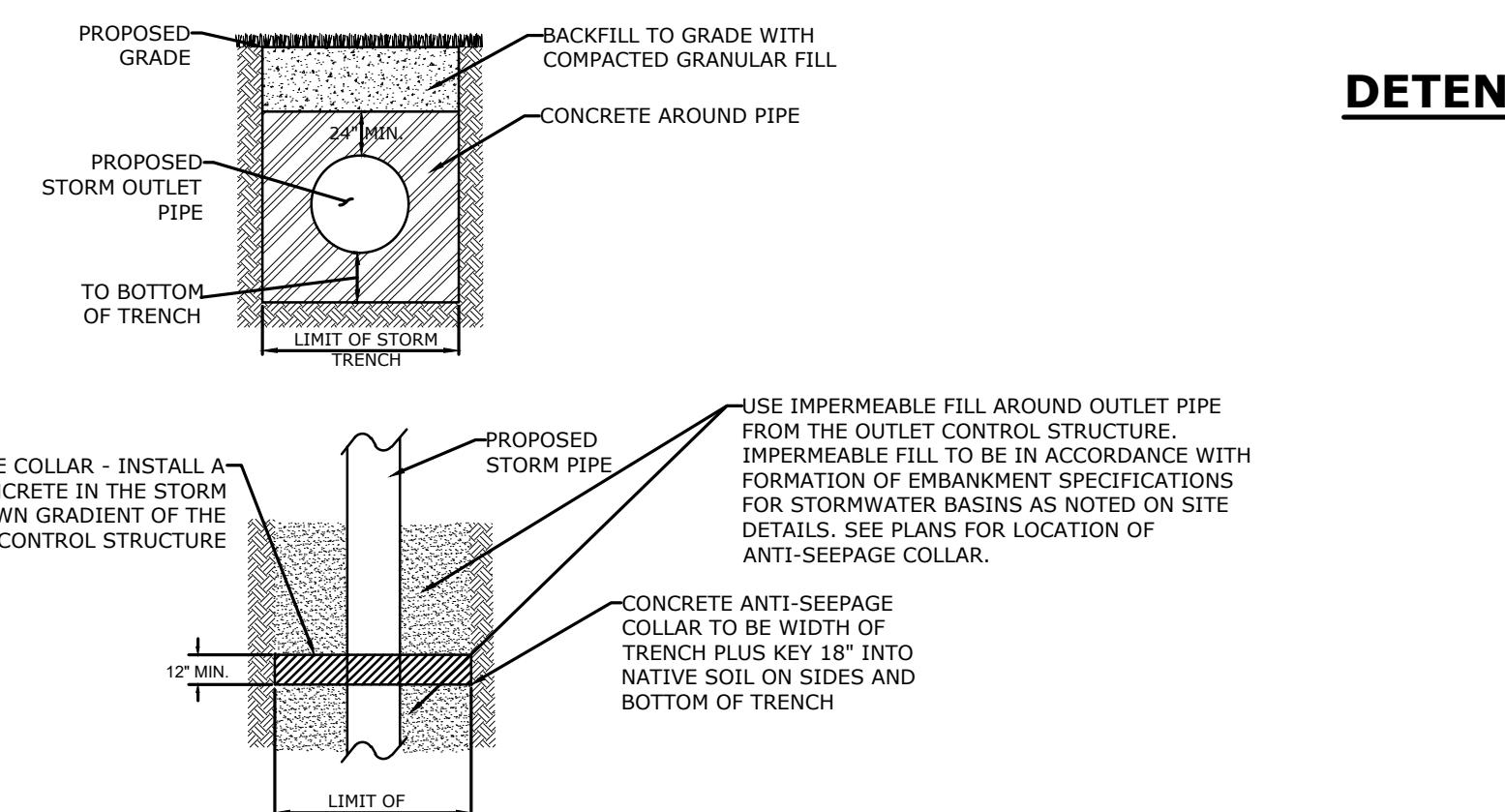
7. CONTROL OF WATER

THE PROJECT SITE IS SUBJECT TO HIGH WATER TABLE. THE CONTRACTOR SHALL USE TEMPORARY PIPES OR PUMPS TO ASSURE PLACEMENT OF SELECT FILL IN DRY CONDITIONS.



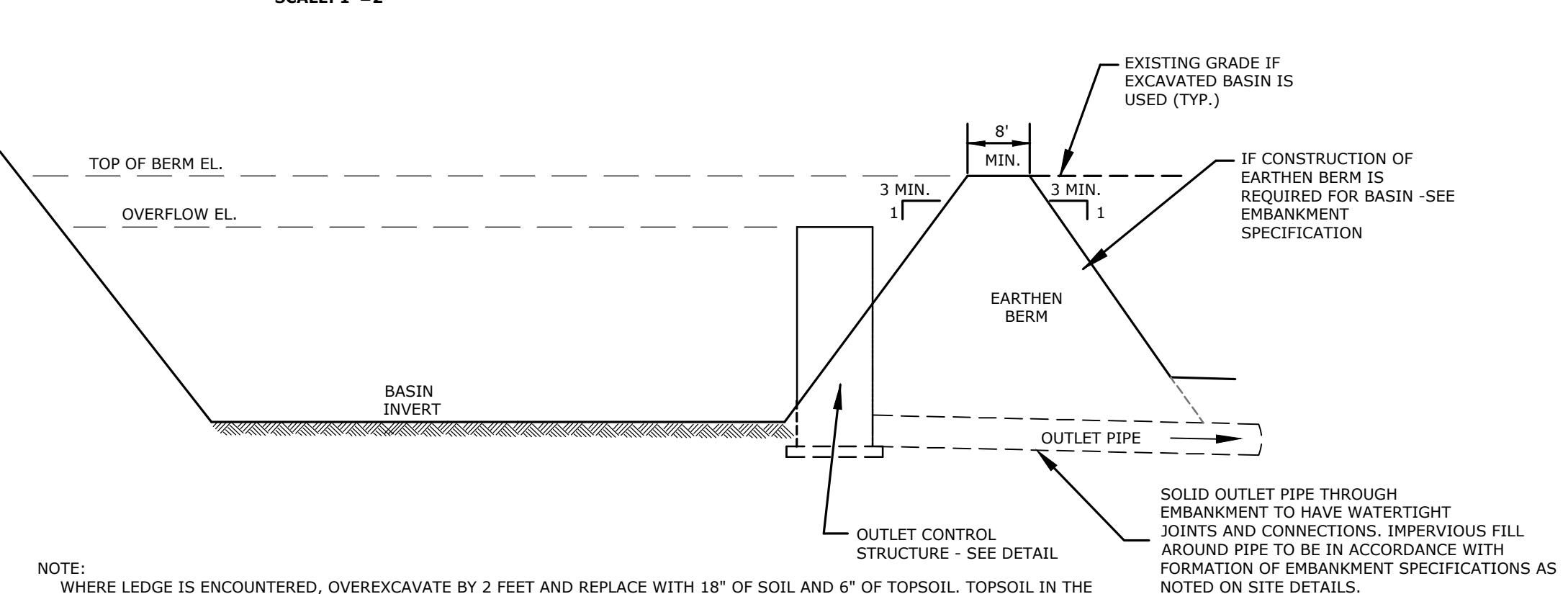
DETENTION BASIN OUTLET CONTROL STRUCTURES

SCALE: 1"=2"



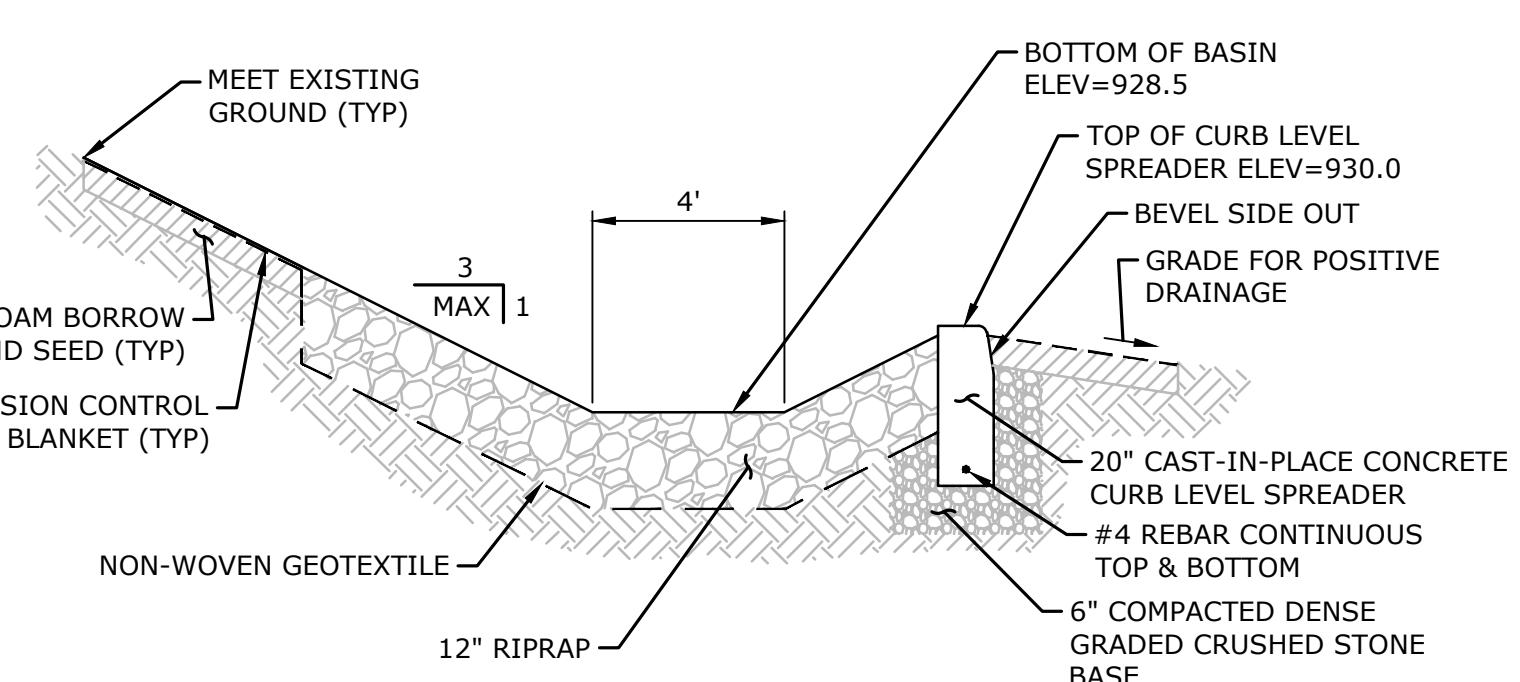
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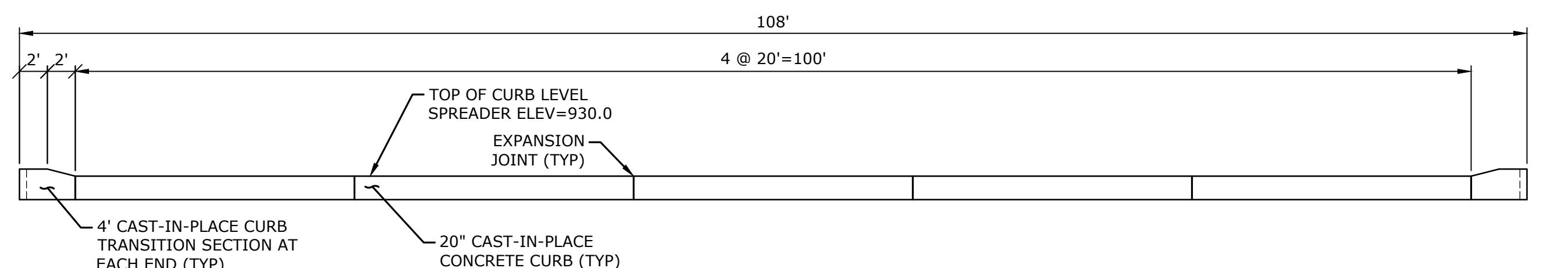
TYPICAL DETENTION BASIN

NOT TO SCALE



FRONT ELEVATION - CURB LEVEL SPREADER

SCALE: 1"=8"



NOTES:

1. USE $1/2"$ PREFORMED EXPANSION JOINT FILLER SPACED NO MORE THAN 25' O.C. OR AS SHOWN.
2. JOINTS BETWEEN CURB SECTIONS NOT TO EXCEED $1/2"$.
3. CONCRETE CURB SHALL MEET M.08.02-4 OF CTDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
4. 2-#4 REBAR CONTINUOUS ALONG LENGTH OF CURB.
5. UPON COMPLETION OF LEVEL SPREADER, TOP OF CURB ELEVATION SHALL BE VERIFIED THAT IT IS ABSOLUTELY LEVEL FOR THE ENTIRE LENGTH OF THE CURB AND DEVIATES NO MORE THAN $1/4"$. FINAL AS-BUILT ELEVATIONS SHALL BE PROVIDED WITH THE RECORD DRAWINGS.

TYPICAL SECTION - RIPRAP OUTLET BASIN

SCALE: 1"=2"

SITE DETAILS
LSE SERPENS LLC
WEST HILL ROAD SOLAR
WEST HILL ROAD
TORRINGTON, CONNECTICUT

SMM SMM MRG
DESIGNED DRAWN CHECKED

AS NOTED

JANUARY 07, 2025

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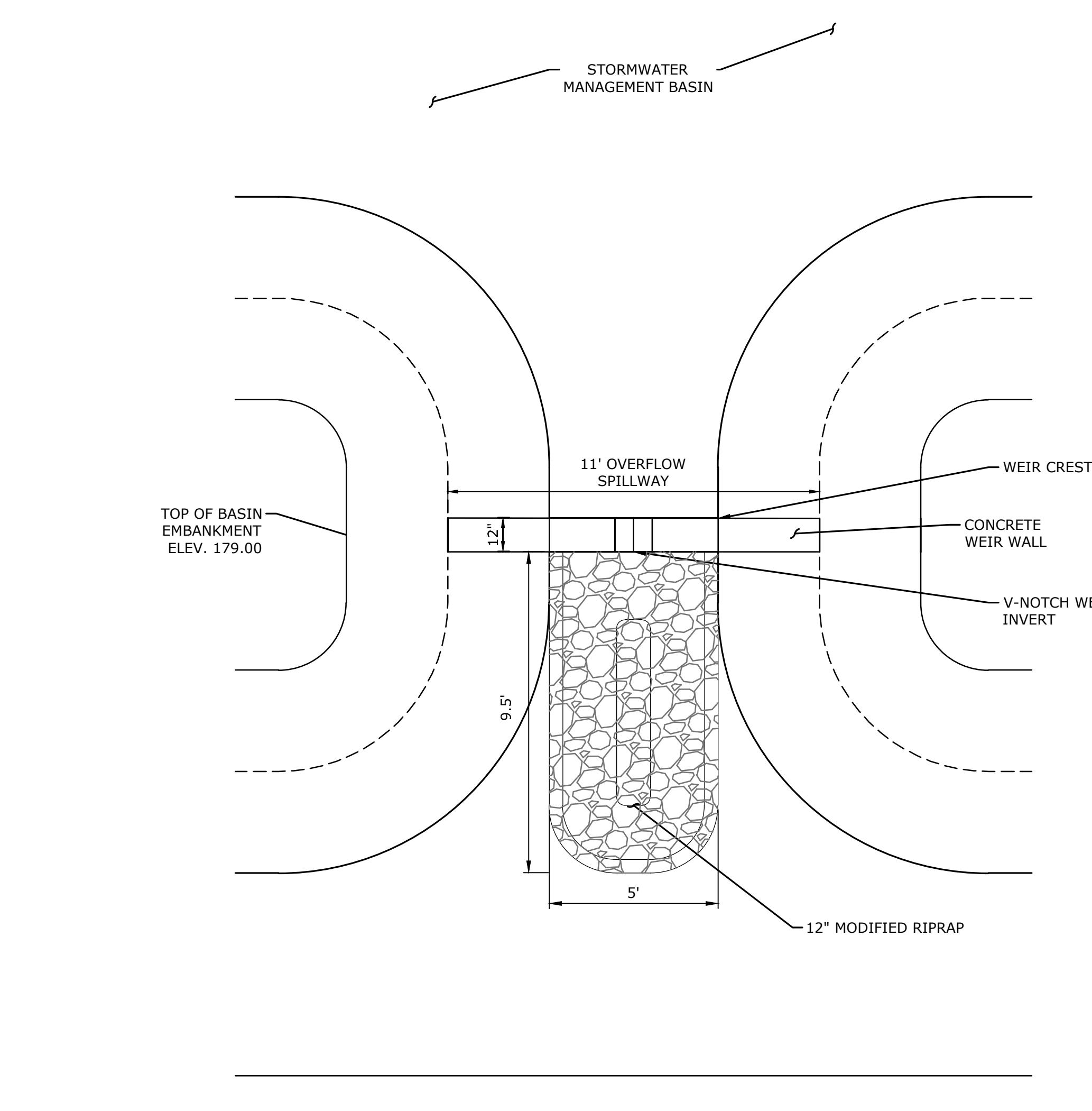
PROJECT NO.

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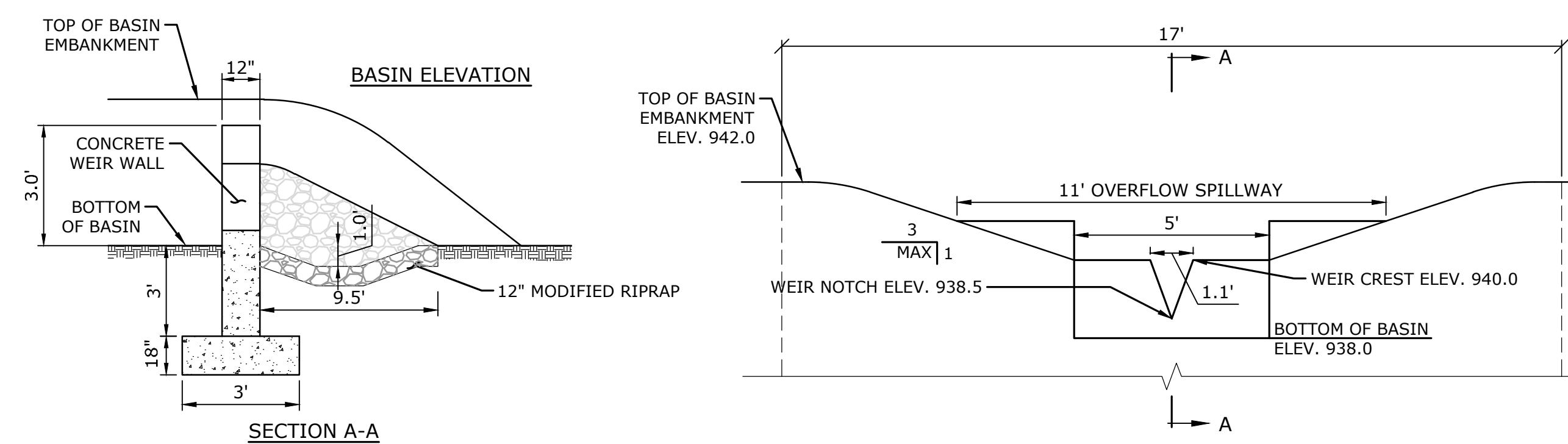
HEET NO.

SD-2

SHEET NAME



PLAN VIEW



OUTLET WEIR WALL - DET 200

SCALE: 1"=3'

TEST PIT OBSERVATION LOGS

SLR-TP-1 OBSERVED BY: SEAN MCALLEN 9/27/24 0"-9" TOPSOIL 9"-24" YELLOW FINE SANDY LOAM W/ SILT 24"-72" YELLOW/BROWN FINE SANDY LOAM W/ SILT (COMPACT) ROOTS: 36" NO GROUNDWATER NO MOTTLING NO LEDGE PERMEABILITY SAMPLES AT 60"	SLR-TP-8 OBSERVED BY: SEAN MCALLEN 9/27/24 0"-8" TOPSOIL 8"-31" YELLOW/BROWN FINE SANDY LOAM 31"-63" YELLOW/BROWN FINE SANDY LOAM W/ SOME ROCK (COMPACT) ROOTS: 27" NO GROUNDWATER MOTTLING: 38" NO LEDGE
SLR-TP-2 OBSERVED BY: SEAN MCALLEN 9/27/24 0"-10" TOPSOIL 10"-20" YELLOW/BROWN FINE SANDY LOAM/SILT 20"-32" TAN BROWN FINE SANDY LOAM/SILT 32"-132" BROWN FINE SANDY LOAM/SILT ROOTS: 30" NO GROUNDWATER NO MOTTLING NO LEDGE PERMEABILITY SAMPLES AT 48"	SLR-TP-9 OBSERVED BY: SEAN MCALLEN 9/27/24 0"-6" TOPSOIL 6"-35" YELLOW/BROWN FINE SANDY LOAM W/SILT 35"-40" LIGHT BROWN SANDY LOAM (COMPACT) 40"-65" BROWN FINE SANDY LOAM ROOTS: 24" NO GROUNDWATER MOTTLING: 43" NO LEDGE PERMEABILITY SAMPLES AT 48"
SLR-TP-3 OBSERVED BY: SEAN MCALLEN 9/27/24 0"-5" TOPSOIL 5"-13" BROWN FINE LOAM/SILT 13"-43" YELLOW/BROWN FINE SANDY LOAM (COMPACT) ROOTS: 24" NO GROUNDWATER NO MOTTLING LEDGE: 60" PERMEABILITY SAMPLES AT 60"	SLR-TP-10 OBSERVED BY: SEAN MCALLEN 10/11/24 0"-7" TOPSOIL 7"-34" LIGHT BROWN FINE SANDY LOAM 34"-110" YELLOW/BROWN FINE SANDY LOAM, SOME GRAVEL (COMPACT) ROOTS: 32" NO GROUNDWATER NO MOTTLING LEDGE: 110" PERMEABILITY SAMPLES AT 60"
SLR-TP-4 OBSERVED BY: SEAN MCALLEN 9/27/24 0"-6" TOPSOIL 6"-31" YELLOW/BROWN FINE SANDY LOAM W/ SILT 21"-42" YELLOW/GREY FINE SANDY LOAM (COMPACT) 43"-79" YELLOW/BROWN FINE SANDY LOAM ROOTS: 30" NO GROUNDWATER NO MOTTLING NO LEDGE PERMEABILITY SAMPLES AT 60"	SLR-TP-11 OBSERVED BY: SEAN MCALLEN 10/11/24 0"-6" TOPSOIL 6"-28" LIGHT BROWN FINE SANDY LOAM 28"-56" YELLOW/BROWN FINE SANDY LOAM, SOME GRAVEL (COMPACT) 56"-120" BROWN/GREY FINE SANDY LOAM ROOTS: 28" NO GROUNDWATER NO MOTTLING NO LEDGE PERMEABILITY SAMPLES AT 60"
SLR-TP-5 OBSERVED BY: SEAN MCALLEN 9/27/24 0"-5" TOPSOIL 5"-14" BROWN FINE SILTY SANDY LOAM 14"-30" YELLOW/BROWN FINE SANDY LOAM ROOTS: 13" NO GROUNDWATER NO MOTTLING LEDGE: 30" PERMEABILITY SAMPLE AT 60"	SLR-TP-12 OBSERVED BY: SEAN MCALLEN 10/11/24 0"-8" TOPSOIL 8"-21" LIGHT BROWN FINE SANDY LOAM W/ SILT 21"-36" YELLOW/BROWN FINE SANDY LOAM W/ SILT 36"-86" YELLOW/BROWN FINE SANDY LOAM SOME GRAVEL (COMPACT) ROOTS: 36" NO GROUNDWATER NO MOTTLING NO LEDGE PERMEABILITY SAMPLE AT 60"
SLR-TP-6 OBSERVED BY: SEAN MCALLEN 9/27/24 0"-6" TOPSOIL 6"-44" YELLOW/BROWN FINE SANDY LOAM W/ SILT 44"-60" BROWN FINE SANDY LOAM ROOTS: 19" NO GROUNDWATER MOTTLING: 44" LEDGE: 60" PERMEABILITY SAMPLE AT 36"	SLR-TP-13 OBSERVED BY: SEAN MCALLEN 10/11/24 0"-6" TOPSOIL 6"-31" LIGHT BROWN FINE SANDY LOAM 31"-68" YELLOW/BROWN FINE SANDY LOAM, SOME GRAVEL (COMPACT) ROOTS: 20" NO GROUNDWATER MOTTLING: 36" NO LEDGE PERMEABILITY SAMPLE AT 36"
SLR-TP-7 OBSERVED BY: SEAN MCALLEN 9/27/24 0"-8" TOPSOIL 8"-30" YELLOW/BROWN FINE SANDY LOAM W/ SILT 30"-84" YELLOW/BROWN SANDY LOAM W/SILT AND SOME ROCK ROOTS: 24" NO GROUNDWATER MOTTLING: 38" NO LEDGE	SLR-TP-14 OBSERVED BY: SEAN MCALLEN 10/11/24 0"-6" TOPSOIL 6"-31" LIGHT BROWN FINE SANDY LOAM 31"-68" YELLOW/BROWN FINE SANDY LOAM, SOME GRAVEL (COMPACT) ROOTS: 20" NO GROUNDWATER MOTTLING: 36" NO LEDGE PERMEABILITY SAMPLE AT 36"

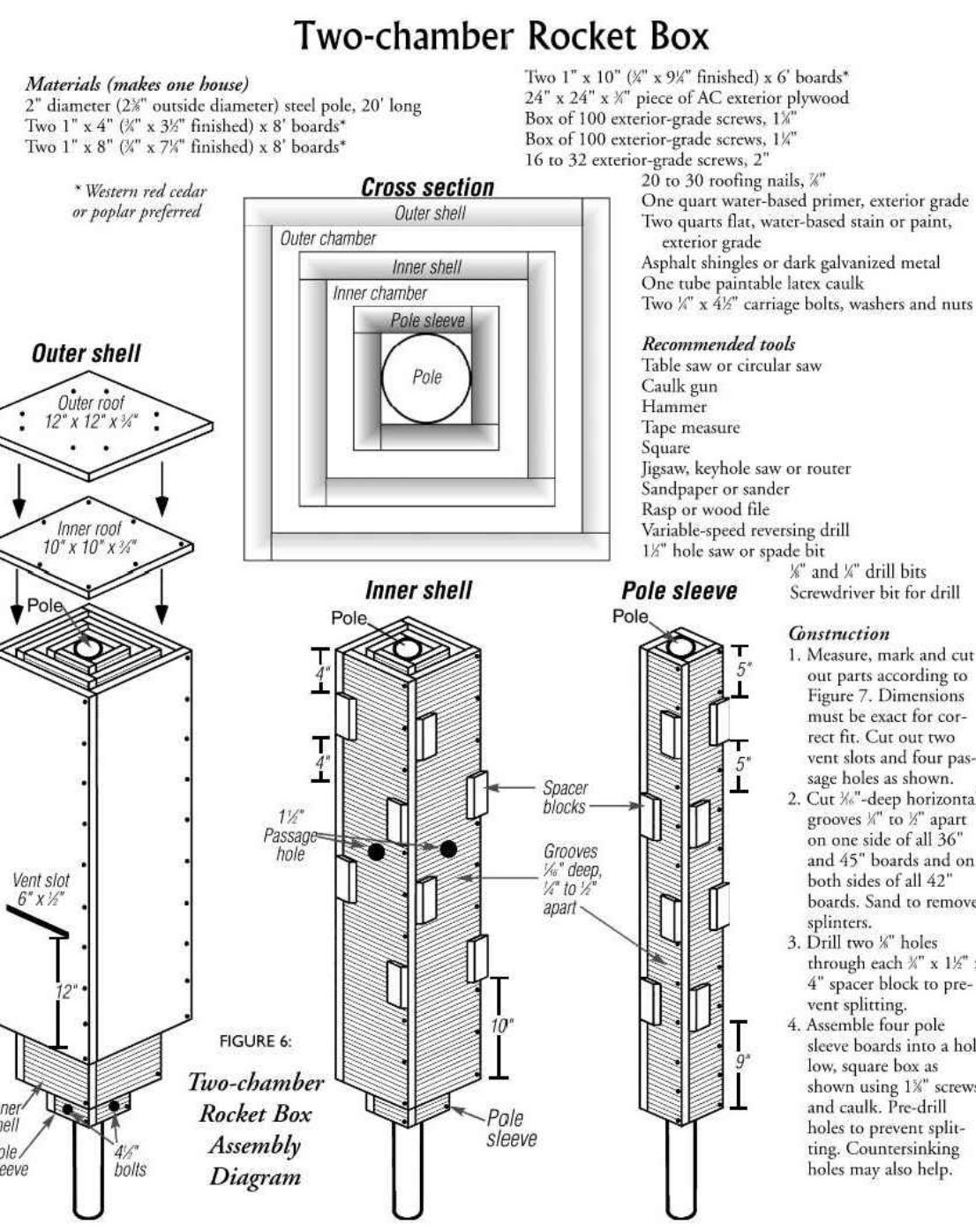
SLR99 REALTY DRIVE
CHESTER, CT 06410
SLR CONSULTING.COM

DESCRIPTION	DATE	BY

NOT FOR CONSTRUCTION
LSE SERPENS LLC
WEST HILL ROAD SOLAR
WEST HILL ROAD
TORRINGTON, CONNECTICUT

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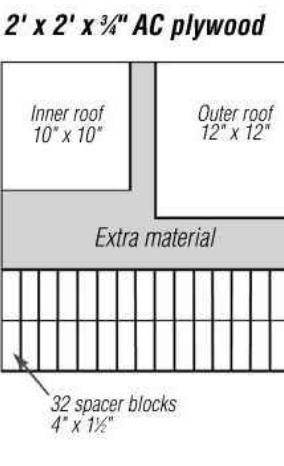
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5. Attach spacer blocks to pole sleeve as shown (four per side) using two 1/4" screws per block. Bottom spacer blocks are 9" up from bottom of pole sleeve. Top spacer blocks are 5" from top. Also attach two 1/4" spacers to each side of the pole sleeve. 6. Assemble four inner shell boards into a hollow, square box as in step 4. 7. Slide pole sleeve into inner shell until top edges are flush. Bat groove holes will be towards the top. Mark location of spacer blocks. Secure inner shell to pole sleeve with 2" screws through the spacer blocks to create no screws protrude into roosting chambers. Pre-drill holes first to avoid splitting spacer blocks (counterbore holes not required). 8. Attach spacer blocks (4 per side) to inner shell as shown, using two 1/4" screws per block. Bottom spacer blocks are 10" up from the bottom edge of the inner shell. Top spacers are 4" from top. Also attach left and right side spacers to inner shell. 9. Assemble four outer shell boards into a hollow, square box as in step 4. Vent slots are on opposing sides and oriented towards the back. 10. Slide finished outer shell over inner shell, so that 6" of inner shell protrudes below outer shell. Mark locations of spacer blocks. 11. Caulking first, attach inner roof to box with 1/4" screws. Carefully drive screws into top edges of shells to prevent screws from entering roosting chambers. 12. Caulk and attach outer roof to inner roof with 1/4" screws, caulking first. 13. Paint or stain exterior three times (use primer for first coat). Cover roof with shingles or galvanized metal. 14. Drill a 1/4" hole over each outer roof overhang. One inch up from the bottom edge of pole sleeve, drill a 1/4" hole all the way through pole and sleeve. Rotate box and pole 90° and drill another 1/4" hole. 2 in from the top of the outer roof through pole and sleeve. Secure box to pole with two 4" bolts, washers and nuts. Orient vent slots north and south during installation.

Optional modifications to the rocket box

- For extra mounting height, insert a 4 1/2" bolt and nut about halfway up through pole sleeve after completing step 10.
- For a larger roosting capacity, create a compartment in upper half of pole sleeve with a 25" square piece of lumber plywood. Fill upper half of sleeve with gravel or dirt, and seal with another piece of plywood flush with top.
- In warm climates, a larger outer roof with more overhang can be used for additional shading.



ARTIFICIAL ROOST - ROCKET BOX DESIGN

NOT TO SCALE

Four-chamber Nursery Bat House

Materials (makes two houses)
1/2 sheet (4' x 4') 1/2" AC, BC or TI-11 (outdoor grade) plywood
1/2 sheet (4' x 4') 3/8" AC, BC (outdoor grade) plywood
Box of 100 exterior-grade screws, 1 1/4"
Box of 100 exterior-grade screws, 1/4"
16 to 32 exterior-grade washers, 1/4"
12 to 20 roofing nails, 7/8"

Recommended tools
Table saw or circular saw
Caulk gun
Hammer
Tape measure
Square
Jigsaw, keyhole saw or router
Sander or sander
Rasp or wood file
Variable-speed reversing drill
1 1/2" hole saw or spade bit
5" and 10" drill bits
Screwdriver bit for drill

Construction

- Measure, mark and cut out parts according to Figure 7. Dimension must be correct for correct fit. Cut out vent slots and four passage holes as shown.
- Cut 5/8"-deep horizontal grooves 1/2" apart on one side of all 36" and 45" boards and on both sides of all 42" boards. Sand to remove splinters.
- Drill two 5/8" diameter holes 5" x 15/8" x 4" space block to prevent splitting.
- Assemble pole sleeve boards into a hollow, square box as shown using 1/4" screws and caulk. Pre-drill holes before splitting. Counterboring holes may also help.
- Attach sidepieces to back, caulking first. Use 15/8" screws. Make sure top angles match.
- Attach sidepieces to inside corners per drawings (Fig. 1). Use 1" screws. Roost chamber spacing will be 14" - 12" apart, cutting 1/2" to 1/16" deep.
- Place first roosting partition on spacers even with bottom edge of roof. Place 20" spacers on partition and screw to first spacers (through partition), using 15/8" screws.
- Repeat step 6 for remaining spacers and partitions (three times).
- Attach front to side: top piece first (caulk seams).
- Be sure top angles match (sand if necessary).
- Leave 1/2" vent space between top and bottom front pieces.
- A bar clamp may be useful if sides have flared out during construction.
- Attach roof supports to the top inside of front and back pieces with 1" screws. Do NOT let screws protrude into roosting chambers.
- Caulk around all top surfaces, sanding first if necessary, to ensure good fit with roof.
- Attach roof to sides and roof supports with 1 1/4" screws.

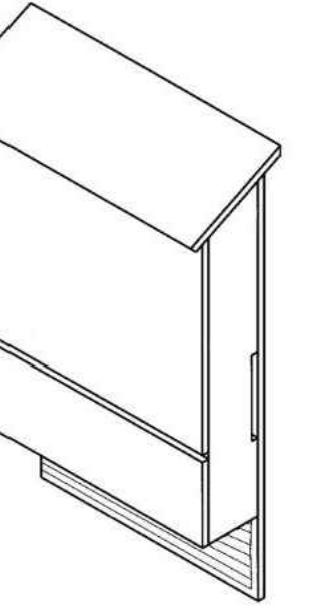
- Caulk around roof and side joints to further guard against leaks and drafts. Do NOT let screws protrude into roosting chambers.
- Paint or stain exterior three times (use primer for first coat). See Fig. 3 for recommended colors.
- Optional: cover roof with shingles or galvanized metal. Houses will last longer with this roofing material.

Optional modifications

- For larger colonies:** These nursery-house dimensions were chosen to permit construction of two bat houses per half sheet of plywood. Increasing house width to 24" or more or adding partitions benefits bats and attracts larger colonies. Additional spacers are required to prevent warping of roost partitions for houses more than 24" wide.
- Taller bat houses:** Taller bat houses provide improved temperature gradients and may be especially useful in climates where daily temperatures fluctuate widely. Bat houses 3' or taller should have the horizontal vent slot 12" from the bottom of the roosting chambers.
- Dual mounting houses:** Two bat houses can be placed back-to-back mounted on poles. This can save on mounting costs and creates a more stable internal temperature.
 - Before assembly, a horizontal 3/4" slot should be cut in the back of each house about 10" from the bottom edge of the back piece to permit movement of bats between houses.
 - Two pieces of wood, 1" x 4" x 10 3/4", screwed horizontally to each side, will join the two boxes.
 - Leave a 3/4" space between the two houses, and roughen the wood surfaces.
 - One 2" x 4" x 40" vertical piece, attached to each side, over the horizontal pieces, blocks light but allows bats and air to enter.
 - Use a 2" x 6" vertical piece if securing houses with U-bolts to metal poles.
 - A galvanized metal roof that covers both houses protects them and helps prevent overheating.
 - Eaves should extend about 3" in front in southern areas and about 1 1/2" in the north.
- Colder climates:** Ventilation may not be necessary in cold climates. In that case, the front of the bat house should be a single, 23"-long piece.
 - Far-northern bat houses may also benefit from a partial bottom to help retain heat. Slope the sides and bottom at an angle of 45° or greater to reduce guano build-up. Leave a 3/4" entry gap at the back and be sure the bottom does not interfere with access to the front crevices. A hinged bottom is required to permit annual cleaning.
- Removable partitions:** Make partitions removable by attaching small cleats with thumbscrews to the bottom of sidepieces for support. Spacer strips are unnecessary if grooves for partitions are cut in the sidepieces with a router or dado saw blade.

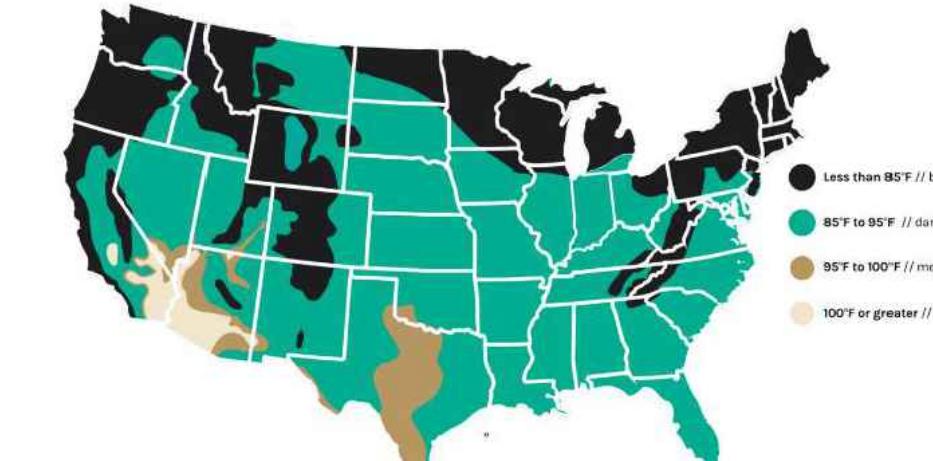
Mounting recommendations

- Mount bat houses on wooden posts, steel poles, pivot poles, or on the sides of buildings, but do not mount them on trees.
 - Example: well pipe; galvanized pipe can be too thin
- Mount in an area that gets 6-8 hours of direct sunlight (facing East or South).
- To the extent possible, locate houses 20 to 30 feet from tree branches or other obstacles and 12 to 20 feet above ground (or above the tallest vegetation beneath the bat house).
- The best locations are along streams, rivers, lakes or forests because:



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Figure 3. Bat house external paint color guide based on average summer temperatures in the United States.



SITE DETAILS

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WEST HILL ROAD
TORRINGTON, CONNECTICUT

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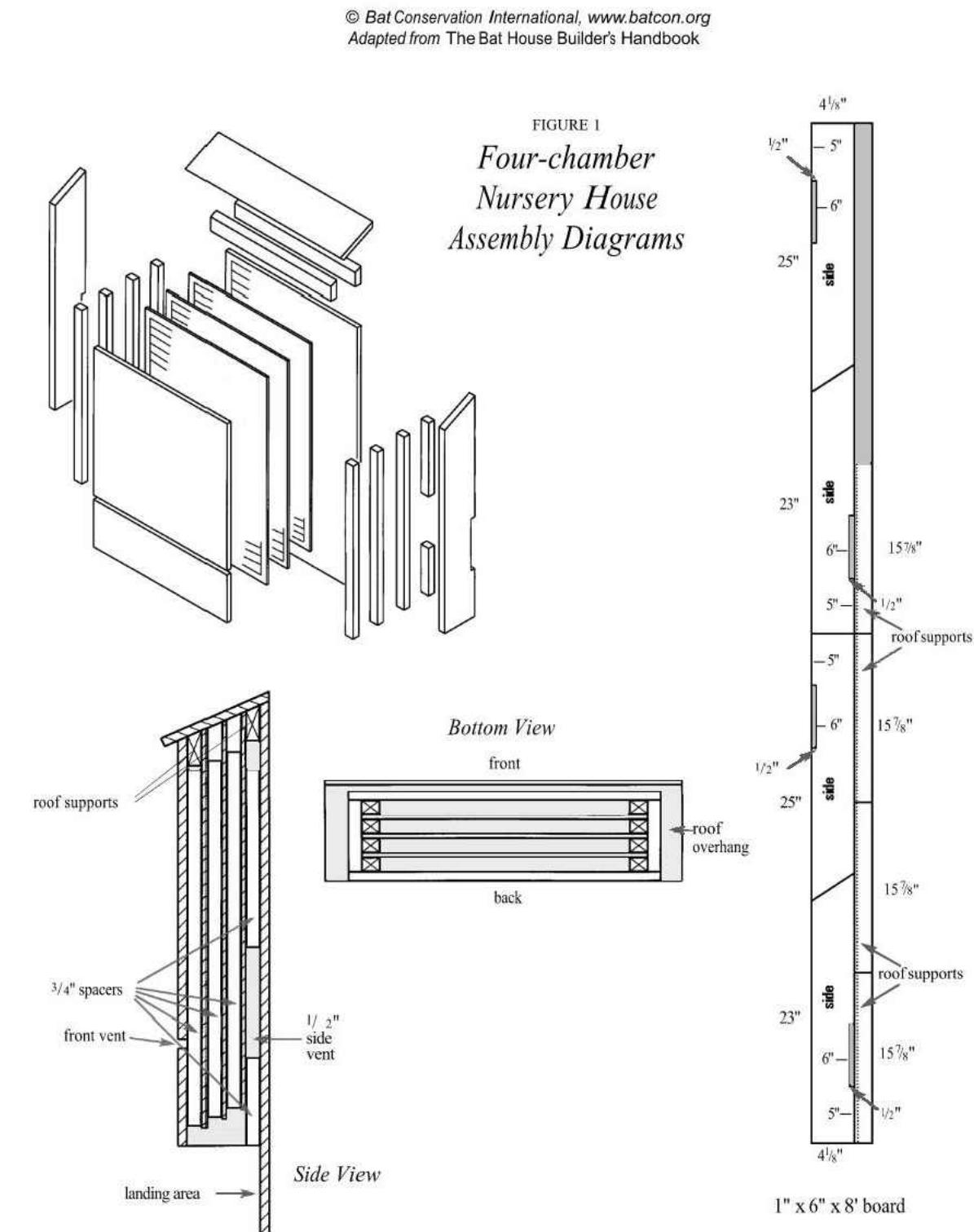
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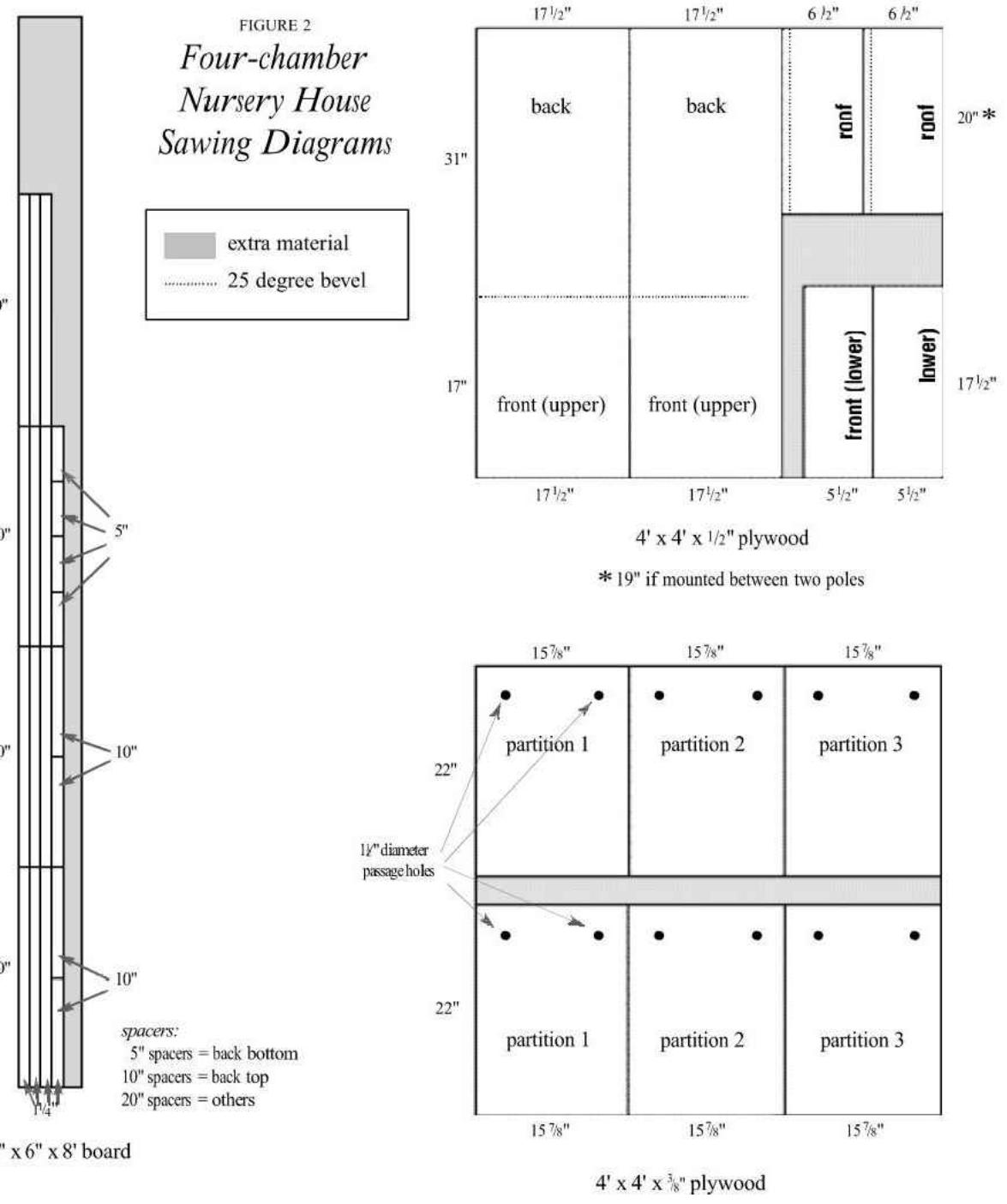
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ARTIFICIAL ROOST - NURSERY BOX DESIGN

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Adapted from The Bat House Builder's Handbook

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