

SITE USE PERMIT SET

1320 S STREET, ANDOVER, MA 01810
5MW/20MWh KWDC ENERGY STORAGE SYSTEM

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1320 S STREET
ANDOVER, MA 01810

PROJECT NUMBER:
120-0345

REV	DATE	BY	DESCRIPTION
1	4/12/22	CS	SITE USE PERMIT SET
2	6/14/22	CS	RESPONSE TO PEER REVIEW COMMENTS
3	9/13/22	CS	RESPONSE TO COMMENTS
4	11/29/22	CS	RESPONSE TO COMMENTS
5	4/25/25	CS	MODIFICATION REQUEST

SCALES STATED ON DRAWINGS ARE VALID ONLY WHEN PLOTTED ARCH D 24" X 36"

T-1
TITLE PAGE

GENERAL NOTES

- AS CONTAINED HEREIN, "CONTRACTOR" IS ASSUMED TO BE THE EPC PROVIDER HIRED BY THE SYSTEM/PROJECT OWNER.
- WHEN THERE IS A CONFLICT BETWEEN THESE GENERAL NOTES AND THE DRAWINGS, THE DRAWINGS SHALL GOVERN.
- ALL WORK SHALL CONFORM TO THE MINIMUM STANDARDS OF THE FOLLOWING: LOCAL BUILDING CODE, LOCAL ELECTRICAL CODE, ANY OTHER REGULATING AGENCIES WHICH HAVE AUTHORITY OVER ANY PORTION OF THE WORK AND THOSE CODES AND STANDARDS LISTED IN THESE DRAWINGS.
- THESE DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING A CONSTRUCTION LEVEL DESIGN AND ASSOCIATED DRAWINGS AND DETAILS.
- COORDINATE THESE DRAWINGS WITH SPECIFICATIONS AND MANUFACTURER INSTALLATION AND OPERATION MANUALS.
- UNLESS OTHERWISE NOTED, THE DESIGN REPRESENTED ON THESE PLANS IS BASED ON THE INFORMATION AND CRITERIA LISTED IN THE "BASIS OF DESIGN" SECTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY SUCH INFORMATION IN PREPARATION OF THE CONSTRUCTION DESIGN.
- THE EXISTING CONDITIONS REPRESENTED ON THESE PLANS ARE BASED ON PUBLICLY AVAILABLE INFORMATION AND THE SITE DISCOVERY SUMMARIZED IN THESE DRAWINGS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ACCURACY OF SUCH INFORMATION AND SUPPLEMENT WITH ANY ADDITIONAL REQUIRED INFORMATION.
- UNLESS INDICATED AS EXISTING (E), ALL PROPOSED MATERIALS AND EQUIPMENT SHALL BE CONSIDERED TO BE NEW.
- ALL EQUIPMENT AND COMPONENTS SHALL BE MOUNTED IN COMPLIANCE WITH THE MANUFACTURER'S REQUIREMENTS, CONSTRUCTION DETAILS, AND/OR PRUDENT INDUSTRY STANDARDS.
- TO THE EXTENT THAT TRESS AND OTHER FEATURES AFFECT THE SYSTEM'S PRODUCTION, SUCH PRODUCTION MODELING IS BASED ON THE EXISTING APPROXIMATE HEIGHTS AND LOCATIONS RELATIVE TO THE SYSTEM AND MAY BE IMPACTED AS TREES GROW AND OTHER FEATURES CHANGE.

PROJECT SCOPE

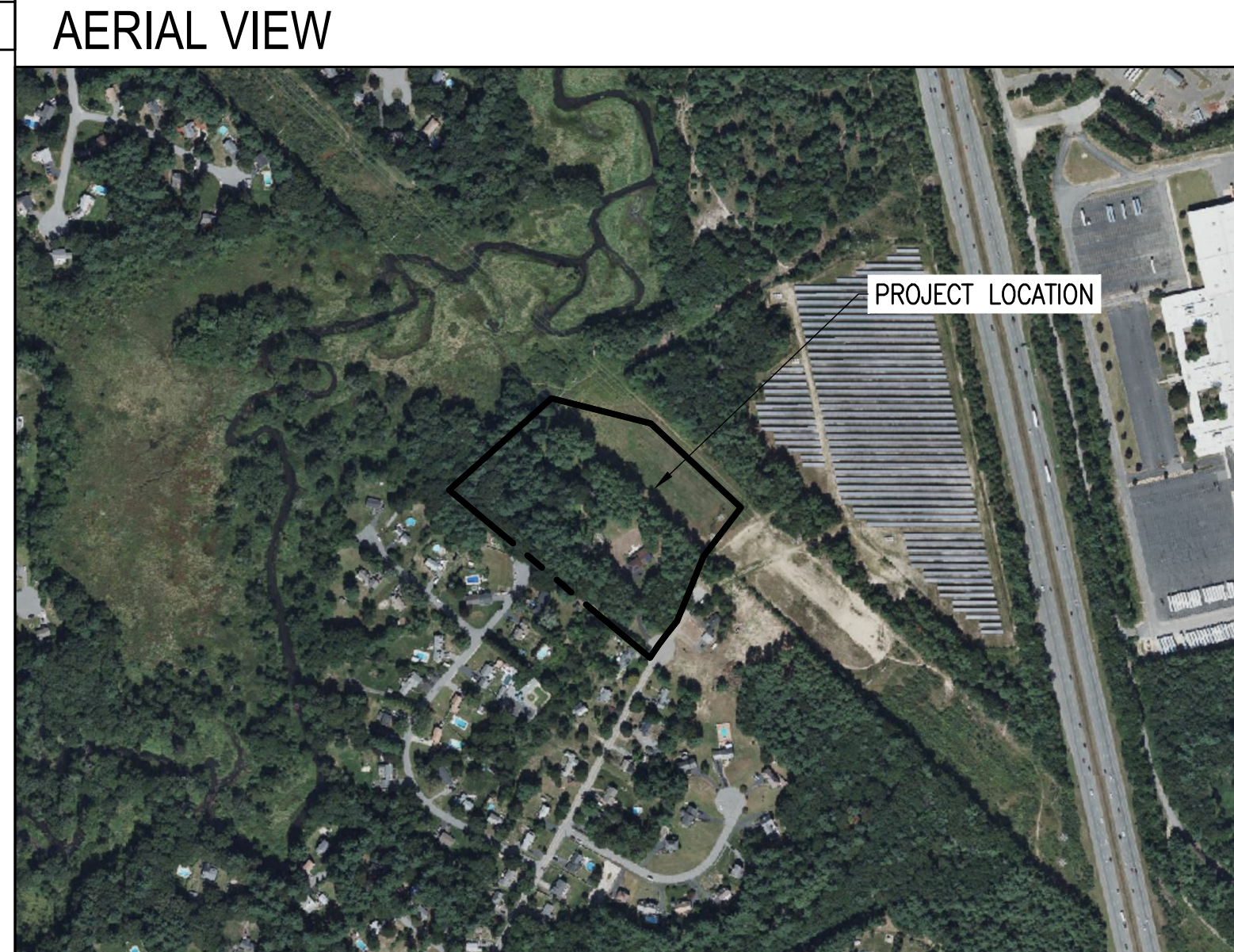
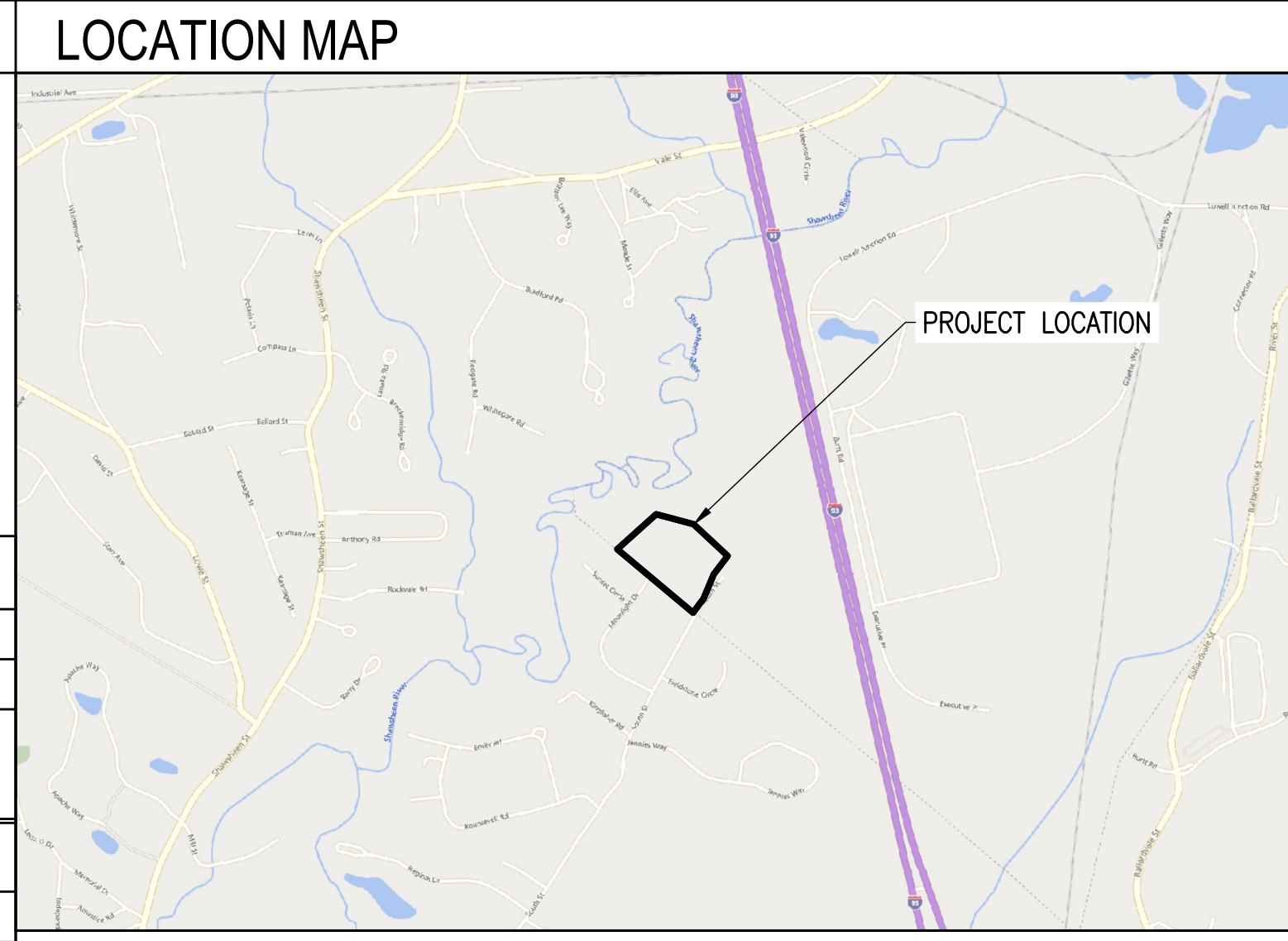
THIS PROJECT CONSISTS OF THE INSTALLATION OF ENERGY STORAGE EQUIPMENT, PER THE SYSTEM DESCRIPTION BELOW. BATTERY MODULES WILL BE INSTALLED IN PURPOSE-BUILT ENERGY STORAGE SEGMENTS WITH INTEGRATED FIRE SUPPRESSION SYSTEMS. BATTERY MODULES WILL BE WIRED IN SERIES STRINGS AND CONNECTED THROUGH DC/DC CONVERTERS, WHICH WILL CONVERT DC TO AC WHILE THE BATTERIES ARE DISCHARGING.

ENERGY STORAGE SYSTEM DESCRIPTION

SYSTEM POWER CAPACITY	5000 kW/5000 kVA KWAC
SYSTEM ENERGY CAPACITY	20,000 KWH
POWER CONVERSION SYSTEM / INVERTER	(2) SMA SUNNY CENTRAL STORAGE 3950 UP-XT-US (DERATED TO 2500KW/KVA EACH)

TOTAL SYSTEM DESCRIPTION

MAXIMUM EXPORT TO UTILITY	5000 kW/5000 kVA KWAC
STORAGE CHARGING MODE	GRID ONLY



APPLICABLE CODES AND STANDARDS

2023 MASSACHUSETTS ELECTRICAL CODE 527 CMR12.00
MASSACHUSETTS BUILDING CODE 9TH EDITION
UL-1703 - SOLAR MODULES
UL-1741 - INVERTERS, COMBINER BOXES
UL-2703 - RACKING MOUNTING SYSTEMS AND CLAMPING DEVICES FOR PV MODULES
UL-1642 - STANDARD FOR LITHIUM BATTERIES
UL-1973 - STANDARD FOR BATTERIES FOR USE IN LIGHT ELECTRIC RAIL (LER) APPLICATIONS AND STATIONARY APPLICATION
UL-9540 - STANDARD FOR ENERGY STORAGE SYSTEM AND EQUIPMENT

PROJECT DIRECTORY

LAND OWNER / HOST
TES MERCEDAT
1320 SOUTH STREET
TEWKSBURY, MA 01876
617-699-6315

AUTHORITY HAVING JURISDICTION
TOWN OF ANDOVER
36 BARTLET STREET
ANDOVER, MA 01810
978-623-8650

UTILITY
NATIONAL GRID

CIVIL ENGINEER
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PHONE: 978-221-3093

ELECTRICAL ENGINEER
FIRM: NEW LEAF ENERGY, INC.
CONTACT: AHARON WRIGHT, P.E.
PHONE: 978-221-3081

DESIGN ENGINEER
FIRM: NEW LEAF ENERGY, INC.
CONTACT: CHELSEA MUDGE
PHONE: 315-726-1876

GENERAL ABBREVIATIONS

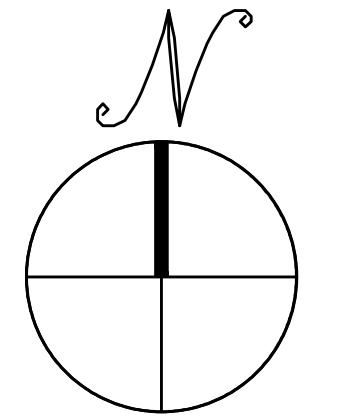
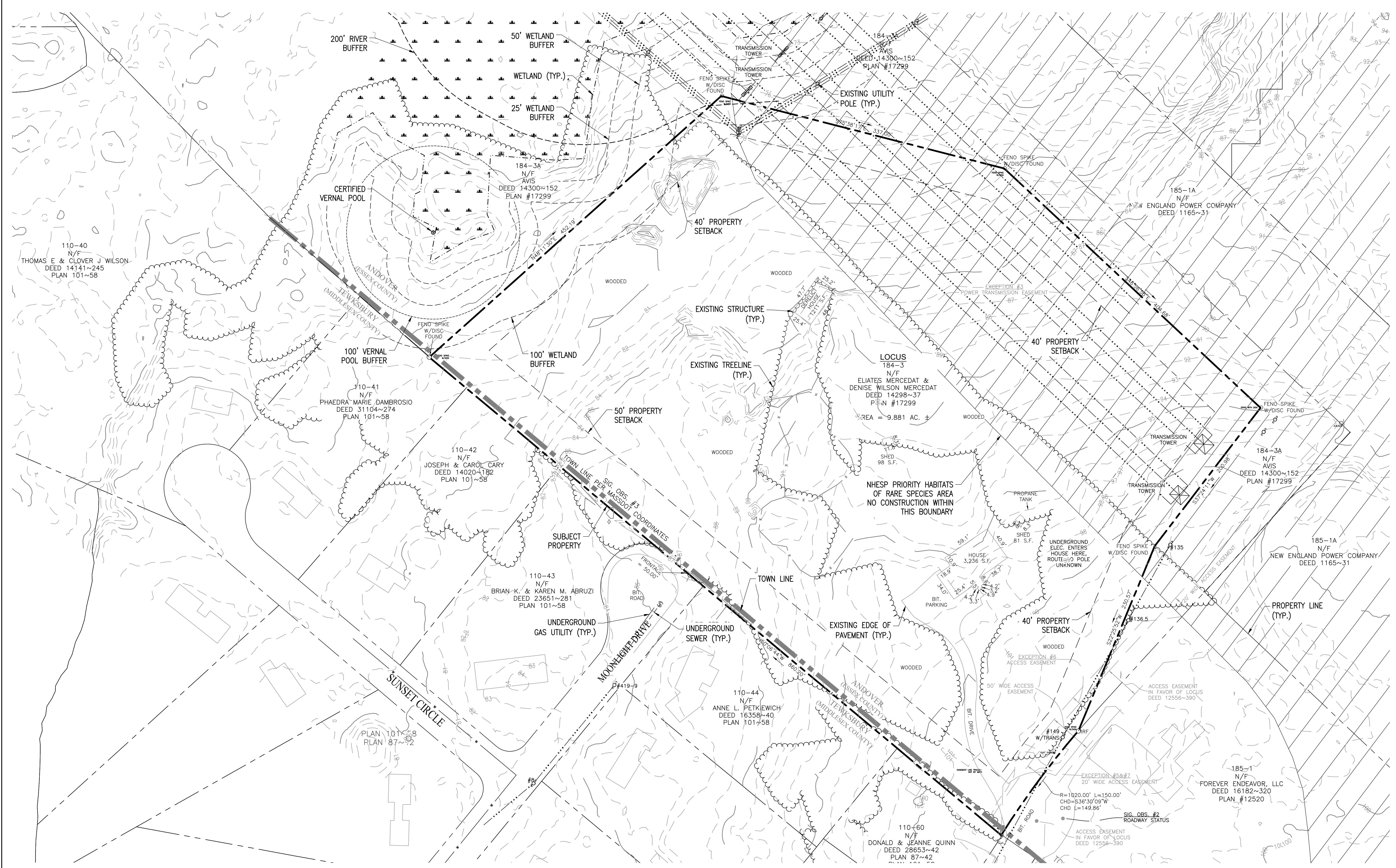
(E) EXISTING	MFR MANUFACTURER
AHJ AUTHORITY HAVING JURISDICTION	MOD SOLAR MODULE
AL ALUMINUM	NS NORTH-SOUTH
APPROX APPROXIMATE	NTS NOT TO SCALE
ARY ARRAY	OAE OR APPROVED EQUAL
BLDG BUILDING	OC ON CENTER
NLE NEW LEAF ENERGY	OD OUTSIDE DIAMETER
CL CENTERLINE	OFCI OWNER FURNISHED CONTRACTOR INSTALLED
DAS DATA ACQUISITION SYSTEM	PCS POWER CONVERSION SYSTEM
DIA DIAMETER	PV PHOTVOLTAIC
DO DITTO	PVC POLY VINYL CHLORIDE
EW EAST-WEST	SCH SCHEDULE
ESS ENERGY STORAGE SYSTEM	SS STAINLESS STEEL
ESU ENERGY STORAGE UNIT	SSS SOLAR SUPPORT STRUCTURE
FBO FURNISHED BY OTHERS	STC STANDARD TEST CONDITIONS
FF FORWARD FACING	TBD TO BE DETERMINED
GALV GALVANIZED	TP TAMPER PROOF
HDG HOT DIP GALVANIZED	TYP TYPICAL
HVAC HEATING VENTILATION AND AIR CONDITIONING	UON UNLESS OTHERWISE NOTED
ID INSIDE DIAMETER	VIF VERIFY IN FIELD
	WP WEATHER PROOF

REV 1.0

C:\Users\lcfshaw_newleafenergy\OneDrive\Documents\1320 S Street - Andover\Design\Working Set\1320 S Street - Andover - SJP - 030322 - C\A\T-1_TheProject.dwg

REV	DATE	DRAWN	CHECKED	RELEASE LEVEL	COMMENTS
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5	4/25/25	CG	BS	BS	MODIFICATION REQUEST

SCALES STATED ON DRAWINGS ARE VALID ONLY WHEN PLOTTED ARCH D 24" X 36"

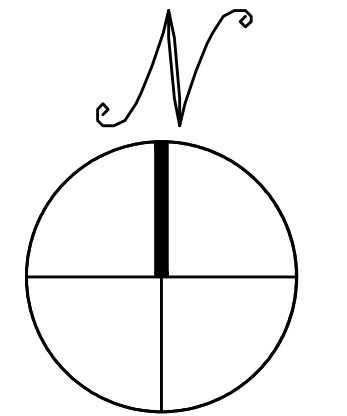
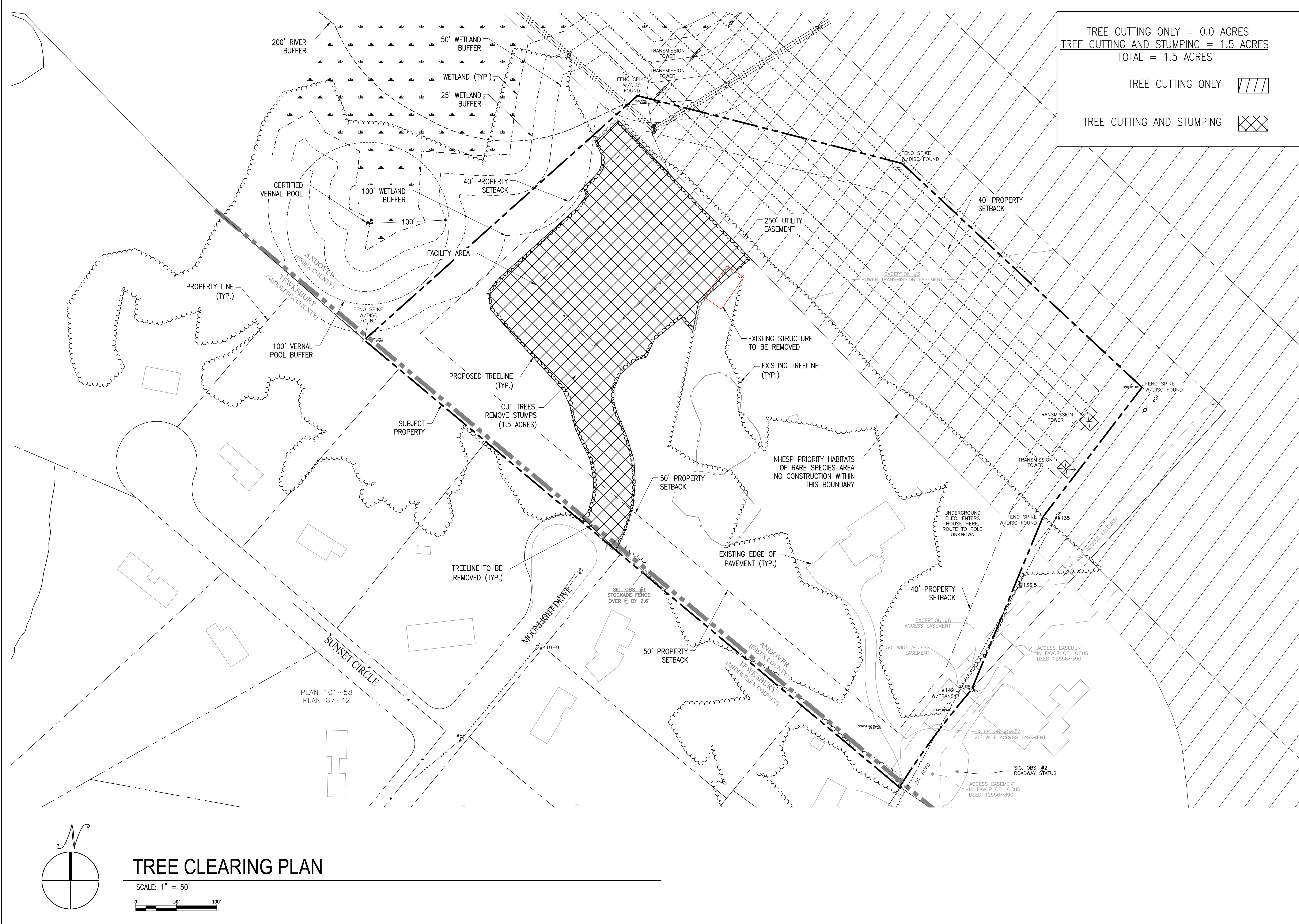


EXISTING CONDITIONS PLAN

SCALE: 1" = 50'
 0 50' 100'

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TREE CLEARING PLAN

SCALE: 1" = 50'

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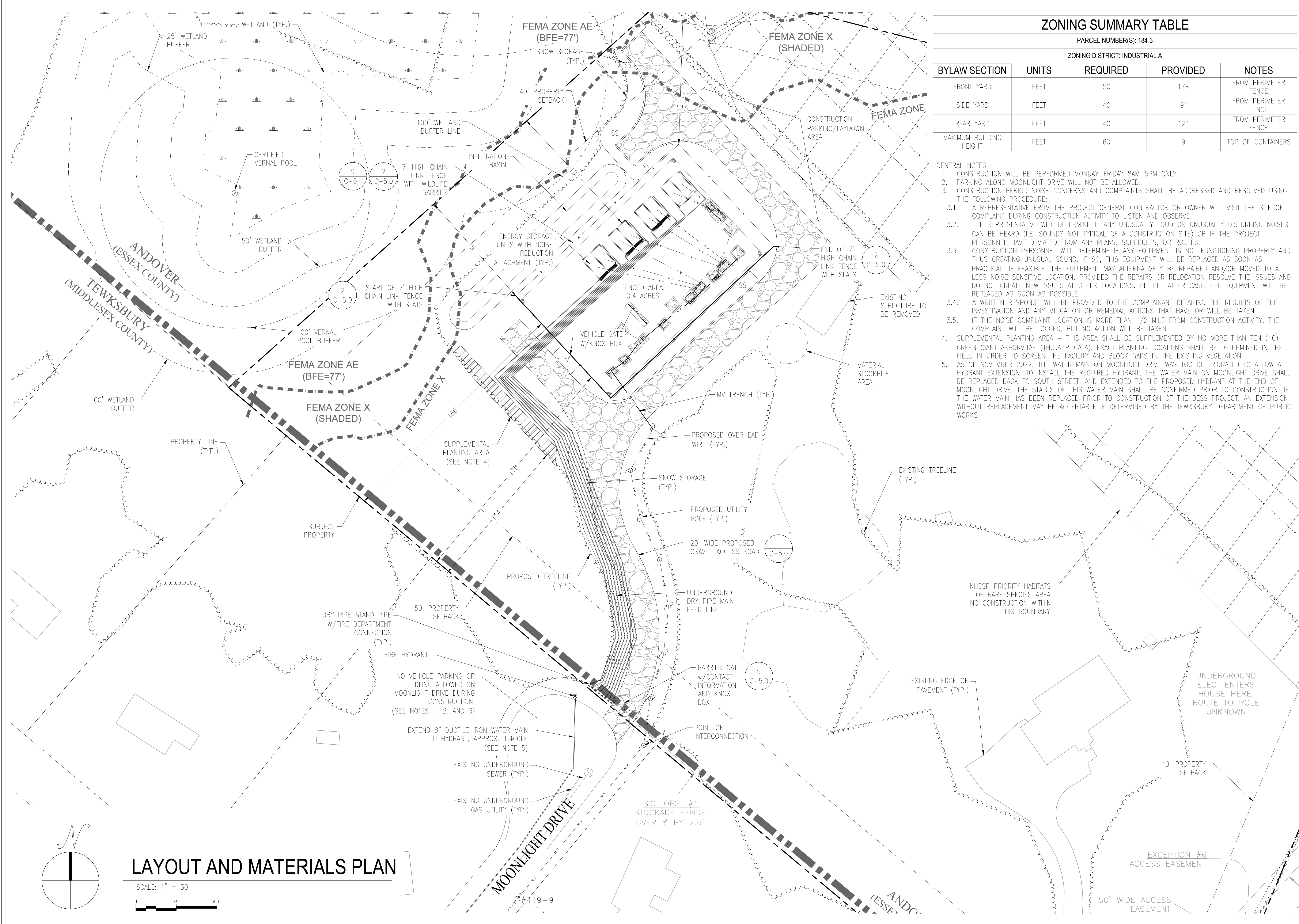
C-3.0
 LAYOUT AND MATERIALS PLAN

ZONING SUMMARY TABLE

PARCEL NUMBER(S): 184-3
 ZONING DISTRICT: INDUSTRIAL A

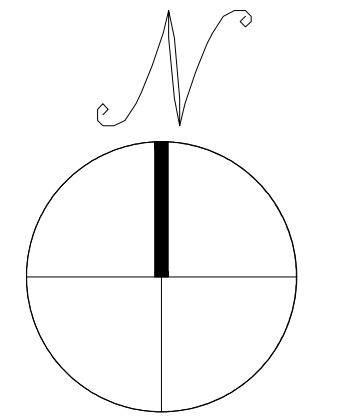
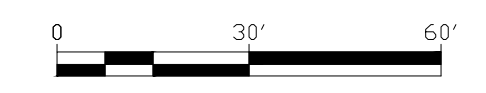
BYLAW SECTION	UNITS	REQUIRED	PROVIDED	NOTES
FRONT YARD	FEET	50	178	FROM PERIMETER FENCE
SIDE YARD	FEET	40	91	FROM PERIMETER FENCE
REAR YARD	FEET	40	121	FROM PERIMETER FENCE
MAXIMUM BUILDING HEIGHT	FEET	60	9	TOP OF CONTAINERS

- GENERAL NOTES:
- CONSTRUCTION WILL BE PERFORMED MONDAY-FRIDAY 8AM-5PM ONLY.
 - PARKING ALONG MOONLIGHT DRIVE WILL NOT BE ALLOWED.
 - CONSTRUCTION PERIOD NOISE CONCERNS AND COMPLAINTS SHALL BE ADDRESSED AND RESOLVED USING THE FOLLOWING PROCEDURE:
 - A REPRESENTATIVE FROM THE PROJECT GENERAL CONTRACTOR OR OWNER WILL VISIT THE SITE OF COMPLAINT DURING CONSTRUCTION ACTIVITY TO LISTEN AND OBSERVE.
 - THE REPRESENTATIVE WILL DETERMINE IF ANY UNUSUALLY LOUD OR UNUSUALLY DISTURBING NOISES CAN BE HEARD (I.E. SOUNDS NOT TYPICAL OF A CONSTRUCTION SITE) OR IF THE PROJECT PERSONNEL HAVE DEVIATED FROM ANY PLANS, SCHEDULES, OR ROUTES.
 - CONSTRUCTION PERSONNEL WILL DETERMINE IF ANY EQUIPMENT IS NOT FUNCTIONING PROPERLY AND THUS CREATING UNUSUAL SOUND. IF SO, THIS EQUIPMENT WILL BE REPLACED AS SOON AS PRACTICAL. IF FEASIBLE, THE EQUIPMENT MAY ALTERNATIVELY BE REPAIRED AND/OR MOVED TO A LESS NOISE SENSITIVE LOCATION, PROVIDED THE REPAIRS OR RELOCATION RESOLVE THE ISSUES AND DO NOT CREATE NEW ISSUES AT OTHER LOCATIONS. IN THE LATTER CASE, THE EQUIPMENT WILL BE REPLACED AS SOON AS POSSIBLE.
 - A WRITTEN RESPONSE WILL BE PROVIDED TO THE COMPLAINANT DETAILING THE RESULTS OF THE INVESTIGATION AND ANY MITIGATION OR REMEDIAL ACTIONS THAT HAVE OR WILL BE TAKEN.
 - IF THE NOISE COMPLAINT LOCATION IS MORE THAN 1/2 MILE FROM CONSTRUCTION ACTIVITY, THE COMPLAINT WILL BE LOGGED, BUT NO ACTION WILL BE TAKEN.
 - SUPPLEMENTAL PLANTING AREA - THIS AREA SHALL BE SUPPLEMENTED BY NO MORE THAN TEN (10) GREEN GIANT ARBORVITAE (THUJA PLICATA). EXACT PLANTING LOCATIONS SHALL BE DETERMINED IN THE FIELD IN ORDER TO SCREEN THE FACILITY AND BLOCK GAPS IN THE EXISTING VEGETATION.
 - AS OF NOVEMBER 2022, THE WATER MAIN ON MOONLIGHT DRIVE WAS TOO DETERIORATED TO ALLOW A HYDRANT EXTENSION. TO INSTALL THE REQUIRED HYDRANT, THE WATER MAIN ON MOONLIGHT DRIVE SHALL BE REPLACED BACK TO SOUTH STREET, AND EXTENDED TO THE PROPOSED HYDRANT AT THE END OF MOONLIGHT DRIVE. THE STATUS OF THIS WATER MAIN SHALL BE CONFIRMED PRIOR TO CONSTRUCTION. IF THE WATER MAIN HAS BEEN REPLACED PRIOR TO CONSTRUCTION OF THE BESS PROJECT, AN EXTENSION WITHOUT REPLACEMENT MAY BE ACCEPTABLE IF DETERMINED BY THE TEWKSBURY DEPARTMENT OF PUBLIC WORKS.

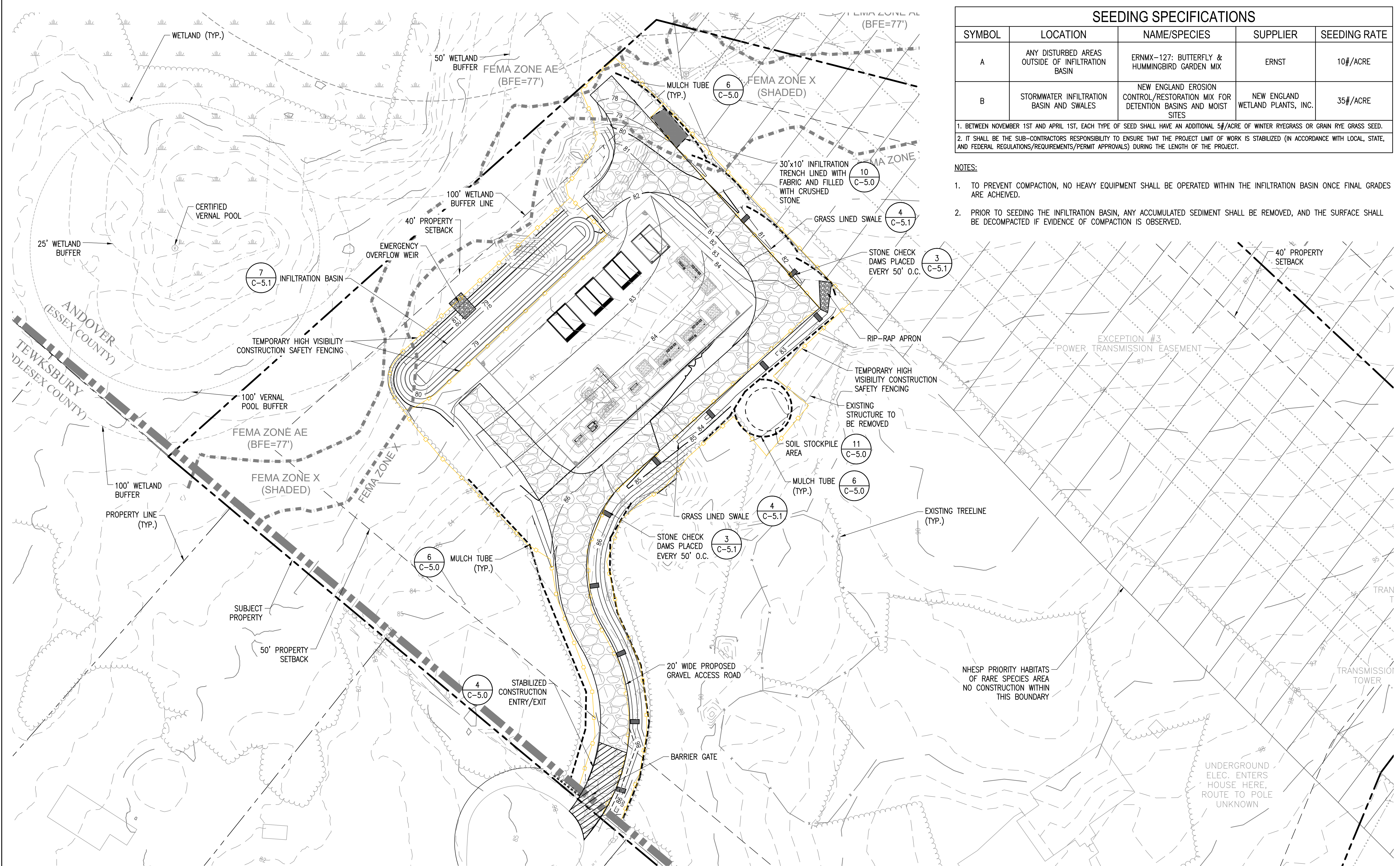


LAYOUT AND MATERIALS PLAN

SCALE: 1" = 30'



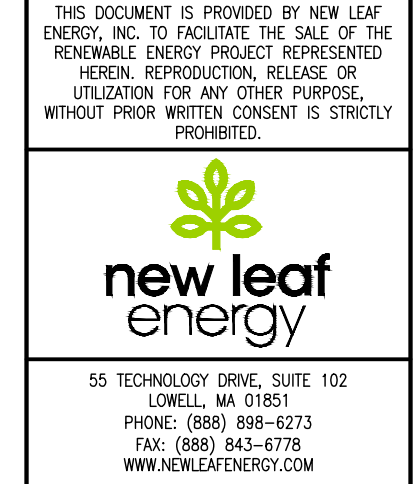
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SEEDING SPECIFICATIONS				
SYMBOL	LOCATION	NAME/SPECIES	SUPPLIER	SEEDING RATE
A	ANY DISTURBED AREAS OUTSIDE OF INFILTRATION BASIN	ERNMX-127: BUTTERFLY & HUMMINGBIRD GARDEN MIX	ERNST	10#/ACRE
B	STORMWATER INFILTRATION BASIN AND SWALES	NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES	NEW ENGLAND WETLAND PLANTS, INC.	35#/ACRE

1. BETWEEN NOVEMBER 1ST AND APRIL 1ST, EACH TYPE OF SEED SHALL HAVE AN ADDITIONAL 5#/ACRE OF WINTER RYEGRASS OR GRAIN RYE GRASS SEED.
 2. IT SHALL BE THE SUB-CONTRACTORS RESPONSIBILITY TO ENSURE THAT THE PROJECT LIMIT OF WORK IS STABILIZED (IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS/REQUIREMENTS/PERMIT APPROVALS) DURING THE LENGTH OF THE PROJECT.

- NOTES:**
- TO PREVENT COMPACTION, NO HEAVY EQUIPMENT SHALL BE OPERATED WITHIN THE INFILTRATION BASIN ONCE FINAL GRADES ARE ACHIEVED.
 - PRIOR TO SEEDING THE INFILTRATION BASIN, ANY ACCUMULATED SEDIMENT SHALL BE REMOVED, AND THE SURFACE SHALL BE DECOMPACTED IF EVIDENCE OF COMPACTION IS OBSERVED.



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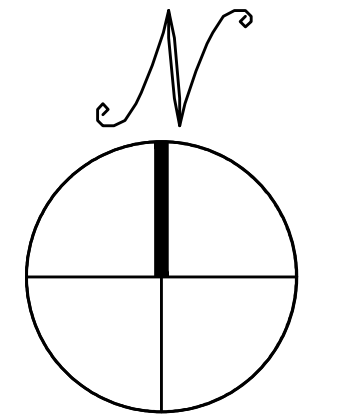
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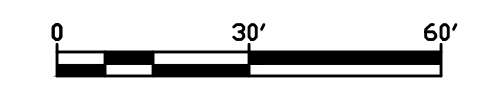
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C-4.0
 GRADING AND EROSION CONTROL PLAN

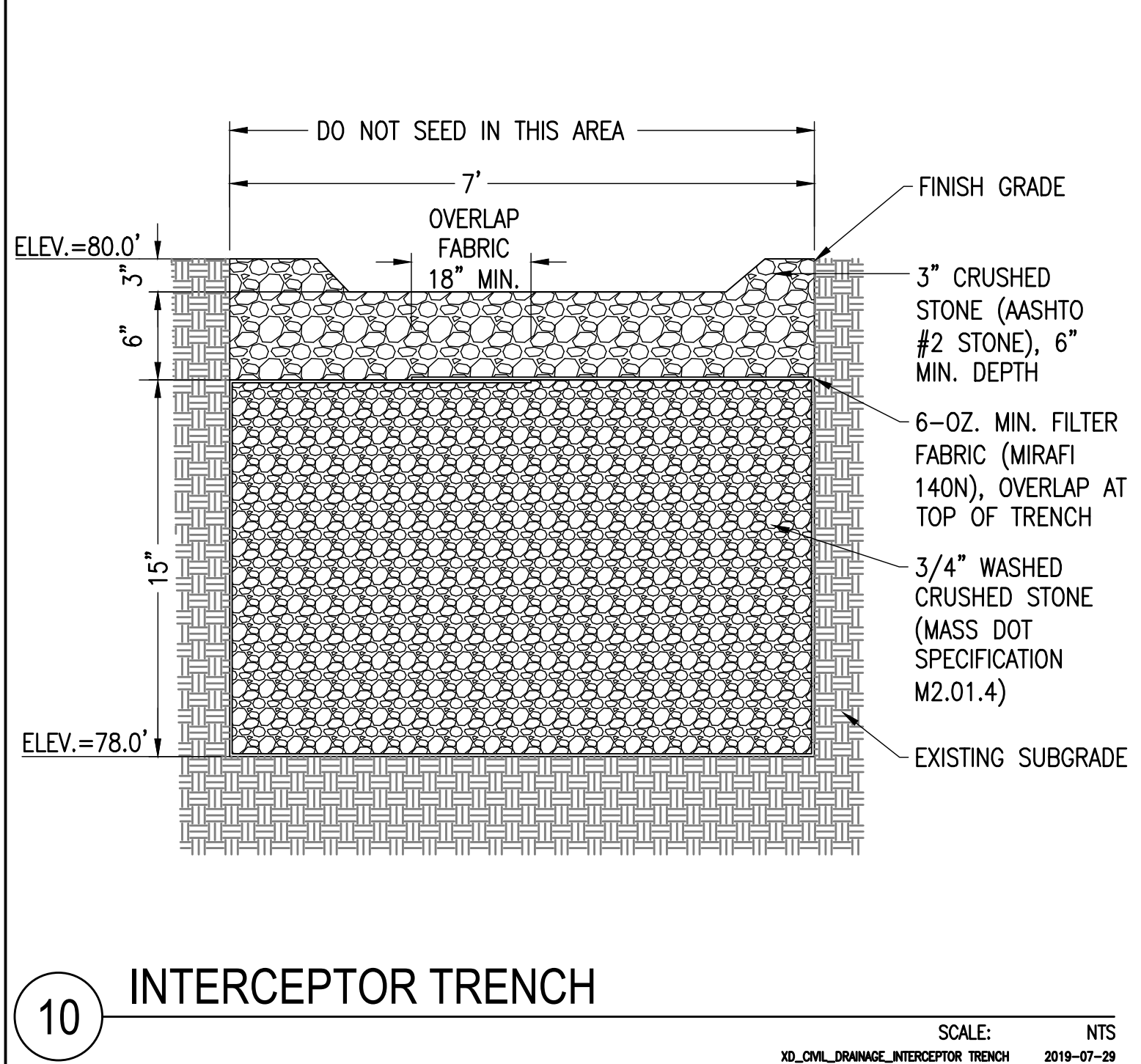


GRADING AND EROSION CONTROL PLAN

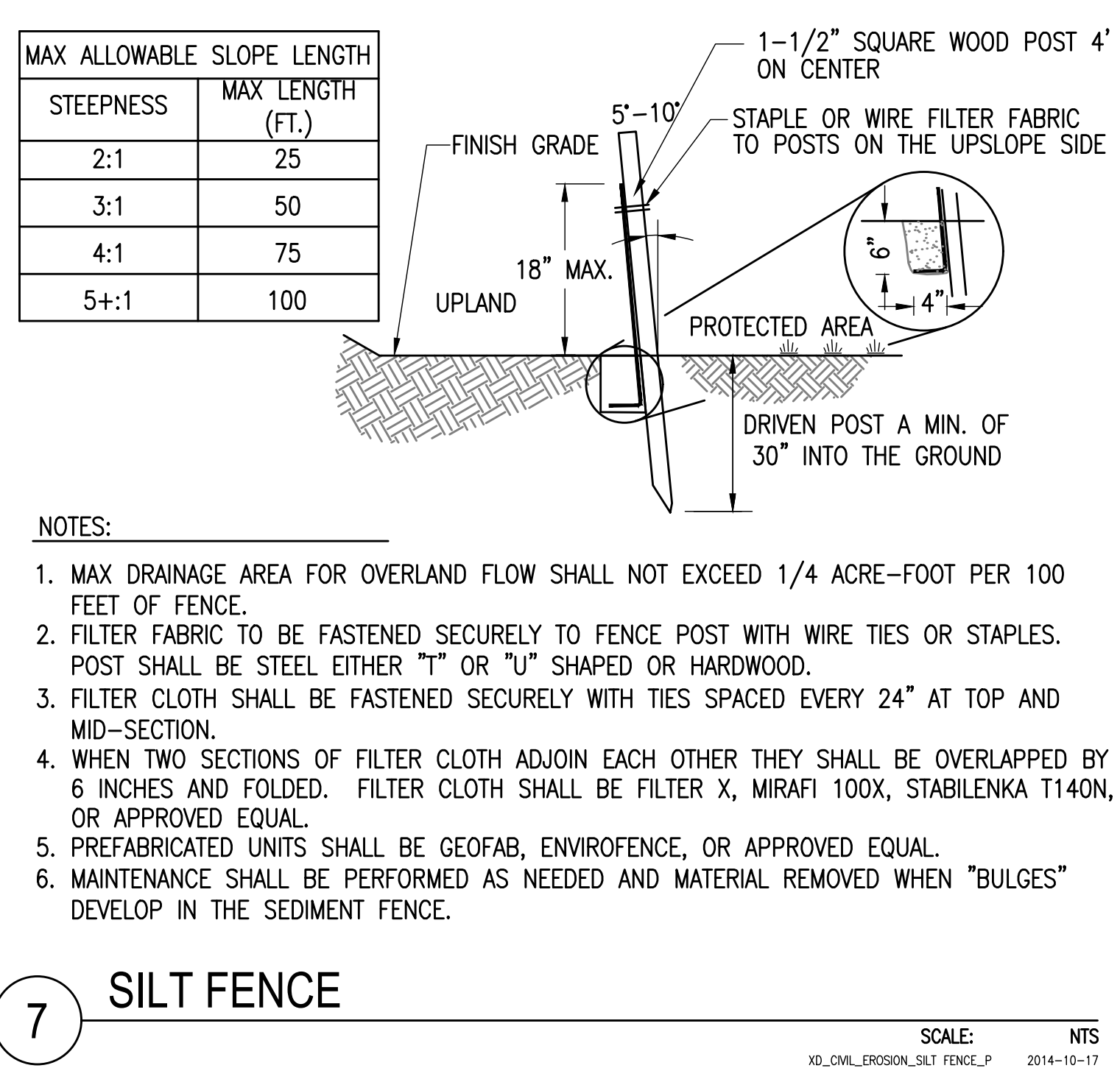
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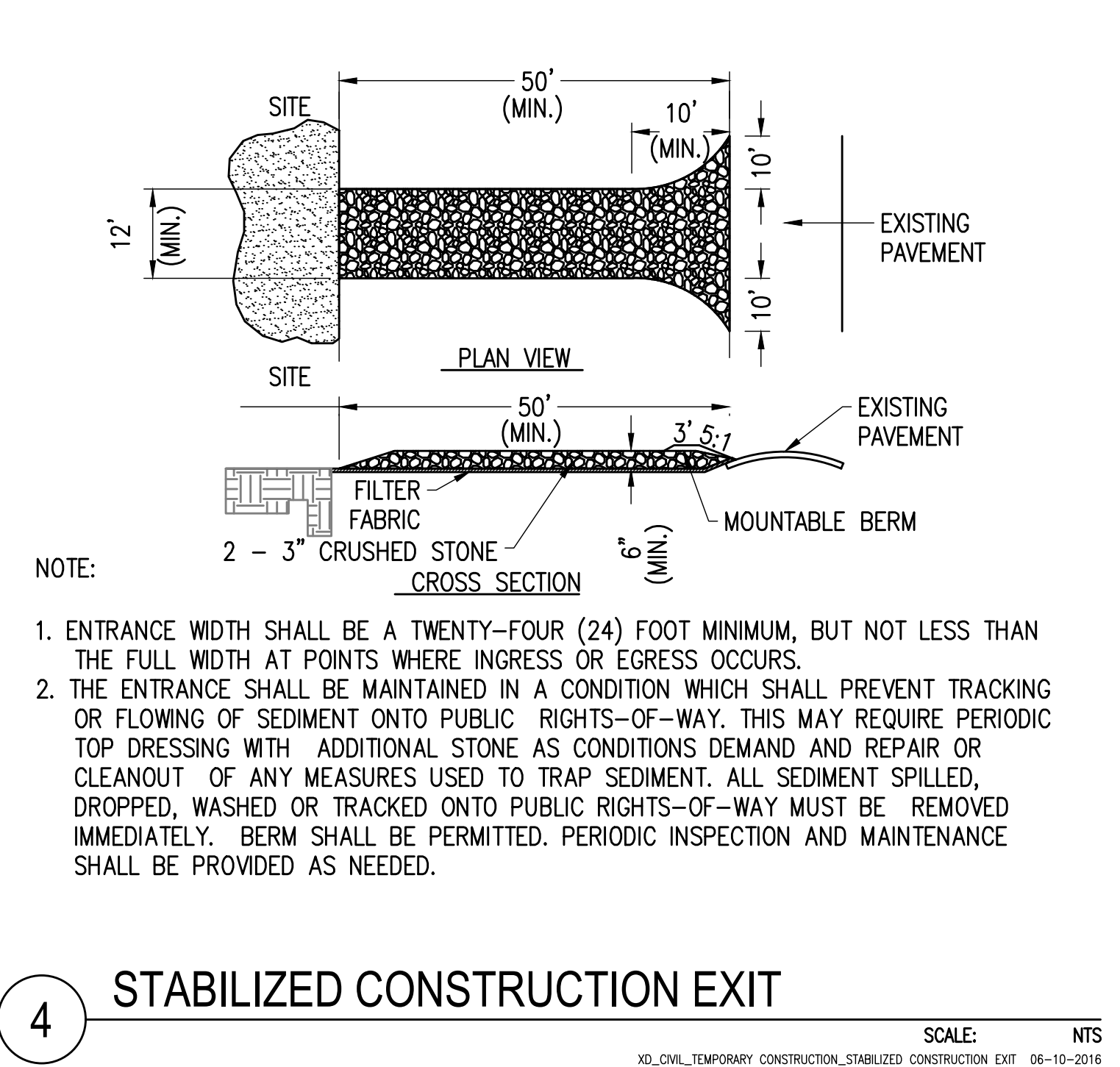
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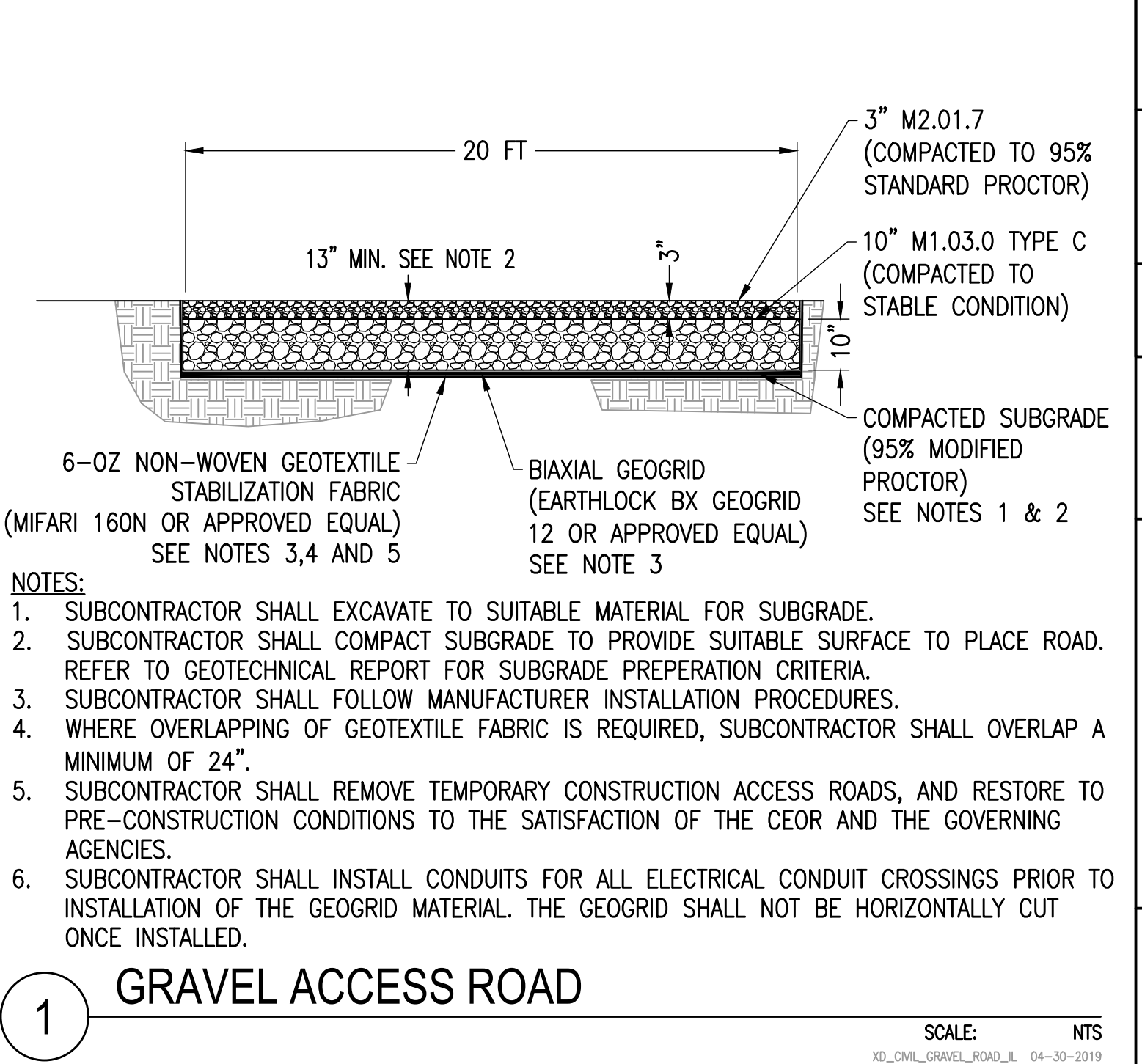
10 INTERCEPTOR TRENCH
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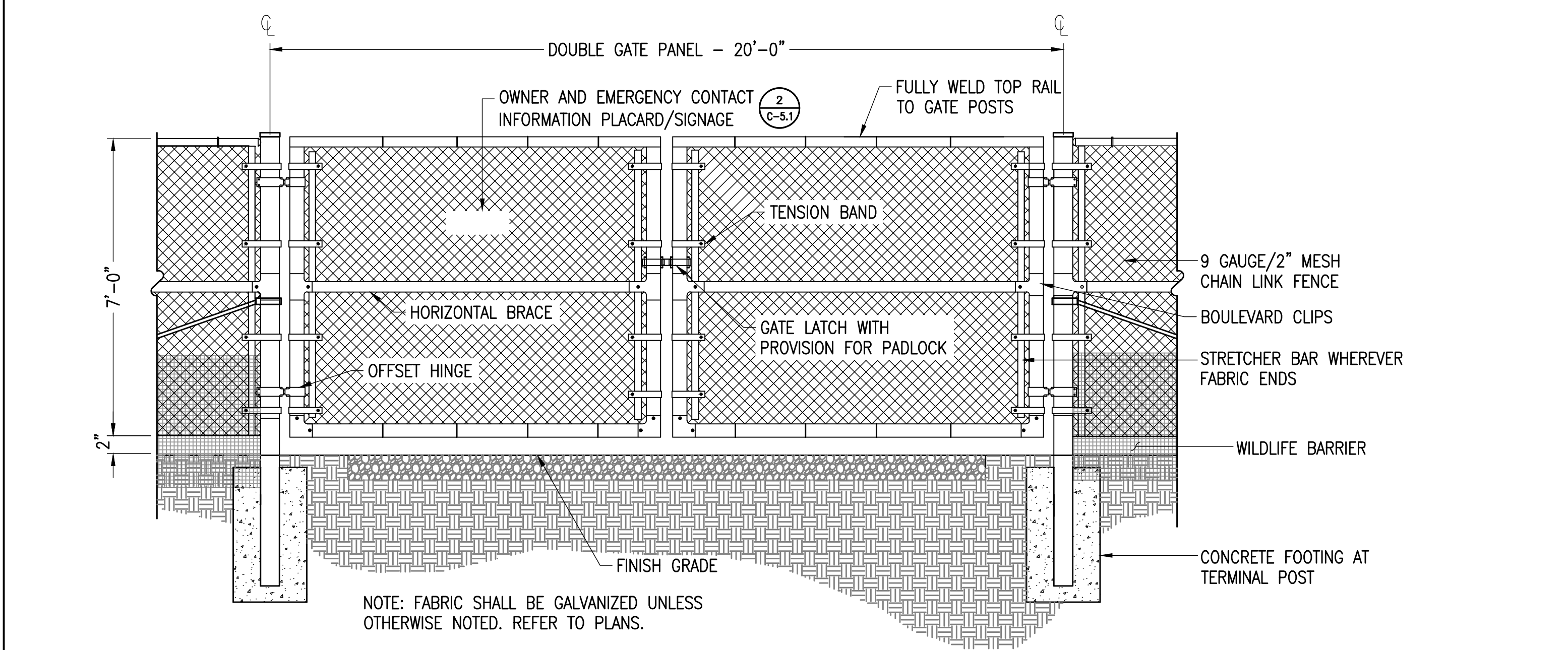
7 SILT FENCE
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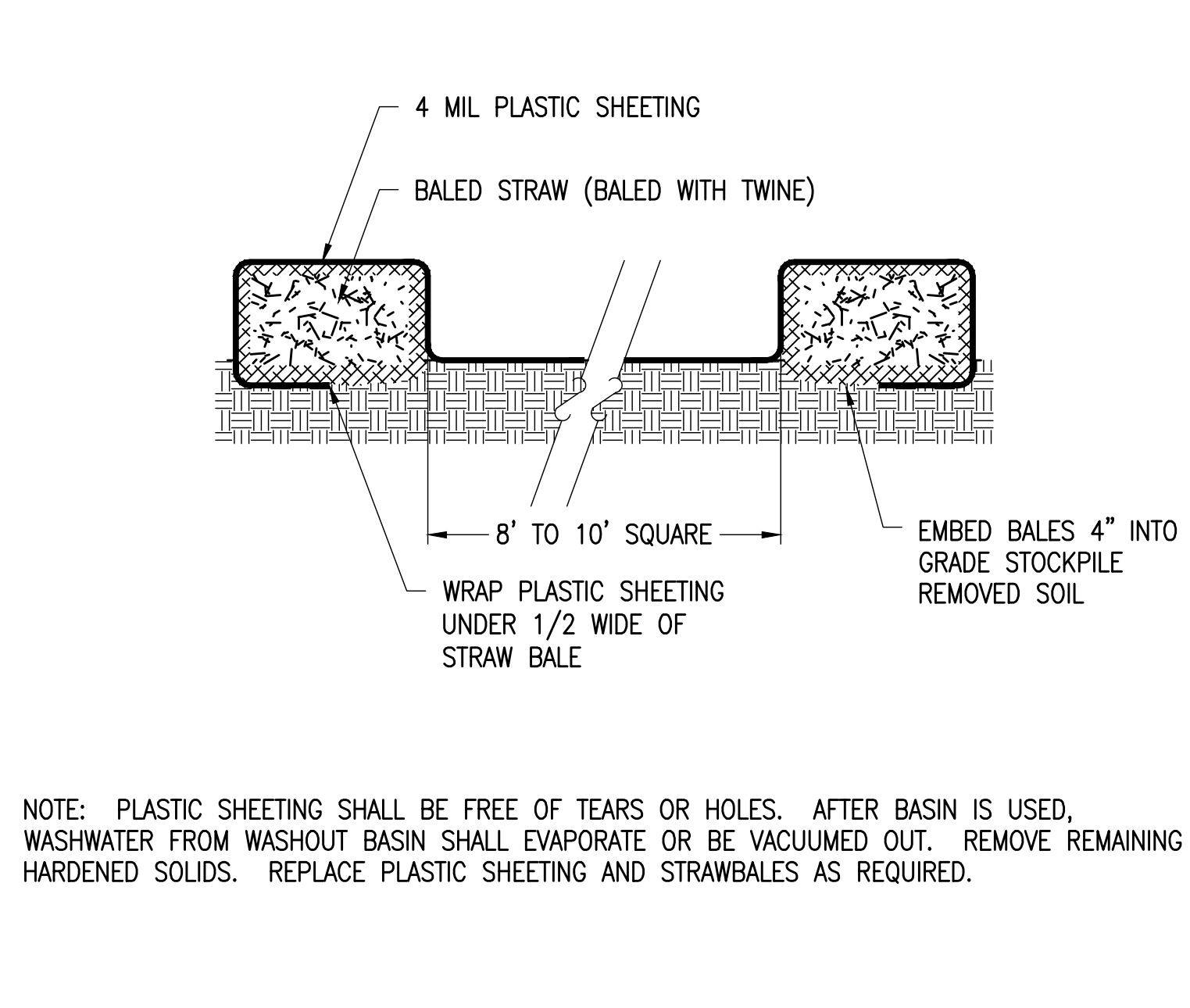
4 STABILIZED CONSTRUCTION EXIT
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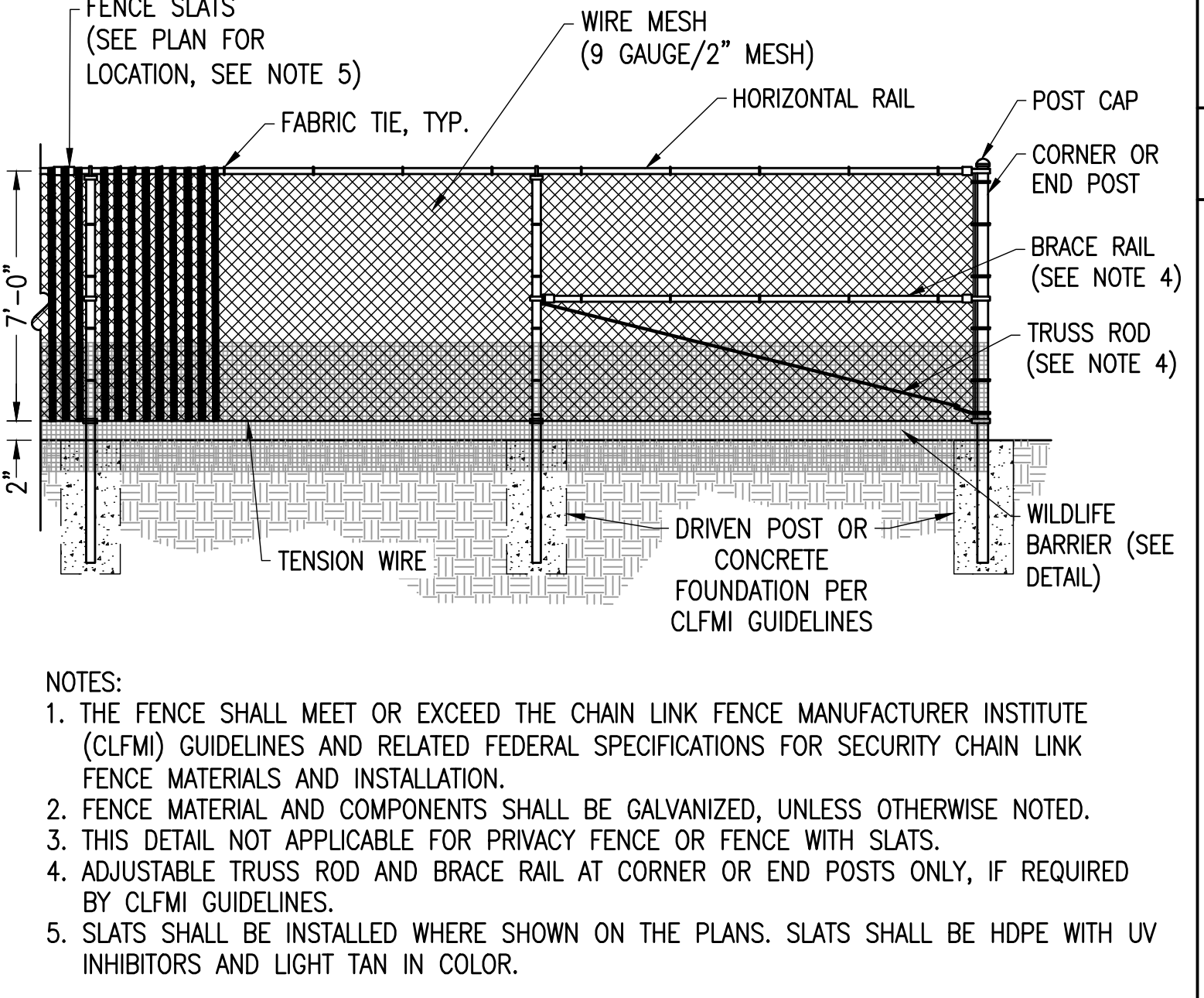
1 GRAVEL ACCESS ROAD
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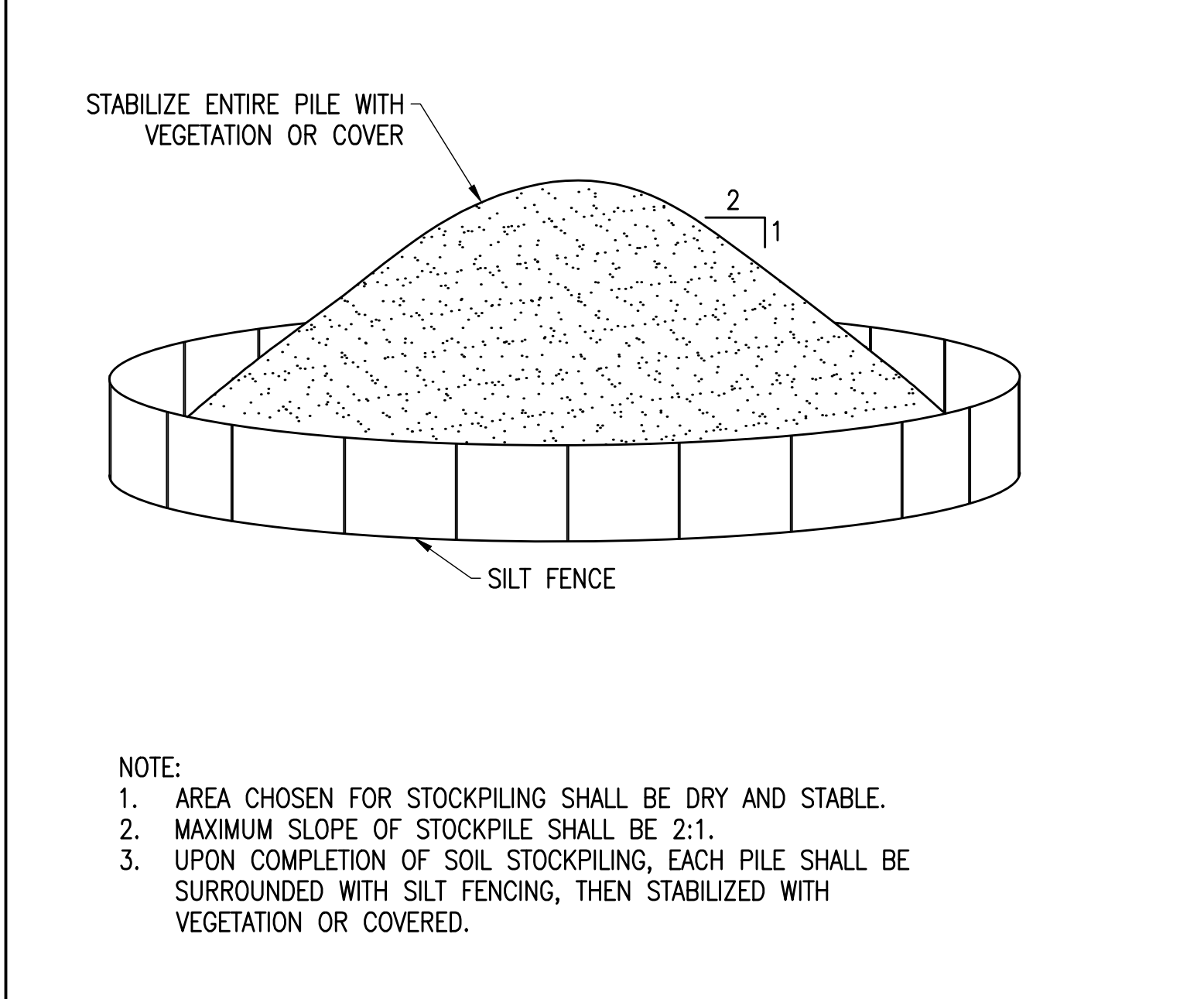
8 VEHICLE GATE
SCALE: NTS
XD_CIVIL_FENCE_VEHICLE_GATE_7 07-02-2020



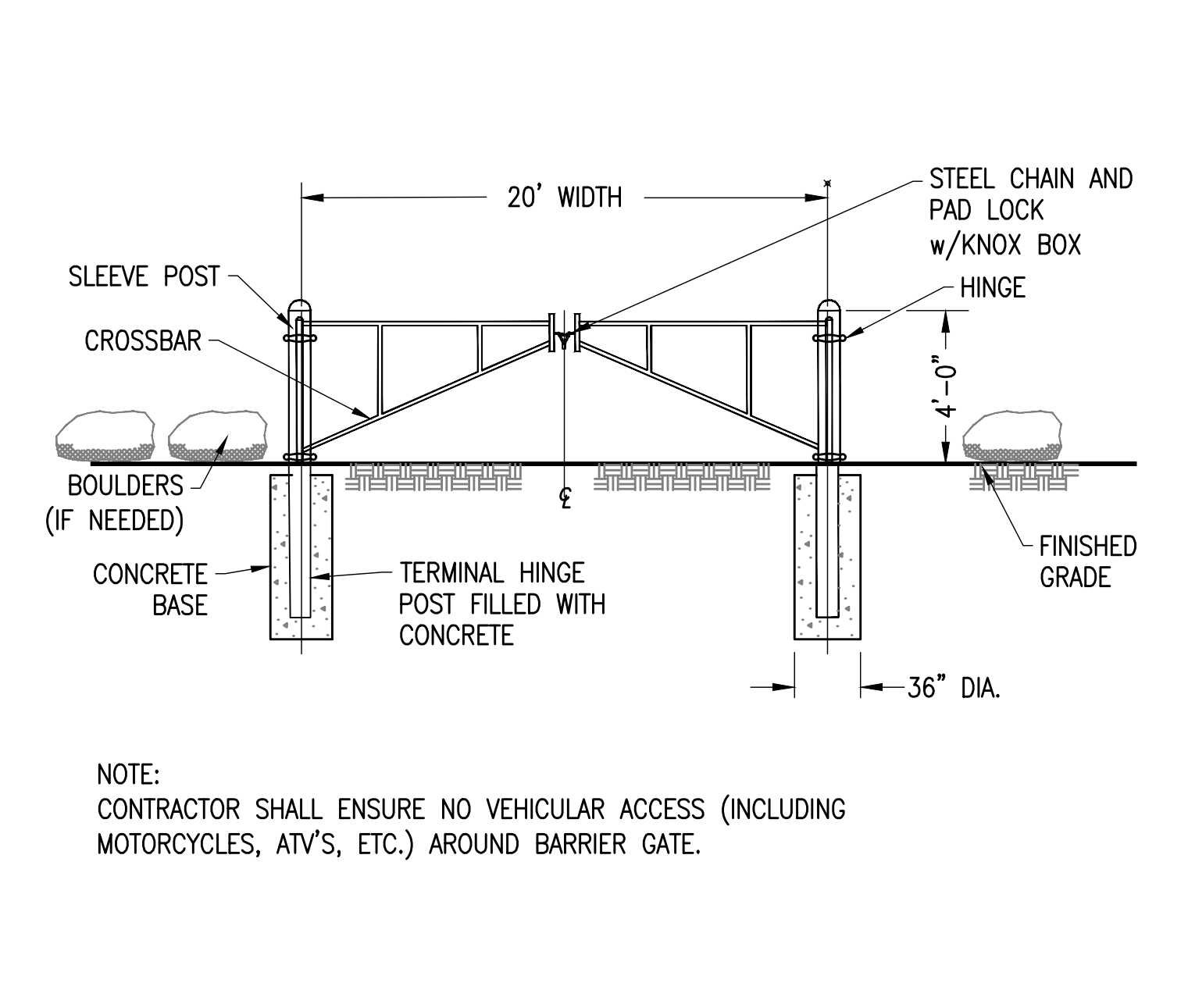
5 CONCRETE WASHOUT BASINS
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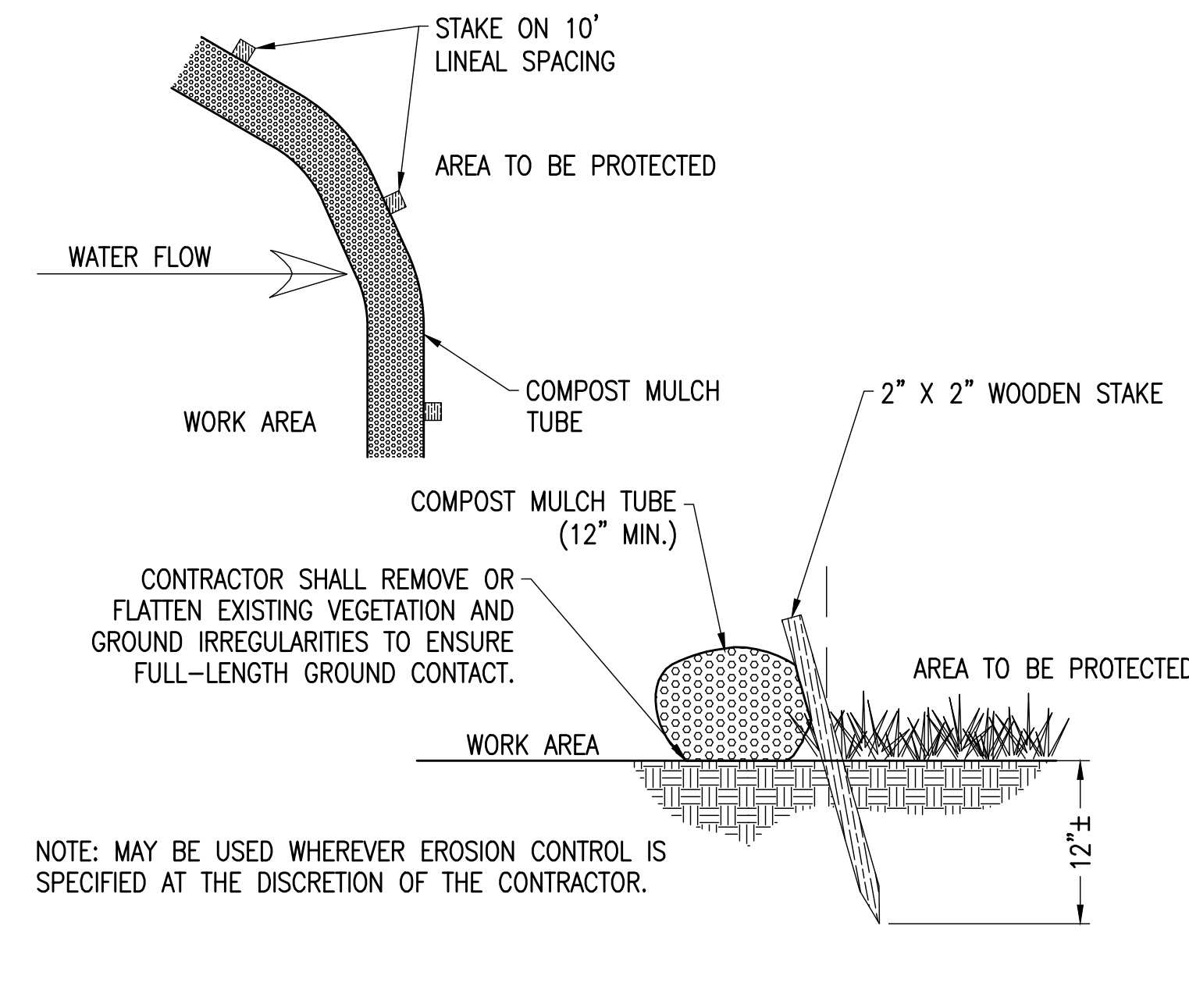
2 CHAIN LINK FENCE
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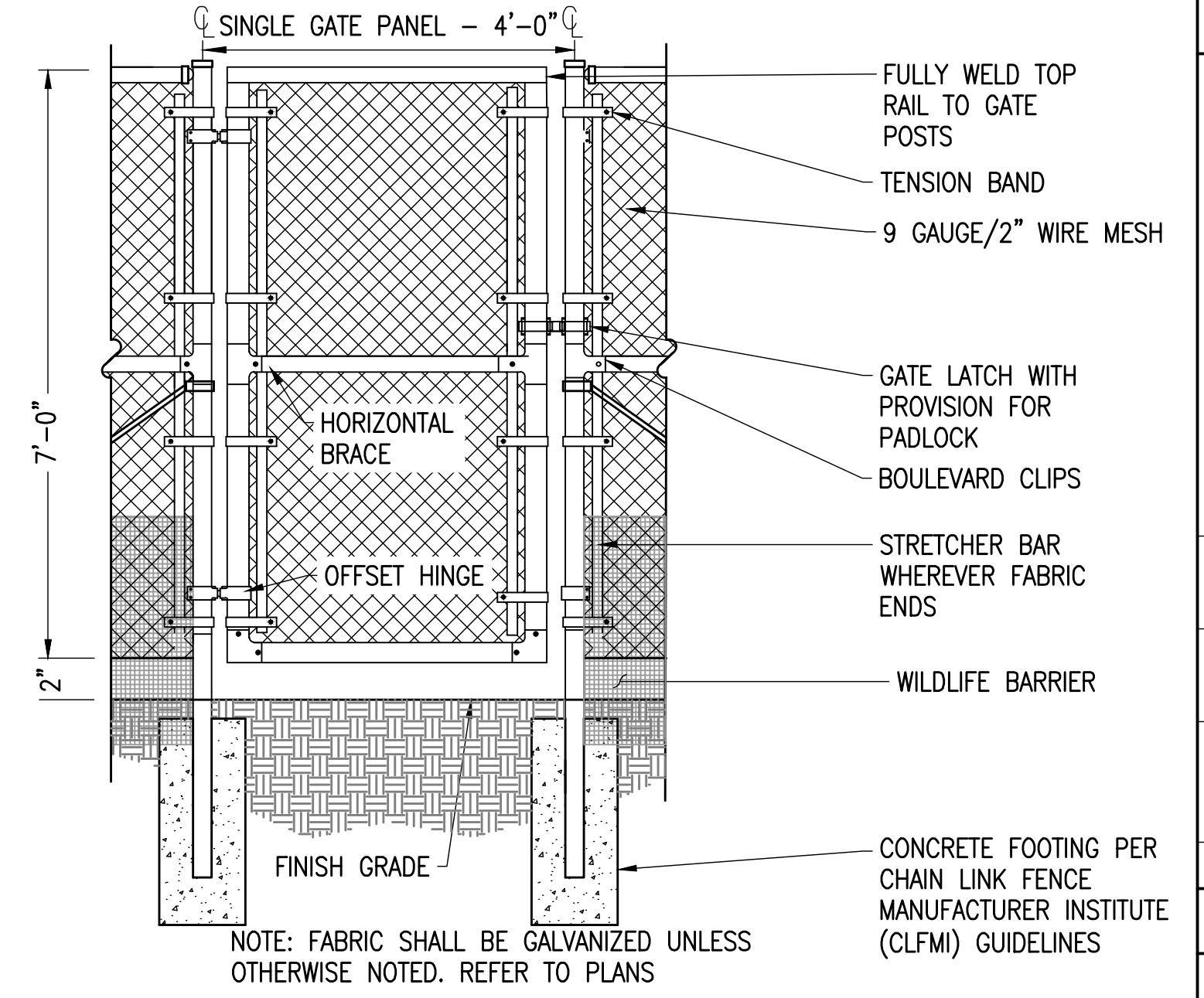
11 STOCKPILE EROSION AND SEDIMENT CONTROL
SCALE: NTS



9 BARRIER GATE
SCALE: NTS
XD_CIVIL_ACCESS_BARRIER_GATE 10-24-2018



6 MULCH TUBE
SCALE: NTS



3 4' ACCESS GATE
SCALE: NTS
XD_CIVIL_SITE_CONSTRUCTION_4_WALK_THROUGH_GATE 07-25-2017

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08/12/2025
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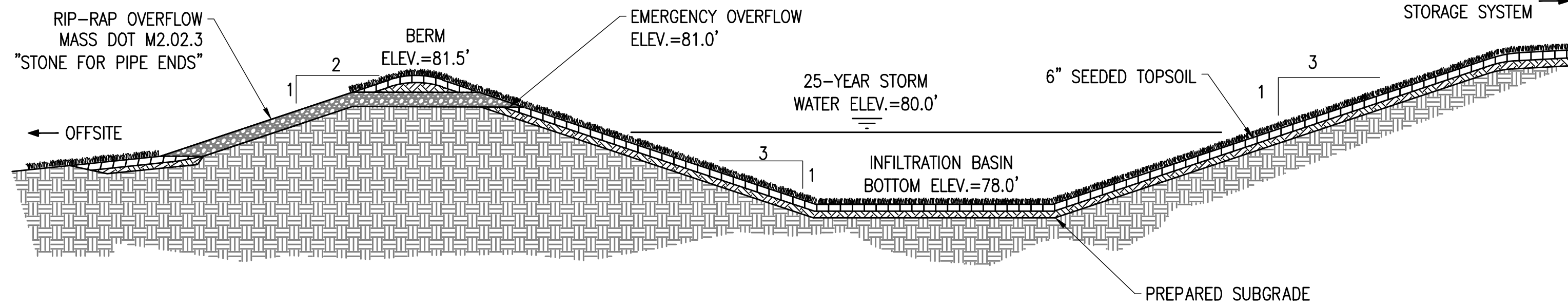
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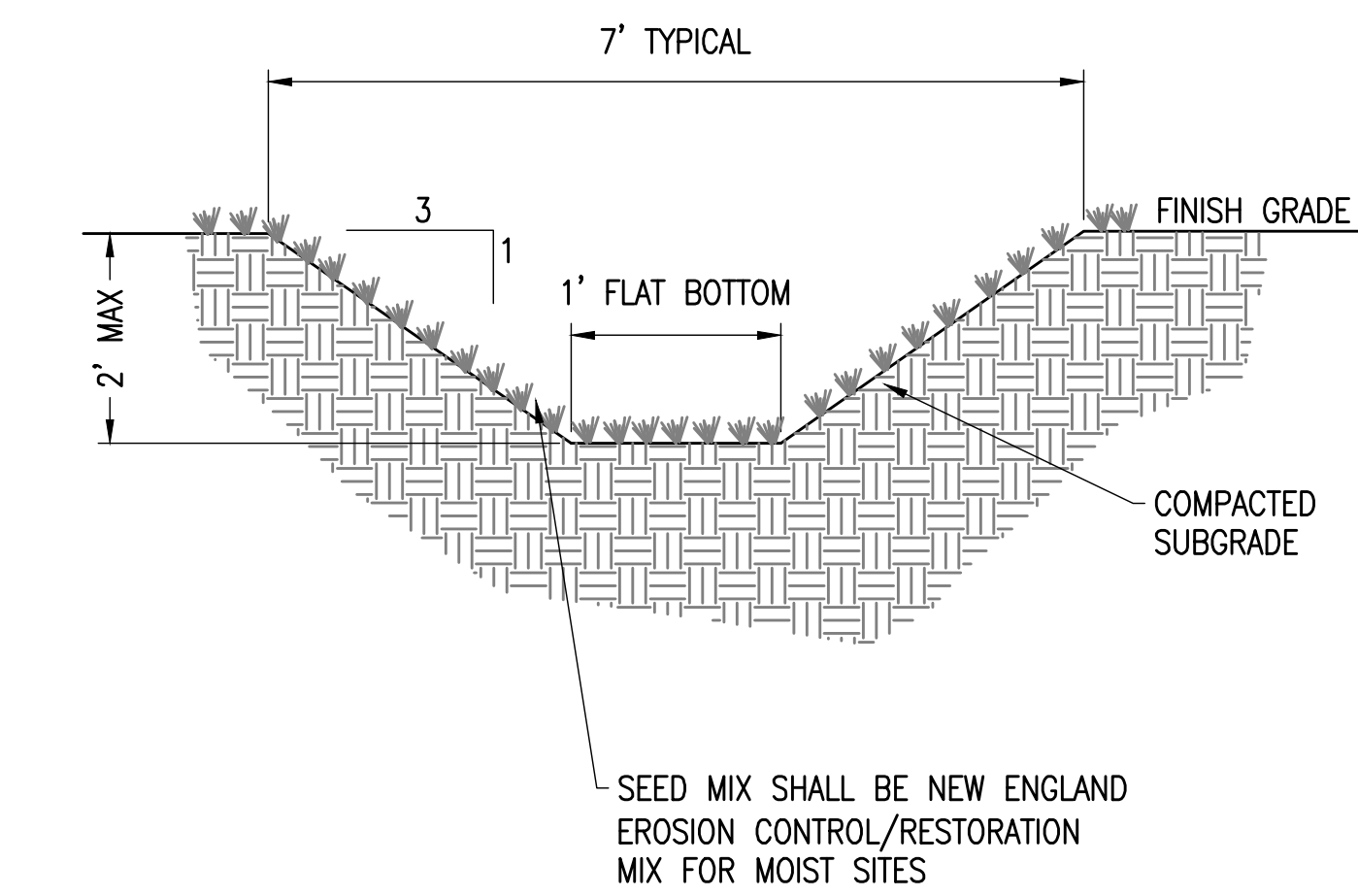
C-5.0
CIVIL DETAILS

NOTES:
1. ALL DIMENSIONS TO BE COORDINATED WITH PLANS



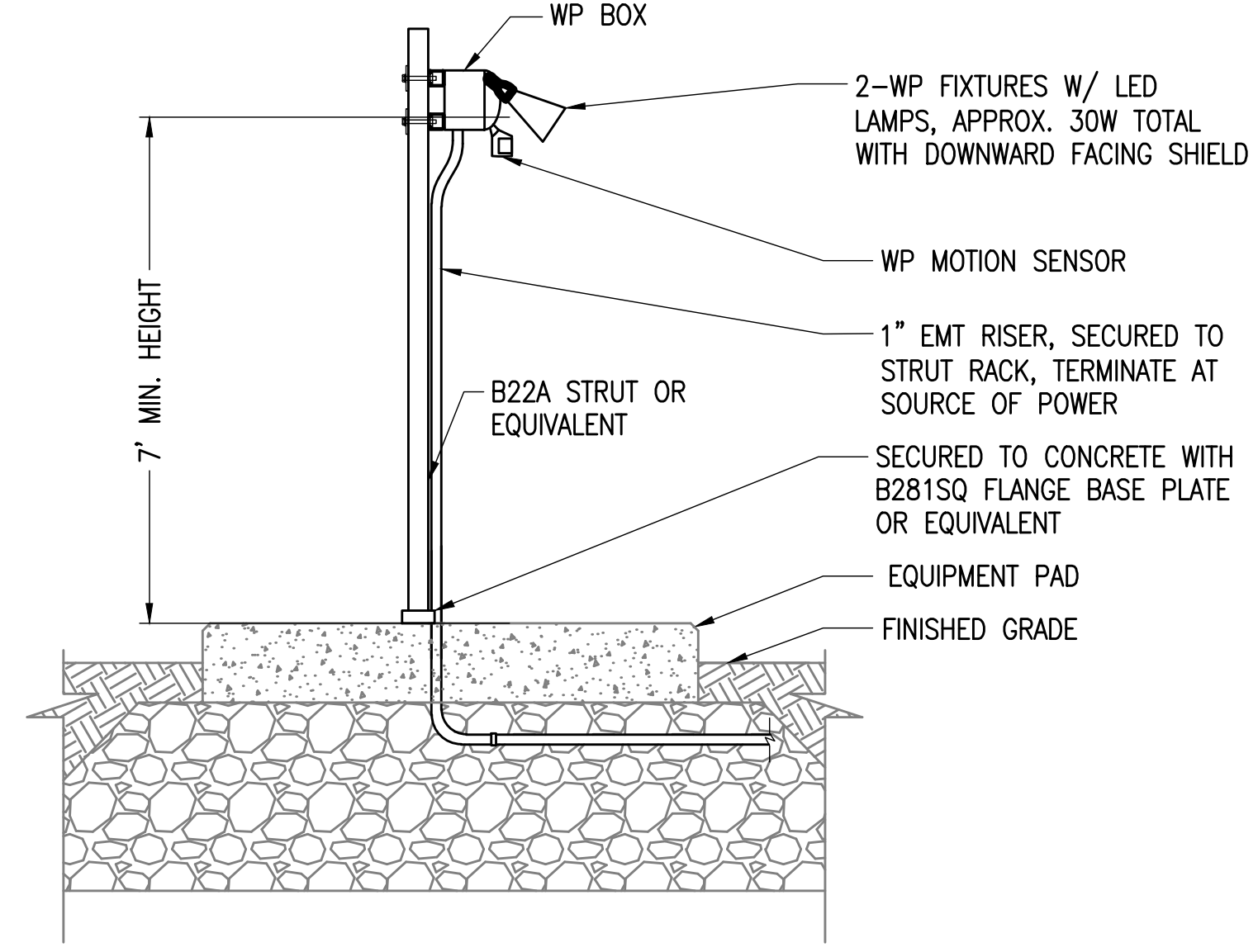
7 INFILTRATION BASIN

SCALE: NTS
XD_CIVIL_DRAINAGE_INFILTRATION_BASIN_NO PIPE 12-08-2020



4 GRASS LINED SWALE

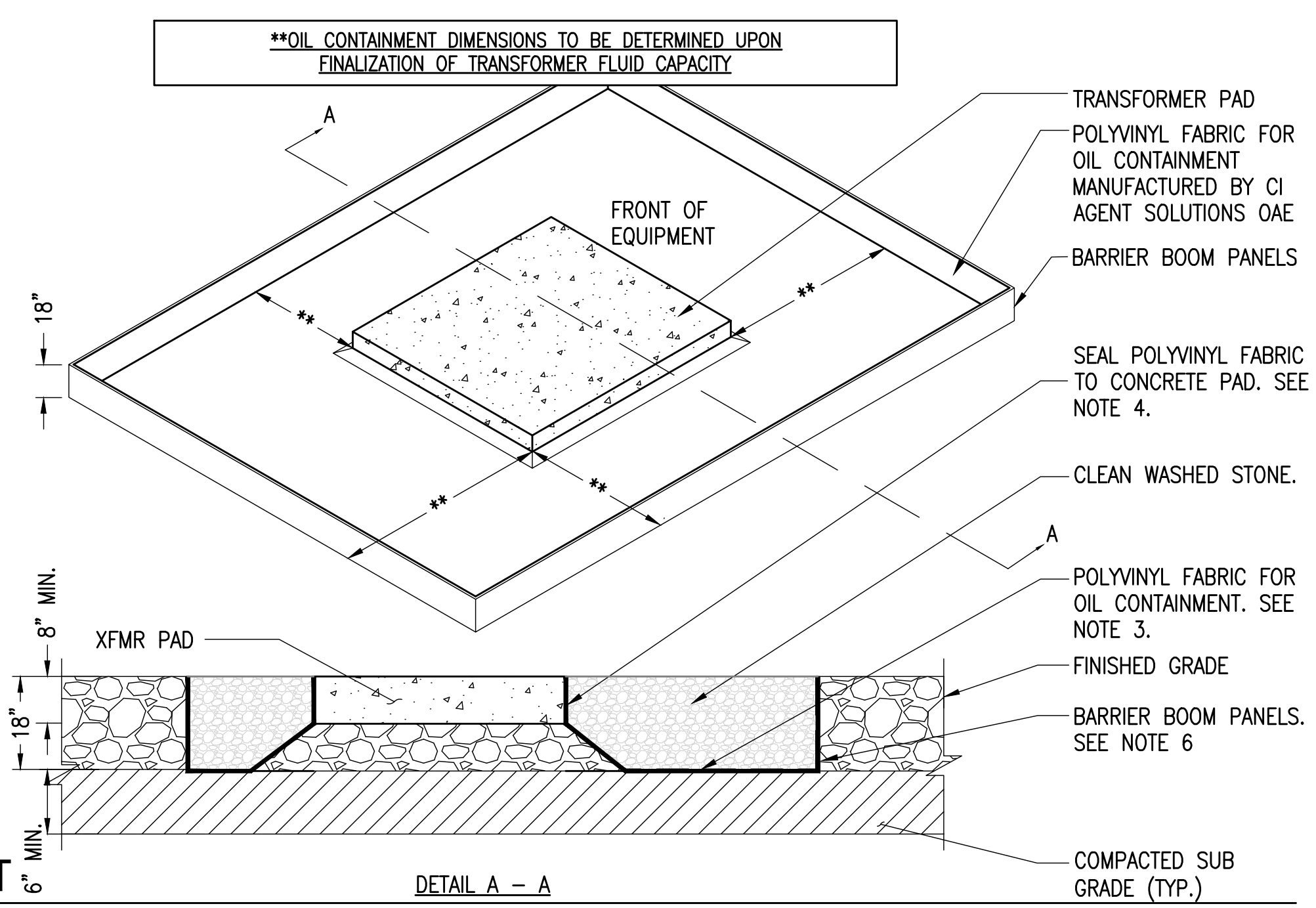
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1 STAND ALONE LIGHT MOUNTING

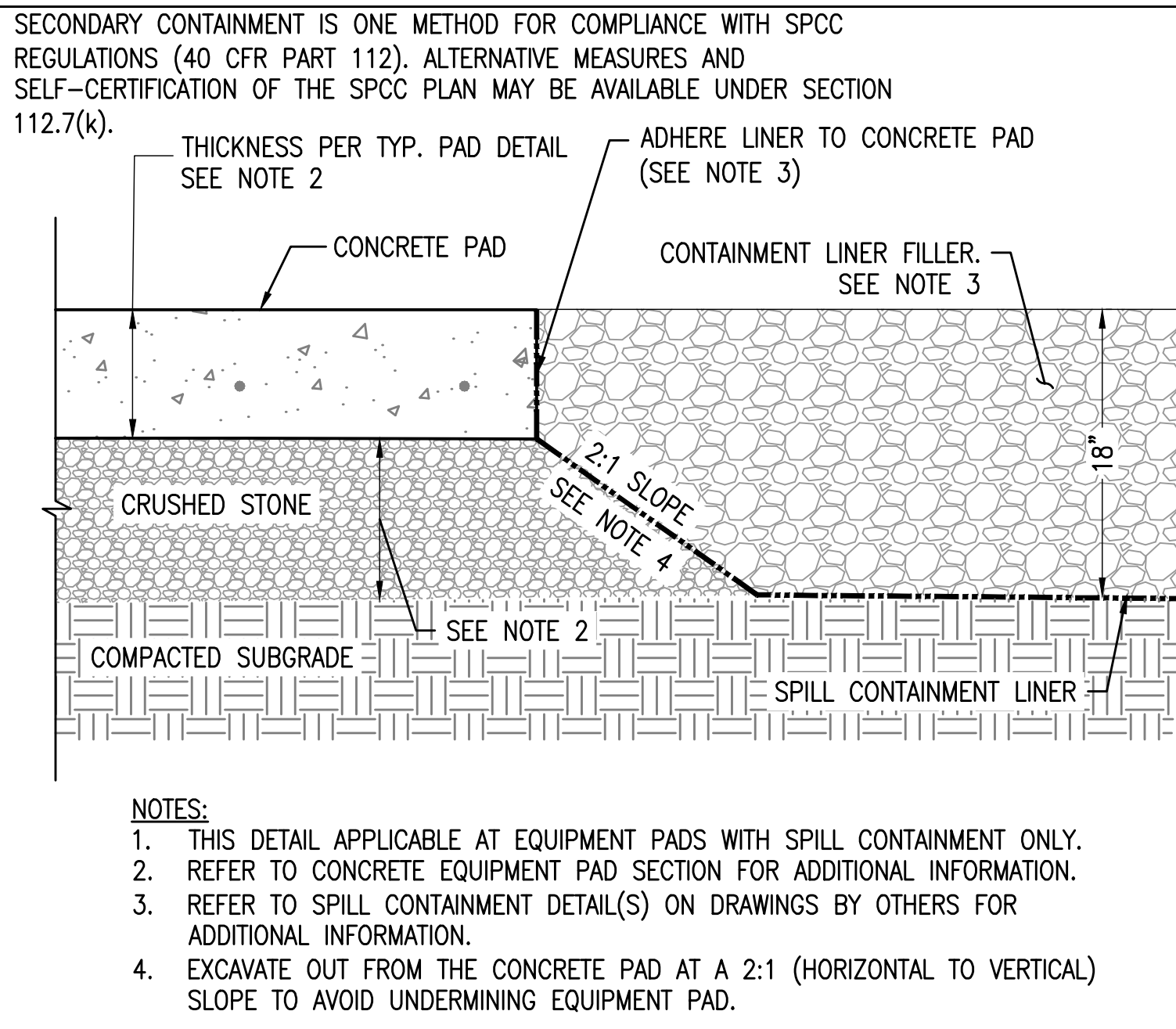
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XD_ELEC_STAND ALONE LIGHT MOUNTING 2016-10-17

- NOTES:
1. PRIOR TO INSTALLATION, SUBCONTRACTOR SHALL CONTACT CONTAINMENT DISTRIBUTOR, SO THAT A REPRESENTATIVE CAN BE ON SITE DURING CONSTRUCTION. DOCUMENTING INSTALLATION IS REQUIRED TO VALIDATE OIL CONTAINMENT PROTECTION POLICY.
 2. EXCAVATION AREA TO BE MINIMUM OF 1' LARGER THAN SIZE OF CONTAINMENT UNIT AND MINIMUM OF 6" DEEPER THAN THE FLOOR OF THE CONTAINMENT UNIT.
 3. CONTRACTOR SHALL SEAM POLYVINYL FABRIC WITH ADHESIVE AND INSTALL IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
 4. AFTER ALL FLOOR SEAMING IS COMPLETE, SUBCONTRACTOR SHALL SEAL POLYVINYL LINER TO CONCRETE PAD USING BENTONITE GRANULAR CLAY IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
 5. SUBCONTRACTOR SHALL SEAL ALL CONDUIT PENETRATIONS WITH FIELD CONSTRUCTED POLYVINYL BOOTS AND BRIMS PER MANUFACTURERS SPECIFICATIONS. A SINGLE BOOT SHALL BE PLACED AROUND GROUPS OF CONDUIT.
 6. SUBCONTRACTOR SHALL PROVIDE 2" WOODEN STAKES TO SUPPORT THE CONTAINMENT WALLS. INSTALLATION OF OUTSIDE BARRIER BOOM USING STAKES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
 7. PRIOR TO BACKFILLING THE FABRIC THE CONTRACTOR SHALL NOTIFY THE BORRERO SOLAR CIVIL ENGINEER AND PROVIDE SUBMITTAL FOR BACKFILL MATERIAL. PROVIDE A MINIMUM OF 48 HOURS NOTICE.
- SECONDARY CONTAINMENT IS ONE METHOD FOR COMPLIANCE WITH SPCC REGULATIONS (40 CFR PART 112). ALTERNATIVE MEASURES AND SELF-CERTIFICATION OF THE SPCC PLAN MAY BE AVAILABLE UNDER SECTION 112.7(k)



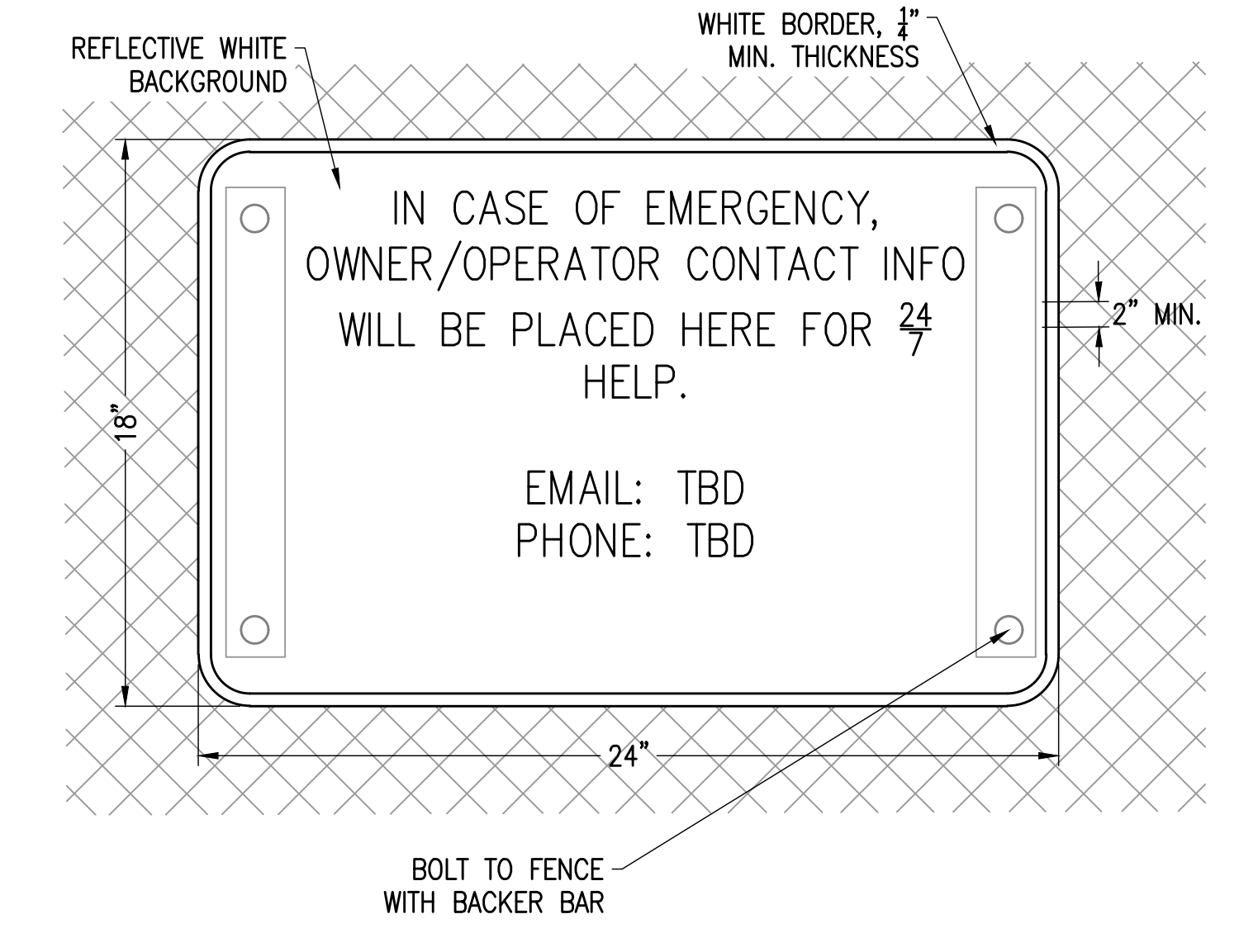
8 SECONDARY SPILL CONTAINMENT

SCALE: NTS
XD_ELEC_TRANSFORMER OIL CONTAINMENT SINGLE LARGE 2020-7-1



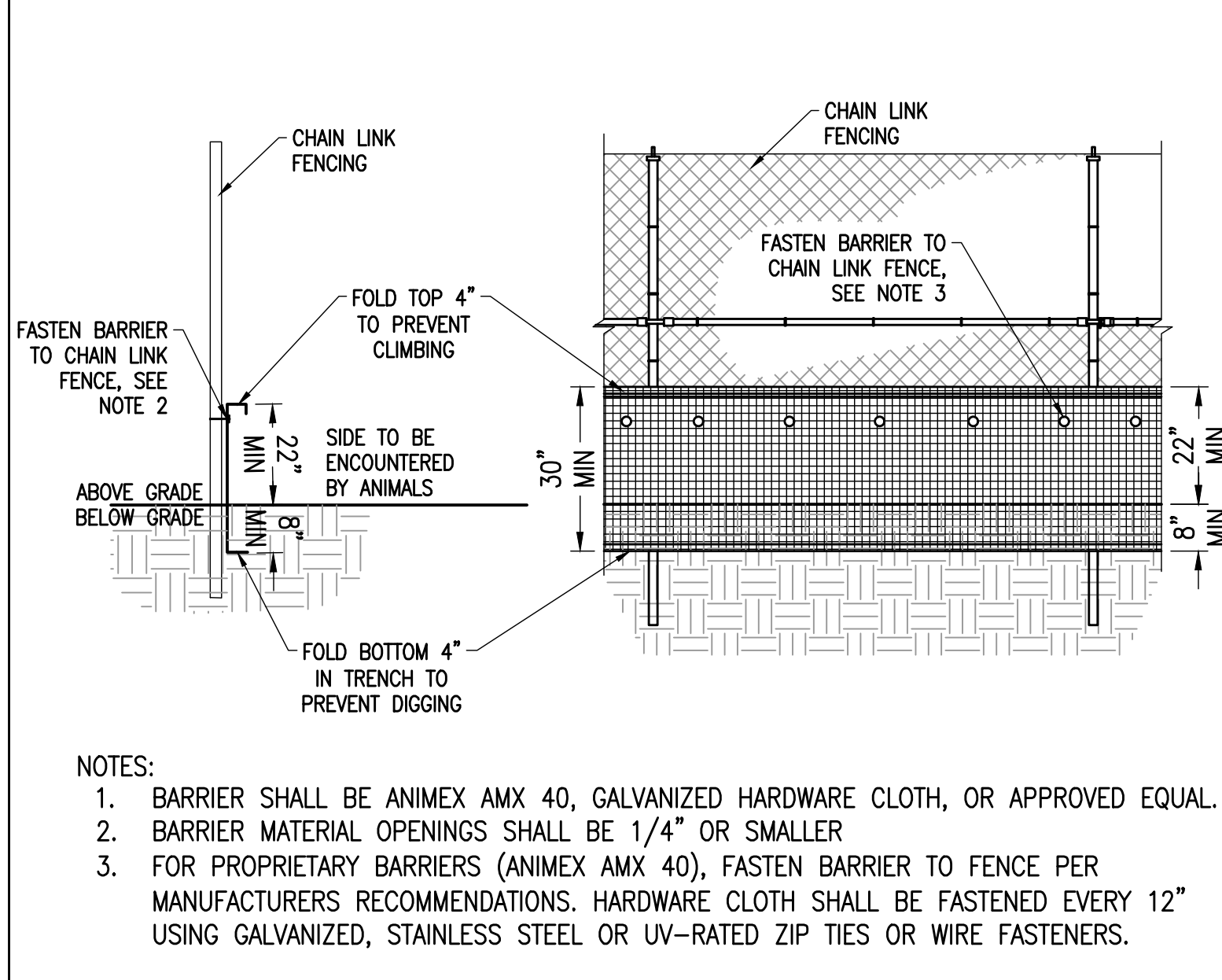
5 SECONDARY SPILL CONTAINMENT LINER

SCALE: NTS
XD_STRUCT_EQUIPMENT_PAD_SPILL_CONTAINMENT 2019-12-13



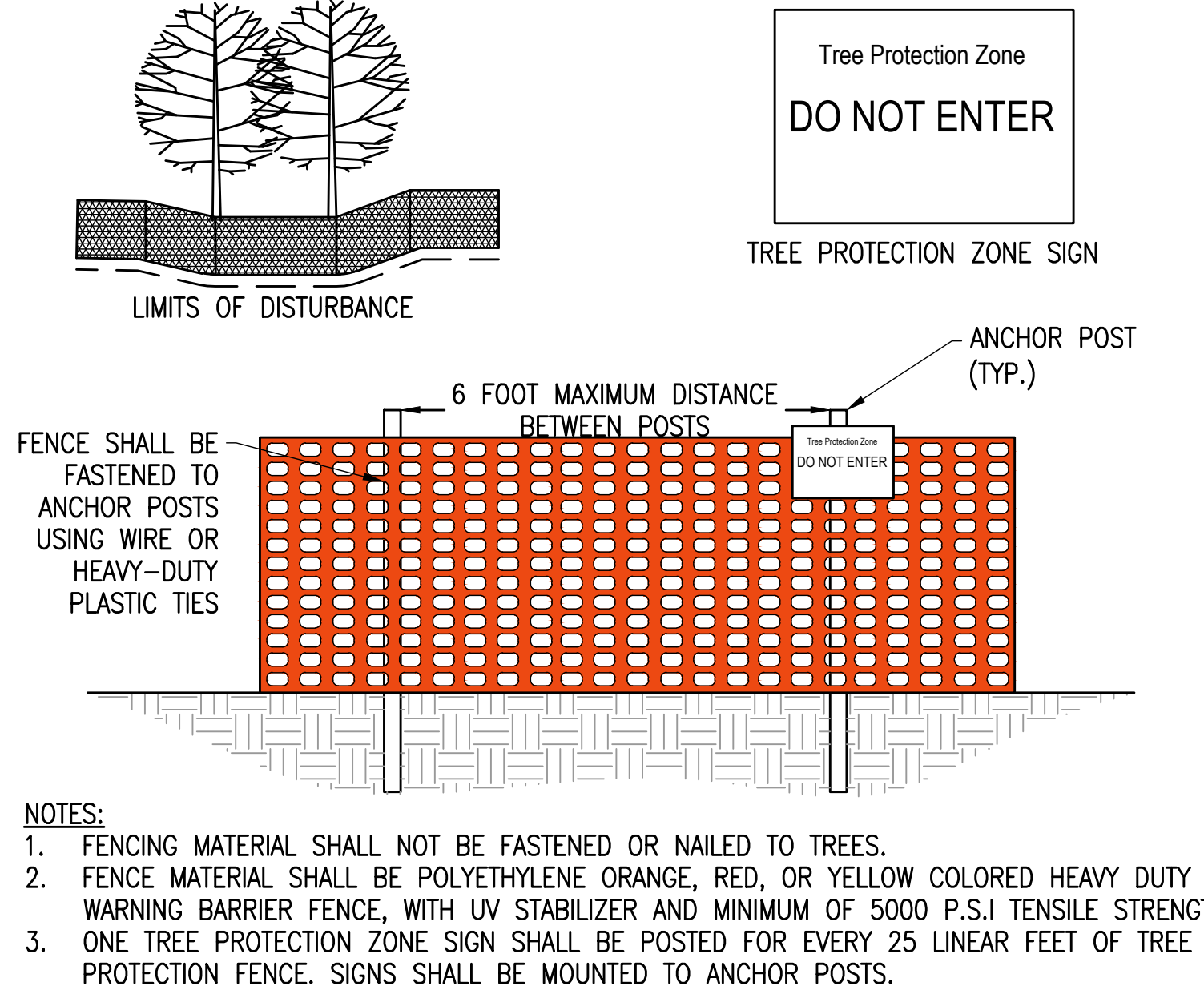
2 EMERGENCY CONTACT SIGN

SCALE: NTS
XD_CIVIL_SIGNAGE_EMERGENCY 2019-2-22



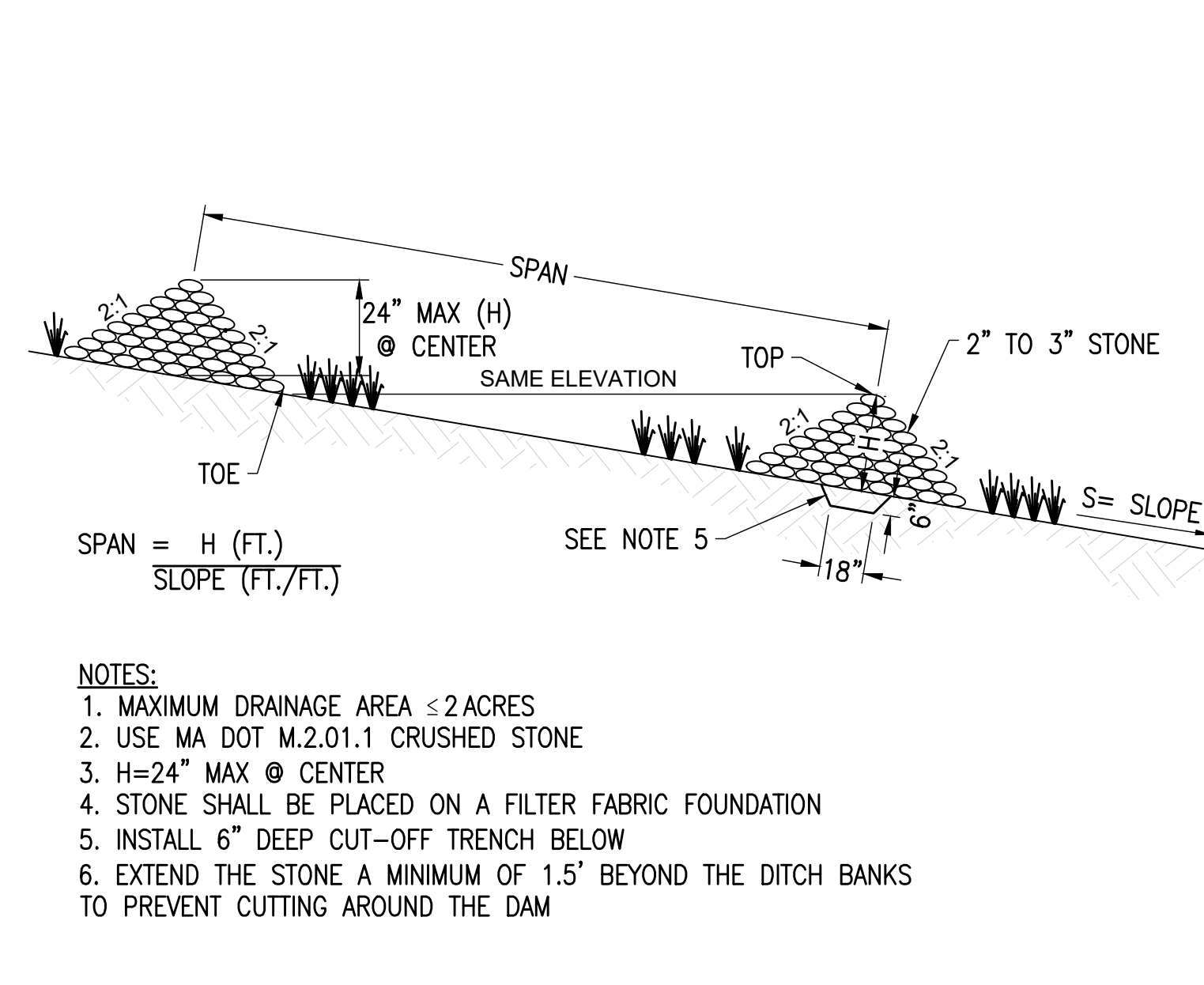
9 WILDLIFE BARRIER

SCALE: NTS



6 TREE PROTECTION FENCING DETAIL

SCALE: N.T.S.



3 STONE CHECK DAM

SCALE: N.T.S.
XD_CIVIL_CHECK DAM 08-15-2016

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BORRERO SOLAR
PROFESSIONAL ENGINEER
08/12/2025

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1320 S STREET
ANDOVER, MA 01810

PROJECT NUMBER:
120-0345

REV	DATE	DRAWN	CHECKED	RELEASE LEVEL	COMMENTS
1	4/12/22	CS	BS	BS	SITE USE PERMIT SET
2	6/14/22	CS	BS	BS	RESPONSE TO PEER REVIEW
3	9/13/22	CS	BS	BS	RESPONSE TO COMMENTS
4	11/29/22	CS	BS	BS	RESPONSE TO COMMENTS
5	4/25/25	CS	BS	BS	MODIFICATION REQUEST

SCALES STATED ON DRAWINGS ARE VALID ONLY WHEN PLOTTED ARCH D 24" X 36"

C-5.1
CIVIL DETAILS