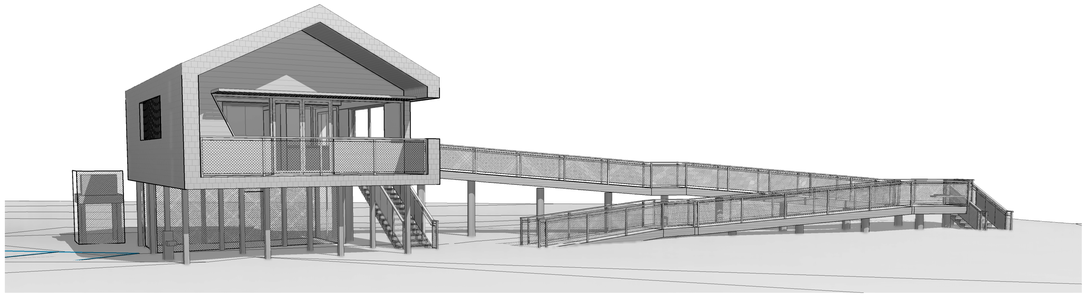
ROCK HARBOR HARBORMASTER BUILDING AND SITE REVITALIZATION PROJECT

631 DYER PRINCE ROAD
EASTHAM, MA 02642
PARCEL NO: 19-120-0

NOTICE OF INTENT UPDATES
APRIL 5, 2021



PROJECT DIRECTORY

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PROJECT DATA

LOCATION:	631 DYER PRINCE ROAD EASTHAM, MA 02642	EXPOSURE:	EXPOSURE D
TYPE:	NEW GROUND-UP HARBORMASTER BUILDING AND SITE IMPROVEMENT	GROUND SNOW LOAD:	25 PSF
PARCEL NUMBER:	MAP 19 PARCEL 120	MINIMUM FLAT ROOF SNOW LOAD:	25 PSF
CONSTRUCTION TYPE:	V-B	RISK CATEGORY:	II
BUILDING OCCUPANCY:	B	BASIC WIND SPEED:	140
LOT AREA:	9.9 ACRES (431,169 SF)	SEISMIC PARAMETERS(Ss, S1):	0.146, 0.054

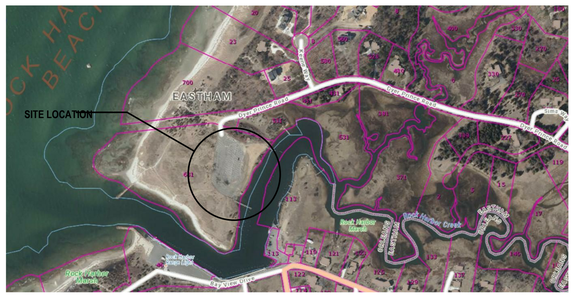
PROPOSED PROJECT INFORMATION:

NUMBER OF STORIES:	1	
PROPOSED AREAS:	OFFICE LEVEL:	703 SF
	CONDITIONED GROSS:	**582 SF**
	DECKS AND RAMPS:	727 SF
	OPENAIR STORAGE:	215 SF
	GENERATOR PLATFORM:	30 SF
BUILDING HEIGHT (MAXIMUM ALLOWED):	24' - 6" 30' - 0"	
ON-SITE PARKING SPACES:	30	

PROJECT DESCRIPTION

WORK CONSISTS OF A NEW WOOD-FRAMED HARBORMASTER BUILDING ON A WOOD PILE FOUNDATION, A DEMOUNTABLE BANDSHELL PAVILION, PERMEABLE PARKING, PERMEABLE PEDESTRIAN WALKS, BENCHES, PICNIC AREA, RINSE STATION, SITE LIGHTING, AND INVASIVE SPECIES REMOVAL AND HABITAT RESTORATION.

VICINITY MAP



PROJECT SCOPE

ARCHITECTURAL:	GROUND-UP CONSTRUCTION OF A SINGLE STORY HARBORMASTER BUILDING ELEVATED ON WOOD PILES CONTAINING OFFICE SPACE, A KITCHENETTE, AND A TOILET ROOM FOR STAFF USE. EXTERIOR CONSTRUCTION INCLUDES STAIR ACCESS, ACCESSIBLE RAMPS, A VIEWING PLATFORM WITH INTEGRATED SEATING, AND SECURED OPEN STORAGE BELOW. SITE CONSTRUCTION INCLUDES A DEMOUNTABLE BANDSHELL PAVILION AND A SCREENED GENERATOR PLATFORM ADJACENT TO MAIN BUILDING.
STRUCTURAL:	SINGLE STORY CONVENTIONAL WOOD FRAME ON WOOD PILE FOUNDATION, IN ACCORDANCE WITH THE WOOD FRAME CONSTRUCTION MANUAL.
CIVIL:	PERVIOUS PARKING, SITE UTILITIES AND CONNECTIONS AT BUILDING, LIMITED GRADING, STORMWATER CATCHMENT AND TREATMENT (TBD)
PLUMBING:	1 TOILET ROOM FOR STAFF USE, KITCHENETTE, SITE PLUMBING FOR RINSE STATION, CONNECTION TO EXISTING TOWN WATER SUPPLY ON SITE
ELECTRICAL:	ELECTRICAL FOR BUILDING, SITE ELECTRICAL FOR LIGHTING
FIRE PROTECTION:	BUILDING IS UNSPRINKLERED
MECHANICAL:	SINGLE-ZONE SPLIT SYSTEM AIR SOURCE HEAT PUMP
LANDSCAPE:	PERMEABLE PARKING, PEDESTRIAN WALKS, DEMOUNTABLE BANDSHELL PAVILION, RINSE STATION, PICNIC AREA, SEATING AREAS, INVASIVE SPECIES REMOVAL, HABITAT REMEDIATION, INTERPRETIVE AND WAYFINDING SIGNAGE

APPLICABLE CODES & STANDARDS

MASSACHUSETTS STATE BUILDING CODE (780 CMR), NINTH EDITION, ADOPTING WITH MODIFICATIONS THE FOLLOWING CODES:
- INTERNATIONAL BUILDING CODE (IBC);
- INTERNATIONAL MECHANICAL CODE (IMC);
- INTERNATIONAL ENERGY CONSERVATION CODE (IECC); AND
- PORTIONS OF THE INTERNATIONAL FIRE CODE (IFC).

TABLE OF CONTENTS

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PROJECT INFORMATION

Town of Eastham
OWNER

APN

LICENSED ARCHITECT
ELIZABETH RANIERI
NO. 30999
STATE OF MASSACHUSETTS

STAMP

Notice of Intent Updates
04/05/21
ISSUANCE

ISSUE	DATE	DESCRIPTION
6	04/05/21	Notice of Intent Updates
5	04/05/21	Planning Rev. 1
3	3/16/21	Planning Submission
2	3/3/21	100% Schematic Design – Revision 1
1	3/1/21	100% Schematic Design

DRAWN BY: CHECKED BY: PROJECT #: 2003.

COVER
TITLE

G000
SHEET

NOTE: If this drawing is not on 30in x 42 in, it has been revised from its original size. Scales as noted on drawings/details are no longer applicable.
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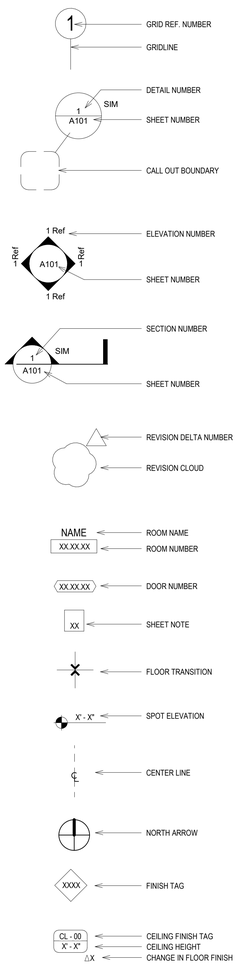
ABBREVIATIONS & ARCHITECTURAL SYMBOLS LEGEND

&	AND
∠	ANGLE
@	AT
℄	CENTERLINE
Ø	DIAMETER
AB	ANCHOR BOLT
ABV	ABOVE
AD	AREA DRAIN
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AGGR	AGGREGATE
AL	ALUMINUM
ALT	ALTERNATE
APPROX	APPROXIMATE(LY)
ARCH	ARCHITECTURAL
ASPH	ASPHALT
BATT	BATTING
BD	BOARD
BITUM	BITUMINOUS
BLDG	BUILDING
BLK'G	BLOCKING
BM	BEAM
BO	BOTTOM OF
BOT	BOTTOM
BTWN	BETWEEN
CAB	CABINET
CB	CATCH BASIN
CEM	CEMENT
CJ	CONTROL JOINT
CLG	CEILING
CLOS	CLOSET
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COMP	COMPOSITION
CONC	CONCRETE
CONT	CONTINUOUS
CORR	CORRIDOR
CT	CERAMIC TILE
CTR	CENTER
DBL	DOUBLE
DEG	DEGREE
DEMO	DEMOLISH
DIAG	DIAGONAL
DIA/Ø	DIAMETER
DIM	DIMENSION
DN	DOWN
DR	DOOR
DS	DOWNSPOUT
DWG	DRAWING
DWR	DRAWER
(E)	EXISTING
EA	EACH
EJ	EXPANSION JOINT
EG	EXISTING GRADE
ELEV	ELEVATION
ELEC	ELECTRICAL
EMER	EMERGENCY
EQ	EQUAL
EQUIP	EQUIPMENT
EXT	EXTERIOR
FA	FIRE ALARM
FD	FLOOR DRAIN
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FF	FINISH FLOOR
FHC	FIRE HOSE CABINET
FIN	FINISH
FIXT	FIXTURE
FLR	FLOOR
FLUOR	FLUORESCENT
FO	FACE OF
FOB	FACE OF BRICK
FOC	FACE OF CONCRETE
FT	FOOT or FEET
FTG	FOOTING
FURR	FURRING
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GL	GLASS
GR	GRADE
GWB	GYPSUM WALL BOARD
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
HB	HOSE BIBB
HC	HOLLOW CORE
H/C	HANDICAPPED
H/CW	HOT / COLD WATER
HDWD	HARDWOOD
HDWR	HARDWARE
HM	HOLLOW METAL
HR	HOUR
HT	HEIGHT
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
ID	INSIDE DIAMETER
INSUL	INSULATION
INT	INTERIOR
JAN	JANITOR
JT	JOINT
JST	JOIST
KIT	KITCHEN
LAM	LAMINATE
LAV	LAVATORY
LT	LIGHT
LVL	LEVEL
MAX	MAXIMUM
MECH	MECHANICAL
MEMB	MEMBRANE
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MTD	MOUNTED
MTL	METAL
MUL	MULLION
(N)	NEW
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
OPNG	OPENING
OPP	OPPOSITE
O/	OVER
PC	PRE-CAST
PL	PROPERTY LINE
PLAM	PLASTIC LAMINATE
PLT	PLATE
PLAS	PLASTER
PLY	PLYWOOD
PR	PAIR
PTD	PAINTED
QT	QUARRY TILE
R	RISER
(R)	REMODELED or RELOCATED
RAD	RADIUS
RCP	REFLECTED CEILING PLAN
RD	ROOF PLAN
RE:	REFER TO:
REF	REFERENCE
REFR	REFRIGERATOR
REINF	REINFORCED
RQD	REQUIRED
RM	ROOM
RO	ROUGH OPENING
RWL	RAIN WATER LEADER
S	SWITCH
SAM	SHEET APPLIED MEMBRANE
SC	SOLID CORE
SCHED	SCHEDULE
SD	SMOKE DETECTOR
SECT	SECTION
SF	SQUARE FOOT
SGR	SEE GEOTECHNICAL REPORT
SHT	SHEET
SIM	SIMILAR
SP	SPRINKLER
SPEC	SPECIFICATION
SQ/	SQUARE
SST	STAINLESS STEEL
SSD	SEE STRUCTURAL DRAWINGS
STAGG	STAGGERED
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STRUC	STRUCTURAL
SUSP	SUSPENDED
T	THERMOSTAT
TR	TREAD
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
THK	THICK
TO	TOP OF
TYP	TYPICAL
UL	UNDERWRITERS LABORATORY
UON	UNLESS OTHERWISE NOTED
VIF	VERIFY IN FIELD
VERT	VERTICAL
W/	WITH
WC	WATER CLOSET
WD	WOOD
W/O	WITHOUT
WRB	WATER RESISTIVE BARRIER



BASIS OF DESIGN NARRATIVES

Coastal (Mott MacDonald):

The proposed harbormaster building is located within a FEMA designated AE flood zone with a base flood elevation (BFE) of +14 ft NAVD88. Therefore, the structure will be elevated on a pile foundation and the building's first-floor elevation will be above this BFE. Additional freeboard will also be incorporated into the first-floor elevation to account for relative sea level rise and increase the resiliency of the design. Building elements located below the BFE will be limited to the foundation, incidental storage, stairways, points of egress, etc. These elements may become subject to hydrostatic and hydrodynamic loading during storm conditions when water levels exceed the ground surface; thus, they will be designed accordingly for AE flood zone conditions following ASCE guidelines.

Geotechnical (Mott MacDonald):

Soils on Cape Cod generally consist of sands and gravels deposited in glacial outwash plains that were formed at the end of the last ice age. Soil conditions at the project site are inferred from data collected from two exploratory soil borings completed in March 2020 by Geosearch Inc. for the Rock Harbor Boat Ramp Eastham, MA project. These borings were located approximately 350 feet south of the proposed harbormaster building site. The soil conditions observed in these two borings are consistent with the general soil conditions throughout Cape Cod and the data in these borings can be reliably extrapolated for use in estimating the soil conditions at the project site.

Soil conditions at the project site are estimated to consist of a natural deposit of glacial outwash, which is described as light brown to gray, fine to medium sand, with little to no gravel. Soil density, as measured by the Standard Penetration Test (ASTM D1586) is estimated to range from 5 to 16 blows per foot (BPF) from 0 to 40 feet below ground surface (BGS) and then increases to an average of 22 BPF below 40 feet BGS.

We recommend that foundation support for the proposed building be provided by timber piles driven into the glacial outwash deposit to a pre-defined minimum depth. For structural design, piles having a nominal diameter of 12 inches can be considered to provide 20 tons of allowable resistance at an embedment depth of 30 feet below ground surface. The timber piles would derive their resistance from friction with the surrounding soil and design of the timber piles is based on an allowable friction value of 500 pounds per square foot. In accordance with Section 1810.3.3.1.4 of the Massachusetts Building Code, Nineth Edition (Code), a pile load test will not be required to verify these design assumptions.

Structural (Mott MacDonald):

The proposed structure will be an elevated, single-story, wood framed building, including a ramp and stairway for means of egress. The building, which will be utilized by the harbor master, will be designed using conventional wood framing with wood stud walls, a wood trussed roofing system, and a wood framed subfloor.

Vertical loads will be transferred from the roof through stud walls and columns. The vertical loads will then transfer to the subfloor beam and girder system, and eventually to the support piles. Lateral loads will be resisted using shear walls.

The Design of the structural wood system shall follow the guidance of the 2015 Wood Frame Construction Manual (WFCM) by the American Wood Council (AWC). All structural calculations and design shall utilize the Ninth Edition of the Massachusetts Building Code 780 (9th Ed. CMR 780). Loading shall follow the guidance of the American Society of Civil Engineers – ASCE 7-16 Minimum Design Loads and Criteria for Buildings and Other Structures.

Plumbing (BLW):

Plumbing Fixtures
Water closets shall be floor mounted residential fixtures with 1.28 gpf flush tank operation. Lavatories shall be counter mounted fixtures with overflow. Faucets for all lavatories shall be provided with a maximum 0.5 gpm flow restricting aerators for water conservation. Kitchen sinks shall be stainless steel, counter or under mounted. Faucets for the kitchen sinks shall be single handle with pull out spray and will be provided with 1.5 gpm flow restricting aerators for water conservation. ADA accessible plumbing fixtures shall be located throughout the buildings as required by the architectural drawings.

Sanitary
The new sanitary line will run below the floor and will be connected to all the fixtures in the building. Once all the plumbing fixtures are connected the sanitary main will go to new septic tank which will be provided by civil/site contractor. All new sanitary piping and vent piping that are exposed outside of the heated space will be provided with heat trace and insulation to avoid freezing. The sanitary piping used will be cast iron. The sanitary piping shall exit the building via gravity. The vent piping that will be provided for each fixture will be cast iron or copper and run through the roof. All sanitary piping systems shall exit the building via gravity to the extent possible.

Cold Water
Domestic water for the building will be supplied via a new underground water service that will be brought into the building underground, from the existing water shed on site or existing water line that feeds a nearby building on site. More investigation is needed to determine the proposed domestic water source. Since the building is raised off the ground the water line will need to rise from into the building which will make a portion of the pipe exposed. A master water meter will be provided in the water room. The exposed water piping will be protected from freezing by heat tracing the pipe and insulating it. Cold piping will be brought to all plumbing fixtures that require it. The material used for cold water piping feeding the commercial fixtures will be copper type "L". An independent backflow is recommended for the building use.

Hot Water
The domestic hot water heater will consist of individual, electric tank type units, sized to meet the demand of plumbing fixtures and located in the building mechanical closet. Plumbing contractor to provide an expansion tank. Safe waste pans and indirect waste shall be provided for each water heater. This shall terminate indirectly to a floor drain. Water sensing alarms shall be provided in each pan to notify occupants of a potential tank failure.

HVAC (BLW):

Heating and cooling shall be provided to the building by a multiple head type heat pump, sized for heating capacity at 0F, and a ductless wall mounted fan coil unit located inside. Each ductless wall mounted unit will be sized for approximately 400 SF/ton (actual sizing will be based on calculations); heat pumps shall be sized for minimum size to meet connected load and number of heads. Heat pumps shall be installed on roof with vibration isolators, wall mounted on exterior of building, or ground mounted with interconnecting refrigerant piping to the each fan coil unit refrigerant coil. A condensate drain piping system will also be required to transport condensate from each fan coil unit to storm drain or to the outdoors. Ductless wall mounted units shall be controlled by a wall mounted programmable thermostat.

Ventilation and exhaust will be provided by a heat recovery as required by the 2018 IMC. New insulated low pressure air duct systems will provide ventilation and exhaust air down through a horizontal duct system to a wall vent separated by 10'-0" as required by code. The ventilation air shall be ducted to terminate into a ceiling air outlet in the vicinity of each ductless wall mounted unit; a volume damper with mechanical operator at air outlet face will be provided for each branch duct to balance air flow; bathroom exhaust air through a ceiling exhaust register with volume damper with mechanical operator at air outlet shall exhaust air through the energy recovery unit.

ELECTRICAL (BLW):

Incoming Services
A new 200 Amp, 120/208 Volt, 3-phase, 4-wire underground service shall be provided, originating at a new utility provided transformer. Provide conduits and grounding as required by utility company (Eversource). Primary (2-5"C w/ pull wire), secondary conduits and secondary cabling shall be provided by the electrical contractor. The service equipment shall consist of a 120/208V, 3-phase, 4-wire, 200 Amp panelboard containing circuit breakers to feed miscellaneous lighting, receptacle and mechanical loads throughout the building. Site lighting, pavilion lighting and weatherproof outdoor receptacles shall also be served by the building electrical panel. A utility meter shall be provided for the building per utility company requirements. Provisions (circuit breaker, conduit, metering, etc._ for a PV system (by others) will also be included.

Fire Alarm
A complete addressable fire alarm system shall be provided in accordance with NFPA 72 National Fire Alarm Code, Massachusetts State Building Code, Fire Protection and Life Safety Systems, ADA and City of Eastham Code and Bylaws for Life Safety and Fire Alarm.

The system shall consist of an addressable fire alarm control panel, remote annunciator, notification to the Fire Department, manual pull stations within 5' of all exit doors, system smoke detectors shall be provided for the common areas: locate 30' on center in lobby areas and corridors, provide detectors at FACP and annunciator; provide heat detectors in mechanical room. Tamper, flow and pressure switches are being provided to accommodate the new sprinkler systems. The tamper and flow switches shall be connected to the Fire Alarm Control Panel via addressable modules. Provide audible/visual notification device coverage throughout the facility that meets the requirements of NFPA and ADA. Utilize strobe only devices in public bathrooms and other small rooms where ample audible notification is present. System batteries shall provide for 24 hours of operation followed by a 5-minute ring down. Battery calculations shall be submitted by the Electrical Contractor with the cut sheets and drawings to the fire department for review and approval. The fire alarm control panel shall transmit alarm to fire department via a radio-controlled master box or coordinated means. Knox Box key boxes shall be provided at the building main entrance annunciator location. Knox boxes and fire alarm beacon shall be located at the main entrance. A signal survey shall be performed to determine if a bi-directional antenna will be required for fire department communications.

Lighting
Lighting shall consist of LED fixtures throughout. Mechanical and/or utility rooms shall be provided with linear strip fixtures. Exact lighting types to be determined by architect and listed on the design light Consortium's DLC qualified product list or be energy star rated. The lighting design shall meet MSBC Article 780 CMR 13.00 Energy Conservation and IECC 2018. Exterior LED site-lighting shall be provided in the parking area.

Lighting control shall be by means of occupancy/vacancy sensors in all indoor areas as required by the IECC. Exterior site lighting and building perimeter lighting shall be controlled by a timeclock with photocell.

Exit and Emergency Lighting
Emergency lighting shall be provided throughout the facility and consist of LED exit signs and egress lighting with battery backup drivers. Lighting levels shall be provided to meet the Mass. State Building Code 780 CMR Articles 1023 and 1024. Exit signs shall be LED and constantly illuminated and coverage shall comply with MSB 780 CMR Article 1023.4 and IBC 1011.

Receptacle and General Power
General purpose power receptacles shall be provided in all common areas throughout the building Provide GFCI receptacles per NEC 210.8 and arc-fault circuit breakers per NEC 210.12. Receptacles shall be provided in corridors every 50-ft maximum for general maintenance use and within 25-ft of all HVAC equipment per NEC 210.63. Provide all power connections for HVAC and plumbing equipment including disconnects and circuit breakers.

Telecommunication
Provide minimum (2) 4" underground conduits with pull wire for incoming telecommunication services to main electrical room telephone backboard from nearest existing telephone utility pole. Ground bus bar, receptacles and ¾" thick plywood backboard shall be provided for telephone and CATV company equipment. Office and common areas shall be provided with tele/data and CATV devices as required by client with cabling back to nearest telephone backboard. Category 5e cabling for telephone/data outlets and coaxial cable RG-6 cabling for CATV outlets shall be provided. Provide cabling from device to telephone backboard or terminal cabinet.

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CONSULTANT

Rock Harbor Harbormaster Building and Site Revitalization

631 Dyer Prince Road
Eastham, MA 02642

PROJECT INFORMATION

Town of Eastham

OWNER

APN

LICENSED ARCHITECT
ELIZABETH RANIERI
NO. 30999
STATE OF MASSACHUSETTS

STAMP

Notice of Intent
Updates
04/05/21

ISSUANCE

ISSUE	DATE	DESCRIPTION
6	04/05/21	Notice of Intent Updates
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3	3/16/21	Planning Submission
2	3/3/21	100% Schematic Design - Revision 1
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DRAWN BY: CHECKED BY: PROJECT #: 2003

BASIS OF DESIGN NARRATIVES

TITLE

G001

SHEET

NOTE: If this drawing is not on 30in x 42 in, it has been revised from its original size. Scales as noted on drawings/details are no longer applicable.
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LEGEND:

GENERAL

BERM
BERM CUT
BUILDING
CENTERLINE
CONTOUR - MINOR
CONTOUR - MAJOR
CURB
CURB CUT
EDGE OF PAVEMENT
EDGE OF GRAVEL
FENCE - CHAIN LINK
FENCE - WIRE
FENCE - WOOD
GUARD RAIL
PATHWAY
EDGE OF STONE
SIDEWALK
TREE LINE
WALL - RETAINING
WALL - STONE

PROPERTY INFORMATION

ABUTTING LOT
EASEMENT LINE
PROPERTY, LOT, OR ROW
SETBACK LINE

UTILITIES

DRAIN PIPE
GAS LINE
OVERHEAD WIRE
SANITARY SEWER
SEWER FORCE MAIN
UNDERGROUND E/T/C
UNDERGROUND ELEC.
CABLE LINE
TELEPHONE LINE
WATER LINE

ENVIRONMENTAL

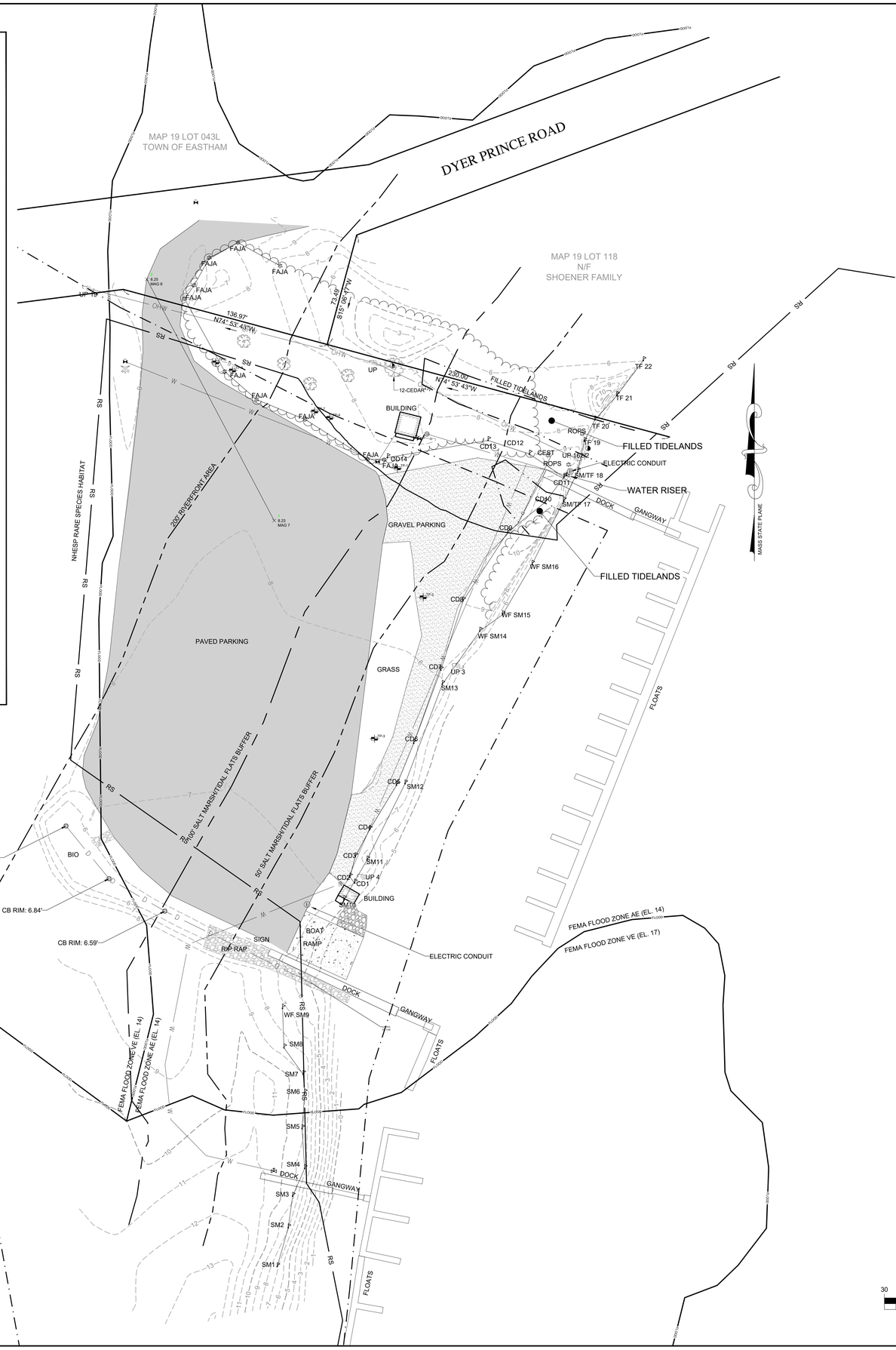
WETLAND BOUNDARY
WETLAND 50 BUFFER
WETLAND 100 BUFFER
RIVERFRONT 200 BUFFER
NHESP RARE SPECIES HABITAT
BARRIER BEACH
FILLED TIDELANDS
FEMA FLOOD ZONE

ABBREVIATIONS

CD= COASTAL DUNES
TF= TIDAL FLATS
SM= SALT MARSH
FAJA= INVASIVE JAPANESE KNOTWEED
CEST= INVASIVE SPOTTED KNAPWEED
ROPS= INVASIVE BLACK LOCUST

SYMBOLS

BENCHMARK
SPIGOT
CONTROL POINT
EXISTING SPOT GRADE
SPOT GRADE
SEWER MANHOLE
ELECTRIC MANHOLE
EXISTING TREE
MANHOLE
DRAIN MANHOLE
CATCHBASIN
FLARED END OUTLET
STONE APRON
WATER VALVE
SEWER VALVE
GAS VALVE
CURB STOP
CLEAN OUT
UTILITY BOX
HYDRANT
UTILITY POLE W/GUY
UTILITY POLE
GUY
LIGHT POST
MONITORING WELL
WATER WELL
TEST PIT
BORING
RESOURCE AREA FLAG
ROCK
SIGN
HANDICAP SYMBOL
NUMBER OF PARKING SPACES
INVASIVE SPECIES



GRAPHIC SCALE

30 0 15 30 60 120

(in feet)

1 INCH = 30 FEET

NOTE: If this drawing is not on 24in x 36 in, it has been revised from its original size. Scales as noted on drawings/details are no longer applicable.

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SURVEY NOTES

1. THE TOPOGRAPHY AND EXISTING SITE CONDITIONS DEPICTED HEREON ARE THE RESULT OF AN ON THE GROUND FIELD SURVEY CONDUCTED BY THE HORSLEY WITTEN GROUP, INC. JULY 24, 2020 AND JULY 30, 2020
2. HORIZONTAL DATUM IS MASS STATE PLANE COORDINATE SYSTEM. DATUM ESTABLISHED BY GPS-RTK.
3. THE ELEVATIONS DEPICTED HEREON WERE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.
4. THE PROPERTY LINES AND RIGHTS OF WAYS DEPICTED HAVE BEEN ESTABLISHED BY FIELD SURVEY AND DEEDS AND PLANS OF RECORD.
5. THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS ARE BASED ON RECORDS OF VARIOUS UTILITY COMPANIES, AND WHEREVER POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD PRIOR TO THE START OF ANY CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY IN THE TOWN OF EASTHAM, AND "DIGSAFE" (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK IN PREVIOUSLY UNALTERED AREAS TO REQUEST EXACT FIELD LOCATION OF UTILITIES.
6. THE PROPERTY IS LOCATED WITHIN F.I.R.M ZONE AE (EL 14 FEET) AS SHOWN ON COMMUNITY PANEL NO, 25001C0417J DATED JULY 16TH, 2014.
7. THE WETLAND DELINEATION SHOWN HEREON WAS CONDUCTED BY THE HORSLEY WITTEN GROUP, INC. ON JULY 24, 2020
8. REFERENCE PLANS: BARNSTABLE COUNTY REGISTRY OF DEEDS LAND COURT PLAN #28883A.
9. FILLED TIDELAND AREAS, NHESP RARE SPECIES HABITAT, BARRIER BEACH, AND FLOODZONE LINES SCALED FROM MASS GIS.

SOIL TEST PIT DATA

PERFORMED BY: M. LEHMAN HORSLEY WITTEN GROUP, INC
DATE: AUGUST 31, 2020.

TP–1

0"	HTM 10 YR 6/3 LOAMY SAND	8.8
42"	O 10 YR 7/1 VERY FINE SAND	5.3
54"	C 10 YR 4/4 COARSE SAND	4.3
82"		1.9

STANDING WATER AT 82"
ESHGW EL. 3.6

TP–2

0"	HTM 10 YR 6/4 LOAMY SAND	8.3
40"	O 10 YR 7/1 FINE SAND	4.9
52"	C 10 YR 5/3 COARSE SAND	3.9
92"		0.6

STANDING WATER AT 92"
ESHGW EL. 3.6

TP–3

0"	HTM 10 YR 6/3 LOAMY SAND	7.2
17"	AO 10 YR 7/1 SILT LOAM	5.7
40"	O 10 YR 7/1 FINE SAND	3.8
76"	C 10 YR 5/3 COARSE SAND	0.8
118"		-2.6

STANDING WATER AT 76"
ESHGW EL. 3.6

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508-833-6600 voice
508-833-3150 fax
CONSULTANT

Rock Harbor Harbormaster Building and Site Revitalization

631 Dyer Prince Road
Eastham, MA 02642

PROJECT INFORMATION

Town of Eastham — OWNER

19-120-0 — APN

NOT FOR CONSTRUCTION

STAMP

CONSERVATION SUBMISSION
4/5/21
ISSUANCE

COMMONWEALTH OF MASSACHUSETTS
DANIEL W. MACKENZIE
No. 47187
REGISTERED
PROFESSIONAL LAND SURVEYOR
9-4-20

ISSUE	DATE	DESCRIPTION

DRAWN BY: LE CHECKED BY: RM PROJECT #: 2003

EXISTING CONDITIONS
TITLE

C001
SHEET

GRAPHIC SCALE

20 0 10 20 40 80

(in feet)

1 INCH = 20 FEET

NOTE: If this drawing is not on 30in x 42 in, it has been revised from its original size. Scales as noted on drawings/details are no longer applicable.

4/4/2021 12:59 PM

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PROJECT INFORMATION

Town of Eastham
OWNER

APN

NOT FOR CONSTRUCTION

STAMP

CONSERVATION SUBMISSION
4/5/21
ISSUANCE

COMMONWEALTH OF MASSACHUSETTS
RICHARD A. CLAYTOR
CIVIL
NO. 45116
REGISTERED PROFESSIONAL ENGINEER
4-5-2021

ISSUE	DATE	DESCRIPTION

DRAWN BY: ML CHECKED BY: RAC PROJECT #: 2003

CIVIL SITE PLAN

TITLE

C002

SHEET

BIORETENTION CONSTRUCTION SEQUENCE

THE FOLLOWING CONSTRUCTION SEQUENCE IS TO BE USED AS A GENERAL GUIDELINE. COORDINATE WITH THE OWNER, ENGINEERS, AND LANDSCAPE ARCHITECTS AND SUBMIT A PROPOSED CONSTRUCTION SEQUENCE FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

1. CONDUCT A PRE-CONSTRUCTION MEETING.
2. CHECK FOR EXISTING UTILITIES PRIOR TO ANY EXCAVATION.
3. CLEAR AND GRUB THE PROPOSED BIORETENTION AREA
4. ROUGH GRADE THE BIORETENTION AREA DURING GENERAL CONSTRUCTION.
5. EXCAVATE PRETREATMENT CELLS AND/OR SEDIMENT FOREBAYS PRIOR TO BIORETENTION CONSTRUCTION.
6. DO NOT CONSTRUCT THE BIORETENTION AREA UNTIL ALL DISTURBED AREAS WITHIN THE CONTRIBUTING DRAINAGE AREAS HAVE BEEN GRADED AND STABILIZED.
7. INSTALL TEMPORARY EROSION AND SEDIMENT CONTROLS TO DIVERT STORMWATER AWAY FROM THE BIORETENTION AREA.
8. EXCAVATE THE BIORETENTION FACILITY TO THE BOTTOM INVERT OF THE SUBDRAIN SYSTEM. IF USED FOR TEMPORY STORMWATER MANAGEMENT DURING CONSTRUCTION PROVIDE A SURFACE ELEVATION AT A MINIMUM 1-FOOT ABOVE THE BOTTOM OF UNDERDRAIN ELEVATION AS SHOWN IN THE BIORETENTION SCHEDULE. THIS ALLOWS FOR AN OVER-DIG OF THE ACCUMULATED SEDIMENT FROM WITHIN THE BIORETENTION AREA PRIOR TO MEDIA/FABRIC INSTALLATION
9. PRIOR TO THE INSTALLATION OF FILTER FABRIC AND MEDIA WITHIN THE BIORETENTION AREAS, REMOVE AND PROPERLY DISPOSE OF SEDIMENT ACCUMULATED IN ANY PARTIALLY CONSTRUCTED OR TEMPORARY BIORETENTION/DRAINAGE AREA USED FOR SEDIMENT CONTROL DURING CONSTRUCTION.
10. INSTALL THE FILTER FABRIC ALONG THE EXCAVATION SIDE WALLS. ENGINEER FIELD VISIT AND REPORT REQUIRED SEE NOTE (3) BELOW.
11. RIP THE BOTTOM SOILS TO A DEPTH OF SIX INCHES TO PROMOTE GREATER INFILTRATION.
12. INSTALL THE OVERFLOW OUTLET STRUCTURE AS SPECIFIED IN THE DRAWINGS.
13. INSTALL UNDERDRAIN AS INDICATED ON DRAWINGS. ENGINEER FIELD VISIT AND REPORT REQUIRED PRIOR TO COVERING THE UNDERDRAIN. SEE NOTE (3) BELOW.
14. INSTALL PEA GRAVEL LAYER AS INDICATED ON DRAWINGS.
15. DELIVER APPROVED BIORETENTION SOIL AND STORE ON ADJACENT IMPERVIOUS AREA OR PLASTIC SHEETING.
16. BACKFILL WITH APPROVED BIORETENTION SOIL TO THE DESIGN GRADE (UN-COMPACTED) AS INDICATED ON DRAWINGS. THE CONTRACTOR MUST SUBMIT A SOIL SAMPLE (2 LBS) TO THE ENGINEER PRIOR TO SOIL DELIVERY TO THE SITE.
17. STABILIZE ALL REMAINING DISTURBED AREAS AND SIDE SLOPES WITH SEEDING, HYDROSEEDING, AND/OR EROSION CONTROL BLANKETS AS INDICATED ON DRAWINGS. ENGINEER FIELD VISIT AND REPORT REQUIRED SEE NOTE (3) BELOW.
18. INSTALL BIORETENTION PLANTINGS AS INDICATED ON DRAWINGS. DO NOT PLANT BEFORE THE REMAINING DISTURBED AREAS SURROUNDING THE FACILITY ARE STABILIZED.
19. INSTALL MULCH LAYER AS INDICATED ON DRAWINGS. THE CONTRACTOR MUST SUBMIT A MULCH SAMPLE (1 GALLON) TO THE ENGINEER PRIOR TO DELIVERY TO THE SITE.
20. CONDUCT FINAL CONSTRUCTION INSPECTION WITH ENGINEER. ENGINEER FIELD VISIT AND REPORT REQUIRED SEE NOTE (3) BELOW.
21. REMOVE REMAINING EROSION AND SEDIMENT CONTROLS ONLY AFTER SURROUNDING DISTURBED AREAS HAVE BEEN PROPERLY STABILIZED.

NOTES:
(1.) SEE GENERAL CONSTRUCTION NOTES FOR OVERALL CONSTRUCTION SEQUENCE.
(2.) SEE GENERAL NOTES/SPECIFICATIONS/CONSTRUCTION DETAILS FOR DETAILED CONSTRUCTION REQUIREMENTS.
(3.) MANDATORY NOTIFICATION/APPROVAL OF THE PROJECT ENGINEER IS REQUIRED PRIOR TO PROCEEDING WITH NEXT STAGE. CALL THE ENGINEER (HORSLEY WITTEN GROUP, INC.) AT 508-833-6600 PRIOR TO 12:00 NOON THE PROCEEDING DAY TO ARRANGE FOR ANY REQUESTED FIELD VISITS.

CONSTRUCTION NOTES

1. EXAMINATION

A. VERIFY LAYOUT AND ORIENTATION OF BIORETENTION AREA AND CONNECTIONS.
B. VERIFY EXCAVATION BASE IS READY TO RECEIVE WORK AND EXCAVATIONS, DIMENSIONS, AND ELEVATIONS ARE AS INDICATED ON DRAWINGS.

2. PREPARATION

A. CALL **DIGSAFE** AT 1-888-DIG-SAFE (1-888-344-7233) NOT LESS THAN **THREE** BUSINESS DAYS BEFORE PERFORMING WORK.
B. REQUEST UNDERGROUND UTILITIES TO BE LOCATED AND MARKED WITHIN AND SURROUNDING CONSTRUCTION AREAS.
C. IDENTIFY REQUIRED LINES, LEVELS, CONTOURS, AND DATUM.
D. CLEAR AND GRUB THE PROPOSED BIORETENTION AREA.

3. EXCAVATION

A. EXCAVATE BIORETENTION AREA IN ACCORDANCE WITH GENERAL NOTES AND SPECIFICATIONS.
B. TO MINIMIZE COMPACTION, WORK EXCAVATORS OR BACKHOES FROM THE SIDES TO EXCAVATE THE BIORETENTION AREA TO ITS APPROPRIATE DESIGN DEPTH AND DIMENSIONS. USE EXCAVATING EQUIPMENT WITH ADEQUATE REACH SO THEY DO NOT WORK IN THE FOOTPRINT OF THE BIORETENTION AREA. IF APPLICABLE AND PER THE ENGINEERS DIRECTION USE A CELL CONSTRUCTION APPROACH IN LARGER BIORETENTION BASINS, WHEREBY THE BASIN IS SPLIT INTO 500 TO 1000 SQUARE FOOT TEMPORARY CELLS WITH A 10 TO 15 FOOT EARTH BRIDGE IN BETWEEN, SO THAT CELLS CAN BE EXCAVATED FROM THE SIDE.
C. EXCAVATE AND SEAL ANY PRETREATMENT CELLS AND/OR SEDIMENT FOREBAYS FIRST AND SEALED TO TRAP SEDIMENTS PER THE DRAWINGS.
D. ROUGH GRADE THE BIORETENTION AREA DURING GENERAL CONSTRUCTION. EXCAVATE THE BIORETENTION FACILITIES TO WITHIN 1 FOOT OF UNDERDRAIN BOTTOM.
E. IF THE BIORETENTION AREA IS TO BE USED AS A TEMPORARY DRAINAGE STORAGE BASIN DURING THE EARLY STAGES OF PROJECT CONSTRUCTION, THE SIDE SLOPES SHOULD BE TEMPORARILY STABILIZED AND SILT FENCE INSTALLED ALONG THE TOE OF THE ROUGH GRADED BIORETENTION SLOPES TO MINIMIZE EXCESSIVE SEDIMENTATION OF THE BIORETENTION FLOOR.

4. COMPACTION

A. MINIMIZE COMPACTION OF BOTH THE BASE OF THE BIORETENTION AREA AND THE REQUIRED BACKFILL. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.
B. USE EXCAVATOR OR BACKHOES TO EXCAVATE THE BIORETENTION AREA
C. IF THE BIORETENTION AREA IS EXCAVATED USING A LOADER, USE ONLY WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH PRESSURE TIRES CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND STORAGE VOLUMES AND IS NOT ACCEPTABLE.
D. COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS A CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE PERFORMED TO REFRACTURE THE SOIL PROFILE THROUGH THE 12-IN COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.
E. DO NOT COMPACT BIORETENTION SOIL WITH MECHANICAL EQUIPMENT.

5. EMBANKMENT/BERM FILL

A. CONSTRUCT EMBANKMENT/BERM IN ACCORDANCE WITH SPECIFICATIONS AND AS INDICATED ON DRAWINGS.

6. INSTALLATION

A. DO NOT CONSTRUCT THE BIORETENTION AREA UNTIL ALL DISTURBED AREAS WITHIN THE CONTRIBUTING DRAINAGE AREAS HAVE BEEN GRADED AND STABILIZED.
B. REMOVE SEDIMENT ACCUMULATED ALONG THE EXCAVATION FLOOR DURING SITE CONSTRUCTION PRIOR TO CONTINUING WITH THE BIORETENTION FACILITY CONSTRUCTION.
C. FORM BOTTOM OF EXCAVATION TO CORRECT ELEVATION.
D. IF INFILTRATION IS PROMOTED, THEN RIP THE BOTTOM SOILS TO A DEPTH OF SIX INCHES TO PROMOTE GREATER INFILTRATION.
E. INSTALL THE FILTER FABRIC ALONG THE EXCAVATION SIDE WALLS AS SPECIFIED IN THE DRAWINGS. IF FILTER FABRIC IS TO BE INSTALLED PLACE THE FILTER FABRIC ON THE SIDES OF THE BIORETENTION AREA WITH A MINIMUM SIX INCH OVERLAP AT ALL JOINTS.
F. INSTALL ANY TEMPORARY EROSION AND SEDIMENT CONTROLS TO DIVERT STORMWATER AWAY FROM THE BIORETENTION AREA DURING FINAL CONSTRUCTION AND UNTIL IT IS COMPLETED. SPECIAL PROTECTION MEASURES SUCH AS EROSION CONTROL FABRICS MAY BE NEEDED TO PROTECT VULNERABLE SIDE SLOPES FROM EROSION DURING THE CONSTRUCTION PROCESS.
G. ESTABLISH ELEVATIONS AND PIPE INVERTS FOR INLETS AND OUTLETS AS INDICATED ON DRAWINGS
H. INSTALL THE OVERFLOW OUTLET STRUCTURE AS INDICATED ON DRAWINGS.
I. INSTALL UNDERDRAIN, INCLUDING 4 INCH PERFORATED PIPE, GRAVEL AND FILTER FABRIC ON TOP OF THE UNDERDRAIN GRAVEL AS INDICATED ON DRAWINGS. PLACE GRAVEL AROUND THE UNDERDRAIN PIPE AS INDICATED IN THE DETAILS. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (SEE PLANS FOR LOCATION).
J. INSTALL PEA GRAVEL LAYER AS INDICTED ON DRAWINGS.
K. DELIVER APPROVED BIORETENTION SOIL AND STORE ON ADJACENT IMPERVIOUS AREA OR PLASTIC SHEETING.

7. BACKFILLING

A. BACKFILL WITH APPROVED BIORETENTION SOIL TO THE DESIGN GRADE AS SPECIFIED IN THE DRAWINGS.
B. PLACE SOIL IN 12 INCH LIFTS UNTIL DESIRED TOP ELEVATION OF BIORETENTION SOIL IS ACHIEVED. DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. WAIT 3 DAYS TO CHECK FOR SETTLEMENT, AND ADD ADDITIONAL MEDIA AS NEEDED
C. DO NOT COMPACT BIORETENTION SOIL WITH MECHANICAL EQUIPMENT.
D. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.
E. STABILIZE ALL REMAINING DISTURBED AREAS AND SIDE SLOPES WITH SEEDING, HYDROSEEDING, AND/OR EROSION CONTROL BLANKETS AS INDICATED ON DRAWINGS.

8. PLANTING

A. PLANT BIORETENTION AREA IN ACCORDANCE WITH PLANTING PLANS AND SPECIFICATIONS.
B. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. DO NOT ADD FERTILIZERS OR OTHER SOIL AMENDMENTS TO THE BIORETENTION SOILS UNLESS INSTRUCTED BY THE ENGINEER. THE PLANTING SOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING.
C. INSTALL BIORETENTION PLANTINGS AS INDICATED ON DRAWINGS. WATER DURING WEEKS OF NO RAIN FOR THE FIRST TWO MONTHS.
D. DO NOT PLANT BEFORE THE REMAINING DISTURBED AREAS SURROUNDING THE FACILITY ARE STABILIZED.
E. REMOVE SEDIMENT ACCUMULATED IN THE BIORETENTION AREA DURING THE PLANTING PHASE.
F. IF SUITABLE VEGETATIVE COVER HAS NOT BEEN ESTABLISHED ALONG THE BIORETENTION SIDE SLOPES PRIOR TO PLANTING, INSTALL A SILT FENCE PERIMETER AT THE TOE OF THE BIORETENTION SLOPES AND LEAVE IN PLACE UNTIL AN APPROVED VEGETATIVE COVER HAS BEEN ESTABLISHED.
G. INSTALL MULCH LAYER AS INDICATED ON DRAWINGS. MIX APPROXIMATELY HALF OF THE SPECIFIED MULCH LAYER INTO THE BIORETENTION SOIL TO A DEPTH OF APPROXIMATELY 4 INCHES TO HELP FOSTER A HIGHLY ORGANIC SURFACE LAYER.
H. REMOVE REMAINING EROSION AND SEDIMENT CONTROLS ONLY AFTER SURROUNDING DISTURBED AREAS HAVE BEEN PROPERLY STABILIZED.
I. CONDUCT FINAL CONSTRUCTION INSPECTION WITH ENGINEER.

9. CLEAN UP

A. AFTER COMPLETION OF THE WORK, REMOVE AND PROPERLY DISPOSE ALL DEBRIS, CONSTRUCTION MATERIALS, RUBBISH, EXCESS SOIL, ETC., FROM THE PROJECT SITE. REPAIR PROMPTLY ANY IDENTIFIED DEFICIENCIES AND LEAVE THE PROJECT SITE IN A CLEAN AND SATISFACTORY CONDITION.

MATERIAL SPECIFICATIONS

1. BIORETENTION SOIL

SUBMIT SOIL SAMPLE (2LBS) AND TESTING ANALYSIS RESULTS BY A QUALIFIED SOIL TESTING LABORATORY INDICATING AND INTERPRETING TEST RESULTS FOR COMPLIANCE WITH THE FOLLOWING PARAMETER:

A. UNIFORM SOIL MIX, FREE OF NOXIOUS WEEDS AND STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN 1 INCH.
B. PROVIDE USDA UNIFIED SOIL CLASSIFICATION: LOAMY SAND
C. PROVIDE A TEXTURAL ANALYSIS INCLUDING THE GRADATION AND PERCENTAGES OF SAND, SILT, AND CLAY CONTENT
85-88% SAND (< 10% COARSE SAND)
8-12% SILT AND CLAY (< 2% CLAY)
D. ORGANIC MATTER: 3%
WELL AGED (6-12 MONTHS), WELL AERATED, LEAF COMPOST OR APPROVED EQUIVALENT
E. PROVIDE A SOIL TEST OF THE BIORETENTION SOIL FOR CONFORMANCE TO THE FOLLOWING CRITERIA:

PH RANGE:	5.2-7.0.
MAGNESIUM:	MINIMUM 32 PPM.
PHOSPHOROUS (P2O5):	NOT TO EXCEED 69 PPM.
POTASSIUM (K2O):	MINIMUM 78 PPM.
SOLUBLE SALTS:	NOT TO EXCEED 500 PPM.

IF THE SOIL PH IS NOT WITHIN THE ACCEPTABLE RANGE, AMEND WITH LIME TO RAISE THE PH OR WITH IRON SULFATE TO LOWER THE PH, AS NECESSARY. ALL TESTING SHOULD BE PERFORMED BY THE SAME TESTING FACILITY TO MAINTAIN CONSISTENT RESULTS. SUBMIT THE SOIL SAMPLE RESULTS TO THE ENGINEER REVIEW AND APPROVAL PRIOR TO DELIVERY TO THE PROJECT SITE.
F. VOLUME OF FILTER MEDIA BASED ON 110% OF PLAN VOLUME TO ACCOUNT FOR SETTLING OR COMPACTION.
G. DO NOT MIX, DUMP OR STORE ANY OTHER MATERIALS OR SUBSTANCES THAT MAY B E HARMFUL TO PLANT GROWTH OR PROVE A HINDRANCE TO THE PLANTING MAINTENANCE OR OPERATIONS WITHIN THE BIORETENTION AREA.

2. FILTER FABRIC

B. NON-WOVEN GEOTEXTILE FABRIC WITH FLOW RATE OF > 110 GALLON/MINUTES/SQUARE FOOT.
C. CLASS "C" APPARENT OPENING SIZE (ASTM-D-4751).
D. GRAB TENSILE STRENGTH (ATSM-D-4632) BURST STRENGTH (ASTM-D-4833).

3. PEA GRAVEL

A. 3/8" WASHED STONE

5. UNDERDRAIN GRAVEL

A. 3/4" CRUSHED WASHED STONE, CLEAN AND FREE OF ALL FINES AND MEETING AASHTO M-43.

6. PIPE

A. UNDERDRAIN
$1\frac{1}{2}$" X $12\frac{1}{2}$" ADS ADVANEDGE OBLONG CORRUGATED PIPE, WITH $1\frac{1}{8}$" X $\frac{1}{8}$" PERFORATIONS. MEETING ASTM D7001. T'S AND Y'S FITTINGS AS REQUIRED FOR THE UNDERDRAIN CONFIGURATION INDICATED ON DRAWING.
B. CONNECTIONS TO STORM DRAIN SYSTEM.
C. UNDERDRAIN CLEANOUTS
NON PERFORATED SCHEDULE 40 PVC PIPE, PVC ELBOW, CAP, AND ALL ASSOCIATED FITTINGS.

7. EROSION CONTROL BLANKET (3:1 SIDE SLOPES ONLY)

A. WOVEN, 100% BIODEGRADABLE JUTE FIBER 7.70 LBS/1000 SQFT.
BIONET S150BN OR APPROVED EQUIVALENT.

8. PLANTS

A. AS INDICATED ON DRAWINGS.

9. SEED (SIDE SLOPES ONLY)

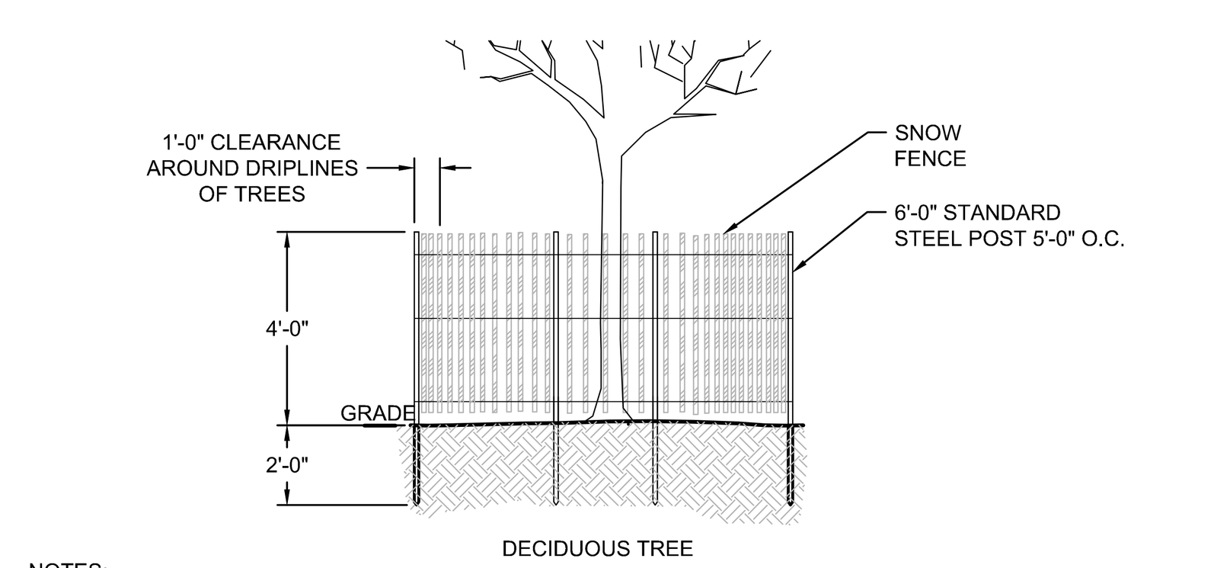
A. NEW ENGLAND CONSERVATION/WILDLIFE/MIX OR APPROVED EQUIVALENT.
B. APPLICATION RATE 25 LBS/ ACRES OR PER SEED MANUFACTURER'S REQUIREMENTS.

10. OUTLET STRUCTURE

A. SIZE AS INDICATED ON DRAWINGS.
B. FIBERGLASS REINFORCED PLASTIC MANHOLES OF SIZE INDICATED ON DRAWINGS.

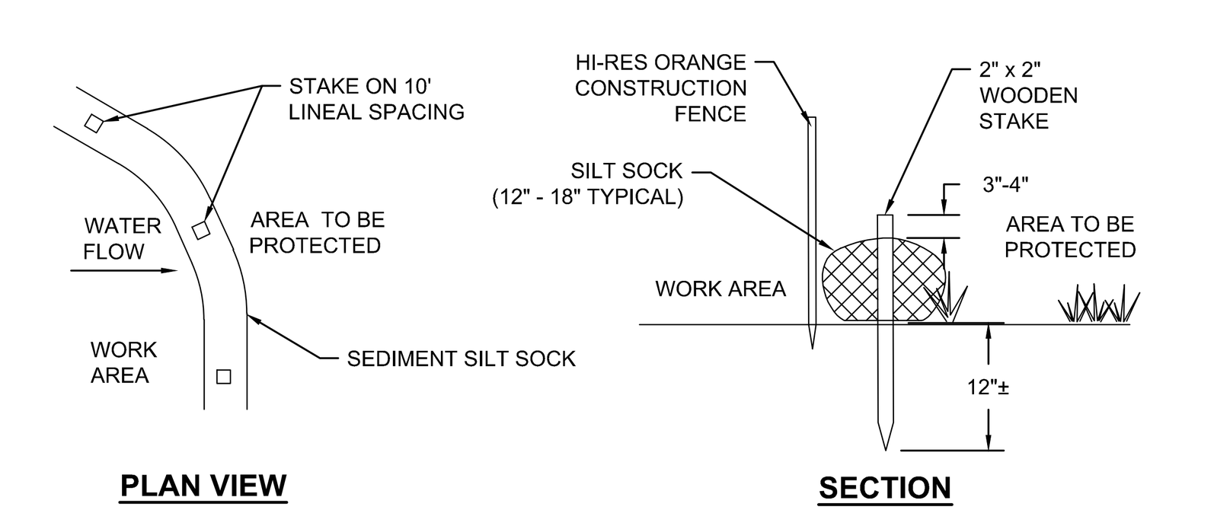
EROSION & SEDIMENT CONTROL NOTES:

1. PRIOR TO THE START OF CONSTRUCTION A NOTICE OF INTENT (NOI) MUST BE FILED WITH NPDES. REFER TO THE STORMWATER AND POLLUTION PREVENTION PLAN (SWPPP) REGARDING ALL EROSION CONTROL MATTERS. MAINTAIN A WORKING COPY OF THE SWPPP ONSITE AT ALL TIMES. FOLLOW THE SWPPP PROTOCOL FOR SITE MAINTENANCE, INSPECTIONS AND PROPER DOCUMENTATION UNTIL THE SITE HAS BEEN ACCEPTED BY THE OWNER. AT THE COMPLETION OF THE PROJECT THE CONTRACTOR OR OWNER MUST FILE A NOTICE OF TERMINATION WITH NPDES. IN ACCORDANCE WITH NPDES REGULATIONS, THE COMPLETED SWPPP MUST INCLUDE ALL OF THE SITE EROSION CONTROL DOCUMENTATION, WEEKLY EROSION INSPECTION REPORTS COMPLETED BY THE DESIGNATED SITE PERSONNEL, AND ANY OTHER PERTINENT SITE DOCUMENTATION MUST BE RETAINED FOR A MINIMUM OF 3 YEARS FROM THE DATE OF TERMINATION.
2. DESIGNATE THE SITE CONSTRUCTION FOREMAN AS THE ON-SITE PERSONNEL RESPONSIBLE FOR THE DAILY INSPECTION AND MAINTENANCE OF ALL SEDIMENT AND EROSION CONTROLS AND IMPLEMENTATION OF ALL NECESSARY MEASURES TO CONTROL EROSION AND PREVENT SEDIMENT FROM LEAVING THE SITE.
3. INSTALL ALL EROSION AND SEDIMENT CONTROL (ESC) MEASURES AS INDICATED ON DRAWINGS IN CONSULTATION WITH THE CONSERVATION AGENT, AND ENGINEER BEFORE ANY CONSTRUCTION ACTIVITIES BEGIN. INSPECT, MAINTAIN REPAIR AND REPLACE EROSION CONTROL MEASURES, AS NECESSARY, DURING THE ENTIRE CONSTRUCTION PERIOD OF THE PROJECT. THE SITE PERIMETER EROSION CONTROLS ARE THE DESIGNATED LIMIT OF WORK. INFORM ALL PERSONNEL WORKING ON THE PROJECT SITE THAT NO CONSTRUCTION ACTIVITY IS TO OCCUR BEYOND THE LIMIT OF WORK AT ANY TIME THROUGHOUT THE CONSTRUCTION PERIOD.
4. MAINTAIN A MINIMUM SURPLUS OF 100 FEET OF EROSION CONTROL BARRIER (SILT FENCE, STRAWBALE, &/OR SILT SOCK) ONSITE AT ALL TIMES.
5. PROTECT THE ADJACENT RESOURCE AREA FROM SEDIMENTATION DURING PROJECT CONSTRUCTION UNTIL ACCEPTANCE BY THE OWNER & IN CONFORMANCE WITH THE ORDER OF CONDITIONS.
6. PROVIDE CONSTRUCTION EXITS AS INDICATED ON DRAWINGS TO SHED DIRT FROM CONSTRUCTION VEHICLE TIRES. CLEAN AND/OR REPLACE THE CRUSHED STONE PAD, AS NECESSARY, TO MAINTAIN ITS EFFECTIVENESS.
7. KEEP THE LIMIT OF CLEARING, GRADING AND DISTURBANCES TO A MINIMUM WITHIN THE PROPOSED AREA OF CONSTRUCTION. PHASE THE SITE WORK IN A MANNER TO MINIMIZE AREAS OF EXPOSED SOIL. IF TREES ARE TO BE CUT ON THE ENTIRE SITE, CLEAR AND GRUB ONLY THOSE AREAS WHICH ARE ACTIVELY UNDER CONSTRUCTION. PROPERLY INSTALL THE SEDIMENTATION CONTROLS PRIOR TO BEGINNING ANY LAND CLEARING ACTIVITY AND/OR OTHER CONSTRUCTION RELATED WORK.
8. MONITOR LOCAL WEATHER REPORTS DURING CONSTRUCTION AND PRIOR TO SCHEDULING EARTHMOVING OR OTHER CONSTRUCTION ACTIVITIES WHICH LEAVE LARGE DISTURBED AREAS UNSTABILIZED. IF INCLEMENT WEATHER IS PREDICTED, USE BEST PROFESSIONAL JUDGEMENT AND GOOD CONSTRUCTION PRACTICES WHEN SCHEDULING CONSTRUCTION ACTIVITIES AND ENSURE THE NECESSARY EROSION CONTROL DEVICES ARE INSTALLED AND FUNCTIONING PROPERLY TO MINIMIZE EROSION FROM ANY IMPENDING WEATHER EVENTS.
9. INSPECT EROSION AND SEDIMENT CONTROL DEVICES AND STABILIZED SLOPES ON A WEEKLY BASIS AND AFTER EACH RAINFALL EVENT OF .25 INCH OR GREATER. REPAIR IDENTIFIED PROBLEMS WITHIN 24 HOURS TO ENSURE EROSION AND SEDIMENT CONTROLS ARE IN GOOD WORKING ORDER. RESET OR REPLACE MATERIALS AS REQUIRED.
10. SURROUND THE PERIMETER OF SOIL STOCKPILES WITH SILT SOCK, SILT FENCE, STRAWBALES, OR A COMBINATION OF SILT FENCE WITH STRAWBALE, AS DETERMINED NECESSARY.
11. DISTURBED AREAS AND SLOPES MUST NOT BE LEFT UNATTENDED OR EXPOSED FOR EXCESSIVE PERIODS OF TIME SUCH AS THE INACTIVE WINTER SEASON. PROVIDE APPROPRIATE STABILIZATION PRACTICES ON ALL DISTURBED AREAS AS SOON AS POSSIBLE BUT NOT MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT AREA HAS TEMPORARILY OR PERMANENTLY CEASED, REINFORCE TEMPORARY AREAS HAVING A SLOPE GREATER THAN 4:1 WITH EROSION BLANKETS OR APPROVED EQUAL UNTIL THE SITE IS PROPERLY STABILIZED. TEMPORARY SWALES MAY ALSO BE REQUIRED IF DETERMINED NECESSARY IN THE FIELD BY THE ENGINEER.
12. SMALL SEDIMENTATION BASINS MAY BE CONSTRUCTED ON AN AS-NEEDED BASIS DURING CONSTRUCTION TO AID IN THE CAPTURE OF SITE RUNOFF AND SEDIMENT. IT WILL BE THE RESPONSIBILITY OF THE SITE CONTRACTOR, IN CONSULTATION WITH THE ENGINEER, TO SIZE AND CREATE THESE BASINS IN APPROPRIATE LOCATIONS.
13. CONTAIN ALL SEDIMENT ONSITE. SWEEP ALL EXITS FROM THE SITE AS NECESSARY INCLUDING ANY SEDIMENT TRACKING. SWEEP PAVED AREAS AS NEEDED TO REMOVE SEDIMENT AND POTENTIAL POLLUTANTS ACCUMULATED DURING SITE CONSTRUCTION.
14. REMOVE ACCUMULATED SEDIMENT FROM ALL TEMPORARY PRACTICES AND DISPOSE OF IN A PRE-APPROVED LOCATION.
15. PROVIDE ON SITE OR MAKE READILY AVAILABLE THE NECESSARY EQUIPMENT AND SITE PERSONNEL DURING CONSTRUCTION HOURS FOR THE DURATION OF THE PROJECT TO ENSURE ALL EROSION AND SEDIMENTATION CONTROL DEVICES ARE PROPERLY MAINTAINED AND REPAIRED IN A TIMELY AND RESPONSIBLE MANNER. IF SITE WORK IS SUSPENDED DURING THE WINTER MONTHS THE CONTRACTOR MUST CONTINUE TO PROVIDE PERSONNEL AND EQUIPMENT EITHER ON SITE OR READILY AVAILABLE TO PROPERLY MAINTAIN AND REPAIR ALL EROSION AND SEDIMENTATION CONTROL DEVICES IN A TIMELY AND RESPONSIBLE MANNER
16. PRIOR TO THE INSTALLATION OF FILTER FABRIC AND MEDIA WITHIN THE BIORETENTION AREAS, REMOVE AND PROPERLY DISPOSE OF SEDIMENT ACCUMULATED IN ANY PARTIALLY CONSTRUCTED OR TEMPORARY BIORETENTION/DRAINAGE AREA USED FOR SEDIMENT CONTROL DURING CONSTRUCTION. PROVIDE A SURFACE ELEVATION AT A MINIMUM 1-FOOT ABOVE THE BOTTOM OF MEDIA ELEVATION AS SHOWN IN THE BIORETENTION SCHEDULE FOR PARTIALLY CONSTRUCTED BIORETENTION AREAS. THIS ALLOWS FOR AN OVER-DIG OF THE COLLECTED SEDIMENT FROM WITHIN THE BIORETENTION AREA PRIOR TO MEDIA/FABRIC INSTALLATION.
17. CONTROL DUST BY WATERING OR OTHER APPROVED METHODS AS NECESSARY, OR AS DIRECTED BY THE ENGINEER.
18. THE CONTRACTOR IS RESPONSIBLE FOR THE INSPECTION AND MAINTENANCE DURING CONSTRUCTION OF ALL STORMWATER FACILITIES INSTALLED OR AFFECTED BY THE PROJECT. REMOVE SEDIMENT OR DEBRIS COLLECTED WITHIN THESE FACILITIES FROM THE PROJECT WORK PRIOR TO THE OWNER'S ACCEPTANCE.



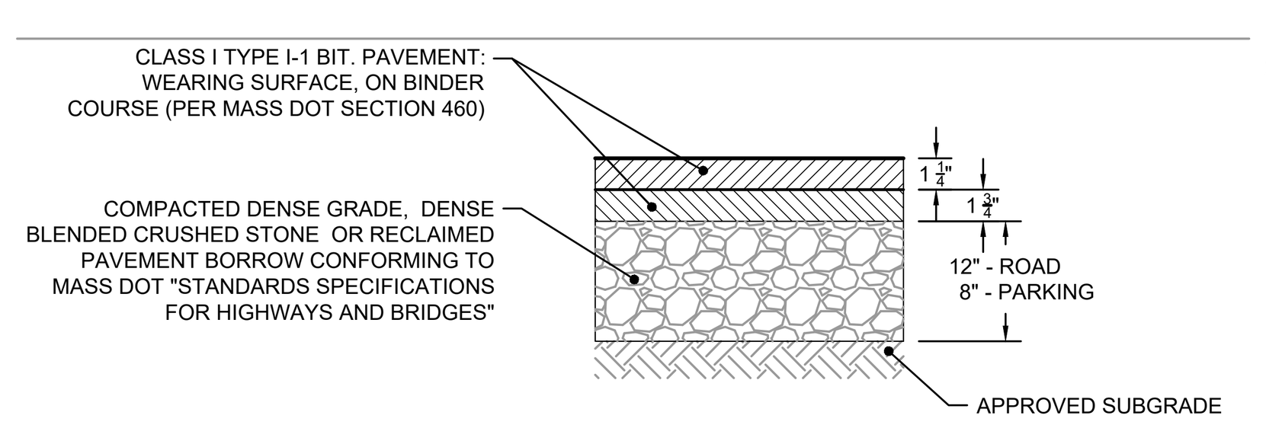
NOTES:
1. FENCING SHALL BE ORANGE RESINET SM60 BARRIER FENCE "SNOW FENCE" OR APPROVED EQUIVALENT.
2. POST SHALL BE HOT ROLLED RAIL STEEL AND FORMED INTO A "T". DIMENSIONS OF "T" POST SECTION, APPROXIMATELY 1 7/16" X 1 5/16" X 1/8" X 6' (SIX FEET) LONG. THE POST SHALL BE PAINTED GREEN OR GALVANIZED.
3. THE FENCING SHALL REMAIN IN PLACE UNTIL ALL EXCAVATION HAS BEEN COMPLETED AND THE SURFACE HAS BEEN RE-ESTABLISHED

TREE PROTECTION DETAIL
NOT TO SCALE



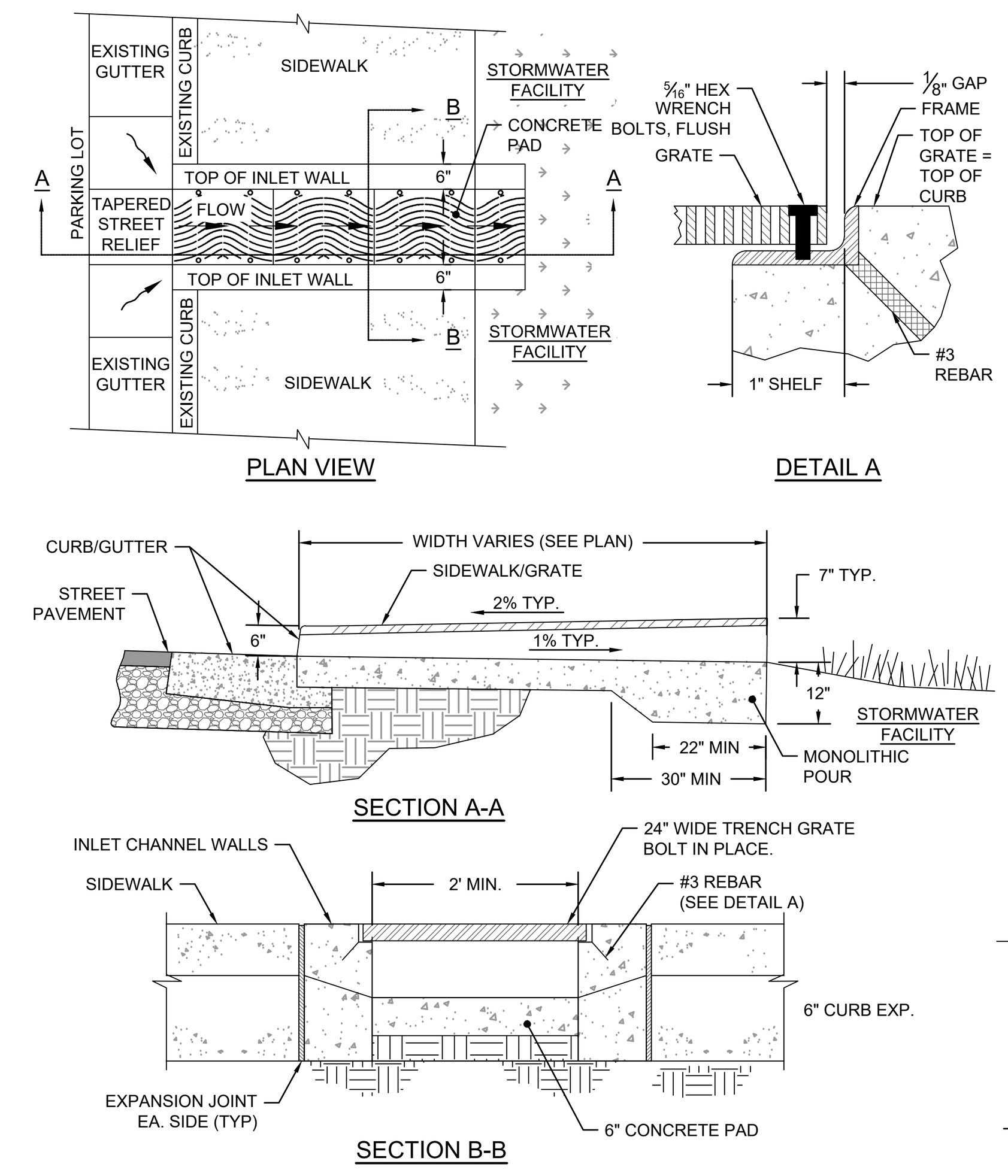
NOTES:
1. SILT SOCK MANUFACTURER TO BE SILT SOXX OR ENGINEER APPROVED EQUAL.
2. ALL MATERIAL TO MEET MANUFACTURER'S SPECIFICATIONS.
3. SEDIMENT SILT SOCK TO BE FILLED WITH LEAF COMPOST AND/OR WOODY MULCH PER MANUFACTURER'S REQUIREMENTS.
4. FOLLOWING CONSTRUCTION AND SITE STABILIZATION, COMPOST MATERIAL TO BE REMOVED OR DISPERSED ON SITE, AS APPROVED BY THE ENGINEER.

SEDIMENT SILT SOCK DETAIL
NOT TO SCALE



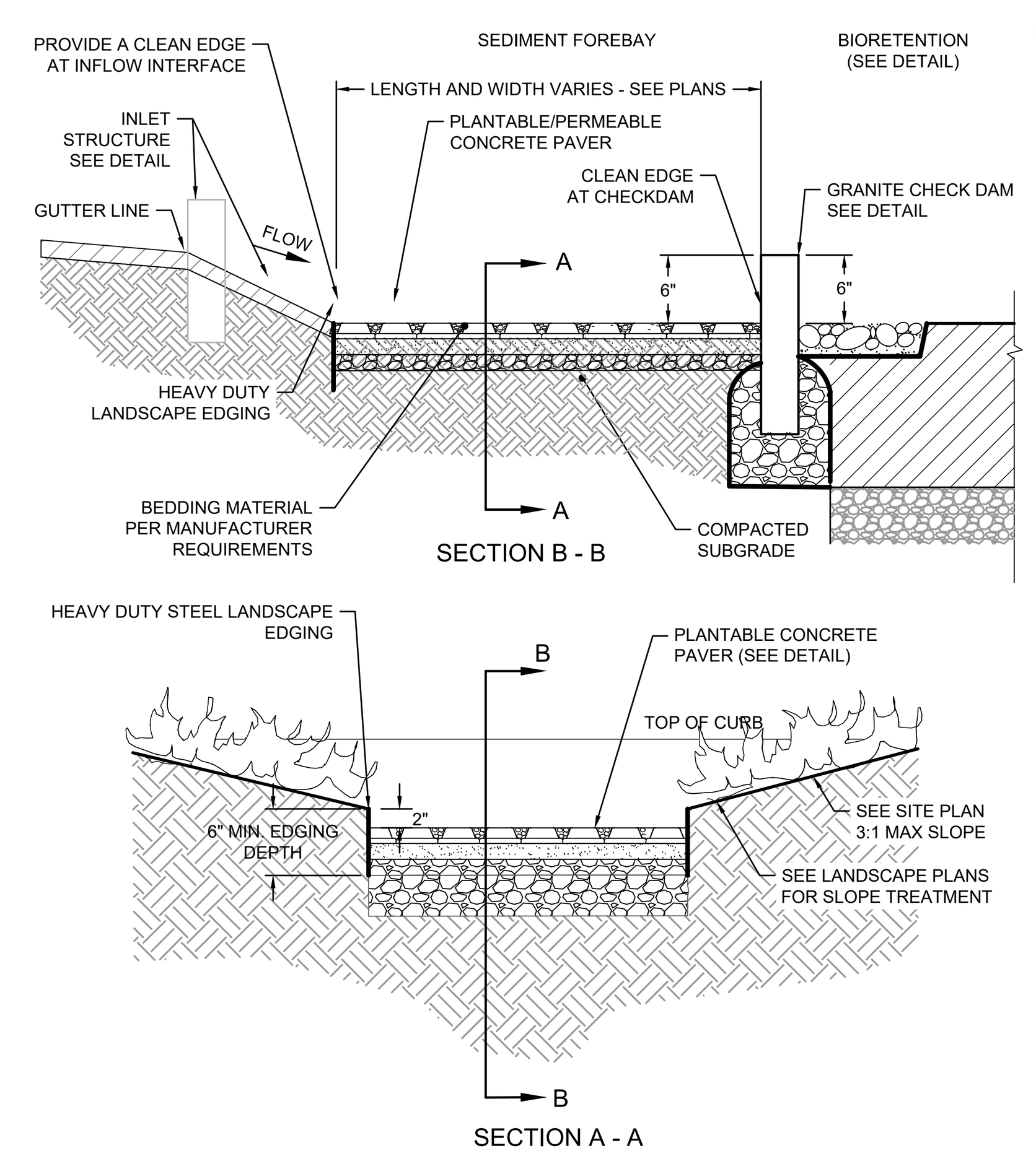
GENERAL NOTES:
1. SUB-GRADE (EXISTING MATERIAL) SHALL CONSIST OF INERT MATERIAL THAT IS HARD, DURABLE STONE AND/OR COARSE SAND, FREE FROM LOAM AND CLAY TO A DEPTH NOT LESS THAN 4-FT BELOW THE FINISH PAVEMENT SURFACE. EXCAVATE SANDY-LOAM AND/OR LOAMY-SAND TOPSOIL MATERIAL FROM ALL PAVED AREAS PRIOR TO SUB-BASE INSTALLATION.
2. PLACE SUB-BASE IN MAXIMUM 8" LIFTS (COMPACTED TO 95%).
3. COMPACT SUB-GRADE FILL TO 95% COMPACTION.
4. SEE SITE LAYOUT PLAN FOR PAVEMENT WIDTH AND LOCATION.
5. SEE GRADING PLANS FOR PAVEMENT SLOPE AND CROSS SLOPE.
6. SWEEP CLEAN THE EXISTING BINDER COURSE SURFACE PRIOR TO INSTALLING THE WEARING COURSE BY A STREET SWEEPING MACHINE .
7. APPLY A TACK COAT PER SPECIFICATIONS.

BITUMINOUS PAVEMENT
NOT TO SCALE



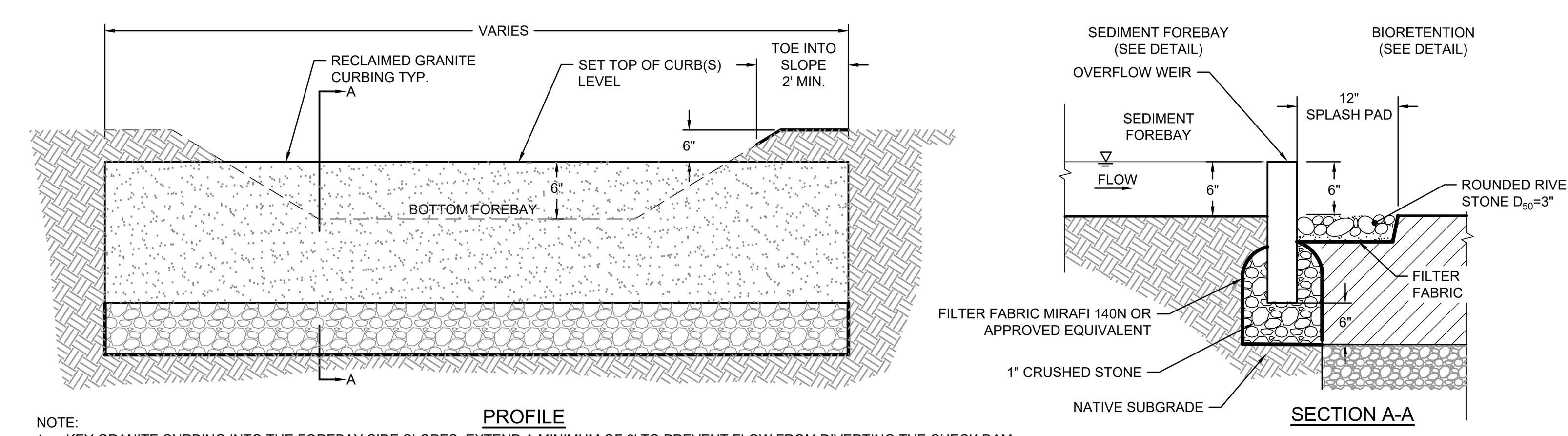
NOTES:
1. TRENCH GRATE TO BE TITLE WAVE MODEL BY URBAN ACESSORIES OR EQUAL.

INLET STRUCTURE
NOT TO SCALE



NOTES:
1. SEE SPECIFICATIONS FOR PLANTABLE/PERMEABLE PAVER REQUIREMENTS.
2. INSTALL PLANTABLE/PERMEABLE PAVER SYSTEM PER MANUFACTURERS REQUIREMENTS.
3. SHAPE FOREBAY AS REQUIRED WITH MIN. 6" SIDE SLOPE DEPTH.
4. LANDSCAPE EDGING: HEAVY DUTY STEEL LANDSCAPE EDGING ($\frac{1}{4}$" THICKNESS) WITH NATURAL FINISH
5. SEE PLANS FOR DIMENSIONS GRADING AND ELEVATIONS FOR SEDIMENT FOREBAY

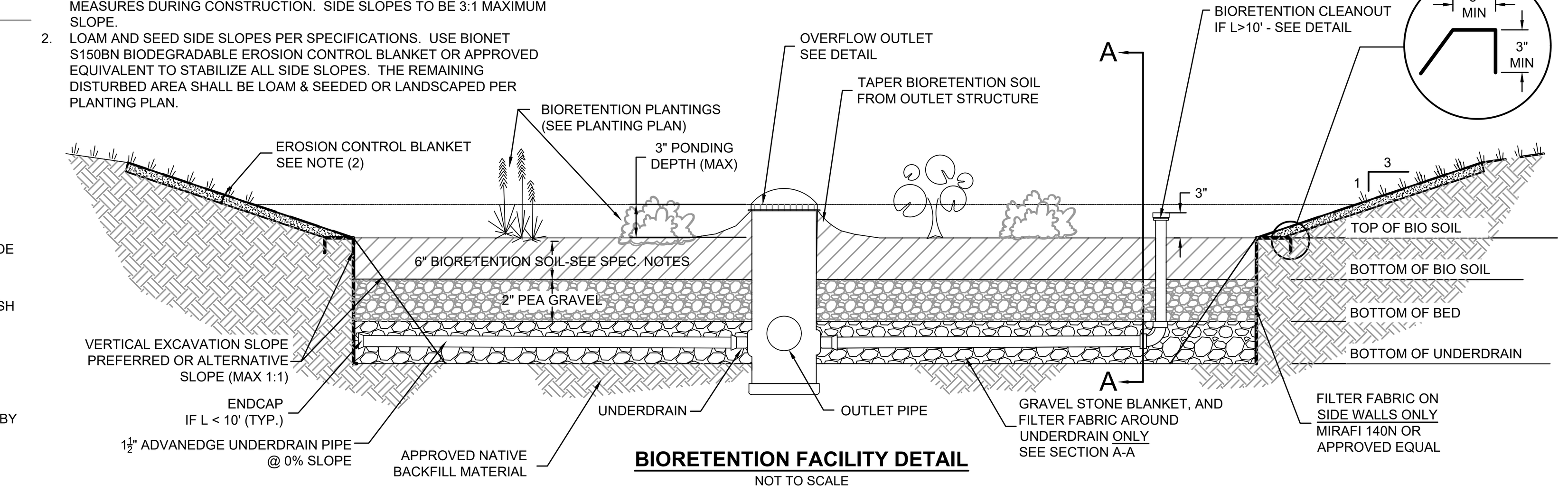
SEDIMENT FOREBAY
NOT TO SCALE



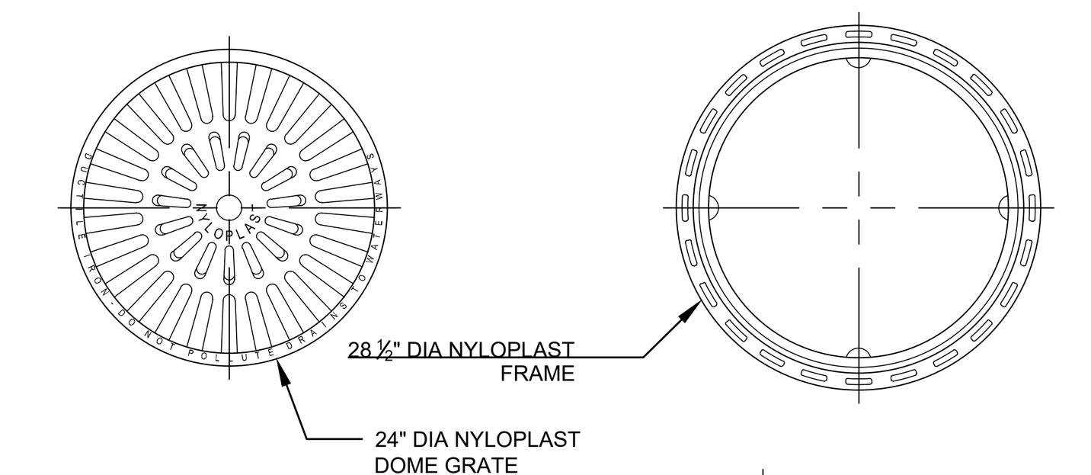
NOTE:
1. KEY GRANITE CURBING INTO THE FOREBAY SIDE SLOPES. EXTEND A MINIMUM OF 2' TO PREVENT FLOW FROM DIVERTING THE CHECK DAM.
2. USE RECLAIMED OR RECYCLED GRANITE CURB I WHEN POSSIBLE. PROVIDE LENGTHS AND DIMENSIONS TO MATCH PLANS AND DETAILS
3. SEE PLANS AND SCHEDULE FOR CHECKDAM LENGTH, LAYOUT AND CONFIGURATION.

SEDIMENT FOREBAY CHECKDAM
NOT TO SCALE

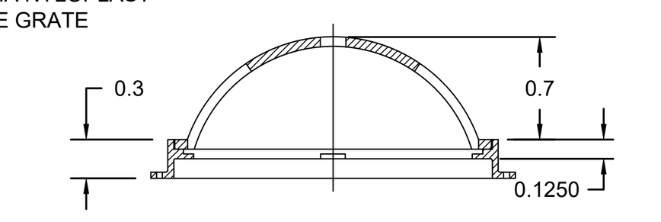
NOTES:
1. CONTRACTOR RESPONSIBLE FOR SLOPE STABILIZATION AND SAFETY MEASURES DURING CONSTRUCTION. SIDE SLOPES TO BE 3:1 MAXIMUM SLOPE.
2. LOAM AND SEED SIDE SLOPES PER SPECIFICATIONS. USE BIONET S150BN BIODEGRADABLE EROSION CONTROL BLANKET OR APPROVED EQUIVALENT TO STABILIZE ALL SIDE SLOPES. THE REMAINING DISTURBED AREA SHALL BE LOAM & SEEDED OR LANDSCAPED PER PLANTING PLAN.



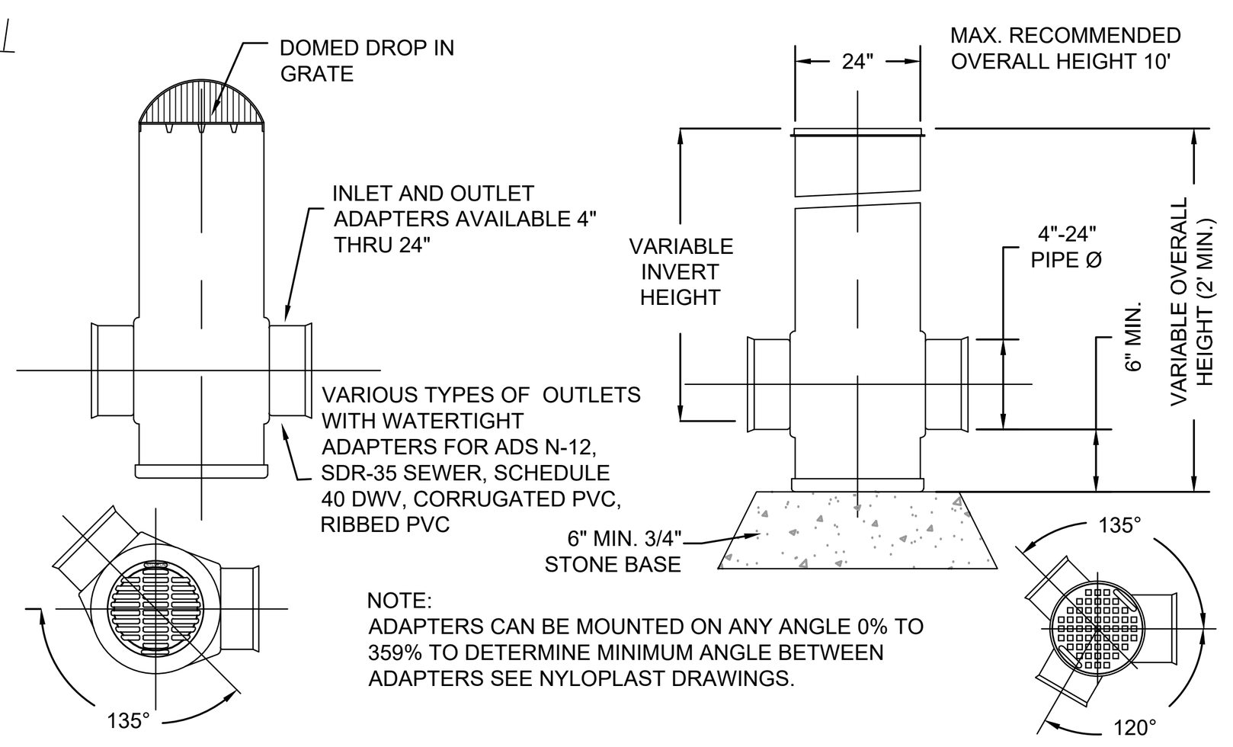
BIORETENTION FACILITY DETAIL
NOT TO SCALE



NOTES:
1. MATERIALS TO CONFORM TO ASTM A536 GRADE 70-50-05
2. CASTINGS ARE FURNISHED WITH A BLACK PAINT



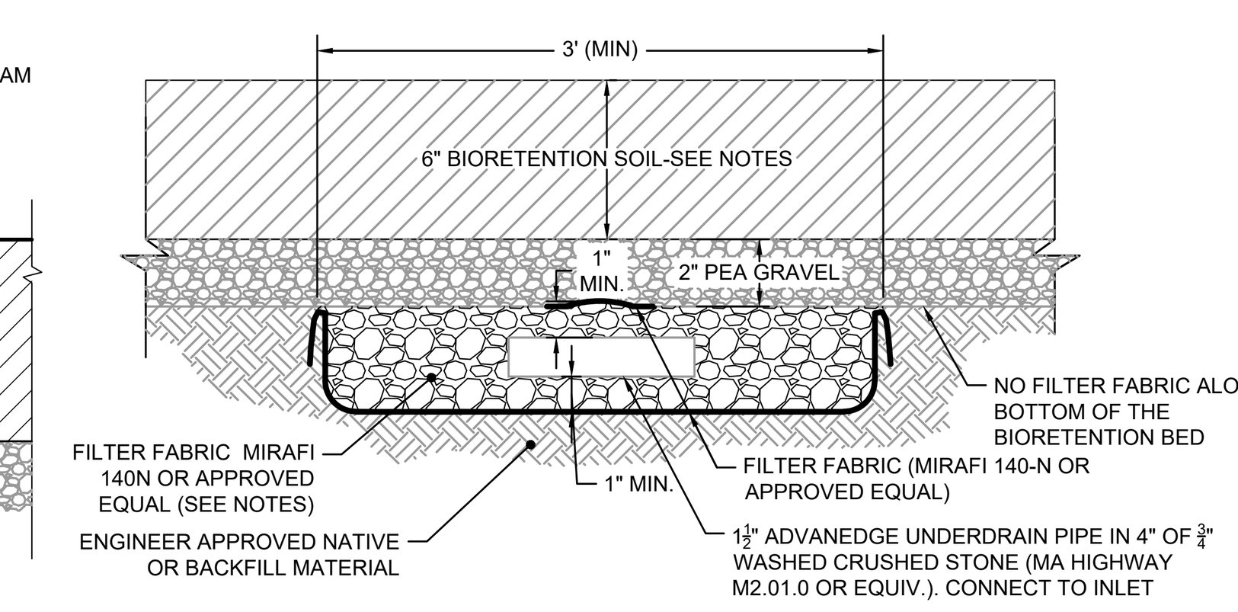
DOME FRAME AND GRATE DETAIL
NOT TO SCALE



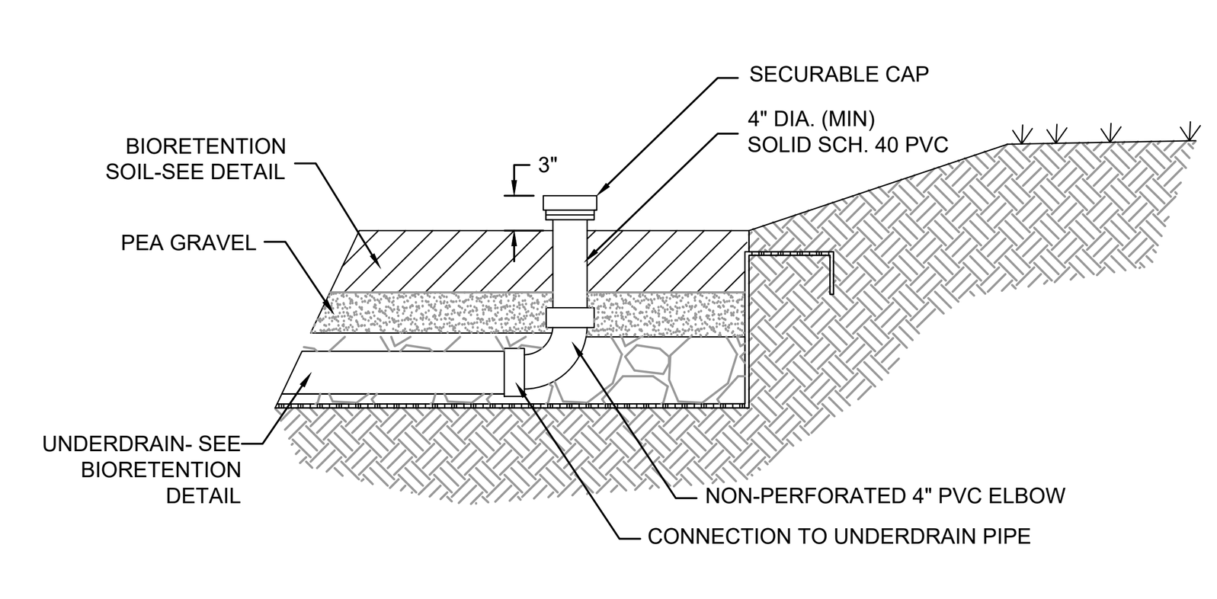
OVERFLOW OUTLET DETAIL
NOT TO SCALE

BY "NYLOPLAST" OR APPROVED EQUIVALENT

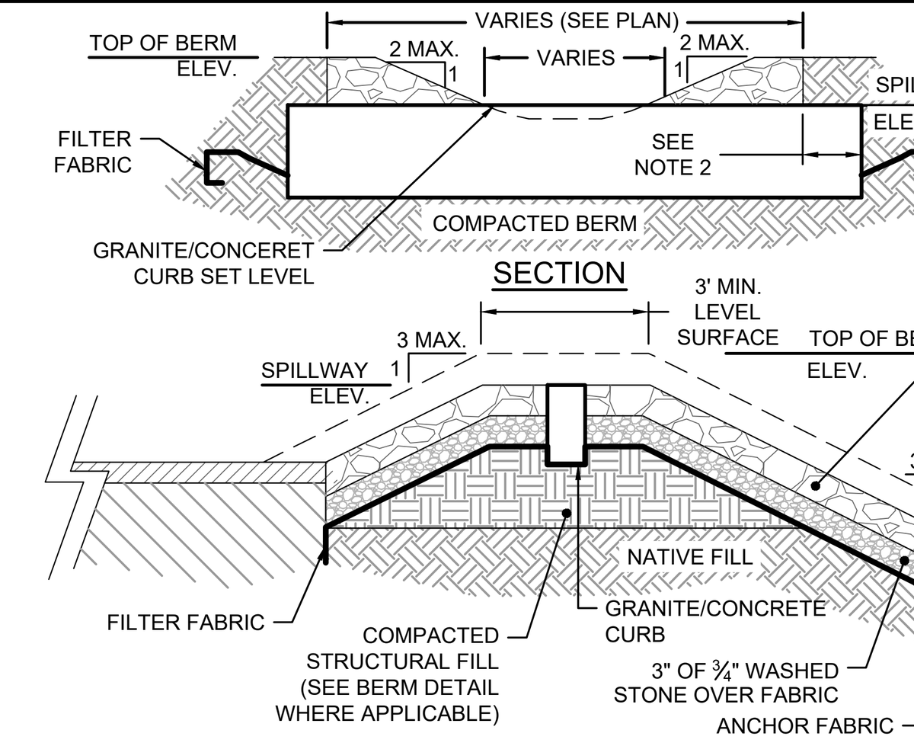
NOTES:
1. FILTER FABRIC AT BOTTOM OF UNDERDRAIN ONLY.
2. FILTER FABRIC ABOVE UNDERDRAIN SHALL EXTEND VERTICALLY 1-INCH± INTO THE PEA GRAVEL LAYER & HORIZONTALLY 1-FOOT OFF THE CENTER OF THE UNDERDRAIN PIPE.



BIORETENTION FACILITY SECTION A-A
NOT TO SCALE



TYPICAL BIORETENTION CLEANOUT DETAIL
NOT TO SCALE



NOTES:
1. STONE IN SPILLWAY CHANNEL TO BE SET LEVEL WITH TOP OF CURB.
2. KEY CURB A MINIMUM OF 18" INTO COMPACTED BERM TO PREVENT FLOW DIVERSION.

OVERFLOW SPILLWAY
NOT TO SCALE

NOTES:
1. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR TO EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH A FOUNDATION OF CLASS I OR II MATERIAL AS DEFINED IN ASTM D2321, "STANDARD PRACTICE FOR INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS," LATEST EDITION; AS AN ALTERNATIVE AND AT THE DISCRETION OF THE ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A WOVEN GEOTEXTILE FABRIC.
2. BEDDING, HAUNCHING AND INITIAL BACKFILL: SUITABLE MATERIAL TO CONSIST OF CLEAN, HARD, PARTICLES OF GRAVEL MEETING THE FOLLOWING:

SIEVE SIZE	% PASSING
3/8"	85-95
NO. 4	5-15
NO. 8	0-2

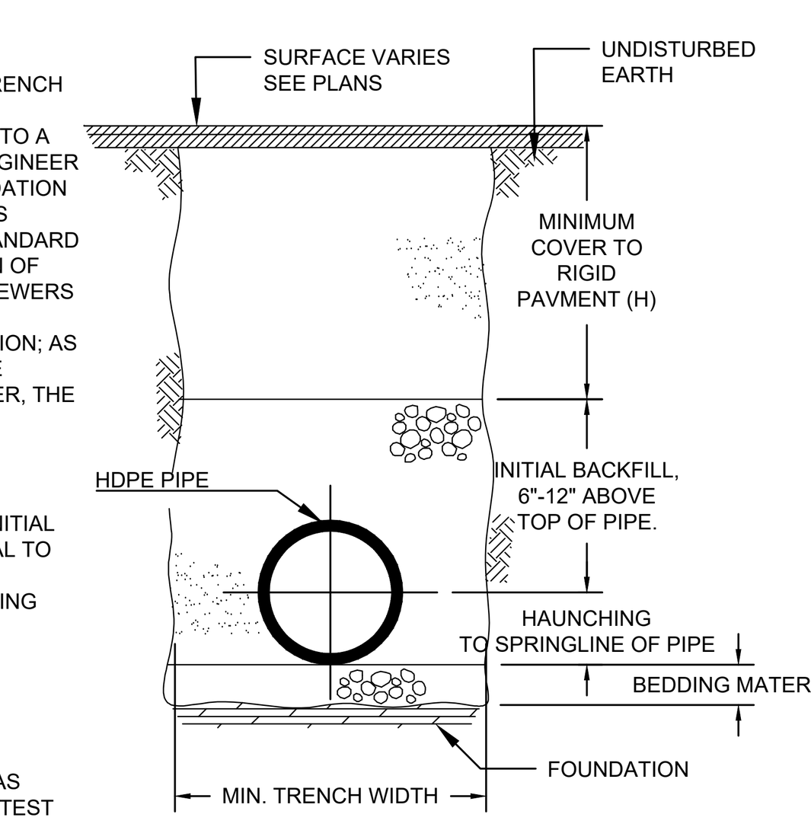
MATERIAL TO BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

MINIMUM BEDDING THICKNESS TO BE 4" (100mm) FOR 4"-24" (100-600mm) AND 42"-48"(1050-1200mm) CORRUGATED POLYETHYLENE PIPE (CPEP); 6" (150mm) FOR 30"-36" (750-900mm) CPEP.

3. MINIMUM TRENCH WIDTHS TO BE AS FOLLOWS:

NOMINAL Ø in (mm)	MIN. RECOMMENDED TRENCH WIDTH, in (mm)
8 (200)	25 (630)
10 (250)	28 (710)
12 (300)	31 (790)
15 (375)	34 (860)
18 (450)	39 (990)

4. MINIMUM COVER: MINIMUM RECOMMENDED DEPTHS OF COVER FOR VARIOUS LIVE LOADING CONDITIONS ARE SUMMARIZED IN THE FOLLOWING TABLE. UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE TAKEN FROM THE TOP OF PIPE TO THE GROUND SURFACE.



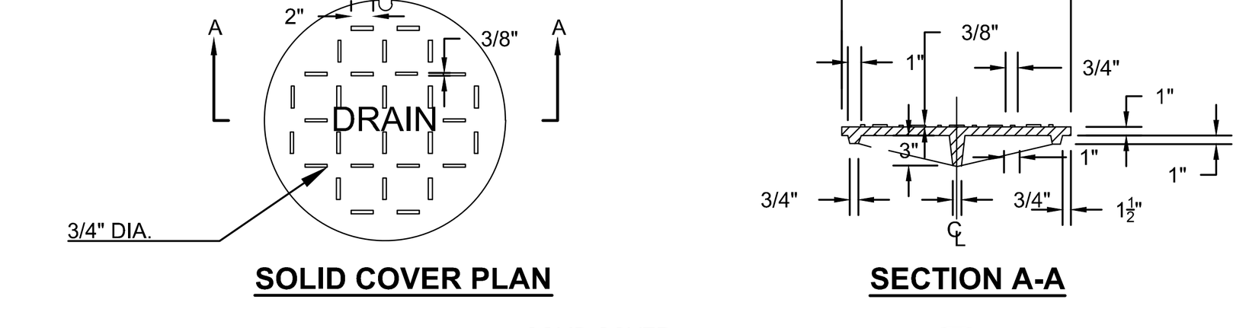
DETAIL PROVIDED BY ADVANCED DRAINAGE SYSTEMS, INC.

SURFACE LIVE LOADING CONDITION	MINIMUM RECOMMENDED * COVER, in (mm)
H25 (FLEXIBLE PAVEMENT)	12 (300)
H25 (RIGID PAVEMENT) E80	12 (300)
RAILWAY HEAVY	24 (610)
CONSTRUCTION	48 (1220)

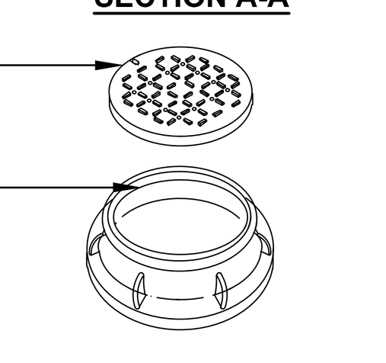
* TOP OF PIPE TO BOTTOM OF BITUMINOUS PAVEMENT

THE MINIMUM COVER FOR A HDPE PIPE IS 1'-0" FOR H-20 TRAFFIC LOADS IF INSTALLED IN ACCORDANCE WITH AASHTO SECTION 30. THIS IS BASED ON EMPIRICAL CALCULATION OF LOAD RESPONSE, MANUFACTURER'S TESTING AND FIELD EXPERIENCE WITH THE PIPE. AASHTO SPECIFICATIONS SECTION 18.4.1.5 DEFINES THE MINIMUM COVER AS "ID/8 BUT NOT LESS THAN 12 INCHES". THIS COVER IS MEASURED FROM THE PIPE OD TO THE TOP OF A RIGID (CONCRETE) PAVEMENT OR THE BOTTOM OF A FLEXIBLE (BITUMINOUS) PAVEMENT. BOTH AASHTO AND ASTM, AS WELL AS MOST MANUFACTURERS, REQUIRE ADDITIONAL (TEMPORARY COVER, MOUNDED OVER THE PIPE AND REMOVED FOR FINAL GRADING AND PAVING, IS SUFFICIENT FOR LARGE CONSTRUCTION VEHICLE LOADS.

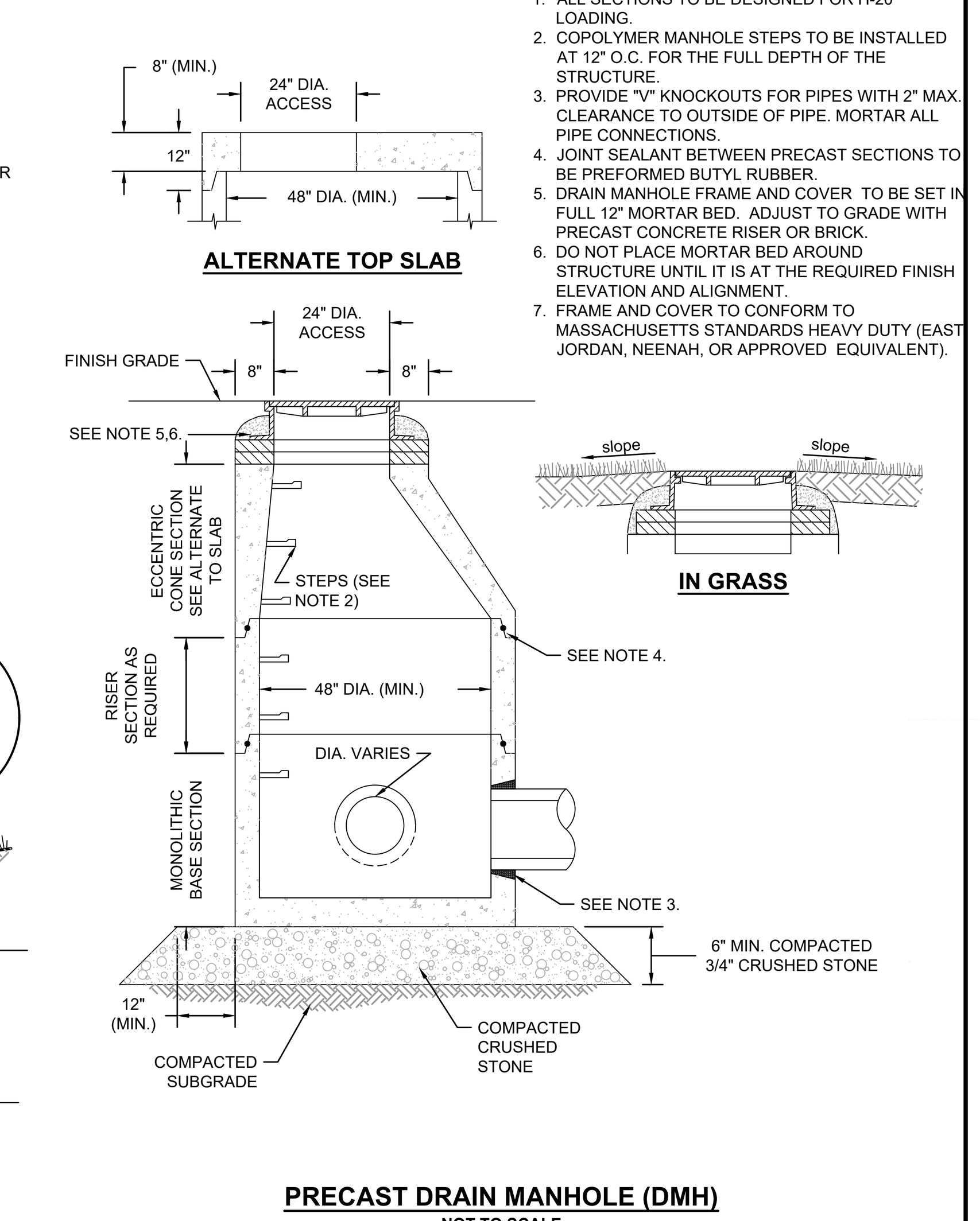
HDPE DRAINAGE PIPE TRENCH
NOT TO SCALE



NOTES:
1. FRAME AND COVER TO CONFORM TO MASSACHUSETTS STANDARDS HEAVY DUTY (EAST JORDAN, NEENAH, OR APPROVED EQUIVALENT)
2. ALL H20 LOADING
3. MIN. FRAME WEIGHT:
4" FLANGE 295 LBS
3" FLANGE 265 LBS
4. MATERIAL-CAST IRON
5. MIN. GRATE WEIGHT: 200LBS.
6. SEE CATCHBASIN AND MANHOLE DETAILS FOR INSTALLATION.



DRAINAGE STRUCTURE FRAME AND COVER
NOT TO SCALE



NOTES:
1. ALL SECTIONS TO BE DESIGNED FOR H-20 LOADING.
2. COPOLYMER MANHOLE STEPS TO BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE.
3. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
4. JOINT SEALANT BETWEEN PRECAST SECTIONS TO BE PREFORMED BUTYL RUBBER.
5. DRAIN MANHOLE FRAME AND COVER TO BE SET IN FULL 12" MORTAR BED. ADJUST TO GRADE WITH PRECAST CONCRETE RISER OR BRICK.
6. DO NOT PLACE MORTAR BED AROUND STRUCTURE UNTIL IT IS AT THE REQUIRED FINISH ELEVATION AND ALIGNMENT.
7. FRAME AND COVER TO CONFORM TO MASSACHUSETTS STANDARDS HEAVY DUTY (EAST JORDAN, NEENAH, OR APPROVED EQUIVALENT).

PRECAST DRAIN MANHOLE (DMH)
NOT TO SCALE

KUTH/RANIERI
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CONSULTANT

Rock Harbor Harbormaster Building and Site Revitalization

631 Dyer Prince Road
Eastham, MA 02642

PROJECT INFORMATION
Town of Eastham
OWNER
APN

NOT FOR CONSTRUCTION

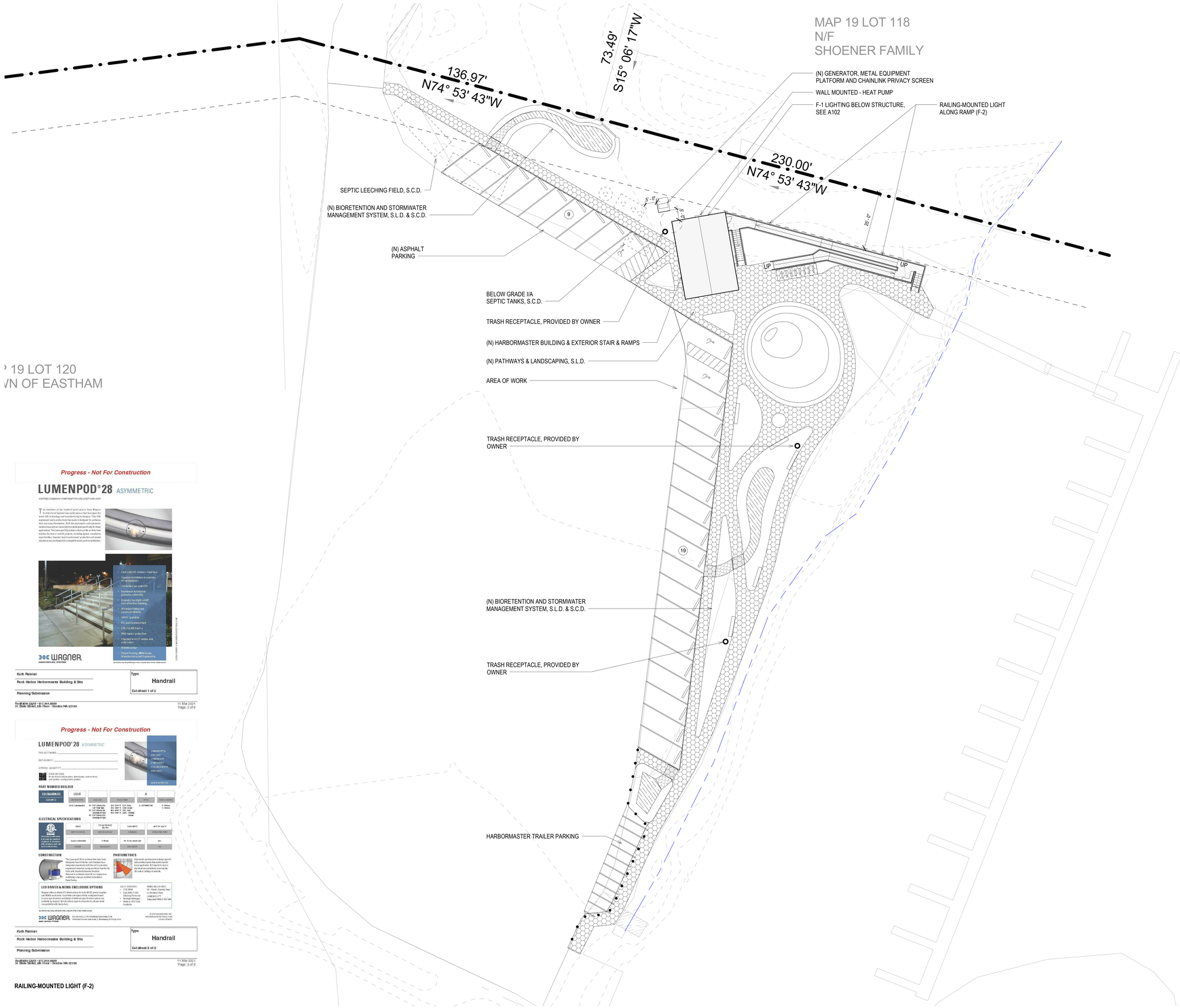
STAMP
RICHARD A. CLAYTOR CIVIL NO. 45116 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS
4-5-2021

CONSERVATION SUBMISSION
4/5/21
ISSUANCE

ISSUE | DATE | DESCRIPTION
DRAWN BY: ML CHECKED BY: RAC PROJECT #: 2003

DETAILS
TITLE

C003
SHEET



1 SITE PLAN
1/16" = 1'-0"

RAILING-MOUNTED LIGHT (F-2)

NOTE: If this drawing is not on 30in x 42 in, it has been revised from its original size. Scales as noted on drawings/details are no longer applicable.
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PROJECT INFORMATION

Town of Eastham
OWNER

APN

LICENSED ARCHITECT
ELIZABETH RANIERI
NO. 30999
STATE OF MASSACHUSETTS

STAMP

Notice of Intent Updates
04/05/21
ISSUANCE

ISSUE	DATE	DESCRIPTION
6	04/05/21	Notice of Intent Updates
5	04/05/21	Planning Rev. 1
3	3/16/21	Planning Submission
2	3/3/21	100% Schematic Design - Revision 1
1	3/1/21	100% Schematic Design

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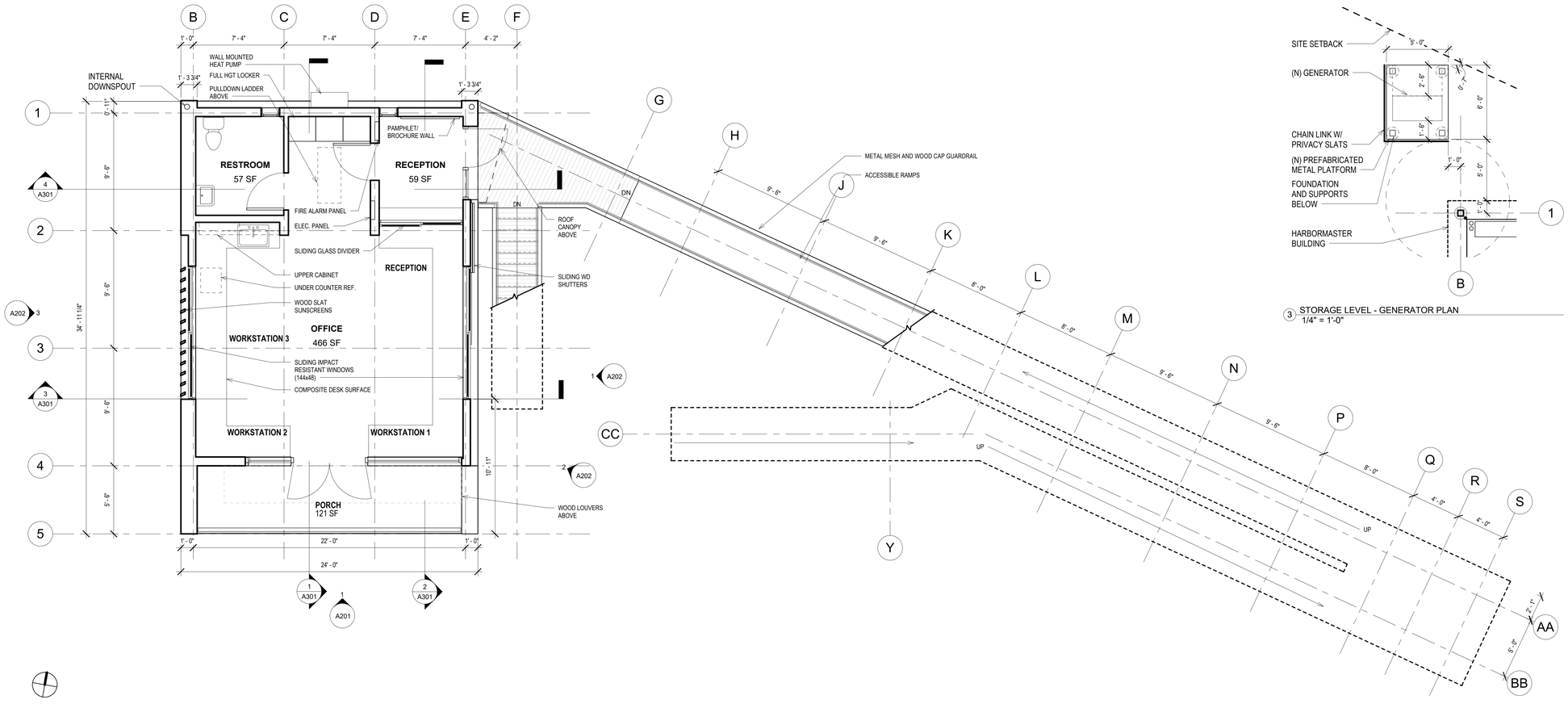
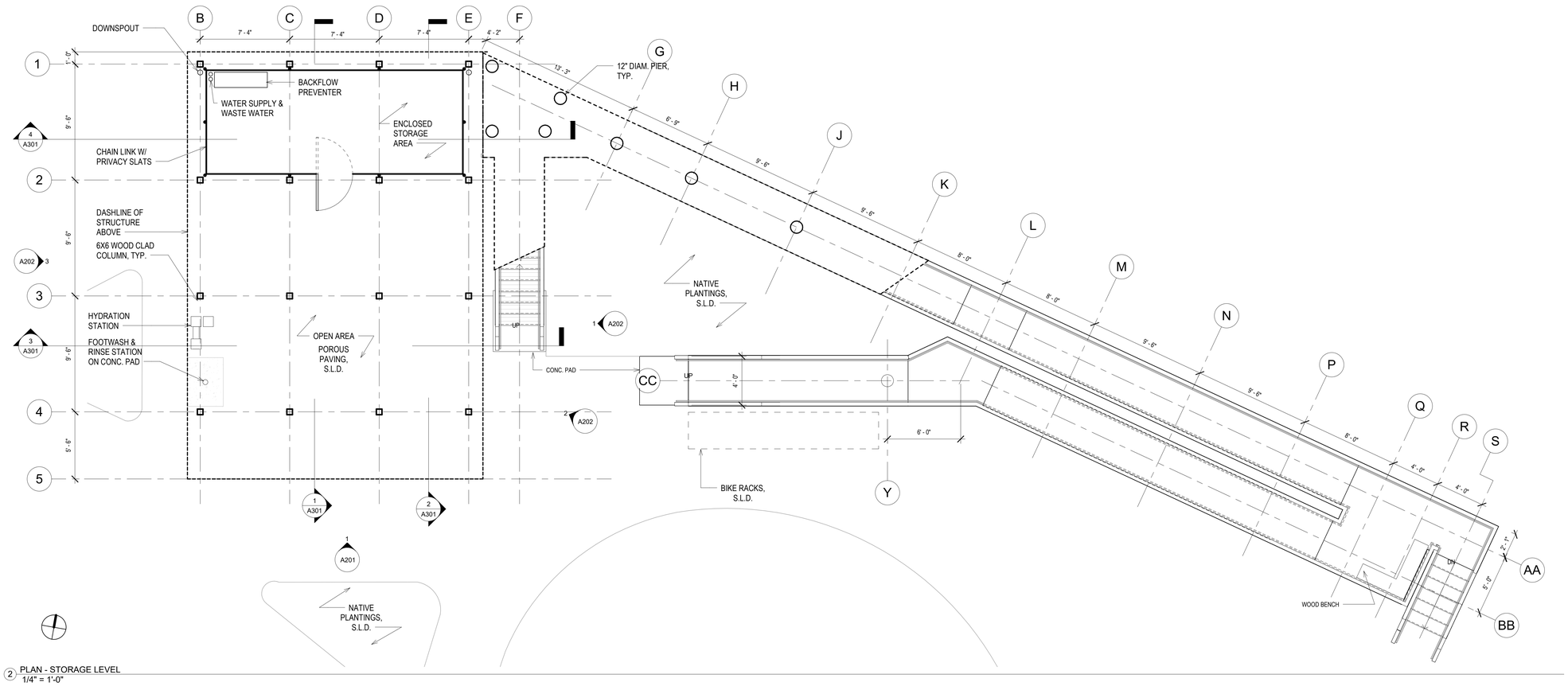
ARCHITECTURE SITE PLAN
TITLE

A100
SHEET



1 PLAN - OFFICE LEVEL
1/4" = 1'-0"

3 STORAGE LEVEL - GENERATOR PLAN
1/4" = 1'-0"



2 PLAN - STORAGE LEVEL
1/4" = 1'-0"

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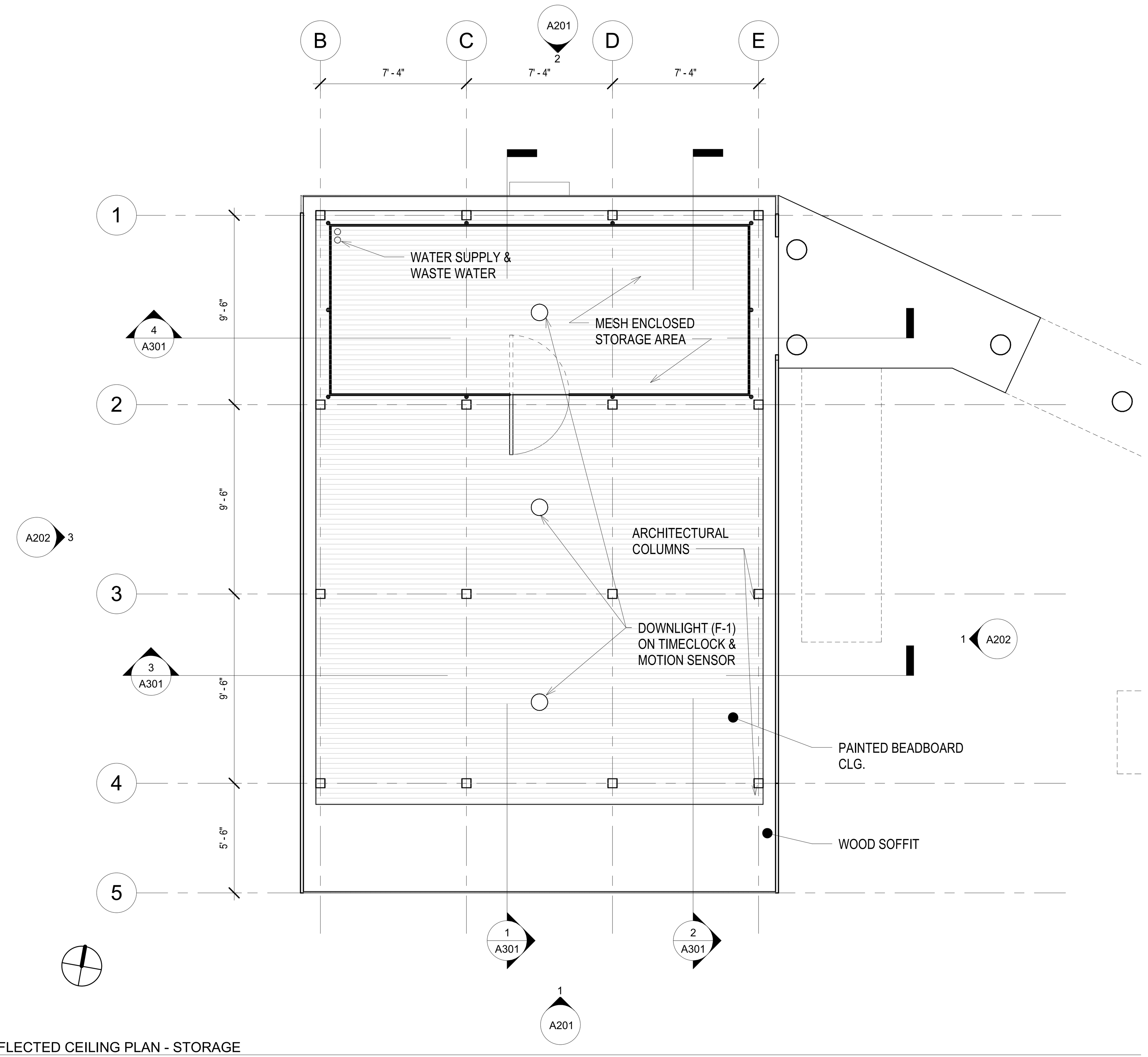
2	3/3/21	100% Schematic Design - Revision 1
1	3/1/21	100% Schematic Design

DRAWN BY: CHECKED BY: PROJECT #: 2003

FLOOR PLANS
TITLE

A101
SHEET



3 REFLECTED CEILING PLAN - STORAGE
1/4" = 1'-0"

LED ceiling mounted downlight - wide beam **BEGA**

Application
This compact LED ceiling mounted downlight is designed for down lighting atriums, canopies, passages, and other interior and exterior locations featuring a symmetrical wide beam light distrubtion.

Materials
Luminaire housing constructed of die-cast marine grade, copper free (≤0.3% copper content) A360.0 aluminum alloy
Clear safety glass
Reflector made of pure anodized aluminum
High temperature silicone gasket

NRTL listed to North American Standards, suitable for wet locations
Protection class IP65
Weight: 5.0 lbs

Electrical

Operating voltage	120-277V AC
Minimum start temperature	-20° C
LED module wattage	10 W
System wattage	12 W
Controllability	0-10V, TRIAC, and ELV dimmable
Color rendering index	Ra > 85
Luminaire lumens	954 lumens (3000K)
Lifetime at Ta = 15° C	>500,000 h (L70)
Lifetime at Ta = 40° C	330,000 h (L70)

LED color temperature
☐ 4000K - Product number + **K4**
☐ 3500K - Product number + **K35**
☐ 3000K - Product number + **K3 (*EXPRESS*)**
☐ 2700K - Product number + **K27**

BEGA can supply you with suitable LED replacement modules for up to 20 years after the purchase of LED luminaires - see website for details

Finish
All BEGA standard finishes are matte, textured polyester powder coat with minimum 3 mil thickness.
Available colors ☐ Black (BLK) ☐ White (WHT) ☐ RAL:
☐ Bronze (BRZ) ☐ Silver (SLV) ☐ CUS:

Type:
BEGA Product:
Project:
Modified:

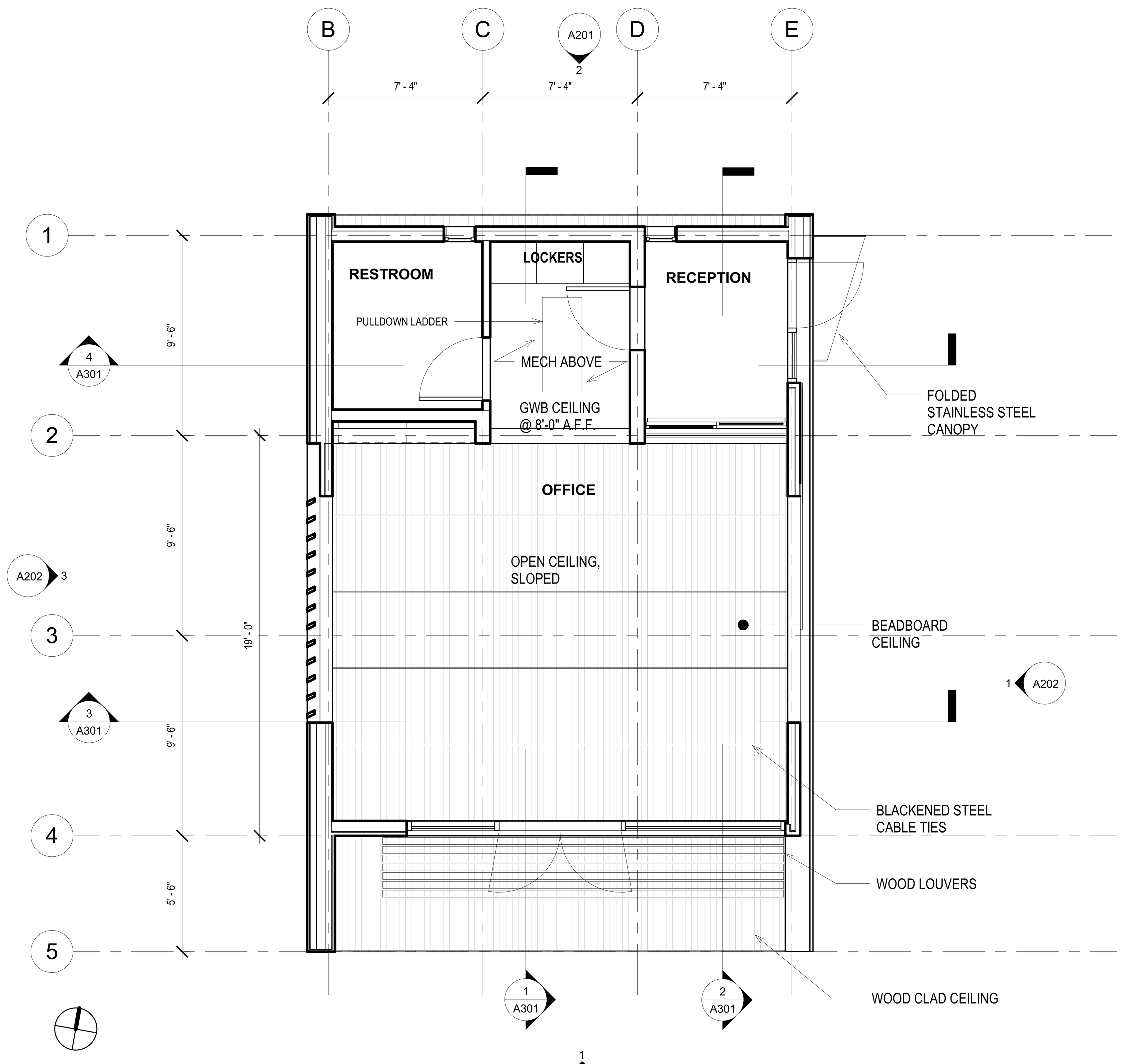
LED ceiling mounted downlight · wide beam	LED	β	A	B
66982	10W	91°	5 7/8	5

β = Beam angle

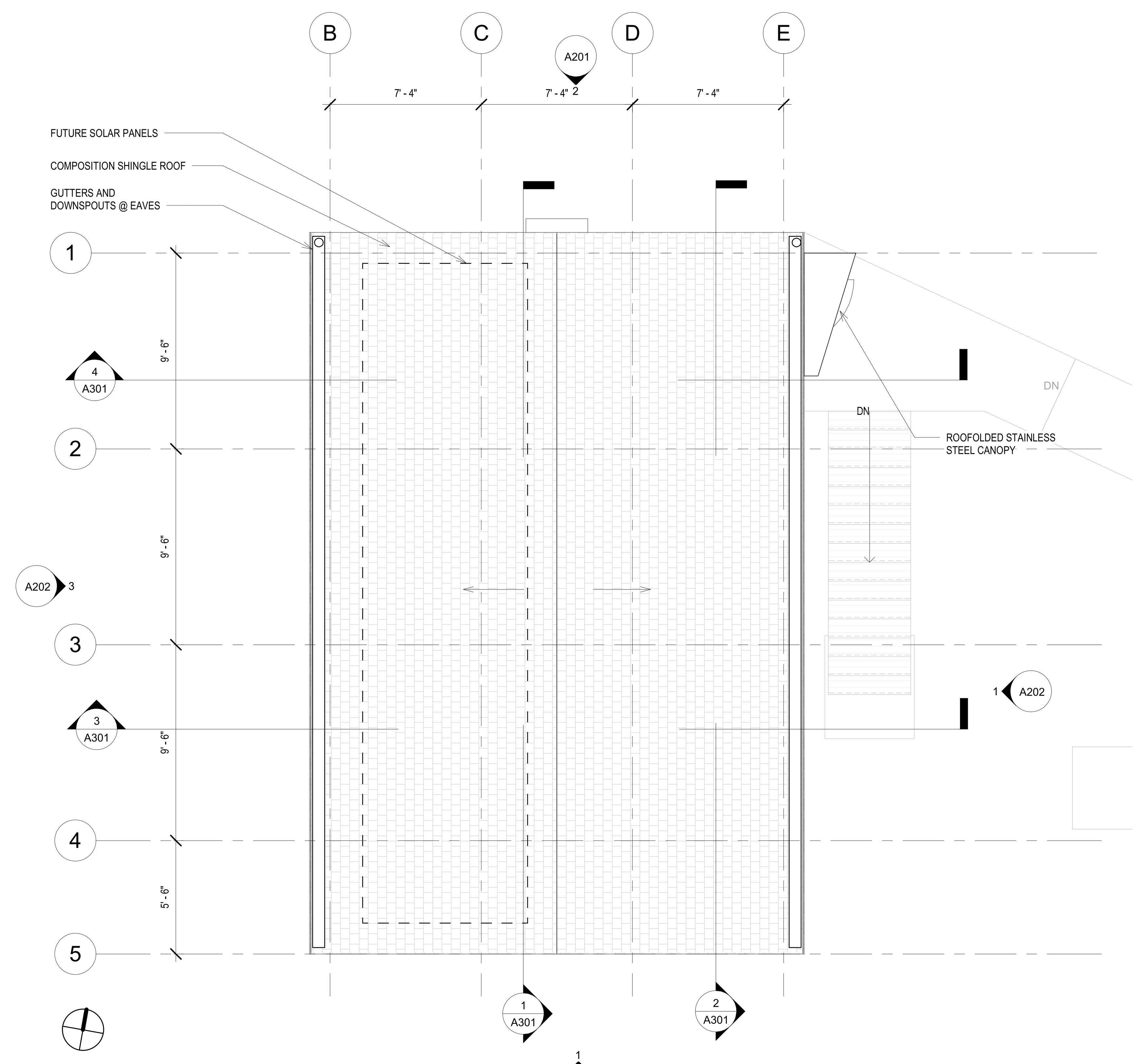
BEGA 1000 BEGA Way, Carpinteria, CA 93013 (805) 684-0533 info@bega-us.com
Due to the dynamic nature of lighting products and the associated technologies, luminaire data on this sheet is subject to change at the discretion of BEGA North America. For the most current technical data, please refer to bega-us.com

Updated 07/11/18

CEILING-MOUNTED DOWNLIGHT (F-1)



2 REFLECTED CEILING PLAN - OFFICE
1/4" = 1'-0"



1 ROOF PLAN
1/4" = 1'-0"

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2	3/3/21	100% Schematic Design - Revision 1
1	3/1/21	100% Schematic Design

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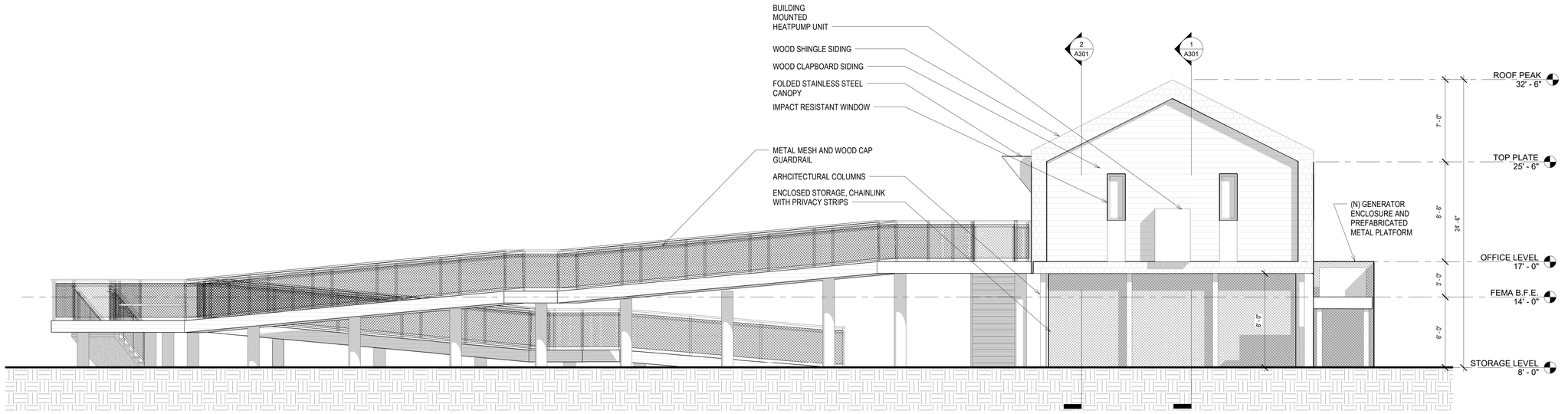
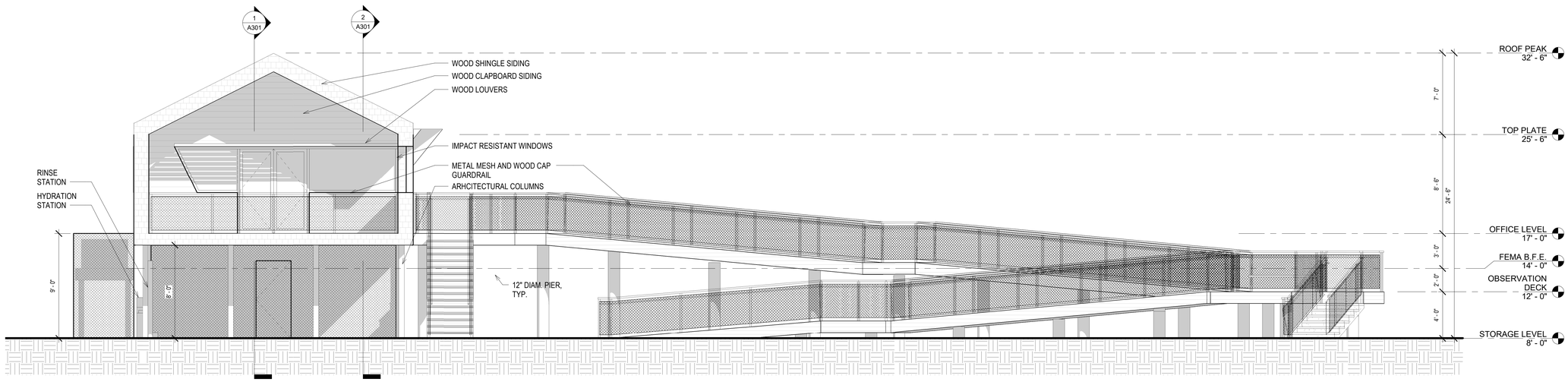
ROOF PLAN & RCP
TITLE

A102
SHEET



2 ELEVATION - NORTH
1/4" = 1'-0"



1 ELEVATION - SOUTH
1/4" = 1'-0"

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4/2/2021 2:23:08 PM

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631 Dyer Prince Road
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PROJECT INFORMATION

Town of Eastham
OWNER

APN

LICENSED ARCHITECT
ELIZABETH RANIERI
NO. 30999
STATE OF MASSACHUSETTS

STAMP

Notice of Intent
Updates
04/05/21
ISSUANCE

ISSUE	DATE	DESCRIPTION
6	04/05/21	Notice of Intent Updates
5	04/05/21	Planning Rev. 1
3	3/16/21	Planning Submission
2	3/3/21	100% Schematic Design - Revision 1
1	3/1/21	100% Schematic Design

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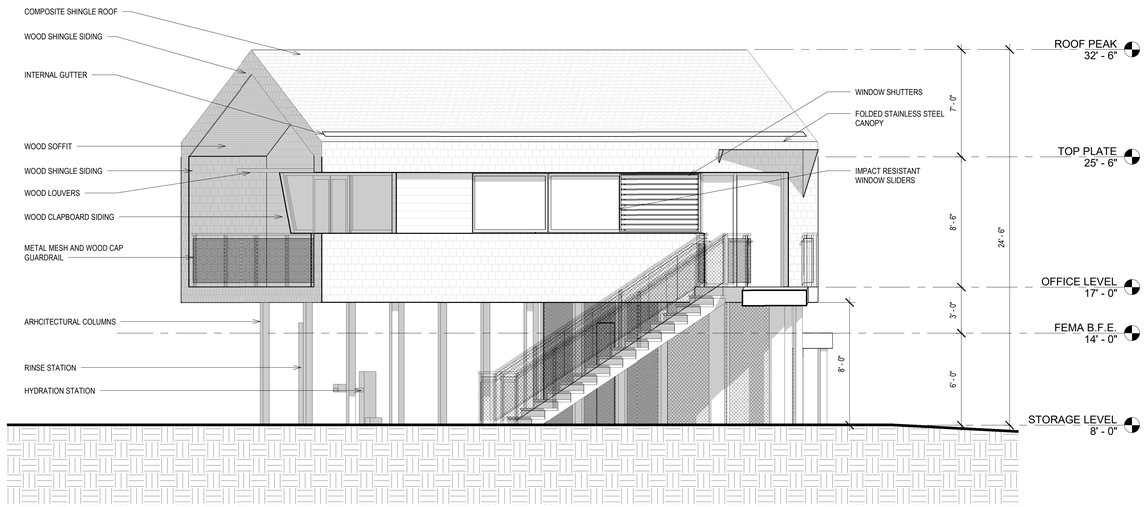
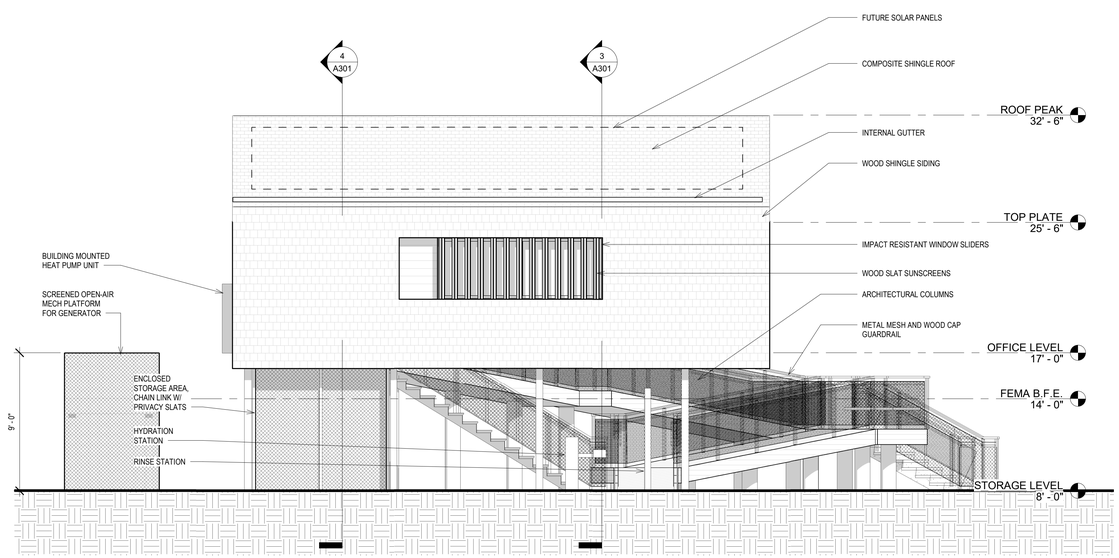
EXTERIOR
ELEVATIONS
TITLE

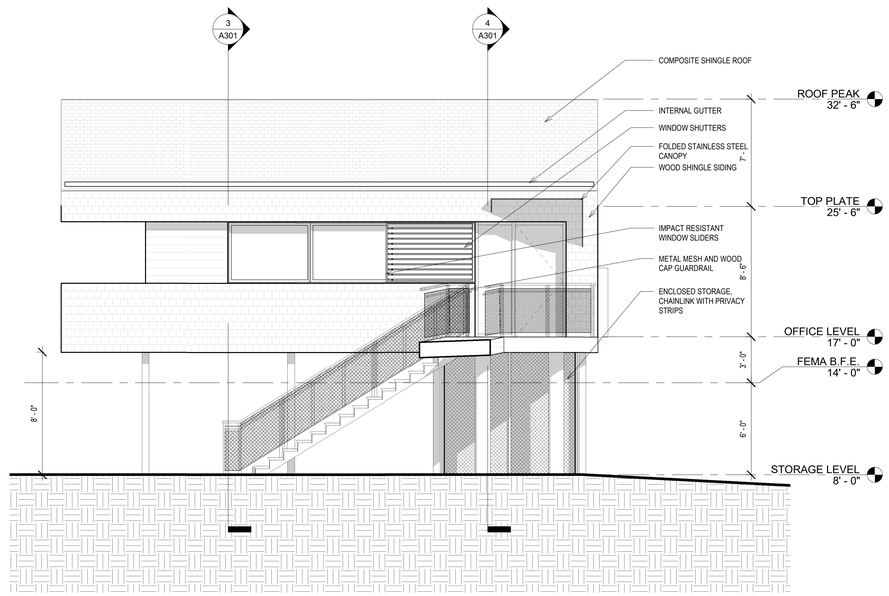
A201
SHEET



2 ELEVATION - SOUTHEAST
1/4" = 1'-0"



3 ELEVATION - WEST
1/4" = 1'-0"



1 ELEVATION - EAST
1/4" = 1'-0"

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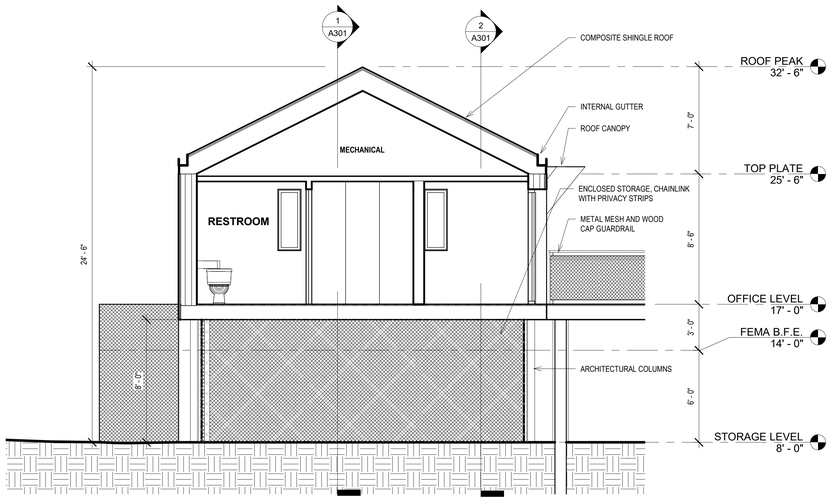
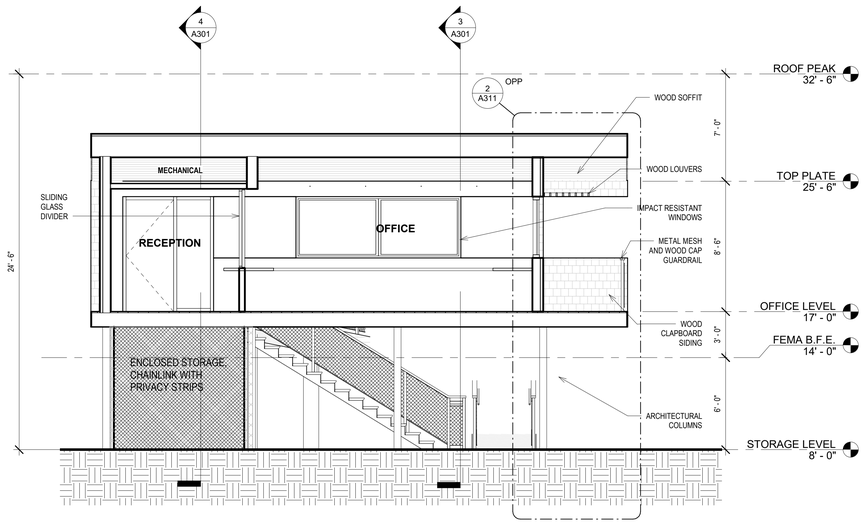
EXTERIOR
ELEVATIONS
TITLE

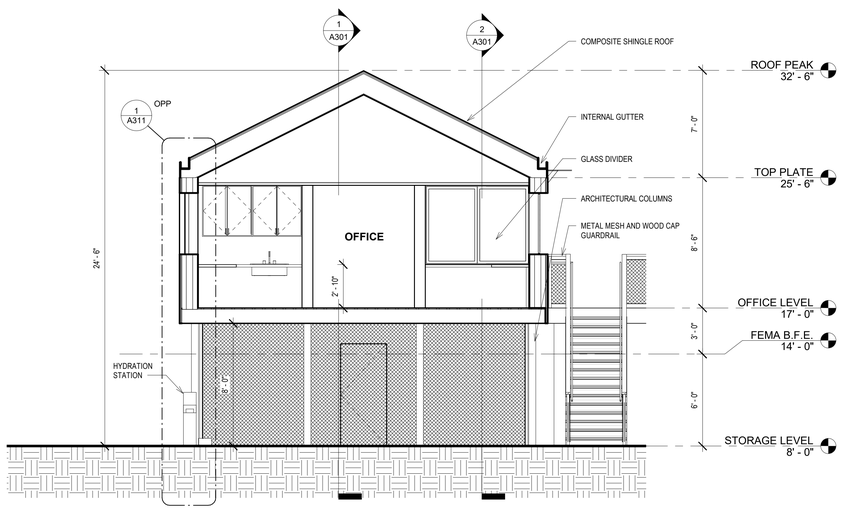
A202
SHEET



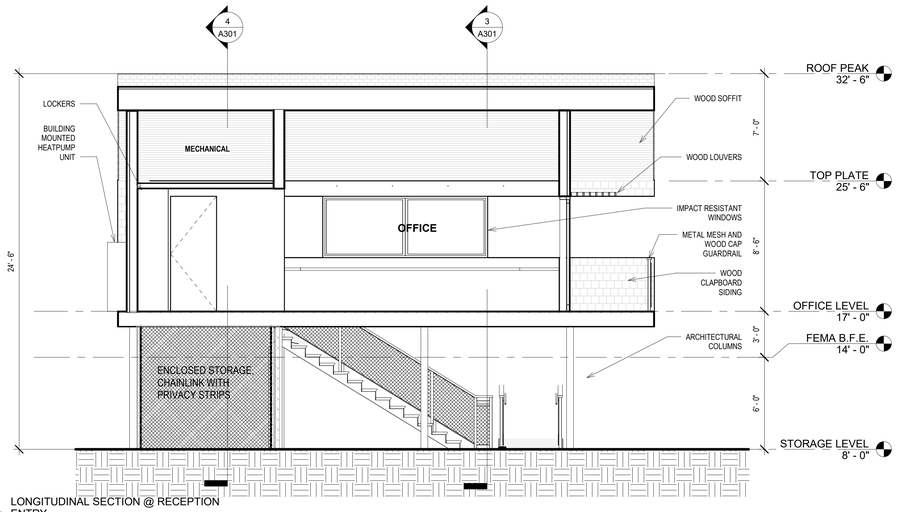
4 CROSS SECTION @ RESTROOM
1/4" = 1'-0"



2 LONGITUDINAL @ OFFICE + BATHROOM
1/4" = 1'-0"



3 CROSS SECTION @ OFFICE
1/4" = 1'-0"



LONGITUDINAL SECTION @ RECEPTION ENTRY
1 1/4" = 1'-0"

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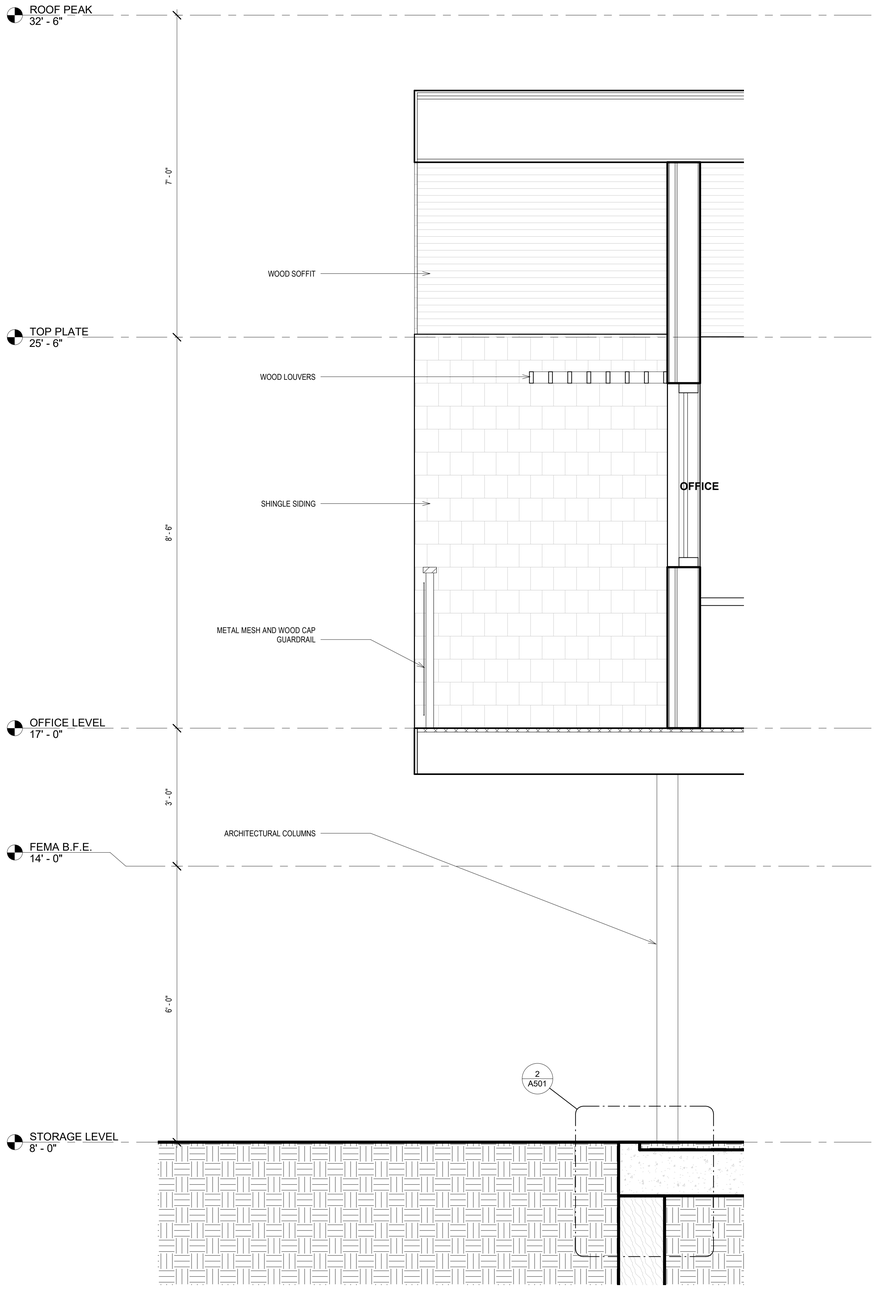
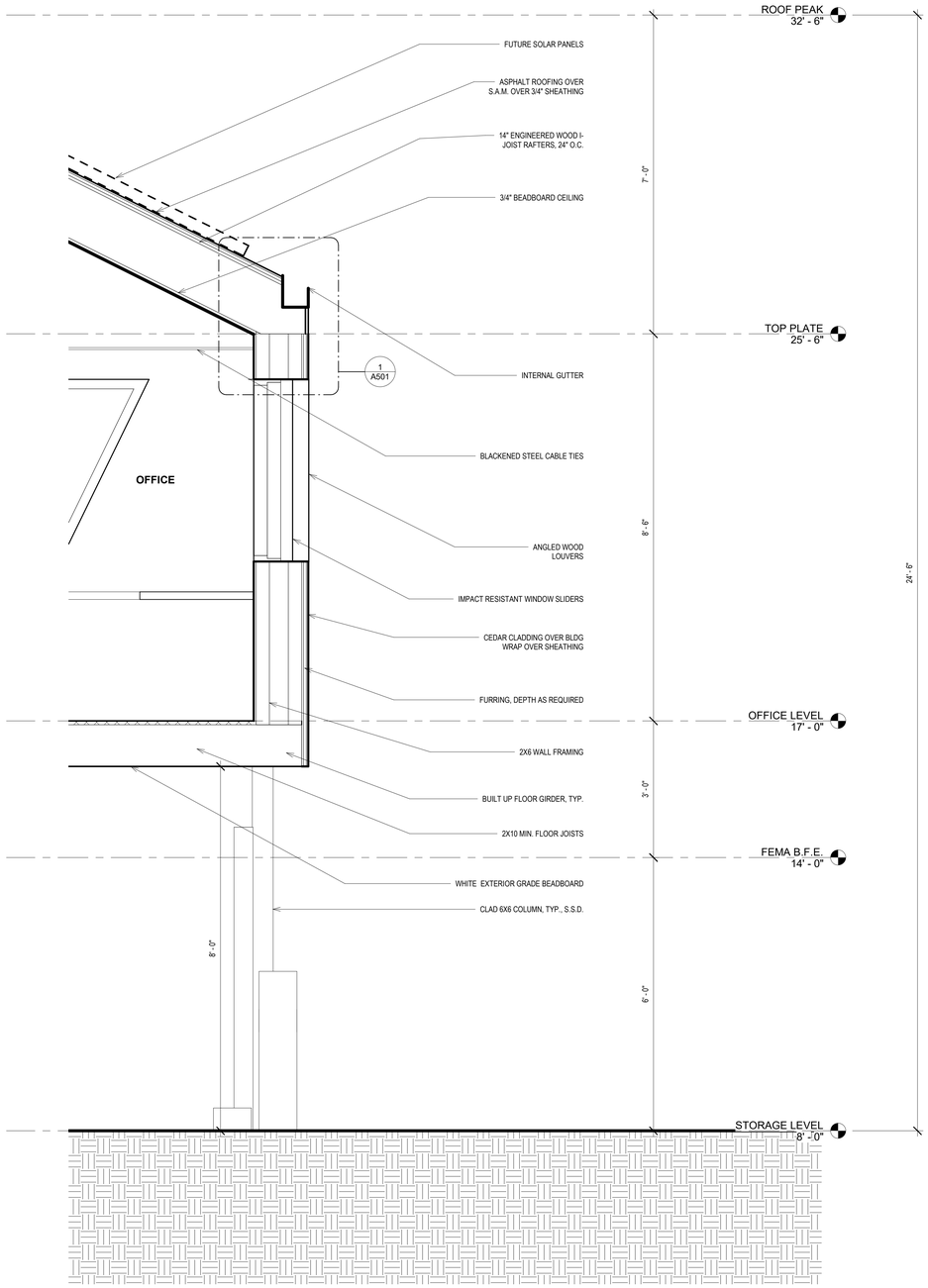
BUILDING SECTIONS
TITLE

A301
SHEET



2 WALL SECTION @ OFFICE AND KITCHEN
3/4" = 1'-0"



1 WALL SECTION @ OFFICE
3/4" = 1'-0"

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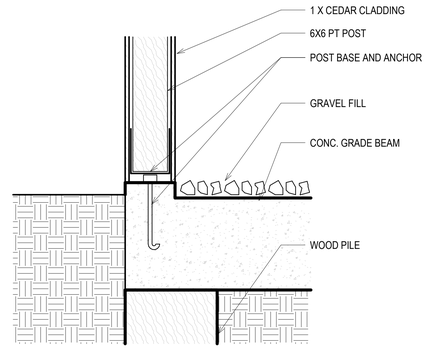
WALL SECTIONS

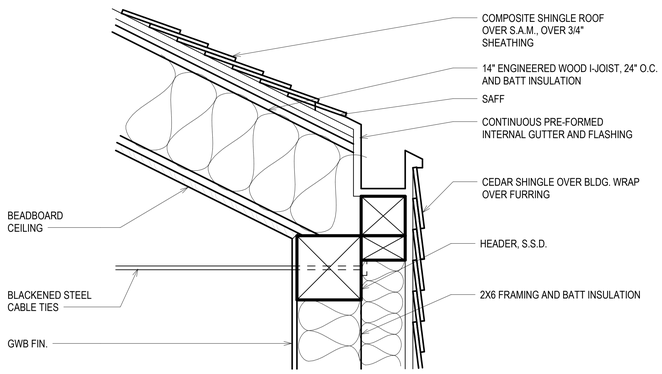
TITLE

A311

SHEET



2 DETAIL @ GRADE BEAM
1 1/2" = 1'-0"



1 DETAIL @ INTERNAL GUTTER
1 1/2" = 1'-0"

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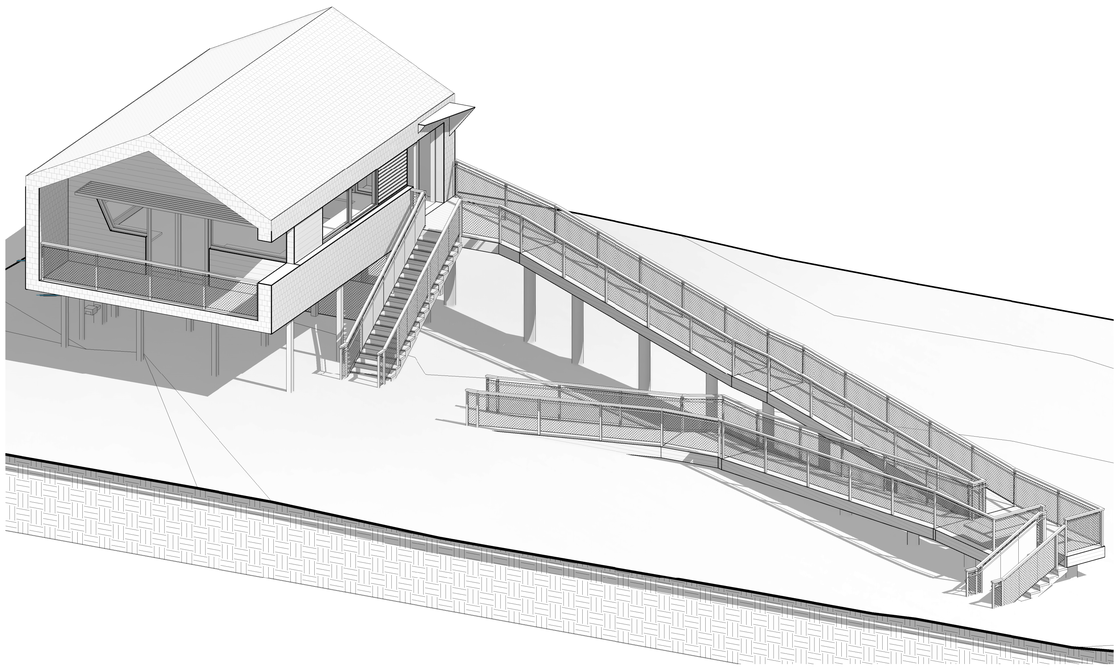
EXTERIOR DETAILS

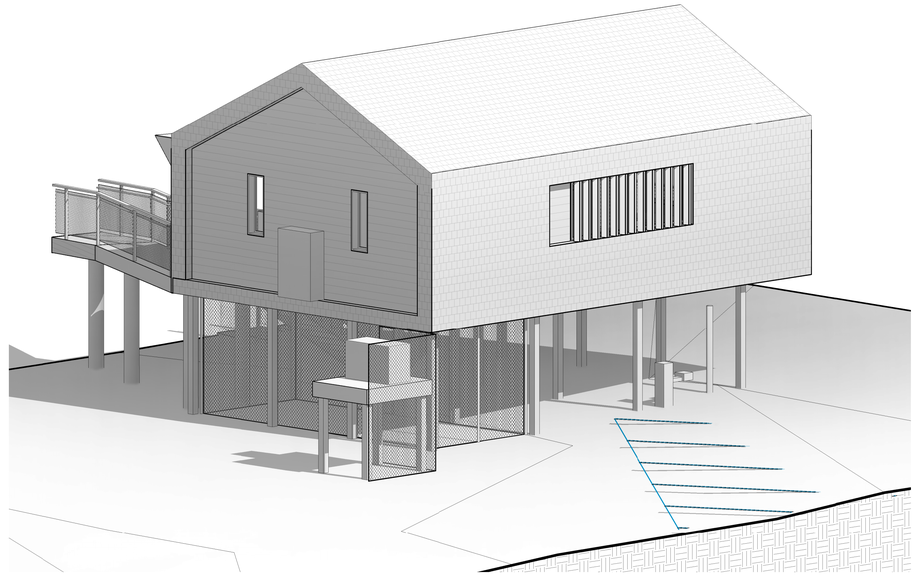
TITLE

A501

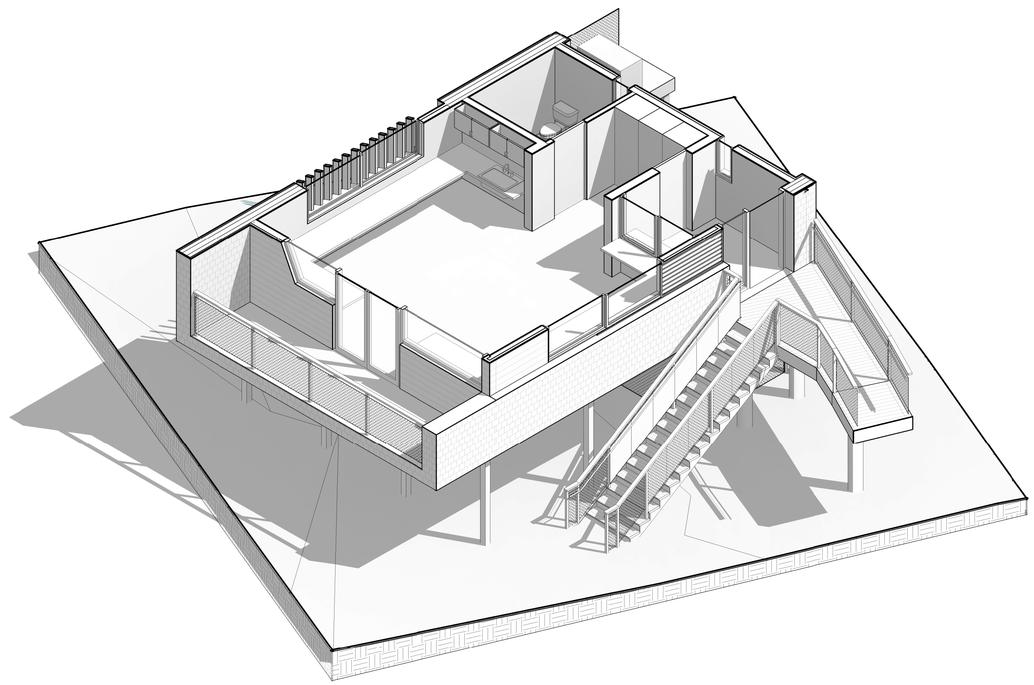
SHEET



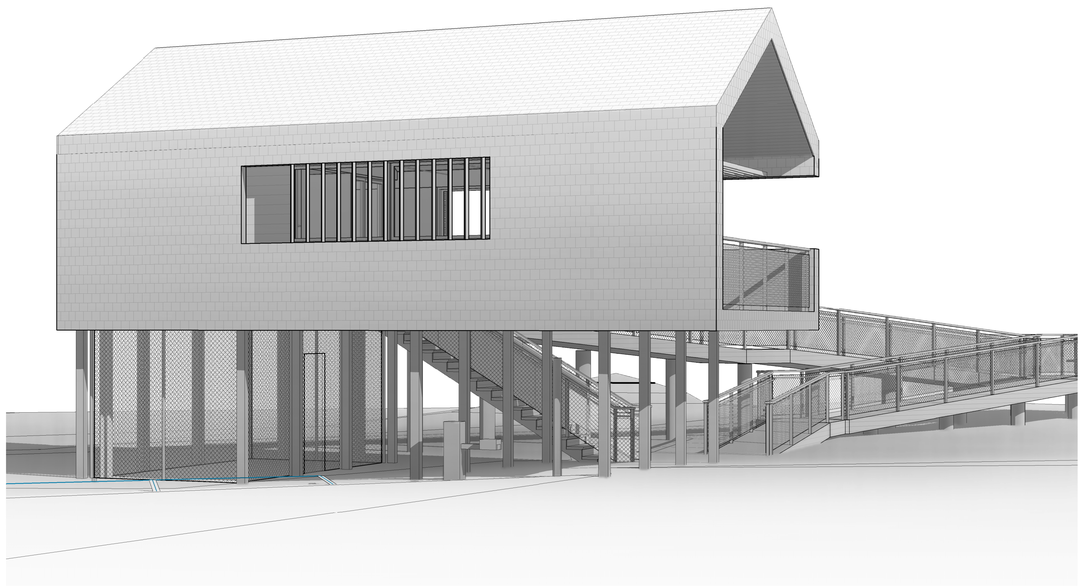
4 ORTHOGRAPHIC VIEW 3



2 ORTHOGRAPHIC VIEW 1



3 ORTHOGRAPHIC VIEW 2



1 PERSPECTIVE VIEW 1

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3D VIEWS
TITLE

A900
SHEET