

Cranberry Point At Willowbend Site Construction Plans

Mashpee, Massachusetts

Owner:

Southworth Mashpee Properties, LLC
130 Willowbend Drive
Mashpee, MA 02649
(508)-539-5316

Applicant:

Southworth Mashpee Properties, LLC
130 Willowbend Drive
Mashpee, MA 02649
Phone (508)-539-5316

Engineer/Surveyor

BAXTER NYE ENGINEERING & SURVEYING
Registered Professional Engineers and Land Surveyors
1597 Falmouth Road
Centerville, MA 02632
Phone (508) 771-7502 Fax (508) 771-7622
ATTN: Matthew Eddy, P.E.



Locus Map

Scale 1" = 500'

Job Number: 2014-009 QUIN

Plan Sheet Index

No.	Drawing Title
C0.0	Cover Sheet
C1.0	Legend and General Notes
CPP1.0	Certified Plot Plan
C2.0	Existing Conditions Plan
C3.0	Master Layout Plan
C3.1	Site Layout Plan - Sheet 1 of 2
C3.2	Site Layout Plan - Sheet 2 of 2
C3.3	Sight Distance Plan
C3.4	Truck Turning Template Plan
C4.0	Grading & Drainage Plan - Sheet 1 of 2
C4.1	Grading & Drainage Plan - Sheet 2 of 2
C4.2	Grading Inset & Drainage Details
C4.3	Drainage Notes
C5.0	Utility Plan - Sheet 1 of 2
C5.1	Utility Plan - Sheet 2 of 2
C5.2	Proposed Driveway and Utility Profiles
C6.0	Master Mitigation Plan
C7.0	Details Plan
C7.1	Details Plan

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PROJECT TITLE

Cranberry Point
275 Quinaquisset Avenue
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JKL	10/13/2023	REVISE GRADING/STORMWATER MGMT
ZDP	5/23/2023	CONSERVATION UPDATE
ZDP	5/1/2023	CONSERVATION UPDATE
JKL	4/28/2023	PER PLANNING BOARD COMMENTS
JKL	3/24/2023	PER PLANNING BOARD COMMENTS
	DATE	DESCRIPTION

SHEET TITLE

Cover Sheet

SHEET NO

CO.0

DATE: JANUARY 16, 2023

SCALE: NO SCALE

DRAWN BY: JKL CHECKED BY: MWE
JOB NO: 2014-009 FILE: 2014-009 QUIN CV.dwg

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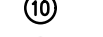
EXIST	PROPOSED (BLACK TEXT REPRESENTS "PROPOSED" INFORMATION)
L=50.00'	PROPERTY LINE
	RIGHT-OF-WAY/PROPERTY LINE
	EASEMENT
	BUILDING SETBACK
10+00	10+00 STATE HIGHWAY BASELINE
	BASELINE
	CONSTRUCTION LAYOUT
	ZONING LINE
	TOWN LINE
	STATE LINE

		GRAVEL ROAD
		EDGE OF PAVEMENT
		BITUMINOUS CURB
		CAPE COD BERM
		PRECAST CONC. CURB
		VERT. GRAN. CURB
		SLOPED GRAN. CURB
		LIMIT OF CURB TYPE
		SAWOUT
		MATCHLINE

<u>SW</u>	<u>SW</u>	SOLID WHITE LINE
<u>SY</u>	<u>SY</u>	SOLID YELLOW LINE
<u>BW</u>	<u>BW</u>	BROKEN WHITE LINE
<u>BY</u>	<u>BY</u>	BROKEN YELLOW LINE
<u>SWCH</u>	<u>SWCH</u>	SOLID WHITE CHANNELIZING LINE
<u>SYCH</u>	<u>SYCH</u>	SOLID YELLOW CHANNELIZING LINE
<u>DW</u>	<u>DW</u>	DOUBLE YELLOW LINE
<u>SL</u>	<u>SL</u>	STOP LINE

		STEEL GUARD RAIL
		WOOD GUARD RAIL
		STOCKADE FENCE
		PATH
		TREE LINE
		CHAIN LINK FENCE
		STONE WALL
		RETAINING WALL
		HAY BALES

--- 2 ---	4	MINOR CONTOUR
--- 10 ---	20	MAJOR CONTOUR
---TOS---	---TOS---	TOP of SLOPE
---BOS---	---BOS---	BOTTOM of SLOPE

		BUILDING
		BUILDING DOOR
		LOADING DOCK
		OVERHEAD DOOR
		BOLLARD
		DUMPSITE PAD
		SIGN
		DOUBLE SIGN
		PARKING METER

	(10)	PARKING COUNT
	(C10)	COMPACT PARKING STALLS
		CROSSWALK
		CROSSWALK

	CONC. PAVEMENT
	STANDARD DUTY FLEXIBLE PAVEMENT
	HEAVY DUTY FLEXIBLE PAVEMENT
	HANDICAP RAMP
	HANDICAP PARKING
	VAN-ACCESSIBLE HANDICAP PARKING
	CART CORRAL

Detail no.  27
on
Sheet no.  A7

DETAIL OR SECTION REFERENCE

		WETLANDS
_____	_____	50' WETLAND BUFFER
_____	_____	100' WETLAND BUFFER
_____	_____	200' WETLAND BUFFER
_____	_____	LIMIT OF WETLANDS
		WETLAND FLAG
52	52	100 YEAR FLOOD PLAIN
_____	_____	MITIGATION AREA LINE
_____	_____	EDGE OF WATER

EDGE OF WATER	
	TELEPHONE MANHOLE
	TELEPHONE MARKER
	TRAFFIC SIGNAL
	SIGNAL BOX
	FIRE ALARM CONTROL PANEL
	FIRE ALARM BOX
	TRANSFORMER PAD
	TELEPHONE RISER

EXIST		PROP (BLACK TEXT REPRESENTS "PROPOSED" INFORMATION)	
	OR		DRAINAGE LINE
			OVERFLOW DRAIN
			ROOF DRAIN
			SEWER LINE
			WATER LINE
			FIRE PROTECTION LINE
			GAS LINE
			OVERHEAD ELECTRIC, TELEPHONE, CABLE & FIBER
	OR		UNDERGROUND ELECTRIC, DATA/COMMUNICATION
			
			UNDERGROUND ELECTRIC/COMMUNICATION LINES
			DATA & COMMUNICATION LINES
			FIRE ALARM
			FIRE & POLICE CABLE
			CABLE TV

		CATCH BASIN (SQUARE OR ROUND CATCH BASIN)
		DOUBLE CATCH BASIN
		DRAIN INLET
		DRAIN MANHOLE
		TRENCH DRAIN
		PLUG/STUB
		FLARED END SECTION
		HEADWALL
		CONTROL STRUCTURE

		SEWER MANHOLE
		GREASE TRAP
		WATER MANHOLE
		WATER SHUT OFF/CURB STOP
		WATER GATE
		TAPPING SLEEVE, VALVE, & BOX RISER
		PRESSURE REDUCER
		SIAMESE CONNECTION
		FIRE HYDRANT
		WATER METER
		POST INDICATOR VALVE
		WELL
		MONITORING WELL
		IRRIGATION CONTROL VALVE
		SPRINKLER HEAD

		GAS GATE
		GAS METER
		ELECTRIC MANHOLE
		ELECTRIC BOX
		ELECTRIC METER
		LIGHT POLE (DECORATIVE)
		FLOOD LIGHT
		LANDSCAPE LIGHT
		SINGLE LUMINAIRE
		DOUBLE LUMINAIRE
		TRIPLE LUMINAIRE
		QUAD LUMINAIRE
		WALL PACK

		SIGNAL ARM
		MANHOLE
		UTILITY POLE/GUY WIRE
		UTILITY POLE/GUY POLE
		HAND HOLE
		PULL BOX

	SILT FENCE/HAYBALE
	DIVERSION BERM/SWALE AND HAY BALE CHECK DAM
	POINT OF INTERSECTION
	FLARED END SECTION (FES) WITH STONE PROTECTION
	PERIMETER DRAIN
	PAVED WATERWAY (PWW) WITH STONE PROTECTION
	DRAINAGE FLOW DIRECTION
	JUTE MAT IN SWALE





 TREES

 SHRUB

EXIST	PROP	
LP	LP	LOW POINT
HP	HP	HIGH POINT
GB	GB	GRADE BREAK
27.21 TOC 27.15 BOC 27.20 + 21.3	27.21 TOC 27.15 BOC 21.20 × 21.25	TOP & BOTTOM ELEVATION SPOT ELEVATION W/LEADER SPOT ELEVATION
		BORING LOCATION TEST PIT LOCATION

TIE IN TO EXISTING GRADE
 GRAY TEXT
 REPRESENTS EXISTING INFORMATION

ABAND	ABANDON
ADJ	ADJUST
APPROX	APPROXIMATE
BB	BITUMINOUS BERM
BC	BITUMINOUS CURB
B0C	BOTTOM OF CURB
B0S	BOTTOM OF SLOPE
B0W	BOTTOM OF WALL
CC	CONCRETE CURB
CCB	CAPE COD BERM
CSE	COBBLESTONE EDGING
ECB	EROSION CONTROL BLANKET
EL	ELEVATION
ELEV	ELEVATION
EOG	EDGE OF GRAVEL
EOL	EDGE OF LAWN
EOP	EDGE OF PAVEMENT
EXIST	EXISTING
EQ	EQUAL
FDN	FOUNDATION
FF	FINISHED FLOOR ELEVATION
GB	GRADE BREAK
GC	GRANITE CURB
GE	GRANITE EDGING
HC	HANDICAP
HMA	HOT MIX ASPHALT
HP	HIGH POINT
LA	LANDSCAPE AREA
LS	LANDSCAPE AREA
LP	LOW POINT
MAX	MAXIMUM
MIN	MINIMUM
MCC	MONOLITHIC CONCRETE CURB
MHB/EP LP	MASS HIGHWAY BOUND/ ESCUTCHEON PIN LEAD PLUG
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PCC	PRECAST CONCRETE CURB
PROP	PROPOSED
PWW	PAVED WATER WAY
REMOD	REMODEL
REM	REMOVE
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RET	RETAIN
SGE	SLOPED GRANITE EDGING
SGC	SLOPED GRANITE CURB
TIEG	TIE INTO EXISTING GRADE
T0C	TOP OF CURB
T0F	TOP OF FOUNDATION
T0S	TOP OF SLOPE
T0W	TOP OF WALL
TYP	TYPICAL
U0N	UNLESS OTHERWISE NOTED
VF	VERIFY IN FIELD BY CONTRACTOR
VIC	VERTICAL GRANITE CURB

ACCP	ASPHALT COATED CORRUGATED METAL PIPE
CAP	CORRUGATED ALUMINUM PIPE
CIP	CAST IRON PIPE
CIT	CHANGE IN TYPE
CMP	CORRUGATED METAL PIPE
COND	CONDUIT
CPP	HIGH DENSITY POLYETHYLENE CORRUGATED PLASTIC PIPE -- SMOOTH INTERIOR
CS	CURB STOP FOR WATER LINE

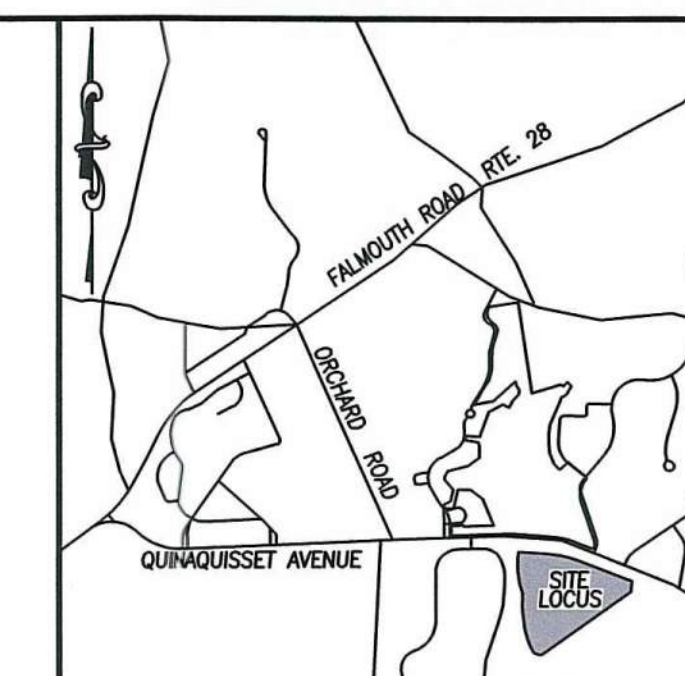
DIP	DUCTILE IRON PIPE
DS	DOWN SPOUT
E	ELECTRIC
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
G	GAS
HYD	HYDRANT
ID	INTERCEPTOR DRAIN
INV	INVERT ELEVATION
PD	PERFORATED DRAIN

PVC	POLYVINYL CHLORIDE PIPE
RPC	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
S	SEWER
C/O	SEWER CLEANOUT
SD	STORM DRAIN

T	TELEPHONE
TSV&B	TAPPING SLEEVE, VALVE & & BOX RISER
UP	UTILITY POLE
VF	VERIFY IN FIELD
VCP	VITRIFIED CLAY PIPE
W	WATER

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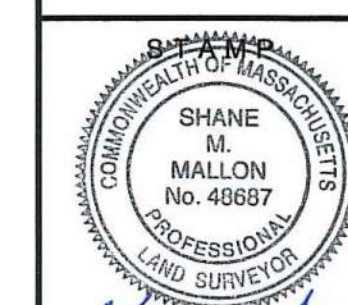
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Mashpee, MA 02649

PROJECT TITLE

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Mashpee, MA 02649

[illegible]

		DATE	DESCRIPTION
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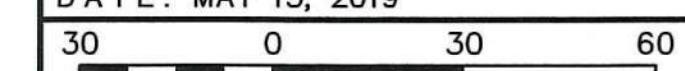
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SHEET TITLE			

Certified Plot Plan

SHEET NO.

CPP1.0

DATE: MAY 13 2019

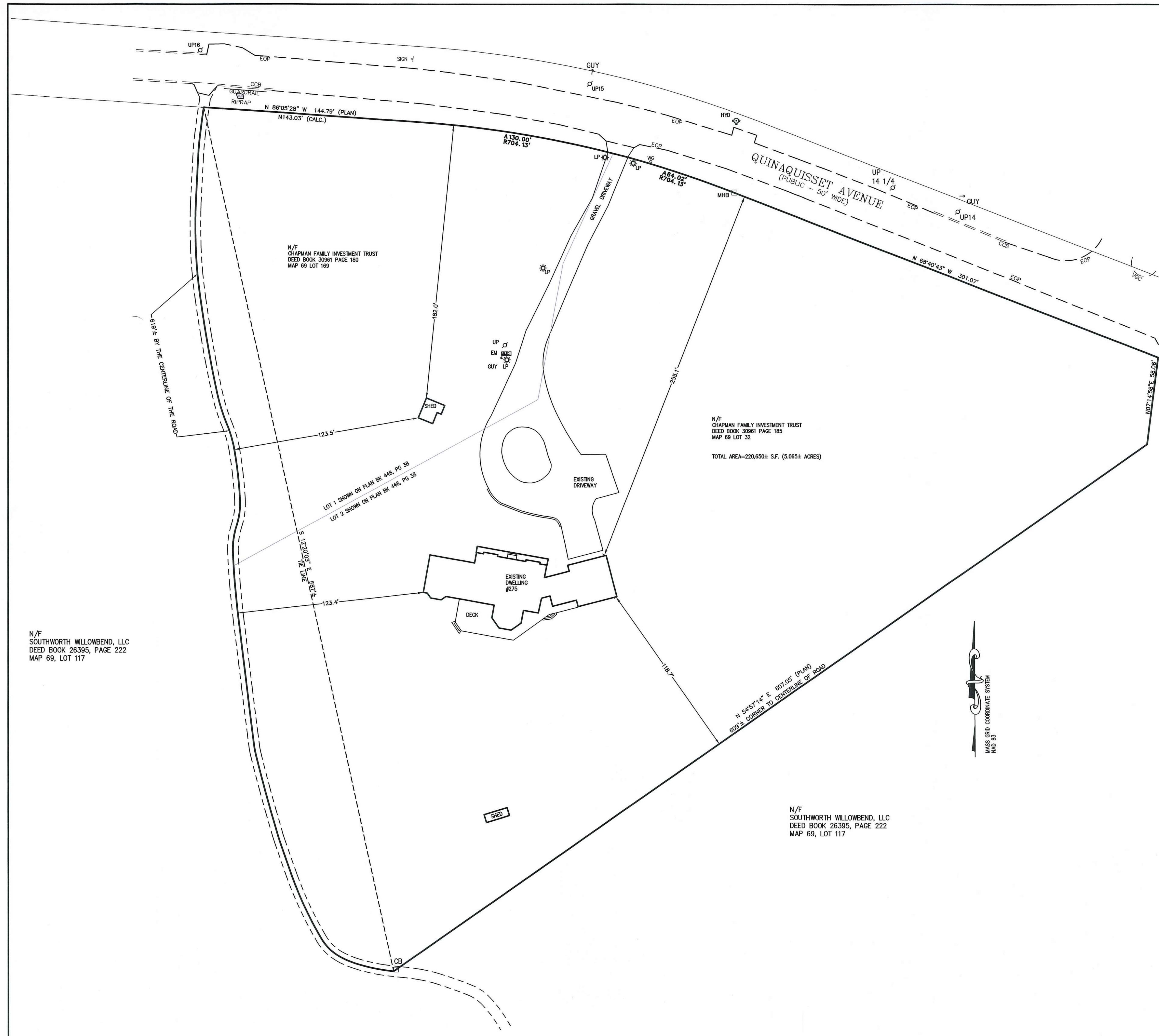


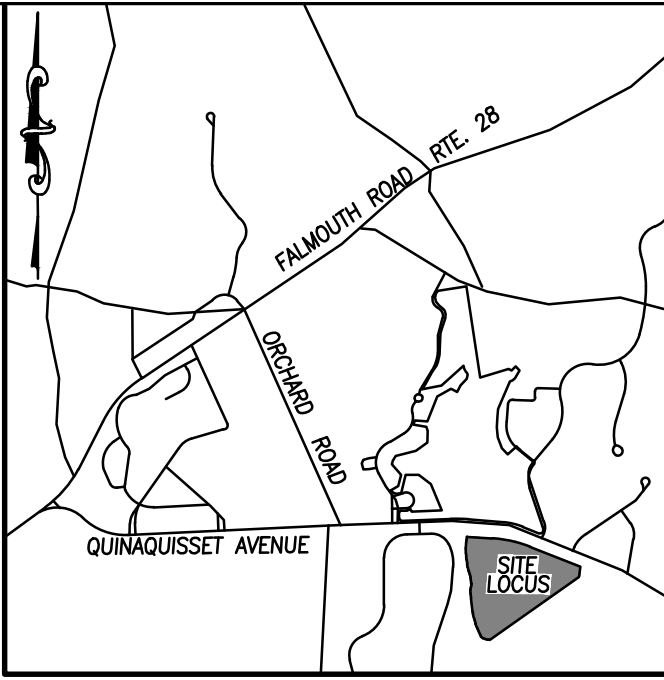
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- NOTES:**
- ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH MHDSS, TOWN ORDINANCES, REQUIREMENTS, AND SPECIFICATIONS.
 - THE CONTRACTOR SHALL CONTACT THE ENGINEER TO SCHEDULE A PRE-CONSTRUCTION MEETING AT LEAST TWO (2) WEEKS PRIOR TO COMMENCING CONSTRUCTION.
 - THE CONTRACTOR SHALL MAKE SUBMITTALS TO THE ENGINEER FOR APPROVAL BEFORE ANY FABRICATION OR DELIVERY OF PRODUCTS OR MATERIALS.
 - ALL PROPOSED WALKWAYS WILL BE HANDICAPPED ACCESSIBLE WHERE REQUIRED. ALL PROPOSED RUNNING SLOPES ON WALKWAYS SHALL BE LESS THAN 5%, ALL CROSS SLOPES AND ALL LANDING SLOPES SHALL BE LESS THAN 2%. RAMPS WHERE NEEDED SHALL HAVE SLOPES LESS THAN 8%. RAILINGS SHALL BE PER ARCHITECT. THESE ARE MAXIMUM SLOPES WITH NO TOLERANCE. ALL WORK WILL BE IN ACCORDANCE WITH THE MOST CURRENT REQUIREMENTS OF THE U.S. ACCESS BOARD, AMERICANS WITH DISABILITIES ACT & COMMONWEALTH OF MASSACHUSETTS, ARCHITECTURAL ACCESS BOARD.
 - CONTRACTOR SHALL CONFIRM AND PROVIDE ALL LANDINGS OUTSIDE OF DOORWAYS, AT THE TOP AND BOTTOM OF STEPS, AND AT TOP AND BOTTOM OF RAMPS, TO BE CONSTRUCTED SO THE LANDING IS 5 FT X 5 FT MIN. (UON) AND IS LESS THAN A 2% SLOPE IN ALL DIRECTIONS ON THE LANDING. THE CONTRACTOR SHALL VERIFY THE LANDING CONDITIONS IN THE FIELD AND CONTACT THE SITE ENGINEER WITH ANY QUESTIONS PRIOR TO INSTALLING LANDING.
 - STAIRS REPRESENTED ON THE SITE PLANS DO NOT INDICATE THE EXACT NUMBER OF TREADS AND RISERS NEEDED. THESE WILL VARY BASED ON SPECIFIC FIELD CONDITIONS. THE CONTRACTOR SHALL VERIFY THE CONDITION IN THE FIELD AND DETERMINE TREADS AND RISERS REQUIRED PER THE BUILDING CODE. REFERENCE SHALL BE MADE TO THE ARCHITECTURAL PLANS.
 - THE CONTRACTOR SHALL CONTACT THE SITE ENGINEER AS NEEDED WITH QUESTIONS REGARDING SPECIFIC TREADS AND RISERS PRIOR TO INSTALLING THE STAIRS.
 - DEMOLISH/REMOVE ALL EXISTING STRUCTURES, FOUNDATIONS, CONCRETE PADS, FENCES AND APPURTENANT ITEMS UNLESS OTHERWISE NOTED TO SAVE, SALVAGE OR RESET.
 - EXISTING PAVING EDGES SHALL BE SAWCUT TO CREATE A CLEAN EDGE WHERE IT IS TO BE TIED INTO NEW PAVING, OR WHERE ASPHALT IS REMOVED ADJACENT TO ASPHALT WHICH IS TO REMAIN. BROKEN OR UNSTABLE PAVEMENT SHALL BE REMOVED AND SUBBASE REPLACED WITH SUITABLE COMPACTED MATERIAL PER PAVEMENT SECTION DETAIL HEREIN. ANY SAWCUT LINES SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE EXACT EDGE OF SAWCUT SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD TO PROPERLY BLEND TO THE SURROUNDING GRADES. PROPOSED ASPHALT SHALL BE PROPERLY BUTTED AND BLENDED TO SURROUNDING ASPHALT WHICH IS TO REMAIN. THE BLENDED TRANSITION BETWEEN PROPOSED AND EXISTING ASPHALT SHALL BE WITH AN APPROXIMATE 1.5% GRADE UNLESS OTHERWISE IDENTIFIED. THE JOINT SHALL NOT BE ABRUPT.
 - THE PROPERTY LINE INFORMATION SHOWN HEREIN/HEREON IS PER THE PROPERTY LINES SET BY THE REGISTERED PROFESSIONAL LAND SURVEYOR (PLS) AS SHOWN ON THE CERTIFIED PLAT AS SEALED BY THE PLS WITHIN THIS PLAN SET. THE PROPERTY LINE AND SURVEY INFORMATION WAS COMMISSIONED AS PART OF THE PROJECT AND IS SHOWN AS BACKGROUND INFORMATION ON THE DESIGN PLANS. SETBACKS SHOWN ARE TO THE PROPERTY LINE SET BY THE PLS. DIMENSIONS SHOWN ARE TO OUTSIDE FACE OF FOUNDATION OR TO THE FACE OF CURB/BERM WHERE APPLICABLE.
 - ALL CURBING SHALL BE INSTALLED SO THAT WHEN A TERMINAL END OF A CURB EXISTS IT SHALL HAVE A TAPERED END PER MDOT SPECIFICATIONS SO THAT THERE IS NOT A BLUNT SQUARE END PROJECTING.
 - THE CONTRACTOR SHALL NOTIFY AND COORDINATE A SITE MEETING WITH THE ENGINEER PRIOR TO PLACING FINAL PAVING COURSE. LAYOUT AND FINAL REQUIRED DIMENSIONS ARE TO BE REVIEWED AT THIS MEETING PRIOR TO PAVING OPERATION. REQUIREMENTS SHALL BE PER MASSDOT STANDARD SPECIFICATIONS.
 - SITE LIGHTING - SEE ELECTRICAL DRAWINGS IN ARCHITECTURAL PLAN PACKAGE FOR DETAILED INFORMATION.
 - ALL WORK WITHIN THESE PLANS SHALL BE PERFORMED AND PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH THE CONSTRUCTION DETAILS PROVIDED IN THIS PLAN SET WHETHER OR NOT THE DETAIL NUMBER IS SPECIFICALLY REFERENCED.

ZONING TABLE		
ZONING DISTRICT(S): R3*	PROPOSED USE:	
OVERLAY DISTRICTS: NONE	12 DETACHED SINGLE FAM. RESIDENTIAL UNITS	
ALLOWED USE: SINGLE FAMILY RES.	TYPICAL UNIT FOOTPRINT:	
EXIST USE: SINGLE-FAMILY RES.	BUILDING = 1,802 SF	
	REAR DECK = 309 SF	
	FREE STANDING GARAGE = 288 SF	
	TOTAL FOOTPRINT/UNIT = 2,407 SF	
EXIST BLDGS FOOTPRINT=3,873 SF	PROP TOTAL SITE BLDG FOOTPRINT = 28,884 SF	
EXIST BUILDING TO BE DEMOLISHED		
TOTAL PARCEL AREA: 220,650 SF TOTAL (UPLAND-152,288± SF; WETLAND-68,362 SF)		
LOT AREA:	REQUIRED/ALLOWED	PROPOSED
FRONTAGE:	40,000 SF (UPLAND)	152,288 SF
BUILDING SETBACKS*	150 FT	658 FT
FRONT SETBACK	40 FT	67 FT±
SIDE SETBACK	15 FT*	N/A INTERIOR LOT LINE
REAR SETBACK	15 FT*	N/A INTERIOR LOT LINE
PARKING SETBACK TO ADJUTER LOTS	10 FT	N/A
MAX. BLDG. HEIGHT (STORIES)	2.5 STORIES / 35 FT	2 STORIES/30.7 FT
MAX. LOT COVERAGE (STRUCTURES):	20%*	N/A PER WILLOWBEND SPECIAL PERMIT (19.0%)
MAX. LAWN AREA	35% (77,228 SF)	20.0% (44,040 SF)
- ASSUMES 2,000 SF LAWN PER UNIT		
- ASSUMES 20,040 SF VILLAGE GREEN		
(TOTAL LAWN AREA/TOTAL LOT AREA)		
PARKING TABLE		
SINGLE FAMILY = 2 PER UNIT x 12 UNITS	24 SPACES	24 SPACES
(1 GARAGE AND 1 DRIVEWAY SPACE)		
PARKING STALL SIZE - 90'	19.33' x 9'	19.33' x 9'
DESIGN VEHICLE		AERIAL LADDER
*PROPOSED BUILDING REQUIREMENTS TO BE PER WILLOWBEND SPECIAL PERMIT MODIFICATION		

SIGN SUMMARY				
M.U.T.C.D. NUMBER	SPECIFICATION	TEXT/ GRAPHIC	QUAN.	
	WIDTH	HEIGHT		
FIRE LANE SIGN ("F.L.S.")	12"	18"		3
R1-1	24"	24"		1
W11-2	24"	24"		2
W16-9P	24"	18"		2
W11A-2	24"	24"		2

ALL SIGNAGE MUST BE IN CONFORMANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), LATEST EDITION, ALL APPLICABLE CODES, AND LOCAL REQUIREMENTS, ORDINANCES, AND BYLAWS. SEE SIGN INSTALLATION DETAIL HEREIN.

SIGN INSTALLER SHALL COORDINATE SPECIFIC SIGN WORDING AND COLOR REQUIREMENTS WITH LOCAL AGENCIES AS NECESSARY (NOTE TO CONTRACTOR TO VERIFY HANDICAP PARKING SIGN FORMAT - SEE DETAIL HEREIN)

* ADD "VAN ACCESSIBLE" SIGN WHERE ASTERISKED

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SHEET TITLE

Master Layout Plan

SHEET NO

C3.0

DATE: JANUARY 16, 2023

30 0 30 60
SCALE IN FEET
SCALE: 1"=30'

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JKL	4/28/2023	PER PLANNING BOARD COMMENTS
JKL	3/24/2023	PER PLANNING BOARD COMMENTS
DATE		DESCRIPTION

Site Layout Plan Sheet 1 of 2

C3.1

20	0	20	40
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SCALE IN FEET

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DATE	DESCRIPTION
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SHEET TITLE

Sight Distance Plan

SHEET NO

C3.3

DATE: JANUARY 16, 2023

30 0 30 60

SCALE IN FEET

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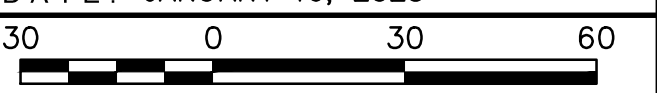
SHEET TITLE

Truck Turning Template Plan

SHEET NO

C3.4

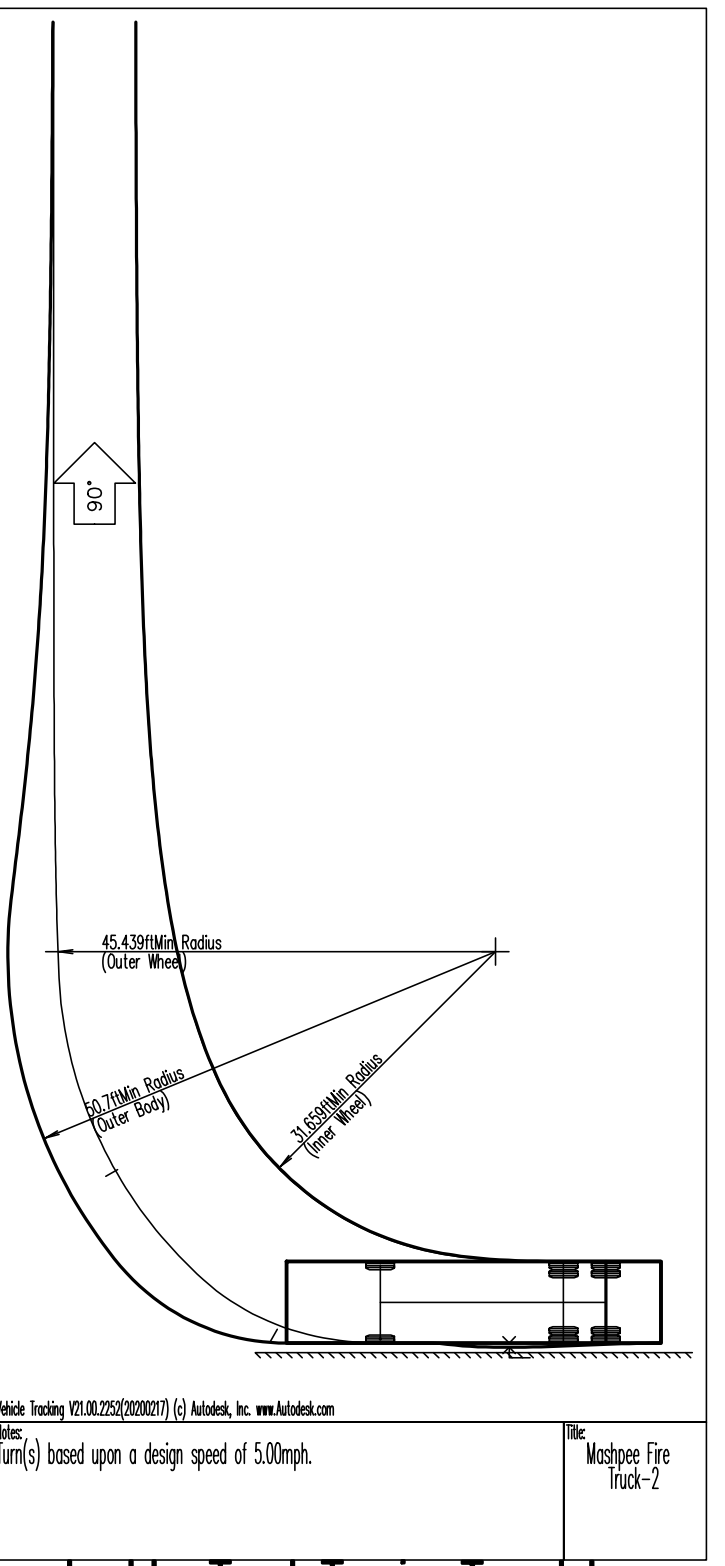
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SCALE 1

SCALE: 1"=30'

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Ladder Truck Turning Template

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PREPARED FOR:

**Southworth Mashpee
Properties, LLC**
130 Willowbend Drive
Mashpee, MA 02649

PROJECT TITLE

Cranberry Point
275 Quinaquisset Avenue
Mashpee, MA 02649

DATE	DESCRIPTION
JKL 10/13/2023	REVISE GRADING/STORMWATER MGMT
ZDP 5/23/2023	CONSERVATION UPDATE
ZDP 5/1/2023	CONSERVATION UPDATE
JKL 4/28/2023	PER PLANNING BOARD COMMENTS
JKL 3/24/2023	PER PLANNING BOARD COMMENTS

SHEET TITLE

**Grading &
Drainage Plan -
Sheet 1 of 2**

SHEET NO

C4.0

DATE: JANUARY 16, 2023

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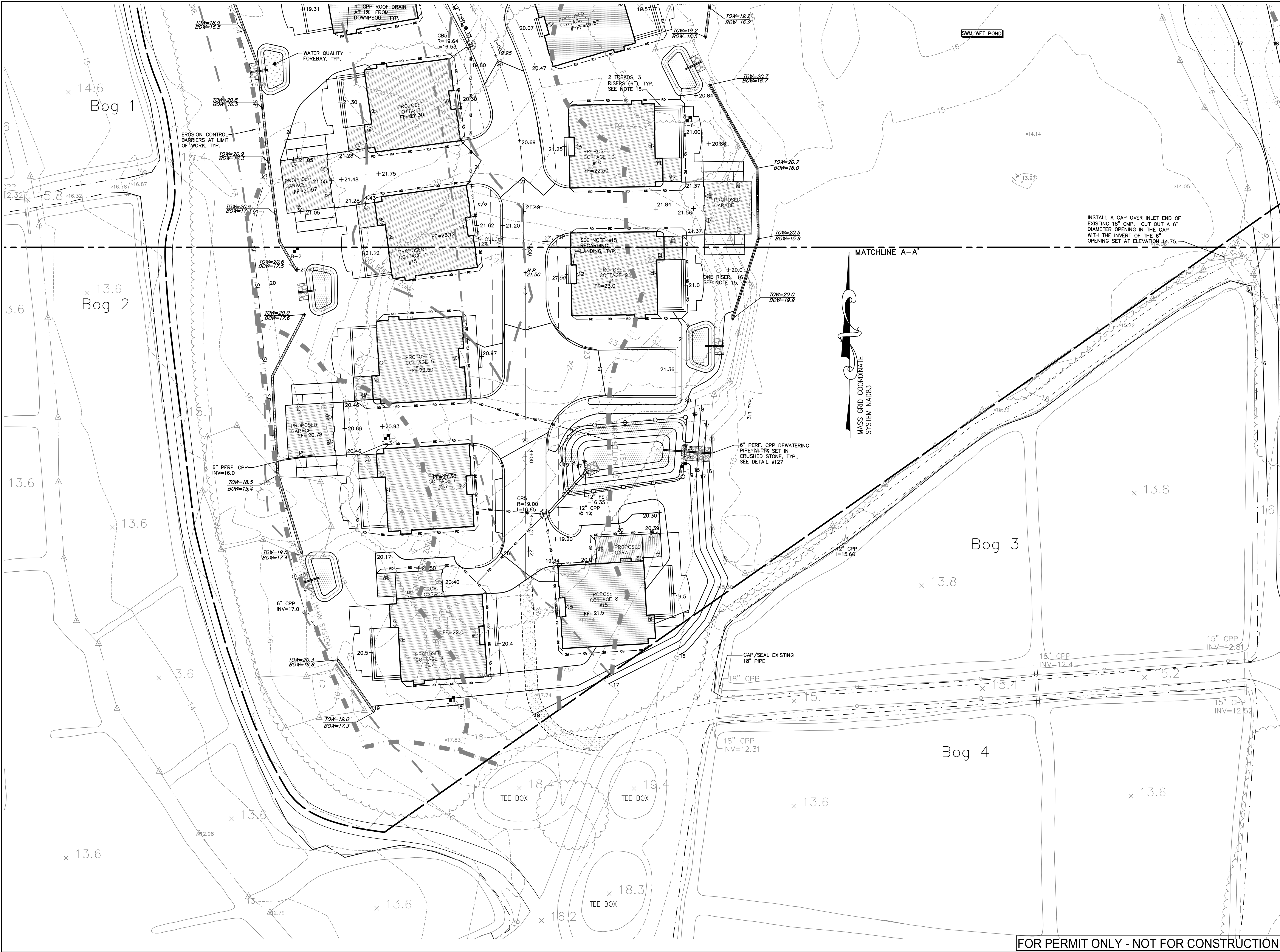
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**Grading &
Drainage Plan -
Sheet 2 of 2**

SHEET NO

C4.1

DATE: JANUARY 16, 2023

20 0 20 40

SCALE IN FEET

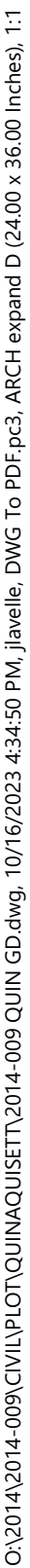
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FILE: 2014-009 QUIN GD.dwg

FOR PERMIT ONLY - NOT FOR CONSTRUCTION



JOB NO: 2014-009 FILE: 2014-009 QUIN G

SWM SPECIFICATIONS

ALL MATERIALS AND WORK SHALL BE IN ACCORDANCE WITH THE MASSDOT/MASSHIGHWAY STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES (MHSSS), SPECIFIC ON-SITE SOIL SPECIFICATIONS IF A GEOTECHNICAL REPORTS WAS PERFORMED, AND THE PLANS HEREIN. WHERE CONFLICTS OF INFORMATION EXIST, THE MORE RESTRICTIVE SHALL APPLY. ALL REFERENCES TO ASTM AND AASHTO SPECIFICATIONS APPLY TO THE MOST RECENT VERSION.

(NOTE: THE CONTRACTOR SHALL BE RESPONSIBLE TO FULLY UNDERSTAND THIS INFORMATION AND INTENT OF THE SWM FACILITIES AND SHALL REVIEW THIS INFORMATION WITH THE ENGINEER AS NEEDED.

SITE PREPARATION AND GRADING:

AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIALS SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1.

AREAS TO BE COVERED BY THE INFILTRATION AREA, BASIN OR RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORMWATER MANAGEMENT PONDS, A MINIMUM OF A 50-FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED. ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE DAM, BASIN AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE.

THE CONTRACTOR SHALL ENSURE ALL SWM AREAS WHICH ARE DESIGNED FOR INFILTRATION SHALL HAVE THEIR EXISTING INFILTRATABLE SUBSOIL CONDITIONS UNCHANGED AT THE HEREIN SPECIFIED ELEVATIONS FOR THE STORMWATER MANAGEMENT FACILITY. THE INFILTRATABLE LAYER BELOW THE DESIGN ELEVATION SHALL NOT BE MINED, ALTERED OR AFFECTED FROM CONSTRUCTION IN ANY WAY. WITHIN BASIN FOOTPRINTS, BOTTOMS, AND NON-EMBANKMENT (NON-DAM) SIDESLOPES, NO UNSUITABLE OR LESS PERVIOUS MATERIAL SHALL BE PLACED OVER THESE LAYERS WHICH COULD AFFECT THE INFILTRATION RATE, UNLESS OTHERWISE SPECIFICALLY IDENTIFIED BY THE ENGINEER. IF SUBGRADE FILL IS NEEDED FOR SWM INFILTRATION BOTTOM AND NON-EMBANKMENT (NON-DAM) SIDE SLOPE AREAS, THE FILL SHALL MEET THE SPECIFICATIONS OF MHD-SSHB M.1.04.0 TYPE B. FILL IN AREAS OF INFILTRATION SHALL NOT BE OVERLY COMPACTED. INFILTRATION AREAS SHALL BE PROTECTED FROM EXCESSIVE CONSTRUCTION EQUIPMENT MOVEMENT AND SEDIMENT/EROSION RUNOFF SO AS TO PRESERVE THE INFILTRATION CHARACTERISTICS. THE CONTRACTOR SHALL BE RESPONSIBLE TO FULLY UNDERSTAND THIS INFORMATION AND INTENT OF THE SWM FACILITIES AND SHALL REVIEW THIS INFORMATION WITH THE ENGINEER AS NEEDED.

TOPSOIL OR PLANTING MATERIAL REQUIRED FOR SEEDING, SOD OR VEGETATION GROWTH ON THE BASIN BOTTOM AND NON-EMBANKMENT SIDESLOPES, SHALL BE PLACED IN ONLY A THREE (3) INCH SURFACE DEPTH OF LOAMY SAND OR SANDY LOAM TOPSOIL (EXCESSIVE TOPSOIL SHALL NOT BE PLACED WHERE INFILTRATION IS USED). THE TOPSOIL SHALL NOT INHIBIT THE INFILTRATION RATE OF THE FACILITY. THE TOPSOIL SHALL BE LESS THAN 5% CLAY CONTENT (AND <5% MATERIALS PASSING THE #200 SIEVE), CORRECTED PH 5.5-6.5, AND ORGANIC MATTER OF BETWEEN 1.5% TO 3%.

THREE (3) INCHES OF HARDWOOD MULCH SHALL BE PLACED AROUND REQUIRED SHRUBS AND OTHER SPECIFIED LANDSCAPE PLANTINGS. MULCH SHALL BE PLACED AROUND THE BOTTOM OF BIO-RETENTION AREAS IF SPECIFIED IN THE PLAN DETAILS. WHERE A PLANTING PLAN OR SCHEDULE IS NOT IDENTIFIED FOR THE SWM FACILITIES, THEN THE BOTTOM AND SIDE SLOPES OF SWM BASINS AND BIORETENTION FACILITIES SHALL BE STABILIZED AND SEEDED AS FOLLOWS:

- BOTTOM AND SIDE SLOPES OF BASINS/FACILITIES SHALL BE SEEDED AND STABILIZED WITH ERNST SEEDS RETENTION BASIN FLOOR MIX, LOW MAINTENANCE, OR EQUAL.
- GENERAL SLOPES SHALL BE SEEDED AND STABILIZED WITH "NEW ENGLAND EROSION CONTROL/RESTORATION MIX".
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING EROSION, CLEANOUT OF SEDIMENT FROM EROSION, AND RESEEDING AS NEEDED UNTIL FULL STABILIZATION IS ACHIEVED. THIS SHALL BE REQUIRED THROUGH TWO GROWING SEASONS.

NO OTHER MATERIALS UNLESS SPECIFICALLY IDENTIFIED AND REVIEWED BY THE ENGINEER, SHALL BE PLACED ON THE BASIN BOTTOM.

EARTH FILL FOR EMBANKMENTS ONLY:

MATERIAL - THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6", FROZEN OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL FOR THE CENTER OF THE DAM EMBANKMENT AND CUT OFF TRENCH WHICH ARE TO BE IMPERMEABLE SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION CC, SC, CH OR CL. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGN AND CONSTRUCTION ARE SUPERVISED BY A GEOTECHNICAL ENGINEER.

PLACEMENT - AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIALS SHALL BE PLACED IN MAXIMUM 8 INCH THICK (BEFORE COMPACTION) LAYERS AND ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. THE MOST PERMEABLE BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE DAM EMBANKMENT. THE PRINCIPAL SPILLWAY MUST BE INSTALLED CONCURRENTLY WITH FILL PLACEMENT AND NOT EXCAVATED INTO THE EMBANKMENT.

COMPACTION - THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE EMBANKMENT FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF THE EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TIERED OR VIBRATORY ROLLER (COMPACTION OF 95% STANDARD PROCTOR SHALL BE ACHIEVED). FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION WILL BE OBTAINED WITH THE EQUIPMENT USED. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IF FORMED INTO A BALL IT WILL NOT CRUMBLE YET NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT.

A MINIMUM REQUIRED DENSITY SHALL NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN ±2% OF OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE TESTED AND CERTIFIED BY A GEOTECHNICAL ENGINEER AT THE TIME OF CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99.

STRUCTURE BACKFILL

BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. AT NO TIME DURING THE BACKFILLING OPERATIONS SHALL DRIVEN EQUIPMENT BE ALLOWED OVER OR WITHIN 4 FEET OF A CONCRETE STRUCTURE OR PIPE, UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE.

RIP-ROAD

ROCK RIPRAP SHALL MEET THE REQUIREMENTS OF MHDS5.

THE RIPRAP SHALL BE PLACED TO THE REQUIRED THICKNESS IN ONE OPERATION. THE ROCK SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL INSURE THE RIPRAP IN PLACE SHALL BE REASONABLY HOMOGENEOUS WITH THE LARGER ROCKS UNIFORMLY DISTRIBUTED AND FIRMLY IN CONTACT ONE TO ANOTHER WITH THE SMALLER ROCKS FILLING THE VOIDS BETWEEN THE LARGER ROCKS. FILTER CLOTH SHALL BE PLACED UNDER ALL RIPRAP AND SHALL MEET THE REQUIREMENTS OF MHDS5.

CHAMBERS

ALL CHAMBERS (PLASTIC AND CONCRETE) SHALL BE HANDLED AND INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, GUIDELINES, AND REQUIREMENTS.

PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

REINFORCED CONCRETE PIPE-

ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE:

1. MATERIALS - REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM C-361. THIS BEDDING SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 10% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 3 INCHES, OR AS SHOWN ON THE DRAWINGS.

2. BEDDING - ALL REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING FOR THEIR ENTIRE LENGTH.

3. LAYING PIPE - BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 2 FEET FROM THE RISER.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

POLYVINYL CHLORIDE (PVC) PIPE-

ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR POLYVINYL CHLORIDE (PVC) PIPE:

1. MATERIALS - PVC PIPE SHALL BE PVC-1120 OR PVC-1220 CONFORMING TO ASTM D-1785 OR ASTM D-2241.

2. JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATERIGHT.

3. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

CONCRETE

CONCRETE SHALL MEET THE REQUIREMENTS OF MHDS5.

ROCK RIPRAP ROCK RIPRAP SHALL MEET THE REQUIREMENTS OF MHDS5.

THE RIPRAP SHALL BE PLACED TO THE REQUIRED THICKNESS IN ONE OPERATION. THE ROCK SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL INSURE THE RIPRAP IN PLACE SHALL BE REASONABLY HOMOGENEOUS WITH THE LARGER ROCKS UNIFORMLY DISTRIBUTED AND FIRMLY IN CONTACT ONE TO ANOTHER WITH THE SMALLER ROCKS FILLING THE VOIDS BETWEEN THE LARGER ROCKS. FILTER CLOTH SHALL BE PLACED UNDER ALL RIPRAP AND SHALL MEET THE REQUIREMENTS OF MHDS5.

LOW FLOW ORIFICE (IF IDENTIFIED ON PLAN AS NEEDED): PERFORATED PIPE FOR LENGTH WITHIN BASIN TO UPSTREAM SIDE TOE OF OVERFLOW SLOPE, AND NON-PERFORATED PIPE AS NEEDED TO EXTEND UNDER OVERFLOW WEIR TO OUTLET. EXTEND CLEANOUT PIPES TO SURFACE WITH VENTED CAPS AT TEES AND WYES. ANY CLEANOUTS IN AREA SUBJECT TO VEHICULAR LOADING SHALL BE INSTALLED WITH CONCRETE COLLARS.

CARE OF WATER DURING CONSTRUCTION

ALL WORK ON PERMANENT STRUCTURES SHALL BE CARRIED OUT IN AREAS FREE FROM WATER. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL TEMPORARY DIKES, LEVEES, COFFER DAMS, DRAINAGE CHANNELS, AND STREAM DIVERSIONS NECESSARY TO PROTECT THE AREAS TO BE OCCUPIED BY THE PERMANENT WORKS. THE CONTRACTOR SHALL ALSO FURNISH, INSTALL, OPERATE AND MAINTAIN ALL NECESSARY PUMPING AND OTHER EQUIPMENT REQUIRED FOR REMOVAL OF WATER FROM THE VARIOUS PARTS OF THE WORK AND FOR MAINTAINING THE EXCAVATIONS, FOUNDATION AND OTHER PARTS OF THE WORK FREE FROM WATER AS REQUIRED OR DIRECTED BY THE ENGINEER FOR CONSTRUCTING EACH PART OF THE WORK. AFTER HAVING SERVED THEIR PURPOSE, ALL TEMPORARY PROTECTIVE WORKS SHALL BE REMOVED OR LEVELED AND GRADED TO THE EXTENT REQUIRED TO PREVENT OBSTRUCTION IN ANY DEGREE WHATSOEVER OF THE FLOW OF WATER TO THE SPILLWAY OR OUTLET WORKS AND SO AS NOT TO INTERFERE IN ANY WAY WITH THE OPERATION OR MAINTENANCE OF THE STRUCTURE. STREAM DIVERSIONS SHALL BE MAINTAINED UNTIL THE FULL FLOW CAN BE PASSED THROUGH THE PERMANENT WORKS. THE REMOVAL OF WATER FROM THE REQUIRED EXCAVATIONS AND THE FOUNDATION SHALL BE ACCOMPLISHED IN A MANNER AND TO THE EXTENT THAT WILL MAINTAIN STABILITY OF THE EXCAVATED SLOPES AND BOTTOM OF REQUIRED EXCAVATIONS AND WILL ALLOW SATISFACTORY PERFORMANCE OF ALL CONSTRUCTION OPERATIONS. DURING THE PLACING AND COMPACTING OF MATERIAL IN REQUIRED EXCAVATIONS, THE WATER LEVEL AT THE LOCATIONS BEING REFILLED SHALL BE MAINTAINED BELOW THE BOTTOM OF THE EXCAVATION AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER TO SUMPS FROM WHICH THE WATER SHALL BE PUMPED.

STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SLIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL, AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING IN ACCORDANCE WITH MHDS5 OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

EROSION AND SEDIMENT CONTROL

CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. DETAIL EROSION AND SEDIMENT CONTROL MEASURES TO BE EMPLOYED DURING THE CONSTRUCTION PROCESS SHALL BE IN ACCORDANCE WITH THE SEDIMENT EROSION CONTROL PLAN HEREIN AND GENERALLY ACCEPTED PRACTICES.

STORMWATER MANAGEMENT FACILITIES SHALL BE PROTECTED FROM SEDIMENT AND SILTATION AT ALL TIMES. JUST PRIOR TO COMPLETION, THE SITE SUBCONTRACTOR SHALL PERFORM A FINAL INSPECTION AND CLEANING OF THE STORM WATER MANAGEMENT SYSTEM. ALL SEDIMENT AND SILTATION SHALL BE REMOVED FROM THE BASINS, FOREBAYS, ETC. AND THESE AREAS SHALL BE SHAPED TO FINAL CONTOURS AND ELEVATION PER THE PLANS. ALL REPAIRS SHALL BE MADE AS NECESSARY TO THE SATISFACTION OF THE ENGINEER PRIOR TO PLACING FINAL TOPSOIL, MULCH, VEGETATION, SEEDING, ETC.

EXCAVATION/FILL NOTES:

1. SIDE SLOPES OF TRENCH EXCAVATIONS DEEPER THAN 4 FEET SHOULD BE FLATTENED (AS REQUIRED BY SITE CONDITIONS) TO AT LEAST 1H:1V OR SUPPORTED WITH TRENCH BOX OR SIMILAR DEVICE. ALL WORK SHALL BE PERFORMED SAFELY AND IN ACCORDANCE WITH OSHA AND MOSHA REQUIREMENTS. CONTRACTOR SHALL OBTAIN TRENCH PERMIT AS REQUIRED.

2. AFTER REMOVAL OF TOPSOIL AND INADEQUATE MATERIALS, GENERAL FILL SUBGRADE SHOULD BE PROOF-ROLLED WITH 10-WHEEL TANDEM-AXLE DUMP TRUCK. THE PROOF-ROLLING SHOULD BE PERFORMED AS DIRECTED BY A GEOTECHNICAL ENGINEER. NO FILL SHOULD BE PLACED UNTIL THE SUBGRADE IS APPROVED BY A GEOTECHNICAL ENGINEER. BORROW MATERIALS FOR FILL OPERATIONS FOR GENERAL SITE GRADING SHOULD MEET AASHTO DESIGNATION A-2-4 (CLASS II) OR MORE GRANULAR AND BE APPROVED BY A GEOTECHNICAL ENGINEER. ALL FILLS SHOULD BE CONSTRUCTED IN 8" LOOSE LIFTS AND COMPACTED AS FOLLOWS, UNLESS OTHERWISE NOTED IN PROJECT SPECIFICATIONS:
- FILLS SUPPORTING FOUNDATIONS AND FLOOR SLABS, 95% OF ASTM D-1557 (AASHTO T-180)
- TOP 24 INCHES OF ROADWAY SUBGRADE AND SUBBASE, 95% OF ASTM D-1557 (AASHTO T-180)
- RETAINING WALLS AND FILLS WITHIN ROADWAY (BELOW TOP 24 INCHES OF SUBGRADE AND SUBBASE), 92% OF ASTM D-1557 (AASHTO T-180)
- FILLS IN GREEN SPACE, 90% OF ASTM D-1557 (AASHTO T-180)
- FILLS UNDER AND AROUND STRUCTURES, MANHOLES, TANKS, VAULTS, ETC. AND PIPE EMBEDMENT (BEDDING, HAUNCHING AND INITIAL BACK FILL), 95% OF ASTM D-1557 (AASHTO T-180)

GRADING AND DRAINAGE NOTES:

1. THE PROJECT ELEVATIONS ARE BASED ON THE NAVD VERTICAL DATUM.

2. DEBRIS, STUMPS, EXCESS, AND UNSUITABLE MATERIALS FROM THE CLEARING & DEMOLITION OPERATIONS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LEGAL MANNER BY THE CONTRACTOR.

3. DISTURBED AREAS SHALL BE PROTECTED AT ALL TIMES TO CONTROL SEDIMENT TRANSPORT BEYOND THE LIMIT OF WORK.

4. DISTURBED AREAS SHALL BE TREATED WITH WATER DURING EXCAVATION, OR APPROVED ALTERNATIVE, TO CONTROL THE DUST.

5. THE SITE SUBCONTRACTOR SHALL PROVIDE ALL EXCAVATION, BACKFILL AND COMPACTION NECESSARY TO ACHIEVE THE FINISH GRADES SHOWN ON THE PLANS AND FOR INSTALLATION OF BUILDING STRUCTURES, PAVING, STORMWATER MANAGEMENT AND ALL UTILITIES (INTERIOR AND EXTERIOR). SITE CONTRACTOR TO REFER TO SITE ELECTRICAL, MEP AND LANDSCAPE PLANS FOR ADDITIONAL INFORMATION AND DETAIL. EXISTING PAVING EDGES SHALL BE SAWCUT TO CREATE A CLEAN EDGE WHERE IT IS TO BE TIED INTO NEW PAVING, OR WHERE ASPHALT IS REMOVED ADJACENT TO ASPHALT WHICH IS TO REMAIN. BROKEN OR UNSTABLE PAVEMENT SHALL BE REMOVED AND SUBBASE REPLACED WITH SUITABLE COMPACTED MATERIAL PER PAVEMENT SECTION DETAIL HEREIN. ANY SAWCUT LINES SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE EXACT EDGE OF SAWCUT SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD TO PROPERLY BLEND TO THE SURROUNDING GRADES. PROPOSED ASPHALT SHALL BE PROPERLY BUTTED AND BLENDED TO SURROUNDING ASPHALT WHICH IS TO REMAIN. THE BLENDED TRANSITION BETWEEN PROPOSED AND EXISTING ASPHALT SHALL BE ACCOMPLISHED WITH AN APPROXIMATE 1.5% GRADE UNLESS OTHERWISE IDENTIFIED. THE JOINT SHALL NOT BE ABRUPT.

6. ALL PIPE OUTFALLS, CURB OPENINGS, STONE WEIRS, AND OTHER DRAINAGE OVERFLOW AND OUTLET AREAS SHALL HAVE RIPRAP EXTENDED FROM THE OUTLET TO THE BOTTOM OF SLOPE WITH A MINIMUM 10 FT x 10 FT RIPRAP LEVEL SPREADER, UNLESS OTHER SPECIALLY DETAILED DETAILS ARE SHOWN. THE RIPRAP SHALL BE PROPERLY SHAPED SO THE RUNOFF IS CONTAINED WITH THE STONE LINING. SEE TYPICAL DETAILS FOR ADDITIONAL INFORMATION.

7. ALL DISTURBED AREAS NOT OTHERWISE TREATED SHALL BE STABILIZED WITH 4" LOAM, SEED, & MULCH. THE CONTRACTOR SHALL BE RESPONSIBLE FOR AREAS UNTIL VEGETATION HAS BEEN PERMANENTLY ESTABLISHED. SLOPES IN EXCESS OF 3:1 AND AREAS THAT SHOW SIGNS OF EROSION FROM UNCONTROLLED FLOWS SHALL BE FURTHER STABILIZED WITH EROSION CONTROL BLANKETS (ECB) OF CURLEX DOUBLE NET - CURLEX II, OR BY AMERICAN EXCELSIOR COMPANY OR EQUAL. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE REQUIRED ECB'S AND PROPERLY STABILIZE ALL AREAS OF THE SITE.

8. ALL DRAINAGE STRUCTURES AND PIPING SHALL BE DESIGNED AND INSTALLED FOR H-20 LOADING. SETTING OF CATCH BASINS AND MANHOLE STRUCTURES SHALL BE ADJUSTED WITH CONCENTRIC OR OFFSET TOPS AS NEEDED FOR MINOR ADJUSTMENTS TO AVOID CONFLICTS WITH UNDERGROUND UTILITIES OR OTHER STRUCTURES. THE GRATE OR MANHOLE COVER SHALL ALSO BE ADJUSTED OVER THE STRUCTURE TO NOT CONFLICT WITH STEPS INSIDE THE STRUCTURE.

9. A 10 FOOT MINIMUM SEPARATION SHALL BE MAINTAINED BETWEEN ALL SWM INFILTRATION FACILITIES AND SANITARY SEWER LINES AND MANHOLES.

10. CPP - HIGH DENSITY POLYETHYLENE CORRUGATED PIPE WITH SMOOTH INTERIOR WALL TO MEET ADS N-12 PIPE SPECIFICATION OR EQUAL. CPP PIPE USE SHALL BE ALLOWED AS NOTED, WITH A DIAMETER UP TO AND INCLUDING 24". BACKFILLING CPP MUST FOLLOW MANUFACTURER'S RECOMMENDATIONS AND SPECIAL CARE MUST BE EXERCISED. (SEE ADS PRODUCT NOTE 3.115).

11. ALL COTTAGES ROOF DOWNSPOUTS SHALL BE TIED INTO ROOF DRAINS. REFER TO ARCHITECTURAL PLANS FOR ALL LOCATIONS OF DOWNSPOUTS. CONTRACTOR SHALL PROVIDE TIE-INS TO ALL DOWNSPOUT LOCATIONS. ROOF DRAINS TO BE AT LEAST 4" CPP AT 1½ SLOPE MINIMUM WITH 1 FOOT MINIMUM COVER, TYPICAL, UNLESS OTHERWISE NOTED ON THE PLAN. GARAGES SHALL BE PROVIDED WITH STONE DRIP STRIPS ALONG FOUNDATION OUT PAST ROOF LINES TO CONTROL ALL GARAGE ROOF RUNOFF.

12. ALL GRADING WORK SHALL BE DONE IN A WORKMANLIKE MANNER ACCOMPLISHED TO CREATE POSITIVE DRAINAGE AND ELIMINATE ANY PUDDLING OR PONDING. WHERE NOT OTHERWISE NOTED OR DEFINED ON THE PLAN, ALL CUT AND FILL SHALL BE BLENDED TO DAYLIGHT AT EXISTING GRADE WITH A 3:1 SLOPE.

13. THE CONTRACTOR SHALL NOTIFY THE ENGINEER WITH ANY GRADE ISSUES OR QUESTIONS PRIOR TO PERFORMING THE FINISH GRADING WORK.

14. ALL PROPOSED WALKWAYS WILL HAVE RUNNING SLOPES OF LESS THAN 5% AND ALL CROSS SLOPES <2%. U.O.N. THESE ARE MAXIMUM SLOPES WITH NO TOLERANCE. ALL WORK WILL BE IN ACCORDANCE WITH THE MOST CURRENT REQUIREMENTS OF THE U.S. ACCESS BOARD, AMERICANS WITH DISABILITIES ACT & COMMONWEALTH OF MASSACHUSETTS, ARCHITECTURAL ACCESS BOARD, WHERE REQUIRED.

15. CONTRACTOR SHALL CONFIRM AND PROVIDE ALL LANDINGS OUTSIDE OF DOORWAYS, AT THE TOP AND BOTTOM OF STEPS, AND AT TOP AND BOTTOM OF RAMPS, TO BE CONSTRUCTED SO THE LANDING IS 5 FT X 5 FT MIN. (UON) AND IS LESS THAN A 2% SLOPE IN ALL DIRECTIONS ON THE LANDING. THE CONTRACTOR SHALL VERIFY THE LANDING CONDITIONS IN THE FIELD AND CONTACT THE SITE ENGINEER WITH ANY QUESTIONS PRIOR TO INSTALLING LANDING.

STAIRS REPRESENTED ON THE SITE PLANS DO NOT INDICATE THE EXACT NUMBER OF TREADS AND RISERS NEEDED. THESE WILL VARY BASED ON SPECIFIC FIELD CONDITIONS. THE CONTRACTOR SHALL VERIFY THE CONDITION IN THE FIELD AND DETERMINE TREADS AND RISERS REQUIRED PER THE BUILDING CODE. REFERENCE SHALL BE MADE TO THE ARCHITECTURAL PLANS. THE CONTRACTOR SHALL CONTACT THE SITE ENGINEER AS NEEDED WITH QUESTIONS REGARDING SPECIFIC TREADS AND RISERS PRIOR TO INSTALLING THE STAIRS.

16. BOTTOM OF WALL (BOW) OR TOP OF WALL (TOW) ELEVATIONS FOR RETAINING WALLS NOTED ON THE PLAN ARE APPROXIMATE ELEVATIONS WHERE THE WALL IS EXPECTED TO DAYLIGHT WITH EXISTING GRADE. STRUCTURAL RETAINING WALL DESIGN IS DONE BY OTHERS AND THE BOW OR TOW EXISTING GROUND ELEVATIONS FOR WHERE THE WALL WOULD DAYLIGHT TO EXISTING GRADES SHALL BE VERIFIED AS NEEDED FOR THE STRUCTURAL DESIGN. THE ACTUAL BOW OR TOW ELEVATION AT THE PROPOSED WALL(S) MAY DIFFER FROM CONTOURS SHOWN ON THE PLANS ESPECIALLY AT STEEP SLOPES AREAS.

17. STORMWATER MANAGEMENT FACILITIES SHALL BE PROTECTED FROM SEDIMENT AND SILTATION AT ALL TIMES. JUST PRIOR TO COMPLETION, THE SITE SUBCONTRACTOR SHALL PERFORM A FINAL INSPECTION AND CLEANING OF THE STORMWATER MANAGEMENT SYSTEM. ALL SEDIMENT AND SILTATION SHALL BE REMOVED FROM THE BASINS, FOREBAYS, ETC. AND THESE AREAS SHALL BE SHAPED TO FINAL CONTOURS AND ELEVATION PER THE PLANS. ALL REPAIRS SHALL BE MADE AS NECESSARY TO THE SATISFACTION OF THE ENGINEER PRIOR TO PLACING FINAL TOPSOIL, MULCH, VEGETATION, SEEDING, ETC.

18. ANY DEWATERING OPERATION, WHEN REQUIRED AS PART OF THE CONSTRUCTION PROCESS, SHALL ENSURE ALL DEWATERING OCCURS THROUGH A PROPER DEWATERING BASIN (STONE, FILTER FABRIC AND HAYBALES OR OTHER ACCEPTABLE MEANS) PRIOR TO DISCHARGE FROM THE SITE.

19. ALL WORK WITHIN THESE PLANS SHALL BE PERFORMED AND PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH THE CONSTRUCTION DETAILS PROVIDED IN THIS PLAN SET WHETHER OR NOT THE DETAIL NUMBER IS SPECIFICALLY REFERENCED.

20. FOUNDATION DRAINS ARE REQUIRED. REFER TO STRUCTURAL AND ARCHITECTURAL PLANS (SEE DETAIL #120).

CONSTRUCTION SEQUENCE

1. INSTALL SILT FENCING AND WATTLES TO ESTABLISH THE LIMIT OF WORK AROUND THE PERIMETER OF THE PROJECT AND ANY AREAS WHICH HAVE GROUND DISTURBANCE BASED ON THE PROJECT WORK AND CONTRACTORS STAGING AREAS. SILT FENCE, WATTLES AND OTHER PERIMETER CONTROL SHALL BE INSTALLED TO PREVENT TRANSPORT OF SEDIMENT OUTSIDE OF THE PROJECT AREA. SILT FENCE AND OTHER EROSION CONTROLS MAY BE REQUIRED BEYOND WHAT IS SPECIFICALLY SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND PROVIDE ALL THE NECESSARY EROSION CONTROLS TO PREVENT SEDIMENT AND OTHER DELETERIOUS RUNOFF MATERIAL FROM LEAVING THE PROJECT AREA DURING CONSTRUCTION.

2. INSTALL TEMPORARY CONSTRUCTION ENTRANCE/EXIT STONE AREAS WHERE EVER CONSTRUCTION TRAFFIC ENTERS OR EXITS THE PROJECT AREA.

3. DISCHARGES FROM DEWATERING OF EXCAVATIONS SHALL NOT BE DIVERTED DIRECTLY INTO ANY WETLANDS OR EXISTING STORM DRAINS WITHOUT PRETREATMENT VIA SEDIMENT BASINS AND/OR SETTLING BASINS.

4. INSTALL HAY BALE AND/OR STONE CHECK DAMS ALONG CENTER OF SWALES/FLOW LINES AT 100' O.C., AS NECESSARY.

5. CLEAR AND GRUB SITE WITHIN THE LIMIT OF WORK.

6. ESTABLISH ROUGH SUB GRADES OF SITE FOR ROAD AND BUILDING PADS. THE SOILS FROM WETLAND AREA SHALL BE SAVED FOR REUSE IN MITIGATION PLANS. INSTALL SEDIMENT BASINS IN AREAS OF FOREBAYS TO CONTAIN LARGER RUNOFF FLOWS DURING CONSTRUCTION.

7. WHERE BASINS ARE USED AS SEDIMENT BASINS DURING CONSTRUCTION, THE BASIN GROUND ELEVATION SHALL BE KEPT ONE FOOT ABOVE THE FINAL BASIN ELEVATION. THESE BASINS SHALL THEN BE CLEANED AND EXCAVATED TO FINAL ELEVATIONS UPON COMPLETION OF THE CONSTRUCTION PROJECT.

8. PERFORM BUILDING, DRAINAGE, UTILITY AND SITE CONSTRUCTION. INSTALL BASE COURSE PAVING AS SOON AS PRACTICAL.

9. INSPECT AND MAINTAIN EROSION CONTROL MEASURES AFTER RAINFALL EVENTS AND A MINIMUM OF ONCE PER WEEK.

10. REMOVE SEDIMENT BUILDUP AT EROSION CONTROL DEVICES AS NEEDED. REDISTRIBUTE MATERIAL OVER SITE IN CONFORMANCE WITH EARTHWORK SPECIFICATIONS.

11. ONCE ALL DRAINAGE STRUCTURES ARE INSTALLED, INSTALL SILT SAC OR FILTER FABRIC AND STONE/HAY BALES AROUND ALL NEW STRUCTURES AND MAINTAIN THEM UNTIL PAVEMENT IS IN PLACE AND CONTRIBUTING DRAINAGE AREAS ARE STABILIZED. ALL OUT FALLS SHALL BE STABILIZED WITH STONE PROTECTION AS REQUIRED WHETHER GRAPHICALLY SHOWN ON THE PLAN OR NOT.

12. ALL CUT AND FILL SLOPES SHALL BE TEMPORARILY STABILIZED WITH TOP SOIL, SEED AND MULCH OR CURLEX AS REQUIRED IF CONSTRUCTION ACTIVITY CEASES ON SAID SLOPES FOR A PERIOD OF 7 DAYS OR GREATER. ALL SLOPES SHALL BE PERMANENTLY STABILIZED AS REQUIRED IMMEDIATELY UPON COMPLETION OF FINAL GRADING.

13. COMPLETE FINISH GRADING, LANDSCAPING AND FINAL STABILIZATION OF SITE. PLACE FINAL PAVING COURSE.

14. REMOVE SEDIMENT FROM ALL BASINS, DRAINAGE STRUCTURES, DRAIN MANHOLES, PIPES AFTER COMPLETION OF CONSTRUCTION. REMOVE AND REGRADE TEMPORARY BERMS, SWALES, CHECK DAMS, ETC. STABILIZE DISTURBED AREAS.

15. CLEAN OUT ALL SEDIMENT FROM SWM FOREBAYS/BASINS AND OUTLET STRUCTURES. REGRADE TO FINAL CONTOURS PER DESIGN. STABILIZE ALL SLOPES AS REQUIRED. REPLACE AND/OR CLEAN FILTER FABRIC AND STONE AT SWM FOREBAYS. ALL AREAS CONTRIBUTING RUNOFF TO THE PROPOSED INFILTRATION DEVICES/BASINS SHALL BE STABILIZED PRIOR TO THE REMOVAL OF SEDIMENT AND EROSION CONTROL DEVICES PROTECTING THESE AREAS.

16. UPON ESTABLISHMENT OF PERMANENT GROUND COVER AND APPROVAL BY THE ENGINEER, REMOVE WATTLES & SILT FENCE. STABILIZE ALL AREAS WHERE WATTLES WERE REMOVED.

OPERATION/MAINTENANCE PLAN

1. THIS OPERATION AND MAINTENANCE PLAN SHALL BE PERFORMED BY THE GENERAL CONTRACTOR DURING CONSTRUCTION OPERATIONS AND BY THE OWNER ONCE THE FACILITIES ARE COMPLETED AND PUT INTO OPERATION.

2. PERSONNEL ASSOCIATED WITH THE CONSTRUCTION OF THIS PROJECT SHALL BE INFORMED THAT THE MAINTENANCE OF SITUATION CONTROLS TAKES PRECEDENCE OVER NORMAL CONSTRUCTION ACTIVITIES. ADJACENT PROPERTIES AND STREETS SHALL BE PROTECTED FROM EROSION OR SILTATION CONDITIONS.

3. INSPECTION AND MAINTENANCE, AS OUTLINED HEREIN, SHALL BE PERFORMED FOUR TIMES WITHIN THE FIRST YEAR OF OPERATION. THENCE, INSPECTIONS AND MAINTENANCE SHALL BE CONDUCTED ON A SEMIANNUAL BASIS (2 TIMES A YR.) AND AFTER ALL LARGE STORMS. AN INSPECTION REPORT SHALL BE MAINTAINED.

4. ACCUMULATED DEBRIS IN CATCH BASINS, SEDIMENT FOREBAYS, AND DRAINAGE BASINS SHALL BE REMOVED BEFORE IT EXCEEDS 12 INCHES IN DEPTH AND DISPOSED OF PROPERLY. BROKEN OR DAMAGED GAS TRAPS/HOODS SHALL BE IMMEDIATELY REPAIRED OR REPLACED TO ENSURE ADEQUATE FUNCTION.

5. A VISUAL INSPECTION SHALL BE MADE AT ALL ACCESS MANHOLES, CATCH BASINS, OUTFALLS, LEACHING BASINS, PIPES AND DRAINAGE CHANNELS FOR THE ENTIRE STORM DRAINAGE SYSTEM. THE GENERAL CONDITION OF THESE STRUCTURES SHOULD BE REVIEWED AND ACCUMULATED DEBRIS SHALL BE REMOVED. THE CONDITION OF ALL OUTLETS SHALL BE NOTED AND A DESCRIPTION OF THE DRAINAGE STRUCTURES SHALL BE INCLUDED IN THE REPORT. DELETERIOUS MATERIALS SHALL BE REMOVED FROM THESE STRUCTURES AND THE DRAINAGE CHANNELS IN ORDER FOR THE SYSTEM TO FUNCTION PROPERLY.

6. ALL OUTLETS, DRAINING CHANNELS, AND SLOPES SHALL BE KEPT STABILIZED. ANY EROSION SHALL BE REPAIRED IMMEDIATELY.

7. ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE SWM BASINS BEFORE IT EXCEEDS 1" IN DEPTH, OR AT LEAST ONCE EVERY 5 YEARS. THE SPILLWAYS OUTLETS SHALL BE CLEANED AND INSPECTED FOR PROPER FUNCTIONING. ALL DEBRIS OR DELETERIOUS MATERIAL SHALL BE REMOVED FROM OUTLET STRUCTURES. BASIN SLOPES SHALL BE MAINTAINED WITH A GRASS STAND OF AT LEAST 3". GRASS SHALL BE MOWED AT LEAST TWICE A YEAR AND CLIPPINGS SHALL NOT BE LEFT IN BASIN. ANY TREES OR OTHER WOODY VEGETATION GROWING IN EMBANKMENTS OR NEAR OUTLET CONTROL STRUCTURES SHALL BE REMOVED.

8. THE FOLLOWING MINIMUM INFORMATION SHALL BE RECORDED:
• DATE OF INSPECTION REPORT
• GENERAL CONDITION OF THE ENTIRE SYSTEM
• CORRECTIVE ACTIONS TAKEN TO ENSURE ADEQUATE FUNCTION AND WHEN PERFORMED.
• A COPY OF THESE REPORTS SHALL BE FURNISHED TO THE PLANNING BOARD UPON REQUEST.

9. MAINTENANCE OF THE STORMWATER MANAGEMENT FACILITIES SHALL BE IN ACCORDANCE WITH THE EXECUTED INSPECTION AND MAINTENANCE AGREEMENT FOR PRIVATE STORMWATER MANAGEMENT FACILITIES AND SHALL BE THE RESPONSIBILITY OF THE OWNER AND THE ASSIGNEES.

OWNER SIGNATURE (OWNER UNDERSTANDS RESPONSIBILITIES OF OPERATION AND MAINTENANCE REQUIREMENTS OF STORMWATER MANAGEMENT SYSTEMS)	DATE
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PREPARED FOR:
**Southworth Mashpee
Properties, LLC**
130 Willowbed Drive
Mashpee, MA 02649

PROJECT TITLE
**Cranberry Point
275 Quinaquisset Avenue
Mashpee, MA 02649**

DATE	DESCRIPTION
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5/23/2023	CONSERVATION UPDATE
5/1/2023	CONSERVATION UPDATE
4/28/2023	PER PLANNING BOARD COMMENTS
3/24/2023	PER PLANNING BOARD COMMENTS

Drainage Notes

SHEET NO

C4.3

DATE: JANUARY 16, 2023

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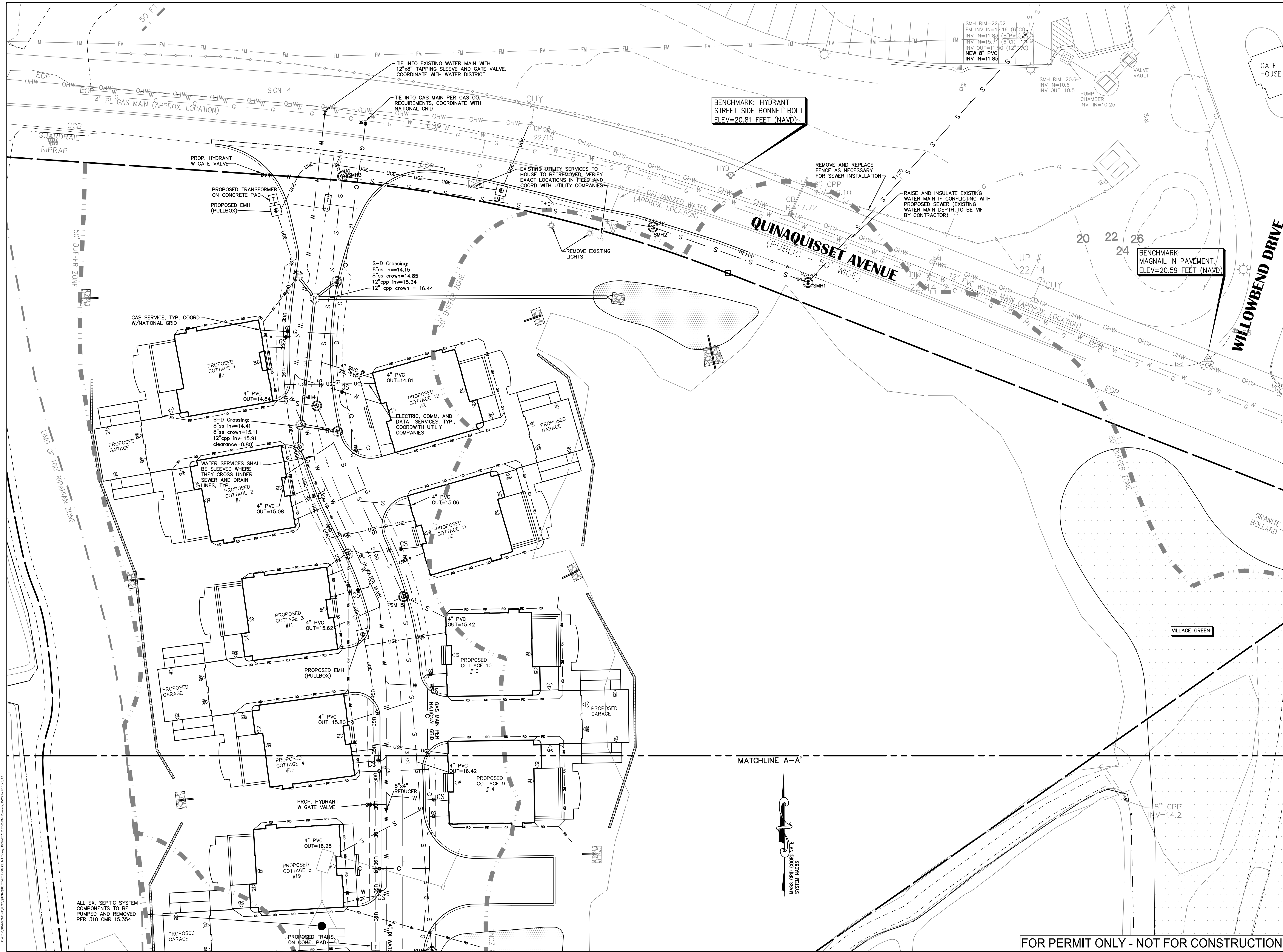
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	DATE	DESCRIPTION

SHEET TITLE

**Utilities Plan
Sheet 1 of 2**

SHEET NO

C5.0

DATE: JANUARY 16, 2023

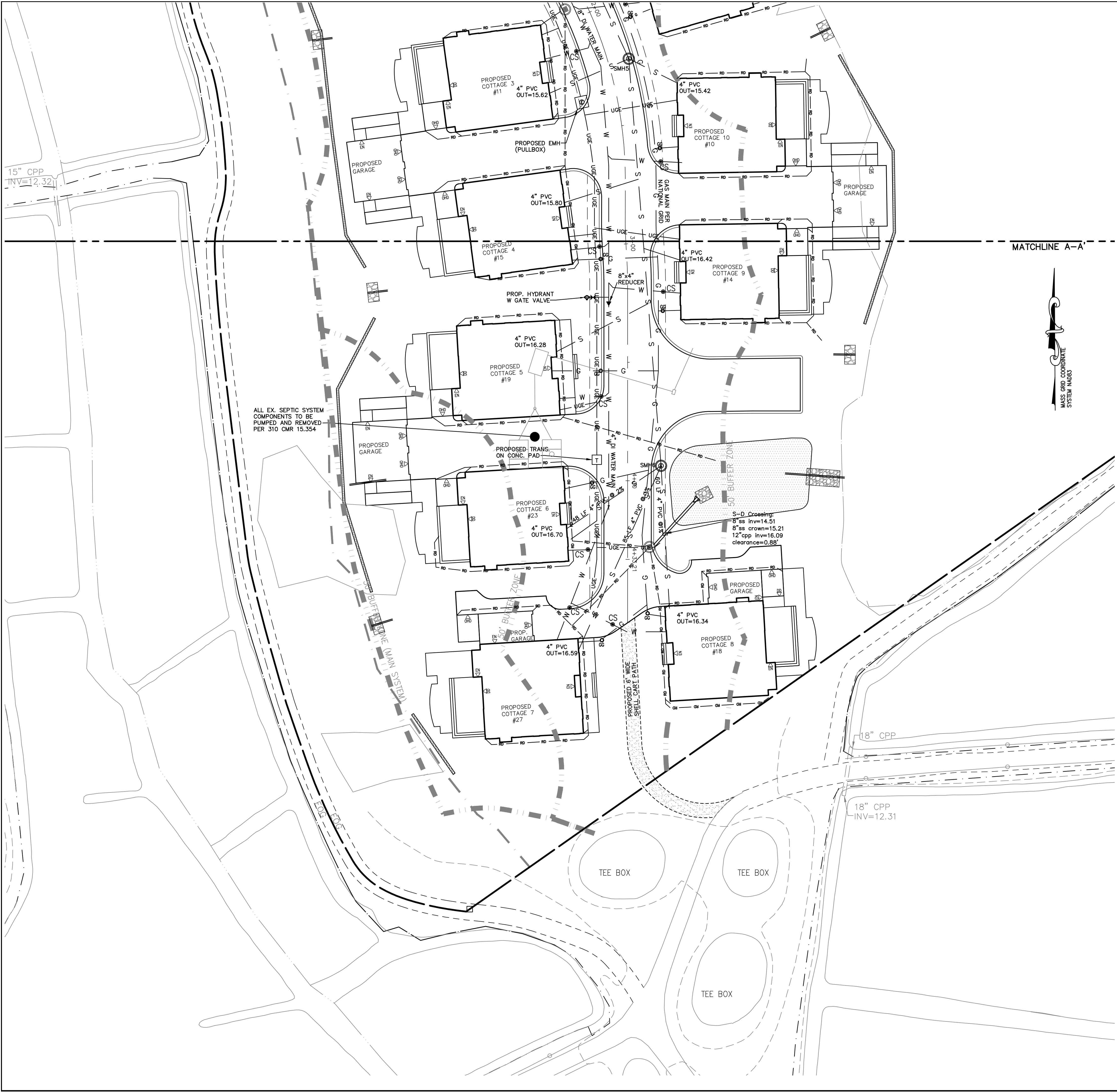
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SCALE: 1"=20'

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UTILITY NOTES:

1. CAUTION: THE CONTRACTOR SHALL CONTACT DIG SAFE (AT 1-888-DIG-SAFE) AND UTILITY COMPANIES TO LOCATE ALL EXISTING UTILITIES, AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION, BOTH HORIZONTALLY AND VERTICALLY, OF ALL EXISTING UTILITIES BEFORE THE START OF ANY WORK. THE LOCATION OF EXISTING UNDERGROUND SYSTEMS, INFRASTRUCTURE, UTILITIES, CONDUITS AND LINES ARE SHOWN IN AN APPROXIMATE WAY ONLY, MAY NOT BE LIMITED TO THOSE SHOWN HEREIN AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER, THE ENGINEER, OR ITS REPRESENTATIVE. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO LOCATE SAID SYSTEMS, INFRASTRUCTURE AND UTILITIES EXACTLY. IF ELEVATION INFORMATION DIFFERS FROM PLAN INFORMATION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY FOR POSSIBLE REDESIGN. AT UTILITY CROSSINGS, VERIFY IN FIELD THE LOCATION AND INVERTS OF WATER, ELECTRIC, GAS, TELEPHONE & DATA/COMM AND RELOCATE IF CONFLICTING WITH PROPOSED INVERTS PER THE ENGINEER'S DIRECTION. THE CONTRACTOR SHALL PRESERVE ALL UNDERGROUND SYSTEMS, INFRASTRUCTURE AND UTILITIES AS REQUIRED.
2. 12" MINIMUM VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN ALL UTILITY CROSSINGS.
3. A MINIMUM 10' HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN WATER AND SEWER LINES. WHERE WATER LINES CROSS SEWER LINES, THE SEWER LINE SHALL BE LOCATED WITH A MINIMUM VERTICAL CLEARANCE OF 18" BELOW THE WATER LINE. THE SEWER LINE JOINTS SHALL BE LOCATED EQUIDISTANT AND AS FAR AWAY FROM THE WATER LINE AS POSSIBLE. WHEN IT IS IMPOSSIBLE TO ACHIEVE HORIZONTAL AND/OR VERTICAL SEPARATION AS STIPULATED ABOVE, BOTH THE WATER LINE AND SEWER LINE AT THE CROSSING LOCATION SHALL BE CONSTRUCTED OF MECHANICAL JOINT CEMENT-LINED DUCTILE IRON PIPE FOR ONE FULL 20' PIPE LENGTH OR ANOTHER EQUIVALENT THAT IS WATERTIGHT AND STRUCTURALLY SOUND. THE JOINTS FOR BOTH PIPES SHALL BE LOCATED AS FAR AWAY FROM THE CROSSING AS POSSIBLE. BOTH PIPES SHOULD BE PRESSURE TESTED TO 150 PSI TO ENSURE THAT THEY ARE WATERTIGHT.
4. SEWER MAINS TO BE 8" MIN. SDR-35 PVC WITH A MIN. SLOPE OF 0.50% UNLESS OTHERWISE NOTED. SEWER MAINS AND SEWER FORCE MAINS TYPICAL COVER OVER SEWER LINE SHALL BE 6'. IF LESS THAN 4' OF COVER IS PROVIDED, INSULATE SEWER LINE AGAINST FREEZING IN ACCORDANCE WITH DETAIL #205 OR EQUAL.
5. RESIDENTIAL SEWER BUILDING CONNECTIONS SHALL BE 4" MIN. SCHEDULE 40 PVC, U.O.N., AT A MIN. SLOPE OF 1% U.O.N. INSTALL A CLEANOUT ON EACH SERVICE LINE AT DISTANCE OF 10'± (U.O.N.) OFF THE FOUNDATION, AT A CHANGE OF HORIZONTAL DIRECTION GREATER THAN 45° OR WHERE MORE THAN ONE CHANGE OF HORIZONTAL DIRECTION GREATER THAN 45° OCCURS WITHIN 40 FEET. CLEANOUTS SHOULD BE LOCATED AT INTERVALS OF NOT MORE THAN 100 FEET.
6. ALL WATERLINE MATERIALS AND WORKMANSHIP TO CONFORM TO THE RULES, REGULATIONS AND SPECIFICATIONS OF THE MASHPEE WATER DISTRICT AS AMENDED TO PRESENT. WATER DISTRICT HAS AUTHORITY TO AMEND PLANS. IF ANY CONFLICTS WITH THE CONTRACT DOCUMENT OCCUR THE HIGHER STANDARD SHALL APPLY. THE WRITTEN SPECIFICATIONS OF THE MASHPEE WATER DISTRICT ARE HEREBY INCLUDED BY REFERENCE AND CONSIDERED A PART OF THE CONTRACT DOCUMENTS. ALL WATER LINE ABANDONMENT SHALL BE DONE AT THE WATER MAIN, NOT LEAVING A STUB LINE, UNLESS OTHERWISE APPROVED BY THE WATER DISTRICT.
7. WATER MAINS TO BE CEMENT LINED DUCTILE IRON PIPE CLASS 52, U.O.N. ALL CONSTRUCTION METHODS AND MATERIALS SHALL BE AS REQUIRED BY, AND IN ACCORDANCE WITH THE LOCAL WATER DEPARTMENT AND APPLICABLE AWWA SPECIFICATIONS. DOMESTIC SERVICE TO BE 200 PSI CTS PLASTIC LINE U.O.N., TO DIVISION SPECIFICATIONS SLEEVED WHERE REQUIRED.
8. GATE VALVES SHALL BE MUELLER ONLY. IRON BODY, BRONZE MOUNTED, DOUBLE DISC, WITH TWO INCH OPERATING NUT WITH MECHANICAL JOINT HUBS. GATE VALVES SHALL CONFORM IN EVERY RESPECT TO ALL APPLICABLE AWWA STANDARDS. VALVES SHALL BE DESIGNED FOR 200 PSI WORKING AND 300 PSI TEST PRESSURE AND SHALL OPEN LEFT.
9. VALVES SHALL ALSO CONFORM TO THE SPECIFICATIONS OF THE AWWA AS TO SIZE STEM, PITCH OF THREAD, GASKET SEATING AREA SHALL BE FULLY MACHINED TO THE FIXED DIMENSIONS AND TOLERANCES AS PER AWWA SPECIFICATIONS. ALL VALVES SHALL BE PROVIDED WITH "O" RINGS. THE DESIGN OF THE VALVE SHALL BE SUCH THAT THE SEAL PLATE CAN BE FITTED WITH NEW "O" RINGS WHILE THE VALVE IS UNDER PRESSURE IN THE FULLY OPEN POSITION.
10. VALVE BOXES AND CURB BOXES SHALL BE BUFFALO OR PIONEER AND SHALL BE FURNISHED AND INSTALLED FOR ALL VALVES. THEY SHALL BE CAST IRON VAS COATED, SLIDING TYPE ADJUSTABLE VALVE BOXES TOGETHER WITH CAST IRON COVERS. SEE WATER DIVISION REGULATIONS.
11. TYPICAL COVER OVER WATER LINE SHALL BE 5'. IF LESS THAN 4' OF COVER IS PROVIDED, INSULATE WATER LINE AGAINST FREEZING IN ACCORDANCE WITH DETAIL #205 OR EQUAL.
12. WATERLINE INSTALLATION REQUIRES TIE ROD RESTRAINED JOINTS TO BE USED AT ALL BENDS, ENDS OF LINE, VALVES AND FIRE HYDRANTS PER WATER DISTRICT REQUIREMENTS. RESTRAINED JOINTS TO BE INSTALLED PER WATER DISTRICT REQUIREMENTS.
13. IF RESTRAINED JOINTS CAN'T BE USED DUE TO PHYSICAL CONSTRAINTS, ONLY AS SPECIFICALLY APPROVED BY THE WATER DISTRICT, THRUST BLOCKS TO BE INSTALLED AT ALL BENDS, ENDS OF LINE, VALVES AND FIRE HYDRANTS IN ACCORDANCE DETAIL #301. CONCRETE THRUST BLOCKS AS REQUIRED, CONCRETE SHALL BE 1 PART CEMENT TO 2 PARTS SAND AND 4 PARTS COARSE AGGREGATE. CONCRETE CLASS "C" WITH A 28 DAY COMPRESSION STRENGTH OF 2000 PSI MINIMUM AGGREGATE SIZE OF 1-1/2". THRUST BLOCKS SIZED PER SPECIFICATIONS. ALTERNATELY PRECAST THRUST BLOCKS TO DISTRICT SPECIFICATIONS MAY BE UTILIZED WITH CARE SHALL BE TAKEN TO ENSURE THAT ALL CONCRETE THRUST BLOCKS BEAR AGAINST UNDISTURBED TRENCH WALLS AND NOT TO ENCASE FLANGES AND BOLTS ON MECHANICAL JOINT FITTINGS. WHERE UNSUITABLE BEARING MATERIAL IS ENCOUNTERED, EXCAVATE AND PLACE SUFFICIENT CONCRETE BALLAST TO OFFSET THE ANTICIPATED THRUSTS.
14. MASHPEE WATER DISTRICT APPROVED WATER SUBCONTRACTOR AND THIRD PARTY INSPECTOR REQUIRED. COST OF THE INSPECTOR SHALL BE BORN BY THE CONTRACTOR/WATER SUBCONTRACTOR.
15. GAS, ELECTRIC, DATA/COM IS SHOWN SCHEMATICALLY HEREON. ALL LABOR, WORK, EQUIPMENT AND MATERIALS FOR INSTALLATION OF THESE UTILITIES SHALL BE OWNED AND PERFORMED BY THE CONTRACTOR. UTILITIES SHALL BE INSTALLED WITH A MINIMUM COVER OF 3 FEET U.O.N. OR OTHERWISE DIRECTED BY THE CONTROLLING UTILITY COMPANY. CONTRACTOR SHALL COORDINATE ALL FINAL LAYOUTS AND DETAILS WITH APPLICABLE UTILITY COMPANY.
16. POWER AND COMMUNICATION DUCT BANKS SHALL BE INSTALLED IN ACCORDANCE WITH DETAIL #C-832. WHERE A DESIGN BY THE UTILITY COMPANY OR MEP ENGINEERS ARE PROVIDED, THOSE SHALL SUPERCEDE #C-832.
17. EXTERIOR RESIDENTIAL LIGHTING SHALL BE LOW WATTAGE TYPE AND DIRECTED SO AS TO KEEP ALL LIGHTING WITHIN SUBJECT LOT. SITE LIGHTING USED SHALL BE LOW WATTAGE LED STREET LANTERNS ON 15' MAXIMUM POLE LOCATED ADJACENT TO ROAD SHOULDERS OR WALKWAYS. LIGHTING FIXTURES TO BE FULL 90° CUTOFF ("DARK SKY" COMPLIANT). A FINAL PHOTOMETRIC AND LIGHTING SCHEDULE PLAN SHALL BE PREPARED BY THE ELECTRICAL ENGINEER OR LIGHTING VENDOR.
18. ALL UTILITY CUTS THROUGH EXISTING CONCRETE OR BITUMINOUS CONCRETE PAVED SURFACES SHALL BE SAWCUT. BACK FILLING OF TRENCH SHALL INCLUDE 12" IN DEPTH FLOWABLE FILL TO THE BASE COURSE OF THE SURFACE TREATMENT. THE SURFACE TREATMENT SHALL THEN BE REPLACED IN KIND.
19. SITE CONTRACTOR TO OWN ALL EXCAVATION, TRENCHING, & BACKFILLING FOR ALL UTILITIES AND MISCELLANEOUS WORK INCIDENTAL TO THE SCOPE OF THE PROJECT AND CONTRACT DOCUMENTS. CONTRACTOR SHALL REFER TO MEP AND LANDSCAPE PLANS BY OTHERS FOR ADDITIONAL INFORMATION AS APPLICABLE.
20. ALL WORK WITHIN THESE PLANS SHALL BE PERFORMED AND PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATIONS REFERENCED AND CONSTRUCTION DETAILS PROVIDED IN THIS PLAN SET WHETHER OR NOT THE DETAIL NUMBER IS SPECIFICALLY REFERENCED.
21. ALL COVERS, CURB BOXES, GRATES, AND OTHER FINISH SURFACES SHALL BE RESET TO THE NEW FINISH GRADE.
22. THE FIRST 10 FEET FROM THE BUILDING FACE FOR STORM DRAIN, SEWER AND WATER PIPING SHALL FOLLOW THE PLUMBING CODE. REFER TO PLUMBING PLANS BY OTHERS AS APPLICABLE.
23. WHERE UTILITIES CALLED OUT TO BE ABANDONED OR REMOVED AS NEEDED, CONTRACTOR SHALL OWN REMOVING ALL TANKS, PIPE AND APPURTENANCES AS NEEDED WHERE WITHIN THE PROPOSED AREA OF WORK.

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Δ	JKL	10/13/2023	REVISE GRADING/STORMWATER MGMT
Δ	ZDP	5/23/2023	CONSERVATION UPDATE
Δ	ZDP	5/1/2023	CONSERVATION UPDATE
Δ	JKL	4/28/2023	PER PLANNING BOARD COMMENTS
Δ	JKL	3/24/2023	PER PLANNING BOARD COMMENTS
		DATE	DESCRIPTION

SHEET TITLE
**Utilities Plan
Sheet 2 of 2**

SHEET NO
C5.1

DATE: JANUARY 16, 2023



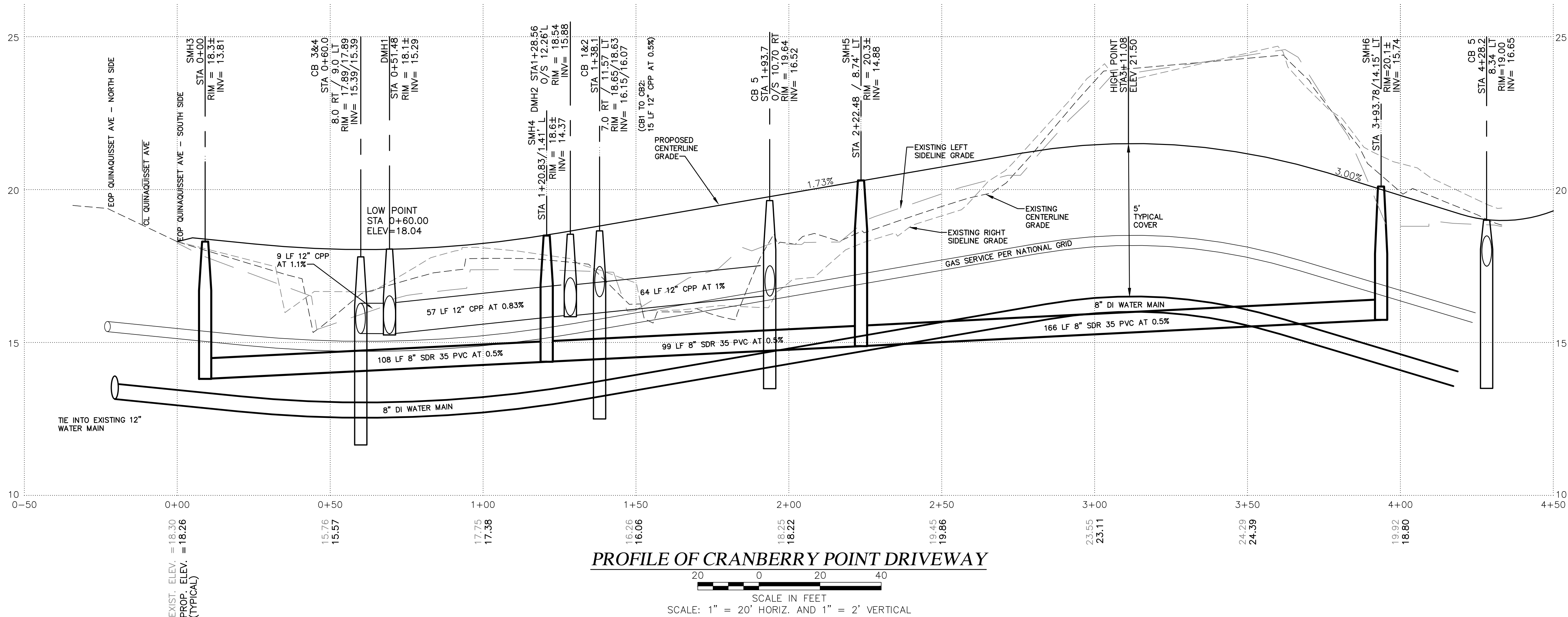
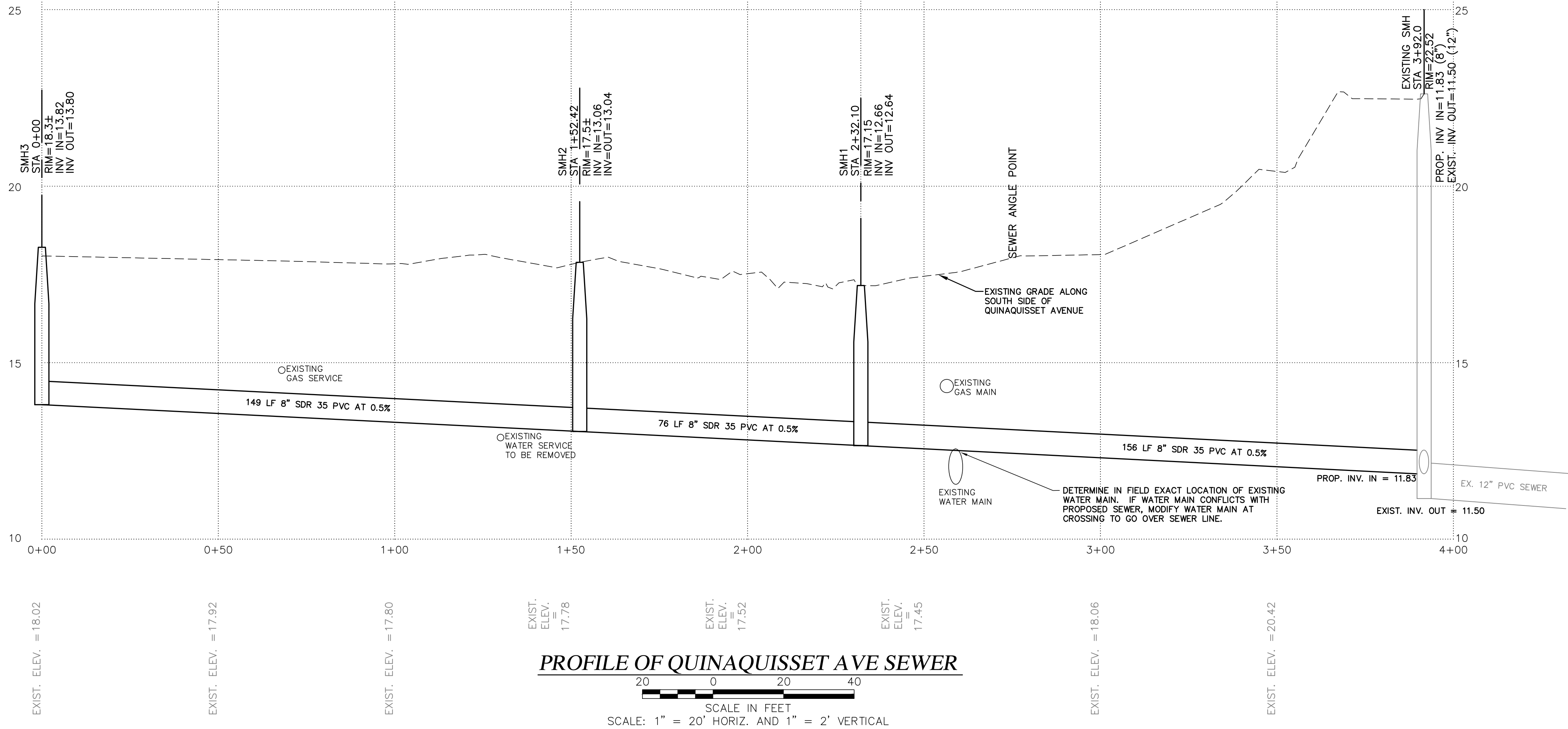
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JOB NO: 2014-009 FILE: 2014-009 QUIN UT.dwg

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SHEET TITLE

**Driveway and
Utility Profiles**

SHEET NO

C5.2

DATE: JANUARY 16, 2023

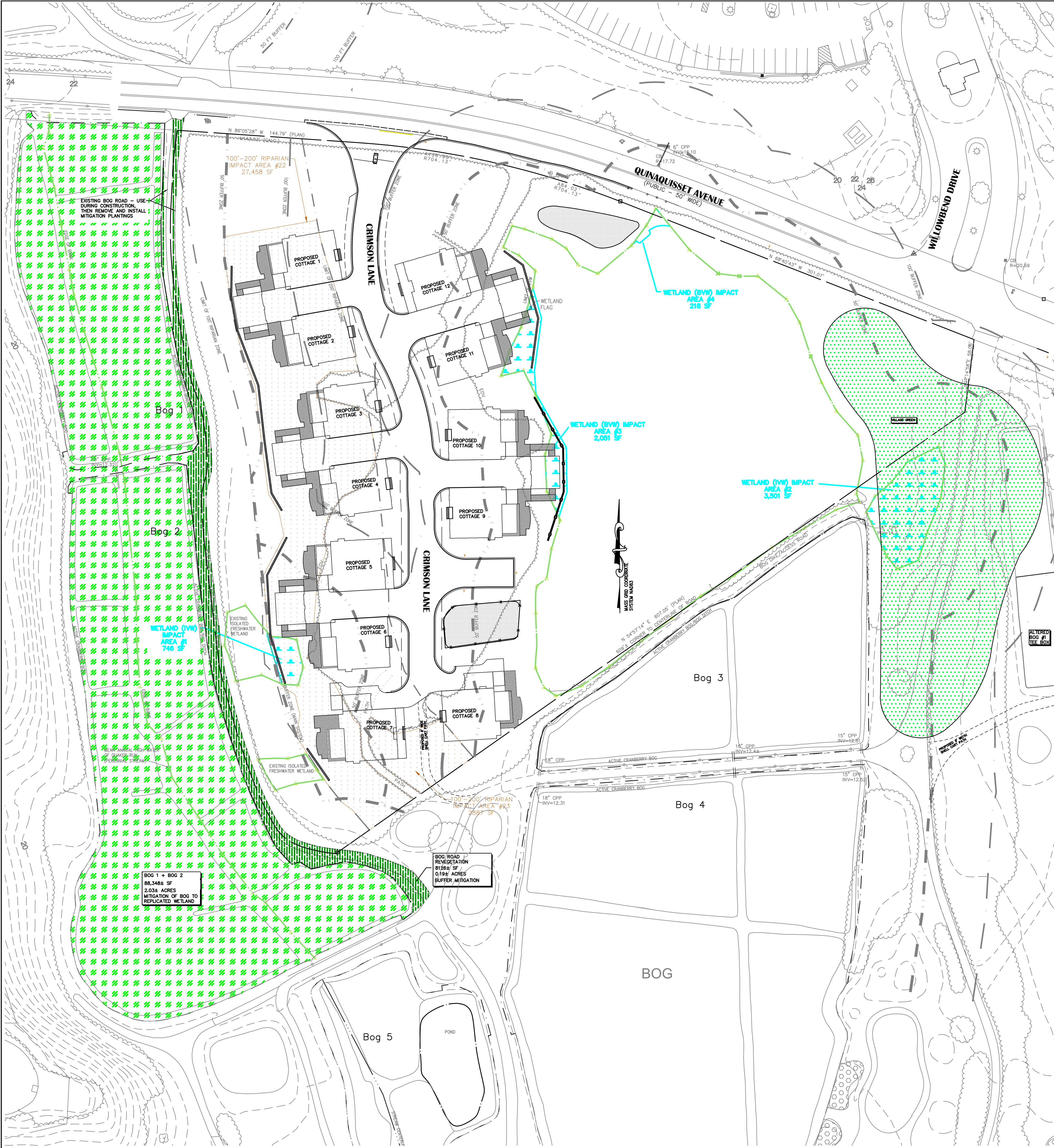
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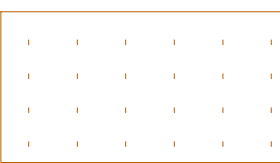
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Willowbend - 275 Quinaquisset Ave, Mashpee, MA				Date:	
Job # 2014-009				By: ZDP	
BASED ON EXISTING WETLAND DELINIATION				chkd: MWE 10/13/2023	

SHADING KEY

-  WETLAND IMPACT
-  OUTER RIPARIAN' BUFFER IMPACT
-  BOG TO WETLAND RESTORATION
-  BOG ROAD REVEGETATION

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CONSULTANT

CONSULTANT

PREPARED FOR:
Southworth Mashpee Properties, LLC
130 Willowbend Drive
Mashpee, MA 02649

PROJECT TITLE
Cranberry Point
275 Quinaquisset Avenue
Mashpee, MA 02649

JKL	10/13/2023	REVISE GRADING/STORMWATER MGMT
ZDP	5/23/2023	CONSERVATION UPDATE
ZDP	5/1/2023	CONSERVATION UPDATE
JKL	4/28/2023	PER PLANNING BOARD COMMENTS
JKL	3/24/2023	PER PLANNING BOARD COMMENTS

DATE	DESCRIPTION
------	-------------

SHEET TITLE

Master Mitigation Plan

SHEET NO
C6.0

DATE: JANUARY 16, 2023

40 0 40 80
SCALE IN FEET
SCALE: 1"=40'

DRAWN BY: ZDP CHECKED BY: MWE
JOB NO.: 2014-009 FILE: 2014-009QUINMPMASTER

FOR PERMIT ONLY - NOT FOR CONSTRUCTION

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Q B N O: 2014-009 F I L E: 2014-009 QUIN DT.dwg

