

PERMIT SITE PLAN

CELL SIGNALING TECHNOLOGY AT THE OLD QUARRY

ATWATER AVENUE
MANCHESTER-BY-THE-SEA, MASSACHUSETTS 01944
FOR

CELL SIGNALING TECHNOLOGIES, INC.

ASSESSORS:

PARCEL ID: 37-0-7 & 37-0-8

REFERENCES:

DEED BOOK 41065, PAGE 352

RECORD OWNER:

PARCEL ID: 37-0-7 & 37-0-8
OLD QUARRY LLC
3 TRASK LANE
DANVERS, MA 01923

ZONING:

LIMITED COMMERCIAL DISTRICT - LCD
GROUND AND SURFACE WATER RESOURCE PROTECTION DISTRICT ZONE 3

PLAN INTENT

THIS PLAN IS INTENDED TO ACCOMPANY A FILING WITH THE TOWN OF
MANCHESTER-BY-THE-SEA PLANNING BOARD.

SURVEY NOTES

- LIMITS OF MEAN ANNUAL HIGH WATER (MAHW) ASSOCIATED WITH SAWMILL BROOK, INTERMITTENT STREAM & BORDERING VEGETATED WETLANDS (BIVN) SHOWN HEREON WERE DELINEATED BY HANCOCK ASSOCIATES ON 7/18, 7/26, 7/27, 8/2/2022 & 1/28/2023 AND LOCATED BY FIELD SURVEY.
- THE HORIZONTAL DATUM FOR THIS SURVEY IS THE MASSACHUSETTS COORDINATE SYSTEM, NAD 1983, MAINLAND ZONE. THE VERTICAL DATUM FOR THIS SURVEY IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). SAID DATUMS WERE ESTABLISHED VIA GPS OBSERVATIONS UTILIZING NAD83 (NA2011) EPOCH 2010.00 (MYCS2) AND GEOID 18.
- UNDERGROUND UTILITIES SHOWN HEREON ARE COMPILED FROM FIELD LOCATIONS OF STRUCTURES AND FROM AVAILABLE RECORD INFORMATION ON FILE AT THE TOWN ENGINEERING OFFICES, TOWN D.P.W., MASSDOT AND UTILITY COMPANIES. OTHER UNDERGROUND UTILITIES MAY EXIST. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION, SIZE & ELEVATION OF ALL UTILITIES WITHIN THE AREA OF PROPOSED WORK.
- THE PROPERTY SHOWN HEREON IS CURRENTLY UNDERGOING EARTH MOVING RELATED OPERATIONS. AREAS OF SOIL AND GRAVEL STOCKPILES, EQUIPMENT STORAGE AND TRAILERS EXIST ON THE SITE NOT SHOWN HEREON.
- LIMIT OF FLOOD ZONE 'A' SHOWN HEREON DOES NOT HAVE A BASE FLOOD ELEVATION ASSOCIATED WITH IT. IT IS GRAPHICALLY SHOWN AS SCALED FROM FLOOD INSURANCE RATE MAPS 25009C0432G & 25009C0434G WITH AN EFFECTIVE DATE OF 7/16/2014. SAID FLOOD ZONE LIMITS SHOULD BE CONSIDERED APPROXIMATE.

GENERAL NOTES

- LOCATIONS OF EXISTING UNDERGROUND UTILITIES/OBSTRUCTIONS/SYSTEMS SHOWN HEREON ARE APPROXIMATE ONLY. ALL UTILITIES/OBSTRUCTIONS/SYSTEMS MAY NOT BE SHOWN. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL UNDERGROUND UTILITIES/OBSTRUCTIONS/SYSTEMS, WHETHER OR NOT SHOWN HEREON.
- UNLESS OTHERWISE SHOWN, ALL NEW UTILITIES SHALL BE UNDERGROUND.
- CONTRACTOR SHALL FURNISH CONSTRUCTION LAYOUT OF BUILDING AND SITE IMPROVEMENTS. THIS WORK SHALL BE PERFORMED BY A PROFESSIONAL LAND SURVEYOR.
- SAFETY MEASURES, CONSTRUCTION METHODS AND CONTROL OF WORK SHALL BE RESPONSIBILITY OF CONTRACTOR.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT OF ANY EXISTING IMPROVEMENTS DAMAGED DURING CONSTRUCTION THAT ARE NOT DESIGNATED FOR DEMOLITION AND / OR REMOVAL HEREON. DAMAGED IMPROVEMENTS SHALL BE REPAIRED TO THE SATISFACTION OF THEIR RESPECTIVE OWNERS.
- THIS PLAN IS NOT INTENDED TO SHOW AN ENGINEERED BUILDING FOUNDATION DESIGN, WHICH WOULD INCLUDE DETAILS AND FINAL ELEVATIONS OF FOOTINGS, WALLS AND SUBSURFACE DRAINAGE TO PREVENT INTERIOR FLOODING. SEE ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS.
- ANY INTENDED REVISION OF THE HORIZONTAL AND/OR VERTICAL LOCATION OF IMPROVEMENTS TO BE CONSTRUCTED AS SHOWN HEREON SHALL BE REVIEWED AND APPROVED BY ENGINEER PRIOR TO IMPLEMENTATION.
- RIM ELEVATIONS SHOWN FOR NEW STRUCTURES ARE APPROXIMATE AND ARE PROVIDED TO ASSIST CONTRACTOR WITH MATERIAL TAKEOFFS. FINISH RIM ELEVATIONS SHOULD MATCH PAVEMENT, GRADING OR LANDSCAPING, UNLESS SPECIFICALLY INDICATED OTHERWISE.
- WHERE EXISTING UTILITY LINES/STRUCTURES ARE TO BE CUT/BROKEN DOWN/ ABANDONED, LINES/STRUCTURES SHALL BE PLUGGED/CAPPED/FILLED IN ACCORDANCE WITH OWNER REQUIREMENTS.
- THE CONTRACTOR SHALL VERIFY THE LOCATION AND RELATIVE ELEVATION OF BENCH MARKS PRIOR TO COMMENCEMENT OF CONSTRUCTION. ANY DISCREPANCY SHALL BE REPORTED TO THE ENGINEER.
- PROPOSED BUILDING FOUNDATION CONFIGURATION AND LOCATION ON THE LOT AS SHOWN ARE CONCEPTUAL AND SHALL BE VERIFIED AS TO CONFORMANCE WITH FINAL ARCHITECTURAL PLANS AND ZONING ORDINANCES PRIOR TO CONSTRUCTION.
- SILT FENCE SHOWN HEREON SHALL BE INSTALLED BEFORE EARTH DISTURBANCE OCCURS WITHIN BUFFER ZONE, AND SHALL SERVE AS THE LIMIT OF WORK.

REGULATORY NOTES

- CONTRACTOR SHALL CONTACT DIG-SAFE FOR UNDERGROUND UTILITY MARKING AT 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF ANY WORK.
- CONTRACTOR SHALL MAKE HIMSELF AWARE OF ALL CONSTRUCTION REQUIREMENTS, CONDITIONS, AND LIMITATIONS IMPOSED BY PERMITS AND APPROVALS ISSUED BY REGULATORY AUTHORITIES PRIOR TO COMMENCEMENT OF ANY WORK. CONTRACTOR SHALL COORDINATE AND OBTAIN ALL CONSTRUCTION PERMITS REQUIRED BY REGULATORY AUTHORITIES.
- ALL WORK OUTSIDE OF BUILDING THAT IS LESS THAN 10 FEET FROM THE INSIDE FACE OF BUILDING FOUNDATIONS SHALL CONFORM WITH THE UNIFORM STATE PLUMBING CODE OF MASSACHUSETTS, 248 CMR 2.00.

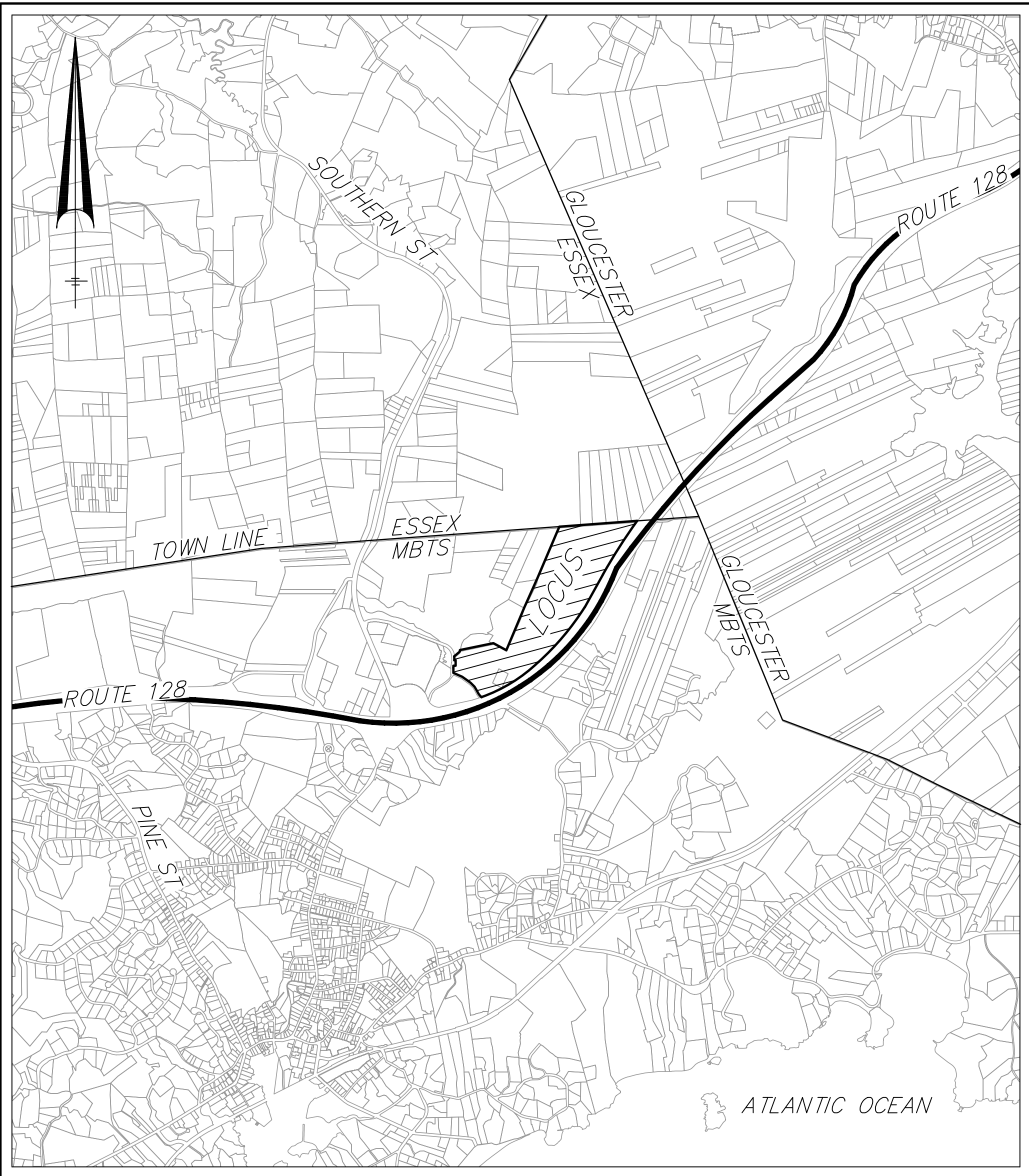
ZONING TABLE

ZONE: LIMITED COMMERCIAL DISTRICT (LCD), ZONE III
PROPOSED USE: 19. LABORATORIES, RESEARCH AND DEVELOPMENT, AND RELATED LIGHT MANUFACTURING, ASSEMBLY

REQUIREMENT	REQUIRED	PROPOSED
MIN. LOT AREA	5 ACRES	41.4± ACRES
FRONTAGE	-	343'±
MIN. STREET SETBACK	150'	347'±
MIN. LOT LINE SETBACK	100'	179'± AT N YARD 229'± AT S YARD 158'± AT E YARD
MAX. IMPERVIOUS SURFACES	60%	14.1% (254,720SF)
MAX. BUILDING COVERAGE	40%	6.6% (119,900SF)

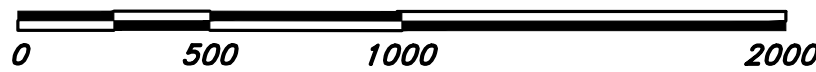
LEGEND

EXISTING		PROPOSED
102	SURFACE CONTOUR	128
○	STONE WALL	○
●	METAL GUARDRAIL	●
—	EDGE OF PAVEMENT	—
—	EDGE OF WOODED AREA	—
—	RETAINING WALL	—
—	STONE RETAINING WALL	—
● 79.3 WFC118	LIMIT OF BORDERING VEGETATED WETLAND WITH FLAG NUMBER AND ELEVATION	
● 79.3 WFB102	LIMIT OF INTERMITTENT STREAM WITH FLAG NUMBER AND ELEVATION	
● 79.3 WFB102	LIMIT OF SAWMILL BROOK WITH FLAG NUMBER AND ELEVATION	
△ 79.3 WFB102	LIMIT OF 30-FOOT NO DISTURB ZONE	
△ 79.3 WFB102	LIMIT OF 50-FOOT NO BUILD ZONE	
○	LIMIT OF 100-FOOT WETLAND BUFFER ZONE	
○	LIMIT OF 100-FOOT INNER RIPARIAN ZONE	
○	LIMIT OF 200-FOOT RIVERFRONT AREA	
△	LIMIT OF SPECIAL FLOOD HAZARD AREA "ZONE A" (WITHOUT BASE FLOOD ELEVATION) (SEE NOTE 6)	
98.8 93.2	RETAINING WALL WITH TOP AND BOTTOM ELEVATIONS	TW: 98.8 BW: 93.2
100.7	SPOT ELEVATION	295.5
8" 8"	SEWER LINE AND MANHOLE SIZE MATERIAL & FLOW DIRECTION	8" 8"
12" 12"	DRAINLINE WITH PIPE SIZE, MATERIAL & FLOW DIRECTION, CATCH BASIN, MANHOLE & ROUND CATCH BASIN	12" 12"
W	SURFACE WATER FLOW AND DIRECTION	W
G	WATER LINE, HYDRANT AND VALVE	G
ETC	GAS LINE	ETC
E	ELECTRIC, TELEPHONE, & CABLE LINE	E
	ELECTRIC LINE	
	EROSION CONTROL LINE	
	BOLLARD	
	SIGN	



LOCUS MAP

SCALE: 1" = 500'



PROJECT TEAM

APPLICANT:

CELL SIGNALING TECHNOLOGIES, INC.
1 CONANT STREET
DANVERS, MASSACHUSETTS 01923

CIVIL ENGINEERS

LAND SURVEYORS

WETLAND SCIENTISTS:

HANCOCK ASSOCIATES
185 CENTRE STREET
DANVERS, MASSACHUSETTS 01923

LANDSCAPE ARCHITECTS:

STUDIO 2112
840 SUMMER STREET, SUITE 102
BOSTON, MASSACHUSETTS 02127

ARCHITECTS:

HGA
374 CONGRESS STREET, SUITE 400
BOSTON, MASSACHUSETTS 02210

SHEET INDEX

C0	TITLE SHEET
C1	INDEX PLAN
V1	EXISTING CONDITIONS PLAN
V2	EXISTING CONDITIONS PLAN
V3	EXISTING CONDITIONS PLAN
V4	EXISTING CONDITIONS PLAN
C2.1	SITE PREPARATION AND EROSION CONTROL PLAN
C2.2	SITE PREPARATION AND EROSION CONTROL PLAN
C3.1	LAYOUT AND MATERIALS PLAN
C3.2	LAYOUT AND MATERIALS PLAN
C4.1	PHASE 1 GRADING PLAN
C4.2	PHASE 1 GRADING PLAN
C5.1	GRADING AND DRAINAGE PLAN
C6.1	ROAD PROFILE PLAN
C7.1	SITE UTILITIES PLAN
C8.1	TRAFFIC AND SIGNAGE PLAN
C9.1	ROCK PROBE AND SOIL TESTING LOCATIONS PLAN
C9.2	ROCK PROBE AND SOIL TESTING LOCATIONS PLAN
C10	PRE DEVELOPMENT WATERSHED PLAN
C11	POST DEVELOPMENT WATERSHED PLAN
C12	DETAILS SHEET
C13	DETAILS SHEET
C14	DETAILS SHEET
C15	DETAILS SHEET

ATWATER
AVENUE

Manchester-By-The-Sea, MA 01944

ASSESSORS:

MAP
37

LOT
08

PREPARED FOR:

CELL SIGNALING
TECHNOLOGIES, INC.

3 TRASK LANE
DANVERS MA 01923

HANCOCK
ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM



1	TJS	WTC	5/20/24	TOWN COMMENTS
NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
DATE:	1/12/24	DESIGN BY:	RT	
SCALE:		DRAWN BY:	CFB/TJS	
APPROV. BY:	WTC	CHECK BY:	GEW	

TITLE SHEET

PLOT DATE: May 20, 2024 12:44 pm
PATH: F:\C046 3D Projects\25770 - Cell Signaling - Manchester\Eng\DWG\

DWG: 257701s.dwg

LAYOUT: TITLE

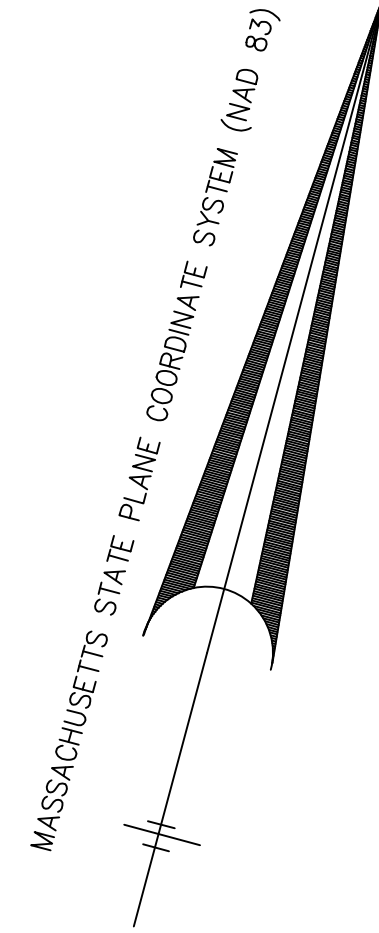
SHEET: 1 OF 24

PROJECT NO.:

25770

C0

PROPERTY LINE
LIMIT OF BORDERING VEGETATED WETLAND
LIMIT OF BANK



ATWATER AVENUE

Manchester-By-The-Sea, MA 01944

ASSESSORS

MAP 37 LOT 08

PREPARED FOR:

CELL SIGNALING TECHNOLOGIES, INC.

3 TRASK LANE
DANVERS MA 01923

HANCOCK ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM



1	TJS	MTG	5/20/24	TOWN COMMENTS
---	-----	-----	---------	---------------

NO.	BY	APP.	DATE	ISSUE/REVISION DESCRIPTION
DATE:	1/12/24	DESIGN BY:	RT	
SCALE:	1" = 100'	DRAWN BY:	CFB/TJS	
APPROV. BY:	MTG	CHECK BY:	GEW	

INDEX PLAN

PLOT DATE: May 20, 2024 1:22 pm
PATH: F:\Civil 3D Projects\25770 - Cell Signaling - Manchester\Eng\DWG\

DWG: 25770base PH1.dwg

LAYOUT: INDEX

SHEET: 2 OF 24

PROJECT NO.: 25770

C1

SCALE: 1" = 100'

0 100 200 400

NORTHERN CIRCUMFERENTIAL HIGHWAY
(PUBLIC - VARIABLE WIDTH)
~ROUTE 128~
1952 S.H.L.O. #3992
(A.K.A. YANKEE DIVISION HIGHWAY)

MILL STREET

TOTAL AREA
130.4± ACRES

SHEET X.2

SHEET X.1

LEGEND

	SURFACE CONTOUR
	STONE WALL
	METAL GUARDRAIL
	EDGE OF PAVEMENT
	EDGE OF WOODED AREA
	RETAINING WALL
	STONE RETAINING WALL
	LIMIT OF BORDERING VEGETATED WETLAND WITH FLAG NUMBER AND ELEVATION
	LIMIT OF INTERMITTENT STREAM WITH FLAG NUMBER AND ELEVATION
	LIMIT OF SAWMILL BROOK WITH FLAG NUMBER AND ELEVATION
	LIMIT OF 30-FOOT NO DISTURB ZONE
	LIMIT OF 50-FOOT NO BUILD ZONE
	LIMIT OF 100-FOOT WETLAND BUFFER ZONE
	LIMIT OF 100-FOOT INNER RIPARIAN ZONE
	LIMIT OF 200-FOOT RIVERFRONT AREA
	LIMIT OF SPECIAL FLOOD HAZARD AREA "ZONE A" (WITHOUT BASE FLOOD ELEVATION) (SEE NOTE 6)
	SEWERLINE & MANHOLE WITH PIPE SIZE, MATERIAL & FLOW DIRECTION
	DRAINLINE WITH PIPE SIZE, MATERIAL & FLOW DIRECTION, CATCHBASIN, MANHOLE & ROUND CATCHBASIN
	WATER MANHOLE, WATER MAIN WITH SIZE, TEE, GATE VALVE & FIRE HYDRANT
	GAS MAIN WITH SIZE & GATE VALVE
	EXISTING UTILITY POLE WITH DESIGNATION OVERHEAD WIRES AND GUY POLE
	ELECTRIC MANHOLE & UNDERGROUND ELECTRIC LINES
	TELEPHONE MANHOLE & UNDERGROUND TELEPHONE LINES
	RETAINING WALL WITH TOP AND BOTTOM ELEVATIONS
	DRILL HOLE IN CONCRETE BOUND
	DRILL HOLE IN STONE BOUND
	RECORD
	CALCULATED
	RECORD AND HELD
	FOUND
	DRILL HOLE
	IRON PIPE
	IRON ROD
	SPOT ELEVATION
	SEWER MANHOLE
	DRAIN MANHOLE
	CATCH BASIN
	ROUND CATCH BASIN
	BOLLARD
	SIGN

AERIAL PHOTOGRAMMETRY LEGEND

	BUILDING
	DECK
	CONCRETE PAD
	SWIMMING POOL
	BUILDING OBSCURED
	STEPS
	STRUCTURE
	TRAILER
	PAVED ROAD
	SIDEWALK
	GUARDRAIL
	CURB BOTTOM OBSCURED
	CURB TOP OBSCURED
	CURB BACK OBSCURED
	PAVEMENT OBSCURED
	DRIVEWAY
	DRIVEWAY UNPAVED
	INDEX CONTOUR
	INDEX OBSCURED
	INDEX DEPRESSION
	INTERMEDIATE OBSCURED
	INTERMEDIATE DEPRESSION OBSCURED
	ROCK OUTLINE
	ROCK OUTCROP
	DRIVEWAY OBSCURED
	RAMP/DOCK
	CURB BOTTOM
	CURB TOP
	CURB BACK
	GUARDRAIL
	PAINTED LINE
	PARKING OUTLINE
	PAINTED DASHES
	FENCE
	RETAINING WALL
	SOLID WALL
	FENCE OBSCURED
	WALL OBSCURED
	STONEMALL
	CONCRETE OBSCURED
	STRUCTURE OBSCURED
	TRAILER OBSCURED
	SIDEWALK OBSCURED
	GUARDRAIL OBSCURED
	SWAMP OBSCURED
	SOLID WALL OBSCURED
	GENERAL OUTLINE
	PILE
	BOARD SIGN
	UTILITIES
	BENCH
	DECK OBSCURED
	LOCATED OBJECT
	SWAMP LIMIT
	CULVERT
	DITCH
	WATER OBSCURED
	TREELINES
	BRUSH
	DENSE WOOD LIMIT
	ATHL FIELD CLINE
	SHRUBBERY
	ARROW
	MAN HOLE
	CATCH BASIN
	LIGHT POLE
	SIGN
	POLE
	FLAG POLE
	LOCATED OBJECT
	UTILITY POLE
	POST
	SWAMP GRASS
	ROCK
	BOULDER
	HANDICAP
	LIGHT POLE OBSCURED

NOTES:

1. THE HORIZONTAL DATUM FOR THIS SURVEY IS THE MASSACHUSETTS COORDINATE SYSTEM, NAD 1983, MAINLAND ZONE. THE VERTICAL DATUM FOR THIS SURVEY IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAV88). SAID DATUMS WERE ESTABLISHED VIA GPS OBSERVATIONS UTILIZING NAD83 (NA2011) EPOCH 2010.00 (MYCS2) AND GEOID 18.
2. UNDERGROUND UTILITIES SHOWN HEREON ARE COMPILED FROM FIELD LOCATIONS OF STRUCTURES AND FROM AVAILABLE RECORD INFORMATION ON FILE AT THE TOWN ENGINEERING OFFICES, TOWN D.P.W., MASSDOT AND UTILITY COMPANIES. OTHER UNDERGROUND UTILITIES MAY EXIST. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION, SIZE & ELEVATION OF ALL UTILITIES WITHIN THE AREA OF PROPOSED WORK AND TO CONTACT "DIG-SAFE" AT 811 AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION, DEMOLITION OR CONSTRUCTION.
3. THE PROPERTY SHOWN HEREON IS CURRENTLY UNDERGOING EARTH MOVING RELATED OPERATIONS. AREAS OF SOIL AND GRAVEL STOCKPILES, EQUIPMENT STORAGE AND TRAILERS EXIST ON THE SITE NOT SHOWN HEREON.
4. LIMIT OF FLOOD ZONE 'A' SHOWN HEREON DOES NOT HAVE A BASE FLOOD ELEVATION ASSOCIATED WITH IT. IT IS GRAPHICALLY SHOWN AS SCALED FROM FLOOD INSURANCE RATE MAPS 25009C0432G & 25009C0434G WITH AN EFFECTIVE DATE OF 7/16/2014. SAID FLOOD ZONE LIMITS SHOULD BE CONSIDERED APPROXIMATE.
5. LIMITS OF MEAN ANNUAL HIGH WATER (MAHW) ASSOCIATED WITH SAWMILL BROOK, INTERMITTENT STREAM & BORDERING VEGETATED WETLANDS (BVW) SHOWN HEREON WERE DELINEATED BY HANCOCK ASSOCIATES ON 7/18, 7/26, 7/27, 8/2/2022 & 1/28/2023 AND LOCATED BY FIELD SURVEY.
6. TOPOGRAPHY AND SITE DETAIL SHOWN HEREON FROM AERIAL PHOTOGRAMMETRY BY EASTERN TOPOGRAPHICS FROM PHOTOGRAPHS DATED JUNE 28, 2022 AND SUPPLEMENTED WITH ON THE GROUND SURVEY PERFORMED BY HANCOCK ASSOCIATES IN 2022 AND 2023.

ASSESSORS:

MAP 37, LOT 7
MAP 37, LOT 8
MAP 38, LOT 13
MAP 43, LOT 29

REFERENCES:

DEED BOOK 41065, PAGE 352
DEED BOOK 41065, PAGE 358
PLAN 596 OF 1950
PLAN BOOK 116, PLAN 58
PLAN BOOK 447, PLAN 64

RECORD OWNERS:

OLD QUARRY, LLC
3 TRASK LANE
DANVERS, MA 01923
NEW QUARRY, LLC
3 TRASK LANE
DANVERS, MA 01923

ATWATER AVENUE

Manchester-By-The-Sea,
Massachusetts

PREPARED FOR:

CELL SIGNALING
TECHNOLOGIES,
INC.

3 Trask Lane
Danvers, MA 01923

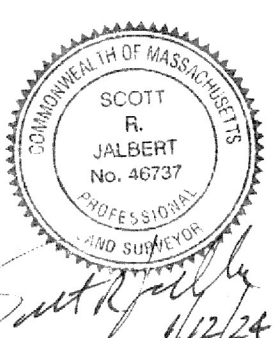
HANCOCK ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM



NO.	BY	APP.	DATE	ISSUE/REVISION	DESCRIPTION
1	DATE	1/12/2024	DRAWN BY:	MMM	
2	SCALE:	1"=40'	CHECK BY:	SRJ	

EXISTING CONDITIONS PLAN OF LAND IN MANCHESTER-BY-THE-SEA, MA

PROJECT NO.: 25770

DATE: Jan 12, 2024 10:55 am
F:\24\20 Projects\25770 - Cell Signaling - Manchester\Sur\DWG\

DWG: 25770ec.dwg
LAYOUT: EC30x42

SHEET: 3 OF 24

V1

ELEVATION BENCH MARKS		
DATUM: NAVD 88 (SEE NOTE 1)		
NO.	DESCRIPTION	ELEV.
1.	6" DHSB(FD): TOP OF BOUND AT DRILL HOLE	45.05
2.	6" SQ. GRANITE POST: TOP EASTERLY CORNER, 4.2' A.G.	53.82
3.	6" DHSB(FD): TOP OF BOUND AT DRILL HOLE	58.33
4.	UP#56-1: SPIKE 1.5' A.G.	51.58
5.	18" SPRUCE TREE: MAG. NAIL 2.0' A.G.	68.47
6.	CONC. GARAGE SLAB: FRONT CENTER 24' WIDE DOORWAY	69.24
7.	MANHOLE, RIM: PUNCH MARK ON SOUTH EDGE OF RIM	53.31

SCALE: 1" = 40'



ATWATER AVENUE

Manchester-by-the-Sea,
Massachusetts

PREPARED FOR:

CELL SIGNALING
TECHNOLOGIES,
INC.

3 Trask Lane
Danvers, MA 01923

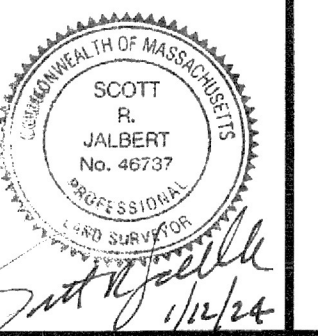
HANCOCK ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM



ELEVATION BENCH MARKS		
DATUM: NAVD 88 (SEE NOTE 1)		
NO.	DESCRIPTION	ELEV.
1.	6" DHSB(FD): TOP OF BOUND AT DRILL HOLE	45.05
2.	6" SQ. GRANITE POST: TOP EASTERLY CORNER, 4.2' A.G.	53.82
3.	6" DHSB(FD): TOP OF BOUND AT DRILL HOLE	58.33
4.	UP#56-1: SPIKE 1.5' A.G.	51.58
5.	18" SPRUCE TREE: MAG. NAIL 2.0' A.G.	68.47
6.	CONC. GARAGE SLAB: FRONT CENTER 24' WIDE DOORWAY	69.24
7.	MANHOLE RIM: PUNCH MARK ON SOUTH EDGE OF RIM	53.31

NOTES:

1. SEE SHEET 1 FOR NOTES REFERENCES ETC.

SCALE: 1" = 40'

EXISTING CONDITIONS PLAN
OF LAND
IN
MANCHESTER-BY-THE-SEA,
MA

PLOT DATE: Jan 12, 2024 10:34 am
PATH: C:\Users\JL\Documents\Projects\25770 - Cell Signaling - Manchester\Drawings\DWG\

DWG: 25770ec.dwg

LAYOUT: EC30x42 (2)

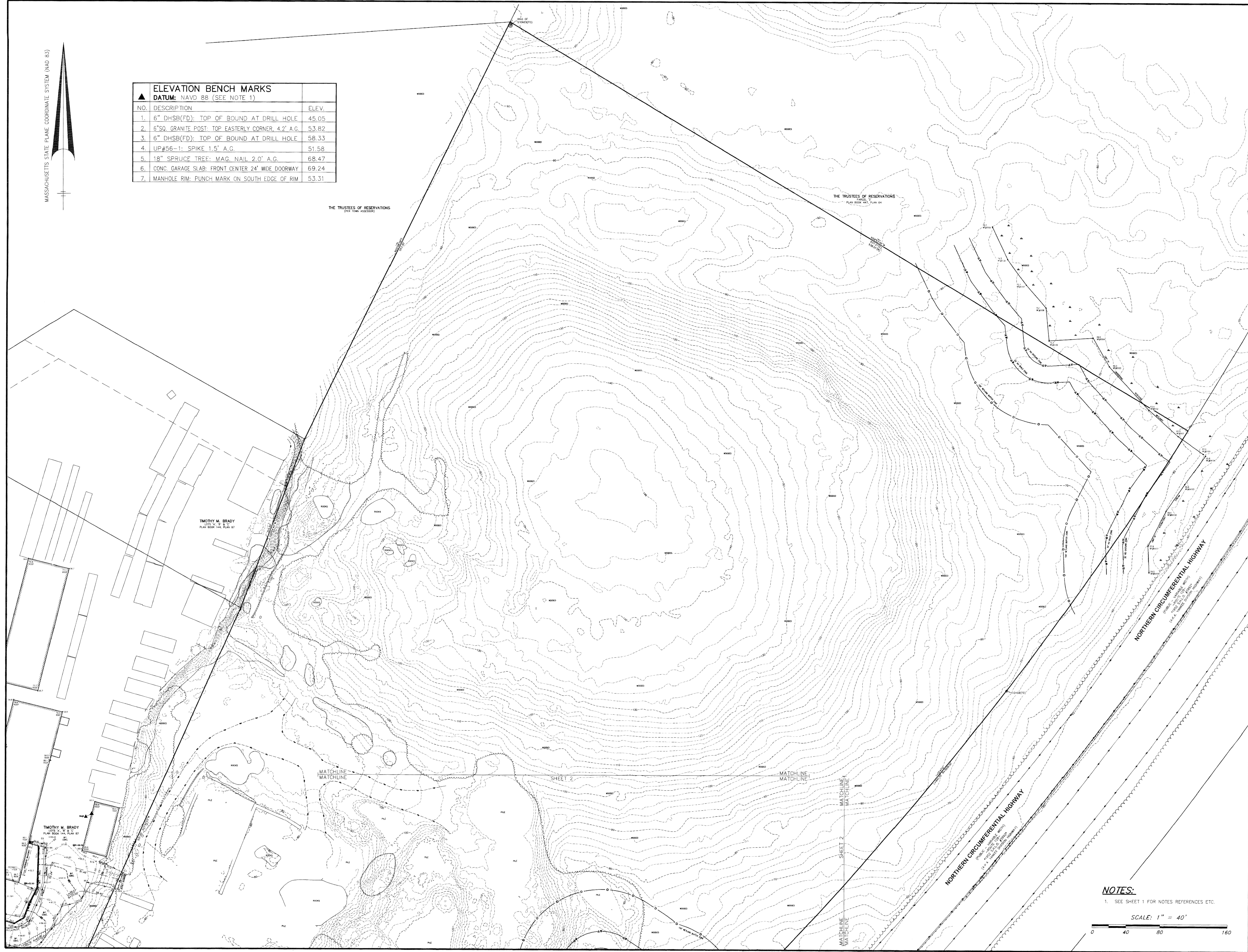
SHEET: 4 OF 24

PROJECT NO.:

V2

25770

ELEVATION BENCH MARKS		
DATUM: NAVD 88 (SEE NOTE 1)		
NO.	DESCRIPTION	ELEV.
1.	6" DHSB(FD): TOP OF BOUND AT DRILL HOLE	45.05
2.	6"SQ. GRANITE POST: TOP EASTERLY CORNER, 4.2' A.G.	53.62
3.	6" DHSB(FD): TOP OF BOUND AT DRILL HOLE	58.33
4.	UP#56-1: SPIKE 1.5' A.G.	51.58
5.	18" SPRUCE TREE: MAG. NAIL 2.0' A.G.	68.47
6.	CONC. GARAGE SLAB: FRONT CENTER 24' WIDE DOORWAY	69.24
7.	MANHOLE RIM: PUNCH MARK ON SOUTH EDGE OF RIM	53.31



ATWATER AVENUE

Manchester-By-The-Sea,
Massachusetts

PREPARED FOR:

CELL SIGNALING
TECHNOLOGIES,
INC.

3 Trask Lane
Danvers, MA 01923

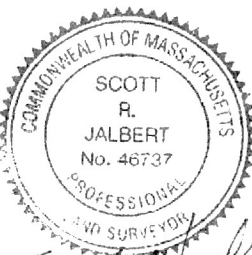
HANCOCK ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM

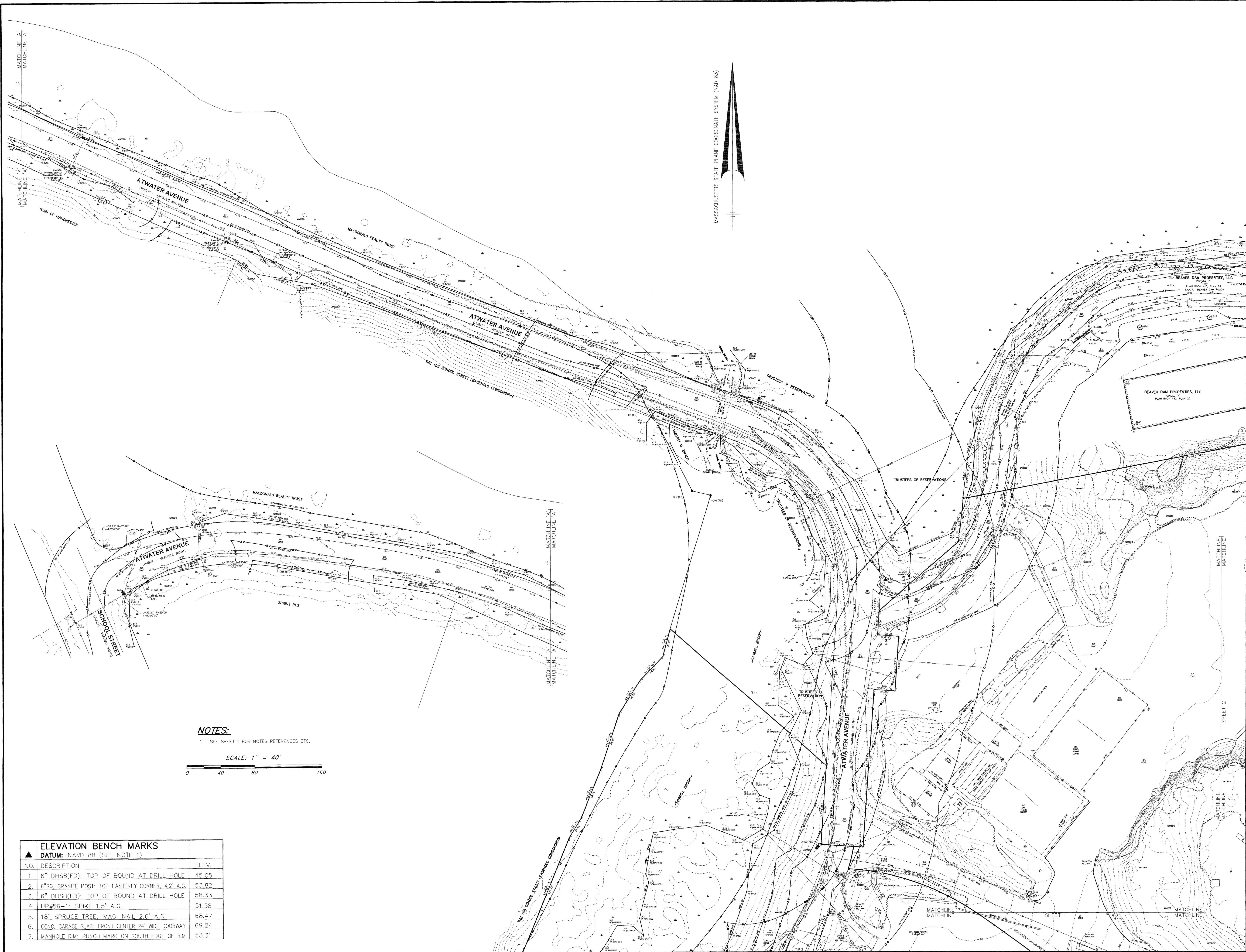


NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
1	DATE:	1/12/2024	DRAWN BY:	MMM
2	SCALE:	1"=40'	CHECK BY:	SRJ

EXISTING CONDITIONS PLAN
OF LAND
IN
MANCHESTER-BY-THE-SEA,
MA

PLOT DATE: Jan 12, 2024 10:53 am
PLOT BY: 2577Dec.dwg
LAYOUT: EC30x42 (3)
SHEET: 5 OF 24
PROJECT NO.: 25770

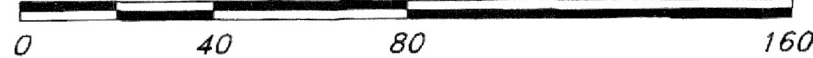
V3



NOTES:

1. SEE SHEET 1 FOR NOTES REFERENCES ETC.

SCALE: 1" = 40'



ELEVATION BENCH MARKS		
DATUM: NAVD 88 (SEE NOTE 1)		
NO.	DESCRIPTION	ELEV.
1.	6" DHSB(FD): TOP OF BOUND AT DRILL HOLE	45.05
2.	6" SQ. GRANITE POST: TOP EASTERLY CORNER, 4.2' A.G.	53.82
3.	6" DHSB(FD): TOP OF BOUND AT DRILL HOLE	58.33
4.	UP#56-1: SPIKE 1.5' A.G.	51.58
5.	18" SPRUCE TREE: MAG. NAIL 2.0' A.G.	68.47
6.	CONC. GARAGE SLAB: FRONT CENTER 24' WIDE DOORWAY	69.24
7.	MANHOLE RIM: PUNCH MARK ON SOUTH EDGE OF RIM	53.31

ATWATER AVENUE

Manchester-by-the-Sea,
Massachusetts

PREPARED FOR:

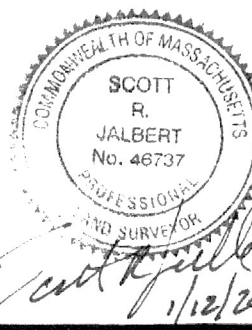
CELL SIGNALING TECHNOLOGIES, INC.

3 Trask Lane
Danvers, MA 01923

HANCOCK ASSOCIATES

Civil Engineers
Land Surveyors
Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM



NO.	BY	APP.	DATE	ISSUE/REVISION DESCRIPTION
1.	MM		1/12/24	DATE: 1/12/2024 DRAWN BY: MM SCALE: 1"=40' CHECK BY: SRJ

EXISTING CONDITIONS PLAN OF LAND IN MANCHESTER-BY-THE-SEA, MA

PLT DATE: Jan 12, 2024 10:52 am
PATH: P:\2024-25 Projects\25770 - Cell Signaling - Manchester\Surv\DWG\

DWG: 25770ec.dwg

LAYOUT: EC30x42 (4)

SHEET: 6 OF 24

PROJECT NO.: 25770

V4

EROSION CONTROL NOTES:

BEST MANAGEMENT PRACTICES (BMP) FOR EROSION AND SEDIMENTATION CONTROL ARE STAKED SILT FENCE, HYDRO SEEDING, AND PHASED DEVELOPMENT. MANY STORMWATER BMP TECHNOLOGIES (E.G., INFILTRATION TECHNOLOGIES) ARE NOT DESIGNED TO HANDLE THE HIGH CONCENTRATIONS OF SEDIMENTS TYPICALLY FOUND IN CONSTRUCTION RUNOFF AND MUST BE PROTECTED FROM CONSTRUCTION-RELATED SEDIMENT LOADINGS. CONSTRUCTION BMP'S MUST BE MAINTAINED.

IN DEVELOPING THE PROPOSED PROJECT CERTAIN MEASURES WILL BE IMPLEMENTED TO MINIMIZE IMPACTS EROSION AND SEDIMENTATION COULD HAVE ON SURROUNDING AREAS. THIS SECTION ADDRESSES ITEMS THAT INVOLVE PROPER CONSTRUCTION TECHNIQUES, CLOSE SURVEILLANCE OF WORKMANSHIP, AND IMMEDIATE RESPONSE TO EMERGENCY SITUATIONS. THE DEVELOPER MUST BE PREPARED TO PROVIDE WHATEVER REASONABLE MEASURES ARE NECESSARY TO PROTECT THE ENVIRONMENT DURING CONSTRUCTION AND TO STABILIZE ALL DISTURBED AREAS AS SOON AS CONSTRUCTION ENDS.

PRE-CONSTRUCTION

1. PRIOR TO CLEARING, EXCAVATION, CONSTRUCTION, OR ANY LAND DISTURBING ACTIVITY REQUIRING A PERMIT, THE APPLICANT, THE APPLICANT'S TECHNICAL REPRESENTATIVE, THE GENERAL CONTRACTOR, PERTINENT SUBCONTRACTORS, AND ANY PERSON WITH AUTHORITY TO MAKE CHANGES TO THE PROJECT, SHALL MEET WITH THE TOWN'S DESIGNATED AGENT AND TO REVIEW THE PERMITTED PLANS AND PROPOSED IMPLEMENTATION.

2. THE CONTRACTOR SHALL HAVE A STOCKPILE OF MATERIALS REQUIRED TO CONTROL EROSION ON-SITE TO BE USED TO SUPPLEMENT OR REPAIR EROSION CONTROL DEVICES. THESE MATERIALS SHALL INCLUDE, BUT ARE NOT LIMITED TO COMPOST FILTER SOCK AND CRUSHED STONE.

3. THE CONTRACTOR IS RESPONSIBLE FOR EROSION CONTROL ON SITE AND SHALL UTILIZE EROSION CONTROL MEASURES WHERE NEEDED, REGARDLESS OF WHETHER THE MEASURES ARE SPECIFIED ON THE PLAN OR IN THE DECISIONS.

PRELIMINARY SITE WORK

1. MATERIALS SUCH AS GRAVEL TO BE REMOVED SHOULD BE STOCKPILED, SEPARATING THE TOPSOIL FOR FUTURE USE ON THE SITE. EROSION CONTROL SHALL BE UTILIZED ALONG THE DOWN SLOPE SIDE OF THE PILES IF THE PILES ARE TO REMAIN FOR MORE THAN THREE WEEKS.

2. IF INTENSE RAINFALL IS ANTICIPATED, THE INSTALLATION OF SUPPLEMENTAL STRAW BALE DIKES, SILT FENCES, OR ARMORED DIKES SHALL BE CONSIDERED.

SITE INSPECTIONS DURING CONSTRUCTION

1. DURING CONSTRUCTION, THE PERMITTEE OR HIS/HER AGENT SHALL CONDUCT AND DOCUMENT INSPECTIONS OF ALL CONTROL MEASURES NO LESS THAN WEEKLY OR AS SPECIFIED IN THE PERMIT, AND PRIOR TO AND FOLLOWING ANTICIPATED STORM EVENTS. THE PURPOSE OF SUCH INSPECTIONS WILL BE TO DETERMINE THE OVERALL EFFECTIVENESS OF THE EROSION AND SEDIMENTATION CONTROL PLAN, AND THE NEED FOR MAINTENANCE OR ADDITIONAL CONTROL MEASURES.

LANDSCAPING/SEEDING

1. LANDSCAPING/SEEDING SHALL OCCUR AS SOON AS POSSIBLE AND NO LONGER THAN 30 DAYS UPON COMPLETION OF WORK IN A DISTURBED AREA TO PROVIDE PERMANENT STABILIZATION OF DISTURBED SURFACES.

2. IF THE SEASON OR ADVERSE WEATHER CONDITIONS DO NOT ALLOW THE ESTABLISHMENT OF VEGETATION, TEMPORARY MULCHING WITH STRAW, WOOD CHIPS WEIGHTED WITH SNOW FENCE OR BRANCHES, OR OTHER METHODS SHALL BE PROVIDED.

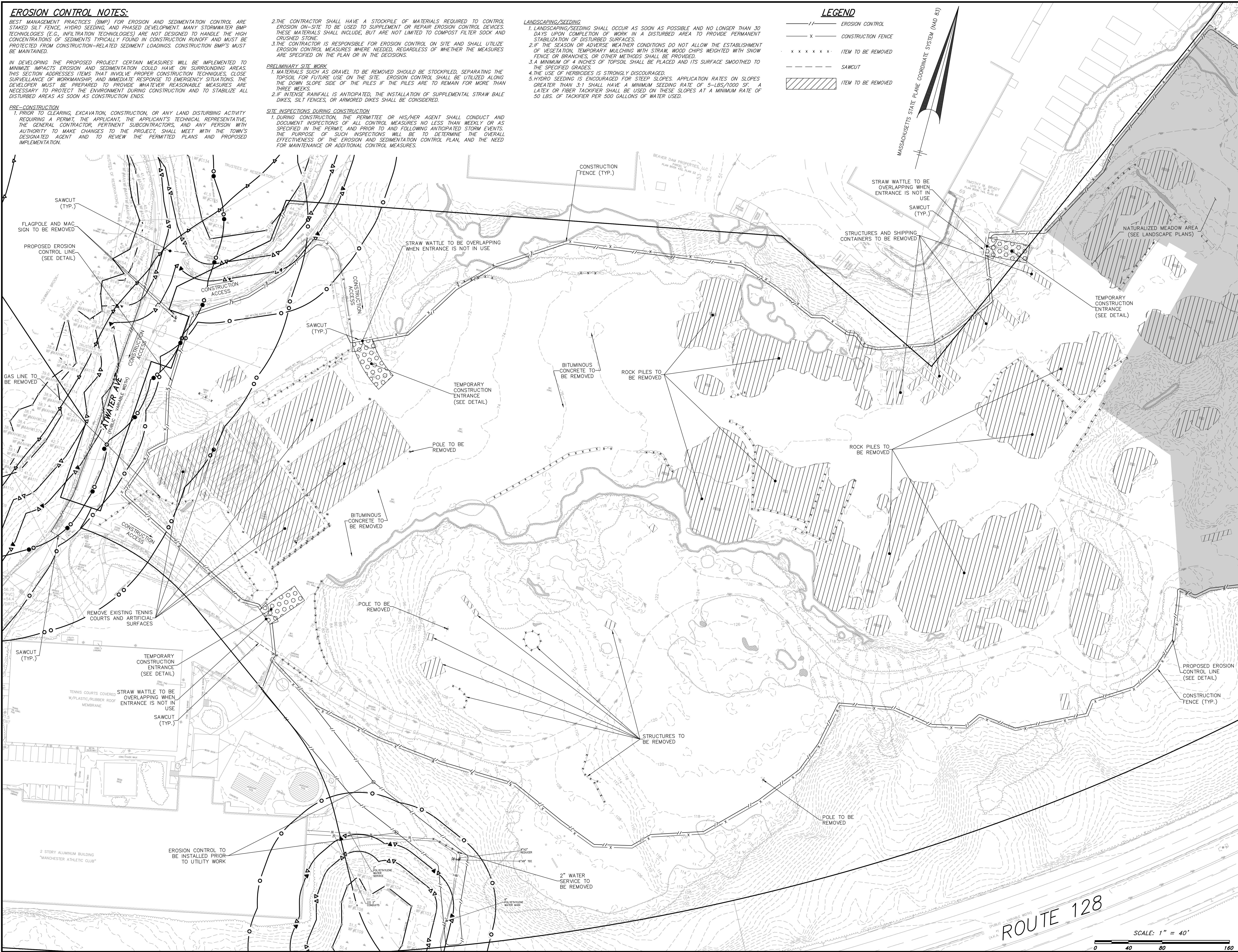
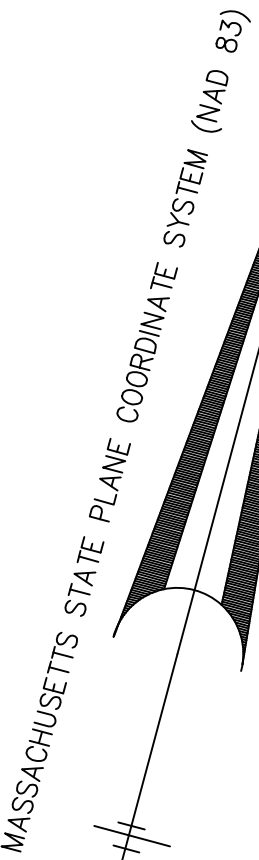
3. A MINIMUM OF 4 INCHES OF TOPSOIL SHALL BE PLACED AND ITS SURFACE SMOOTHED TO THE SPECIFIED GRADES.

4. THE USE OF HERBICIDES IS STRONGLY DISCOURAGED.

5. HYDRO SEEDING IS ENCOURAGED FOR STEEP SLOPES. APPLICATION RATES ON SLOPES GREATER THAN 3:1 SHALL HAVE A MINIMUM SEEDING RATE OF 5-LBS/1000 SF. A LATEX OR FIBER TACKIFIER SHALL BE USED ON THESE SLOPES AT A MINIMUM RATE OF 50 LBS. OF TACKIFIER PER 500 GALLONS OF WATER USED.

LEGEND

- //--- EROSION CONTROL
- x--- CONSTRUCTION FENCE
- x x x x x x x x ITEM TO BE REMOVED
- --- SAWCUT
- /// /// ITEM TO BE REMOVED



ATWATER AVENUE

Manchester-By-The-Sea, MA 01944

ASSESSORS

MAP
37

LOT
08

PREPARED FOR:

CELL SIGNALING
TECHNOLOGIES, INC.

3 TRASK LANE
DANVERS MA 01923

HANCOCK
ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM



1	TJS	WTC	5/20/24	TOWN COMMENTS
NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
DATE:	1/12/24	DESIGN BY:	RT	
SCALE:	1" = 40'	DRAWN BY:	CFB/TJS	
APPROV. BY:	WTC	CHECK BY:	GEW	

SITE PREPARATION
AND EROSION
CONTROL PLAN

PLOT DATE: May 20, 2024 1:04 pm
PATH: F:\Civil 3D Projects\25770 - Cell Signaling - Manchester\Eng\DWG\

DWG: 25770sec.dwg

LAYOUT: SEC(1)

SHEET: 7 OF 24

PROJECT NO.:

25770

C2.1



EROSION CONTROL NOTES:

BEST MANAGEMENT PRACTICES (BMP) FOR EROSION AND SEDIMENTATION CONTROL ARE STAKED SILT FENCE, HYDRO SEEDING, AND PHASED DEVELOPMENT. MANY STORMWATER BMP TECHNOLOGIES (E.G., INFILTRATION TECHNOLOGIES) ARE NOT DESIGNED TO HANDLE THE HIGH CONCENTRATIONS OF SEDIMENTS TYPICALLY FOUND IN CONSTRUCTION RUNOFF AND MUST BE PROTECTED FROM CONSTRUCTION-RELATED SEDIMENT LOADINGS. CONSTRUCTION BMP'S MUST BE MAINTAINED.

IN DEVELOPING THE PROPOSED PROJECT CERTAIN MEASURES WILL BE IMPLEMENTED TO MINIMIZE IMPACTS EROSION AND SEDIMENTATION COULD HAVE ON SURROUNDING AREAS. THIS SECTION ADDRESSES ITEMS THAT INVOLVE PROPER CONSTRUCTION TECHNIQUES, CLOSE SURVEILLANCE OF WORKMANSHIP, AND IMMEDIATE RESPONSE TO EMERGENCY SITUATIONS. THE DEVELOPER MUST BE PREPARED TO PROVIDE WHATEVER REASONABLE MEASURES ARE NECESSARY TO PROTECT THE ENVIRONMENT DURING CONSTRUCTION AND TO STABILIZE ALL DISTURBED AREAS AS SOON AS CONSTRUCTION ENDS.

PBE-CONSTRUCTION

1. PRIOR TO CLEARING, EXCAVATION, CONSTRUCTION, OR ANY LAND DISTURBING ACTIVITY REQUIRING A PERMIT, THE APPLICANT, THE APPLICANT'S TECHNICAL REPRESENTATIVE, THE GENERAL CONTRACTOR, PERTINENT SUBCONTRACTORS, AND ANY PERSON WITH AUTHORITY TO MAKE CHANGES TO THE PROJECT SHALL MEET WITH THE TOWN'S DESIGNATED AGENT AND TO REVIEW THE PERMITTED PLANS AND PROPOSED IMPLEMENTATION.

2. THE CONTRACTOR SHALL HAVE A STOCKPILE OF MATERIALS REQUIRED TO CONTROL EROSION ON-SITE TO BE USED TO SUPPLEMENT OR REPAIR EROSION CONTROL DEVICES. THESE MATERIALS SHALL INCLUDE, BUT ARE NOT LIMITED TO COMPOST FILTER SOCK AND CRUSHED STONE.

3. THE CONTRACTOR IS RESPONSIBLE FOR EROSION CONTROL ON SITE AND SHALL UTILIZE EROSION CONTROL MEASURES WHERE NEEDED, REGARDLESS OF WHETHER THE MEASURES ARE SPECIFIED ON THE PLAN OR IN THE DECISIONS.

PRELIMINARY SITE WORK

1. MATERIALS SUCH AS GRAVEL TO BE REMOVED SHOULD BE STOCKPILED, SEPARATING THE TOPSOIL FOR FUTURE USE ON THE SITE. EROSION CONTROL SHALL BE UTILIZED ALONG THE DOWN SLOPE SIDE OF THE PILES IF THE PILES ARE TO REMAIN FOR MORE THAN THREE WEEKS.

2. IF INTENSE RAINFALL IS ANTICIPATED, THE INSTALLATION OF SUPPLEMENTAL STRAW BALE DIKES, SILT FENCES, OR ARMORED DIKES SHALL BE CONSIDERED.

SITE INSPECTIONS DURING CONSTRUCTION

1. DURING CONSTRUCTION, THE PERMITTEE OR HIS/HER AGENT SHALL CONDUCT AND DOCUMENT INSPECTIONS OF ALL CONTROL MEASURES NO LESS THAN WEEKLY OR AS SPECIFIED IN THE PERMIT, AND PRIOR TO AND FOLLOWING ANTICIPATED STORM EVENTS. THE PURPOSE OF SUCH INSPECTIONS WILL BE TO DETERMINE THE OVERALL EFFECTIVENESS OF THE EROSION AND SEDIMENTATION CONTROL PLAN, AND THE NEED FOR MAINTENANCE OR ADDITIONAL CONTROL MEASURES.

LANDSCAPING/SEEDING

1. LANDSCAPING/SEEDING SHALL OCCUR AS SOON AS POSSIBLE AND NO LONGER THAN 30 DAYS UPON COMPLETION OF WORK IN A DISTURBED AREA TO PROVIDE PERMANENT STABILIZATION OF DISTURBED SURFACES.

2. IF THE SEASON OR ADVERSE WEATHER CONDITIONS DO NOT ALLOW THE ESTABLISHMENT OF VEGETATION, TEMPORARY MULCHING WITH STRAW, WOOD CHIPS WEIGHTED WITH SNOW FENCE OR BRANCHES, OR OTHER METHODS SHALL BE PROVIDED.

3. A MINIMUM OF 4 INCHES OF TOPSOIL SHALL BE PLACED AND ITS SURFACE SMOOTHED TO THE SPECIFIED GRADES.

4. THE USE OF HERBICIDES IS STRONGLY DISCOURAGED.

5. HYDRO SEEDING IS ENCOURAGED FOR STEEP SLOPES. APPLICATION RATES ON SLOPES GREATER THAN 3:1 SHALL HAVE A MINIMUM SEEDING RATE OF 5-LBS/1000 SF. A LATEX OR FIBER TACKIFIER SHALL BE USED ON THESE SLOPES AT A MINIMUM RATE OF 50 LBS. OF TACKIFIER PER 500 GALLONS OF WATER USED.

GENERAL NOTES:

1. CLEARING FOR UTILITY TRENCHING SHALL BE LIMITED TO THE MINIMUM AREA NECESSARY TO MANEUVER A BACKHOE OR OTHER CONSTRUCTION EQUIPMENT.

2. ROOTS SHOULD BE CUT CLEANLY RATHER THAN PULLED OR RIPPED OUT DURING UTILITY TRENCHING.

3. TUNNELING FOR UTILITIES INSTALLATION SHOULD BE UTILIZED WHEREVER FEASIBLE TO PROTECT ROOT SYSTEMS OF TREES.

CONSTRUCTION SEQUENCE

1. INSTALL ALL EROSION CONTROL MEASURES: 1 WEEK

2. COMMENCE CLEARING AND GRUBBING AND DEMOLITION: 2 WEEKS - 1 MONTH

3. ROUGH GRADE SITE: 2 WEEKS

4. INSTALL INFILTRATION BASINS: 2 WEEKS - 1 MONTH

5. INSTALL BUILDING FOUNDATION: 8-12 MONTHS

6. ROUGH GRADE ROADWAYS: 1 MONTH

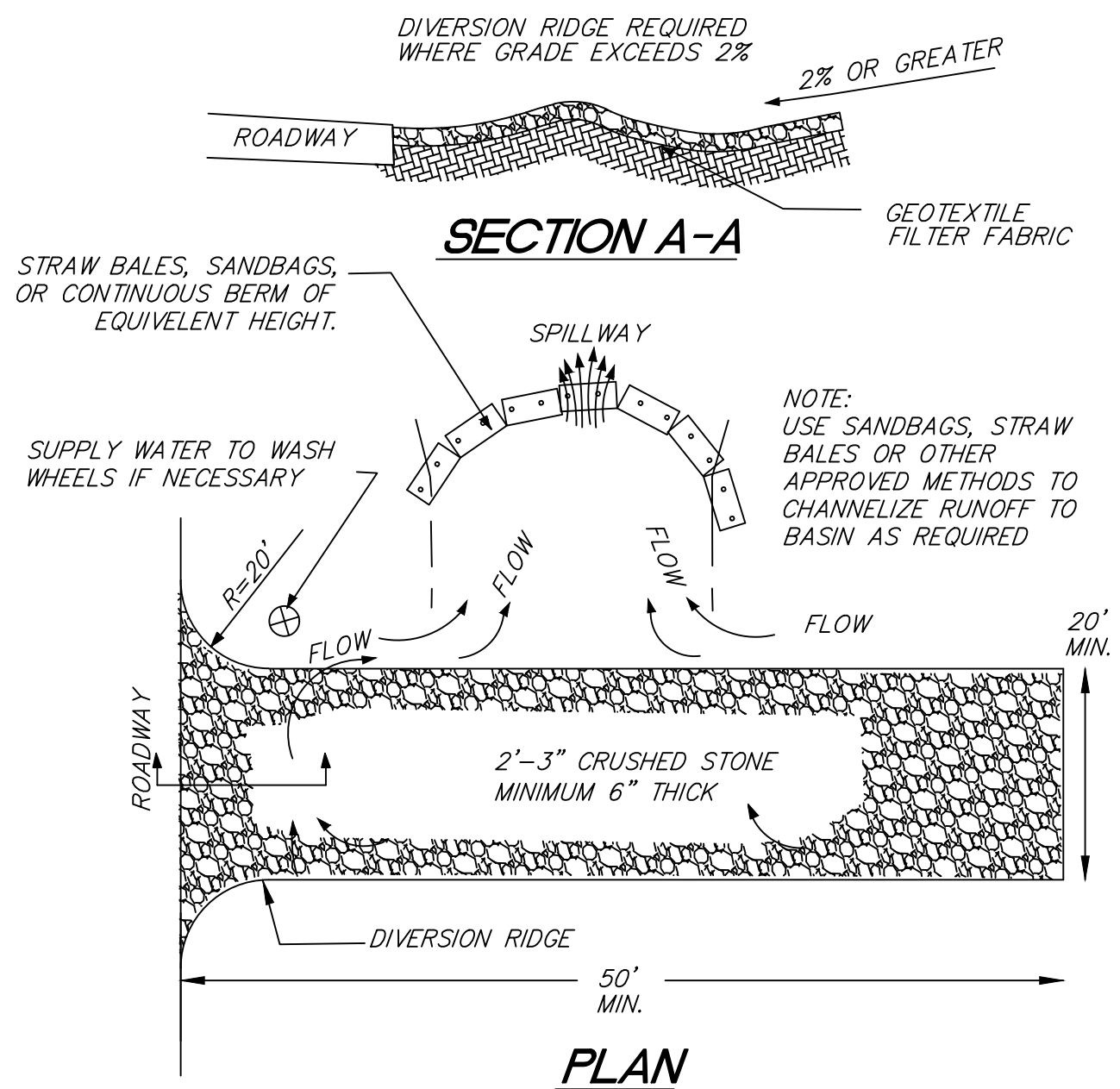
7. INSTALL UTILITIES: 2 WEEKS - 1 MONTH

8. INSTALL CATCH BASINS, MANHOLES, AND RAIN GARDENS: 2 WEEKS - 1 MONTH

9. FINISH PAVE ROAD, INSTALL SIDEWALKS AND OTHER SITE FEATURES: 1 MONTH

10. FINISH GRADE SITE: 1 WEEK

11. REMOVE EROSION CONTROL DEVICES: 1 WEEK



NOTES:

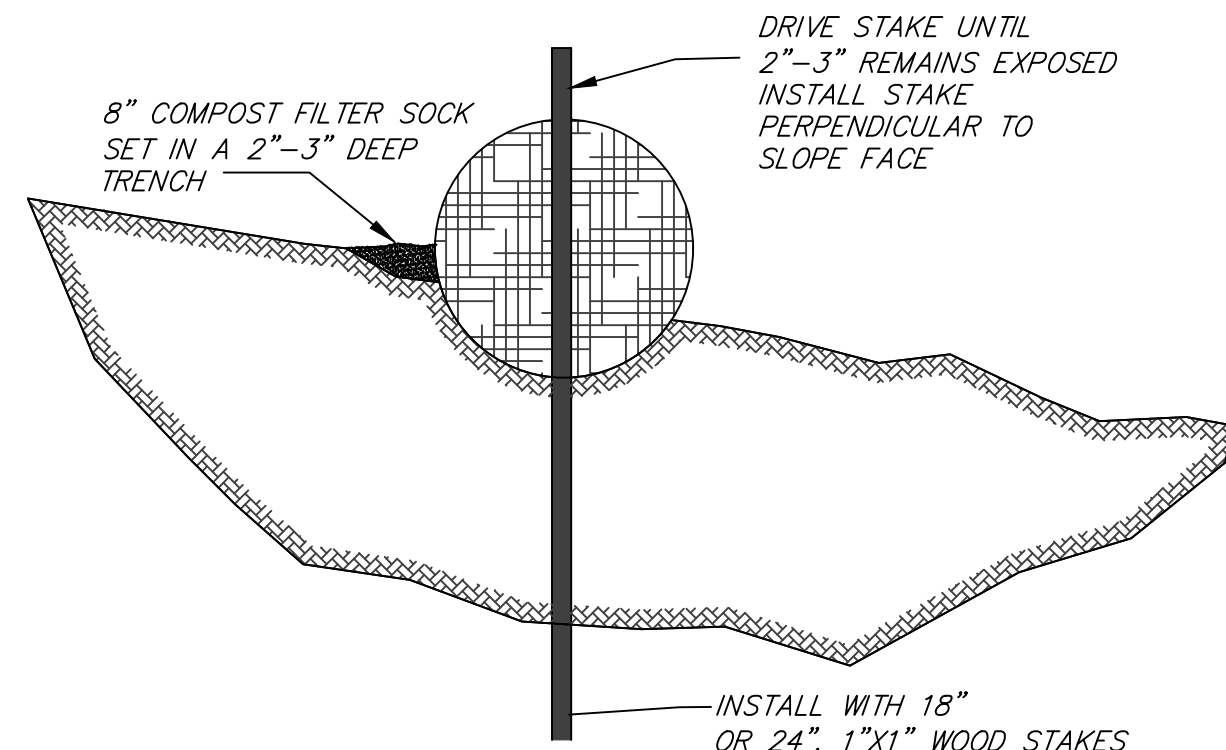
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

2. WHEN NECESSARY WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.

3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT

NOT TO SCALE

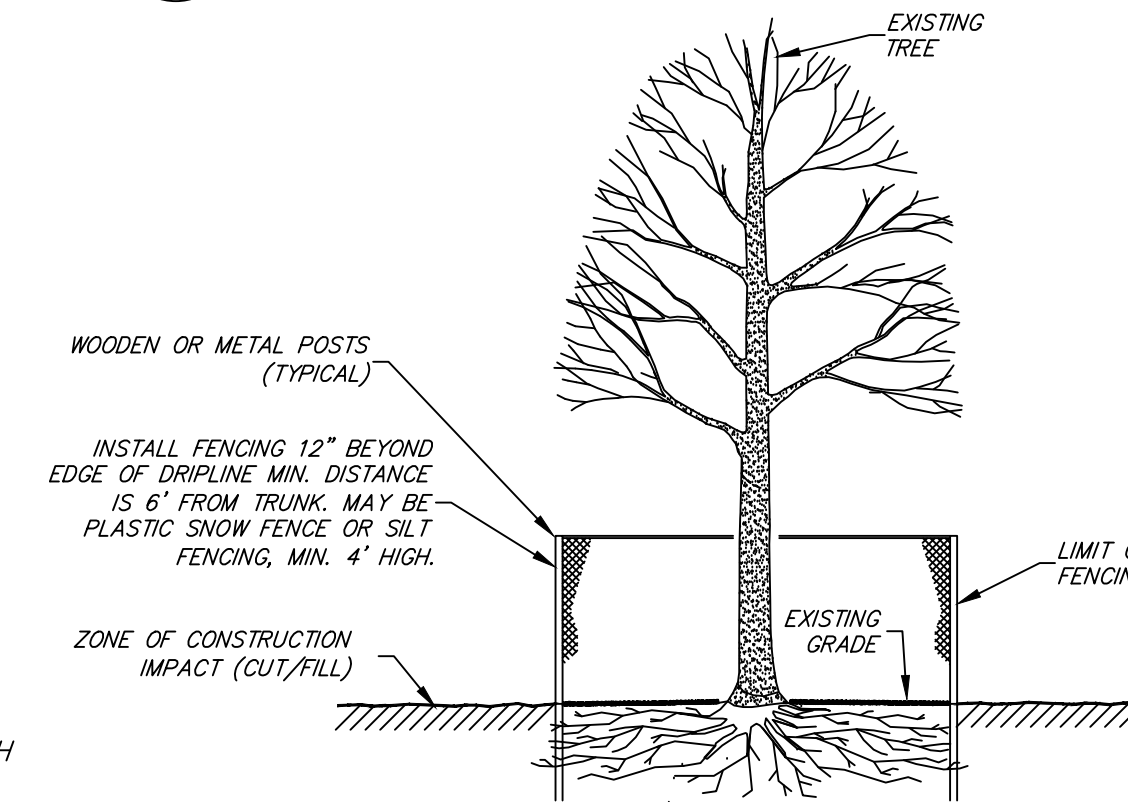


GENERAL NOTES:

1. REMOVE SEDIMENT ACCUMULATION FROM SEDIMENT SOCK WHEN IT REACHED HALF THE HEIGHT OF THE SEDIMENT SOCK (4")

EROSION CONTROL INSTALLATION

NOT TO SCALE



TEMP EXISTING TREE PROTECTION

NOT TO SCALE

SCALE: 1" = 40'

ATWATER AVENUE

Manchester-By-The-Sea, MA 01944

ASSESSORS

MAP
37

LOT
08

PREPARED FOR:

CELL SIGNALING
TECHNOLOGIES, INC.

3 TRASK LANE
DANVERS MA 01923

HANCOCK ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM



NO.	BY	APP.	DATE	ISSUE/REVISION DESCRIPTION
1	TJS	WTC	5/20/24	TOWN COMMENTS

DATE: 1/12/24 DESIGN BY: RT

SCALE: 1" = 40' DRAWN BY: CFB/TJS

APPROV. BY: WTC CHECK BY: GEW

SITE PREPARATION AND EROSION CONTROL PLAN

PLOT DATE: May 20, 2024 1:01 pm
PATH: F:\Civil 3D Projects\25770 - Cell Signaling - Manchester\Eng\DWG\

DWG: 25770sec.dwg

LAYOUT: SEC (2)

SHEET: 8 OF 24

PROJECT NO.:

25770

C2.2

PHASE 1 GARAGE PARKING SCHEDULE

TIER	STANDARD	ACCESSIBLE CAR	ACCESSIBLE VAN	EV STALL	EV ADA STALL	EV ADA VAN STALL	TOTAL
GROUND TIER	12	0	0	29	0	0	41
SECOND TIER	51	1	0	12	1	0	65
THIRD TIER	51	1	0	12	1	0	65
FOURTH TIER	51	1	0	14	0	0	66
FIFTH TIER	17	2	1	0	0	1	21
	182	5	1	67	2	1	258

EXTERIOR PARKING SCHEDULE

STANDARD	ACCESSIBLE CAR	ACCESSIBLE VAN	EV STALL	EV ADA STALL	EV ADA VAN STALL	TOTAL
39	2	2	2	0	0	45

ABBREVIATIONS

20'R TWENTY FOOT RADIUS
SGC SLOPED GRANITE CURB



ATWATER AVENUE

Manchester-By-The-Sea, MA 01944

ASSESSORS

MAP
37

LOT
08

PREPARED FOR

CELL SIGNALING
TECHNOLOGIES, INC.

3 TRASK LANE
DANVERS MA 01923

HANCOCK
ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM



1	TJS	MTC	5/20/24	TOWN COMMENTS
NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
DATE:	1/12/24	DESIGN BY:	RT	
SCALE:	1" = 40'	DRAWN BY:	CFB/TJS	
APPROV. BY:	MTC	CHECK BY:	CEW	

LAYOUT AND
MATERIALS PLAN

PLOT DATE: May 20, 2024 1:12 pm
PATH: F:\Civil 3D Projects\25770 - Cell Signaling - Manchester\Eng\DWG\

DWG: 25770m.dwg

LAYOUT: LAYOUT(1)

SHEET: 9 OF 24

PROJECT NO.:

25770

C3.1

NORTHERN CIRCUMFERENTIAL HIGHWAY
YANKEE DIVISION HIGHWAY
ROUTE 128

SCALE: 1" = 40'

0 40 80 160

PHASE 1 GARAGE PARKING SCHEDULE

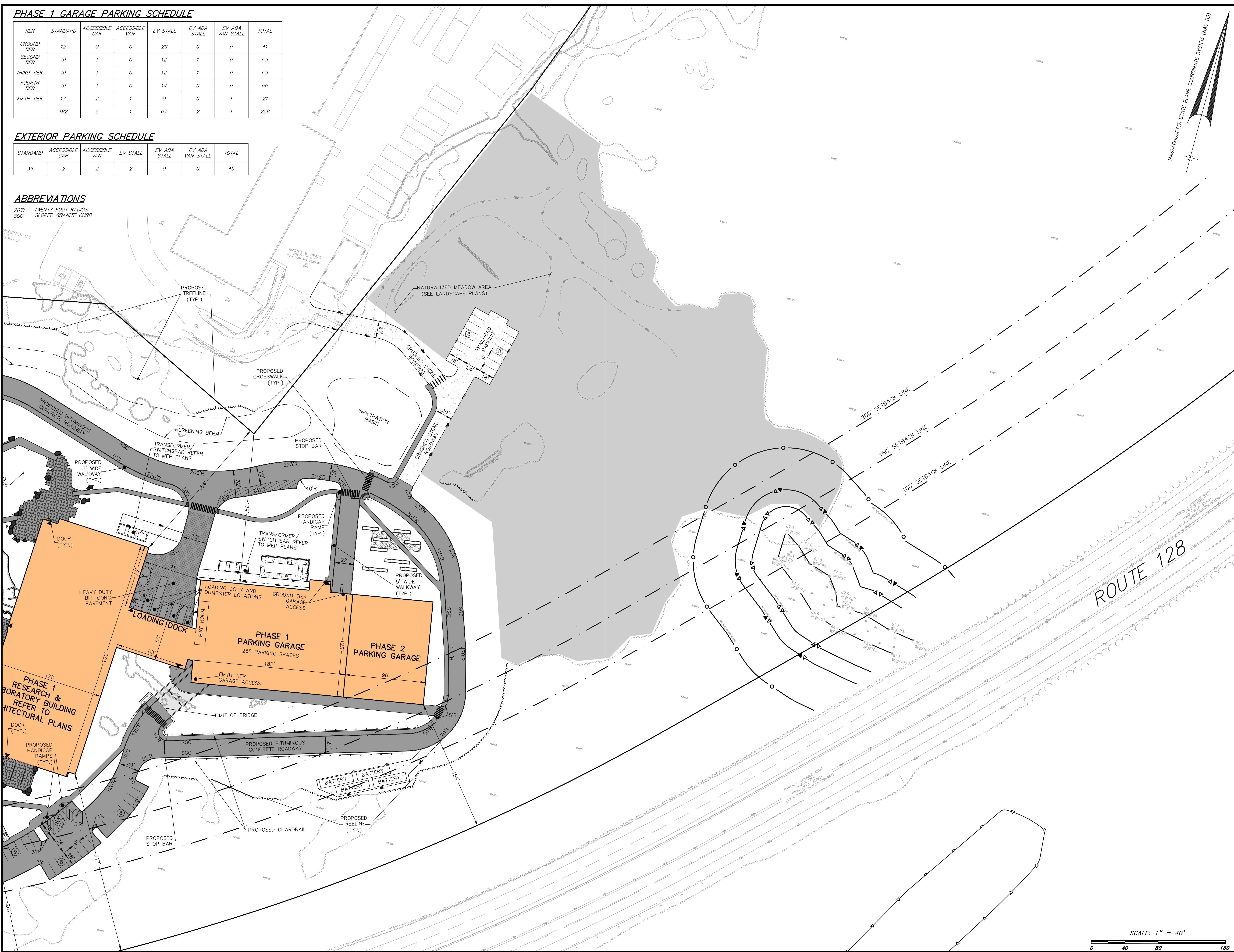
TIER	STANDARD	ACCESSIBLE CAR	ACCESSIBLE VAN	EV STALL	EV ADA STALL	EV ADA VAN STALL	TOTAL
GROUND TIER	12	0	0	29	0	0	41
SECOND TIER	51	1	0	12	1	0	65
THIRD TIER	51	1	0	12	1	0	65
FOURTH TIER	51	1	0	14	0	0	66
FIFTH TIER	17	2	1	0	0	1	21
	182	5	1	67	2	1	258

EXTERIOR PARKING SCHEDULE

STANDARD	ACCESSIBLE CAR	ACCESSIBLE VAN	EV STALL	EV ADA STALL	EV ADA VAN STALL	TOTAL
39	2	2	2	0	0	45

ABBREVIATIONS

20'R TWENTY FOOT RADIUS
SGC SLOPED GRANITE CURB



ATWATER AVENUE

Manchester-By-The-Sea, MA 01944

ASSESSORS

MAP
37

LOT
08

PREPARED FOR

CELL SIGNALING TECHNOLOGIES, INC.

3 TRASK LANE
DANVERS MA 01923

HANCOCK ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM



1	TJS	WTC	5/20/24	TOWN COMMENTS
NO.	BY	APP.	DATE	ISSUE/REVISION DESCRIPTION
DATE:	1/12/24	DESIGN BY:	RT	
SCALE:	1" = 40'	DRAWN BY:	CFB/TJS	
APPROV. BY:	WTC	CHECK BY:	CEW	

LAYOUT AND MATERIALS PLAN

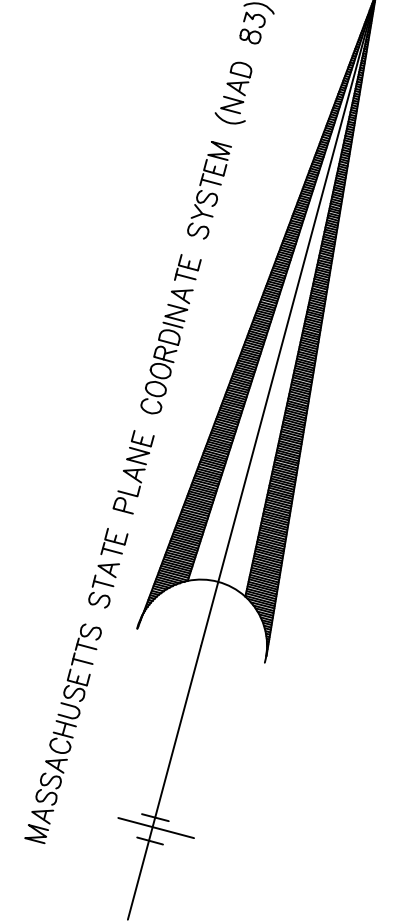
PLOT DATE: May 20, 2024 1:16 pm
PATH: F:\Civil 3D Projects\25770 - Cell Signaling - Manchester\Eng\DWG
DWG: 25770m.dwg
LAYOUT: LAYOUT(2)
SHEET: 10 OF 24
PROJECT NO.: 25770

C3.2



ABBREVIATIONS

CB	CATCH BASIN
DMH	DRAIN MANHOLE
TD	TRENCH DRAINS
OCS	OUTLET CONTROL STRUCTURE
FES	FLARED END STRUCTURE
HDPE	HIGH DENSITY POLYETHYLENE
L	LENGTH
S	SLOPE
HP	HIGH POINT
2:1	2(HORIZONTAL):1(VERTICAL) SLOPE



ATWATER AVENUE

Manchester-By-The-Sea, MA 01944

ASSESSORS	
MAP	LOT
37	08

PREPARED FOR:

CELL SIGNALING TECHNOLOGIES, INC.

3 TRASK LANE
DANVERS MA 01923

HANCOCK ASSOCIATES

Civil Engineers
Land Surveyors
Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM

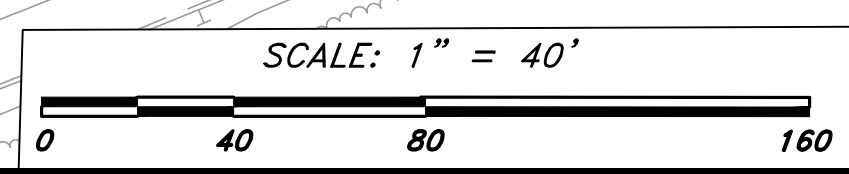


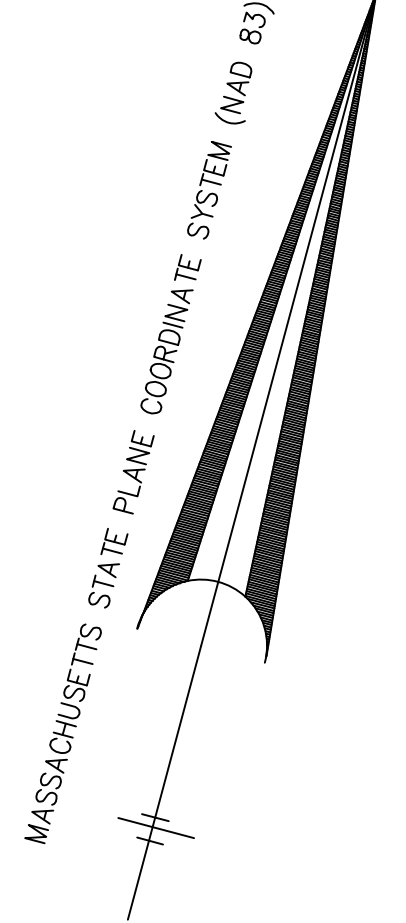
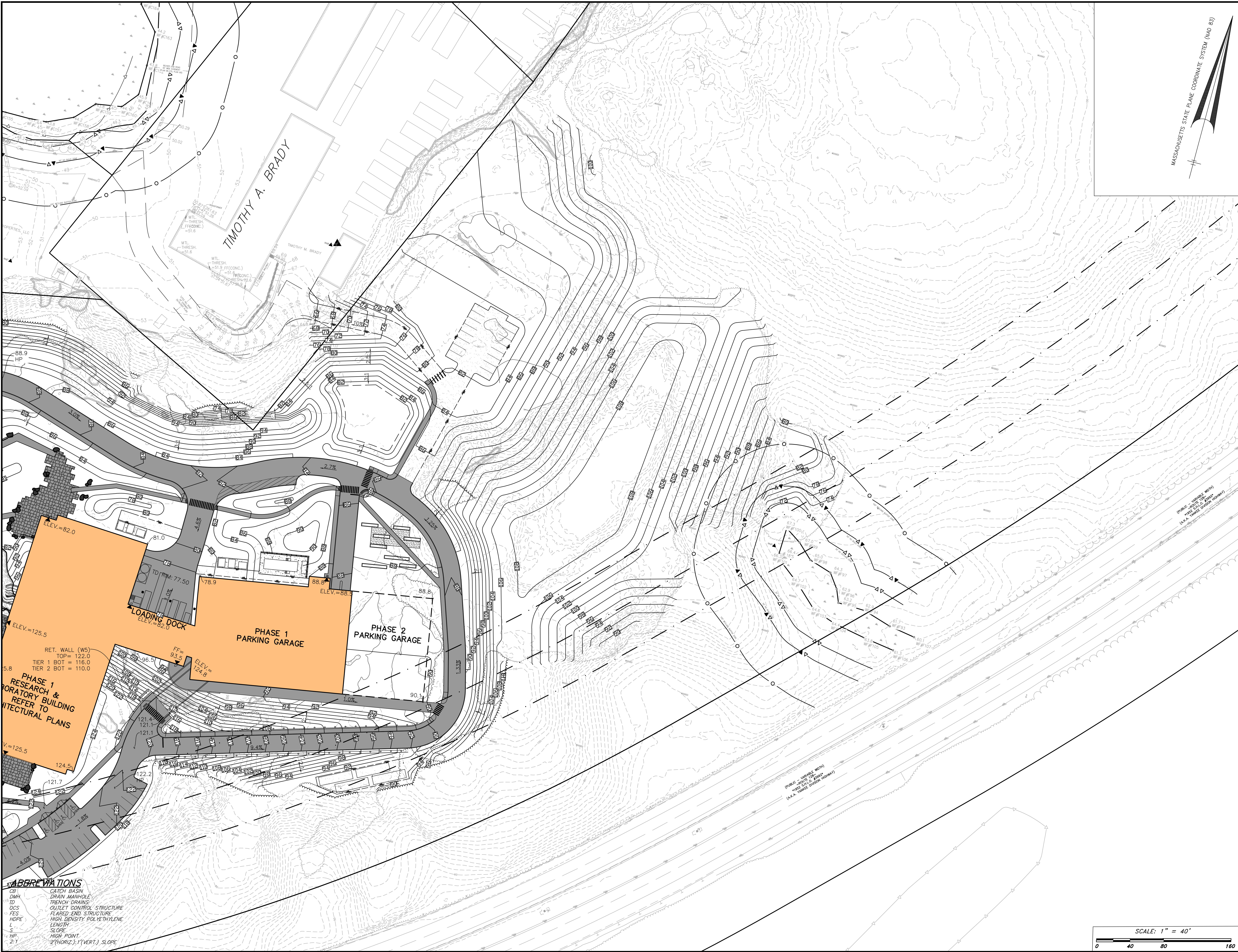
1	TJS	MTG	5/20/24	TOWN COMMENTS
NO.	BY	APP.	DATE	ISSUE/REVISION DESCRIPTION
DATE:	1/12/24	DESIGN BY:	RT	
SCALE:	1" = 40'	DRAWN BY:	CFB/TJS	
APPROV. BY:	MTG	CHECK BY:	CEW	

PHASE 1 GRADING PLAN

PLOT DATE: May 20, 2024 12:57 pm
PATH: F:\Low 3D Projects\25770 - Cell Signaling - Manchester\Eng\DWG\DWG: 25770grade PH.dwg
LAYOUT: GD (1)
SHEET: 11 OF 24
PROJECT NO.: 25770

C4.1





ATWATER AVENUE

Manchester-By-The-Sea, MA 01944

ASSESSORS	
MAP 37	LOT 08

PREPARED FOR:

CELL SIGNALING
TECHNOLOGIES, INC.

3 TRASK LANE
DANVERS MA 01923

HANCOCK ASSOCIATES

Civil Engineers
Land Surveyors
Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM



5/20/24

1	TJS	MTG	5/20/24	TOWN COMMENTS
NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
DATE:	1/12/24	DESIGN BY:	RT	
SCALE:	1" = 40'	DRAWN BY:	CFB/TJS	
APPROVED BY:	MTG	CHECK BY:	GEW	

PHASE 1 GRADING PLAN

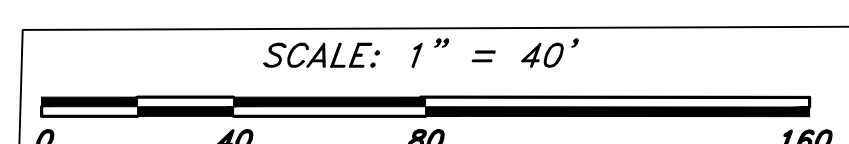
PLOT DATE: May 20, 2024 1:31 pm
PATH: F:\Civil 3D Projects\25770 - Cell Signaling - Manchester\Eng\DWG\

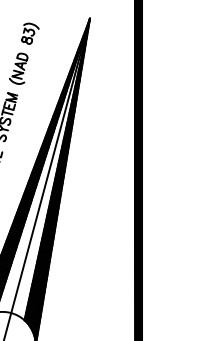
DWG: 25770grade PH1.dwg
LAYOUT: GD (2)

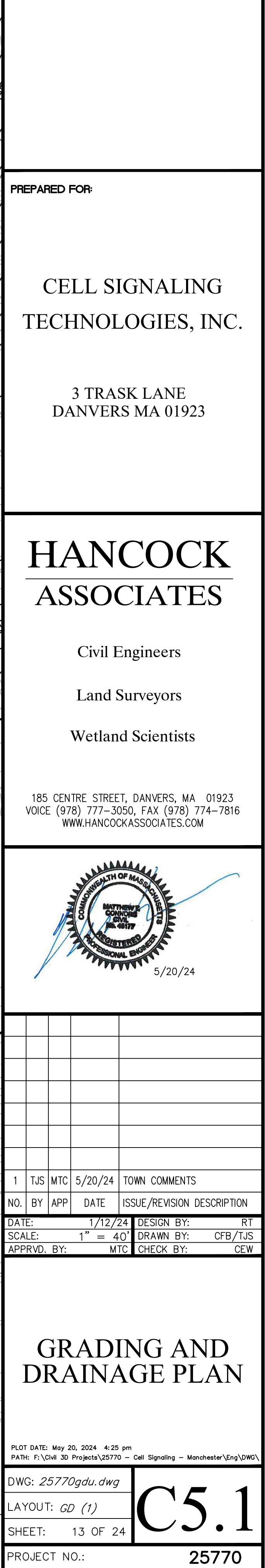
SHEET: 12 OF 24
PROJECT NO.: 25770

C4.2

- ABBREVIATIONS**
- CB CATCH BASIN
 - DMH DRAIN MANHOLE
 - TD TRENCH DRAIN
 - OCS OUTLET CONTROL STRUCTURE
 - FES FLARED END STRUCTURE
 - HDPE HIGH DENSITY POLYETHYLENE
 - LEN LENGTH
 - SLOPE
 - HP HIGH POINT
 - 2:1 2'(HORIZ.):1'(VERT.) SLOPE



	ATWATER AVENUE	
	Manchester-By-The-Sea, MA 01944	
	ASSESSORS	<u>MAP</u> 37



ATWATER AVENUE

Manchester-By-The-Sea, MA 01944

ASSESSORS

MAP 37 LOT 08

PREPARED FOR:

CELL SIGNALING TECHNOLOGIES, INC.

3 TRASK LANE DANVERS MA 01923

HANCOCK ASSOCIATES

Civil Engineers
Land Surveyors
Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM



1	TJS	MTG	5/20/24	TOWN COMMENTS
NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
DATE:			1/12/24	DESIGN BY: RT
SCALE:			1" = 40'	DRAWN BY: CFB/TJS
APPROV. BY:		MTG	CHECK BY:	CEW

ROAD PROFILE PLAN

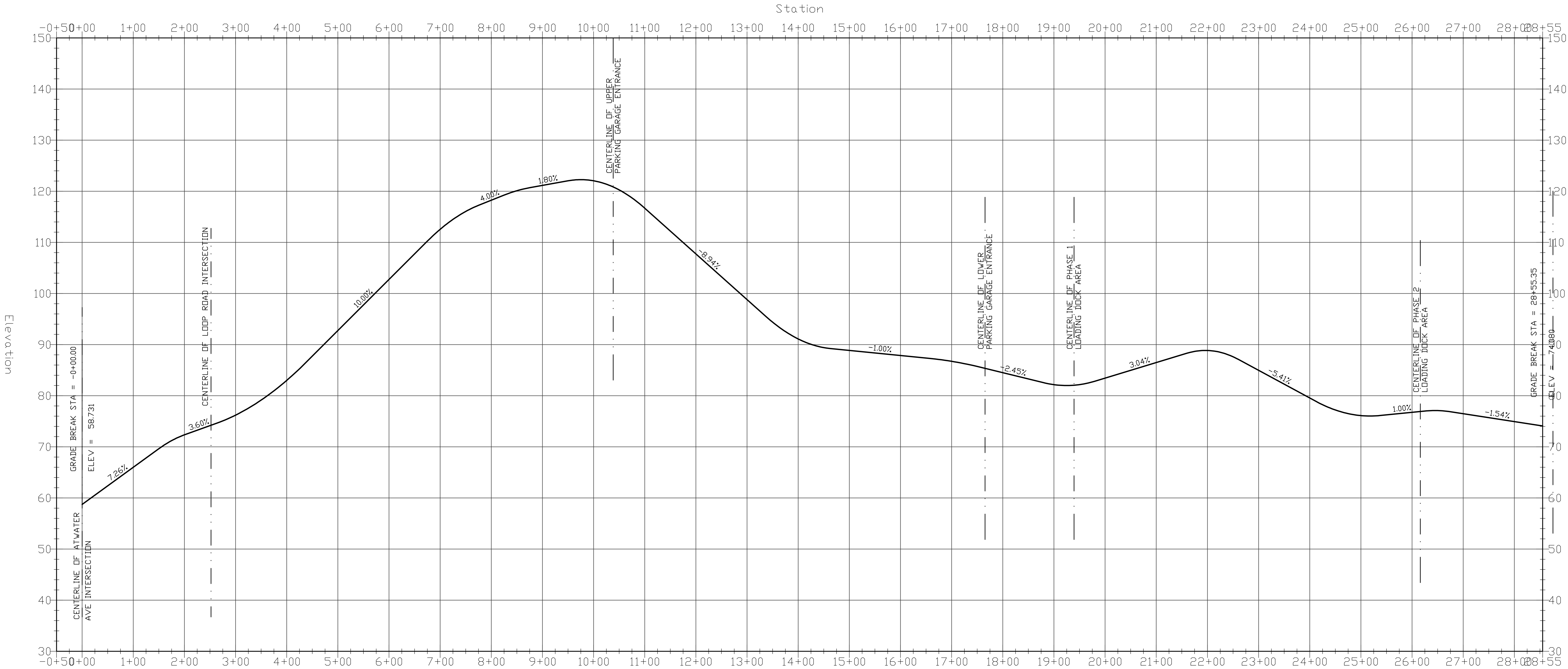
PLOT DATE: May 20, 2024 4:30 pm
PATH: F:\DWG 3D Projects\25770 - Cell Signaling - Manchester\Eng\DWG\

DWG: 25770gdu.dwg
LAYOUT: RP (1)
SHEET: 14 OF 24

C6.1

PROJECT NO.: 25770

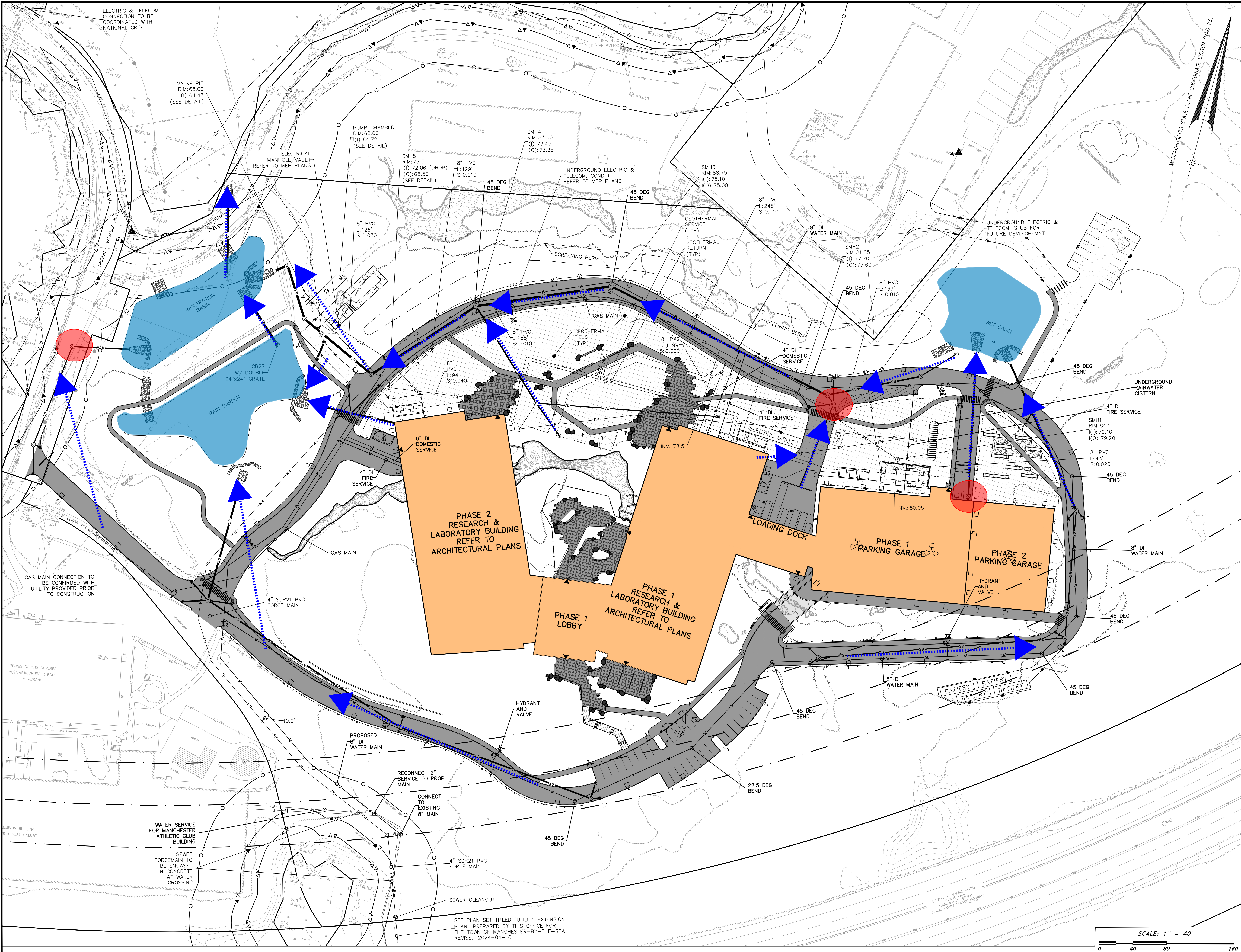
Loop Road PROFILE



VERTICAL SCALE: 1"=10'
HORIZONTAL SCALE: 1"=100'

SCALE: 1" = 100'





ATWATER AVENUE

Manchester-By-The-Sea, MA 01944

ASSESSORS	
MAP 37	LOT 08

CELL SIGNALING TECHNOLOGIES, INC.

3 TRASK LANE
DANVERS MA 01923

HANCOCK ASSOCIATES

Civil Engineers
Land Surveyors
Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM

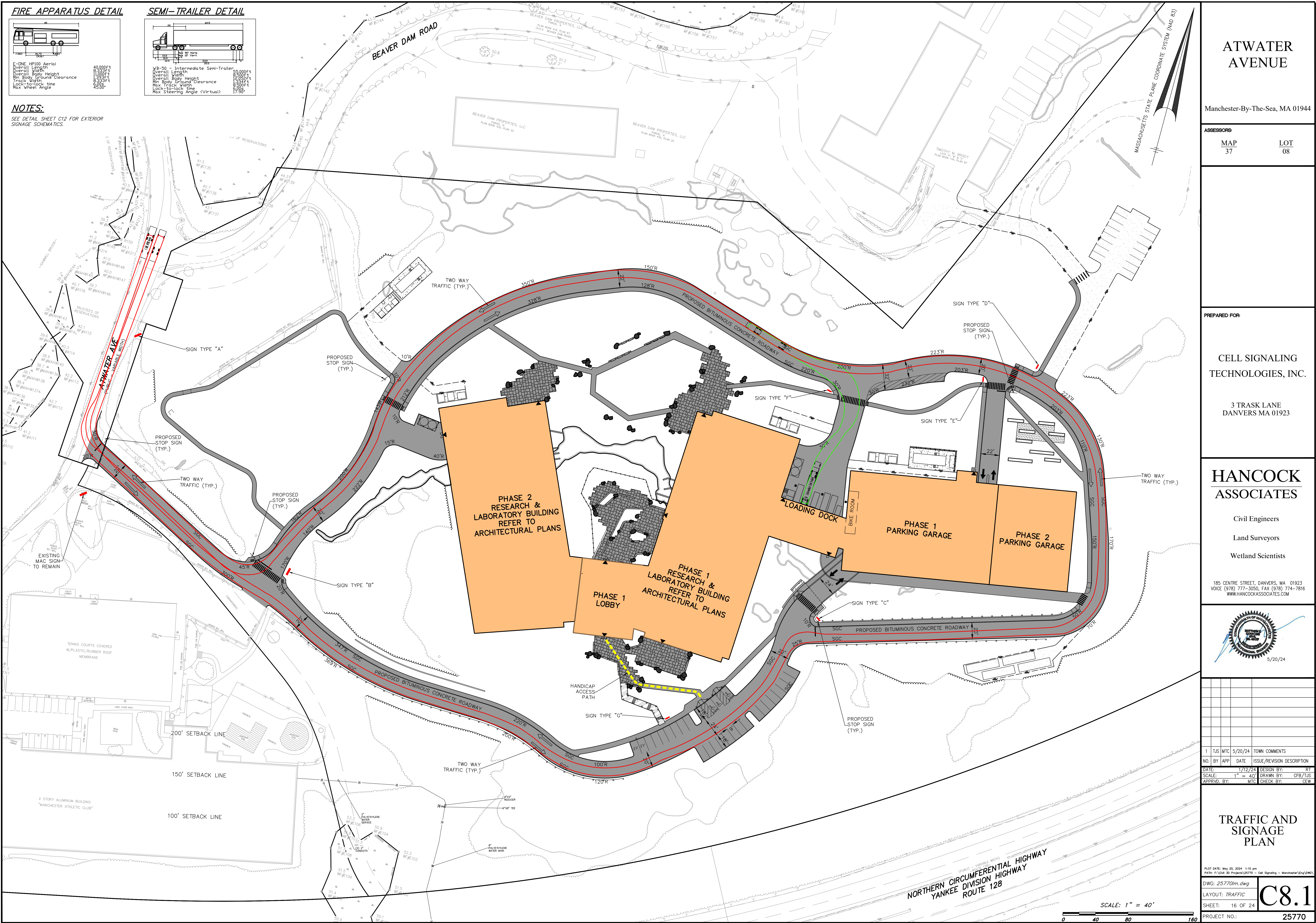


1	TJS	WTC	5/20/24	TOWN COMMENTS
NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
DATE:	1/12/24	DESIGN BY:	RT	
SCALE:	1" = 40'	DRAWN BY:	CFB/TJS	
APPROV. BY:	WTC	CHECK BY:	CEW	

UTILITY PLAN

PLOT DATE: May 20, 2024 4:27 pm
PATH: F:\DWG 3D Projects\25770 - Cell Signaling - Manchester\Eng\DWG\DWG: 25770gdu.dwg
LAYOUT: UTL (1)
SHEET: 15 OF 24
PROJECT NO.: 25770

C7.1



FIRE APPARATUS DETAIL

5-LINE HP100 Aerial
Overall Length 40,000ft
Overall Width 10,000ft
Min Body Height 8,500ft
Min Body Ground Clearance 8,500ft
Track Width 8,500ft
Lock-to-lock time 45.00s
Max Wheel Angle

SEMI-TRAILER DETAIL

V8-50 - Intermediate Semi-Trailer
Overall Length 65,000ft
Overall Width 10,000ft
Min Body Height 8,500ft
Min Body Ground Clearance 8,500ft
Lock-to-lock time 45.00s
Max Steering Angle (Virtual) 17.90

NOTES:
SEE DETAIL SHEET C12 FOR EXTERIOR SIGNAGE SCHEMATICS.

ATWATER AVENUE

Manchester-By-The-Sea, MA 01944

ASSESSORS	
MAP 37	LOT 08

PREPARED FOR:

CELL SIGNALING TECHNOLOGIES, INC.

3 TRASK LANE
DANVERS MA 01923

HANCOCK ASSOCIATES

Civil Engineers
Land Surveyors
Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM



1	TJS	MTG	5/20/24	TOWN COMMENTS
NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
DATE:	1/12/24	DESIGN BY:	RT	
SCALE:	1" = 40'	DRAWN BY:	CFB/TJS	
APPROV. BY:	MTG	CHECK BY:	GEW	

TRAFFIC AND SIGNAGE PLAN

PLOT DATE: May 20, 2024 1:10 pm
PATH: F:\DWG 3D Projects\25770 - Cell Signaling - Manchester\Eng\DWG\

DWG: 25770m.dwg
LAYOUT: TRAFFIC
SHEET: 16 OF 24

PROJECT NO.: 25770

C8.1

SOIL TESTING DATA

DONE BY GZA GEOENVIRONMENTAL, INC.
DATE: 02/02/2022
EVALUATOR: R. BARONOWSKI

TP-1
0-11" FILL GRAVEL/ASPHALT MILLINGS
11-30" FILL S CONSTRUCTION FILL
LEDGE @ 30", NO REDOX, NO STANDING

TP-2
0-8" FILL GRAVEL/ASPHALT MILLINGS
REFUSAL @ 6" (FROZEN SOIL), NO REDOX, NO STANDING

TP-3
0-8" FILL GRAVEL/ASPHALT MILLINGS
8-33" FILL S CONSTRUCTION FILL
33-53" FILL BLAST ROCK
LEDGE @ 53", NO REDOX, NO STANDING

TP-4
0-3" FILL S CONSTRUCTION FILL
3-20" FILL GRAVEL/ASPHALT MILLINGS
REFUSAL @ 20" (FROZEN SOIL), NO REDOX, NO STANDING

TP-5
0-3" FILL GRAVEL/ASPHALT MILLINGS
3-54" FILL BLAST ROCK
NO REFUSAL, REDOX @ 42", WEeping @ 47"

TP-6
0-2" FILL GRAVEL/ASPHALT MILLINGS
2-22" FILL CONSTRUCTION FILL, COBBLE, & DEBRIS
22-46" FILL S CONSTRUCTION FILL
LEDGE @ 46", NO REDOX, NO STANDING

TP-7
0-22" FILL CONSTRUCTION FILL, COBBLE, & DEBRIS
REFUSAL @ 22" (FROZEN SOIL), NO REDOX, NO STANDING

TP-8
0-13" FILL CONSTRUCTION FILL, COBBLE, & DEBRIS
REFUSAL @ 13" (FROZEN SOIL), NO REDOX, NO STANDING

TP-9
0-1" FILL SL TOP SOIL
1-105" C LS GLACIAL TILL, COBBLES, GRAVEL
LEDGE @ 105", NO REDOX, NO STANDING

TP-10
0-16" Ap SL TOP SOIL
16-36" Bw LS GRAVEL (10-20%)
36-101" C LS GLACIAL TILL, COBBLES (10-20%), GRAVEL(10-20%)
LEDGE @ 105", NO REDOX, NO STANDING

TP-11
0-13" FILL CONSTRUCTION FILL & DEBRIS
REFUSAL @ 13" (FROZEN SOIL), NO REDOX, NO STANDING

TP-12
0-5" FILL SL TOP SOIL
5-19" FILL LS GRAVEL (20-35%)
19-38" FILL LS COBBLES (10-20%), GRAVEL(10-20%)
38-144" Bw S GRAVEL(10-20%)
44-140" C S GLACIAL TILL, COBBLES (10-20%)
NO REFUSAL, NO REDOX, NO STANDING

TP-13
0-4" FILL SL TOP SOIL
4-92" FILL S COBBLES (0-10%), GRAVEL (10-20%)
92-109" Ap SL BURIED ORGANICS, PEAT, GRAVEL(0-10%)
109-142" C SL GRAVEL(0-10%), CLAY AND SILT
NO REFUSAL, NO STANDING

TP-14
0-16" FILL SL TOP SOIL
16-32" FILL LS GRAVEL (20-35%)
32-53" FILL LS COBBLES (10-20%), GRAVEL(10-20%)
53-144" Bw S GRAVEL(10-20%)
44-140" C S GLACIAL TILL, COBBLES (10-20%)
NO REFUSAL, NO STANDING

SOIL TESTING DATA, CONT.

DONE BY GZA GEOENVIRONMENTAL, INC.
DATE: 03/14/2022
EVALUATOR: R. BARONOWSKI

TP-101
0-11" FILL GRAVEL/ASPHALT MILLINGS
11-18" FILL S CONSTRUCTION FILL, COBBLES (10-20%)
LEDGE @ 18", NO REDOX, NO STANDING

TP-102
0-11" FILL GRAVEL/ASPHALT MILLINGS
11-63" FILL S CONSTRUCTION FILL, COBBLES (10-20%) GRAVEL (20-35%)
REFUSAL @ 42" (BOULDERS), NO REDOX, WEeping @ 22"

TP-103
0-11" FILL GRAVEL/ASPHALT MILLINGS
11-63" FILL S CONSTRUCTION FILL, COBBLES (10-20%), GRAVEL (20-35%)
LEDGE @ 53", NO REDOX, NO STANDING

TP-104
0-11" FILL GRAVEL/ASPHALT MILLINGS
11-48" FILL CONSTRUCTION FILL, COBBLES (10-20%) GRAVEL (20-35%)
REFUSAL @ 48" (BOULDERS), NO REDOX, NO STANDING

TP-105
0-30" FILL CONSTRUCTION FILL AND DEBRIS, GRAVEL (20-35%)
30-72" FILL BLAST ROCK
REFUSAL @ 72" (BOULDERS), NO REDOX, NO WEeping

TP-106
0-6" FILL GRAVEL/ASPHALT MILLINGS
6-52" FILL BLAST ROCK
REFUSAL @ 52" (BOULDERS), NO REDOX, NO STANDING

TP-107
0-7" FILL GRAVEL/ASPHALT MILLINGS
7-55" FILL S CONSTRUCTION FILL, COBBLES (10-20%), GRAVEL (20-35%)
REFUSAL @ 55" (BOULDERS), NO REDOX, NO STANDING

TP-108
0-74" FILL CONSTRUCTION FILL, COBBLE, & DEBRIS
74-144" C S GLACIAL TILL, GRAVEL (10-20%)
NO REFUSAL, NO REDOX, NO STANDING

TP-109
0-162" FILL S CONSTRUCTION FILL & DEBRIS, COBBLE (0-10%), GRAVEL (10-20%)
NO REFUSAL, NO REDOX, NO STANDING

TP-110
0-58" FILL CONSTRUCTION FILL, COBBLE, & DEBRIS
58-96" FILL S GRAVEL (10-10%)
96-138" FILL S GRAVEL (10-10%)
NO REFUSAL, NO REDOX, NO STANDING

TP-111
0-11" FILL GRAVEL/ASPHALT MILLINGS
11-45" FILL S COBBLE (10-10%), GRAVEL (10-20%)
LEDGE @ 45", NO REDOX, NO STANDING

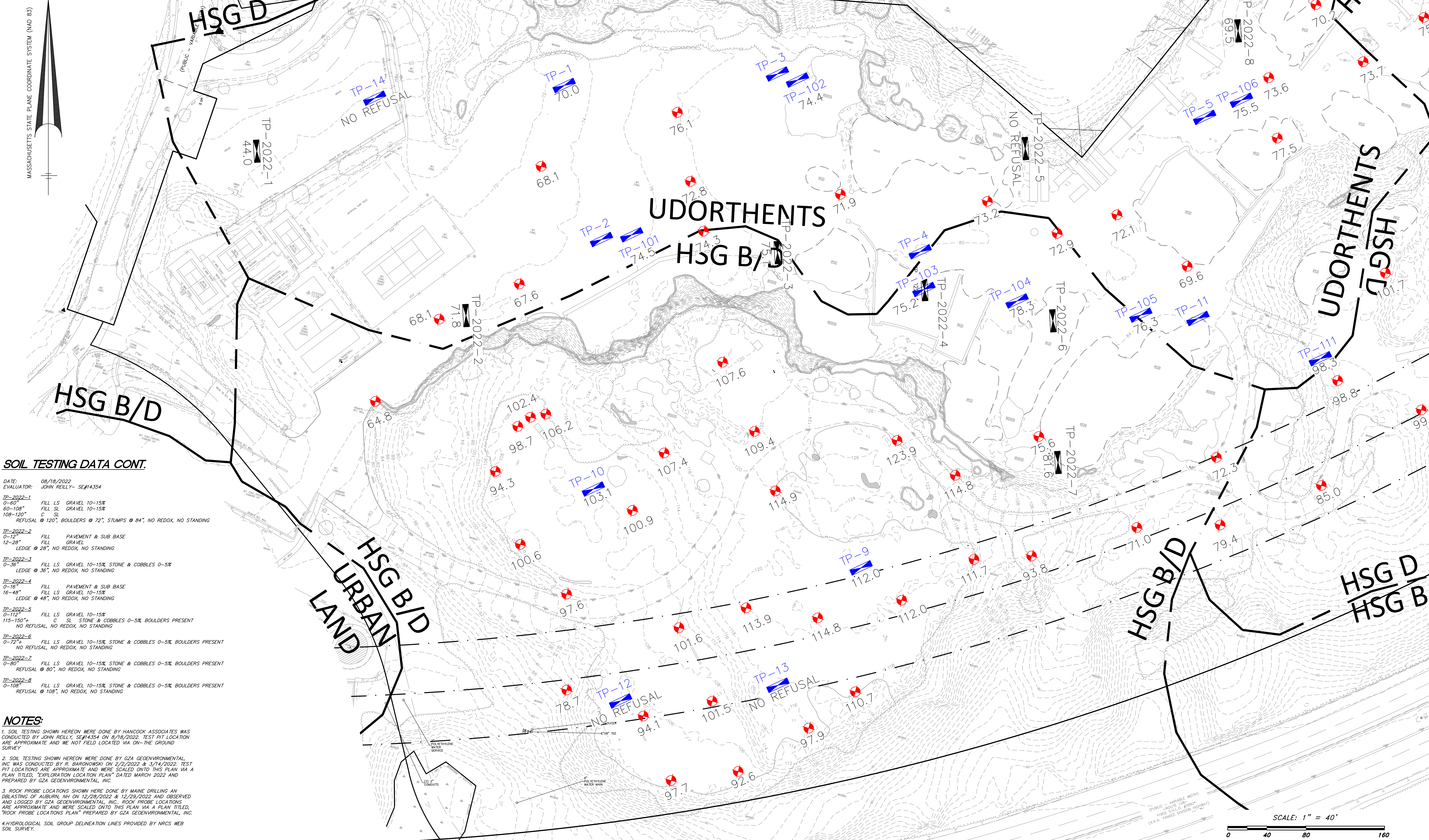
LEGEND

BORING LOCATIONS WITH DEPTH TO LEDGE

TP-2 113.2
TP-2022-2 113.2

DEEP HOLE OBSERVATIONS CONDUCTED BY GZA GEOENVIRONMENTAL INC WITH DEPTH TO LEDGE/REFUSAL

DEEP HOLE OBSERVATIONS CONDUCTED BY HANCOCK ASSOCIATES WITH DEPTH TO LEDGE/REFUSAL



SOIL TESTING DATA CONT.

DATE: 08/19/2022
EVALUATOR: JOHN REILLY- SE#14354

TP-2022-1
0-60" FILL LS GRAVEL 10-15%
60-108" FILL LS GRAVEL 10-15%
108-120" C SL
REFUSAL @ 120", BOULDERS @ 72", STUMPS @ 84", NO REDOX, NO STANDING

TP-2022-2
0-12" FILL PAVEMENT & SUB BASE
12-28" FILL GRAVEL
LEDGE @ 28", NO REDOX, NO STANDING

TP-2022-3
0-36" FILL LS GRAVEL 10-15% STONE & COBBLES 0-5%
LEDGE @ 36", NO REDOX, NO STANDING

TP-2022-4
0-16" FILL PAVEMENT & SUB BASE
16-48" FILL LS GRAVEL 10-15%
LEDGE @ 48", NO REDOX, NO STANDING

TP-2022-5
0-112" FILL LS GRAVEL 10-15%
115-180" C SL STONE & COBBLES 0-5% BOULDERS PRESENT
NO REFUSAL, NO REDOX, NO STANDING

TP-2022-6
0-72" FILL LS GRAVEL 10-15% STONE & COBBLES 0-5% BOULDERS PRESENT
NO REFUSAL, NO REDOX, NO STANDING

TP-2022-7
0-80" FILL LS GRAVEL 10-15% STONE & COBBLES 0-5% BOULDERS PRESENT
REFUSAL @ 80", NO REDOX, NO STANDING

TP-2022-8
0-108" FILL LS GRAVEL 10-15% STONE & COBBLES 0-5% BOULDERS PRESENT
REFUSAL @ 108", NO REDOX, NO STANDING

NOTES:

1. SOIL TESTING SHOWN HEREON WERE DONE BY HANCOCK ASSOCIATES WAS CONDUCTED BY JOHN REILLY, SE#14354 ON 8/18/2022. TEST PIT LOCATIONS ARE APPROXIMATE AND WE NOT FIELD LOCATED VIA ON-THE GROUND SURVEY.
2. SOIL TESTING SHOWN HEREON WERE DONE BY GZA GEOENVIRONMENTAL, INC WAS CONDUCTED BY R. BARONOWSKI ON 2/2/2022 & 3/14/2022. TEST PIT LOCATIONS ARE APPROXIMATE AND WERE SCALED ONTO THIS PLAN VIA A PLAN TITLED, "EXPLORATION LOCATION PLAN" DATED MARCH 2022 AND PREPARED BY GZA GEOENVIRONMENTAL, INC.
3. ROCK PROBE LOCATIONS SHOWN HERE DONE BY MAINE DRILLING AN DILASTING OF AUBURN, NH ON 12/28/2022 & 12/29/2022 AND OBSERVED AND LOGGED BY GZA GEOENVIRONMENTAL, INC. ROCK PROBE LOCATIONS ARE APPROXIMATE AND WERE SCALED ONTO THIS PLAN VIA A PLAN TITLED, "ROCK PROBE LOCATIONS PLAN" PREPARED BY GZA GEOENVIRONMENTAL, INC.
4. HYDROLOGICAL SOIL GROUP DELINEATION LINES PROVIDED BY NRCS WEB SOIL SURVEY.

ATWATER AVENUE

Manchester-By-The-Sea, MA 01944

ASSESSORS:

MAP 37 LOT 08

PREPARED FOR:

CELL SIGNALING TECHNOLOGIES, INC.

3 TRASK LANE DANVERS MA 01923

HANCOCK ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

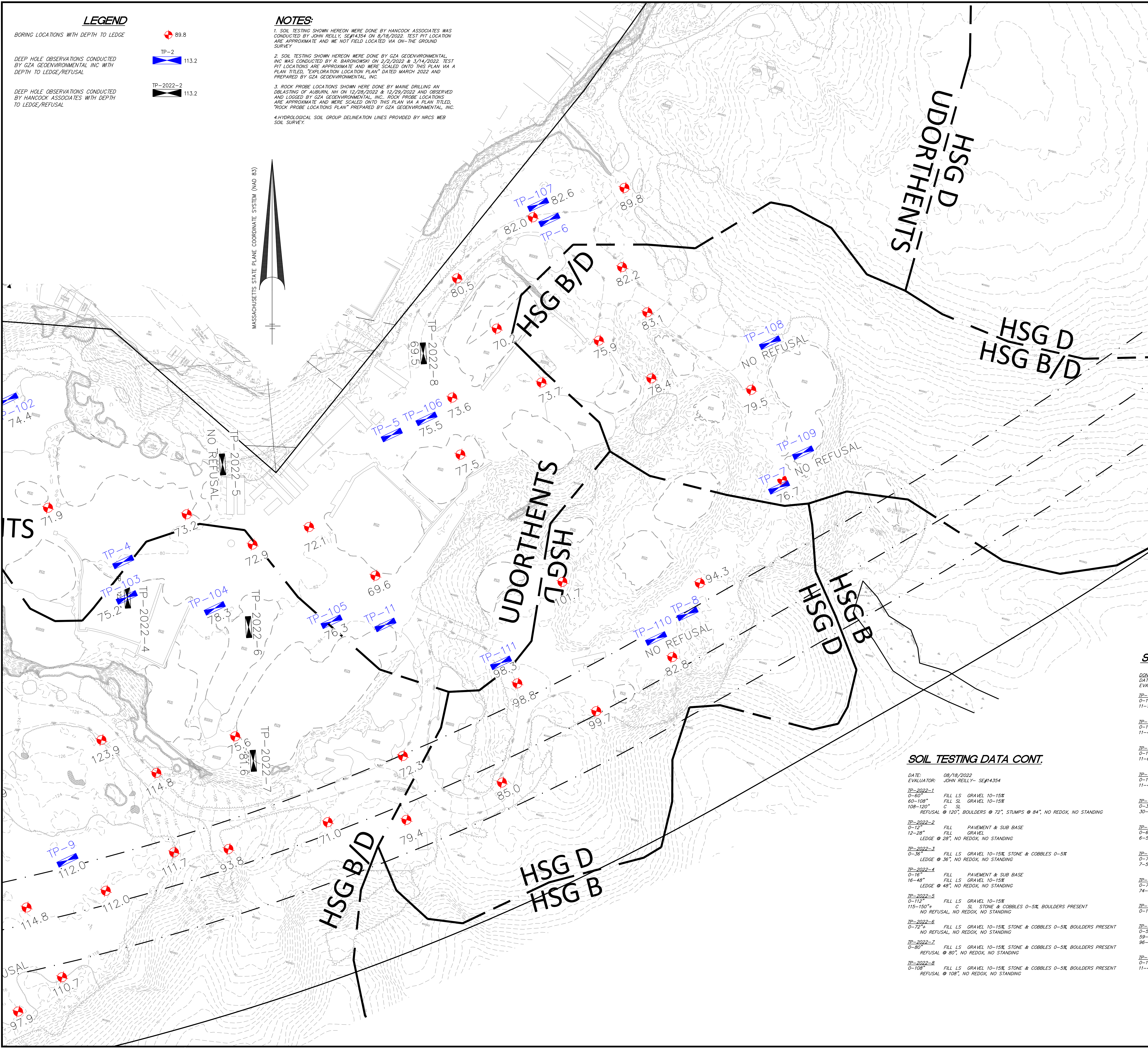
185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM



NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
1	TJS	WTC	5/20/24	TOWN COMMENTS

ROCK PROBE AND SOIL TESTING LOCATIONS PLAN

PLOT DATE: May 20, 2024 12:52 pm
DWG: 25770watershed_plan.dwg
LAYOUT: SOILS (1)
SHEET: 17 OF 24
PROJECT NO.: 25770



SOIL TESTING DATA

DONE BY GZA GEOENVIRONMENTAL, INC.
DATE: 02/02/2022
EVALUATOR: R. BARONOWSKI

TP-1	0-11"	FILL	GRAVEL/ASPHALT MILLINGS
	11-30"	FILL S	CONSTRUCTION FILL
		LEDGE @ 30"	NO REDOX, NO STANDING
TP-2	0-6"	FILL	GRAVEL/ASPHALT MILLINGS
		REFUSAL @ 6"	(FROZEN SOIL), NO REDOX, NO STANDING
TP-3	0-8"	FILL	GRAVEL/ASPHALT MILLINGS
	8-33"	FILL S	CONSTRUCTION FILL
		FILL	BLAST ROCK
		LEDGE @ 53"	NO REDOX, NO STANDING
TP-4	0-3"	FILL S	CONSTRUCTION FILL
	3-20"	FILL	GRAVEL/ASPHALT MILLINGS
		REFUSAL @ 20"	(FROZEN SOIL), NO REDOX, NO STANDING
TP-5	0-3"	FILL	GRAVEL/ASPHALT MILLINGS
	3-54"+	FILL	BLAST ROCK
		NO REFUSAL, REDOX @ 42", WEEPING @ 47"	
TP-6	0-2"	FILL	GRAVEL/ASPHALT MILLINGS
	2-22"	FILL	CONSTRUCTION FILL, COBBLE, & DEBRIS
	22-46"	FILL S	CONSTRUCTION FILL
		LEDGE @ 46"	NO REDOX, NO STANDING
TP-7	0-22"	FILL	CONSTRUCTION FILL, COBBLE, & DEBRIS
		REFUSAL @ 22"	(FROZEN SOIL), NO REDOX, NO STANDING
TP-8	0-13"	FILL	CONSTRUCTION FILL, COBBLE, & DEBRIS
		REFUSAL @ 13"	(FROZEN SOIL), NO REDOX, NO STANDING
TP-9	0-1"	FILL SL	TOP SOIL
	1-105"	C	LS GLACIAL TILL, COBBLES, GRAVEL
		LEDGE @ 105"	NO REDOX, NO STANDING
TP-10	0-16"	Ap	SL TOP SOIL
	16-38"	Bw	LS GRAVEL (10-20%)
	38-101"	C	LS GLACIAL TILL, COBBLES (10-20%), GRAVEL(10-20%)
		LEDGE @ 105"	NO REDOX, NO STANDING
TP-11	0-13"	FILL	CONSTRUCTION FILL & DEBRIS
		REFUSAL @ 13"	(FROZEN SOIL), NO REDOX, NO STANDING
TP-12	0-5"	FILL SL	TOP SOIL
	5-19"	FILL LS	GRAVEL (20-35%)
	19-38"	FILL	LS GLACIAL TILL, COBBLES (10-20%), GRAVEL(10-20%)
	38-44"	Bw1	S GRAVEL(10-20%)
	44-140"+	C	S GLACIAL TILL, COBBLES (10-20%)
		NO REFUSAL, NO REDOX, NO STANDING	
TP-13	0-4"	FILL SL	TOP SOIL
	4-92"	FILL S	COBBLES (0-10%), GRAVEL (10-20%)
	92-108"	Ap	SL BURIED ORGANICS, PEAT, GRAVEL(0-10%)
	108-142"+	C	S GRAVEL(0-10%), CLAY AND SILT
		NO REFUSAL, NO STANDING	
TP-14	0-16"	FILL SL	TOP SOIL
	16-32"	FILL LS	GRAVEL (20-35%)
	32-53"	FILL LS	COBBLES (10-20%), GRAVEL(10-20%)
	53-44"	Bw1	S GRAVEL(10-20%)
	44-140"+	C	S GLACIAL TILL, COBBLES (10-20%)
		NO REFUSAL, NO REDOX, NO STANDING	

SOIL TESTING DATA, CONT.

DONE BY GZA GEOENVIRONMENTAL, INC.
DATE: 03/14/2022
EVALUATOR: R. BARONOWSKI

TP-101	0-11"	FILL	GRAVEL/ASPHALT MILLINGS
	11-18"	FILL S	CONSTRUCTION FILL, COBBLES (10-20%)
		LEDGE @ 18"	NO REDOX, NO STANDING
TP-102	0-11"	FILL	GRAVEL/ASPHALT MILLINGS
	11-42"	FILL S	CONSTRUCTION FILL, COBBLES (10-20%) GRAVEL (20-35%)
		REFUSAL @ 42"	(BOULDERS), NO REDOX, WEEPING @ 22"
TP-103	0-11"	FILL	GRAVEL/ASPHALT MILLINGS
	11-63"	FILL S	CONSTRUCTION FILL, COBBLES (10-20%), GRAVEL (20-35%)
		LEDGE @ 53"	NO REDOX, NO STANDING
TP-104	0-11"	FILL	GRAVEL/ASPHALT MILLINGS
	11-48"	FILL	CONSTRUCTION FILL, COBBLES (10-20%) GRAVEL (20-35%)
		REFUSAL @ 48"	(BOULDERS), NO REDOX, NO STANDING
TP-105	0-30"	FILL	CONSTRUCTION FILL AND DEBRIS, GRAVEL (20-35%)
	30-72"	FILL	BLAST ROCK
		REFUSAL @ 72"	(BOULDERS), NO REDOX, NO WEEPING
TP-106	0-6"	FILL	GRAVEL/ASPHALT MILLINGS
	6-55"	FILL	BLAST ROCK
		REFUSAL @ 52"	(BOULDERS), NO REDOX, NO STANDING
TP-107	0-7"	FILL	GRAVEL/ASPHALT MILLINGS
	7-55"	FILL S	CONSTRUCTION FILL, COBBLES (10-20%), GRAVEL (20-35%)
		REFUSAL @ 55"	(BOULDERS), NO REDOX, NO STANDING
TP-108	0-74"	FILL	CONSTRUCTION FILL, COBBLE, & DEBRIS
	74-144"+	C	S GLACIAL TILL, GRAVEL (10-20%)
		NO REFUSAL, NO REDOX, NO STANDING	
TP-109	0-162"	FILL S	CONSTRUCTION FILL & DEBRIS, COBBLE (0-10%), GRAVEL (10-20%)
		NO REFUSAL, NO REDOX, NO STANDING	
TP-110	0-59"	FILL	CONSTRUCTION FILL, COBBLE, & DEBRIS
	59-96"	FILL S	GRAVEL (0-10%)
	96-138"+	FILL S	GRAVEL (0-10%)
		NO REFUSAL, NO REDOX, NO STANDING	
TP-111	0-11"	FILL	GRAVEL/ASPHALT MILLINGS
	11-45"	FILL S	COBBLE (0-10%), GRAVEL (10-20%)
		LEDGE @ 45"	NO REDOX, NO STANDING

ATWATER AVENUE

Manchester-By-The-Sea, MA 01944

ASSESSORS

MAP
37

LOT
08

PREPARED FOR:

CELL SIGNALING
TECHNOLOGIES, INC.

3 TRASK LANE
DANVERS MA 01923

HANCOCK
ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM



1 TJS MTC 5/20/24 TOWN COMMENTS

NO. BY APP DATE ISSUE/REVISION DESCRIPTION

DATE: 1/12/24 DESIGN BY: RT

SCALE: 1" = 40' DRAWN BY: CFB/TJS

APPROV. BY: MTC CHECK BY: GEW

ROCK PROBE
AND SOIL TESTING
LOCATIONS PLAN

PLOT DATE: May 20, 2024 12:53 pm

PATH: F:\DWG 3D Projects\25770 - Cell Signaling - Manchester\Eng\DWG\

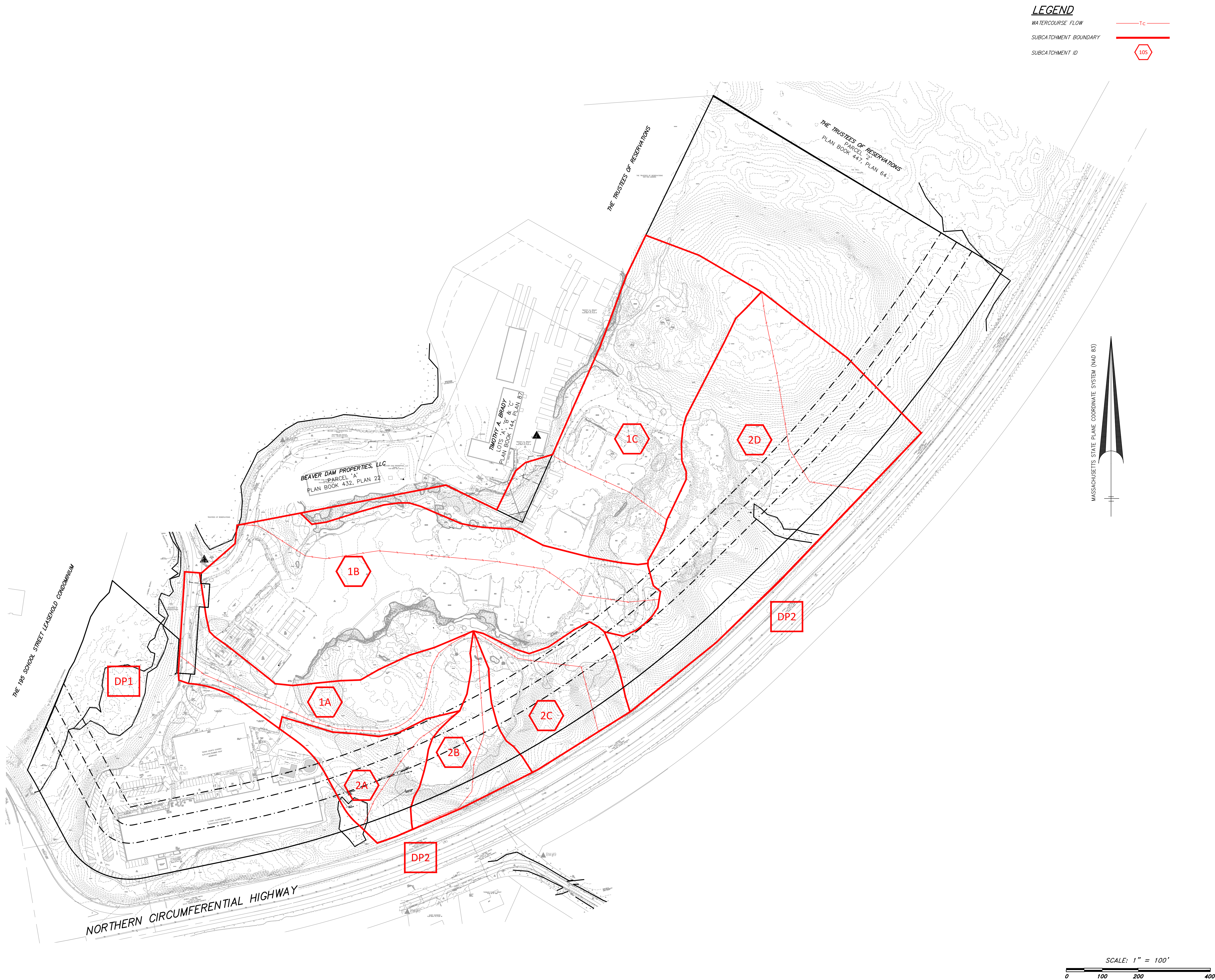
DWG: 25770watershed_plan.dwg

LAYOUT: SOILS (2)

SHEET: 18 OF 24

PROJECT NO.: 25770

C9.2



ATWATER
AVENUE

Manchester-By-The-Sea, MA 01944

ASSESSORS

MAP	LOT
37	08

PREPARED FOR:

CELL SIGNALING
TECHNOLOGIES, INC.

3 TRASK LANE
DANVERS MA 01923

HANCOCK
ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM



1	TJS	MTG	5/20/24	TOWN COMMENTS
NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
DATE:	1/12/24	DESIGN BY:	RT	
SCALE:	1" = 100'	DRAWN BY:	CFB/TJS	
APPROV. BY:	MTG	CHECK BY:	GEW	

PRE
DEVELOPMENT
WATERSHED
PLAN

PLOT DATE: May 20, 2024 1:15 pm
PATH: F:\DWG 3D Projects\25770 - Cell Signaling - Manchester\Eng\DWG\

DWG: 25770watershed_plan.dwg

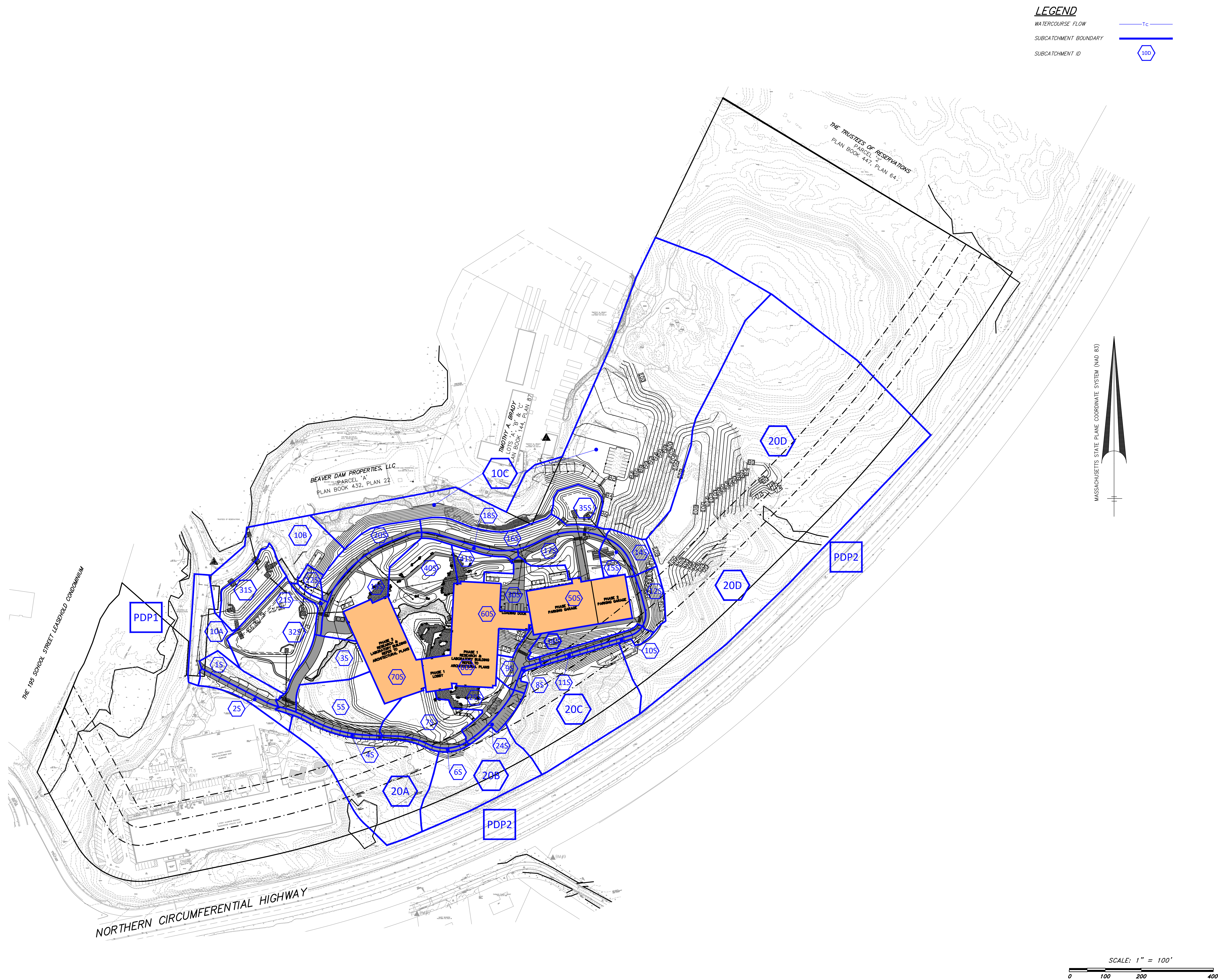
LAYOUT: PRE

SHEET: 19 OF 24

PROJECT NO.:

C10

25770

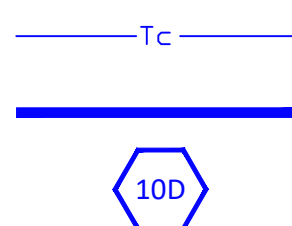


LEGEND

WATERCOURSE FLOW

SUBCATCHMENT BOUNDARY

SUBCATCHMENT ID



ATWATER AVENUE

Manchester-By-The-Sea, MA 01944

ASSESSORS

MAP
37

LOT
08

PREPARED FOR:

CELL SIGNALING
TECHNOLOGIES, INC.

3 TRASK LANE
DANVERS MA 01923

HANCOCK ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM



1	TJS	MTG	5/20/24	TOWN COMMENTS
NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
DATE:	1/12/24	DESIGN BY:	RT	
SCALE:	1" = 100'	DRAWN BY:	CFB/TJS	
APPROVED BY:	MTG	CHECK BY:	GEW	

POST DEVELOPMENT WATERSHED PLAN

PLOT DATE: May 20, 2024 12:45 pm
PATH: F:\DWG 3D Projects\25770 - Cell Signaling - Manchester\Eng\DWG\

DWG: 25770watershed_plan.dwg

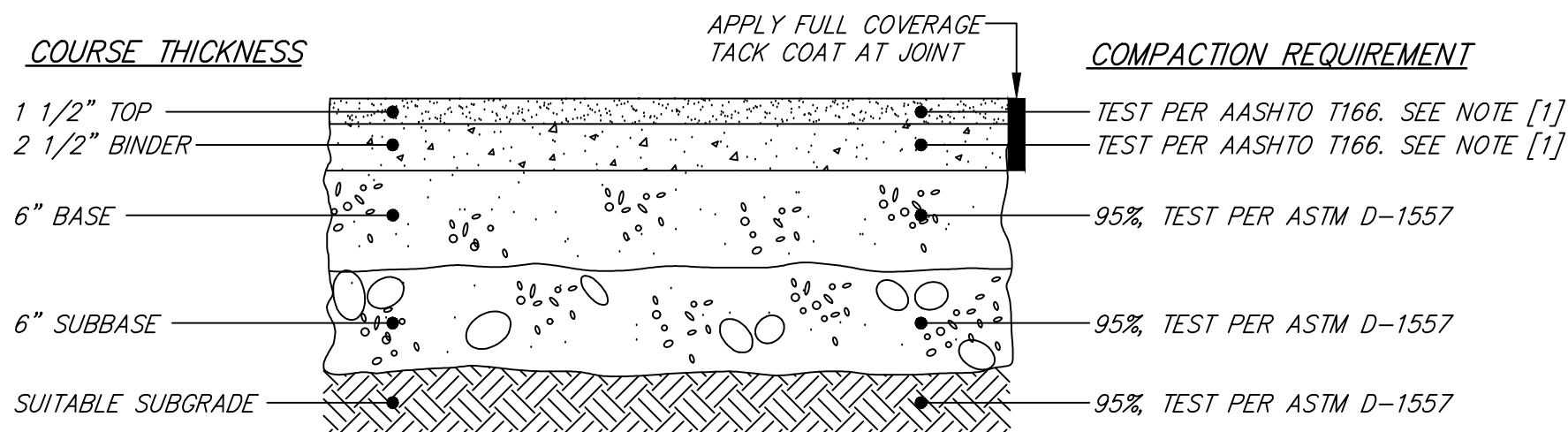
LAYOUT: POST

SHEET: 20 OF 24

PROJECT NO.:

C11

25770

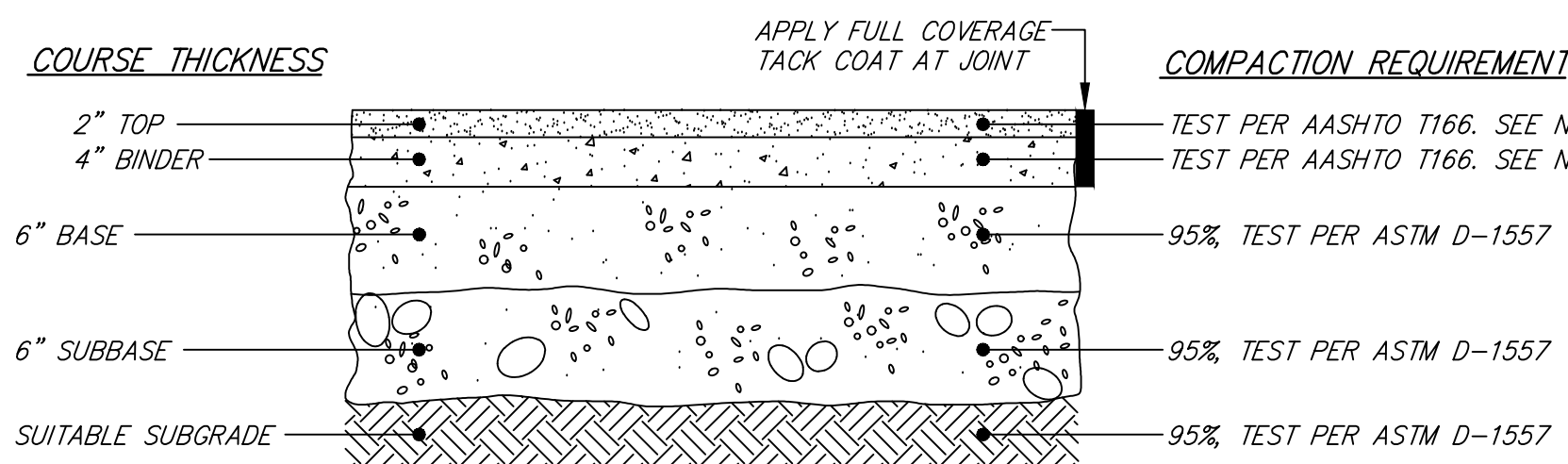


NOTES:
[1] COMPACT TO TEST AVERAGE OF 95% $\pm$ 2.5%

MATERIAL	SPECIFICATION	MAXIMUM AGGREGATE OR PARTICLE SIZE (IN.)
TOP - BITUMINOUS CONCRETE	MHD M3.11.03 CLASS I, TYPE I-1	1/2
BINDER- BITUMINOUS CONCRETE	MHD M3.11.03 CLASS I, TYPE I-1	1
BASE - DENSE GRADED CRUSHED STONE	MHD M2.01.7	1 1/2
SUBBASE - GRAVEL BORROW	MHD M1.03.0 TYPE C	2

1 BITUMINOUS CONCRETE PAVEMENT

TYPICAL CROSS SECTION
NOT TO SCALE

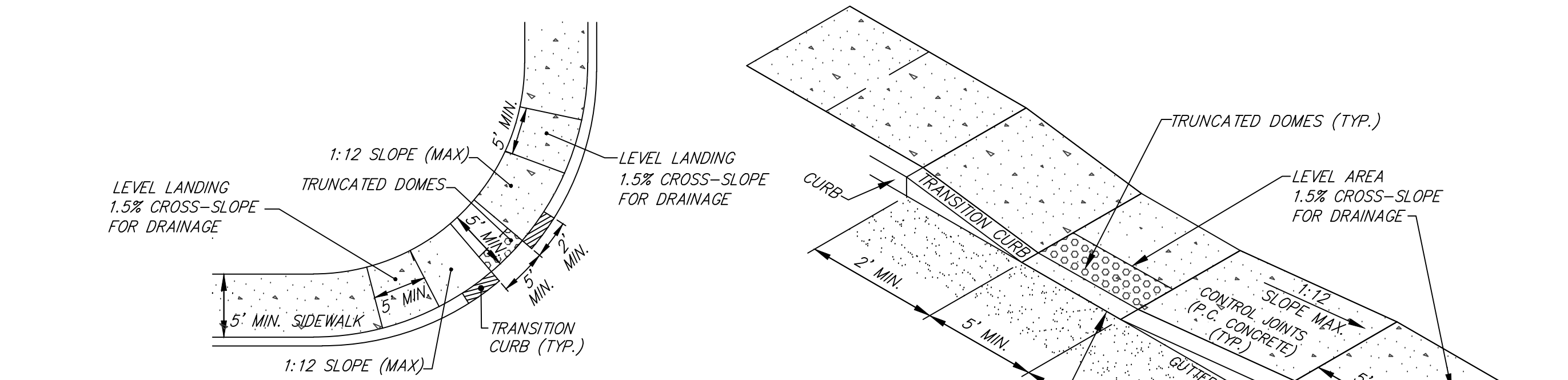
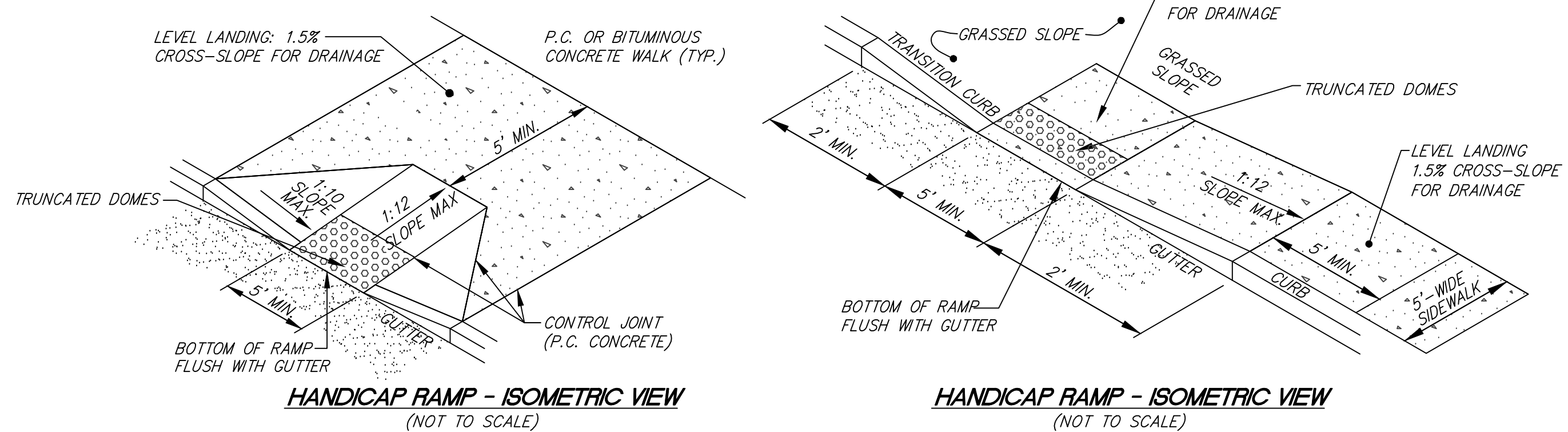


NOTES:
[1] COMPACT TO TEST AVERAGE OF 95% $\pm$ 2.5%

MATERIAL	SPECIFICATION	MAXIMUM AGGREGATE OR PARTICLE SIZE (IN.)
TOP - BITUMINOUS CONCRETE	MHD M3.11.03 CLASS I, TYPE I-1	1/2
BINDER- BITUMINOUS CONCRETE	MHD M3.11.03 CLASS I, TYPE I-1	1
BASE - DENSE GRADED CRUSHED STONE	MHD M2.01.7	1 1/2
SUBBASE - GRAVEL BORROW	MHD M1.03.0 TYPE C	2

5 HEAVY DUTY BITUMINOUS CONCRETE PAVEMENT

TYPICAL CROSS SECTION
NOT TO SCALE



HANDICAP RAMP - ISOMETRIC VIEW (NOT TO SCALE)

HANDICAP RAMP - ISOMETRIC VIEW (NOT TO SCALE)

HANDICAP RAMP AT SIDEWALK CORNER (NOT TO SCALE)

HANDICAP RAMP - ISOMETRIC VIEW (NOT TO SCALE)

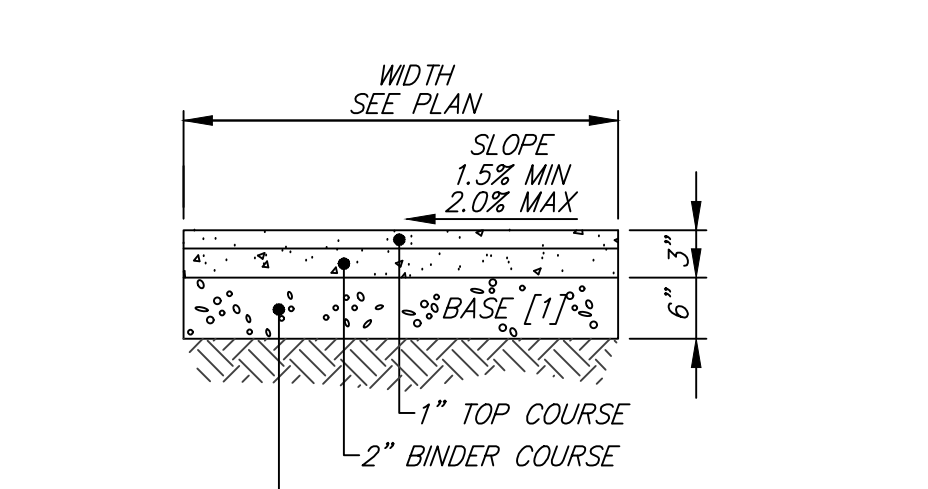
HANDICAP RAMP - ISOMETRIC VIEW (NOT TO SCALE)

HANDICAP RAMP - ISOMETRIC VIEW (NOT TO SCALE)

HANDICAP RAMP - ISOMETRIC VIEW (NOT TO SCALE)

HANDICAP RAMP - ISOMETRIC VIEW (NOT TO SCALE)

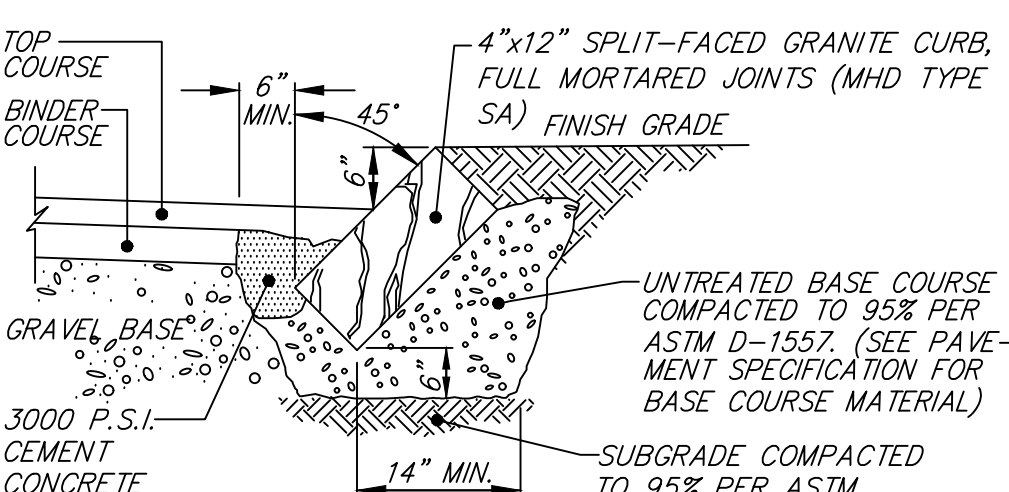
HANDICAP RAMP - ISOMETRIC VIEW (NOT TO SCALE)



NOTE [1] COMPACT TO 95% PER ASTM D-1557

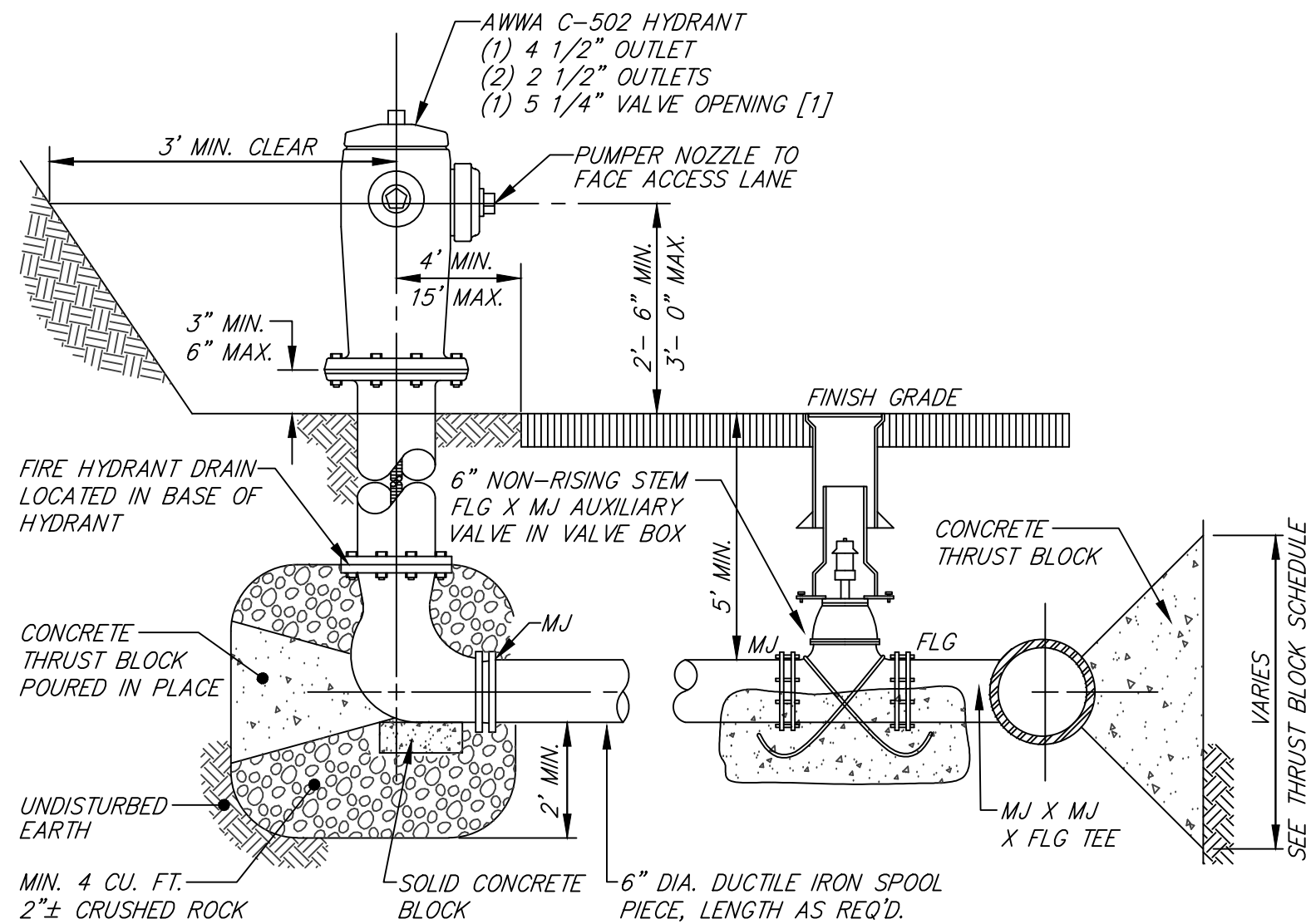
2 BITUMINOUS CONCRETE WALK

CROSS SECTION
NOT TO SCALE



6 SLOPED GRANITE CURB

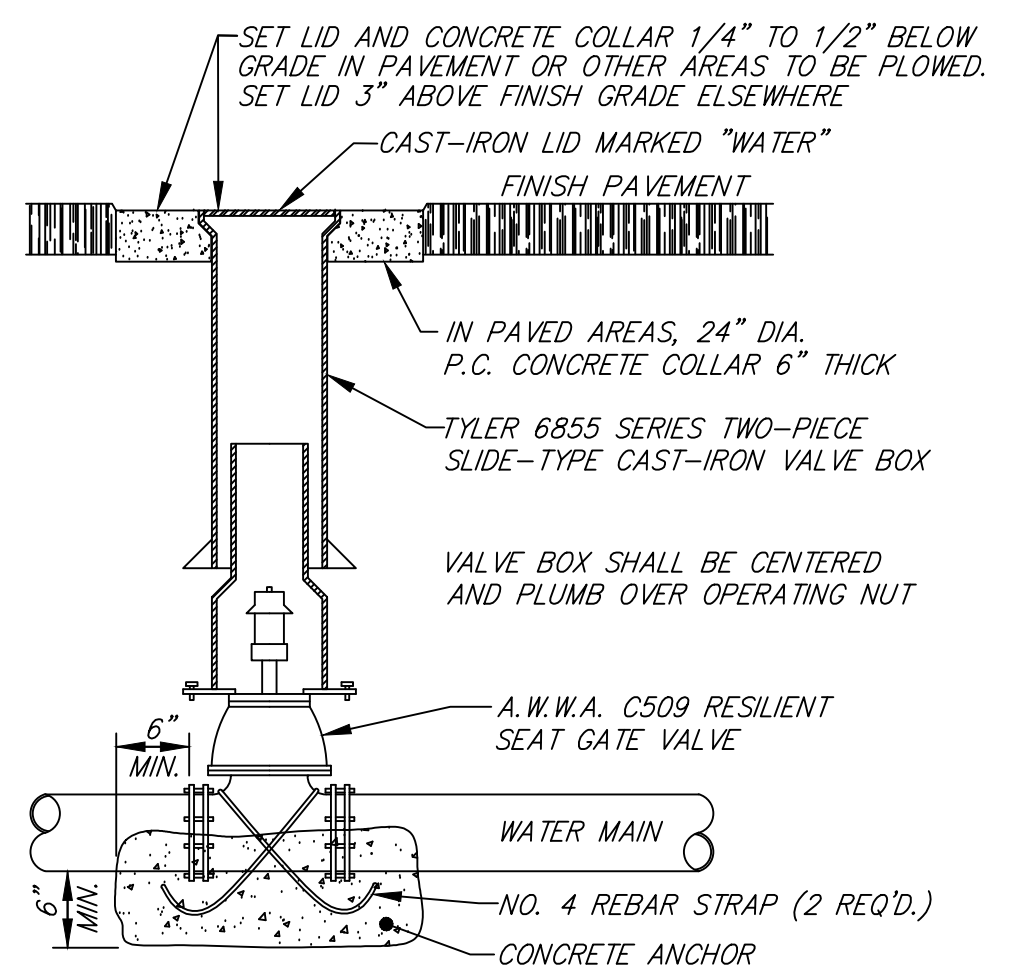
CROSS SECTION
NOT TO SCALE



NOTES:
[1] TO CONFORM TO MANCHESTER BY THE SEA WATER DEPT REQUIREMENTS

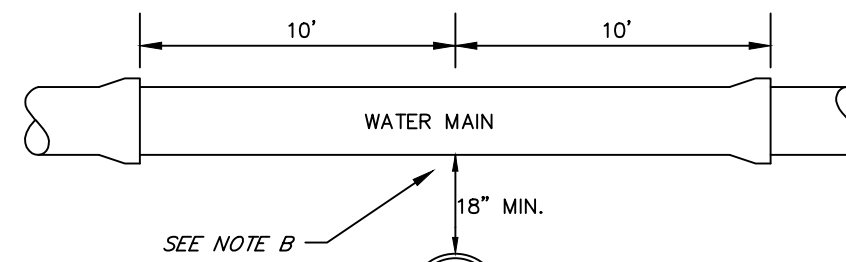
3 FIRE HYDRANT ASSEMBLY

TYPICAL CROSS SECTION
NOT TO SCALE



4 GATE VALVE

TYPICAL CROSS SECTION
NOT TO SCALE



NOTES:
THE SEPARATION OF WATER MAINS AND SEWERS SHALL COMPLY WITH THE FOLLOWING GENERAL REQUIREMENTS.

A. PARALLEL INSTALLATION:

• NORMAL CONDITIONS: THE INSIDE EDGE OF A WATER MAIN SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM THE INSIDE EDGE OF ANY SANITARY SEWER, STORM SEWER OR SEWER MANHOLE.

• WHEN LOCAL CONDITIONS PREVENT A HORIZONTAL SEPARATION OF 10 FEET, ONE OF TWO METHODS MAY BE EMPLOYED. IN BOTH CASES THE INVERT OF THE WATER LINE MUST BE AT LEAST 18" ABOVE THE CROWN OF THE SEWER LINE.

1. LAY WATER AND SEWER IN SEPARATE TRENCHES

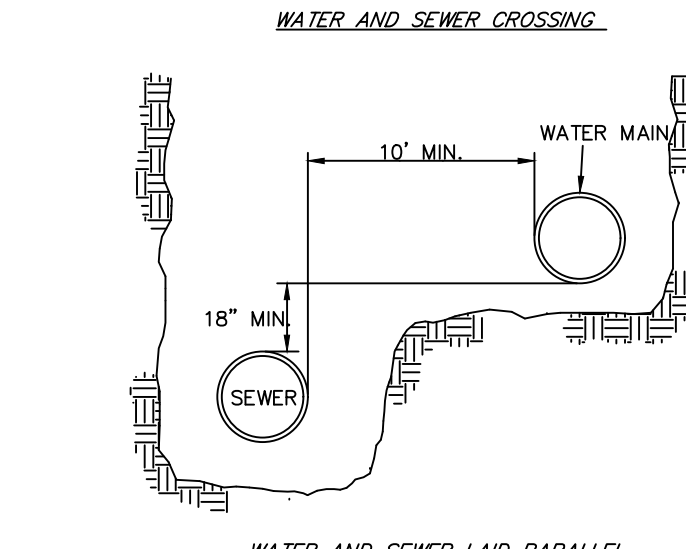
2. LAY THE WATER AND SEWER IN THE SAME TRENCH WITH THE WATER MAIN AT ONE SIDE ON A BENCH OF UNDISTURBED EARTH WITH A MINIMUM HORIZONTAL SEPARATION FROM INSIDE PIPE TO INSIDE PIPE OF 36"

B. CROSSINGS:

• WHEN SEWERS MUST CROSS UNDER WATER MAINS, THE SEWER LAID SUCH THAT THE INVERT OF THE WATER LINE IS AT LEAST 18 INCHES ABOVE THE CROWN OF THE SEWER LINE.

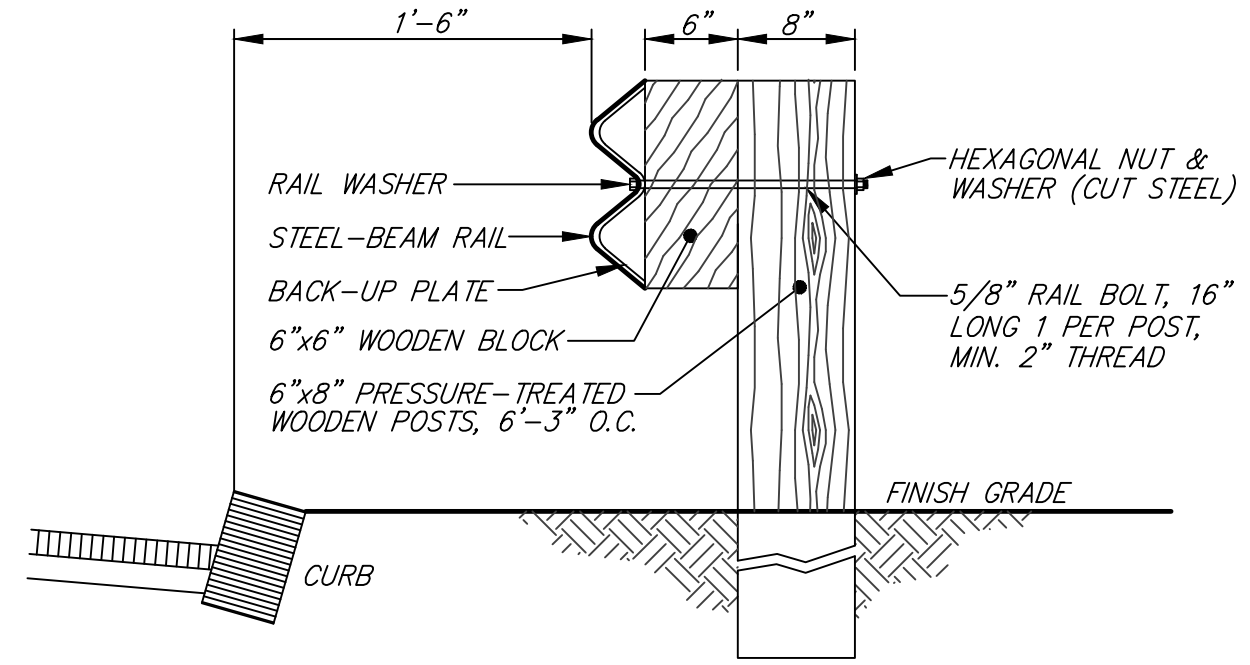
• WHEN THE SEWER ELEVATION CANNOT BE VARIED TO MEET THE REQUIREMENT, THE WATER LINE MUST BE RELOCATED OR RECONSTRUCTED WITH MECHANICAL JOINT CEMENT LINED DUCTILE IRON PIPE FOR A DISTANCE OF 10 FT ON EACH SIDE OF THE SEWER.

• WHEN IT IS IMPOSSIBLE TO OBTAIN EITHER OR BOTH OF THE ABOVE REQUIREMENTS, BOTH THE WATER AND SEWER LINES SHALL BE CONSTRUCTED OF MECHANICAL JOINT CEMENT LINED DUCTILE IRON PIPE OR OTHER EQUIVALENT MATERIAL. BOTH PIPES SHALL BE PRESSURE TESTED BY AN APPROVED METHOD TO ASSURE WATER TIGHTNESS OR BOTH PIPES SHALL BE ENCASED IN CONCRETE.



8 SEWER AND WATER IN SAME TRENCH/CROSSING

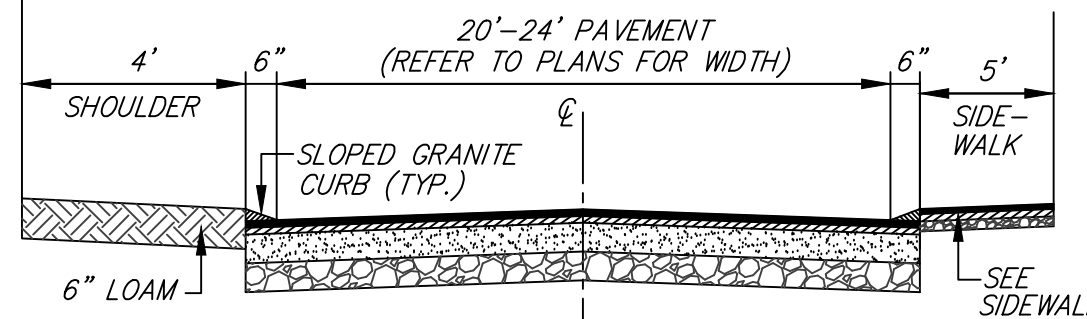
NOT TO SCALE



NOTES:
1. FOR LOCATION, SEE LAYOUT AND MATERIALS PLAN
2. ALL HARDWARE TO BE GALVANIZED.

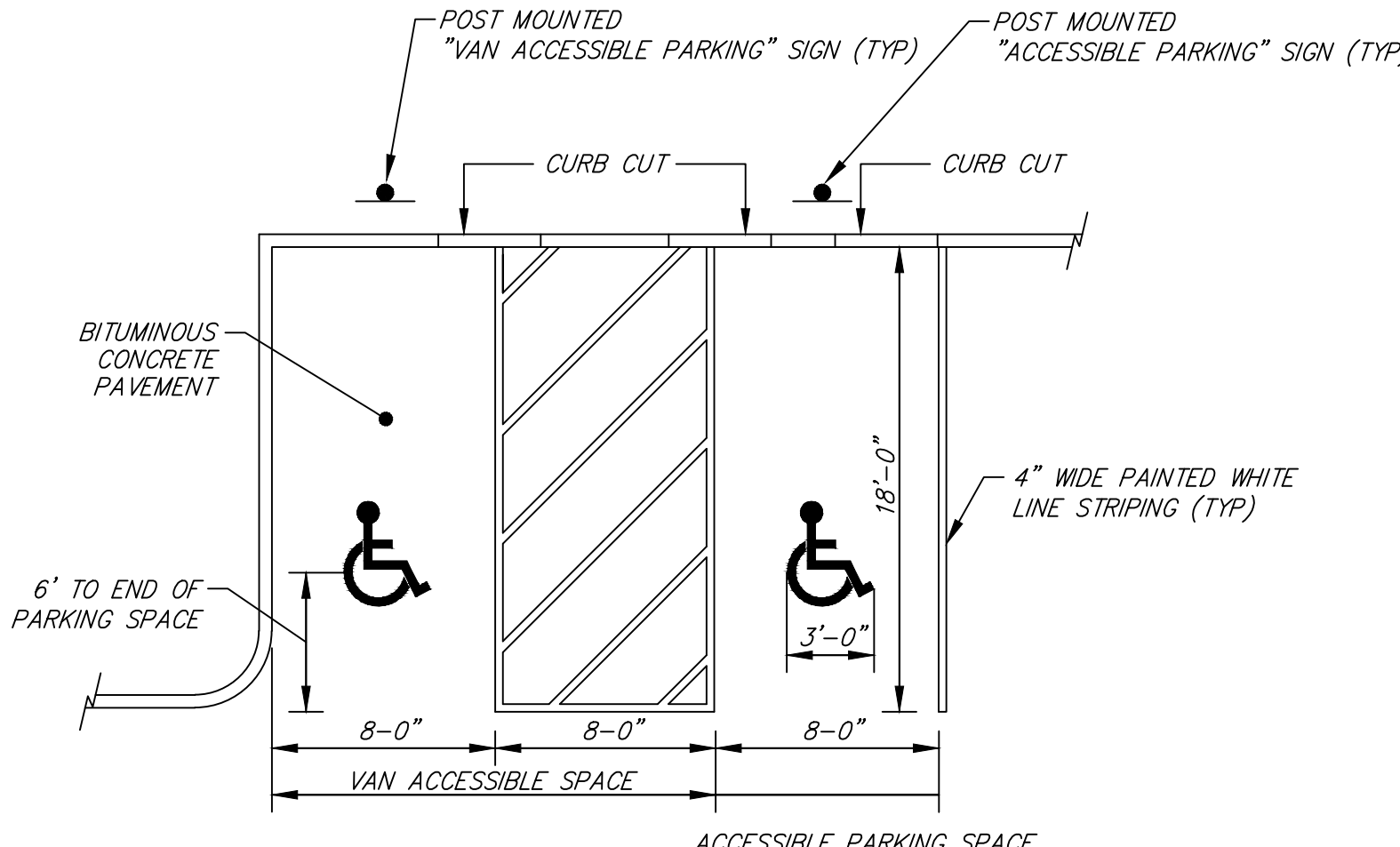
7 STEEL-BEAM GUARDRAIL w/WOOD POST

TYPICAL CROSS SECTION
NOT TO SCALE



9 TYPICAL ROADWAY CROSS SECTION

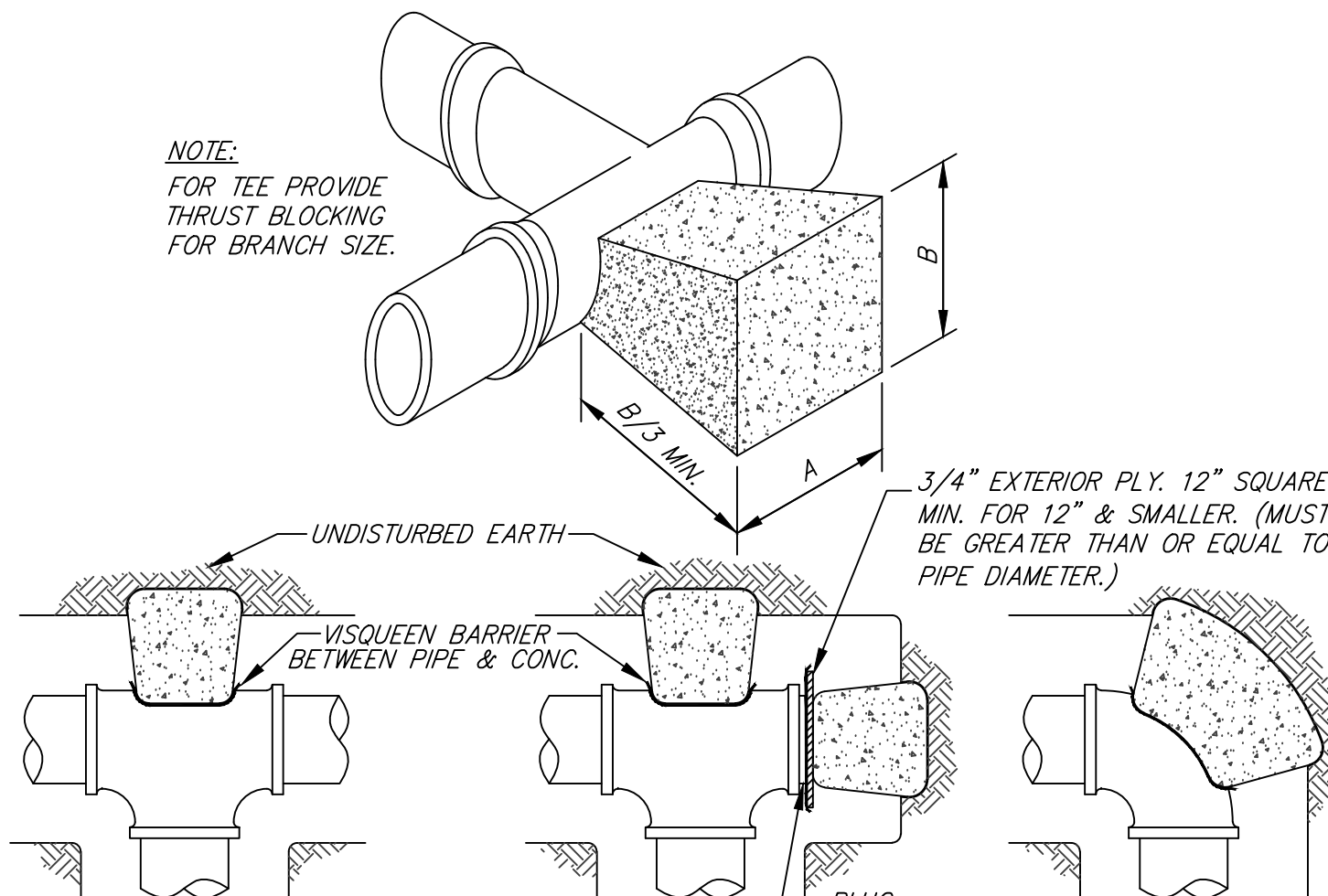
NOT TO SCALE



NOTES:
1. MAXIMUM SLOPE 2% IN ANY DIRECTION.
2. LOCATE SIGN WITHIN 10 FT OF ACCESSIBLE SPACE.
3. PROVIDE AN ACCESSIBLE CURB CUT AT EACH ACCESS AISLE BETWEEN ACCESSIBLE SPACES.

11 ACCESSIBLE PARKING STALL DETAIL

NOT TO SCALE



12 THRUST BLOCK SCHEDULE

NOT TO SCALE

FITTING SIZES	DIMENSION FOR THRUST BLOCKING							
	TEES & PLUGS		90° BENDS		45° BENDS & "Y"s		22 1/2° BENDS	
	A	B	A	B	A	B	A	B
4"	1'-6"	1'-6"	1'-6"	1'-6"	1'-3"	0'-6"	1'-0"	0'-6"
6"	2'-0"	1'-0"	2'-0"	2'-0"	1'-3"	1'-6"	1'-0"	1'-5"
8"	2'-0"	1'-6"	2'-3"	2'-3"	1'-8"	1'-8"	1'-0"	1'-3"
10"	2'-6"	2'-3"	2'-9"	2'-10"	2'-3"	1'-10"	1'-3"	2'-0"
12"	3'-0"	2'-9"	3'-6"	3'-3"	2'-6"	2'-4"	2'-0"	1'-6"
14"	3'-5"	3'-0"	4'-0"	3'-8"	3'-6"	2'-4"	2'-0"	2'-3"

1. THIS TABLE IS BASED ON 200 P.S.I. MAIN PRESSURE AND 2000 P.S.F. SOIL-BEARING PRESSURE. ADJUST BEARING AREAS IN ACCORDANCE WITH SOIL CONDITIONS AND PRESSURES ENCOUNTERED.
2. USE VESQUEEN BARRIER BETWEEN PIPE AND CONCRETE AS SHOWN IN DETAIL ABOVE.
3. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS.
4. BLOCKING SIZE/FREQUENCY SHALL BE INCREASED IF REQUIRED BY ENGINEER.

ATWATER AVENUE

Manchester-By-The-Sea, MA 01944

ASSESSORS

MAP
37

LOT
08

PREPARED FOR

CELL SIGNALING
TECHNOLOGIES, INC.

3 TRASK LANE
DANVERS MA 01923

HANCOCK ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM



NO.	BY	APP.	DATE	ISSUE/REVISION DESCRIPTION
1	TJS	WTC	5/20/24	TOWN COMMENTS
2	TJS	WTC	5/20/24	DESIGN/REVISION DESCRIPTION
3	TJS	WTC	5/20/24	DESIGN/REVISION DESCRIPTION
4	TJS	WTC	5/20/24	DESIGN/REVISION DESCRIPTION
5	TJS	WTC	5/20/24	DESIGN/REVISION DESCRIPTION
6	TJS	WTC	5/20/24	DESIGN/REVISION DESCRIPTION
7	TJS	WTC	5/20/24	DESIGN/REVISION DESCRIPTION
8	TJS	WTC	5/20/24	DESIGN/REVISION DESCRIPTION
9	TJS	WTC	5/20/24	DESIGN/REVISION DESCRIPTION
10	TJS	WTC	5/20/24	DESIGN/REVISION DESCRIPTION
11	TJS	WTC	5/20/24	DESIGN/REVISION DESCRIPTION
12	TJS	WTC	5/20/24	DESIGN/REVISION DESCRIPTION
13	TJS	WTC	5/20/24	DESIGN/REVISION DESCRIPTION
14	TJS	WTC	5/20/24	DESIGN/REVISION DESCRIPTION
15	TJS	WTC	5/20/24	DESIGN/REVISION DESCRIPTION
16	TJS	WTC	5/20/24	DESIGN/REVISION DESCRIPTION
17	TJS	WTC	5/20/24	DESIGN/REVISION DESCRIPTION
18	TJS	WTC	5/20/24	DESIGN/REVISION DESCRIPTION
19	TJS	WTC	5/20/24	DESIGN/REVISION DESCRIPTION
20	TJS	WTC	5/20/24	DESIGN/REVISION DESCRIPTION

DETAIL SHEET

PLOT DATE: May 20, 2024 12:41 pm
PATH: F:\CADD 3D Projects\25770 - Cell Signaling - Manchester\Eng\DWG\

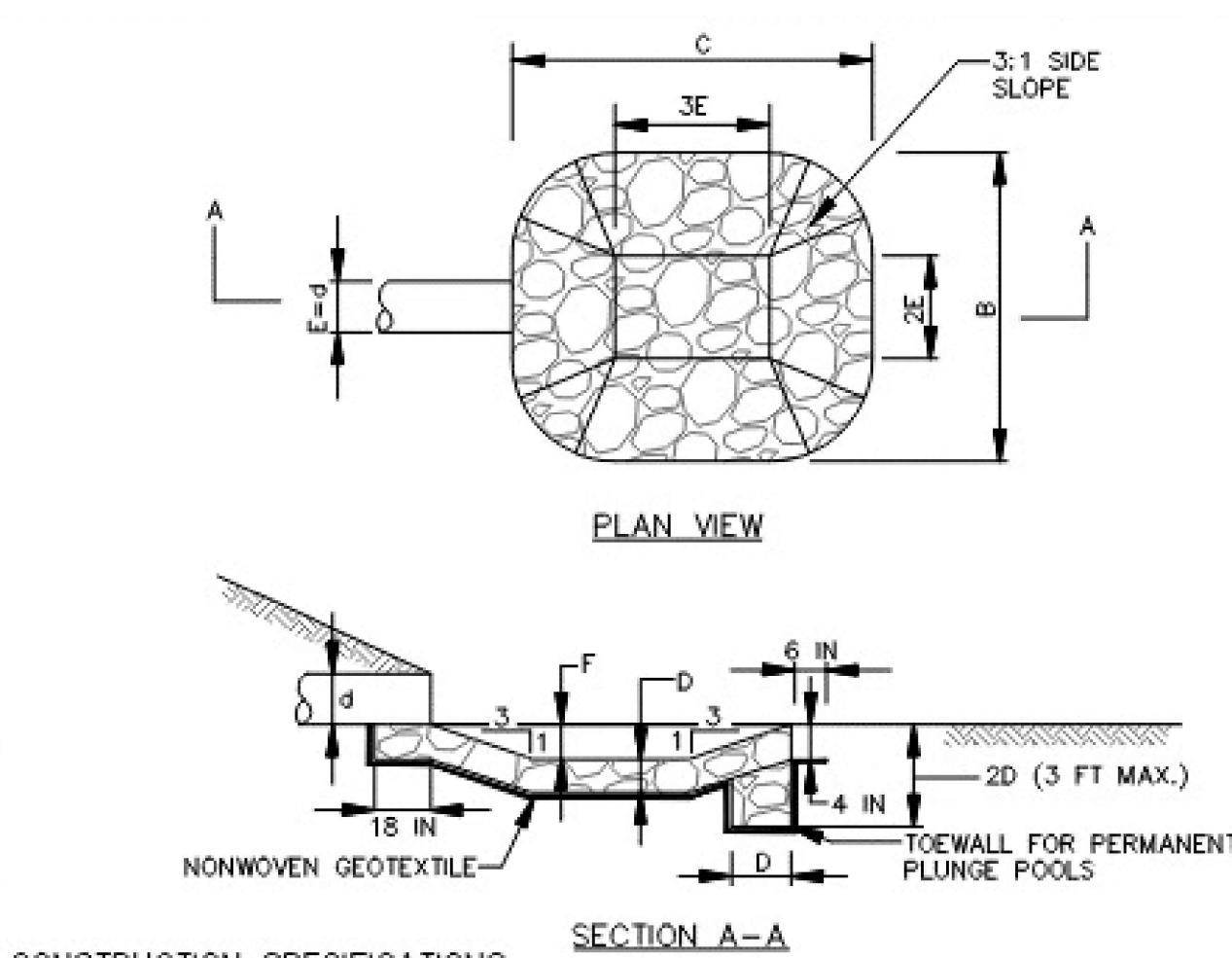
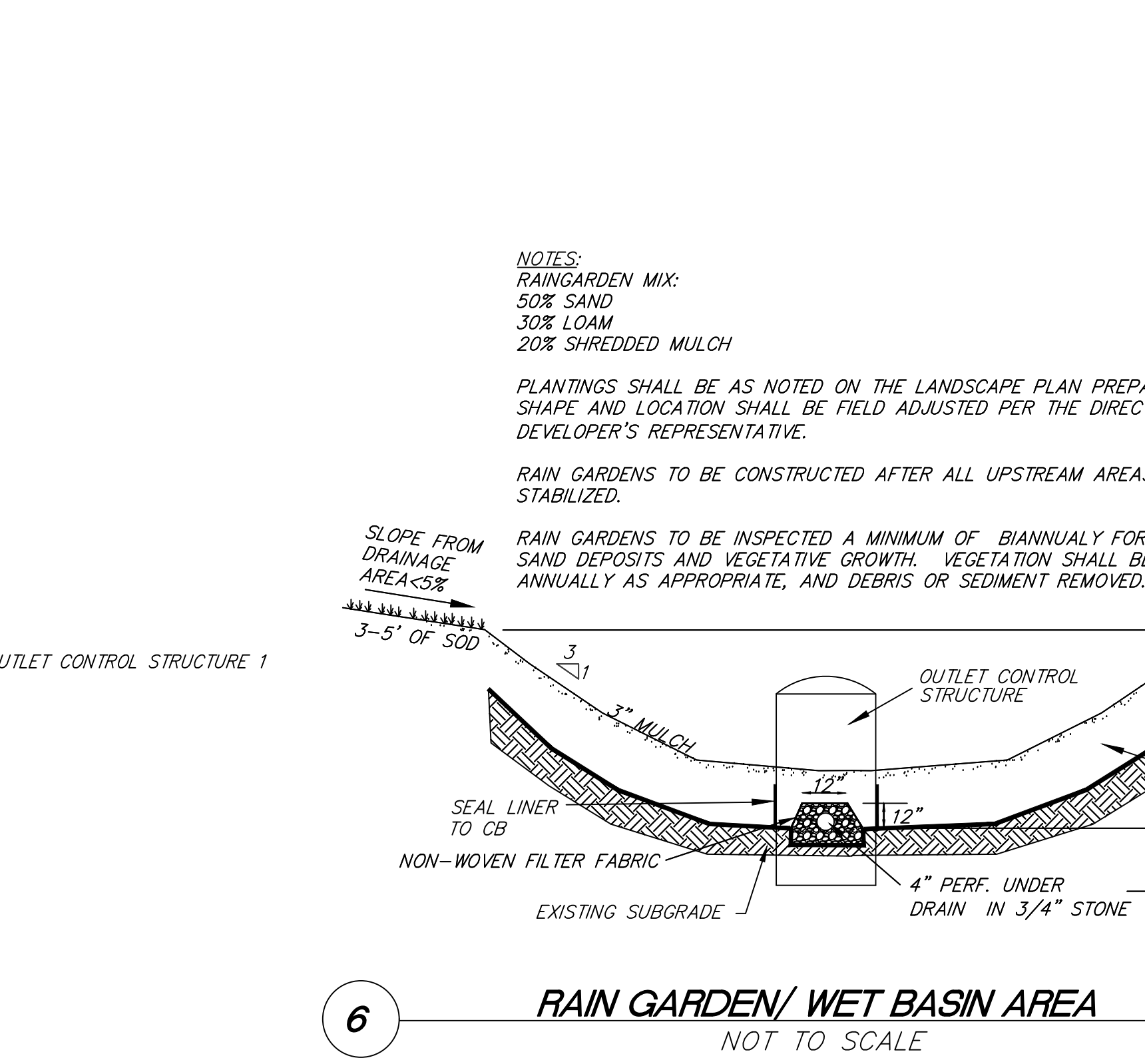
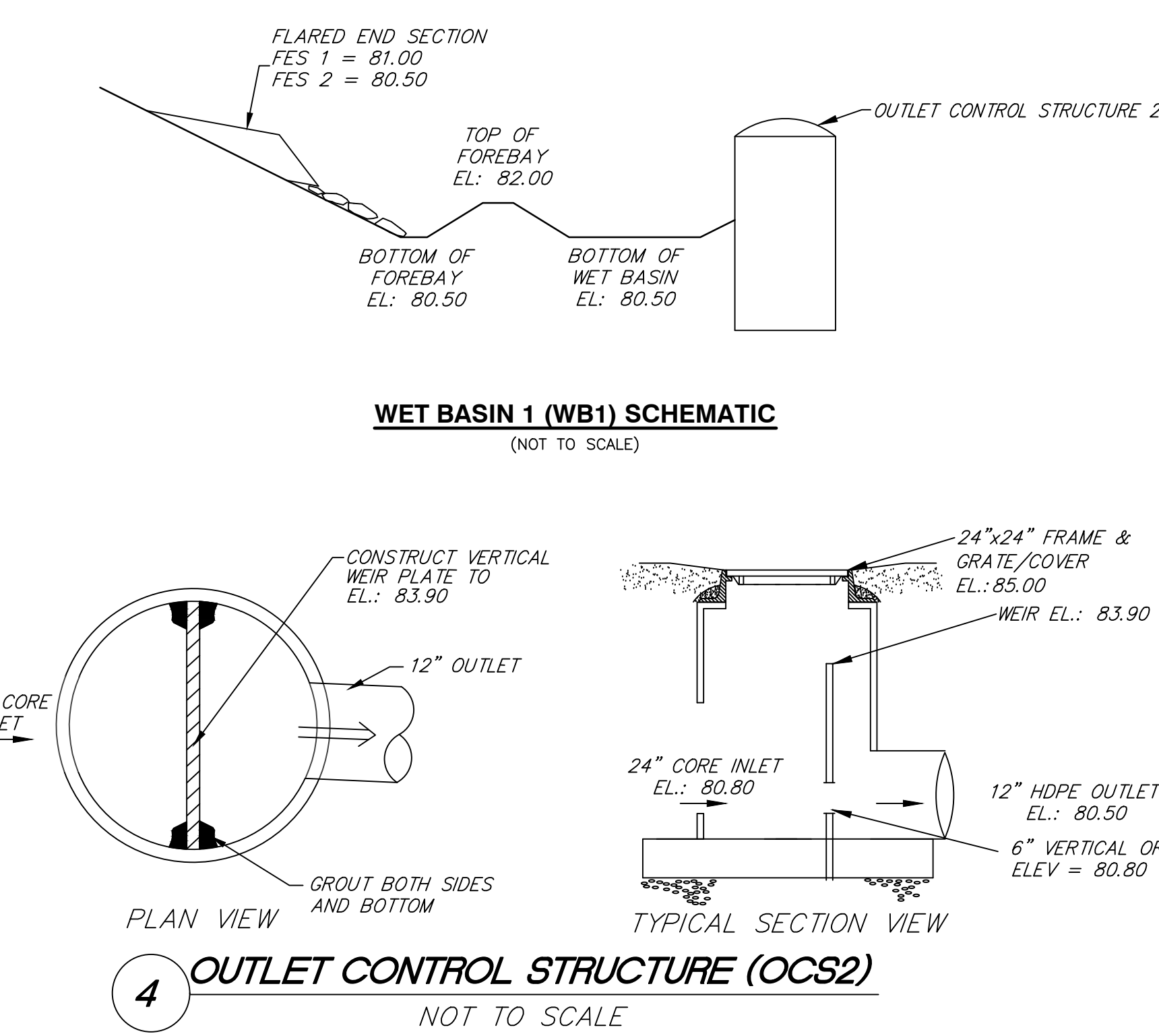
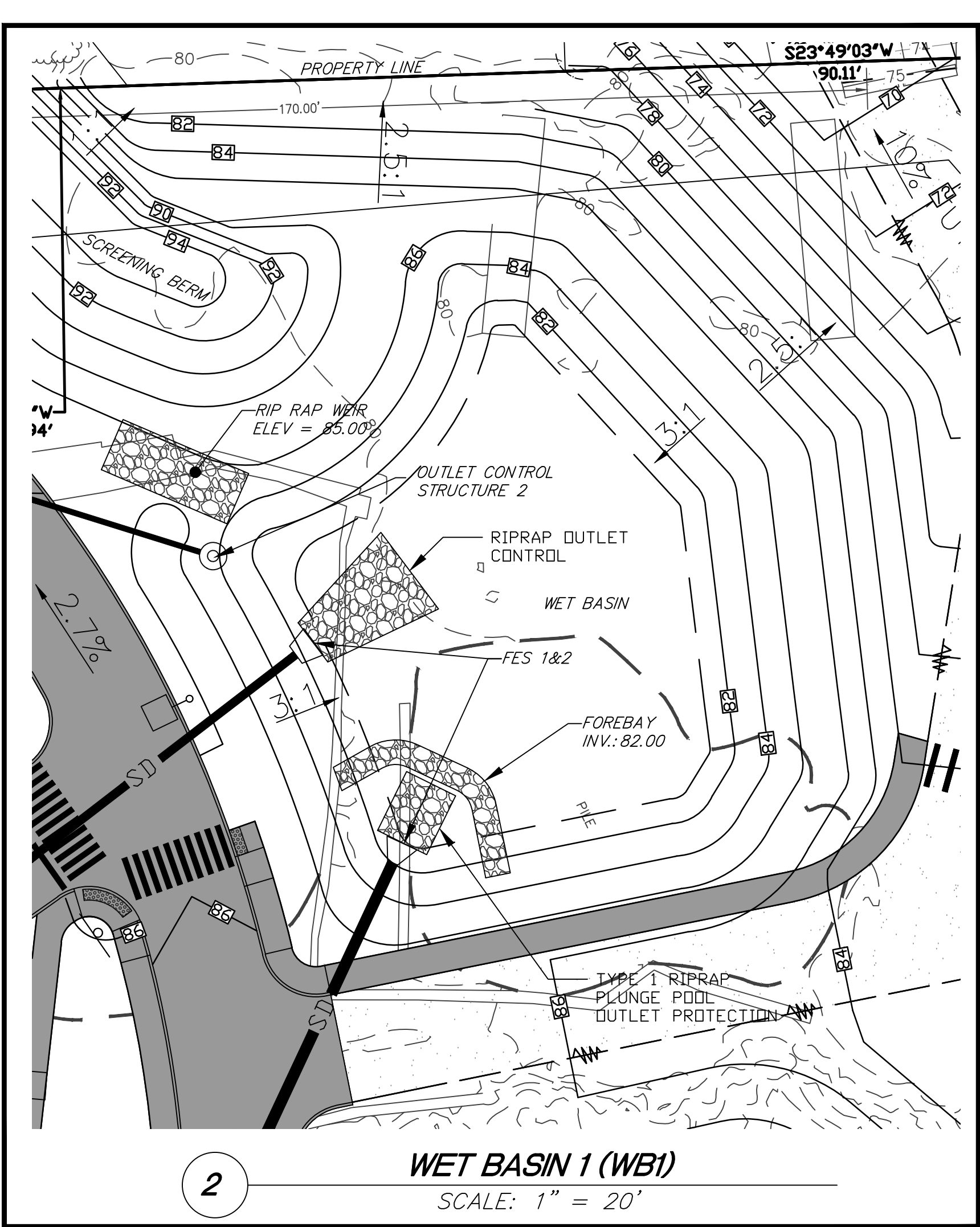
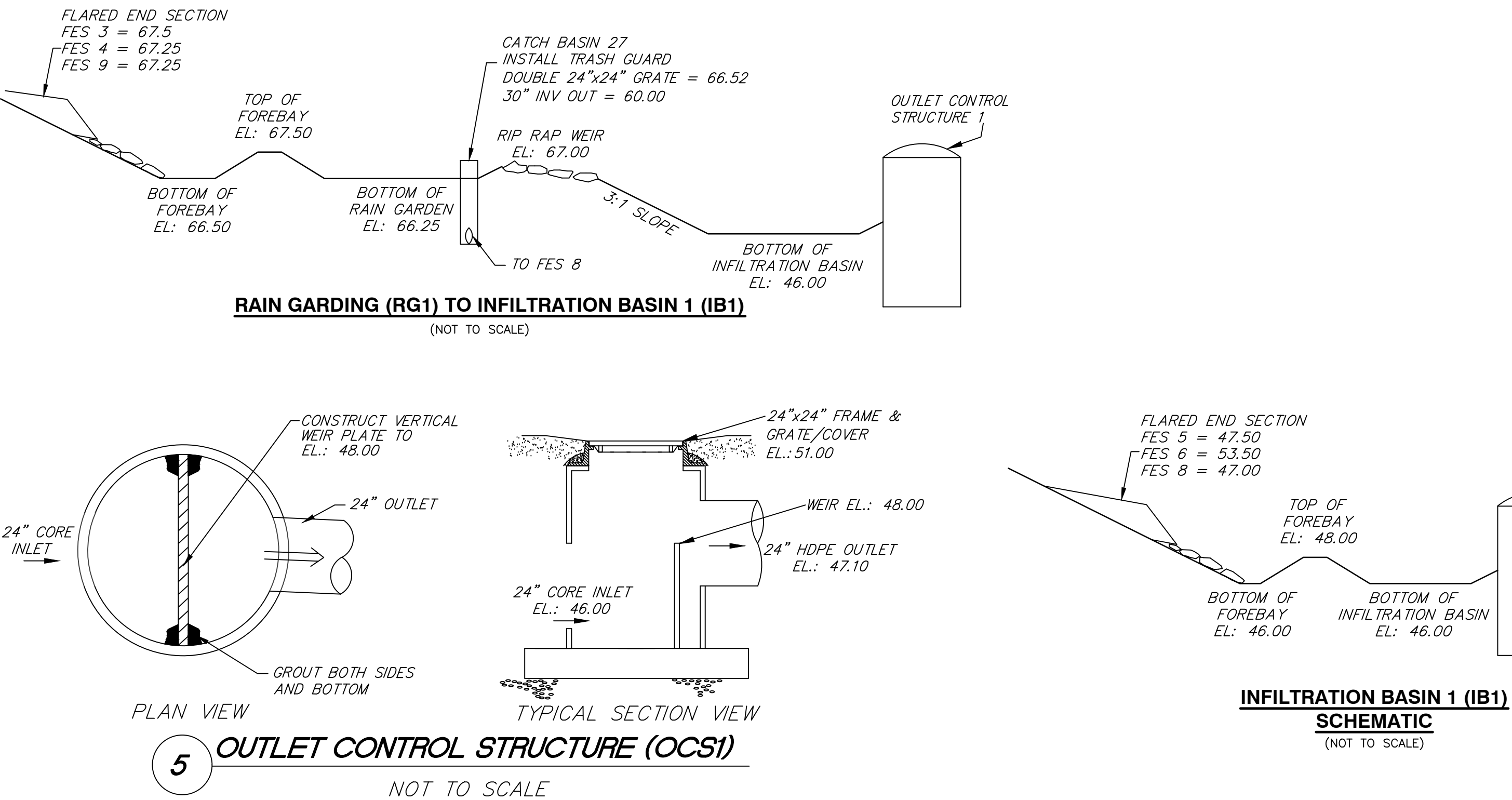
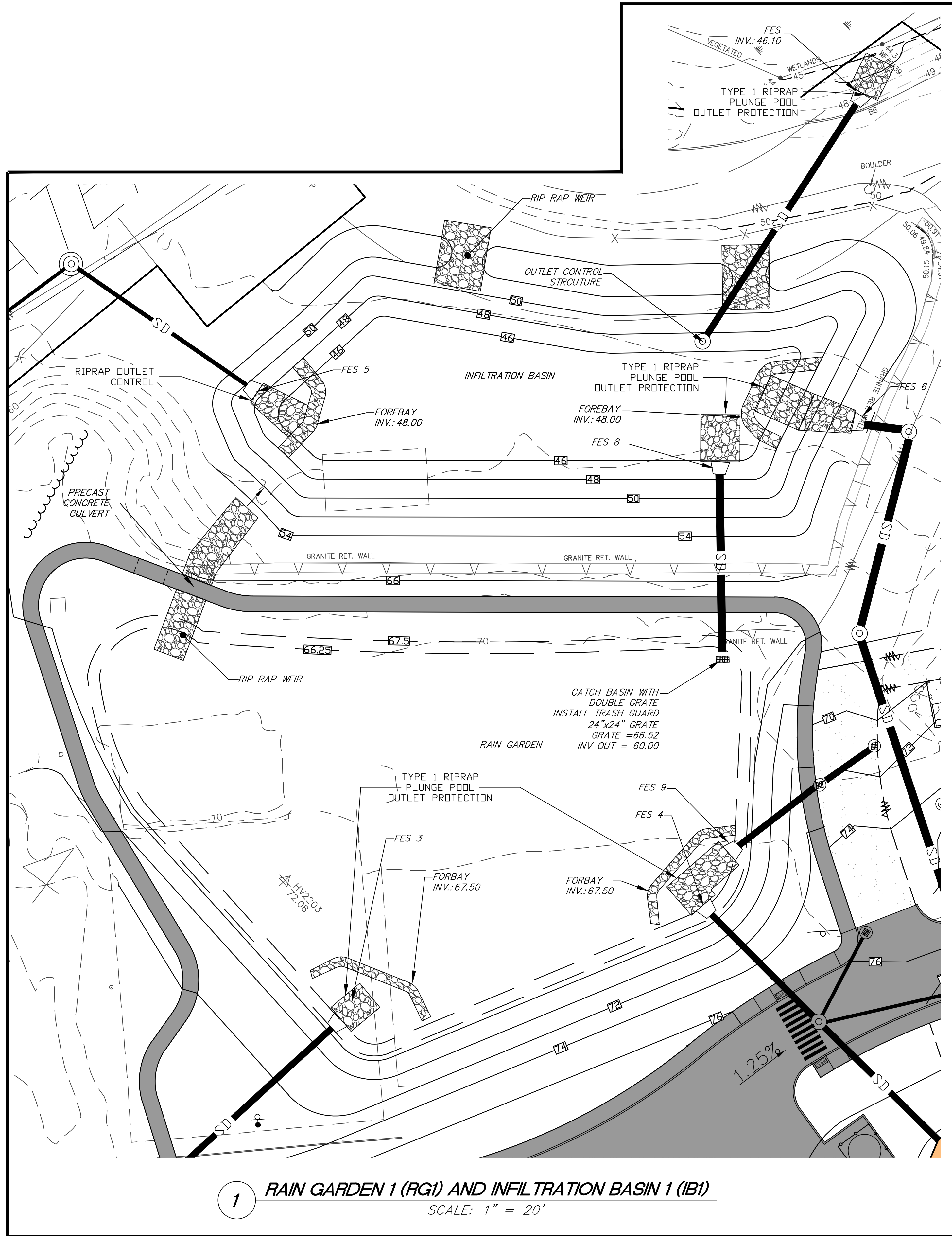
DWG: 25770det.dwg

LAYOUT: DET(1)

SHEET: 21 OF 24

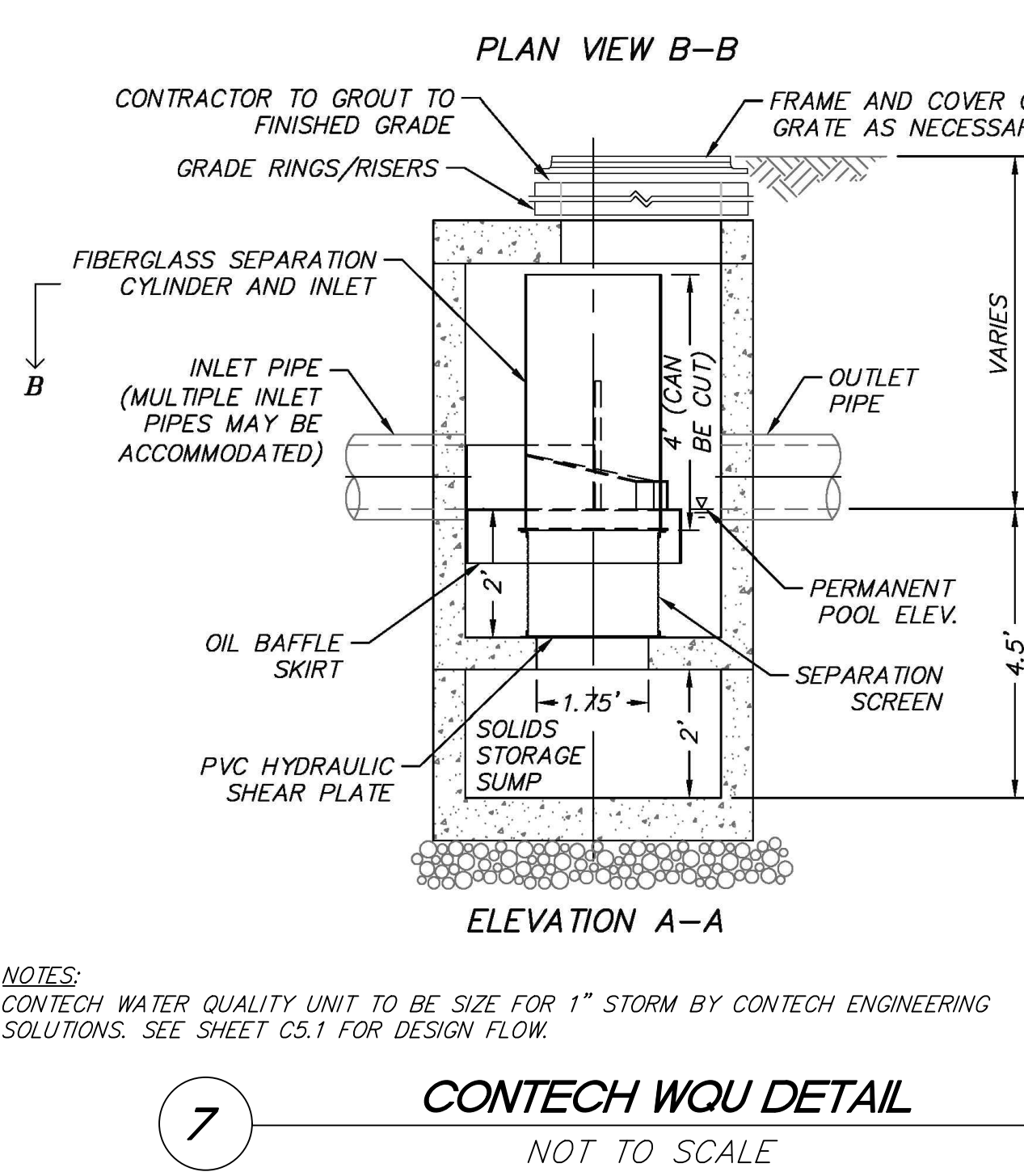
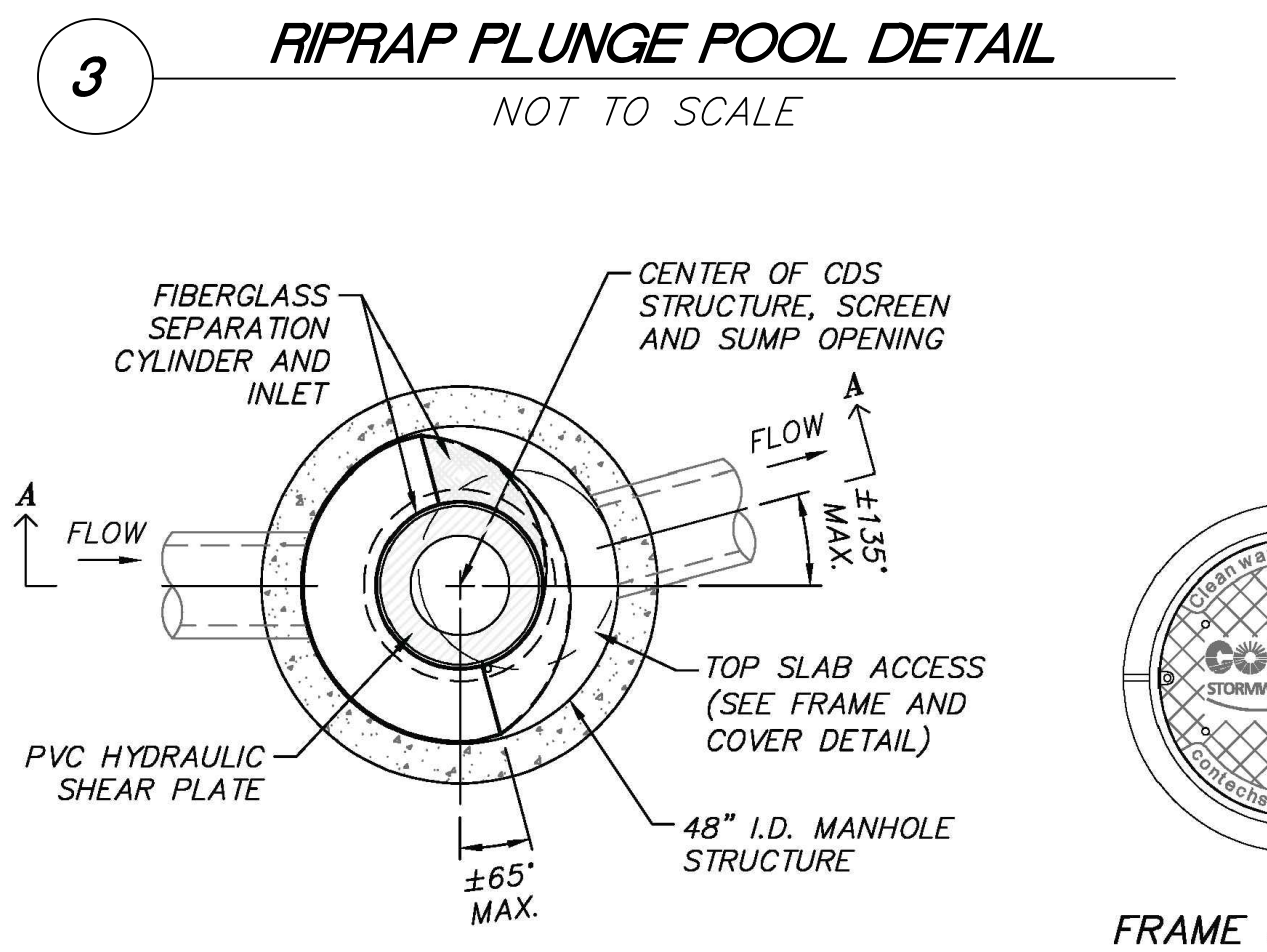
PROJECT NO.: 25770

C12



- CONSTRUCTION SPECIFICATIONS**
- USE SPECIFIED CLASS OF RIPRAP.
 - USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCHING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE.
 - PREPARE THE SUBGRADE FOR THE PLUNGE POOL TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
 - EMBED THE GEOTEXTILE A MINIMUM OF 4 INCHES AND EXTEND THE GEOTEXTILE A MINIMUM OF 6 INCHES BEYOND THE EDGE OF THE SCOUR HOLE.
 - STONE FOR THE PLUNGE POOL MAY BE PLACED BY EQUIPMENT. CONSTRUCT TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. DELIVER AND PLACE THE STONE FOR THE PLUNGE POOL IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE STONE FOR THE PLUNGE POOL IN A MANNER TO PREVENT DAMAGE TO THE GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
 - AT THE PLUNGE POOL OUTLET, PLACE THE STONE SO THAT IT MEETS THE EXISTING GRADE.
 - MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.
- d50 = the median stone size (feet), refer to Riprap
d = the culvert diameter or span (feet)
Tw = the tailwater depth (feet)
Q = the design flow for the culvert, minimum 10-year, 24-hour storm (cfs)
B = the plunge pool width (feet)
C = the plunge pool length (feet)
D = 2 x d50 = riprap thickness (feet)
E = the culvert diameter or span (feet) equal to d
3E = the plunge pool bottom length in feet
2E = the plunge pool bottom width (feet)
F = plunge pool depth (feet) = d (for Type II) or 0.5 d (for Type I)

RIP RAP OUTLET SIZING @25 yr(2090) storm- Cell Signaling								
Apron	Q(cfs)	D0(ft)	Tw(ft)	La(ft)	Wstart(ft)	Wend(ft)	D50(in)	
Fes2	7.07	1.50	0.75	17.43	4.50	21.93	0.23	use 6" stone
Fes5	3.51	1.25	0.38	13.27	3.75	17.02	0.22	use 6" stone
Fes9	1.49	1.00	0.25	9.68	3.00	12.68	0.13	use 6" stone
Plunge Pool	Q(CFS)	dia (d)	F(depth)	C	B	Type	D50(in)	
Fes1	10.87	2.00	1.00	12	10	1	0.22	use 6" stone
Fes3	14.84	2	1	12	10	1	0.33	use 6" stone
Fes4	25.72	2.5	1.25	15	12.5	1	0.44	use 6" stone
Fes6	29.1	2.5	1.25	15	12.5	1	0.51	use 6" stone
Fes7	22.31	2	1	12	10	1	0.57	use 8" stone
Fes8	33.61	2.5	1.25	15	12.5	1	0.62	use 8" stone



ATWATER AVENUE

Manchester-By-The-Sea, MA 01944

ASSESSORS

MAP

37

LOT

08

PREPARED FOR

CELL SIGNALING TECHNOLOGIES, INC.

3 TRASK LANE
DANVERS MA 01923

HANCOCK ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM



1	TJS	MTC	5/20/24	TOWN COMMENTS
NO.	BY	APP.	DATE	ISSUE/REVISION DESCRIPTION
1	TJS	MTC	5/20/24	DESIGN BY: RT
2	TJS	MTC	5/20/24	SCALE: AS SHOWN
3	TJS	MTC	5/20/24	DRAWN BY: CFB/TJS
4	TJS	MTC	5/20/24	APPROV. BY: MTC
5	TJS	MTC	5/20/24	CHECK BY: GEW

DETAIL SHEET

PLOT DATE: May 20, 2024 3:06 pm
PATH: F:\DWG 3D Projects\25770 - Cell Signaling - Manchester\Eng\DWG\DWG: 25770det.dwg
LAYOUT: DET(3)
SHEET: 23 OF 24
PROJECT NO.: 25770

- PUMPS**
1. NO. OF PUMPS REQUIRED: 2
 2. STATIC HEAD: 25.7 FEET
 3. TOTAL DYNAMIC HEAD AT FLOW: 128' @ 225 GPM
 4. IMPELLER DIAMETER: 11.375 IN
 5. SOLIDS HANDLING: 2 IN
 6. MANUF./MODEL (OR EQUAL): GOULDS WATER TECHNOLOGY HSUL 4X4-12 SUBMERSIBLE PUMP
 7. HORSEPOWER/SPEED: 25 HP/1750 RPM

NOTES:

1. PUMP SHALL BE INSTALLED WITH 3/4" GALVANIZED GUIDE RAILS & LIFT-OUT SYSTEM (SEE INSTALLATION GUIDE FOR DETAILS).

CALCULATIONS:

WORKING RANGE = 7.0'
WORKING VOLUME = 30,000 GAL
PUMP FLOW RATE = $Q = 30,000 \text{ GPD} / (1440 \text{ MIN/DAY}) \cdot 2.2 \text{ HR} = 225 \text{ GPM}$ (PHASE III, PHF)
RUN TIME = 30,000 GAL / 225 GPM = 133 MIN (2.2 HR)

STATIC HEAD LOSS

= FORCE MAIN HIGH POINT (87.0') - PUMP ELEVATION
= 87.0-61.3 = 25.7 FT

FORCE MAIN LOSS (FRICTIONAL HEAD LOSS)

= $0.2083 \times L / 100 \times (Q \times 100 / C)^{1.852} / D^{4.8655}$
MATERIAL COEFFICIENT = C = 150 (PVC FORCE MAIN)
FORCE MAIN DIAMETER = D = 2 IN

FORCE MAIN LENGTH = 4,185 FT
EQUIVALENT LENGTH OF FITTINGS:

90° LOU SWEEP: 2 x 10.1 FT = 20.2 FT
45° ELBOW: 10 x 8.1 FT = 81.0 FT
TEE, BRANCH: 1 x 30.3 FT = 30.3 FT
GATE VALVE: 2 x 4.0 FT = 8.0 FT
AIR REL. VALVE: 4 x 4.0 FT = 16.0 FT
PLUG VALVE: 1 x 10.5 FT = 10.5 FT
CHECK VALVE: 1 x 50.5 FT = 50.5 FT
TOTAL: 216.5 FT
DESIGN PIPE LENGTH = L = 4,185 FT + 216.5 FT
= 4,402 FT

FM (FRICTIONAL) HEAD LOSS = 63.3 FT

TOTAL DYNAMIC HEAD (TDH)

= STATIC + FRICTIONAL = 25.7 + 63.3 ~ 89 FT

1

PUMP SPECIFICATIONS

(310 CMR 15.231)

CONTROLS:

PANEL SHALL INCLUDE MAIN CIRCUIT BREAKER, MAGNETIC STARTER, THREE (3) LEG AMBIENT COMPENSATED OVERLOAD PROTECTION IN THREE (3) PHASE, AUTOMATIC PUMP ALTERNATOR, PUMP RUNNING LIGHTS, TEST-OFF-AUTO SWITCHES, NEON TYPE MOISTURE SEAL LEAK INDICATING LIGHTS, PROVISION FOR TEMPERATURE SWITCH MOTOR SHUTDOWN, TERMINAL STRIP, AND GROUND BAR. PUMP CONTROL WILL BE DESIGNED TO OPERATE ON AVAILABLE POWER. PANEL WILL BE NEMA (1) (2) (4) (4X) DESIGNED FOR INDOOR (OUTDOOR) MOUNTING AND EQUIPPED WITH A LOCKING COVER.

PUMP RUN ELAPSED TIME METERS SHALL BE INCLUDED FOR EACH PUMP.

TIME DELAY RELAYS SHALL BE INCLUDED TO AVOID SIMULTANEOUS STARTING OF BOTH PUMPS.

WIRING DIAGRAMS TO BE CONTAINED IN CONTROL PANEL.

HIGHWATER ALARM WITH HORN, HORN SILENCING SWITCH AND FLASHING LIGHT TO BE FURNISHED IN A SEPARATE CABINET SUITABLE FOR OUTDOOR REMOTE MOUNTING. ALARM SIGNAL SHALL BE TRANSMITTED TO AUTO DIALER LOCATED IN GENERATOR SET ENCLOSURE.

WATER LEVEL FLOAT SWITCHES SHALL ACTUATE SEWAGE PUMPS IN STATION. SWITCHES SHALL BE POLYURETHANE ENCLOSED MERCURY SWITCH AND DESIGNED SPECIFICALLY FOR SEWAGE PUMPING APPLICATIONS. FS-1 FUNCTIONS AS THE TURN-OFF SWITCH AND IS SET AT THE LOW WATER LEVEL IN THE WET WELL. FS-2 STARTS THE PUMPING CYCLE AND IS SET AT THE NORMAL OPERATION WATER LEVEL. FS-3 BRINGS IN THE SECOND PUMP AND FS-4 ACTIVATES THE HIGH WATER ALARM. FS-5 ACTIVATES A LOW WATER ALARM.

JUNCTION BOX SHALL BE OF NEMA 4X FIBERGLASS CONSTRUCTION, WITH TERMINAL STRIP FOR ALL FLOAT SWITCHES, MOTOR LEADS, AND MOTOR TEMPERATURE SWITCHES.

DUPLEX GFI CONVENIENCE OUTLET TO BE INCLUDED IN CONTROL PANEL.

THREE COPIES OF OPERATING MANUAL WITH WARRANTIES TO BE FURNISHED TO OWNERS.

EMERGENCY GENERATOR SET SPECIFICATION:

A. THE CONTRACTOR WILL FURNISH AND INSTALL, AS SHOWN ON THE PLANS, A SERIES 1500 POWER PAC AS MANUFACTURED BY THE PRECISION SYSTEMS DIVISION OF GASVODA & ASSOCIATES, INC. CALUMET CITY, ILLINOIS. THE POWER MODULE SHALL BE COMPLETE WITH ALL NEEDED EQUIPMENT FACTORY INSTALLED AND WIRED, IN A SEAMLESS ON-PIECE MOLDED FIBERGLASS ENCLOSURE. THE FIBERGLASS ENCLOSURE SHALL BE SECURELY MOUNTED ON A FABRICATED STEEL BASE.

B. THE PRINCIPAL ITEMS OF EQUIPMENT SHALL INCLUDE, BUT NOT LIMITED TO, THE FOLLOWING:

1. A ONE PIECE SEAMLESS FIBERGLASS ENCLOSURE
2. A FABRICATED STEEL BASE
3. ENGINE GENERATOR SET
4. ENGINE CONTROL
5. AUTOMATIC TRANSFER SWITCH
6. GENERATOR CONTROL
7. PREPARED EXHAUST SYSTEM WITH GUARD OUTSIDE
8. FIXED INTAKE AND EXHAUST LOUVERS
9. PREPARED FUEL SYSTEM
10. RADIATOR DUCT ADAPTER
11. CONVENIENCE ACCESSORIES

C. THE GENERATOR MANUFACTURER SHALL ALSO BE THE MANUFACTURER OF THE AUTOMATIC TRANSFER SWITCH FOR SINGLE SOURCE RESPONSIBILITY.

D. ENGINE GENERATOR SET SHALL BE CAPABLE OF CONTINUOUS STANDBY RATING AT 0.8 PF, FOR OPERATION AT RATED POWER REQUIREMENTS.

E. ALL EQUIPMENT AND COMPONENTS SHALL BE AS DETAILED IN THE CONSTRUCTION SPECIFICATIONS.

F. AUTO DIALER WILL BE INSTALLED IN FIBERGLASS ENCLOSURE TO TRANSMIT PUMP AND GENERATOR SET ALARM SIGNALS.

SEWAGE PUMP STATION SPECIFICATIONS

GENERAL:

MANUFACTURER SHALL FURNISH AND INSTALL ONE (1) PREFABRICATED REINFORCED CONCRETE SUBMERSIBLE TYPE SEWAGE PUMP STATION. STATION SHALL BE OF PRECAST REINFORCED CONCRETE CONSTRUCTION. MANUFACTURER SHALL GUARANTEE THAT ALL JOINTS IN PUMPING CHAMBER AND ENTRANCE TUBES SHALL BE WATER TIGHT.

PUMPING STATION SHALL BE COMPLETE WITH TWO (2) NON-CLOG SEWAGE PUMPS, MOTORS, FIVE (4) WATER LEVEL FLOAT SWITCHES, STEPS, HATCHWAY AND CONTROLS. COMPLETE DIMENSIONAL DRAWINGS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO ORDERING EQUIPMENT.

PUMP CHAMBER:

PUMP CHAMBER SHALL BE CONSTRUCTED OF CONCRETE REINFORCED FOR COMPRESSIVE STRENGTH TO A MINIMUM OF 5000 PSI. CHAMBER HAS INSIDE DIMENSION OF 8 FEET X 10 FEET. THE WALLS SHALL BE 8" THICK. THE FLOOR SHALL BE 8" THICK. THE ROOF SHALL BE 8" THICK AND DESIGNED FOR H-20 LOADING. MANUFACTURER SHALL SEAL ALL JOINTS AND OPENINGS TO BE WATER TIGHT WITH BUTYL RUBBER SECTION JOINT CONFORMING TO LATEST ASTM C443 SPEC.

HATCH HAS CLEAR OPENING AS SHOWN ON PLANS. DOOR LEAF SHALL BE ALUMINUM WITH STEEL HARDWARE CAPABLE OF WITHSTANDING H2O LOADING. DOOR SHALL BE PROVIDED WITH SNAP LOCK AND EXTERIOR HASP LOCK.

VALVE PIT:

VALVE PIT SHALL BE CONSTRUCTED OF CONCRETE REINFORCED FOR COMPRESSIVE STRENGTH TO A MINIMUM OF 5,000 PSI. CHAMBER HAS INSIDE DIMENSIONS OF 6 FEET X 6 FEET. THE WALLS SHALL BE 6" THICK. THE ROOF SHALL BE 6" THICK. MANUFACTURER SHALL SEAL ALL JOINTS AND OPENINGS TO BE WATER TIGHT WITH BUTYL RUBBER SECTION JOINT CONFORMING TO LATEST ASTM C443 SPEC.

HATCH HAS CLEAR OPENING AS SHOWN ON PLANS. DOOR LEAF SHALL BE ALUMINUM WITH STEEL HARDWARE CAPABLE OF WITHSTANDING H2O LOADING. DOOR SHALL BE PROVIDED WITH SNAP LOCK AND EXTERIOR HASP LOCK.

STEPS SHALL BE PROVIDED FOR CLIMBING IN AND OUT OF THE CHAMBER. STEPS WILL BE STEEL REINFORCED COPOLYMER POLYPROPYLENE PLASTIC. STEPS WILL CONFORM TO LATEST ASTM C478 PARA. 11 SPEC.

PUMPS:

PUMPS SHALL BE GOULD HSUL 4X4-12 SUBMERSIBLE PUMP. EACH PUMP SHALL BE DESIGNED FOR A CAPACITY OF 225 GPM AGAINST 128 FEET TOTAL DYNAMIC HEAD.

MOTORS SHALL BE HERMETICALLY SEALED SUBMERSIBLE TYPE ELECTRIC MOTOR OF 25 HP, 1750 RPM, FOR OPERATION ON AVAILABLE POWER. DESIGNED TO CLASS 1, GROUP D SPECIFICATIONS. SHALL BE FURNISHED FOR EACH PUMP. MOTOR NAMEPLATE HORSEPOWER RATING SHALL NOT BE EXCEEDED BY THE BRAKE HORSEPOWER REQUIREMENT OF THE PUMP FOR DESIGN CONDITION OF SERVICE FOR THE IMPELLER DIAMETER INSTALLED. MOTOR SHAFT SHALL BE STAINLESS STEEL, IMPERVOUS TO LIQUID AND WASTE MATTER BEING HANDLED. THERMAL OVERLOAD PROTECTIONS AND A MOISTURE DETECTION SYSTEM SHALL BE BUILT INTO THE MOTOR.

LIFTING EYES SHALL BE CAST INTO THE MOTOR HOUSING ADEQUATELY DESIGNED TO LIFT THE ENTIRE PUMP/MOTOR ASSEMBLY. PUMP CONSTRUCTION SHALL BE IN ACCORDANCE WITH ASTM SPEC. NO. A48-64, CLASS 30, WHICH SHALL INCLUDE CAST IRON FOR INTEGRAL SUPPORT LEGS, PUMP CASING AND IMPELLER. ALL PIPE FLANGES SHALL BE FACED AND TO THE THICKNESS REQUIRED FOR COMPLIANCE WITH 125 LB. AMERICAN STANDARD BOLT SLOTS ARE ACCEPTABLE IN LIEU OF DRILLED HOLES.

IMPELLER SHALL BE CAST IN ONE PIECE AND DIRECTLY MOUNTED TO A ONE PIECE STAINLESS STEEL MOTOR-PUMP SHAFT. IT SHALL NOT REQUIRE SEPARATE PUMP SHAFT OR COUPLING. EACH IMPELLER SHALL BE AN ENCLOSED TWO (2) PORT TYPE. THE IMPELLER SHALL PASS A THREE (3) INCH SPHERE. THE ENDS OF THE BLADES SHALL BE ROUNDED TO PREVENT CLOGGING.

IMPELLER HUB SHALL BE PROVIDED WITH A KEY WAY AND KEY, AND WILL BE LOCKED TO THE PUMP SHAFT AND MAINTAINED IN THIS POSITION BY A WASHER AND SELF LOCKING IMPELLER SCREW.

MOTOR BEARINGS SHALL BE IN ACCORDANCE WITH ELECTRIC MOTOR SPECIFICATION, B-10.

PIPING:

PIPING SHALL BE OF CLASS 53 D.I. CEMENT LINED WITH 125 LB. FLANGES, ASPHALT COATED EXTERIOR AND PAINTED. FITTING WILL BE 125 LB. CAST IRON, FLANGED. GATE VALVES TO BE BRONZE FITTED SOLID WEDGE WITH NON-RISING STEM TO CONFORM TO FEDERAL SPEC. WW-V-58A, TYPE 1, CLASS 1 CHECK VALVES ARE BALL CHECK VALVE FOR USE IN VERTICAL LINE. CAST IRON BODY WITH RUBBER COVERED IRON BALL WITH METAL SEAL. FOUR (4) INCH DISCHARGE WHICH WILL EXIT WALL AND BE PROVIDED WITH A FLEXIBLE MECHANICAL COUPLING ON EXTERIOR OF STATION.

QUICK LIFT ASSEMBLY:

INSTALL "QUICK LIFT" SLIDE RAIL MECHANISM IN ACCORDANCE WITH PUMP MANUFACTURERS RECOMMENDATIONS TO GUIDE SUBMERSIBLE PUMPS FROM UPPER LEVEL TO ITS OPERATIONAL LOCATION IN THE SUMP BASIN.

BASE ELBOW IS CAST IN ACCORDANCE WITH ASTM SPEC NO. A48-64, CLASS 30. ALL PIPE FLANGES SHALL BE FACED AND THE THICKNESS REQUIRED FOR COMPLIANCE WITH 125 LB. AMERICAN STANDARD. BOLT SLOTS ARE ACCEPTABLE IN LIEU OF DRILLED HOLES. BOLT SLOTS IN THE BASE ARE PROVIDED FOR MOUNTING THE ELBOW TO THE CONCRETE FLOOR OR SOLE PLATE. BASE ELBOW IS SPECIFICALLY DESIGNED TO PERMIT THE SLIDE MECHANISM TO LINK UP THE PUMP WITH THE BASE ELBOW.

GUIDE RAIL IS CONSTRUCTED FROM GALVANIZED PIPE AND COATED WITH EPOXY TO PREVENT CORROSION AND MAINTAIN A SMOOTH SURFACE FOR THE GUIDE SHOES. THE GUIDE RAIL IS ATTACHED TO THE CURB FRAME OR DOOR FRAME AT THE UPPER LEVEL AND TO THE BASE ELBOW AT THE FLOOR BY AN ATTACHMENT BRACKET, PROPERLY FABRICATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

TWO TEFLON COATED SHOES ARE TO GUIDE THE PUMP ASSEMBLY DOWN THE GUIDE RAIL UNTIL THE SHOES CONTACT THE DISCHARGE ELBOW.

A NEOPRENE JAM WASHER SHALL FIT IN THE SLIDE PART TO MINIMIZE LEAKAGE BETWEEN THE PUMP CLEARING AND BASE ELBOW.

SLIDE HAS PUMP DISCHARGE BOLTED TO ONE SIDE AND GUIDE SHOES ATTACHED TO THE OTHER SIDE. THE SLIDE IS GUIDED TO ITS DESCENT AND ASCENT BY THE RAIL AND GUIDE SHOES. LIFTING CHAIN OR CABLE SHALL BE INCLUDED.

