

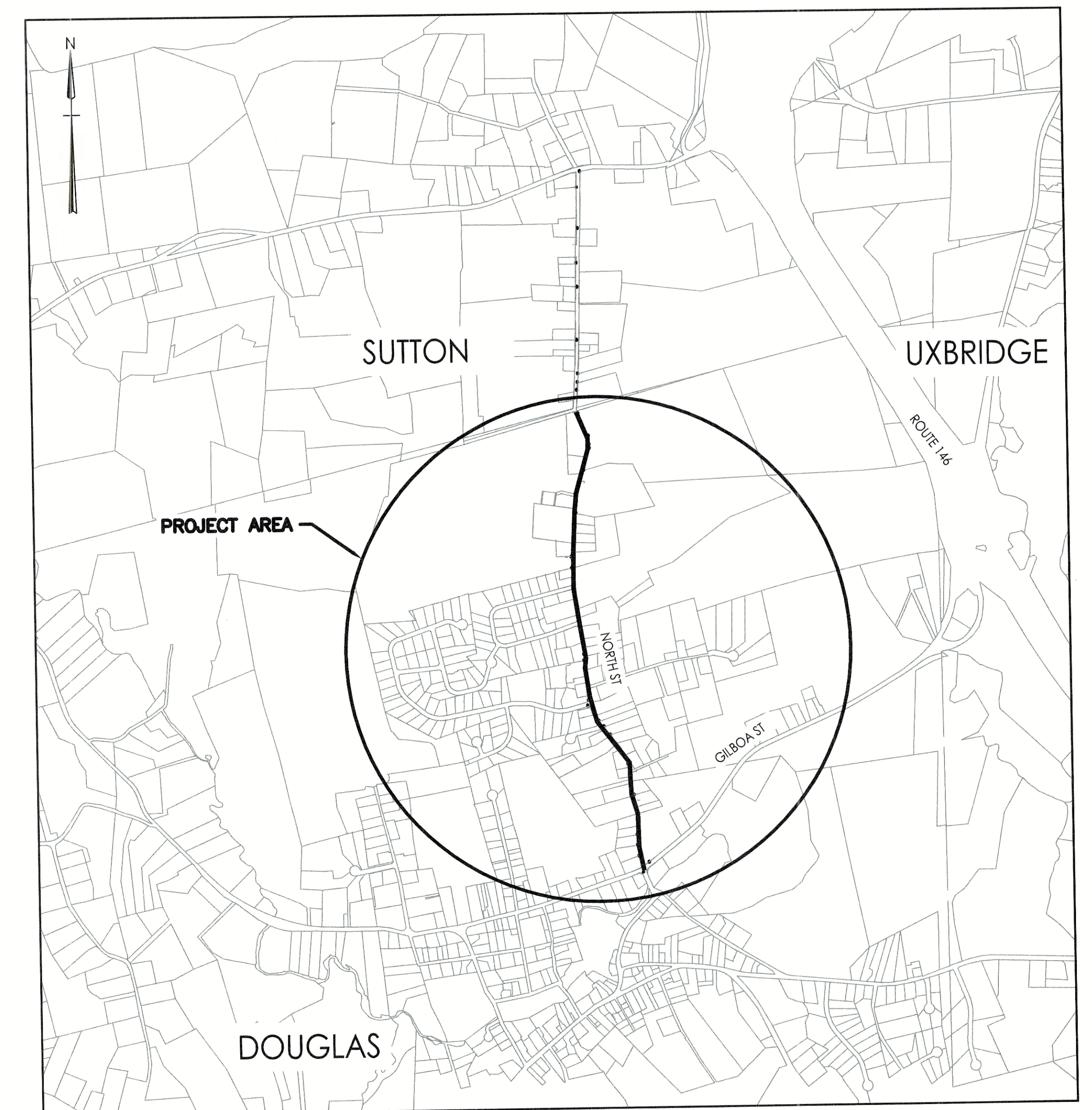


TOWN OF DOUGLAS, MASSACHUSETTS

WATER & SEWER SYSTEM MANAGER
ROBERT SULLIVAN

NORTH STREET ROADWAY AND UTILITY IMPROVEMENTS

AUGUST 2024



LOCUS MAP
SCALE: 1" = 1,500'

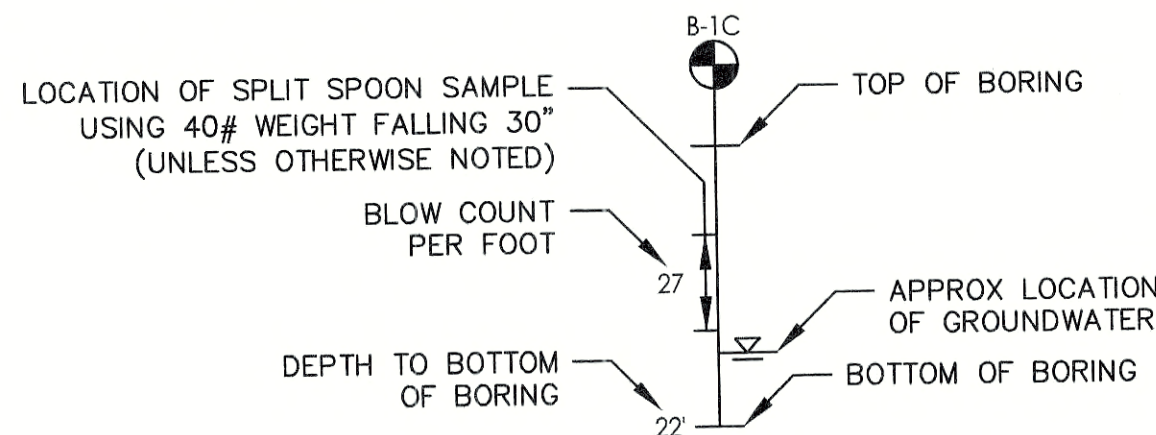
NOTICE OF INTENT
NOT FOR CONSTRUCTION

1. THESE PLANS WERE COPIED FROM TOPOGRAPHICAL SURVEY PROVIDED BY DAUOD ENGINEERING & ASSOCIATES, INC., AND FIELD INVESTIGATION BY STANTEC CONSULTING SERVICES INC.
2. HORIZONTAL COORDINATE SYSTEM IS APPROXIMATELY REFERENCED TO NAD83 BASED ON EXISTING MAPPING FROM THE TOWN OF DOUGLAS GIS.
3. DEPTHS OF EXISTING UNDERGROUND STRUCTURES SHALL BE VERIFIED PRIOR TO CONSTRUCTION.
4. DIG-SAFE (DIAL 811) AND DOUGLAS WATER AND SEWER DEPARTMENT SHALL BE NOTIFIED PRIOR TO CONSTRUCTION. CALL TEL. NO. 1-508-476-2400 AT LEAST 72 HOURS IN ADVANCE OF THE WORK.
5. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WORK WITH ALL UTILITY COMPANIES IN REGARDS TO THEIR BURIED UTILITIES LOCATED IN THE PROJECT AREA. CONTRACTOR SHALL SUPPORT CONDUITS WHEN NECESSARY TO PREVENT DAMAGE. FOR UTILITY COMPANY CONTACT INFORMATION SEE SPECIFICATION SECTION 01010.
6. THE CONTRACTOR SHALL PROVIDE DUST CONTROL FOR EXCAVATION AND CONSTRUCTION OPERATIONS UNLESS OTHERWISE NOTED IN THE CONTRACT DOCUMENTS.
7. PIPE SHALL BE LAID WITH 5'-0" MINIMUM COVER UNLESS OTHERWISE SPECIFIED OR APPROVED BY THE ENGINEER.
8. LOCATIONS OF UTILITIES AND UNDERGROUND STRUCTURES ARE APPROXIMATE AND ARE THE RESULT OF SURFACE EVIDENCE AS LOCATED BY FIELD SURVEY, PLANS OF RECORD, AND OTHER AVAILABLE SOURCES. THESE PLANS DO NOT NECESSARILY DEPICT THE EXACT LOCATIONS OF ALL UTILITIES WHICH MAY EXIST AT THIS TIME WITHIN THE PREMISES SURVEYED.
9. CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS PRIOR TO BEGINNING ANY EXCAVATION.
10. UPON AWARD OF CONTRACT, CONTRACTOR SHALL MAKE NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS, AND IN THE CONTRACT DOCUMENTS. DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS AND/OR FIRE HYDRANTS, OR EXCAVATE WITHOUT APPROPRIATE PERMITS.
11. CONTRACTOR IS RESPONSIBLE FOR OBTAINING STREET OCCUPANCY, STREET OPENING, AND TRENCH PERMITS FROM THE TOWN OF DOUGLAS WATER & SEWER DEPARTMENT, BEFORE CONSTRUCTION.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
13. CONTRACTOR SHALL PROVIDE FOR THE MAINTENANCE OF SAFETY AND TRAFFIC FLOW ON THE PUBLIC AND PRIVATE WAYS AFFECTED BY THE CONSTRUCTION OF THIS PROJECT. THE CONSTRUCTION SITE MUST BE ACCESSIBLE TO EMERGENCY VEHICLES AT ALL TIMES.
14. CONTRACTOR SHALL CAREFULLY COORDINATE ALL WORK WITH THAT OF HIS/HER SUBCONTRACTORS, THE OWNER AND OTHER CONTRACTORS WORKING WITHIN THE PROJECT LIMITS.
15. WORK WITHIN STATE RIGHTS-OF-WAY SHALL CONFORM TO THE PERMIT TO ACCESS STATE HIGHWAY, INCLUDED IN THESE CONTRACT DOCUMENTS. WORK WITHIN THE LOCAL RIGHTS-OF-WAY SHALL CONFORM TO THE TOWN OF DOUGLAS WATER & SEWER DEPARTMENT.
16. BEFORE STARTING CONSTRUCTION, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MAKING ALL NECESSARY ARRANGEMENTS FOR COORDINATING AND/OR PERFORMING ALL NECESSARY WORK IN CONNECTION WITH THE DISCONTINUANCE OF ANY UTILITIES WITHIN THE PROJECT LIMITS. ALL EXISTING UTILITY SERVICES SHALL BE MAINTAINED DURING CONSTRUCTION.
17. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
18. WHERE A NEW ASPHALT PAVEMENT SHALL MEET EXISTING ASPHALT PAVEMENT, THE JOINT SHALL BE SAWCUT TO A NEAT VERTICAL LINE. THE CONTRACTOR SHALL PROVIDE A SMOOTH, FLUSH TRANSITION AT THE JOINT. THE CONTRACTOR SHALL SEAL WITH BITUMEN AND SAND THE JOINT.
19. THE CONTRACTOR SHALL SEQUENCE CONSTRUCTION TO LIMIT THE TIME EARTH MATERIALS ARE EXPOSED BEFORE THEY ARE COVERED, SEEDED, OR OTHERWISE STABILIZED TO PREVENT EROSION.
20. TEMPORARY STOCKPILING OF MATERIALS RELATED TO THE CONSTRUCTION ACTIVITIES ARE TO BE PROPERLY STABILIZED, PROTECTED AND DEMARCATED TO LIMIT MOVEMENT OF MATERIAL INTO STORM DRAIN SYSTEM OR ONTO ADJACENT PARCELS.
21. THE AREAS OF CONSTRUCTION SHALL REMAIN IN A STABLE CONDITION AT THE CLOSE OF EACH CONSTRUCTION DAY.
22. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK, DISTURBED BY THE CONTRACTOR'S OPERATIONS, INCLUSIVE OF DELIVERIES AND CONSTRUCTION LOAD DAMAGE, SHALL BE RESTORED BY THE CONTRACTOR TO ORIGINAL CONDITION, AT THE CONTRACTOR'S EXPENSE.
23. AREAS DISTURBED DURING CONSTRUCTION AND NOT RESTORED WITH IMPERVIOUS SURFACES (BUILDINGS, PAVEMENTS, WALKS, ETC.) SHALL BE RESTORED WITH SIX (6) INCHES LOAM AND SEEDED, WITH FINISHED GRADES T MATCH EXISTING CONDITIONS.
24. CONTRACTOR SHALL BLEND NEW EARTHWORK SMOOTHLY INTO EXISTING GRADE.
25. CONTRACTOR SHALL PREVENT DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS AND CORRECTIVE ACTION IF SUCH OCCURS.
26. CONTRACTOR SHALL CONTROL STORMWATER RUNOFF DURING CONSTRUCTION TO PREVENT ADVERSE IMPACTS TO DRAINAGE SYSTEM AND OFF-SITE AREAS, AND SHALL BE RESPONSIBLE FOR REPAIRS RESULTING FROM DAMAGES, IF ANY, AT NO COST TO OWNER AND THE TOWN OF DOUGLAS.
27. PRECAUTIONS SHALL BE TAKEN TO PROTECT NEW WORK FROM FLOODING DURING STORMS OR FROM OTHER CAUSES. GRADING IN THE AREAS SURROUNDING ALL EXCAVATIONS SHALL BE PROPERLY SLOPED TO PREVENT WATER FROM RUNNING INTO THE EXCAVATED AREA OR TO ADJACENT PROPERTIES.
28. ALL PIPELINES OR STRUCTURES NOT STABLE AGAINST UPLIFT DURING CONSTRUCTION OR PRIOR TO COMPLETION SHALL BE THOROUGHLY BRACED OR OTHERWISE PROTECTED.

29.	DO NOT EXCAVATE UNTIL THE DOWATERING SYSTEM IS OPERATIONAL SUCH THAT THE EXCAVATION MAY PROCEED WITHOUT DISTURBANCE TO THE FINAL SUBGRADE.
30.	THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING POLICE DETAILS. NO ADDITIONAL PAYMENTS WILL BE MADE FOR DELAYS RELATED TO A LACK OF POLICE COVERAGE.
31.	THE CONTRACTOR SHALL COORDINATE DISRUPTION OF PRIVATE UTILITY SERVICES WITH PROPERTY OWNERS AND TENANTS AT LEAST FORTY EIGHT (48) HOURS PRIOR TO DISRUPTION. ALL UTILITY COORDINATION IS THE RESPONSIBILITY OF THE CONTRACTOR, AT NO COST TO THE TOWN.
32.	THE LOCATION OF EXISTING SUBSURFACE ROCK IS NOT KNOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE HIS OWN DETERMINATION AS TO THE LOCATION OF THE SUBSURFACE ROCK. SOIL BORING AND PROBE LOGS ARE INCLUDED AS AN APPENDIX TO THE SPECIFICATIONS.
33.	THE CONTRACTOR IS REQUIRED TO EXCAVATE AND BACKFILL TEST PITS WHEREVER INDICATED ON THE CONTRACT DRAWINGS.
34.	CONTRACTOR SHALL PLACE TEMPORARY TRENCH PAVEMENT ONCE PER WEEK.
35.	TEMPORARY OR ALTERNATE PEDESTRIAN ACCESS MUST BE MAINTAINED WHEN SIDEWALKS ARE IMPACTED BY THE WORK.
36.	CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION SITE DOWATERING AND MAINTENANCE OF EXISTING FLOWS AT ALL TIMES DURING CONSTRUCTION. ALL DISCHARGES FROM DOWATERING ACTIVITIES SHALL BE FREE FROM SUSPENDED SEDIMENTS AND SHALL BE TREATED FOR SEDIMENT REMOVAL PRIOR TO DISCHARGE.
37.	WATER FROM THE TRENCHES AND EXCAVATIONS SHALL BE DISPOSED OF IN SUCH A MANNER AS TO AVOID PUBLIC NUISANCE, INJURY TO PUBLIC HEALTH OR THE ENVIRONMENT. DAMAGE TO PUBLIC OR PRIVATE PROPERTY, OR DAMAGE TO THE WORK COMPLETED OR IN PROGRESS. SILTATION BARRIERS AND SEDIMENT TANKS SHALL BE UTILIZED AS NECESSARY.
38.	WATER FROM TRENCHES AND EXCAVATIONS SHALL NOT BE DISCHARGED DIRECTLY TO STORM DRAIN SYSTEMS. PROPER TREATMENT THROUGH SEDIMENTATION DEVICE OR SEDIMENTATION AREA SHALL BE PROVIDED PRIOR TO DISCHARGE TO ANY DRAINAGE SYSTEMS.
39.	CONTRACTOR SHALL REPAIR ANY DAMAGE RESULTING FROM THE FAILURE OF THE DOWATERING OPERATIONS OR FROM FAILURE TO MAINTAIN ALL THE AREAS OF WORK IN A SUITABLE DRY CONDITION.
40.	FRAMES AND COVERS FOR ALL THE DRAIN AND SEWER MANHOLES SHALL BE SET TO MEET FINAL GRADES AS ESTABLISHED BY THE CONTRACTOR IN THE FIELD.
41.	FRAMES AND GRATES FOR ALL CATCH BASINS SHALL BE SET TO MEET FINAL GRADES AS ESTABLISHED BY THE CONTRACTOR IN THE FIELD.
42.	CONTRACTOR IS RESPONSIBLE FOR SUBMITTING SEWER BYPASS PUMPING IN ACCORDANCE WITH SPECIFICATION SECTION 02736.
43.	THE CONTRACTOR SHALL COMPLY WITH THE STATE DEPARTMENT OF HEALTH SERVICES CRITERIA FOR THE SEPARATION OF WATER MAINS AND SANITARY SEWERS.
44.	WITH THE EXCEPTION OF TEMPORARY DOMESTIC SERVICE HOSES, NO RUBBER BYPASS SHALL BE USED UNDER ANY CIRCUMSTANCE. RUBBER SERVICE HOSE MUST BE NSF 61 RATED.
45.	CONTRACTOR IS RESPONSIBLE FOR SUBMITTING A TEMPORARY BYPASS PIPING PLAN IN ACCORDANCE WITH SPECIFICATION SECTION 02666.
46.	ALL WATER MAIN BENDS, CAPS, TEES AND HYDRANTS SHALL BE BACKED WITH CONCRETE THRUST BLOCKS, SEE DRAWING C-501 FOR THRUST BLOCK SCHEDULE.
47.	DEFINITE LOCATIONS OF WATER MAINS, HYDRANTS, VALVES AND FITTINGS SHALL BE ESTABLISHED IN THE FIELD BY THE ENGINEER.
48.	ALL NECESSARY WATER MAIN SHUTDOWNS SHALL BE COORDINATED WITH THE DOUGLAS WATER DEPARTMENT AT LEAST 72 HOURS PRIOR TO TAKING ANY WATER MAINS OUT OF SERVICE. NO DELAY CLAIMS SHALL BE MADE DUE TO SHUTDOWN EFFORTS BY THE TOWN.
49.	ALL EXISTING PIPE, FITTINGS, VALVES, VALVE BOXES AND HYDRANTS REMOVED BY THE CONTRACTOR DURING ANY PORTION OF THE WORK SHALL REMAIN THE PROPERTY OF THE OWNER AND BE STOCKPILED AT NO ADDITIONAL COST TO THE OWNER.
50.	IN GENERAL, NEW WATER MAINS SHALL BE LAID UNDER EXISTING DRAIN LINES AND OVER EXISTING SEWER MAINS.
51.	RELOCATION OF EXISTING PRIVATE UTILITIES, IF NECESSARY, SHALL BE DONE BY THE RESPECTIVE UTILITY COMPANY WITH PROPER NOTIFICATION BY THE CONTRACTOR.
52.	WHEREVER NEW WATER MAINS OR APPURTENANCES ARE TO JOIN OR BE CONNECTED TO EXISTING PIPE, THE CONTRACTOR SHALL CUT AND REMOVE THE EXISTING PIPE AS NECESSARY TO INSTALL THE NEW WORK.
53.	THE CONTRACTOR SHALL PROVIDE FLUSHING, TESTING AND SAMPLING OF TEMPORARY AND PERMANENT PIPING AS DIRECTED BY THE OWNER AND ESTABLISHED PROCEDURES IN SPECIFICATION SECTION 02665.
54.	COUPLINGS (RESTRAINED) WITHIN 15 FEET OF A TEE, BEND OR VALVE SHALL BE SOLID SLEEVES WITH METALLURGS. FLEXIBLE COUPLINGS (RESTRAINED) SHALL BE USED AT ALL OTHER CONNECTIONS. NO SEPARATE PAYMENT SHALL BE MADE FOR COUPLINGS (RESTRAINED). IF THE OUTSIDE DIAMETER OF THE EXISTING CAST IRON PIPE EXCEEDS THAT ALLOWED BY THE SOLID SLEEVE COUPLING (RESTRAINED) THEN FRICTION CLAMPS SHALL BE INSTALLED ACROSS A FLEXIBLE COUPLING (RESTRAINED). NO SEPARATE PAYMENT SHALL BE MADE FOR SOLID SLEEVES OR THREADED RODS AND FRICTION CLAMPS.
55.	WATER AND SEWER SERVICE LOCATIONS ARE CONSIDERED APPROXIMATE. THE CONTRACTOR SHALL COORDINATE EXACT SERVICE LOCATIONS IN THE FIELD WITH THE DOUGLAS WATER / SEWER DEPARTMENT, IN CONCEPT WITH PROPERTY OWNERS.
56.	CONTRACTOR SHALL SHAPE INVERTS AS REQUIRED WHEN CONNECTING INTO EXISTING MANHOLES.
57.	WETLAND RESOURCE AREAS DELINEATED BY MICHELE SIMONEAUX, PWS AND JOSHUA WEISS, PSS ON MAY 18, 2023. HATCH DIVER/MANHOLES PER DELINEATED BY RYAN RYAN "WE" WERE DELINEATED BY OTHERS.

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LEGEND: BORINGS



EXISTING	PROPOSED		
		HYDRANT	PROPOSED DUCTILE IRON WATER MAIN
		UTILITY POLE	GATE VALVE TO BE INSTALLED OR REMOVED AND REPLACED (AS NOTED)
		CATCH BASIN	CAP
		SEWER MANHOLE	TEE
		DRAIN MANHOLE	BEND
		WATER SERVICE VALVE	REDUCER
		MAIN VALVE (GAS, WATER)	ABANDON EXIST.
		REDUCER	2" BYPASS PIPE
		ELECTRIC HANDHOLE	4" BYPASS PIPE
		TELEPHONE VAULT	6" BYPASS PIPE
		GAS SERVICE VALVE	HYDRANT INSTALLATION
		EXISTING CONIFEROUS TREE	INSTALL COPPER SERVICE PIPE, CORPORATION STOP, AND CURB STOP (SIZE INDICATED)
		EXISTING DECIDUOUS TREE	REMOVE GATE VALVE BOX AND COVER
		SEWER MAIN (SIZE INDICATED)	TSGV TO CONNECT BYPASS PIPE
		DRAIN (SIZE INDICATED)	COMPOST FILTER TUBE
		WATER MAIN (SIZE INDICATED)	PROBE
		GAS MAIN (SIZE INDICATED)	BORING
		UNDERGROUND ELECTRIC	SEWER MANHOLE
		UNDERGROUND COMMUNICATION	GRAVITY SEWER
		OVERHEAD WIRES	SEWER SERVICE
		PROPERTY LINE	CATCH BASIN INSERTION
		GUARD RAIL	COUPLING
		FENCE LINE	DEMO EXISTING
		TREELINE	TEST PIT
		CONTOUR LINES	
		100-YEAR FEMA FLOODZONE/BORDERING LAND SUBJECT TO FLOODING	
		INNER RIPARIAN ZONE	
		OUTER RIPARIAN ZONE	
		50' AND 100' BUFFER ZONE	
		CULVERT AND OUTLETS	
		INLAND BANK/MAHWL	
		BORDERING VEGETATED WETLANDS	
		WETLAND	
		EXISTING WATER STOP	
		BUILDING	

ADJ	ADJUST	HP	HIGH PRESSURE
BB	BITUMINOUS BERM	HYD	HYDRANT
BCC	BITUMINOUS CONCRETE CURB	OHW	OVER HEAD WIRE
BIT	BITUMINOUS PAVEMENT	PE	POLYETHYLENE
BOF	BOTTOM OF FOOTING	PIV	POST INDICATOR VALVE
BSW	BITUMINOUS PAVEMENT SIDEWALK	PL	PLASTIC
B.P.H.	BOSTON-PROVIDENCE HIGHWAY (ROUTE 1)	PROP	PROPOSED
BS	BARE STEEL	RED	REDUCER
CB	CATCH BASIN	REM	REMOVE
CCSW	CONCRETE SIDEWALK	RET	RETAIN
CEM	CEMENT	R&D	REMOVE AND DISCARD
C.T.E.	CONNECT TO EXISTING	R&R	REMOVE AND RESET
CI	CAST IRON	R&S	REMOVE AND STACK
CL	CENTERLINE	S	SEWER
CLF	CHAIN LINK FENCE	SMH	SEWER MANHOLE
CONC	CONCRETE	STA.	STATION
D	STORM STRAIN	SW	SIDEWALK
D/CL	DUCTILE IRON CEMENT LINED	SGC	SLOPED GRANITE CURBING
DMH	DRAIN MANHOLE	S.H.L.O.	STATE HIGHWAY LAID OUT (RIGHT OF WAY)
DWY	DRIVEWAY	SWL	SOLID WHITE LINE
DYCL	DOUBLE YELLOW CENTER LINE	TGW	TOP OF WALL
E	ELECT	TSV	TAPPING SLEEVE AND GATE VALVE
EP	EDGE OF PAVEMENT	(TYP)	TYPICAL
EX	EXISTING	UGE	UNDERGROUND ELECTRIC DUCT
G	GAS	UGT	UNDERGROUND TELEPHONE DUCT
GC	GRANITE CURB	UP	UTILITY POLE
GV	GATE VALVE	VG	VERTICAL GRANITE CURBING
HMA	HOT MIX ASPHALT	W	WATER
		WG	WATER GATE

C

B

A

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MATCHLINE - SEE THIS SHEET

MATCHLINE - SEE THIS SHEET

MATCHLINE - SEE DRAWING NO. C-102

NOTE:

1. REMOVE AND DISPOSE OF 6" WATER MAIN WITHIN TRENCH LIMITS. WHEN THE 6" WATER MAIN EXITS TRENCH LIMITS CAP AND ABANDON PIPE AT EDGE OF TRENCH.

REMOVE
EXIST. HYDRANT
INSTALL
12"x6" ANCHOR TEE
6" DICL PIPE
6" GV & BOX
NEW HYDRANT

REMOVE EXIST.
8" DICL WATER
MAIN

INSTALL
1" CORPORATION STOP
1" COPPER SERVICE PIPE
1" CURB STOP & BOX
TYP.

INSTALL
NEW HYDRANT
12"x6" ANCHOR TEE
6" DICL PIPE
6" GV & BOX

INSTALL
NEW 12" DICL
WATER MAIN

FOR STORM DRAIN WORK
REFER TO DRAWINGS C-105 TO
C-114

FOR ROADWAY WORK
REFER TO DRAWINGS R-101
TO R-105

PLAN

SCALE: 1"=40'

0 40' 80'

NORTH
STREET

PLAN

SCALE: 1"=40'

0 40' 80'

Consultant



Gina Britton
8-19-2024



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Client/Project Logo

Client/Project
Town of Douglas, MA

NORTH STREET ROADWAY
AND UTILITY IMPROVEMENTS

Douglas, MA

File Name:

ART Dwn. RHD Dign. GAB Chkd. 2024.05.22 YYYY.MM.DD

Title

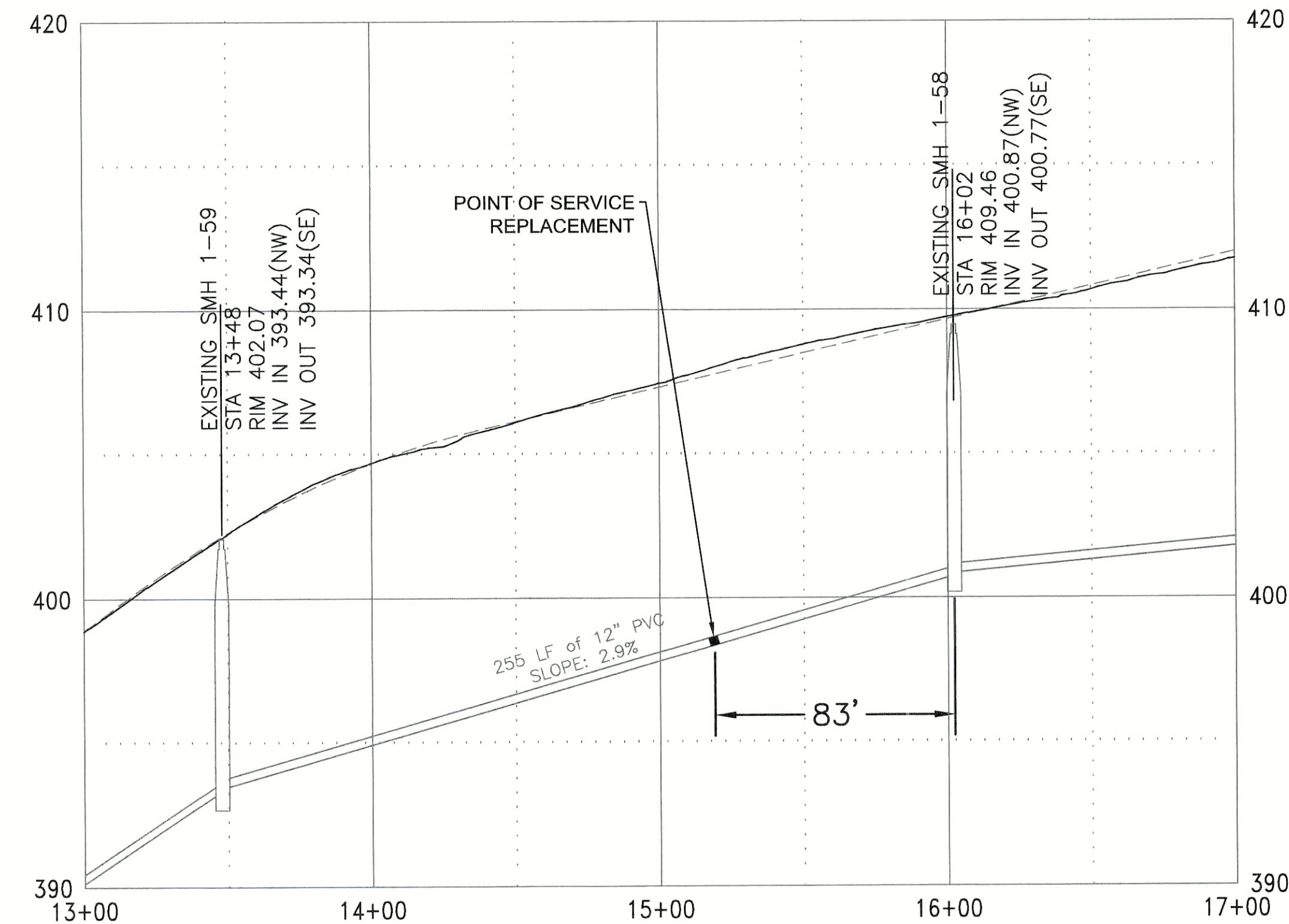
WATER AND SEWER IMPROVEMENTS - 1 OF 3

Project No.
195150885

Revision Sheet
0 4 of 43

Scale

Drawing No.
C-101



PROFILE

HOR. SCALE: 1"=40'

VER. SCALE: 1"=4'

NORTH STREET

GILBOA STREET

MUNFORD RIVER

MAHWAH

NORTH STREET

GILBOA STREET

MUNFORD RIVER

MAHWAH

NORTH STREET

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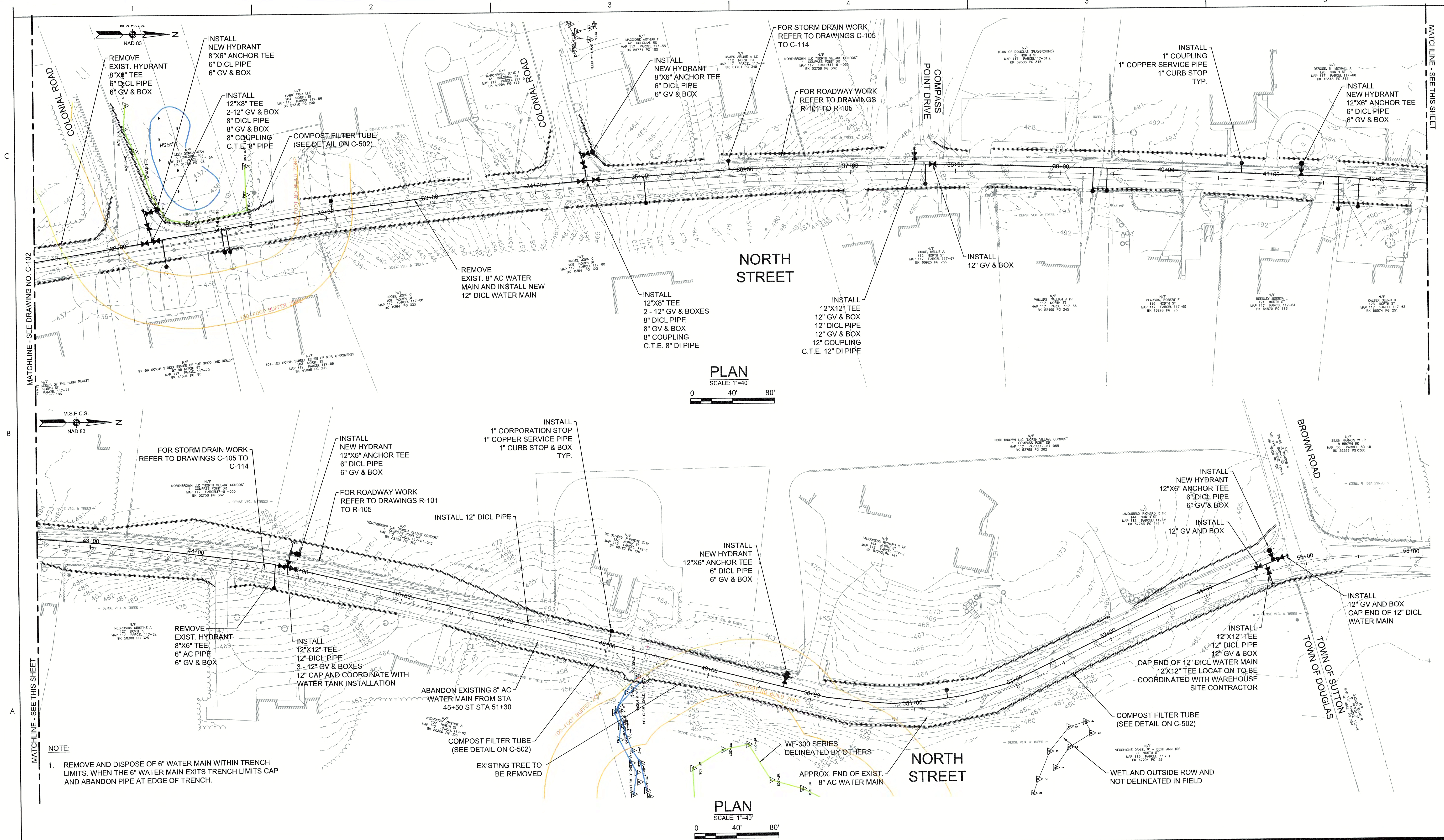
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				Permit/Seal		Consultant		Client/Project Logo		Client/Project Town of Douglas, MA		Title WATER AND SEWER IMPROVEMENTS - 3 OF 3			
						GINA A. BRITTON CIVIL No. 41626 REGISTERED PROFESSIONAL ENGINEER <i>Gina A. Britton</i> 8-19-2024		 Stantec Stantec Consulting Services Inc. 45 Blue Sky Drive, 3rd Floor, Burlington MA 01803-4542 Tel: (781) 221-1000 www.stantec.com Copyright Reserved The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing; any errors or omissions shall be reported to Stantec without delay. The Copyrights to all designs and drawings are the property of Stantec. Reproduction or use for any purpose other than that authorized by Stantec is forbidden.		NORTH STREET ROADWAY AND UTILITY IMPROVEMENTS Douglas, MA File Name: ART Dwn. RHD Dsgn. GAB Chkd. 2024.05.22 YYYY-MM-DD		Project No. 195150885 Revision Sheet 0 6 of 43 Scale --- Drawing No. C-103			
Revision		By		Appd		YYYY-MM-DD		Issued		By		Appd		YYYY-MM-DD	

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- NOTES:
- FOR WATER WORK REFER TO DRAWINGS C-101 TO C-103
 - FOR ROADWAY WORK REFER TO DRAWINGS R-101 TO R-105

DRAINAGE STRUCTURE TABLE							
NAME/TYPE	REFERENCE ALIGNMENT	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CB - 110	NORTH STREET	0+44.90	31.2 L	350.19			CB
DMH - 001	NORTH STREET	0+63.29	10.5 L	350.76	I=345.46' (DMH - 002) I=345.46' (E - CB - 001)	I=345.36' (E - HW - 001)	DMH
CB - 109	NORTH STREET	0+74.27	25.3 L	350.58			CB
DMH - 002	NORTH STREET	1+06.39	3.2 L	352.06	I=346.26' (DMH - 005) I=346.26' (CB - 003) I=346.26' (CB - 004)	I=346.16' (DMH - 001)	DMH
CB - 003	NORTH STREET	1+10.26	9.9 L	352.07		I=346.56' (DMH - 002)	CB
CB - 004	NORTH STREET	1+11.46	10.8 R	352.10		I=346.65' (DMH - 002)	CB

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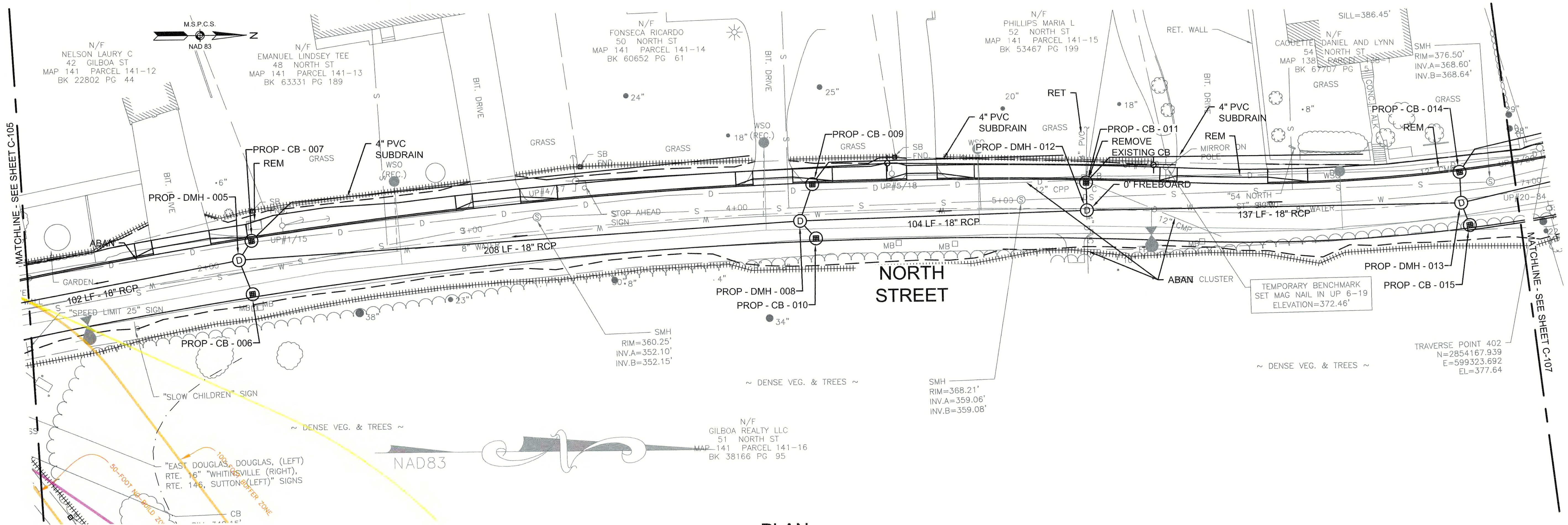
Douglas, MA

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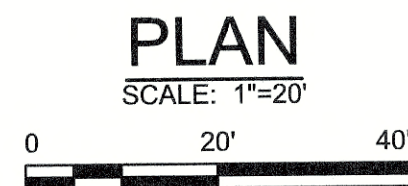
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Title
DRAINAGE PLAN - 1 OF 10

Project No.	Scale
195150885	---
Revision	Sheet
0	8 of 43
	Drawing No.
	C-105

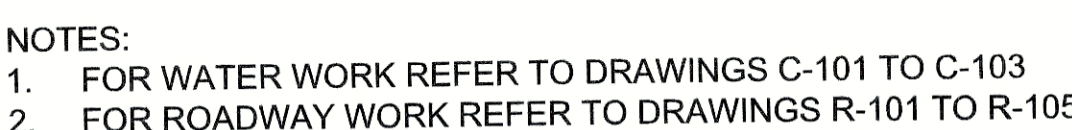


- NOTES:
- FOR WATER WORK REFER TO DRAWINGS C-101 TO C-103
 - FOR ROADWAY WORK REFER TO DRAWINGS R-101 TO R-105



DRAINAGE STRUCTURE TABLE							
NAME/TYPE	REFERENCE ALIGNMENT	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
DMH - 005	NORTH STREET	2+11.89	3.6 L	356.07	I=350.44' (DMH - 008) I=350.61' (CB - 007) I=350.61' (CB - 006)	I=350.34' (DMH - 002)	DMH
CB - 006	NORTH STREET	2+14.91	9.9 R	356.06		I=351.07' (DMH - 005)	CB
CB - 007	NORTH STREET	2+17.63	10.0 L	356.16	I=351.12' (UD - 175)	I=351.02' (DMH - 005)	CB
DMH - 008	NORTH STREET	4+23.59	3.2 R	365.09	I=358.46' (DMH - 012) I=358.88' (CB - 009) I=358.88' (CB - 010)	I=358.36' (DMH - 005)	DMH
CB - 009	NORTH STREET	4+28.74	10.5 L	365.17	I=359.20' (UD - 177)	I=359.04' (DMH - 008)	CB
CB - 010	NORTH STREET	4+29.34	10.0 R	365.20		I=358.98' (DMH - 008)	CB
CB - 011	NORTH STREET	5+31.33	10.0 L	369.22	I=365.30' (UD - 176)	I=365.24' (DMH - 012)	CB
DMH - 012	NORTH STREET	5+31.82	0.5 R	369.43	I=362.71' (DMH - 013) I=365.00' (CB - 011)	I=362.61' (DMH - 008)	DMH
DMH - 013	NORTH STREET	6+72.87	1.2 R	376.51	I=369.80' (DMH - 016) I=369.97' (CB - 014) I=369.97' (CB - 015)	I=369.70' (DMH - 012)	DMH
CB - 014	NORTH STREET	6+73.70	10.5 L	376.36	I=371.59' (UD - 179)	I=370.17' (DMH - 013)	CB
CB - 015	NORTH STREET	6+74.99	10.0 R	376.44		I=370.37' (DMH - 013)	CB

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GINA A. BRITTON CIVIL No. 41628 REGISTERED PROFESSIONAL ENGINEER 8-19-2024		Stantec		Town of Douglas, MA		NORTH STREET ROADWAY AND UTILITY IMPROVEMENTS		DRAINAGE PLAN - 2 OF 10
Copyright Reserved		Douglas, MA		Project No. 195150885		Scale ---		Project No. 195150885
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				2024.05.22		YYYY.MM.DD		Revision Sheet 0 9 of 43
								Drawing No. C-106

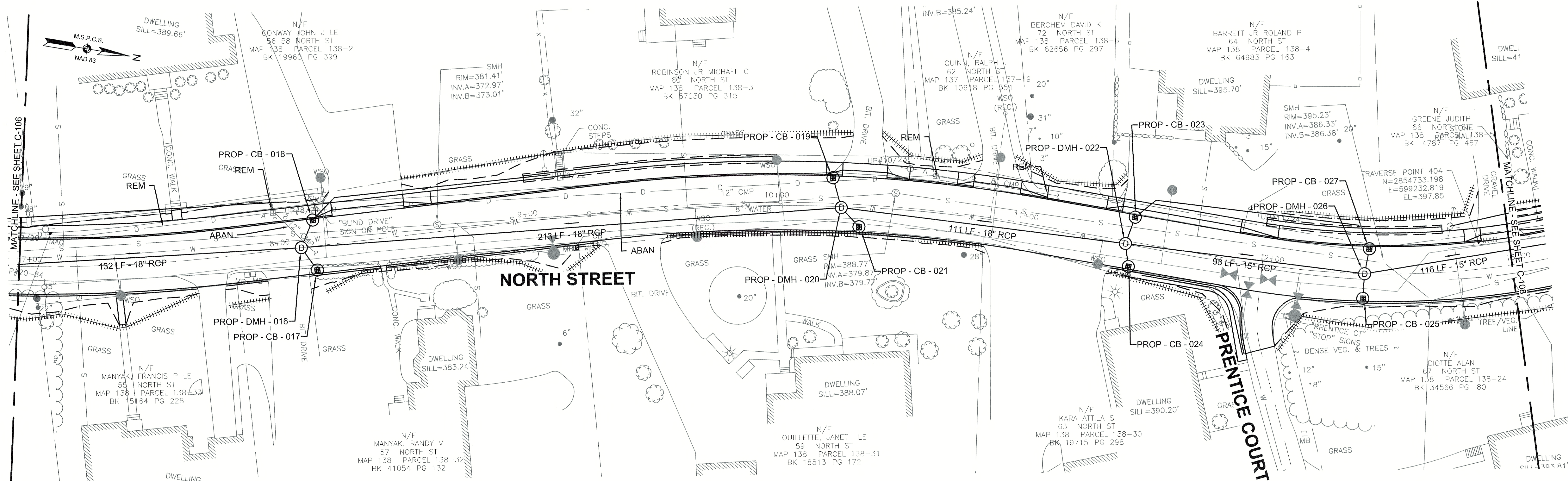


A horizontal scale bar with alternating black and white segments. Above the bar, the numbers 0, 20', and 40 are printed at regular intervals.

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Revision

Drawing No.
3 C-108



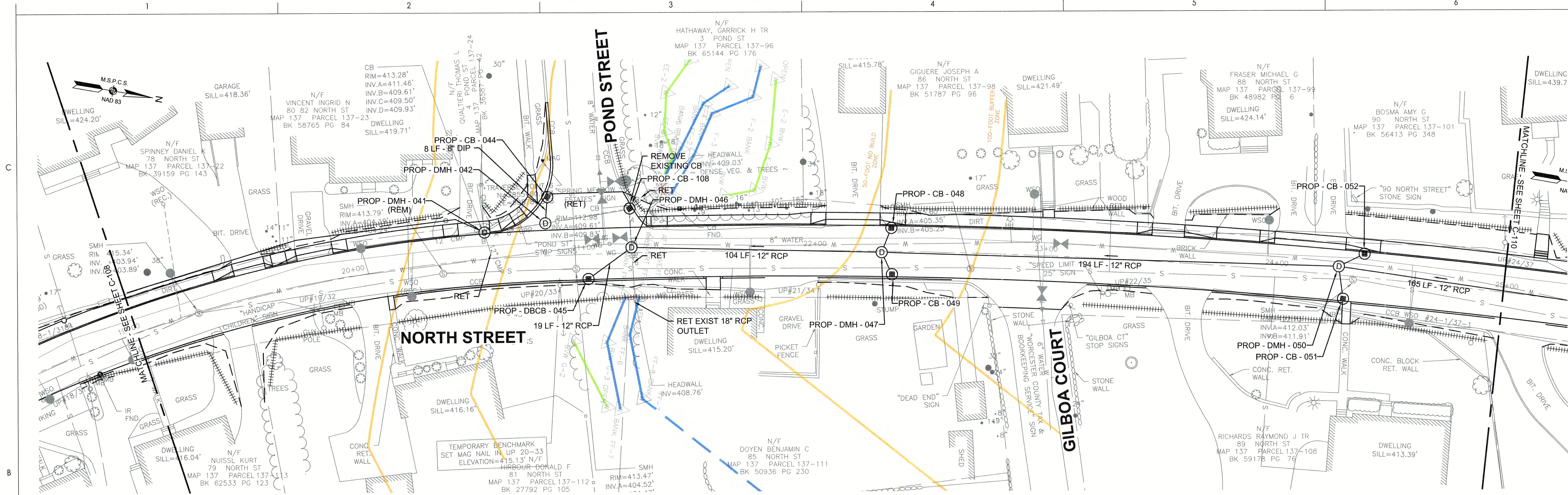
- NOTES:
- FOR WATER WORK REFER TO DRAWINGS C-101 TO C-103
 - FOR ROADWAY WORK REFER TO DRAWINGS R-101 TO R-105



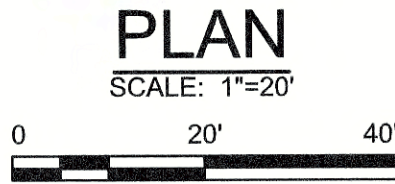
DRAINAGE STRUCTURE TABLE							
NAME/TYPE	REFERENCE ALIGNMENT	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
DMH - 016	NORTH STREET	8+08.47	0.0	380.23	I=373.95' (DMH - 020) I=374.32' (CB - 018) I=374.32' (CB - 017)	I=373.85' (DMH - 013)	DMH
CB - 017	NORTH STREET	8+13.79	9.6 R	380.13		I=374.64' (DMH - 016)	CB
CB - 018	NORTH STREET	8+14.28	10.5 L	380.12	I=374.70' (UD - 180)	I=374.64' (DMH - 016)	CB
CB - 019	NORTH STREET	10+22.11	10.2 L	388.22		I=381.07' (DMH - 020)	CB
DMH - 020	NORTH STREET	10+25.86	1.6 R	388.13	I=380.48' (DMH - 022) I=380.80' (CB - 021) I=380.80' (CB - 019)	I=380.38' (DMH - 016)	DMH
CB - 021	NORTH STREET	10+33.38	8.9 R	388.25		I=381.07' (DMH - 020)	CB
DMH - 022	NORTH STREET	11+40.95	1.1 R	390.90	I=384.90' (DMH - 026) I=385.20' (CB - 023) I=385.20' (CB - 024)	I=384.65' (DMH - 020)	DMH
CB - 023	NORTH STREET	11+43.03	10.0 L	390.89	I=385.50' (UD - 181)	I=385.50' (DMH - 022)	CB
CB - 024	NORTH STREET	11+43.65	10.0 R	390.79		I=385.50' (DMH - 022)	CB
CB - 025	NORTH STREET	12+37.19	9.9 R	394.58		I=388.97' (DMH - 026)	CB
DMH - 026	NORTH STREET	12+37.64	0.0 R	394.80	I=388.50' (DMH - 028) I=388.77' (CB - 025) I=388.77' (CB - 027)	I=388.40' (DMH - 022)	DMH
CB - 027	NORTH STREET	12+39.35	10.0 L	394.70		I=388.97' (DMH - 026)	CB

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						Town of Douglas, MA		DRAINAGE PLAN - 3 OF 10
		8-19-2024		Stantec Consulting Services Inc. 45 Blue Sky Drive, 3rd Floor, Burlington MA 01803-4542 Tel: (781) 221-1000 www.stantec.com		NORTH STREET ROADWAY AND UTILITY IMPROVEMENTS		Project No. 195150885
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						TJC Dwn. DPG Dign. GAB Chkd. 2024.05.22 YYYY.MM.DD		Drawing No. C-107

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- NOTES:
- FOR WATER WORK REFER TO DRAWINGS C-101 TO C-103
 - FOR ROADWAY WORK REFER TO DRAWINGS R-101 TO R-105



DRAINAGE STRUCTURE TABLE							
NAME/TYPE	REFERENCE ALIGNMENT	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
DMH - 041	NORTH STREET	20+57.81	11.6 L	414.45	I=409.60' (UD -185)	I=411.29' (DMH - 042)	DMH
DMH - 042	NORTH STREET	20+83.87	14.0 L	413.80	I=410.60' (CB - 044) I=410.43' (DMH - 041)	I=410.33' (UD - 178)	DMH
CB - 044	NORTH STREET	20+85.16	25.3 L	413.57		I=411.10' (DMH - 042)	CB
DBCBC - 045	NORTH STREET	21+01.60	10.7 R	413.48		I=410.15' (DMH - 046)	DOUBLE INLET
CB - 108	NORTH STREET	21+20.29	19.1 L	413.12			CB
DMH - 046	NORTH STREET	21+20.66	2.3 L	413.79	I=409.40' (DMH - 047) I=409.40' (DBCBC - 045) I=409.30' (UD - 178)	I=409.61' ()	DMH
DMH - 047	NORTH STREET	22+28.90	0.5 R	415.07	I=410.05' (DMH - 050) I=410.05' (CB - 049) I=410.05' (CB - 048)	I=409.95' (DMH - 046)	DMH
CB - 048	NORTH STREET	22+32.90	10.1 L	414.96		I=410.50' (DMH - 047)	CB
CB - 049	NORTH STREET	22+33.48	9.9 R	414.87		I=410.11' (DMH - 047)	CB
DMH - 050	NORTH STREET	24+26.86	3.7 L	422.52	I=417.88' (DMH - 053) I=418.40' (CB - 052) I=418.40' (CB - 051)	I=417.78' (DMH - 047)	DMH
CB - 051	NORTH STREET	24+29.88	10.0 R	422.49		I=418.90' (DMH - 050)	CB
CB - 052	NORTH STREET	24+37.42	10.2 L	423.11		I=419.00' (DMH - 050)	CB

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Seal of GINA A. BRITTON, CIVIL ENGINEER, No. 41626, State of Massachusetts

Gina A. Britton
8-19-2024

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Title
DRAINAGE PLAN - 5 OF 10

Project No.
195150885

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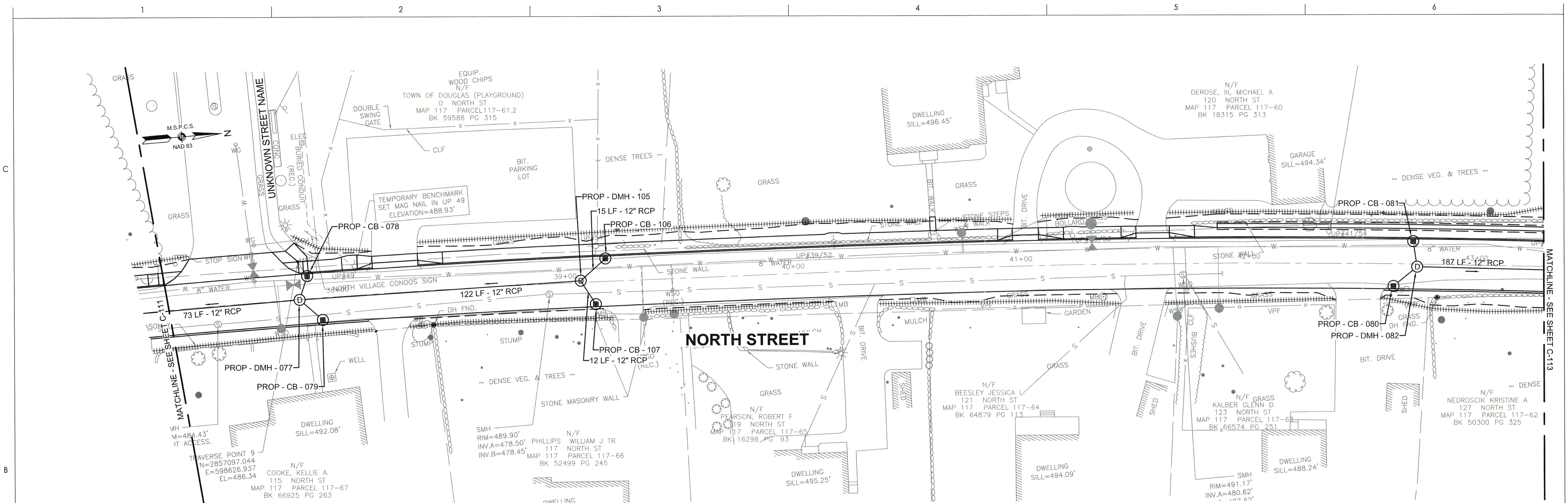
Sheet
12 of 43

Scale

Drawing No.
C-109

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- NOTES:
- FOR WATER WORK REFER TO DRAWINGS C-101 TO C-103
 - FOR ROADWAY WORK REFER TO DRAWINGS R-101 TO R-105

DRAINAGE STRUCTURE TABLE							
NAME/TYPE	REFERENCE ALIGNMENT	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
DMH - 077	NORTH STREET	37+83.12	0.2 R	486.59	I=481.45' (CB - 079) I=481.45' (CB - 078)	I=481.35' (DMH - 076)	DMH
CB - 078	NORTH STREET	37+87.19	9.9 L	486.59		I=481.65' (DMH - 077)	CB
CB - 079	NORTH STREET	37+92.63	9.7 R	486.84		I=481.65' (DMH - 077)	CB
DMH - 105	NORTH STREET	39+06.75	0.7 L	490.27			DMH
CB - 107	NORTH STREET	39+12.85	9.9 R	490.15			CB
CB - 106	NORTH STREET	39+17.92	9.9 L	490.28			CB
CB - 080	NORTH STREET	42+63.49	9.9 R	487.82		I=482.70' (DMH - 082)	CB
CB - 081	NORTH STREET	42+71.95	10.0 L	487.46		I=482.70' (DMH - 082)	CB
DMH - 082	NORTH STREET	42+73.81	1.2 R	487.55	I=482.20' (CB - 081) I=482.20' (CB - 080)	I=481.99' (DMH - 085)	DMH

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Consultant

GINA A. BRITTON
CIVIL
No. 41626
REGISTERED
PROFESSIONAL ENGINEER

Gina A. Britton
8-19-2024

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DRAINAGE PLAN - 8 OF 10

Project No.
195150885

Revision
0

Sheet
15 of 43

Scale

Drawing No.
C-112

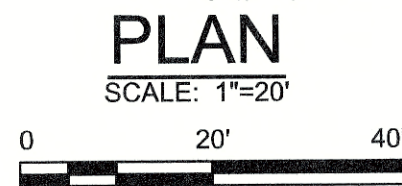
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- NOTES:
- FOR WATER WORK REFER TO DRAWINGS C-101 TO C-103
 - FOR ROADWAY WORK REFER TO DRAWINGS R-101 TO R-105



DRAINAGE STRUCTURE TABLE							
NAME/TYPE	REFERENCE ALIGNMENT	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CB - 083	NORTH STREET	44+57.51	9.9 L	476.82		I=470.78' (DMH - 085)	CB
CB - 084	NORTH STREET	44+60.68	9.8 R	476.60		I=470.78' (DMH - 085)	CB
DMH - 085	NORTH STREET	44+63.90	1.3 L	476.53	I=470.58' (DMH - 082) I=470.58' (CB - 084) I=470.58' (CB - 083)	I=470.48' (DMH - 088)	DMH
CB - 086	NORTH STREET	46+58.19	10.0 R	463.55		I=458.60' (DMH - 088)	CB
CB - 087	NORTH STREET	46+59.83	10.0 L	463.48		I=458.60' (DMH - 088)	CB
DMH - 088	NORTH STREET	46+63.49	0.8 R	463.52	I=458.50' (DMH - 085) I=458.50' (CB - 087) I=458.50' (CB - 086)	I=458.40' (DMH - 091)	DMH
CB - 089	NORTH STREET	48+06.77	10.1 L	459.99		I=456.46' (DMH - 091)	CB
CB - 090	NORTH STREET	48+09.75	9.6 R	459.96		I=456.46' (DMH - 091)	CB
DMH - 091	NORTH STREET	48+10.97	1.0 L	460.11	I=456.26' (DMH - 088) I=456.26' (CB - 089) I=456.26' (CB - 090)	I=456.16' ()	DMH
P - FES - 01	NORTH STREET	48+29.81	14.3 R		I=456.00' ()		HW
P - FES - 02	NORTH STREET	48+46.15	13.5 R		I=456.00' ()		HW
CB - 093	NORTH STREET	48+46.27	9.9 L	459.52		I=456.18' (DMH - 092)	CB
DMH - 092	NORTH STREET	48+58.03	1.2 L	459.58	I=456.08' (DMH - 096) I=456.08' (CB - 093)	I=456.08' ()	DMH

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Gina A. Britton
8-19-2024



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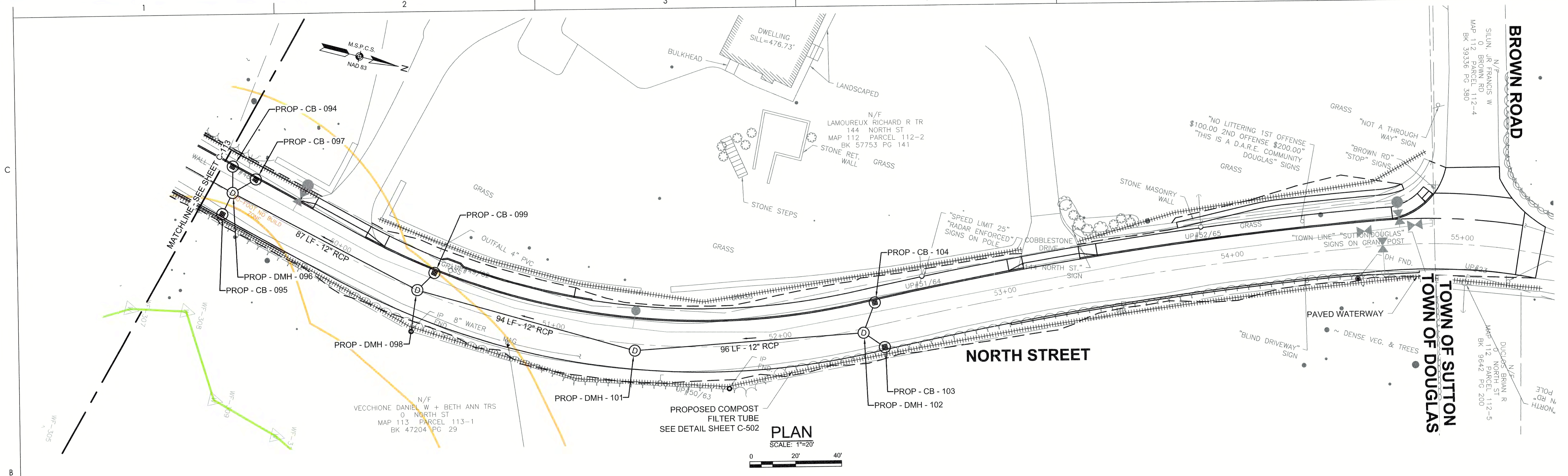
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Title
DRAINAGE PLAN - 9 OF 10

Project No.	Scale
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	Drawing No.
	C-113

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ORIGINAL SHEET - ARCH D



- NOTES:
- FOR WATER WORK REFER TO DRAWINGS C-101 TO C-103
 - FOR ROADWAY WORK REFER TO DRAWINGS R-101 TO R-105

DRAINAGE STRUCTURE TABLE							
NAME/TYPE	REFERENCE ALIGNMENT	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CB - 094	NORTH STREET	49+42.42	10.5 L	459.01		I=456.34' (DMH - 096)	CB
DMH - 096	NORTH STREET	49+47.88	0.4 L	459.21	I=456.30' (DMH - 098) I=456.30' (CB - 097) I=456.30' (CB - 094) I=456.34' (CB - 095)	I=456.30' (DMH - 092)	DMH
CB - 095	NORTH STREET	49+48.35	9.9 R	459.05		I=456.38' (DMH - 096)	CB
CB - 097	NORTH STREET	49+53.90	10.4 L	459.02		I=456.35' (DMH - 096)	CB
DMH - 098	NORTH STREET	50+38.59	0.1 L	459.69	I=456.90' (DMH - 101) I=456.80' (CB - 099)	I=456.79' (DMH - 096)	DMH
CB - 099	NORTH STREET	50+42.69	9.9 L	459.51		I=456.84' (DMH - 098)	CB
DMH - 101	NORTH STREET	51+36.64	2.9 R	461.22	I=458.00' (DMH - 102)	I=457.90' (DMH - 098)	DMH
DMH - 102	NORTH STREET	52+36.11	1.8 R	464.58	I=459.90' (CB - 104) I=459.91' (CB - 103)	I=459.80' (DMH - 101)	DMH
CB - 103	NORTH STREET	52+43.70	10.0 R	465.07		I=460.20' (DMH - 102)	CB
CB - 104	NORTH STREET	52+43.76	9.9 L	464.77		I=460.20' (DMH - 102)	CB

Revision		By	Appd	YYYY.MM.DD	Issued	By	Appd	YYYY.MM.DD	Permit/Seal	Consultant	Client/Project Logo	Client/Project Town of Douglas, MA	Title DRAINAGE PLAN - 10 OF 10	
													Project No. 195150885	
													Scale ---	
													Revision Sheet 0 17 of 43	
													Drawing No. C-114	
													File Name: TJC DPG GAB 2024.05.22 Dwn. Dsgn. Chkd. YYYY.MM.DD	

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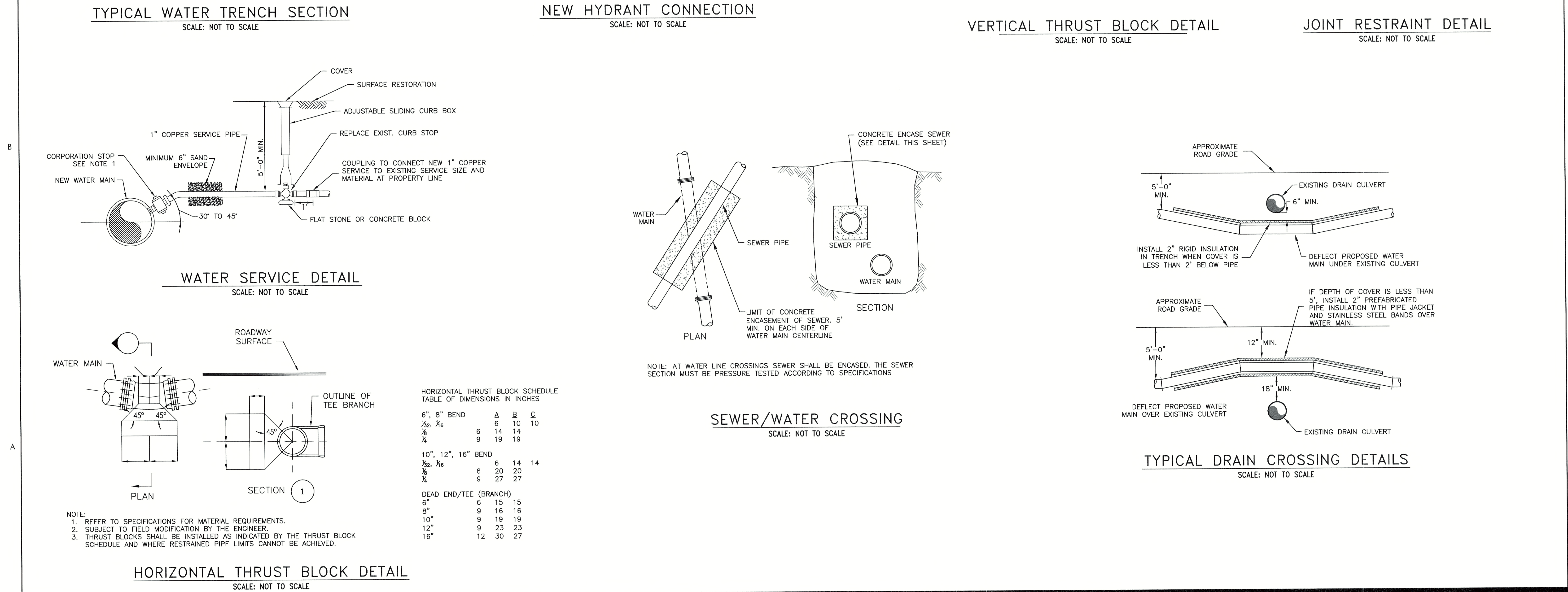
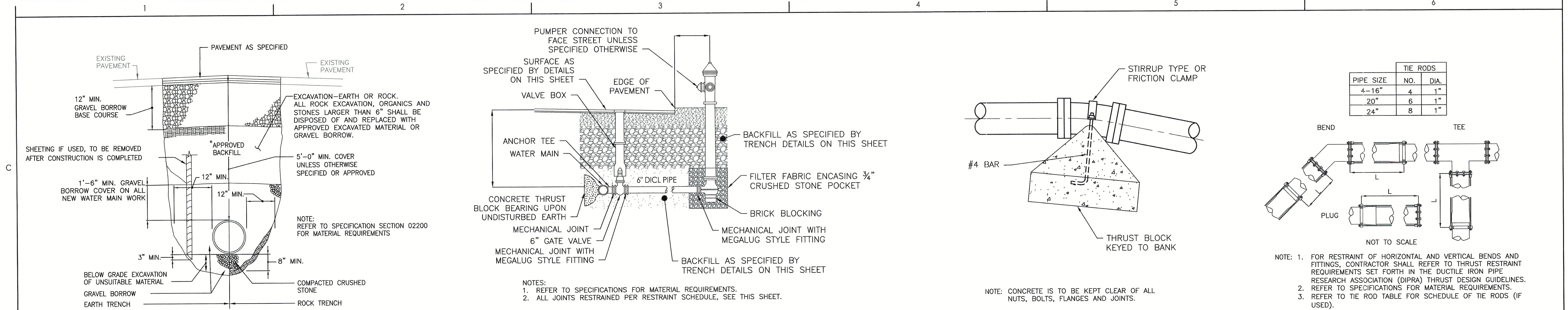
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GINA A. BRITTON
CIVIL
No. 41526
REGISTERED PROFESSIONAL ENGINEER

8-19-2024



Revision

By

Appd

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By

Appd

YYYY.MM.DD

Permit/Seal

Consultant

GINA A. BRITTON
CIVIL
No. 41828
REGISTERED
PROFESSIONAL ENGINEER

GINA A. BRITTON
8-19-2024

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Client/Project Logo

Client/Project

Town of Douglas, MA

NORTH STREET ROADWAY
AND UTILITY IMPROVEMENTS

Douglas, MA

File Name:

TJC
Dwn.

RHD
Dign.

GAB
Chkd.

2024.05.22
YYYY.MM.DD

Title

DETAILS - 1

Project No.
195150885

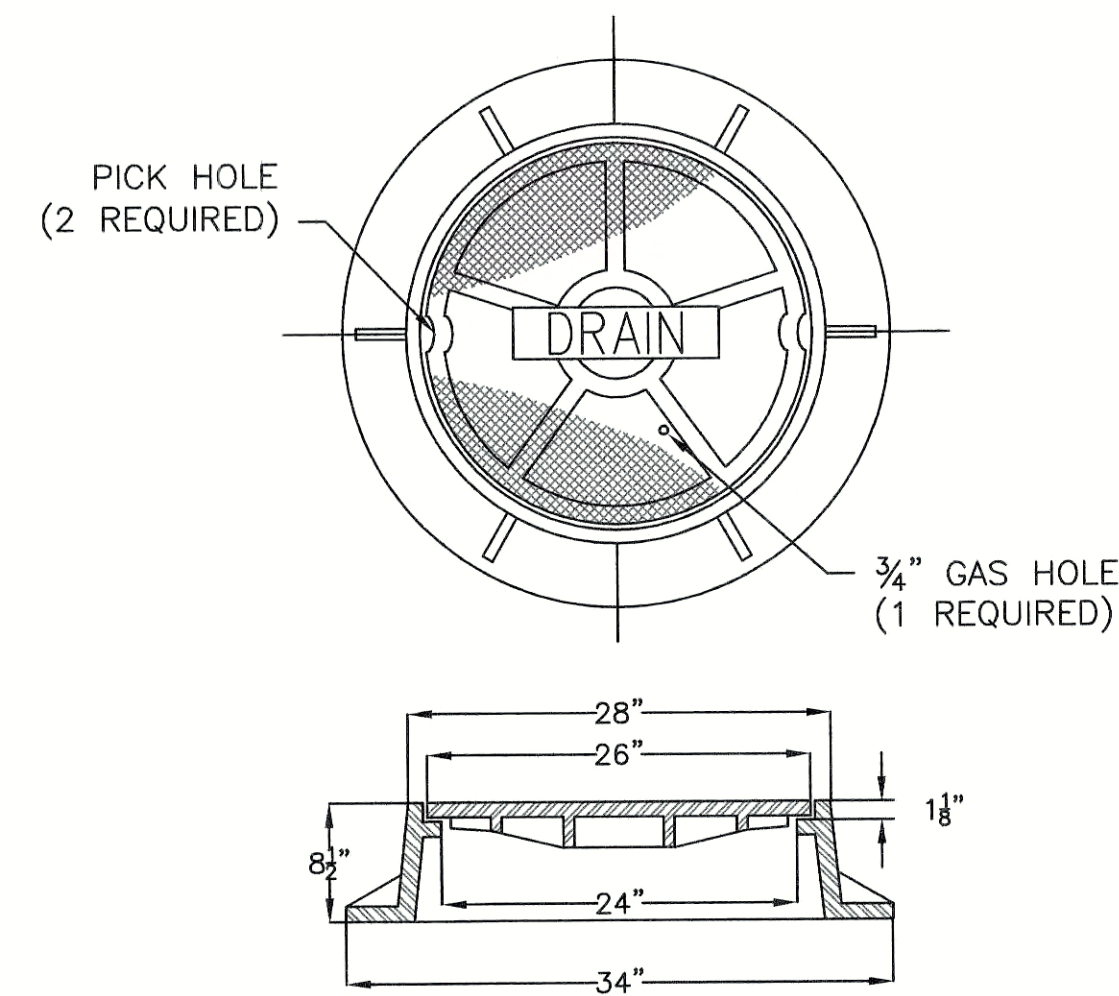
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Revision
0

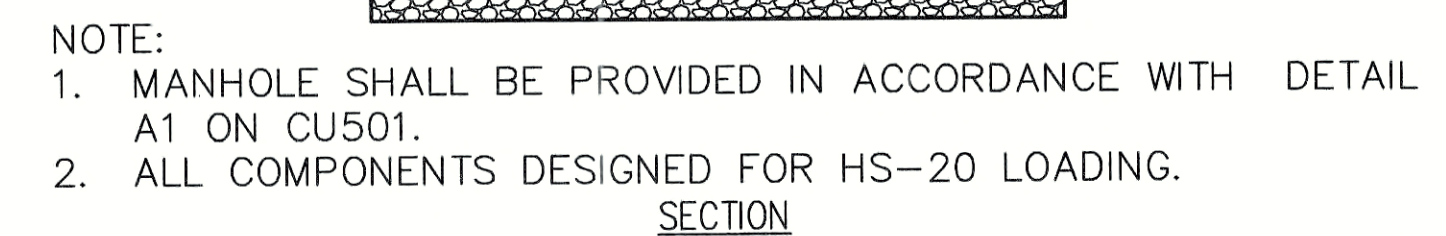
Sheet
18 of 43

Drawing No.
C-501

\\us0502.crd\us0502\shared_projects\195150885\1. design\civil\cd\c_d_riffle.dwg
revision: 02, civil 195150885, 5-501-c-504
PROJECT: 195150885, 5-501-c-504
ORIGINAL SHEET - ARCH D



TYPICAL SEWER SERVICE DETAIL



INTERNAL DROP MANHOLE
SCALE: NOT TO SCALE

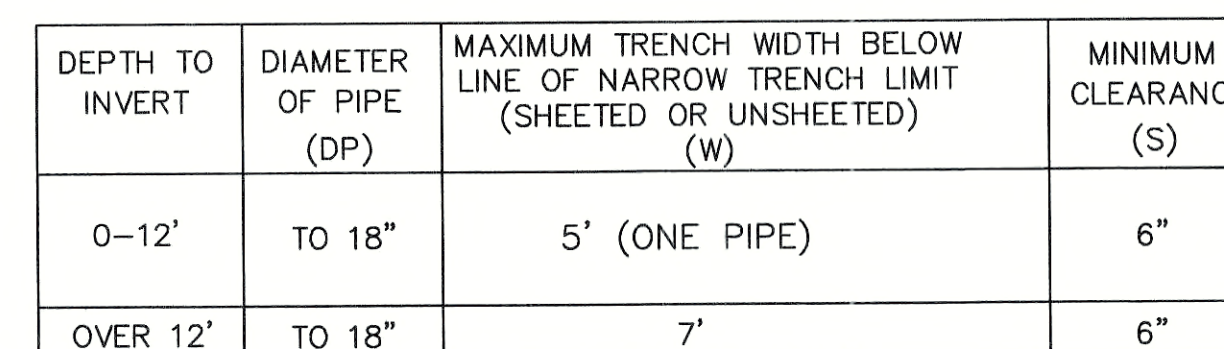
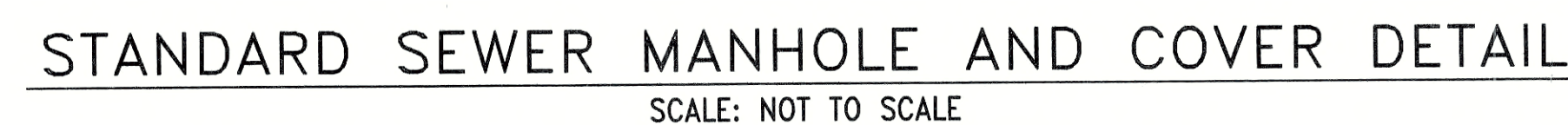
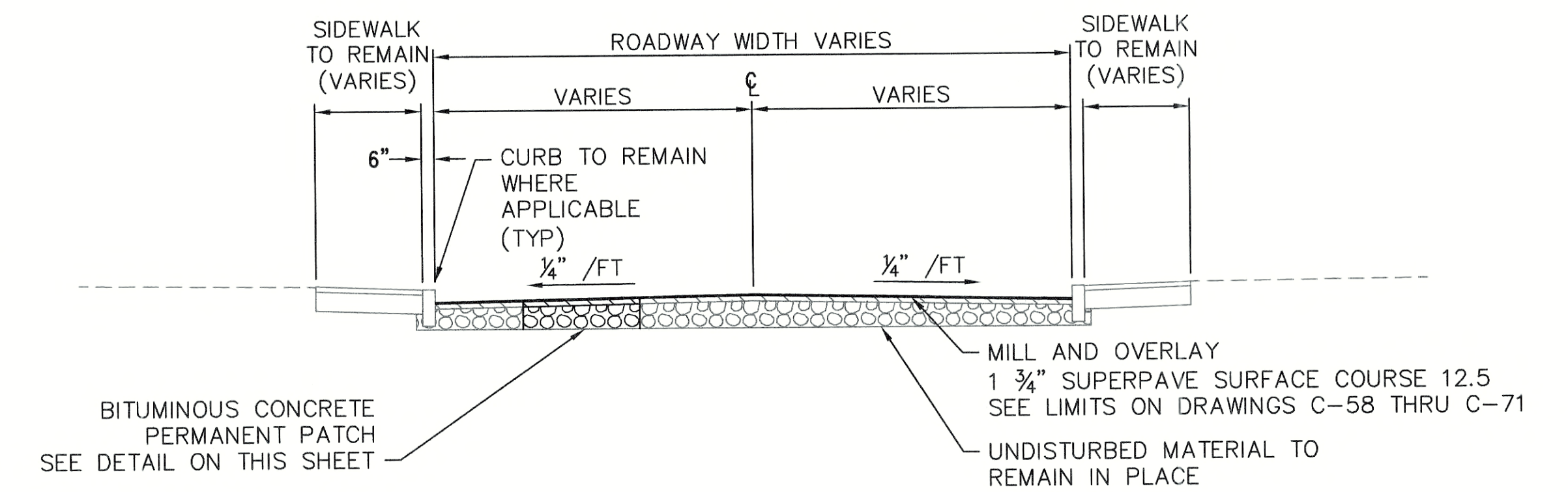


TABLE A
SEWER TRENCH DETAIL
SCALE: NOT TO SCALE

C

B

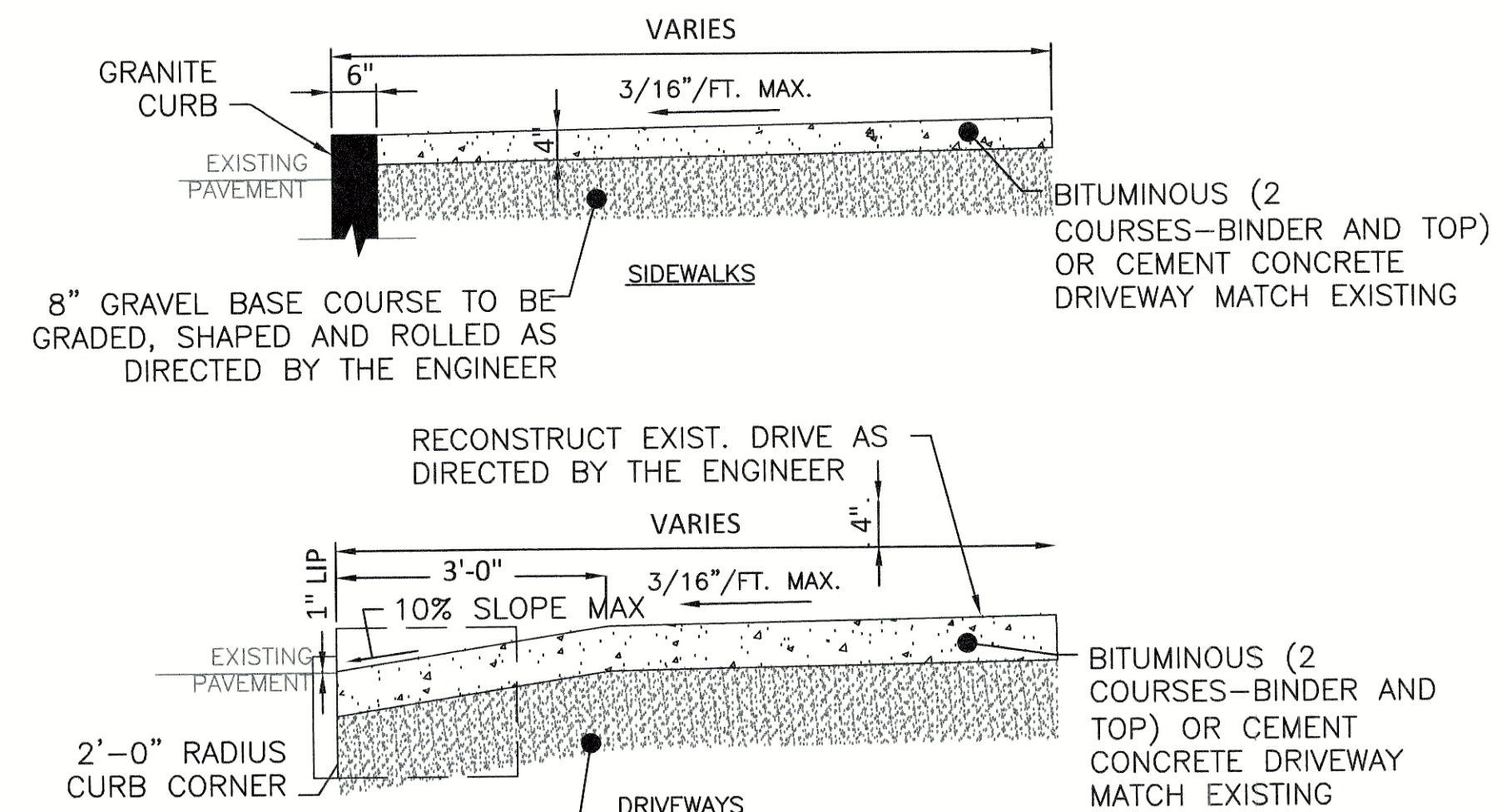
A



- NOTE:
1. MILL EXISTING PAVEMENT TO MAINTAIN EXISTING CURB REVEAL AND MATCH EXISTING GRADES. OVERLAY SHALL CONSIST OF 1 3/4" SUPERPAVE SURFACE COURSE 12.5 ON TACK COAT OVER EXISTING PAVEMENT.

1-3/4" PAVEMENT MILL AND OVERLAY

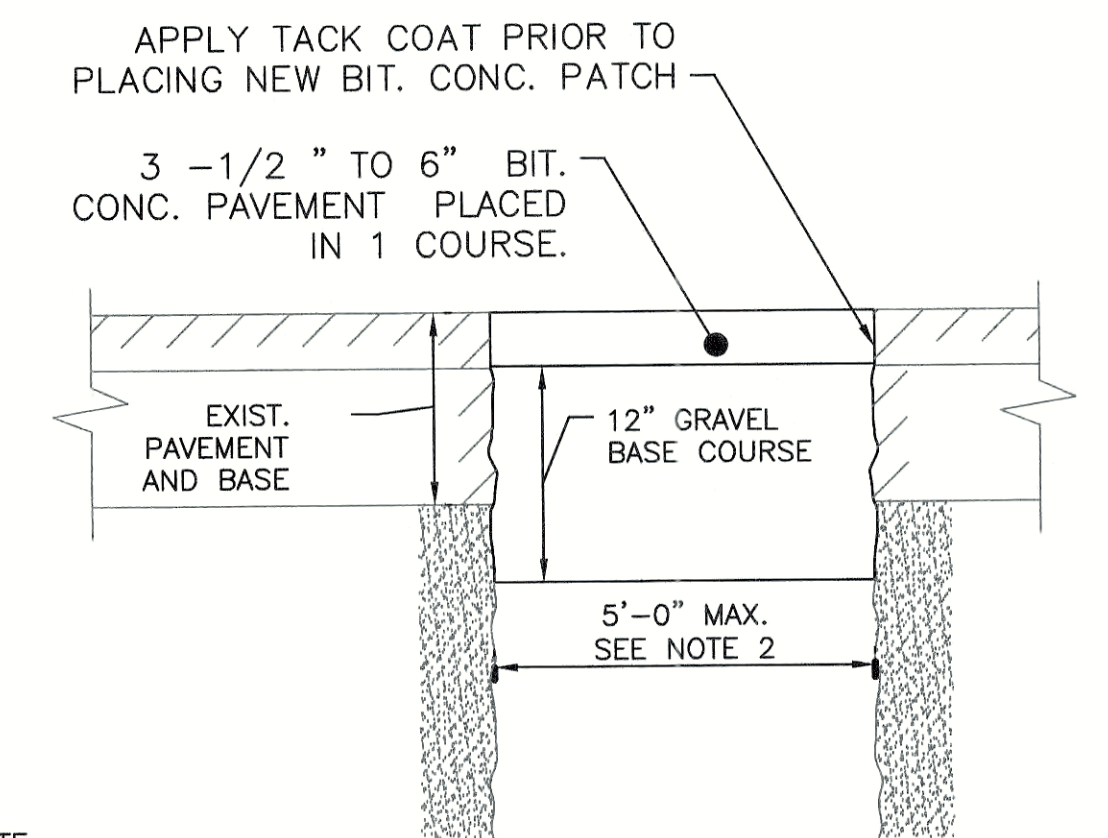
SCALE: NOT TO SCALE



- 8" GRAVEL BASE COURSE TO BE GRADED, SHAPED AND ROLLED AS DIRECTED BY THE ENGINEER
- SIDEWALK AND DRIVEWAY NOTES:
1. CEMENT CONCRETE SIDEWALKS AND DRIVEWAYS SHALL HAVE WELDED WIRE REINFORCEMENT PER ASTM A185.
 2. USE 4" LIP FOR THE PUMP STATION SITE GRANITE CURB.

TYPICAL SECTIONS SIDEWALKS AND DRIVEWAYS

SCALE: NOT TO SCALE



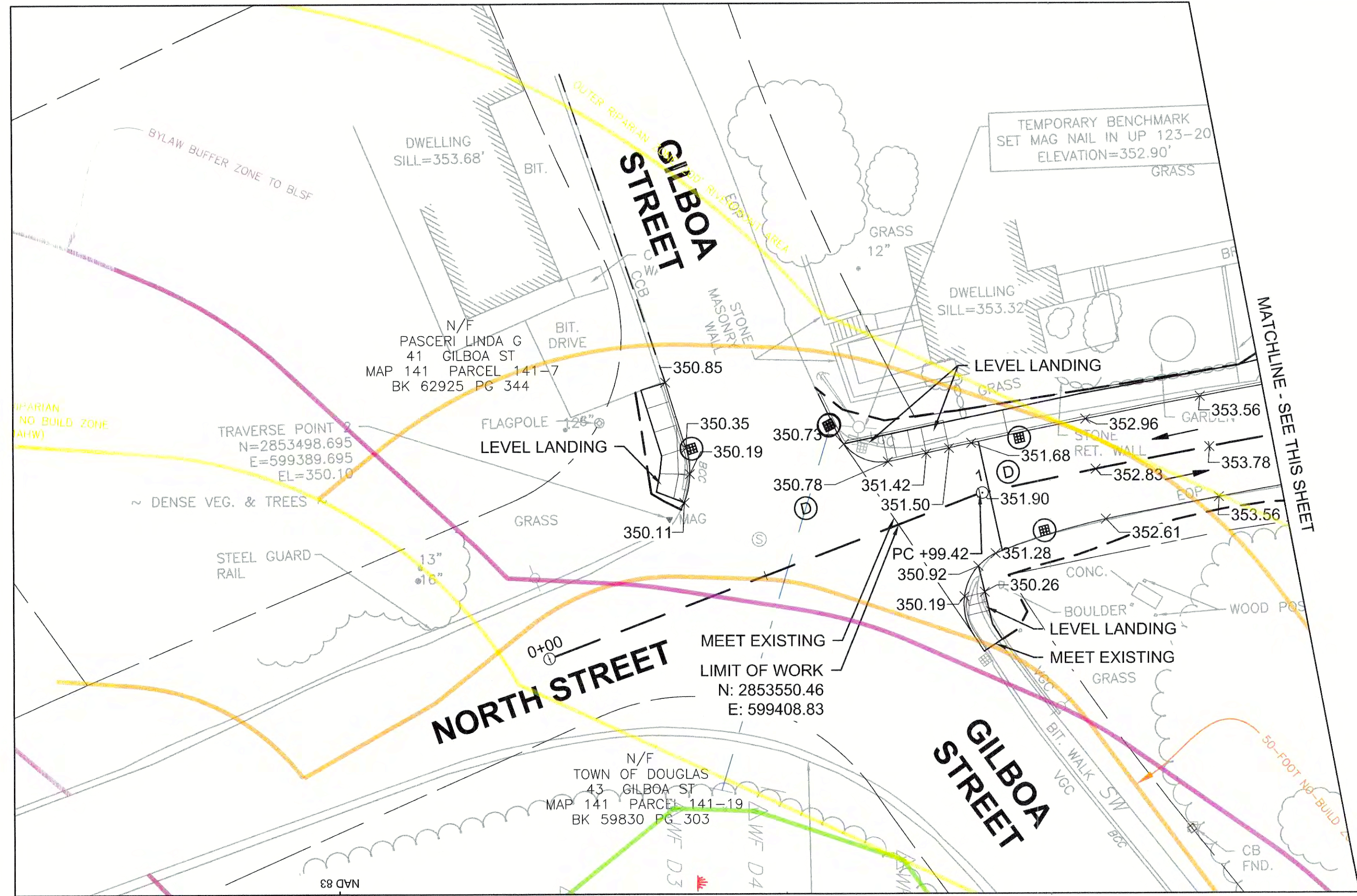
- NOTE:
1. EXISTING PAVEMENT THICKNESS ON LACKEY DAM ROAD AND GILBOA STREET HAS BEEN OBSERVED TO BE 6" DEEP.
 2. MAX TRENCH WIDTH FOR TWO PIPES IN THE SAME TRENCH WILL BE 7'-0" SEE DETAIL #####

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6/27/2024 10:24:24 AM

Revision		By	Appd	YYYY.MM.DD	Issued		By	Appd	YYYY.MM.DD

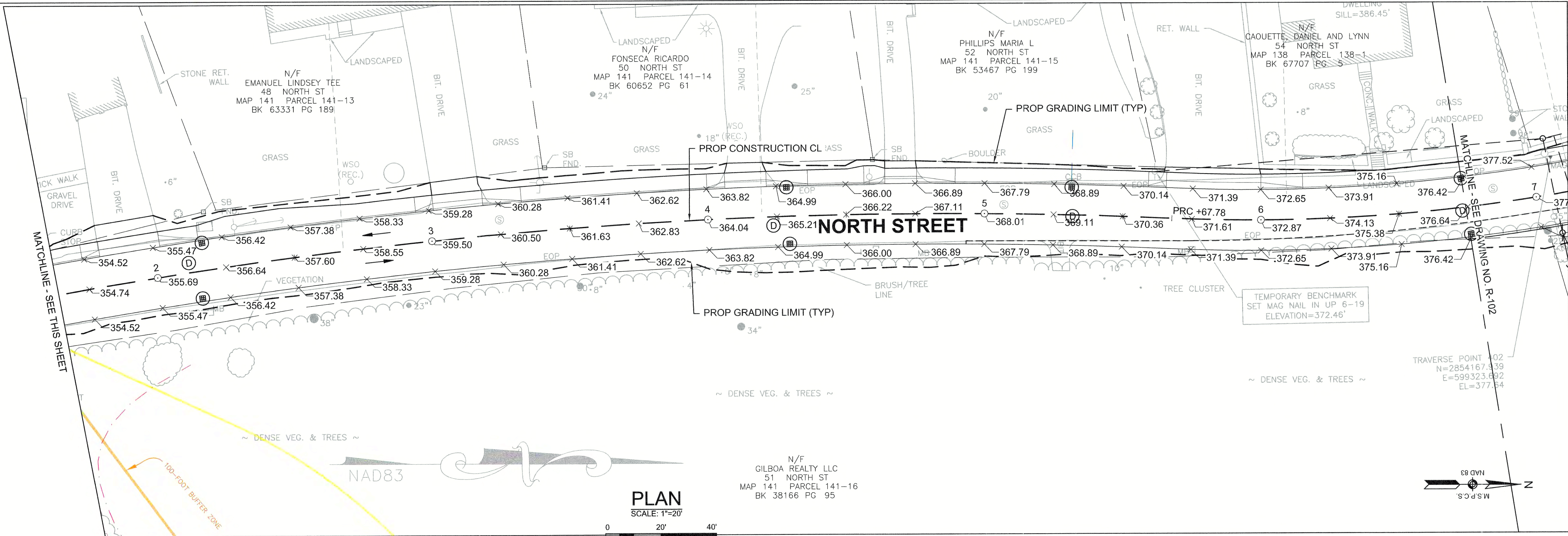
Permit/Seal	Consultant	Client/Project Logo	Client/Project	Title
			Town of Douglas, MA	DETAILS - 4
	<i>Gina A. Britton</i> 8-19-2024		NORTH STREET ROADWAY AND UTILITY IMPROVEMENTS	
			Douglas, MA	Project No. 195150885
				Scale ----
				Revision Sheet Drawing No.
				0 21 of 43 C-504

TJC	RHD	GAB	2024.05.22
Dwn.	Disgn.	Chkd.	YYYY.MM.DD



SUPERELEVATION TABLE		
STATION	LEFT TRAVELWAY	RIGHT TRAVELWAY
0+81	MATCH EXISTING	
1+00	-2.0%	-2.0%
NORMAL CROWN		
8+69.09	-2.0%	-2.0%
9+05.09	0.0%	-2.0%
9+41.09	2.0%	-2.0%
FULL SUPER		
10+92.36	2.0%	-2.0%
11+28.36	0.0%	-2.0%
11+64.36	-2.0%	-2.0%
NORMAL CROWN		
16+50.00	-2.0%	-2.0%
17+00.00	-2.0%	-3.0%
17+56.67	0.0%	-3.0%
18+09.57	2.0%	-3.0%
FULL SUPER		
20+25.00	2.0%	-3.0%
20+62.50	0.0%	-3.0%
21+00.00	-2.0%	-3.0%
NORMAL CROWN (-2.0%/-3.0%)		
24+50.00	-2.0%	-3.0%
25+00.00	-2.0%	-2.0%
NORMAL CROWN		
49+43.00	-2.0%	-2.0%
49+79.00	-2.0%	0%
50+15.00	-2.0%	2.0%
FULL SUPER		
52+27.27	-2.0%	2.0%

SUPERELEVATION TABLE		
STATION	LEFT TRAVELWAY	RIGHT TRAVELWAY
52+27.27	-2.0%	2.0%
52+63.27	-2.0%	0%
52+99.27	-2.0%	-2.0%
NORMAL CROWN		
54+64.29	-2.0%	-2.0%
55+34	MATCH EXISTING	



Revision

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Consultant

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CIVIL
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8-19-2024

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Client/Project Logo

Client/Project
Town of Douglas, MA

NORTH STREET ROADWAY
AND UTILITY IMPROVEMENTS

Douglas, MA

File Name:

TJW
Dwn.

NMG
Dgn.

NJH
Chkd.

2024.05.22
YYYY.MM.DD

Title
GRADING PLANS - 1 OF 5

Project No.
195150885

Revision
Sheet

Scale
AS SHOWN

Drawing No.
R-107

32 of 43

Unissued portion of drawing is not to be used for construction. Design, draft and utility and

