

1. THIS PLAN SET DEPICTS THE PROPOSED SANITARY SEWER EXTENSION FOR THE TOWN OF WILMINGTON DEPARTMENT OF PUBLIC WORKS. PROPOSED IMPROVEMENTS INCLUDE 100 LF OF GRAVITY SEWER MAIN AND SEWER SERVICE STUBS FOR EXISTING DEVELOPMENTS ALONG MIDDLESEX AVENUE AND JEFFERSON ROAD, A PUMP STATION OFF JEFFERSON ROAD, 120 LF OF FORCE MAIN CONNECTING TO THE EXISTING MUNICIPAL SEWER MAIN IN SALEM STREET. ADD-AL IMPROVEMENTS INCLUDE 330 LF OF GRAVITY SEWER MAIN ALONG JEFFERSON ROAD FROM THE PUMP STATION TO MIDDLESEX AVENUE.
2. ELEVATIONS, TOPOGRAPHIC, AND PROPERTY LINES SHOWN HEREON ARE THE RESULT OF AN ON-THE-GROUND SURVEY DONE BY HANCOCK ASSOCIATES IN MAY OF 2020. ADDITIONAL PROPERTY LINE INFORMATION WAS SCALED FROM MASS GIS. BUILDING LOCATIONS SHOWN HEREON WAS COMPILED FROM DATA SUPPLIED BY THE TOWN OF WILMINGTON DEPARTMENT OF PUBLIC WORKS.
3. LOCATIONS OF EXISTING UNDERGROUND UTILITIES, OBSTRUCTIONS, AND SYSTEMS SHOWN HEREON ARE APPROXIMATE ONLY. ALL UTILITIES, OBSTRUCTIONS, AND SYSTEMS MAY NOT BE SHOWN. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL UNDERGROUND UTILITIES, OBSTRUCTIONS, AND SYSTEMS, WHETHER OR NOT SHOWN HEREON.
4. WHERE EXISTING UTILITY LINES AND STRUCTURES ARE TO BE CUT, BROKEN DOWN OR ABANDONED, SAID LINES AND STRUCTURES SHALL BE PLUGGED, CAPPED, AND/OR FILLED IN ACCORDANCE WITH OWNER REQUIREMENTS.
5. UNLESS OTHERWISE SHOWN, ALL NEW UTILITIES SHALL BE UNDERGROUND.
6. CONTRACTOR SHALL FURNISH CONSTRUCTION LAYOUT OF ROADWAY AND SITE IMPROVEMENTS. THIS WORK SHALL BE PERFORMED BY A PROFESSIONAL LAND SURVEYOR.
7. SAFETY MEASURES, CONSTRUCTION METHODS AND CONTROL OF WORK SHALL BE RESPONSIBILITY OF CONTRACTOR.
8. 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 THE SATISFACTION OF THEIR RESPECTIVE OWNERS.
9. CONTRACTOR SHALL OBTAIN AND ABIDE BY THE REQUIREMENTS OF ALL APPLICABLE MASSDOT PERMITS.
10. 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.
11. 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.
12. 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.
13. RUNOFF AND SEDIMENT CONTROL MEASURES SHALL BE FOLLOWED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS.
14. SILT FENCE SHOWN HEREON SHALL BE INSTALLED BEFORE EARTH DISTURBANCE OCCURS WITHIN BUFFER ZONE, AND SHALL SERVE AS THE LIMIT OF WORK.
15. MUNICIPAL WATER VALVES AND APPURTENANCES ARE TO BE OPERATED BY TOWN OF WILMINGTON PERSONNEL ONLY.
16. NOTIFY WILMINGTON WATER AND SEWER DIVISION (978-658-4711) A MINIMUM OF 48 HOURS PRIOR TO THE REQUIREMENT FOR THE OPERATION OF WATER VALVES OR HYDRANTS.
17. EXISTING SIGNS, MAILBOXES, AND LIGHT POLES ARE NOT NECESSARILY SHOWN. WHERE NECESSARY, CONTRACTOR SHALL REMOVE OBSTRUCTIONS WITHOUT DAMAGING THEM AND REINSTALL SAME AT COMPLETION OF EXCAVATION/BACKFILL ACTIVITIES FOR EACH PROPERTY. NO ADDITIONAL COMPENSATION WILL BE MADE FOR PROTECTION, REMOVAL, RESTORATION.
18. PROVIDE AND IMPLEMENT TRAFFIC MANAGEMENT PLANS IN ACCORDANCE WITH FEDERAL HIGHWAY ADMINISTRATION MUTCD STANDARDS AND TOWN OF WILMINGTON DPW REQUIREMENTS.
19. ALL TRENCHES SHALL BE RESTORED WITH TEMPORARY PAVING BY THE END OF THE WORK WEEK. PERMANENT PAVING WILL BE PLACED AS A FINAL PRODUCT.
20. NOTIFY ALL PROPERTY OWNERS ALONG THE PIPELINE ROUTE IN WRITING 48 HOURS PRIOR TO CONSTRUCTION ACTIVITIES AFFECTING THE PREMISES. NOTIFICATIONS SHALL BE PROVIDED TO THE TOWN AND ENGINEER AS WELL.
21. SANITARY SEWER AND FORCE MAIN SIZES ARE EXAGGERATED ON PLAN.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING VEHICLE ACCESS TO ALL DRIVEWAYS AND SIDE STREETS ALONG THE CONSTRUCTION ROUTE TO THE MAXIMUM PRACTICAL EXTENT. THE CONTRACTOR SHALL BACKFILL THE TRENCH IMMEDIATELY WHERE THE MAIN IS CONSTRUCTED IN FRONT OF DRIVEWAYS TO ALLOW VEHICULAR ACCESS. STEEL PLATES MAY BE USED TO PERMIT VEHICLES TO CROSS THE TRENCH IN DRIVEWAY AREAS. CONTRACTOR SHALL COORDINATE WITH THE POLICE AND FIRE DEPARTMENTS, SUCH THAT ACCESS FOR EMERGENCY VEHICLES IS ALWAYS MAINTAINED ON BOTH MIDDLESEX AVENUE AND JEFFERSON ROAD.
23. SUPPORT POLES IN VICINITY OF EXCAVATION. NO SEPARATE COMPENSATION WILL BE MADE FOR SUPPORT.
24. RESTRAIN ALL FITTINGS AND PIPE JOINTS AS INDICATED HEREIN.
25. WILMINGTON DPW PERSONNEL REPORT THAT THE SUBGRADE MATERIAL IN JEFFERSON ROAD IS EXTREMELY SANDY AND UNSTABLE. THE CONTRACTOR SHALL TAKE EXTRA CARE FOR TRENCH SUPPORT AND MAKE PROVISIONS TO SUPPORT THE EXISTING WATER MAIN AND OTHER UTILITIES WHILE PERFORMING EXCAVATION WORK.

BUILDING, LIGHT, STEPS & OVERHANG

The diagram shows a horizontal line representing a linear chromosome. Two solid black squares are placed on the line, representing centromeres. Below the line, there are seven pairs of small circles, each pair connected by a horizontal line, representing sister chromatids. The pairs are distributed along the chromosome: one pair is to the left of the first centromere, two pairs are between the two centromeres, and four pairs are to the right of the second centromere.

1. CONTRACTOR SHALL CONTACT DIG-SAFE FOR UNDERGROUND UTILITY MARKING AT 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF ANY WORK.
2. 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.
3. ALL SEWER AND WATER UTILITY WORK SHALL CONFORM TO THE TOWN OF WILMINGTON DEPARTMENT OF PUBLIC WORKS STANDARDS AND WATER AND SEWER REGULATIONS.

3. PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN STATE AND LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT.
2. EROSION CONTROLS TO BE INSTALLED AT THE EDGE OF PROPOSED WORK. EROSION CONTROLS TO ACT AS A LIMIT OF WORK LINE TO ENSURE THAT NO EQUIPMENT ENDOACHES ON TO ADJACENT PROPERTIES.
3. EROSION CONTROLS SHALL REMAIN IN PLACE AND BE MAINTAINED FOR THE DURATION OF THE PROJECT TO LIMIT THE MOVEMENT OF SILTATION AND SEDIMENTS FROM ENTERING EXISTING DRAINAGE SYSTEMS OR FROM LEAVING THE PARCEL. ANY ACCUMULATED SEDIMENTS ARE TO BE REMOVED FROM THE EROSION CONTROLS AND DISPOSED OF PROPERLY. ADDITIONALLY, ALL EROSION CONTROLS ARE TO BE INSPECTED AFTER A STORM EVENT AND THE CONTROLS REPLACED OR ARMORED AS NECESSARY AND ACCUMULATED SEDIMENTS REMOVED.
4. CATCH BASIN INSERTS SHALL BE INSTALLED ON CATCH BASINS WITHIN AND ADJACENT TO THE WORK AREA AS SPECIFIED ON THE PLANS. ADDITIONAL EROSION CONTROLS ARE TO BE UTILIZED AS NECESSARY AND AS DIRECTED BY THE ENGINEER TO LIMIT SEDIMENTS FROM DISCHARGING TO ADJACENT PROPERTIES OR INTO EXISTING STORM DRAIN SYSTEMS.
5. CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT EROSION SHALL NOT AFFECT ON-SITE STABILIZED AREAS (WETLANDS, ETC.) AND OFF-SITE AREAS, WHETHER SUCH EROSION IS CAUSED BY FLOOD, WIND, OR DIRECT DEPOSIT.
6. A RESERVE AMOUNT OF EROSION CONTROL MATERIALS ARE TO BE KEPT WITHIN EASY ACCESS ON SITE AT ALL TIMES.
7. CONTRACTOR SHALL PERFORM CONSTRUCTION SEQUENCING SUCH THAT EARTH MATERIALS ARE EXPOSED FOR A MINIMUM OF THE TIME BEFORE THEY ARE COVERED, SEEDED, OR OTHERWISE STABILIZED TO PREVENT EROSION.
8. 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 TO ADJACENT PARCELS.
9. REFUELING AND ANY WORK ASSOCIATED WITH THE MAINTENANCE OF CONSTRUCTION EQUIPMENT TO BE PERFORMED IN COMPLIANCE WITH APPLICABLE REGULATIONS.
10. THE AREAS OF CONSTRUCTION SHALL REMAIN IN A STABLE CONDITION AT THE CLOSE OF EACH CONSTRUCTION DAY. EROSION CONTROLS SHALL BE CHECKED AT THIS TIME AND MAINTAINED OR REINFORCED IF NECESSARY.
11. EROSION CONTROLS SHALL REMAIN IN PLACE UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED WITH PAVEMENT, PLANTINGS, OR WITH AN ESTABLISHED STAND OF GRASS. EROSION CONTROLS SHALL NOT BE REMOVED UNTIL VEGETATION IS COMPLETELY ESTABLISHED. CONTRACTOR SHALL REMOVE AND DISPOSE OF EROSION CONTROL MEASURES AND CLEAN SEDIMENT AND DEBRIS FROM ENTIRE DRAINAGE AND SEWER SYSTEMS AS DIRECTED BY THE ENGINEER AND/OR DPW.
12. UTILIZE APPROPRIATE DEWATERING SYSTEMS AND TECHNIQUES TO MAINTAIN THE EXCAVATED AREA SUFFICIENTLY DRY FROM GROUNDWATER AND/OR SURFACE RUNOFF SO AS NOT TO ADVERSELY AFFECT CONSTRUCTION PROCEDURES OR CAUSE EXCESSIVE DISTURBANCE OF UNDERLYING NATURAL GROUND.
13. PROVIDE AND STORE AUXILIARY DEWATERING EQUIPMENT ON THE SITE IN THE EVENT OF BREAKDOWN. PROVIDE NON-WOVEN FILTER FABRIC WHERE REQUIRED FOR UNDERDRAIN SYSTEMS. THE NON-WOVEN FILTER FABRIC SHALL BE SPECIFICALLY DESIGNED FOR SUBSURFACE DRAINAGE APPLICATIONS.
14. WATER FROM TRENCHES AND EXCAVATIONS SHALL BE DISPOSED OF IN SUCH A MANNER AS TO AVOID PUBLIC NUISANCE, HAZARD TO PUBLIC HEALTH OR THE ENVIRONMENT, DAMAGE TO PUBLIC OR PRIVATE PROPERTY, OR DAMAGE TO THE WORK COMPLETED OR IN PROGRESS. DO NOT DISCHARGE WATER INTO ANY SANITARY SEWER SYSTEM. SILTATION BARRIERS SHALL BE UTILIZED AS NECESSARY.
15. WATER FROM TRENCHES AND EXCAVATIONS SHALL NOT BE DISCHARGE DIRECTLY TO STORM DRAIN SYSTEMS. PROPER TREATMENT TO A SEDIMENTATION AREA IS TO TAKE PLACE PRIOR TO DISCHARGE TO ANY DRAINAGE SYSTEMS.
16. THE CONTRACTOR SHALL REPAIR ANY DAMAGE RESULTING FROM THE FAILURE OF THE DEWATERING OPERATIONS OR FROM FAILURE TO MAINTAIN ALL THE AREAS OF WORK IN SUITABLE DRY CONDITIONS.
17. 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 OFF THE SURROUNDING AREA TO ADJACENT PROPERTIES. WHEN REQUIRED, TEMPORARY DITCHES SHALL BE PROVIDED FOR DRAINAGE. UPON COMPLETION OF THE WORK AND WHEN DIRECTED, ALL AREAS SHALL BE RESTORED IN A SATISFACTORY MANNER AND AS DIRECTED.
18. ALL PIPELINES OR STRUCTURES NOT STABLE AGAINST UPLIFT DURING CONSTRUCTION OR PRIOR TO COMPLETION SHALL BE THOROUGHLY BRACED OR OTHERWISE PROTECTED.
19. DO NOT EXCAVATE UNTIL THE DEWATERING SYSTEM IS OPERATIONAL AND THE EXCAVATION MAY PROCEED WITHOUT DISTURBANCE TO THE FINAL SUBGRADE.
20. UNLESS OTHERWISE SPECIFIED, CONTINUE DEWATERING UNINTERRUPTED UNTIL THE STRUCTURES, PIPES, AND APPURTENANCES TO BE BUILT HAVE BEEN PROPERLY INSTALLED. WHERE SUBGRADE MATERIALS ARE UNABLE TO SUPPORT THE STRUCTURES, THE CONTRACTOR SHALL BE REQUIRED TO IMPROVE DEWATERING TECHNIQUES, REMOVE AND REPLACE THE MATERIALS AS DIRECTED BY THE ENGINEER.

ADS	ADVANCED DRAINAGE SYSTEMS (PIPE)	OWH	OVERHEAD WIRE
A.R.V.	AIR RELEASE VALVE	OWS	OLY/WATER SEPARATOR
CB	CATCH BASIN	P	PROPOSED
CCB	CAPE COD BERM	PHF	PEAK HOURLY FLOW
CDS	CONTINUOUS DEFLECTIVE SEPARATOR	PL	PLASTIC (GAS)
CONC	CORRUGATED METAL PIPE (DRAIN)	PVC	POLYVINYL CHLORIDE (PIPE)
CMP	CLEANOUT	R	RIGHT (OFFSET)
CNC	CONCRETE	R	RIGHT
DI	DUCTILE IRON (PIPE)	ROM	REINFORCED CONCRETE PIPE
DMH	DRAIN MANHOLE	REP	REMOVE
DYS	DOWNHILL LOW LINE	R&R	REMOVE AND REPLACE
EX	EXISTING	RET.	RETAINING (WALL)
FM	FORCE MAIN	S	SLOPE
G	GAS (MAIN OR SERVICE)	S	SEWER (MAIN OR SERVICE)
HORZ	HORIZONTAL	SDR	STANDARD DIMENSION RATIO
HHP	HIGH POINT	SF	SQUARE FEET
HSE	HOUSE	SMH	SEWER MANHOLE
I	INVERT	STA	STATION
II	INVERT IN	SWL	SINGLE WHITE LINE
INO	INVERT OUT	SYL	SINGLE YELLOW LINE
INV.	INVERT	TD	TRENCH DRAIN
L	LEFT (OFFSET)	TYP	TYPICAL
L	LENGTH	UP	UTILITY POLE
LF	LINEAR FEET	VCC	VERTICAL GRANITE CURB
MH	MANHOLE	W	WATER (MAIN OR SERVICE)
NIC	NOT IN CONTRACT	WF	WETLAND FLAG
OFF	OFFSET	WV	WATER VALVE

COMMONWEALTH OF MASSACHUSETTS
BRIAN D. GENDREAU
CIVIL
No. 54495
REGISTERED
PROFESSIONAL ENGINEER

[Handwritten Signature] 3922921

NO.	BY	APP	DATE	ISSUE/REVISION	DESCRIPTION

DATE: 12/22/2021	DESIGN BY: RD
SCALE: ---	DRAWN BY: RD
APPROVED BY: BGG	CHECK BY: JDP

PLOT DATE: Dec 22, 2021 2:26 pm	
DWG: 24514CD.dwg	C2
LAYOUT: C2 NOTES	
SHEET: 2 OF 14	
PROJECT NO.: 24514	

TOWN OF WILMINGTON
DEPARTMENT OF PUBLIC WORKS

SANITARY SEWER EXTENSION PLAN

Middlesex Avenue
Wilmington, MA 01887

TEC, INC - THE
ENGINEERING
CORP

146 Dascomb Road
Andover, Massachusetts 01810

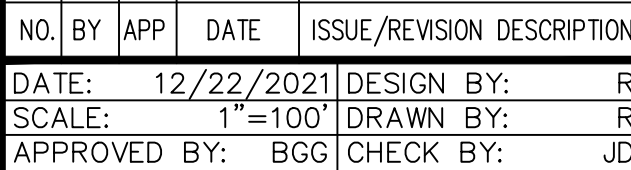
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CONSTRUCTION DRAWINGS

INDEX SHEET

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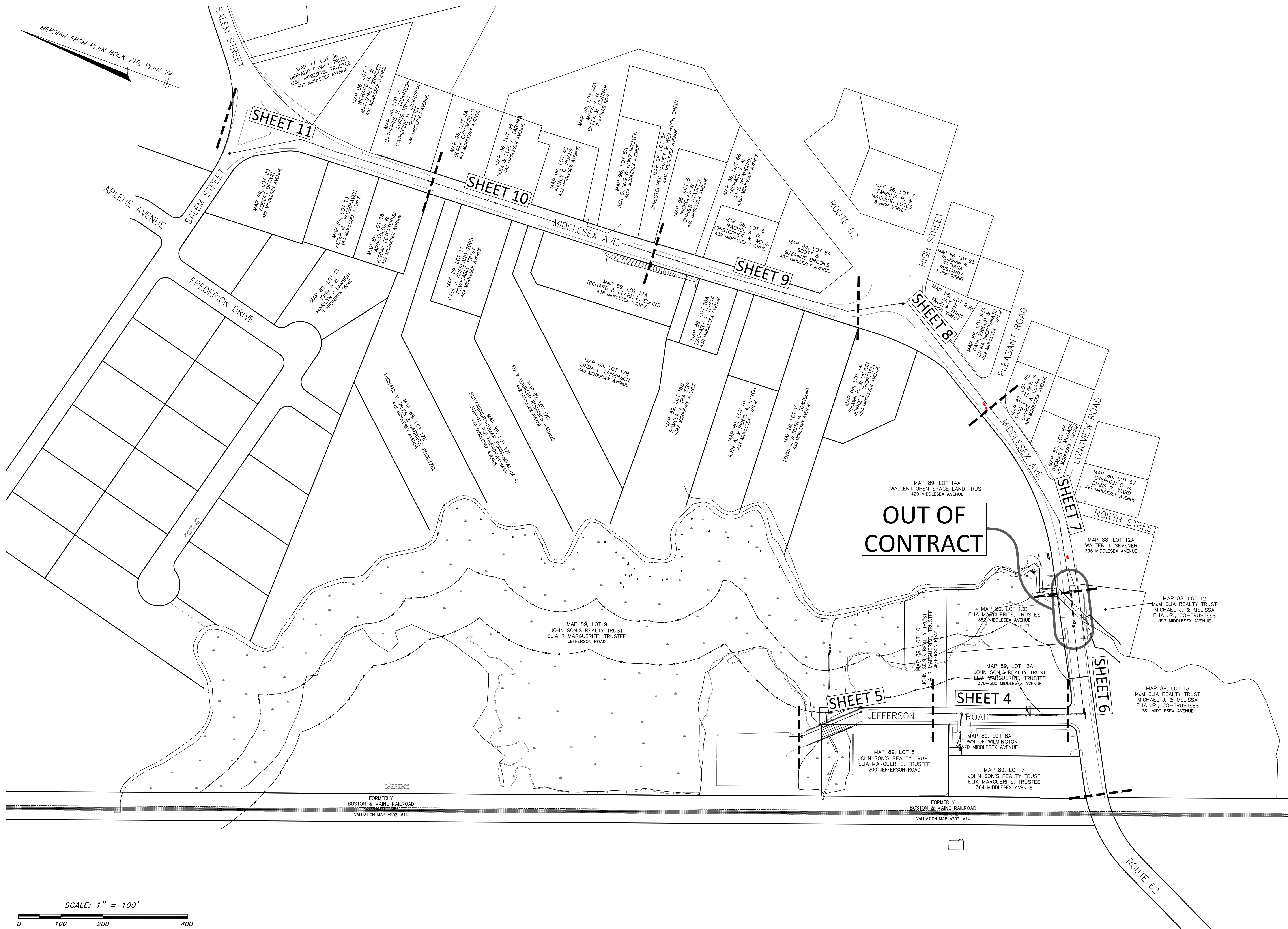
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LAYOUT: C3 INDEX

SHEET: 3 OF 14

PROJECT NO.:

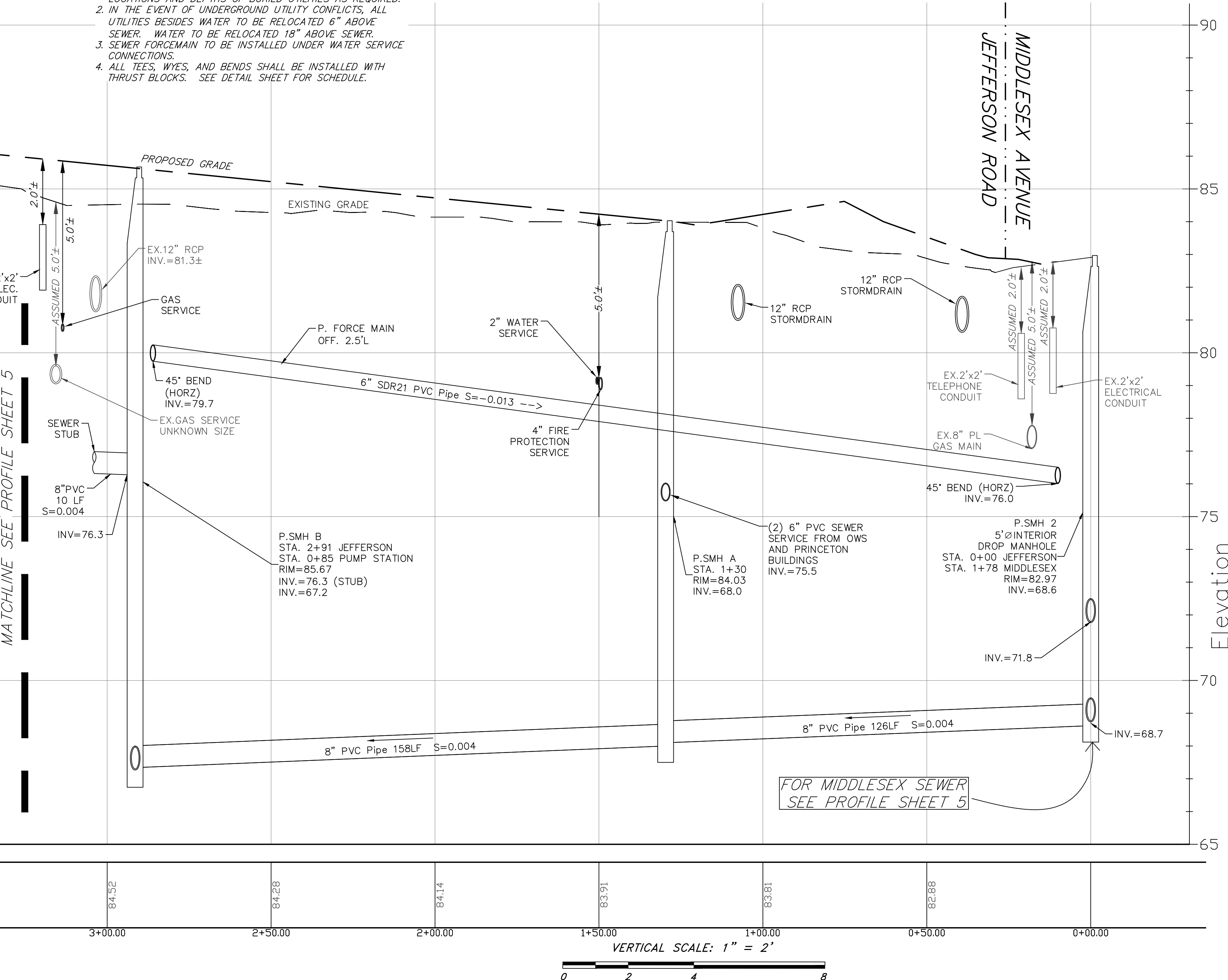
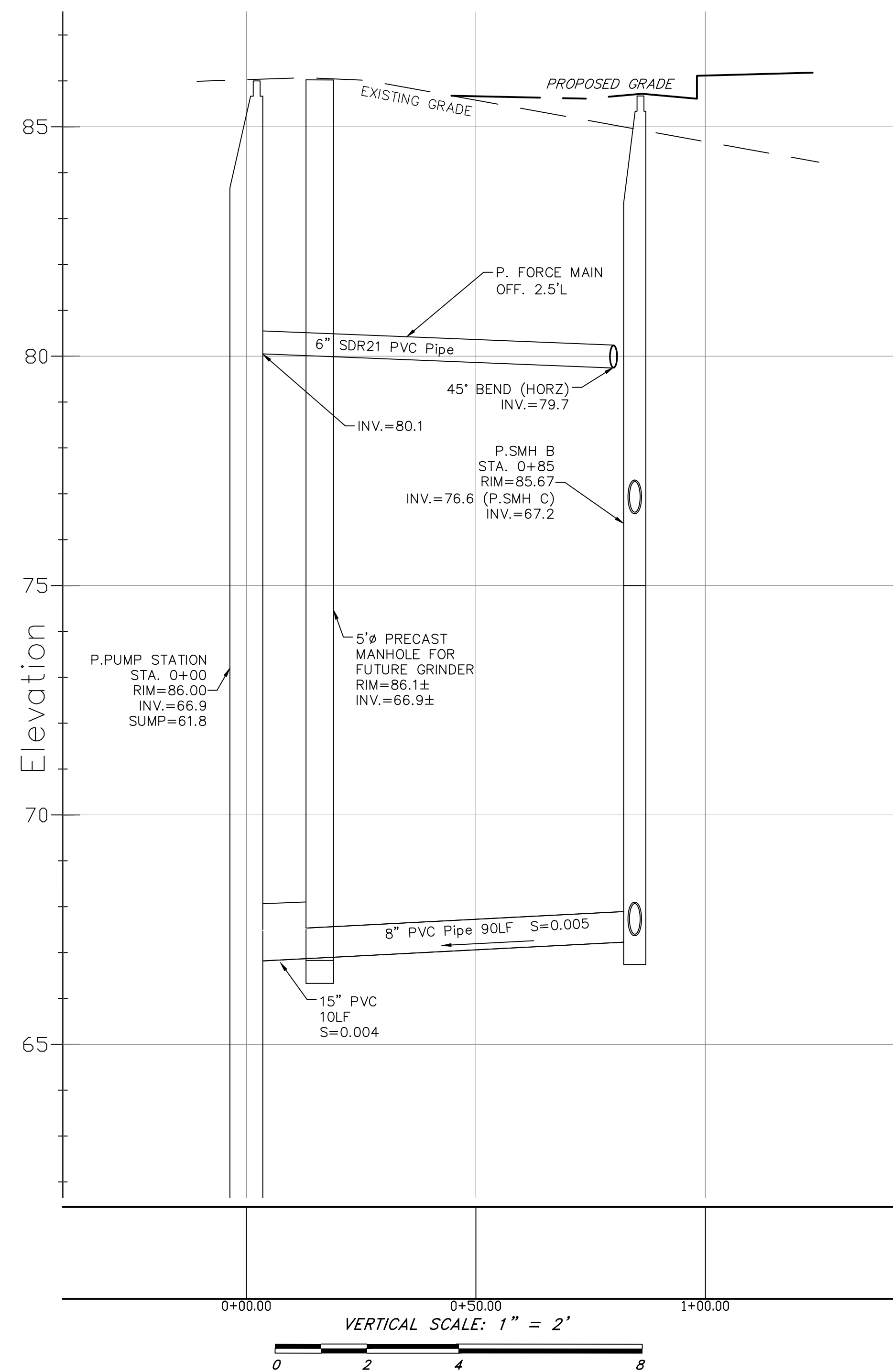
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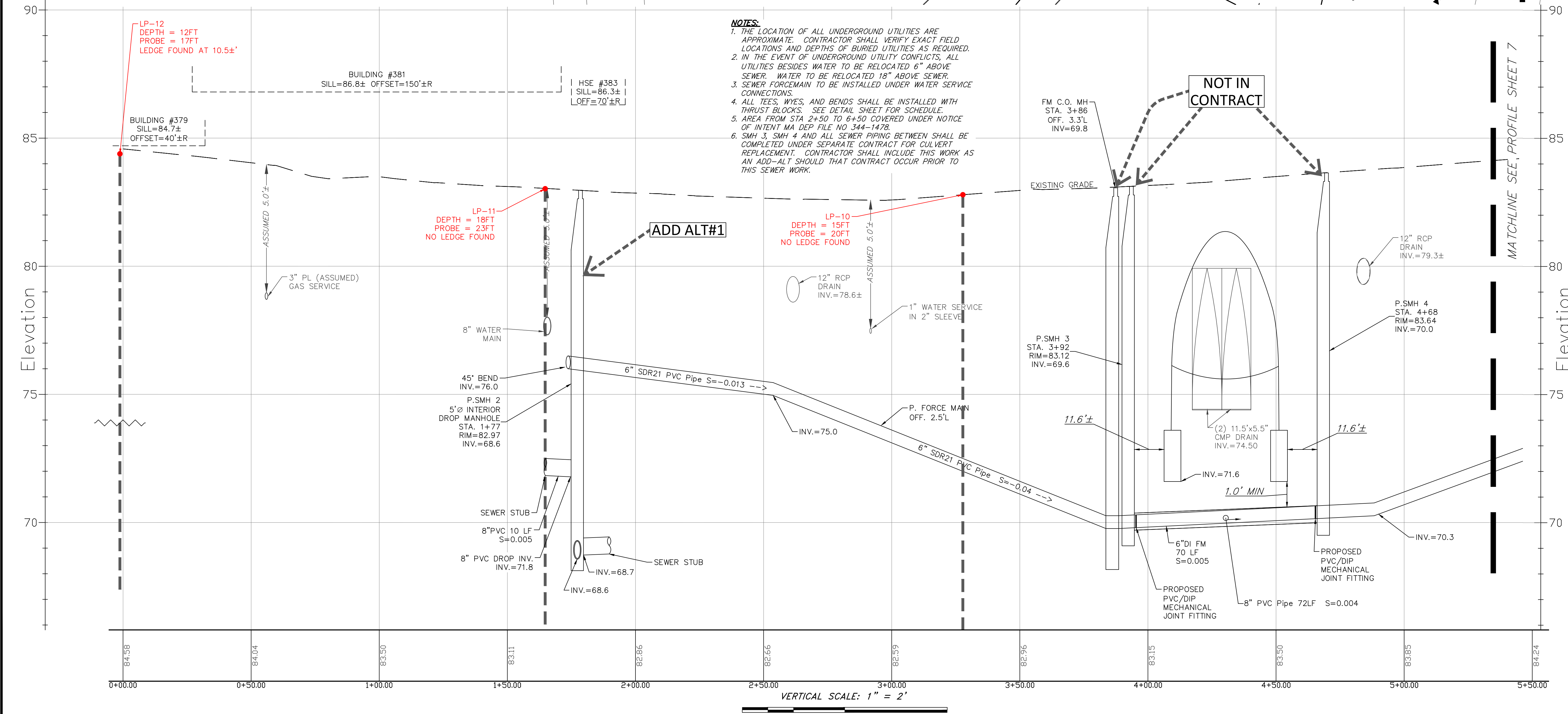
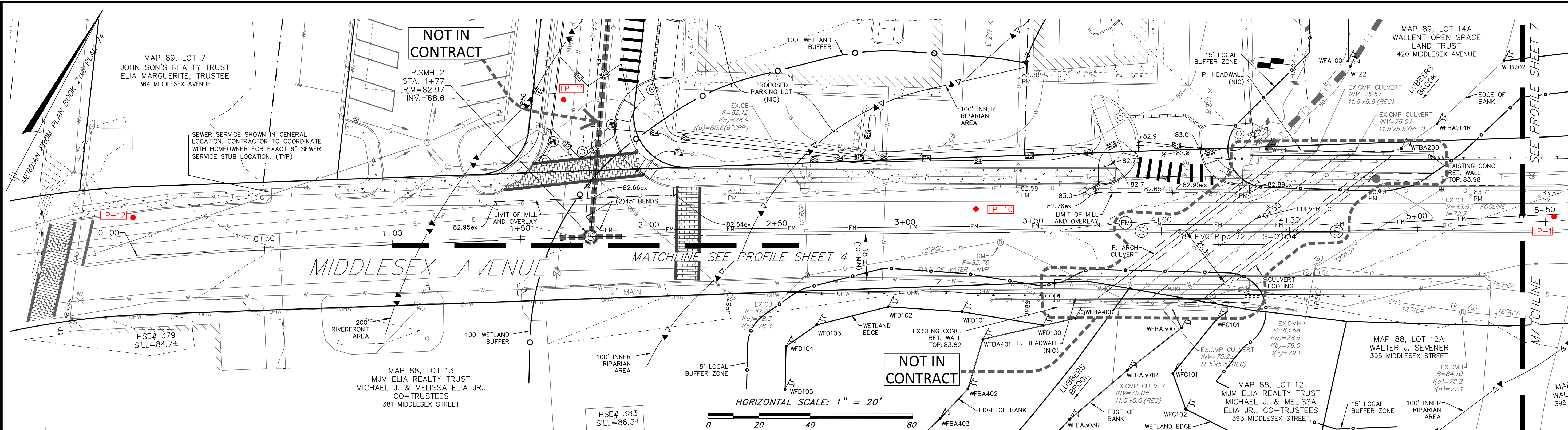


C3



24514

C4



NOTES:

1. THE LOCATION OF ALL UNDERGROUND UTILITIES ARE APPROXIMATE. CONTRACTOR SHALL VERIFY EXACT FIELD LOCATIONS AND DEPTHS OF BURIED UTILITIES AS REQUIRED.
2. IN THE EVENT OF UNDERGROUND UTILITY CONFLICTS, ALL UTILITIES BESIDES WATER TO BE RELOCATED 6" ABOVE SEWER. WATER TO BE RELOCATED 18" ABOVE SEWER.
3. SEWER FORCEMAIN TO BE INSTALLED UNDER WATER SERVICE CONNECTIONS.
4. ALL TEES, WYES, AND BENDS SHALL BE INSTALLED WITH THRUST BLOCKS. SEE DETAIL SHEET FOR SCHEDULE.
5. AREA FROM STA 2+50 TO 6+50 COVERED UNDER NOTICE OF INTENT MA DEP FILE NO 344-1478.
6. SMH 3, SMH 4 AND ALL SEWER PIPING BETWEEN SHALL BE COMPLETED UNDER SEPARATE CONTRACT FOR CULVERT REPLACEMENT. CONTRACTOR SHALL INCLUDE THIS WORK AS AN ADD-ALT SHOULD THAT CONTRACT OCCUR PRIOR TO THIS SEWER WORK.

PROJECT:
TOWN OF WILMINGTON
DEPARTMENT OF PUBLIC WORKS

**MASSWORKS PUBLIC
INFRASTRUCTURE IMPROVEMENTS**

**SANITARY
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PLAN**
Middlesex Avenue
Wilmington, MA 01887

PREPARED FOR:
**TEC, INC - THE
ENGINEERING
CORP**
146 Dascomb Road
Andover, Massachusetts 01810

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**CONSTRUCTION
DRAWINGS**
PLAN AND PROFILE
MIDDLESEX AVENUE
(STA. 0+00 - 5+25)

PLOT DATE: Dec 22, 2021 2:27 pm
DWG: 24514CD.dwg
LAYOUT: C5 MIDD1
SHEET: 5 OF 14
PROJECT NO.: 24514

C5

TOWN OF WILMINGTON
DEPARTMENT OF PUBLIC WORKS

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APPROVED BY:		BGG		CHECK BY:	JDP

CONSTRUCTION DRAWINGS

PLAN AND PROFILE MIDDLESEX AVENUE (STA. 5+25 - 9+75)

PLOT DATE: Dec 22, 2021 2:27 pm

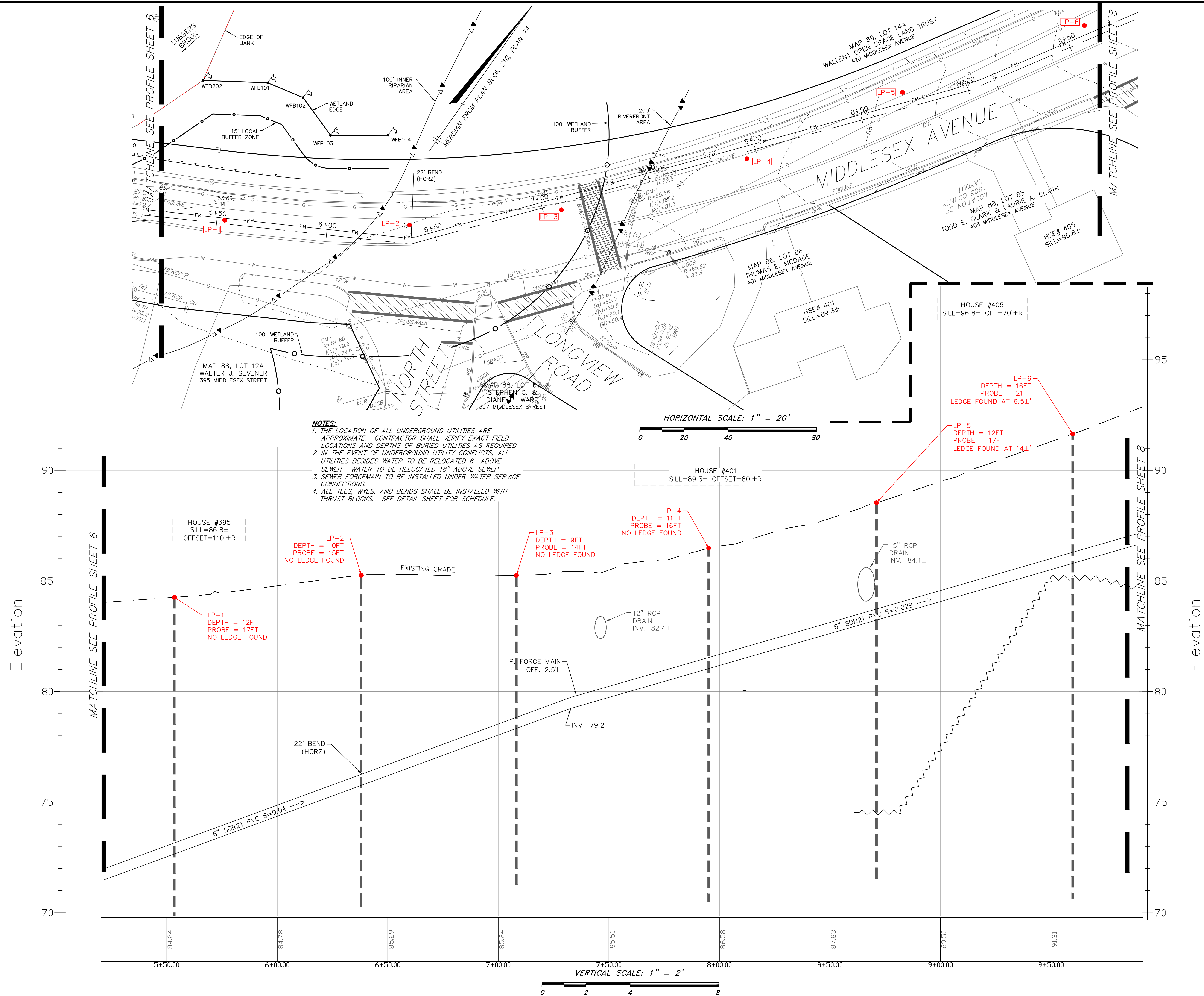
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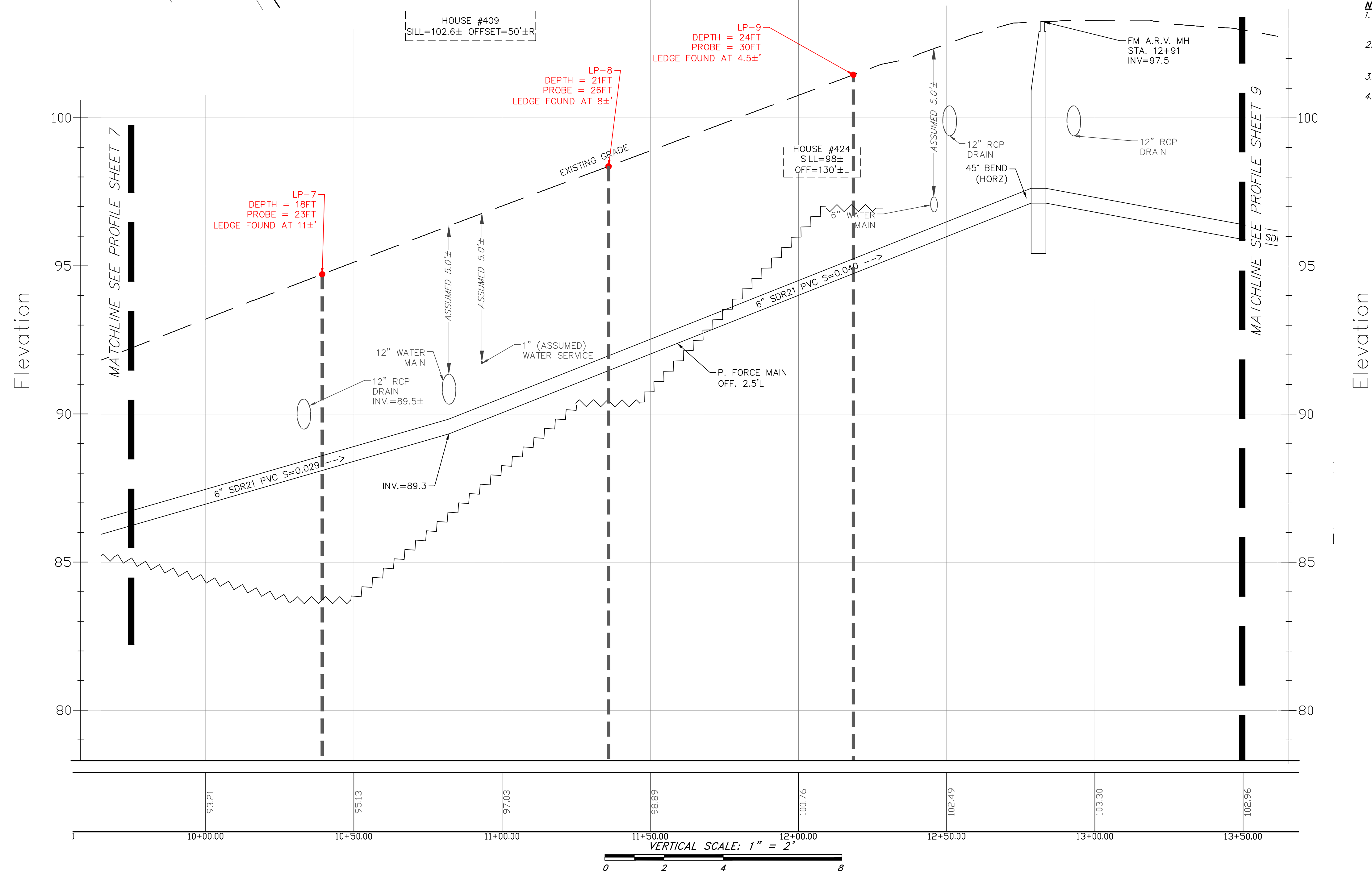
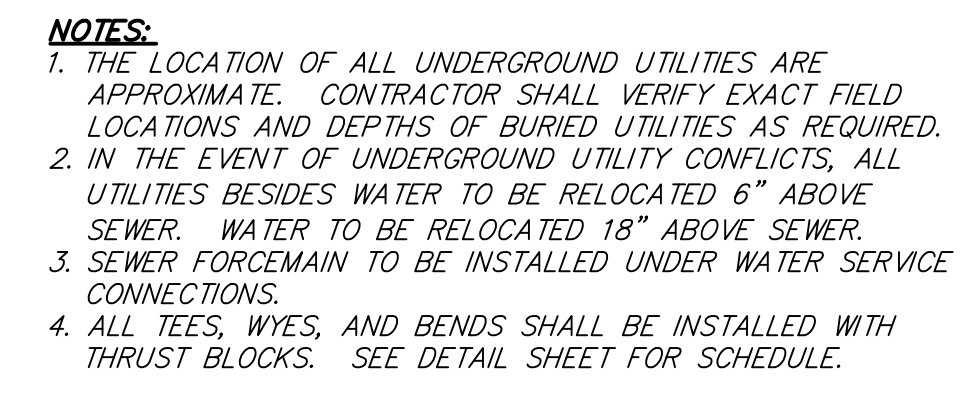
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SHEET: 6 OF 14

PROJECT NO.:

24514





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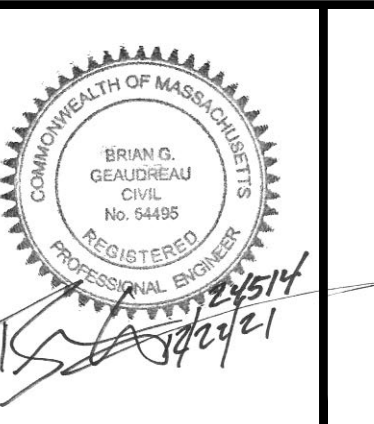
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CONSTRUCTION DRAWINGS

PLAN AND PROFILE MIDDLESEX AVENUE (STA. 9+75 - 13+50)

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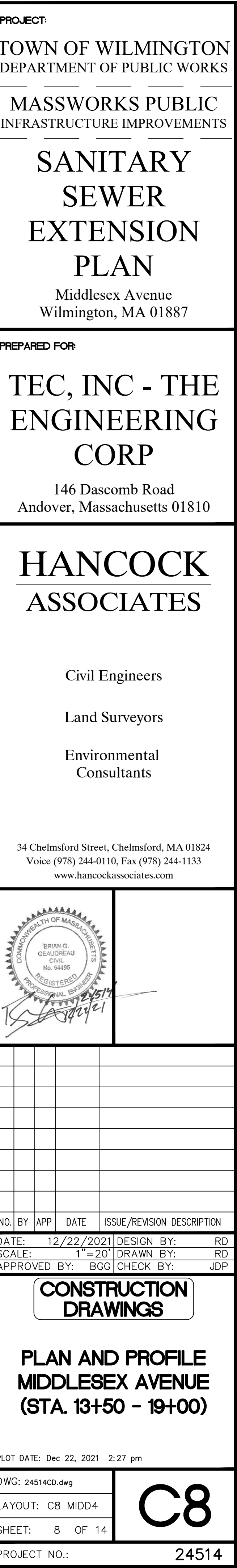
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SHEET: 7 OF 14

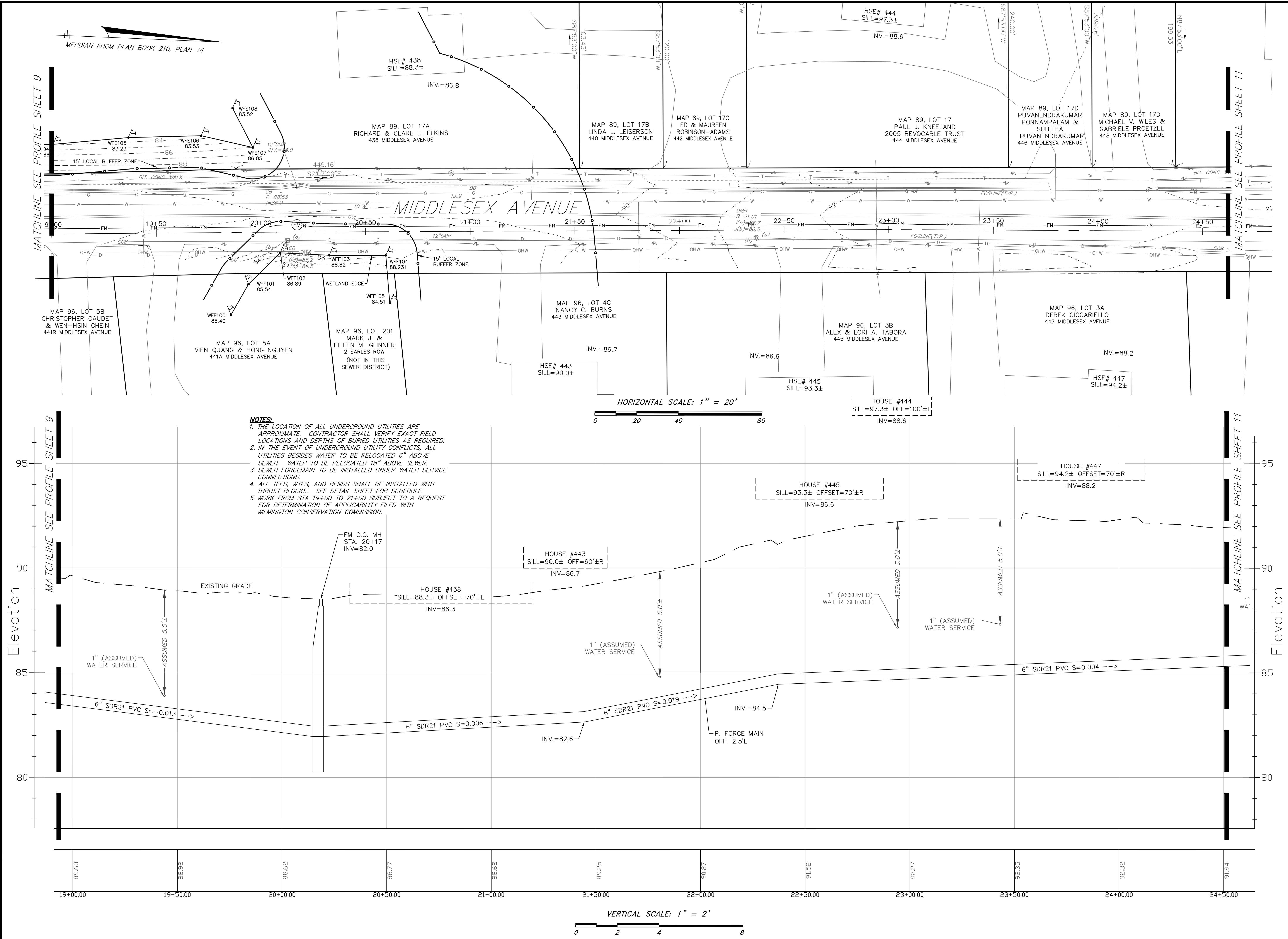
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4514



PROJECT NO.: 24514

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PROJECT:

TOWN OF WILMINGTON
DEPARTMENT OF PUBLIC WORKS

MASSWORKS PUBLIC
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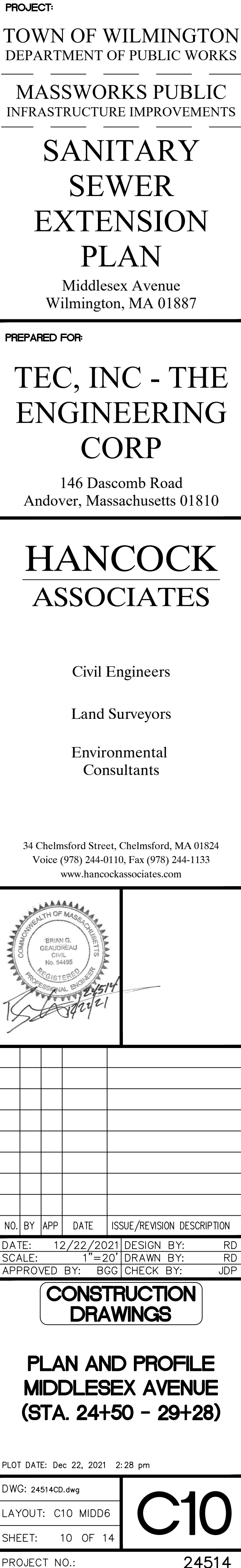
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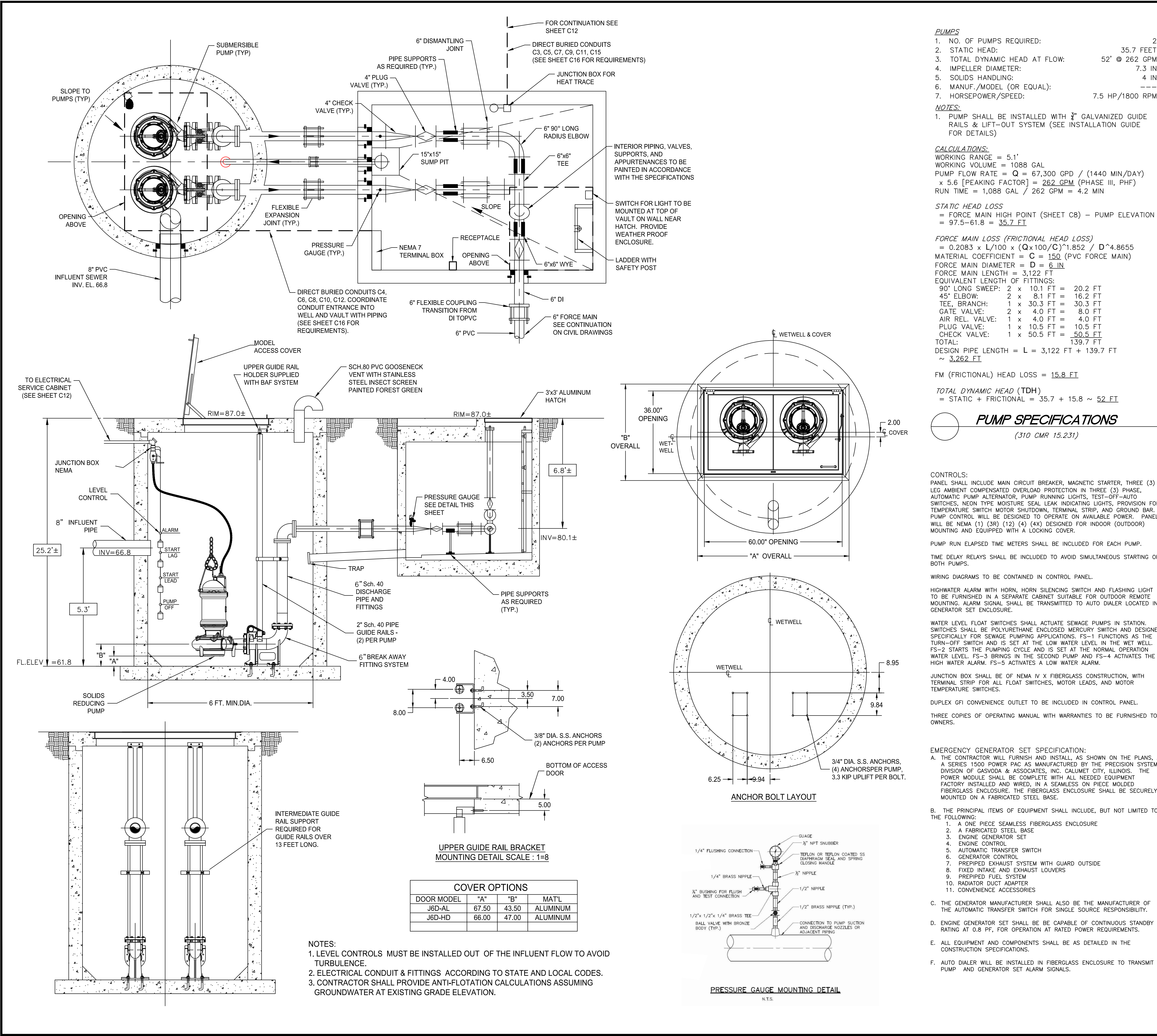
PLAN AND PROFILE
MIDDLESEX AVENUE
(STA. 19+00 - 24+50)

PLOT DATE: Dec 22, 2021 2:28 pm

DWG: 24514CD.dwg
LAYOUT: C9 MIDD5
SHEET: 9 OF 14
PROJECT NO.: 24514

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PROJECT:

TOWN OF WILMINGTON
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CONSTRUCTION
DRAWINGS

PUMP STATION
DETAIL SHEET

C12

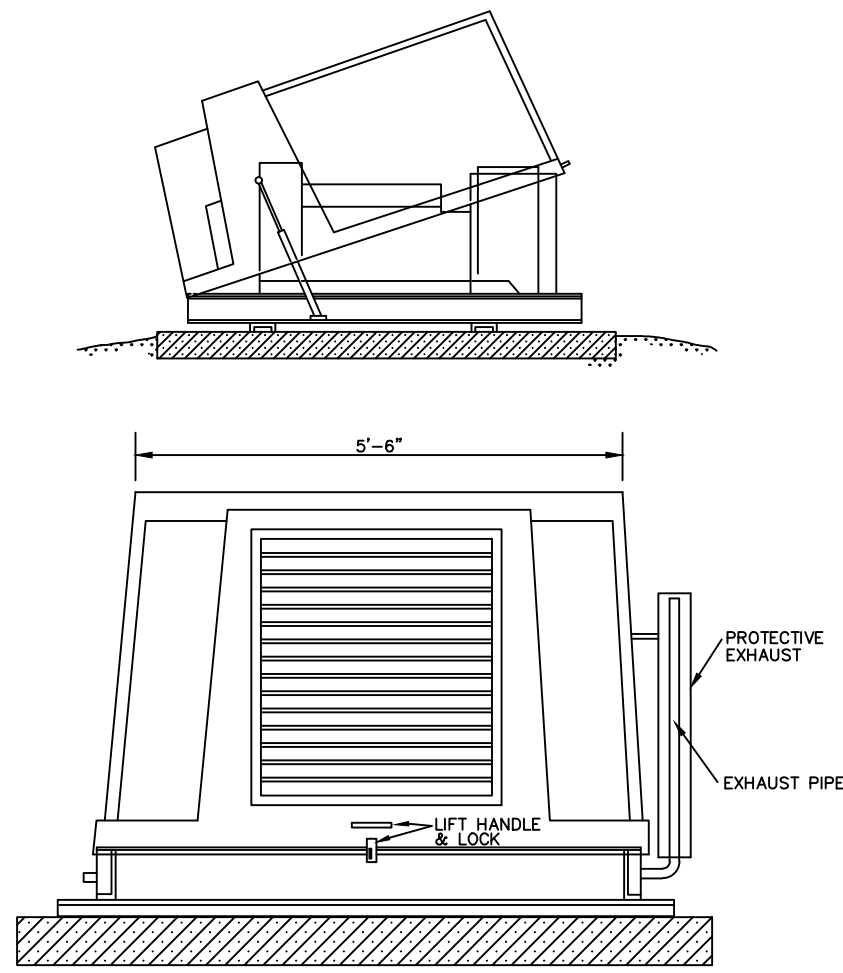
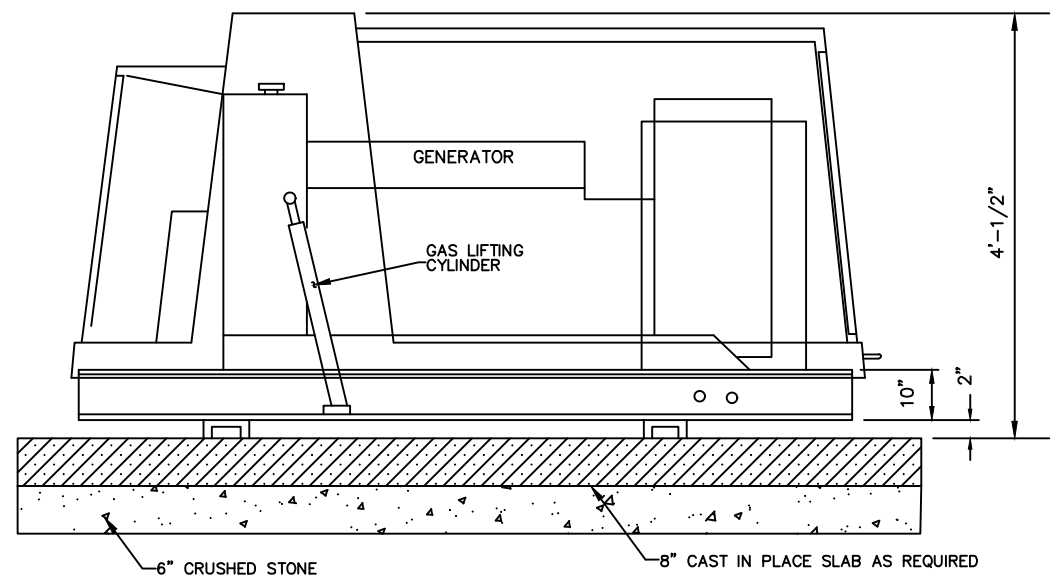
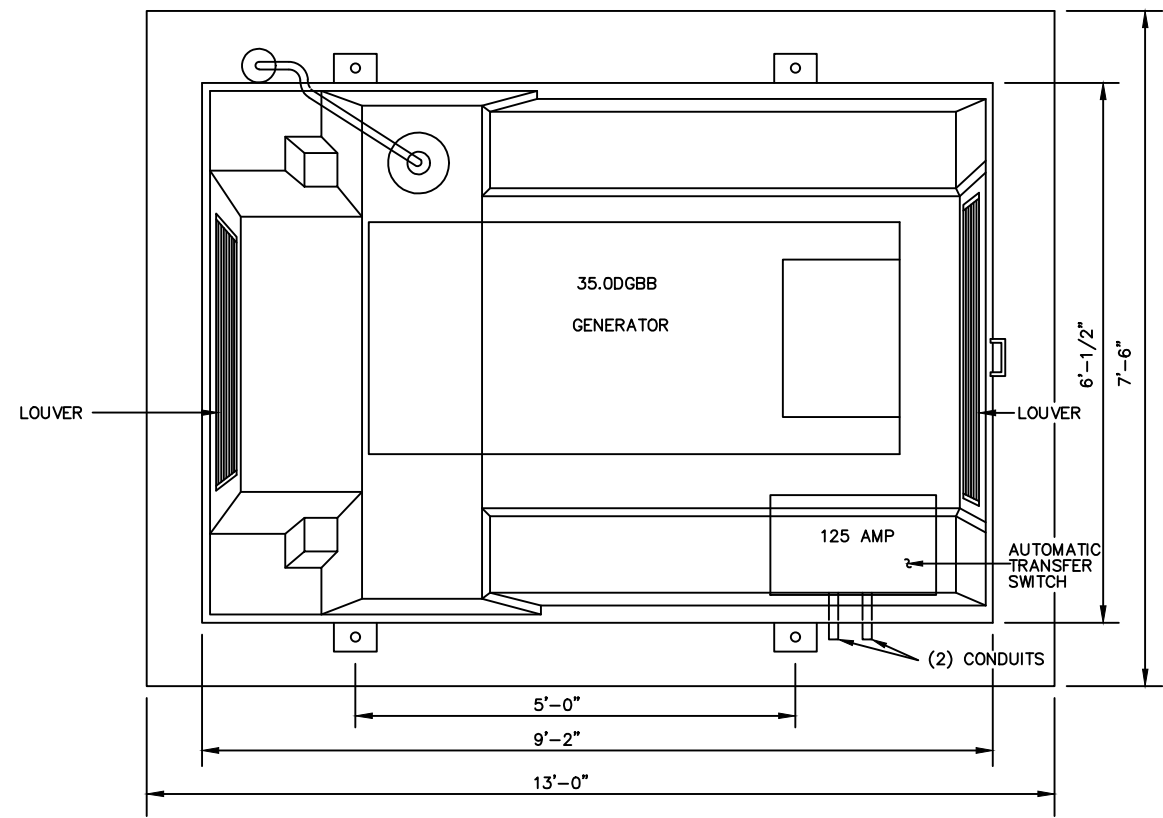
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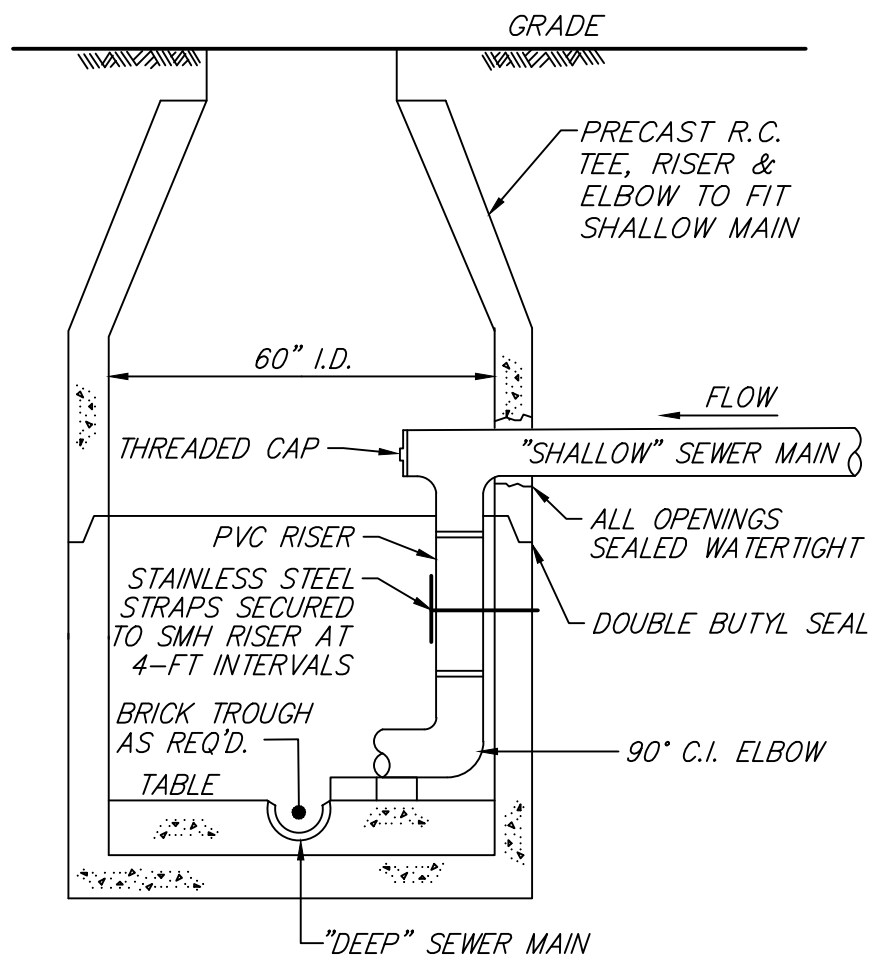
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SHEET: 12 OF 14

PROJECT NO.: 24514

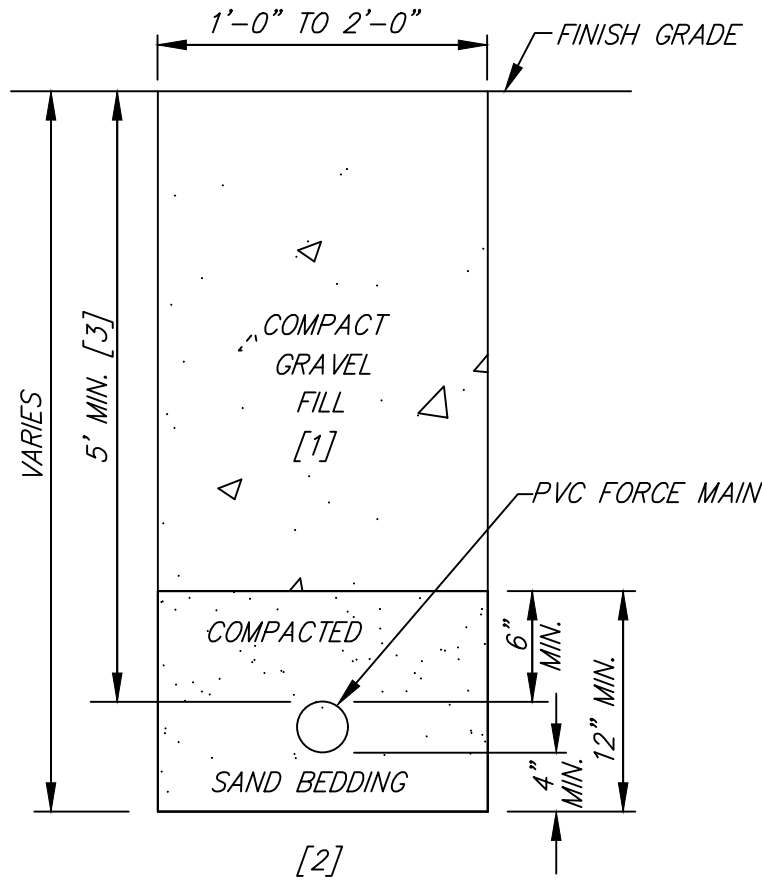


GENERATOR SET DETAIL
NOT TO SCALE



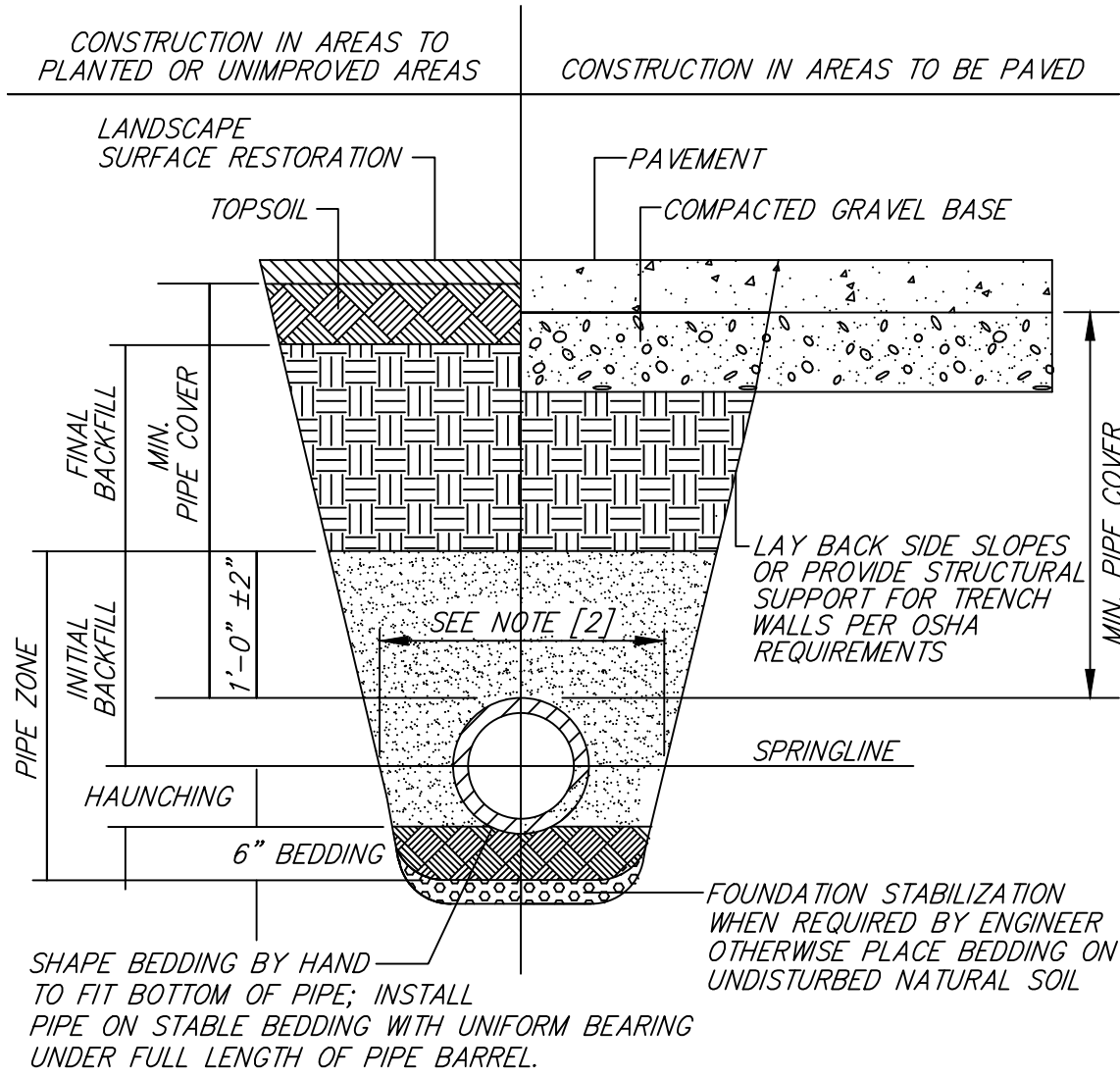
DROP SEWER MANHOLE
CROSS SECTION
NOT TO SCALE

NOTE: CONTRACTOR SHALL PROVIDE ANTI-FLOTATION CALCULATIONS ASSUMING GROUNDWATER AT EXISTING GRADE ELEVATION.



- [1] WHERE UNDER OR ADJACENT AREA TO BE PAVED, COMPACT BACKFILL TO 95% PER ASTM D-1557.
[2] UNDISTURBED SOIL OR SUBGRADE COMPACTED TO 95% PER ASTM D-1557.
[3] UNLESS OTHERWISE AUTHORIZED BY TOWN ENGINEER

FORCE MAIN TRENCH
TYPICAL CROSS SECTION
NOT TO SCALE



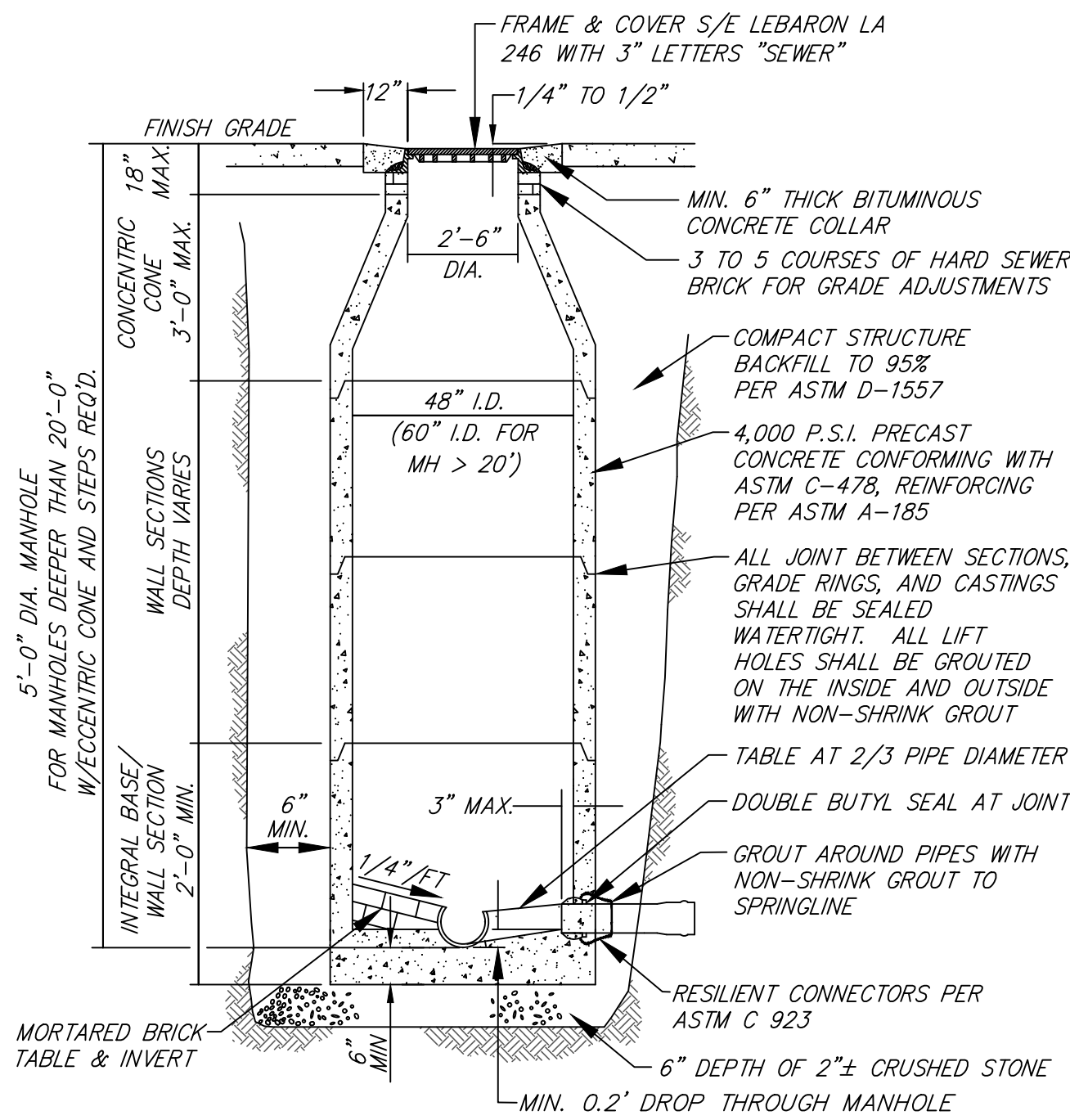
FOUNDATION, BEDDING, & BACKFILL MATERIALS			
PIPE MATERIAL	HDP, PVC	RG, DI	
FOUNDATION STABILIZATION	[6]	[6]	
BEDDING	[1]	[1]	
HAUNCHING	[1]	[1]	
INITIAL BACKFILL	[1]	[1]	
FINAL BACKFILL	[4]	[4]	
MIN. PIPE COVER	[5]	[5]	

- [3] INSTALL PIPE IN CENTER OF TRENCH.
[4] IN PLANTED OR UNIMPROVED AREAS, USE ON-SITE EXCAVATED MATERIAL FOR FINAL BACKFILL. COMPACT TO 95% PER ASTM D-1557. IN PAVED AREAS, OBTAIN ENGINEER APPROVAL OF ON-SITE EXCAVATED MATERIALS FOR USE AS FINAL BACKFILL.
[5] MINIMUM COVER OVER TOP OF PIPE:

PIPE MATERIAL	HDP, PVC	RG, DI
WATER SEWER	5'-0"	5'-0"
DRAIN	4'-0"	4'-0"
	1'-6"	1'-0"

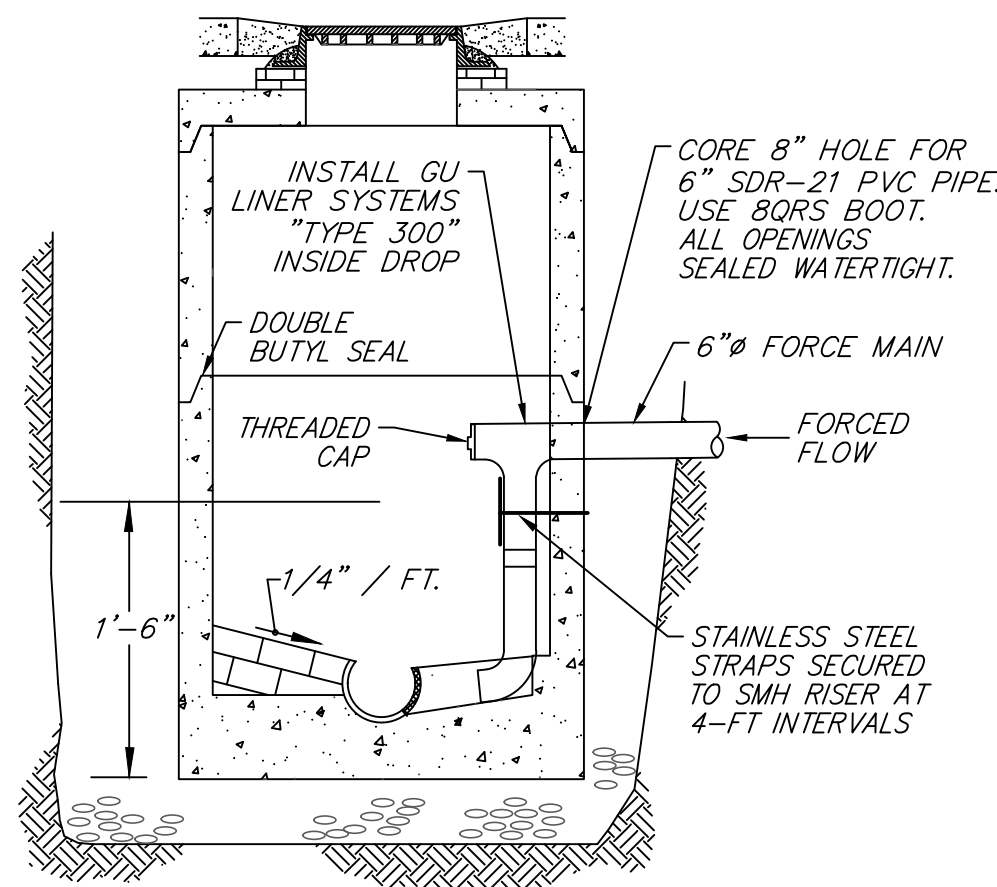
- [6] FOR FOUNDATION STABILIZATION, USE 2"± CRUSHED STONE.

PIPE TRENCH
TYPICAL CROSS SECTION
NOT TO SCALE



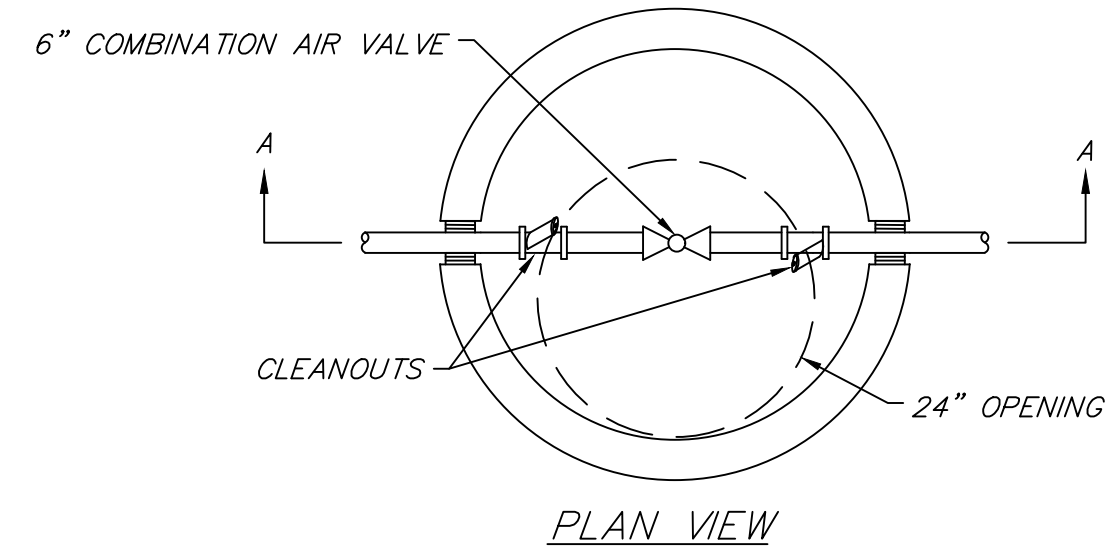
SEWER MANHOLE
TYPICAL CROSS SECTION
NOT TO SCALE

NOTE: CONTRACTOR SHALL PROVIDE ANTI-FLOTATION CALCULATIONS ASSUMING GROUNDWATER AT EXISTING GRADE ELEVATION.

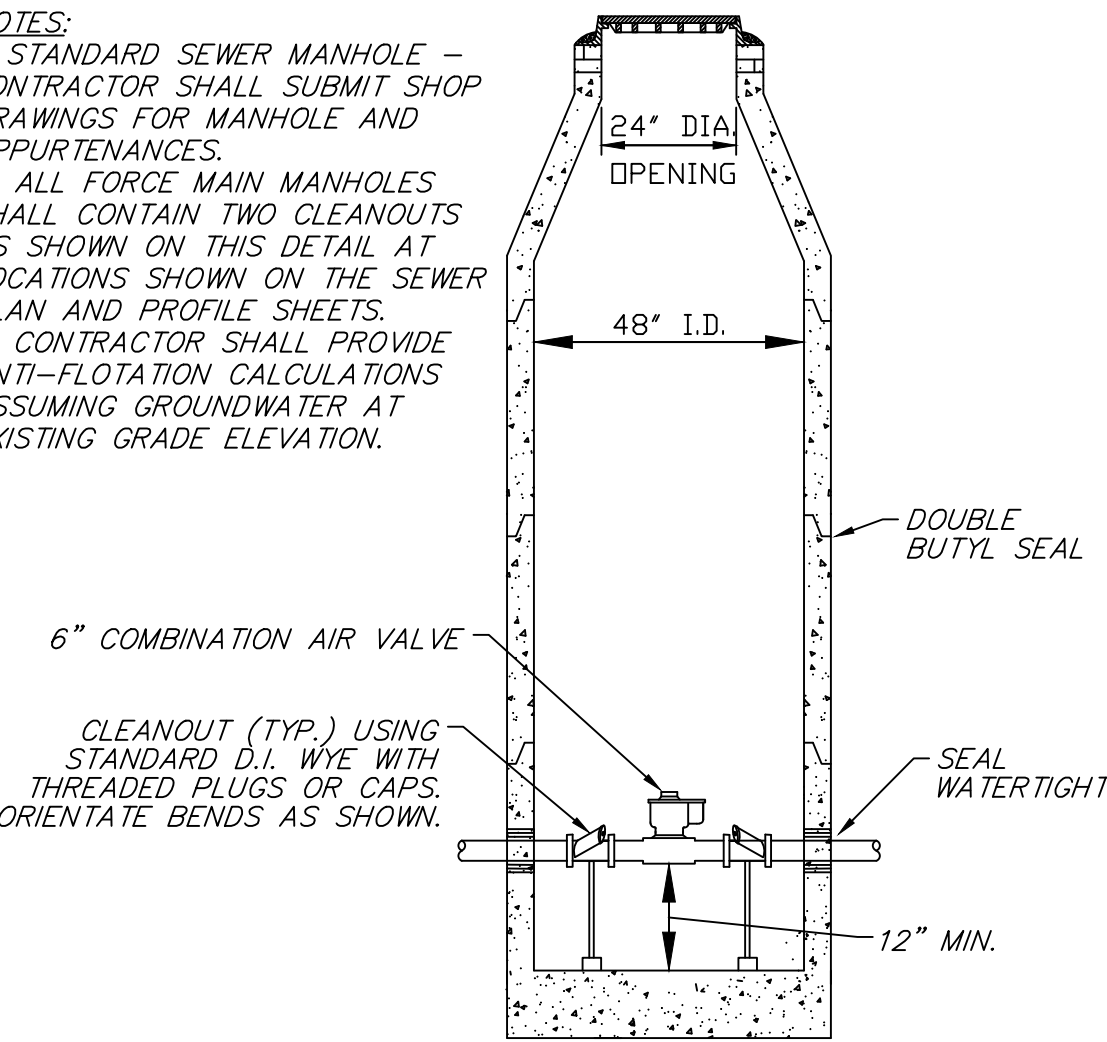


- NOTES:
1. DROP INLET TO DRAIN INTO INVERT. THE INVERT SHELVES AND TROUGH SHALL BE RECONSTRUCTED TO ACCOMMODATE THE DROP INLET.
2. CONTRACTOR SHALL PROVIDE ANTI-FLOTATION CALCULATIONS ASSUMING GROUNDWATER AT EXISTING GRADE ELEVATION.

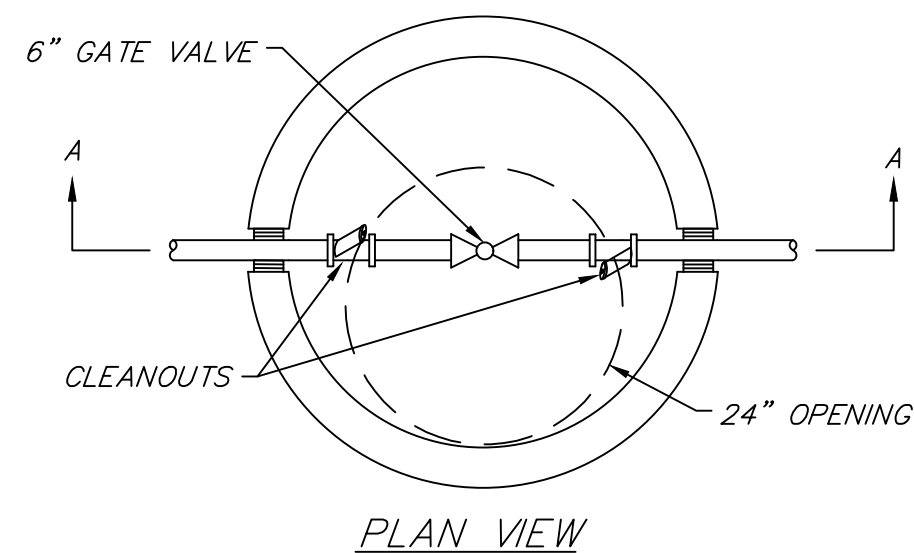
FORCE MAIN DISCHARGE
NOT TO SCALE



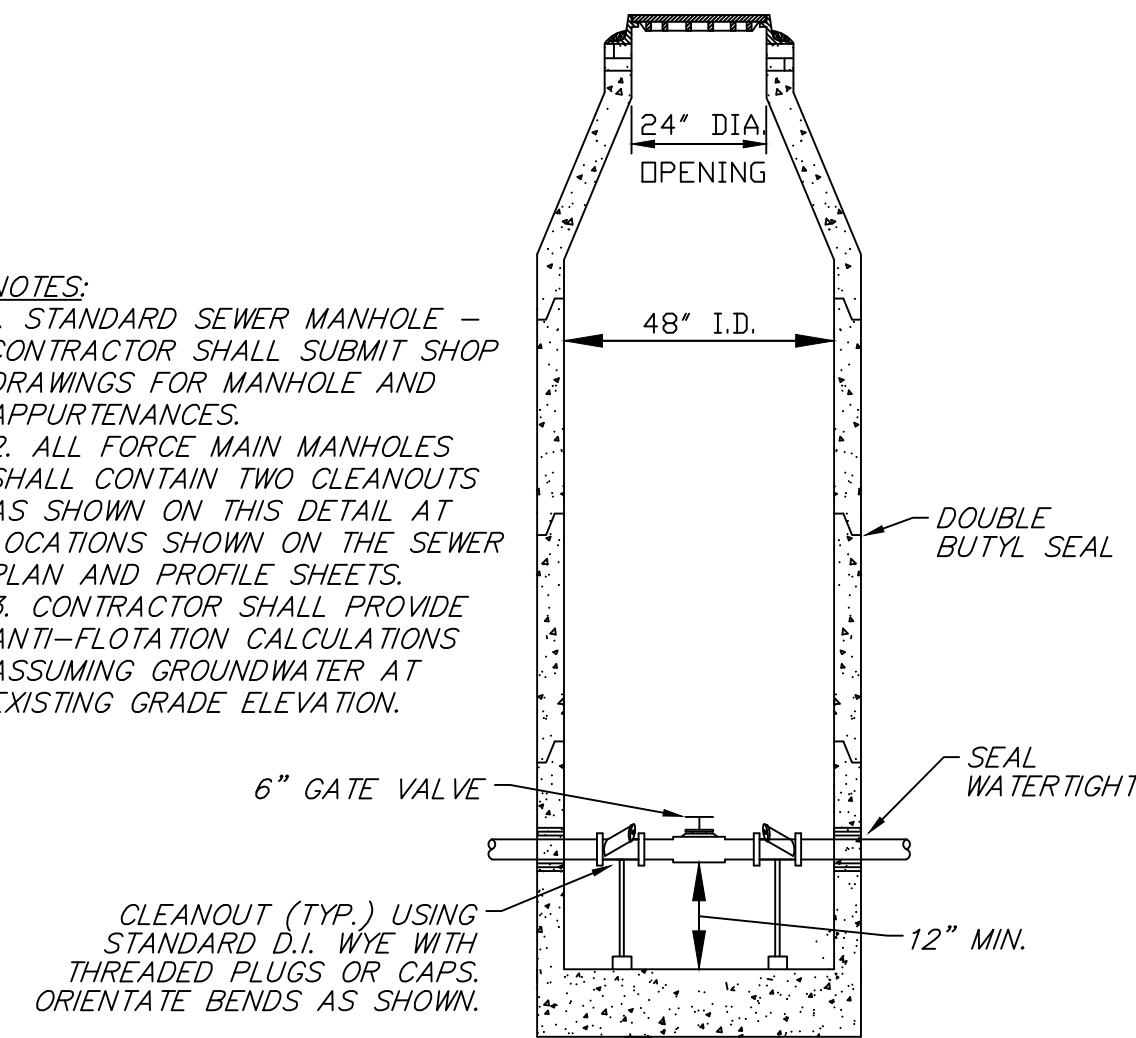
- NOTES:
1. STANDARD SEWER MANHOLE - CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR MANHOLE AND APPURTENANCES.
2. ALL FORCE MAIN MANHOLES SHALL CONTAIN TWO CLEANOUTS AS SHOWN ON THIS DETAIL AT LOCATIONS SHOWN ON THE SEWER PLAN AND PROFILE SHEETS.
3. CONTRACTOR SHALL PROVIDE ANTI-FLOTATION CALCULATIONS ASSUMING GROUNDWATER AT EXISTING GRADE ELEVATION.



SEWER FORCE MAIN AIR RELEASE VALVE MANHOLE
NOT TO SCALE



- NOTES:
1. STANDARD SEWER MANHOLE - CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR MANHOLE AND APPURTENANCES.
2. ALL FORCE MAIN MANHOLES SHALL CONTAIN TWO CLEANOUTS AS SHOWN ON THIS DETAIL AT LOCATIONS SHOWN ON THE SEWER PLAN AND PROFILE SHEETS.
3. CONTRACTOR SHALL PROVIDE ANTI-FLOTATION CALCULATIONS ASSUMING GROUNDWATER AT EXISTING GRADE ELEVATION.



SEWER FORCE MAIN CLEANOUT MANHOLE
NOT TO SCALE

PROJECT:
TOWN OF WILMINGTON
DEPARTMENT OF PUBLIC WORKS

MASSWORKS PUBLIC
INFRASTRUCTURE IMPROVEMENTS

SANITARY SEWER EXTENSION PLAN

Middlesex Avenue
Wilmington, MA 01887

PREPARED FOR:

TEC, INC - THE ENGINEERING CORP

146 Dascomb Road
Andover, Massachusetts 01810

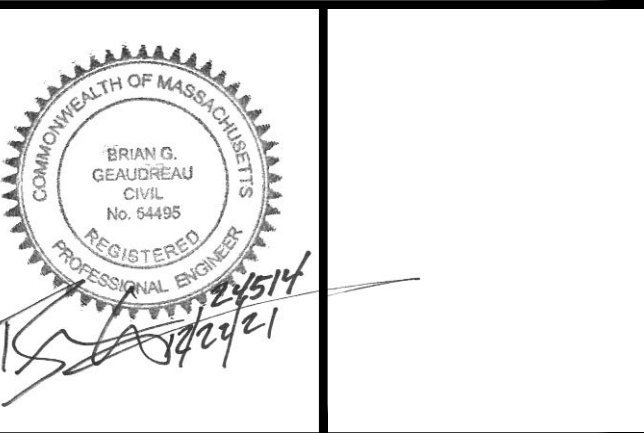
HANCOCK ASSOCIATES

Civil Engineers

Land Surveyors

Environmental
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34 Chelmsford Street, Chelmsford, MA 01824
Voice (978) 244-0110, Fax (978) 244-1133
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NO.	BY	APP	DATE	ISSUE/REVISION	DESCRIPTION
1			12/22/2021	DESIGN BY:	RO
2				SCALE:	DRAWN BY: RO
3				APPROVED BY:	BGG CHECK BY: JDP

CONSTRUCTION DRAWINGS

SEWER DETAIL SHEET

PLOT DATE: Dec 22, 2021 3:15 pm

DWG: 24514CD.dwg

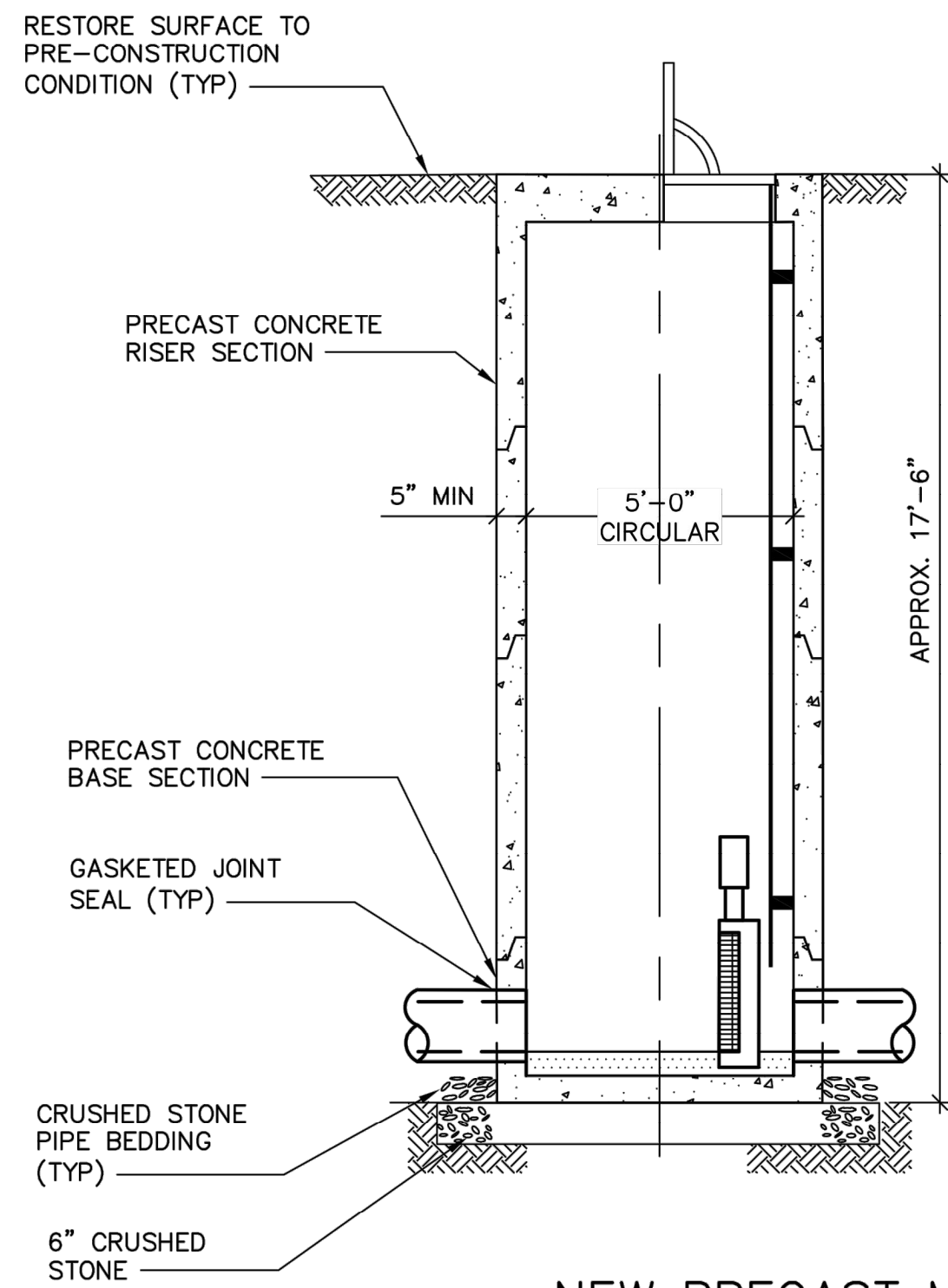
LAYOUT: C13 DET

SHEET: 13 OF 14

PROJECT NO.:

24514

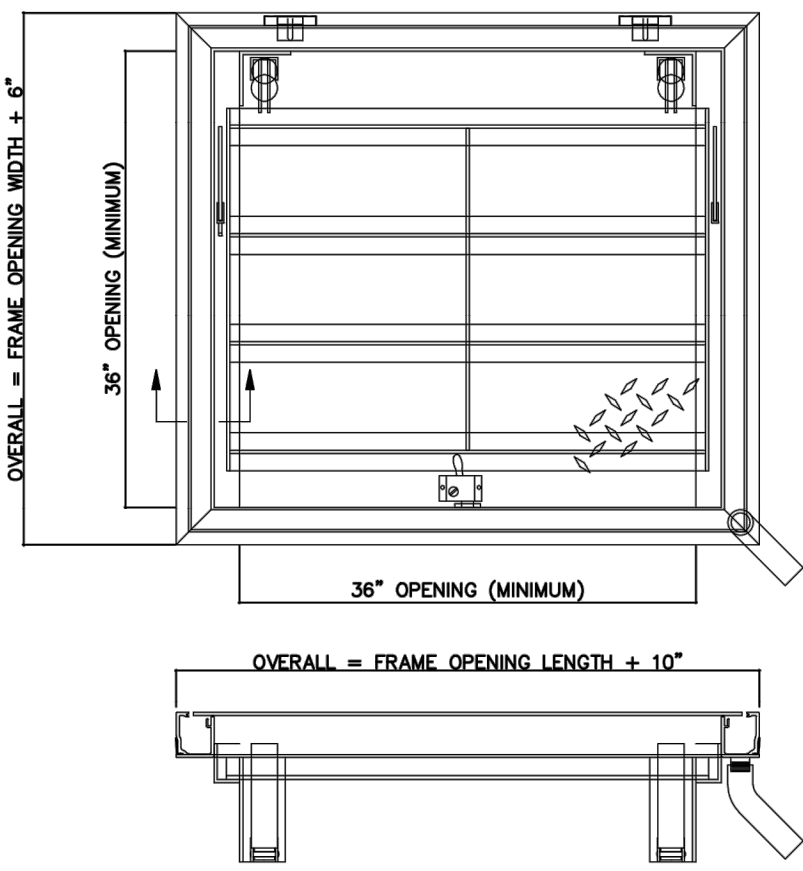
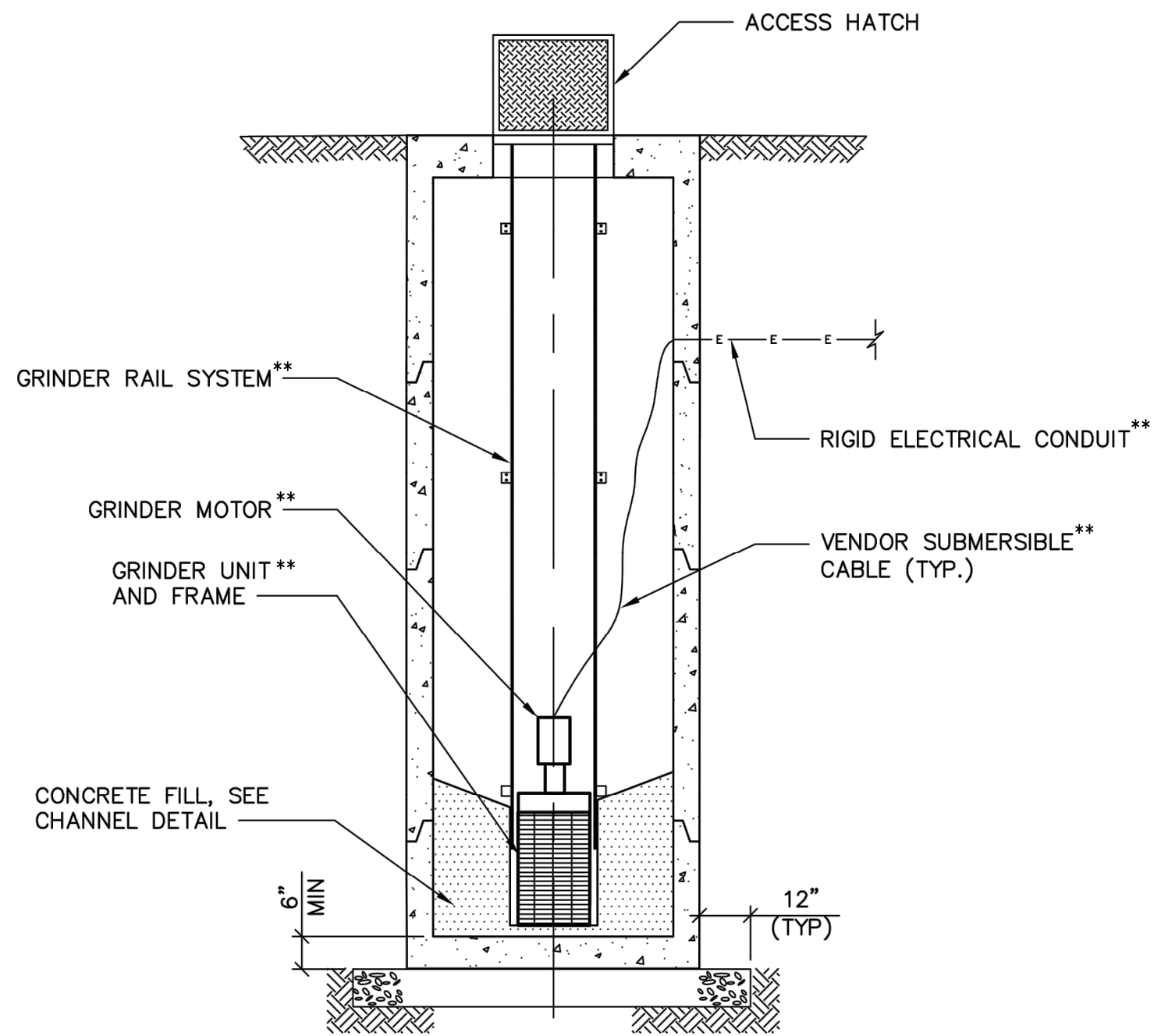
PATH: S:\Bran\PROJECTS\24514-TEC-Wilmington-Land\DWG



NEW PRECAST MANHOLE WITH WASTEWATER GRINDER

NOT TO SCALE

NOTE: ** NOT IN CONTRACT, FOR REFERENCE ONLY.



HAY BALE AND SILT FENCE BARRIER

ISOMETRIC VIEW
NOT TO SCALE

1/8" DIAMETER NEOPRENE
CONTINUOUS BUMPER ALL
AROUND

1/4" ALUMINUM CHANNEL
FRAME WITH RECESSED
ANCHORS

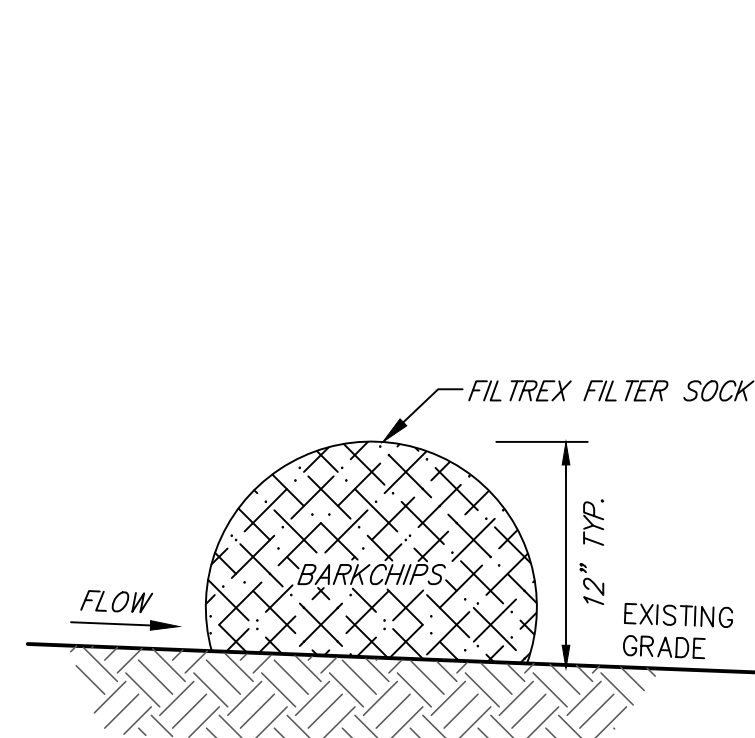
1-1/2" DRAIN
COUPLING

SUPPORT SHELF

SECTION
WITH COVER OPEN

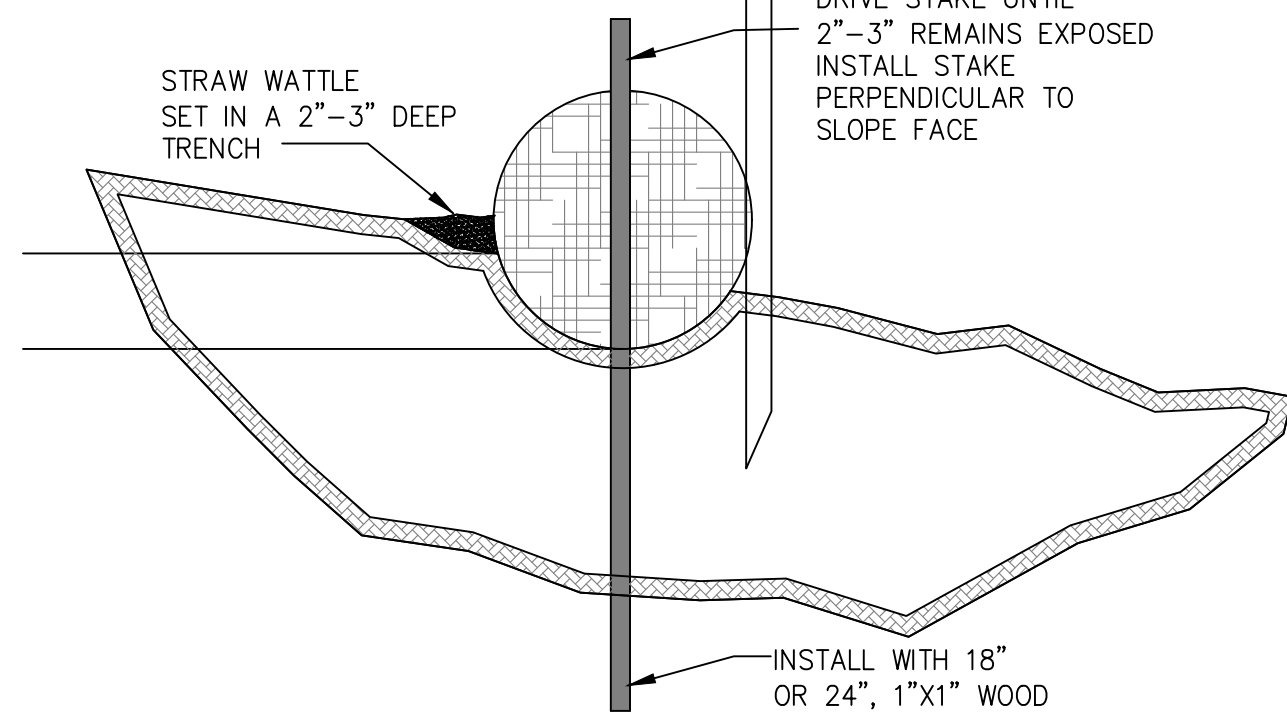
ACCESS HATCH

NOT TO SCALE



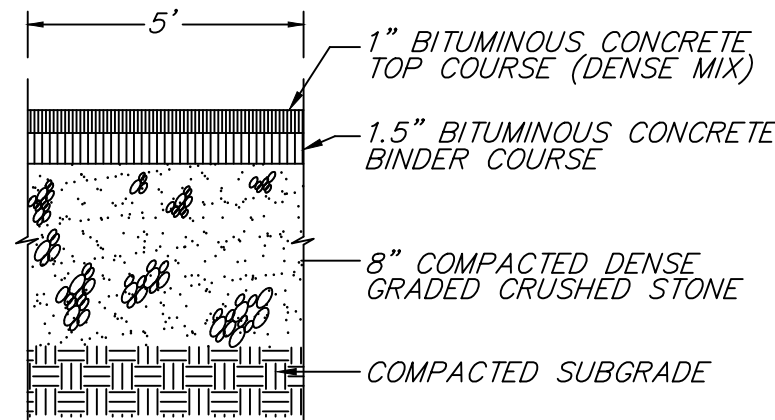
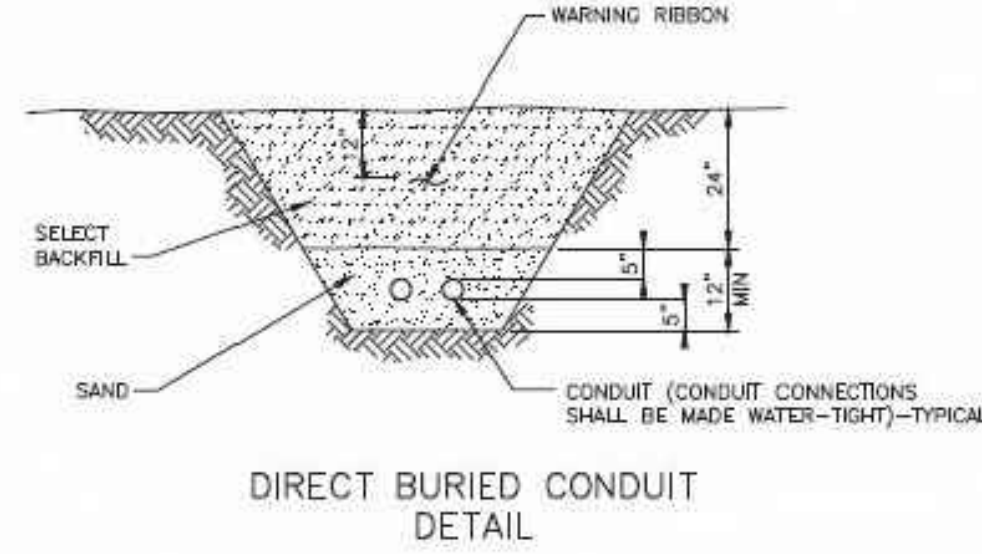
SILTATION BARRIER

CROSS SECTION
NOT TO SCALE



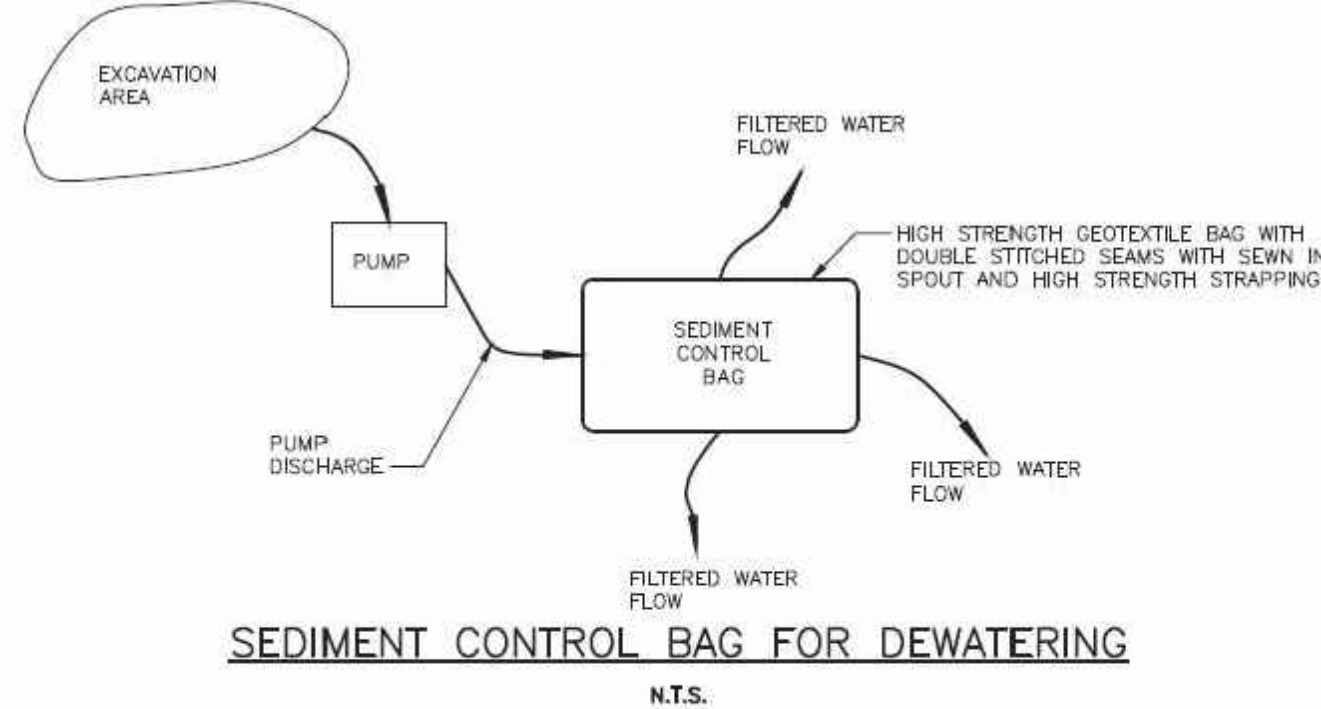
STRAW WATTLE INSTALLATION

NOT TO SCALE



BITUMINOUS CONCRETE WALKWAY

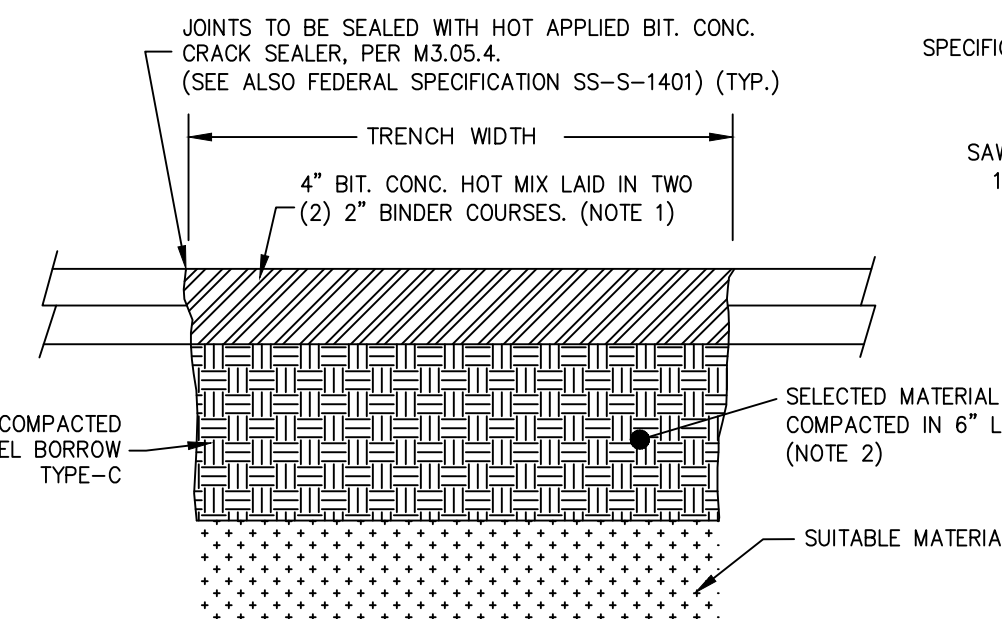
TYPICAL CROSS SECTION - NOT TO SCALE



SEDIMENT CONTROL BAG FOR DEWATERING

N.T.S.

- NOTES:
- BAG MUST BE LOCATED ON A SLOPE AND AWAY FROM RECEIVING WATERS AND/OR CONSTRUCTION ACTIVITIES.
 - BAGS MUST BE DISPOSED OF ACCORDING TO MANUFACTURE'S INSTRUCTIONS. BAGS MAY NOT BE REUSED.
 - DEWATERING OPERATIONS MUST DISCHARGE DIRECTLY INTO A SEDIMENT CONTROL BAG OR OTHER APPROVED FILTER.
 - INSTALL THE SEDIMENT CONTROL BAG ON A LAYER OF AGGREGATE TO PREVENT PUNCTURES FROM DEBRIS.



- NOTES:
- PAVING COURSES SHALL MEET THE SPECIFICATIONS OF MASSDOT CLASS I BITUMINOUS CONCRETE PAVEMENT (M3.11.00) FOR 3/4" BINDER COURSE.
 - COMPACTION EQUIPMENT SHALL MEET OR EXCEED THE MINIMUM REQUIREMENTS TO OBTAIN THE COMPACTION STANDARDS DESCRIBED IN THE CONSTRUCTION NOTES, UNLESS OTHERWISE APPROVED BY THE TOWN ENGINEER. IN PROXIMITY TO STRUCTURES, A JUMPING JACK COMPACTOR SHALL BE REQUIRED.
 - TRENCHES SHALL BE PAVED USING THIS TEMPORARY PATCH DETAIL AT THE END OF THE EACH WORK WEEK (FRIDAY).

TEMPORARY TRENCH PAVING

TYPICAL SECTION
NOT TO SCALE

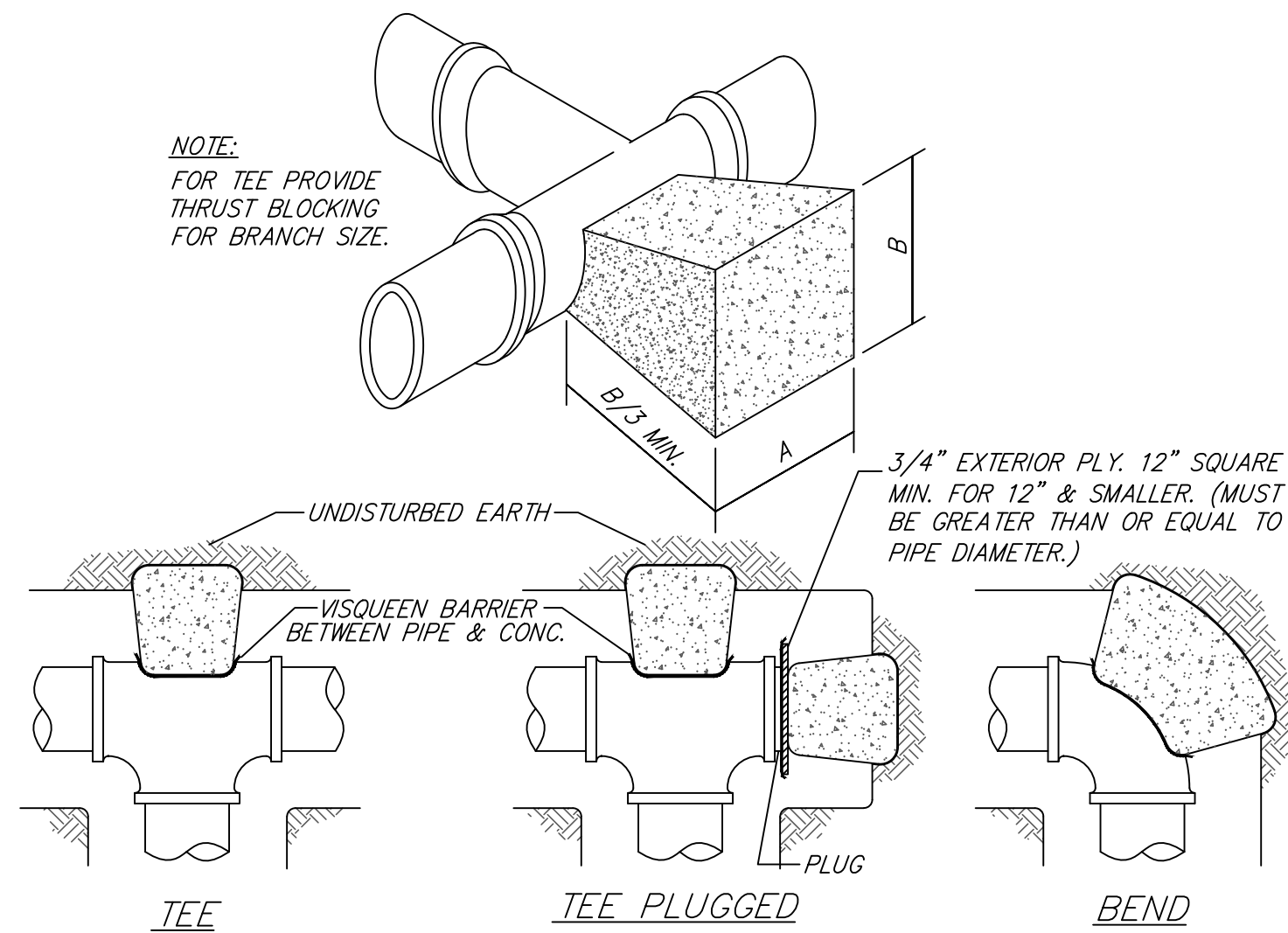
JOINTS TO BE SEALED WITH HOT
APPLIED BIT. CONC. CRACK SEALER,
PER M3.05.4
(SEE ALSO FEDERAL
SPECIFICATION SS-5-1401)(TYP.)

SAWCUT EXISTING BIT. CONC.
12" MIN. BEYOND LIMIT OF
TRENCHING

- NOTES:
- THE TEMPORARY PAVEMENT PATCH SHALL BE MILLED (1.5" MINIMUM DEPTH) TO ONE (1) FOOT OUTSIDE THE LIMITS OF EXCAVATION WITHIN THE ROADWAY SURFACE AND PAVED WITH MASSDOT CLASS I BITUMINOUS CONCRETE PAVEMENT (M3.11.00) FOR A WEARING (TOP) COURSE.
 - COMPACTION EQUIPMENT SHALL MEET OR EXCEED THE MINIMUM REQUIREMENTS TO OBTAIN THE COMPACTION STANDARDS DESCRIBED IN THE CONSTRUCTION NOTES, UNLESS OTHERWISE APPROVED BY THE TOWN ENGINEER. IN PROXIMITY TO STRUCTURES, A JUMPING JACK COMPACTOR SHALL BE REQUIRED.
 - TRENCHES SHALL BE PERMANENTLY PAVED WITHIN TWELVE (12) MONTHS OF TEMPORARY PATCHING, BUT NO SOONER THAN SIX (6) MONTHS.

FINAL TRENCH PAVING

TYPICAL SECTION
NOT TO SCALE

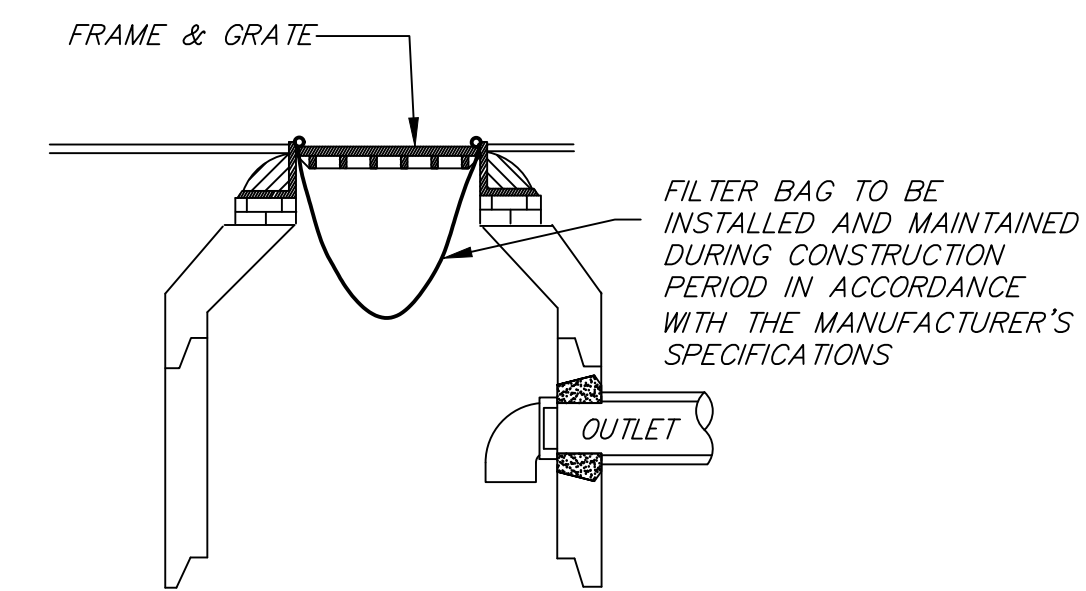


FITTING SIZES	TEES & PLUGS		90° BENDS		45° BENDS & WYES		22½° & 1¼° BENDS	
	A	B	A	B	A	B	A	B
4"	1'-6"	1'-6"	1'-6"	1'-9"	1'-3"	0'-6"	1'-0"	0'-6"
6"	2'-0"	1'-0"	2'-0"	2'-0"	1'-3"	1'-6"	1'-0"	1'-5"
8"	2'-0"	1'-6"	2'-3"	2'-3"	1'-8"	1'-8"	1'-0"	1'-3"
10"	2'-6"	2'-3"	2'-9"	2'-10"	2'-3"	1'-10"	1'-3"	2'-0"
12"	3'-0"	2'-9"	3'-6"	3'-3"	2'-6"	2'-4"	2'-0"	1'-6"

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 VISQUEEN 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.
5. THRUST BLOCKS ARE REQUIRED AT ALL SEWER FORCE MAIN BENDS.

THRUST BLOCK SCHEDULE

NOT TO SCALE



CATCH BASIN FILTER BAG

TYPICAL CROSS SECTION - NOT TO SCALE

PROJECT:
TOWN OF WILMINGTON
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SANITARY SEWER EXTENSION PLAN

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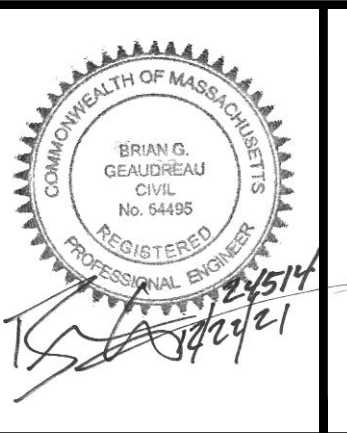
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4				APPROVED BY:	BGG
5				CHECK BY:	JDP

**CONSTRUCTION
DRAWINGS**

**GENERAL
DETAIL SHEET**

PLOT DATE: Dec 22, 2021 2:28 pm

DWG: 24514CD.dwg

LAYOUT: C14 DET

SHEET: 14 OF 14

PROJECT NO.:

24514

PATH: S:\Branh\PROJECTS\24514-TEC-Wilmington\Eng\DWG\