



FOR REGISTRY USE ONLY
I CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN CONFORMANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.


11-10-25
DATE PROFESSIONAL LAND SURVEYOR

APPROVED SUBJECT TO TERMS AND CONDITIONS OF A COMPREHENSIVE PERMIT PER ZONING BOARD OF APPEALS DECISION, AS AUTHORIZED BY CHAPTER 40B OF THE MASSACHUSETTS GENERAL LAWS, SECTIONS 20-23.

DATE: _____

MEDWAY ZONING BOARD OF APPEALS

THIS PLAN IS SUBJECT TO A COVENANT TO BE RECORDED HEREWITH

I CERTIFY THAT 20 DAYS HAVE ELAPSED SINCE ZONING BOARD APPROVAL, AND THAT NO APPEAL HAS BEEN FILED AT THIS OFFICE.

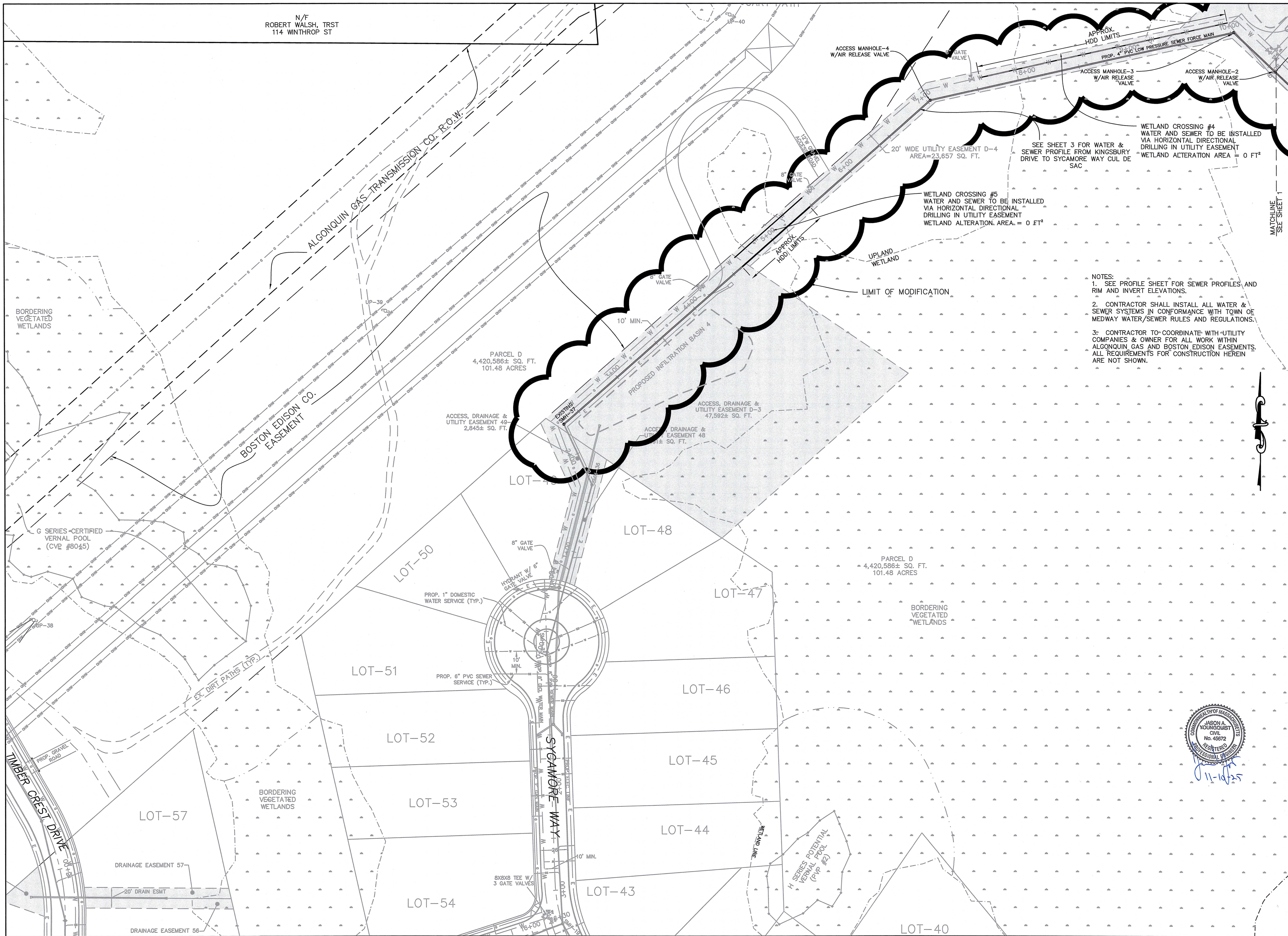
TOWN CLERK-TOWN OF MEDWAY

**SEWER CONNECTION
MODIFICATION PLAN**

"KINGSBURY VILLAGE"
IN
MEDWAY
MASSACHUSETTS


165 EAST GROVE STREET
MIDDLEBOROUGH, MA 02346
TEL: (508)-946-9231
FAX: (508)-947-8873
www.outback-eng.com

DATE: NOVEMBER 10, 2025
DRAWN BY: JUS CHECKED BY: JAY
SCALE: 1"=40' SHEET 1 OF 5
0' 40' 80' 120'
OE-2765



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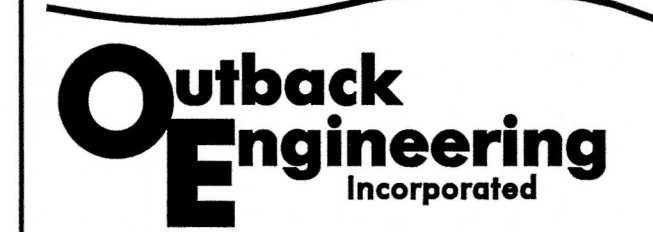
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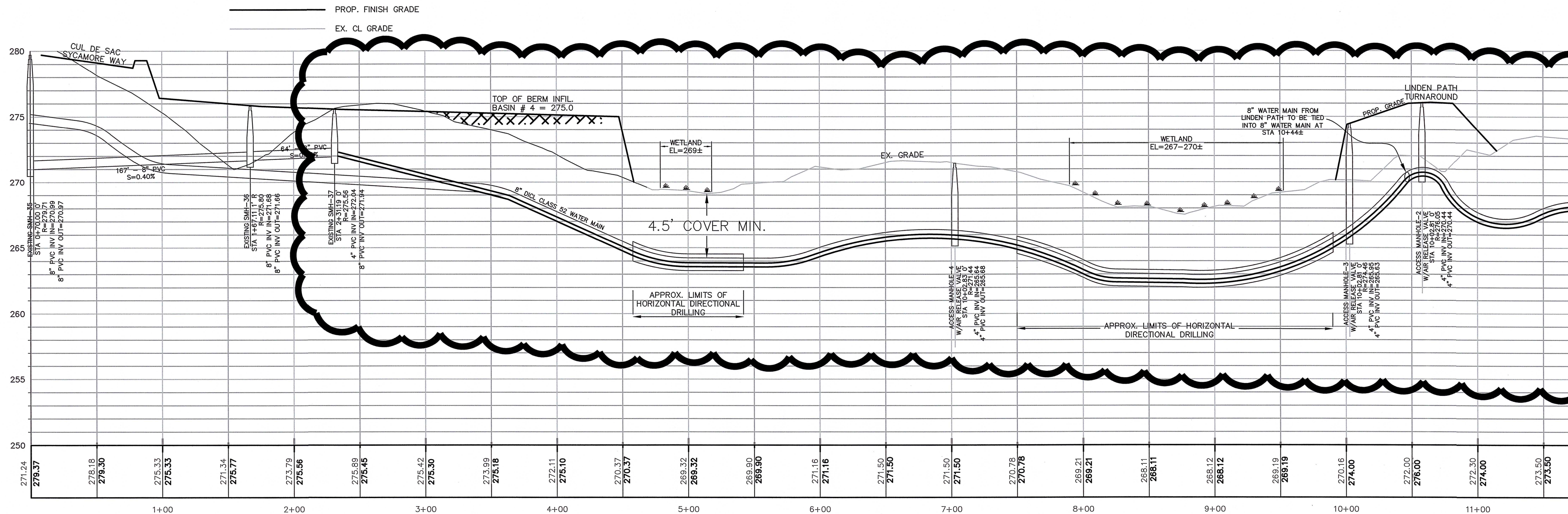
**SEWER CONNECTION
MODIFICATION PLAN**

**"TIMBER CREST
ESTATES"
IN
MEDWAY
MASSACHUSETTS**

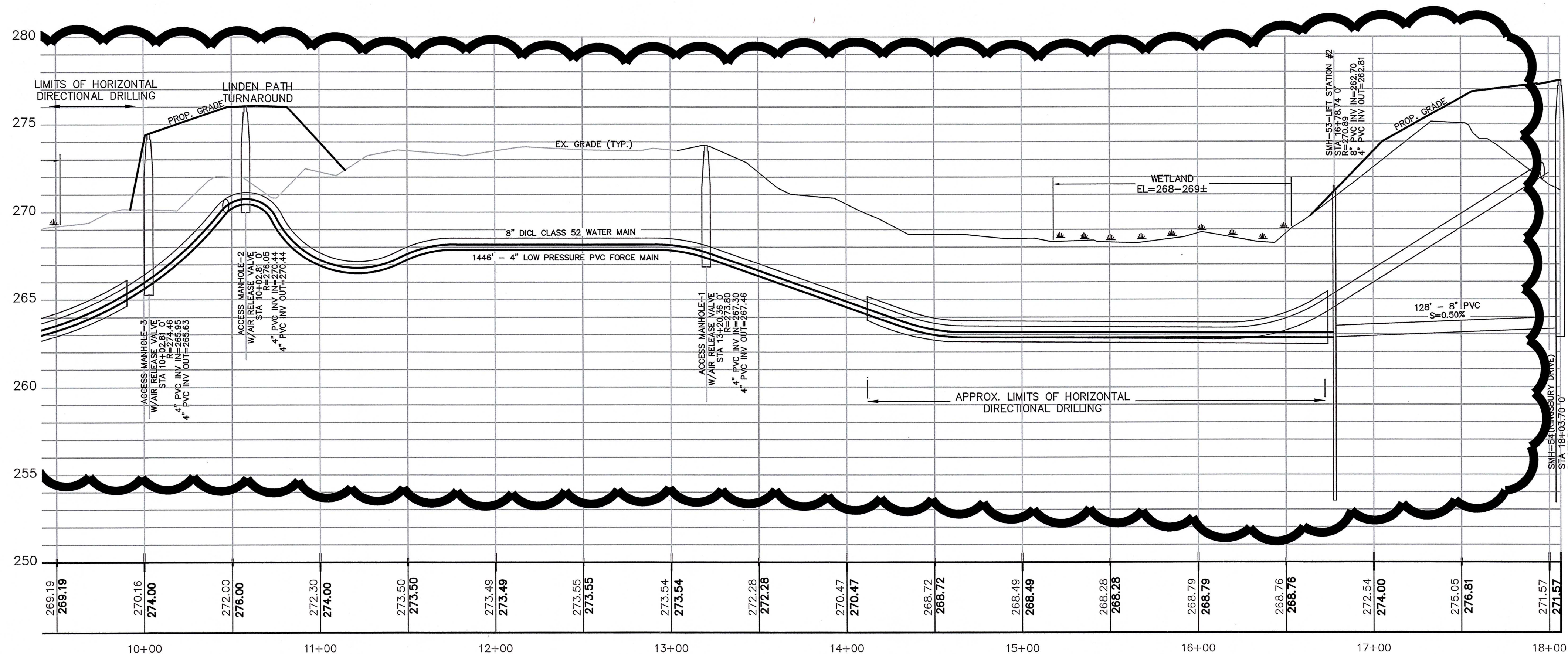


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0' 40' 80' 120'	
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EAST-WEST UTILITY PROFILE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'



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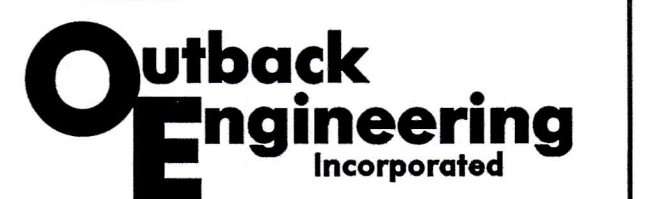
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SEWER CONNECTION MODIFICATION PLAN

"TIMBER CREST ESTATES & KINGSBURY VILLAGE" IN MEDWAY MASSACHUSETTS



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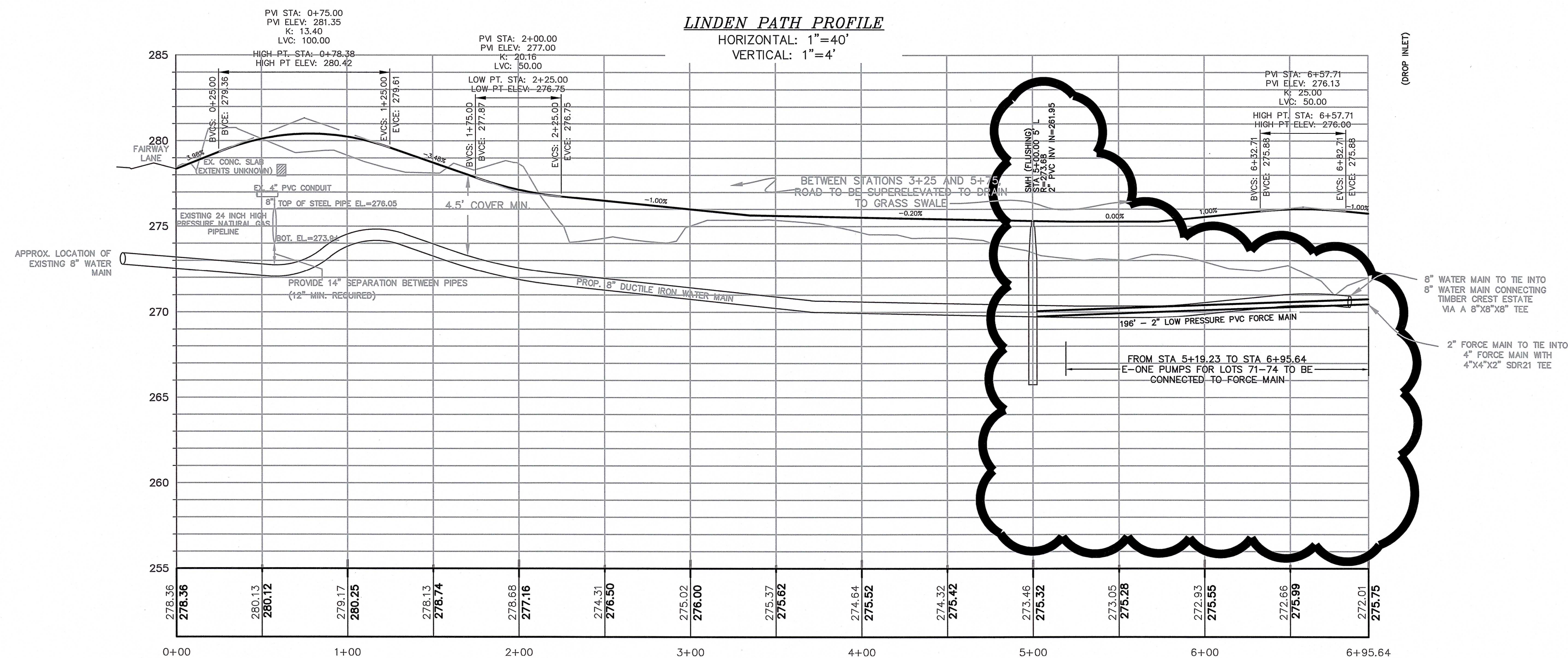
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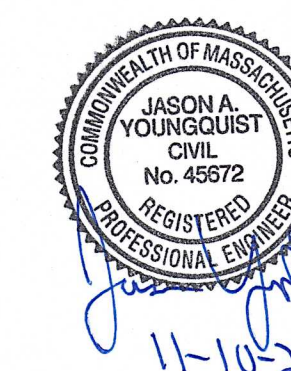
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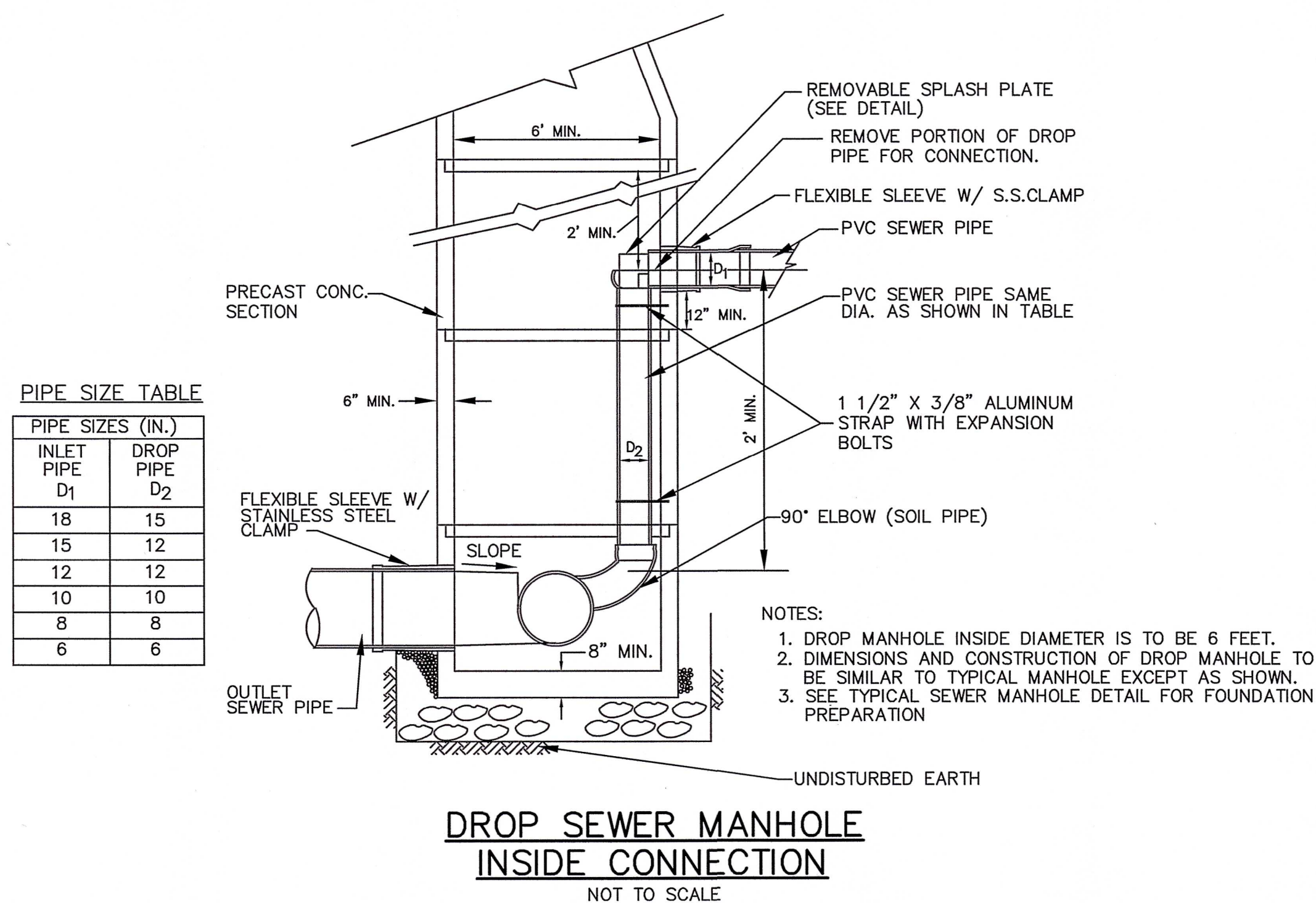
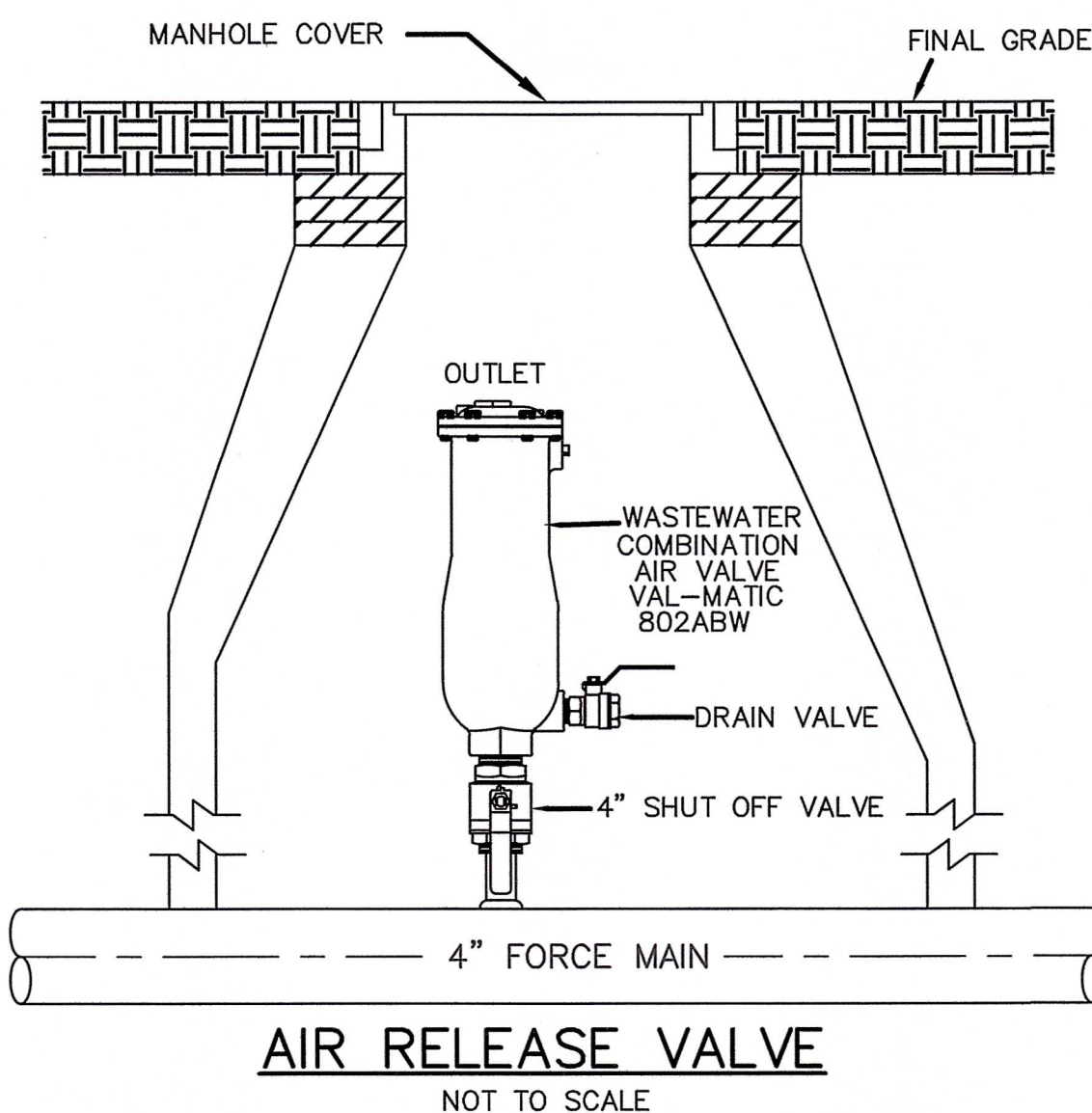
$$\begin{aligned}\text{AMOUNT OF HEAD REQUIRED} &= (\text{INVERT INTO SMH}-37) - (\text{ELEVATION OF INTERIOR BOTTOM OF LIFT STATION}) \\ &= 272.04 - 254.07 = 17.97'\end{aligned}$$

FRICTION LOSS
 USE A 4" SCH. 40 FORCE MAIN
 TRY PUMPING AT ± 120 GPM
 EQUIVALENT PIPE LENGTH FOR 90° BEND = 5.5'
 EQUIVALENT PIPE LENGTH FOR 45° BEND = 2.5'
 TOTAL LENGTH OF PIPE = $1446' + 3(2.5') + 2(5.5') = 1464.5'$
 FRICTION LOSS PER 100' OF PIPE = 0.88
 TOTAL LOSS DUE TO FRICTION = $(1464.5')(0.88)$
 = 12.88'

$$\text{TOTAL DYNAMIC HEAD} = 12.88' + 17.97' = 30.85'$$

MAX. GROUNDWATER ELEV. = 267.9 (TP-12B)
PROPOSED TANK BOTTOM ELEV. = 254.07

- PROPOSED TANK DIMENSIONS: 254.07'
1. BUOYANCY FORCE ON EMPTY TANK:
VOLUME DISPLACED = $81.25 \text{ FT}^3 \times (267.9 - 254.1)$
= 1121 C.F.
WT. OF DISPLACED WATER = $1121 \text{ C.F.} \times 62.4 \text{ \#/C.F.}$
= $69950 \text{ \#}$ ↑
2. WEIGHT OF EMPTY TANK:
WT. OF EMPTY TANK = $69000 \text{ \#}$ ↓
3. WEIGHT OF SOIL ATOP BASE:
VOLUME = $24.3' \text{ DEEP} \times 29 \text{ FT}^2 = 705 \text{ C.F.}$
WEIGHT = $705 \text{ C.F.} \times 120 \text{ \#/C.F.} = 84564 \text{ \#}$ ↓
- 3a. BUOYANCY FORCE OF SOIL ATOP SLAB:
VOLUME = $(268.0 - 254.1') \text{ DEEP} \times 29 \text{ FT}^2 = 403 \text{ C.F.}$
WEIGHT = $403 \text{ C.F.} \times 62.4 \text{ \#/C.F.} = 25153 \text{ \#}$ ↑
SUM OF FORCES: $84564 \downarrow - 25153 \uparrow = 59411 \downarrow \text{ \#}$
4. SUM OF FORCES:
F.S. = $(69000 \text{ \#} + 59411 \text{ \#}) \div 69950 \text{ \#} = 1.83 \text{ FACTOR OF SAFETY}$
WT. OF TANK + SOIL IS GREATER THAN WT. OF DISPLACED WATER
∴ OK

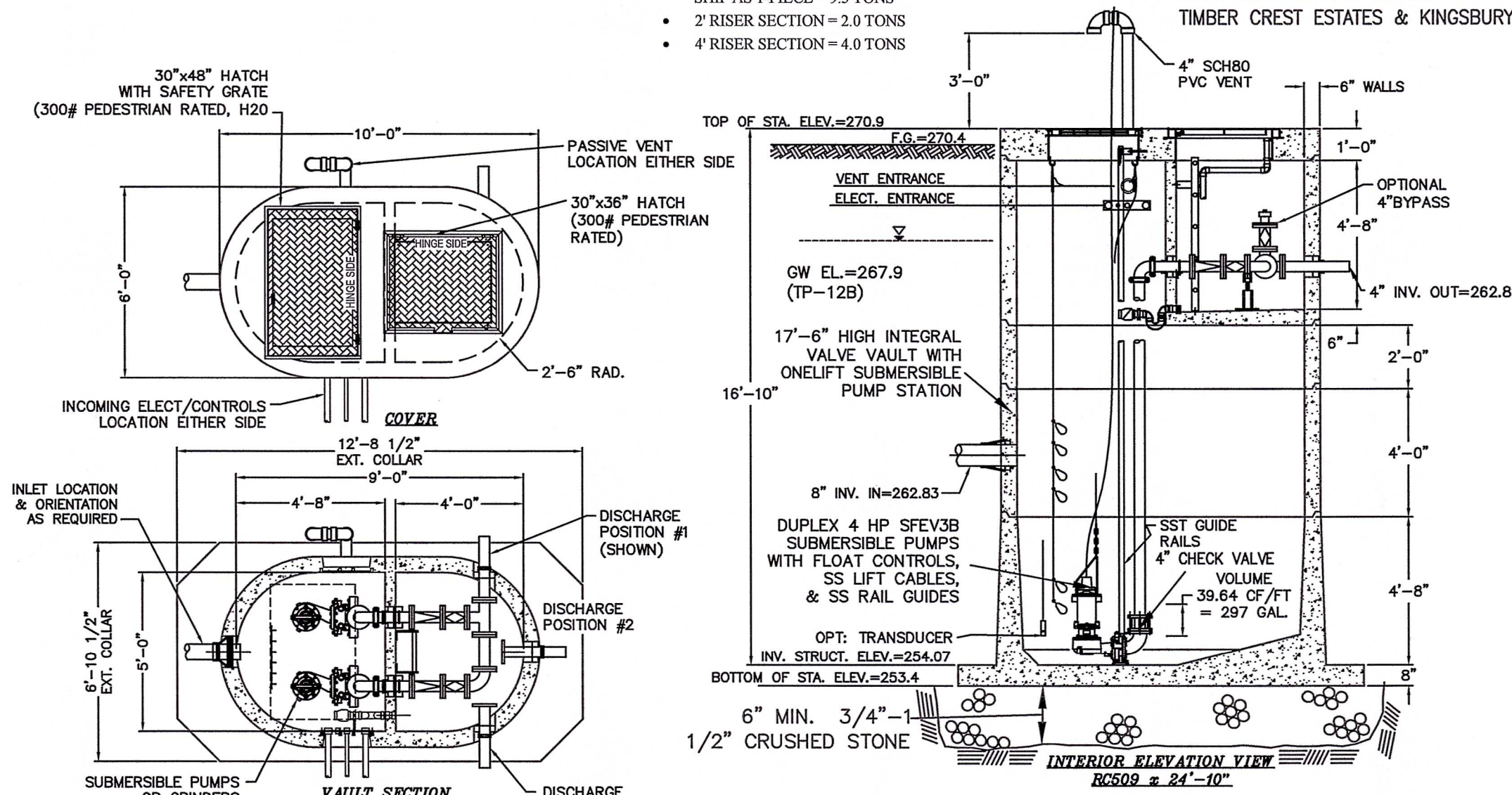


NOTES FOR LIFT STATION 2:
1. PUMP CORDS NOT SHOWN FOR CLARITY.

2. CONTRACTOR TO PROVIDE ALL EQUIPMENT, MATERIALS & LABOR NECESSARY FOR COMPLETE INSTALLATION OF LIFT STATIONS (SEE HAYES PUMP, INC. BUDGET QUOTATION LETTERS DATED NOVEMBER 12, 2018 FOR SPECIFICATIONS), INCLUDING ELECTRIC CONTROL PANELS AND BACKUP GENERATORS. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR REVIEW BY DESIGN ENGINEER & MEDWAY DPW PRIOR TO ORDERING AND INSTALLATION, AND AS-BUILT DRAWINGS PRIOR TO PLACING STATIONS IN SERVICE.
3. PRIOR TO RELEASE OF ANY BUILDING PERMITS FOR INDIVIDUAL LOTS, CONTRACTOR SHALL PROVIDE THE OWNER & TOWN DPW WITH A CLEAR WELL TEST REPORT AND AS-BUILT DRAWINGS FOR ALL PUMP STATIONS NEEDED TO SERVE PROPOSED BUILDING LOTS. OWNER SHALL PROVIDE A COPY OF A CONTRACT FOR EMERGENCY AND ROUTINE MAINTENANCE SERVICES DESIGNATING WHO IS RESPONSIBLE FOR SUCH SERVICES AND RELATED CONTACT INFORMATION. (REFER TO SEWER LIFT STATIONS SPEC SHEETS & STANDARD OPERATING GUIDELINE TIMBER CREST ESTATES & KINGSBURY VILLAGE DATED NOVEMBER 29, 2019.)

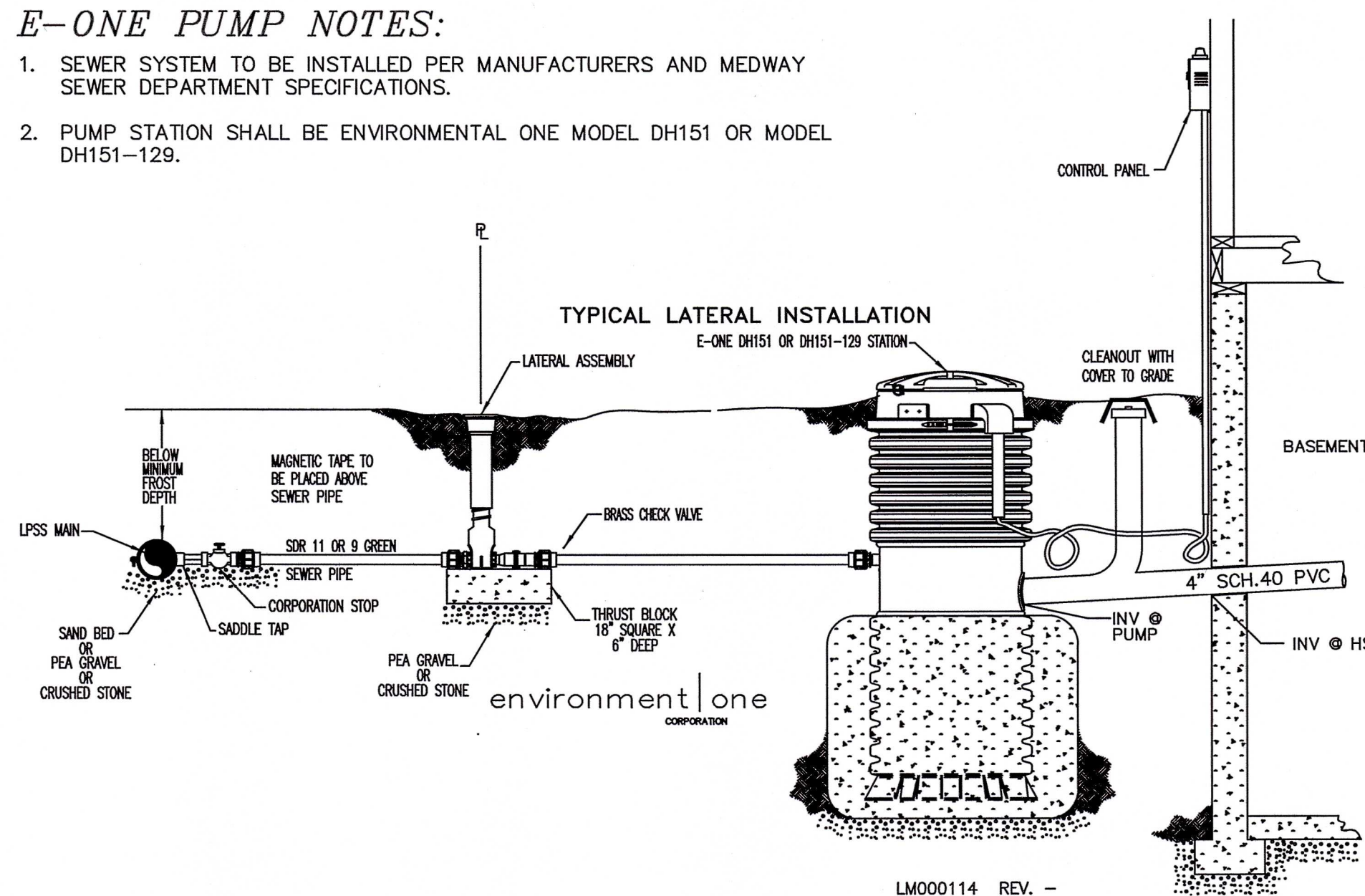
APPROX. WEIGHTS:

- BASE SECTION W/FLOAT COLLAR & FILLETS = 11.0 TONS
- TOP SLAB & VALVE VAULT ARE FACTORY SEALED, AND SHIP AS 1-PIECE = 9.5 TONS
- 2' RISER SECTION = 2.0 TONS
- 4' RISER SECTION = 4.0 TONS



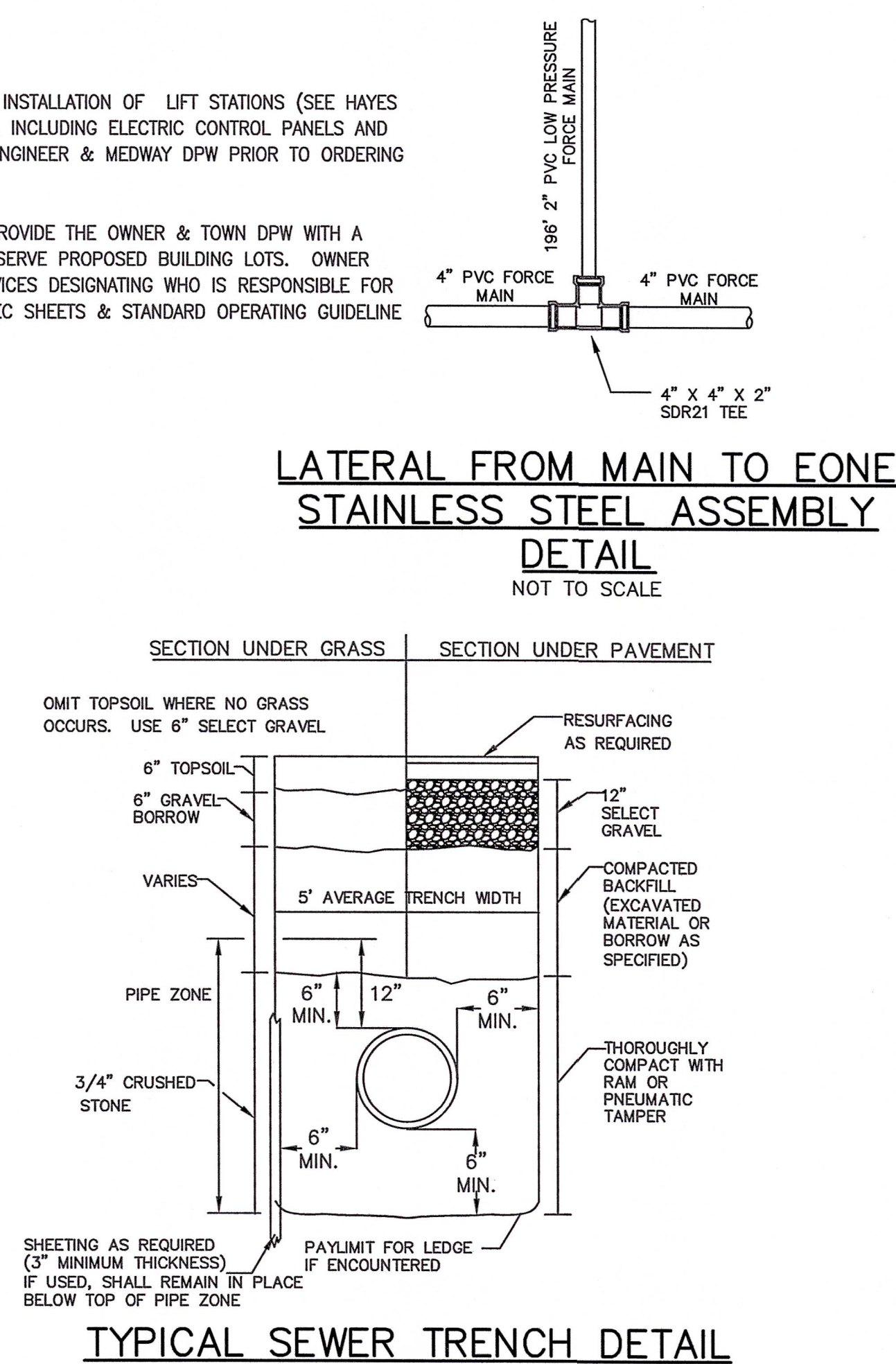
LIFT STATION #2
NOT TO SCALE

1. SEWER SYSTEM TO BE INSTALLED PER MANUFACTURERS AND MEDWAY SEWER DEPARTMENT SPECIFICATIONS.
2. PUMP STATION SHALL BE ENVIRONMENTAL ONE MODEL DH151 OR MODEL DH151-129.



LIFT Station # & Location	# of homes	Avg Flow(GPD) (170 GPD/home)	Peak flow (5X) (GPD)	GPH (peak hour)	GPM (peak hour)	Rim El.	8" Inv. In to Lift station	Inv. Out (of wet well)	FM length	Connecting inv. El.
#2	67	11390	56950	2373	40	270.89	262.83	(4") 262.81	*1446'	272.04

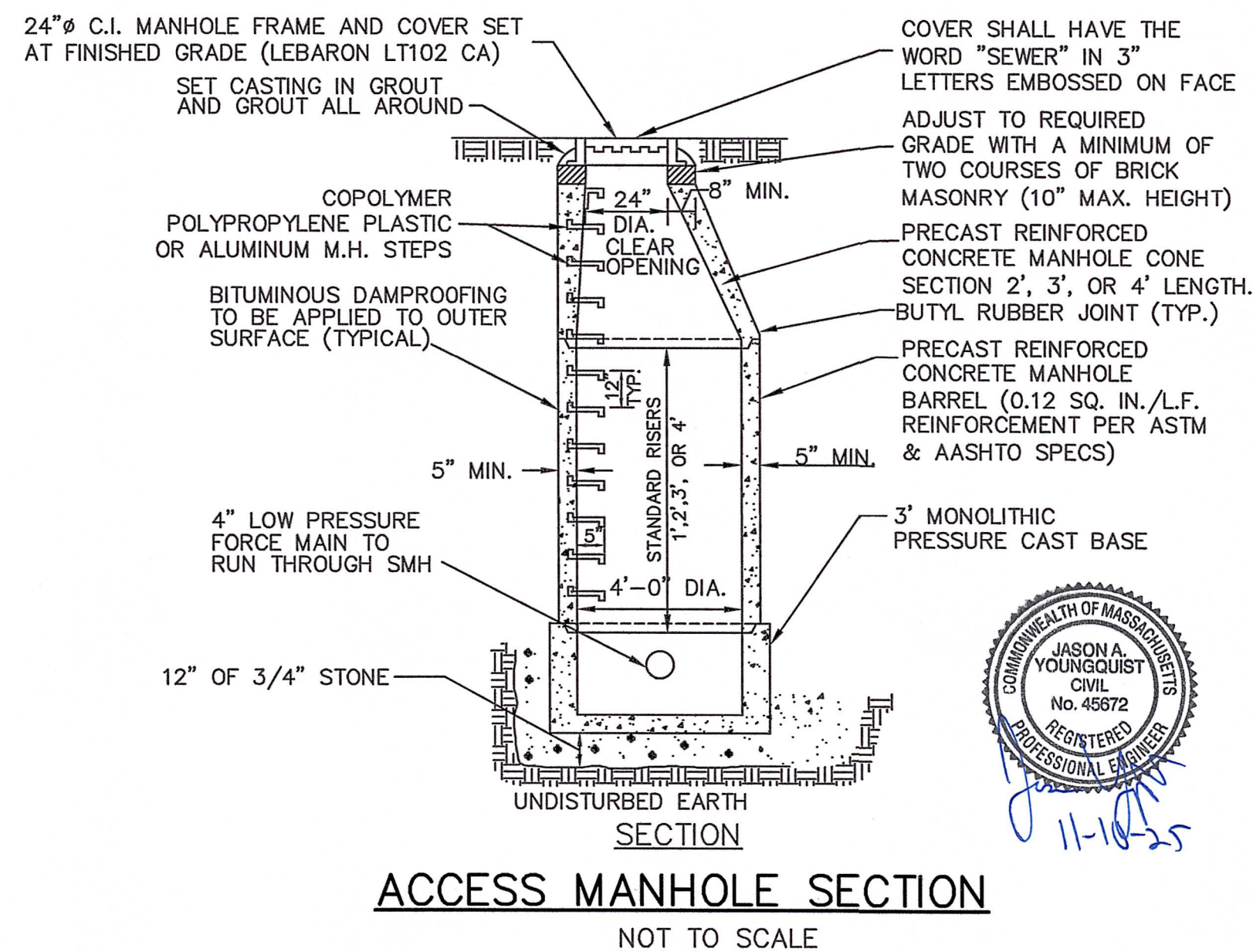
LIFT STATION DESIGN FLOW CALCULATIONS & ELEVATIONS



TYPICAL SEWER TRENCH DETAIL

NOTES:

1. INCLUDES HOUSE SERVICES
2. EXISTING PAVEMENT SHALL BE SAW CUT BEFORE TRENCH EXCAVATION
3. PAY WIDTH EQUALS 5 FEET



ACCESS MANHOLE SECTION

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