

REVIEWER'S NOTES:

1. ROW EASEMENTS NEEDED.
2. SEWER RELOCATION IS ANTICIPATED.
3. OVERHEAD UTILITY RELOCATION IS REQUIRED.
4. ANTICIPATED CLOSURE OF STOWE STREET IS 60 DAYS AND THE ANTICIPATED CLOSURE OF LINCOLN STREET IS 21 DAYS.
5. THE PARK AND RIDE FACILITY ON LINCOLN STREET WILL BE TEMPORARILY RELOCATED TO THE WASSON BUILDING LOT OF THE STATE OFFICE COMPLEX WITH ACCESS TO THE LOT OFF OF PARK ROW.

STATE OF VERMONT AGENCY OF TRANSPORTATION

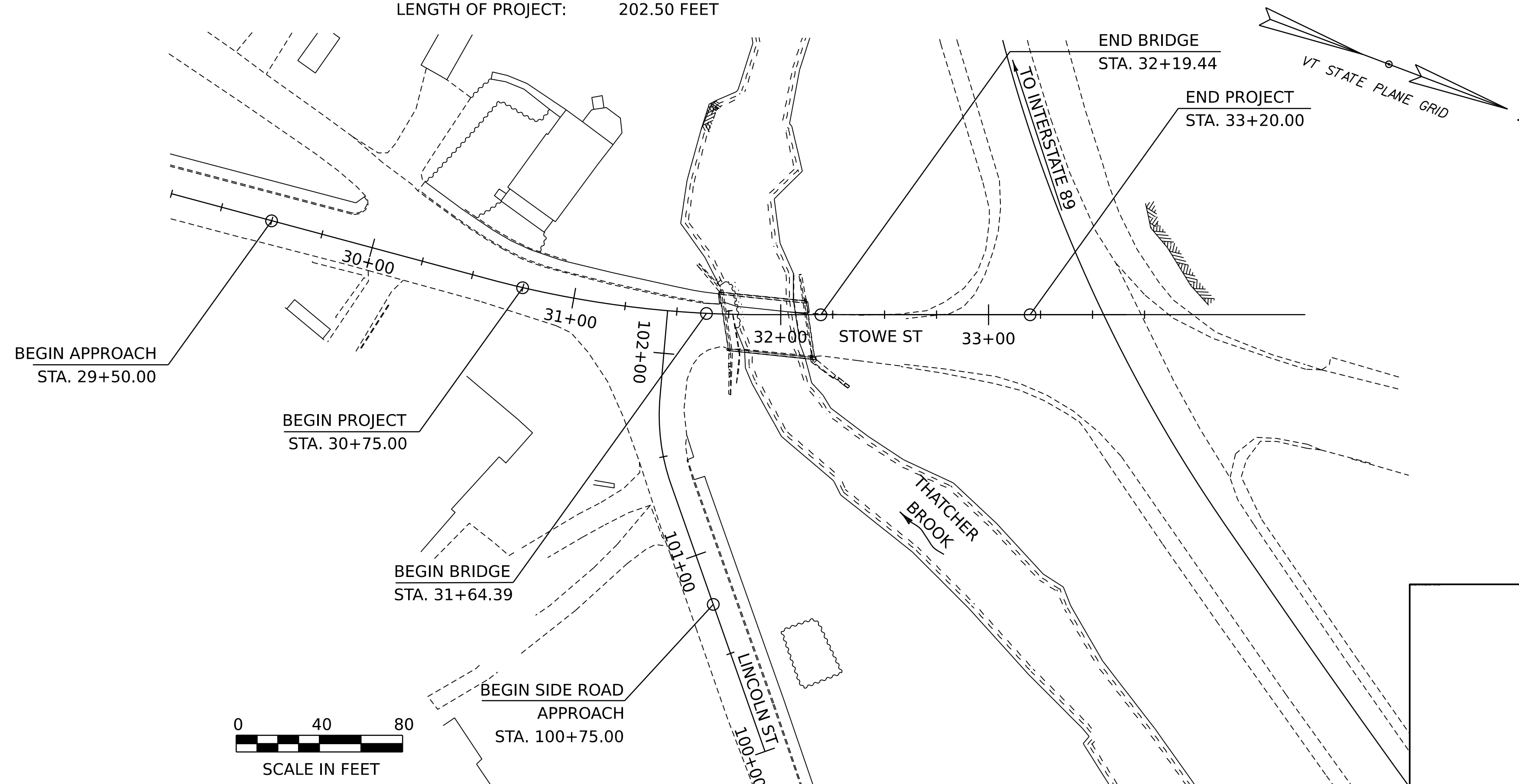
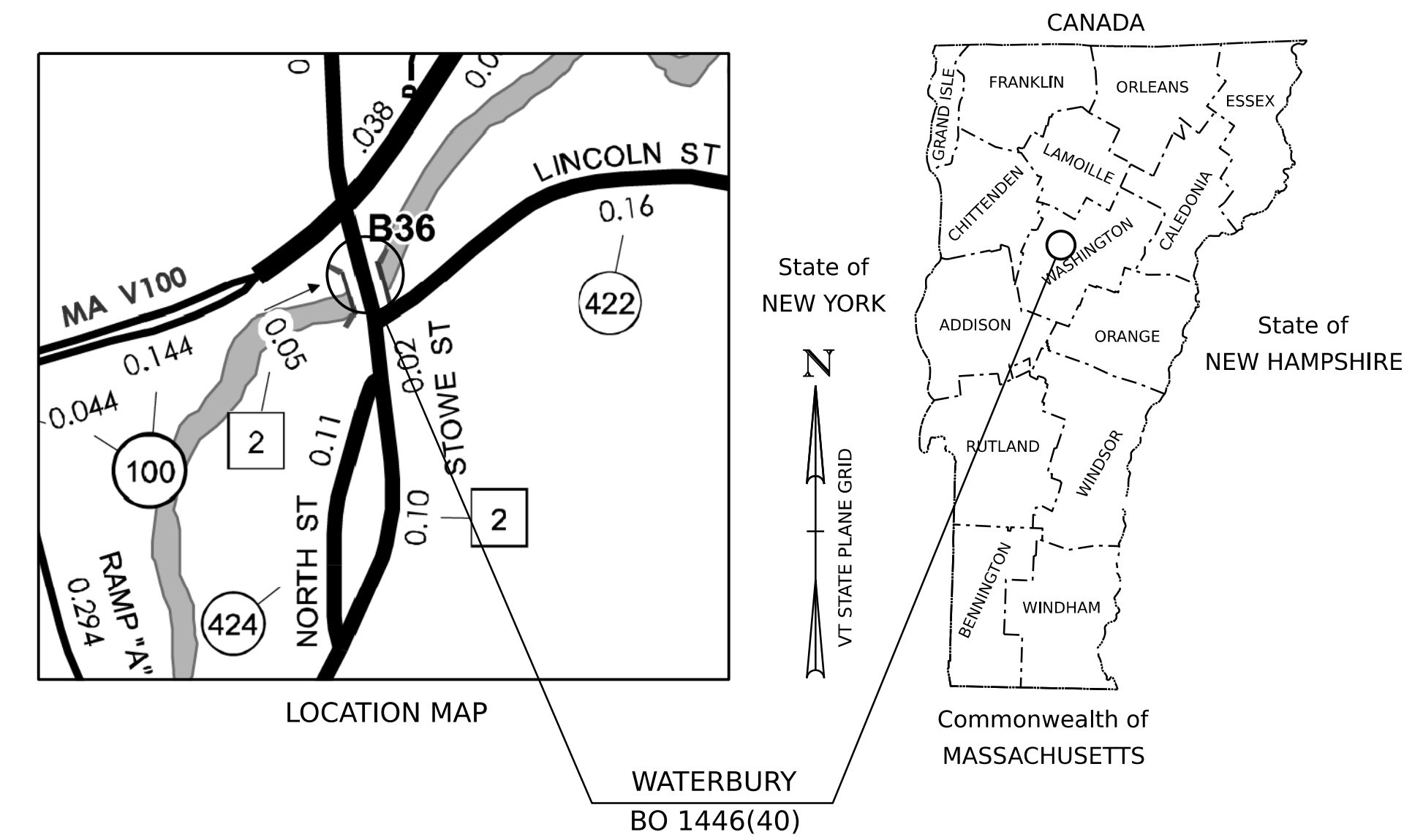


PROPOSED IMPROVEMENT BRIDGE PROJECT TOWN OF WATERBURY COUNTY OF WASHINGTON LOCAL ROAD BRIDGE NO. 36

PROJECT LOCATION: THE BRIDGE IS LOCATED ON TOWN HIGHWAY 2 (STOWE STREET), APPROXIMATELY 150 FEET SOUTH OF THE INTERSECTION OF STOWE STREET, ROUTE 100 AND BLUSH HILL ROAD.

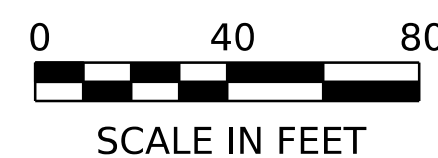
PROJECT DESCRIPTION: REPLACEMENT OF THE EXISTING BRIDGE WITH A PRECAST CONCRETE ARCH OR FRAME STRUCTURE ALONG WITH RELATED ROADWAY, SIDEWALK, CHANNEL WORK AND SEWER RELOCATION.

LENGTH OF STRUCTURE: 55.05 FEET
LENGTH OF ROADWAY: 147.45 FEET
LENGTH OF PROJECT: 202.50 FEET



CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2018, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON APRIL 13, 2018 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

| | |
|-------------------------------------|--------------|
| QUALITY ASSURANCE PROGRAM : LEVEL 2 | |
| SURVEYED BY : | VSE |
| SURVEYED DATE : | 10/2020 |
| DATUM | |
| VERTICAL | NAVD88 |
| HORIZONTAL | NAD83 (2011) |



**PRELIMINARY PLANS
9-SEP-2022**



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 South Burlington VT U.S.A. 05403
 Phone: (802) 864-0223
 www.stantec.com

| | |
|--|-------------|
| HIGHWAY DIVISION, CHIEF ENGINEER | |
| APPROVED _____ | DATE _____ |
| PROJECT MANAGER : MAHENDRA THILLIYAR, P.E. | |
| PROJECT NAME : | WATERBURY |
| PROJECT NUMBER : | BO 1446(40) |
| SHEET 1 OF 44 SHEETS | |

INDEX OF SHEETS

FINAL HYDRAULIC REPORT

PLAN SHEETS

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DETAIL SHEETS

HSD 400.01 SAFETY EDGE DETAIL

STANDARDS LIST

| | | |
|--------|---|------------|
| B-71a | STANDARD FOR RESIDENTIAL DRIVES | 04-07-2020 |
| C-2A | PORTLAND CEMENT CONCRETE SIDEWALK DRIVE ENTRANCES WITH SIDEWALK A | 10-14-2005 |
| C-3A | SIDEWALK RAMPS | 02-17-2022 |
| C-3B | SIDEWALK RAMPS AND MEDIAN ISLANDS | 02-17-2022 |
| D-13 | CONCRETE CATCH BASIN | 01-03-2000 |
| D-15 | PRECAST REINF CONC. MH-GRATES, CAST IRON GRATE WITH FRAME, TYPE D & E | 06-01-1994 |
| D-22 | SANITARY SEWER SYSTEMS | 03-10-1995 |
| E-1 | TREE PLANTING | 07-11-2017 |
| E-2 | SHRUB PLANTING | 07-11-2017 |
| E-10 | ROLLED EROSION CONTROL PRODUCT, TYPE I | 04-07-2020 |
| E-12 | STABILIZED CONSTRUCTION ENTRANCE | 04-07-2020 |
| E-15 | SILT FENCE | 04-07-2020 |
| E-121 | STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD | 08-08-1995 |
| E-191 | PAVEMENT MARKING DETAILS | 02-01-1999 |
| E-192 | PAVEMENT MARKING DETAILS | 10-12-2000 |
| E-193 | PAVEMENT MARKING DETAILS | 08-18-1995 |
| G-1 | STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS) | 03-10-2017 |
| G-1D | STEEL BEAM GUARDRAIL DETAILS (END TERMINAL, ANCHOR, MEDIAN) | 03-10-2017 |
| G-19 | GENERIC GRADING PLANS FOR GUARDRAIL END TERMINALS | 10-02-2018 |
| S-352A | BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION | 02-17-2022 |
| S-352B | BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION | 02-17-2022 |
| S-352C | BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION | 02-17-2022 |
| S-352D | GUARDRAIL APPROACH SECTION TO CONCRETE COMBINATION BRIDGE RAILING, T | 02-17-2022 |
| S-500 | CONCRETE DETAILS AND NOTES | 04-07-2020 |
| S-501 | CONCRETE DETAILS AND NOTES | 04-07-2020 |
| T-1 | TRAFFIC CONTROL GENERAL NOTES | 04-25-2016 |
| T-2 | TRAFFIC SIGN GENERAL NOTES | 04-07-2020 |
| T-10 | CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING | 08-06-2012 |
| T-17 | TRAFFIC CONTROL MISCELLANEOUS DETAILS | 08-06-2012 |
| T-28 | CONSTRUCTION SIGN DETAILS | 08-06-2012 |
| T-30 | CONSTRUCTION SIGN DETAILS | 08-06-2012 |
| T-35 | CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS | 08-06-2012 |
| T-36 | CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS FOR PAVING | 08-06-2012 |
| T-45 | SQUARE TUBE SIGN POST AND ANCHOR | 01-02-2013 |
| T-56 | STANDARD SIGN PLACEMENT | 10-26-2015 |

HYDROLOGIC DATA

Date: 07/28/2022

DRAINAGE AREA : 18
 CHARACTER OF TERRAIN : Hilly to Mountainous Rural Watershed
 STREAM CHARACTERISTICS : Straight to Sinuous Channel with Narrow Floodplains
 NATURE OF STREAMBED : Boulders and Cobles with Exposed Bedrock

PEAK FLOW DATA - ANNUAL EXCEEDANCE PROBABILITY (AEP)

| | | | |
|-------|------|--------|------|
| 43% = | 840 | 2% = | 1400 |
| 10% = | 1500 | 1% = | 2900 |
| 4% = | 2000 | 0.2% = | 4200 |

DATE OF FLOOD OF RECORD : Unknown
 ESTIMATED DISCHARGE : Unknown
 WATER SURFACE ELEV. : Unknown
 NATURAL STREAM VELOCITY : @ 2% AEP = 6.7 fps upstream and 11.3 fps downstream
 ICE CONDITIONS : Moderate
 DEBRIS : Moderate
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? : Unknown
 IS ORDINARY RISE RAPID? : Unknown
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? : No
 IF YES, DESCRIBE :

WATERSHED STORAGE : 0% HEADWATERS :
 UNIFORM : X
 IMMEDIATELY ABOVE SITE :

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE : Single Span T-Beam
 YEAR BUILT : 1928
 CLEAR SPAN(NORMAL TO STREAM) : 37 ft +/-
 VERTICAL CLEARANCE ABOVE STREAMBED : 17
 WATERWAY OF FULL OPENING : 578
 DISPOSITION OF STRUCTURE : Full Replacement
 TYPE OF MATERIAL UNDER SUBSTRUCTURE : See Borings

WATER SURFACE ELEVATIONS AT:

| | | | |
|-----------|-----|------------|----|
| 43% AEP = | 495 | VELOCITY = | 10 |
| 10% AEP = | 496 | " | 13 |
| 4% AEP = | 498 | " | 14 |
| 2% AEP = | 499 | " | 15 |
| 1% AEP = | 499 | " | 16 |

LONG TERM STREAMBED CHANGES : Unknown

IS THE ROADWAY OVERTOPPED BELOW 1% AEP : No
 FREQUENCY : N/A
 RELIEF ELEVATION : N/A
 DISCHARGE OVER ROAD @ 1% AEP : N/A

UPSTREAM STRUCTURE

TOWN : Waterbury DISTANCE : 4000 ft.
 HIGHWAY # : TH-21 STRUCTURE # : 16
 CLEAR SPAN : 62 CLEAR HEIGHT : Unknown
 YEAR BUILT : 1959 FULL WATERWAY : Unknown
 STRUCTURE TYPE : Rolled Beam

DOWNSTREAM STRUCTURE

TOWN : Waterbury DISTANCE : 1200 ft.
 HIGHWAY # : 189 STRUCTURE # : 46A
 CLEAR SPAN : 434 CLEAR HEIGHT : Unknown
 YEAR BUILT : 2016 FULL WATERWAY : Unknown
 STRUCTURE TYPE : Three Span Welded Girder

LRFR LOAD RATING FACTORS

| LOADING LEVELS | TRUCK | | | | | | |
|----------------|--|-------|-----|--------|---------|---------|--------|
| | H-20 | HL-93 | 3S2 | 6 AXLE | 3A STR. | 4A STR. | 5A SEM |
| TONNAGE | 20 | 36 | 36 | 66 | 30 | 34.5 | 38 |
| INVENTORY | | | | | | | |
| POSTING | | | | | | | |
| OPERATING | | | | | | | |
| COMMENTS: | TABLE TO BE COMPLETED BY CONTRACTOR'S DESIGNER | | | | | | |

CULVERT DESIGN CRITERIA

- PROPOSED CULVERT IS A .
- CULVERT ENDS ARE NOT SKEWED.
- CULVERT WILL BE SET AT A SLOPE OF 0.00 IN. ON 0 FT.
- CULVERT WILL NOT REQUIRE FISH PASSAGE ACCOMODATIONS
- CULVERT CONSTRUCTION WILL NOT REQUIRE A TEMPORARY PIPE

SUPERPAVE BITUMINOUS CONCRETE PAVEMENT DESIGN
 SUPERPAVE GYRATIONS = 50
 PG ASPHALT GRADE = "SEE TABLE 406.03F"

AS BUILT "REBAR" DETAIL

| LEVEL I | LEVEL II | LEVEL III |
|---------|----------|-----------|
| TYPE: | TYPE: | TYPE: |
| GRADE: | GRADE: | GRADE: |

TRAFFIC DATA

| YEAR | ADT | DHV | % D | % T | ADTT | |
|------|------|-----|-----|-----|------|---|
| | | | | | | 20 year ESAL for flexible pavement from 2024 to 2044 : 376000 |
| 2024 | 2900 | 410 | 66 | 3 | 100 | 40 year ESAL for flexible pavement from 2024 to 2064 : 86800 |
| 2044 | 3200 | 450 | 66 | 4.8 | 180 | Design Speed : 25 mph |

PROPOSED STRUCTURE

STRUCTURE TYPE : Single Span
 CLEAR SPAN(NORMAL TO STREAM): 50
 VERTICAL CLEARANCE ABOVE STREAMBED : See Plans and Specifications
 WATERWAY OF FULL OPENING : See Plans and Specifications

WATER SURFACE ELEVATIONS AT:

| | | | |
|-----------|-----------|------------|----------|
| 43% AEP = | 495 | VELOCITY = | 10.5 fps |
| 10% AEP = | 496 | " | 12.5 fps |
| 4% AEP = | 497.4 ft. | " | 13.7 fps |
| 2% AEP = | 498.3 ft. | " | 14.5 fps |
| 1% AEP = | 499.3 ft. | " | 15.3 fps |

IS THE ROADWAY OVERTOPPED BELOW 1% AEP : No
 FREQUENCY : N/A
 RELIEF ELEVATION : N/A
 DISCHARGE OVER ROAD @ 1% AEP : N/A

BRIDGE LOW CHORD ELEVATION : See plans and specifications
 FREEBOARD : @ 4% AEP = 4.1 ft*

SCOUR : Abutments are to be founded on non-erodible bedrock

REQUIRED CHANNEL PROTECTION : Stone Fill Type IV**

PERMIT INFORMATION

AVERAGE DAILY FLOW : - DEPTH OR ELEVATION :
 ORDINARY LOW WATER : -
 ORDINARY HIGH WATER : -

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE :
 CLEAR SPAN (NORMAL TO STREAM):
 VERTICAL CLEARANCE ABOVE STREAMBED :
 WATERWAY AREA OF FULL OPENING :

ADDITIONAL INFORMATION

*Freeboard was determined using a low chord elevation of 501.5 ft.
 **E-stone Type IV should be used for all in channel work.

TRAFFIC MAINTENANCE NOTES

- MAINTAIN TWO-WAY TRAFFIC ON THE EXISTING STRUCTURE.
- TRAFFIC SIGNALS ARE NOT NECESSARY.
- SIDEWALKS ARE NOT NECESSARY

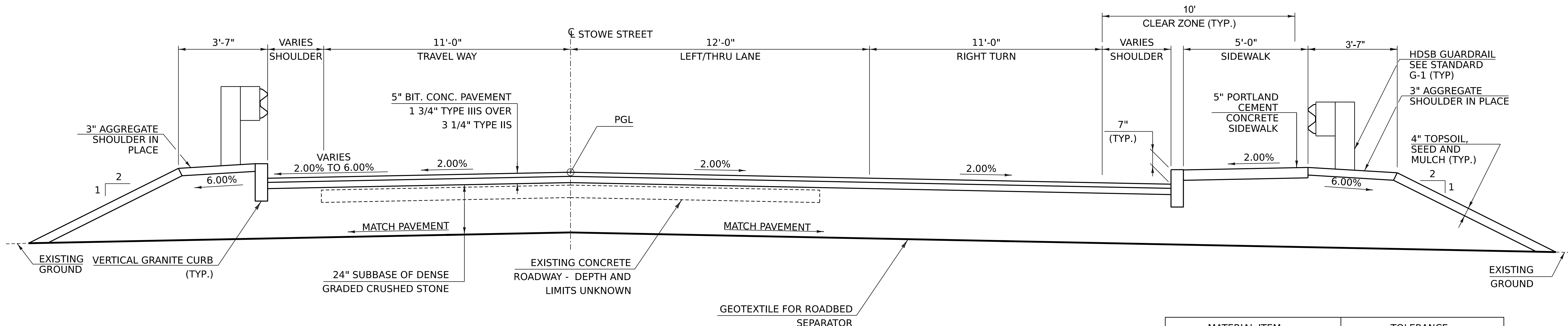
DESIGN VALUES

| | |
|--|-------------------------------|
| 1. DESIGN LIVE LOAD | HL-93 |
| 2. FUTURE PAVEMENT | dp: 0.0 INCH |
| 3. CULVERT OPENING | D: 50.00 FT |
| 4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS) | Δ: --- |
| 5. PRESTRESSING STRAND | fy: --- |
| 6. PRESTRESSED CONCRETE STRENGTH | f'c: --- |
| 7. PRESTRESSED CONCRETE RELEASE STRENGTH | f'ci: --- |
| 8. HIGH PERFORMANCE CONCRETE, CLASS PCD | f'c: --- |
| 9. HIGH PERFORMANCE CONCRETE, CLASS PCS | f'c: 3.5 KSI |
| 10. CONCRETE HIGH PERFORMANCE, CLASS SCC | f'c: --- |
| 11. CONCRETE, CLASS B | f'c: 3.5 KSI |
| 12. REINFORCING STEEL | fy: 60 KSI |
| 13. STRUCTURAL STEEL AASHTO M270 | fy: 50 KSI |
| 14. NOMINAL BEARING RESISTANCE OF SOIL | qn: --- |
| 15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) | φ: --- |
| 16. NOMINAL BEARING RESISTANCE OF ROCK | qn: 150 |
| 17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) | φ: 0.45 |
| 18. PILE RESISTANCE FACTOR | φ: --- |
| 19. LATERAL PILE DEFLECTION | Δ: --- |
| 20. BASIC WIND SPEED | V3s: --- |
| 21. MINIMUM GROUND SNOWLOAD | Pg: --- |
| 22. SEISMIC DATA | PGA: --- S: --- SI: --- |
| 23. | --- |
| 24. | --- |
| 25. | --- |
| 26. | --- |

PROJECT NAME : WATERBURY
 PROJECT NUMBER : BO 1446(40)

FILE NAME : z93j040pi.dgn PLOT DATE : 9-SEP-2022
 PROJECT LEADER : T. KNIGHT DRAWN BY : P. ARMATA
 DESIGNED BY : D. YOULEN CHECKED BY : T. KNIGHT
 PRELIMINARY INFORMATION SHEET SHEET 2 OF 44

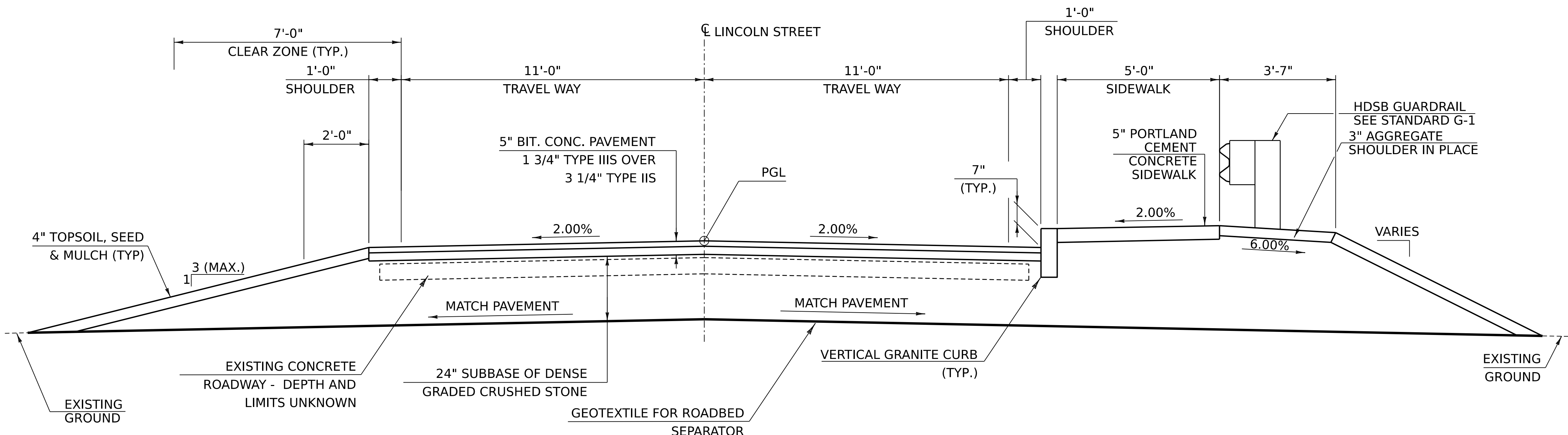




PROPOSED STOWE STREET TYPICAL SECTION

N.T.S.
 STA. 30+75.00 - 31+64.39
 STA. 32+19.44 - 32+77.50

| MATERIAL ITEM | TOLERANCE |
|--------------------------|--------------------|
| PAVEMENT | ¼" TOTAL THICKNESS |
| AGGREGATE SURFACE COURSE | ± ½" |
| SUBBASE | ± 1" |



PROPOSED LINCOLN STREET TYPICAL SECTION

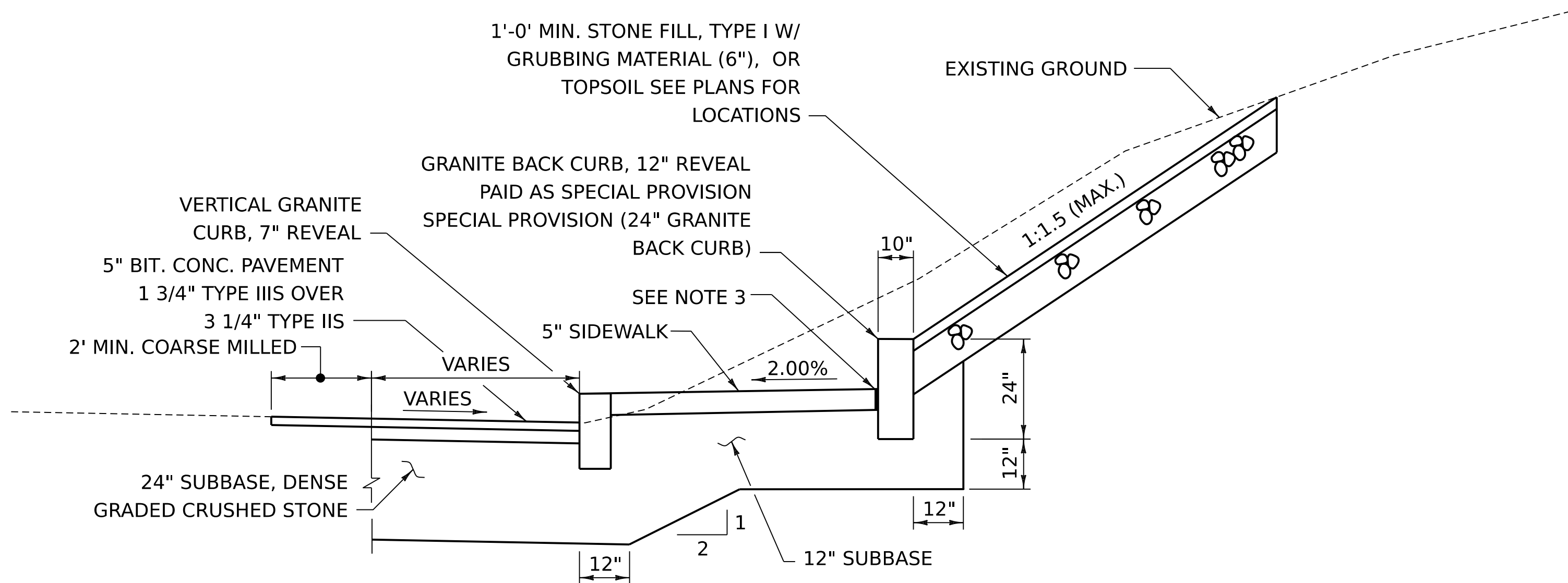
N.T.S.
 STA. 101+37.50 - 102+00.00 +/-

GENERAL NOTES:

1. TACK COAT: EMULSIFIED ASPHALT IS TO BE APPLIED AT THE RATE OF BETWEEN 0.025 TO 0.040 GAL/SY BETWEEN SUCCESSIVE COURSES OF PAVEMENT. A RATE OF 0.08 GAL/SY ON COARSE MILLED AND EXISTING SURFACES AS DIRECTED BY THE ENGINEER.
2. MARKER POSTS: TO BE PLACED AT GUARDRAIL ENDS OR AS DIRECTED BY THE ENGINEER.
3. SLOPE ROUNDING: ALL CUT SLOPES TO BE ROUNDED IN ACCORDANCE WITH STANDRAD B-5.
4. SHOULDER WIDTH VARIES - SEE CONSTRUCTION PLAN SHEETS.
5. FORESLOPE VARIES, SEE ROADWAY CROSS SECTIONS FOR ADDITIONAL INFORMATION.
6. COSTS ASSOCIATED WITH SAWCUTTING AND EXCAVATION OF EXISTING BITUMINOUS CONCRETE PAVEMENT ARE INCIDENTAL TO COMMON EXCAVATION; ITEM 203.15
7. SEE SIGNS & PAVEMENT MARKINGS SHEETS FOR DIMENSIONS.
8. EDGE OF PAVEMENT TREATMENT SHALL FOLLOW VTRANS SAFETY EDGE DETAIL HSD-400.01.

| | |
|----------------------------------|--------------------|
| PROJECT NAME: | WATERBURY |
| PROJECT NUMBER: | BO 1446(40) |
| FILE NAME: | z93j040typ.dgn |
| PROJECT LEADER: | T. KNIGHT |
| DESIGNED BY: | T. LUTHER |
| ROADWAY TYPICAL SECTIONS SHEET 1 | |
| PLOT DATE: | 9-SEP-2022 |
| DRAWN BY: | P. ARMATA |
| CHECKED BY: | T. KNIGHT |
| SHEET | 3 OF 44 |



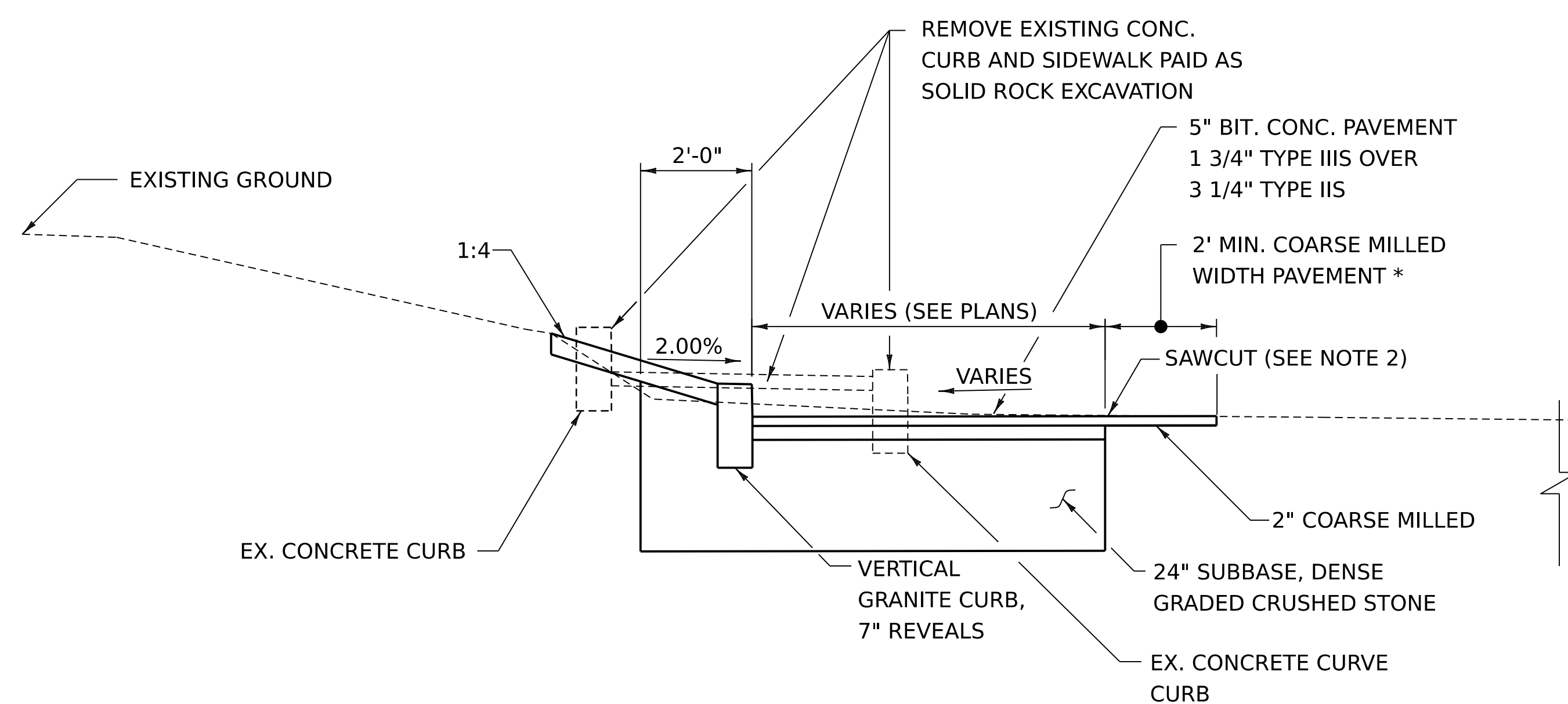


STOWE STREET RT

NOT TO SCALE
STA. 30+20 - 31+10 RT

NOTES:

SEE STOWE STREET TYPICAL SECTION FOR ADDITIONAL INFORMATION

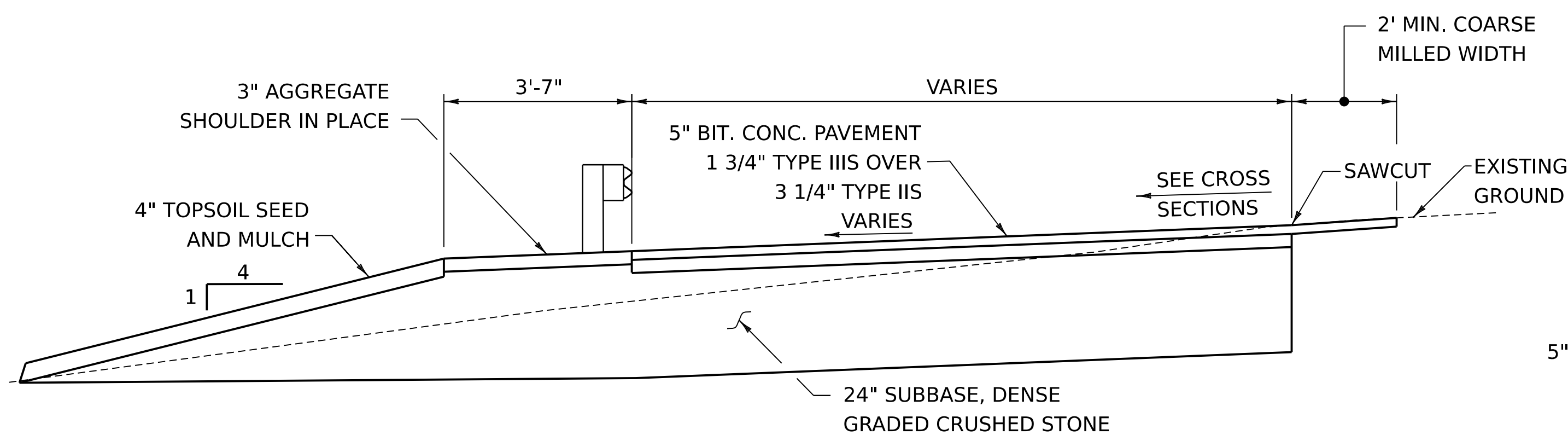


STOWE STREET LT

NOT TO SCALE
STA. 30+10 - 31+00

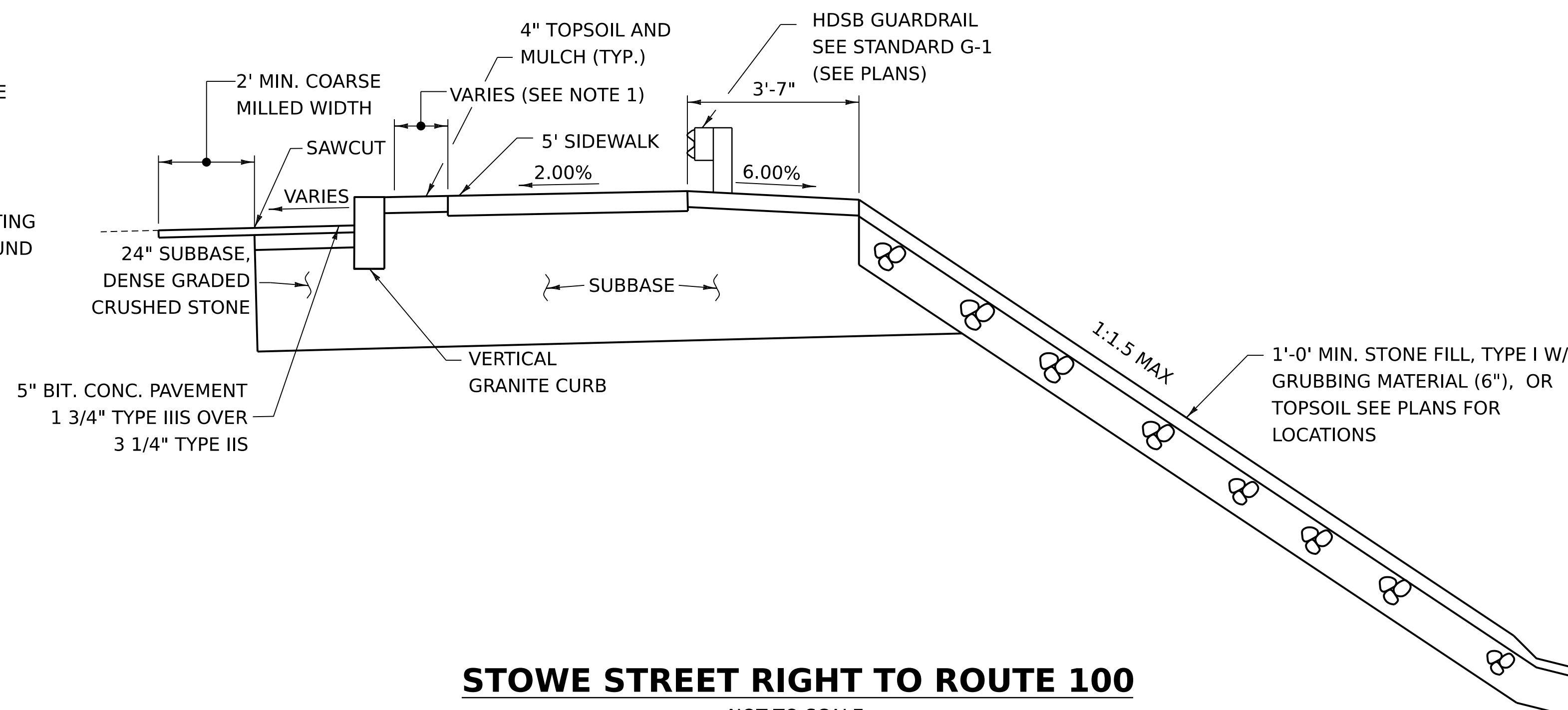
NOTES:

1. SEE TYPICAL SECTIONS FOR ADDITIONAL INFORMATION
2. SAWCUT IS INCIDENTAL TO PAVEMENT
3. EXPANSION JOINT INCIDENTAL TO GRANITE BACK CURB



STOWE STREET LEFT TO ROUTE 100

NOT TO SCALE
STA. 32+19 - 32+90 LT

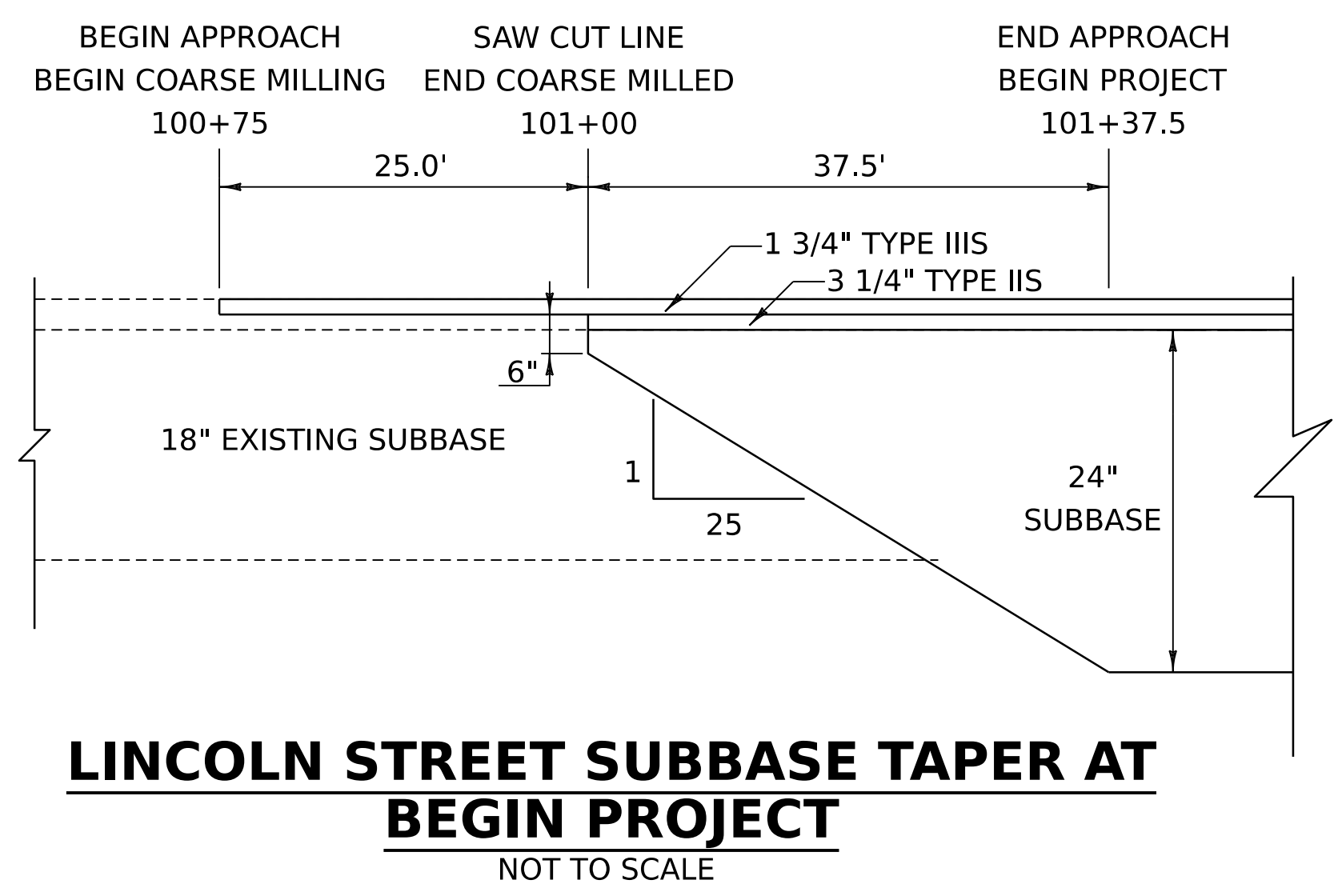


STOWE STREET RIGHT TO ROUTE 100

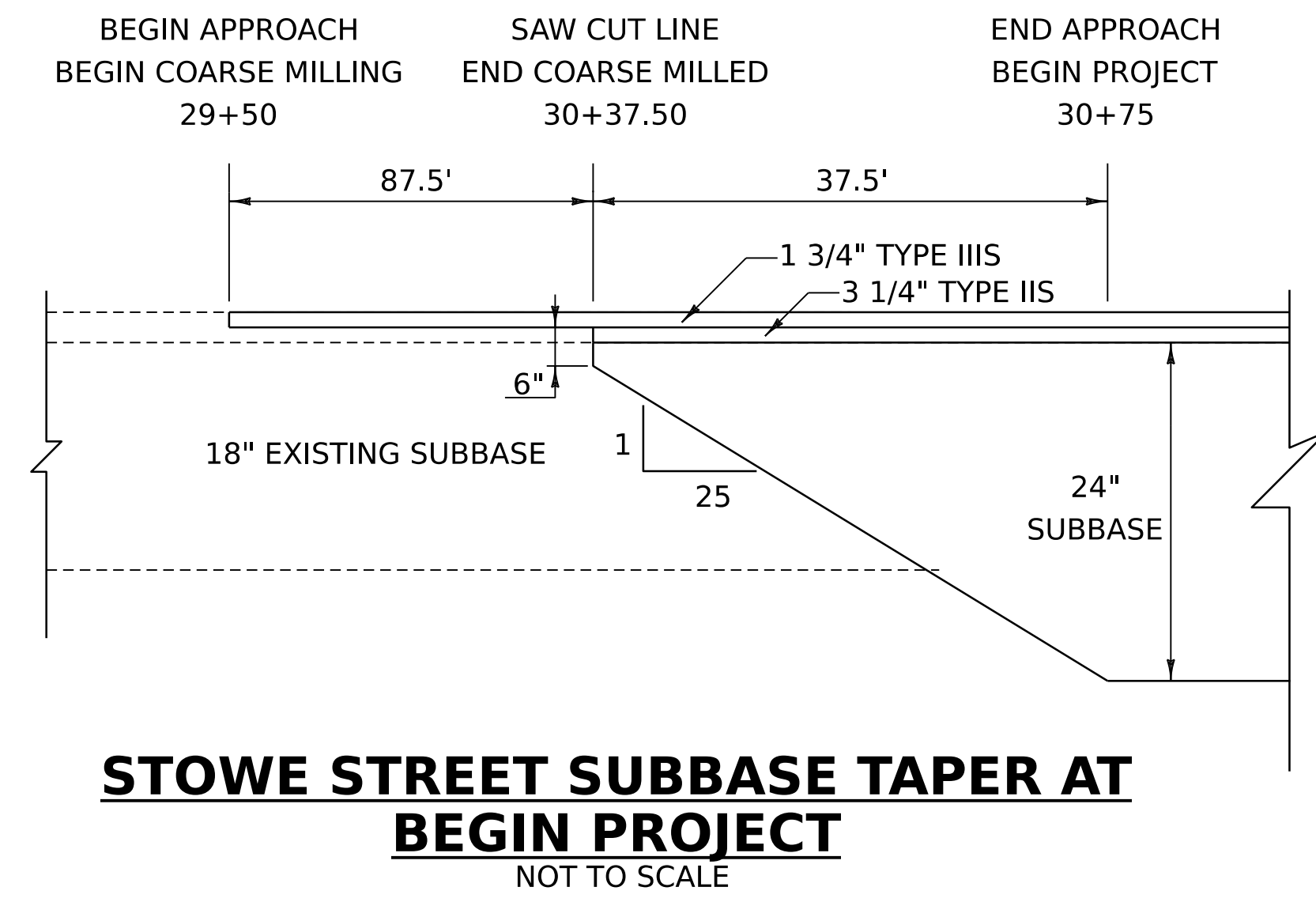
NOT TO SCALE
STA. 32+50-33+90 RT



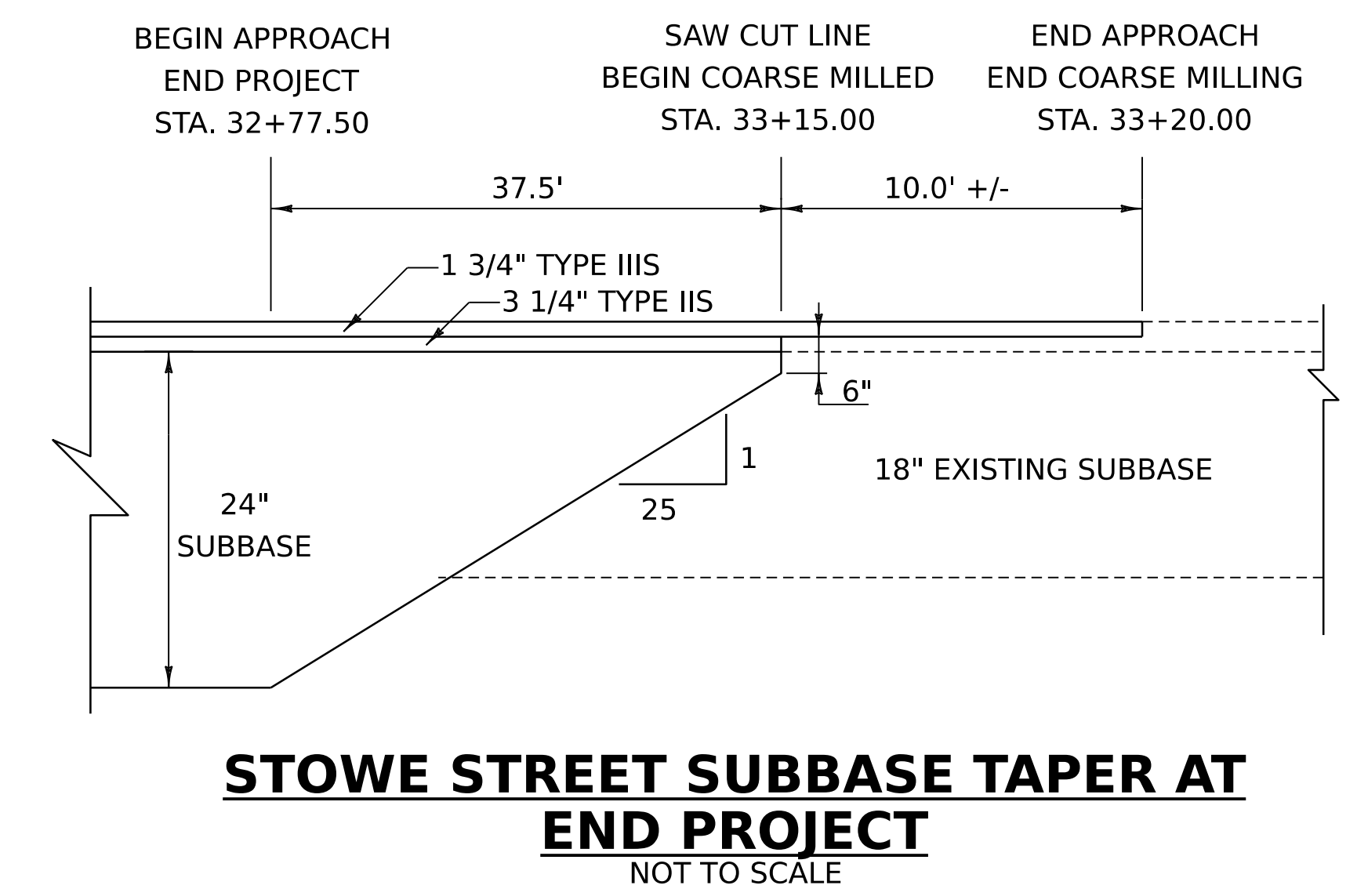
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| PROJECT NAME: | WATERBURY | | |
| PROJECT NUMBER: | BO 1446(40) | | |
| FILE NAME: | z93j040typ.dgn | PLOT DATE: | 9-SEP-2022 |
| PROJECT LEADER: | T. KNIGHT | DRAWN BY: | S. VERITY |
| DESIGNED BY: | T. LUTHER | CHECKED BY: | T. KNIGHT |
| ROADWAY TYPICAL SECTIONS SHEET 2 | | SHEET | 4 OF 44 |



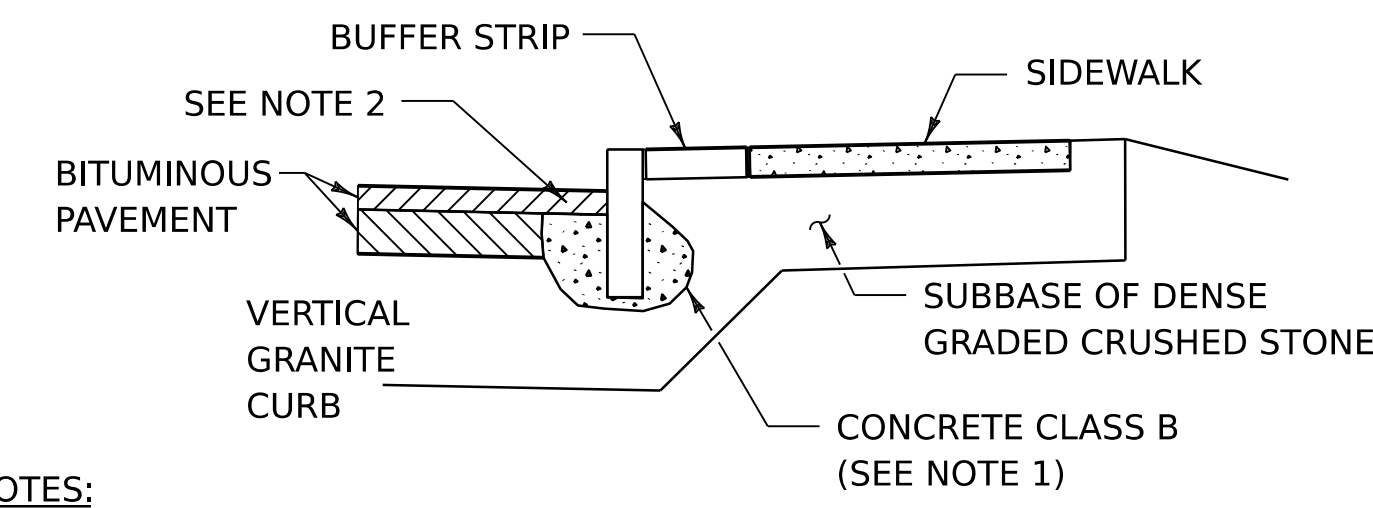
LINCOLN STREET SUBBASE TAPER AT BEGIN PROJECT
NOT TO SCALE



STOWE STREET SUBBASE TAPER AT BEGIN PROJECT
NOT TO SCALE

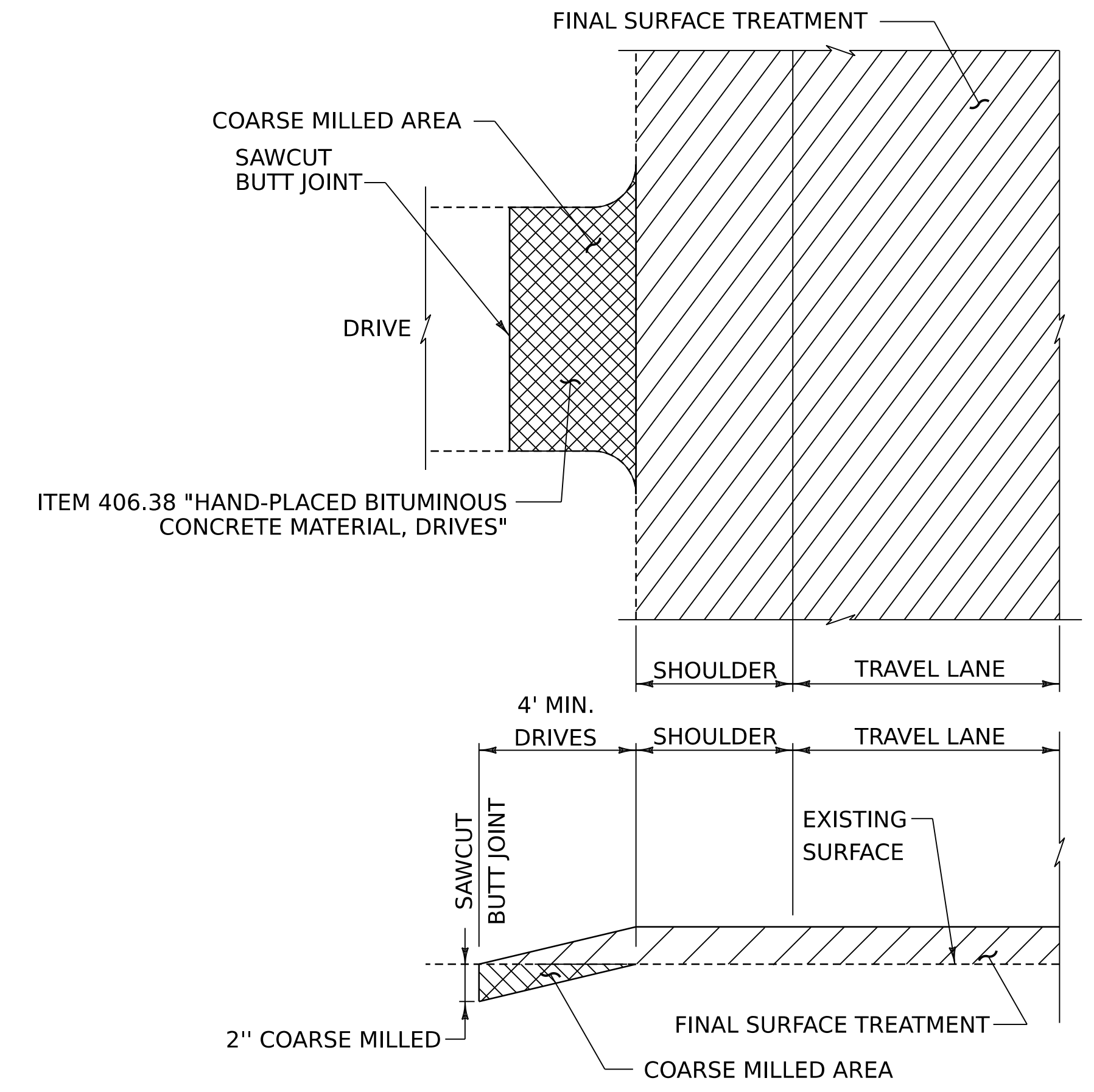


STOWE STREET SUBBASE TAPER AT END PROJECT
NOT TO SCALE



- NOTES:**
1. UNREINFORCED CONCRETE FOR THE PURPOSE OF STABILIZING THE CURB DURING BACKFILLING AND PAVING OPERATIONS.
 2. CONCRETE SHALL NOT EXCEED THE ELEVATION OF THE BASE PAVING AND SHALL ALLOW FOR FULL TOP LIFT OF PAVEMENT OVER THE TOP OF THE CONCRETE TO THE FACE OF CURB.
 3. CONCRETE CLASS B FOR CURB BEDDING SHALL BE EXEMPT FROM ALL TESTING REQUIREMENTS.
 4. CONCRETE CLASS B FOR CURB BEDDING SHALL NOT BE PAID SEPARATELY, BUT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR VERTICAL GRANITE CURB.
 5. PROVIDE A MINIMUM 12" HORIZONTAL WIDTH OF CONCRETE ON BOTH THE FRONT AND BACK SIDES OF THE CURB FOR THE ENTIRE LENGTH OF CURB (OR AS DIRECTED BY THE ENGINEER).

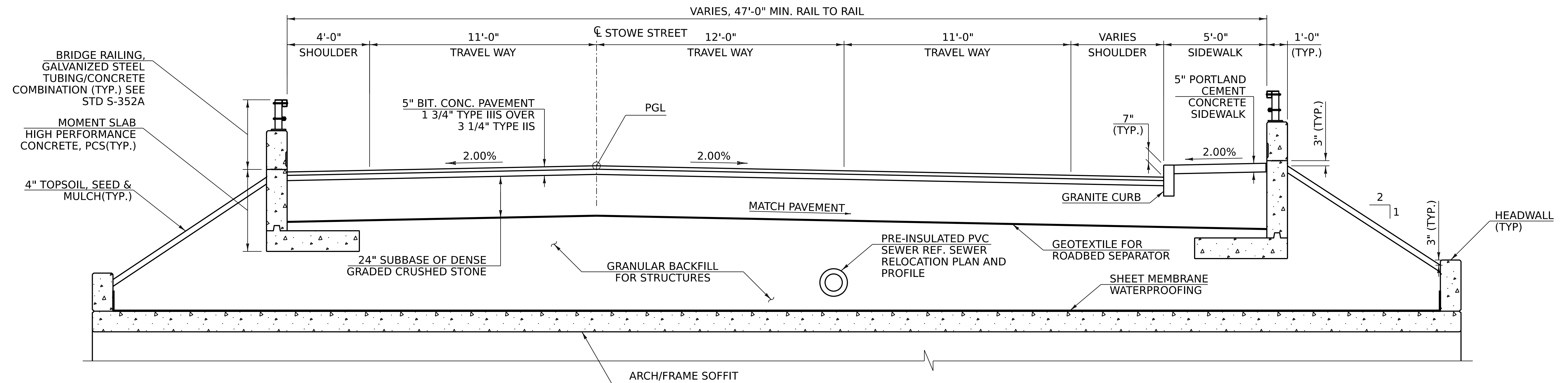
CURB BEDDING DETAIL
NOT TO SCALE



COARSE MILLED DETAILS AT DRIVES & TOWN HIGHWAYS
NOT TO SCALE

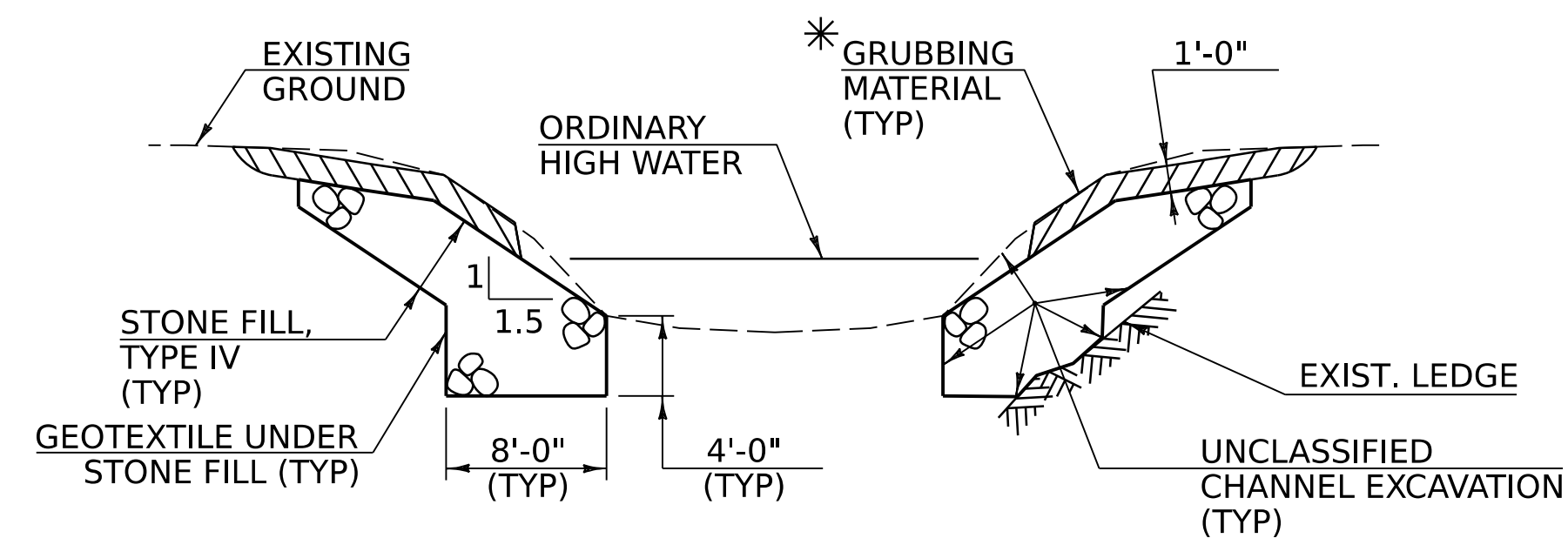


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| PROJECT NUMBER: | BO 1446(40) | DRAWN BY: | P. ARMATA |
| FILE NAME: | z93j04otyp.dgn | CHECKED BY: | T. KNIGHT |
| PROJECT LEADER: | T. KNIGHT | ROADWAY TYPICAL SECTIONS SHEET 3 | SHEET 5 OF 44 |
| DESIGNED BY: | T. LUTHER | | |



PROPOSED BRIDGE TYPICAL SECTION

N.T.S.



TYPICAL CHANNEL SECTION

NOT TO SCALE

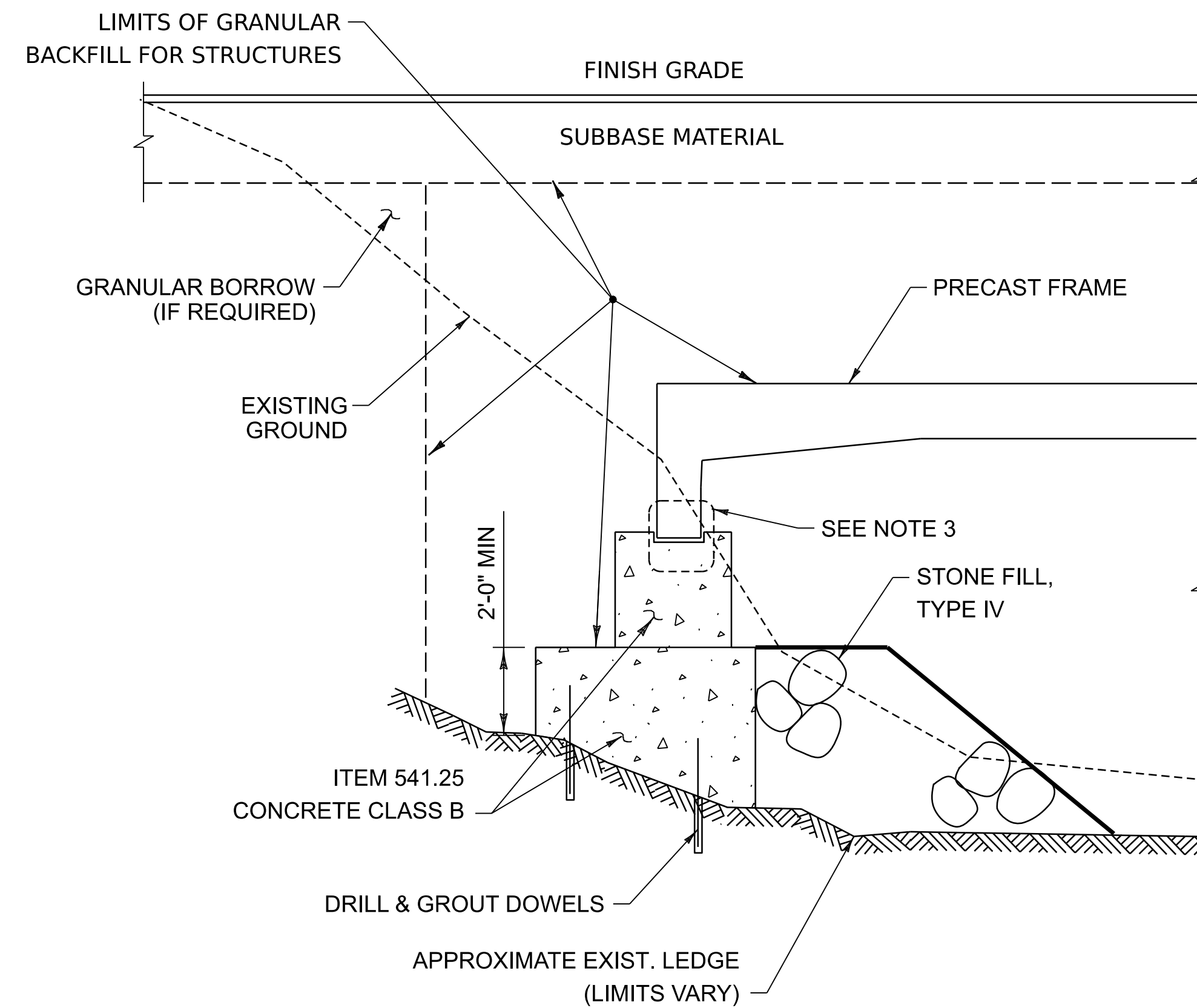
- 1) GRUBBING MATERIAL SHALL BE PLACED UNDERNEATH STRUCTURES WHERE THERE IS MORE THAN 6 FEET VERTICALLY FROM ORDINARY HIGH WATER (OHW) TO THE BOTTOM OF SUPERSTRUCTURE AND MORE THAN 6 FEET HORIZONTALLY FROM OHW LINE TO FRONT FACE OF ABUTMENT. THIS MATERIAL SHALL START JUST ABOVE THE OHW ELEVATION AND TERMINATE 3 FEET HORIZONTALLY FROM THE FRONT FACE OF THE ABUTMENT. THIS MATERIAL SHALL NOT BE PLACED UNDERNEATH DOWNSPOUTS. SEE THE CHANNEL SECTIONS FOR ADDITIONAL DETAILING.
- 2) WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.



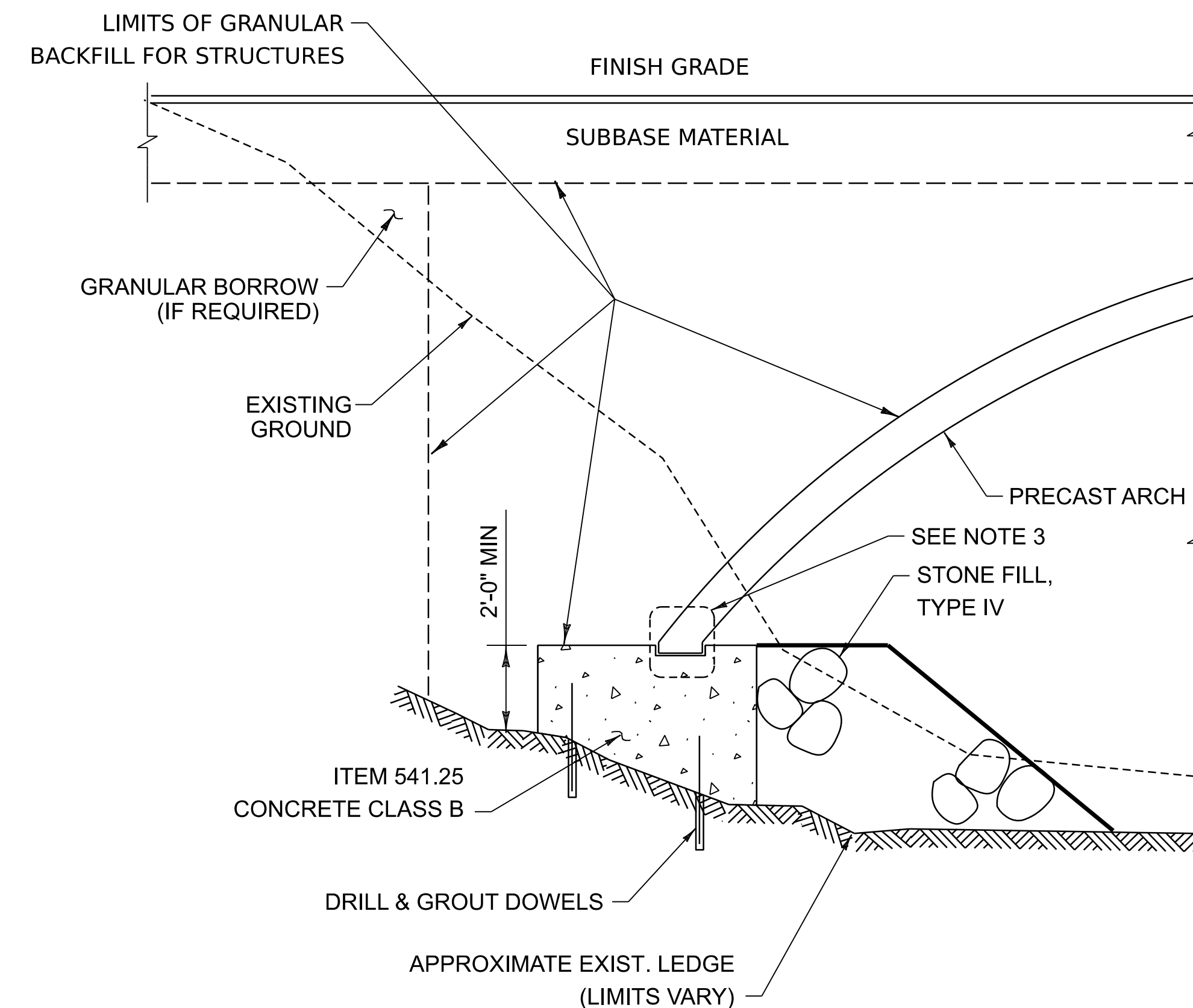
PROJECT NAME: WATERBURY
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PROJECT LEADER: T. KNIGHT
DESIGNED BY: T. LUTHER
BRIDGE TYPICAL SECTION

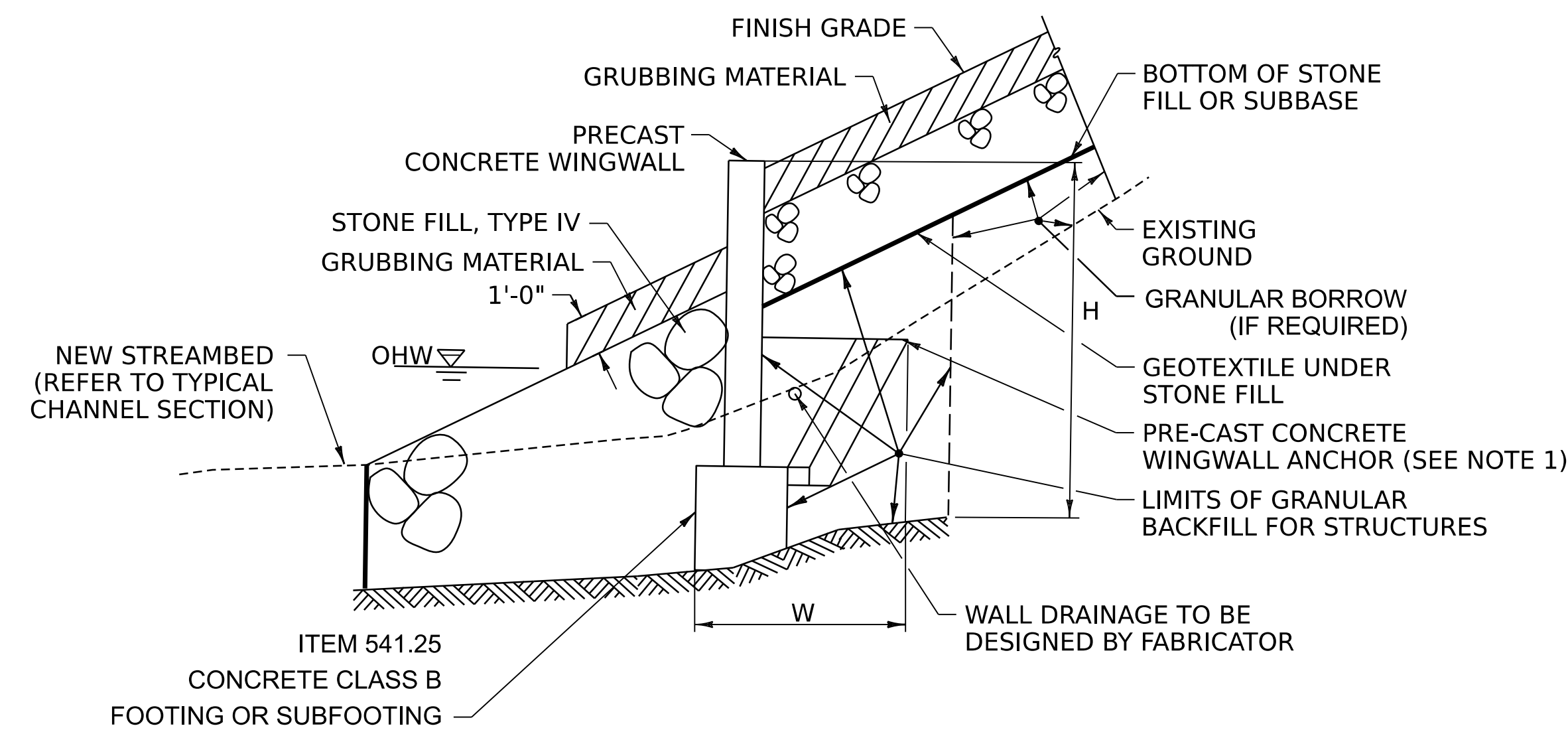
PLOT DATE: 9-SEP-2022
DRAWN BY: P. ARMATA
CHECKED BY: T. KNIGHT
SHEET 6 OF 44



PRECAST FRAME EARTHWORK SECTION
N.T.S.



PRECAST ARCH EARTHWORK SECTION
N.T.S.



WINGWALL EARTHWORK SECTION
N.T.S.

NOTES:

1. ANCHOR TYPE WALLS SHOWN, OTHER APPROVED WALL SYSTEMS MAY BE USED
2. FOR THE PURPOSES OF ESTIMATING EARTHWORK QUANTITIES IT HAS BEEN ASSUMED THAT $W = 0.6 \times H$
3. CONNECTION TO FOUNDATION TO BE DESIGNED BY THE FABRICATOR.

PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040typ.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: S. WINES
BRIDGE EARTHWORK DETAILS

PLOT DATE: 9-SEP-2022
DRAWN BY: P. ARMATA
CHECKED BY: T. KNIGHT
SHEET 7 OF 44



GENERAL INFORMATION

SYMBOLGY LEGEND NOTE

THE SYMBOLGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLGY. THE SYMBOLGY IS USED FOR EXISTING & PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROJECT ANNOTATION, AS NOTED ON PROJECT PLAN SHEETS. THIS LEGEND SHEET COVERS THE BASICS. SYMBOLGY ON PLANS MAY VARY, PLAN ANNOTATIONS AND NOTES SHOULD BE USED TO CLARIFY AS NEEDED.

R.O.W. ABBREVIATIONS (CODES) & SYMBOLS

| POINT | CODE | DESCRIPTION |
|------------|-------|------------------------------|
| | CH | CHANNEL EASEMENT |
| | CONST | CONSTRUCTION EASEMENT |
| | CUL | CULVERT EASEMENT |
| | D&C | DISCONNECT & CONNECT |
| | DIT | DITCH EASEMENT |
| | DR | DRAINAGE EASEMENT |
| | DRIVE | DRIVEWAY EASEMENT |
| | EC | EROSION CONTROL |
| | HWY | HIGHWAY EASEMENT |
| | I&M | INSTALL & MAINTAIN EASEMENT |
| | LAND | LANDSCAPE EASEMENT |
| | R&RES | REMOVE & RESET |
| | R&REP | REMOVE & REPLACE |
| | SR | SLOPE RIGHT |
| | UE | UTILITY EASEMENT |
| | (P) | PERMANENT EASEMENT |
| | (T) | TEMPORARY EASEMENT |
| ■ | BNDNS | BOUND SET |
| □ | BNDNS | BOUND TO BE SET |
| ● | IPNS | IRON PIN SET |
| ⊙ | IPNS | IRON PIN TO BE SET |
| ⊗ | CALC | EXISTING ROW POINT |
| ○ | PROW | PROPOSED ROW POINT |
| [LENGTH] | | LENGTH CARRIED ON NEXT SHEET |

COMMON TOPOGRAPHIC POINT SYMBOLS

| POINT | CODE | DESCRIPTION |
|-------|--------|---------------------------|
| ⊕ | APL | BOUND APPARENT LOCATION |
| □ | BM | BENCHMARK |
| □ | BND | BOUND |
| ⊕ | CB | CATCH BASIN |
| ⊕ | COMB | COMBINATION POLE |
| ⊕ | DITHR | DROP INLET THROATED DNC |
| ⊕ | EL | ELECTRIC POWER POLE |
| ○ | FPOLE | FLAGPOLE |
| ○ | GASFIL | GAS FILLER |
| ○ | GP | GUIDE POST |
| × | GSO | GAS SHUT OFF |
| ○ | GUY | GUY POLE |
| ○ | GUYW | GUY WIRE |
| × | GV | GATE VALVE |
| ⊕ | H | TREE HARDWOOD |
| △ | HCTRL | CONTROL HORIZONTAL |
| △ | HVCTRL | CONTROL HORIZ. & VERTICAL |
| ◇ | HYD | HYDRANT |
| ● | IP | IRON PIN |
| ● | IPIPE | IRON PIPE |
| ⊕ | LI | LIGHT - STREET OR YARD |
| ⊕ | MB | MAILBOX |
| ○ | MH | MANHOLE (MH) |
| ■ | MM | MILE MARKER |
| ■ | PM | PARKING METER |
| ■ | PMK | PROJECT MARKER |
| ○ | POST | POST STONE/WOOD |
| ⊕ | RRSIG | RAILROAD SIGNAL |
| ⊕ | RRSL | RAILROAD SWITCH LEVER |
| ⊕ | S | TREE SOFTWOOD |
| ⊕ | SAT | SATELLITE DISH |
| ⊕ | SHRUB | SHRUB |
| ⊕ | SIGN | SIGN |
| ⊕ | STUMP | STUMP |
| ⊕ | TEL | TELEPHONE POLE |
| ○ | TIE | TIE |
| ⊕ | TSIGN | SIGN W/DOUBLE POST |
| ⊕ | VCTRL | CONTROL VERTICAL |
| ○ | WELL | WELL |
| × | WSO | WATER SHUT OFF |

THESE ARE COMMON VAOT SURVEY POINT SYMBOLS FOR EXISTING FEATURES, ALSO USED FOR PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROPOSED ANNOTATION.

PROPOSED GEOMETRY CODES

| CODE | DESCRIPTION |
|------|-------------------------|
| PC | POINT OF CURVATURE |
| PI | POINT OF INTERSECTION |
| CC | CENTER OF CURVE |
| PT | POINT OF TANGENCY |
| PCC | POINT OF COMPOUND CURVE |
| PRC | POINT OF REVERSE CURVE |
| POB | POINT OF BEGINNING |
| POE | POINT OF ENDING |
| STA | STATION PREFIX |
| AH | AHEAD STATION SUFFIX |
| BK | BACK STATION SUFFIX |
| D | CURVE DEGREE OF (100FT) |
| R | CURVE RADIUS OF |
| T | CURVE TANGENT LENGTH |
| L | CURVE LENGTH OF |
| E | CURVE EXTERNAL DISTANCE |

UTILITY SYMBOLGY

UNDERGROUND UTILITIES

| | |
|----------|---------------------------|
| — UGU — | UTILITY (GENERIC-UNKNOWN) |
| — UT — | TELEPHONE |
| — UE — | ELECTRIC |
| — UC — | CABLE (TV) |
| — UEC — | ELECTRIC+CABLE |
| — UET — | ELECTRIC+TELEPHONE |
| — UCT — | CABLE+TELEPHONE |
| — UECT — | ELECTRIC+CABLE+TELEP. |
| — | GAS LINE |
| — | WATER LINE |
| — S — | SANITARY SEWER (SEPTIC) |

ABOVE GROUND UTILITIES (AERIAL)

| | |
|-------------|---------------------------|
| — AGU — | UTILITY (GENERIC-UNKNOWN) |
| — T — | TELEPHONE |
| — | ELECTRIC |
| — C — | CABLE (TV) |
| — EC — | ELECTRIC+CABLE |
| — ET — | ELECTRIC+TELEPHONE |
| — AER E&T — | ELECTRIC+TELEPHONE |
| — CT — | CABLE+TELEPHONE |
| — ECT — | ELECTRIC+CABLE+TELEP. |
| — | UTILITY POLE GUY WIRE |

PROJECT CONSTRUCTION SYMBOLGY

PROJECT DESIGN & LAYOUT SYMBOLGY

| | |
|--------|-----------------------|
| — CZ — | CLEAR ZONE |
| — | PLAN LAYOUT MATCHLINE |

PROJECT CONSTRUCTION FEATURES

| | |
|----------------------|----------------------------|
| — | TOP OF CUT SLOPE |
| — | TOE OF FILL SLOPE |
| ⊗ | STONE FILL |
| — | BOTTOM OF DITCH |
| — | CULVERT PROPOSED |
| — | STRUCTURE SUBSURFACE |
| — | PROJECT DEMARCATION FENCE |
| — | BARRIER FENCE |
| XXXXXXXXXXXXXXXXXXXX | TREE PROTECTION ZONE (TPZ) |
| //// | STRIPING LINE REMOVAL |
| ~~~~ | SHEET PILES |

CONVENTIONAL BOUNDARY SYMBOLGY

BOUNDARY LINES

| | |
|-----------------|--|
| — | TOWN BOUNDARY LINE |
| — COUNTY LINE — | COUNTY BOUNDARY LINE |
| — STATE LINE — | STATE BOUNDARY LINE |
| — | PROPOSED STATE R.O.W. (LIMITED ACCESS) |
| — | PROPOSED STATE R.O.W. |
| — | STATE ROW (LIMITED ACCESS) |
| — | STATE ROW |
| — | TOWN ROW |
| — | PERMANENT EASEMENT LINE (P) |
| — | TEMPORARY EASEMENT LINE (T) |
| — | SURVEY LINE |
| — P — | PROPERTY LINE (P/L) |
| — L — | PROPERTY LINE (P/L) |
| — SR — | SLOPE RIGHTS |
| — 6f — | 6F PROPERTY BOUNDARY |
| — 4f — | 4F PROPERTY BOUNDARY |
| — HAZ — | HAZARDOUS WASTE |

EPSC LAYOUT PLAN SYMBOLGY

EPSC MEASURES

| | |
|---|---|
| — | FILTER CURTAIN |
| — | SILT FENCE |
| — | SILT FENCE WOVEN WIRE |
| — | CHECK DAM |
| — | DISTURBED AREAS REQUIRING RE-VEGETATION |
| — | EROSION MATTING |

SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLGY

ENVIRONMENTAL RESOURCES

| | |
|-----------------|---------------------------------|
| — | WETLAND BOUNDARY |
| — | RIPARIAN BUFFER ZONE |
| — | WETLAND BUFFER ZONE |
| — | SOIL TYPE BOUNDARY |
| — T&E — | THREATENED & ENDANGERED SPECIES |
| — HAZ — | HAZARDOUS WASTE AREA |
| — AG — | AGRICULTURAL LAND |
| — HABITAT — | FISH & WILDLIFE HABITAT |
| — FLOOD PLAIN — | FLOOD PLAIN |
| — OHW — | ORDINARY HIGH WATER (OHW) |
| — | STORM WATER |
| — | USDA FOREST SERVICE LANDS |
| — | WILDLIFE HABITAT SUIT/CONN |

ARCHEOLOGICAL & HISTORIC

| | |
|-------------------|----------------------------|
| — ARCH — | ARCHEOLOGICAL BOUNDARY |
| — HISTORIC DIST — | HISTORIC DISTRICT BOUNDARY |
| — HISTORIC — | HISTORIC AREA |
| Ⓜ | HISTORIC STRUCTURE |

CONVENTIONAL TOPOGRAPHIC SYMBOLGY

EXISTING FEATURES

| | |
|---|--------------------|
| — | ROAD EDGE PAVEMENT |
| — | ROAD EDGE GRAVEL |
| — | DRIVEWAY EDGE |
| — | DITCH |
| — | FOUNDATION |
| — | FENCE (EXISTING) |
| — | FENCE WOOD POST |
| — | FENCE STEEL POST |
| — | GARDEN |
| — | ROAD GUARDRAIL |
| — | RAILROAD TRACKS |
| — | CULVERT (EXISTING) |
| — | STONE WALL |
| — | WALL |
| — | WOOD LINE |
| — | BRUSH LINE |
| — | HEDGE |
| — | BODY OF WATER EDGE |
| — | LEDGE EXPOSED |

PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040legend.dgn PLOT DATE: 9-SEP-2022
PROJECT LEADER: T. KNIGHT DRAWN BY: VTRANS
DESIGNED BY: VTRANS CHECKED BY: T. KNIGHT
CONVENTIONAL SYMBOLGY LEGEND SHEET SHEET 8 OF 44



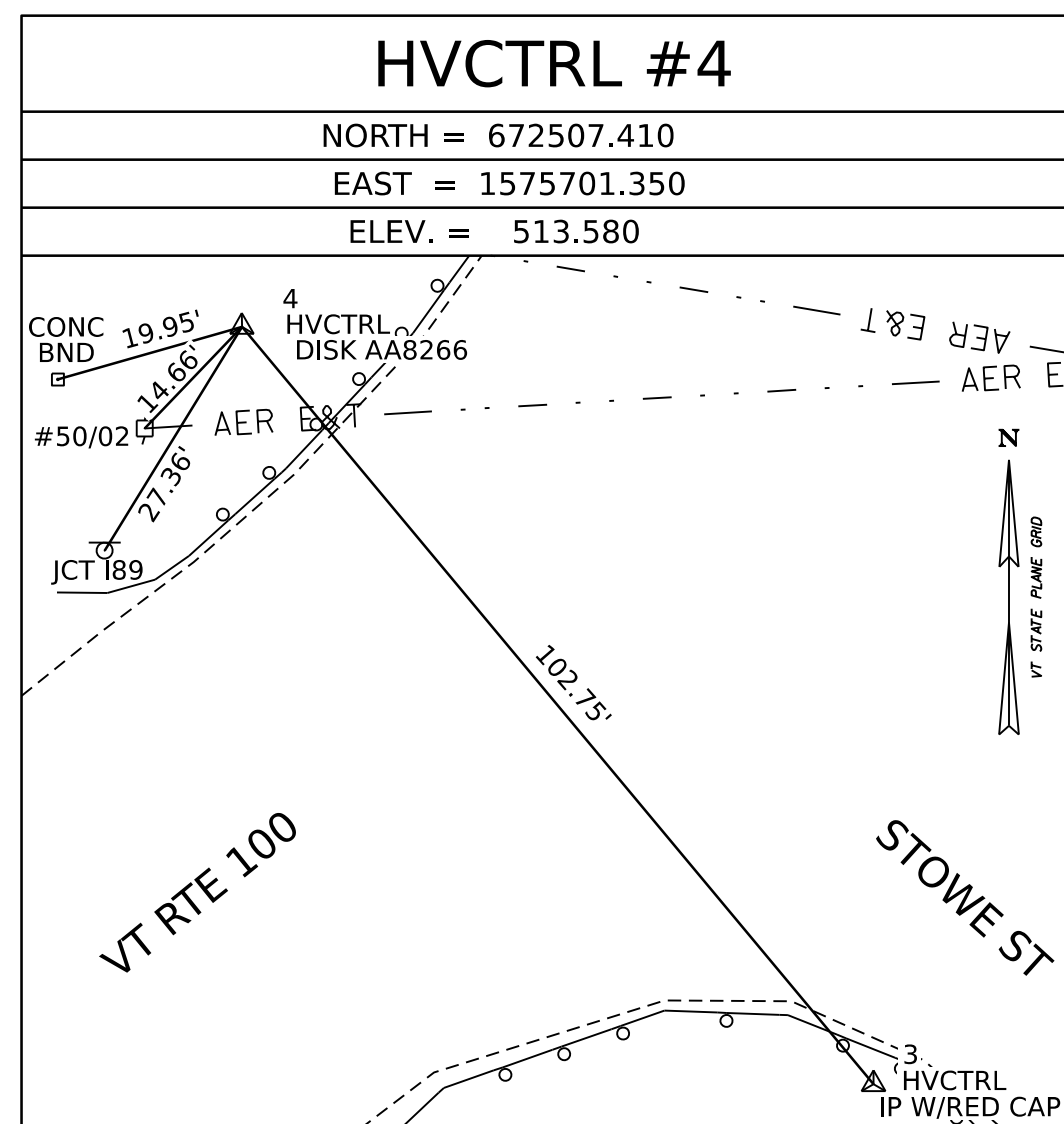
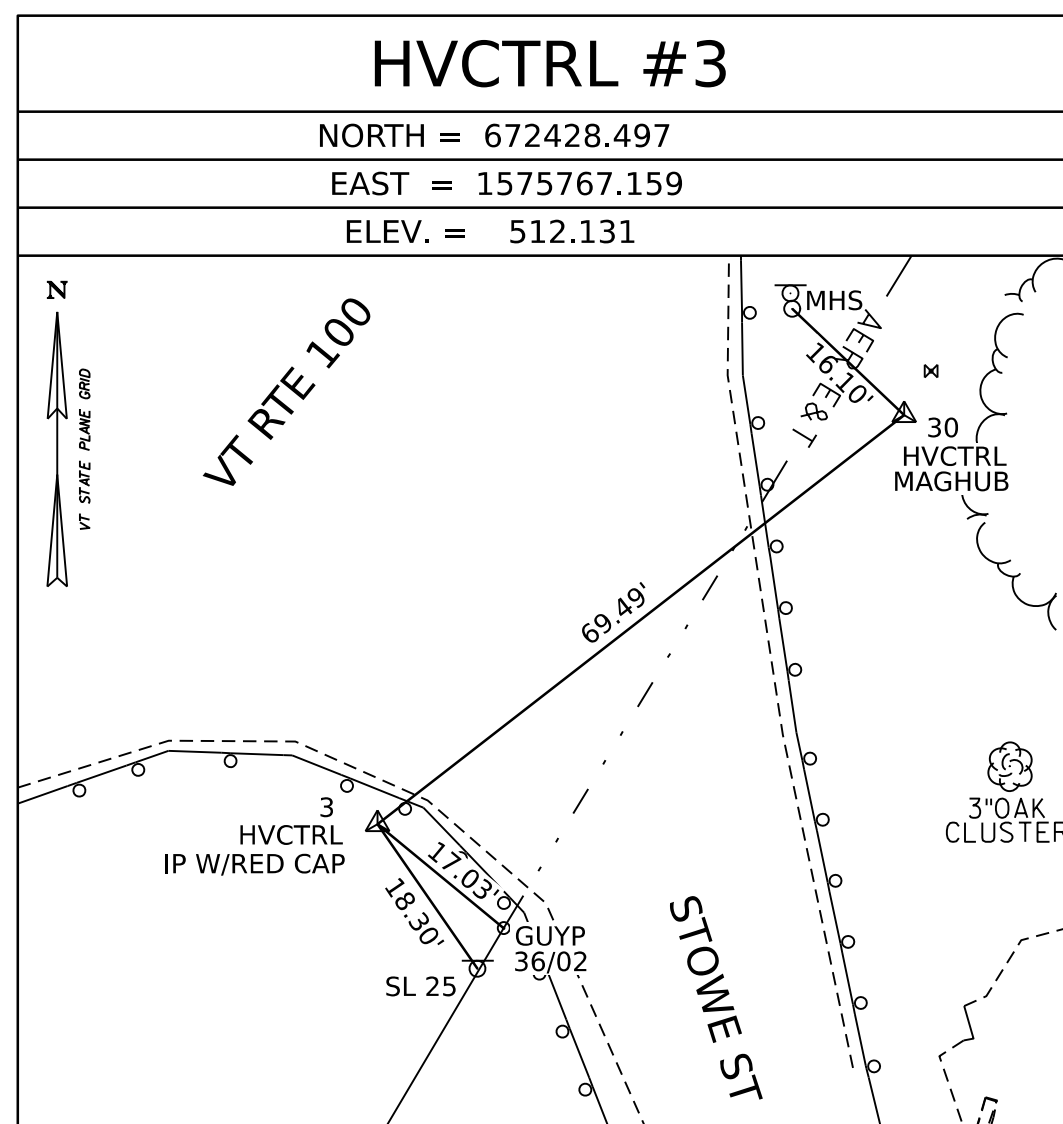
GPS CONTROL POINTS

A94002 (#4)

PID AA8266
 NORTH = 672507.410
 EAST = 1575701.350
 ELEV. = 513.580

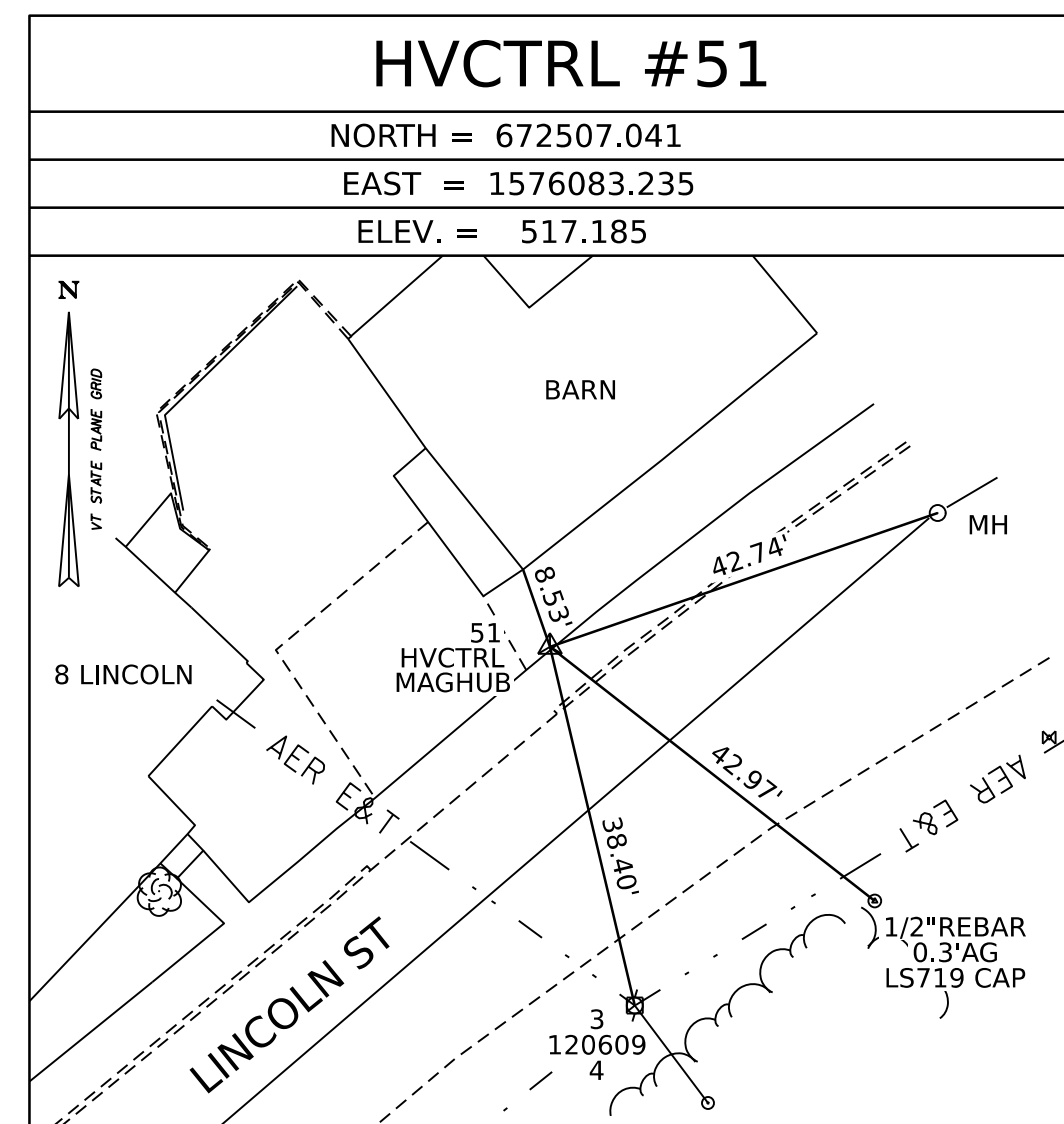
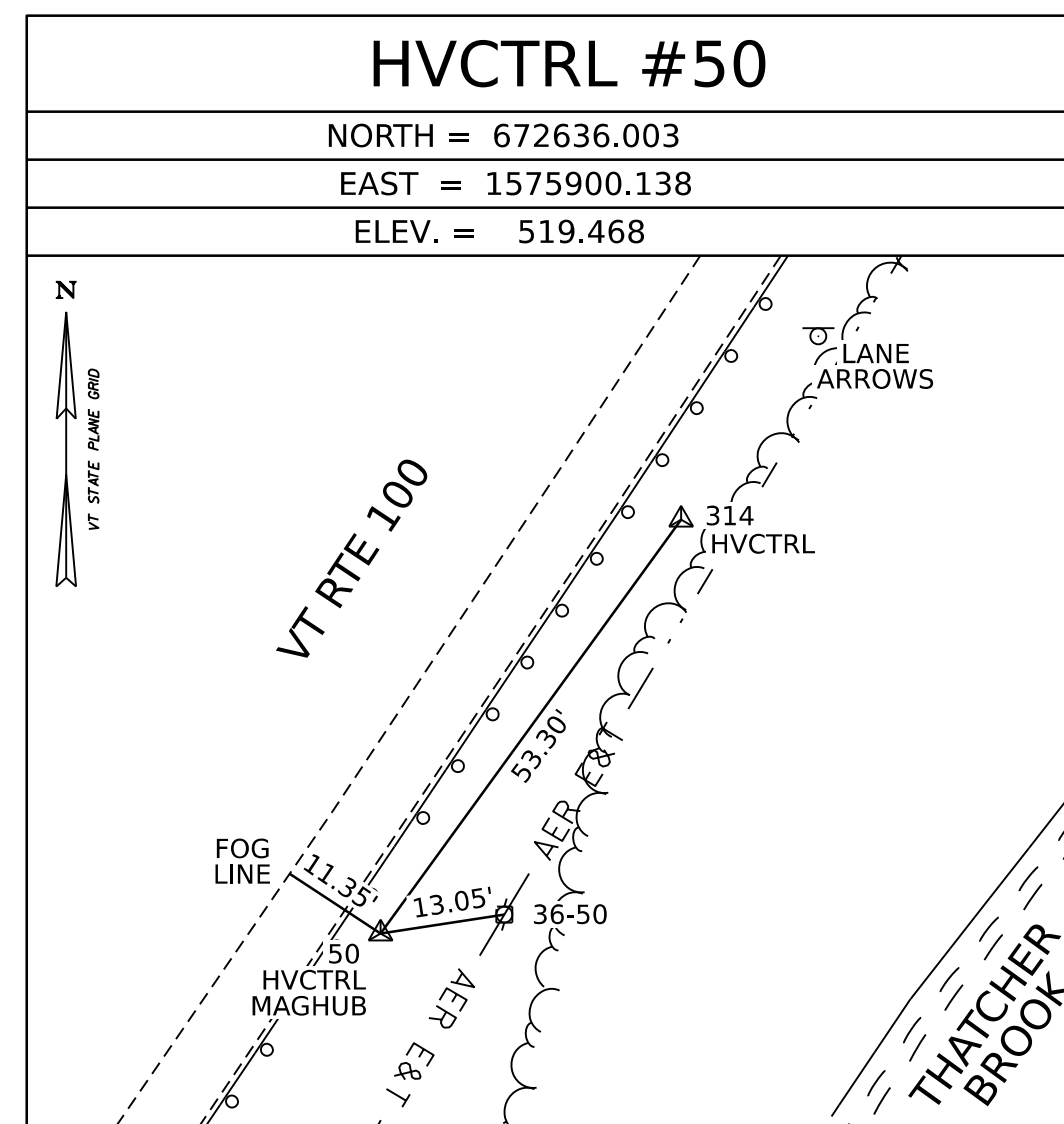
DESCRIBED BY VERMONT AGENCY OF TRANSPORTATION 1994 (CHR). GENERAL LOCATION, WATERBURY. TO REACH FROM THE INTERSECTION OF U.S. ROUTE 2 AND VT. ROUTE 100 NORTH IN WATERBURY, GO NORTHEAST ALONG ROUTE 100 FOR 0.6 MI (1.0 KM) TO THE INTERSECTION OF BLUSH HILL ROAD LEFT AND SITE OF THE MARK ON THE LEFT. THE MARK IS 12.3 M (40.4 FT) NORTHWEST OF AND ABOUT 1 M (3.3 FT) HIGHER THAN THE CENTERLINE OF ROUTE 100, 25.3 M (83.0 FT) SOUTHWEST OF THE CENTERLINE OF BLUSH HILL ROAD, 4.2 M (13.8 FT) NORTHEAST OF POLE NO. 03, 9.4 M (30.8 FT) SOUTH OF THE SOUTH CORNER OF THE STONE MASONRY HOLIDAY INN SIGN, 6.1 M (20.0 FT) EAST NORTHEAST OF A FIBERGLASS WITNESS POST AT THE NORTHEAST END OF A CHAINLINK FENCE.

TRAVERSE TIES



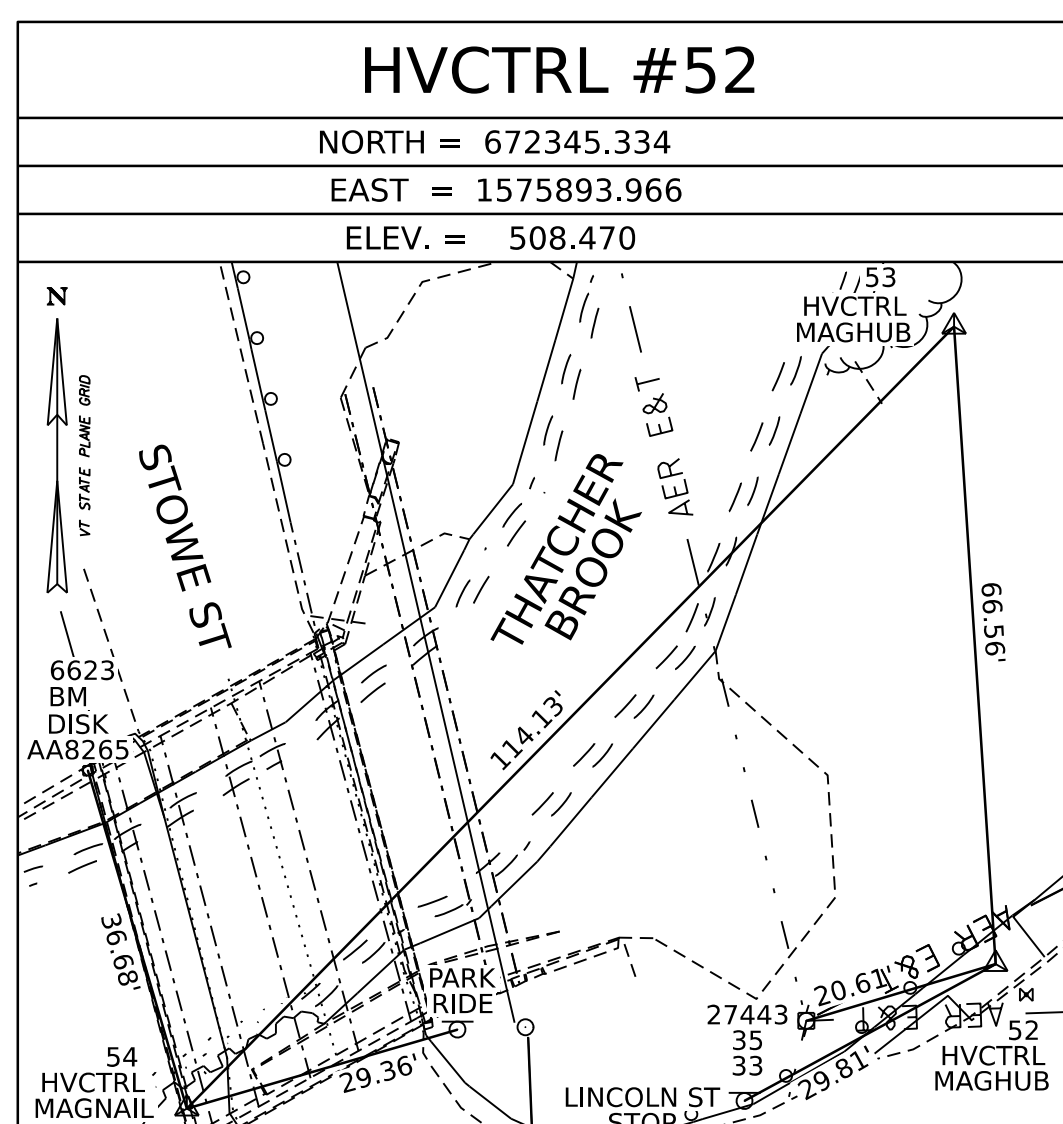
HVCTRL #30
 NORTH = 672471.126
 EAST = 1575822.039
 ELEV. = 513.849

SEE SKETCH FOR HVCTRL #3



* VSE PORTION OF SURVEY FOR WATERBURY STP BP17(11) COMPLETED: APRIL 18, 2018 BY VSE, A. SCARZELLO-PC, M. BACKMAN

TRAVERSE TIES

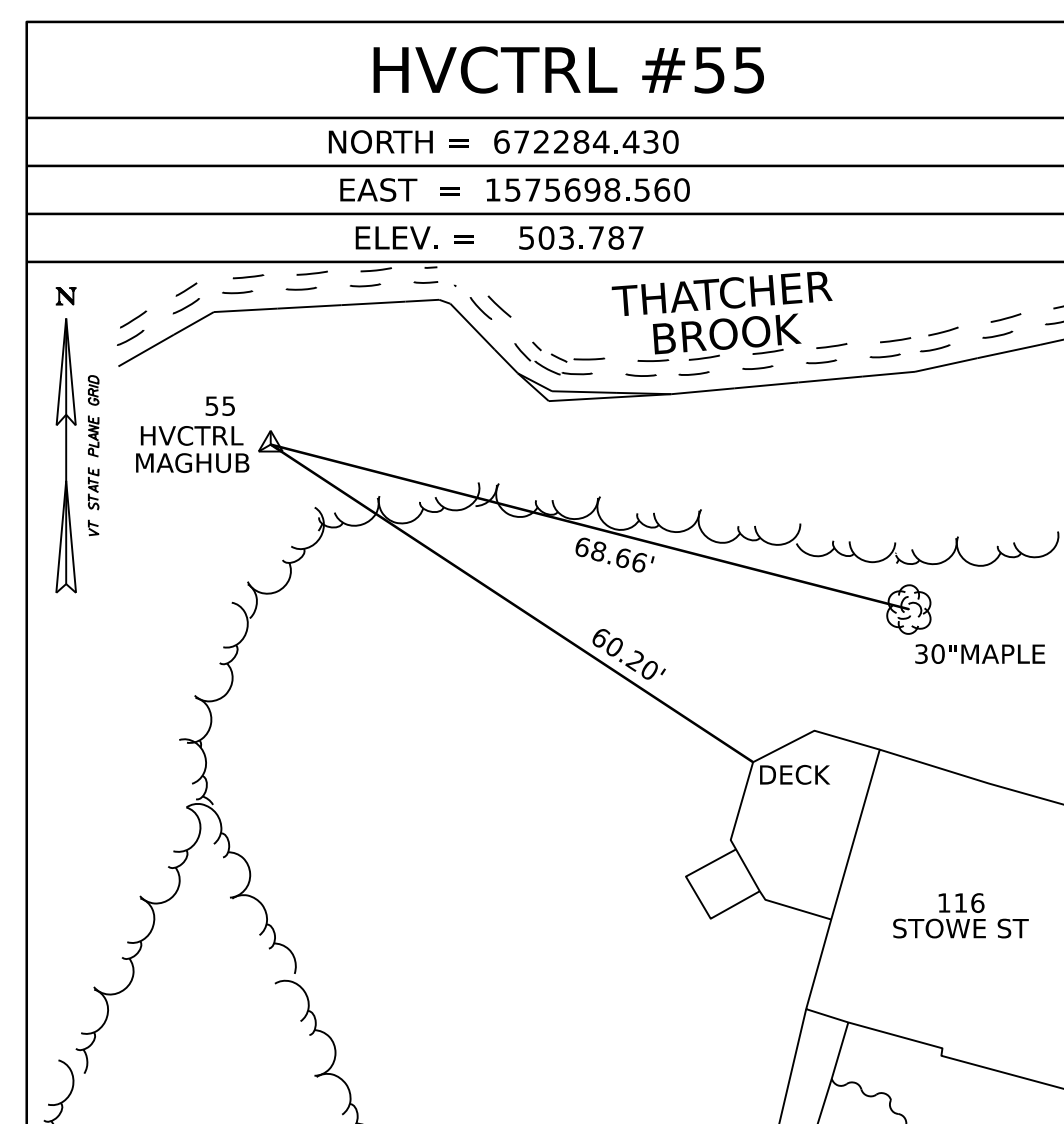


HVCTRL #53
 NORTH = 672411.755
 EAST = 1575889.617
 ELEV. = 494.881

SEE SKETCH FOR HVCTRL #52

HVCTRL #54
 NORTH = 672330.287
 EAST = 1575809.690
 ELEV. = 491.327

SEE SKETCH FOR HVCTRL #52



HVCTRL #56
 NORTH = 672229.260
 EAST = 1575609.301
 ELEV. = 487.509

NOT TIED

| | |
|------------|-------------|
| DATUM | |
| VERTICAL | NAVD88 |
| HORIZONTAL | NAD83(2011) |
| ADJUSTMENT | LSQ |

| | |
|-----------------------------|-----------------------|
| PROJECT NAME: WATERBURY | |
| PROJECT NUMBER: BO 1446(40) | |
| FILE NAME: z93j040tie.dgn | PLOT DATE: 9-SEP-2022 |
| PROJECT LEADER: VSE | DRAWN BY: VSE |
| DESIGNED BY: VSE | CHECKED BY: VSE |
| TIE SHEET 1 | SHEET 9 OF 44 |

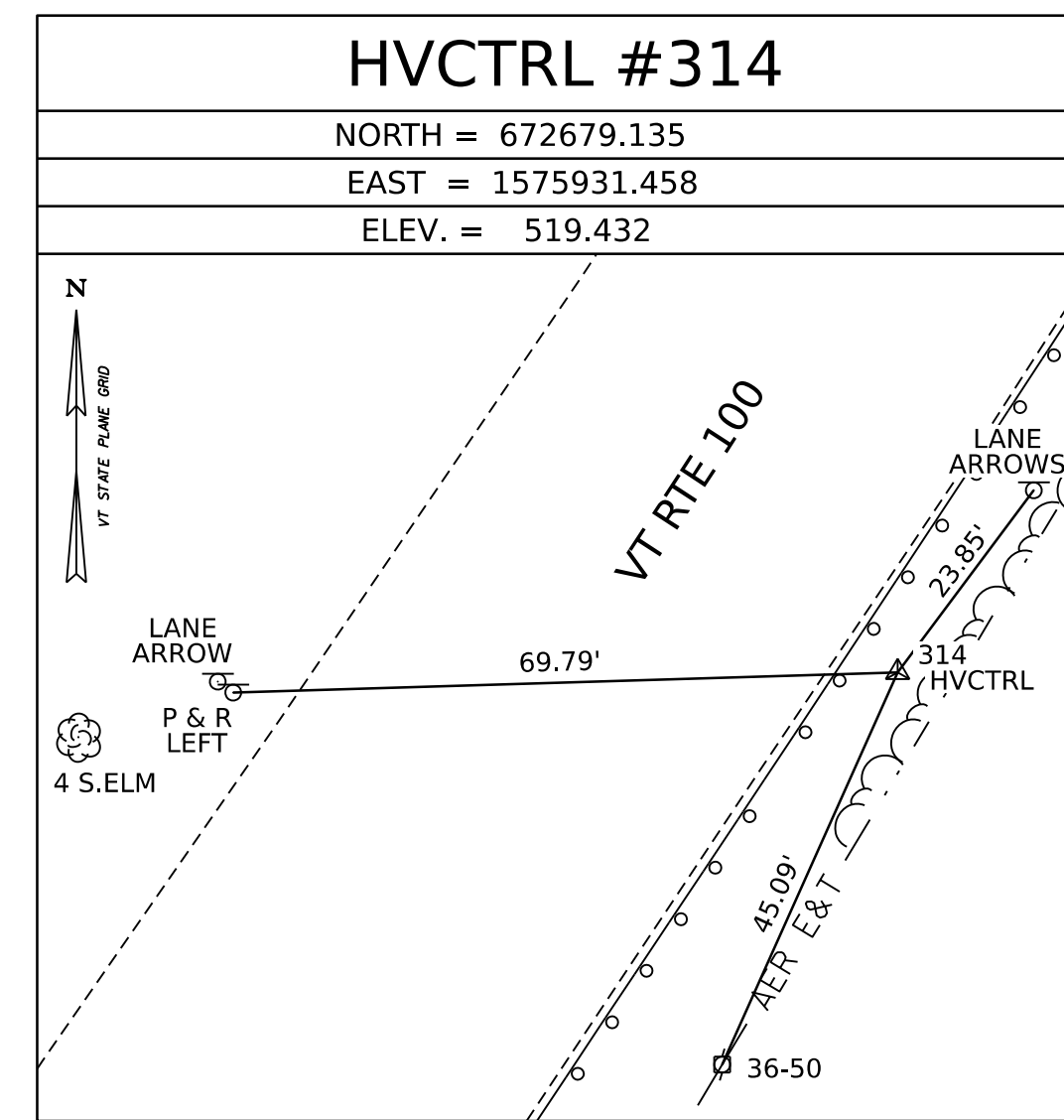
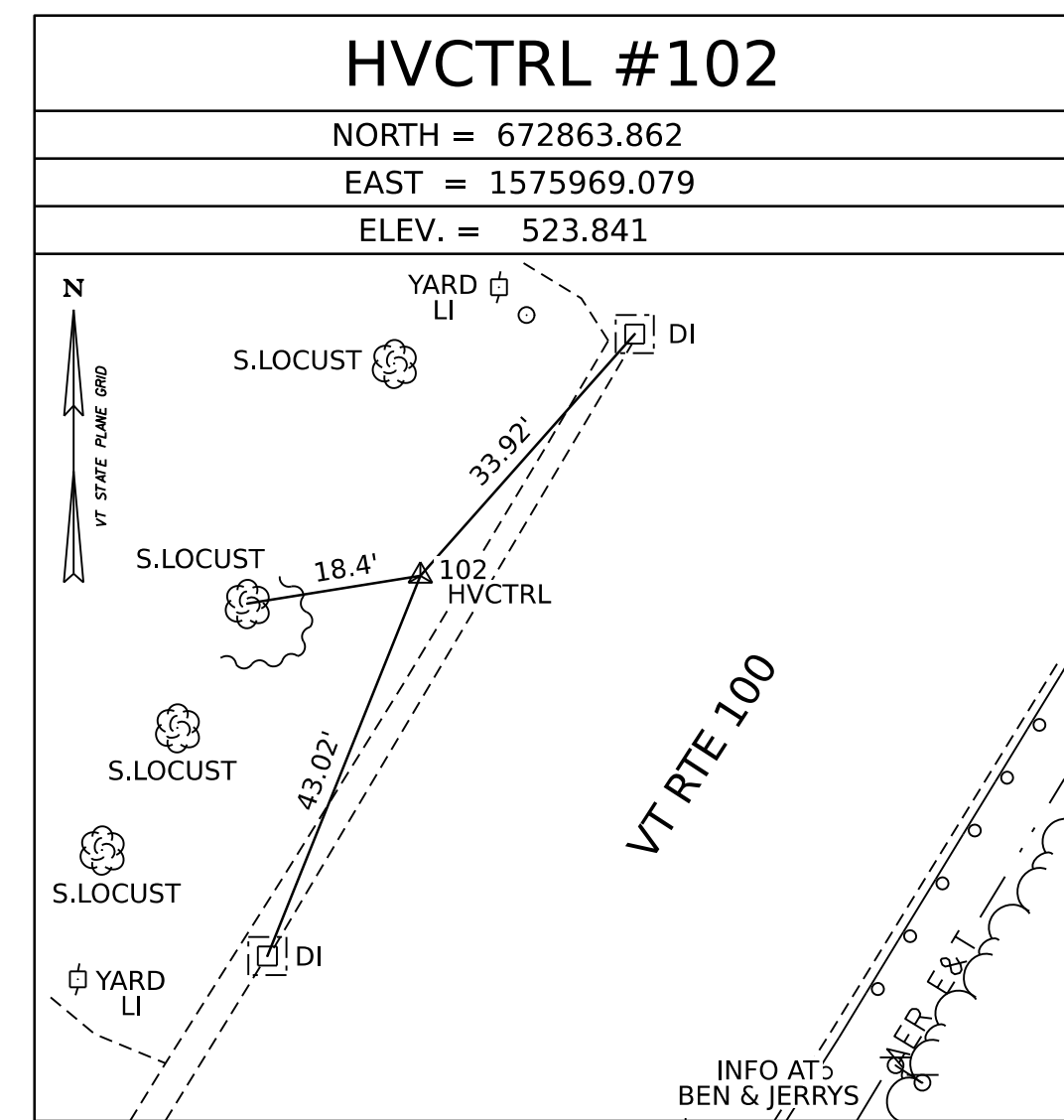
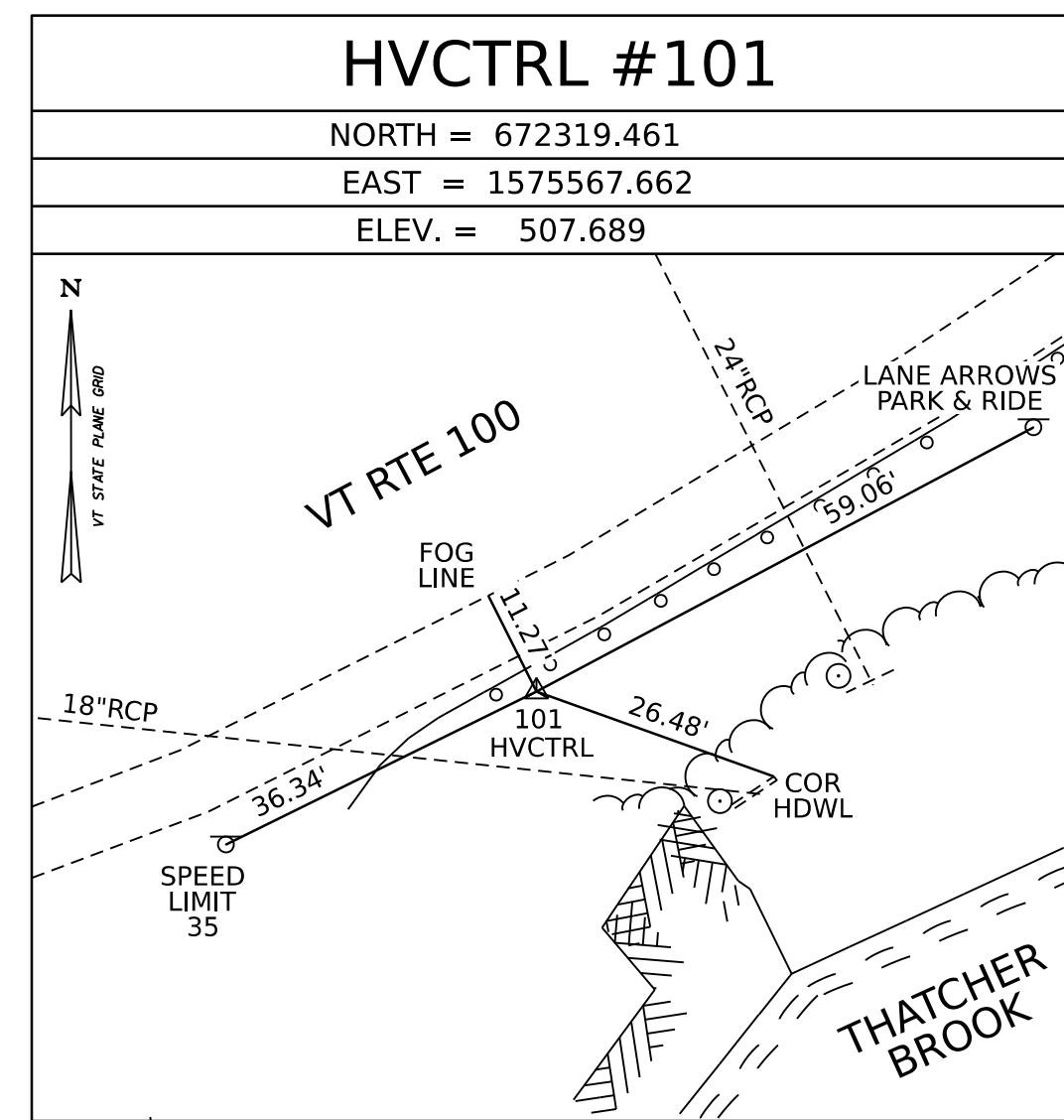
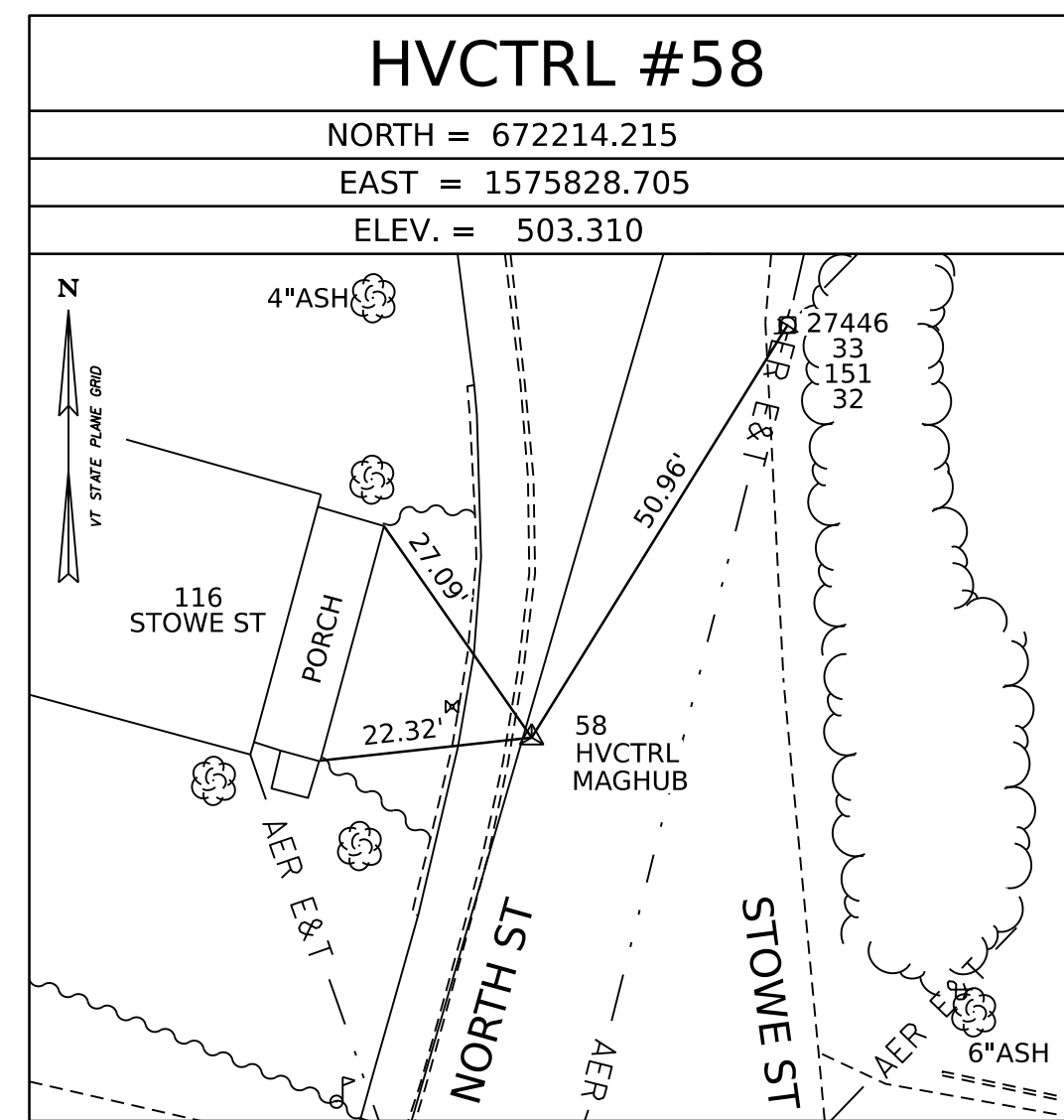
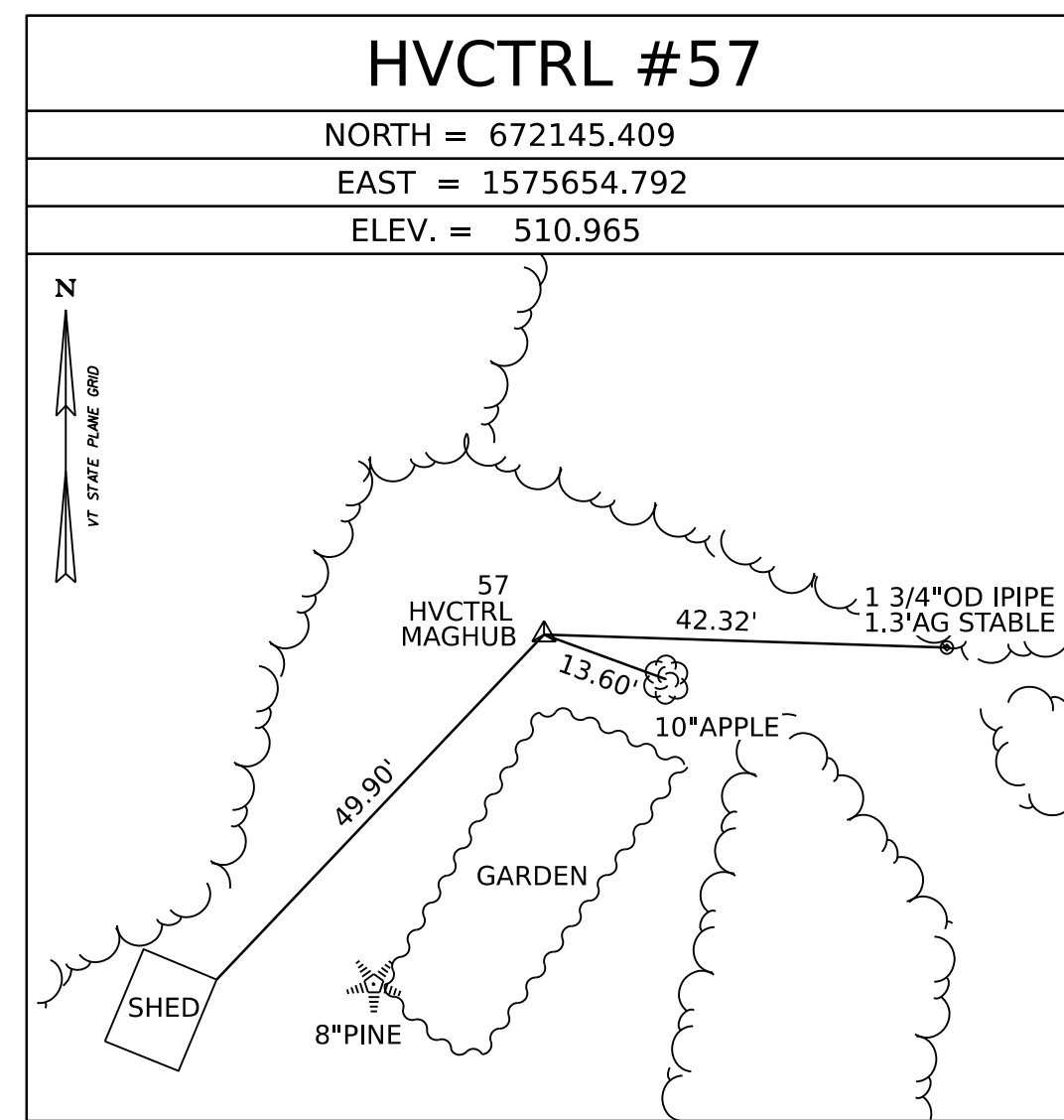
GPS CONTROL POINTS

64 HBC (#6623)

PID AA8265
 NORTH = 672365.490
 EAST = 1575799.372
 ELEV. = 508.132

DESCRIBED BY VERMONT AGENCY OF TRANSPORTATION 1994 (CHR). GENERAL LOCATION, WATERBURY. TO REACH FROM THE INTERSECTION OF U.S. ROUTE 2 AND VT. ROUTE 100 NORTH IN WATERBURY GO NORTHEAST ALONG VT ROUTE 100 FOR 0.6 MI (1.0 KM) TO THE INTERSECTION OF STOWE STREET, TURN RIGHT AND GO SOUTH ALONG STOWE STREET FOR 40 M (131.2 FT) TO THE NORTH END OF THE STOWE STREET BRIDGE OVER THATCHER BROOK AND THE MARK ON THE RIGHT, IN THE TOP OF THE ABUTMENT AT THE NORTHWEST CORNER OF THE BRIDGE. THE MARK IS 4.9 M (16.1 FT) WEST OF THE CENTERLINE OF STOWE ST, 16.8 M (55.1 FT) SOUTHWEST OF POLE NO. 01, 0.2 M (0.7 FT) WEST OF THE WEST FACE OF THE CONCRETE PARAPET WALL OF THE BRIDGE.

TRAVERSE TIES



* WATERBURY BO 1446(40) SURVEY COMPLETED: NOVEMBER 12, 2019 BY VSE, A. SCARZELLO-PC, C. BROWN

ALIGNMENT TIES

| |
|---------|
| NORTH = |
| EAST = |
| ELEV. = |

| |
|---------|
| NORTH = |
| EAST = |
| ELEV. = |

| |
|---------|
| NORTH = |
| EAST = |
| ELEV. = |

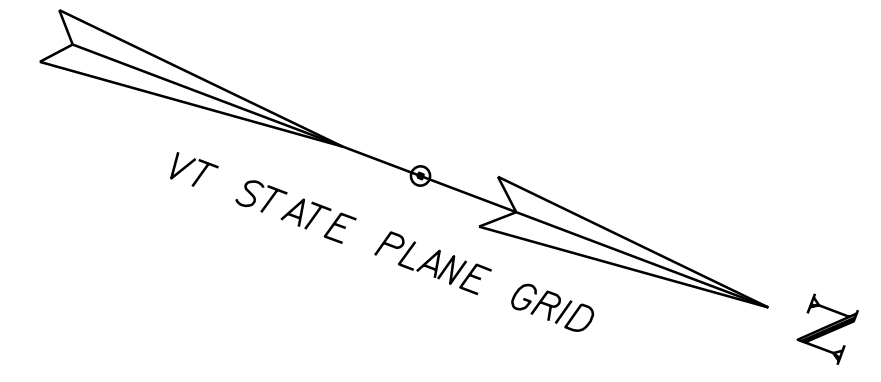
| |
|---------|
| NORTH = |
| EAST = |
| ELEV. = |

| |
|---------|
| NORTH = |
| EAST = |
| ELEV. = |

| | |
|------------|-------------|
| DATUM | |
| VERTICAL | NAVD88 |
| HORIZONTAL | NAD83(2011) |
| ADJUSTMENT | LSQ |

| | | | |
|-----------------|----------------|-------------|------------|
| PROJECT NAME: | WATERBURY | | |
| PROJECT NUMBER: | BO 1446(40) | | |
| FILE NAME: | z93j040tie.dgn | PLOT DATE: | 9-SEP-2022 |
| PROJECT LEADER: | VSE | DRAWN BY: | VSE |
| DESIGNED BY: | VSE | CHECKED BY: | VSE |
| TIE SHEET 2 | | SHEET | 10 OF 44 |

NOTE:
SEE NEXT SHEET EC-2 FOR EXISTING
SANITARY SEWER MANHOLE INFORMATION.



HALL, CONRAD JR.;
MORRIS, STEPHEN J.;
MORRIS, GEORGE J.;
C/O BEST WESTERN

41E
Buxton silt loam
25 to 45 percent slopes

43C
Salmon very fine
sandy loam
8 to 15 percent slopes

41D
Buxton silt loam
15 to 25 percent slopes

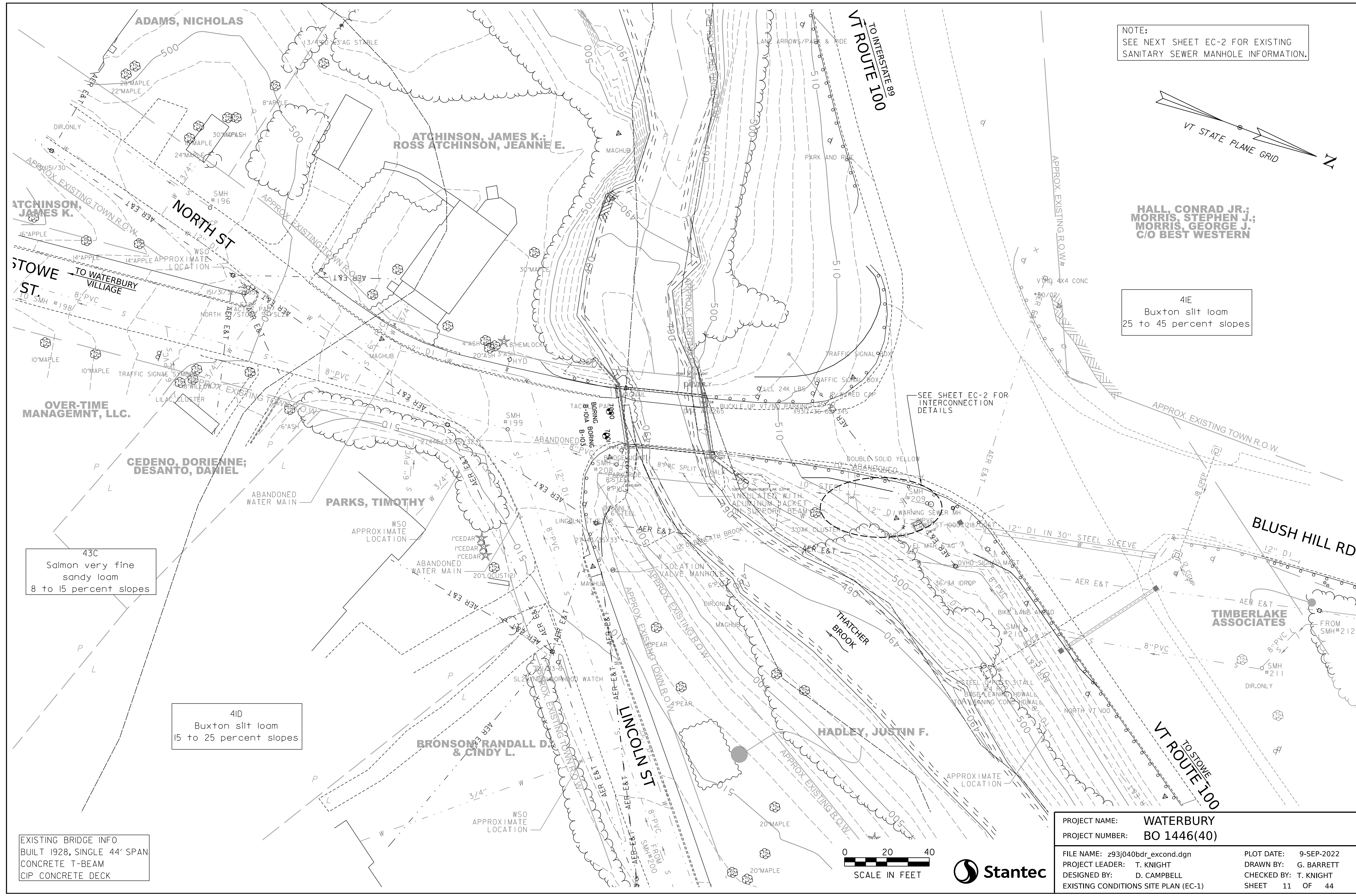
EXISTING BRIDGE INFO
BUILT 1928, SINGLE 44' SPAN
CONCRETE T-BEAM
CIP CONCRETE DECK



PROJECT NAME: **WATERBURY**
PROJECT NUMBER: **BO 1446(40)**

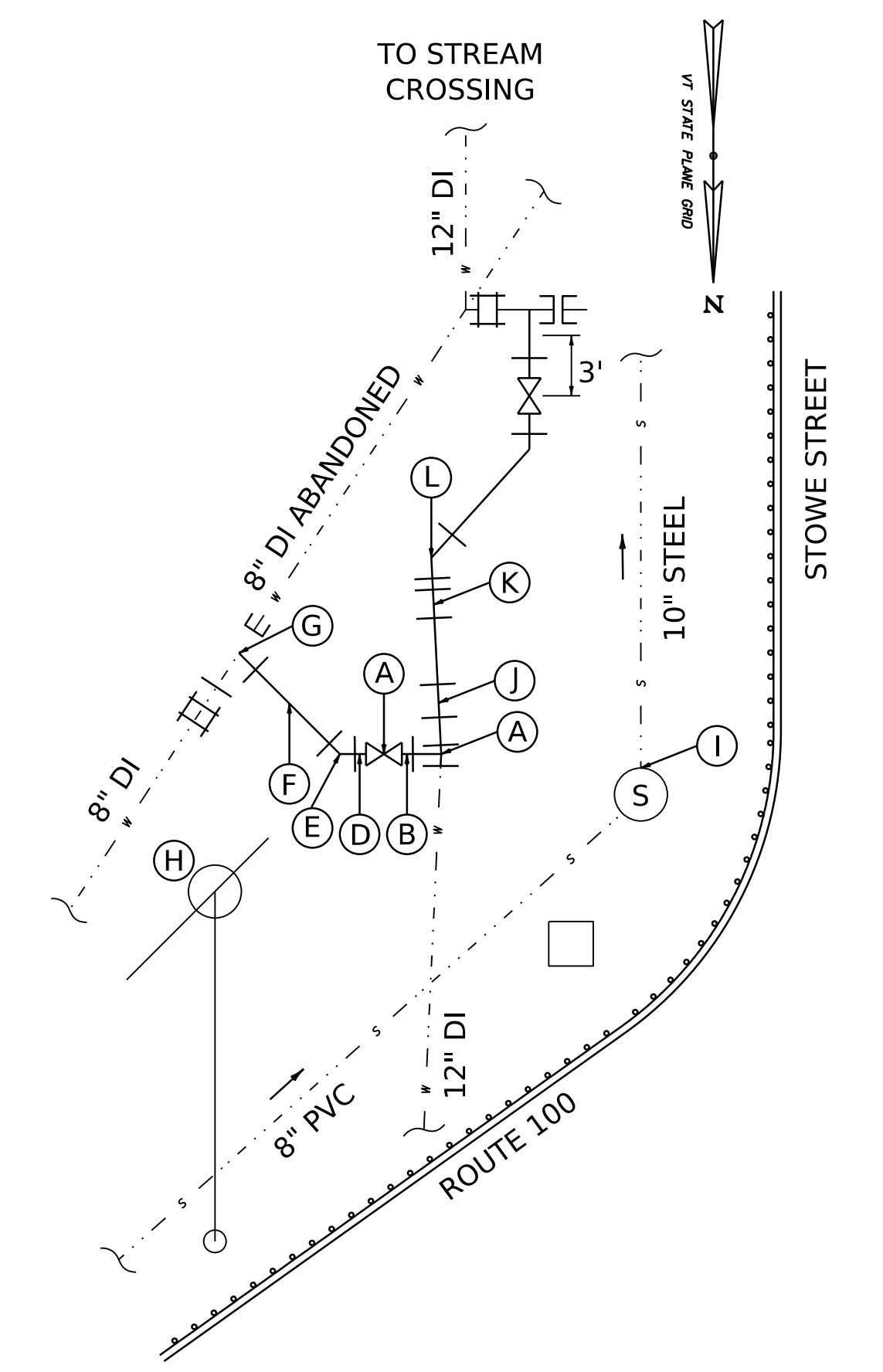
FILE NAME: z93j040bdr_excond.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: D. CAMPBELL
EXISTING CONDITIONS SITE PLAN (EC-1)

PLOT DATE: 9-SEP-2022
DRAWN BY: G. BARRETT
CHECKED BY: T. KNIGHT
SHEET 11 OF 44



EXISTING SANITARY SEWER MANHOLE SUMMARY TABLE

| |
|---|
| <p><u>SMH #199</u> RIM = 506.4 EXISTING 8" PVC INV. IN = 501.4 (N) EXISTING 8" PVC INV. IN = 498.9 (E) EXISTING 8" PVC INV. OUT = 498.7 (S)</p> |
| <p><u>SMH #200</u> RIM = 517.4 EXISTING 8" PVC INV. IN = 509.0 (E) EXISTING 8" PVC INV. OUT = 508.9 (W)</p> |
| <p><u>SMH #208</u> RIM = 508.5 EXISTING 10" STEEL INV. IN = 505.2 (N) EXISTING 8" PVC INV. OUT = 505.0 (S) (OUTLET PIPE MAY BE CAPPED) EXISTING 8" PVC INV. OUT = 503.0 (S)</p> |
| <p><u>SMH #209</u> RIM = 514.4 EXISTING 8" PVC INV. IN = 506.2 (E) EXISTING 10" STEEL INV. OUT = 506.2 (S)</p> |
| <p><u>SMH #210</u> RIM = 512.6 EXISTING 8" PVC INV. IN = 506.3 (N) EXISTING 8" PVC INV. OUT = 506.2 (W)</p> |



TIE INFO

- AC = 1'
- CE = 1'
- CI = 15'-4"
- CH = 30'-8"
- EI = 17'
- EH = 28'
- EG = 4'
- JI = 19'
- JH = 36'
- AI = 14'
- AH = 32'
- KI = 28'-8"
- LI = 33'-4"

TIE INFO

- A = 12" X 8" TEE, MJ W/ RG
- B = 8" NIPPLE, 1 FOOT LONG
- C = 8" GATE VALVE, MJ W/ RG
- D = 8" NIPPLE, 1 FOOT LONG
- E = 8"-90° ELBOW, MJ W/ RG
- F = 8" NIPPLE, 4 FEET LONG
- G = 8"-90° ELBOW, MJ W/ RG
- H = POWER POLE
- I = MANHOLE (SMH #209)
- J = 12"-22.5° ELBOW, MJ W/ RG (VERTICAL ELBOW ONLY)
- K = 12"-22.5° ELBOW, MJ W/ RG (VERTICAL ELBOW ONLY)
- L = 12"-45° ELBOW, MJ W/ RG

EXISTING WATER MAIN INTERCONNECTION DETAIL

NOT TO SCALE

| | |
|--|-----------------------------|
| PROJECT NAME: WATERBURY | PROJECT NUMBER: BO 1446(40) |
| FILE NAME: z93j040det.water.dgn | PLOT DATE: 9-SEP-2022 |
| PROJECT LEADER: T. KNIGHT | DRAWN BY: G. BARRETT |
| DESIGNED BY: D. CAMPBELL | CHECKED BY: J. MYERS |
| EXISTING CONDITIONS INFORMATION (EC-2) | SHEET 12 OF 44 |



CURVE DATA #1
 DELTA = 15°03'38"
 D = 11°27'33"
 R = 500.00'
 T = 66.09'
 L = 131.43'
 E = 4.35'
 C = 131.05

PC
 N 672219.2002
 E 1575843.6485

PT
 N 672346.8076
 E 1575813.8095

CURVE DATA #3
 DELTA = 11°16'36"
 D = 36°02'06"
 R = 159.00'
 T = 15.70'
 L = 31.29'
 E = 0.77'
 C = 31.24'

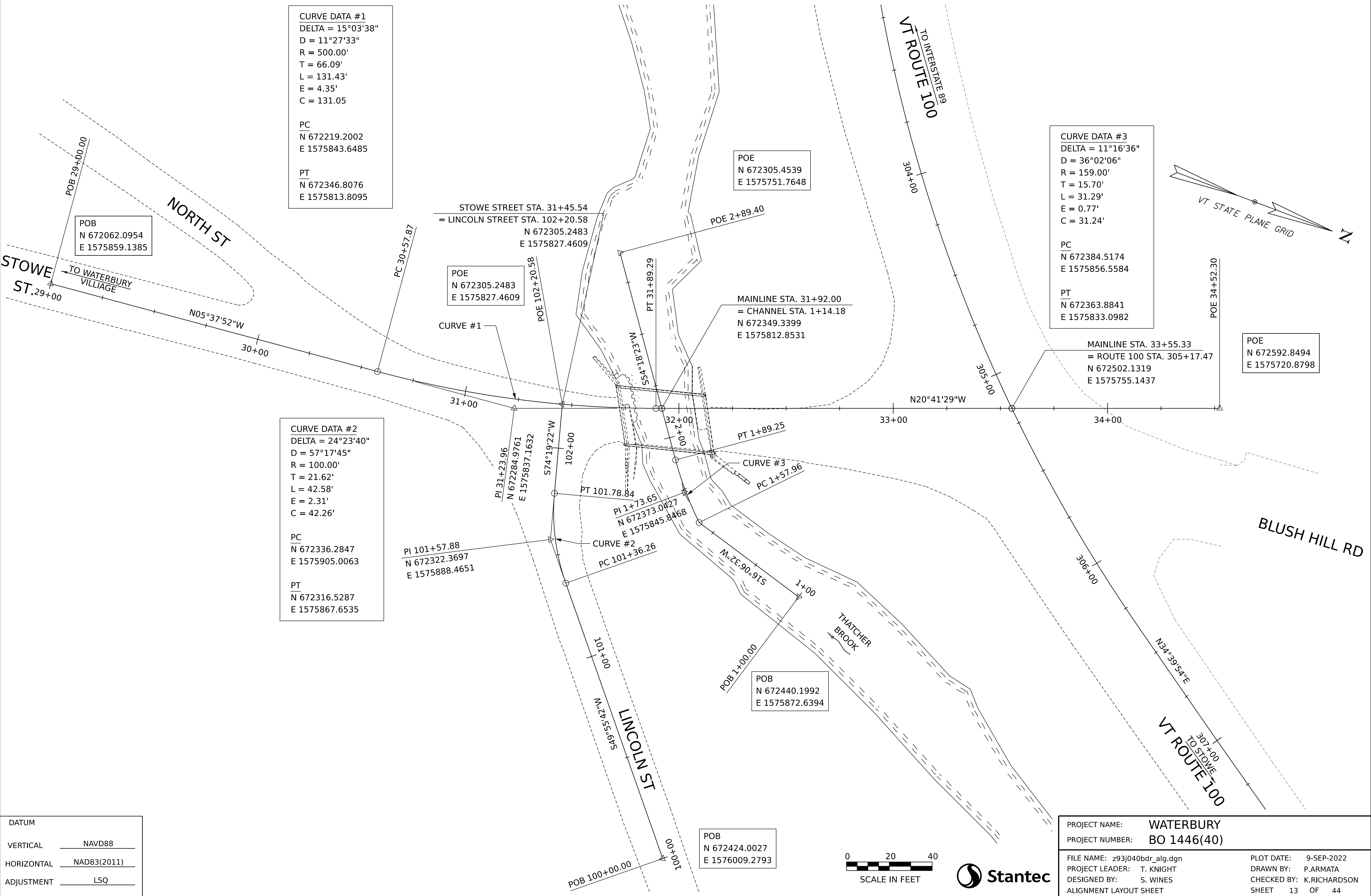
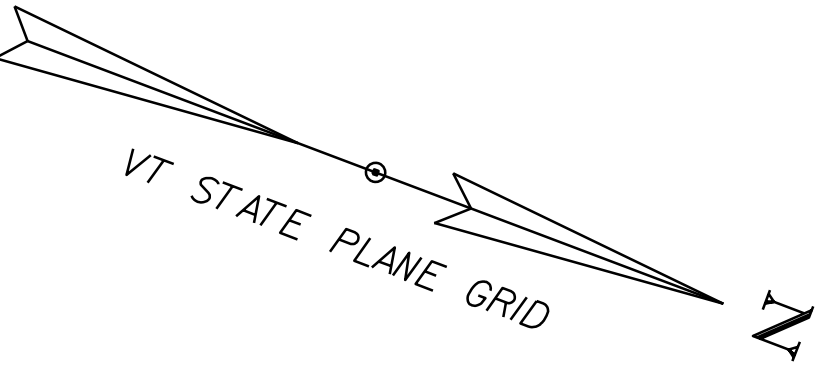
PC
 N 672384.5174
 E 1575856.5584

PT
 N 672363.8841
 E 1575833.0982

CURVE DATA #2
 DELTA = 24°23'40"
 D = 57°17'45"
 R = 100.00'
 T = 21.62'
 L = 42.58'
 E = 2.31'
 C = 42.26'

PC
 N 672336.2847
 E 1575905.0063

PT
 N 672316.5287
 E 1575867.6535

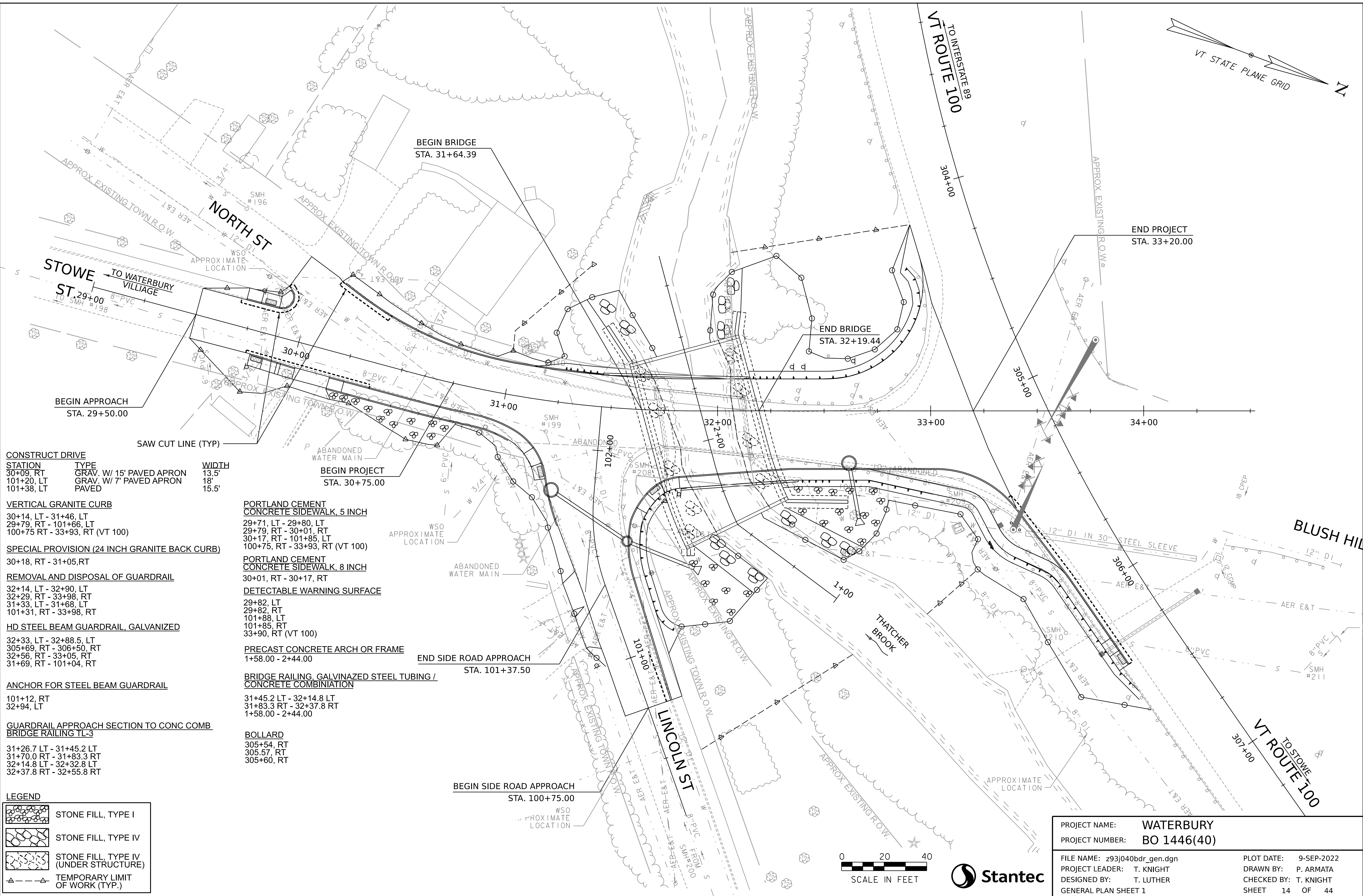
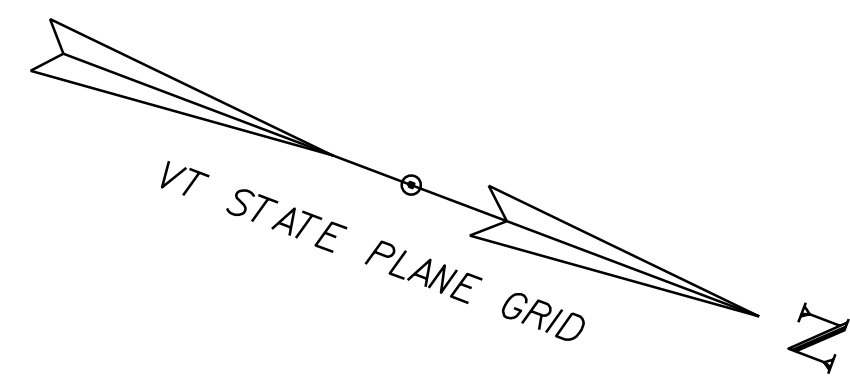


| | |
|------------|-------------|
| DATUM | |
| VERTICAL | NAVD88 |
| HORIZONTAL | NAD83(2011) |
| ADJUSTMENT | LSQ |

POB
 N 672424.0027
 E 1576009.2793



| | | | |
|-----------------|--------------------|------------------------|--------------|
| PROJECT NAME: | WATERBURY | PLOT DATE: | 9-SEP-2022 |
| PROJECT NUMBER: | BO 1446(40) | DRAWN BY: | P.ARMATA |
| FILE NAME: | z93j040bdr_alg.dgn | CHECKED BY: | K.RICHARDSON |
| PROJECT LEADER: | T. KNIGHT | SHEET | 13 OF 44 |
| DESIGNED BY: | S. WINES | ALIGNMENT LAYOUT SHEET | |



CONSTRUCT DRIVE

| STATION | TYPE | WIDTH |
|------------|--------------------------|-------|
| 30+09, RT | GRAV. W/ 15' PAVED APRON | 13.5' |
| 101+20, LT | GRAV. W/ 7' PAVED APRON | 18' |
| 101+38, LT | PAVED | 15.5' |

VERTICAL GRANITE CURB

| |
|--------------------------------|
| 30+14, LT - 31+46, LT |
| 29+79, RT - 101+66, LT |
| 100+75 RT - 33+93, RT (VT 100) |

SPECIAL PROVISION (24 INCH GRANITE BACK CURB)

| |
|-----------------------|
| 30+18, RT - 31+05, RT |
|-----------------------|

REMOVAL AND DISPOSAL OF GUARDRAIL

| |
|------------------------|
| 32+14, LT - 32+90, LT |
| 32+29, RT - 33+98, RT |
| 31+33, LT - 31+68, LT |
| 101+31, RT - 33+98, RT |

HD STEEL BEAM GUARDRAIL, GALVANIZED

| |
|-------------------------|
| 32+33, LT - 32+88.5, LT |
| 305+69, RT - 306+50, RT |
| 32+56, RT - 33+05, RT |
| 31+69, RT - 101+04, RT |

ANCHOR FOR STEEL BEAM GUARDRAIL

| |
|------------|
| 101+12, RT |
| 32+94, LT |

GUARDRAIL APPROACH SECTION TO CONC COMB BRIDGE RAILING TL-3

| |
|-------------------------|
| 31+26.7 LT - 31+45.2 LT |
| 31+70.0 RT - 31+83.3 RT |
| 32+14.8 LT - 32+32.8 LT |
| 32+37.8 RT - 32+55.8 RT |

PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH

| |
|---------------------------------|
| 29+71, LT - 29+80, LT |
| 29+79, RT - 30+01, RT |
| 30+17, RT - 101+85, LT |
| 100+75, RT - 33+93, RT (VT 100) |

PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH

| |
|-----------------------|
| 30+01, RT - 30+17, RT |
|-----------------------|

DETECTABLE WARNING SURFACE

| |
|--------------------|
| 29+82, LT |
| 29+82, RT |
| 101+88, LT |
| 101+85, RT |
| 33+90, RT (VT 100) |

PRECAST CONCRETE ARCH OR FRAME

| |
|-------------------|
| 1+58.00 - 2+44.00 |
|-------------------|

BRIDGE RAILING, GALVANIZED STEEL TUBING / CONCRETE COMBINATION

| |
|-------------------------|
| 31+45.2 LT - 32+14.8 LT |
| 31+83.3 RT - 32+37.8 RT |
| 1+58.00 - 2+44.00 |

BOLLARD

| |
|------------|
| 305+54, RT |
| 305+57, RT |
| 305+60, RT |

LEGEND

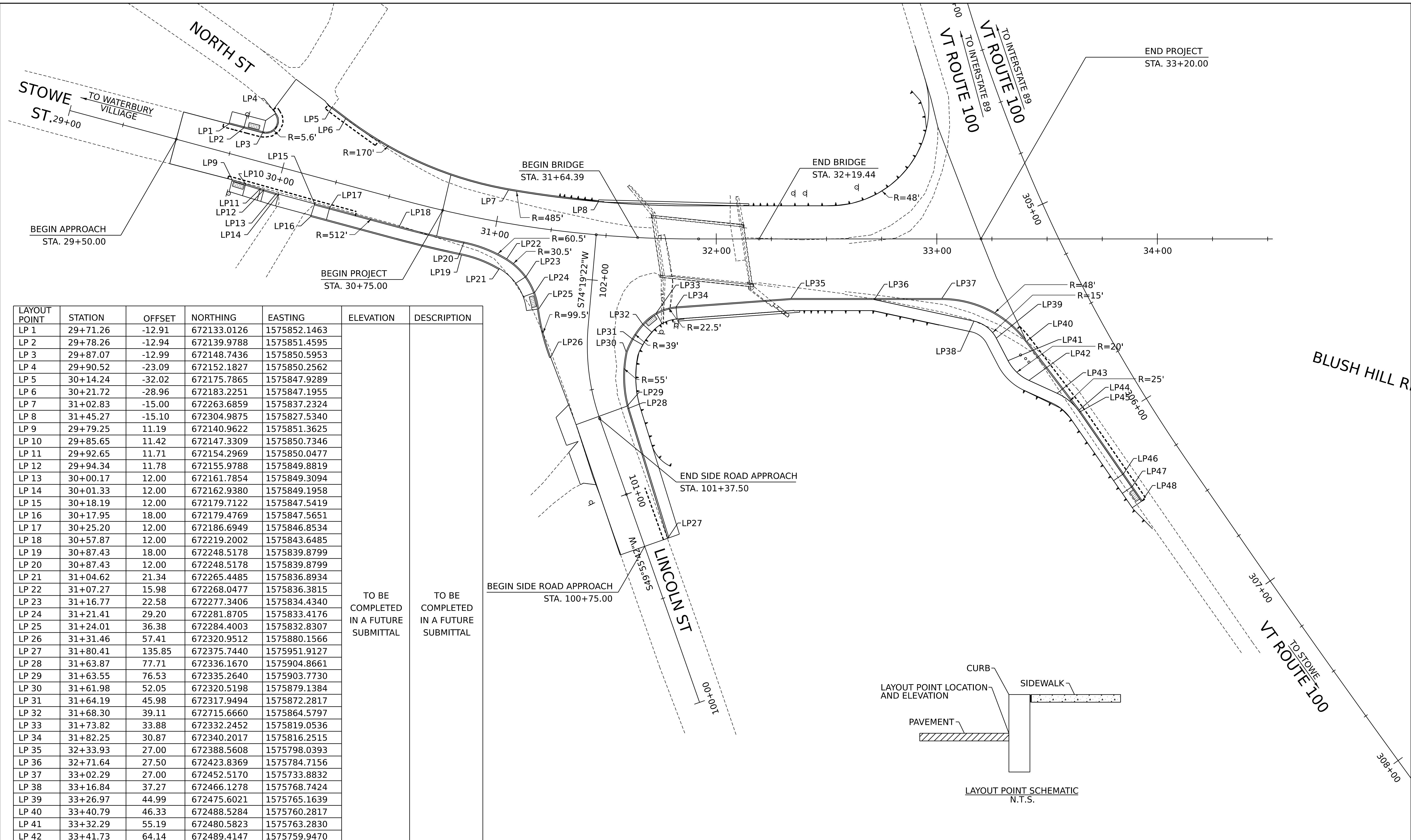
| | |
|--|---------------------------------------|
| | STONE FILL, TYPE I |
| | STONE FILL, TYPE IV |
| | STONE FILL, TYPE IV (UNDER STRUCTURE) |
| | TEMPORARY LIMIT OF WORK (TYP.) |

BEGIN SIDE ROAD APPROACH
STA. 100+75.00

END SIDE ROAD APPROACH
STA. 101+37.50



| | |
|----------------------|--------------------|
| PROJECT NAME: | WATERBURY |
| PROJECT NUMBER: | BO 1446(40) |
| FILE NAME: | z93j040bdr_gen.dgn |
| PROJECT LEADER: | T. KNIGHT |
| DESIGNED BY: | T. LUTHER |
| GENERAL PLAN SHEET 1 | |
| PLOT DATE: | 9-SEP-2022 |
| DRAWN BY: | P. ARMATA |
| CHECKED BY: | T. KNIGHT |
| SHEET | 14 OF 44 |

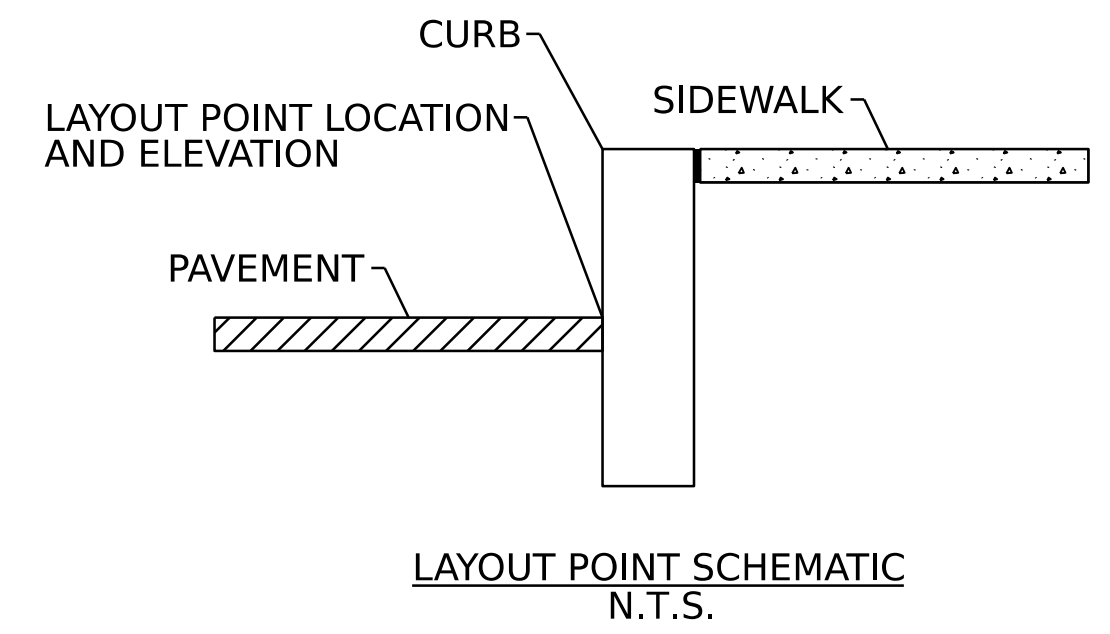


| LAYOUT POINT | STATION | OFFSET | NORTHING | EASTING | ELEVATION | DESCRIPTION |
|--------------|----------|--------|-------------|--------------|-----------|-------------|
| LP 1 | 29+71.26 | -12.91 | 672133.0126 | 1575852.1463 | | |
| LP 2 | 29+78.26 | -12.94 | 672139.9788 | 1575851.4595 | | |
| LP 3 | 29+87.07 | -12.99 | 672148.7436 | 1575850.5953 | | |
| LP 4 | 29+90.52 | -23.09 | 672152.1827 | 1575850.2562 | | |
| LP 5 | 30+14.24 | -32.02 | 672175.7865 | 1575847.9289 | | |
| LP 6 | 30+21.72 | -28.96 | 672183.2251 | 1575847.1955 | | |
| LP 7 | 31+02.83 | -15.00 | 672263.6859 | 1575837.2324 | | |
| LP 8 | 31+45.27 | -15.10 | 672304.9875 | 1575827.5340 | | |
| LP 9 | 29+79.25 | 11.19 | 672140.9622 | 1575851.3625 | | |
| LP 10 | 29+85.65 | 11.42 | 672147.3309 | 1575850.7346 | | |
| LP 11 | 29+92.65 | 11.71 | 672154.2969 | 1575850.0477 | | |
| LP 12 | 29+94.34 | 11.78 | 672155.9788 | 1575849.8819 | | |
| LP 13 | 30+00.17 | 12.00 | 672161.7854 | 1575849.3094 | | |
| LP 14 | 30+01.33 | 12.00 | 672162.9380 | 1575849.1958 | | |
| LP 15 | 30+18.19 | 12.00 | 672179.7122 | 1575847.5419 | | |
| LP 16 | 30+17.95 | 18.00 | 672179.4769 | 1575847.5651 | | |
| LP 17 | 30+25.20 | 12.00 | 672186.6949 | 1575846.8534 | | |
| LP 18 | 30+57.87 | 12.00 | 672219.2002 | 1575843.6485 | | |
| LP 19 | 30+87.43 | 18.00 | 672248.5178 | 1575839.8799 | | |
| LP 20 | 30+87.43 | 12.00 | 672248.5178 | 1575839.8799 | | |
| LP 21 | 31+04.62 | 21.34 | 672265.4485 | 1575836.8934 | | |
| LP 22 | 31+07.27 | 15.98 | 672268.0477 | 1575836.3815 | | |
| LP 23 | 31+16.77 | 22.58 | 672277.3406 | 1575834.4340 | | |
| LP 24 | 31+21.41 | 29.20 | 672281.8705 | 1575833.4176 | | |
| LP 25 | 31+24.01 | 36.38 | 672284.4003 | 1575832.8307 | | |
| LP 26 | 31+31.46 | 57.41 | 672320.9512 | 1575880.1566 | | |
| LP 27 | 31+80.41 | 135.85 | 672375.7440 | 1575951.9127 | | |
| LP 28 | 31+63.87 | 77.71 | 672336.1670 | 1575904.8661 | | |
| LP 29 | 31+63.55 | 76.53 | 672335.2640 | 1575903.7730 | | |
| LP 30 | 31+61.98 | 52.05 | 672320.5198 | 1575879.1384 | | |
| LP 31 | 31+64.19 | 45.98 | 672317.9494 | 1575872.2817 | | |
| LP 32 | 31+68.30 | 39.11 | 672715.6660 | 1575864.5797 | | |
| LP 33 | 31+73.82 | 33.88 | 672332.2452 | 1575819.0536 | | |
| LP 34 | 31+82.25 | 30.87 | 672340.2017 | 1575816.2515 | | |
| LP 35 | 32+33.93 | 27.00 | 672388.5608 | 1575798.0393 | | |
| LP 36 | 32+71.64 | 27.50 | 672423.8369 | 1575784.7156 | | |
| LP 37 | 33+02.29 | 27.00 | 672452.5170 | 1575733.8832 | | |
| LP 38 | 33+16.84 | 37.27 | 672466.1278 | 1575768.7424 | | |
| LP 39 | 33+26.97 | 44.99 | 672475.6021 | 1575765.1639 | | |
| LP 40 | 33+40.79 | 46.33 | 672488.5284 | 1575760.2817 | | |
| LP 41 | 33+32.29 | 55.19 | 672480.5823 | 1575763.2830 | | |
| LP 42 | 33+41.73 | 64.14 | 672489.4147 | 1575759.9470 | | |
| LP 43 | 33+54.53 | 69.96 | 672501.3829 | 1575755.4266 | | |
| LP 44 | 33+64.58 | 77.51 | 672510.7822 | 1575751.8765 | | |
| LP 45 | 33+64.73 | 78.50 | 672510.9319 | 1575751.8199 | | |
| LP 46 | 33+84.65 | 106.47 | 672529.5583 | 1575744.7848 | | |
| LP 47 | 33+88.64 | 112.22 | 672533.2962 | 1575743.3730 | | |
| LP 48 | 33+93.15 | 118.74 | 672537.5124 | 1575741.7805 | | |

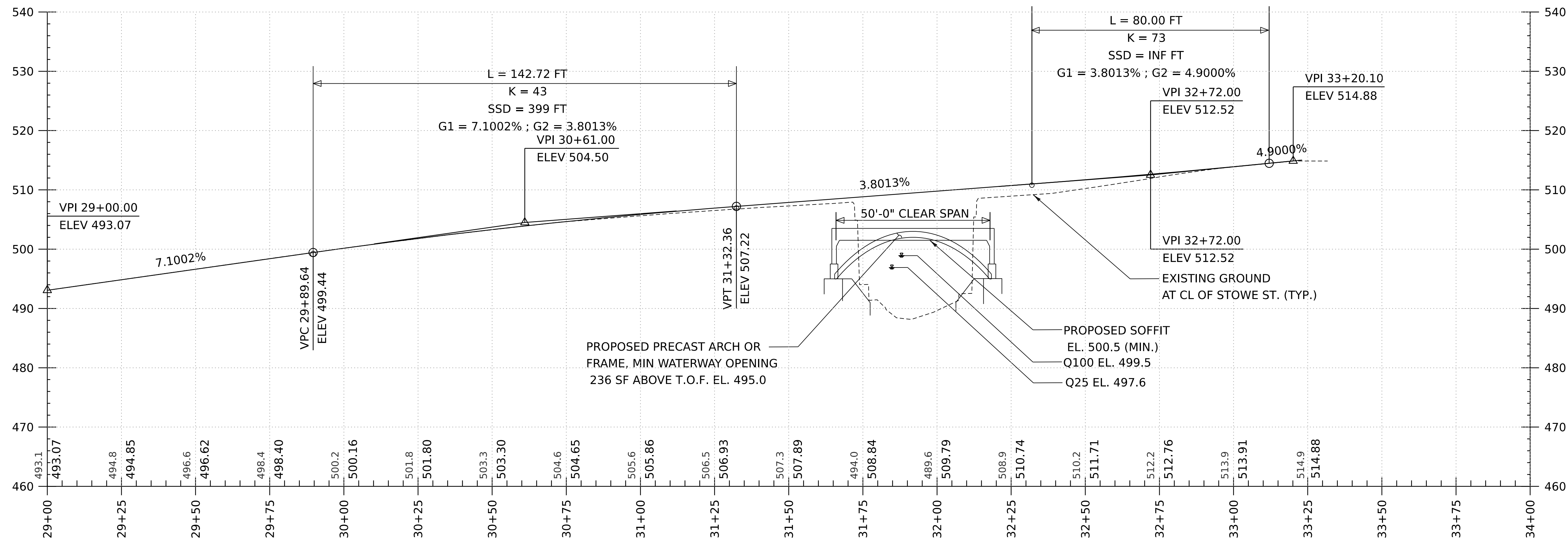
TO BE COMPLETED IN A FUTURE SUBMITTAL

BEGIN SIDE ROAD APPROACH
STA. 100+75.00

END SIDE ROAD APPROACH
STA. 101+37.50

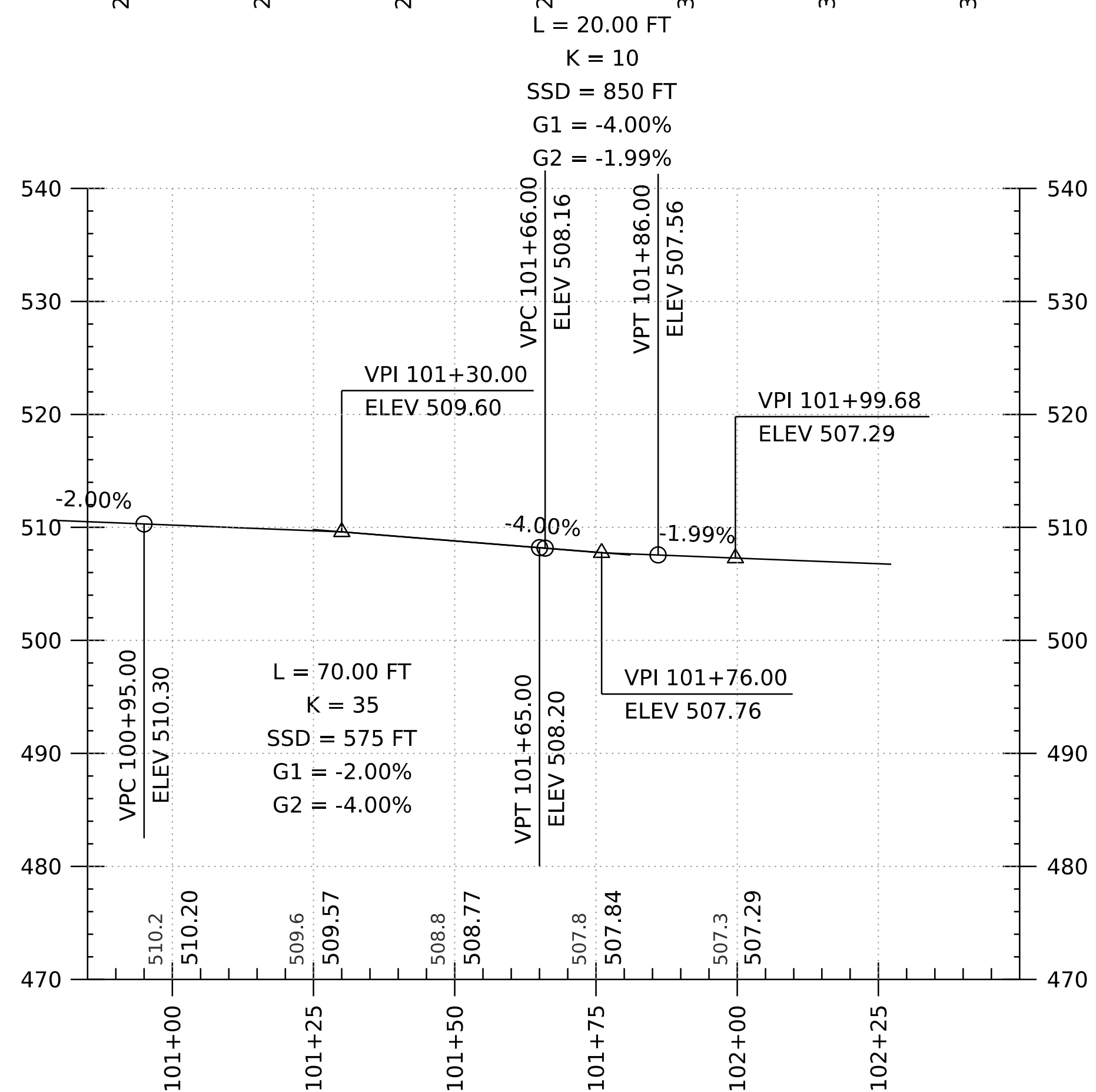


| | | | | | |
|-----------------|--------------------|---------------------|-----------------------|-------------|---------------|
| PROJECT NAME: | WATERBURY | FILE NAME: | z93j040bdr_layout.dgn | PLOT DATE: | 9-SEP-2022 |
| PROJECT NUMBER: | BO 1446(40) | PROJECT LEADER: | T. KNIGHT | DRAWN BY: | P. ARMATA |
| | | DESIGNED BY: | T. LUTHER | CHECKED BY: | K. RICHARDSON |
| | | LAYOUT PLAN SHEET 1 | | SHEET | 15 OF 44 |



STOWE STREET PROFILE

SCALE: HORIZONTAL 1" = 20'-0"
 VERTICAL 1" = 10'-0"



LINCOLN STREET PROFILE

SCALE: HORIZONTAL 1" = 20'-0"
 VERTICAL 1" = 10'-0"

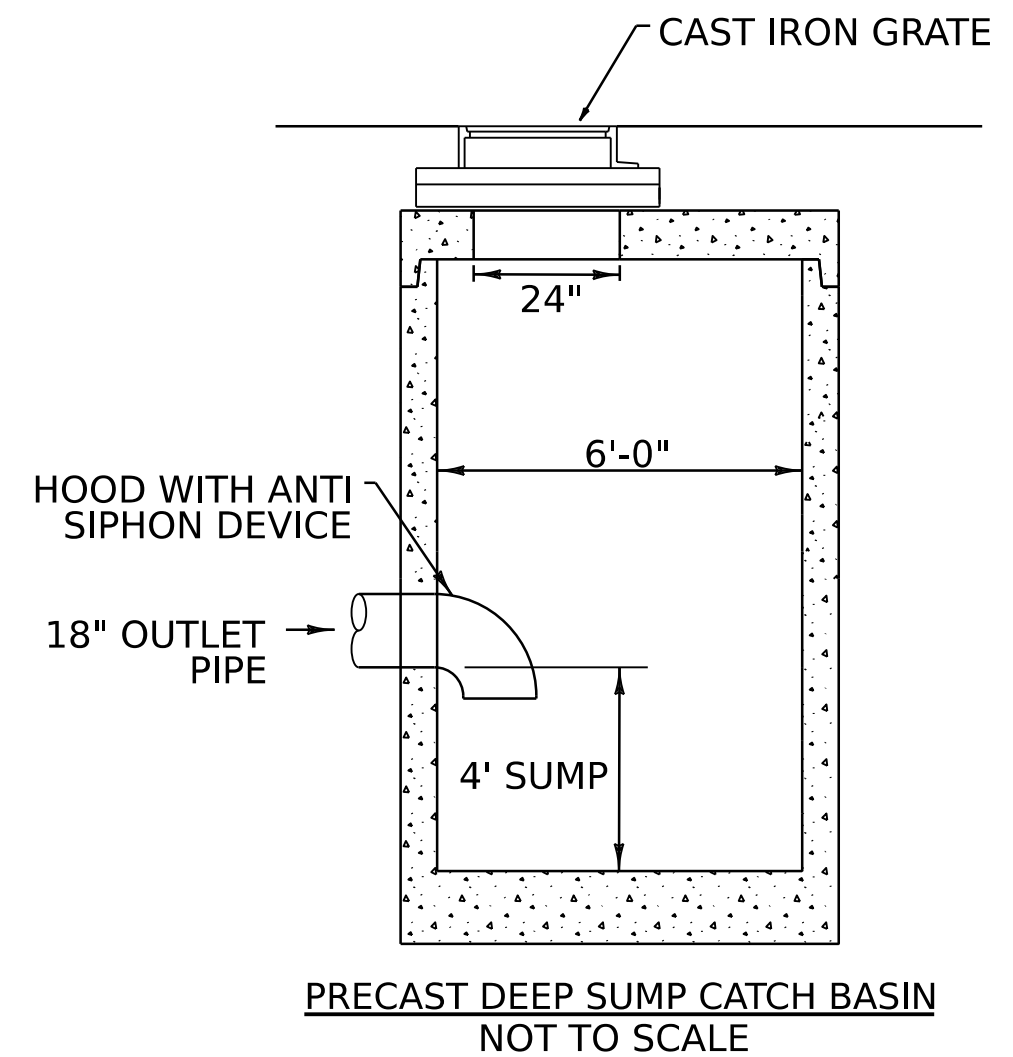
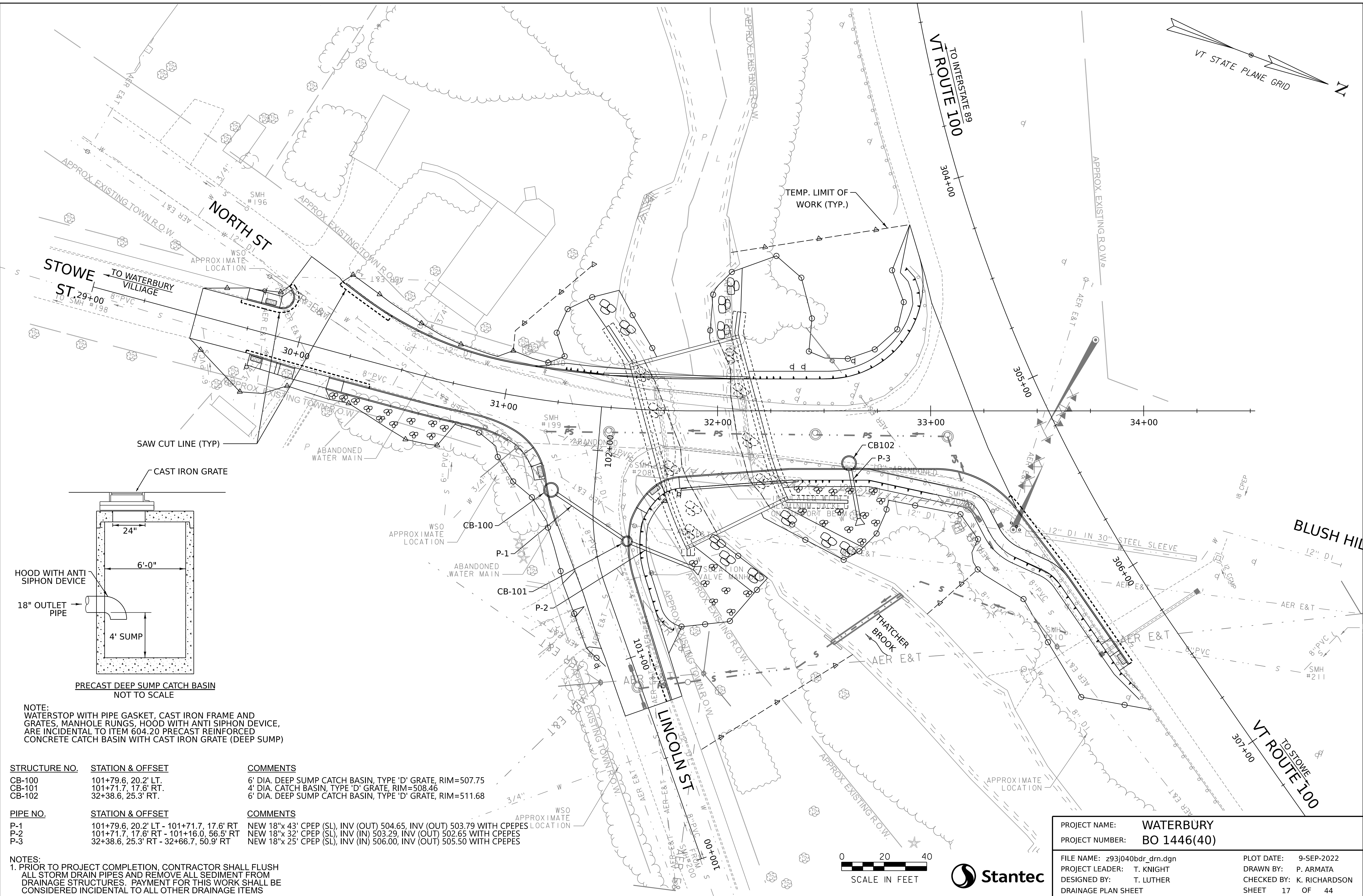
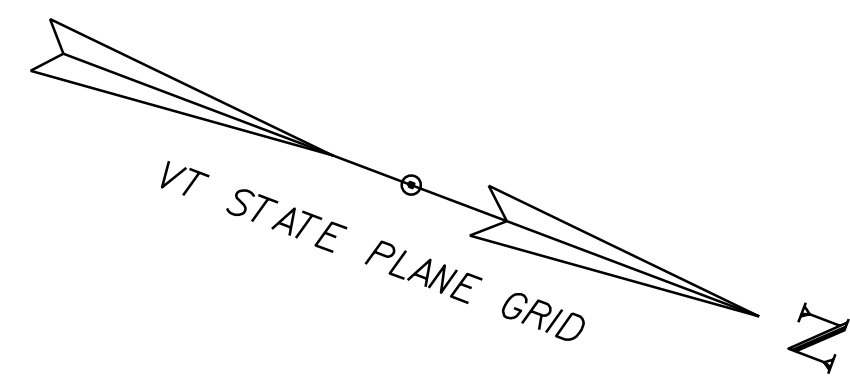
NOTE:
 1. EXISTING GRADES ARE SHOWN TO THE NEAREST TENTH. PROPOSED GRADES ARE SHOWN TO THE NEAREST HUNDREDTH.

PROJECT NAME: **WATERBURY**
 PROJECT NUMBER: **BO 1446(40)**

FILE NAME: z93j040_pro.dgn
 PROJECT LEADER: T. KNIGHT
 DESIGNED BY: T. LUTHER
 ROADWAY PROFILES

PLOT DATE: 9-SEP-2022
 DRAWN BY: T. LUTHER
 CHECKED BY: S. WINES
 SHEET 16 OF 44





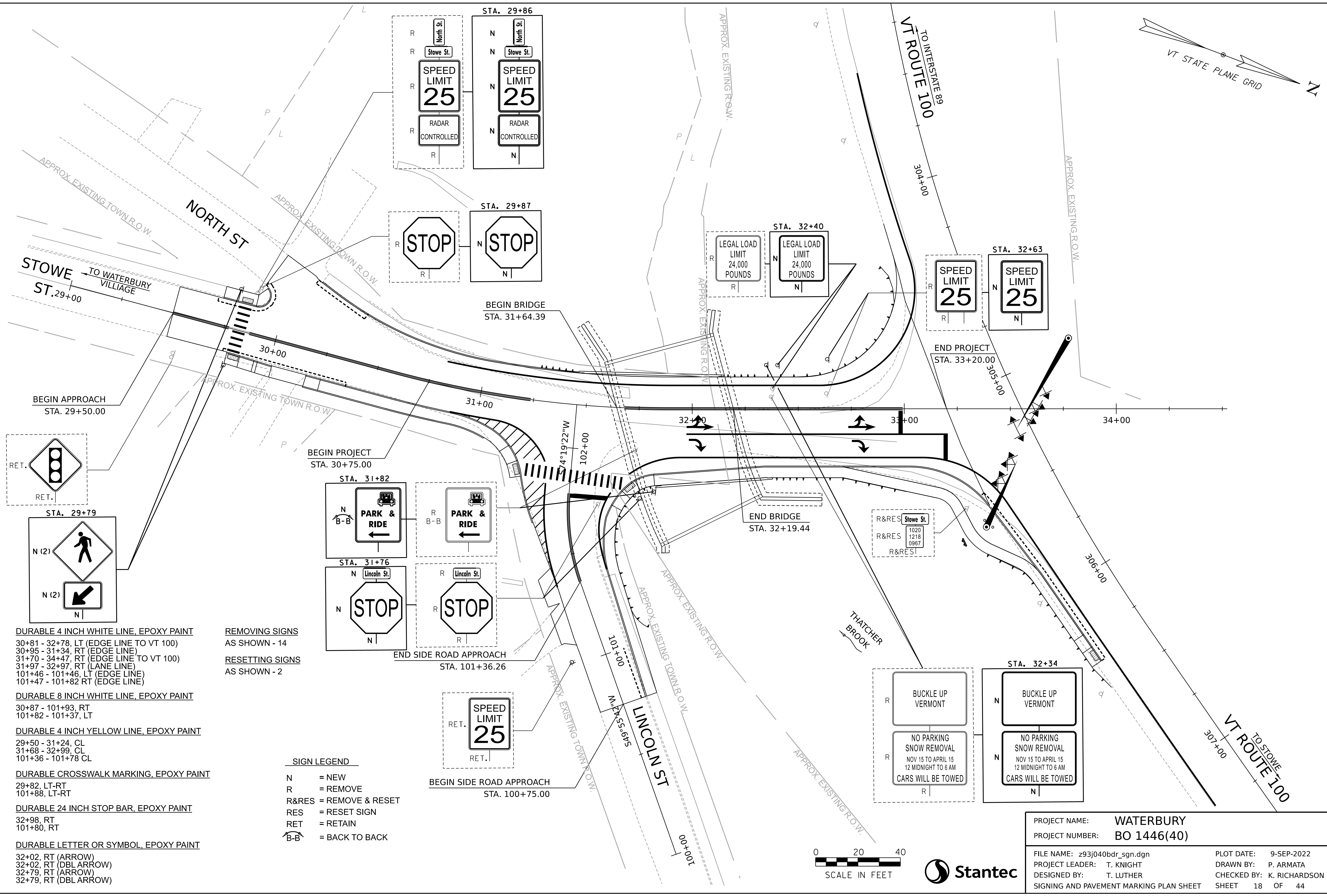
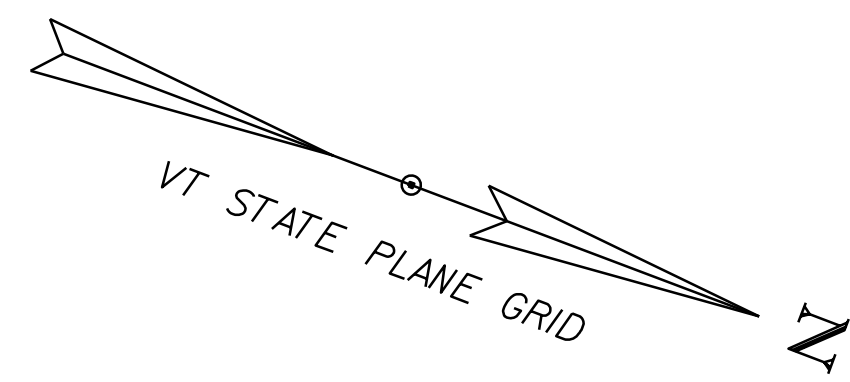
NOTE:
 WATERSTOP WITH PIPE GASKET, CAST IRON FRAME AND GRATES, MANHOLE RUNGS, HOOD WITH ANTI SIPHON DEVICE, ARE INCIDENTAL TO ITEM 604.20 PRECAST REINFORCED CONCRETE CATCH BASIN WITH CAST IRON GRATE (DEEP SUMP)

| STRUCTURE NO. | STATION & OFFSET | COMMENTS |
|---------------|---|--|
| CB-100 | 101+79.6, 20.2' LT. | 6' DIA. DEEP SUMP CATCH BASIN, TYPE 'D' GRATE, RIM=507.75 |
| CB-101 | 101+71.7, 17.6' RT. | 4' DIA. CATCH BASIN, TYPE 'D' GRATE, RIM=508.46 |
| CB-102 | 32+38.6, 25.3' RT. | 6' DIA. DEEP SUMP CATCH BASIN, TYPE 'D' GRATE, RIM=511.68 |
| PIPE NO. | STATION & OFFSET | COMMENTS |
| P-1 | 101+79.6, 20.2' LT - 101+71.7, 17.6' RT | NEW 18"x 43' CPEP (SL), INV (OUT) 504.65, INV (OUT) 503.79 WITH CPEPES |
| P-2 | 101+71.7, 17.6' RT - 101+16.0, 56.5' RT | NEW 18"x 32' CPEP (SL), INV (IN) 503.29, INV (OUT) 502.65 WITH CPEPES |
| P-3 | 32+38.6, 25.3' RT - 32+66.7, 50.9' RT | NEW 18"x 25' CPEP (SL), INV (IN) 506.00, INV (OUT) 505.50 WITH CPEPES |

NOTES:
 1. PRIOR TO PROJECT COMPLETION, CONTRACTOR SHALL FLUSH ALL STORM DRAIN PIPES AND REMOVE ALL SEDIMENT FROM DRAINAGE STRUCTURES. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ALL OTHER DRAINAGE ITEMS



| | | | |
|-----------------|--------------------|---------------------|---------------|
| PROJECT NAME: | WATERBURY | PLOT DATE: | 9-SEP-2022 |
| PROJECT NUMBER: | BO 1446(40) | DRAWN BY: | P. ARMATA |
| FILE NAME: | z93j040bdr_drm.dgn | CHECKED BY: | K. RICHARDSON |
| PROJECT LEADER: | T. KNIGHT | SHEET | 17 OF 44 |
| DESIGNED BY: | T. LUTHER | DRAINAGE PLAN SHEET | |



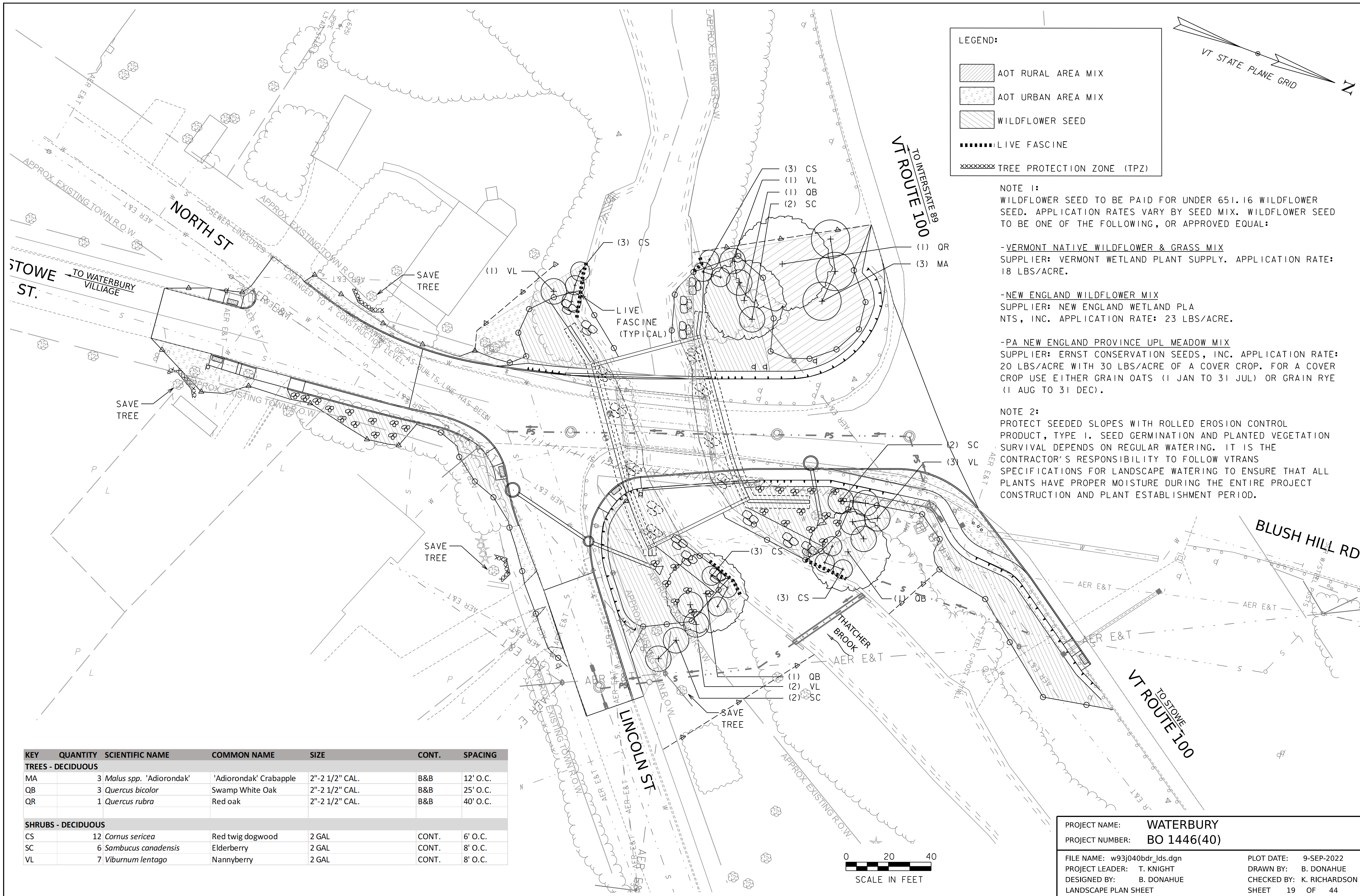
- DURABLE 4 INCH WHITE LINE, EPOXY PAINT**
 30+81 - 32+78, LT (EDGE LINE TO VT 100)
 30+95 - 31+34, RT (EDGE LINE)
 31+70 - 34+47, RT (EDGE LINE TO VT 100)
 31+97 - 32+97, RT (LANE LINE)
 101+46 - 101+46, LT (EDGE LINE)
 101+47 - 101+82 RT (EDGE LINE)
- DURABLE 8 INCH WHITE LINE, EPOXY PAINT**
 30+87 - 101+93, RT
 101+82 - 101+37, LT
- DURABLE 4 INCH YELLOW LINE, EPOXY PAINT**
 29+50 - 31+24, CL
 31+68 - 32+99, CL
 101+36 - 101+78 CL
- DURABLE CROSSWALK MARKING, EPOXY PAINT**
 29+82, LT-RT
 101+88, LT-RT
- DURABLE 24 INCH STOP BAR, EPOXY PAINT**
 32+98, RT
 101+80, RT
- DURABLE LETTER OR SYMBOL, EPOXY PAINT**
 32+02, RT (ARROW)
 32+02, RT (DBL ARROW)
 32+79, RT (ARROW)
 32+79, RT (DBL ARROW)

- REMOVING SIGNS**
AS SHOWN - 14
- RESETTING SIGNS**
AS SHOWN - 2

- SIGN LEGEND**
- N = NEW
 - R = REMOVE
 - R&RES = REMOVE & RESET
 - RES = RESET SIGN
 - RET = RETAIN
 - B-B = BACK TO BACK

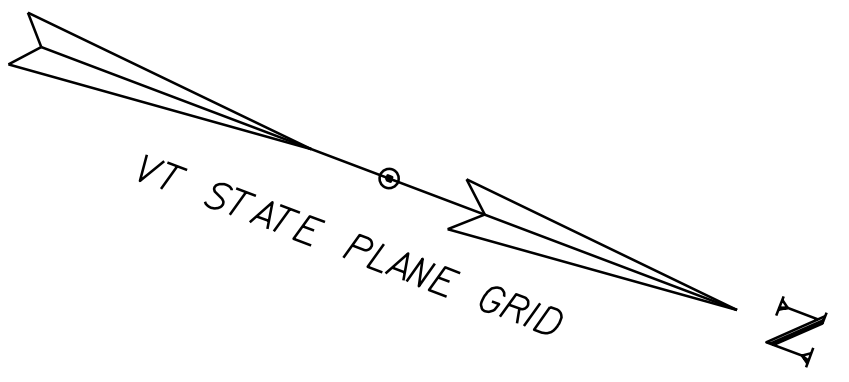


| | |
|---|--------------------|
| PROJECT NAME: | WATERBURY |
| PROJECT NUMBER: | BO 1446(40) |
| FILE NAME: | z93j040bdr_sgn.dgn |
| PROJECT LEADER: | T. KNIGHT |
| DESIGNED BY: | T. LUTHER |
| SIGNING AND PAVEMENT MARKING PLAN SHEET | |
| PLOT DATE: | 9-SEP-2022 |
| DRAWN BY: | P. ARMATA |
| CHECKED BY: | K. RICHARDSON |
| SHEET | 18 OF 44 |



LEGEND:

- AOT RURAL AREA MIX
- AOT URBAN AREA MIX
- WILDFLOWER SEED
- LIVE FASCINE
- TREE PROTECTION ZONE (TPZ)



NOTE 1:
 WILDFLOWER SEED TO BE PAID FOR UNDER 651.16 WILDFLOWER SEED. APPLICATION RATES VARY BY SEED MIX. WILDFLOWER SEED TO BE ONE OF THE FOLLOWING, OR APPROVED EQUAL:

-VERMONT NATIVE WILDFLOWER & GRASS MIX
 SUPPLIER: VERMONT WETLAND PLANT SUPPLY. APPLICATION RATE: 18 LBS/ACRE.

-NEW ENGLAND WILDFLOWER MIX
 SUPPLIER: NEW ENGLAND WETLAND PLANTS, INC. APPLICATION RATE: 23 LBS/ACRE.

-PA NEW ENGLAND PROVINCE UPL MEADOW MIX
 SUPPLIER: ERNST CONSERVATION SEEDS, INC. APPLICATION RATE: 20 LBS/ACRE WITH 30 LBS/ACRE OF A COVER CROP. FOR A COVER CROP USE EITHER GRAIN OATS (1 JAN TO 31 JUL) OR GRAIN RYE (1 AUG TO 31 DEC).

NOTE 2:
 PROTECT SEEDED SLOPES WITH ROLLED EROSION CONTROL PRODUCT, TYPE I. SEED GERMINATION AND PLANTED VEGETATION SURVIVAL DEPENDS ON REGULAR WATERING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW VTRANS SPECIFICATIONS FOR LANDSCAPE WATERING TO ENSURE THAT ALL PLANTS HAVE PROPER MOISTURE DURING THE ENTIRE PROJECT CONSTRUCTION AND PLANT ESTABLISHMENT PERIOD.

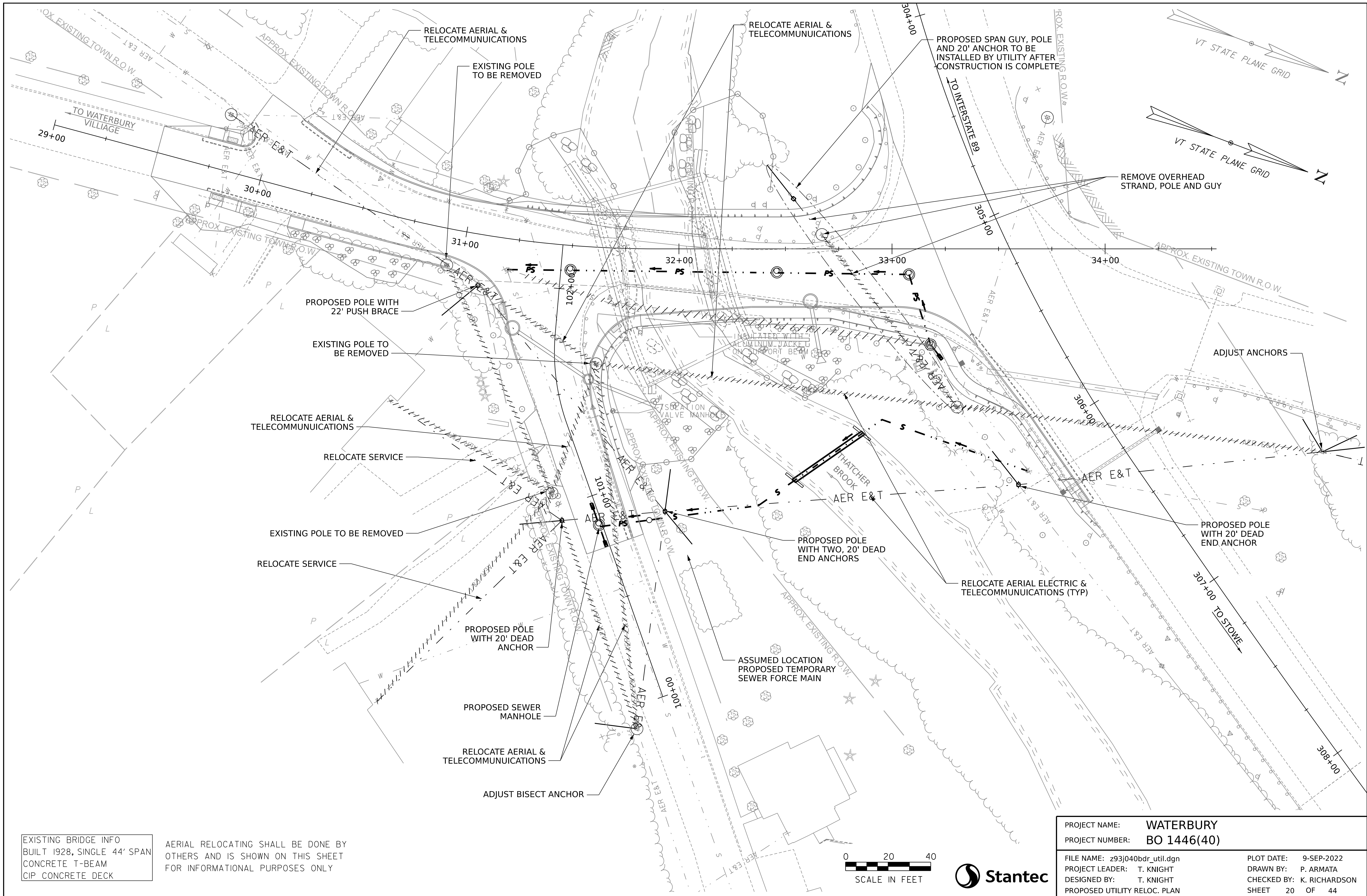
| KEY | QUANTITY | SCIENTIFIC NAME | COMMON NAME | SIZE | CONT. | SPACING |
|---------------------------|----------|--------------------------------|------------------------|----------------|-------|----------|
| TREES - DECIDUOUS | | | | | | |
| MA | 3 | <i>Malus spp. 'Adiorondak'</i> | 'Adiorondak' Crabapple | 2"-2 1/2" CAL. | B&B | 12' O.C. |
| QB | 3 | <i>Quercus bicolor</i> | Swamp White Oak | 2"-2 1/2" CAL. | B&B | 25' O.C. |
| QR | 1 | <i>Quercus rubra</i> | Red oak | 2"-2 1/2" CAL. | B&B | 40' O.C. |
| SHRUBS - DECIDUOUS | | | | | | |
| CS | 12 | <i>Cornus sericea</i> | Red twig dogwood | 2 GAL | CONT. | 6' O.C. |
| SC | 6 | <i>Sambucus canadensis</i> | Elderberry | 2 GAL | CONT. | 8' O.C. |
| VL | 7 | <i>Viburnum lentago</i> | Nannyberry | 2 GAL | CONT. | 8' O.C. |



PROJECT NAME: **WATERBURY**
 PROJECT NUMBER: **BO 1446(40)**

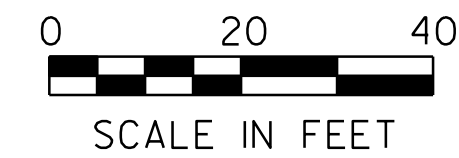
FILE NAME: w93j040bdr_ids.dgn
 PROJECT LEADER: T. KNIGHT
 DESIGNED BY: B. DONAHUE
 LANDSCAPE PLAN SHEET

PLOT DATE: 9-SEP-2022
 DRAWN BY: B. DONAHUE
 CHECKED BY: K. RICHARDSON
 SHEET 19 OF 44



EXISTING BRIDGE INFO
 BUILT 1928, SINGLE 44' SPAN
 CONCRETE T-BEAM
 CIP CONCRETE DECK

AERIAL RELOCATING SHALL BE DONE BY
 OTHERS AND IS SHOWN ON THIS SHEET
 FOR INFORMATIONAL PURPOSES ONLY



PROJECT NAME: **WATERBURY**
 PROJECT NUMBER: **BO 1446(40)**

FILE NAME: z93j040bdr_util.dgn
 PROJECT LEADER: T. KNIGHT
 DESIGNED BY: T. KNIGHT
 PROPOSED UTILITY RELOC. PLAN

PLOT DATE: 9-SEP-2022
 DRAWN BY: P. ARMATA
 CHECKED BY: K. RICHARDSON
 SHEET 20 OF 44

ITEM 900.620 SPECIAL PROVISION
(SANITARY SEWER MANHOLE, ALL-INCLUSIVE) (4' I.D.)

- ① STA. 31+50, 11.5' RT. (SMH #1)
CONSTRUCT NEW PRECAST CONCRETE SANITARY SEWER MANHOLE WITH NEW CAST IRON FRAME AND COVER
- ② STA. 32+46, 11.0' RT. (SMH #2)
CONSTRUCT NEW PRECAST CONCRETE SANITARY SEWER MANHOLE WITH NEW CAST IRON FRAME AND COVER
- ③ STA. 33+08, 12.0' RT. (SMH #3)
CONSTRUCT NEW PRECAST CONCRETE SANITARY SEWER MANHOLE WITH NEW CAST IRON FRAME AND COVER
- ④ STA. 33+17, 45' RT. (SMH #4)
CONSTRUCT NEW PRECAST CONCRETE SANITARY SEWER MANHOLE WITH NEW CAST IRON FRAME AND COVER
- ⑤ STA. 100+86, 1.5' LT. (SMH #5)
CONSTRUCT NEW PRECAST CONCRETE SANITARY SEWER MANHOLE WITH NEW CAST IRON FRAME AND COVER

ITEM 900.640 SPECIAL PROVISION
(SDR 35 PVC SEWER PIPE, ALL-INCLUSIVE) (8")

- ⑥ STA. 31+22, 14' RT. TO STA. 31+50, 11.5' RT.
INSTALL 30 LF X 8" SDR 35 PVC SEWER PIPE (SMH #199 TO SMH #1)
- ⑦ STA. 32+46, 11.0' RT. TO STA. 33+08, 12.0' RT.
INSTALL 62 LF X 8" SDR 35 PVC SEWER PIPE (SMH #2 TO SMH #3)
- ⑧ STA. 33+08, 12.0' RT. TO STA. 33+17, 45' RT.
INSTALL 34 LF X 8" SDR 35 PVC SEWER PIPE (SMH #3 TO SMH #4)
- ⑨ STA. 33+17, 45' RT. TO STA. 33+23, 52' RT.
INSTALL 10 LF X 8" SDR 35 PVC SEWER PIPE STUB. CONNECT TO EXISTING 8" PVC SEWER MAIN WITH 8" FLEXIBLE RUBBER TRANSITION COUPLING
- ⑩ STA. 100+86, 1.5' LT. TO STA. 100+80, 21.5' RT.
INSTALL 23 LF X 8" SDR 35 PVC SEWER PIPE (SMH #4 TO NEW SEWER CLEANOUT)
- ⑪ STA. 100+76, 1.5' LT. TO STA. 100+86, 1.5' LT.
INSTALL 10 LF X 8" SDR 35 PVC SEWER PIPE STUB CONNECT TO EXISTING 8" PVC SEWER MAIN WITH 8" FLEXIBLE RUBBER TRANSITION COUPLING
- ⑫ STA. 100+86, 1.5' LT. TO STA. 100+96, 1.5' LT.
INSTALL 10 LF X 8" SDR 35 PVC SEWER PIPE STUB CONNECT TO EXISTING 8" PVC SEWER MAIN WITH 8" FLEXIBLE RUBBER TRANSITION COUPLING

ITEM 900.640 SPECIAL PROVISION
(PRE-INSULATED DR 25 C900 PVC SEWER PIPE, ALL-INCLUSIVE) (10")

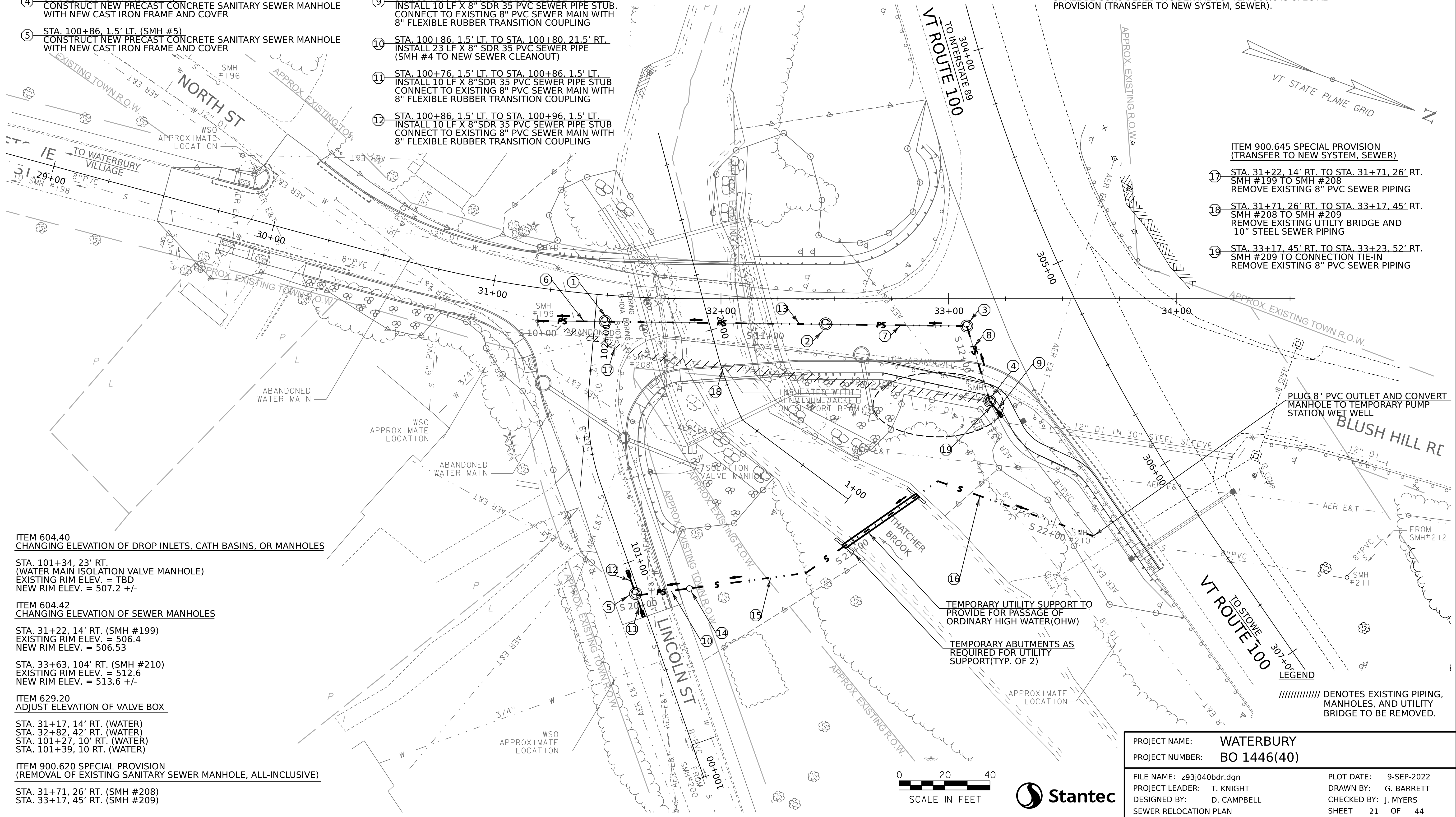
- ⑬ STA. 31+50, 11.5' RT. TO STA. 32+46, 11.0' RT.
INSTALL 97 LF X 10" PRE-INSULATED DR 25 C900 PVC SEWER PIPE (SMH #1 TO SMH #2)
- ITEM 900.620 SPECIAL PROVISION
(SANITARY SEWER CLEANOUT, ALL-INCLUSIVE) (6")
- ⑭ STA. 100+80, 21.5' RT.
CONSTRUCT NEW 6" SANITARY SEWER CLEANOUT

ITEM 900.645 SPECIAL PROVISION
(TRANSFER TO NEW SYSTEM, SEWER)

- ⑮ STA. 100+80, 21.5' RT. TO STA. 33+63, 104' RT.
(NEW SEWER CLEANOUT TO SMH #210) CONTRACTOR SHALL MAINTAIN EXISTING SEWAGE SYSTEM FLOWS DURING CONSTRUCTION OF THE RELOCATED SANITARY SEWER MAINS AND SANITARY SEWER MANHOLES. SEE SPECIAL PROVISIONS FOR DETAILS. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.645 SPECIAL PROVISION (TRANSFER TO NEW SYSTEM, SEWER).
- ⑯ STA. 100+80, 21.5' RT. TO STA. 33+63, 104' RT.
INSTALL TEMPORARY SEWER BYPASS FORCE MAIN AS REQUIRED BETWEEN NEW SEWER CLEANOUT AND SMH #210. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.645 SPECIAL PROVISION (TRANSFER TO NEW SYSTEM, SEWER).

ITEM 900.645 SPECIAL PROVISION
(TRANSFER TO NEW SYSTEM, SEWER)

- ⑰ STA. 31+22, 14' RT. TO STA. 31+71, 26' RT.
SMH #199 TO SMH #208
REMOVE EXISTING 8" PVC SEWER PIPING
- ⑱ STA. 31+71, 26' RT. TO STA. 33+17, 45' RT.
SMH #208 TO SMH #209
REMOVE EXISTING UTILITY BRIDGE AND 10" STEEL SEWER PIPING
- ⑲ STA. 33+17, 45' RT. TO STA. 33+23, 52' RT.
SMH #209 TO CONNECTION TIE-IN
REMOVE EXISTING 8" PVC SEWER PIPING



ITEM 604.40
CHANGING ELEVATION OF DROP INLETS, CATH BASINS, OR MANHOLES

STA. 101+34, 23' RT.
(WATER MAIN ISOLATION VALVE MANHOLE)
EXISTING RIM ELEV. = TBD
NEW RIM ELEV. = 507.2 +/-

ITEM 604.42
CHANGING ELEVATION OF SEWER MANHOLES

STA. 31+22, 14' RT. (SMH #199)
EXISTING RIM ELEV. = 506.4
NEW RIM ELEV. = 506.53

STA. 33+63, 104' RT. (SMH #210)
EXISTING RIM ELEV. = 512.6
NEW RIM ELEV. = 513.6 +/-

ITEM 629.20
ADJUST ELEVATION OF VALVE BOX

STA. 31+17, 14' RT. (WATER)
STA. 32+82, 42' RT. (WATER)
STA. 101+27, 10' RT. (WATER)
STA. 101+39, 10 RT. (WATER)

ITEM 900.620 SPECIAL PROVISION
(REMOVAL OF EXISTING SANITARY SEWER MANHOLE, ALL-INCLUSIVE)

STA. 31+71, 26' RT. (SMH #208)
STA. 33+17, 45' RT. (SMH #209)

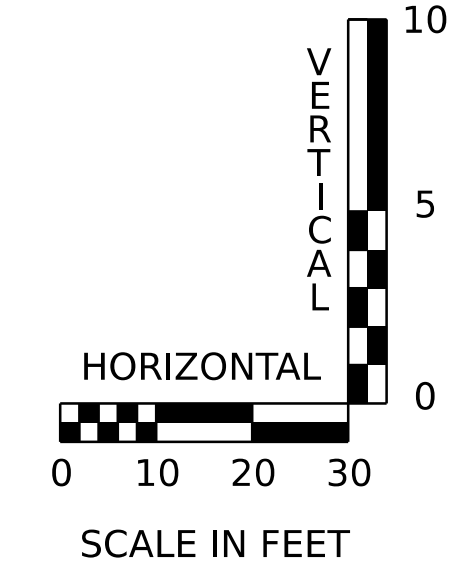
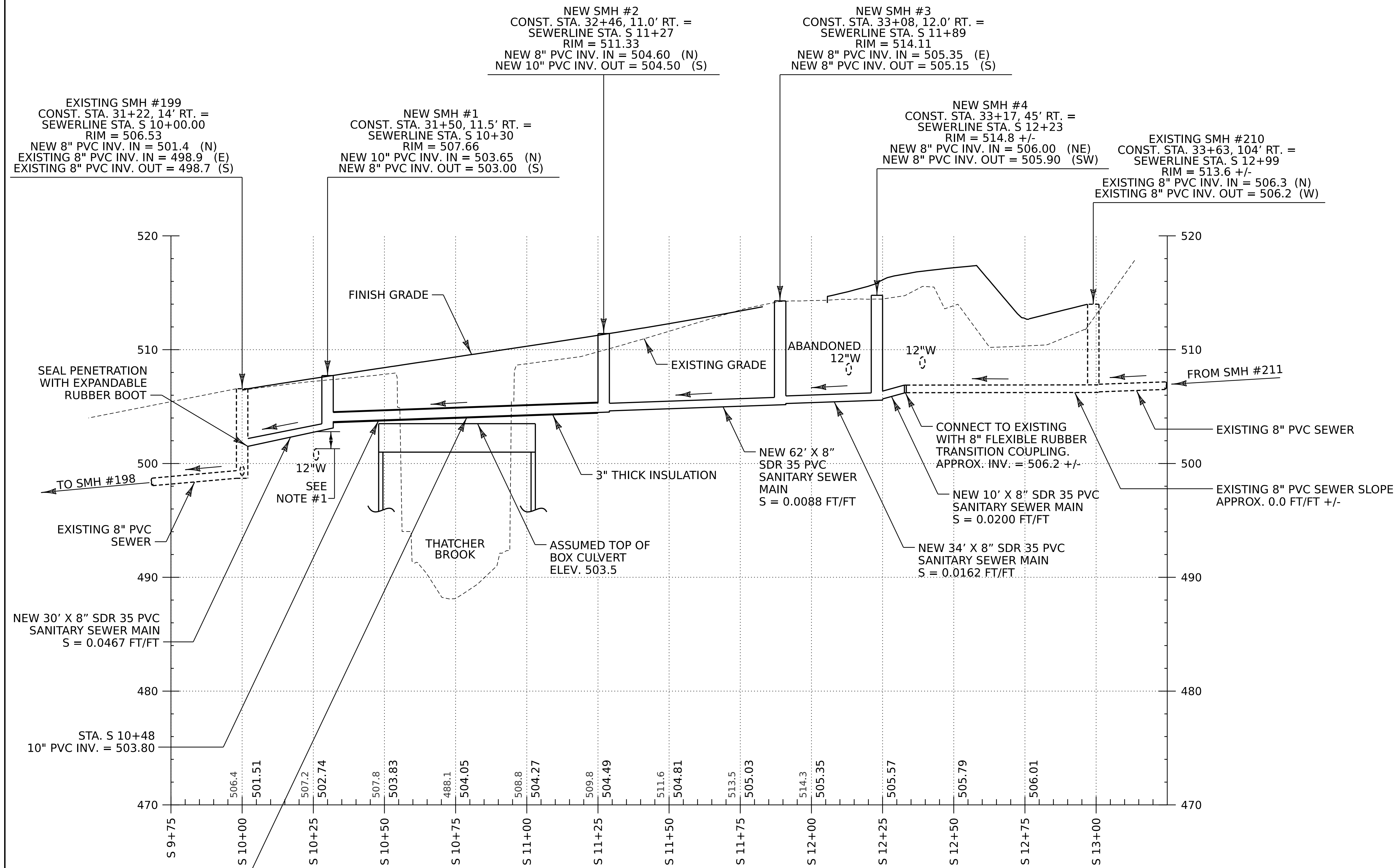
PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040bdr.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: D. CAMPBELL
SEWER RELOCATION PLAN

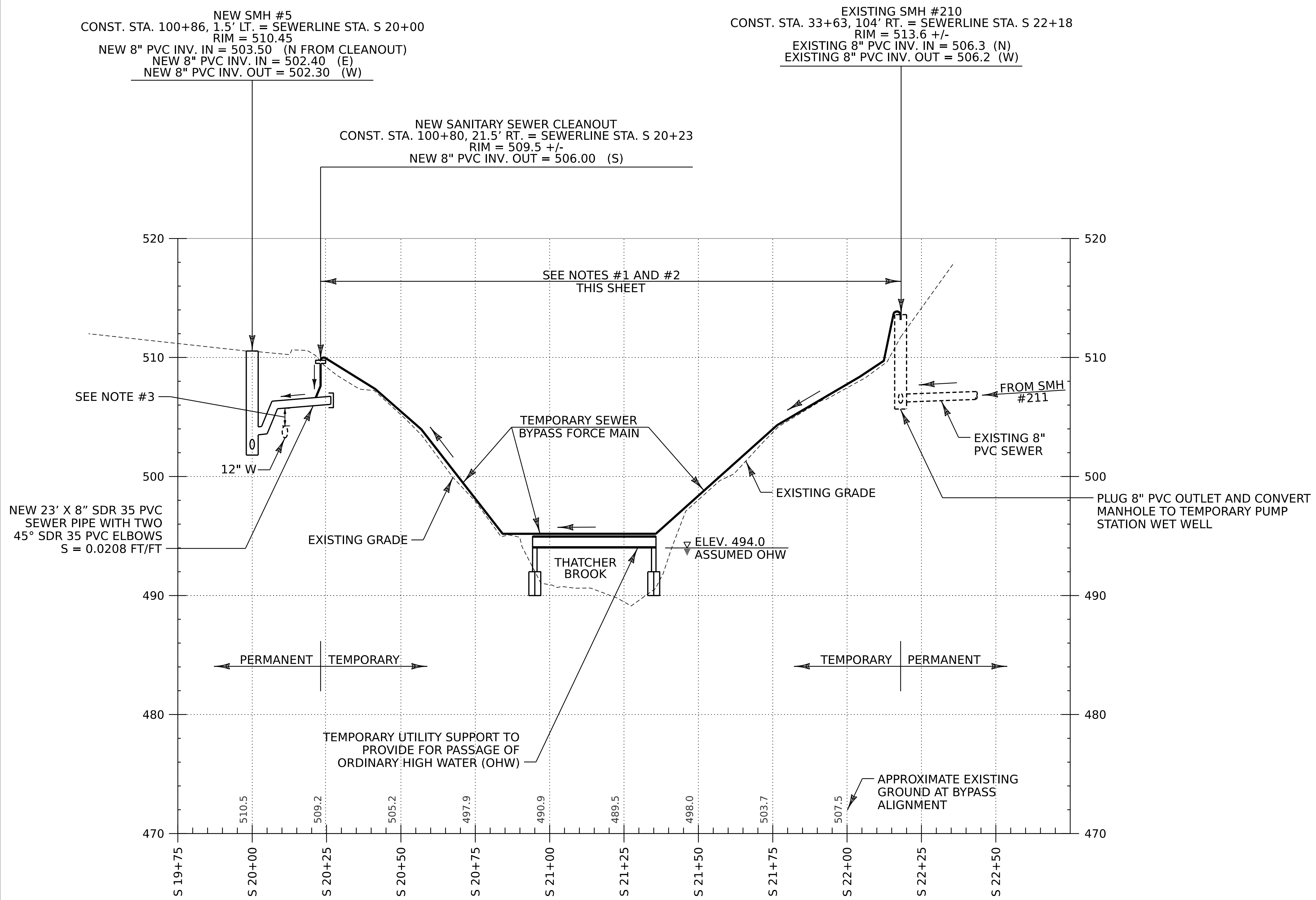
PLOT DATE: 9-SEP-2022
DRAWN BY: G. BARRETT
CHECKED BY: J. MYERS
SHEET 21 OF 44



NOTE:
1. MAINTAIN 18" MINIMUM VERTICAL SEPARATION.

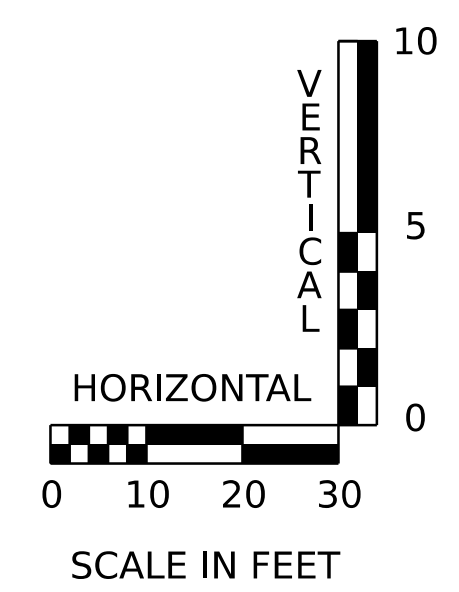


| | | | |
|----------------------|------------------------------|-------------|----------------|
| PROJECT NAME: | WATERBURY | | |
| PROJECT NUMBER: | BO 1446(40) | | |
| FILE NAME: | z93j040_UTILITY Geometry.dgn | PLOT DATE: | 9-SEP-2022 |
| PROJECT LEADER: | T. KNIGHT | DRAWN BY: | G. BARRETT |
| DESIGNED BY: | D. CAMPBELL | CHECKED BY: | J. MYERS |
| SEWER PROFILE (SP-1) | | | SHEET 22 OF 44 |

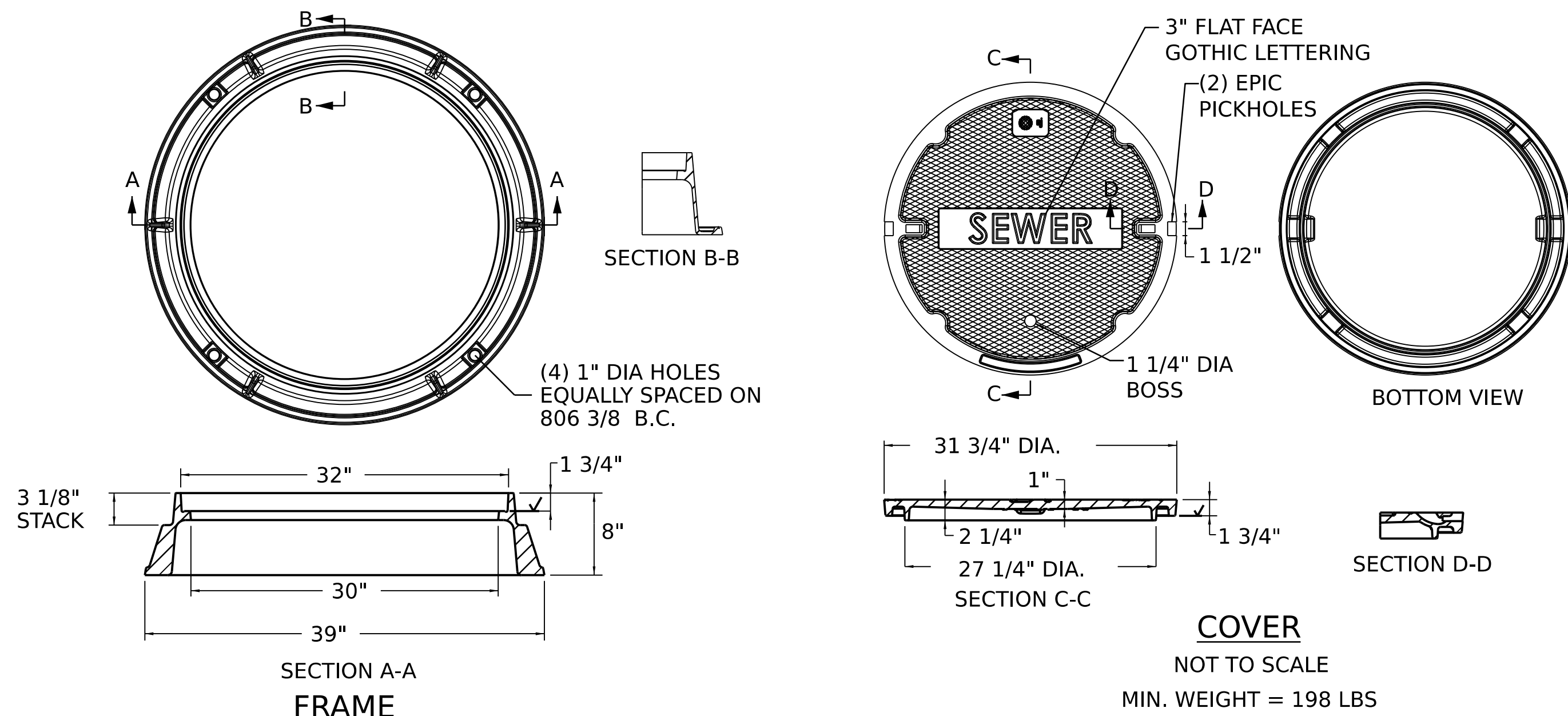


NEW SEWER MAIN PROFILE
 WITH SUGGESTED TEMPORARY SEWER
 BYPASS FORCE MAIN

- NOTES:
1. CONTRACTOR SHALL MAINTAIN EXISTING SEWAGE SYSTEM FLOWS DURING CONSTRUCTION OF THE RELOCATED SANITARY SEWER MAINS AND SANITARY SEWER MANHOLES. SEE SPECIAL PROVISIONS FOR DETAILS. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.645 SPECIAL PROVISION (TRANSFER TO NEW SYSTEM, SEWER).
 2. INSTALL TEMPORARY SEWER BYPASS FORCE MAIN AS REQUIRED BETWEEN NEW SEWER CLEANOUT AND SMH #210. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.645 SPECIAL PROVISION (TRANSFER TO NEW SYSTEM, SEWER).
 3. MAINTAIN 18" MINIMUM VERTICAL SEPARATION.



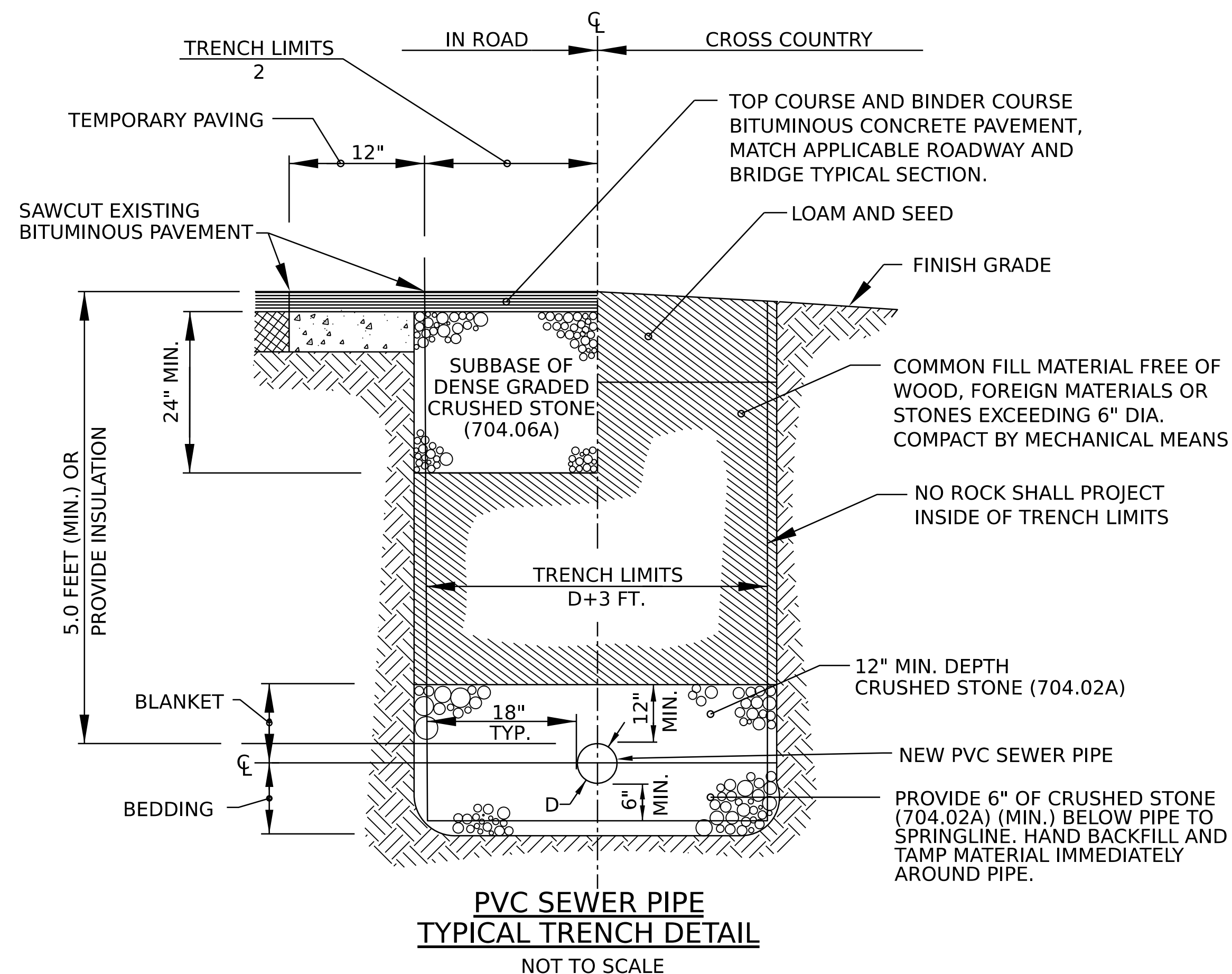
| | | | |
|----------------------|------------------------------|-------------|----------------|
| PROJECT NAME: | WATERBURY | | |
| PROJECT NUMBER: | BO 1446(40) | | |
| FILE NAME: | z93j040_Utility Geometry.dgn | PLOT DATE: | 9-SEP-2022 |
| PROJECT LEADER: | T. KNIGHT | DRAWN BY: | G. BARRETT |
| DESIGNED BY: | D. CAMPBELL | CHECKED BY: | J. MYERS |
| SEWER PROFILE (SP-2) | | | SHEET 23 OF 44 |



**SANITARY SEWER MANHOLE
FRAME AND COVER DETAIL**
NOT TO SCALE

NOTES:

1. SANITARY SEWER MANHOLE CAST IRON FRAMES AND COVERS SHALL BE GRAY IRON (CL35B), HEAVY DUTY H-20 LOAD RATED, AND MEETING ASTM A48 WITH EPIC PICKHOLES IN THE COVER. THE WORD "SEWER" SHALL BE CAST INTO A DIAMOND DESIGN ON THE TOP SURFACE OF THE COVER. SANITARY SEWER MANHOLE FRAME AND COVER SHALL BE EJ GROUP (FORMERLY EAST JORDAN IRON WORKS), PRODUCT NO. 00200811 (FRAME) AND 00200628 (SEWER COVER), OR FORMERLY LEBARON FOUNDRY, NO. LA328-5 (FRAME) AND NO. L32C22 (SEWER COVER), OR APPROVED EQUAL.
2. PAYMENT FOR SANITARY SEWER MANHOLE FRAME AND COVER SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.620 SPECIAL PROVISION (SANITARY SEWER MANHOLE, ALL-INCLUSIVE) (4' I.D.).

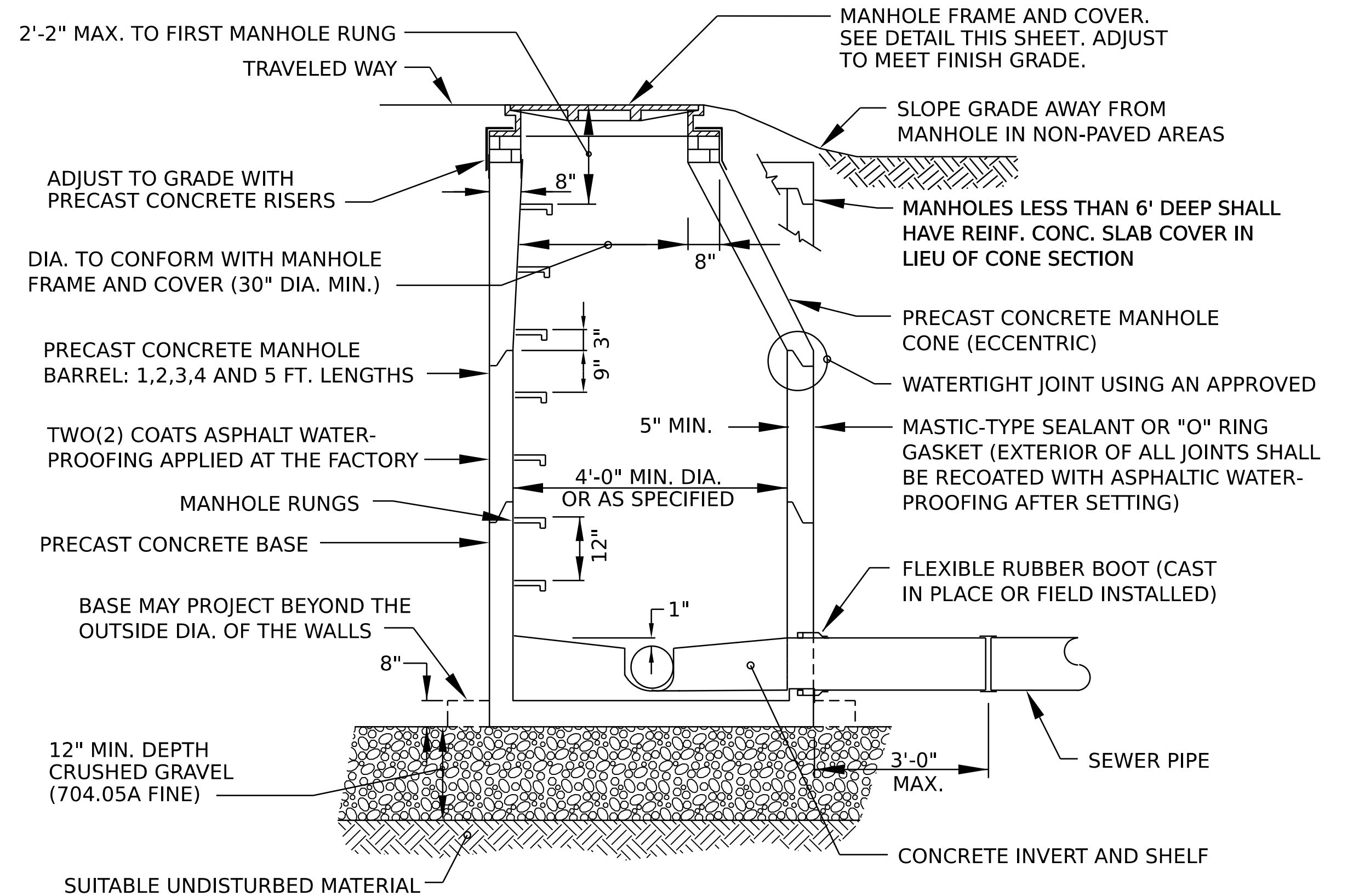


**PVC SEWER PIPE
TYPICAL TRENCH DETAIL**
NOT TO SCALE

PAYMENT FOR NEW PVC SEWER PIPE WILL BE MADE UNDER ITEM 900.640 SPECIAL PROVISION (SDR 35 PVC SEWER PIPE, ALL-INCLUSIVE) OR ITEM 900.640 SPECIAL PROVISION (DR 25 C900 PVC SEWER PIPE, ALL-INCLUSIVE) RESPECTIVE OF THE PVC SEWER PIPE INSTALLED.

NOTES:

1. PAYMENT FOR SAWCUTTING OF EXISTING BITUMINOUS PAVEMENT SHALL BE CONSIDERED INCIDENTAL TO PVC SEWER PIPE, ALL-INCLUSIVE, ITEMS NOTED BELOW LEFT.
2. PAYMENT FOR FURNISHING AND INSTALLING FOUR INCH THICK POLYSTYRENE INSULATION IN CASES WHERE THE SEWER PIPE DEPTH IS LESS THAN 5'-0", SHALL BE CONSIDERED INCIDENTAL TO PVC SEWER PIPE, ALL-INCLUSIVE, ITEMS NOTED BELOW LEFT.
3. PAYMENT FOR TRENCH EXCAVATION SHALL BE CONSIDERED INCIDENTAL TO PVC SEWER PIPE, ALL-INCLUSIVE, ITEMS NOTED BELOW LEFT.
4. PAYMENT FOR REMOVAL OF SOLID ROCK OR BOULDERS GREATER THAN 1 CY WILL BE MADE UNDER ITEM 203.16, SOLID ROCK EXCAVATION.
5. COMPACTION TO BE IN ACCORDANCE WITH SPECIAL PROVISION.

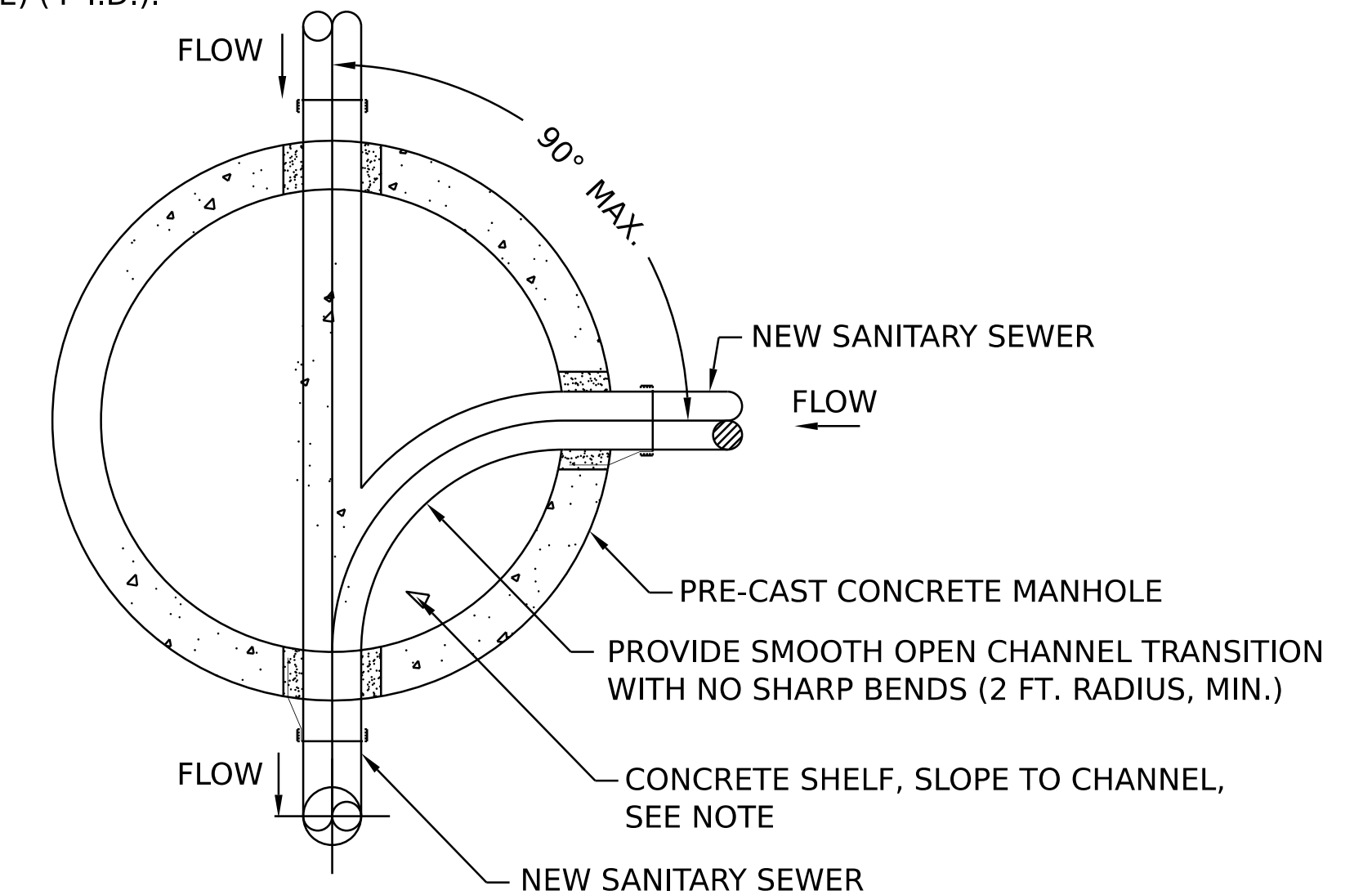


PRECAST CONCRETE SANITARY SEWER MANHOLE
NOT TO SCALE

PAYMENT FOR NEW PRECAST CONCRETE SANITARY SEWER MANHOLE WILL BE MADE UNDER ITEM 900.620 SPECIAL PROVISION (SANITARY SEWER MANHOLE, ALL-INCLUSIVE) (4' I.D.).

NOTES:

1. MANHOLE STRUCTURE TO BE CAPABLE OF SUPPORTING AASHTO H-20 LOADING.
2. PAYMENT FOR TRENCH EXCAVATION SHALL BE INCIDENTAL TO ITEM 900.620 - SPECIAL PROVISION (SANITARY SEWER MANHOLE, ALL INCLUSIVE) (4' I.D.).



TYPICAL SANITARY SEWER MANHOLE CHANNEL
NOT TO SCALE

NOTE:

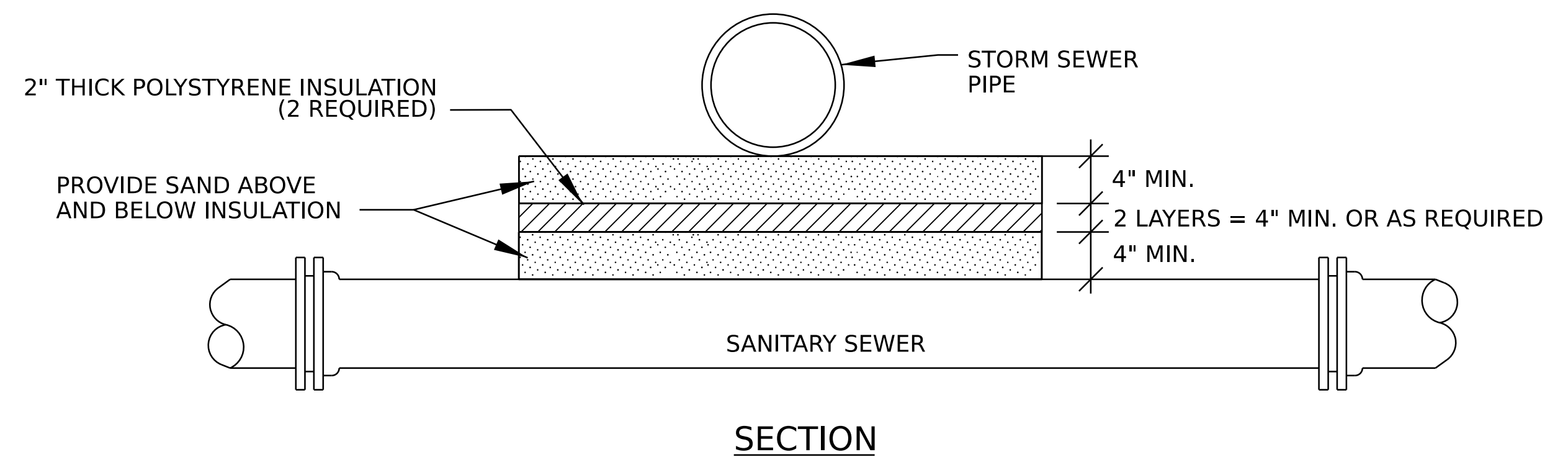
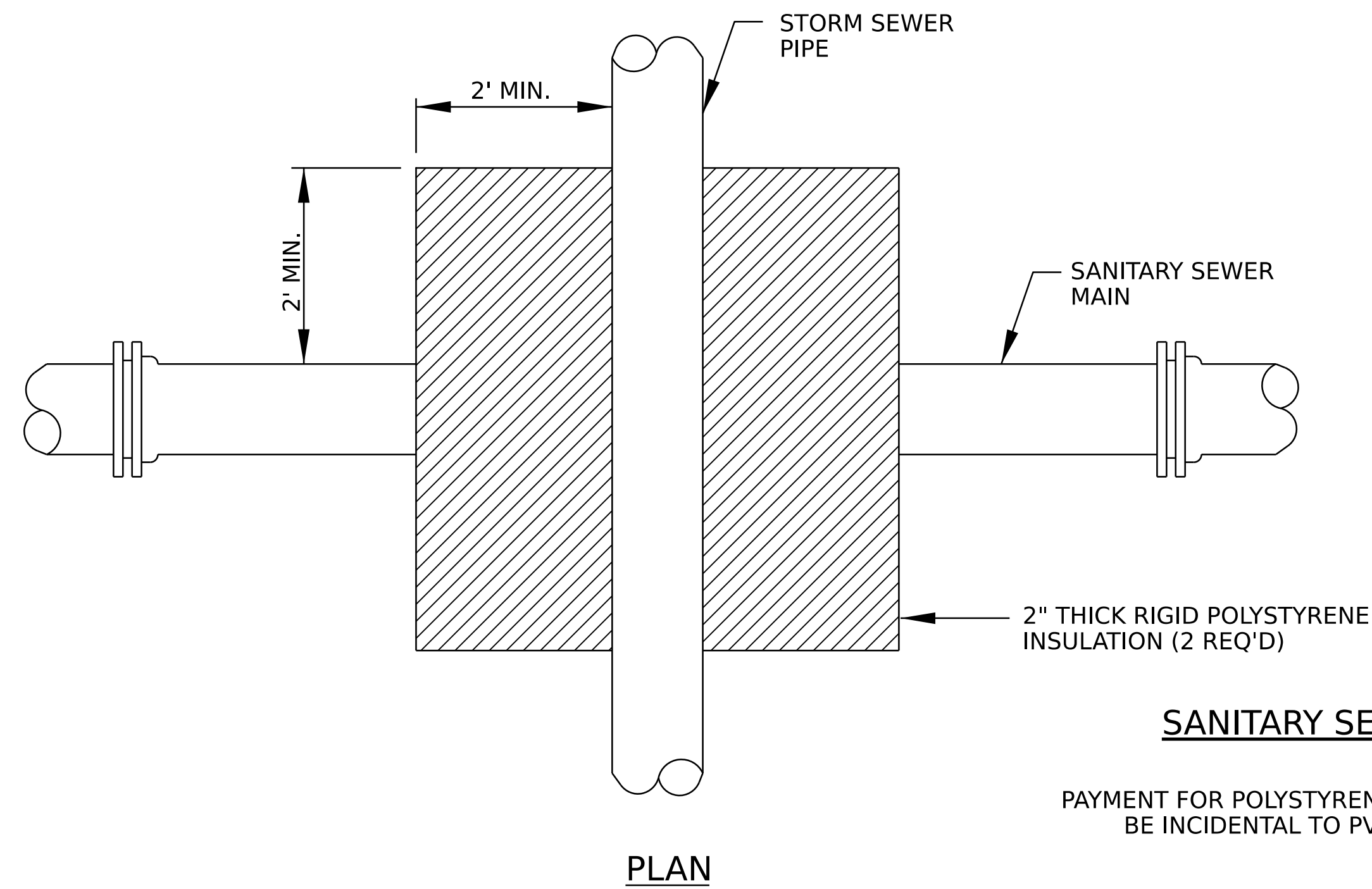
SHelves SHALL BE CONSTRUCTED OF CLASS B CONCRETE, IN ACCORDANCE WITH SECTION 541 OF THE STANDARD SPECIFICATIONS. INVERTS FOR SEWER MANHOLES SHALL BE AS SHOWN ON THE PLANS AND DETAILS, AND SHALL BE CONSTRUCTED OF CLASS B CONCRETE. OR FOR STRAIGHT RUNS, THE INVERT SHALL BE SEGMENTS OF PIPE CUT IN HALF LONGITUDINALLY. INVERTS SHALL HAVE THE EXACT SHAPE AND SLOPE TO THAT OF THE SEWER TO WHICH THEY ARE CONNECTED. ANY CHANGE IN SIZE OR DIRECTION SHALL BE GRADUAL AND EVEN.

PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040det_sewer.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: D. CAMPBELL
SEWER DETAILS SD-1

PLOT DATE: 9-SEP-2022
DRAWN BY: G. BARRETT
CHECKED BY: J. MYERS
SHEET 24 OF 44





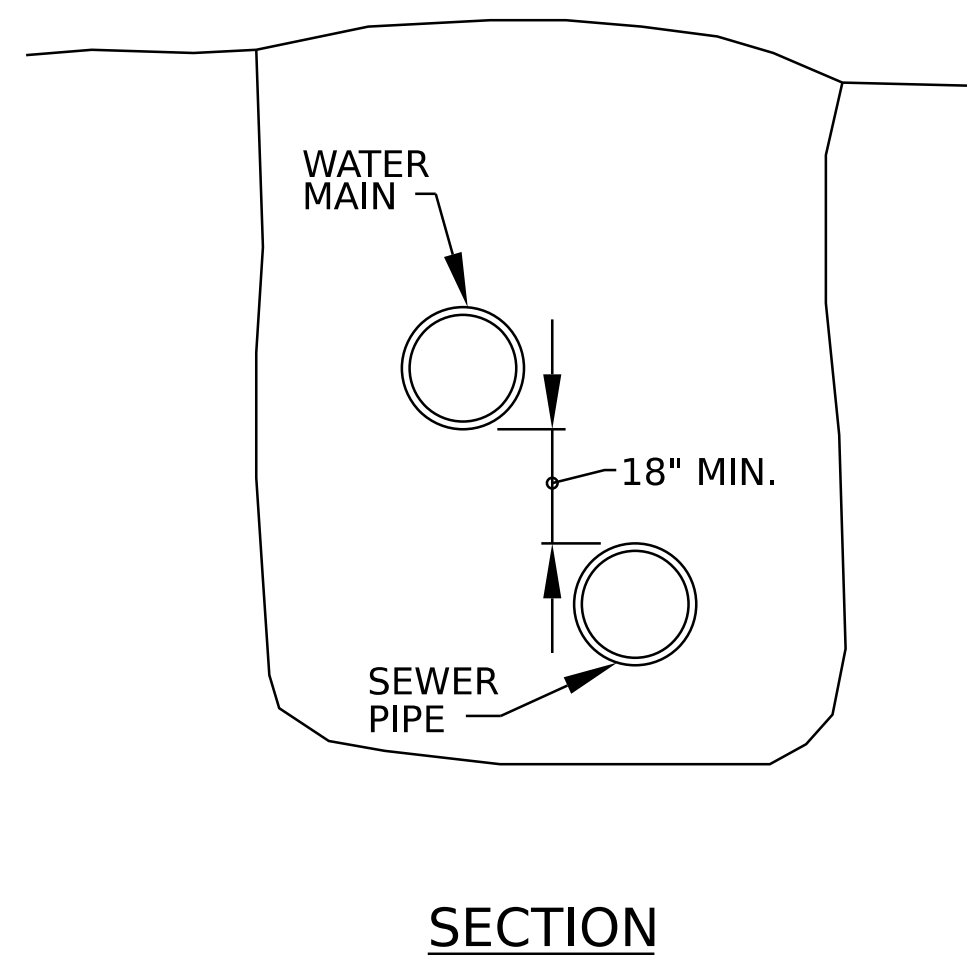
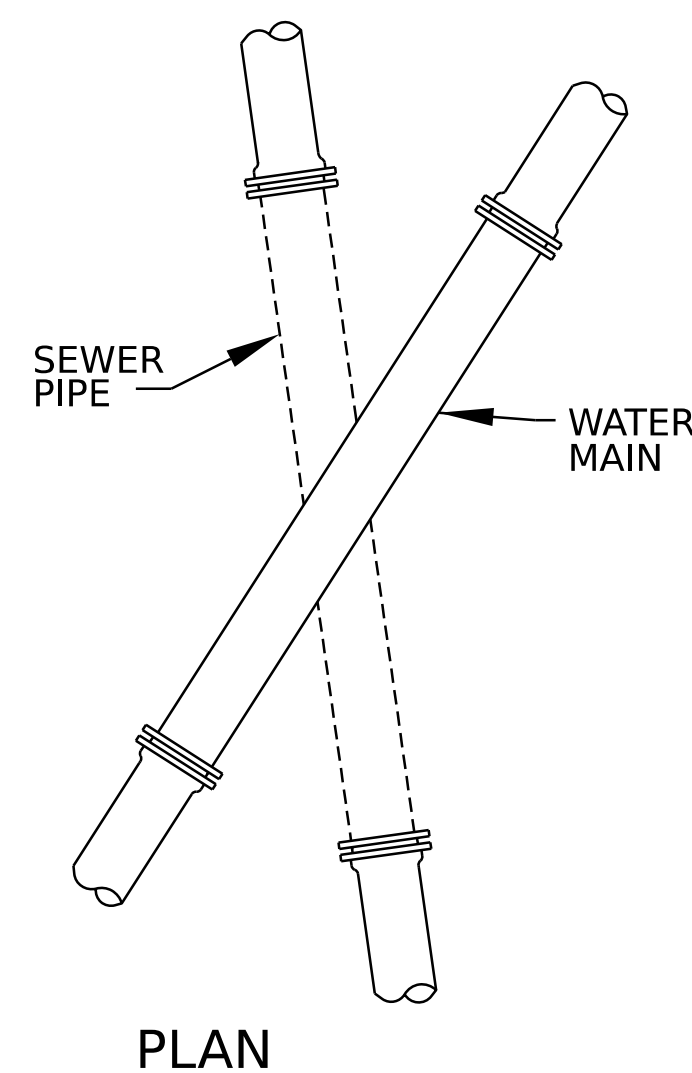
SANITARY SEWER INSULATION DETAIL

NOT TO SCALE

PAYMENT FOR POLYSTYRENE INSULATION AND SAND BLANKET ARE TO BE INCIDENTAL TO PVC SEWER PIPE, ALL-INCLUSIVE, ITEMS.

NOTES:

1. SAND BLANKET MATERIAL SHALL MEET THE REQUIREMENTS OF SUBSECTION 703.03 AND POLYSTYRENE INSULATION BOARD SHALL MEET THE REQUIREMENTS OF SUBSECTION 735.01 AS STATED IN THE VTRANS STANDARD SPECIFICATIONS FOR CONSTRUCTION.
2. INSTALL TWO INCH THICK INSULATION (TWO LAYERS REQ. D=FOUR INCH) WHERE FIVE FOOT OF COVER OVER GRAVITY SEWER CAN NOT BE MAINTAINED, AND SEWER MAIN/STORM PIPECROSSINGS WITH LESS THAN TWO FOOT VERTICAL CLEARANCE AND WHERE SPECIFIED ON PLANS OR PROFILES.



SEWER PIPE AND WATER MAIN CROSSING

NOT TO SCALE

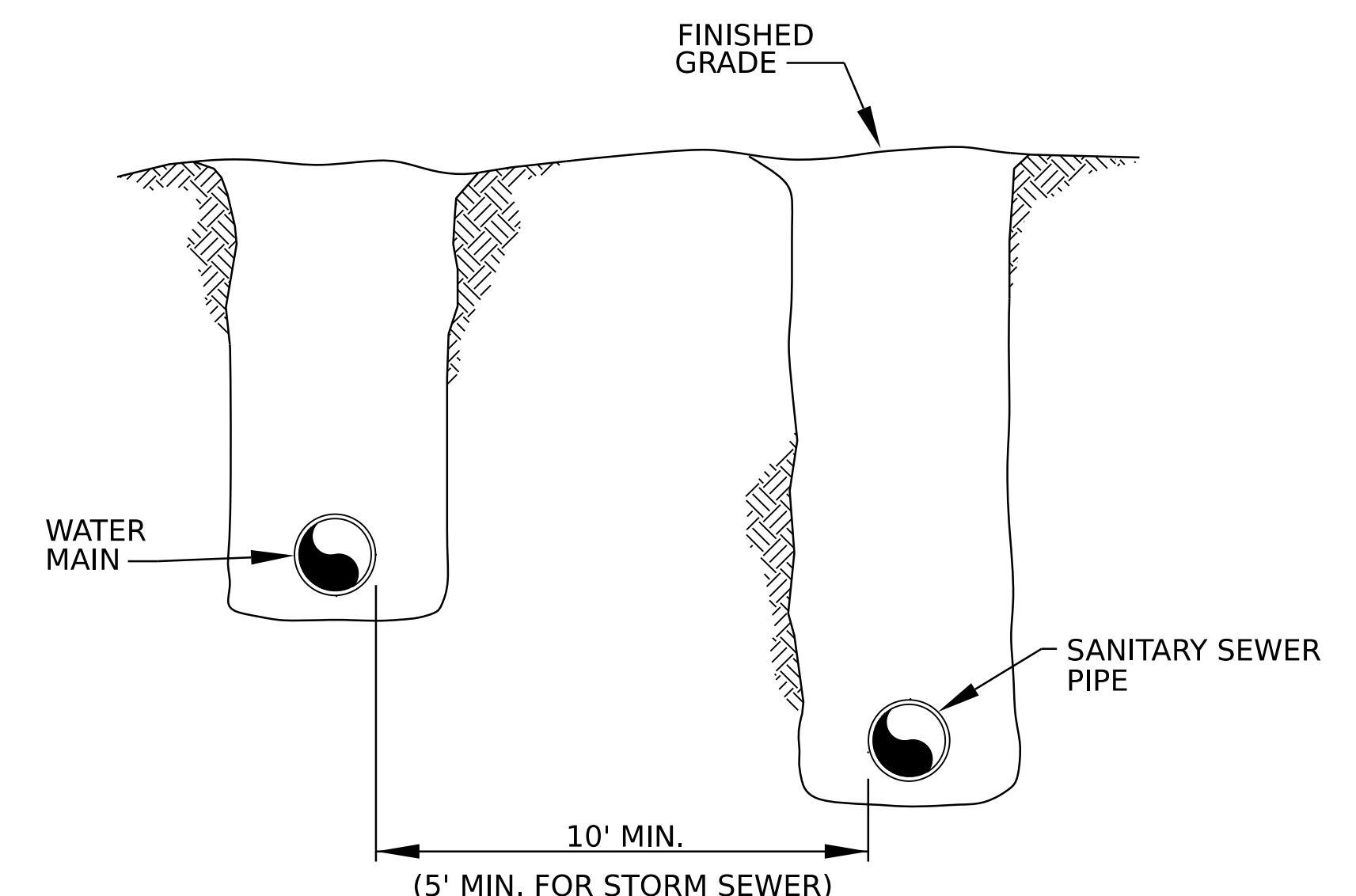
NOTE:

SEWER PIPE SHALL MEAN SANITARY SEWER PIPE OR STORM SEWER PIPE.

NOTE:

SEWERS CROSSING WATER MAINS SHALL BE LAID BENEATH THE WATER MAIN WITH AT LEAST 18 INCHES VERTICAL CLEARANCE BETWEEN THE OUTSIDE OF THE SEWER AND THE OUTSIDE OF THE WATER MAIN. WHEN IT IS IMPOSSIBLE TO MAINTAIN THE 18" VERTICAL SEPARATION:

1. THE CROSSING SHALL BE ARRANGED SO THAT ONE FULL LENGTH OF SEWER PIPE IS CENTERED ABOVE OR BELOW THE WATER LINE WITH SEWER JOINTS AS FAR AS POSSIBLE FROM WATER JOINTS;
2. THE SEWER PIPE MUST BE CONSTRUCTED TO WATER MAIN STANDARDS FOR A MINIMUM DISTANCE OF 20 FEET EITHER SIDE OF THE CROSSING OR A TOTAL OF THREE PIPE LENGTHS, WHICHEVER IS GREATER;
3. THE SECTION CONSTRUCTED TO WATER MAIN STANDARDS MUST BE PRESSURE TESTED TO MAINTAIN 50 PSI FOR 15 MINUTES WITHOUT LEAKAGE PRIOR TO BACKFILLING BEYOND ONE FOOT ABOVE THE PIPE TO ASSURE WATER TIGHTNESS;
4. WHERE A WATER MAIN CROSSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT DAMAGE TO THE WATER MAIN.

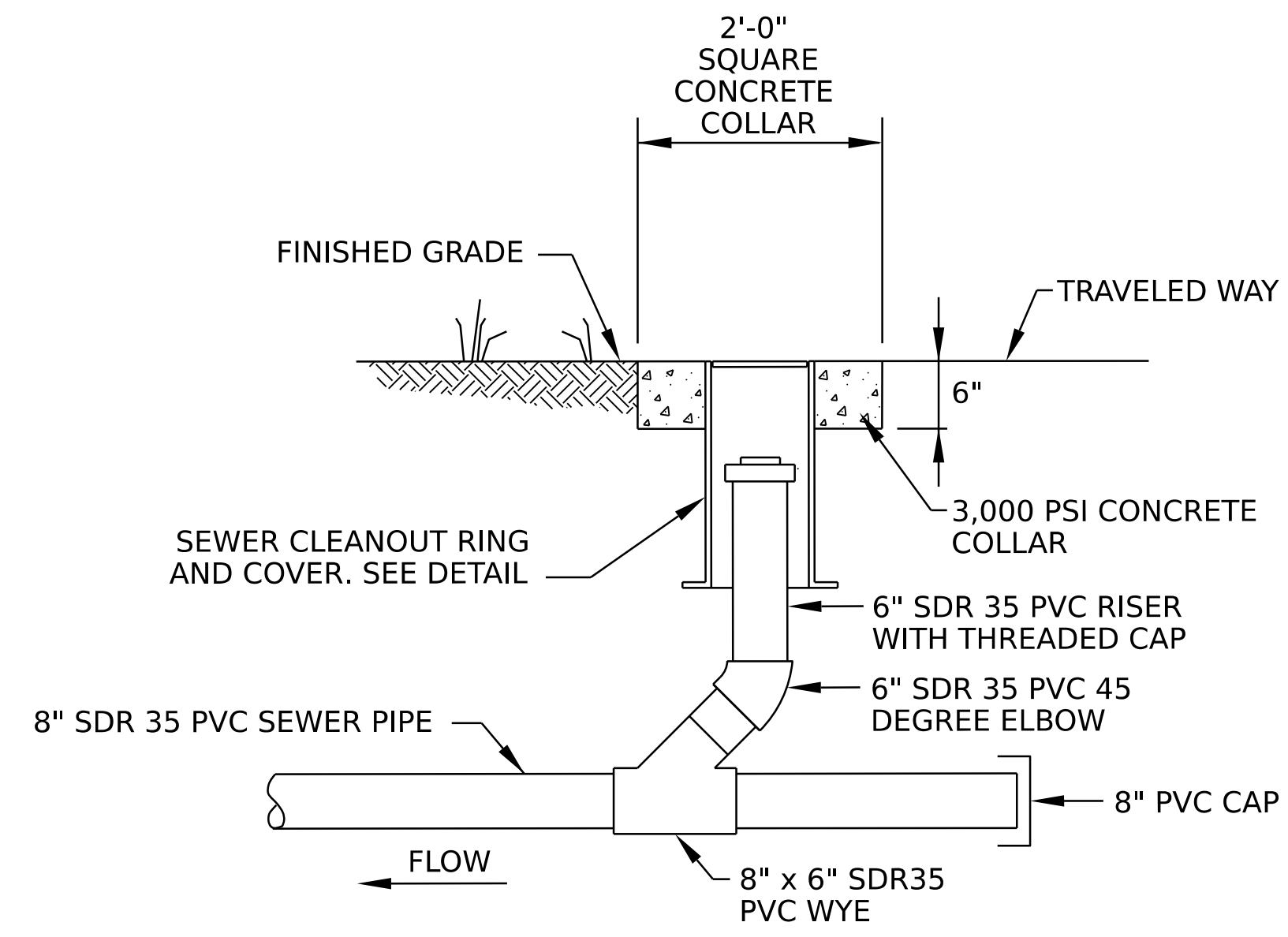


SEWER-WATER PARALLEL INSTALLATION

NOT TO SCALE



| | | | |
|--------------------|----------------------|--------------|----------------|
| PROJECT NAME: | WATERBURY | PLOT DATE: | 9-SEP-2022 |
| PROJECT NUMBER: | BO 1446(40) | DRAWN BY: | G. BARRETT |
| FILE NAME: | z93j040det_sewer.dgn | DESIGNED BY: | D. CAMPBELL |
| PROJECT LEADER: | T. KNIGHT | CHECKED BY: | J. MYERS |
| SEWER DETAILS SD-2 | | | SHEET 25 OF 44 |



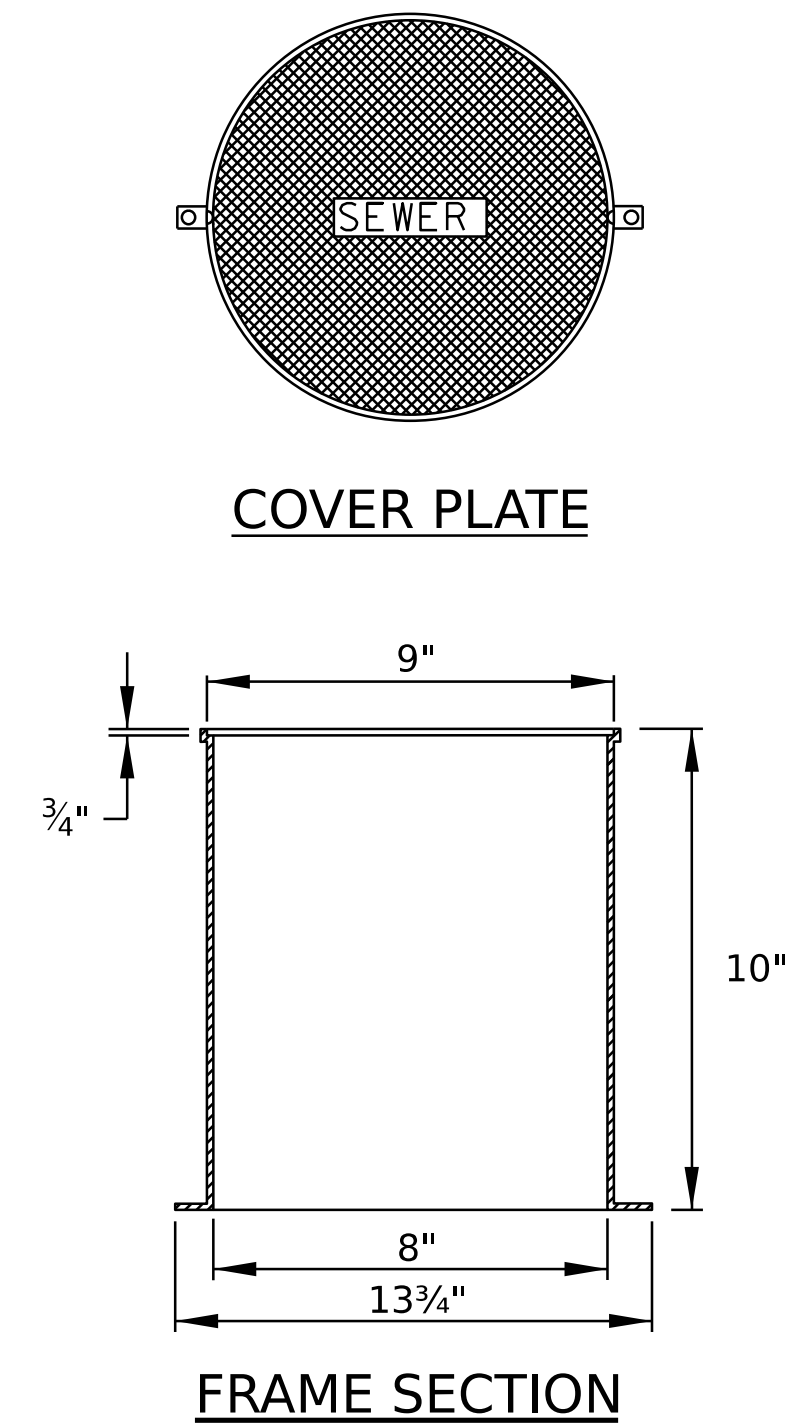
CLEANOUT DETAIL

NOT TO SCALE

PAVEMENT FOR SEWER CLEANOUT INCLUDING PVC WYE, SEWER PIPE, FITTINGS INCLUDING ELBOWS AND CAP, CONCRETE, AND CAST IRON CLEANOUT COVER WILL BE MADE UNDER ITEM 900.620 SPECIAL PROVISION (SANITARY SEWER CLEANOUT, ALL-INCLUSIVE)(6").

NOTES:

1. INSTALL CLEANOUT AT LOCATIONS DEPICTED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
2. CAST IRON SEWER CLEANOUT RING AND COVER SHALL BE GRAY IRON (CL35B), HEAVY DUTY H-20 LOAD RATED, AND MEETING ASTM A48. THE WORD 'SEWER' SHALL BE CAST INTO A DIAMOND DESIGN ON THE TOP SURFACE OF THE COVER. SEWER CLEANOUT RING AND COVER SHALL BE EJ GROUP (FORMERLY EAST JORDAN IRON WORKS), PRODUCT NO. 00157322C01, OR LEBARON FOUNDRY, NO. LA0910, OR APPROVED EQUAL.



COVER PLATE

FRAME SECTION

**SEWER CLEANOUT COVER PLATE
DETAIL**

NOT TO SCALE



PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040det_sewer.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: D. CAMPBELL
SEWER DETAILS SD-3

PLOT DATE: 9-SEP-2022
DRAWN BY: G. BARRETT
CHECKED BY: J. MYERS
SHEET 26 OF 44

| VAOT LOW GROW/FINE FESCUE MIX | | | | | | |
|-------------------------------|-----------|-----------|---------------------|------------------------------|------|--------|
| WEIGHT | LBS/AC | | NAME | LATIN NAME | GERM | PURITY |
| | BROADCAST | HYDROSEED | | | | |
| 38% | 57 | 95 | CREeping RED FESCUE | FESTUCA RUBRA VAR. RUBRA | 90% | 98% |
| 29% | 43.5 | 72.5 | HARD FESCUE | FESTUCA LONGIFOLIA | 85% | 95% |
| 15% | 22.5 | 37.5 | CHEWINGS FESCUE | FESTUCA RUBRA VAR. COMMUTATA | 87% | 95% |
| 15% | 22.5 | 37.5 | ANNUAL RYEGRASS | LOLIUM MULTIFLORUM | 90% | 95% |
| 3% | 4.5 | 7.5 | INERTS | | | |
| 100% | 150 | 250 | | | | |

| VAOT RURAL AREA MIX | | | | | | |
|---------------------|-----------|-----------|---------------------|--------------------------|------|--------|
| WEIGHT | LBS/AC | | NAME | LATIN NAME | GERM | PURITY |
| | BROADCAST | HYDROSEED | | | | |
| 37.5% | 22.5 | 45 | CREeping RED FESCUE | FESTUCA RUBRA VAR. RUBRA | 85% | 98% |
| 37.5% | 22.5 | 45 | TALL FESCUE | FESTUCA ARUNDINACEA | 90% | 95% |
| 5.0% | 3 | 6 | RED TOP | AGROSTIS GIGANTEA | 90% | 95% |
| 15.0% | 9 | 18 | WHITE FIELD CLOVER | TRIFOLIUM REPENS | 85% | 98% |
| 5.0% | 3 | 6 | ANNUAL RYE GRASS | LOLIUM MULTIFLORUM | 85% | 95% |
| 100% | 60 | 120 | | | | |

| GENERAL AMENDMENT GUIDANCE | | |
|----------------------------|-----------|------------|
| FERTILIZER | LIME | |
| 10/20/10 | AG LIME | PELLITIZED |
| 500 LBS/AC | 2 TONS/AC | 1 TONS/AC |

CONSTRUCTION GUIDANCE

- SEED MIX: THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER ON WHICH SEED MIX TO USE.
- SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
- ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
- FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER.
- HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.
- HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED PROPOSED FOR USE WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED.
- TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES **TURF ESTABLISHMENT**

| | |
|--|----------------------|
| THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 651FOR SEED (PAY ITEM 651J5) | REVISIONS |
| | JANUARY 12, 2015 WHF |

| VAOT URBAN LAWN MIX | | | | | | |
|---------------------|-----------|-----------|---------------------|-----------------------|------|--------|
| WEIGHT | LBS/AC | | NAME | LATIN NAME | GERM | PURITY |
| | BROADCAST | HYDROSEED | | | | |
| 42.5% | 34 | 68 | CREeping RED FESCUE | FESTUCA RUBRA X RUBRA | 85% | 98% |
| 20.0% | 16 | 32 | PERENNIAL RYE GRASS | LOLIUM PERENNE | 90% | 95% |
| 32.5% | 26 | 52 | KENTUCKY BLUE GRASS | POA PRATENSIS | 85% | 85% |
| 5.0% | 4 | 8 | ANNUAL RYE GRASS | LOLIUM MULTIFLORUM | 85% | 95% |
| 100% | 80 | 160 | | | | |

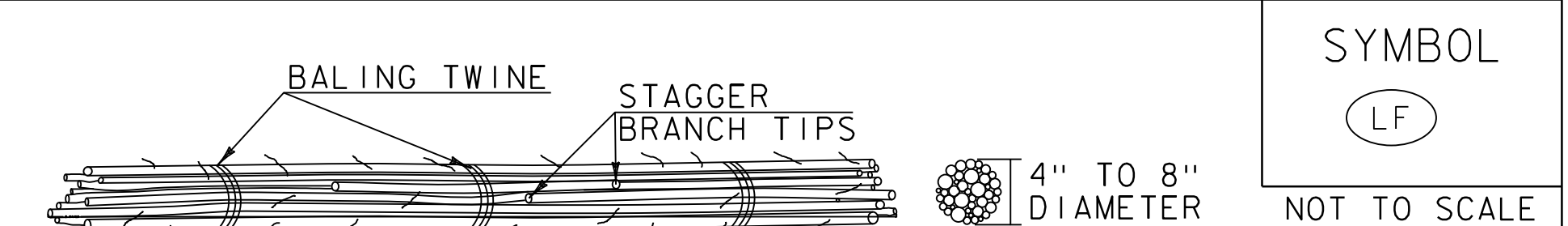
| GENERAL AMENDMENT GUIDANCE | | |
|----------------------------|-----------|------------|
| FERTILIZER | LIME | |
| 10/20/10 | AG LIME | PELLITIZED |
| 500 LBS/AC | 2 TONS/AC | 1 TONS/AC |

CONSTRUCTION GUIDANCE

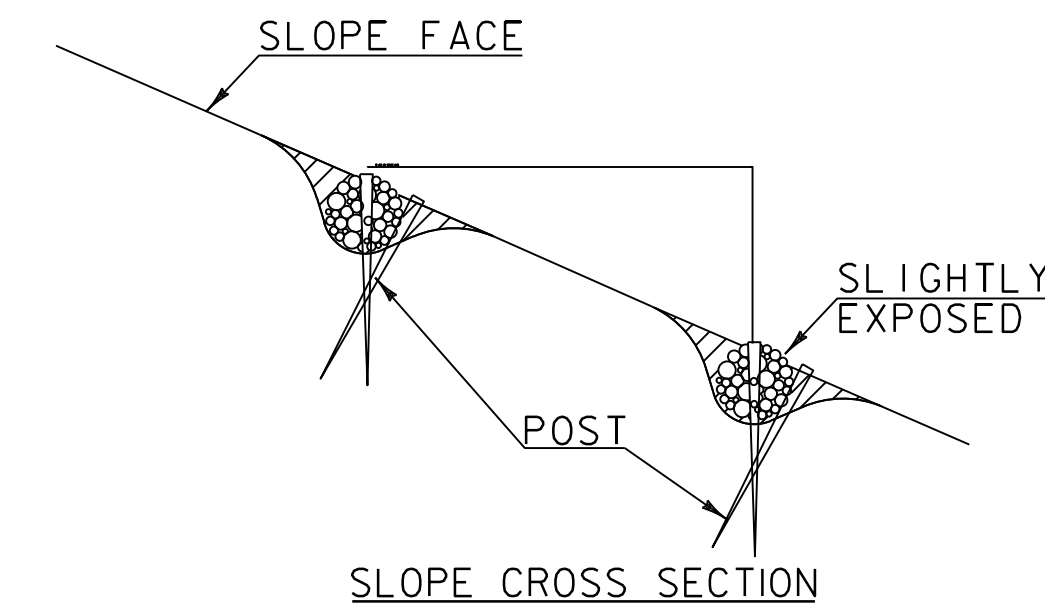
- SEED MIX: THE URBAN AREA MIX SHALL NOT BE USED IN WETLANDS OR ANY WATERS OF THE STATE OF VERMONT.
- SEED MIX: USE ONLY AS INDICATED IN THE PLANS.
- SEED MIX: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
- FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER
- HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.
- HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED
- TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES **TURF ESTABLISHMENT**

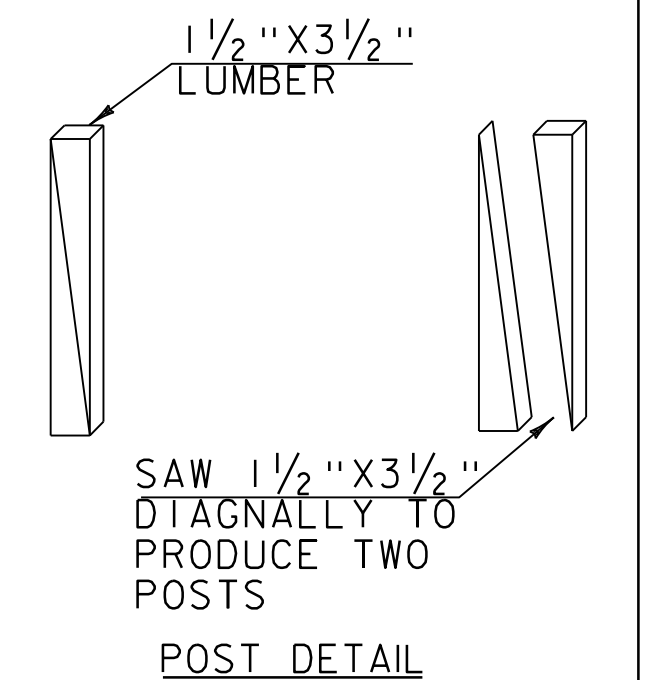
| | |
|--|----------------------|
| THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 651FOR SEED (PAY ITEM 651J5) | REVISIONS |
| | JANUARY 22, 2015 WHF |



FASCINE BUNDLE DETAIL



SLOPE CROSS SECTION



POST DETAIL

CONSTRUCTION SPECIFICATIONS

- LIVE FASCINES SHALL BE OBTAINED FROM SOURCES APPROVED BY THE ENGINEER. THEY SHALL BE PREPARED FROM FRESHLY CUT DORMANT PLANTS AND INSTALLED WITHIN 8 HOURS OF THE TIME THE MATERIAL IS HARVESTED, UNLESS PROPERLY STORED.
- LIVE FASCINES SHALL BE PLACED AS INDICATED IN THE CONTRACT DOCUMENTS.
- BEGINNING AT THE BASE OF THE SLOPE, A TRENCH SHALL BE DUG LARGE ENOUGH TO CONTAIN THE LIVE FASCINES. THE LIVE FASCINES SHALL BE PLACED IN THE TRENCH. WHERE ENDS MEET IN THE TRENCH, THE FASCINES SHALL OVERLAP 18".
- WOOD POSTS SHALL BE INSTALLED FLUSH TO THE TOP OF THE FASCINE EVERY 18" ALONG THE LENGTH OF THE BUNDLES AS SHOWN ON THE CROSS SECTIONS. WHERE SPECIFIED LIVE STAKES MAY BE USED IN PLACE OF POSTS.
- THE TRENCH SHALL BE BACKFILLED WITH MOIST SOIL AND HAND TAMPED. THE TOP OF THE FASCINE SHALL BE SLIGHTLY EXPOSED WHEN THE INSTALLATION IS COMPLETE AS SHOWN ON THE CROSS SECTION.
- SEED OR OTHER EROSION CONTROL MATERIAL SHALL BE USED BETWEEN THE FASCINE ROWS, AS SPECIFIED IN THE COCNTRACT DOCUMENTS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC ORIGINALLY DEVELOPED BY USDA-NRCS VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

LIVE FASCINE

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006-" FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR LIVE FASCINE (PAY ITEM 653.65).

| |
|----------------------|
| REVISIONS |
| MARCH 7, 2008 WHF |
| DECEMBER 9, 2008 WHF |
| JANUARY 13, 2009 WHF |

PROJECT NAME: **WATERBURY**
PROJECT NUMBER: **BO 1446(40)**

FILE NAME: z93j040det_stowe.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: VTRANS
EROSION CONTROL DETAILS

PLOT DATE: 9-SEP-2022
DRAWN BY: P. ARMATA
CHECKED BY: K.RICHARDSON
SHEET 27 OF 44



SOIL CLASSIFICATION

AASHTO

- A1 Gravel and Sand
- A3 Fine Sand
- A2 Silty or Clayey Gravel and Sand
- A4 Silty Soil - Low Compressibility
- A5 Silty Soil - Highly Compressible
- A6 Clayey Soil - Low Compressibility
- A7 Clayey Soil - Highly Compressible

ROCK QUALITY DESIGNATION

| R.Q.D. (%) | ROCK DESCRIPTION |
|------------|------------------|
| <25 | Very Poor |
| 25 to 50 | Poor |
| 51 to 75 | Fair |
| 76 to 90 | Good |
| >90 | Excellent |

SHEAR STRENGTH

| UNDRAINED SHEAR STRENGTH IN P.S.F. | CONSISTENCY |
|------------------------------------|-------------|
| <250 | Very Soft |
| 250-500 | Soft |
| 500-1000 | Med. Stiff |
| 1000-2000 | Stiff |
| 2000-4000 | Very Stiff |
| >4000 | Hard |

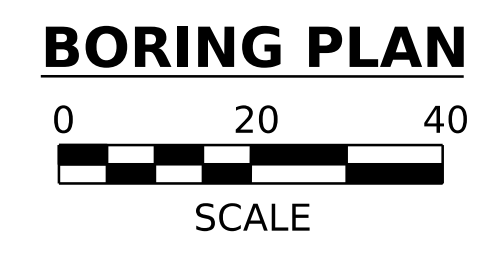
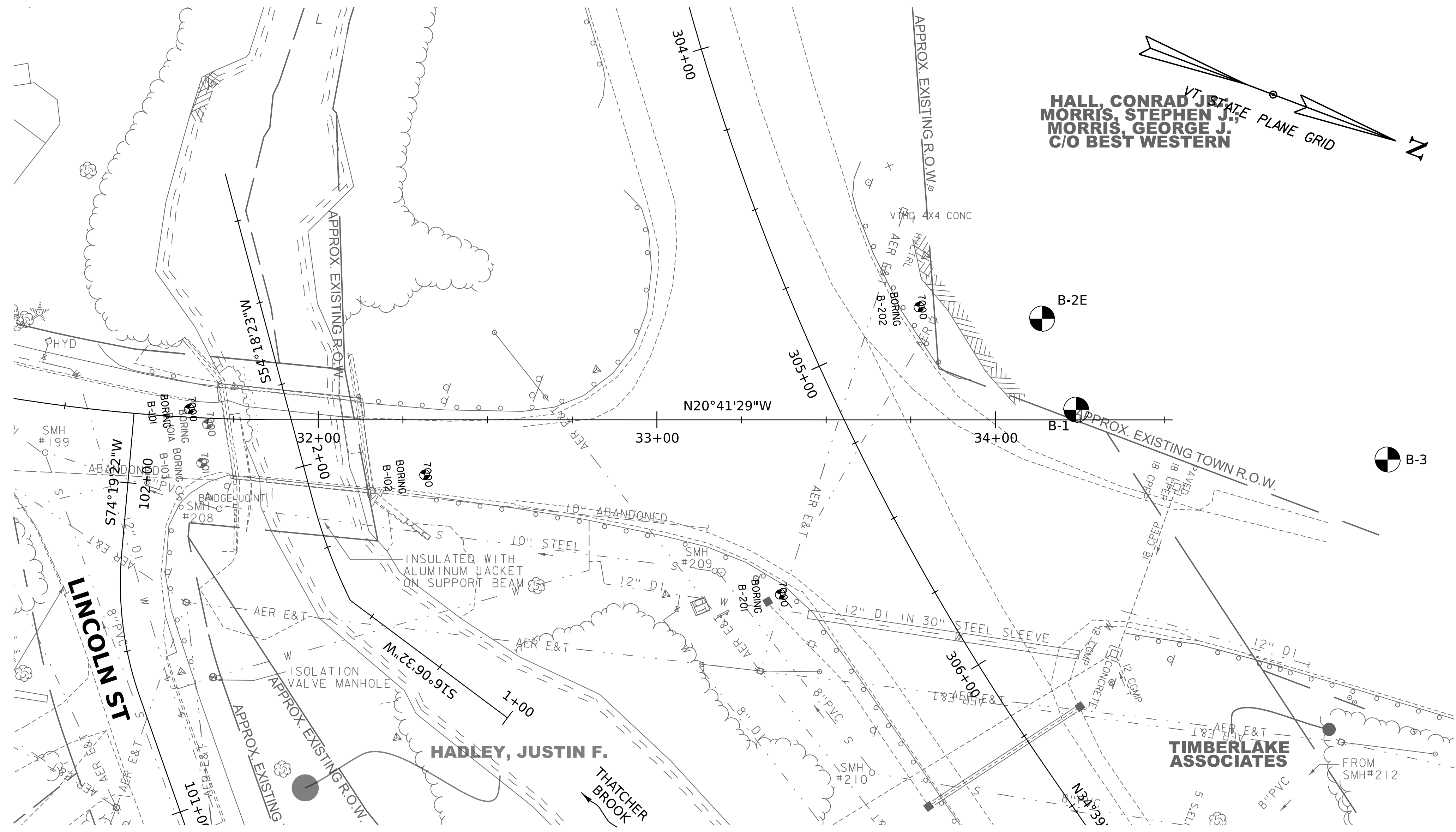
CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

| DENSITY (GRANULAR SOILS) | | CONSISTENCY (COHESIVE SOILS) | |
|--------------------------|------------------|------------------------------|------------------|
| N | DESCRIPTIVE TERM | N | DESCRIPTIVE TERM |
| <5 | Very Loose | <2 | Very Soft |
| 5-10 | Loose | 2-4 | Soft |
| 11-24 | Med. Dense | 5-8 | Med. Stiff |
| 25-50 | Dense | 9-15 | Stiff |
| >50 | Very Dense | 16-30 | Very Stiff |
| | | 31-60 | Hard |
| | | >60 | Very Hard |

COMMONLY USED SYMBOLS

- ▼ Water Elevation
- ⊕ Standard Penetration Boring
- ⊕ Auger Boring
- ⊕ Rod Sounding
- ⊕ Sample
- N Standard Penetration Test
 - Blow Count Per Foot For:
 - 2" O. D. Sampler
 - 1 3/8" I. D. Sampler
 - Hammer Weight Of 140 Lbs.
 - Hammer Fall Of 30"
- VS Field Vane Shear Test
- US Undisturbed Soil Sample
- B Blast
- DC Diamond Core
- MD Mud Drill
- WA Wash Ahead
- HSA Hollow Stem Auger
 - Core Size 1 1/4"
 - Core Size 1 3/8"
 - Core Size 2 1/8"
- M Double Tube Core Barrel Used
- LL Liquid Limit
- PL Plastic Limit
- PI Plasticity Index
- NP Non Plastic
- w Moisture Content (Dry Wgt. Basis)
- D Dry
- M Moist
- MTW Moist To Wet
- W Wet
- Sat Saturated
- Bo Boulder
- Gr Gravel
- Sa Sand
- Si Silt
- Cl Clay
- HP Hardpan
- Le Ledge
- NLTD No Ledge To Depth
- CNPF Can Not Penetrate Further
- TLOB Top of Ledge Or Boulder
- NR No Recovery
- Rec. Recovery
- %Rec. Percent Recovery
- RQD Rock Quality Designation
- CBR California Bearing Ratio
- < Less Than
- > Greater Than
- R Refusal (N 100)>
- VTSPG NAD83 - See Note 7

| COLOR | | | |
|-------|--------|------|--------------|
| blk | Black | pnk | Pink |
| bl | Blue | pu | Purple |
| brn | Brown | rd | Red |
| dk | Dark | tn | Tan |
| gry | Gray | wh | White |
| gn | Green | yel | Yellow |
| lt | Light | mltc | Multicolored |
| or | Orange | | |



| BORING CHART | | | | | | |
|---------------|----------------|--------|------------|-------------|------------------|--------------------|
| BORING NUMBER | SURVEY STATION | OFFSET | NORTHING | EASTING | GROUND ELEVATION | TOP OF BEDROCK EL. |
| B-101 | 31+72.49 | 2.4 | 672320.084 | 1575820.540 | 507.6 | 492.3 |
| B-101A | 31+78.13 | 1.8 | 672326.735 | 1575822.762 | 507.8 | |
| B-102 | 32+31.46 | 16.2 | 672391.970 | 1575814.108 | 509.0 | 490.7 |
| B-103 | 31+76.94 | 13.3 | 672329.157 | 1575834.091 | 507.7 | 492.7 |
| B-201 | 33+11.46 | 51.5 | 672502.70 | 1575810.04 | 515.8 | 500.4 |
| B-202 | 33+52.45 | 33.3 | 672522.82 | 1575747.33 | | |

DEFINITIONS (AASHTO)

- BEDROCK (LEDGE)** - Rock in its native location of indefinite thickness.
- BOULDER** - A rock fragment with an average dimension > 12 inches.
- COBBLE** - Rock fragments with an average dimension between 3 and 12 inches.
- GRAVEL** - Rounded particles of rock < 3" and > 0.0787" (#10 sieve).
- SAND** - Particles of rock < 0.0787" (#10 sieve) and > 0.0029" (#200 sieve).
- SILT** - Soil < 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.
- CLAY** - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.
- VARVED** - Alternate layers of silt and clay.
- HARDPAN** - Extremely dense soil, cemented layer, not softened when wet.
- MUCK** - Soft organic soil (containing > 10% organic material).
- MOISTURE CONTENT** - Weight of water divided by dry weight of soil.
- FLOWING SAND** - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.
- STRIKE** - Angle from magnetic north to line of intersection of bed with a horizontal plane.
- DIP** - Inclination of bed with a horizontal plane.

GENERAL NOTES

- The subsurface explorations shown herein were made between November 18, 2021, December 2021 and May 3, 2022 by WSP and VTrans.
- Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
- Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
- Engineering judgment was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgment by the Contractor.
- Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
- Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.
- Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.

LEGEND:



PROJECT NAME: **WATERBURY**
PROJECT NUMBER: **BO 1446(40)**

FILE NAME: z93j040borplan.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: VTRANS
BORING PLAN

PLOT DATE: 9-SEP-2022
DRAWN BY: P. ARMATA
CHECKED BY: T. KNIGHT
SHEET 28 OF 44





STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

**Waterbury
BO 1446(40)
TH2, Br #36 GAU 21497656**

Boring No.: **B-101**

Page No.: 1 of 1

Pin No.: 93J040

Checked By: BK

Boring Crew: Platform - Michael Jordan, GAU Begum Kurtoglu
Date Started: 11/18/21 Date Finished: 11/18/21
VTSPG NAD83: N 672320.08 ft E 1575820.54 ft
Station: 32+37.7 Offset: 8.5 ft L
Ground Elevation: 507.6 ft

Casing Sampler
Type: WASH BORE SS
I.D.: 4 in 2 in
Hammer Wt: N.A. 140 lb.
Hammer Fall: N.A. 30 in.
Hammer/Rod Type: Auto/NWJ
Rig: Geoprobe 7822DT C = 1.68

| Groundwater Observations | | |
|--------------------------|------------|---------------------|
| Date | Depth (ft) | Notes |
| 11/18/21 | 14.4 | Dry, after drilling |

| Depth (ft) | Strata (1) | CLASSIFICATION OF MATERIALS (Description) | Run (Dip deg.) | Core Rec. % (ROD %) | Drill Rate minutes/ft | Blows/6" (N Value) | Moisture Content % | Gravel % | Sand % | Fines % |
|------------|------------|---|----------------|---------------------|-----------------------|--------------------|--------------------|----------|--------|---------|
| 0.0 | | 0.0 ft - 0.3 ft, Asphalt | | | | | | | | |
| 0.3 | | S1: 0.3 ft - 0.75 ft, A-1-b, Rec. = 0.7 ft, Top 0.45 ft: Brown, damp, very dense, fine to coarse SAND, some gravel, trace silt, well-graded (SW-SM) | | | | 8-21-50(3") (R) | 8.8 | 44.5 | 45.7 | 9.8 |
| 0.75 | | 0.75 ft - 1.55 ft, A-1-b, Bottom 0.25 ft: White, dry, very dense, fine to coarse SAND, some gravel, trace silt, well-graded (SW-SM) | | | | 7-5-4-3 (9) | 4.8 | 58.1 | 33.5 | 8.4 |
| 1.55 | | 1.55 ft - 2.0 ft, Driller Notes: Drilled through a thin concrete obstruction | | | | | | | | |
| 2.0 | | S2: 2.0 ft - 2.5 ft, A-1-a, Rec. = 1.2 ft, Top 0.50 ft: Grayish brown, damp, loose, sandy fine to coarse GRAVEL, trace silt, poorly-graded (GP-GM) | | | | | | | | |
| 2.5 | | 2.5 ft - 4.0 ft, A-4, Bottom 0.70 ft: Brown, damp, loose, silty fine to medium SAND, trace gravel, well-graded (SM) | | | | | | | | |
| 4.0 | | 4.0 ft - 8.0 ft, Driller Notes: Brown, damp, fine to medium SAND, little silt | | | | | | | | |
| 8.0 | | S3: 8.0 ft - 8.4 ft, A-1-a, Rec. = 0.7 ft, Top 0.40 ft: Brown, damp, medium dense, fine to coarse GRAVEL, some sand, trace silt, well-graded (GW-GM) | | | | 5-8-16-14 (24) | 5.6 | 69.5 | 21.8 | 8.7 |
| 8.4 | | 8.4 ft - 10.0 ft, A-1-a, Bottom 0.30 ft: Greenish gray, dry, medium dense, fine to coarse GRAVEL, little sand, trace silt, trace weathered rock, poorly-graded (GP-GM) | | | | | 0.7 | 82.2 | 12.8 | 5.0 |
| 10.0 | | 10.0 ft - 14.0 ft, Driller Notes: Grayish brown, damp, fine to coarse GRAVEL, some sand, trace silt, rock fragments | | | | | | | | |
| 14.0 | | S4: 14.0 ft - 14.3 ft, A-1-b, Rec. = 1.1 ft, Top 0.30 ft: Brown, wet, very dense, fine to coarse SAND, little gravel, little silt, poorly-graded (SM) | | | | 29-40-50(3") (R) | 10.4 | 29.0 | 53.4 | 17.6 |
| 14.3 | | 14.3 ft - 15.3 ft, A-1-b, Bottom 0.80 ft: Gray, dry, very dense, fine to coarse SAND, some gravel, little silt, poorly-graded (SM) | 1 | 70 (0) | 11.7 | (R) | | | | 15.3 ft |
| 15.3 | | 15.5 ft - 16.5 ft, NQ, Greenish gray, fine grained, fresh (W1), very strong (R5), SCHIST and PHYLLITE; discontinuities horizontal to moderately dipping (0 to 30°), very closely spaced (0.2 ft) [Carbonaceous Phyllite Member, Ottauquechee Formation] | | | | | | | | |
| 16.5 | | Remarks: - AASHTO and USCS classifications are based on the results of sieve analyses of the samples - Boring backfilled with all purpose gravel to ground surface by the Town of Waterbury Highway Department | | | | | | | | |

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C, is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG VTRANS WATERBURY BRIDGE NO. 36.GPJ VERMONT AOT.GDT 6/16/22



STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

**Waterbury
BO 1446(40)
TH2, Br #36 GAU 21497656**

Boring No.: **B-101A**

Page No.: 1 of 1

Pin No.: 93J040

Checked By: BK

Boring Crew: Platform - Michael Jordan, GAU Andrew Martin
Date Started: 12/10/21 Date Finished: 12/10/21
VTSPG NAD83: N 672326.74 ft E 157822.76 ft
Station: 32+43.8 Offset: 4.7 ft L
Ground Elevation: 507.8 ft

Casing Sampler
Type: WASH BORE N.A.
I.D.: 3 in
Hammer Wt: N.A. N.A.
Hammer Fall: N.A. N.A.
Hammer/Rod Type: Auto/NWJ
Rig: Geoprobe 7822DT C = 1.68

| Groundwater Observations | | |
|--------------------------|------------|----------------------|
| Date | Depth (ft) | Notes |
| 12/10/21 | 7.4 | Taken after drilling |

| Depth (ft) | Strata (1) | CLASSIFICATION OF MATERIALS (Description) | Blows/6" (N Value) | Moisture Content % | Gravel % | Sand % | Fines % |
|------------|------------|--|--------------------|--------------------|----------|--------|---------|
| 0.0 | | 0.0 ft - 0.3 ft, ASPHALT | | | | | |
| 1.0 | | 1.0 ft - 2.5 ft, Driller Notes: Drilled through a concrete obstruction | | | | | |
| 2.5 | | | | | | | |
| 4.5 | | 4.5 ft - 6.0 ft, Driller Notes: Drilling difficulty increased. Wood present in the drill cuttings | | | | | |
| 6.0 | | | | | | | |
| 11.0 | | 11.0 ft - 11.1 ft, Driller Notes: Casing refusal at 11 ft bgs. Apparent cement chips in the drill cuttings | | | | | |
| 11.1 | | Hole stopped @ 11.1 ft Terminated due to time constraints | | | | | |
| 11.1 | | Remarks: - After termination of the boring, when the casing was removed from the boring it was observed that the bottom of the casing had been crimped due to the obstruction at 11 ft bgs which prevented further advancement of the boring - Boring backfilled with all purpose gravel to ground surface by the Town of Waterbury Highway Department | | | | | |

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C, is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG VTRANS WATERBURY BRIDGE NO. 36.GPJ VERMONT AOT.GDT 6/16/22

PROJECT NAME: **WATERBURY**
PROJECT NUMBER: **BO 1446(40)**
FILE NAME: z93j040det_stowe.dgn PLOT DATE: 9-SEP-2022
PROJECT LEADER: T. KNIGHT DRAWN BY: P. ARMATA
DESIGNED BY: T. LUTHER CHECKED BY: T. KNIGHT
BORING LOG PLAN SHEET 1 SHEET 29 OF 44



Boring Crew: Platform - Michael Jordan, GAU Andrew Martin
Date Started: 11/19/21 Date Finished: 11/19/21
VTSPG NAD83: N 672391.97 ft E 1575814.11 ft
Station: 33+08.9 Offset: 5.0 ft R
Ground Elevation: 509.0 ft

Casing Sampler
Type: WASH BORE SS
I.D.: 4 in 2 in
Hammer Wt: N.A. 140 lb.
Hammer Fall: N.A. 30 in.
Hammer/Rod Type: Auto/NWJ
Rig: Geoprobe 7822DT C = 1.68

Groundwater Observations
Date Depth (ft) Notes
11/19/21 15.5 When casing in
11/19/21 7.1 Before rock coring

| Depth (ft) | Strata (1) | CLASSIFICATION OF MATERIALS (Description) | Run (Dip deg.) | Core Rec. % (RCD %) | Drill Rate minutes/ft | Blows/6" (N Value) | Moisture Content % | Gravel % | Sand % | Fines % |
|------------------------|------------|--|----------------|---------------------|-----------------------|---------------------|--------------------|----------|--------|---------|
| 0.0 - 0.9 | | 0.0 ft - 0.9 ft, Asphalt | | | | | | | | |
| 0.9 - 1.6 | | S1: 0.9 ft - 1.6 ft, A-1-a, Rec. = 0.5 ft, Gray, dry, very dense, sandy fine to coarse GRAVEL, trace silt, well-graded (GW-GM) 1.6 ft - 3.9 ft, Driller Notes: Suspected Boulder | | | | 40-50(2") (R) | 3.4 | 64.3 | 25.2 | 10.5 |
| 4.0 - 6.0 | | S2: 4.0 ft - 6.0 ft, A-2-4, Rec. = 0.8 ft, Brown, moist, loose, fine to coarse SAND, some silt, little gravel, poorly-graded (SM) | | | | 6-4-3-6 (7) | 13.6 | 26.6 | 42.4 | 31.0 |
| 9.0 - 11.0 | | 9.0 ft - 11.0 ft, Rec. = 0.0 ft | | | | 2-2-3-4 (5) | | | | |
| 11.0 - 13.0 | | S3: 11.0 ft - 13.0 ft, A-1-b, Rec. = 1.0 ft, Brown, wet, medium dense, fine to coarse SAND, little silt, trace gravel, wood chips in the top 3", well-graded (SM) | | | | 2-5-9-8 (14) | 46.3 | 18.1 | 67.0 | 14.9 |
| 14.0 - 16.0 | | S4: 14.0 ft - 16.0 ft, A-4, Rec. = 1.0 ft, Gray, wet, very loose, SILT, some sand, trace gravel, poorly-graded (ML) | | | | 1-WOH-WOH-WOH (WOH) | 45.5 | 5.1 | 34.1 | 60.8 |
| 18.5 - 23.5 | | 18.5 ft - 23.5 ft, NQ, Green, fine-grained, fresh (W1), very strong (R5), SCHIST and PHYLLITE; discontinuities low angle to steep (15 to 75°), very close to moderately closely spaced (0.15 to 2.0 ft) [Carbonaceous Phyllite Member, Ottauquechee Formation] | 1 | 86 (77) | 5.3 | (R) | | | | 18.3 ft |
| 20.0 | | | | | 5.9 | (R) | | | | |
| 20.0 | | | | | 5.9 | (R) | | | | |
| 22.5 | | | | | 4.3 | (R) | | | | |
| 22.5 | | | | | 5.5 | (R) | | | | |
| Hole stopped @ 23.5 ft | | | | | | | | | | |

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG VTRANS WATERBURY BRIDGE NO. 36.GPJ VERMONT AOT.GDT 6/16/22

Boring Crew: Platform - Michael Jordan, GAU Andrew Martin
Date Started: 11/19/21 Date Finished: 11/19/21
VTSPG NAD83: N 672391.97 ft E 1575814.11 ft
Station: 33+08.9 Offset: 5.0 ft R
Ground Elevation: 509.0 ft

Casing Sampler
Type: WASH BORE SS
I.D.: 4 in 2 in
Hammer Wt: N.A. 140 lb.
Hammer Fall: N.A. 30 in.
Hammer/Rod Type: Auto/NWJ
Rig: Geoprobe 7822DT C = 1.68

Groundwater Observations
Date Depth (ft) Notes
11/19/21 15.5 When casing in
11/19/21 7.1 Before rock coring

| Depth (ft) | Strata (1) | CLASSIFICATION OF MATERIALS (Description) | Run (Dip deg.) | Core Rec. % (RCD %) | Drill Rate minutes/ft | Blows/6" (N Value) | Moisture Content % | Gravel % | Sand % | Fines % |
|--|------------|---|----------------|---------------------|-----------------------|--------------------|--------------------|----------|--------|---------|
| Remarks: - AASHTO and USCS classifications are based on the results of sieve analyses of the samples - Boring backfilled with all purpose gravel to ground surface by the Town of Waterbury Highway Department | | | | | | | | | | |

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG VTRANS WATERBURY BRIDGE NO. 36.GPJ VERMONT AOT.GDT 6/16/22



| STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY | | BORING LOG | | Boring No.: B-103 | | | | | | |
|--|------------|---|----------------|------------------------------------|-----------------------|--------------------|--------------------|----------|--------|--------------------------|
| | | Waterbury BO 1446(40) TH2, Br #36 GAU 21497656 | | Page No.: 1 of 1 | | | | | | |
| | | | | Pin No.: 93J040 | | | | | | |
| | | | | Checked By: BK | | | | | | |
| Boring Crew: Platform - Michael Jordan, GAU Andrew Martin | | Casing Sampler | | Groundwater Observations | | | | | | |
| Date Started: 12/10/21 Date Finished: 12/10/21 | | Type: WASH BORE N.A. | | Date Depth Notes | | | | | | |
| VTSPG NAD83: N 672329.16 ft E 157834.09 ft | | I.D.: 3 in | | 12/10/21 12.6 Taken after drilling | | | | | | |
| Station: 32+43.3 Offset: 6.8 ft R | | Hammer Wt: N.A. N.A. | | | | | | | | |
| Ground Elevation: 507.7 ft | | Hammer Fall: N.A. N.A. | | | | | | | | |
| | | Hammer/Rod Type: Auto/NWJ | | | | | | | | |
| | | Rig: Geoprobe 7822DT C = 1.68 | | | | | | | | |
| Depth (ft) | Strata (1) | CLASSIFICATION OF MATERIALS (Description) | Run (Dip deg.) | Core Rec. % (RQD %) | Drill Rate minutes/ft | Blows/6" (N Value) | Moisture Content % | Gravel % | Sand % | Fines % |
| 0.0 | | 0.0 ft - 0.3 ft, ASPHALT | | | | | | | | |
| 1.0 | | 1.0 ft - 2.0 ft, Driller Notes: Drilled through concrete obstruction | | | | | | | | |
| 2.5 | | | | | | | | | | |
| 5.0 | | | | | | | | | | |
| 7.5 | | 7.0 ft - 8.0 ft, Driller Notes: Drilling difficulty increased. Possible cobbles | | | | | | | | |
| 8.0 | | 8.0 ft - 14.0 ft | | | | | | | | |
| 10.0 | | | | | | | | | | |
| 12.5 | | | | | | | | | | |
| 14.0 | | 14.0 ft - 15.0 ft, CONCRETE | | | | | | | | |
| 15.0 | | 15.0 ft - 19.0 ft, NX, Gray, fine-grained, fresh (W1), very strong (R5), SCHIST and PHYLLITE; discontinuities low angle to steep (20 - 60°), very close to closely spaced (0.1 - 0.8 ft) [Carbonaceous Phyllite Member, Ottauquechee Formation] | 1 | 55 (29) | 6.5 | (R) | | | | Top of Bedrock @ 15.0 ft |
| 17.5 | | | | | 7.9 | (R) | | | | |
| 19.0 | | | | | 9.3 | (R) | | | | |
| 20.0 | | | | | 9.5 | (R) | | | | |
| 20.0 | | Hole stopped @ 19.0 ft | | | | | | | | |
| 22.5 | | Remarks: - Boring backfilled with all purpose gravel to ground surface by the Town of Waterbury Highway Department | | | | | | | | |
| Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. C is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made. | | | | | | | | | | |

BORING LOG VTRANS WATERBURY BRIDGE NO. 36.GPJ VERMONT AOT.GDT 6/16/22

| STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY | | BORING LOG | | Boring No.: B-201 | | | | | | |
|--|------------|---|----------------|-----------------------------------|-----------------------|--------------------|--------------------|----------|--------|--------------------------|
| | | Waterbury-Stowe STP 2945(1) VT-100 Mast Arms | | Page No.: 1 of 1 | | | | | | |
| | | | | Pin No.: 11b342 | | | | | | |
| | | | | Checked By: END | | | | | | |
| Boring Crew: Gonyaw, Garrow, Mazzei | | Casing Sampler | | Groundwater Observations | | | | | | |
| Date Started: 7/19/17 Date Finished: 7/19/17 | | Type: WB SS | | Date Depth Notes | | | | | | |
| VTSPG NAD83: N 672502.70 ft E 1575810.04 ft | | I.D.: 3 in 1.5 in | | 07/19/17 5.4 W.T. during drilling | | | | | | |
| Station: 35+54 Offset: 40.20 | | Hammer Wt: N.A. 140 lb. | | | | | | | | |
| Ground Elevation: 515.8 ft | | Hammer Fall: N.A. 30 in. | | | | | | | | |
| | | Hammer/Rod Type: Auto/AWJ | | | | | | | | |
| | | Rig: Diedrich D25 CE = Unknown | | | | | | | | |
| Depth (ft) | Strata (1) | CLASSIFICATION OF MATERIALS (Description) | Run (Dip deg.) | Core Rec. % (RQD %) | Drill Rate minutes/ft | Blows/6" (N Value) | Moisture Content % | Gravel % | Sand % | Fines % |
| 1.4 | | A-1-b, GrSa, brn, Moist, Rec. = 1.4 ft | | | | 2-2-2-2 (4) | 10.0 | 35.9 | 44.2 | 19.9 |
| 0.6 | | A-1-b, SaGr, brn, Moist, Rec. = 0.6 ft | | | | 3-3-3-4 (6) | 8.0 | 48.6 | 33.3 | 18.1 |
| 1.4 | | A-4, GrSaSi, brn, Moist, Rec. = 1.4 ft | | | | 3-2-5-8 (7) | 14.2 | 23.1 | 34.3 | 42.6 |
| 1.6 | | A-1-b, SaSiGr, gry, Moist, Rec. = 1.6 ft, Lab Note: Broken and weathered rock was within sample Field Note: BXDC, cleaned out casing | | | | 8-5-17-7 (22) | 7.0 | 54.3 | 22.8 | 22.9 |
| 1.1 | | A-1-b, GrSa, brn-gry, Moist, Rec. = 1.1 ft Field Note: BXDC, roller cone cleaned out casing | | | | 8-8-R@2.5" (R) | 14.2 | 36.6 | 43.7 | 19.7 |
| 0.5 | | A-1-b, GrSa, gry, Moist, Rec. = 0.5 ft | | | | R@5" (R) | 19.2 | 35.3 | 49.3 | 15.4 |
| 15.4 | | Field Note: BXDC, roller cone cleaned out casing | | | | | | | | |
| 15.4 | | Field Note: No Recovery 15.4 ft - 18.4 ft, Light gray-green, PHYLLITE, consisting of "sandy" quartz-muscovite-chlorite and thinly veined CaCO3 bearing quartz strewn throughout. Joints are rough with light orange oxidation. Moderately hard, Slightly weathered, Poor rock, BX, RMR=41 | 1 (75) | 77 (26) | 5 | R@5" (R) | | | | Top of Bedrock @ 15.4 ft |
| 18.4 | | 18.4 ft - 23.4 ft, Interbedded light gray-green and black, PHYLLITE, containing distinct cm wide zones of quartz-muscovite-chlorite and fine grained graphitic minerals. Both zones have CaCO3 bearing quartz strewn throughout. Joints are rough with light orange oxidation. Moderately hard, Slightly weathered, Fair rock, BX, RMR=49 | 2 (80) | 48 (63) | 6 | | | | | |
| 23.4 | | 23.4 ft - 25.4 ft, White, Pinstriped black PHYLLITE, with black cm wide zones of fine-grained, graphitic minerals and are sulfide bearing. White pinstripes are CaCO3 bearing quartzite. Low RQD value due in part to mechanical breking by drill. Moderately hard, Moderately weathered, Poor rock, RMR=29 BX | 3 (75) | 65 (0) | 6 | | | | | |
| 25.4 | | Hole stopped @ 25.4 ft | | | | | | | | |
| 8.5 | | Remarks: Hole collapsed at 8.5 feet. | | | | | | | | |
| Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. <<SUB>><<SUB>> is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made. | | | | | | | | | | |

BORING LOG 2 WATERBURY-STOWE STP2945(1).GPJ VERMONT AOT.GDT 8/3/17

| | | | |
|-------------------------|----------------------|-------------|------------|
| PROJECT NAME: | WATERBURY | | |
| PROJECT NUMBER: | BO 1446(40) | | |
| FILE NAME: | z93j040det_stowe.dgn | PLOT DATE: | 9-SEP-2022 |
| PROJECT LEADER: | T. KNIGHT | DRAWN BY: | P. ARMATA |
| DESIGNED BY: | T. LUTHER | CHECKED BY: | T. KNIGHT |
| BORING LOG PLAN SHEET 3 | | SHEET | 31 OF 44 |





STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

**Waterbury-Stowe
STP 2945(1)
VT-100 Mast Arms**

Boring No.: **B-202**

Page No.: 1 of 1

Pin No.: 11b342

Checked By: END

Boring Crew: Emerson, Garrow, Mazzei
Date Started: 7/13/17 Date Finished: 7/18/17
VTSPG NAD83: N 672511.05 ft E 1575716.16 ft
Station: 34+98 Offset: -34.00
Ground Elevation: 511.2 ft

Casing Type: WB Sampler: SS
I.D.: 3 in 1.5 in
Hammer Wt: N.A. 140 lb.
Hammer Fall: N.A. 30 in.
Hammer/Rod Type: Auto/AWJ
Rig: Diedrich D25 CE = Unknown

| Groundwater Observations | | |
|--------------------------|------------|----------------------|
| Date | Depth (ft) | Notes |
| 07/18/17 | 5.5 | W.T. during drilling |

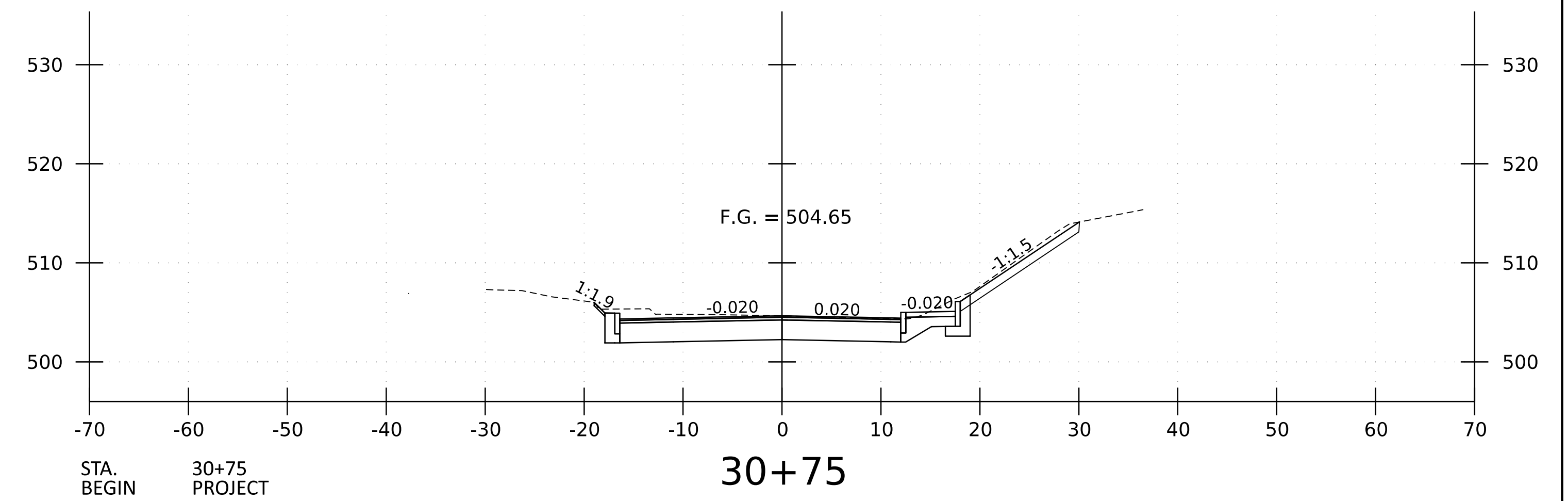
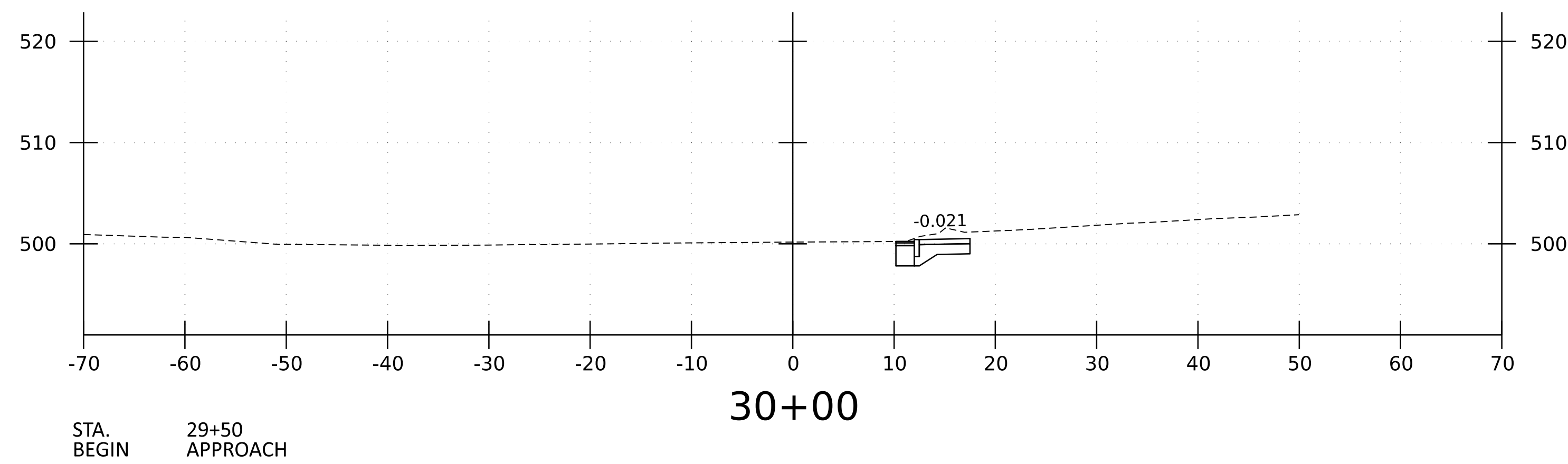
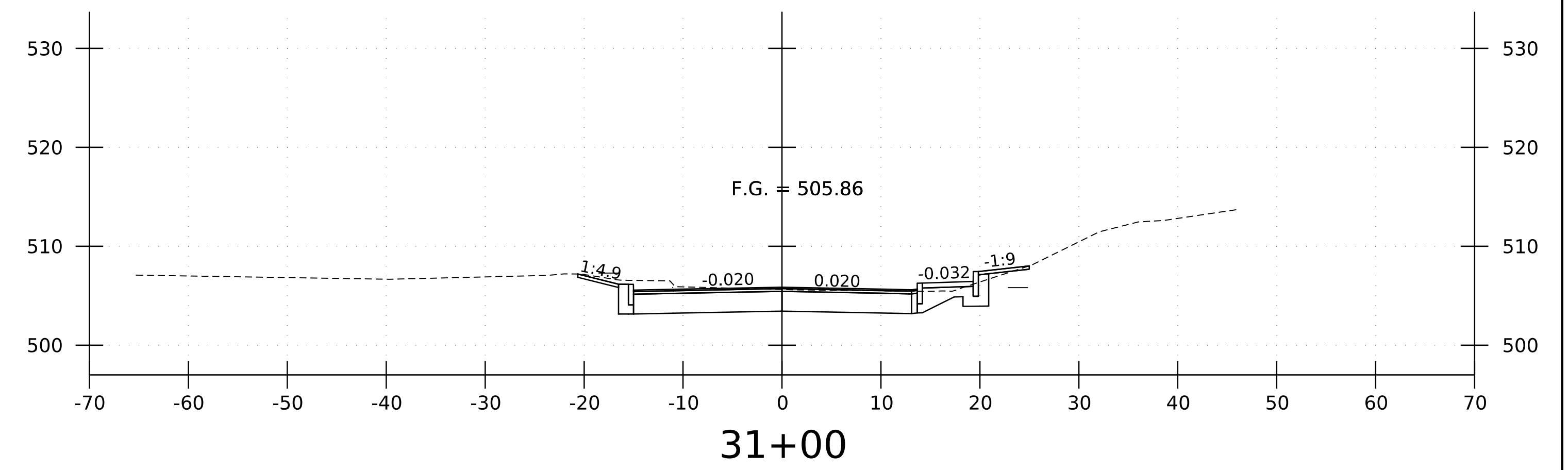
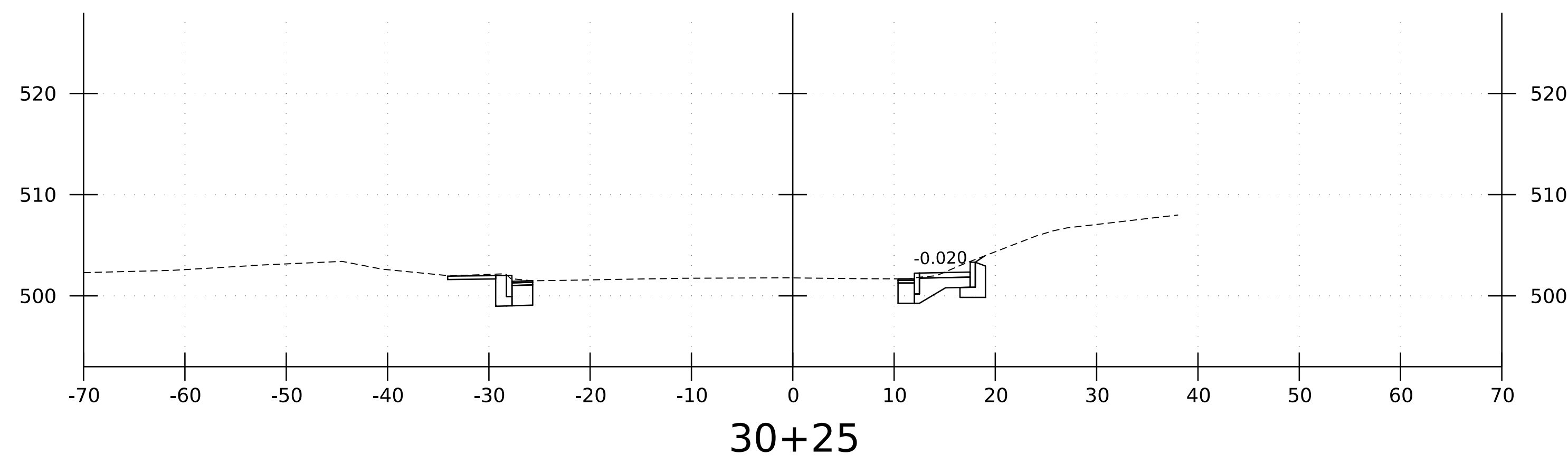
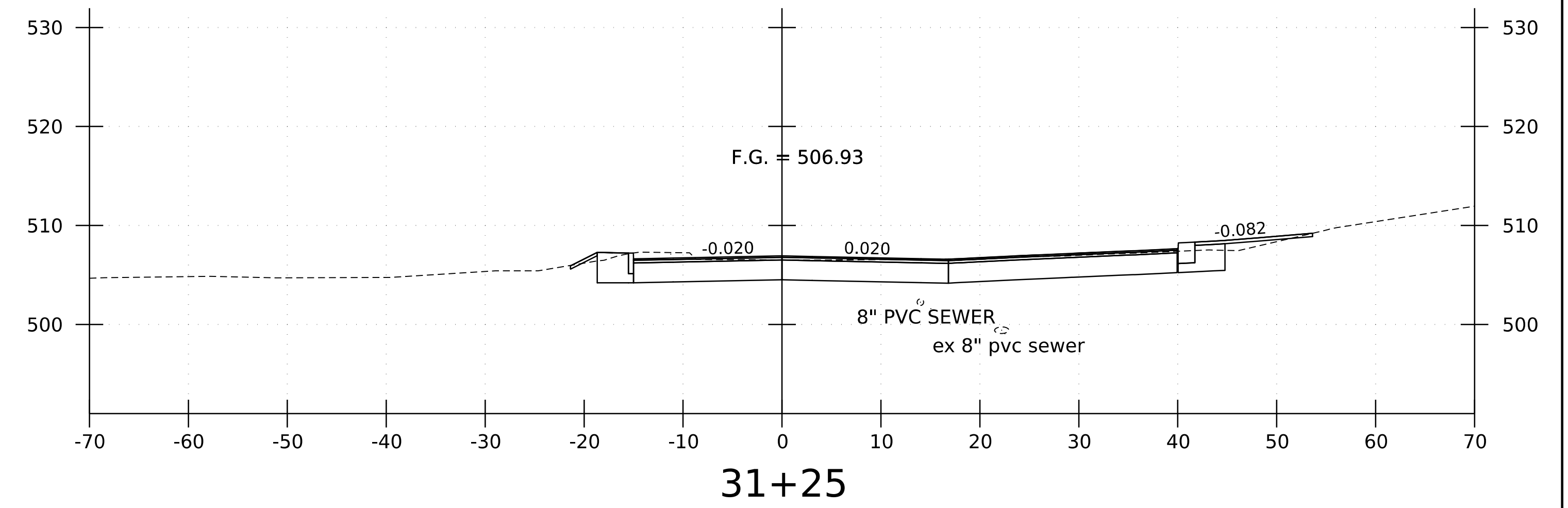
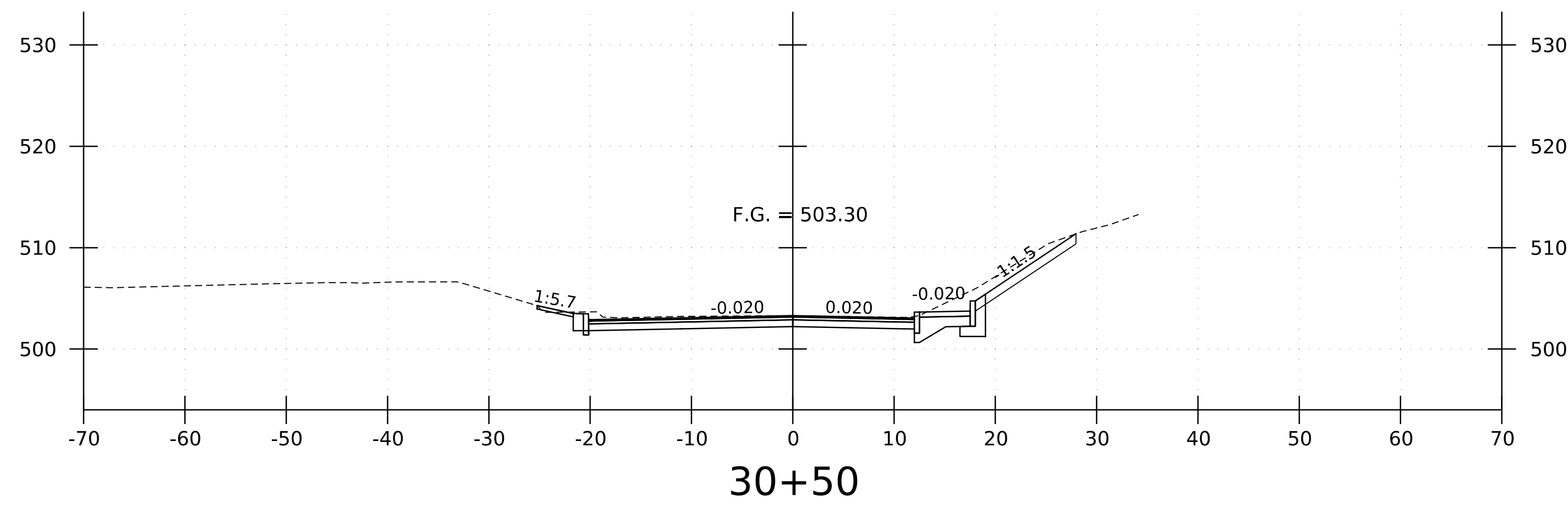
| Depth (ft) | Strata (1) | CLASSIFICATION OF MATERIALS (Description) | Run (Dip deg.) | Core Rec. % (ROD %) | Drill Rate minutes/ft | Blows/6" (N Value) | Moisture Content % | Gravel % | Sand % | Fines % | |
|------------|------------|---|----------------|---------------------|-----------------------|--------------------------|--------------------|----------|--------|---------|--|
| 2.5 | | A-1-b, GrSa, brn, Moist, Rec. = 0.5 ft | | | | WH-3-2-2 (5) | 6.9 | 39.8 | 47.6 | 12.6 | |
| | | A-1-b, GrSa, brn, Moist, Rec. = 1.1 ft | | | | 3-4-3-4 (7) | 9.3 | 36.6 | 49.5 | 13.9 | |
| 5.0 | | A-1-b, SaGr, brn, Wet, Rec. = 0.5 ft | | | | 3-3-2-3 (5) | 11.2 | 47.6 | 40.5 | 11.9 | |
| 7.5 | | A-1-b, GrSa, brn, Wet, Rec. = 0.65 ft | | | | 5-2-3-3 (5) | 14.2 | 41.5 | 47.7 | 10.8 | |
| | | A-1-b, GrSa, brn, Moist, Rec. = 1.5 ft | | | | 2-2-8-25 (10) | 11.9 | 42.5 | 42.7 | 14.8 | |
| 10.0 | | 10.1 ft - 15.1 ft, Black-light gray, Graphitic PHYLLITE, consisting of zones with very fine-grained black minerals that are graphitic and host sulfides, interbedded with "sandy" light gray-green zones of muscovite-biotite-chlorite-quartz. Joints are moderately rough with bright orange oxidation. Moderately hard, Moderately weathered, Poor rock, BX, RMR=34 | 1 (80) | 90 (16) | 4 | Top of Bedrock @ 10.1 ft | | | | | |
| 12.5 | | | | | 4 | | | | | | |
| | | | | | | | 5 | | | | |
| 15.0 | | | | | | | 5 | | | | |
| 17.5 | | 15.1 ft - 17.6 ft, Black-light gray, Graphitic PHYLLITE, consisting of zones with very fine-grained black minerals that are graphitic and host sulfides, interbedded with "sandy" light gray-green zones of muscovite-biotite-chlorite-quartz. Joints are moderately rough with bright orange oxidation. BX | 2 (50-90) | 96 (85) | 9 | | | | | | |
| | | 17.6 ft - 20.1 ft, Light gray-green, Muscovite-biotite-chlorite-quartz PHYLLITE, with erratic veining and cm thick banding of CaCO3 bearing quartz disrupts the contacts between different zones. Joints are smooth with bright orange oxidation. Moderately hard, Moderately weathered, Fair rock, RMR=58 | | | 12 | 7 | | | | | |
| 20.0 | | Hole stopped @ 20.1 ft | | | | | | | | | |
| 22.5 | | Remarks: Hole collapsed at 5.2 feet. 1. Driller switched from 4 inch to 3 inch casing at 8 feet. | | | | | | | | | |

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. <<SUB>><<SUB>> is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 2 WATERBURY-STOWE STP2945(1).GPJ VERMONT AOT.GDT 8/3/17

| | | | |
|-----------------|----------------------|-------------------------|----------------|
| PROJECT NAME: | WATERBURY | PLOT DATE: | 9-SEP-2022 |
| PROJECT NUMBER: | BO 1446(40) | DRAWN BY: | P. ARMATA |
| FILE NAME: | z93j040det_stowe.dgn | CHECKED BY: | T. KNIGHT |
| PROJECT LEADER: | T. KNIGHT | BORING LOG PLAN SHEET 4 | SHEET 32 OF 44 |





STA. BEGIN 29+50 APPROACH

STA. BEGIN 30+75 PROJECT

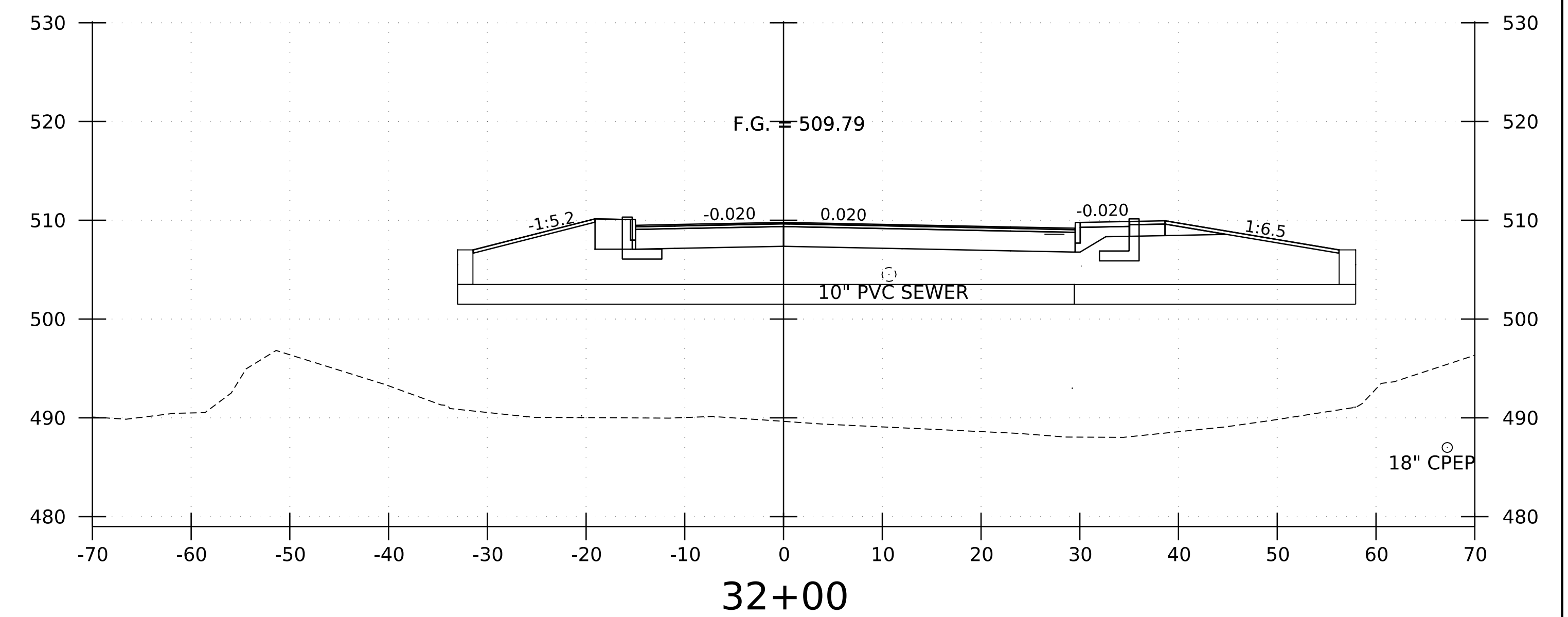
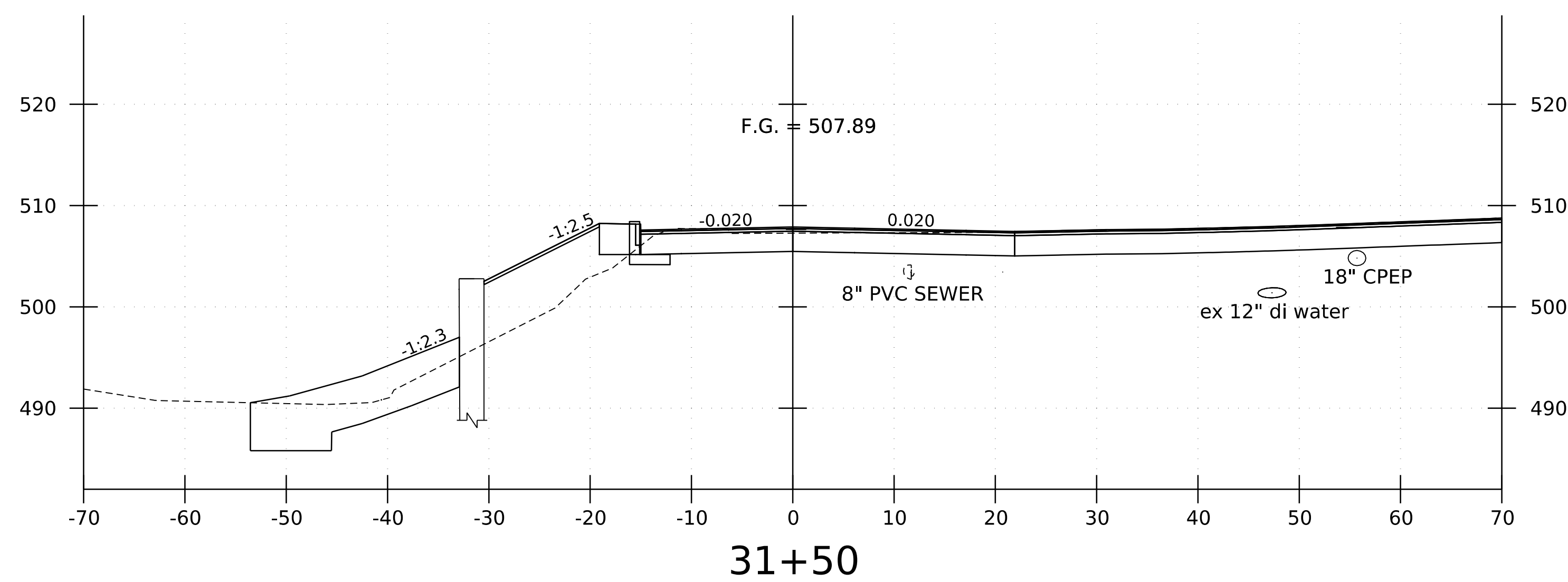
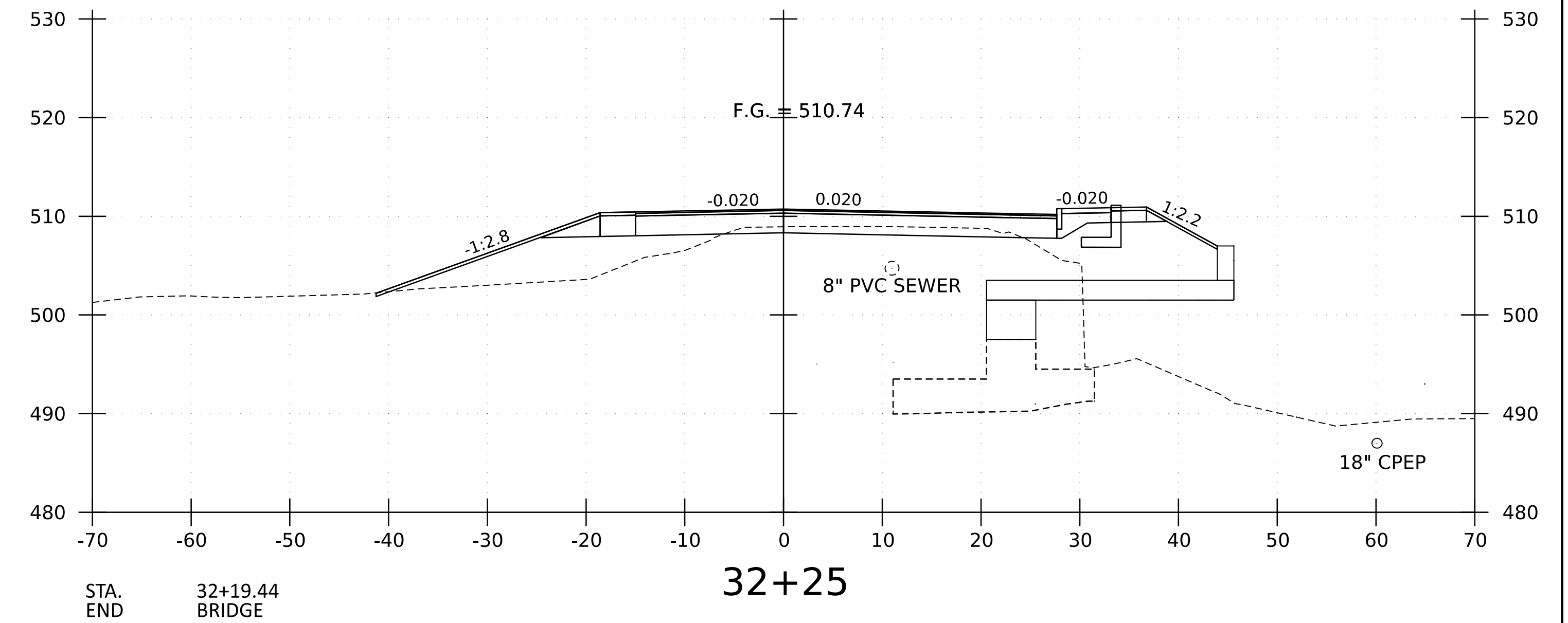
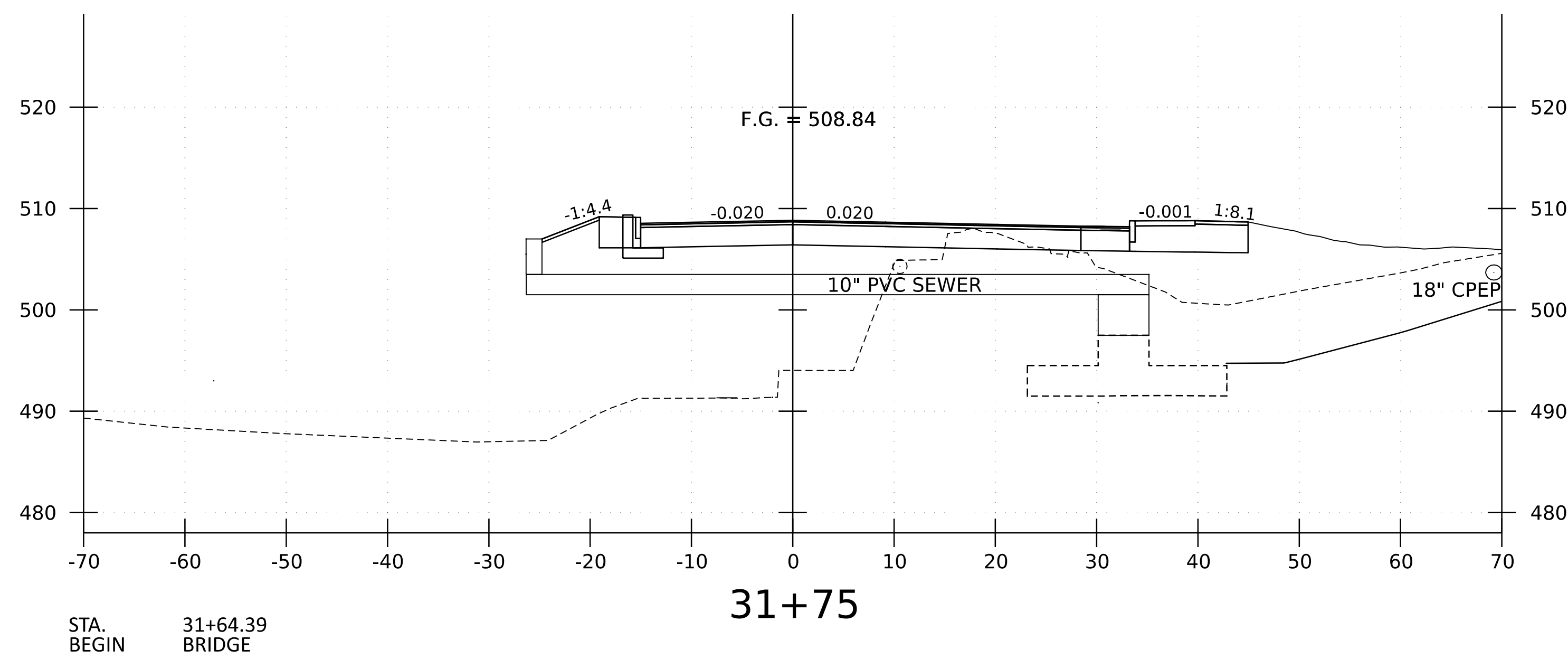
PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040xs ord.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: S. WINES

PLOT DATE: 9-SEP-2022
DRAWN BY: P. ARMATA
CHECKED BY: T. KNIGHT
SHEET 33 OF 44



STOWE STREET CROSS SECTION SHEET 1

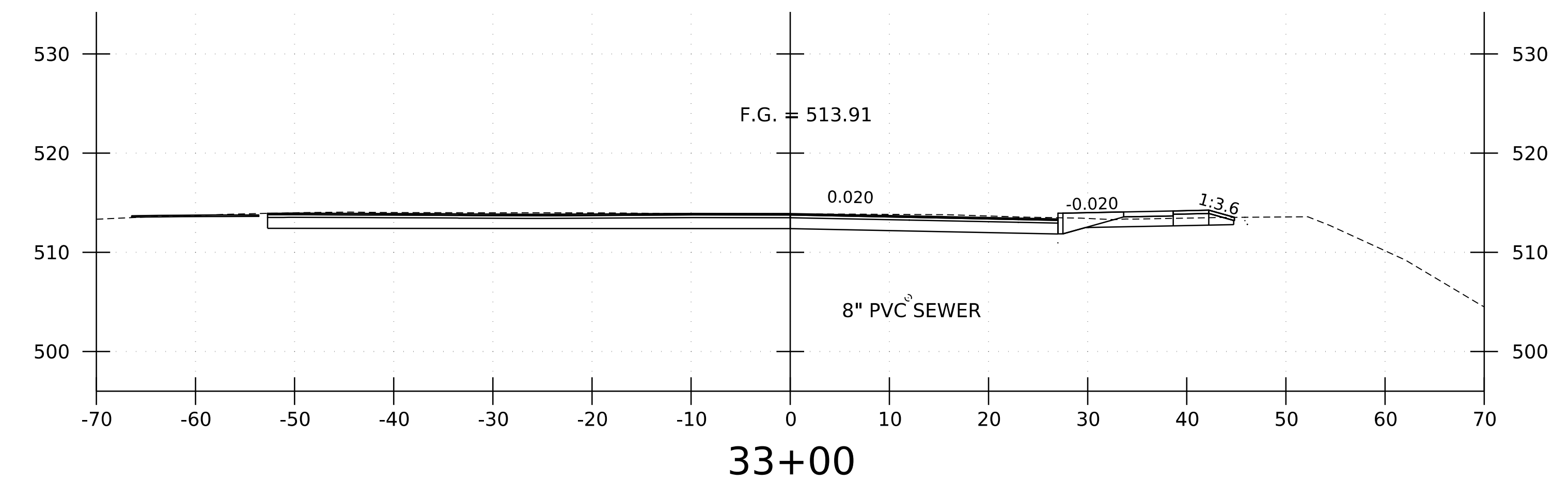
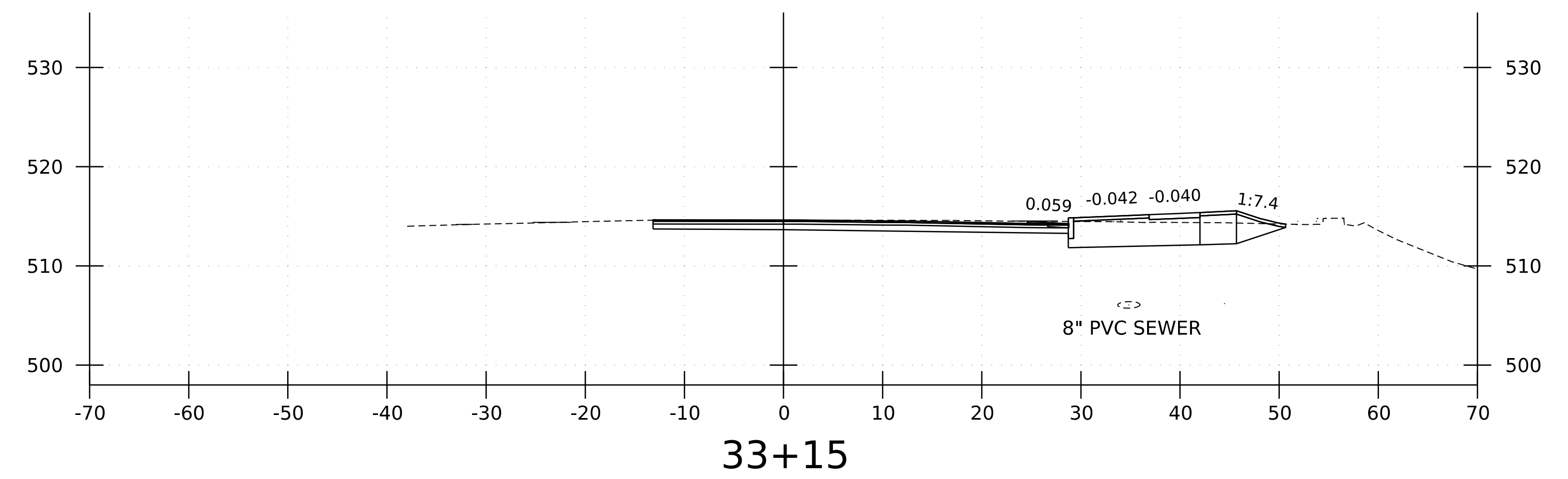
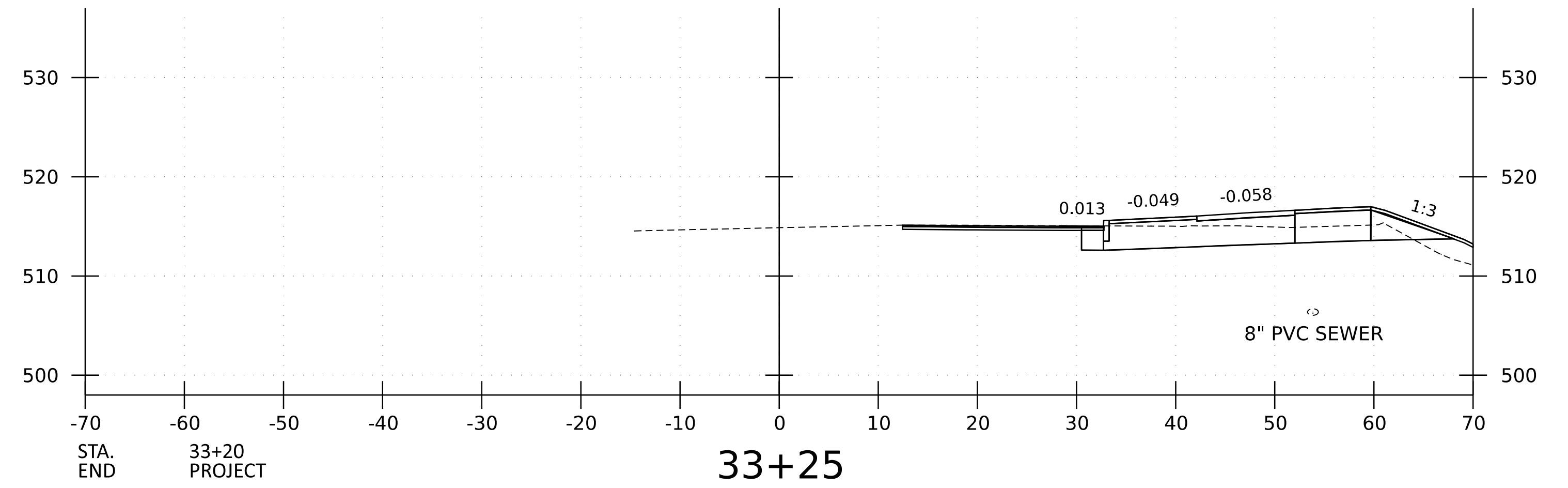
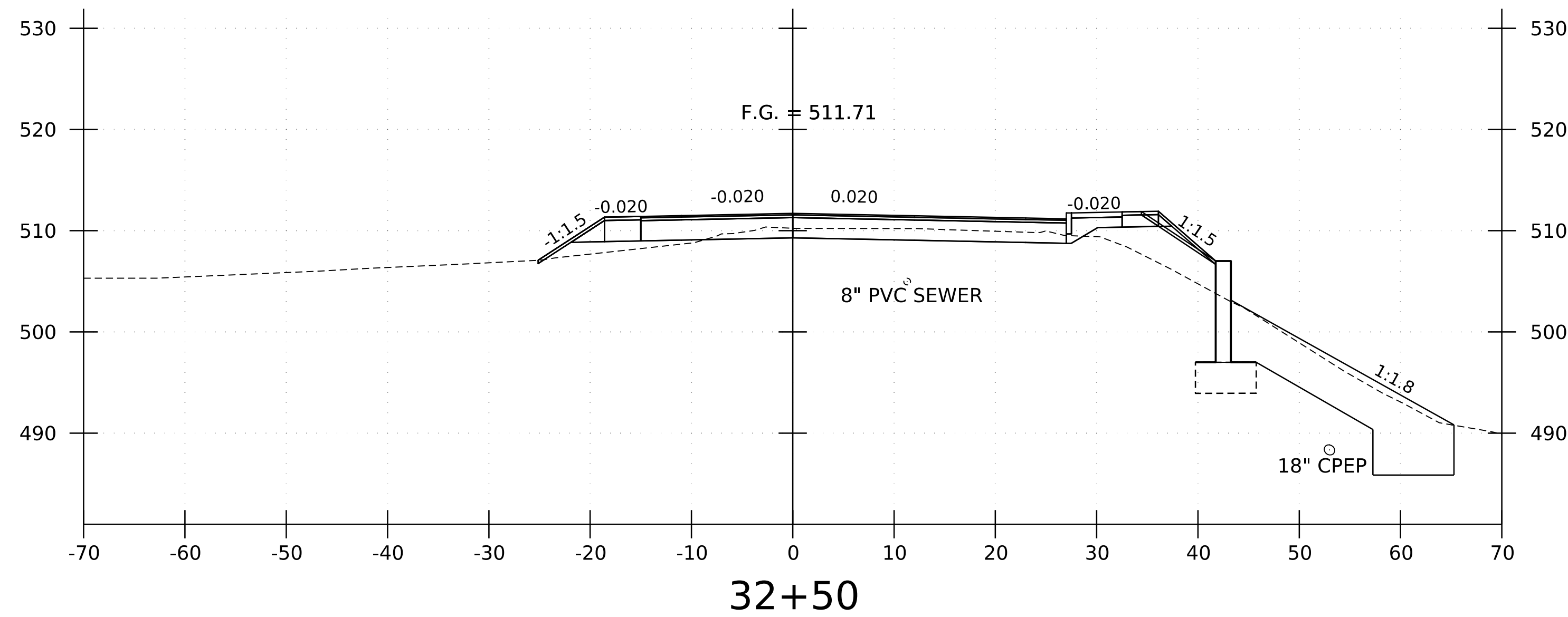
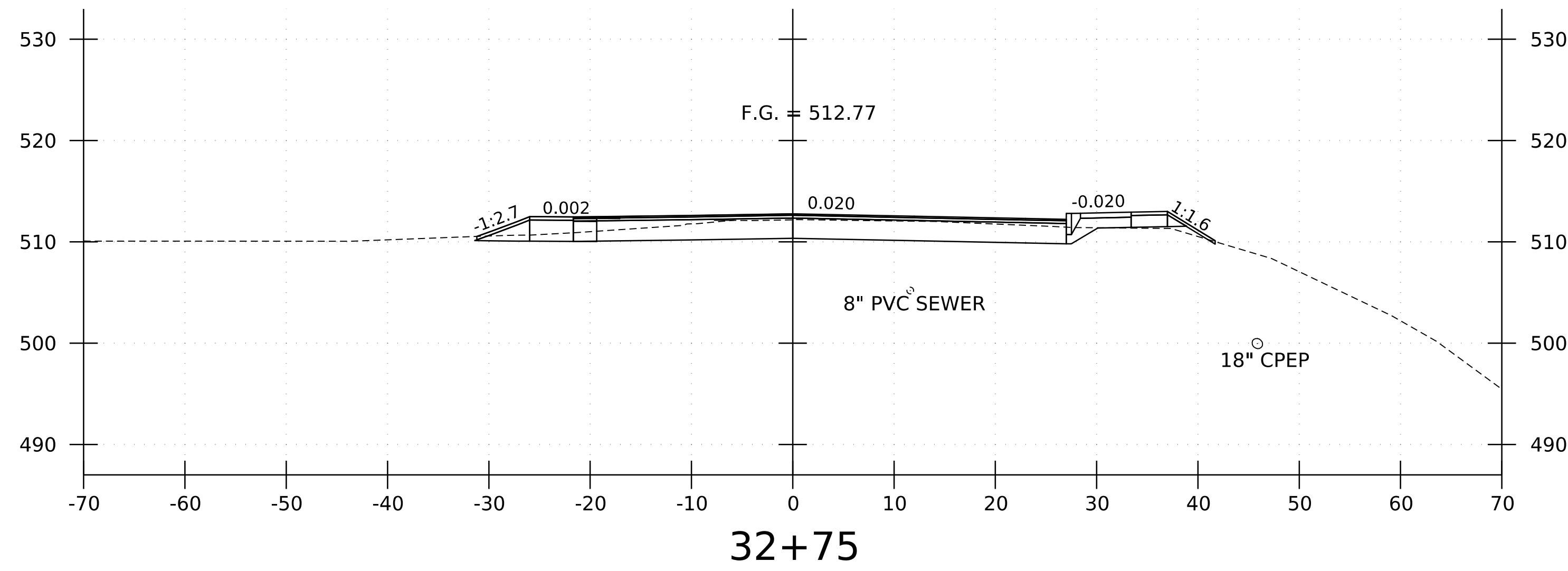


PROJECT NAME: WATERBURY
 PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040xs ord.dgn
 PROJECT LEADER: T. KNIGHT
 DESIGNED BY: S. WINES

PLOT DATE: 9-SEP-2022
 DRAWN BY: P. ARMATA
 CHECKED BY: T. KNIGHT
 SHEET 34 OF 44

STOWE STREET CROSS SECTION SHEET 2



PROJECT NAME: WATERBURY
 PROJECT NUMBER: BO 1446(40)

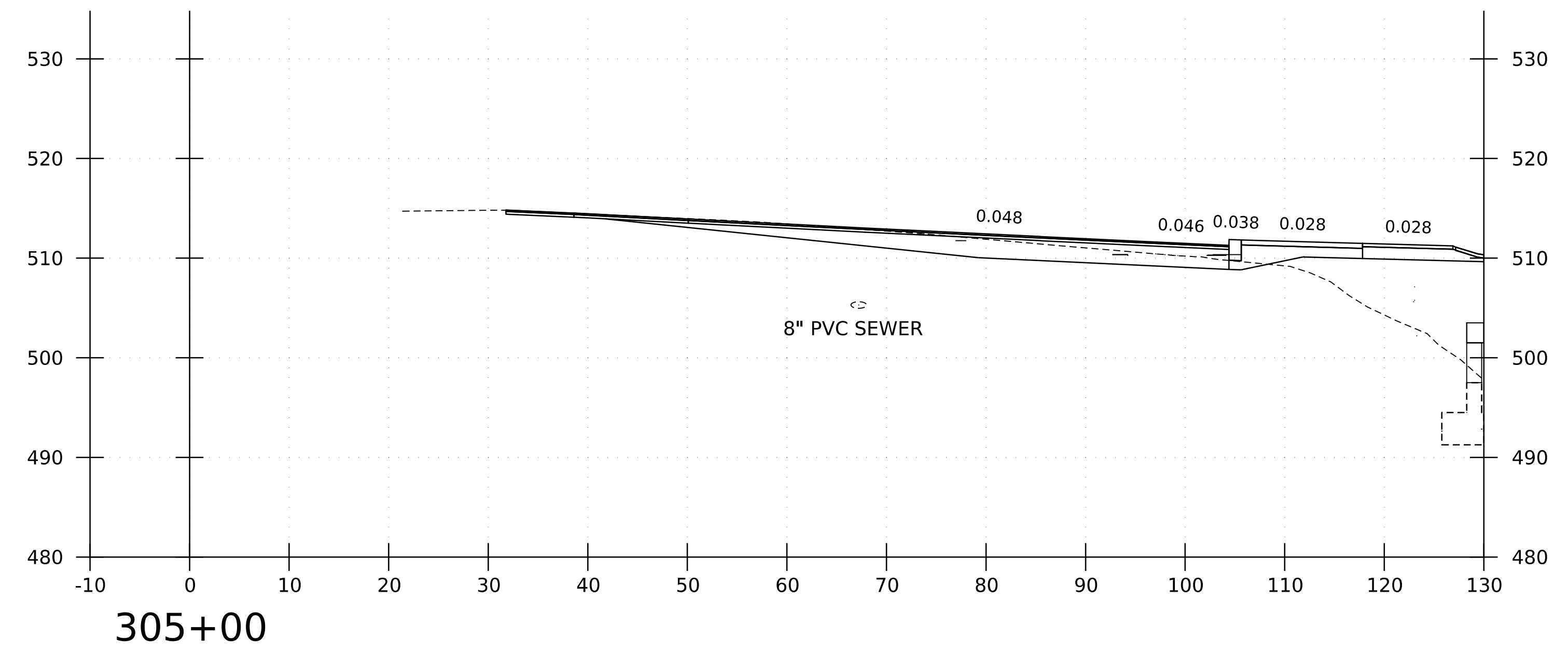
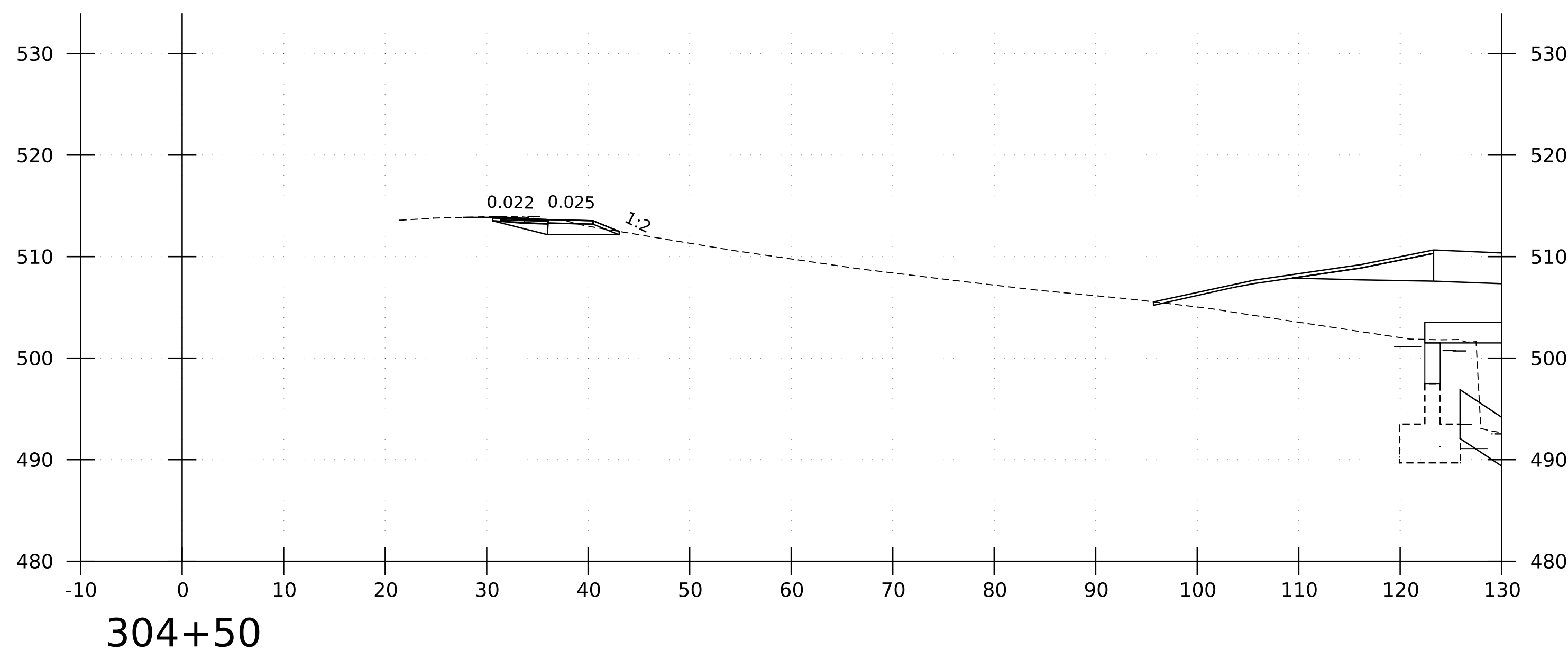
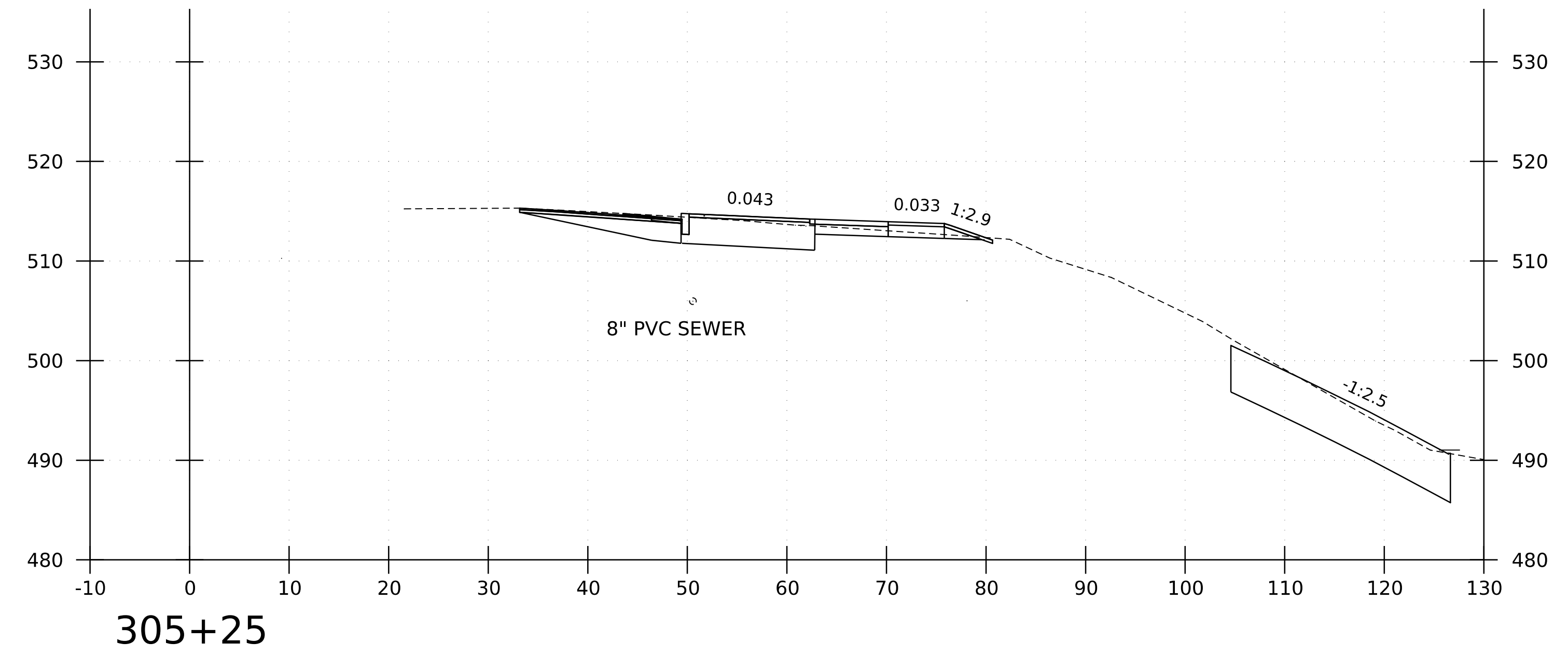
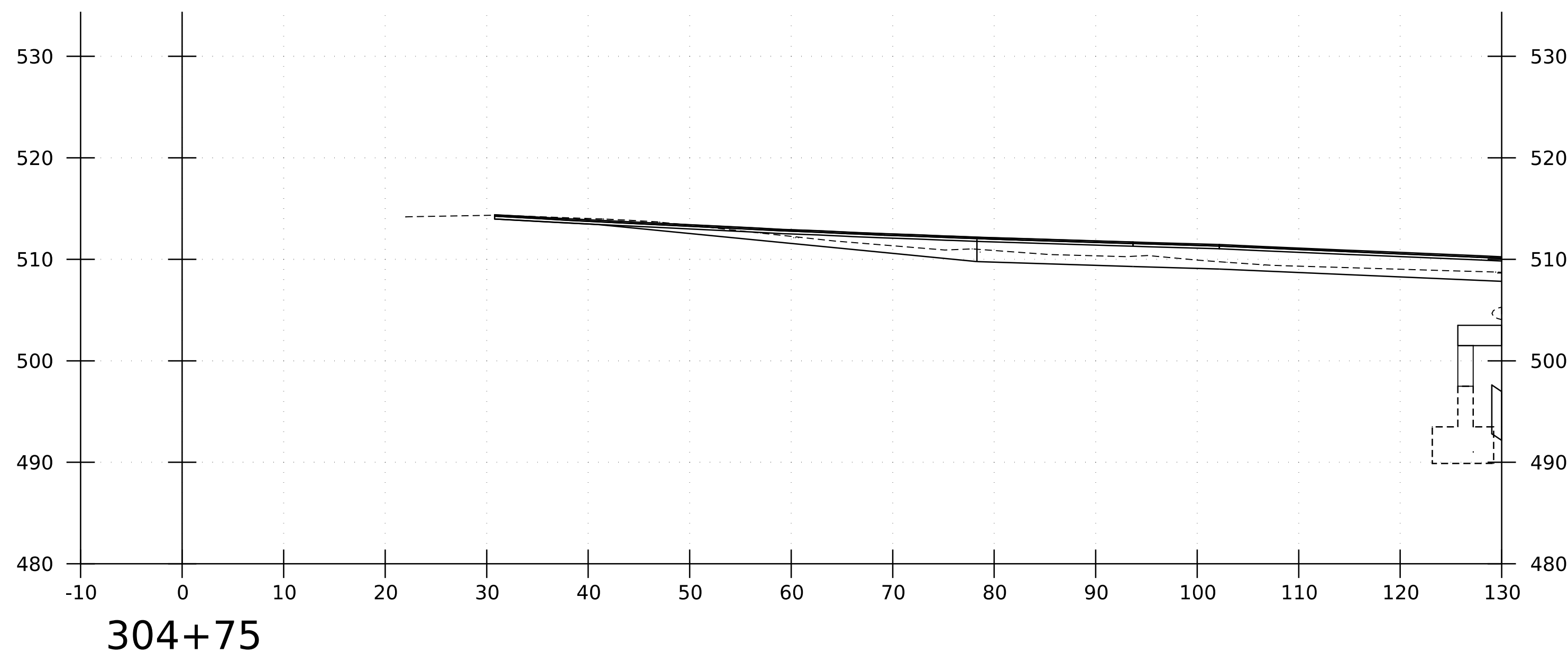
FILE NAME: z93j040xs ord.dgn
 PROJECT LEADER: T. KNIGHT
 DESIGNED BY: S. WINES

PLOT DATE: 9-SEP-2022
 DRAWN BY: P. ARMATA
 CHECKED BY: T. KNIGHT

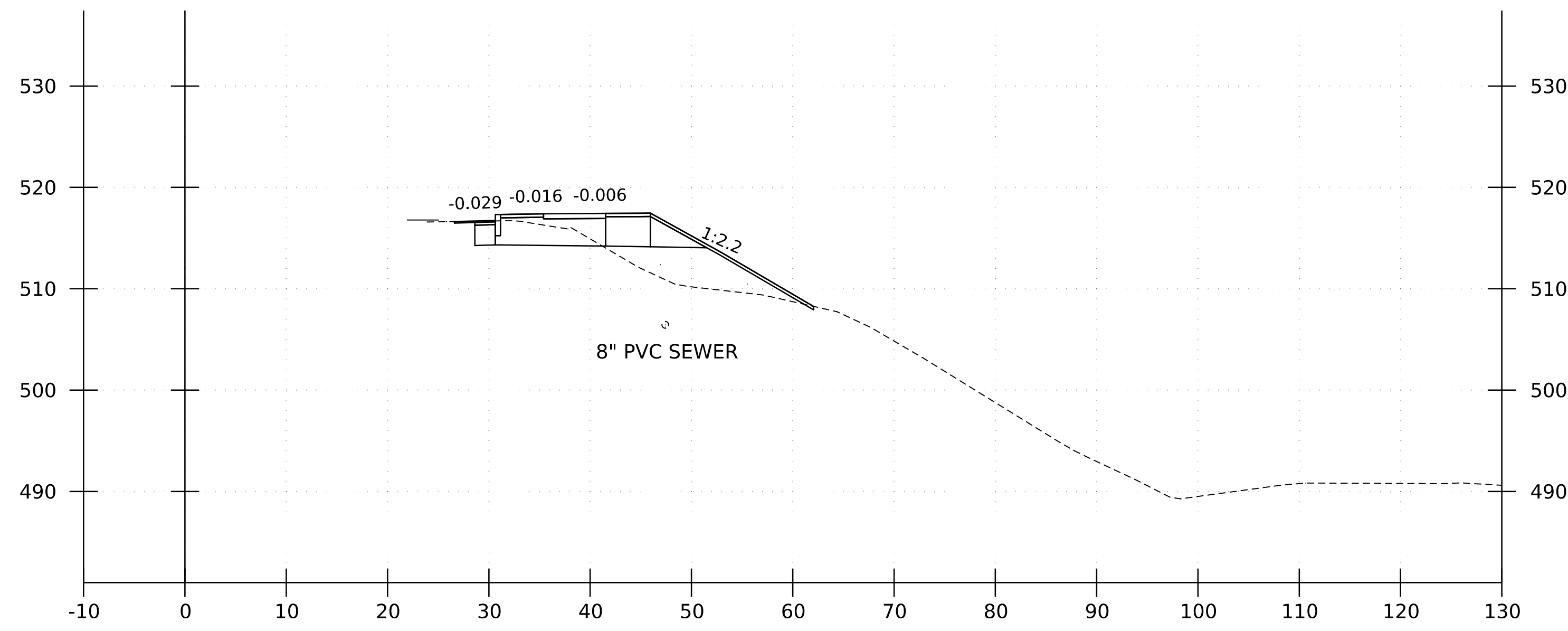
STOWE STREET CROSS SECTION SHEET 3

SHEET 35 OF 44

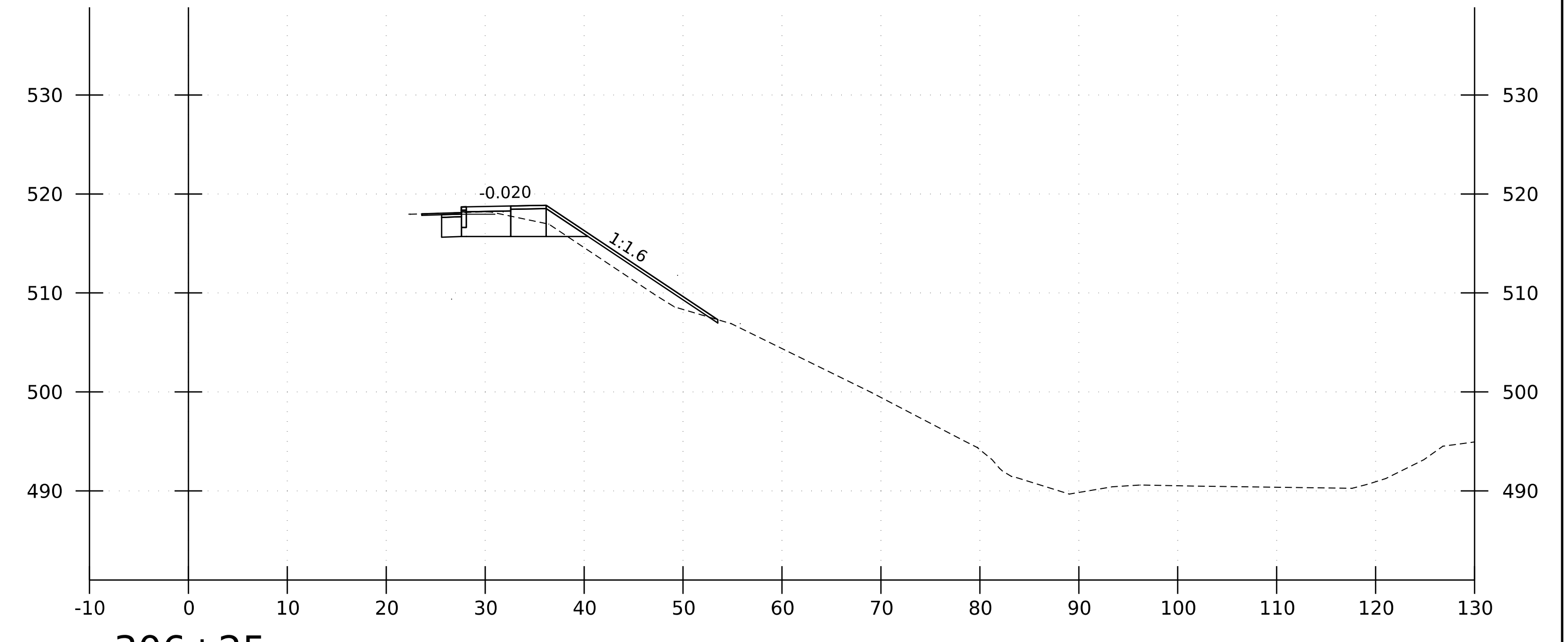




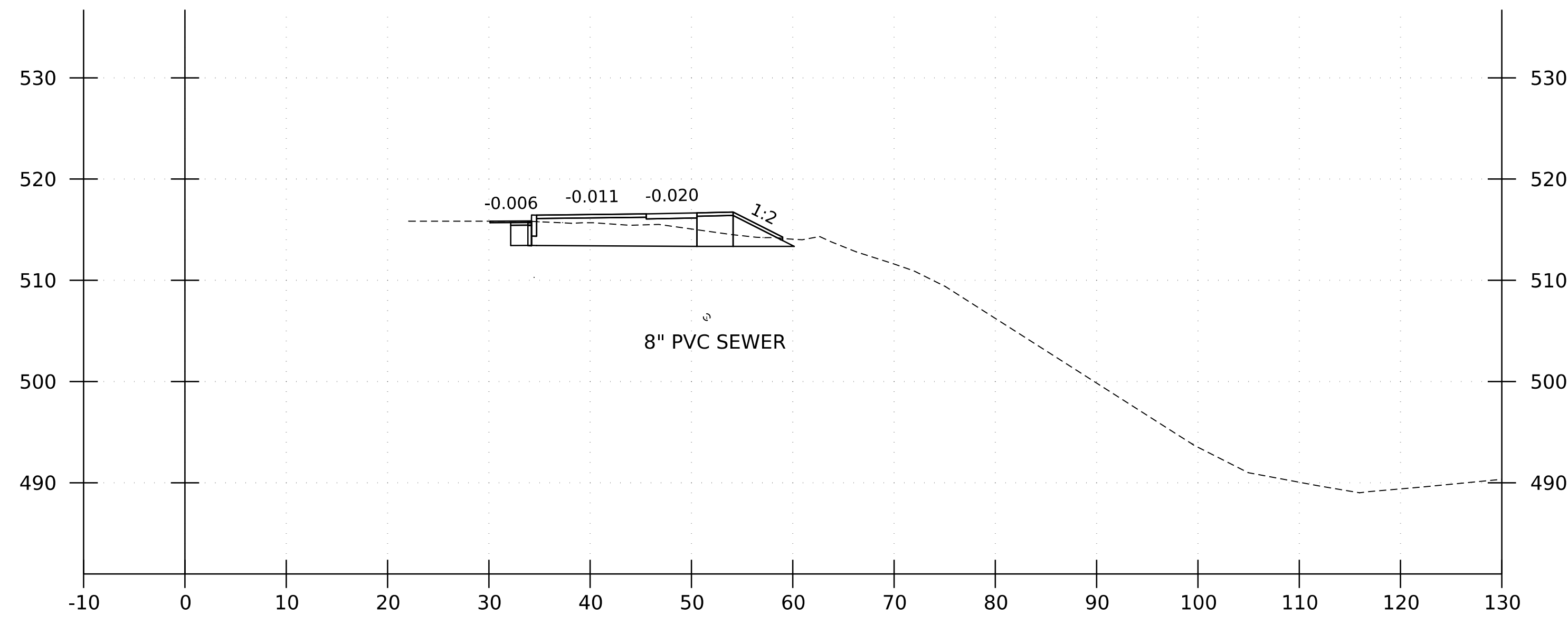
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| PROJECT NAME: | WATERBURY | | |
| PROJECT NUMBER: | BO 1446(40) | | |
| FILE NAME: | z93j040xs ord.dgn | PLOT DATE: | 9-SEP-2022 |
| PROJECT LEADER: | T. KNIGHT | DRAWN BY: | P. ARMATA |
| DESIGNED BY: | S. WINES | CHECKED BY: | T. KNIGHT |
| MAINLINE CROSS SECTION SHEET 1 | | SHEET | 36 OF 44 |



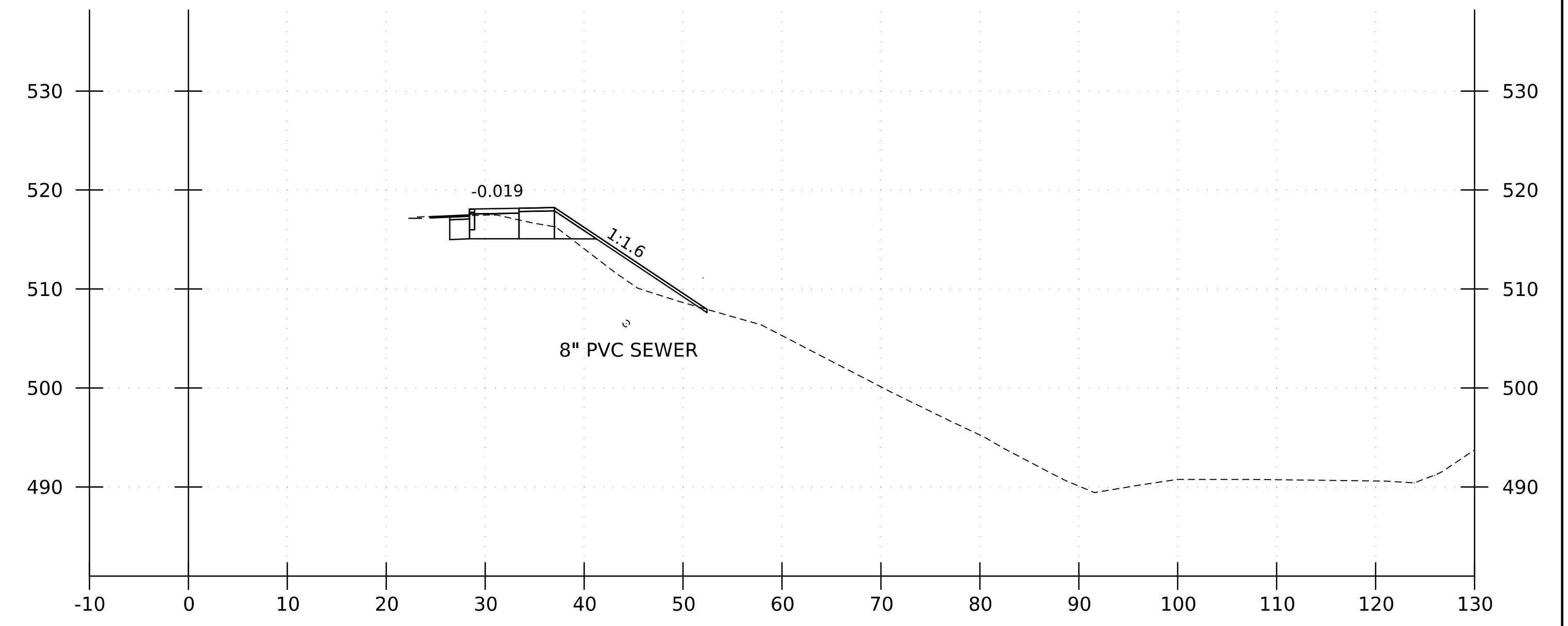
305+75



306+25



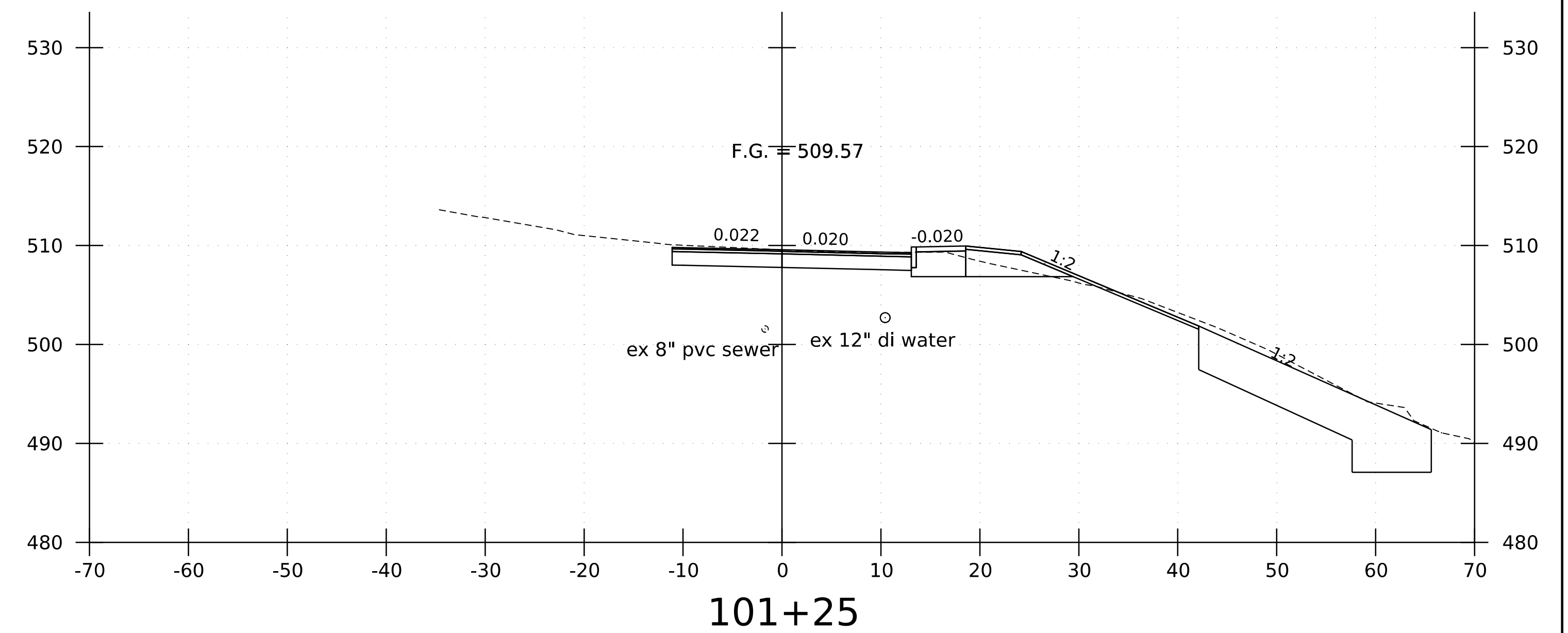
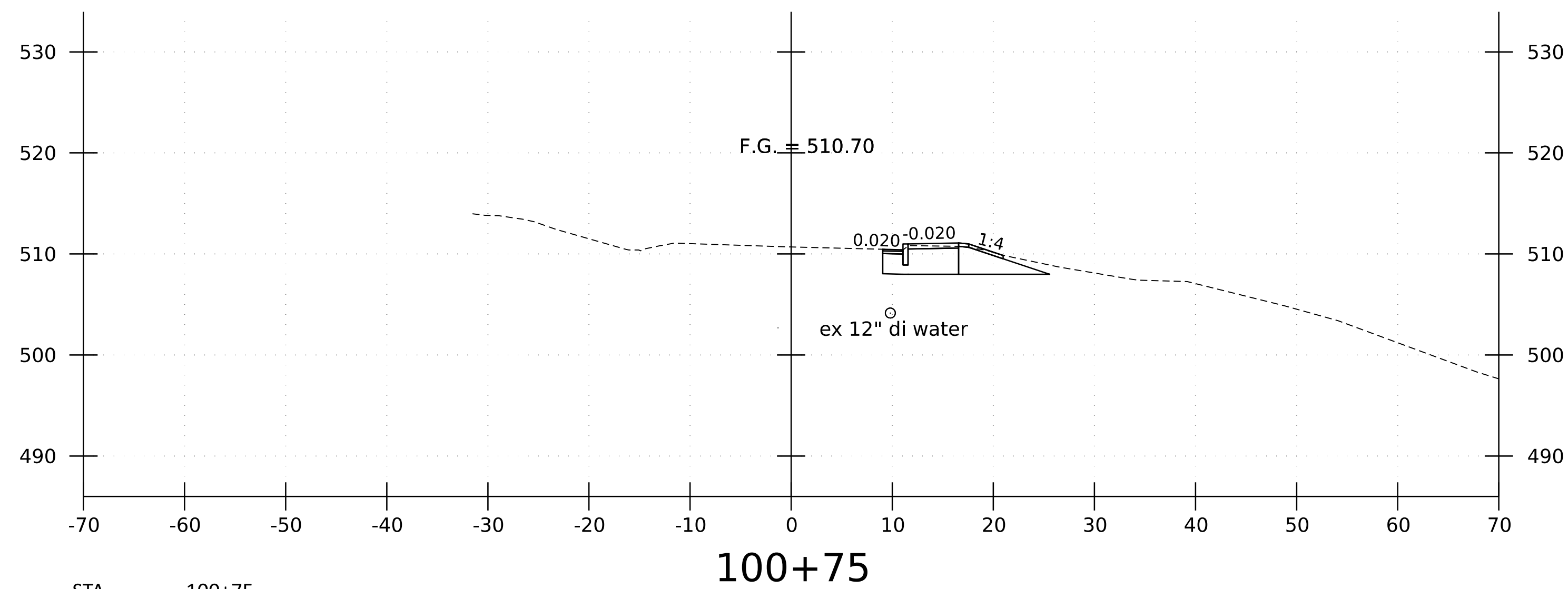
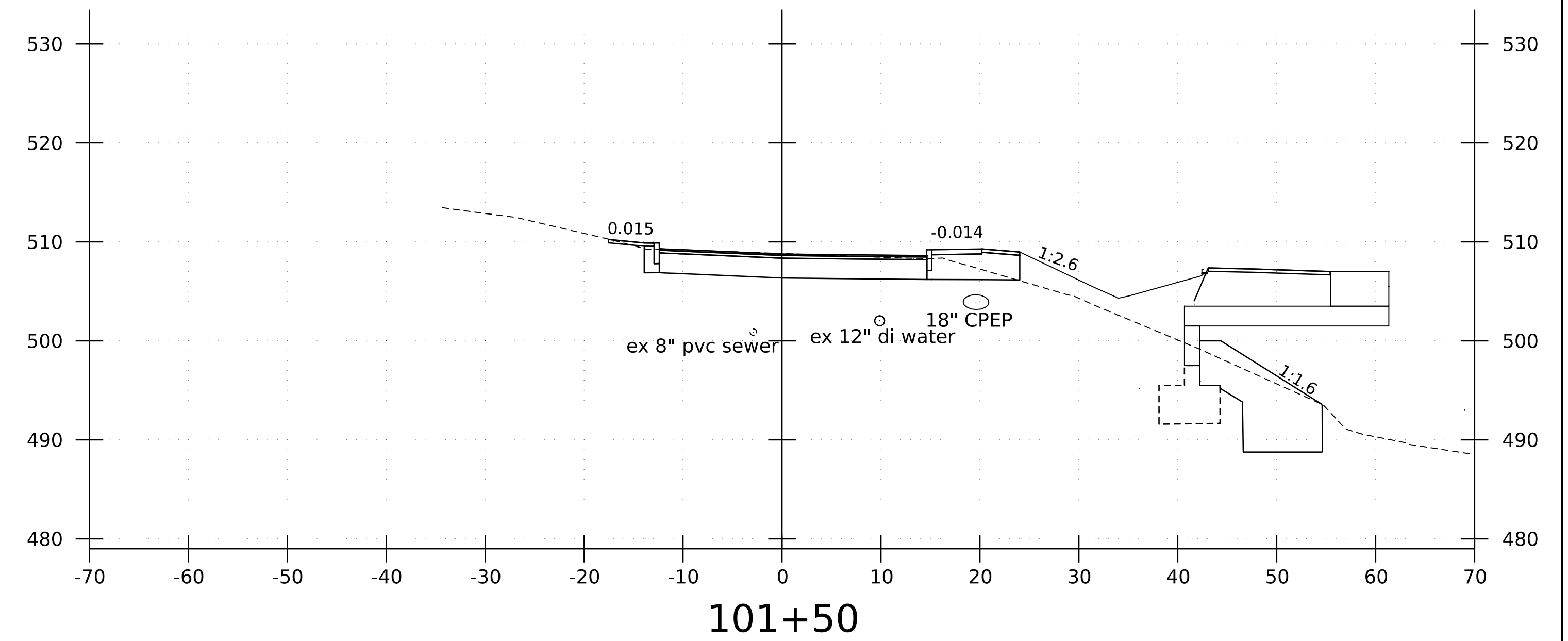
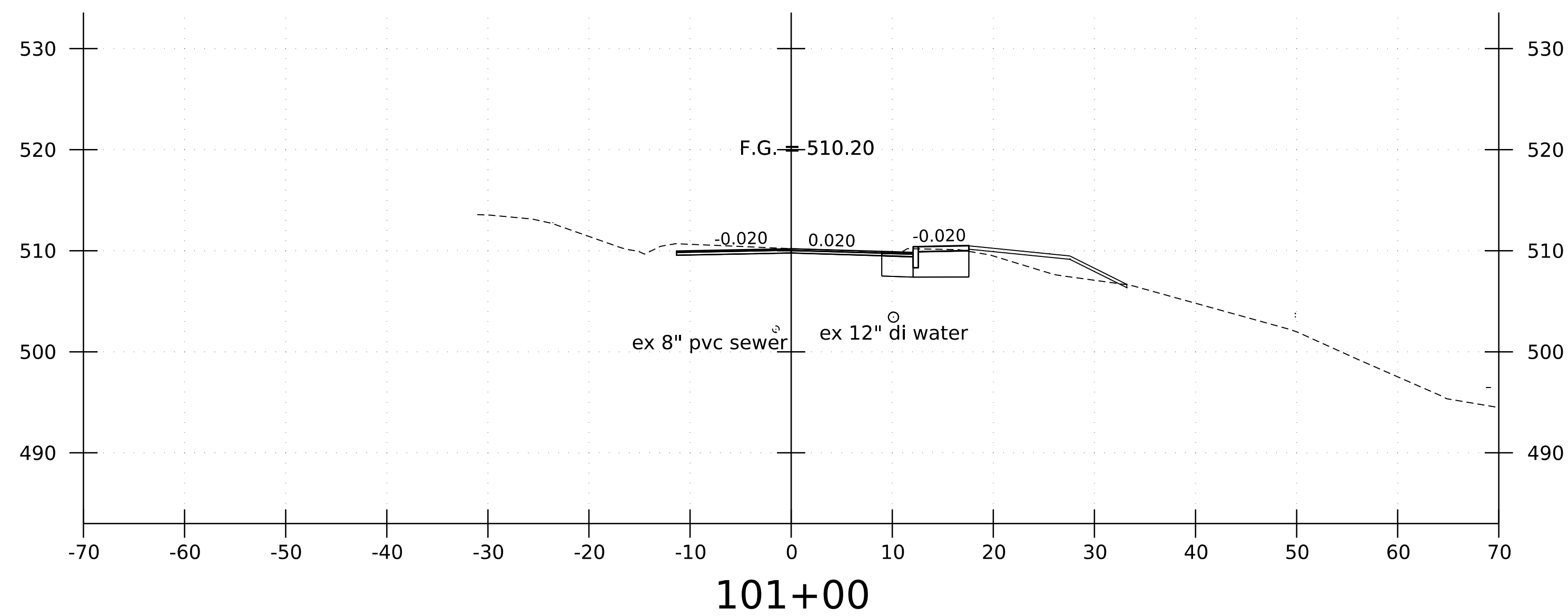
305+50



306+00



| | | |
|--------------------------------|-------------------|----------------|
| PROJECT NAME: | WATERBURY | |
| PROJECT NUMBER: | BO 1446(40) | |
| FILE NAME: | z93j040xs ord.dgn | PLOT DATE: |
| PROJECT LEADER: | T. KNIGHT | DRAWN BY: |
| DESIGNED BY: | S. WINES | CHECKED BY: |
| MAINLINE CROSS SECTION SHEET 2 | | SHEET 37 OF 44 |



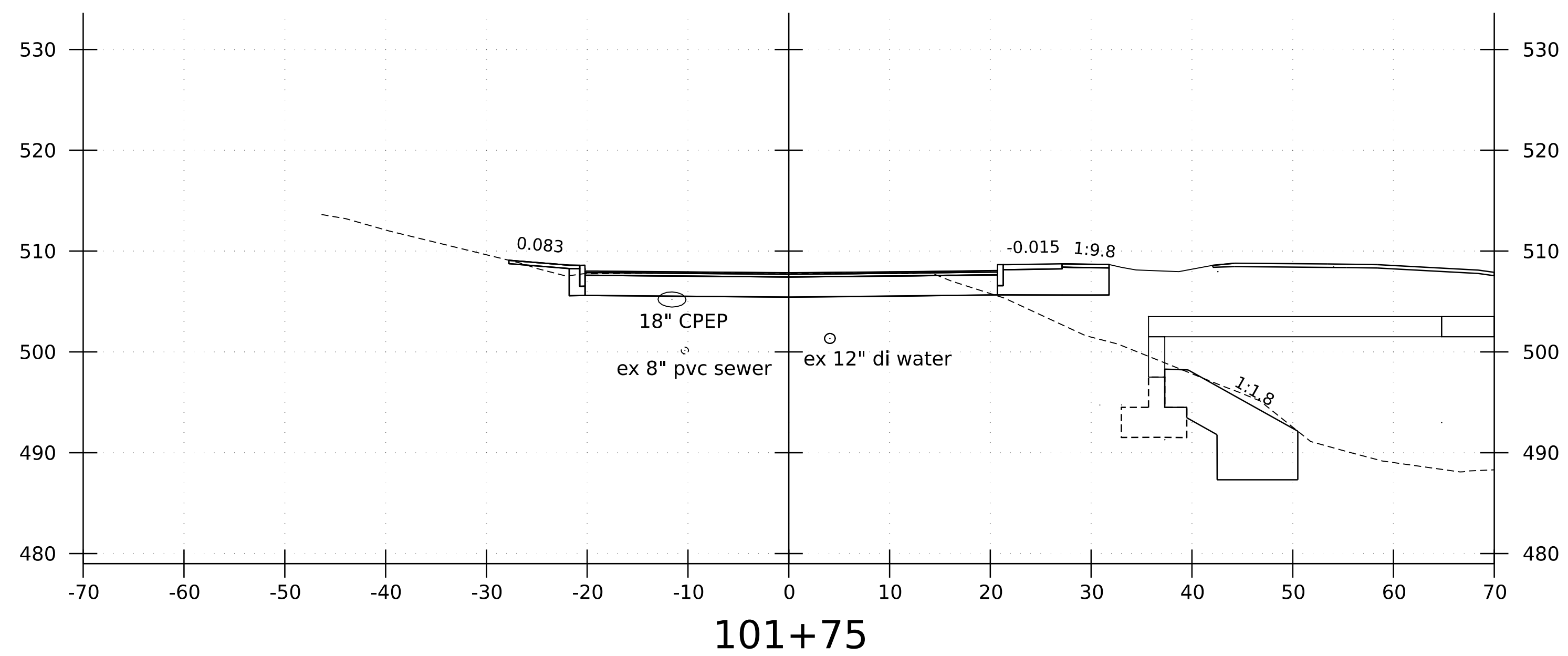
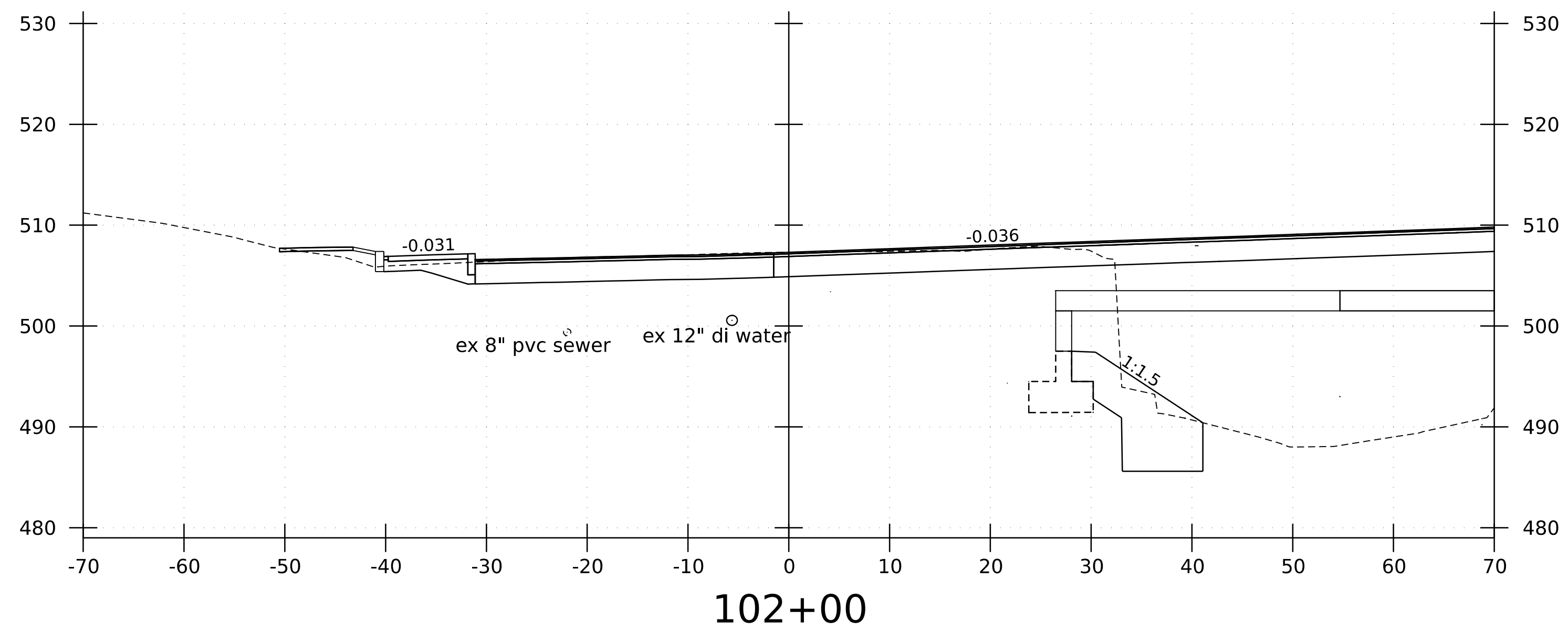
STA. 100+75
BEGIN SIDE ROAD APPROACH



PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040xs ord.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: S. WINES
LINCOLN STREET CROSS SECTION SHEET 1

PLOT DATE: 9-SEP-2022
DRAWN BY: P. ARMATA
CHECKED BY: T. KNIGHT
SHEET 38 OF 44

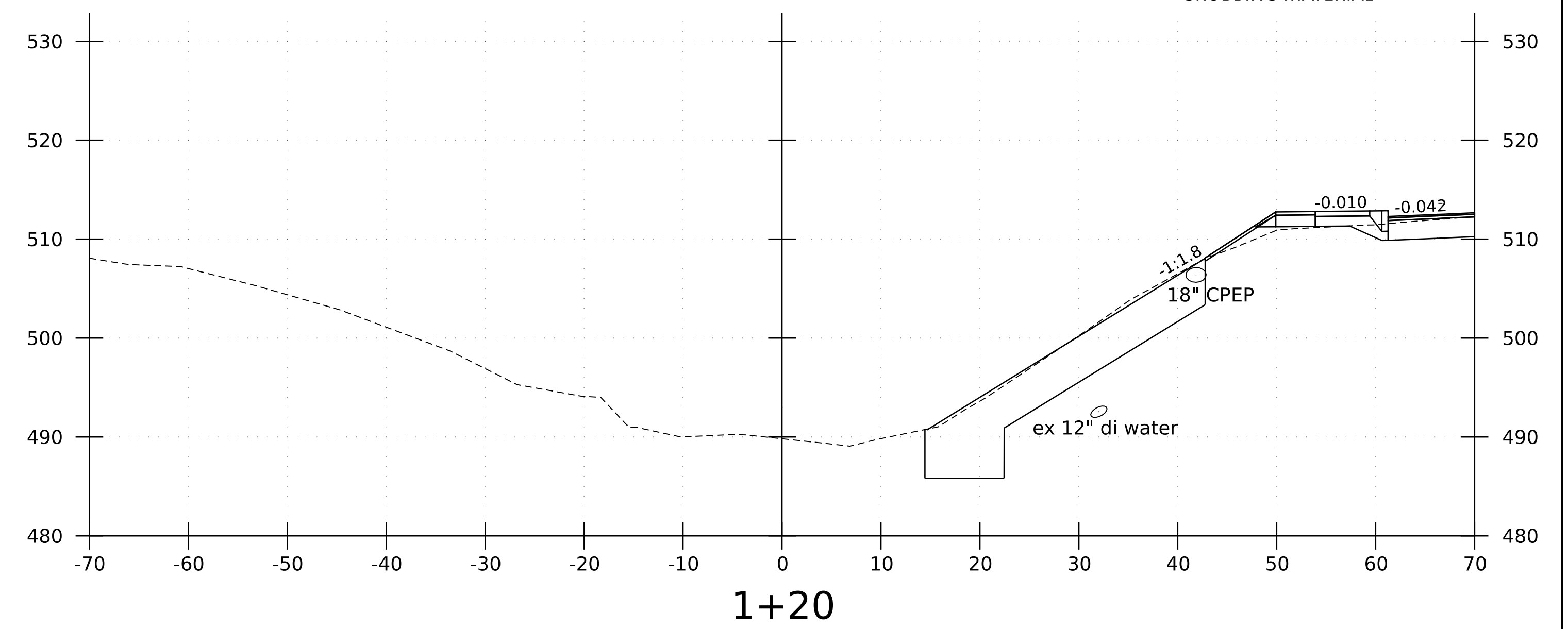
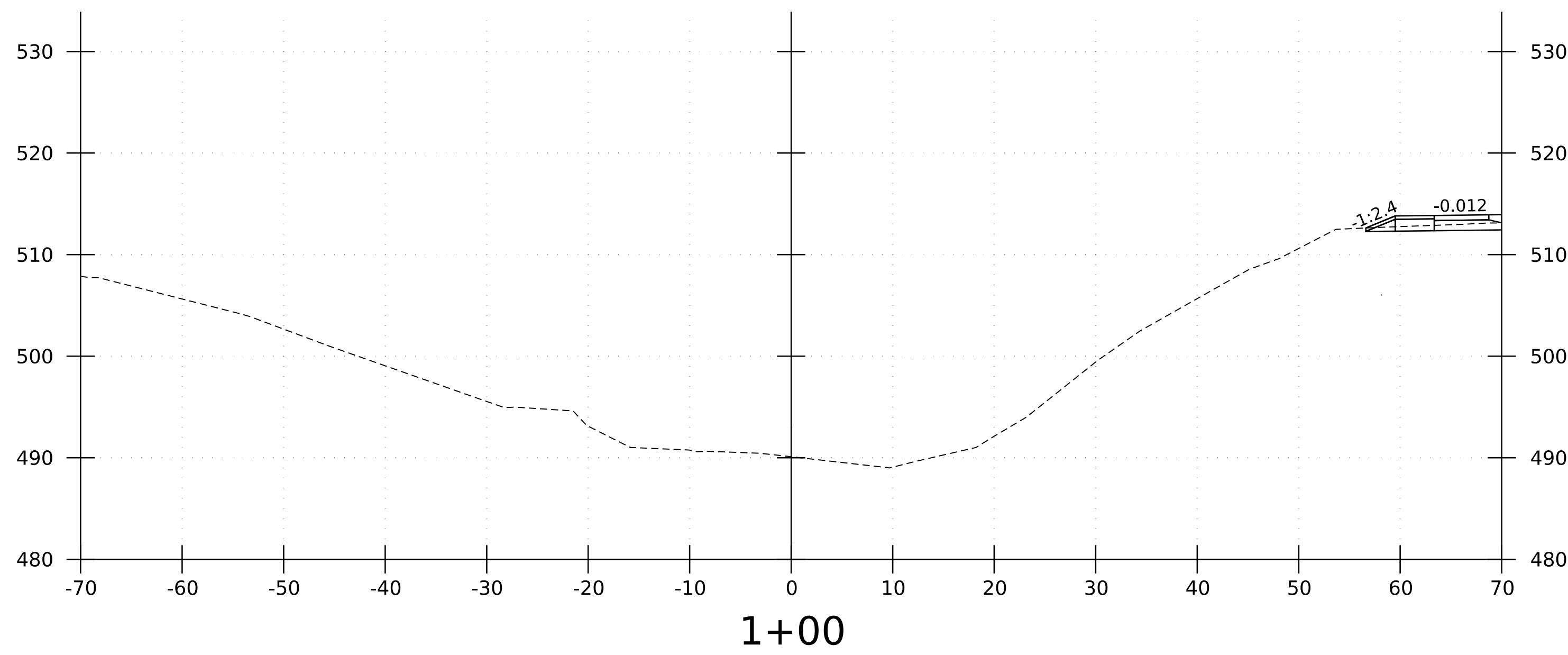
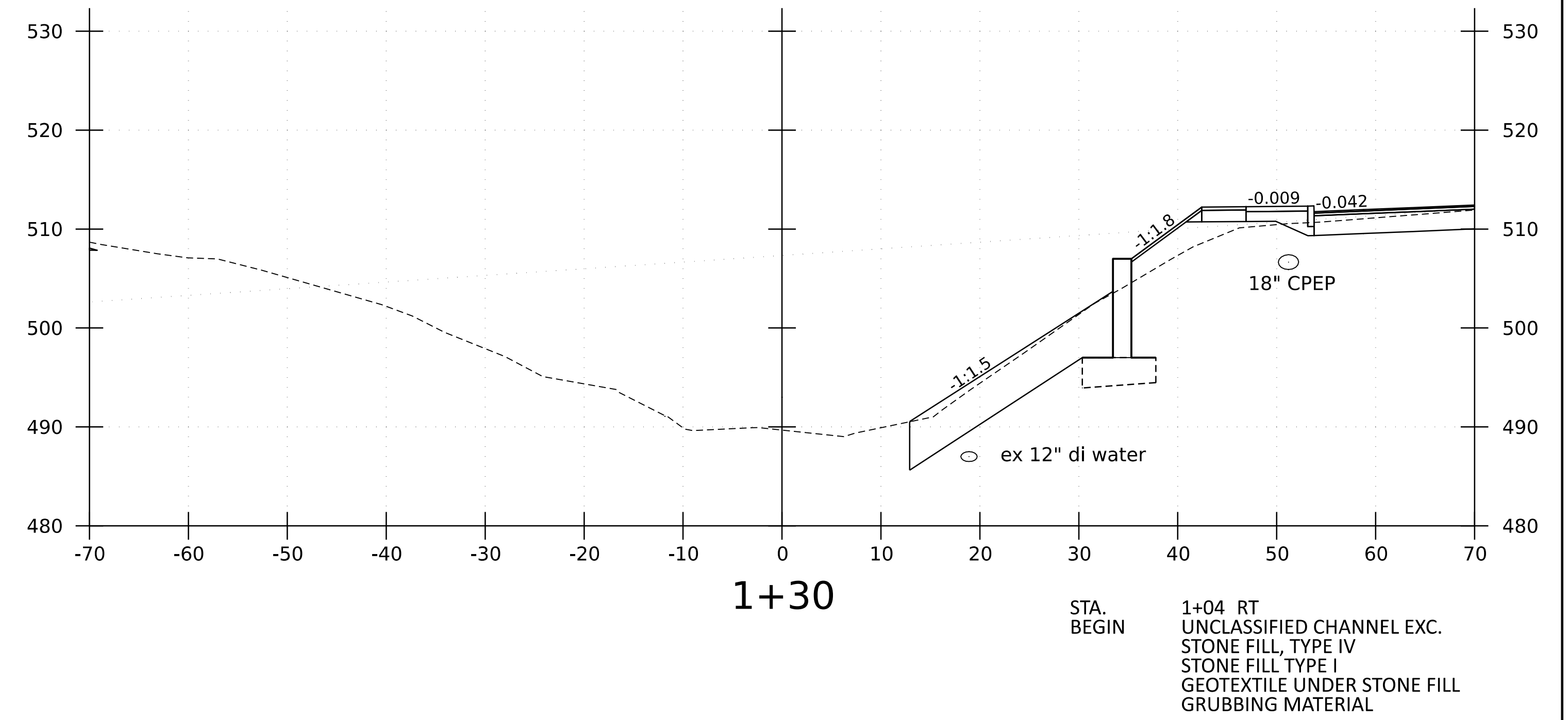
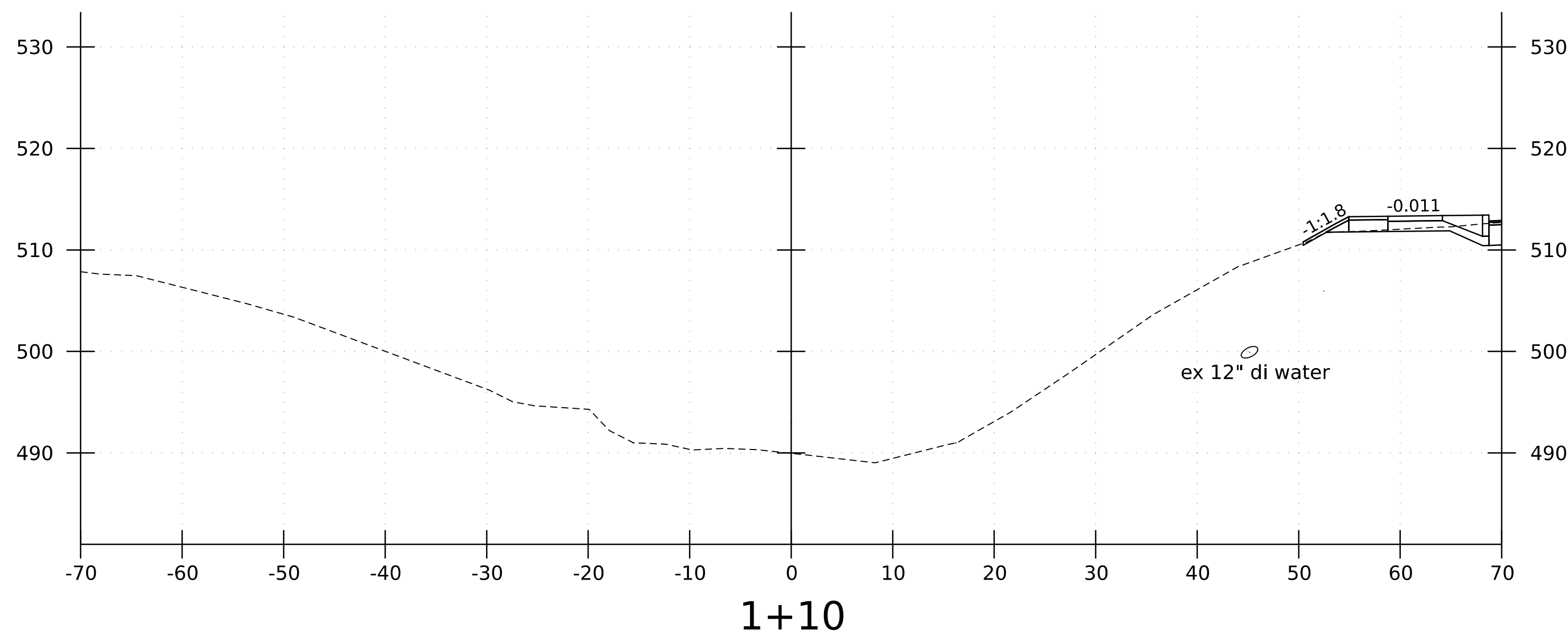


PROJECT NAME: WATERBURY
 PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040xs ord.dgn
 PROJECT LEADER: T. KNIGHT
 DESIGNED BY: S. WINES
 LINCOLN STREET CROSS SECTION SHEET 2

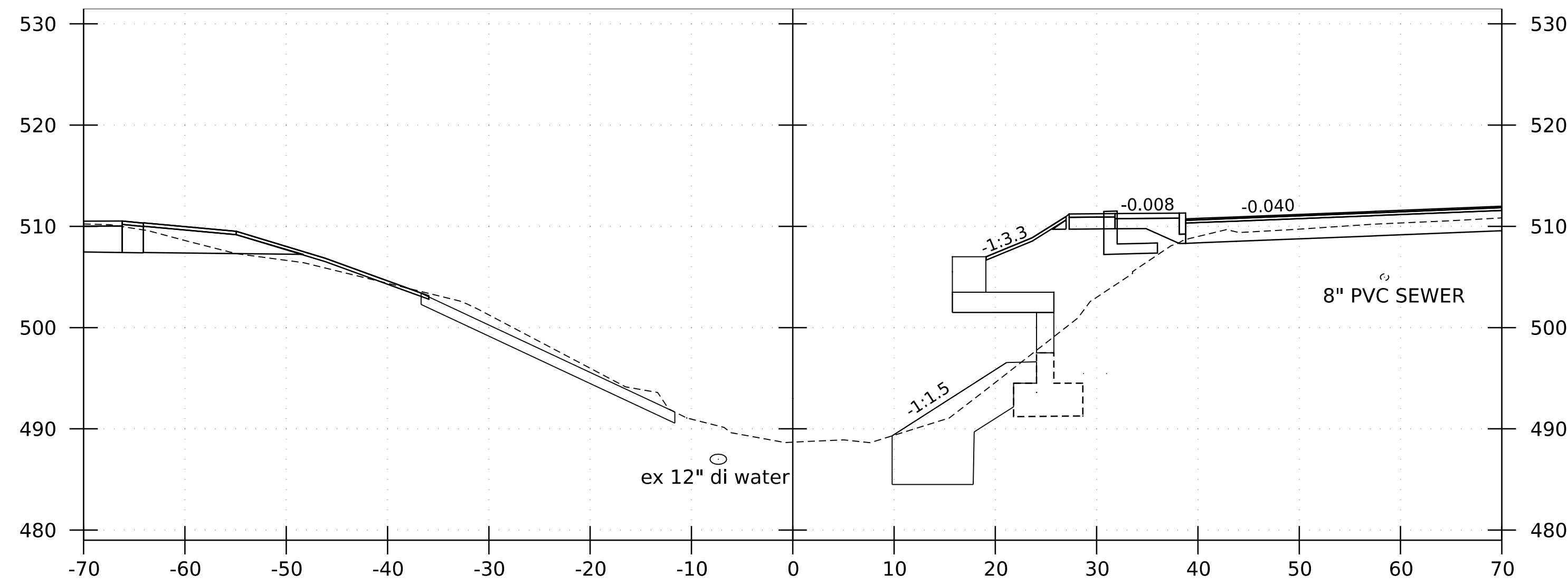
PLOT DATE: 9-SEP-2022
 DRAWN BY: P. ARMATA
 CHECKED BY: T. KNIGHT
 SHEET 39 OF 44





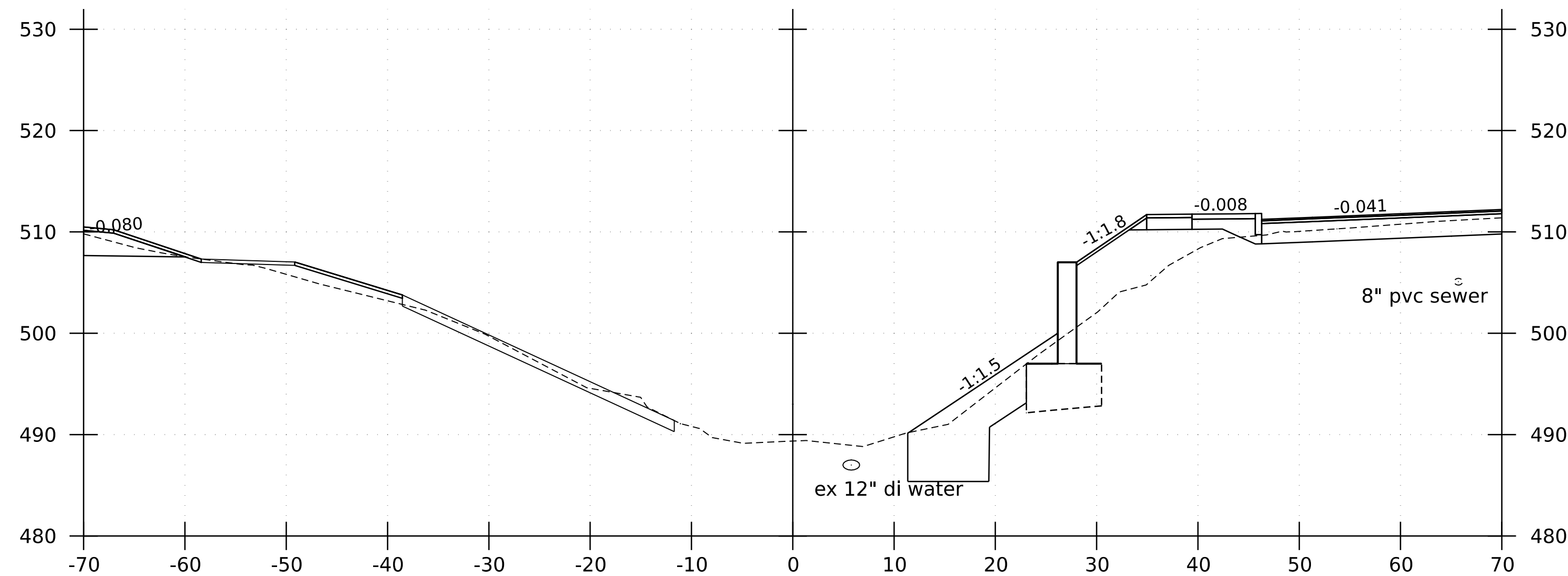
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| PROJECT NAME: | WATERBURY | FILE NAME: | z93j040xs ord.dgn | PLOT DATE: | 9-SEP-2022 |
| PROJECT NUMBER: | BO 1446(40) | PROJECT LEADER: | T. KNIGHT | DRAWN BY: | P. ARMATA |
| | | DESIGNED BY: | S. WINES | CHECKED BY: | T. KNIGHT |
| | | CHANNEL CROSS SECTION SHEET 1 | | SHEET | 40 OF 44 |

STA. 1+51 RT
END GRUBBING MATERIAL



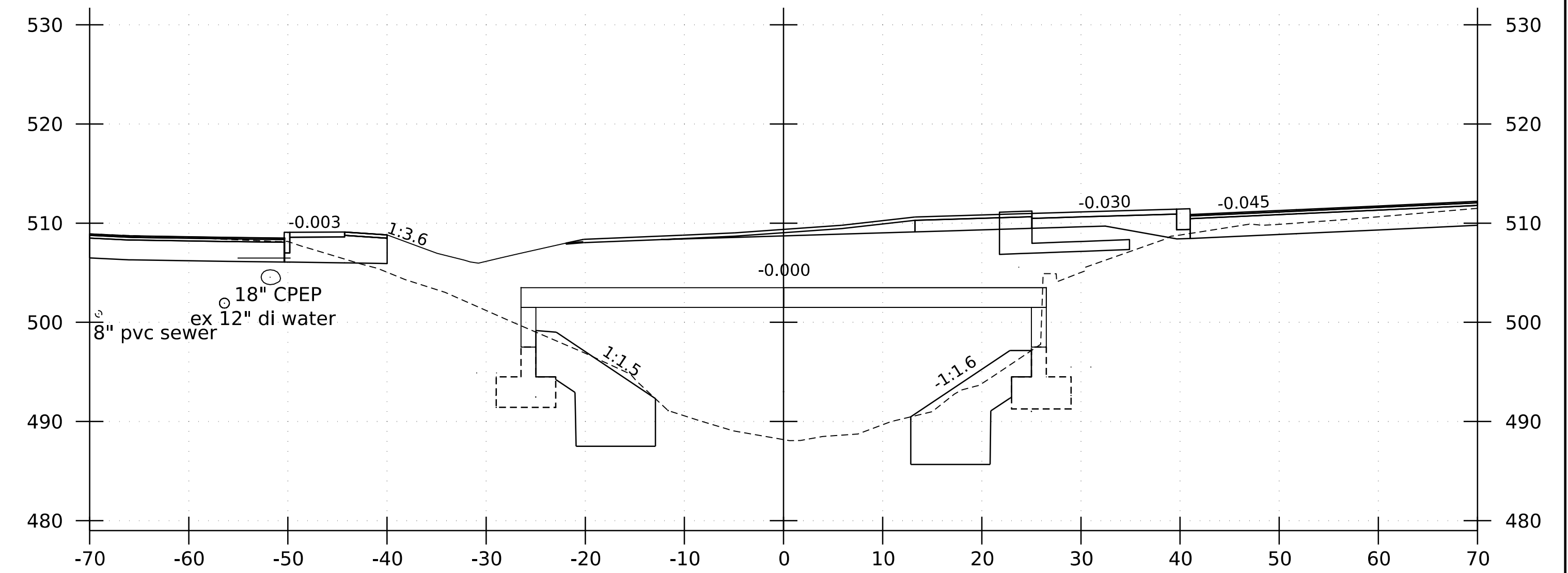
1+50

STA. 1+25 LT
BEGIN UNCLASSIFIED CHANNEL EXC.
STONE FILL, TYPE IV
STONE FILL, TYPE I
GEOTEXTILE UNDER STONE FILL
GRUBBING MATERIAL



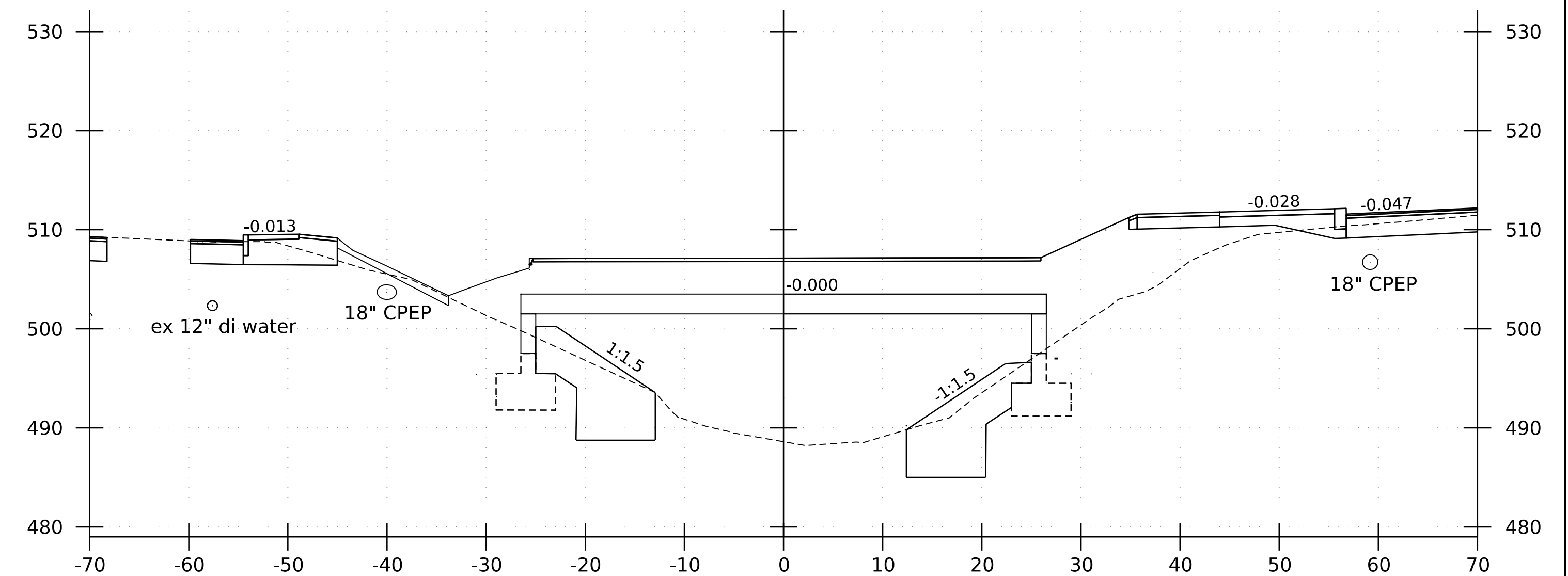
1+40

STA. 1+68 RT
END STONE FILL, TYPE I
GEOTEXTILE UNDER STONE FILL



1+70

STA. 1+58 LT
END GRUBBING MATERIAL



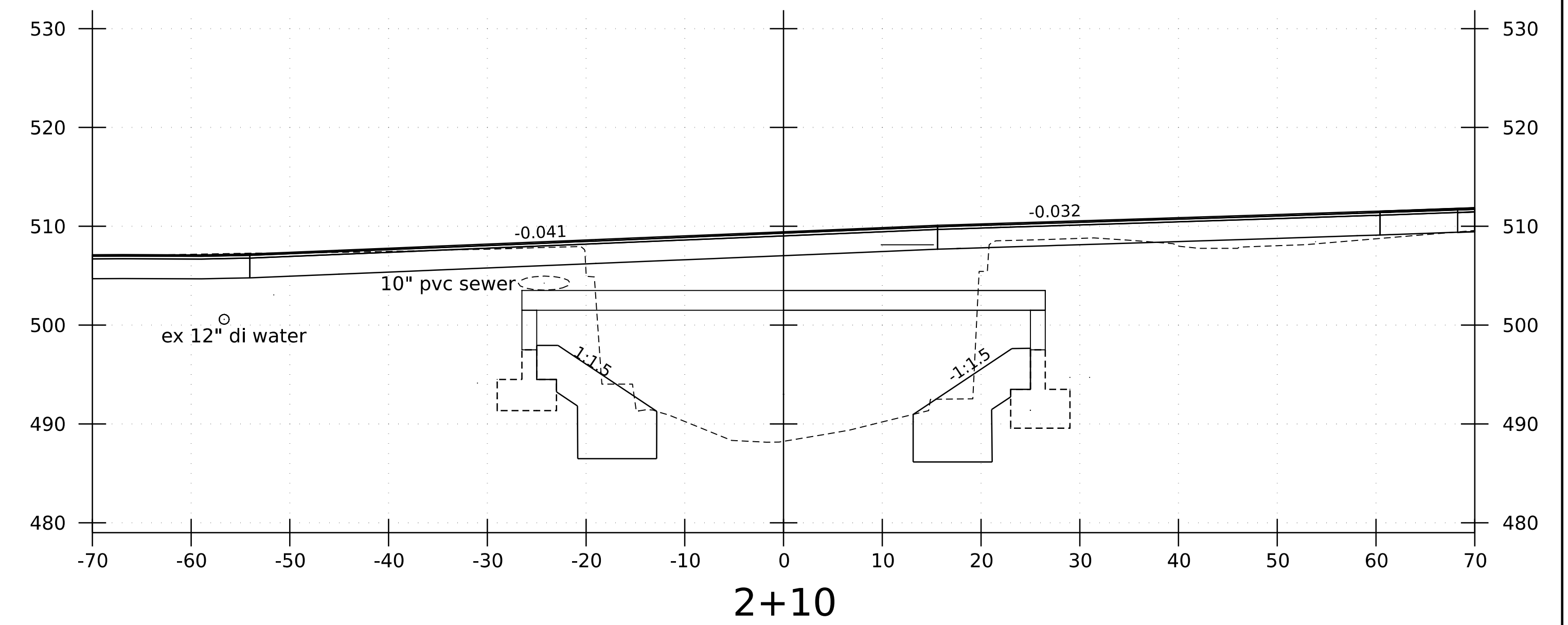
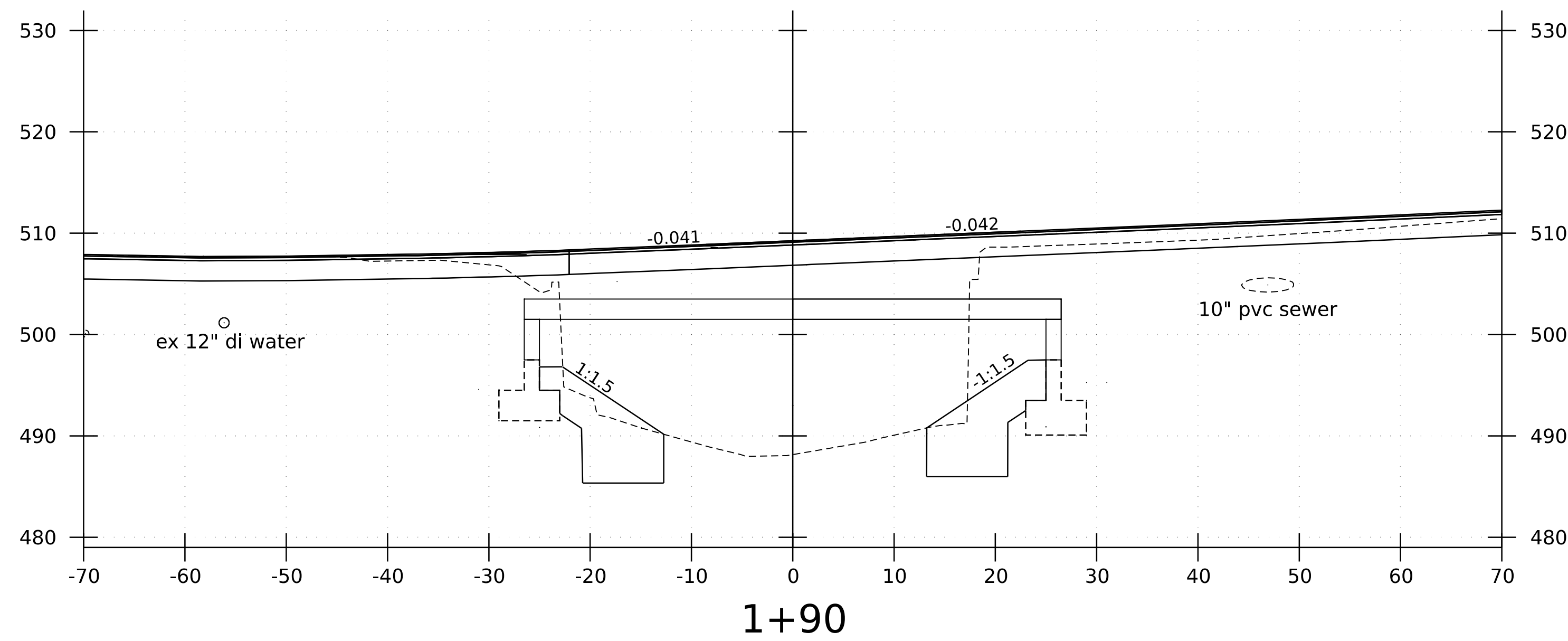
1+60

PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

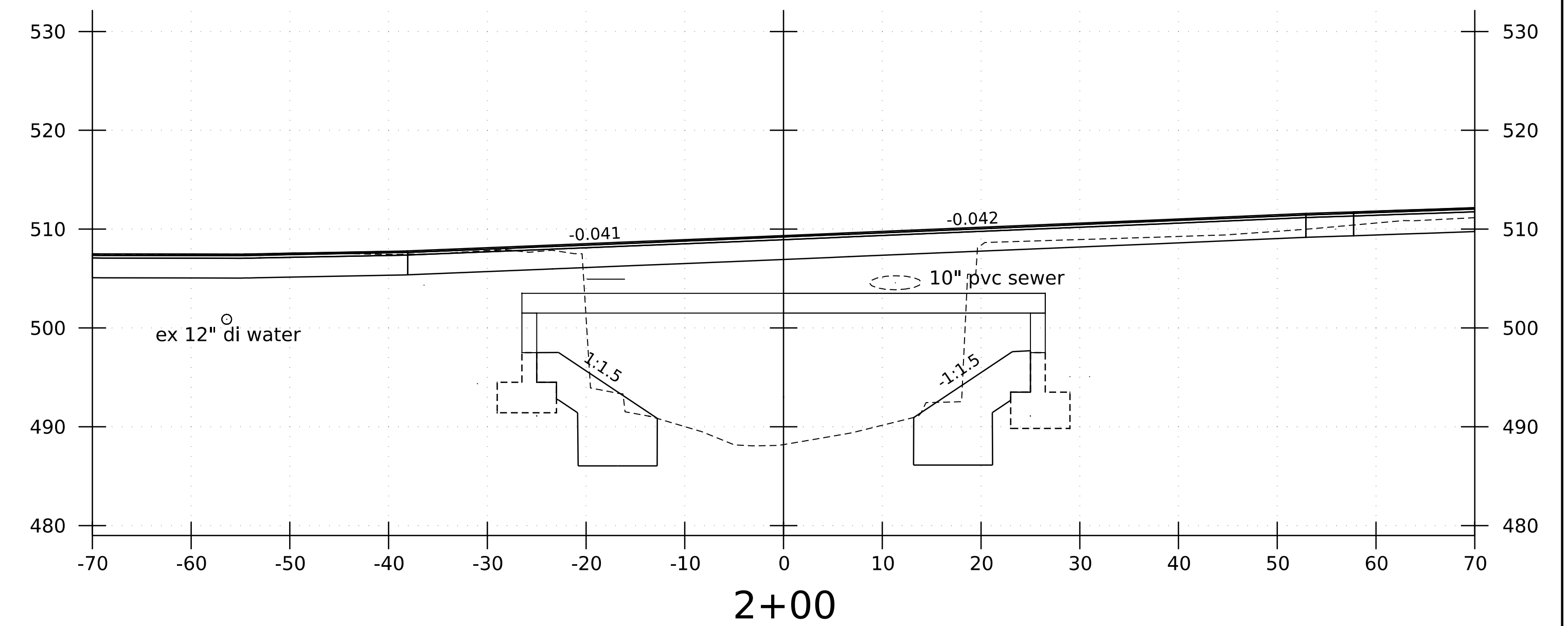
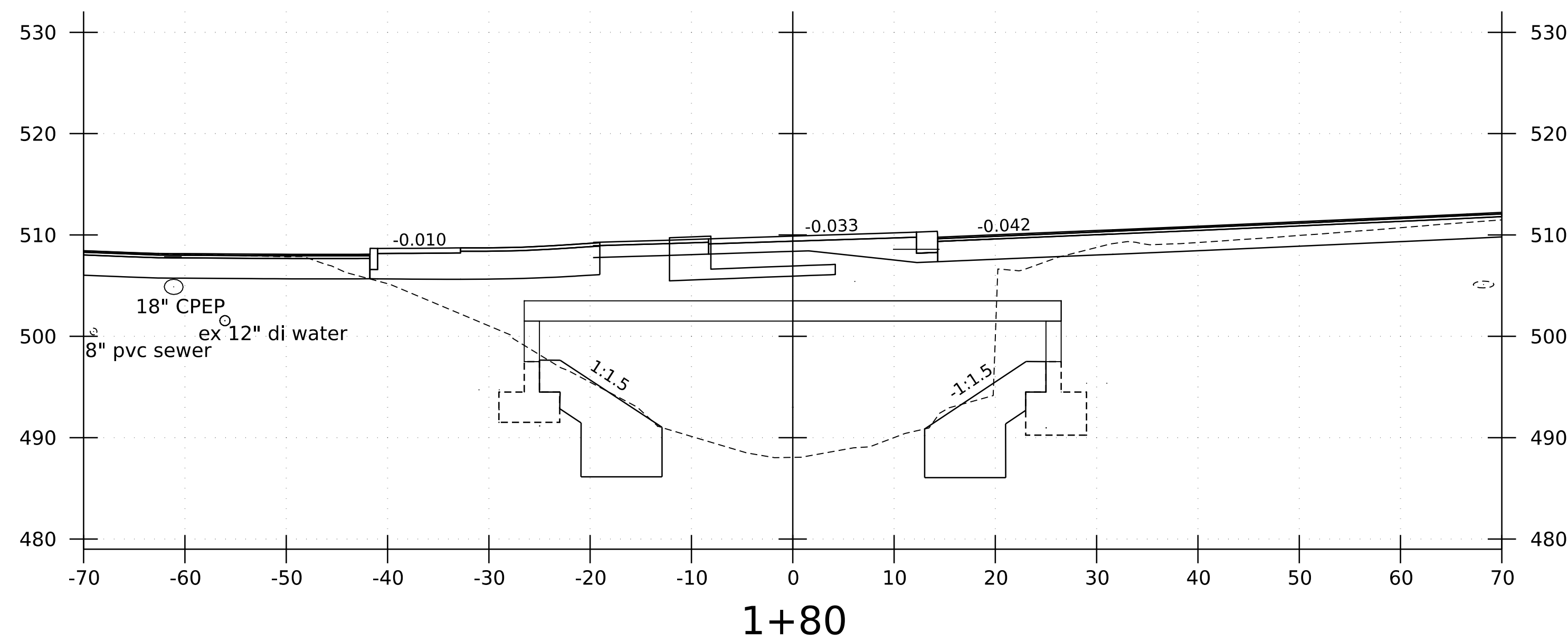
FILE NAME: z93j040xs ord.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: S. WINES
CHANNEL CROSS SECTION SHEET 2

PLOT DATE: 9-SEP-2022
DRAWN BY: P. ARMATA
CHECKED BY: T. KNIGHT
SHEET 41 OF 44





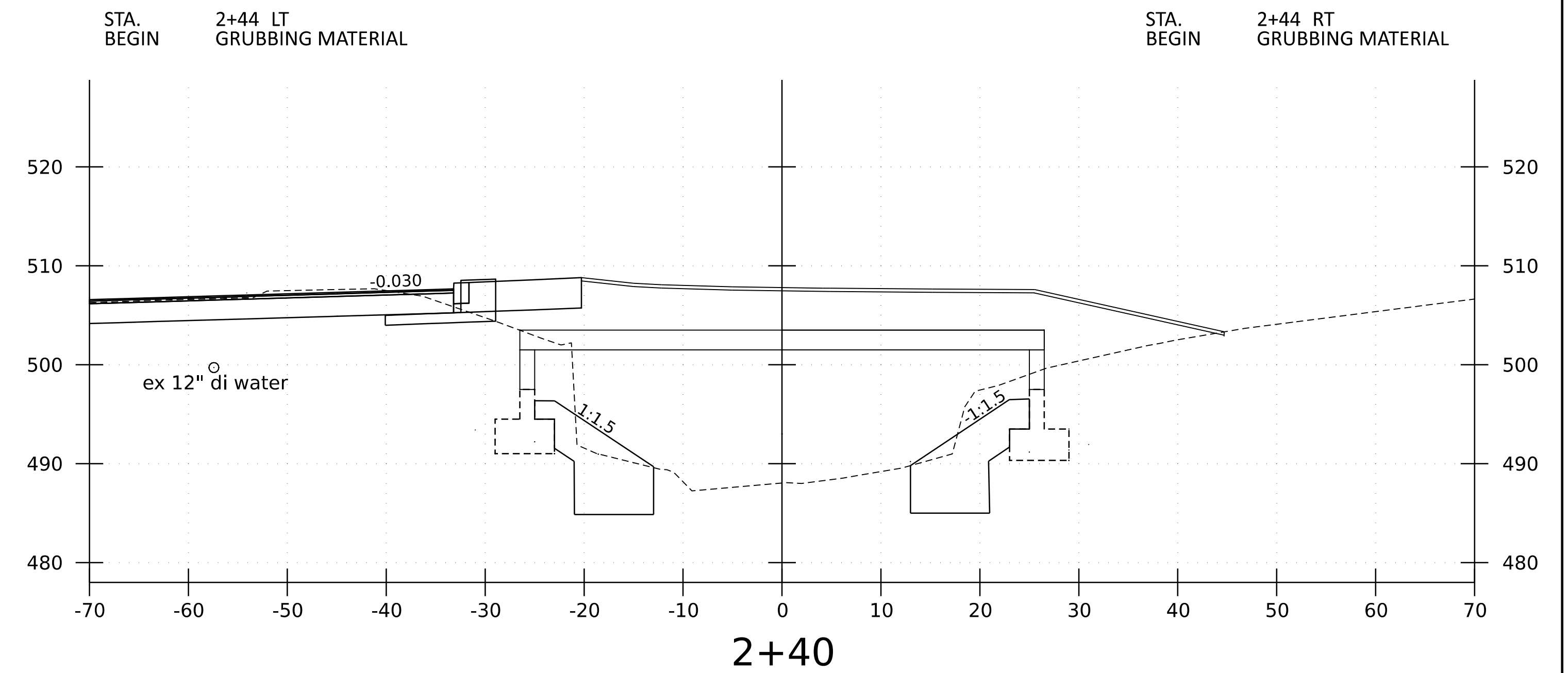
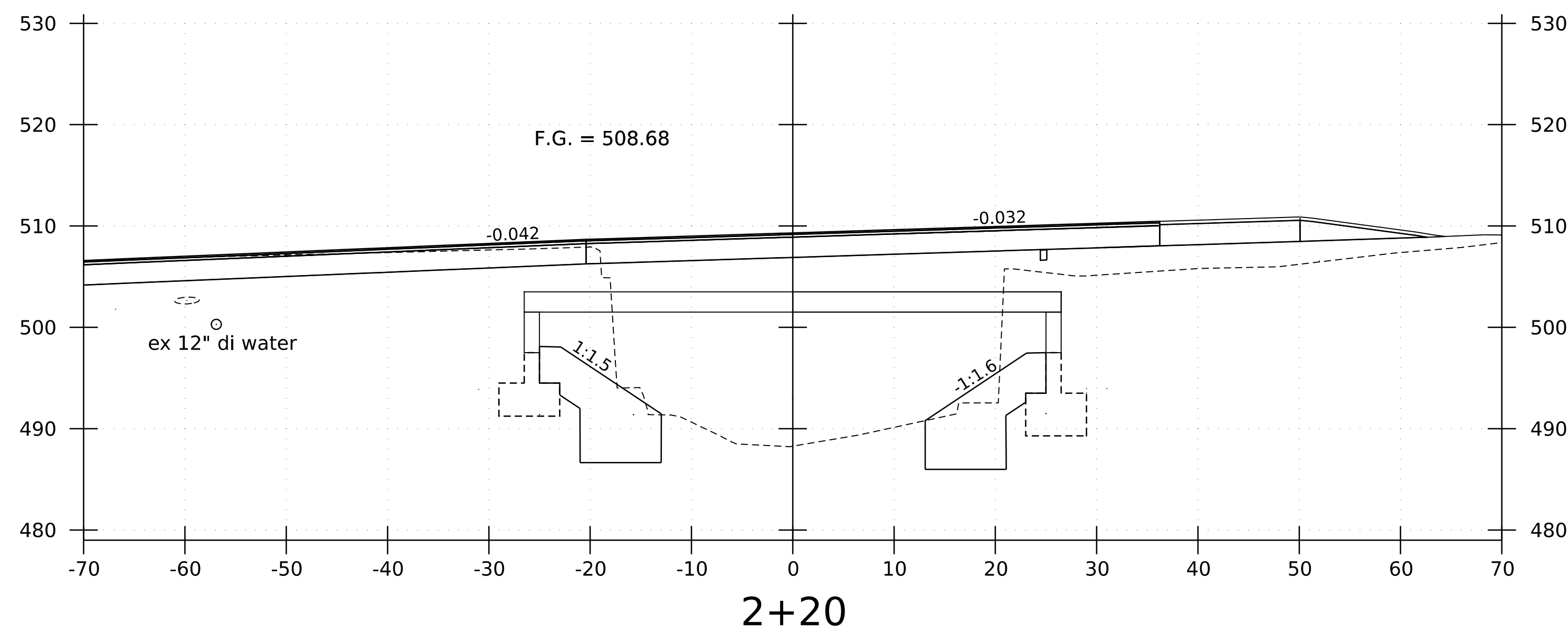
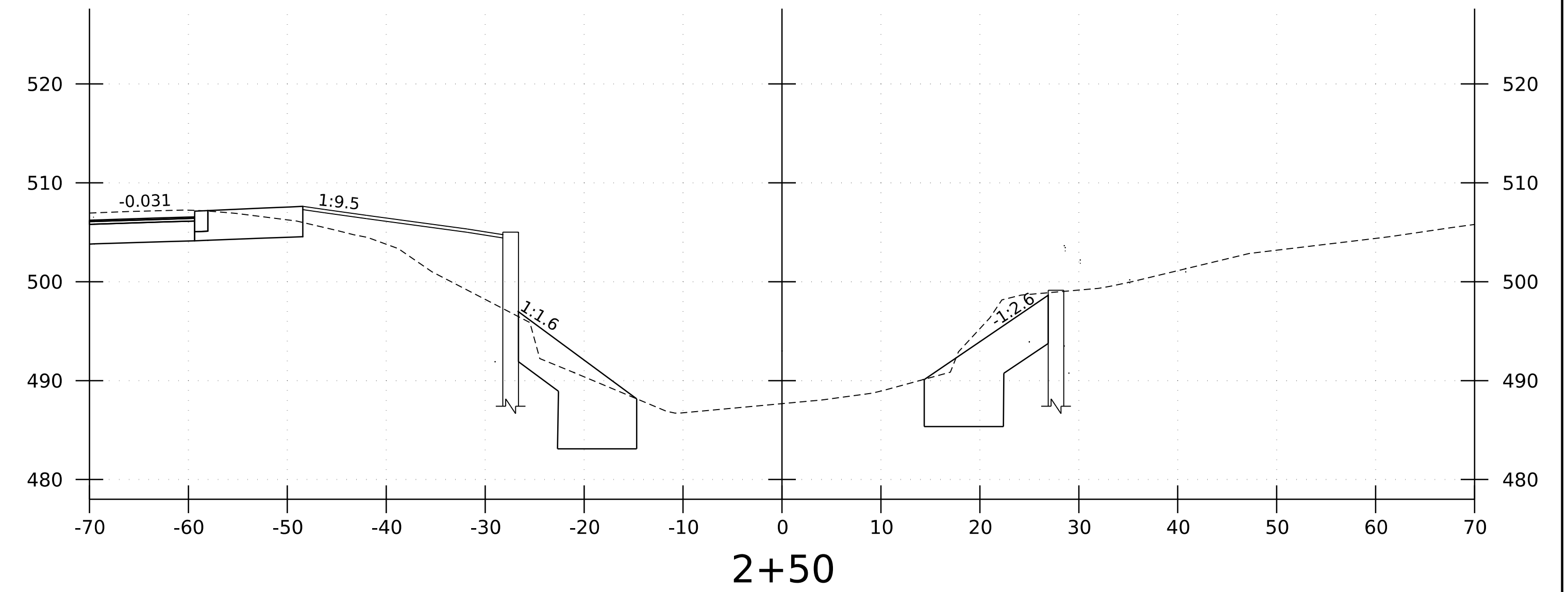
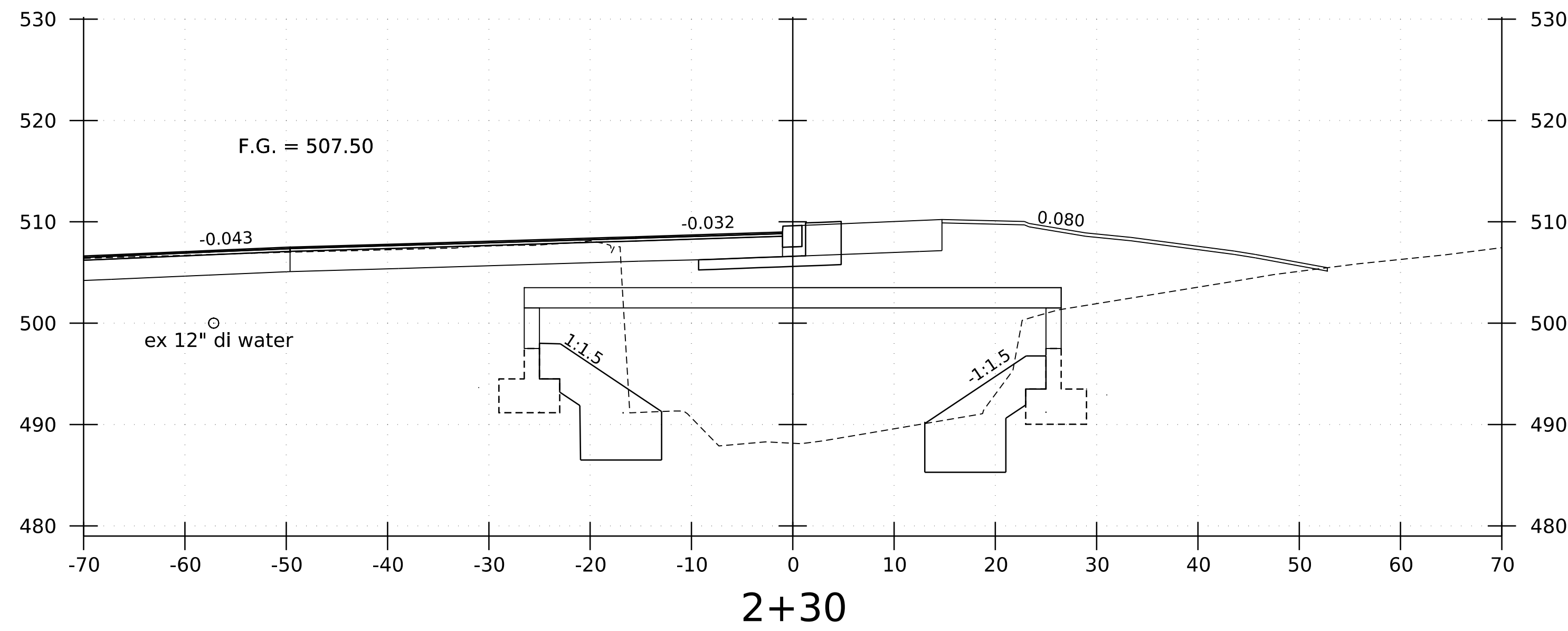
STA. 1+80 LT
 END STONE FILL, TYPE I
 GEOTEXTILE UNDER STONE FILL



PROJECT NAME: WATERBURY
 PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040xs ord.dgn
 PROJECT LEADER: T. KNIGHT
 DESIGNED BY: S. WINES
 CHANNEL CROSS SECTION SHEET 3

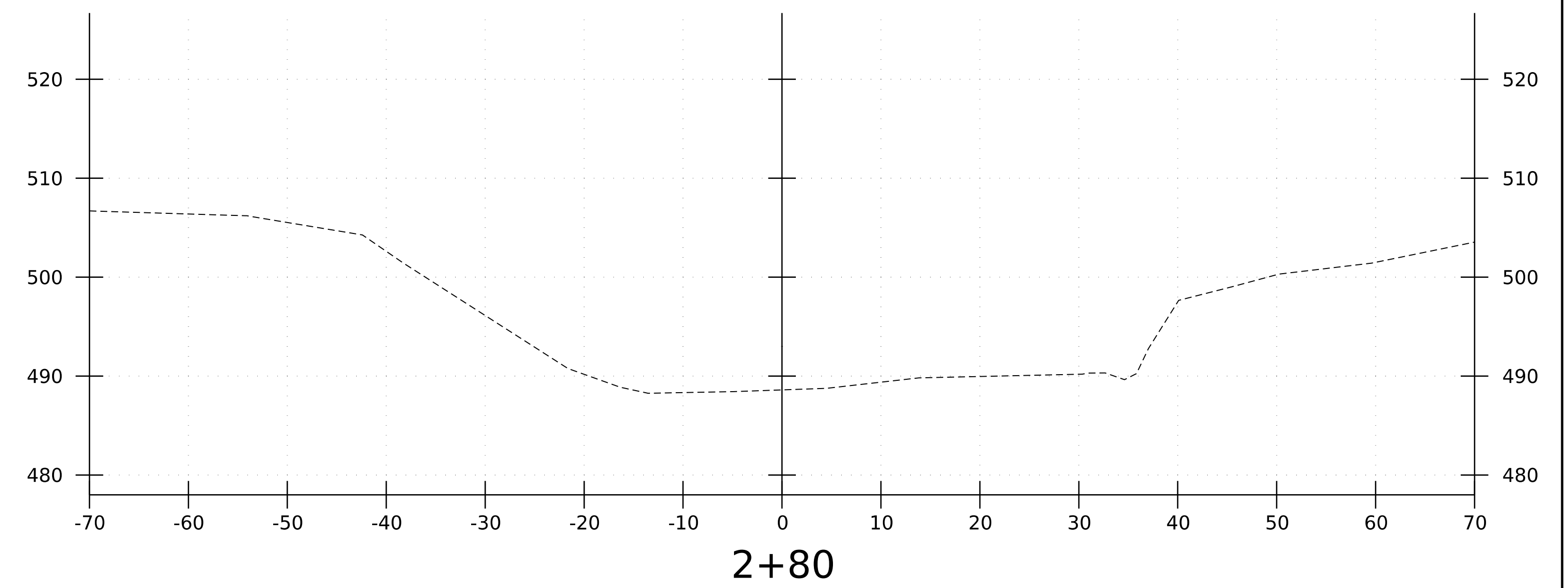
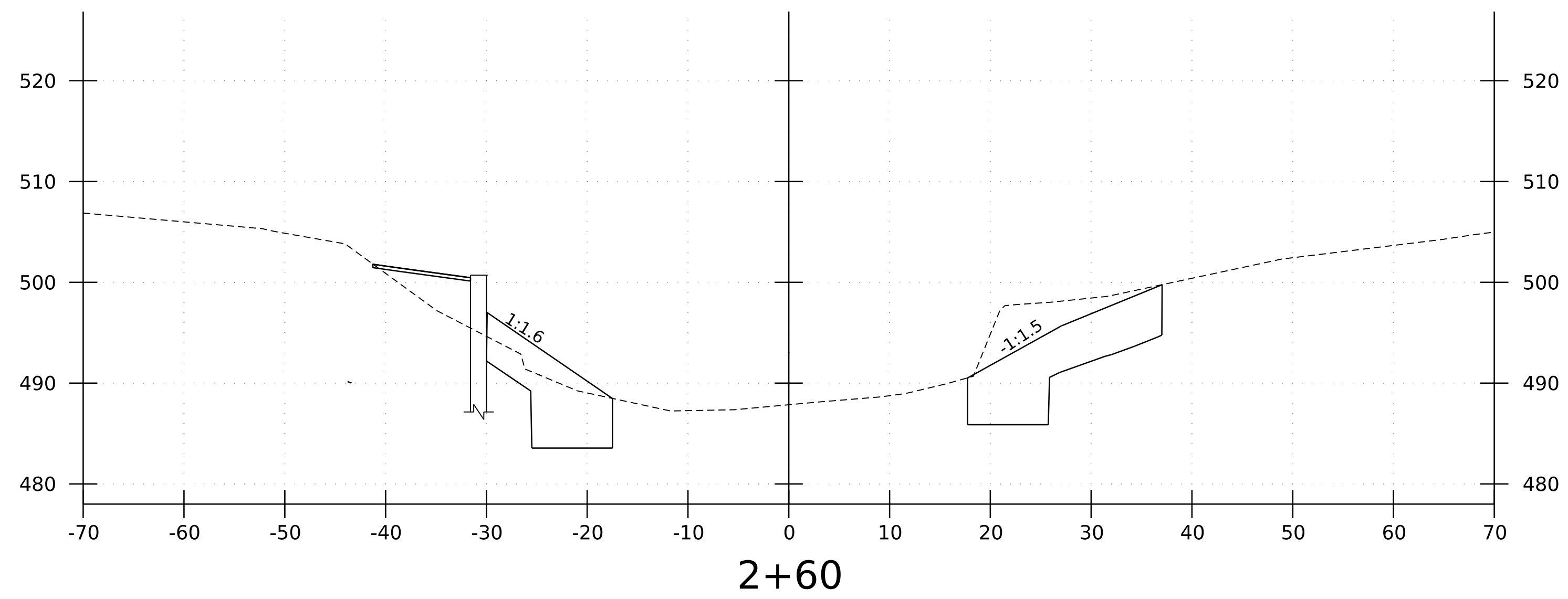
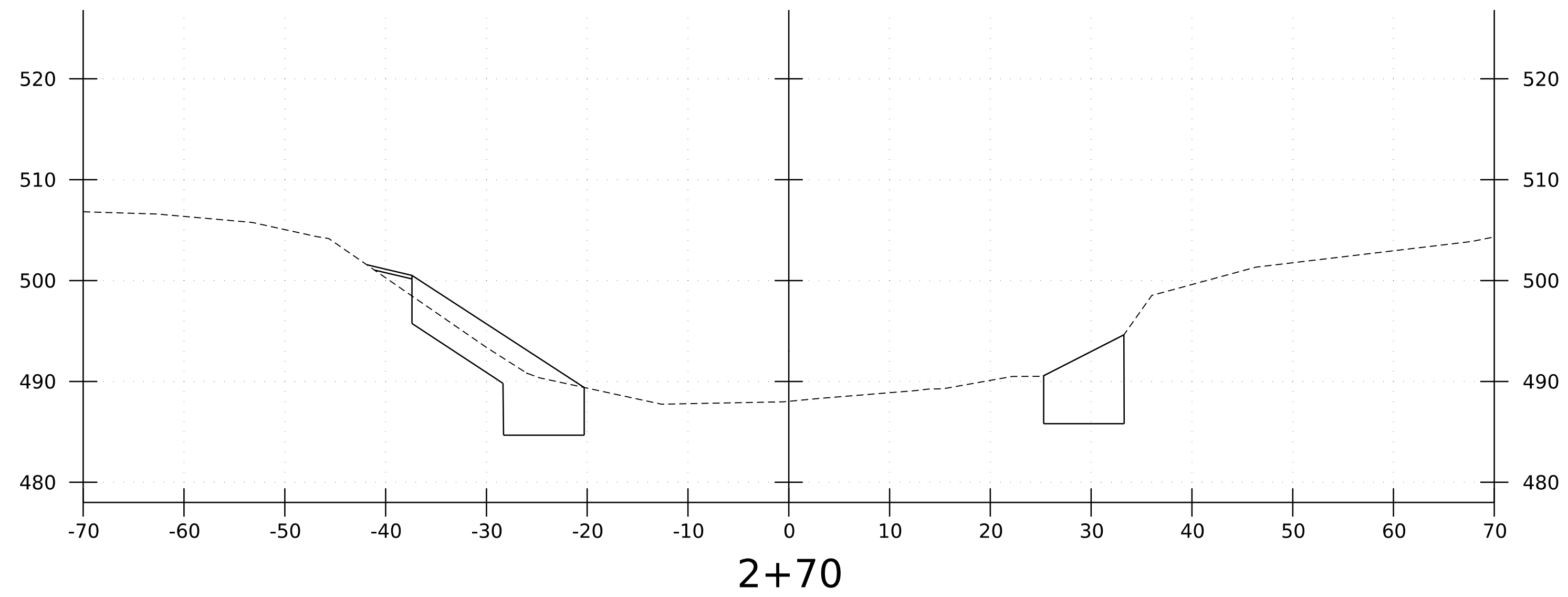
PLOT DATE: 9-SEP-2022
 DRAWN BY: P. ARMATA
 CHECKED BY: T. KNIGHT
 SHEET 42 OF 44



| | | | |
|-------------------------------|-------------------|-------------|------------|
| PROJECT NAME: | WATERBURY | | |
| PROJECT NUMBER: | BO 1446(40) | | |
| FILE NAME: | z93j040xs ord.dgn | PLOT DATE: | 9-SEP-2022 |
| PROJECT LEADER: | T. KNIGHT | DRAWN BY: | P. ARMATA |
| DESIGNED BY: | S. WINES | CHECKED BY: | T. KNIGHT |
| CHANNEL CROSS SECTION SHEET 4 | | SHEET | 43 OF 44 |

STA. 2+78 LT
 END STONE FILL, TYPE IV
 UNCLASSIFIED CHANNEL EXC.

STA. 2+75 RT
 END STONE FILL TYPE IV
 UNCLASSIFIED CHANNEL EXC.



PROJECT NAME: WATERBURY
 PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040xs ord.dgn
 PROJECT LEADER: T. KNIGHT
 DESIGNED BY: S. WINES
 CHANNEL CROSS SECTION SHEET 5

PLOT DATE: 9-SEP-2022
 DRAWN BY: P. ARMATA
 CHECKED BY: T. KNIGHT
 SHEET 44 OF 44

