

# CITY OF CONWAY, AR

# CONWAY STONE DAM CREEK TRAIL (RTP-18) (S)

## ISSUED FOR CONSTRUCTION

## MIMOSA DRIVE TO SOUTH GERMAN LANE

APRIL 2021  
 ARDOT JOB#: 080620  
 F.A.P. RTP-1302(309)

## CONWAY STONE DAM CREEK TRAIL

## CONWAY, ARKANSAS 72034

### OWNER

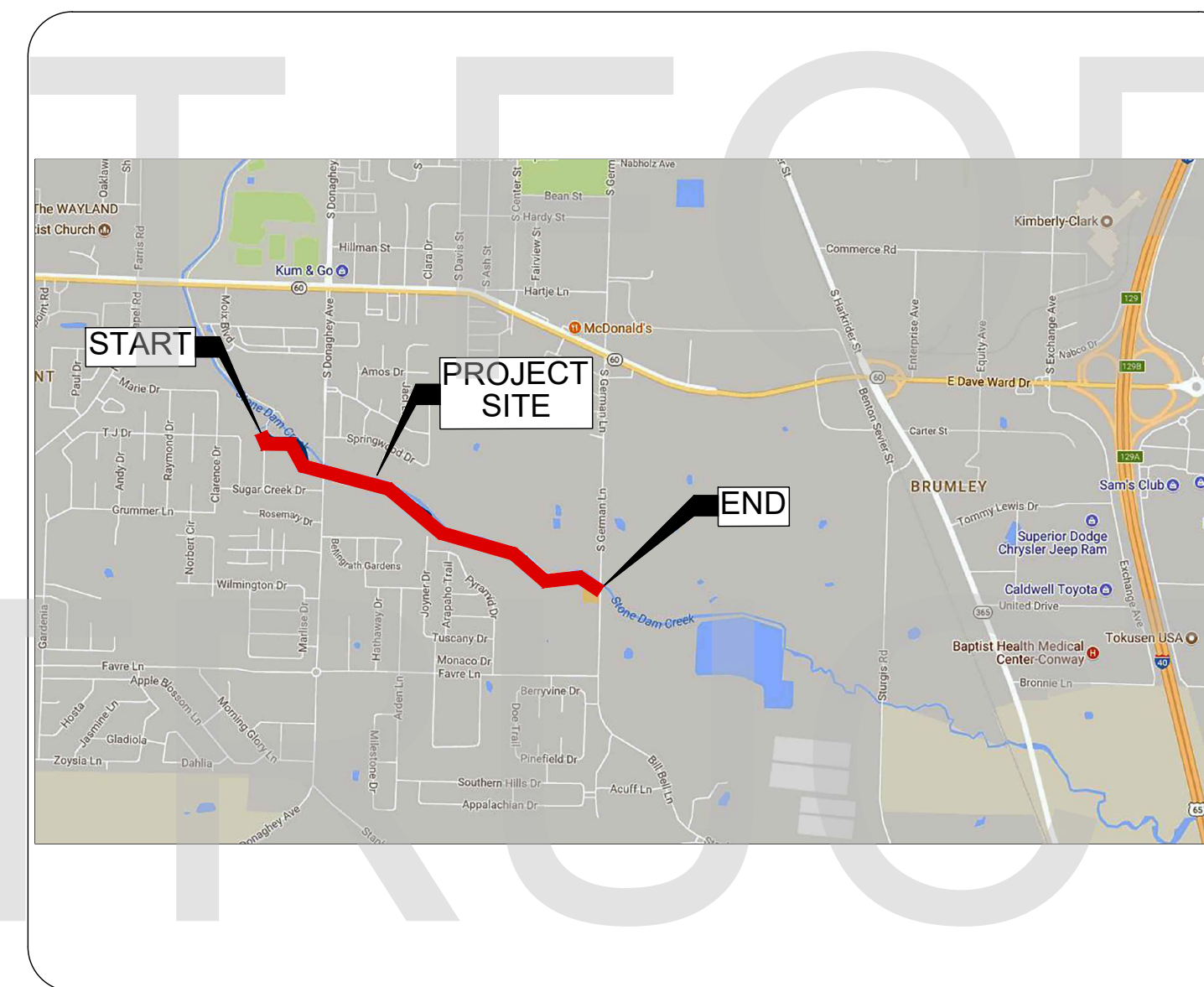
City of Conway, AR  
 Department of Transportation  
 100 East Robins Street  
 Conway, AR 72032  
 CONTACT: Phillip Vick  
 EMAIL: Phillip.Vick@conwayarkansas.gov  
 TEL: (501) 450-6165

### CIVIL ENGINEER

Half Associates Inc.  
 10800 Financial Centre Parkway, Suite 500  
 Little Rock, AR 72211  
 CONTACT: Brain Vines  
 EMAIL: bVines@half.com  
 TEL: (501) 801-2675

### LANDSCAPE ARCHITECT

Half Associates Inc.  
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 CONTACT: Sally B. Horsey  
 EMAIL: sHorsey@half.com  
 TEL: (501) 801-2672



 LOCATION MAP  
 NOT TO SCALE



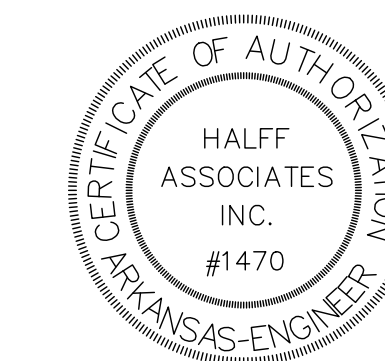
STREET &  
 ENGINEERING



10800 Financial Centre Pkwy, Suite 500  
 Little Rock, Arkansas 72211  
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THE INFORMATION SHOWN ON THESE DRAWINGS INDICATING SIZE, TYPE AND LOCATION OF UNDERGROUND, SURFACE, AND AERIAL UTILITIES IS NOT GUARANTEED TO BE EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT THE CONWAY AREA "ONE CALL" SYSTEM AT 1-501-329-2500 - 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION FOR EXISTING UTILITY LOCATIONS. THE CONTRACTOR SHALL ALSO BE FULLY RESPONSIBLE FOR FIELD VERIFYING LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES AFFECTED BY CONSTRUCTION FOR THIS PROJECT IN ORDER TO AVOID DAMAGING THOSE UTILITIES, AND SHALL IMMEDIATELY ARRANGE FOR REPAIR AND RESTORATION OF CONTRACTOR-DAMAGED UTILITIES TO THE UTILITY COMPANY'S APPROVAL AT THE EXPENSE OF THE CONTRACTOR.

AVO: 33160

Submittal / Revision			
Revision #	Date	Description	Approval

PROJECT QUANTITIES

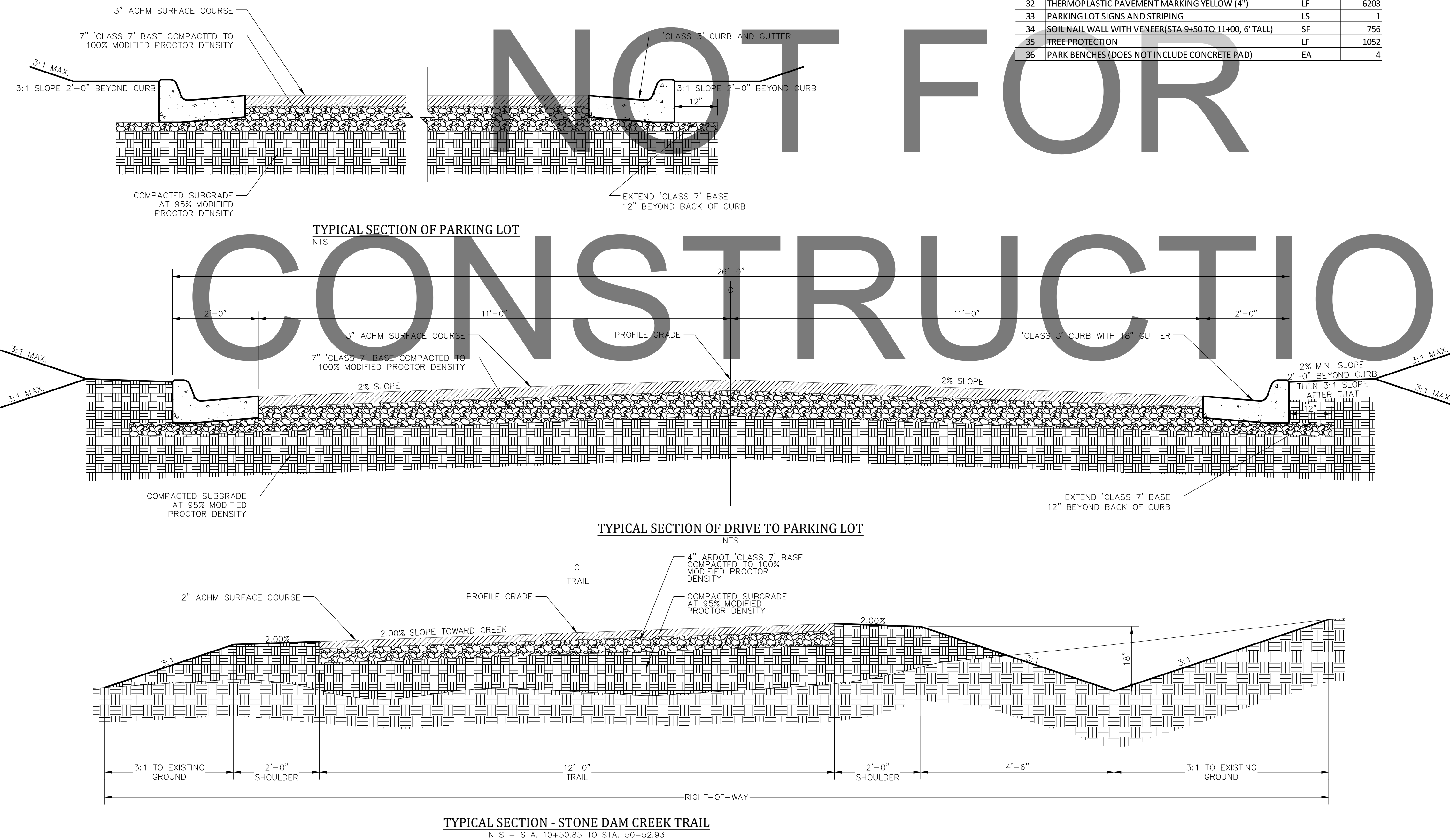
Item	Description	Unit	QUAN.
1	SITE PREPARATION	LS	1
2	CLEARING AND GRUBBING	ACRE	3.7
3	SELECT GRANULAR BACKFILL	CY	1949
4	UNCLASSIFIED EXCAVATION	CY	7018
5	BORROW MATERIAL	CY	5611
6	TOPSOIL	CY	1728
7	AGGREGATE BASE COURSE	TON	1649
8	TACK COAT	GAL	195
9	ACHM SURFACE COURSE	TON	716
10	CONCRETE CURB AND GUTTER (CLASS 3)	LF	200
11	CONCRETE FLUME	SF	111
12	CONCRETE SIDEWALK (4" THICK)	SF	365
13	RC PRECAST BOX CULVERT (4x8') WITH HEADWALLS	LF	24
14	RC PRECAST BOX CULVERT WITH WING WALLS (TRIPLE - 3'X8')	LF	15
15	STORM DRAIN PIPE, 18" CROSS DRAIN	LF	630
16	STORM DRAIN PIPE, 24" CROSS DRAIN	LF	83
17	MAINTENANCE OF TRAFFIC	LS	1
18	REMOVE AND REPLACE FENCE	LF	500
19	HANDRAIL	LF	209
20	RIPRAP	CY	500
21	GROUTED RIPRAP	CY	11
22	WATER FOR DUST CONTROL	GAL	20000
23	FINAL CLEANUP	LS	1
24	B STONE	TON	4252
25	ROCK DAM (RD)	CY	200
26	SILT FENCE - TYPE C (SFC)	LF	5451
27	DISTURBED AREA STABILIZATION - PERMANENT GRASSING (TS3)	AC	2.4
28	TRENCH & EXCAVATION SAFETY	LS	1
29	PORTLAND CEMENT CONCRETE PAVEMENT	SY	351
30	FLARED END SECTION 18" RCP	EA	24
31	FLARED END SECTION 24" RCP	EA	4
32	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")	LF	6203
33	PARKING LOT SIGNS AND STRIPING	LS	1
34	SOIL NAIL WALL WITH VENEER (STA 9+50 TO 11+00, 6' TALL)	SF	756
35	TREE PROTECTION	LF	1052
36	PARK BENCHES (DOES NOT INCLUDE CONCRETE PAD)	EA	4

GENERAL NOTES:

- THE STREET DEPARTMENT SHALL BE NOTIFIED 24 HOURS PRIOR TO PLACEMENT OF ANY FILL MATERIAL, INSTALLATION OF STORM DRAINAGE PIPE OR DRAINAGE STRUCTURES, PLACEMENT CRUSHED STONE, ASPHALT, OR CONCRETE PAVING.
- ALL OSHA REGULATIONS SHALL BE STRICTLY FOLLOWED AND SPECIAL CARE TAKEN TO PREVENT INTERACTION WITH OVERHEAD OR UNDERGROUND POWER SOURCES.
- THE LOCATION OF KNOWN SUBSURFACE STRUCTURES, PIPE, POWER, GAS, PHONE, ETC. ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING INFORMATION AND SATISFYING HIMSELF AS TO THE LOCATION OF THE FOREMENTIONED ITEMS, SHOWN AND NOT SHOWN. ALL REPAIRS TO UTILITIES DAMAGED BY CONTRACTOR SHALL BE MADE AS REQUIRED BY THE OWNER OF THE UTILITY OR STRUCTURE. THE COST OF SUCH REPAIRS NECESSARY SHALL BE BORNE BY THE CONTRACTOR.
- ALL STREETS, DRIVES, WALKS, DRAINAGE STRUCTURES, BRIDGES, FENCES, ETC. THAT ARE DISTURBED SHALL BE RESTORED TO THEIR ORIGINAL OR BETTER CONDITION USING LIKE MATERIALS. COST OF SUCH REPAIRS SHALL BE BORNE BY THE CONTRACTOR UNLESS PROVISION FOR PAYMENT IS MADE IN THE PROPOSAL.
- ALL CONCRETE SHALL DEVELOP 3000 PSI COMPRESSIVE STRENGTH IN 28 DAYS UNLESS OTHERWISE SPECIFIED.
- THE CONTRACTOR IS REQUIRED TO NOTIFY THE ONE CALL CENTER AT 811 AT LEAST 48 HOURS PRIOR TO DIGGING IN ORDER THAT UNDERGROUND UTILITIES IN THE AREA CAN BE LOCATED.
- WITHOUT REGARD TO THE MATERIALS ENCOUNTERED, ALL TRAIL EXCAVATION, ROUGH EXCAVATION, AND DRAINAGE EXCAVATION SHALL BE UNCLASSIFIED. IT SHALL BE DISTINCTLY UNDERSTOOD THAT ANY REFERENCE TO SUBSURFACE MATERIALS ON THE PLANS AND IN THE BID DOCUMENTS, WHETHER IN NUMBERS, WORDS, LETTERS OR LINES IS SOLELY FOR THE OWNER'S INFORMATION AND IS NOT TO BE TAKEN AS AN INDICATION OF CLASSIFIED EXCAVATION OR THE QUANTITY OF EITHER ROCK, EARTH, OR ANY OTHER MATERIAL INVOLVED. THE CONTRACTOR MUST DRAW HIS OWN CONCLUSIONS AS TO THE CONDITIONS TO BE ENCOUNTERED. THE OWNER DOES NOT GIVE ANY GUARANTEE AS TO THE ACCURACY OF THE DATA, AND NO CLAIM WILL BE CONSIDERED FOR ADDITIONAL COMPENSATION WHEN THE MATERIALS ENCOUNTERED ARE NOT IN ACCORD WITH THE CLASSIFICATION SHOWN.
- ALL FILL MATERIAL SHALL BE PLACED IN LIFTS NOT EXCEEDING 8" AND EACH LIFT COMPACTED WITH A SHEEP'S FOOT ROLLER TO 95% MODIFIED PROCTOR DENSITY. FILL MATERIAL SHALL BE APPROVED BY THE CONWAY TRANSPORTATION DEPARTMENT PRIOR TO USE IN TRAIL FILLS (NO TOP SOIL OR ORGANIC MATERIAL SHALL BE INCLUDED IN THE FILL MATERIAL.) THE MOISTURE CONTENT OF THE FILL MATERIAL SHALL BE PLUS OR MINUS 3% OF OPTIMUM. ALL EARTHWORK SHALL CONFORM TO THE REQUIREMENTS OF SECTIONS 210 AND 212 OF THE ARDOT STANDARD SPECIFICATIONS.
- ALL STORM DRAINAGE PIPE SHALL BE RCP CLASS III UNLESS SPECIFICALLY APPROVED OTHERWISE.
- CRUSHED STONE BASE COURSE SHALL CONFORM TO THE REQUIREMENT FOR CLASS 7 AGGREGATE BASE COURSE AS DESCRIBED IN SECTION 303-AGGREGATE BASE COURSE OF THE ARDOT STANDARD SPECIFICATIONS.
- CONTRACTOR SHALL DISPOSE OF ALL UNSALVAGEABLE MATERIAL TO BE REMOVED. ALL MATERIALS TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
- CONTRACTOR IS TO BRING TO THE ATTENTION OF THE CIVIL ENGINEER ANY AREA OF DEMOLITION IN QUESTION BEFORE PROCEEDING WITH WORK.

EROSION CONTROL NOTES

- EROSION CONTROL DEVICES SHALL BE INSTALLED AS THE PROJECT PROGRESSES AND AREAS ARE DISTURBED.
- ALL STREAMS AND DITCHES ON AND ADJACENT TO THE SITE SHALL BE PROTECTED FROM SEDIMENT.
- INSPECT ALL EROSION CONTROL DEVICES WEEKLY AND FOLLOWING RAINFALL EVENTS OF 0.5 INCHES OR MORE.
- ALL EROSION CONTROL DEVICES ARE TO BE MAINTAINED IN GOOD WORKING CONDITION THROUGHOUT THE DURATION OF THE PROJECT AND UNTIL PERMANENT VEGETATION IS ESTABLISHED.
- ALL DISTURBED AREAS LEFT IDLE FOR A PERIOD OF 14 DAYS OR LONGER ARE TO RECEIVE TEMPORARY VEGETATION AND MULCHED.
- REMOVE EROSION CONTROL DEVICES AFTER PERMANENT VEGETATION IS ESTABLISHED.
- AS PROJECT DISTURBED AREA IS LESS THAN ONE ACRES, CONTRACTOR IS NOT REQUIRED TO PREPARE A STORMWATER POLLUTION PREVENTION PLAN.
- THE EROSION CONTROL PLAN MAY BE ADDED TO OR DELETED AS DIRECTED BY THE ENGINEER.
- ALL DISTURBED AREAS TO BE HYDROSEEDING WITH PERMANENT GRASS.



**STONE DAM CREEK TRAIL**  
Conway, Arkansas

**STREET & ENGINEERING**

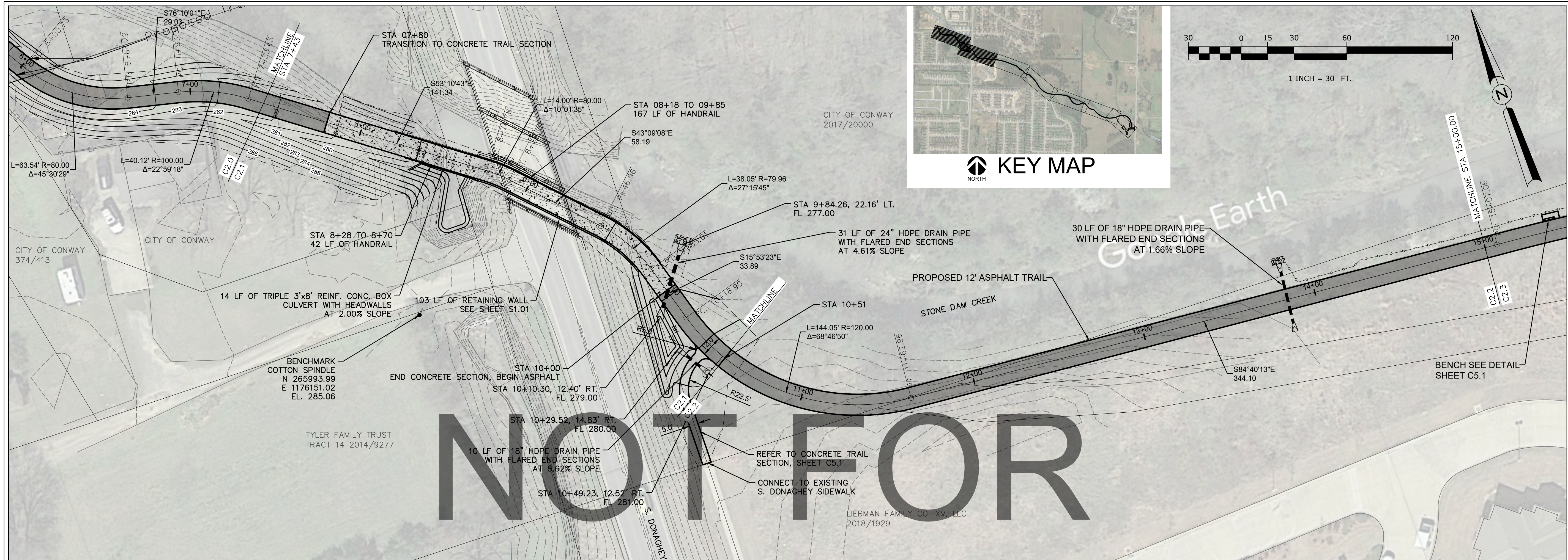
**HALFF**  
1080 Finroad Centre Parkway, Suite 500  
MANN, (501) 901-2690

Revision No.	Date	Description

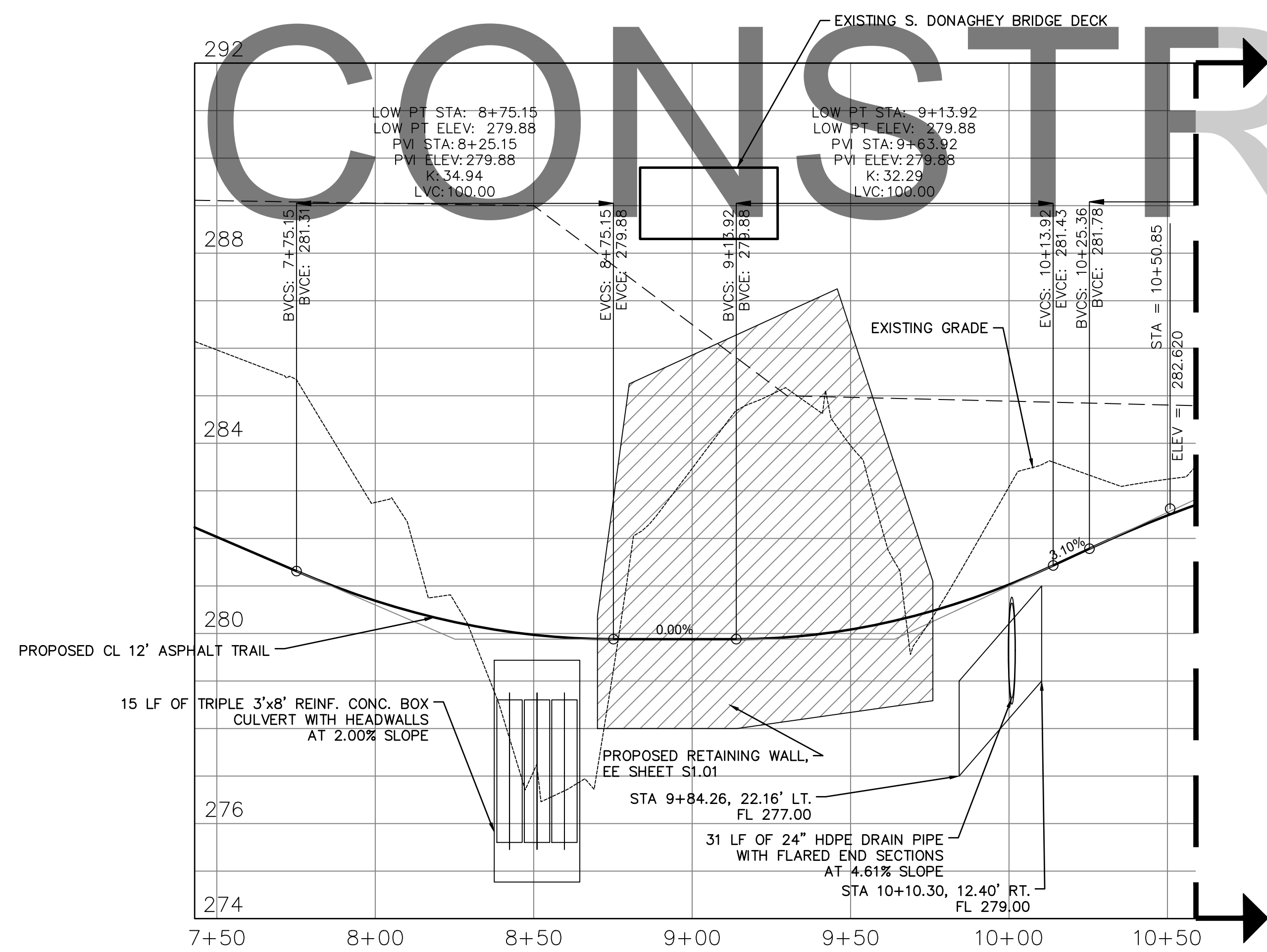
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Drawn By: BD / LCJ / JKJ  
Checked By: BLV / SBH  
Sheet Title  
**GENERAL NOTES AND TYPICAL SECTIONS**  
Sheet Number  
**C1.0**








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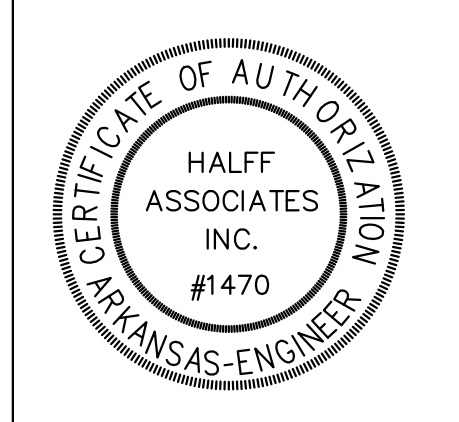


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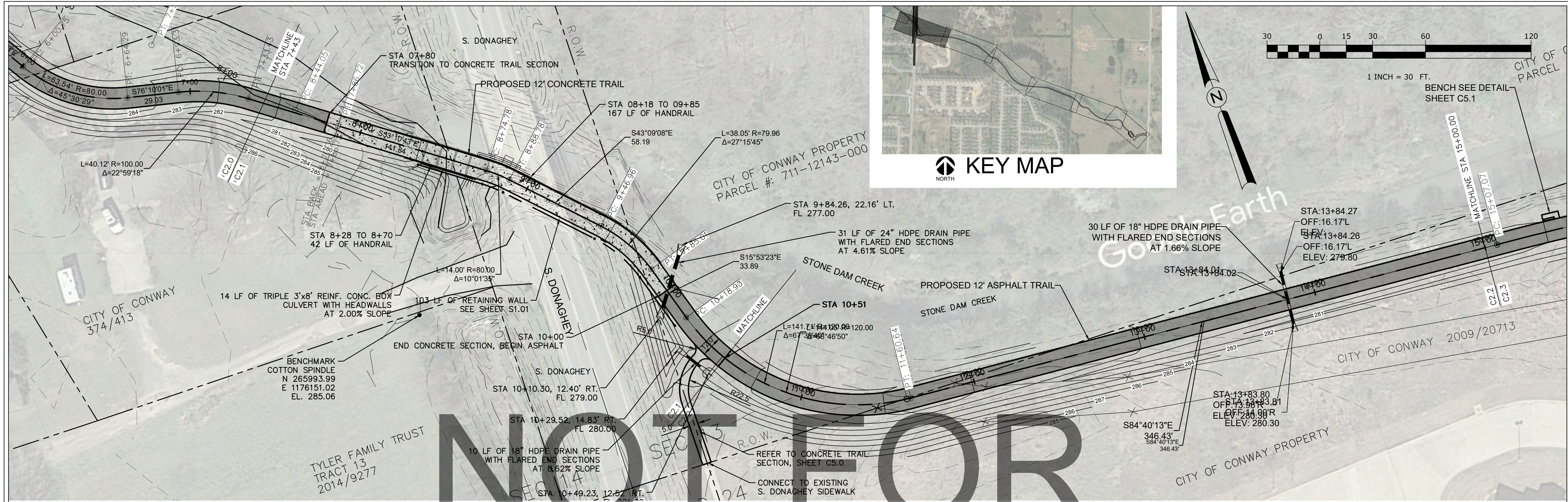



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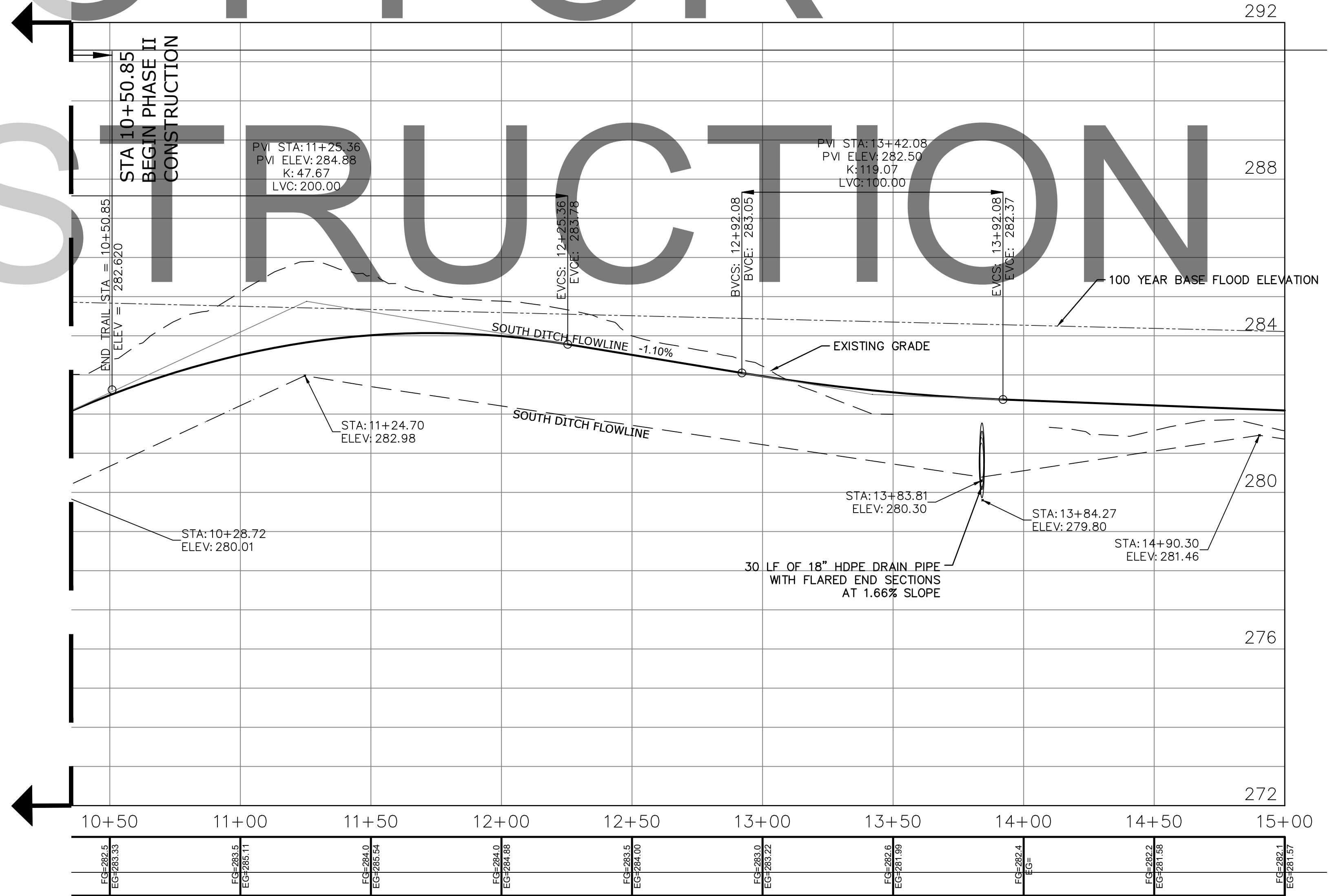
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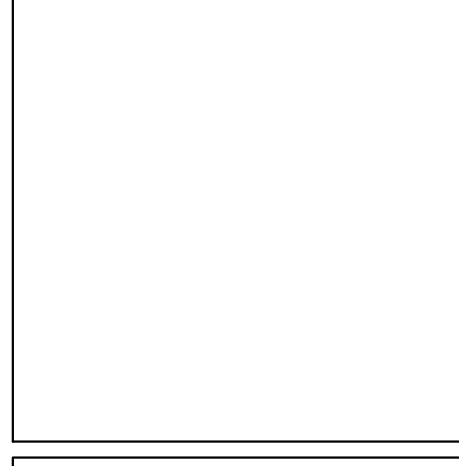
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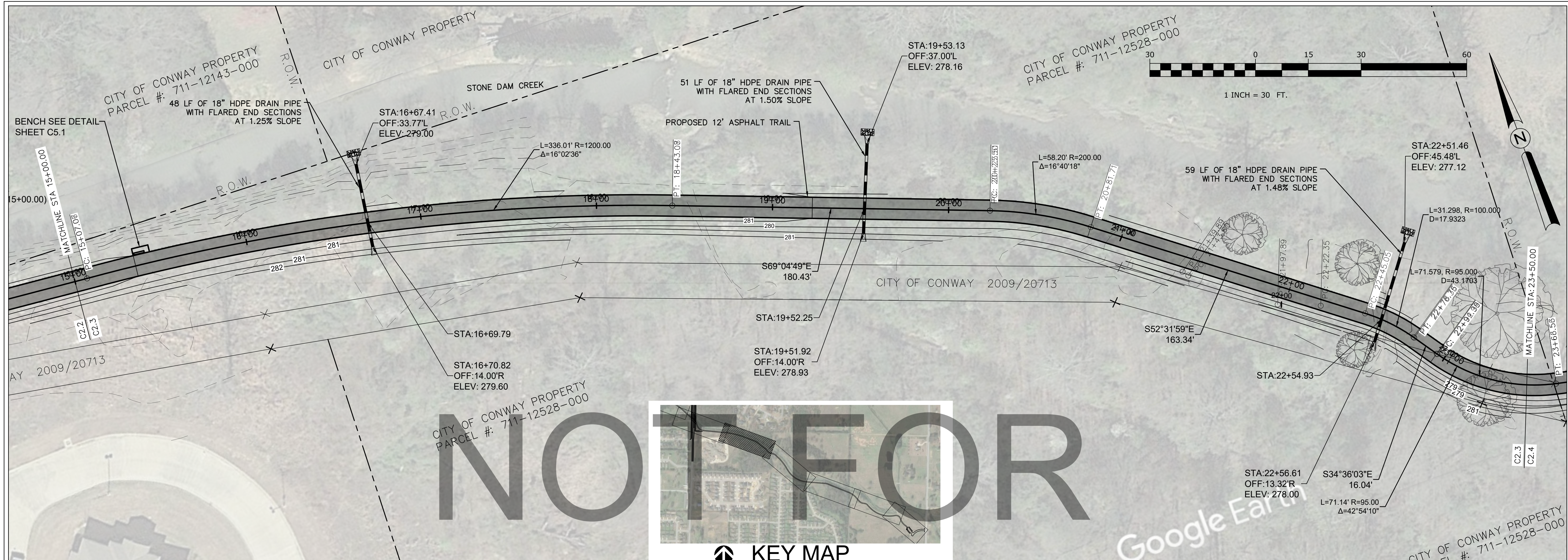
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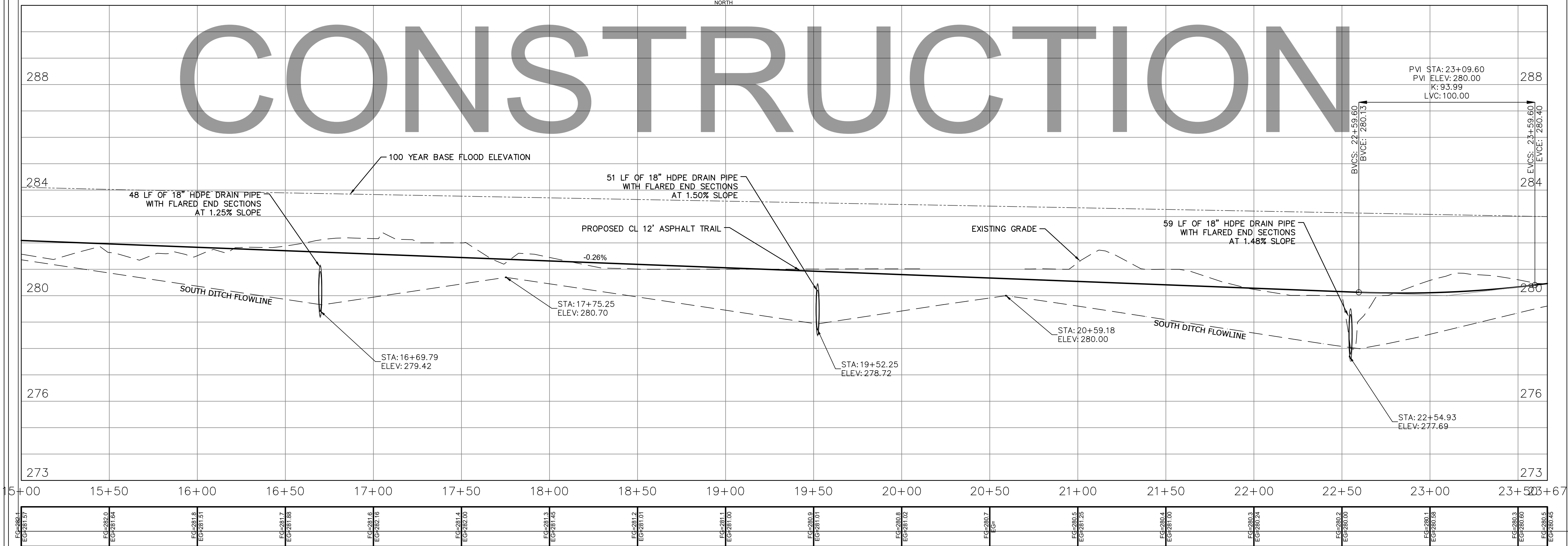
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CONSTRUCTION

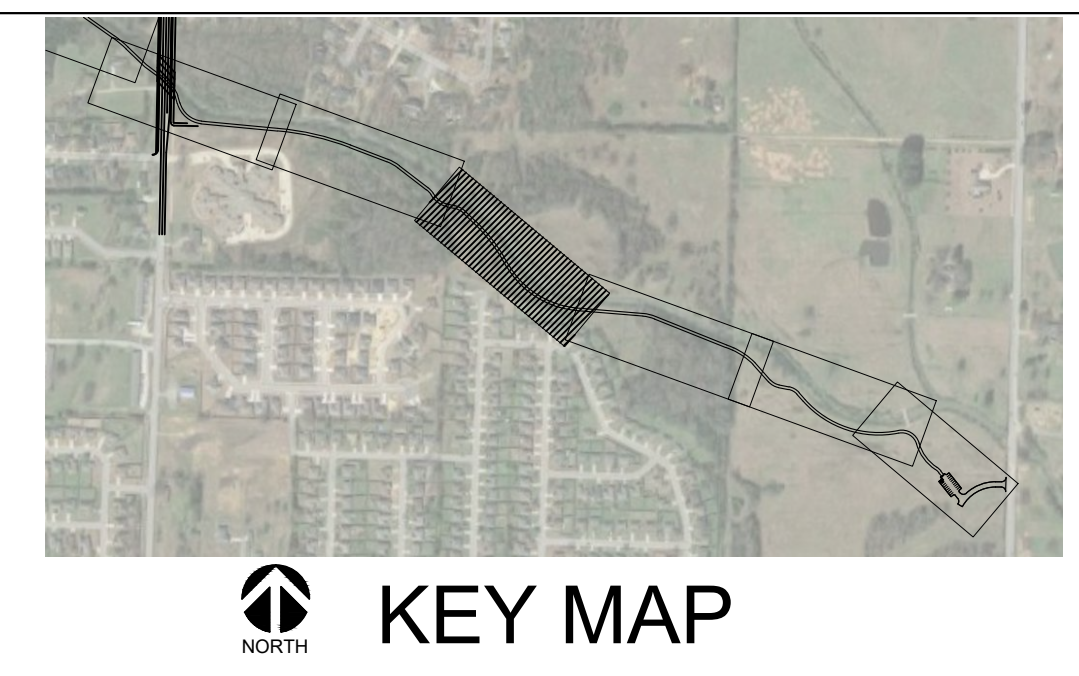


**STONE DAM CREEK TRAIL**  
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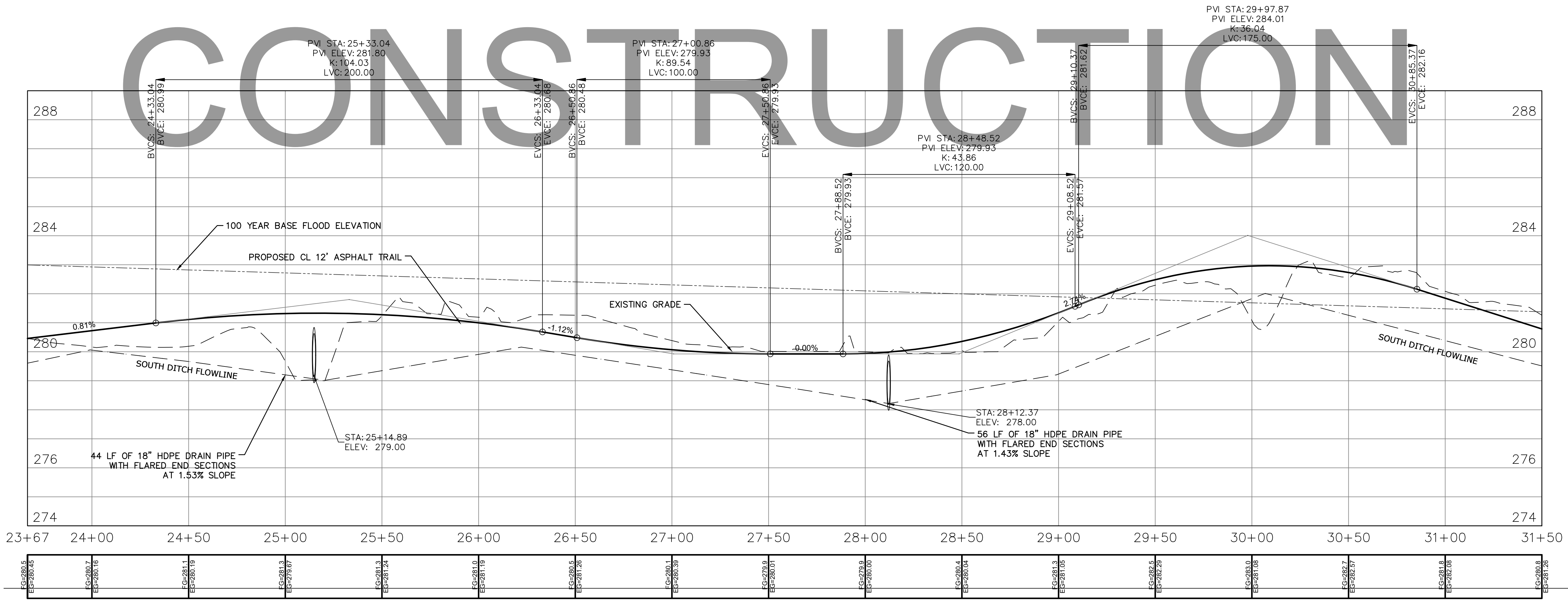


**STONE DAM CREEK TRAIL**  
Conway, Arkansas

HALFF STREET & ENGINEERING

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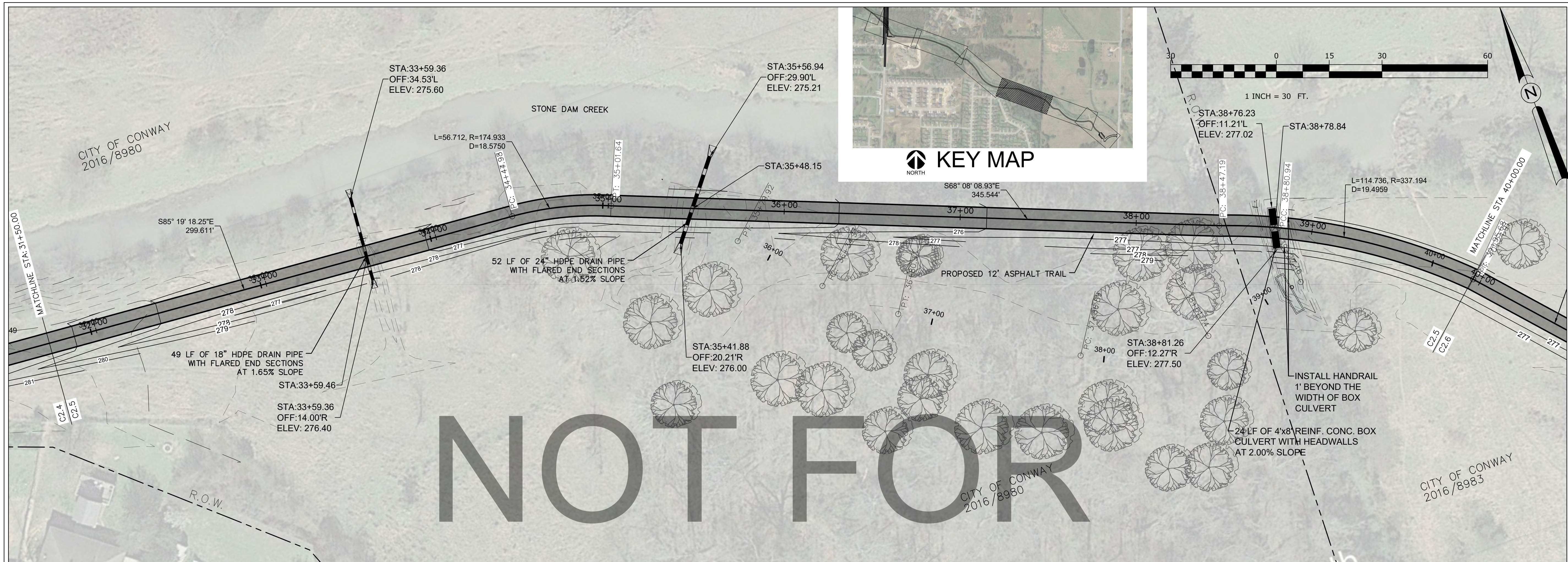


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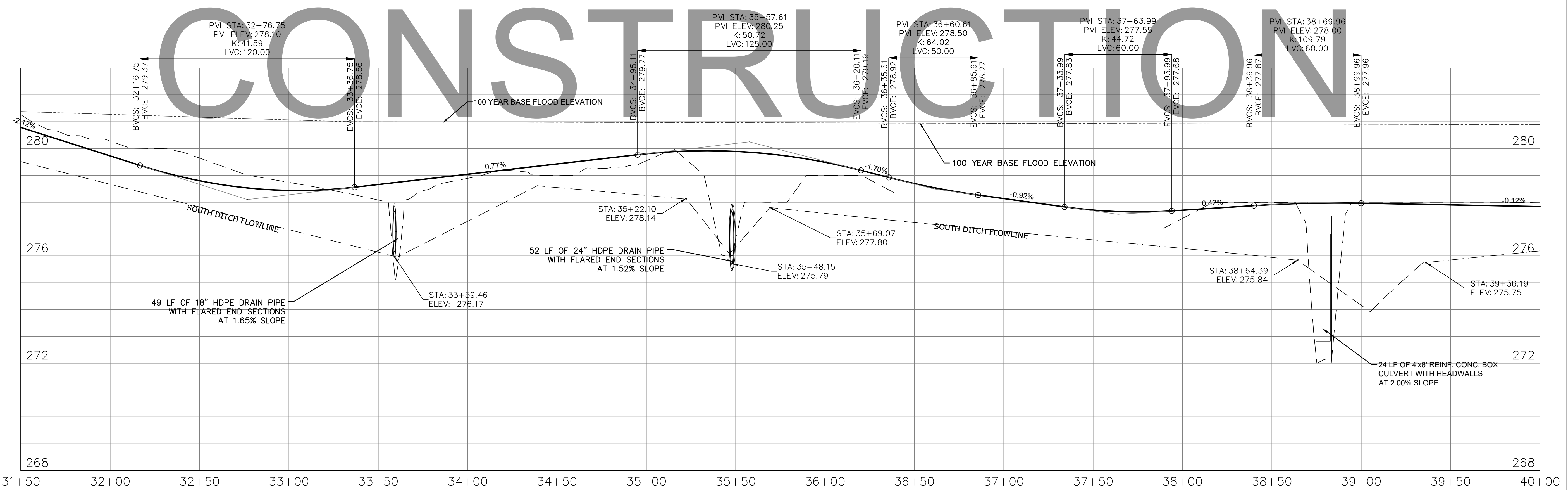


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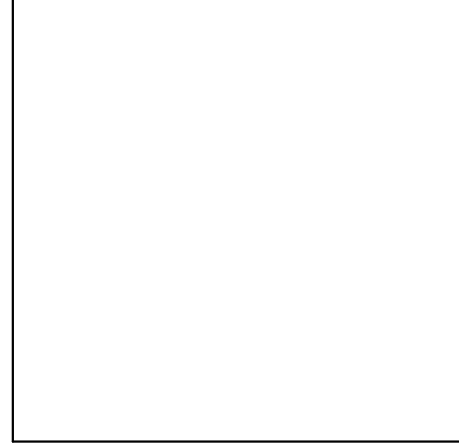


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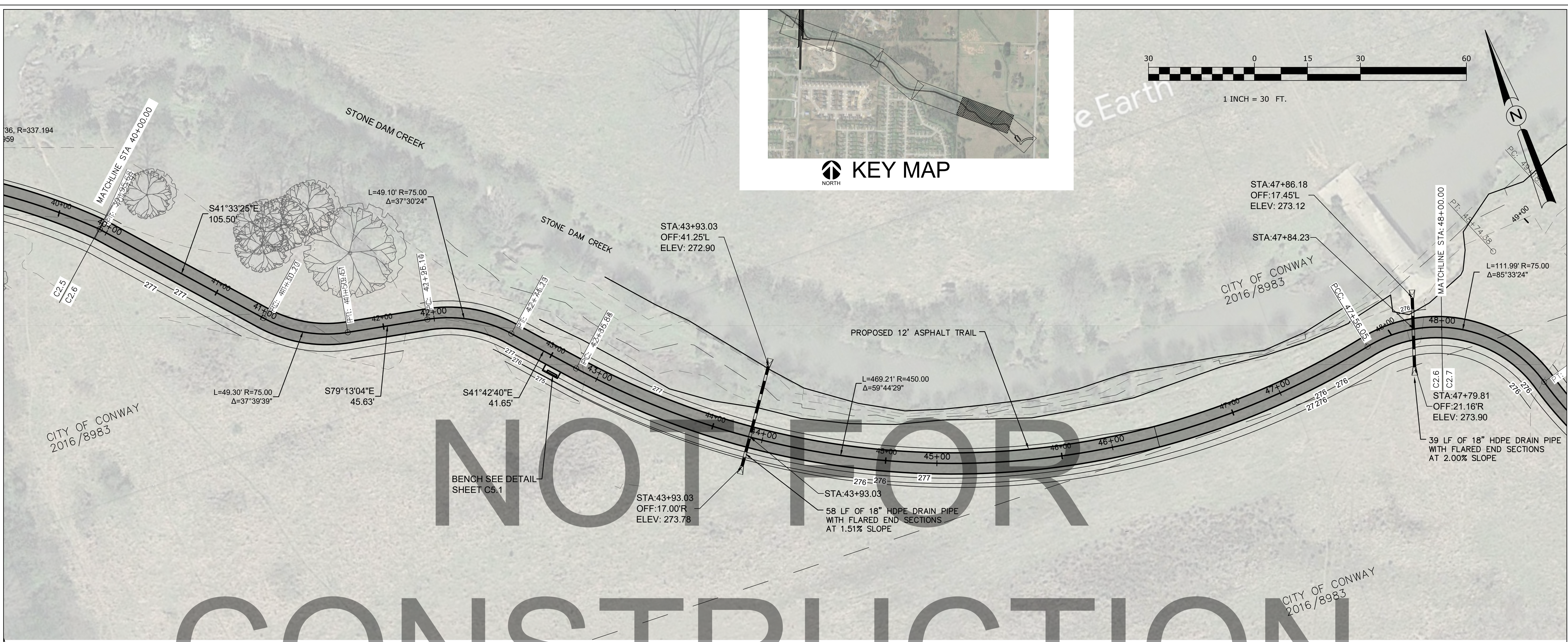
**STONE DAM CREEK TRAIL**  
Conway, Arkansas

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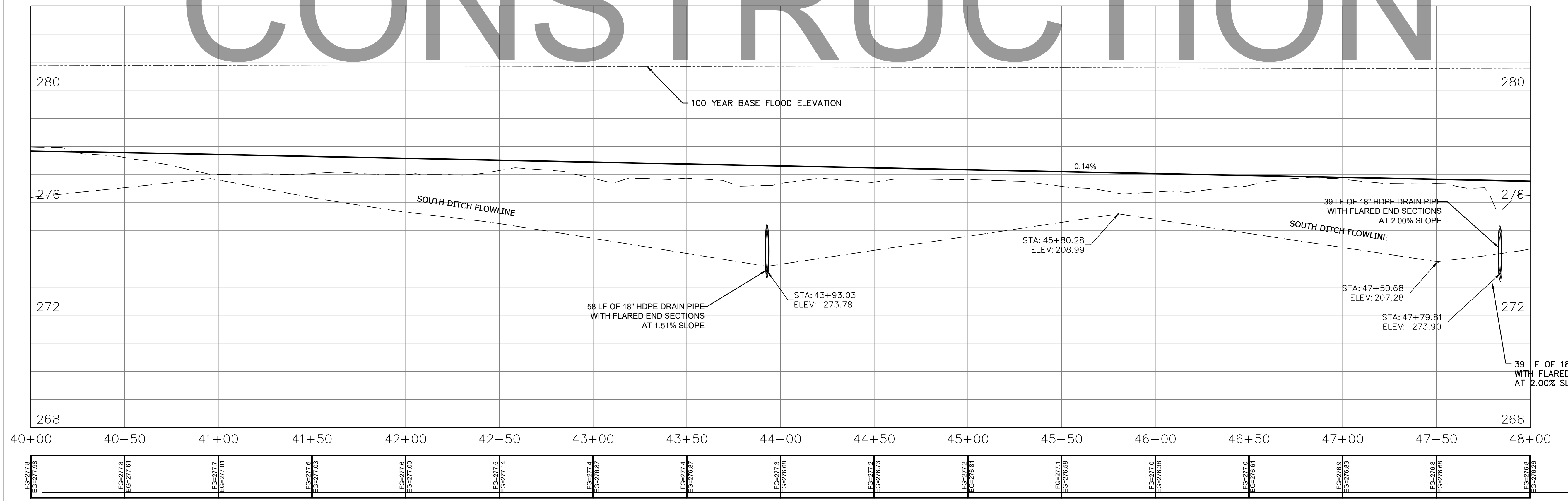
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**C2.5**



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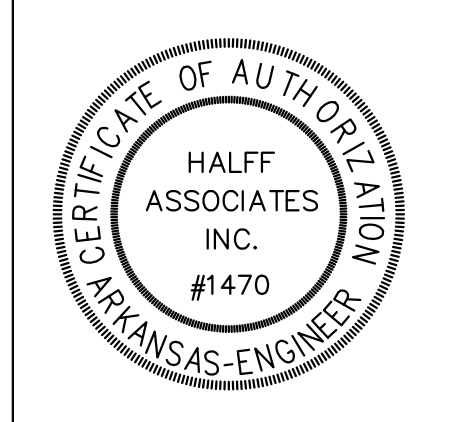
**STONE DAM CREEK TRAIL**  
Conway, Arkansas

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STREET & ENGINEERING

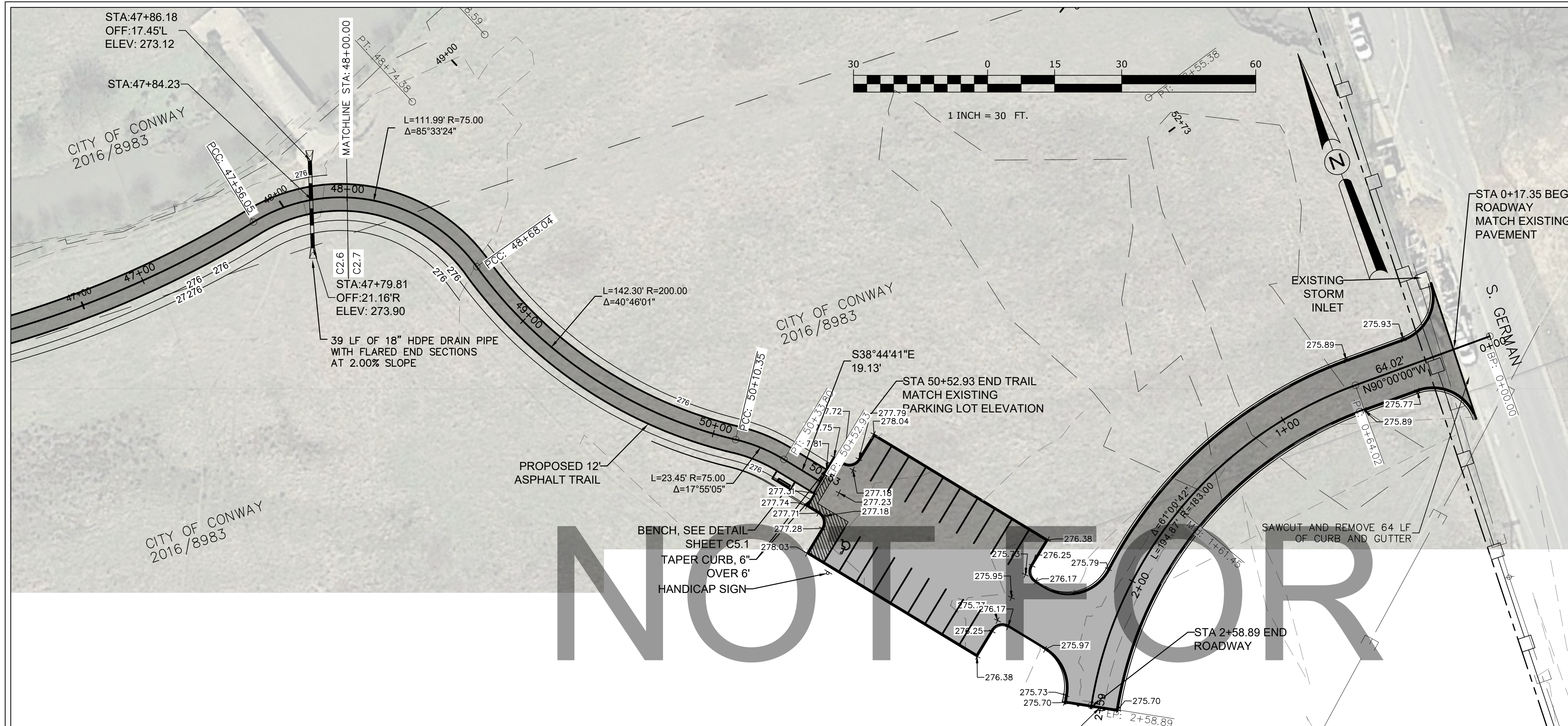
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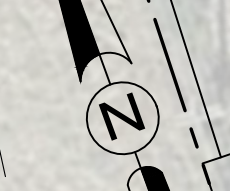
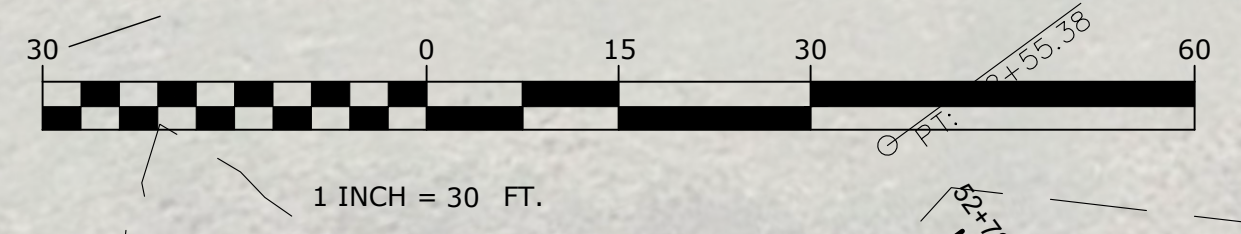
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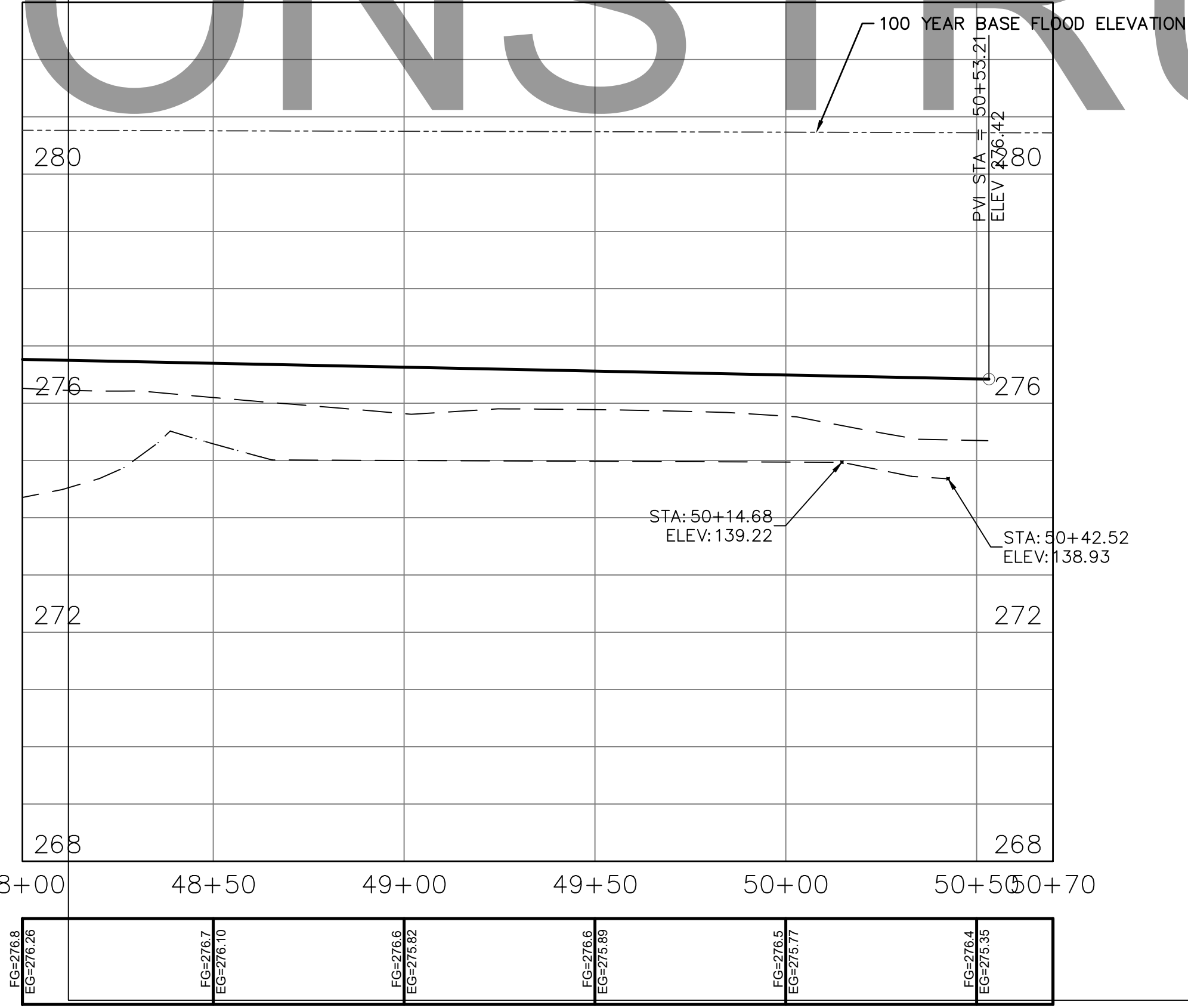
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KEY MAP



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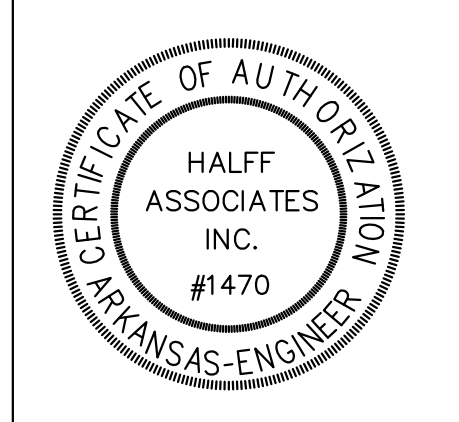
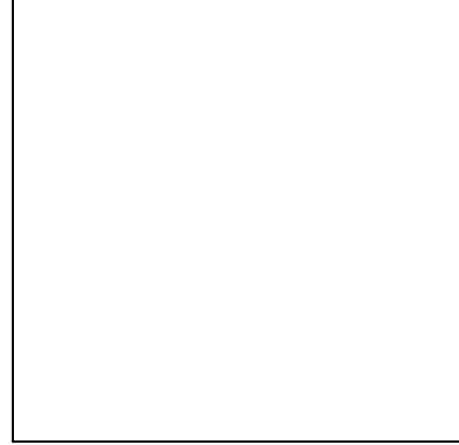
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STREET & ENGINEERING

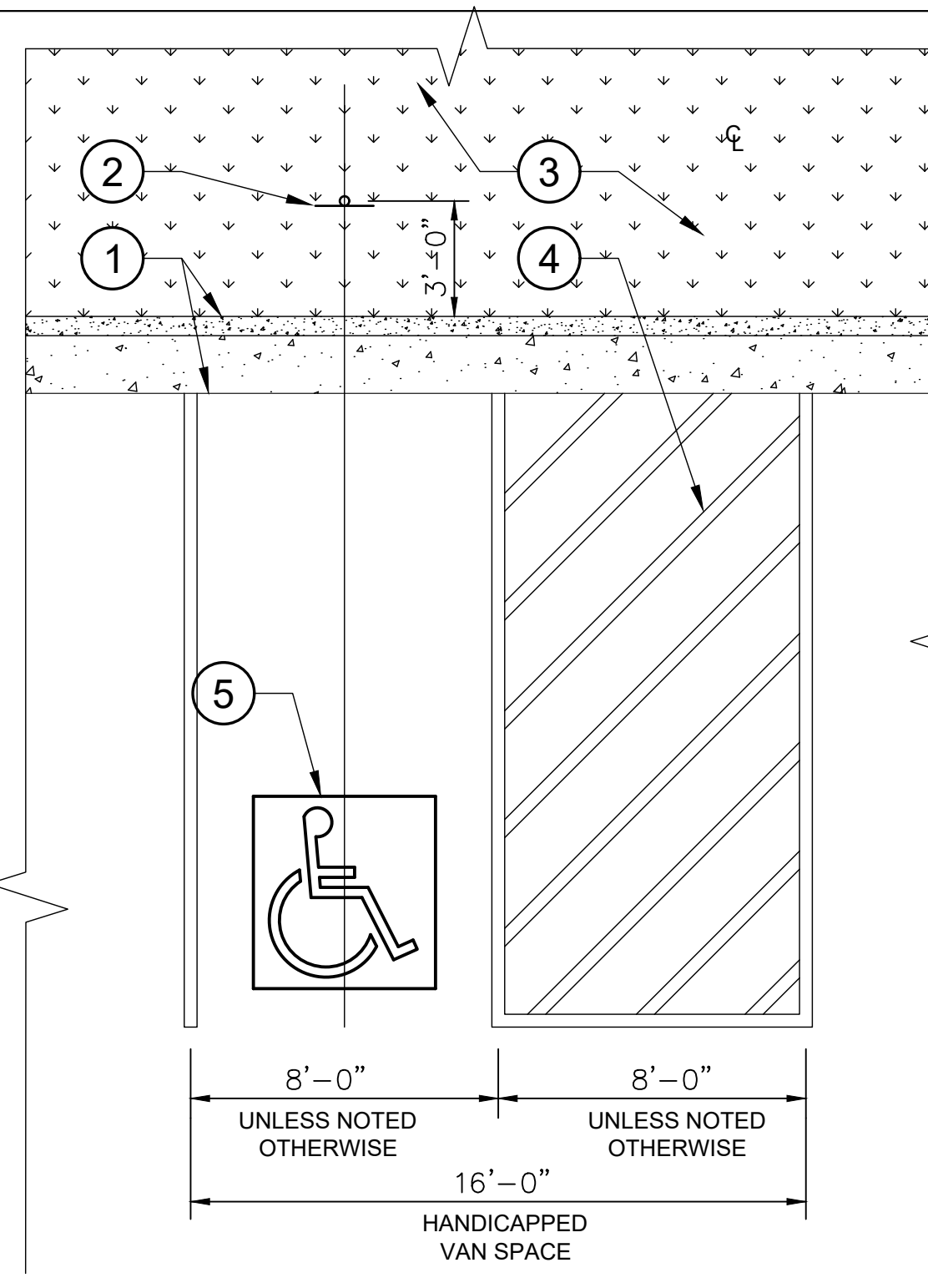
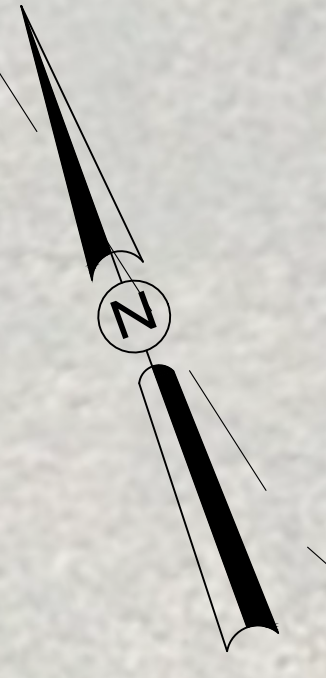
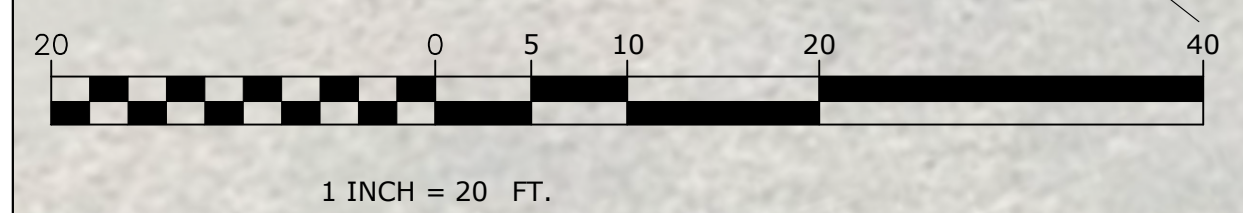
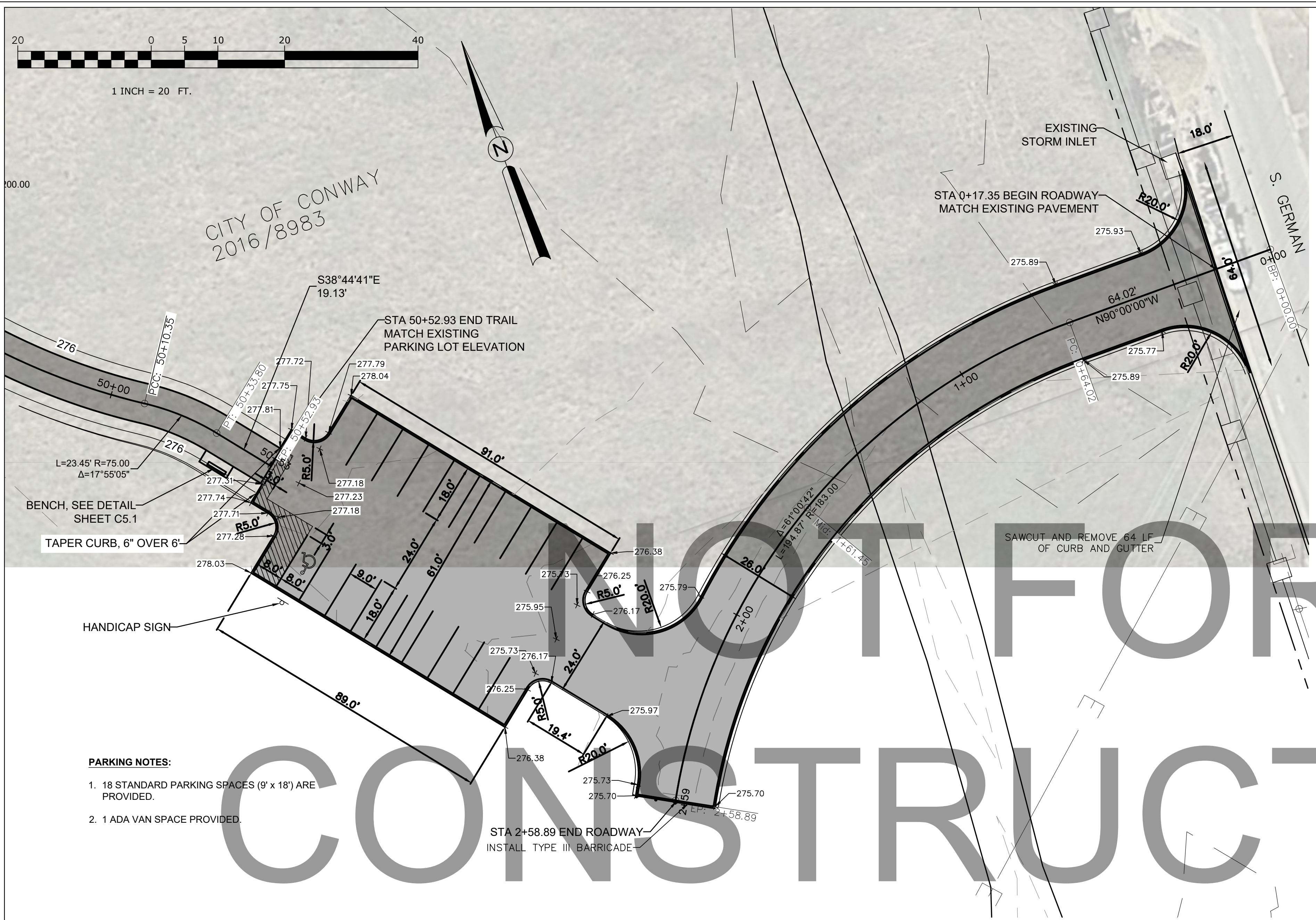
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ASSOCIATES  
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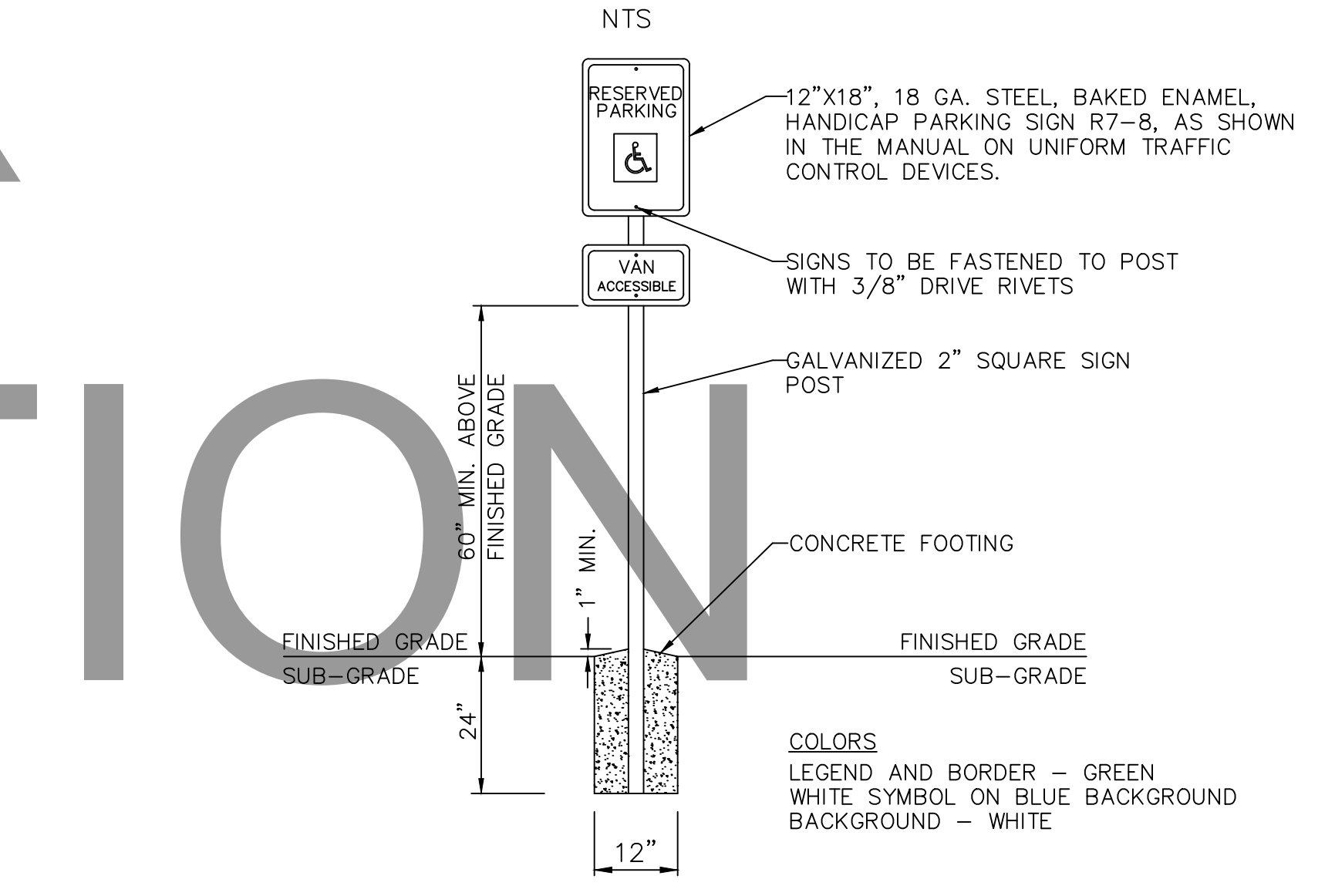
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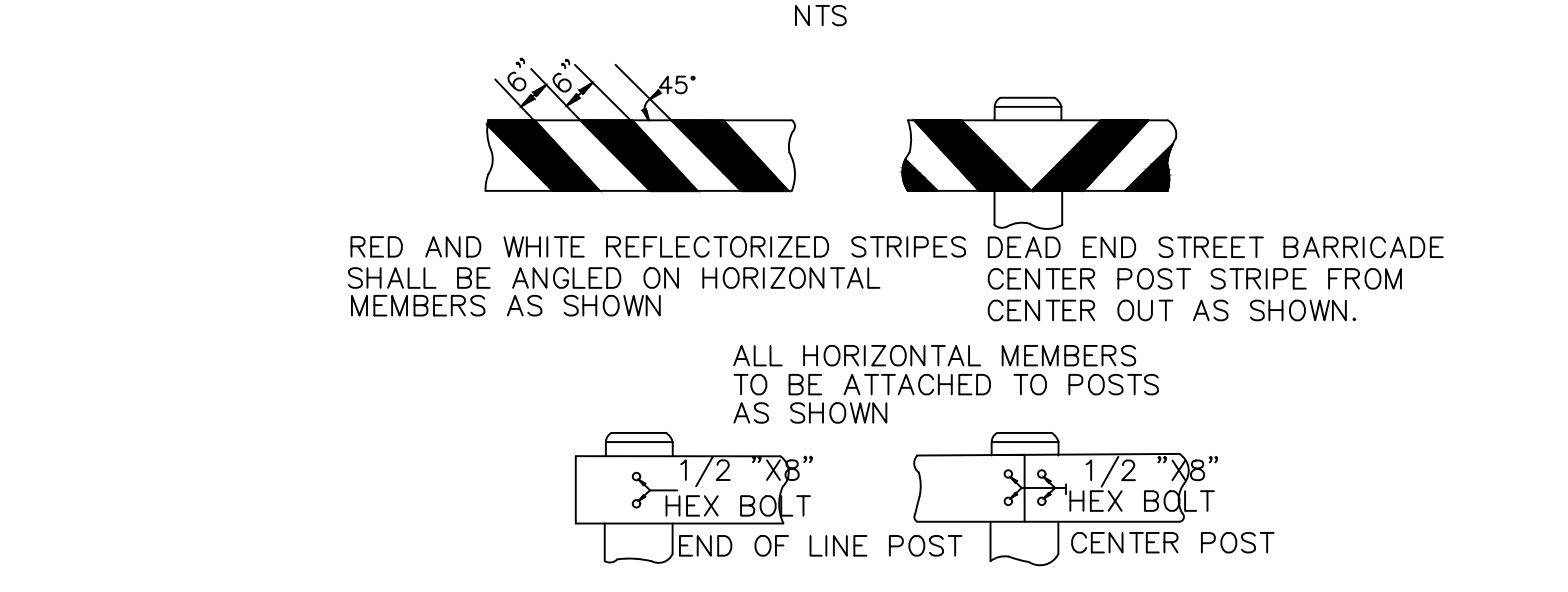
- KEY:**
- ① EXISTING CURB AND GUTTER.
  - ② HANDICAPPED PARKING SIGN WHERE NOTED ON PLANS. REFER TO DETAIL. CENTER HANDICAPPED PARKING SIGN WITH PARKING SPACE.
  - ③ TURF AREA.
  - ④ 4" WIDE DIAGONAL WHITE PAINT @ 24" ON CENTER.
  - ⑤ STANDARD ADA HANDICAPPED SYMBOL TO BE PAINTED ON PAVEMENT WITH NONREFLECTIVE PAINT.

- NOTES:**
- 1. EACH HANDICAPPED PARKING SPACE SHALL BE SIGNED IN ACCORDANCE WITH ADA REQUIREMENTS.
  - 2. PROVIDE 2% MAXIMUM SLOPE IN ALL DIRECTIONS.

TYPICAL HANDICAP VAN PARKING SPACE DETAIL



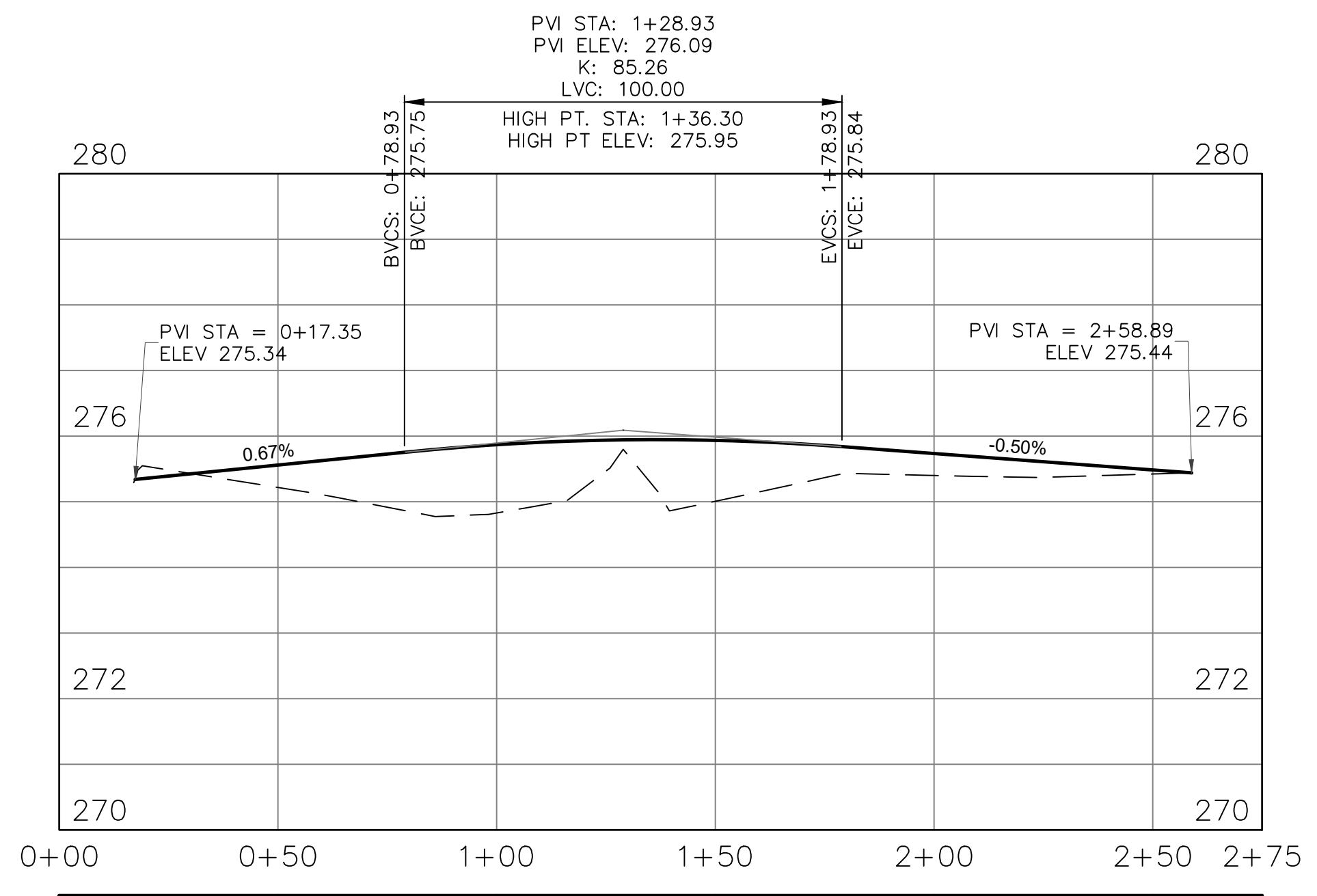
HANDICAP SIGN



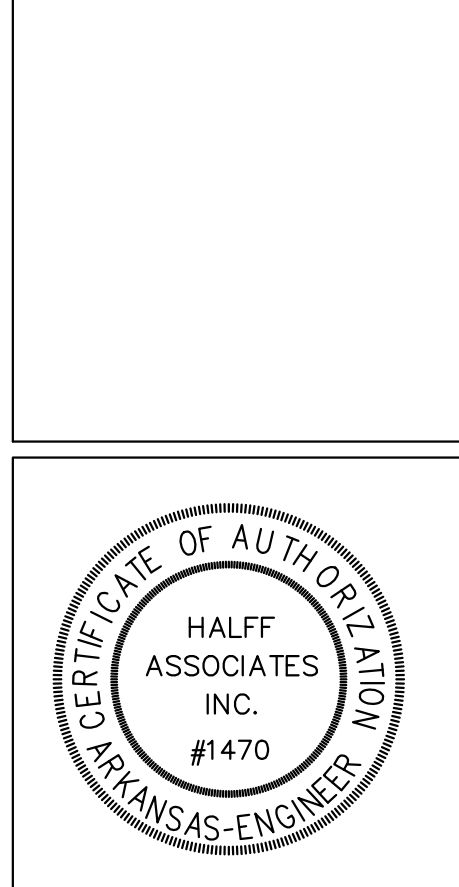
TYPE III BARRICADE

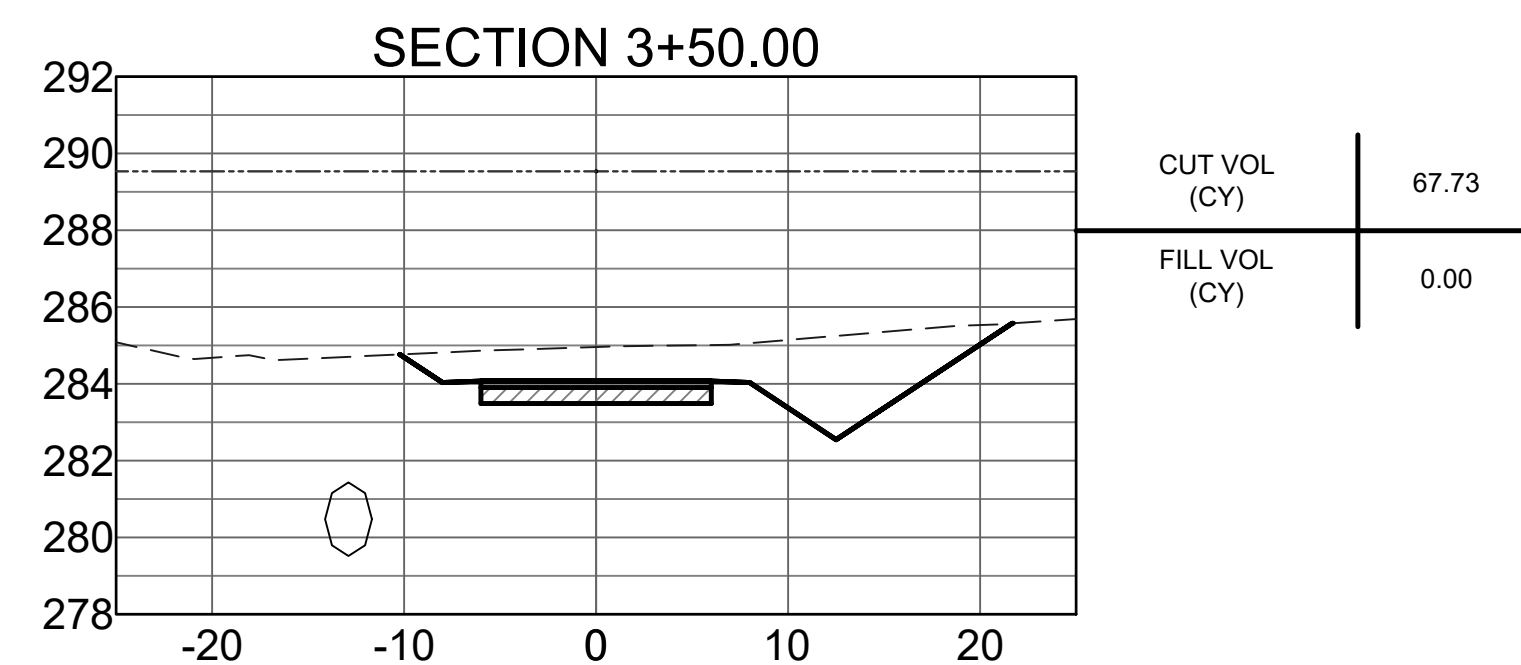
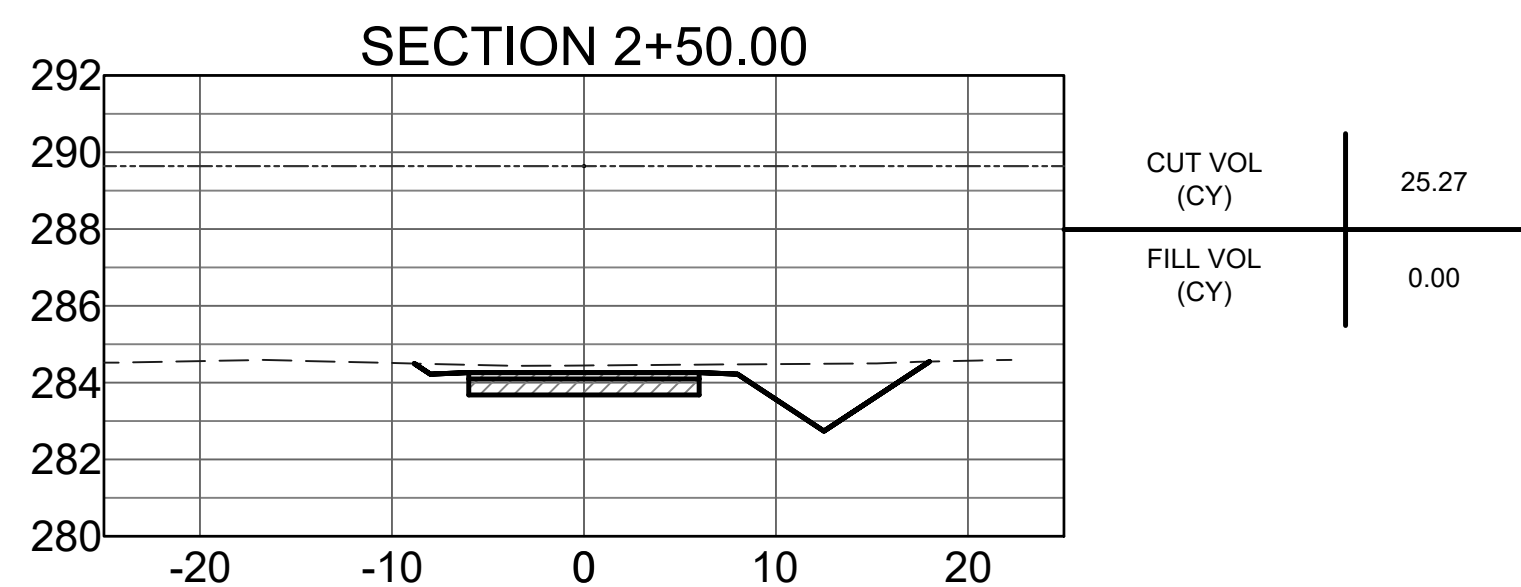
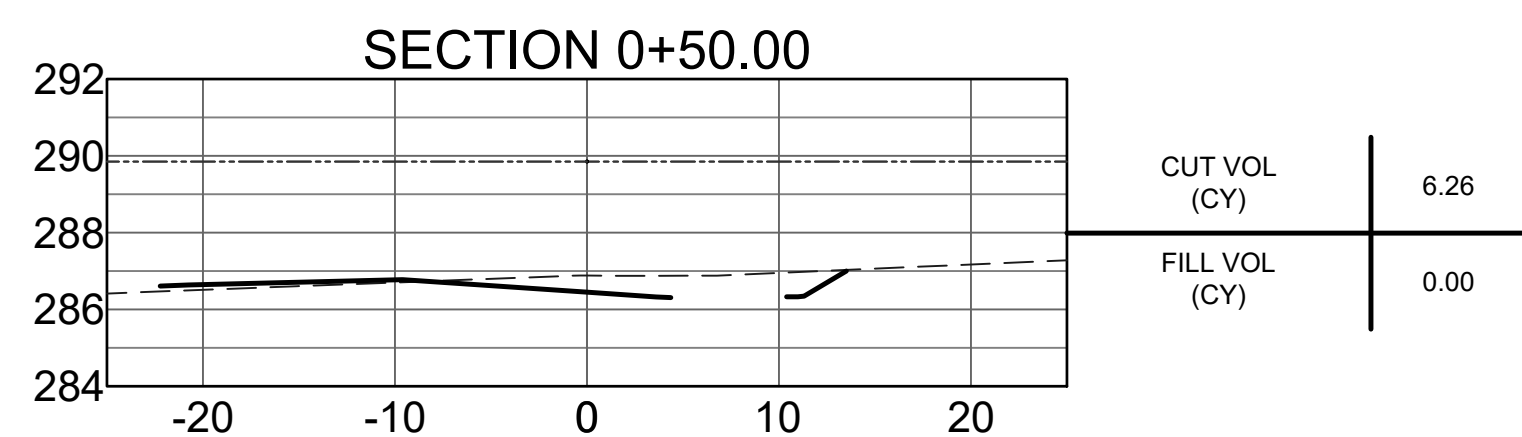
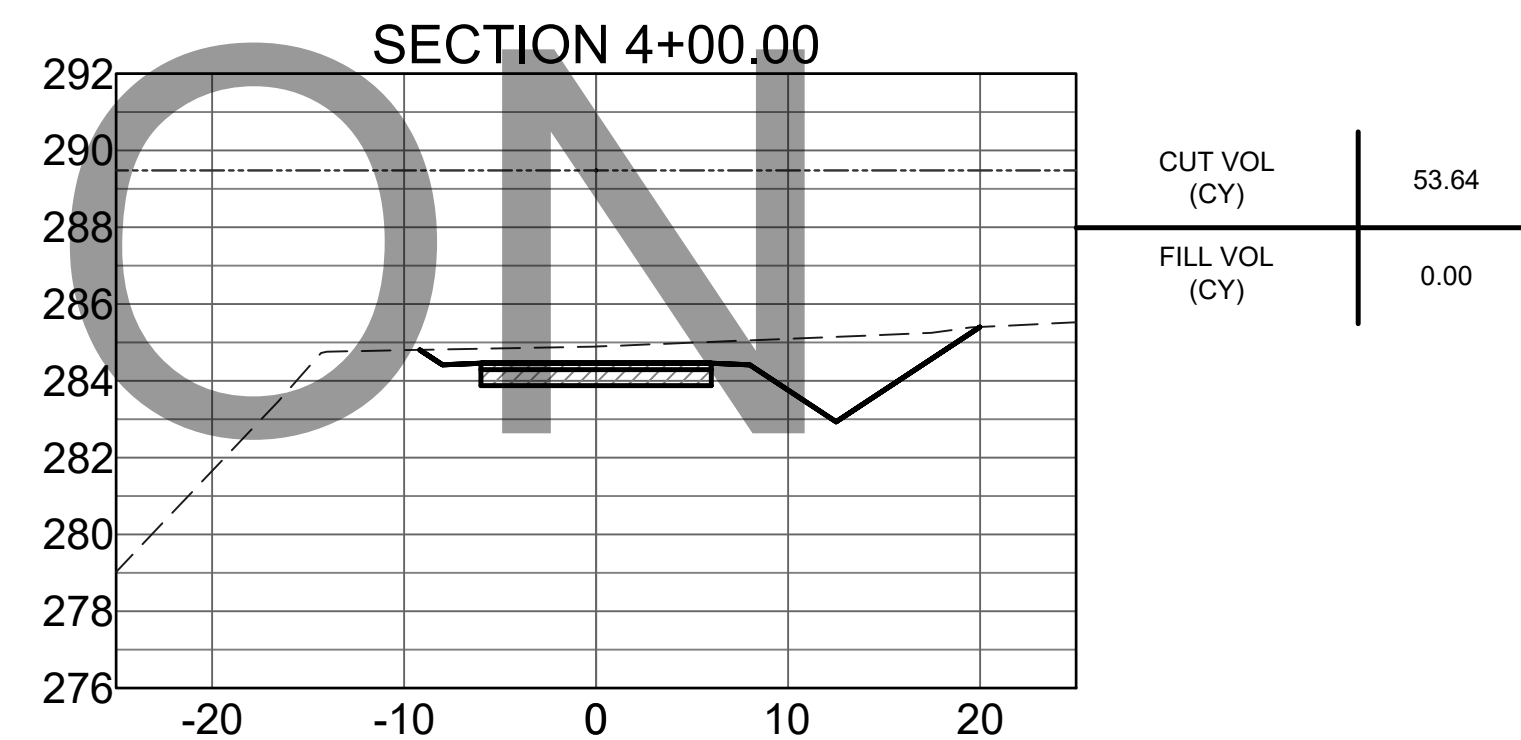
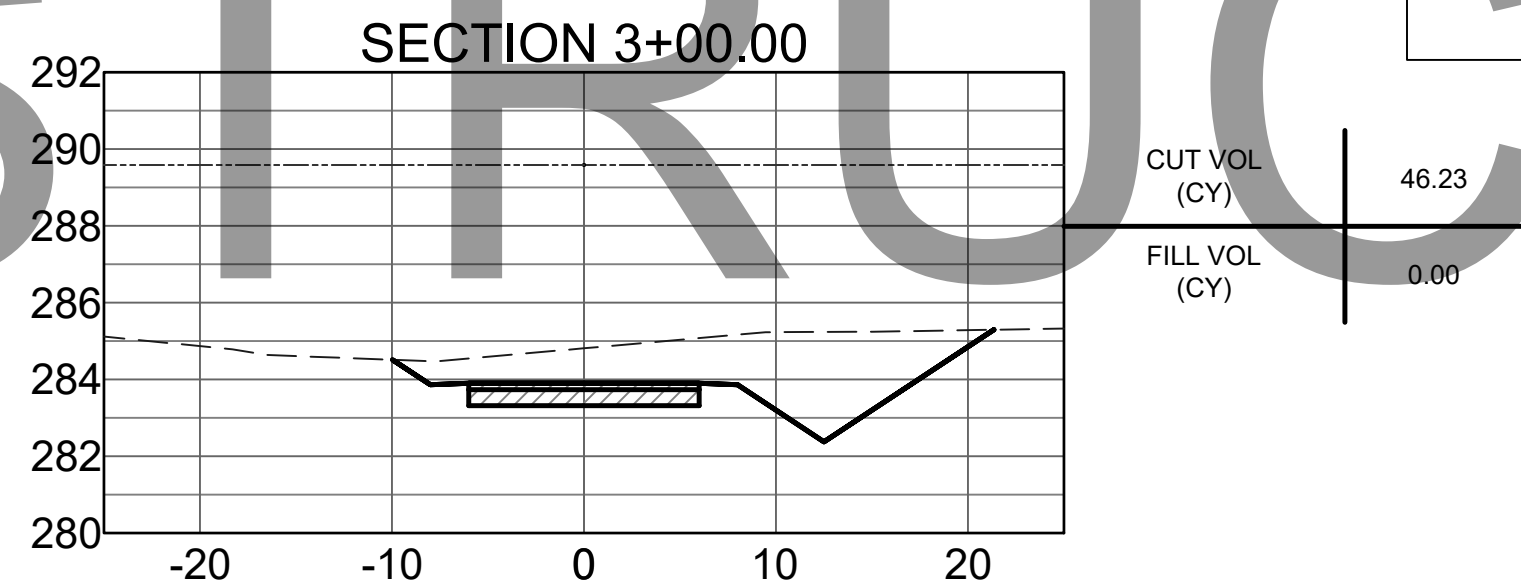
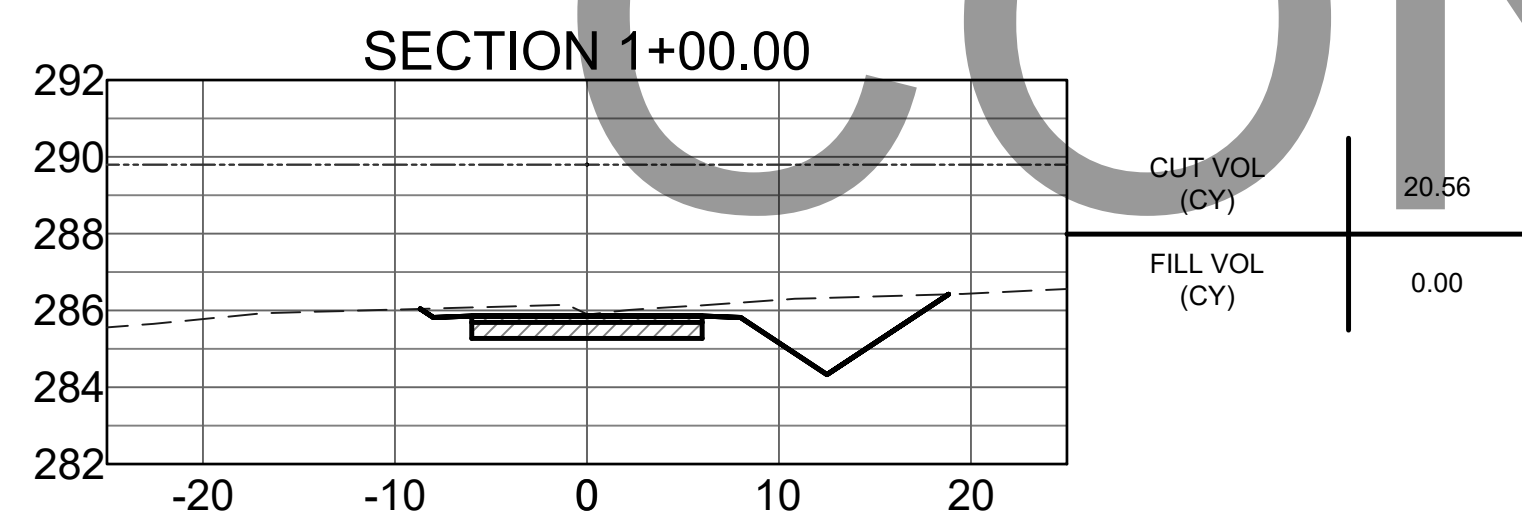
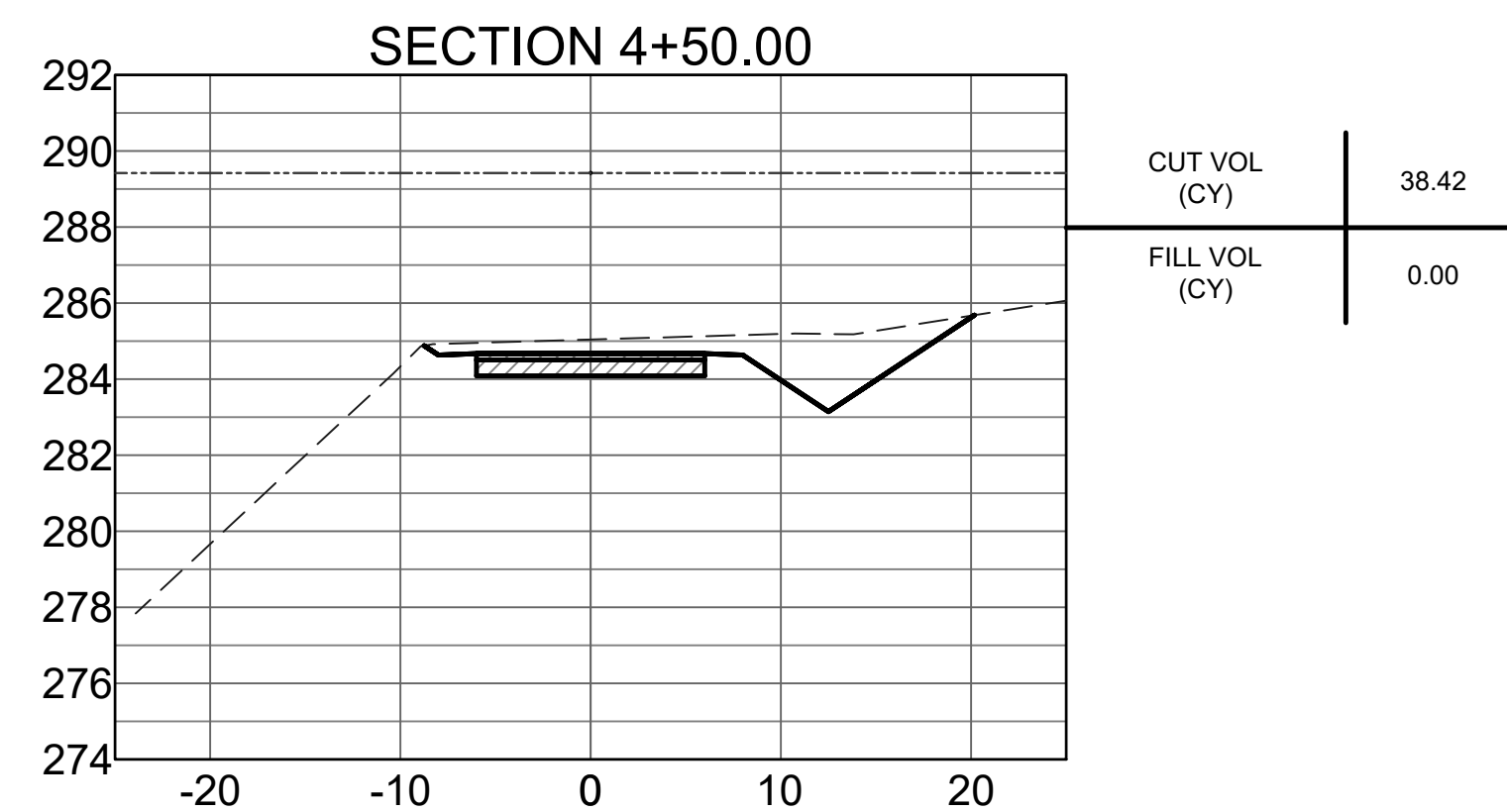
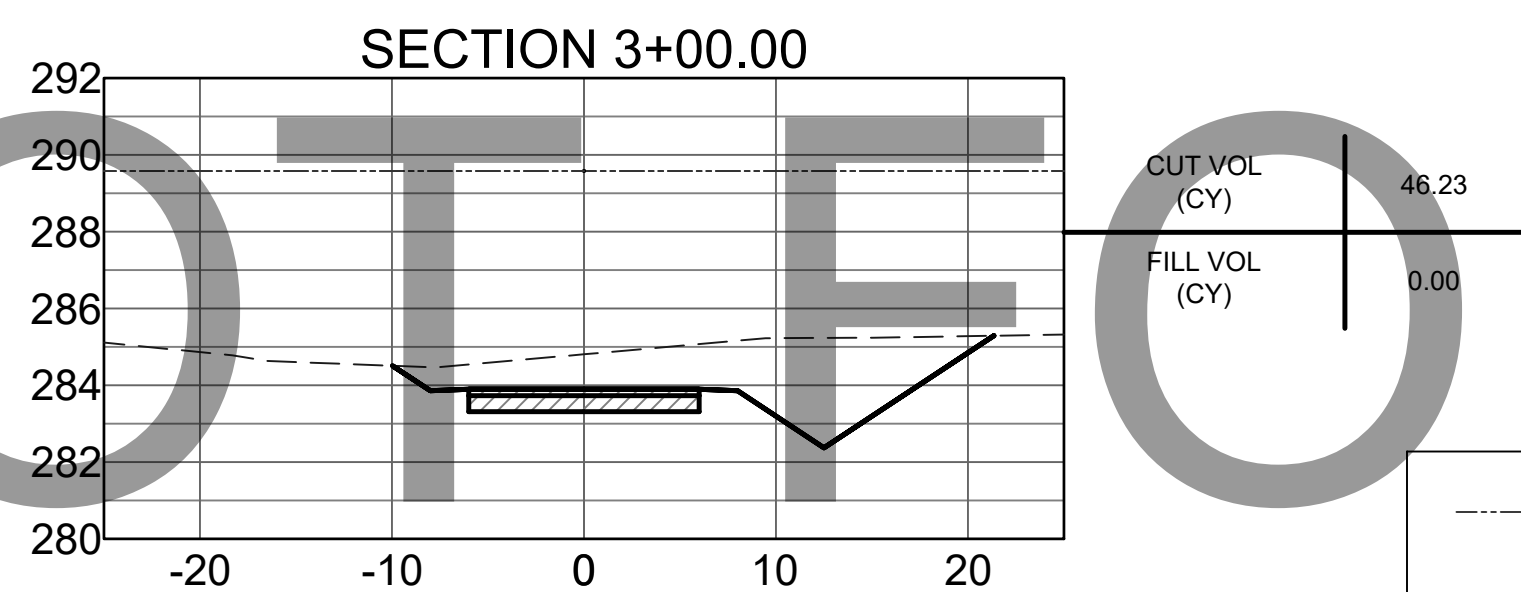
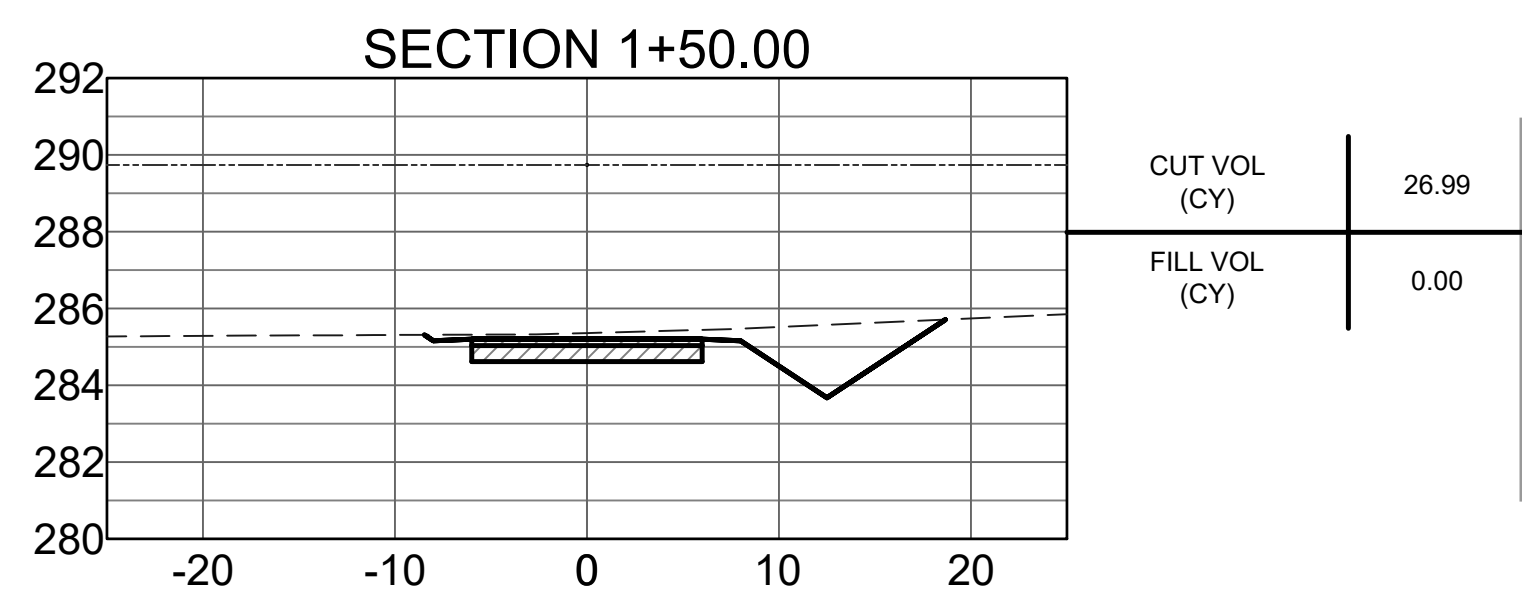
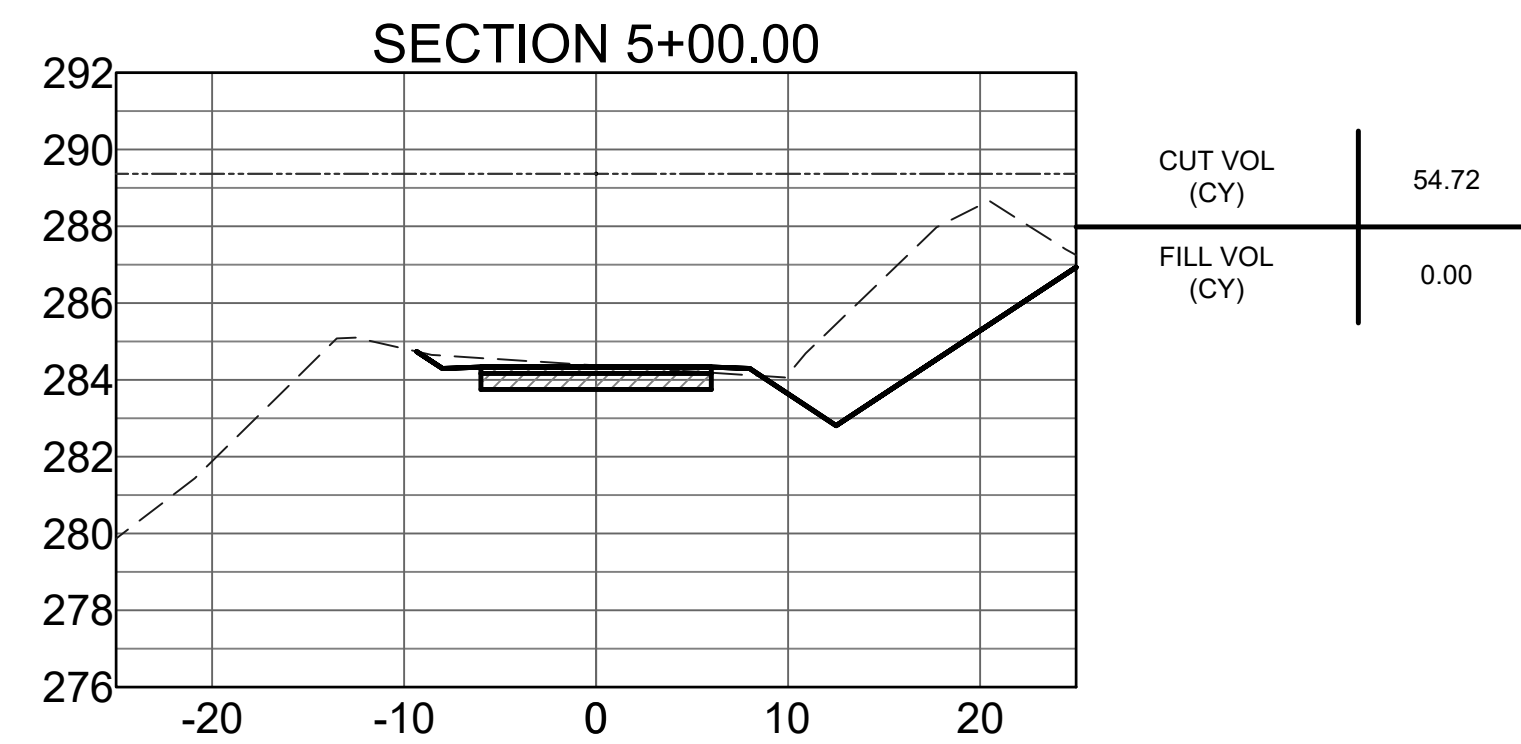
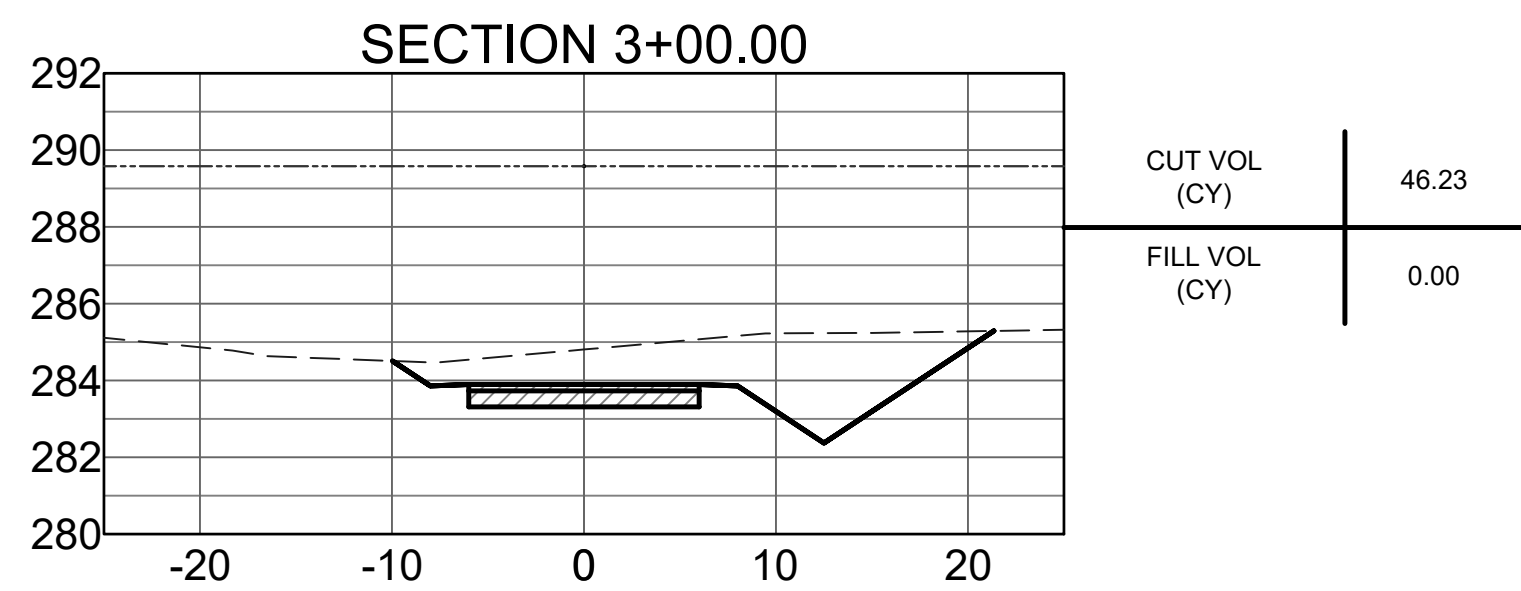
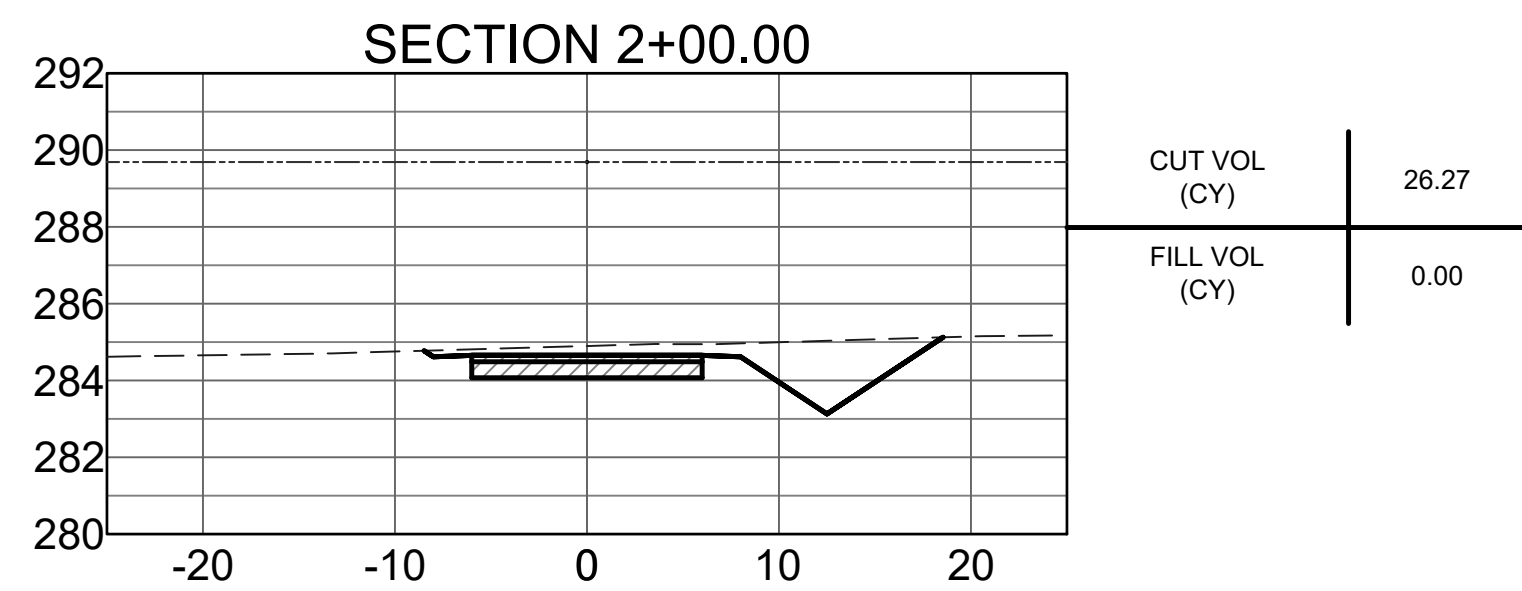
- PARKING NOTES:**
- 1. 18 STANDARD PARKING SPACES (9' x 18') ARE PROVIDED.
  - 2. 1 ADA VAN SPACE PROVIDED.

STA 2+58.89 END ROADWAY  
INSTALL TYPE III BARRICADE



Revision No.	Date	Description

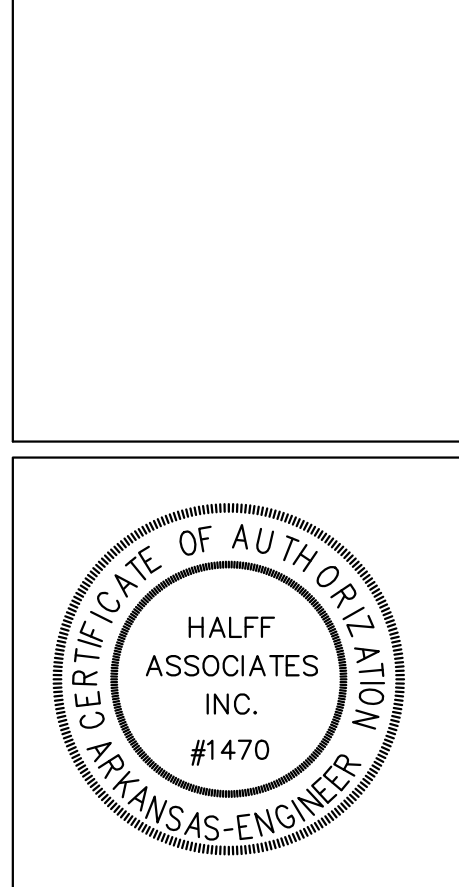




NOT FOR CONSTRUCTION

- - - - 100 YEAR  
 BASE FLOOD  
 ELEVATION  
 - - - - EXISTING  
 GRADE  
 ——— PROPOSED  
 GRADE

Revision No.	Date	Description



Project No.:	33160
Issued:	APRIL 2021
Drawn By:	BD / LCJ / JKJ
Checked By:	BLV / SBH
Sheet Title	<b>CROSS SECTIONS</b>
Sheet Number	<b>1</b>
C3.0	



Revision No.	Date	Description

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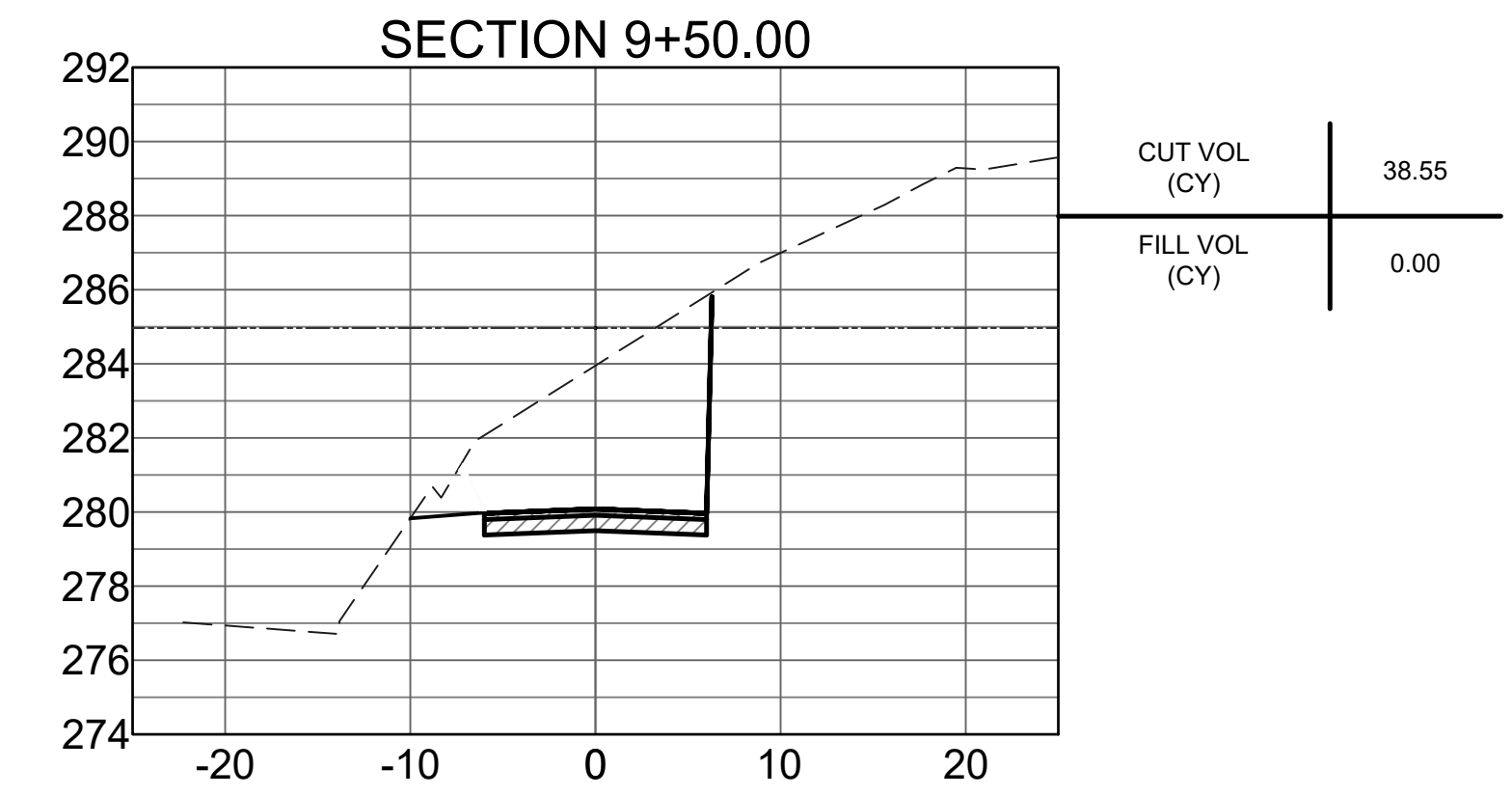
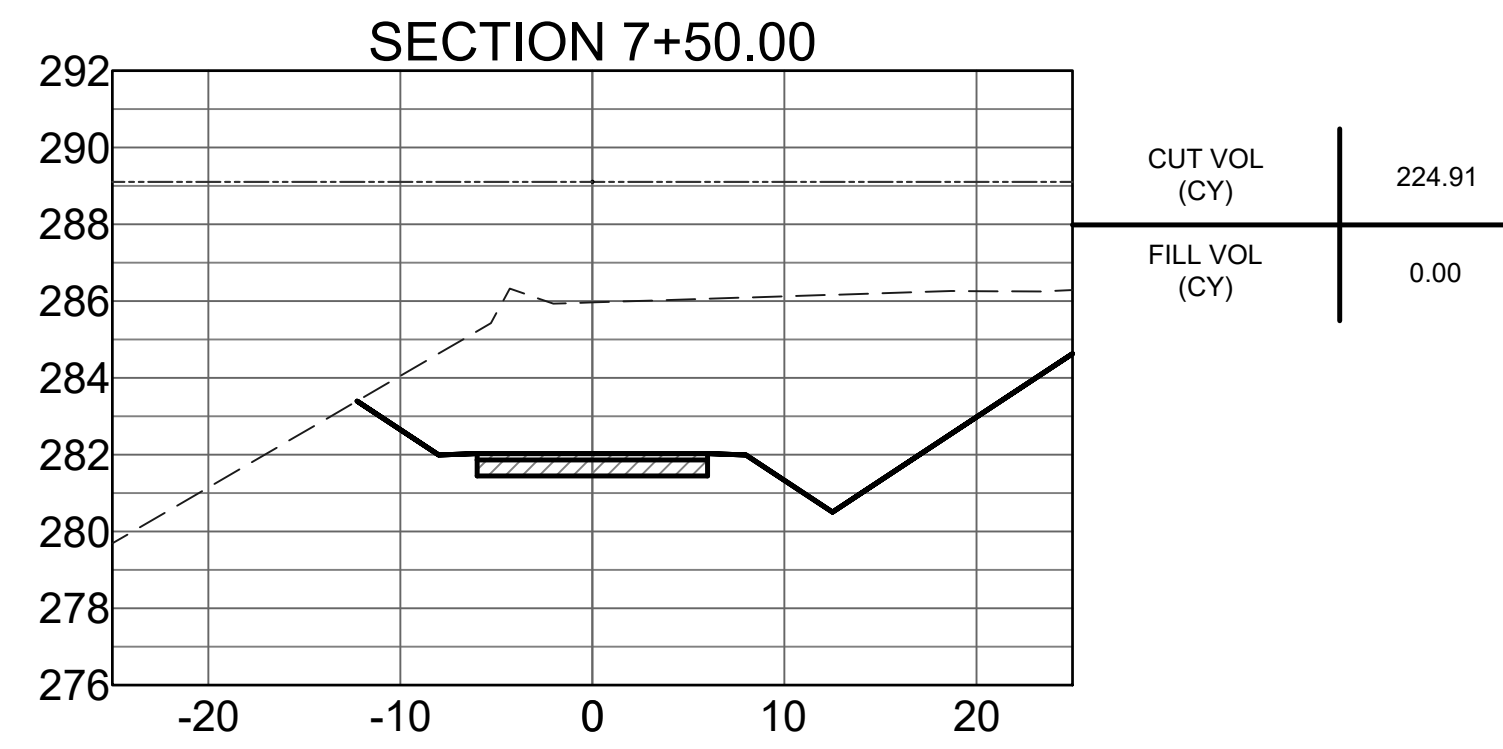
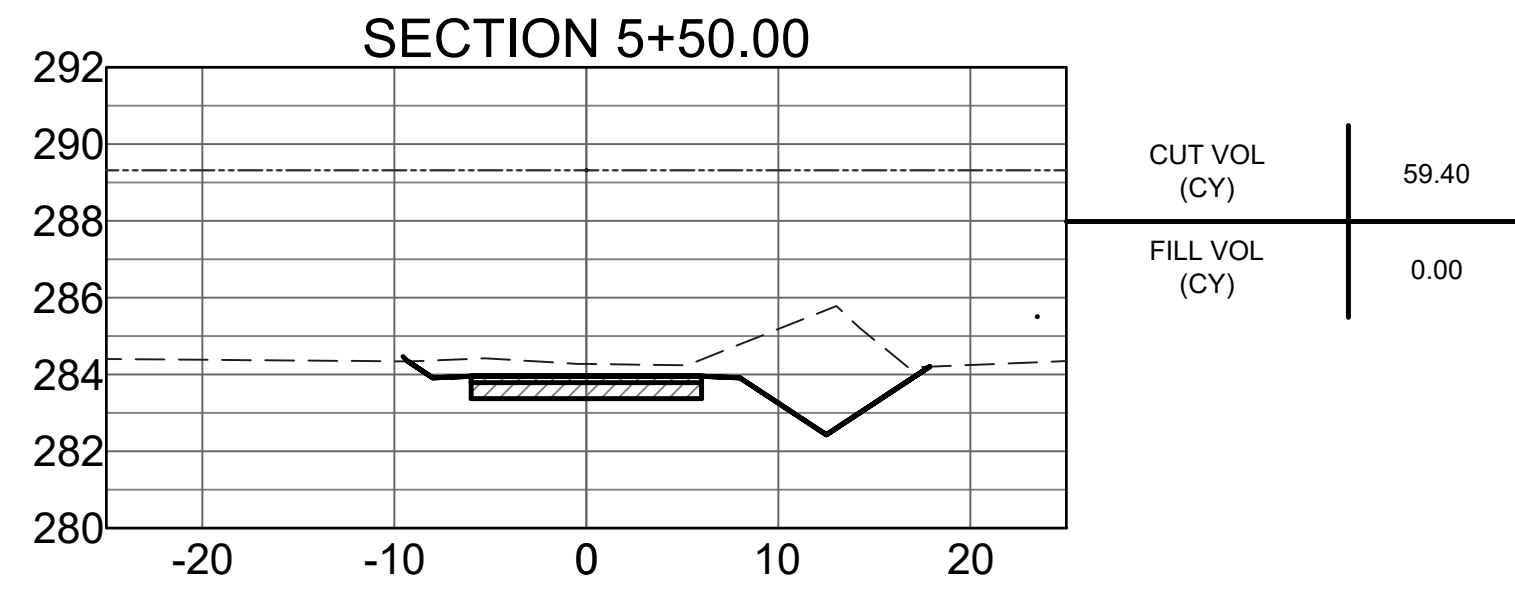
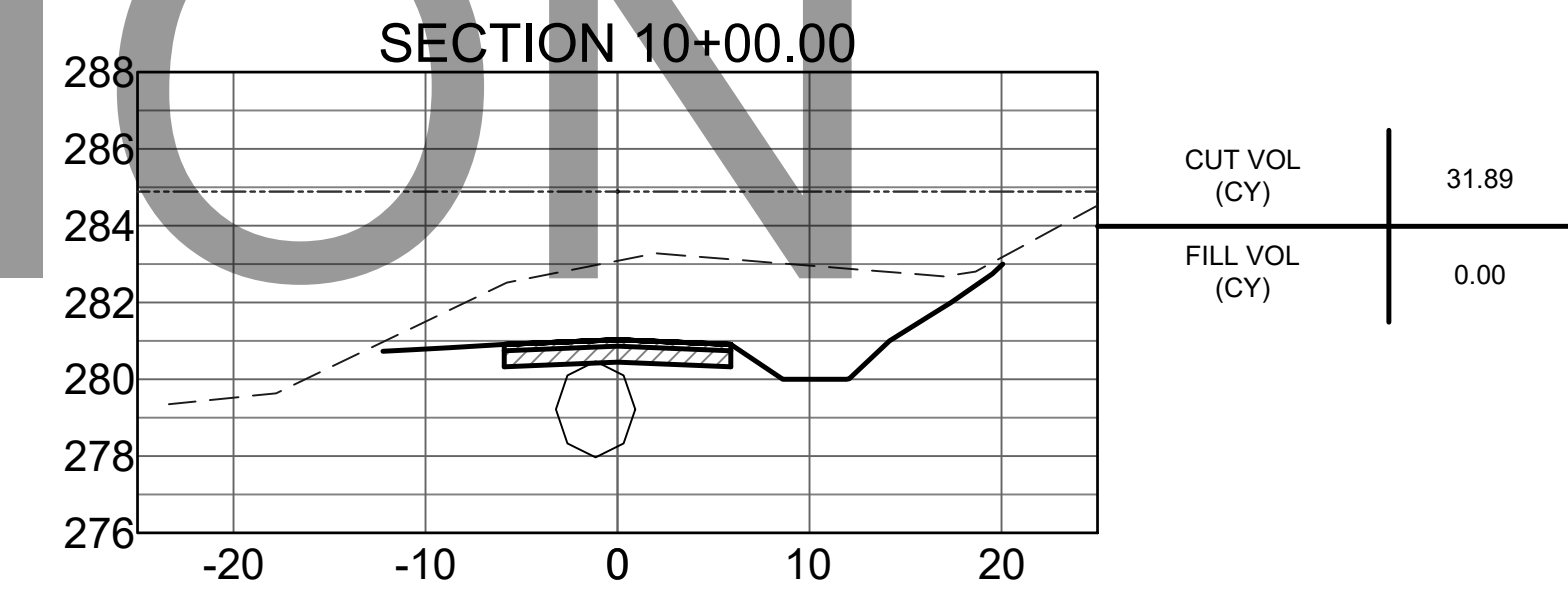
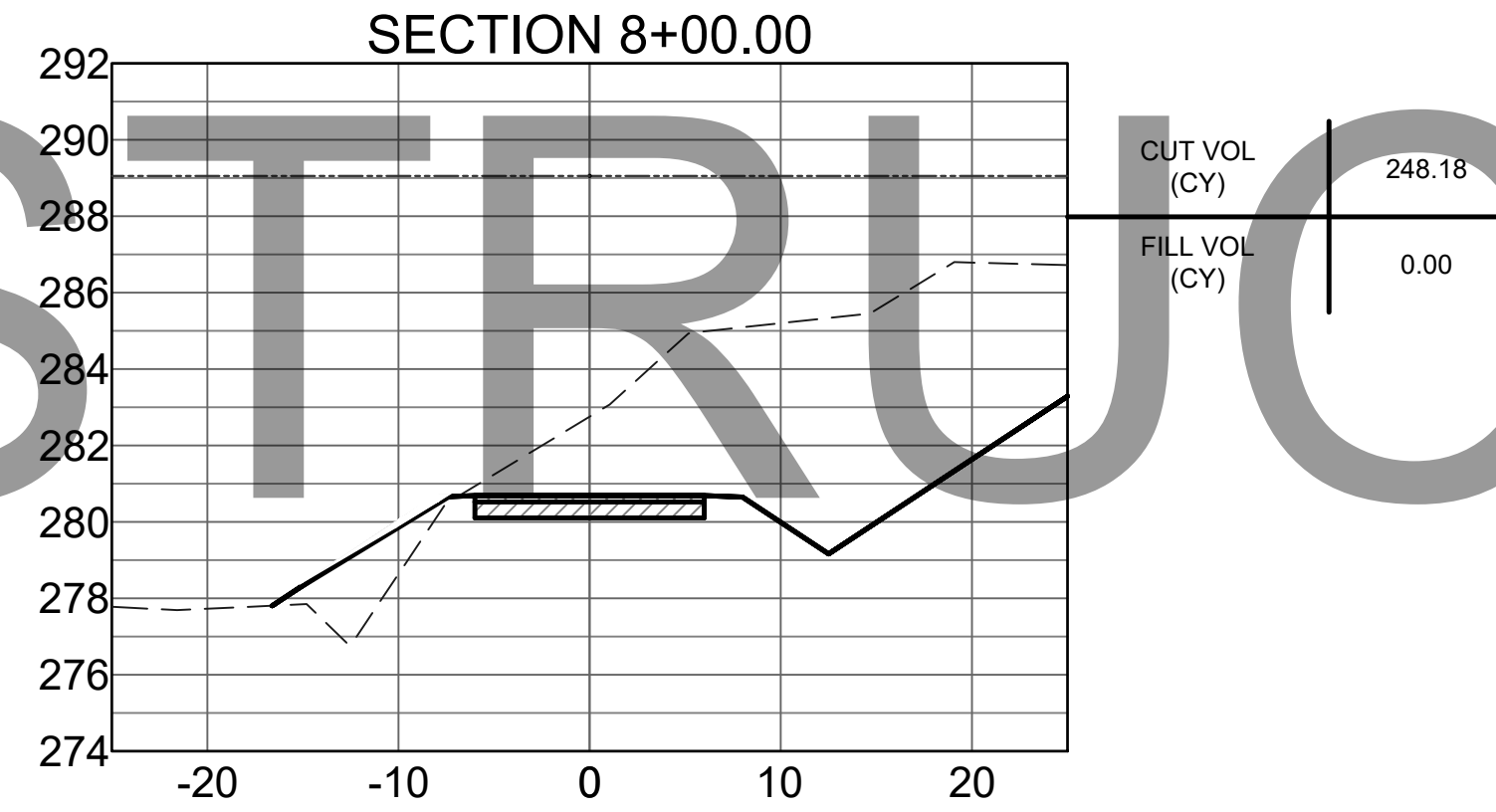
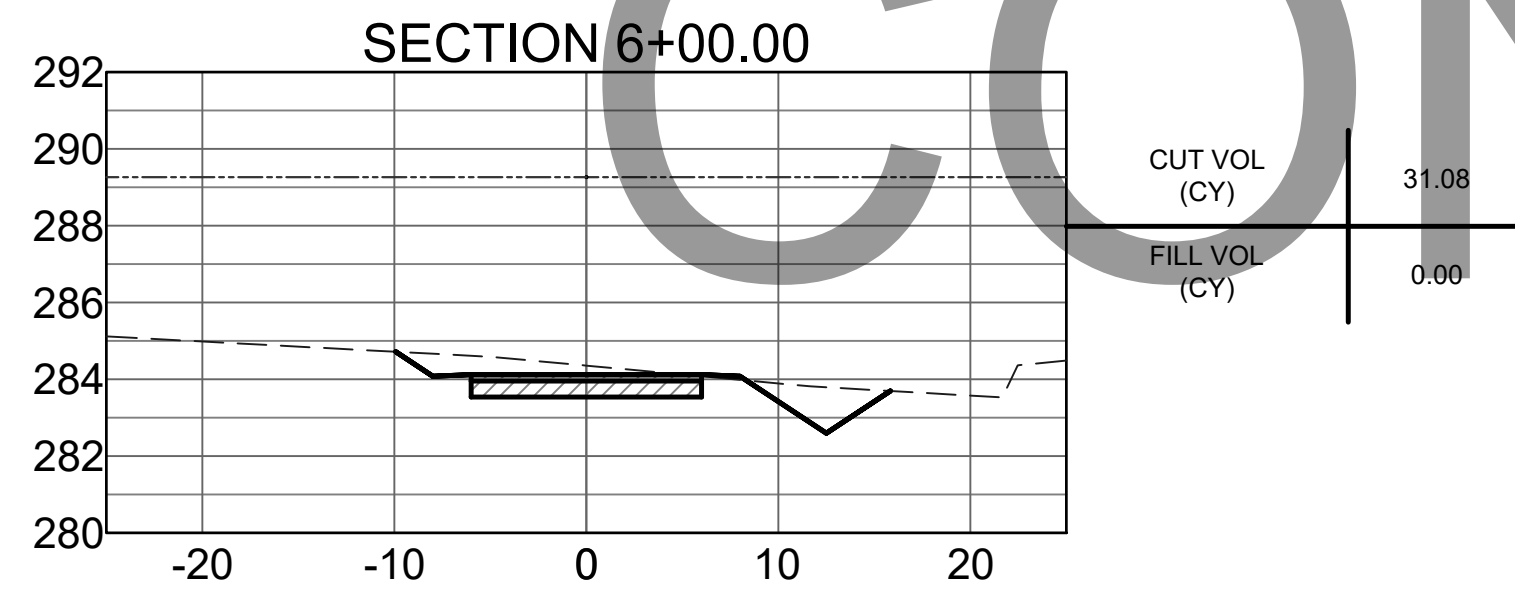
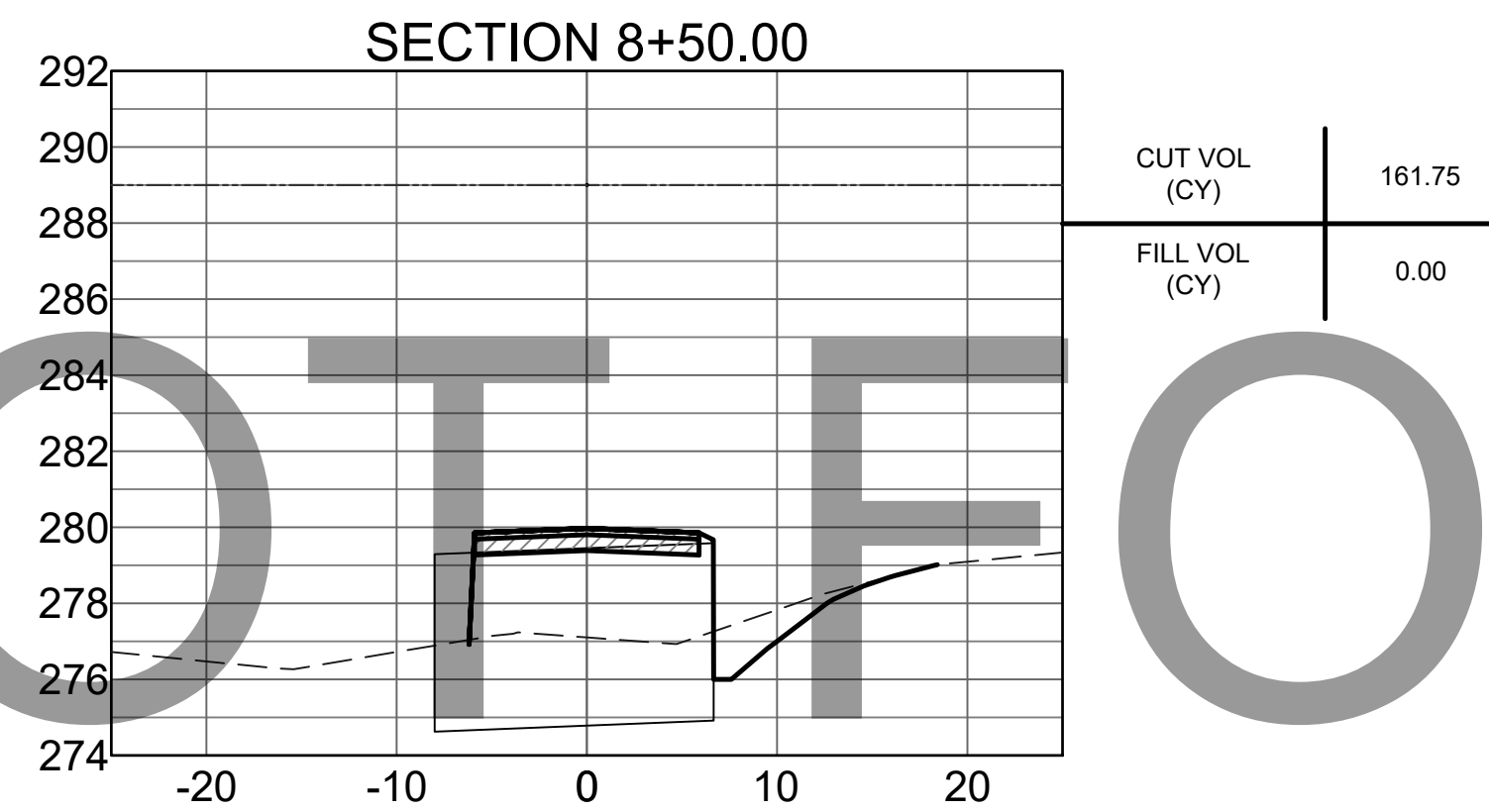
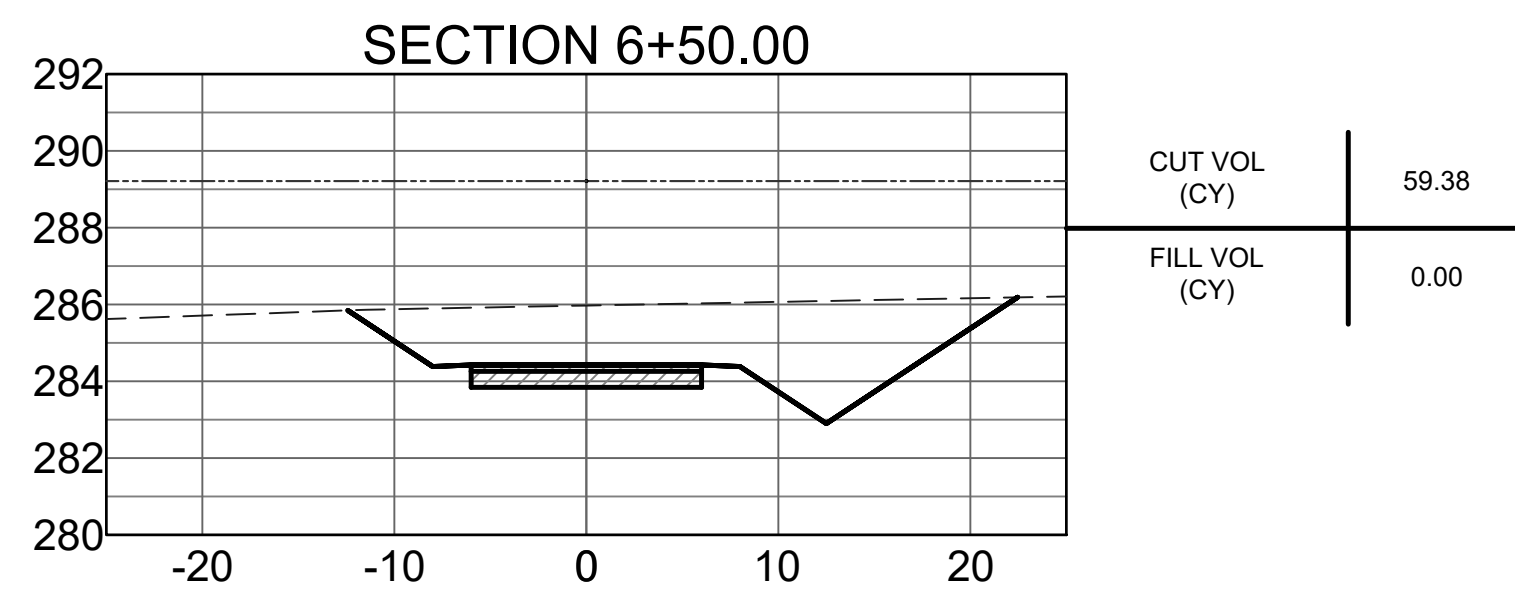
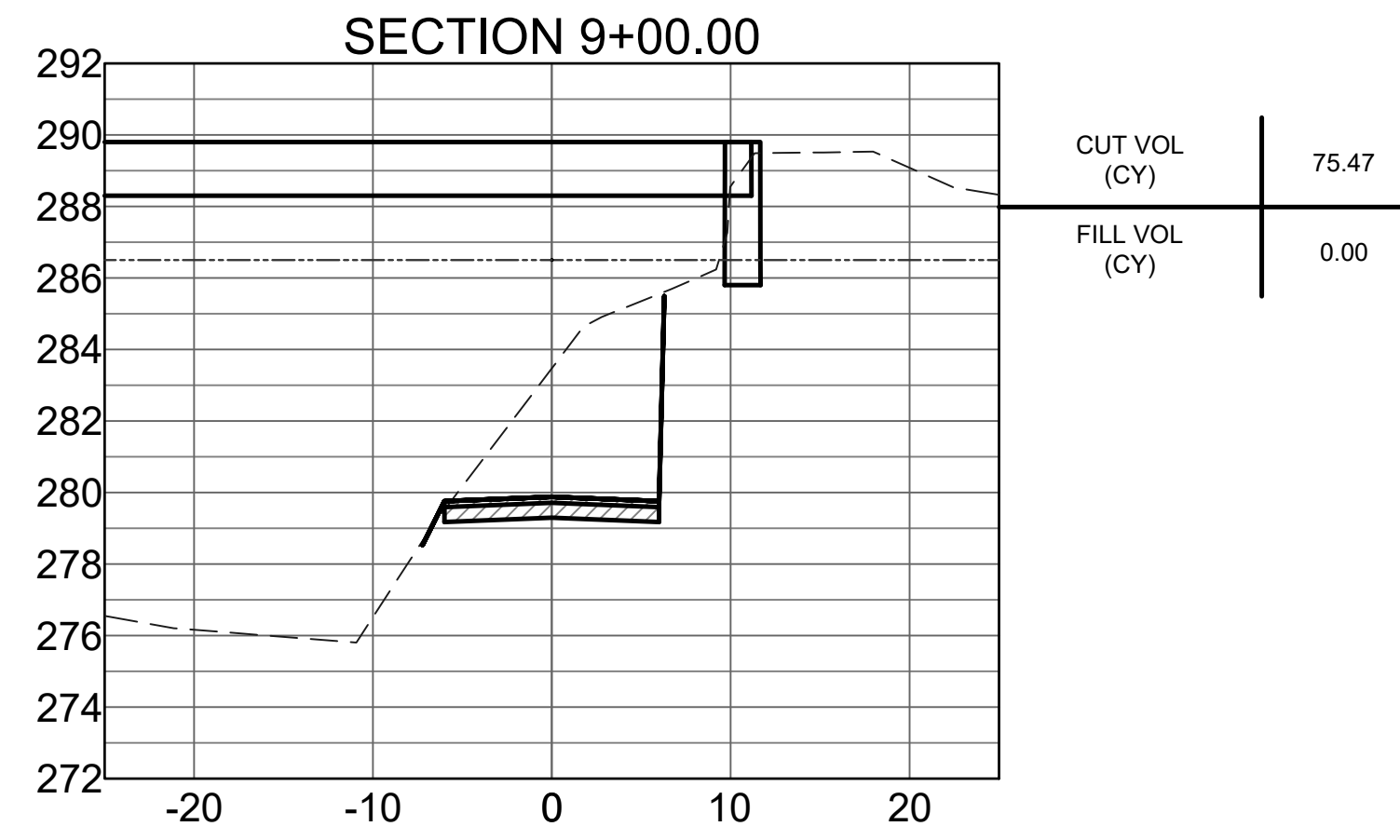
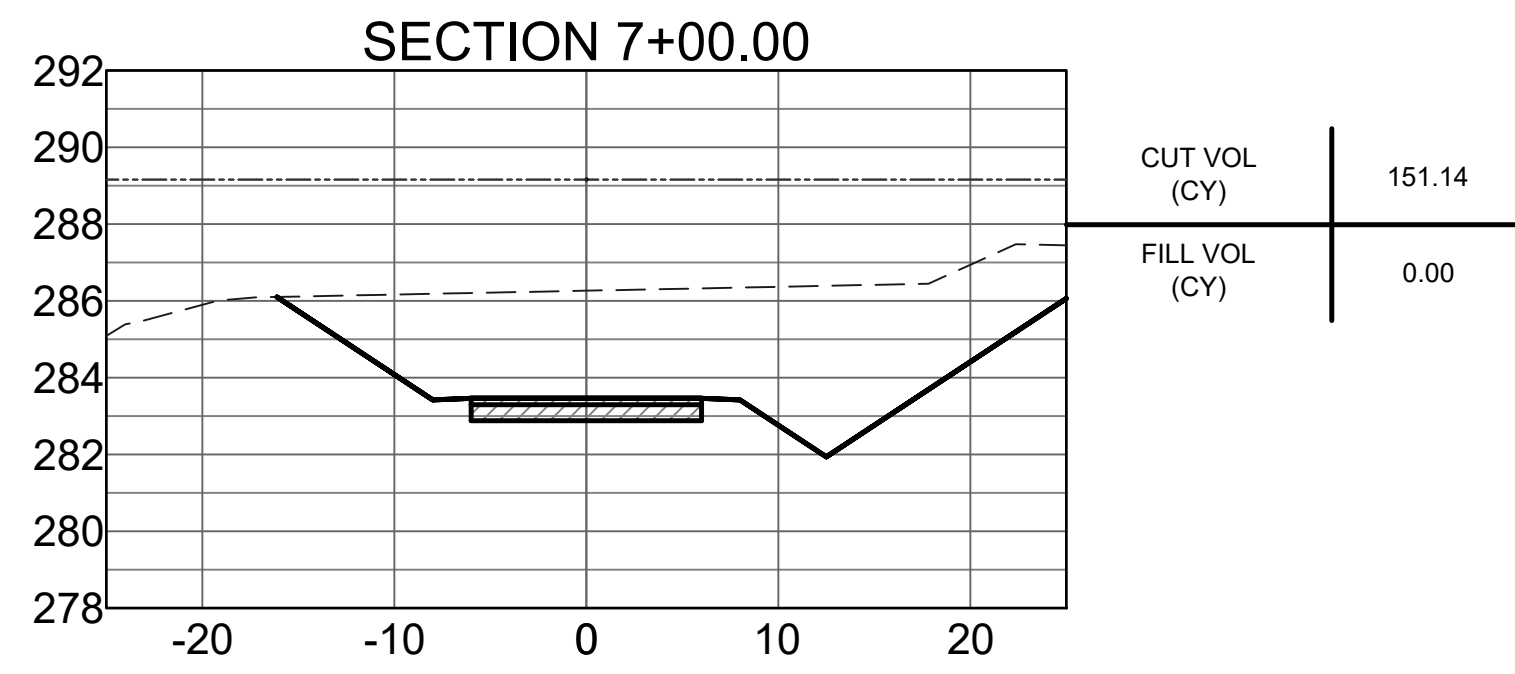
Project No.: 33160  
Issued: APRIL 2021  
Drawn By: BD / LCJ / JKJ  
Checked By: BLV / SBH

Sheet Title  
**CROSS SECTIONS**

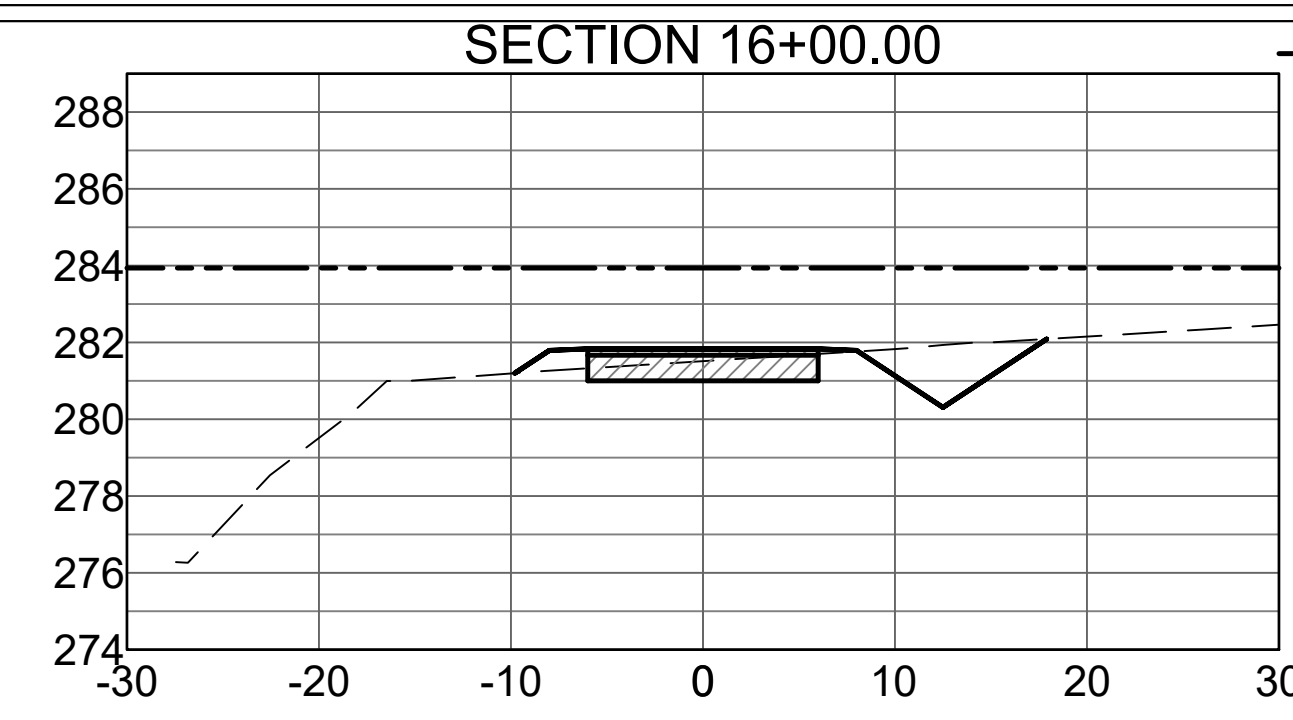
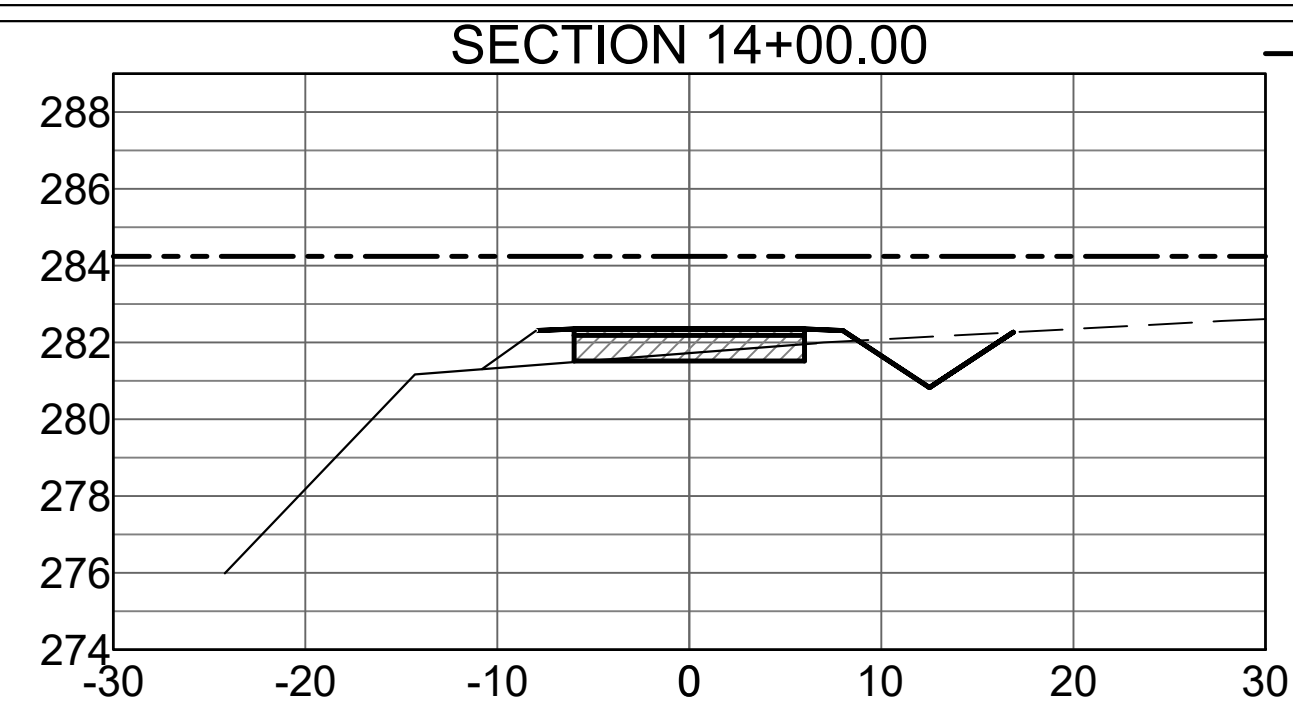
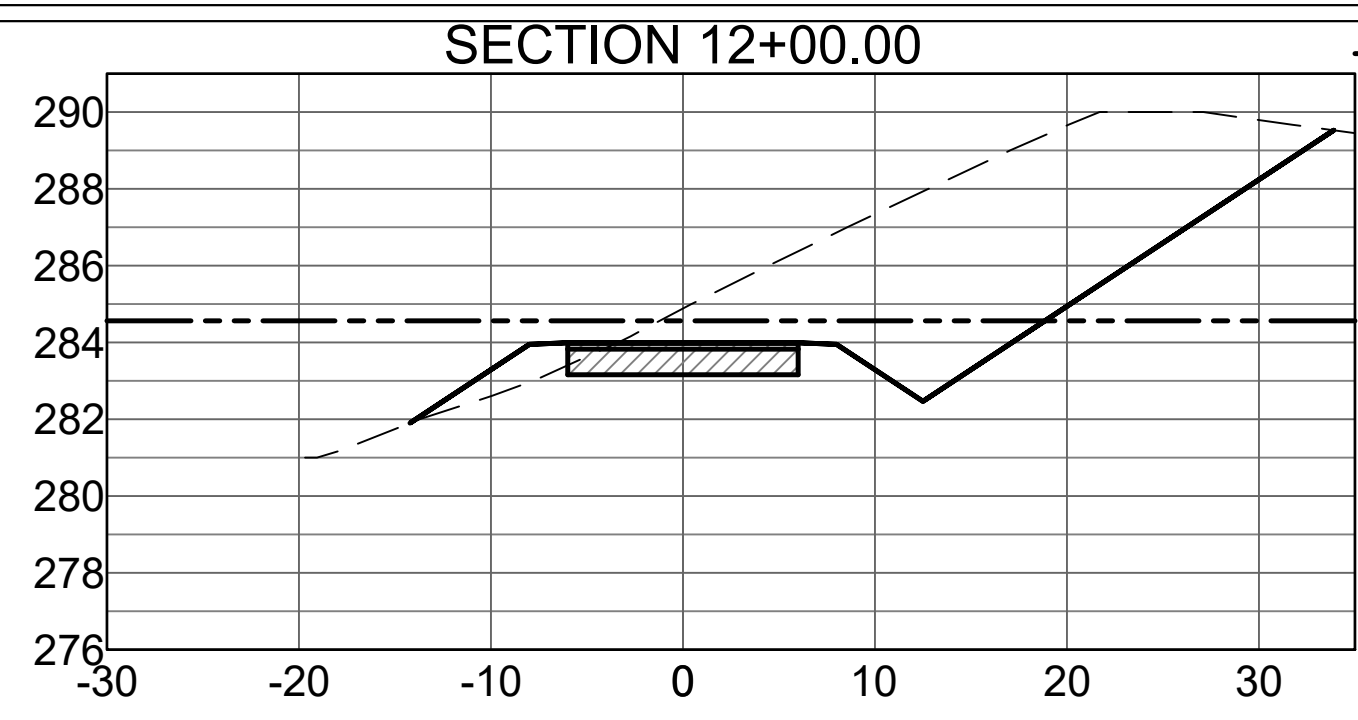
Sheet Number  
**2**

C3.1

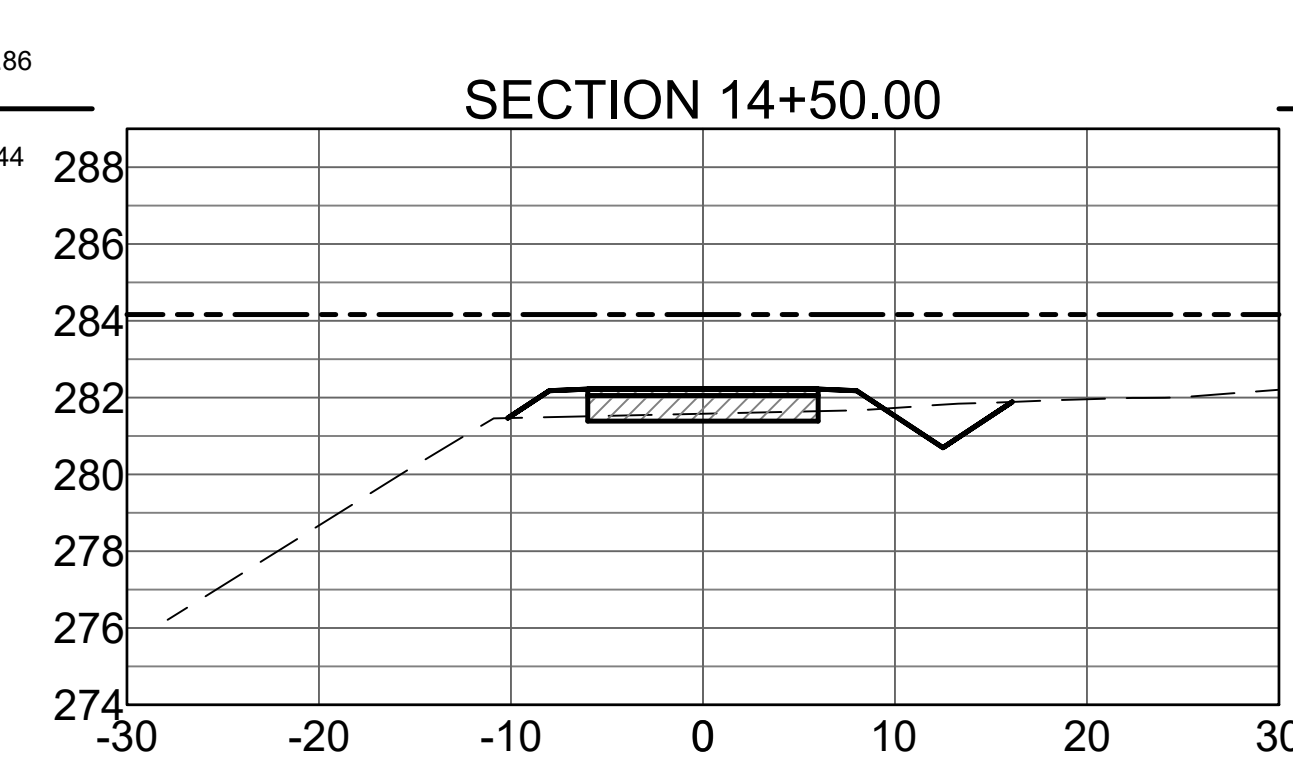
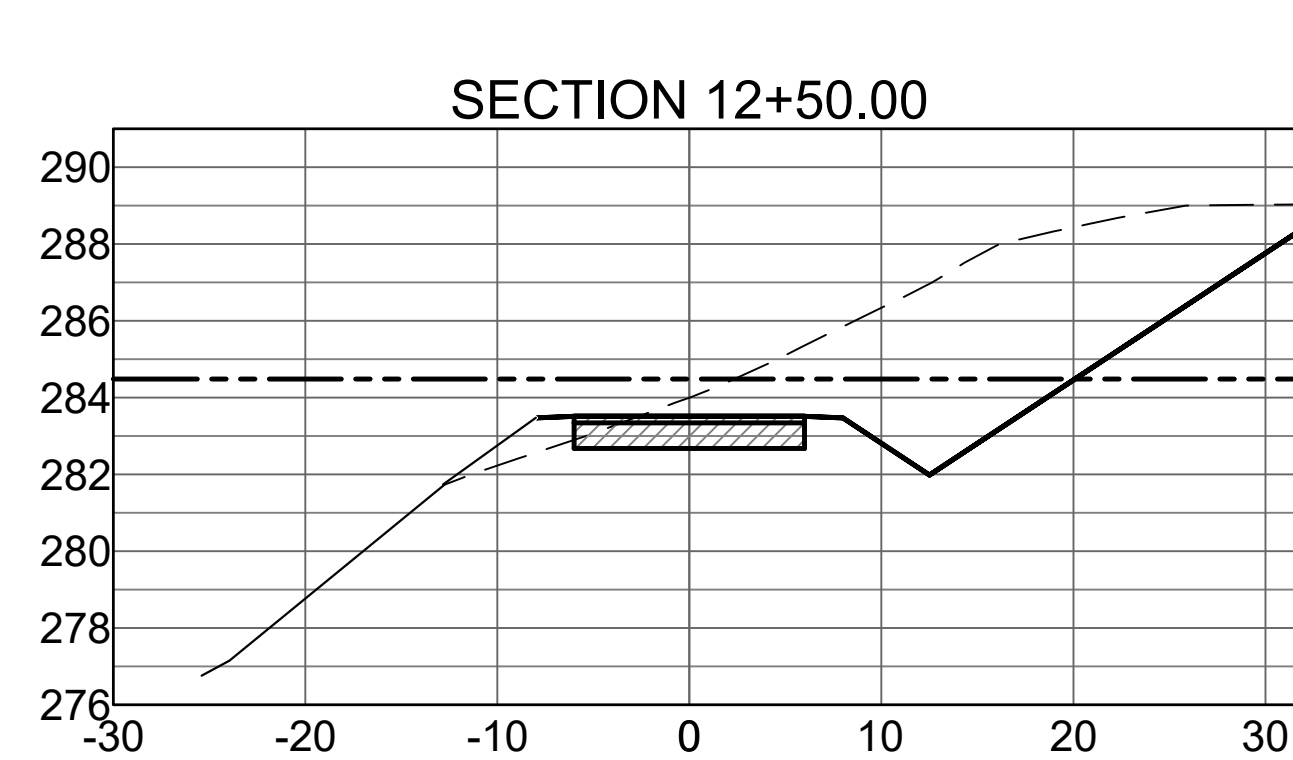
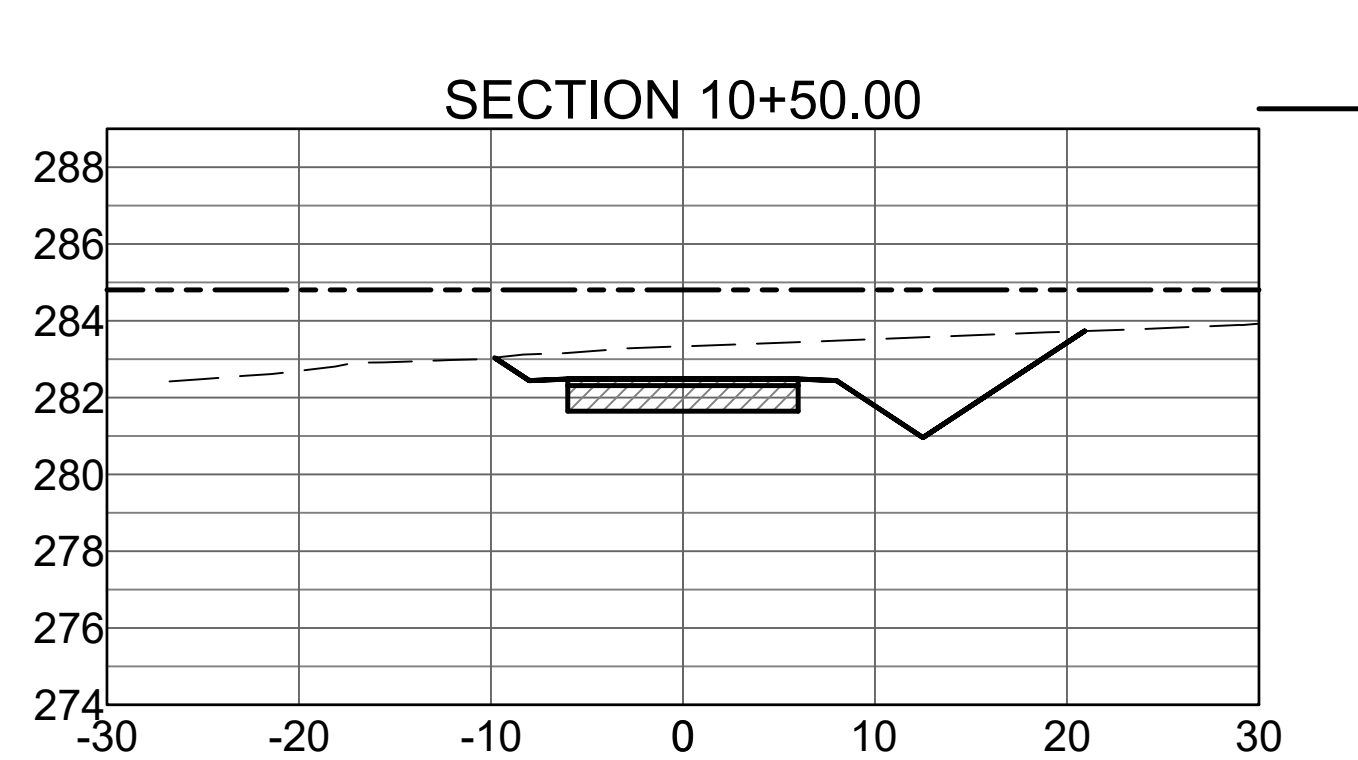
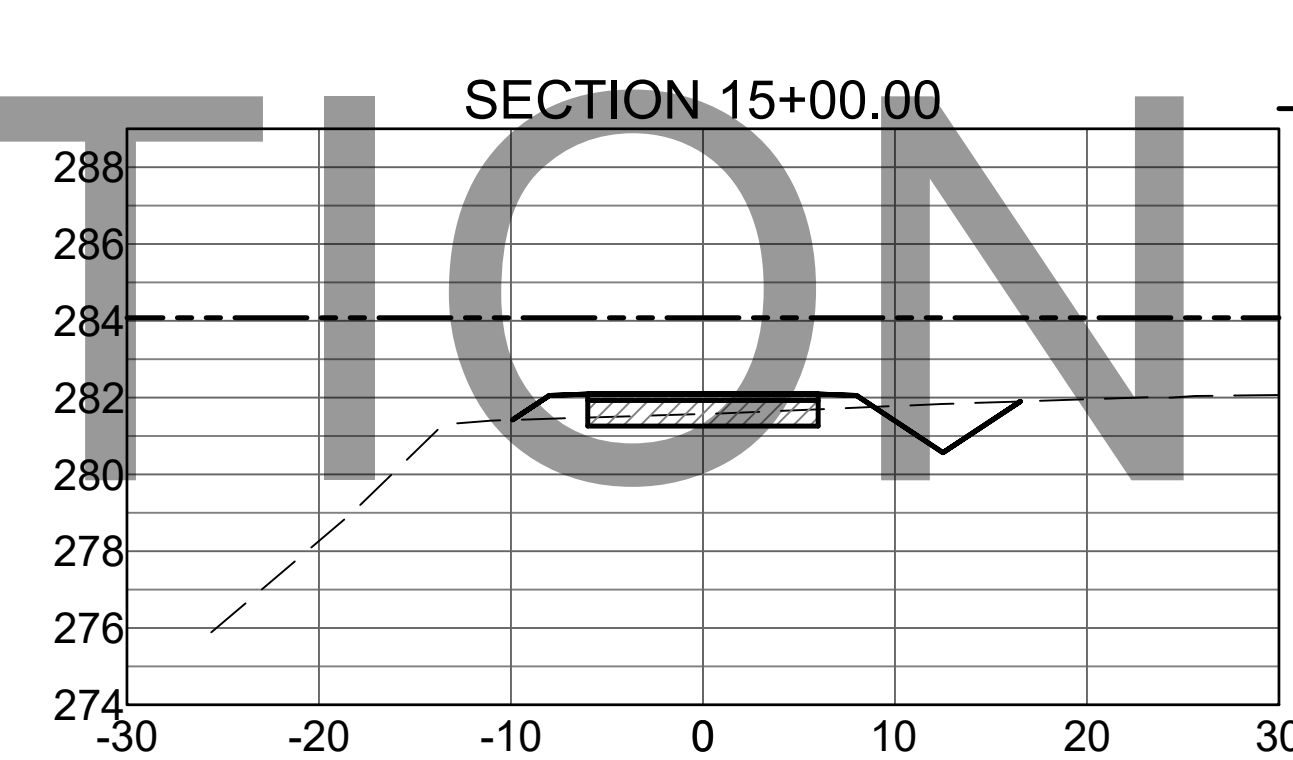
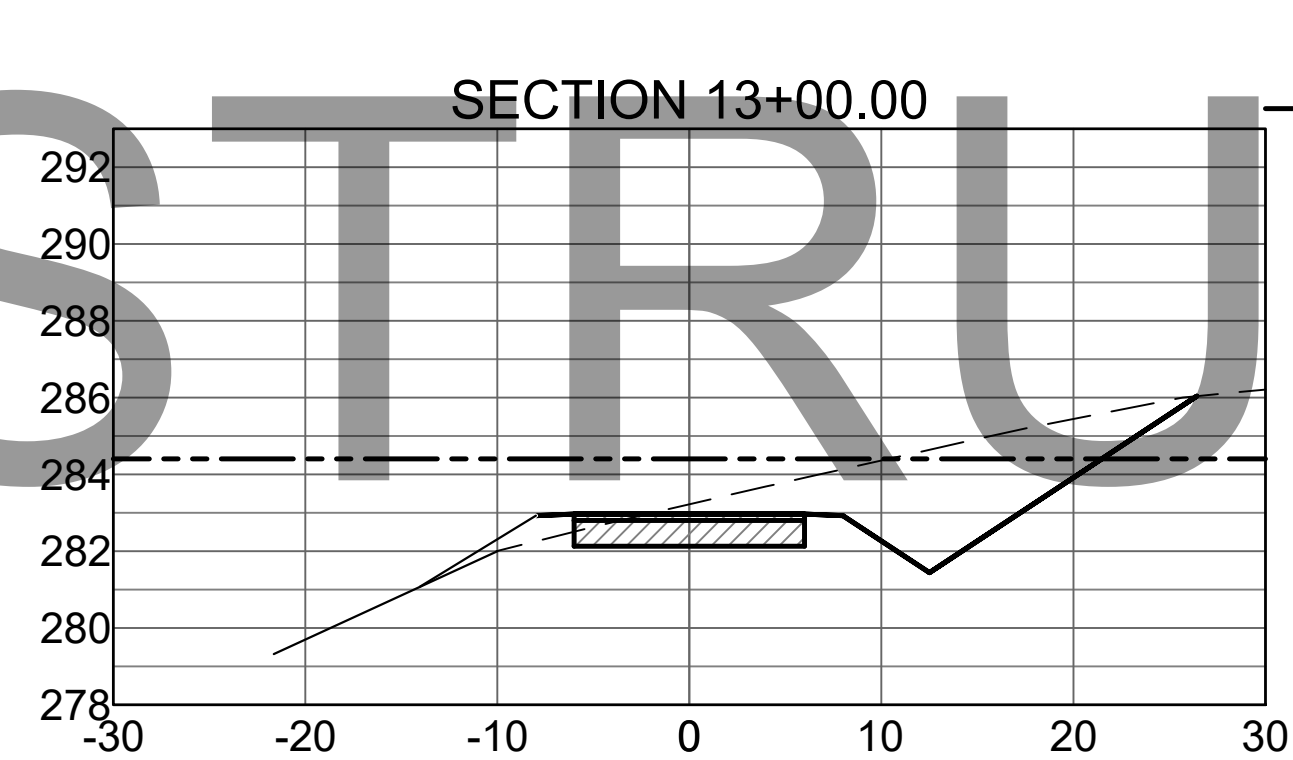
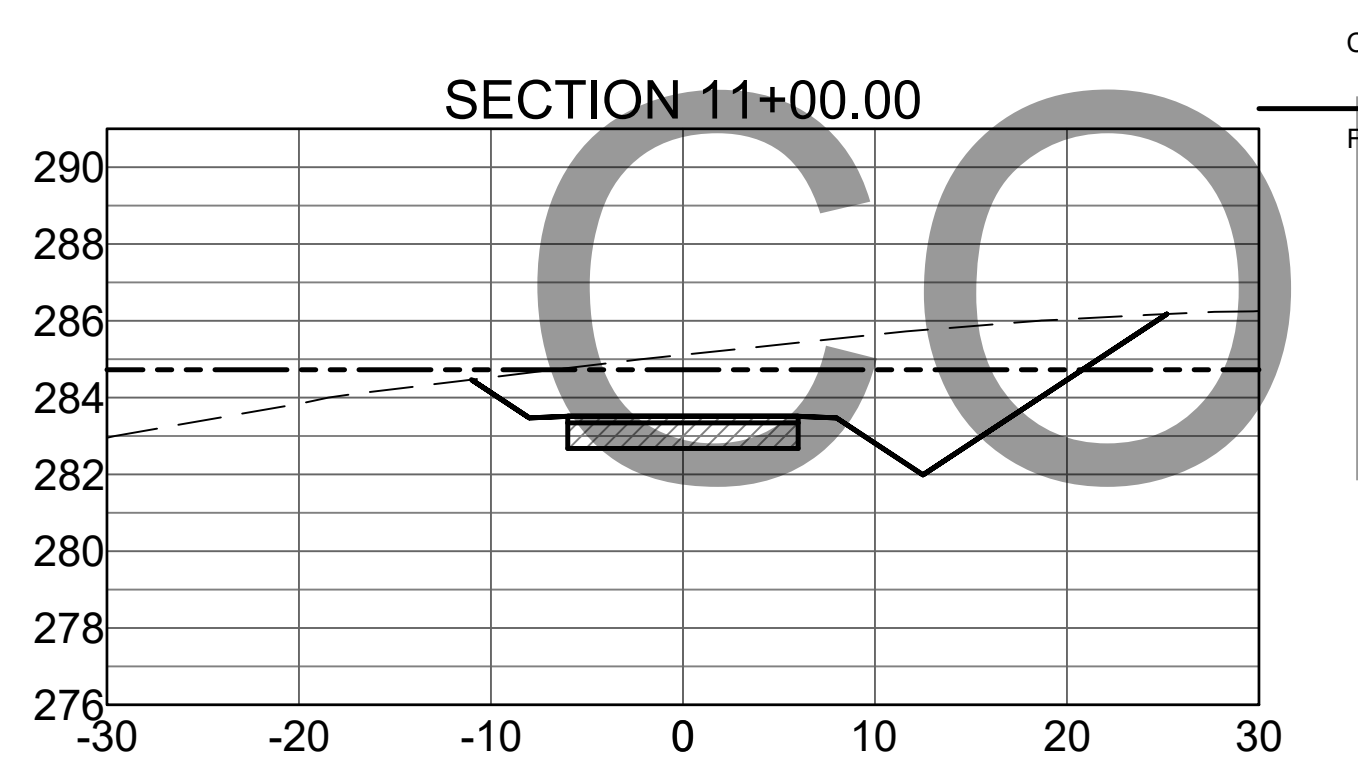
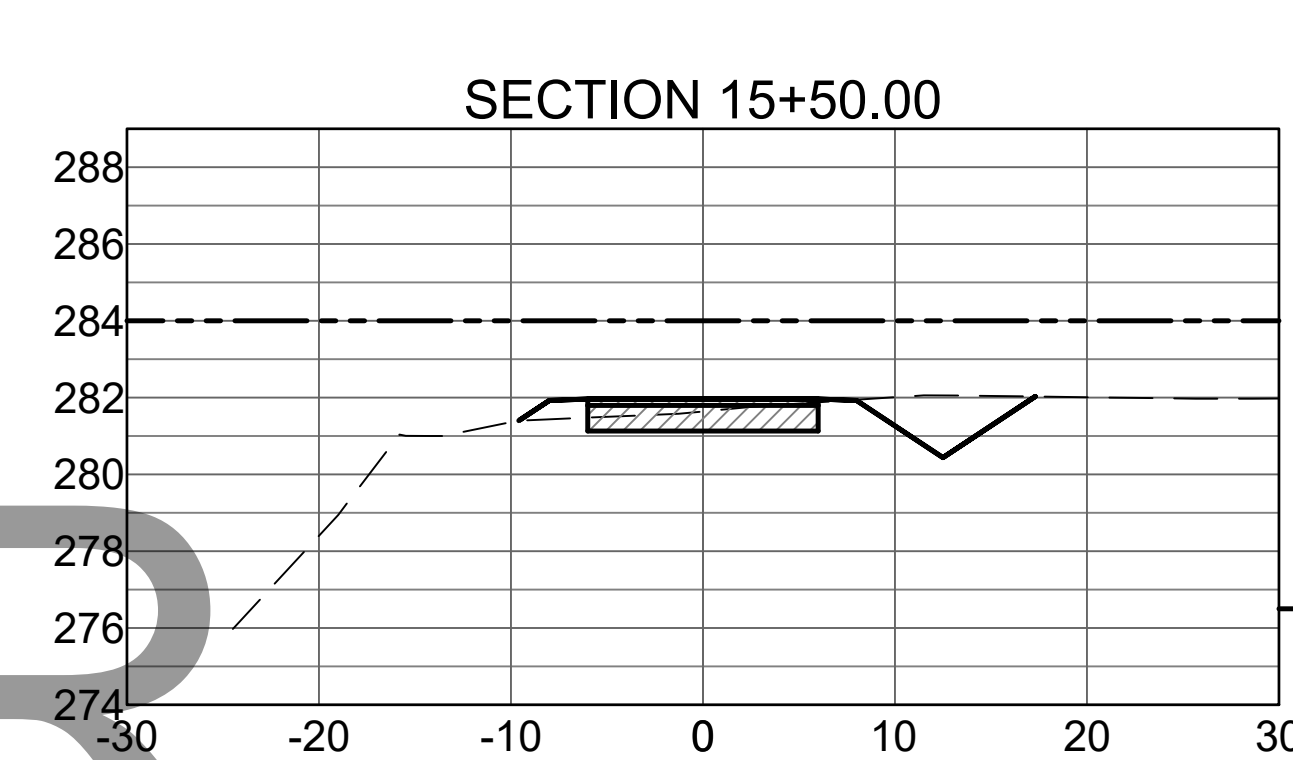
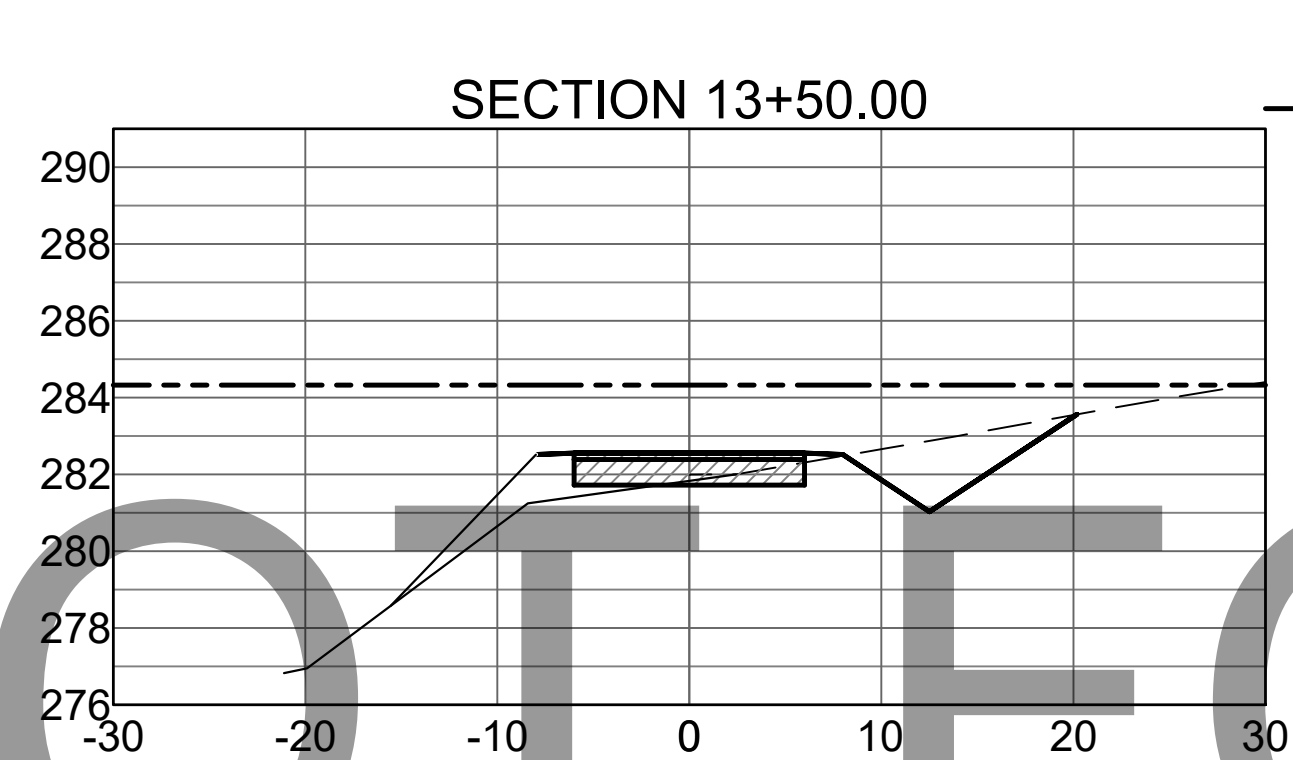
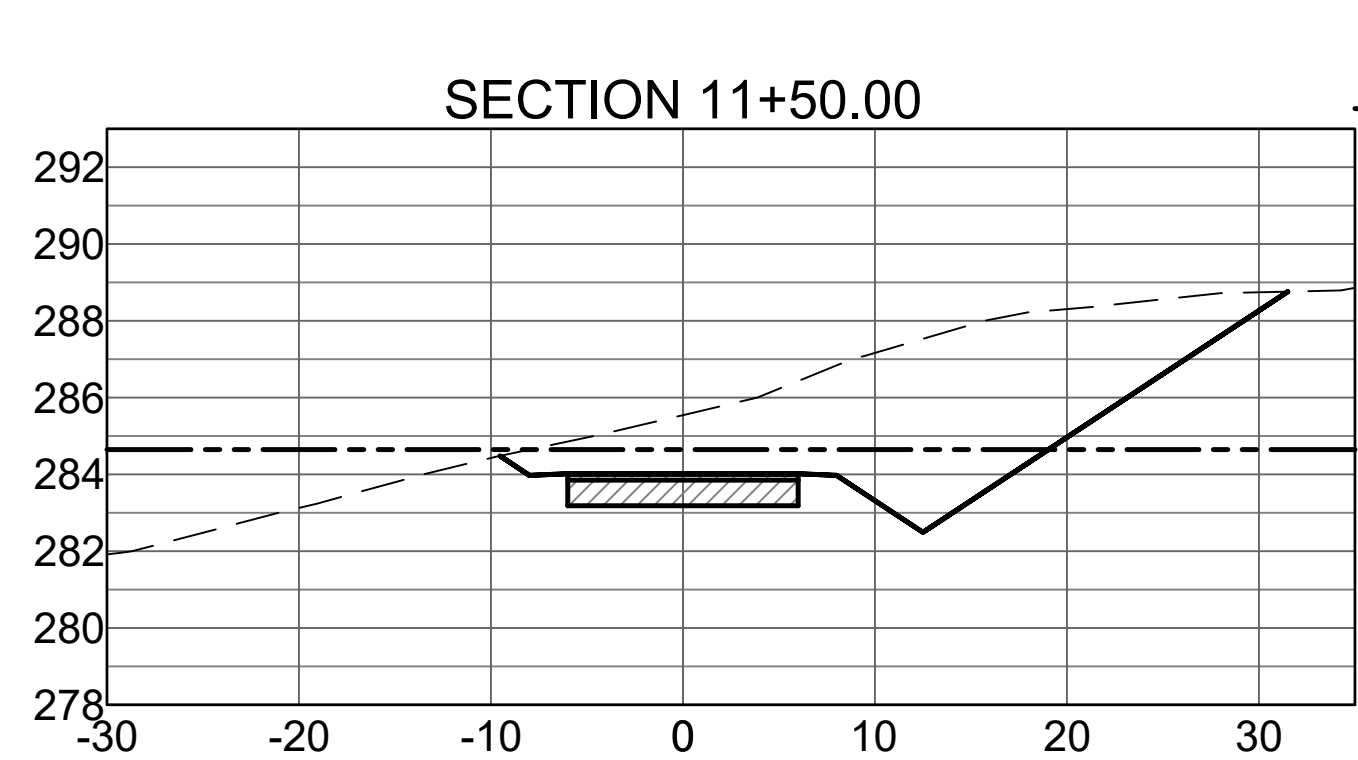
100 YEAR BASE FLOOD ELEVATION  
 EXISTING GRADE  
 PROPOSED GRADE



NOT FOR CONSTRUCTION



- - - 100 YEAR  
 BASE FLOOD  
 ELEVATION  
 - - - EXISTING  
 GRADE  
 — PROPOSED  
 GRADE



NOT FOR CONSTRUCTION

**STONE DAM CREEK TRAIL**  
 Conway, Arkansas



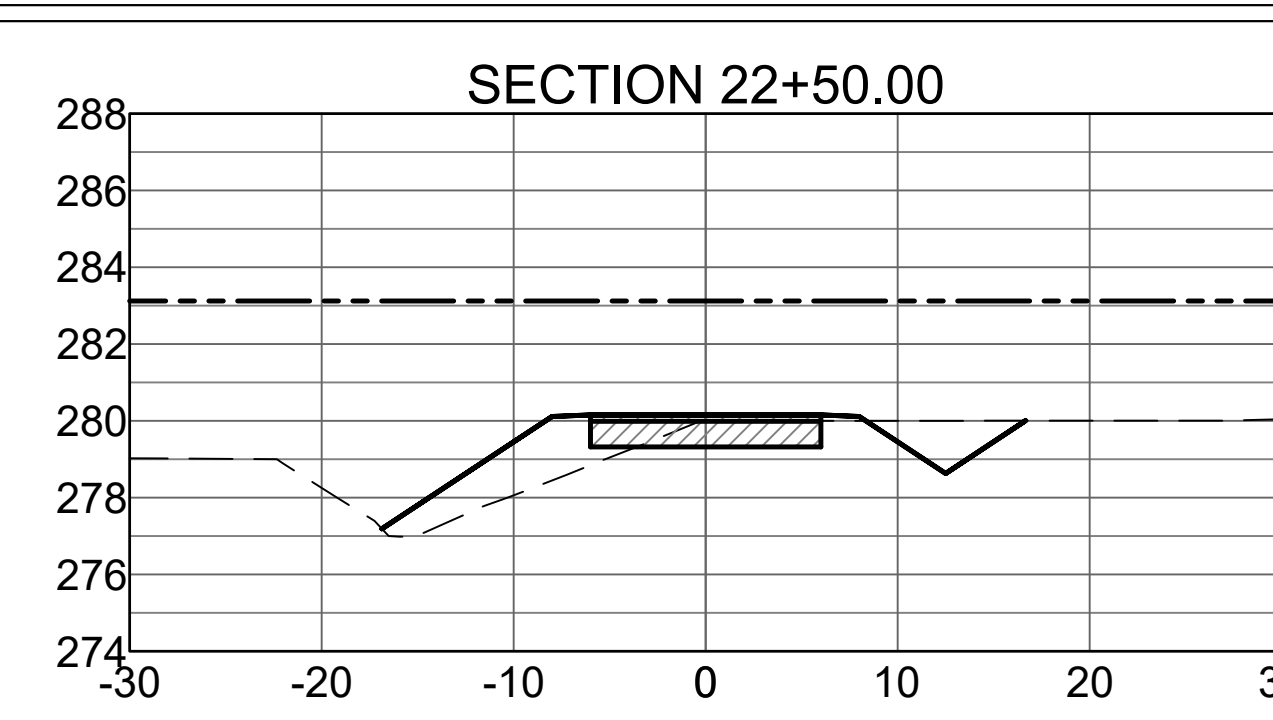
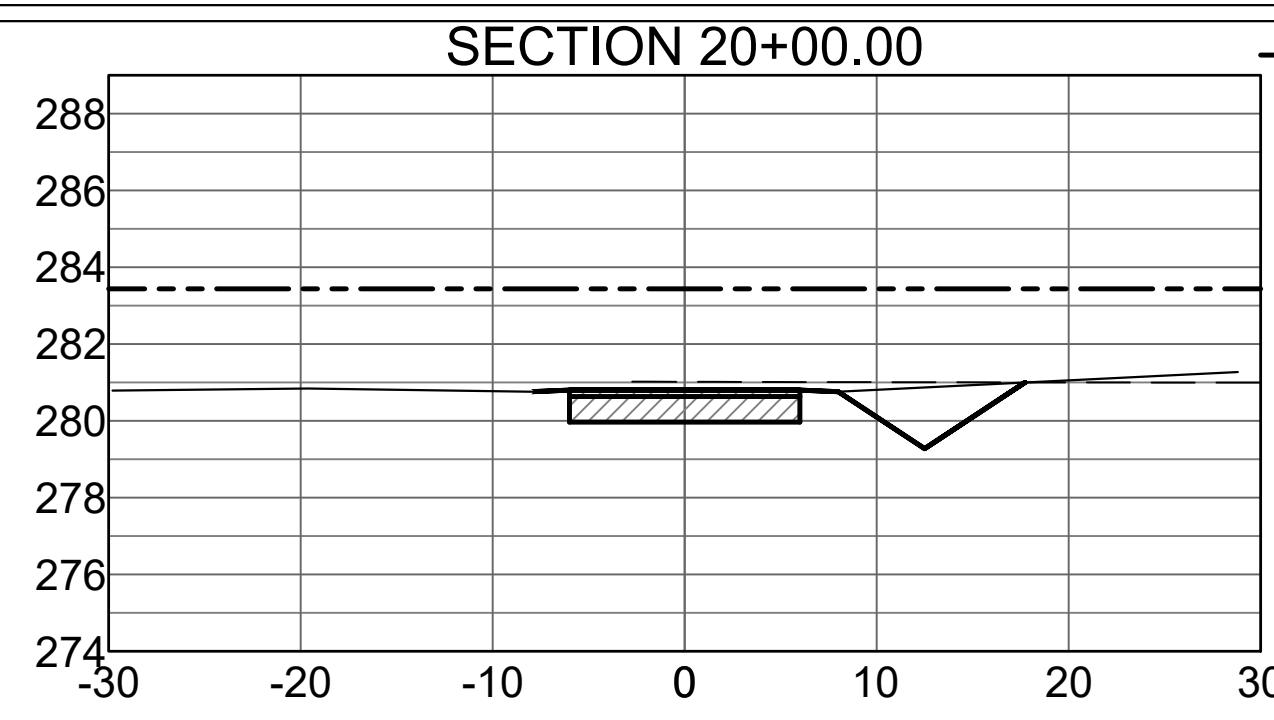
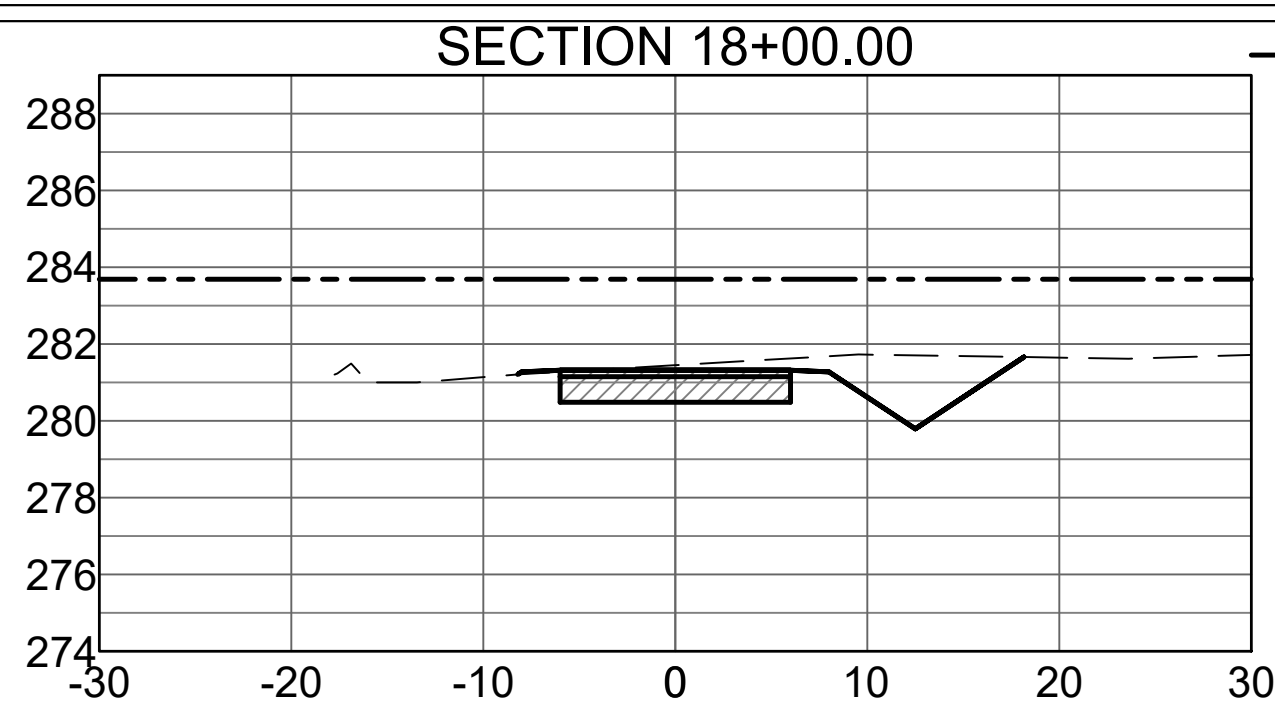
Revision No.	Date	Description



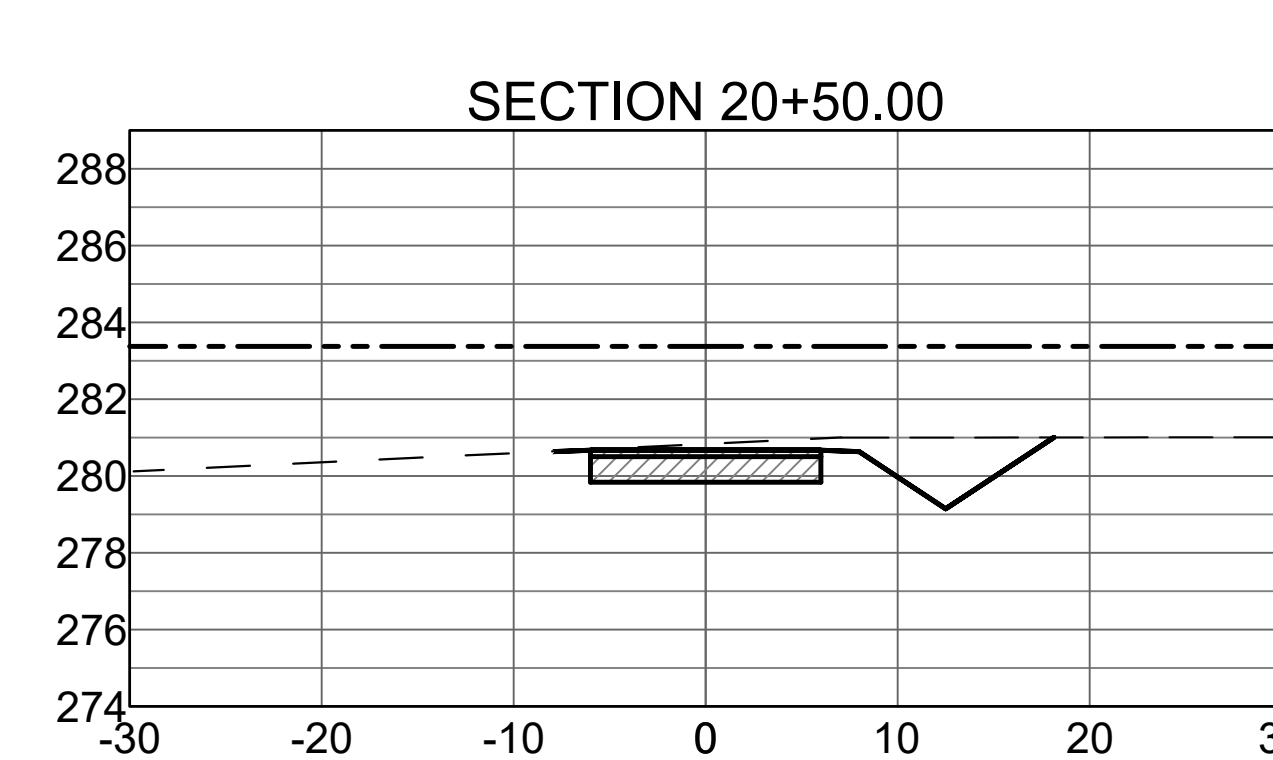
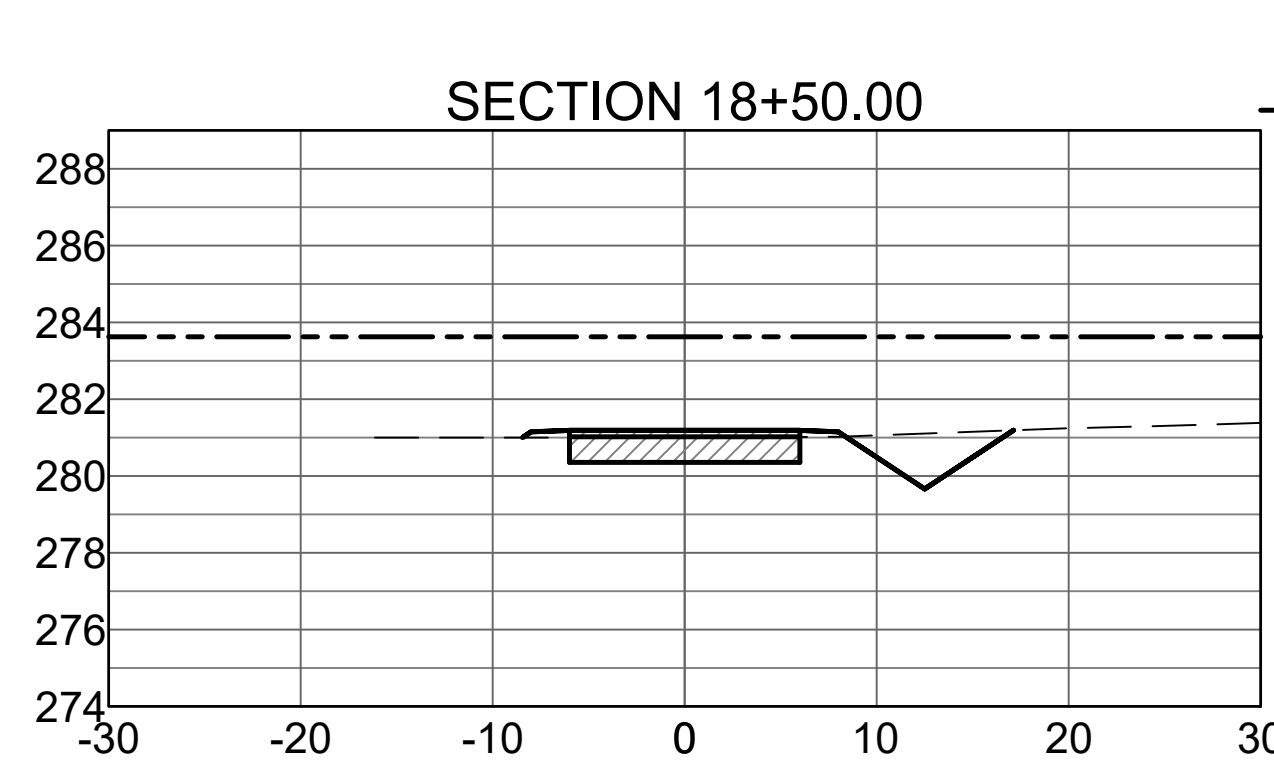
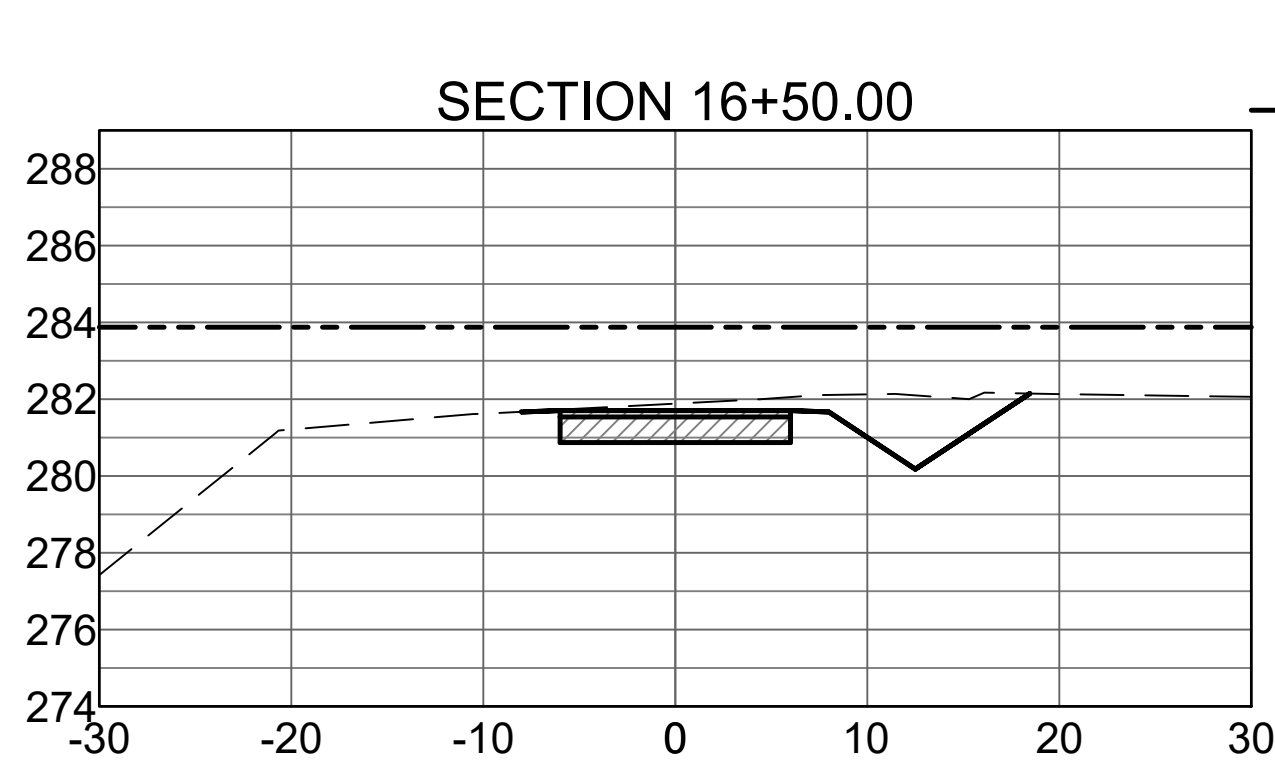
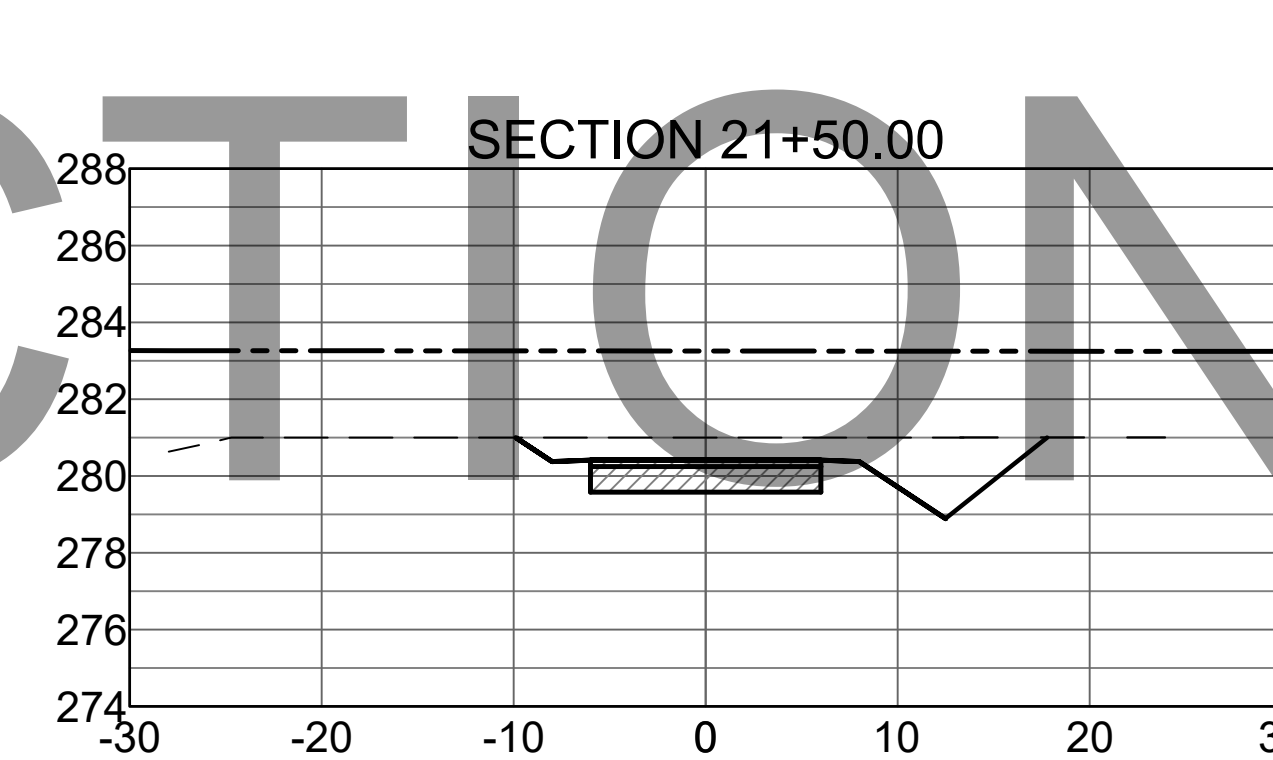
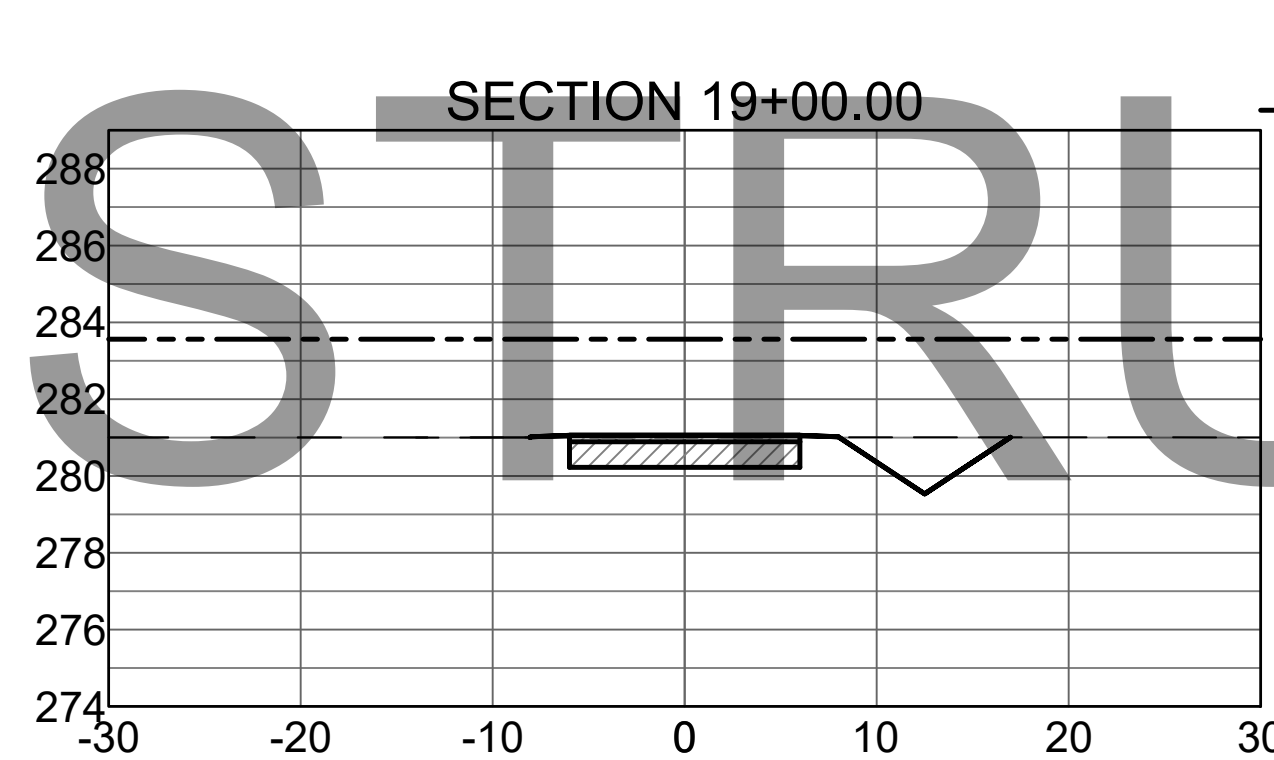
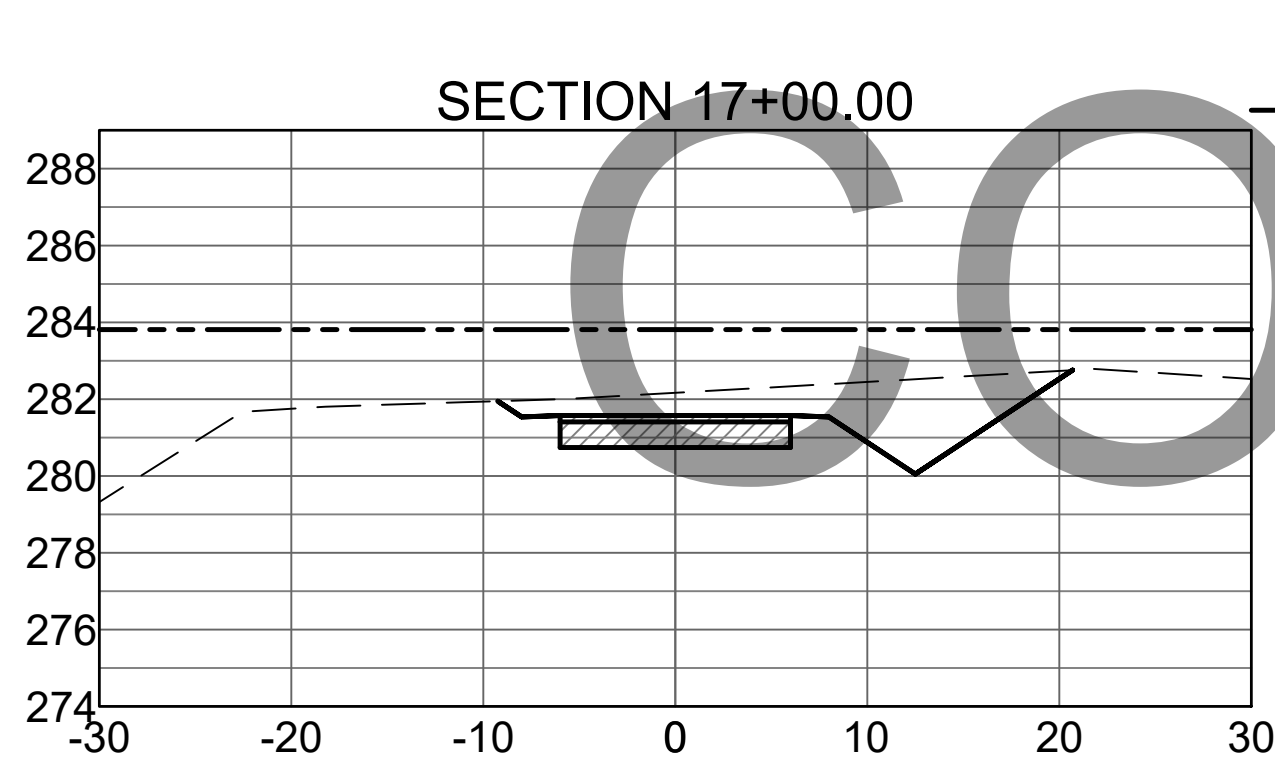
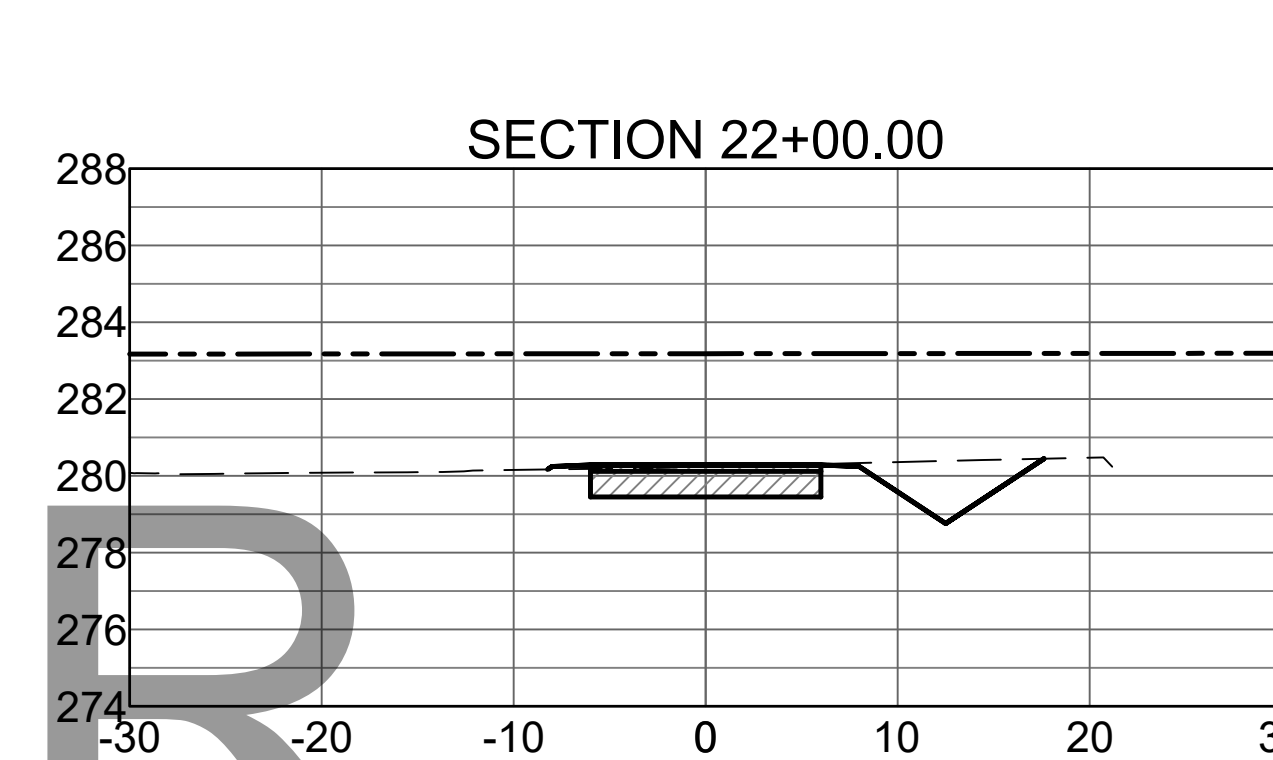
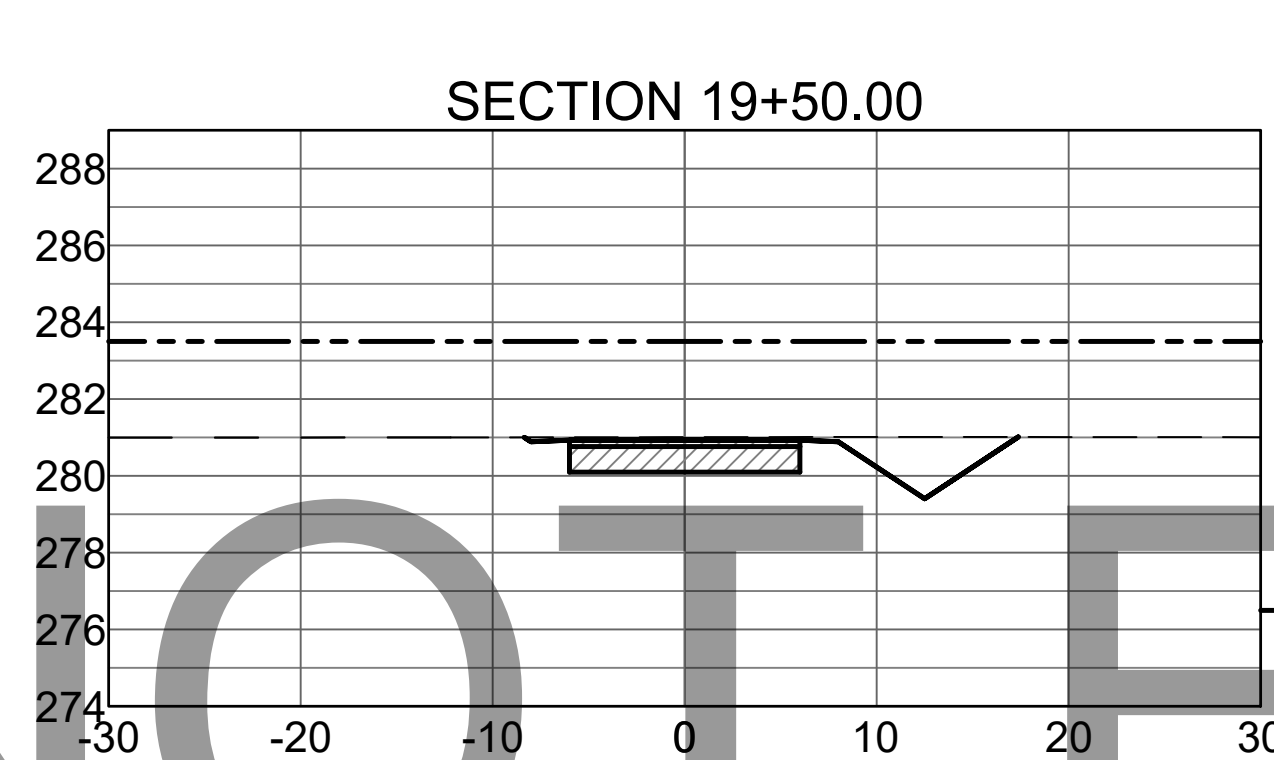
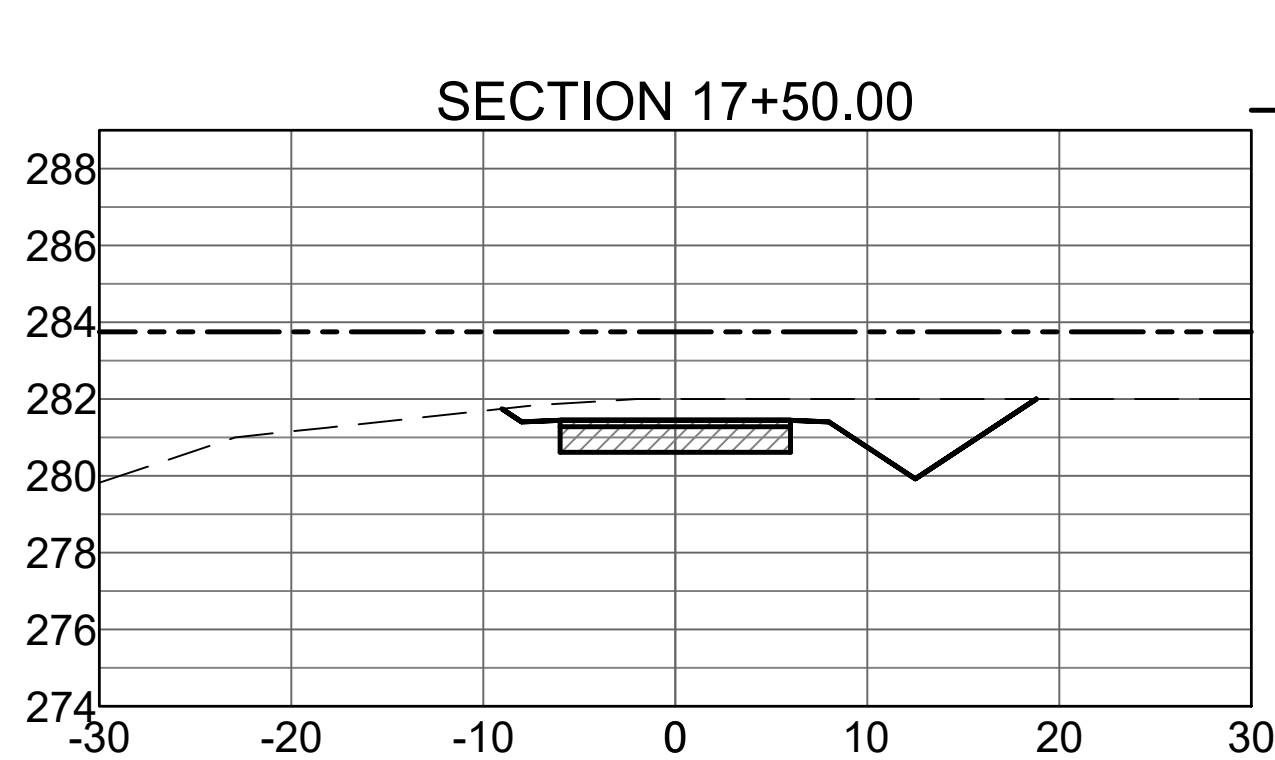
Project No.: 33160  
 Issued: APRIL 2021  
 Drawn By: BD / LCJ / JKJ  
 Checked By: BLV / SBH

Sheet Title  
**CROSS SECTIONS**  
 3

Sheet Number  
**C3.2**



--- 100 YEAR BASE FLOOD ELEVATION  
 - - - EXISTING GRADE  
 ——— PROPOSED GRADE

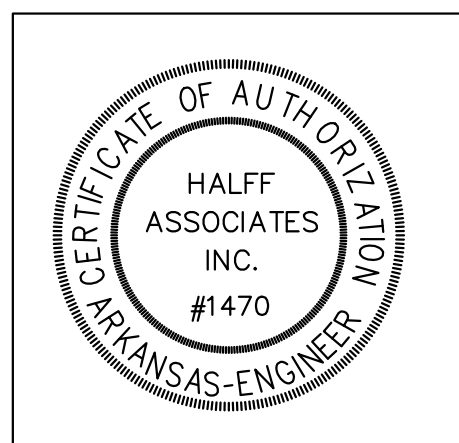


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**STONE DAM CREEK TRAIL**  
 Conway, Arkansas



Revision No.	Date	Description

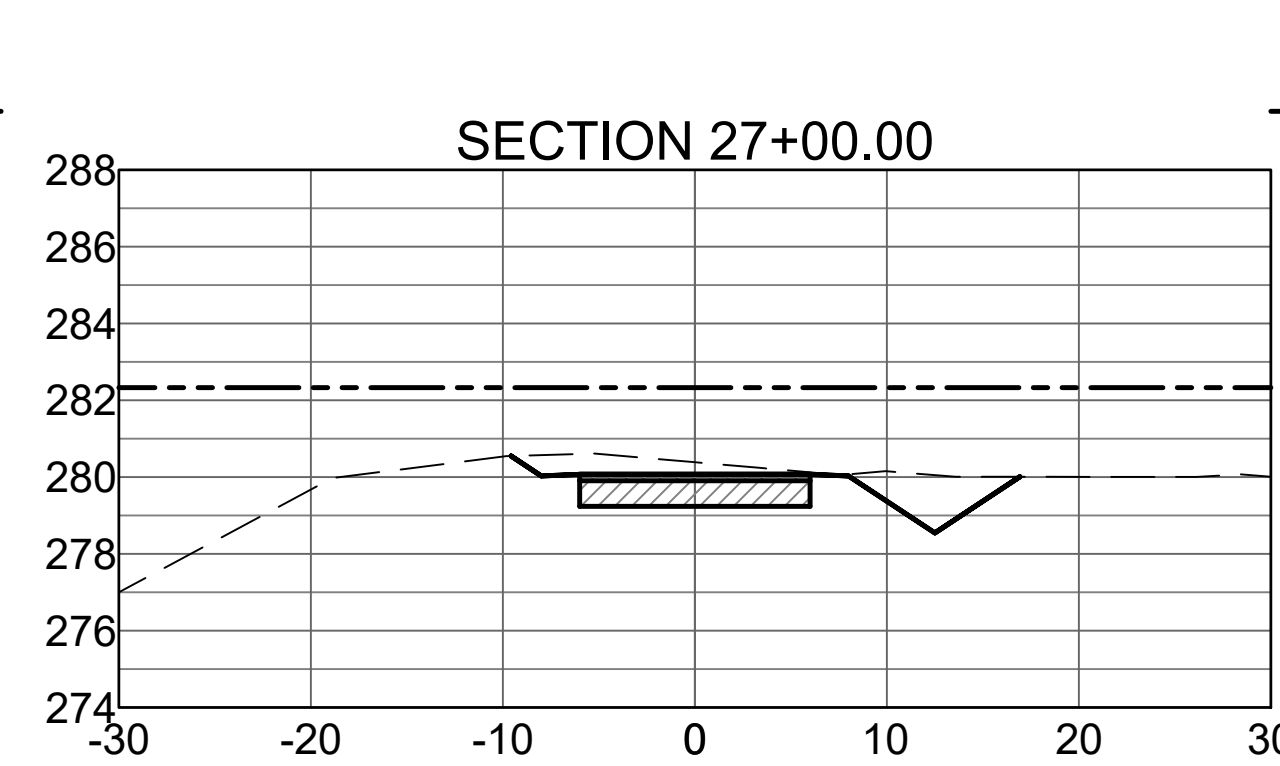
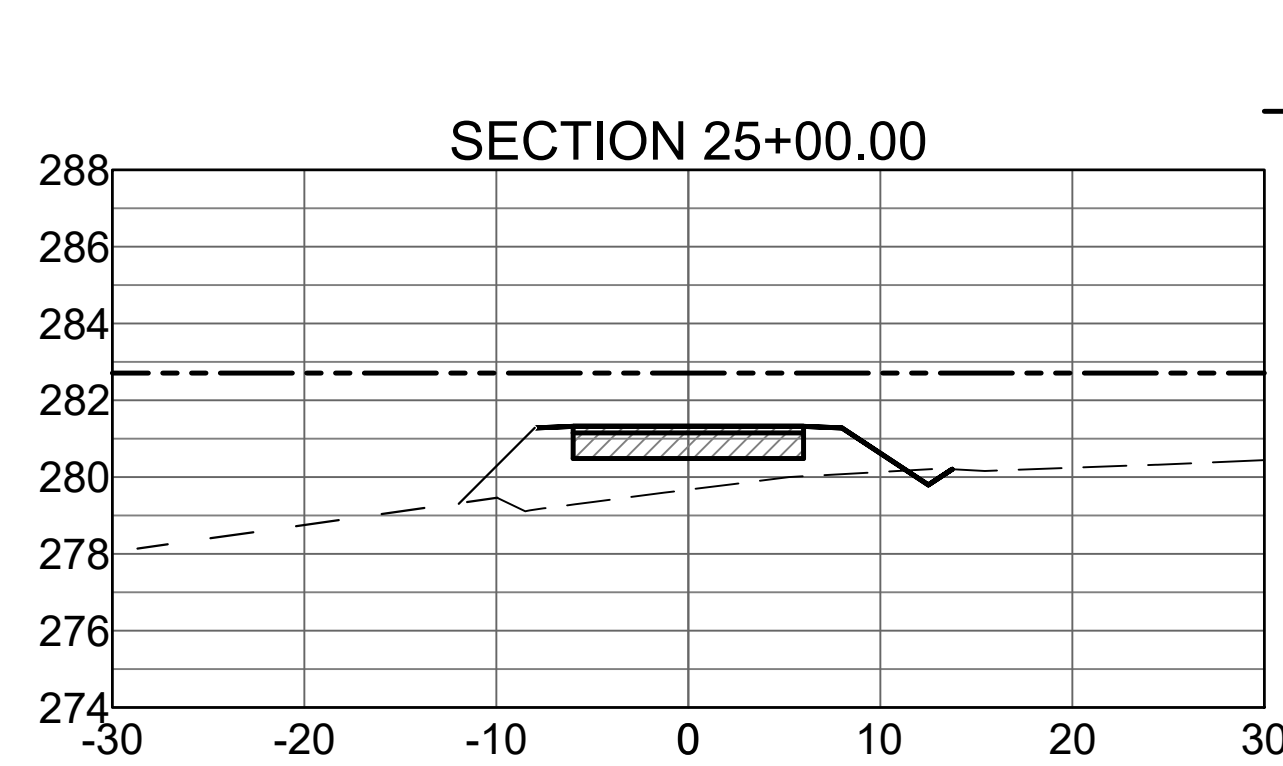
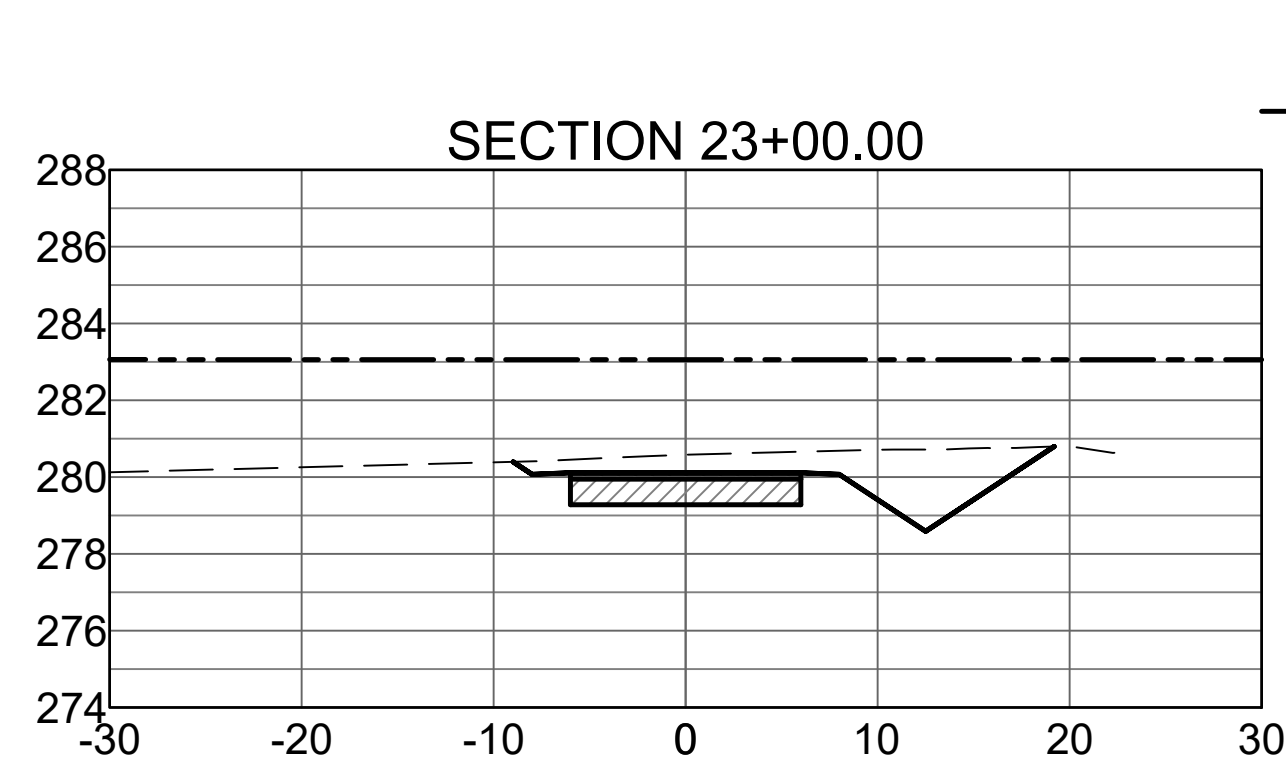
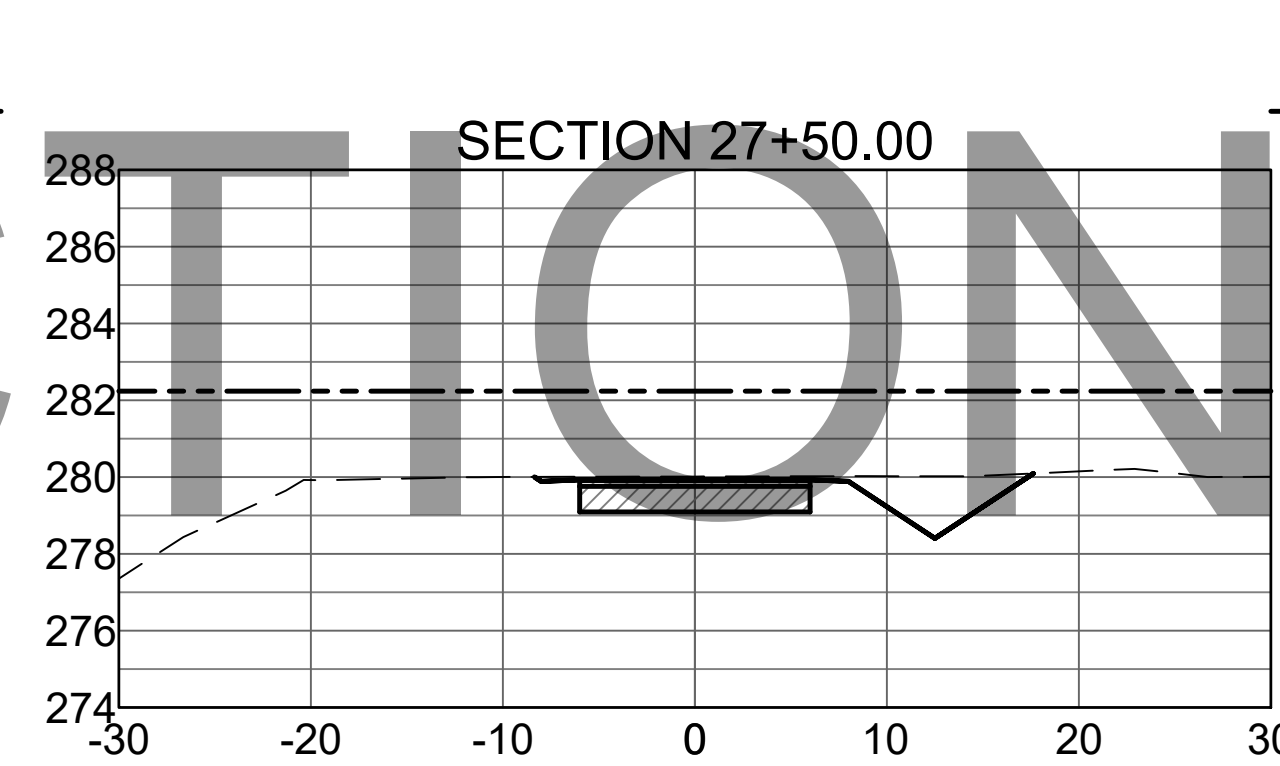
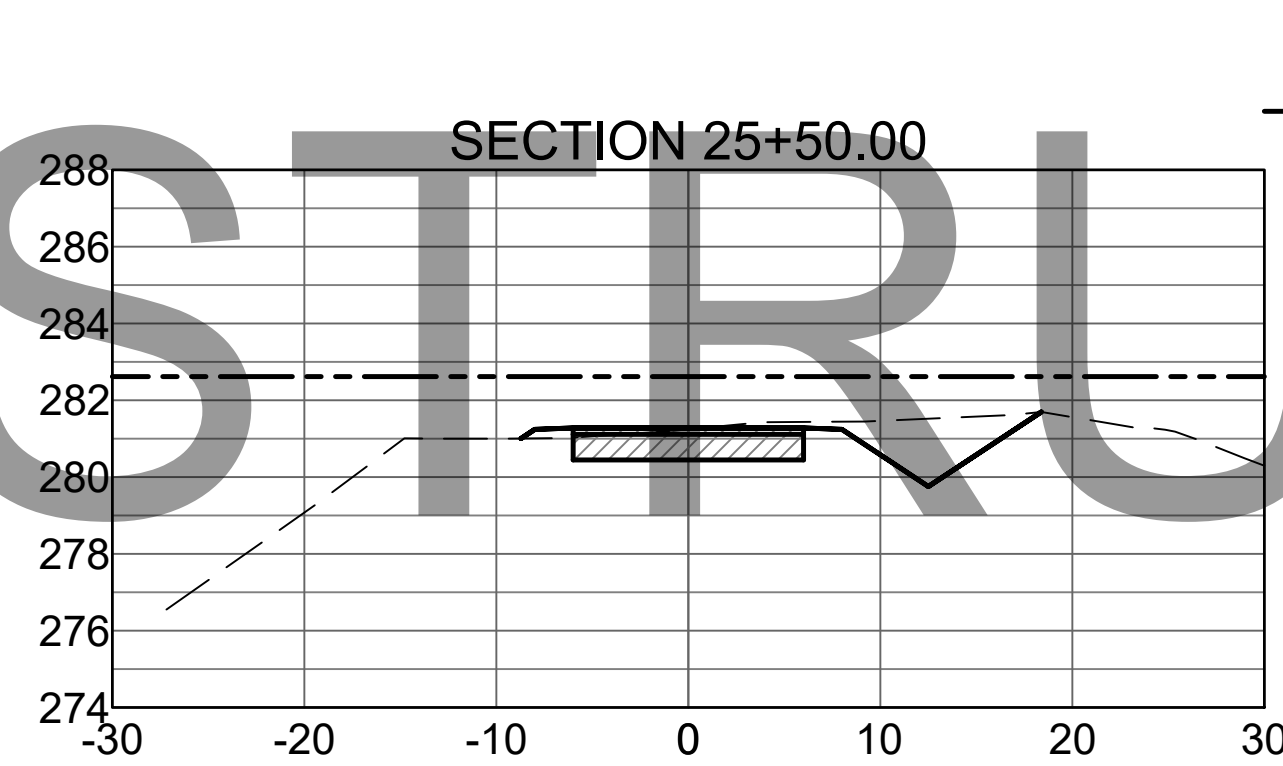
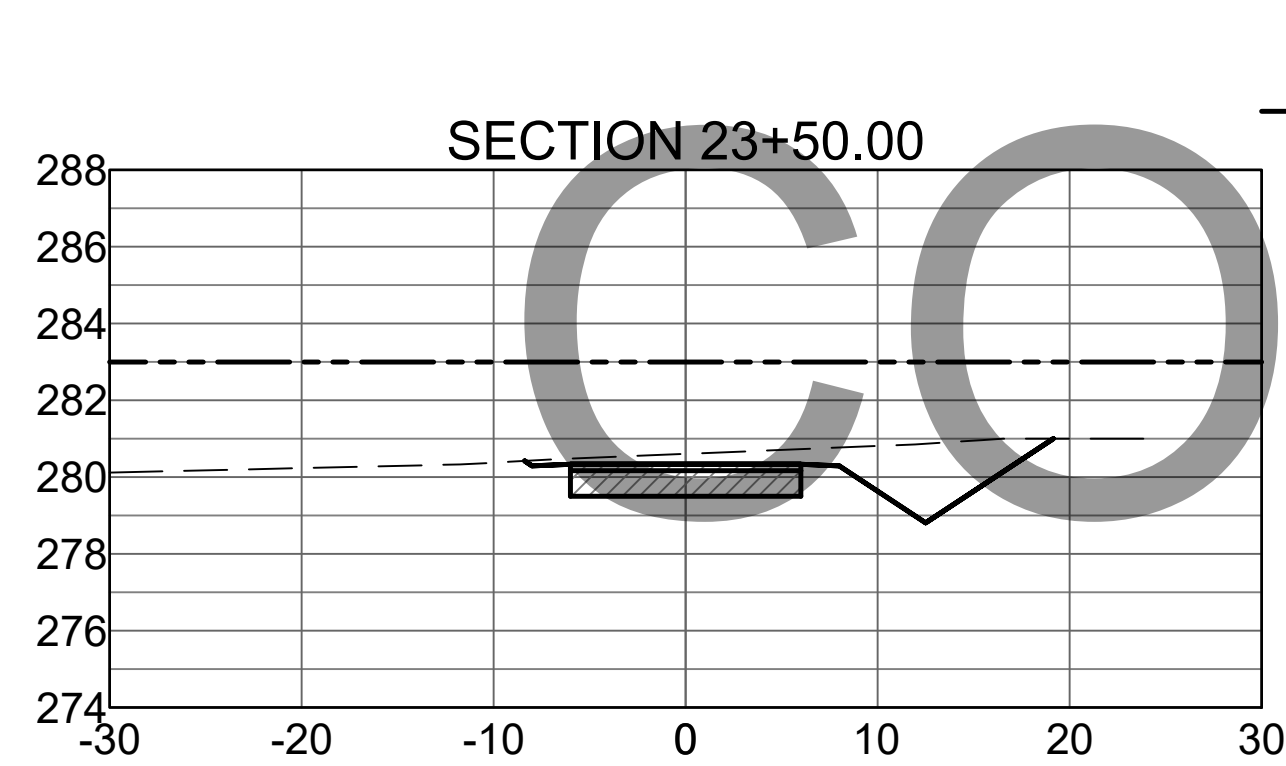
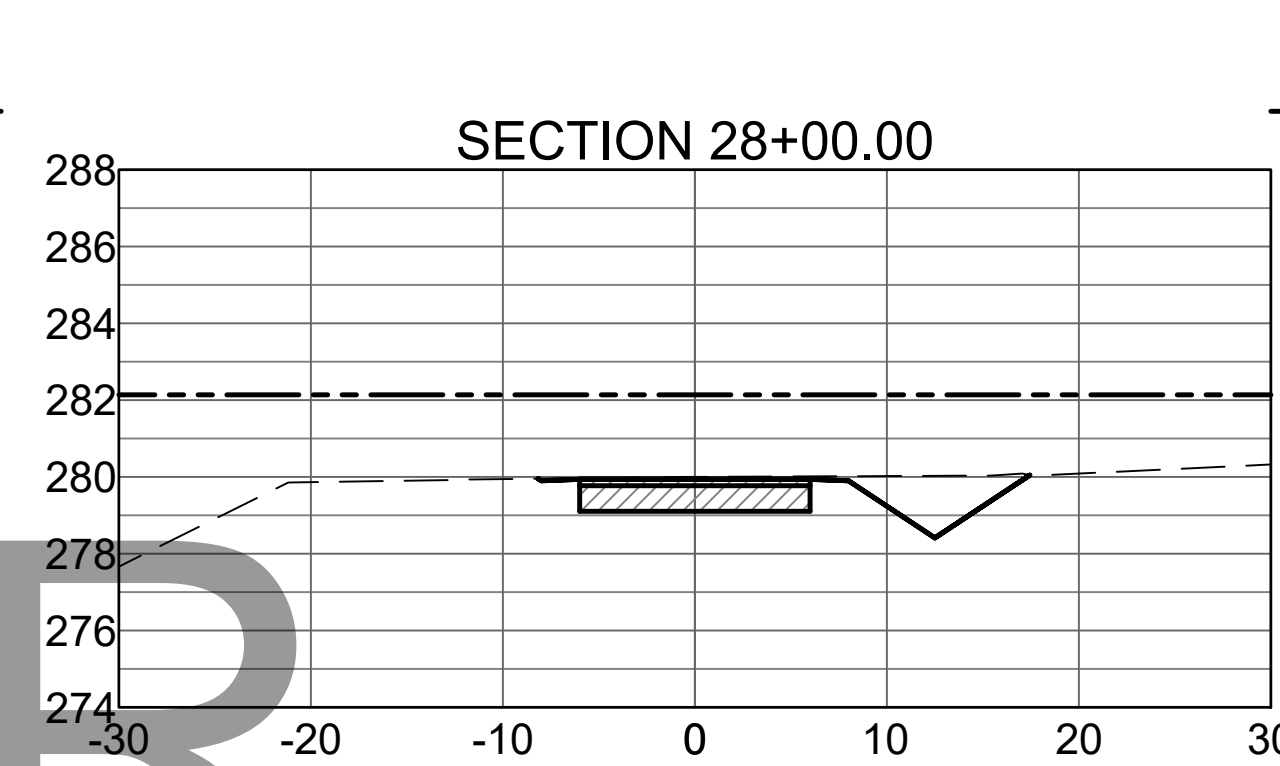
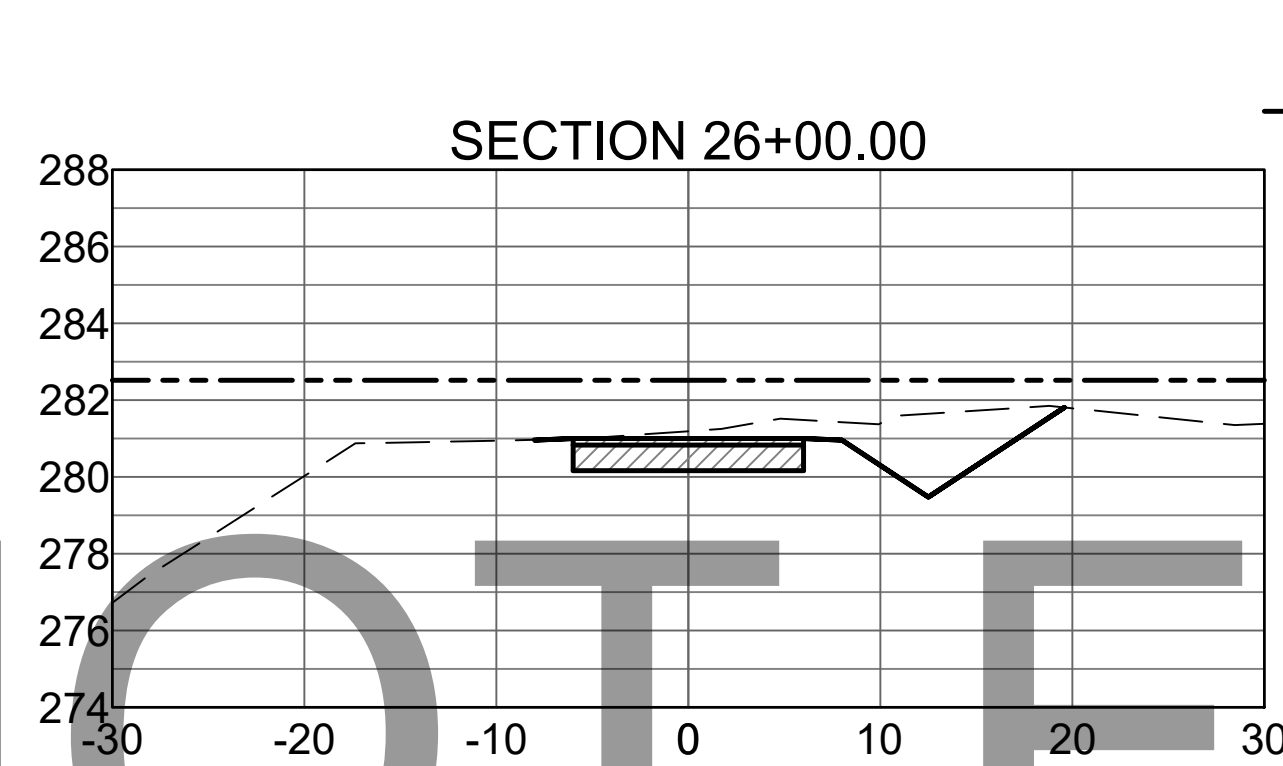
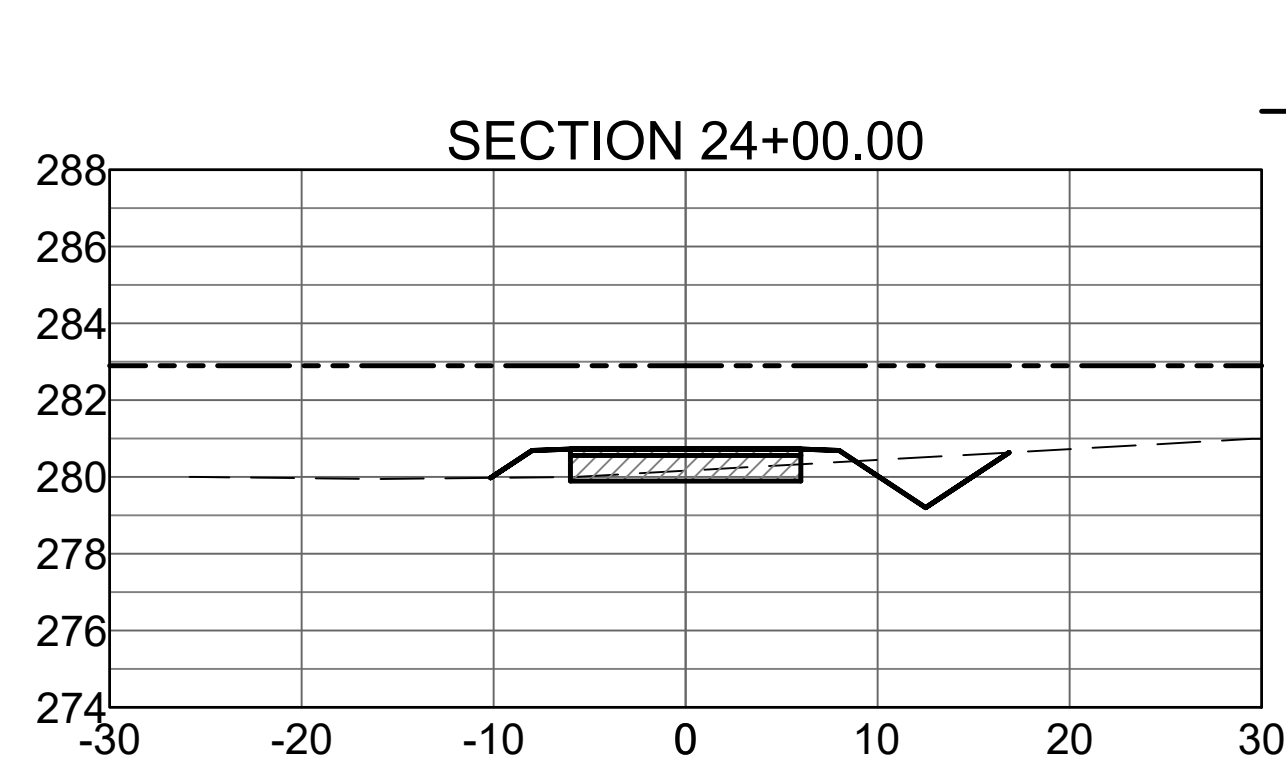
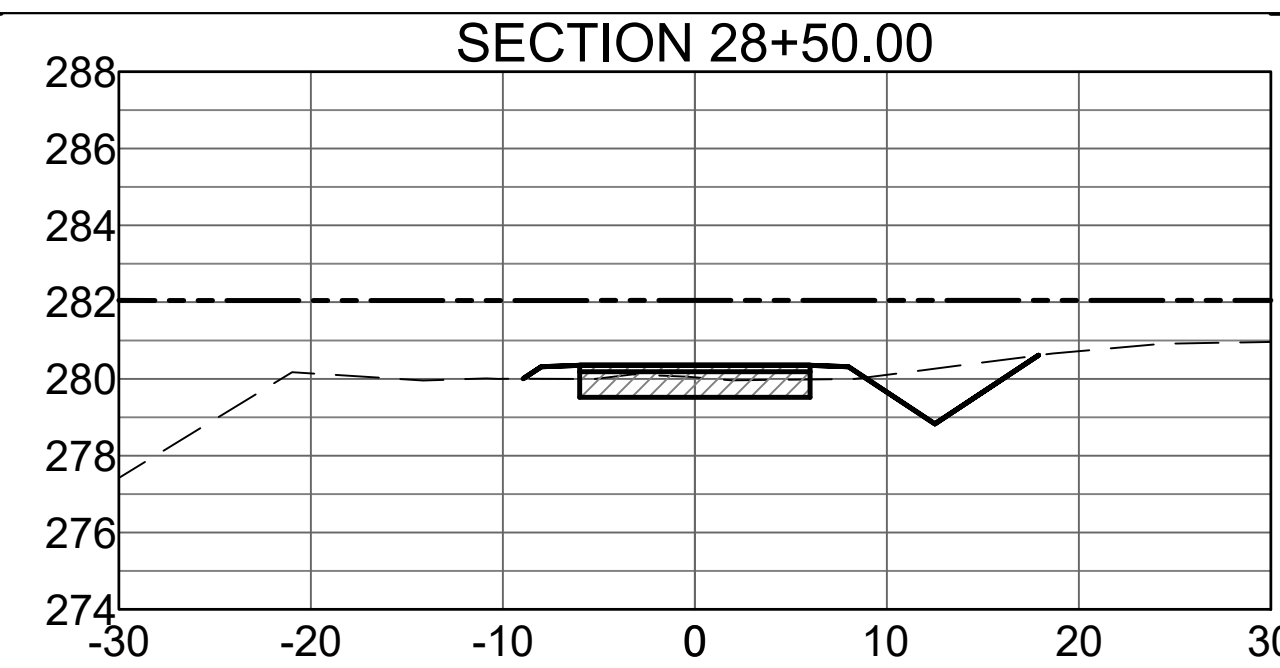
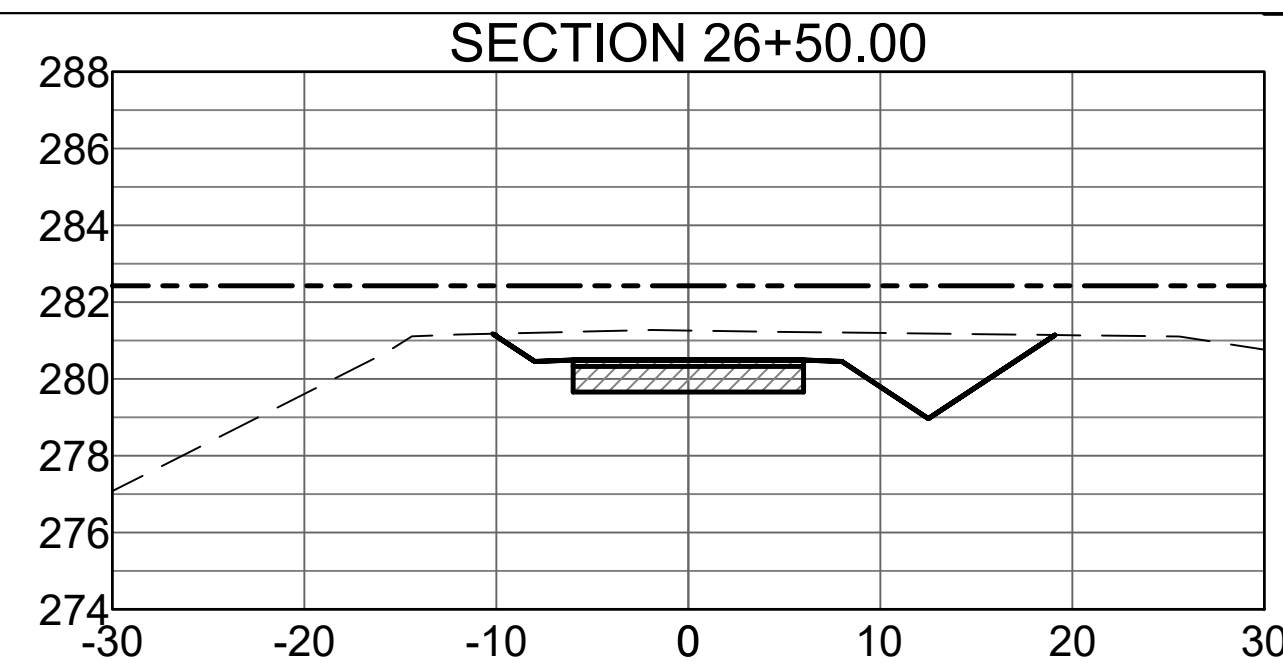
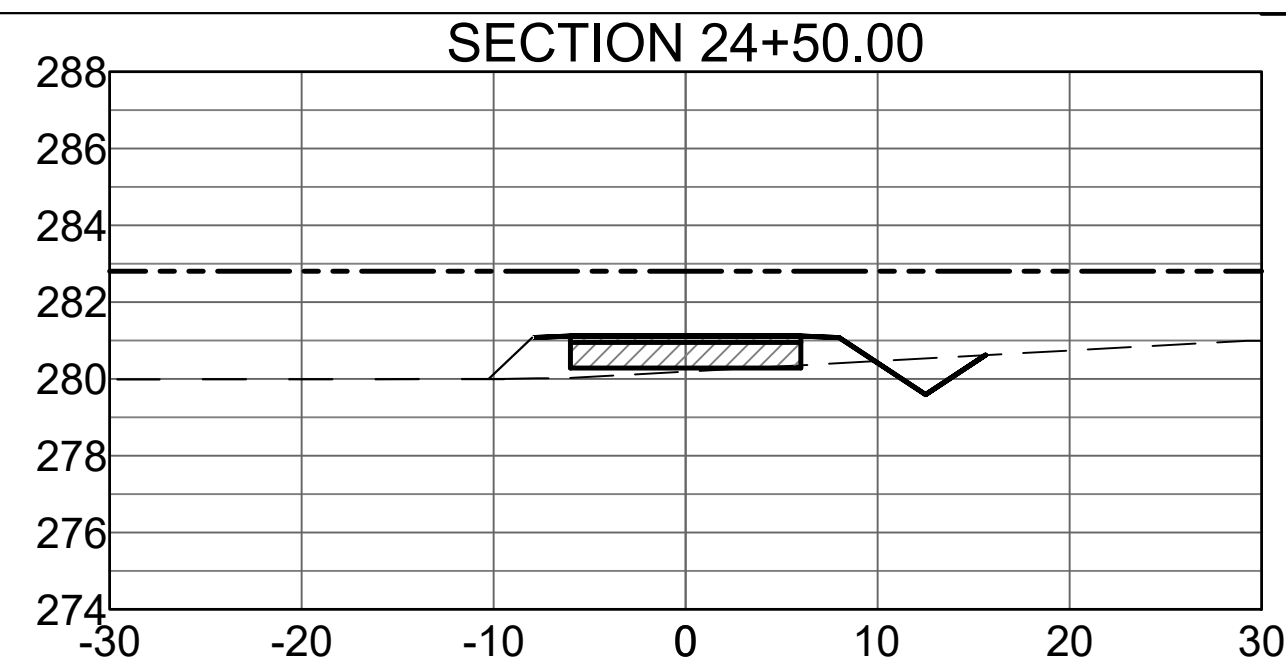


Project No.: 33160  
 Issued: APRIL 2021  
 Drawn By: BD / LCJ / JKJ  
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Sheet Title  
**CROSS SECTIONS**  
 4

Sheet Number  
**C3.3**





NOT FOR CONSTRUCTION

STONE DAM CREEK TRAIL  
 Conway, Arkansas



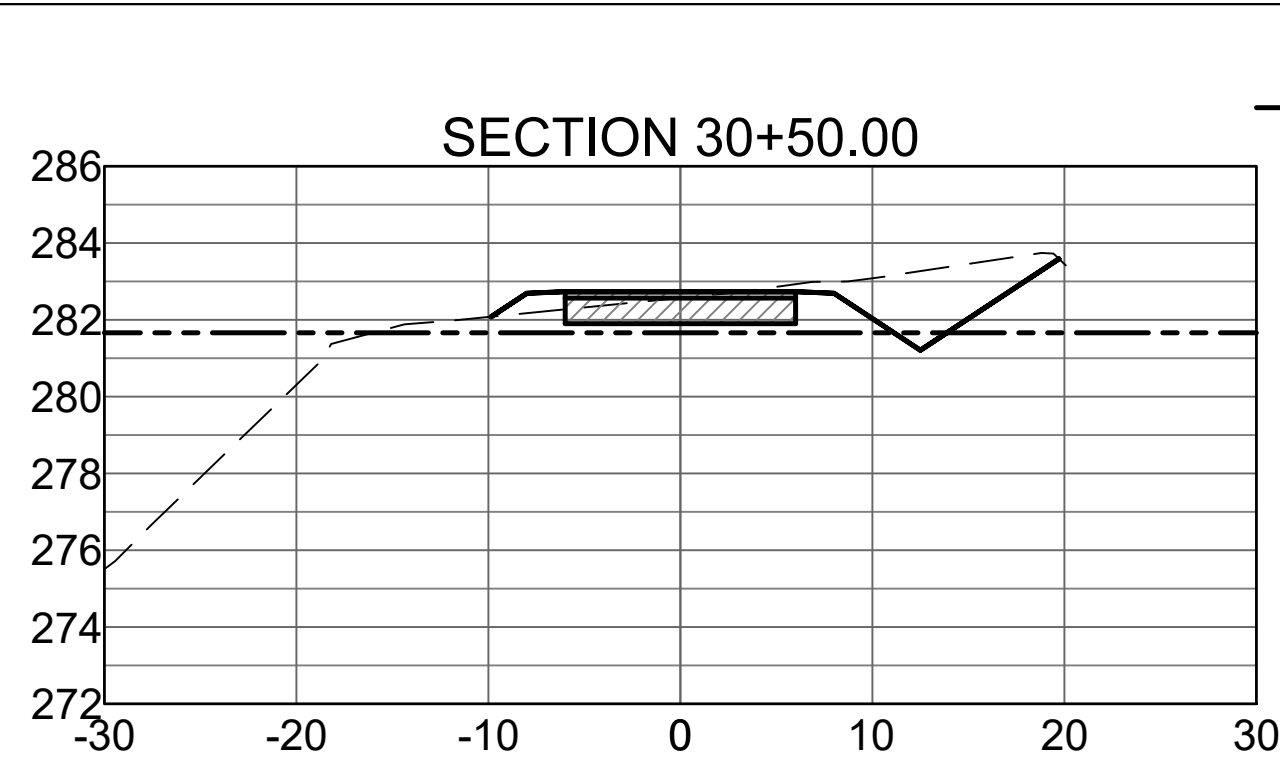
Revision No.	Date	Description



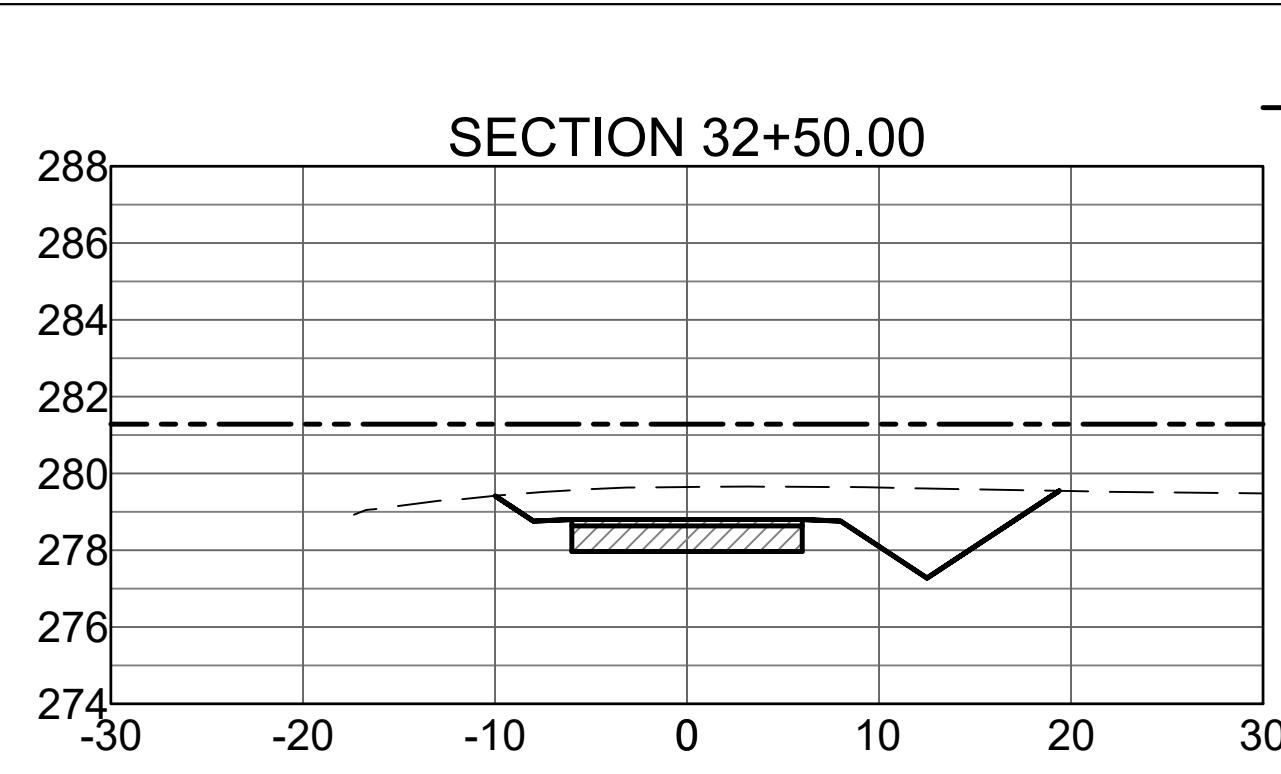
Project No.: 33160  
 Issued: APRIL 2021  
 Drawn By: BD / LCJ / JKJ  
 Checked By: BLV / SBH

Sheet Title  
**CROSS SECTIONS**  
 5

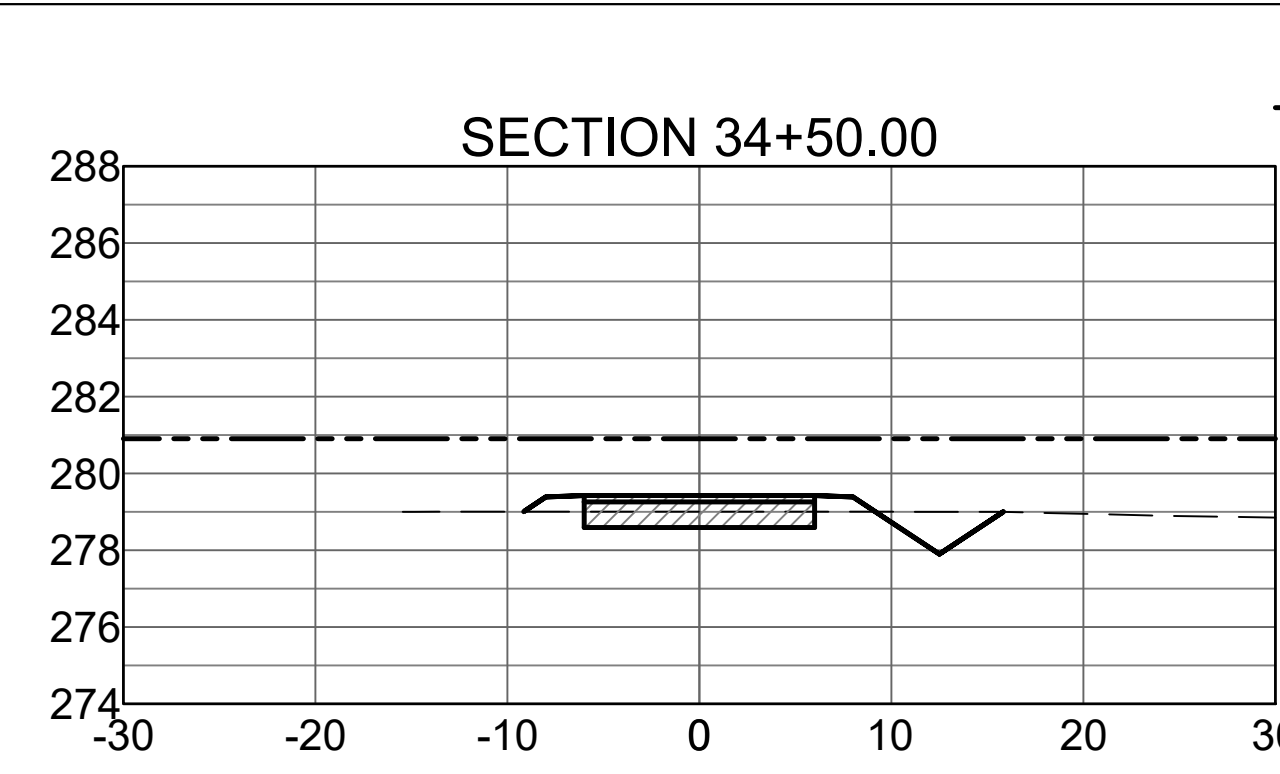
Sheet Number  
**C3.4**



CUT VOL (CY)	53.61
FILL VOL (CY)	129.79

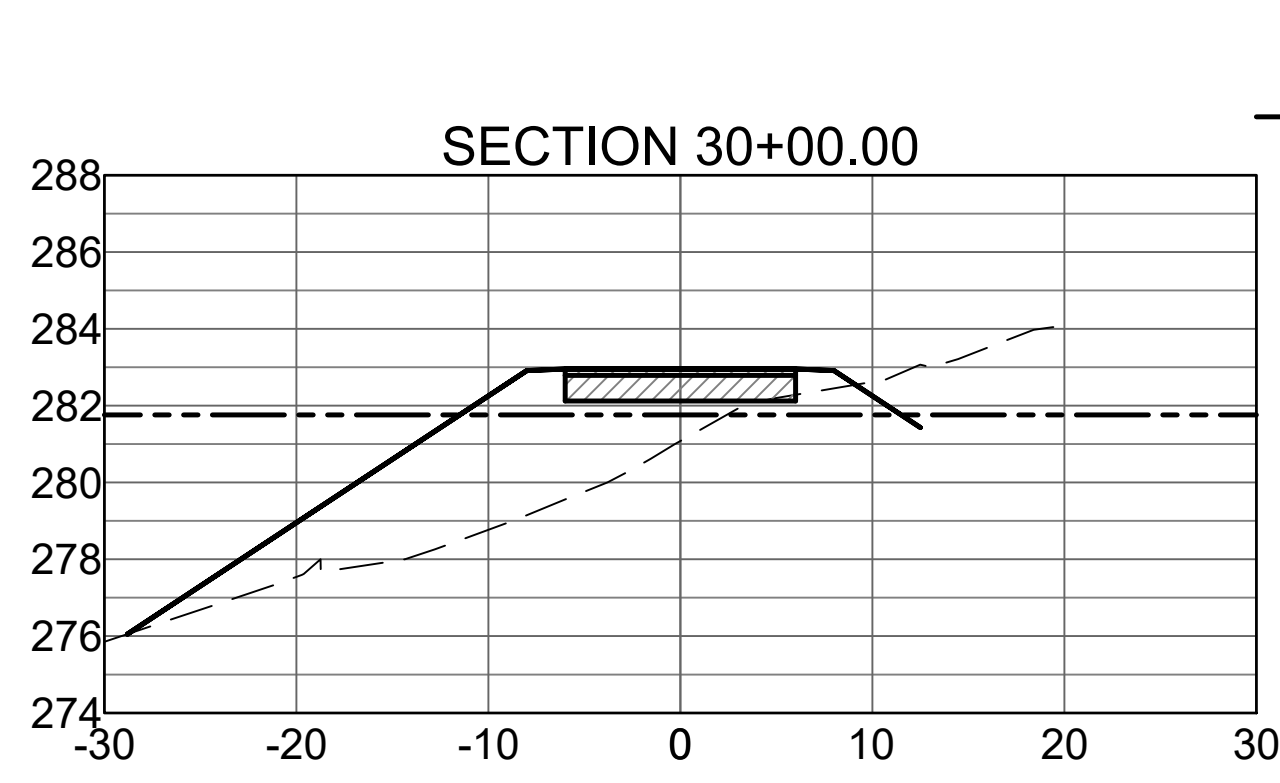


CUT VOL (CY)	0.00
FILL VOL (CY)	180.80

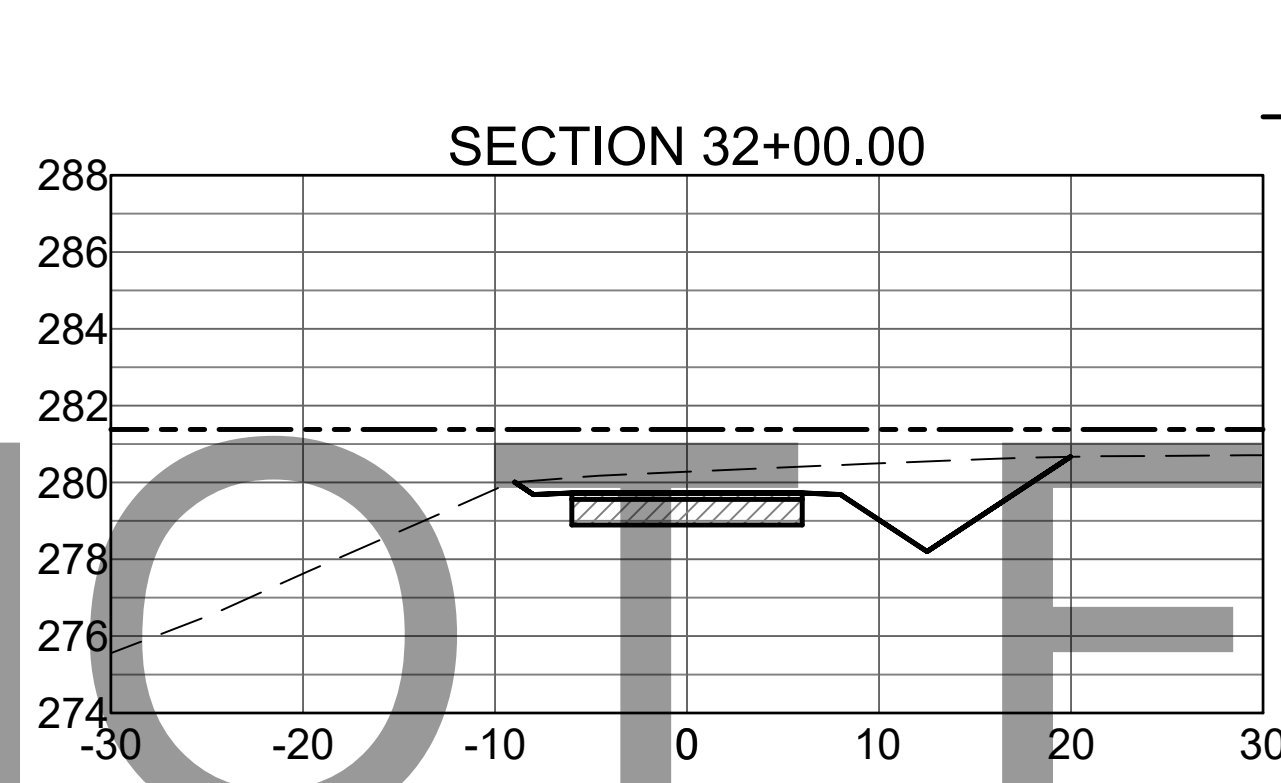


CUT VOL (CY)	0.00
FILL VOL (CY)	169.45

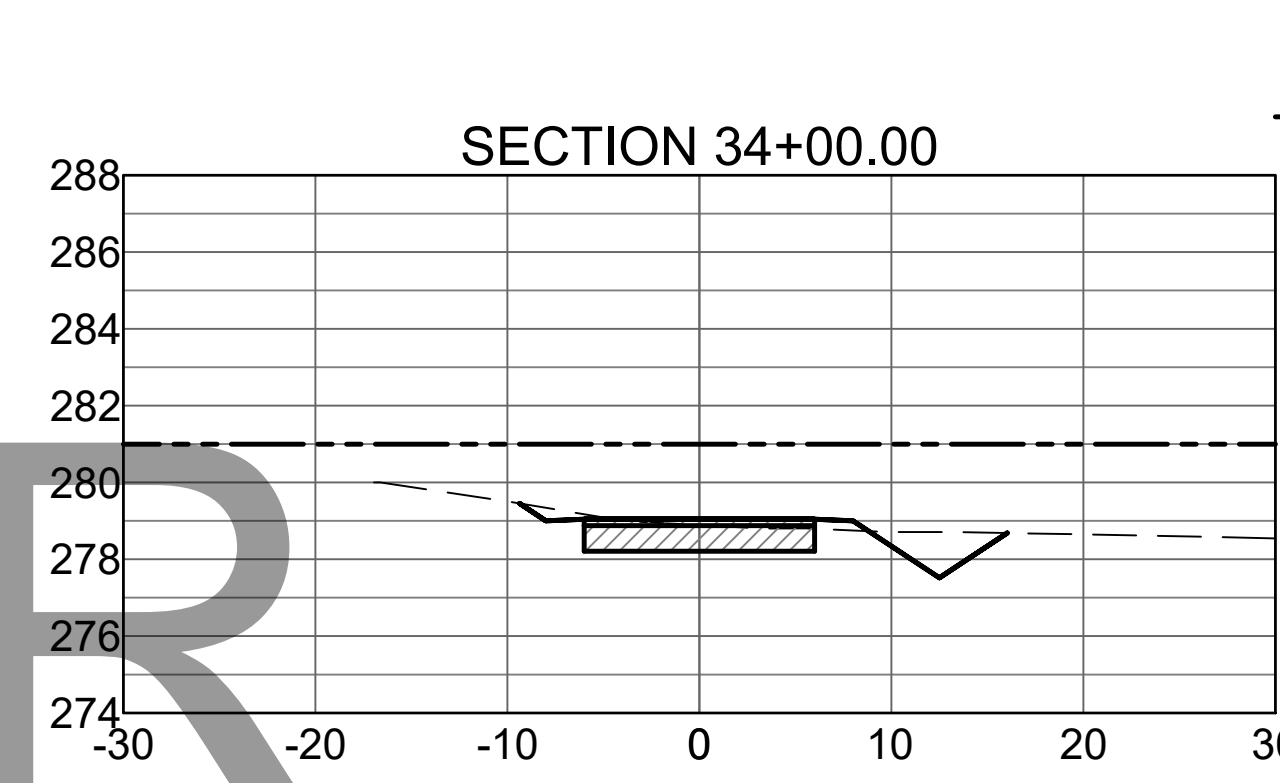
--- 100 YEAR BASE FLOOD ELEVATION  
 - - - EXISTING GRADE  
 ——— PROPOSED GRADE



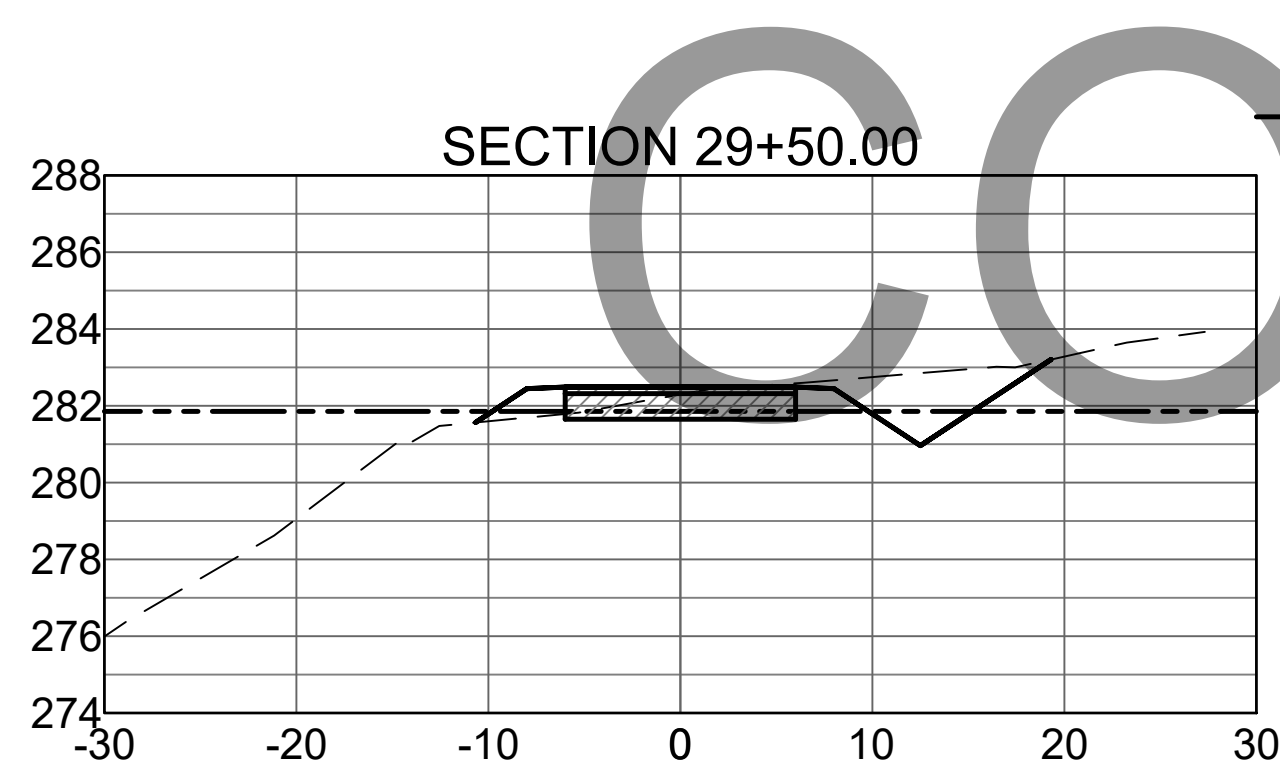
CUT VOL (CY)	48.91
FILL VOL (CY)	144.16



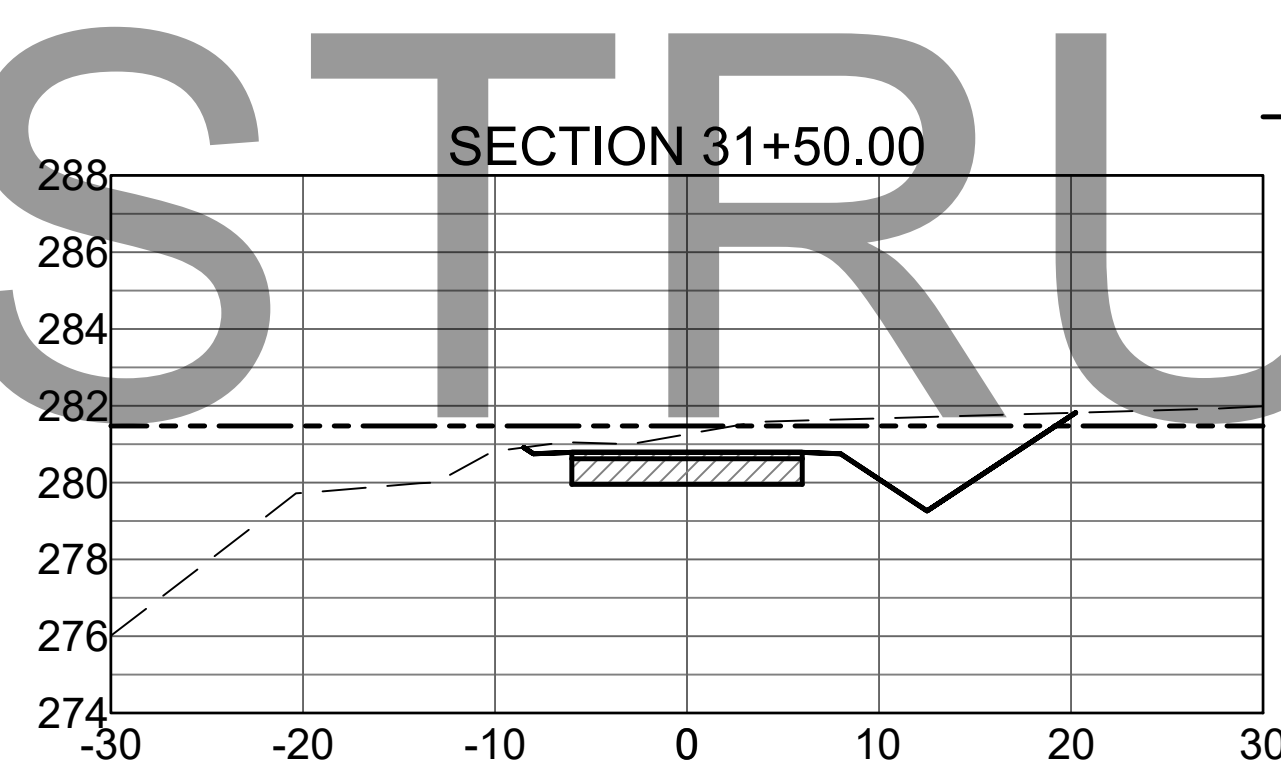
CUT VOL (CY)	7.30
FILL VOL (CY)	154.12



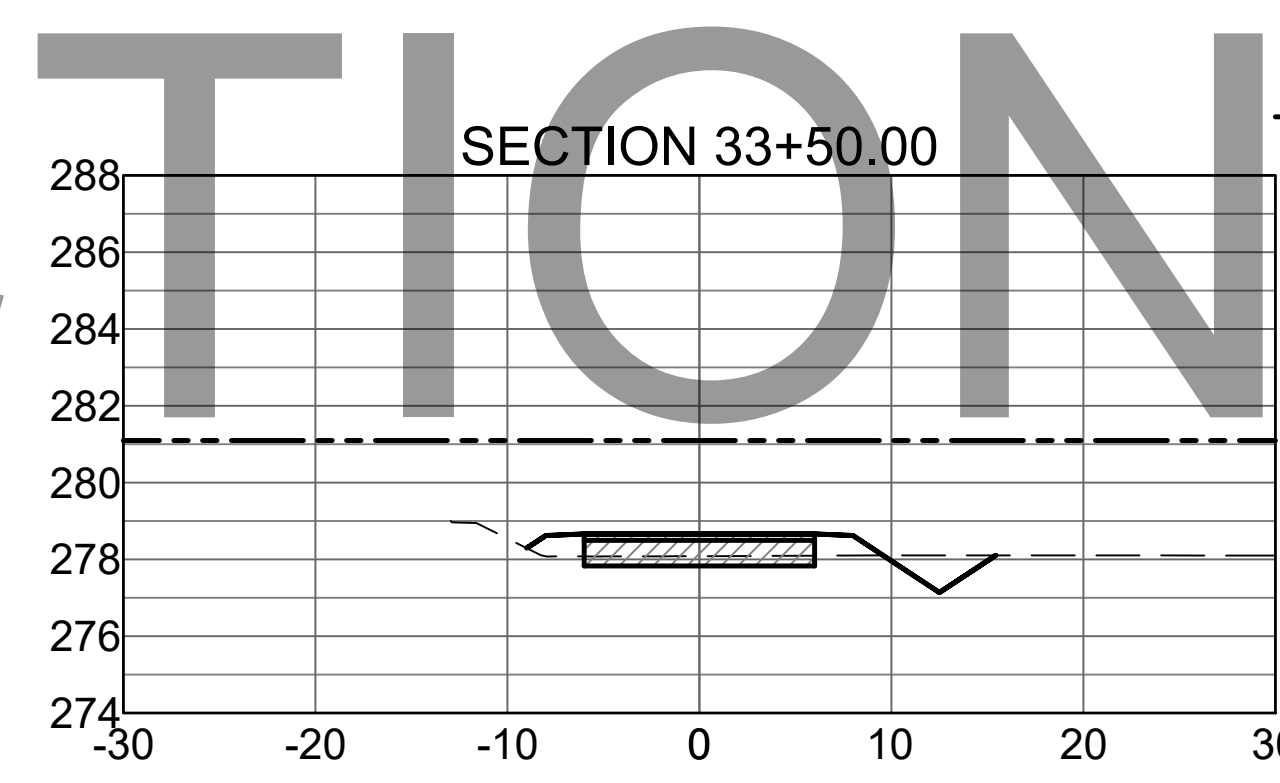
CUT VOL (CY)	0.00
FILL VOL (CY)	206.11



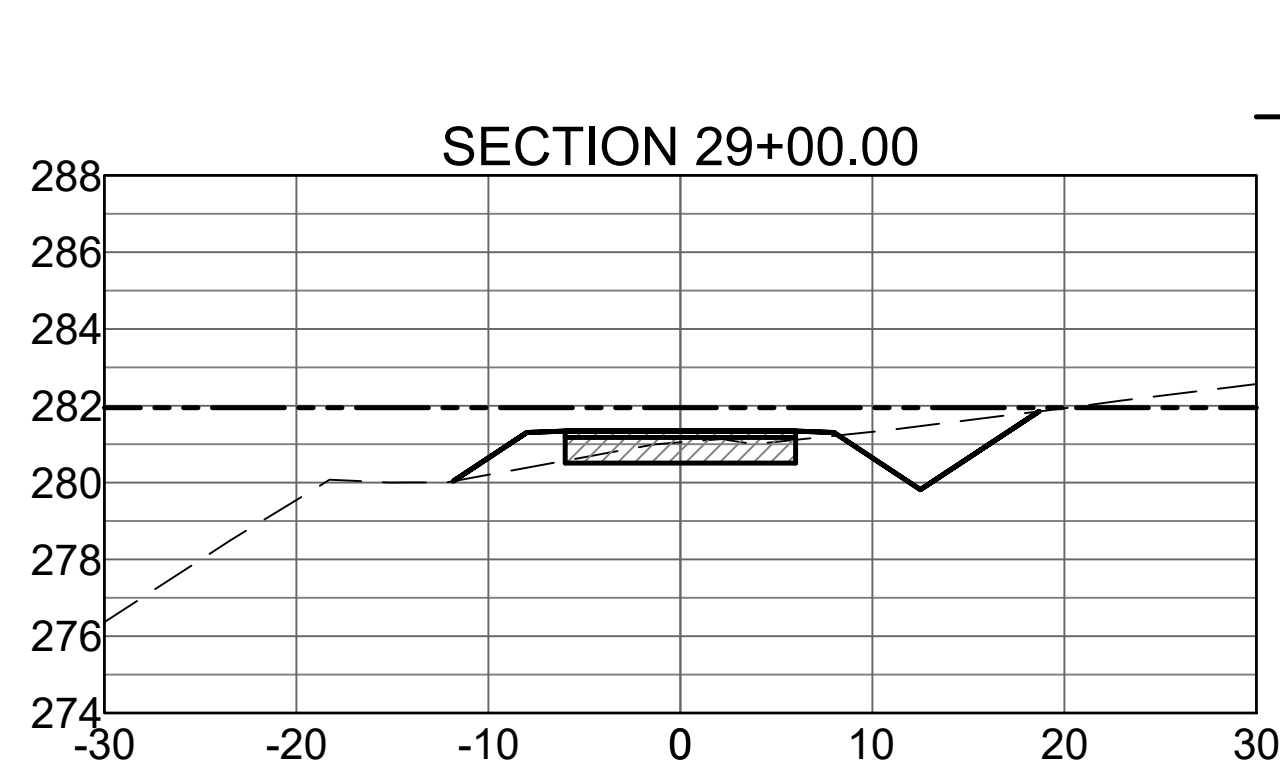
CUT VOL (CY)	34.00
FILL VOL (CY)	123.04



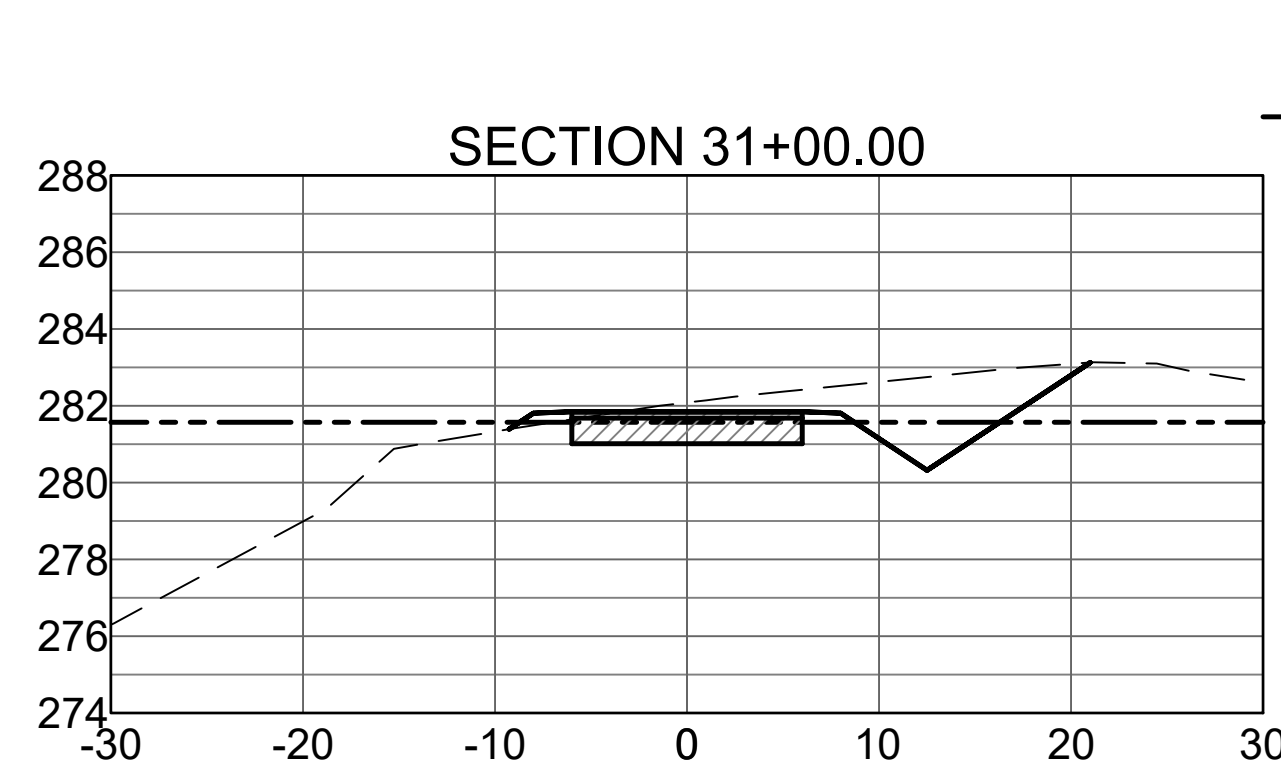
CUT VOL (CY)	41.85
FILL VOL (CY)	91.87



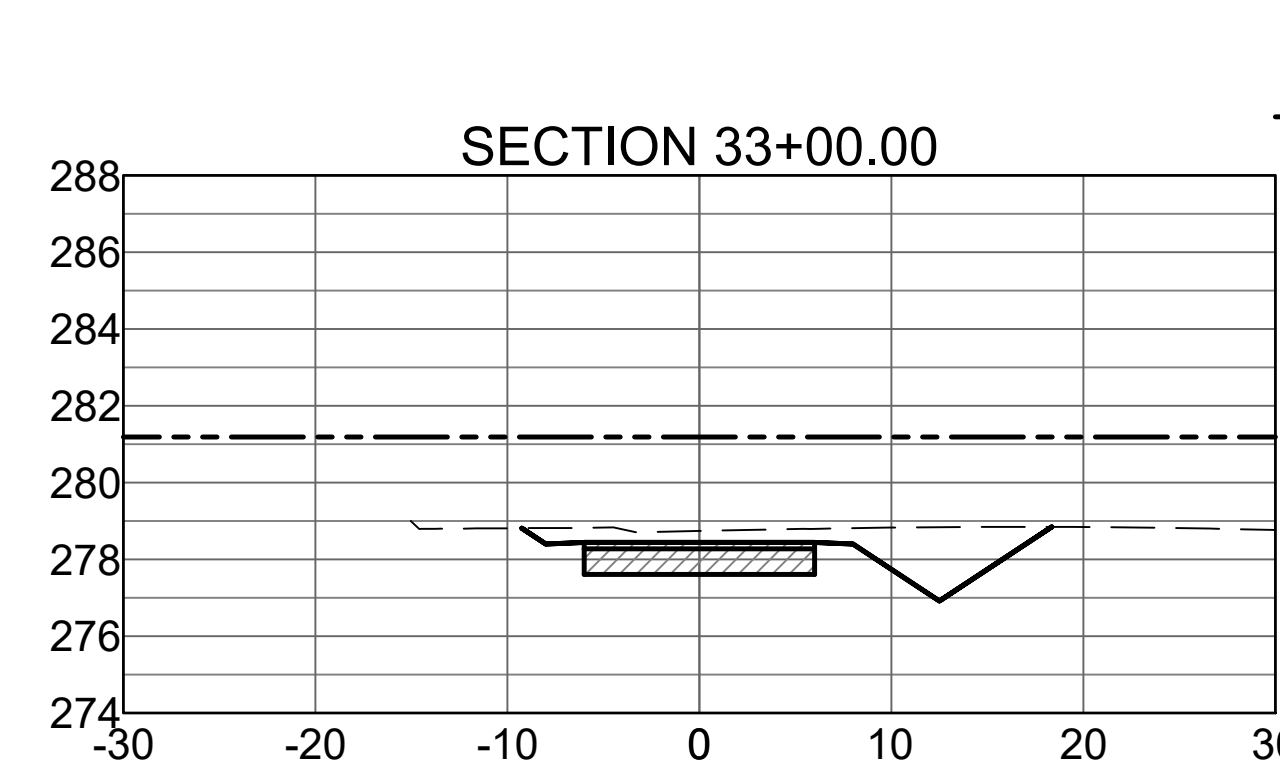
CUT VOL (CY)	0.00
FILL VOL (CY)	216.25



CUT VOL (CY)	3.05
FILL VOL (CY)	183.67



CUT VOL (CY)	69.82
FILL VOL (CY)	78.45



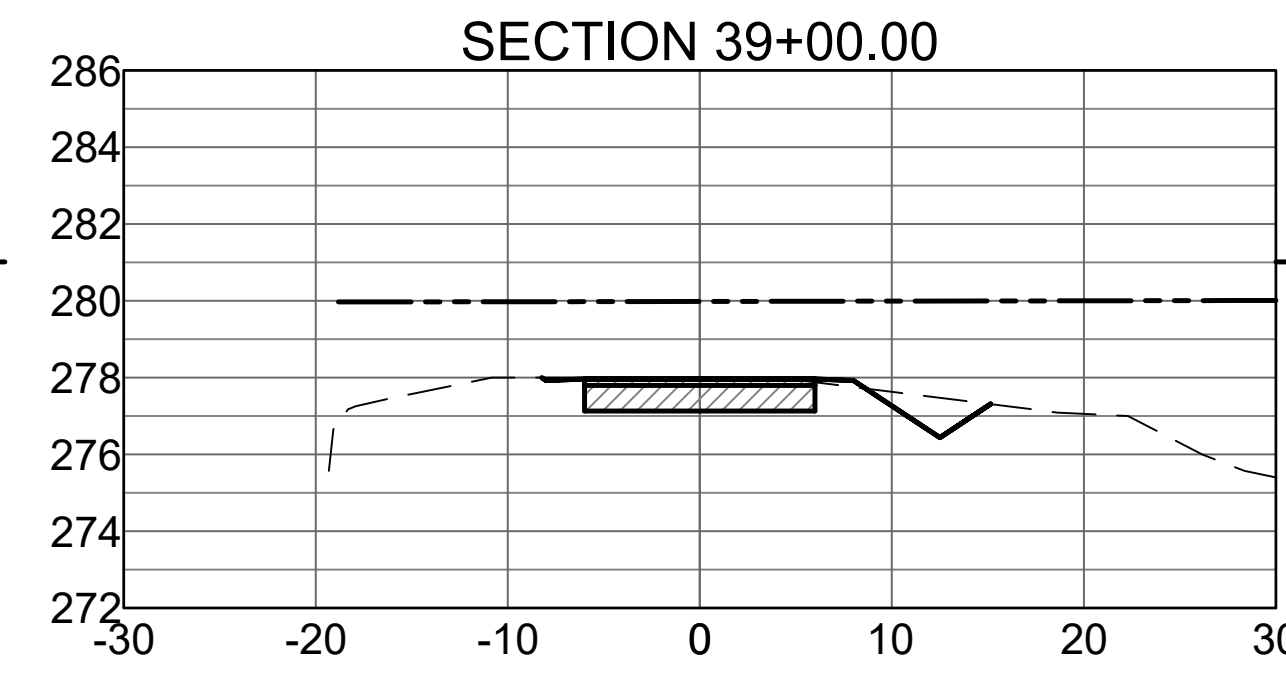
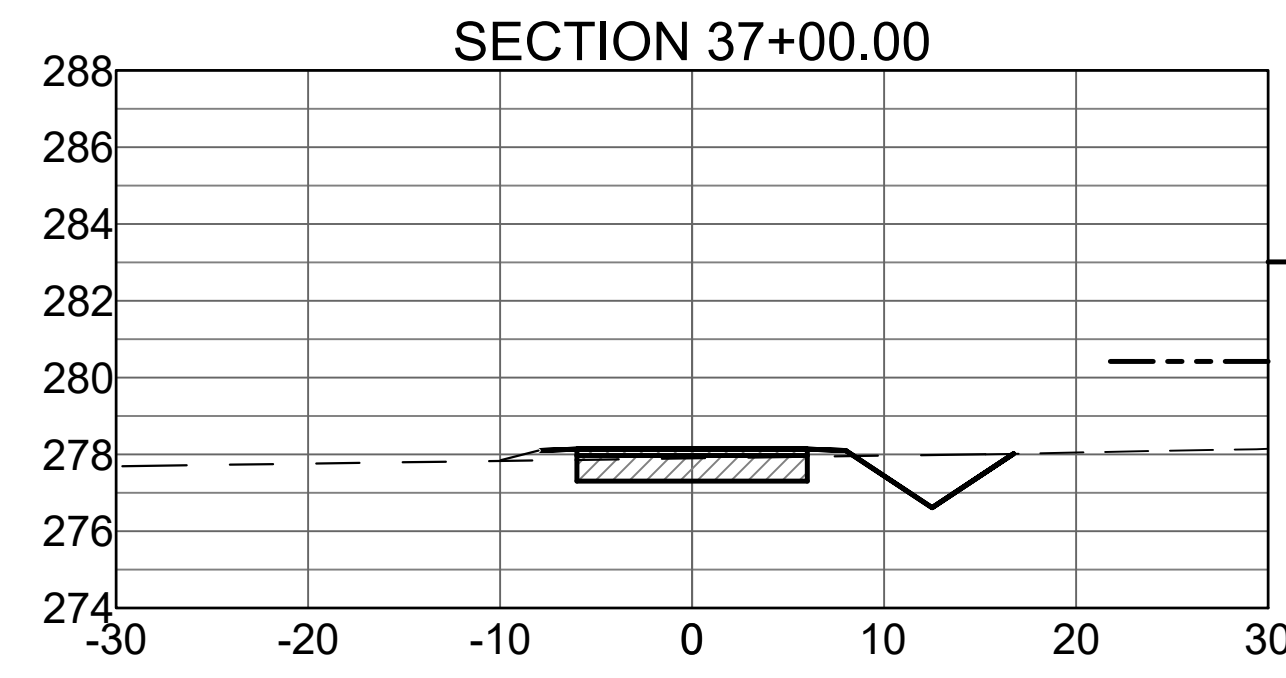
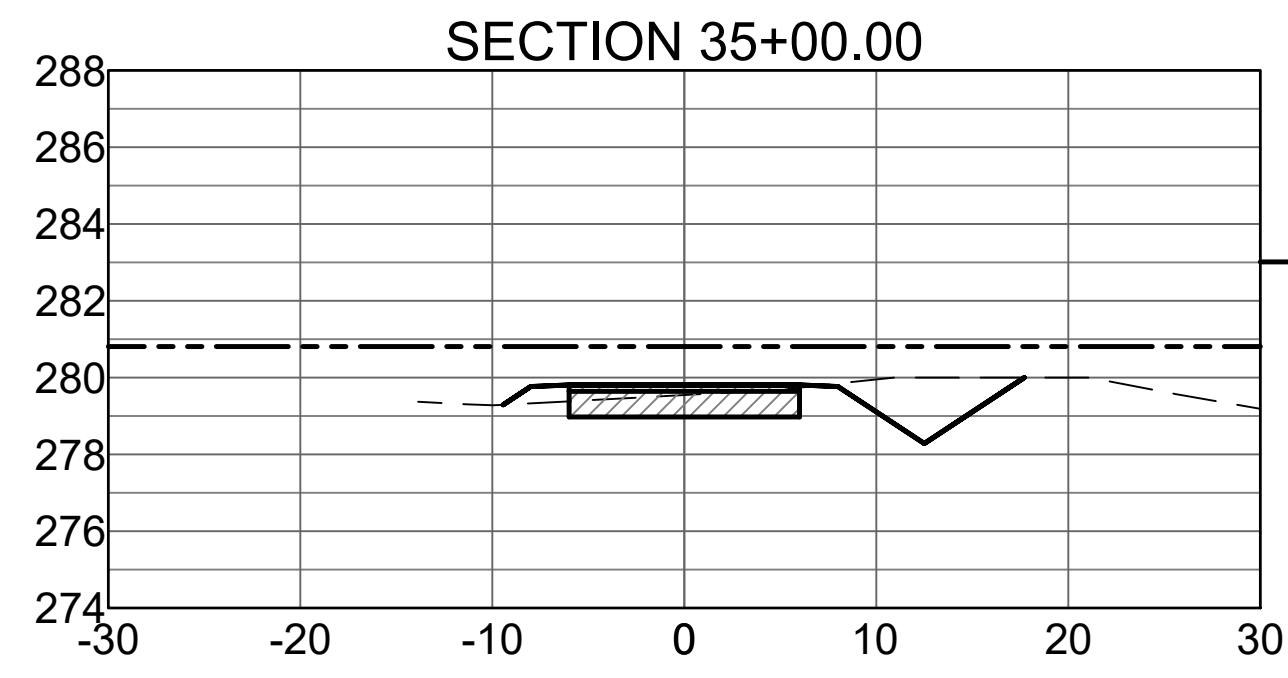
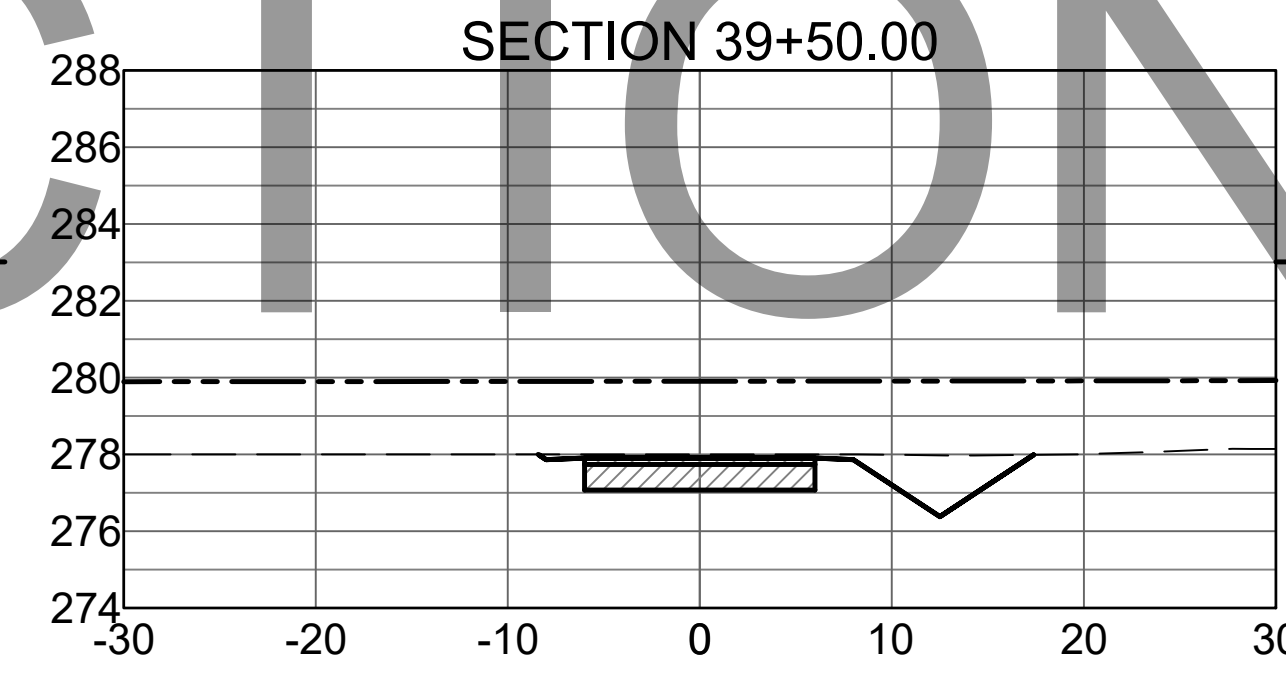
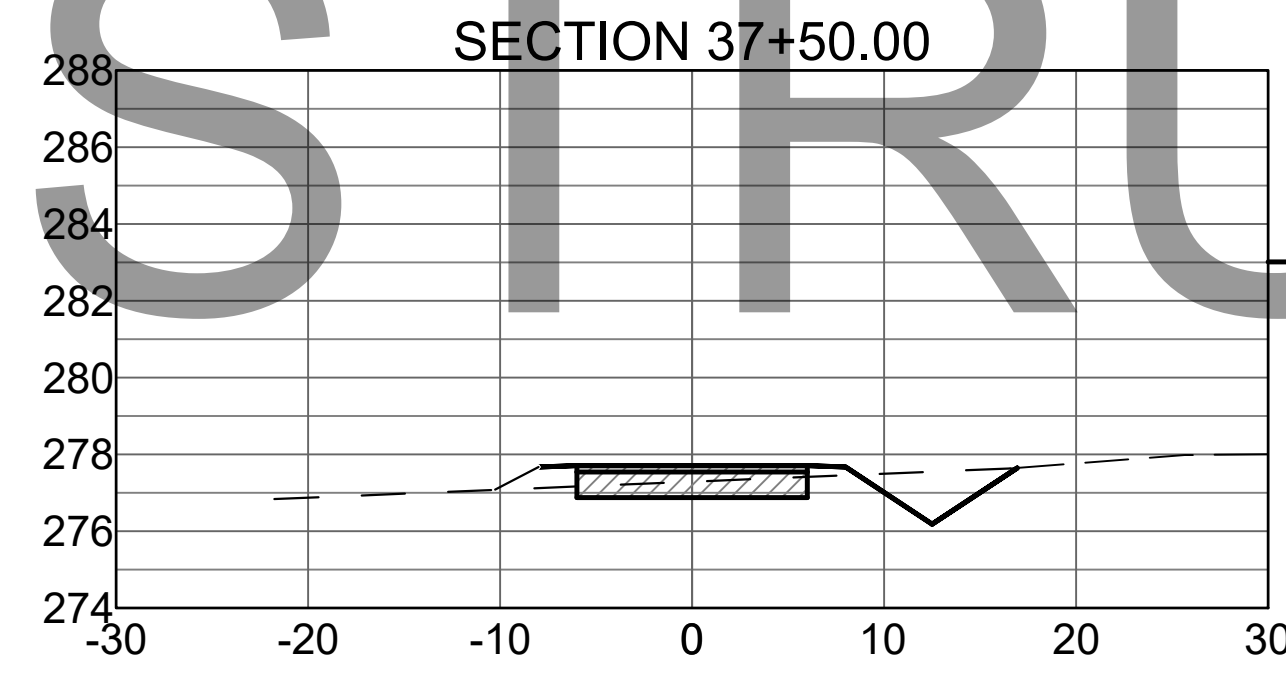
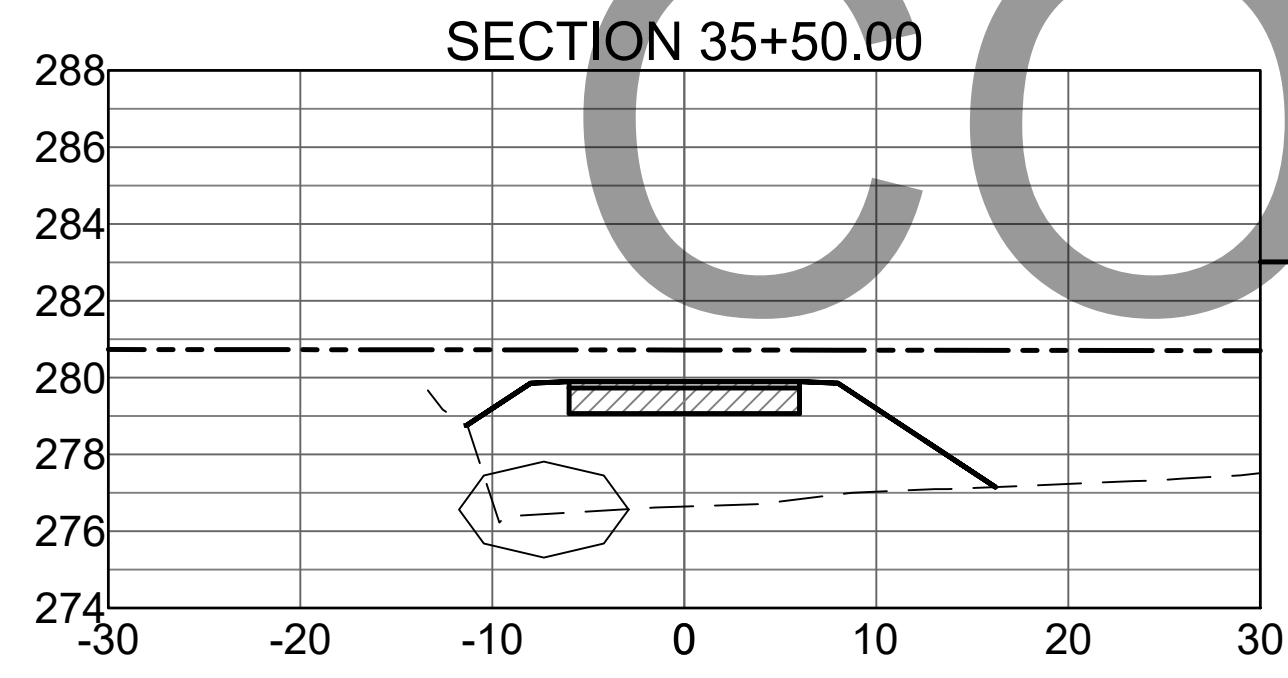
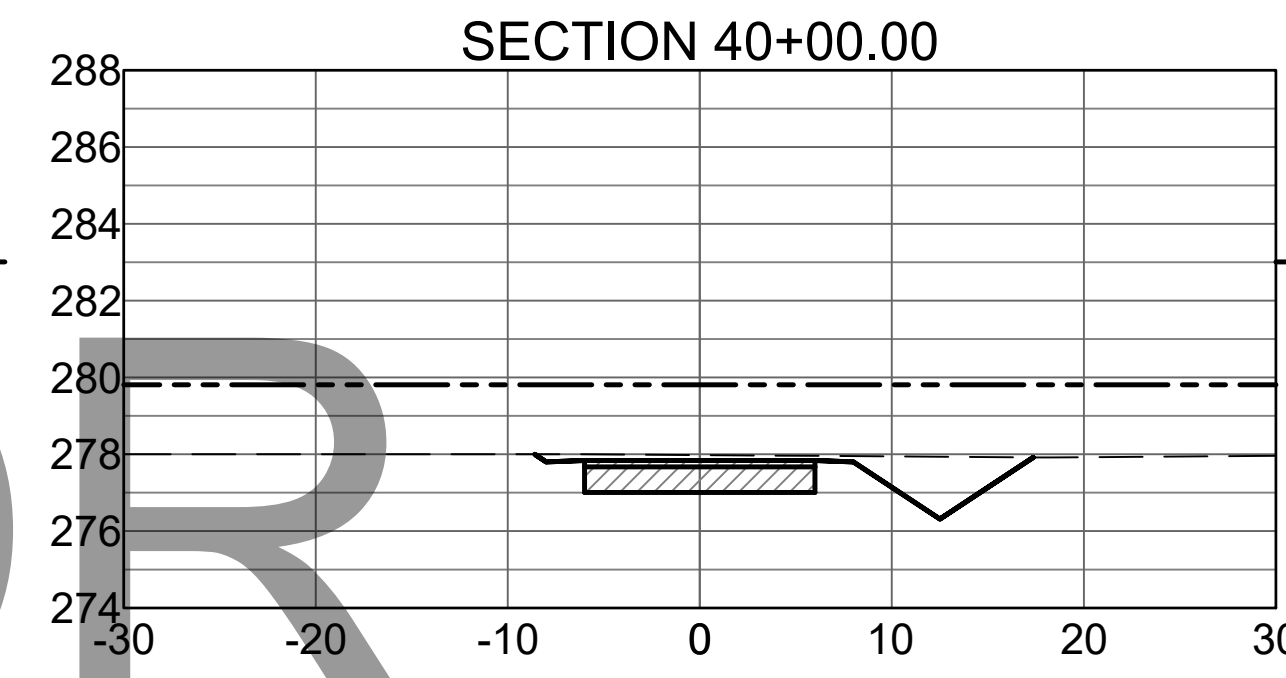
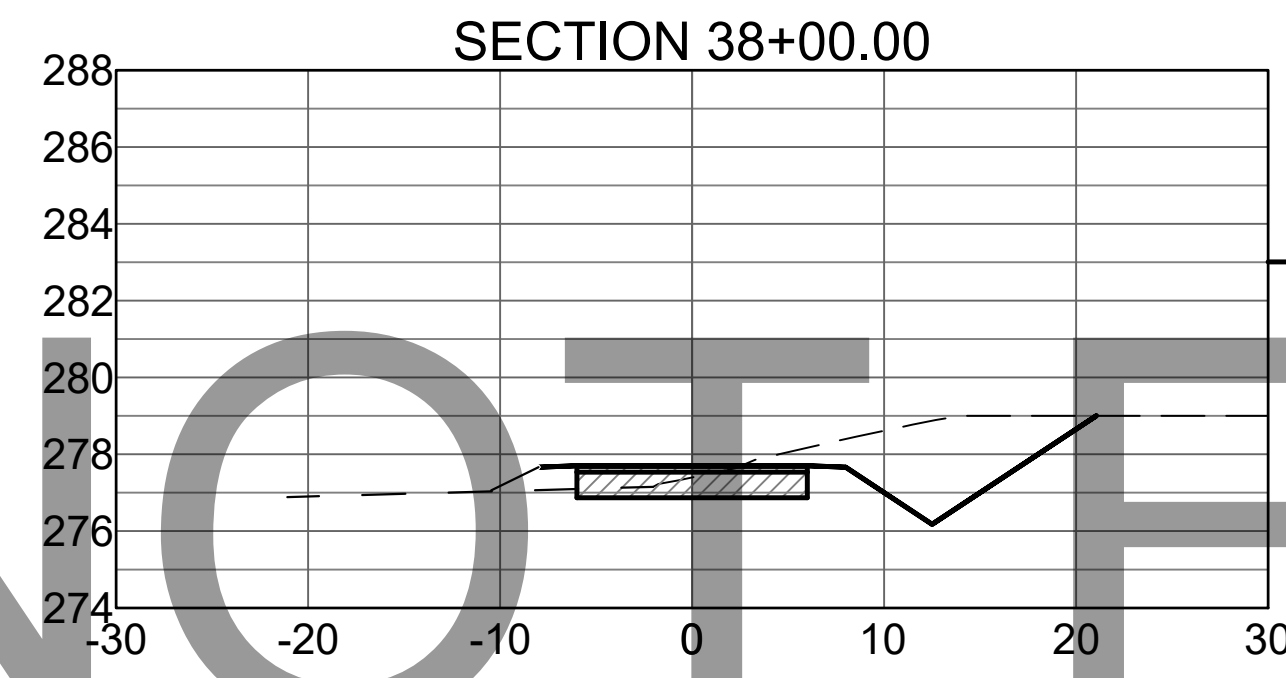
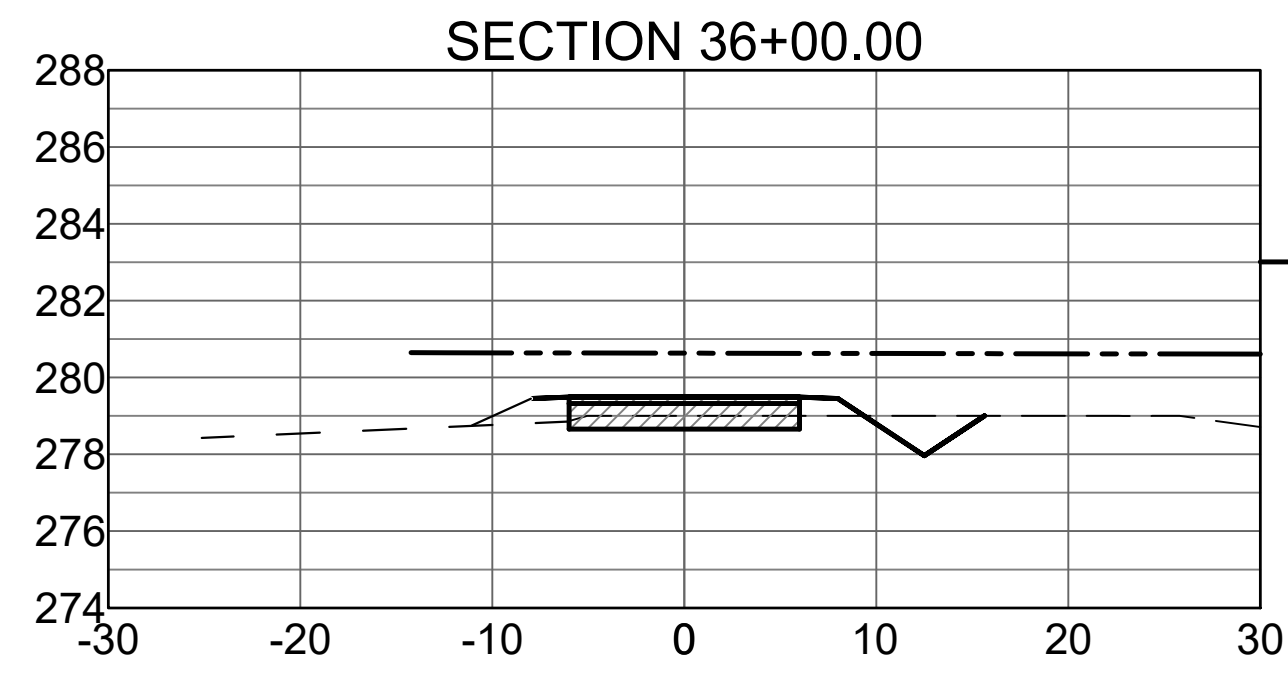
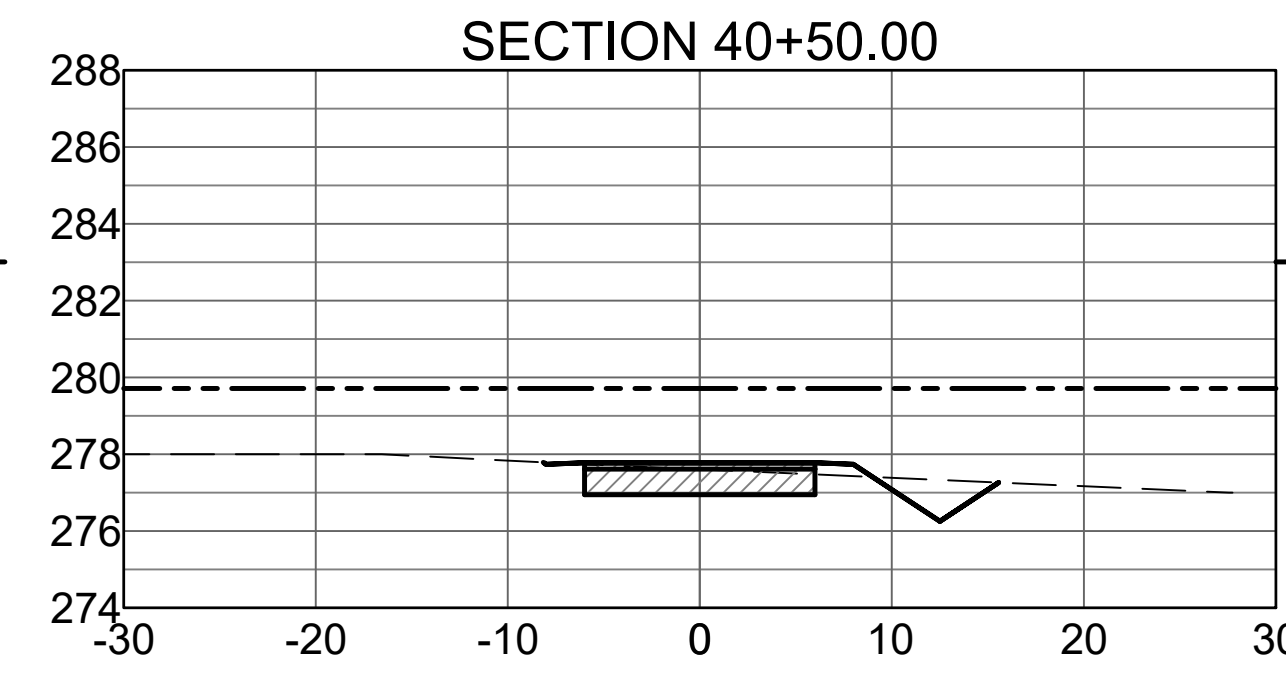
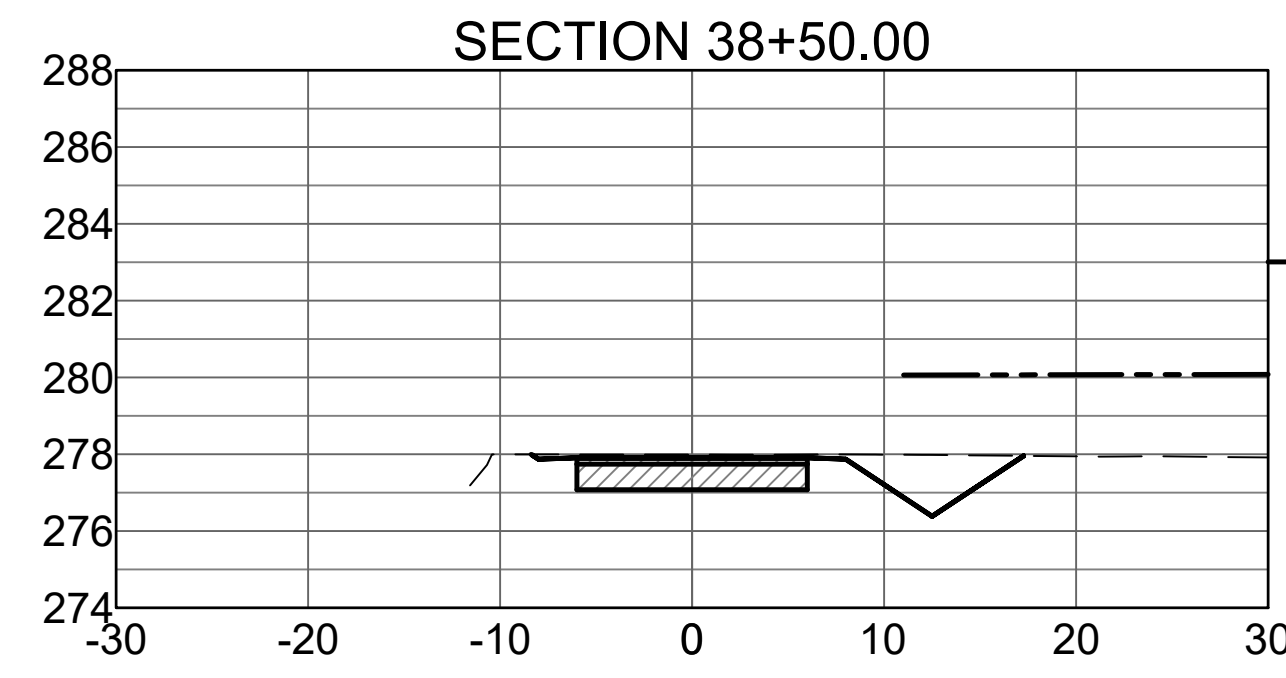
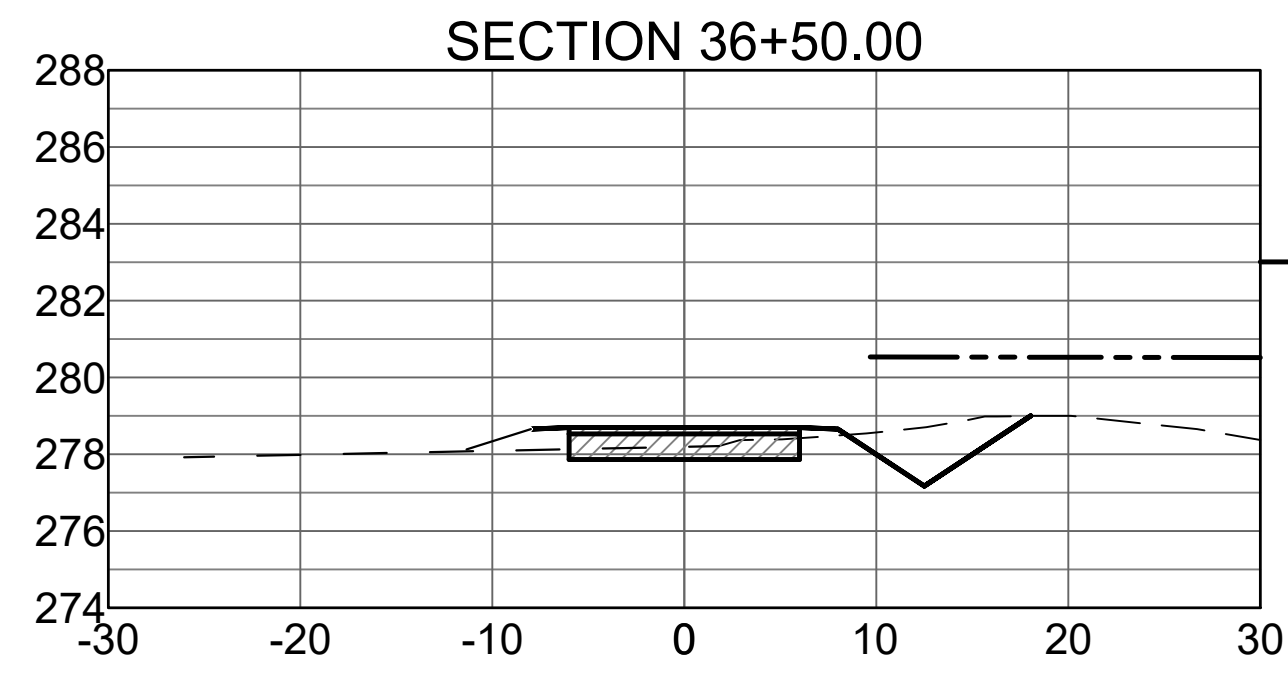
CUT VOL (CY)	0.00
FILL VOL (CY)	176.57

NOT FOR CONSTRUCTION

Revision No.	Date	Description



Project No.:	33160
Issued:	APRIL 2021
Drawn By:	BD / LCJ / JKJ
Checked By:	BLV / SBH
Sheet Title	<b>CROSS SECTIONS</b>
Sheet Number	<b>6</b>
	<b>C3.5</b>

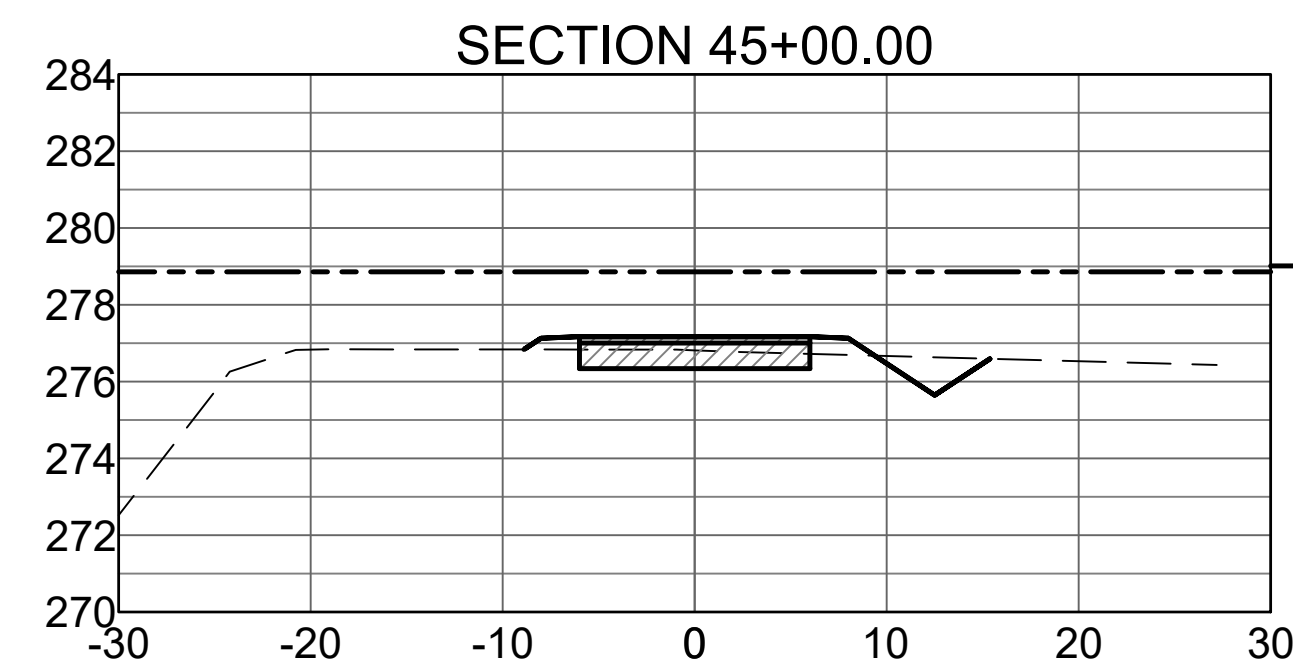
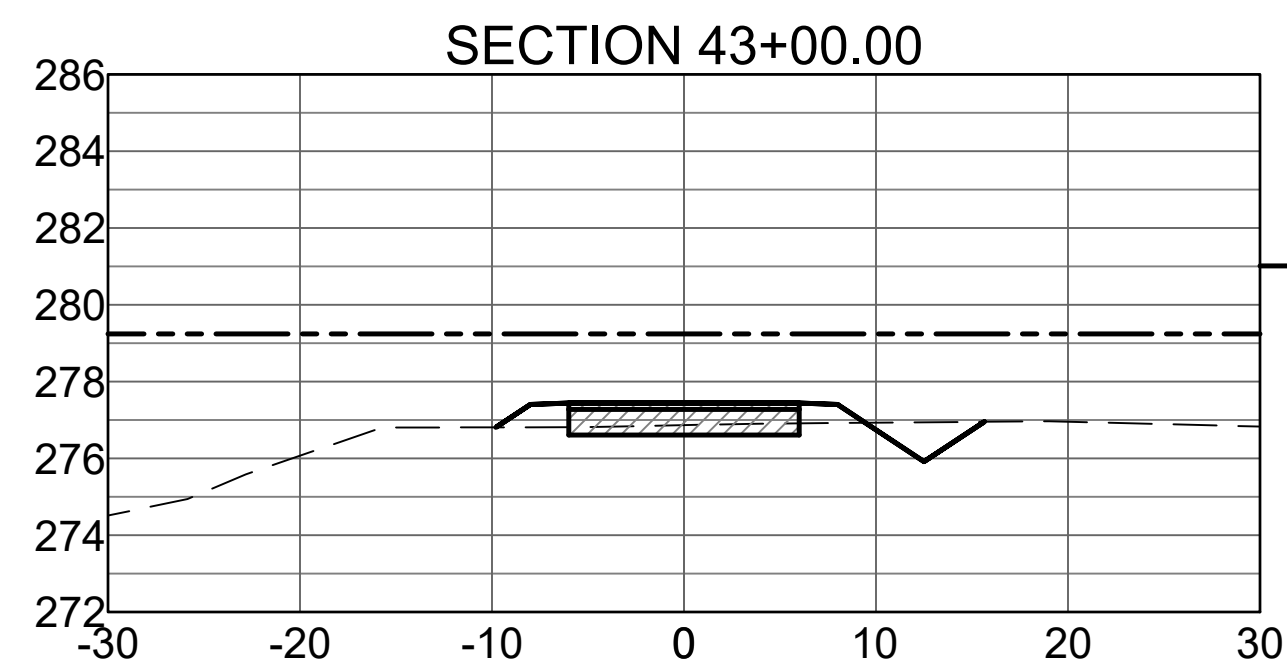
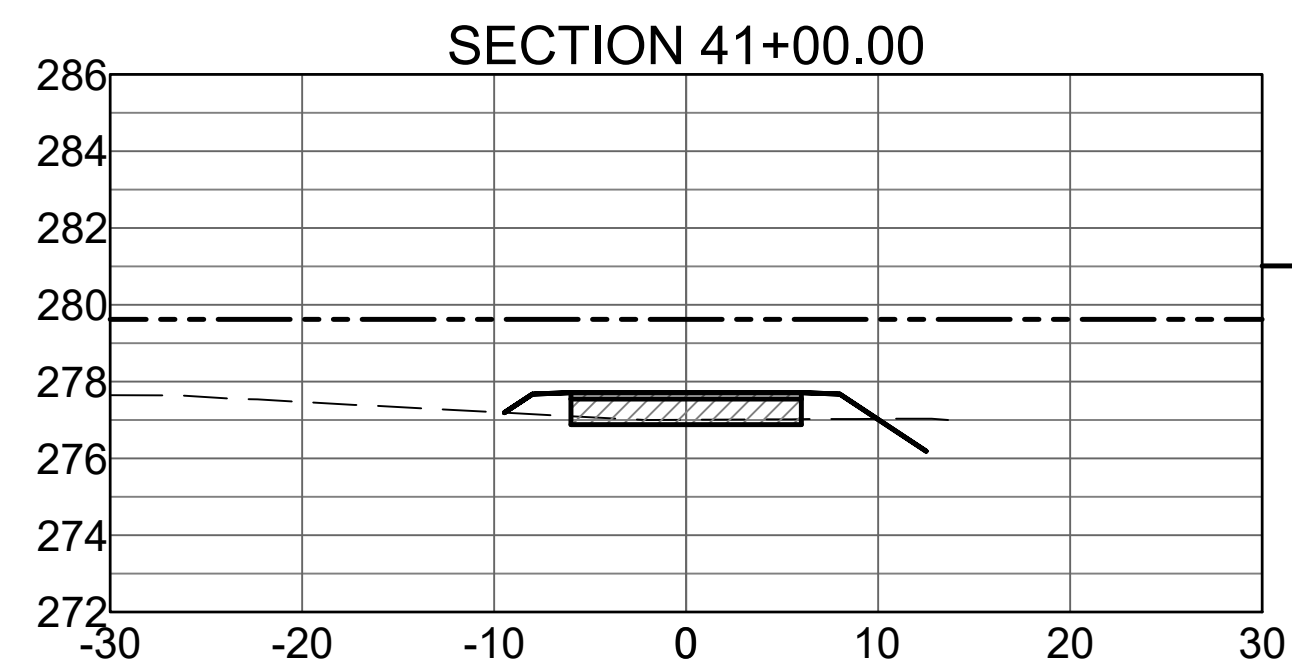
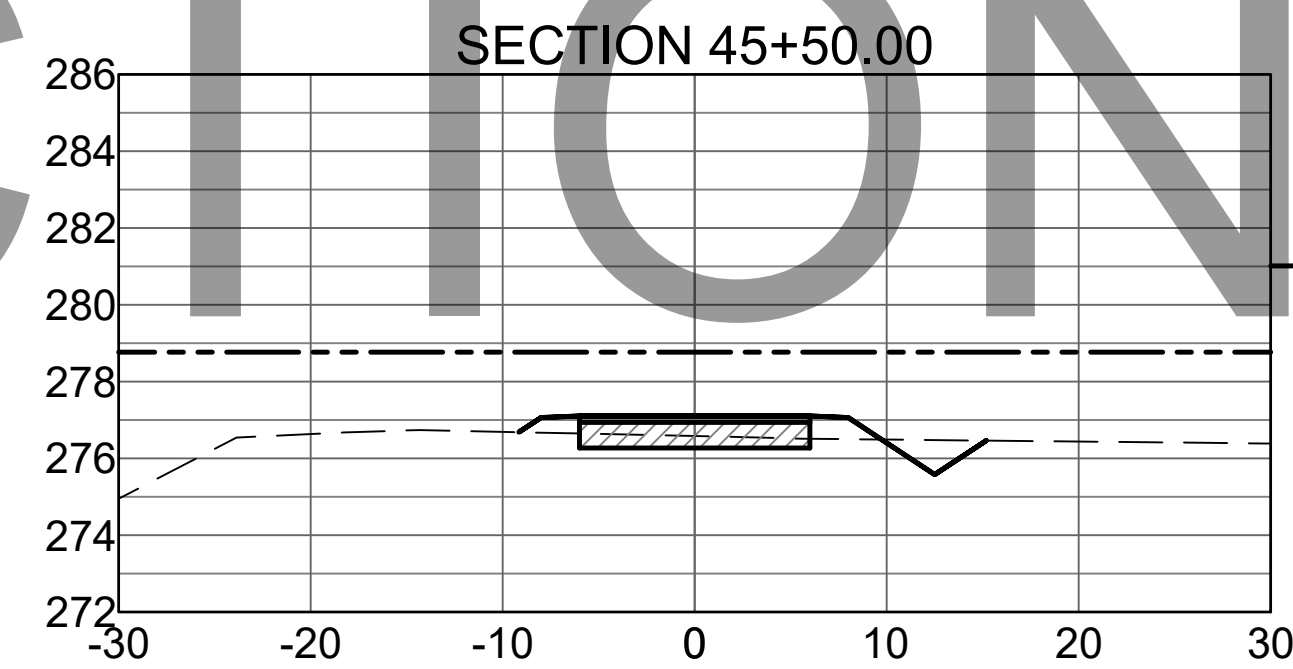
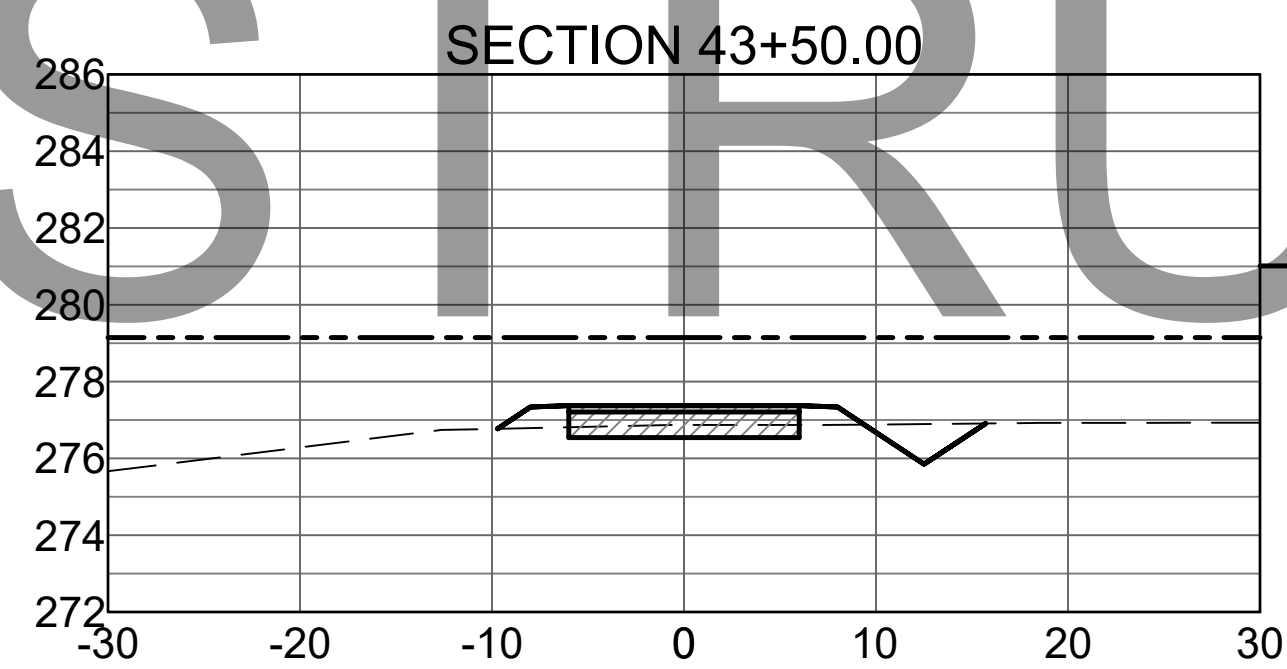
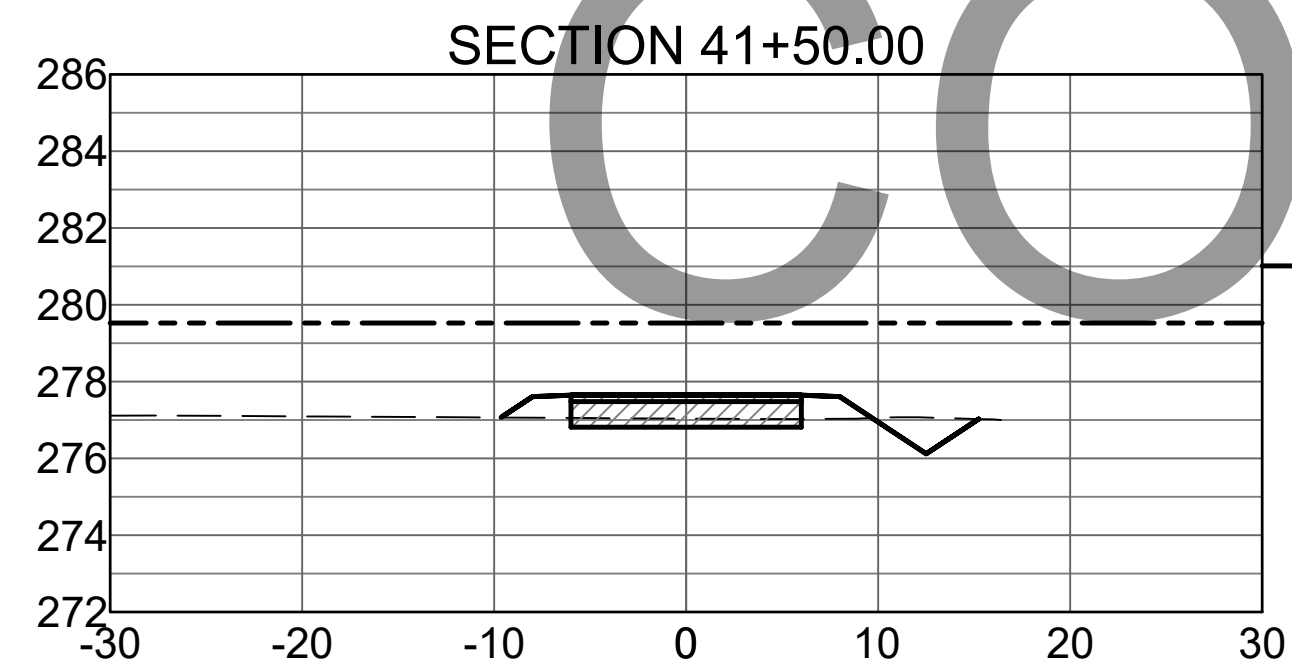
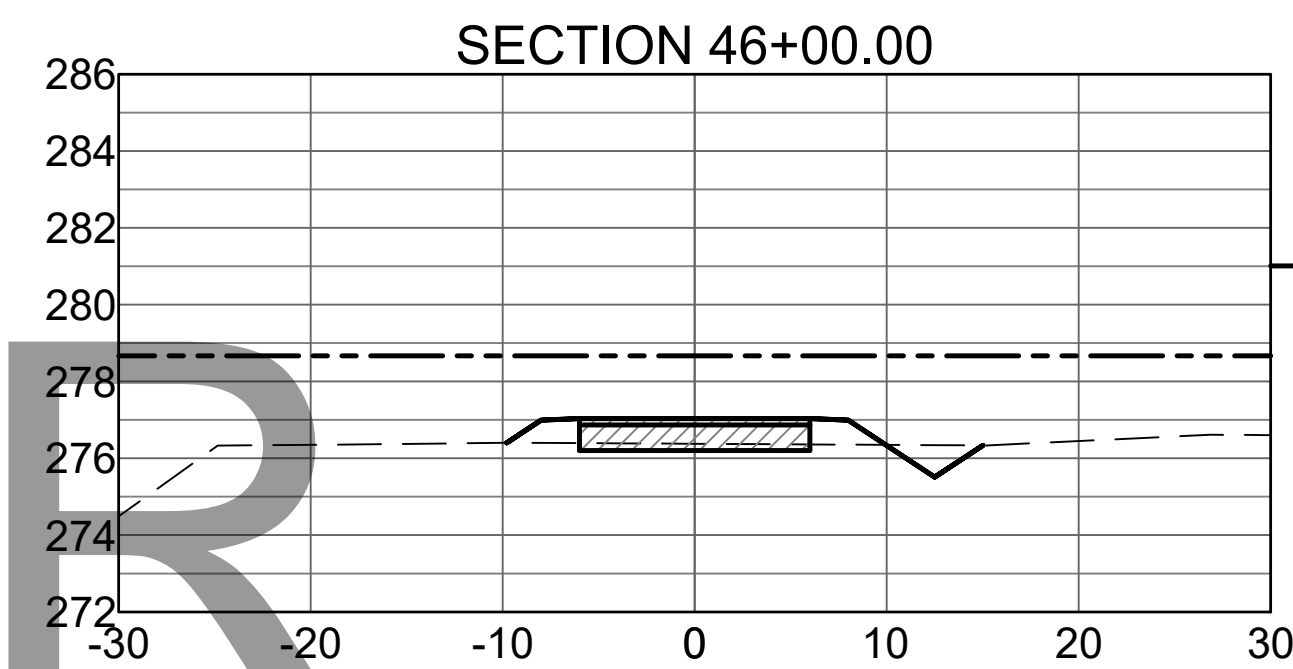
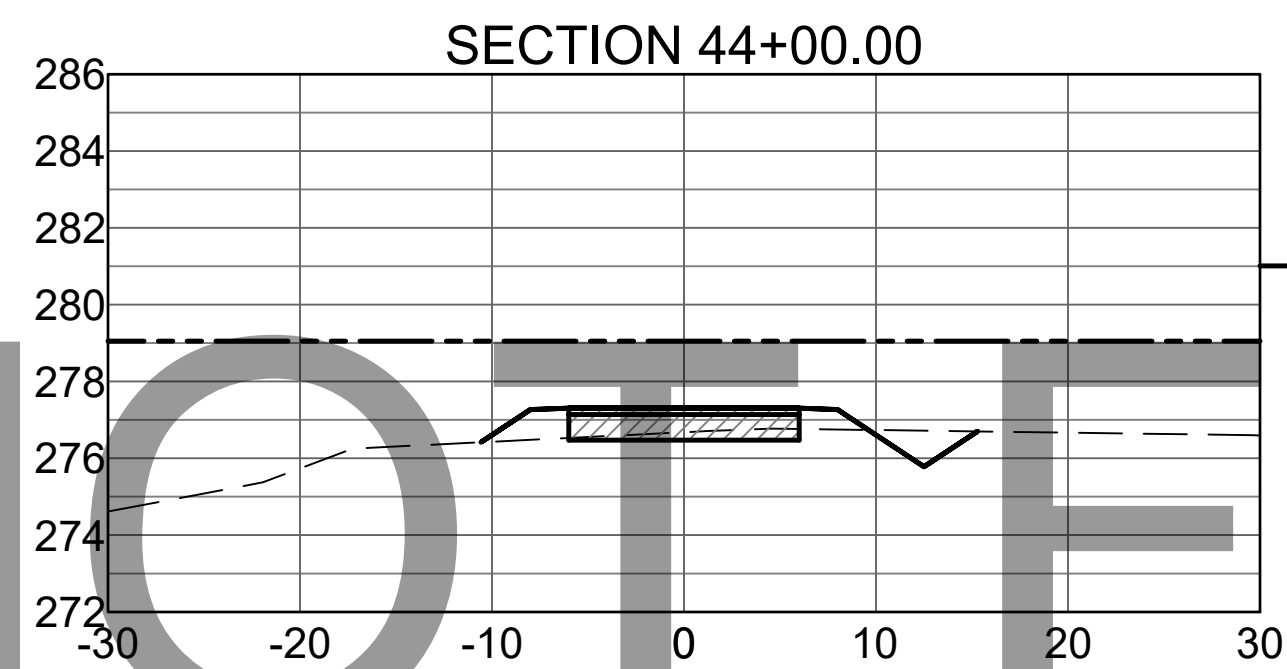
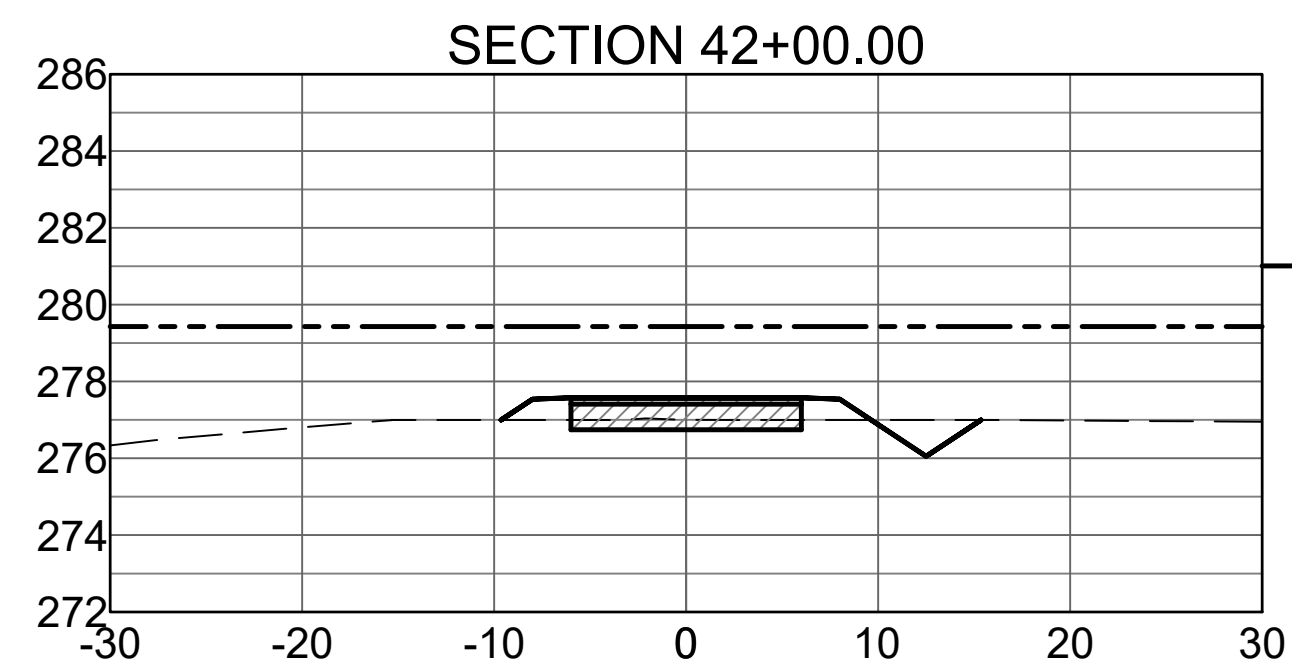
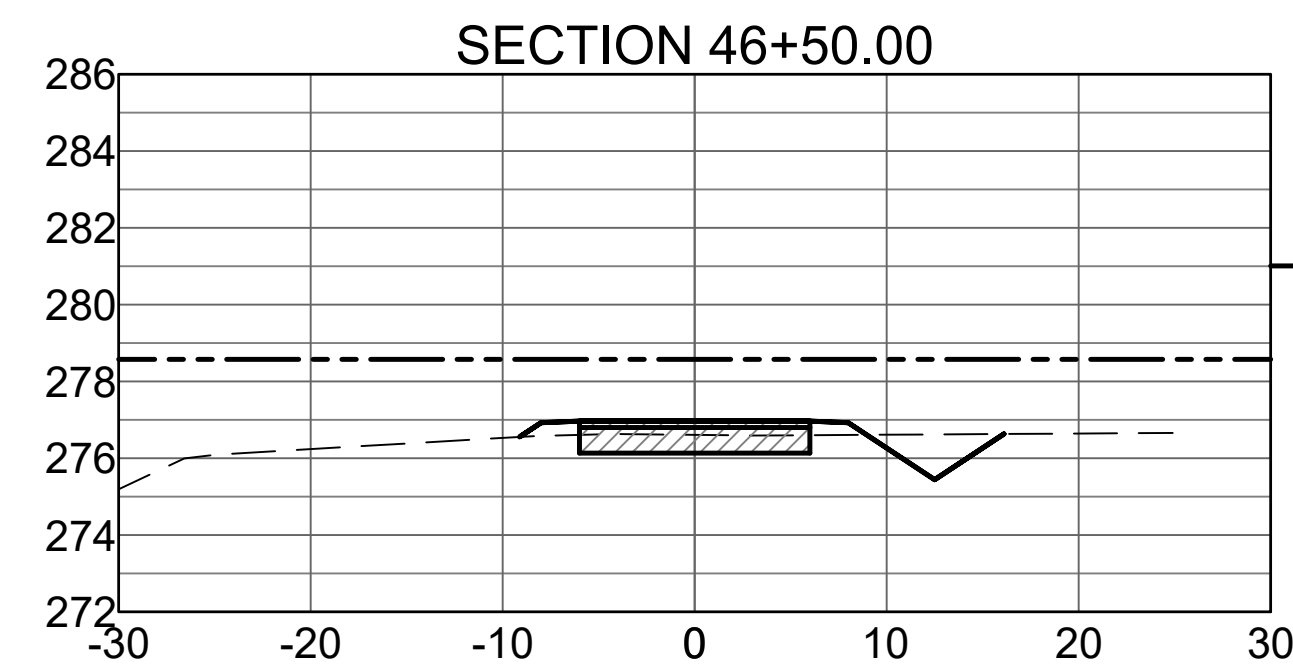
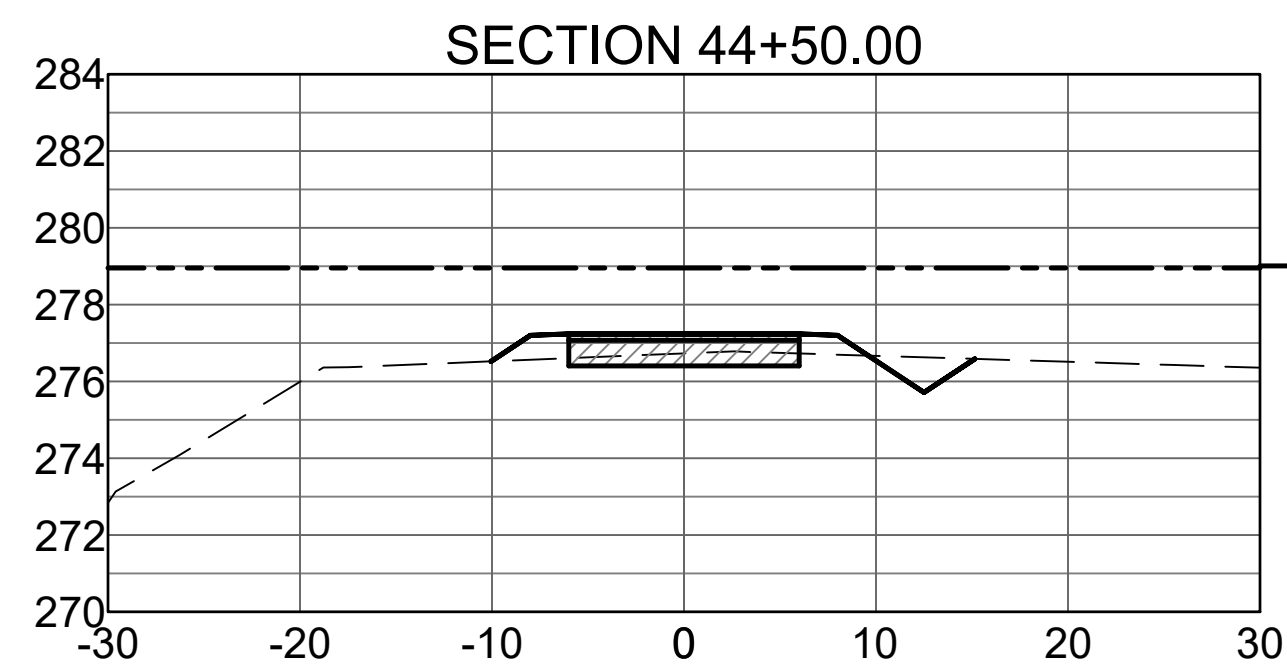
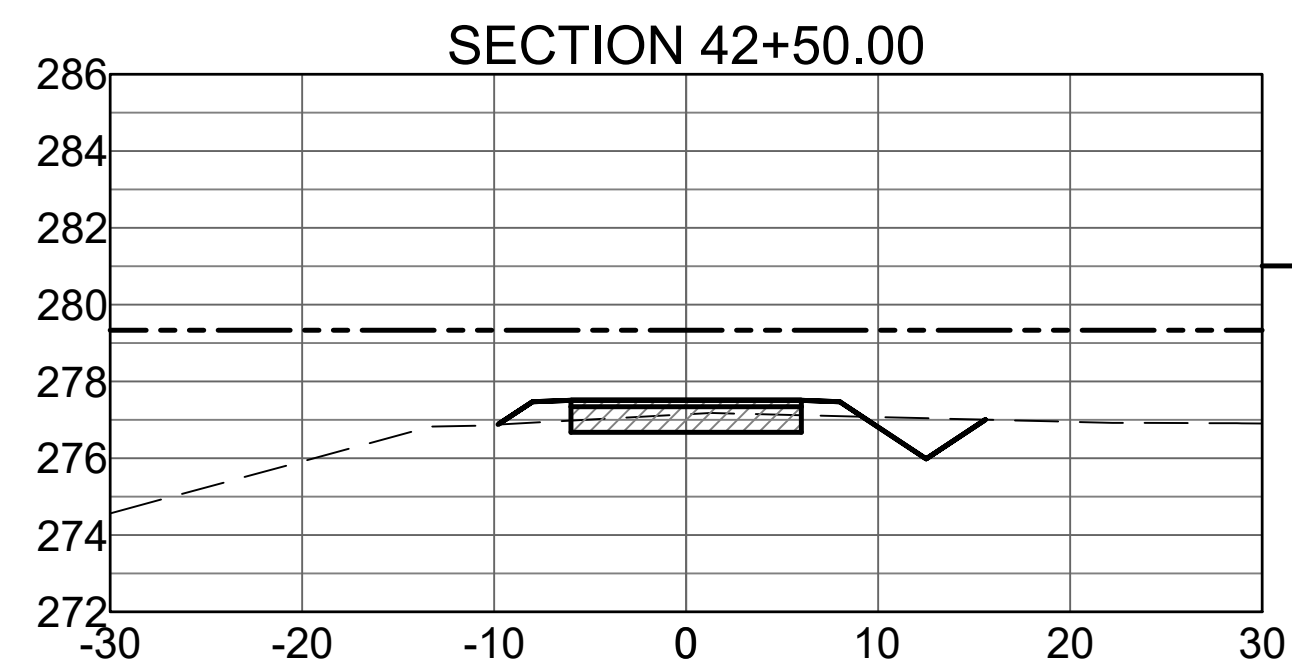


--- 100 YEAR BASE FLOOD ELEVATION  
 - - - EXISTING GRADE  
 ——— PROPOSED GRADE

NOT FOR CONSTRUCTION

Revision No.	Date	Description



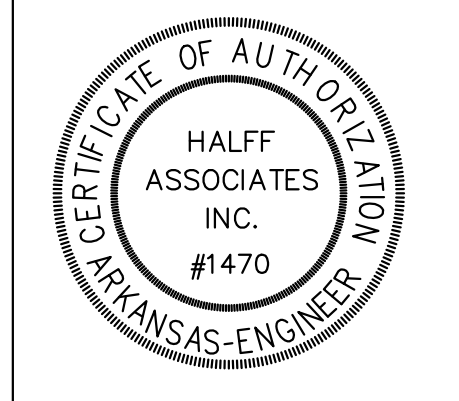


--- 100 YEAR BASE FLOOD ELEVATION  
 - - - EXISTING GRADE  
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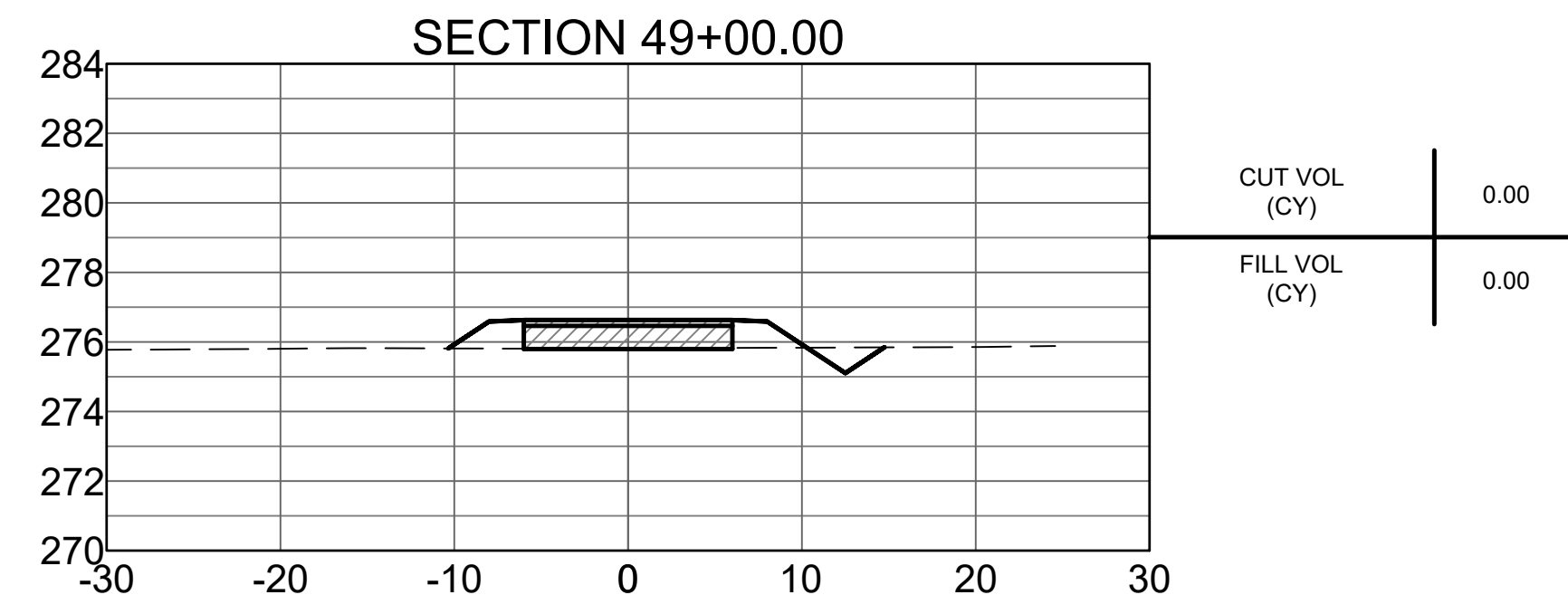
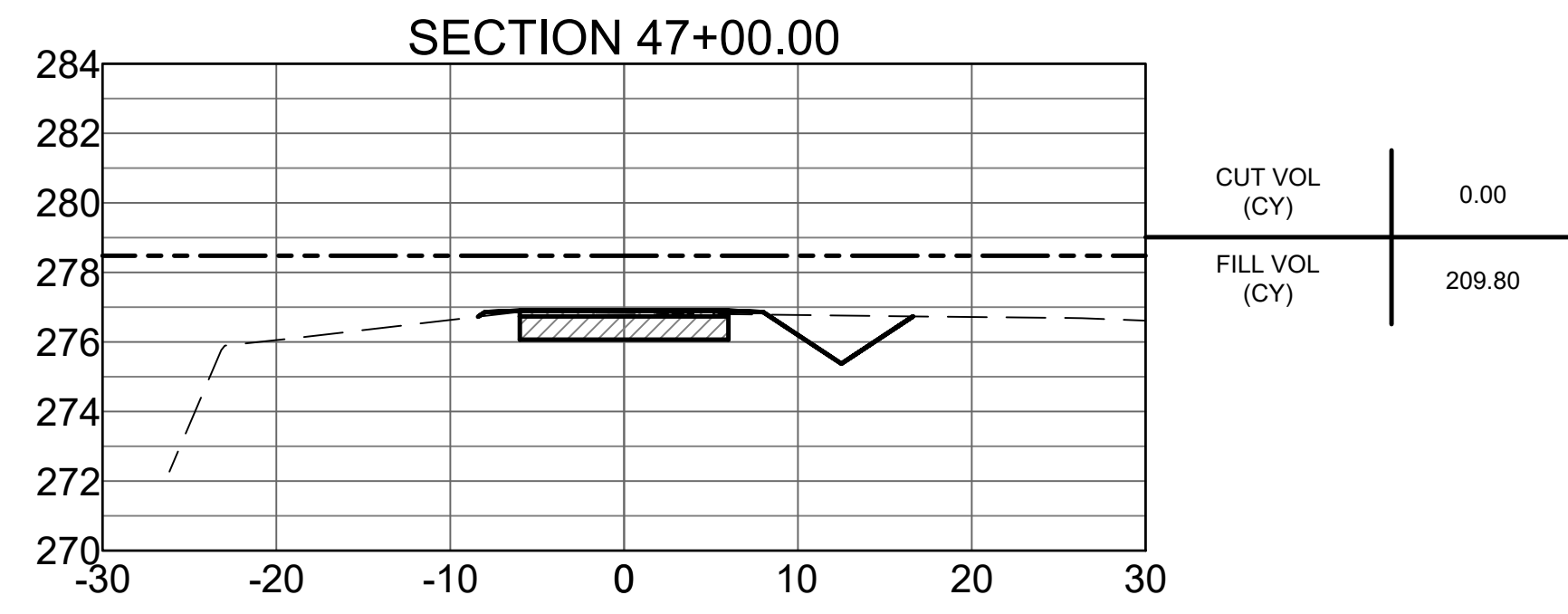
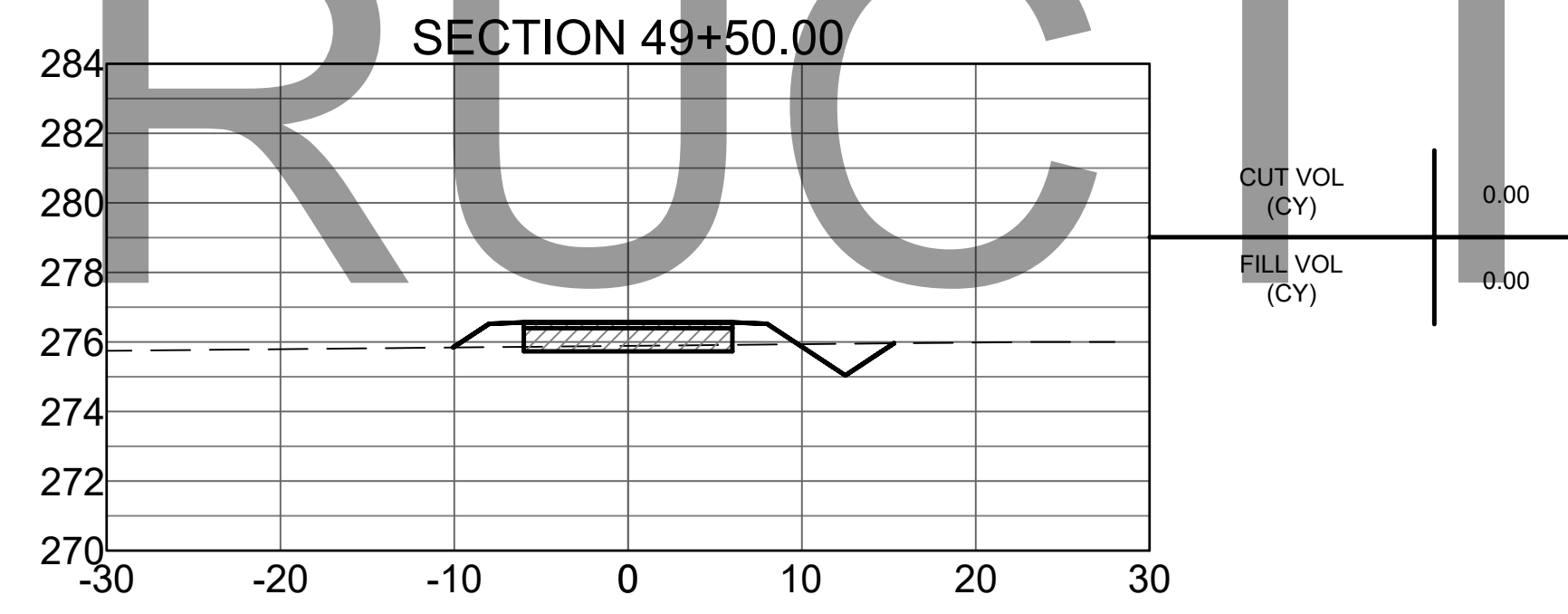
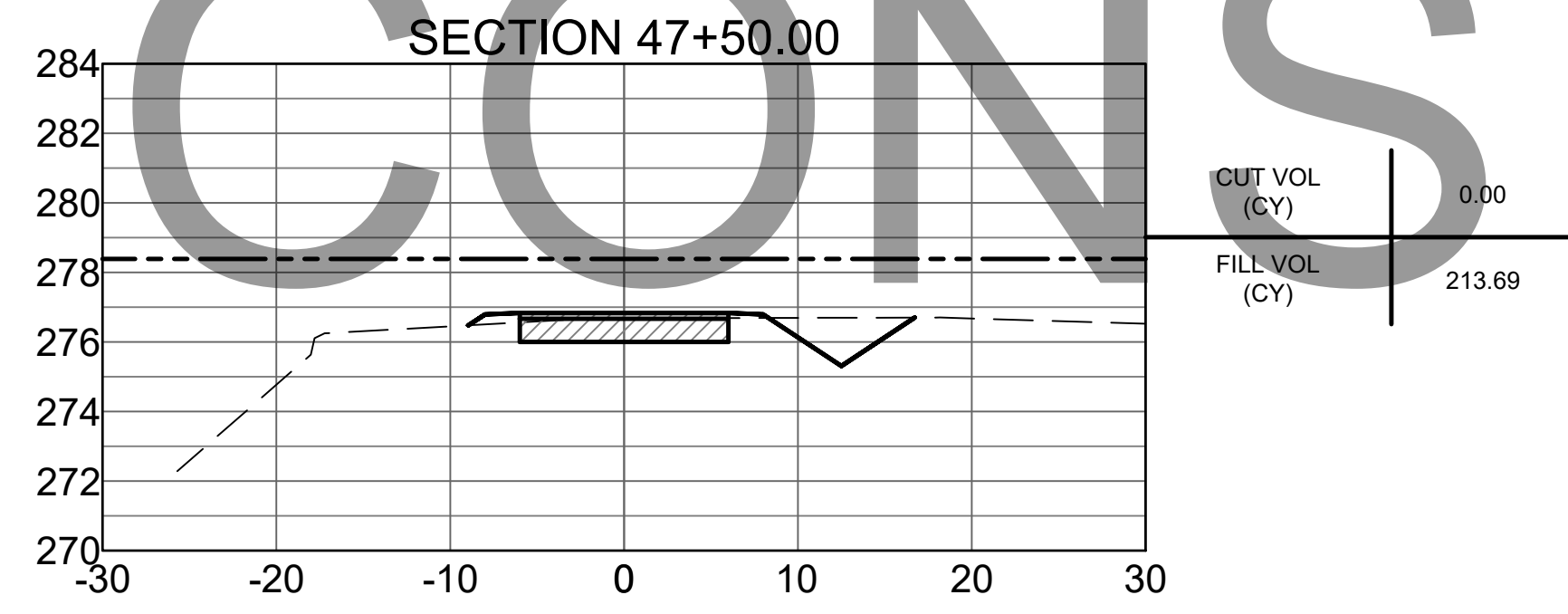
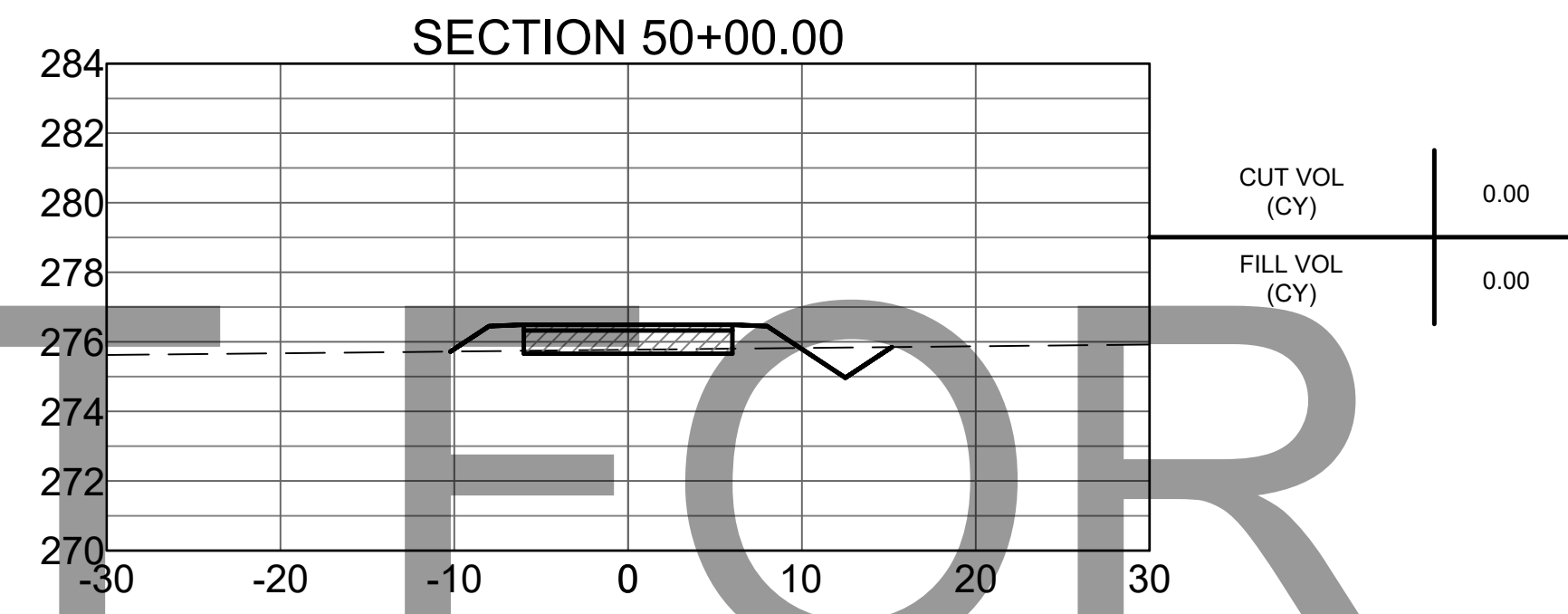
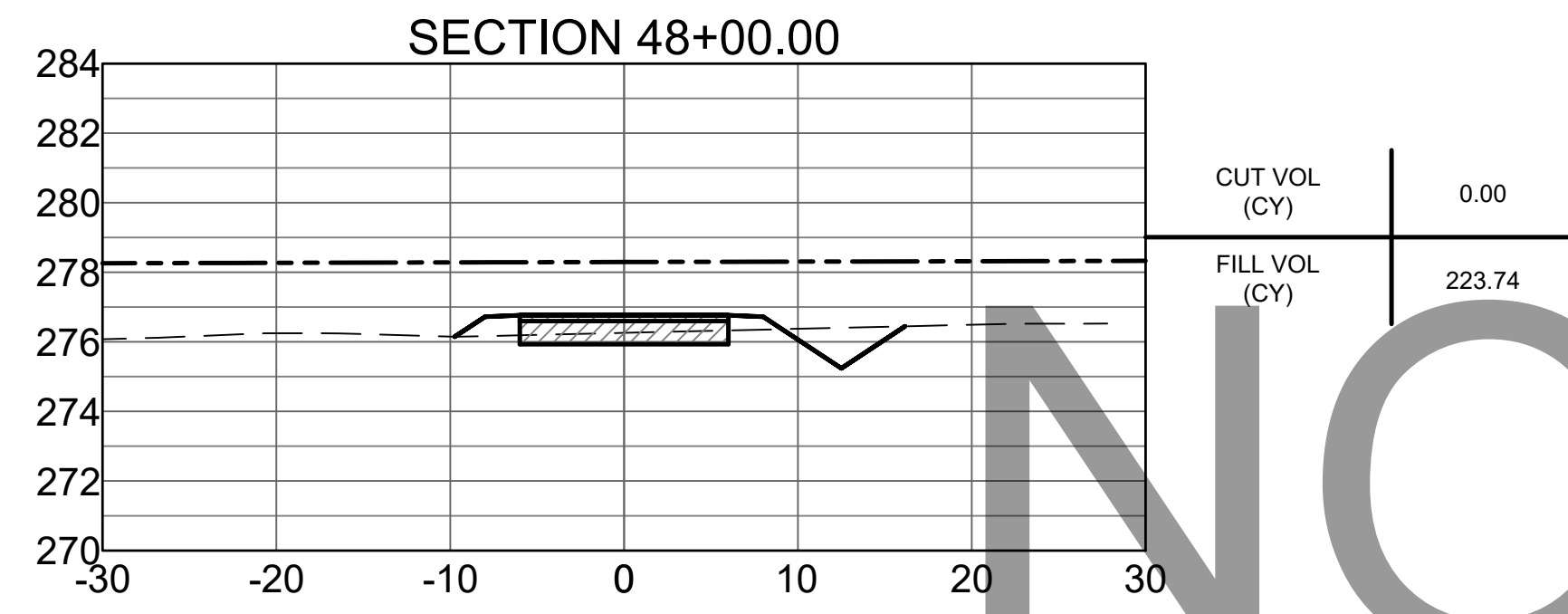
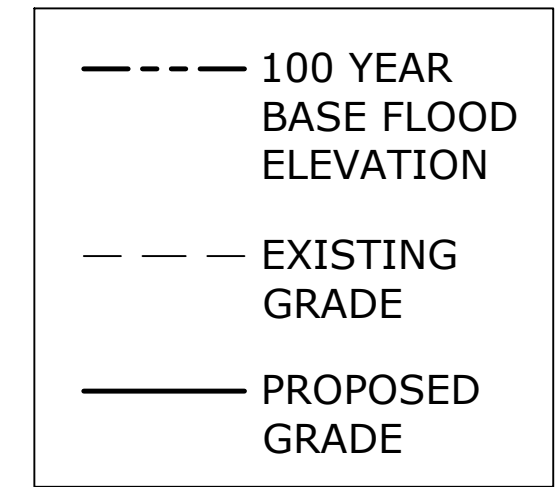
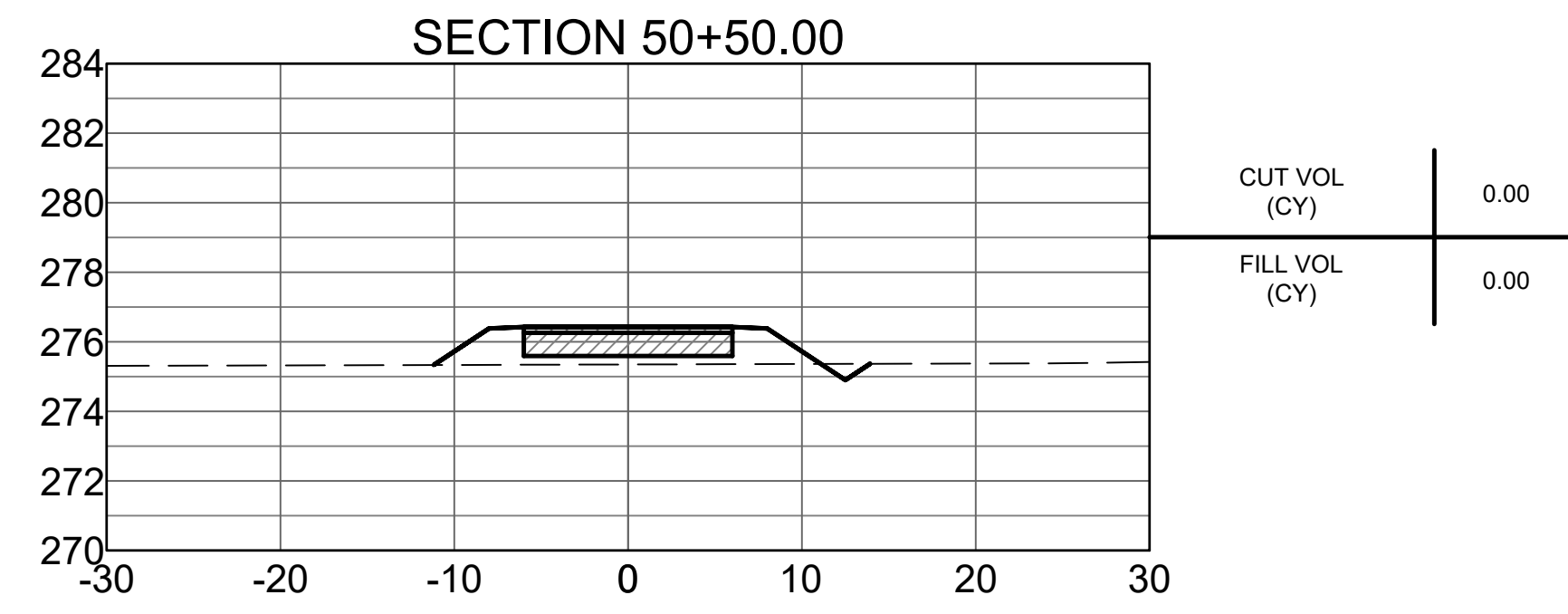
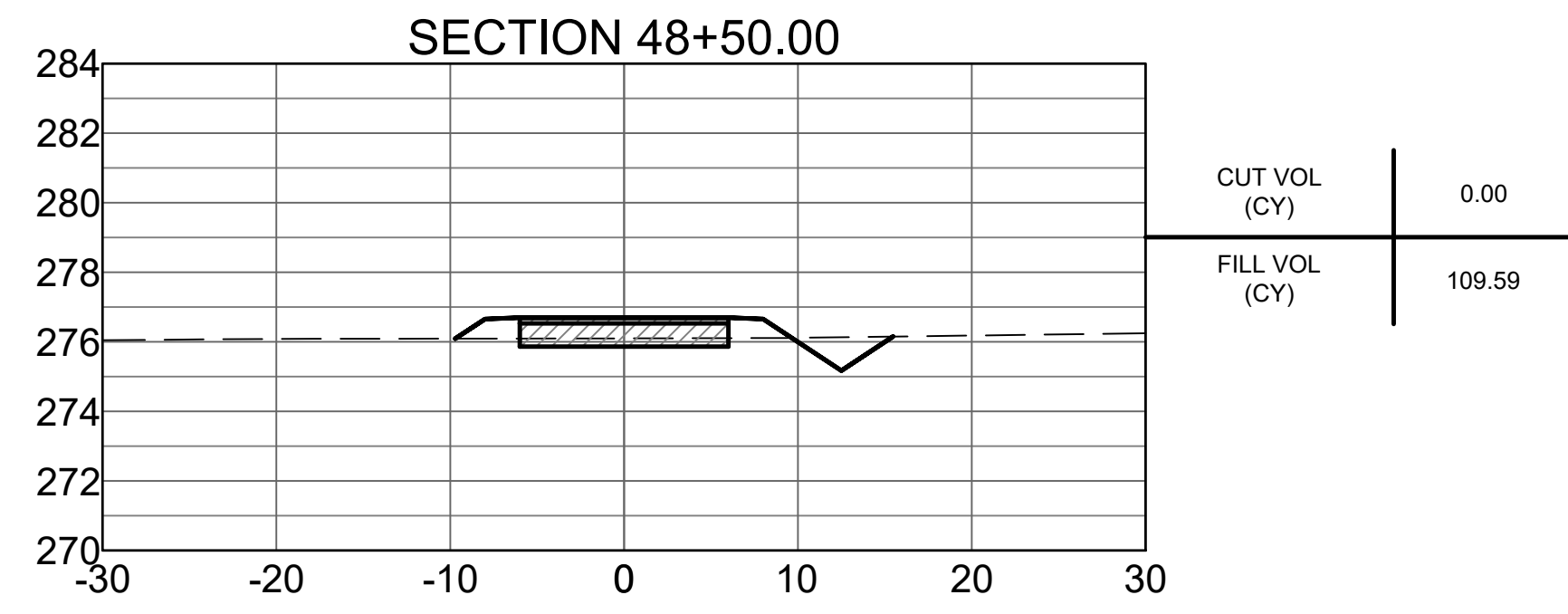
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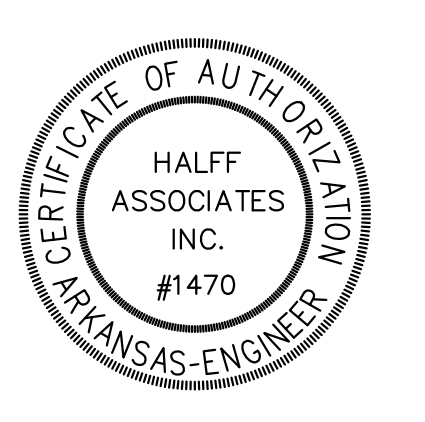


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Sheet Number	C3.7



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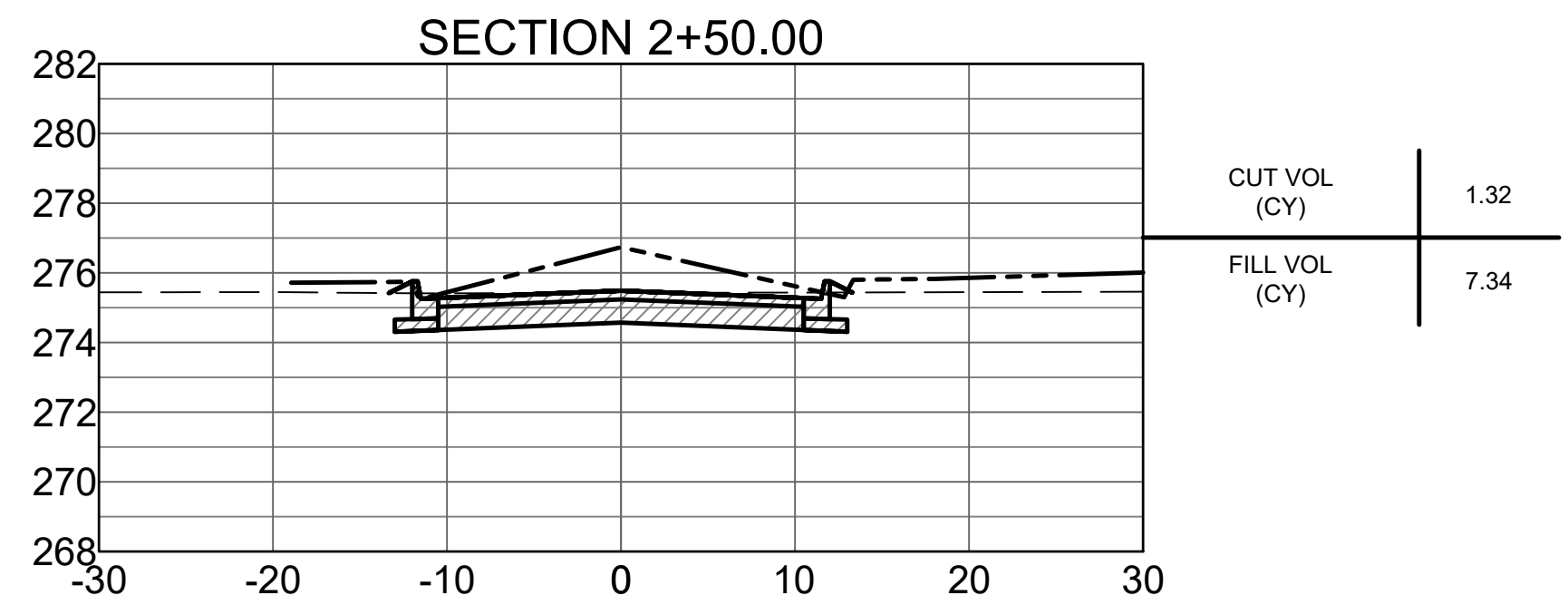
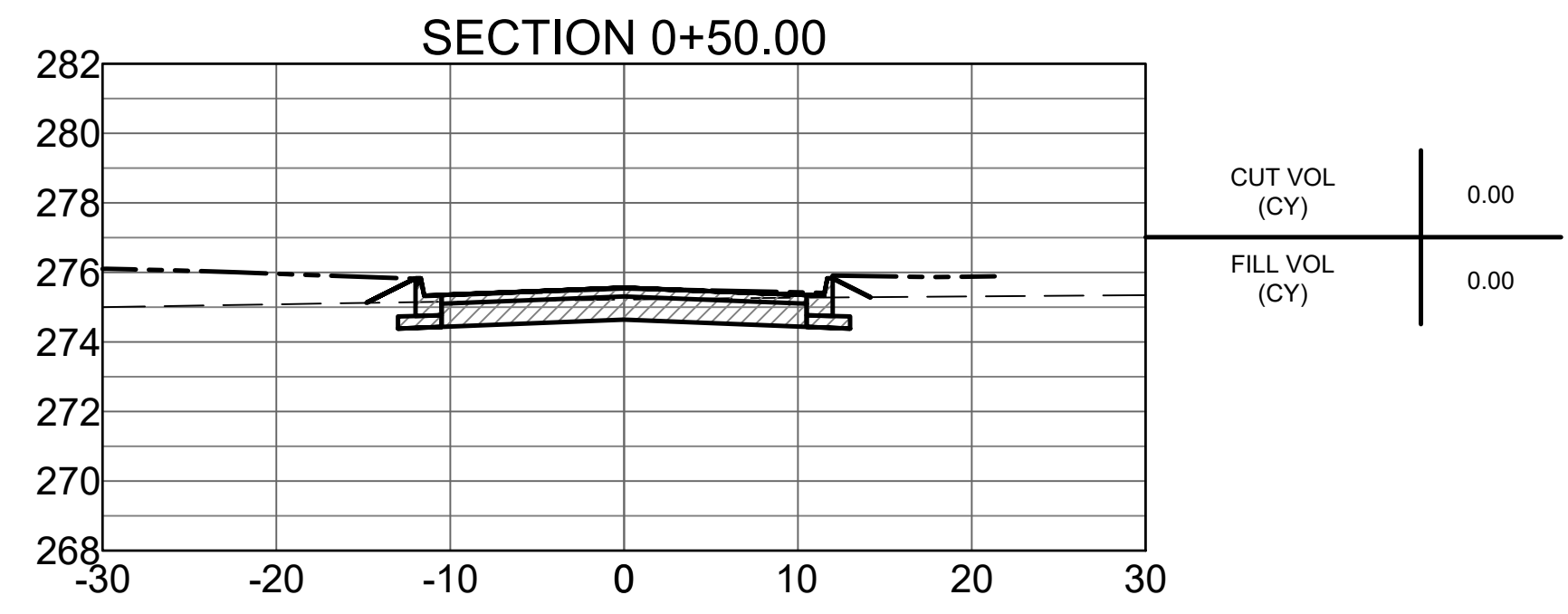
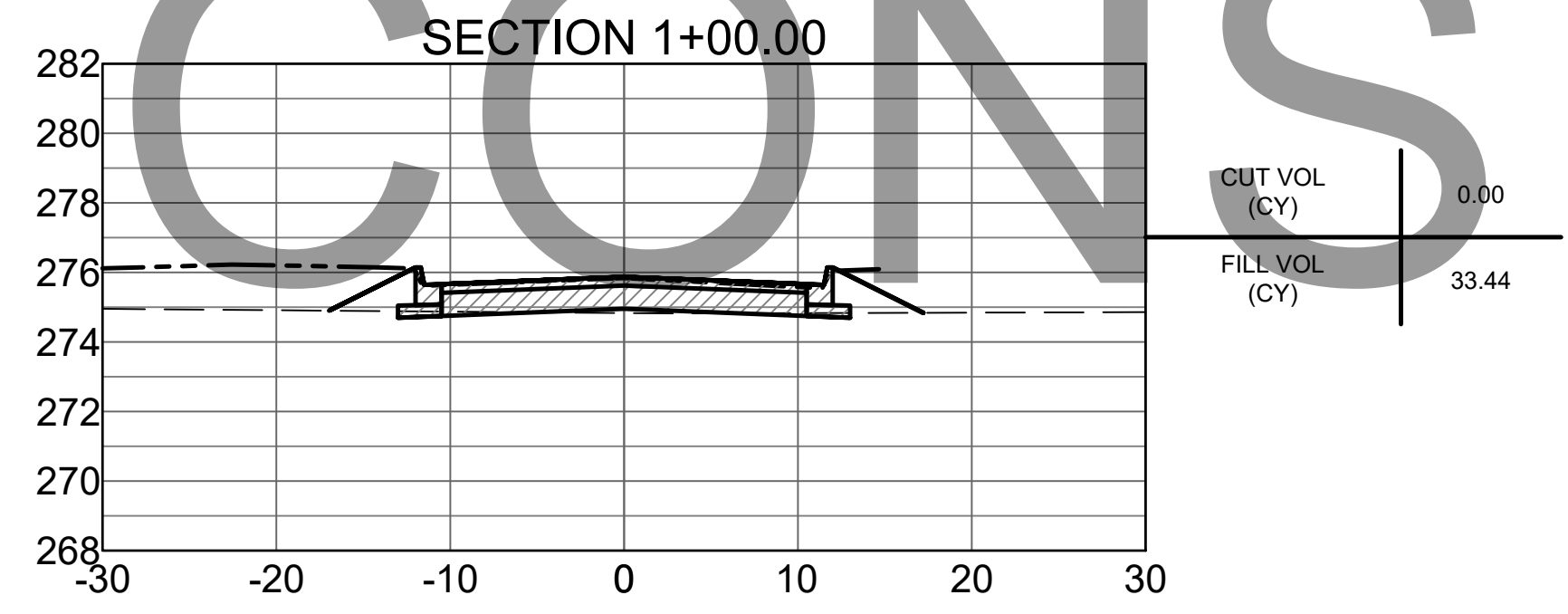
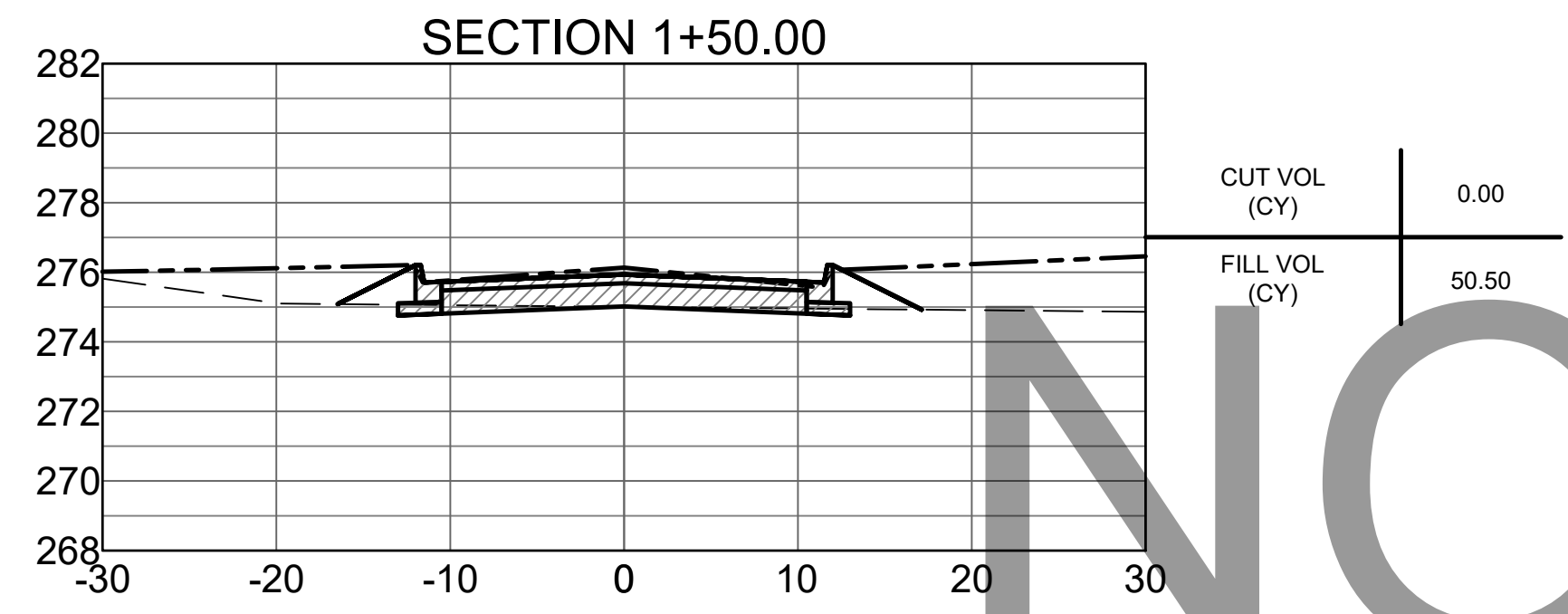
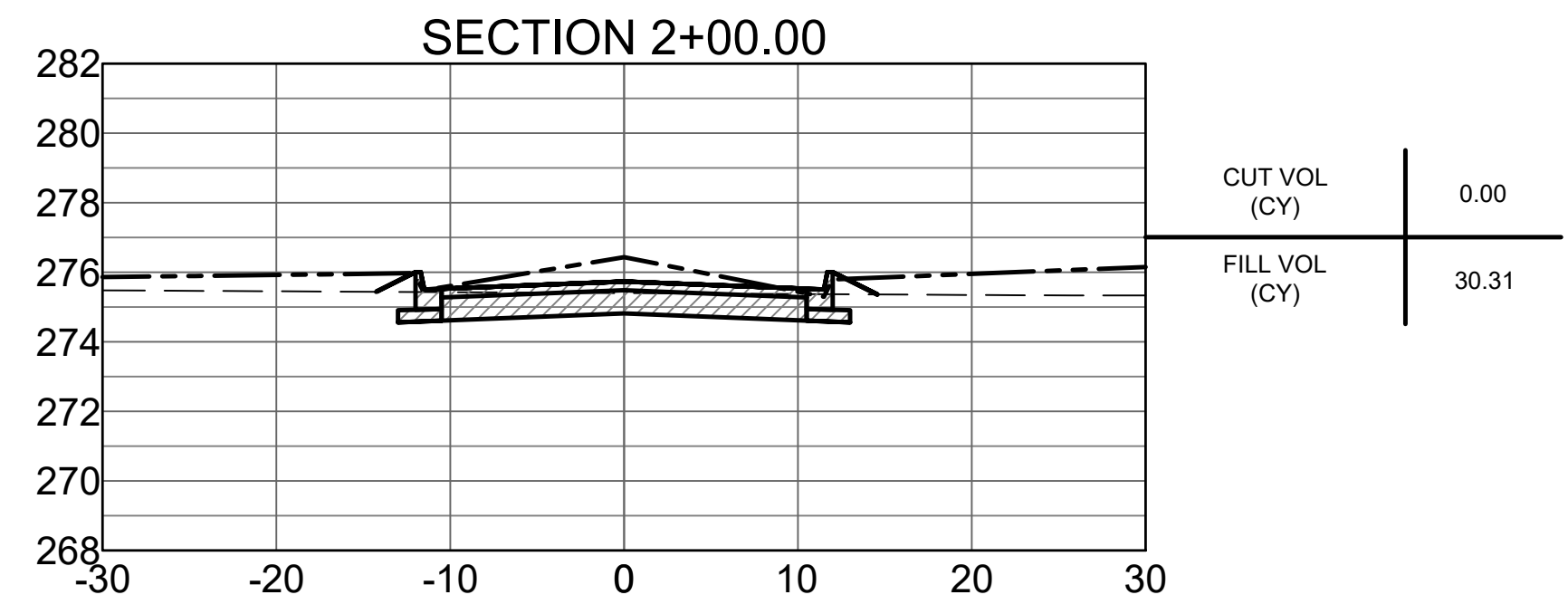


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Sheet Number  
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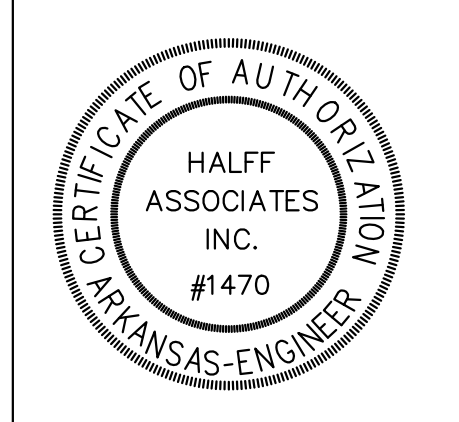
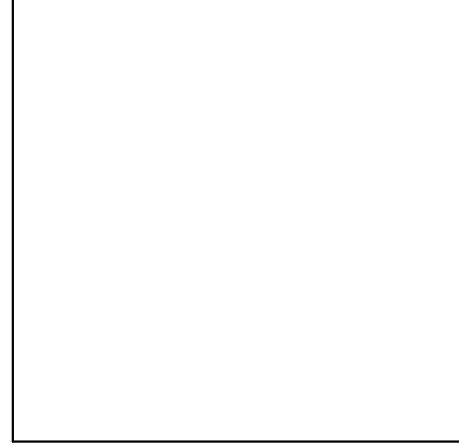
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- 100 YEAR BASE FLOOD ELEVATION
- - - - - EXISTING GRADE
- PROPOSED GRADE

NOT FOR CONSTRUCTION

Revision No.	Date	Description



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Sheet Number  
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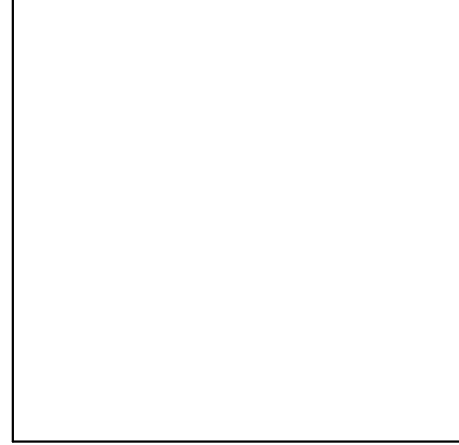
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**STONE DAM CREEK TRAIL**  
Conway, Arkansas

**STREET & ENGINEERING**

**HALFF**  
1080 Pinevalle Centre Parkway, Suite 500  
MANN, (501) 801-2890

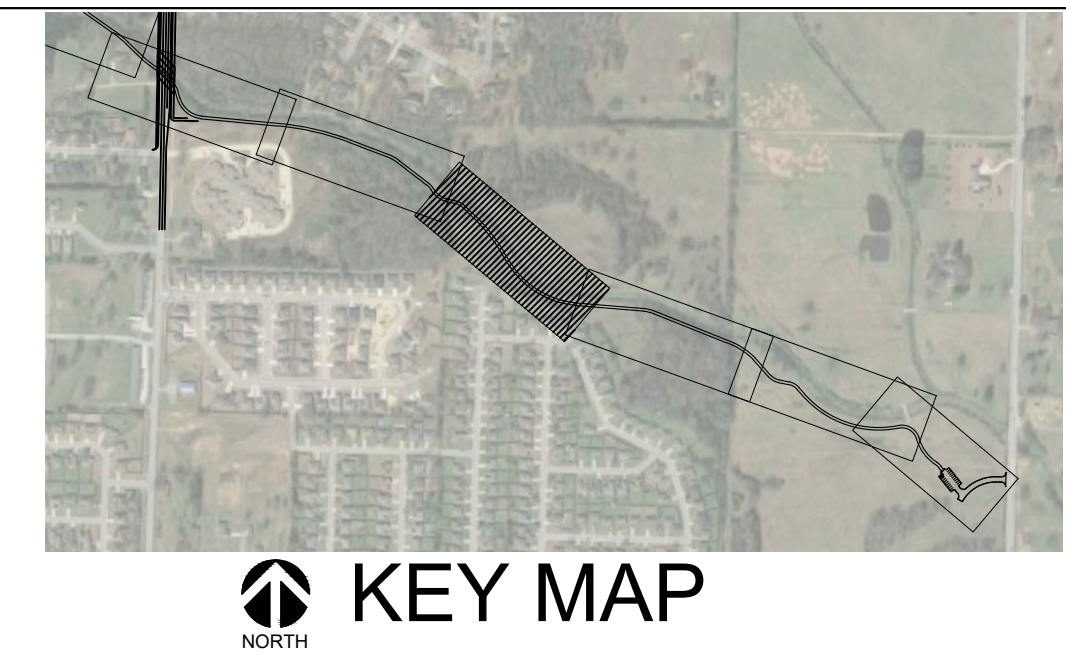
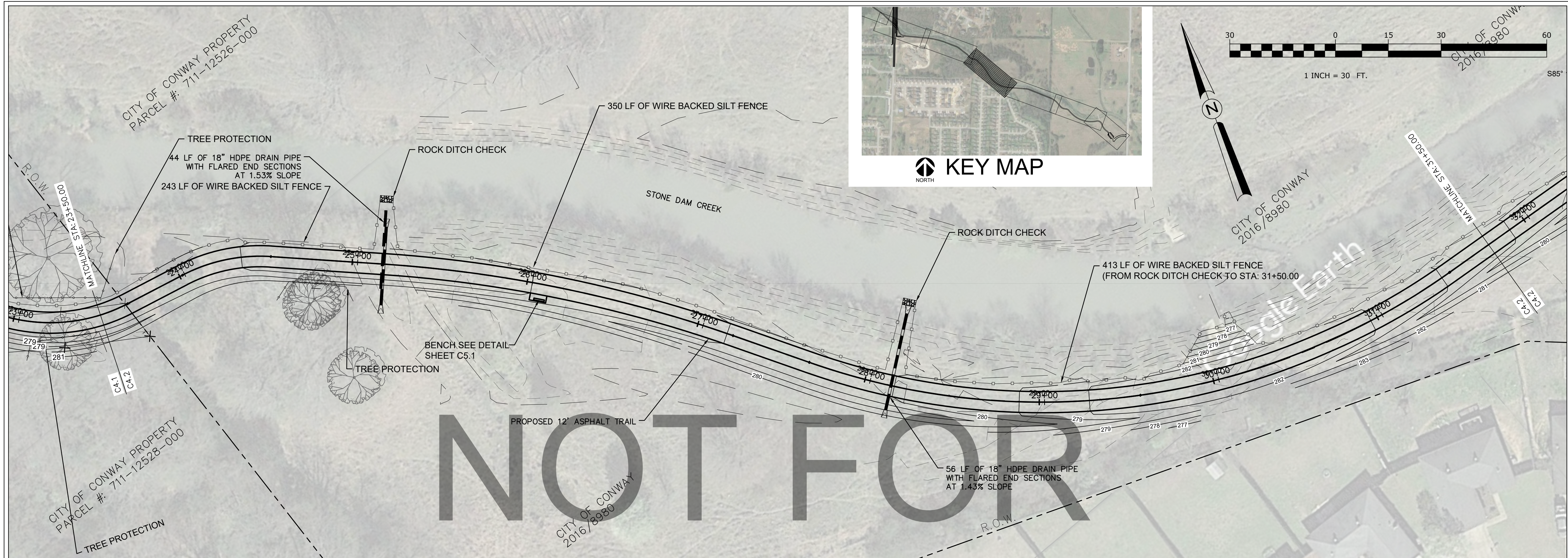
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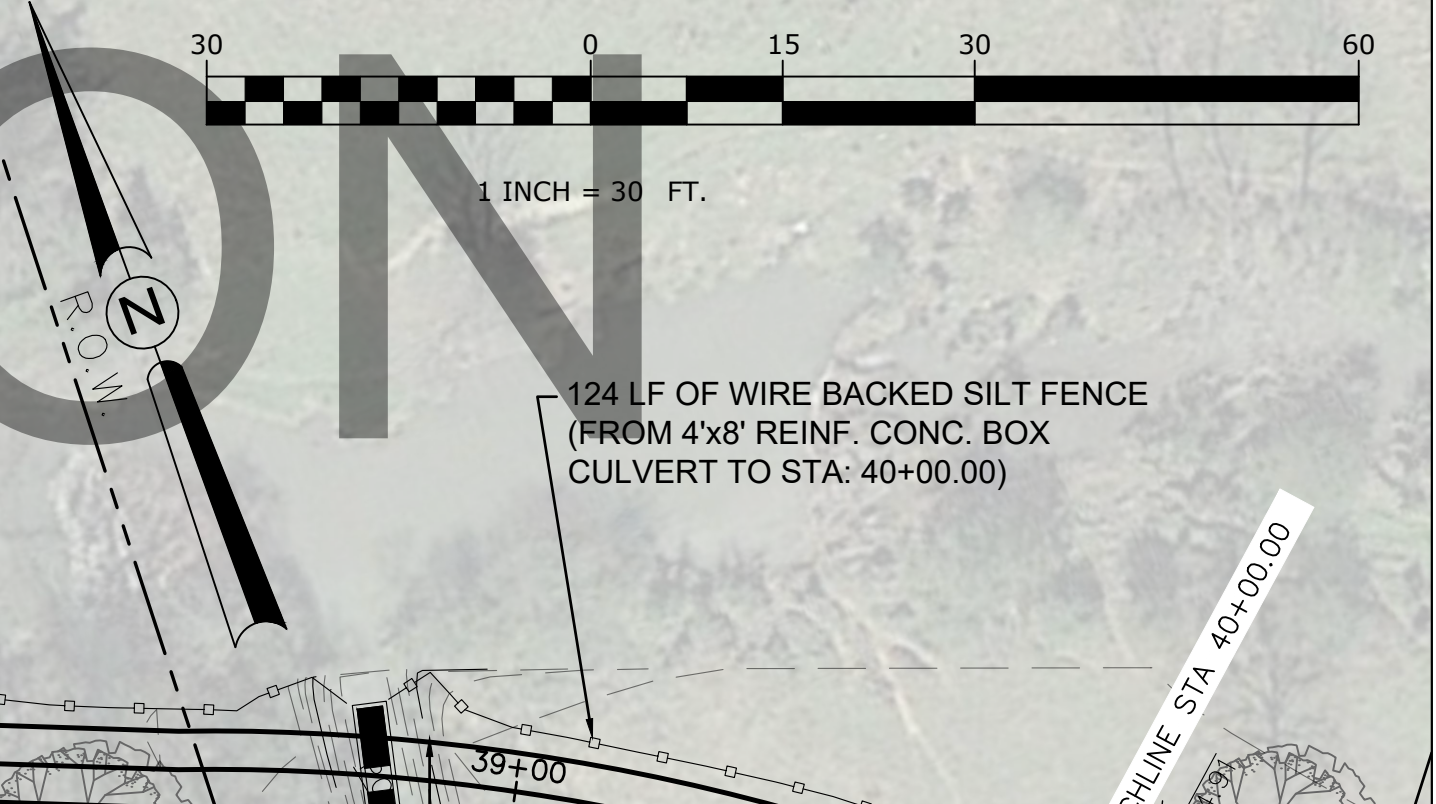
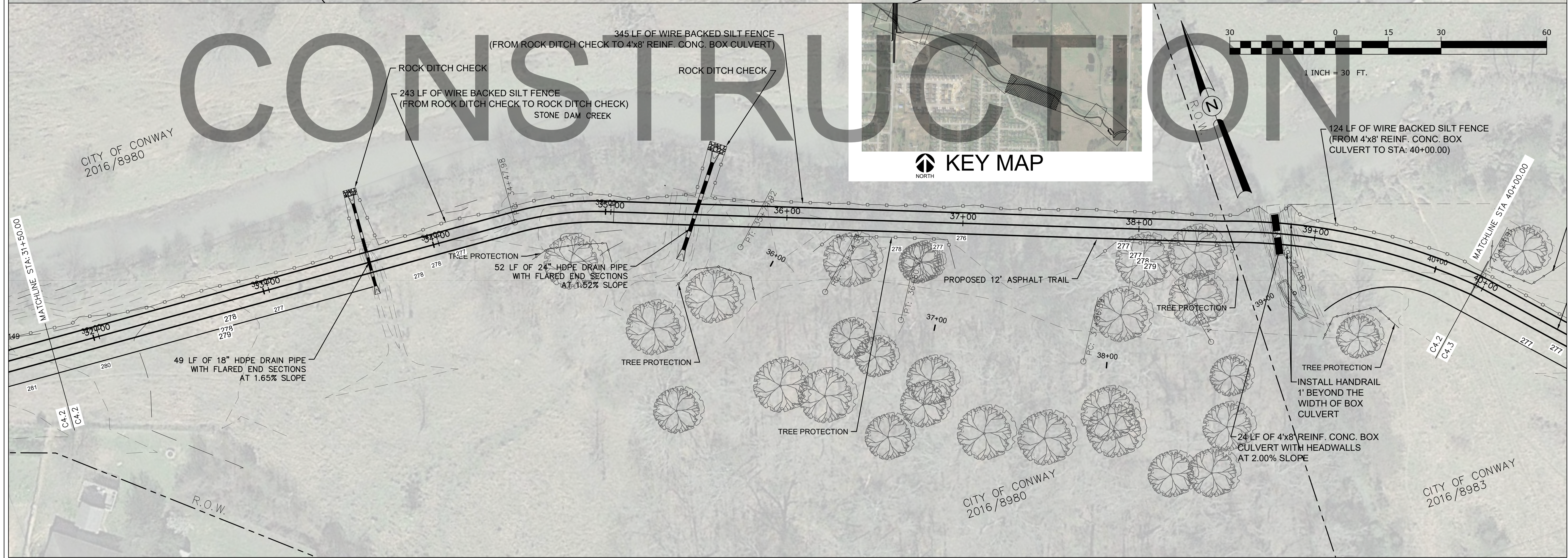
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Sheet Number	C4.0







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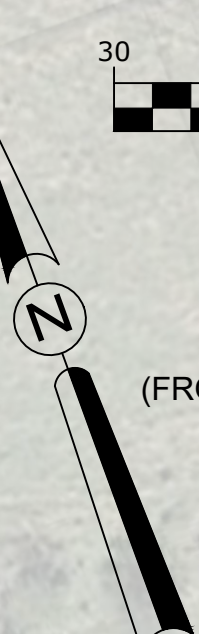
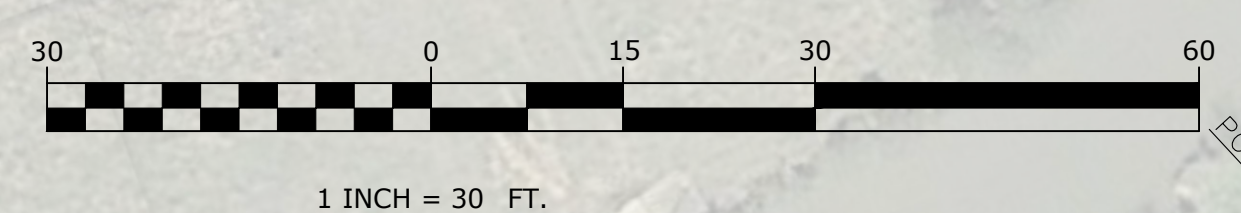
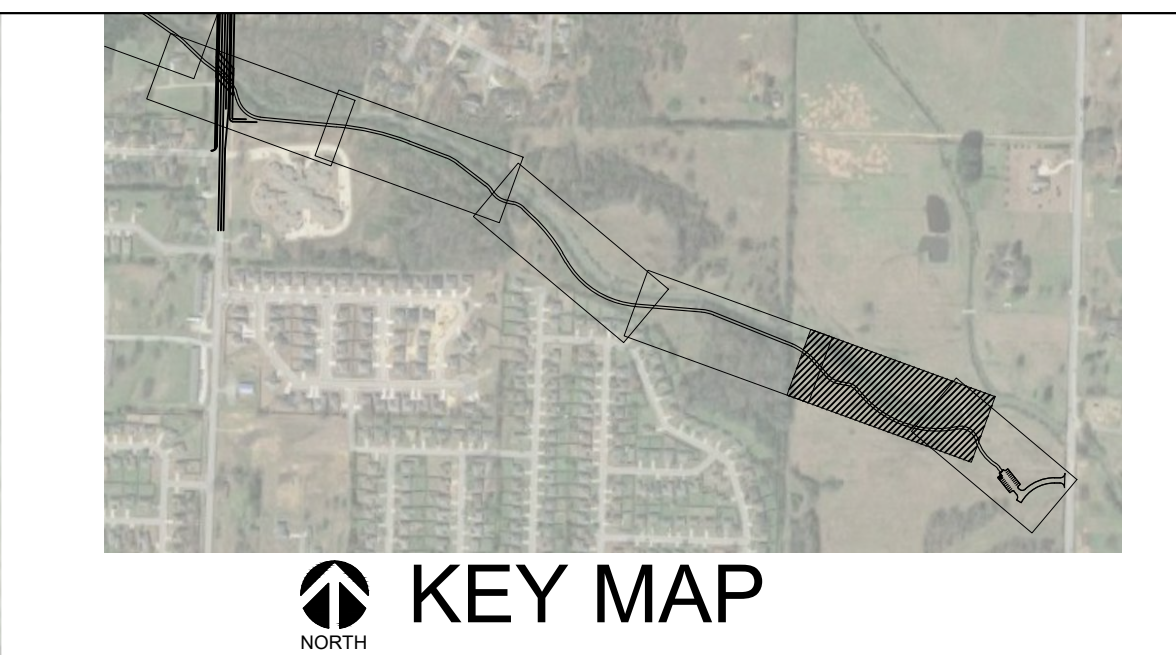
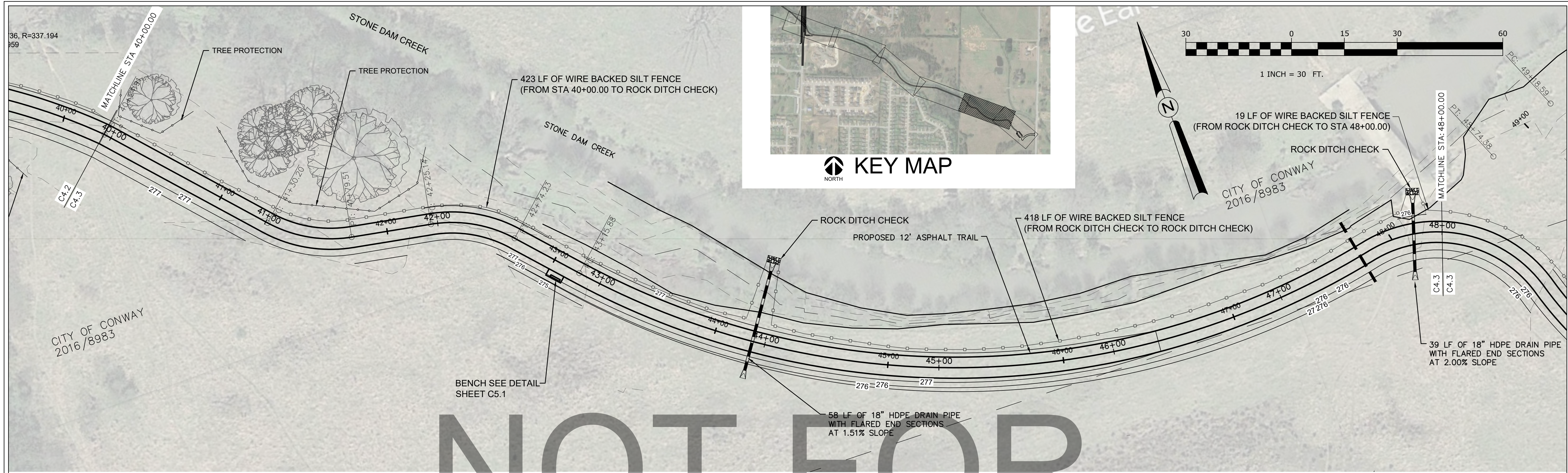
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**STONE DAM CREEK TRAIL**  
Conway, Arkansas

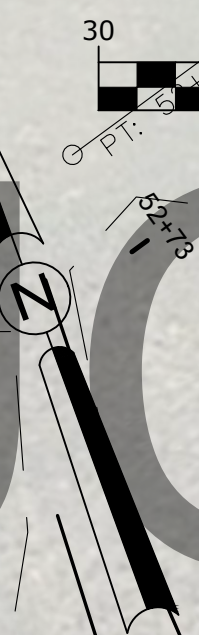
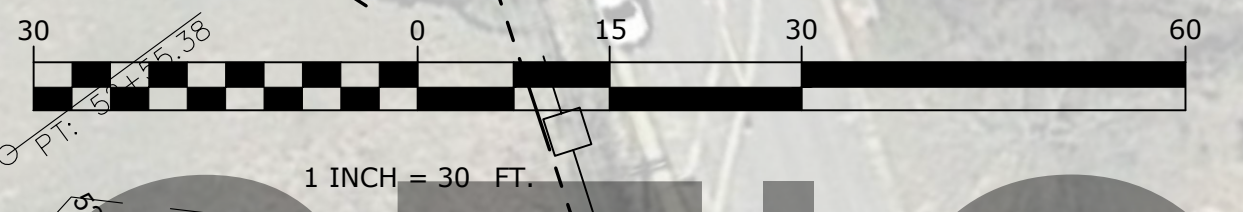
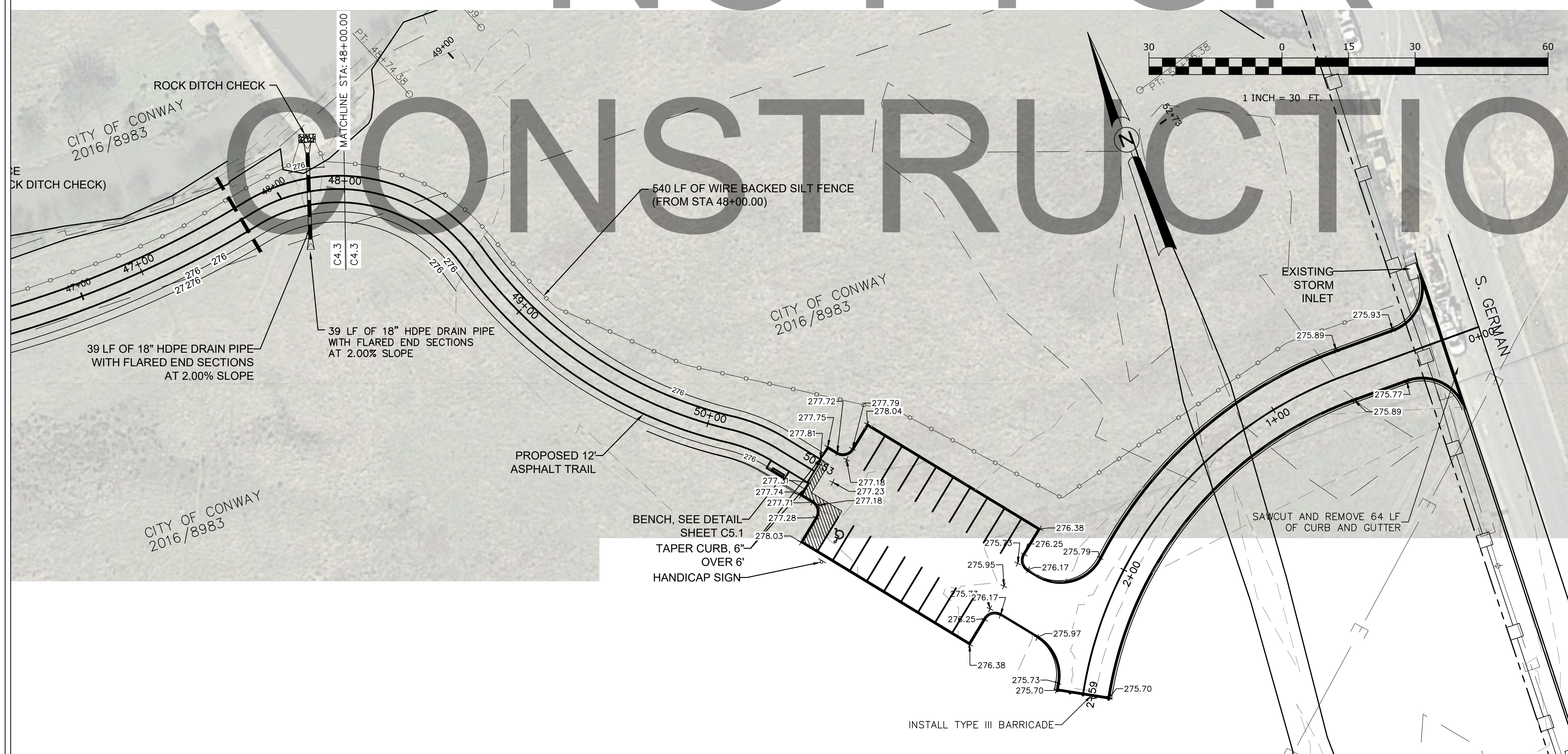
1085 Finneydale Centre Parkway, Suite 500  
MANNING, ARKANSAS 72076  
PHONE: (501) 801-2890

Revision No.	Date	Description

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Drawn By: BD / LCJ / JKJ	Checked By: BLV / SBH
Sheet Title	
<b>EROSION CONTROL</b>	
Sheet Number	
<b>C4.2</b>	



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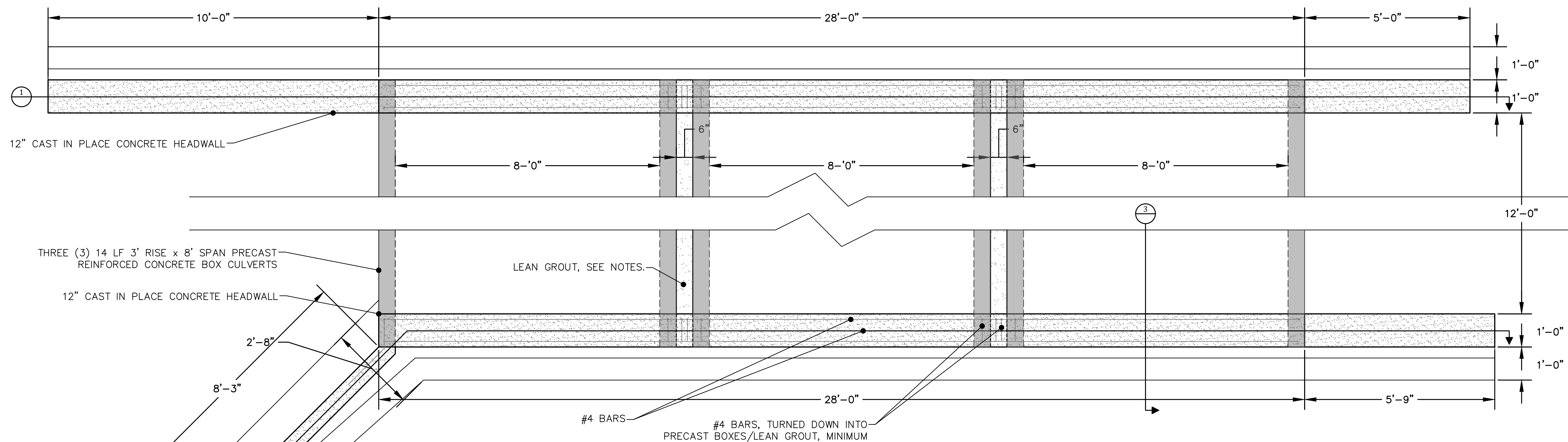


**STONE DAM CREEK TRAIL**  
Conway, Arkansas

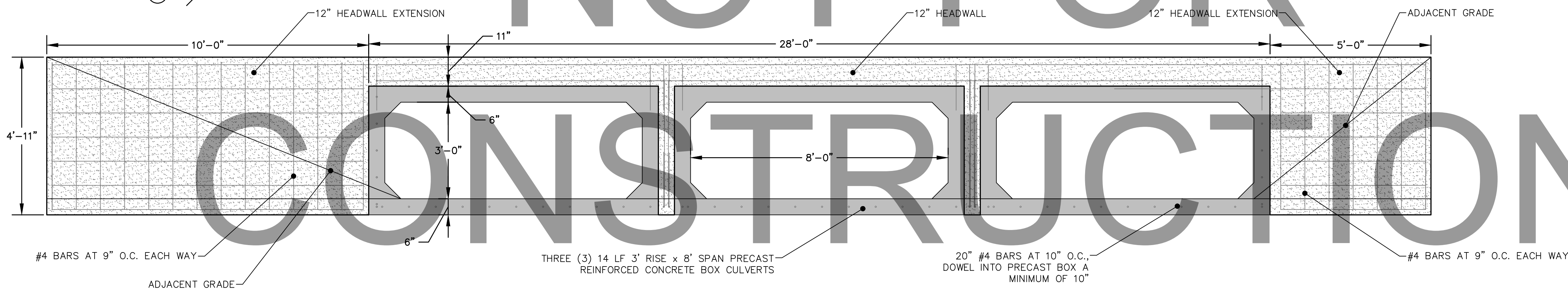
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MANNING, ARKANSAS 72053  
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Revision No.	Date	Description

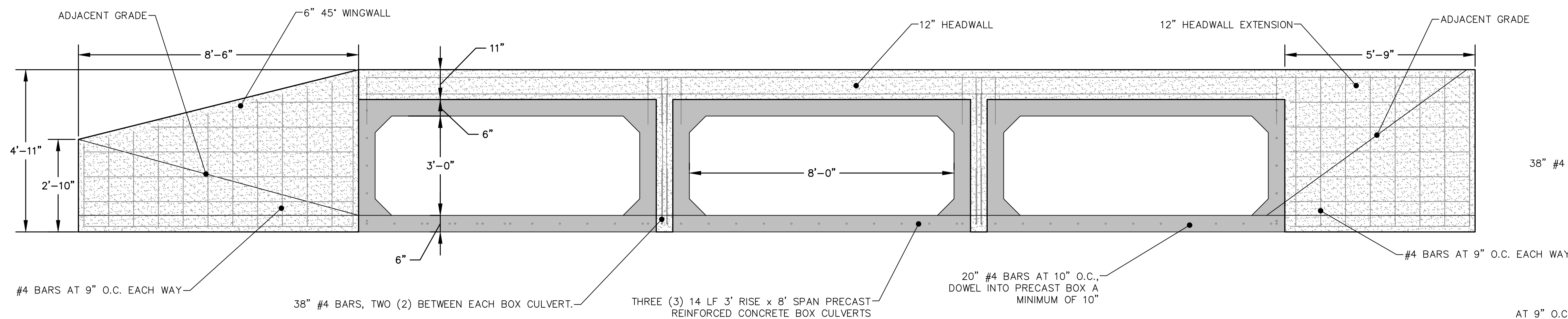
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 Issued: APRIL 2021  
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**EROSION CONTROL**  
 Sheet Number  
**C4.3**



CULVERT CROSSING - PLAN VIEW



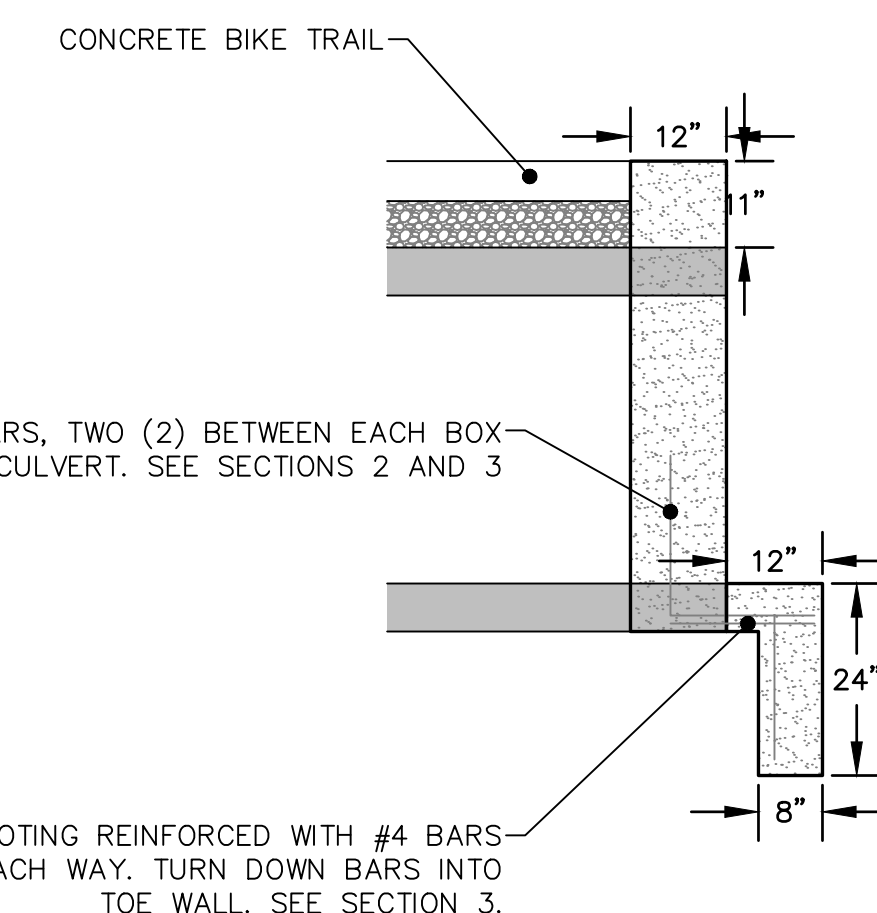
1 SECTION  
1" = 2'



2 SECTION  
1" = 2'

PRECAST CONCRETE BOX CULVERT NOTES

1. WINGS, CURTAIN WALLS, AND APRONS SHALL BE TIED TO THE PRECAST CULVERT SECTION BY CASTING BARS IN CULVERT END SECTIONS AS SHOWN OR BY DOWELING AND GROUTING. J BARS AND M BARS SHALL BE EMBEDDED A MINIMUM OF 10" IN PRECAST BOX.
2. ALL EXPOSED CORNERS TO HAVE 3/8" CHAMFERS
3. LEAN GROUT SHALL CONSIST OF A SAND CEMENT MIXTURE MEETING THE FOLLOWING REQUIREMENTS: PORTLAND CEMENT SHALL BE TYPE I AND SHALL MEET THE REQUIREMENTS OF AASHTO M 85, SAND SHALL MEET THE REQUIREMENTS OF FINE AGGREGATE AS SPECIFIED IN ARDOT STANDARD SPECIFICATION 802.02, THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE, THE MIXTURE SHALL CONTAIN SUFFICIENT WATER TO HYDRATE THE CEMENT. THE SAND CEMENT MIXTURE SHALL BE PLACED IN MAXIMUM 8" THICK LIFTS, LOOSE MEASURE, AND THOROUGHLY RODDED AND TAMPED AROUND BOX TO THOROUGHLY FILL ALL VOIDS.
4. MEMBRANE WATERPROOFING CONFORMING TO THE REQUIREMENTS OF ARDOT STANDARD SPECIFICATION 815 SHALL BE APPLIED TO ALL BOX CULVERT JOINTS.
5. THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.
6. IN OUTER BARRELS, ONE WEEP HOLE IS REQUIRED IN EXTERIOR WALLS OF EACH PRECAST CULVERT SECTION. WEEP HOLES SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 4'-0" IN THE ASSEMBLED CULVERT AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.
7. DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT.
8. WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST, FLOWABLE SELECT MATERIAL CONFORMING TO SECTION 206 OF ARDOT STANDARD SPECIFICATIONS IN LIEU OF LEAN GROUT.

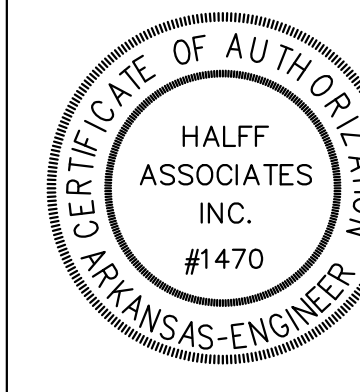


3 SECTION  
1" = 2'

NOT FOR CONSTRUCTION



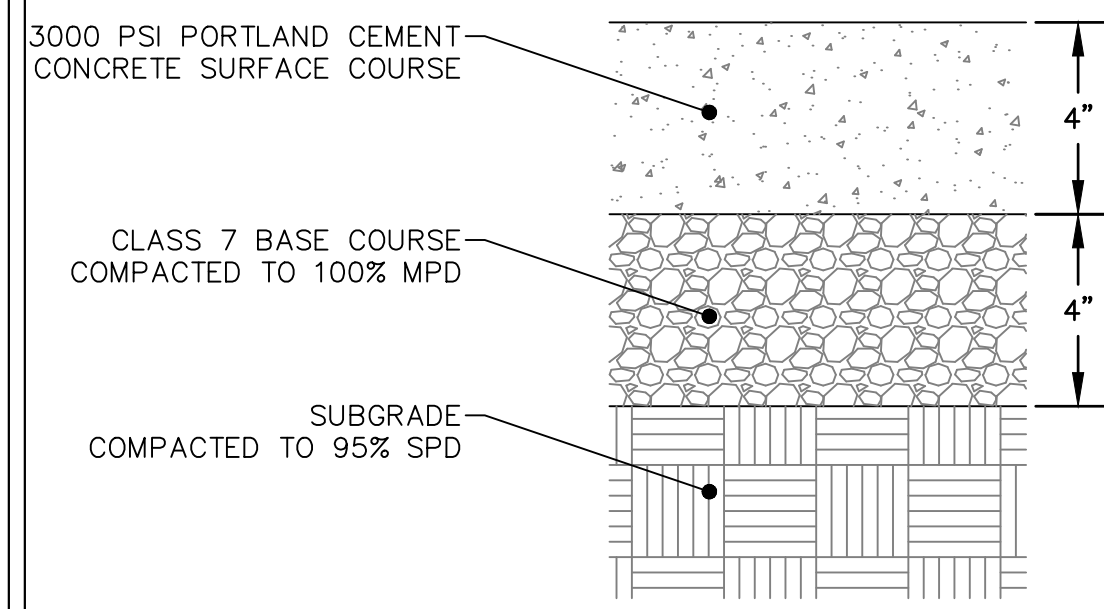
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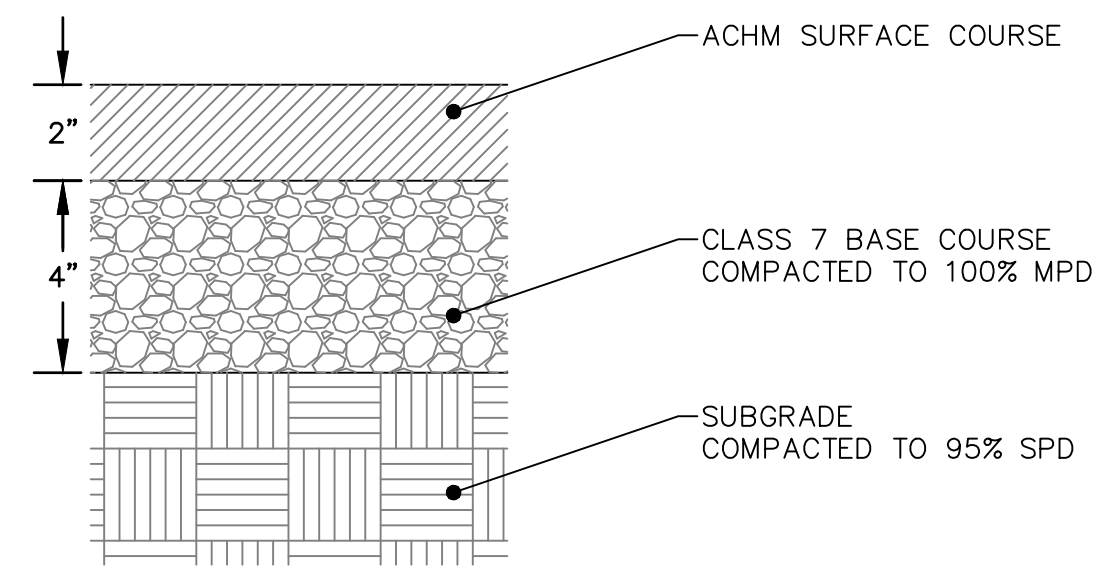
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Issued: APRIL 2021  
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Sheet Title

BOX CULVERT DETAILS

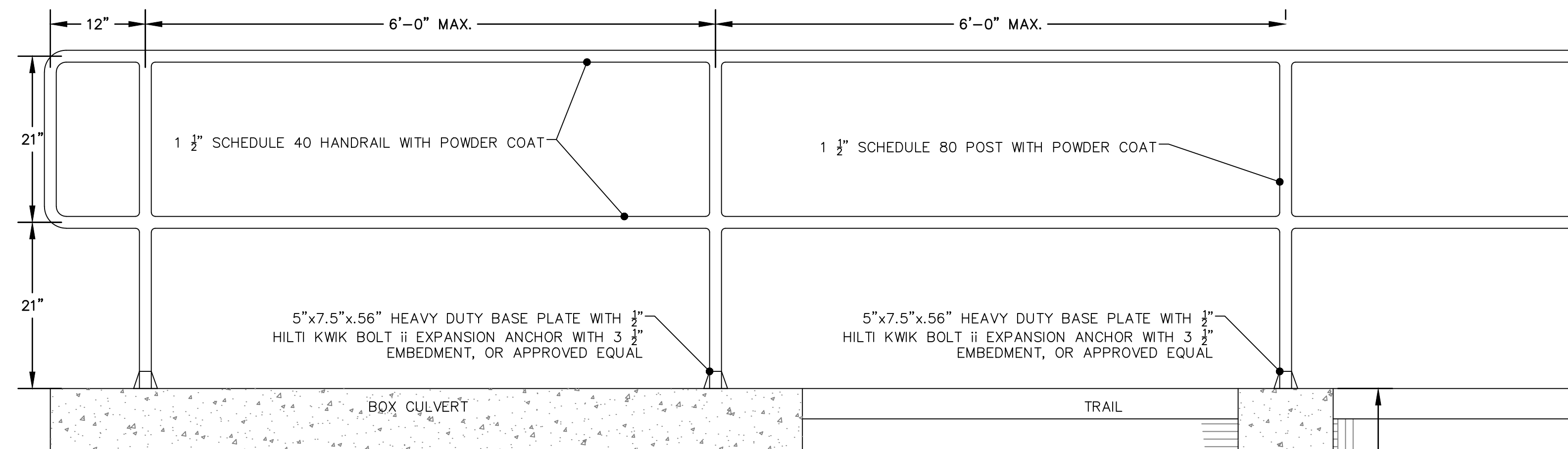
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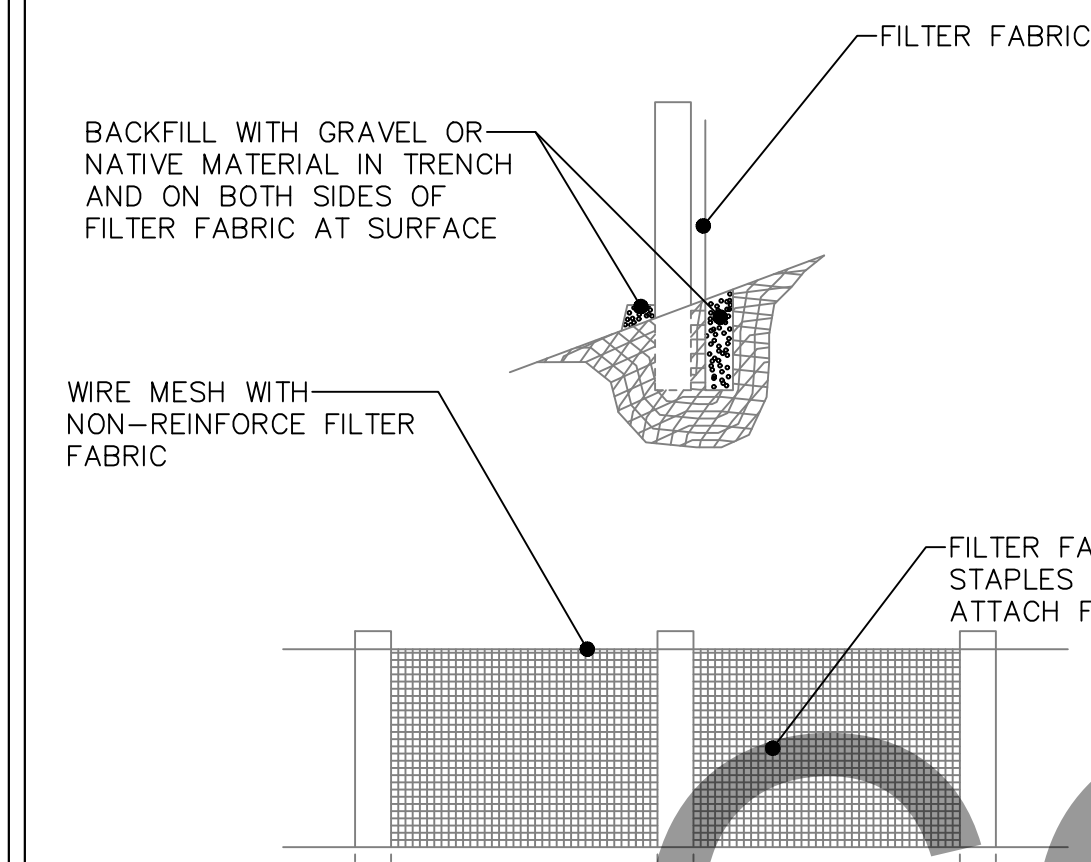
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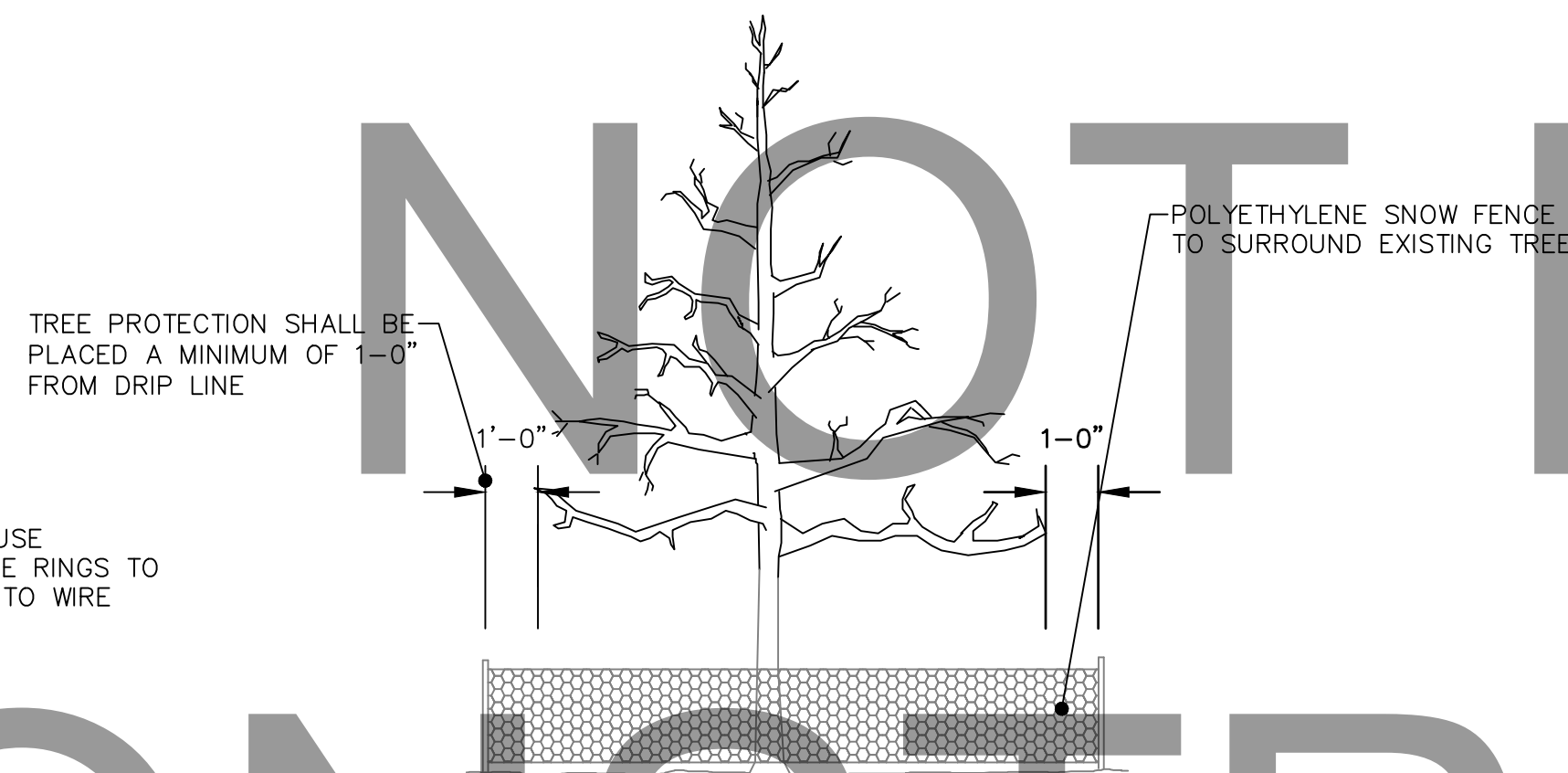
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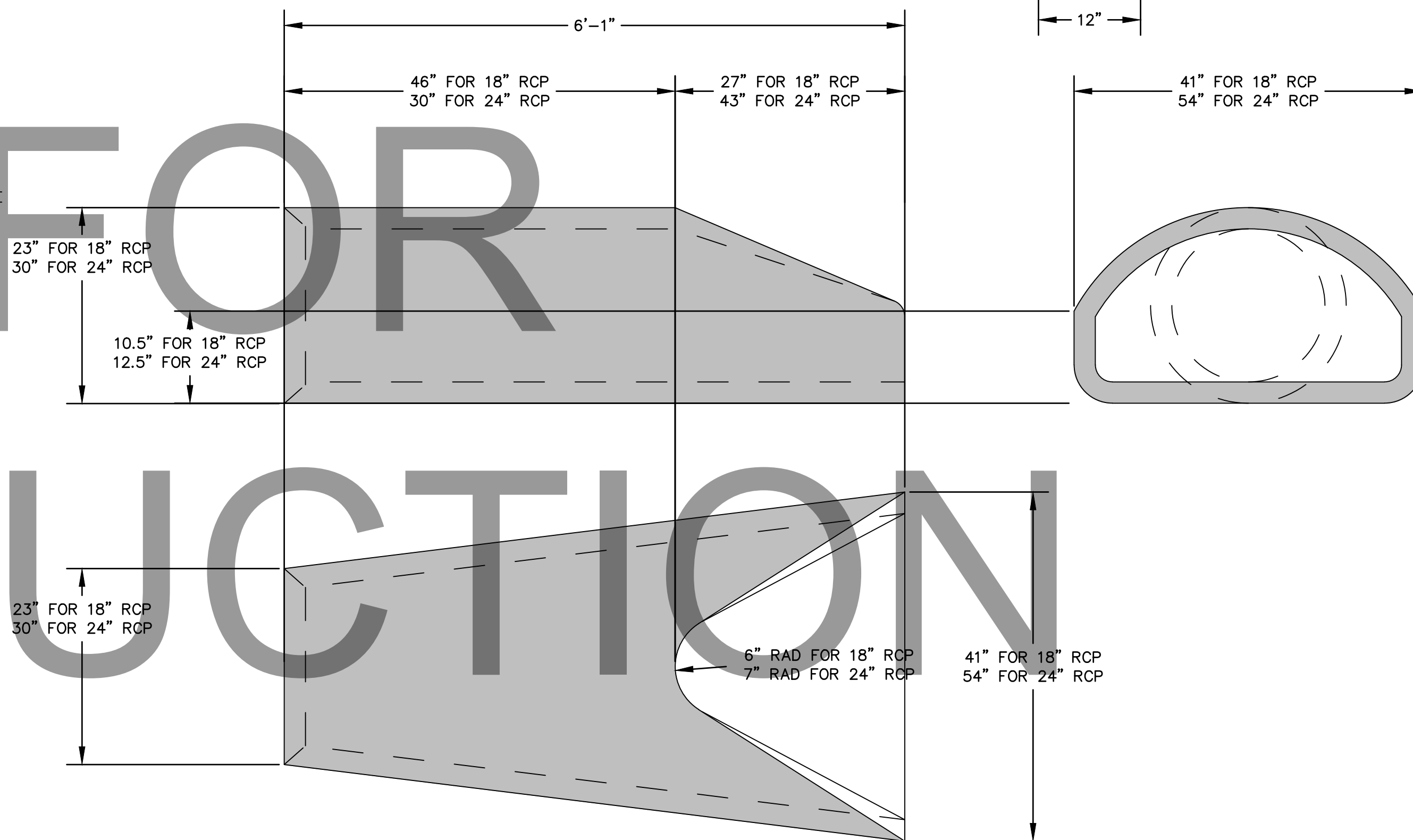
**HANDRAIL - DETAIL**  
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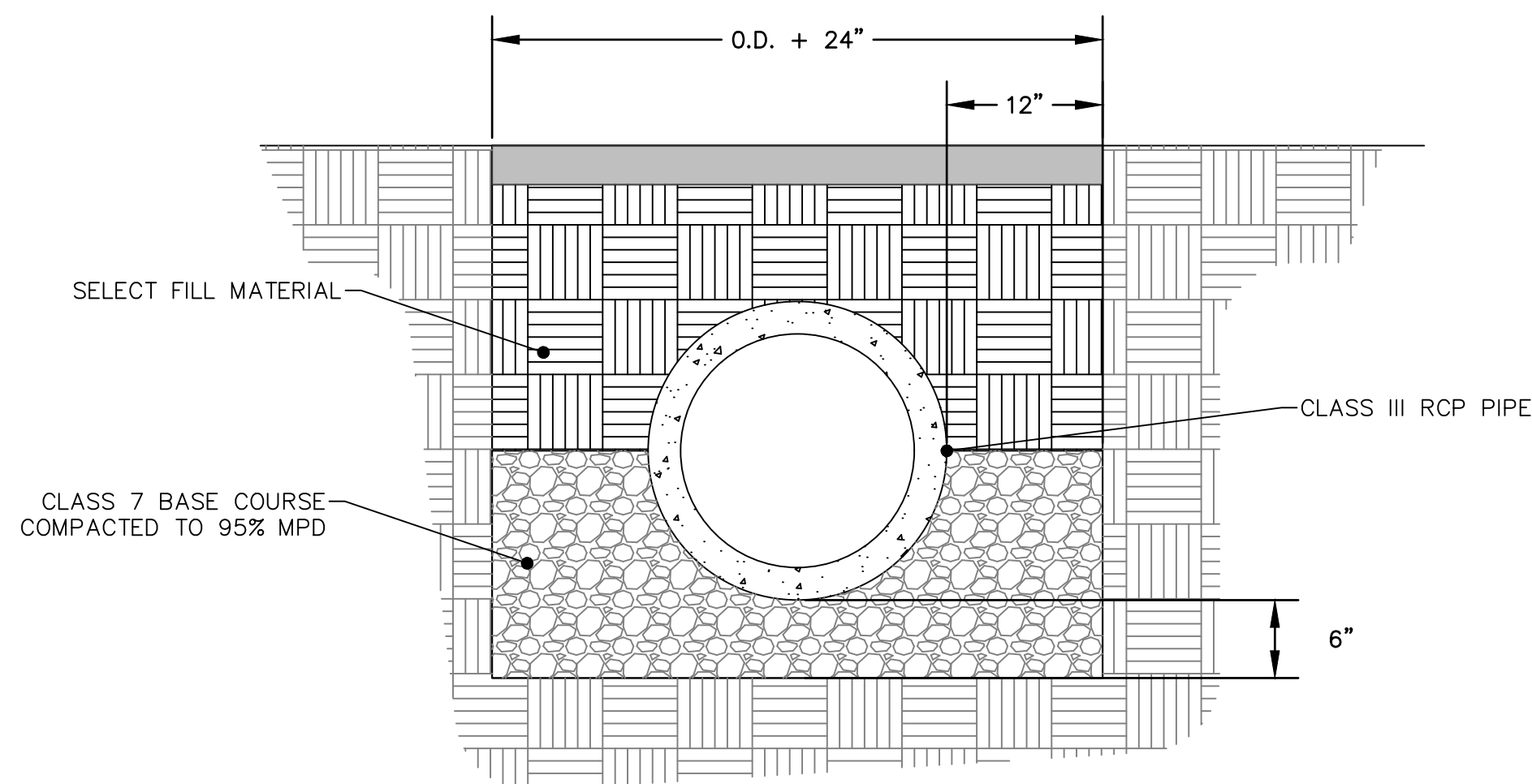
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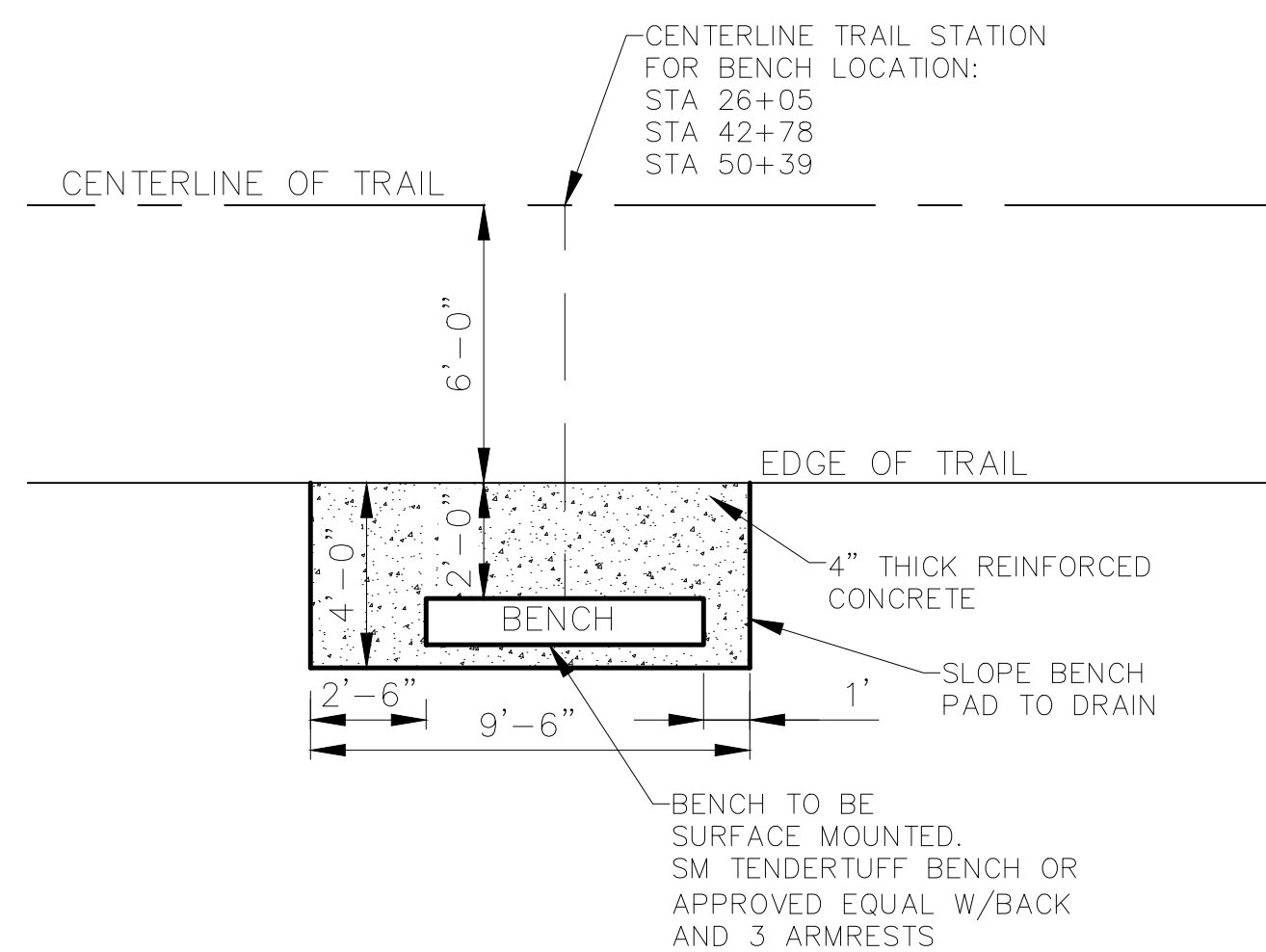
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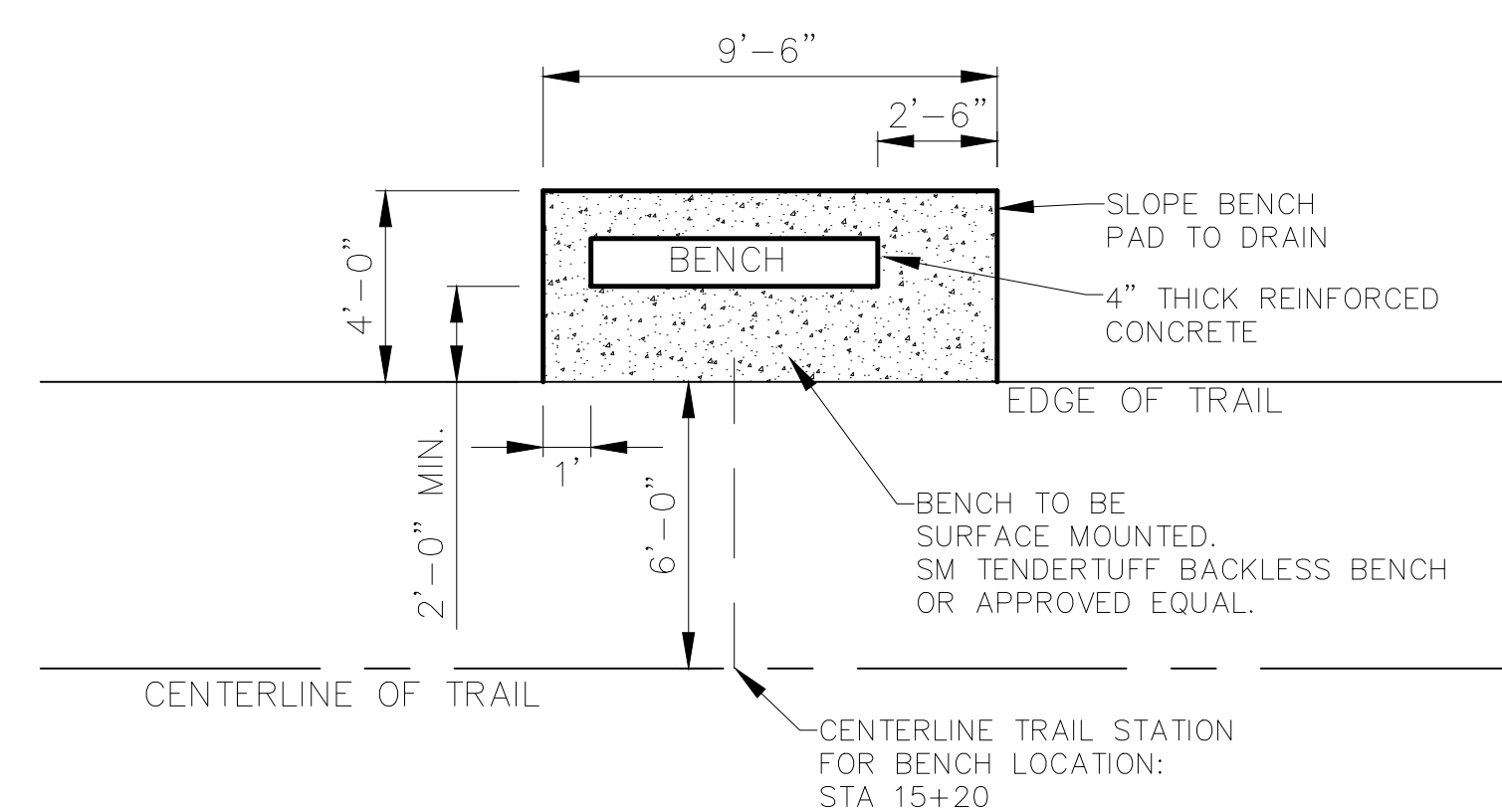
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**RCP PIPE - DETAIL**  
NTS



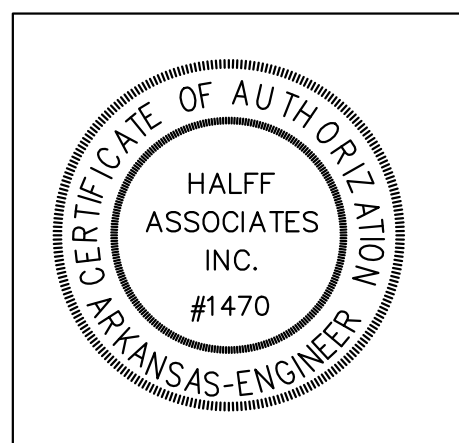
**BENCH PAD DETAIL**  
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**BENCH PAD DETAIL FOR BACKLESS BENCH**  
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NOT FOR CONSTRUCTION

Revision No.	Date	Description



**RETAINING WALL GENERAL NOTES**

1. ALL CONSTRUCTION MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THESE DRAWINGS AND SPECIFICATIONS.
2. CONTRACTOR SHALL LOCATE EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION OF THIS PROJECT. CONTRACTOR SHALL NOTIFY OWNER OF ANY POTENTIAL CONFLICT IN A TIMELY MANNER.
3. CONTRACTOR SHALL PROVIDE TEMPORARY ERECTION BRACING AND SHORING OF ALL STRUCTURAL WORK AS REQUIRED FOR STABILITY OF THE STRUCTURE DURING ALL PHASES OF CONSTRUCTION.
4. DESIGN OF RETAINING WALLS IS BASED ON THE FOLLOWING VALUES:  
 SOIL NAIL WALL (FILL MATERIAL):  
 SOIL UNIT WEIGHT .....125 PCF  
 FRICTION ANGLE .....20 DEGREE  
 ALLOWABLE BOND STRENGTH:  
 COMPACTED EMBANKMENT FILL..... 5 PSI  
 STIFF SILTY CLAY..... 10 PSI
5. FOR AESTHETIC, SEE SITE DETAILS.
6. GEOTECHNICAL INFORMATION IS BASED ON JOB NO. 18-112 DATED DECEMBER 10, 2018, BY GRUBBS, HOSKYN, BARTON & WYATT, INC.
7. DESIGNED IN ACCORDANCE WITH AASHTO LRFD SPECIFICATIONS SEVENTH EDITION WITH ALL INTERIM SPECIFICATIONS.

**CAST-IN-PLACE GENERAL NOTES**

1. ALL CONCRETE SHALL BE CLASS (A) WITH A MINIMUM COMPRESSIVE STRENGTH EQUAL TO 4,000 PSI, AND COARSE AGGREGATE GRADE NOS. 2-5 ARE PERMITTED.
2. ALL REINFORCING STEEL SHALL COMPLY WITH ASTM A615, GRADE 60.
3. FILTER FABRIC SHALL CONFORM TO ARDOT DEPARTMENTAL MATERIAL SPECIFICATION. FILTER FABRIC SPLICES SHALL HAVE A MINIMUM OVERLAP OF 18 INCHES.
4. BACKFILL MATERIAL, FILTER FABRIC, UNDERDRAIN SYSTEM, WEEP HOLES, WATER PROOFING AND OTHER MATERIALS REQUIRED TO CONSTRUCT COMPLETE RETAINING WALL PER THESE DRAWINGS SHALL BE CONSIDERED SUBSIDIARY TO RETAINING WALL. RETAINING WALL QUANTITY TAKEN FROM TOP OF WALL TO BOTTOM OF FOOTING.

**LOAD TESTING**

1. VERIFICATION LOAD TESTS AND PROOF LOAD TESTS OF THE SOIL NAILS SHALL BE PERFORMED PER THE SPECIFICATION. VERIFICATION OR PROOF LOAD TEST SHALL BE COMPLETED AND PASSED FOR AT LEAST ONE NAIL ANCHOR BEFORE INSTALLATION OF PRODUCTION NAILS IN ANY WALL OR WALL PANEL.
2. TESTING OF ANY NAIL SHALL NOT BE PERFORMED UNTIL THE NAIL GROUT AND PPC HAVE CURED FOR AT LEAST 72 HOURS OR ATTAINED AT LEAST THEIR SPECIFIED COMPRESSIVE STRENGTH.
3. TEST ANCHORS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO PRODUCTION NAILS.
4. SHOULD ANY TEST ANCHORS FAIL TO REACH ADEQUATE CAPACITY DURING TESTING, THE CONTRACTOR SHALL MODIFY THE CONSTRUCTION METHODS AND PROCEDURES AND INSTALL AND TEST ADDITIONAL TEST ANCHORS TO ACHIEVE REQUIRED CAPACITY. ANY TEST ANCHORS THAT FAIL TESTING WILL NOT BE MEASURED FOR PAYMENT BUT WILL BE CONSIDERED SUBSIDIARY TO PRODUCTION NAILS.
5. CONTRACTOR SHALL SUBMIT LOCATION OF TEST NAILS FOR APPROVAL BY ENGINEER. LOCATIONS OF TEST ANCHORS SHALL VARY ALONG THE LENGTH AND HEIGHT OF THE WALL. TEST NAILS HOLE DIAMETER SHALL BE 4".

**VERIFICATION LOAD TESTING**

1. VERIFICATION LOAD TESTS OF THE NAILS WILL BE REQUIRED AT A MINIMUM NUMBER OF TWO VERIFICATION TESTS FOR EACH SOIL STRATA. CONTRACTOR SHALL SUBMIT LOCATION OF TEST NAILS FOR APPROVAL BY ENGINEER. LOCATIONS OF TEST ANCHORS SHALL VARY ALONG THE LENGTH AND HEIGHT OF THE WALL.
2. VERIFICATION LOAD TESTS SHALL BE PERFORMED TO FAILURE OR A MAXIMUM TEST LOAD TO REACH THE VERIFICATION TEST LOAD OF THE TEST NAIL AS SHOWN IN THE TESTING TABLE.
3. THE VERIFICATION TEST NAILS ARE SACRIFICIAL AND SHALL NOT BE USED AS PRODUCTION NAILS.
4. IF WIDELY VARYING SOIL CONDITIONS ARE ENCOUNTERED THE ENGINEER MAY REQUIRE UP TO FOUR ADDITIONAL TEST ANCHORS PER WALL.

**FORM LINER NOTES**

1. FORM LINER SHALL BE FITZGERALD \* 16925 OR OWNER APPROVED EQUAL.
2. CONTRACTOR TO PREFORM 5'x5' MOCK UP OF FORMLINER FOR OWNER APPROVAL PRIOR TO WALL CONSTRUCTION.

**SOIL NAIL GENERAL NOTES**

1. THE CONTRACTOR SHALL PROVIDE "WORKING DRAWINGS" PRIOR TO WALL CONSTRUCTION SHOWING NAIL LOCATION, DRAINAGE MAT LOCATION, WALL PANELIZATION, AND CONSTRUCTION/EXPANSION JOINTS AS A MINIMUM.
2. THE CONTRACTOR SHALL REVIEW THE SOIL BORING DATA AND BE AWARE OF SHALE LOCATION AND QUALITY, WHICH MAY REQUIRE ROTARY IMPACT STYLE EQUIPMENT TO ADVANCE THE NAIL HOLES.
3. THE NAIL WALLS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE FHWA "GEOTECHNICAL ENGINEERING CIRCULAR NO. 7, SOIL NAIL WALLS", PUBLICATION NO. FHWA-NHI-14-007 STRUCTURAL DESIGN OF ANY INDIVIDUAL WALL ELEMENTS NOT COVERED IN THE FHWA MANUAL HAVE BEEN DESIGNED IN ACCORDANCE WITH AASHTO LRFD SPECIFICATIONS WITH ALL INTERIM SPECIFICATIONS.
4. CONCRETE MINIMUM COMPRESSIVE STRENGTHS IN 7 DAY:  
 SHOTCRETE (PNEUMATICALLY PLACED CONCRETE).....400PSI  
 SOIL NAIL GROUT (HYDRAULIC CEMENT CONCRETE).....4000PSI  
 CONCRETE MINIMUM COMPRESSIVE STRENGTHS IN 28 DAY:  
 CAST IN PLACED CONCRETE FACING, CLASS C.....4000PSI
5. ALL SOIL NAIL STEEL RODS SHALL BE GRADE 60, UNLESS NOTED OTHERWISE, AND SHALL BE ENCAPSULATED PER 04/S103.
6. ALL REINFORCING STEEL SHALL BE GRADE 60, UNLESS NOTED OTHERWISE.
7. ALL NAIL LENGTHS AND BARS SIZES ARE SHOWN ON THE STRUCTURAL SOIL NAIL WALL ESTIMATED QUANTITIES.
8. IF REINFORCING BARS WITH CUT THREADS ARE USED FOR NAILS, THE NEXT LARGER BAR SIZE ABOVE THAT SHOWN SHALL BE PROVIDED AT NO ADDITIONAL COST.
9. THE NAIL GROUT SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATION.
10. STRUCTURAL STEEL INCLUDING ANCHOR PLATES AND STEEL STUDS SHALL CONFORM TO THE PROJECT SPECIFICATION.
11. UNLESS NOTED OTHERWISE ON THE PLANS, MINIMUM CONCRETE/PNEUMATICALLY PLACED CONCRETE COVER MEASURED FROM THE FACE OF EXPOSED CONCRETE AND/OR PNEUMATICALLY PLACED CONCRETE TO THE FACE OF ANY REINFORCING BAR SHALL BE AS FOLLOWS:  
 a. PERMANENT PNEUMATICALLY PLACED CONCRETE FACINGS EXPOSED TO SOIL: 2"  
 b. PERMANENT CAST-IN-PLACE CONCRETE FACINGS CAST AGAINST TEMPORARY PNEUMATICALLY PLACED CONCRETE: 2"
12. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING STABLE SLOPES ABOVE AND BELOW THE NAIL WALLS.
13. NO GENERAL EXCAVATION OPEN CUTS STEEPER THAN 1H:1V SHALL BE MADE WITHIN 15' IN FRONT OF THE NAIL WALLS WITHOUT APPROVAL OF THE ENGINEER.
14. EXCAVATION IN THE VICINITY OF THE WALL FACE REQUIRES SPECIAL CARE AND EFFORT COMPARED TO GENERAL ROADWAY EXCAVATION IN ORDER TO MAINTAIN A TRUE VERTICAL CUT OR AS DIRECTED BY THE ENGINEER.
15. EXPANSION JOINT LOCATIONS FOR NAIL WALLS ARE PROVIDED FOR PANEL DEFINITION ONLY. CONTRACTOR MAY ADJUST JOINT LOCATIONS IN COORDINATION WITH FINAL AESTHETIC FEATURES. MAXIMUM EXPANSION JOINT SPACING SHALL NOT BE EXCEEDED AS SHOWN ON THE SOIL NAIL DETAIL SHEETS. THE EXPANSION JOINTS SHALL BE LOCATED PRIOR TO CONSTRUCTION OF THE SOIL NAIL WALLS AND AT LEAST 12' CLEAR DISTANCE SHALL BE PROVIDED BETWEEN THE JOINT AND THE NAILS.
16. CONSTRUCTION JOINT SPACING FOR NAIL WALLS SHALL NOT BE EXCEEDED AS SHOWN ON THE DETAIL SHEETS.
17. THE JOINT BETWEEN THE CONCRETE FLUME SEGMENT AND CAST-IN-PLACE FACING SHALL BE SEALED TO PREVENT INFILTRATION OF WATER INTO THE RETAINING WALL BACKFILL. SEALANT MATERIALS SHALL CONFORM TO THE PROJECT SPECIFICATIONS.
18. NAILS MAY BE ANGLED +/- 7 DEGREES HORIZONTALLY TO CLEAR PILES, UTILITY LINES, ETC. SEE THE STRUCTURAL LAYOUTS FOR PROPOSED NAIL LOCATIONS ADJACENT TO PILES.
19. PNEUMATICALLY PLACED CONCRETE (PPC) SHALL COMPLY WITH THE REQUIREMENT OF THE PROJECT SPECIFICATION AND THAT IT WILL NOT BE PAID FOR DIRECTLY. MEMBRANE CURING WILL BE ALLOWED IN PLACE OF WATER CURING. STRENGTH TESTING OF THE PPC WILL BE REQUIRED.
20. DRAINAGE SYSTEM SHALL CONSIST OF PREFABRICATED DRAINAGE MATS EMPTYING INTO AN UNDERDRAIN. REFER TO THE RETAINING WALL MISCELLANEOUS DETAILS-WALL UNDERDRAIN SHEET FOR SPECIFIC INFORMATION. THE UNDERDRAIN OUTFALL SHALL BE AS SHOWN ON THE RETAINING WALL PLAN AND PROFILE SHEETS. DRAIN MAT INSTALLATION DETAILS ARE FOR INFORMATION ONLY AND INSTALLATION SHALL MEET MANUFACTURERS RECOMMENDED INSTALLATION OR AS APPROVED BY THE ENGINEER. THE DRAINAGE SYSTEM SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO RETAINING WALL.
21. THE PRICE BID PER SQUARE FOOT OF RETAINING WALL (INSTALL) (SOIL NAILED) SHALL INCLUDE ALL WALL REINFORCING STEEL, PPC, CAST-IN-PLACE FACING WALL CONCRETE, LEVELING PAD, ANCHOR PLATES WITH STUDS, NUTS, EXPANSION AND CONSTRUCTION JOINT MATERIAL, DRAINAGE MATERIALS, NAIL COUPLERS, NAIL EXTENSIONS, REMOVABLE FORMWORK AND FLOWABLE FILL AT DRAINAGE INLET AND ALL OTHER MATERIALS NECESSARY TO COMPLETE THE WALL.
22. THE PRICE BID PER LINEAR FOOT OF SOIL NAIL ANCHORS SHALL INCLUDE ALL DRILLING, NAIL REINFORCEMENT, GROUT, TEST ANCHORS, AND ANY OTHER MATERIALS REQUIRED TO COMPLETE THE SOIL NAIL ANCHORS. REFER TO GRUBBS, HOSKYN, BARTON & WYATT, INC. GEOTECHNICAL REPORT NO. 18-112 DATED DECEMBER 10, 2018 FOR ADDITIONAL INFORMATION.

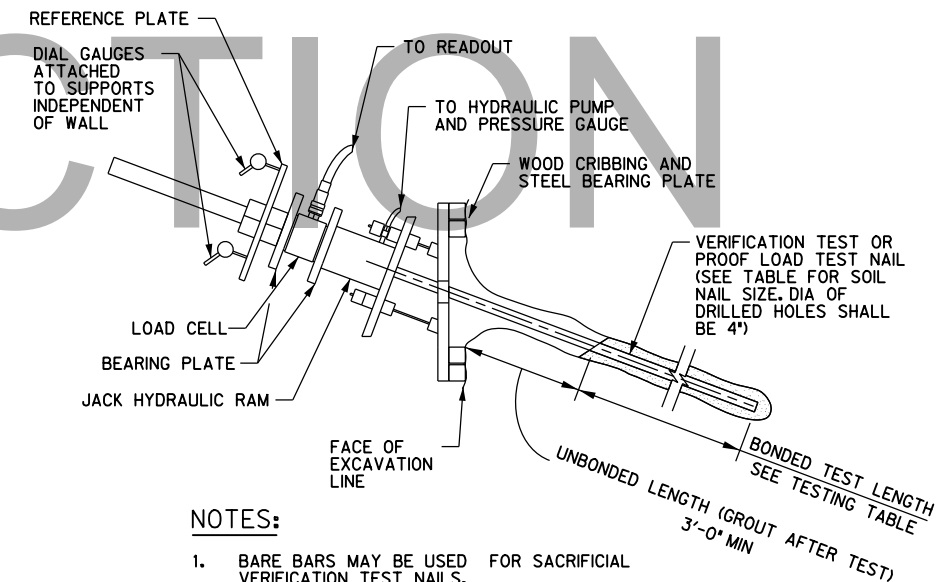
**PROOF LOAD TESTING**

1. PROOF LOAD TESTING OF THE NAILS WILL BE REQUIRED ON UP TO 5% OF THE TOTAL NAILS PER WALL OR AS DIRECTED BY THE ENGINEER.
2. THE PROOF LOAD TESTS SHALL BE PERFORMED TO REACH THE PROOF TEST LOAD OF THE NAIL AS SHOWN IN THE TESTING TABLE.
3. THE PROOF TEST NAILS MAY BE INCORPORATED AS PRODUCTION NAILS PROVIDED THEY DEVELOP THE REQUIRED TEST LOAD AND ARE ENCAPSULATED AND NO ADVERSE DEFORMATION WERE OBSERVED DURING THE TEST OR ANY OTHER DAMAGE OCCURRED DURING TESTING OR FROM OTHER CONSTRUCTION ACTIVITIES.

**TYPICAL CONSTRUCTION PROCEDURE**

1. FOR WALLS IN SOIL OR FOR WALLS WITH A LOWER SECTION OF ROCK AND A CLAY OVERBURDEN OF MORE THAN 2', THE SLOPE IN FRONT OF THE WALL SHALL BE REMOVED IN LIFTS. THE DEPTH OF EACH LIFT SHALL BE LIMITED TO THE AMOUNT NECESSARY TO INSTALL A SINGLE ROW OF NAILS. AT NO TIME SHALL MORE THAN 5' OF UNNAILED VERTICAL SOIL BE EXPOSED. THE LENGTH OF EACH LIFT SHALL BE LIMITED TO THE AMOUNT THAT CAN BE NAILED IN ONE (1) DAY. AT NO TIME SHALL ANY UNNAILED CUT SOIL FACE BE EXPOSED FOR MORE THAN 48 HOURS.
2. UPON COMPLETION OF EACH DAY'S INSTALLMENT OF NAILS, THE PREFABRICATED SOIL DRAINAGE MATERIAL AND THE REINFORCING SHALL BE INSTALLED AND THEN PPC SHALL BE APPLIED TO THE CUT SOIL FACE. THE PPC SHALL BE REINFORCED AS SHOWN ON THE SOIL NAIL DETAIL SHEETS. ANCHOR PLATES SHALL BE SET AGAINST THE FACE OF THE WET PPC. NUTS SHALL BE TIGHTENED AGAINST THE ANCHOR PLATES AFTER THE PPC HAS CURED.

NAIL TESTING TABLE							
STRATA	NAIL SIZE	NAIL GRADE	DRILLED HOLE SIZE	VERIFICATION LOAD TEST		PROOF LOAD TEST	
				VERIFICATION TEST LOAD	BONDED TEST LENGTH	PROOF TEST LOAD	BONDED TEST LENGTH
SAND OR CLAY	#6	GR. 60	4" DIA	5 KIP	13 FT	3 KIP	10 FT



**NOTES:**

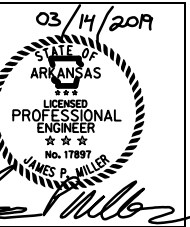
1. BARE BARS MAY BE USED FOR SACRIFICIAL VERIFICATION TEST NAILS.
2. LOAD CELL MAY NOT BE REQUIRED FOR PROOF LOAD TEST ON NAILS.
3. REFER TO TEST TABLE FOR TEST NAILS REQUIRED, BOND LENGTHS AND DESIGN TEST LOAD (DTL).
4. THIS ASSEMBLY DETAIL IS FOR INFORMATION ONLY. CONTRACTOR TO SUBMIT DETAILED EQUIPMENT ASSEMBLY FOR ENGINEER'S REVIEW.

**VERIFICATION LOAD TEST OR PROOF LOAD TEST NAIL DETAIL**

STONE DAM CREEK  
 TRAIL EXTENSION  
 CONWAY, AR

**HALFF + MARLAR**  
 10411 W MARKUM ST, SUITE 320  
 TEL: (501) 861-2896  
 AR.COM# 1470

Revision No.	Date	Description
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Project No.:	033160
Issued:	03/14/2019
Drawn By:	ML
Checked By:	JPM
Scale:	AS SHOWN
Sheet Title	

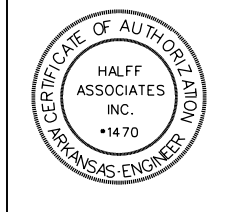
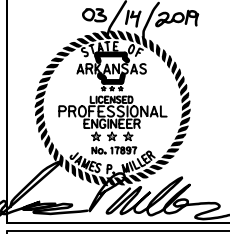
GENERAL NOTES

S0.01

**STONE DAM CREEK  
TRAIL EXTENSION  
CONWAY, AR**



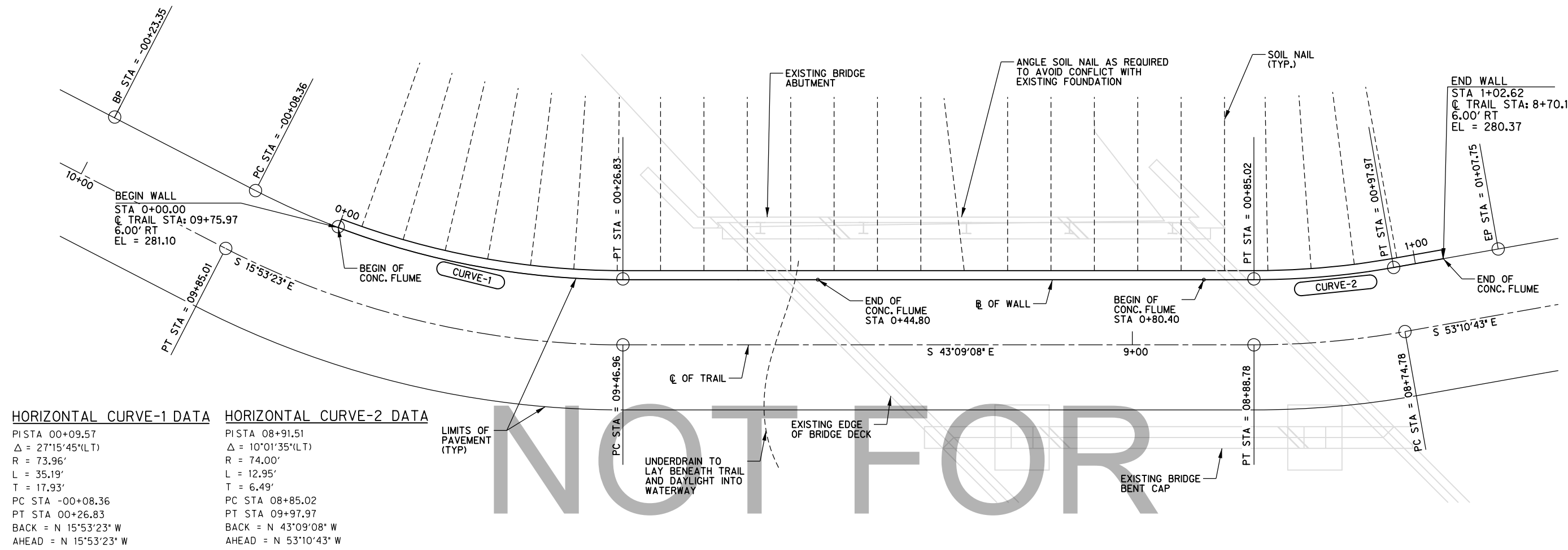
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SOIL NAIL  
PLAN & PROFILE

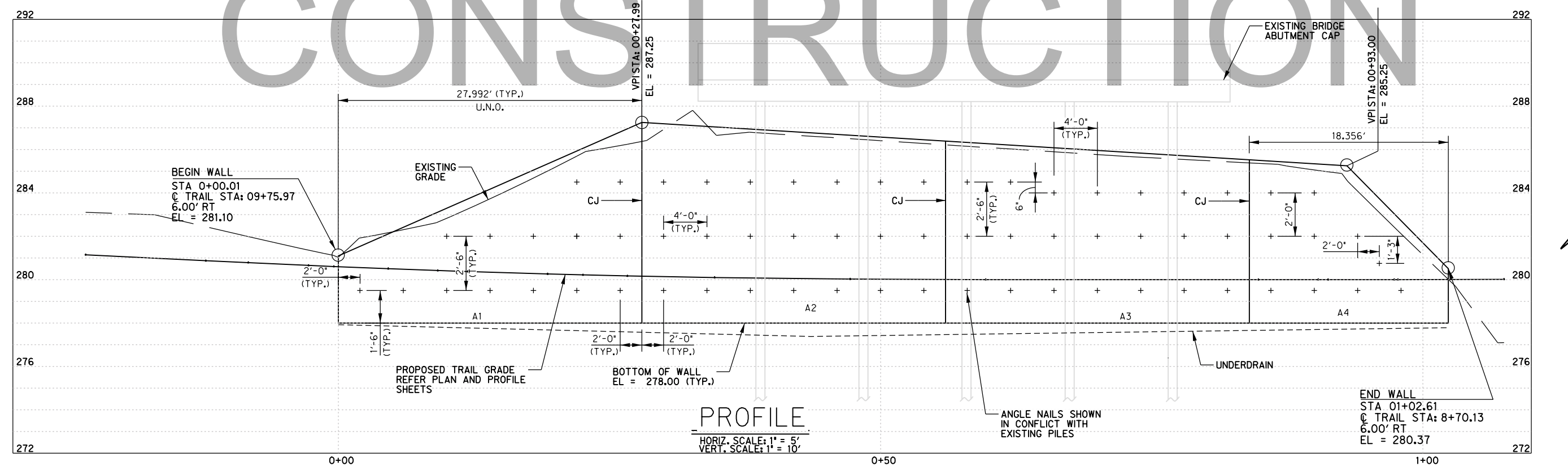
**S1.01**



HORIZONTAL CURVE-1 DATA	HORIZONTAL CURVE-2 DATA
PISTA 00+09.57	PISTA 08+91.51
$\Delta = 27^{\circ}15'45''$ (LT)	$\Delta = 10^{\circ}01'35''$ (LT)
R = 73.96'	R = 74.00'
L = 35.19'	L = 12.95'
T = 17.93'	T = 6.49'
PC STA -00+08.36	PC STA 08+85.02
PT STA 00+26.83	PT STA 09+97.97
BACK = N 15°53'23" W	BACK = N 43°09'08" W
AHEAD = N 15°53'23" W	AHEAD = N 53°10'43" W

**PLAN**  
SCALE: 1" = 5'

•CONTRACTOR TO IDENTIFY AND LOCATE EXISTING FOUNDATION ELEMENTS, AND ADJUST NAIL ANGLES AND LOCATIONS TO AVOID CONFLICT. NOTIFY E.O.R. IF NAIL SHIFTS EXCEED 6 INCHES.



**PROFILE**  
HORIZ. SCALE: 1" = 5'  
VERT. SCALE: 1" = 10'

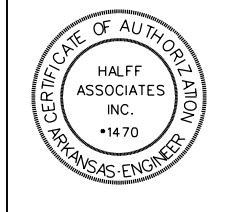
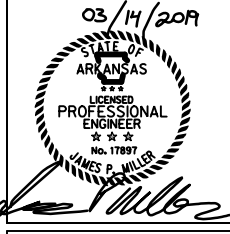
ANGLE NAILS SHOWN IN CONFLICT WITH EXISTING PILES

END WALL  
STA 01+02.61  
C TRAIL STA: 8+70.13  
6.00' RT  
EL = 280.37

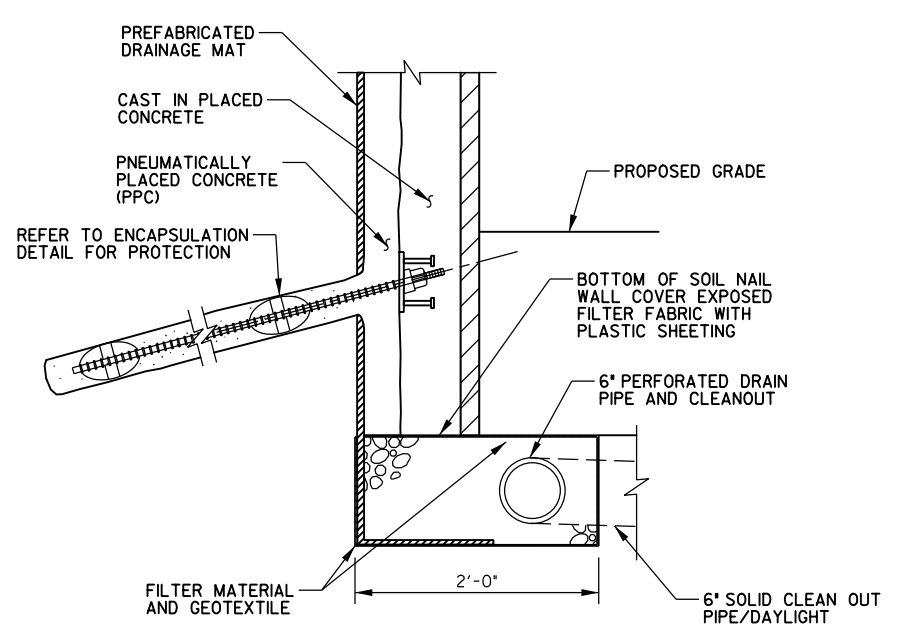
NOT FOR CONSTRUCTION



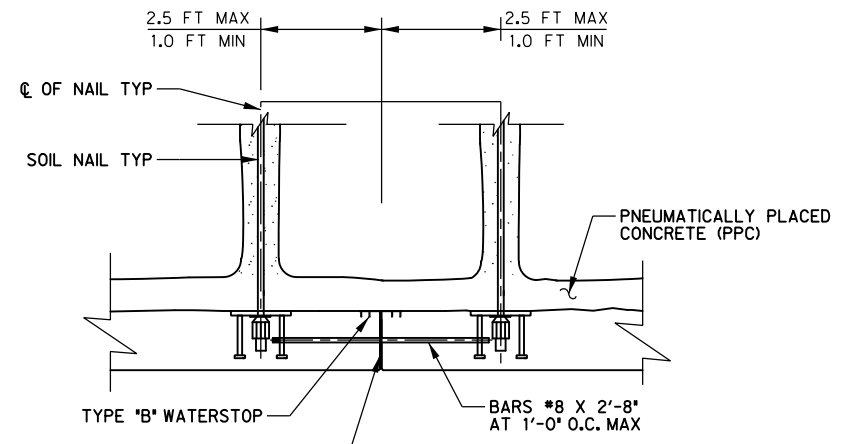
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Sheet Title	TYPICAL DETAILS

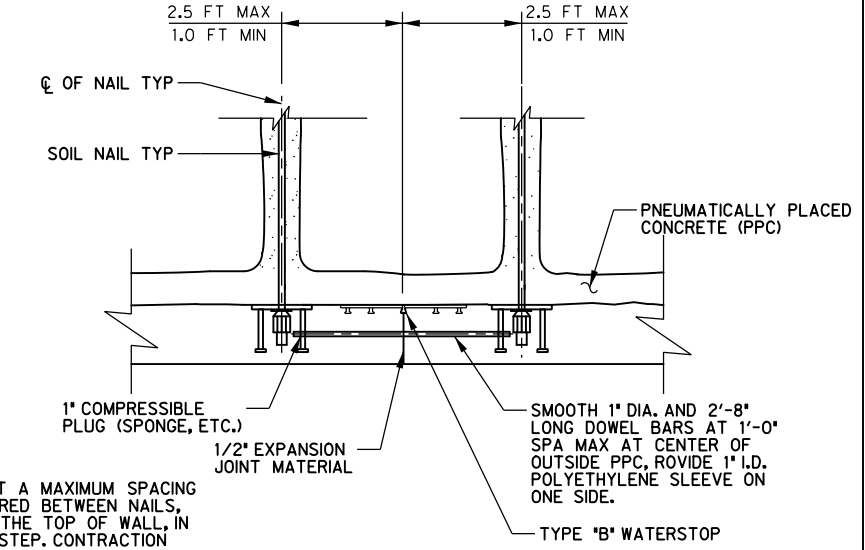


DRAINAGE DETAIL FOR SOIL NAIL WALL  
SCALE: NTS

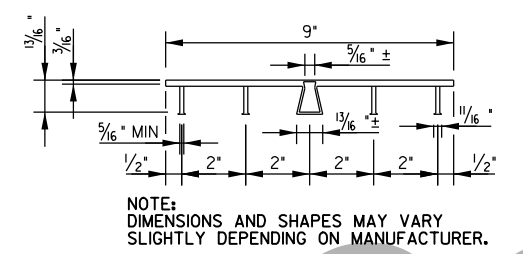


NOTE: EXPANSION JOINTS IN CIP WALL SHALL BE LOCATED AT A MAXIMUM SPACING OF 100 FT CENTER TO CENTER, AND SHALL BE CENTERED BETWEEN NAILS, EXCEPT IF THE JOINT IS WITHIN 2 FT OF A STEP AT THE TOP OF WALL, IN WHICH CASE THE JOINT SHALL BE LOCATED AT THAT STEP. CONTRACTION JOINTS IN CIP WALL SHALL BE LOCATED AT MAXIMUM SPACING OF 60 FT CENTER TO CENTER. EXPANSION AND CONTRACTION JOINTS NOT REQUIRED THROUGH SHOTCRETE CONSTRUCTION FACING.

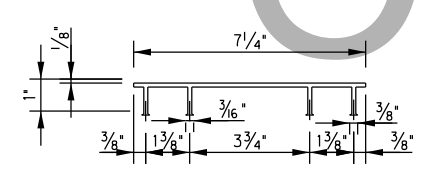
SOIL NAIL WALL CONSTRUCTION JOINT DETAIL  
SCALE: NTS



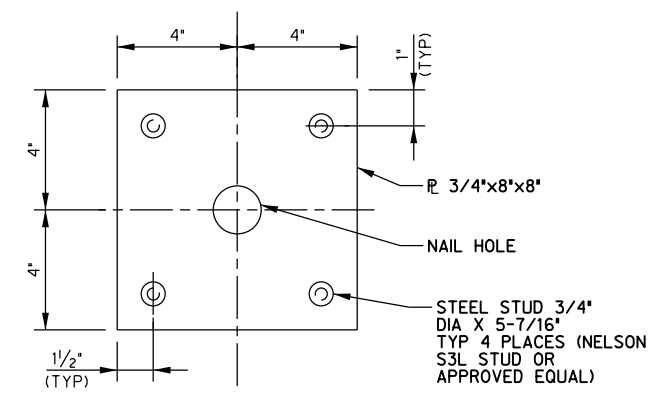
SOIL NAIL WALL EXPANSION JOINT DETAIL  
SCALE: NTS



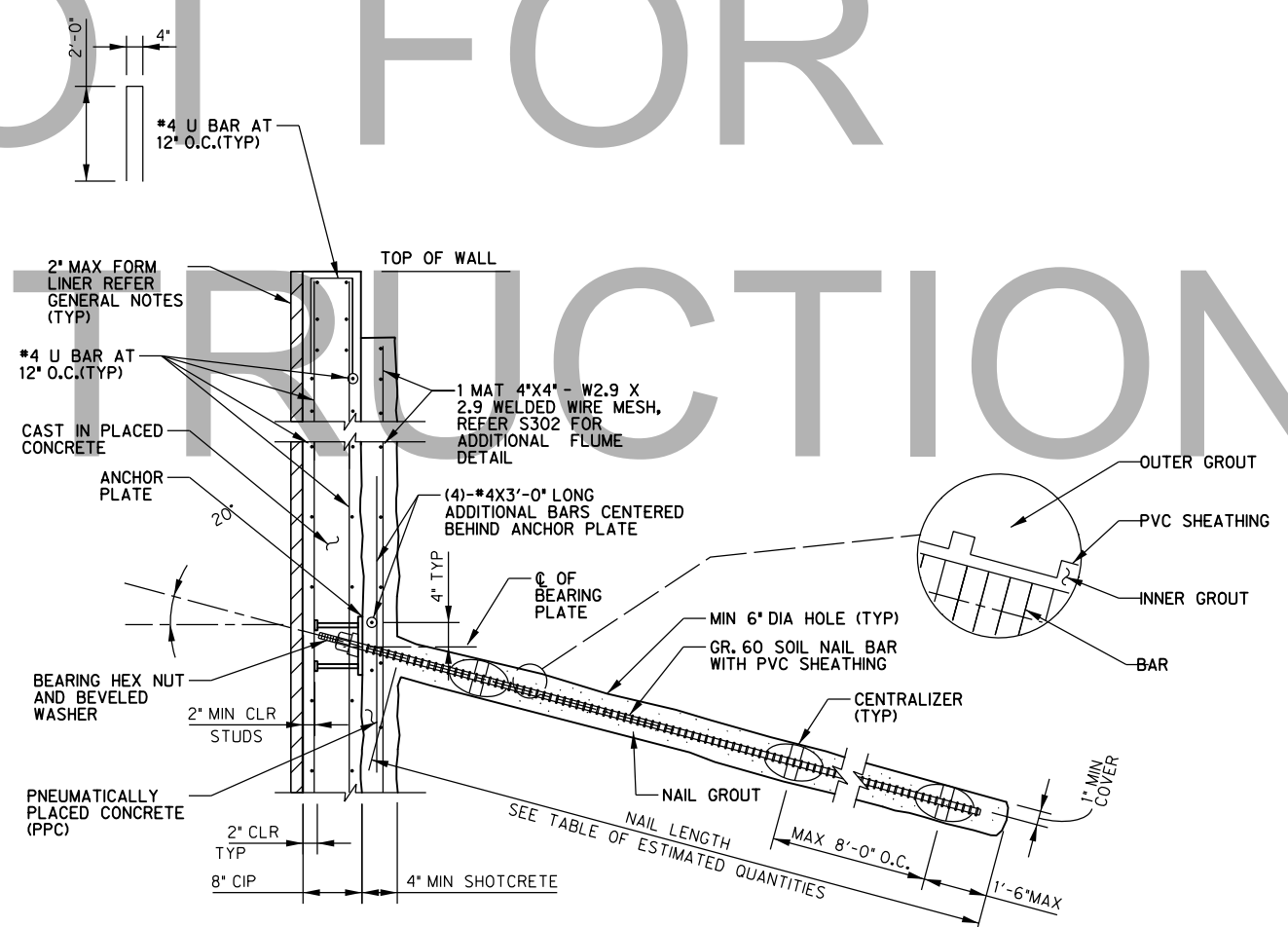
TYPE "A" PVC WATERSTOP  
SCALE: NTS



TYPE "B" PVC WATERSTOP  
SCALE: NTS



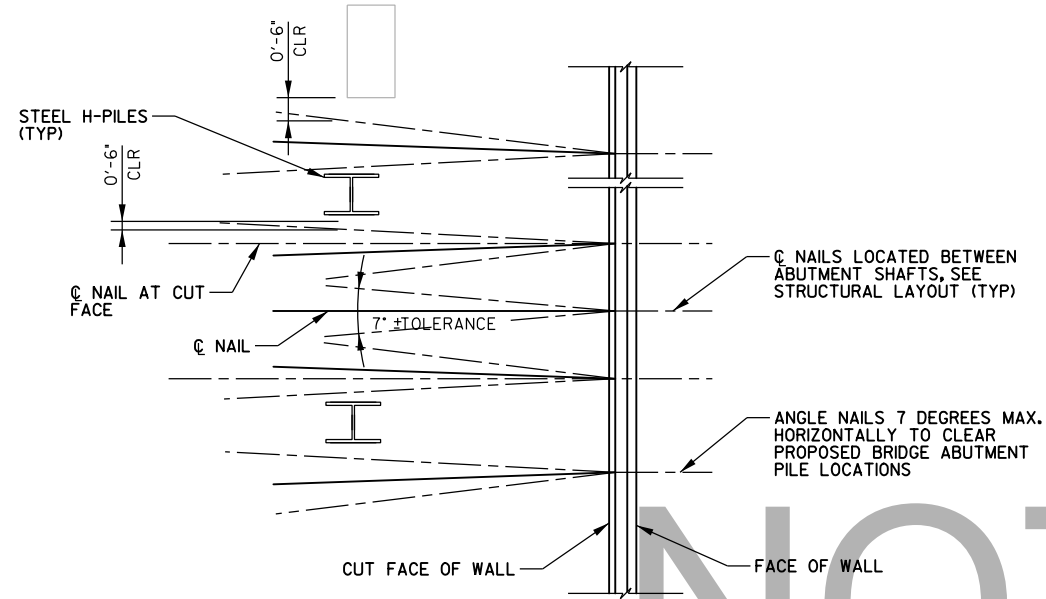
ANCHOR PLATE WITH STUDS  
SCALE: NTS



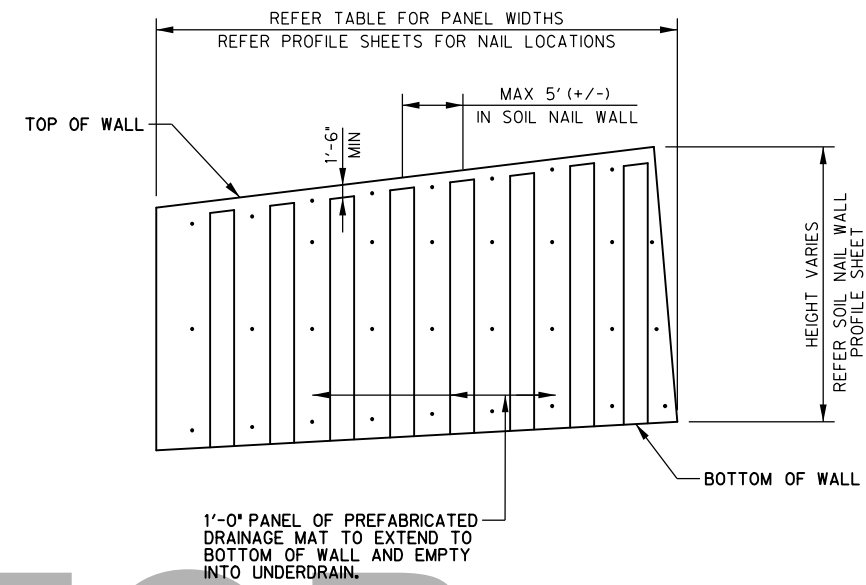
SHEATHING ENCAPSULATION ON GROUTED SOIL NAIL DETAIL (CLASS A PROTECTION)  
SCALE: NTS

NOT FOR CONSTRUCTION

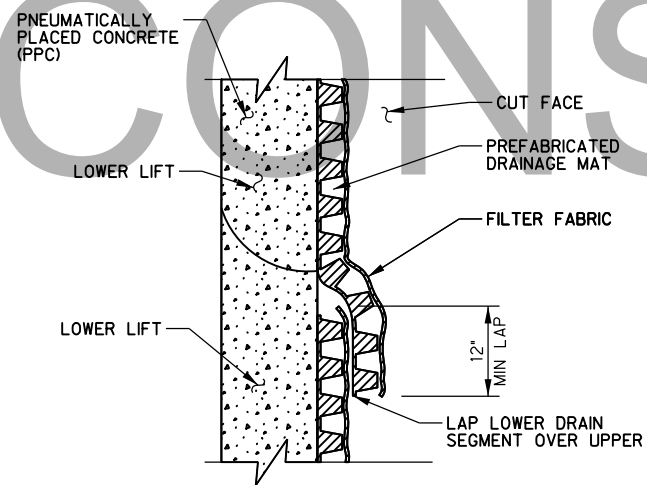




PLAN - NAILS IN FRONT OF ABUTMENT  
SCALE: NTS



TYPICAL NAIL PANEL DRAINAGE  
SCALE: NTS



PREFABRICATED DRAINAGE MAT DETAIL  
SCALE: NTS

STONE DAM CREEK  
TRAIL EXTENSION  
CONWAY, AR

**HALFF + MARLAR**  
10411 W MARKUM ST., SUITE 320  
LITTLE ROCK, AR 72205  
TEL: (501) 801-2890  
AR.COM# 1470

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03/14/2019  
STATE OF ARKANSAS  
LICENSED PROFESSIONAL ENGINEER  
No. 17887  
JAMES F. MILLER

CERTIFICATE OF AUTHORIZATION  
HALFF ASSOCIATES INC.  
#1470  
ARKANSAS ENGINEER

Project No.: 033160  
Issued: 03/14/2019  
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Checked By: JPM  
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Sheet Title  
TYPICAL DETAILS

S1.04