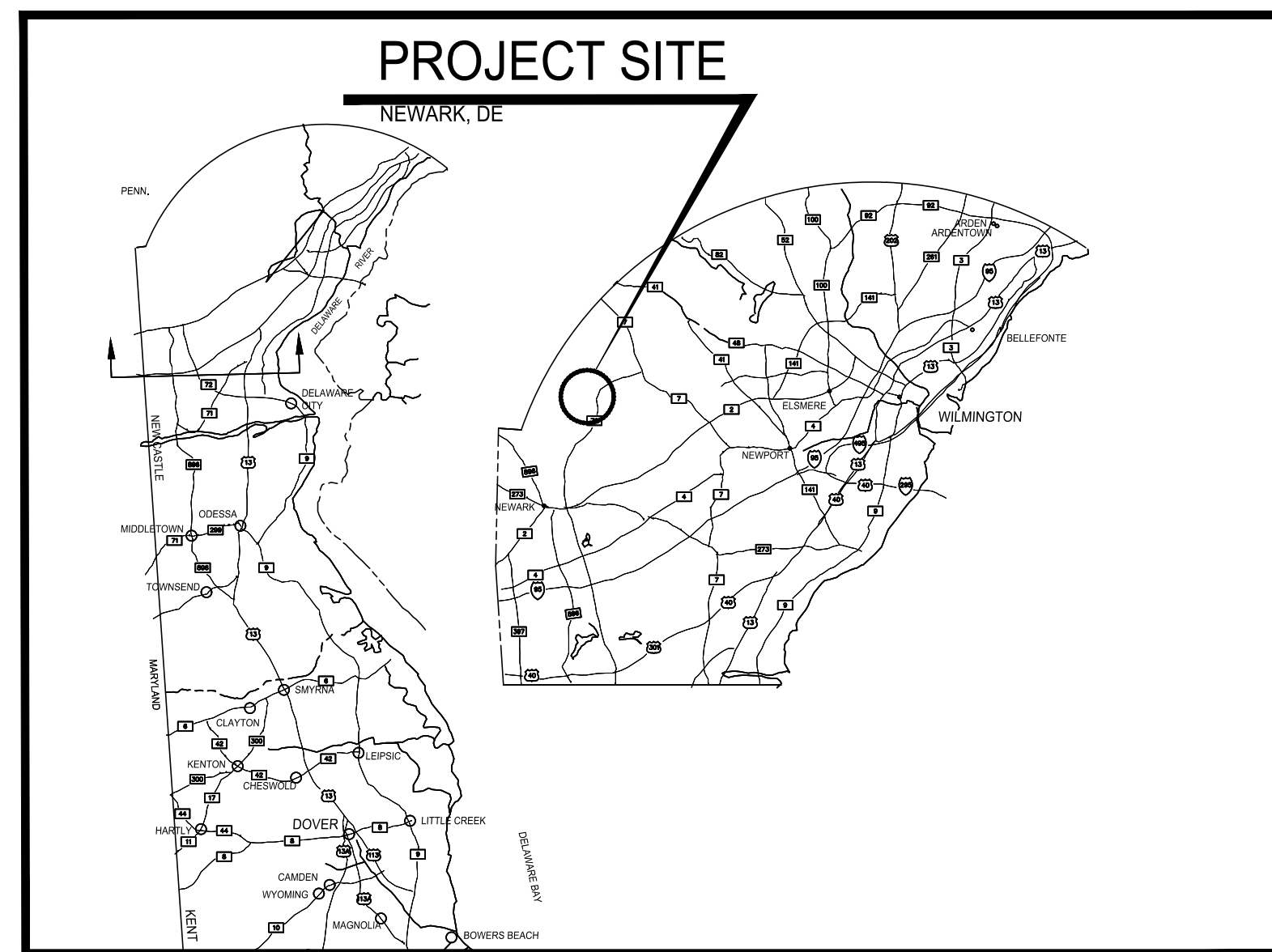
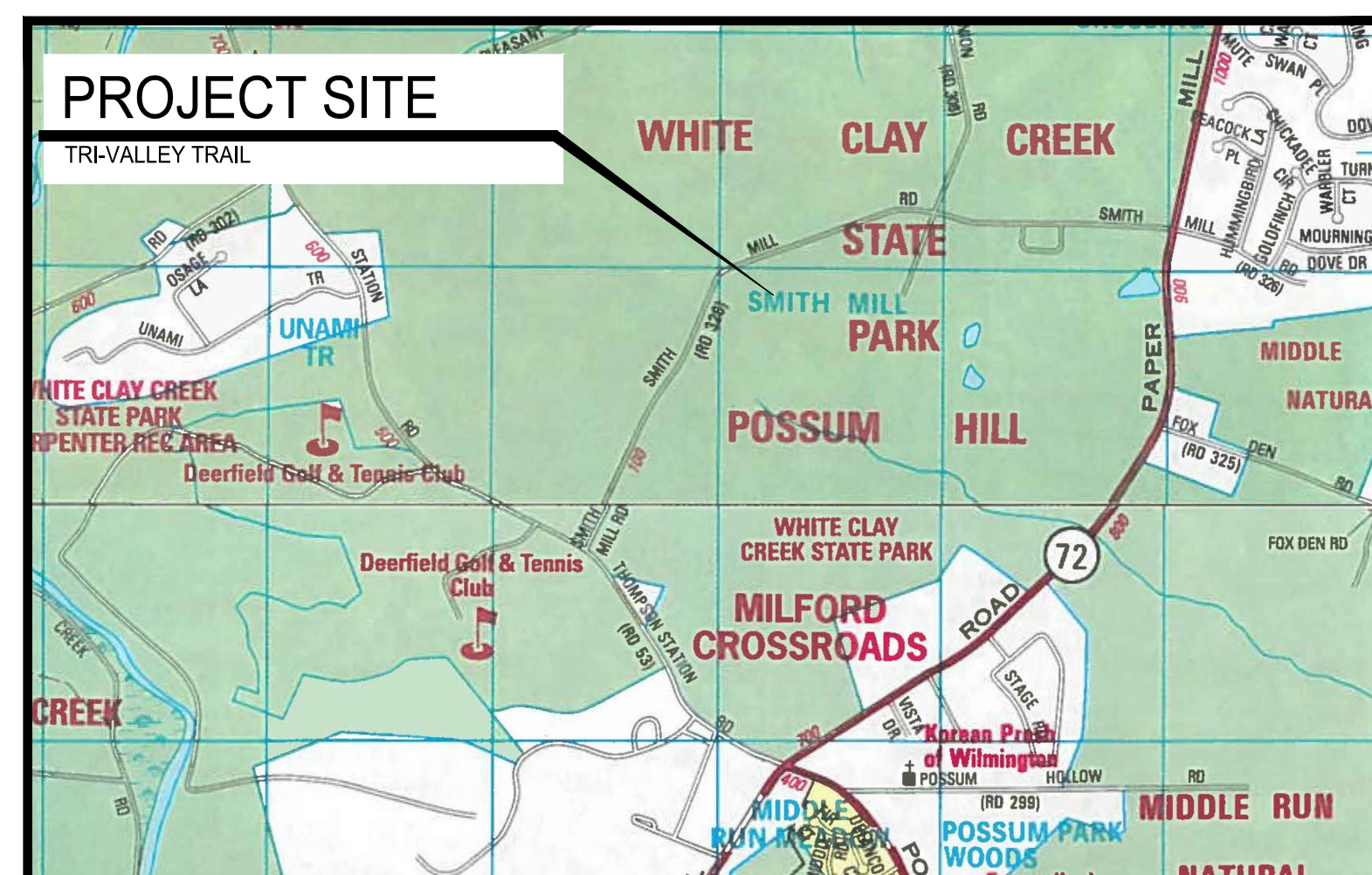


SEPTEMBER 7, 2016

SHEET NO.	SHEET TITLE
C1.0	COVER SHEET
C1.1	PROJECT NOTES & LEGEND
C1.2	BASE BID & ALTERNATES PLAN
C1.3	SITE CONTROL PLAN
C1.4	OVERALL SHEET LAYOUT PLAN
C2.1	DEMOLITION PLAN - PARKING LOT 2
C2.2	DEMOLITION PLAN - PARKING LOT 3
C3.1 - C3.11	SITE ALIGNMENT & SITE GRADING PLAN
C3.12	SITE GRADING PLAN - PARKING LOT 1
C3.13	SITE GRADING PLAN - PARKING LOT 3
C4.1 - C4.3	TYPICAL SECTIONS
C5.1 - C5.16	CROSS SECTIONS
C6.1 - C6.3	TYPICAL CONSTRUCTION DETAILS
C7.1	SIGNING AND STRIPING PLAN
C8.1 - C8.6	RESTROOM CONSTRUCTION DETAILS



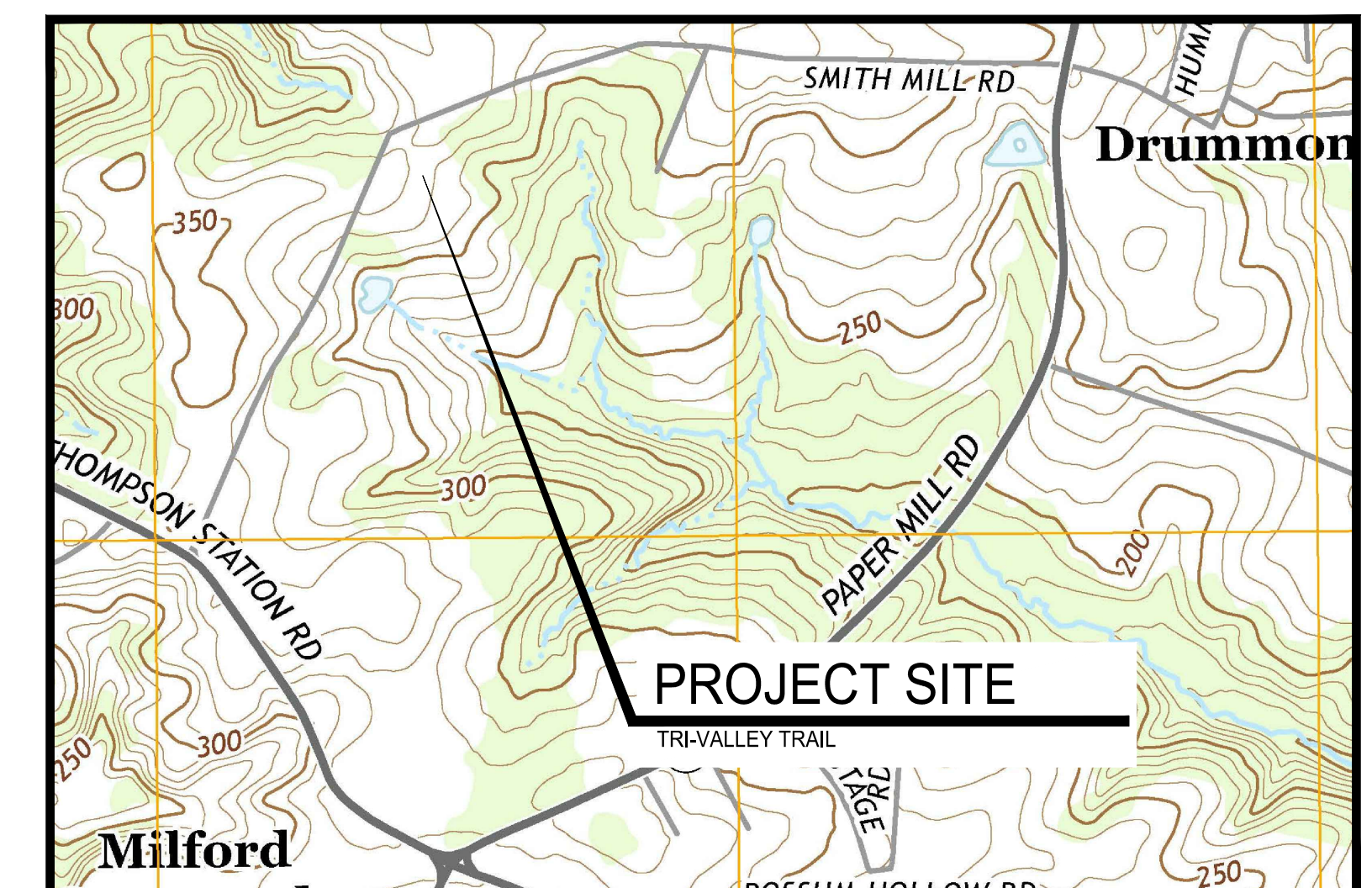
LOCATION MAP



SITE MAP



BID-SET PLANS, NOT FOR CONSTRUCTION



USGS QUADRANGLE MAP

CIVIL ENGINEER

PREPARED BY:



CENTURY
ENGINEERING

CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY. DOVER, DELAWARE 19901 (302) 734-9188

SIGNATURE

DATE _____

STAMP

CLIENT

OFFICE OF DESIGN & DEVELOPMENT
DELAWARE DIVISION OF PARKS & RECREATION
89 KINGS HIGHWAY
DOVER, DELAWARE 19901
(302) 739-9231
(302) 739-7026 (FAX)

PROJECT NOTES

1.

THE INTENT OF THIS PROJECT IS TO PROVIDE THE FOLLOWING IMPROVEMENTS AT WHITE CLAY CREEK STATE PARK:
- 1.1.

CONSTRUCT NEW ASPHALT TRAIL SYSTEM BETWEEN THE INTERSECTION OF THOMPSON STATION ROAD AND OLD POSSUM ROAD, AND THE INTERSECTION OF PAPER MILL ROAD AND SMITH MILL ROAD. CONSTRUCTION WILL INCLUDE NEW ALIGNMENT PAVEMENT, OVERLAY EXISTING PAVEMENT, AND DEMOLITION AND PLACEMENT OF NEW PAVEMENT AS SHOWN ON THE PLANS.
- 1.2.

CONSTRUCT ONE (1) NEW PAVED PARKING LOT (PARKING LOT 3).
- 1.3.

PAVE ONE (1) EXISTING GRAVEL PARKING LOT (PARKING LOT 1) [ALTERNATE NUMBER 1].
- 1.4.

REMOVE ONE (1) EXISTING GRAVEL PARKING LOT AND ALL ASSOCIATED AMENITIES (PARKING LOT 2.)
- 1.5.

INSTALL STUB UTILITY CONDUITS FOR ONE (1) PREMANUFACTURED RESTROOM (PARKING LOT 3.)
- 1.6.

REMOVAL OF EXISTING EXCESS ASPHALT PAVEMENT AS SHOWN ON THE PLANS.
- 1.7.

RELOCATING ONE (1) UTILITY POLE ADJACENT TO PARKING LOT 3, AS SHOWN ON THE PLANS.
- 1.8.

MISCELLANEOUS CONSTRUCTION, AS SHOWN ON THE PLANS.
2.

THE CONTRACTOR SHALL BE AWARE THAT ACCESS MUST BE MAINTAINED TO INDIVIDUAL RESIDENCES ALONG SMITH MILL ROAD AND NINE FOOT ROAD. ACCESS SHALL ALSO BE MAINTAINED TO THE "SILENT KNIGHT" MODEL AIRPLANE FIELD LOCATED NEAR STATION 522+40 ON THE NORTH SIDE OF SMITH MILL ROAD. ANY LANE OR ENTRANCE CLOSURES SHALL BE APPROVED WITH DNREC PARKS ONE (1) WEEK PRIOR TO THE CLOSURE.
3.

PARCEL AND BOUNDARY LINES TAKEN FROM GIS INFORMATION. NO BOUNDARY SURVEY WAS REQUESTED OR PERFORMED FOR THIS PROJECT.
4.

THESE PLANS WERE DEVELOPED FROM CONVENTIONAL FIELD SURVEY PROVIDED. CONTROL POINTS FOR THE SURVEY HAVE BEEN INCLUDED IN THESE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL ADDITIONAL PHYSICAL CONTROL AS REQUIRED TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.
5.

EXISTING UTILITIES SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME THIS PLAN WAS DEVELOPED. COMPLETENESS OR CORRECTNESS OF THE UTILITIES SHOWN THEREOF IS NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR EMPLOYING AN UNDERGROUND UTILITY LOCATOR TO LOCATE AND MARK EXISTING UTILITIES WITHIN THE LIMIT OF DISTURBANCE PRIOR TO BEGINNING CONSTRUCTION.
6.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR RELOCATION OF ELECTRICAL AND COMMUNICATION LINES, AND ELECTRICAL/COMMUNICATION PEDESTALS THAT CONFLICT WITH EXISTING FEATURES TO REMAIN, AT NO ADDITIONAL COST TO THE PROJECT, AS DIRECTED BY THE ENGINEER. WORK SHALL INCLUDE, BUT IS NOT LIMITED TO, EXCAVATION/TRENCHING, MATERIALS, AND ALL LABOR.
7.

PORTIONS OF THIS CONTRACT ARE TO BE CONSTRUCTED IN ACCORDANCE WITH DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (STANDARD SPECIFICATIONS), DATED AUGUST 2001 INCLUDING ALL REVISIONS UP TO ADVERTISEMENT OF THIS PROJECT, UNLESS NOTED OTHERWISE IN THESE PLANS OR THE SPECIFICATIONS. ITEMS INCLUDING, BUT NOT LIMITED TO, ASPHALT PAVEMENT, REFER TO THE "STANDARD SPECIFICATIONS" FOR MATERIALS AND METHOD OF CONSTRUCTION.
8.

ALL EXCAVATION FOR CONSTRUCTION OF THE PROPOSED ROADWAY SHALL BE IN ACCORDANCE WITH SECTION 202 - EXCAVATION AND EMBANKMENT, OF THE DELDOT STANDARD SPECIFICATIONS.
9.

TOPSOIL SHALL BE STRIPPED, STOCKPILED, AND STABILIZED IN ACCORDANCE WITH THE DELAWARE EROSION & SEDIMENT CONTROL HANDBOOK, CURRENT EDITION. STOCKPILE TO BE WITHIN WHITE CLAY CREEK STATE PARK AT A LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD.
10.

CLEARING AND GRUBBING IS ASSUMED TO EXTEND A MINIMUM OF SIX (6) INCHES BELOW EXISTING GRADE FOR FOR ALL NEW PAVED AREAS. CLEARING AND GRUBBING WITHIN THE LIMITS OF DISTURBANCE (LOD) SHALL CONSIST OF CLEARING, GRUBBING, REMOVING AND DISPOSING OF ALL TREES, ROOTS, VEGETATION AND DEBRIS UNLESS OTHERWISE INDICATED, EXCEPT SUCH OBJECT(S) THAT ARE DESIGNATED TO REMAIN.
11.

ALL TREE REMOVAL AND TREE TRIMMING WITHIN THE LIMITS OF DISTURBANCE, REGARDLESS OF SIZE, SHALL BE INCIDENTAL TO THE CONTRACT. INDIVIDUAL TREES ARE NOT SHOWN ON THE DRAWINGS BUT MAY BE REMOVED BY THE CONTRACTOR AS NECESSARY WITHIN THE LIMITS OF DISTURBANCE. TREES GREATER THAN 6" IN DIAMETER SHALL BE FLAGGED BY THE CONTRACTOR FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO REMOVAL. THE ENGINEER WILL NOT ACCEPT REMOVAL OF TREES INTENDED TO BE PROTECTED.
12.

TREES NOT DESIGNATED TO BE REMOVED SHALL BE PROTECTED FROM CONSTRUCTION EQUIPMENT AND COMPACTION OF SOIL WITHIN THE DRIP LINE BY MEANS OF 3'-0" HIGH SENSITIVE AREA PROTECTION (SAP) FENCE, AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLANS.
13.

ENDS OF THE PROPOSED ROADWAY SHALL BE TRANSITIONED AS NECESSARY TO MEET THE EXISTING GRADES OF THE EXISTING PAVEMENT.
14.

CROSS SLOPE OF ALL NEW WALKWAYS SHALL NOT EXCEED A SLOPE OF 1:50. LONGITUDINAL SLOPES OF ALL NEW WALKWAYS SHALL NOT EXCEED 1:20.
15.

THE CONTRACTOR MAY STORE AND/OR STOCKPILE EQUIPMENT AND MATERIALS WITHIN THE PROJECT SITE LIMIT OF DISTURBANCE (LOD) SHOWN ON PLAN. REFER TO THE SEDIMENT AND EROSION CONTROL PLANS FOR ADDITIONAL INFORMATION.
16.

EXCESS EXCAVATED MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE LEGALLY DISPOSED OF OFF SITE.
17.

THE CONTRACTOR IS ADVISED THAT CONTRACTOR EMPLOYEE PARKING SHALL BE LIMITED TO THE EXISTING PAVED PARK PARKING AREAS, UNLESS APPROVED BY THE ENGINEER. VEHICLE PARKING SHALL NOT BE ALLOWED ON UNPAVED AREAS.
18.

THE CONTRACTOR IS ADVISED THAT ACTIVE HUNTING WILL TAKE PLACE IN THE PARK BETWEEN SEPTEMBER 1, 2016 AND JANUARY 31, 2017.
19.

PARKING LOT 2 SHALL REMAIN OPEN TO PARK/HUNTING USE FROM OCTOBER 10, 2016 THROUGH DECEMBER 3, 2016.
20.

INSTALL ONE (1) 5'-0" BY 15'-0" CONCRETE SLAB-ON-GRADE AT PARK SIGNAGE AS DIRECTED BY ENGINEER. LOCATION TO BE DETERMINED IN FIELD. CONCRETE SLAB SHALL BE CONSTRUCTED PER DETAIL 6/C4.1 - PCC SIDEWALK SECTION.

GENERAL NOTES

1.

THE TERM "ENGINEER," "STATE," AND/OR "ARCHITECT" NOTED THROUGHOUT THE CONTRACT PLANS AND SPECIFICATIONS SHALL REFER TO DNREC / STATE PARKS, OR THEIR APPOINTED REPRESENTATIVE. THE TERM "SITE" AND "PARK" MAY BE USED INTERCHANGEABLY THROUGHOUT THESE DOCUMENTS AS A MEANS OF IDENTIFYING WHITE CLAY CREEK STATE PARK.
2.

THE CONTRACTOR SHALL PROTECT ALL FEATURES NOT DESIGNATED TO BE REMOVED. DAMAGED ITEMS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY DNREC, AT NO COST TO THE OWNER.
3.

THE CONTRACTOR SHALL RESTORE ALL AREAS AFFECTED BY THE CONSTRUCTION SHOWN HEREON AS SHOWN ON THESE PLANS AND SPECIFICATIONS, TO A CONDITION COMPARABLE TO THAT EXISTING PRIOR TO CONSTRUCTION, AND TO THE SATISFACTION OF DNREC.
4.

THE CONTRACTOR SHALL PROVIDE NECESSARY FACILITIES, INCLUDING BUT NOT LIMITED TO RESTROOMS, AND CONSTRUCTION TRAILER DURING CONSTRUCTION. PARK FACILITIES SHALL NOT BE USED.
5.

THE CONTRACTOR SHALL NOTE THAT IN CASE OF DISCREPANCY BETWEEN THE SCALED AND THE FIGURED DIMENSIONS SHOWN ON THE PLANS, THE FIGURED DIMENSIONS SHALL GOVERN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING ALL DIMENSIONS.
6.

BEFORE EXCAVATION IS STARTED, THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES. ALL EXISTING UTILITIES SHALL BE PROTECTED AND TEMPORARILY SUPPORTED OR RELOCATED AS NECESSARY TO COMPLETE THE WORK IN ACCORDANCE WITH THE PERTINENT OWNER/UTILITY COMPANY REQUIREMENTS. ANY UTILITIES DAMAGED BY THE CONTRACTOR SHALL BE PROMPTLY AND FULLY RESTORED TO THE SATISFACTION OF THE OWNER.
7.

THE CONTRACTOR SHALL DESIGNATE A PERSON WHO SHALL BE RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING THE EROSION AND SEDIMENT CONTROL PLANS, A PERSON WHO SHALL BE RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING THE TRAFFIC CONTROL, AND A PERSON WHO SHALL BE RESPONSIBLE FOR WORKER SAFETY. THE PERSON RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING THE EROSION AND SEDIMENT CONTROL PLANS SHALL BE CERTIFIED BY DNREC FOR EROSION AND SEDIMENT CONTROL RESPONSIBILITY (CERTIFIED CONSTRUCTION REVIEWER).
8.

THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE AREA WITHIN THE LIMITS OF CONSTRUCTION TO PROHIBIT PUBLIC ACCESS UNTIL COMPLETION OF THE PROJECT. THE CONTRACTOR'S PROCEDURE/METHOD FOR LIMITING ACCESS SHALL BE REVIEWED BY, AND COORDINATED WITH DNREC PRIOR TO THE START OF WORK. THE COST TO INSTALL, RELOCATE, AND MAINTAIN SITE SECURITY SHALL BE INCIDENTAL TO THE CONTRACT.
9.

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR OBTAINING OFF-SITE SPOIL AREAS FOR LEGAL DISPOSAL OF EXCESS MATERIAL NOT ACCEPTED BY THE PARK AND/OR UNSUITABLE MATERIALS AS NECESSARY IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS. ALL COST FOR RECYCLING, TRANSPORTING TO, PROCURING AND UTILIZING THE OFF-SITE SPOIL AREAS ARE TO BE INCIDENTAL TO THE CONTRACT.
10.

IN CASE OF CONFLICT BETWEEN THE "MANUFACTURER'S RECOMMENDATIONS" FOR AN APPROVED MATERIAL AND THE GOVERNING "CONTRACT SPECIFICATIONS" FOR THE MATERIAL, THE MORE RESTRICTIVE OF THE TWO SHALL PREVAIL, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
11.

THE CONSTRUCTION PLANS PRESENT A CONCEPT OF THE RELATIONSHIP BETWEEN TRAFFIC CONTROL, EROSION CONTROL, ETC. ANY REVISION TO THE DETAILS OR SEQUENCE SHOWN ON THE CONSTRUCTION PLANS SHALL BE PREPARED BY THE CONTRACTOR ON STANDARD DNREC PLAN SHEETS AND SUBMITTED FOR REVIEW AND APPROVAL BY THE ENGINEER. THE PLANS SHALL BE PREPARED IN ACCORDANCE WITH CURRENT DNREC STANDARDS FOR TRAFFIC CONTROL, EROSION AND SEDIMENT CONTROL (PREPARED BY A CERTIFIED CONSTRUCTION REVIEWER), STORM WATER MANAGEMENT, ETC. AND SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF DELAWARE. ALL REQUIRED CALCULATIONS, REPORTS, ETC. SHALL ALSO ACCOMPANY THE SUBMISSION. THE NUMBER OF COPIES REQUIRED TO BE SUBMITTED FOR REVIEW SHALL BE DETERMINED BY DNREC, DEPENDING ON THE NATURE OF THE PROPOSED REVISION. THE CONTRACTOR SHALL NOTE THAT THE REVISIONS TO THE CONSTRUCTION PLANS, AS WELL AS REVIEW TIME BY DNREC, WILL NOT JUSTIFY A DELAY IN THE CONSTRUCTION SCHEDULE. REVISIONS INVOLVING UTILITIES WILL REQUIRE THE COMPLETION OF A UTILITY STATEMENT APPROVED BY THE RESPECTIVE UTILITIES AS PART OF THE PLAN DOCUMENTS. ALL COSTS INVOLVED IN PREPARING THE PLAN REVISIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12.

THESE DRAWINGS DO NOT INCLUDE NECESSARY ELEMENTS OF CONSTRUCTION SAFETY. ALL CONSTRUCTION, INCLUDING EXCAVATION, MUST BE COMPLETED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT, CFR §1926.652(b)(2), AND ALL FEDERAL, STATE AND LOCAL REQUIREMENTS. CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL SITE SAFETY.
13.

NO DEBRIS SHALL BE BURIED OR BURNED ON THE SITE UNLESS SPECIFICALLY NOTED WITHIN THESE PLANS OR SPECIFICATIONS.
14.

THE CONTRACTOR SHALL CONTACT MISS UTILITY TWO (2) CONSECUTIVE WORKING DAYS PRIOR TO EXCAVATION, OR AS REQUIRED BY LAW, AT 1-800-282-8555.

MAINTENANCE OF TRAFFIC NOTES

1.

MAINTENANCE OF TRAFFIC DURING LANE CLOSURES AND LANE SHIFTS SHALL CONFORM TO TYPICAL APPLICATION TA-3 AND/OR TA-6 OF THE DELAWARE MUTCD.

REVISIONS:

DATE: DESCRIPTION:

BY:

WCCSP TRI-VALLEY TRAIL

BID SET

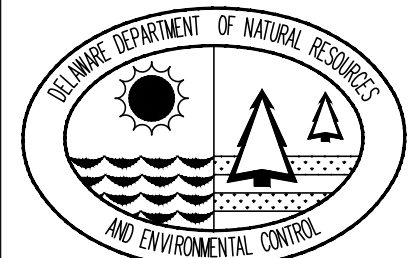
PROJECT NOTES & LEGEND

SEAL:

CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE:

SEPTEMBER 7,2016

SCALE:

NONE

SHEET NO.:

C1.1

CONTRACT NO.:

2016-WCCSP-100

FIRE MARSHAL NOTES

NAME OF PROJECT:

WHITE CLAY CREEK STATE PARK
TRI-VALLEY TRAIL

ADDRESS:

121 SMITH MILL ROAD
NEWARK, DE 19711

TAX MAP NUMBER:

08-035.00-032
08-040.00-054
08-040.00-055
08-040.00-056
08-041.00-027
08-041.00-028
08-041.00-029
08-041.00-030
08-047.00-097

OWNER'S NAME AND ADDRESS:

STATE OF DELAWARE
DELAWARE STATE PARKS

ENGINEER:

CENTURY ENGINEERING, INC.
4134 N. DUPONT HWY.
DOVER, DE 19901

APPLICANT:

WALTER J. HOEY, III, P.E.
(CENTURY ENGINEERING, INC.)

INTENDED USE OF SITE:

MULTI-USE TRAIL

WATER SUPPLIER:

PRIVATE WELL

NUMBER OF FIRE HYDRANTS:

0

BUILDING USE:

RESTROOM

MAXIMUM HEIGHT OF BUILDING:

9'-10"

BUILDING(S) SIZE:

334 S.F.

PROPOSED BUILDING CONSTRUCTION:

TYPE U (IBC)
TYPE I (000) (NFPA),

AUTOMATIC SPRINKLER PROTECTION:

NONE

FIRE LANES:

NONE

NOTES:

1.

ALL FIRE LANES, FIRE HYDRANTS, AND FIRE DEPARTMENT CONNECTIONS SHALL BE MARKED IN ACCORDANCE WITH THE STATE FIRE PREVENTION REGULATIONS.
2.

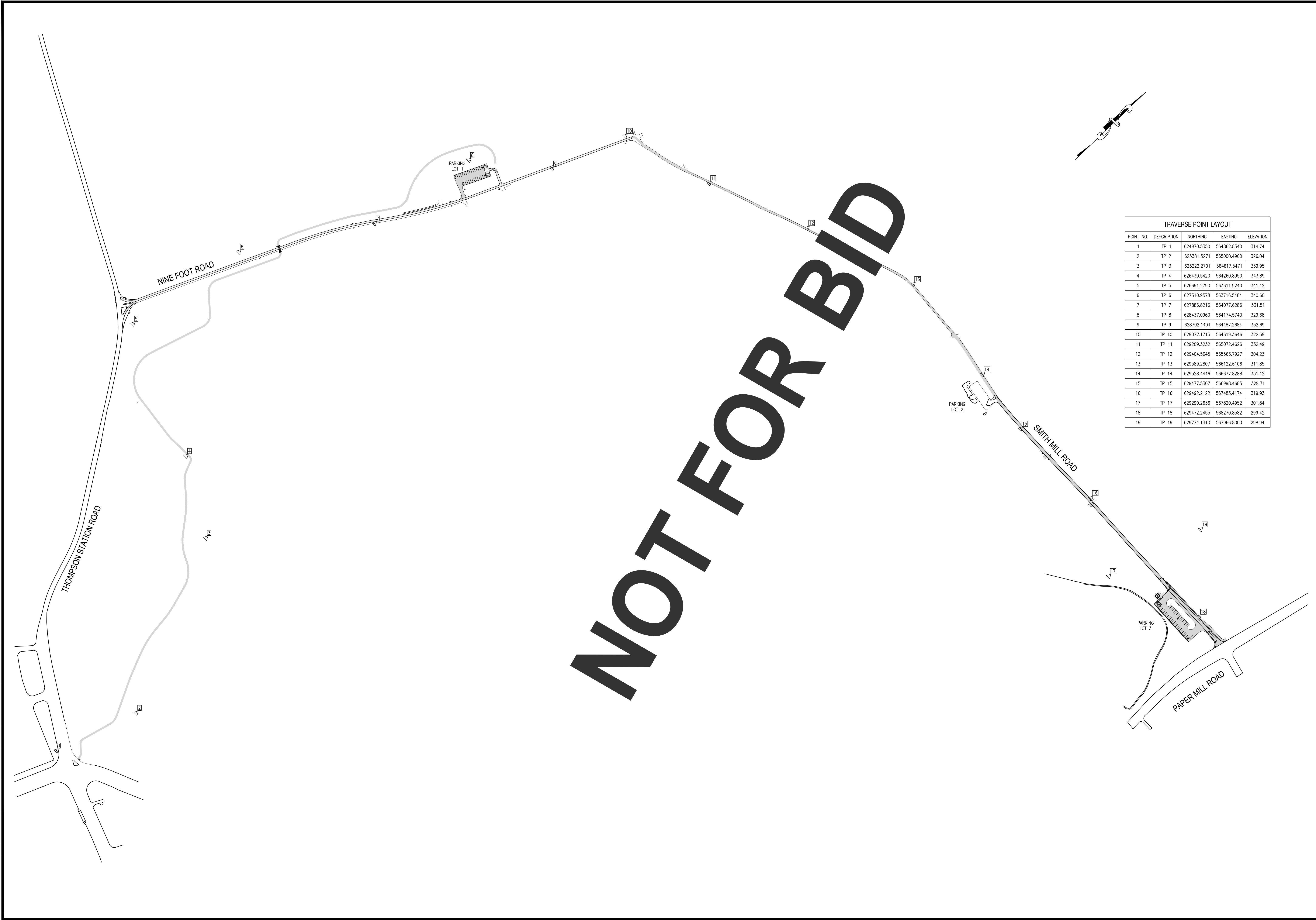
ALL PROPOSED FIRE HYDRANTS AND WATER MAINS SHALL BE INSTALLED IN ACCORDANCE WITH THE MOST CURRENT EDITION OF THE DELAWARE STATE FIRE REGULATIONS. (DSFPR REGULATION 702, CHAPTER 6 & 7.
3.

FIRE HYDRANTS SHALL BE COLOR CODED IN ACCORDANCE WITH THE DSFPR REGULATION 703, CHAPTER 3, SECTION 4. THIS INCLUDES BOTH COLOR CODING THE BONNET AND 2 INCH REFLECTIVE TAPE AROUND THE BARREL UNDER THE TOP FLANGE.
4.

ALL THREADS PROVIDED FOR FIRE DEPARTMENT CONNECTIONS, TO SPRINKLER SYSTEMS, STANDOPRES, HARD HYDRANTS OR ANY OTHER FIRE HOSE CONNECTIONS SHALL BE UNIFORM TO THOSE USED BY THE FIRE DEPARTMENT IN WHOSE DISTRICT THEY ARE LOCATED. (DSFPR REGULATION 703, CHAPTER 1, SECTION 1.5)
5.

THE STEAMER CONNECTION OF ALL FIRE HYDRANTS SHALL BE SO POSITIONED SO AS TO BE FACING THE STREET OR FIRE LANE. (DSFPR REGULATION 705, CHAPTER 5, SECTION 10)

C:\PROJECTS\125002.02 (WREC Civil Engineering Services - 2012)\125002.02_Tri-Valley Trail Concept Plan\125002.02_Site ControlPlan.dwg, 9/7/2016 1:06 AM



TRAVERSE POINT LAYOUT				
POINT NO.	DESCRIPTION	NORTHING	EASTING	ELEVATION
1	TP 1	624970.5350	564862.8340	314.74
2	TP 2	625381.5271	565000.4900	326.04
3	TP 3	626222.2701	564617.5471	339.95
4	TP 4	626430.5420	564260.8950	343.89
5	TP 5	626691.2790	563611.9240	341.12
6	TP 6	627310.9578	563716.5484	340.60
7	TP 7	627886.8216	564077.6286	331.51
8	TP 8	628437.0960	564174.5740	329.68
9	TP 9	628702.1431	564487.2684	332.69
10	TP 10	629072.1715	564619.3646	322.59
11	TP 11	629209.3232	565072.4626	332.49
12	TP 12	629404.5645	565563.7927	304.23
13	TP 13	629589.2807	566122.6106	311.85
14	TP 14	629528.4446	566677.8288	331.12
15	TP 15	629477.5307	566998.4685	329.71
16	TP 16	629492.2122	567483.4174	319.93
17	TP 17	629290.2636	567820.4952	301.84
18	TP 18	629472.2455	568270.8582	299.42
19	TP 19	629774.1310	567966.8000	298.94

REVISIONS:


DATE:	DESCRIPTION:	BY:

WCCSP TRI-VALLEY TRAIL
BID SET

SITE CONTROL PLAN

SEAL:

CIVIL ENGINEER:



CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17

DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE:

SEPTEMBER 7,2016

SCALE:

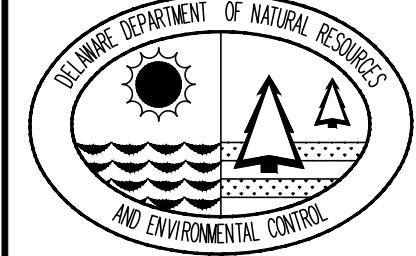
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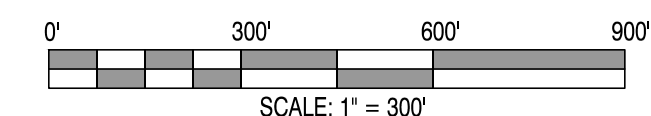
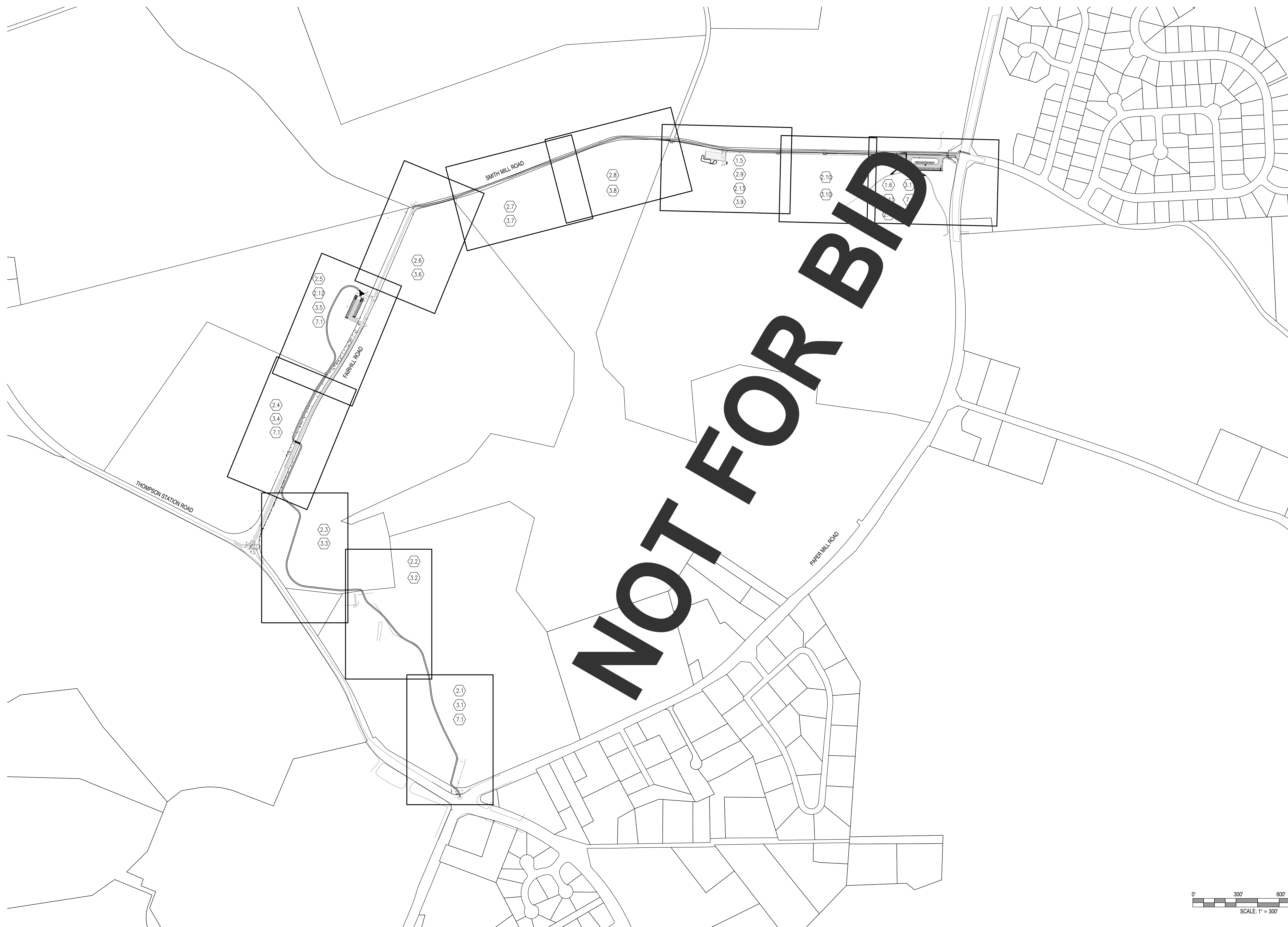
SHEET NO.:

C1.3

CONTRACT NO.:

2016-WCCSP-100





REVISIONS:

DATE:	DESCRIPTION:	BY:
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WCCSP TRI-VALLEY TRAIL

BID SET

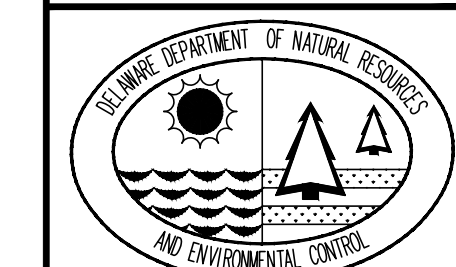
OVERALL SHEET LAYOUT PLAN

SEAL:

CIVIL ENGINEER:



CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE: _____

SEPTEMBER 7, 2016

SCALE:

$$1'' = 300'$$

SHEET NO.:

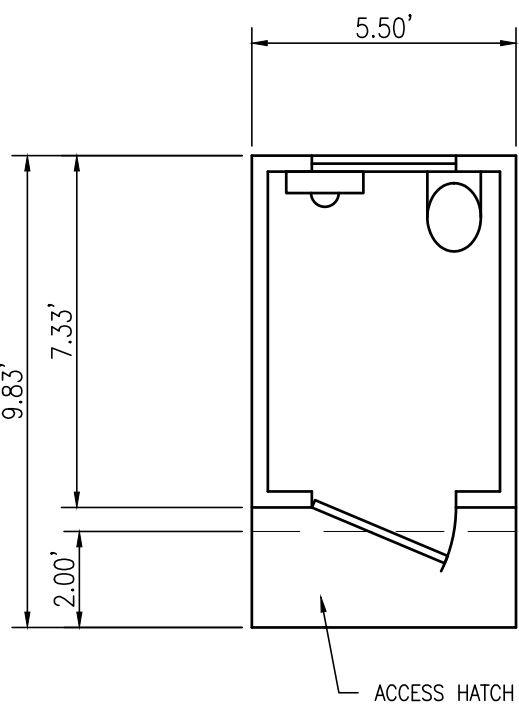
C1.4

CONTRACT NO.:

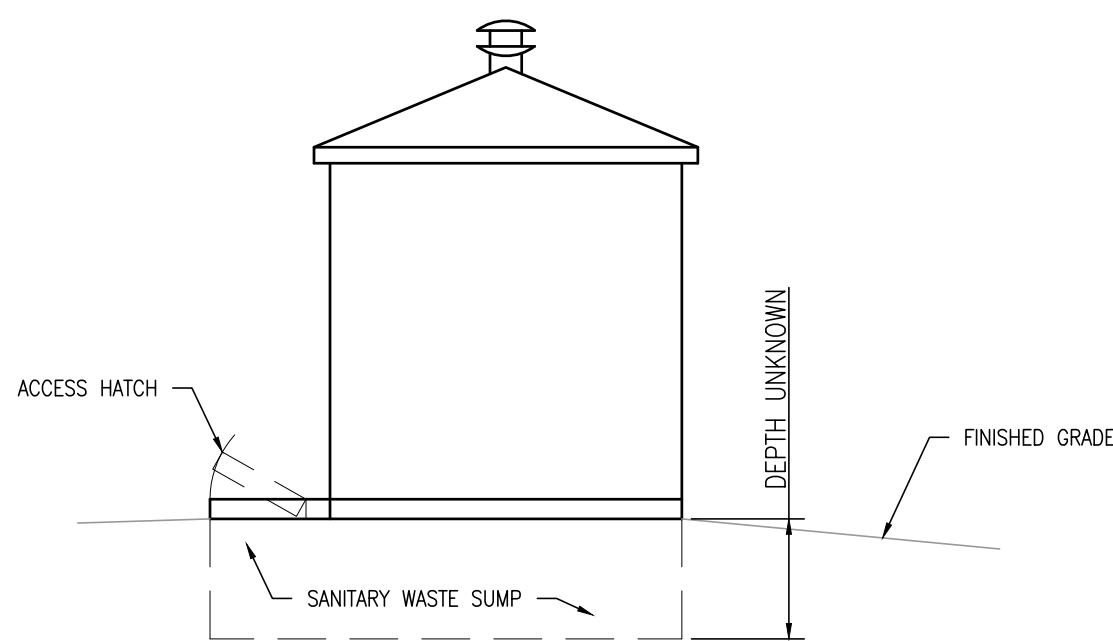
2016-WCCSP-100

T.P. 08-040.00-032
LANDS N.O.F.
STATE OF DELAWARE
c/o SAUL EWING AND SAUL REMICK
D.R. 2395-247
ZONING: SR

T.P. 08-041.00-030
LANDS N.O.F.
STATE OF DELAWARE
DNREC PARKS AND RECREATION
D.R. 808-151
ZONING: SR



PLAN VIEW

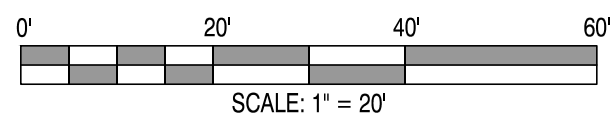


SIDE ELEVATION

1 FIBERGLASS SELF CONTAINED RESTROOM DETAILS
SCALE: 1/4" = 1'-0"

NOTES: (X)

1. PARCEL LINES TAKEN FROM GIS INFORMATION.
2. REMOVE EXISTING FIBERGLASS, SELF-CONTAINED RESTROOM, SEE DETAIL THIS SHEET. WORK TO INCLUDE:
 - 2.1. PUMPING ALL SEWAGE FROM SUMP.
 - 2.2. DISPOSING OF ALL SEWAGE IN ACCORDANCE WITH ALL STATE AND LOCAL LAWS AND REGULATIONS.
 - 2.3. SANITARY STEAM CLEANING OF EXISTING FACILITY, INCLUDING SUMP.
 - 2.4. TRANSPORTING RESTROOM TO DNREC PARKS (LOCATION TO BE DETERMINED).
 - 2.5. BACKFILLING ALL EXCAVATED AREAS WITH TYPE F BORROW TO WITHIN SIX (6) INCHES OF FINAL GRADE.
 - 2.6. BACKFILLING AND GRADING EXCAVATED AREA WITH SIX (6) INCHES OF TOPSOIL.
 - 2.7. SEEDING AND MULCHING AREA IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL DETAILS.
3. REMOVE AND DISPOSE OF EXISTING TIMBER SPLIT-RAIL FENCE.
4. REMOVE EXISTING GRAVEL PARKING LOT. WORK TO INCLUDE:
 - 4.1. REMOVAL, SALVAGE, AND DELIVERY OF CONCRETE PARKING BLOCKS TO DNREC PARKS.
 - 4.2. REMOVAL, SALVAGE, AND DELIVERY OF ALL SIGNAGE AND INFORMATION STRUCTURES TO DNREC PARKS.
 - 4.3. REMOVAL, AND SALVAGE OF STEEL GATE, GATE POSTS, AND RECEIVING POSTS TO BE INSTALLED AT LOT 3. (SEE SHEET C3.13.)
 - 4.4. EXCAVATING GRAVEL TO A MINIMUM DEPTH OF SIX (6) INCHES BELOW EXISTING GRADE. EXCAVATED MATERIAL TO BECOME THE PROPERTY OF THE CONTRACTOR AND LEGALLY DISPOSED OF OFF SITE.
 - 4.5. BACKFILLING AND GRADING LOT WITH SIX (6) INCHES OF TOPSOIL. GRADE TO DRAIN WITH NO LOW SPOTS.
 - 4.6. SEEDING AND MULCHING LOT IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL DETAILS.
5. CLEAR AND GRUB TREES, BRUSH, ETC. ON SOUTH AND WEST SIDE OF PARKING LOT. BACKFILL ALL DEPRESSIONS WITH CLEAN TOPSOIL, FINE GRADE TO MATCH SURROUNDING TERRAIN, SEED AND MULCH WITH PERMANENT SEEDING, DRY GROUND AND STRAW MULCH. OWNER TO REMOVE JUNE BERRY TREES TO BE SALVAGED PRIOR TO CONTRACTOR PERFORMING DEMOLITION WORK AT LOT 2.



REVISIONS:

DATE:	DESCRIPTION:	BY:

WCCSP TRI-VALLEY TRAIL

BID SET

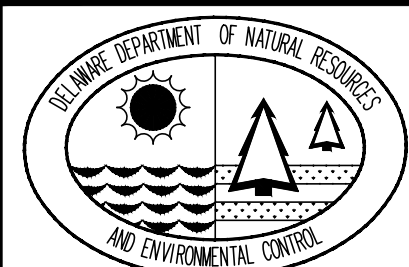
DEMOLITION PLAN - PARKING LOT 2

SEAL:

CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE:

SEPTEMBER 7, 2016

SCALE:

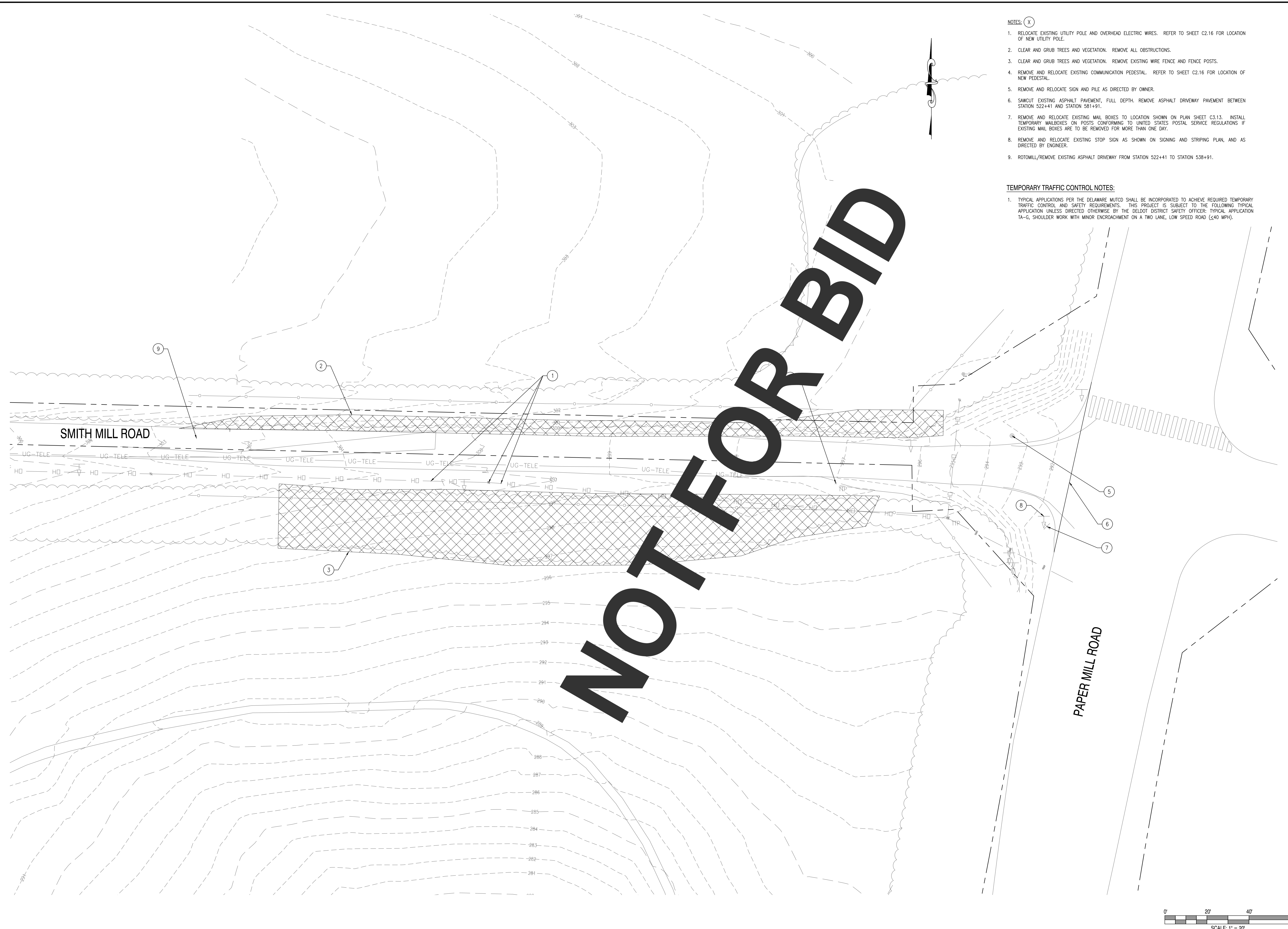
1" = 20'

SHEET NO.:

C2.1

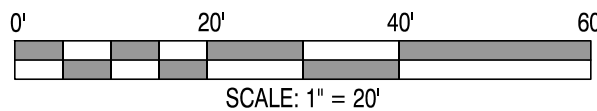
CONTRACT NO.:

2016-WCCSP-100



- NOTES: (X)
1. RELOCATE EXISTING UTILITY POLE AND OVERHEAD ELECTRIC WIRES. REFER TO SHEET C2.16 FOR LOCATION OF NEW UTILITY POLE.
 2. CLEAR AND GRUB TREES AND VEGETATION. REMOVE ALL OBSTRUCTIONS.
 3. CLEAR AND GRUB TREES AND VEGETATION. REMOVE EXISTING WIRE FENCE AND FENCE POSTS.
 4. REMOVE AND RELOCATE EXISTING COMMUNICATION PEDESTAL. REFER TO SHEET C2.16 FOR LOCATION OF NEW PEDESTAL.
 5. REMOVE AND RELOCATE SIGN AND PILE AS DIRECTED BY OWNER.
 6. SAWCUT EXISTING ASPHALT PAVEMENT, FULL DEPTH. REMOVE ASPHALT DRIVEWAY PAVEMENT BETWEEN STATION 522+41 AND STATION 581+91.
 7. REMOVE AND RELOCATE EXISTING MAIL BOXES TO LOCATION SHOWN ON PLAN SHEET C3.13. INSTALL TEMPORARY MAILBOXES ON POSTS CONFORMING TO UNITED STATES POSTAL SERVICE REGULATIONS IF EXISTING MAIL BOXES ARE TO BE REMOVED FOR MORE THAN ONE DAY.
 8. REMOVE AND RELOCATE EXISTING STOP SIGN AS SHOWN ON SIGNING AND STRIPING PLAN, AND AS DIRECTED BY ENGINEER.
 9. ROTOMILL/REMOVE EXISTING ASPHALT DRIVEWAY FROM STATION 522+41 TO STATION 538+91.

- TEMPORARY TRAFFIC CONTROL NOTES:
1. TYPICAL APPLICATIONS PER THE DELAWARE MUTCD SHALL BE INCORPORATED TO ACHIEVE REQUIRED TEMPORARY TRAFFIC CONTROL AND SAFETY REQUIREMENTS. THIS PROJECT IS SUBJECT TO THE FOLLOWING TYPICAL APPLICATION UNLESS DIRECTED OTHERWISE BY THE DELDOT DISTRICT SAFETY OFFICER: TYPICAL APPLICATION TA-G, SHOULDER WORK WITH MINOR ENCRoACHMENT ON A TWO LANE, LOW SPEED ROAD (≤40 MPH).



REVISIONS:

DATE:	DESCRIPTION:	BY:

WCCSP TRI-VALLEY TRAIL

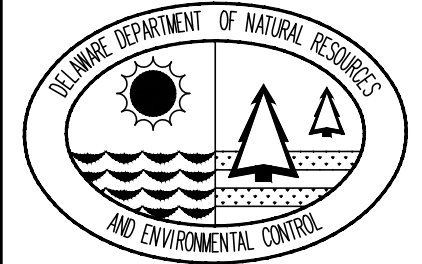
BID SET

DEMOLITION PLAN - PARKING LOT 3

SEAL:

CIVIL ENGINEER:
CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17



DESIGNED BY:
WJH

DRAWN BY:
DLD

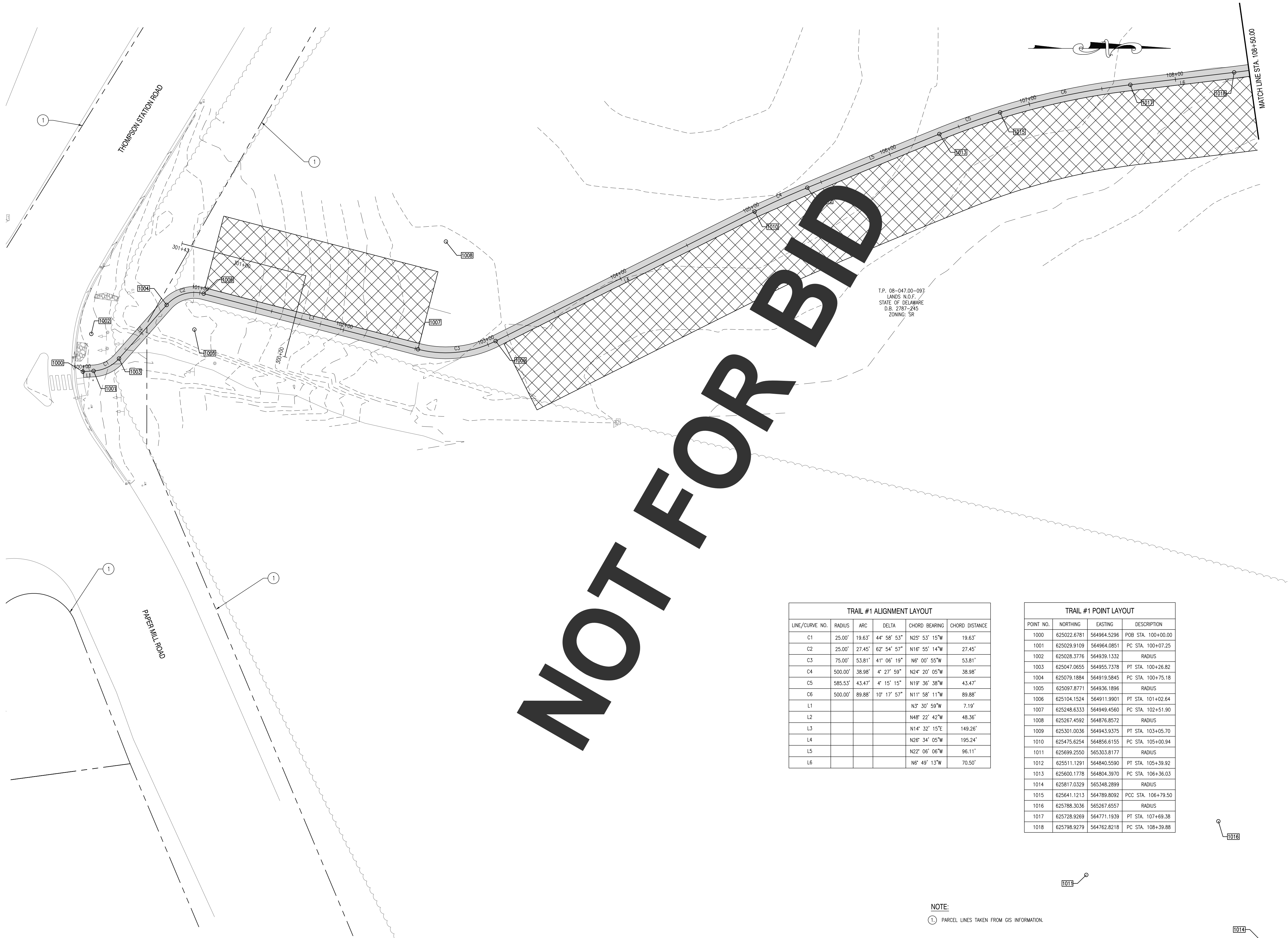
CHECKED BY:
SLR

DATE:
SEPTEMBER 7, 2016

SCALE:
1" = 20'

SHEET NO.:
C2.2

CONTRACT NO.:
2016-WCCSP-100

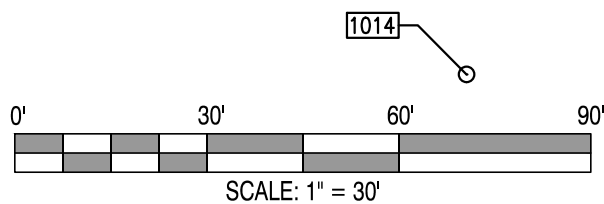


T.P. 08-047.00-097
LANDS N.C.T.
STATE OF DELAWARE
D.B. 2787-245
ZONING: SR

TRAIL #1 ALIGNMENT LAYOUT					
LINE/CURVE NO.	RADIUS	ARC	DELTA	CHORD BEARING	CHORD DISTANCE
C1	25.00'	19.63'	44° 58' 53"	N25° 53' 15"W	19.63'
C2	25.00'	27.45'	62° 54' 57"	N16° 55' 14"W	27.45'
C3	75.00'	53.81'	41° 06' 19"	N6° 00' 55"W	53.81'
C4	500.00'	38.98'	4° 27' 59"	N24° 20' 05"W	38.98'
C5	585.53'	43.47'	4° 15' 15"	N19° 36' 38"W	43.47'
C6	500.00'	89.88'	10° 17' 57"	N11° 58' 11"W	89.88'
L1				N3° 30' 59"W	7.19'
L2				N48° 22' 42"W	48.36'
L3				N14° 32' 15"E	149.26'
L4				N26° 34' 05"W	195.24'
L5				N22° 06' 06"W	96.11'
L6				N6° 49' 13"W	70.50'

TRAIL #1 POINT LAYOUT			
POINT NO.	NORTHING	EASTING	DESCRIPTION
1000	625022.6781	564964.5296	POB STA. 100+00.00
1001	625029.9109	564964.0851	PC STA. 100+07.25
1002	625028.3776	564939.1332	RADIUS
1003	625047.0655	564955.7378	PT STA. 100+26.82
1004	625079.1884	564919.5845	PC STA. 100+75.18
1005	625097.8771	564936.1896	RADIUS
1006	625104.1524	564911.9901	PT STA. 101+02.64
1007	625248.6333	564949.4560	PC STA. 102+51.90
1008	625267.4592	564876.8572	RADIUS
1009	625301.0036	564943.9375	PT STA. 103+05.70
1010	625475.6254	564856.6155	PC STA. 105+00.94
1011	625699.2550	565303.8177	RADIUS
1012	625511.1291	564840.5590	PT STA. 105+39.92
1013	625600.1778	564804.3970	PC STA. 106+36.03
1014	625817.0329	565348.2899	RADIUS
1015	625641.1213	564789.8092	PCC STA. 106+79.50
1016	625788.3036	565267.6557	RADIUS
1017	625728.9269	564771.1939	PT STA. 107+69.38
1018	625798.9279	564762.8218	PC STA. 108+39.88

NOTE:
①. PARCEL LINES TAKEN FROM GIS INFORMATION.



REVISIONS:

DATE:	DESCRIPTION:	BY:

WCCSP TRI-VALLEY TRAIL

BID SET

SITE ALIGNMENT & SITE GRADING PLAN

SEAL:

CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE:

SEPTEMBER 7, 2016

SCALE:

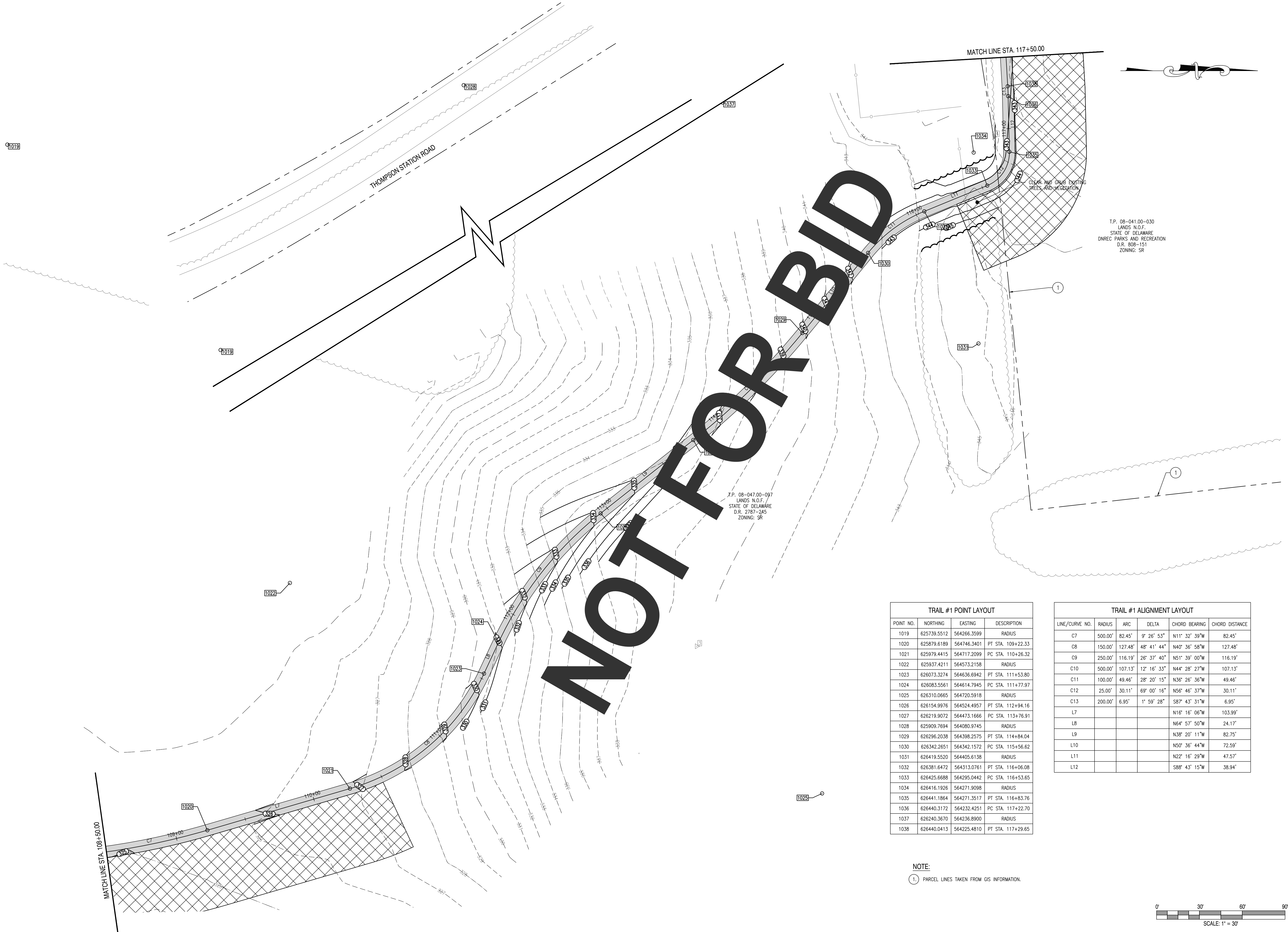
1" = 30'

SHEET NO.:

C3.1

CONTRACT NO.:

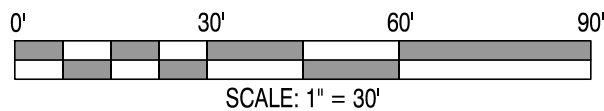
2016-WCCSP-100



TRAIL #1 POINT LAYOUT			
POINT NO.	NORTHING	EASTING	DESCRIPTION
1019	625739.5512	564266.3599	RADIUS
1020	625879.6189	564746.3401	PT STA. 109+22.33
1021	625979.4415	564717.2099	PC STA. 110+26.32
1022	625937.4211	564573.2158	RADIUS
1023	626073.3274	564636.6942	PT STA. 111+53.80
1024	626083.5561	564614.7945	PC STA. 111+77.97
1025	626310.0665	564720.5918	RADIUS
1026	626154.9976	564524.4957	PT STA. 112+94.16
1027	626219.9072	564473.1666	PC STA. 113+76.91
1028	625909.7694	564080.9745	RADIUS
1029	626296.2038	564398.2575	PT STA. 114+84.04
1030	626342.2651	564342.1572	PC STA. 115+56.62
1031	626419.5520	564405.6138	RADIUS
1032	626381.6472	564313.0761	PT STA. 116+06.08
1033	626425.6688	564295.0442	PC STA. 116+53.65
1034	626416.1926	564271.9098	RADIUS
1035	626441.1864	564271.3517	PT STA. 116+83.76
1036	626440.3172	564232.4251	PC STA. 117+22.70
1037	626240.3670	564236.8900	RADIUS
1038	626440.0413	564225.4810	PT STA. 117+29.65

TRAIL #1 ALIGNMENT LAYOUT					
LINE/CURVE NO.	RADIUS	ARC	DELTA	CHORD BEARING	CHORD DISTANCE
C7	500.00'	82.45'	9' 26' 53"	N11° 32' 39"W	82.45'
C8	150.00'	127.48'	48' 41' 44"	N40° 36' 58"W	127.48'
C9	250.00'	116.19'	26' 37' 40"	N51° 39' 00"W	116.19'
C10	500.00'	107.13'	12' 16' 33"	N44° 28' 27"W	107.13'
C11	100.00'	49.46'	28' 20' 15"	N36° 26' 36"W	49.46'
C12	25.00'	30.11'	69° 00' 16"	N56° 46' 37"W	30.11'
C13	200.00'	6.95'	1° 59' 28"	S87° 43' 31"W	6.95'
L7				N16° 16' 06"W	103.99'
L8				N64° 57' 50"W	24.17'
L9				N38° 20' 11"W	82.75'
L10				N50° 36' 44"W	72.59'
L11				N22° 16' 29"W	47.57'
L12				S88° 43' 15"W	38.94'

NOTE:
1. PARCEL LINES TAKEN FROM GIS INFORMATION.



REVISIONS:		DATE:	DESCRIPTION:	BY:


WCCSP TRI-VALLEY TRAIL

BID SET

SITE ALIGNMENT & SITE GRADING PLAN

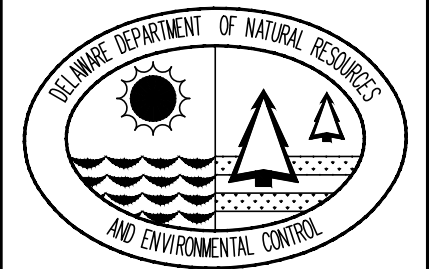
SEAL:

CIVIL ENGINEER:



CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17



DESIGNED BY:
WJH

DRAWN BY:
DLD

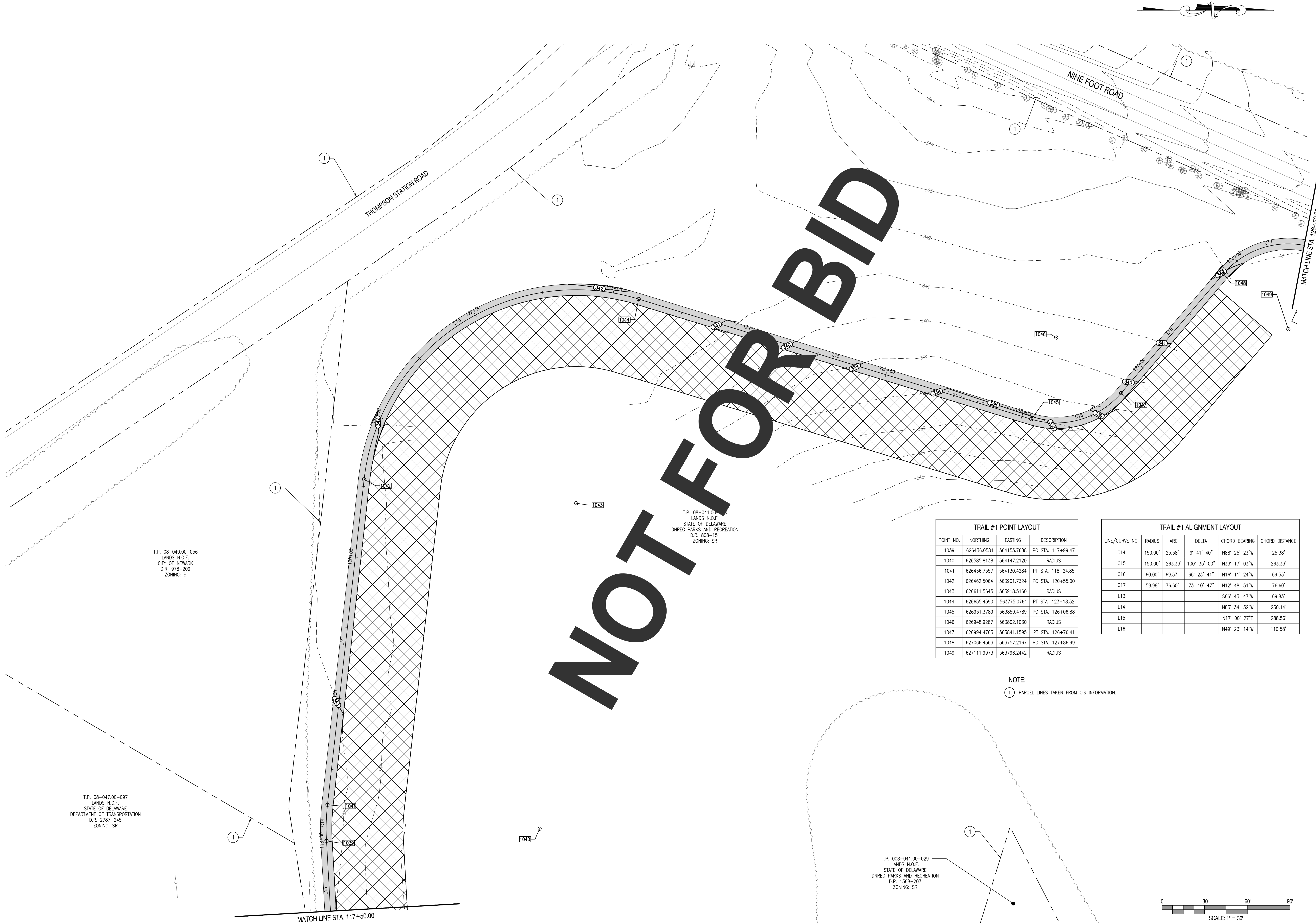
CHECKED BY:
SLR

DATE:
SEPTEMBER 7, 2016

SCALE:
1" = 30'

SHEET NO.:
C3.2

CONTRACT NO.:
2016-WCCSP-100



T.P. 08-040.00-056
LANDS N.O.F.
CITY OF NEWARK
D.R. 878-209
ZONING: S

T.P. 08-047.00-097
LANDS N.O.F.
STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
D.R. 2787-245
ZONING: SR

T.P. 08-041.00-029
LANDS N.O.F.
STATE OF DELAWARE
DNREC PARKS AND RECREATION
D.R. 808-151
ZONING: SR

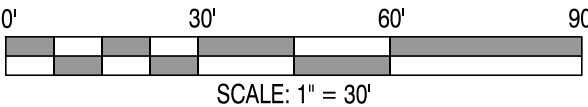
T.P. 008-041.00-029
LANDS N.O.F.
STATE OF DELAWARE
DNREC PARKS AND RECREATION
D.R. 1388-207
ZONING: SR

TRAIL #1 POINT LAYOUT			
POINT NO.	NORTHING	EASTING	DESCRIPTION
1039	626436.0581	564155.7688	PC STA. 117+99.47
1040	626585.8138	564147.2120	RADIUS
1041	626436.7557	564130.4284	PT STA. 118+24.85
1042	626462.5064	563901.7324	PC STA. 120+55.00
1043	626611.5645	563918.5160	RADIUS
1044	626655.4390	563775.0761	PT STA. 123+18.32
1045	626931.3789	563859.4789	PC STA. 126+06.88
1046	626948.9287	563802.1030	RADIUS
1047	626994.4763	563841.1595	PT STA. 128+76.41
1048	627066.4563	563757.2167	PC STA. 127+86.99
1049	627111.9973	563796.2442	RADIUS

TRAIL #1 ALIGNMENT LAYOUT					
LINE/CURVE NO.	RADIUS	ARC	DELTA	CHORD BEARING	CHORD DISTANCE
C14	150.00'	25.38'	9° 41' 40"	N88° 25' 23"W	25.38'
C15	150.00'	263.33'	100° 35' 00"	N33° 17' 03"W	263.33'
C16	60.00'	69.53'	66° 23' 41"	N16° 11' 24"W	69.53'
C17	59.98'	76.60'	73° 10' 47"	N12° 48' 51"W	76.60'
L13				S86° 43' 47"W	69.83'
L14				N83° 34' 32"W	230.14'
L15				N17° 00' 27"E	288.56'
L16				N49° 23' 14"W	110.58'

NOTE:

- 1 PARCEL LINES TAKEN FROM GIS INFORMATION.



REVISIONS:

DATE:	DESCRIPTION:	BY:

WCCSP TRI-VALLEY TRAIL

BID SET

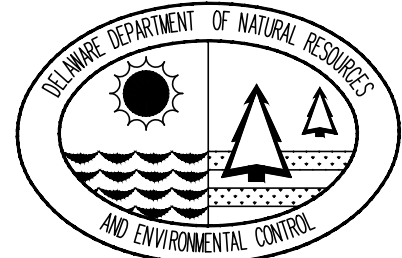
SITE ALIGNMENT & SITE GRADING PLAN

SEAL:

CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE:

SEPTEMBER 7, 2016

SCALE:

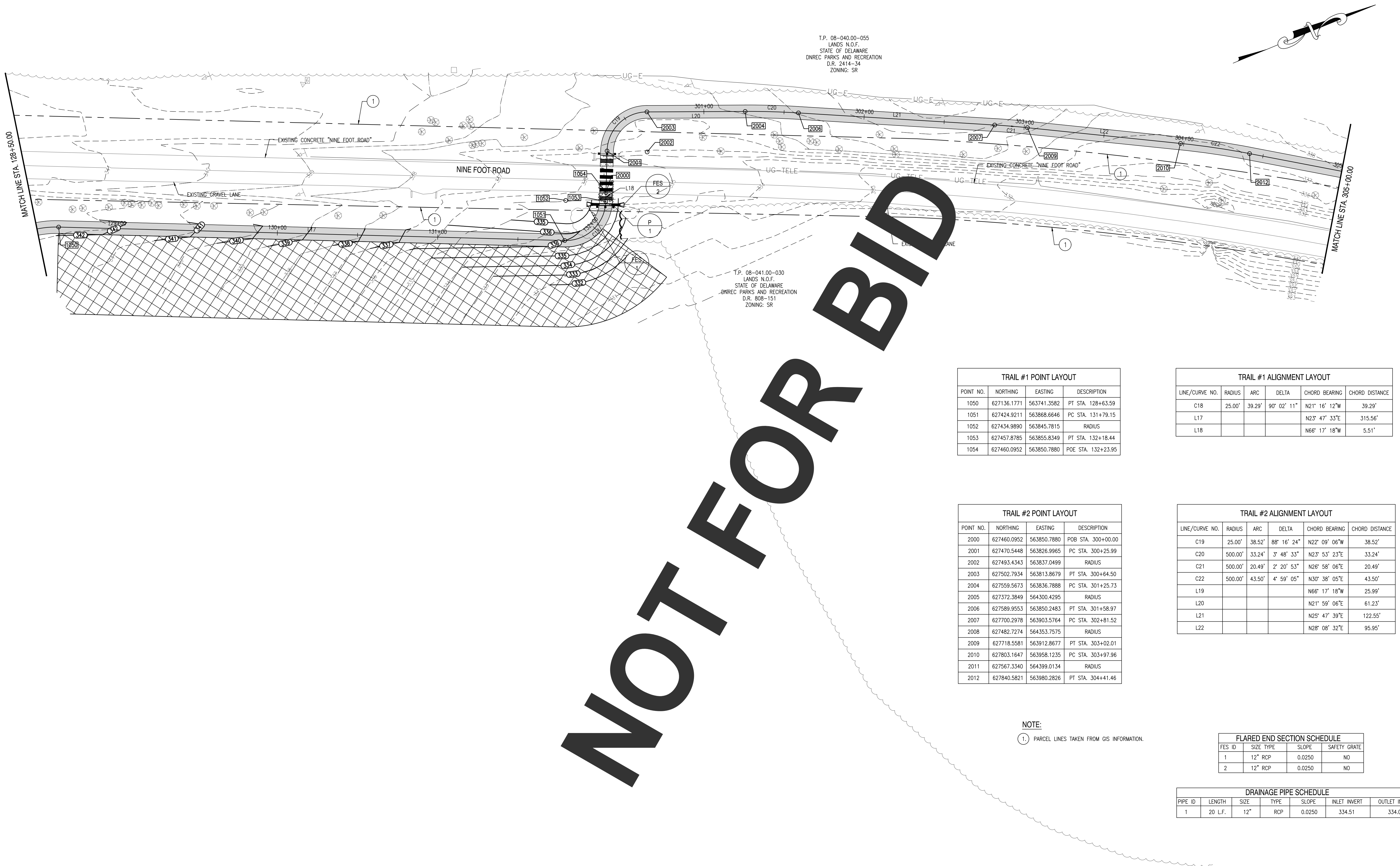
1" = 30'

SHEET NO.:

C3.3

CONTRACT NO.:

2016-WCCSP-100



NOT FOR BID

TRAIL #1 POINT LAYOUT			
POINT NO.	NORTHING	EASTING	DESCRIPTION
1050	627136.1771	563741.3582	PT STA. 128+63.59
1051	627424.9211	563868.6646	PC STA. 131+79.15
1052	627434.9890	563845.7815	RADIUS
1053	627457.8785	563855.8349	PT STA. 132+18.44
1054	627460.0952	563850.7880	POE STA. 132+23.95

TRAIL #1 ALIGNMENT LAYOUT					
LINE/CURVE NO.	RADIUS	ARC	DELTA	CHORD BEARING	CHORD DISTANCE
C18	25.00'	39.29'	90° 02' 11"	N21° 16' 12"W	39.29'
L17				N23° 47' 33"E	315.56'
L18				N66° 17' 18"W	5.51'

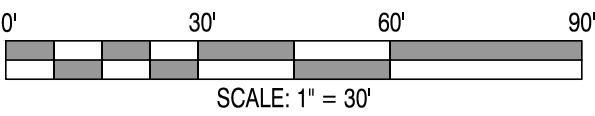
TRAIL #2 POINT LAYOUT			
POINT NO.	NORTHING	EASTING	DESCRIPTION
2000	627460.0952	563850.7880	POB STA. 300+00.00
2001	627470.5448	563826.9965	PC STA. 300+25.99
2002	627493.4343	563837.0499	RADIUS
2003	627502.7934	563813.8679	PT STA. 300+64.50
2004	627559.5673	563836.7888	PC STA. 301+25.73
2005	627372.3849	564300.4295	RADIUS
2006	627589.9553	563850.2483	PT STA. 301+58.97
2007	627700.2978	563903.5764	PC STA. 302+81.52
2008	627482.7274	564353.7575	RADIUS
2009	627718.5581	563912.8677	PT STA. 303+02.01
2010	627803.1647	563958.1235	PC STA. 303+97.96
2011	627567.3340	564399.0134	RADIUS
2012	627840.5821	563980.2826	PT STA. 304+41.46

TRAIL #2 ALIGNMENT LAYOUT					
LINE/CURVE NO.	RADIUS	ARC	DELTA	CHORD BEARING	CHORD DISTANCE
C19	25.00'	38.52'	88° 16' 24"	N22° 09' 06"W	38.52'
C20	500.00'	33.24'	3° 48' 33"	N23° 53' 23"E	33.24'
C21	500.00'	20.49'	2° 20' 53"	N26° 58' 06"E	20.49'
C22	500.00'	43.50'	4° 59' 05"	N30° 38' 05"E	43.50'
L19				N66° 17' 18"W	25.99'
L20				N21° 59' 06"E	61.23'
L21				N25° 47' 39"E	122.55'
L22				N28° 08' 32"E	95.95'

NOTE:
1. PARCEL LINES TAKEN FROM GIS INFORMATION.

FLARED END SECTION SCHEDULE			
FES ID	SIZE	TYPE	SAFETY GRATE
1	12"	RCP	NO
2	12"	RCP	NO

DRAINAGE PIPE SCHEDULE						
PIPE ID	LENGTH	SIZE	TYPE	SLOPE	INLET INVERT	OUTLET INVERT
1	20 L.F.	12"	RCP	0.0250	334.51	334.01



REVISIONS:		DATE:	DESCRIPTION:	BY:

WCCSP TRI-VALLEY TRAIL

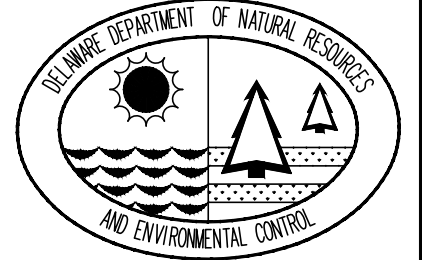
BID SET

SITE ALIGNMENT & SITE GRADING PLAN

SEAL:

CIVIL ENGINEER:
CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17



DESIGNED BY:
WJH

DRAWN BY:
DLD

CHECKED BY:
SLR

DATE:
SEPTEMBER 7, 2016

SCALE:
1" = 30'



SHEET NO.:
C3.4

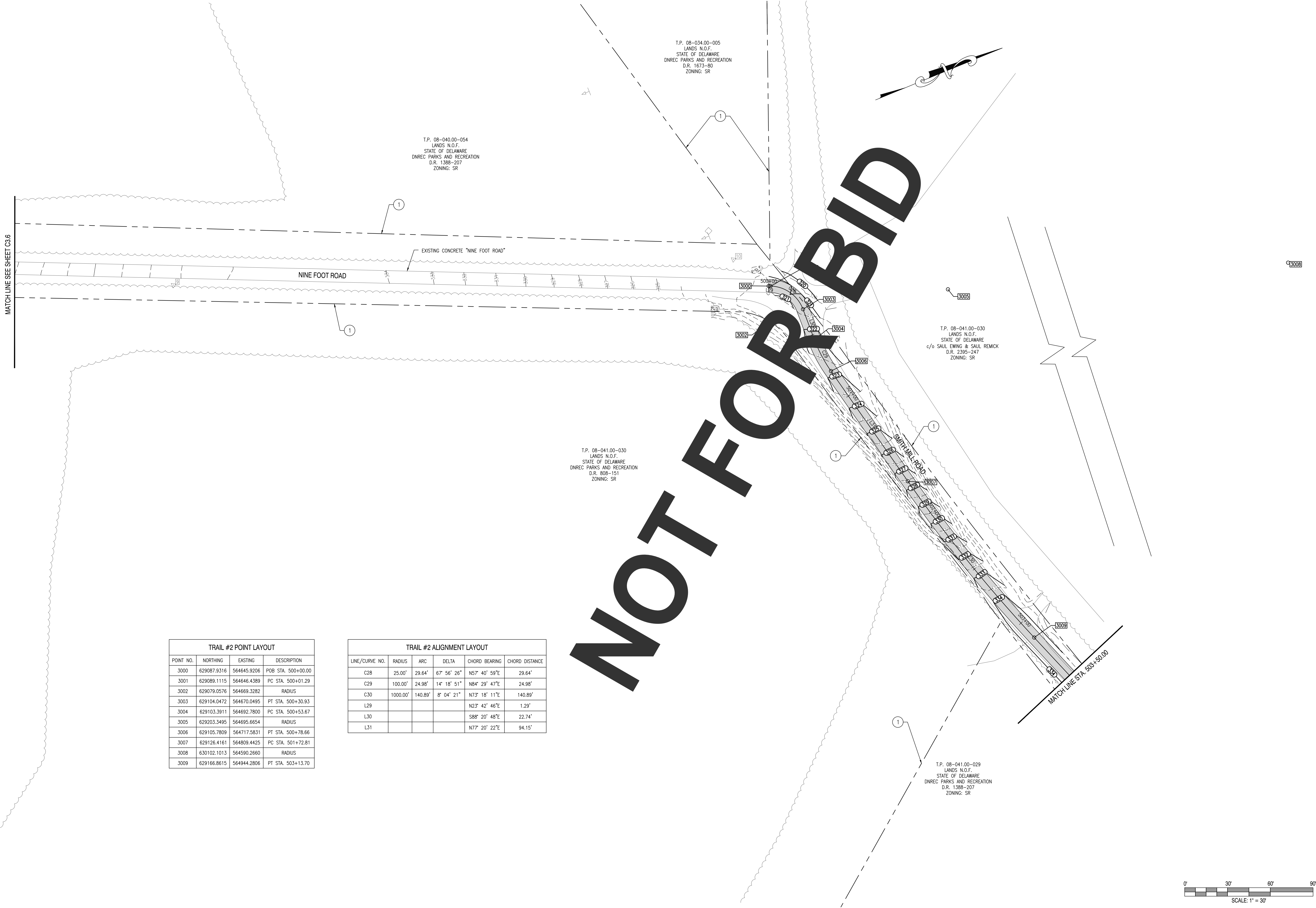
CONTRACT NO.:
2016-WCCSP-100



TRAIL #2 POINT LAYOUT			
POINT NO.	NORTHING	EASTING	DESCRIPTION
2013	628012.8299	564092.6851	PC STA. 306+47.14
2014	628056.8444	564025.8806	RADIUS
2015	628096.4069	564005.0525	PT STA. 307+35.12
2016	628109.9290	564087.2825	PC STA. 307+50.71
2017	628259.3939	564437.3984	RADIUS
2018	628373.9367	564370.1261	PT/PC STA. 310+24.70
2019	628045.5805	564684.9734	RADIUS
2020	628512.1653	564124.5479	PT STA. 311+80.97
2021	628468.7620	564209.7502	RADIUS
2022	628527.5247	564264.0360	PT STA. 313+20.42
2023	628499.8960	564293.9432	PT STA. 313+61.14
2024	628495.1981	564304.4211	PC STA. 313+72.62
2025	628677.6935	564366.2466	RADIUS
2026	628494.2932	564306.4722	PT STA. 313+74.86
2027	628467.1685	564308.8295	POE STA. 314+42.86

TRAIL #2 ALIGNMENT LAYOUT					
LINE/CURVE NO.	RADIUS	ARC	DELTA	CHORD BEARING	CHORD DISTANCE
C23	80.00'	87.98'	63° 00' 32"	N1° 37' 21"E	87.98'
C24	300.00'	273.99'	52° 19' 40"	N3° 43' 05"W	273.99'
C25	80.00'	139.45'	99° 52' 32"	N82° 47' 40"E	139.45'
C27	200.00'	2.24'	0° 38' 33"	S66° 10' 16"E	2.24'
C56	860.00'	156.27'	10° 24' 39"	N27° 39' 05"E	156.27'
L23				N33° 07' 37"E	205.68'
L24				N29° 52' 55"W	15.60'
L26				S47° 16' 04"E	40.72'
L27				S65° 51' 00"E	11.48'
L28				S66° 29' 32"E	68.00'

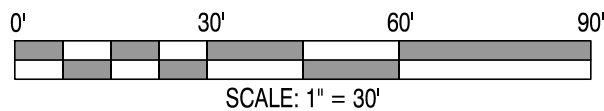
REVISIONS:			
DATE:	DESCRIPTION:	BY:	
WCCSP TRI-VALLEY TRAIL BID SET		SITE ALIGNMENT & SITE GRADING PLAN	
SEAL:			
CIVIL ENGINEER:			
 CENTURY ENGINEERING CONSULTING ENGINEERS, SURVEYORS 4134 N. DUPONT HWY. DOVER, DELAWARE 19901			
CEI CONTRACT NO.: 125002.17			
			
DESIGNED BY: WJH			
DRAWN BY: DLD			
CHECKED BY: SLR			
DATE: SEPTEMBER 7, 2016			
SCALE: 1" = 30'			
SHEET NO.: C3.5			
CONTRACT NO.: 2016-WCCSP-100			



MATCH LINE SEE SHEET C3.6

TRAIL #2 POINT LAYOUT			
POINT NO.	NORTHING	EASTING	DESCRIPTION
3000	629087.9316	564645.9206	POB STA. 500+00.00
3001	629089.1115	564646.4389	PC STA. 500+01.29
3002	629079.0576	564669.3282	RADIUS
3003	629104.0472	564670.0495	PT STA. 500+30.93
3004	629103.3911	564692.7800	PC STA. 500+53.67
3005	629203.3495	564895.6654	RADIUS
3006	629105.7809	564717.5831	PT STA. 500+78.66
3007	629126.4161	564809.4425	PC STA. 501+72.81
3008	630102.1013	564590.2660	RADIUS
3009	629166.8615	564944.2806	PT STA. 503+13.70

TRAIL #2 ALIGNMENT LAYOUT					
LINE/CURVE NO.	RADIUS	ARC	DELTA	CHORD BEARING	CHORD DISTANCE
C28	25.00'	29.64'	67° 56' 26"	N57° 40' 59"E	29.64'
C29	100.00'	24.98'	14° 18' 51"	N84° 29' 47"E	24.98'
C30	1000.00'	140.89'	8° 04' 21"	N73° 18' 11"E	140.89'
L29				N23° 42' 46"E	1.29'
L30				S88° 20' 48"E	22.74'
L31				N77° 20' 22"E	94.15'



REVISIONS:

DATE	DESCRIPTION	BY

WCCSP TRI-VALLEY TRAIL
BID SET

SITE ALIGNMENT & SITE GRADING PLAN

SEAL:

CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
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CEI CONTRACT NO.: 125002.17

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DRAWN BY:
DLD

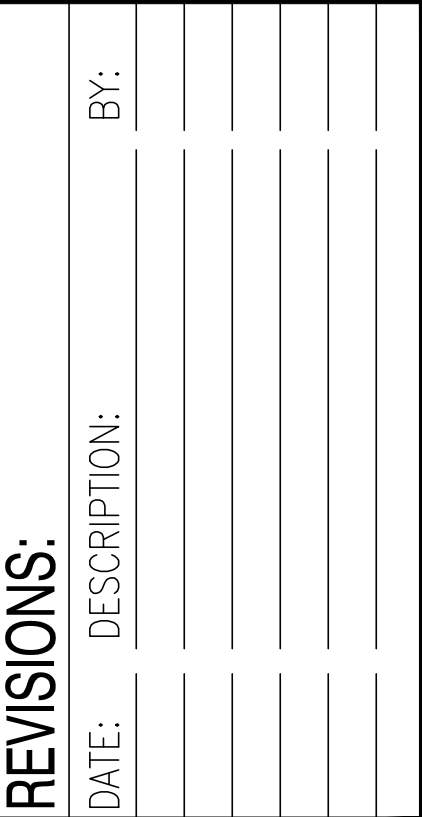
CHECKED BY:
SLR

DATE:
SEPTEMBER 7, 2016

SCALE:
1" = 30'

SHEET NO.:
C3.6

CONTRACT NO.:
2016-WCCSP-100



SEAL:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CHECKED BY:
SLR

SCALE:
 $1'' = 30'$

CONTRACT NO.:
2016-WCCSP-100

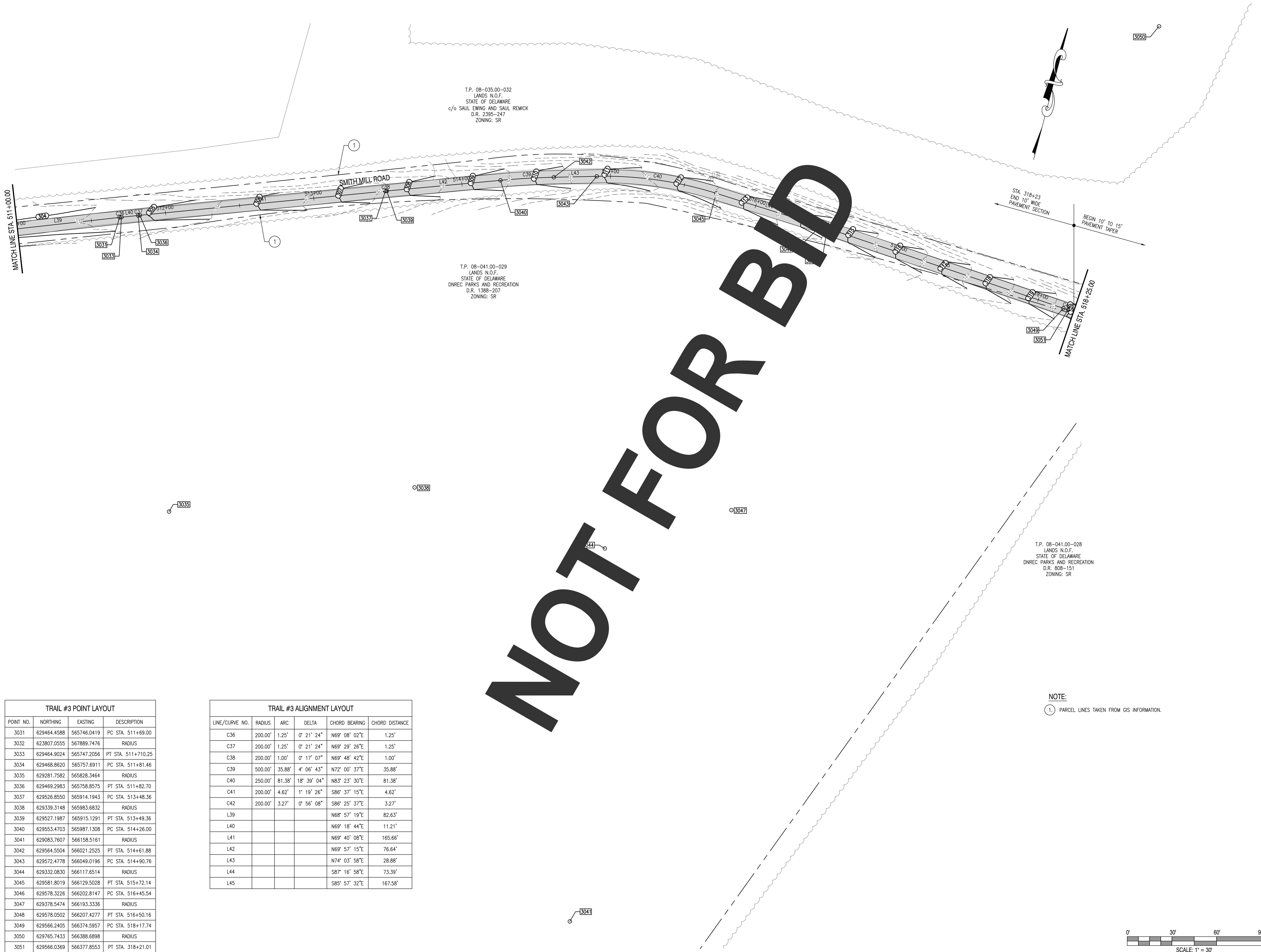
TRAIL #3 ALIGNMENT LAYOUT					
LINE/CURVE NO.	RADIUS	ARC	DELTA	CHORD BEARING	CHORD DISTANCE
C31	200.00'	1.79'	0° 30' 47"	N69° 31' 24"E	1.79'
C32	200.00'	3.39'	0° 58' 15"	N70° 15' 55"E	3.39'
C33	200.00'	9.71'	2° 46' 57"	N69° 21' 34"E	9.71'
C34	200.00'	4.73'	1° 21' 22"	N68° 38' 47"E	4.73'
C35	200.00'	5.01'	1° 26' 12"	N70° 02' 34"E	5.01'
L32				N69° 16' 01"E	164.20'
L33				N69° 46' 48"E	200.91'
L34				N67° 45' 03"E	62.56'
L35				N67° 58' 06"E	97.30'
L36				N69° 19' 28"E	36.65'
L37				N70° 45' 40"E	52.46'
L38				N70° 41' 35"E	127.89'

0' 30' 60' 90'

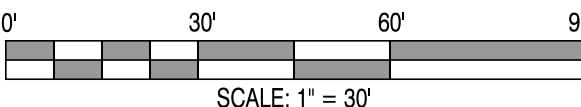
SCALE: 1" = 30'

TRAIL #3 POINT LAYOUT				
POINT NO.	NORTHING	EASTING	DESCRIPTION	
3031	629464.4588	565746.0419	PC STA. 511+69.00	
3032	623807.0555	567889.7476	RADIUS	
3033	629464.9024	565747.2056	PT STA. 511+710.25	
3034	629468.8620	565757.6911	PC STA. 511+81.46	
3035	629281.7582	565828.3464	RADIUS	
3036	629469.2983	565758.8575	PT STA. 511+82.70	
3037	629526.8550	565914.1943	PC STA. 513+48.36	
3038	629339.3148	565983.6832	RADIUS	
3039	629527.1987	565915.1291	PT STA. 513+49.36	
3040	629553.4703	565987.1308	PC STA. 514+26.00	
3041	629083.7607	566158.5161	RADIUS	
3042	629564.5504	566021.2525	PT STA. 514+61.88	
3043	629572.4778	566049.0196	PC STA. 514+90.76	
3044	629332.0830	566117.6514	RADIUS	
3045	629581.8019	566129.5028	PT STA. 515+72.14	
3046	629578.3226	566202.8147	PC STA. 516+45.54	
3047	629378.5474	566193.3336	RADIUS	
3048	629578.0502	566207.4277	PT STA. 516+50.16	
3049	629566.2405	566374.5957	PC STA. 518+17.74	
3050	629765.7433	566388.6898	RADIUS	
3051	629566.0369	566377.8553	PT STA. 318+21.01	

TRAIL #3 ALIGNMENT LAYOUT					
LINE/CURVE NO.	RADIUS	ARC	DELTA	CHORD BEARING	CHORD DISTANCE
C36	200.00'	1.25'	0° 21' 24"	N69° 08' 02"E	1.25'
C37	200.00'	1.25'	0° 21' 24"	N69° 29' 26"E	1.25'
C38	200.00'	1.00'	0° 17' 07"	N69° 48' 42"E	1.00'
C39	500.00'	35.88'	4° 06' 43"	N72° 00' 37"E	35.88'
C40	250.00'	81.38'	18° 39' 04"	N83° 23' 30"E	81.38'
C41	200.00'	4.62'	1° 19' 26"	S86° 37' 15"E	4.62'
C42	200.00'	3.27'	0° 56' 08"	S86° 25' 37"E	3.27'
L39				N68° 57' 19"E	82.63'
L40				N69° 18' 44"E	11.21'
L41				N69° 40' 08"E	165.66'
L42				N69° 57' 15"E	76.64'
L43				N74° 03' 58"E	28.88'
L44				S87° 16' 58"E	73.39'
L45				S85° 57' 32"E	167.58'



NOTE:
1. PARCEL LINES TAKEN FROM GIS INFORMATION.



REVISIONS:

DATE	DESCRIPTION	BY

WCCSP TRI-VALLEY TRAIL
BID SET

SITE ALIGNMENT & SITE GRADING PLAN

SEAL:

CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901
CEI CONTRACT NO.: 125002.17

DESIGNED BY:
WJH

DRAWN BY:
DLD

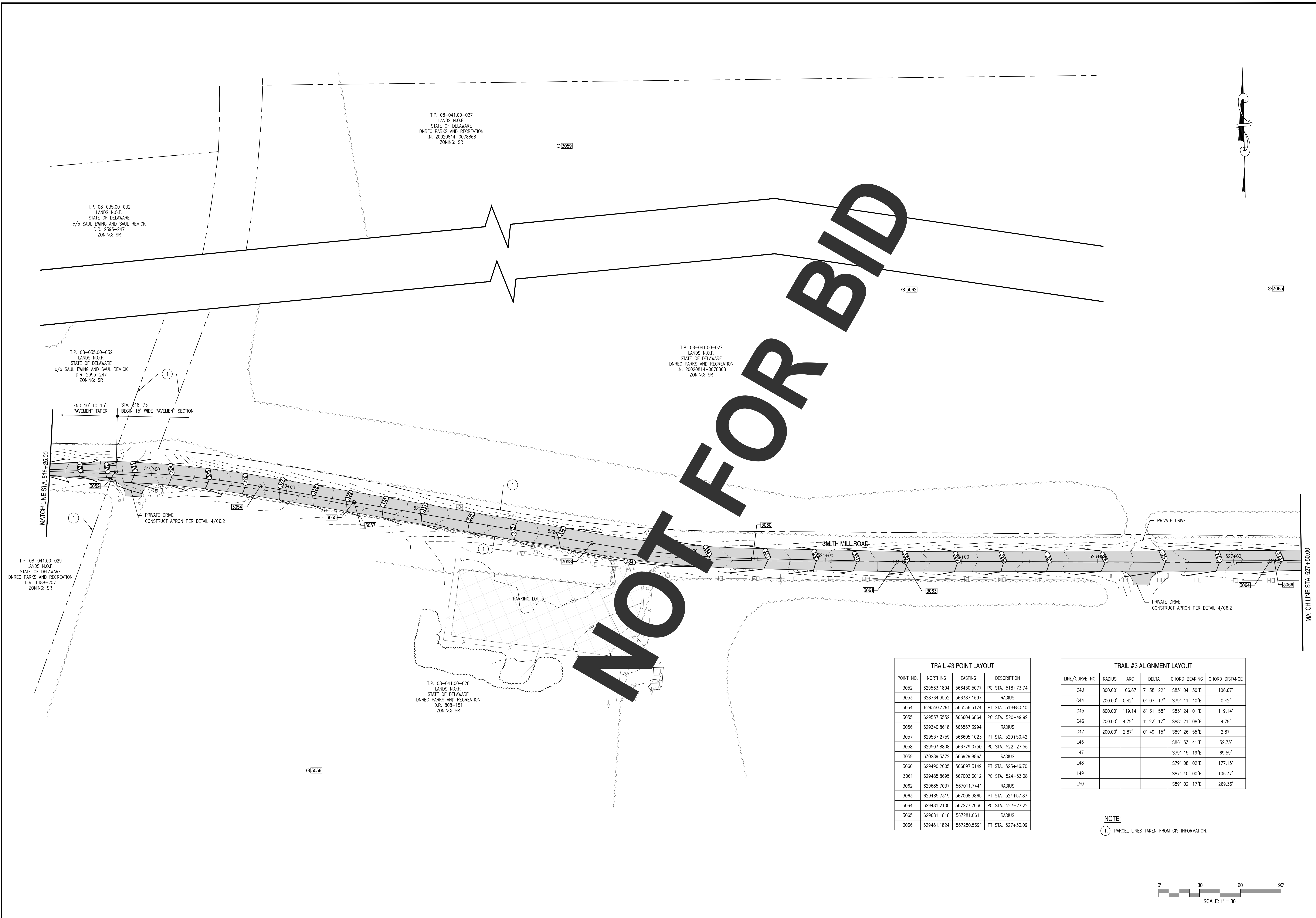
CHECKED BY:
SLR

DATE:
SEPTEMBER 7, 2016

SCALE:
1" = 30'

SHEET NO.:
C3.8

CONTRACT NO.:
2016-WCCSP-100

[illegible]

WCCSP TRI-VALLEY TRAIL

BID SET

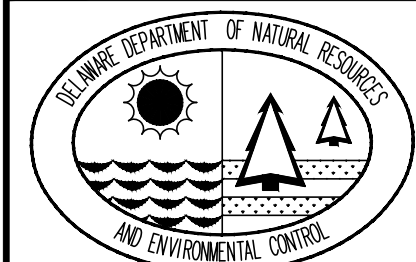
SITE ALIGNMENT & SITE GRADING PLAN

SEAL:

CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE:

SEPTEMBER 7, 2016

SCALE:

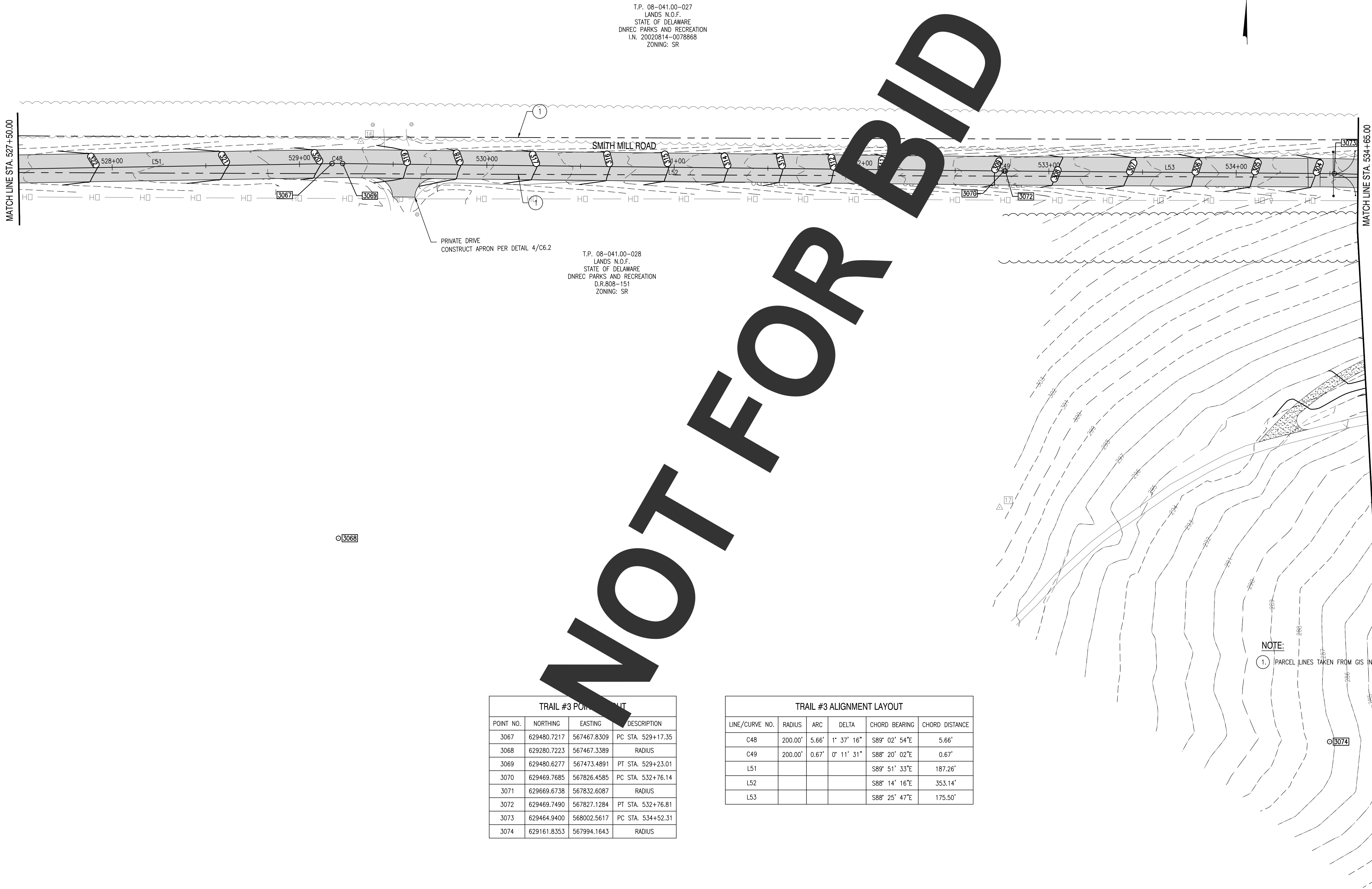
$$1'' = 30'$$

SHEET NO.:

C3.9

CONTRACT NO.:

2016-WCCSP-100



TRAIL #3 POINTS OF INTEREST			
POINT NO.	NORTHING	EASTING	DESCRIPTION
3067	629480.7217	567467.8309	PC STA. 529+17.35
3068	629280.7223	567467.3389	RADIUS
3069	629480.6277	567473.4891	PT STA. 529+23.01
3070	629469.7685	567826.4585	PC STA. 532+76.14
3071	629669.6738	567832.6087	RADIUS
3072	629469.7490	567827.1284	PT STA. 532+76.81
3073	629464.9400	568002.5617	PC STA. 534+52.31
3074	629161.8353	567994.1643	RADIUS

TRAIL #3 ALIGNMENT LAYOUT					
LINE/CURVE NO.	RADIUS	ARC	DELTA	CHORD BEARING	CHORD DISTANCE
C48	200.00'	5.66'	1° 37' 16"	S89° 02' 54"E	5.66'
C49	200.00'	0.67'	0° 11' 31"	S88° 20' 02"E	0.67'
L51				S89° 51' 33"E	187.26'
L52				S88° 14' 16"E	353.14'
L53				S88° 25' 47"E	175.50'

REVISIONS:

DATE: DESCRIPTION:

BY:

WCCSP TRI-VALLEY TRAIL

BID SET

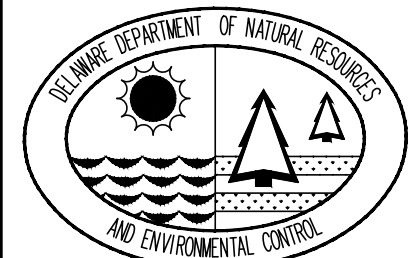
SITE ALIGNMENT & SITE GRADING PLAN

SEAL:

CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE:

SEPTEMBER 7, 2016

SCALE:

1" = 30'

SHEET NO.:

C3.10

CONTRACT NO.:

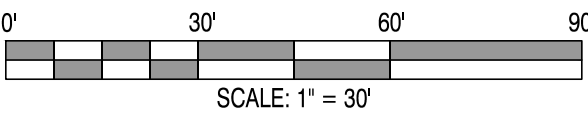
2016-WCCSP-100



TRAIL #3 POINT LAYOUT			
POINT NO.	NORTHING	EASTING	DESCRIPTION
3075	629462.4459	568033.8666	PCC STA. 534+83.73
3076	629810.4288	568083.7028	RADIUS
3077	629459.2954	568066.9380	PCC STA. 535+16.97
3078	629359.4091	568062.1689	RADIUS
3079	629458.8829	568072.4140	PT STA. 535+22.46
3080	629454.2492	568117.4053	PC STA. 535+67.69
3081	629752.6706	568148.1406	RADIUS
3082	629452.7756	568140.2047	PT STA. 535+90.54
3083	629449.5437	568264.7612	PC STA. 537+24.10
3084	629649.1873	568279.0058	RADIUS
3085	629452.6437	568316.1067	PCC STA. 537+66.70
3086	629279.6835	568348.7557	RADIUS
3087	629455.6366	568353.4118	PT STA. 538+04.20
3088	629453.3345	568440.4075	POE STA. 538+91.23

TRAIL #3 ALIGNMENT LAYOUT					
LINE/CURVE NO.	RADIUS	ARC	DELTA	CHORD BEARING	CHORD DISTANCE
C50	303.22'	31.42°	5° 56' 12"	S85° 26' 41"E	31.42'
C51	351.53'	33.23°	5° 25' 00"	S84° 33' 29"E	33.23'
C52	100.00'	5.49°	3° 08' 49"	S85° 41' 35"E	5.49'
C53	300.00'	22.85°	4° 21' 52"	S86° 18' 07"E	22.85'
C54	200.01'	42.61°	12° 12' 20"	N85° 24' 47"E	42.61'
C55	176.01'	37.50°	12° 12' 20"	N85° 24' 47"E	37.50'
L54				S84° 07' 11"E	45.23'
L55				S88° 29' 03"E	133.56'
L56				S88° 29' 03"E	87.03'

NOTE:
1. PARCEL LINES TAKEN FROM GIS INFORMATION.



REVISIONS:

DATE:	DESCRIPTION:	BY:

WCCSP TRI-VALLEY TRAIL
BID SET

SITE ALIGNMENT & SITE GRADING PLAN

SEAL:

CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17

DESIGNED BY:
WJH

DRAWN BY:
DLD

CHECKED BY:
SLR

DATE:
SEPTEMBER 7, 2016

SCALE:
1" = 30'

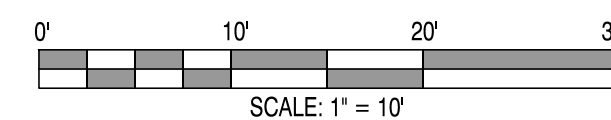
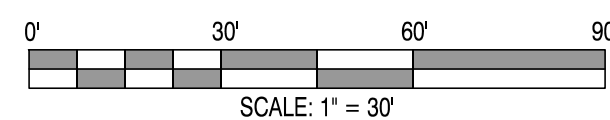
SHEET NO.:
C3.11

CONTRACT NO.:
2016-WCCSP-100

T.P. 08-040.00-054
LANDS N.O.F.
STATE OF DELAWARE
DNREC PARKS AND RECREATION
D.R. 1388-207
ZONING: SR

T.P. 11.00-030
LANDS N.O.F.
STATE OF DELAWARE
DNREC PARKS AND RECREATION
D.R. 151
ZONING: SR

NOT FOR BID



NOTES: (X)

1. PARCEL LINES TAKEN FROM GIS INFORMATION.
2. EXISTING CONCRETE PAVEMENT (TO REMAIN).
3. NEW ASPHALT PAVEMENT OVER EXISTING GRAVEL BASE.
4. PROPOSED 8 FOOT WIDE PAVED MULTI-USE TRAIL.
5. EXISTING PAVED "NINE FOOT ROAD" (TO REMAIN)
6. CAREFULLY REMOVE EXISTING SIGNS AND SIGN POSTS AND TURN OVER TO DNREC PARKS.
7. REMOVE EXISTING TREE.
8. SAWCUT AND REMOVED EXISTING CONCRETE SIDEWALK.
9. INSTALL NEW PCC SIDEWALK, TIE INTO EXISTING CONCRETE SIDEWALK AND NEW ASPHALT TRAIL.

REFERENCES:

1. SEE SIGNING AND STRIPING PLAN, SHEET C7.1, FOR PAVEMENT MARKINGS AND SIGNAGE WITHIN PARKING LOT.

REVISIONS:

DATE: DESCRIPTION: BY:

WCCSP TRI-VALLEY TRAIL

BID SET

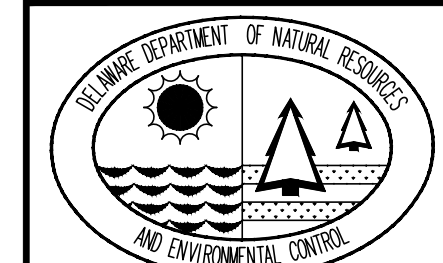
SITE GRADING PLAN - PARKING LOT 1

SEAL:

CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE:

SEPTEMBER 7, 2016

SCALE:

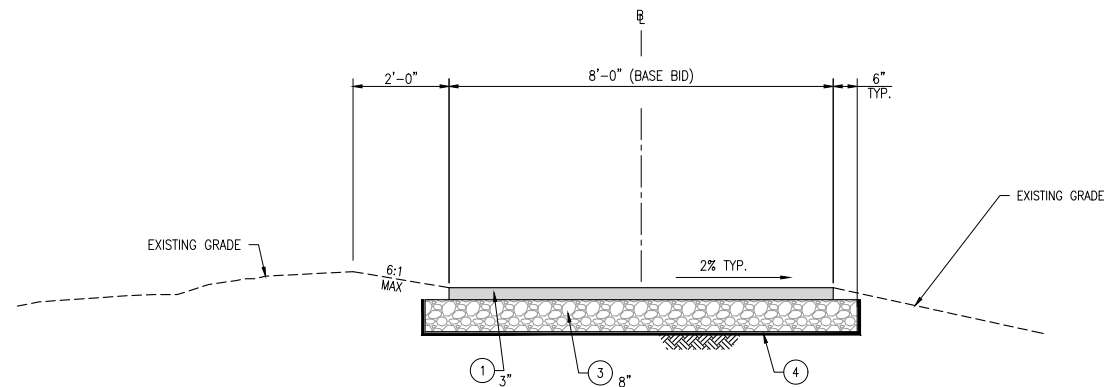
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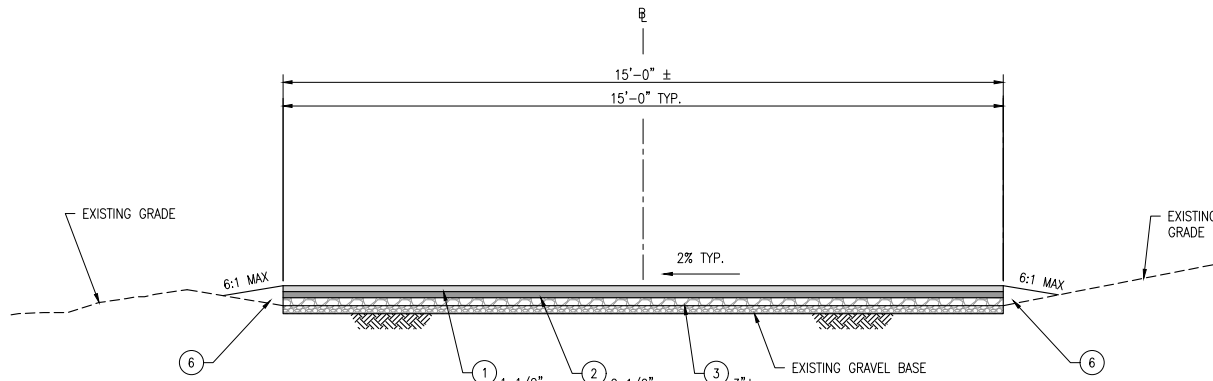
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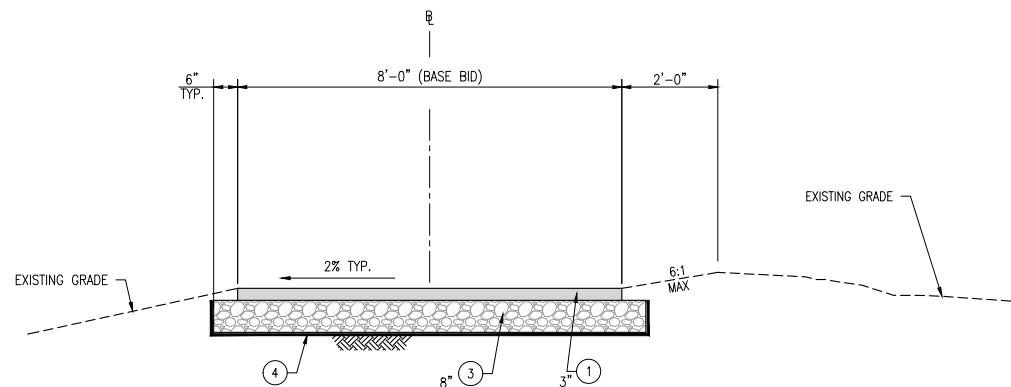
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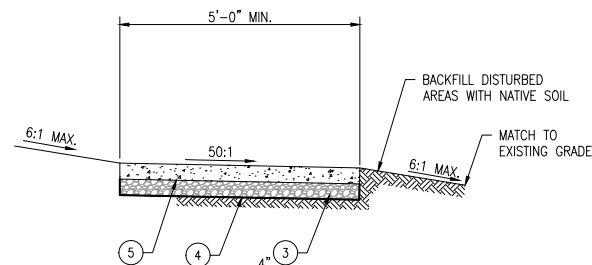
TYPICAL TRAIL SECTION
STATION 100+00 - STATION 101+02.64
STATION 103+00 - STATION 110+50.00
STATION 116+28.97 - STATION 133+33
STATION 300+00 - STATION 314+00
SCALE: 1/2" = 1'-0"



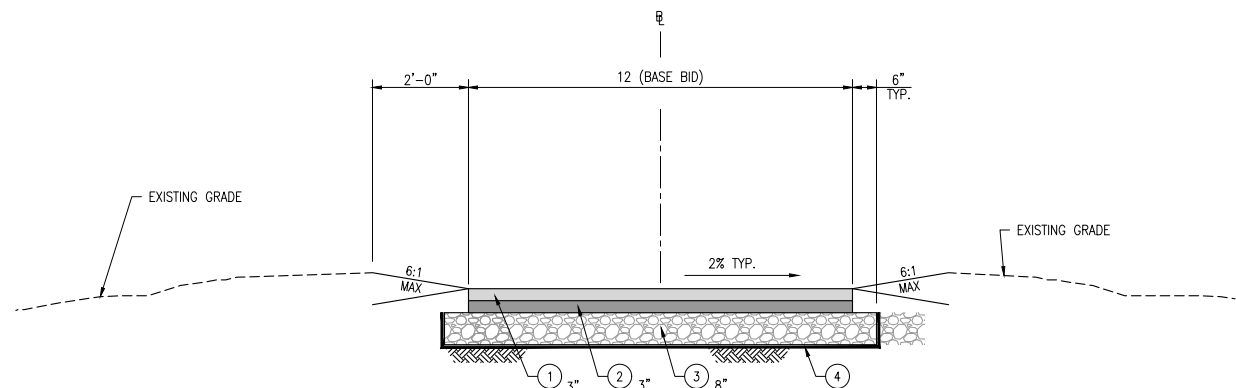
TYPICAL TRAIL SECTION
STATION 518+73 - STATION 526+00
SCALE: 1/2" = 1'-0"



TYPICAL TRAIL SECTION
STATION 101+02.64 - STATION 103+00.00
STATION 110+50.00 - STATION 116+28.97
SCALE: 1/2" = 1'-0"

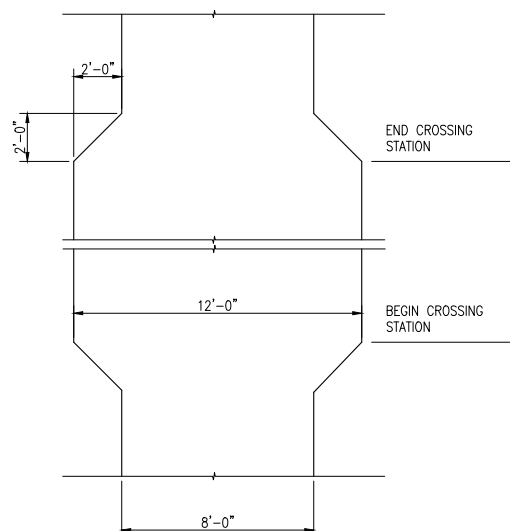


PCC SIDEWALK SECTION
SCALE: 1/2" = 1'-0"

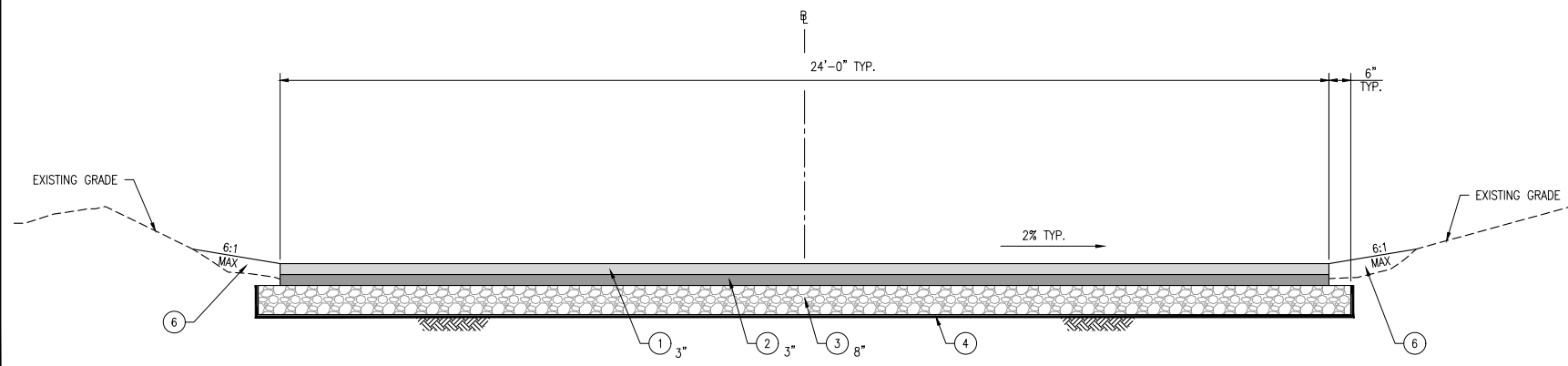


FARM CROSSING TRAIL SECTION
STATION 111+00 - STATION 111+50,
STATION 130+75 - STATION 131+25
SCALE: 1/2" = 1'-0"

NOTE:
ENGINEER TO DETERMINE LOCATION AND
LENGTH OF FARM CROSSING IN THE
FIELD. TOTAL LENGTH TO BE 100
LINEAR FEET FOR BIDDING PURPOSES.



FARM CROSSING PLAN
SCALE: 1/4" = 1'-0"



SMITH MILL ROAD SECTION
STATION 522+27 - STATION 538+89
SCALE: 1/2" = 1'-0"

LEGEND

- 1 WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 64-22 (CARBONATE STONE); (ITEM 401801) (PLACE IN 2 EQUAL LIFTS)
- 2 WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 64-22; (ITEM 732002)
- 3 GRADED AGGREGATE BASE COURSE, TYPE B; (ITEM 302005)
- 4 GEOTEXTILES SEPARATION: (ITEM 713002)
- 5 4" P.C.C. SIDEWALK; (ITEM 705001)
CONSTRUCTION & EXPANSION JOINTS:
1. PLACE CONSTRUCTION JOINTS TRAVERSE TO DIRECTION OF TRAVEL.
2. SIDEWALKS SHALL HAVE CONSTRUCTION JOINTS AT SPACING EQUAL TO THE WIDTH OF THE SIDEWALK
3. PROVIDE ADDITIONAL EXPANSION JOINTS WHERE SIDEWALK ABUTS INTERSECTING SIDEWALKS, OR FIXED STRUCTURES.
4. THE SURFACE EDGES OF THE SLAB SHALL BE ROUNDED TO A 1/4" RADIUS WITH AN APPROVED FINISHING TOOL.
5. PROVIDE 1/2" JOINT CORK FILLER AT EXPANSION JOINTS.
6. SIDEWALK SHALL HAVE TINED FINISH TRANSVERSE TO DIRECTION OF TRAVEL)
- 6 TOPSOIL, 6" DEPTH; (ITEM 732002)
VEGETATIVE STABILIZATION - PERMANENT SEEDING;
STABILIZATION MATTING - SLOPE (SM-S)

NOTES:

1. TRANSITION FROM 10 FOOT WIDE PAVEMENT TO 15 FOOT WIDE PAVEMENT BETWEEN STATION 518+73 AND STATION 519+33. TOTAL LENGTH OF TRANSITION TO BE 60 LINEAR FEET.
2. SEE CROSS SECTION SHEETS CX.X TO CX.X FOR SPECIFIC CROSS SLOPES TO BE CONSTRUCTED.
3. PROPOSED PAVED TRAIL STATION 100+00 TO STATION 313+37± SHOWN 8'-0" WIDE. MAXIMUM. CONTRACTOR SHALL ADJUST WIDTH PLUS OR MINUS AS DIRECTED BY THE ENGINEER TO ACCOMMODATE EXISTING TREES AND OTHER FEATURES.
4. RUTS AND DEPRESSIONS IN THE EXISTING GRAVEL SURFACE OF SMITH MILL ROAD SHALL BE ADDRESSED AND FILLED USING GABC MATERIAL TO PROVIDE A STABLE, UNIFORM SURFACE FOR PAVING.
5. CROSS SLOPE ON NEW TRAIL PAVEMENT SHALL BE PITCHED LEFT OR RIGHT AS REQUIRED TO PROVIDE POSITIVE DRAINAGE ACROSS TRAIL AND NOT TRAP SURFACE RUNOFF. MAXIMUM CROSS SLOPE SHALL BE 2% (50:1).
6. ITEM NUMBERS THAT HAVE A "0" FOR THE FOURTH DIGIT, REFER TO DELDOT "STANDARD SPECIFICATIONS". IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE DELDOT STANDARD SPECIFICATIONS EITHER ONLINE OR HARD COPY FROM DELDOT TO REFERENCE THESE ITEMS.

REVISIONS:	BY:								
DATE:	DESCRIPTION:								

**WCCSP TRI-VALLEY TRAIL
BID SET
TYPICAL SECTIONS**

SEAL:

CIVIL ENGINEER:
**CENTURY
ENGINEERING**
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17



DESIGNED BY:
WJH

DRAWN BY:
DLD

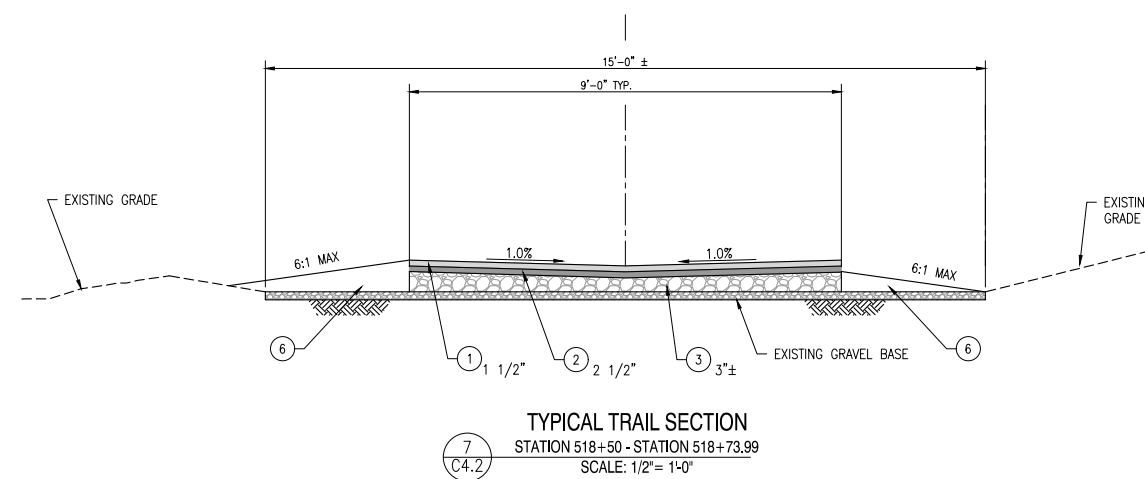
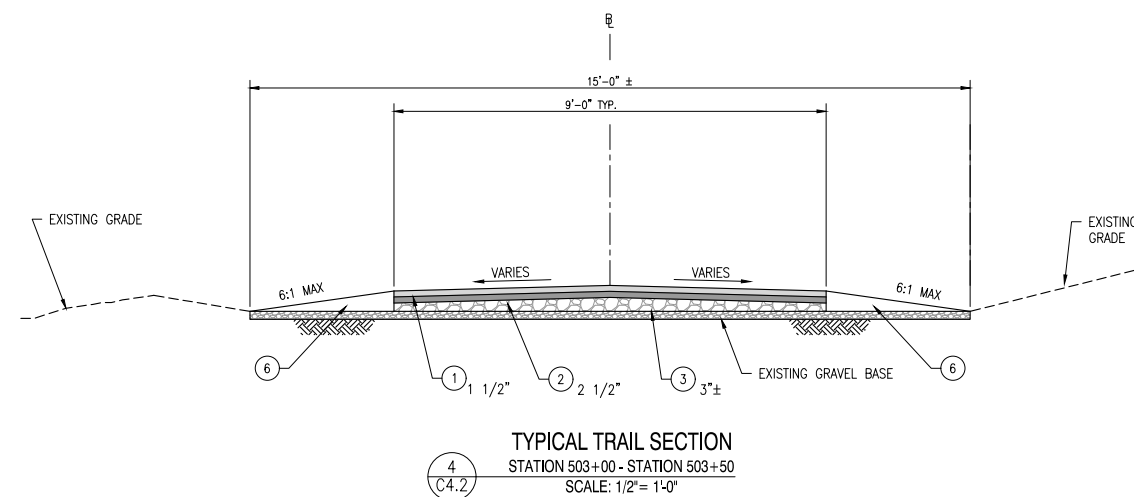
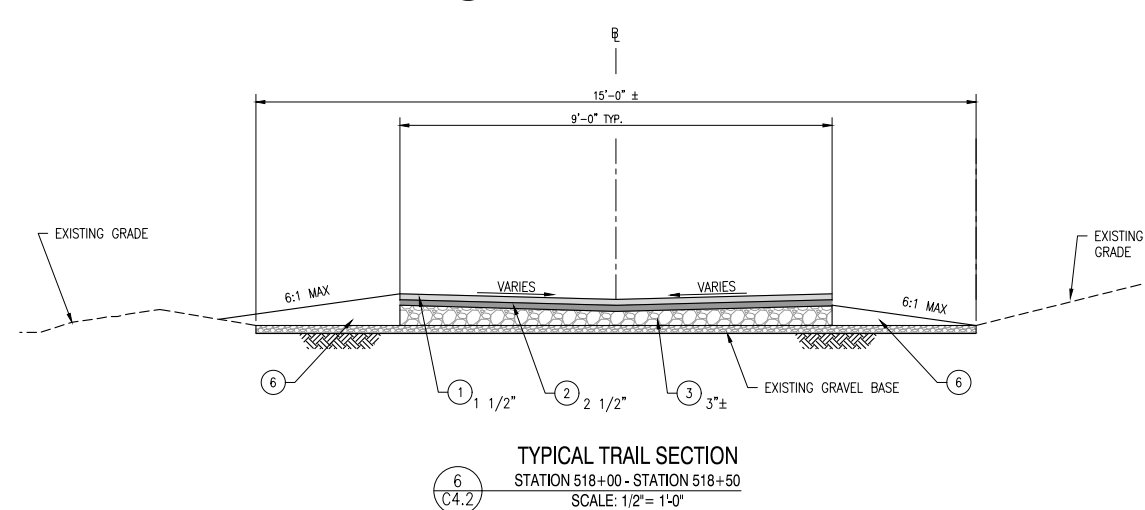
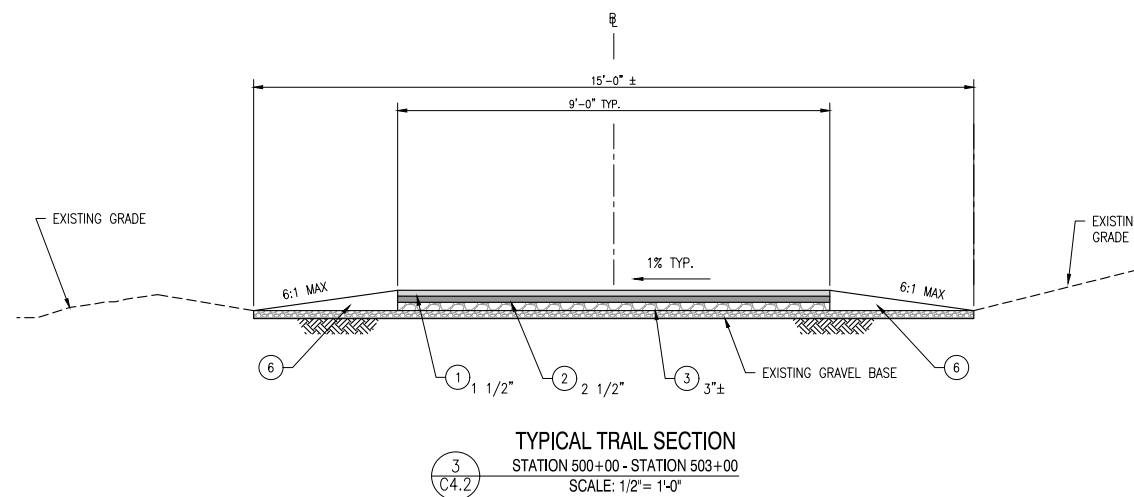
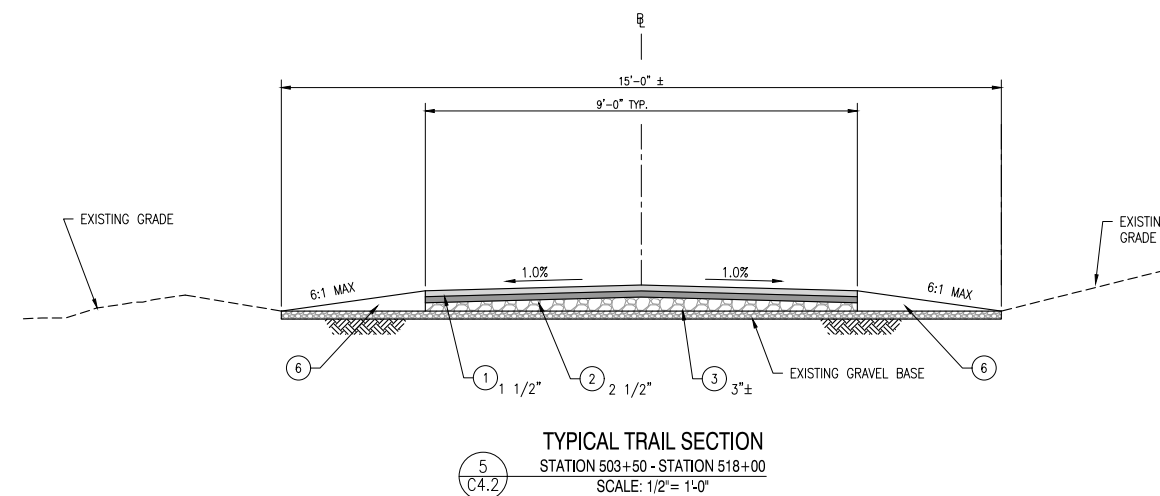
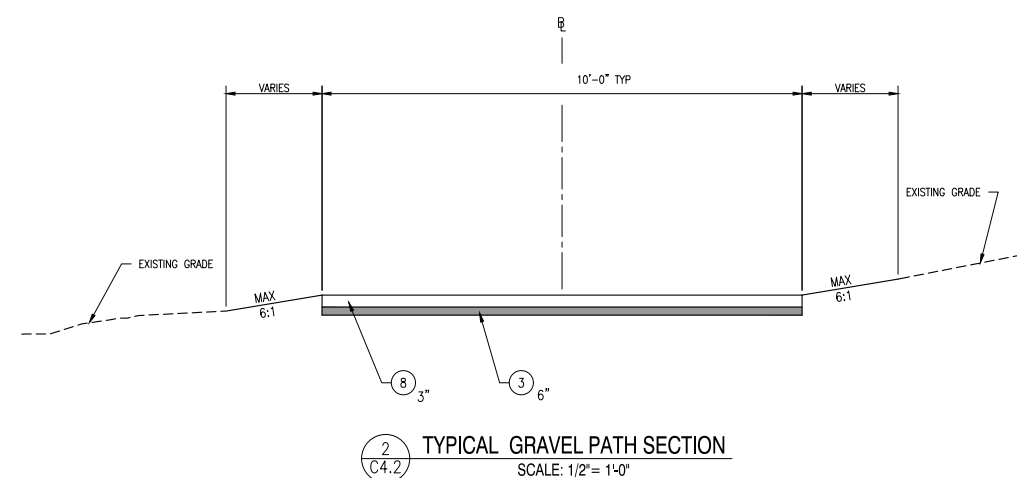
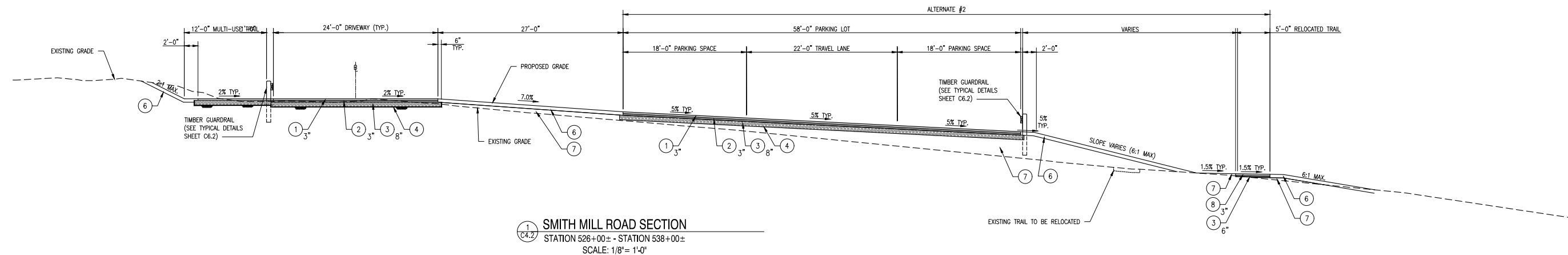
CHECKED BY:
SLR

DATE:
SEPTEMBER 7, 2016

SCALE:



SHEET NO.:
C4.1

CONTRACT NO.:
2016-WCCSP-100

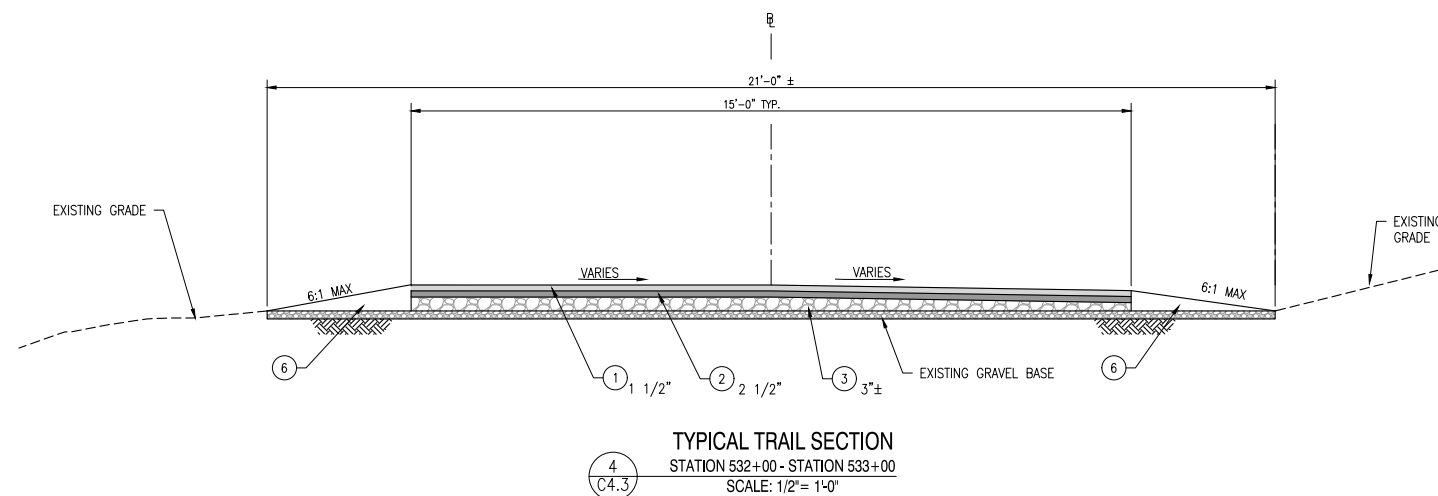
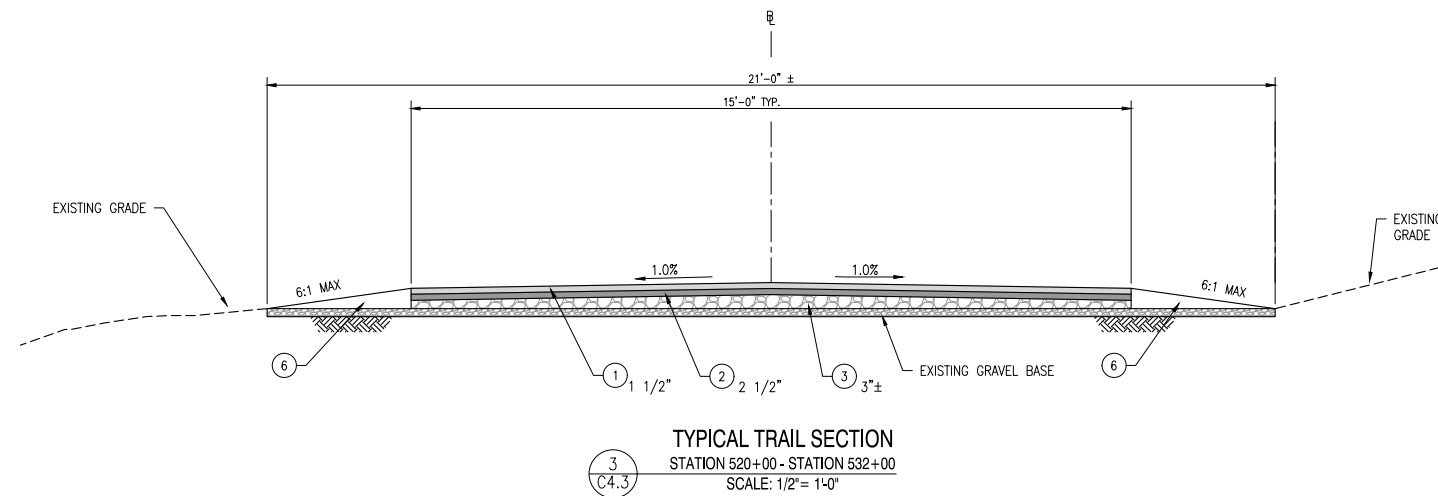
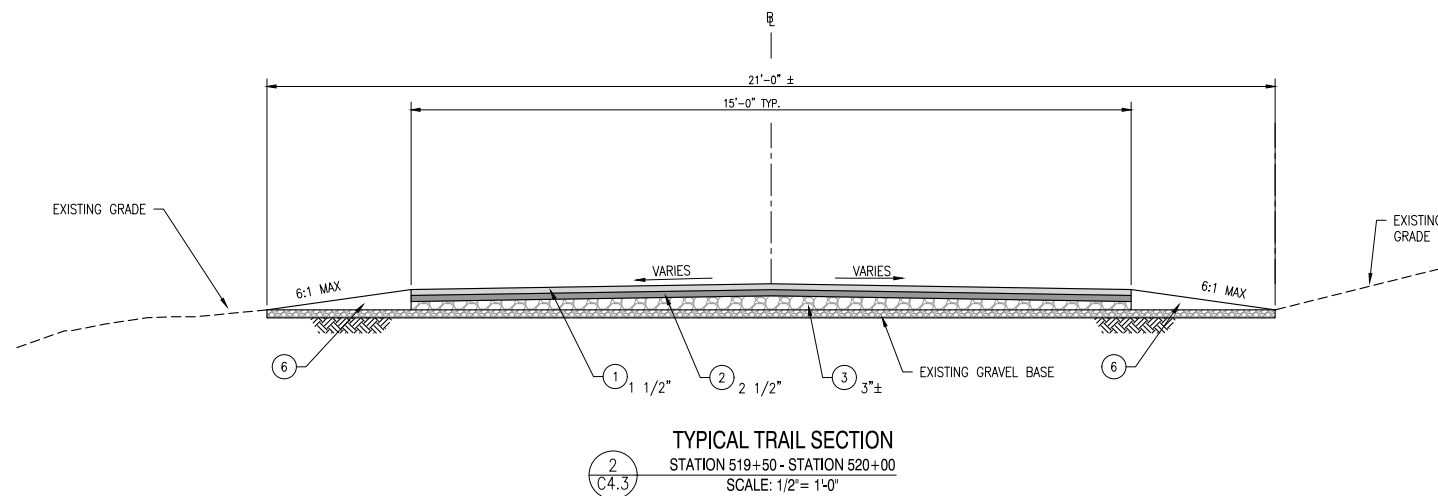
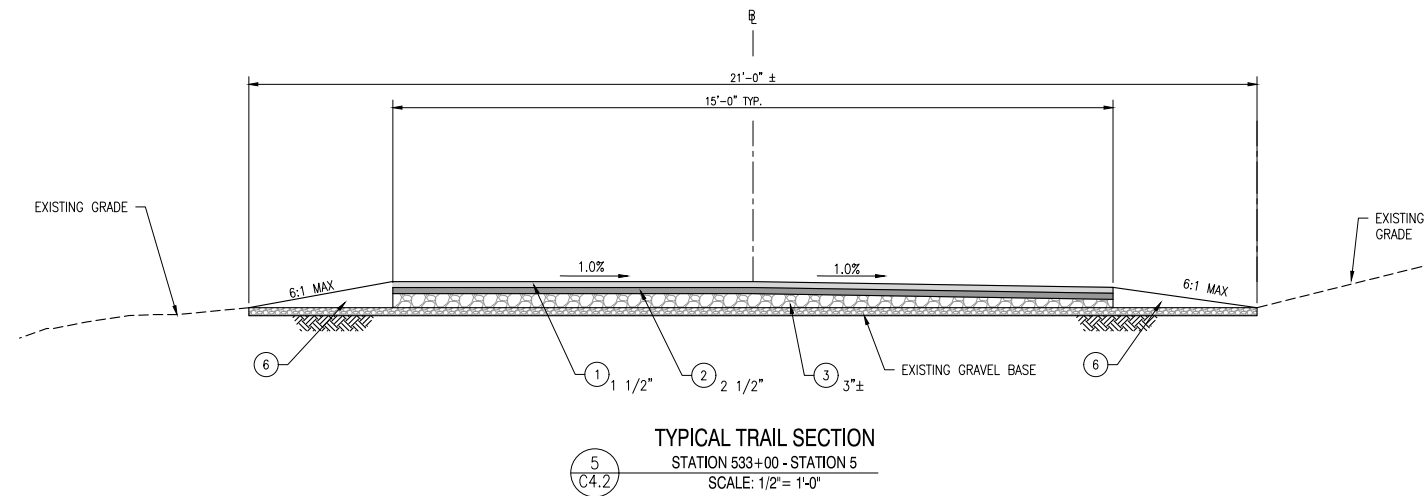
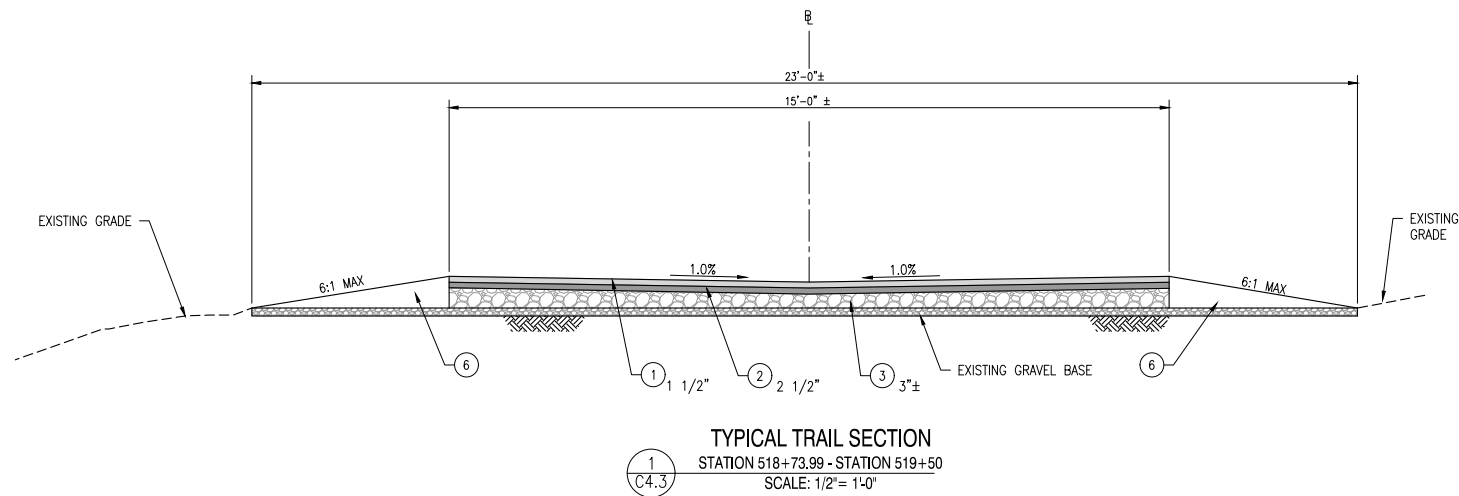


- ### LEGEND

1. WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 64-22 (CARBONATE STONE); (ITEM 401801) (PLACE IN 2 EQUAL LIFTS)
2. WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 64-22; (ITEM 732002)
3. GRADED AGGREGATE BASE COURSE, TYPE B; (ITEM 302005)
4. GEOTEXTILES SEPARATION; (ITEM 713002)
5. 4" P.C.C. SIDEWALK; (ITEM 705001)
CONSTRUCTION & EXPANSION JOINTS:
 1. PLACE CONSTRUCTION JOINTS TRAVERSE TO DIRECTION OF TRAVEL.
 2. SIDEWALKS SHALL HAVE CONSTRUCTION JOINTS AT SPACING EQUAL TO THE WIDTH OF THE SIDEWALK
 3. PROVIDE ADDITIONAL EXPANSION JOINTS WHERE SIDEWALK ABUTS INTERSECTING SIDEWALKS, OR FIXED STRUCTURES.
 4. THE SURFACE EDGES OF THE SLAB SHALL BE ROUNDED TO A 1/4" RADIUS WITH AN APPROVED FINISHING TOOL.
 5. PROVIDE 1/2" JOINT CORK FILLER AT EXPANSION JOINTS.
 6. SIDEWALK SHALL HAVE TINED FINISH TRANSVERSE TO DIRECTION OF TRAVEL)
6. TOPSOIL, 6" DEPTH; (ITEM 732002)
VEGETATIVE STABILIZATION - PERMANENT SEEDING;
STABILIZATION MATTING - SLOPE (SM-S)
7. BORROW, TYPE F; (ITEM 209006)
8. DE NO. 3 STONE; (ITEM 302011)

WCCSP TRI-VALLEY TRAIL BID SET	REVISIONS:	BY:
	DATE:	DESCRIPTION:
TYPICAL SECTIONS		
<u>SEAL:</u>		
<u>CIVIL ENGINEER:</u>		
 CENTURY ENGINEERING CONSULTING ENGINEERS SURVEYORS 4134 N. DUPONT HWY. DOVER, DELAWARE 19901		
CEI CONTRACT NO.: 125002.17		
		
DESIGNED BY: WJH		
DRAWN BY: DLD		
CHECKED BY: SLR		
DATE: SEPTEMBER 7, 2016		
SCALE: AS NOTED		
SHEET NO.: C4.2		
CONTRACT NO.: 2016-WCCSP-100		

C:\PROJECTS\250002 (WCCSP TRI-Valley Trail Concept Plan)\CADD FILES\Sheet\Construction Plans\C4.3 TYPICAL SECTIONS.dwg, 9/7/2016 8:31 AM



LEGEND

- 1 WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 64-22 (CARBONATE STONE); (ITEM 401801) (PLACE IN 2 EQUAL LIFTS)
- 2 WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 64-22; (ITEM 732002)
- 3 GRADED AGGREGATE BASE COURSE, TYPE B; (ITEM 302005)
- 4 GEOTEXTILES SEPARATION: (ITEM 713002)
- 5 4" P.C.C. SIDEWALK; (ITEM 705001)
CONSTRUCTION & EXPANSION JOINTS:
1. PLACE CONSTRUCTION JOINTS TRAVERSE TO DIRECTION OF TRAVEL.
2. SIDEWALKS SHALL HAVE CONSTRUCTION JOINTS AT SPACING EQUAL TO THE WIDTH OF THE SIDEWALK
3. PROVIDE ADDITIONAL EXPANSION JOINTS WHERE SIDEWALK ABUTS INTERSECTING SIDEWALKS, OR FIXED STRUCTURES.
4. THE SURFACE EDGES OF THE SLAB SHALL BE ROUNDED TO A 1/4" RADIUS WITH AN APPROVED FINISHING TOOL.
5. PROVIDE 1/2" JOINT CORK FILLER AT EXPANSION JOINTS.
6. SIDEWALK SHALL HAVE TINED FINISH TRANSVERSE TO DIRECTION OF TRAVEL)
- 6 TOPSOIL, 6" DEPTH; (ITEM 732002)
VEGETATIVE STABILIZATION - PERMANENT SEEDING;
STABILIZATION MATTING - SLOPE (SM-S)
- 7 BORROW, TYPE F; (ITEM 209006)
- 8 DE. NO. 3 STONE; (ITEM 302011)

REVISIONS:

DATE: DESCRIPTION:

WCCSP TRI-VALLEY TRAIL
BID SET

TYPICAL SECTIONS

SEAL:

CIVIL ENGINEER:

CENTURY
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CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE:

SEPTEMBER 7, 2016

SCALE:

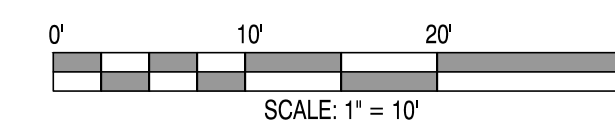
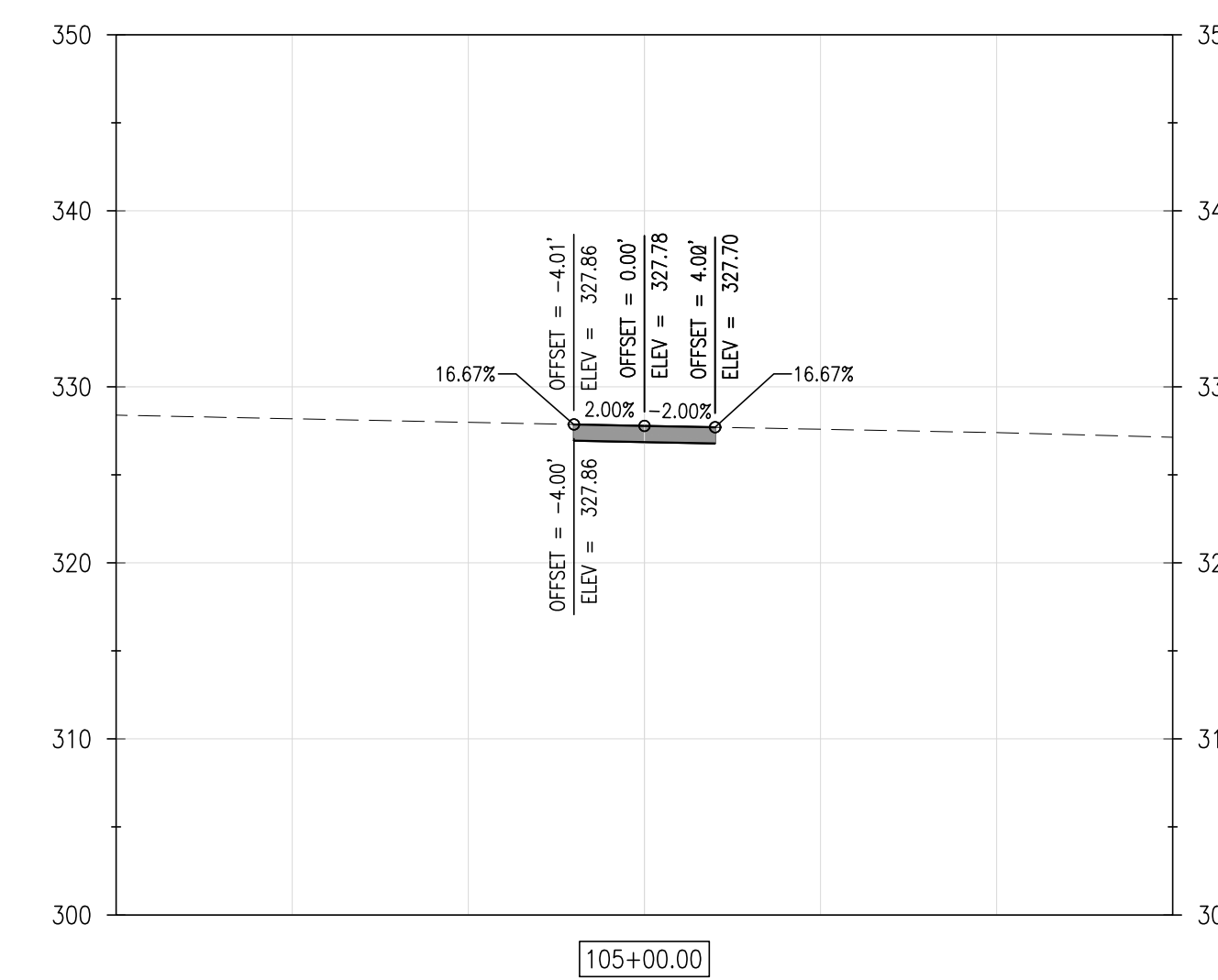
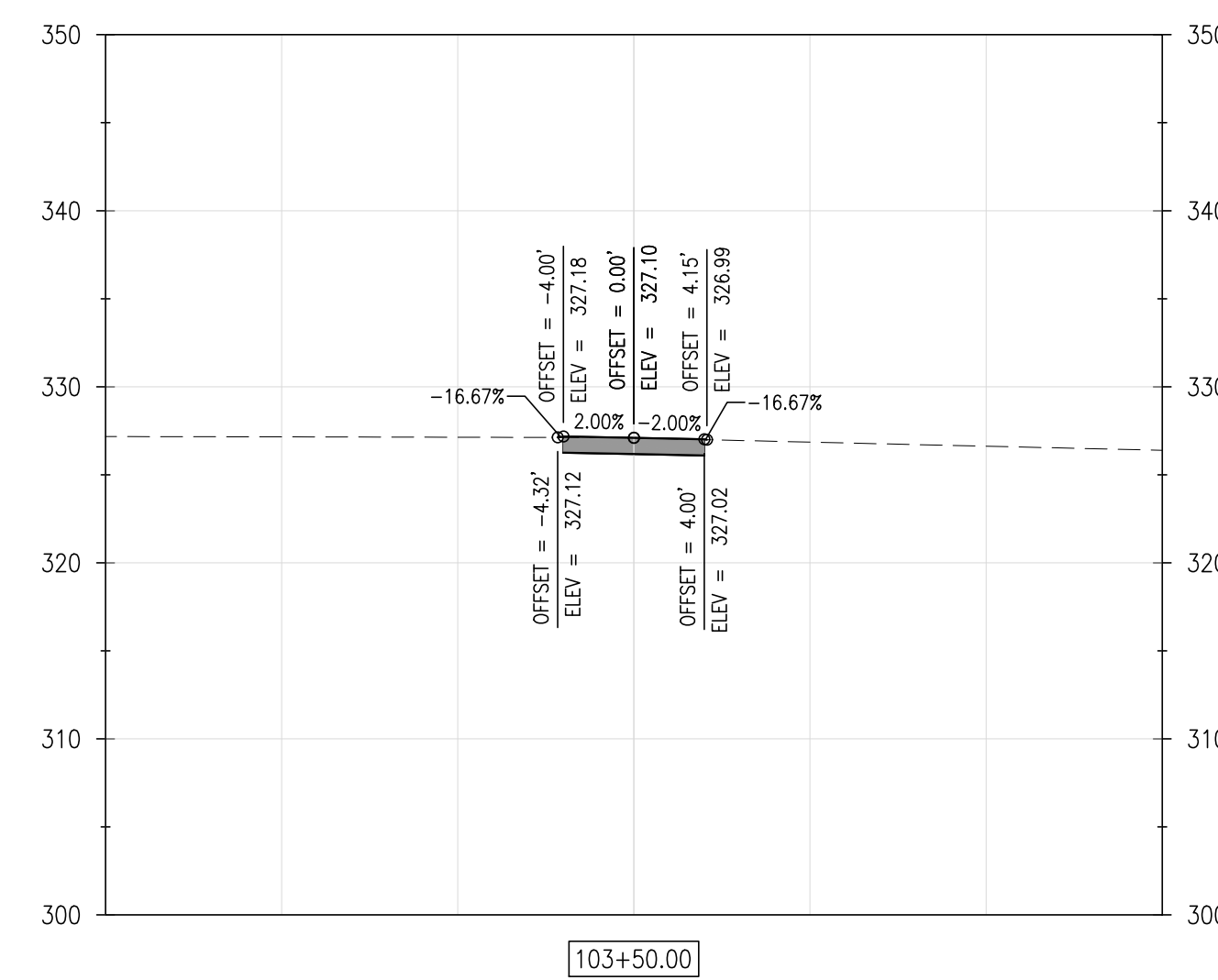
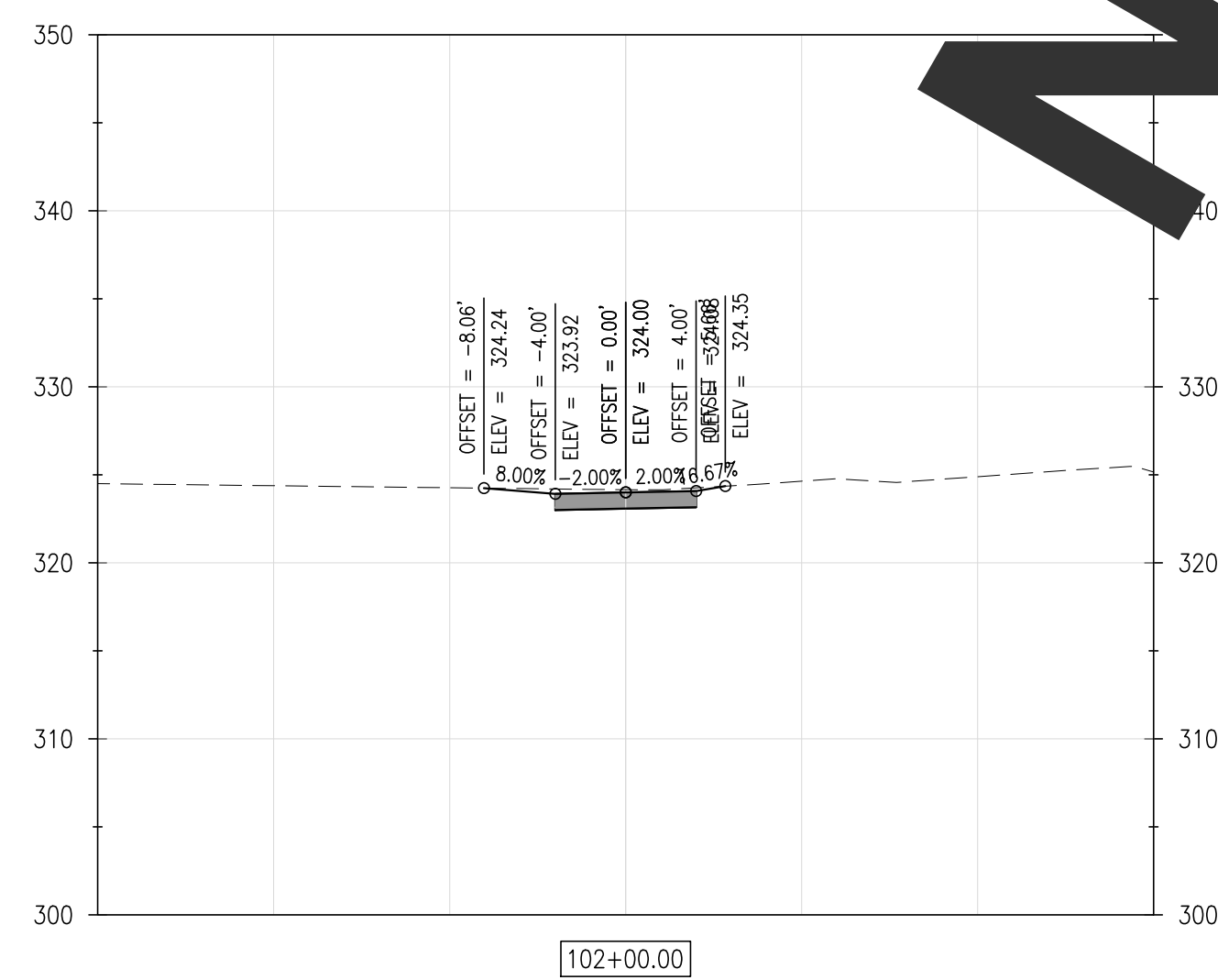
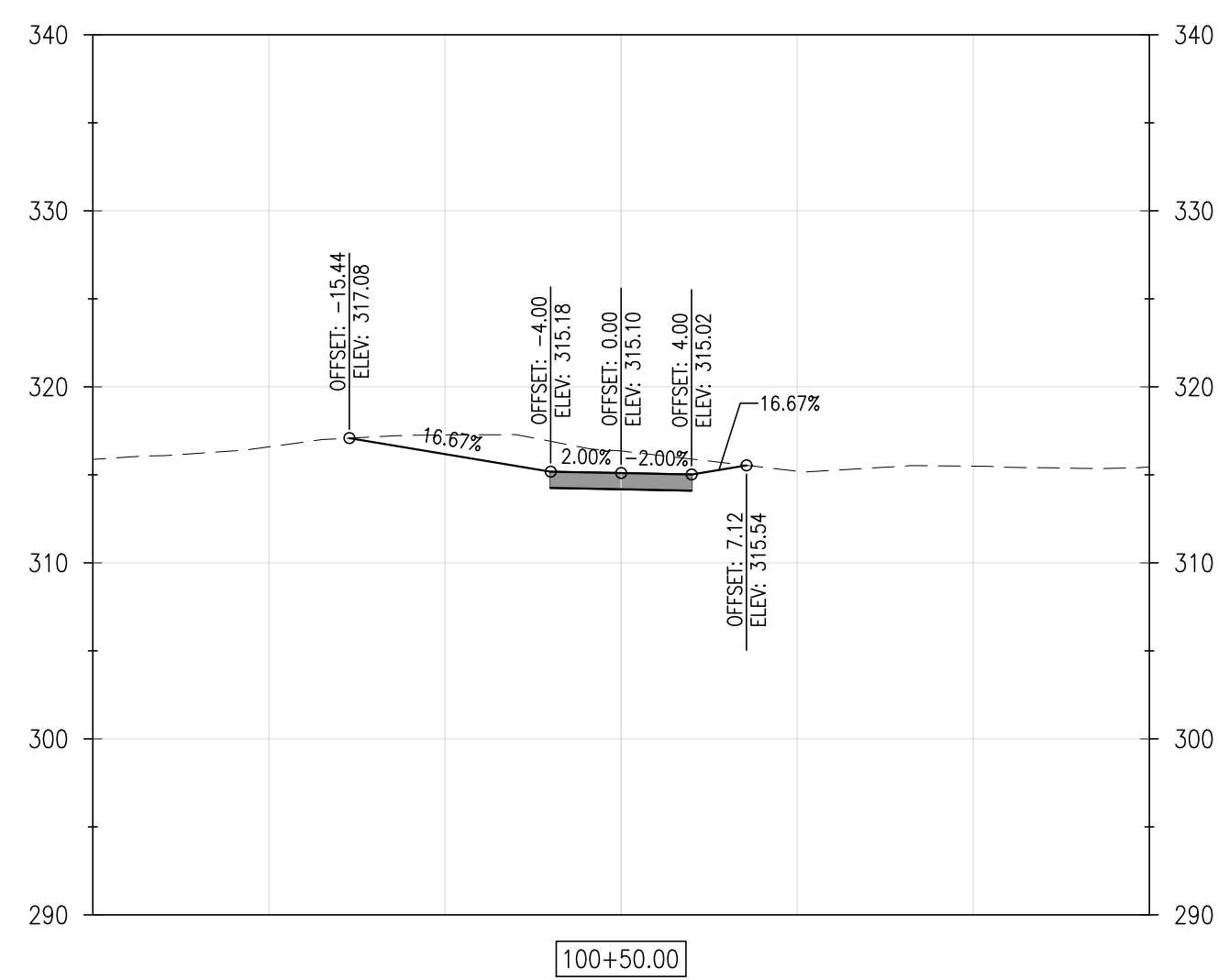
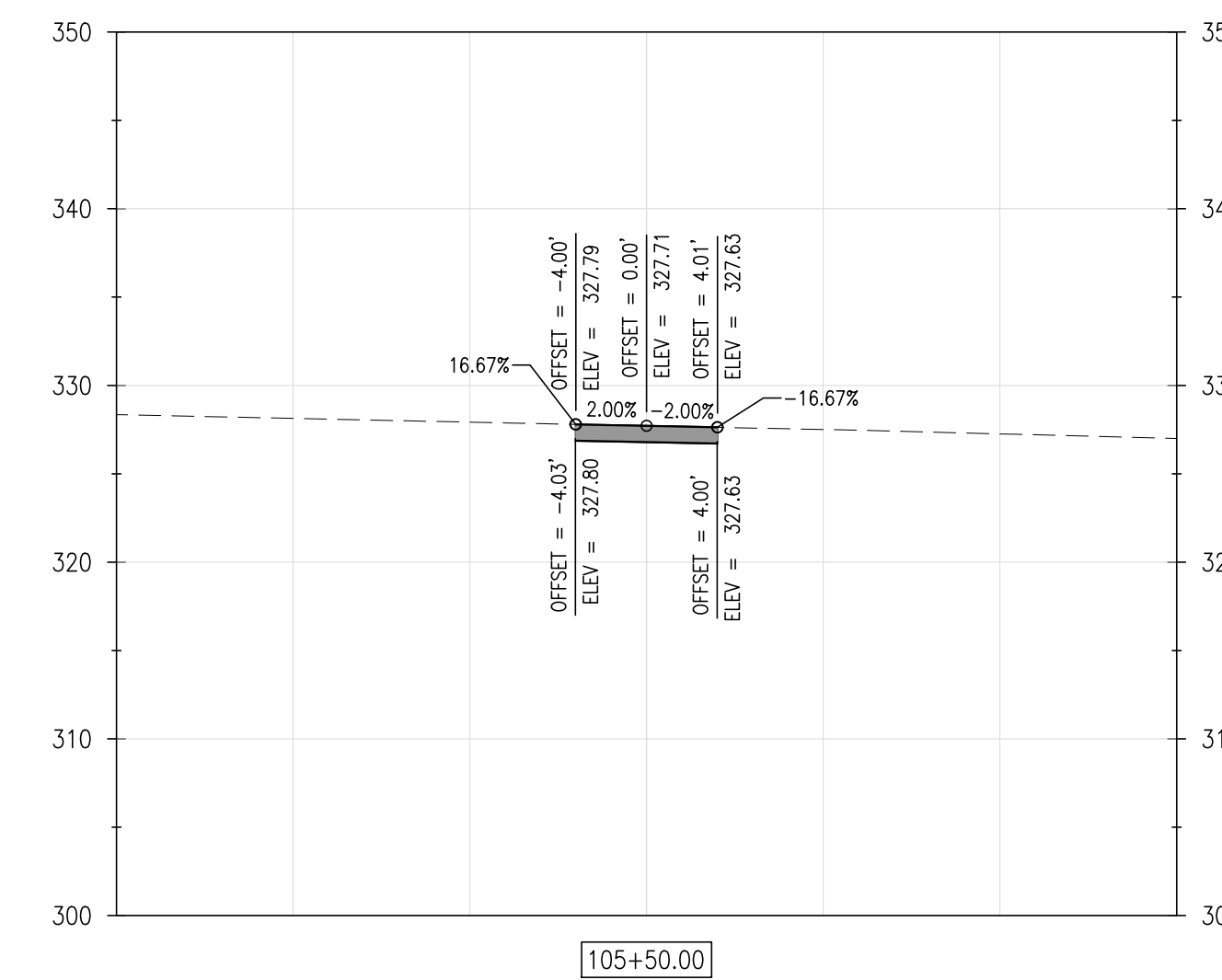
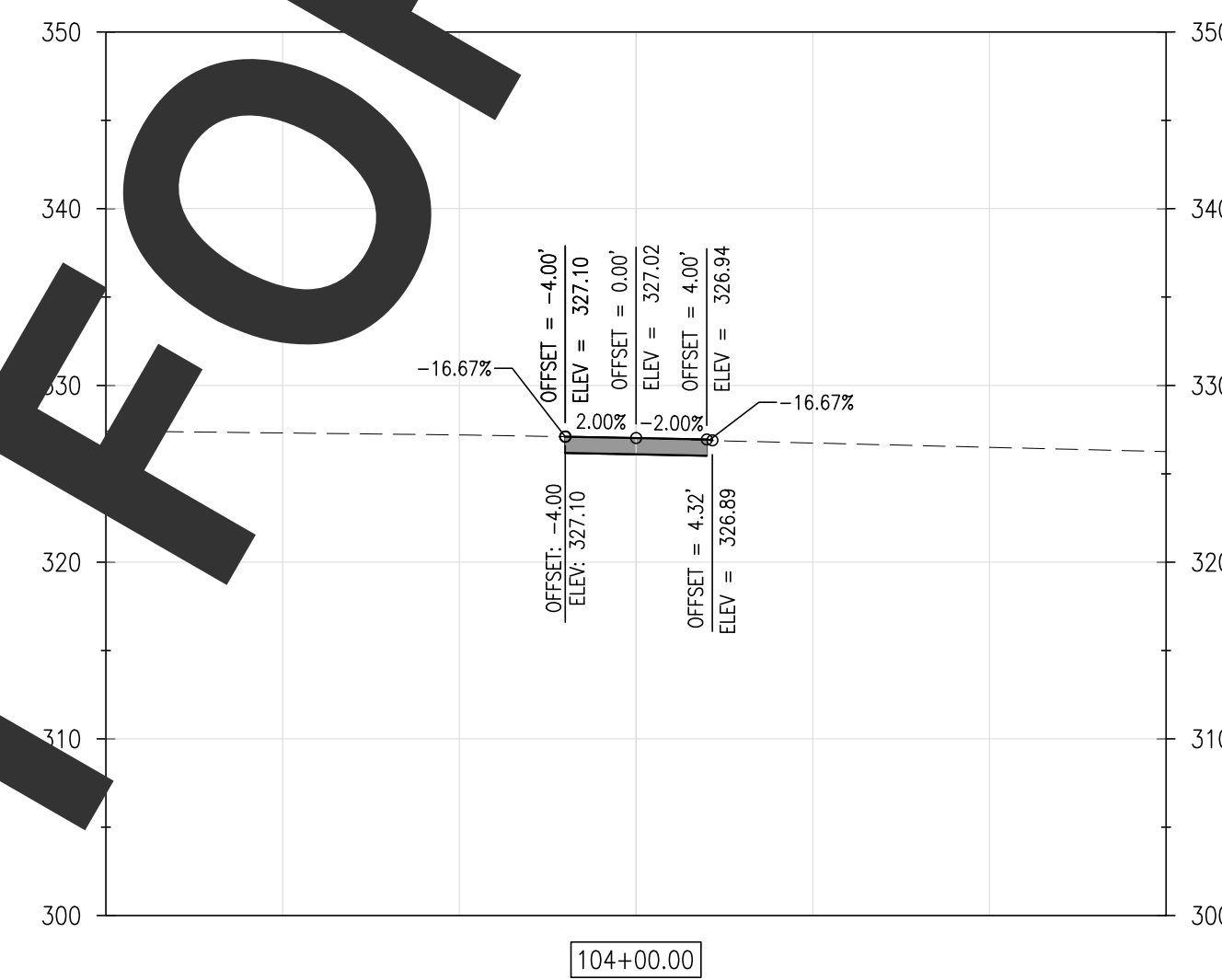
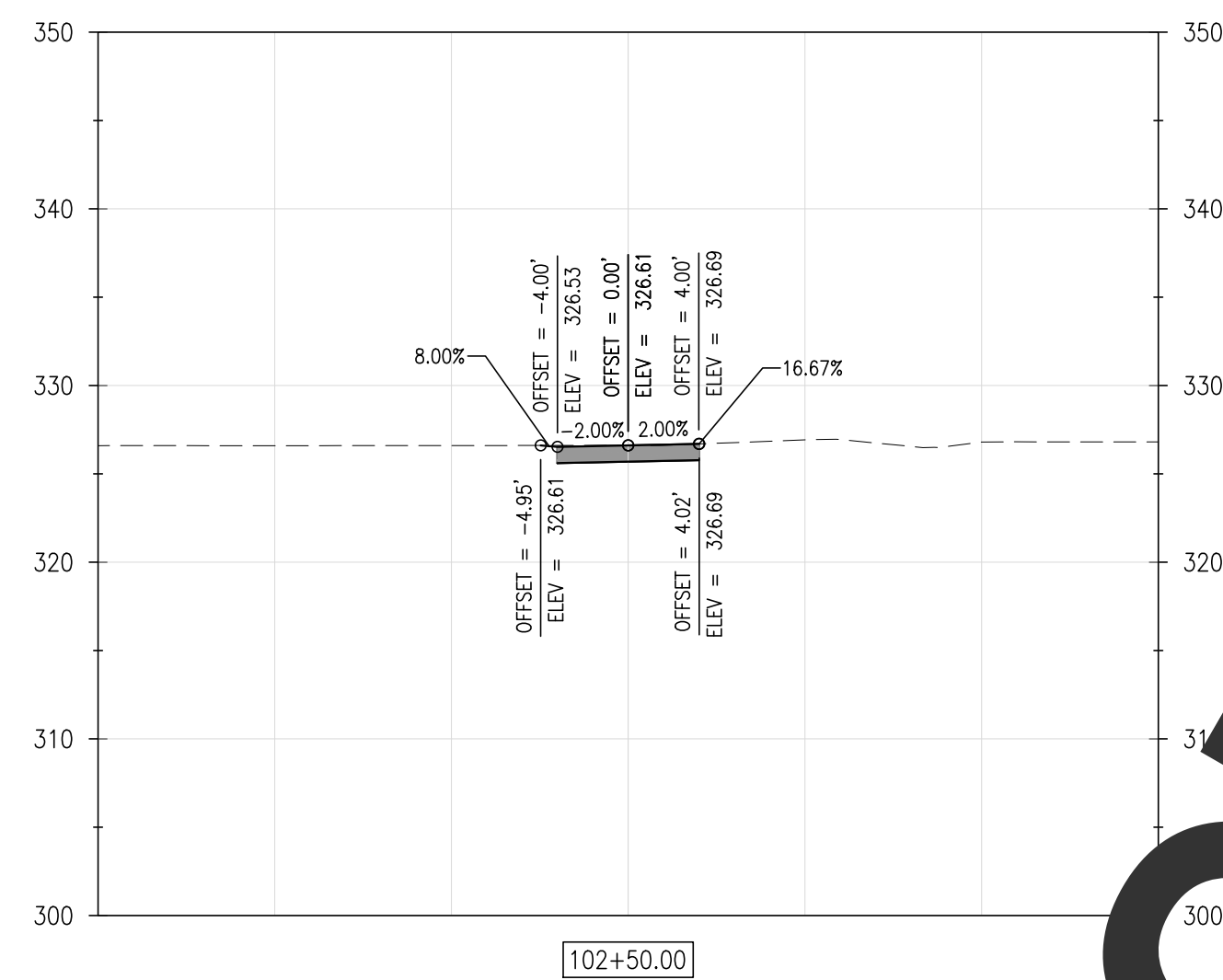
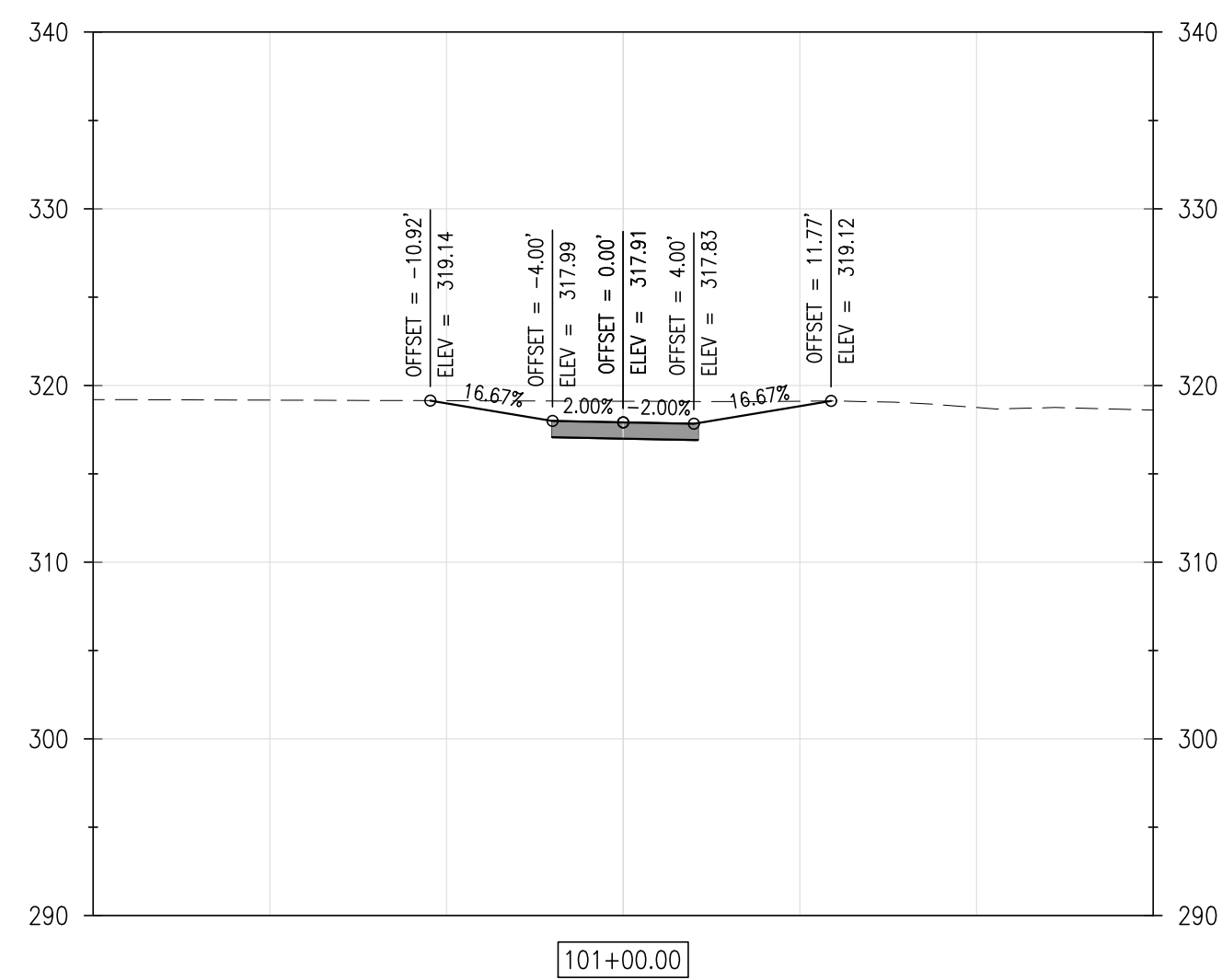
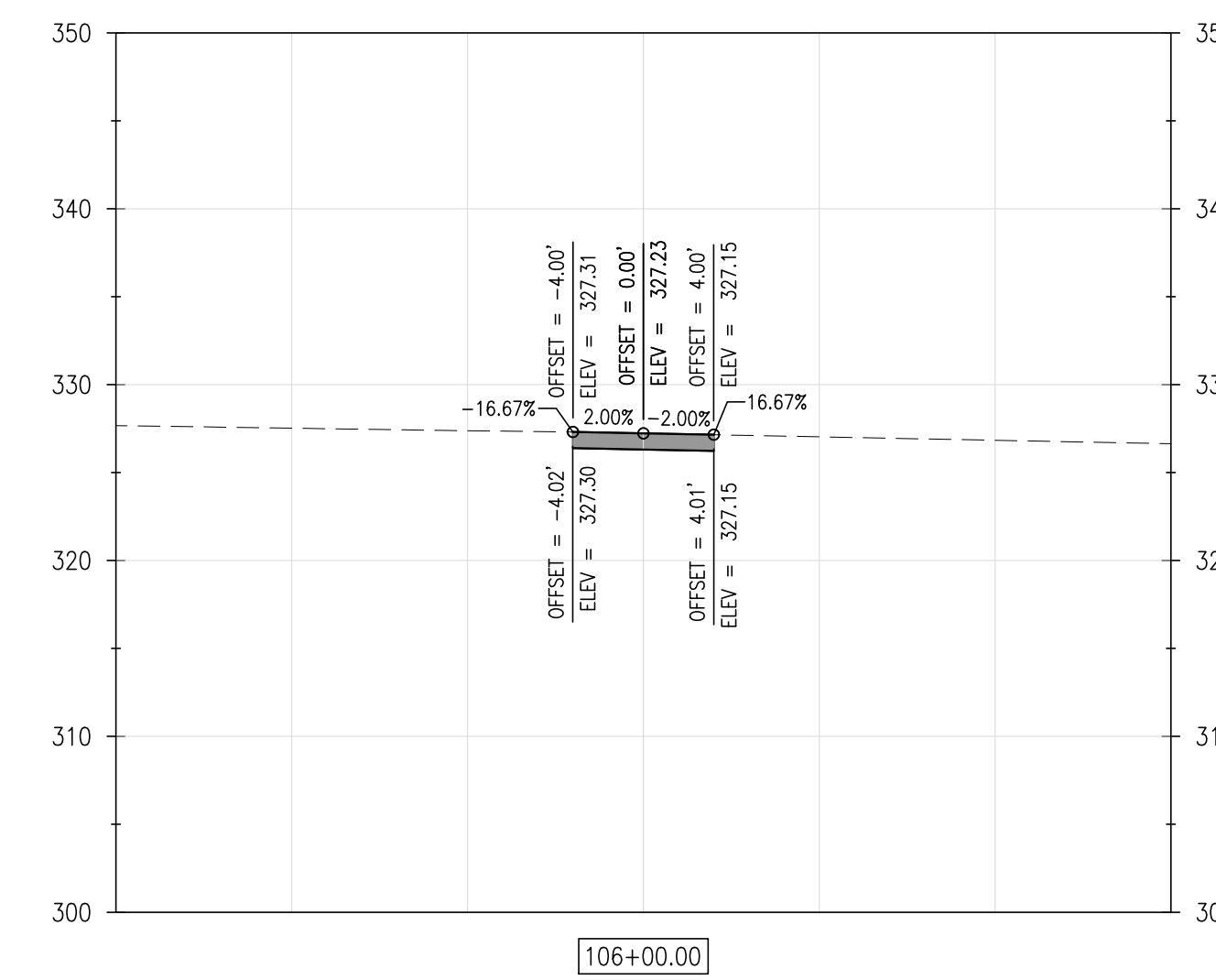
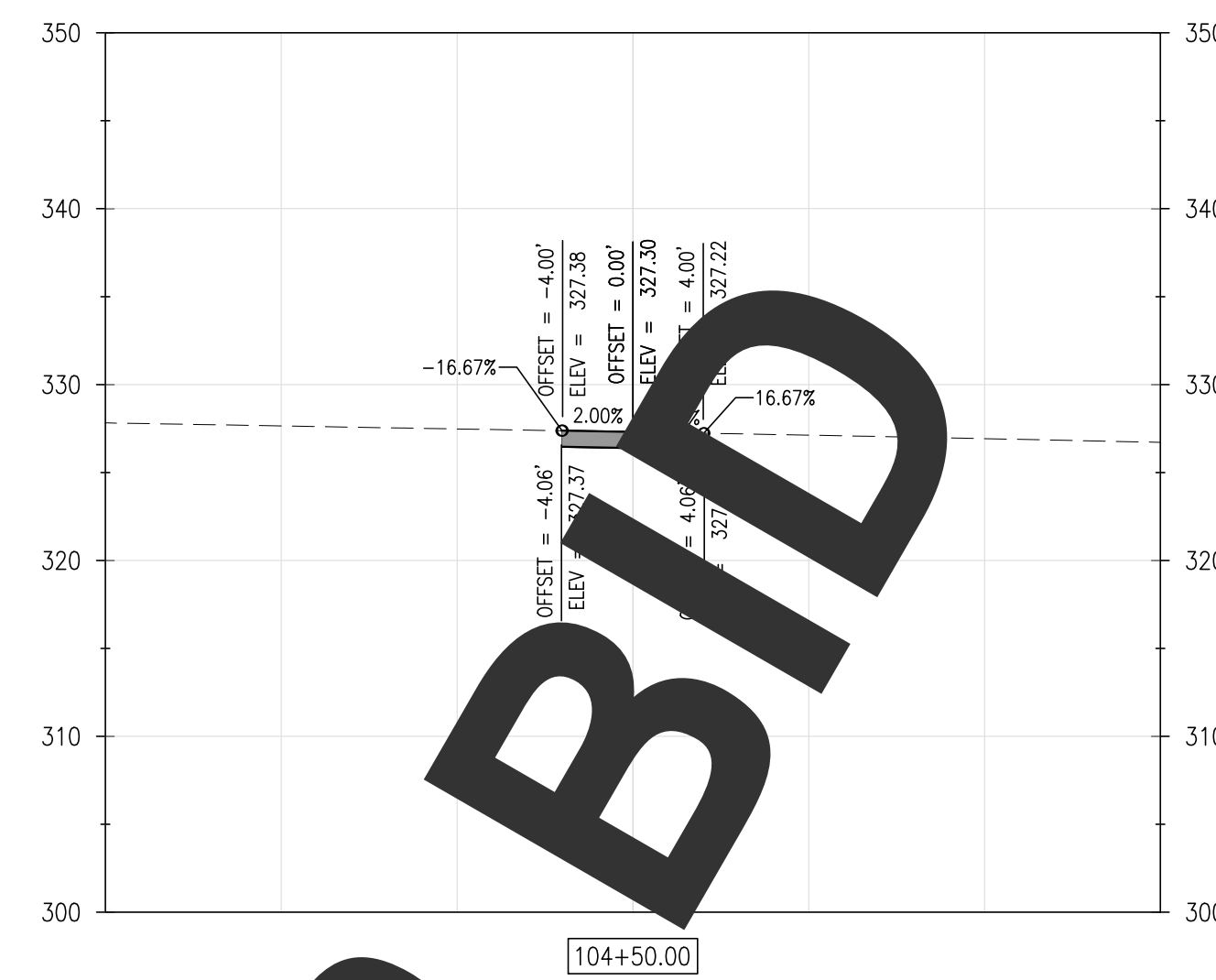
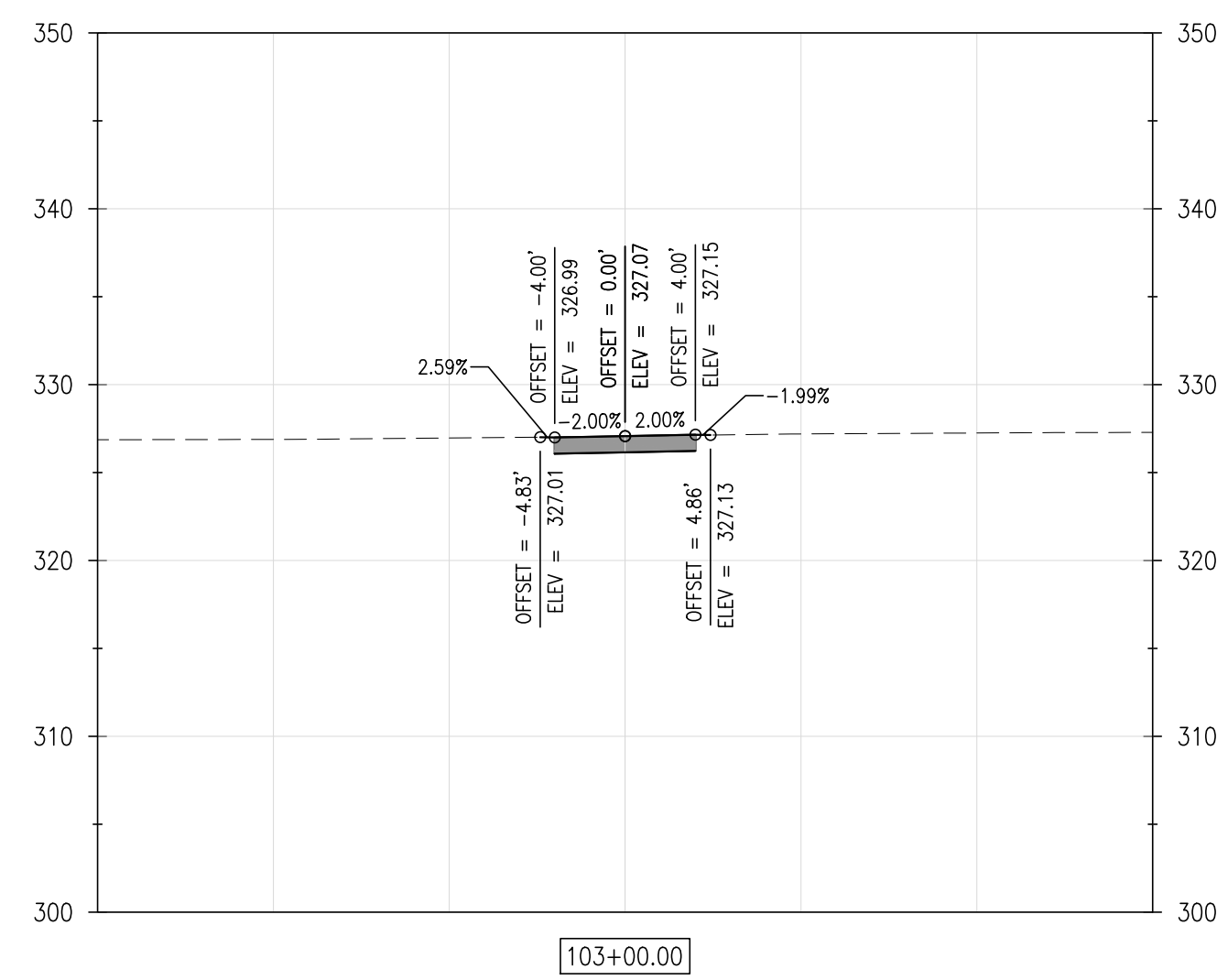
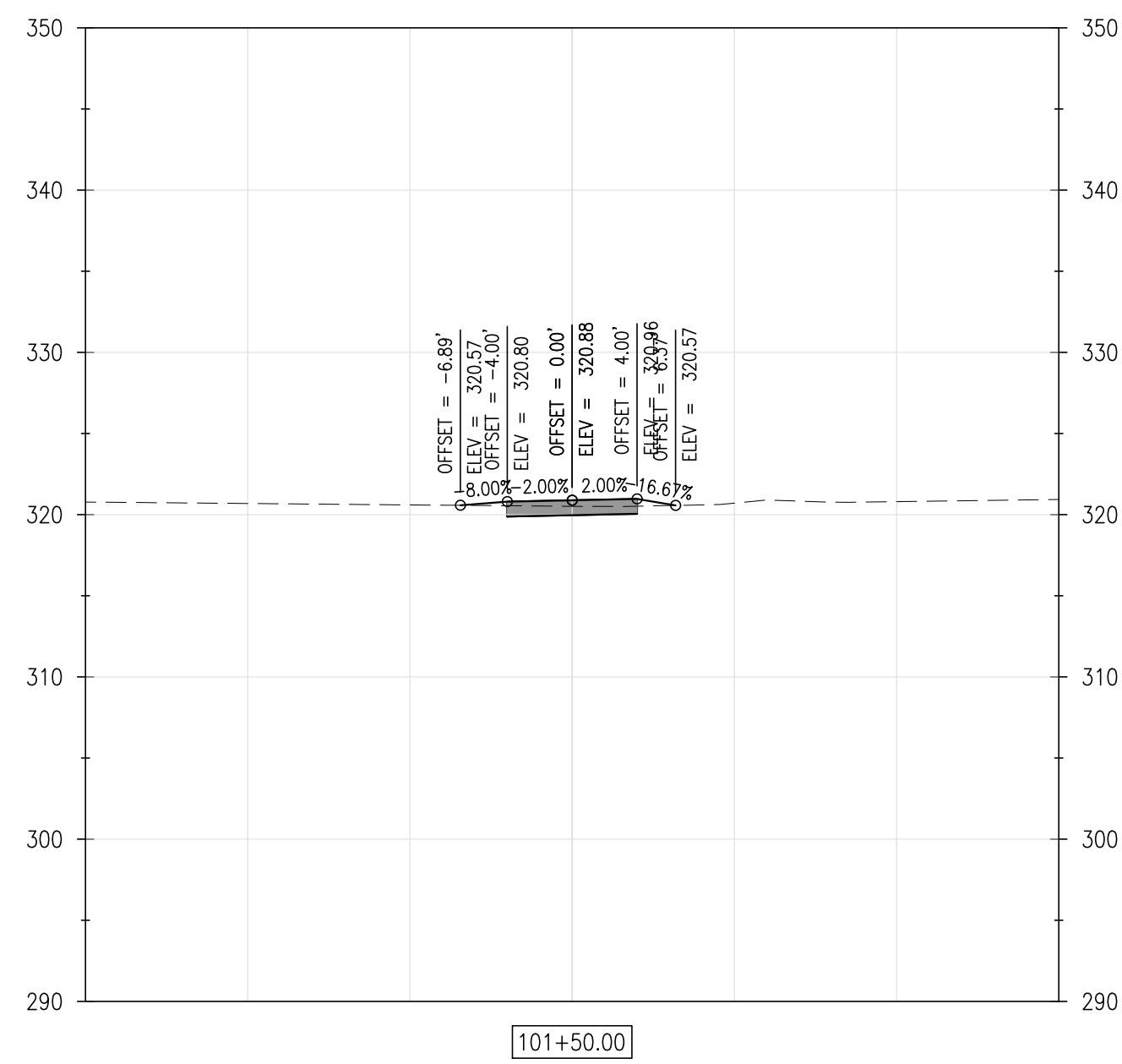
AS NOTED

SHEET NO.:

C4.3

CONTRACT NO.:

2016-WCCSP-100



REVISIONS:

DATE:	DESCRIPTION:
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BY:

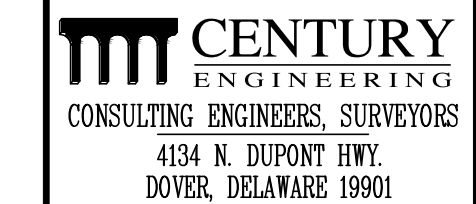
WCCSP TRI-VALLEY TRAIL

BID SET

CROSS SECTIONS

SEAL:

CIVIL ENGINEER:



CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE: _____

SEPTEMBER 7, 2016

SCALE:

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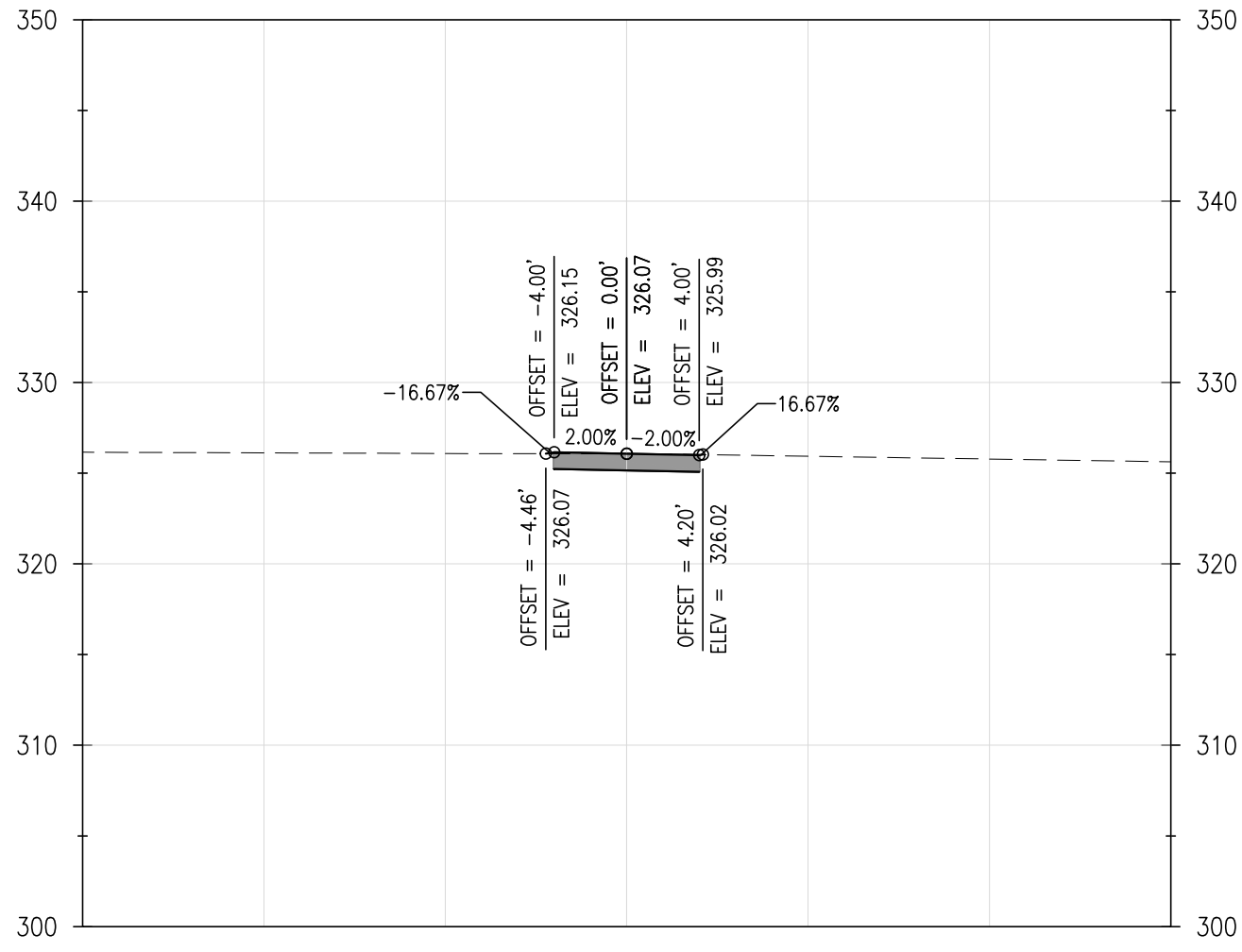
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C5.1

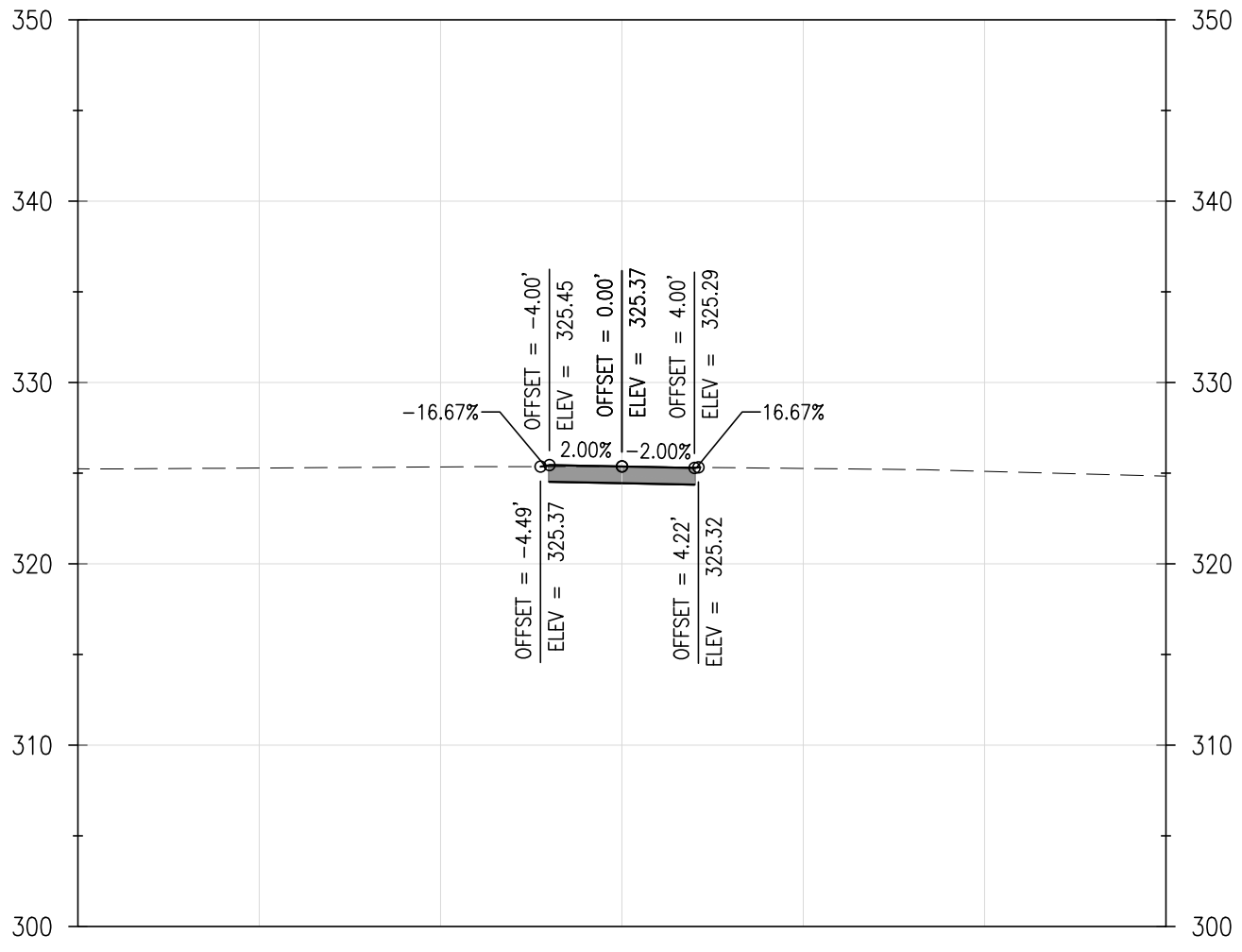
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2016-WCCSP-100

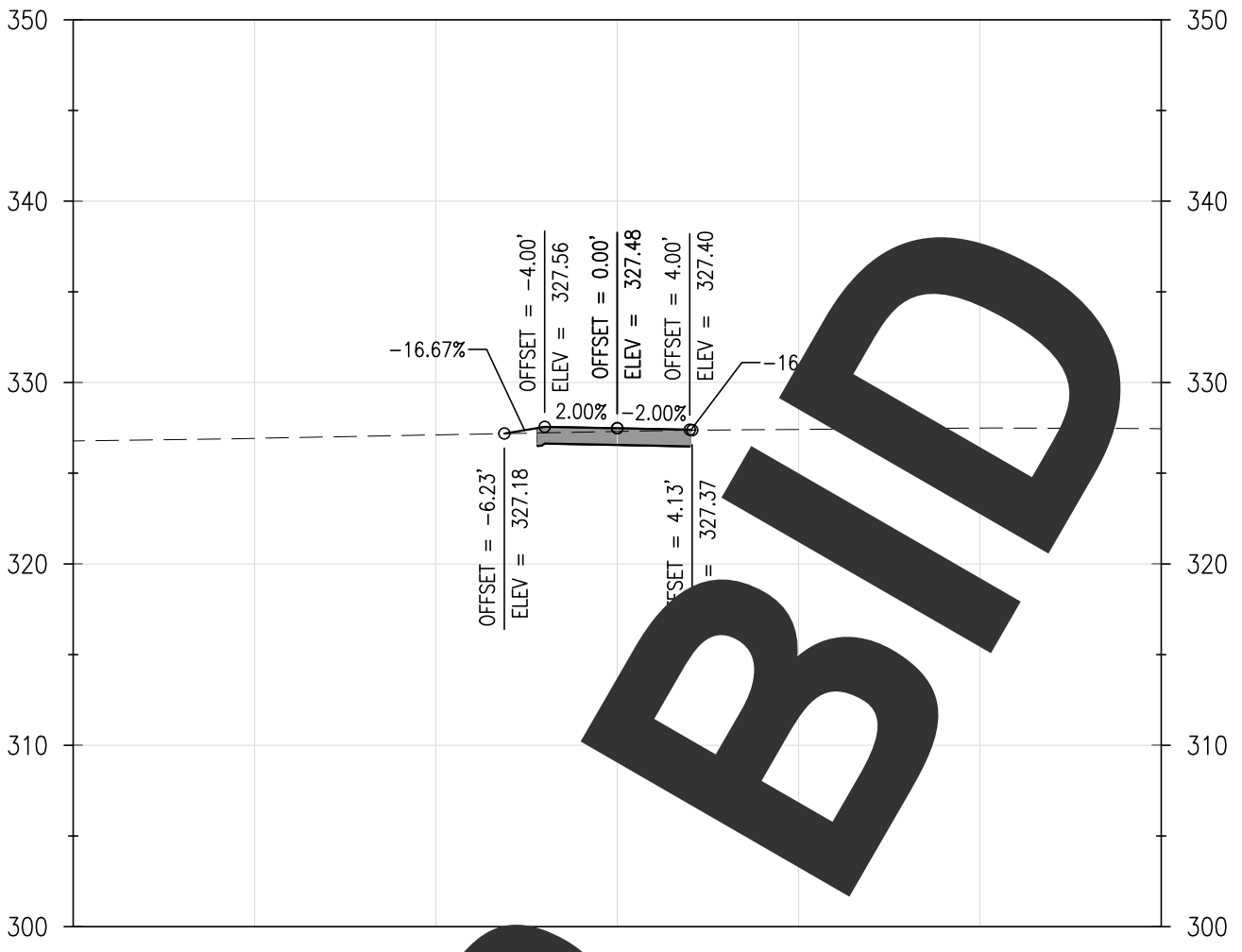
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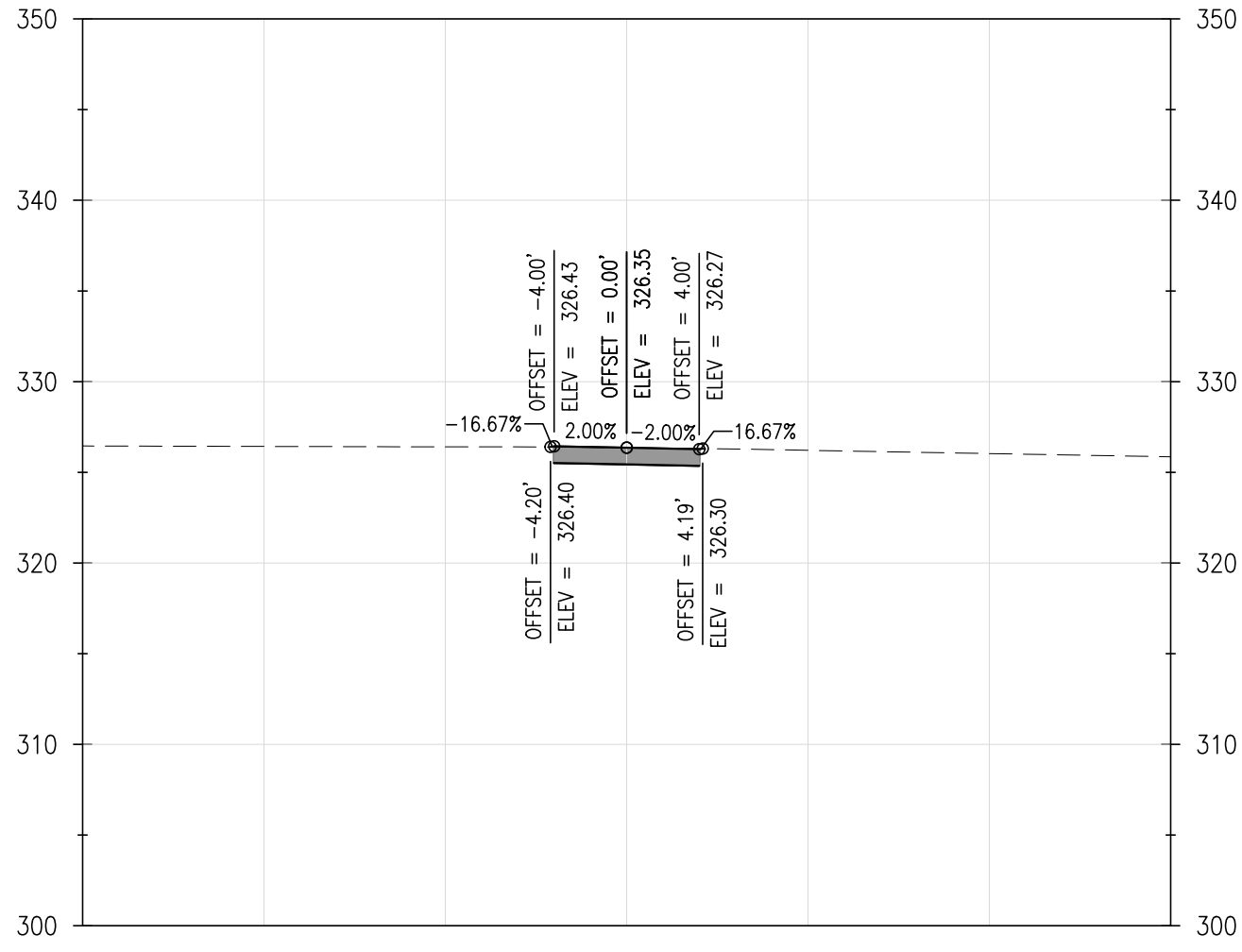
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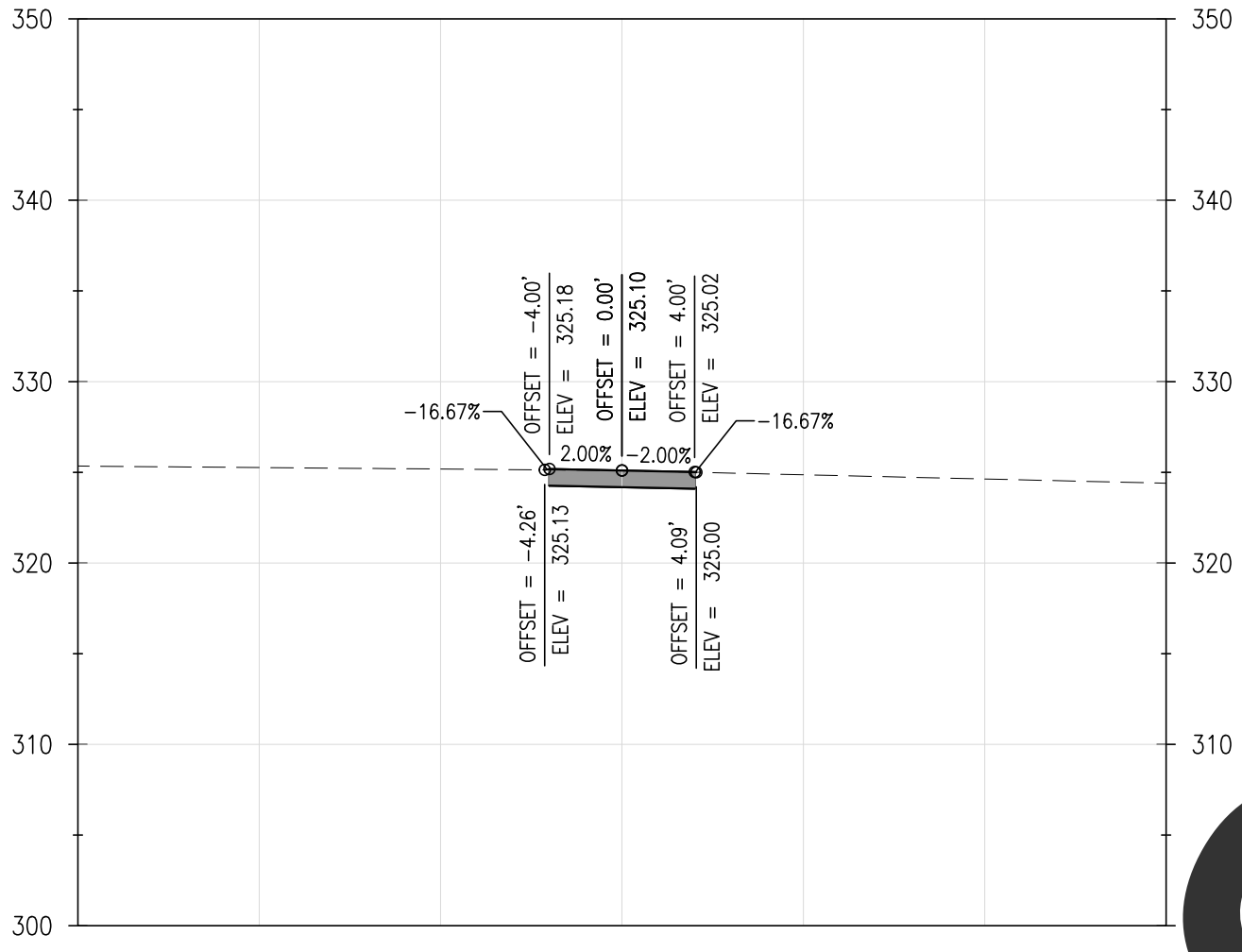
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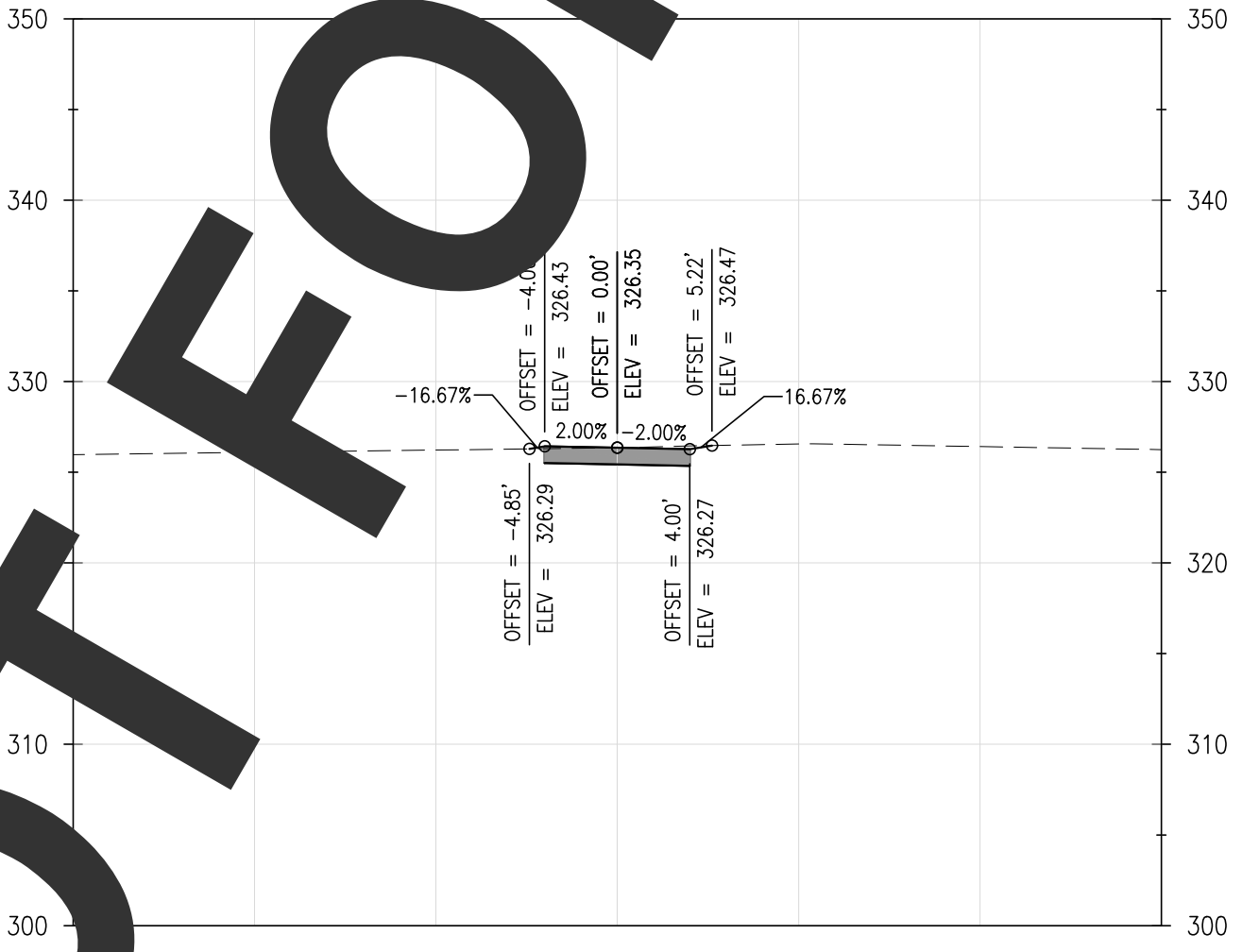
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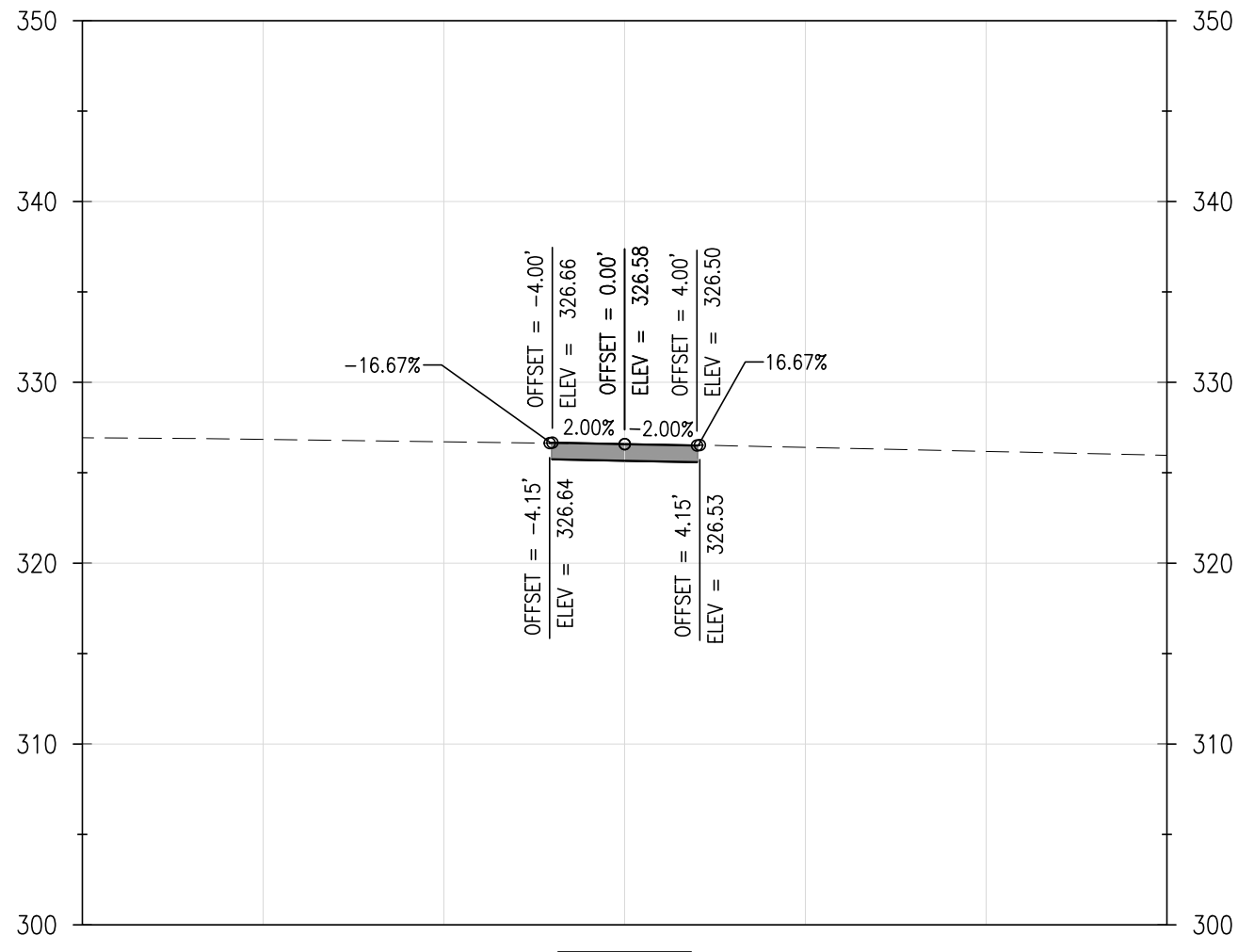
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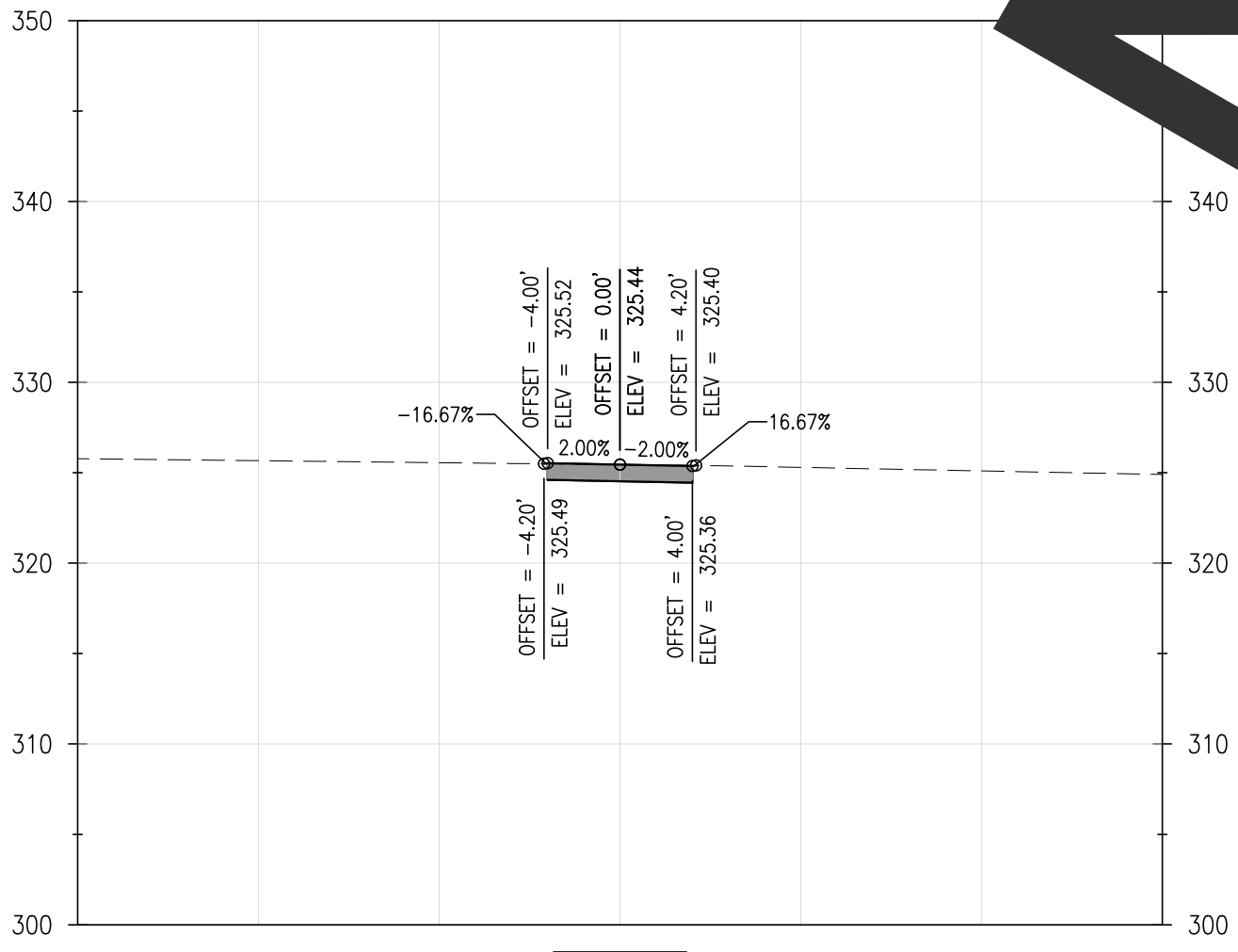
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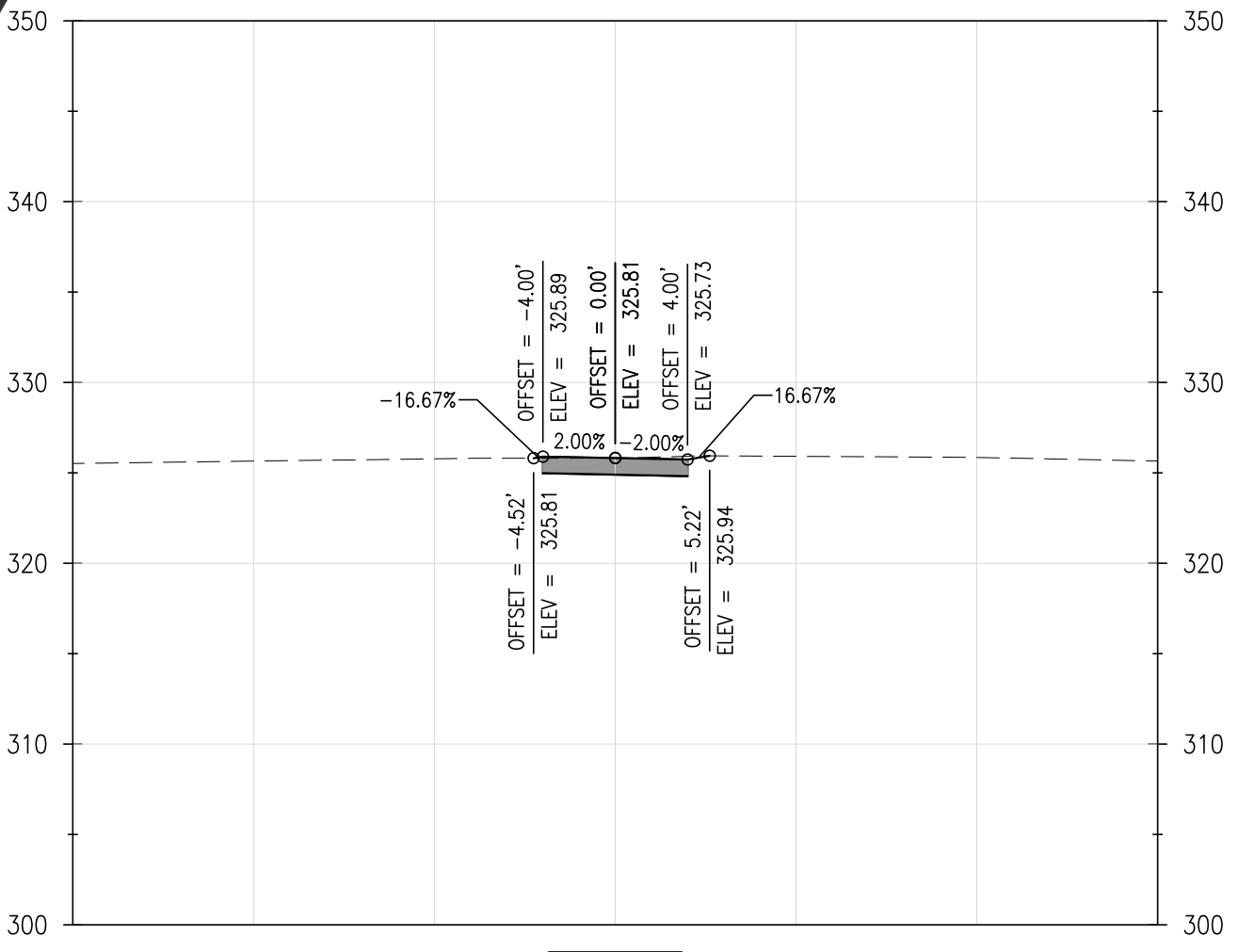
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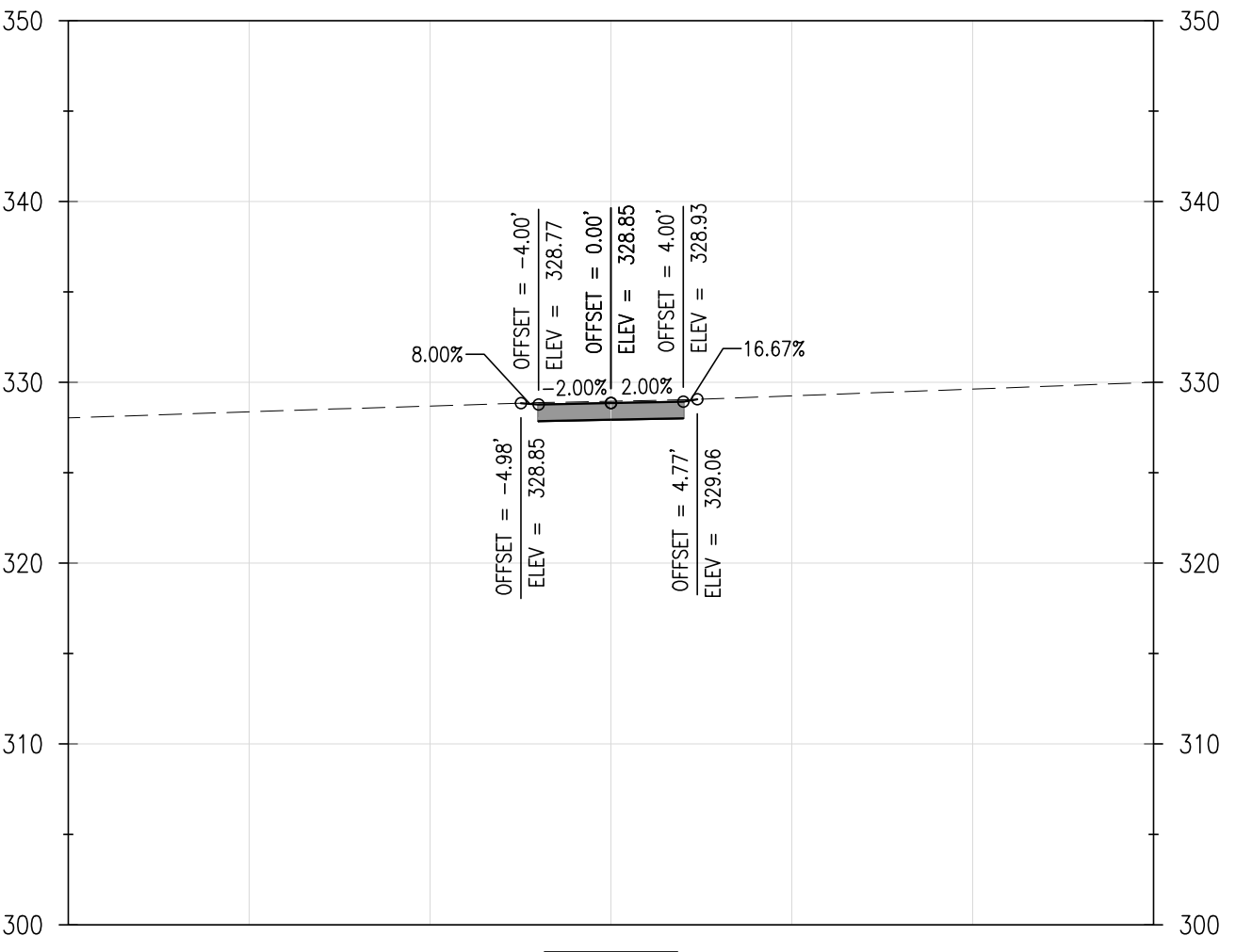
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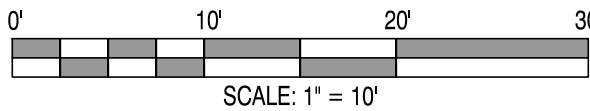
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109+50.00



111+00.00



REVISIONS:

DATE: DESCRIPTION:

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WCCSP TRI-VALLEY TRAIL

BID SET

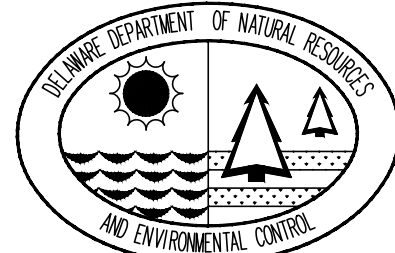
CROSS SECTIONS

SEAL:

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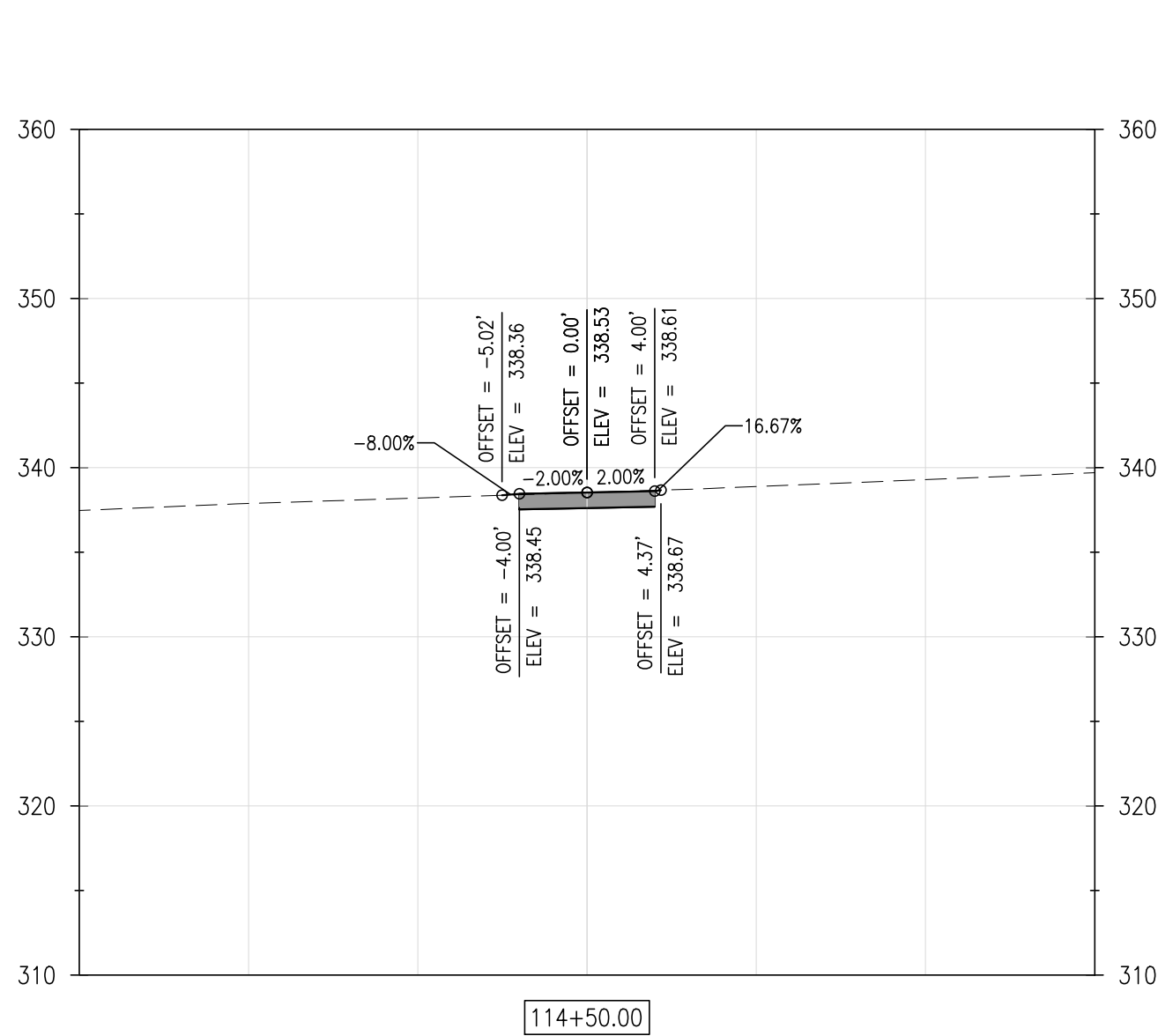
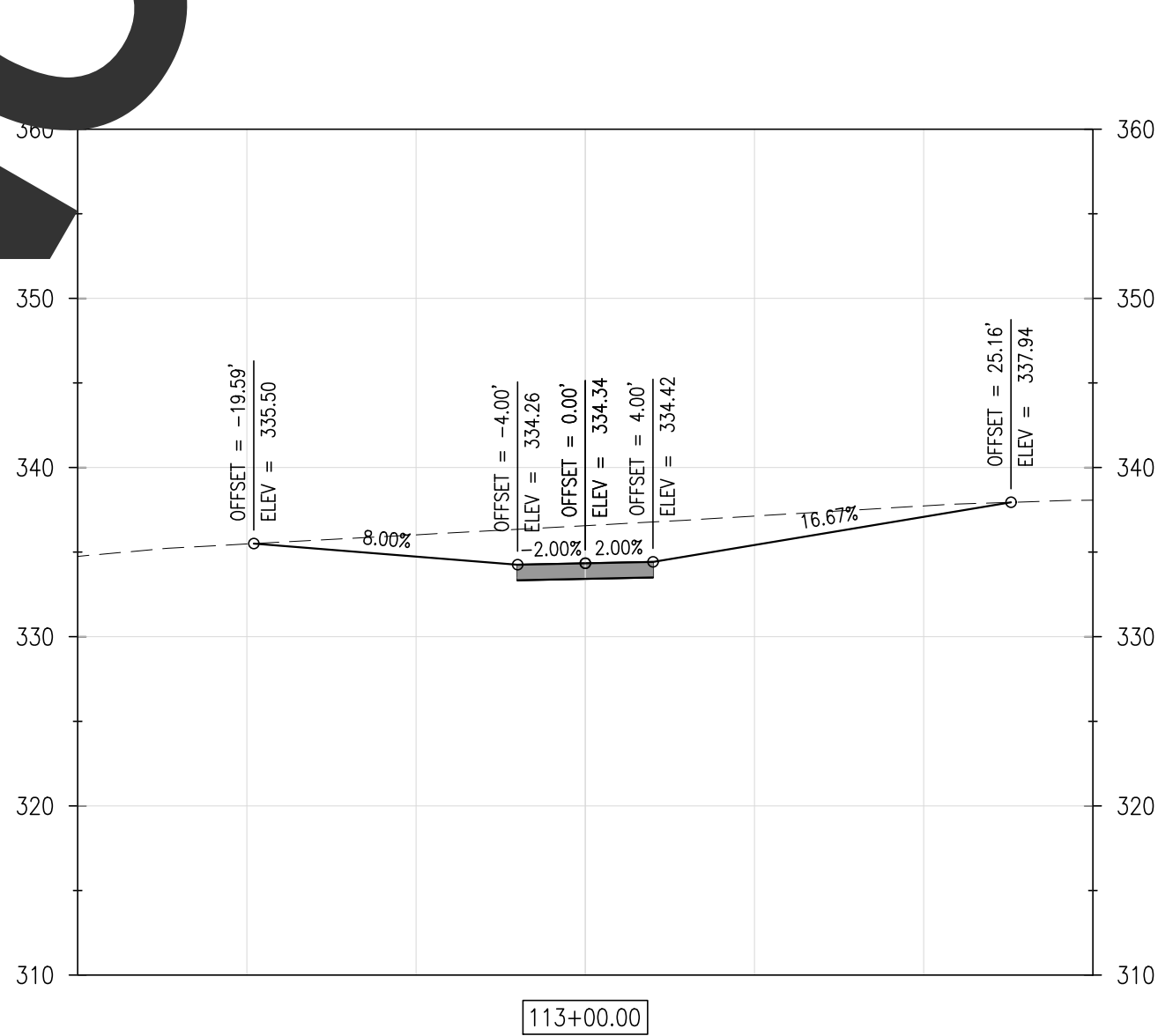
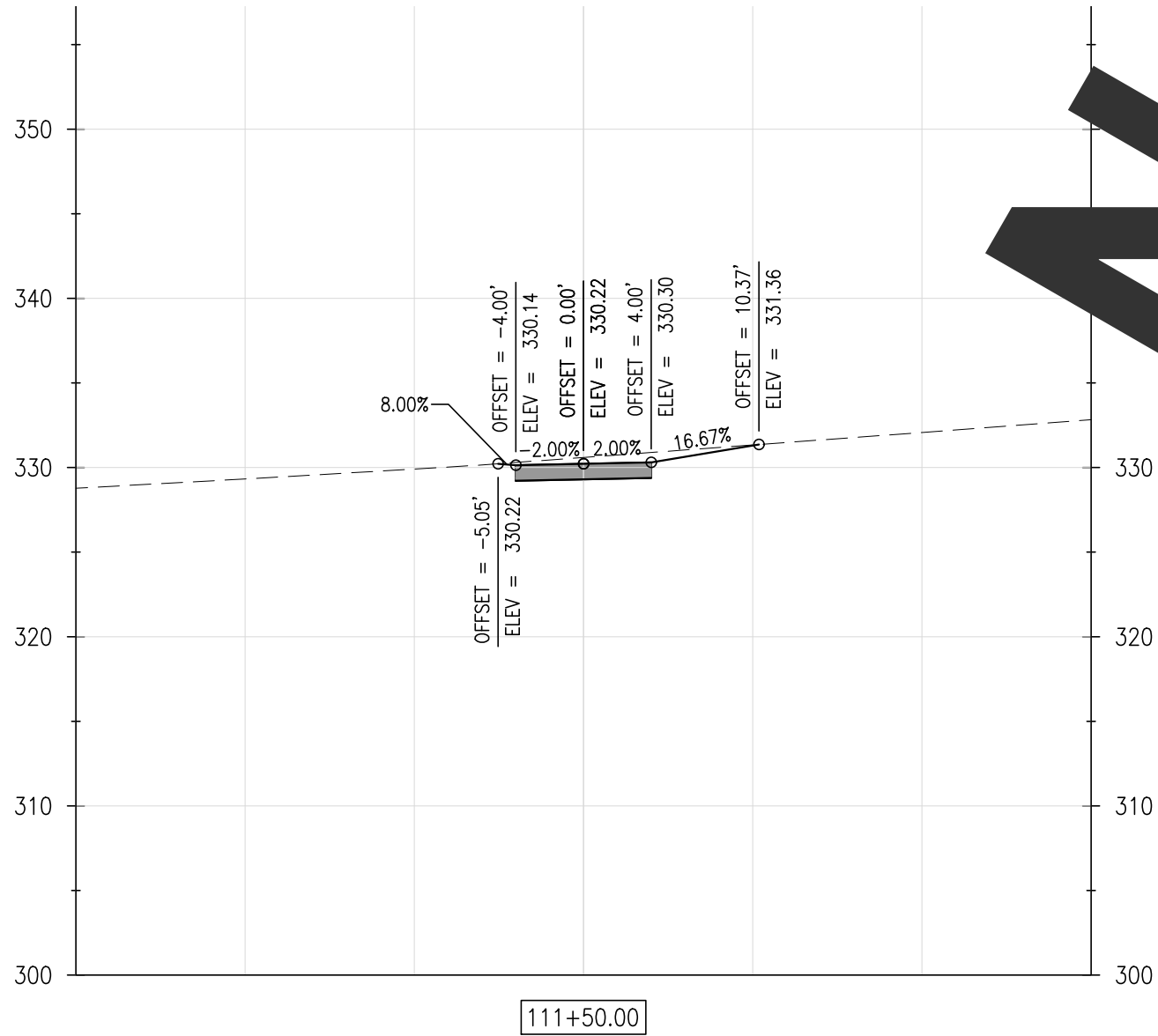
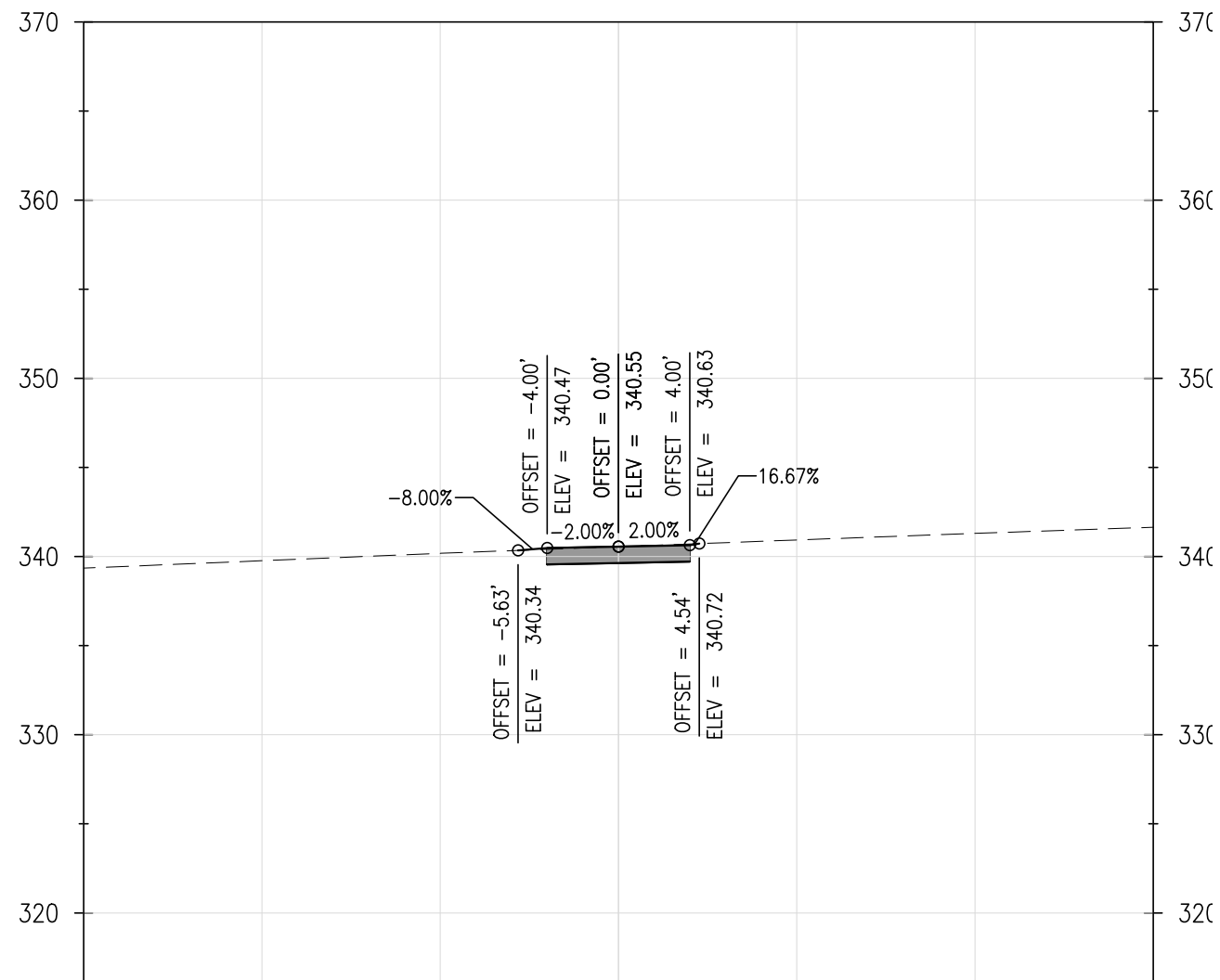
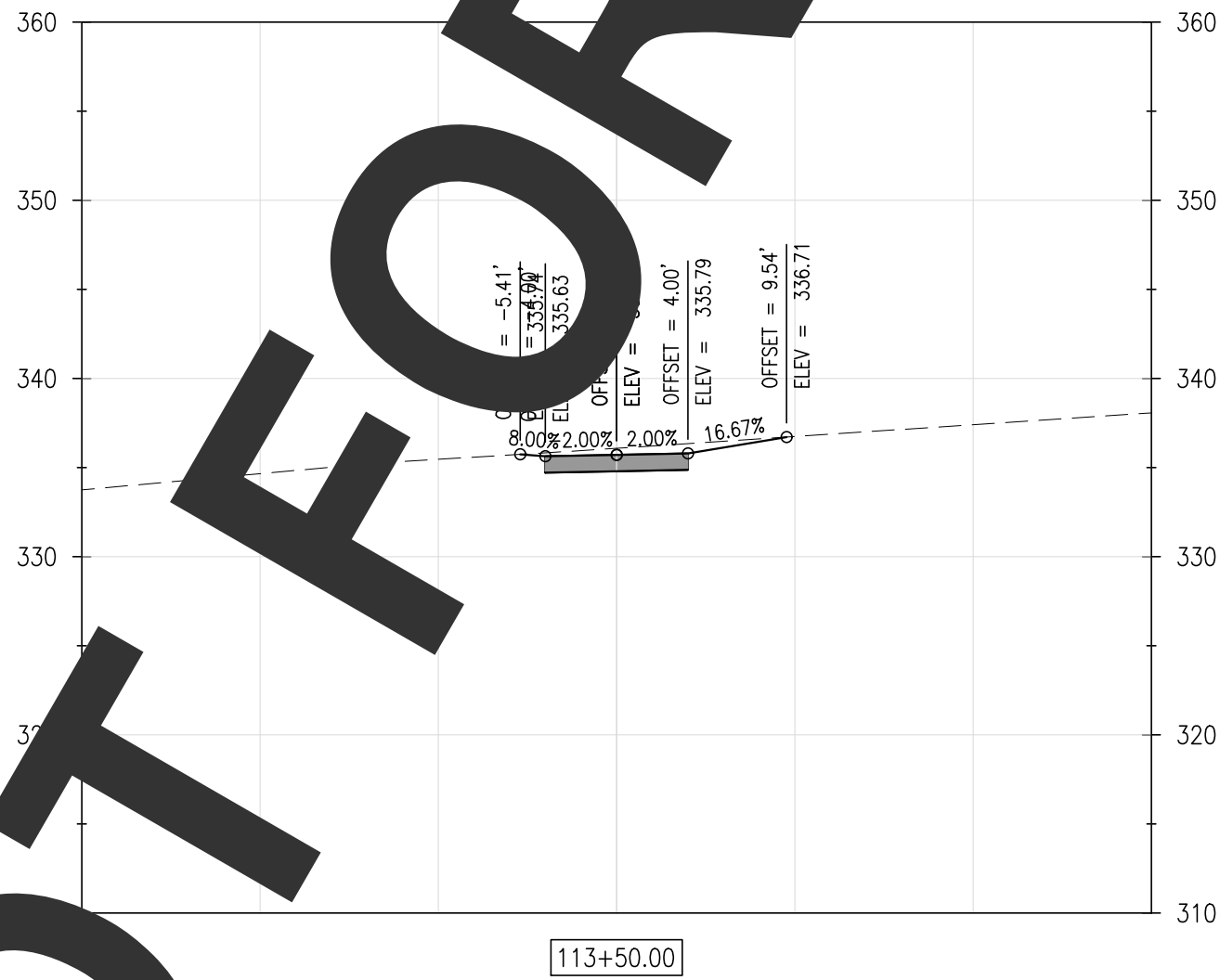
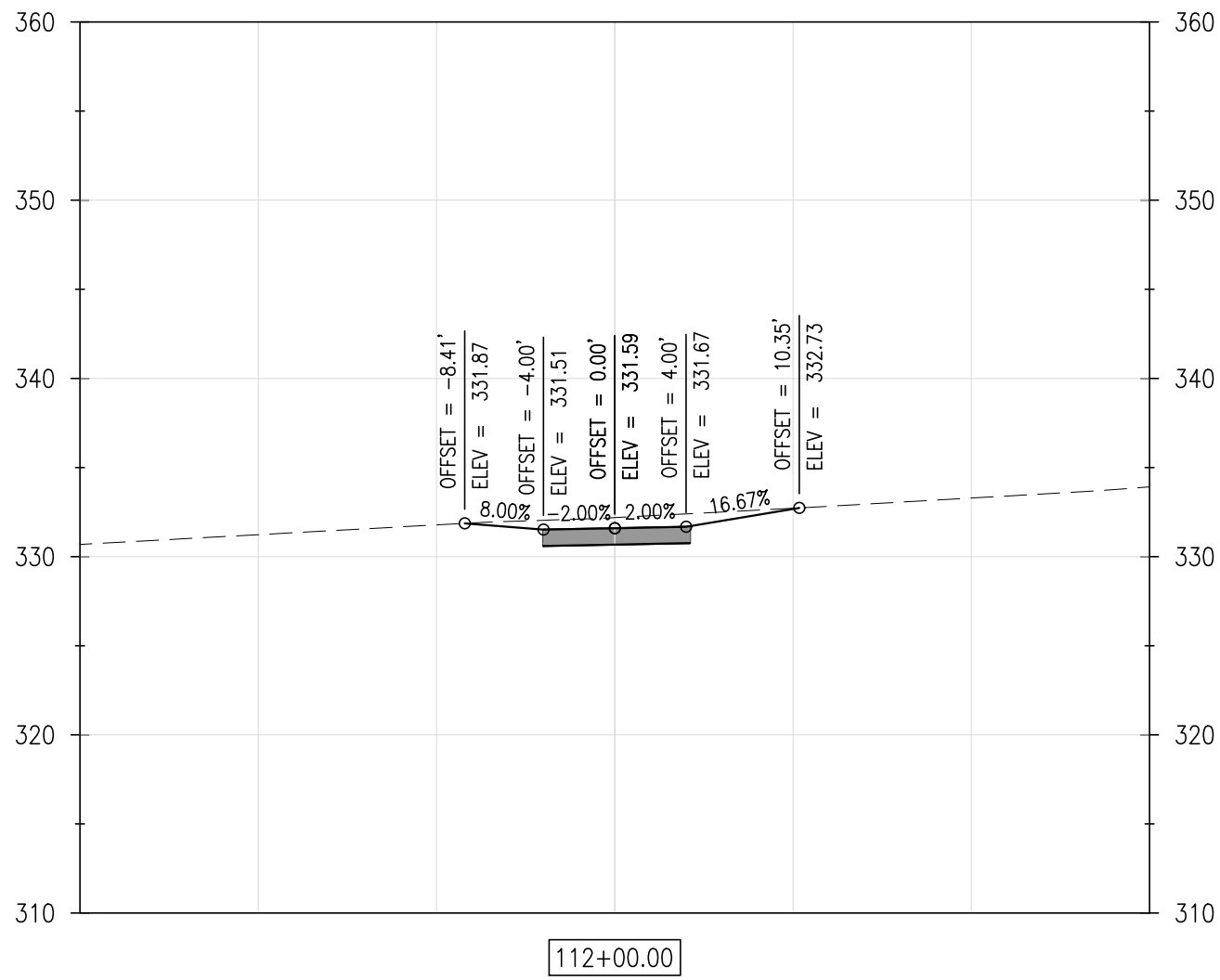
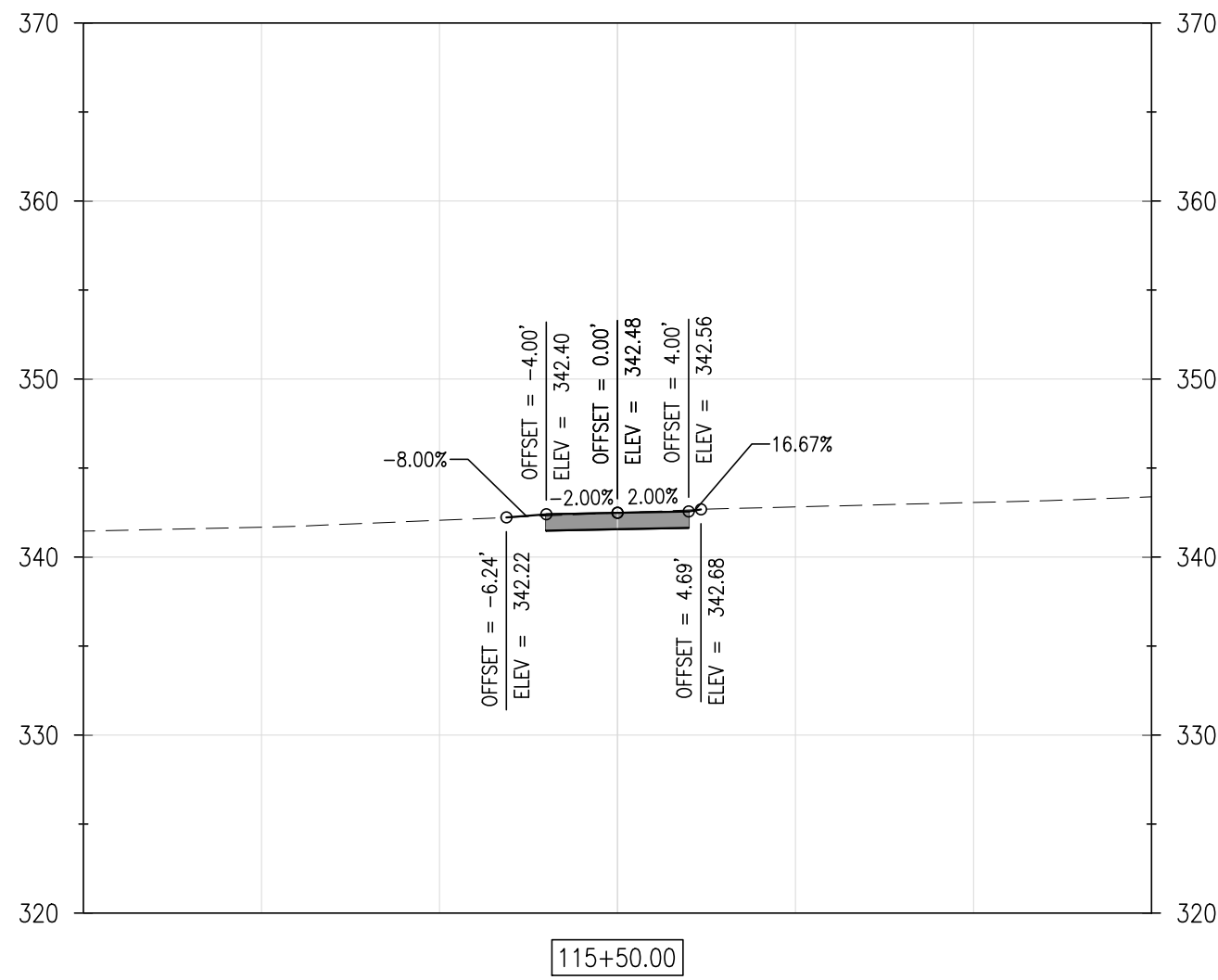
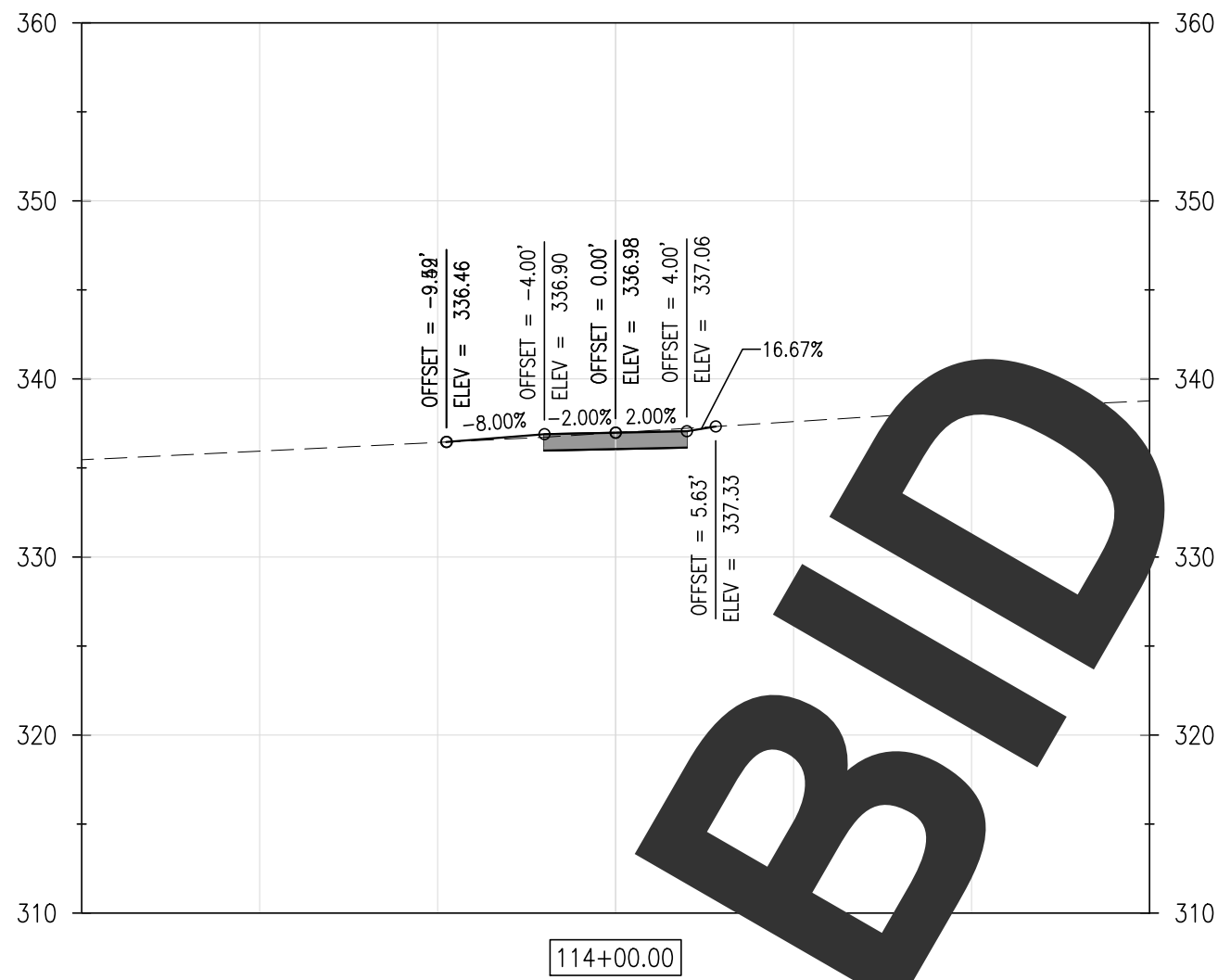
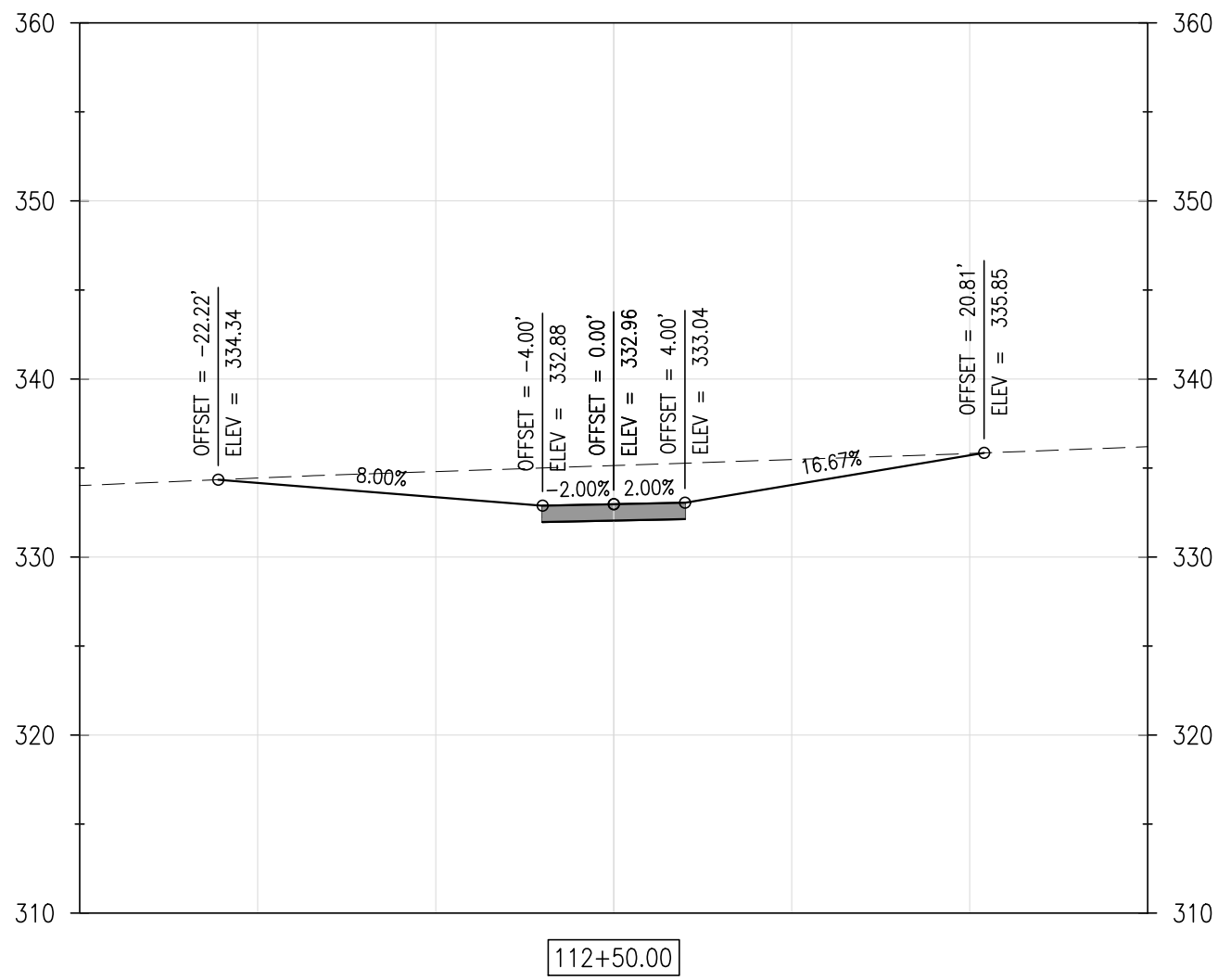
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SHEET NO.:

C5.2

CONTRACT NO.:

2016-WCCSP-100



REVISIONS:

DATE: DESCRIPTION: BY:

WCCSP TRI-VALLEY TRAIL

BID SET

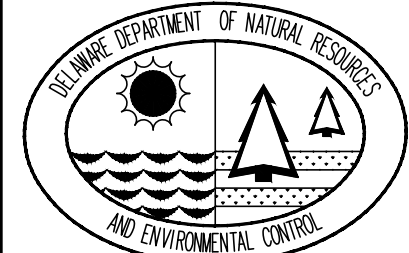
CROSS SECTIONS

SEAL:

CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17



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SEPTEMBER 7, 2016

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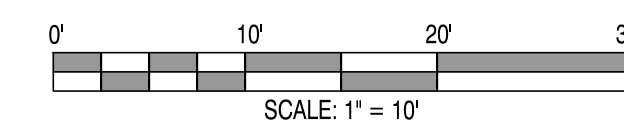
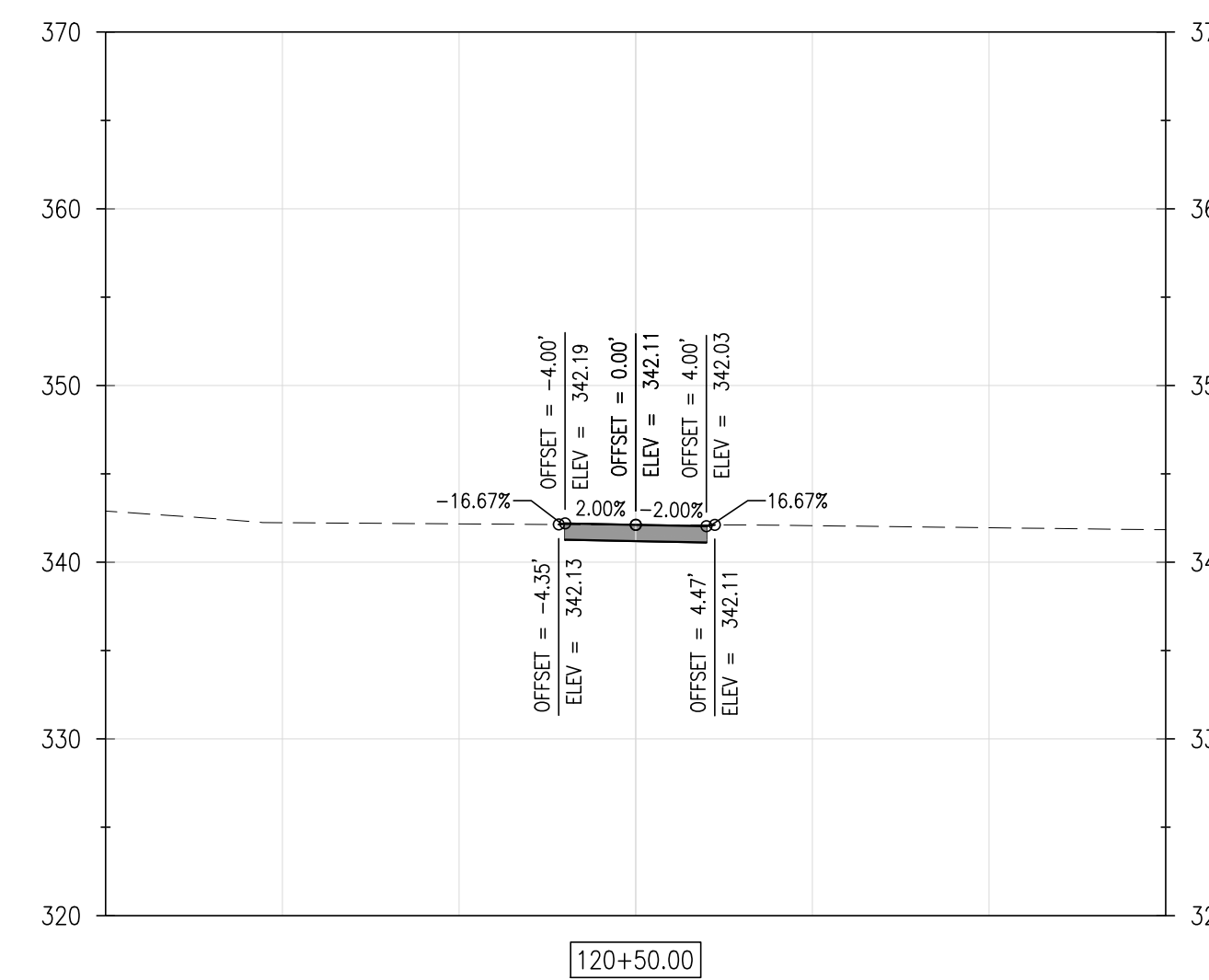
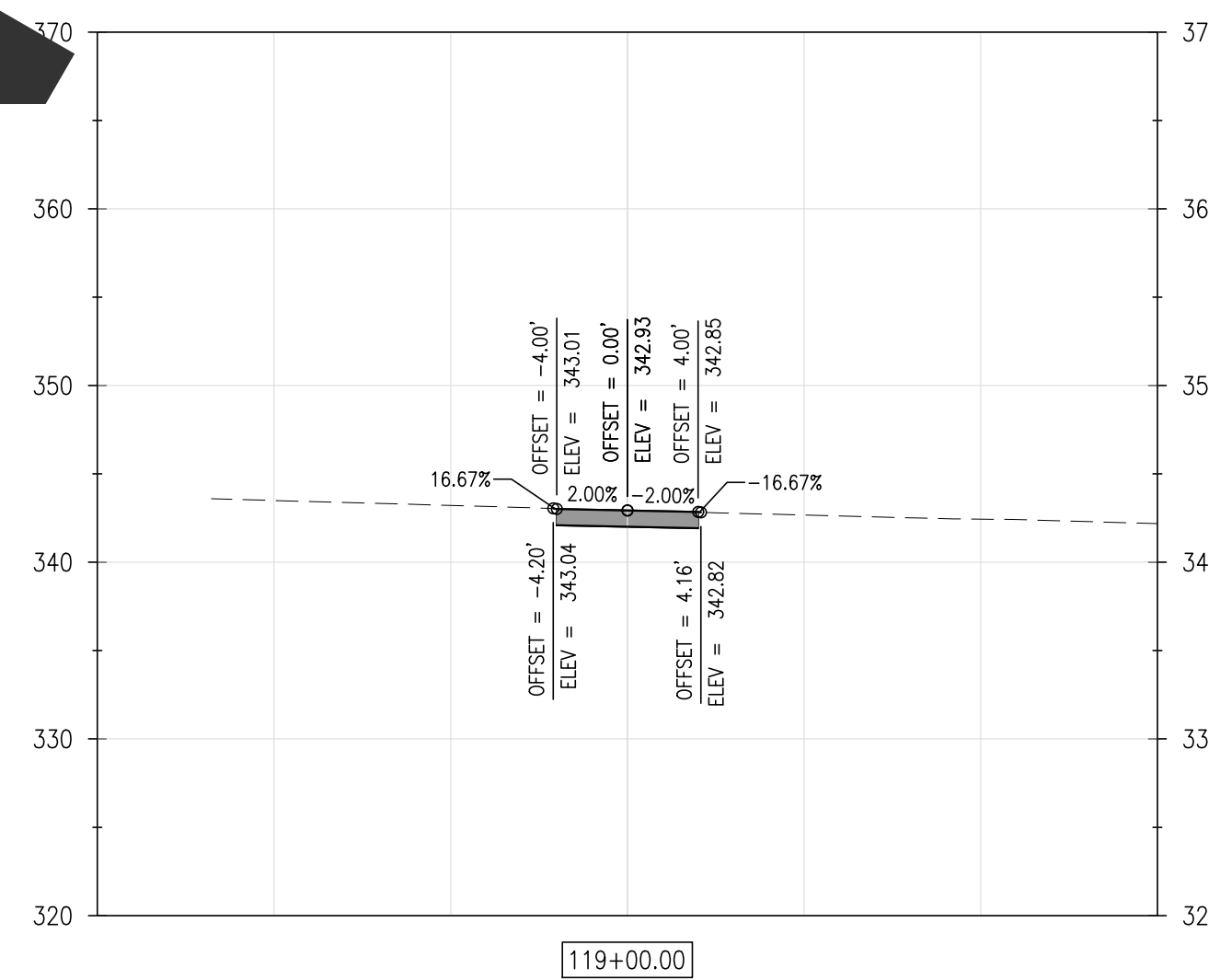
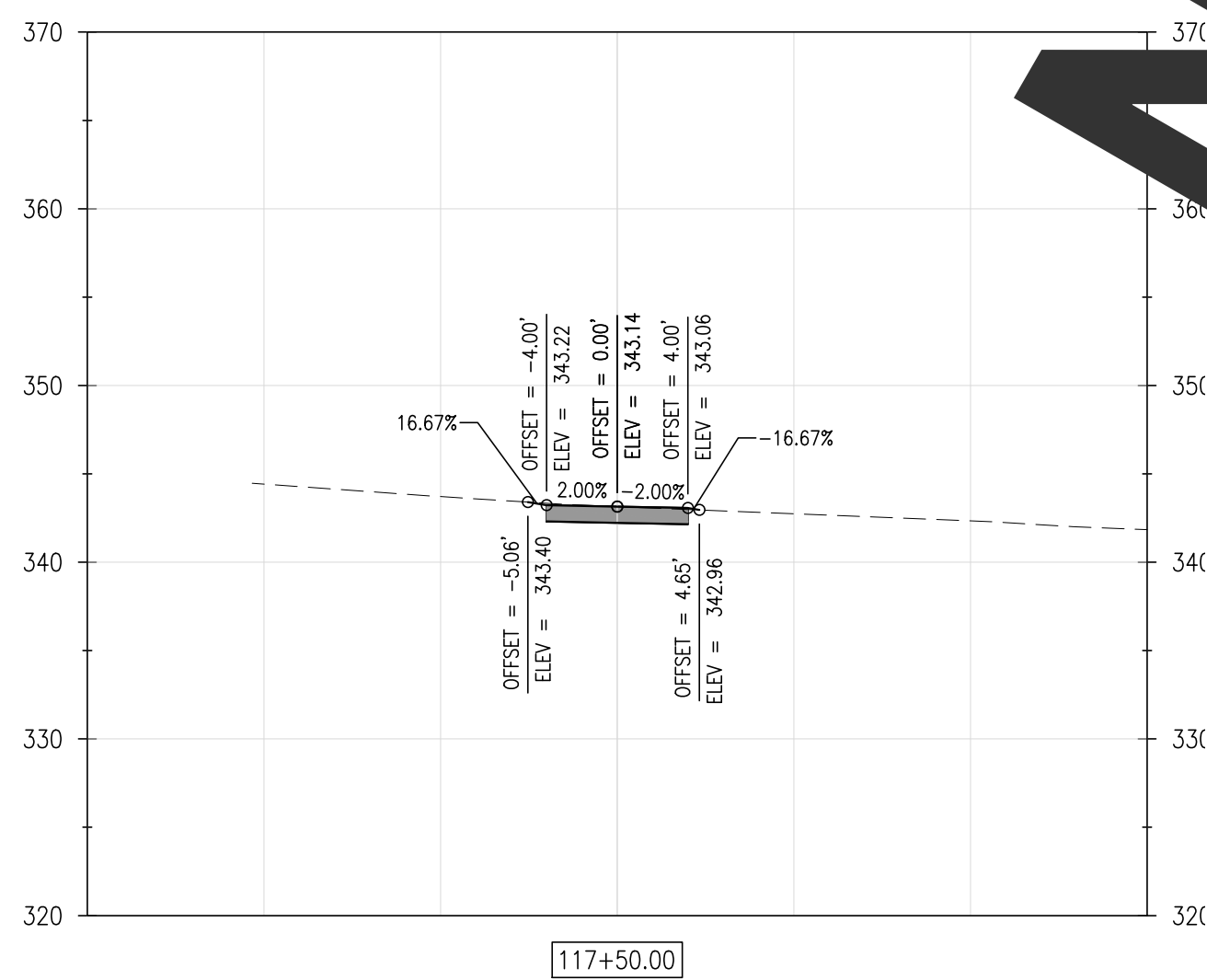
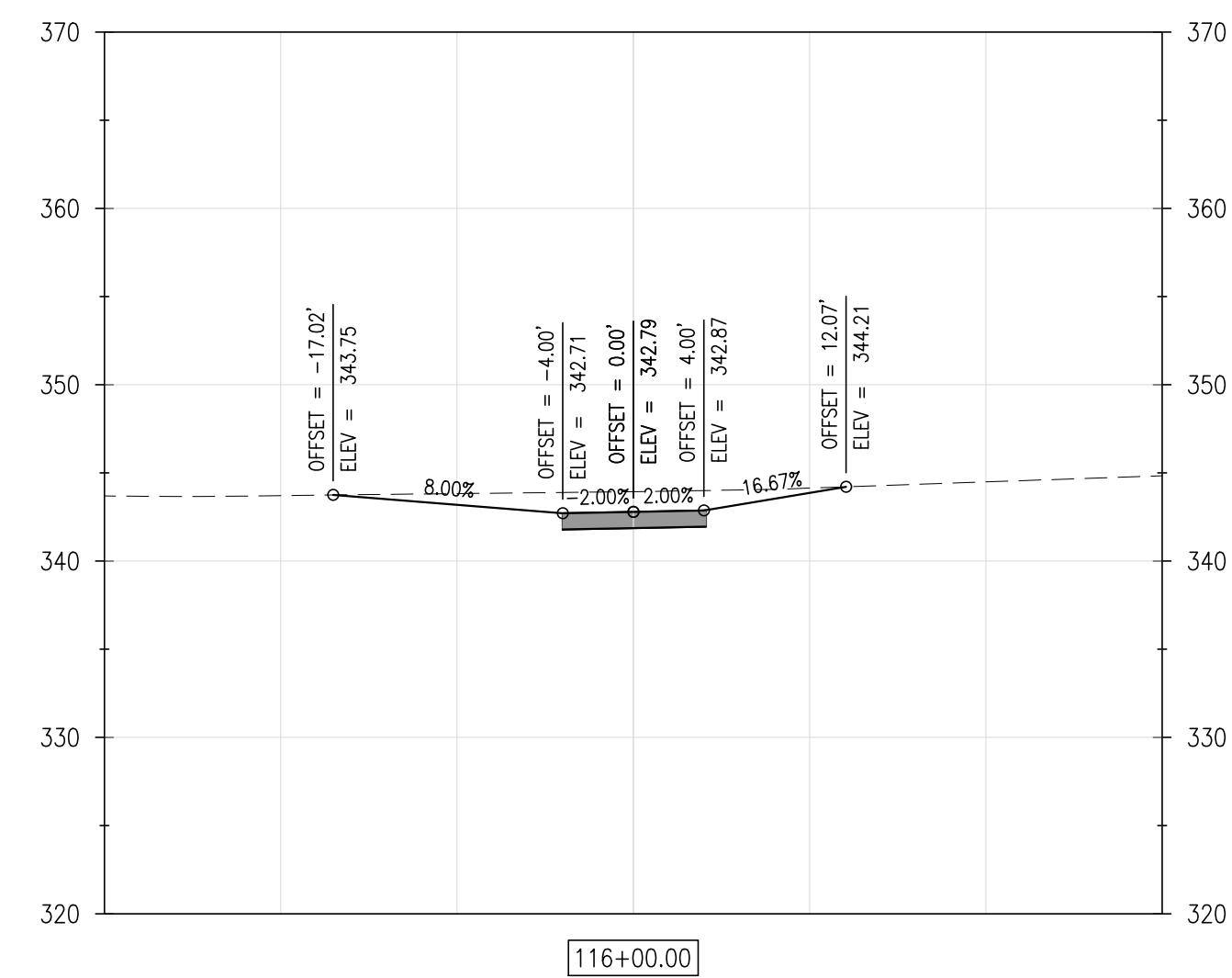
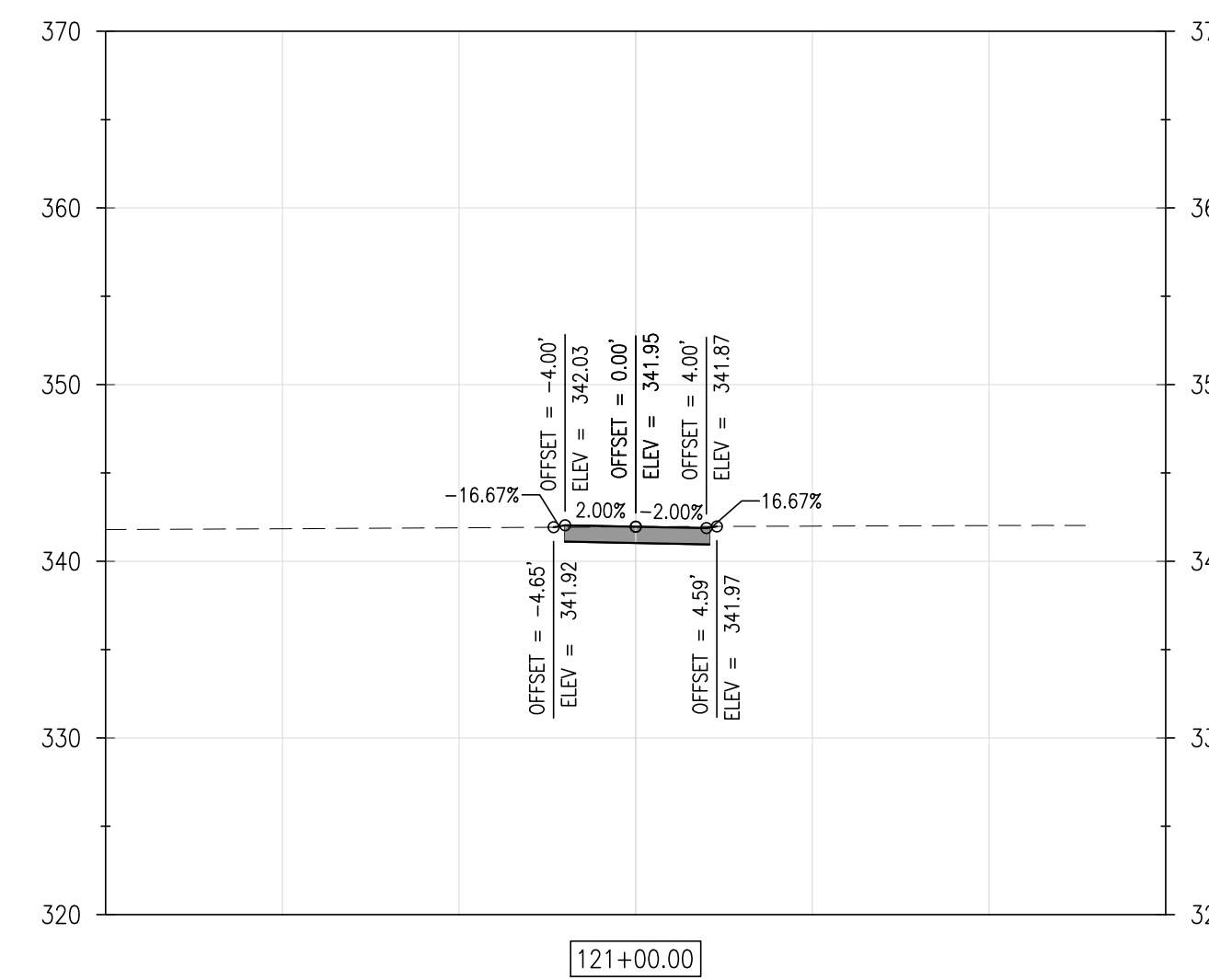
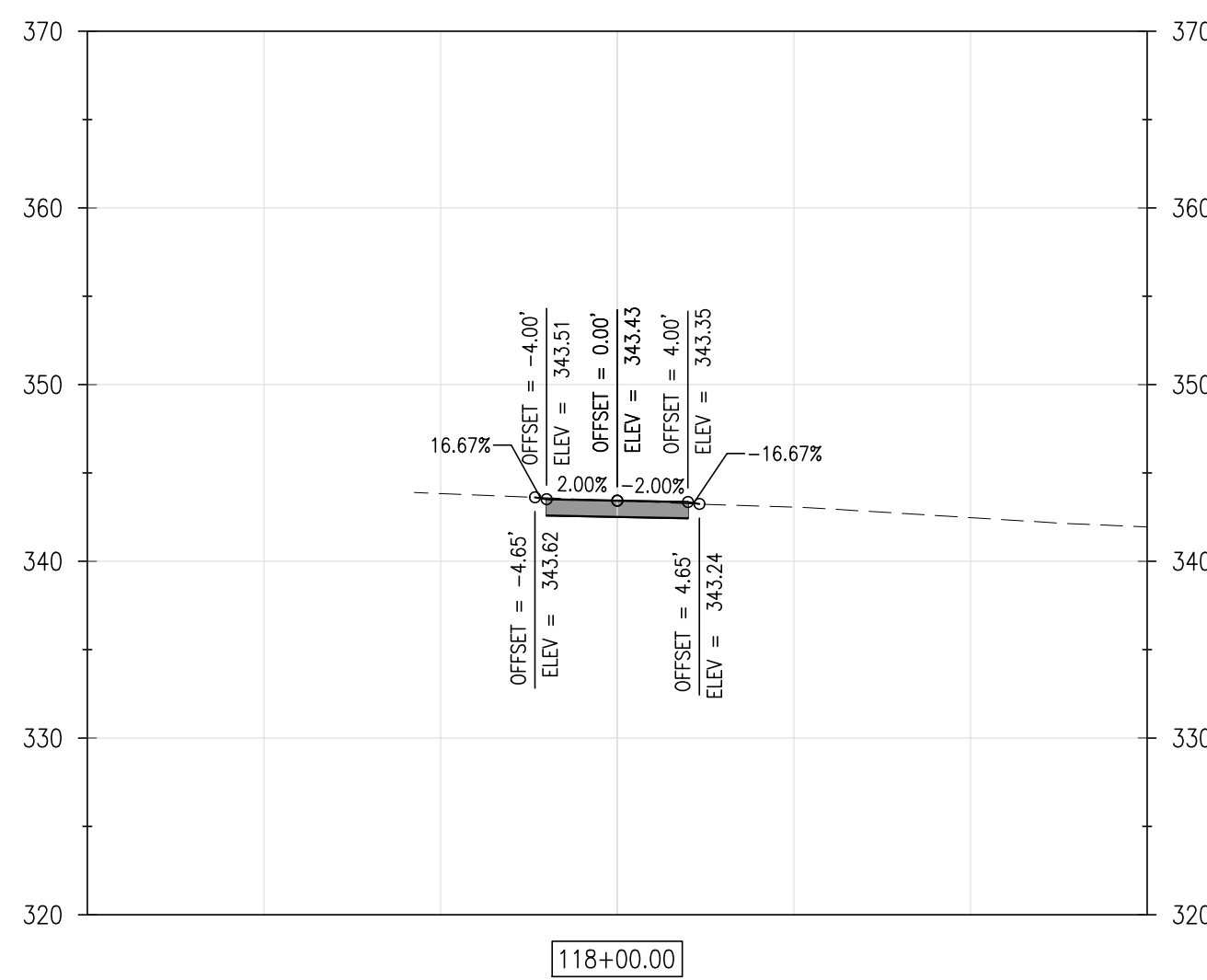
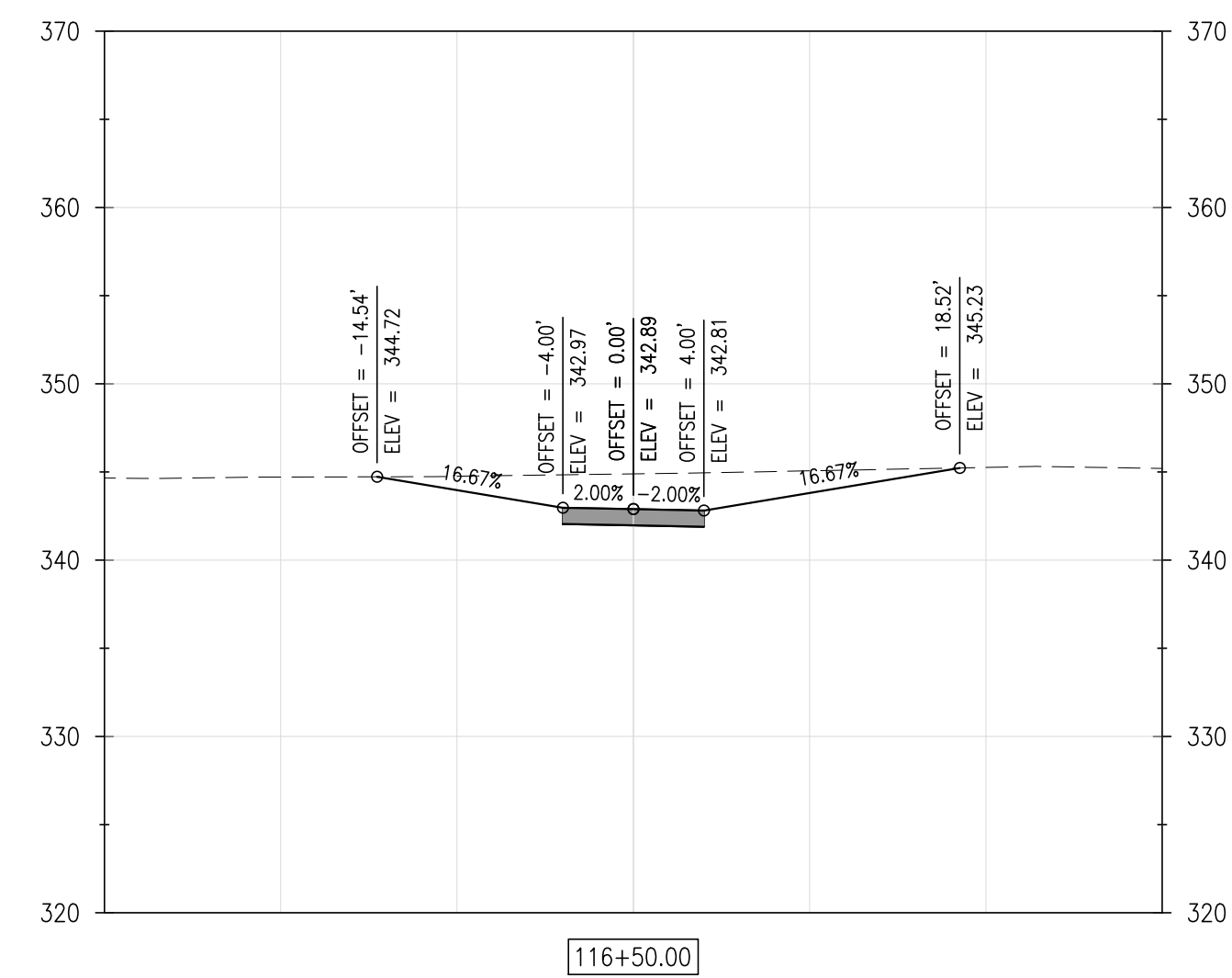
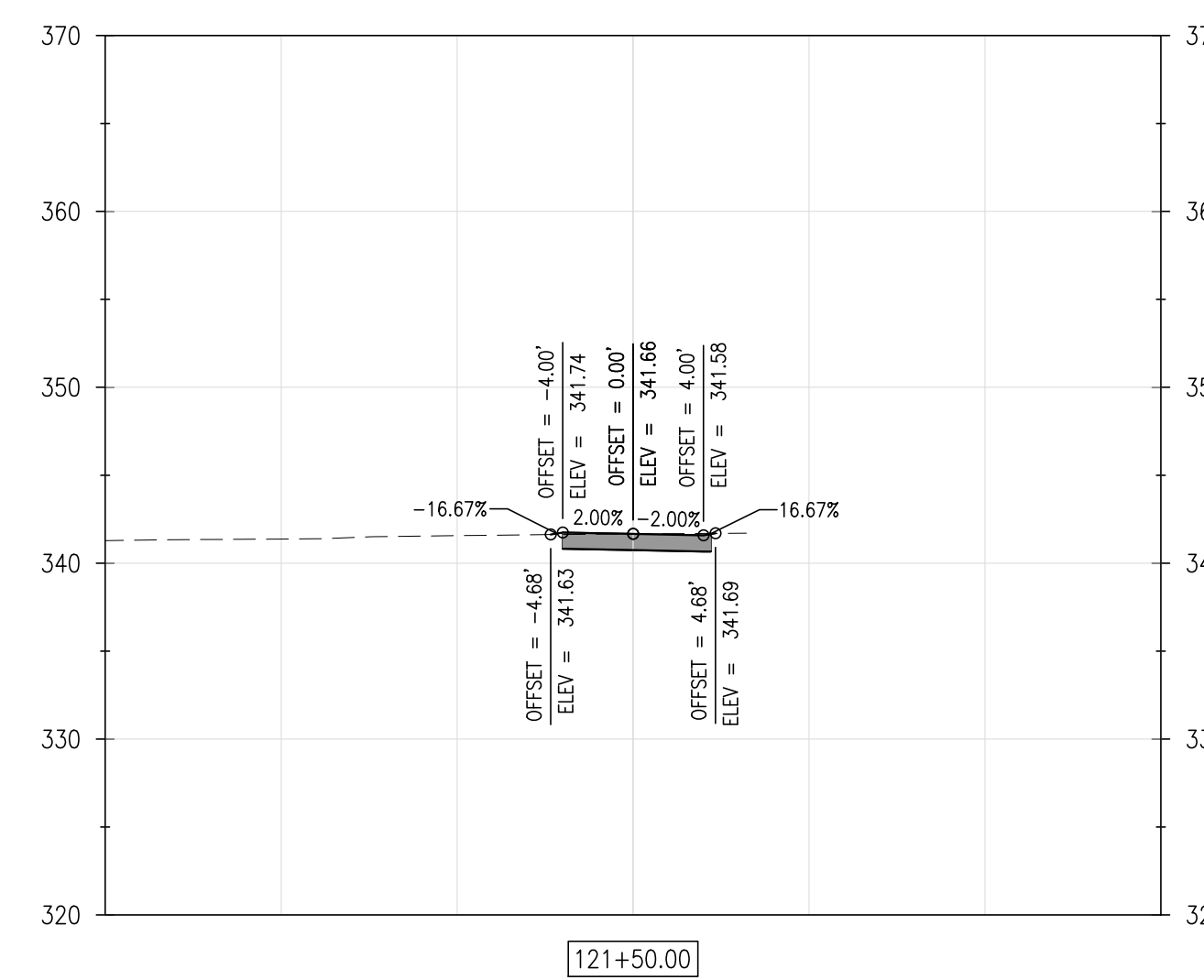
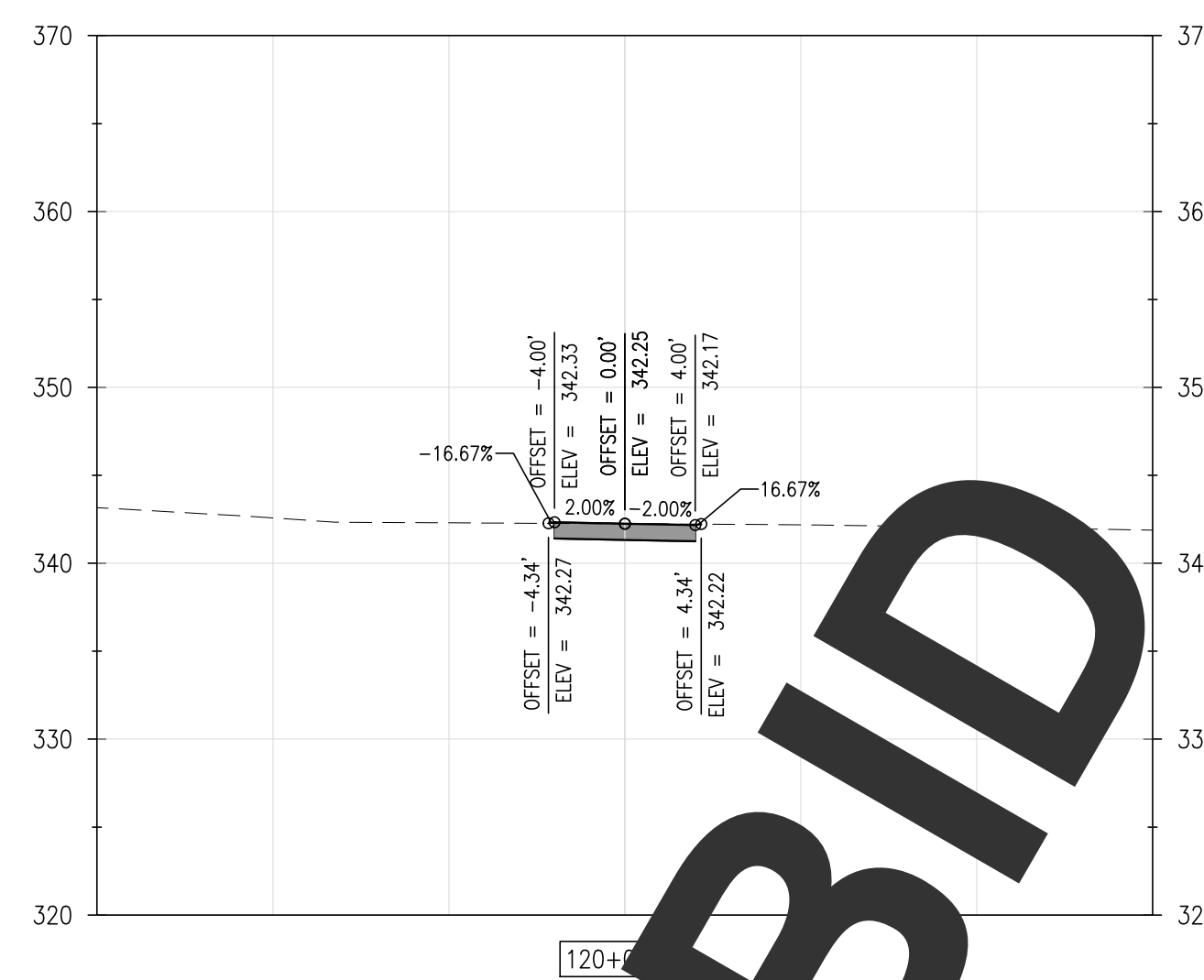
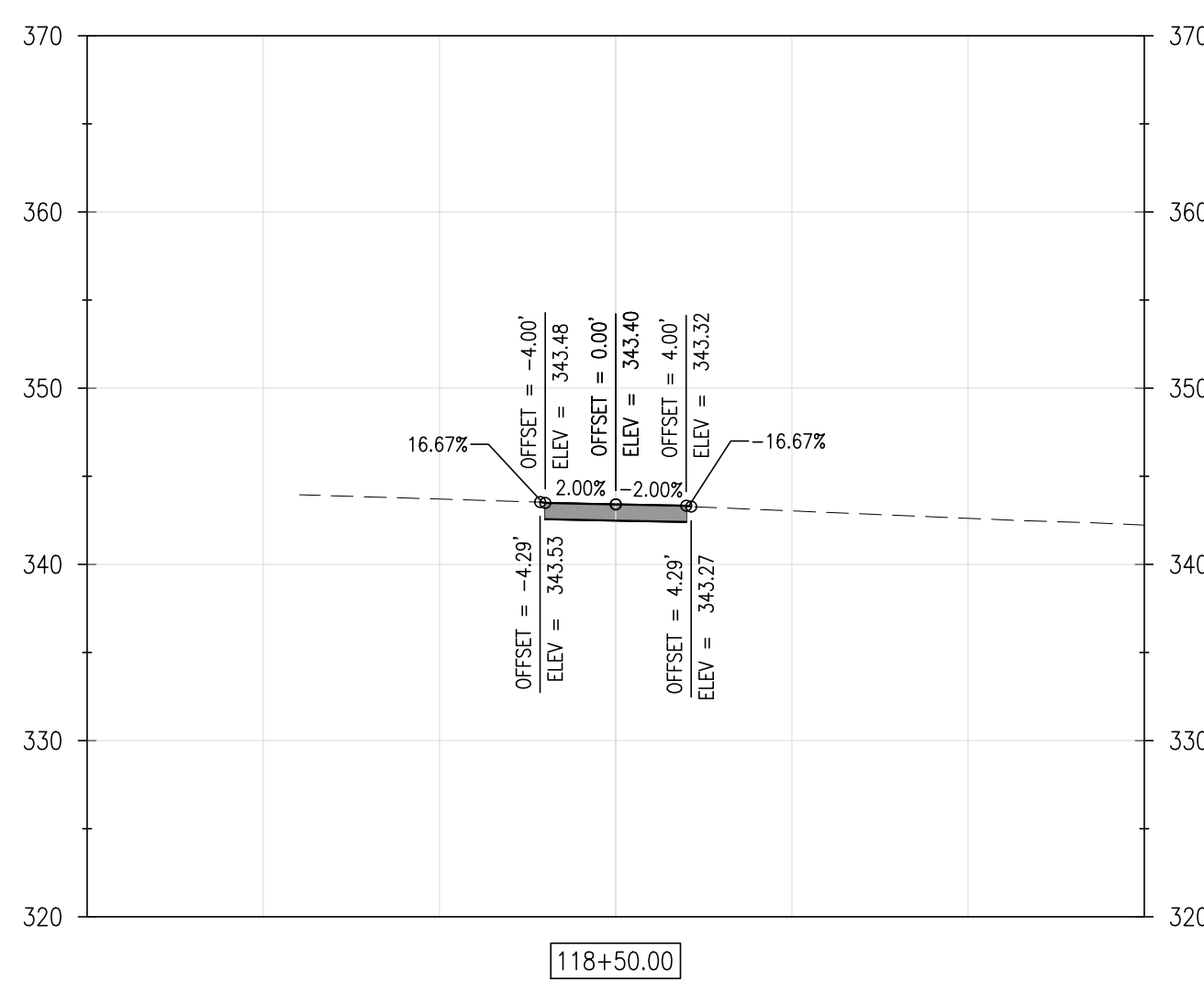
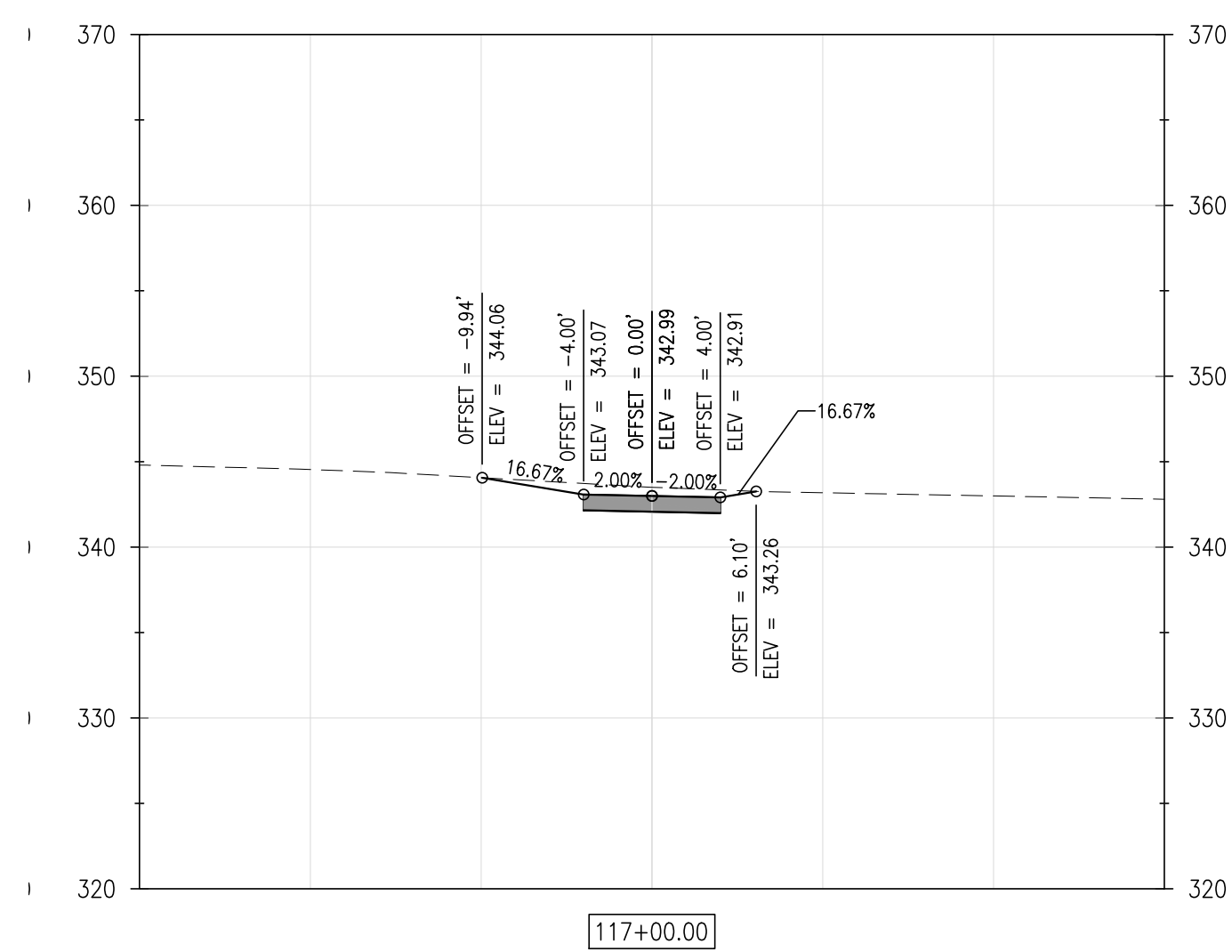
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SHEET NO.:

C5.3

CONTRACT NO.:

2016-WCCSP-100



REVISIONS:

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BY:

WCCSP TRI-VALLEY TRAIL

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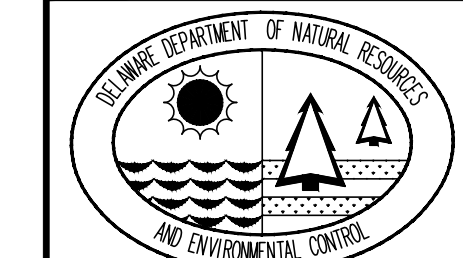
CROSS SECTIONS

SEAL:

CIVIL ENGINEER:



CEI CONTRACT NO.: 125002.17



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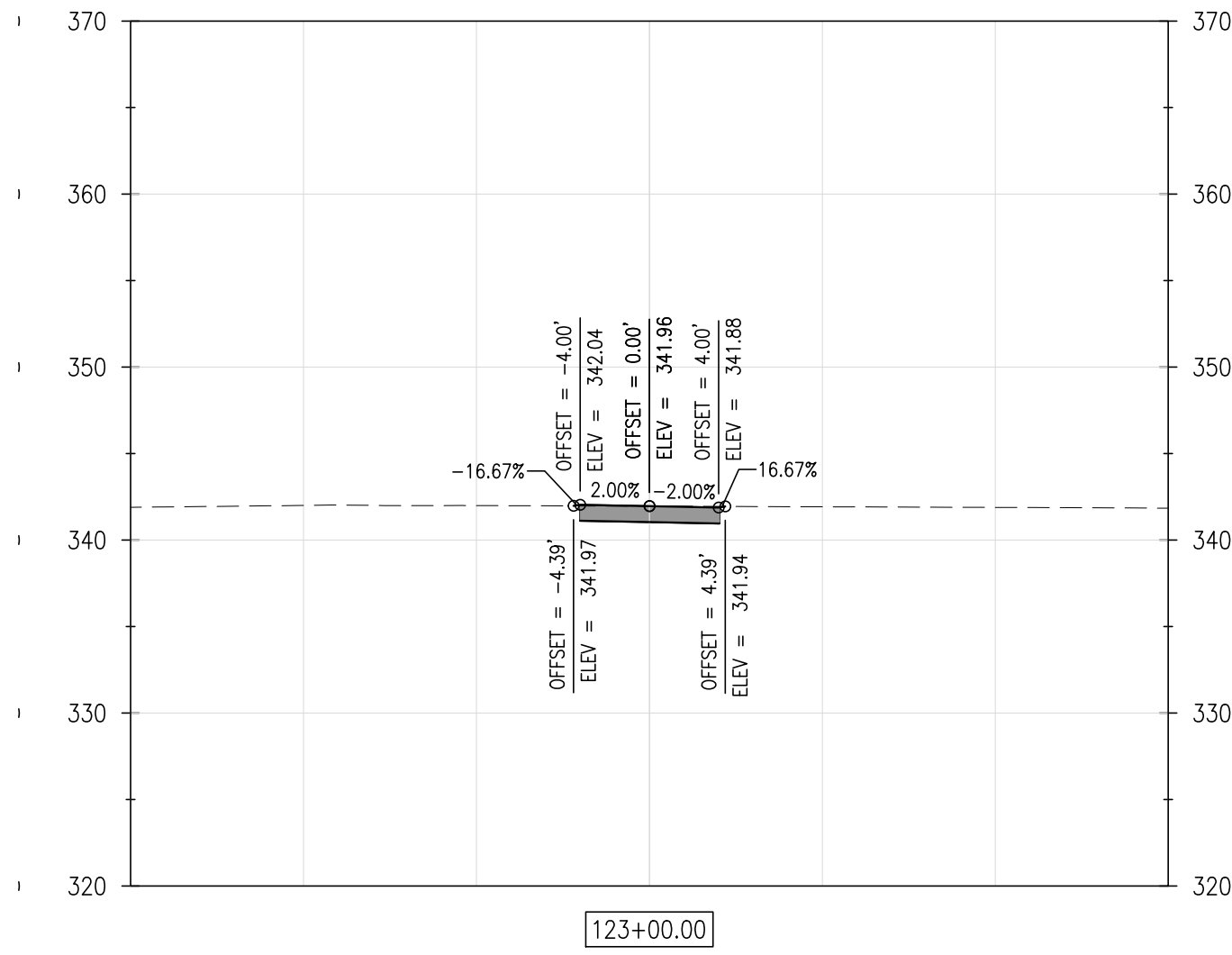
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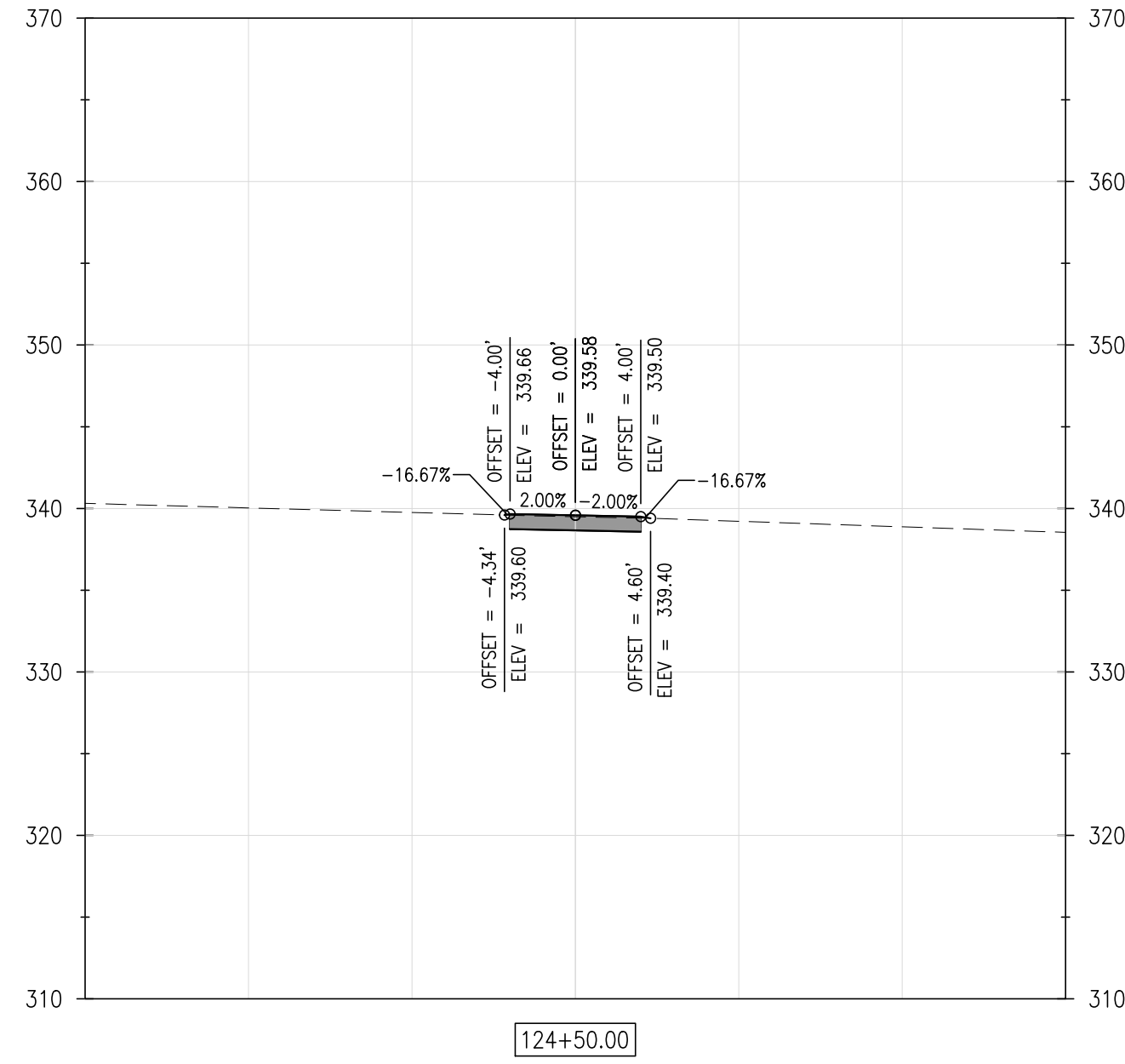
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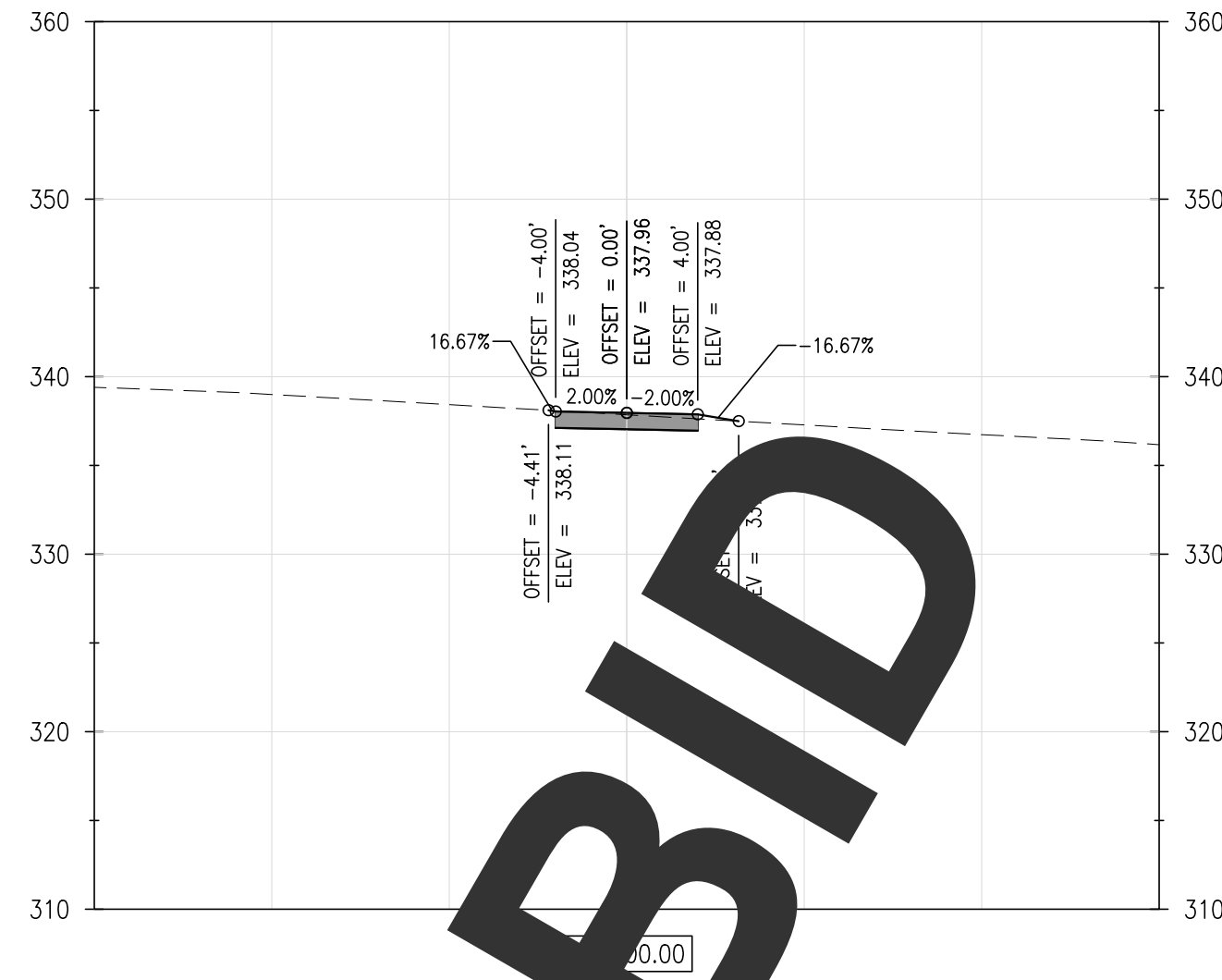
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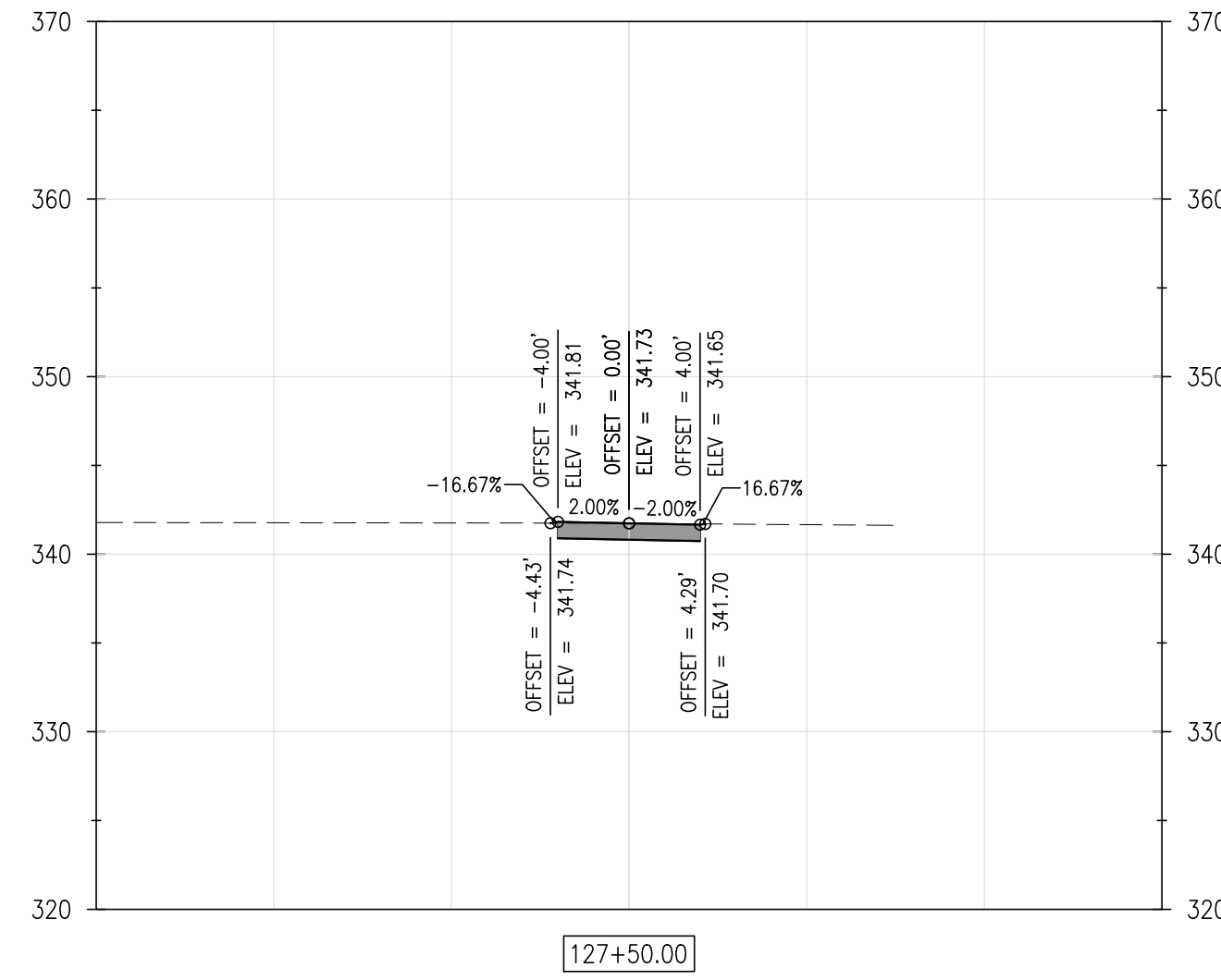
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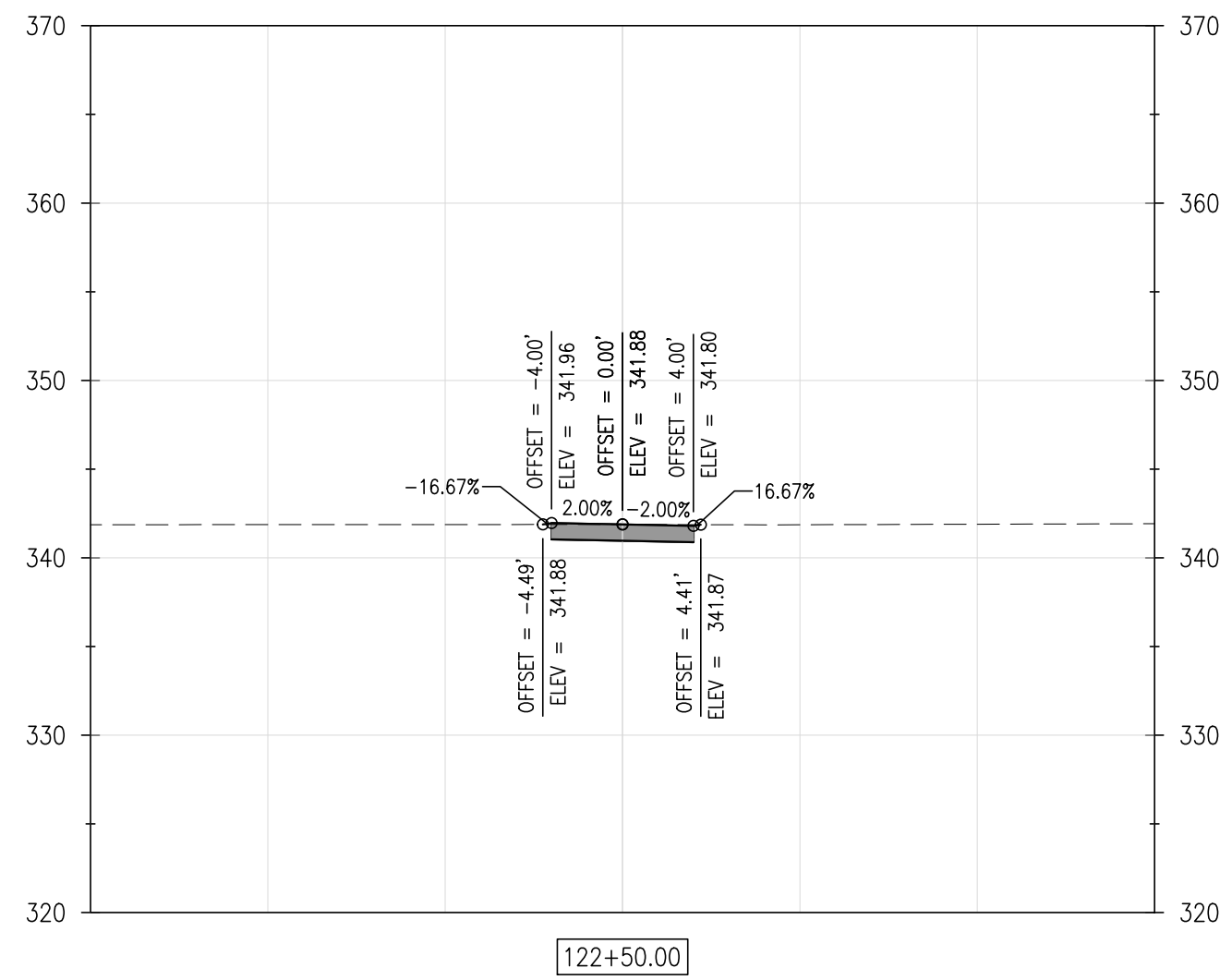
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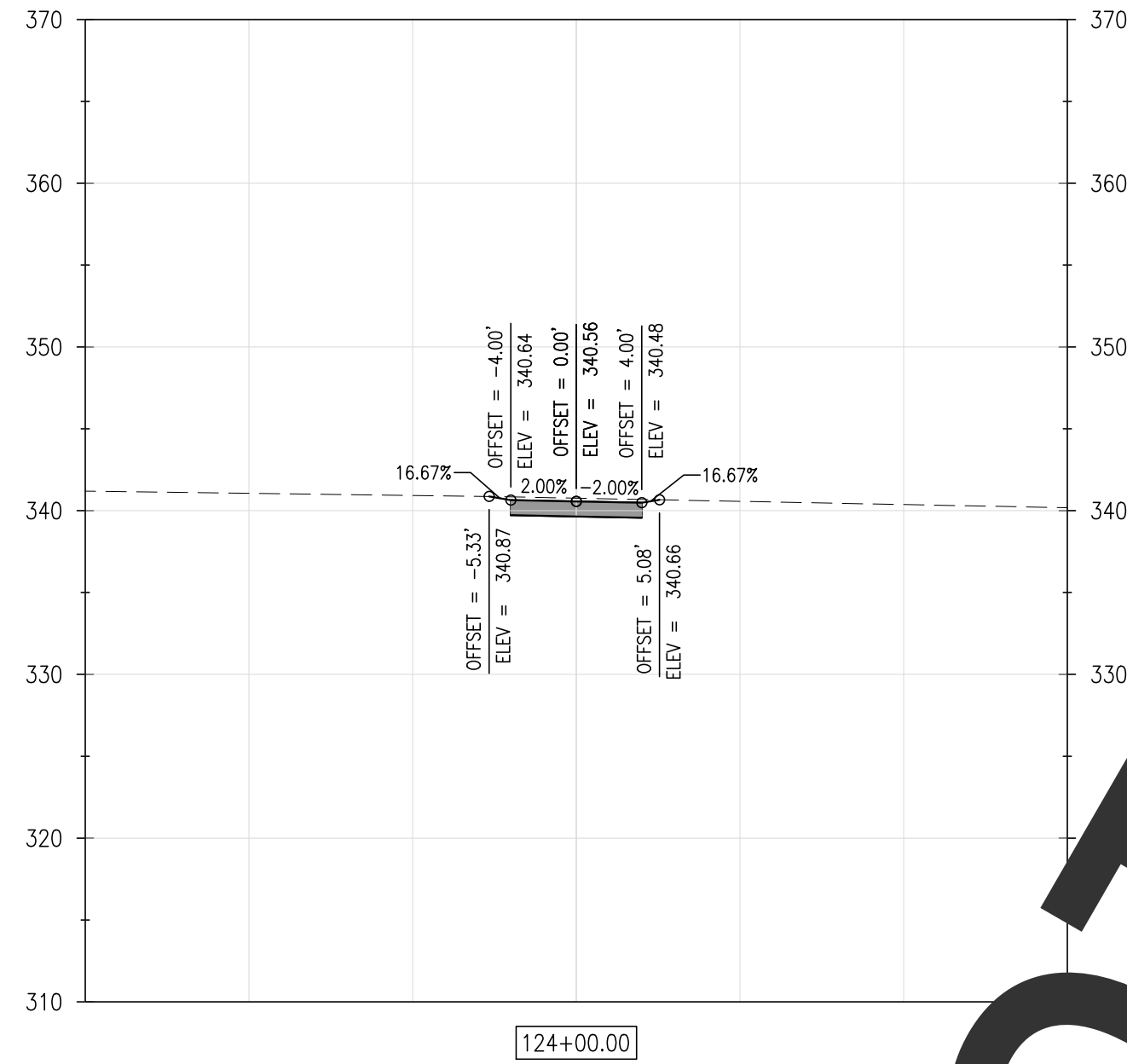
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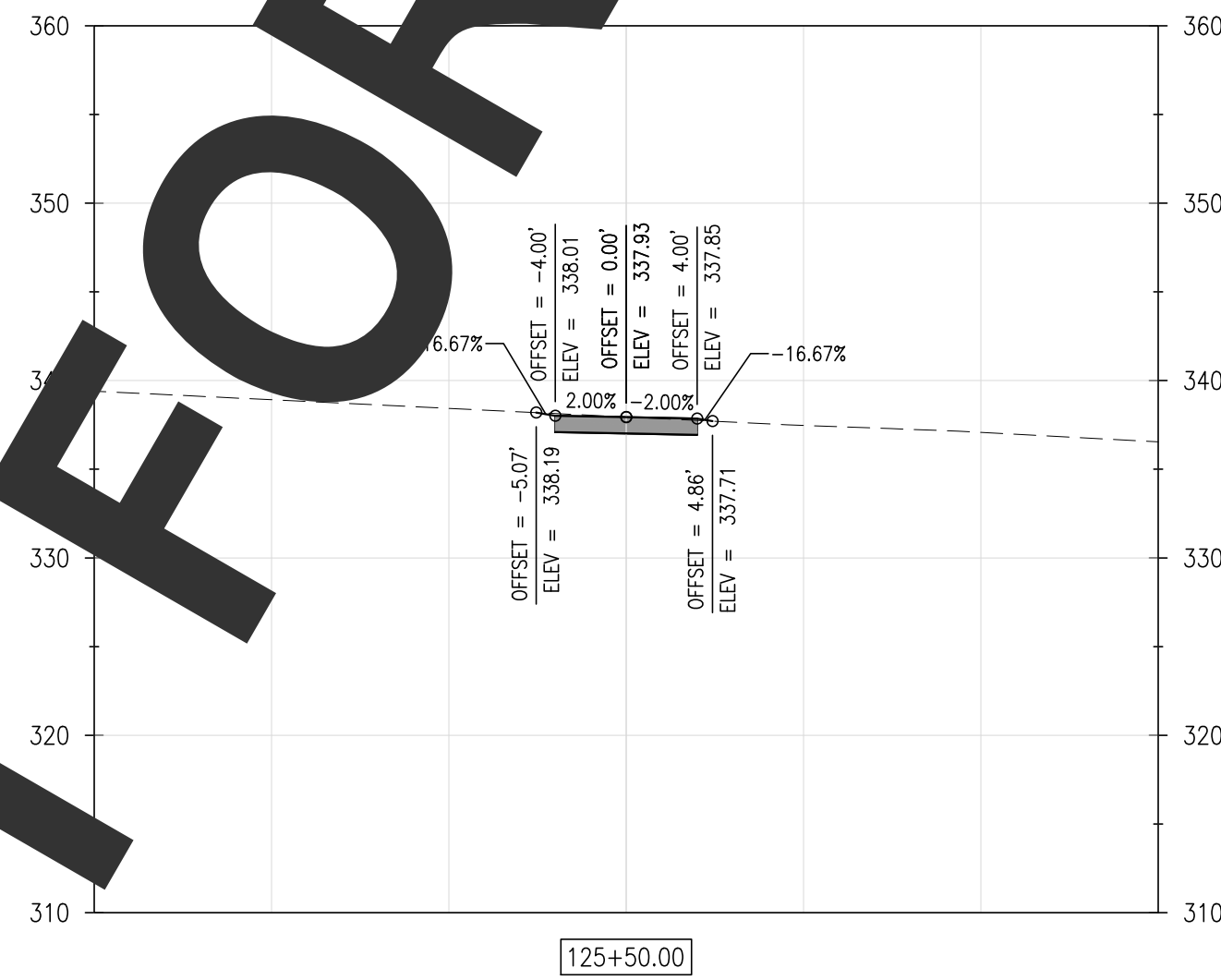
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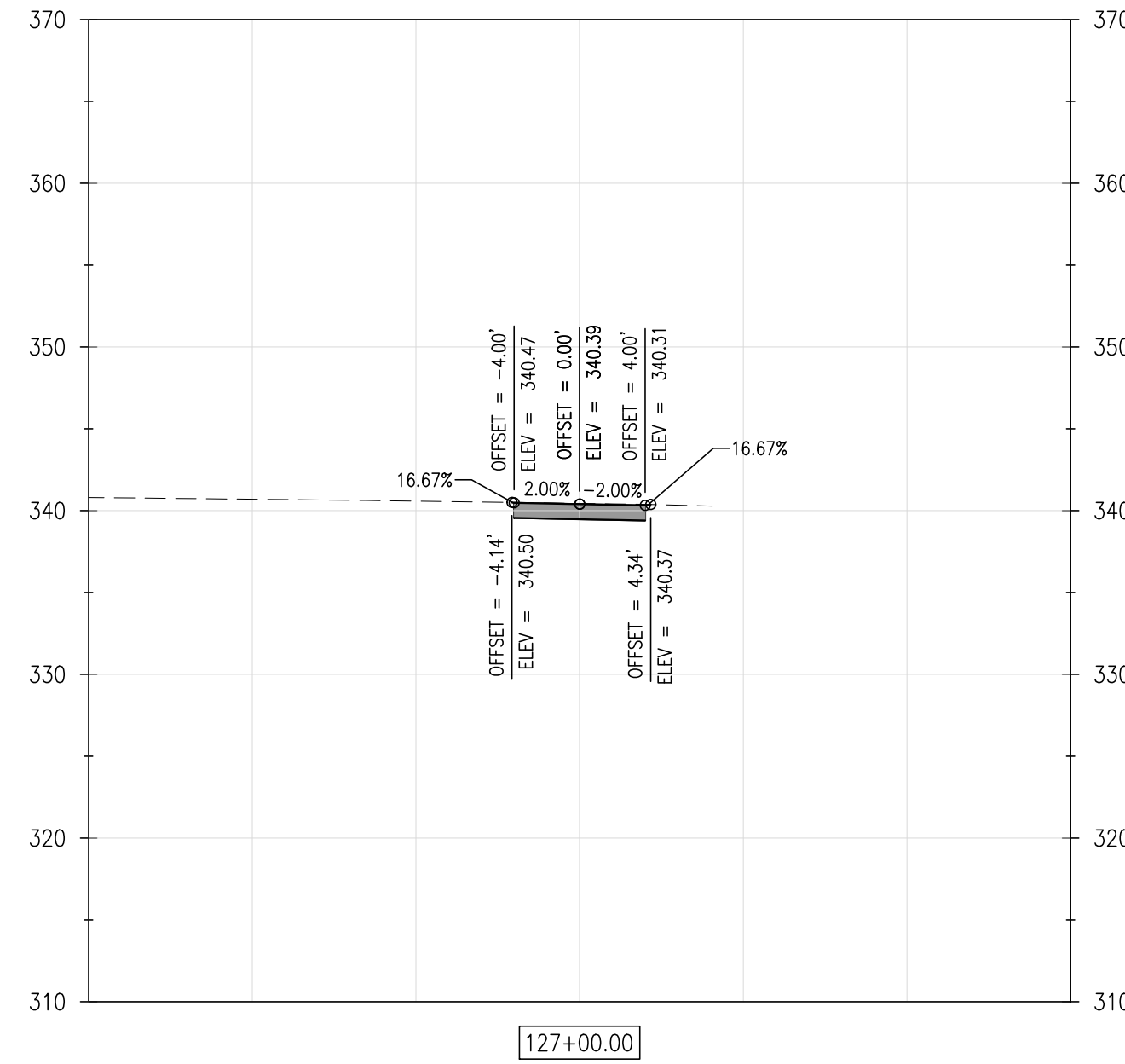
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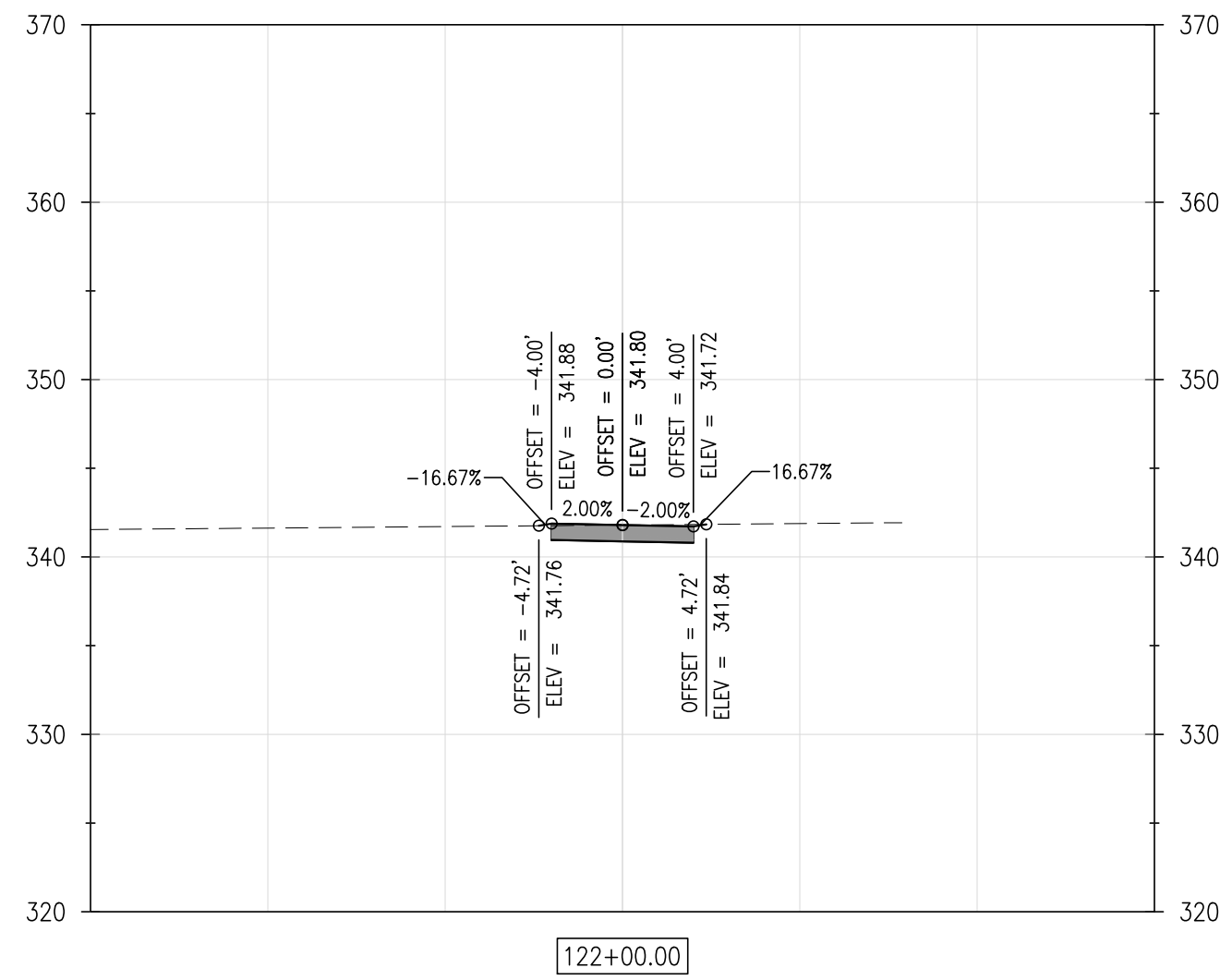
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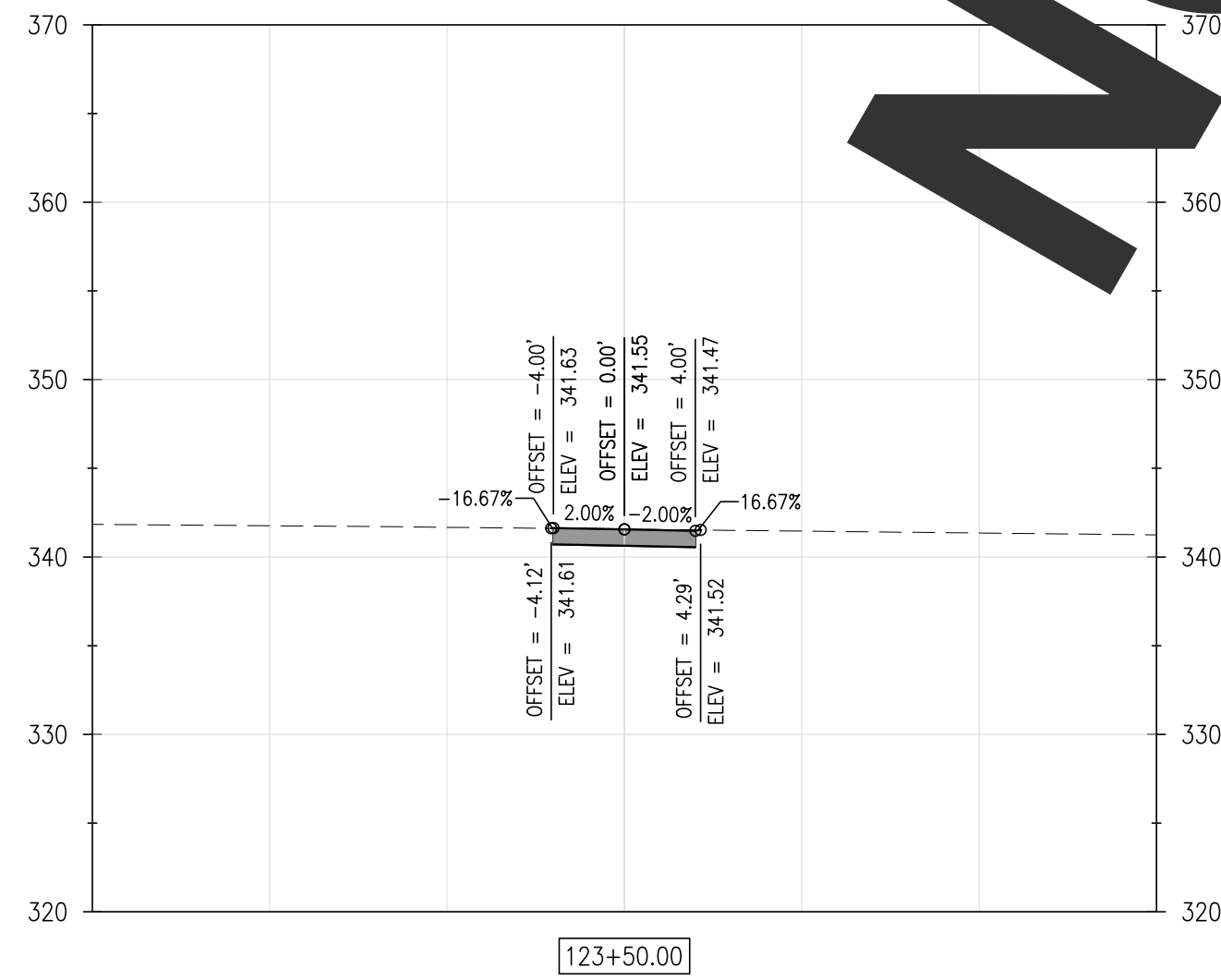
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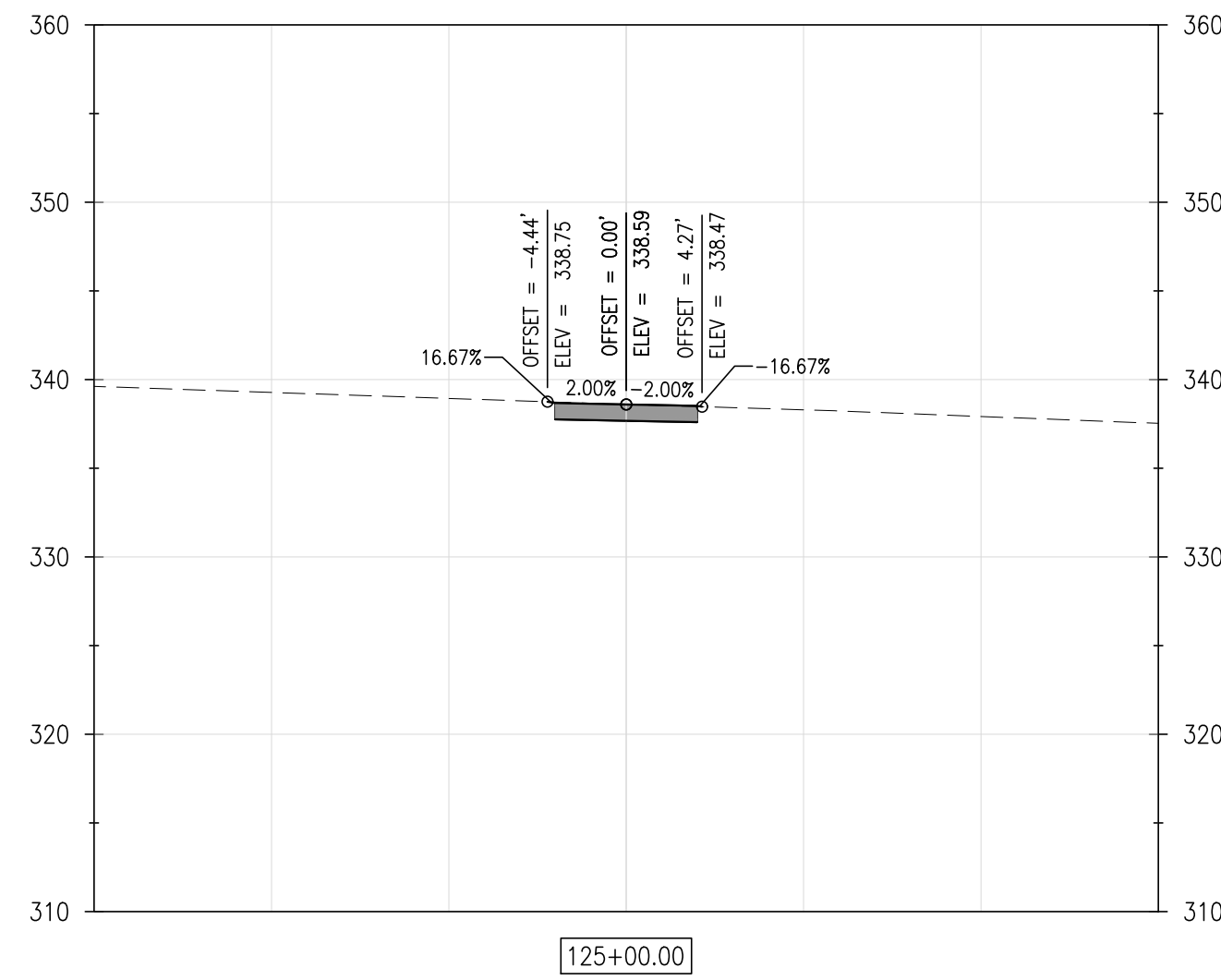
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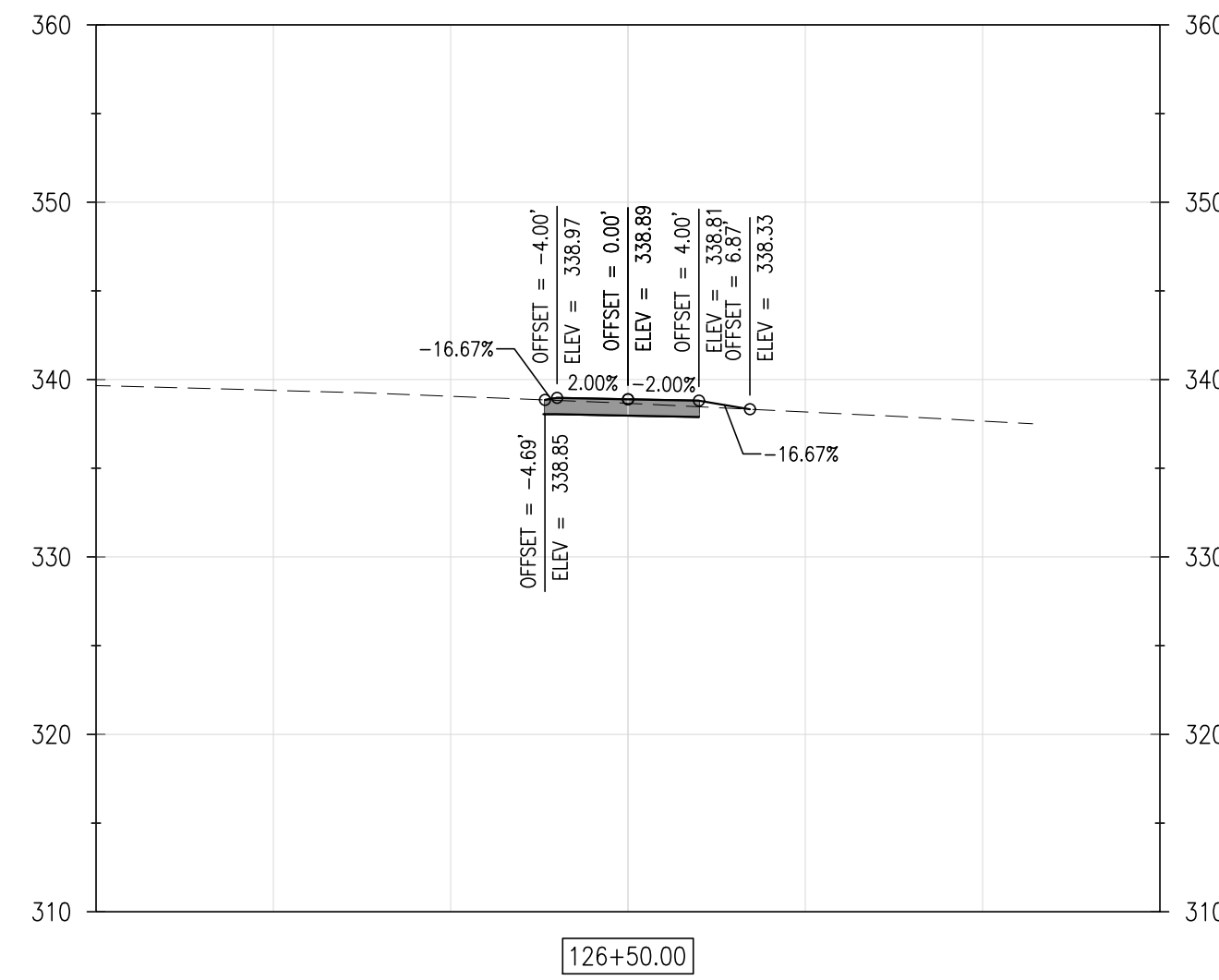
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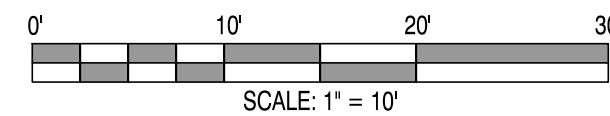
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REVISIONS:

DATE: DESCRIPTION:

BY:

WCCSP TRI-VALLEY TRAIL

BID SET

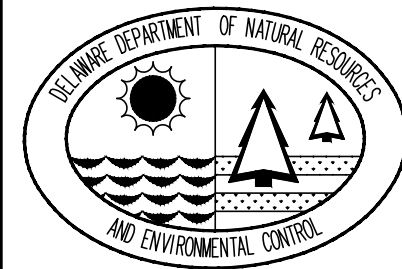
CROSS SECTIONS

SEAL:

CIVIL ENGINEER:

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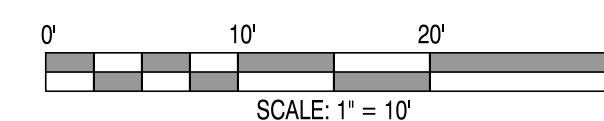
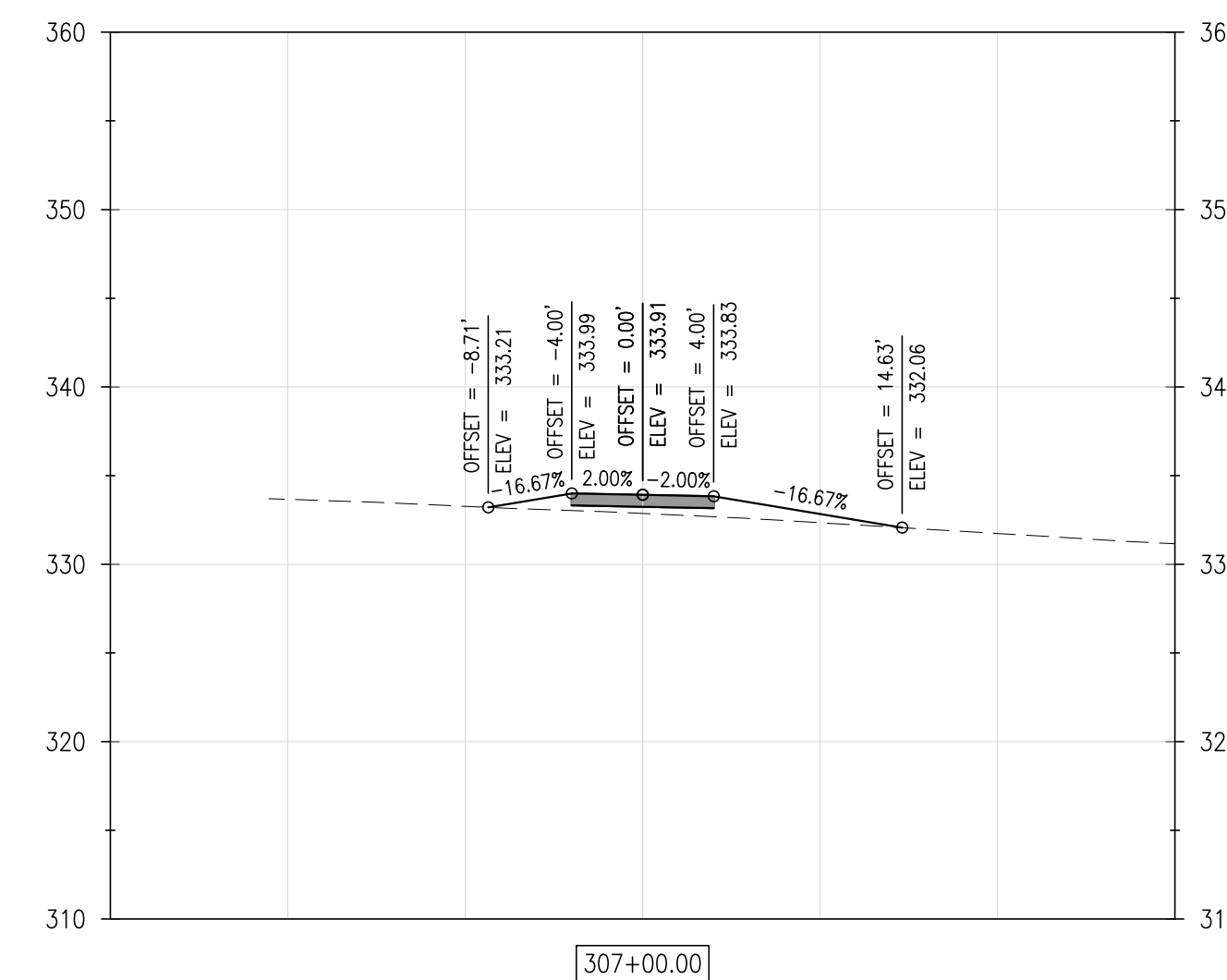
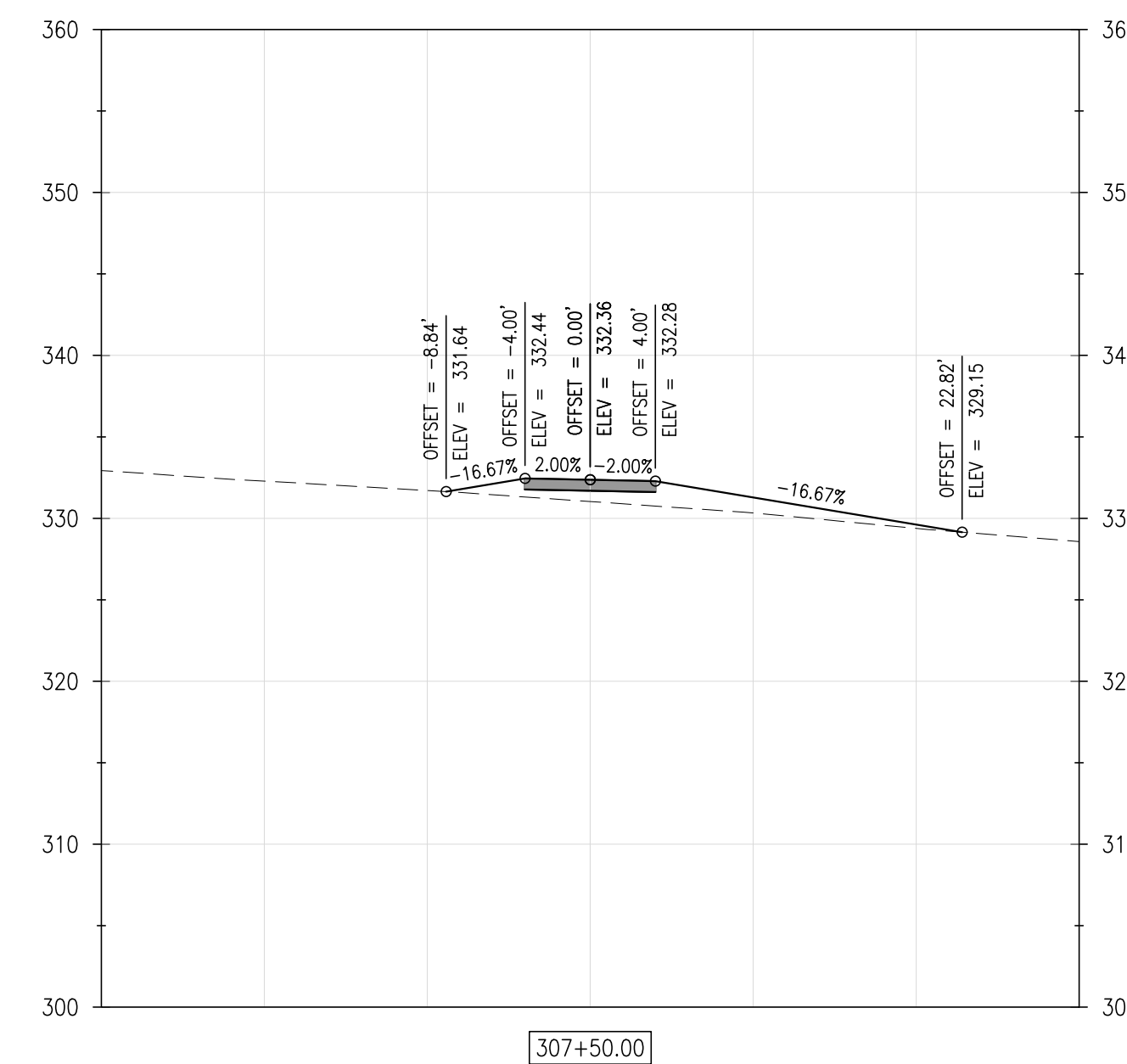
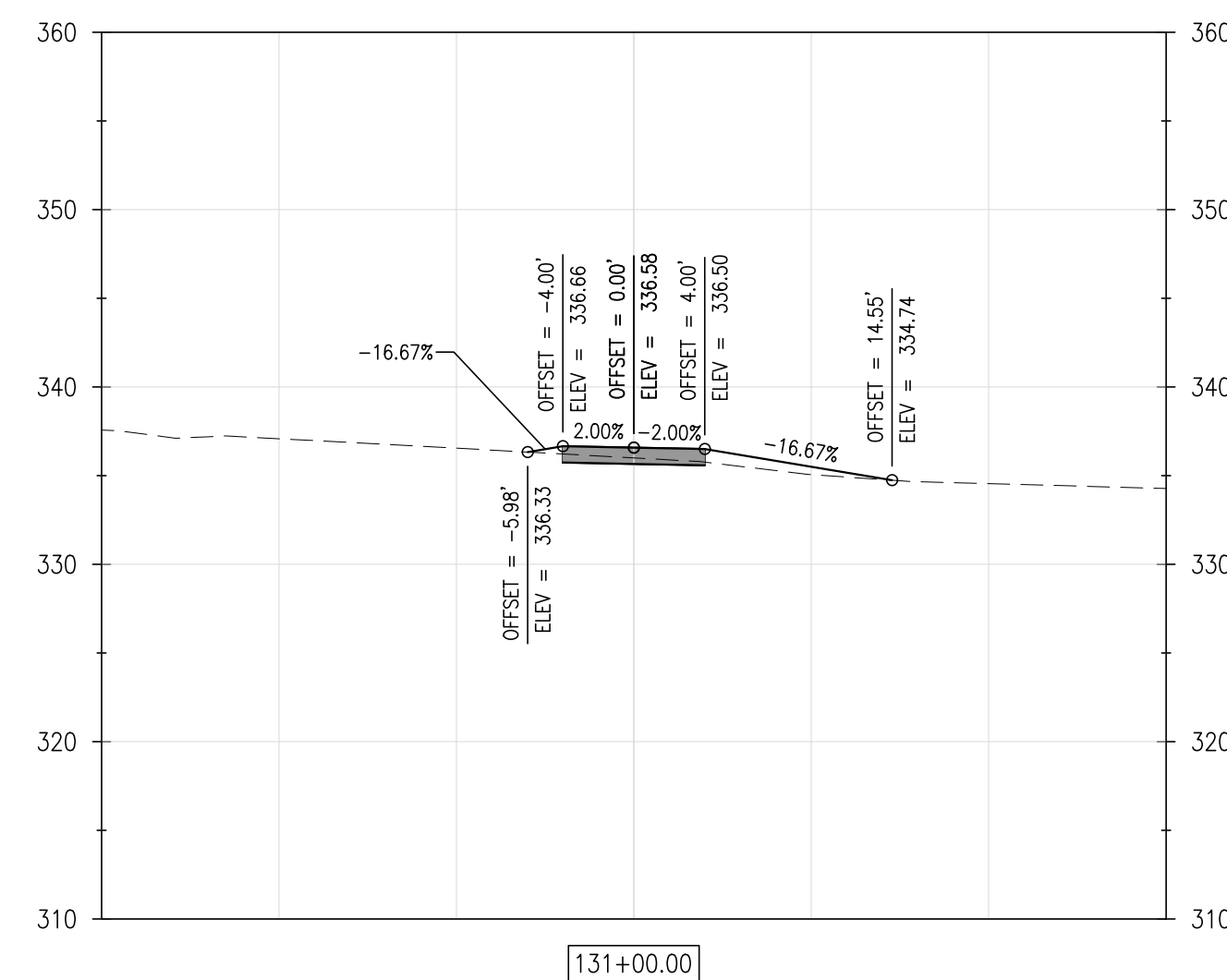
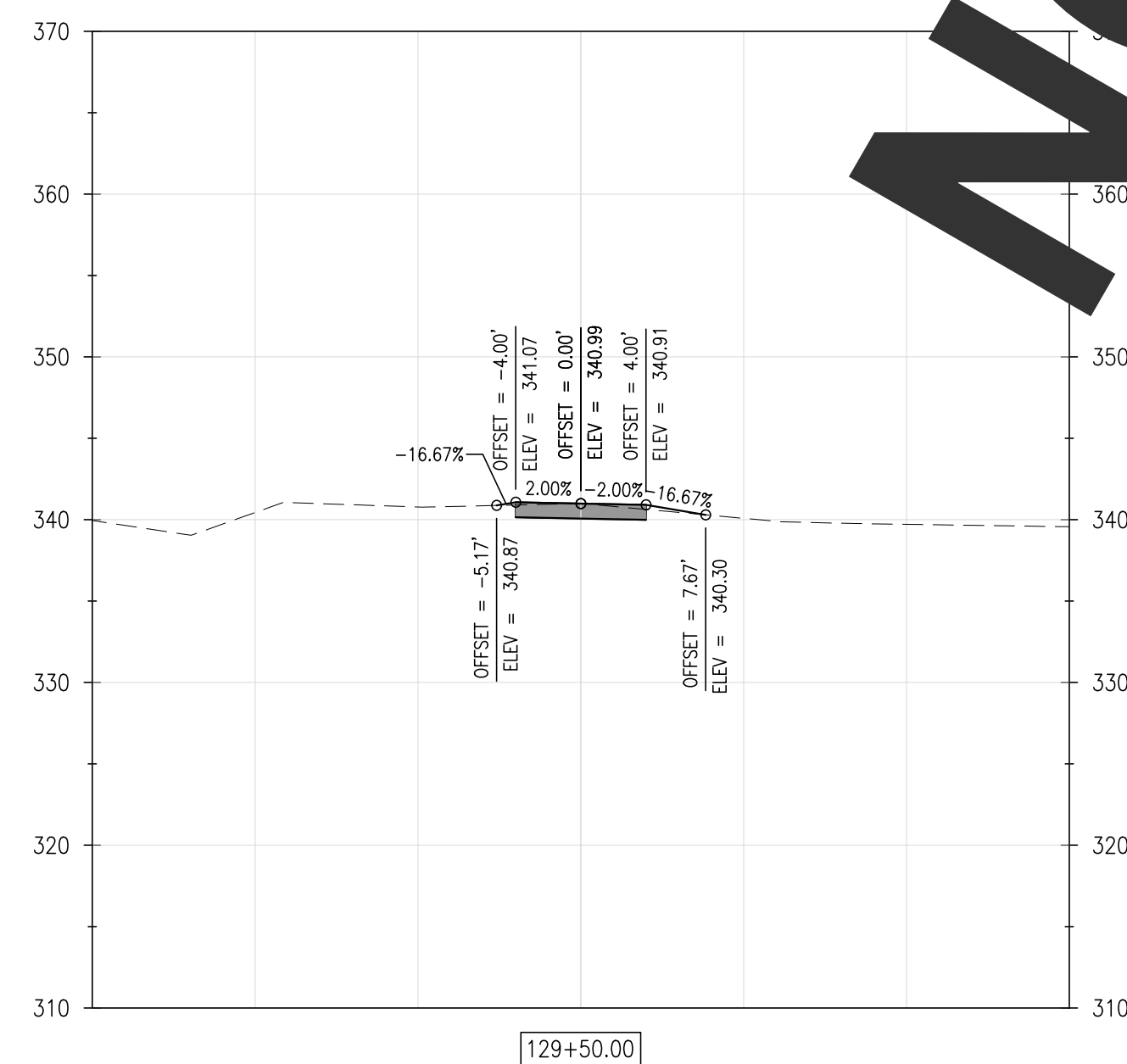
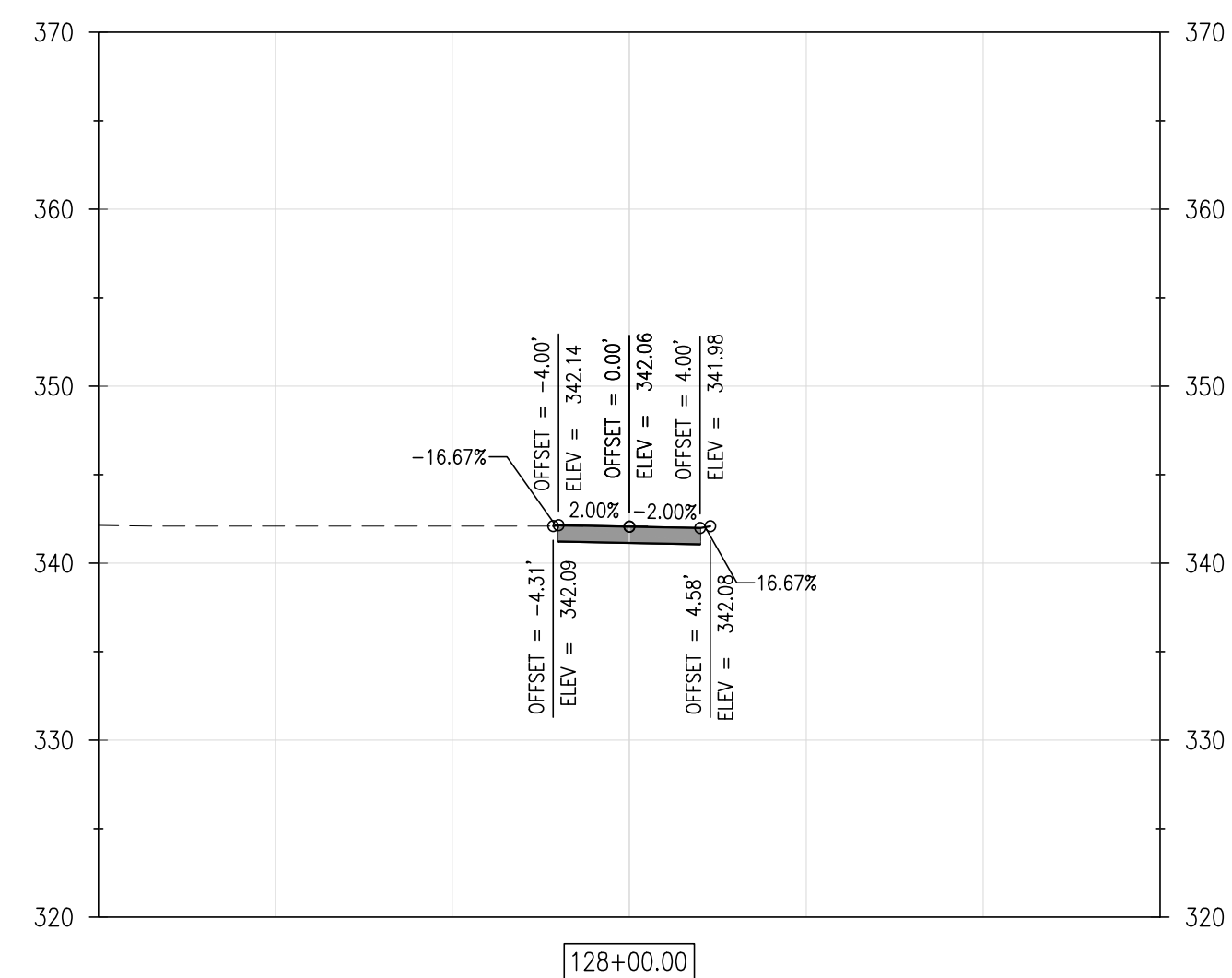
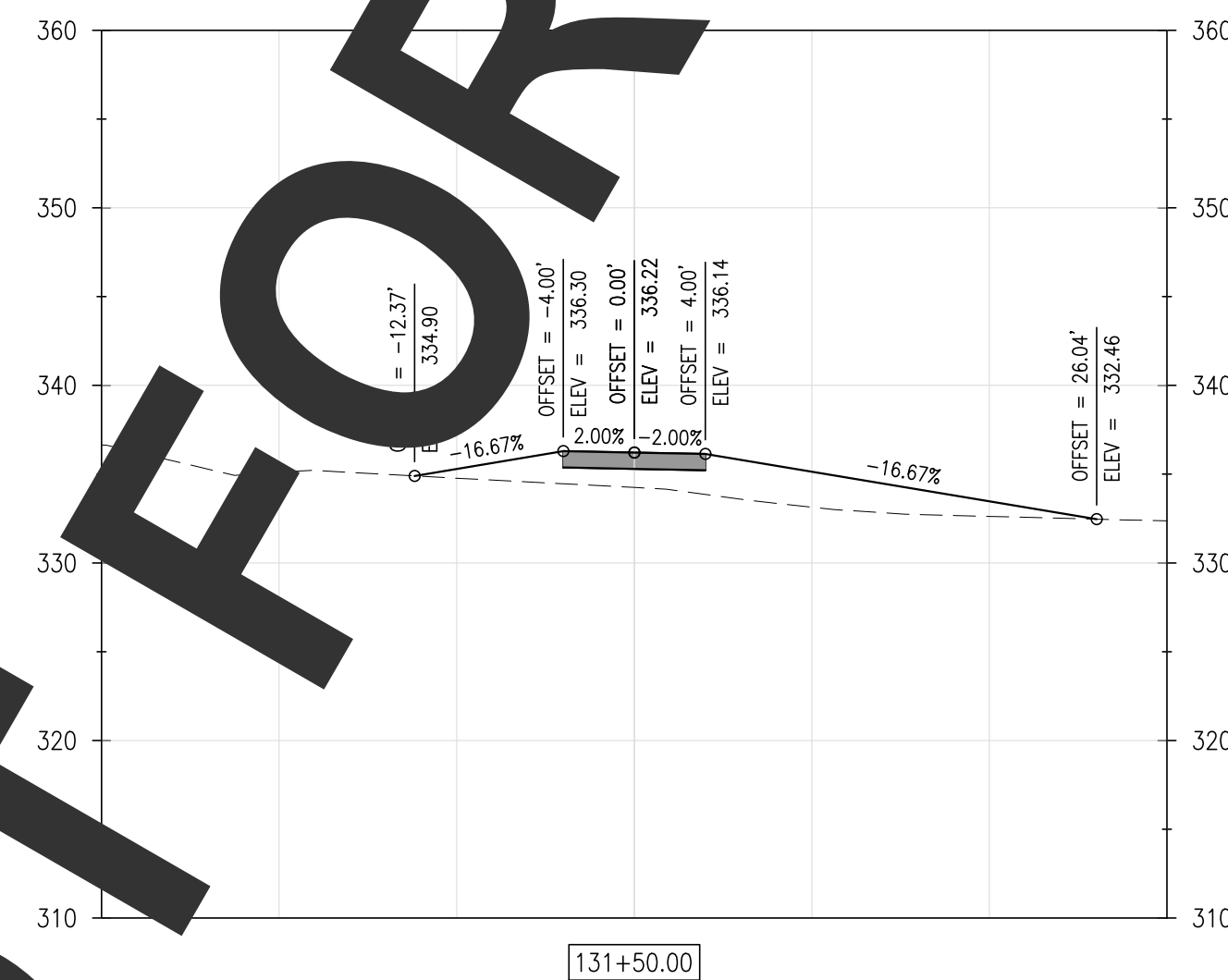
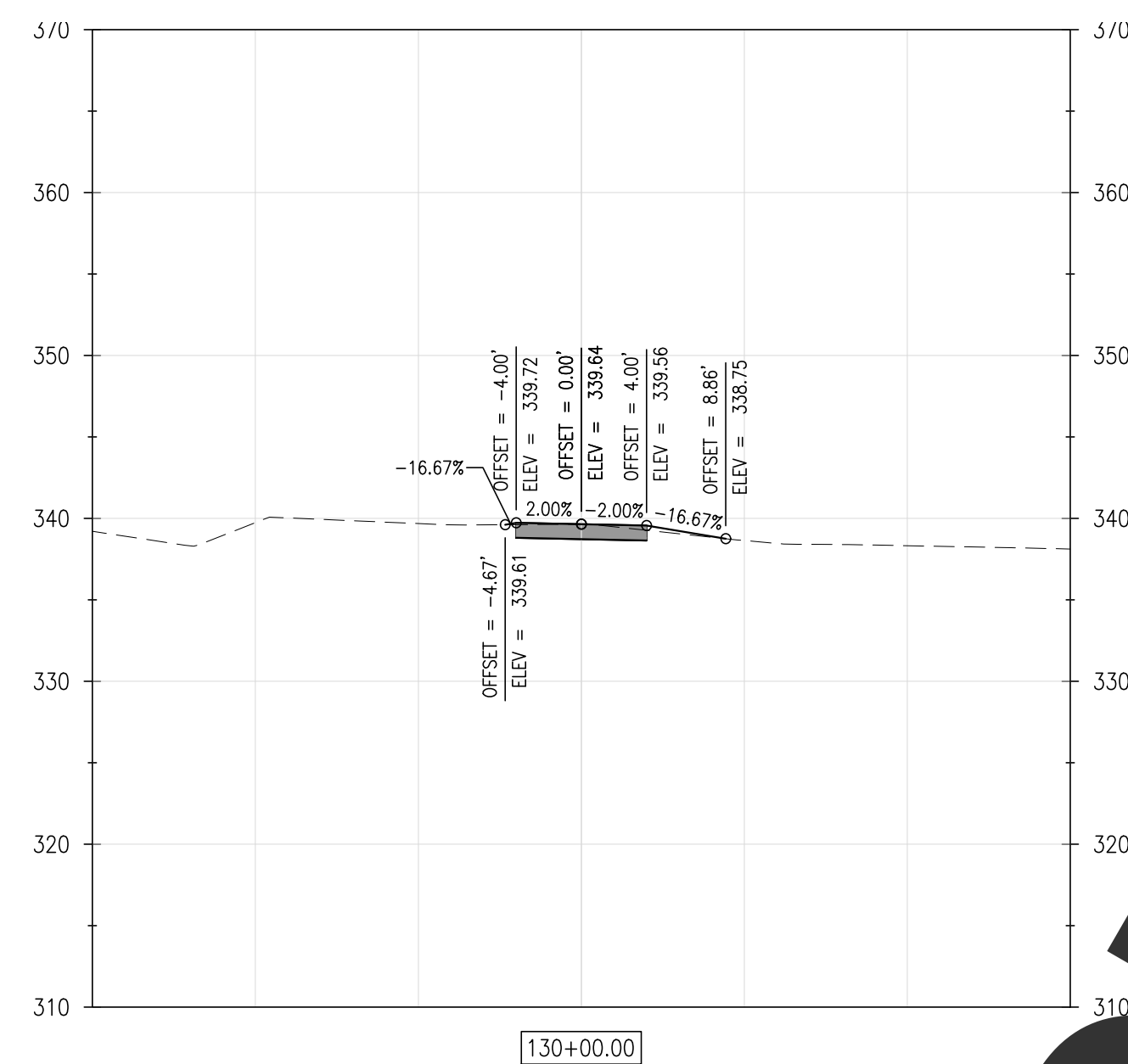
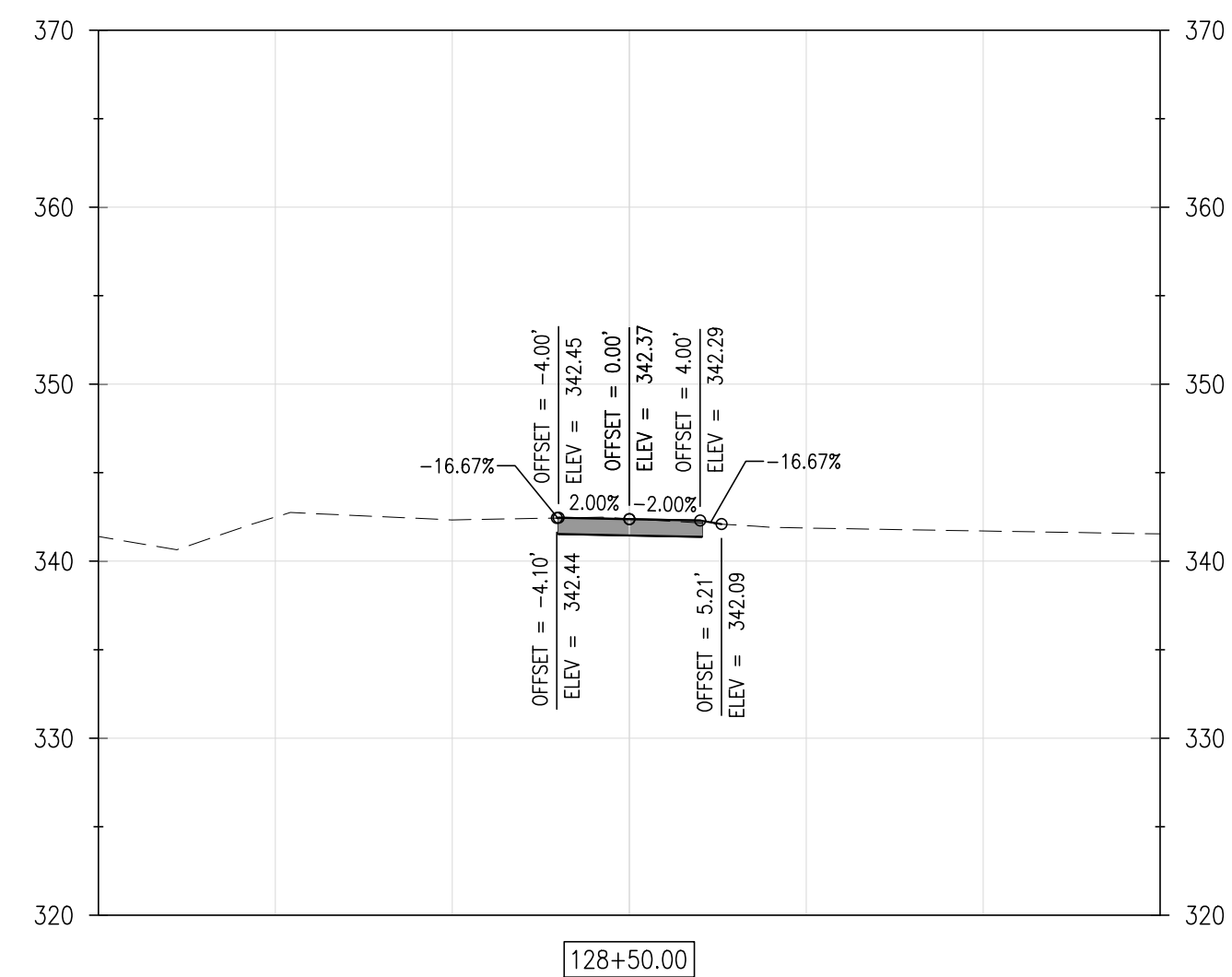
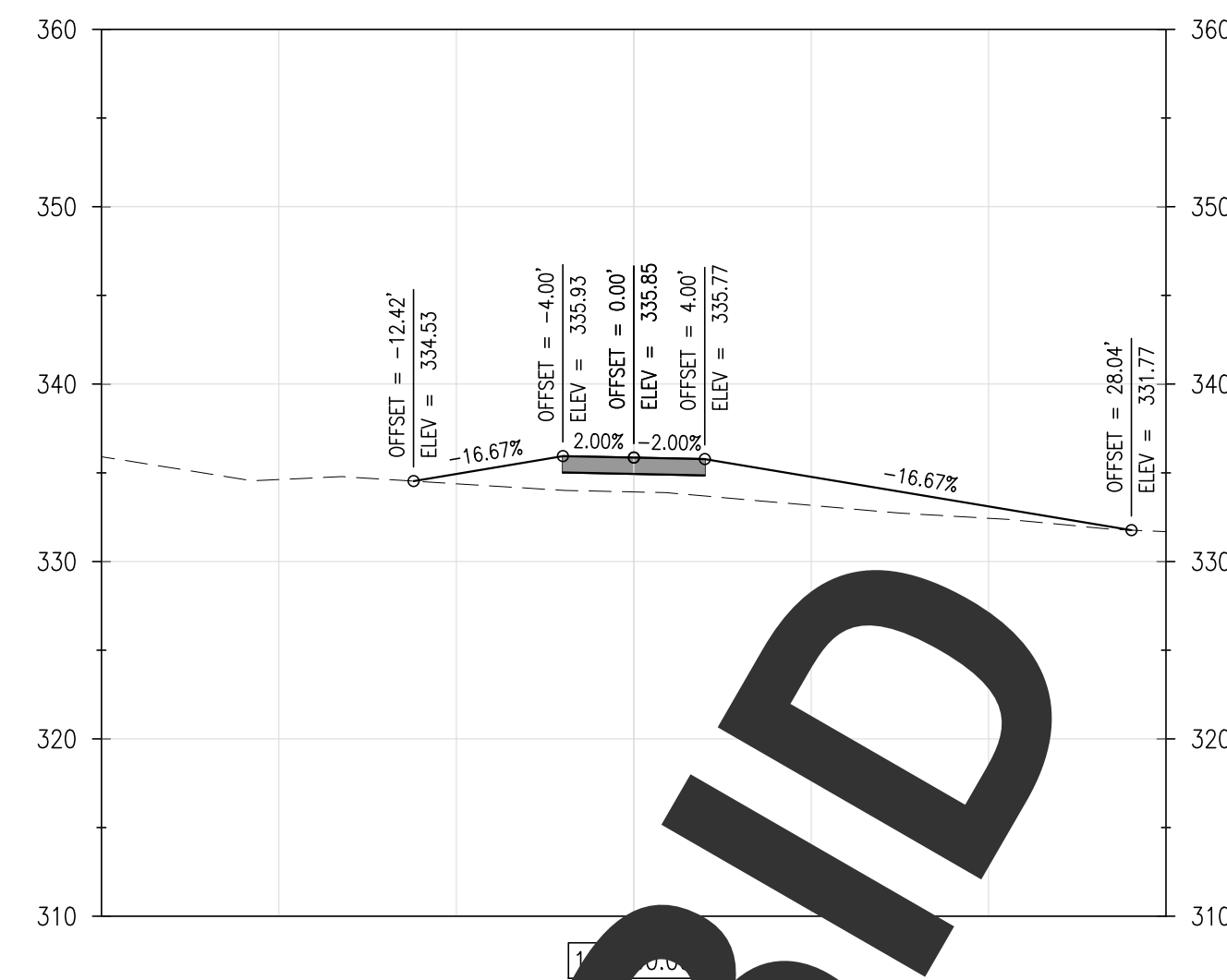
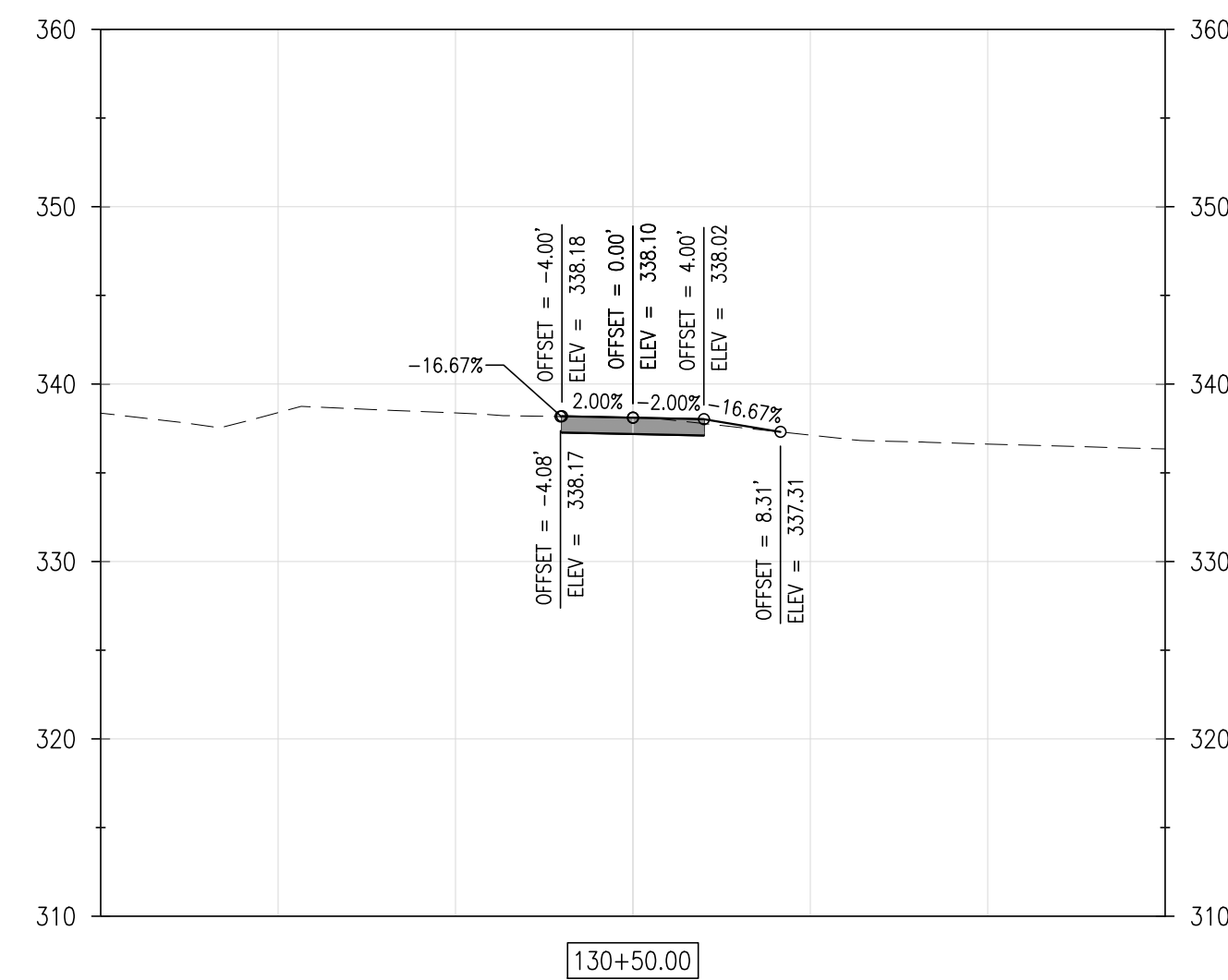
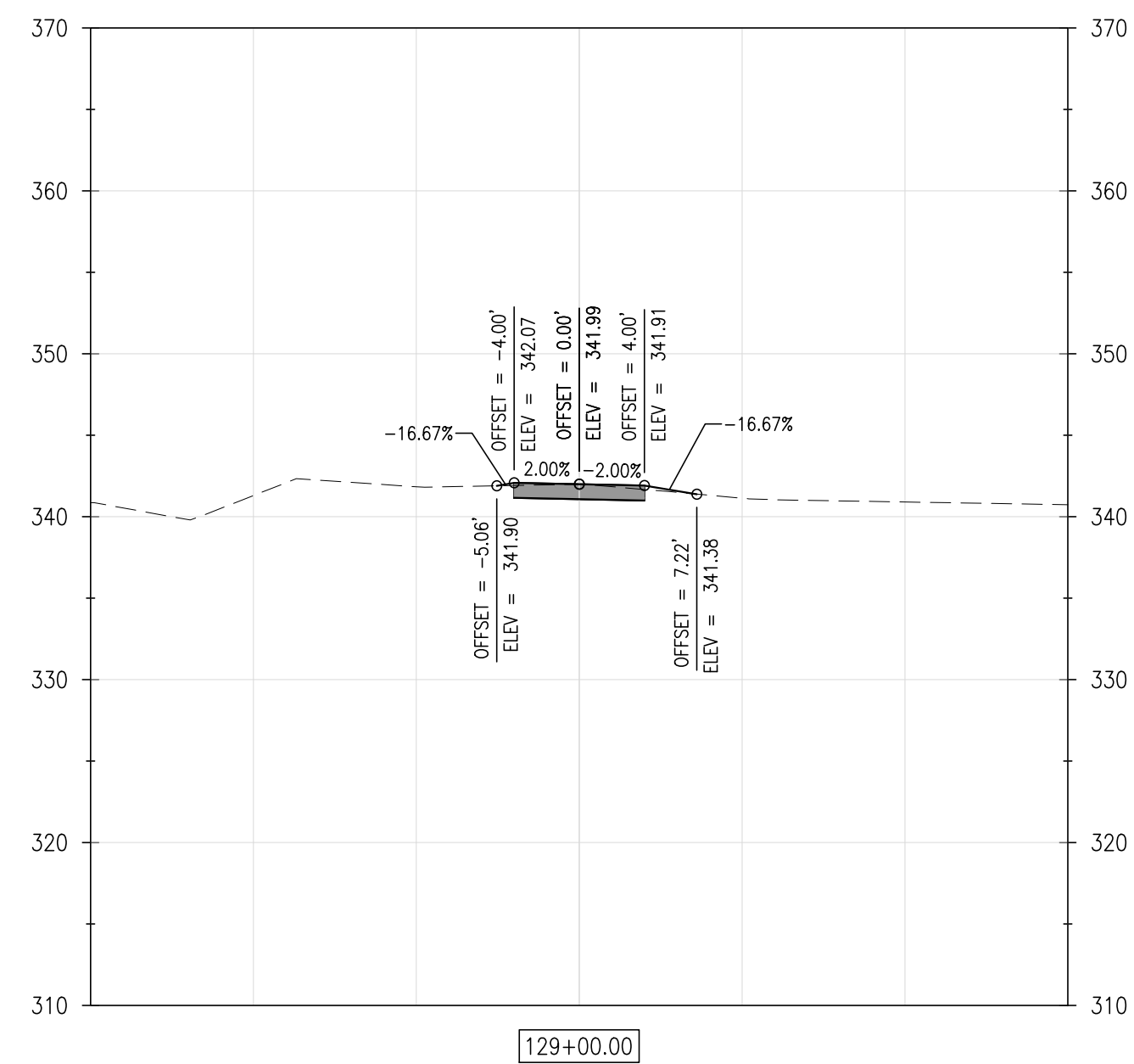
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SHEET NO.:

C5.5

CONTRACT NO.:

2016-WCCSP-100



**WCCSP TRI-VALLEY TRAIL
BID SET**

CROSS SECTIONS

REVISIONS:

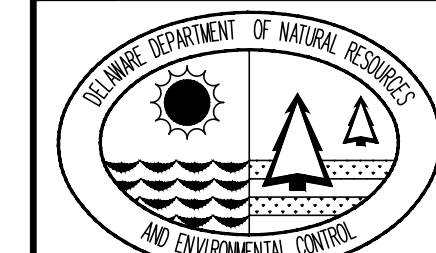
DATE: DESCRIPTION:

BY:

CIVIL ENGINEER:



CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE: _____

SEPTEMBER 7, 2016

SCALE:

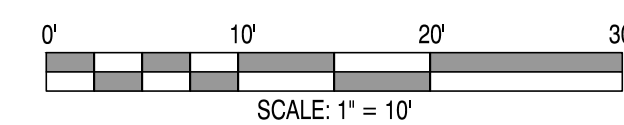
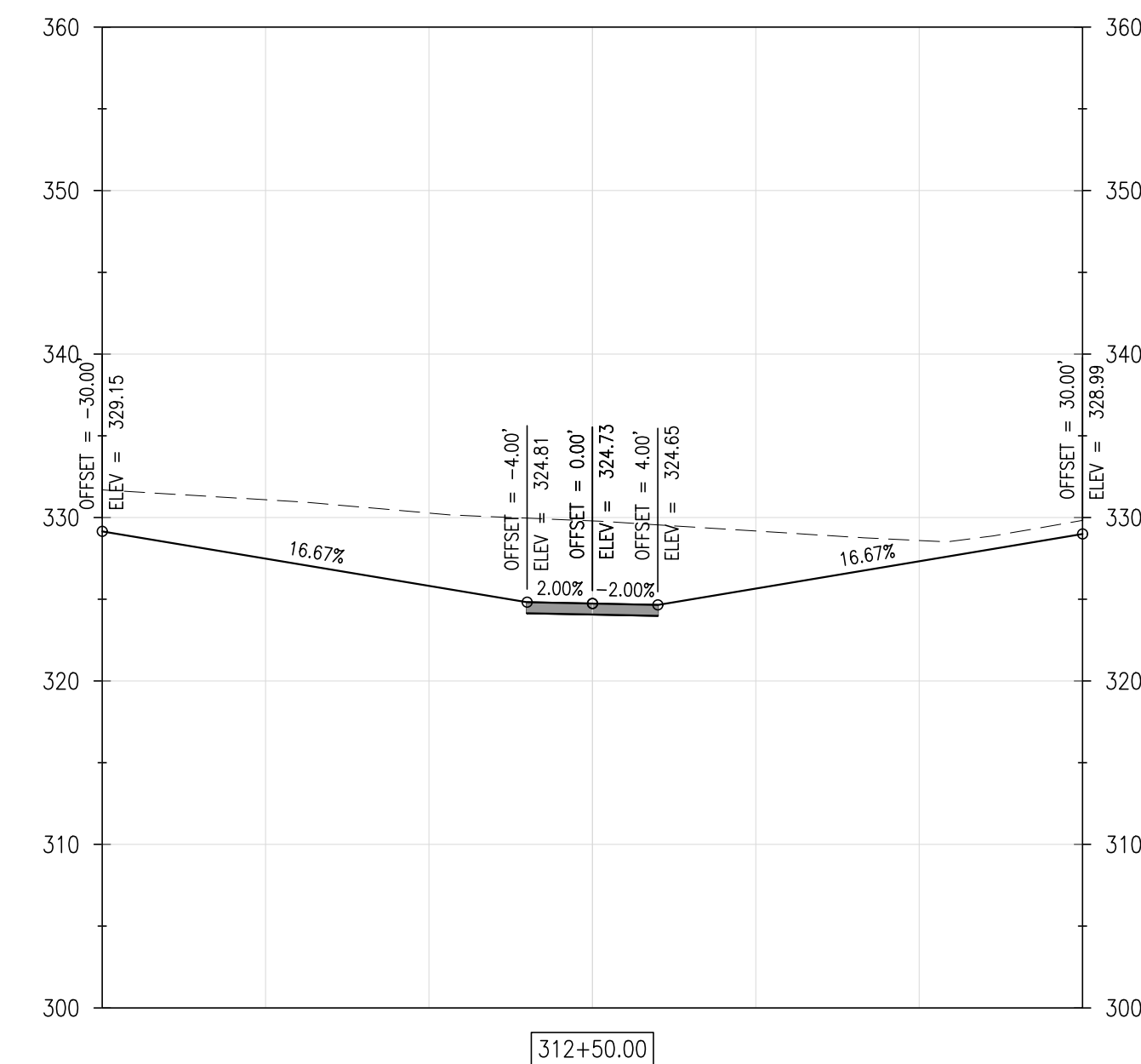
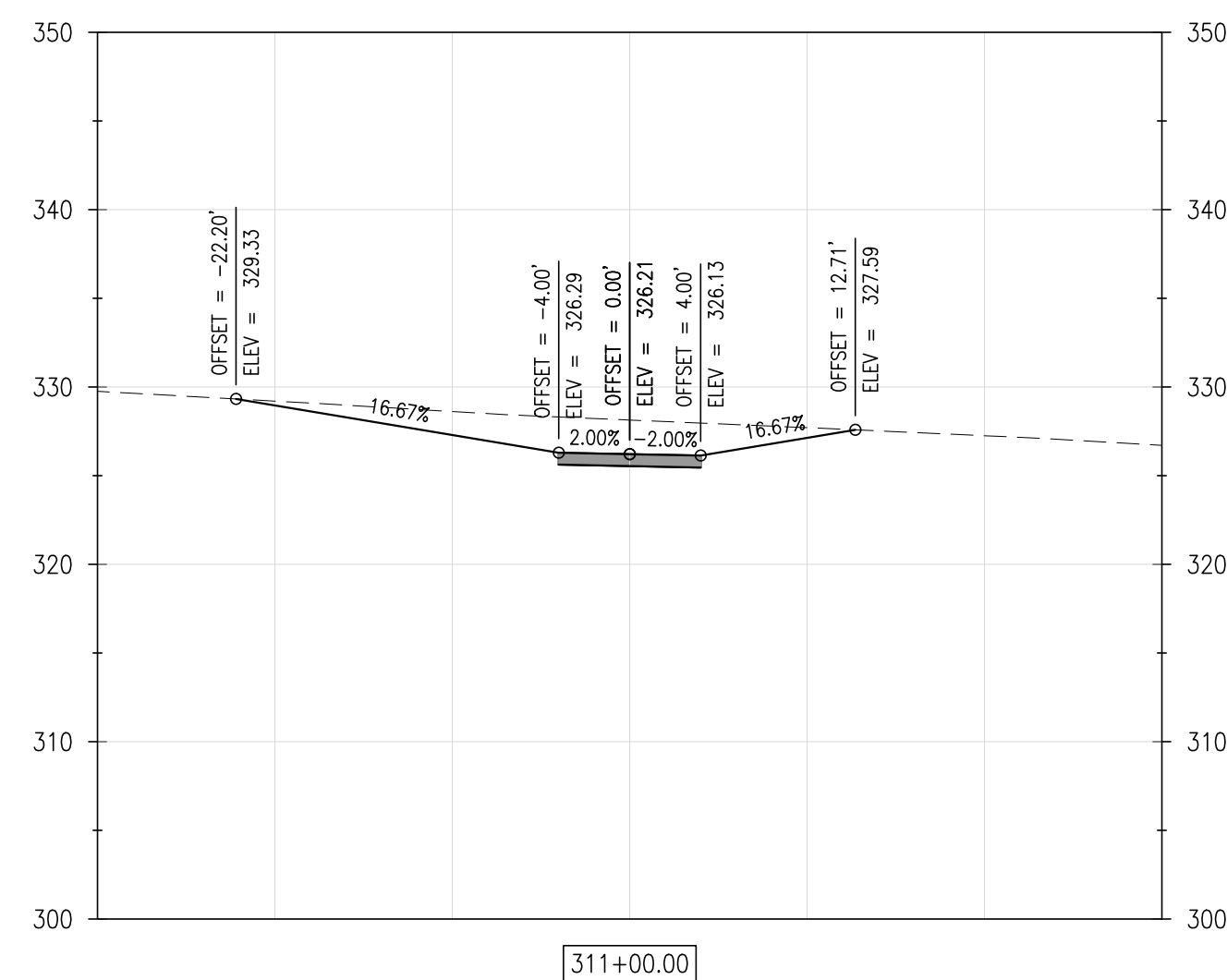
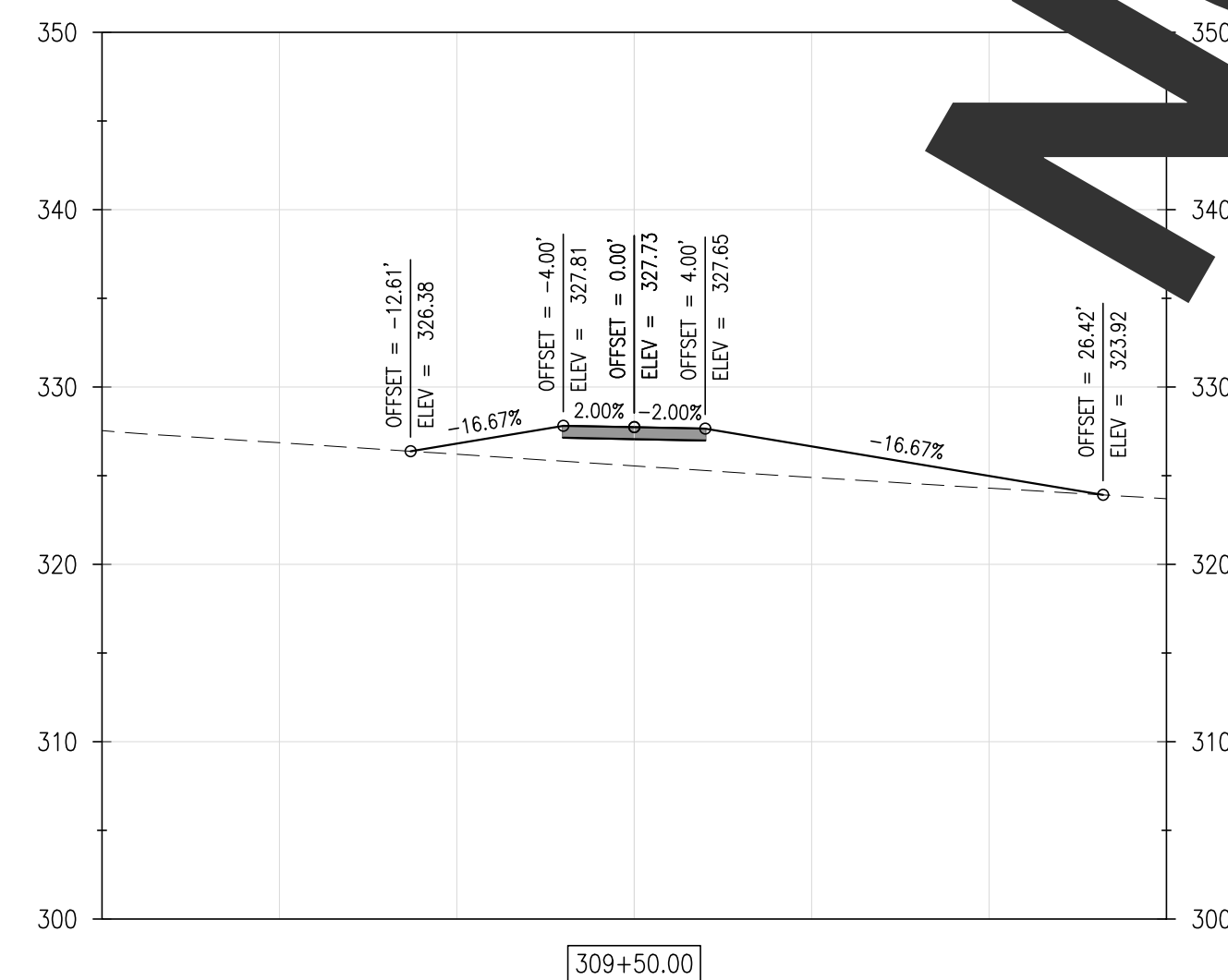
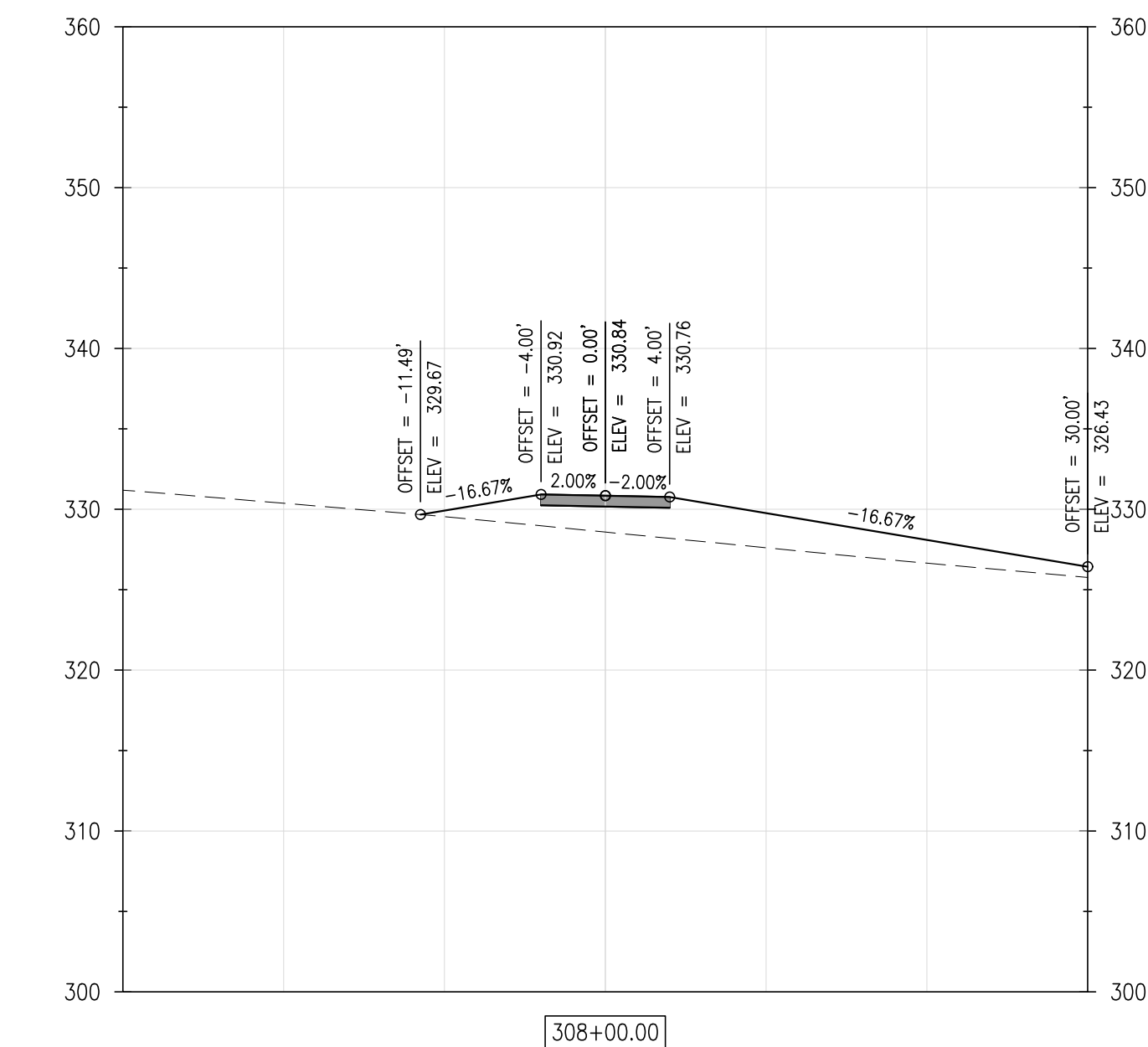
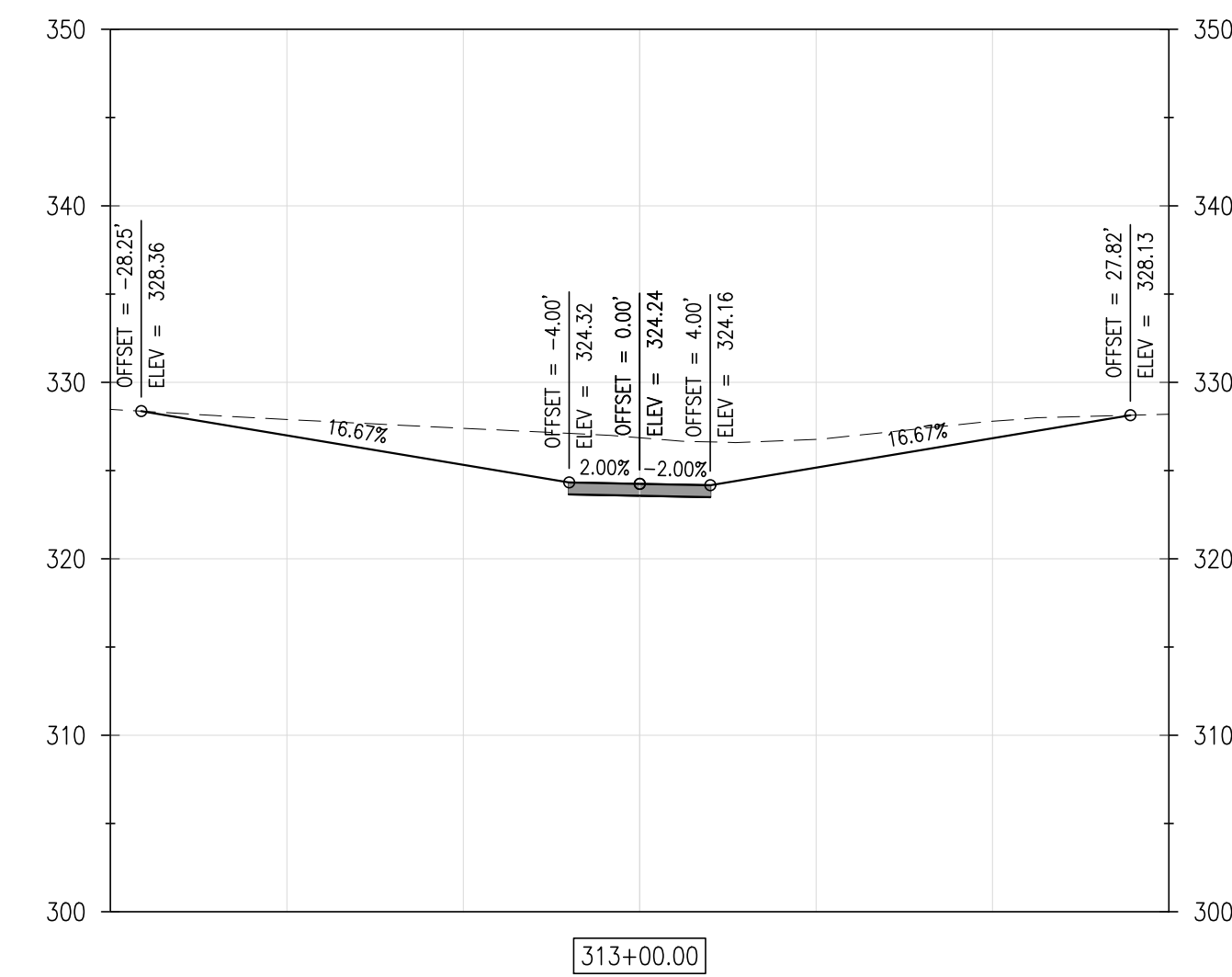
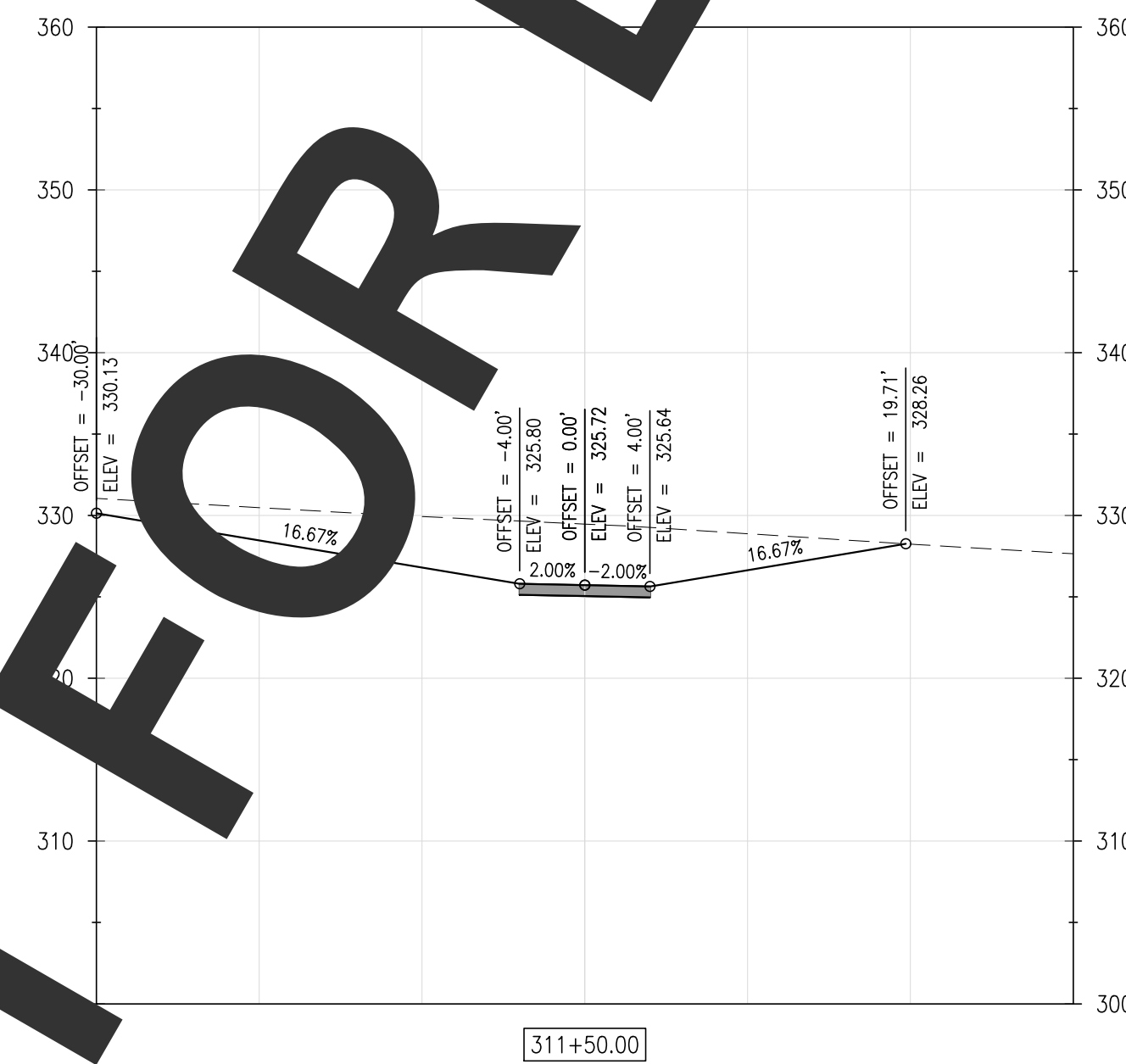
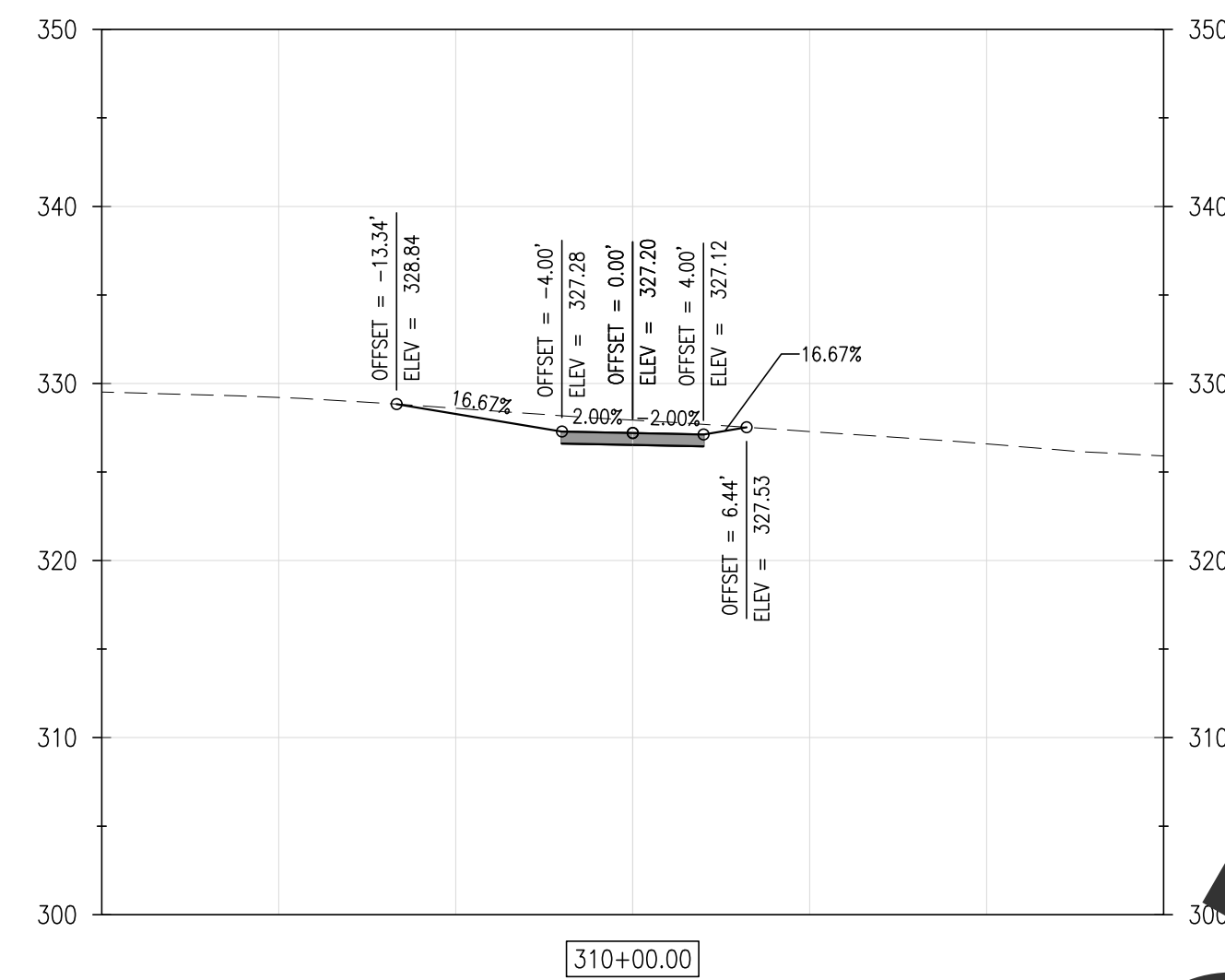
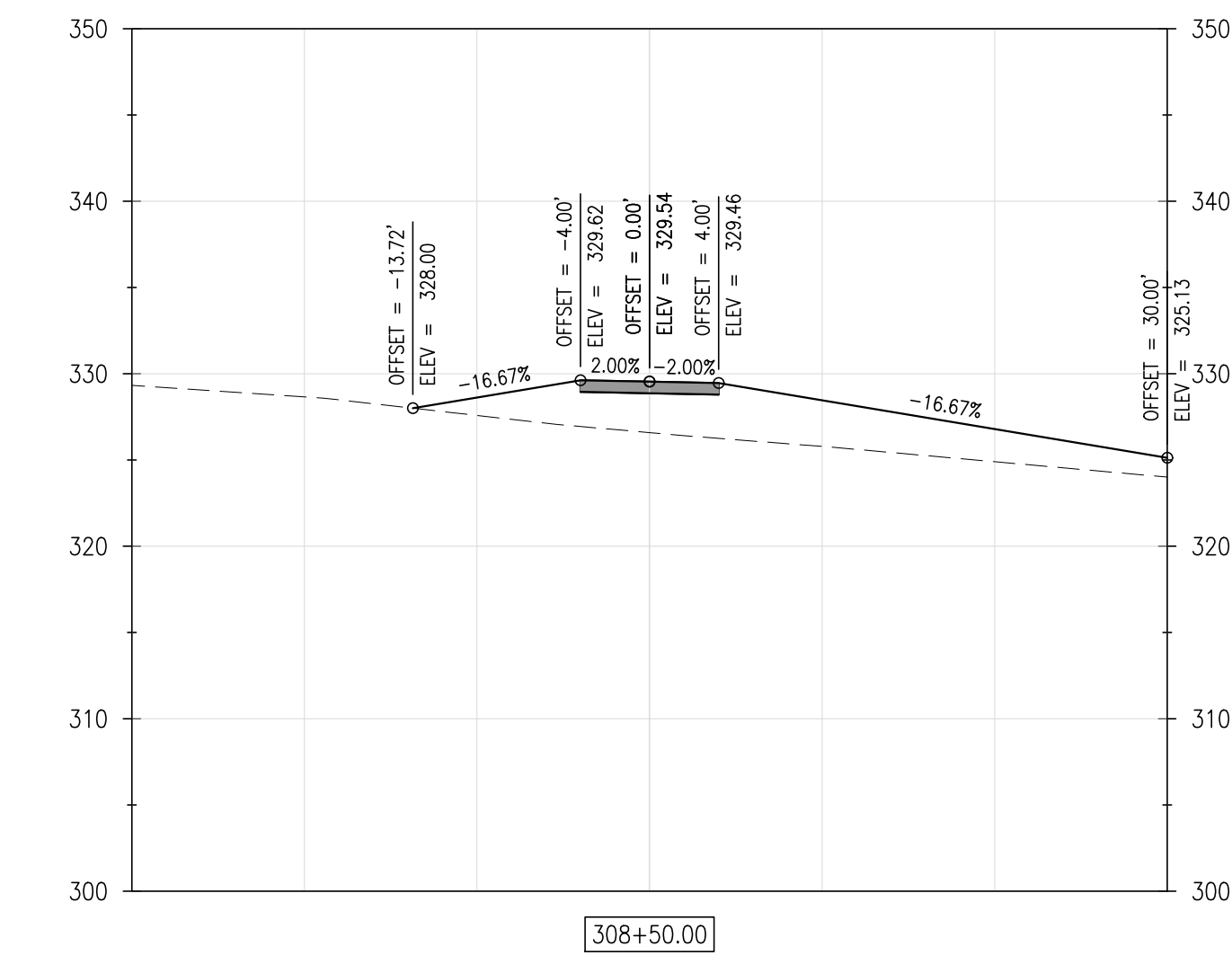
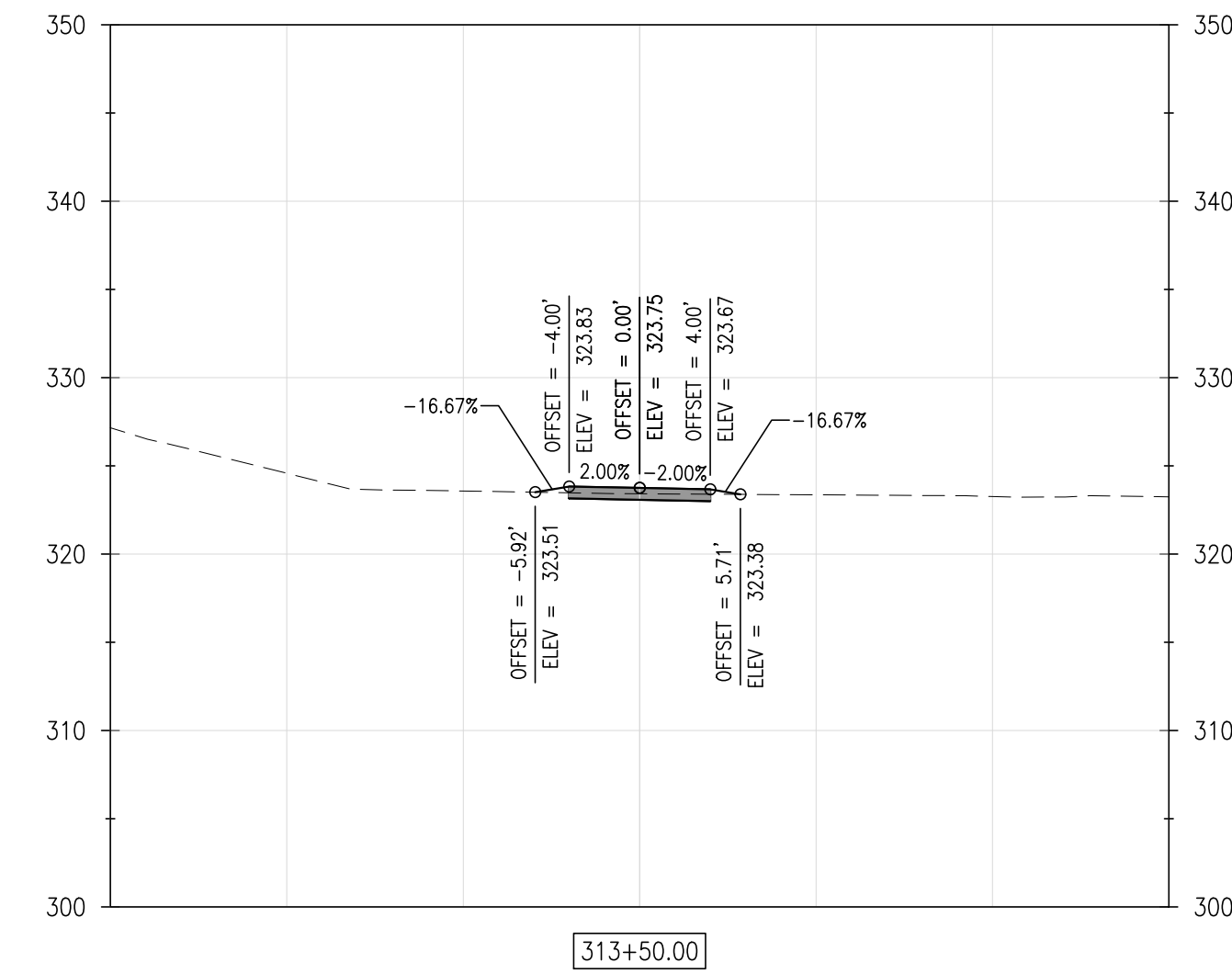
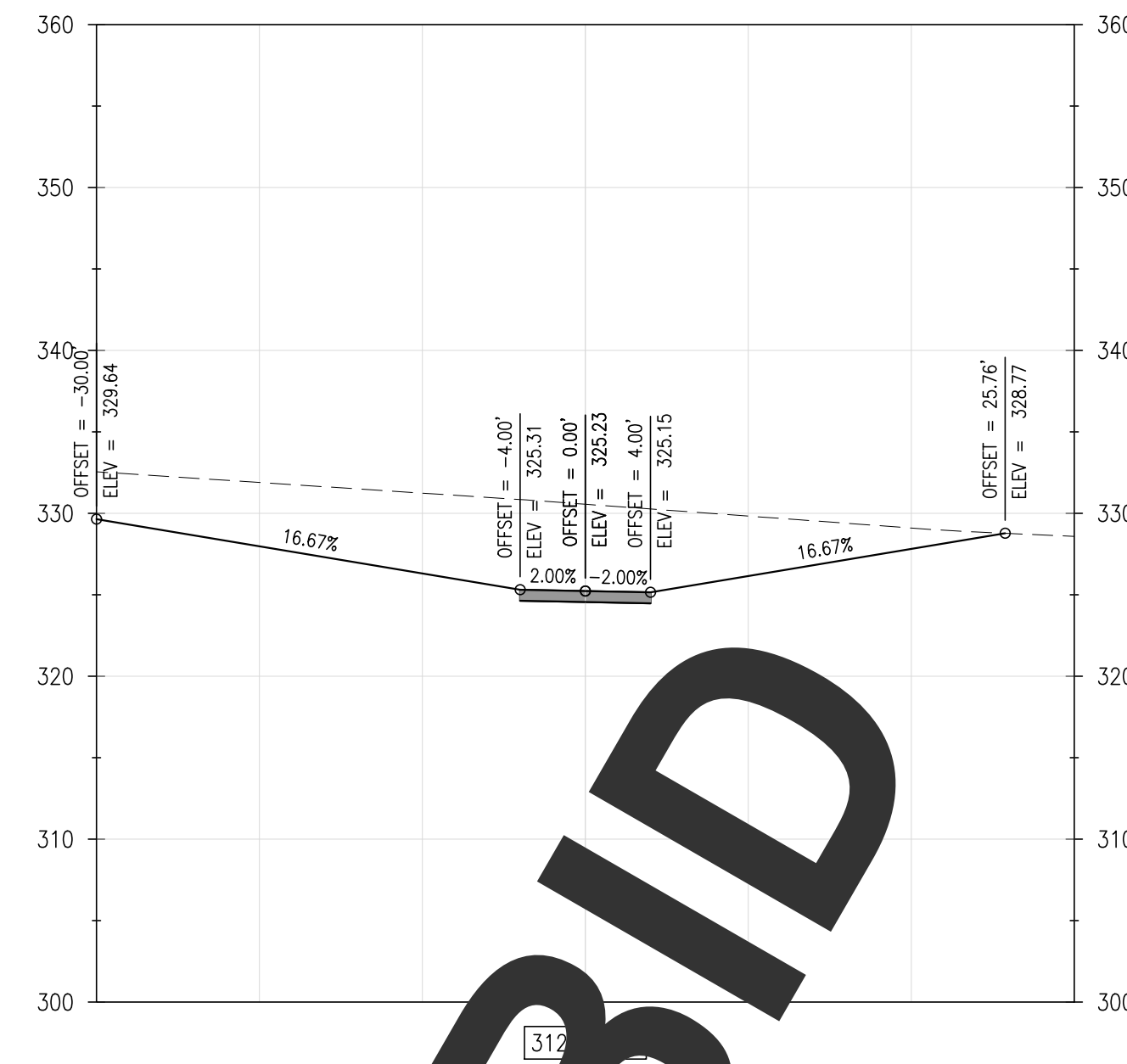
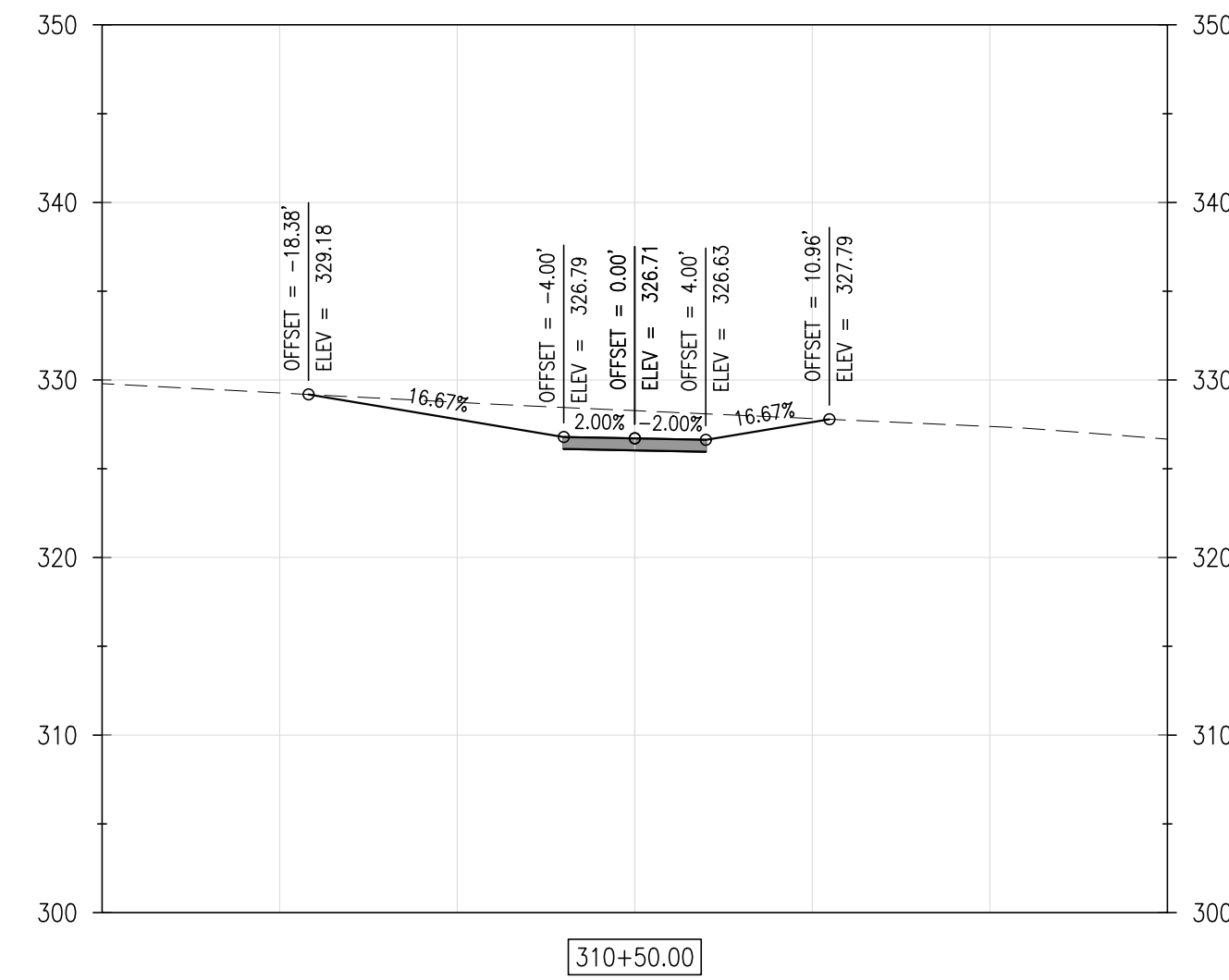
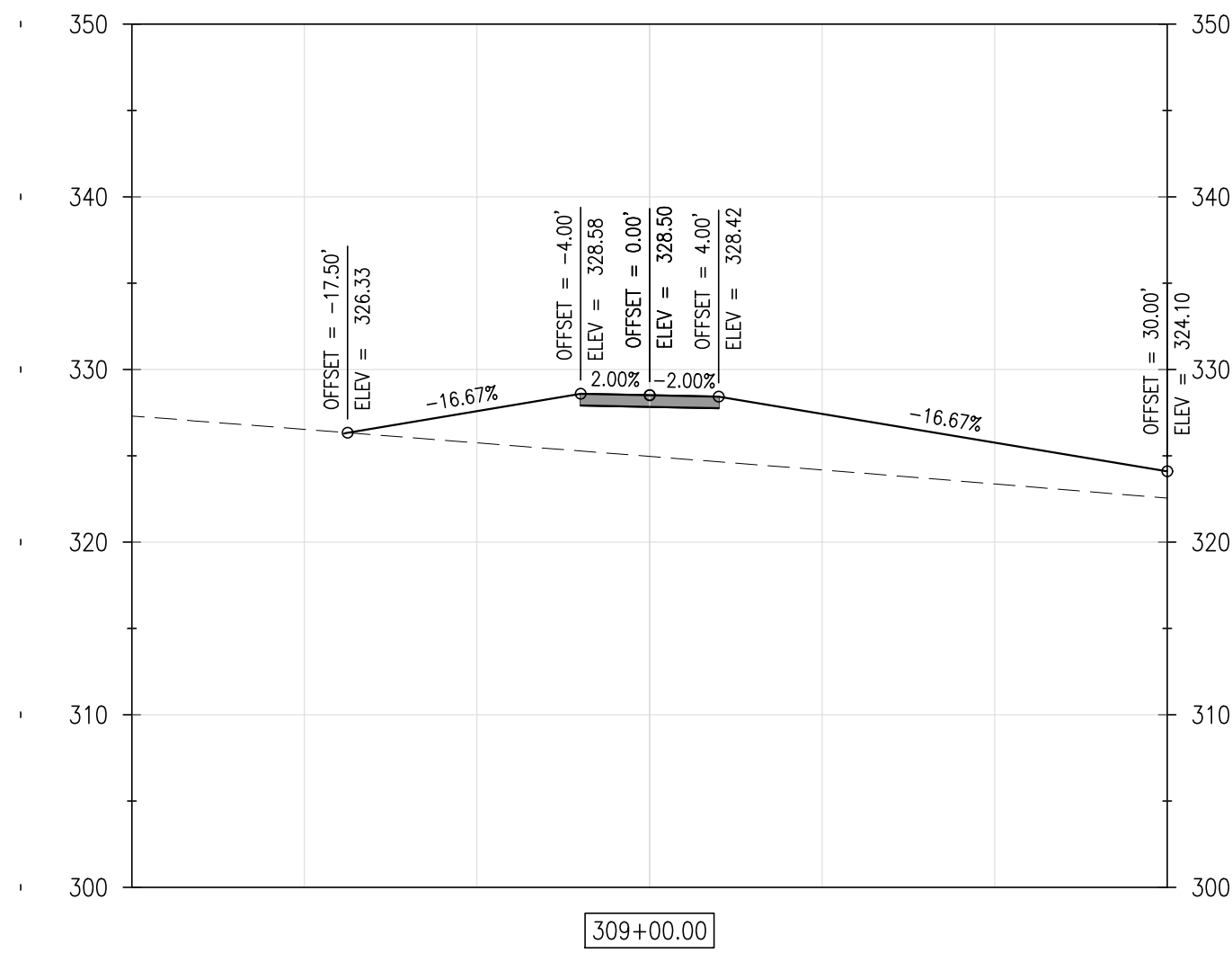
$$1'' = 10'$$

SHEET NO.:

C5.6

CONTRACT NO.:

2016-WCCSP-100



REVISIONS:

DATE:	DESCRIPTION:
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BY:

WCCSP TRI-VALLEY TRAIL

BID SET

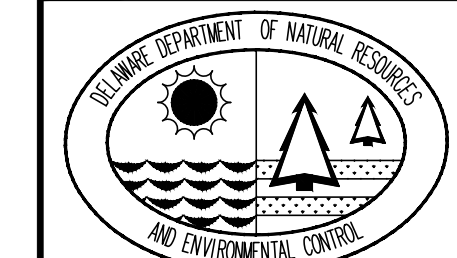
CROSS SECTIONS

SEAL:

CIVIL ENGINEER:



CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE:

SEPTEMBER 7, 2016

SCALE:

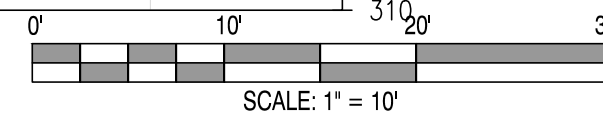
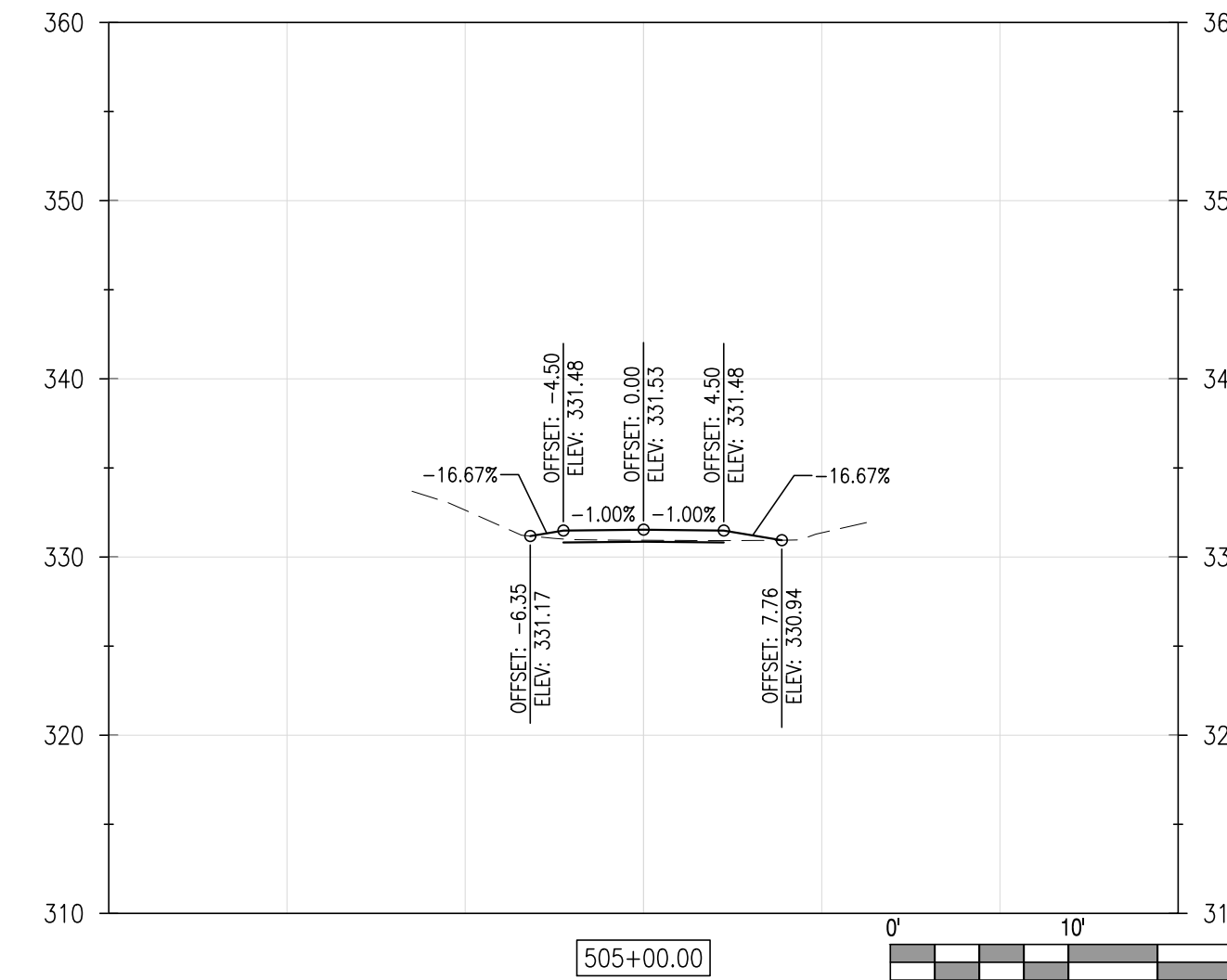
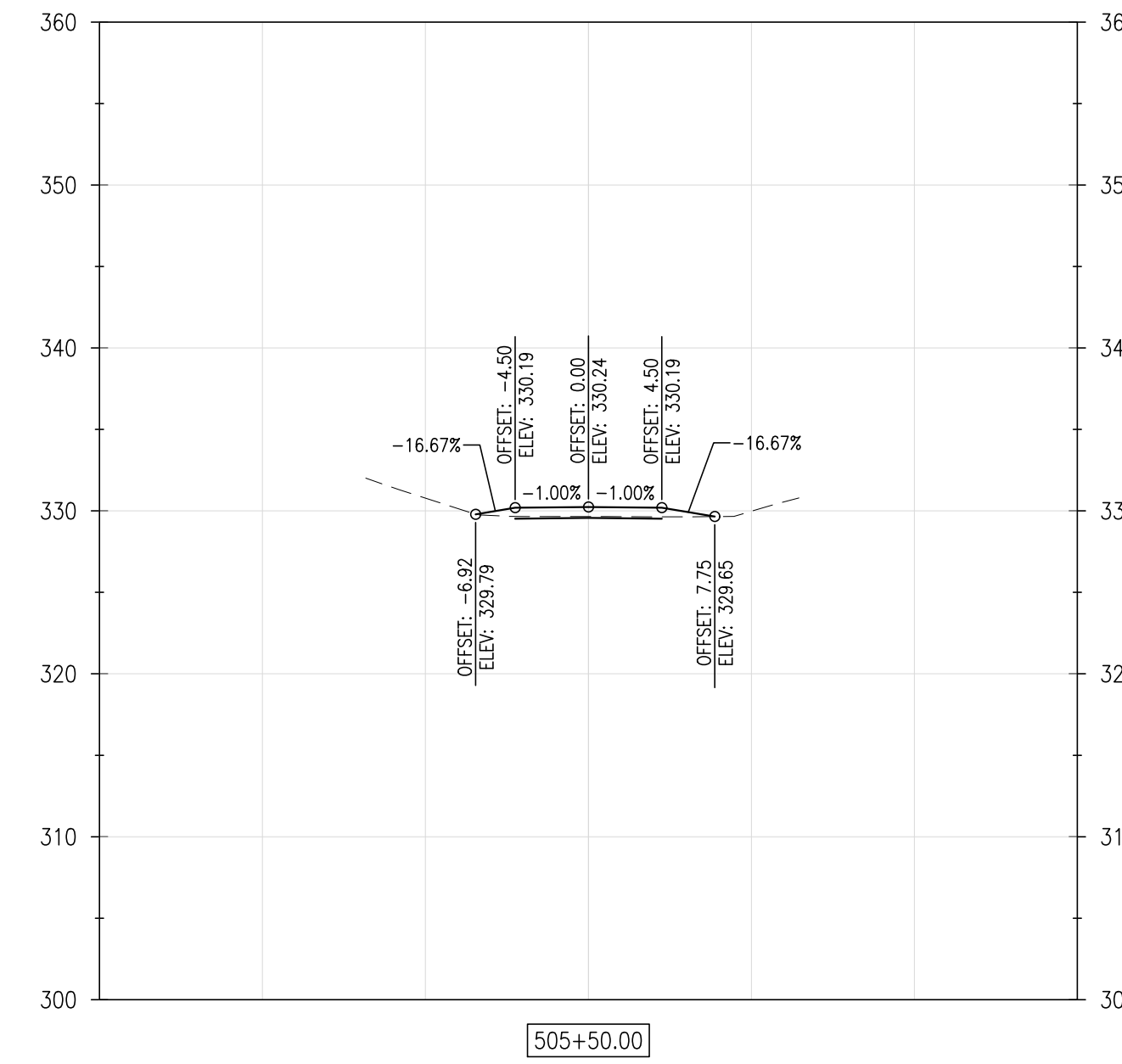
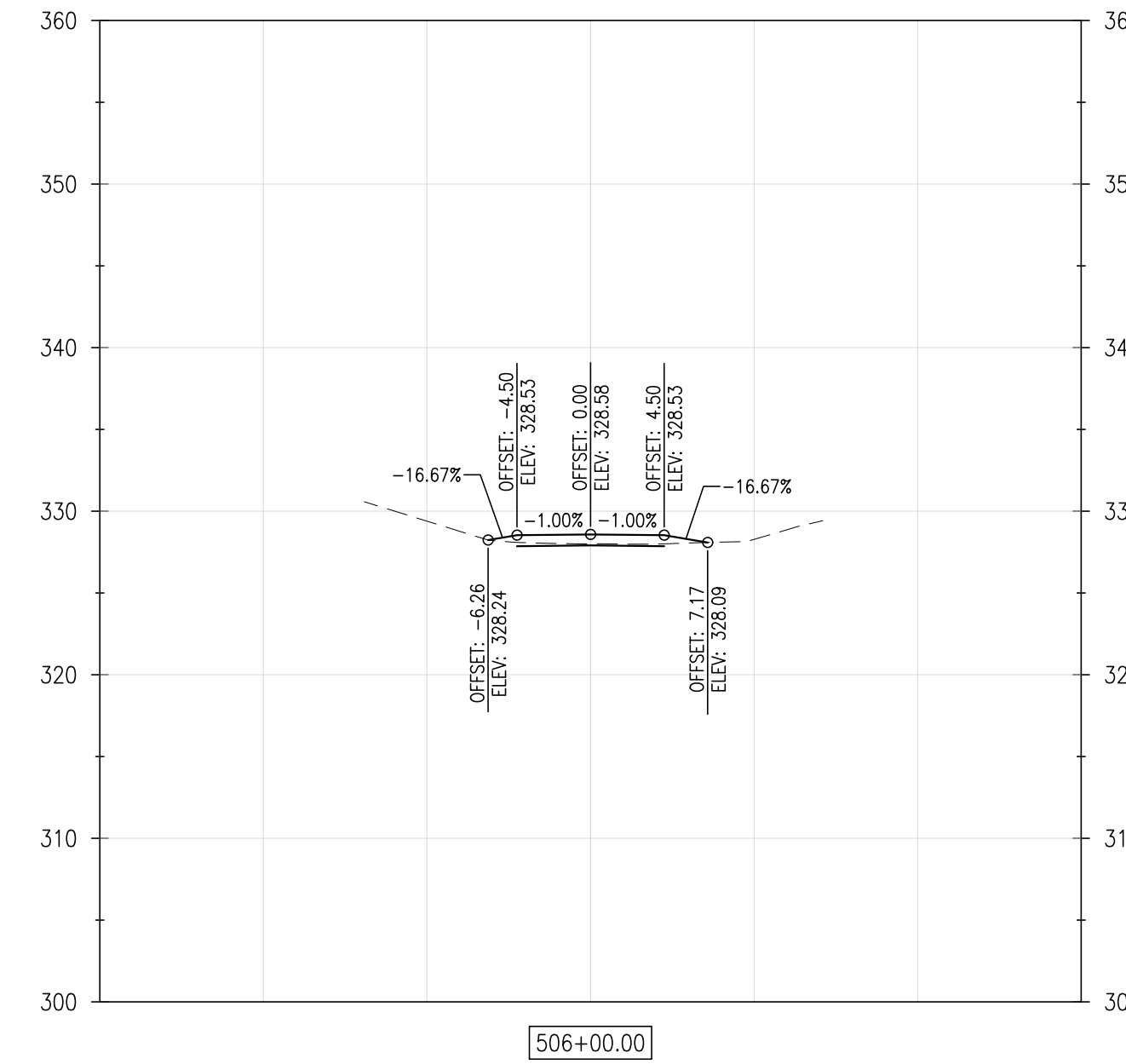
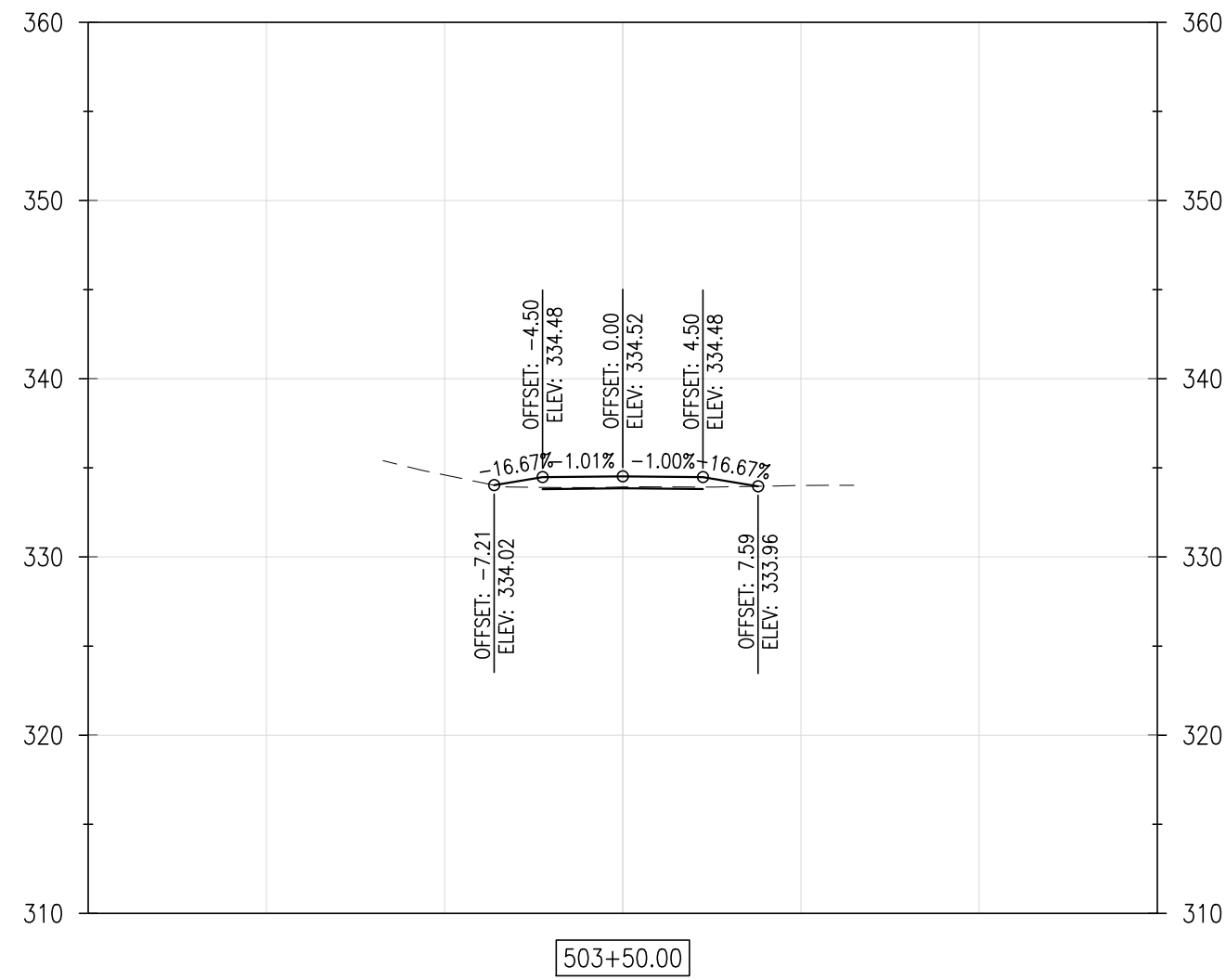
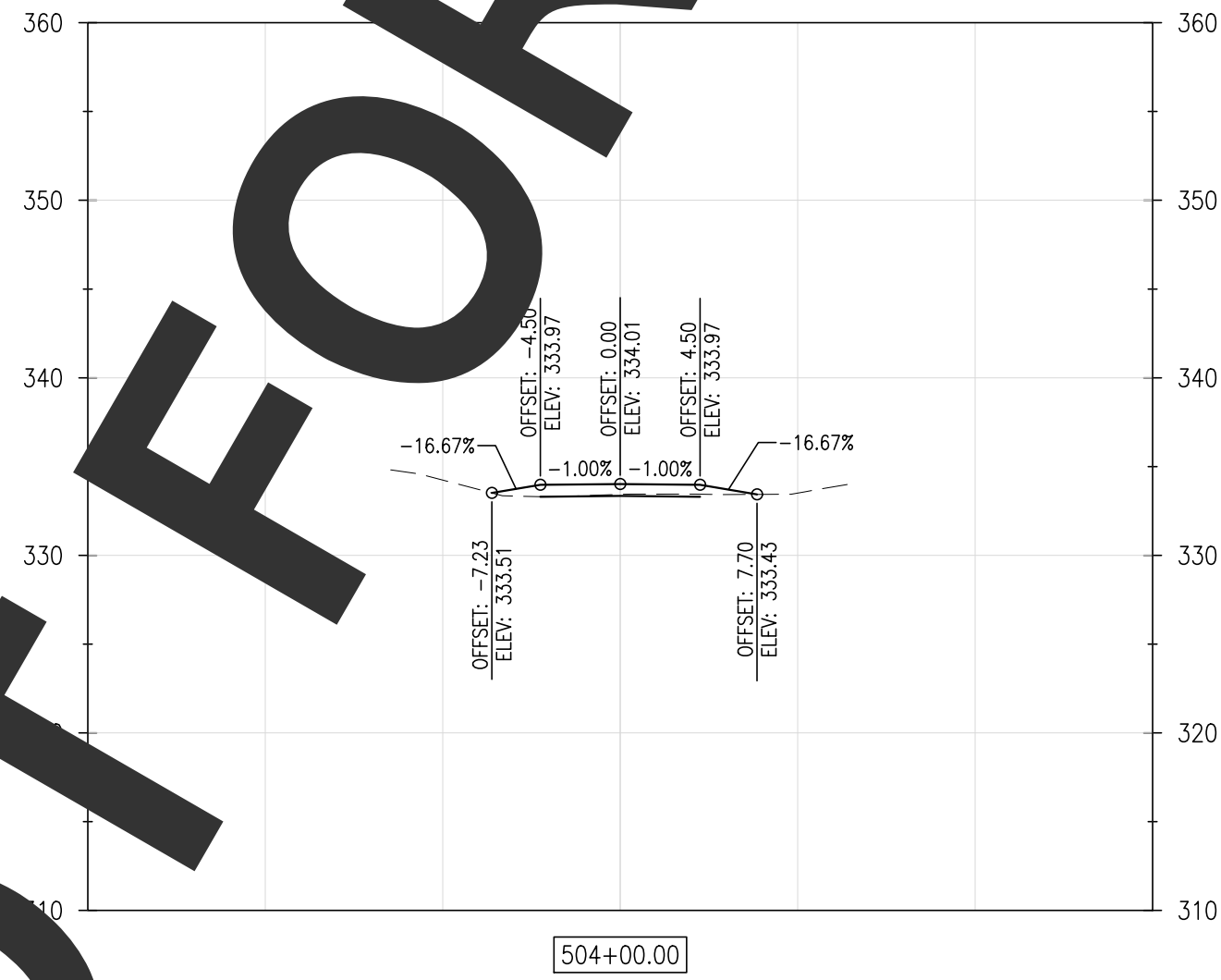
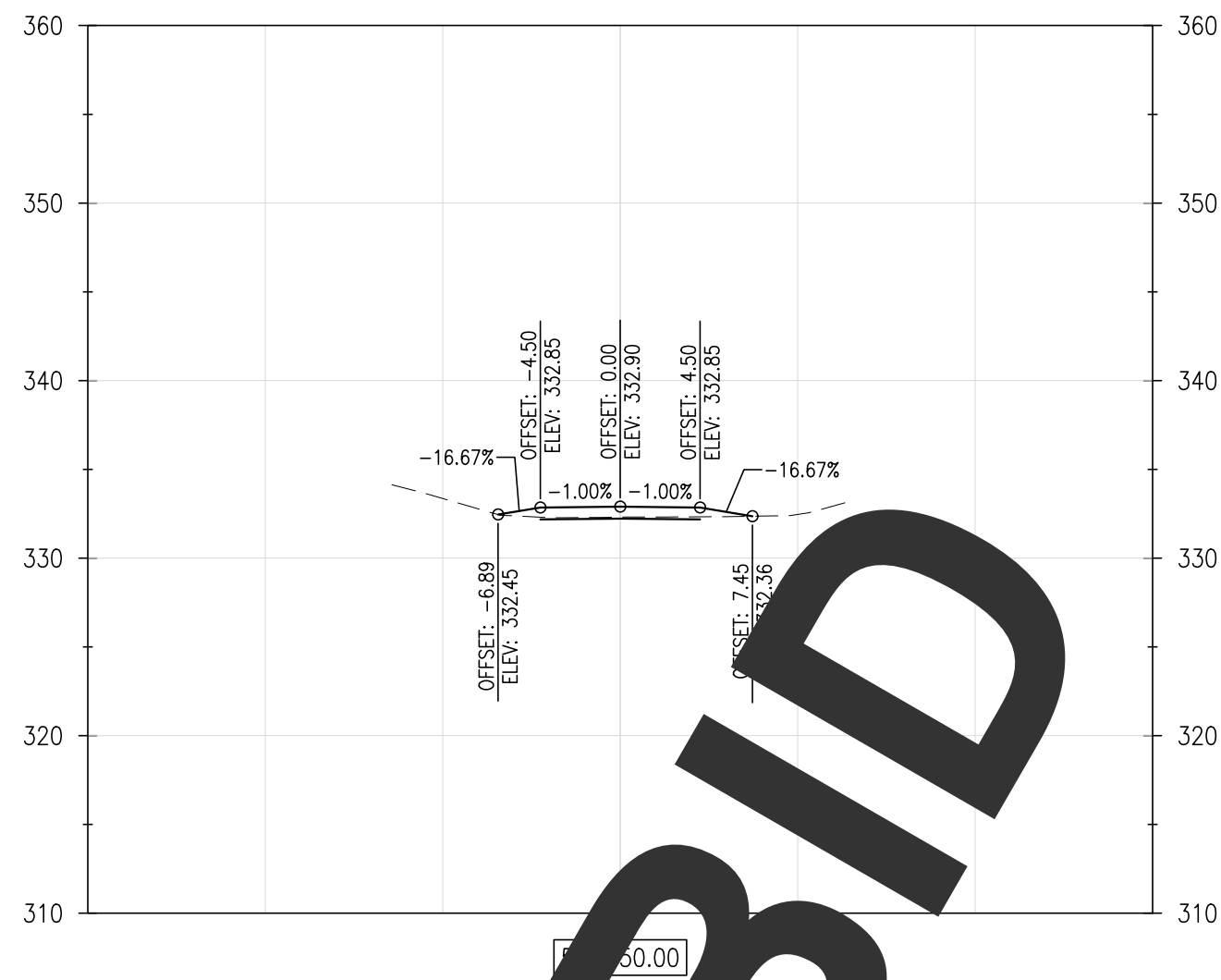
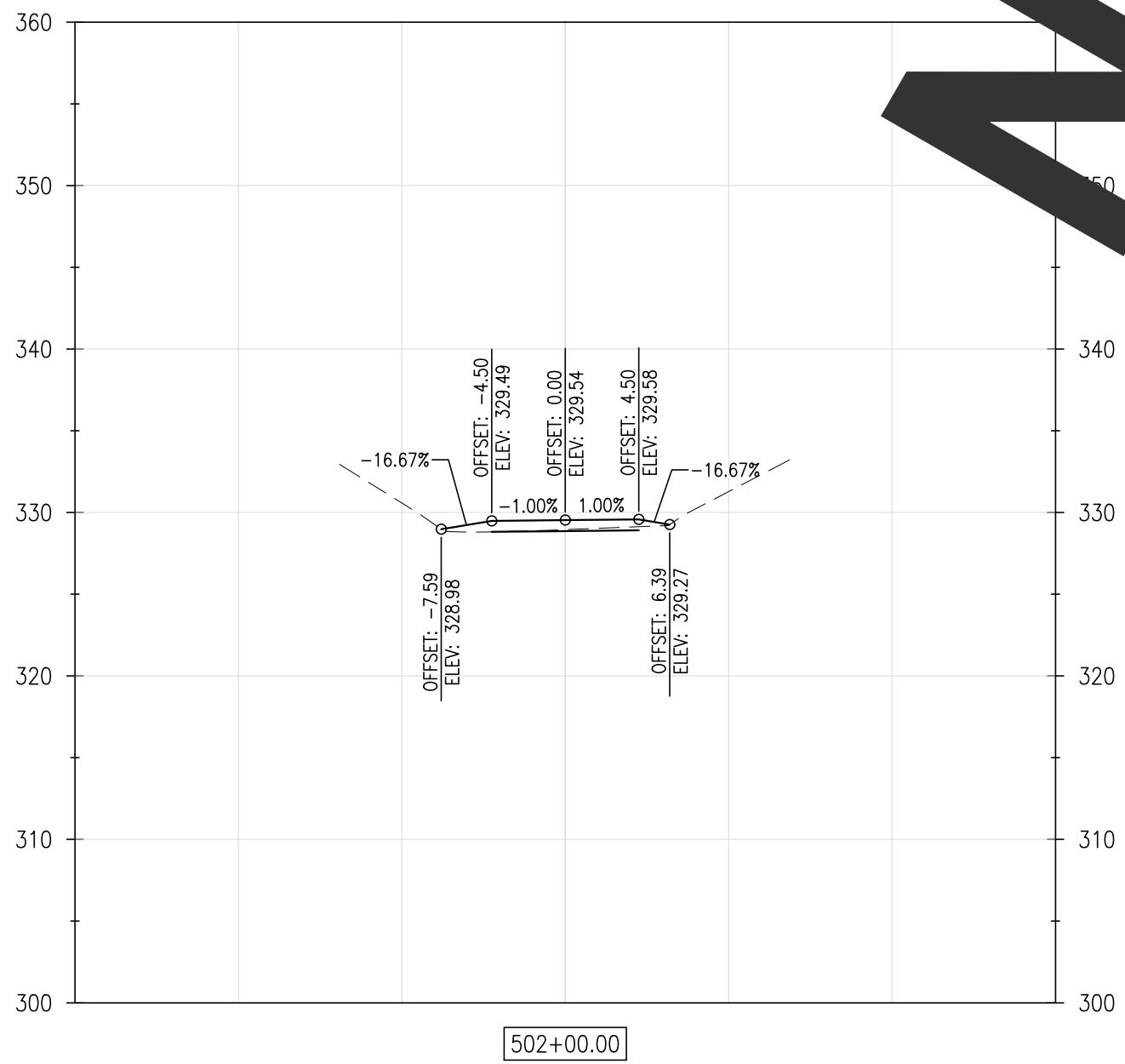
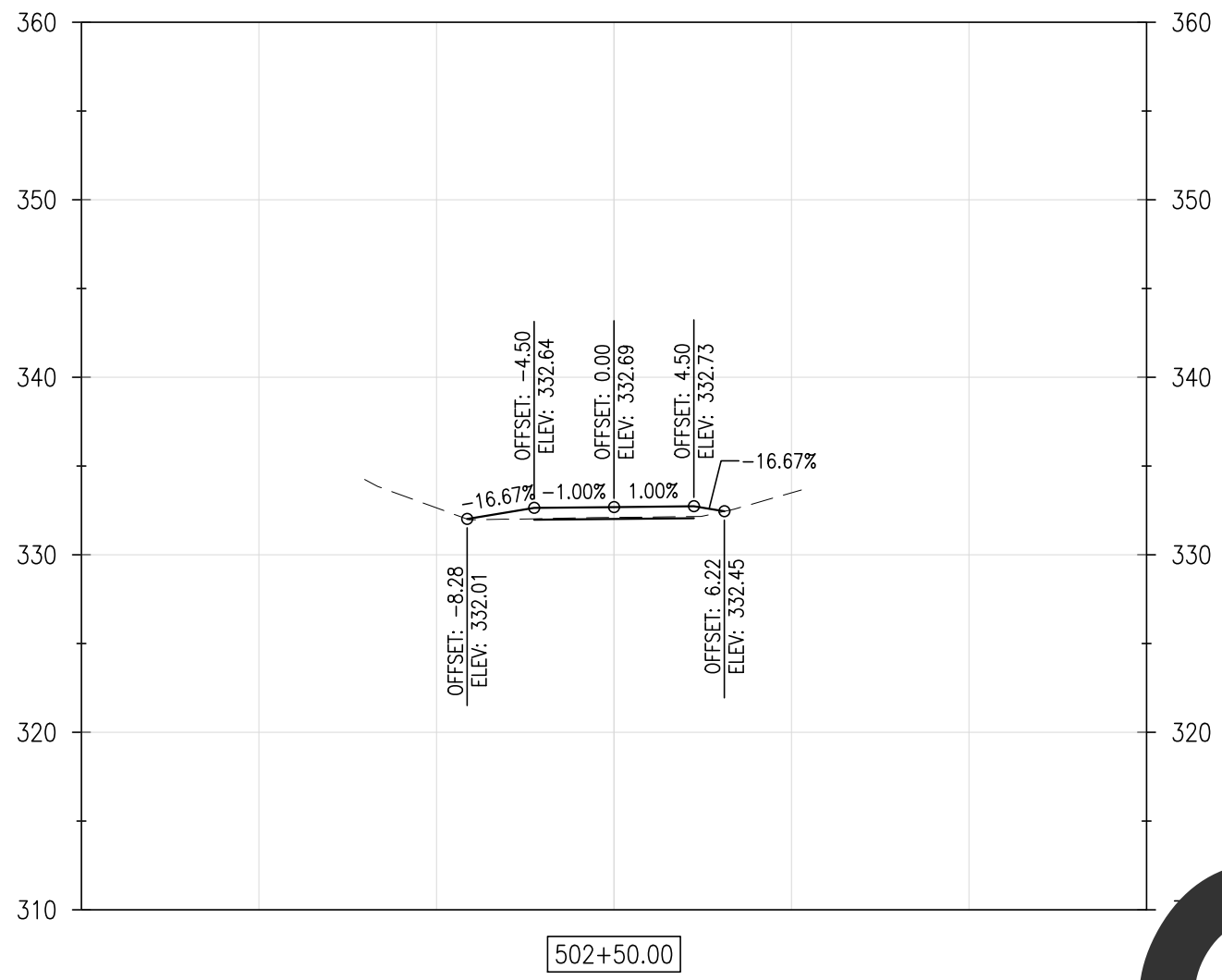
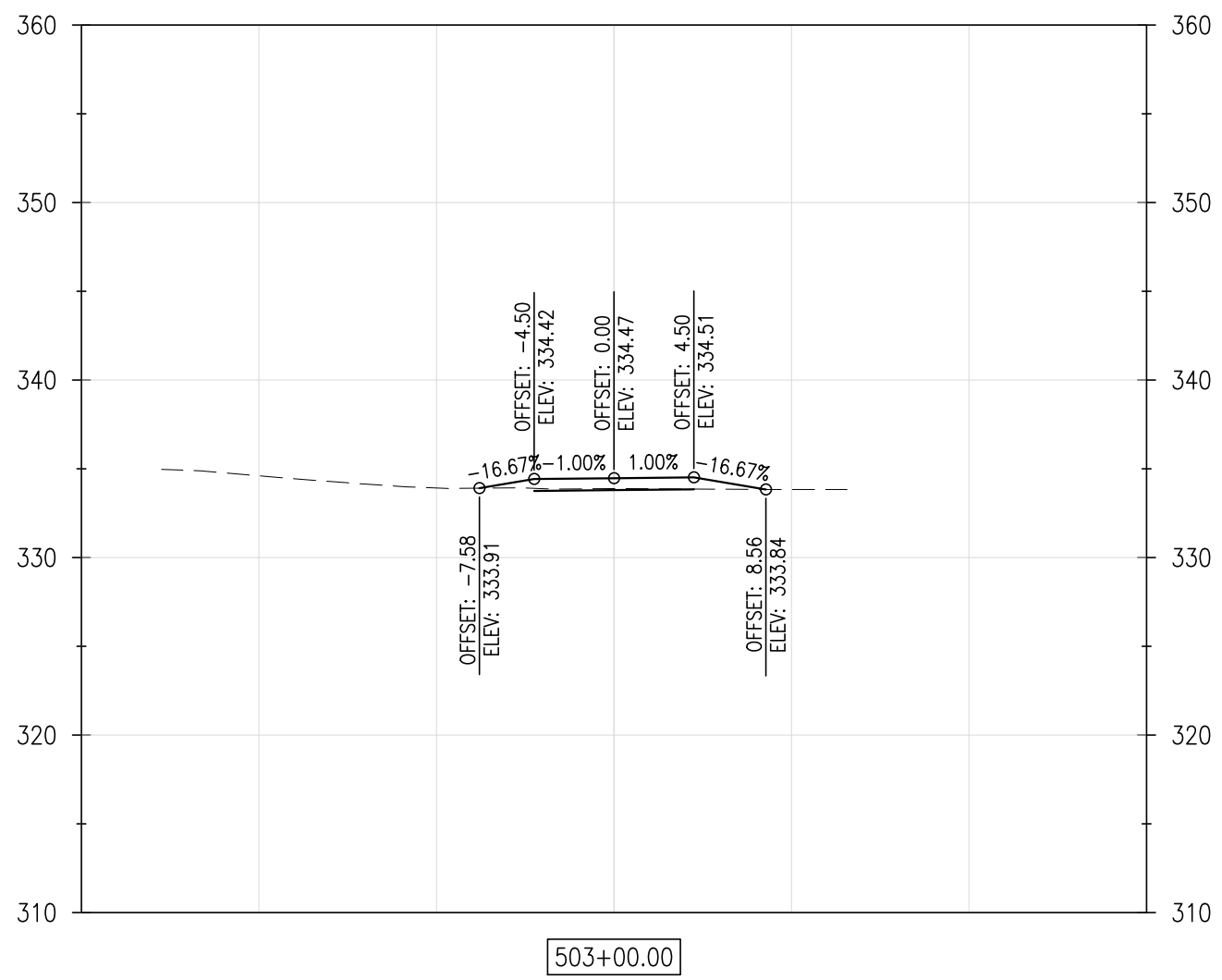
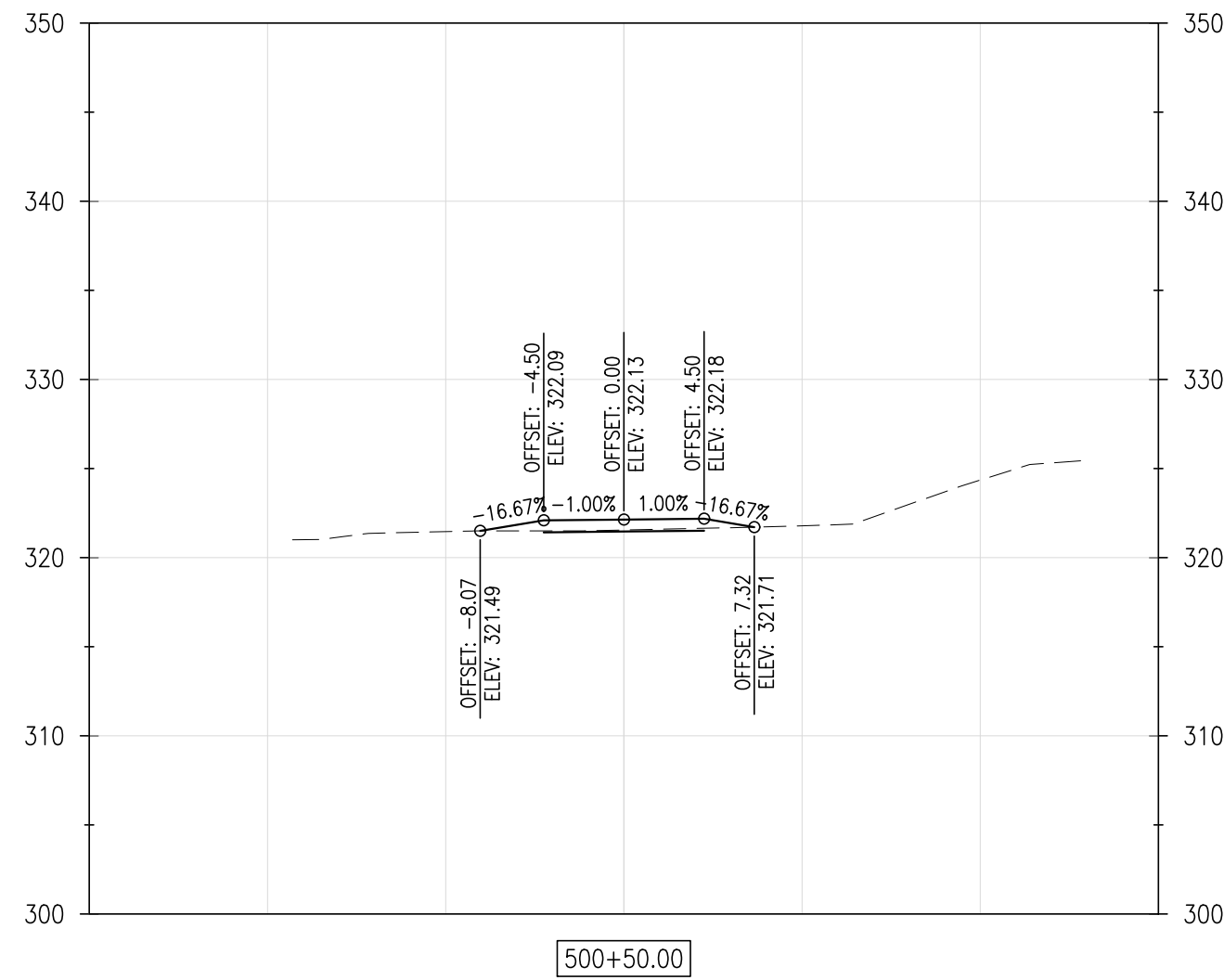
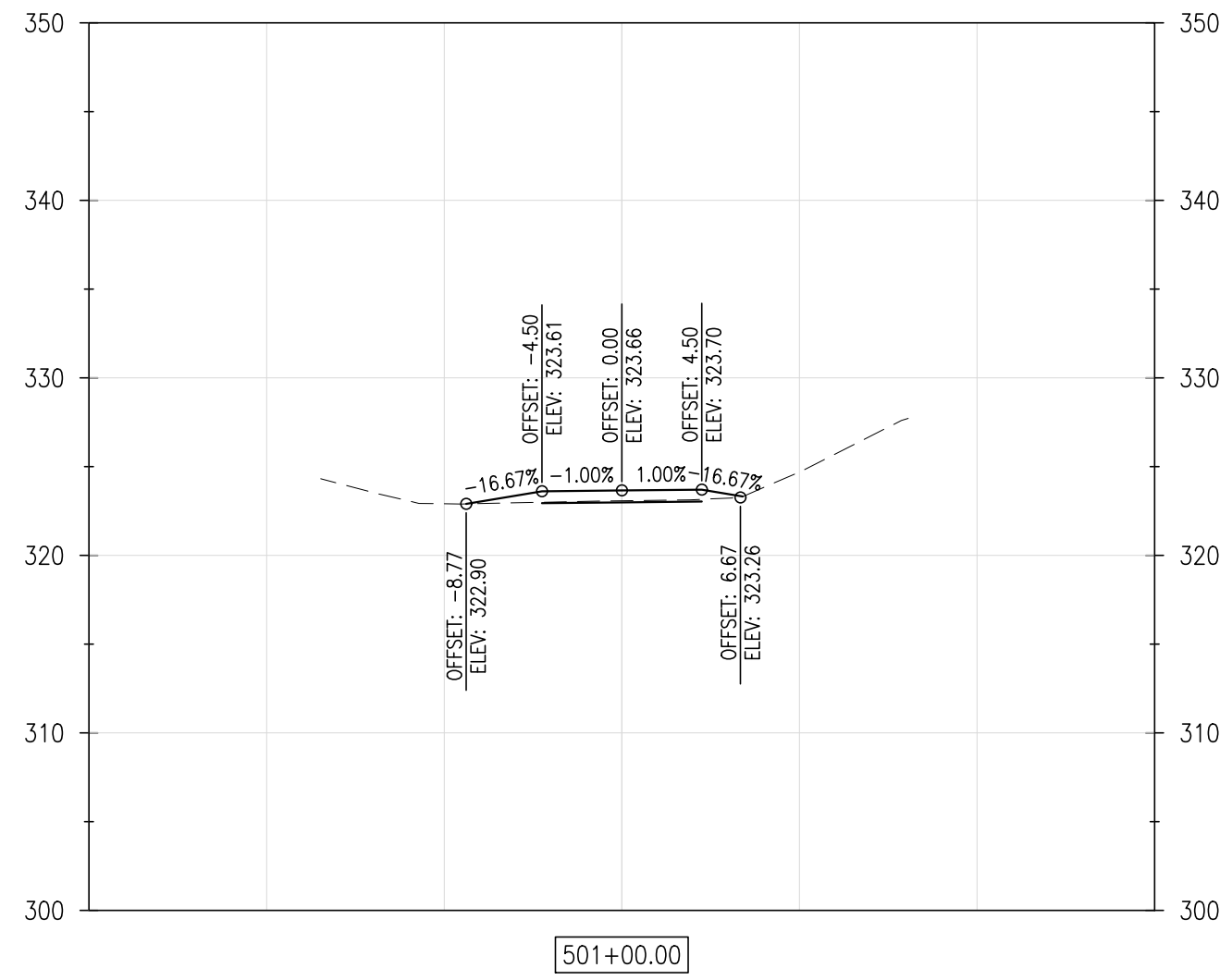
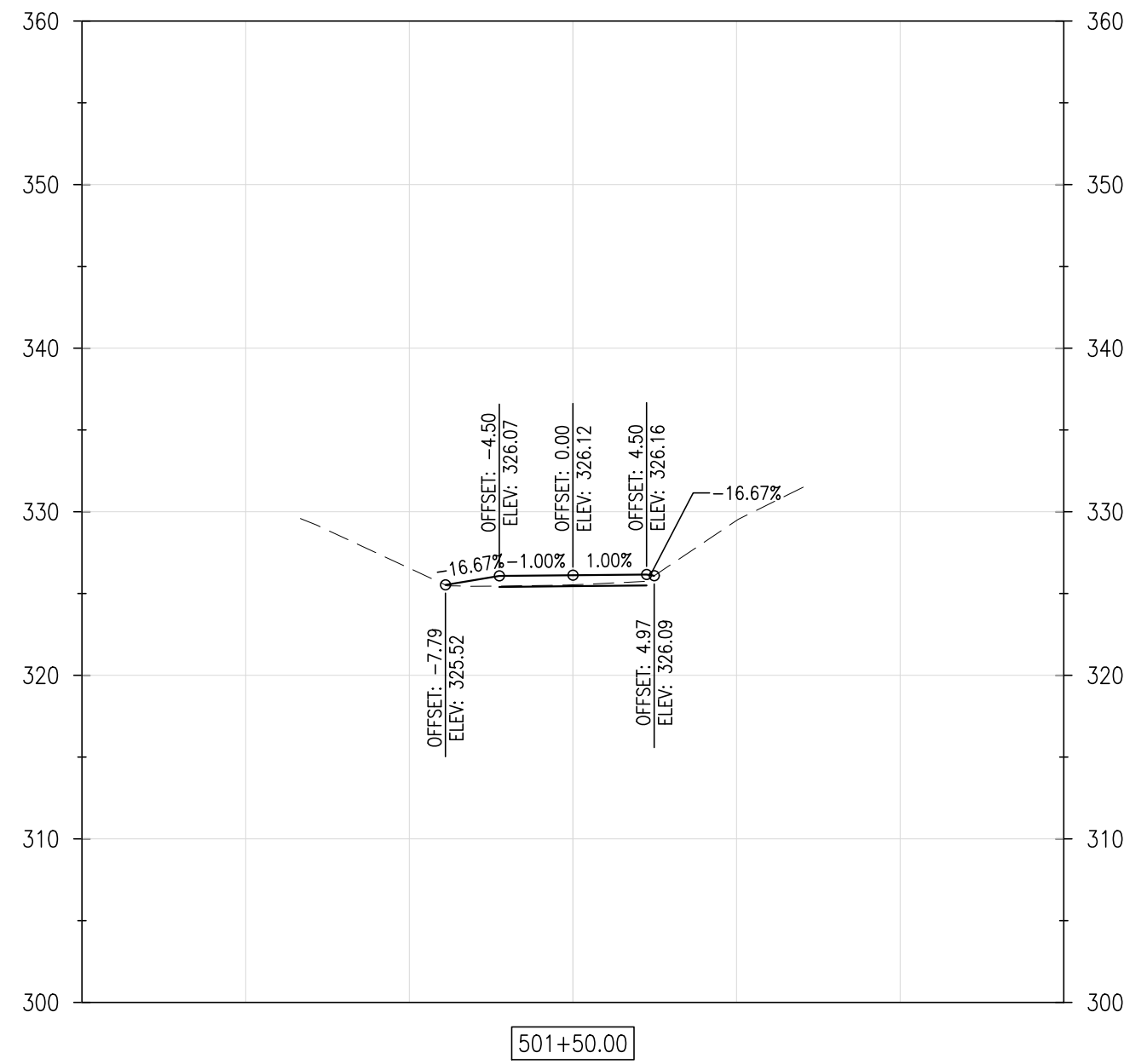
$$1'' = 10'$$

SHEET NO.:

C5.7

CONTRACT NO.:

2016-WCCSP-100



REVISIONS:

DATE: DESCRIPTION: BY:

WCCSP TRI-VALLEY TRAIL
BID SET

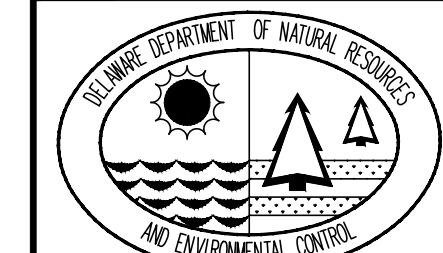
CROSS SECTIONS

SEAL:

CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE:

SEPTEMBER 7, 2016

SCALE:

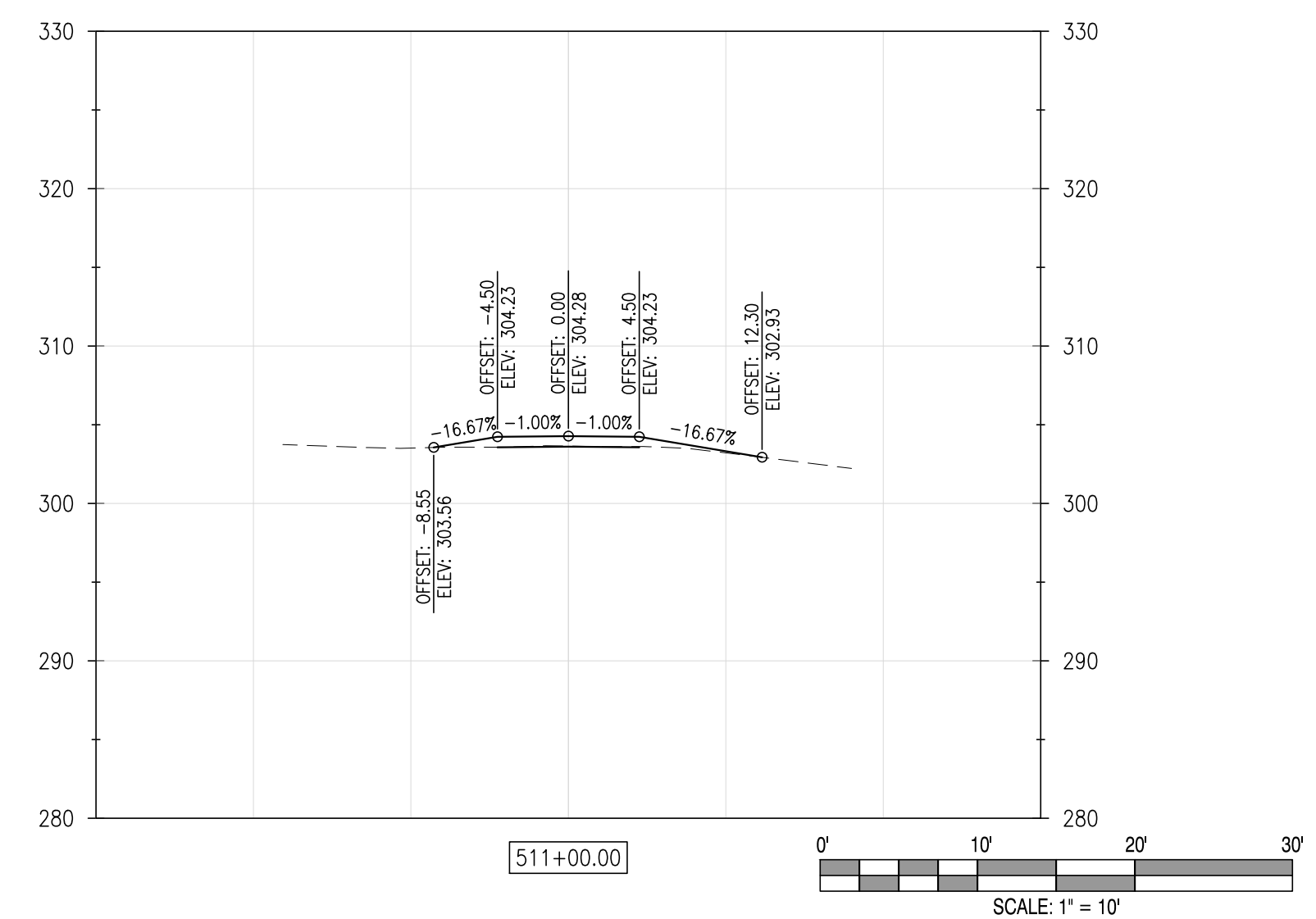
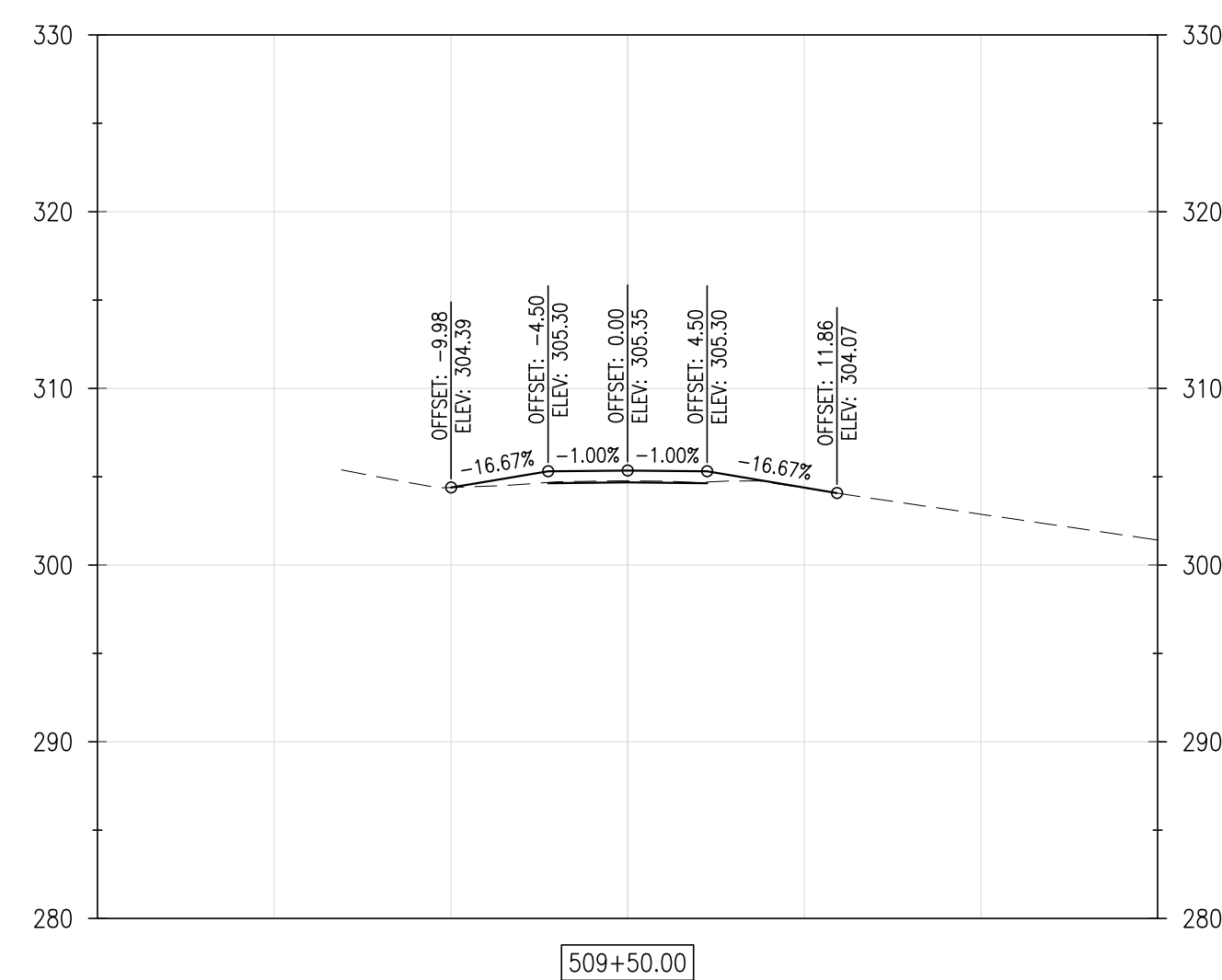
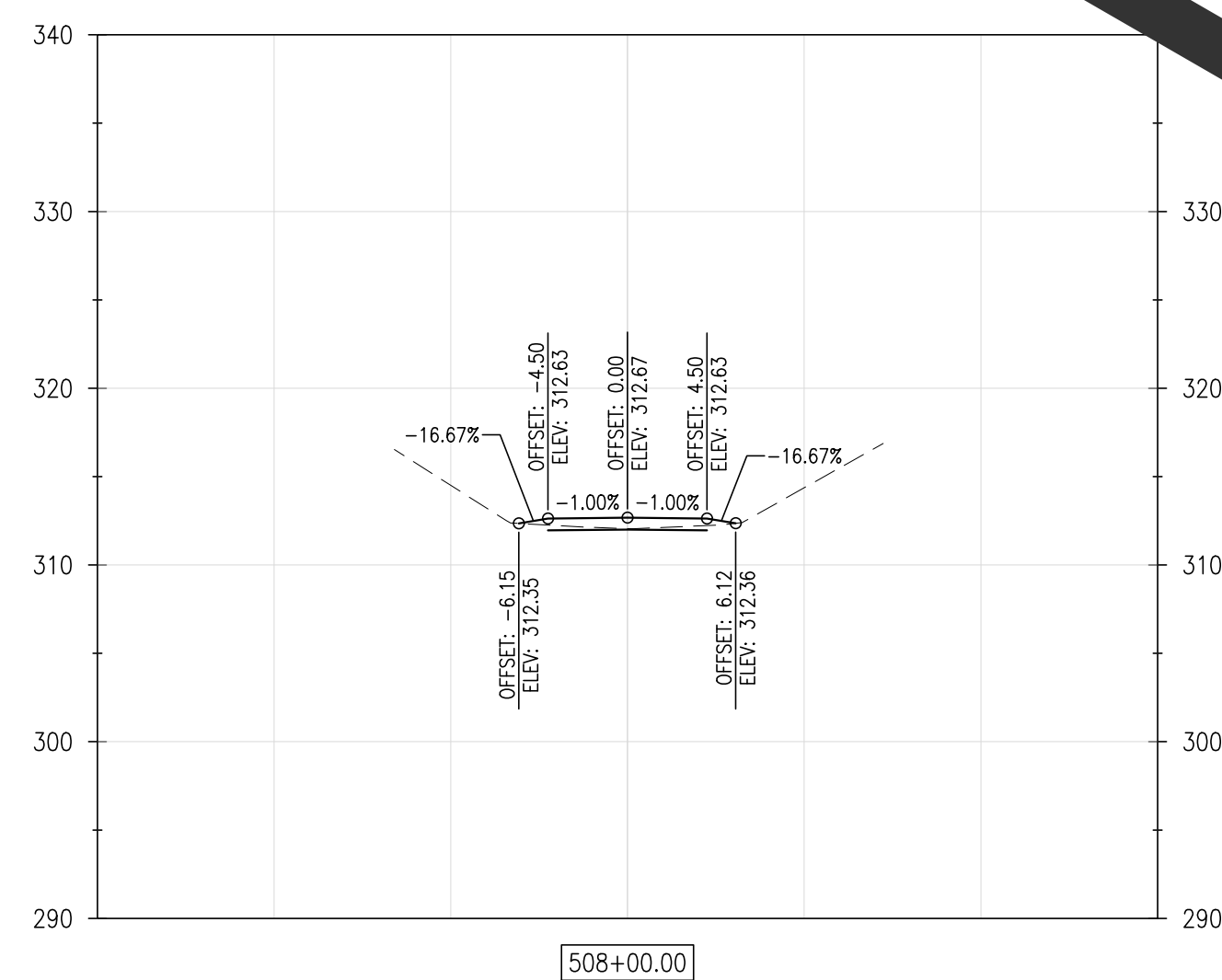
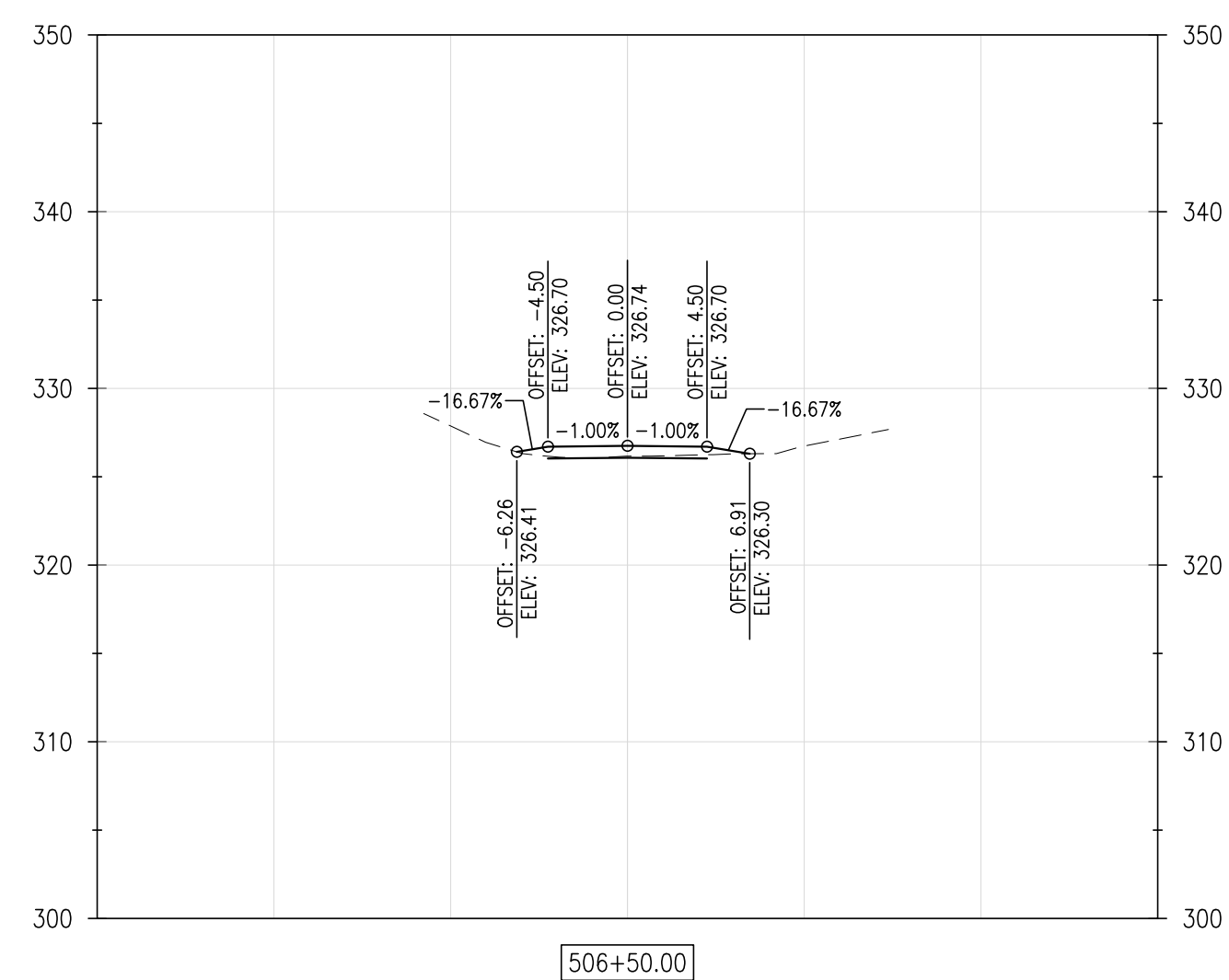
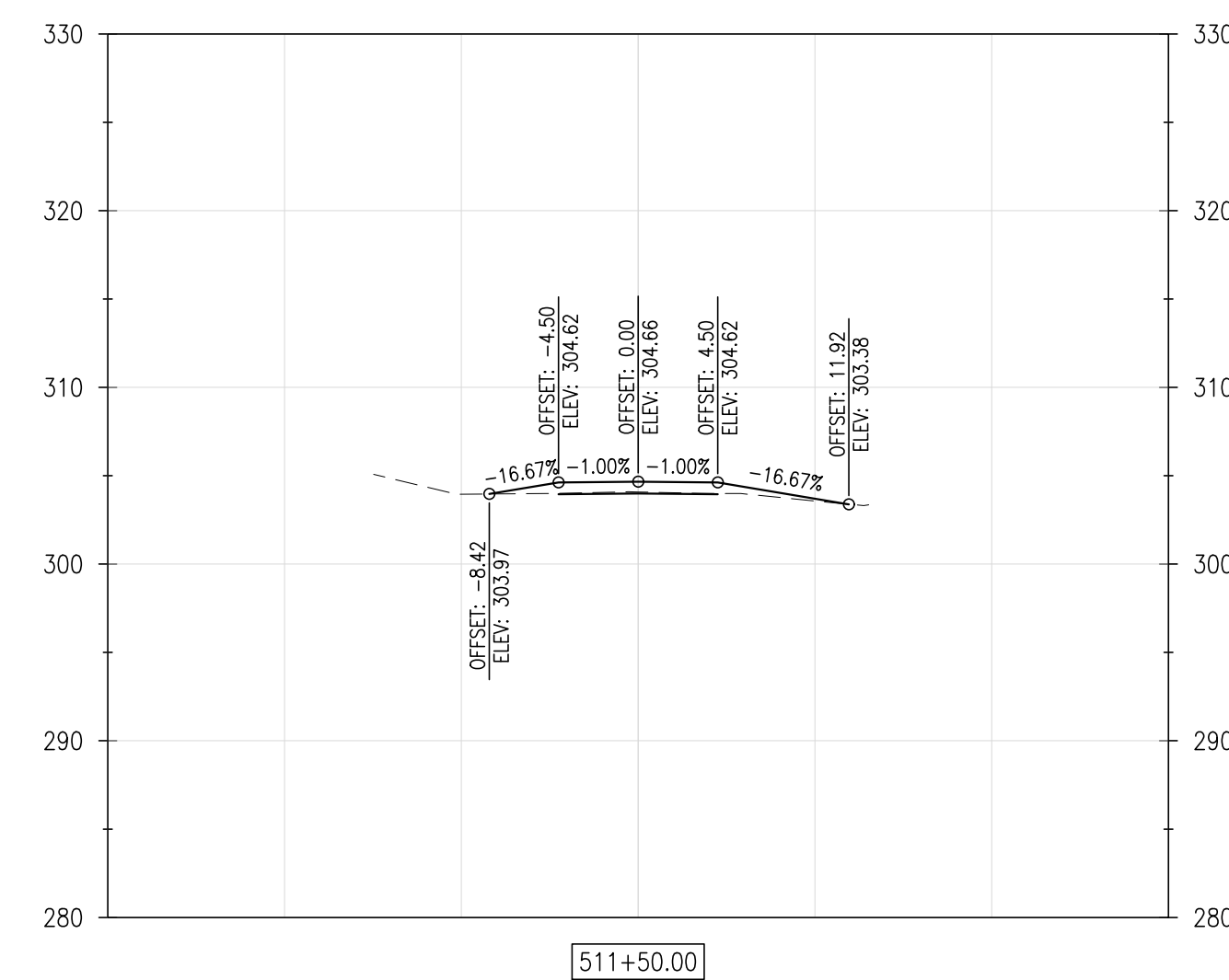
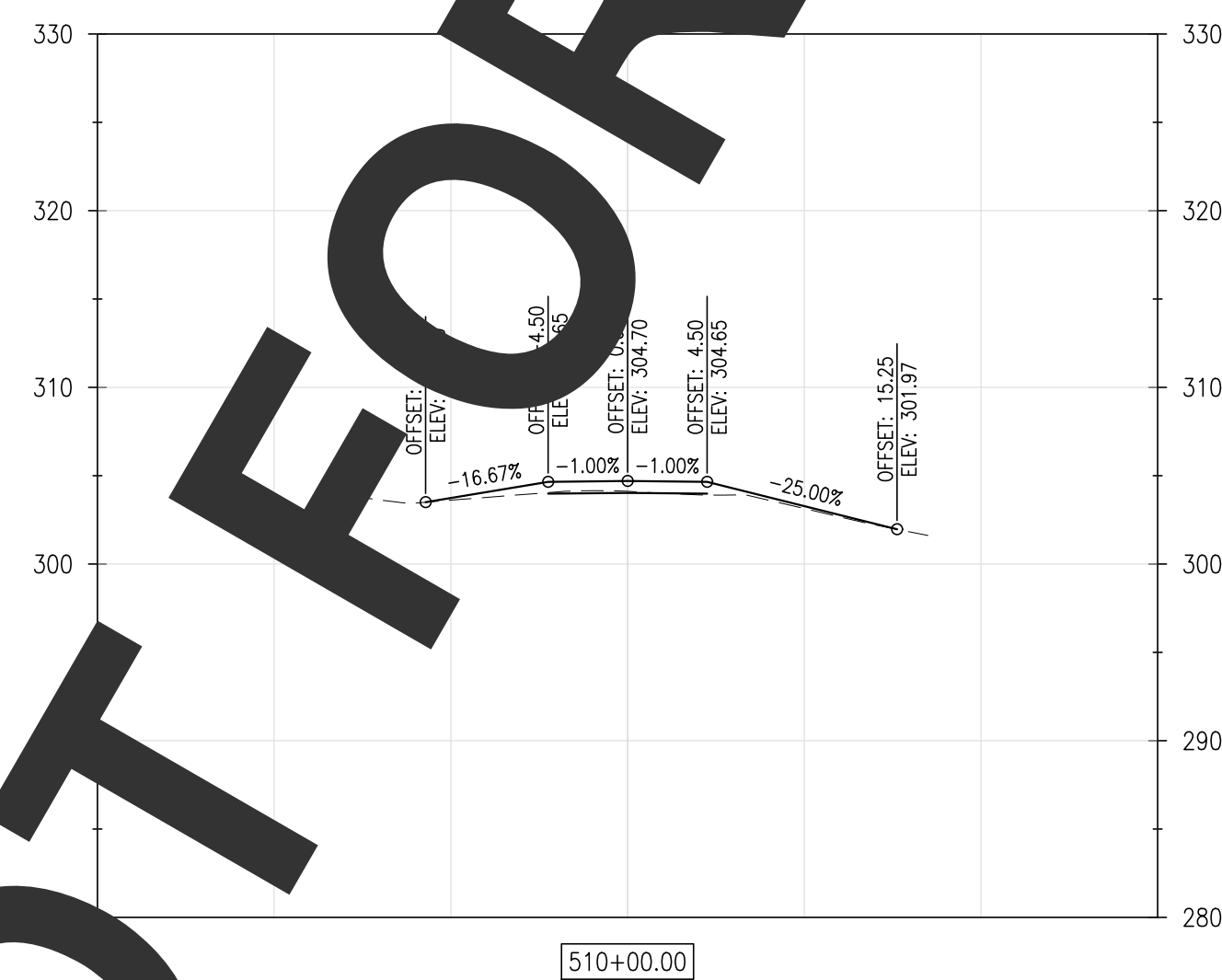
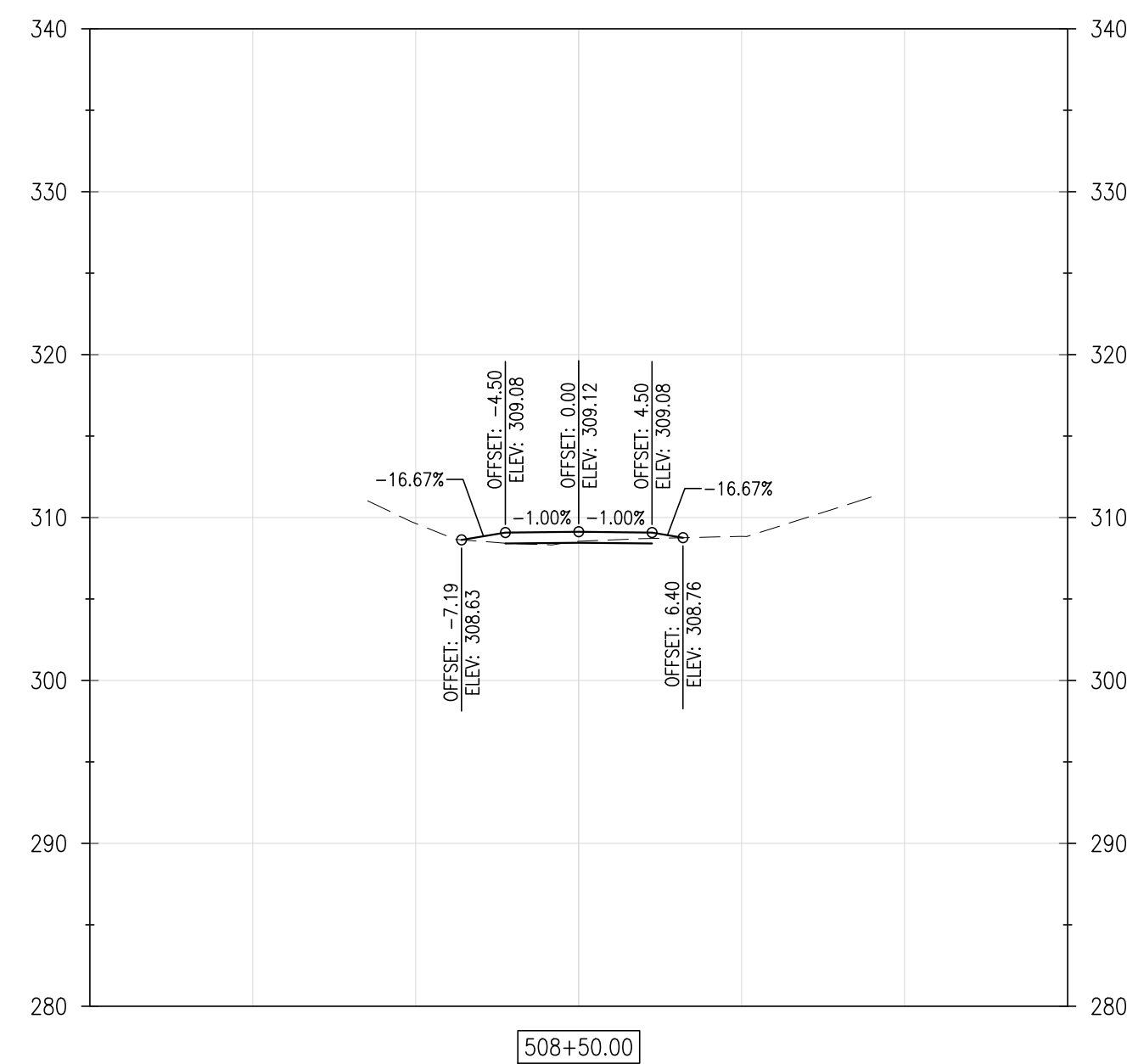
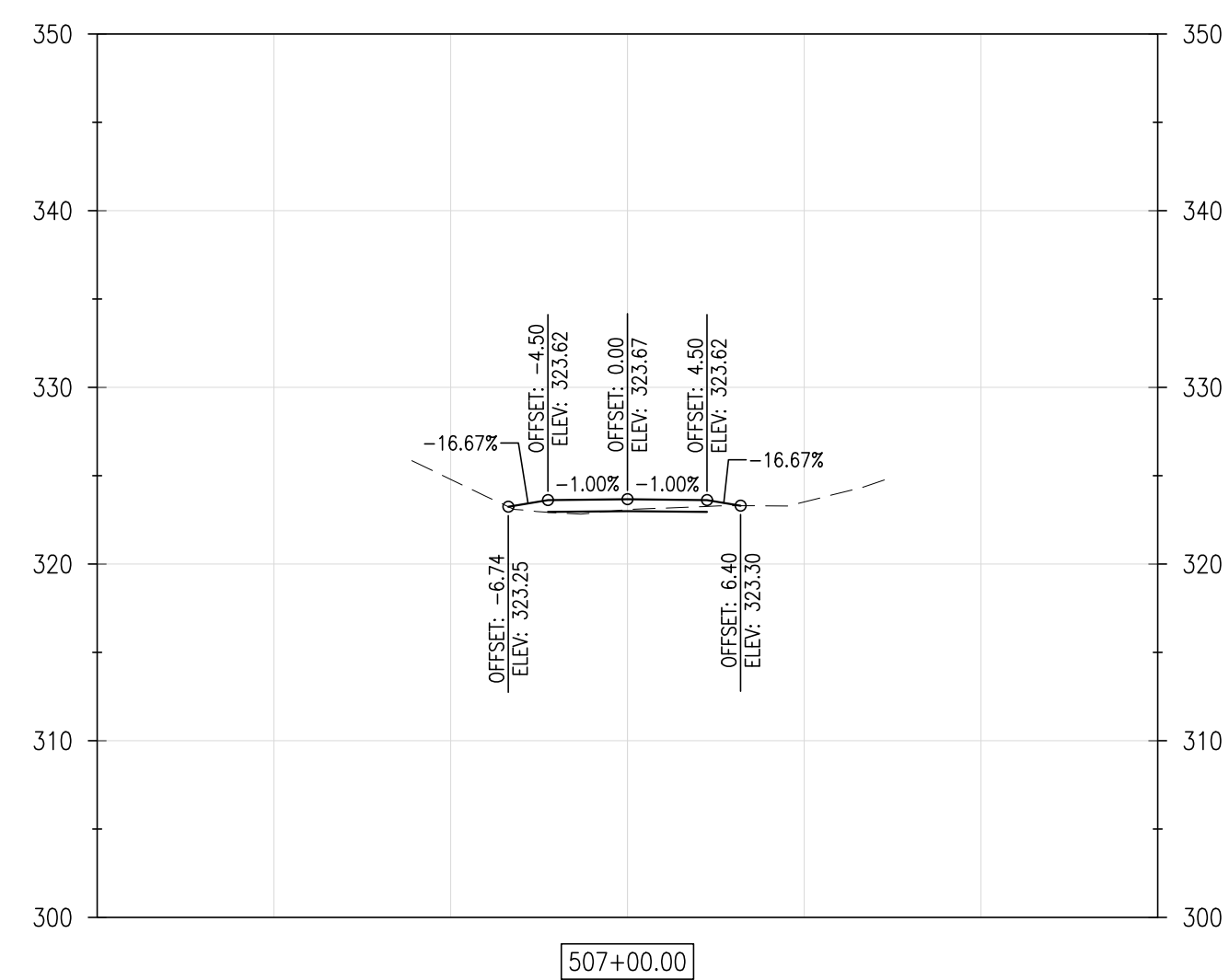
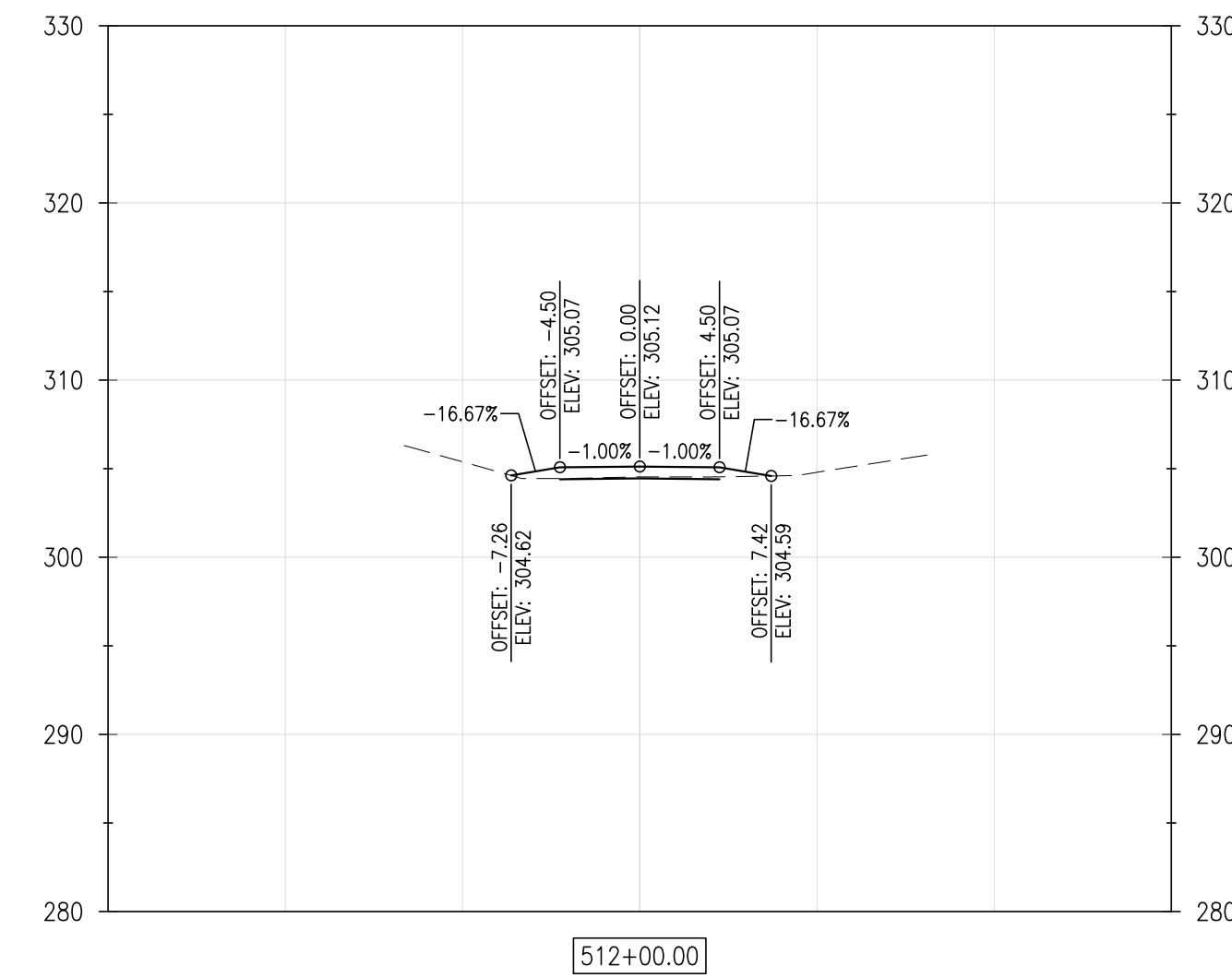
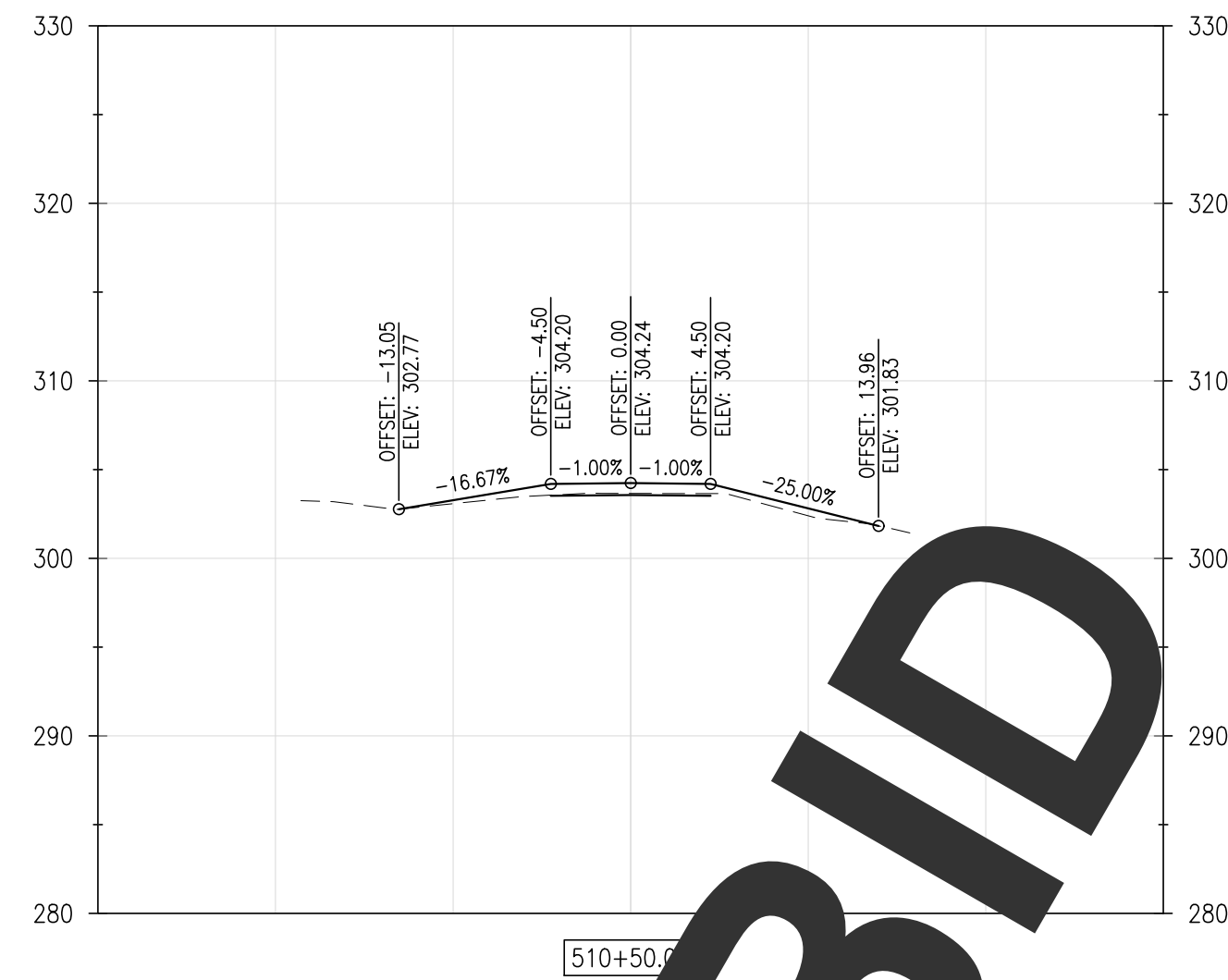
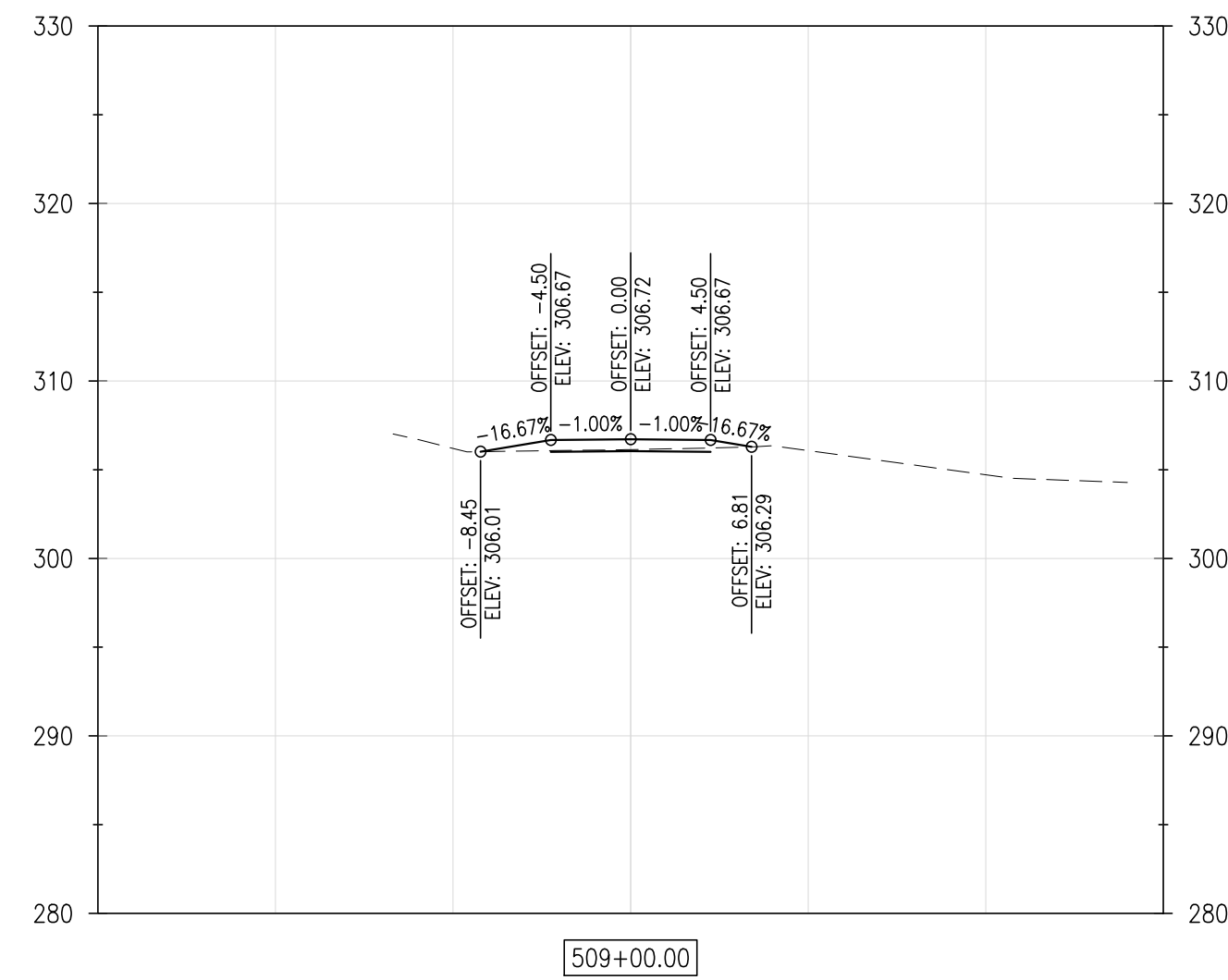
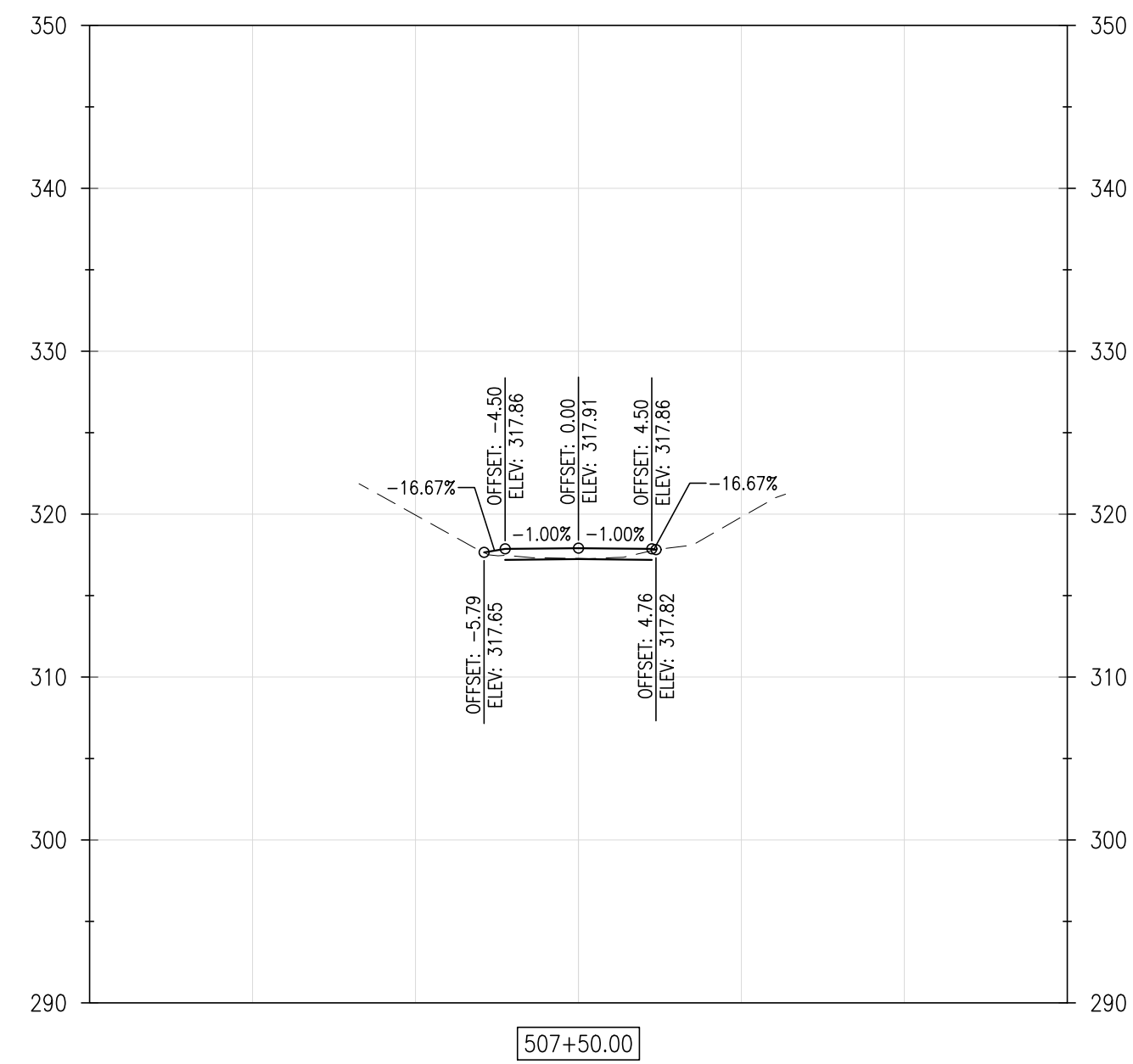
1" = 10'

SHEET NO.:

C5.8

CONTRACT NO.:

2016-WCCSP-100



REVISIONS:

DATE: _____ DESCRIPTION: _____

BY: _____

WCCSP TRI-VALLEY TRAIL

BID SET

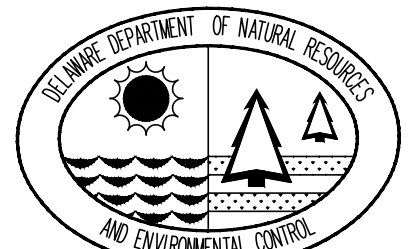
CROSS SECTIONS

SEAL:

CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE:

EMBER 7, 2016

SCALE:

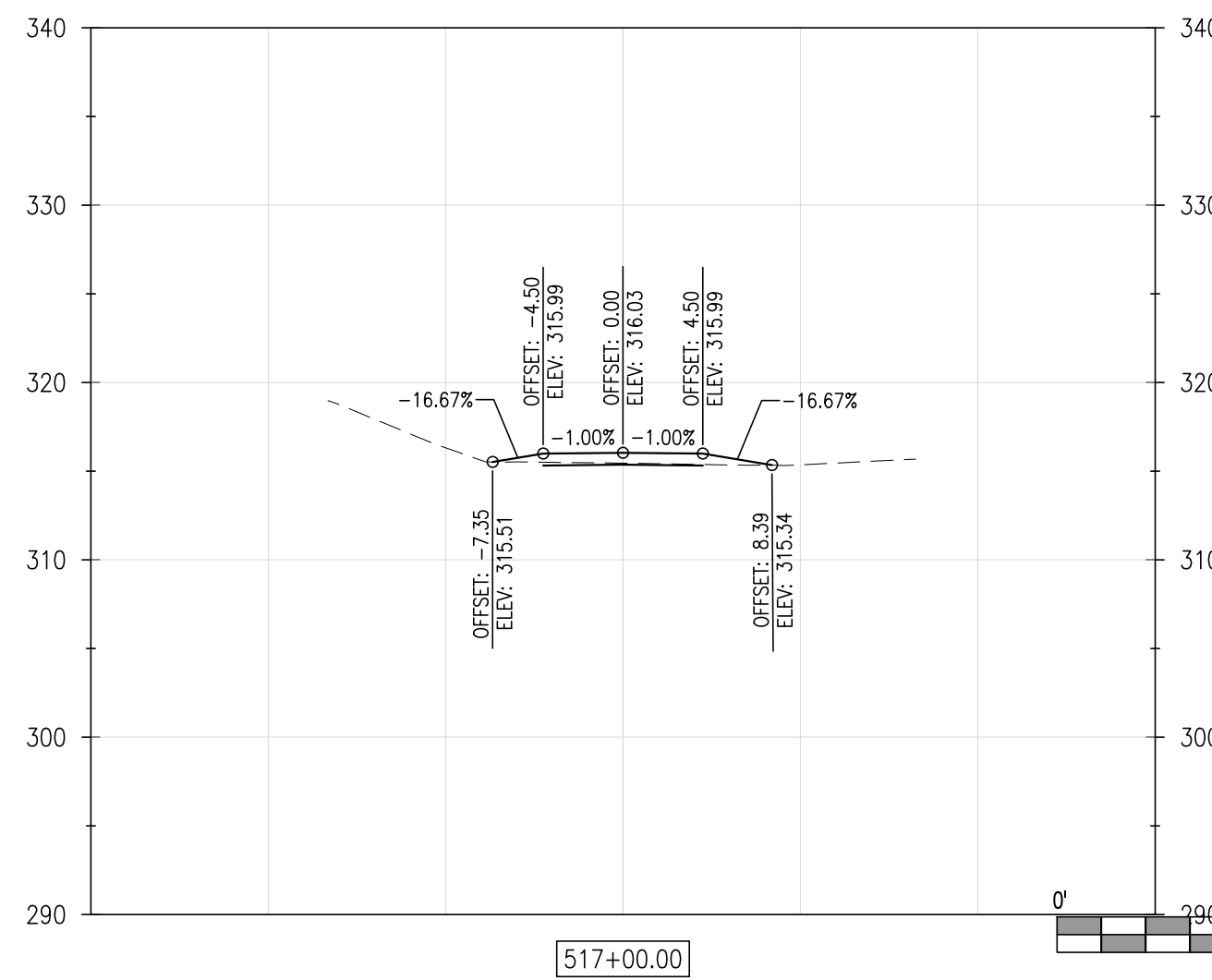
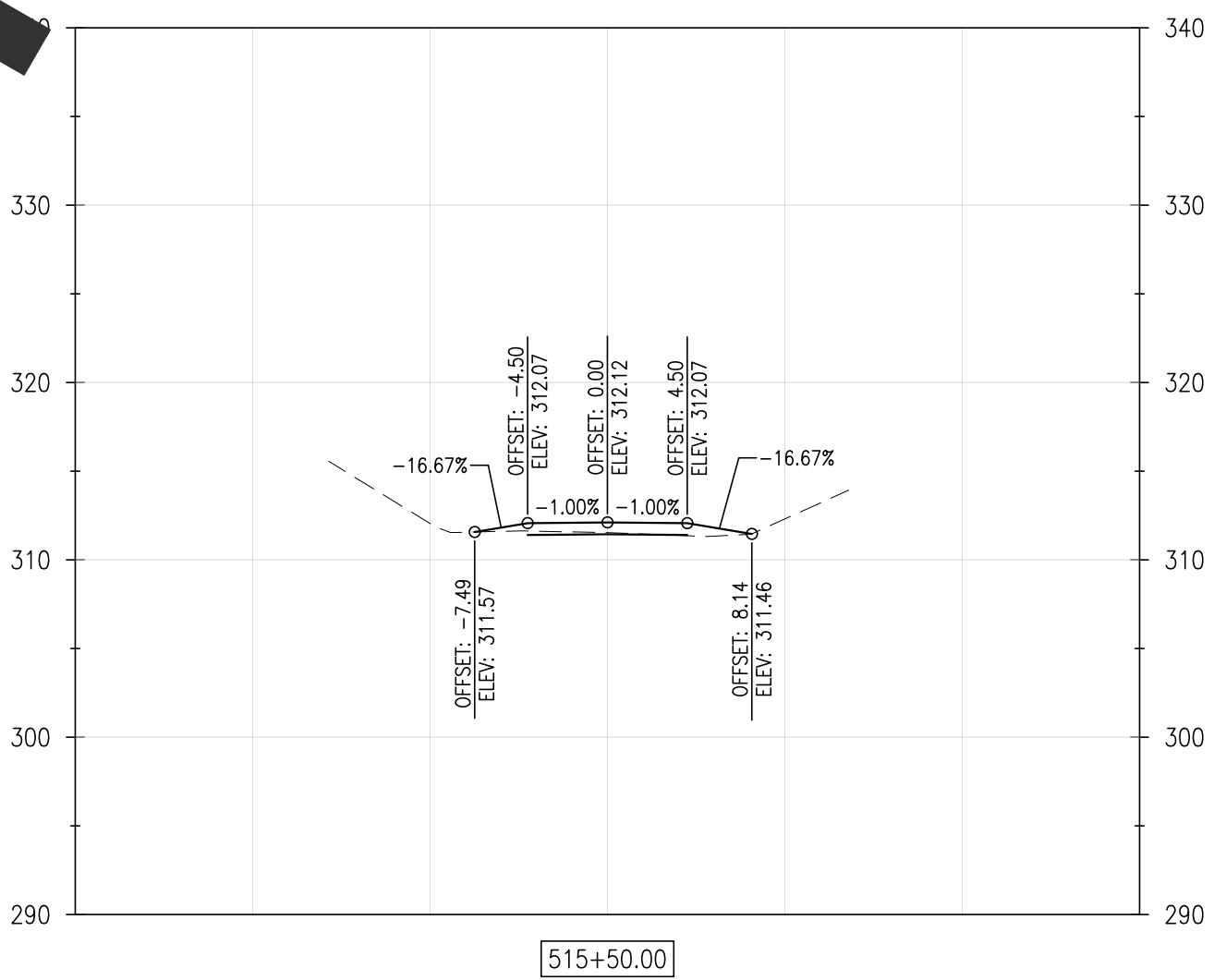
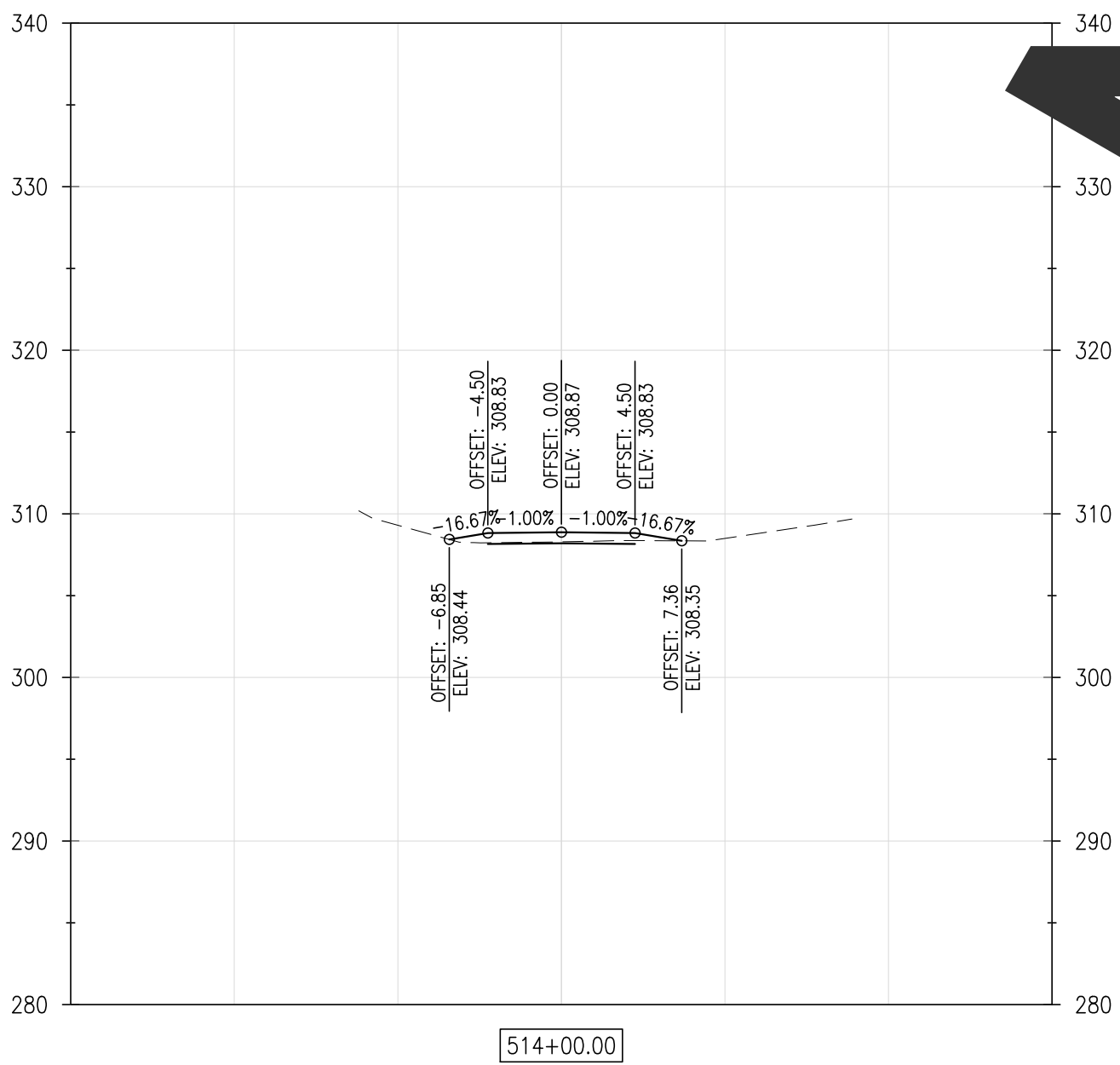
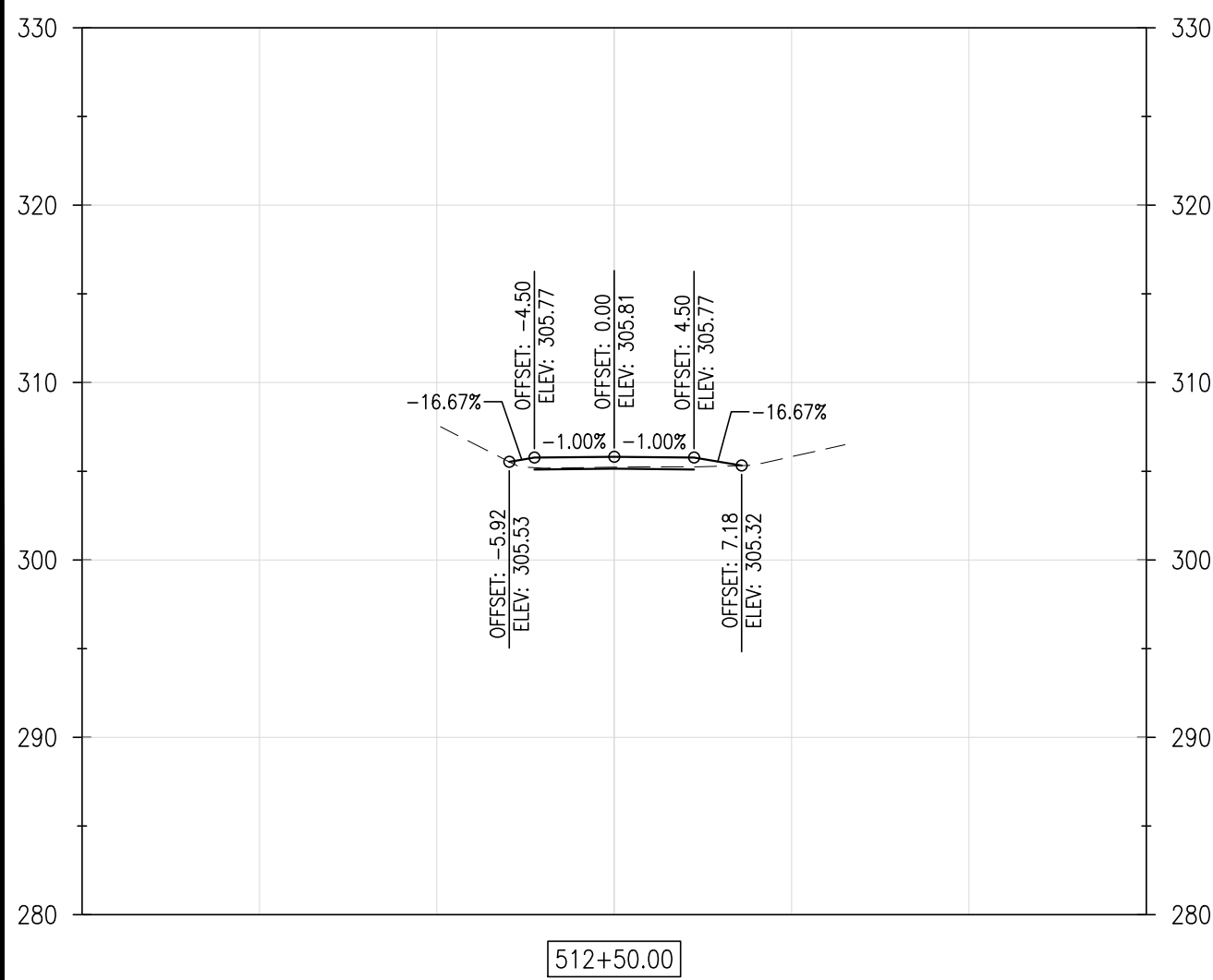
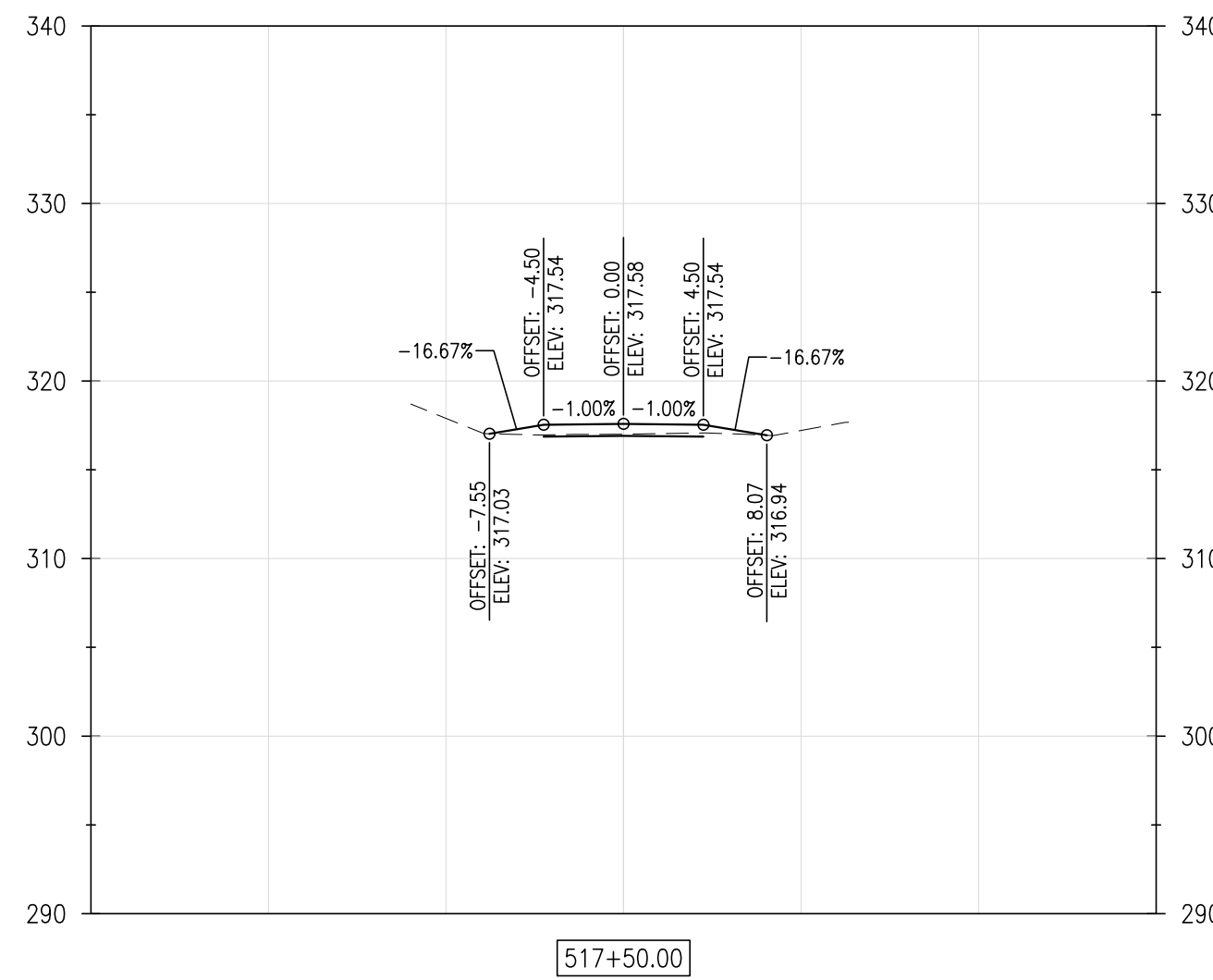
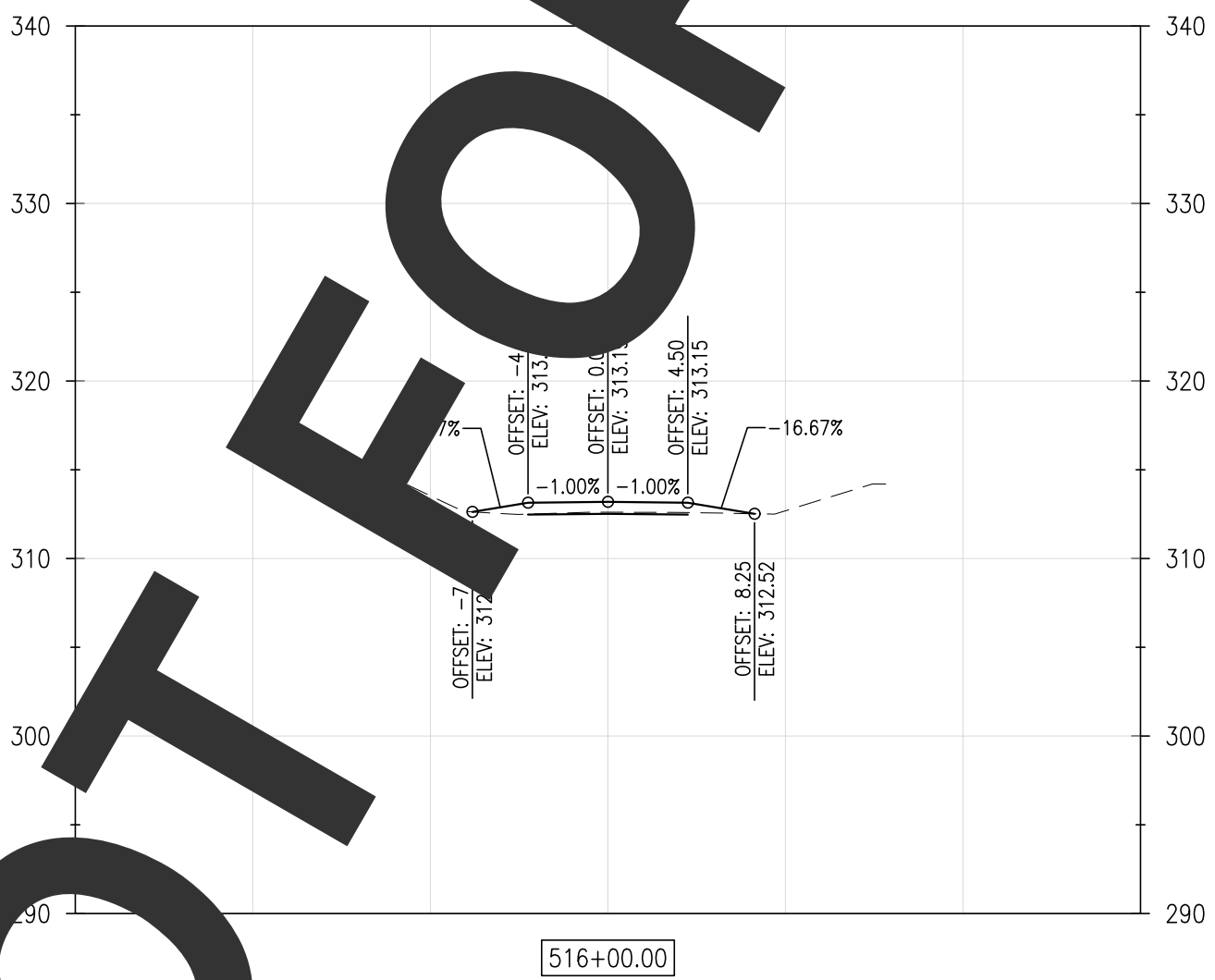
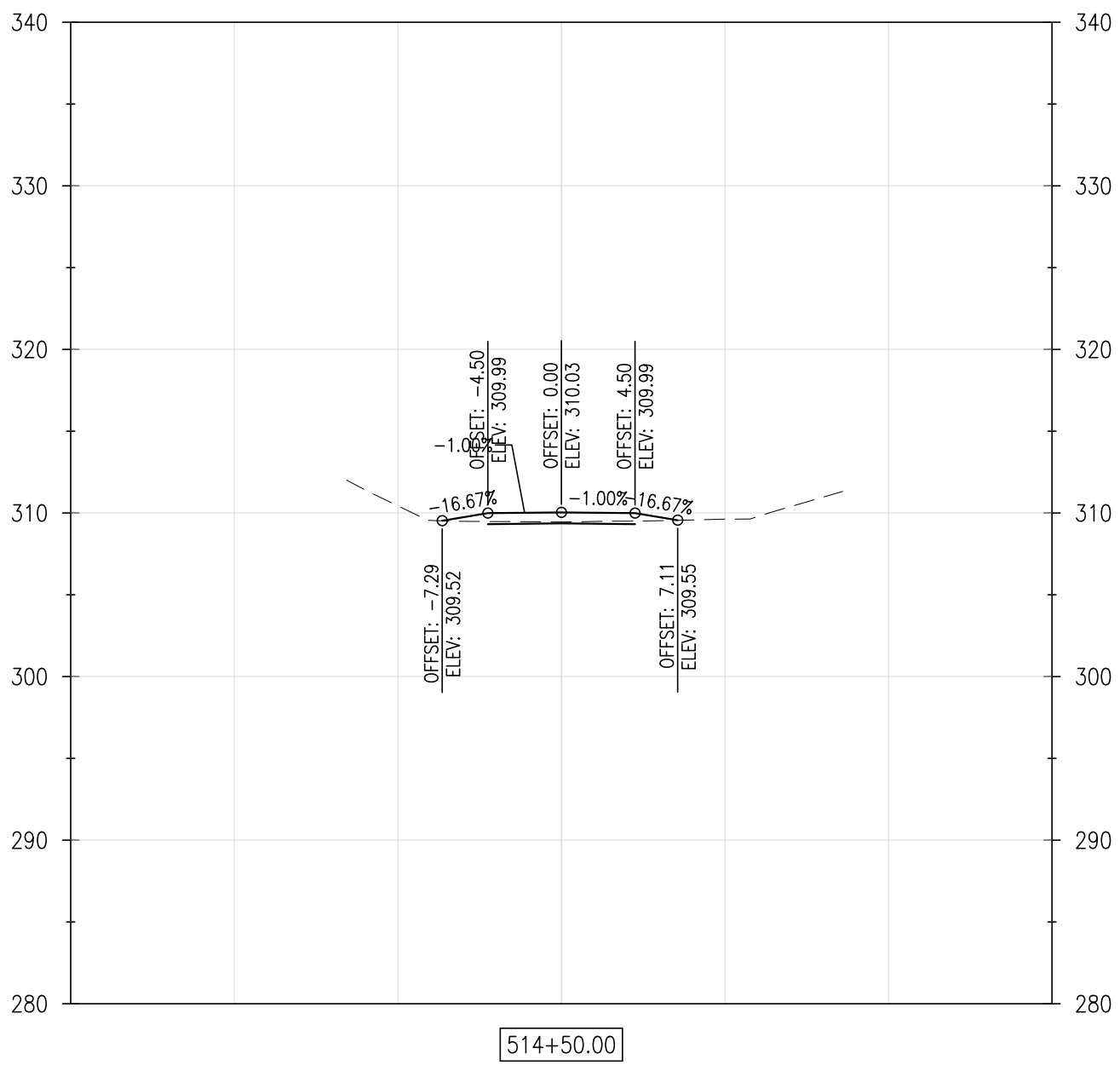
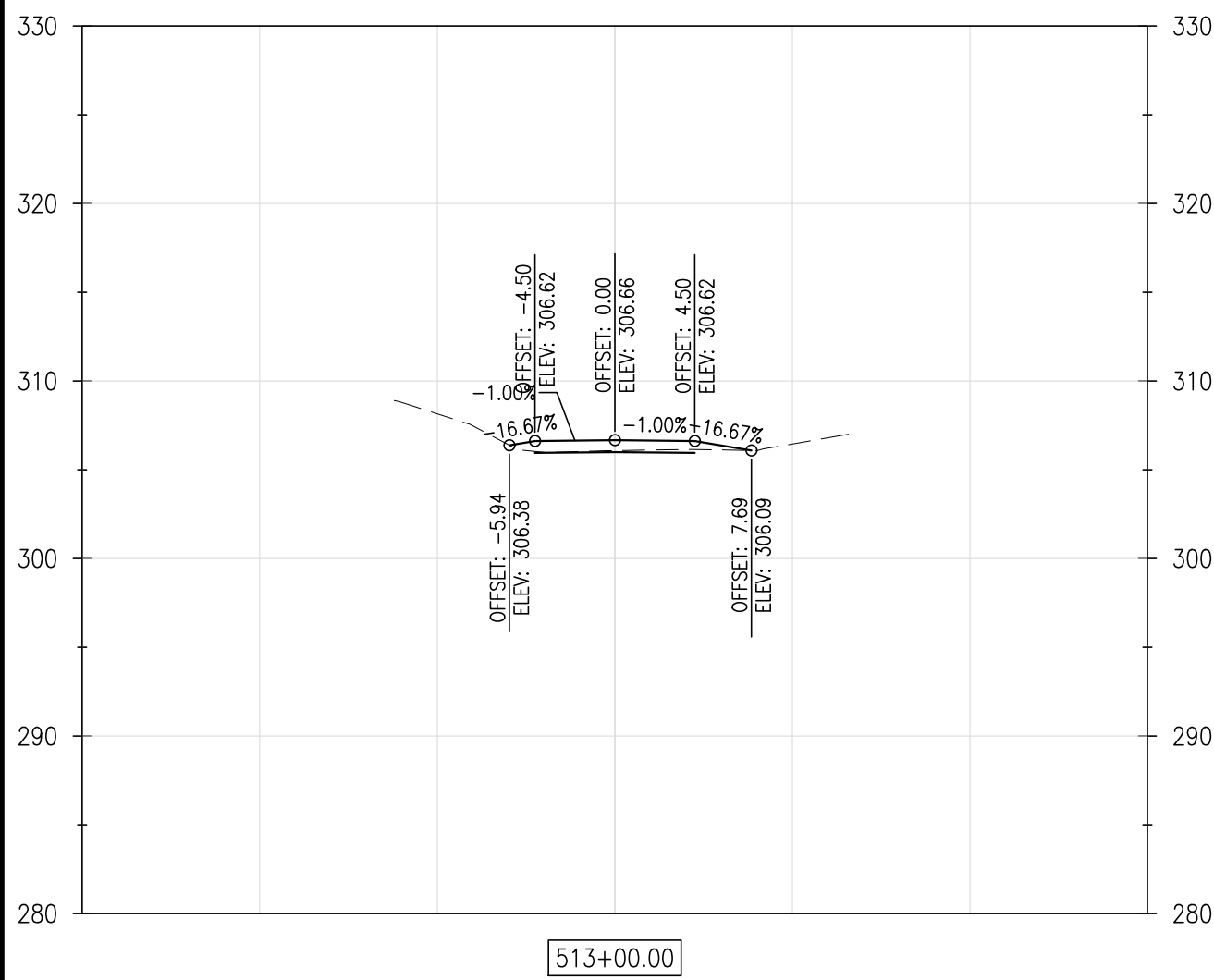
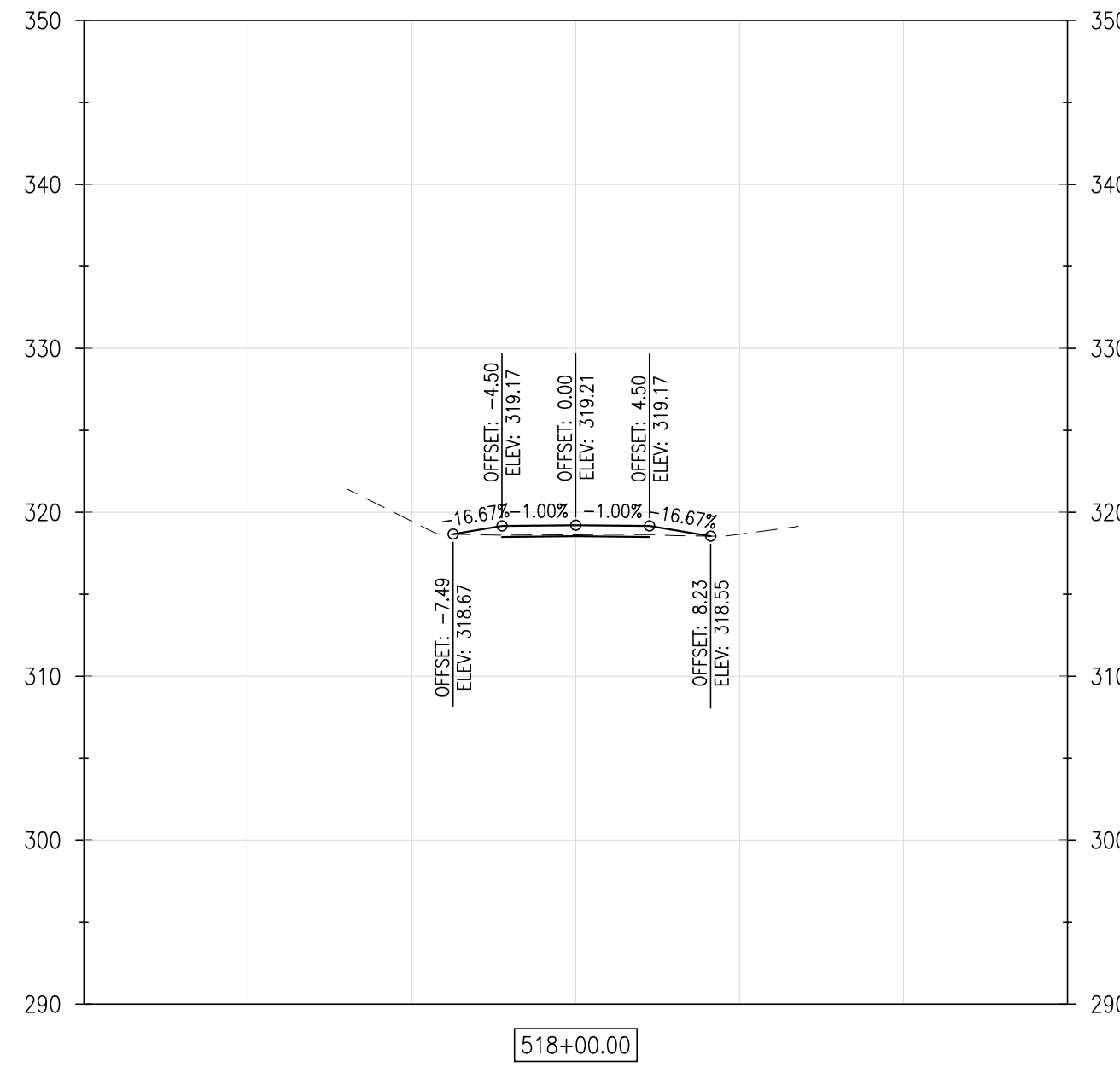
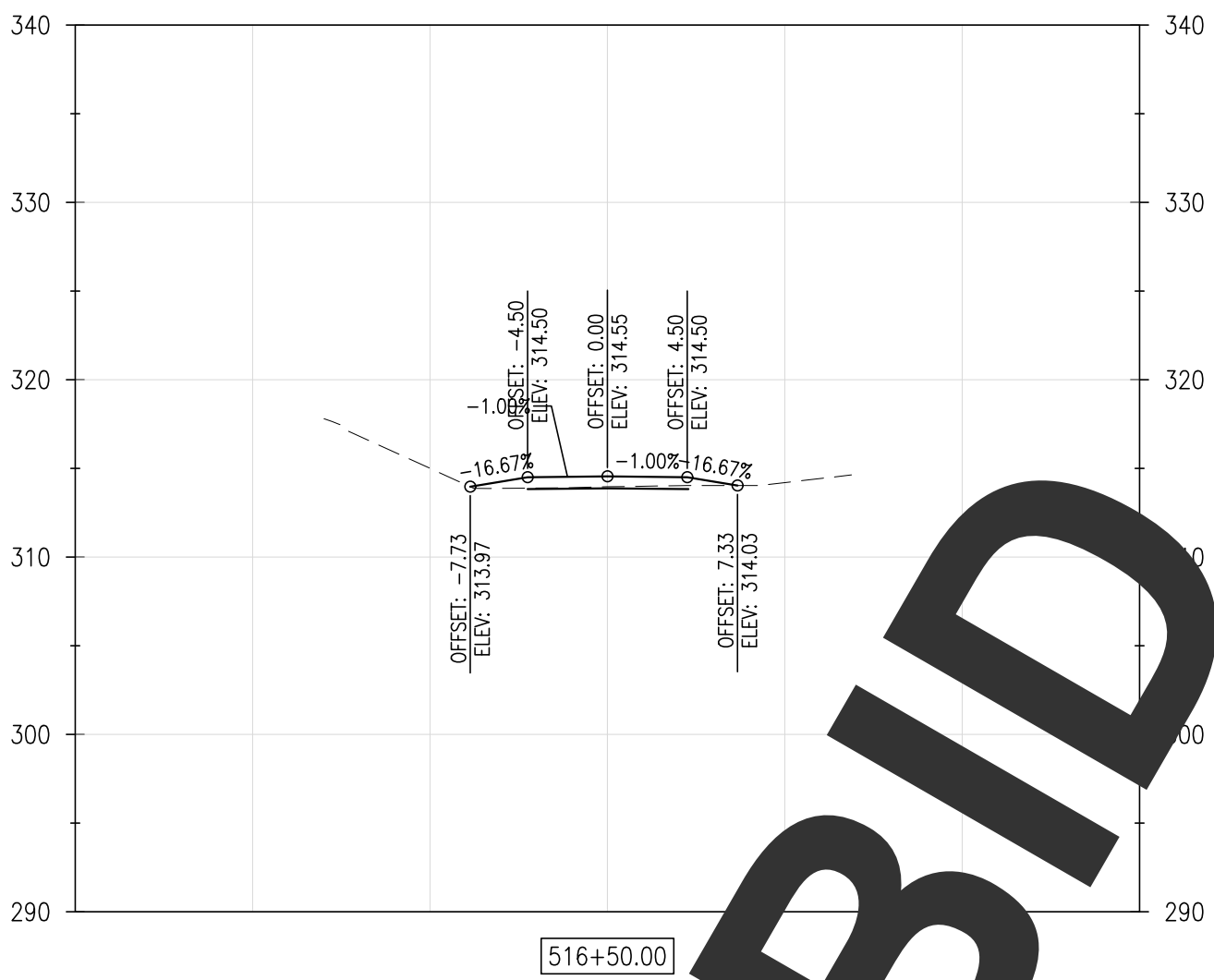
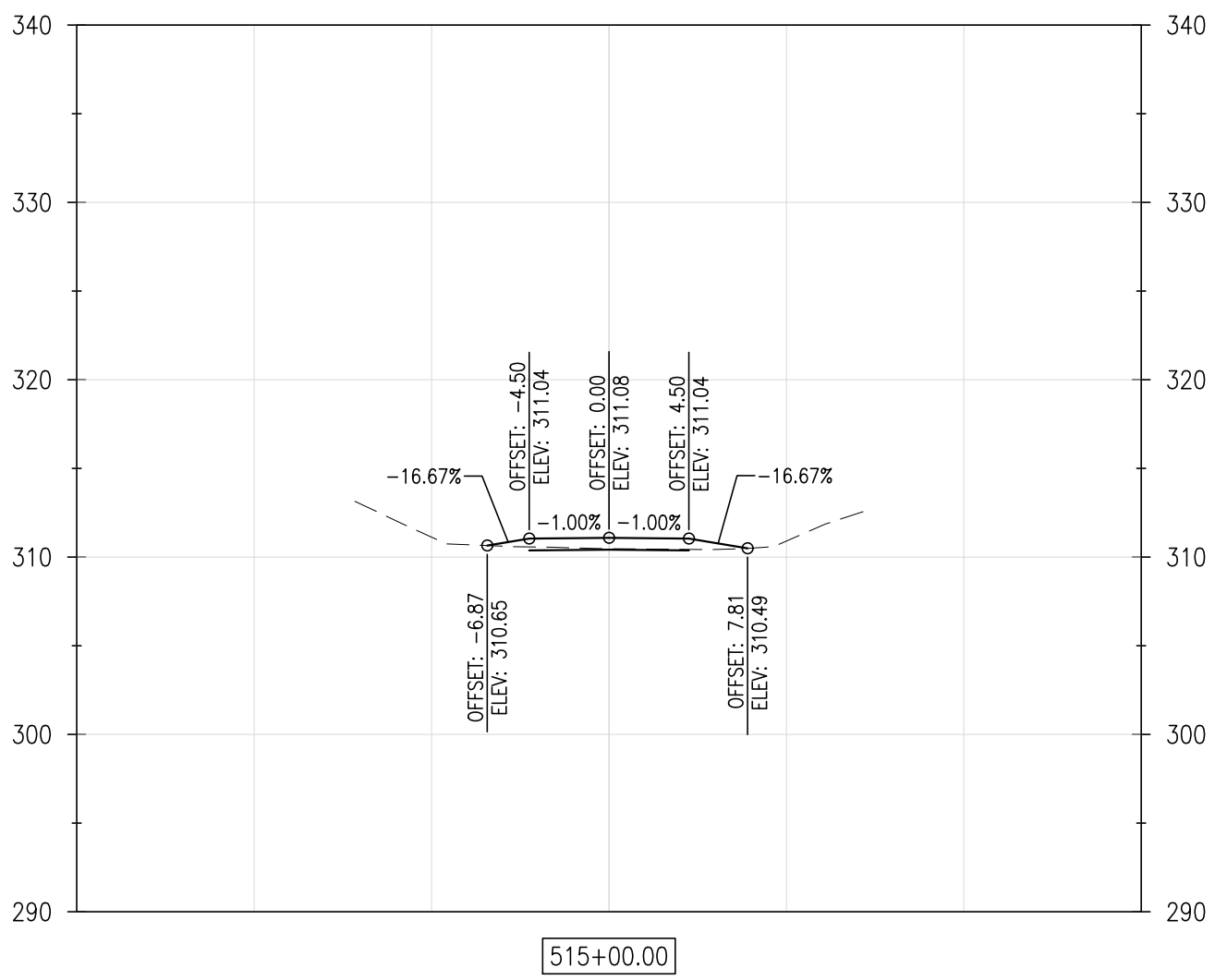
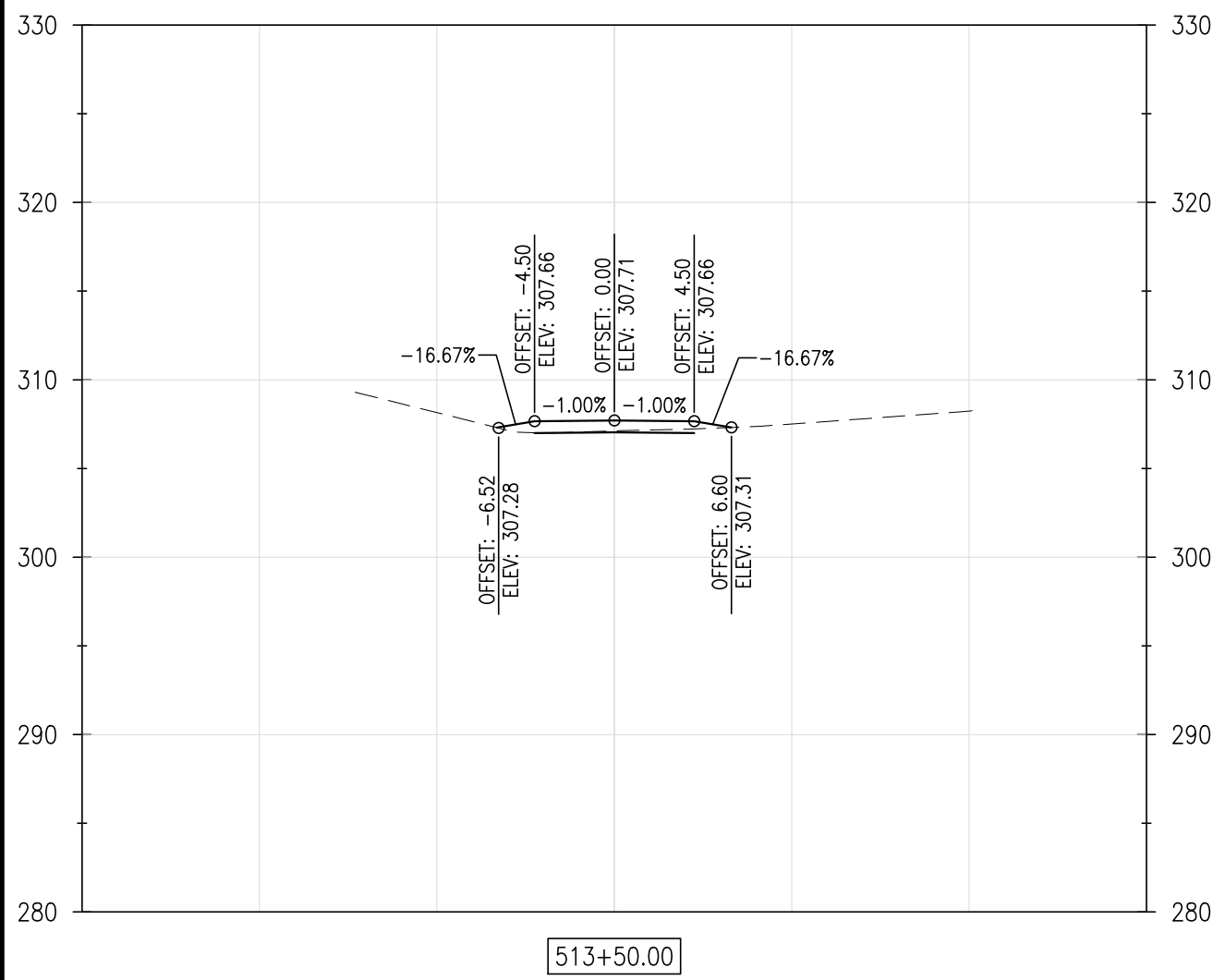
$$1'' = 10'$$

SHEET NO.:

C5.9

CONTRACT NO.:	
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2016-WCCSP-100



NOT FOR BID

REVISIONS:

DATE: DESCRIPTION: BY:

WCCSP TRI-VALLEY TRAIL

BID SET

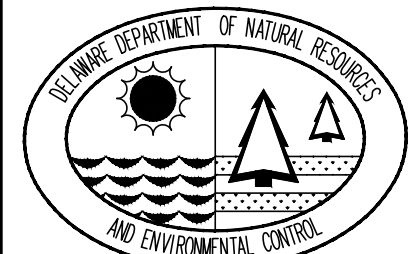
CROSS SECTIONS

SEAL:

CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE:

SEPTEMBER 7, 2016

SCALE:

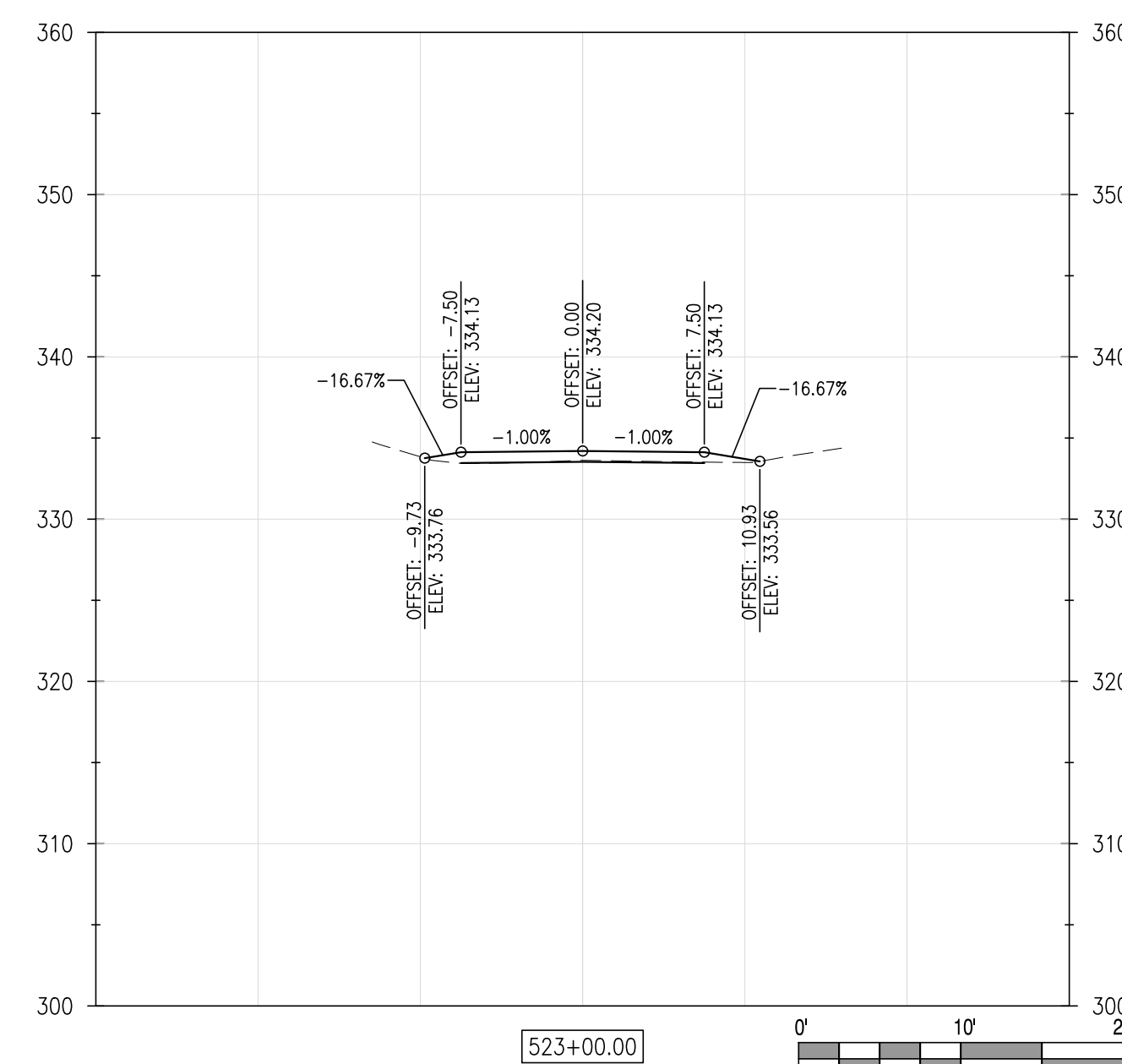
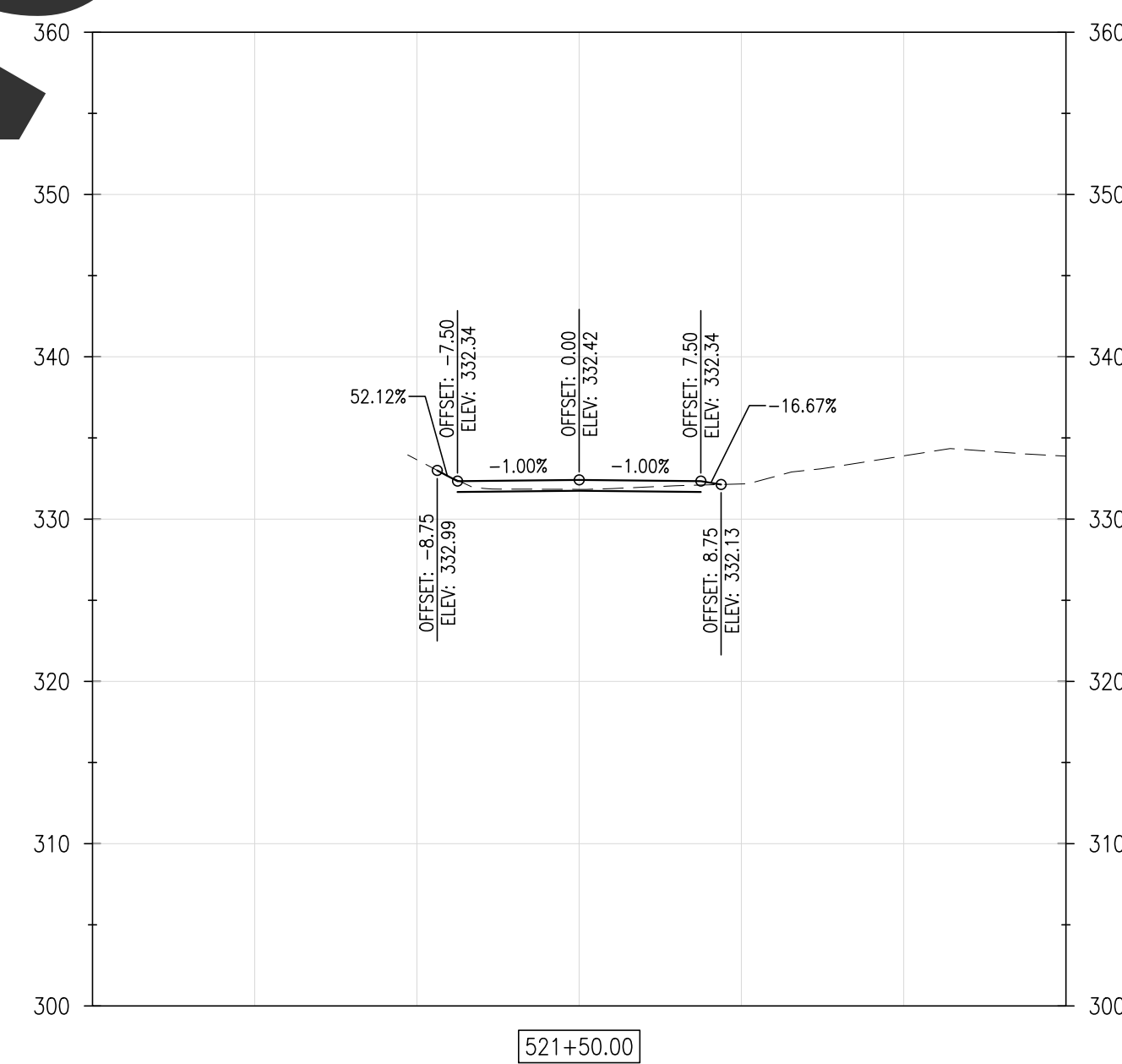
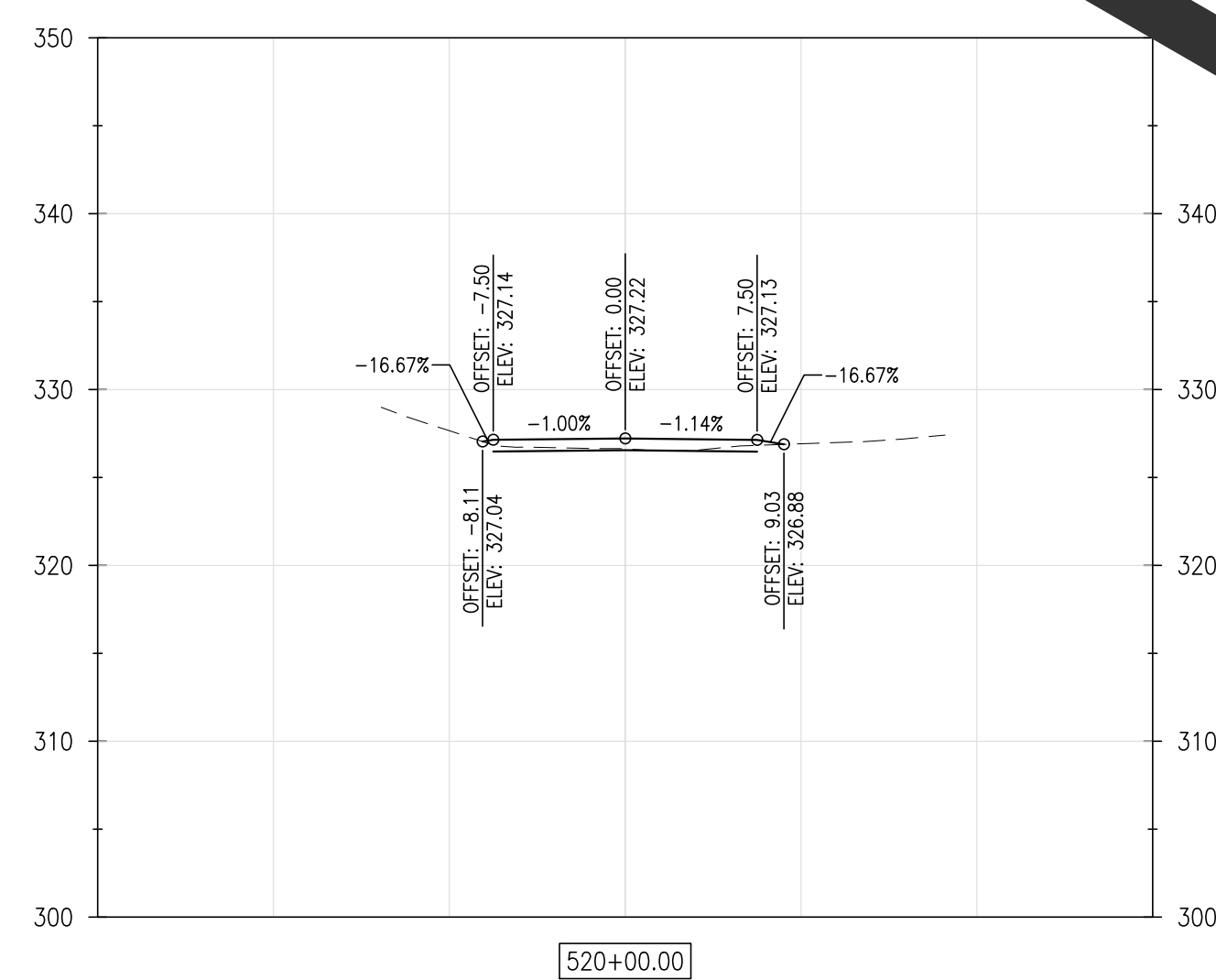
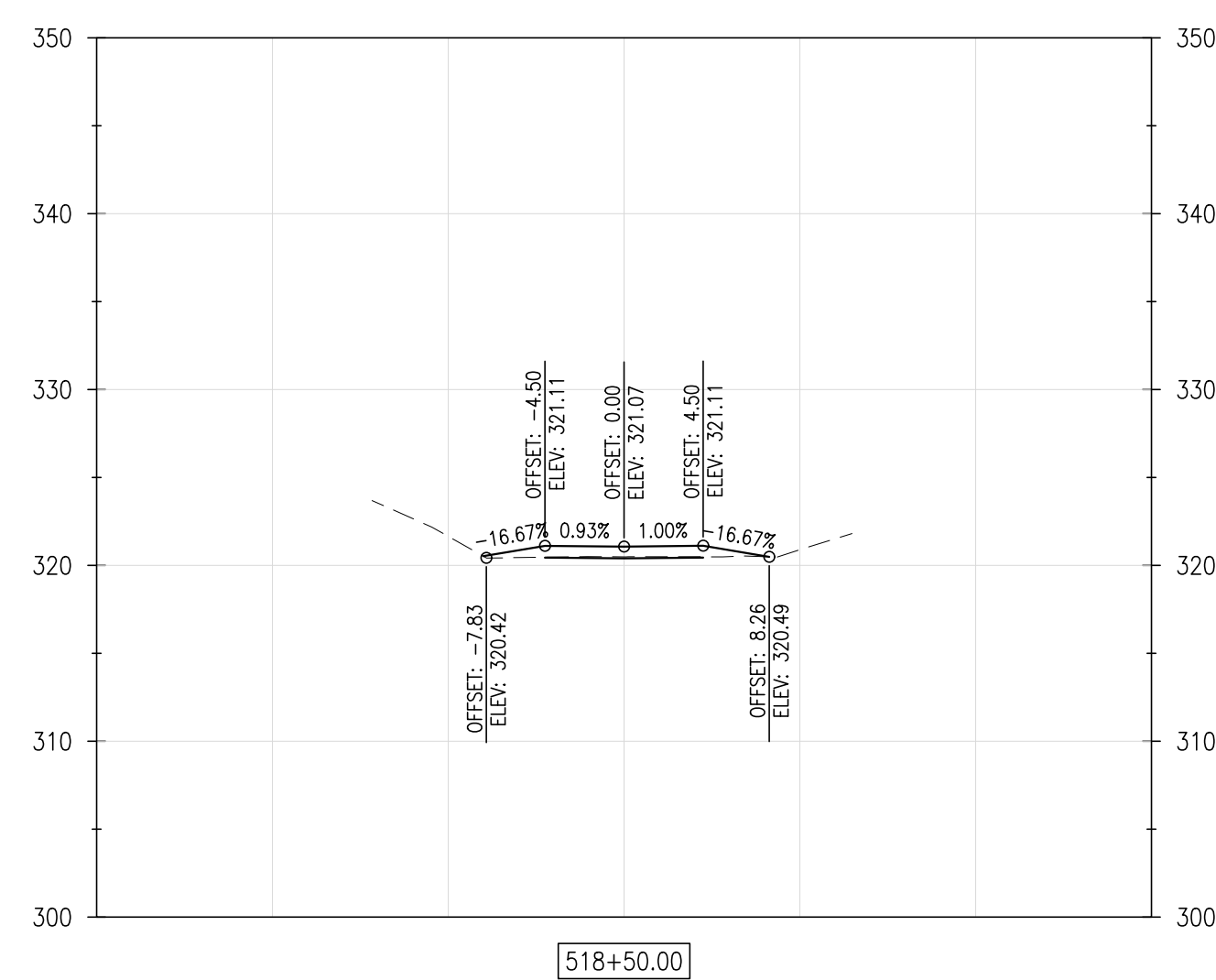
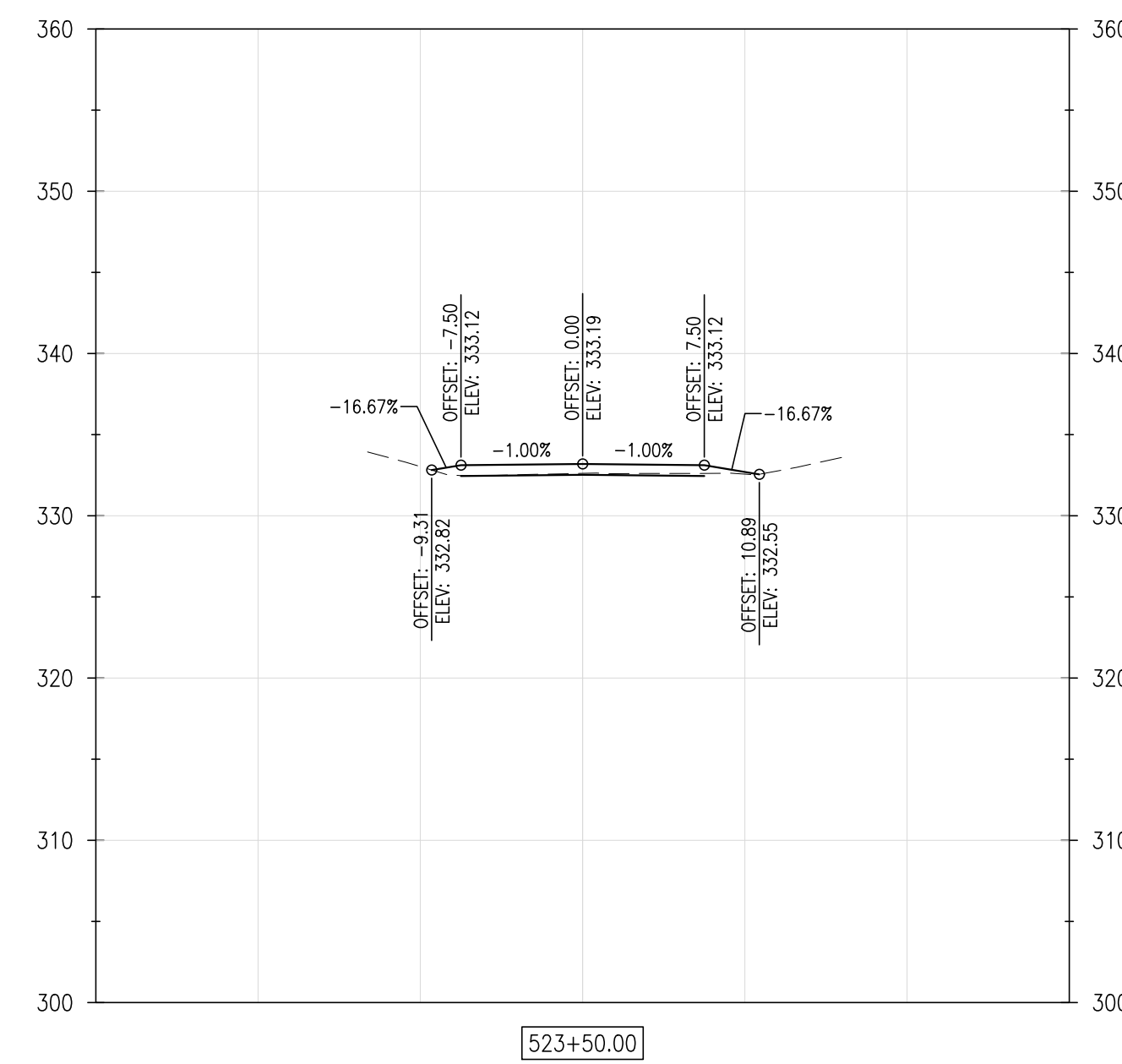
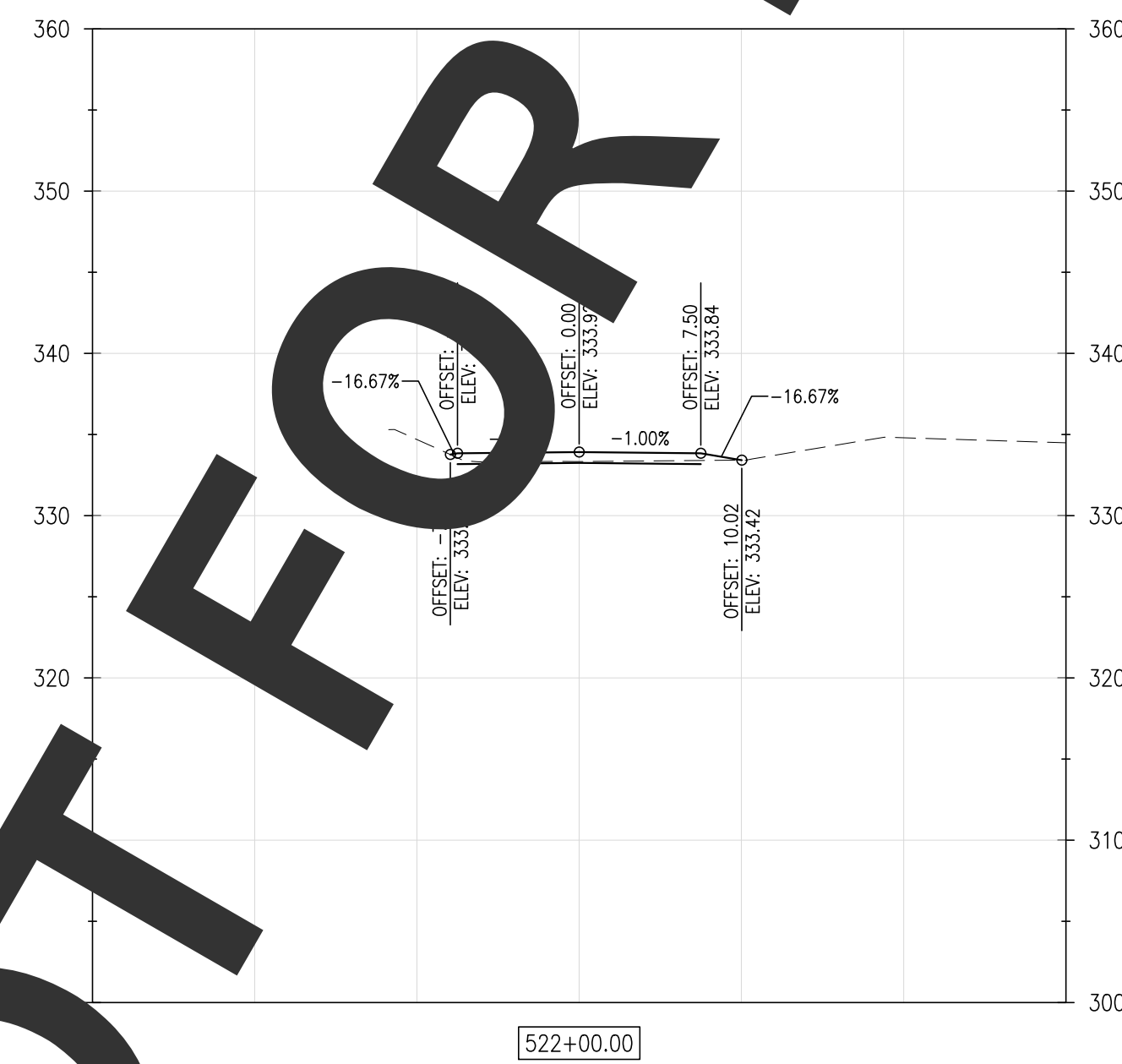
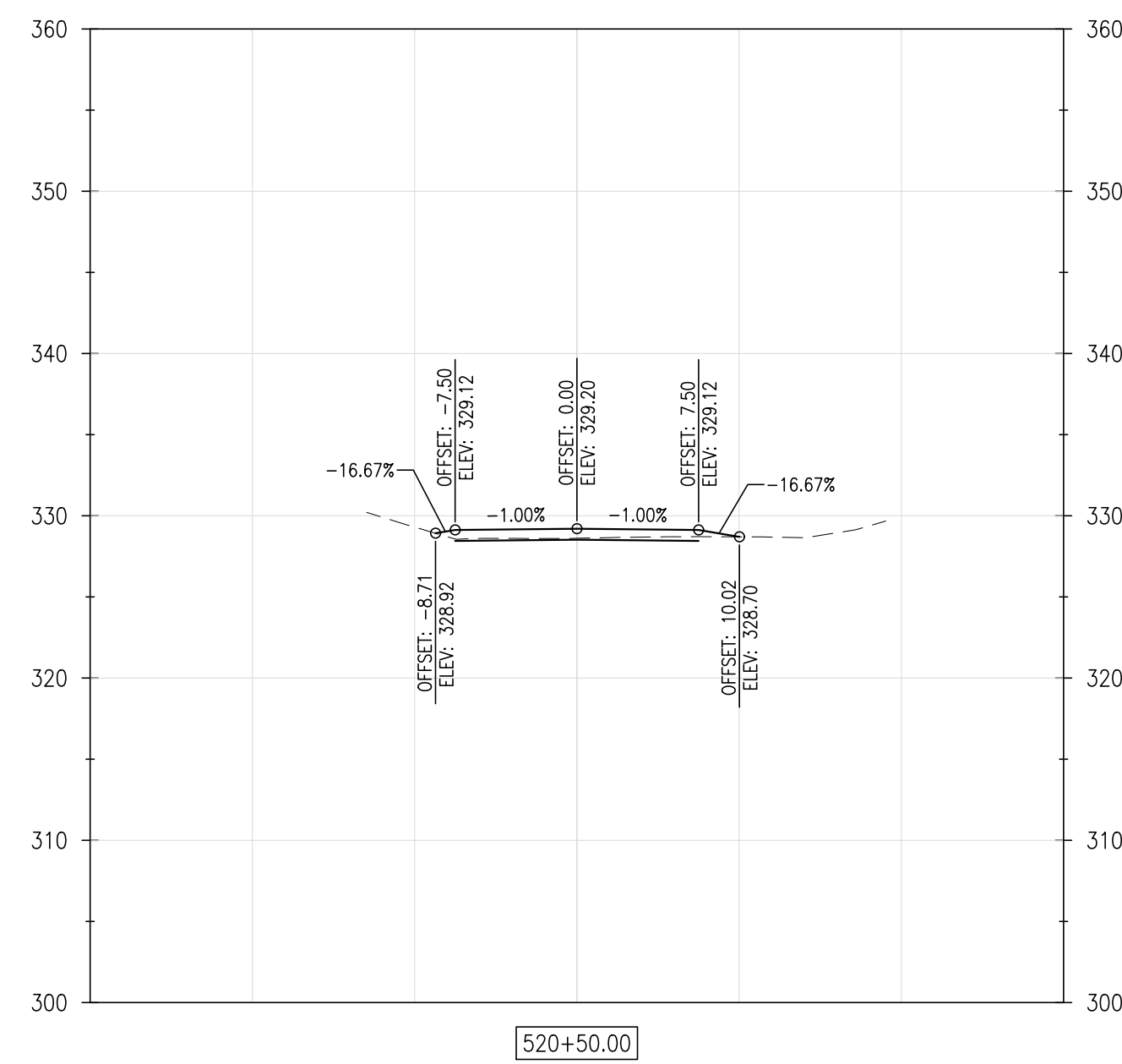
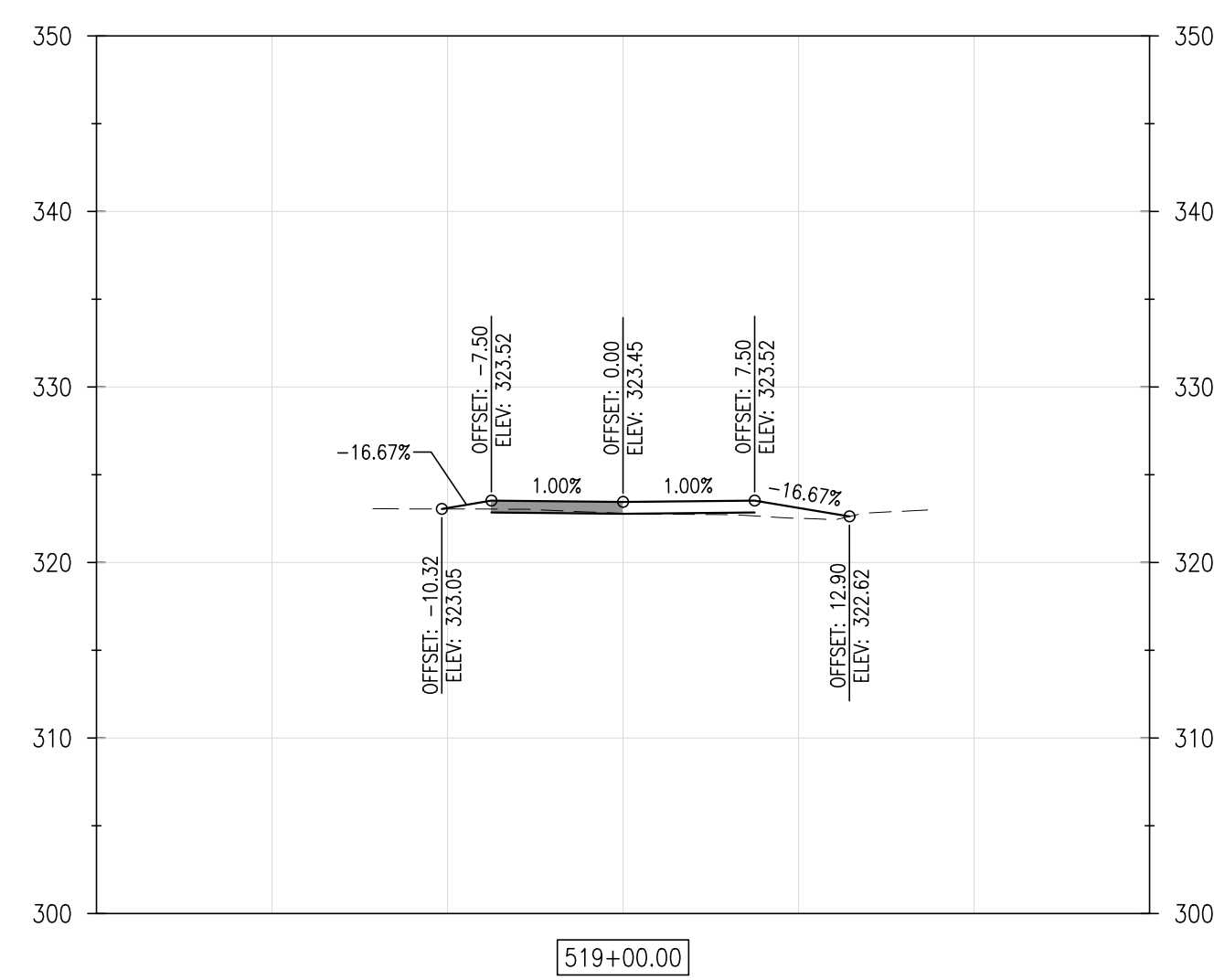
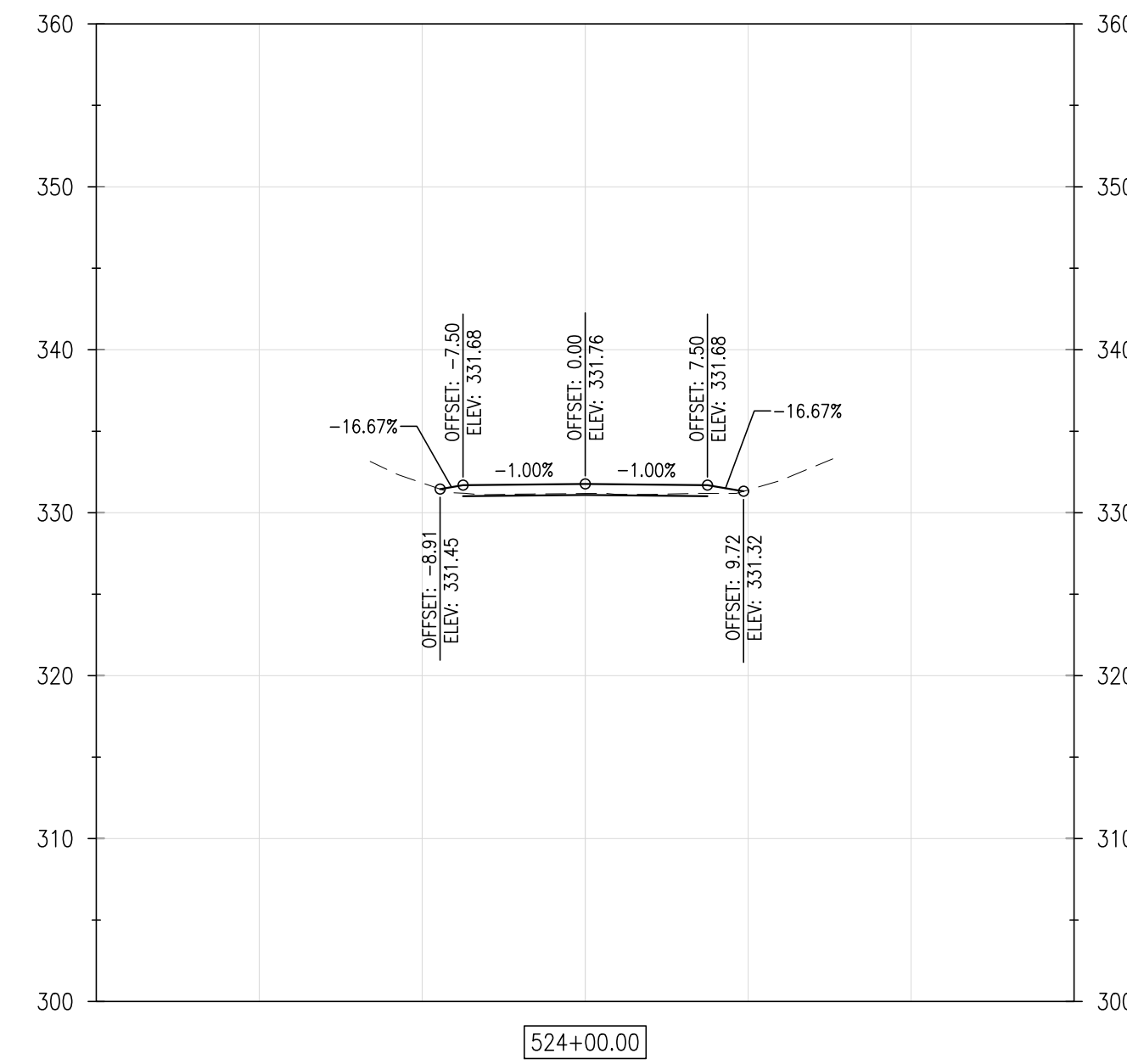
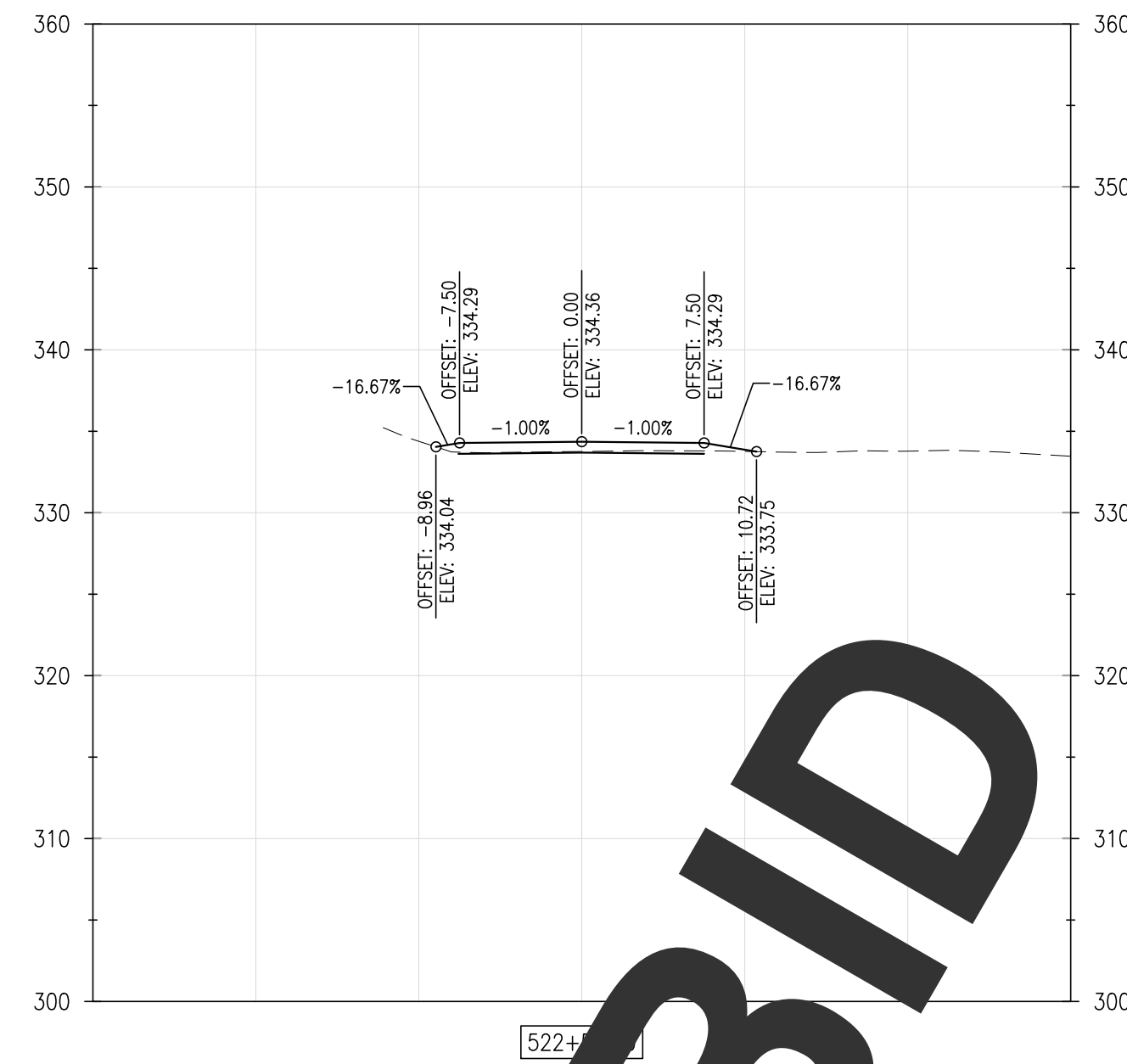
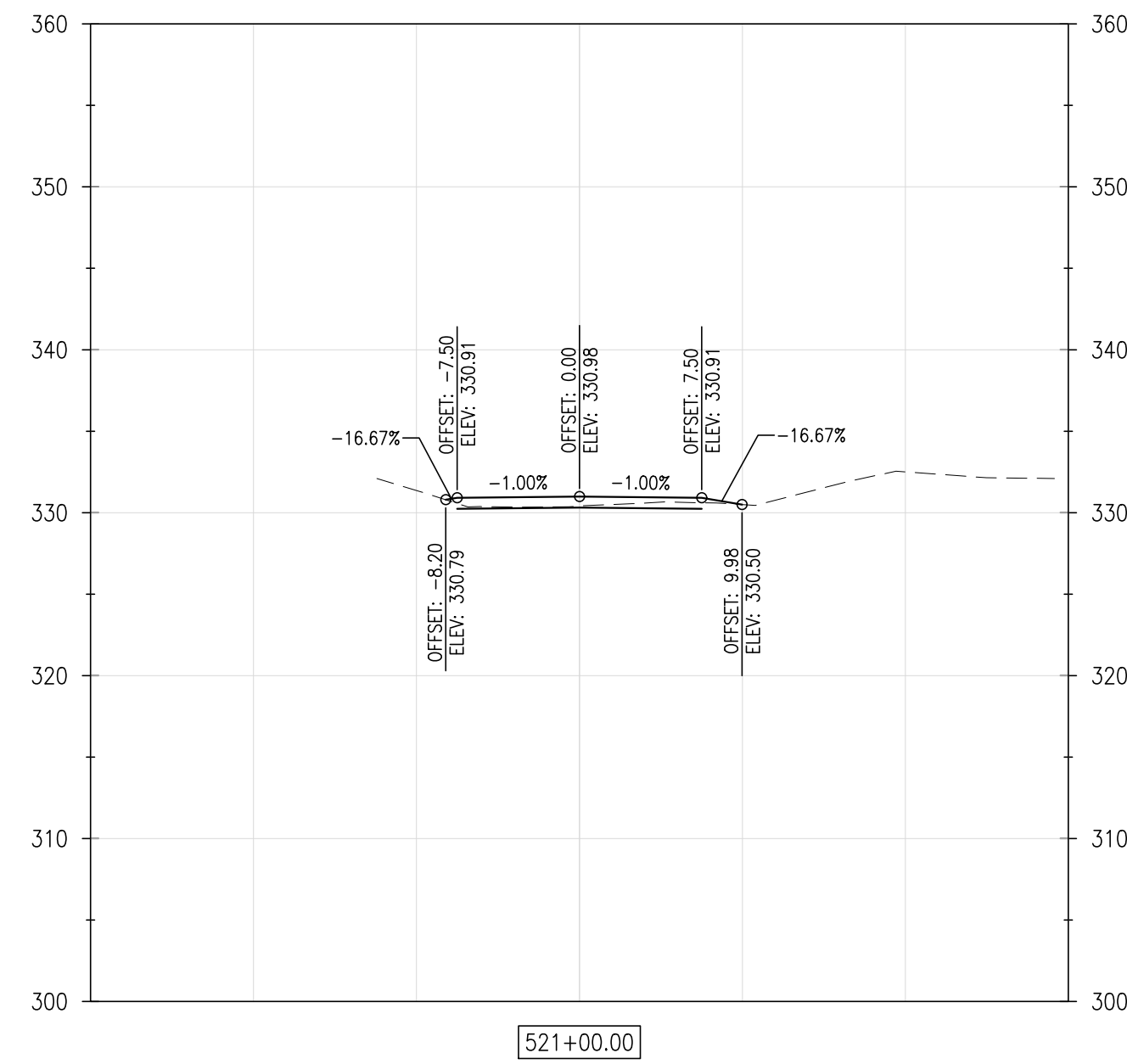
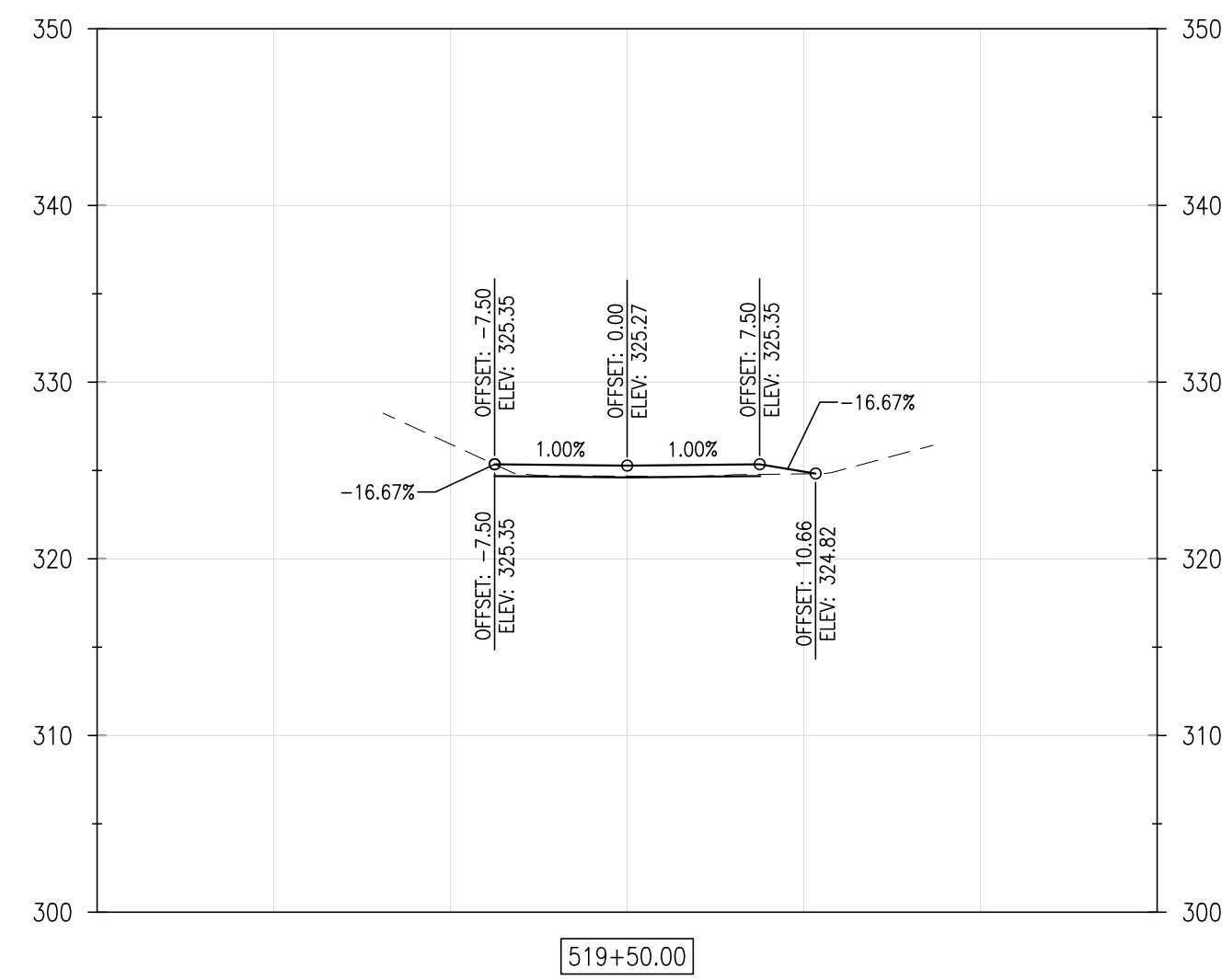
1" = 10'

SHEET NO.:

C5.10

CONTRACT NO.:

2016-WCCSP-100



REVISIONS:

DATE: _____ DESCRIPTION: _____

DESCRIPTION:

BY:

WCCSP TRI-VALLEY TRAIL

BID SET

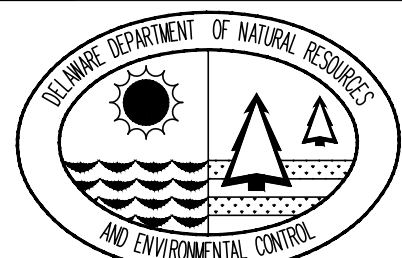
CROSS SECTIONS

SEAL:

CIVIL ENGINEER:



CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE: _____

EMBER 7, 2016

SCALE:

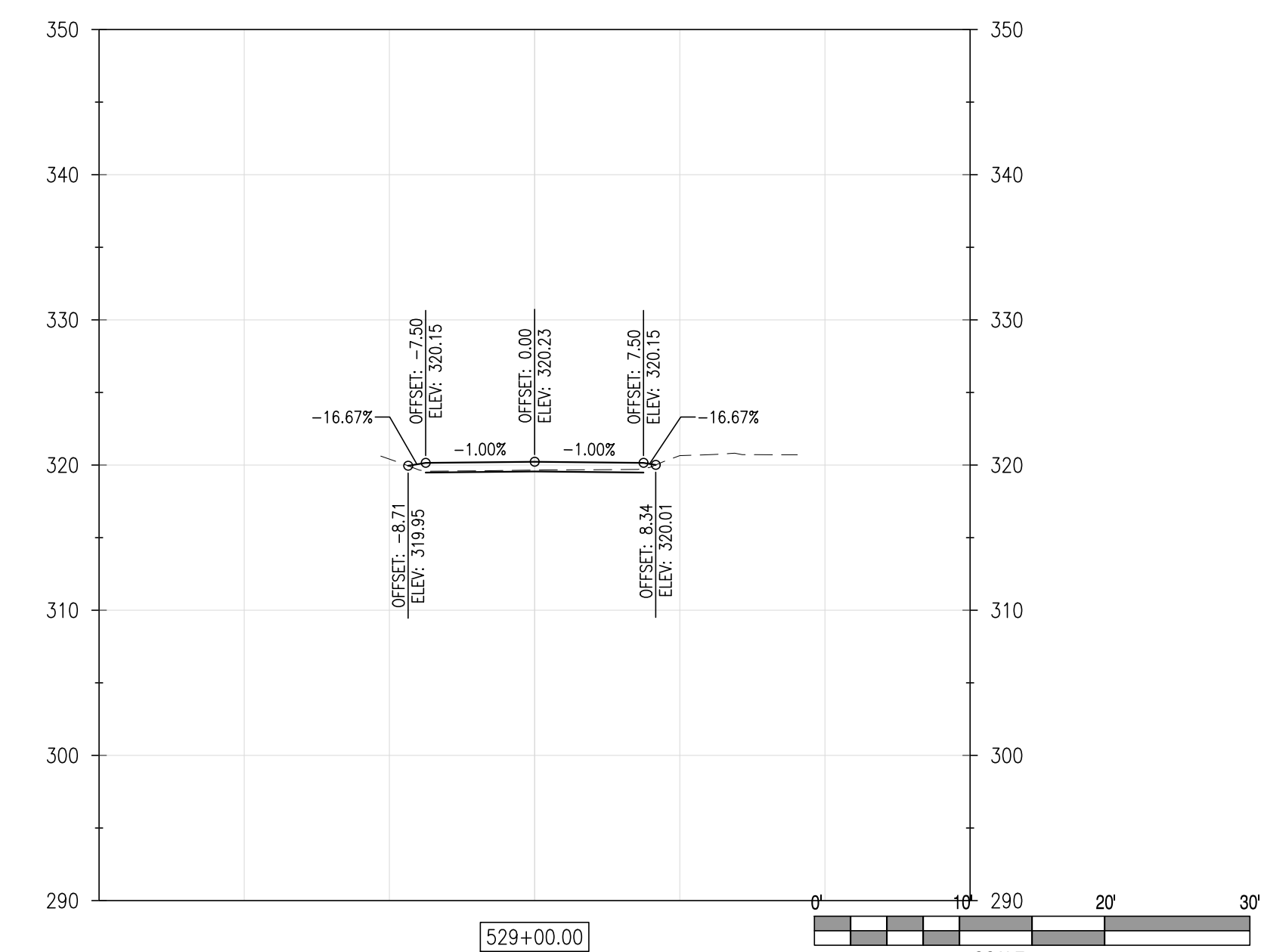
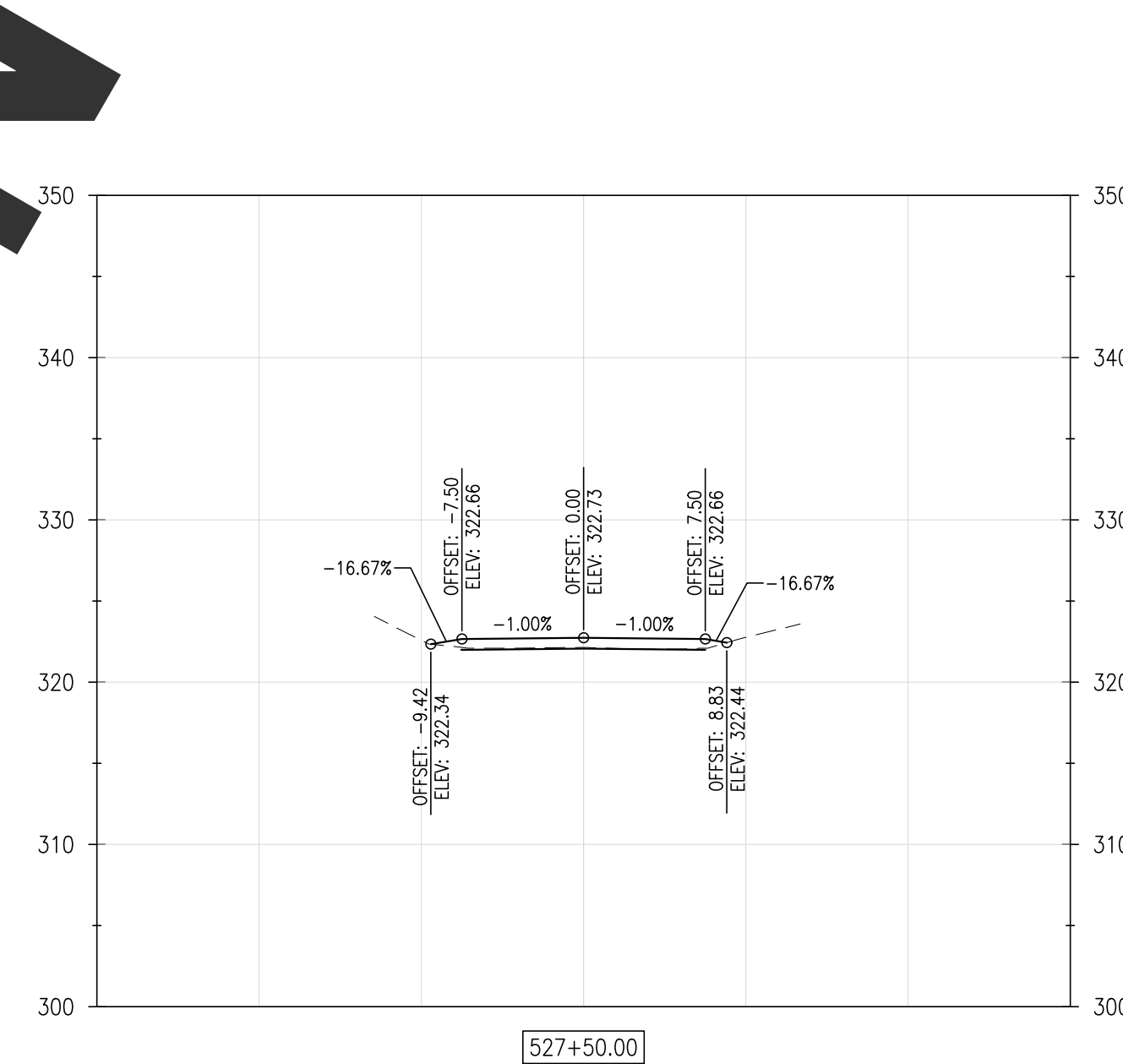
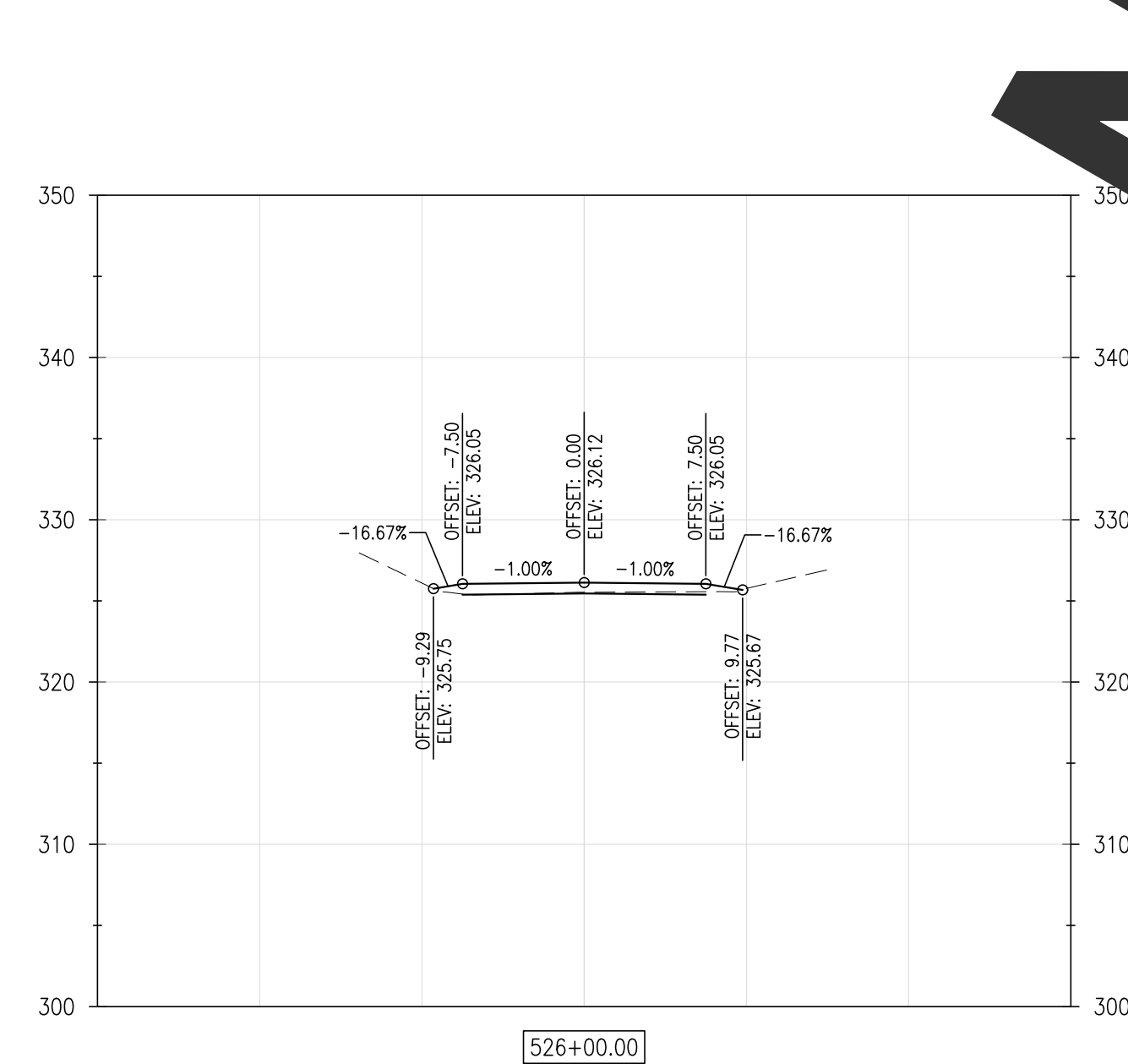
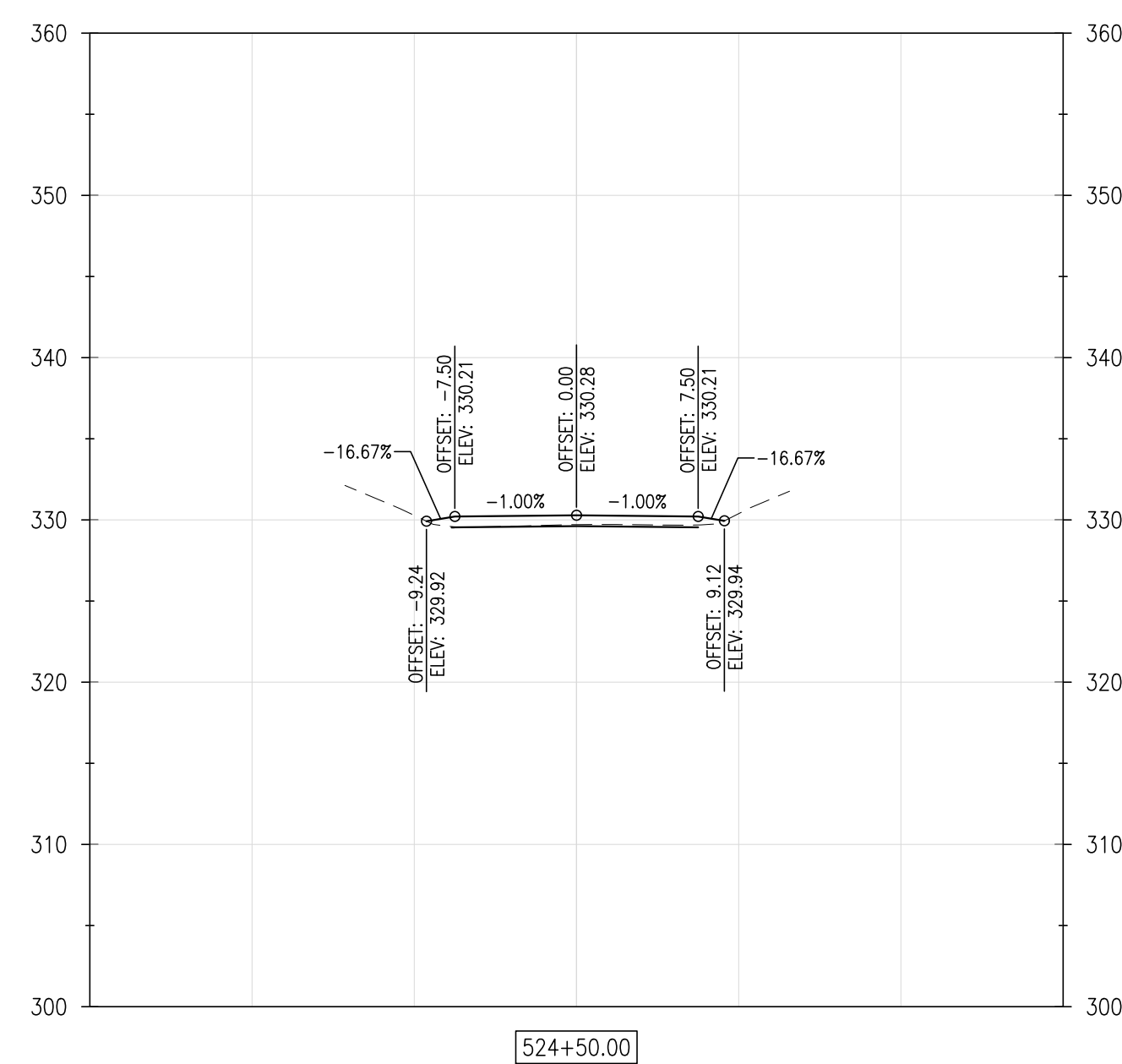
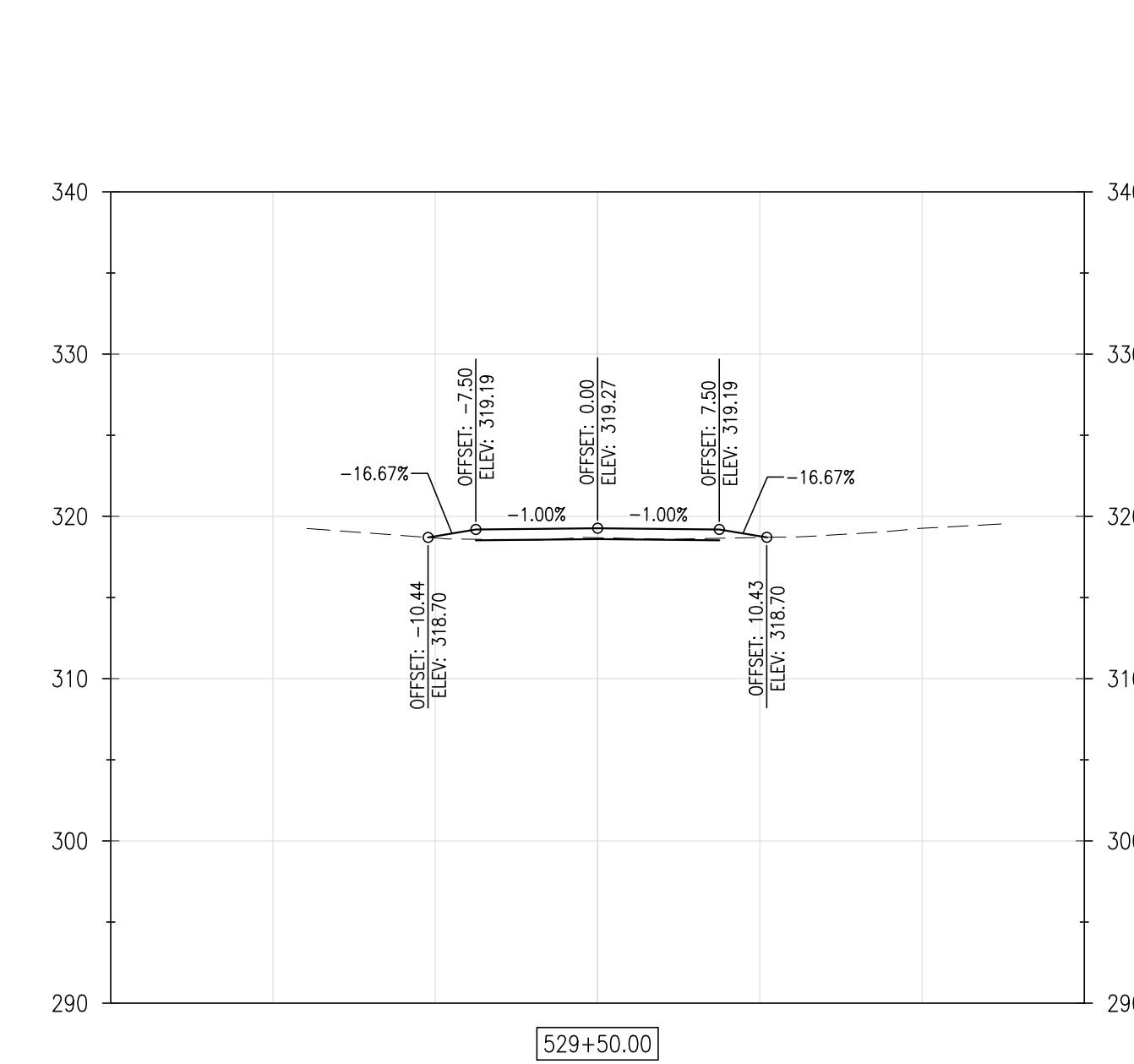
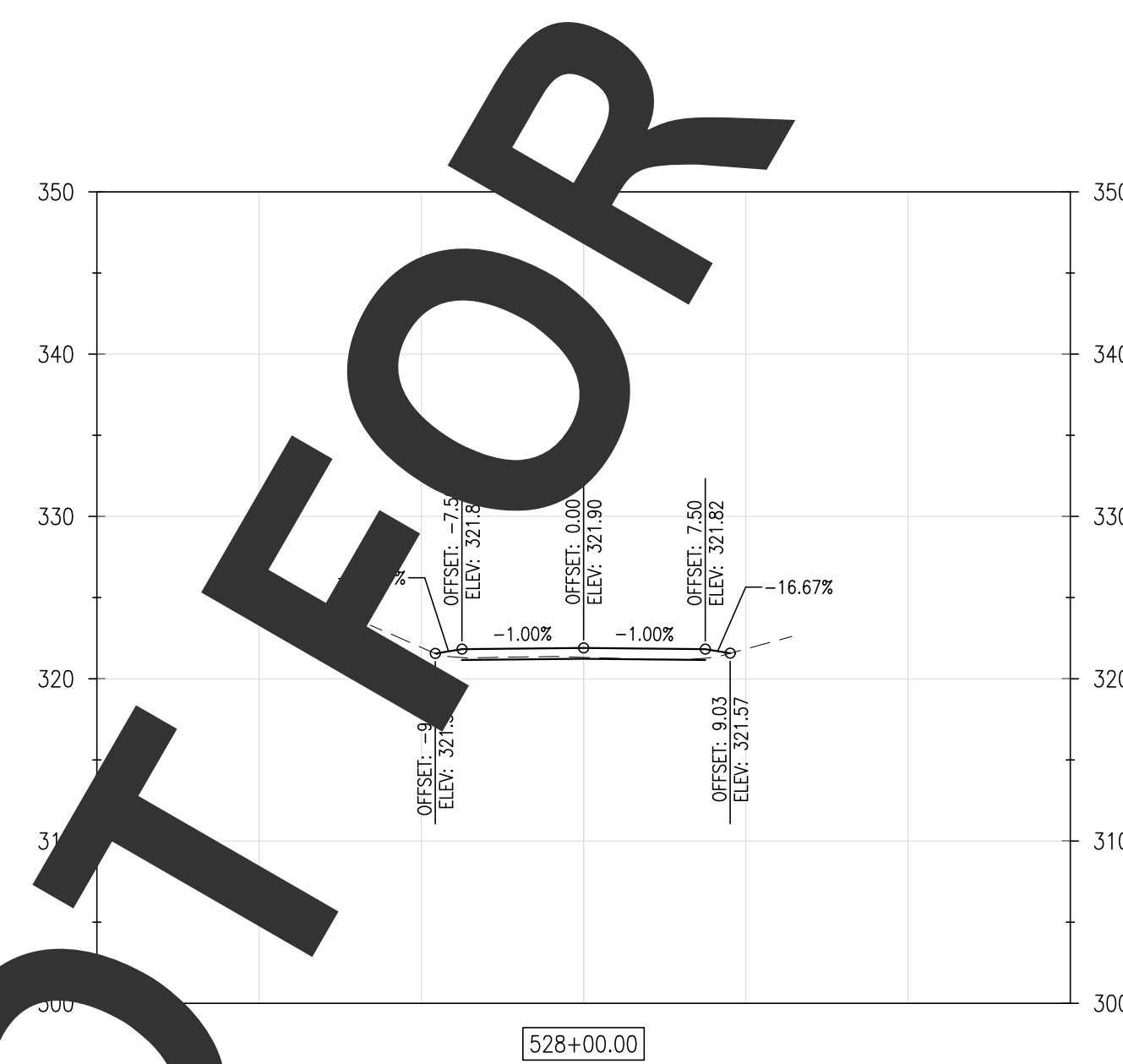
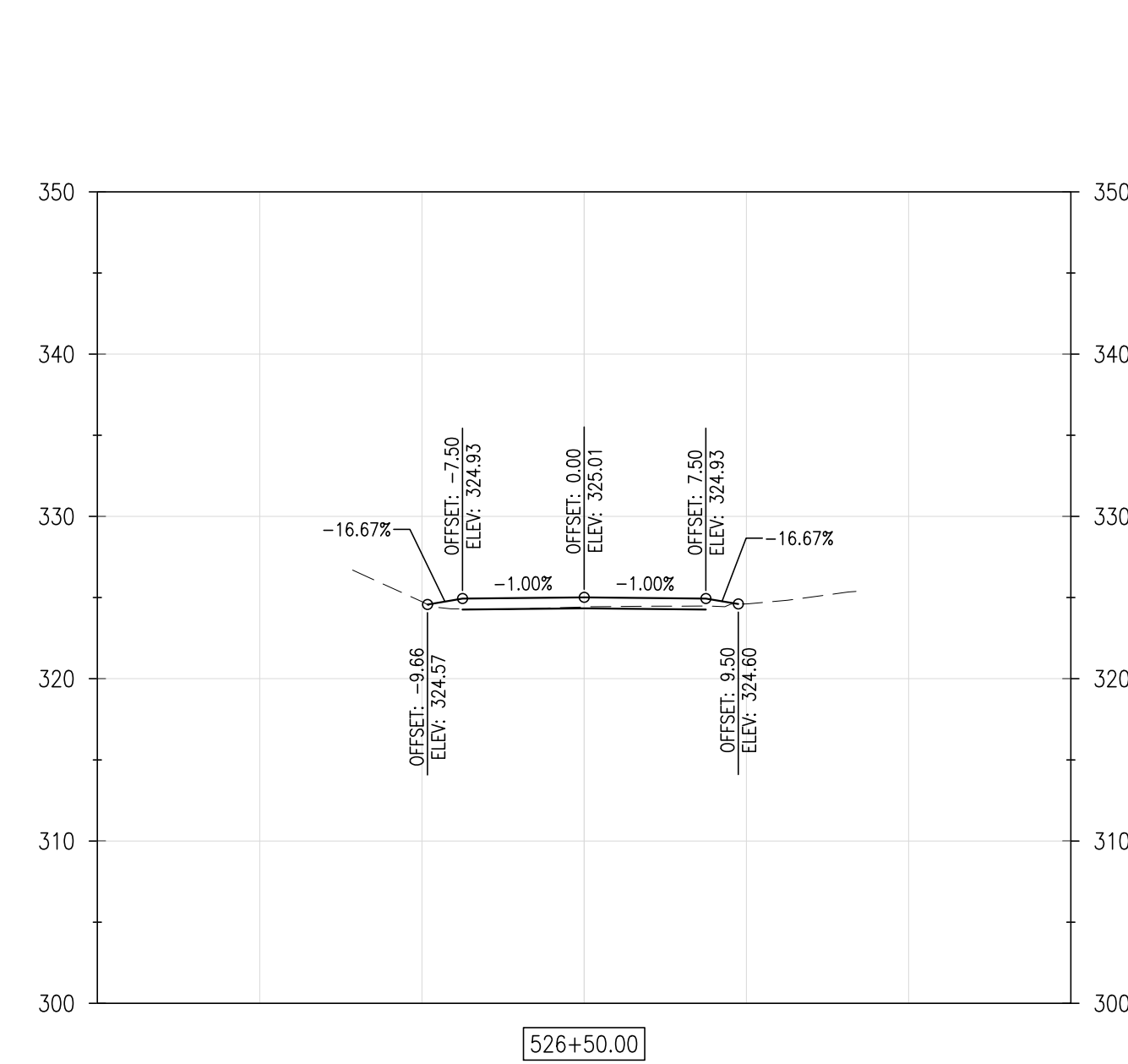
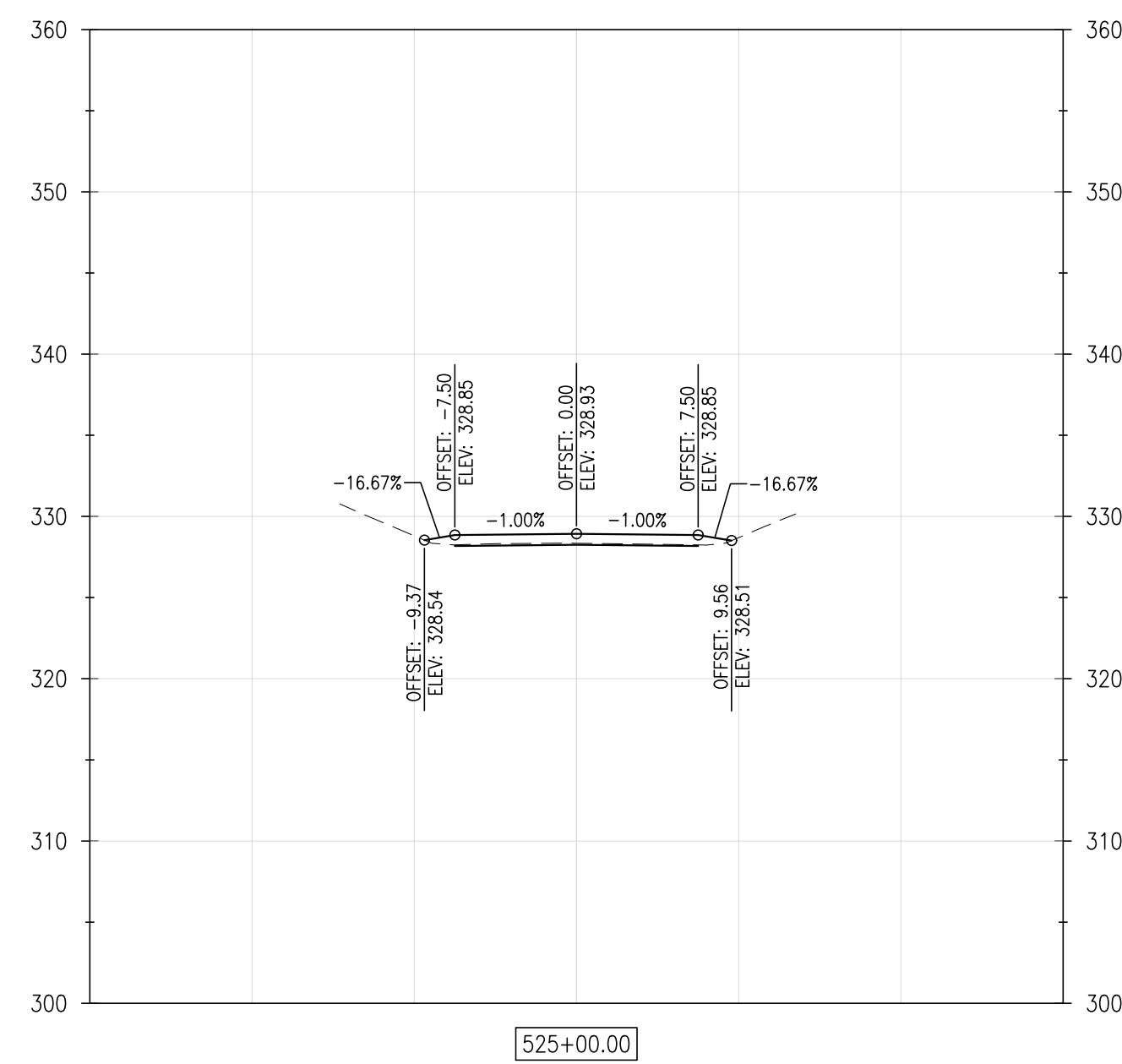
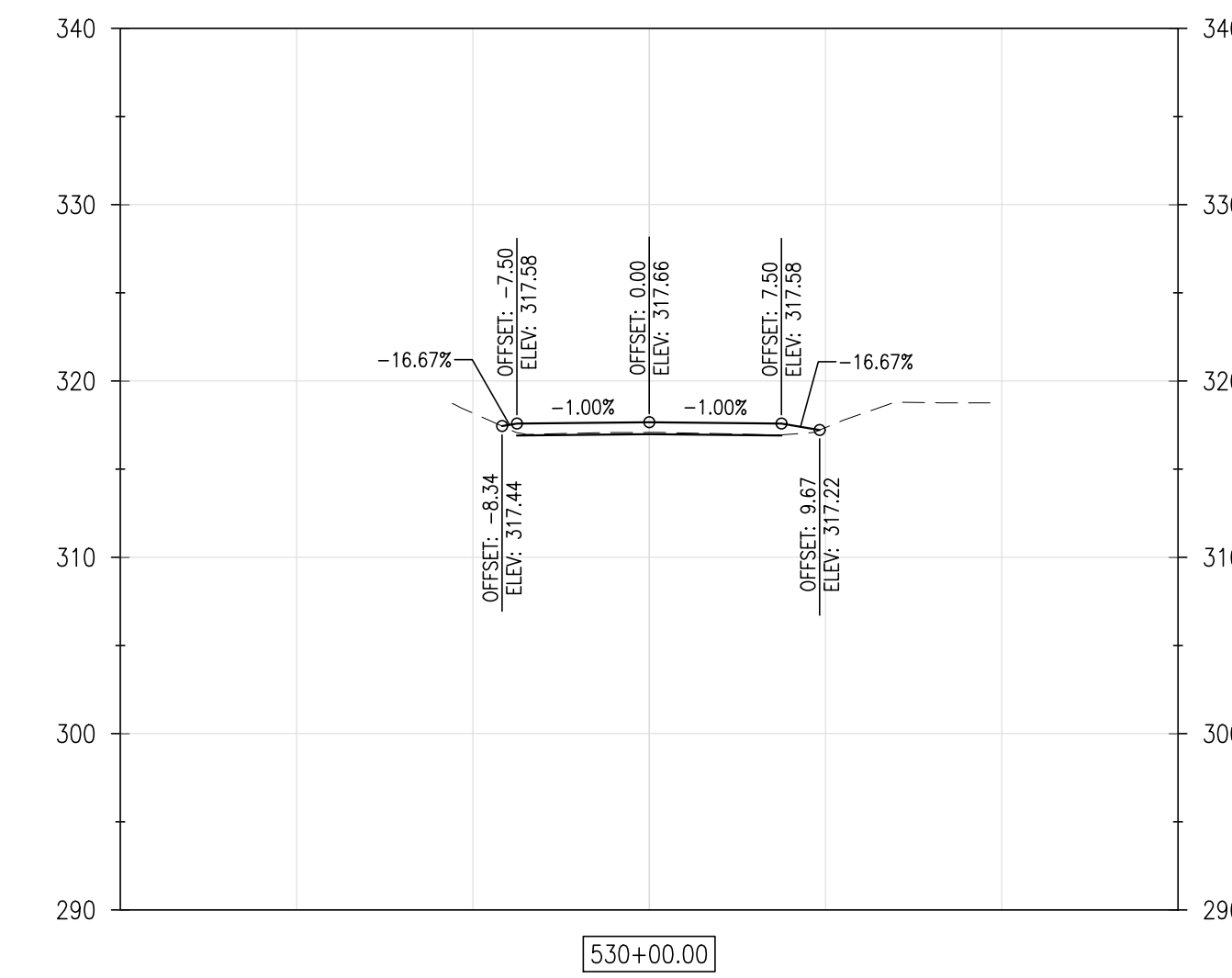
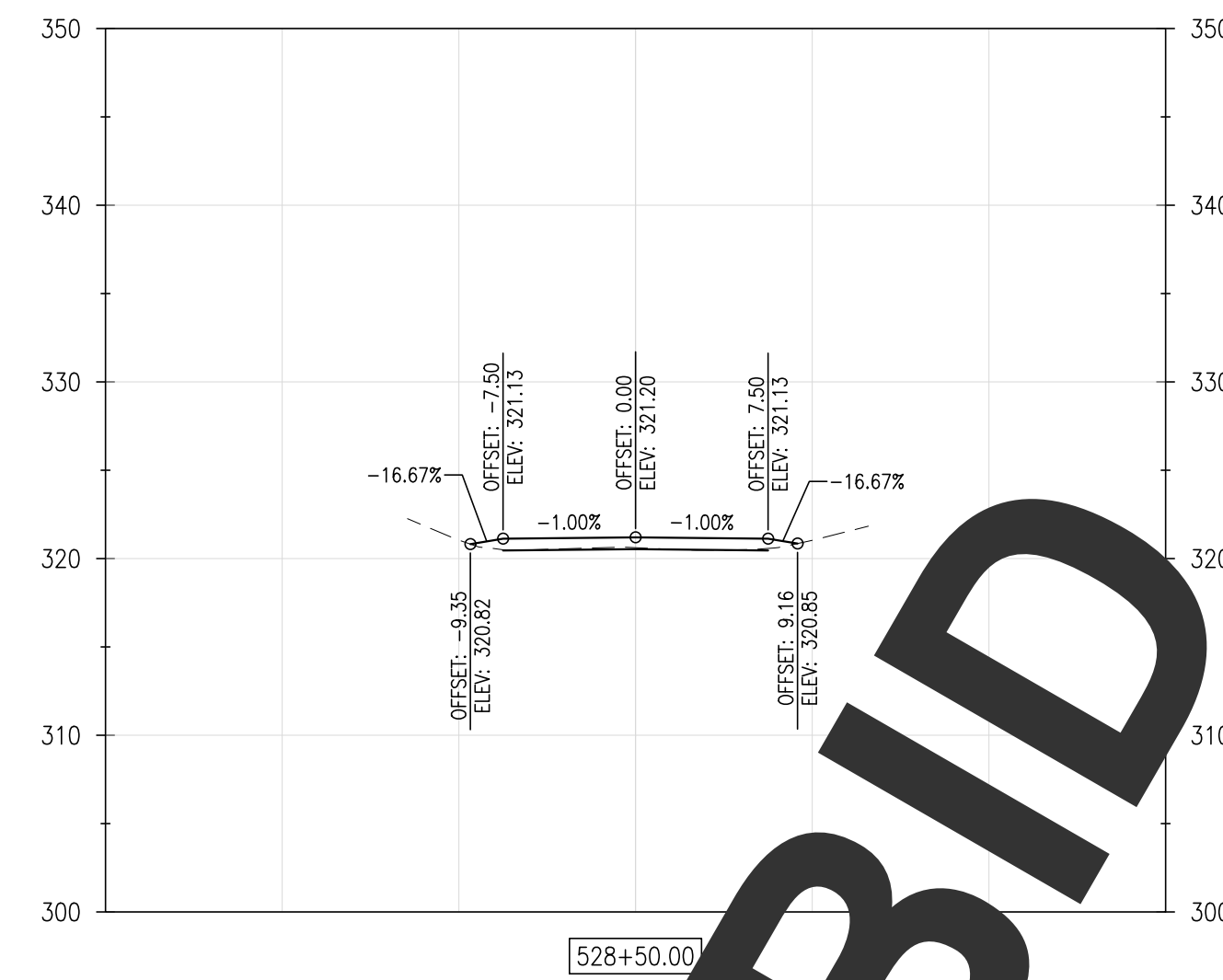
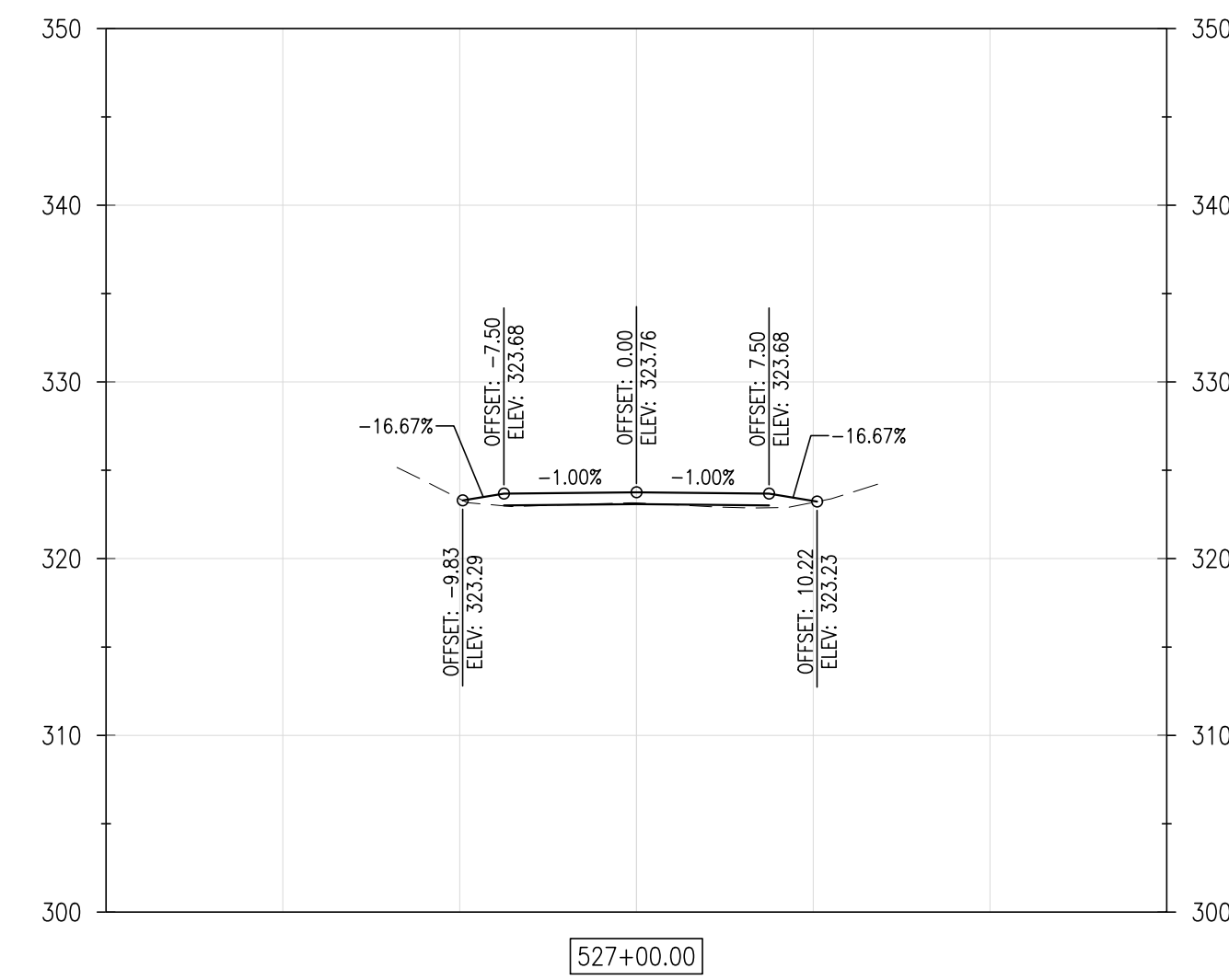
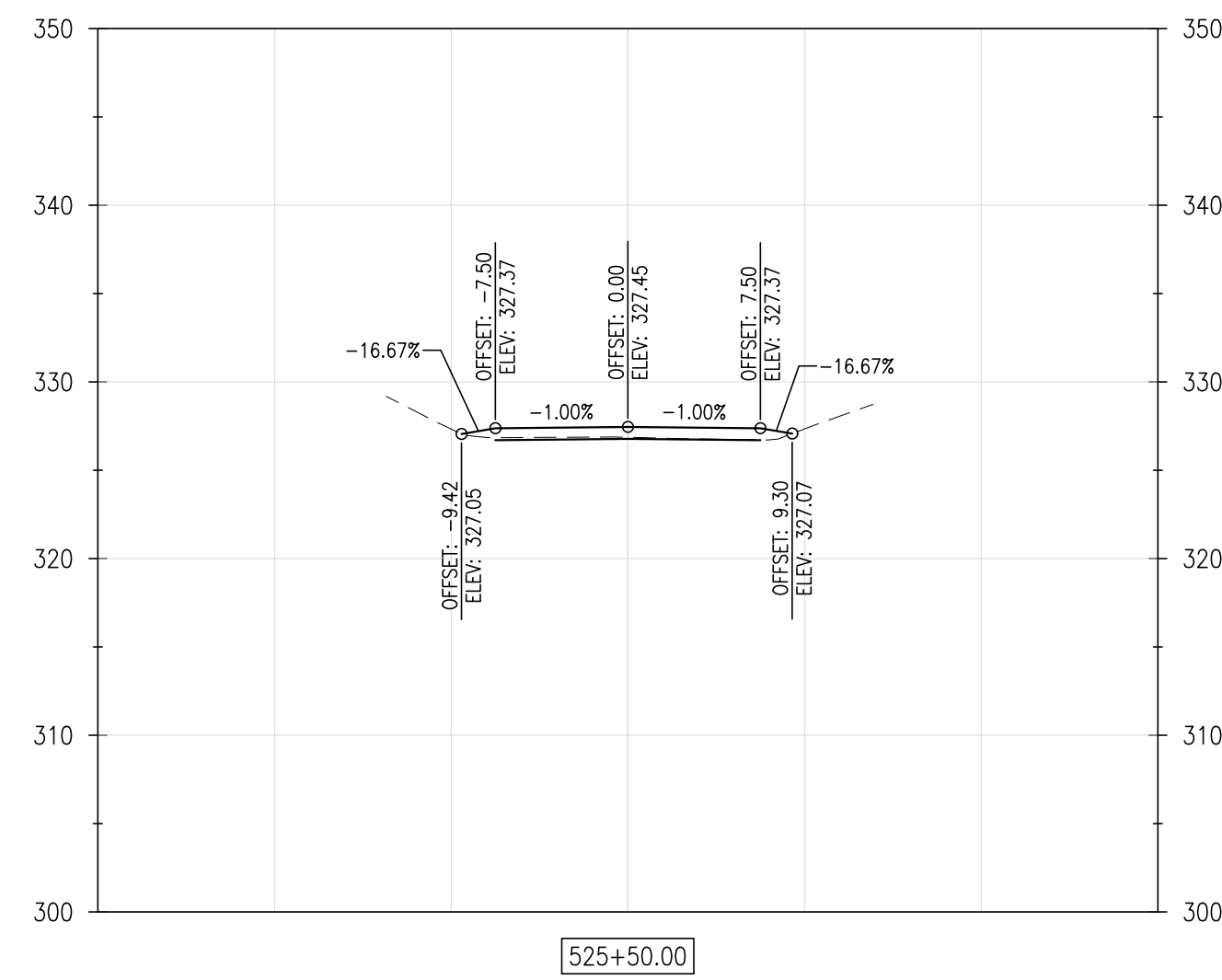
$$1'' = 10'$$

SHEET NO.:

C5.11

CONTRACT NO.:

2016-WCCSP-100



WCCSP TRI-VALLEY TRAIL

BID SET

CROSS SECTIONS

REVISIONS:

DATE:	DESCRIPTION:
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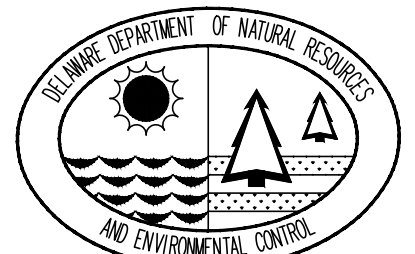
BY: _____

SEAL:

CIVIL ENGINEER:



CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE: _____

SEPTEMBER 7, 2016

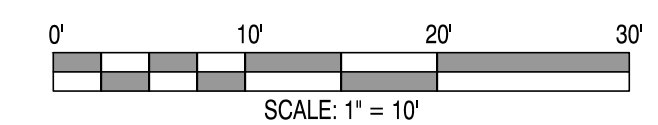
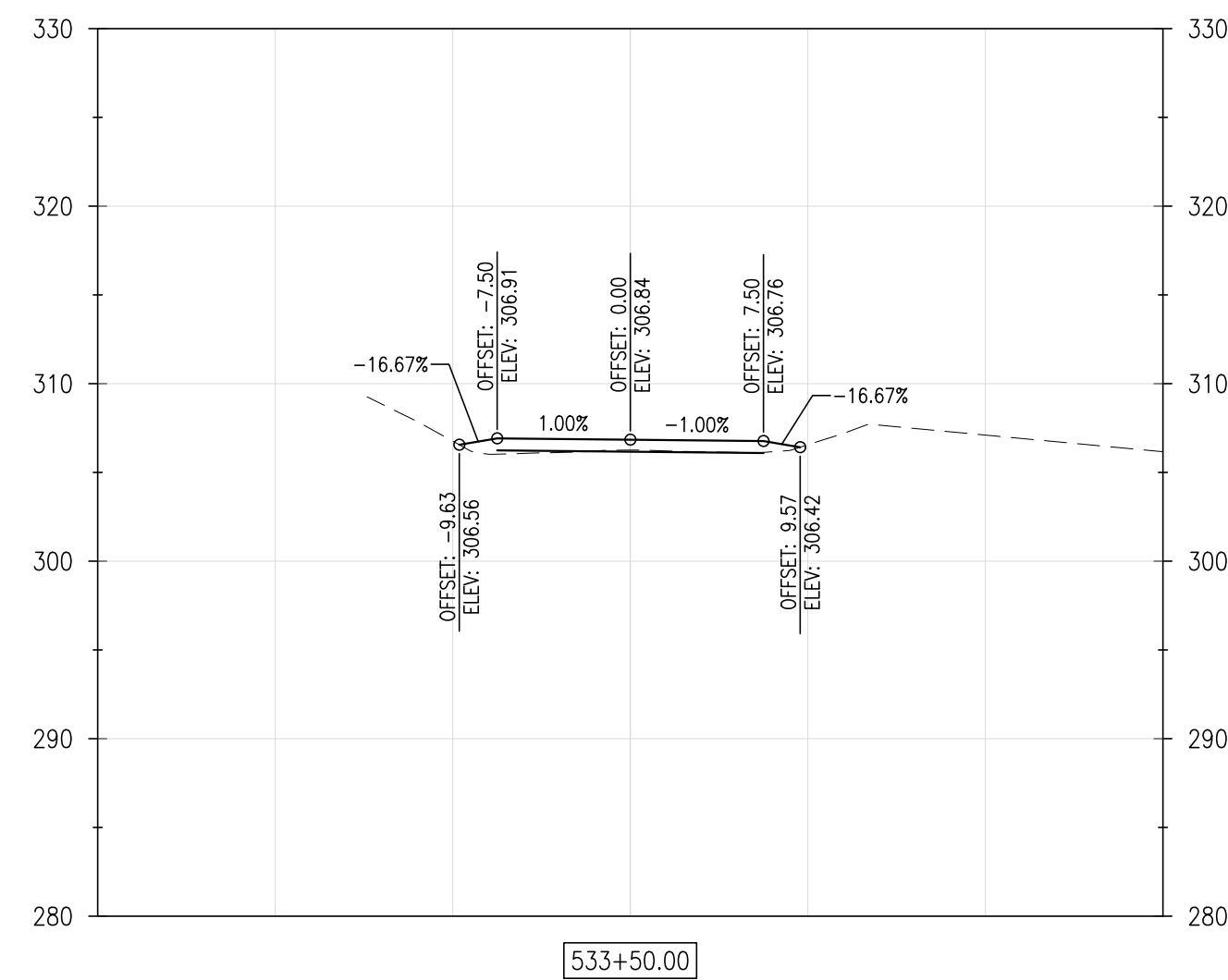
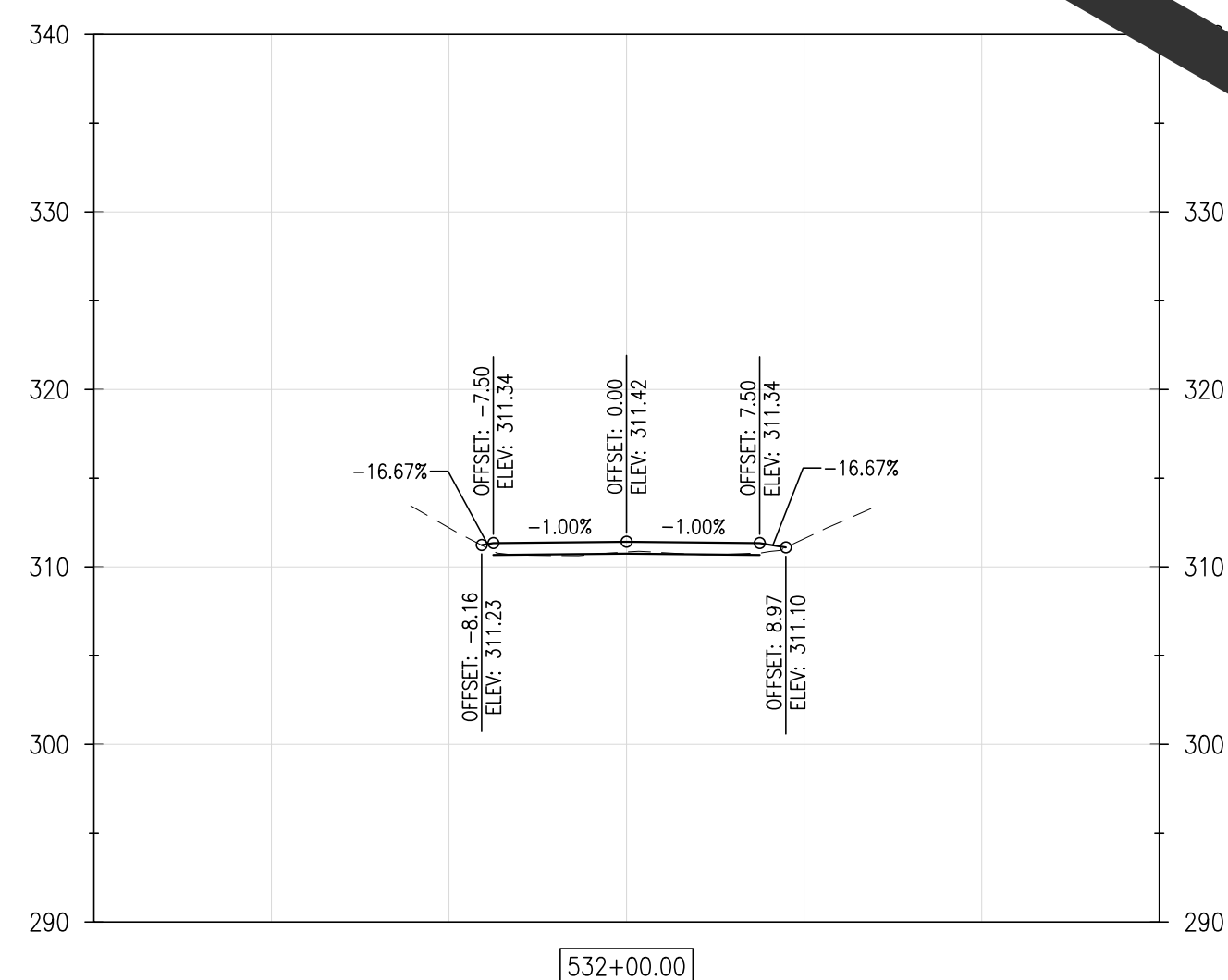
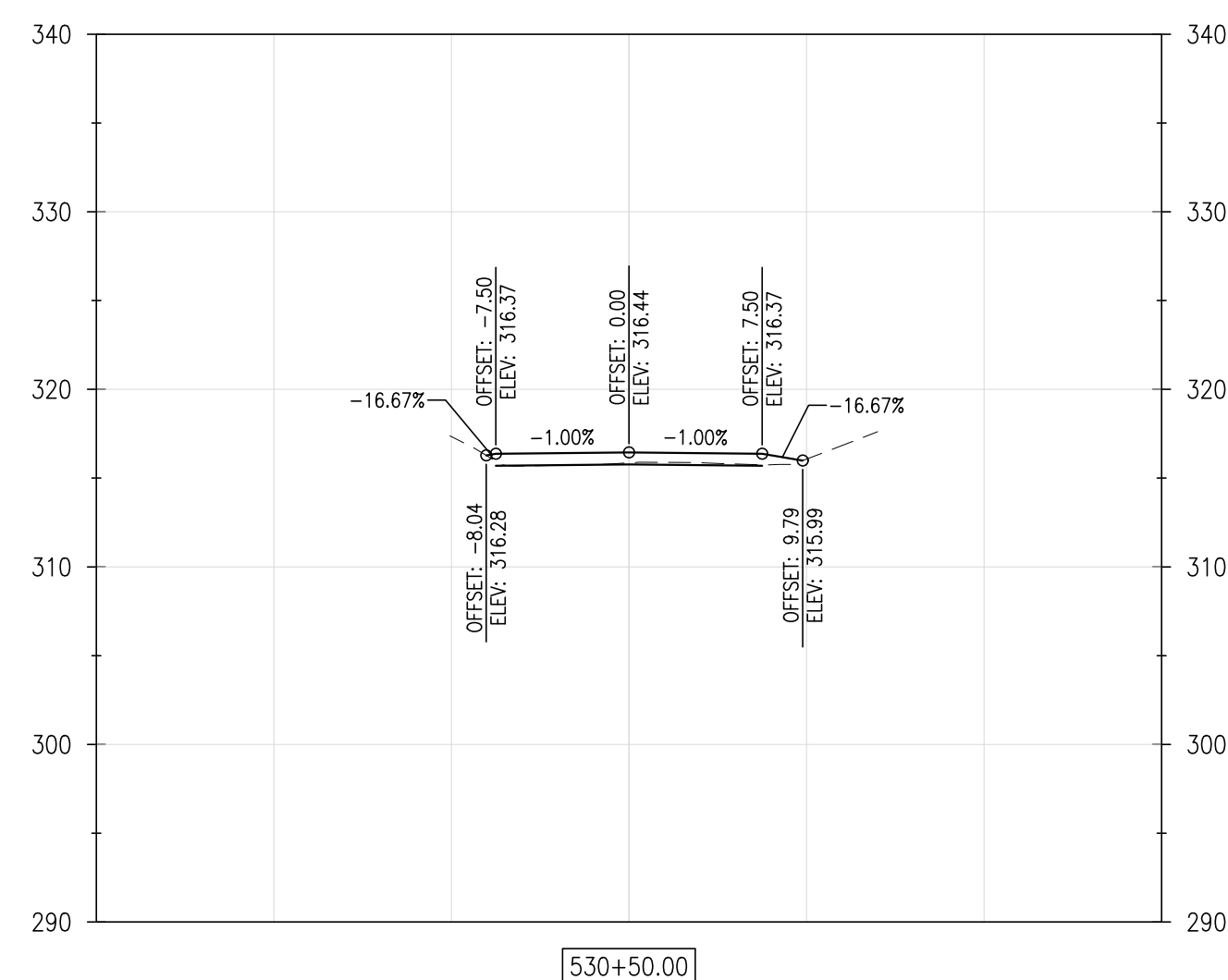
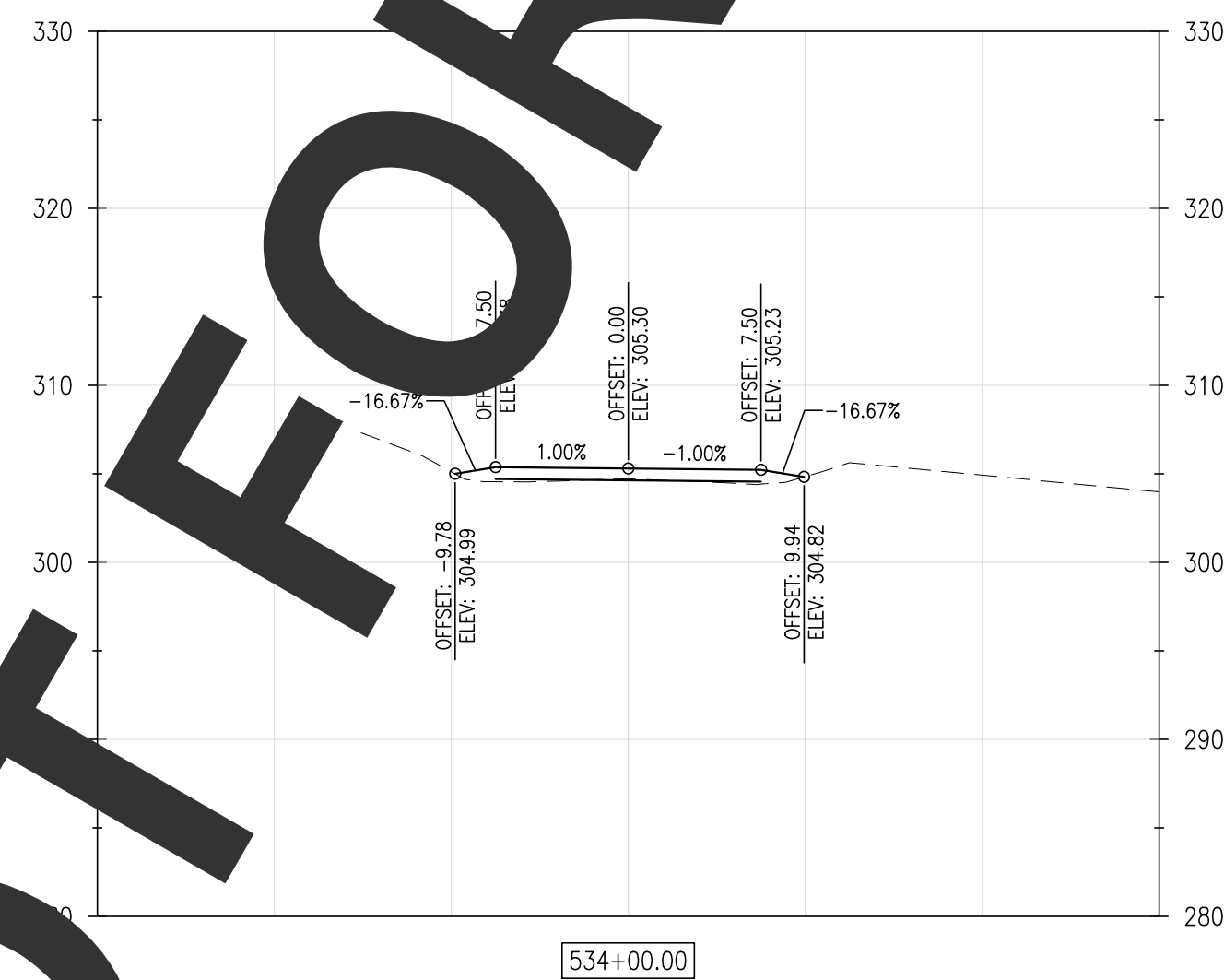
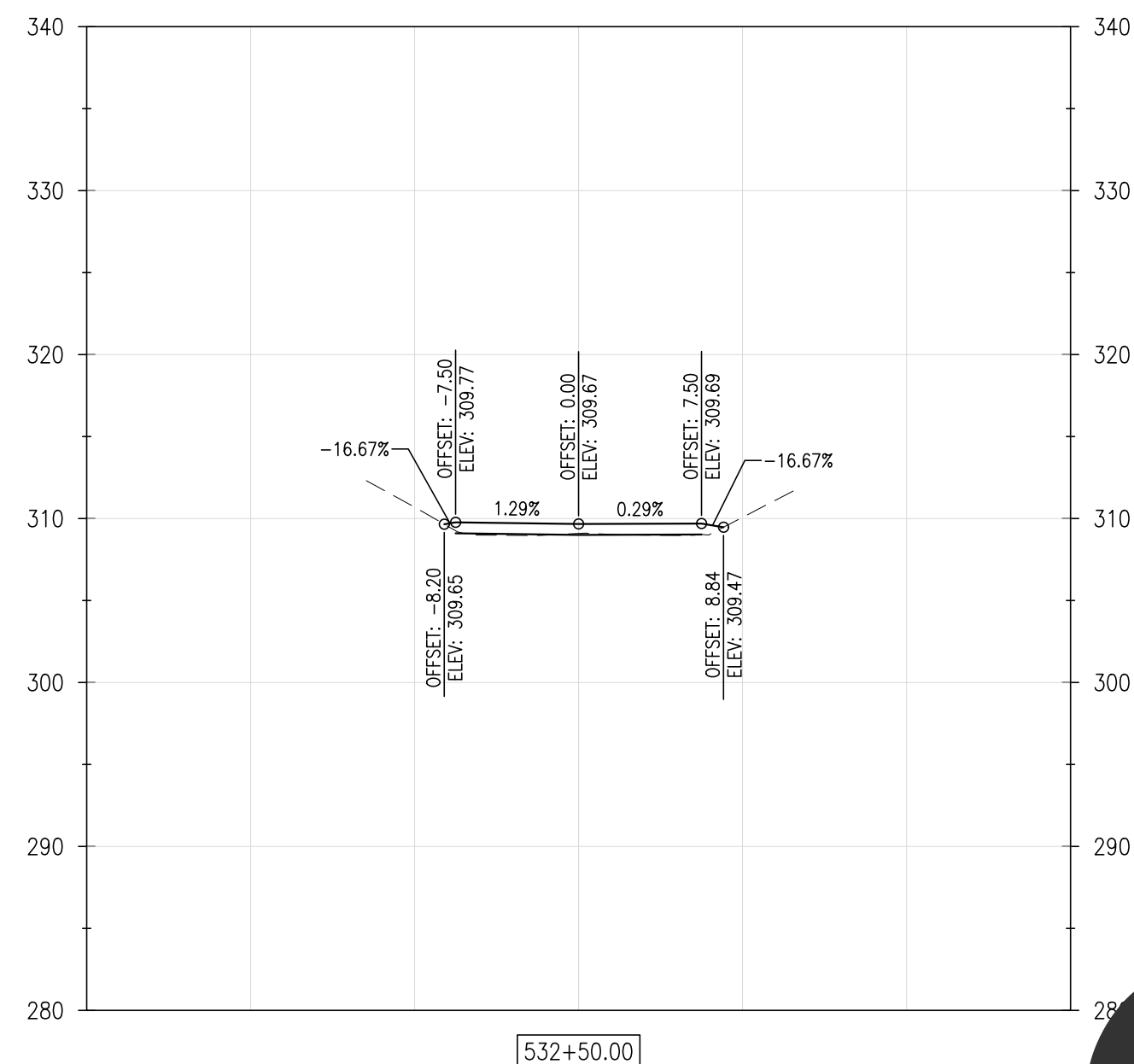
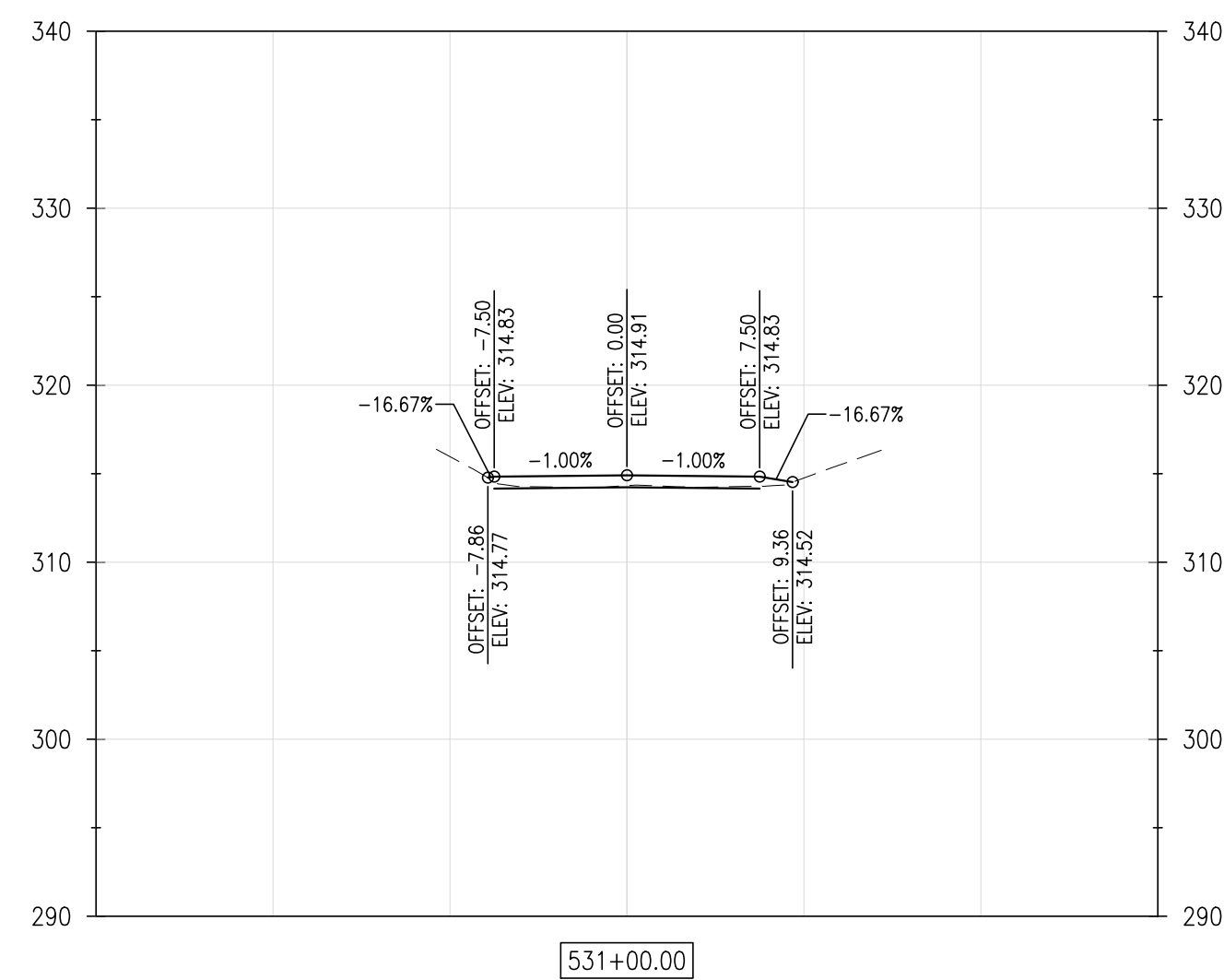
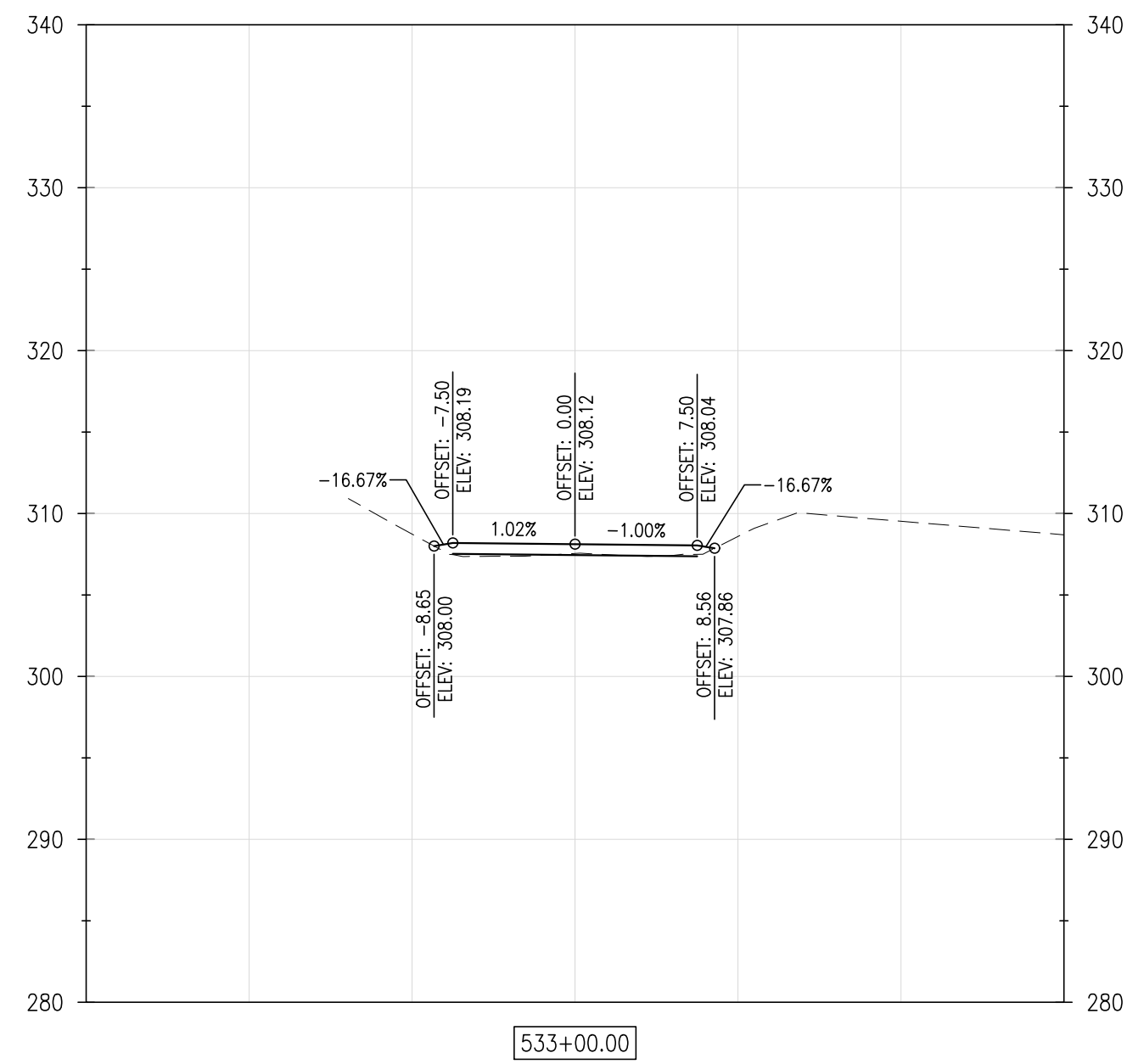
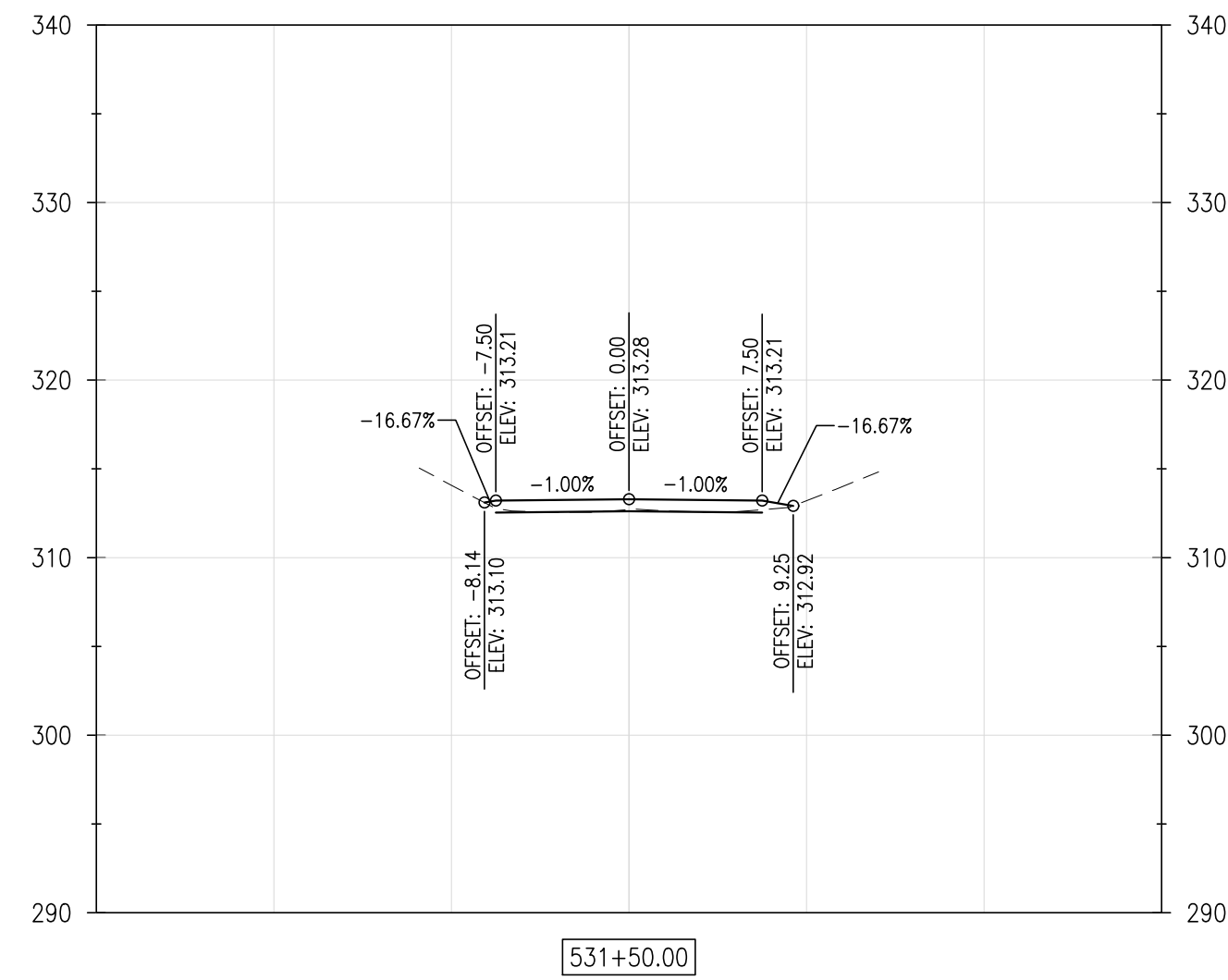
SCALE:

$$1'' = 10'$$

SHEET NO :

C5.12

CONTRACT NO.:
2016-WCCSP-100



REVISIONS:

DATE: _____ DESCRIPTION: _____

BY: _____

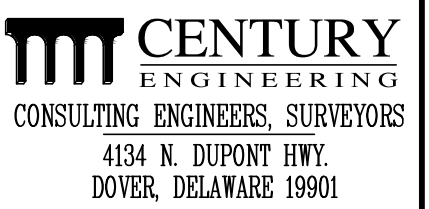
WCCSP TRI-VALLEY TRAIL

BID SET

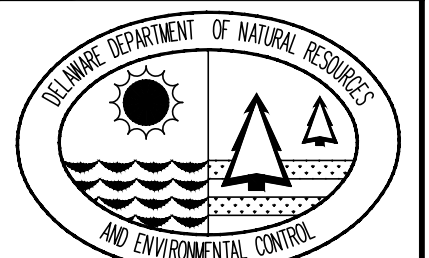
CROSS SECTIONS

SEAL:

CIVIL ENGINEER:



CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE: _____

EMBER 7, 2016

SCALE:

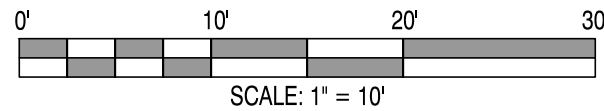
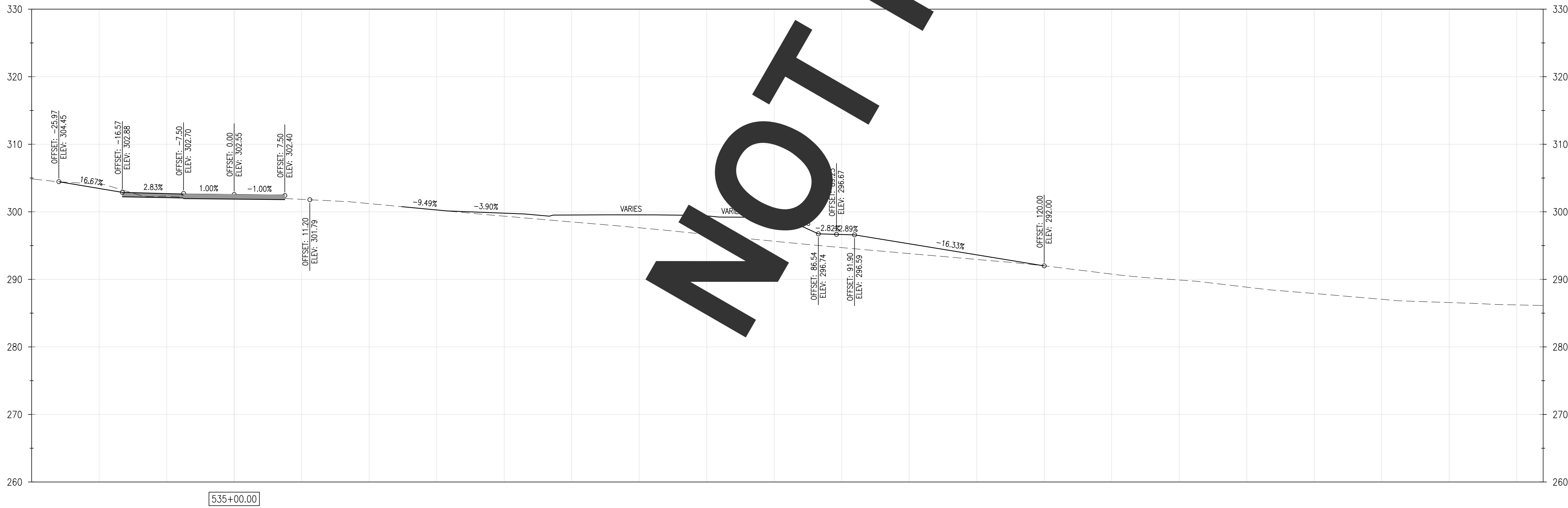
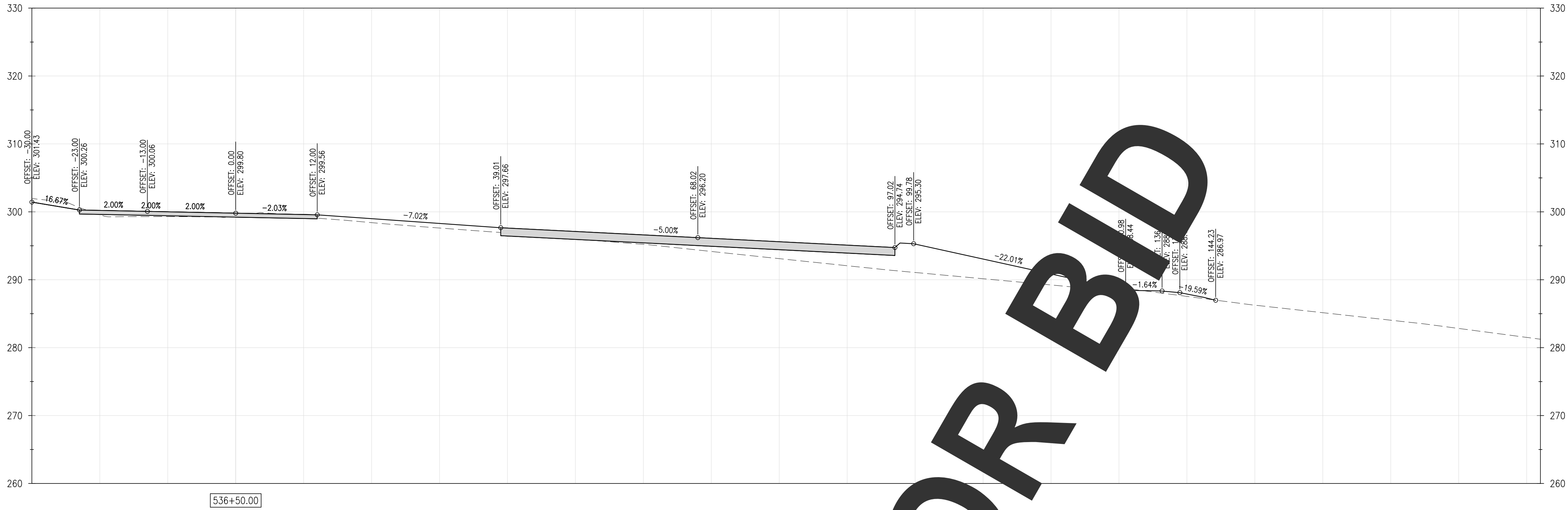
$$1'' = 10'$$

SHEET NO.:

C5.13

CONTRACT NO.:

2016-WCCSP-100



REVISIONS:

DATE:	DESCRIPTION:	BY:

WCCSP TRI-VALLEY TRAIL
BID SET

CROSS SECTIONS

SEAL:

CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17

DESIGNED BY:
WJH

DRAWN BY:
DLD

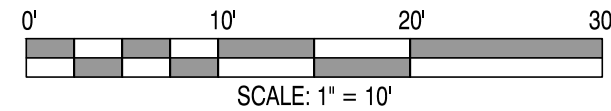
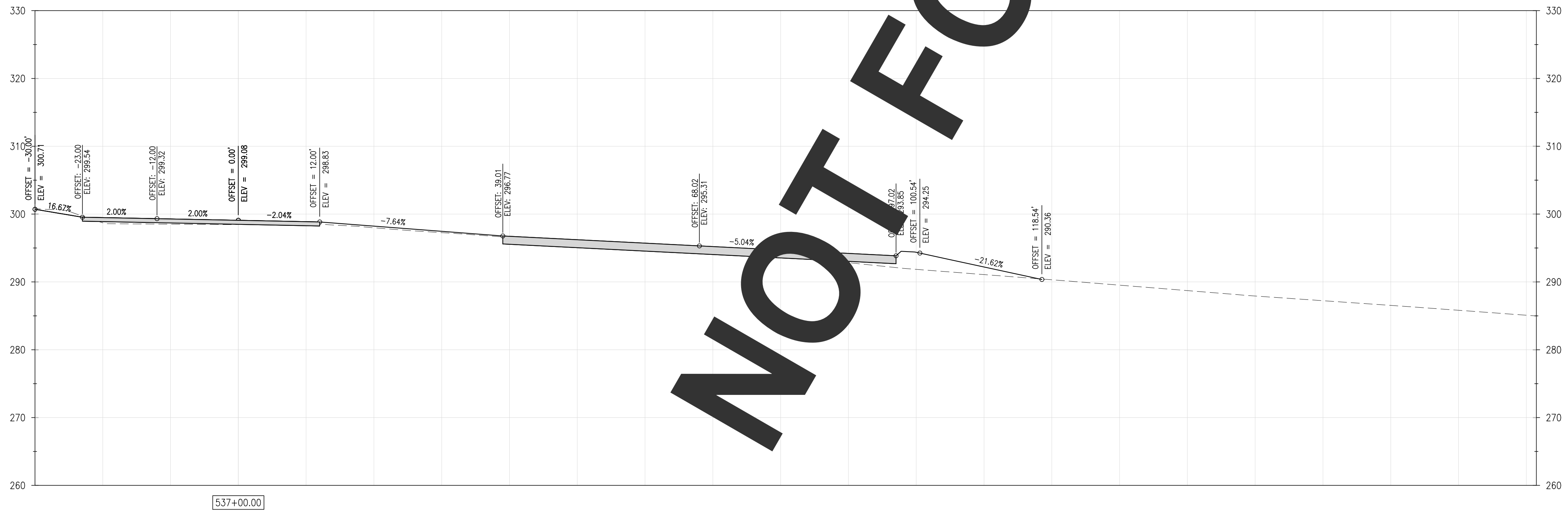
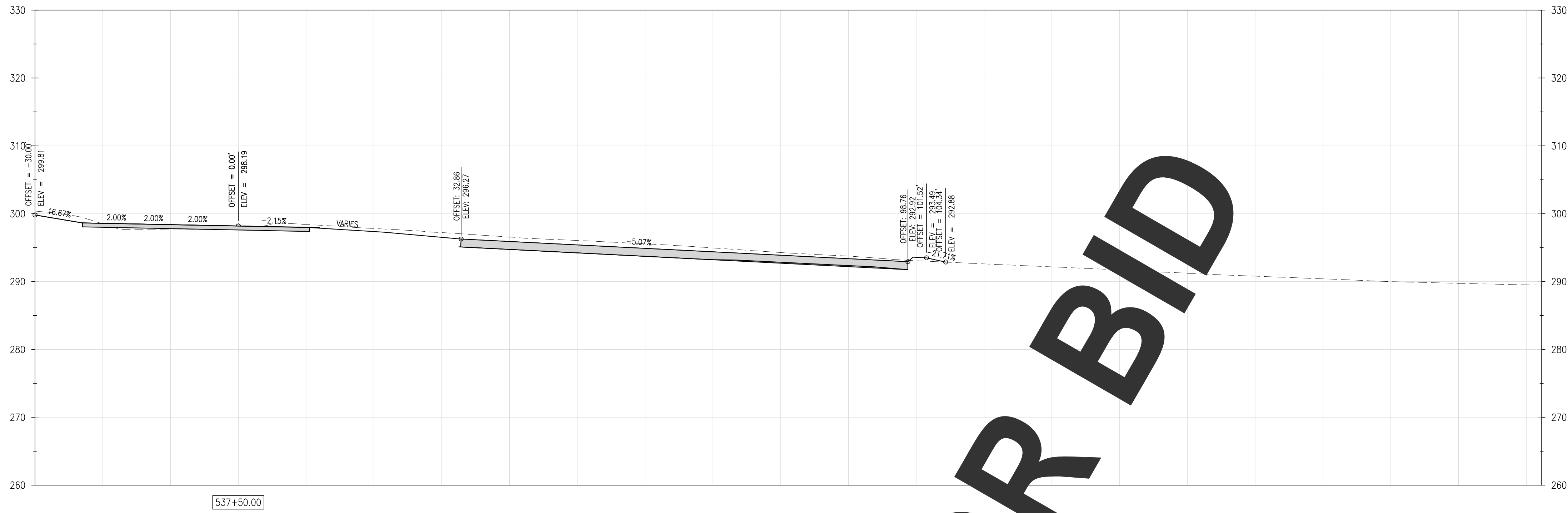
CHECKED BY:
SLR

DATE:
SEPTEMBER 7, 2016

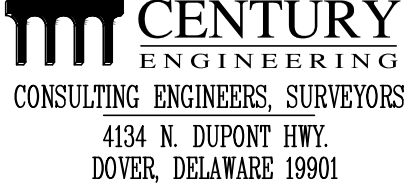
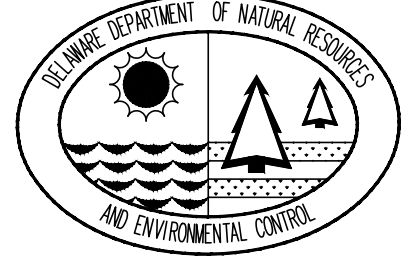
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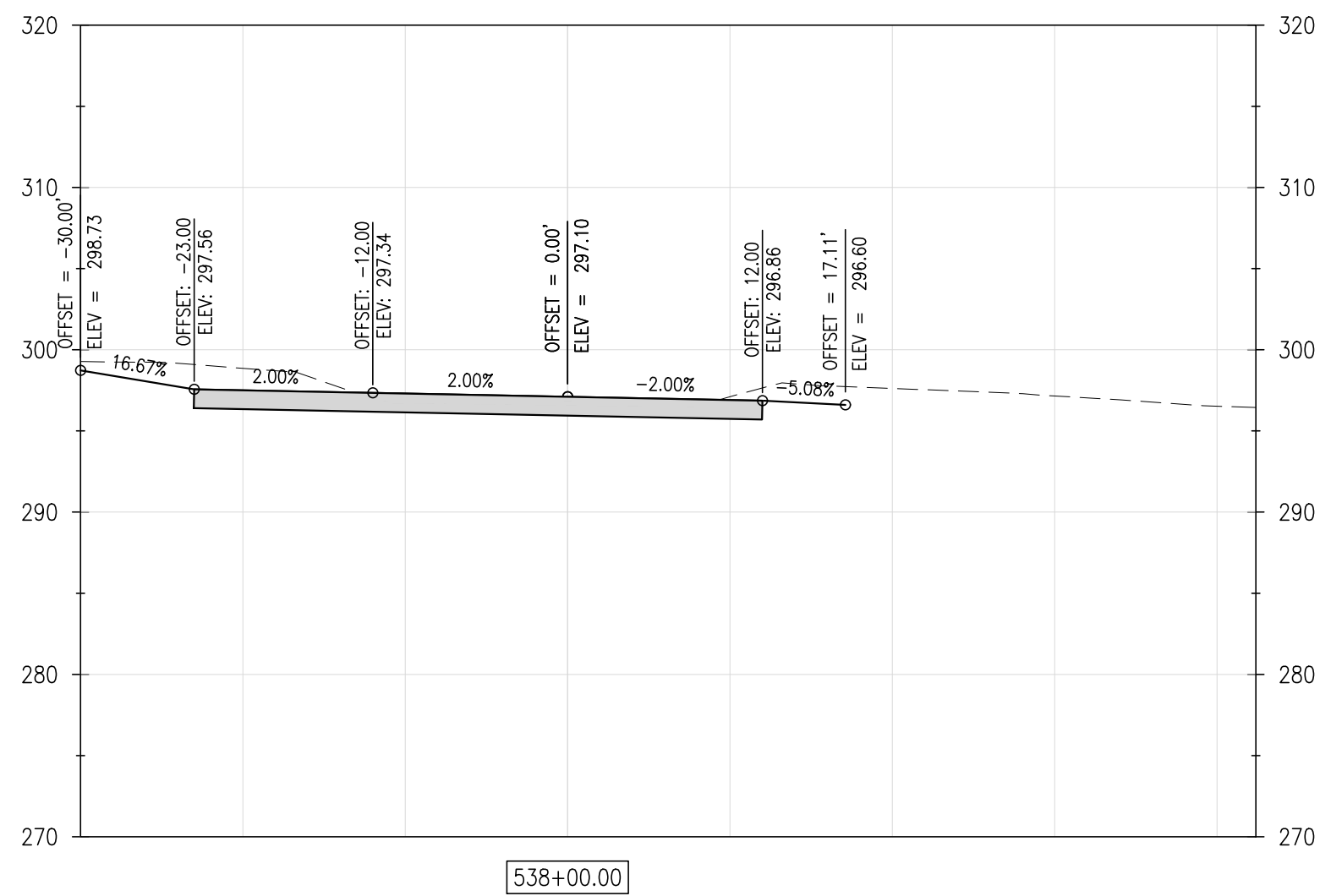
SHEET NO.:
C5.14

CONTRACT NO.:
2016-WCCSP-100

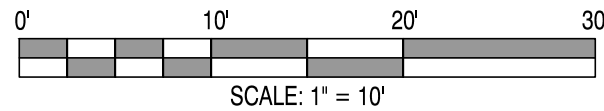



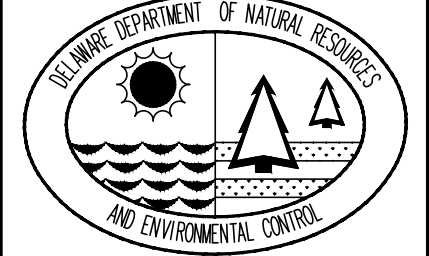
NOT FOR BID

WCCSP TRI-VALLEY TRAIL		REVISIONS:	DATE:	DESCRIPTION:	BY:
BID SET					
CROSS SECTIONS					
SEAL:					
CIVIL ENGINEER:					
 CENTURY ENGINEERING CONSULTING ENGINEERS, SURVEYORS 4134 N. DUPONT HWY. DOVER, DELAWARE 19901					
CEI CONTRACT NO.: 125002.17					
					
DESIGNED BY:					
WJH					
DRAWN BY:					
DLD					
CHECKED BY:					
SLR					
DATE:					
SEPTEMBER 7, 2016					
SCALE:					
1" = 10'					
SHEET NO.:					
C5.15					
CONTRACT NO.:					
2016-WCCSP-100					

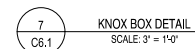
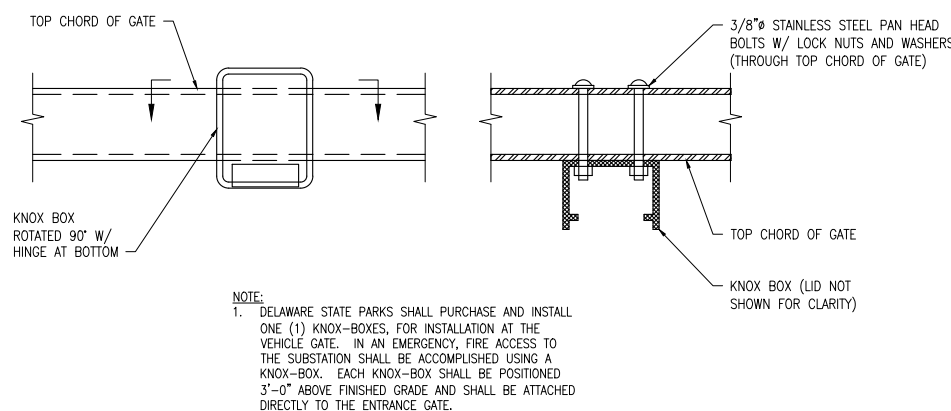
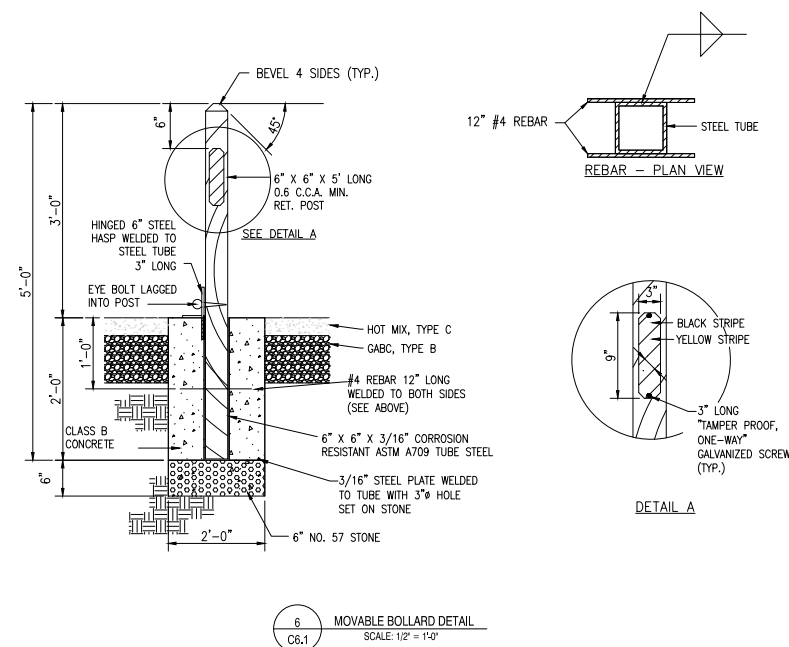
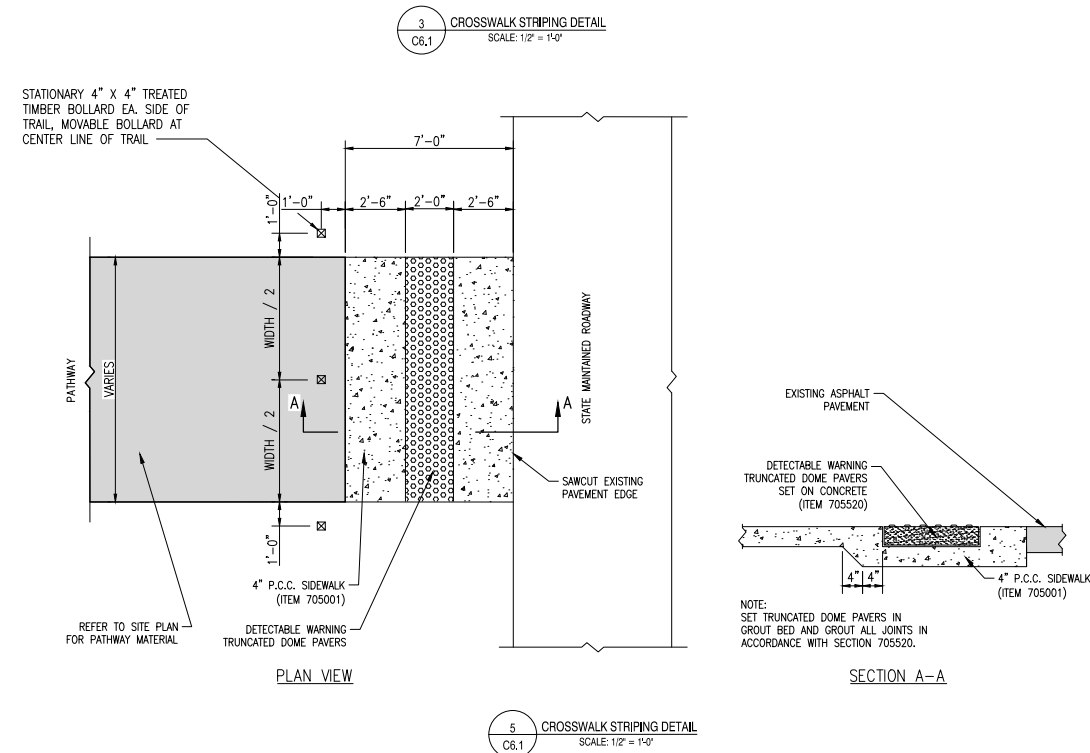
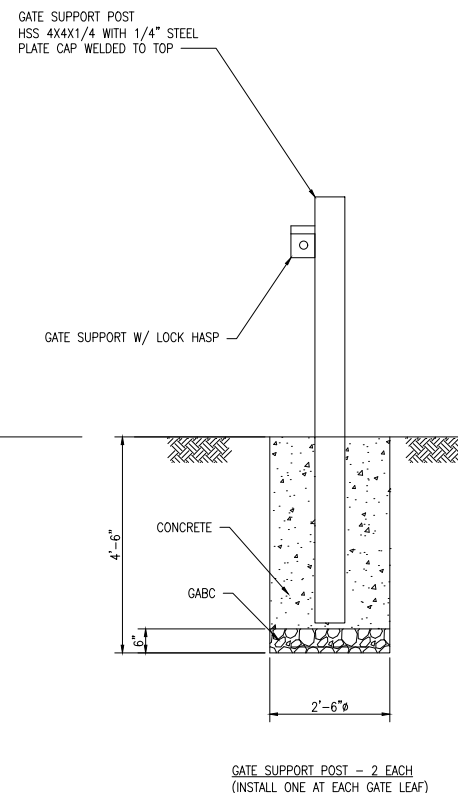
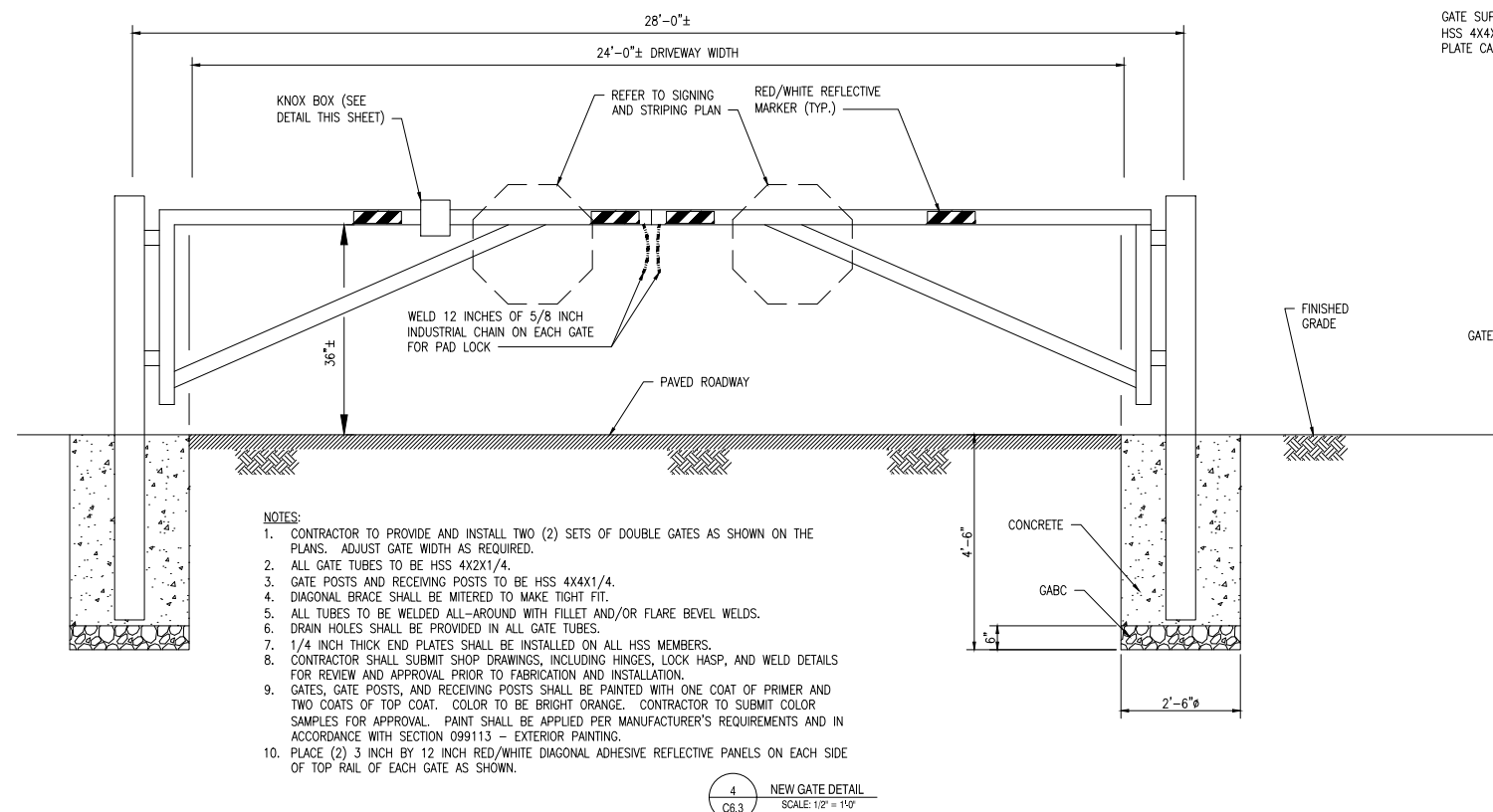
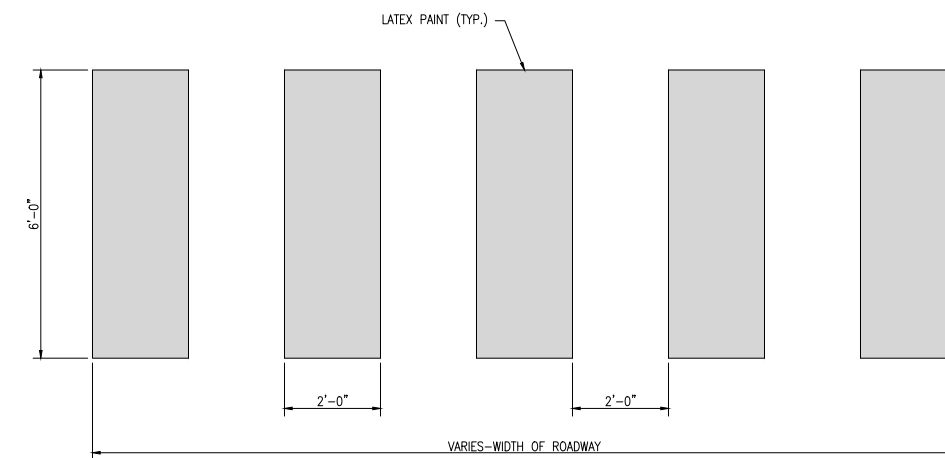
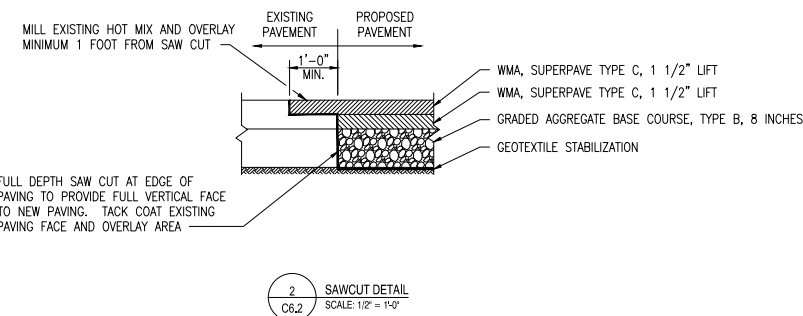
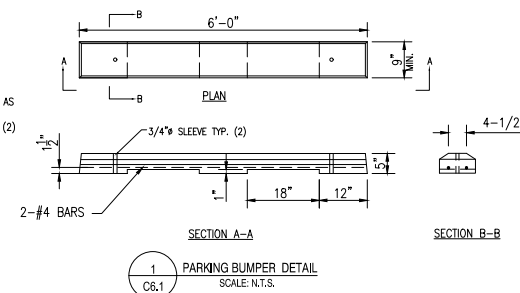


NOT FOR BID

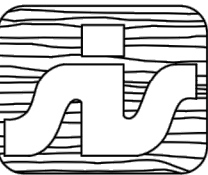


WCCSP TRI-VALLEY TRAIL BID SET		REVISIONS:	
CROSS SECTIONS		DATE:	DESCRIPTION:
		BY:	
SEAL:		CIVIL ENGINEER:	
 CENTURY ENGINEERING CONSULTING ENGINEERS, SURVEYORS 4134 N. DUPONT HWY. DOVER, DELAWARE 19901 CEI CONTRACT NO.: 125002.17			
		DESIGNED BY: WJH	
DRAWN BY: DLD		CHECKED BY: SLR	
DATE: SEPTEMBER 7, 2016		SCALE: 1" = 10'	
SHEET NO.: C5.16		CONTRACT NO.: 2016-WCCSP-100	

1. CONCRETE 5000 PSI @ 28 DAYS.
2. REBAR ASTM 615 GR. 60.
3. ALL VERTICAL SURFACES HAVE DRAFT.
4. FLOW CHANNELS SHALL BE PROVIDED AS SHOWN.
5. ATTACH BUMPER TO PAVEMENT WITH (2) 1/2" X 18" LONG REBARS (TYP.).

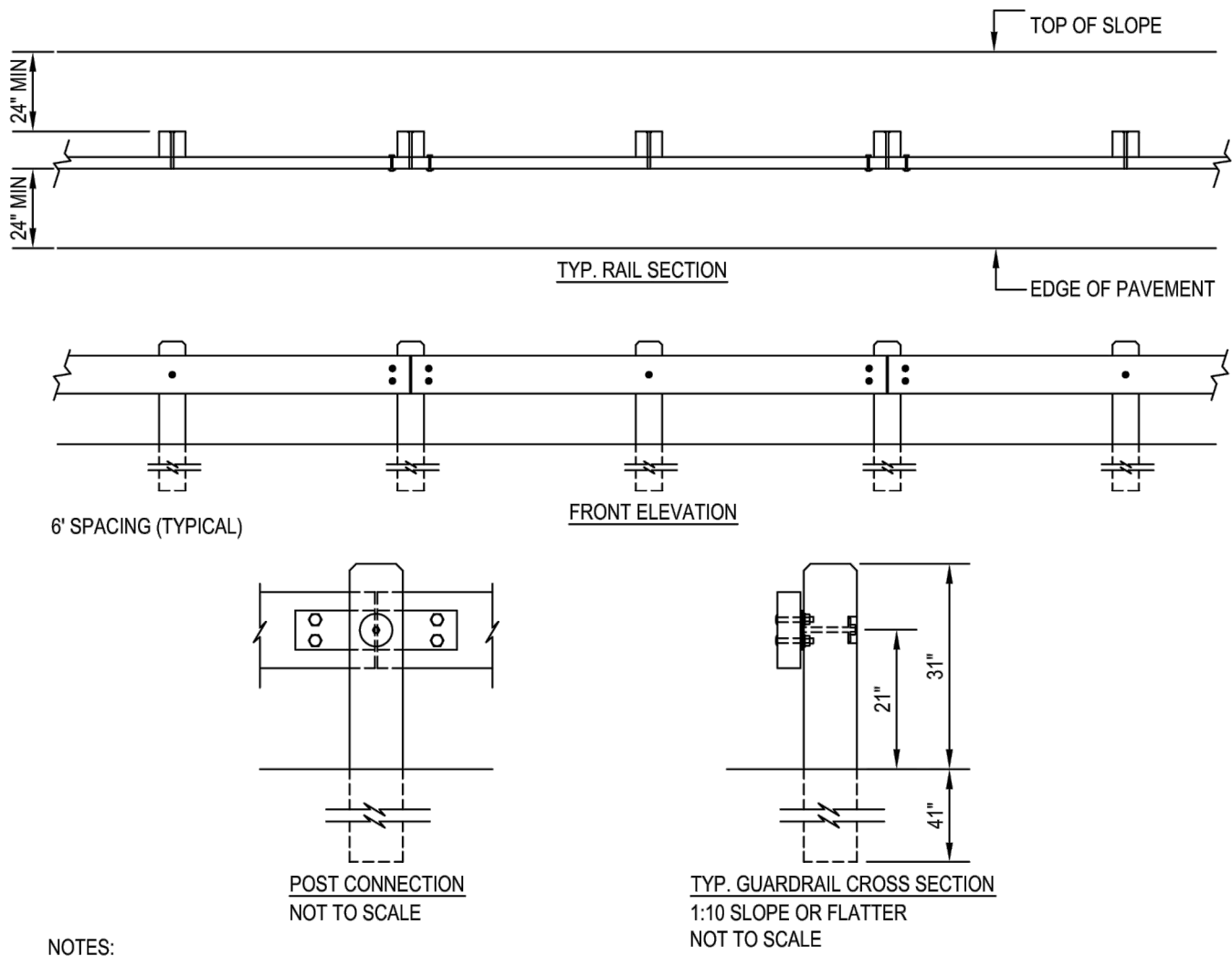


CONTRACT NO.:
2016-WCCSP-100



S.I. Storey
LUMBER COMPANY, INC.

S.I. STOREY LUMBER CO., INC.
285 SIKE STOREY RD NW
P.O. BOX 99
ARMUCHEE, GA 30105-0099
TOLL FREE: (888) 934-1605
PHONE: (706) 234-1605
FAX: (706) 235-8132
www.timbarrier.com



- NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
 2. DO NOT SCALE DRAWINGS.
 3. IF TOP OF SLOPE IS CLOSER THAN 24\"/>

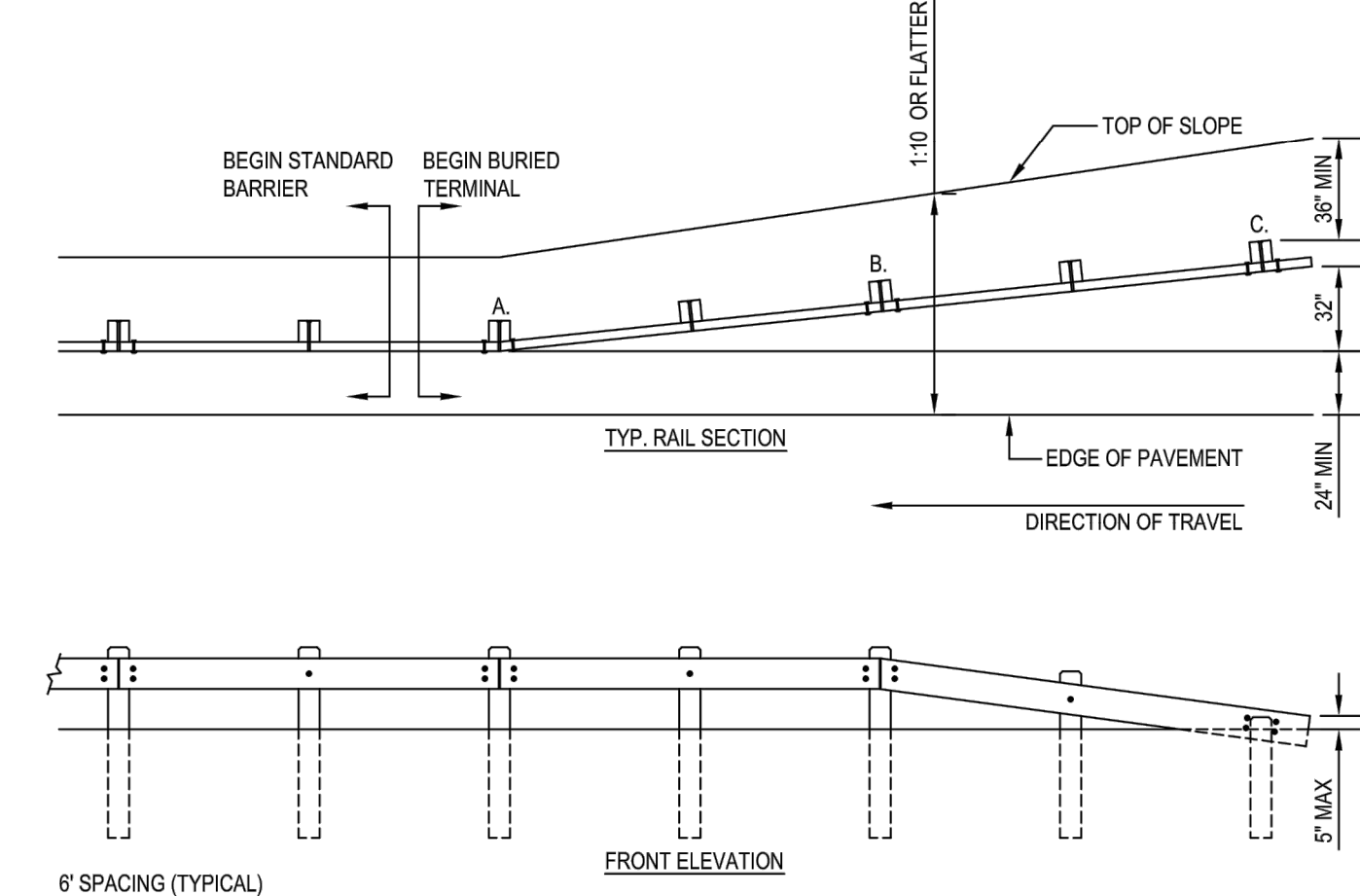


651-003
PROTECTED BY COPYRIGHT - 10/28/03
www.CADdetails.com

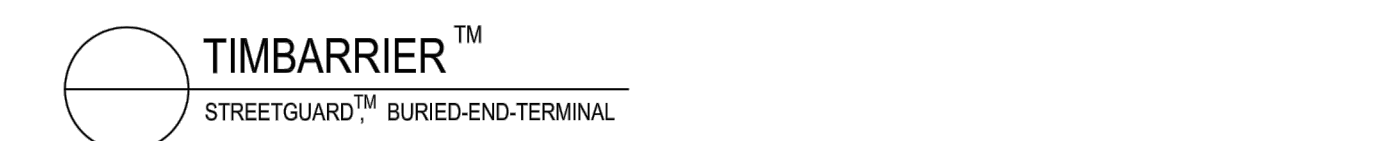


S.I. Storey
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285 SIKE STOREY RD NW
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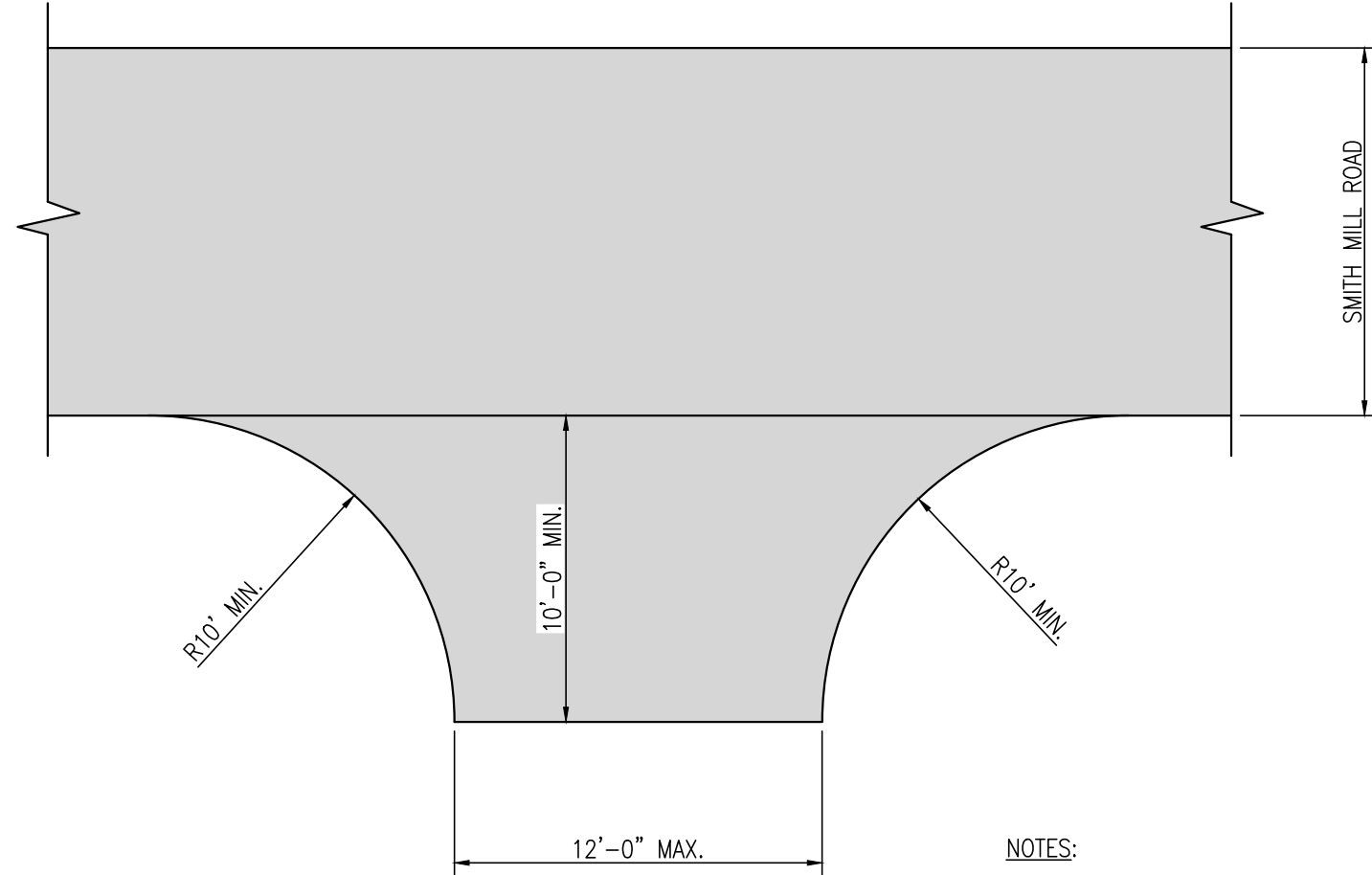


- NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
 2. DO NOT SCALE DRAWINGS.
 3. REFER TO DRAWING 651-003 FOR MATERIAL SPECIFICATIONS AND CONNECTION DETAIL.
 4. A. SPICE PLATE T1 (PRE-BENT);
B. SPICE PLATE T2 (SLOTTED);
C. ALL HARDWARE FOR THIS CONNECTION HOT DIP GALVANIZED
 5. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info
REFERENCE NUMBER 651-003b.



651-003b
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www.CADdetails.com

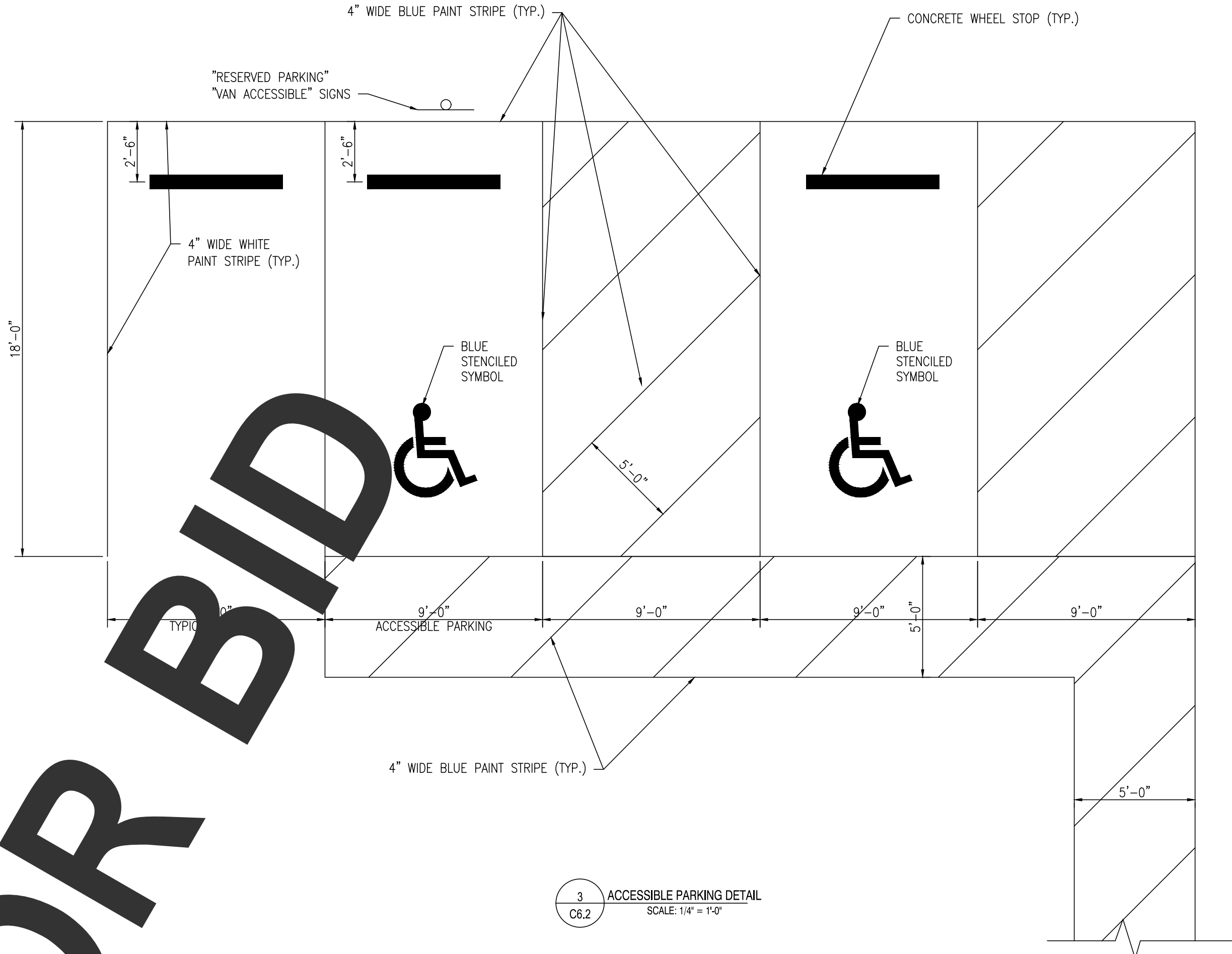
1
C6.2
TIMBER GUARDRAIL DETAIL
SCALE: AS SHOWN



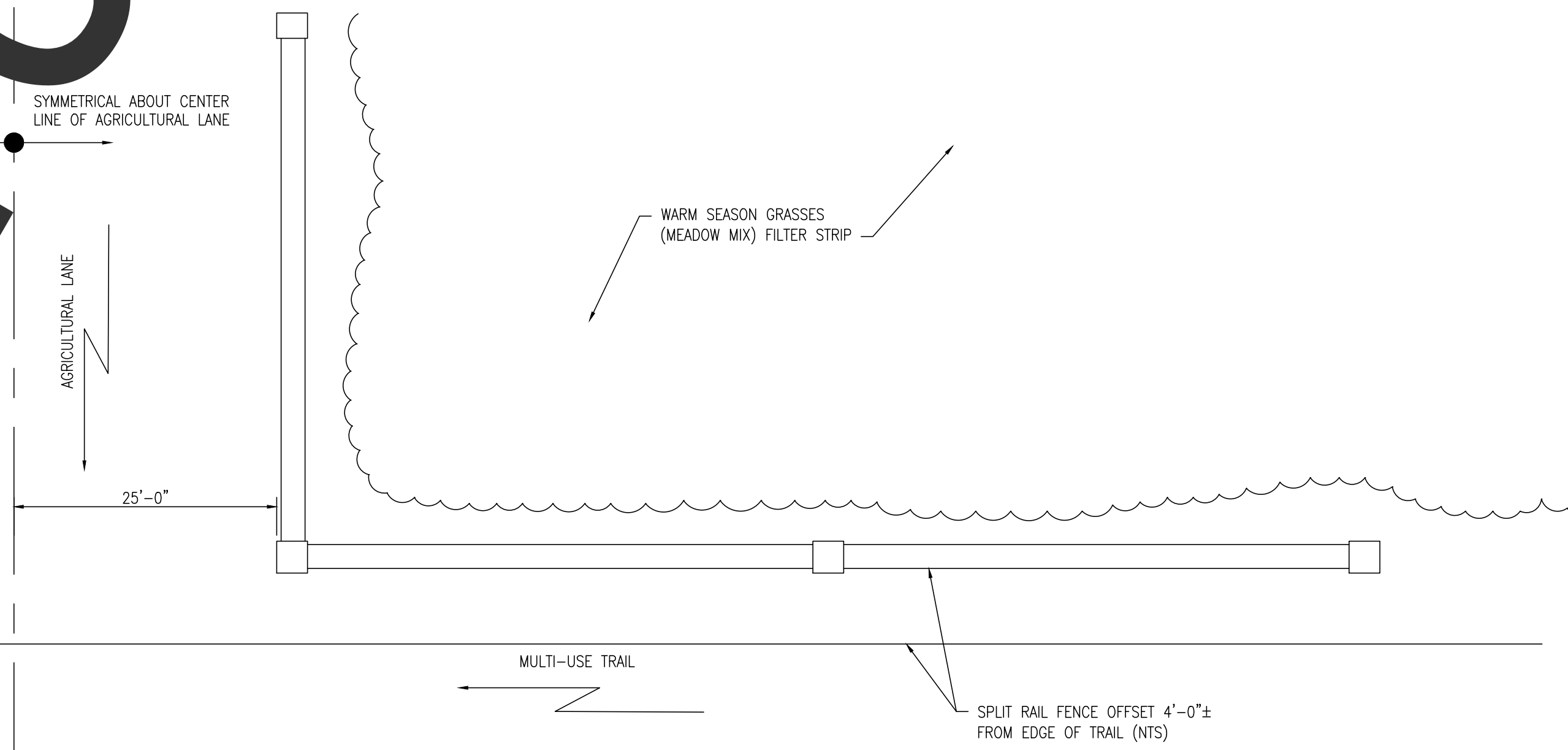
4
C6.2
DRIVEWAY APRON DETAIL
SCALE: NONE

- NOTES:
1. CONSTRUCT DRIVEWAY APRONS AT THE FOLLOWING LOCATIONS ON SMITH MILL ROAD:
1.1. 518+87 RT.
1.2. 526+30 RT.
1.3. 529+55 RT.
 2. PAVEMENT SECTION TO MATCH ADJACENT SMITH MILL ROAD SECTION.

2
C6.2
TIMBER GUARDRAIL DETAIL
SCALE: AS SHOWN



3
C6.2
ACCESSIBLE PARKING DETAIL
SCALE: 1/4\"/>



5
C6.2
SPLIT RAIL FENCE DETAIL
SCALE: NONE

REVISIONS:

DATE: DESCRIPTION:

WCCSP TRI-VALLEY TRAIL

BID SET

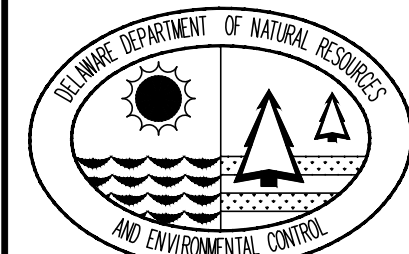
TYPICAL CONSTRUCTION DETAILS

SEAL:

CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE:

SEPTEMBER 7, 2016

SCALE:

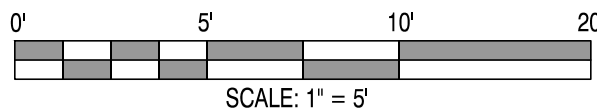
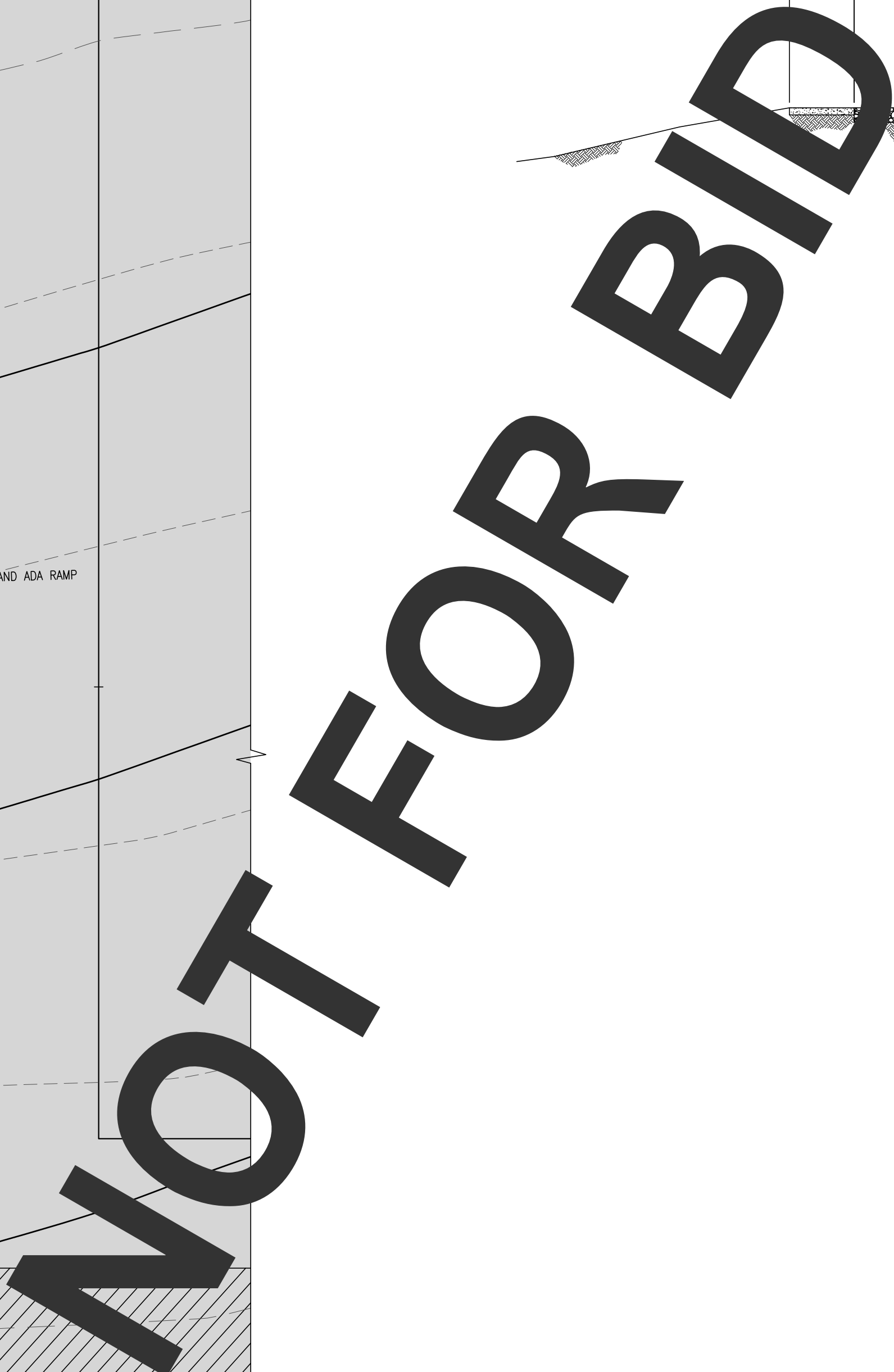
AS NOTED

SHEET NO.:

C6.2

CONTRACT NO.:

2016-WCCSP-100



- NOTES:** (X)
1. 2" HDPE WATER STUB W/ CAPPED END.
 2. 6" PVC SANITARY STUB W/ CAPPED END.
 3. 3" PVC ELECTRIC STUB W/ CAPPED END.
 4. 17'-0"x 19'-8" PREMANUFACTURED RESTROOM
 5. UTILITY CUT-OUT IN BUILDING CONCRETE SLAB

ADDITIONAL NOTES

1. CONTRACTOR SHALL RETURN TO PLAN SHEETS C8.1 THROUGH C8.6 FOR ADDITIONAL RESTROOM INFORMATION.
2. ALL PROPOSED SANITARY SEWER LATERAL PIPING SHALL BE PVC (POLYVINYL CHLORIDE) SCHEDULE 35 PIPING UNLESS OTHERWISE REQUIRED BY THE NEW CASTLE COUNTY DEPARTMENT OF SPECIAL SERVICES.
3. ALL WATER PIPING SHALL BE HDPE SD19, UNLESS NOTED OTHERWISE.
4. CONDUIT FOR UNDERGROUND ELECTRICAL SHALL BE PVC SCHEDULE 80.
6. EXTEND ALL UTILITY STUBS 5 FEET BEYOND EDGE OF SIDEWALK/PAV. AND SET WITNESS POSTS.
7. PCC CURB SHALL TAPER AT EACH END.

REVISIONS:

DATE: DESCRIPTION:

WCCSP TRI-VALLEY TRAIL

BID SET

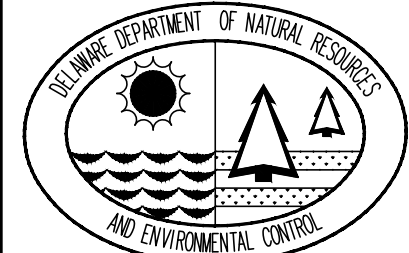
TYPICAL CONSTRUCTION DETAILS

SEAL:

CIVIL ENGINEER

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE _____

SEPTEMBER 7, 2016

SCALE:

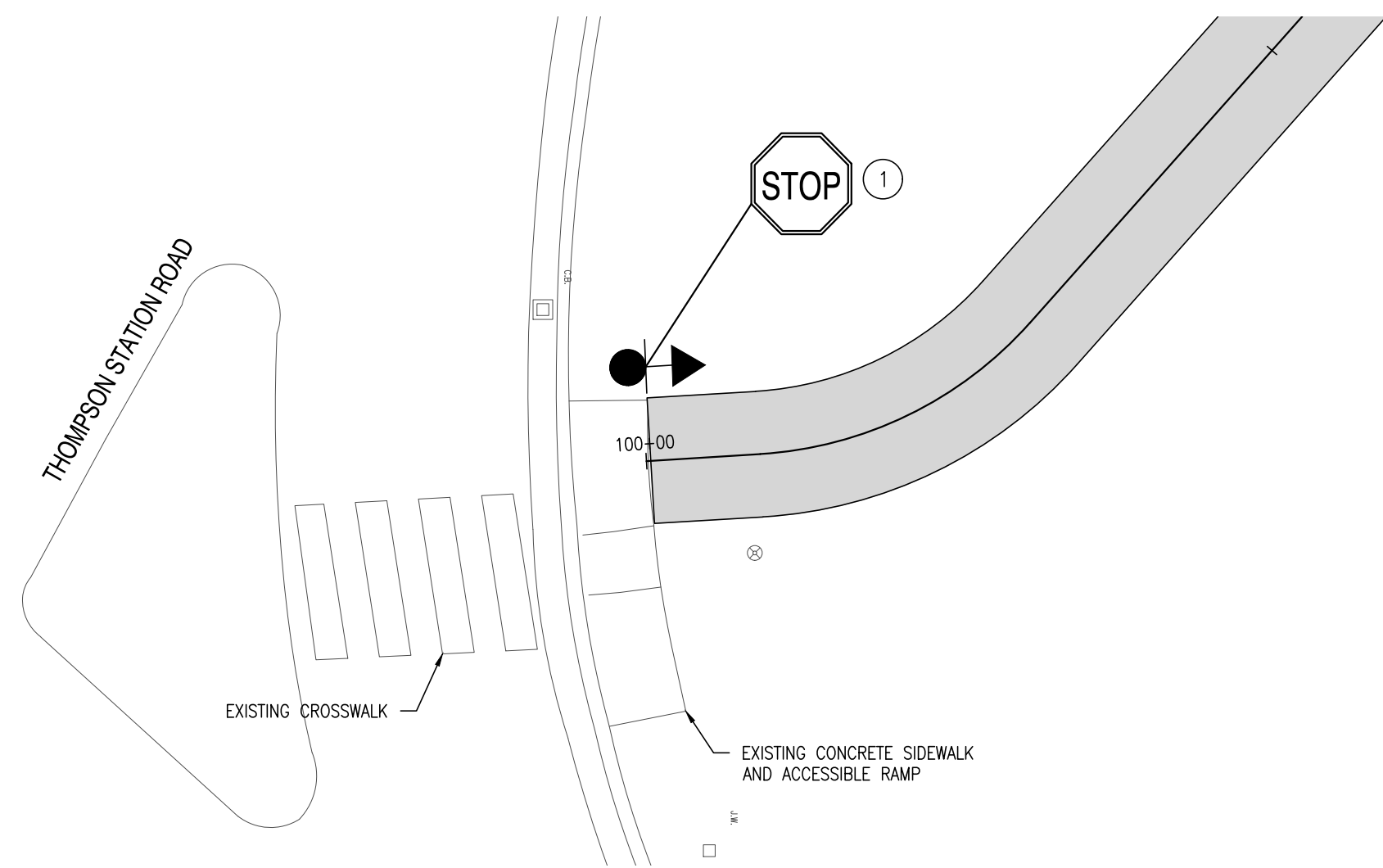
AS SHOWN

SHEET NO. :

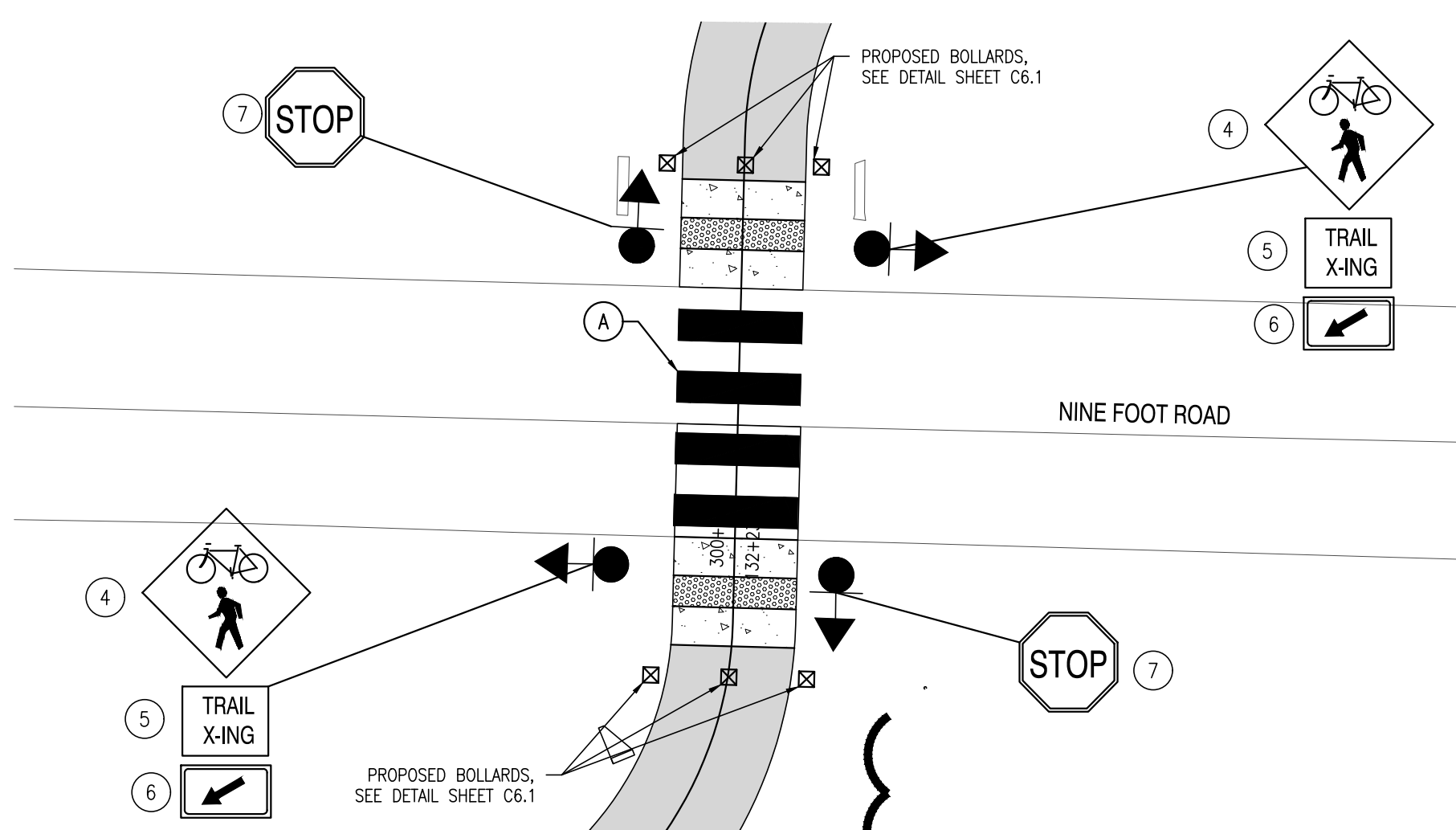
C6.3

CONTRACT NO. _____

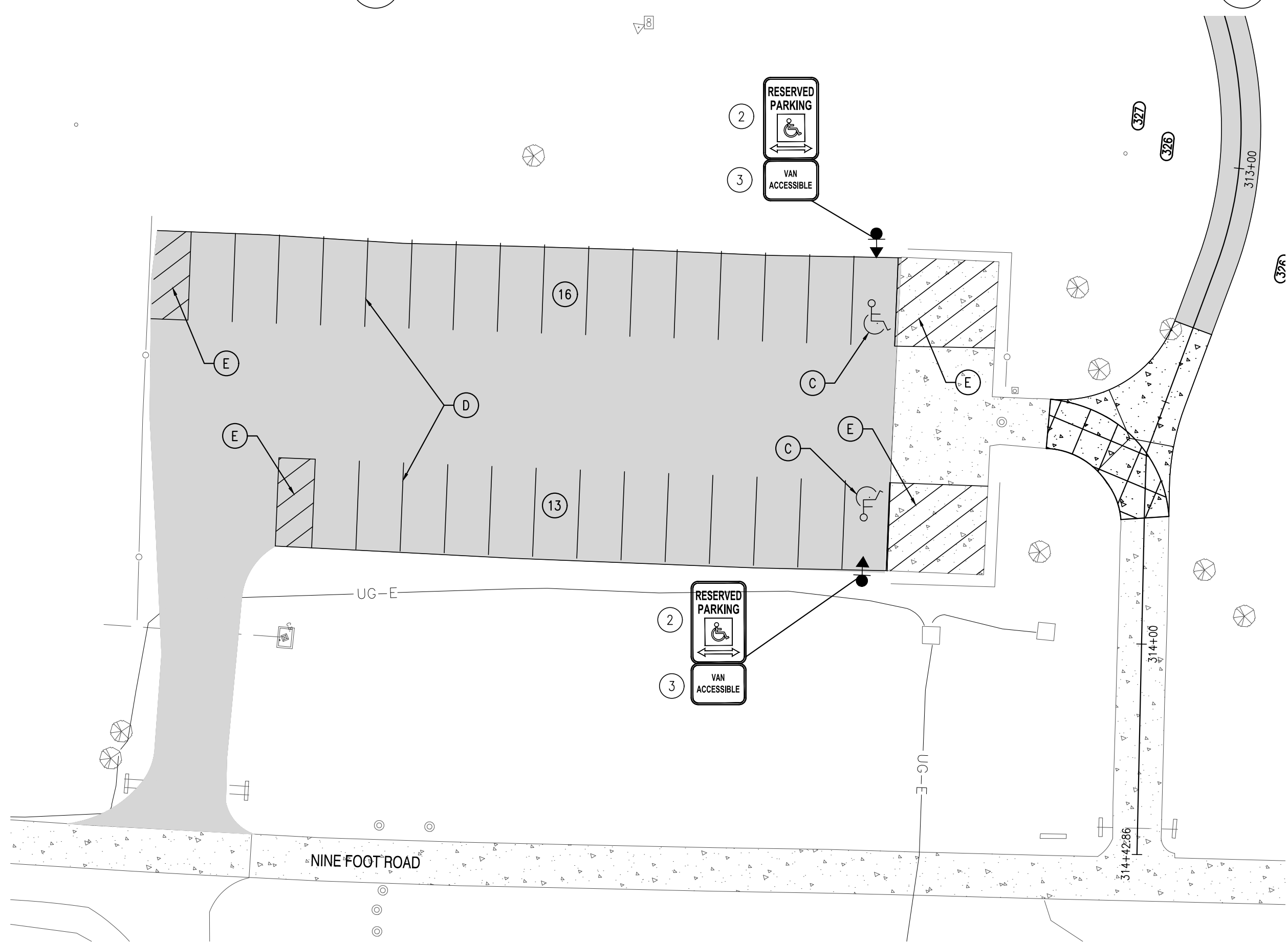
2016-WCCSP-100



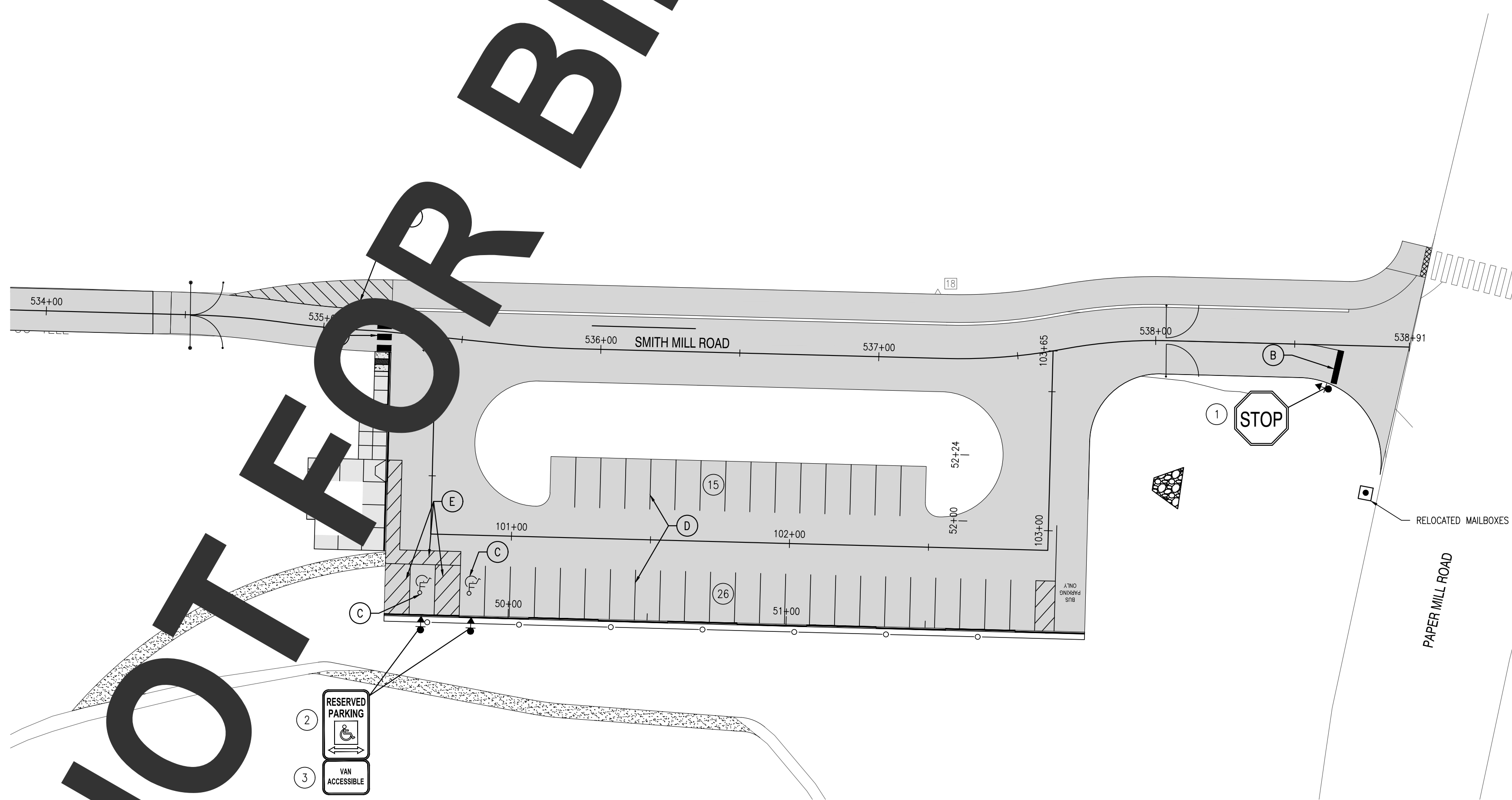
1 SIGNING AND STRIPING - THOMPSON STATION ROAD
SCALE: 1" = 10'



2 SIGNING AND STRIPING - NINE FOOT ROAD
SCALE: 1" = 10'



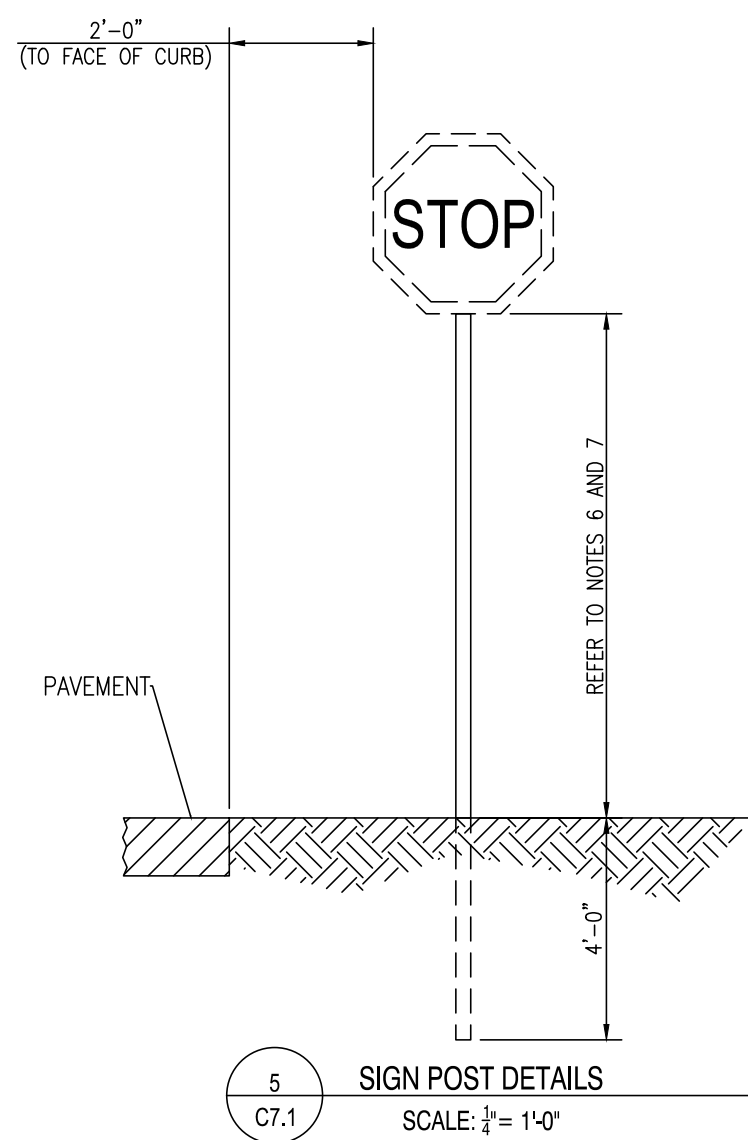
3 SIGNING AND STRIPING - PARKING LOT 1
SCALE: 1" = 20'



4 SIGNING AND STRIPING - PARKING LOT 3
SCALE: 1" = 30'

PAVEMENT MARKING S LEGEND	
SYMBOL	ITEM
(A)	24" SOLID WHITE LATEX PAINT PAVEMENT STRIPING
(B)	16" SOLID WHITE ALKYD THERMOPLASTIC PAVEMENT STRIPING
(C)	BLUE LATEX PAINT SYMBOL/LEGEND
(D)	4" WHITE LATEX PAINT PAVEMENT STRIPING
(E)	5" BLUE LATEX PAINT PAVEMENT STRIPING

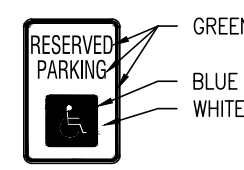
NOTE: NOT ALL SYMBOLS USED ON THIS DRAWING.



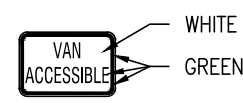
5 SIGN POST DETAILS
SCALE: 3/4" = 1'-0"

NOTES:

- DESIGN, FABRICATION AND INSTALLATION OF ALL PERMANENT SIGNING SHALL BE AS OUTLINED IN THE 'GUIDE FOR FABRICATION AND INSTALLATION OF TRAFFIC CONTROL DEVICES' LATEST EDITION.
- SIGNS TO BE INSTALLED WOODEN, 4"x4" SOUTHERN YELLOW PINE PRESSURE TREATED POST, ACO 0.4 PCF.
- SIGNS GREATER THAN 36 INCHES IN WIDTH SHALL BE INSTALLED ON TWO (2) POSTS.
- IF NO CURB, PLACE SIGN 6'-0" FROM EDGE OF PAVEMENT, OR AS DIRECTED BY OWNER.
- ALL SIGNS SHALL BE INSTALLED ON TIMBER POSTS USING A MINIMUM OF TWO (2) 5/16" GALVANIZED BOLTS WITH TWO (2) GALVANIZED WASHERS AND LOCK NUTS.
- WARNING AND REGULATORY SIGN PANELS SHALL BE POSITIONED NOT LESS THAN 7'-0" FROM FINISHED GRADE TO BOTTOM OF SIGN.
- ACCESSIBLE PARKING SIGNS SHALL BE POSITIONED 5'-0" FROM FINISHED GRADE UNLESS LOCATED IN WALKWAY, AT WHICH TIME THEY SHALL BE POSITIONED 7'-0" FROM FINISHED GRADE.



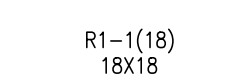
R7-8
12X18



R7-8P
12X9

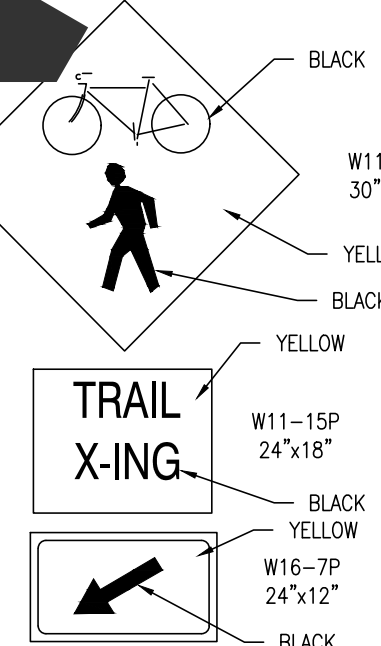


R1-1(30)
30X30



R1-1(18)
18X18

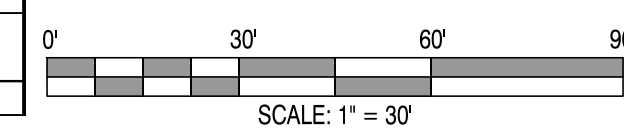
6 SIGN DETAILS
SCALE: N.T.S.



W11-15P
24"x18"

NOTE:
REFER TO SHEET C6.2 FOR STRIPING
DETAILS AT ACCESSIBLE PARKING.

#	SHEET NO.	PLAN INDICATOR	CODE	QTY.	DESCRIPTION	ASSEMBLY NO.	SIGN WIDTH (IN)	SIGN HEIGHT (IN)	SIGN AREA (SF)	ITEM 749687 SINGLE POST (EACH)			ITEM 749690 MULTI POST (POST NEEDED)			POST INSTALLATION TYPE	Code X11 12' Post (W/Basepost)	ITEM 749688 4" HOLE, 0-6" (EACH)	ITEM 749689 4" HOLE, >6" (EACH)	REMARKS
										SIGN DISPOSITION	REMOVE	INSTALL	SIGN DISPOSITION	REMOVE	INSTALL					
3	C7.1	1	R1-1(30)	1	STOP		30"	30"	6.25	NEW		1				SOIL	1	0	0	
428	C7.1	2	R7-8	4	RESERVED PARKING (Disabilities - symbols)		12"	18"	1.5	NEW		4				SOIL	4	0	0	
429	C7.1	3	R7-8P	4	VAN ACCESSIBLE (plaque)		18"	9"	1.125	ADD TO EXST.		4					0	0	0	
1226	C7.1	4	W11-15(18)	2	BIKE - PEDESTRIAN (Symbol) - 18x18		18"	18"	2.25	NEW		2				SOIL	2	0	0	
1235	C7.1	5	W11-15P(18)	2	TRAIL XING (plaque) - 18x12		18"	12"	1.5	ADD TO EXST.		2					0	0	0	
1357	C7.1	6	W16-7P_R(24)	2	RIGHT DOWNWARD DIAGONAL ARROW (plaque) - 24x12		24"	12"	2	ADD TO EXST.		2					0	0	0	
1	C7.1	7	R1-1(18)	2	STOP		18"	18"	2.25	NEW		2				SOIL	2	0	0	



REVISIONS:

DATE: DESCRIPTION: BY:

WCCSP TRI-VALLEY TRAIL

BID SET

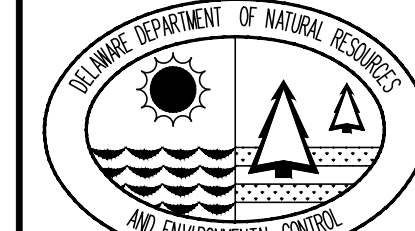
SIGNING AND STRIPING PLAN

SEAL:

CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE:

SEPTEMBER 7, 2016

SCALE:

1" = 30'

SHEET NO.:

C7.1

CONTRACT NO.:

2016-WCCSP-100

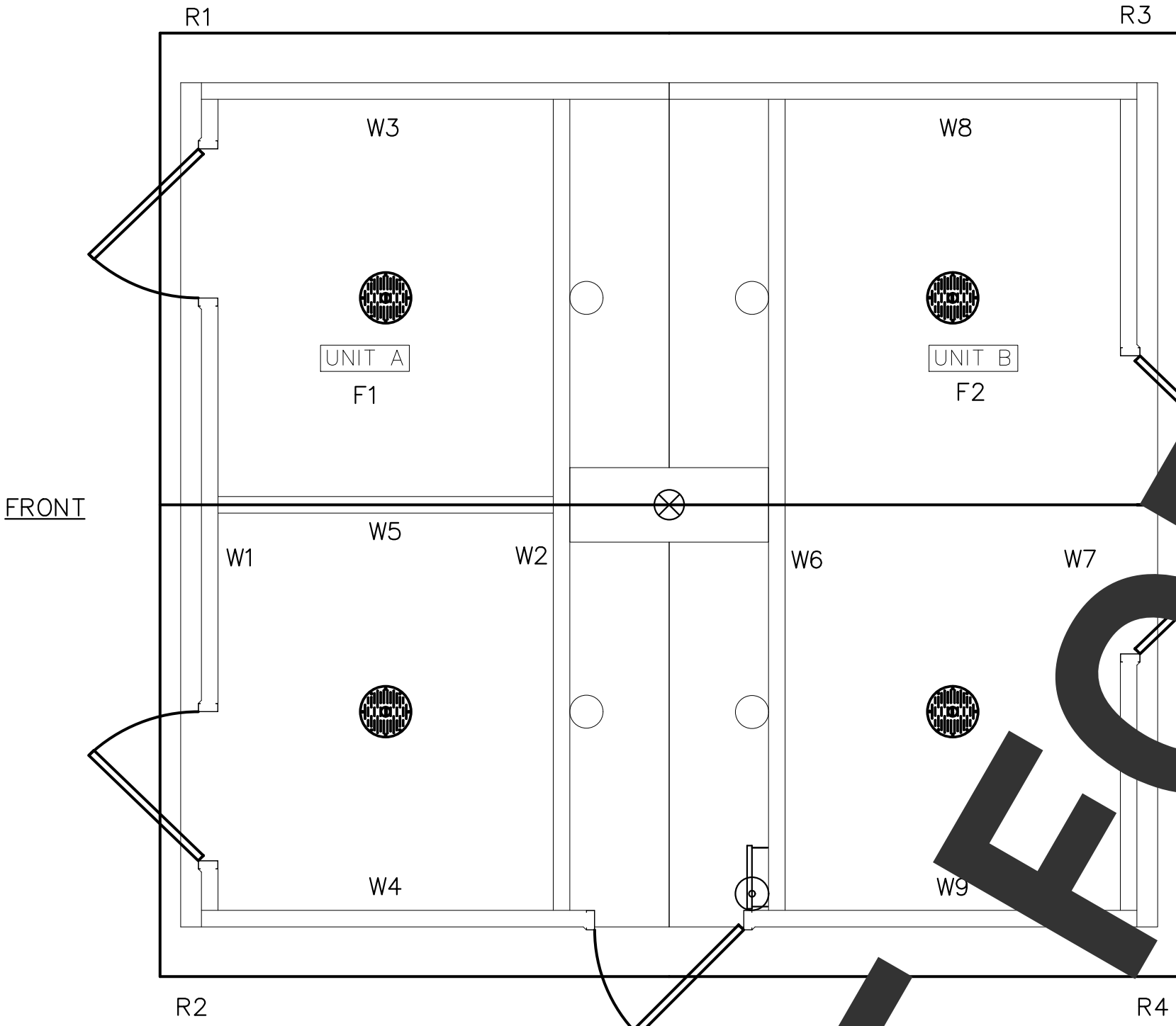
CORTEZ SECTIONAL

PANEL MARK NO. KEY PLAN

INDEX OF DRAWINGS

NOTES

- BUILDING IS DESIGNED TO COMPLY WITH THE 2013 CALIFORNIA BUILDING STANDARDS CODE (CBCS).
- DESIGN COMPLIES WITH THE PROVISIONS OF THE 2013 CBCS CODE FOR THE FOLLOWING LOADS:
ROOF SNOW LOAD = 250 PSF
FLOOR LOAD = 400 PSF
IBC DESIGN SPECTRAL RESPONSE $S_s = 2.165$, $S_1 = 1.389$
SITE CLASS D
SEISMIC USE GROUP: II
SEISMIC DESIGN CATEGORY: E
BEARING WALL SYSTEM $R = 4.0$
BASIC WIND SPEED = 150 MPH (3-SECOND GUST)
WIND EXPOSURE C, I = 1.0
- BUILDING TYPE: IBC TYPE V-B
OCCUPANCY: U
EXTERIOR WALLS: 1-HR RATED PER IBC TABLE 721.1(2), ITEM 4-1.1
- CONCRETE STRENGTH $f'_{ci} = 2500$ PSI INITIAL $f'_c = 5000$ PSI
FINAL AIR ENTRAINMENT $5\frac{1}{2}\% \pm 1\%$ IN PLASTIC CONCRETE.
REINFORCING STEEL: GRADE 60 $F_y = 60$ KSI
MINIMUM LAP 18" AT SPLICES. TIE BARS WITH DOUBLE ANNEALED 16 GA IRON WIRE. REINFORCING TO BE PLACED IN CENTER OF PANEL UNO. ALL BENDS IN REINFORCING SHALL HAVE A MINIMUM RADIUS OF 6x THE BAR DIAMETER.
WELDED WIRE FABRIC(W.W.F.): 4x4xW8xW8, $F_y=65$ KSI (OR EQUIVAL). COMPLY WITH ASTM A82, SMOOTH WIRE, MIN. LAP 2 SQUARES.
- EMBEDDED ITEMS IDENTIFIED ON DRAWINGS (i.e. PS-2, R301) REFER TO CXT STANDARD EMBEDMENT CATALOG.
- BACK OF PANELS TO HAVE SMOOTH TROWEL FINISH UNO. ALL SURFACES TO BE TEXTURED ARE NOTED ON PANEL DWG'S
- REFER TO SEPARATE CXT INCORPORATED SPECIFICATIONS COVERING DESIGN, MATERIALS, PRODUCTION, AND INSTALLATION CRITERIA FOR SPECIFIC STYLE OF BUILDING.
- ALL REBAR BENDS ARE TO HAVE A MINIMUM RADIUS OF 6x THE BAR DIAMETER
- INSTALLATION TO MEET APPLICABLE LOCAL, STATE & FEDERAL CODES, BY OTHERS.
- ADEQUATE PLUMBING FACILITIES MUST BE PROVIDED IN ACCORDANCE WITH 2012 IBC (NOT BY CXT)



APPLICABLE CODES

2013 CALIFORNIA BUILDING STANDARDS CODE
CALIFORNIA CODE OF REGULATIONS, TITLE 24

TITLE

- | | |
|--------|--|
| CRS-01 | COVER SHEET |
| CRS-02 | HANDLING INSTRUCTIONS |
| CRS-03 | FLOOR PLAN |
| CRS-04 | BUILDING ELEVATIONS |
| CRS-05 | INTERIOR ELEVATIONS |
| CRS-06 | DETAILS |
| CRS-07 | WALL PANEL W1 |
| CRS-08 | WALL PANEL W2 |
| CRS-09 | WALL PANEL W3 |
| CRS-10 | WALL PANEL W4 |
| CRS-11 | WALL PANEL W5 |
| CRS-12 | WALL PANEL W6 |
| CRS-13 | WALL PANEL W7 |
| CRS-14 | WALL PANEL W8 |
| CRS-15 | WALL PANEL W9 |
| CR-16 | FLOOR SLAB F1 |
| CR-17 | FLOOR SLAB F2 |
| CRS-18 | ROOF SLAB R1 |
| CRS-19 | ROOF SLAB R2 |
| CRS-20 | ROOF SLAB R3 |
| CRS-21 | ROOF SLAB R4 |
| CRS-22 | FOUNDATION DETAIL |
| CRS-23 | FLOOR DRAIN LOCATIONS & BELOW FLOOR PIPING |
| CRS-24 | WATER, WASTE & VENT PIPING PLANS & NOTES |
| CRS-25 | PLUMBING SCHEDULE, DIAGRAMS & NOTES |
| CRS-26 | ELECTRICAL NOTES & SCHEDULES |
| CRS-27 | ELECTRICAL PLAN, LEGEND & NOTES |
| CRS-28 | MATERIAL LIST |

NOTES:

- THE CONTRACTOR SHALL REFER TO SECTION 132800 - RESTROOM BUILDING, OF THE SPECIFICATION PACKET FOR MODIFICATIONS TO THE STANDARD CXT RESTROOM BUILDING THAT SHALL BE INCORPORATED INTO THIS PROJECT.
- SHEETS C8.1 THROUGH C8.6 PROVIDED FOR BIDDING PURPOSES ONLY BY CXT PRECAST PRODUCTS. THESE PLANS MAY BE INCOMPLETE.

CASTING TOLERANCES:

OVERALL LENGTH OR WIDTH
10 FT OR UNDER = $\pm 1/8"$
10 TO 20 FT = $\pm 1/8"$, $-3/16"$
20 TO 40 FT = $\pm 1/4"$
TOTAL THICKNESS = $-1/8$, $+1/4$
VARIATION FROM SQUARE = $\pm 1/8$ PER 6 FT OF DIAGONAL
LOCAL SMOOTHNESS = $1/4"$ IN 10 FT
SWEEP = $\pm 1/4"$
POSITION OF TENDONS = $\pm 1/4"$
POSITION OF BLOCKOUTS = $\pm 1/4"$
SIZE OF BLOCKOUTS = $\pm 1/4"$
POSITION OF EMBEDS = $\pm 1/4"$
TIPPING AND FLUSHNESS OF PLATES = $\pm 1/16$, $-1/4$
BOWING = LENGTH/360
END SQUARENESS = $\pm 1/8"$

CALIFORNIA STATE TAG, APPROVAL, & PE DRAWINGS REQUIRED

WALL TEXTURE: BARNWOOD
WALL PAINT: WESTERN WHEAT
ROOF TEXTURE: CEDAR SHAKE
ROOF COLOR: CAPPUCCINO CREAM
TRIM PAINT: BROWN

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3808 N. Sullivan Bldg. #7 Spokane, WA 99216



901 N. Highway 77 Hillsboro, TX 76645

PROJECT TITLE
CORTEZ SECTIONAL
BUILDING NUMBER CRS-016

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CXT Incorporated

REV.	DESCRIPTION	APPROVAL	DATE
SCALE	3/16"=1'-0"	DATE	06-22-16
DRAWN	ROB D WALKER	FILE NO.	CRS-016
CHECKED	RDW	PLOT	64

COVER SHEET

DWG NO.	SHEET	REV.
CRS-01	1/28	

REVISIONS:

DATE: DESCRIPTION:

WCCSP TRI-VALLEY TRAIL

BID SET

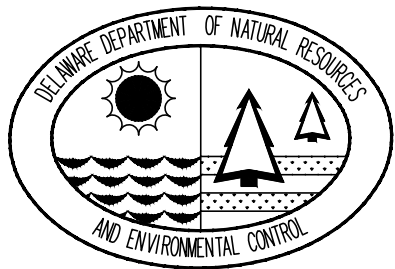
RESTROOM CONSTRUCTION DETAILS

SEAL:

CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLG

CHECKED BY:

SLR

DATE:

SEPTEMBER 7,2016

SCALE:

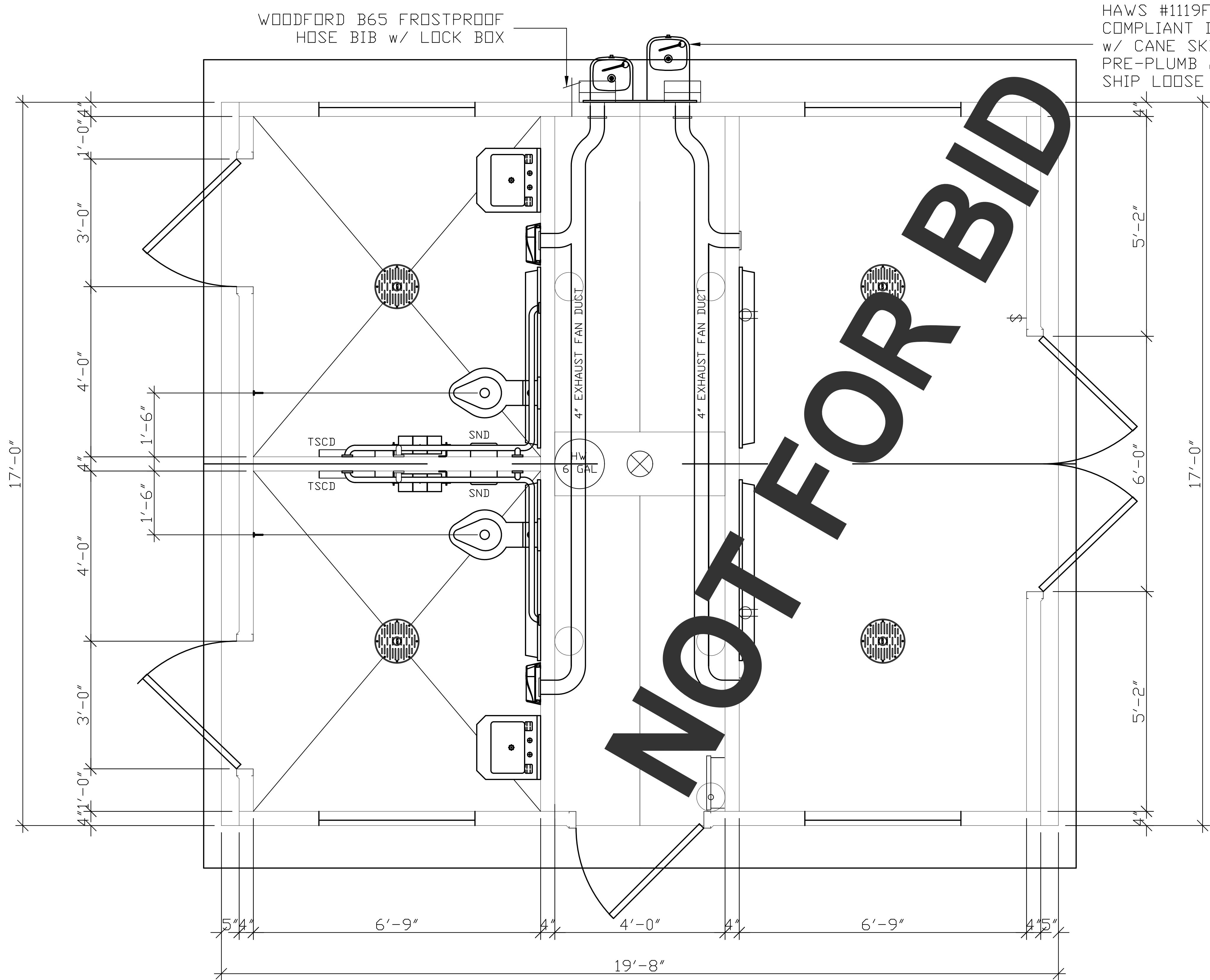
1" = 40'

SHEET NO.:

C8.1

CONTRACT NO.:

2016-WCCSP-100



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CXT
Precast Products
901 N. Highway 77 Hillsboro, TX 76645

PROJECT TITLE
CORTEZ SECTIONAL
BUILDING NUMBER CRS-016

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CXT Incorporated			
REV.	DESCRIPTION	APPROVAL	DATE
SCALE	3/4"=1'-0"	DATE	06-22-16
DRAWN	ROB D WALKER	FILE NO.	CRS-016
CHECKED	RDW	PLOT	32

FLOOR PLAN		
DWG NO.	SHEET	REV.
CRS-03	3	28

REVISIONS:

DATE: DESCRIPTION:

BY:

WCCSP TRI-VALLEY TRAIL

BID SET

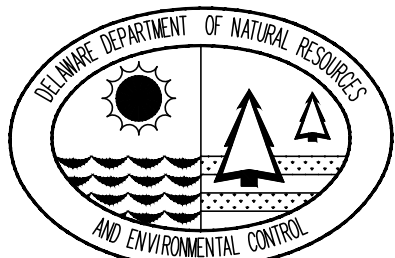
RESTROOM CONSTRUCTION DETAILS

SEAL:

CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE:

SEPTEMBER 7, 2016

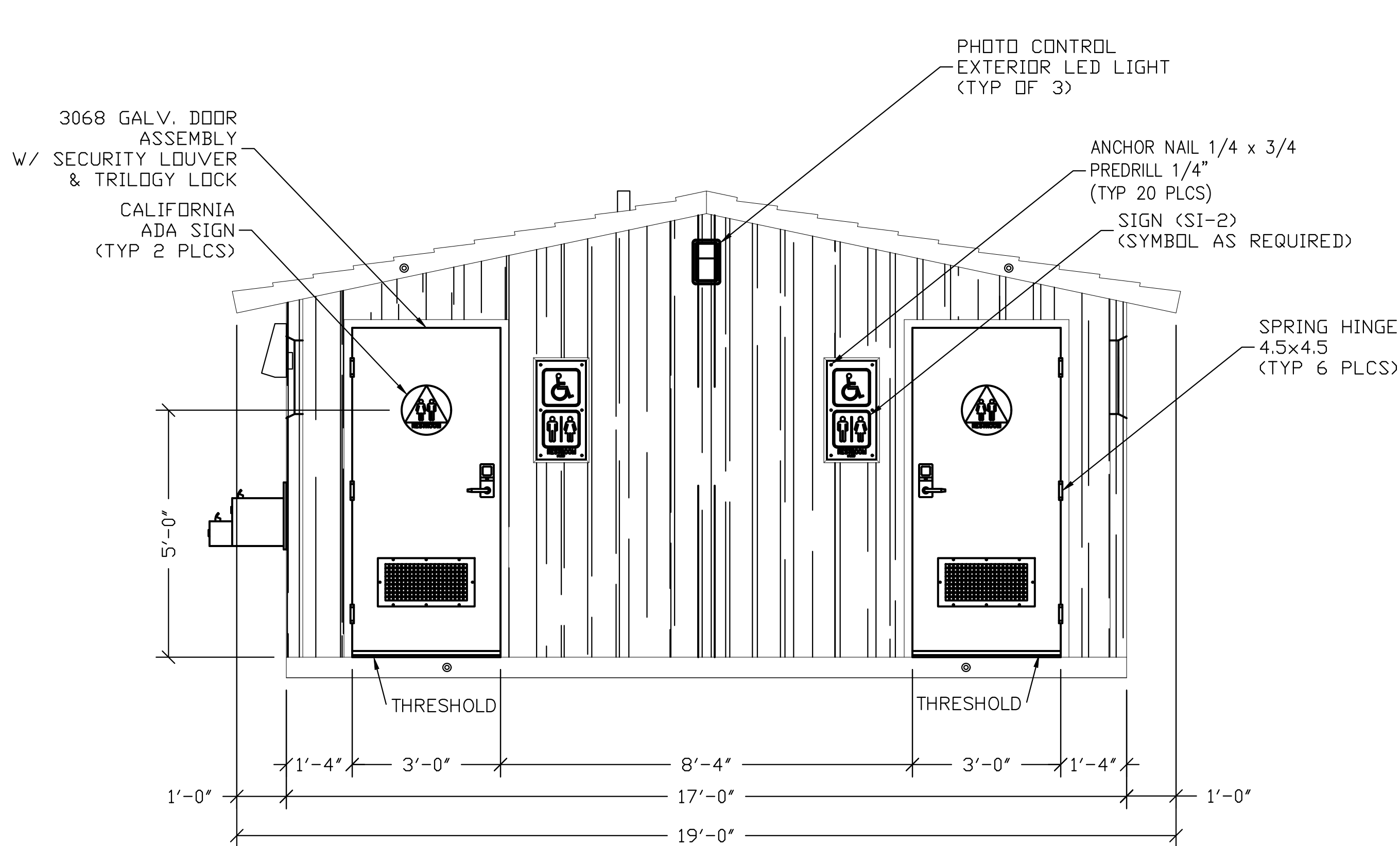
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SHEET NO.:

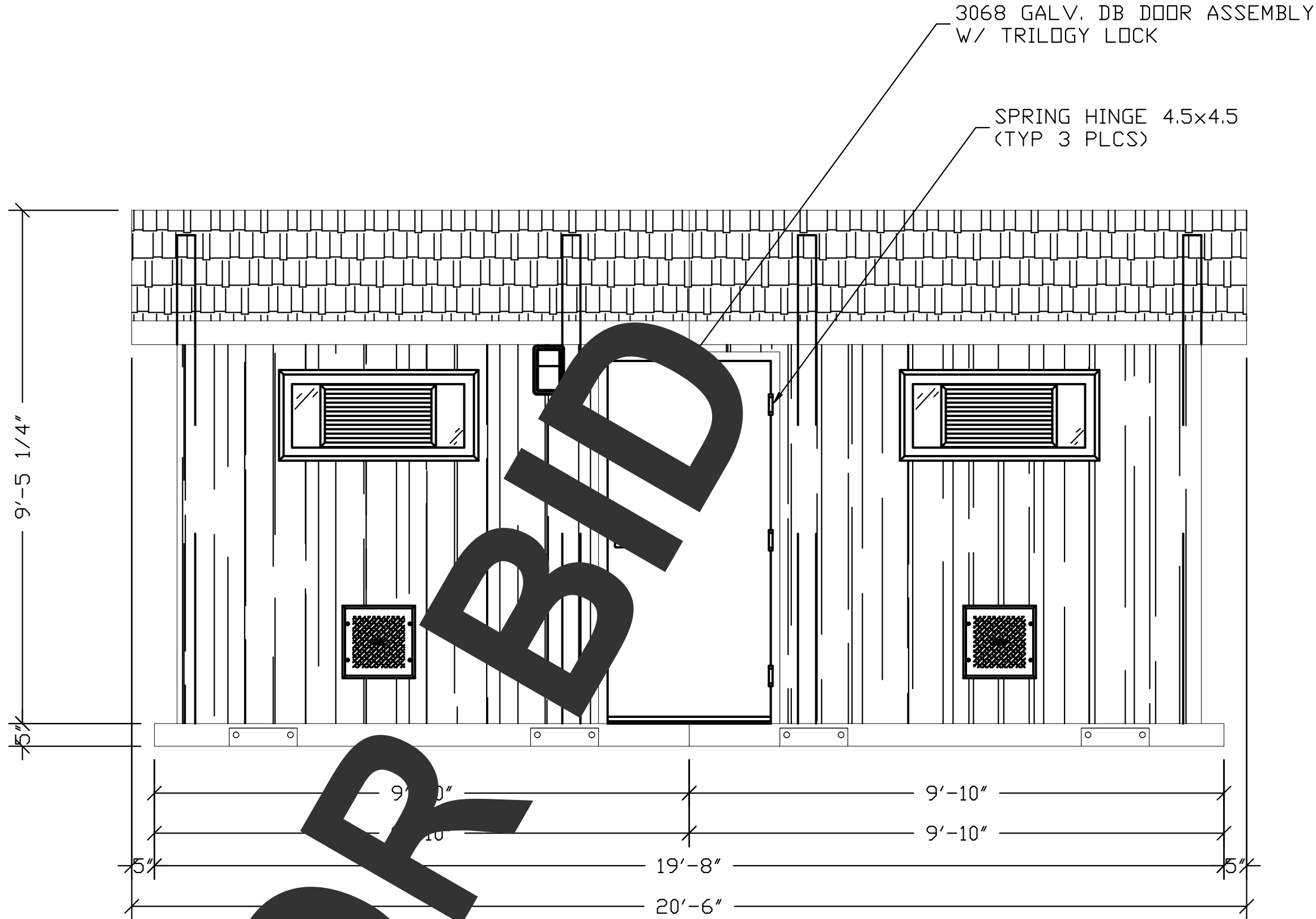
C8.2

CONTRACT NO.:

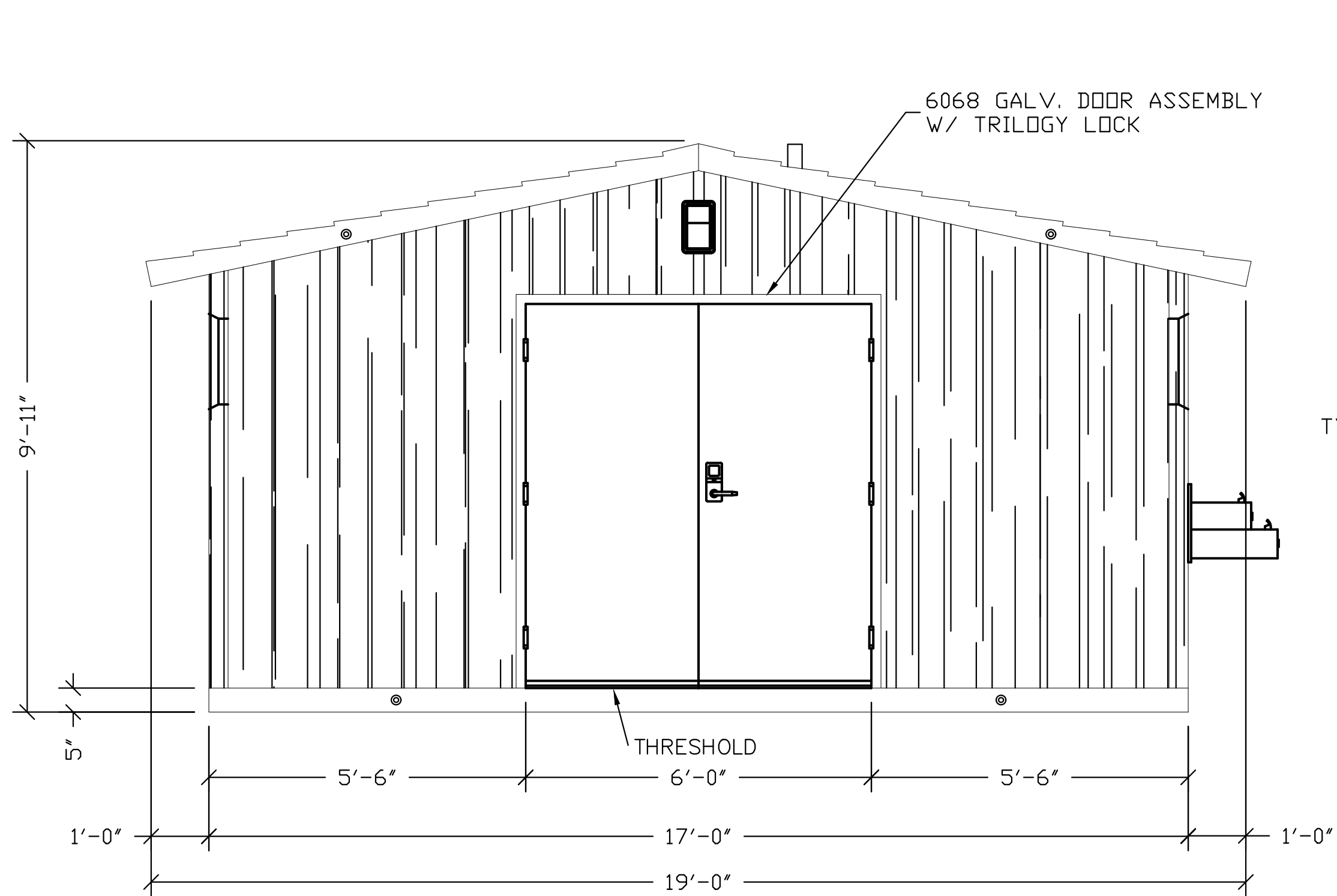
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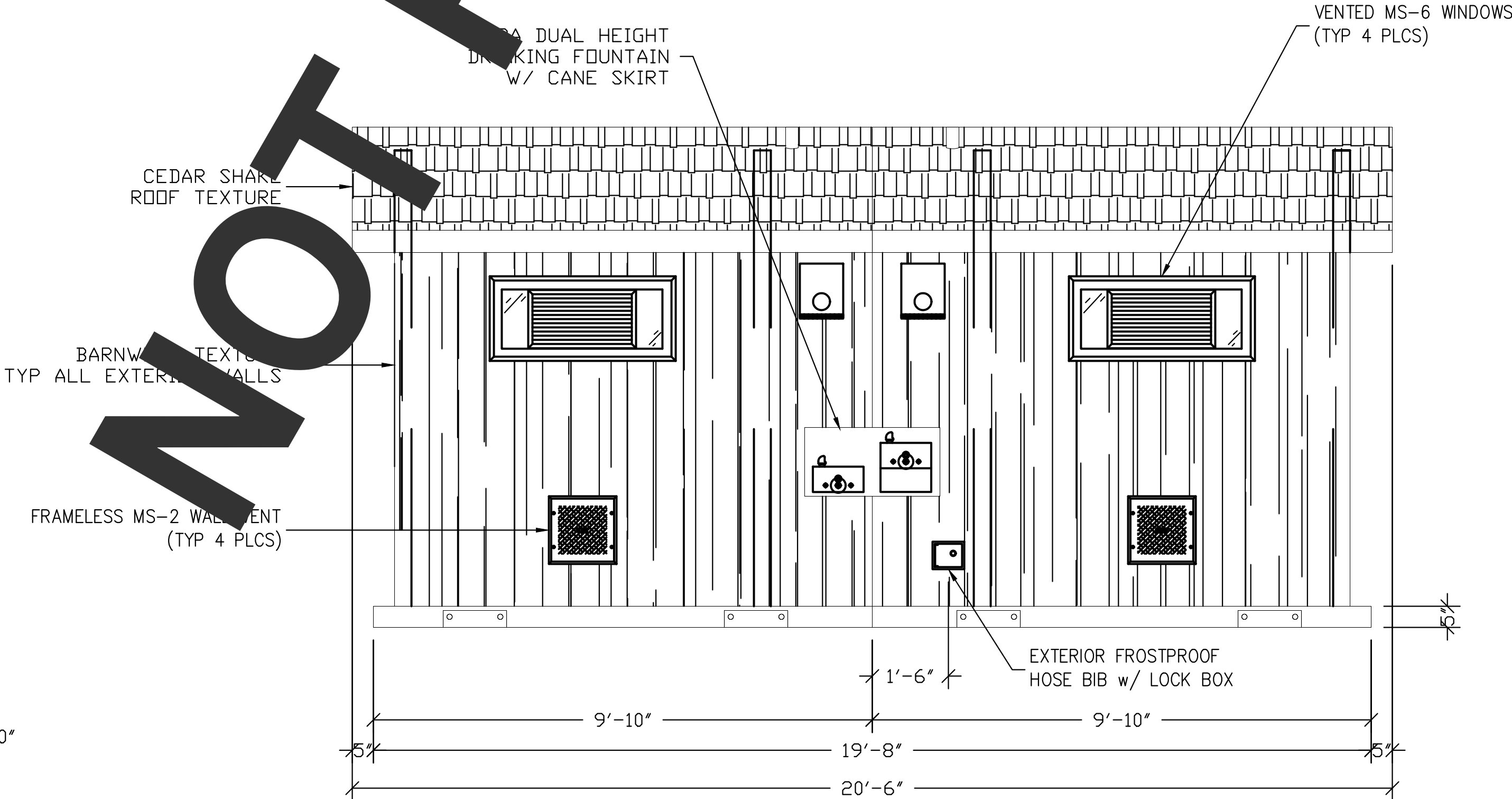
FRONT ELEVATION



RH SIDE ELEVATION



REAR ELEVATION



LH SIDE ELEVATION

EMBEDDED MATERIALS	
ITEM	QTY
3068 DOOR ASSEMBLY	3
SPRING HINGE 4.5x4.5	15
CALIFORNIA ADA SIGN	2
ADA DRINKING FOUNTAIN	1
FROST-PROOF HOSE BIB	1
6068 DOOR ASSEMBLY	1
SI-2	2
RM31215 SECURITY LOUVER	2

CU. FT. CONC.	SQ. FT. W.W.F.
APPROXIMATE WEIGHT	
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CXT
Precast Products

901 N. Highway 77 Hillsboro, TX 76645

PROJECT TITLE
CORTEZ SECTIONAL
BUILDING NUMBER CRS-016

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REV.	DESCRIPTION	APPROVAL	DATE
SCALE	1/2"=1'-0"	DATE	06-22-16
DRAWN	ROB D WALKER	FILE NO.	CRS-016
CHECKED	RDW	PLOT	48

BUILDING ELEVATIONS		
DWG NO.	SHEET	REV.
CRS-04	4 28	

REVISIONS:
DATE: DESCRIPTION:

WCCSP TRI-VALLEY TRAIL
BID SET

RESTROOM CONSTRUCTION DETAILS

SEAL:

CIVIL ENGINEER:
CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901
CEI CONTRACT NO.: 125002.17

DESIGNED BY:
WJH

DRAWN BY:
DLD

CHECKED BY:
SLR

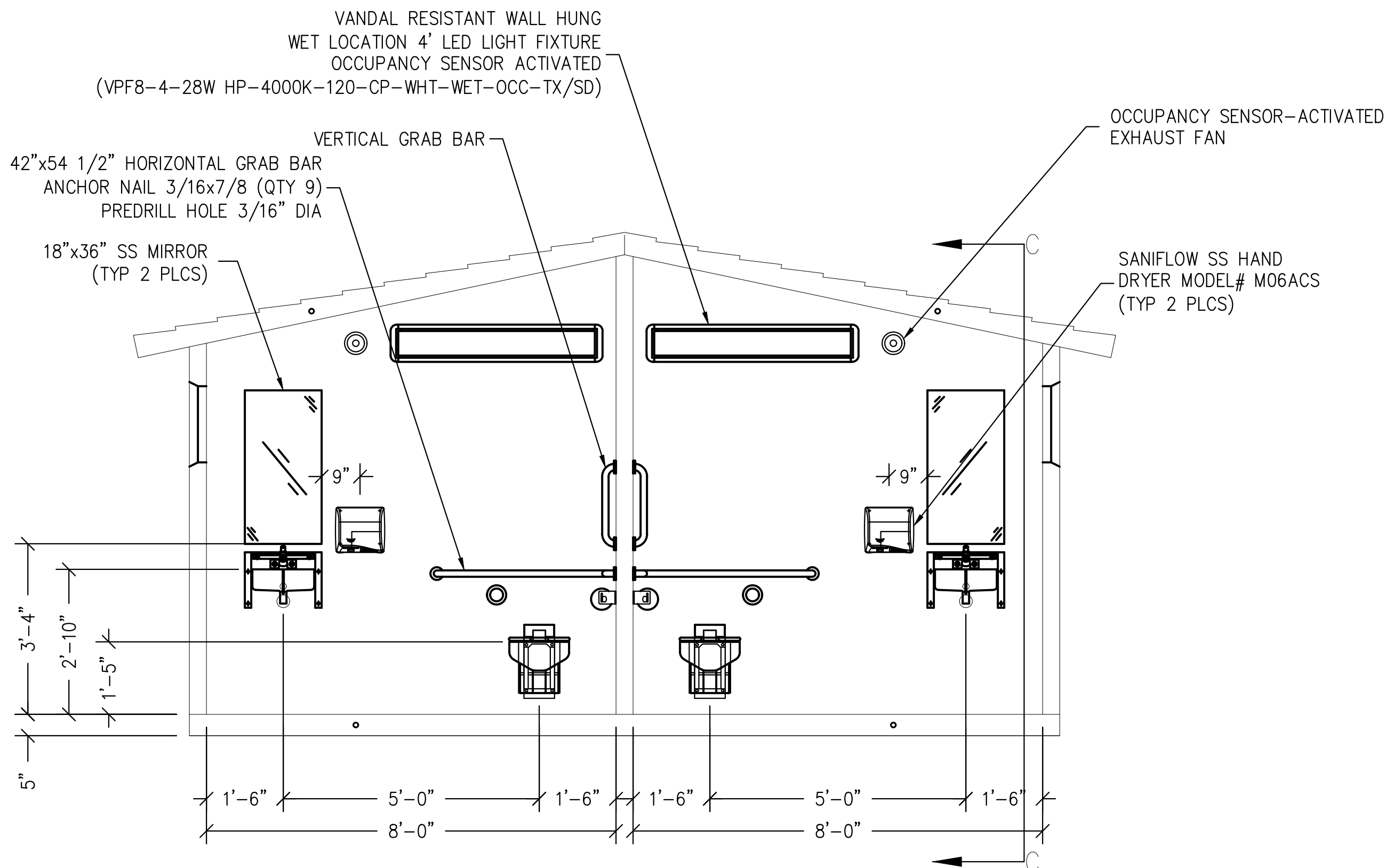
DATE:
SEPTEMBER 7, 2016

SCALE:
1" = 40'

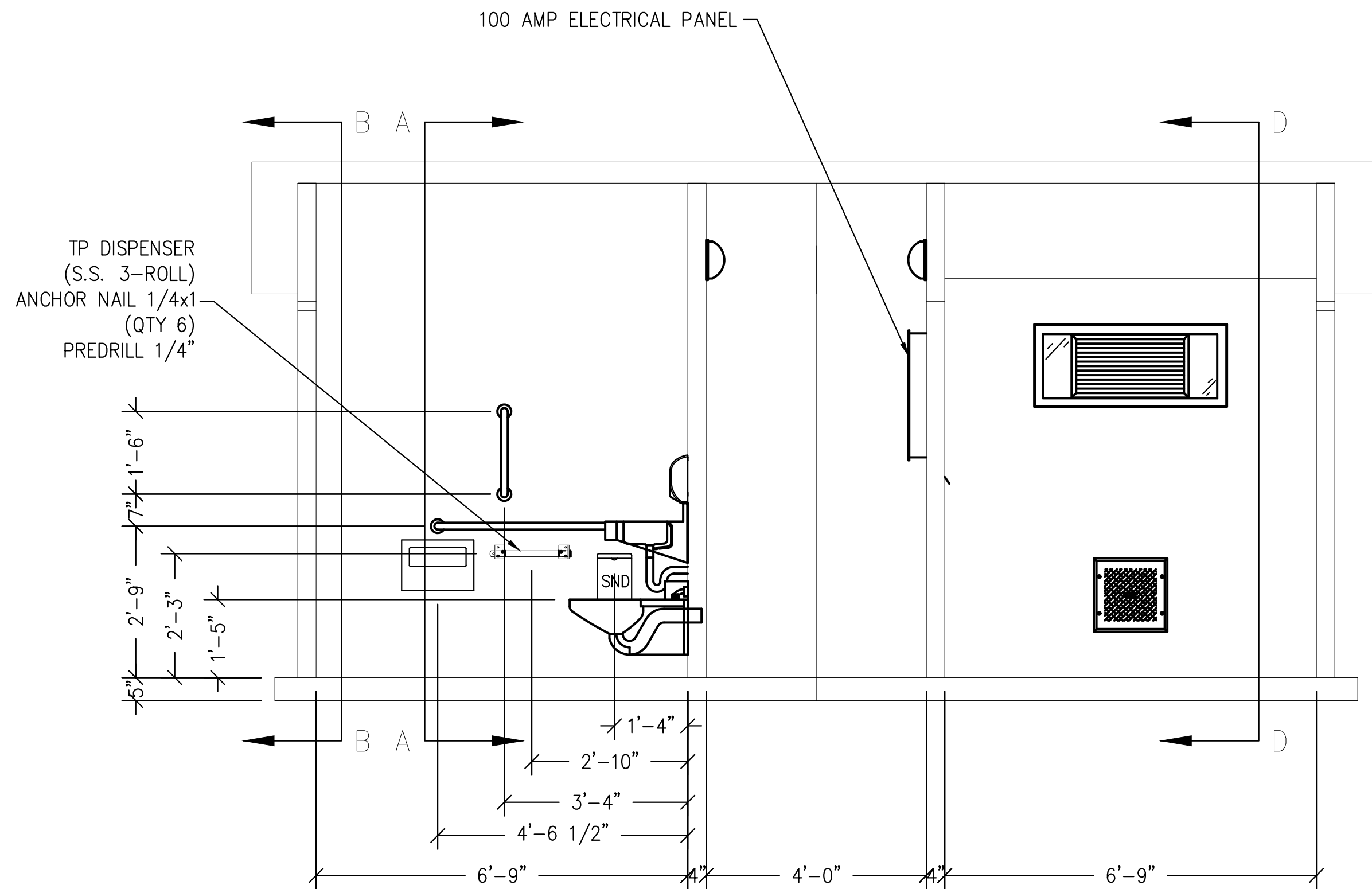
SHEET NO.:
C8.3

CONTRACT NO.:
2016-WCCSP-100

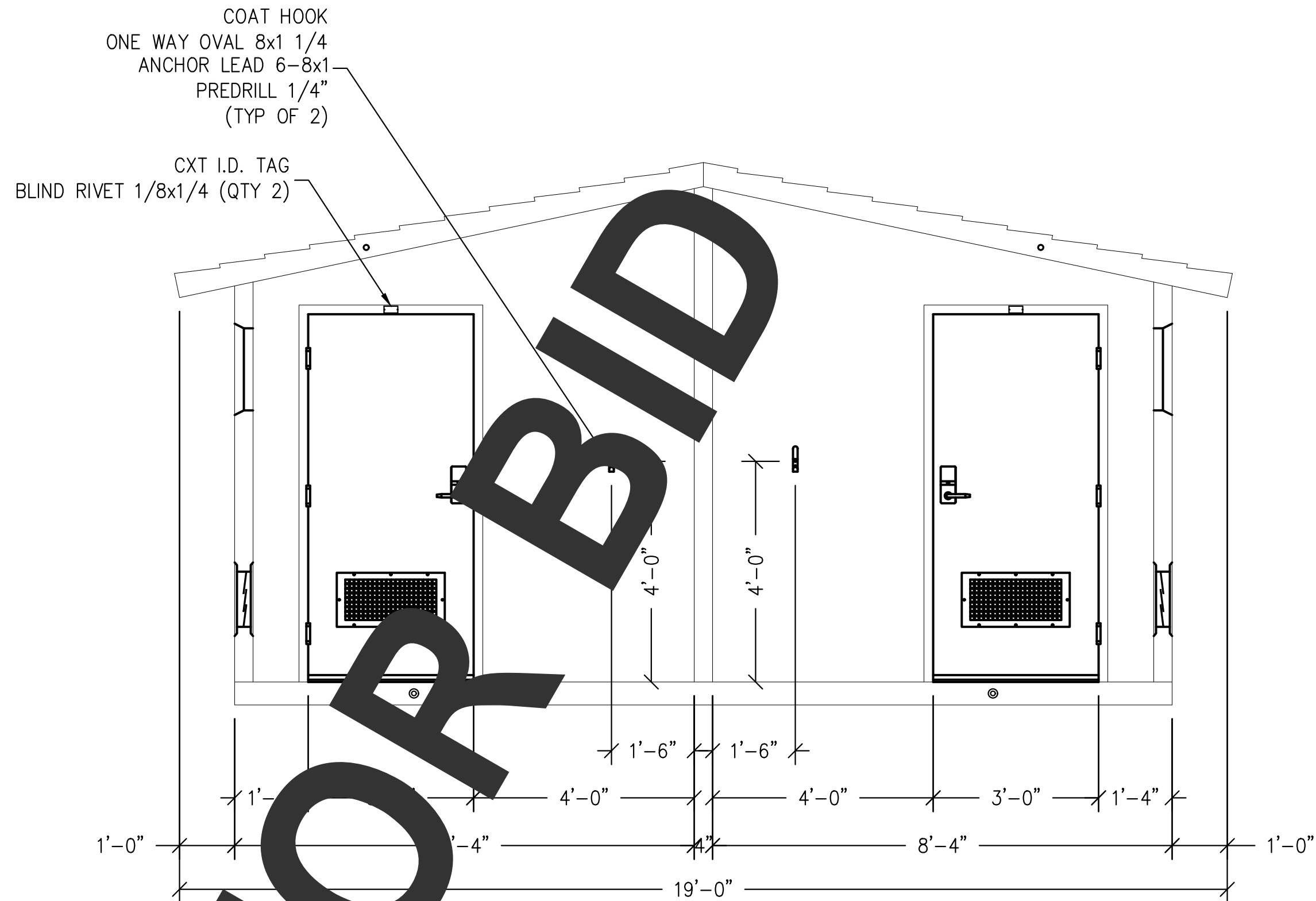
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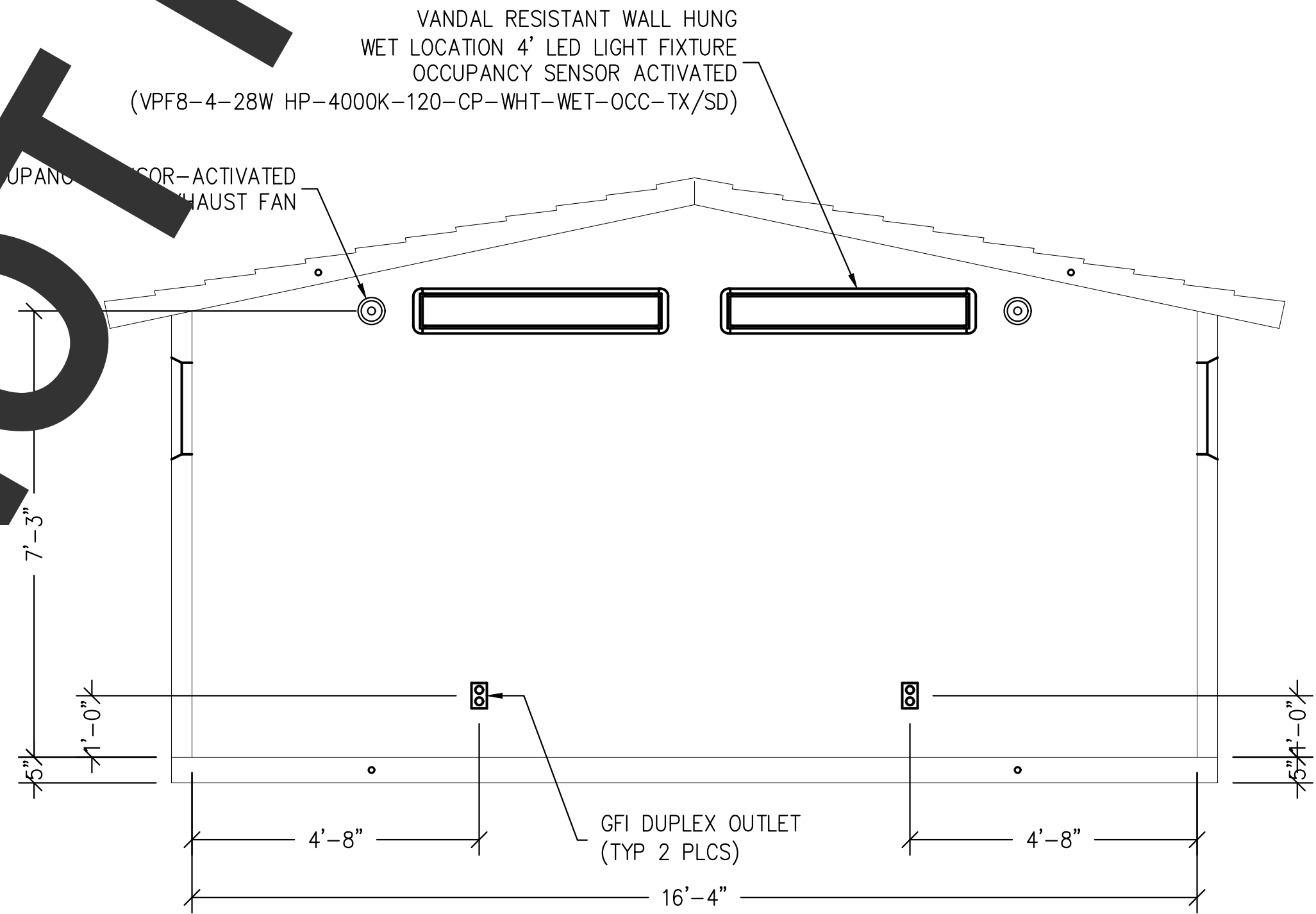
SECTION A - A



SECTION C - C



SECTION B - B



SECTION D - D

EMBEDDED MATERIALS	
ITEM	QTY
BLIND RIVET 1/8x1/4	4
GRAB BAR	2
TP DISPENSER	2
TOILET PAPER ROLL	6
COAT HOOK	2
DOOR STOP	2
ONE WAY OVAL 8x1 1/4	4
ANCHOR LEAD 6-8x1	4
CXT I.D. TAG	2
ANCHOR NAIL 1/4x1	12
ANCHOR NAIL 1/4x3/4	8
ANCHOR NAIL 3/16x7/8	30
VERT GRAB BAR	2
SND	2
TOILET SEAT COVER DISPENSER	2

CU. FT. CONC.	SQ. FT. W.W.F.
APPROXIMATE WEIGHT	
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CXT
Precast Products

901 N. Highway 77 Hillsboro, TX 76645

PROJECT TITLE			
CORTEZ SECTIONAL BUILDING NUMBER CRS-016			
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CXT Incorporated			
REV.	DESCRIPTION	APPROVAL	DATE
SCALE	1/2"=1'-0"	DATE	06-22-16
DRAWN	ROB D WALKER	FILE NO.	CRS-016
CHECKED	ROW	PLOT	48

BUILDING INTERIOR ELEVATIONS		
DWG NO.	SHEET	REV.
CRS-05	5	28

REVISIONS:	
DATE:	DESCRIPTION:

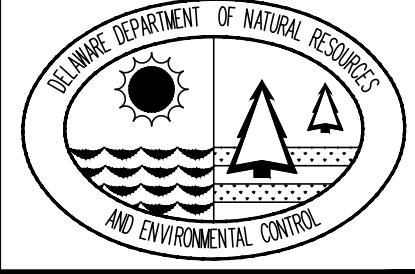
WCCSP TRI-VALLEY TRAIL
BID SET
RESTROOM CONSTRUCTION DETAILS

SEAL:

CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17



DESIGNED BY:
WJH
DRAWN BY:
DLD
CHECKED BY:
SLR

DATE:
SEPTEMBER 7,2016

SCALE:

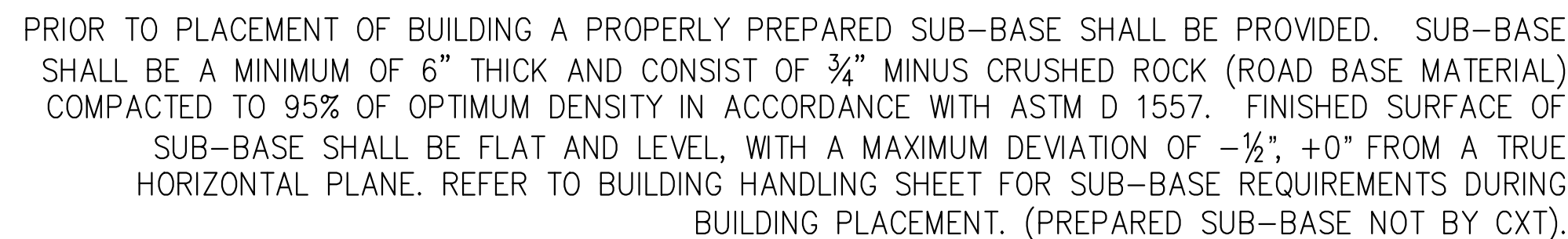
SHEET NO.:
C8.4

CONTRACT NO.:
2016-WCCSP-100

THIS FACTORY ASSEMBLED BUILDING AS CONSTRUCTED PROVIDES A RIGID BOX TYPE STRUCTURAL SYSTEM. VERTICAL LOADS ARE TRANSFERRED PRIMARILY THROUGH BEARING WALLS TO A PREPARED GRANULAR SUB-BASE WHICH DISSIPATES VERTICAL LOADS UNIFORMLY TO THE NATIVE SUBGRADE AND ALSO ACTS AS A FROST BARRIER. DUE TO THE INHERENT STIFFNESS OF THE BUILDING, IT WILL REMAIN SAFE AND STRUCTURALLY SOUND IN THE UNLIKELY EVENT OF FREEZING ACTION BELOW THE BUILDING.

LATERAL LOADS ARE TRANSFERRED TO THE GROUND THROUGH FRICTIONAL RESISTANCE WITHOUT SLIDING OR SHIFTING BETWEEN THE BUILDING FLOOR SLAB AND THE PREPARED SOIL AND GRAVEL SUB-BASE ON WHICH THE BUILDING RESTS. SEISMIC ANALYSES ARE BASED ON LOADS DETERMINED IN ACCORDANCE WITH THE 2013 CALIFORNIA BUILDING STANDARDS CODE USING PARAMETERS WHICH MEET OR EXCEED THE CODE PRESCRIBED REQUIREMENTS FOR THIS INSTALLATION.

THIS BUILDING, AS DESIGNED, RESTING ON A PROPOSED PREPARED GRANULAR SUB-BASE WILL BE SAFE AND STRUCTURALLY SOUND FOR VERTICAL AND LATERAL LOADS AS DISCUSSED ABOVE. A FULL DEPTH FOUNDATION WALL AT THE BUILDING PERIMETER, TYPICAL FOR CONCRETE TYPE FOUNDATION CONSTRUCTION, IS NOT REQUIRED FOR THIS BUILDING.



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Prefast Products

PROJECT TITLE
CORTEZ SECTIONAL
BUILDING NUMBER CRS-016

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CXT Incorporated			
REV.	DESCRIPTION	APPROVAL	DATE
SCALE	1/2" = 1'-0"	DATE	06-22-
DRAWN	ROB D WALKER	FILE NO.	CRS-016
CHECKED	RDW	PLOT	48

FOUNDATION DETAIL

DWG NO.	SHEET	REV
CRS-22	22	
	28	

REVISIONS:

WCCSP TRI-VALLEY TRAIL

BID SET

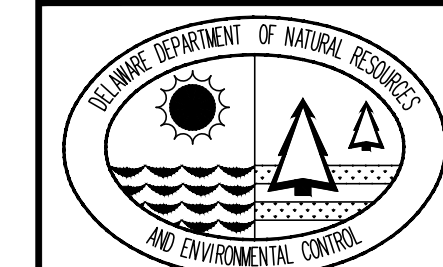
RESTROOM CONSTRUCTION DETAILS

SEAL

CIVIL ENGINEER

THIRD CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE _____

SEPTMBER 7.2016

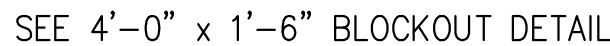
SCALE:

SHEET NO.:

C8.5

CONTRACT NO.

2016-WCCSP-100



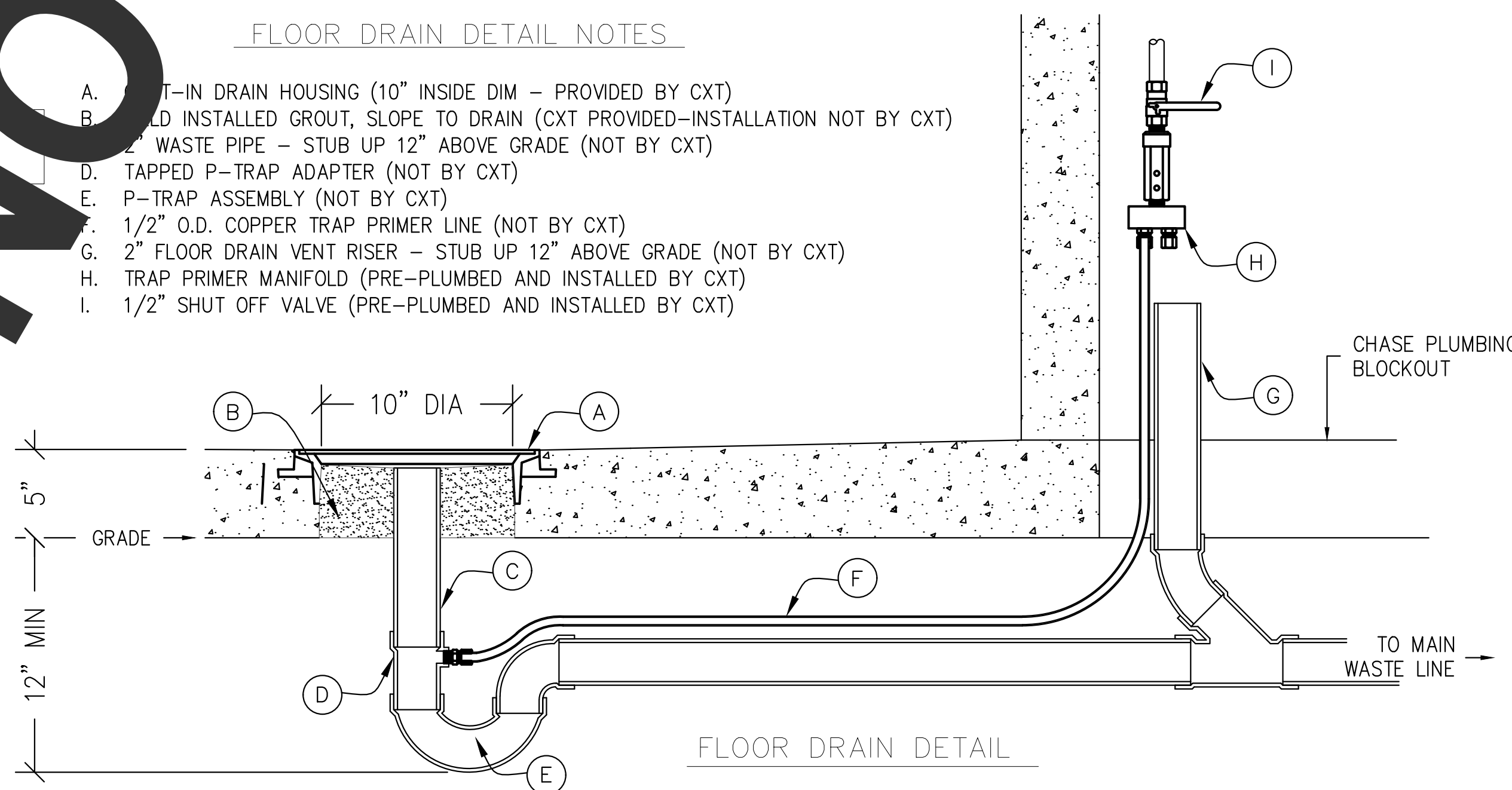
4'-0" x 1'-6" BLOCKOUT DETAIL

4. 4" CLEAN OUT TO GRADE.
2. 2" FLOOR DRAIN. FIELD INSTALLED TRAP PRIMER SYSTEM IF REQUIRED BY AUTHORITY HAVING JURISDICTION. (4'-0" x 1'-6" BLOCKOUT)
3. 2" VENT PIPES EXTENDED 12" ABOVE FINISHED FLOOR LEVEL, PROVIDE TEST PLUG. (4'-0" x 1'-6" BLOCKOUT)
4. 3" WASTE PIPE EXTENDED 12" ABOVE FINISHED FLOOR LEVEL, PROVIDE TEST PLUG. (4'-0" x 1'-6" BLOCKOUT)
5. 1/2" TYPE K ANNEALED "SOFT" COPPER WATER SERVICE EXTENDED 12" ABOVE FINISHED FLOOR LEVEL, PROVIDE CAP AT END. (4'-0" x 1'-6" BLOCKOUT)
6. 30" MIN. BURY PER LOCAL REQUIREMENTS TO PROTECT FLOOR DRAIN. FIELD INSTALLED TRAP PRIMER SYSTEM IF REQUIRED BY AUTHORITY HAVING JURISDICTION. (10" DIA BLOCKOUT)
7. 2" FLOOR DRAIN. FIELD INSTALLED TRAP PRIMER SYSTEM IF REQUIRED BY AUTHORITY HAVING JURISDICTION. BACKWATER VALVES ON DRAINS (NOT BY CXT) (10" DIA BLOCKOUT)
8. 30" MIN. BURY, PROVIDE TRACER TAP.
9. ELECTRICAL STUB UP, (8" DIA BLOCKOUT)
10. 2" VENT PIPES EXTENDED 12" ABOVE FINISHED FLOOR LEVEL, PROVIDE TEST PLUG. (8" DIA BLOCKOUT)

FLOOR DRAIN DETAIL NOTES

- A. 1" IT-IN DRAIN HOUSING (10" INSIDE DIM - PROVIDED BY CXT)
- B. 1" IT-IT INSTALLED GROUT, SLOPE TO DRAIN (CXT PROVIDED-INSTALLATION NOT BY CXT)
- C. 2" WASTE PIPE - STUB UP 12" ABOVE GRADE (NOT BY CXT)
- D. TAPPED P-TRAP ADAPTER (NOT BY CXT)
- E. P-TRAP ASSEMBLY (NOT BY CXT)
- F. 1/2" O.D. COPPER TRAP PRIMER LINE (NOT BY CXT)
- G. 2" FLOOR DRAIN VENT RISER - STUB UP 12" ABOVE GRADE (NOT BY CXT)
- H. TRAP PRIMER MANIFOLD (PRE-PLUMBED AND INSTALLED BY CXT)
- I. 1/2" SHUT OFF VALVE (PRE-PLUMBED AND INSTALLED BY CXT)

ALL PIPING INDICATED ON
THIS SHEET IS NOT BY CA



FLOOR DRAIN DETAIL

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3808 N. Sullivan Bldg. #7 Spokane, WA 99216



Precast Products

901 N. Highway 77 Hillsboro, TX 7664

PROJECT TITLE
CORTEZ SECTIONAL
BUILDING NUMBER CRS-016

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CXT Incorporated

REV.	DESCRIPTION	APPROVAL	DATE
SCALE	1/2"=1'-0"	DATE	06-22-1
DRAWN	ROB D WALKER	FILE NO.	CRS-016
CHECKED	RDW	PLOT	48

FIELD STUB UP LOCATIONS

DWG NO.	SHEET	REV.
CRS-23	23	
	28	

REVISIONS:

DATE: DESCRIPTION:

WCCSP TRI-VALLEY TRAIL

BID SET

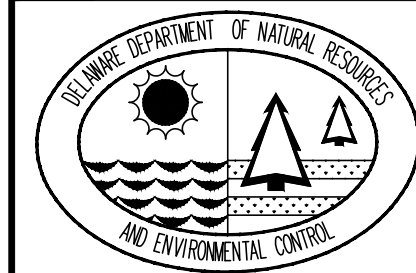
RESTROOM CONSTRUCTION DETAILS

SEAL

CIVIL ENGINEER

TH CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 125002.17



DESIGNED BY:

WJH

DRAWN BY:

DLD

CHECKED BY:

SLR

DATE:

SEPTEMBER 7, 2016

SCALE:

SHEET NO.:

C8.6

CONTRACT NO.

2016-WCCSP-100

THOMPSON STATION ROAD, NEWARK, NEW CASTLE COUNTY DELAWARE



SCALE: 1" = 1/2 MILE

REVISIONS:

DESCRIPTION:

BY:

WCCSP TRI-VALLEY TRAIL
SEDIMENT STORMWATER MANAGEMENT PLANS

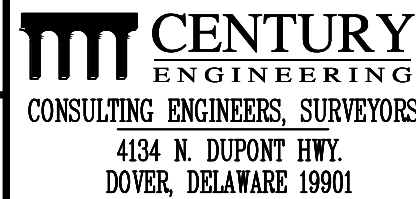
COVER SHEET

OWNER/DEVELOPER CERTIFICATION

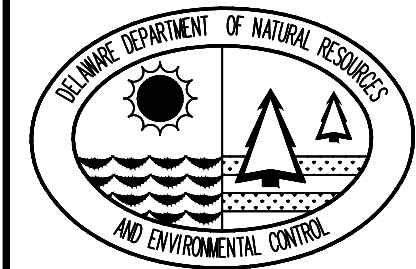
I, THE UNDERSIGNED, CERTIFY THAT ALL LAND CLEARING, CONSTRUCTION AND DEVELOPMENT SHALL BE DONE PURSUANT TO THE APPROVED PLAN AND THAT RESPONSIBLE PERSONNEL (I.E. BLUE CARD HOLDER) INVOLVED IN THE LAND DISTURBANCE WILL HAVE A CERTIFICATION OF TRAINING PRIOR TO INITIATION OF THE PROJECT, AT A DNREC SPONSORED OR APPROVED TRAINING COURSE FOR THE CONTROL OF EROSION AND SEDIMENT DURING CONSTRUCTION. IN ADDITION, I GRANT THE DNREC SEDIMENT AND STORMWATER PROGRAM AND/OR THE RELEVANT DELEGATED AGENCY THE RIGHT TO CONDUCT ON-SITE REVIEWS, AND I UNDERSTAND MY RESPONSIBILITIES UNDER THE NPDES CONSTRUCTION GENERAL PERMIT, AS REFERENCED ON THIS COVERSHEET.

CYNTHIA A. TODD, RLA
CONSTRUCTION PROJECT ADMINISTRATOR
OFFICE OF DESIGN AND DEVELOPMENT
DNREC - DIVISION OF PARKS AND RECREATION
89 KINGS HIGHWAY, DOVER, DE 19901
PHONE: 302-739-9210
FAX: 302-739-3817

CIVIL ENGINEER:



CEI CONTRACT NO. WCCSP-7A



DESIGNED BY:

ATF

DRAWN BY:

ATF

CHECKED BY:

AES

DATE:

SEPTEMBER 7, 2016

SCALE:

NOT TO SCALE

SHEET NO.:

SWM1.0

CONTRACT NO.:

2016-WCCSP-100

WETLAND CERTIFICATION

THIS PROPERTY, TAX MAP #08-001.00-021, HAS BEEN EXAMINED BY CENTURY ENGINEERING, INC FOR THE PRESENCE OF WATERS OF THE UNITED STATES, INCLUDING WETLANDS (SECTION 404 AND SECTION 10), STATE SUBAQUEOUS LANDS AND STATE REGULATED WETLANDS AS ESTABLISHED BY THE REVIEWING AGENCIES IN THE FORM OF MANUALS, POLICIES AND PROCEDURES IN PLACE AT THE TIME THAT THE INVESTIGATION WAS CONDUCTED. THE INFORMATION CONTAINED IN THIS PLAN SET IS IN ACCORDANCE WITH THIS CRITERIA, PER US ARMY CORPS JD #CENAP-OP-R-2015-989-85.

TJ AUSTIN ENVIRONMENTAL SCIENTIST CENTURY ENGINEERING, INC. 4134 NORTH DUPONT HIGHWAY DOVER, DELAWARE 19901 PHONE: (302) 734-9188 FAX: (302) 734-4589	DATE
---	------

CERTIFICATION OF PLAN ACCURACY

I, HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED UNDER MY SUPERVISION AND TO THE BEST OF MY KNOWLEDGE COMPLIES WITH THE APPLICABLE STATE AND LOCAL REGULATIONS AND ORDINANCES.

ALEX SCHMIDT, P.E., DE NO. 16139 CENTURY ENGINEERING, INC. 4134 NORTH DUPONT HIGHWAY DOVER, DELAWARE 19901 PHONE: (302) 734-9188 FAX: (302) 734-4589	DATE
---	------

DATA COLUMN

- COUNTY TAX MAP: 08-035.00-032
08-040.00-054
08-040.00-055
08-041.00-027
08-041.00-028
08-041.00-029
08-041.00-030
08-047.00-097
2. DNREC PROJECT NUMBER:
3. ADDRESS OF SITE: THOMPSON STATION ROAD
NEWARK, DE 19711
4. SITE COORDINATES AT YORKLYN ROAD BRIDGE: LATITUDE: 39.7154 N
LONGITUDE: -75.7409 W
5. ZONING: EXISTING: SR-SUBURBAN RESERVE
PROPOSED: SR-SUBURBAN RESERVE
- LOT AREA: TAX PARCEL NO. EXISTING PROPOSED
08-035.00-032 67.89 ACS. 67.89 ACS.
08-040.00-054 52.23 ACS. 52.23 ACS.
08-040.00-055 29.24 ACS. 29.24 ACS.
08-041.00-027 47.83 ACS. 47.83 ACS.
08-041.00-028 91.09 ACS. 91.09 ACS.
08-041.00-029 111.44 ACS. 111.44 ACS.
08-041.00-030 66.61 ACS. 66.61 ACS.
08-047.00-097 50.76 ACS. 50.76 ACS.
- SOURCE OF TITLE: TAX PARCEL NO. DEED RECORD/INSTRUMENT NUMBER
08-035.00-032 2399-247
08-040.00-054 1368-207
08-040.00-055 2417-34
08-041.00-027 20020814-0078688
08-041.00-028 808-151
08-041.00-029 1368-207
08-041.00-030 808-151
08-047.00-097 2787-245
6. EXISTING USE: STATE PARK
7. PROPOSED USE: STATE PARK WITH TRAIL
PARKING LOT & IMPROVEMENTS
8. DATUM: EXISTING
VERTICAL - NAVD 88
HORIZONTAL - NAD 83
BENCHMARK: - EXISTING DRAINAGE MANHOLE
INTERSECTION THOMPSON STATION ROAD AND NINE FOOT ROAD
ELEV. 342.39
9. SITE CONDITIONS WITHIN LIMITS OF DISTURBANCE (ACRES)

EXISTING CONDITIONS	PROPOSED CONDITIONS
BUILDING 0.00 ACRES	BUILDING 0.00 ACRES
PAVEMENT/CONCRETE 1.82 ACRES	PAVEMENT/CONCRETE 3.09 ACRES
TREES 2.09 ACRES	TREES 1.69 ACRES
OPEN SPACE 12.07 ACRES	OPEN SPACE 11.19 ACRES
TOTAL 15.98 ACRES	TOTAL 15.98 ACRES
IMPERVIOUS CONDITIONS	
EXISTING 11.4%	
PROPOSED 19.3%	
10. FLOOD PLAIN MAP: PER FIRM MAP NUMBER 10003C00130K, DATED FEBRUARY 4, 2015, THIS SITE LIES WITHIN ZONE X, AREA DETERMINED TO BE OUTSIDE THE ANNUAL 0.2% CHANCE OF FLOODPLAIN.
11. WATER RESOURCE PROTECTION: ACCORDING TO THE WATER RESOURCE PROTECTION MAP FOR NEW CASTLE COUNTY, MAP 1 OF 3, DATED 1987, LAST REVISED DECEMBER 2011, THIS SITE DOES NOT LAY WITHIN A RECHARGE WATER RESOURCE PROTECTION AREA.
12. TOTAL LAND DISTURBANCE: THE TOTAL LAND DISTURBANCE PROPOSED BY THIS PLAN IS 15.98± ACRES (696.089± S.F.)
13. LIMITS OF CONSTRUCTION: THE TOTAL LIMITS OF CONSTRUCTION FOR THE SITE IS 15.98± ACRES (696.089± S.F.)
14. WETLANDS: THE TOTAL WETLANDS EXISTING WITHIN THE LIMITS OF DISTURBANCE IS 0.00± ACRES (000± S.F.)
15. PROPOSED DISCHARGE LOCATIONS
1.) POA 1 - ON SITE SUMP AREA: CONTRIBUTING LOD AREA = 0.70 ACRES
2.) POA 2 - RED CLAY CREEK: CONTRIBUTING LOD AREA = 1.83 ACRES
16. OWNER: STATE OF DELAWARE
DNREC, DIVISION OF PARKS & RECREATION
89 KINGS HIGHWAY, DOVER, DE 19901
PHONE: 302-739-8210
FAX: 302-739-3817
17. REVIEW AGENCY: DNREC, DIVISION OF WATERSHED STEWARDSHIP
89 KINGS HIGHWAY, DOVER, DE 19901
PHONE: (302) 739-9921
FAX: (302) 739-6724
18. CIVIL ENGINEER: CENTURY ENGINEERING, INC.
4134 NORTH DUPONT HIGHWAY, DOVER, DE 19901
ALEX SCHMIDT, P.E.
PHONE: (302) 734-9188
FAX: (302) 734-4589

GENERAL NOTES

1. THE DNRCE SEDIMENT AND STORMWATER MANAGEMENT PROGRAM MUST BE NOTIFIED IN WRITING FIVE (5) DAYS PRIOR TO COMMENCING WITH CONSTRUCTION. FAILURE TO DO SO CONSTITUTES A VIOLATION OF THE SEDIMENT AND STORMWATER MANAGEMENT PLAN.
2. REVIEW AND APPROVAL OF THE SEDIMENT AND STORMWATER MANAGEMENT PLAN SHALL NOT RELIEVE THE CONTRACTOR FROM HIS OR HER RESPONSIBILITIES FOR COMPLIANCE WITH THE REGULATIONS OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM ERRORS OR OMISSIONS IN THE APPROVED PLAN.
3. IF THE APPROVED PLAN NEEDS TO BE MODIFIED, ADDITIONAL SEDIMENT AND STORMWATER CONTROL MEASURES MAY BE REQUIRED AS DEEMED NECESSARY BY DNRCE OR THE DELEGATED AGENCY.
4. FOLLOWING THE SOIL DISTURBANCE OR RESTORATION:
 - a. TEMPORARY STABILIZATION SHALL BE COMPLETED FOR ALL PERMETER SEDIMENT CONTROLS, SOIL STOCKPILES, AND ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE WITHIN SEVEN (7) DAYS UNLESS MORE RESTRICTIVE FEDERAL REQUIREMENTS APPLY.
 - b. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL COMPLY WITH THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
 - c. AT ANY TIME A DETERMINING OPERATION IS USED, IT SHALL BE PREVIOUSLY APPROVED BY THE AGENCY CONSTRUCTION SITE REVIEWER FOR A NON-EROSIVE POINT OF DISCHARGE, AND A DETERMINING PERMIT SHALL BE APPROVED BY THE DNRCE WELL PERMITTING BRANCH.
5. APPROVED PLANS REMAIN VALID FOR 3 YEARS FROM THE DATE OF APPROVAL.
6. POST CONSTRUCTION VERIFICATION DOCUMENTS ARE TO BE SUBMITTED TO THE DNRCE SEDIMENT AND STORMWATER PROGRAM WITHIN 60 DAYS OF STORMWATER MANAGEMENT PLAN COMPLETION.
7. APPROVAL OF A SEDIMENT AND STORMWATER PLAN DOES NOT GRANT OR IMPLY A RIGHT TO DISCHARGE STORMWATER RUNOFF. THE DEVELOPER OR CONTRACTOR SHALL OBTAIN ALL NECESSARY AND ALL AGREEMENTS, EASEMENTS, ETC., NECESSARY TO COMPLY WITH STATE DRAINAGE AND OTHER APPLICABLE LAWS.
8. THE NOTICE OF INTENT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER NPDES GENERAL PERMIT FOR THIS PROJECT IS #4961. AT ANY TIME THE OWNERSHIP FOR THIS PROJECT IS TRANSFERRED TO ANOTHER PARTY BY AUTHORIZATION OR A CO-PERMIT APPLICATION MUST BE SUBMITTED TO DNRCE. THE PERMITTEE OF RECORD SHALL NOT BE RELIEVED OF THEIR RESPONSIBILITIES UNTIL A NOTICE OF TERMINATION HAS BEEN PROCESSED BY DNRCE.
9. THE OWNER SHALL BE FAMILIAR WITH AND COMPLY WITH ALL ASPECTS OF THE NPDES CONSTRUCTION GENERAL PERMIT ASSOCIATED WITH THE PROJECT, INCLUDING, BUT NOT LIMITED TO, PERFORMING WEEKLY SITE INSPECTIONS DURING CONSTRUCTION AND AFTER RAIN EVENTS, AND MAINTAINING WRITTEN LOGS OF THESE INSPECTIONS.
10. BEFORE ANY EARTHWORK OR EXCAVATION TAKES PLACE, THE CONTRACTOR SHALL FILL EXISTING UTILITY AT 811 OR 1-800-485-8555 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, TO HAVE ALL EXISTING UTILITIES MARKED ONSITE.
11. THE CONTRACTOR SHALL AT ALL TIMES PROTECT AGAINST SEDIMENT OR DEBRIS LAIDEN RUNOFF OR WIND FROM LEAVING THE SITE. PERMETER CONTROLS SHALL BE CHECKED DAILY AND ADJUSTED AS NECESSARY TO PREPARED TO FILL EXISTING UTILITY AND CONTROL SEDIMENT FROM LEAVING THE SITE. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED HALF OF THE EFFECTIVE CAPACITY OF THE CONTROL. EXCESS SEDIMENT ACCUMULATED MAY NEED TO ADJUST OR ALTER MEASURES IN TIMES OF ADVERSE WEATHER CONDITIONS, OR AS DIRECTED BY THE AGENCY CONSTRUCTION SITE REVIEWER.
12. BEST AVAILABLE TECHNOLOGY (BAT) SHALL BE EMPLOYED TO MANAGE TURBID DISCHARGES IN ACCORDANCE WITH REQUIREMENTS AND DEL. C. CHAPTER 23, TITLE 23, SUBTITLE 2, CONTROL OF WATER POLLUTION, SECTION 9.102, KNOWN AS SPECIAL CONDITIONS FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES AND DEPARTMENT POLICIES, PROCEDURES, AND GUIDANCE.
13. DOCUMENTATION OF SOIL TESTING AND MATERIALS USED FOR TEMPORARY OR PERMANENT STABILIZATION INCLUDING BUT NOT LIMITED TO SOIL TEST RESULTS, SEED TAGS, SOIL AMENDMENT TAGS, ETC. SHALL BE PROVIDED TO THE DEPARTMENT OR DELEGATED AGENCY AT THE TIME THAT PERMITS FOR TEMPORARY STABILIZATION HAS BEEN COMPLETED IN ACCORDANCE WITH THE APPROVED PLAN. THE DEPARTMENT OR DELEGATED AGENCY MAY REQUIRE ADDITIONAL SOIL TESTING AND REAPPLICATION OF PERMANENT OR TEMPORARY STABILIZATION IN ACCORDANCE WITH SPECIFICATIONS PROVIDED IN THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK OR ALTERNATIVE MEASURES THAT PROVIDE FUNCTIONAL EQUIVALENCY.
14. CONTRACTOR SHALL ONLY EXCAVATE AS MUCH TRAIL ALIGNMENT AS CAN BE BACKFILLED WITH BASE COURSE STONE AND STABILIZED IN ONE DAY. DO NOT EXCAVATE IF IT WILL NOT BE STABILIZED IN THE SAME DAY.

PROJECT NOTES

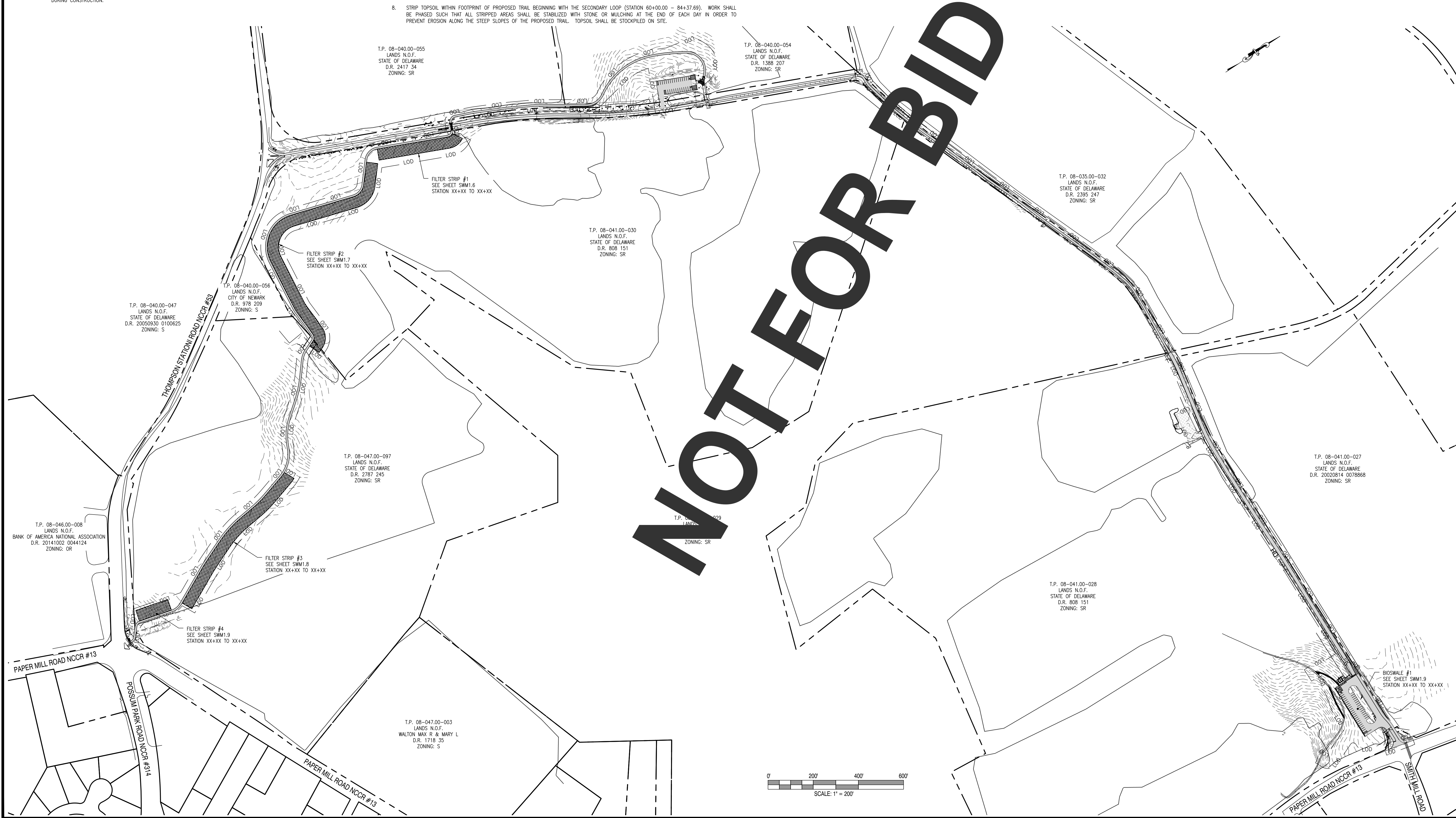
- TOTAL LOD AREA = 9.56 ACRES (414,585± S.F.)
- TOTAL WETLAND AREA WITHIN LOD = 0.0 ACRES (0.0± S.F.)
- THE ENTIRE LOD IS OUTSIDE THE 100-YR FLOODPLAIN.
- EXCAVATION VOLUMES: SPOIL: 87,874 CF / BORROW: 0 CF
- GEOTEXTILE FOR THE STABILIZED CONSTRUCTION ENTRANCE SHALL MEET DNREC TYPE GS-1 SPECIFICATIONS. EXAMPLE PRODUCTS INCLUDE: MIRAFI 600X, AMOCO 2006, AND GEOTEX 315ST
- ALL DISTURBED AREAS WITHIN THE LOD SHALL BE STABILIZED WITH 4" TOPSOIL, SEED, AND MULCH. TEMPORARY SEEDING SHALL MEET SPECIFICATIONS OF DNREC TEMPORARY SEED MIX #3, 5, OR 6. TOPSOIL SHALL NOT BE REQUIRED FOR TEMPORARY SEEDING. PERMANENT SEEDING SHALL MEET SPECIFICATIONS OF DNREC PERMANENT SEED MIX #9, AND SEED MIX #3 FOR FILTER STRIP AREAS. MULCH SHALL BE BLOWN STRAW PER MULCHING DETAILS ON SHEET SWM 1.3 OR STABILIZATION MATING--SLOPE PER DETAILS ON SHEET SWM 1.2.
- SPRINKLING SHALL BE THE STABILIZATION MEASURE INITIATED IF DUST CONTROL BECOMES A PROBLEM.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN AND REPAIR ALL EROSION AND SEDIMENT CONTROL PRACTICES DURING CONSTRUCTION.
- LOCATIONS OF DUMPSTER AND STAGING AREAS ARE SHOWN ON PLANS. IF THESE LOCATIONS MUST BE MOVED, THE NEW LOCATION SHALL BE APPROVED BY THE AGENCY CONSTRUCTION SITE REVIEWER.
- CONTRACTOR SHALL ONLY EXCAVATE AS MUCH TRAIL ALIGNMENT AS CAN BE BACKFILLED WITH BASE COURSE STONE AND STABILIZED IN ONE DAY. DO NOT EXCAVATE IF IT WILL NOT BE STABILIZED IN THE SAME DAY.

SEQUENCE OF CONSTRUCTION

- NOTIFY THE DNREC SEDIMENT AND STORMWATER PROGRAM IN WRITING AT LEAST FIVE (5) DAYS PRIOR TO THE START OF CONSTRUCTION. FAILURE TO DO SO CONSTITUTES A VIOLATION OF THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLAN.
- PRIOR TO ANY CLEARING, INSTALLATION OF SEDIMENT CONTROL MEASURES OR GRADING, A PRECONSTRUCTION MEETING MUST BE SCHEDULED AND CONDUCTED WITH THE AGENCY CONSTRUCTION SITE REVIEWER. THE LANDOWNER/DEVELOPER, CONTRACTOR, AND CERTIFIED CONSTRUCTION REVIEWER ARE REQUIRED TO BE IN ATTENDANCE AT THE PRE-CONSTRUCTION MEETING; THE DESIGNER IS RECOMMENDED TO ATTEND.
- CLEAR AND GRUB AS REQUIRED TO INSTALL STABILIZED CONSTRUCTION ENTRANCE. INSTALL STABILIZED CONSTRUCTION ENTRANCE. CLEAR AND GRUB AS REQUIRED TO INSTALL SILT FENCE. INSTALL SILT FENCE. ALL PERIMETER CONTROLS ARE TO BE REVIEWED BY THE AGENCY CONSTRUCTION SITE REVIEWER AND APPROVED PRIOR TO PROCEEDING WITH FURTHER SITE DISTURBANCE OR CONSTRUCTION.
- AT THE OWNER'S DIRECTION, THE CONTRACTOR SHALL PLACE SENSITIVE AREA PROTECTION AROUND ALL TREES WITHIN THE LIMITS OF DISTURBANCE THAT ARE TO REMAIN FOLLOWING CONSTRUCTION.
- THE CONTRACTOR SHALL AT ALL TIMES PROTECT AGAINST SEDIMENT OR DEBRIS LADEN RUNOFF OR WIND FROM LEAVING THE SITE. PERIMETER CONTROLS SHOULD BE CHECKED DAILY AND ADJUSTED AND/OR REPAIRED TO FULLY CONTAIN AND CONTROL SEDIMENTATION ON THE SITE. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED HALF OF THE EFFECTIVE CAPACITY OF THE CONTROL. IN ADDITION, THE CONTRACTOR MAY NEED TO ADJUST OR REPAIR MEASURES IN TIMES OF ADVERSE WEATHER CONDITIONS, OR AS DIRECTED BY THE AGENCY CONSTRUCTION SITE REVIEWER.
- STAKE OUT FILTER STRIP LOCATIONS.
- PLACE STONE OPTION CULVERT INLET PROTECTION AT EXISTING PIPE #1. PLACE COMPOST FILTER LOGS UPSTREAM OF INLETS TO EXISTING PIPES #2 & #3 AS MODIFIED CULVERT INLET PROTECTION.
- STRIP TOPSOIL WITHIN FOOTPRINT OF PROPOSED TRAIL BEGINNING WITH THE SECONDARY LOOP (STATION 60+00.00 - 84+37.69). WORK SHALL BE PHASED SUCH THAT ALL STRIPPED AREAS SHALL BE STABILIZED WITH STONE OR MULCHING AT THE END OF EACH DAY IN ORDER TO PREVENT EROSION ALONG THE STEEP SLOPES OF THE PROPOSED TRAIL. TOPSOIL SHALL BE STOCKPILED ON SITE.
- IF STONE BASE WILL REMAIN UNPAVED FOR GREATER THAN 48 HOURS, THE CONTRACTOR SHALL PLACE COMPOST FILTER LOGS ON STONE BASE PER THE DETAILS SPECIFIED ON SHEET SWM1.2 AT 50-FOOT INCREMENTS ALONG THE PROPOSED TRAIL. THE ANCHORING STAKES SHALL BE PLACED WITH A MAXIMUM SPACING OF 4' ON CENTER. THE CONTRACTOR SHALL REMOVE COMPOST FILTER LOGS PRIOR TO PAVING.
- STRIP TOPSOIL WITHIN FOOTPRINT OF REMAINING TRAIL AND PARKING AREA. PERFORM ROUGH GRADING, AND STOCKPILE ANY EXCESS SUBGRADE MATERIAL ON SITE.
- PLACE STONE BASE FOR ALL UNSTABILIZED PAVED AREAS.
- NOTIFY THE PERSON RESPONSIBLE (CERTIFIED CONSTRUCTION REVIEWER) FOR STORMWATER SYSTEM REVIEW AT LEAST THREE (3) DAYS PRIOR TO THE START OF STORMWATER SYSTEM CONSTRUCTION; STORMWATER FACILITIES MUST BE REVIEWED THROUGHOUT THEIR CONSTRUCTION.
- PERMANENTLY GRADE AND STABILIZE ALL DISTURBED AREAS INCLUDING COMPLETE CONSTRUCTION OF ALL FILTER STRIPS. FILTER STRIPS SHALL BE CONSTRUCTED PER FILTER STRIP SEQUENCE OF CONSTRUCTION SPECIFIED ON SHEETS SWM1.6, SWM1.7, SWM1.8, SWM1.9 & SWM1.10. EXCESS TOPSOIL WILL BE REMOVED ON SITE.
- PERFORM PAVING OF ALL SURFACES SHOWN. PLACE PAVEMENT MARKINGS AND STRIPING.
- EROSION AND SEDIMENT CONTROL DEVICES SHALL BE REMOVED ONLY AFTER WORK IN AN AREA HAS BEEN COMPLETED AND STABILIZED, WITH WRITTEN APPROVAL FROM THE AGENCY CONSTRUCTION SITE REVIEWER.
- THE TERMINATION OF THE CONSTRUCTION GENERAL PERMIT WILL REQUIRE SUBMISSION AND ACCEPTANCE OF THE POST CONSTRUCTION VERIFICATION DOCUMENTS, INCLUDING FINAL STABILIZATION THROUGHOUT THE SITE, AND ALL ELEMENTS OF THE SEDIMENT AND STORMWATER MANAGEMENT PLAN IMPLEMENTED.

SOILS LEGEND

GeB	GLENELG LOAM (3-8% SLOPES)	HSG = B
GeC	GLENELG LOAM (8-15% SLOPES)	HSG = B
GrB	GLENVILLE SILT LOAM (3-8% SLOPES)	HSG = C
Bkd	BRINKLOW CHANNERY LOAM (15-25% SLOPES)	HSG = B



REVISIONS:

DATE: DESCRIPTION:

BY:

WCCSP TRI-VALLEY TRAIL
SEDIMENT STORMWATER MANAGEMENT PLANS

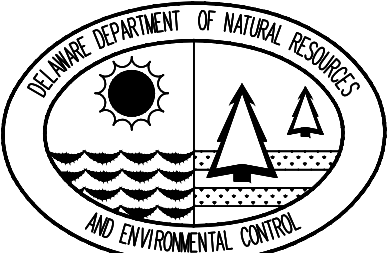
CONSTRUCTION SITE MANAGEMENT PLAN

SEAL:

CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO. WCCSP-7A



DESIGNED BY:

ATF

DRAWN BY:

ATF

CHECKED BY:

AES

DATE:

SEPTEMBER 7, 2016

SCALE:

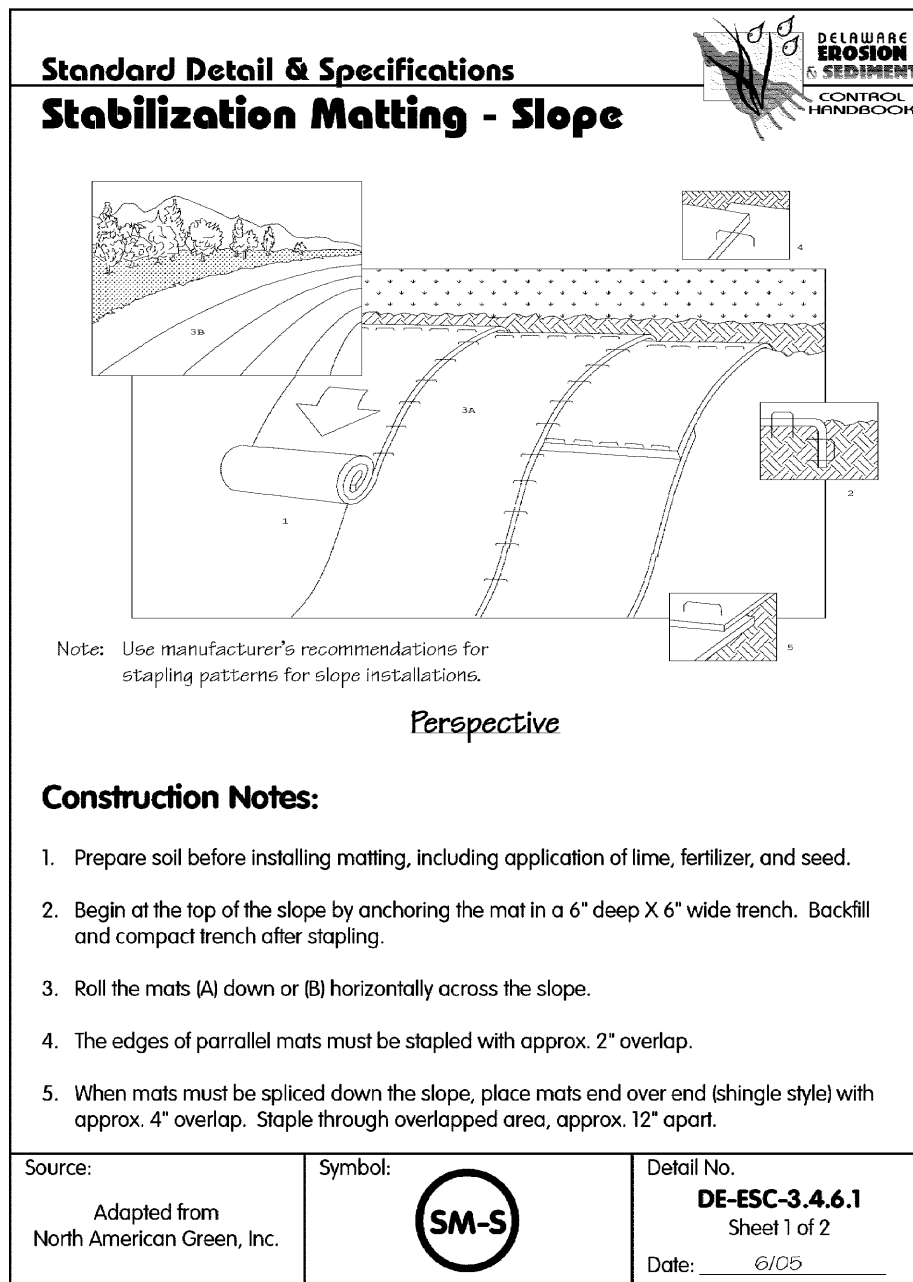
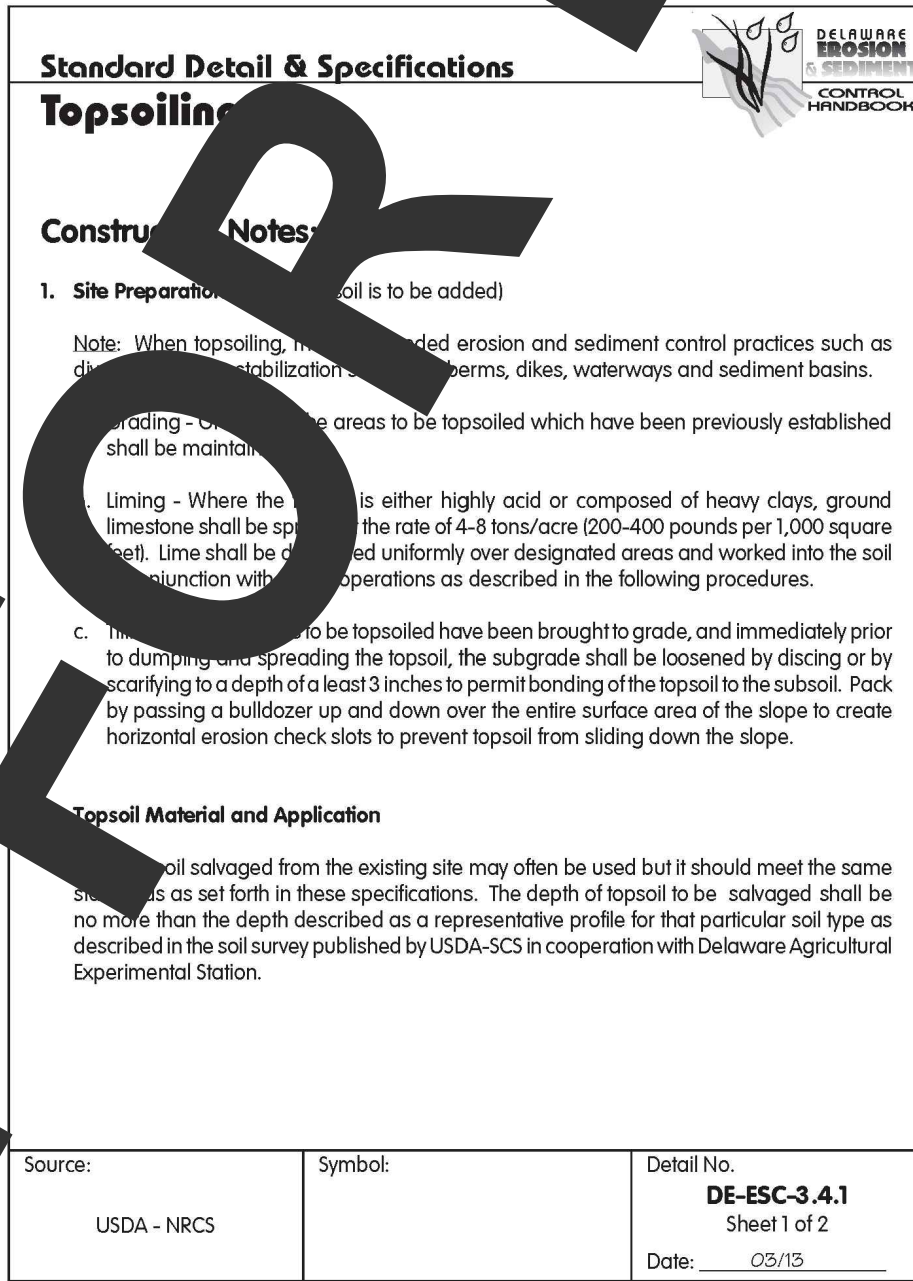
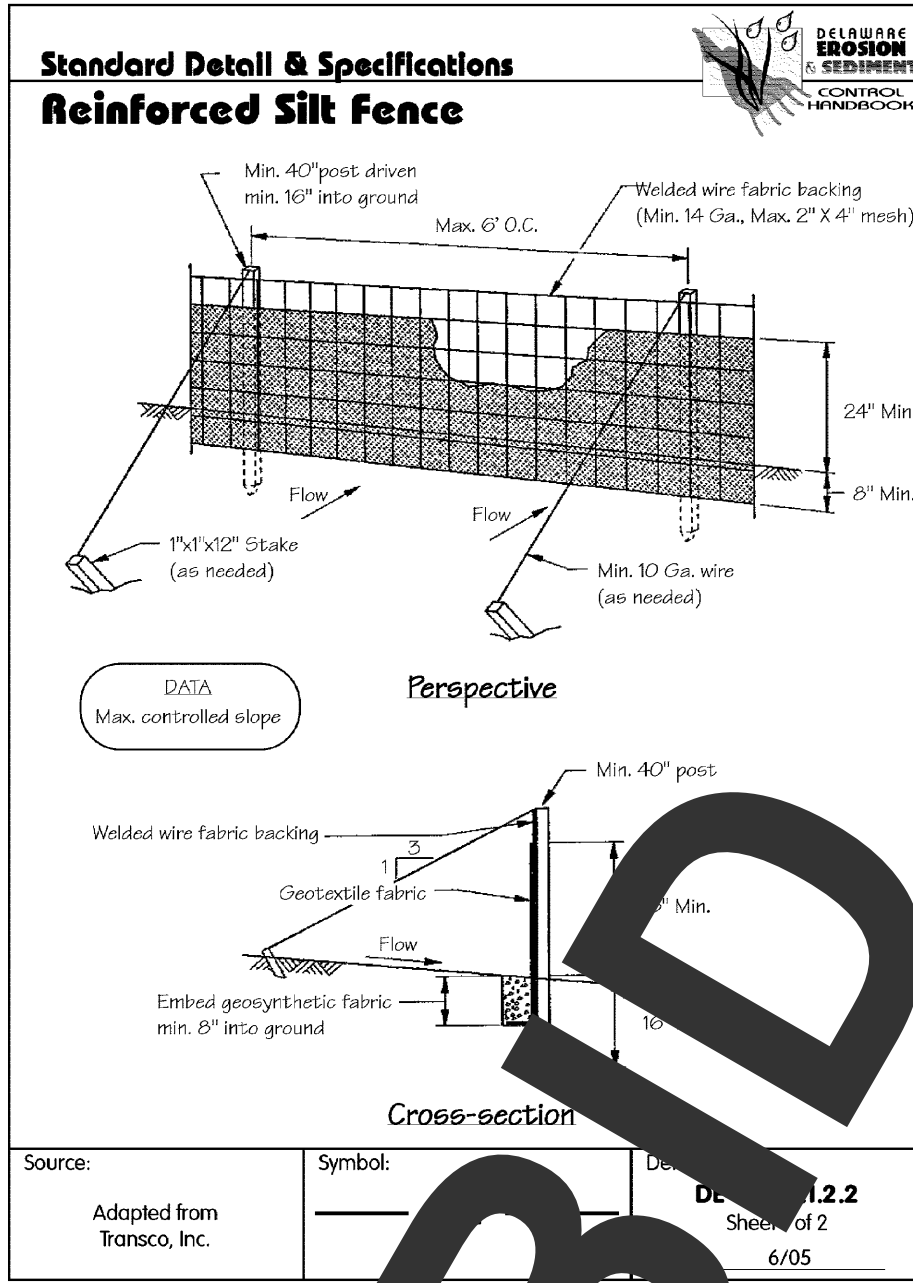
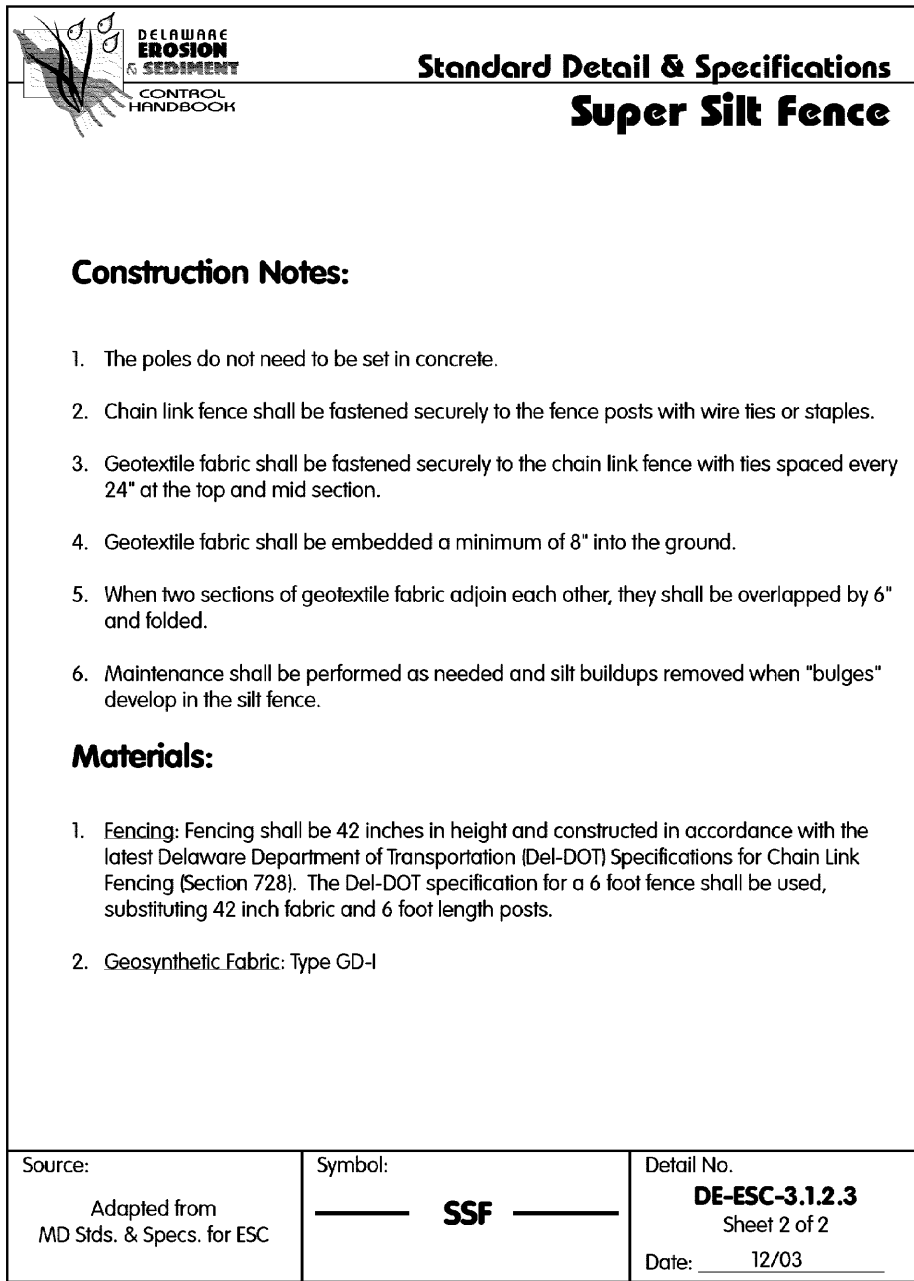
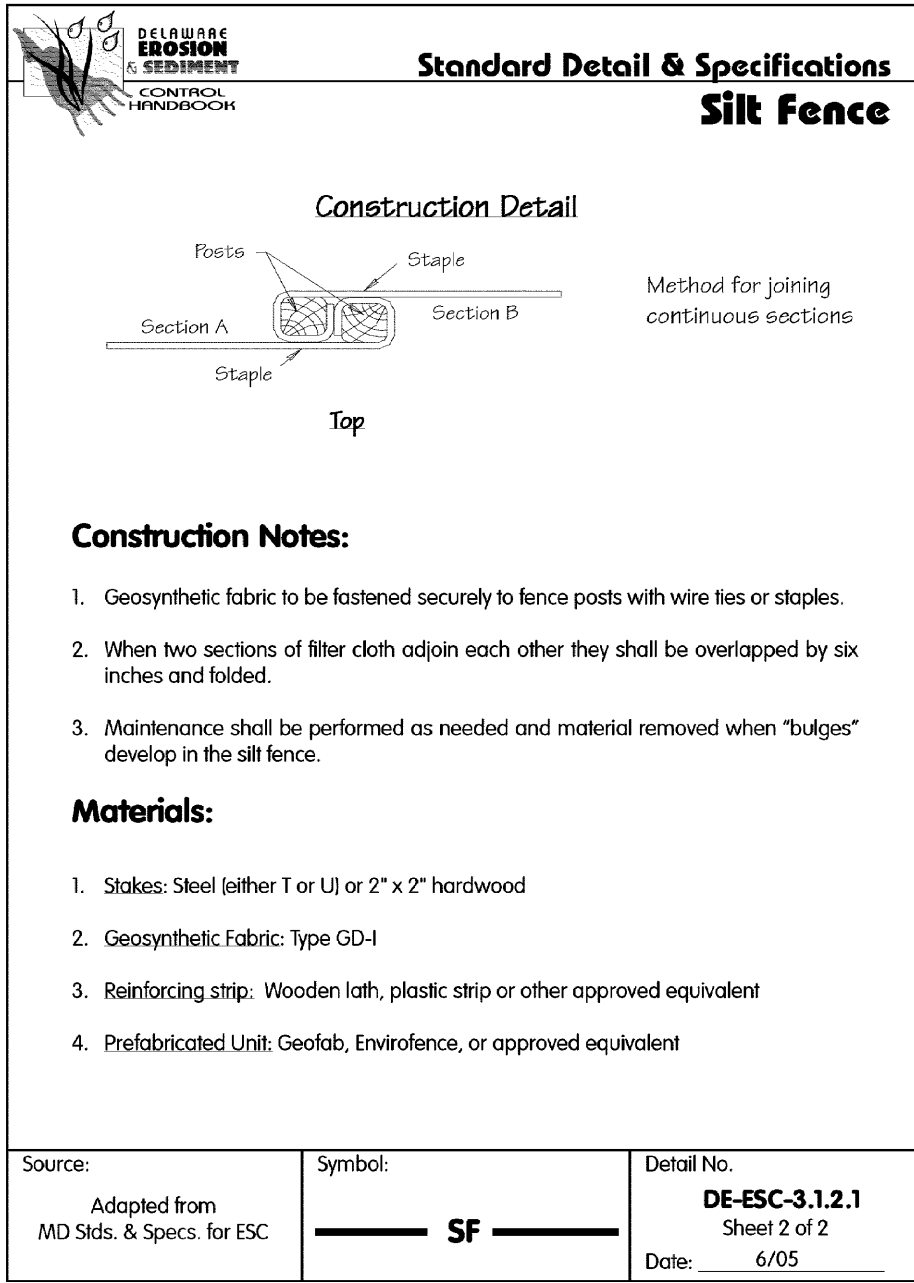
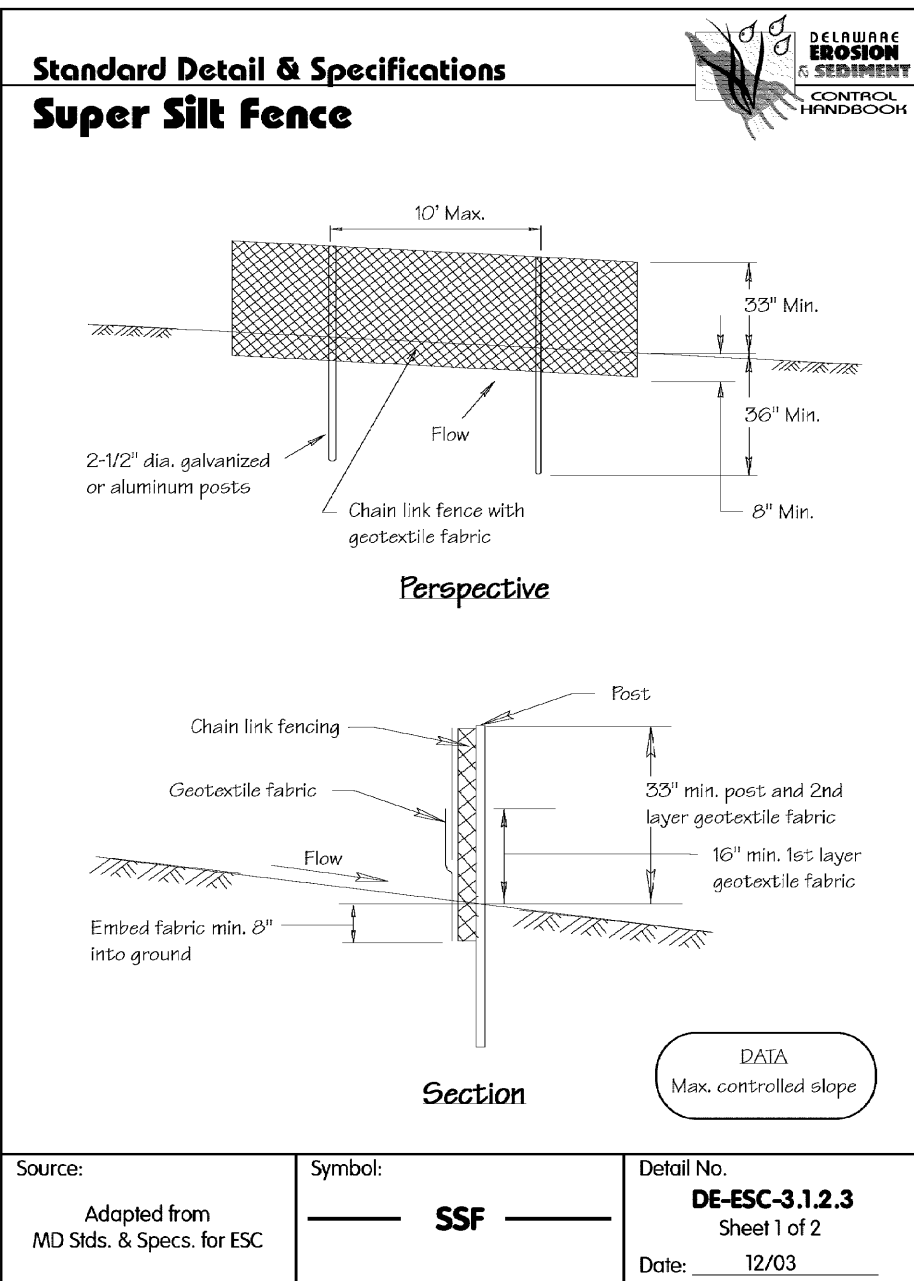
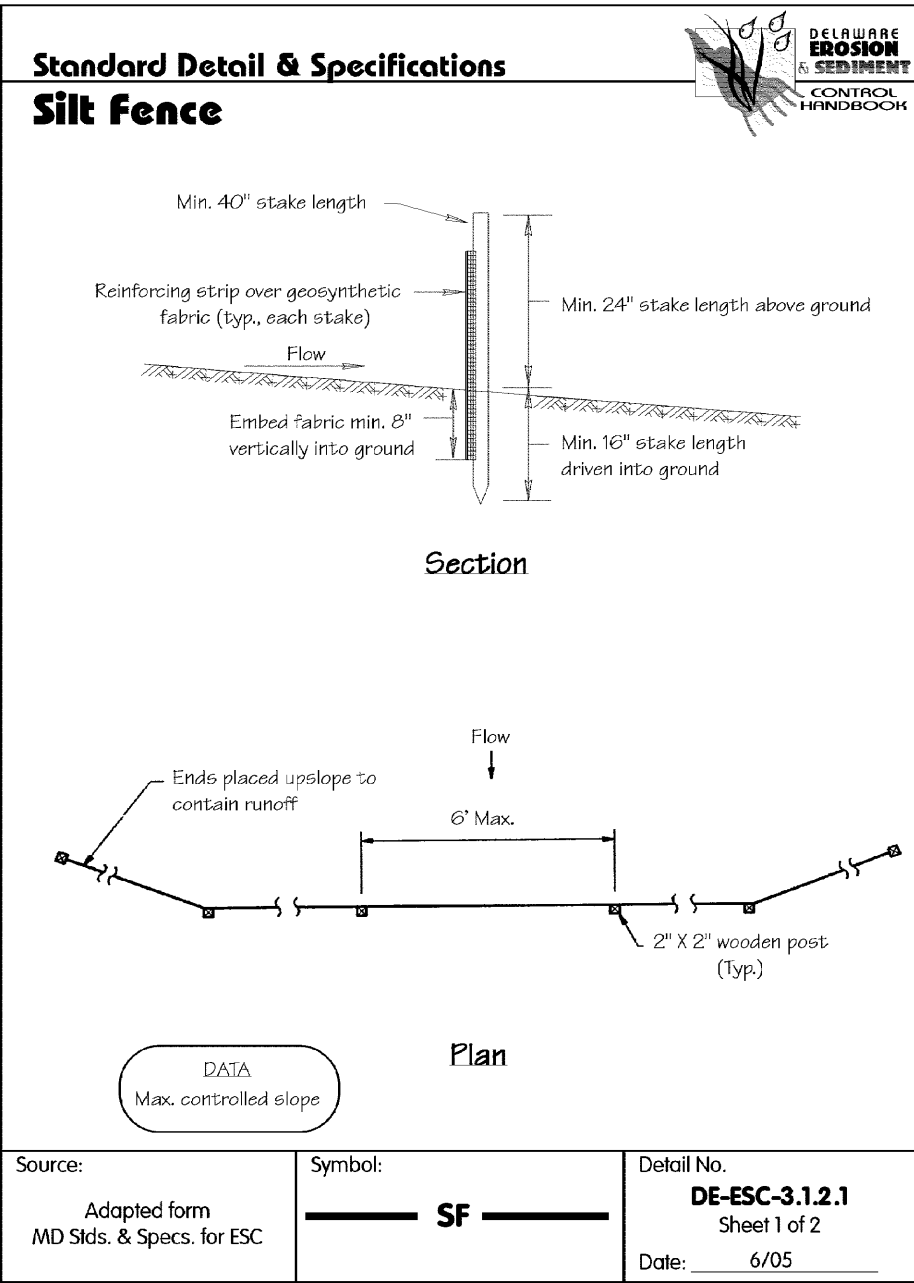
1" = 200'

SHEET NO.:

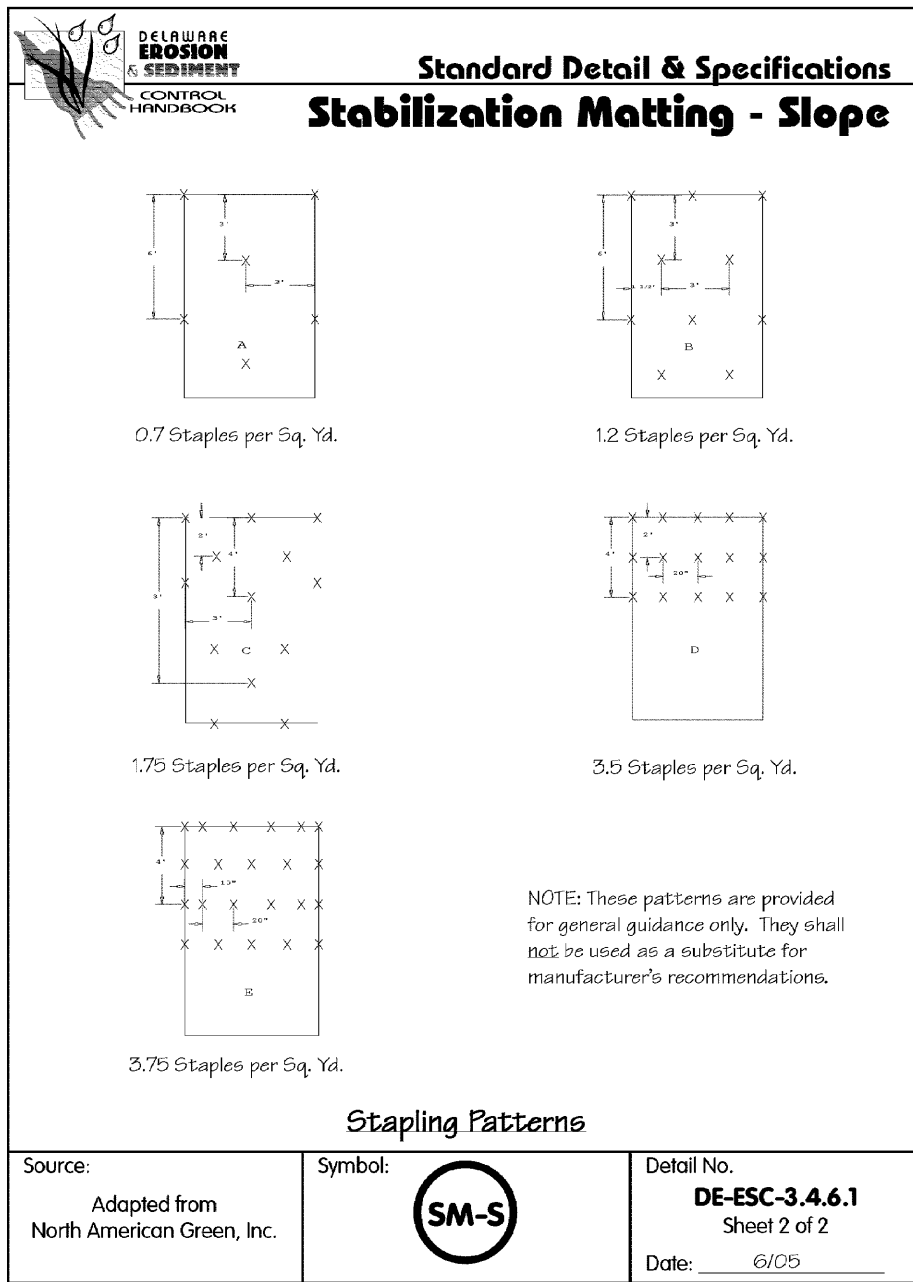
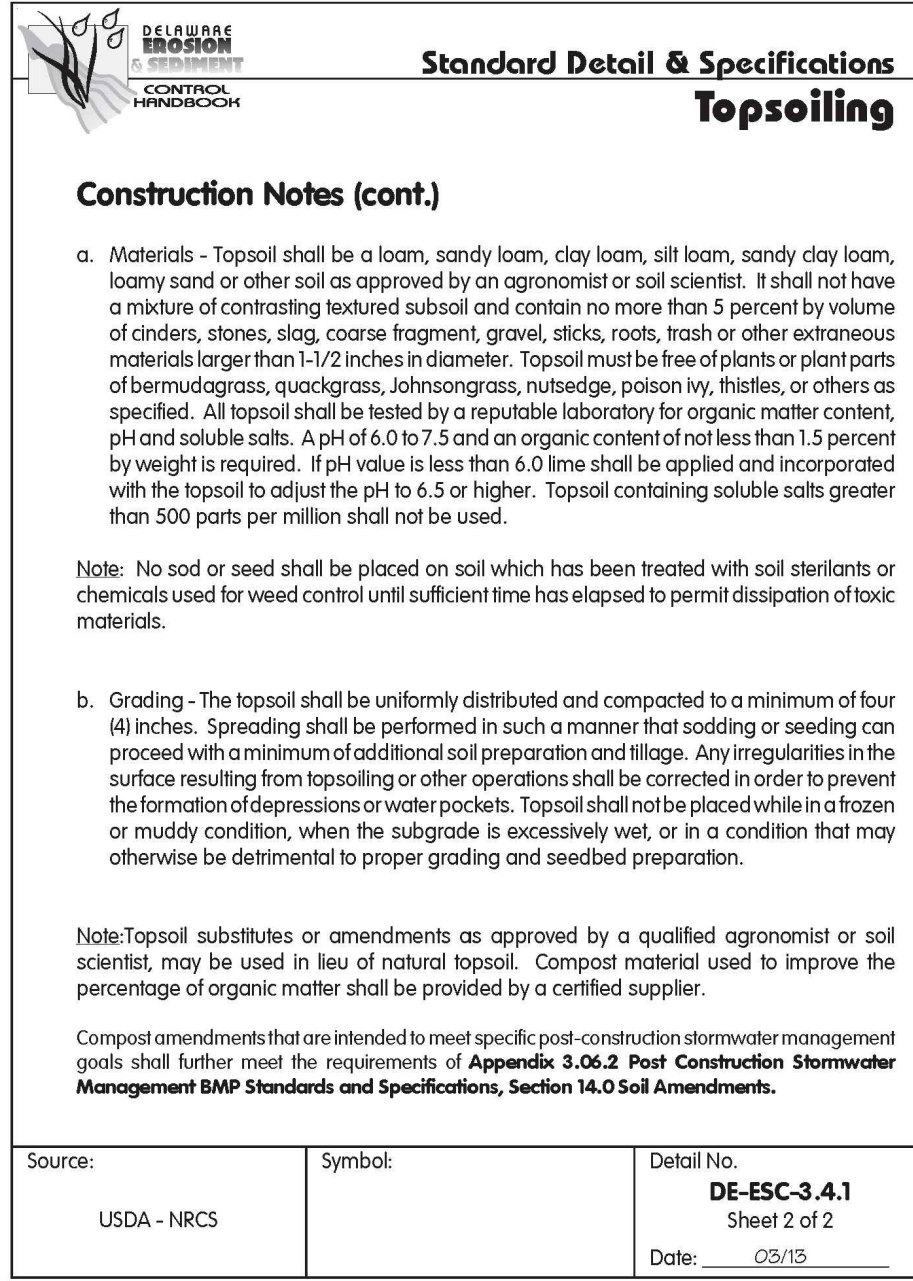
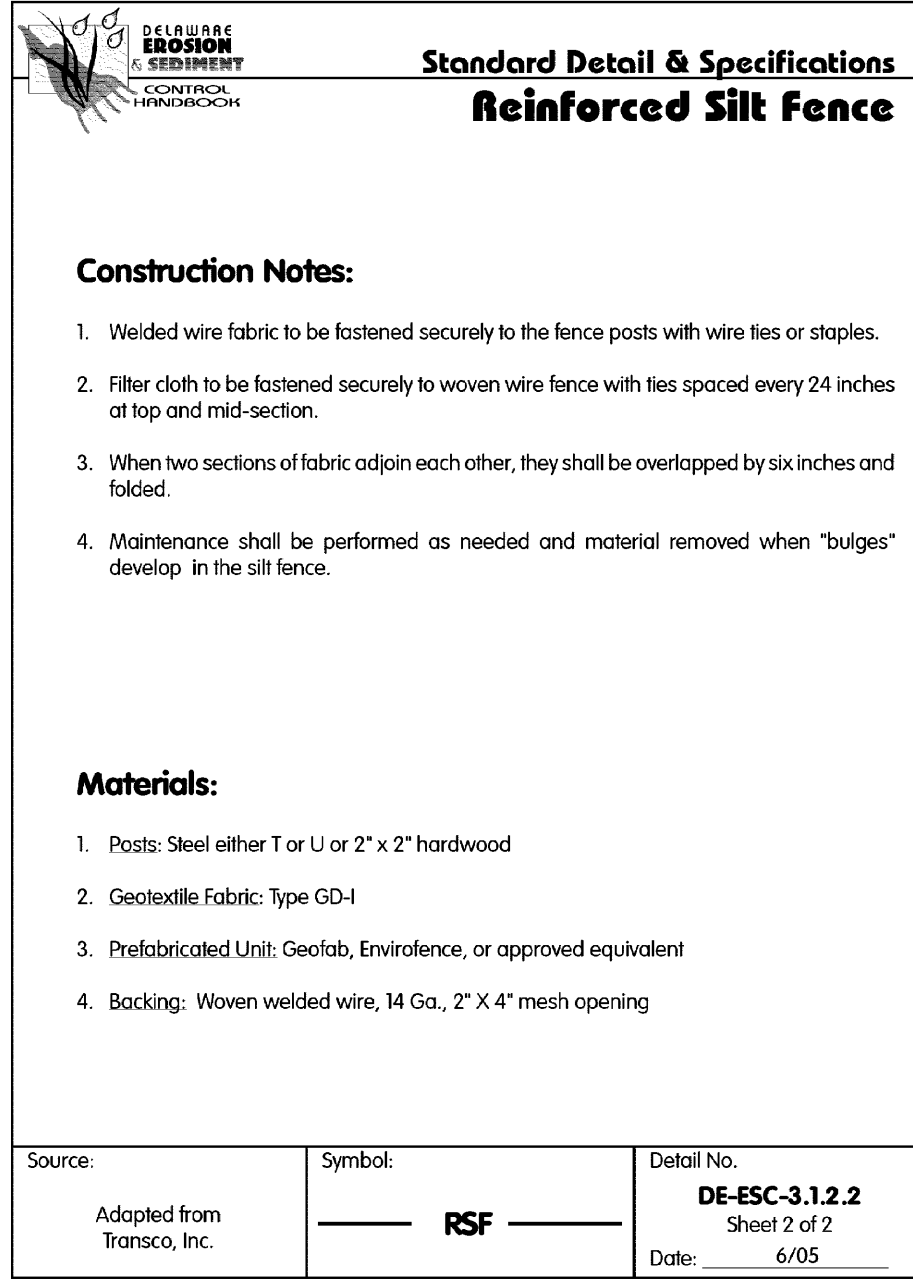
SWM1.1

CONTRACT NO.:

2016-WCCSP-100



NOTE: SOIL STABILIZATION MATTING TYPE 1 (SSM-1) SHALL BE USED FOR FILTER STRIP STABILIZATION. EXAMPLE PRODUCTS INCLUDE NORTH AMERICAN GREEN S75BN AND EAST COAST EROSION BLANKETS ECS-1B.

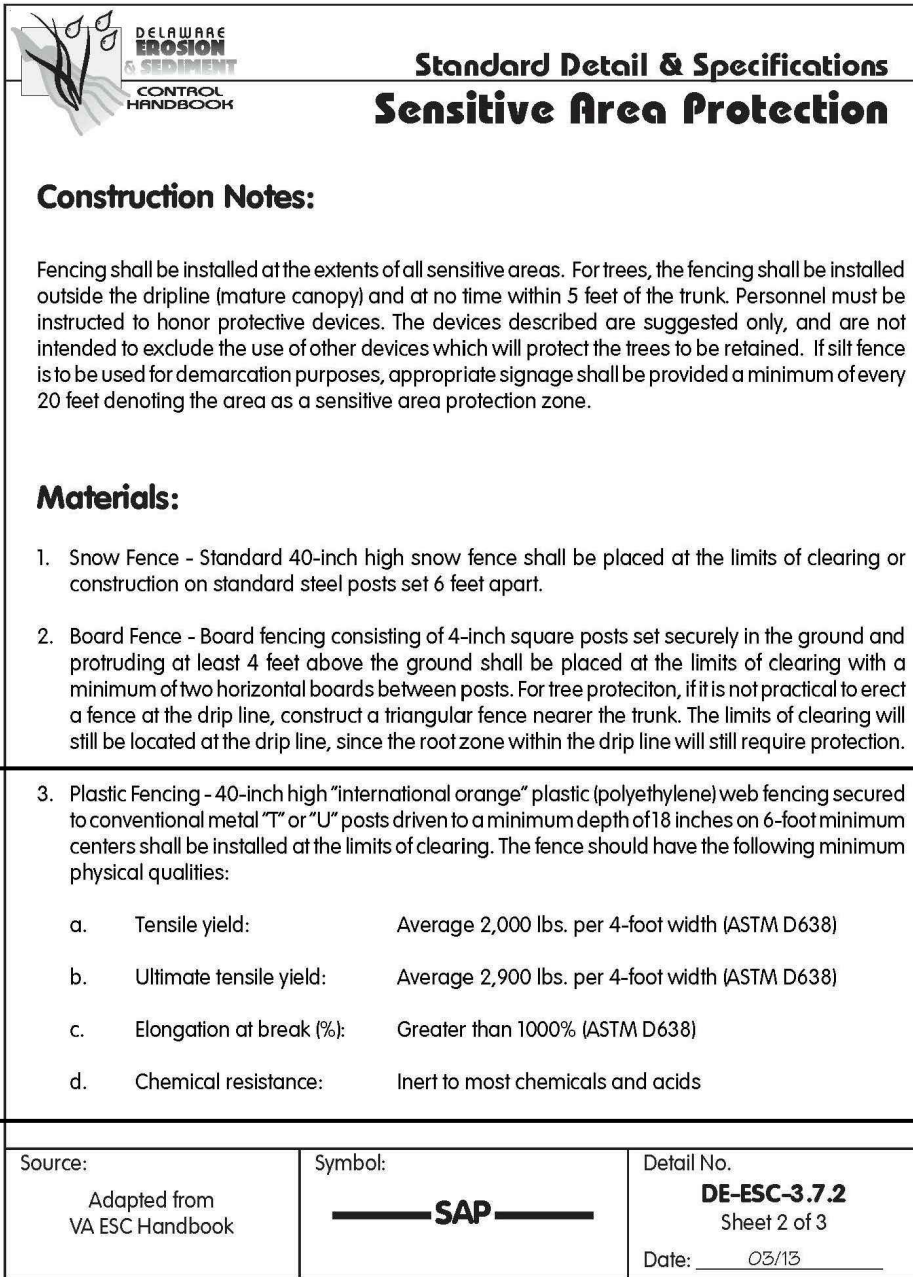
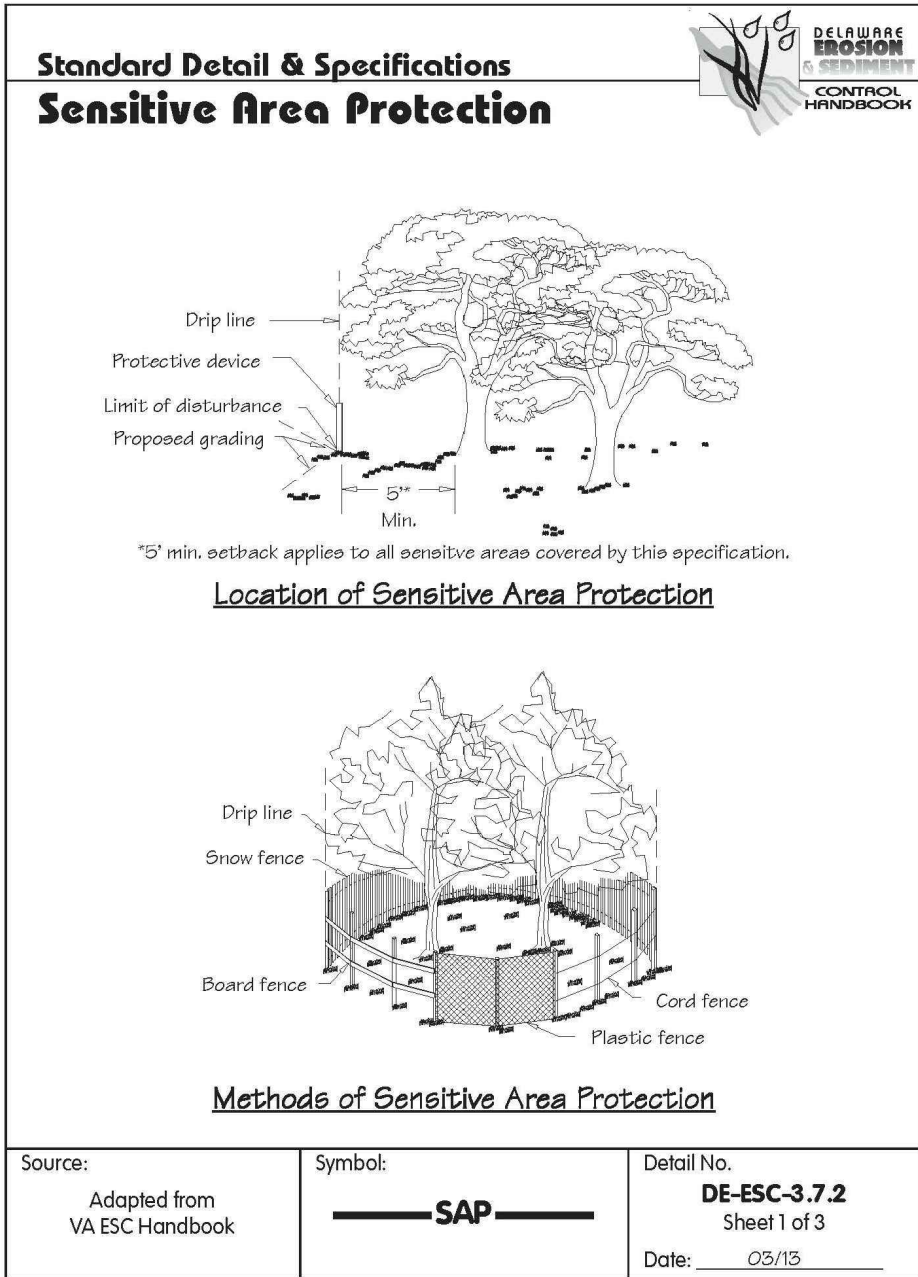
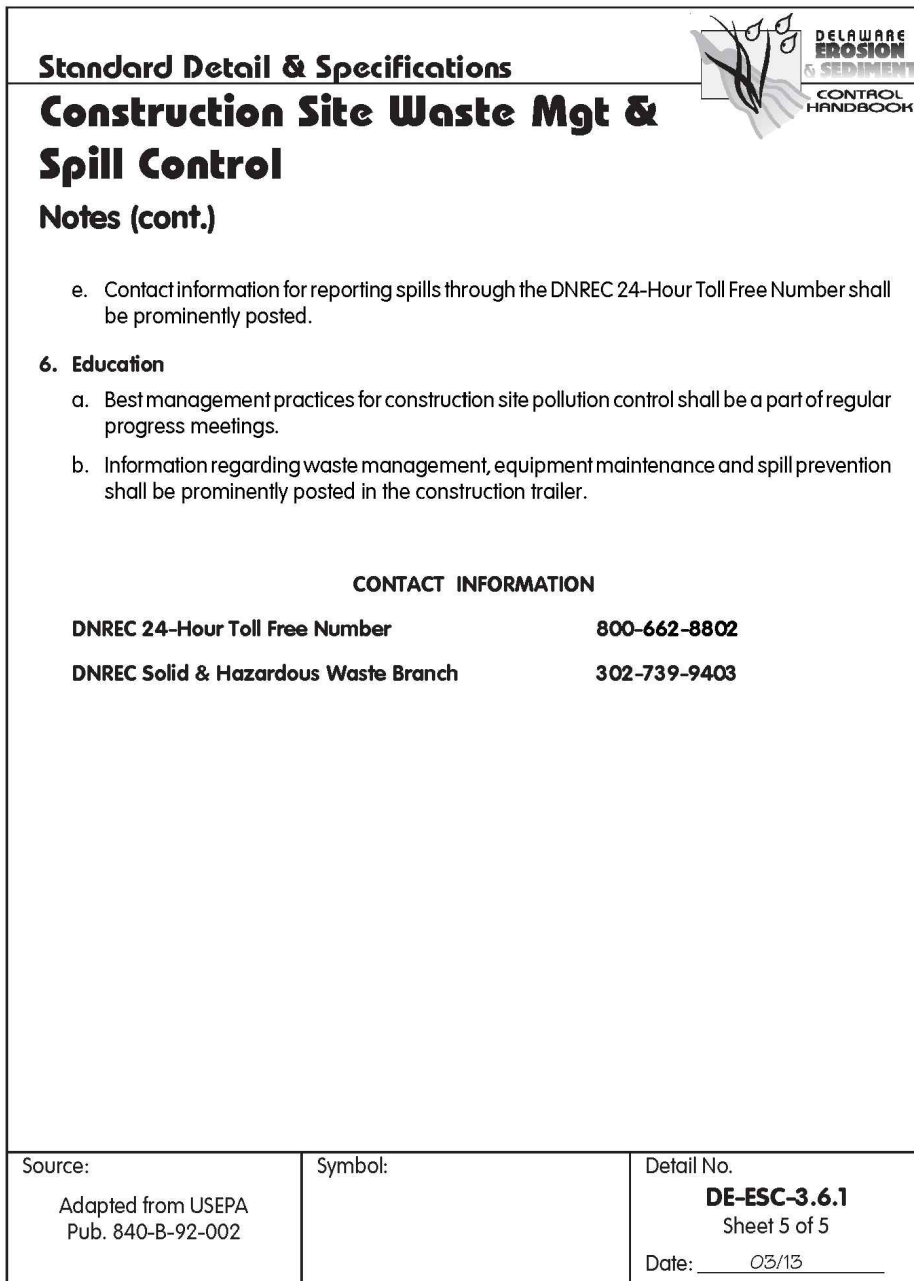
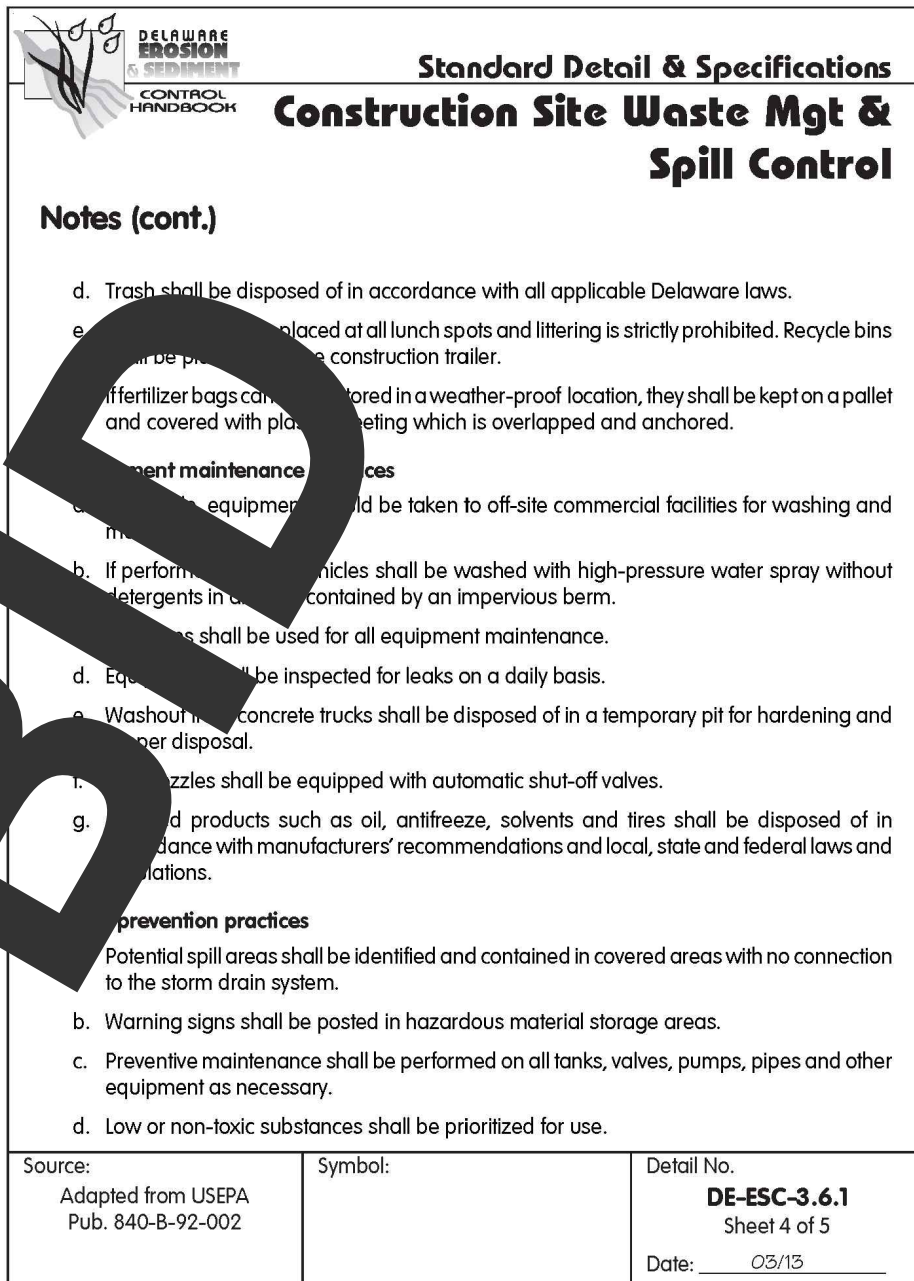
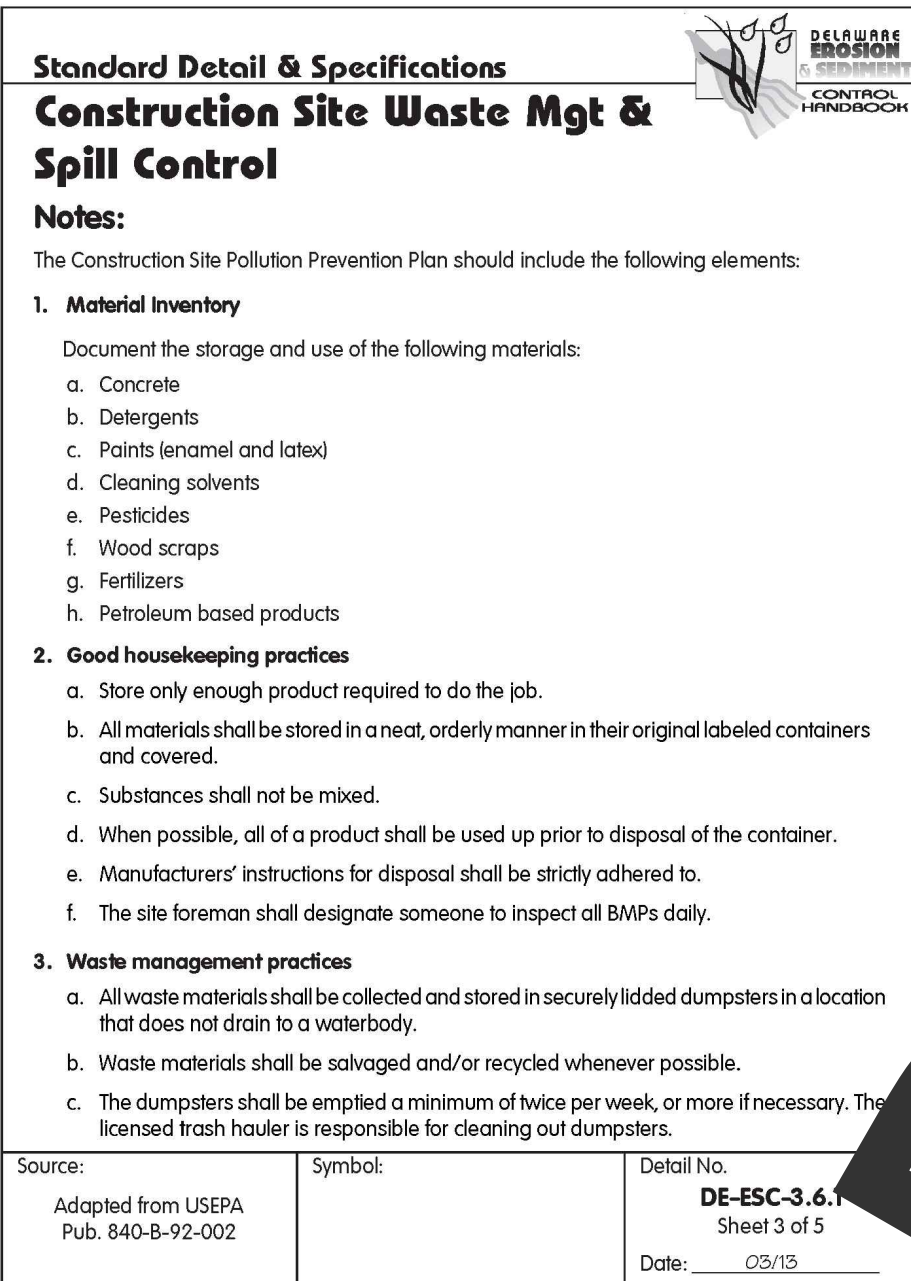
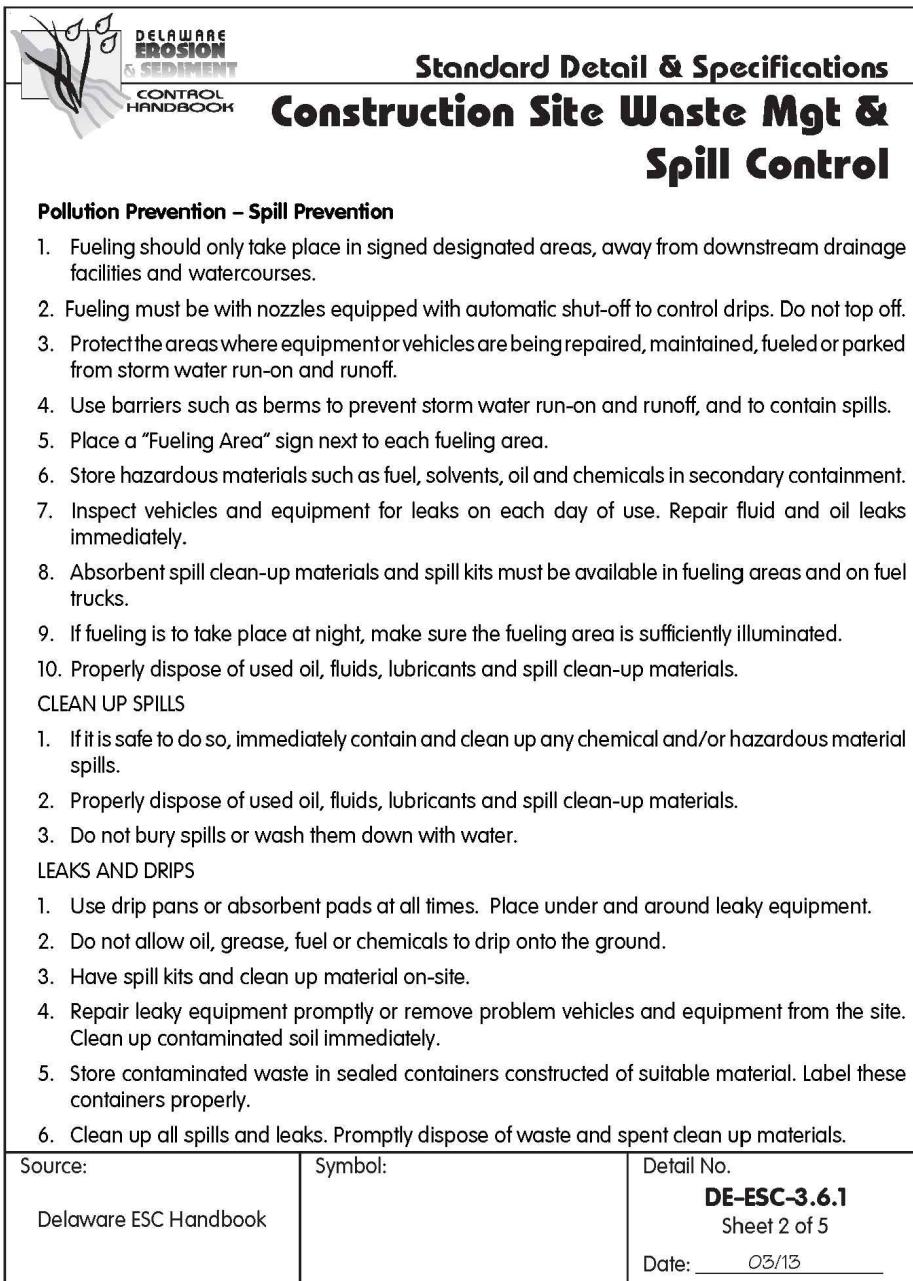
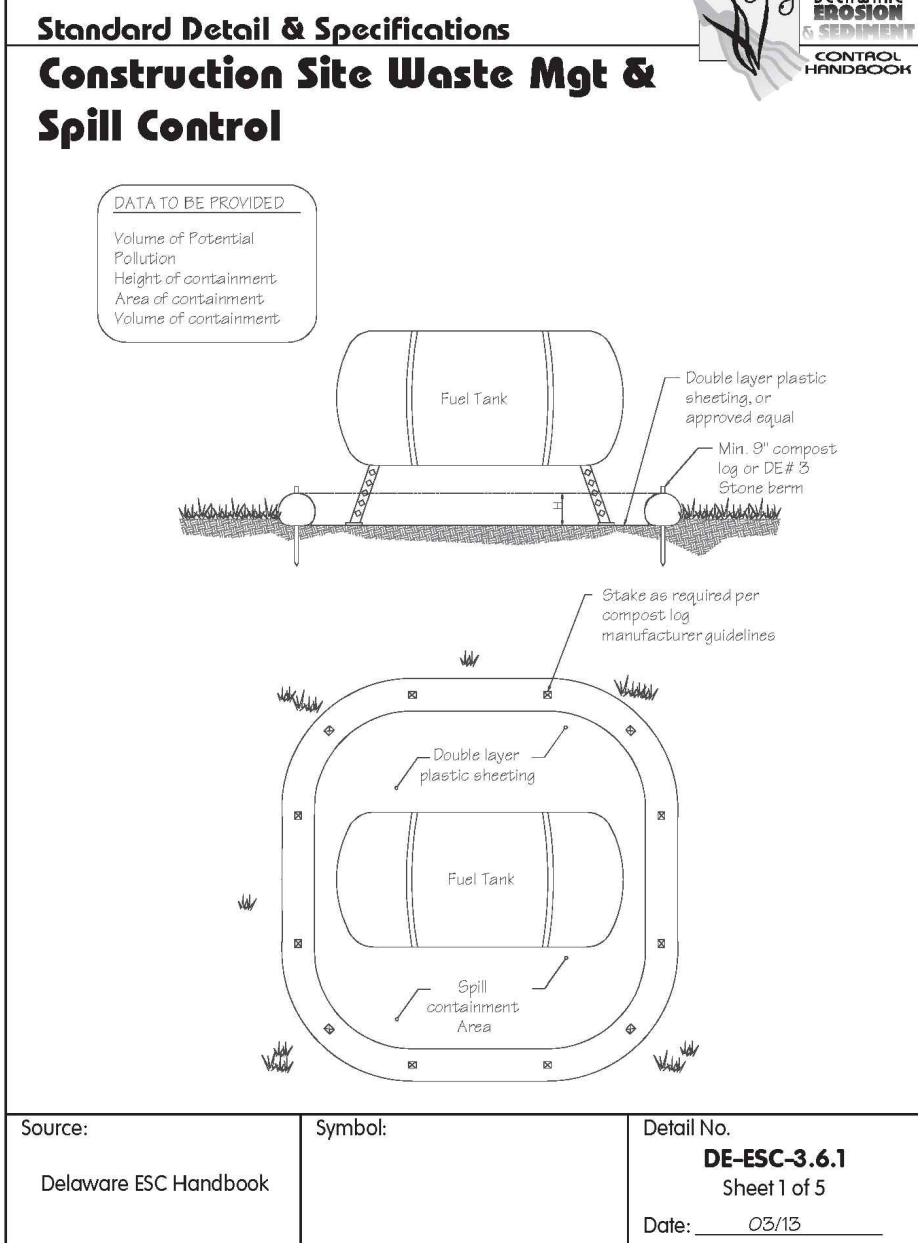


REVISIONS:	BY:	
DATE:	DESCRIPTION:	

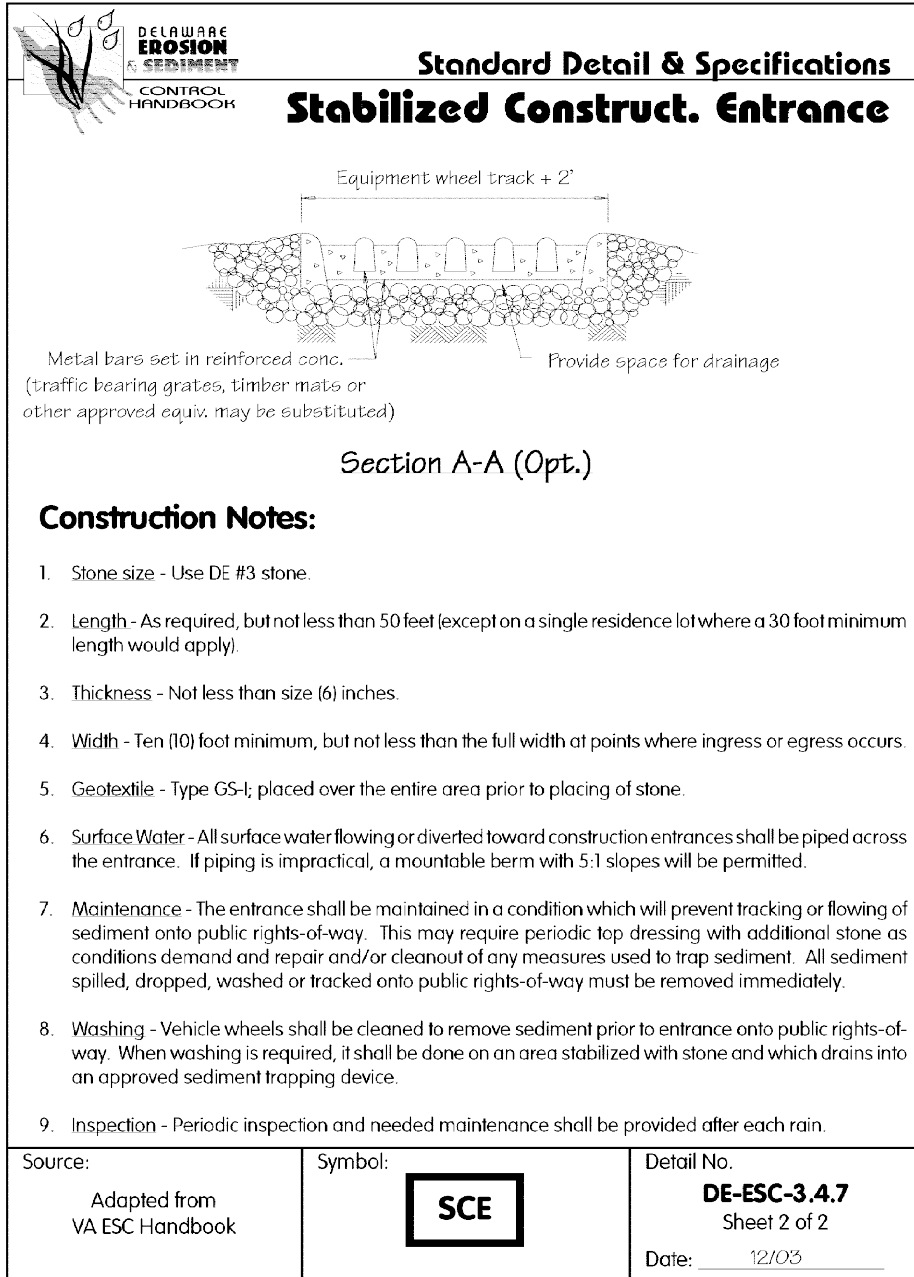
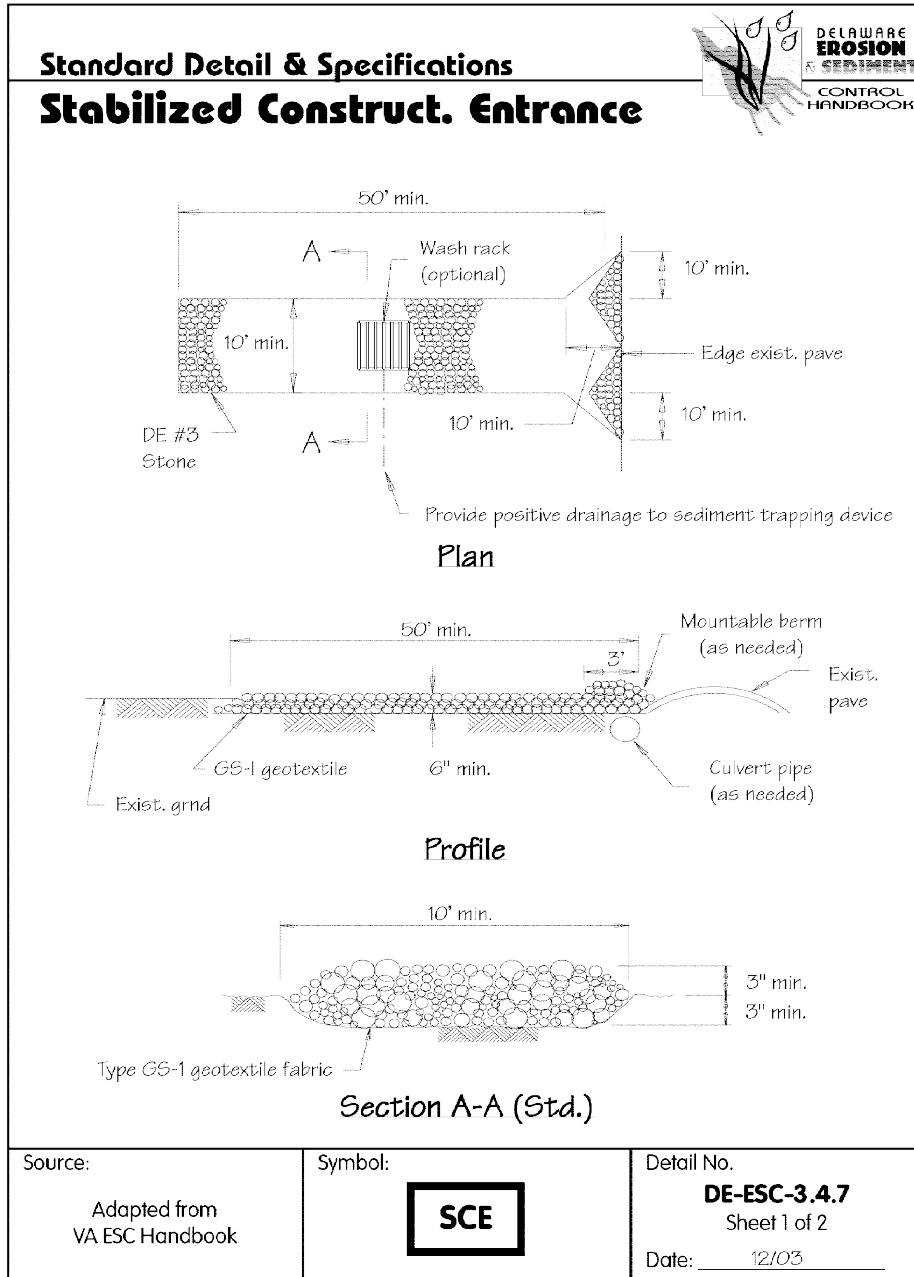
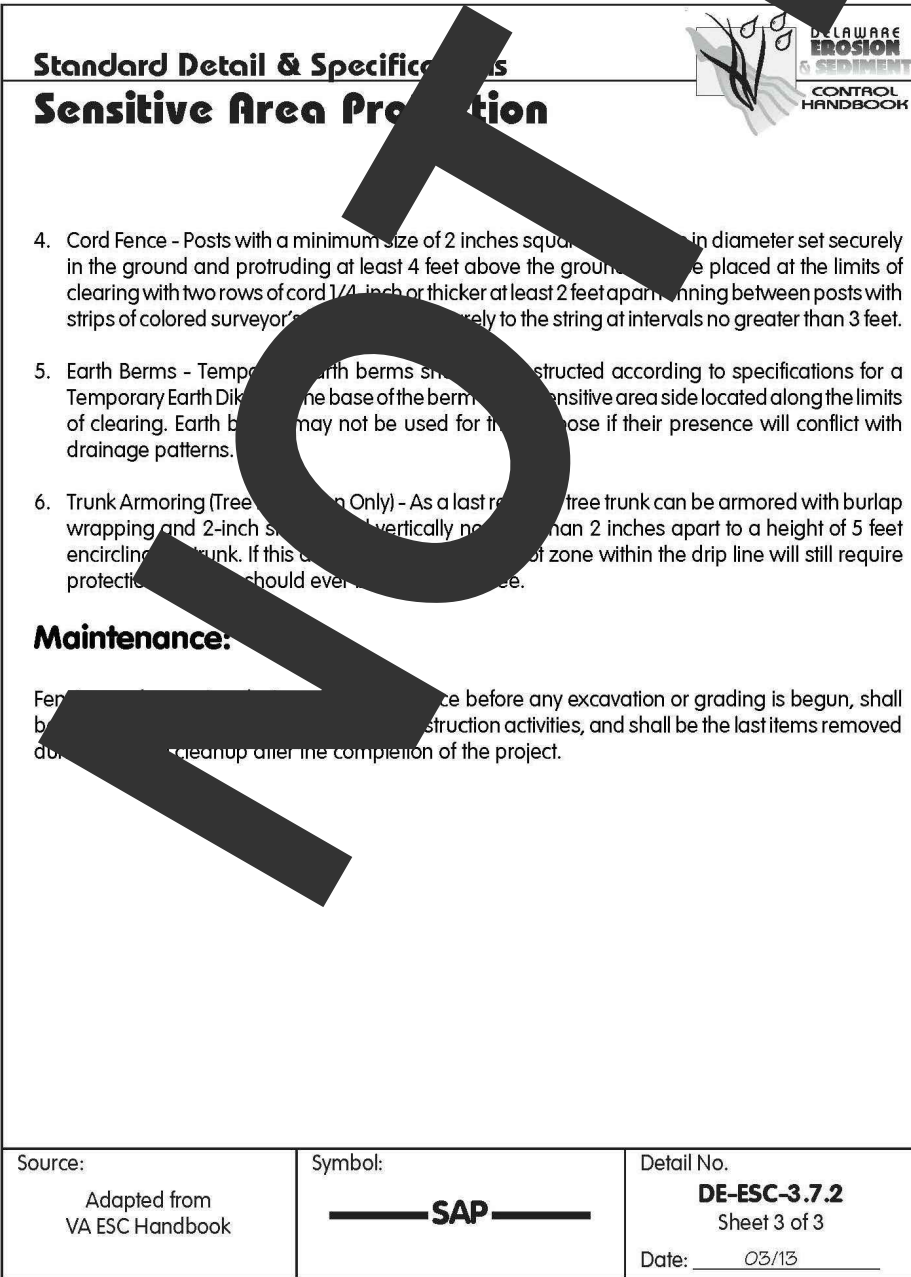
WCCSP TRI-VALLEY TRAIL	CONSTRUCTION SITE DETAILS AND NOTES
SEDIMENT STORMWATER MANAGEMENT PLANS	

SEAL:
CIVIL ENGINEER:
CENTURY ENGINEERING CONSULTING ENGINEERS, SURVEYORS 4134 N. DUPONT HWY. DOVER, DELAWARE 19901
CEI CONTRACT NO. WCCSP-7A

DESIGNED BY:	ATF
DRAWN BY:	ATF
CHECKED BY:	AES
DATE:	SEPTEMBER 7, 2016
SCALE:	NOT TO SCALE
SHEET NO.:	SWM1.2
CONTRACT NO.:	2016-WCCSP-100



NOTE: PLASTIC FENCING SHALL BE USED FOR SENSITIVE AREA PROTECTION



REVISIONS:

DATE:	DESCRIPTION:

WCCSP TRI-VALLEY TRAIL
SEDIMENT STORMWATER MANAGEMENT PLANS

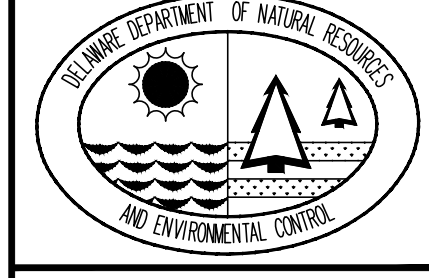
CONSTRUCTION SITE DETAILS AND NOTES

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CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
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ATF

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SEPTEMBER 7, 2016

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SHEET NO.:

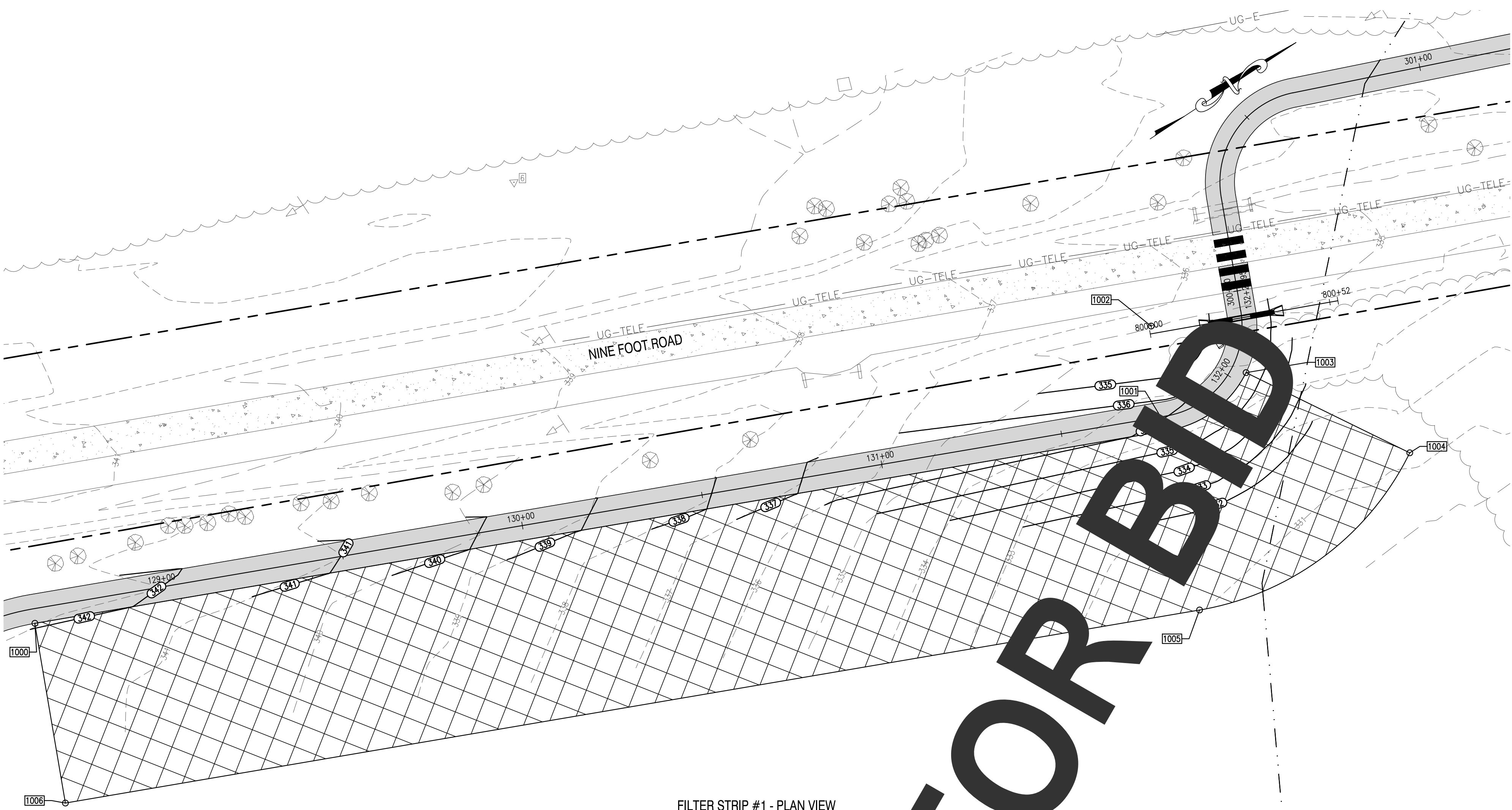
SWM1.4

CONTRACT NO.:

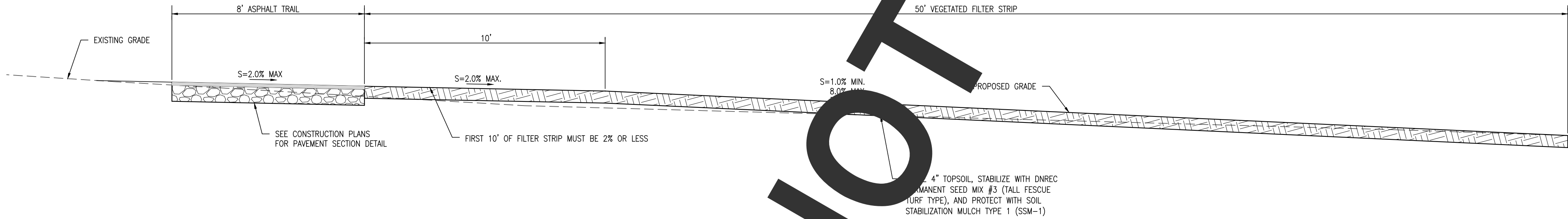
2016-WCCSP-100

LEGEND	
EXISTING PROPERTY LINE	---
EXISTING RIGHT OF WAY	---
EXISTING FLOOD PLAIN	FP
EXISTING FENCELINE	X X
PROPOSED SAWCUT	SAW
EXISTING BUILDING	[Hatched Box]
EXISTING UTILITY POLE	⊙
EXISTING MANHOLE	⊙
PROPOSED BOLLARD	●
PROPOSED SIGN	●
EXISTING CONTOUR	--- 177 ---
PROPOSED CONTOUR	--- 177 ---
WETLANDS LINE	W
ORDINARY HIGH WATER LINE	OHW OHW
2007 TREELINE	---
2007 SINGLE FAMILY RESIDENTIAL AREA	[Patterned Box]
LIMITS OF DISTURBANCE	LOD LOD
SOIL GROUP BOUNDARY	---
STREAM BOUNDARY	---
EXISTING IMPERVIOUS	[Solid Grey Box]
PROPOSED IMPERVIOUS	[Solid Grey Box]
SILT FENCE	SF
COMPOST FILTER LOG	CFL
STABILIZED CONSTRUCTION ENTRANCE	[Patterned Box]
REINFORCED SILT FENCE	RSF RSF
SUPER SILT FENCE	SSF SSF
SENSITIVE AREA PROTECTION	SAP
DRAINAGE AREA BOUNDARY	---
TIME OF CONCENTRATION PATH	>TC >TC
FILTER STRIP LOCATION	[X Pattern Box]
BIOSWALE	>X >X
STONE CHECK DAM	SCD

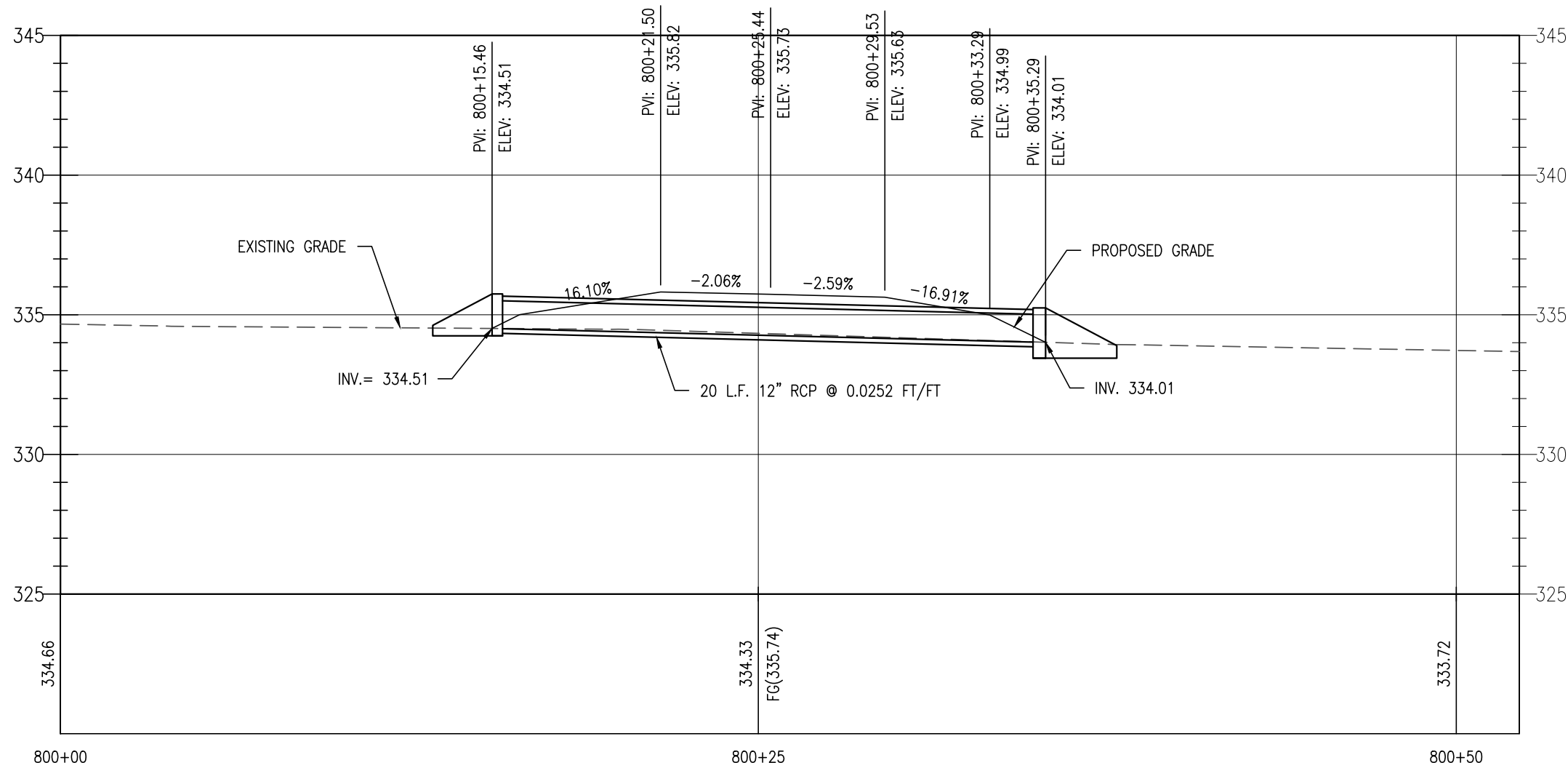
FILTER STRIP LAYOUT			
POINT NO.	DESCRIPTION	NORTHING	EASTING
1000	FILTER STRIP	627134.6288	563745.0471
1001	FILTER STRIP	627423.3752	563872.3546
1002	RADIUS	627435.0591	563845.8109
1003	FILTER STRIP	627449.7529	563870.8144
1004	FILTER STRIP	627475.0853	563913.9150
1005	FILTER STRIP	627403.2039	563918.1052
1006	FILTER STRIP	627114.4280	563790.7847



FILTER STRIP #1 - PLAN VIEW
SCALE: 1" = 20'



FILTER STRIP #1 - TYPICAL SECTION
SCALE: 1" = 3'



PROPOSED STORM SEWER PROFILE
SCALE: 1" = 3'

FILTER STRIP SEQUENCE OF CONSTRUCTION

- BEFORE SITE WORK BEGINS, FILTER STRIP BOUNDARIES SHOULD BE CLEARLY MARKED.
- ONLY VEHICULAR TRAFFIC USED FOR FILTER STRIP CONSTRUCTION SHOULD BE ALLOWED WITHIN THE FILTER STRIP BOUNDARY.
- IF EXISTING TOPSOIL IS STRIPPED DURING GRADING, IT SHALL BE STOCKPILED FOR LATER USE. CONSTRUCTION RUNOFF SHOULD BE DIRECTED AWAY FROM THE PROPOSED FILTER STRIP SITE, COMPOST FILTER LOGS.
- FILTER STRIPS REQUIRE LIGHT GRADING TO ACHIEVE DESIRED ELEVATIONS AND SLOPES. THIS SHOULD BE DONE WITH TRACKED VEHICLES TO PREVENT COMPACTION. TOPSOIL AND OR COMPOST AMENDMENTS SHOULD BE INCORPORATED EVENLY ACROSS THE FILTER STRIP AREA, STABILIZED WITH SEED (PERMANENT MIX #3 W/ ADDITIONAL WINTER RYE), AND PROTECTED BY BIODEGRADABLE EROSION CONTROL MATTING OR BLANKETS (SSM TYPE 1).
EXAMPLE PRODUCTS INCLUDE: NORTH AMERICAN GREEN S75BN & EAST COAST EROSION BLANKETS ECS-18
- COMPOST FILTER LOGS SHALL NOT BE REMOVED UNTIL THE TURF COVER IS DENSE, WELL ESTABLISHED, AND APPROVED BY THE SITE COR.

GENERAL NOTES

- THE DNREC SEDIMENT AND STORMWATER PROGRAM RESERVES THE RIGHT TO ENTER PRIVATE PROPERTY FOR PURPOSES OF PERIODIC SITE REVIEWS.
- THE DNREC SEDIMENT AND STORMWATER PROGRAM SHALL BE NOTIFIED WITHIN 30 BUSINESS DAYS IF THE PROPERTY OWNERSHIP IS TRANSFERRED TO A NEW PERSON OR ENTITY.
- THE DNREC SEDIMENT AND STORMWATER PROGRAM MAY SEEK ENFORCEMENT ACTION AGAINST ANY OWNER DEEMED NEGLIGENT IN FULFILLING THE OPERATION AND MAINTENANCE REQUIREMENTS OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.
- THE DNREC SEDIMENT AND STORMWATER PROGRAM SHALL BE CONTACTED IF A CONCERN ARISES REGARDING A STORMWATER MANAGEMENT FACILITY, BEFORE ANY NON-ROUTINE MAINTENANCE, OR IF MODIFICATIONS TO THE FACILITY ARE DESIRED.
- ANY DESIGN MODIFICATIONS MADE TO THE STORMWATER SYSTEM SHALL REQUIRE THE CREATION OF A NEW POST CONSTRUCTION STORMWATER MANAGEMENT PLAN AND/OR OPERATIONS AND MAINTENANCE PLAN, WITH APPROVAL OF THE PLAN(S) BY THE DNREC SEDIMENT AND STORMWATER PROGRAM.
- FOR ALL STORMWATER EASEMENT AREAS (I.E., ACCESS, MAINTENANCE, OR OFFSITE) AND THE MINIMUM 10-FOOT WIDE ACCESSWAYS TO ALL STORMWATER FACILITIES AND THEIR STRUCTURAL COMPONENTS, REGULAR MOWING SHALL BE PERFORMED TO KEEP THE GRASS 6" OR LESS; NO TREES OR SHRUBS SHALL BE PLANTED, AND ANY FOUND GROWING SHALL BE REMOVED; AND NO PERMANENT STRUCTURES, SUCH AS FENCES OR SHEDS, SHALL BE LOCATED WITHIN THE EASEMENT OR ACCESSWAY.
- TREES SHALL NOT BE PLANTED, AND SHALL BE REMOVED IF FOUND GROWING, ON AND WITHIN 15 FEET OF ALL POND EMBANKMENTS, ON POND SLOPES OR SAFETY BENCHES, AND WITHIN 10 FEET OF STRUCTURAL COMPONENTS, SUCH AS PIPE INLETS.
- WHEN THE FACILITY IS EXCAVATED TO REMOVE ACCUMULATED SEDIMENT, THE DISPOSAL AREA SHALL BE PERMANENTLY STABILIZED SO THAT IT DOES NOT RECREATE AN EROSION PROBLEM. ANY MATERIAL TAKEN OFF-SITE SHALL STILL BE UTILIZED OR DISPOSED OF IN AN APPROVED DNREC MANNER.
- BEFORE ANY EARTHWORK OR EXCAVATION TAKES PLACE, THE CONTRACTOR SHALL CALL MISS UTILITY AT 811 OR 1.800.282.8555 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, TO HAVE ALL EXISTING UTILITIES MARKED ON-SITE.

FILTER STRIP MAINTENANCE

FUNCTION:

FILTER STRIPS SPREAD RUNOFF UNIFORMLY OVER A FILTERING SURFACE OF VEGETATION, PROVIDING INFILTRATION AND POLLUTANT REMOVAL. FILTER STRIPS CAN PROVIDE SUBSTANTIAL TREATMENT AS LONG AS THEY ARE NOT OVERWHELMED BY SEDIMENT AND RUNOFF.

INSPECTION:

SEMI-ANNUAL (SPRING AND FALL) & AFTER STORM EVENTS OF 2 INCHES OR MORE.

TRASH AND DEBRIS:

REMOVE TRASH AND DEBRIS ON A REGULAR BASIS.

SOIL:

SOIL SHOULD BE TESTED ANNUALLY TO ENSURE PROPER PH AND FERTILITY INCLUDING: ORGANIC MATTER, MAGNESIUM (MG), PHOSPHORUS (P2O5), NITROGEN (N), POTASSIUM (K2O), AND SOLUBLE SALTS. IF REQUIRED, FERTILIZER SHOULD ONLY BE APPLIED IN THE FALL.

EROSION:

IF BARE SOIL EXISTS WITHIN ANY AREA OF FILTER STRIP, RESEED AND/OR REPLANT AS REQUIRED BASED UPON INSPECTION FINDINGS. STABILIZE APPLICABLE ERODED AREAS WITH ROLLED EROSION CONTROL PRODUCTS (RECP) OR TURF REINFORCING MATS (TRM), AS REQUIRED. IF RECP IS APPLIED, IT IS RECOMMENDED TO USE TRULY BIODEGRADABLE PRODUCTS TO AID IN MOWING MAINTENANCE AND DETER WILDLIFE ENTANGLEMENT. THESE PRODUCTS CAN BE RECOGNIZED AS HAVING "BN" FOR BIONETTING OR "B" FOR BIODEGRADABLE.

MOWING:

MOW, ANNUALLY, BETWEEN SEPTEMBER 1 AND 30 TO ALLOW FOR REGROWTH OF WINTER COVER WHILE AVOIDING POTENTIAL NEGATIVE EFFECTS ON WILDLIFE SUCH AS NESTING BIRDS. USE MULCHING MOWER TO ENSURE THAT NUTRIENTS ARE RECYCLED. FOR WARM SEASON GRASSES, THE PREVIOUS SEASON'S STALKS SHOULD BE CUT DOWN TO 8-12 INCHES IN EARLY SPRING (MID MARCH), BEFORE NEW SEASON'S GROWTH EMERGES. THE APPROVED PLAN WILL SPECIFY THE MOW HEIGHT. FILTER STRIP VEGETATION SHOULD BE MAINTAINED AT A HEIGHT OF 2 TIMES THE DEPTH OF FLOW DURING THE QUALITY STORM.

SEEDING:

DNREC PERMANENT SEED MIX #3 (TALL FESCUE - TURF TYPE W/ ADDITIONAL WINTER RYE) SHALL BE BED FOR ALL PERMANENT SEEDING IN FILTER STRIP AREAS. SEE SWM1.3 FOR DETAILS.

BUFFERS:

NA

FENCING:

NA

SPECIAL CONSIDERATIONS:

CONSULT THE DELAWARE DEPARTMENT OF AGRICULTURE FOR LICENSING REQUIREMENTS PERTAINING TO THE APPLICATION OF CHEMICALS.

HIRE A PROFESSIONAL:

REPAIR OF SEVERE EROSION; VEGETATION CONTROL (CHEMICAL APPLICATION) IF LICENSING REQUIRED BY DEPARTMENT OF AGRICULTURE.

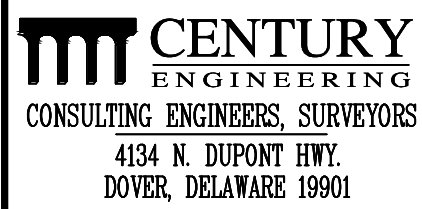
REVISIONS:	DATE:	DESCRIPTION:	BY:

WCCSP TRI-VALLEY TRAIL SEDIMENT STORMWATER MANAGEMENT PLANS

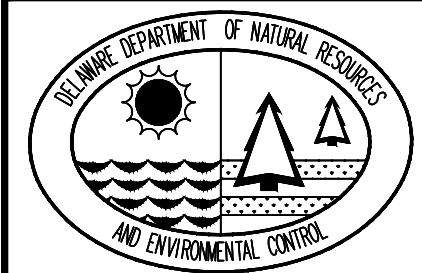
POST CONSTRUCTION MANAGEMENT PLAN - FILTER STRIP #1

SEAL:

CIVIL ENGINEER:



CEI CONTRACT NO. WCCSP-7A



DESIGNED BY:

ATF

DRAWN BY:

ATF

CHECKED BY:

AES

DATE:

SEPTEMBER 7, 2016

SCALE:

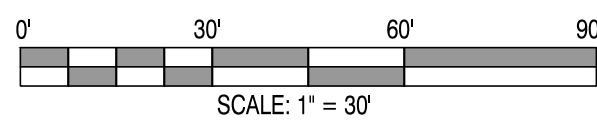
AS NOTED

SHEET NO.:

SWM1.6

CONTRACT NO.:

2016-WCCSP-100



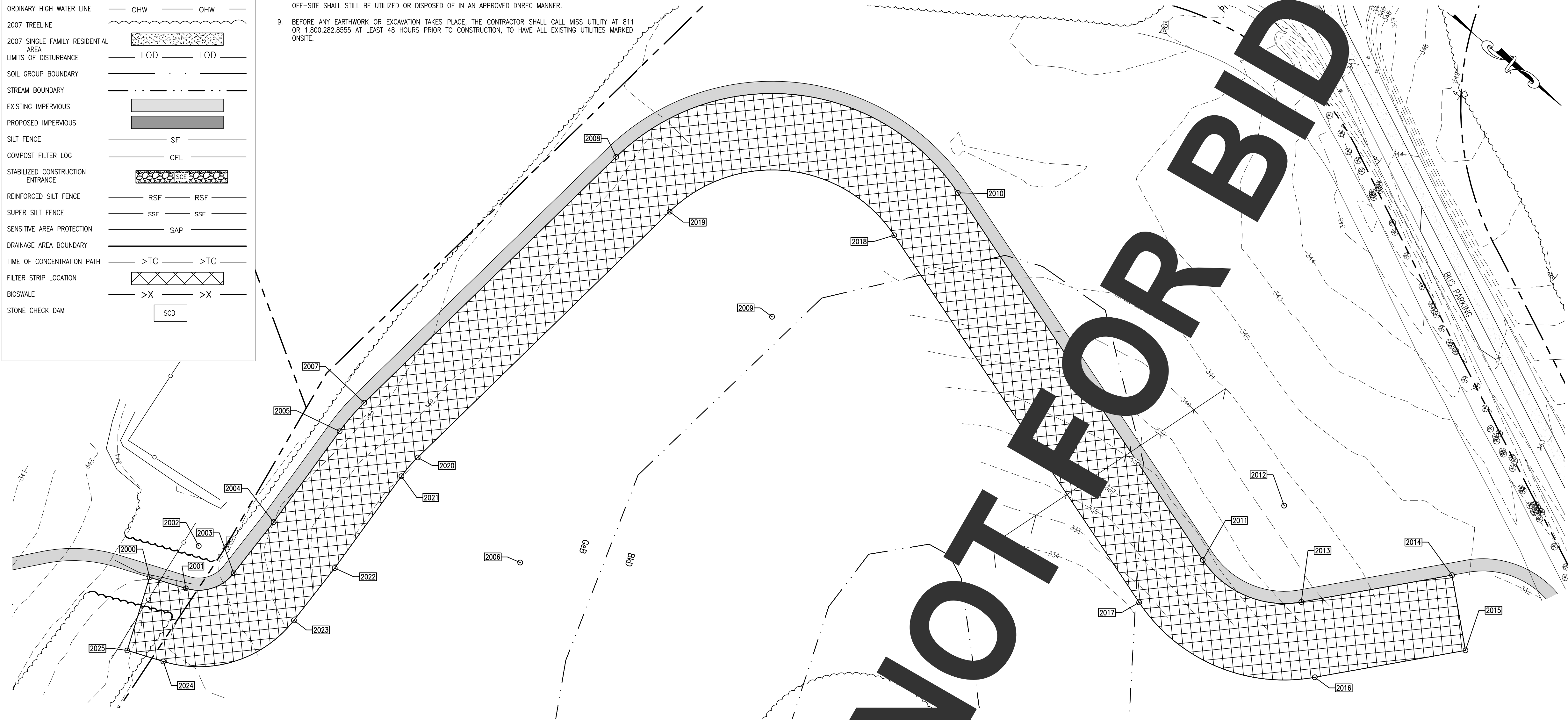
SCALE: 1" = 30'

C:\PROJECTS\25002.02 (WCCSP TRI-Valley Trail Concept Plan)\25002.02 (Tri-Valley Trail Concept Plan)\SWM-7 PostConstructionPlan.rvt 9/7/2016 11:34 AM

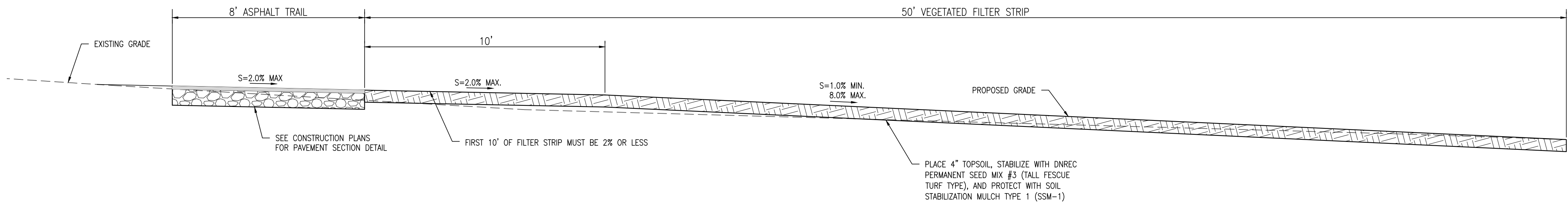
LEGEND	
EXISTING PROPERTY LINE	---
EXISTING RIGHT OF WAY	---
EXISTING FLOOD PLAN	FP
EXISTING FENCELINE	X X
PROPOSED SAWCUT	SAW
EXISTING BUILDING	
EXISTING UTILITY POLE	
EXISTING MANHOLE	
PROPOSED BOLLARD	
PROPOSED SIGN	
EXISTING CONTOUR	177
PROPOSED CONTOUR	177
WETLANDS LINE	OHW OHW
ORDINARY HIGH WATER LINE	OHW OHW
2007 TREELINE	
2007 SINGLE FAMILY RESIDENTIAL AREA	
LIMITS OF DISTURBANCE	LOD LOD
SOIL GROUP BOUNDARY	
STREAM BOUNDARY	
EXISTING IMPERVIOUS	
PROPOSED IMPERVIOUS	
SILT FENCE	SF
COMPOST FILTER LOG	CFL
STABILIZED CONSTRUCTION ENTRANCE	
REINFORCED SILT FENCE	RSF RSF
SUPER SILT FENCE	SSF SSF
SENSITIVE AREA PROTECTION	SAP
DRAINAGE AREA BOUNDARY	
TIME OF CONCENTRATION PATH	>TC >TC
FILTER STRIP LOCATION	>X >X
BIOSWALE	
STONE CHECK DAM	SCD

GENERAL NOTES

1. THE DNREC SEDIMENT AND STORMWATER PROGRAM RESERVES THE RIGHT TO ENTER PRIVATE PROPERTY FOR PURPOSES OF PERIODIC SITE REVIEWS.
2. THE DNREC SEDIMENT AND STORMWATER PROGRAM SHALL BE NOTIFIED WITHIN 30 BUSINESS DAYS IF THE PROPERTY OWNERSHIP IS TRANSFERRED TO A NEW PERSON OR ENTITY.
3. THE DNREC SEDIMENT AND STORMWATER PROGRAM MAY SEEK ENFORCEMENT ACTION AGAINST ANY OWNER DEEMED NEGLIGENT IN FULFILLING THE OPERATION AND MAINTENANCE REQUIREMENTS OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.
4. THE DNREC SEDIMENT AND STORMWATER PROGRAM SHALL BE CONTACTED IF A CONCERN ARISES REGARDING A STORMWATER MANAGEMENT FACILITY, BEFORE ANY NON-ROUTINE MAINTENANCE, OR IF MODIFICATIONS TO THE FACILITY ARE DESIRED.
5. ANY DESIGN MODIFICATIONS MADE TO THE STORMWATER SYSTEM SHALL REQUIRE THE CREATION OF A NEW POST CONSTRUCTION STORMWATER MANAGEMENT PLAN AND/OR OPERATIONS AND MAINTENANCE PLAN, WITH APPROVAL OF THE PLAN(S) BY THE DNREC SEDIMENT AND STORMWATER PROGRAM.
6. FOR ALL STORMWATER EASEMENT AREAS (I.E., ACCESS, MAINTENANCE, OR OFFSITE) AND THE MINIMUM 10-FOOT WIDE ACCESSWAYS TO ALL STORMWATER FACILITIES AND THEIR STRUCTURAL COMPONENTS, REGULAR MOWING SHALL BE PERFORMED TO KEEP THE GRASS 6" OR LESS, NO TREES OR SHRUBS SHALL BE PLANTED, AND ANY FOUND GROWING SHALL BE REMOVED; AND NO PERMANENT STRUCTURES, SUCH AS FENCES OR SHEDS, SHALL BE LOCATED WITHIN THE EASEMENT OR ACCESSWAY.
7. TREES SHALL NOT BE PLANTED, AND SHALL BE REMOVED IF FOUND GROWING, ON AND WITHIN 15 FEET OF ALL POND EMBANKMENTS, ON POND SLOPES OR SAFETY BENCHES, AND WITHIN 10 FEET OF STRUCTURAL COMPONENTS, SUCH AS PIPE INLETS.
8. WHEN THE FACILITY IS EXCAVATED TO REMOVE ACCUMULATED SEDIMENT, THE DISPOSAL AREA SHALL BE PERMANENTLY STABILIZED SO THAT IT DOES NOT RECREATE AN EROSION PROBLEM. ANY MATERIAL TAKEN OFF-SITE SHALL STILL BE UTILIZED OR DISPOSED OF IN AN APPROVED DNREC MANNER.
9. BEFORE ANY EARTHWORK OR EXCAVATION TAKES PLACE, THE CONTRACTOR SHALL CALL MISS UTILITY AT 811 OR 1.800.282.8555 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, TO HAVE ALL EXISTING UTILITIES MARKED ONSITE.



FILTER STRIP #2 - PLAN VIEW
SCALE: 1" = 40'



FILTER STRIP NO. 2 (TYP.) - SECTION A-A
NOT TO SCALE

FILTER STRIP SEQUENCE OF CONSTRUCTION

1. BEFORE SITE WORK BEGINS, FILTER STRIP BOUNDARIES SHOULD BE CLEARLY MARKED.
2. ONLY VEHICULAR TRAFFIC USED FOR FILTER STRIP CONSTRUCTION SHOULD BE ALLOWED WITHIN THE FILTER STRIP BOUNDARY.
3. IF EXISTING TOPSOIL IS STRIPPED DURING GRADING, IT SHALL BE STOCKPILED FOR LATER USE. CONSTRUCTION RUNOFF SHOULD BE DIRECTED AWAY FROM THE PROPOSED FILTER STRIP SITE, COMPOST FILTER LOGS.
4. FILTER STRIPS REQUIRE LIGHT GRADING TO ACHIEVE DESIRED ELEVATIONS AND SLOPES. THIS SHOULD BE DONE WITH TRACKED VEHICLES TO PREVENT COMPACTION. TOPSOIL AND OR COMPOST AMENDMENTS SHOULD BE INCORPORATED EVENLY ACROSS THE FILTER STRIP AREA, STABILIZED WITH SEED (PERMANENT MIX #3 W/ ADDITIONAL WINTER RYE), AND PROTECTED BY BIODEGRADABLE EROSION CONTROL MATTING OR BLANKETS (SSM TYPE 1).
EXAMPLE PRODUCTS INCLUDE: NORTH AMERICAN GREEN S75BN & EAST COAST EROSION BLANKETS ECS-1B
5. COMPOST FILTER LOGS SHALL NOT BE REMOVED UNTIL THE TURF COVER IS DENSE, WELL ESTABLISHED, AND APPROVED BY THE SITE CDR.

FILTER STRIP MAINTENANCE

FUNCTION:

FILTER STRIPS SPREAD RUNOFF UNIFORMLY OVER A FILTERING SURFACE OF VEGETATION, PROVIDING INFILTRATION AND POLLUTANT REMOVAL. FILTER STRIPS CAN PROVIDE SUBSTANTIAL TREATMENT AS LONG AS THEY ARE NOT OVERWHELMED BY SEDIMENT AND RUNOFF.

INSPECTION:

SEMI-ANNUAL (SPRING AND FALL) & AFTER STORM EVENTS OF 2 INCHES OR MORE.

TRASH AND DEBRIS:

REMOVE TRASH AND DEBRIS ON A REGULAR BASIS.

SOIL:

SOIL SHOULD BE TESTED ANNUALLY TO ENSURE PROPER PH AND FERTILITY INCLUDING: ORGANIC MATTER, MAGNESIUM (MG), PHOSPHORUS (PO4), NITROGEN (N), POTASSIUM (K2O), AND SOLUBLE SALTS. IF REQUIRED, FERTILIZER SHOULD ONLY BE APPLIED IN THE FALL.

EROSION:

IF BARE SOIL EXISTS WITHIN ANY AREA OF FILTER STRIP, RESEED AND/OR REPLANT AS REQUIRED BASED UPON INSPECTION FINDINGS. STABILIZE APPLICABLE ERODED AREAS WITH ROLLED EROSION CONTROL PRODUCTS (RECP) OR TURF REINFORCING MATS (TRM), AS REQUIRED. IF RECP IS APPLIED, IT IS RECOMMENDED TO USE TRULY BIODEGRADABLE PRODUCTS TO AID IN MOWING MAINTENANCE AND DETER WILDLIFE ENTRANGLEMENT. THESE PRODUCTS CAN BE RECOGNIZED AS HAVING 'BN' FOR BIONETTING OR 'B' FOR BIODEGRADABLE.

MOWING:

MOW, ANNUALLY, BETWEEN SEPTEMBER 1 AND 30 TO ALLOW FOR REGROWTH OF WINTER COVER WHILE AVOIDING POTENTIAL NEGATIVE EFFECTS ON WILDLIFE SUCH AS NESTING BIRDS. USE MULCHING MOWER WHILE ENSURING THAT NUTRIENTS ARE RECYCLED. FOR WARM SEASON GRASSES, THE PREVIOUS SEASON'S STALKS SHOULD BE CUT DOWN TO 8-12 INCHES IN EARLY SPRING (NO MARCH), BEFORE NEW SEASON'S GROWTH EMERGES. THE APPROVED PLAN WILL SPECIFY THE MOW HEIGHT. FILTER STRIP VEGETATION SHOULD BE MAINTAINED AT A HEIGHT OF 2 TIMES THE DEPTH OF FLOW DURING THE QUALITY STORM.

SEEDING:

DNREC PERMANENT SEED MIX #3 (TALL FESCUE - TURF TYPE W/ ADDITIONAL WINTER RYE) SHALL BE BED FOR ALL PERMANENT SEEDING IN FILTER STRIP AREAS. SEE SWM1.3 FOR DETAILS.

BUFFERS:

NA

FENCING:

NA

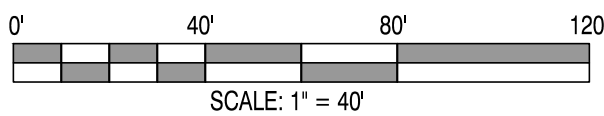
SPECIAL CONSIDERATIONS:

CONSULT THE DELAWARE DEPARTMENT OF AGRICULTURE FOR LICENSING REQUIREMENTS PERTAINING TO THE APPLICATION OF CHEMICALS.

HIRE A PROFESSIONAL:

REPAIR OF SEVERE EROSION; VEGETATION CONTROL (CHEMICAL APPLICATION) IF LICENSING REQUIRED BY DE DEPARTMENT OF AGRICULTURE.

FILTER STRIP LAYOUT			
POINT NO.	DESCRIPTION	NORTHING	EASTING
2000	FILTER STRIP	626404.3475	564308.1003
2001	FILTER STRIP	626427.1850	564298.7457
2002	RADIUS	626416.1926	564271.9098
2003	FILTER STRIP	626445.1854	564271.2624
2004	FILTER STRIP	626444.2370	564228.7918
2005	FILTER STRIP	626440.0516	564155.5406
2006	RADIUS	626585.8138	564147.2120
2007	FILTER STRIP	626440.7306	564130.8759
2008	FILTER STRIP	626466.4813	563902.1800
2009	RADIUS	626611.5645	563918.5160
2010	FILTER STRIP	626654.2690	563778.9011
2011	FILTER STRIP	626930.2089	563863.3040
2012	RADIUS	626948.9287	563802.1030
2013	FILTER STRIP	626997.5128	563843.7633
2014	FILTER STRIP	627062.6785	563767.7673
2015	FILTER STRIP	627100.6348	563800.3144
2016	FILTER STRIP	627035.4692	563876.3104
2017	FILTER STRIP	626915.5840	563911.1173
2018	FILTER STRIP	626639.6442	563826.7145
2019	FILTER STRIP	626516.1673	563907.7745
2020	FILTER STRIP	626490.4167	564136.4705
2021	FILTER STRIP	626489.9701	564152.6883
2022	FILTER STRIP	626494.2052	564226.8070
2023	FILTER STRIP	626495.1729	564270.1461
2024	FILTER STRIP	626446.1374	564345.0146
2025	FILTER STRIP	626423.2998	564354.3691



REVISIONS:

DATE: _____

BY: _____

WCCSP TRI-VALLEY TRAIL SEDIMENT STORMWATER MANAGEMENT PLANS

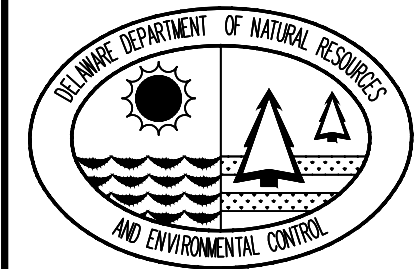
POST CONSTRUCTION MANAGEMENT PLAN - FILTER STRIP #2

SEAL:

CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO. WCCSP-7A



DESIGNED BY:

ATF

DRAWN BY:

ATF

CHECKED BY:

AES

DATE:

SEPTEMBER 7, 2016

SCALE:

AS NOTED

SHEET NO.:

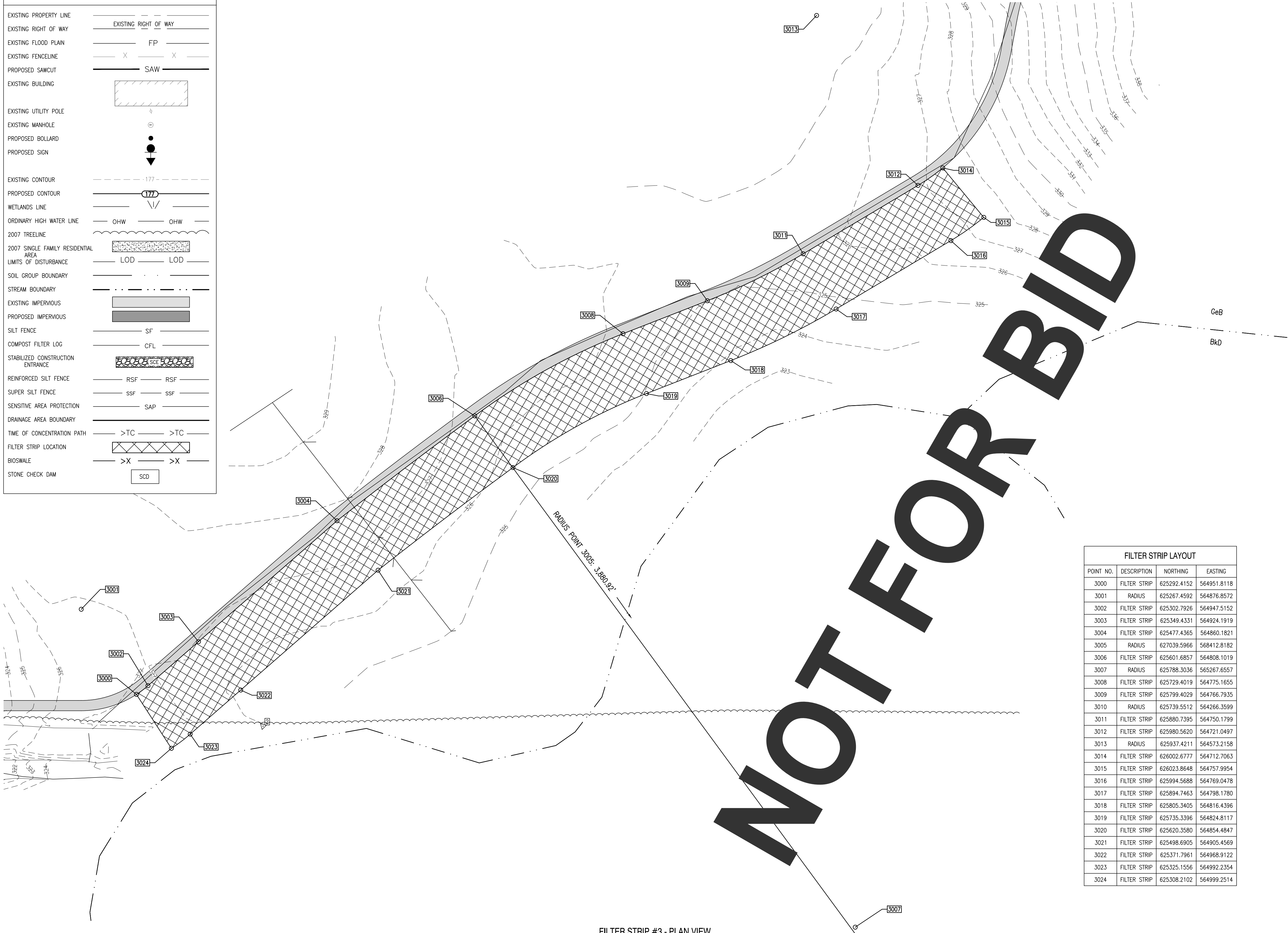
SWM1.7

CONTRACT NO.:

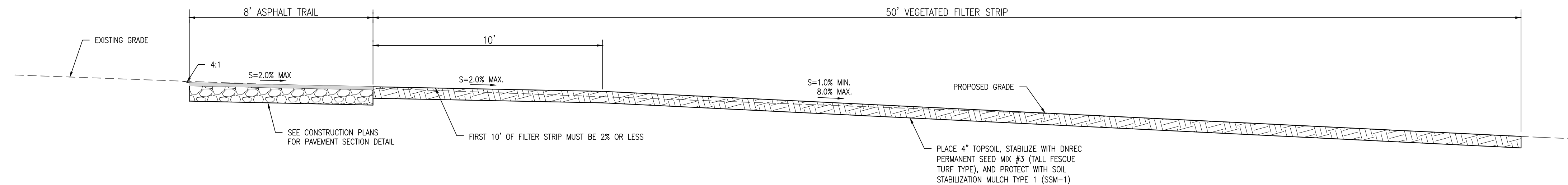
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LEGEND	
EXISTING PROPERTY LINE	EXISTING RIGHT OF WAY
EXISTING FLOOD PLAIN	EXISTING FENCELINE
PROPOSED SAWCUT	EXISTING BUILDING
EXISTING UTILITY POLE	EXISTING MANHOLE
PROPOSED BOLLARD	PROPOSED SIGN
EXISTING CONTOUR	PROPOSED CONTOUR
WETLANDS LINE	ORDINARY HIGH WATER LINE
2007 TREELINE	2007 SINGLE FAMILY RESIDENTIAL AREA
LIMITS OF DISTURBANCE	SOIL GROUP BOUNDARY
STREAM BOUNDARY	EXISTING IMPERVIOUS
PROPOSED IMPERVIOUS	SILT FENCE
COMPOST FILTER LOG	STABILIZED CONSTRUCTION ENTRANCE
REINFORCED SILT FENCE	SUPER SILT FENCE
SENSITIVE AREA PROTECTION	DRAINAGE AREA BOUNDARY
TIME OF CONCENTRATION PATH	FILTER STRIP LOCATION
BIOSWALE	STONE CHECK DAM



FILTER STRIP #3 - PLAN VIEW
SCALE: 1" = 40'



FILTER STRIP NO. 3 - SECTION A-A
NOT TO SCALE

FILTER STRIP SEQUENCE OF CONSTRUCTION

- BEFORE SITE WORK BEGINS, FILTER STRIP BOUNDARIES SHOULD BE CLEARLY MARKED.
- ONLY VEHICULAR TRAFFIC USED FOR FILTER STRIP CONSTRUCTION SHOULD BE ALLOWED WITHIN THE FILTER STRIP BOUNDARY.
- IF EXISTING TOPSOIL IS STRIPPED DURING GRADING, IT SHALL BE STOCKPILED FOR LATER USE. CONSTRUCTION RUNOFF SHOULD BE DIRECTED AWAY FROM THE PROPOSED FILTER STRIP SITE, COMPOST FILTER LOGS.
- FILTER STRIPS REQUIRE LIGHT GRADING TO ACHIEVE DESIRED ELEVATIONS AND SLOPES. THIS SHOULD BE DONE WITH TRACKED VEHICLES TO PREVENT COMPACTION. TOPSOIL AND OR COMPOST AMENDMENTS SHOULD BE INCORPORATED EVENLY ACROSS THE FILTER STRIP AREA, STABILIZED WITH SEED (PERMANENT MIX #3 W/ ADDITIONAL WINTER RYE), AND PROTECTED BY BIODEGRADABLE EROSION CONTROL MATING OR BLANKETS (SSM TYPE 1).
- COMPOST FILTER LOGS SHALL NOT BE REMOVED UNTIL THE TURF COVER IS DENSE, WELL ESTABLISHED, AND APPROVED BY THE SITE COR.

GENERAL NOTES

- THE DNREC SEDIMENT AND STORMWATER PROGRAM RESERVES THE RIGHT TO ENTER PRIVATE PROPERTY FOR PURPOSES OF PERIODIC SITE REVIEWS.
- THE DNREC SEDIMENT AND STORMWATER PROGRAM SHALL BE NOTIFIED WITHIN 30 BUSINESS DAYS IF THE PROPERTY OWNERSHIP IS TRANSFERRED TO A NEW PERSON OR ENTITY.
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- ANY DESIGN MODIFICATIONS MADE TO THE STORMWATER SYSTEM SHALL REQUIRE THE CREATION OF A NEW POST CONSTRUCTION STORMWATER MANAGEMENT PLAN AND/OR OPERATIONS AND MAINTENANCE PLAN, WITH APPROVAL OF THE PLAN(S) BY THE DNREC SEDIMENT AND STORMWATER PROGRAM.
- FOR ALL STORMWATER EASEMENT AREAS (I.E., ACCESS, MAINTENANCE, OR OFFSITE) AND THE MINIMUM 10-FOOT WIDE ACCESSWAYS TO ALL STORMWATER FACILITIES AND THEIR STRUCTURAL COMPONENTS, REGULAR MOWING SHALL BE PERFORMED TO KEEP THE GRASS 6" OR LESS; NO TREES OR SHRUBS SHALL BE PLANTED, AND ANY FOUND GROWING SHALL BE REMOVED; AND NO PERMANENT STRUCTURES, SUCH AS FENCES OR SHEDS, SHALL BE LOCATED WITHIN THE EASEMENT OR ACCESSWAY.
- TREES SHALL NOT BE PLANTED, AND SHALL BE REMOVED IF FOUND GROWING, ON AND WITHIN 15 FEET OF ALL POND EMBANKMENTS, ON POND SLOPES OR SAFETY BENCHES, AND WITHIN 10 FEET OF STRUCTURAL COMPONENTS, SUCH AS PIPE INLETS.
- WHEN THE FACILITY IS EXCAVATED TO REMOVE ACCUMULATED SEDIMENT, THE DISPOSAL AREA SHALL BE PERMANENTLY STABILIZED SO THAT IT DOES NOT RECREATE AN EROSION PROBLEM. ANY MATERIAL TAKEN OFF-SITE SHALL STILL BE UTILIZED OR DISPOSED OF IN AN APPROVED DNREC MANNER.
- BEFORE ANY EARTHWORK OR EXCAVATION TAKES PLACE, THE CONTRACTOR SHALL CALL MISS UTILITY AT 811 OR 1.800.282.8555 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, TO HAVE ALL EXISTING UTILITIES MARKED ONSITE.

FILTER STRIP MAINTENANCE

- FUNCTION:
- FILTER STRIPS SPREAD RUNOFF UNIFORMLY OVER A FILTERING SURFACE OF VEGETATION, PROVIDING INFILTRATION AND POLLUTANT REMOVAL. FILTER STRIPS CAN PROVIDE SUBSTANTIAL TREATMENT AS LONG AS THEY ARE NOT OVERWHELMED BY SEDIMENT AND RUNOFF.
- INSPECTION:
- SEMI-ANNUAL (SPRING AND FALL) & AFTER STORM EVENTS OF 2 INCHES OR MORE.
- TRASH AND DEBRIS:
- REMOVE TRASH AND DEBRIS ON A REGULAR BASIS.
- SOIL:
- SOIL SHOULD BE TESTED ANNUALLY TO ENSURE PROPER PH AND FERTILITY INCLUDING: ORGANIC MATTER, MAGNESIUM (Mg), PHOSPHORUS (P2O5), NITROGEN (N), POTASSIUM (K2O), AND SOLUBLE SALTS. IF REQUIRED, FERTILIZER SHOULD ONLY BE APPLIED IN THE FALL.
- EROSION:
- IF BARE SOIL EXISTS WITHIN ANY AREA OF FILTER STRIP, RESEED AND/OR REPLANT AS REQUIRED BASED UPON INSPECTION FINDINGS. STABILIZE APPLICABLE ERODED AREAS WITH ROLLED EROSION CONTROL PRODUCTS (RECP) OR TURF REINFORCING MATS (TRM), AS REQUIRED. IF RECP IS APPLIED, IT IS RECOMMENDED TO USE TRULY BIODEGRADABLE PRODUCTS TO AID IN MOWING MAINTENANCE AND DETER WILDLIFE ENTANGLEMENT. THESE PRODUCTS CAN BE RECOGNIZED AS HAVING "BN" FOR BIONETTING OR "B" FOR BIODEGRADABLE.
- MOWING:
- MOW, ANNUALLY, BETWEEN SEPTEMBER 1 AND 30 TO ALLOW FOR REGROWTH OF WINTER COVER WHILE AVOIDING POTENTIAL NEGATIVE EFFECTS ON WILDLIFE SUCH AS NESTING BIRDS. USE MULCHING MOWER TO ENSURE THAT NUTRIENTS ARE RECYCLED. FOR WARM SEASON GRASSES, THE PREVIOUS SEASON'S STALKS SHOULD BE CUT DOWN TO 8-12 INCHES IN EARLY SPRING (MID MARCH), BEFORE NEW SEASON'S GROWTH EMERGES. THE APPROVED PLAN WILL SPECIFY THE MOW HEIGHT. FILTER STRIP VEGETATION SHOULD BE MAINTAINED AT A HEIGHT OF 2 TIMES THE DEPTH OF FLOW DURING THE QUALITY STORM.
- SEEDING:
- DNREC PERMANENT SEED MIX #3 (TALL FESCUE - TURF TYPE W/ ADDITIONAL WINTER RYE) SHALL BE BED FOR ALL PERMANENT SEEDING IN FILTER STRIP AREAS. SEE SWM1.3 FOR DETAILS.
- BUFFERS:
- NA
- FENCING:
- NA
- SPECIAL CONSIDERATIONS:
- CONSULT THE DELAWARE DEPARTMENT OF AGRICULTURE FOR LICENSING REQUIREMENTS PERTAINING TO THE APPLICATION OF CHEMICALS.
- HIRE A PROFESSIONAL:
- REPAIR OF SEVERE EROSION; VEGETATION CONTROL (CHEMICAL APPLICATION) IF LICENSING REQUIRED BY DE DEPARTMENT OF AGRICULTURE.



REVISIONS:

DATE:	DESCRIPTION:

WCCSP TRI-VALLEY TRAIL
SEDIMENT STORMWATER MANAGEMENT PLANS

POST CONSTRUCTION MANAGEMENT PLAN - FILTER STRIP #3

SEAL:

CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO. WCCSP-7A

DESIGNED BY:
ATF

DRAWN BY:
ATF

CHECKED BY:
AES

DATE:
SEPTEMBER 7, 2016

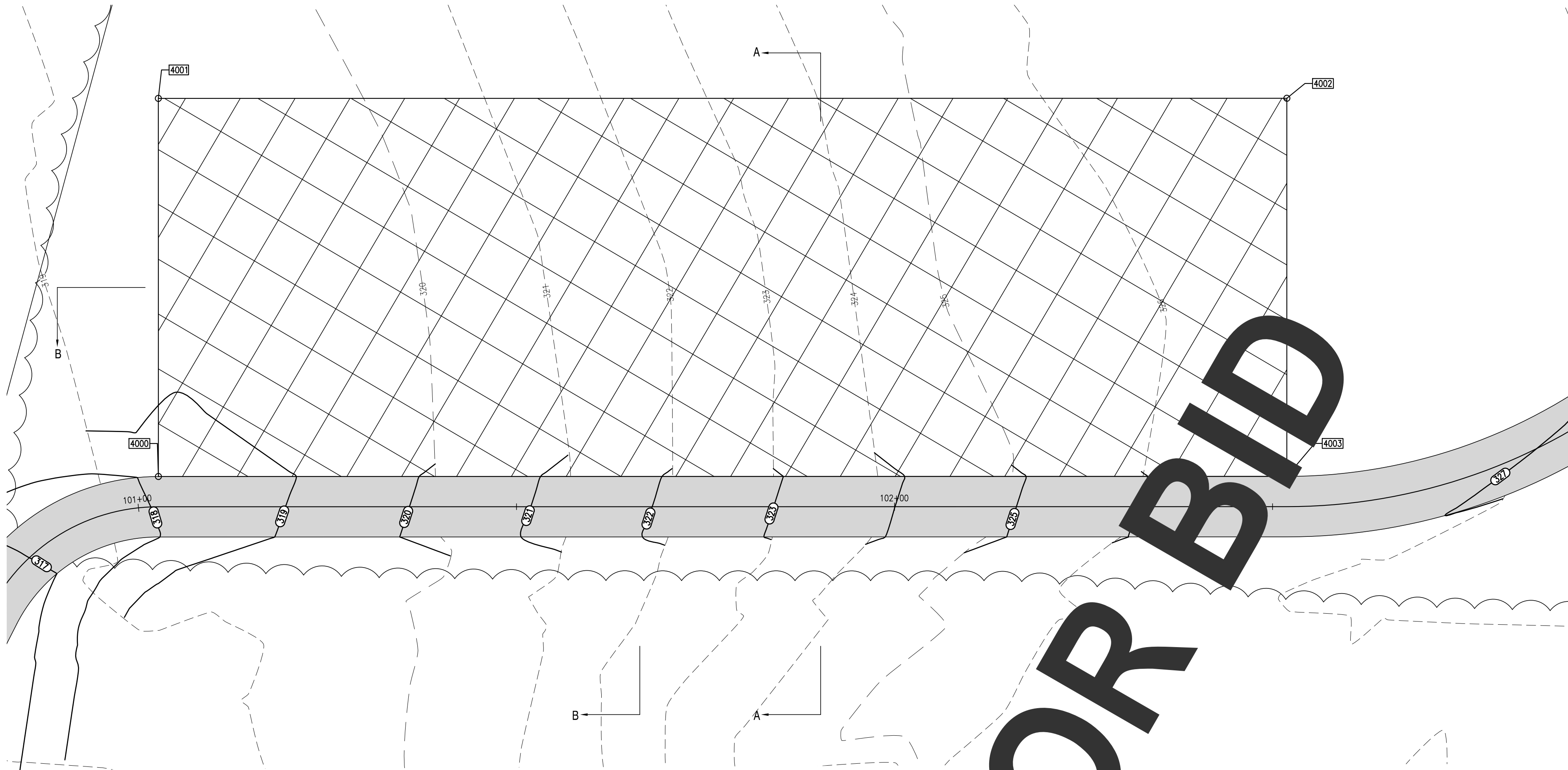
SCALE:
AS NOTED

SHEET NO.:
SWM1.8

CONTRACT NO.:
2016-WCCSP-100

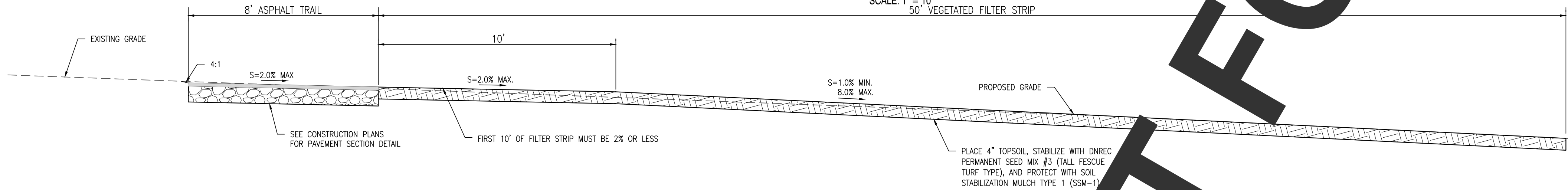
C:\PROJECTS\25002.02 (WCCSP TRI-Valley Trail Concept Plan)\25002.02 (Tri-Valley Trail Concept Plan)\SWM\SWM.dwg, 9/7/2016 11:37 AM

LEGEND	
EXISTING PROPERTY LINE	---
EXISTING RIGHT OF WAY	---
EXISTING FLOOD PLAIN	FP
EXISTING FENCELINE	X X
PROPOSED SAWCUT	SAW
EXISTING BUILDING	
EXISTING UTILITY POLE	
EXISTING MANHOLE	
PROPOSED BOLLARD	
PROPOSED SIGN	
EXISTING CONTOUR	-177-
PROPOSED CONTOUR	177
WETLANDS LINE	
ORDINARY HIGH WATER LINE	OHW OHW
2007 TREELINE	
2007 SINGLE FAMILY RESIDENTIAL AREA	
LIMITS OF DISTURBANCE	LOD LOD
SOIL GROUP BOUNDARY	
STREAM BOUNDARY	
EXISTING IMPERVIOUS	
PROPOSED IMPERVIOUS	
SILT FENCE	SF
COMPOST FILTER LOG	CFL
STABILIZED CONSTRUCTION ENTRANCE	
REINFORCED SILT FENCE	RSF RSF
SUPER SILT FENCE	SSF SSF
SENSITIVE AREA PROTECTION	SAP
DRAINAGE AREA BOUNDARY	
TIME OF CONCENTRATION PATH	>TC >TC
FILTER STRIP LOCATION	X X
BIOSWALE	X X
STONE CHECK DAM	SCD



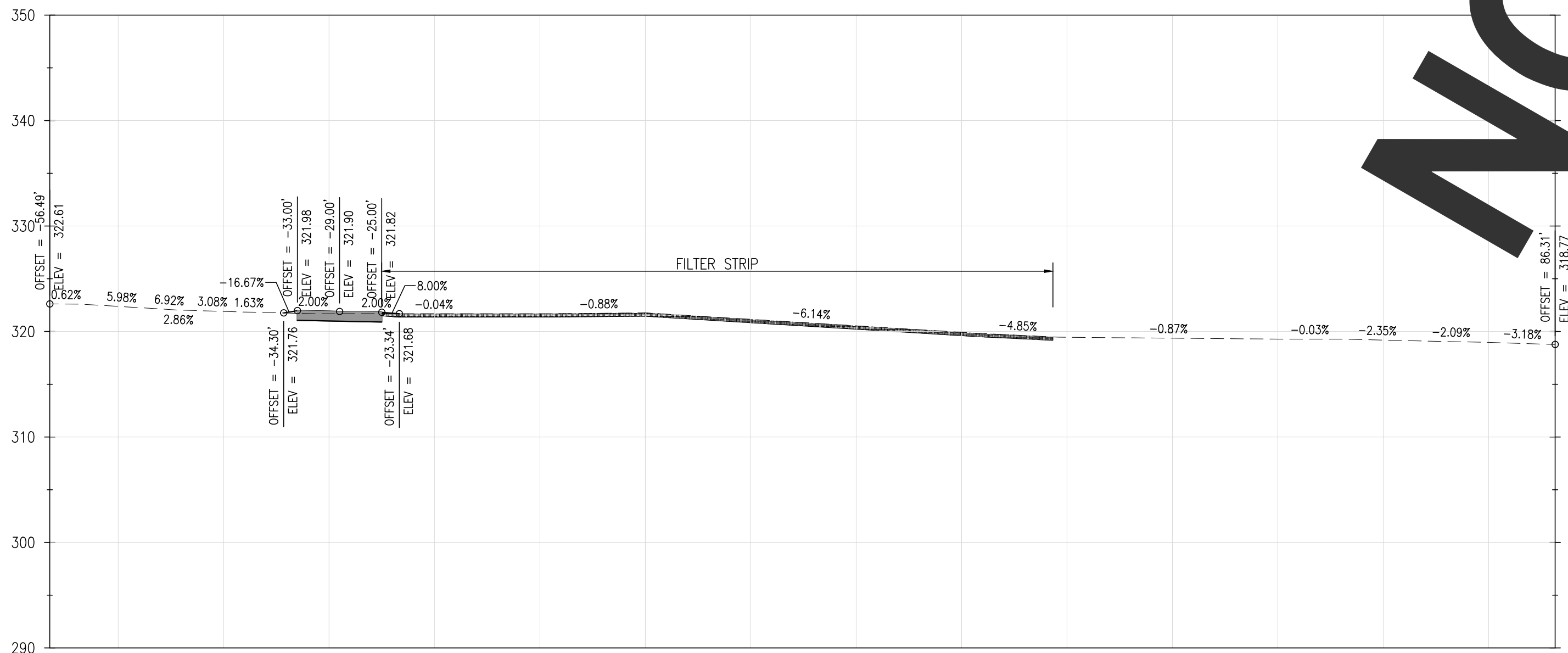
FILTER STRIP #4 - PLAN VIEW

SCALE: 1" = 10'
50' VEGETATED FILTER STRIP



FILTER STRIP NO. 4 - SECTION A-A

NOT TO SCALE



FILTER STRIP NO. 4 - SECTION B-B

SCALE: 1" = 10'

FILTER STRIP LAYOUT			
POINT NO.	DESCRIPTION	NORTHING	EASTING
4000	FILTER STRIP	625105.1565	564908.1181
4001	FILTER STRIP	625117.7071	564859.7189
4002	FILTER STRIP	625262.1879	564897.1849
4003	FILTER STRIP	625249.6373	564945.5841

FILTER STRIP SEQUENCE OF CONSTRUCTION

- BEFORE SITE WORK BEGINS, FILTER STRIP BOUNDARIES SHOULD BE CLEARLY MARKED.
- ONLY VEHICULAR TRAFFIC USED FOR FILTER STRIP CONSTRUCTION SHOULD BE ALLOWED WITHIN THE FILTER STRIP BOUNDARY.
- IF EXISTING TOPSOIL IS STRIPPED DURING GRADING, IT SHALL BE STOCKPILED FOR LATER USE. CONSTRUCTION RUNOFF SHOULD BE DIRECTED AWAY FROM THE PROPOSED FILTER STRIP SITE, COMPOST FILTER LOGS.
- FILTER STRIPS REQUIRE LIGHT GRADING TO ACHIEVE DESIRED ELEVATIONS AND SLOPES. THIS SHOULD BE DONE WITH TRACKED VEHICLES TO PREVENT COMPACTION. TOPSOIL AND OR COMPOST AMENDMENTS SHOULD BE INCORPORATED EVENLY ACROSS THE FILTER STRIP AREA, STABILIZED WITH SEED (PERMANENT MIX #3 W/ ADDITIONAL WINTER RYE), AND PROTECTED BY BIODEGRADABLE EROSION CONTROL MATTING OR BLANKETS (SSM TYPE 1).
EXAMPLE PRODUCTS INCLUDE: NORTH AMERICAN GREEN S75BN & EAST COAST EROSION BLANKETS ECS-1B
- COMPOST FILTER LOGS SHALL NOT BE REMOVED UNTIL THE TURF COVER IS DENSE, WELL ESTABLISHED, AND APPROVED BY THE SITE COR.

GENERAL NOTES

- THE DNREC SEDIMENT AND STORMWATER PROGRAM RESERVES THE RIGHT TO ENTER PRIVATE PROPERTY FOR PURPOSES OF PERIODIC SITE REVIEWS.
- THE DNREC SEDIMENT AND STORMWATER PROGRAM SHALL BE NOTIFIED WITHIN 30 BUSINESS DAYS IF THE PROPERTY OWNERSHIP IS TRANSFERRED TO A NEW PERSON OR ENTITY.
- THE DNREC SEDIMENT AND STORMWATER PROGRAM MAY SEEK ENFORCEMENT ACTION AGAINST ANY OWNER DEEMED NEGLIGENT IN FULFILLING THE OPERATION AND MAINTENANCE REQUIREMENTS OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.
- THE DNREC SEDIMENT AND STORMWATER PROGRAM SHALL BE CONTACTED IF A CONCERN ARISES REGARDING A STORMWATER MANAGEMENT FACILITY, BEFORE ANY NON-ROUTINE MAINTENANCE, OR IF MODIFICATIONS TO THE FACILITY ARE DESIRED.
- ANY DESIGN MODIFICATIONS MADE TO THE STORMWATER SYSTEM SHALL REQUIRE THE CREATION OF A NEW POST CONSTRUCTION STORMWATER MANAGEMENT PLAN AND/OR OPERATIONS AND MAINTENANCE PLAN, WITH APPROVAL OF THE PLAN(S) BY THE DNREC SEDIMENT AND STORMWATER PROGRAM.
- FOR ALL STORMWATER EASEMENT AREAS (I.E., ACCESS, MAINTENANCE, OR OFFSITE), AND THE MINIMUM 10-FOOT WIDE ACCESSWAYS TO ALL STORMWATER FACILITIES AND THEIR STRUCTURAL COMPONENTS, REGULAR MOWING SHALL BE PERFORMED TO KEEP THE GRASS 6" OR LESS; NO TREES OR SHRUBS SHALL BE PLANTED, AND ANY FOUND GROWING SHALL BE REMOVED; AND NO PERMANENT STRUCTURES, SUCH AS FENCES OR SHEDS, SHALL BE LOCATED WITHIN THE EASEMENT OR ACCESSWAY.
- TREES SHALL NOT BE PLANTED, AND SHALL BE REMOVED IF FOUND GROWING, ON AND WITHIN 15 FEET OF ALL POND EMBANKMENTS, ON POND SLOPES OR SAFETY BENCHES, AND WITHIN 10 FEET OF STRUCTURAL COMPONENTS, SUCH AS PIPE INLETS.
- WHEN THE FACILITY IS EXCAVATED TO REMOVE ACCUMULATED SEDIMENT, THE DISPOSAL AREA SHALL BE PERMANENTLY STABILIZED SO THAT IT DOES NOT RECREATE AN EROSION PROBLEM. ANY MATERIAL TAKEN OFF-SITE SHALL STILL BE UTILIZED OR DISPOSED OF IN AN APPROVED DNREC MANNER.
- BEFORE ANY EARTHWORK OR EXCAVATION TAKES PLACE, THE CONTRACTOR SHALL CALL MISS UTILITY AT 811 OR 1.800.282.8555 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, TO HAVE ALL EXISTING UTILITIES MARKED ON-SITE.

FILTER STRIP MAINTENANCE

FUNCTION:

FILTER STRIPS SPREAD RUNOFF UNIFORMLY OVER A FILTERING SURFACE OF VEGETATION, PROVIDING INFILTRATION AND POLLUTANT REMOVAL. FILTER STRIPS CAN PROVIDE SUBSTANTIAL TREATMENT AS LONG AS THEY ARE NOT OVERWHELMED BY SEDIMENT AND RUNOFF.

INSPECTION:

SEMI-ANNUAL (SPRING AND FALL) & AFTER STORM EVENTS OF 2 INCHES OR MORE.

TRASH AND DEBRIS:

REMOVE TRASH AND DEBRIS ON A REGULAR BASIS.

SOIL:

SOIL SHOULD BE TESTED ANNUALLY TO ENSURE PROPER PH AND FERTILITY INCLUDING: ORGANIC MATTER, MAGNESIUM (MG), PHOSPHORUS (P2O5), NITROGEN (N), POTASSIUM (K2O), AND SOLUBLE SALTS. IF REQUIRED, FERTILIZER SHOULD ONLY BE APPLIED IN THE FALL.

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BUFFERS:

NA

FENCING:

NA

SPECIAL CONSIDERATIONS:

CONSULT THE DELAWARE DEPARTMENT OF AGRICULTURE FOR LICENSING REQUIREMENTS PERTAINING TO THE APPLICATION OF CHEMICALS.

HIRE A PROFESSIONAL:

REPAIR OF SEVERE EROSION; VEGETATION CONTROL (CHEMICAL APPLICATION) IF LICENSING REQUIRED BY DEPARTMENT OF AGRICULTURE.

REVISIONS:

BY:

DATE:

DESCRIPTION:

WCCSP TRI-VALLEY TRAIL
SEDIMENT STORMWATER MANAGEMENT PLANS

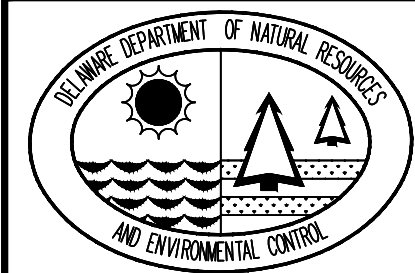
POST CONSTRUCTION MANAGEMENT PLAN - FILTER STRIP #4

SEAL:

CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO. WCCSP-7A



DESIGNED BY:

ATF

DRAWN BY:

ATF

CHECKED BY:

AES

DATE:

SEPTEMBER 7, 2016

SCALE:

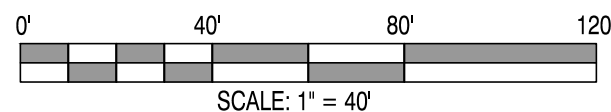
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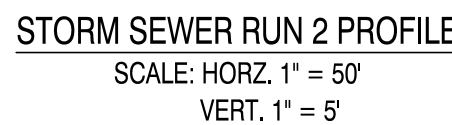
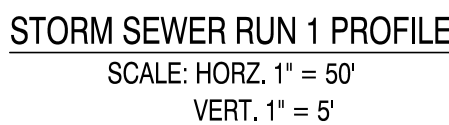
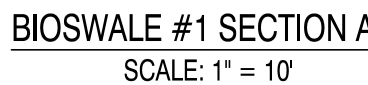
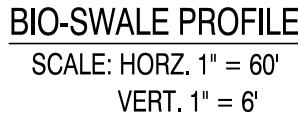
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CONTRACT NO.:

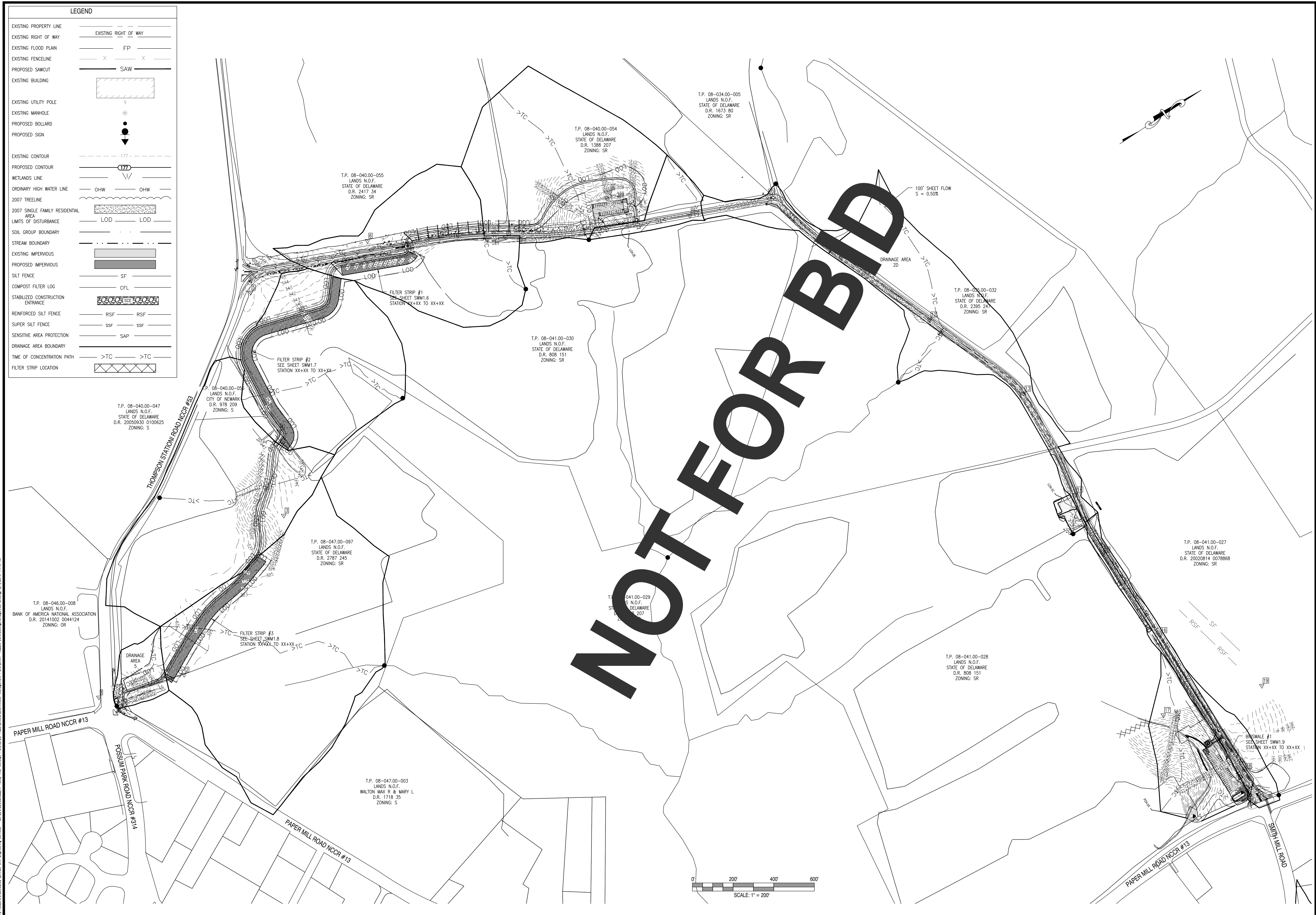
2016-WCCSP-100





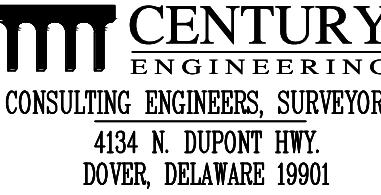
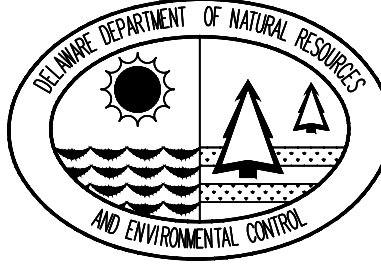
BIO-SWALE PROFILE
SCALE: HORZ. 1" = 60'
VERT. 1" = 6'



REVISIONS:	DATE:	DESCRIPTION:	BY:
WCCSP TRI-VALLEY TRAIL SEDIMENT STORMWATER MANAGEMENT PLANS		POST CONSTRUCTION STORMWATER MANAGEMENT PLAN-BIOSWALE #1	
<u>SEAL:</u>			
<u>CIVIL ENGINEER:</u>			
 CENTURY ENGINEERING CONSULTING ENGINEERS, SURVEYORS 4134 N. DUPONT HWY. DOVER, DELAWARE 19901 CEI CONTRACT NO. WCCSP-7A			
			
DESIGNED BY:		ATF	
DRAWN BY:		ATF	
CHECKED BY:		AES	
DATE:		SEPTEMBER 7, 2016	
SCALE:		AS NOTED	
SHEET NO.:		SWM1.10	
CONTRACT NO.:		2016-WCCSP-100	



REVISIONS: DATE: _____ DESCRIPTION: _____ _____ _____ _____	WCCSP TRI-VALLEY TRAIL SEDIMENT STORMWATER MANAGEMENT PLANS
	BMP CONTRIBUTING DRAINAGE AREA PLAN
	SEAL:
	CIVIL ENGINEER:  CENTURY ENGINEERING CONSULTING ENGINEERS, SURVEYORS 4134 N. DUPONT HWY. DOVER, DELAWARE 19901 CEI CONTRACT NO. WCCSP-7A
	
DESIGNED BY: ATF	DRAWN BY: ATF
CHECKED BY: AES	DATE: SEPTEMBER 7, 2016
SCALE: 1" = 200'	SHEET NO.: SWM1.11
CONTRACT NO.: 2016-WCCSP-100	

<div>NOT FOR BID</div>		WCCSP TRI-VALLEY TRAIL SEDIMENT STORMWATER MANAGEMENT PLANS		REVISIONS:	
		BMP CONTRIBUTING DRAINAGE AREA DETAILS AND NOTES		DATE: _____ DESCRIPTION: _____ BY: _____	
SEAL:		<div>CIVIL ENGINEER:  CENTURY ENGINEERING CONSULTING ENGINEERS, SURVEYORS 4134 N. DUPONT HWY. DOVER, DELAWARE 19901 CEI CONTRACT NO. WCCSP-7A</div>			
		DESIGNED BY: ATF			
		DRAWN BY: ATF			
		CHECKED BY: AES			
		DATE: SEPTEMBER 7, 2016			
		SCALE: N.T.S.			
		SHEET NO.: SWM1.12			
		CONTRACT NO.: 2016-WCCSP-100			

