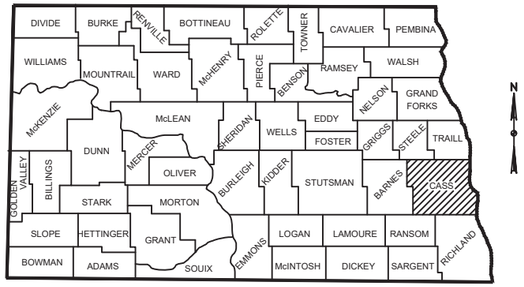
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	ND	AC-TMA-TAU-CRP-8-984(183)	24418	1	1

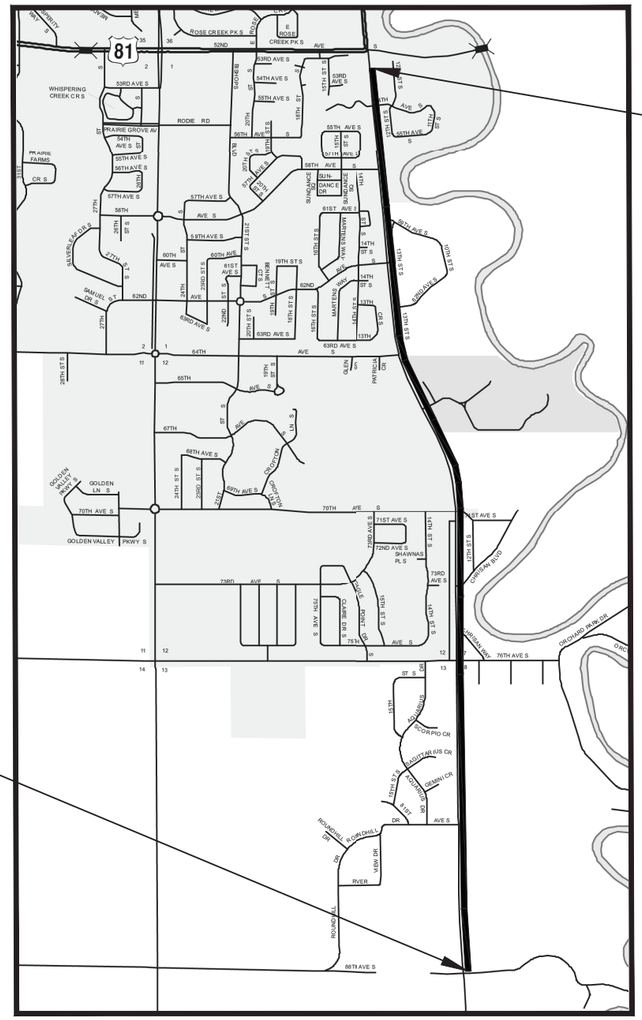


STATE OF NORTH DAKOTA
SHOWING COUNTIES

CASS COUNTY, NORTH DAKOTA
PLANS FOR FEDERAL AID
PROJECT AC-TMA-TAU-CRP-8-984(183)
SHARED USE PATH

Project Consists of Removals, Concrete Shared Use Path, Culverts, and Flashing Beacons

Project is located adjacent to University Drive South/Cass County Highway 81
from 52nd Ave S to 88th Ave S in Fargo, North Dakota



END PROJECT
AC-TMA-TAU-CRP-8-984(183)
STA. 165+31.09

BEGIN PROJECT
AC-TMA-TAU-CRP-8-984(183)
STA. 10+42.15

GOVERNING SPECIFICATIONS	Date Published and Adopted by the North Dakota Department of Transportation
Standard Specifications	07/1/2025
Supplemental Specifications	NONE

PROJECT LENGTH

PROJECT	GROSS MILES	EXCEPTION MILES	NET MILES
AC-TMA-TAU-CRP-8-984(183)	2.934	0.079	2.855
TOTAL	2.934	0.079	2.855

N

PS&E Corrections Made — August 2026
Surveyed & Designed Date — March 2026/May 2026

DESIGNER	Bryan Tykwinski, PE
DESIGNER	Zach Vlaminck
DESIGNER	Zach Nelson, EI
DESIGNER	-
DESIGNER	-

APPROVED DATE 08/26/26
Kyle Litchy
ND REG. NO. PE-27408

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

KLJ
300 23RD AVE E
SUITE 100
WEST FARGO, ND 58078
(701) 232-5353, FAX (855) 288-8055

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2	1	Table of Contents
4	1	Scope of Work
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10	1	Basis of Estimate
20	1 - 10	General Details
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90	1 - 13	Paving Layouts
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150	1 - 3	Signals
200	1 - 29	Cross Sections

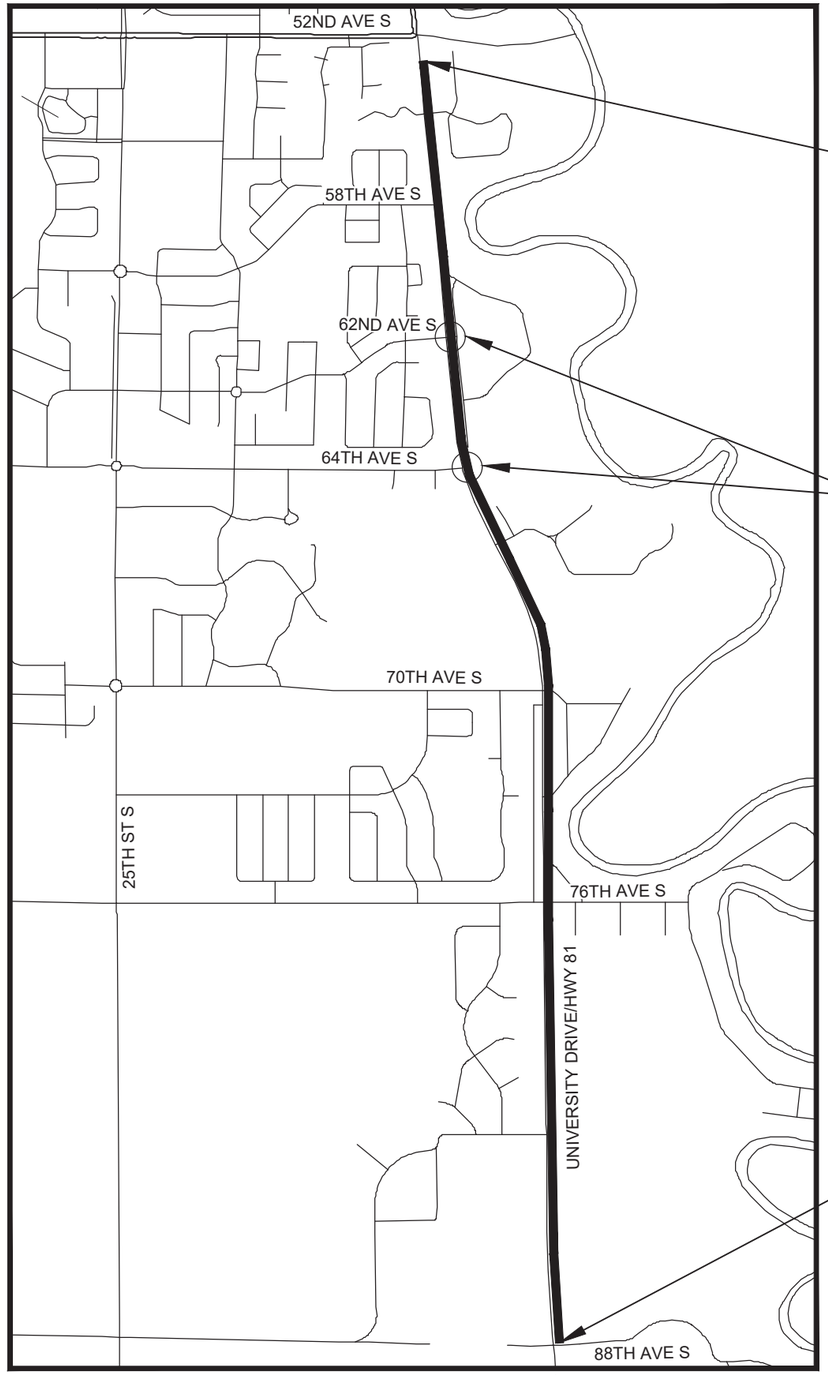
SPECIAL PROVISIONS

Number	Description
SSP 1	Temporary Erosion and Sediment Best Management Practices
SSP 3	Local Agency Contracts
PSP 96(25)	Permits and Environmental Considerations
SP 573(25)	Commercial Grade Asphalt Without Density
SP 591(25)	Utility Coordination
SP 601(25)	Temporary Pedestrian Facilities

LIST OF STANDARD DRAWINGS

Number	Description
D-101-1, 2, 3, 4	NDDOT Abbreviations
D-101-10	NDDOT Utility Company and Organization Abbreviations
D-101-20, 21	Line Styles
D-101-30, 31, 32, 33	Symbols
D-261-1	Erosion Control - Fiber Roll Placement Details
D-704-7	Breakaway Systems For Construction Zone Signs - Perforated Tube
D-704-8	Breakaway Systems For Construction Zone Signs - U-Channel Post
D-704-9	Construction Sign Details - Terminal And Guide Signs
D-704-10	Construction Sign Details - Regulatory Signs
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D-704-13	Barricade And Channelizing Device Details
D-704-14	Construction Sign Punching And Mounting Details
D-704-24	Shoulder Closures And Bridge Painting Layouts
D-704-25	Lane Closures On Urban Streets Layouts
D-704-26	Miscellaneous Sign Layouts
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D-704-50	Portable Sign Support Assembly
D-714-1	Reinforced Concrete Pipe Culverts And End Sections (Round Pipe)
D-714-2	Reinforced Concrete Pipe Arch Culverts And End Sections
D-714-4	Round Corrugated Steel Pipe Culverts And End Sections
D-714-22	Concrete Pipe, Cattle Pass, or Precast Concrete Box Culvert Ties
D-714-27	Pipe Installation Detail for Longitudinal Mainline Pipe or Pipe Not Under the Roadway
D-750-2	Sidewalk
D-750-3	Curb Ramp Retrofit Details
D-750-4	Curb Ramp Retrofit Transitional Area Details
D-754-23	Perforated Tube Assembly Details
D-754-24, 25	Mounting Details Perforated Tube
D-754-24A	Breakaway Coupler System For Perforated Tubes
D-754-28, 31	Sign Punching, Stringer and Support Location Details Regulatory, Warning and Guide Signs
D-754-46	Punching, Stringer and Support Location Details for Regulatory, Warning and Guide Bike Route Signs
D-754-83	Object Markers - Culverts
D-762-1	Pavement Marking Message Details

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CONCRETE SHARED USE PATH & CULVERTS

END PROJECT
STA. 165+31.09

FLASHING BEACON (SEE SECTION 150)

BEGIN PROJECT
STA. 10+42.15

N

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/25/26
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CASS COUNTY, NORTH DAKOTA

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SCOPE OF WORK

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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NOTES

100-P01 NOISE RESTRICTION: No construction activities or moving of equipment shall occur between the hours of 10:00 pm and 7:00 am except for sawing of new concrete. When sawing is planned to occur during these hours, the Contractor shall distribute written notices to residents located within 500 feet of the work by 7:30 pm the evening prior to the work taking place.

202-P01 REMOVAL OF BITUMINOUS SURFACING: The existing thickness of bituminous material has been estimated based on historic records. The actual depth of bituminous material may vary. Any changes in thickness will not constitute a change in unit price.

202-P01 SAW CUTTING: Include all costs for saw cutting bituminous and concrete surfacing and curb and gutter in other items bid.

203-010 SHRINKAGE: 25 percent additional volume is included for shrinkage in earth embankment.

203-P02 EARTHWORK QUANTITIES: “COMMON EXCAVATION TYPE B” and “TOPSOIL” will be paid at plan quantity unless charges are made in the field. Any field changes must be approved by the Owner or Engineer.

251-P01 SEEDING CLASS III: Provide the specified mix of seed for “SEEDING CLASS III”. Rate of Seeding = 300 Pounds per Acre.

Species	Percentage By Weight
Perennial Ryegrass	30%
Creeping Red Fescue	30%
Annual Ryegrass	30%
Kentucky Bluegrass	10%

After the seed is drilled into the topsoil spread fertilizer at a mixture of 12-24-12 applied at a rate of 220 pounds per acre. Place the hydraulic mulch after the seeding and fertilizing has been completed. Include all costs for labor, equipment, and materials necessary in the price bid for "SEEDING CLASS III".

302-P01 AGGREGATE BASE COURSE CL 5: An additional quantity of 100 tons of aggregate base has been included in the estimate of quantities to be used at the discretion of the Engineer.

704-P01 TRAFFIC CONTROL DEVICES: Traffic control devices have been quantified based on the layouts provided in Section 100 and a ½ mile shoulder closer per NDDOT Standard Drawing D-704-24 Layout Type U. Any changes or revisions to the traffic control must be reviewed and approved by the Engineering before implementation or payment.

704-P02 TRAFFIC CONTROL: Submit a traffic control phasing plan that incorporates the details shown in Section 100 to the Engineer for approval. Coordinate private and field drive closures/restrictions with land owners. Maintain a minimum width of 12 feet at all times. Written permission from owners must be acquired to close entire access.

For shoulder closures a minimum width of 28 feet must be maintained on CR 81/University Drive to allow for one lane in each direction.

The pedestrian ramps at the intersection of CR 81/University Drive and 54th Ave S cannot be closed simultaneously. The north ramp must be operational until the ramps at 58th Ave S have been constructed. The south ramp must be operational when the north ramp is closed and the 58th Ave ramps are operational. See Section 20 for details regarding temporary pedestrian ramps and Section 100 for the pedestrian detours.

714-P01 PIPE CONDUIT: Follow Excavation and Backfill Detail A on NDDOT Standard Drawing D-714-27 for all pipe installation on the project. Backfill pipes with Aggregate Base Course Class 3 or Class 5.

714-P02 MISCELLANEOUS PIPES: Miscellaneous PVC pipes running from residential properties under the existing shared use path are present within the project. Pipes have been identified at the locations listed below, others may be present throughout the project. These pipes are to remain in place. Any damage caused by construction is to be corrected at no additional cost to the owner.

- Sta 58+18
- Sta 58+91
- Sta 61+02
- Sta 79+60
- Sta 85+28
- Sta 158+55

714-P03 PIPE EXTENSION: Provide a 24-inch long coupling band for the pipe extension at sta 134+84 LT. Coupling band to be included in the unit price bid for “PIPE CONDUIT 24IN”.

722-P01 MODIFY INLET: Remove the existing casting and frame from the inlet at sta 74+21 and install a Neenah Foundry R-4342, EJ 6489, or approved equal. Include all labor, equipment, and materials required to remove and install the new grate in the price bid for “MODIFY INLET”.

722-P02 MANHOLE 60IN: Manhole casting shall be Neenah R-1733, EJ1205Z, or approved equal with a vented lid with the word “STORM” (or the words “STORM SEWER”) cast in the center of the lid in letters at least 1 inch high.

Manhole was designed with a minimum 4’ riser height. Fill the bottom of the structure with concrete, up to the lowest invert elevation.

722-P03 ADJUST MANHOLE: Adjust the manhole to the proposed elevation at stat 151+15. Remove, salvage, and reset the existing casting and cover. Provide adjustment rings for the adjustment. Include all costs for the adjustment in the unit price bid for “ADJUST MANHOLE”.

750-P01 CONCRETE: All contraction joints in concrete are to be sawcut, not tooled.

750-P02 DETECTABLE WARNING PANELS: Use cast-in-place, unpainted cast iron plates manufactured by East Jordan Iron Works, Neenah Foundry, or approved equal.

750-P03 PIGMENTED IMPRINTED CONCRETE: Provide Soloman 435 Sunbaked Clay, Davis Sangria 1117, or an approved equal pigmented concrete. To be

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/15/26
NORTH DAKOTA

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PLAN NOTES

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NOTES

considered an approved equal, pigments must meet the requirements of ASTM C 979. Imprinted pattern to be brick pattern.

750-P04 SIDEWALK CONCRETE: Tie all sidewalk adjacent to construction joints (non-isolation joints) with #4 x 12" deformed tie bars placed mid depth at a max spacing of 24". Include all labor, equipment, and materials required to install the tie bars in the price bid for "SIDEWALK CONCRETE 5IN REINF"

750-P05 ISOLATION JOINTS: All isolation joints in sidewalk and driveway are to be pinned using #4 x 12" plain round dowels placed mid depth at a max spacing of 24". Install plastic or metal caps and grease dowels in the cold joint for the second pour. Include all labor, equipment, and materials required to install the dowels in the price bid for "SIDEWALK CONCRETE 5IN REINF".

750-P06 CONCRETE: If random cracking occurs prior to final payment for the project, remove, and replace all damaged panels at the Contractor's expense unless the Contractor can provide proof to the satisfaction of the Engineer that the uncontrolled cracking was not the fault of the Contractor's operations.

754-P01 REMOVE & RESET SIGN: Remove and reset the existing signs at Sta. 119+82 LT and Sta. 163+03 RT on existing supports. Include all costs to complete this work in the price bid for other removal items.

772-P01 FLASHING BEACON-POST MOUNTED: Provide post mounted push button actuated flashing beacons at the four locations shown in the plans. Flashing beacons must meet the requirements shown below. All costs for equipment, labor and materials to supply and install each post mounted flashing beacon is to be included in the unit price bid for "FLASHING BEACON-POST MOUNTED".

Flashing beacons to be a solar pedestrian flasher manufactured by RTC Manufacturing, Inc. Each solar flasher will include the following items:

- Combination flasher/battery cabinet with #2 Corbin lock and Uni-Strut or RTC hinge bracket (502364HB) mounting system.
- Wired back panel w/toggle switch and a MorningStar Prostar or SunSaver solar charge controller.
- 2-circuit 12 VDC flasher
- Programmable Timer Relay for adjusting flash time to cross roadway
- Master/Remote wireless communication for pedestrian button activation between both flashers
- 3 EA- 12" yellow 12 VDC LED's
- 50-watt solar panel
- 1 EA 100-amp hour Deep Cycle Gel cell battery
- 17.5' Type V, the standards will meet the specifications listed in this note
- 3 EA- 12" federal yellow SG Polycarbonate signals with visors and mounting brackets
- Signs W11-20 and W16-7PL as shown in Section 150

Provide a type V traffic signal standard meeting the following requirements:

- All Type V signal standards will be manufactured by Millerbernd Manufacturing, Winsted, MN, or approved Valmont equal
- All Type V signal standard transformer bases will have an aluminum breakaway Akron Foundry Co.TB1-20, 1975 AASHTO approved or approved equal.
- All Type V signal standards and Transformer bases will be galvanized and gloss black
- All Type V signal standards will be 17.5'

Provide flasher equipment meeting the following requirements:

- All hardware and equipment shown in Section 150
- All beacon head mounting hardware, pedestal adapters/collars will be iron – absolutely no aluminum.
- All beacon heads will be SG polycarbonate or approved equal and installed level on all sides.
- Yellow indications will be approved L.E.D. signal heads.

Provide pedestrian push buttons and signs

- Pedestrian push buttons will be a Polara Rees Style Bulldog Button with momentary L.E.D. Model #RBDSP-014-Y-2H (Yellow). Pedestrian push buttons will have a Pelco SE-2000 Rectangular Series box pole mount #SE-0295-P01 (Yellow). Pedestrian crossing signs will be an 11th Edition MUTCD R10-25, 5" x 7" size, H.I.P. Sheeting, .080" aluminum sign thickness.

970-P01 BENCH: Existing free-standing benches and ground/post mounted trash receptacles are located throughout the project. Remove, salvage, and install the existing benches and trash receptacles per Section 20 at the following locations:

- Sta 65+57
- Sta 88+72
- Sta 117+90
- Sta 143+86
- Sta 161+11

Bolt the benches to the concrete pad. Include all labor, materials, and equipment necessary to remove, salvage, and install the benches and trash receptacles in the unit price bid for "BENCH". Grading and concrete work to be included in the bid items "COMMON EXCAVATION-TYPE B" and "SIDEWALK CONCRETE 5IN RENF".

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SCOTT MIDDAUGH
PE-7499
DATE 8/25/26
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PLAN NOTES

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Estimated Quantities

SPEC	CODE	ITEM DESCRIPTION	UNIT	Mainline:	TOTAL
103	0100	CONTRACT BOND	L SUM	1	1
202	0114	REMOVAL OF CONCRETE PAVEMENT	SY	655	655
202	0130	REMOVAL OF CURB & GUTTER	LF	16	16
202	0132	REMOVAL OF BITUMINOUS SURFACING	SY	15340	15340
202	0169	REMOVAL OF END SECTION-ALL TYPES & SIZES	EA	1	1
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES	LF	1004	1004
203	0102	COMMON EXCAVATION-TYPE B	CY	470	470
203	0109	TOPSOIL	CY	1500	1500
203	0140	BORROW-EXCAVATION	CY	970	970
216	0100	WATER	M GAL	69	69
251	0300	SEEDING CLASS III	ACRE	2.46	2.46
253	0201	HYDRAULIC MULCH	ACRE	4.92	4.92
261	0112	FIBER ROLLS 12IN	LF	20484	20484
261	0113	REMOVE FIBER ROLLS 12IN	LF	10242	10242
302	0120	AGGREGATE BASE COURSE CL 5	TON	1498	1498
411	0105	MILLING PAVEMENT SURFACE	SY	66	66
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT	TON	92	92
702	0100	MOBILIZATION	L SUM	1	1
704	0100	FLAGGING	MHR	200	200
704	1000	TRAFFIC CONTROL SIGNS	UNIT	1917	1917
704	1052	TYPE III BARRICADE	EA	7	7
704	1054	SIDEWALK BARRICADE	EA	38	38
704	1056	PEDESTRIAN CHANNELIZATION	LF	60	60
704	1060	DELINEATOR DRUMS	EA	282	282
704	1067	TUBULAR MARKERS	EA	110	110
704	2108	TEMPORARY CURB RAMP	EA	1	1
714	4100	PIPE CONDUIT 18IN	LF	646	646
714	4105	PIPE CONDUIT 24IN	LF	48	48
714	4110	PIPE CONDUIT 30IN	LF	200	200
714	4216	PIPE CONDUIT ARCH 22IN X 13IN	LF	26	26
714	4229	PIPE CONDUIT ARCH 58IN X 36IN	LF	30	30
722	0110	MANHOLE 60IN	EA	1	1
722	1110	MANHOLE RISER 60IN	LF	4	4
722	3495	MODIFY INLET	EA	1	1
722	6200	ADJUST MANHOLE	EA	1	1
748	0190	CURB & GUTTER-TYPE I 30IN	LF	224	224
750	0030	PIGMENTED IMPRINTED CONCRETE	SY	40.5	40.5
750	0120	SIDEWALK CONCRETE 5IN REINF	SY	16577	16577
750	1016	DRIVEWAY CONCRETE 6IN REINFORCED	SY	578	578
750	2115	DETECTABLE WARNING PANELS	SF	300	300
754	0110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING	SF	72.7	72.7
754	0112	FLAT SHEET FOR SIGNS-TYPE IV REFL SHEETING	SF	21.5	21.5
754	0206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	335.3	335.3
754	0805	OBJECT MARKERS - CULVERTS	EA	45	45
762	0117	EPOXY PVMT MK 24IN LINE	LF	210	210
762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED	LF	300	300
772	2110	FLASHING BEACON-POST MOUNTED	EA	4	4

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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Estimated Quantities

SPEC	CODE	ITEM DESCRIPTION	UNIT	Mainline:					TOTAL
970	0300	BENCH	EA	5					5

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BASIS OF ESTIMATE

Aggregate Base Course CL 5	1.875 Ton/CY (Shrinkage and Compaction)
Seeding	All disturbed areas within the right of way and project limits minus hard surfaces
Mulching	Provided for permanent seeding and temporary stabilization
Water	25 M Gal for Dust Palliative 10 Gal/CY for Embankment 20 Gal/Ton for Aggregate

Earthwork Summary

	Earthwork				Aggregate	Topsoil[2]
Location	Excavation (CY)[3]	Embankment[1] (CY)	203-0102 Common Excavation-Type B (CY)	203-0140 Borrow Excavation (CY)	302-0120 Aggregate Base Course CL5 (Ton)	203-0109 Topsoil (CY)
	A	C	D	E =C-A	F	G
Mainline	470	1,440	470	970	1,498	1500

1) Embankment quantities include 25% for shrinkage.
2) Topsoil quantities based 4" depth. Place topsoil per Standard Specification 203.04 D.2
3) Excavation quantity includes existing aggregate to match profile

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PE-7499
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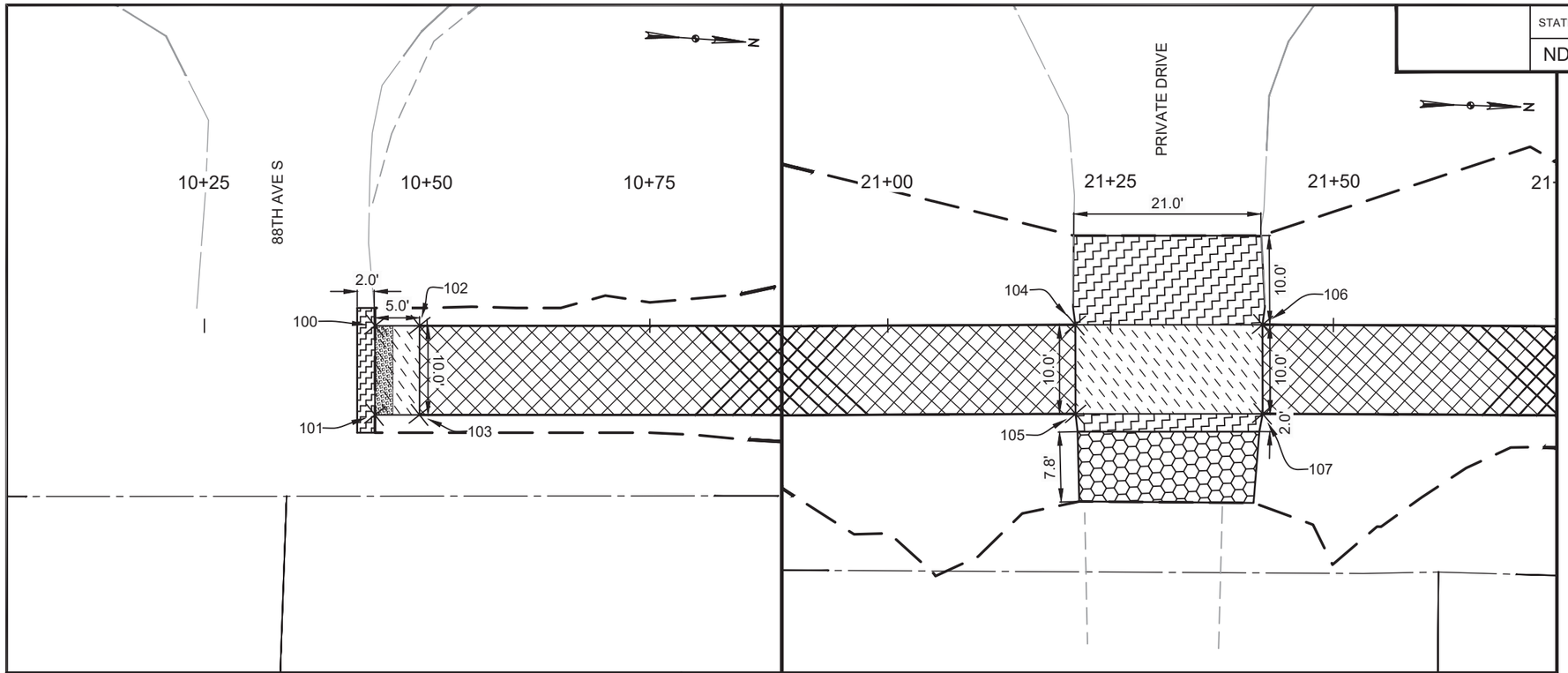
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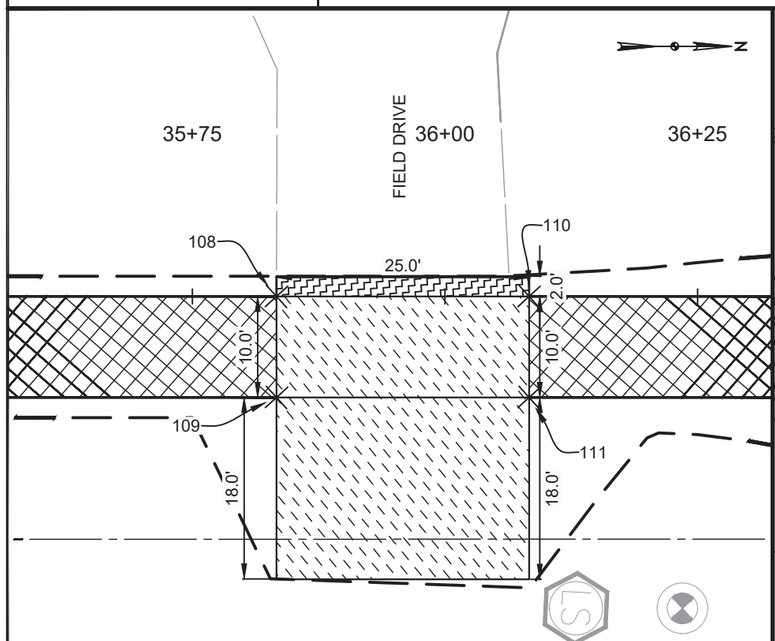
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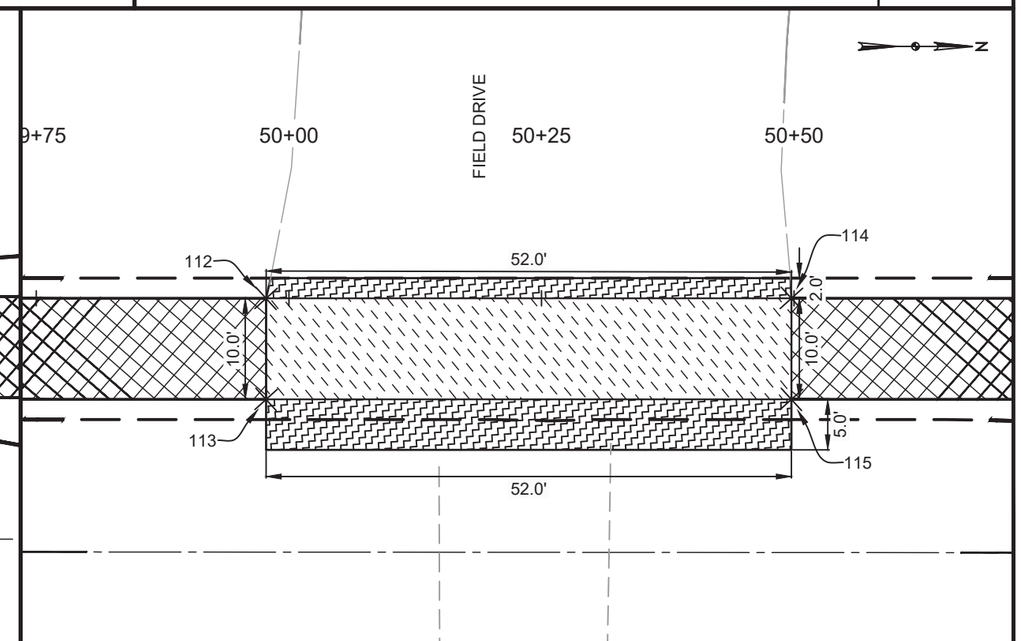
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LEGEND:

- 4:1 MAX CURB TRANSITION
- DETECTABLE WARNING PANEL
- LANDING
  1.5% PREFERRED, 2% MAX CROSS SLOPE
  1.5% PREFERRED, 2% MAX RUNNING SLOPE
- CLEAR SPACE
  2% MAXIMUM CROSS SLOPE
  5% MAXIMUM RUNNING AND COUNTER SLOPE
  4' LONG X WIDTH OF RAMP OR 4' MIN
- COMMERCIAL HMA
- MILL & OVERLAY
- 5IN SIDEWALK
  CONCRETE REINFORCED
- 6IN DRIVEWAY
  CONCRETE REINFORCED
- 5IN SIDEWALK PIGMENTED
  IMPRINTED CONCRETE REINFORCED

NOTES:
1. OBTAIN ENGINEER APPROVAL ON FORM GRADES PRIOR TO PLACING CONCRETE.
2. DIMENSIONS SHOWN MAY VARY FROM ACTUAL. FIELD ADJUST IF MAXIMUM SLOPES CANNOT MEET DIMENSIONS GIVEN.

7.5 0 7.5 15
scale 1"=15' feet

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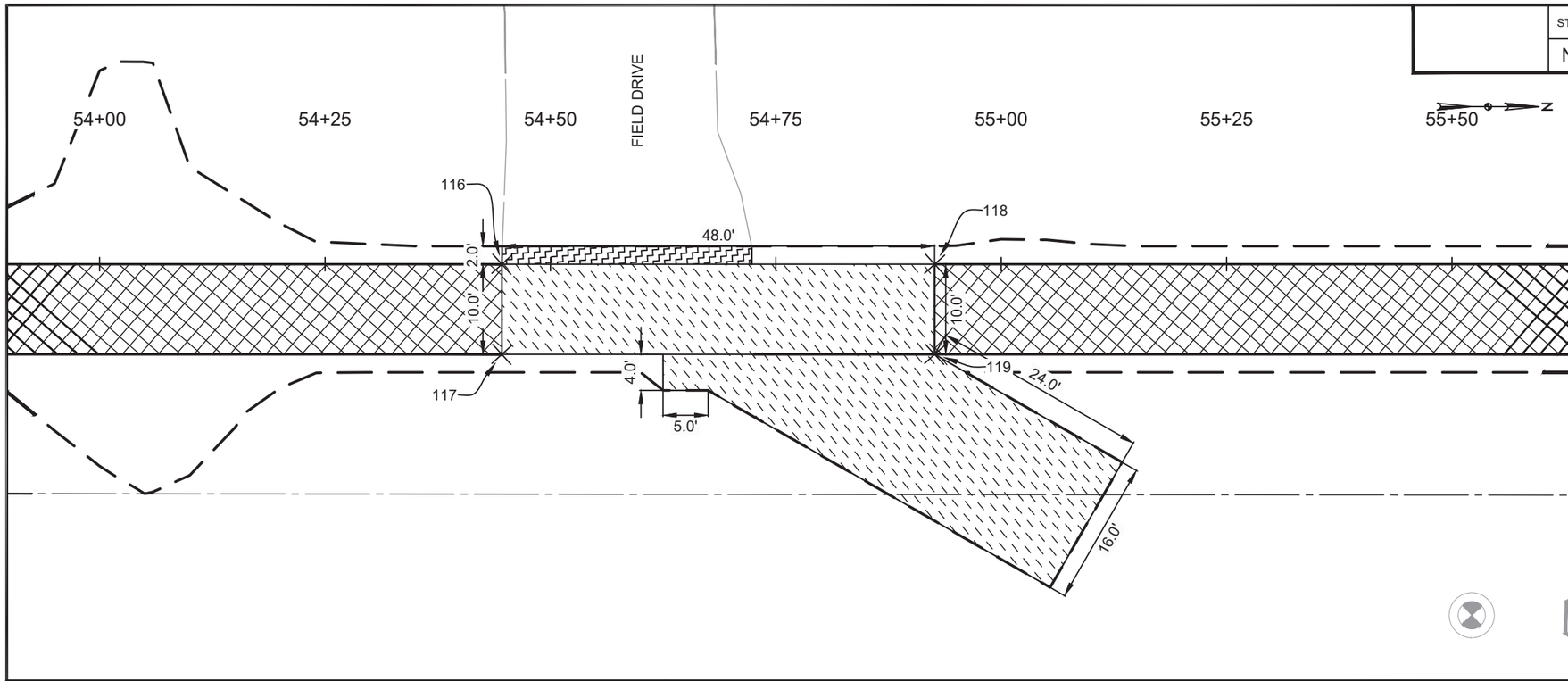
DRIVEWAY & CROSSING DETAILS

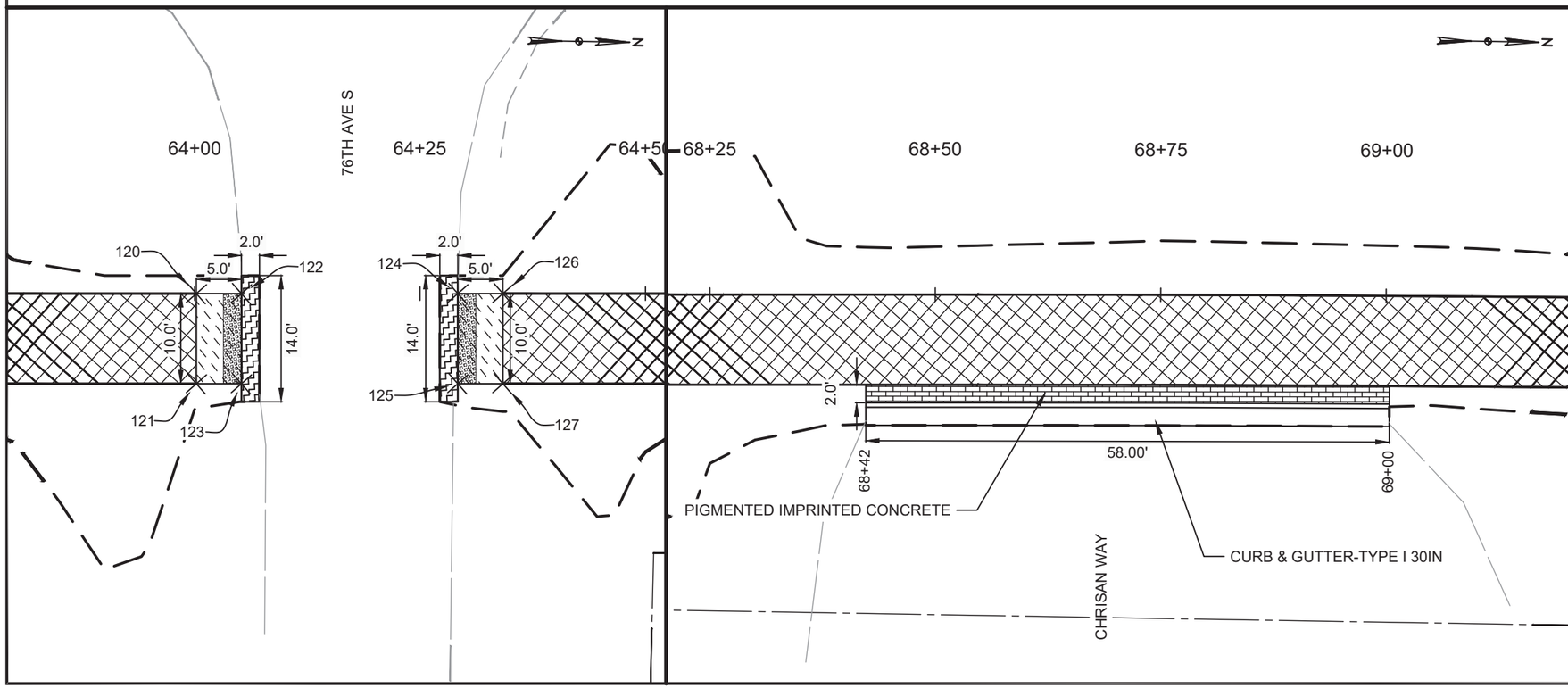
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	20	2





LEGEND:

- 4:1 MAX CURB TRANSITION
- DETECTABLE WARNING PANEL
- LANDING
  1.5% PREFERRED, 2% MAX CROSS SLOPE
  1.5% PREFERRED, 2% MAX RUNNING SLOPE
- CLEAR SPACE
  2% MAXIMUM CROSS SLOPE
  5% MAXIMUM RUNNING AND COUNTER SLOPE
  4' LONG X WIDTH OF RAMP OR 4' MIN
- COMMERCIAL HMA
- MILL & OVERLAY
- 5IN SIDEWALK
  CONCRETE REINFORCED
- 6IN DRIVEWAY
  CONCRETE REINFORCED
- 5IN SIDEWALK PIGMENTED
  IMPRINTED CONCRETE REINFORCED

NOTES:
1. OBTAIN ENGINEER APPROVAL ON FORM GRADES PRIOR TO PLACING CONCRETE.
2. DIMENSIONS SHOWN MAY VARY FROM ACTUAL. FIELD ADJUST IF MAXIMUM SLOPES CANNOT MEET DIMENSIONS GIVEN.

7.5 0 7.5 15
scale 1"=15' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 5/6/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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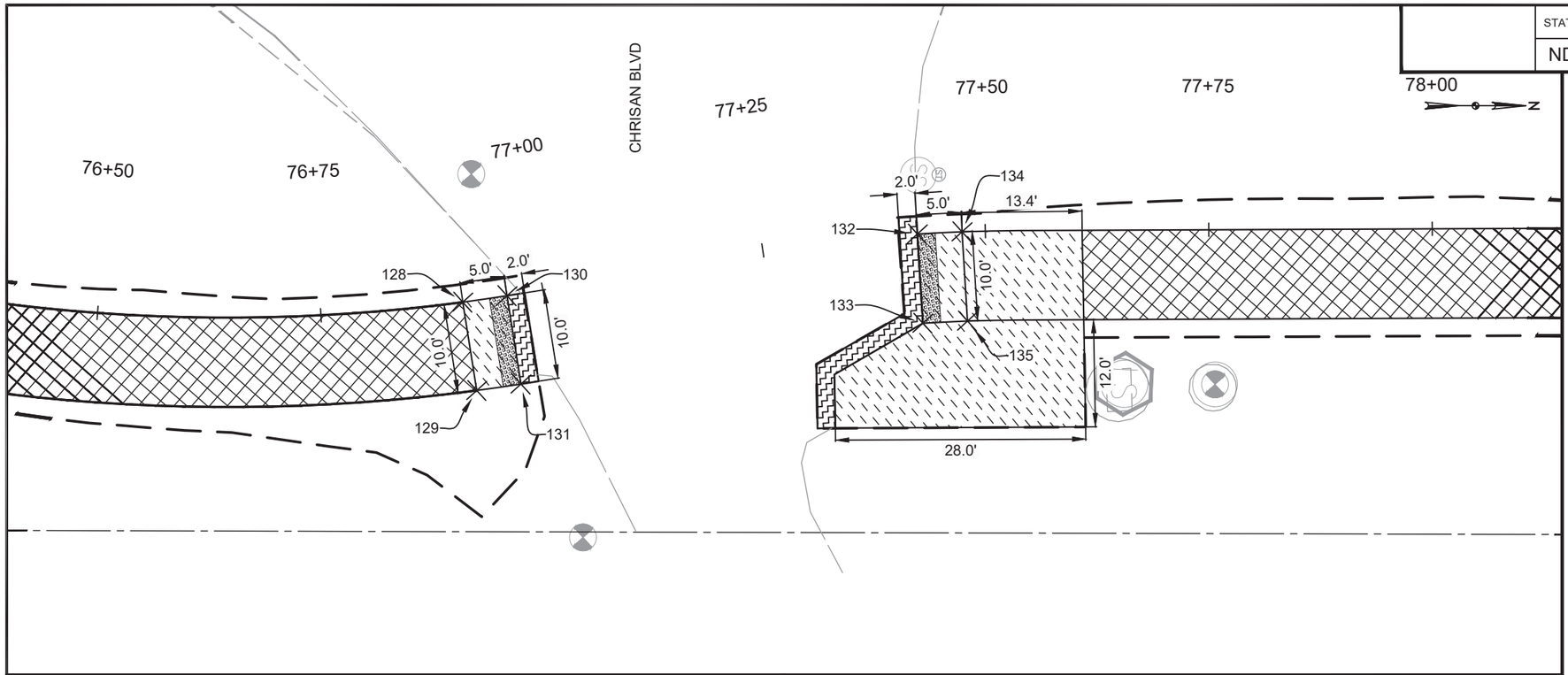
DRIVEWAY & CROSSING DETAILS

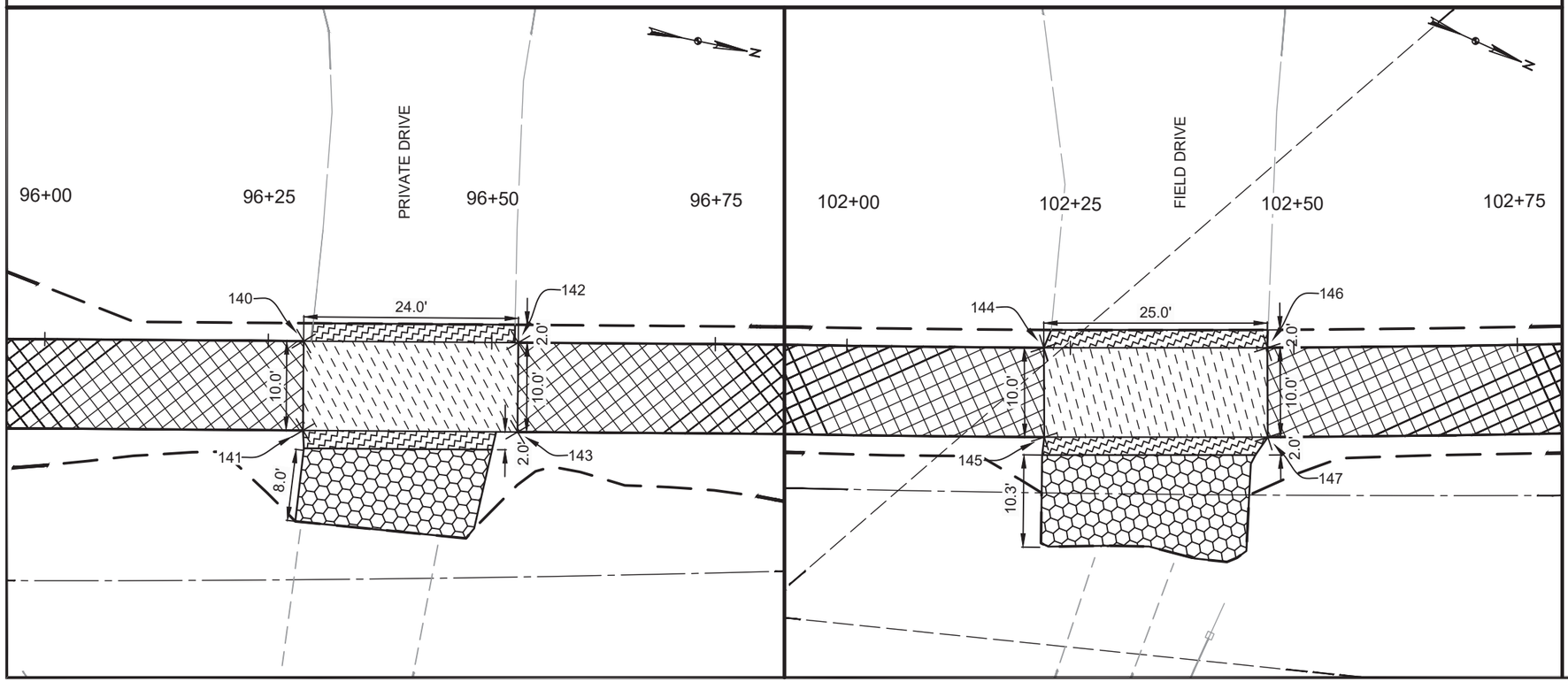
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	20	3





LEGEND:

- 4:1 MAX CURB TRANSITION
- DETECTABLE WARNING PANEL
- LANDING
  1.5% PREFERRED, 2% MAX CROSS SLOPE
  1.5% PREFERRED, 2% MAX RUNNING SLOPE
- CLEAR SPACE
  2% MAXIMUM CROSS SLOPE
  5% MAXIMUM RUNNING AND COUNTER SLOPE
  4' LONG X WIDTH OF RAMP OR 4' MIN
- COMMERCIAL HMA
- MILL & OVERLAY
- 5IN SIDEWALK CONCRETE REINFORCED
- 6IN DRIVEWAY CONCRETE REINFORCED
- 5IN SIDEWALK PIGMENTED IMPRINTED CONCRETE REINFORCED

NOTES:
1. OBTAIN ENGINEER APPROVAL ON FORM GRADES PRIOR TO PLACING CONCRETE.
2. DIMENSIONS SHOWN MAY VARY FROM ACTUAL. FIELD ADJUST IF MAXIMUM SLOPES CANNOT MEET DIMENSIONS GIVEN.

7.5 0 7.5 15
scale 1"=15' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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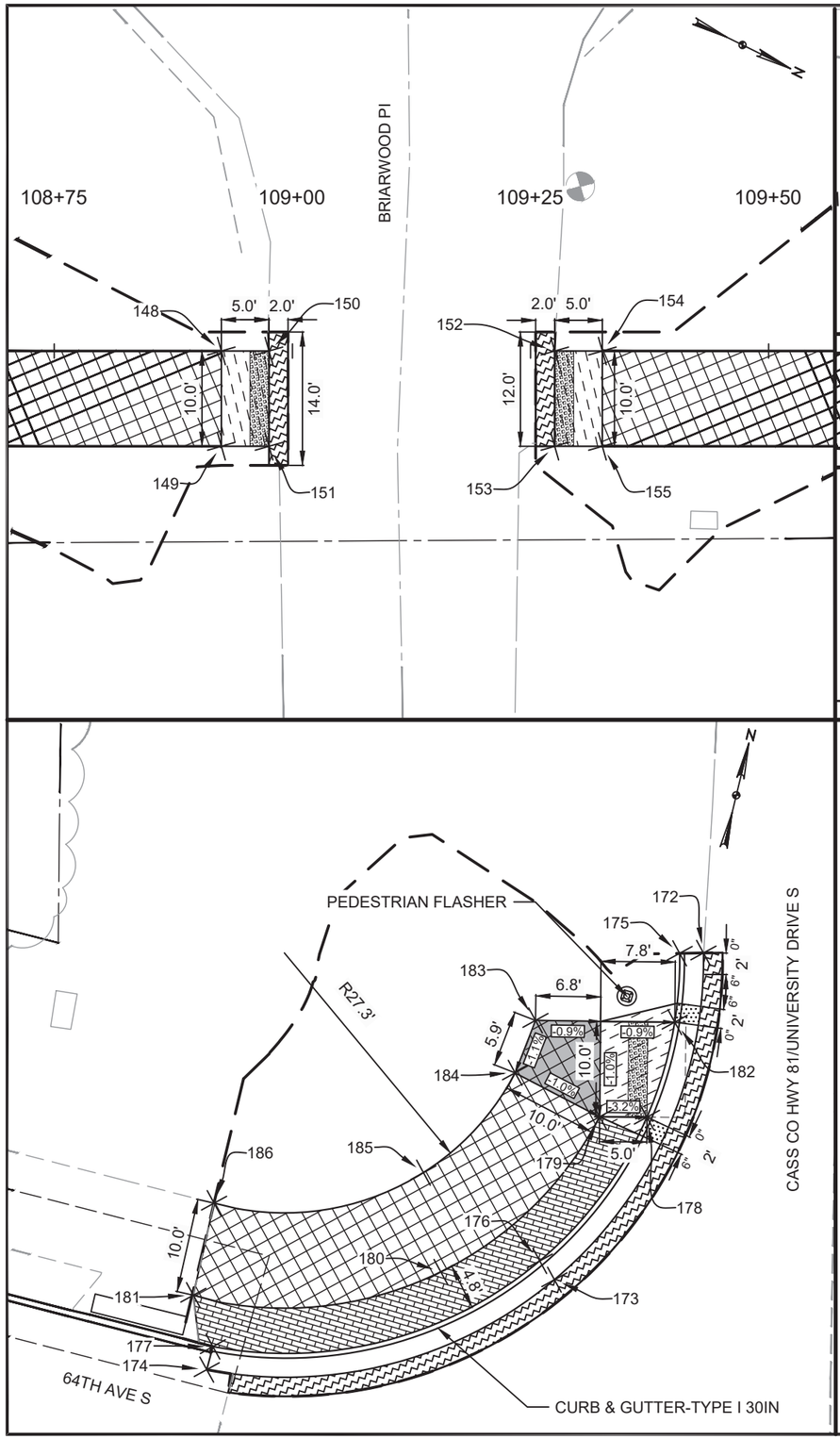
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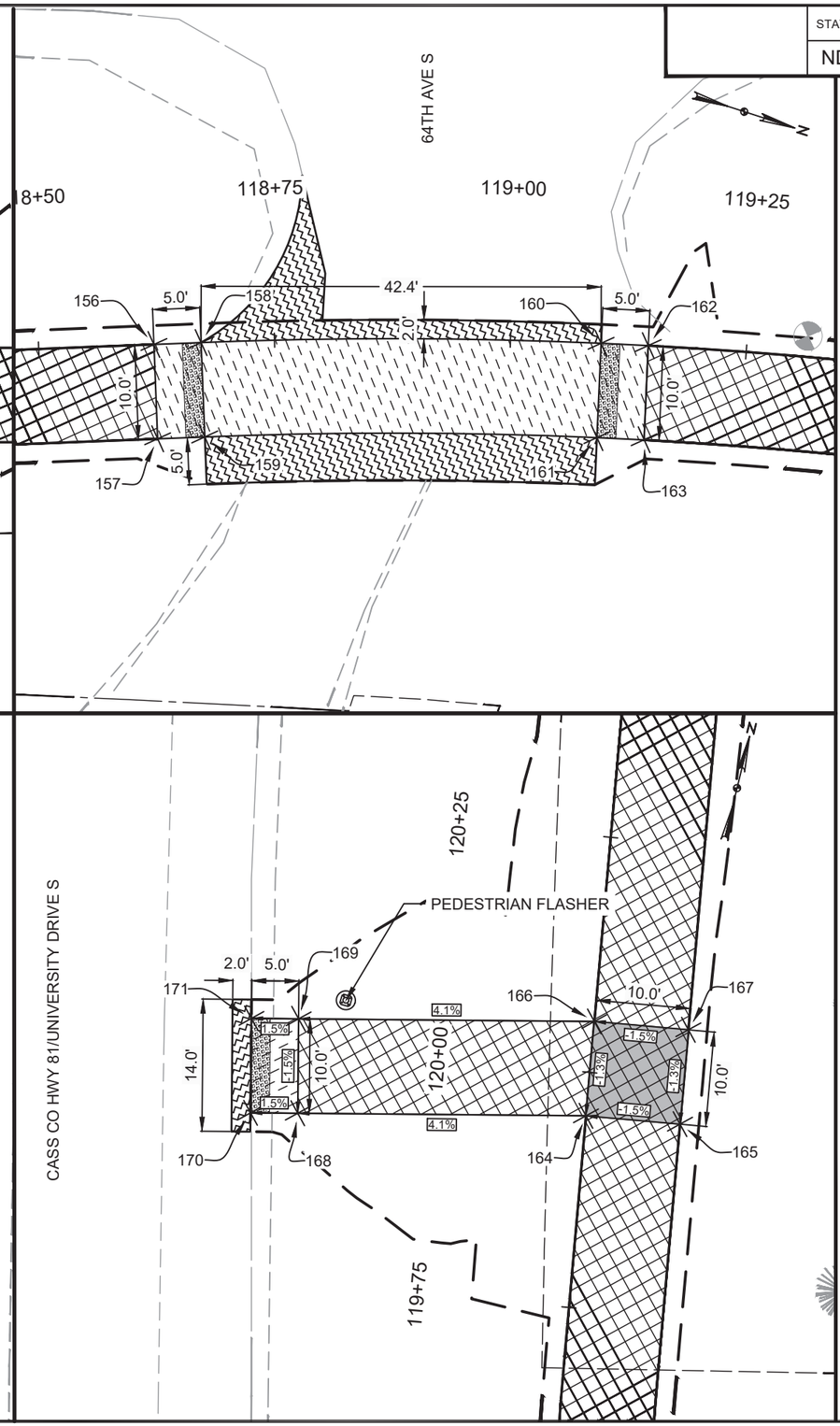
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	20	4





LEGEND:

- 4:1 MAX CURB TRANSITION
- DETECTABLE WARNING PANEL
- LANDING
  1.5% PREFERRED, 2% MAX CROSS SLOPE
  1.5% PREFERRED, 2% MAX RUNNING SLOPE
- CLEAR SPACE
  2% MAXIMUM CROSS SLOPE
  5% MAXIMUM RUNNING AND COUNTER SLOPE
  4' LONG X WIDTH OF RAMP OR 4' MIN
- COMMERCIAL HMA
- MILL & OVERLAY
- 5IN SIDEWALK CONCRETE REINFORCED
- 6IN DRIVEWAY CONCRETE REINFORCED
- 5IN SIDEWALK PIGMENTED IMPRINTED CONCRETE REINFORCED

NOTES:
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2. DIMENSIONS SHOWN MAY VARY FROM ACTUAL. FIELD ADJUST IF MAXIMUM SLOPES CANNOT MEET DIMENSIONS GIVEN.

7.5 0 7.5 15
scale 1"=15' feet

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SCOTT MIDDAUGH
PE-7499
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NORTH DAKOTA

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CASS COUNTY, NORTH DAKOTA

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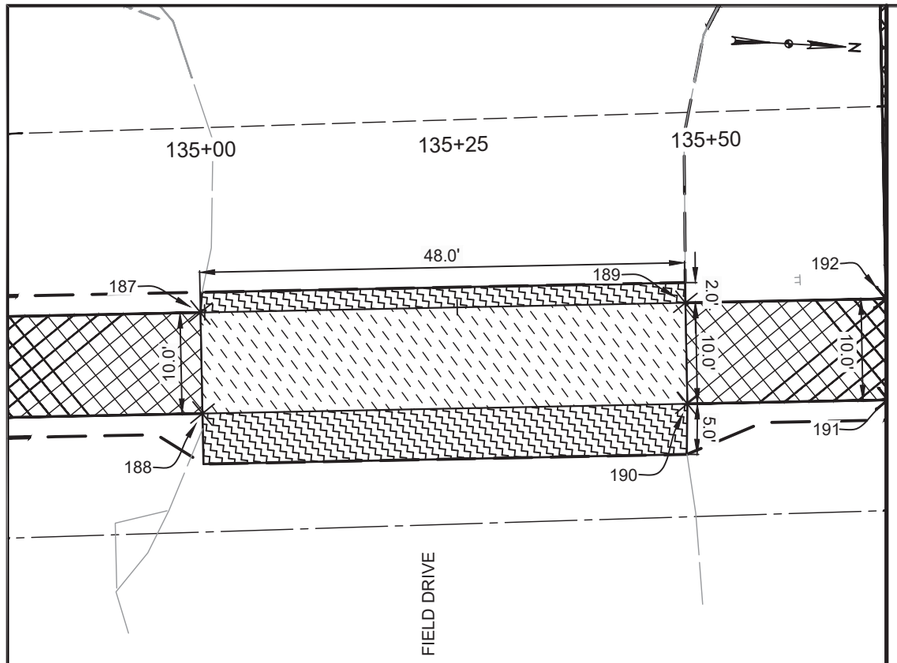
DRIVEWAY & CROSSING DETAILS

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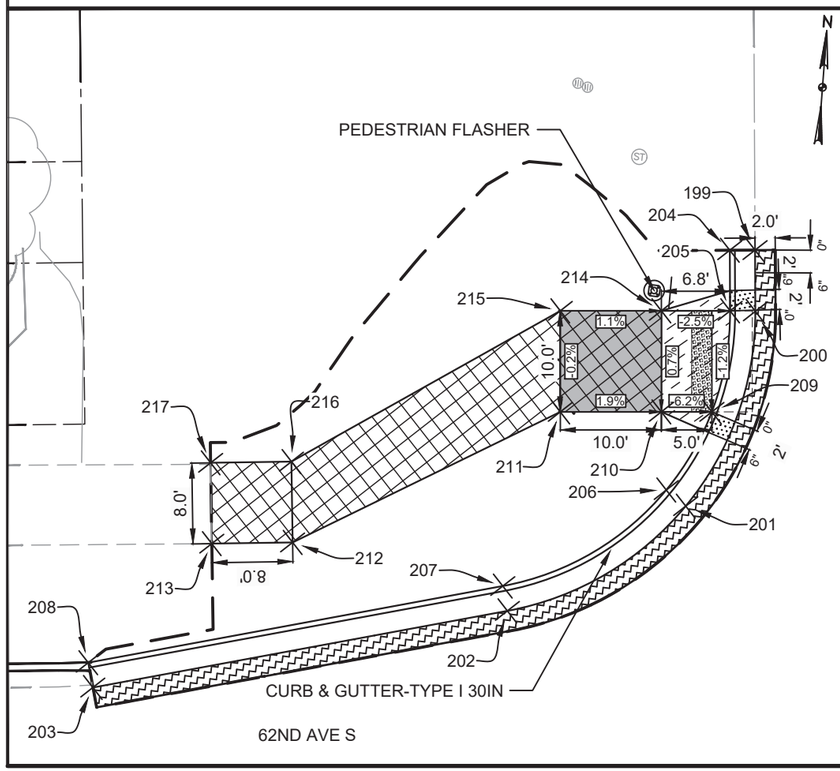
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ND	TMA-TAU-CRP-8-984(183)	20	5

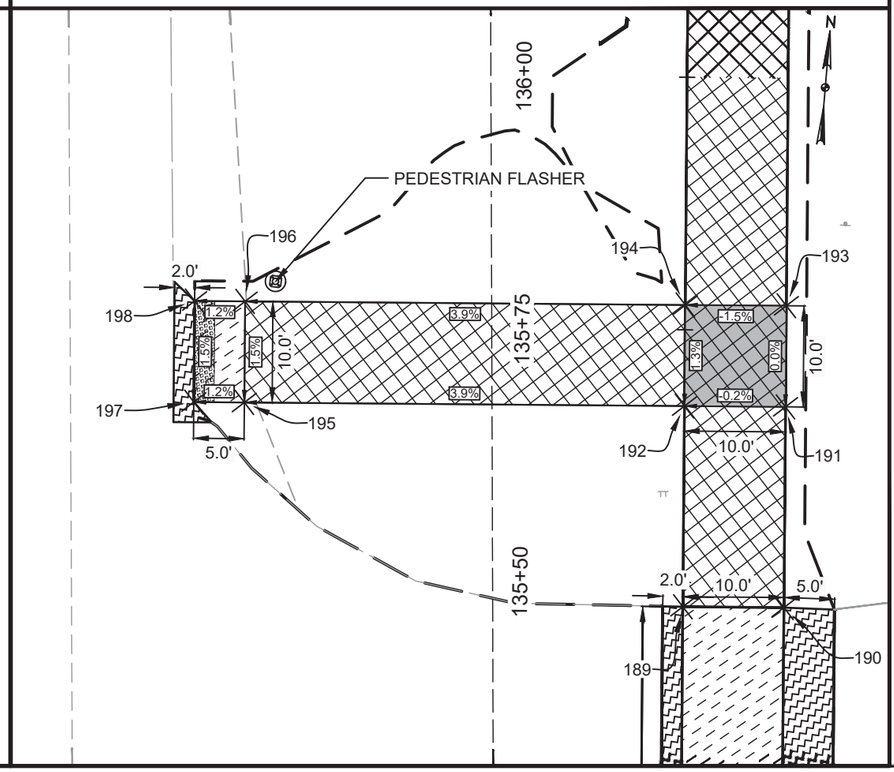


LEGEND:

- 4:1 MAX CURB TRANSITION
- DETECTABLE WARNING PANEL
- LANDING
  1.5% PREFERRED, 2% MAX CROSS SLOPE
  1.5% PREFERRED, 2% MAX RUNNING SLOPE
- CLEAR SPACE
  2% MAXIMUM CROSS SLOPE
  5% MAXIMUM RUNNING AND COUNTER SLOPE
  4' LONG X WIDTH OF RAMP OR 4' MIN
- COMMERCIAL HMA
- MILL & OVERLAY
- 5IN SIDEWALK
  CONCRETE REINFORCED
- 6IN DRIVEWAY
  CONCRETE REINFORCED
- 5IN SIDEWALK PIGMENTED
  IMPRINTED CONCRETE REINFORCED

NOTES:
1. OBTAIN ENGINEER APPROVAL ON FORM GRADES PRIOR TO PLACING CONCRETE.
2. DIMENSIONS SHOWN MAY VARY FROM ACTUAL. FIELD ADJUST IF MAXIMUM SLOPES CANNOT MEET DIMENSIONS GIVEN.





scale 7.5 0 7.5 15 feet 1"=15'

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SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
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CASS COUNTY, NORTH DAKOTA

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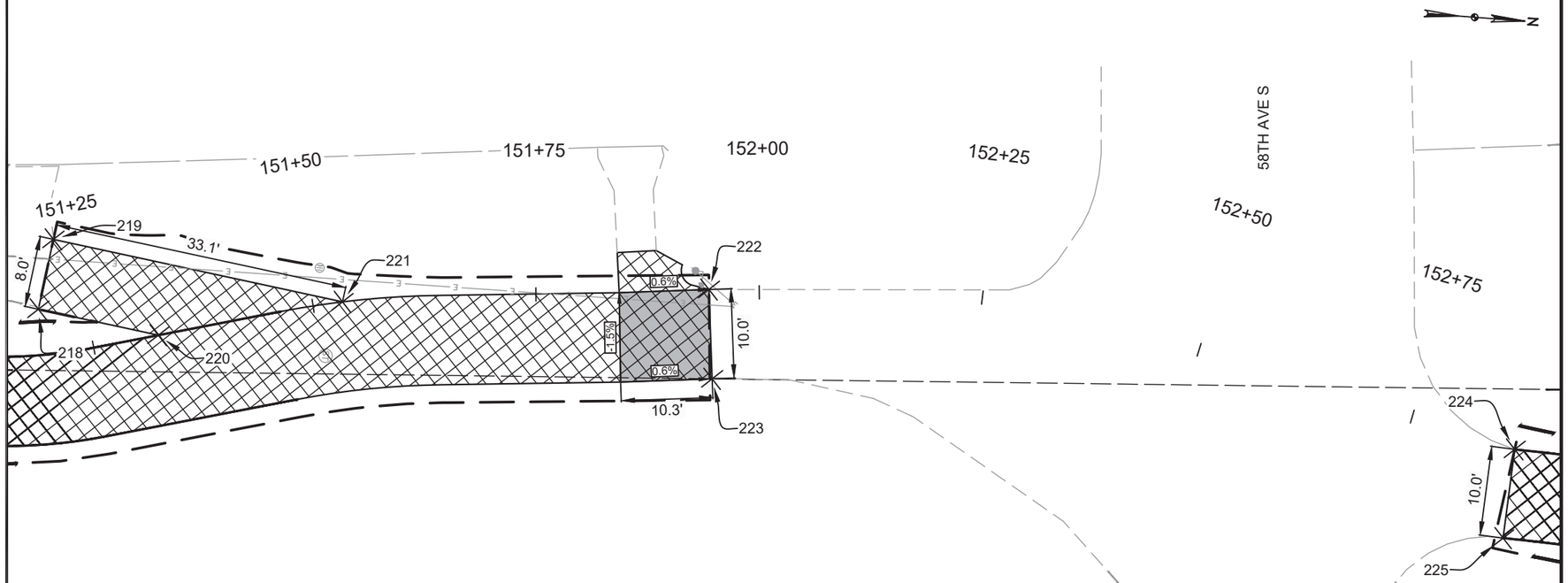
DRIVEWAY & CROSSING DETAILS

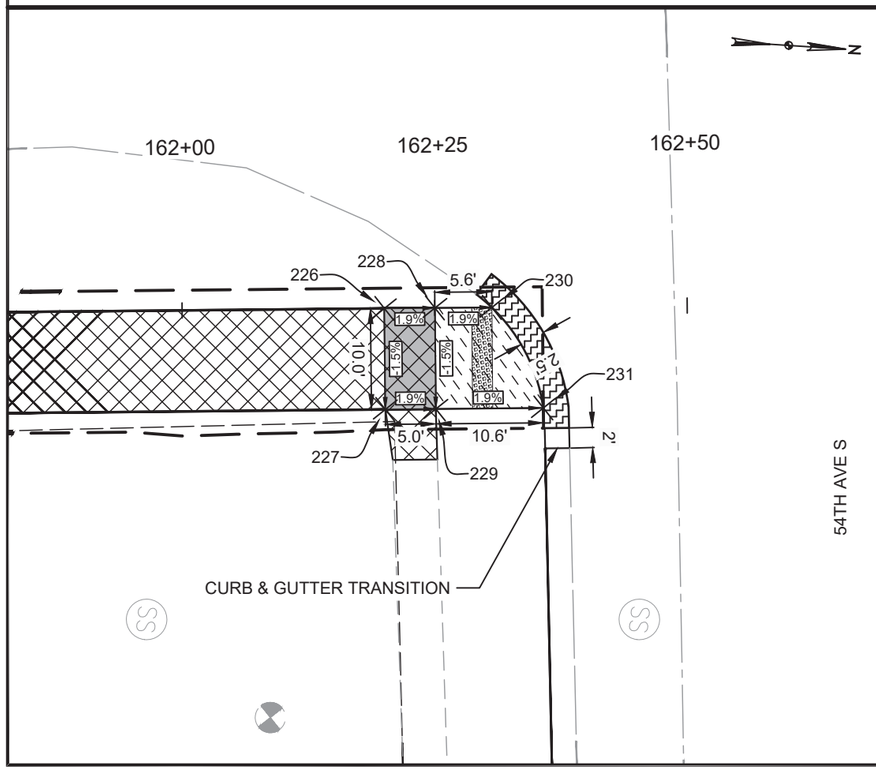
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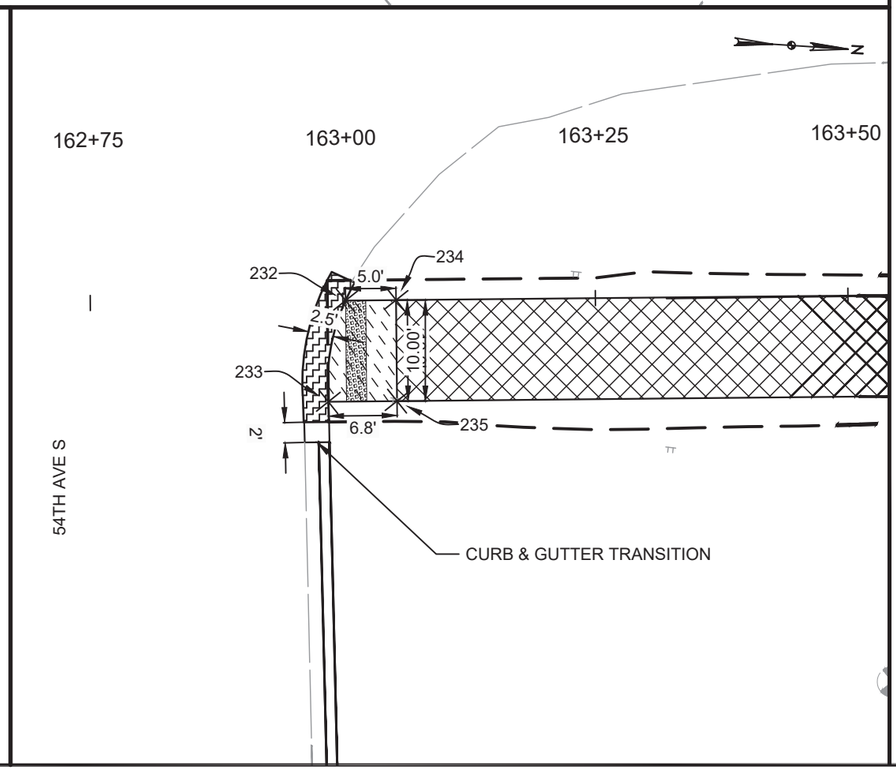
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	20	6







LEGEND:

- 4:1 MAX CURB TRANSITION
- DETECTABLE WARNING PANEL
- LANDING
  1.5% PREFERRED, 2% MAX CROSS SLOPE
  1.5% PREFERRED, 2% MAX RUNNING SLOPE
- CLEAR SPACE
  2% MAXIMUM CROSS SLOPE
  5% MAXIMUM RUNNING AND COUNTER SLOPE
  4' LONG X WIDTH OF RAMP OR 4' MIN
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7.5 0 7.5 15
scale 1"=15' feet

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SCOTT MIDDAUGH
PE-7499
DATE 8/25/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
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DRIVEWAY & CROSSING DETAILS

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	20	7

POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
100	420454.62	2895944.72	910.28	FG
101	420455.78	2895954.65	910.43	FG
102	420459.58	2895944.14	910.38	FG
103	420460.74	2895954.07	910.53	FG
104	421525.54	2895832.55	910.71	FG
105	421526.32	2895842.52	910.56	FG
106	421546.48	2895830.95	910.67	FG
107	421547.26	2895840.92	910.52	FG
108	422986.26	2895765.99	909.07	FG
109	422986.73	2895775.98	908.92	FG
110	423011.23	2895764.82	909.15	FG
111	423011.70	2895774.81	909.00	FG
112	424399.04	2895698.12	909.25	FG
113	424399.52	2895708.11	909.11	FG
114	424450.98	2895695.62	909.42	FG
115	424451.46	2895705.61	909.27	FG
116	424845.39	2895676.59	909.33	FG
117	424845.88	2895686.58	909.48	FG
118	424893.34	2895674.28	908.49	FG
119	424893.82	2895684.27	908.64	FG
120	425799.82	2895629.61	909.84	FG
121	425800.44	2895639.60	909.99	FG
122	425804.81	2895629.30	909.99	FG
123	425805.43	2895639.28	910.14	FG
124	425828.76	2895627.81	910.19	FG
125	425829.38	2895637.79	910.34	FG
126	425833.75	2895627.49	910.05	FG
127	425834.37	2895637.47	910.20	FG
128	427086.67	2895573.16	907.90	FG
129	427088.70	2895582.96	908.05	FG
130	427091.58	2895572.21	907.95	FG
131	427093.61	2895582.00	908.10	FG
132	427137.09	2895563.10	907.63	FG
133	427138.19	2895573.04	907.78	FG
134	427142.07	2895562.61	907.61	FG
135	427143.16	2895572.55	907.76	FG
136	428273.95	2895523.80	0.22	FG
137	428274.41	2895533.79	0.22	FG
138	428448.00	2895517.29	906.91	FG
139	428448.08	2895527.29	906.91	FG
140	429011.95	2895416.52	907.79	FG
141	429014.35	2895426.23	907.94	FG
142	429035.24	2895410.76	907.83	FG
143	429037.64	2895420.47	907.98	FG
144	429569.31	2895218.33	907.07	FG
145	429573.92	2895227.20	907.22	FG
146	429591.55	2895206.92	907.03	FG
147	429596.17	2895215.79	907.18	FG
148	430154.74	2894891.51	908.13	FG
149	430159.58	2894900.26	908.28	FG

POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
150	430159.11	2894889.09	908.18	FG
151	430163.96	2894897.84	908.33	FG
152	430185.36	2894874.56	908.15	FG
153	430190.20	2894883.31	908.30	FG
154	430189.73	2894872.14	908.10	FG
155	430194.58	2894880.88	908.25	FG
156	431017.56	2894452.30	907.89	FG
157	431021.45	2894461.52	907.87	FG
158	431022.17	2894450.36	907.91	FG
159	431026.06	2894459.57	907.87	FG
160	431061.85	2894435.50	907.97	FG
161	431064.96	2894445.00	907.92	FG
162	431066.61	2894433.97	907.82	FG
163	431069.71	2894443.45	907.76	FG
164	431145.15	2894415.30	907.81	FG
165	431147.10	2894425.11	907.96	FG
166	431154.99	2894413.35	907.92	FG
167	431156.94	2894423.16	908.07	FG
168	431136.85	2894385.92	908.96	FG
169	431146.47	2894383.20	909.11	FG
170	431135.49	2894381.11	909.03	FG
171	431145.11	2894378.39	909.18	FG
172	431135.39	2894317.20	911.61	FG
173	431098.08	2894311.81	910.96	FG
174	431078.77	2894279.42	910.91	FG
175	431134.65	2894314.82	911.58	FG
176	431099.54	2894309.78	911.43	FG
177	431081.28	2894279.37	911.16	FG
178	431117.18	2894316.34	911.26	FG
179	431115.83	2894311.57	911.42	FG
180	431095.51	2894300.13	911.37	FG
181	431085.88	2894275.88	910.95	FG
182	431127.57	2894316.35	911.45	FG
183	431123.64	2894302.26	911.58	FG
184	431117.76	2894301.75	911.52	FG
185	431105.00	2894295.46	911.35	FG
186	431095.76	2894275.25	911.09	FG
187	432633.86	2894203.42	908.10	FG
188	432635.09	2894213.34	908.06	FG
189	432681.50	2894197.52	908.32	FG
190	432682.73	2894207.44	908.27	FG
191	432702.44	2894205.00	908.20	FG
192	432701.22	2894195.07	908.18	FG
193	432712.37	2894203.77	908.20	FG
194	432711.14	2894193.84	908.05	FG
195	432695.86	2894151.84	909.89	FG
196	432705.78	2894150.61	909.74	FG
197	432695.24	2894146.87	909.95	FG
198	432705.17	2894145.64	909.80	FG
199	432703.12	2894080.19	909.36	FG

POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
200	432697.11	2894080.97	909.33	FG
201	432677.13	2894076.50	909.12	FG
202	432664.67	2894060.25	908.64	FG
203	432652.10	2894020.47	0.22	FG
204	432702.80	2894077.71	909.82	FG
205	432696.85	2894078.48	909.29	FG
206	432678.47	2894074.39	909.59	FG
207	432667.05	2894059.50	909.11	FG
208	432654.48	2894019.71	0.22	FG
209	432686.70	2894077.92	909.21	FG
210	432686.09	2894072.95	909.53	FG
211	432684.86	2894063.03	909.33	FG
212	432668.78	2894038.32	908.29	FG
213	432667.68	2894030.40	907.98	FG
214	432696.01	2894071.72	909.46	FG
215	432694.78	2894061.80	909.35	FG
216	432676.70	2894037.23	908.36	FG
217	432675.60	2894029.30	908.10	FG
218	434226.38	2893952.30	909.57	FG
219	434227.10	2893944.34	909.40	FG
220	434240.06	2893953.53	910.01	FG
221	434260.07	2893947.29	909.28	FG
222	434300.60	2893940.88	908.93	FG
223	434302.18	2893950.75	909.02	FG
224	434392.30	2893947.55	909.09	FG
225	434392.23	2893957.55	909.17	FG
226	435311.56	2893808.64	908.47	FG
227	435312.78	2893818.57	908.32	FG
228	435316.52	2893808.03	908.57	FG
229	435317.74	2893817.96	908.42	FG
230	435322.12	2893807.34	908.68	FG
231	435328.30	2893816.66	908.60	FG
232	435391.21	2893798.85	908.52	FG
233	435390.64	2893809.00	908.43	FG
234	435396.17	2893798.24	908.35	FG
235	435397.39	2893808.17	908.26	FG
236	435619.50	2893793.57	906.04	FG
237	435622.09	2893803.24	905.90	FG

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
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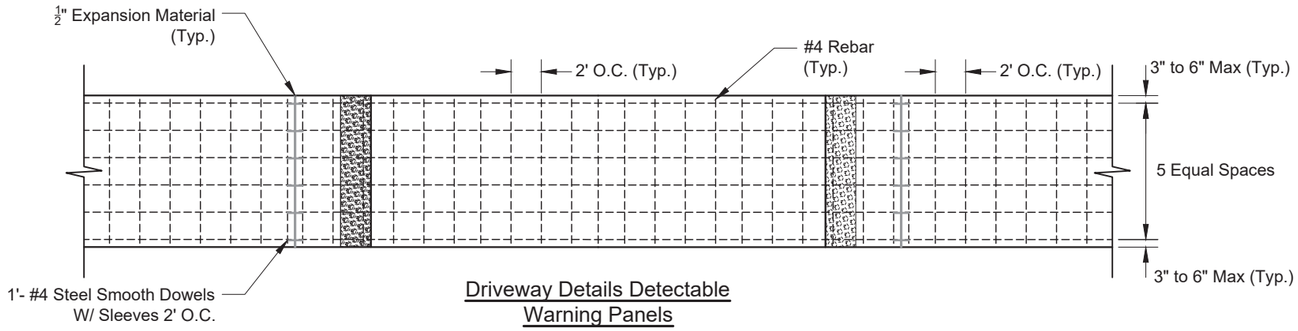
DRIVEWAY & CROSSING DETAILS

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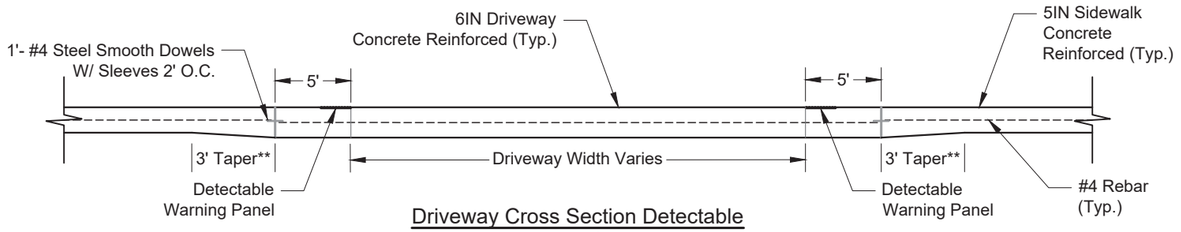
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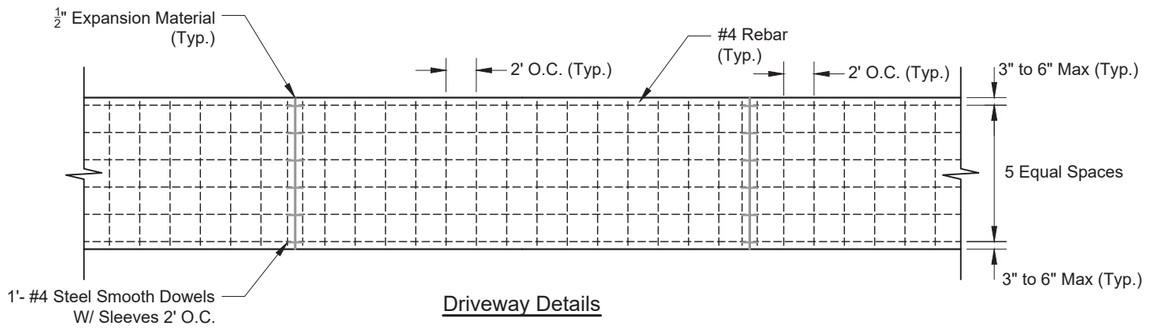
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	ND	TMA-TAU-CRP-8-984(183)	20	8



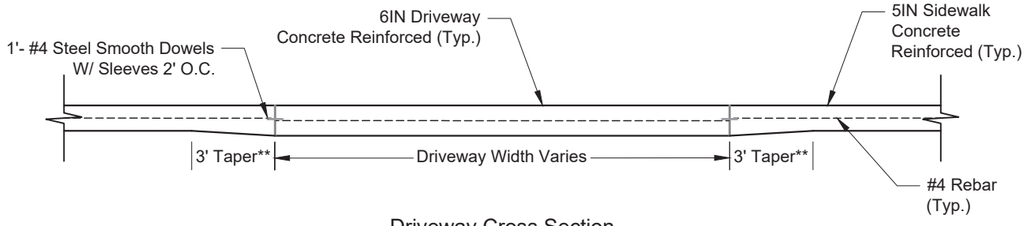
Driveway Details Detectable Warning Panels



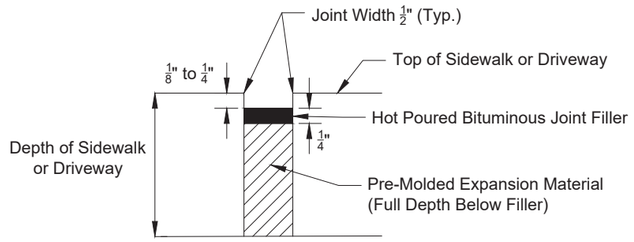
Driveway Cross Section Detectable Warning Panels



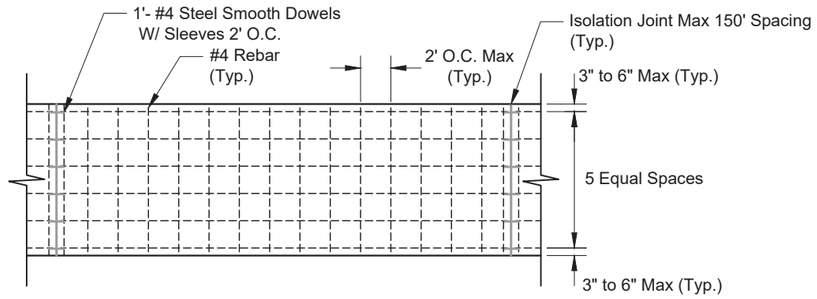
Driveway Details



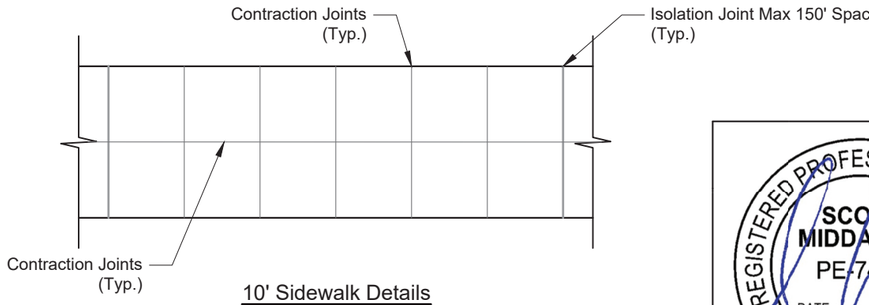
Driveway Cross Section



Typical Isolation Joint Seal



10' Sidewalk Reinforcing



10' Sidewalk Details

Sidewalk Width	Panels L'XW'
6'	5'x6'
8'	4.5'x4'
10'	5'x5'

Sidewalk Joint Dimensions

NOTES:
* Drawings not to scale
** Include cost of 3' Taper in price bid for "SIDEWALK CONCRETE 5IN REINF"
*** Transition from a depth of 6" to 5" over the 3' taper.



TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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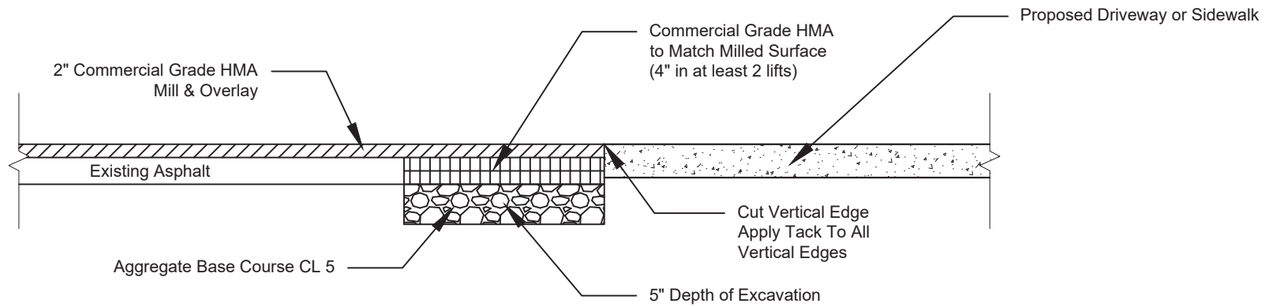
DRIVEWAY & SIDEWALK DETAILS

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TMA-TAU-CRP-8-984(183)	20	9



*See Section 20 Sheets 1-6 for Dimensions

Milling & Full Depth Asphalt Replacement

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/25/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

MILLING & FULL DEPTH ASPHALT DETAILS

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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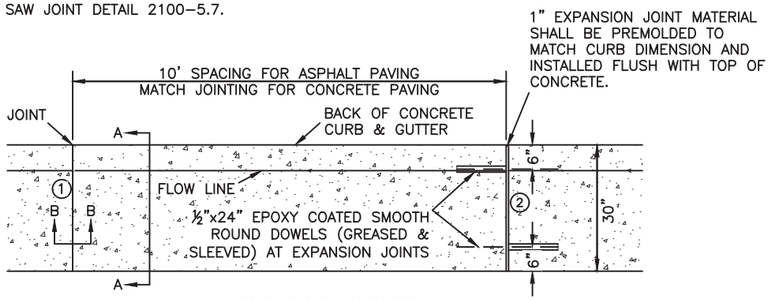
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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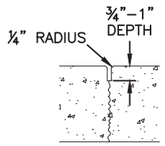
① ASPHALT PAVING: SAW CUT OR TOOLED JOINTS AT 10' SPACINGS.

CONCRETE PAVING: SAW CUT JOINTS TO MATCH CONCRETE PAVEMENT JOINT SPACINGS. SEE SAW JOINT DETAIL 2100–5.7.

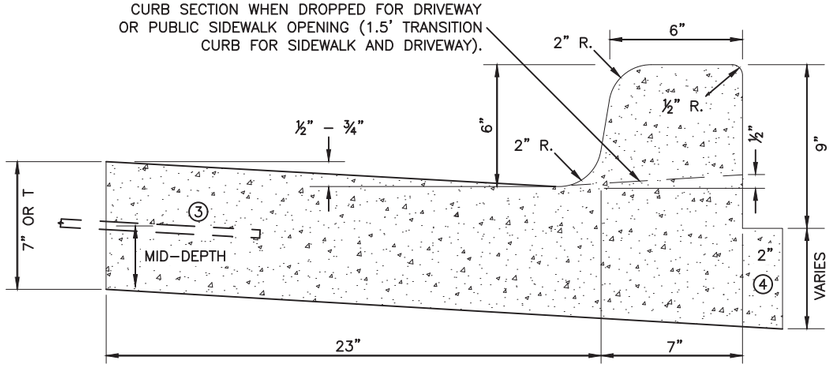
② PLACE 1" EXPANSION JOINTS AT P.C.'S AND AT 250' MAX. SPACINGS FOR ASPHALT PAVING



CURB & GUTTER PLAN



TOOLED JOINT DETAIL
SECTION B-B



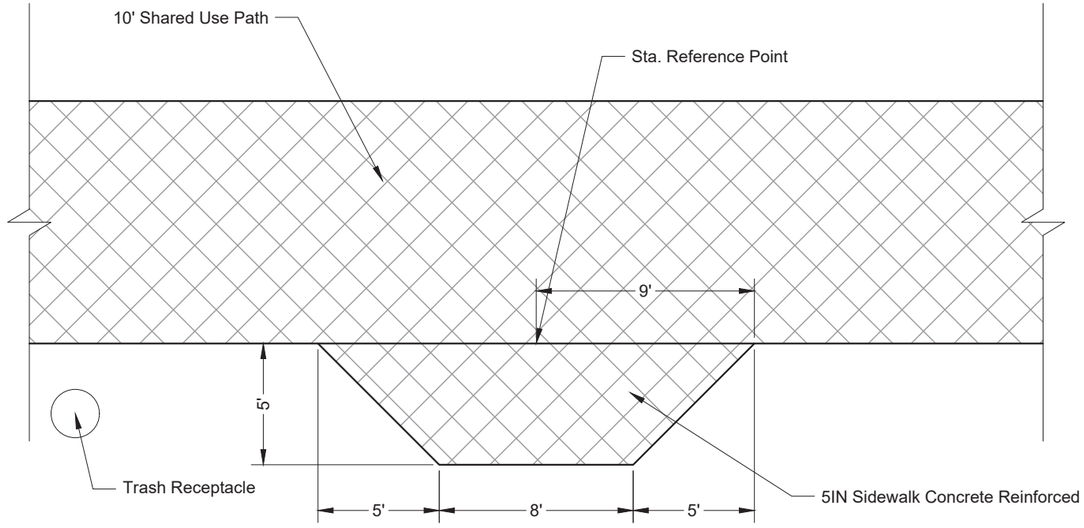
③ ½"x18" DEFORMED BARS AT 30" O.C. REQUIRED WHEN ADJOINING CONCRETE PAVEMENT

④ 2" LEDGE REQUIRED WHEN ADJOINING DRIVEWAYS, MEDIAN CONCRETE, OR SIDEWALKS.

SECTION A-A

NOTES:
1. DIMENSION "T" SHALL MATCH THE THICKNESS OF THE ADJOINING CONCRETE PAVEMENT
2. WHEN OUTFLOW CURB IS SPECIFIED SLOPE SHALL BE ¼" PER FOOT

FARGO ENGINEERING DEPARTMENT	SECTION: 2100	DRAWING: 5.12
	REVISION: 2021	
STANDARD CURB & GUTTER (TYPE I 30IN)		



Bench Bump Out

NOTES:
1. Not drawn to scale
2. Center existing bench on pad
3. Install existing trash receptacle 15' north or south of the edge of the pad

Sta. 65+57, Rt
Sta. 88+72, Lt
Sta. 117+90, Lt
Sta. 143+86, Rt
Sta. 161+11, Rt

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

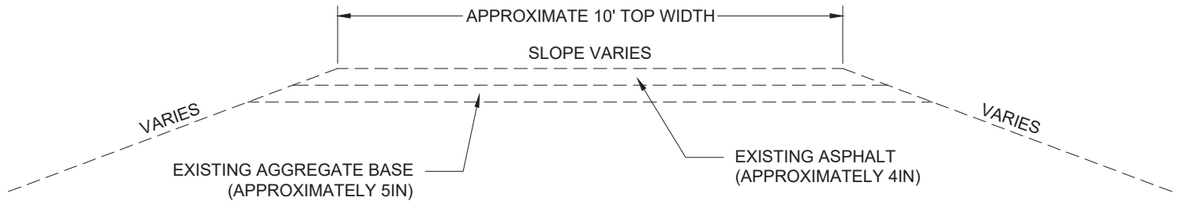
CURB & GUTTER & BENCH BUMP OUT DETAILS

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

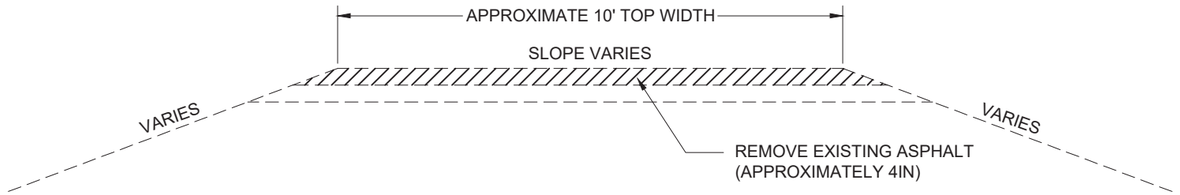
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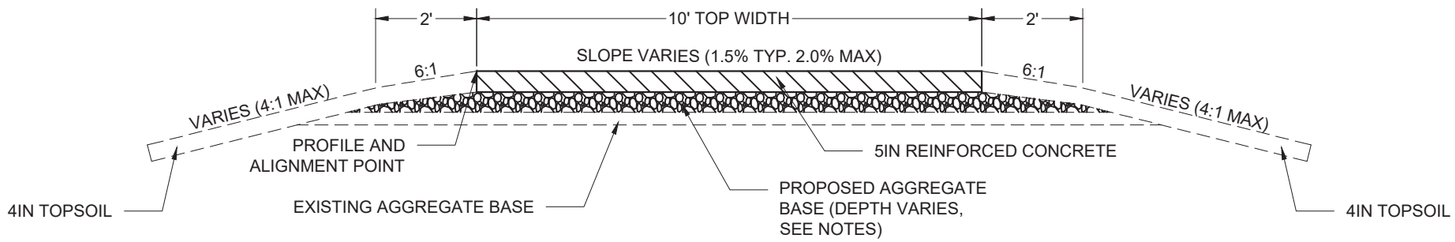
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TMA-TAU-CRP-8-984(183)	30	1



EXISTING TYPICAL
STA 10+42.15 TO STA 165+31.09



REMOVAL TYPICAL
STA 10+42.15 TO STA 165+31.09



PROPOSED TYPICAL
STA 10+42.15 TO STA 165+31.09

NOTES:

1. Grade existing aggregate to proposed top of aggregate base, maintain a minimum of 4" of existing aggregate.
2. Add additional aggregate on top of existing aggregate in fill areas.
3. A minimum of 5" of proposed aggregate to be installed in areas where the path is realigned, where there is no existing path, or where pipes are installed.

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
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NORTH DAKOTA

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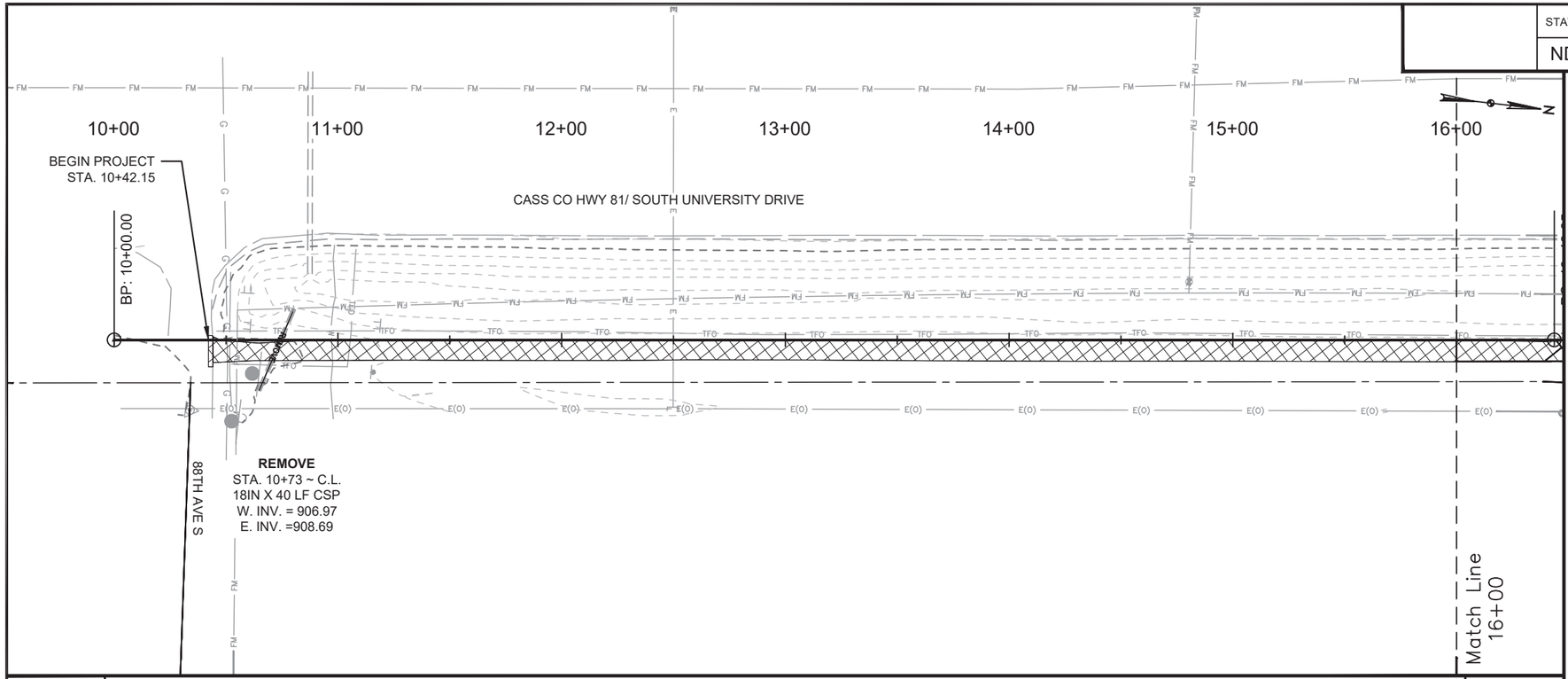
TYPICAL SECTIONS

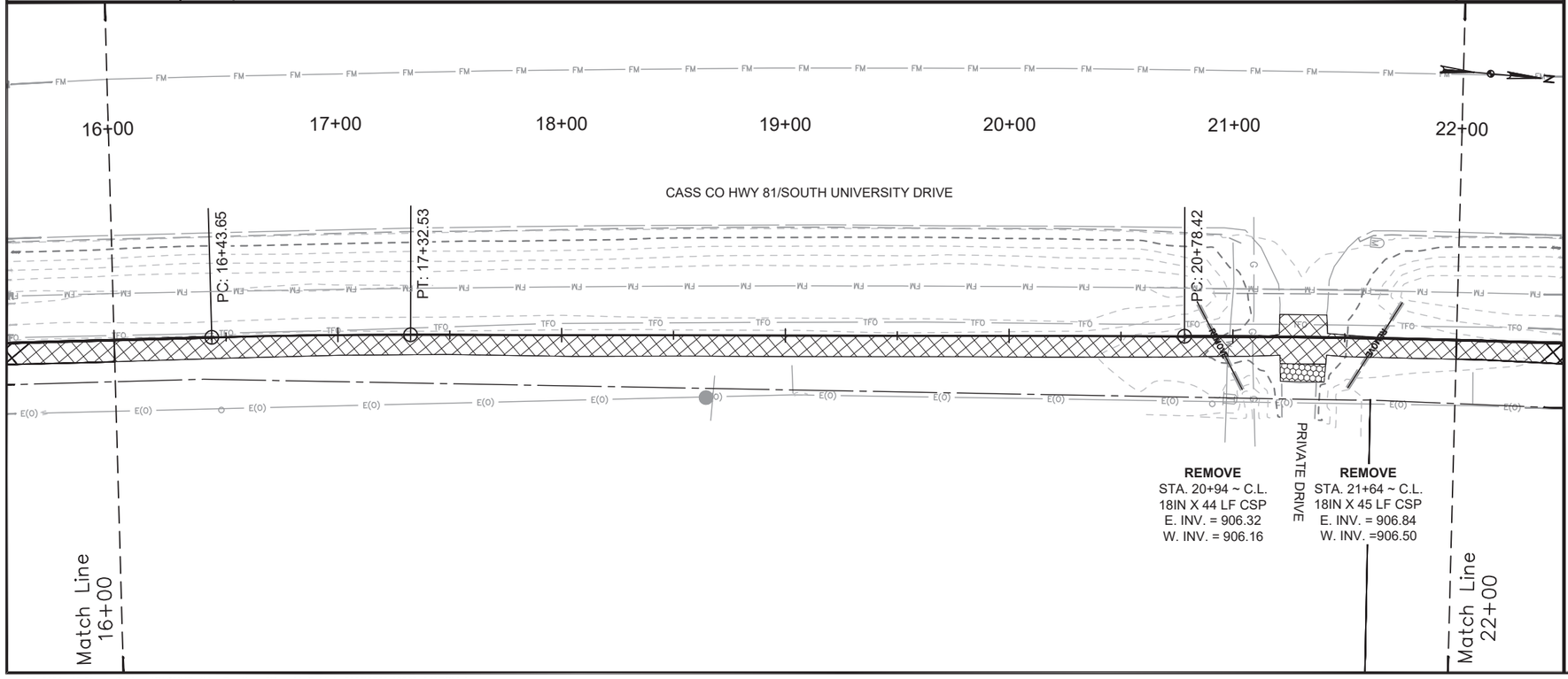
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	40	1





SPEC	CODE	BID ITEM	QTY	UNIT
202	0132	REMOVAL OF BITUMINOUS SURFACING Sta. 10+00 to Sta. 22+00	1,214	SY
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES Sta. 10+00 to Sta. 22+00	129	LF
411	0105	MILLING PAVEMENT SURFACE Sta. 10+00 to Sta. 22+00	18	SY

LEGEND:

- REMOVAL OF BITUMINOUS PAVEMENT
- 2" MILL
- REMOVAL OF CONCRETE
- REMOVE — REMOVAL OF PIPE

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

REMOVALS
STA. 10+00 TO 22+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	40	2

22+00 23+00 24+00 25+00 26+00 27+00 28+00

CASS CO HWY 81/SOUTH UNIVERSITY DRIVE

PT: 23+09.80

REMOVE
STA. 23+85 ~ C.L.
18IN X 35 LF CSP
E. INV. = 907.30
W. INV. = 907.08

Match Line 22+00

Match Line 28+00

28+00 29+00 30+00 31+00 32+00 33+00 34+00

CASS CO HWY 81/SOUTH UNIVERSITY DRIVE

PI: 28+58.14

PI: 33+89.37

REMOVE
STA. 33+37 ~ C.L.
18IN X 35 LF CSP
E. INV. = 907.57
W. INV. = 906.73

Match Line 28+00

Match Line 34+00

SPEC	CODE	BID ITEM	QTY	UNIT
202	0132	REMOVAL OF BITUMINOUS SURFACING Sta. 22+00 to Sta. 34+00	1,249	SY
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES Sta. 22+00 to Sta. 34+00	70	LF

LEGEND:

- REMOVAL OF BITUMINOUS PAVEMENT
- 2" MILL
- REMOVAL OF CONCRETE
- REMOVE — REMOVAL OF PIPE

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/25/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

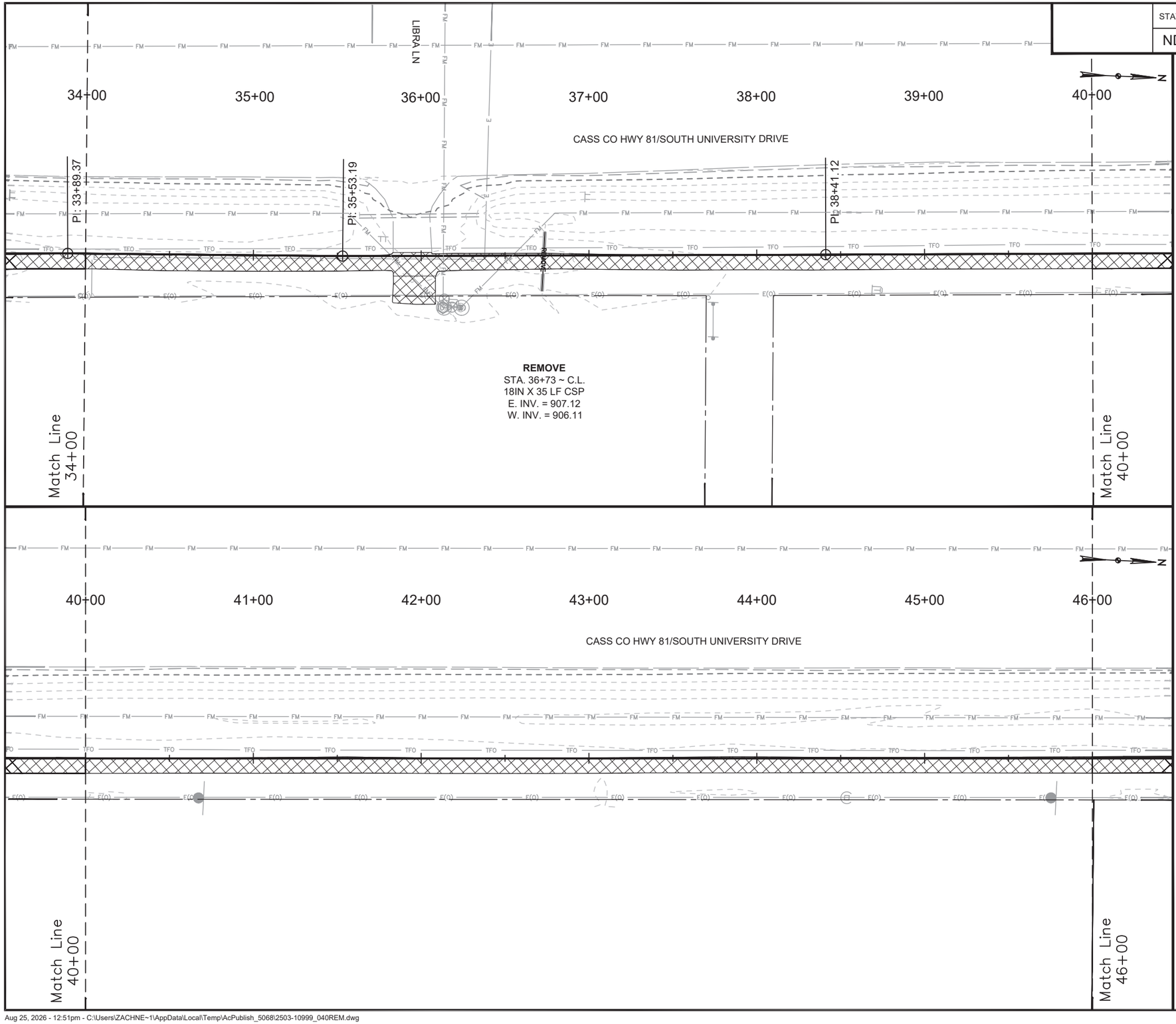
REMOVALS
STA. 22+00 TO 34+00

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ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	40	3



SPEC	CODE	BID ITEM	QTY	UNIT
202	0132	REMOVAL OF BITUMINOUS SURFACING Sta. 34+00 to Sta. 46+00	1,295	SY
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES Sta. 34+00 to Sta. 46+00	35	LF

LEGEND:

- REMOVAL OF BITUMINOUS PAVEMENT
- 2" MILL
- REMOVAL OF CONCRETE
- REMOVE — REMOVAL OF PIPE

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/15/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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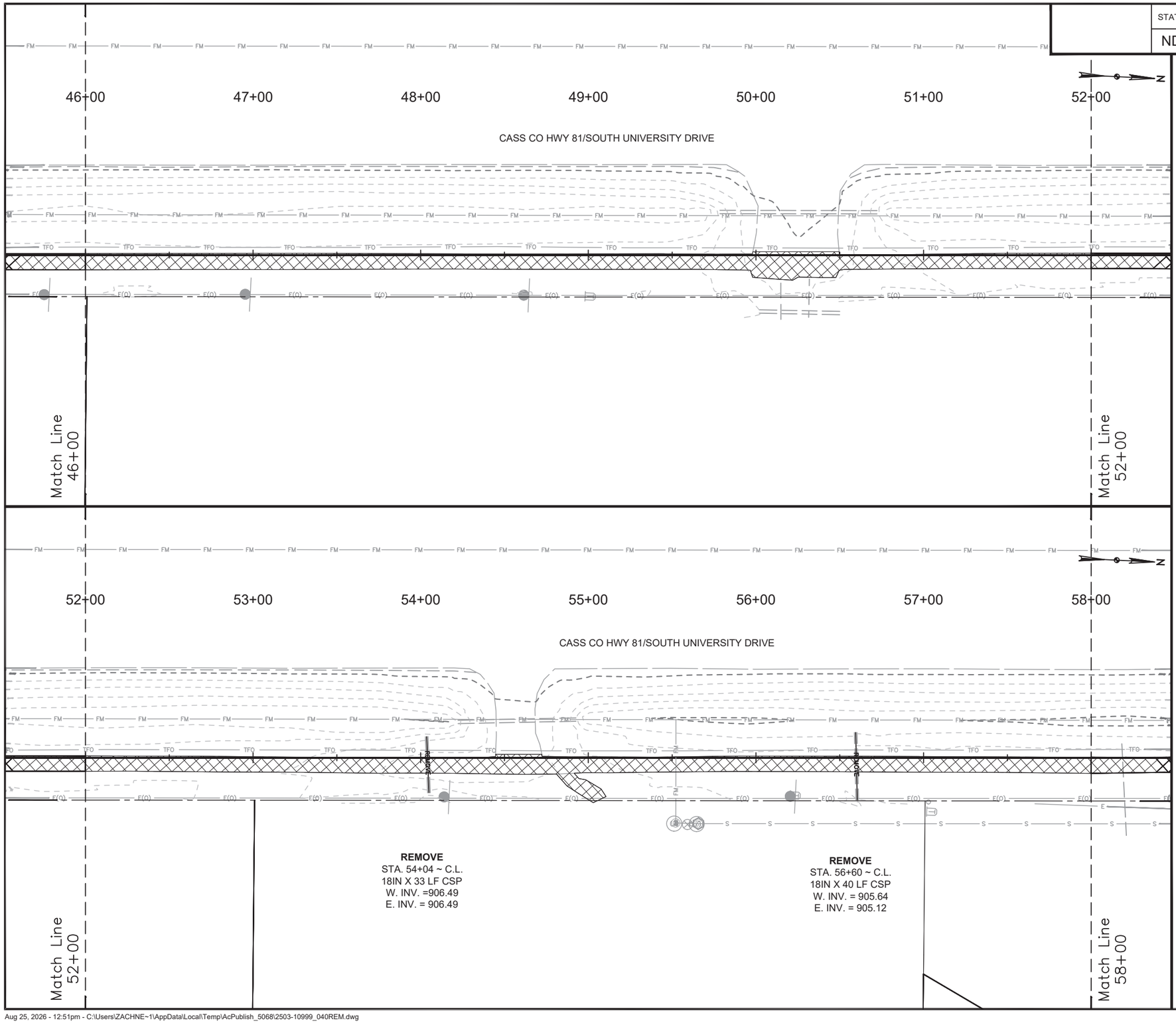
REMOVALS
STA. 34+00 TO 46+00

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	40	4



SPEC	CODE	BID ITEM	QTY	UNIT
202	0132	REMOVAL OF BITUMINOUS SURFACING Sta. 46+00 to Sta. 58+00	1,306	SY
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES Sta. 46+00 to Sta. 58+00	73	LF

LEGEND:

- REMOVAL OF BITUMINOUS PAVEMENT
- 2" MILL
- REMOVAL OF CONCRETE
- REMOVE — REMOVAL OF PIPE

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/15/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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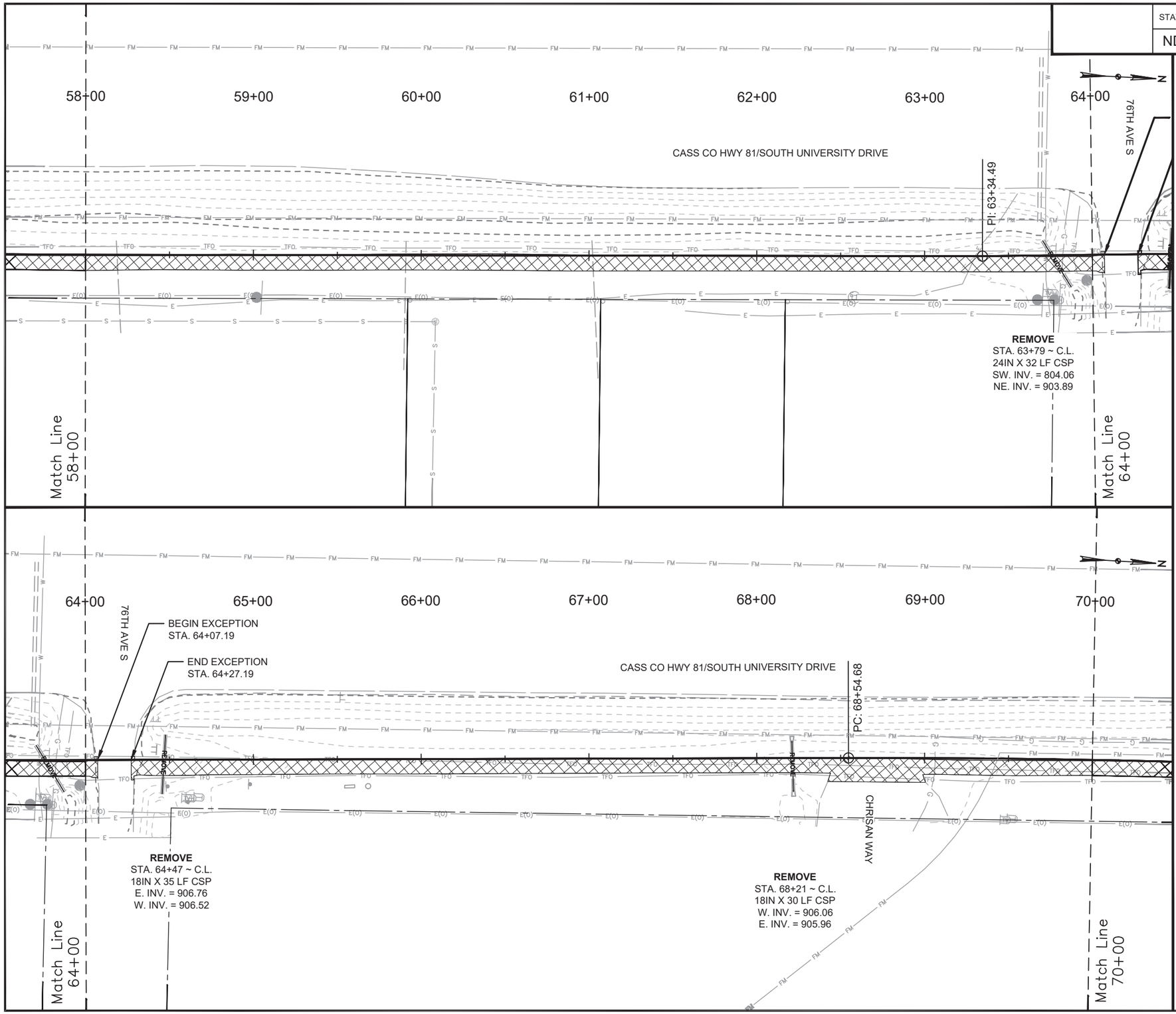
REMOVALS
STA. 46+00 TO 58+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	40	5



SPEC	CODE	BID ITEM	QTY	UNIT
202	0132	REMOVAL OF BITUMINOUS SURFACING Sta. 58+00 to Sta. 70+00	1,232	SY
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES Sta. 58+00 to Sta. 70+00	97	LF

LEGEND:

- REMOVAL OF BITUMINOUS PAVEMENT
- 2" MILL
- REMOVAL OF CONCRETE
- REMOVE — REMOVAL OF PIPE

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/15/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

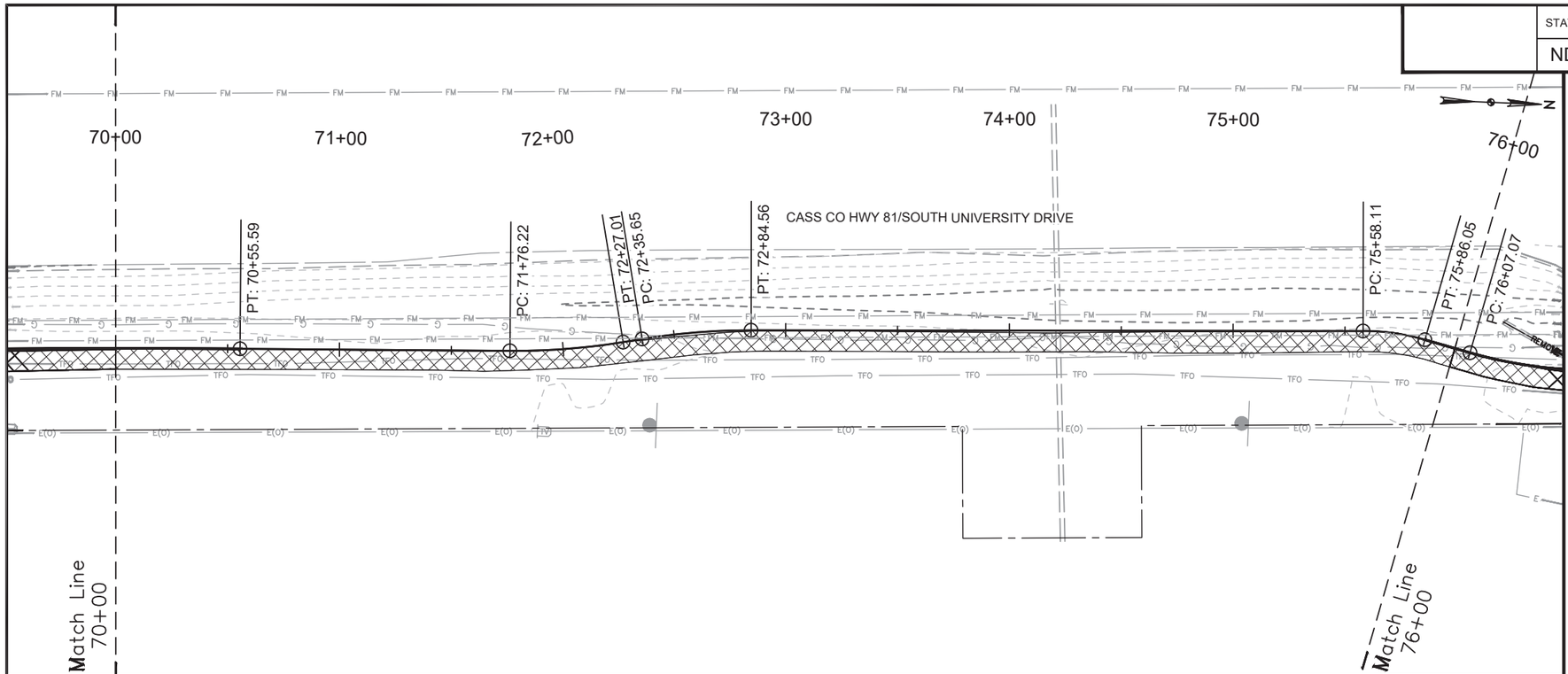
REMOVALS
STA. 58+00 TO 70+00

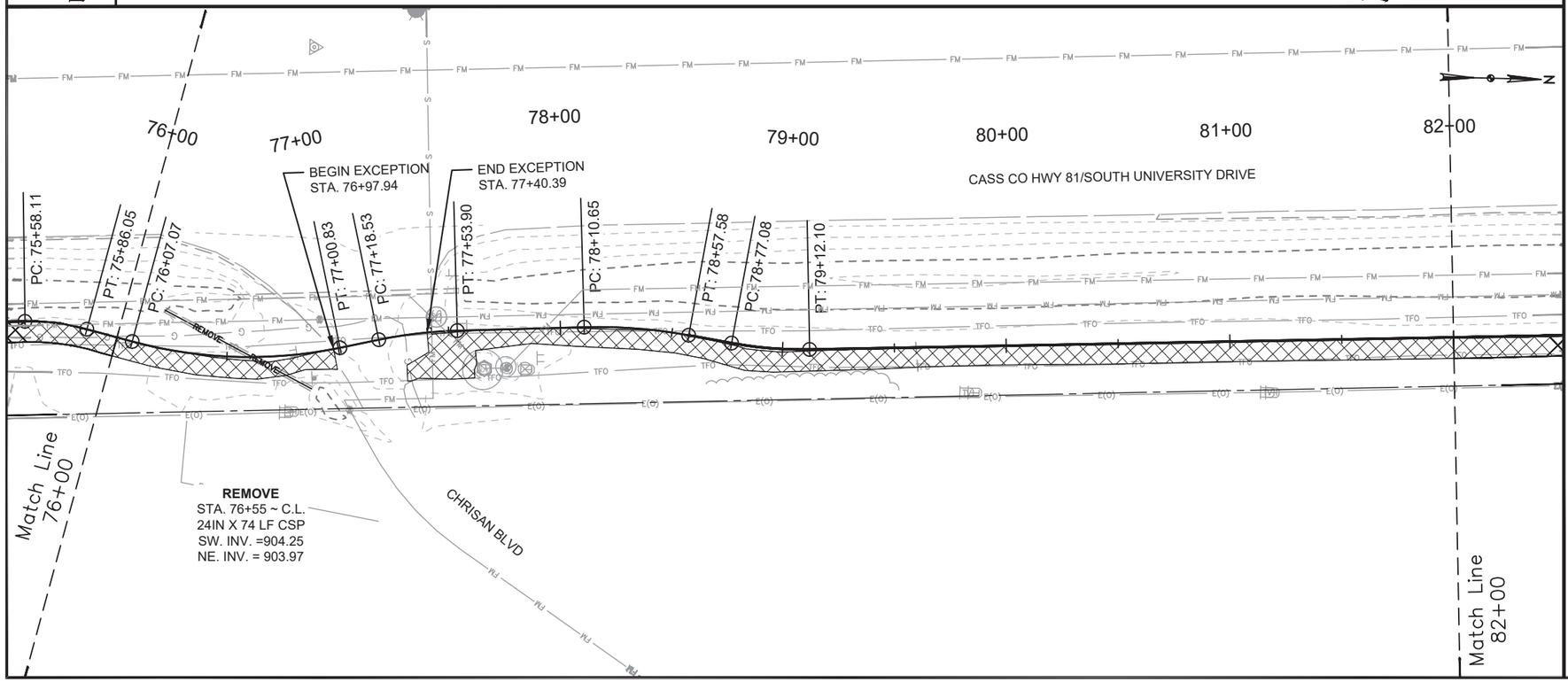
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	40	6





SPEC	CODE	BID ITEM	QTY	UNIT
202	0132	REMOVAL OF BITUMINOUS SURFACING Sta. 70+00 to Sta. 82+00	1,174	SY
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES Sta. 70+00 to Sta. 82+00	74	LF

LEGEND:

- REMOVAL OF BITUMINOUS PAVEMENT
- 2" MILL
- REMOVAL OF CONCRETE
- REMOVE — REMOVAL OF PIPE

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/ /26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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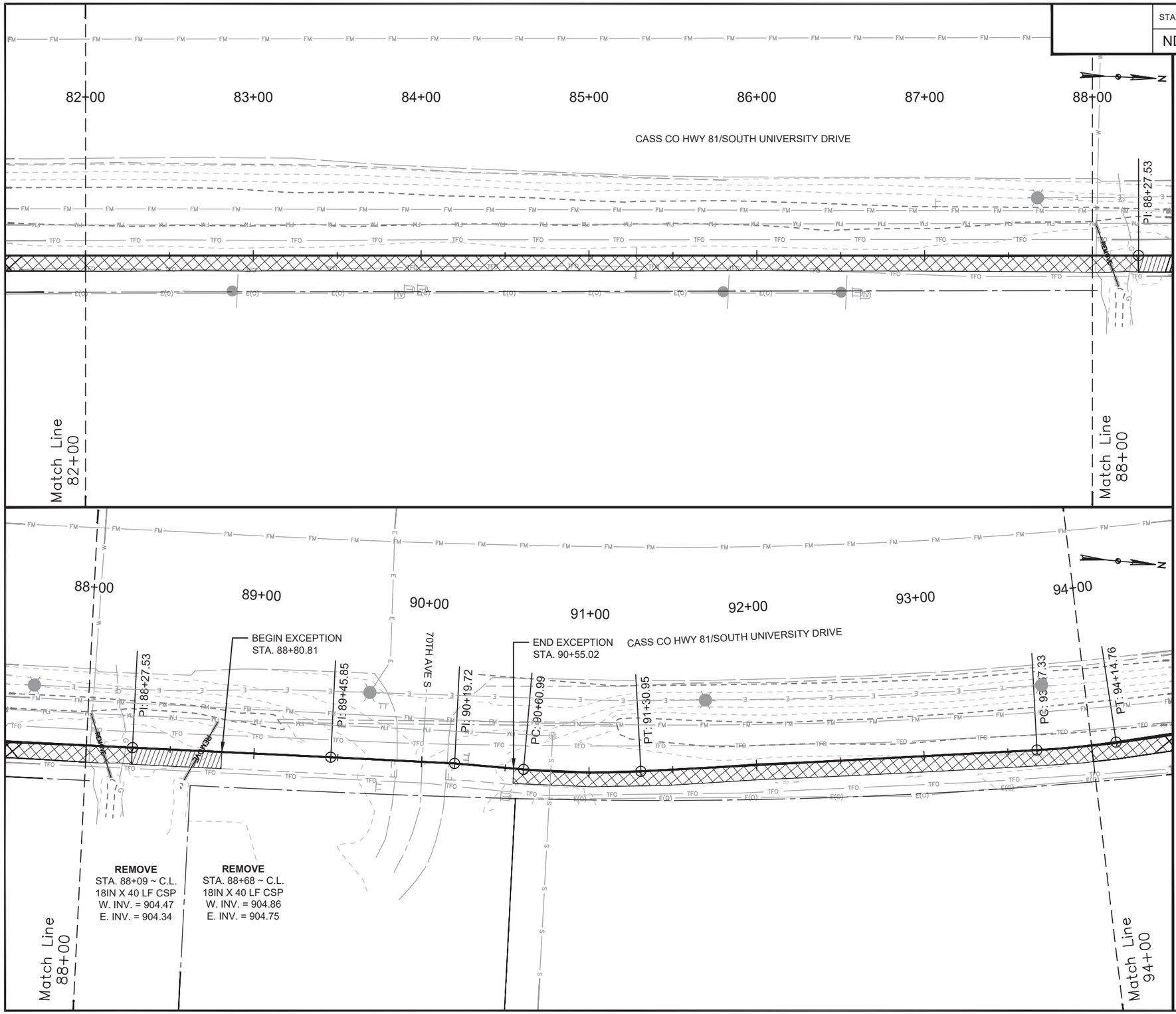
REMOVALS
STA. 70+00 TO 82+00

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ND	TMA-TAU-CRP-8-984(183)	40	7



SPEC	CODE	BID ITEM	QTY	UNIT
202	0114	REMOVAL OF CONCRETE PAVEMENT Sta. 82+00 to Sta. 94+00	59	SY
202	0132	REMOVAL OF BITUMINOUS SURFACING Sta. 82+00 to Sta. 94+00	991	SY
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES Sta. 82+00 to Sta. 94+00	80	LF

LEGEND:

- REMOVAL OF BITUMINOUS PAVEMENT
- 2" MILL
- REMOVAL OF CONCRETE
- REMOVE — REMOVAL OF PIPE

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/[illegible]/26
NORTH DAKOTA

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CASS COUNTY, NORTH DAKOTA

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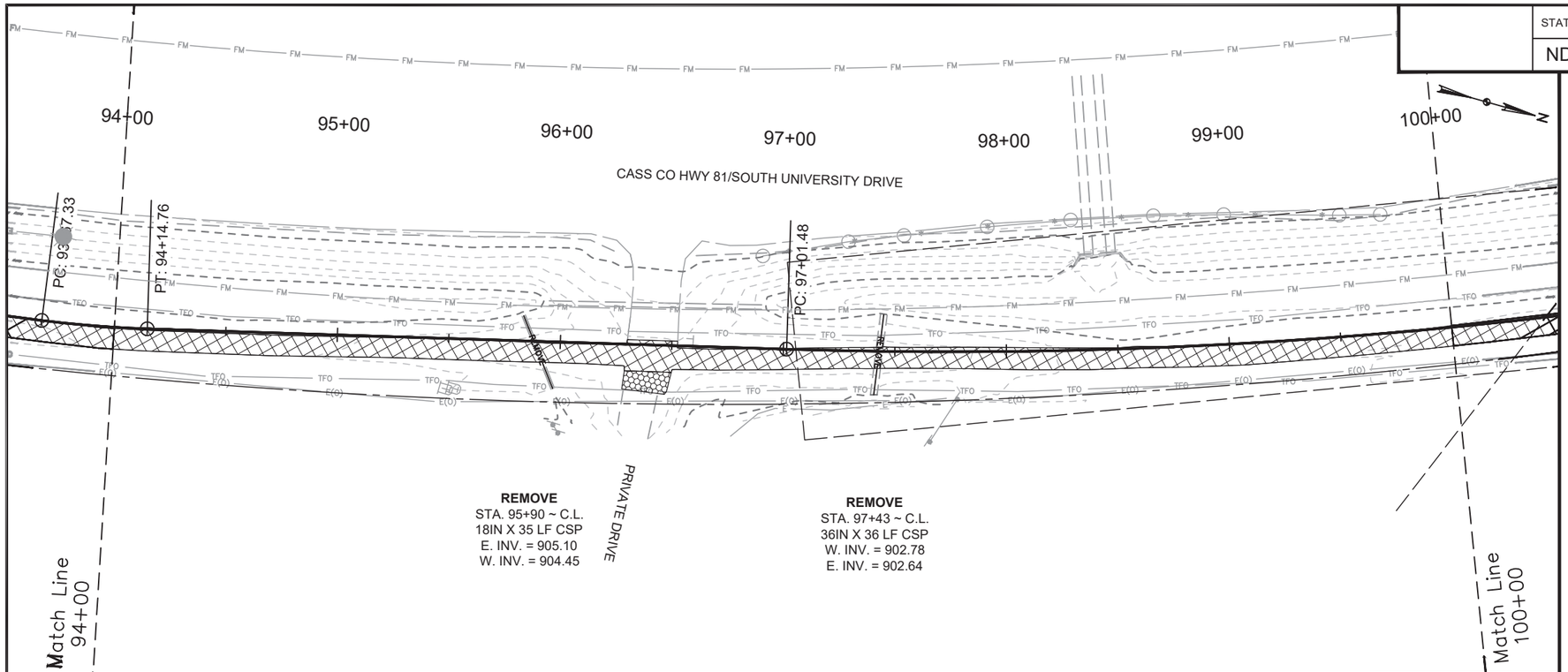
REMOVALS STA. 82+00 TO 94+00

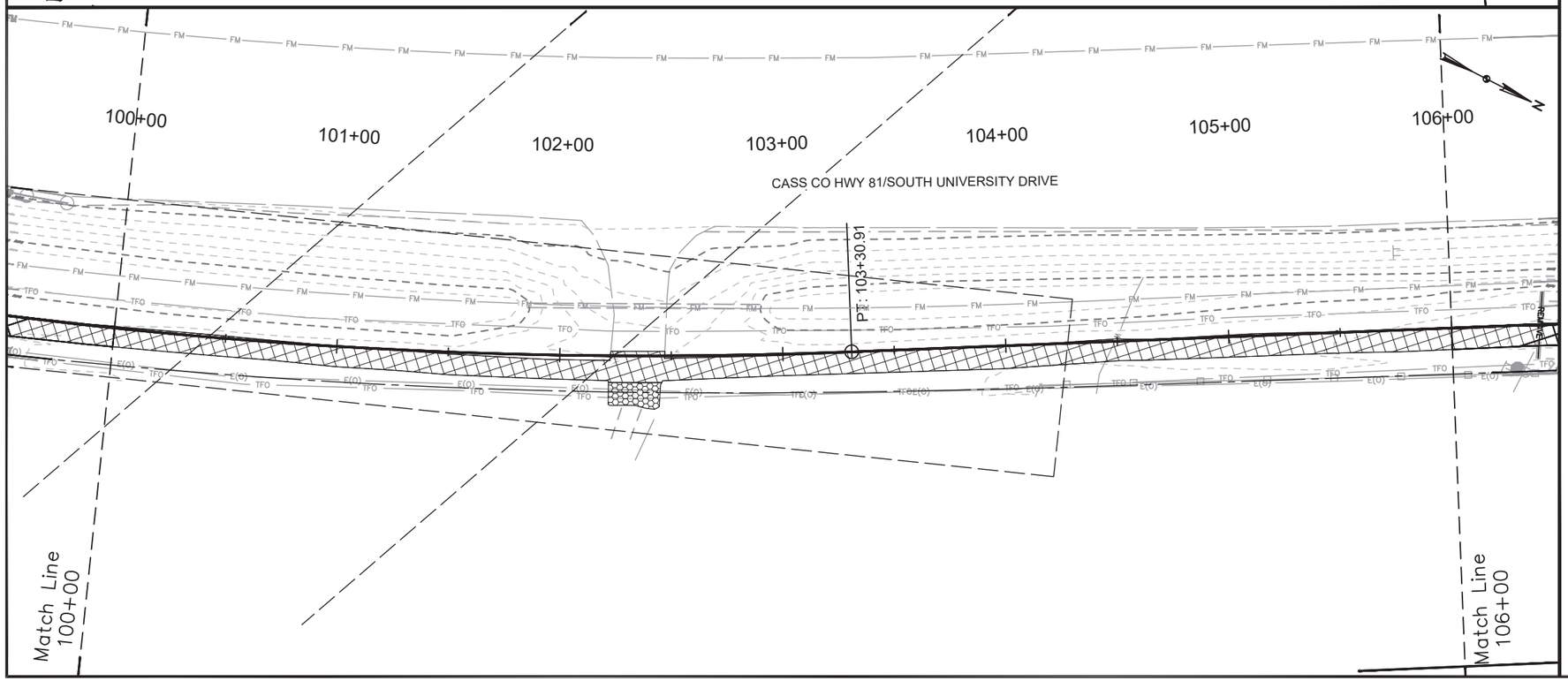
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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SPEC	CODE	BID ITEM	QTY	UNIT
202	0132	REMOVAL OF BITUMINOUS SURFACING Sta. 94+00 to Sta. 106+00	1,275	SY
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES Sta. 94+00 to Sta. 106+00	71	LF
411	0105	MILLING PAVEMENT SURFACE Sta. 94+00 to Sta. 106+00	48	SY

LEGEND:

- REMOVAL OF BITUMINOUS PAVEMENT
- 2" MILL
- REMOVAL OF CONCRETE
- REMOVE — REMOVAL OF PIPE

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/ /26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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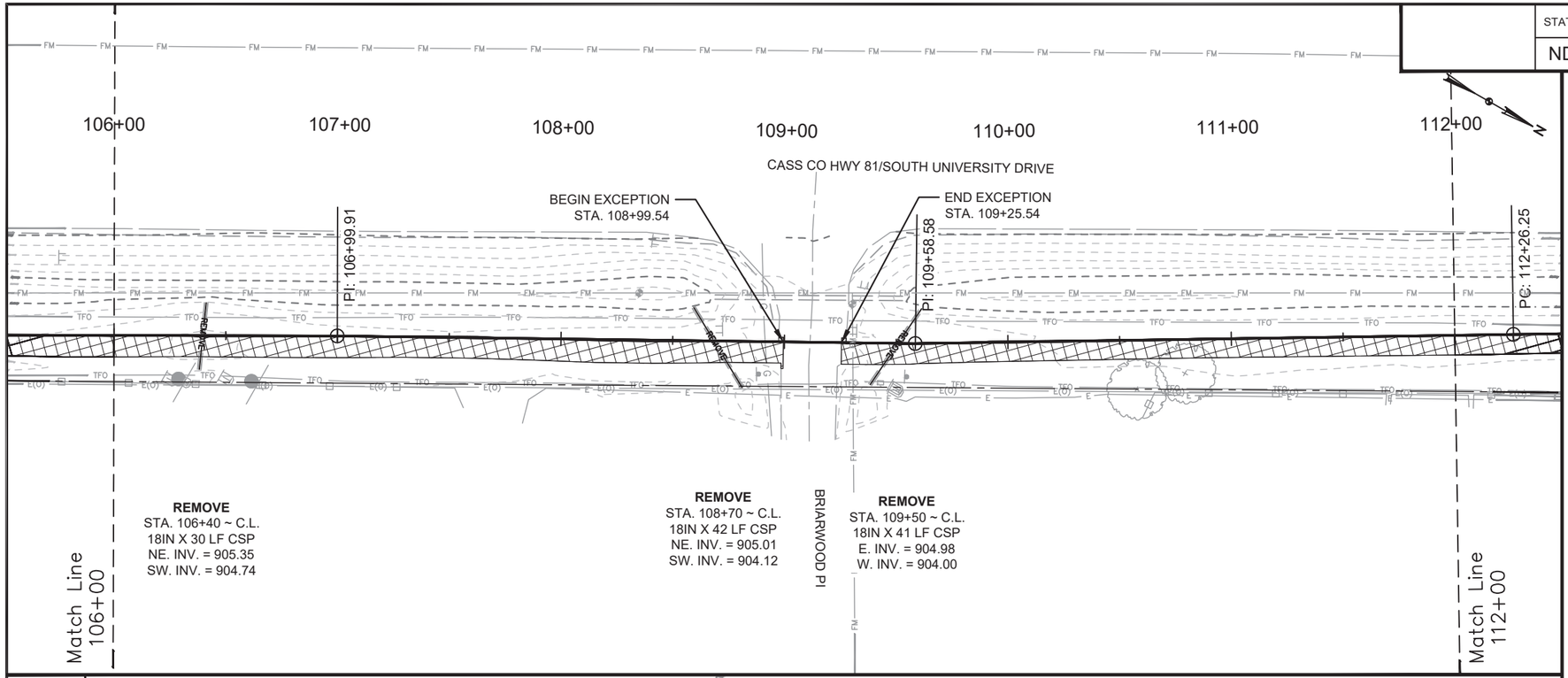
REMOVALS
STA. 94+00 TO 106+00

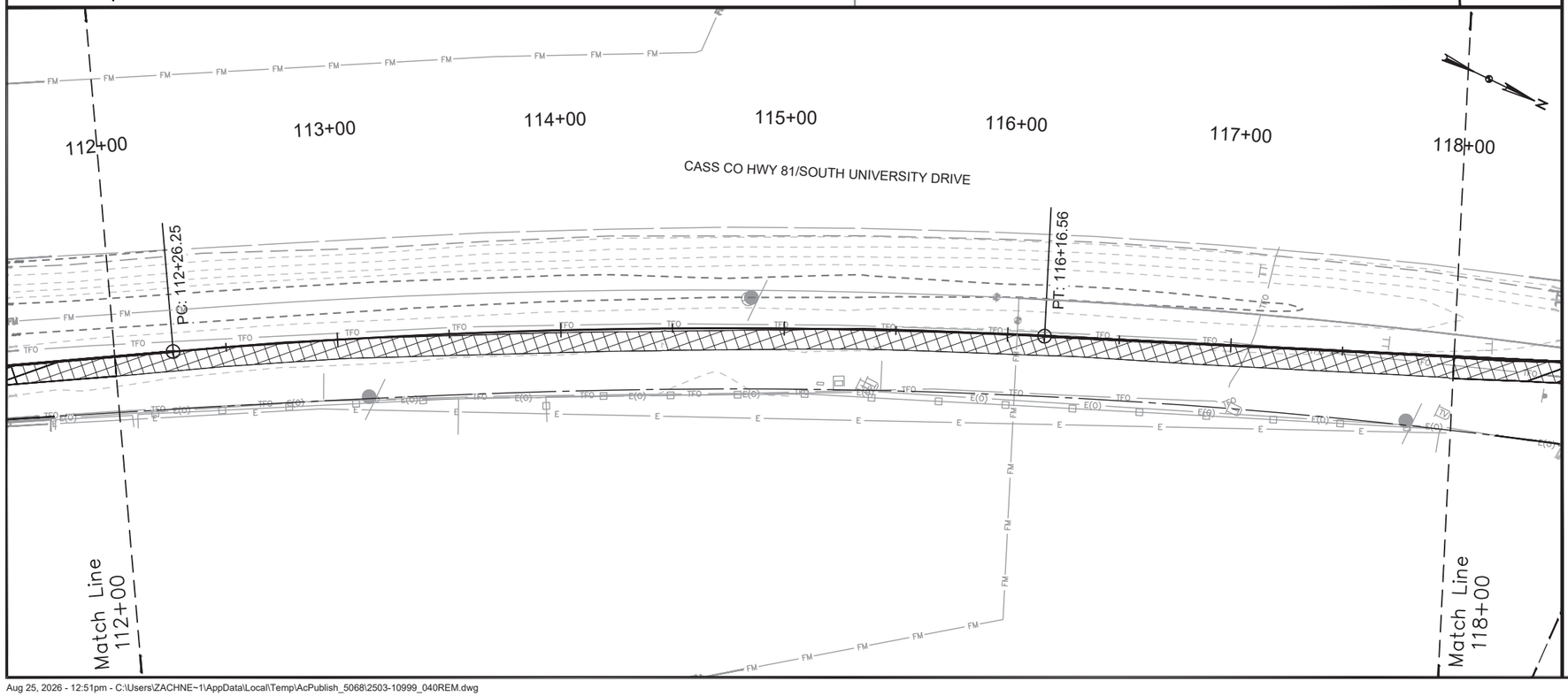
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SPEC CODE BID ITEM — QTY UNIT

SPEC	CODE	BID ITEM	QTY	UNIT
202	0132	REMOVAL OF BITUMINOUS SURFACING Sta. 106+00 to Sta. 118+00	1,189	SY
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES Sta. 106+00 to Sta. 118+00	113	LF

LEGEND:

- REMOVAL OF BITUMINOUS PAVEMENT
- 2" MILL
- REMOVAL OF CONCRETE
- REMOVE — REMOVAL OF PIPE

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

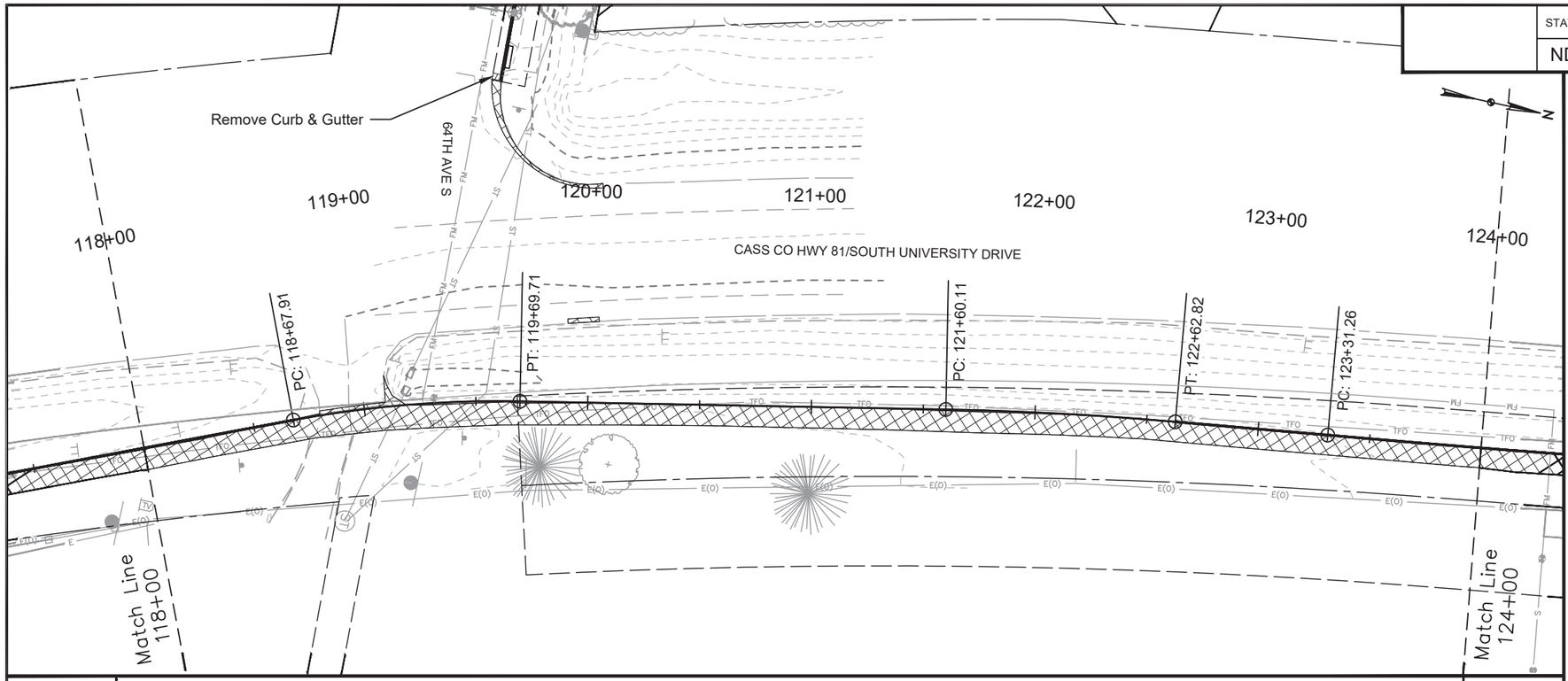
REMOVALS
STA. 106+00 TO 118+00

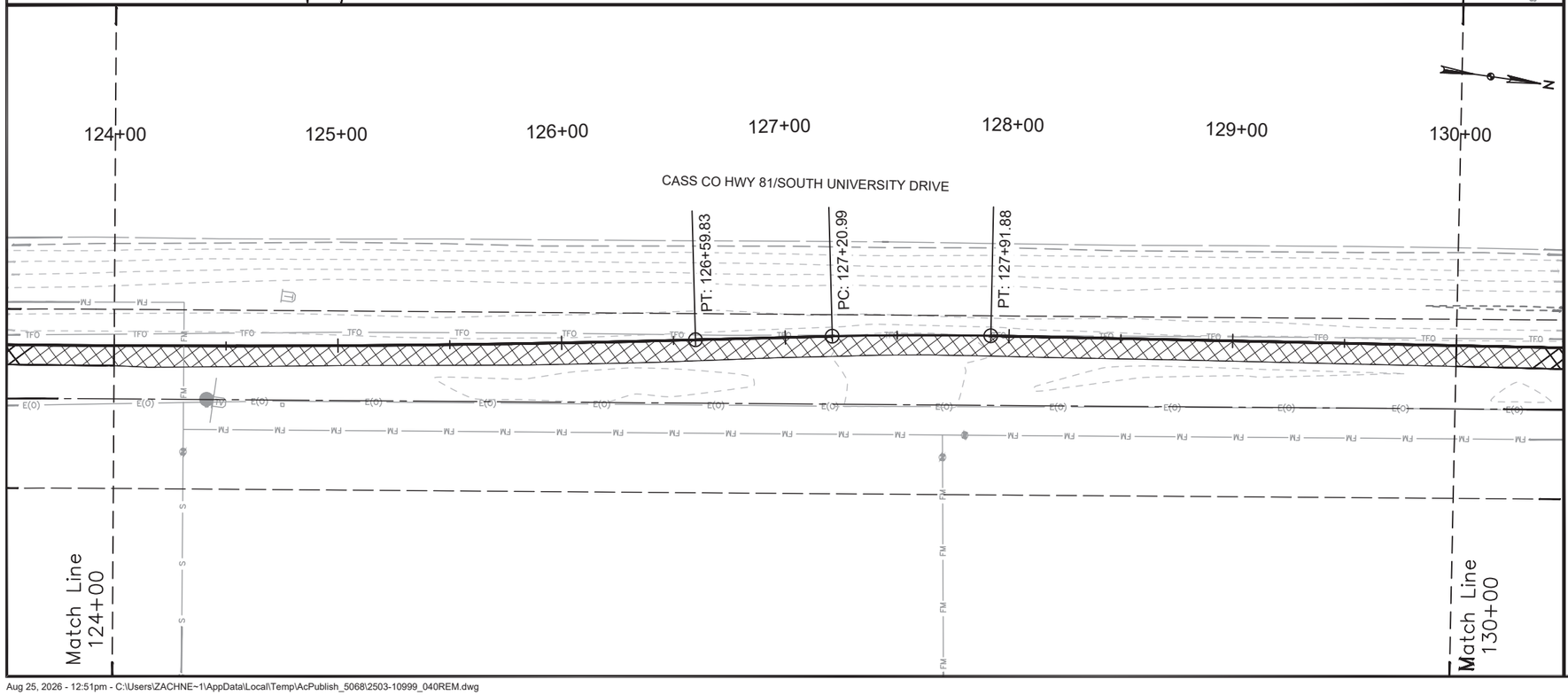
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	40	10





SPEC	CODE	BID ITEM	QTY	UNIT
202	0130	REMOVAL OF CURB & GUTTER Sta. 118+00 to Sta. 130+00	2	LF
202	0132	REMOVAL OF BITUMINOUS SURFACING Sta. 118+00 to Sta. 130+00	1,274	SY

LEGEND:

- REMOVAL OF BITUMINOUS PAVEMENT
- 2" MILL
- REMOVAL OF CONCRETE
- REMOVE — REMOVAL OF PIPE

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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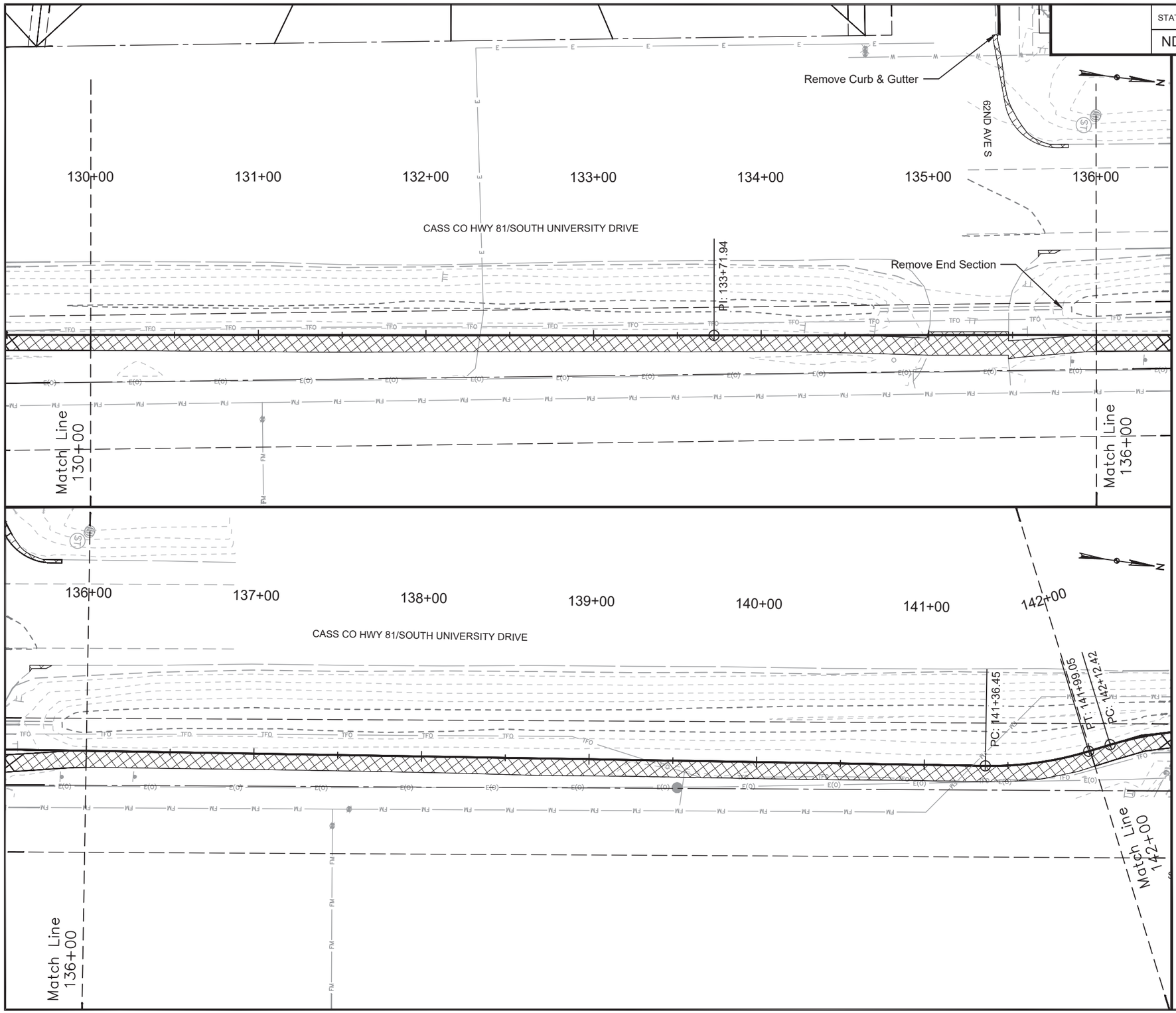
REMOVALS
STA. 118+00 TO 130+00

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	40	11



SPEC	CODE	BID ITEM	QTY	UNIT
202	0130	REMOVAL OF CURB & GUTTER Sta. 130+00 to Sta. 142+00	2	LF
202	0132	REMOVAL OF BITUMINOUS SURFACING Sta. 130+00 to Sta. 142+00	1,349	SY
202	0169	REMOVAL OF END SECTION-ALL TYPES & SIZES Sta. 135+80, LT	1	EA

LEGEND:

- REMOVAL OF BITUMINOUS PAVEMENT
- 2" MILL
- REMOVAL OF CONCRETE
- REMOVE — REMOVAL OF PIPE

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/ /26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

REMOVALS
STA. 130+00 TO 142+00

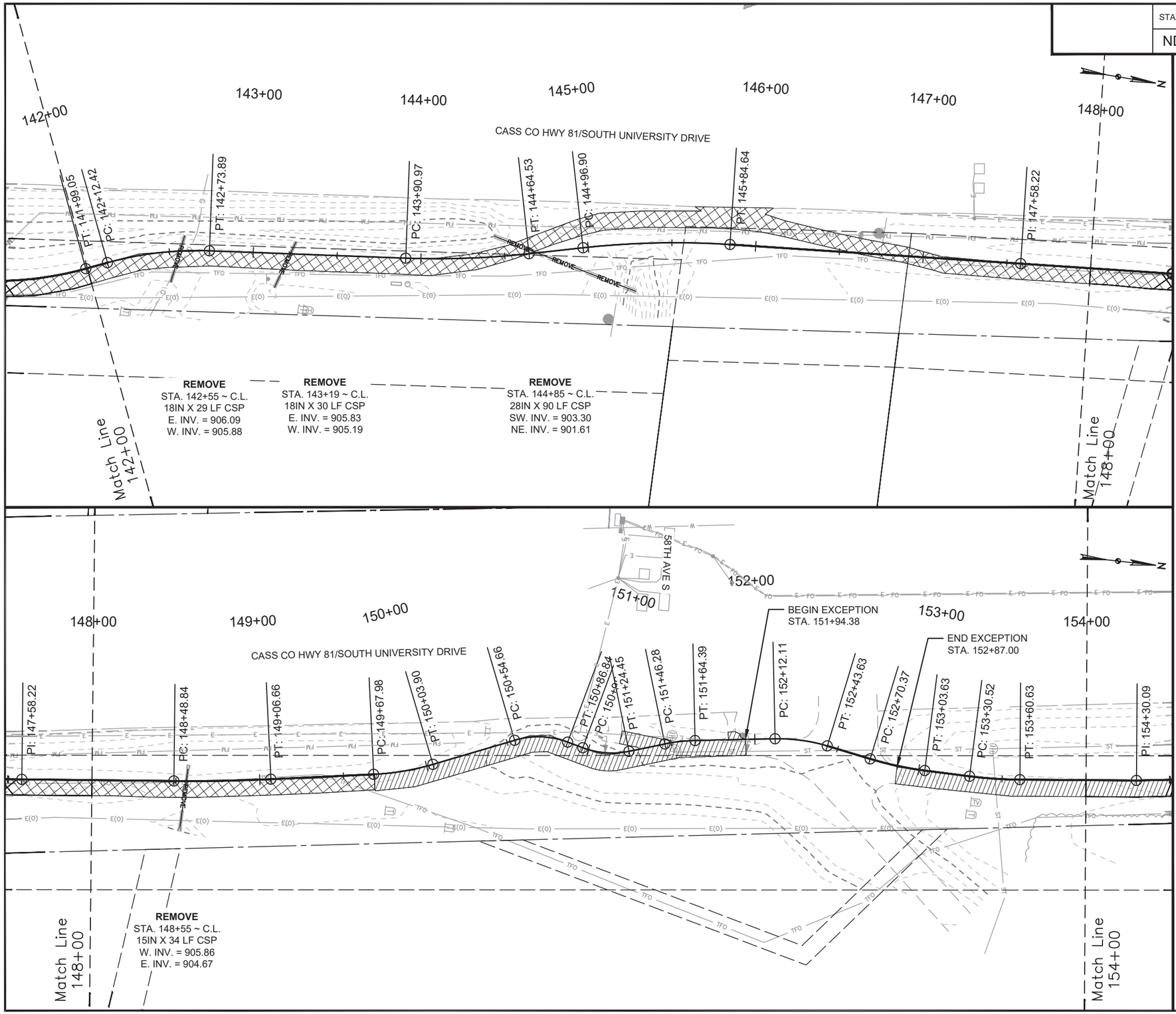
DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

Aug 25, 2026 - 12:51pm - C:\Users\ZACHNE~1\AppData\Local\Temp\AcPublish_5068\2503-10999_040REM.dwg

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	40	12

SPEC	CODE	BID ITEM	QTY	UNIT
202	0114	REMOVAL OF CONCRETE PAVEMENT Sta. 142+00 to Sta. 154+00	393	SY
202	0132	REMOVAL OF BITUMINOUS SURFACING Sta. 142+00 to Sta. 154+00	832	SY
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES Sta. 142+00 to Sta. 154+00	183	LF



LEGEND:

- REMOVAL OF BITUMINOUS PAVEMENT
- 2" MILL
- REMOVAL OF CONCRETE
- REMOVE — REMOVAL OF PIPE

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

REMOVALS
STA. 142+00 TO 154+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	40	13

154+00 155+00 156+00 157+00 158+00 159+00 160+00

CASS CO HWY 81/SOUTH UNIVERSITY DRIVE

PT: 153+60.63
PI: 154+30.09
PI: 155+59.85
PC: 160+03.40

Match Line 154+00

Match Line 160+00

160+00 161+00 162+00 163+00 164+00 165+00 166+00

CASS CO HWY 81/SOUTH UNIVERSITY DRIVE

PC: 160+03.40
PT: 160+70.99
PC: 161+03.41
PT: 161+74.00
BEGIN EXCEPTION STA. 162+34.04
END EXCEPTION STA. 162+97.56
PC: 163+51.05
PT: 164+08.62
PC: 164+25.28
PT: 164+65.56
PC: 165+16.09
PT: 165+44.72
PC: 165+71.77
PT: 166+17.07
PC: 166+25.19

REMOVE

Remove Curb & Gutter

Remove Curb & Gutter

54TH AVE S

REMOVE
STA. 161+07 ~ C.L.
18IN X 79 LF CSP
N. INV. = 903.92
S. INV. = 903.72

Match Line 160+00

Match Line 166+00

SPEC	CODE	BID ITEM	QTY	UNIT
202	0114	REMOVAL OF CONCRETE PAVEMENT Sta. 154+00 to Sta. 166+00	203	SY
202	0130	REMOVAL OF CURB & GUTTER Sta. 154+00 to Sta. 166+00	12	LF
202	0132	REMOVAL OF BITUMINOUS SURFACING Sta. 154+00 to Sta. 166+00	960	SY
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES Sta. 154+00 to Sta. 166+00	79	LF

LEGEND:

- REMOVAL OF BITUMINOUS PAVEMENT
- 2" MILL
- REMOVAL OF CONCRETE
- REMOVE — REMOVAL OF PIPE

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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REMOVALS
STA. 154+00 TO 166+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	51	1

Begin Station	Begin Offset	End Station	End Offset	Pipe Installation (Pay Item) IN	Pipe Installation (Pay Item) Bid Item	Pipe Installation (Pay Item) LF	Allowable Material	Required Diameter (IN)	Steel Pipe Coatings (TYPE)	Steel Pipe Corrugations or Spiral Ribs	Steel Pipe Minimum Thickness (IN)	(*) End Sections Begin (EA)	(*) End Sections End (EA)	Applicable Backfill
11+66	9.8' LT	11+66	16.2' RT	22X13	Pipe Conduit Arch	26	Reinforced Concrete Arch Pipe 22IN X 13IN - Class III **(Barrel Length = 18 LF)**	22X13	-	-	-	FES	FES	Standard D-714-27
20+85	14.6' LT	21+05	24.5' RT	18	Pipe Conduit	44	Reinforced Concrete Pipe - Class III (**Barrel Length = 36 LF)** or Corrugated Dual Wall HDPE Pipe	18	-	-	-	FES	FES	Standard D-714-27
21+74	13.9' LT	21+52	21.9' RT	18	Pipe Conduit	42	Reinforced Concrete Pipe - Class III (**Barrel Length = 34 LF)** or Corrugated Dual Wall HDPE Pipe	18	-	-	-	FES	FES	Standard D-714-27
23+84	9.3' LT	23+86	18.7' RT	18	Pipe Conduit	28	Reinforced Concrete Pipe - Class III (**Barrel Length = 20 LF)** or Corrugated Dual Wall HDPE Pipe	18	-	-	-	FES	FES	Standard D-714-27
33+37	8.4' LT	33+37	19.6' RT	18	Pipe Conduit	28	Reinforced Concrete Pipe - Class III (**Barrel Length = 20 LF)** or Corrugated Dual Wall HDPE Pipe	18	-	-	-	FES	FES	Standard D-714-27
36+74	12.3' LT	36+72	19.6' RT	18	Pipe Conduit	32	Reinforced Concrete Pipe - Class III (**Barrel Length = 24 LF)** or Corrugated Dual Wall HDPE Pipe	18	-	-	-	FES	FES	Standard D-714-27
54+04	12.8' LT	54+05	21.1' RT	18	Pipe Conduit	34	Reinforced Concrete Pipe - Class III (**Barrel Length = 26 LF)** or Corrugated Dual Wall HDPE Pipe	18	-	-	-	FES	FES	Standard D-714-27
56+60	8.9' LT	56+60	23.1' RT	18	Pipe Conduit	32	Reinforced Concrete Pipe - Class III (**Barrel Length = 24 LF)** or Corrugated Dual Wall HDPE Pipe	18	-	-	-	FES	FES	Standard D-714-27
63+70	9.5' LT	63+90	23.1' RT	24	Pipe Conduit	38	Reinforced Concrete Pipe - Class III (**Barrel Length = 32 LF)** or Corrugated Dual Wall HDPE Pipe	24	-	-	-	FES	FES	Standard D-714-27
64+48	12.2' LT	64+46	19.7' RT	18	Pipe Conduit	32	Reinforced Concrete Pipe - Class III (**Barrel Length = 24 LF)** or Corrugated Dual Wall HDPE Pipe	18	-	-	-	FES	FES	Standard D-714-27
68+21	9.1' LT	68+22	18.9' RT	18	Pipe Conduit	28	Reinforced Concrete Pipe - Class III (**Barrel Length = 20 LF)** or Corrugated Dual Wall HDPE Pipe	18	-	-	-	FES	FES	Standard D-714-27
88+47	17.1' LT	88+19	19.7' RT	18	Pipe Conduit	46	Reinforced Concrete Pipe - Class III (**Barrel Length = 38 LF)** or Corrugated Dual Wall HDPE Pipe	18	-	-	-	FES	FES	Standard D-714-27
95+84	9.8' LT	95+96	17.7' RT	18	Pipe Conduit	30	Reinforced Concrete Pipe - Class III (**Barrel Length = 22 LF)** or Corrugated Dual Wall HDPE Pipe	18	-	-	-	FES	FES	Standard D-714-27
97+44	12.4' LT	97+41	17.5' RT	58X36	Pipe Conduit Arch	30	Reinforced Concrete Arch Pipe 58IN X 36IN - Class III **(Barrel Length = 24 LF)**	58X36	-	-	-	FES	FES	Standard D-714-27
106+41	12.7' LT	106+38	15.2' RT	18	Pipe Conduit	28	Reinforced Concrete Pipe - Class III (**Barrel Length = 20 LF)** or Corrugated Dual Wall HDPE Pipe	18	-	-	-	FES	FES	Standard D-714-27
108+60	13.2' LT	108+81	20.8' RT	18	Pipe Conduit	40	Reinforced Concrete Pipe - Class III (**Barrel Length = 32 LF)** or Corrugated Dual Wall HDPE Pipe	18	-	-	-	FES	FES	Standard D-714-27
109+61	14.3' LT	109+38	19.0' RT	18	Pipe Conduit	40	Reinforced Concrete Pipe - Class III (**Barrel Length = 32 LF)** or Corrugated Dual Wall HDPE Pipe	18	-	-	-	FES	FES	Standard D-714-27
119+86	11.4' LT	120+12	12.9' LT	18	Pipe Conduit	26	Reinforced Concrete Pipe - Class III (**Barrel Length = 18 LF)** or Corrugated Dual Wall HDPE Pipe	18	-	-	-	FES	FES	Standard D-714-27
135+79	16.2' LT	135+89	16.3' LT	24	Pipe Conduit	10	Corrugated Steel Pipe	24	Z, A, P	2	0.064	-	FES	Standard D-714-27
143+25	7.2' LT	143+14	18.5' RT	18	Pipe Conduit	28	Reinforced Concrete Pipe - Class III (**Barrel Length = 20 LF)** or Corrugated Dual Wall HDPE Pipe	18	-	-	-	FES	FES	Standard D-714-27
143+38	13.4' LT	MH 100	-	30	Pipe Conduit	190	Reinforced Concrete Pipe - Class III Storm Drain (**Barrel Length = 188 LF)** or Corrugated Dual Wall HDPE Pipe	30	-	-	-	FES	-	Standard D-714-27
MH 100	-	145+29	31.5' RT	30	Pipe Conduit	10	Reinforced Concrete Pipe - Class III Storm Drain (**Barrel Length = 8 LF)** or Corrugated Dual Wall HDPE Pipe	30	-	-	-	-	FES	Standard D-714-27
148+57	6.8' LT	148+53	22.9' RT	18	Pipe Conduit	30	Reinforced Concrete Pipe - Class III (**Barrel Length = 22 LF)** or Corrugated Dual Wall HDPE Pipe	18	-	-	-	FES	FES	Standard D-714-27
160+71	6.4' LT	161+46	20.9' RT	18	Pipe Conduit	78	Reinforced Concrete Pipe - Class III (**Barrel Length = 70 LF)** or Corrugated Dual Wall HDPE Pipe	18	-	-	-	FES	FES	Standard D-714-27

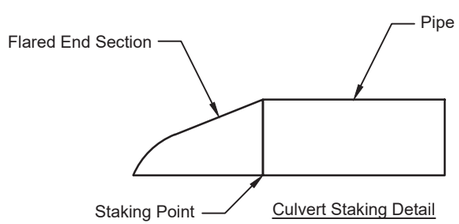
MH No.	100	60IN
Sta.	145+28.43 ~ 19.5' RT	
Casting Elev.	906.00	
Base Elev.	900.30	
Invert Elev.	901.40	
Riser (60IN). . .	4.0	FT
30 IN CONDUIT S	-	901.50
30 IN CONDUIT E	-	901.40

Corrugations: **2** = 2-2/3"x1/2"
3 = 3"x1"
5 = 5"x1"

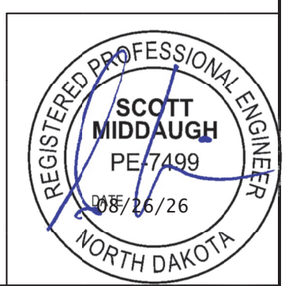
Coatings: **Z** = Zinc
A = Aluminum
P = Polymeric (over Zinc or Aluminum)

Spiral Ribs: **3/4** = 3/4"x3/4"@7-1/2"
1 = 3/4"x1"@11-1/2"

FES = Flared End Section
TES = Traversable End Section



Culvert Staking Detail



TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

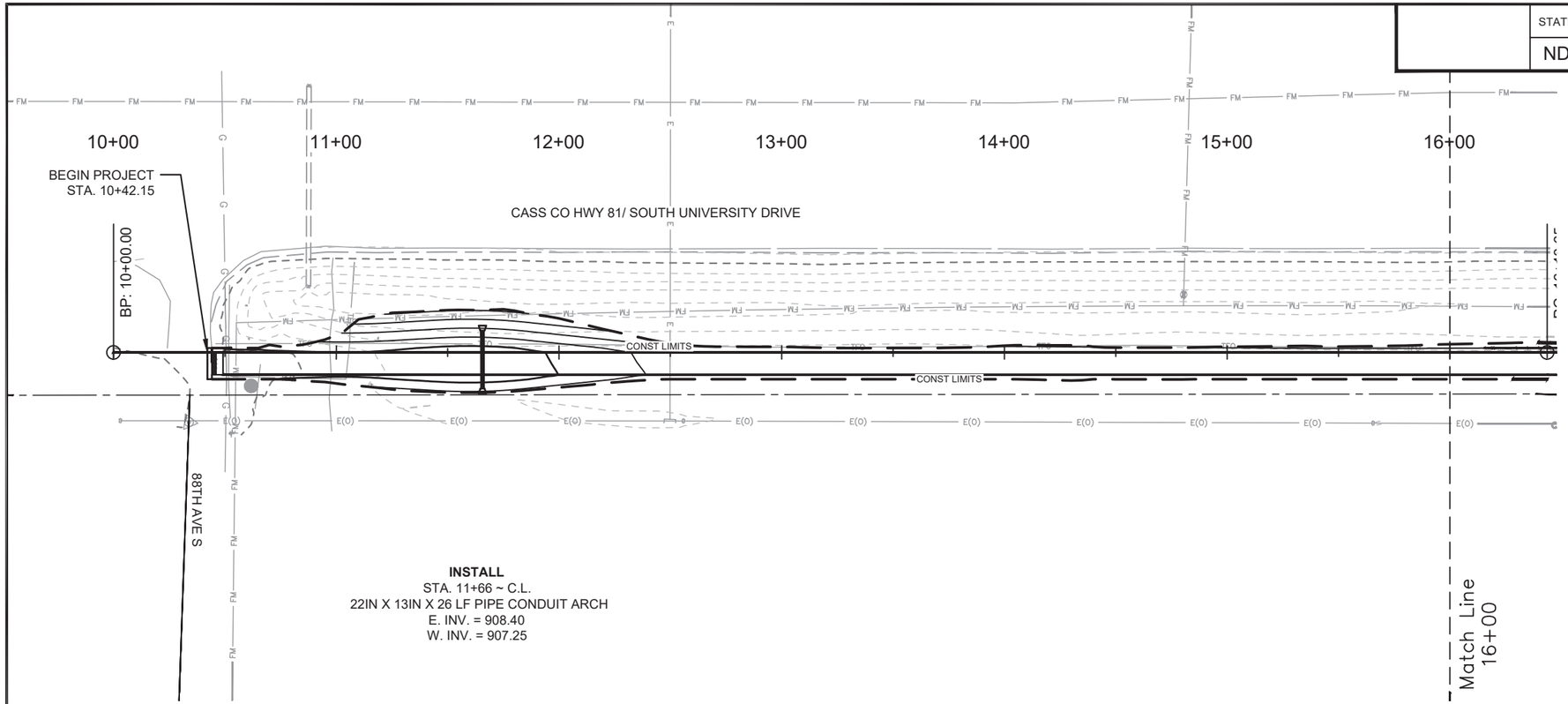
ALLOWABLE PIPE LIST & MANHOLE SUMMARY

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

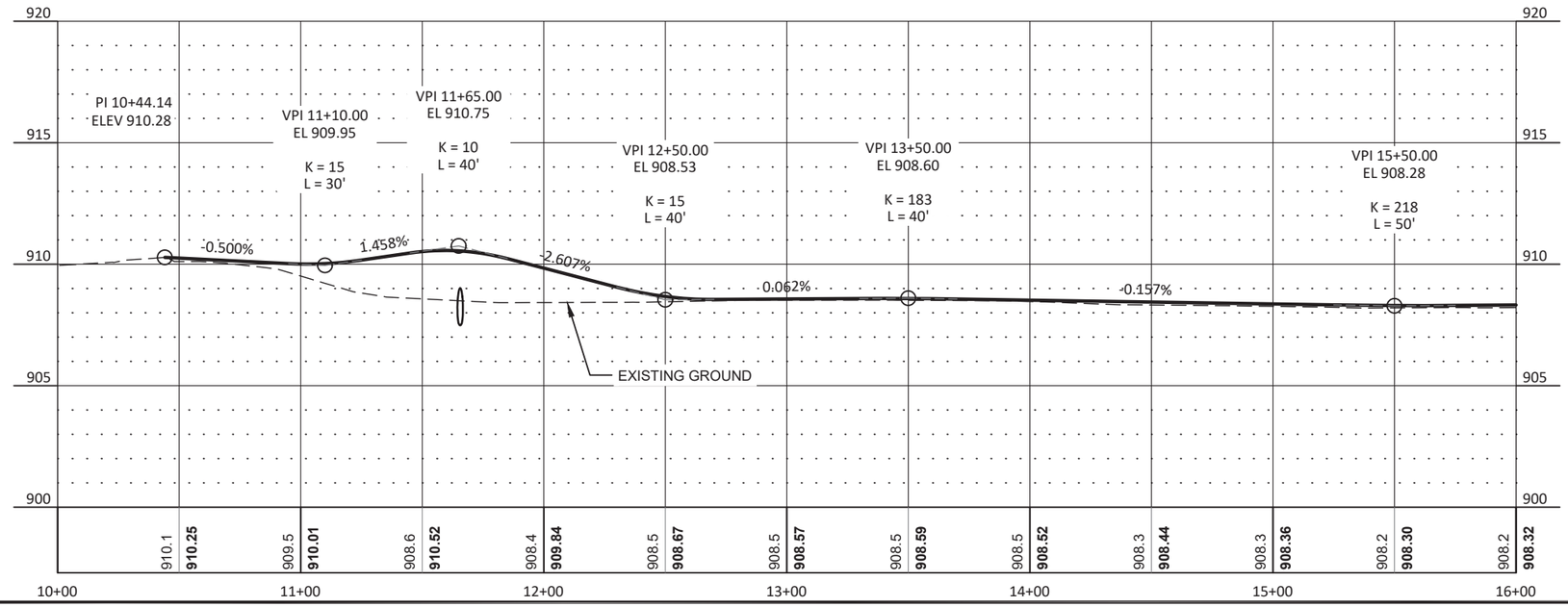
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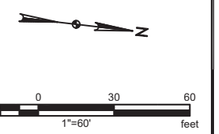
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	60	1



SPEC CODE	BID ITEM	QTY	UNIT
714 4216	PIPE CONDUIT ARCH 22IN X 13IN Sta. 11+66 ~ ℄	26	LF







TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

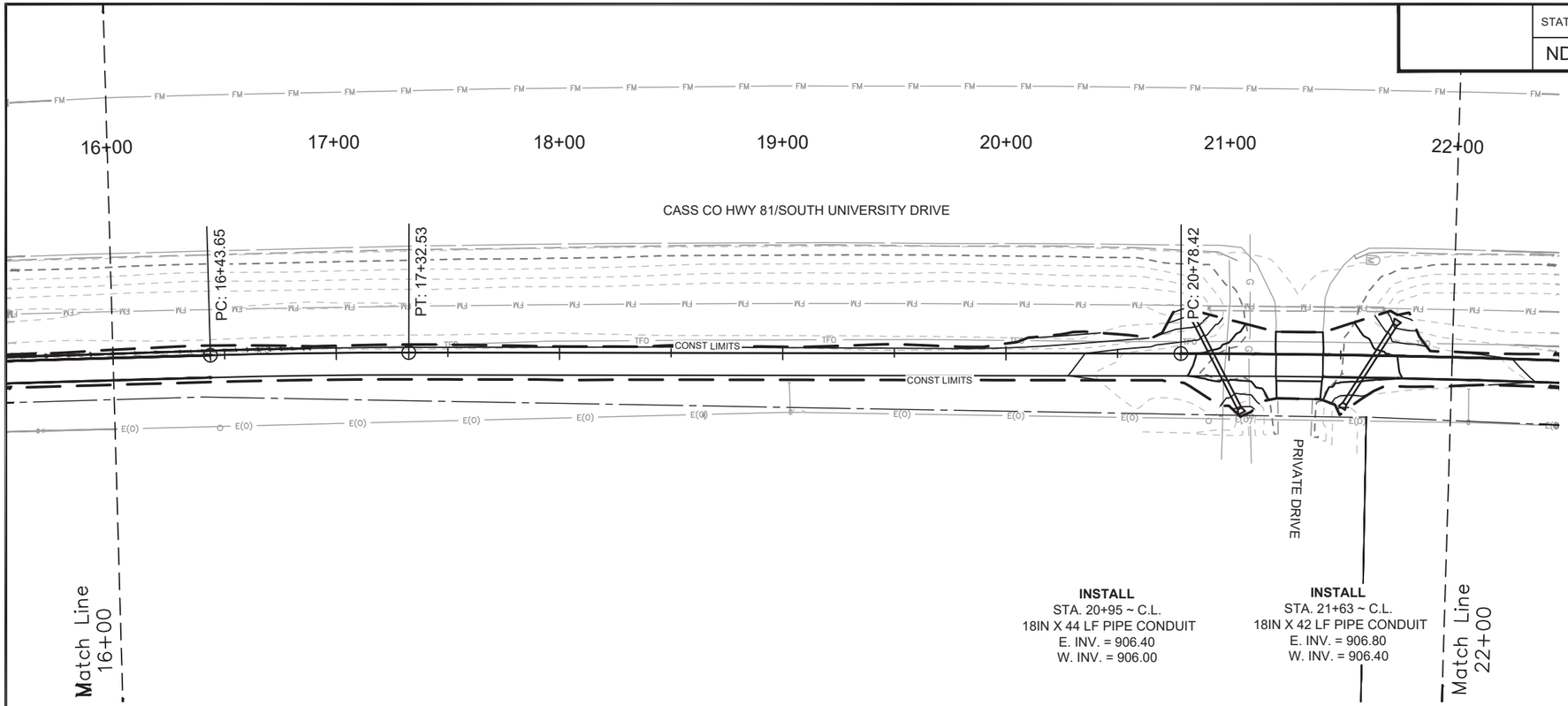
PLAN & PROFILE
STA. 10+00 TO 16+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

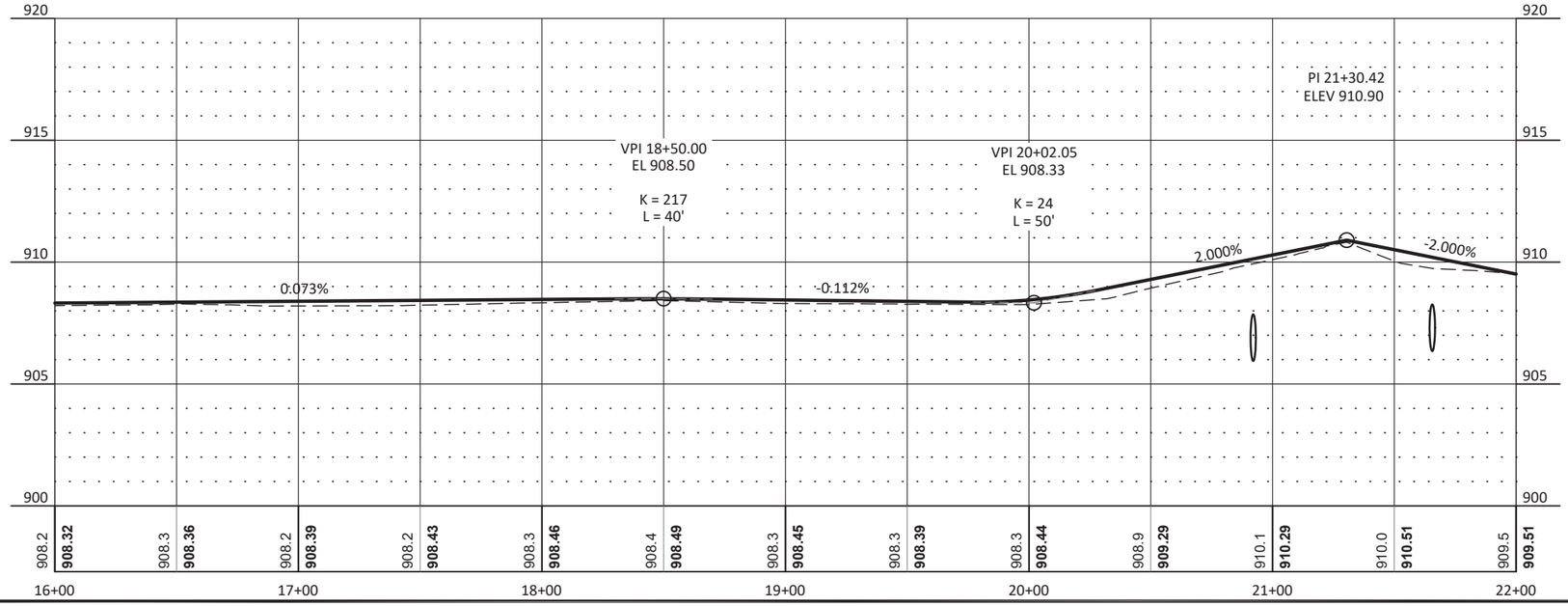
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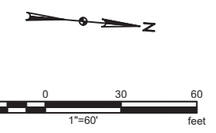
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	60	2



SPEC	CODE	BID ITEM	QTY	UNIT
714	4100	PIPE CONDUIT 18IN		
		Sta. 20+95 ~ ℄	44	LF
		Sta. 21+63 ~ ℄	42	LF







TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

PLAN & PROFILE
STA. 16+00 TO 22+00

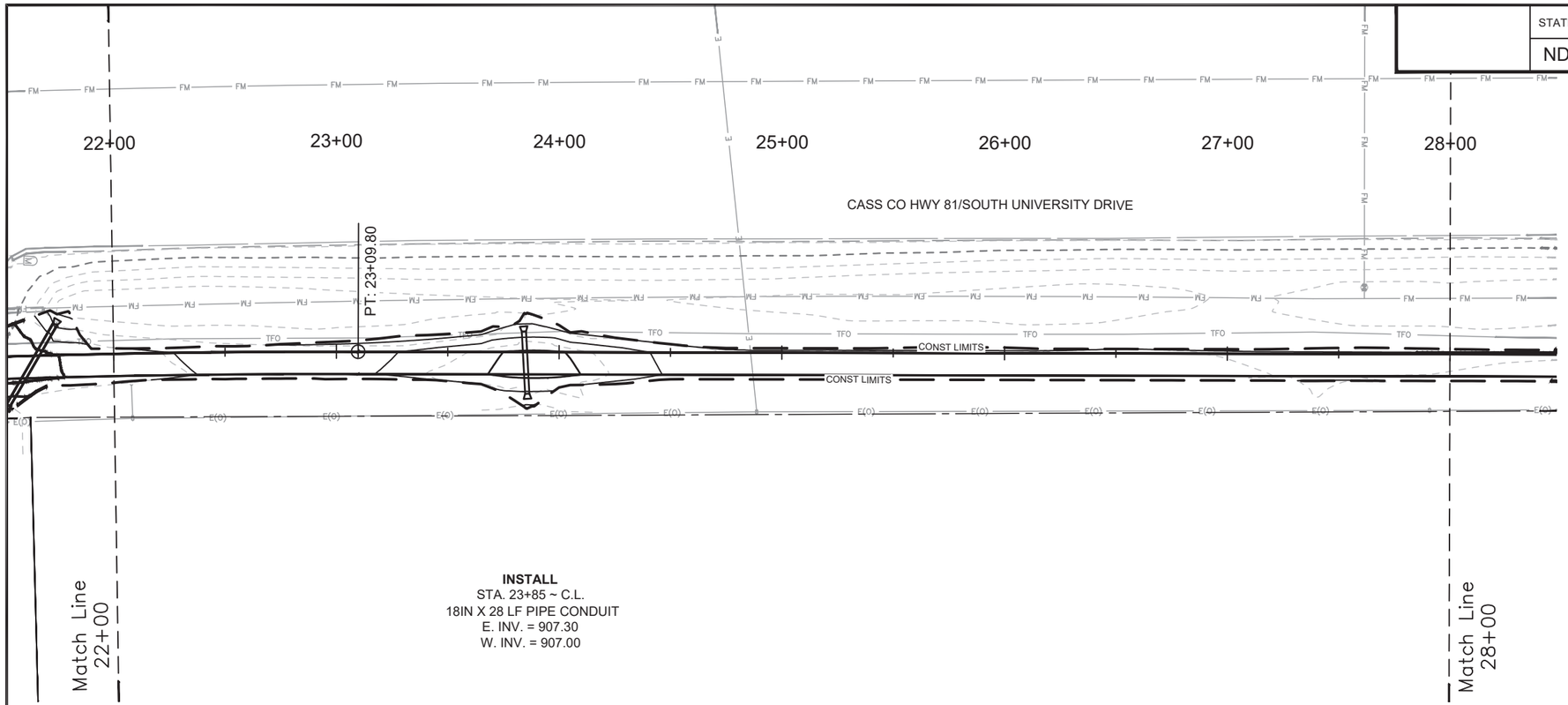
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ZBN	BJT	2503-10999

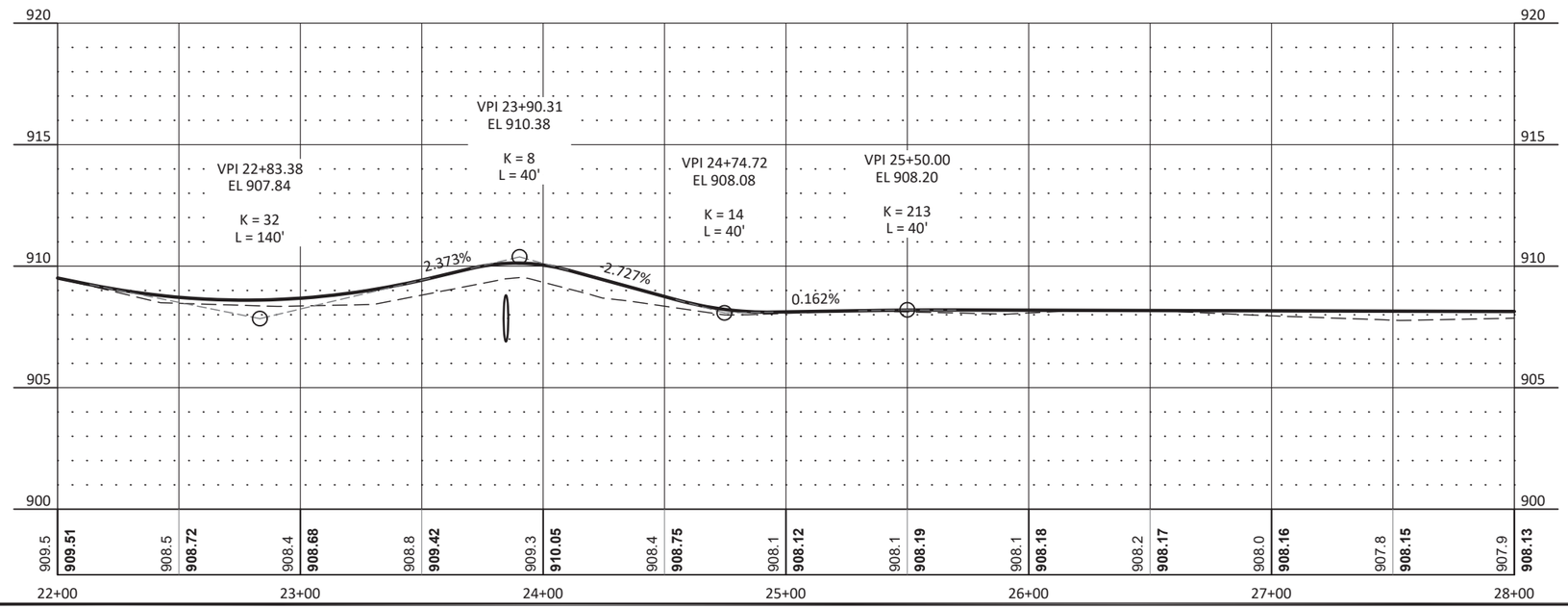
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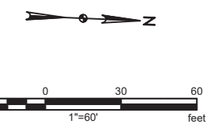
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	60	3

SPEC	CODE	BID ITEM	QTY	UNIT
714	4100	PIPE CONDUIT 18IN		
		Sta. 23+85 ~ ℄	28	LF









TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

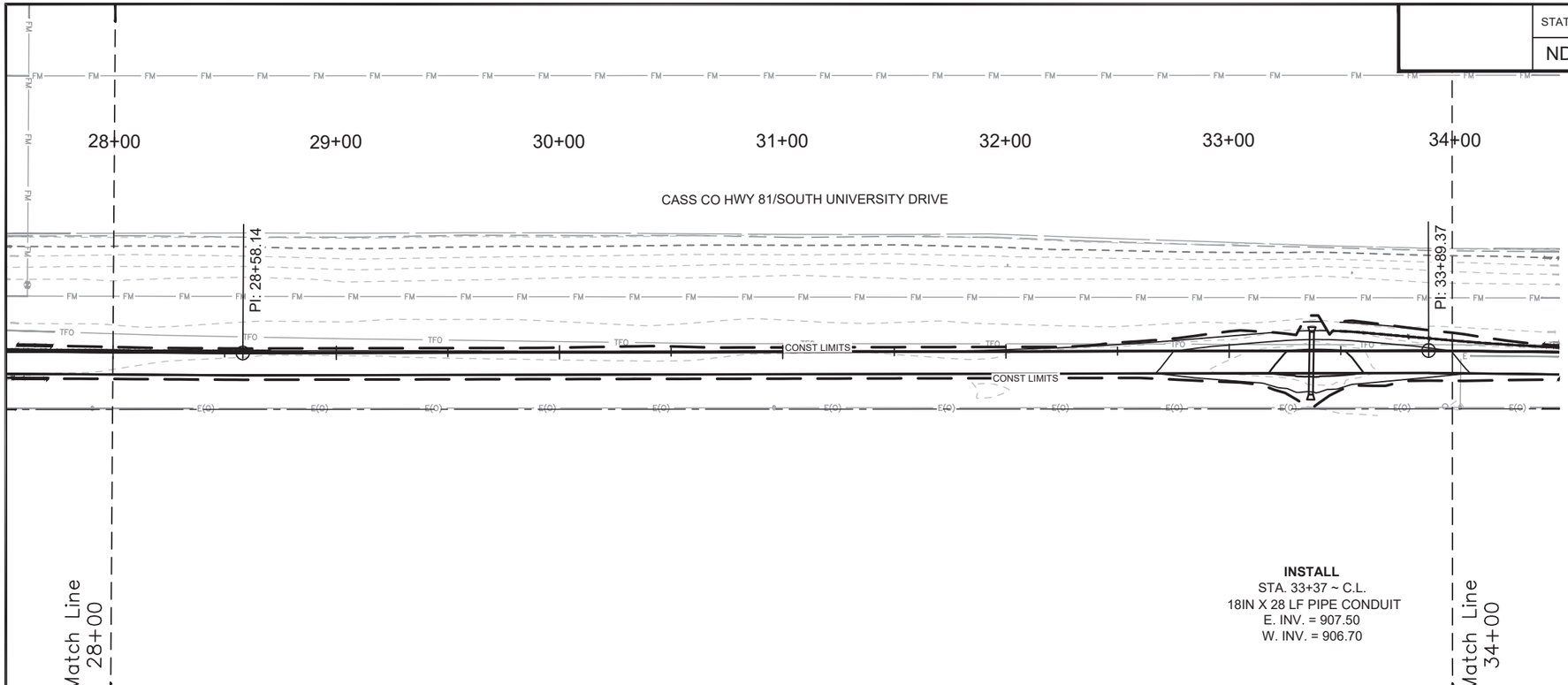
PLAN & PROFILE
STA. 22+00 TO 28+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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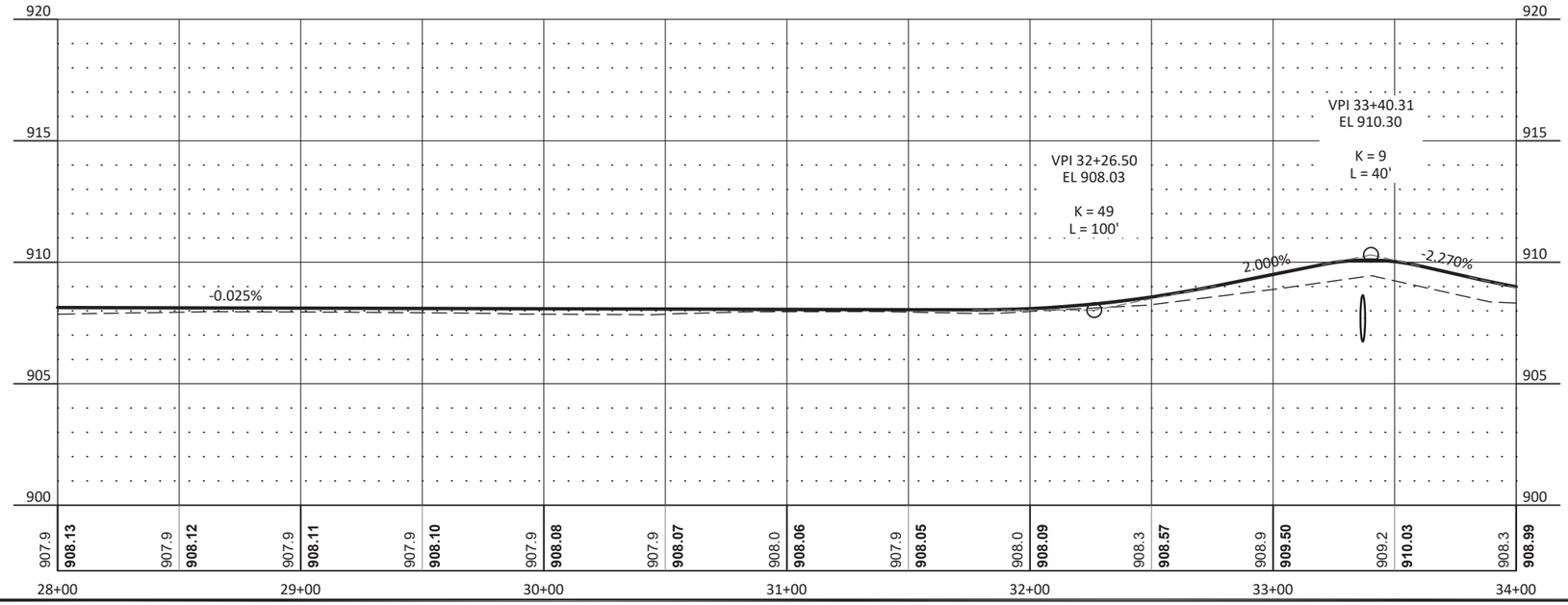
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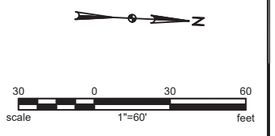
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	60	4



INSTALL
STA. 33+37 ~ C.L.
18IN X 28 LF PIPE CONDUIT
E. INV. = 907.50
W. INV. = 906.70

SPEC	CODE	BID ITEM	QTY	UNIT
714	4100	PIPE CONDUIT 18IN		
		Sta. 33+37 ~ ℄	28	LF







TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

PLAN & PROFILE
STA. 28+00 TO 34+00

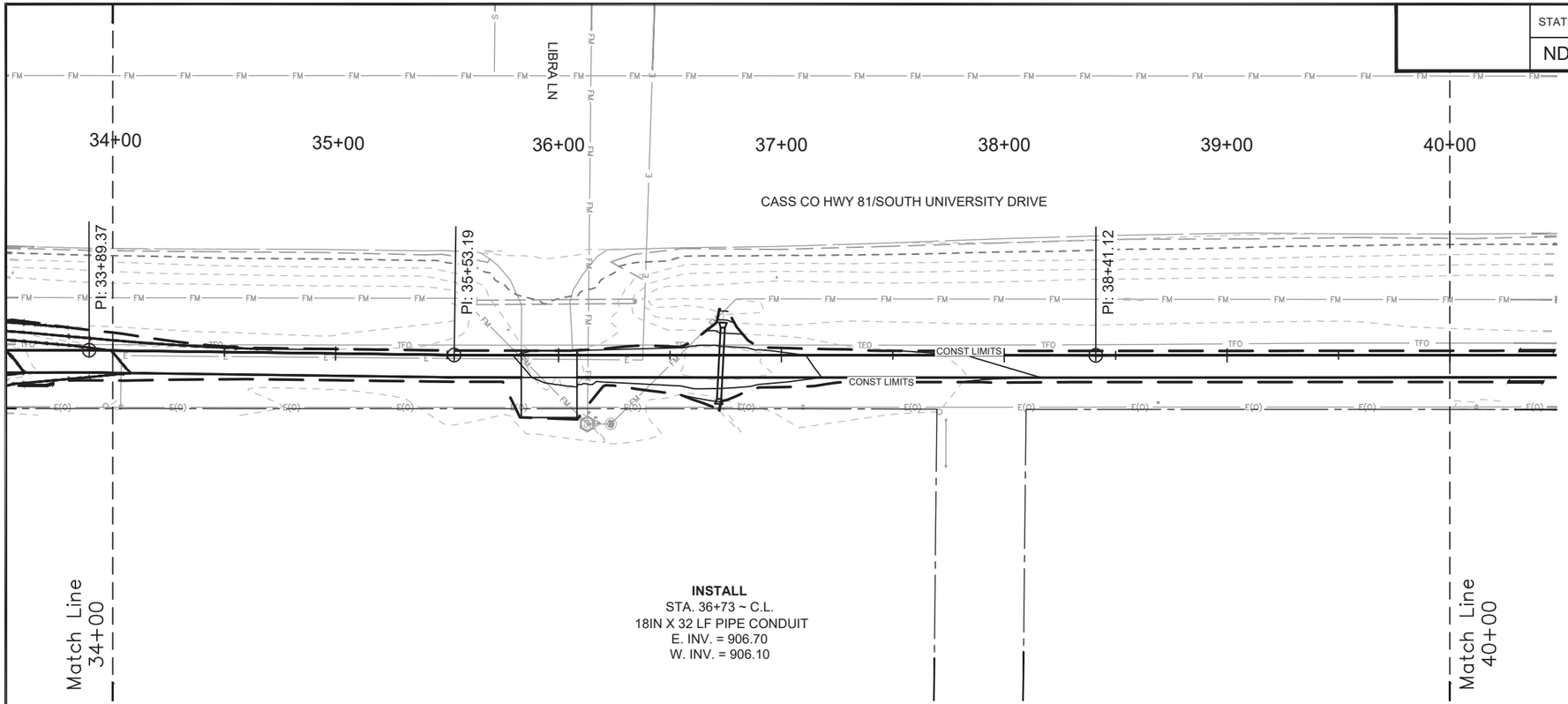
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ZBN	BJT	2503-10999

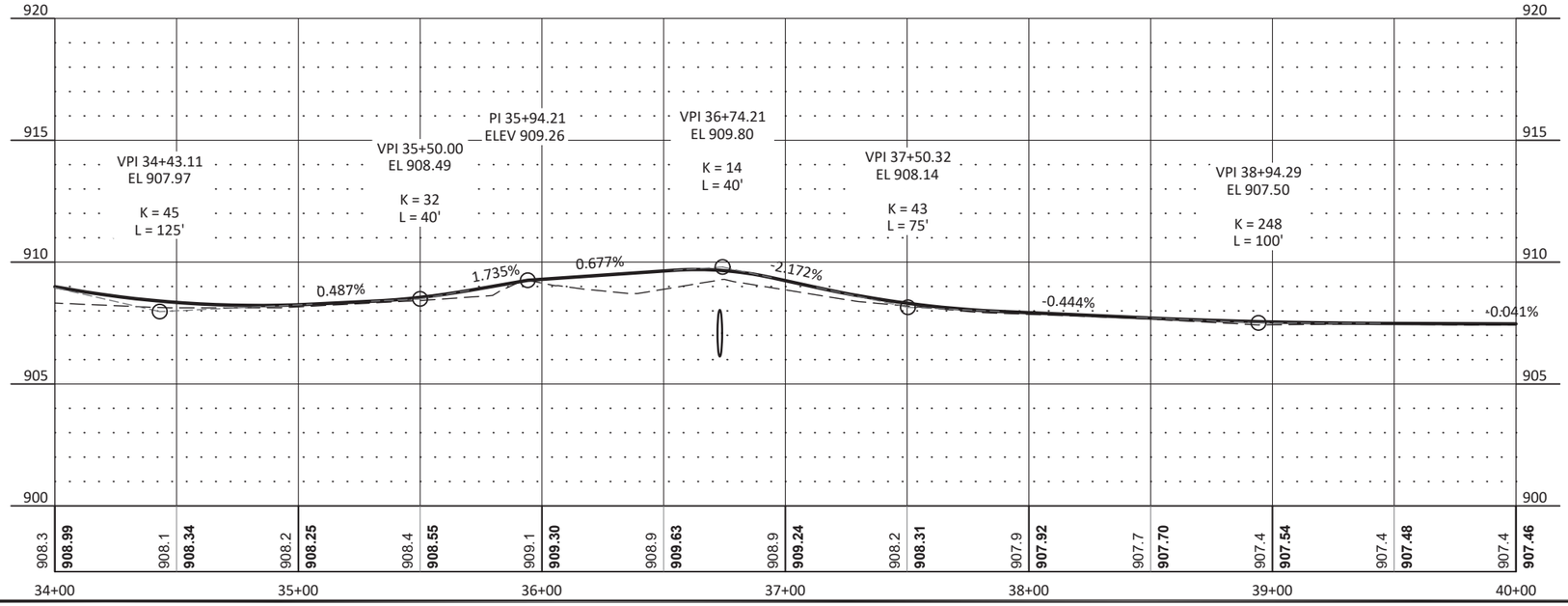
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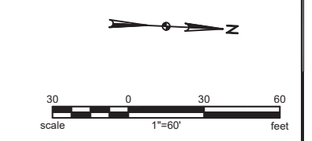
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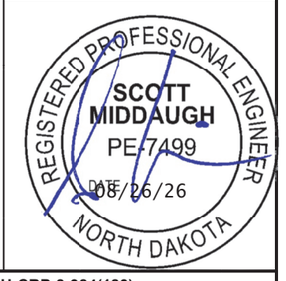
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	60	5

SPEC	CODE	BID ITEM	QTY	UNIT
714	4100	PIPE CONDUIT 18IN		
		Sta. 36+73 ~ ℄	32	LF









TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

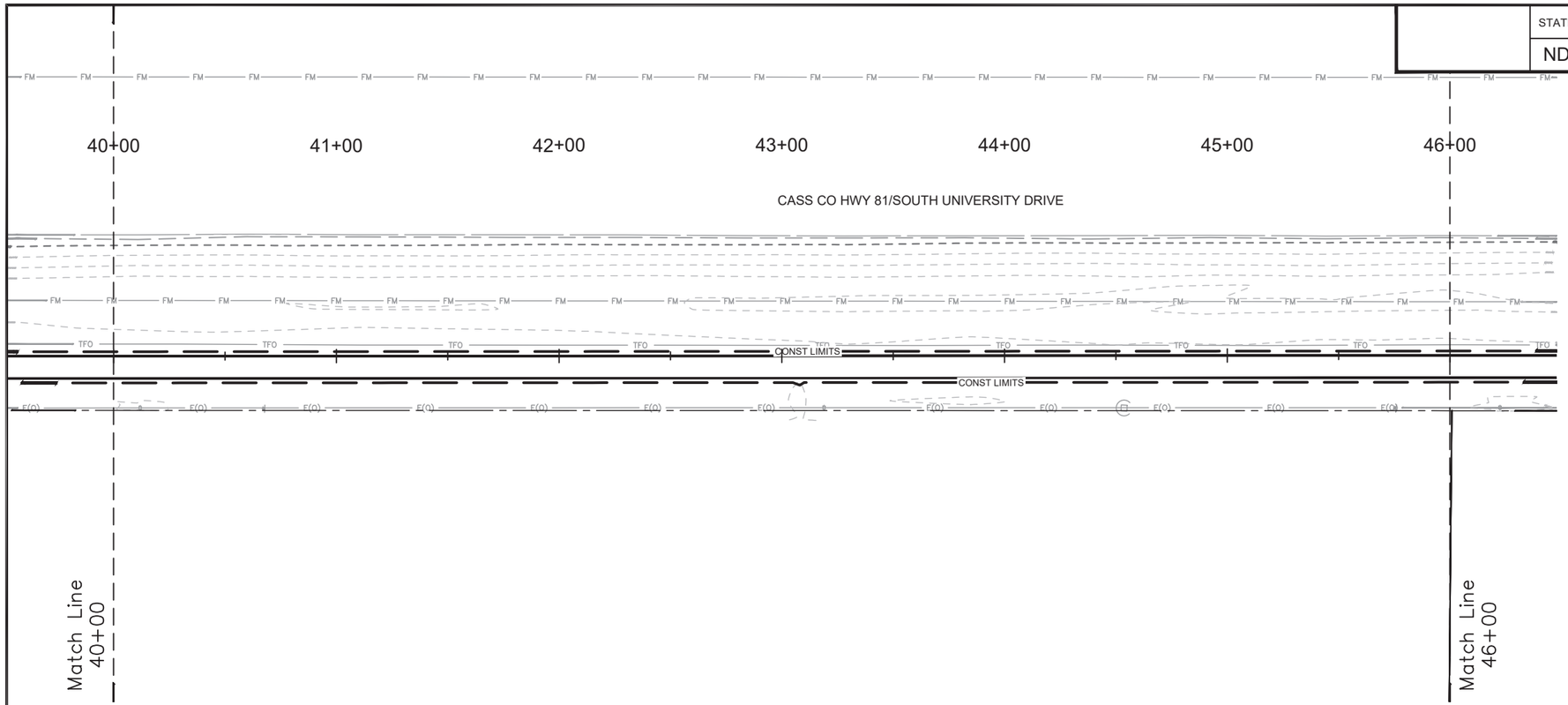
PLAN & PROFILE
STA. 34+00 TO 40+00

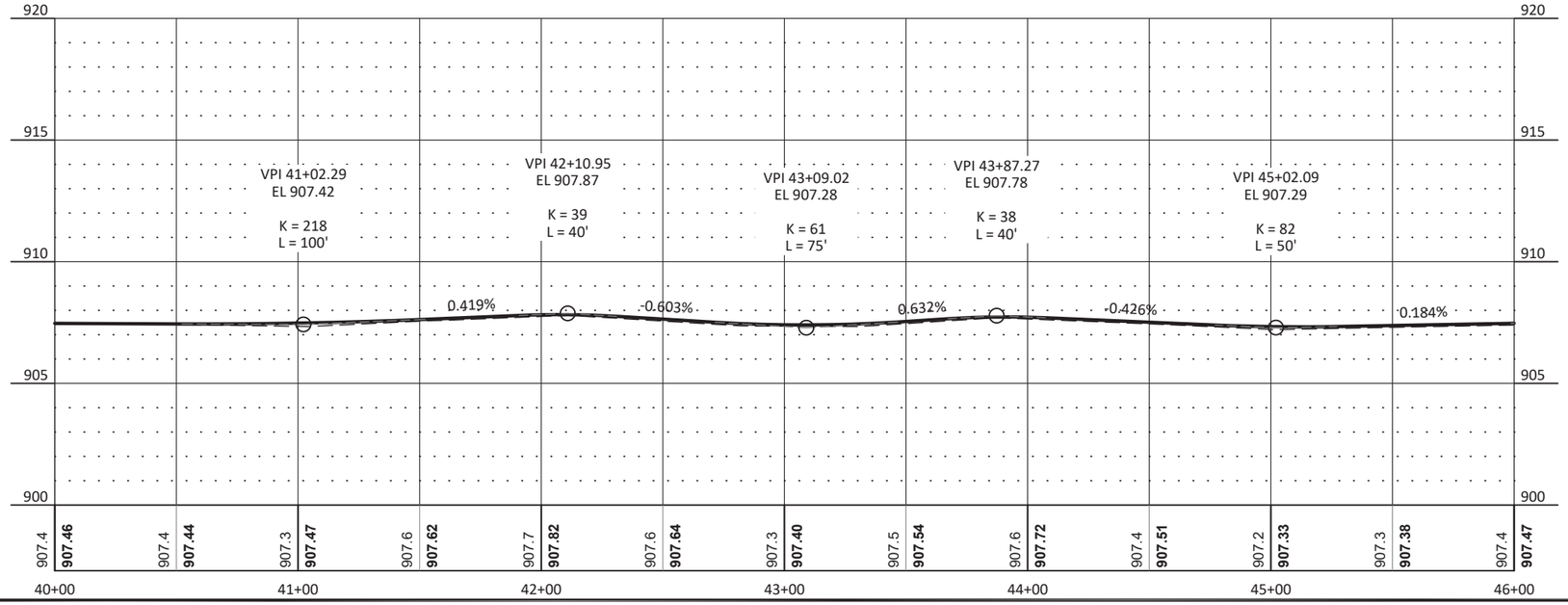
DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

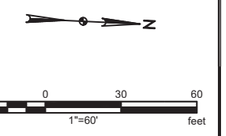
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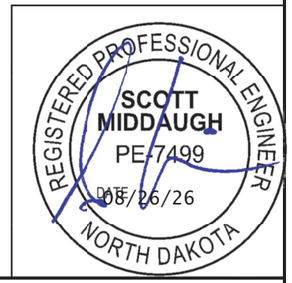
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	60	6









TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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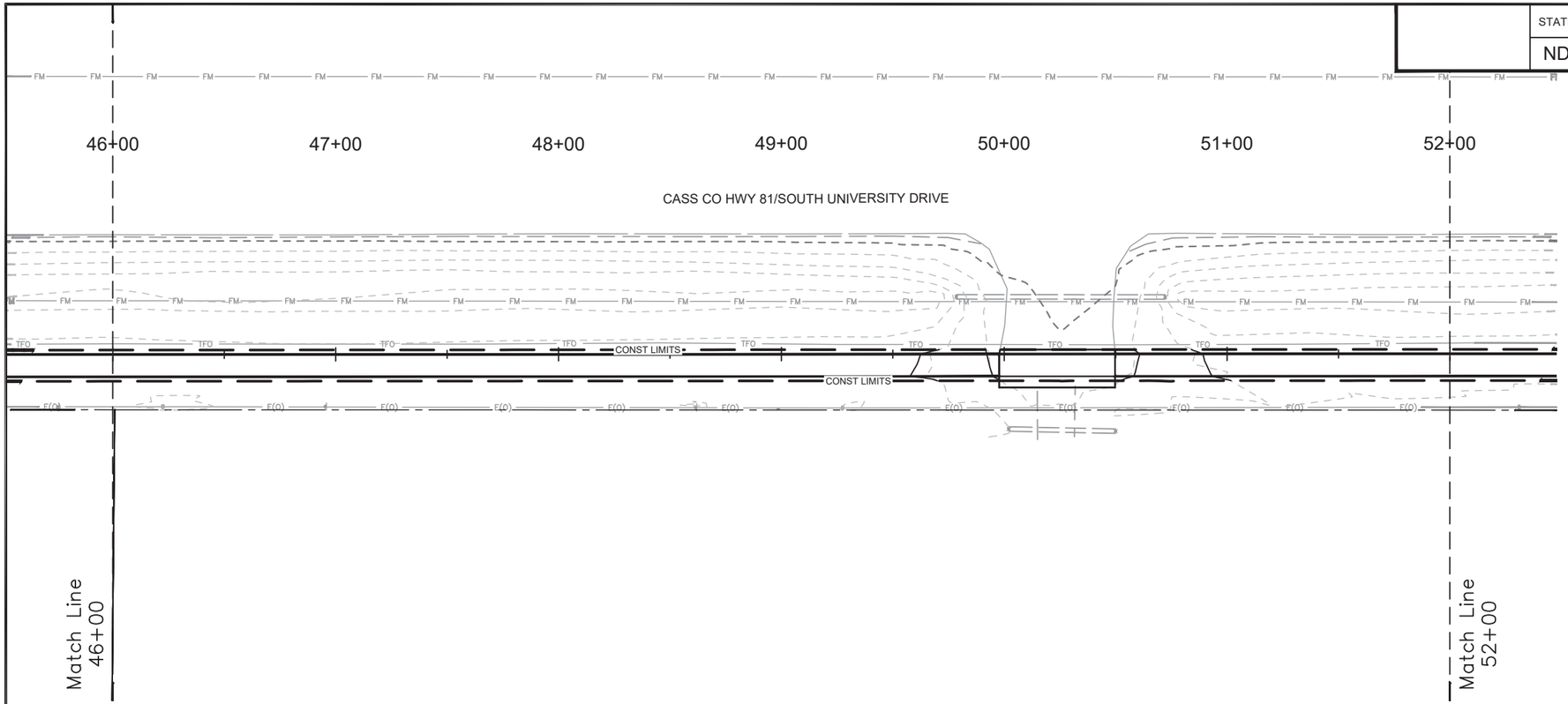
PLAN & PROFILE
STA. 40+00 TO 46+00

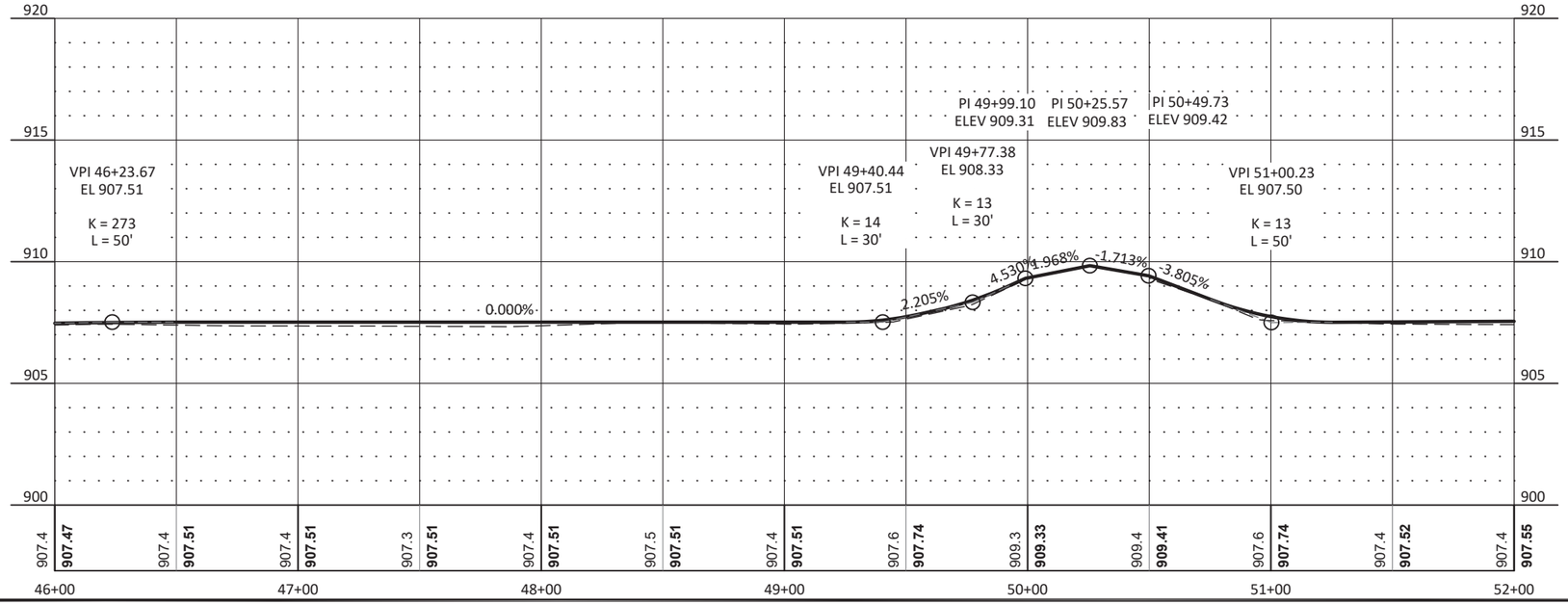
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ZBN	BJT	2503-10999

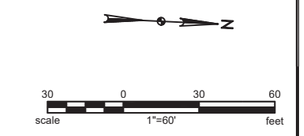
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	60	7









TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

KLJ

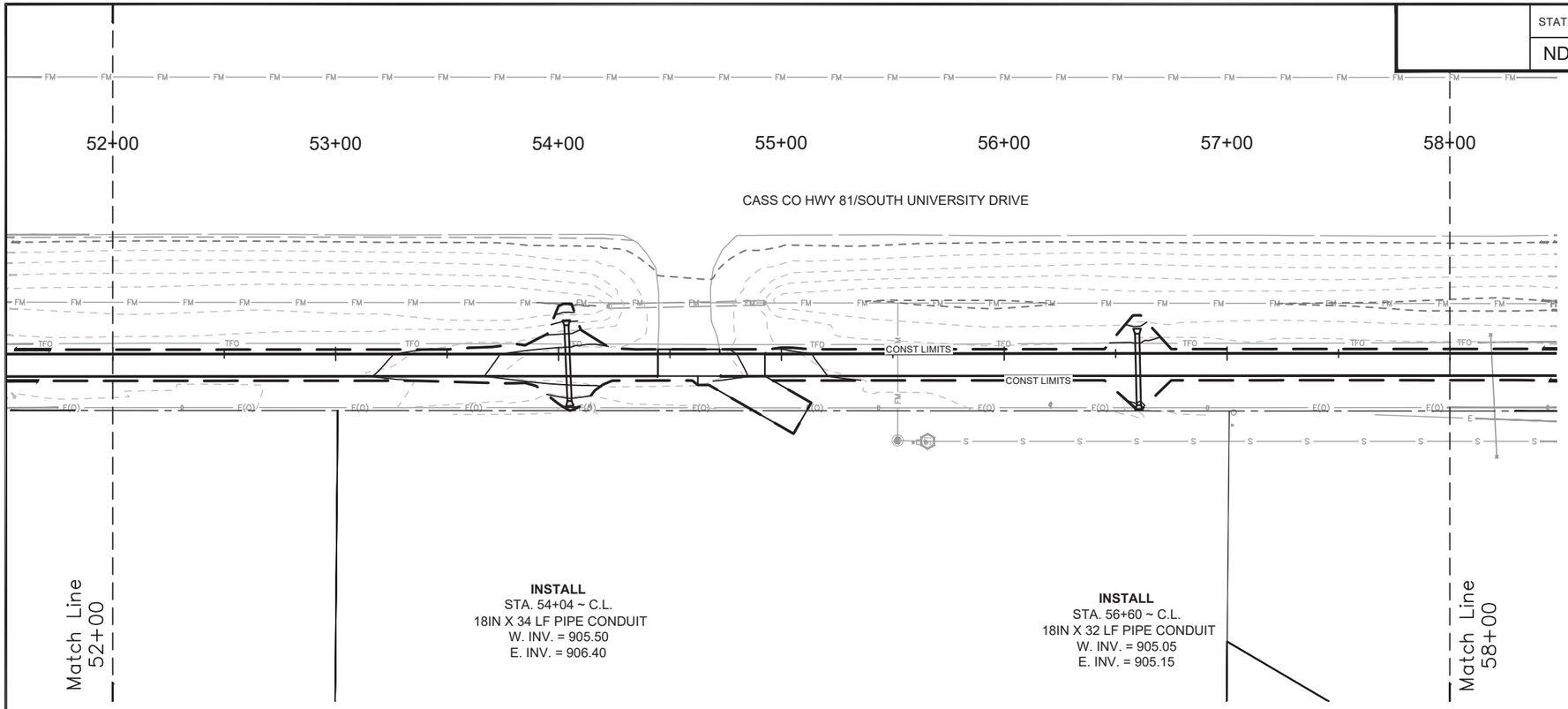
PLAN & PROFILE
STA. 46+00 TO 52+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

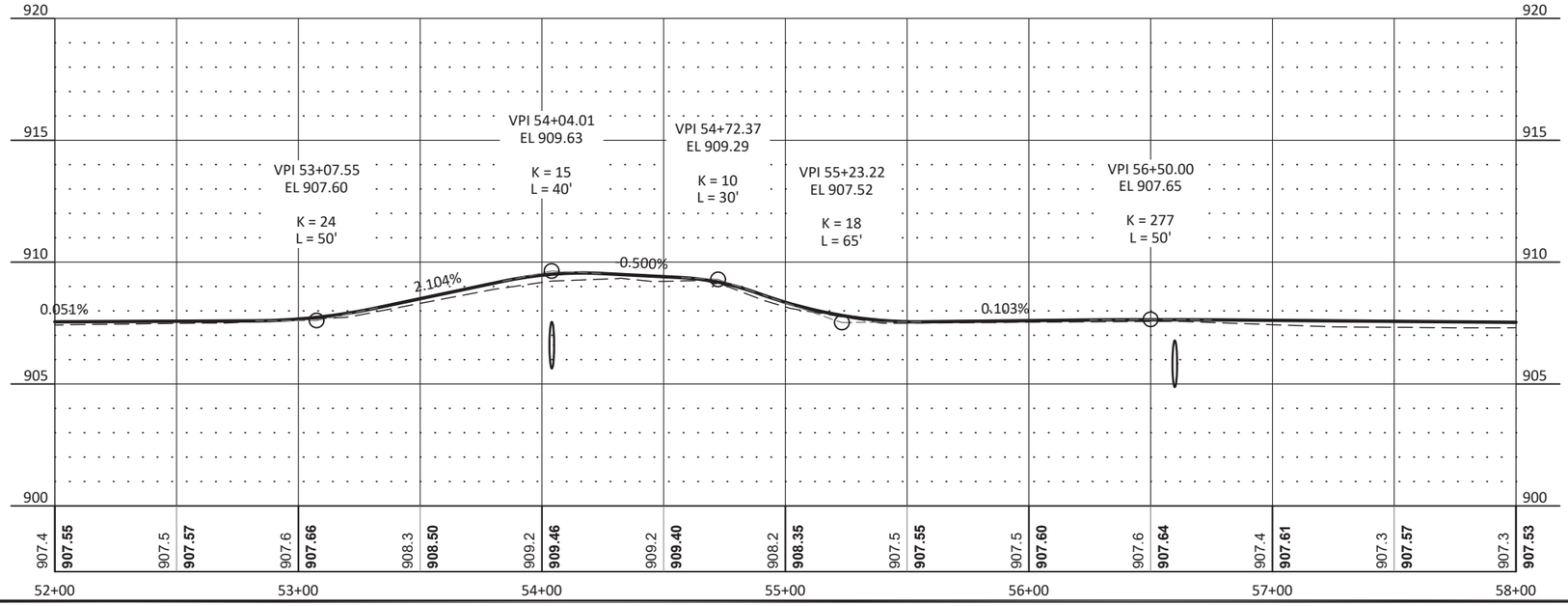
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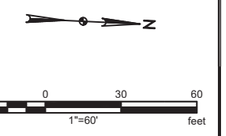
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	60	8



SPEC	CODE	BID ITEM	QTY	UNIT
714	4100	PIPE CONDUIT 18IN		
		Sta. 54+04 ~ ℄	34	LF
		Sta. 56+60 ~ ℄	32	LF







TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

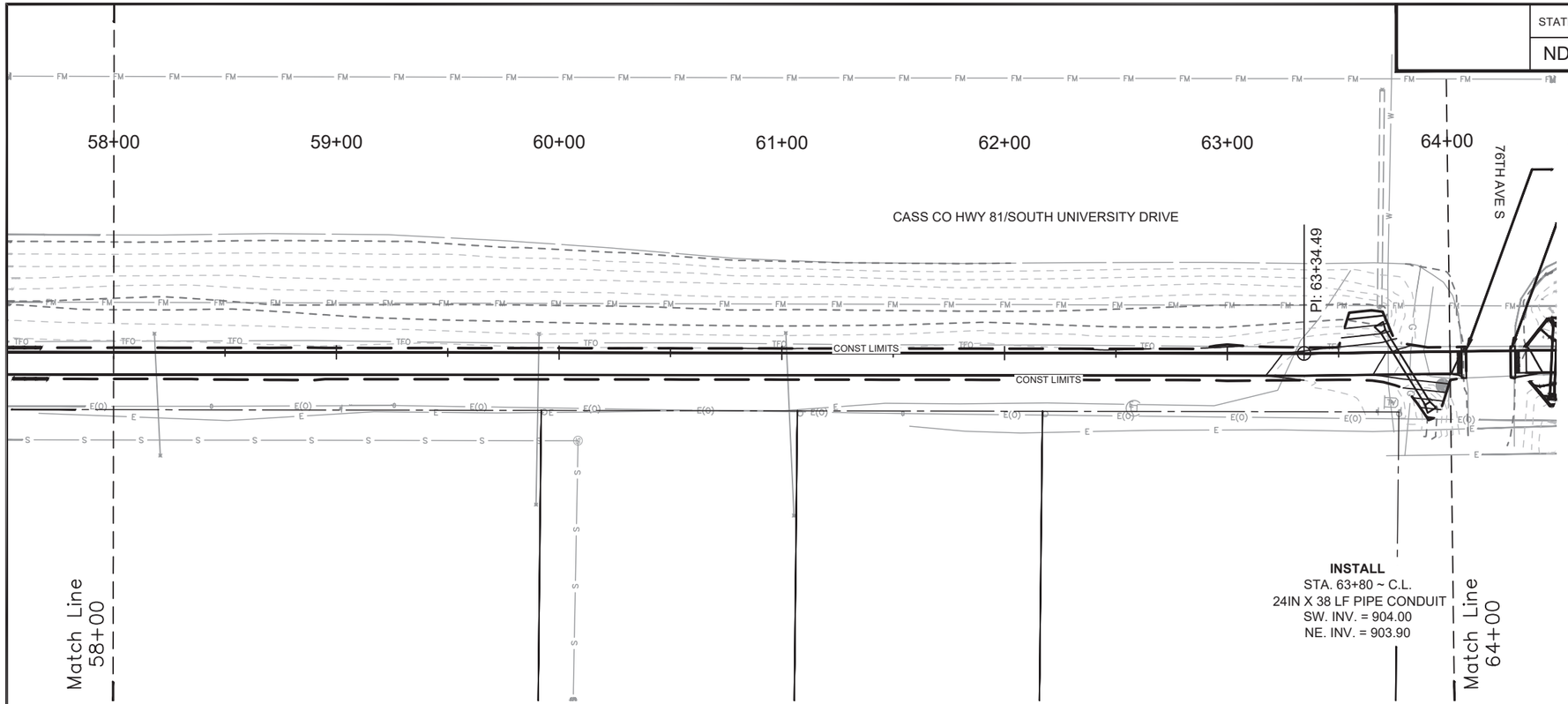
PLAN & PROFILE
STA. 52+00 TO 58+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

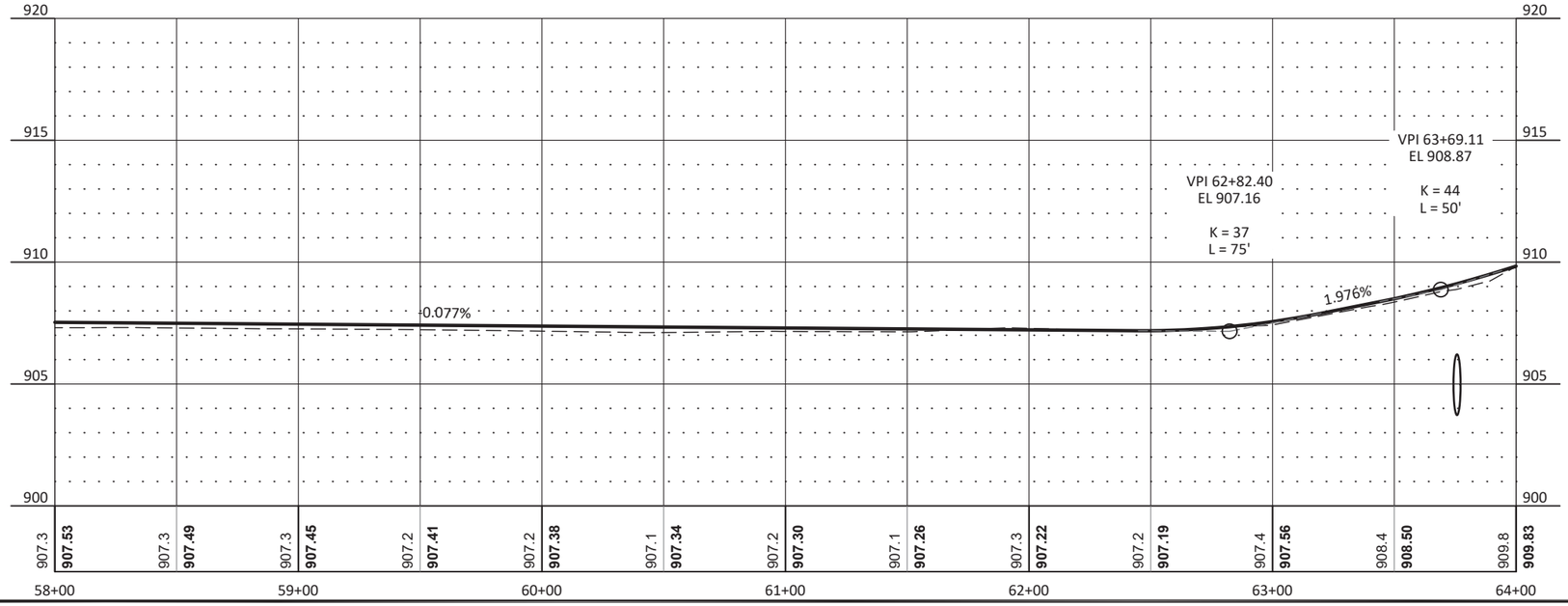
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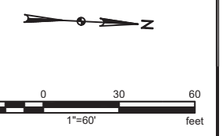
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	60	9



SPEC	CODE	BID ITEM	QTY	UNIT
714	4105	PIPE CONDUIT 24IN		
		Sta. 63+80 ~ ℄	38	LF







TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

PLAN & PROFILE
STA. 58+00 TO 64+00

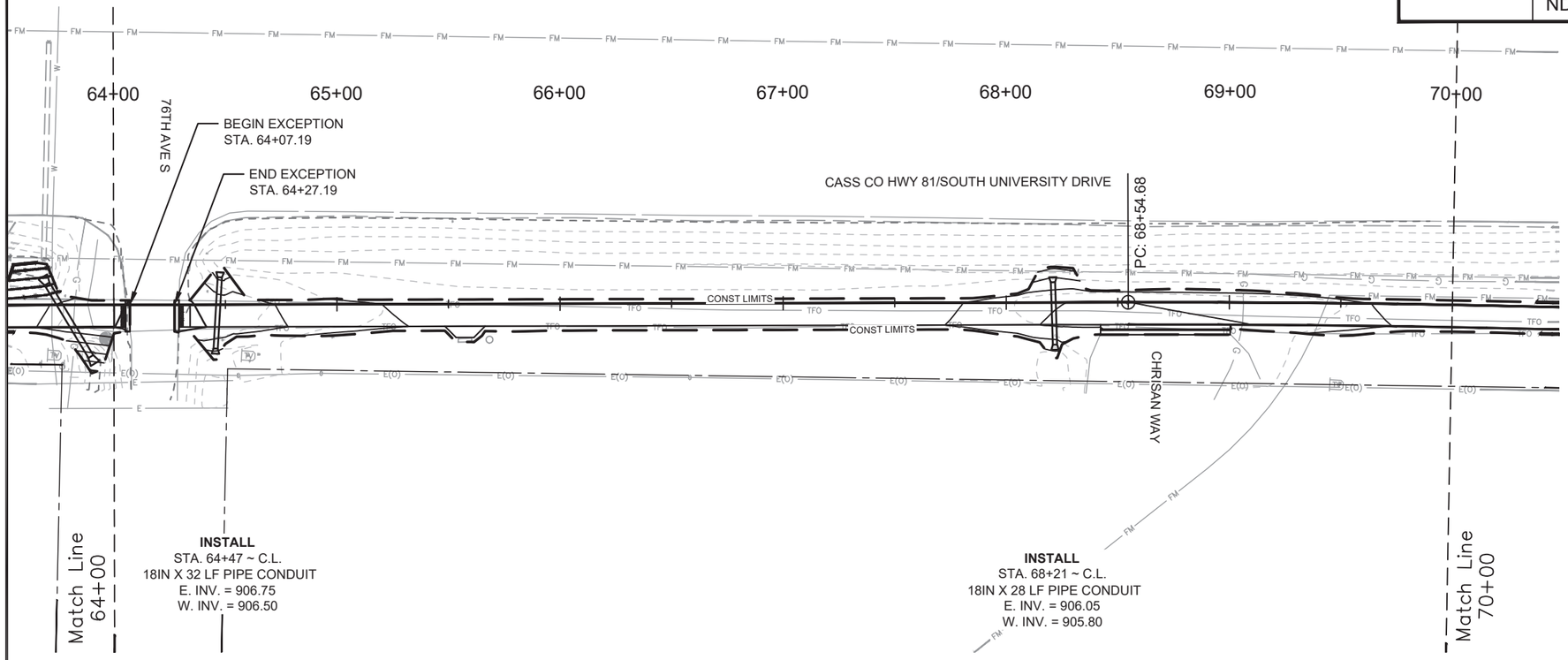
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ZBN	BJT	2503-10999

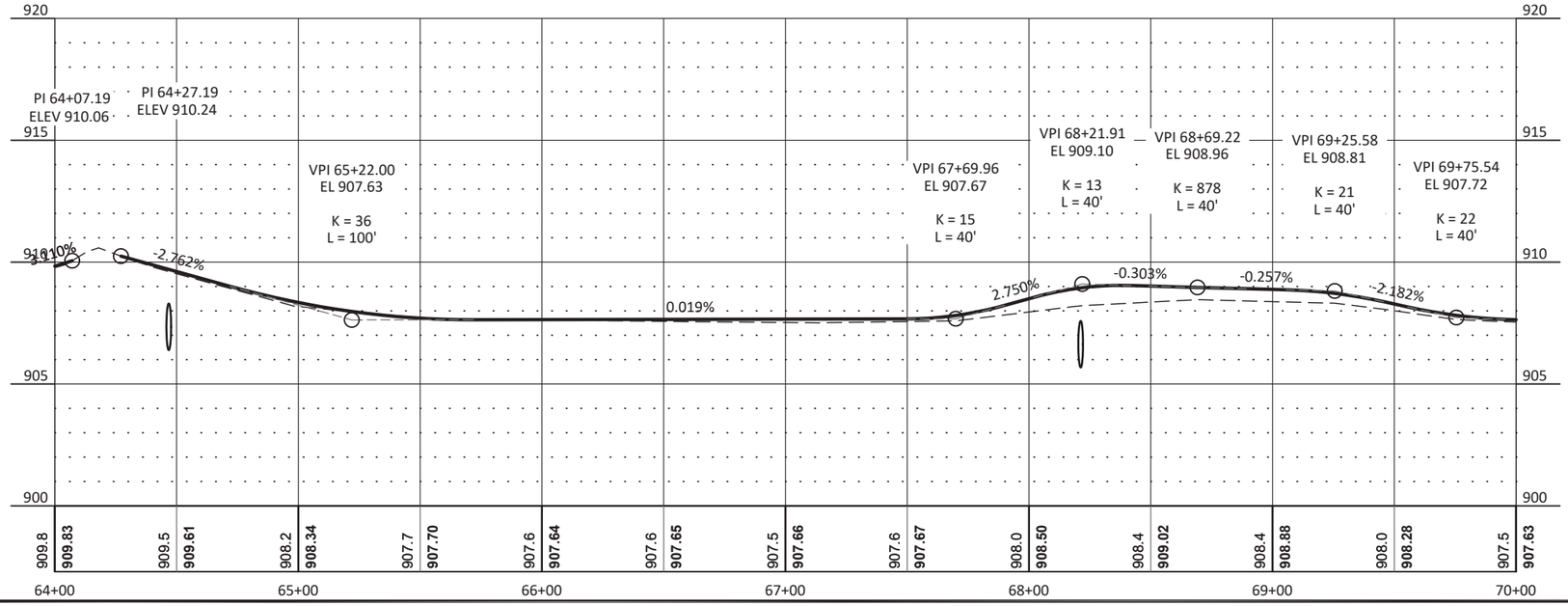
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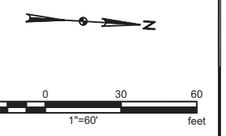
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	60	10

SPEC	CODE	BID ITEM	QTY	UNIT
714	4100	PIPE CONDUIT 18IN		
		Sta. 64+47 ~ ℄	32	LF
		Sta. 68+21 ~ ℄	28	LF









TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

PLAN & PROFILE
STA. 64+00 TO 70+00

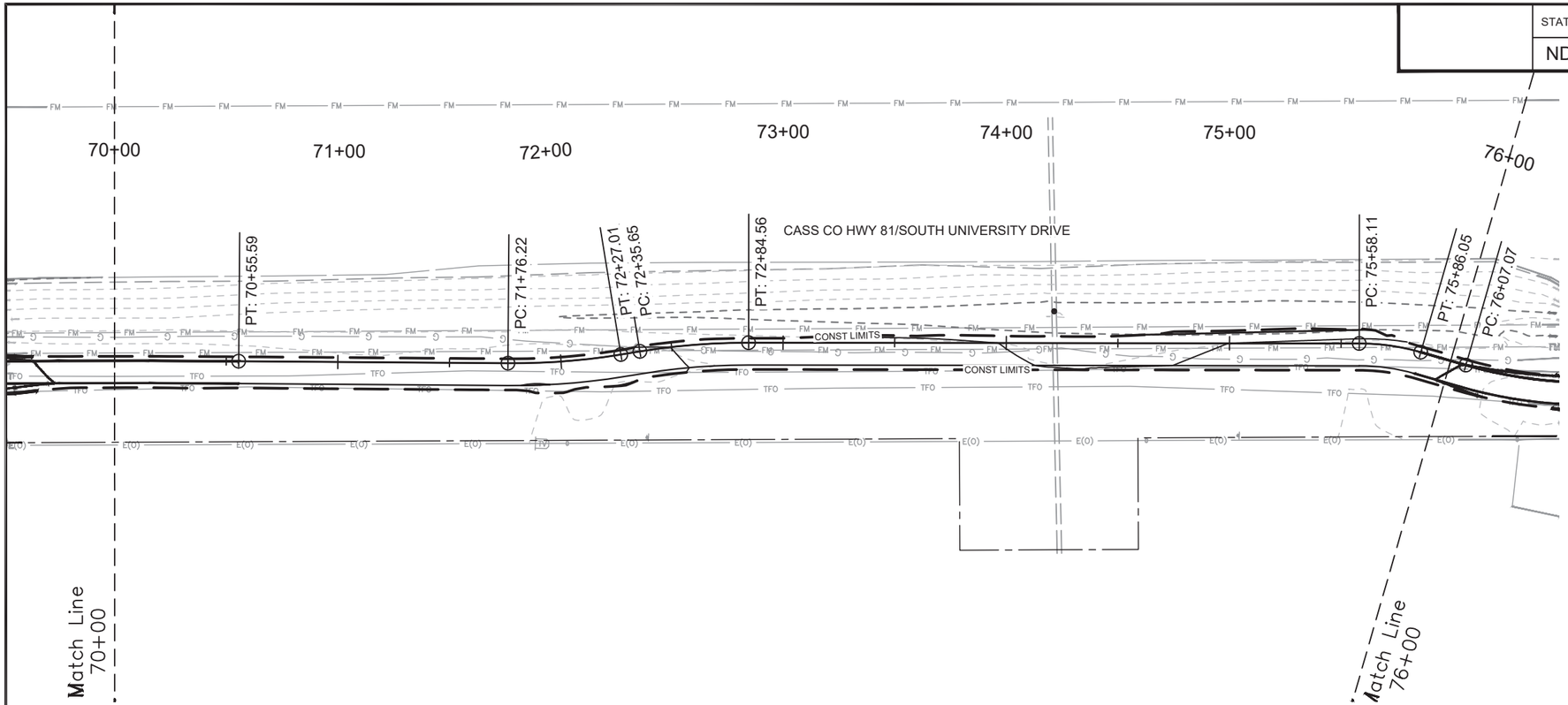
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ZBN	BJT	2503-10999

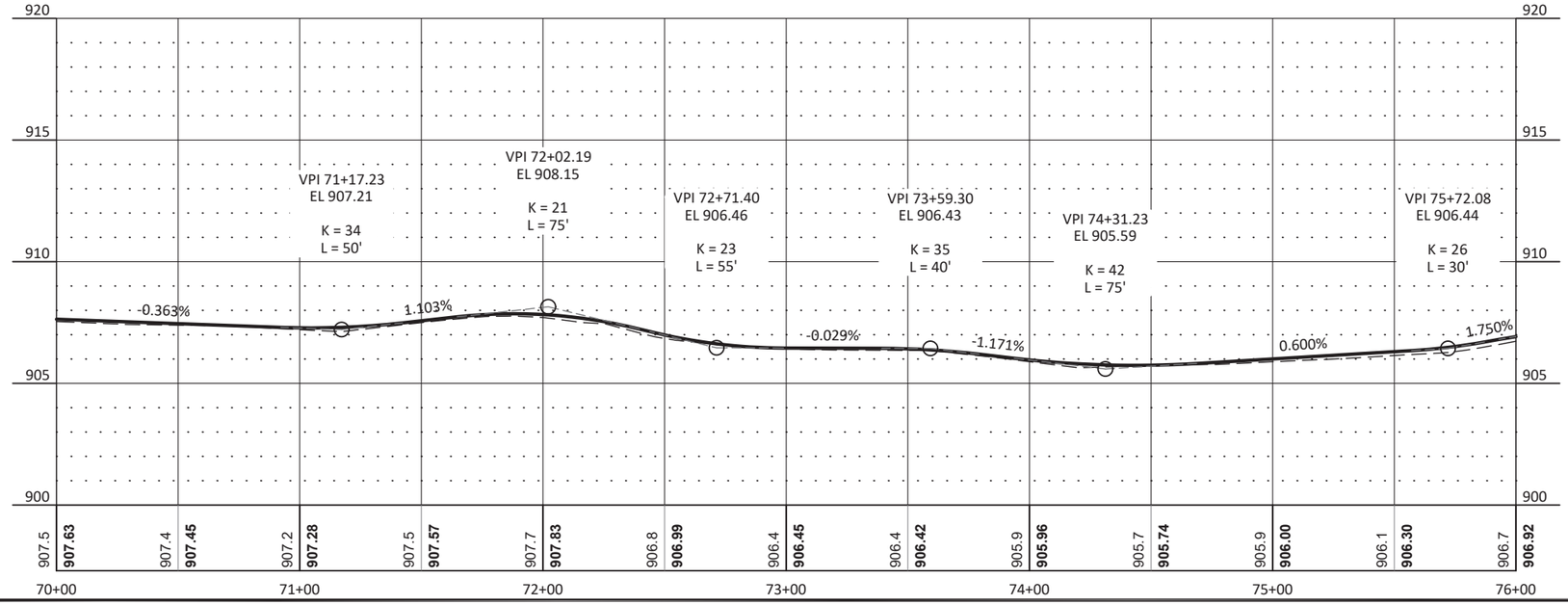
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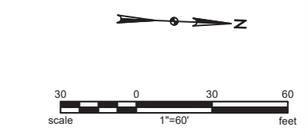
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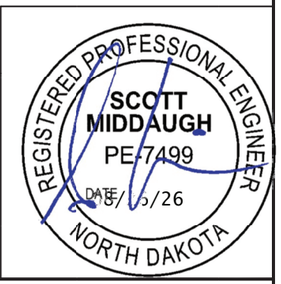
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	60	11

SPEC	CODE	BID ITEM	QTY	UNIT
722	3495	MODIFY INLET		
		Sta. 74+21 ~ LT	1	EA









TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

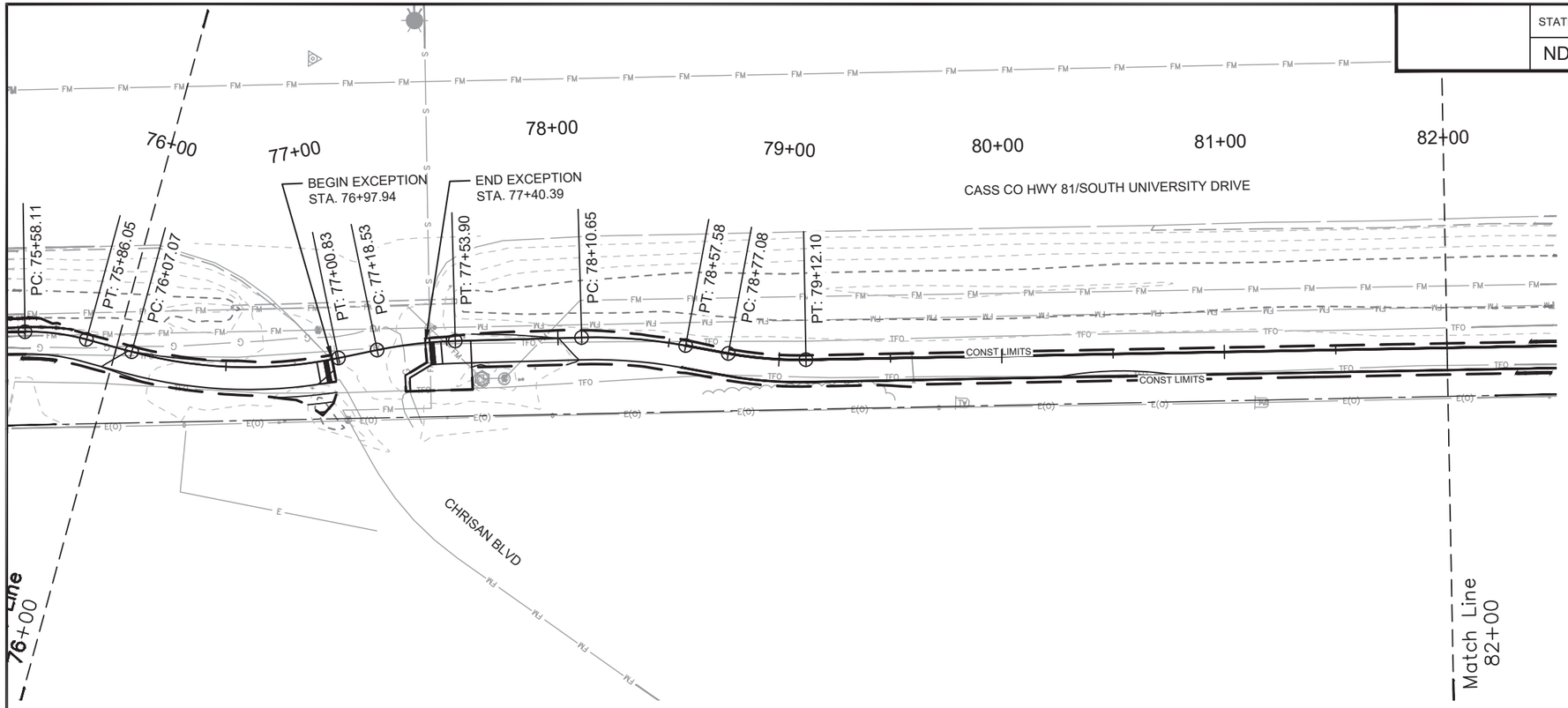
PLAN & PROFILE
STA. 70+00 TO 76+00

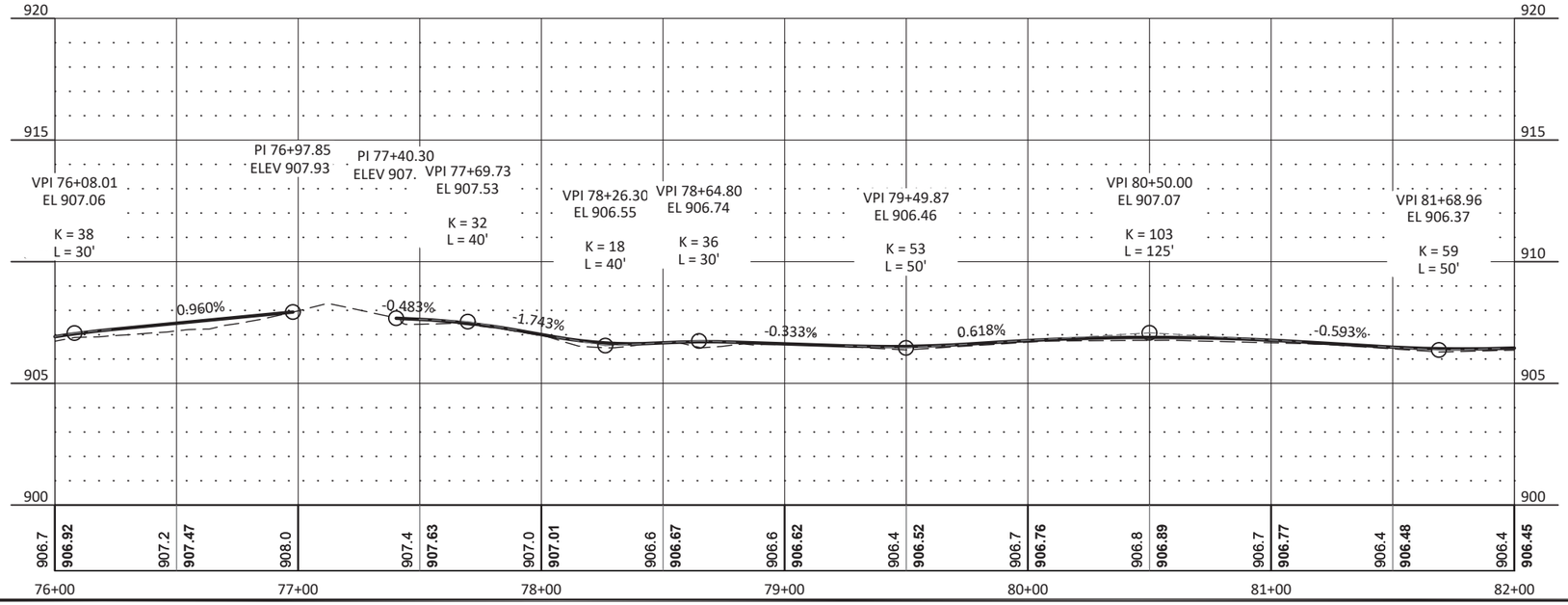
DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

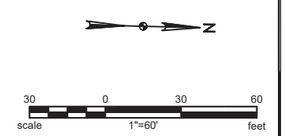
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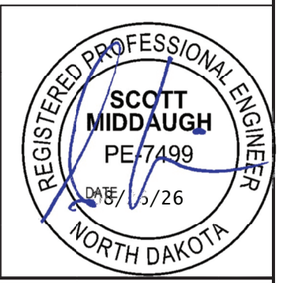
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	60	12









TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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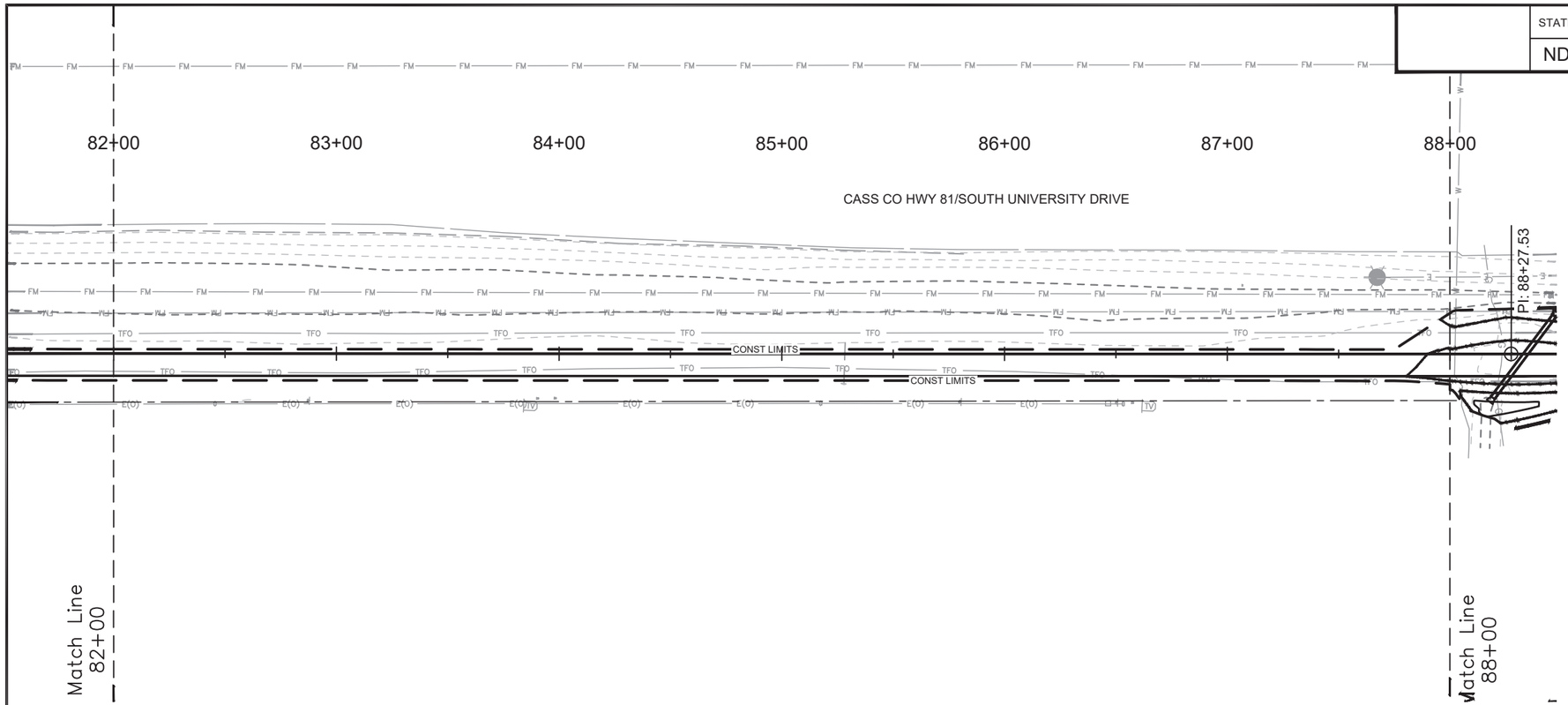
PLAN & PROFILE
STA. 76+00 TO 82+00

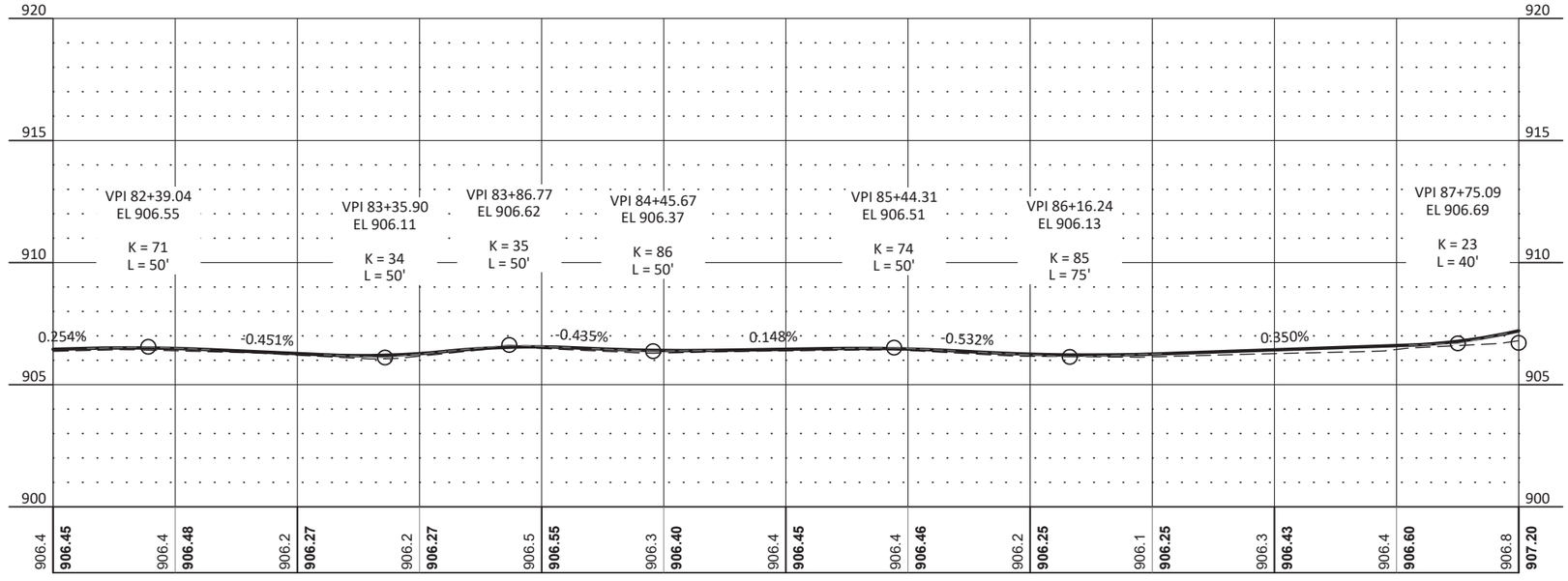
DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

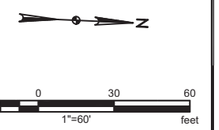
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	60	13









TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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PLAN & PROFILE
STA. 82+00 TO 88+00

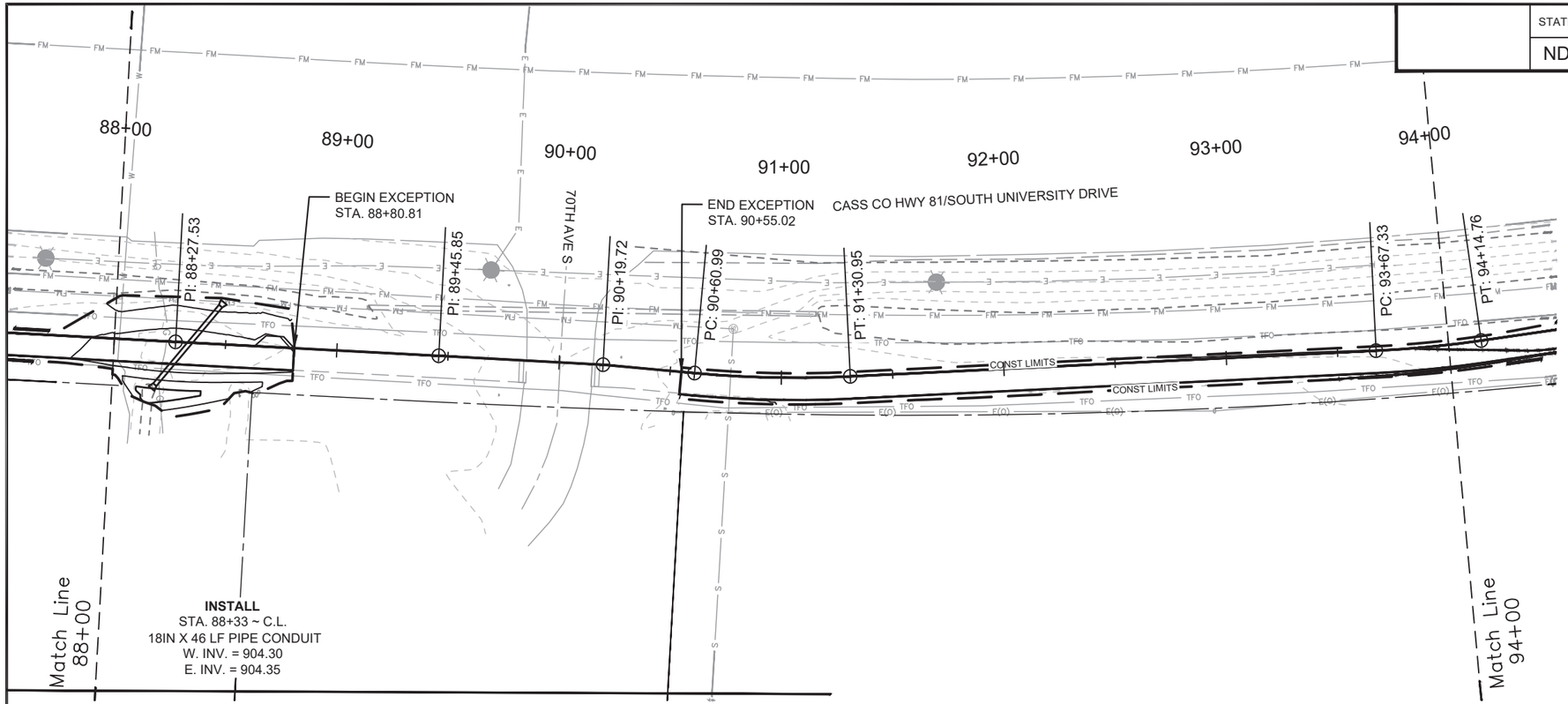
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ZBN	BJT	2503-10999

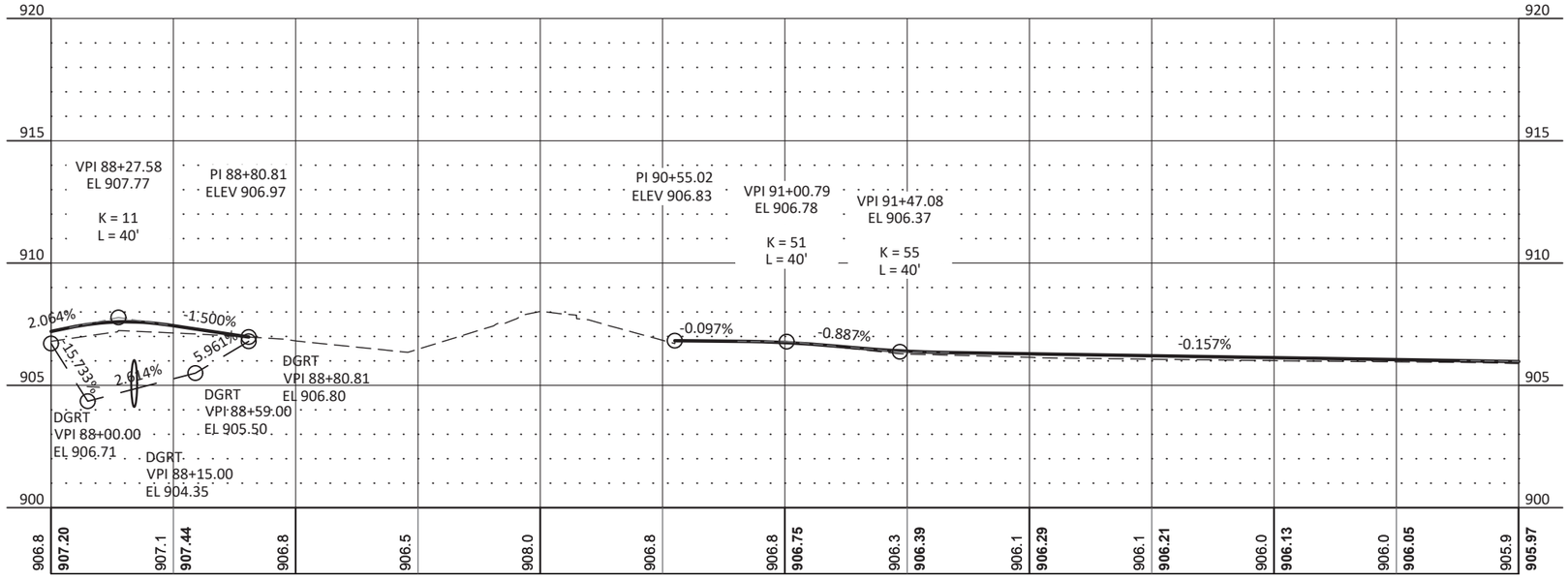
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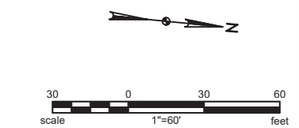
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	60	14

SPEC	CODE	BID ITEM	QTY	UNIT
714	4100	PIPE CONDUIT 18IN		
		Sta. 88+33 ~ ℄	46	LF









TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

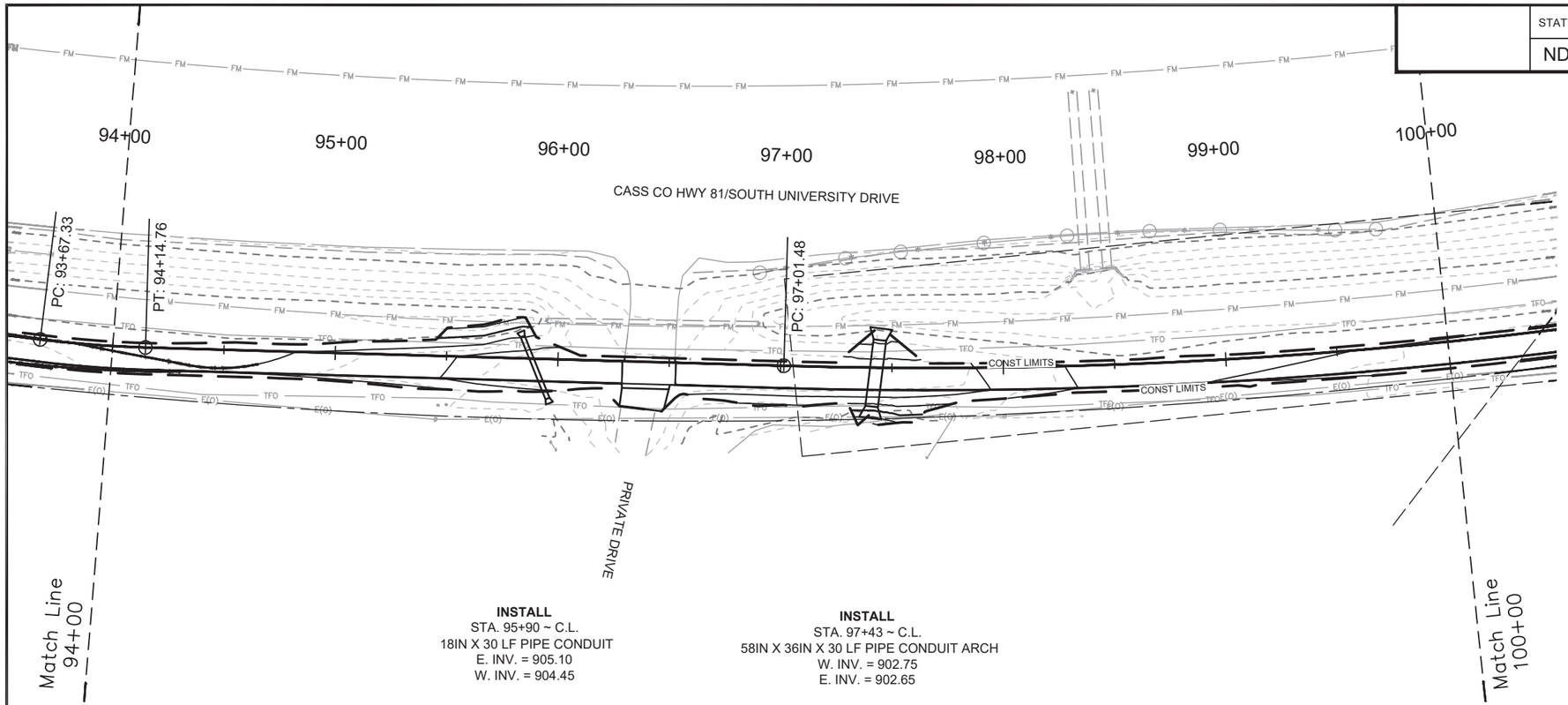
PLAN & PROFILE
STA. 88+00 TO 94+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

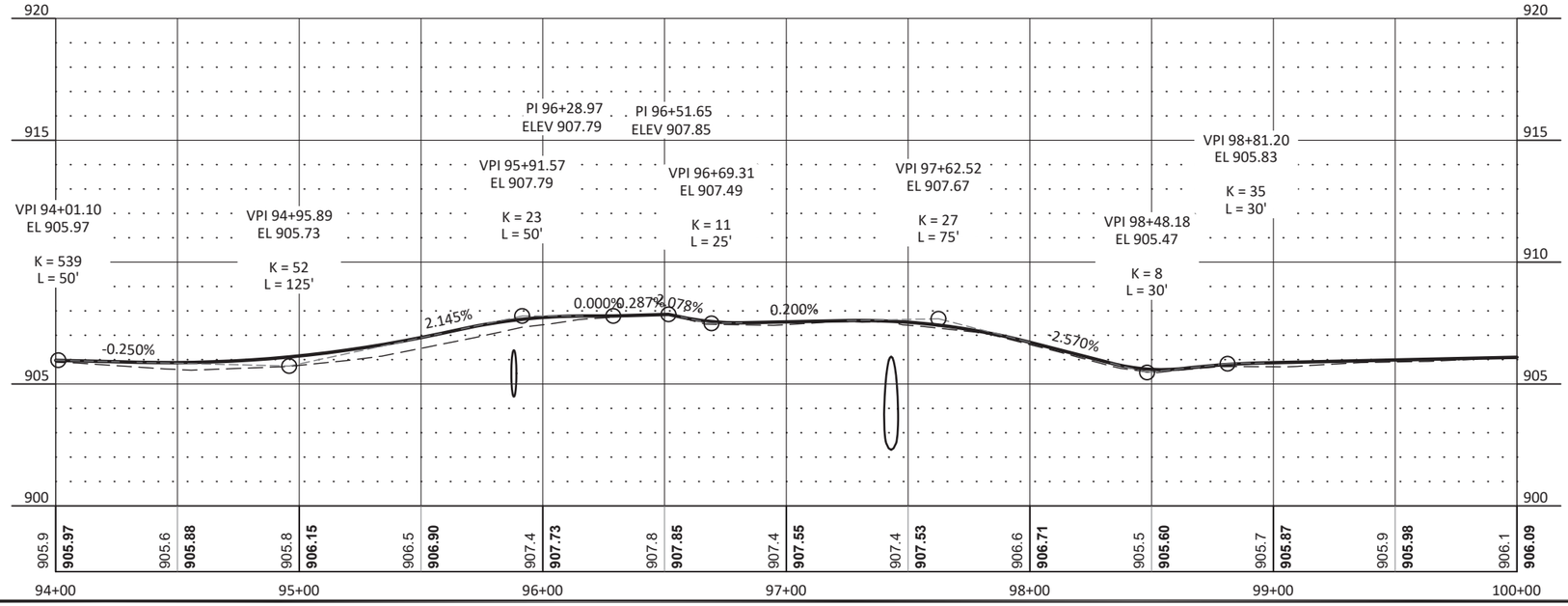
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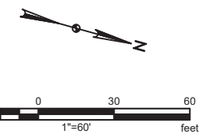
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	60	15



SPEC	CODE	BID ITEM	QTY	UNIT
714	4100	PIPE CONDUIT 18IN		
		Sta. 95+90 ~ ℄	30	LF
714	4229	PIPE CONDUIT ARCH 58IN X 36IN		
		Sta. 97+43 ~ ℄	30	LF







TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

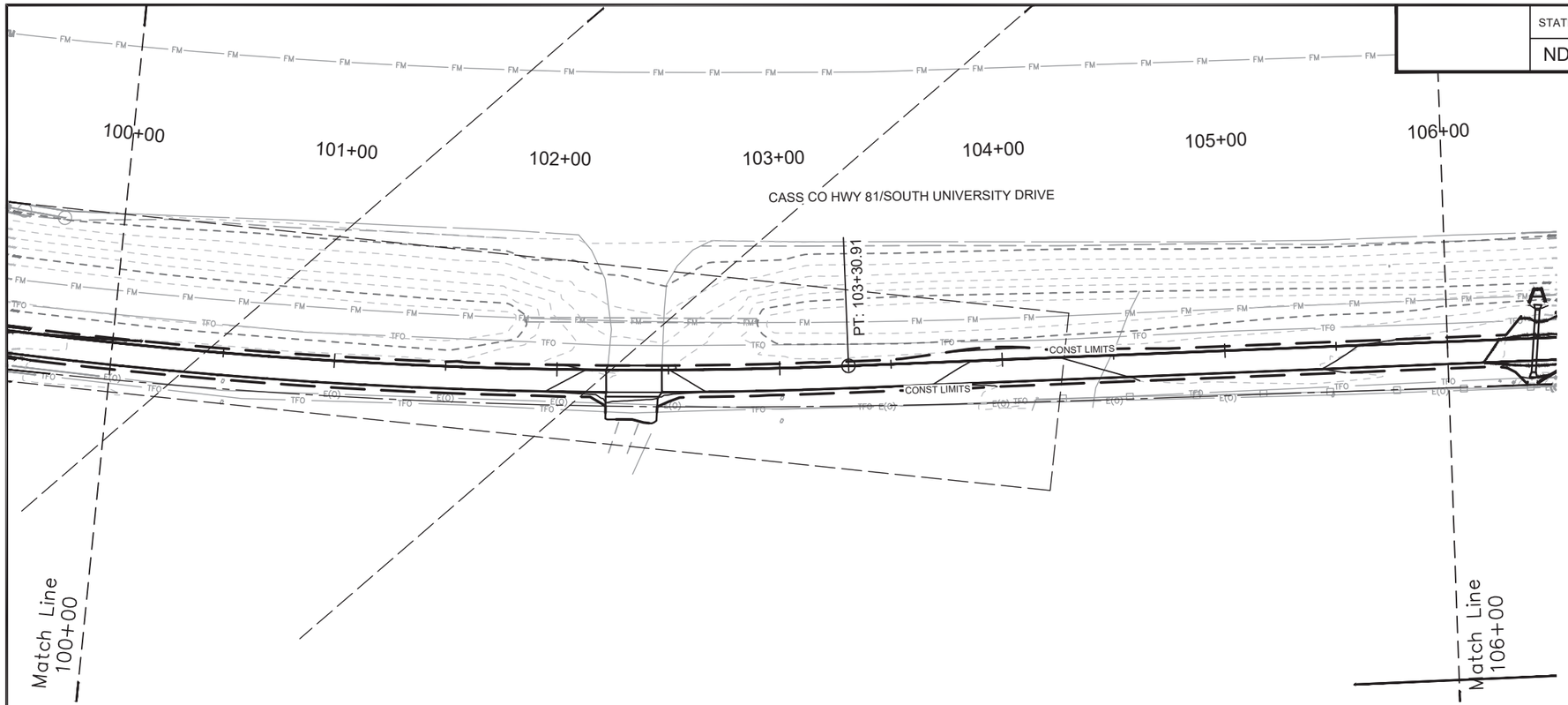
PLAN & PROFILE
STA. 94+00 TO 100+00

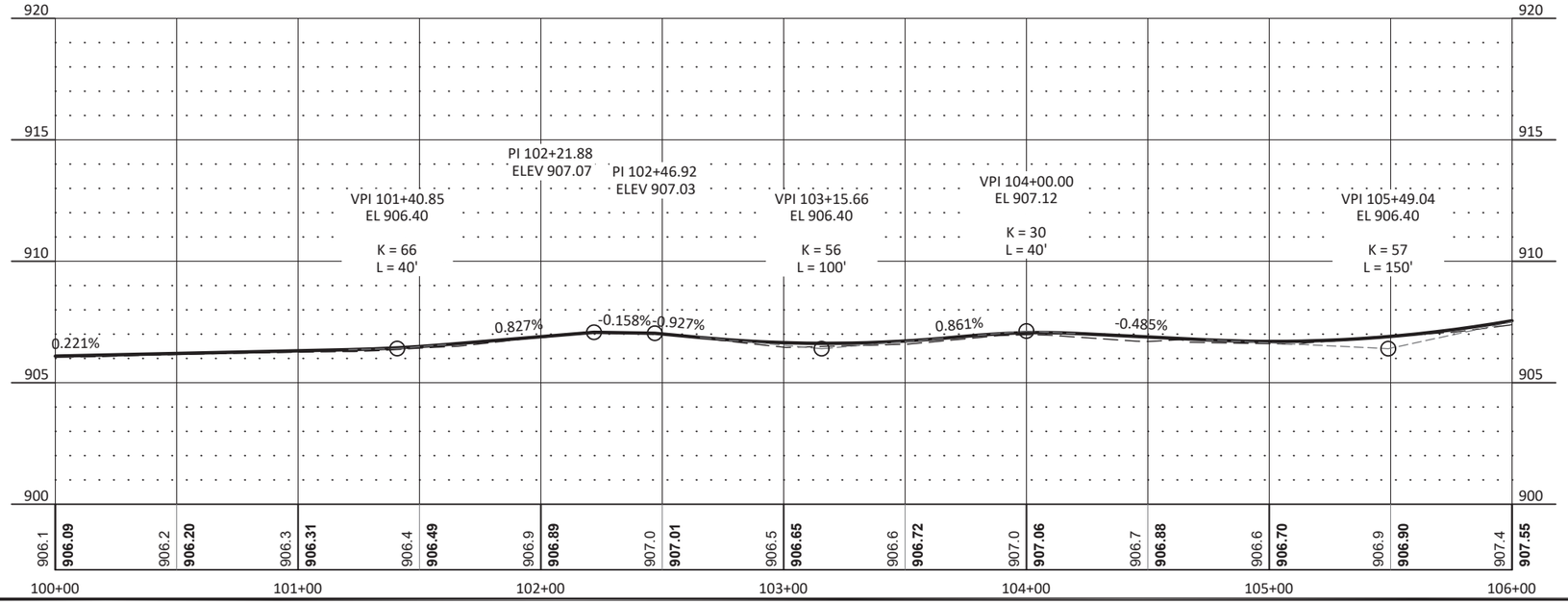
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ZBN	BJT	2503-10999

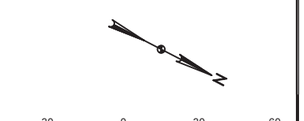
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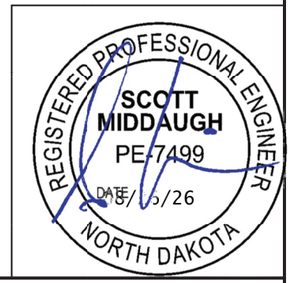
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	60	16









TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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PLAN & PROFILE
STA. 100+00 TO 106+00

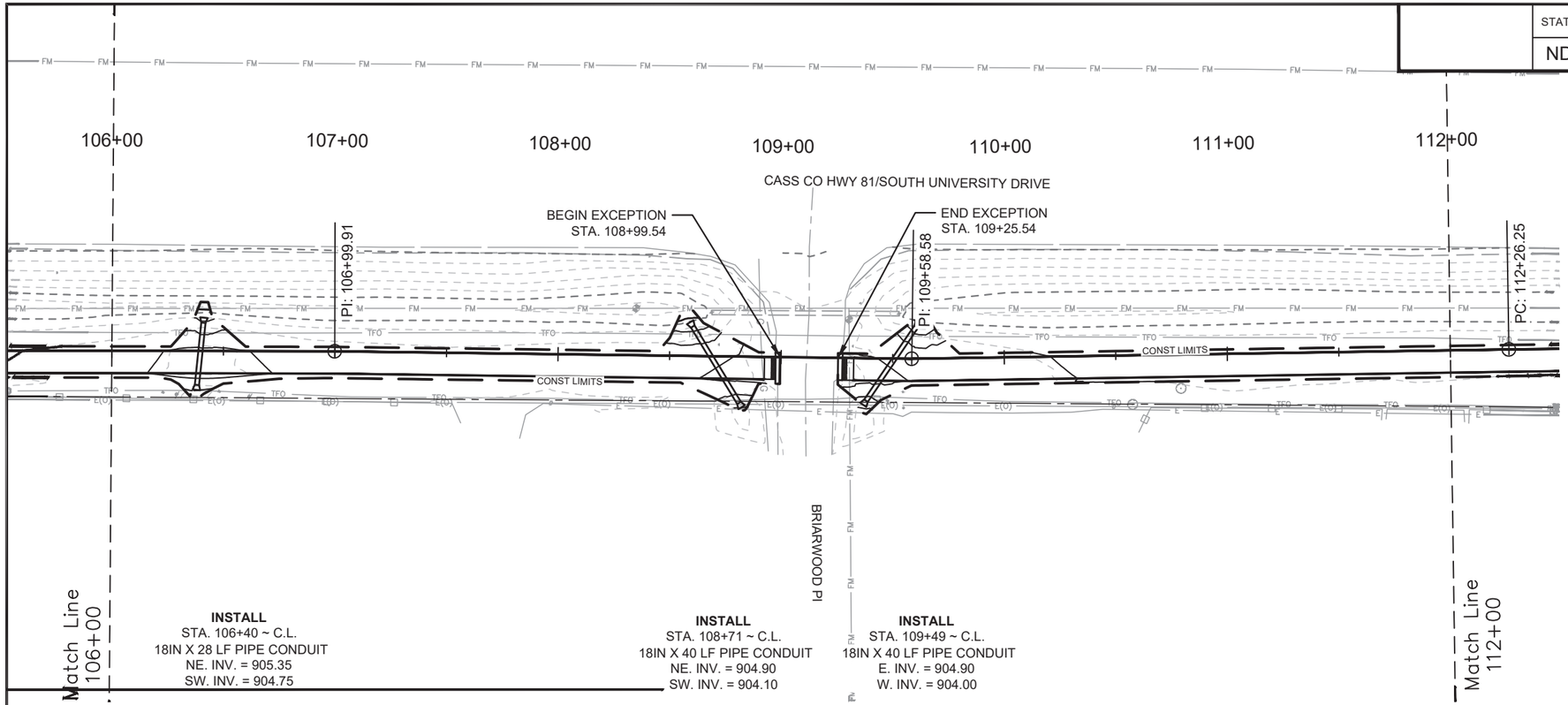
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ZBN	BJT	2503-10999

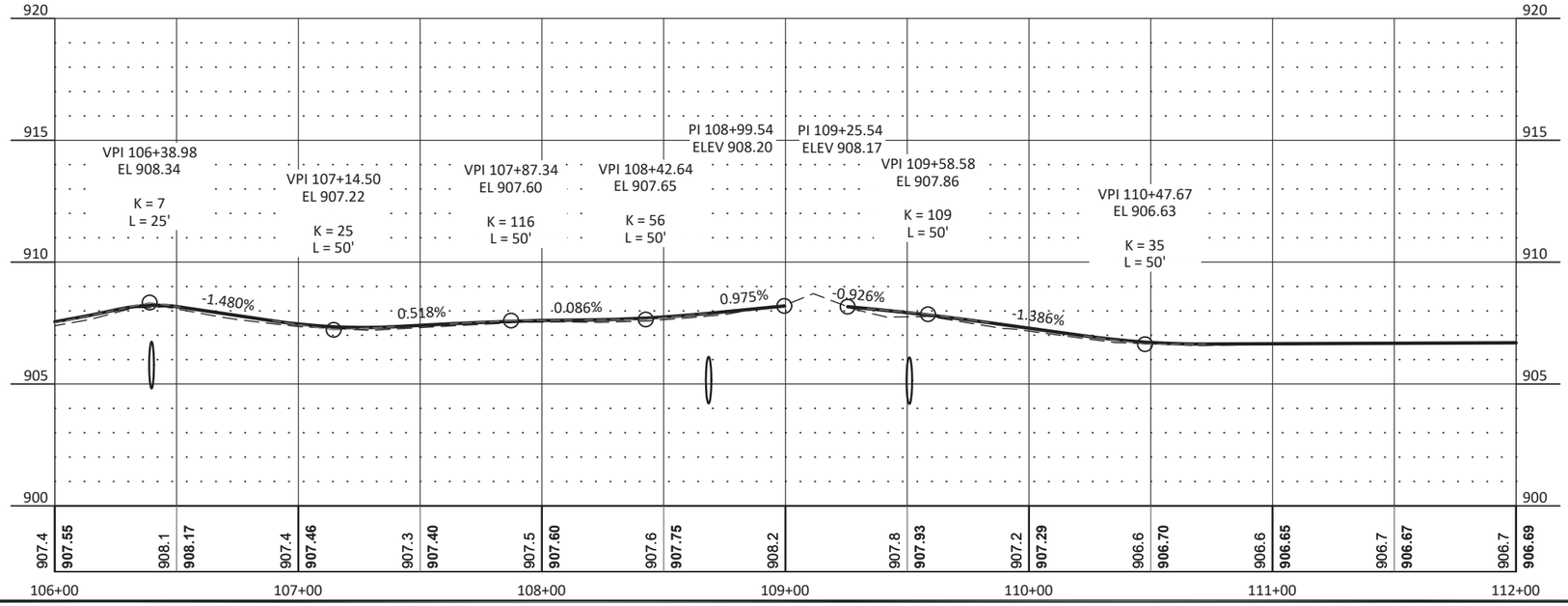
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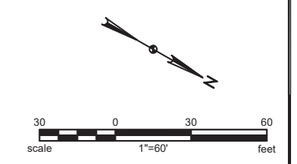
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	60	17

SPEC	CODE	BID ITEM	QTY	UNIT
714	4100	PIPE CONDUIT 18IN		
		Sta. 106+40 ~ ℄	28	LF
		Sta. 108+71 ~ ℄	40	LF
		Sta. 109+49 ~ ℄	40	LF









TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

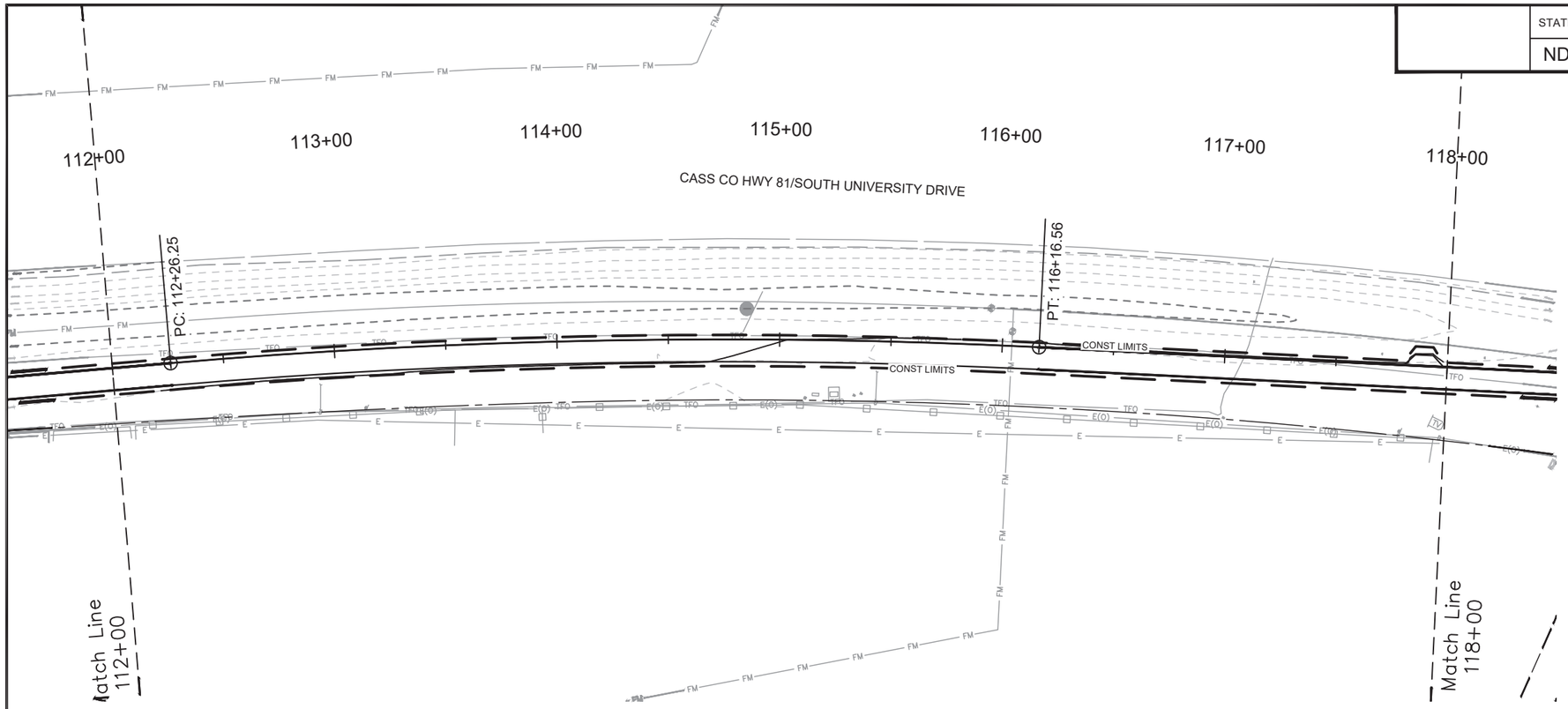
PLAN & PROFILE
STA. 106+00 TO 112+00

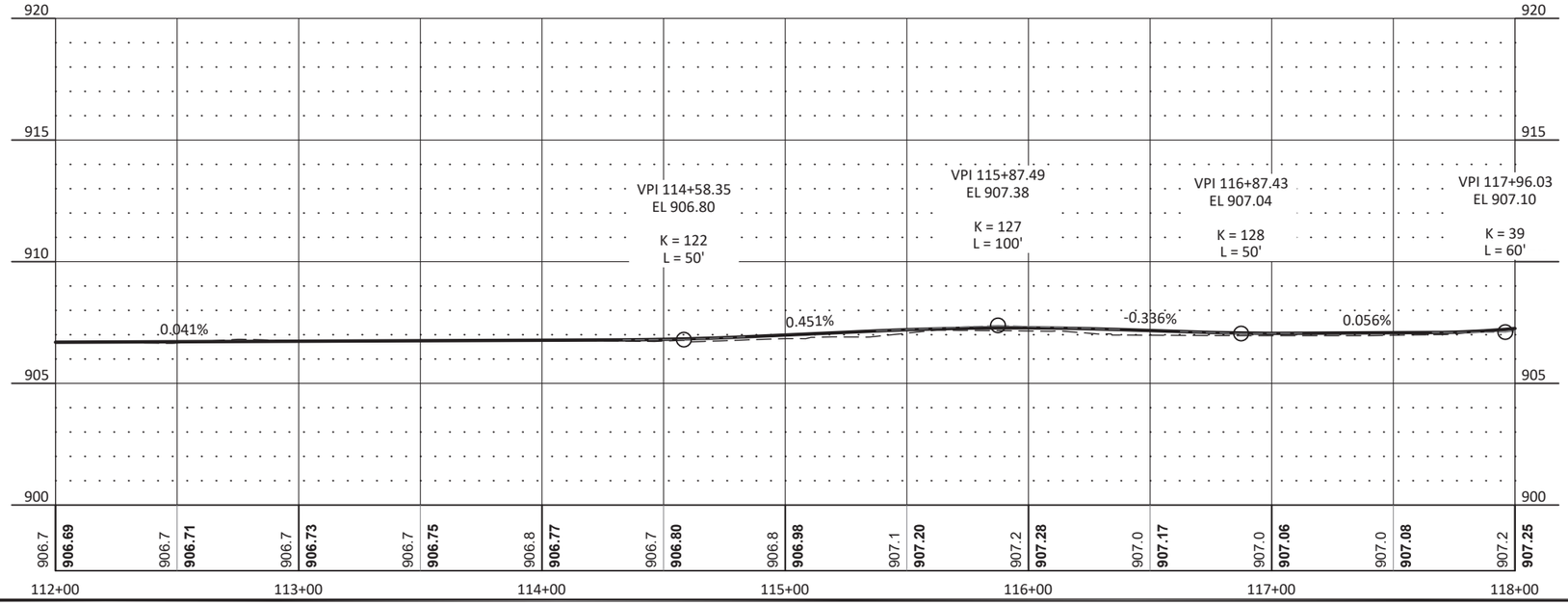
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ZBN	BJT	2503-10999

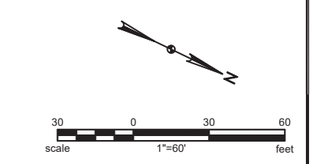
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TMA-TAU-CRP-8-984(183)	60	18









TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

PLAN & PROFILE
STA. 112+00 TO 118+00

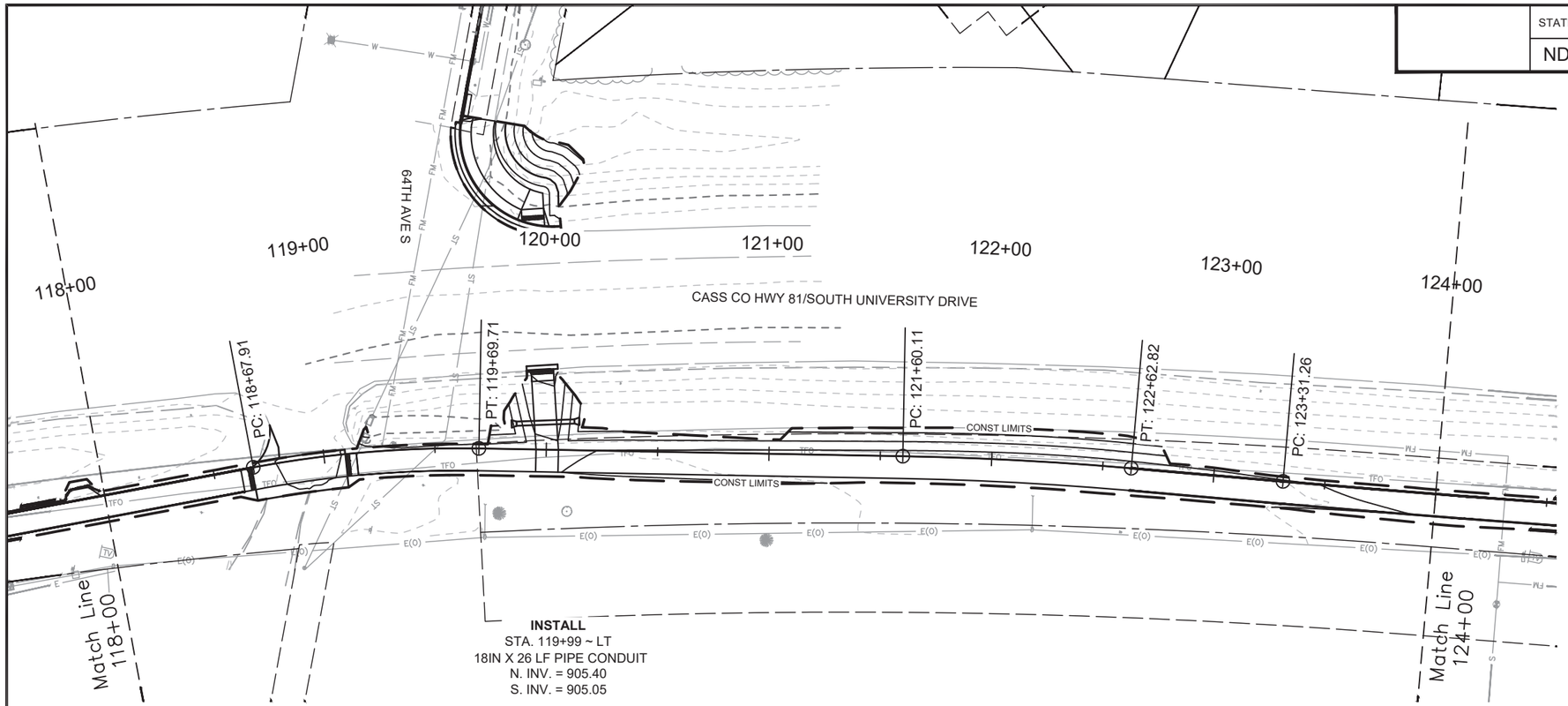
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ZBN	BJT	2503-10999

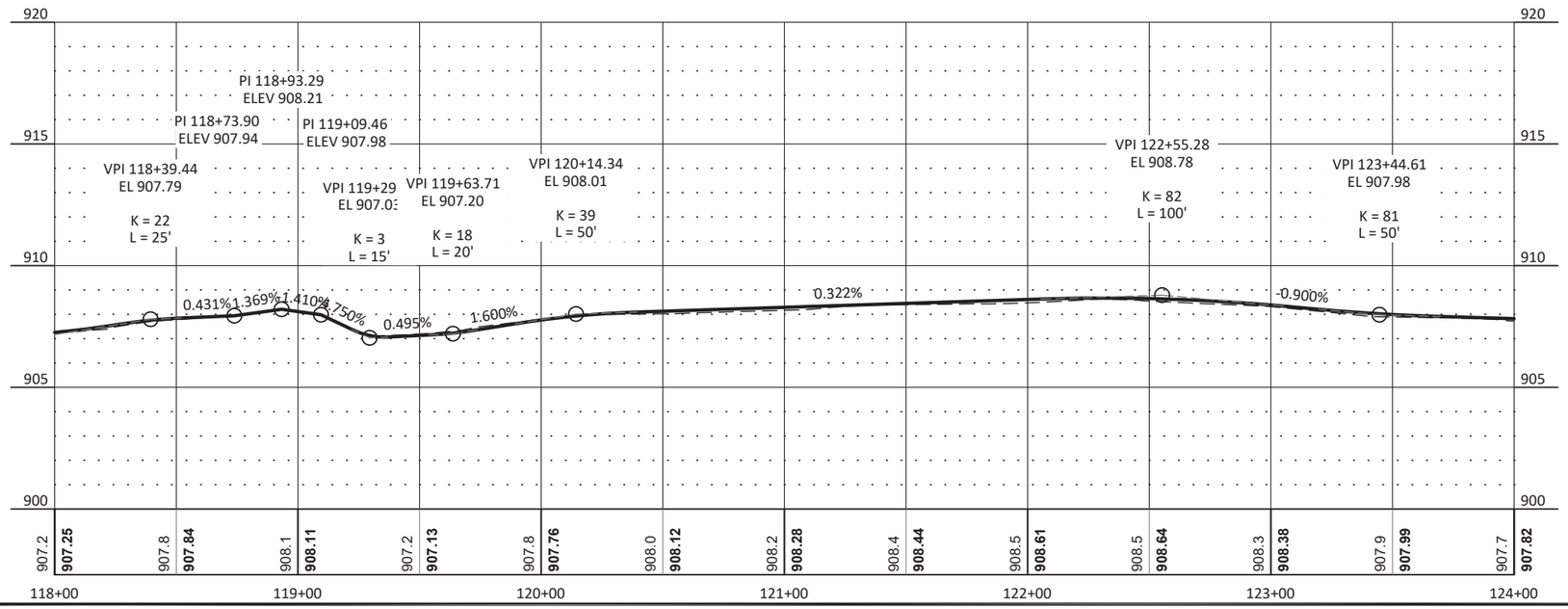
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	60	19

SPEC	CODE	BID ITEM	QTY	UNIT
714	4100	PIPE CONDUIT 18IN		
		Sta. 119+99 ~ LT	26	LF





30 0 30 60
scale 1"=60' feet



TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

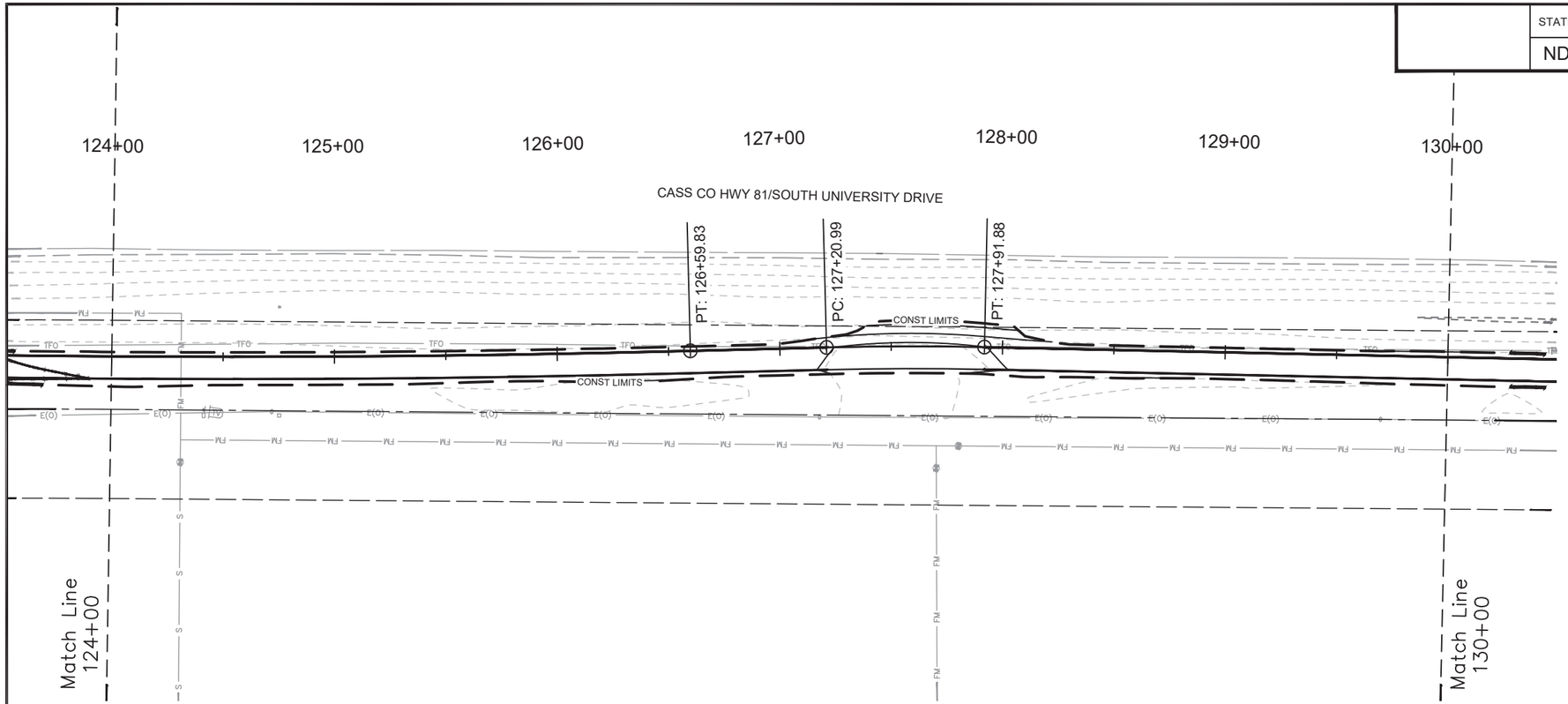
PLAN & PROFILE
STA. 118+00 TO 124+00

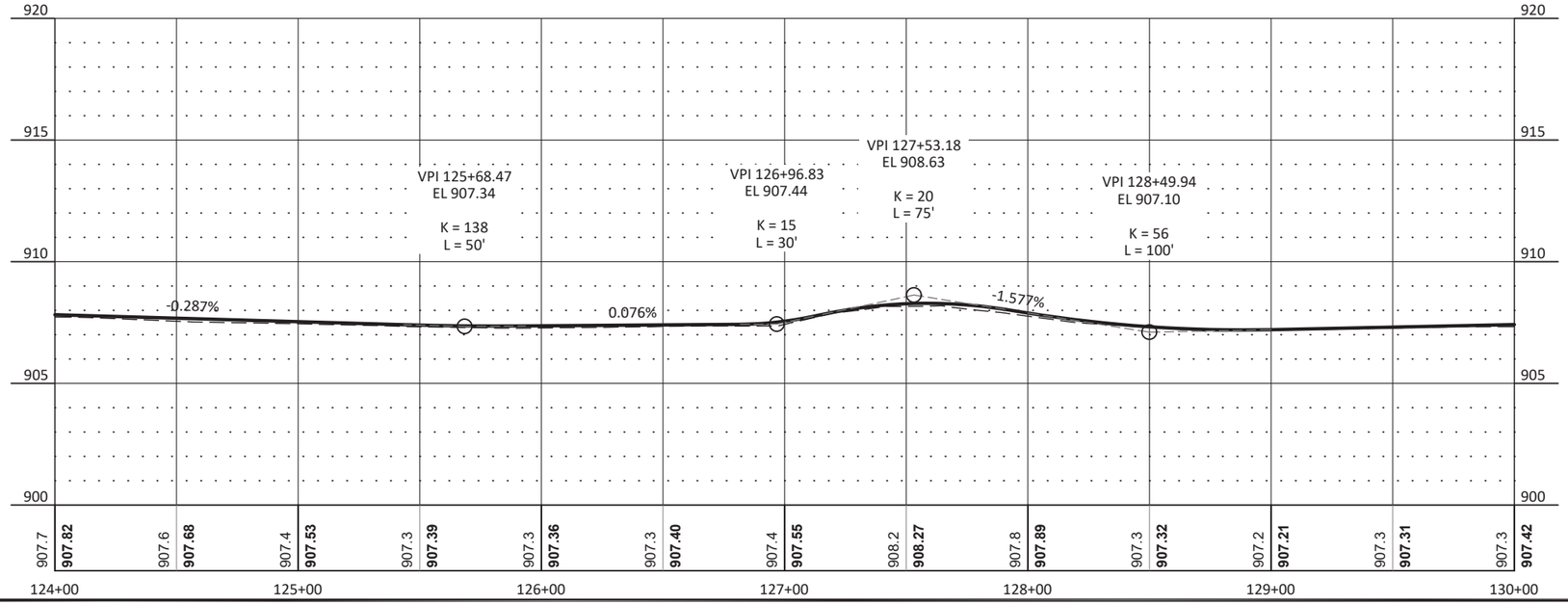
DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

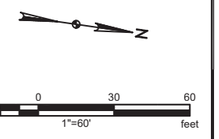
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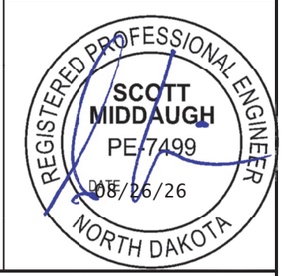
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	60	20









TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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PLAN & PROFILE
STA. 124+00 TO 130+00

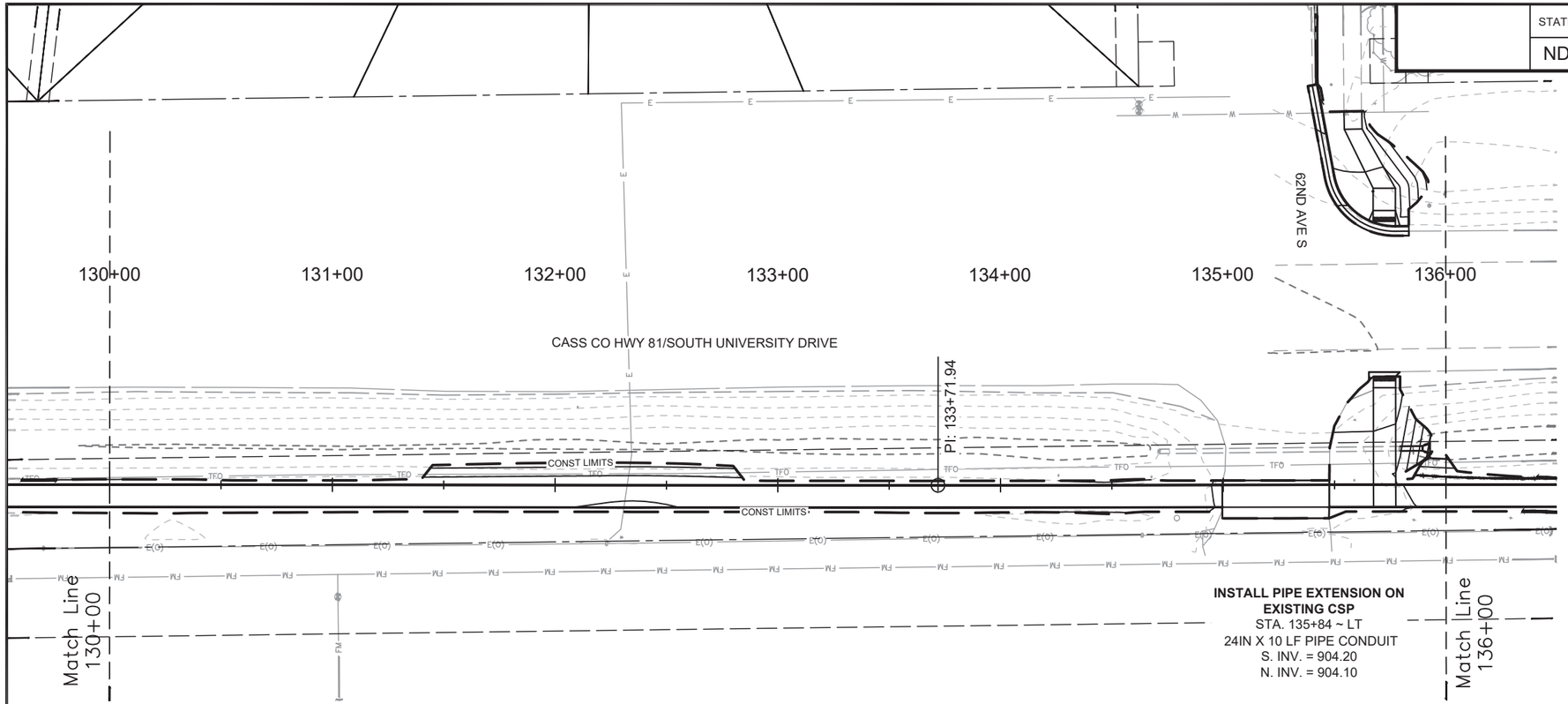
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ZBN	BJT	2503-10999

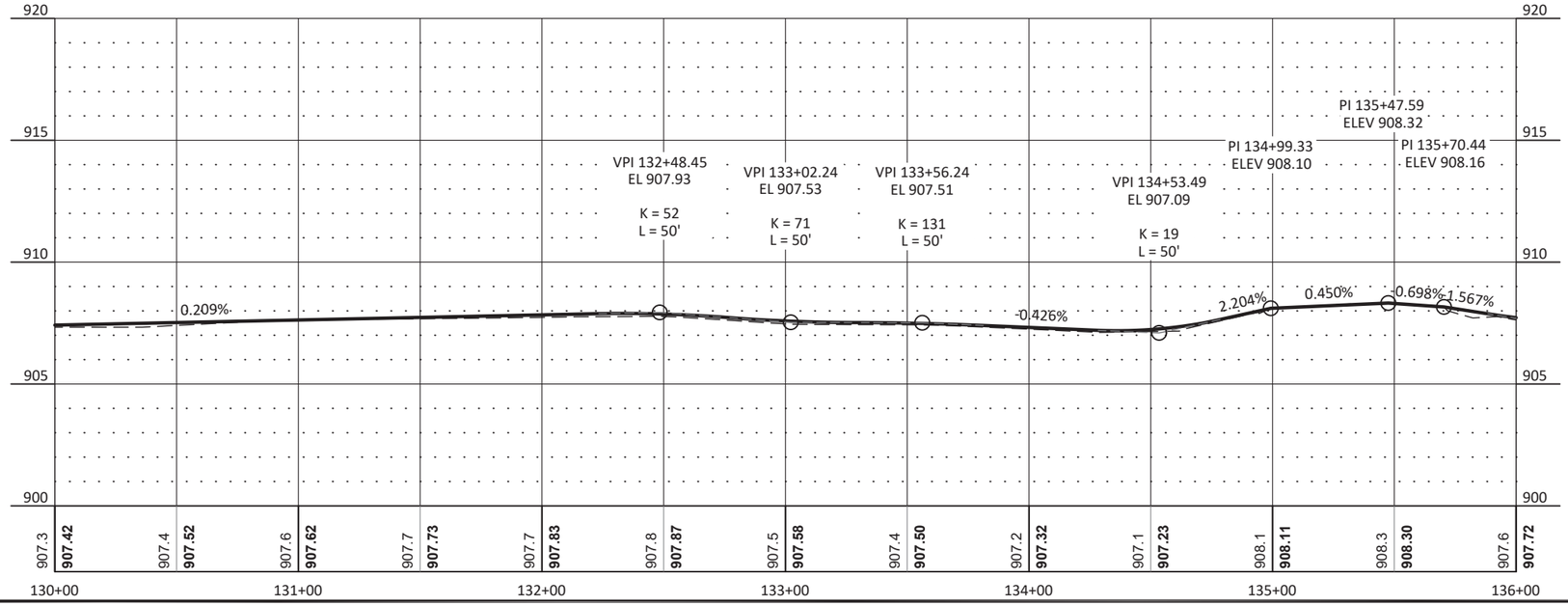
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	60	21

SPEC	CODE	BID ITEM	QTY	UNIT
714	4105	PIPE CONDUIT 24IN		
		Sta. 135+84 ~ LT	10	LF





30 0 30 60
scale 1"=60' feet



TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

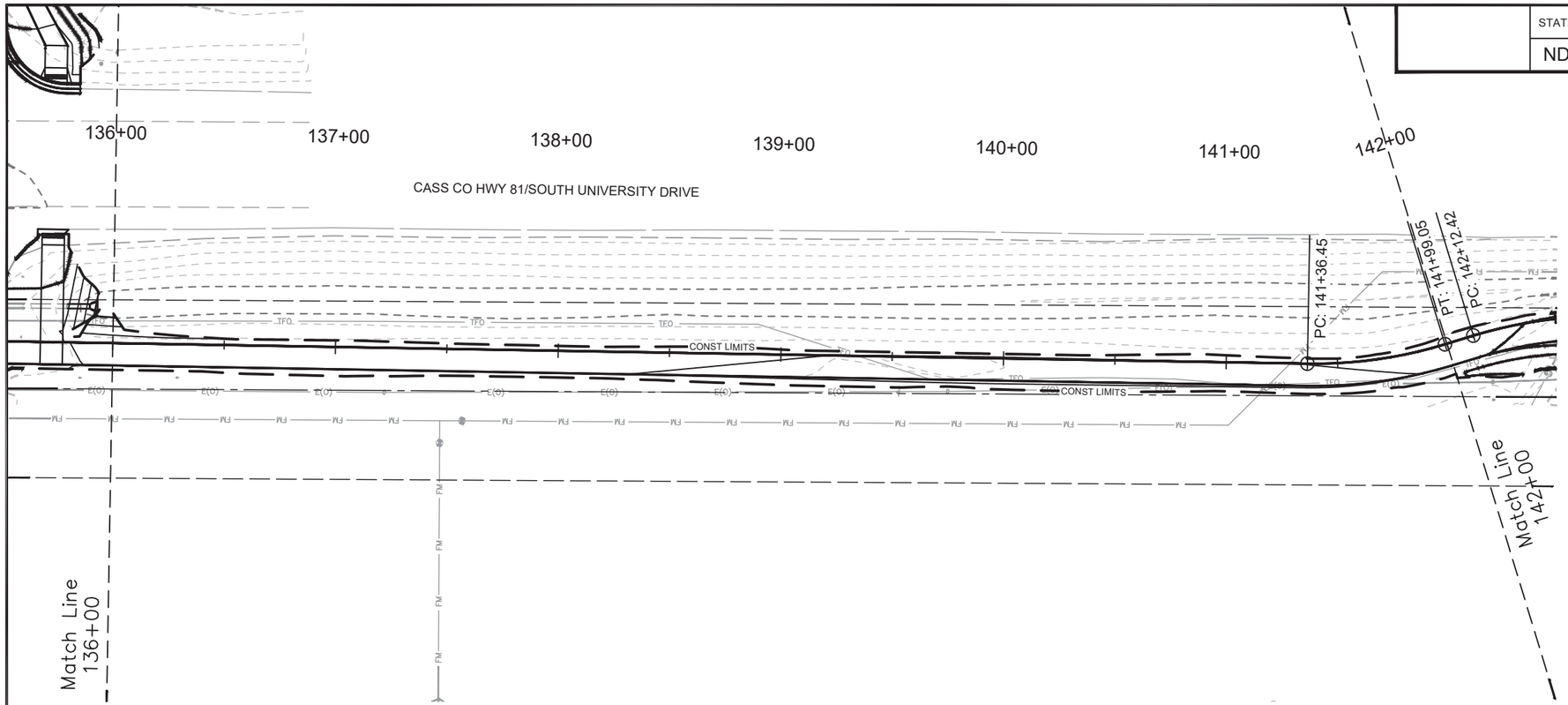
PLAN & PROFILE
STA. 130+00 TO 136+00

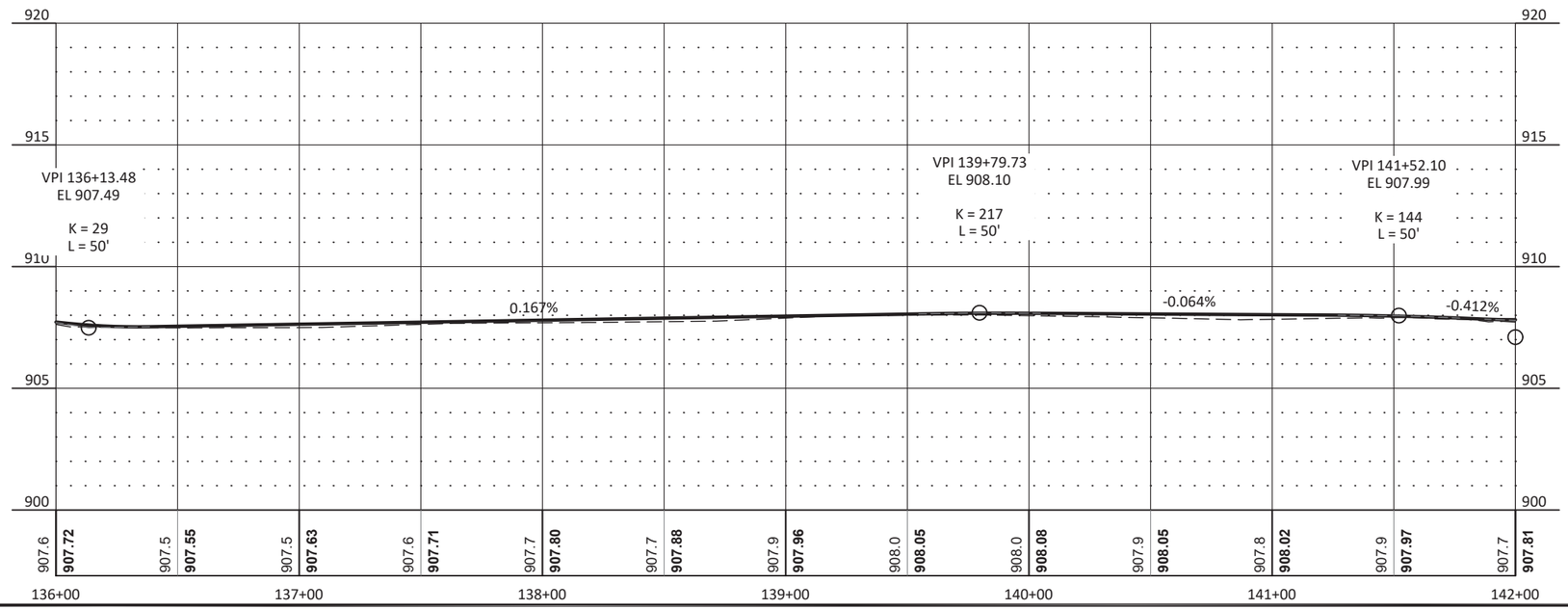
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ZBN	BJT	2503-10999

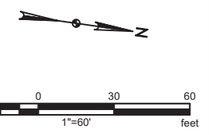
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TMA-TAU-CRP-8-984(183)	60	22









TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

PLAN & PROFILE
STA. 136+00 TO 142+00

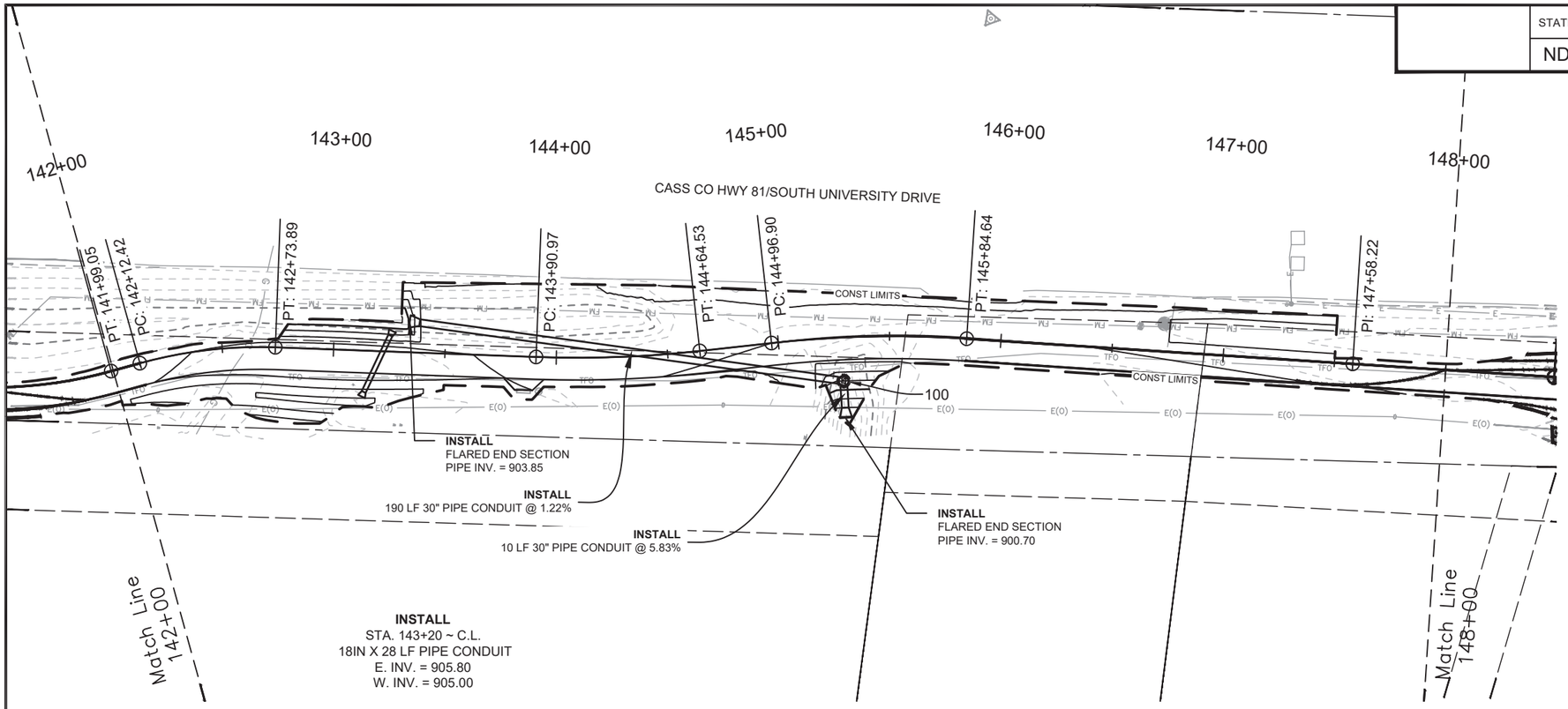
DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

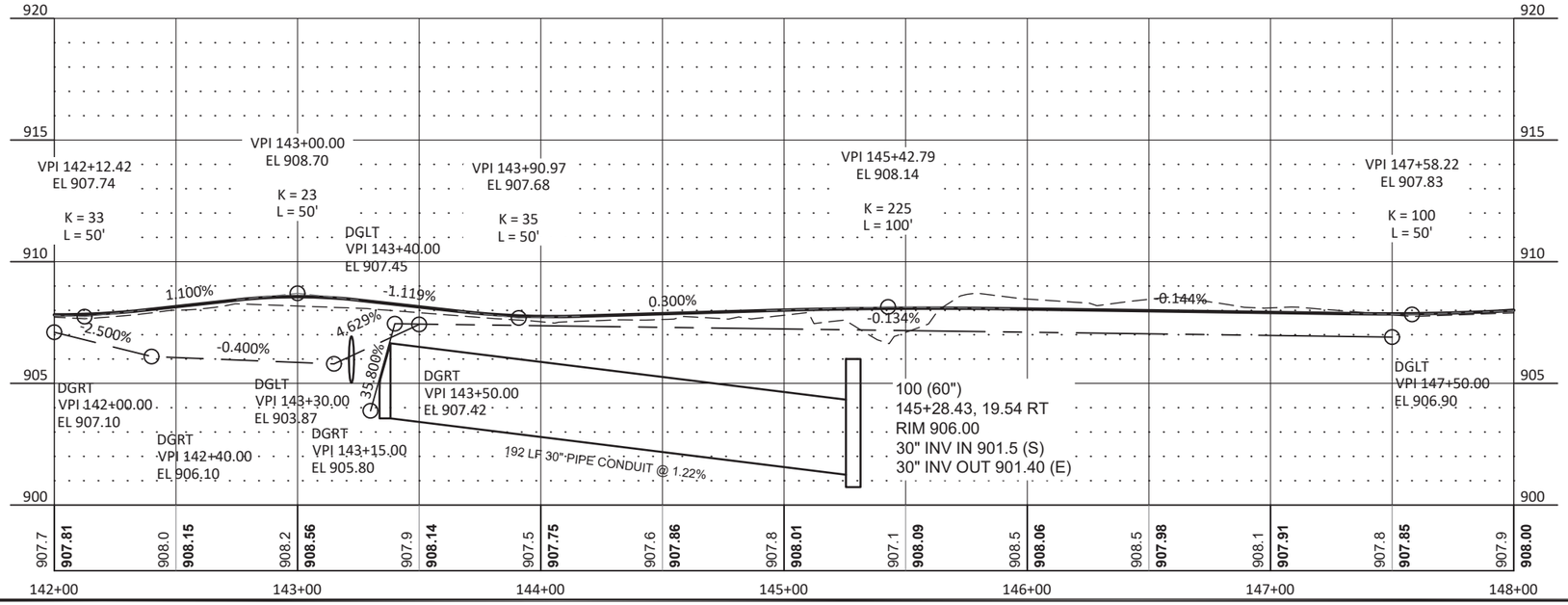
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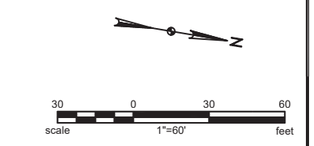
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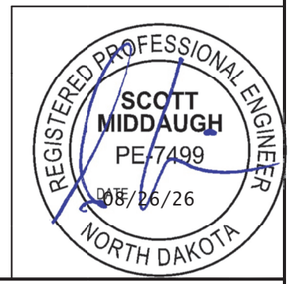
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	60	23

SPEC	CODE	BID ITEM	QTY	UNIT
714	4100	PIPE CONDUIT 18IN		
		Sta. 143+20 ~ ℄	28	LF
714	4110	PIPE CONDUIT 30IN		
		Sta. 144+34 ~ ℄	190	LF
		Sta. 145+29 ~ RT	10	LF
722	0110	MANHOLE 60IN		
		Sta. 145+28, 19.5' RT	1	EA
722	1110	MANHOLE RISER 60IN		
		Sta. 145+28, 19.5' RT	4.0	LF









TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

PLAN & PROFILE
STA. 142+00 TO 148+00

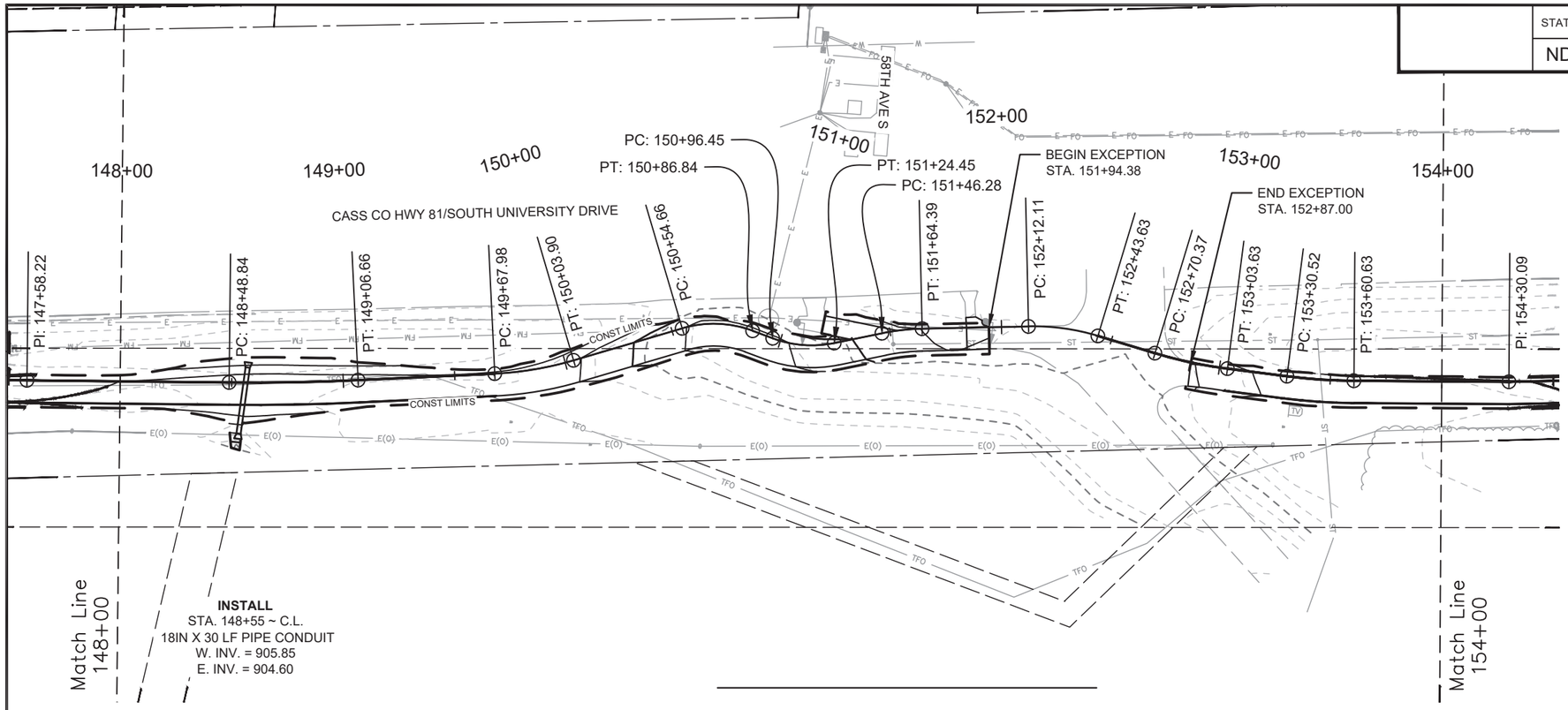
DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

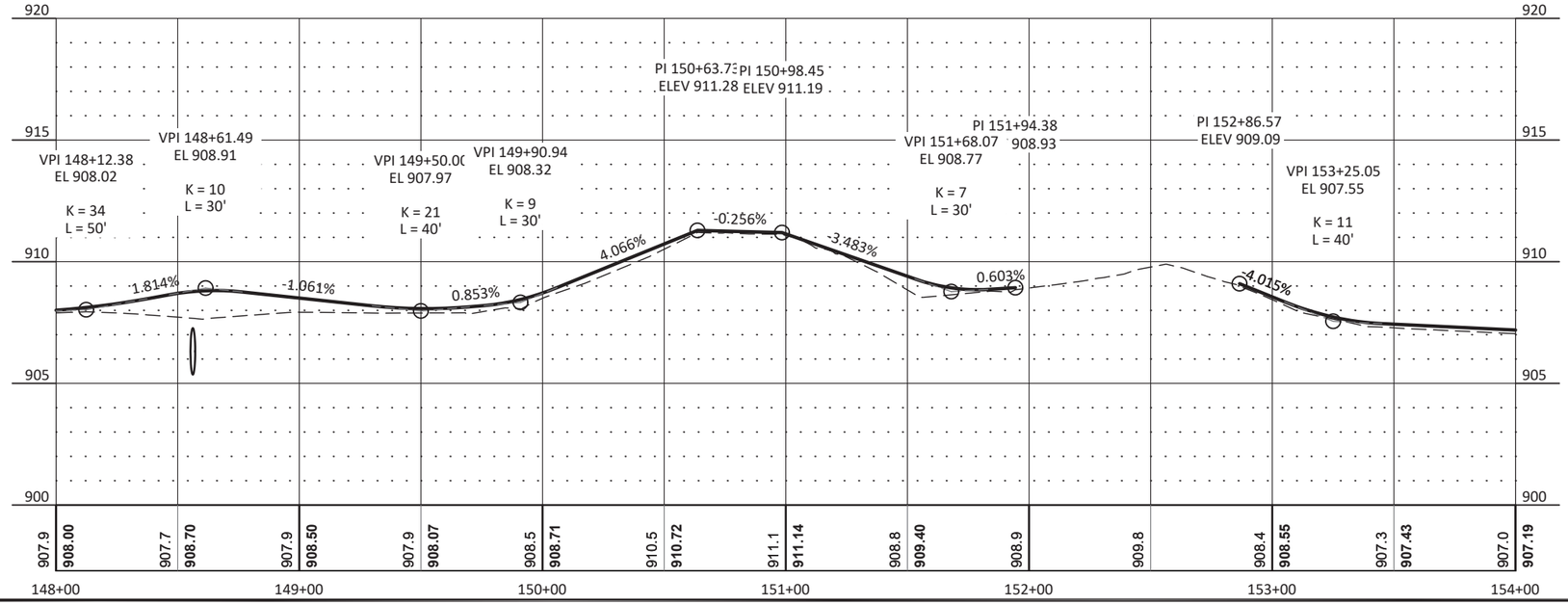
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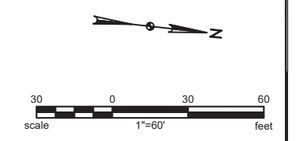
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	60	24

SPEC	CODE	BID ITEM	QTY	UNIT
714	4100	PIPE CONDUIT 18IN Sta. 148+55 ~ ℄	30	LF
722	6200	ADJUST MANHOLE Sta. 151+51, 6' RT	1	EA









TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

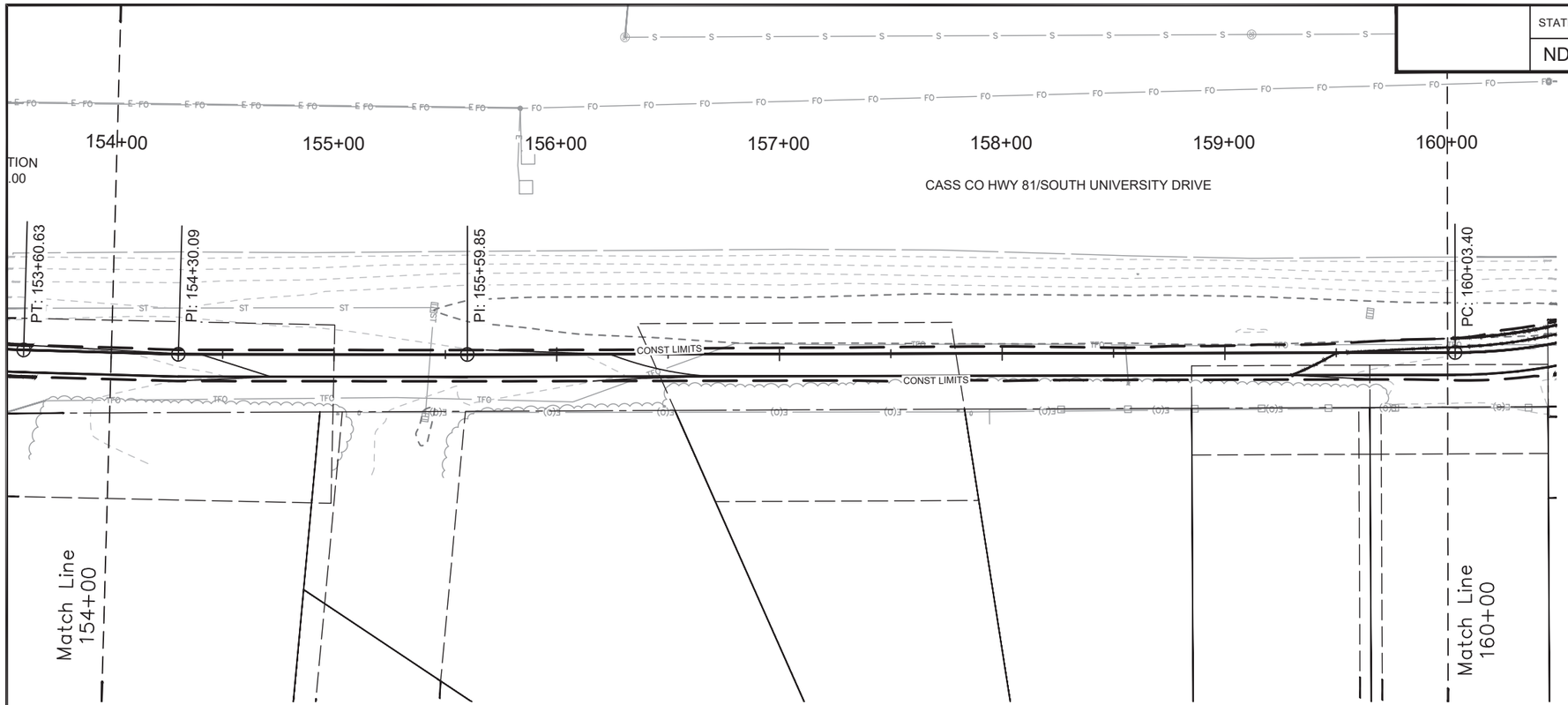
PLAN & PROFILE
STA. 148+00 TO 154+00

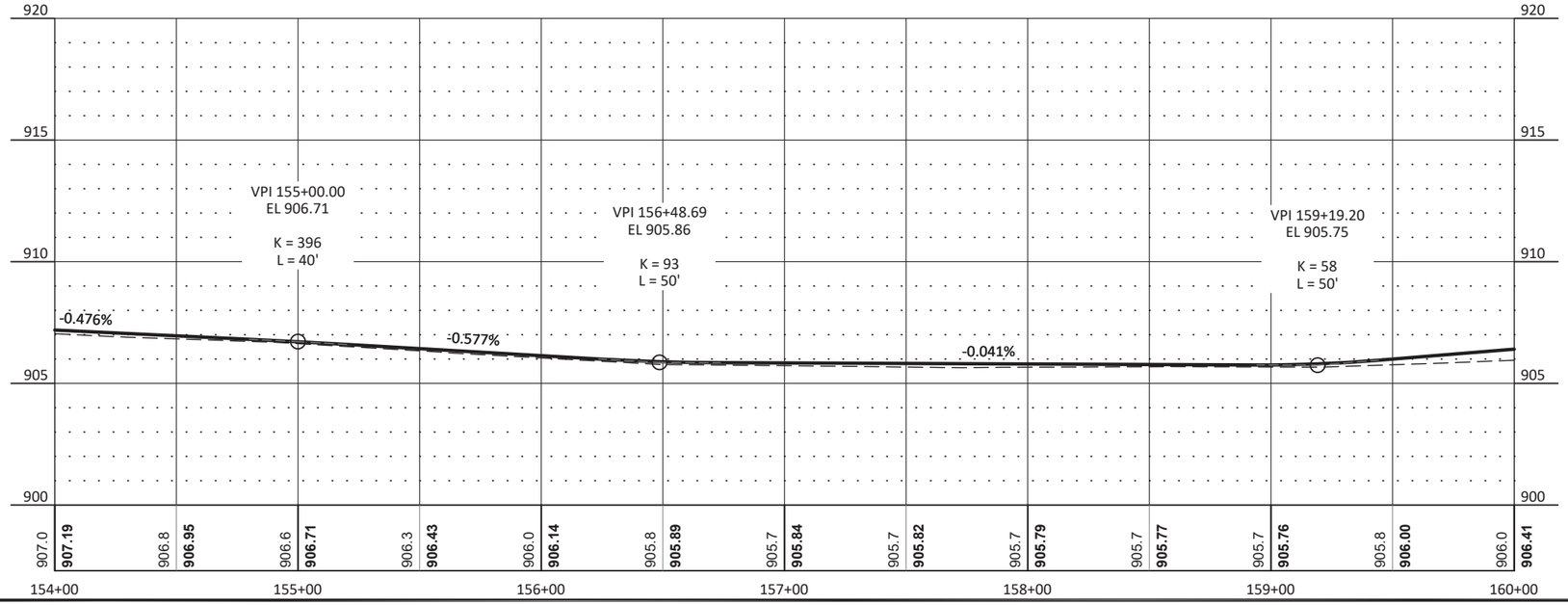
DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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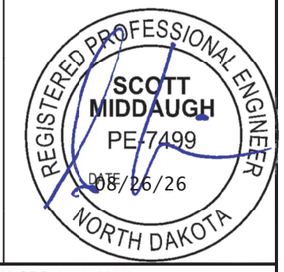
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	60	25









TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

PLAN & PROFILE
STA. 154+00 TO 160+00

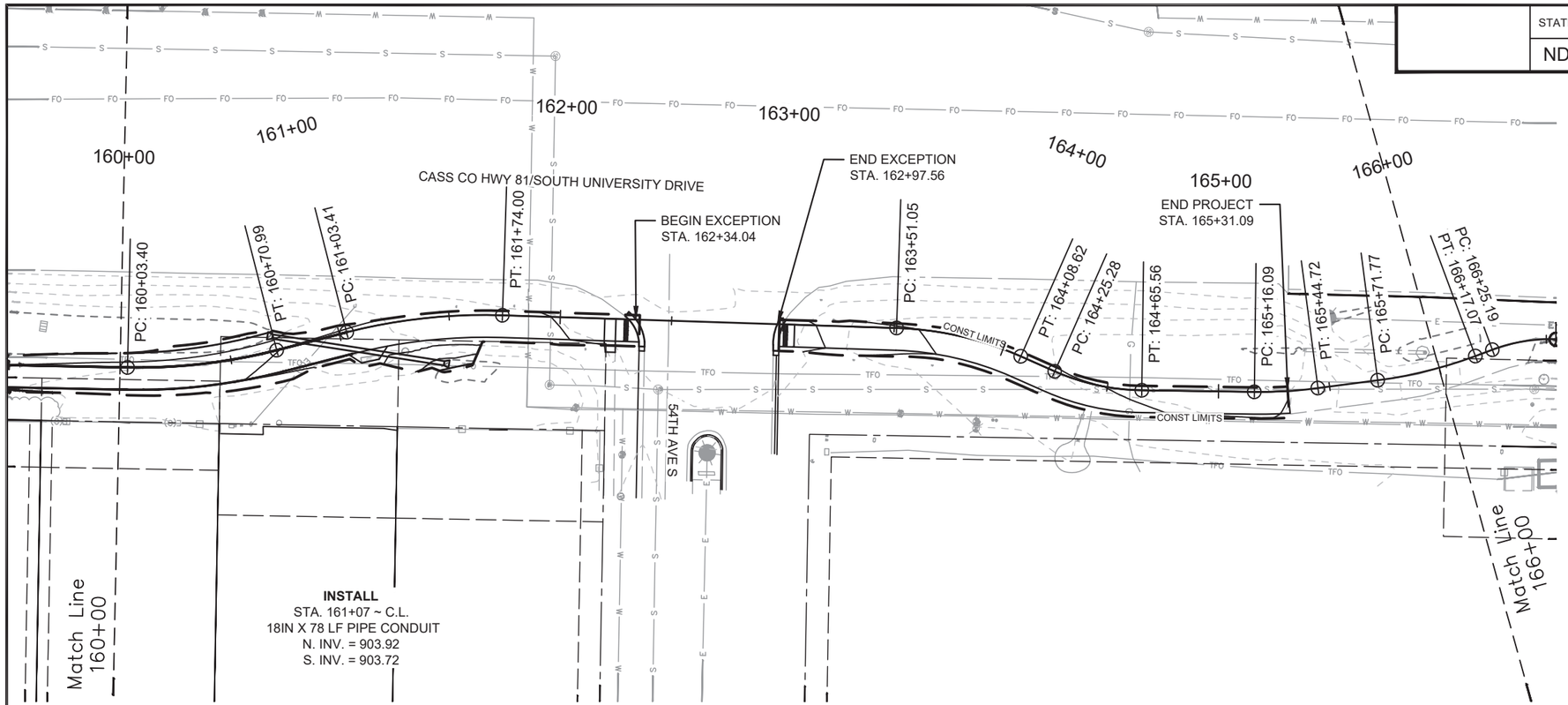
DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

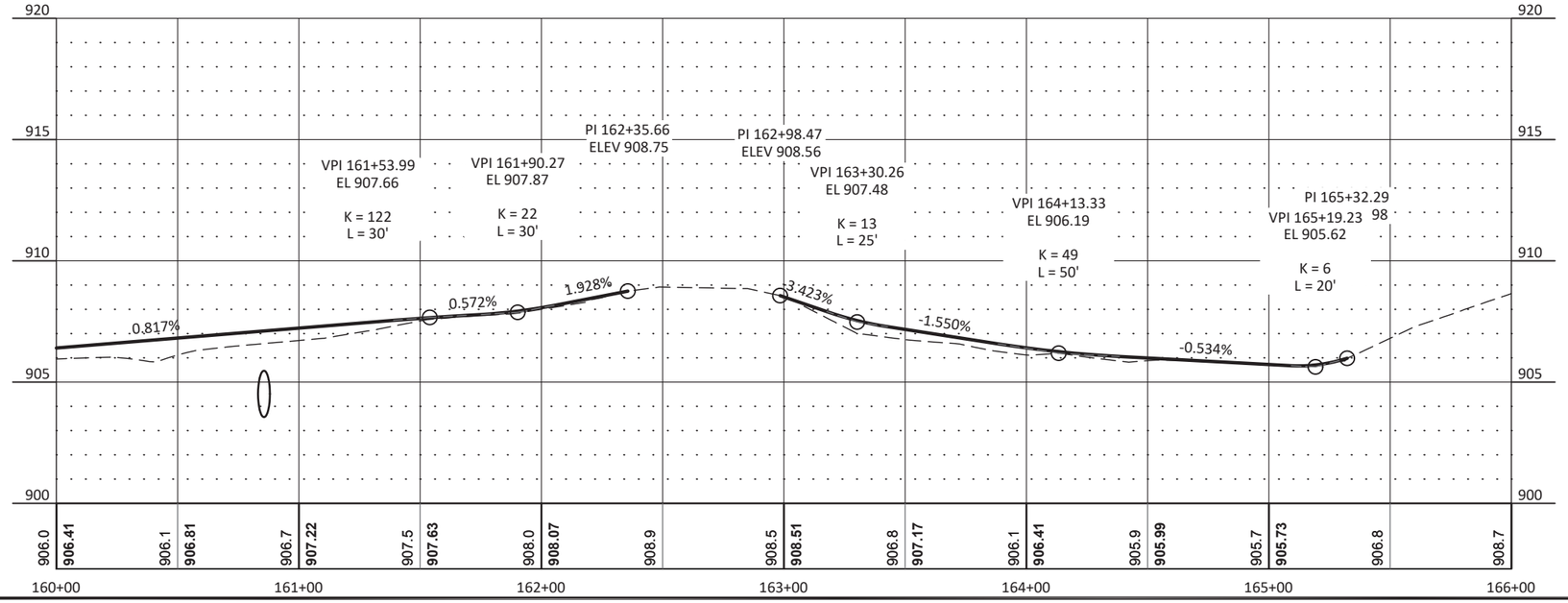
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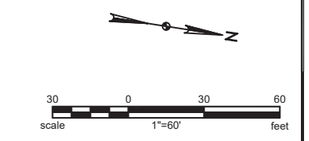
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TMA-TAU-CRP-8-984(183)	60	26

SPEC	CODE	BID ITEM	QTY	UNIT
714	4100	PIPE CONDUIT 18IN		
		Sta. 161+07 ~ ℄	78	LF









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CASS COUNTY, NORTH DAKOTA

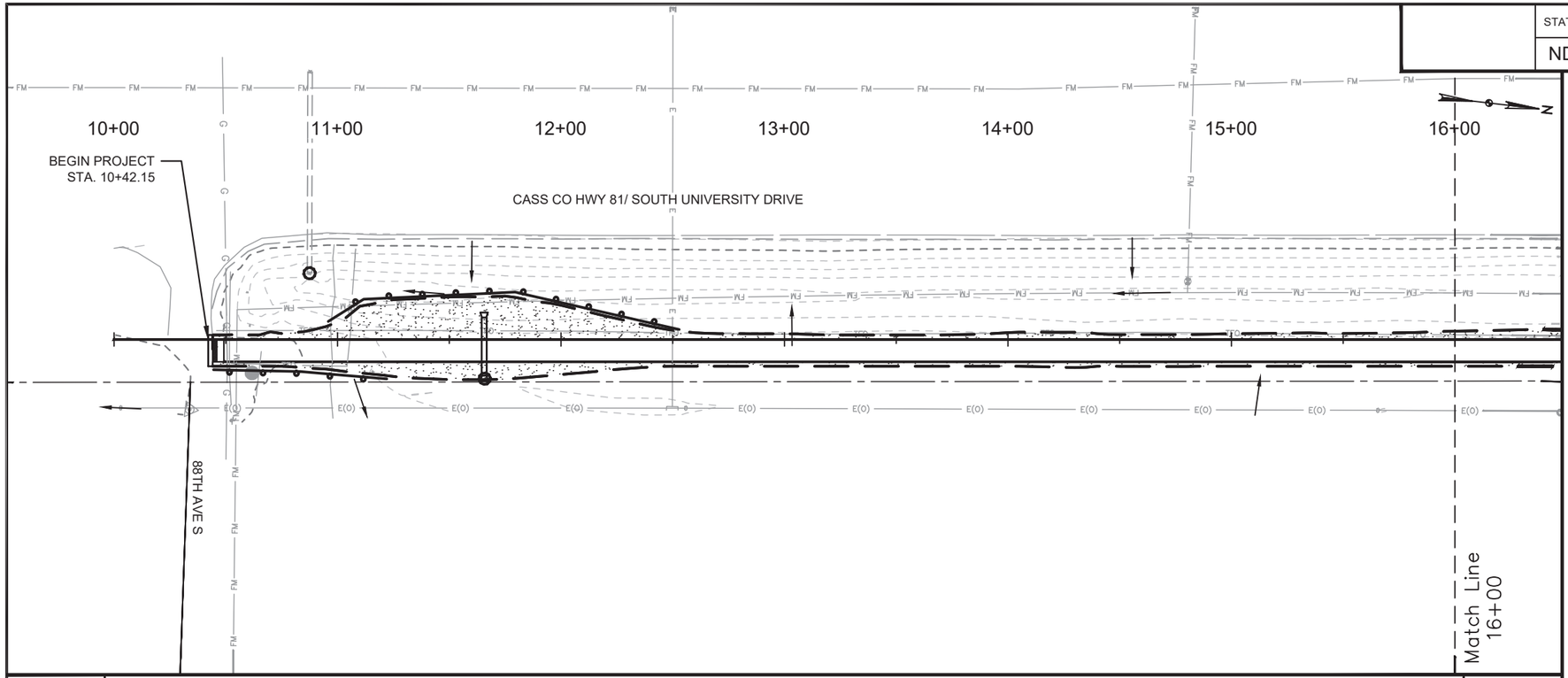
PLAN & PROFILE
STA. 160+00 TO 166+00

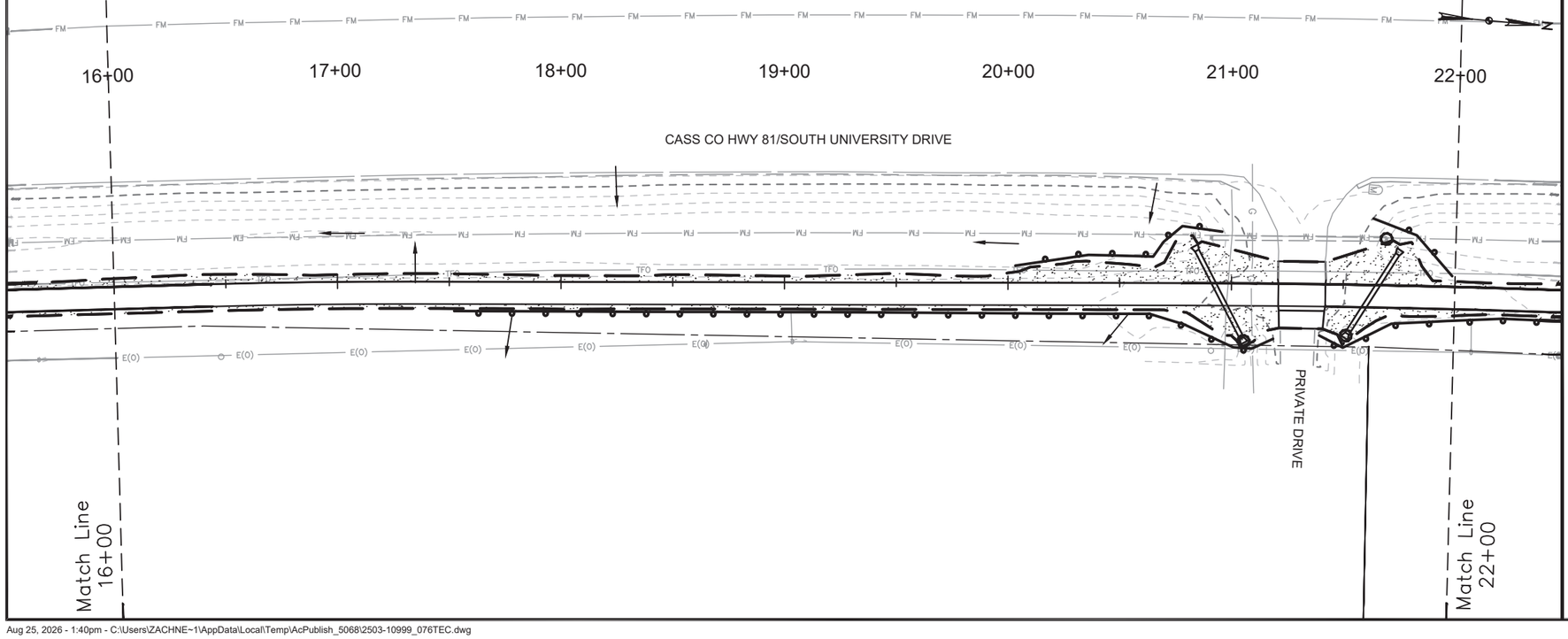
DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	76	1





SPEC CODE	BID ITEM	QTY	UNIT
253 0201	HYDRAULIC MULCH		
	Sta. 10+00 to Sta. 22+00	0.24	ACRE
261 0112	FIBER ROLLS 12IN		
	Sta. 10+00 to Sta. 22+00	897	LF
261 0113	REMOVE FIBER ROLLS 12IN		
	Sta. 10+00 to Sta. 22+00	897	LF

LEGEND:

HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

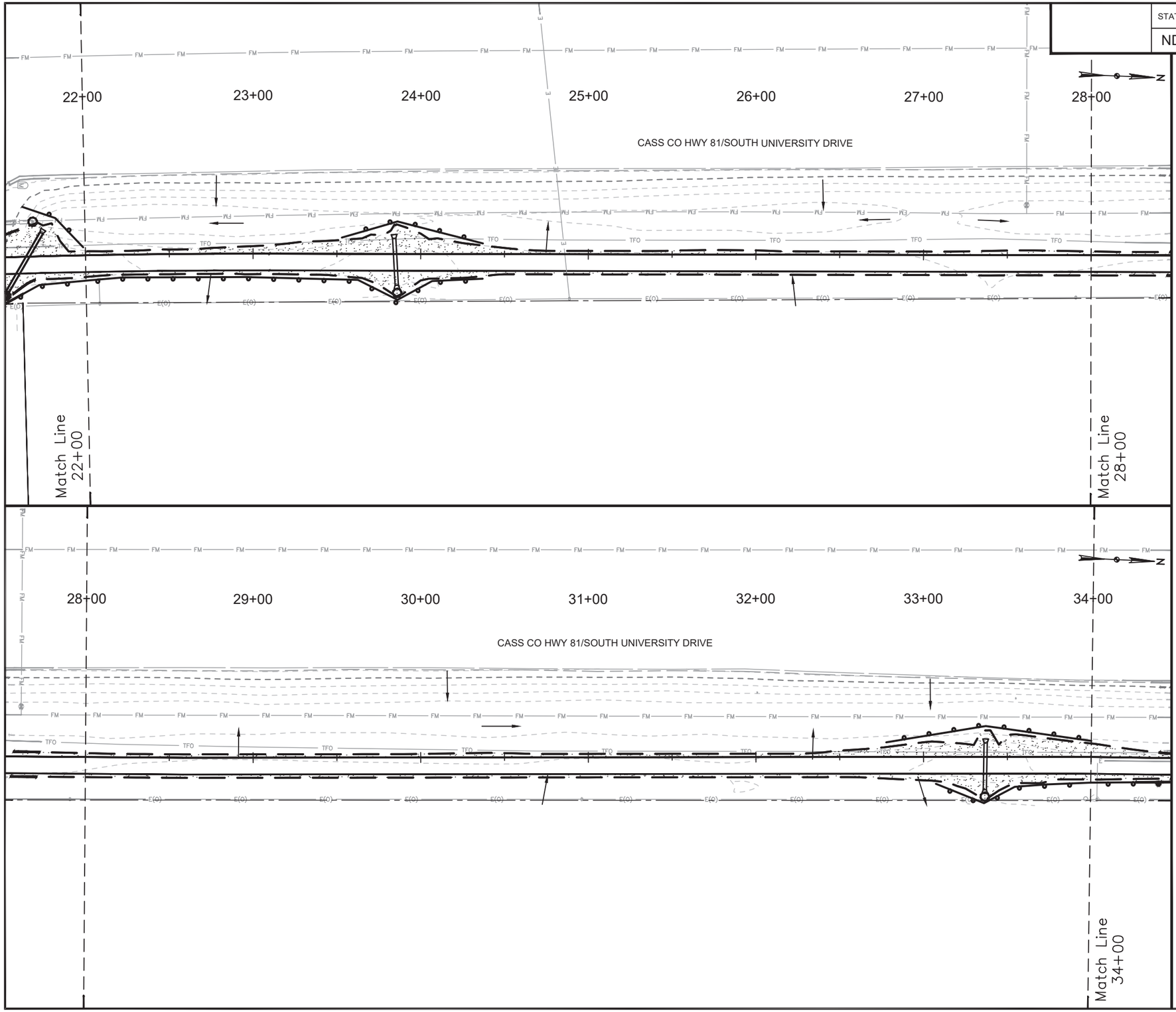
TEMPORARY EROSION CONTROL STA. 10+00 TO 22+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	76	2



SPEC CODE	BID ITEM	QTY	UNIT
253 0201	HYDRAULIC MULCH		
	Sta. 22+00 to Sta. 34+00	0.18	ACRE
261 0112	FIBER ROLLS 12IN		
	Sta. 22+00 to Sta. 34+00	582	LF
261 0113	REMOVE FIBER ROLLS 12IN		
	Sta. 22+00 to Sta. 34+00	582	LF

LEGEND:

HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

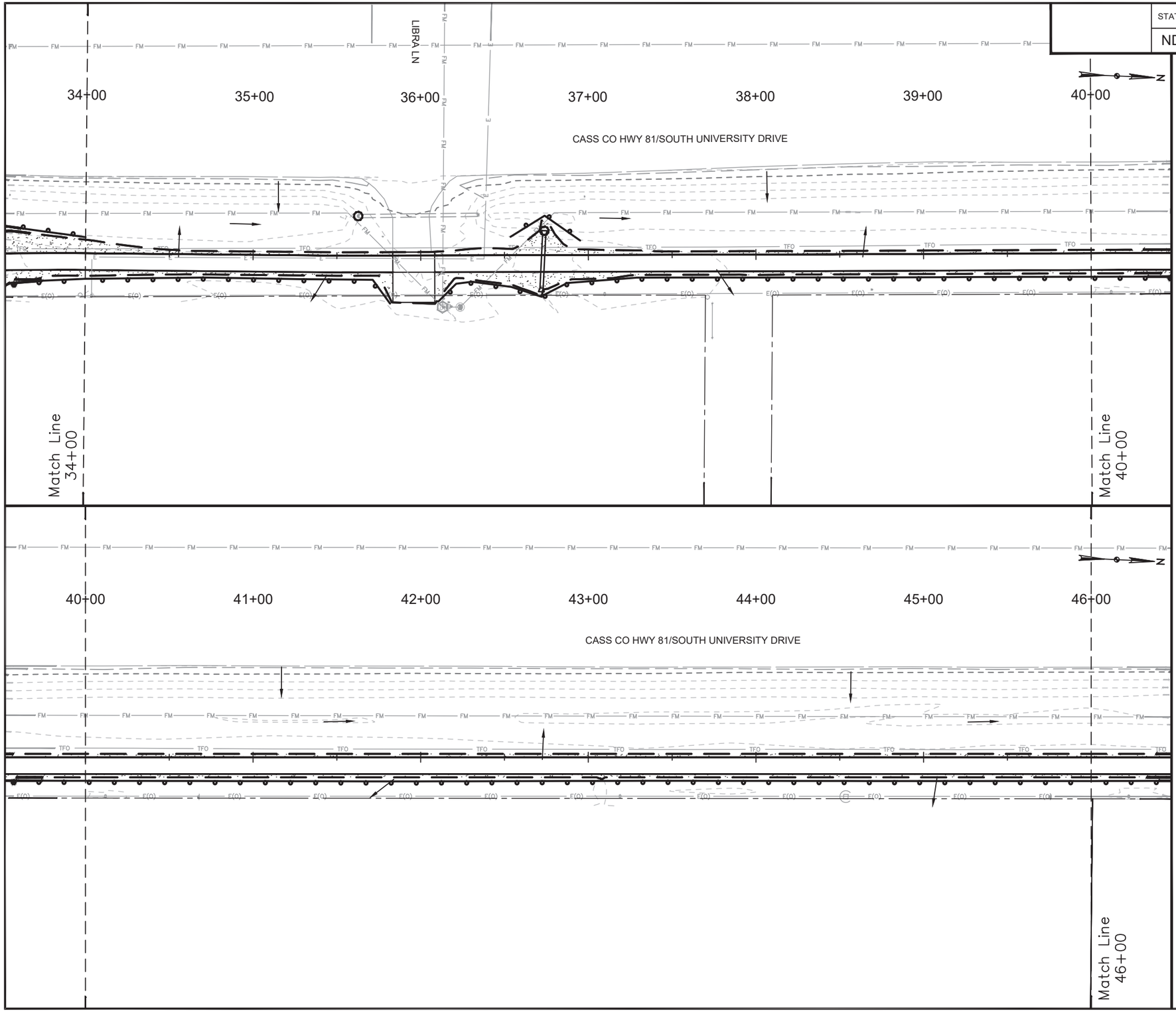
TEMPORARY EROSION CONTROL STA. 22+00 TO 34+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	76	3



SPEC CODE	BID ITEM	QTY	UNIT
253 0201	HYDRAULIC MULCH		
	Sta. 34+00 to Sta. 46+00	0.13	ACRE
261 0112	FIBER ROLLS 12IN		
	Sta. 34+00 to Sta. 46+00	1,267	LF
261 0113	REMOVE FIBER ROLLS 12IN		
	Sta. 34+00 to Sta. 46+00	1,267	LF

LEGEND:

HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/05/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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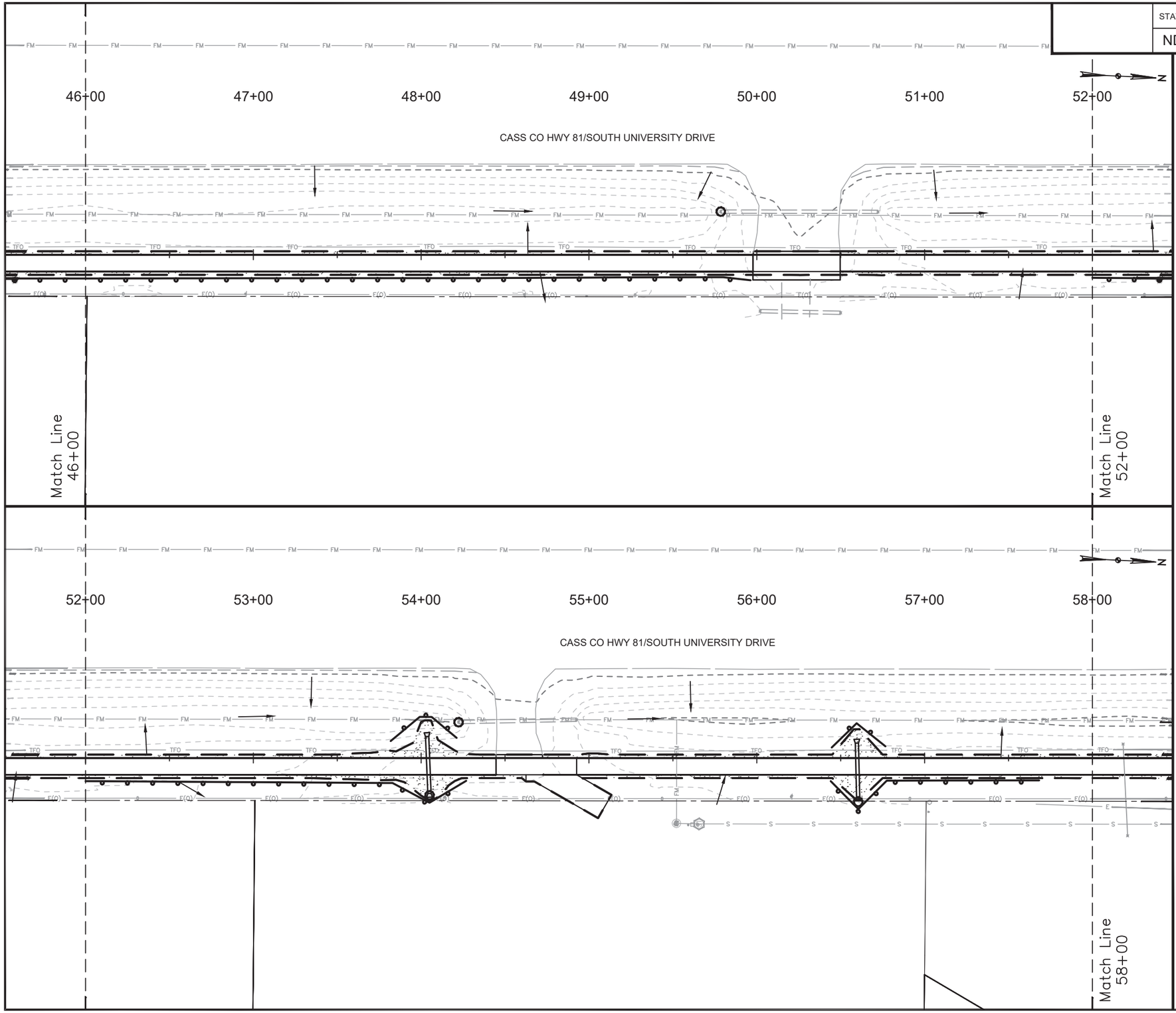
TEMPORARY EROSION CONTROL STA. 34+00 TO 46+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	76	4



SPEC CODE	BID ITEM	QTY	UNIT
253 0201	HYDRAULIC MULCH		
	Sta. 46+00 to Sta. 58+00	0.13	ACRE
261 0112	FIBER ROLLS 12IN		
	Sta. 46+00 to Sta. 58+00	923	LF
261 0113	REMOVE FIBER ROLLS 12IN		
	Sta. 46+00 to Sta. 58+00	923	LF

LEGEND:

HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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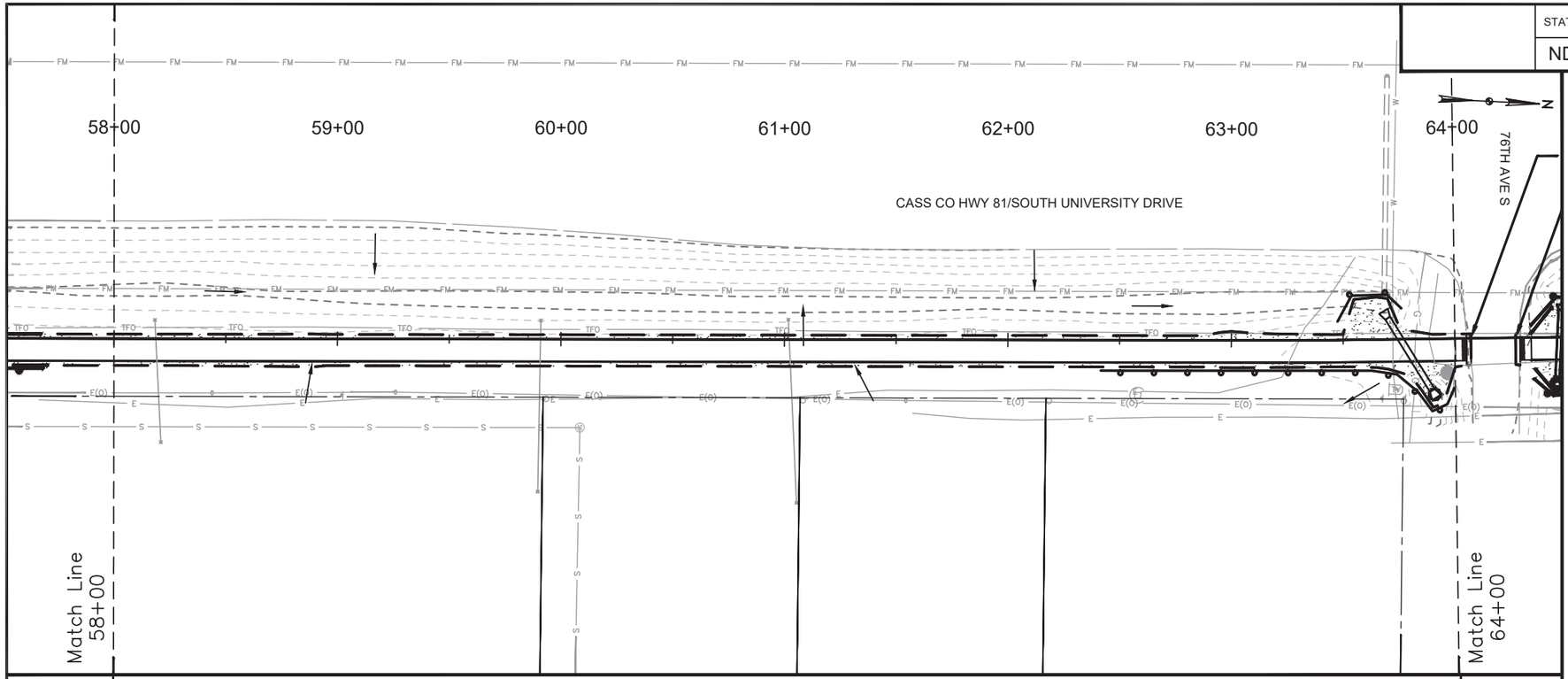
TEMPORARY EROSION CONTROL STA. 46+00 TO 58+00

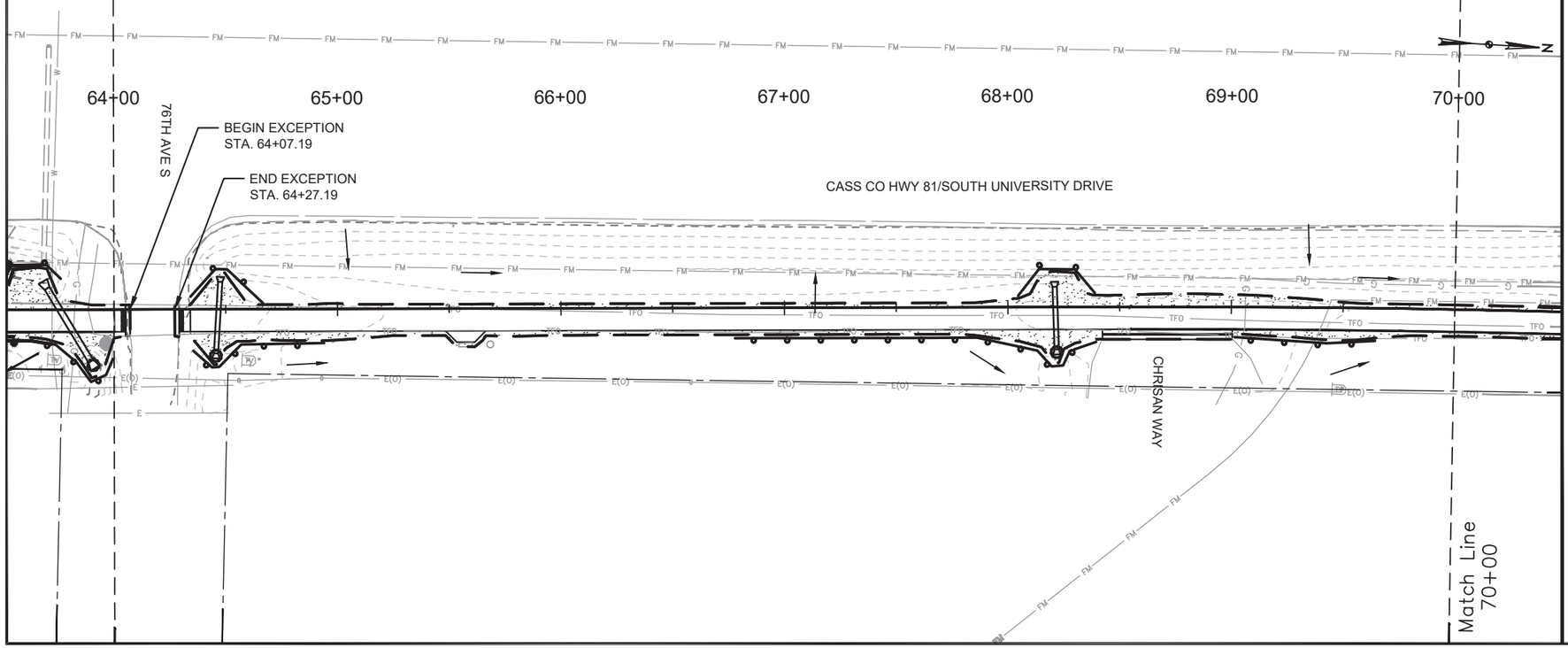
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ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	76	5





SPEC CODE	BID ITEM	QTY	UNIT
253 0201	HYDRAULIC MULCH		
	Sta. 58+00 to Sta. 70+00	0.16	ACRE
261 0112	FIBER ROLLS 12IN		
	Sta. 58+00 to Sta. 70+00	644	LF
261 0113	REMOVE FIBER ROLLS 12IN		
	Sta. 58+00 to Sta. 70+00	644	LF

LEGEND:

HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/25/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

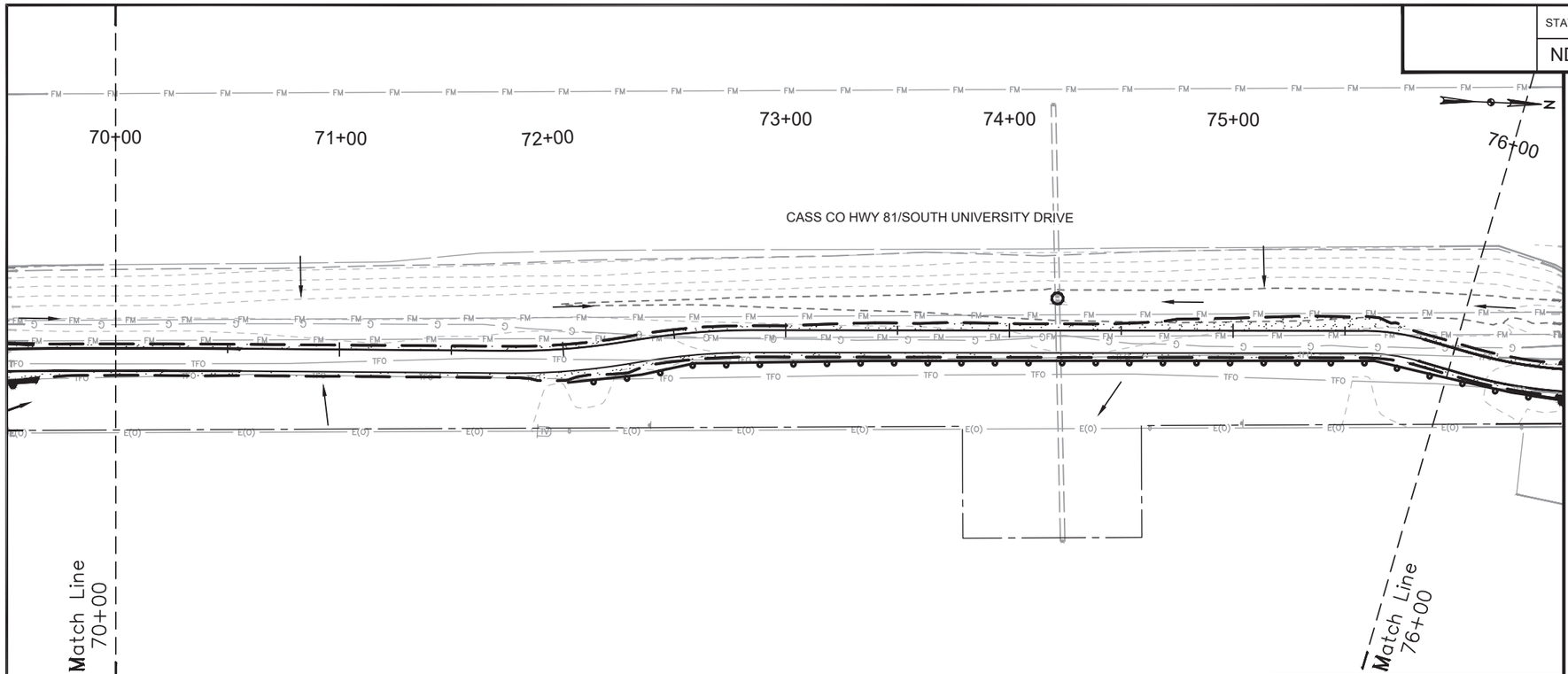
TEMPORARY EROSION CONTROL STA. 58+00 TO 70+00

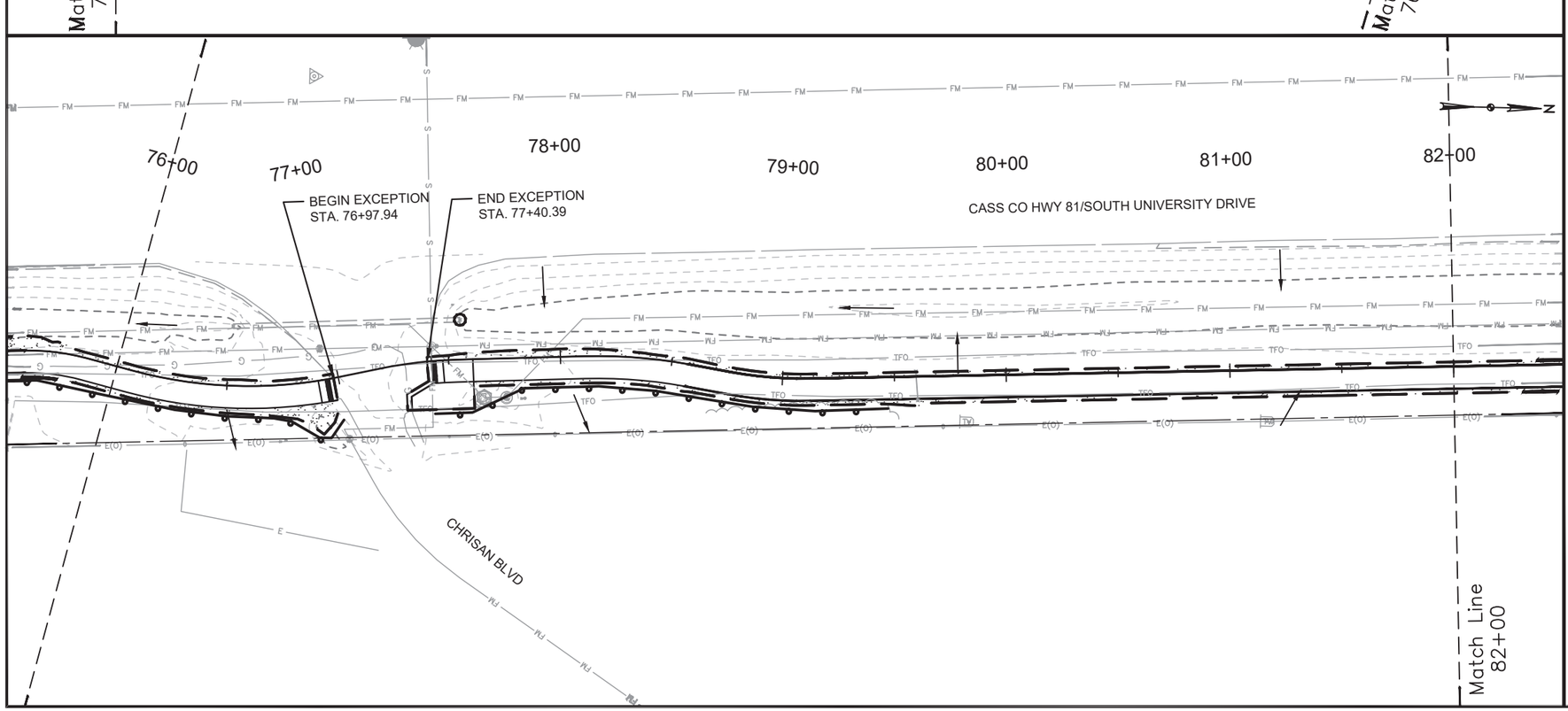
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ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	76	6





SPEC CODE	BID ITEM	QTY	UNIT
253 0201	HYDRAULIC MULCH		
	Sta. 70+00 to Sta. 82+00	0.13	ACRE
261 0112	FIBER ROLLS 12IN		
	Sta. 70+00 to Sta. 82+00	743	LF
261 0113	REMOVE FIBER ROLLS 12IN		
	Sta. 70+00 to Sta. 82+00	743	LF

LEGEND:

HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

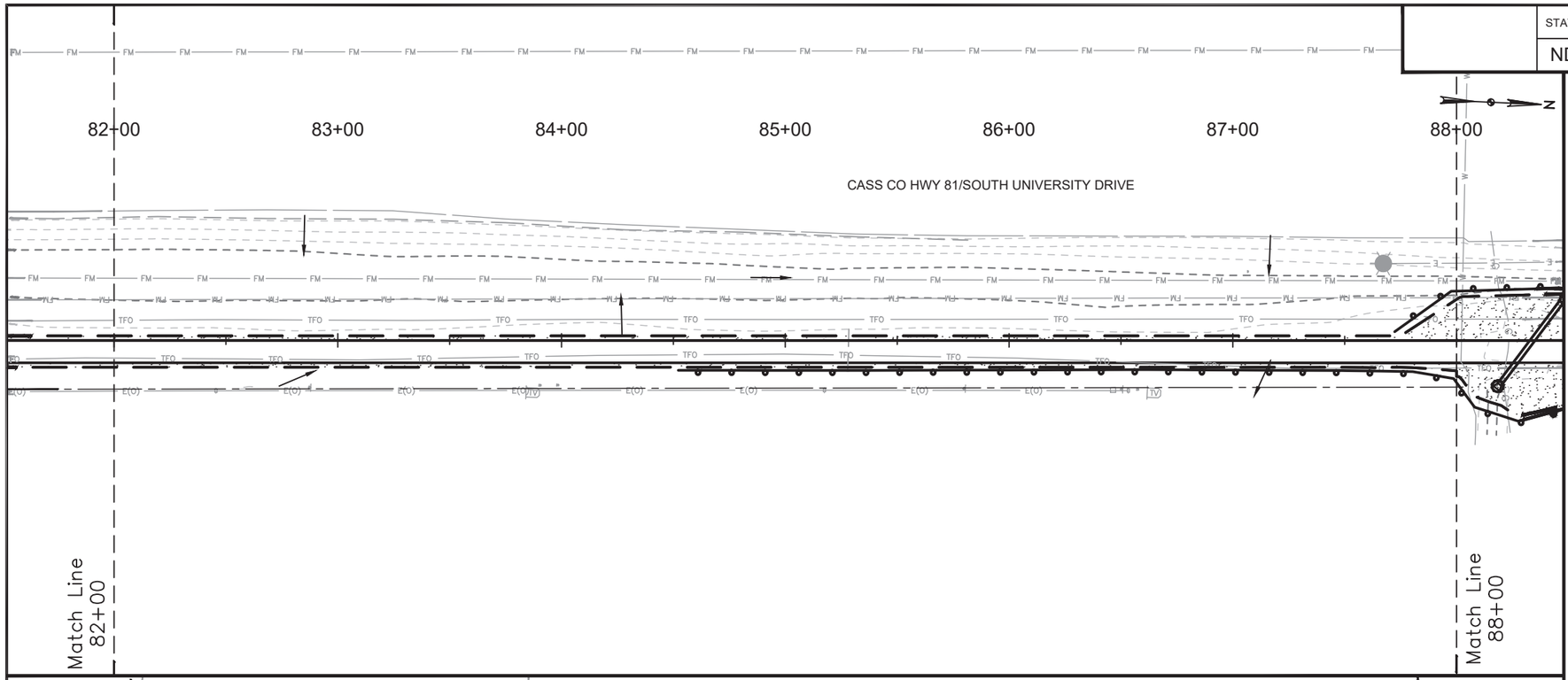
TEMPORARY EROSION CONTROL STA. 70+00 TO 82+00

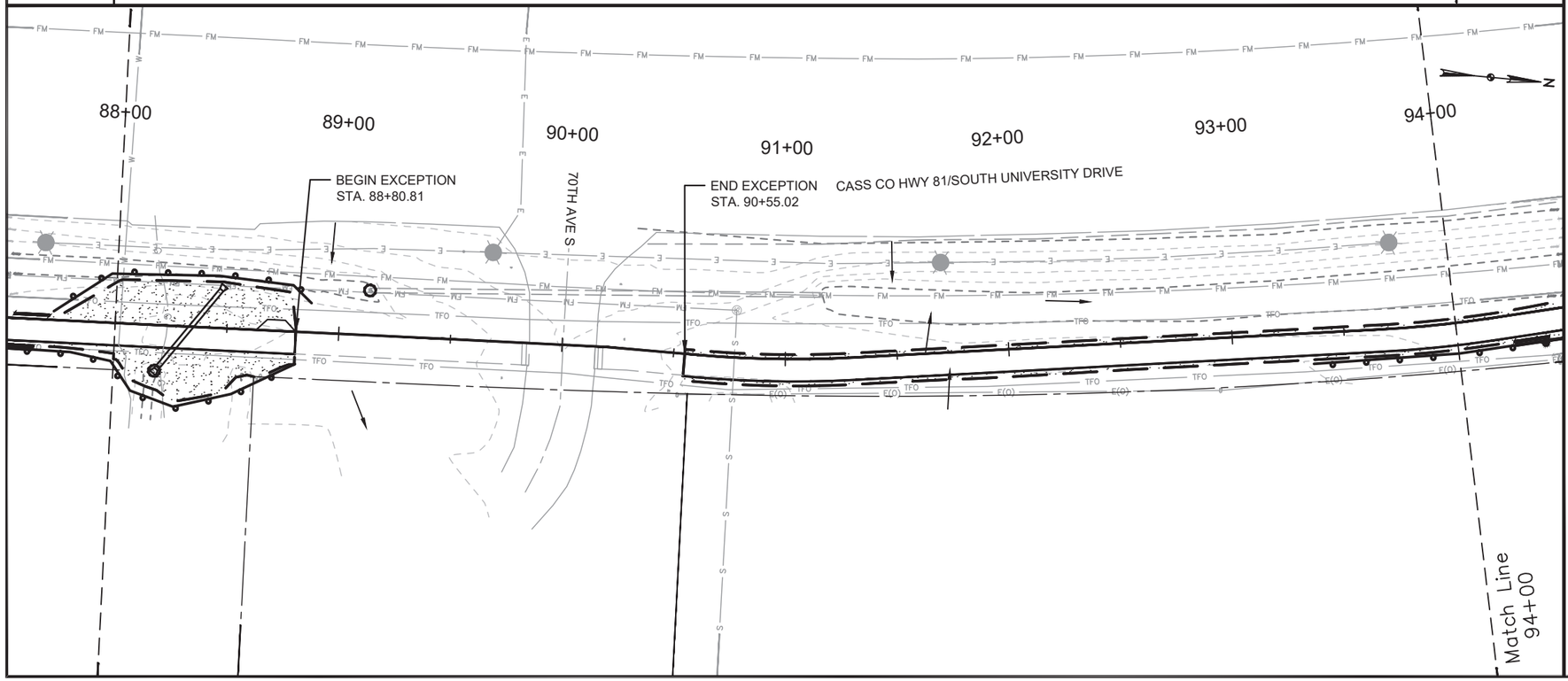
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ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	76	7





SPEC CODE	BID ITEM	QTY	UNIT
253 0201	HYDRAULIC MULCH		
	Sta. 82+00 to Sta. 94+00	0.16	ACRE
261 0112	FIBER ROLLS 12IN		
	Sta. 82+00 to Sta. 94+00	661	LF
261 0113	REMOVE FIBER ROLLS 12IN		
	Sta. 82+00 to Sta. 94+00	661	LF

LEGEND:

HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/13/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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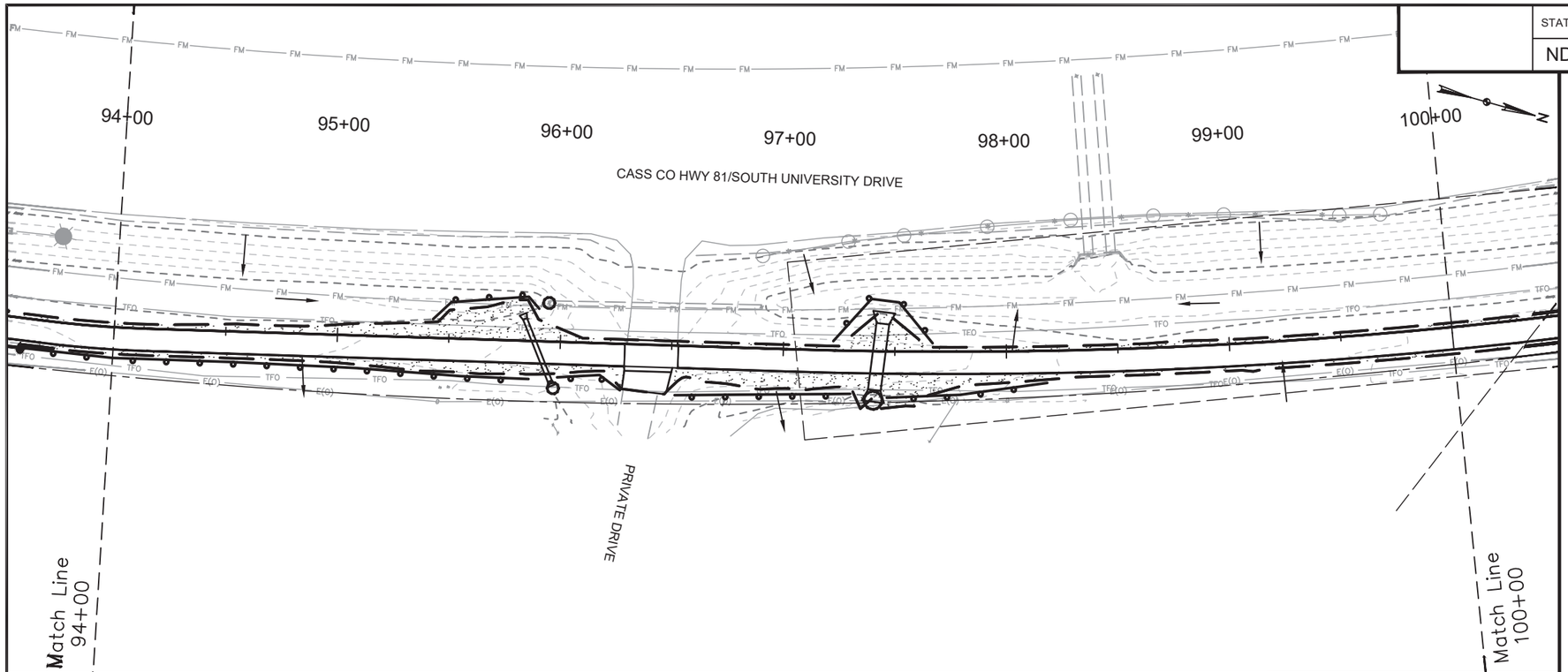
TEMPORARY EROSION CONTROL STA. 82+00 TO 94+00

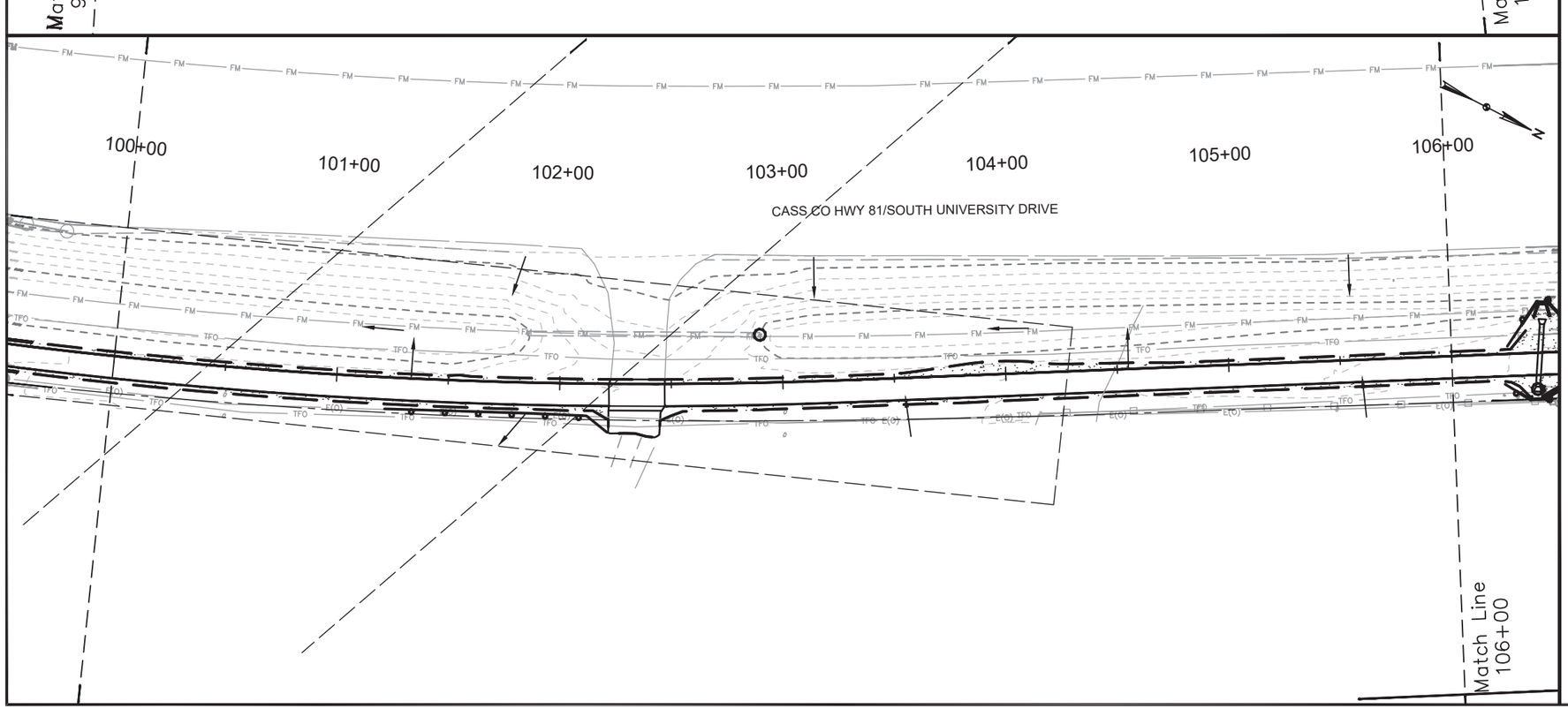
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ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	76	8





SPEC	CODE	BID ITEM	QTY	UNIT
253	0201	HYDRAULIC MULCH		
		Sta. 94+00 to Sta. 106+00	0.17	ACRE
261	0112	FIBER ROLLS 12IN		
		Sta. 94+00 to Sta. 106+00	658	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta. 94+00 to Sta. 106+00	658	LF

LEGEND:

HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

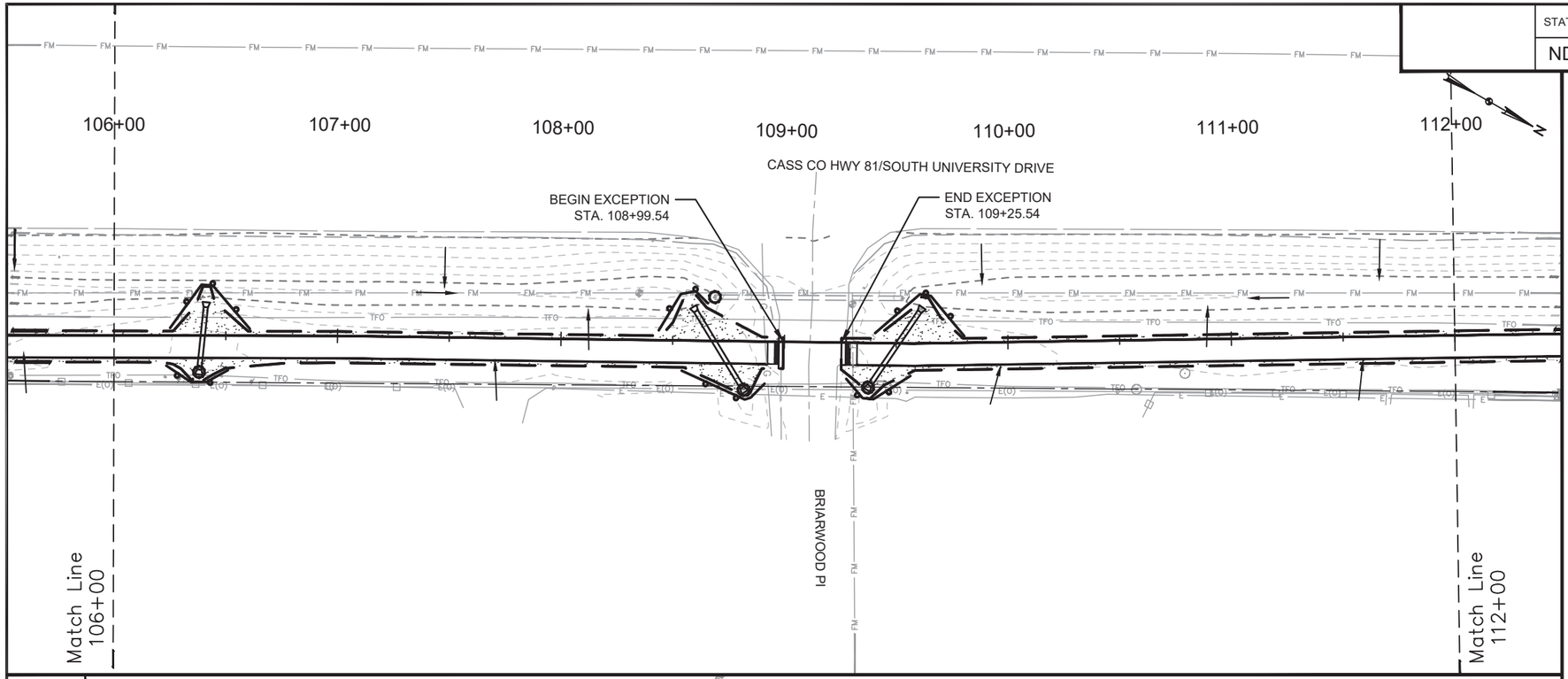
TEMPORARY EROSION CONTROL STA. 94+00 TO 106+00

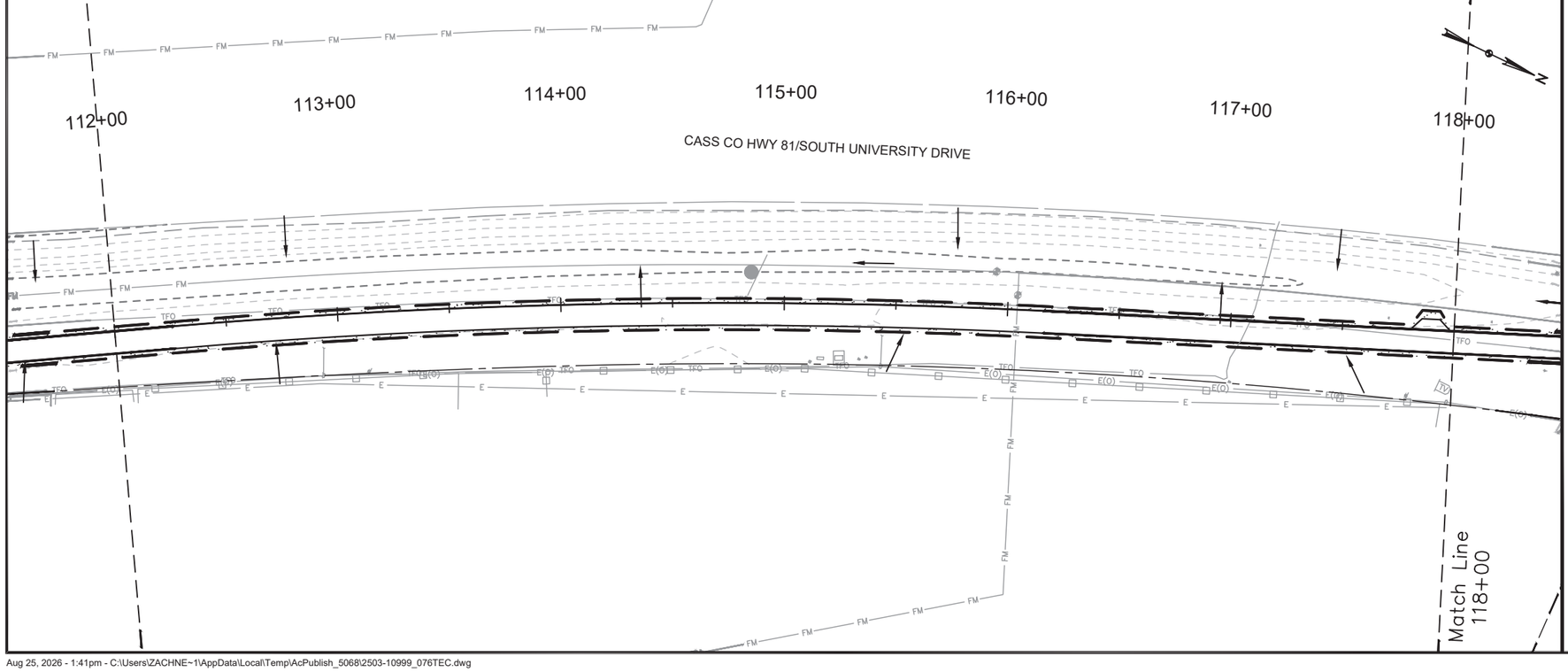
DRWN. BY	CHK'D BY	PROJECT NO.
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	76	9





SPEC CODE	BID ITEM	QTY	UNIT
253 0201	HYDRAULIC MULCH		
	Sta. 106+00 to Sta. 118+00	0.15	ACRE
261 0112	FIBER ROLLS 12IN		
	Sta. 106+00 to Sta. 118+00	315	LF
261 0113	REMOVE FIBER ROLLS 12IN		
	Sta. 106+00 to Sta. 118+00	315	LF

LEGEND:

HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

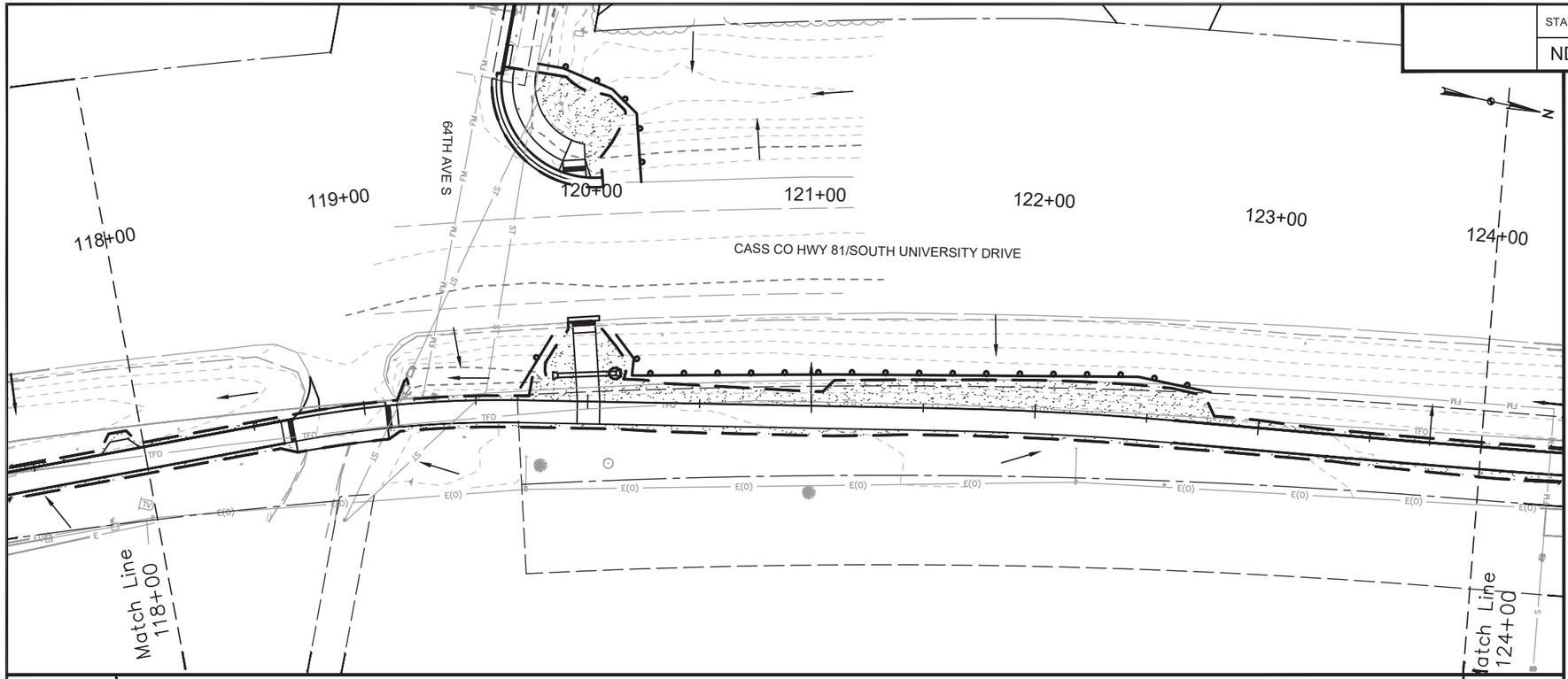
TEMPORARY EROSION CONTROL STA. 106+00 TO 118+00

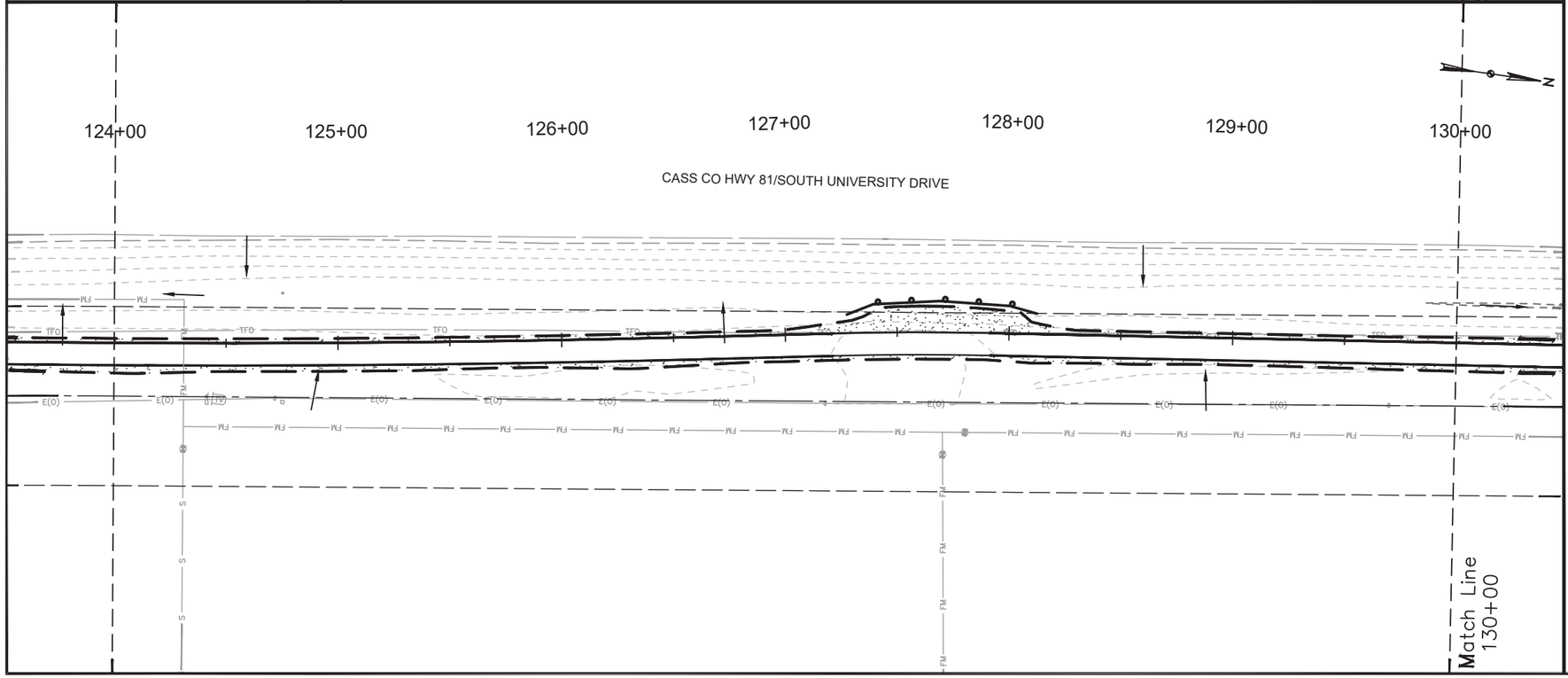
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	76	10





SPEC CODE	BID ITEM	QTY	UNIT
253 0201	HYDRAULIC MULCH		
	Sta. 118+00 to Sta. 130+00	0.23	ACRE
261 0112	FIBER ROLLS 12IN		
	Sta. 118+00 to Sta. 130+00	491	LF
261 0113	REMOVE FIBER ROLLS 12IN		
	Sta. 118+00 to Sta. 130+00	491	LF

LEGEND:

HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

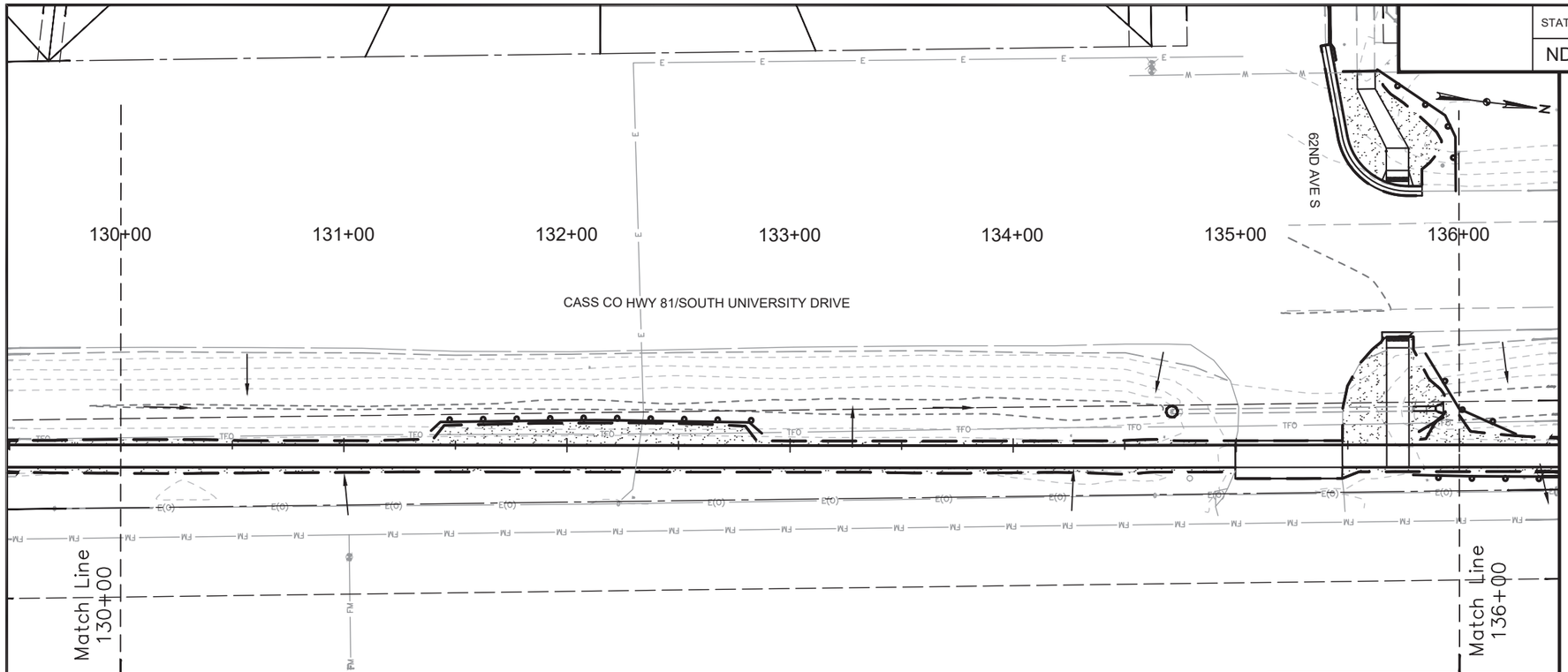
TEMPORARY EROSION CONTROL STA. 118+00 TO 130+00

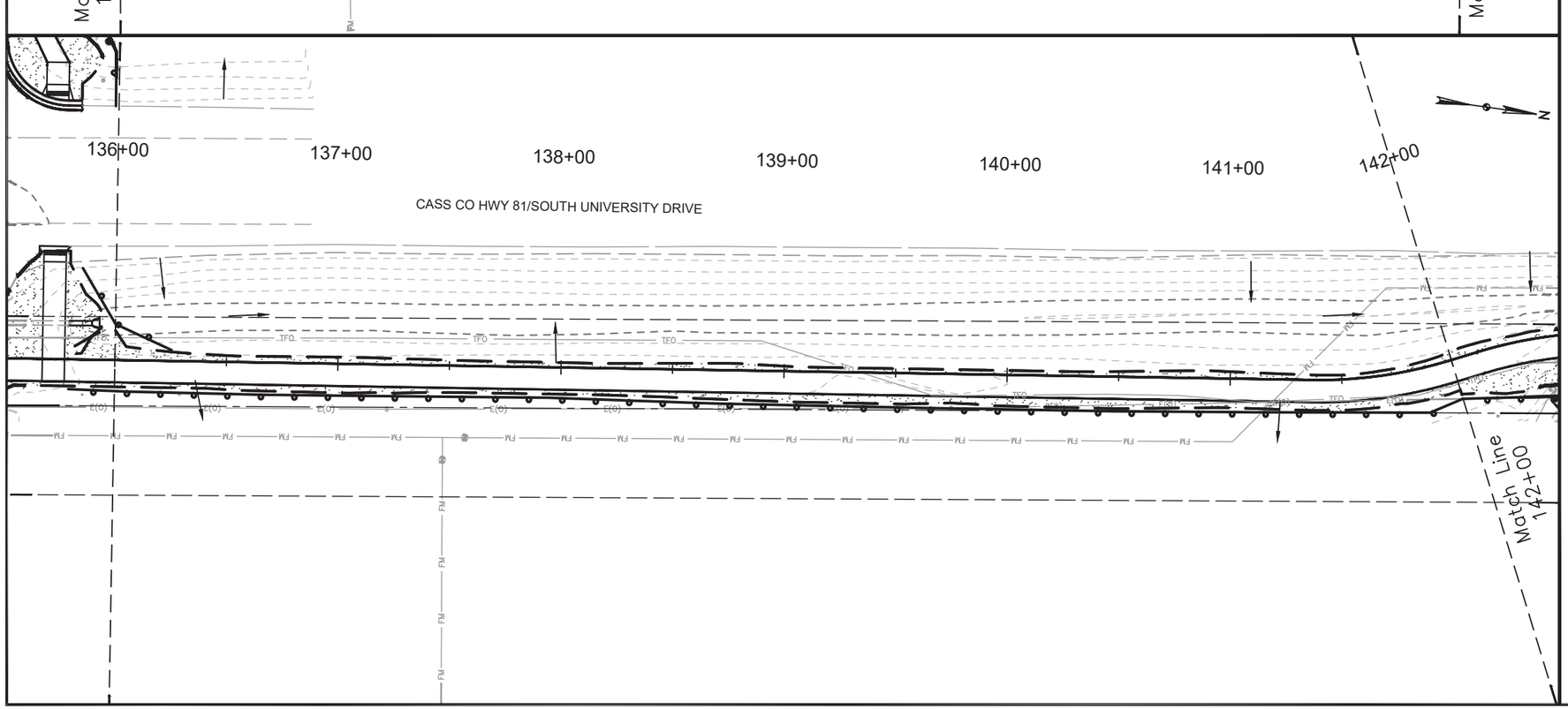
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	76	11





SPEC	CODE	BID ITEM	QTY	UNIT
253	0201	HYDRAULIC MULCH		
		Sta. 130+00 to Sta. 142+00	0.21	ACRE
261	0112	FIBER ROLLS 12IN		
		Sta. 130+00 to Sta. 142+00	922	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta. 130+00 to Sta. 142+00	922	LF

LEGEND:

HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

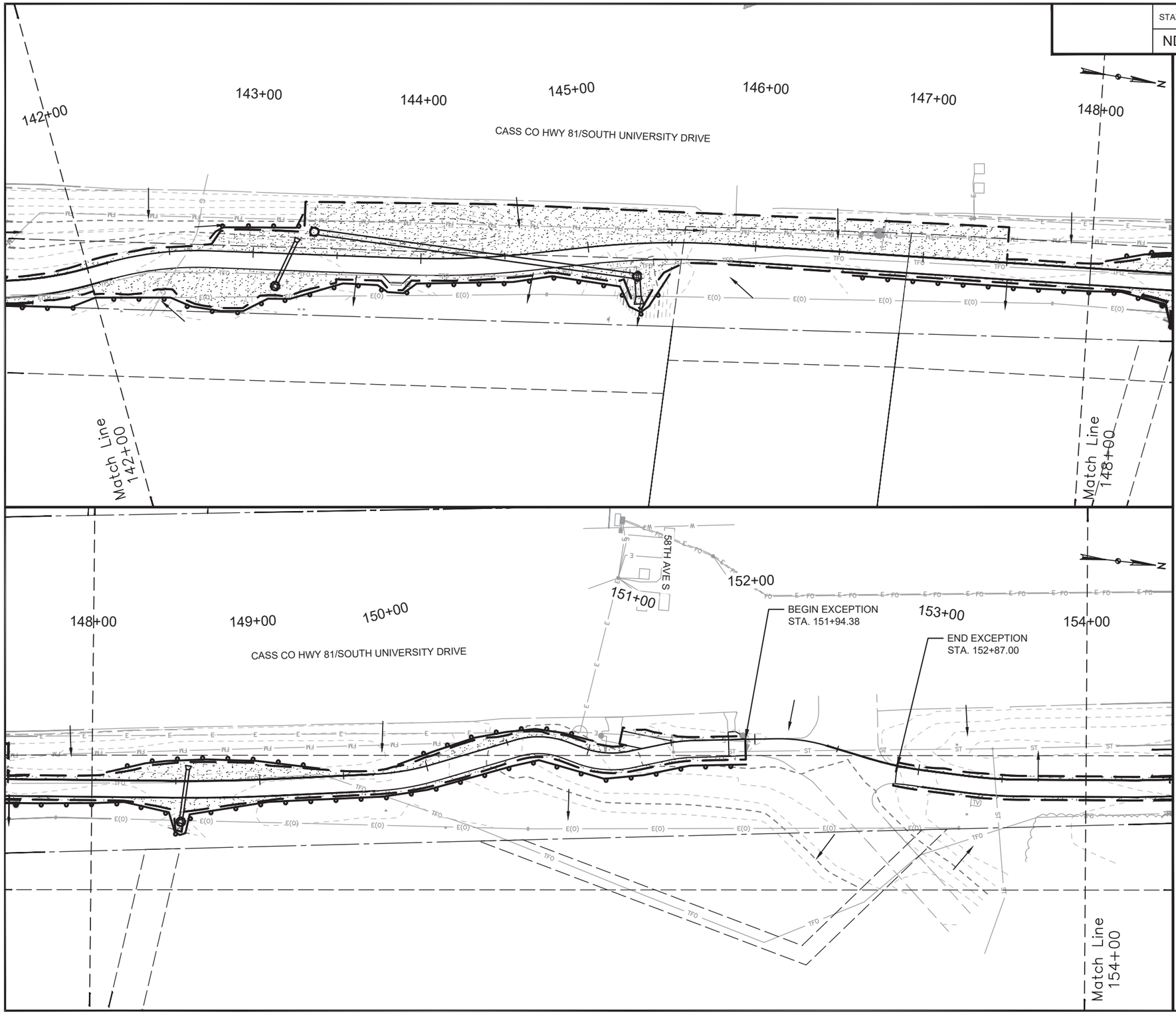
TEMPORARY EROSION CONTROL STA. 130+00 TO 142+00

DRWN. BY	CHK'D BY	PROJECT NO.
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	76	12



SPEC CODE	BID ITEM	QTY	UNIT
253 0201	HYDRAULIC MULCH		
	Sta. 142+00 to Sta. 154+00	0.43	ACRE
261 0112	FIBER ROLLS 12IN		
	Sta. 142+00 to Sta. 154+00	1,284	LF
261 0113	REMOVE FIBER ROLLS 12IN		
	Sta. 142+00 to Sta. 154+00	1,284	LF

LEGEND:

HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

TEMPORARY EROSION CONTROL STA. 142+00 TO 154+00

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ND	TMA-TAU-CRP-8-984(183)	76	13

154+00 155+00 156+00 157+00 158+00 159+00 160+00

TION
.00

CASS CO HWY 81/SOUTH UNIVERSITY DRIVE

Match Line 154+00

Match Line 160+00

160+00 161+00 162+00 163+00 164+00 165+00 166+00

CASS CO HWY 81/SOUTH UNIVERSITY DRIVE

BEGIN EXCEPTION STA. 162+34.04

END EXCEPTION STA. 162+97.56

END PROJECT STA. 165+31.09

54TH AVE S

Match Line 160+00

Match Line 166+00

SPEC CODE	BID ITEM	QTY	UNIT
253 0201	HYDRAULIC MULCH		
	Sta. 154+00 to Sta. 166+00	0.14	ACRE
261 0112	FIBER ROLLS 12IN		
	Sta. 154+00 to Sta. 166+00	855	LF
261 0113	REMOVE FIBER ROLLS 12IN		
	Sta. 154+00 to Sta. 166+00	855	LF

LEGEND:

HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

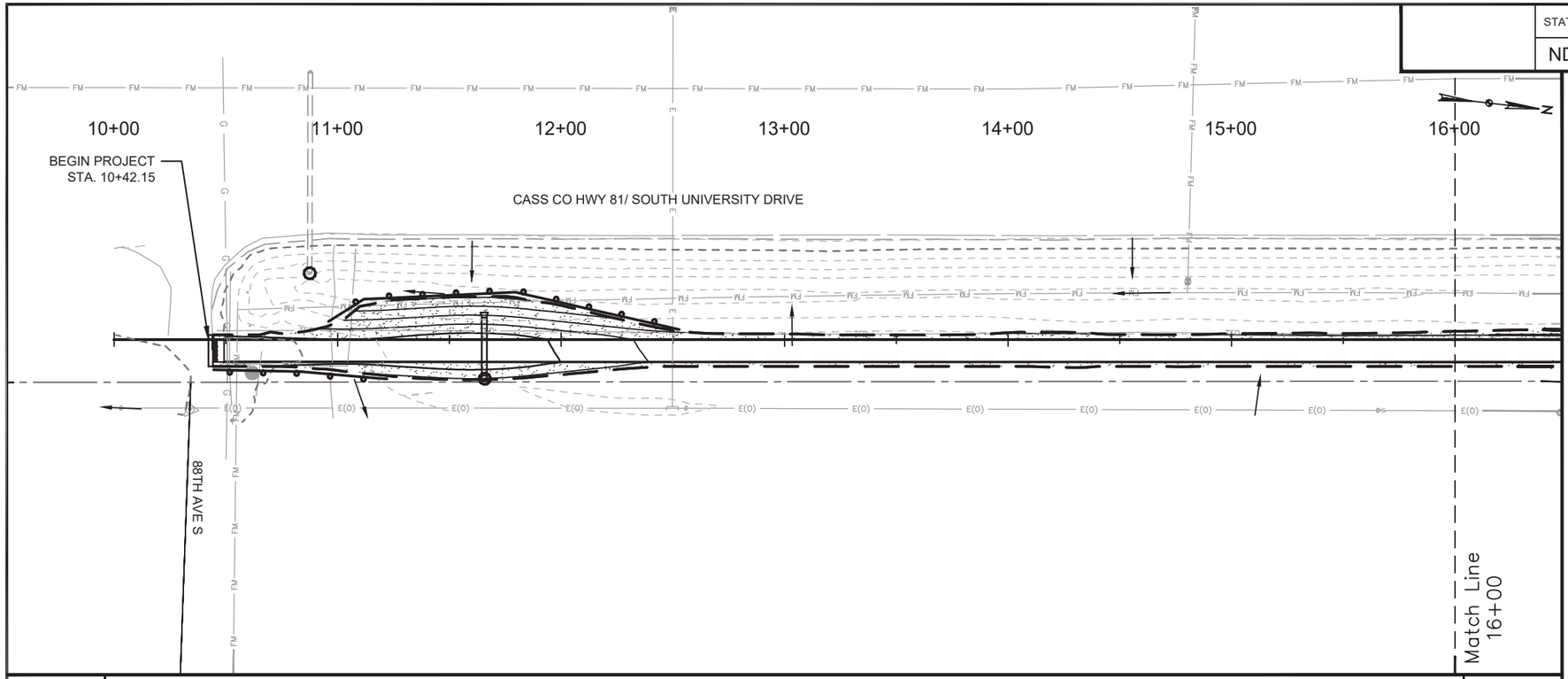
TEMPORARY EROSION CONTROL STA. 154+00 TO 166+00

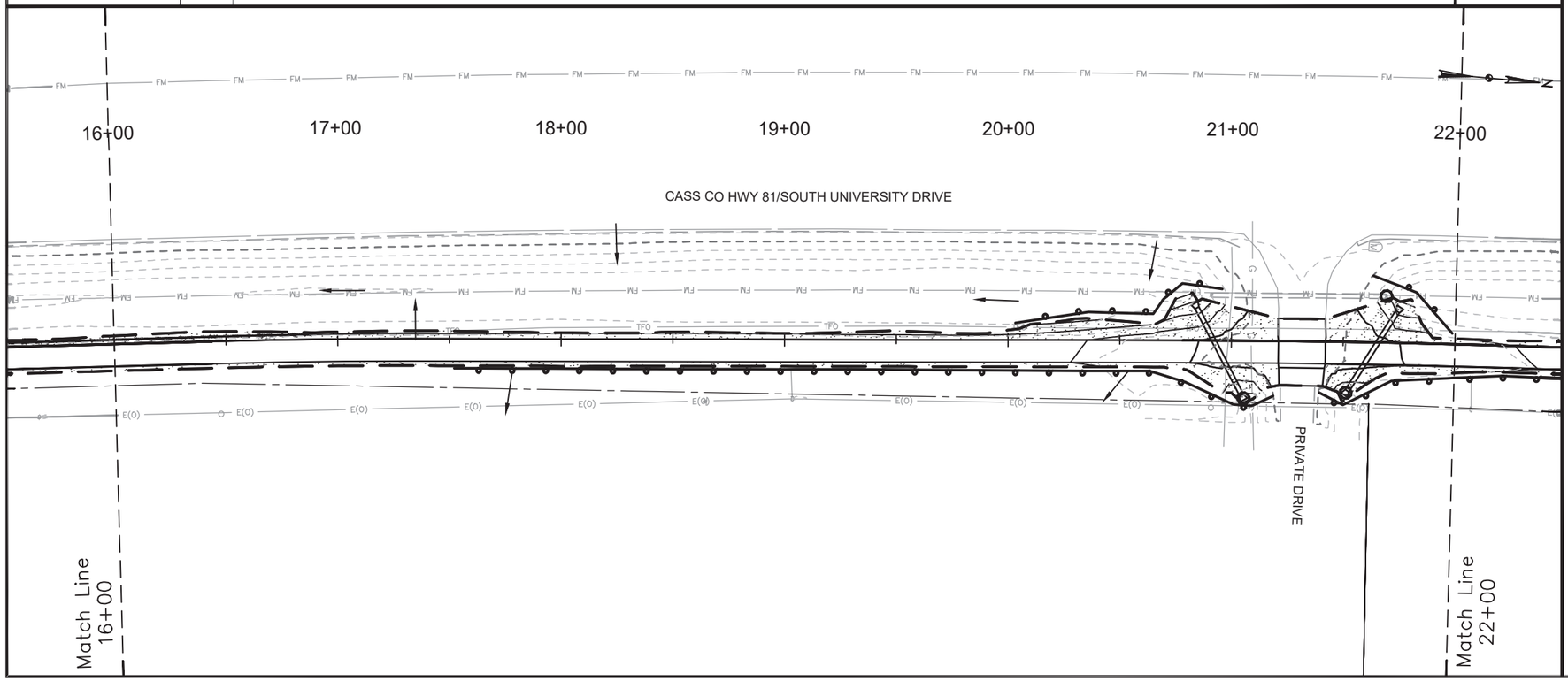
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	77	1





SPEC	CODE	BID ITEM	QTY	UNIT
251	0300	SEEDING CLASS III		
		Sta. 10+00 to Sta. 22+00	0.24	ACRE
253	0201	HYDRAULIC MULCH		
		Sta. 10+00 to Sta. 22+00	0.24	ACRE
261	0112	FIBER ROLLS 12IN		
		Sta. 10+00 to Sta. 22+00	897	LF

LEGEND:

SEEDING CLASS III/
HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/25/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

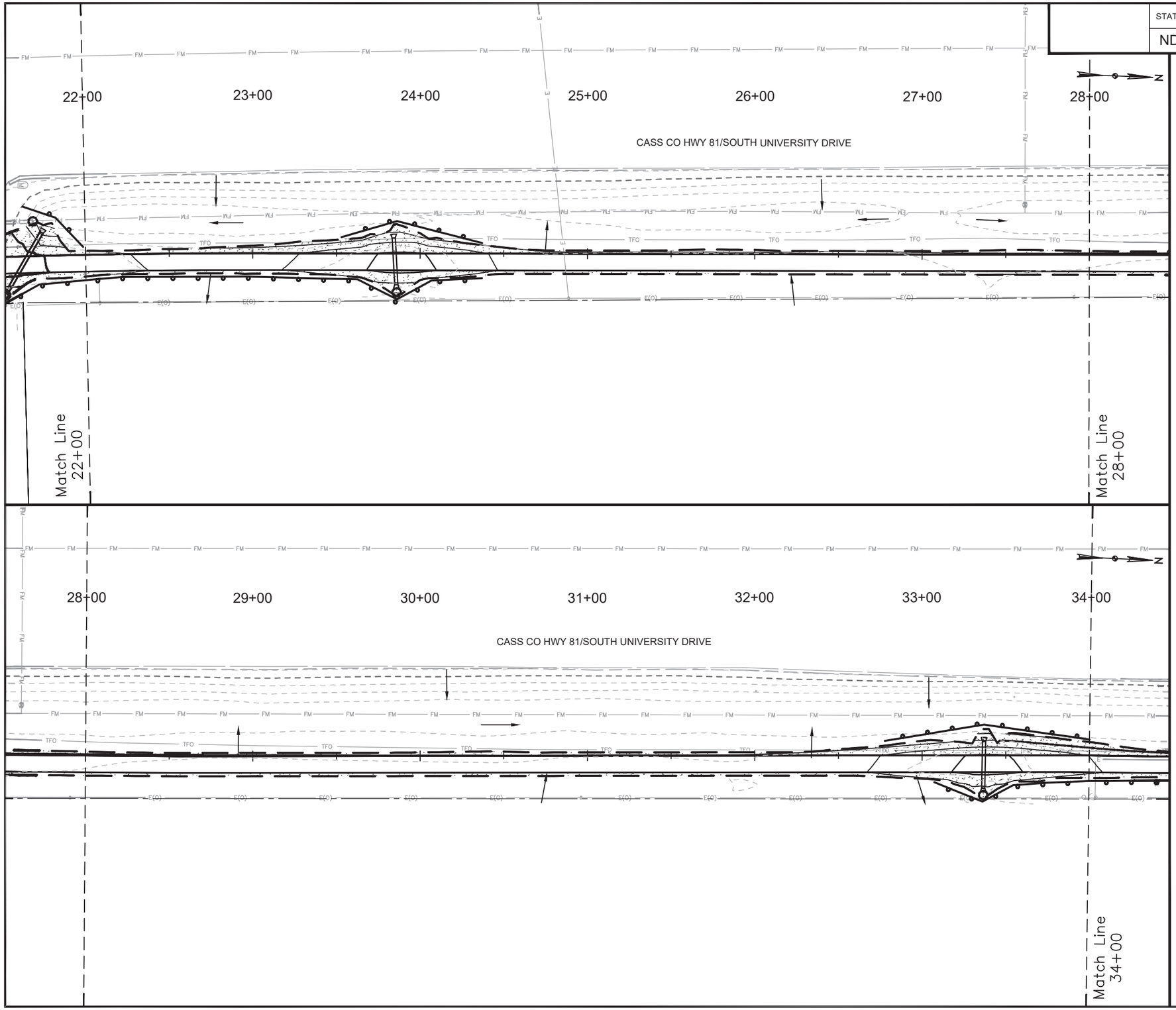
PERMANENT EROSION CONTROL STA. 10+00 TO 22+00

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	77	2



SPEC CODE	BID ITEM	QTY	UNIT
251 0300	SEEDING CLASS III		
	Sta. 22+00 to Sta. 34+00	0.18	ACRE
253 0201	HYDRAULIC MULCH		
	Sta. 22+00 to Sta. 34+00	0.18	ACRE
261 0112	FIBER ROLLS 12IN		
	Sta. 22+00 to Sta. 34+00	582	LF

LEGEND:

SEEDING CLASS III/ HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

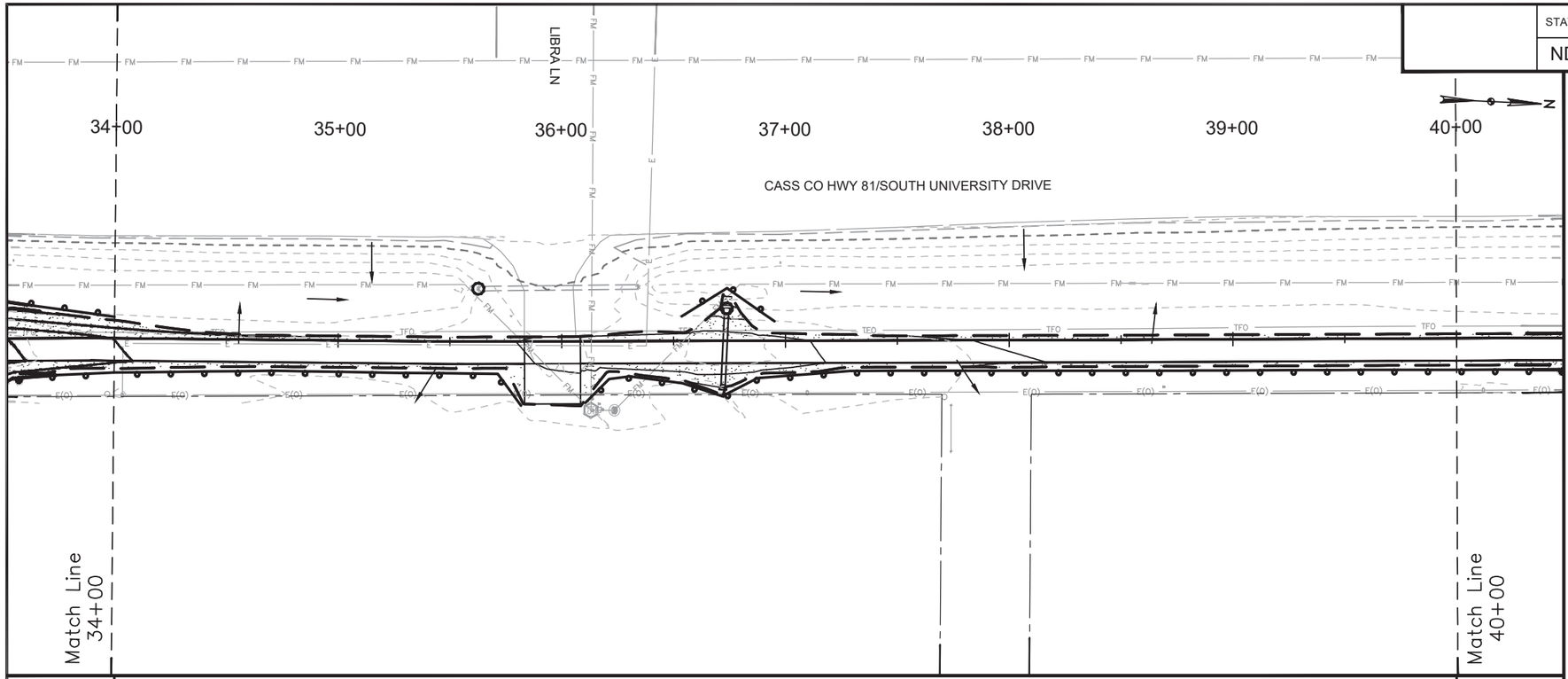
PERMANENT EROSION CONTROL STA. 22+00 TO 34+00

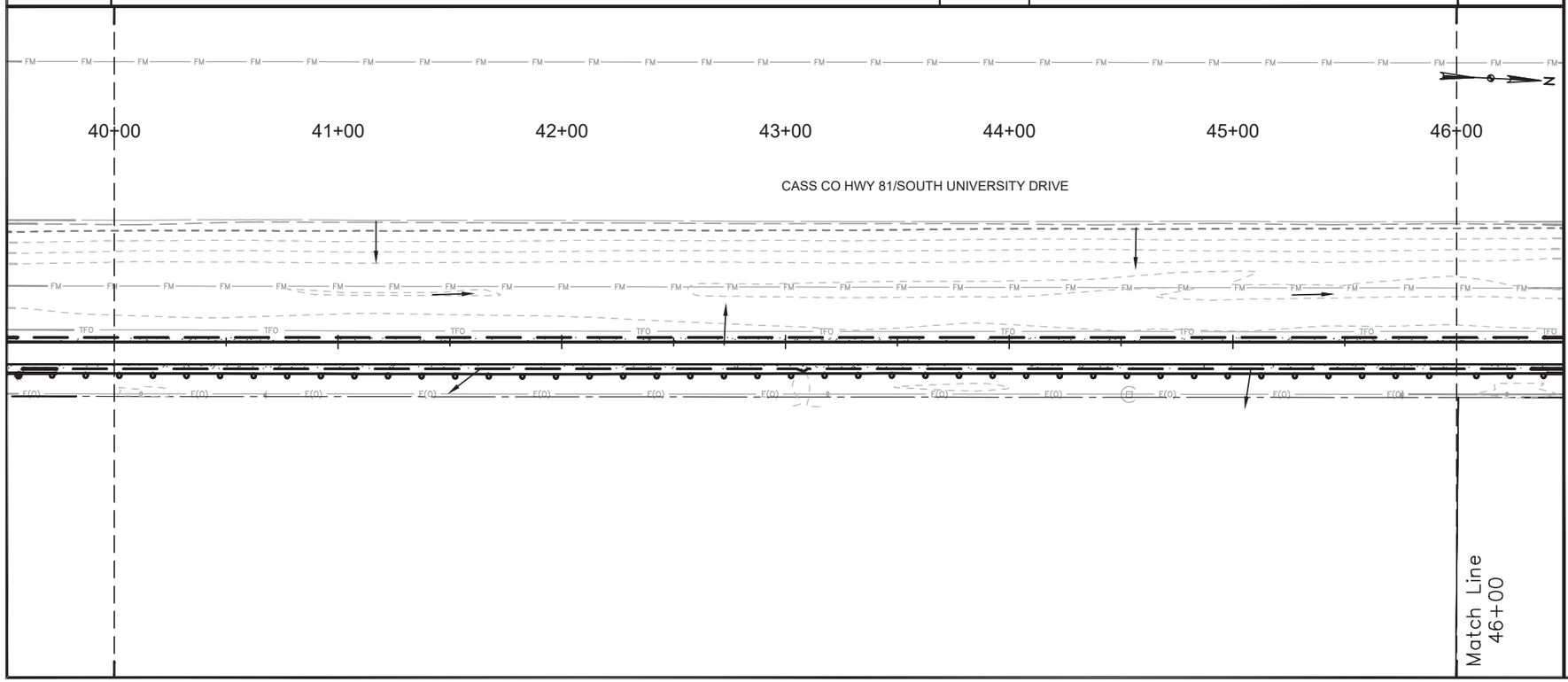
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	77	3





SPEC CODE	BID ITEM	QTY	UNIT
251 0300	SEEDING CLASS III		
	Sta. 34+00 to Sta. 46+00	0.13	ACRE
253 0201	HYDRAULIC MULCH		
	Sta. 34+00 to Sta. 46+00	0.13	ACRE
261 0112	FIBER ROLLS 12IN		
	Sta. 34+00 to Sta. 46+00	1,267	LF

LEGEND:

SEEDING CLASS III/ HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

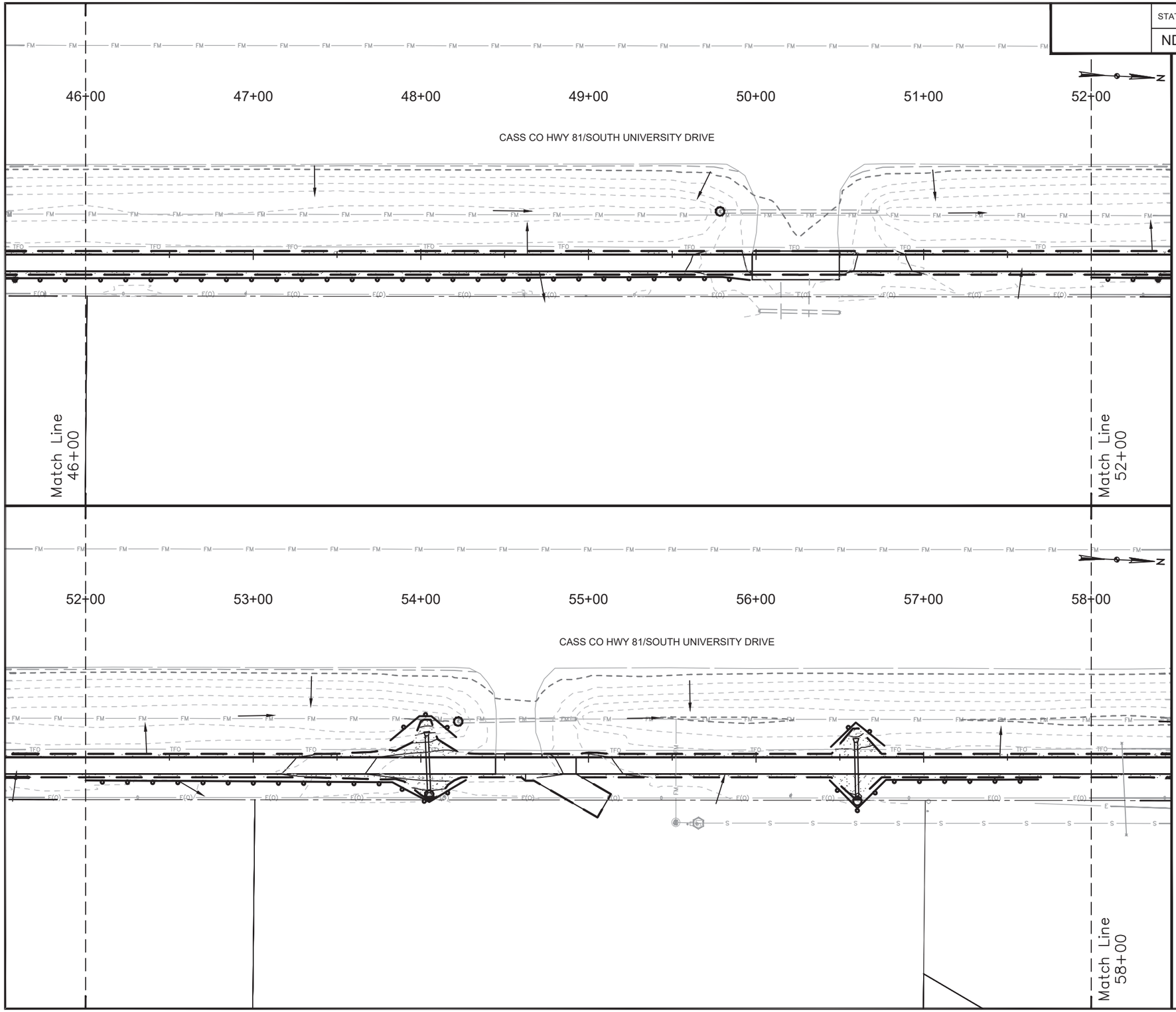
PERMANENT EROSION CONTROL STA. 34+00 TO 46+00

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	77	4



SPEC CODE	BID ITEM	QTY	UNIT
251 0300	SEEDING CLASS III		
	Sta. 46+00 to Sta. 58+00	0.13	ACRE
253 0201	HYDRAULIC MULCH		
	Sta. 46+00 to Sta. 58+00	0.13	ACRE
261 0112	FIBER ROLLS 12IN		
	Sta. 46+00 to Sta. 58+00	923	LF

LEGEND:

SEEDING CLASS III/ HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/25/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

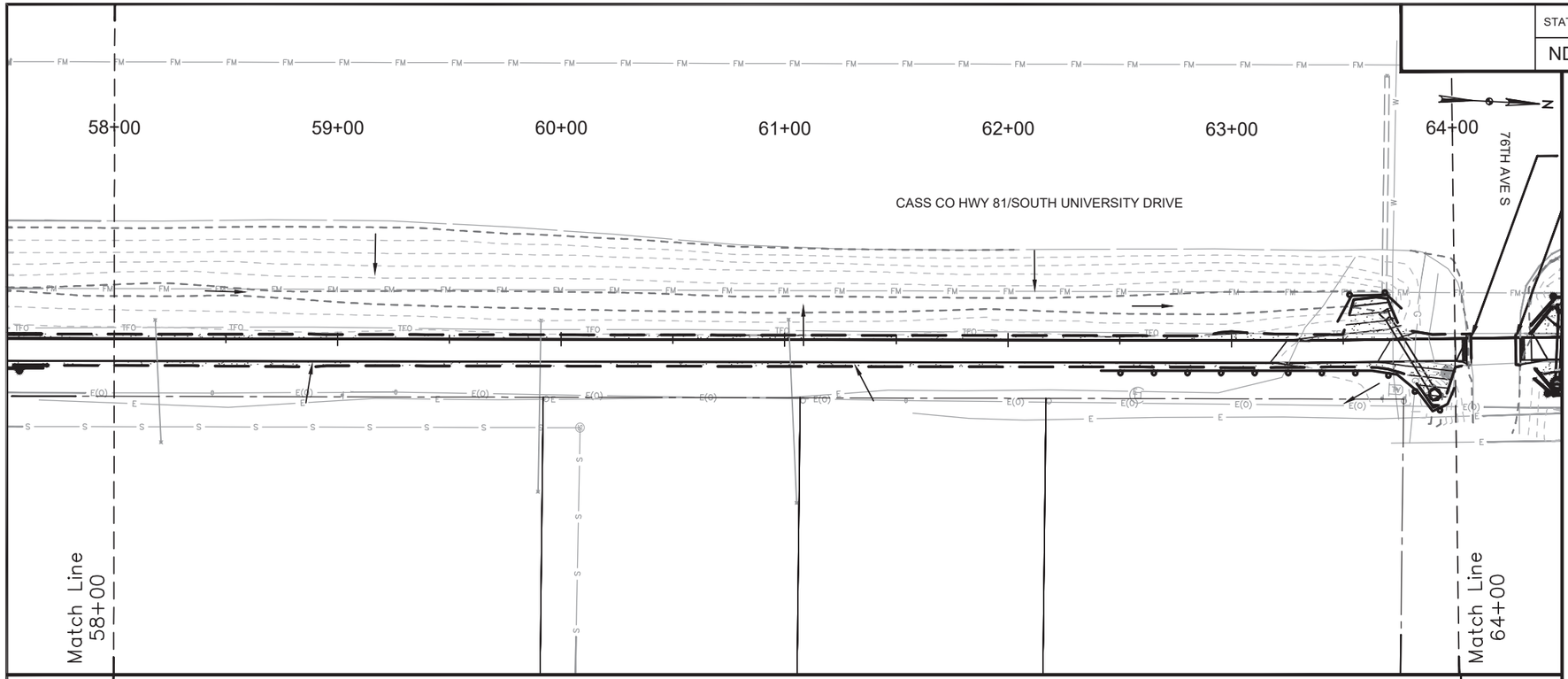
PERMANENT EROSION CONTROL STA. 46+00 TO 58+00

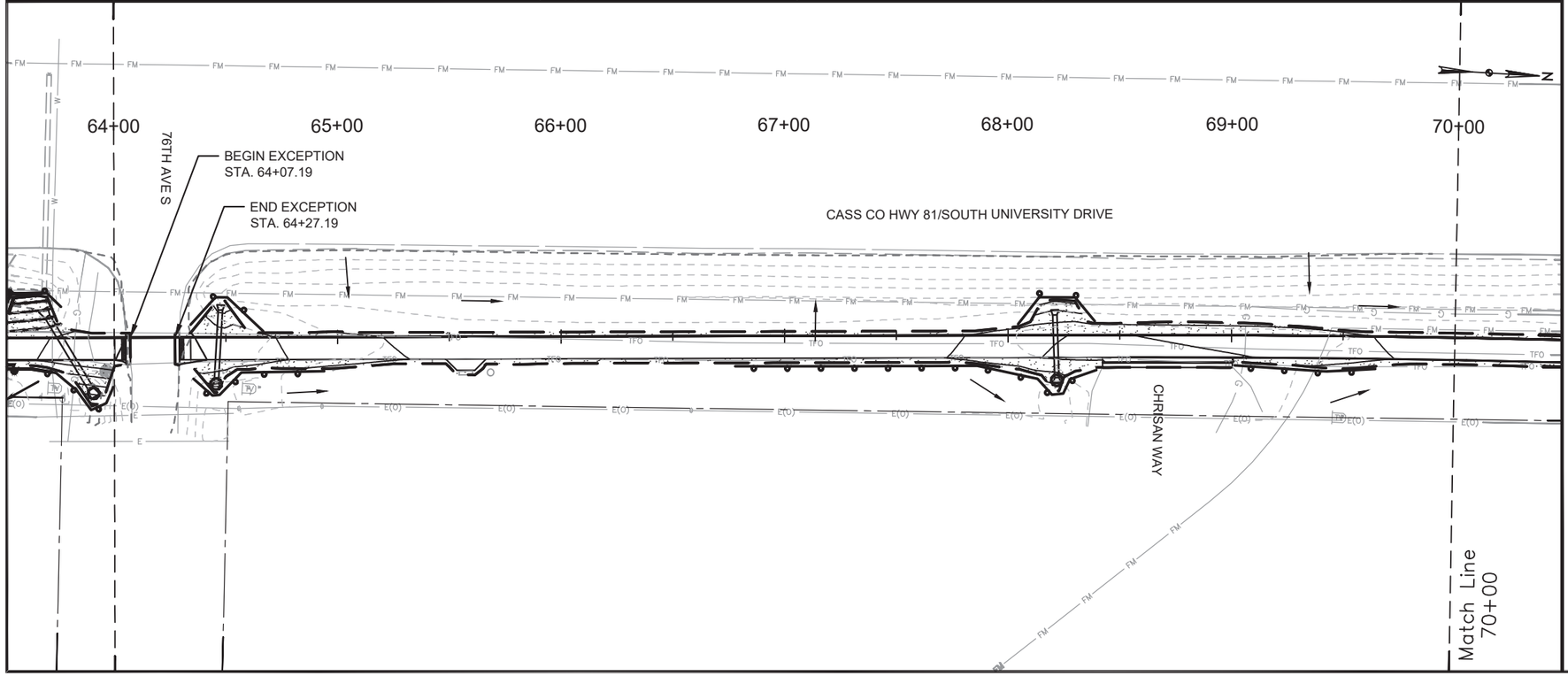
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	77	5





SPEC CODE	BID ITEM	QTY	UNIT
251 0300	SEEDING CLASS III		
	Sta. 58+00 to Sta. 70+00	0.16	ACRE
253 0201	HYDRAULIC MULCH		
	Sta. 58+00 to Sta. 70+00	0.16	ACRE
261 0112	FIBER ROLLS 12IN		
	Sta. 58+00 to Sta. 70+00	644	LF

LEGEND:

SEEDING CLASS III/ HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/5/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

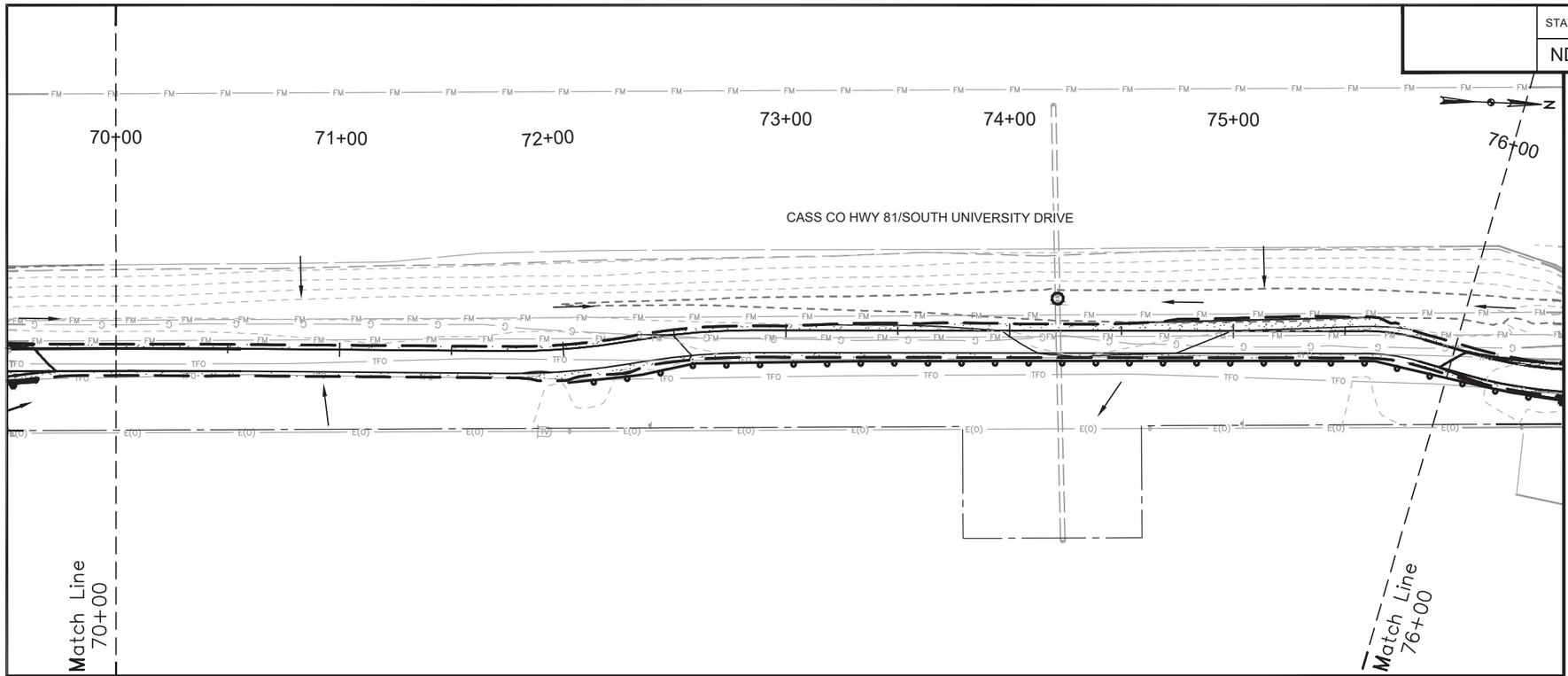
PERMANENT EROSION CONTROL STA. 58+00 TO 70+00

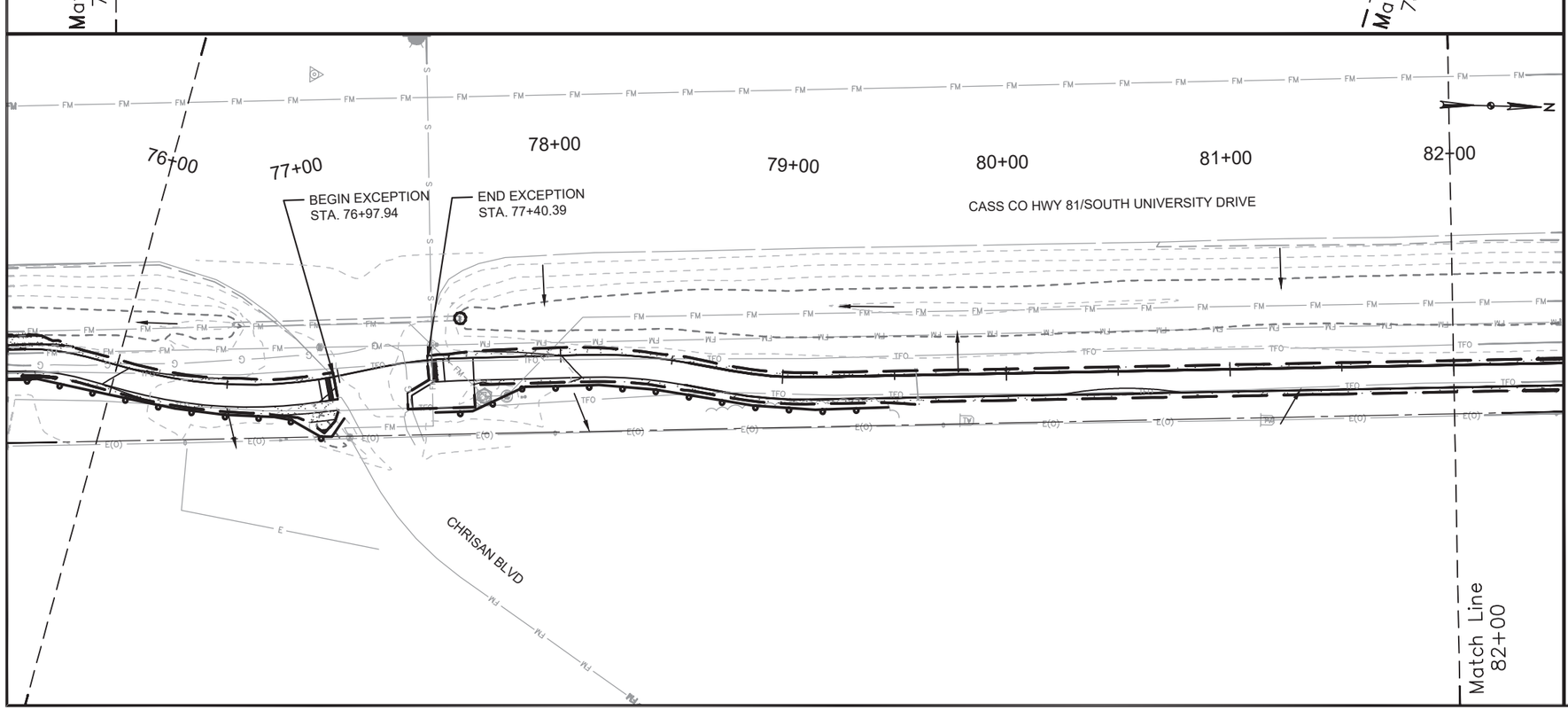
DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	77	6





SPEC CODE	BID ITEM	QTY	UNIT
251 0300	SEEDING CLASS III		
	Sta. 70+00 to Sta. 82+00	0.13	ACRE
253 0201	HYDRAULIC MULCH		
	Sta. 70+00 to Sta. 82+00	0.13	ACRE
261 0112	FIBER ROLLS 12IN		
	Sta. 70+00 to Sta. 82+00	743	LF

LEGEND:

SEEDING CLASS III/ HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

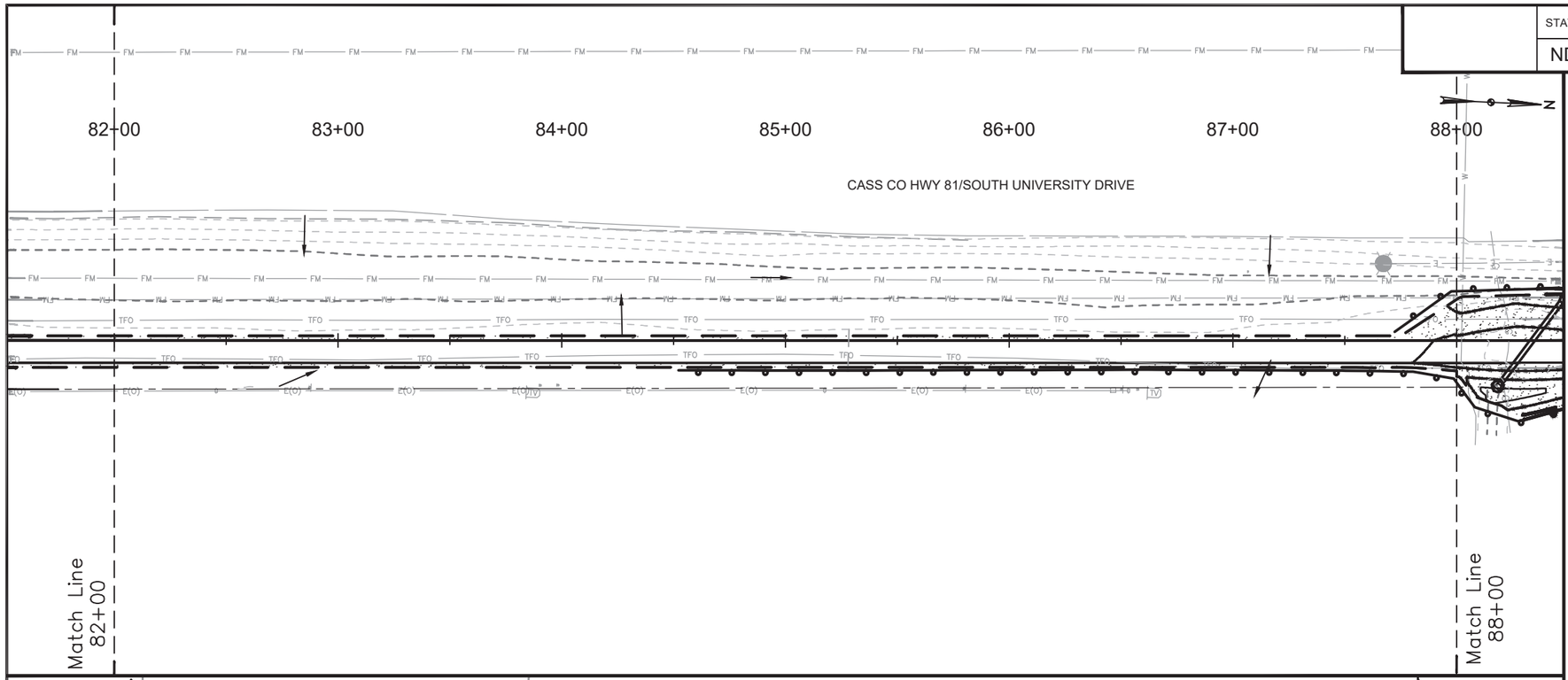
PERMANENT EROSION CONTROL STA. 70+00 TO 82+00

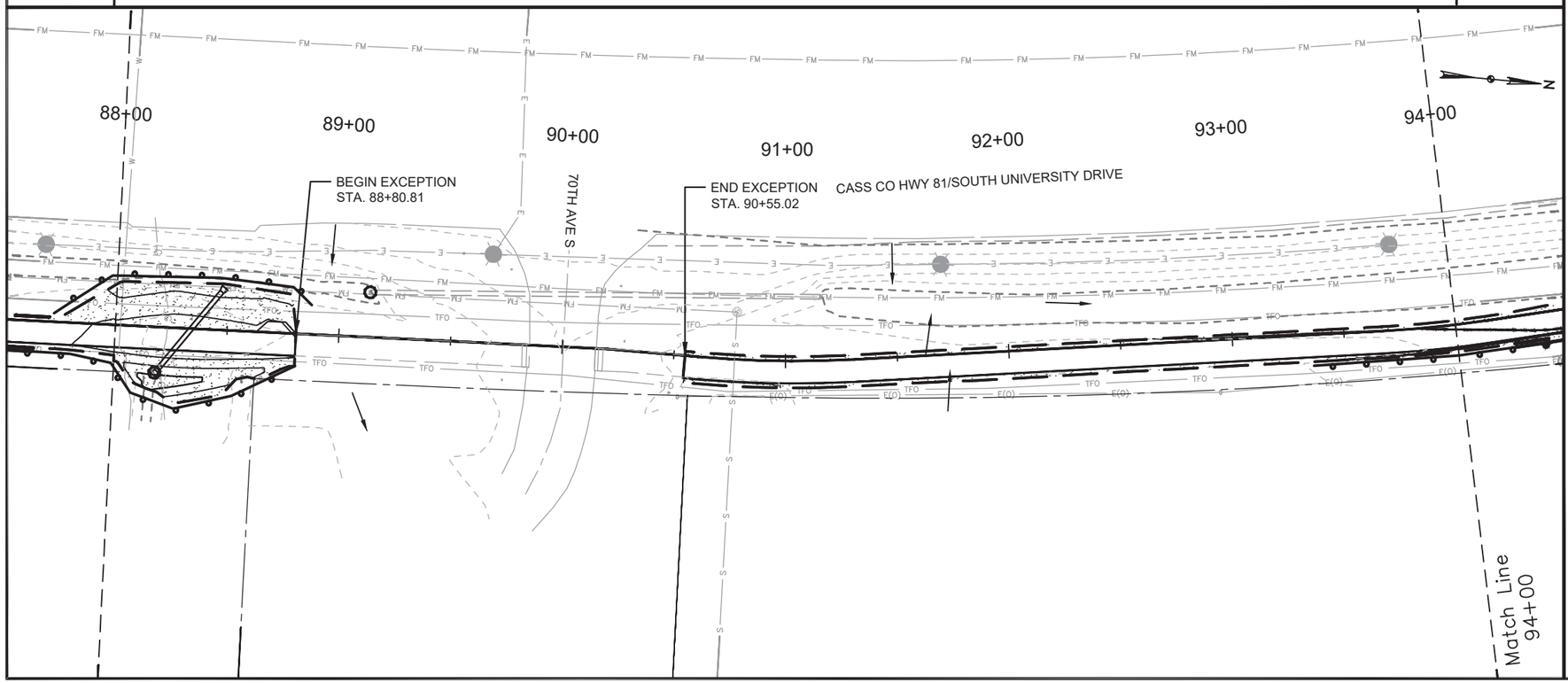
DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	77	7





SPEC CODE	BID ITEM	QTY	UNIT
251 0300	SEEDING CLASS III		
	Sta. 82+00 to Sta. 94+00	0.16	ACRE
253 0201	HYDRAULIC MULCH		
	Sta. 82+00 to Sta. 94+00	0.16	ACRE
261 0112	FIBER ROLLS 12IN		
	Sta. 82+00 to Sta. 94+00	661	LF

LEGEND:

SEEDING CLASS III/ HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/5/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

KLJ

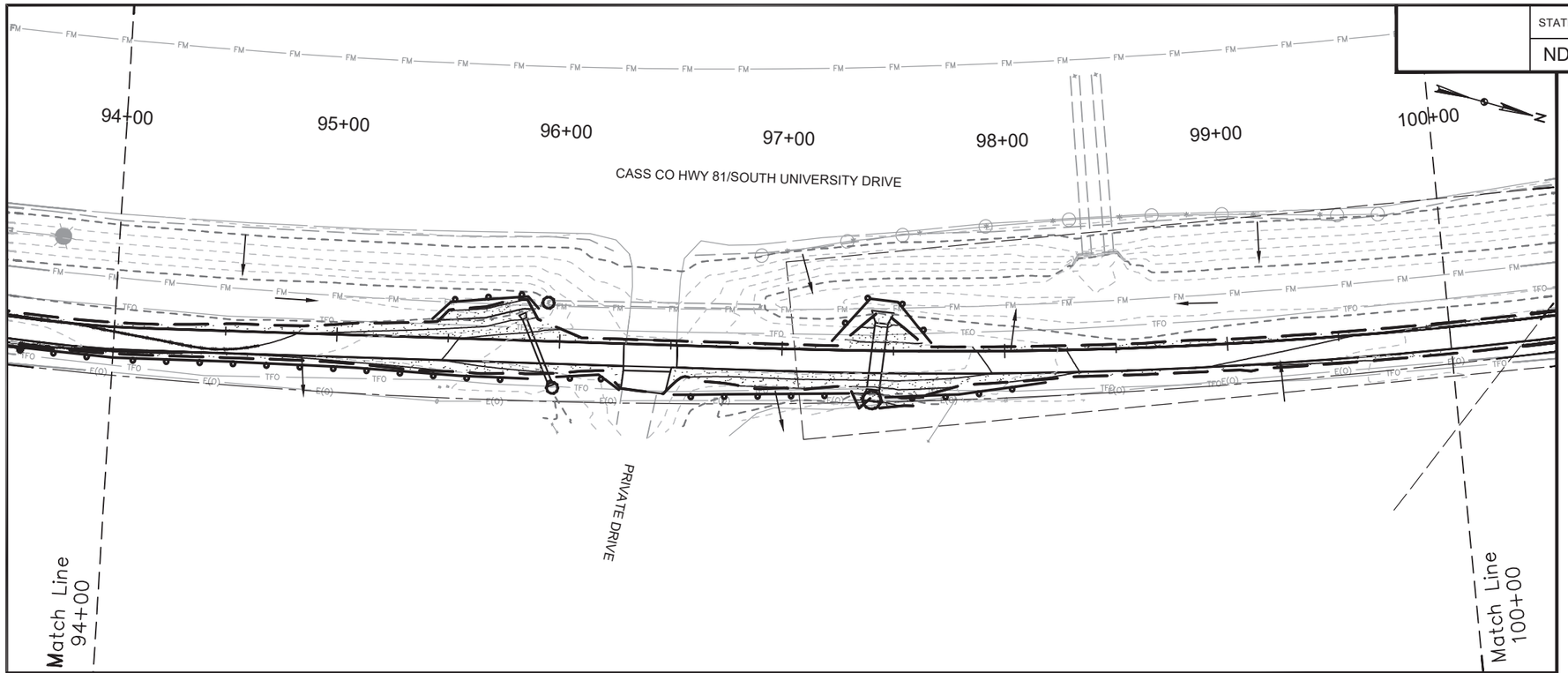
PERMANENT EROSION CONTROL STA. 82+00 TO 94+00

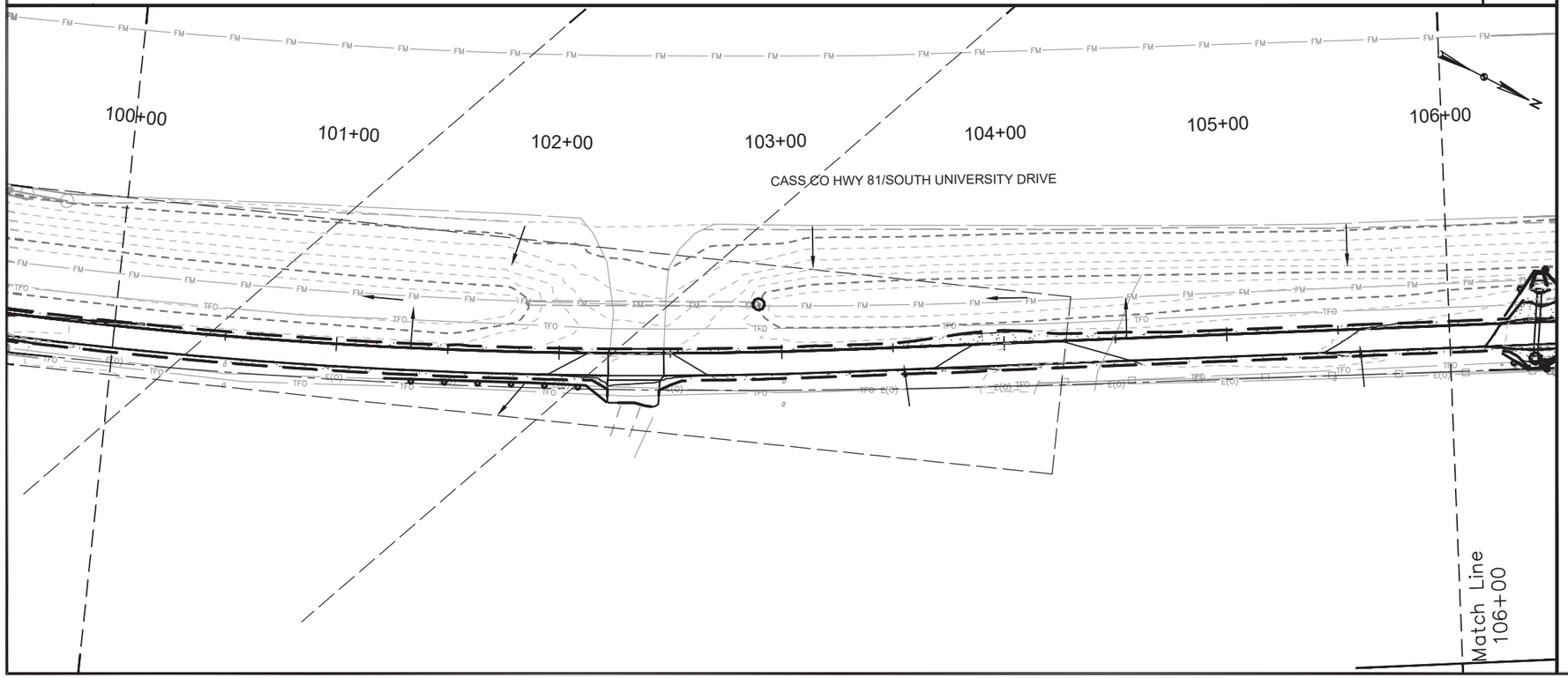
DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	77	8





SPEC CODE	BID ITEM	QTY	UNIT
251 0300	SEEDING CLASS III		
	Sta. 94+00 to Sta. 106+00	0.17	ACRE
253 0201	HYDRAULIC MULCH		
	Sta. 94+00 to Sta. 106+00	0.17	ACRE
261 0112	FIBER ROLLS 12IN		
	Sta. 94+00 to Sta. 106+00	658	LF

LEGEND:

SEEDING CLASS III/ HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

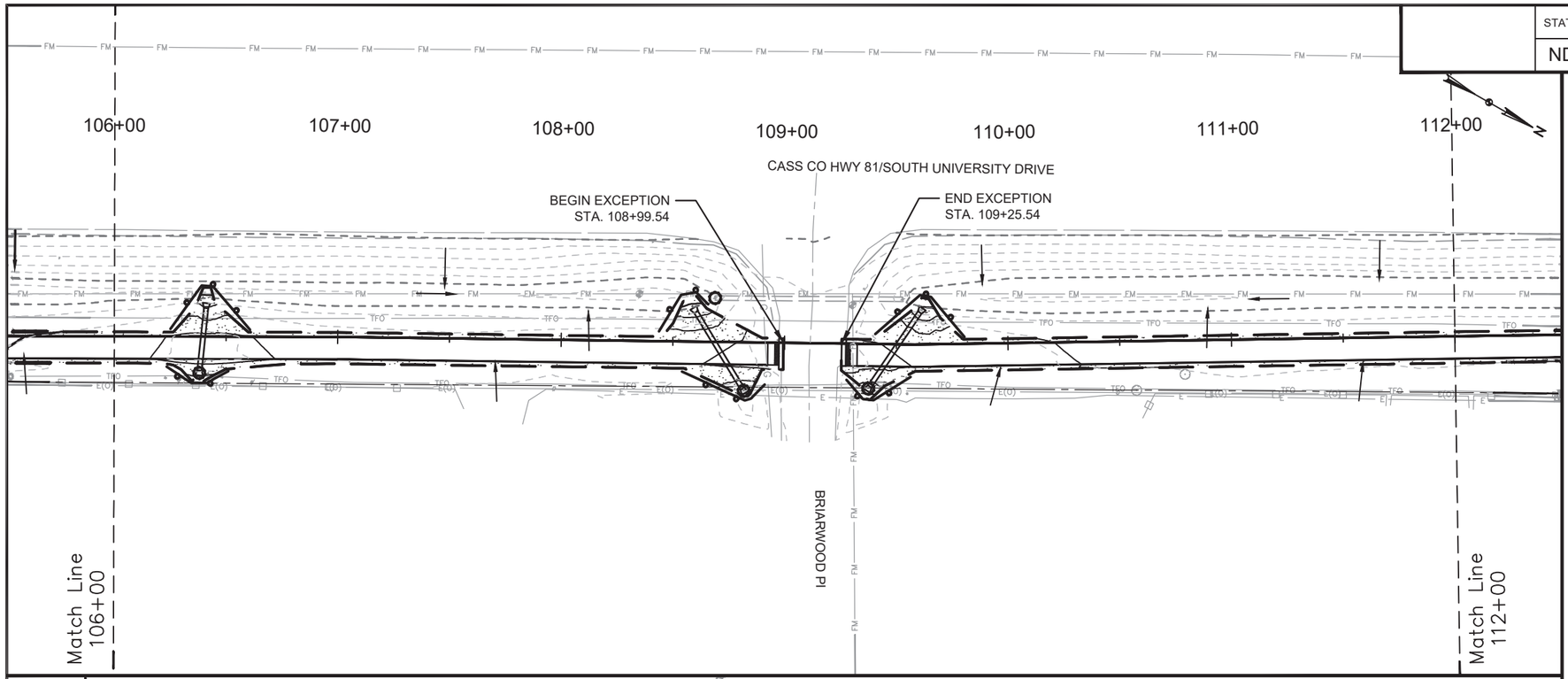
PERMANENT EROSION CONTROL STA. 94+00 TO 106+00

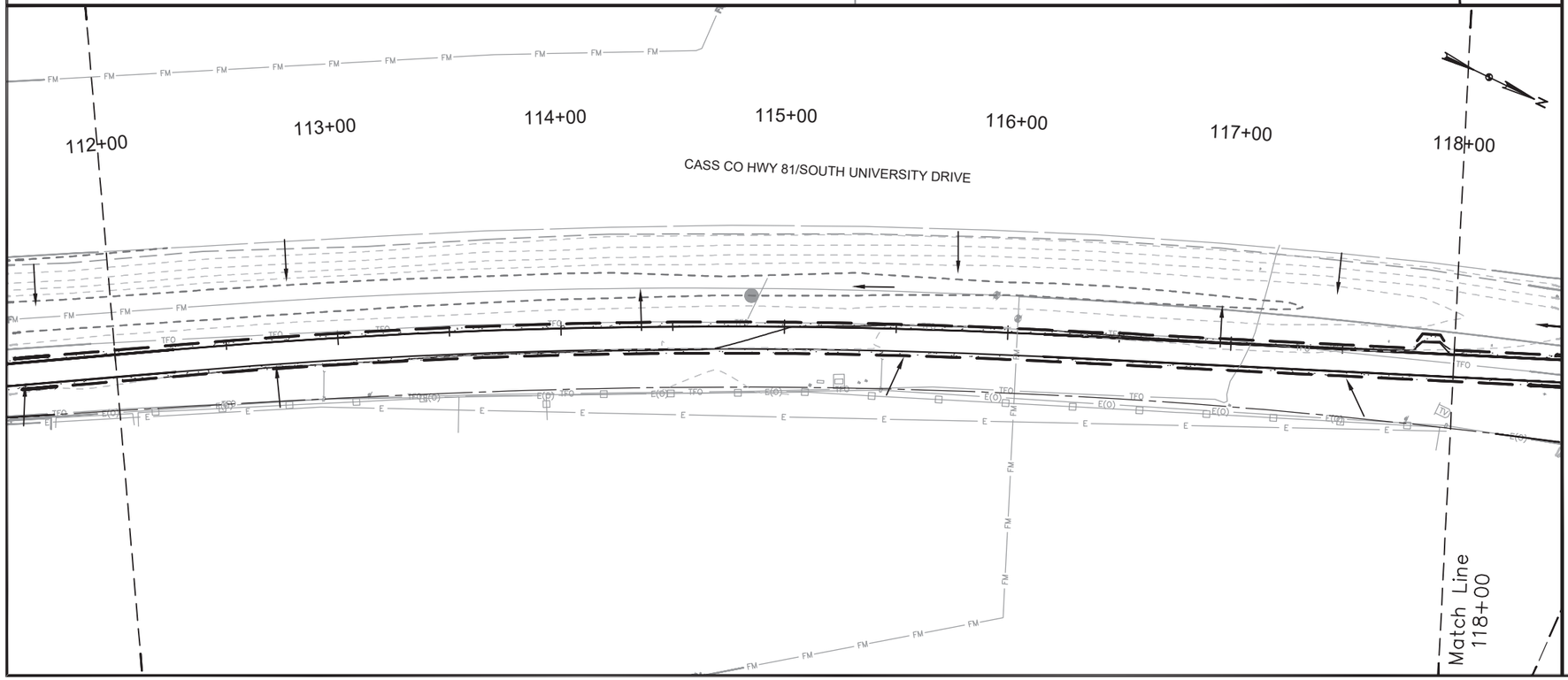
DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	77	9





SPEC CODE	BID ITEM	QTY	UNIT
251 0300	SEEDING CLASS III Sta. 106+00 to Sta. 118+00	0.15	ACRE
253 0201	HYDRAULIC MULCH Sta. 106+00 to Sta. 118+00	0.15	ACRE
261 0112	FIBER ROLLS 12IN Sta. 106+00 to Sta. 118+00	315	LF

LEGEND:

SEEDING CLASS III/
HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/15/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

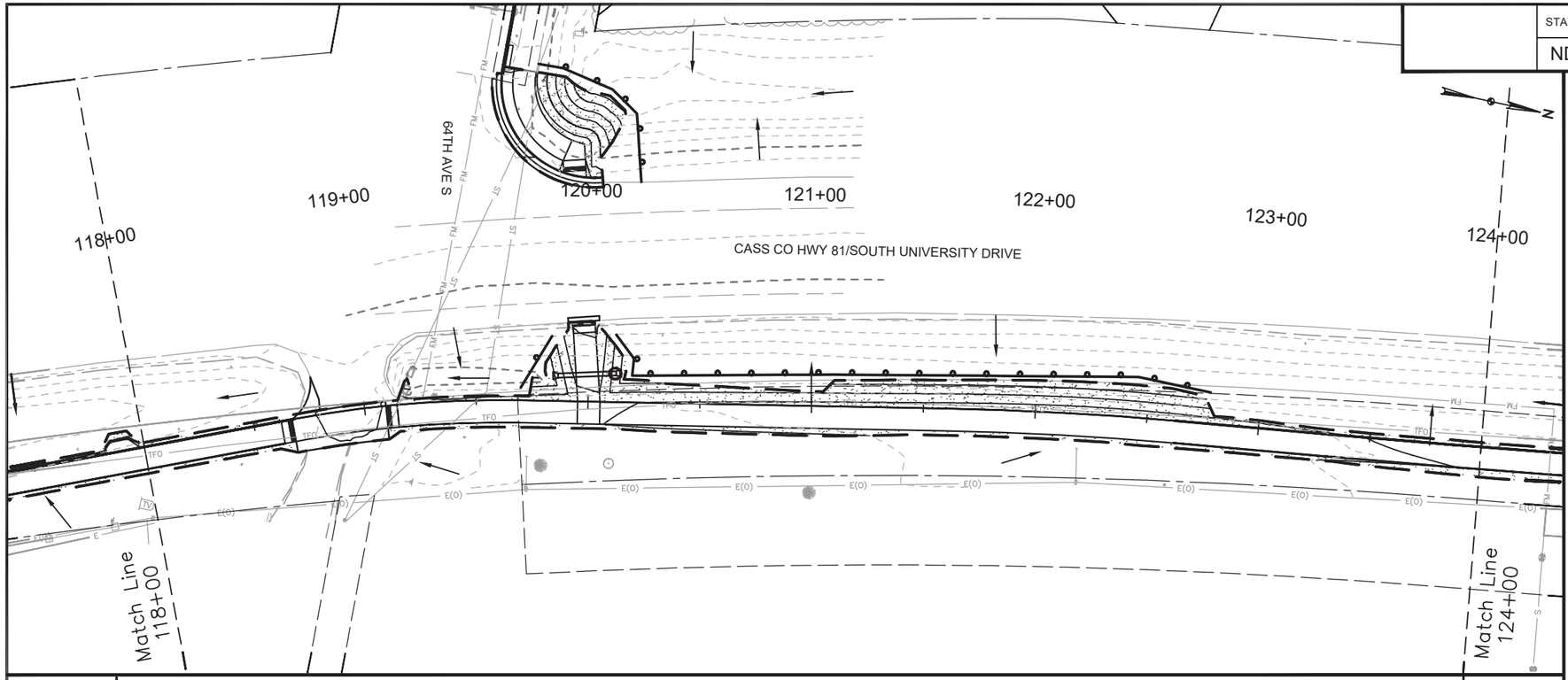
PERMANENT EROSION CONTROL STA. 106+00 TO 118+00

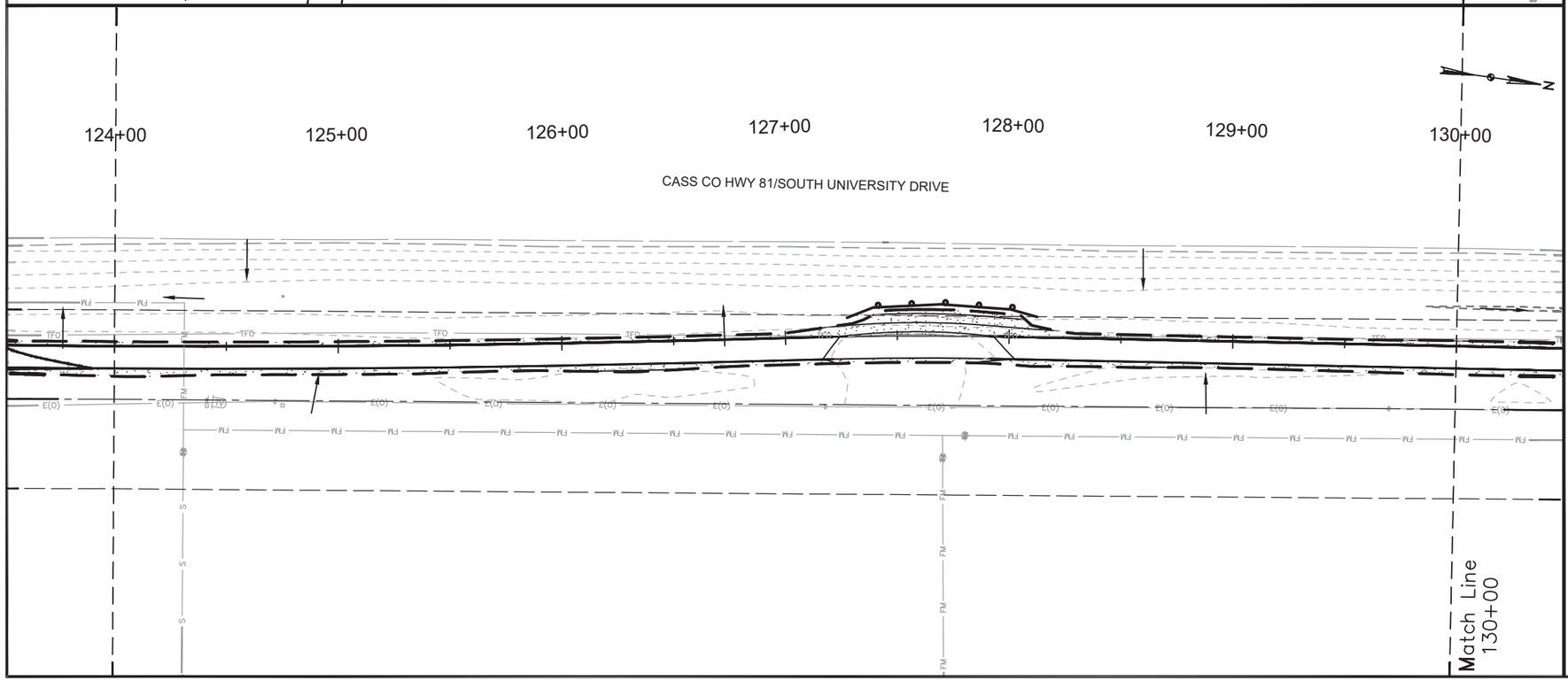
DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	77	10





SPEC	CODE	BID ITEM	QTY	UNIT
251	0300	SEEDING CLASS III		
		Sta. 118+00 to Sta. 130+00	0.23	ACRE
253	0201	HYDRAULIC MULCH		
		Sta. 118+00 to Sta. 130+00	0.23	ACRE
261	0112	FIBER ROLLS 12IN		
		Sta. 118+00 to Sta. 130+00	491	LF

LEGEND:

SEEDING CLASS III/ HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

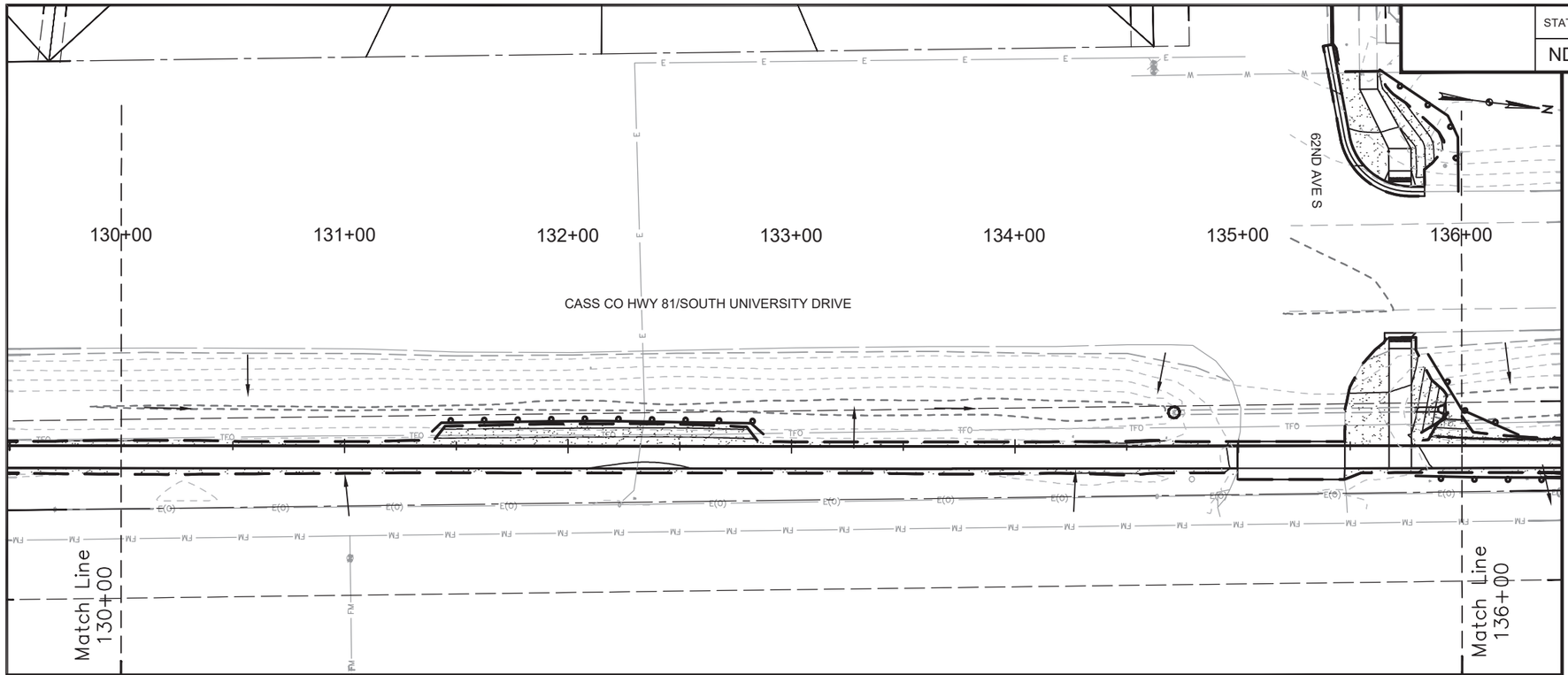
PERMANENT EROSION CONTROL STA. 118+00 TO 130+00

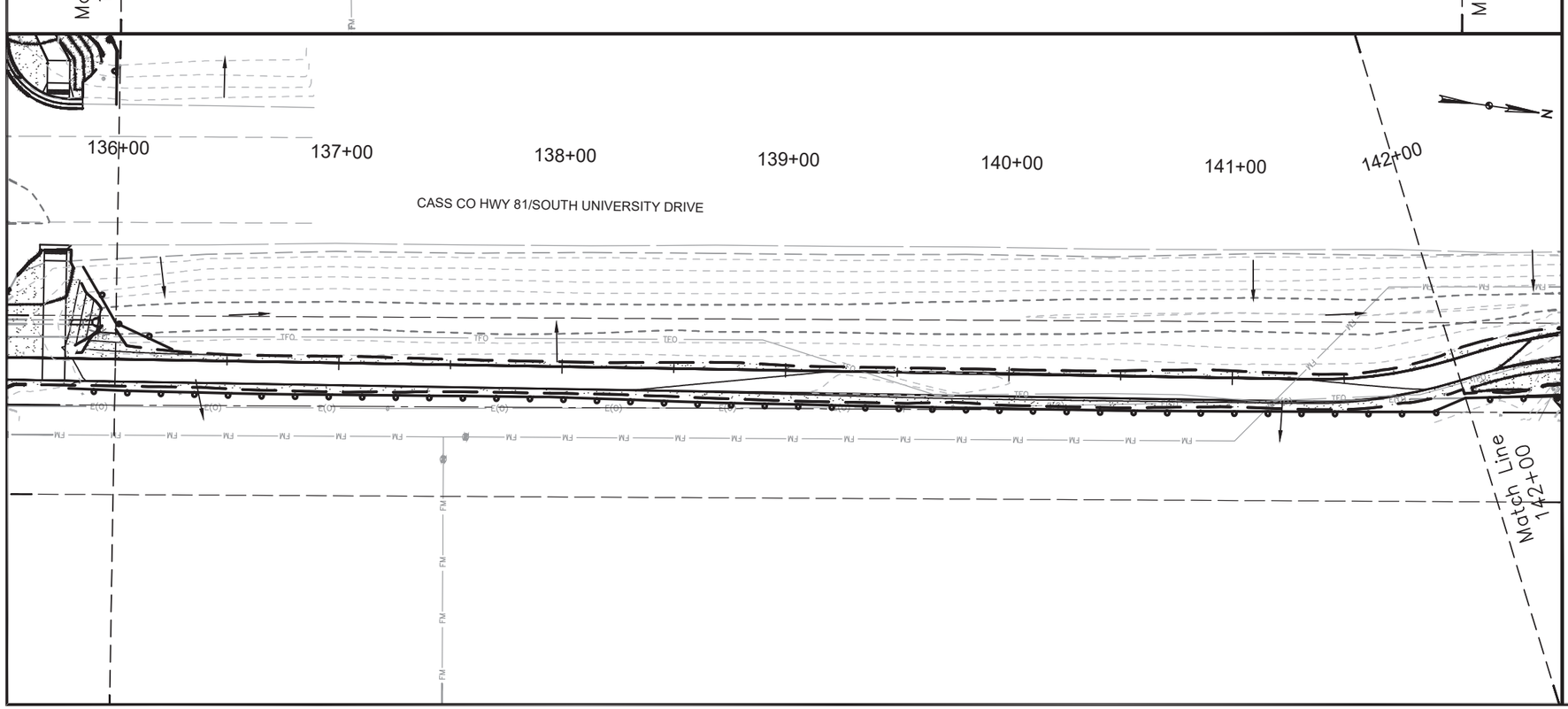
DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	77	11





SPEC	CODE	BID ITEM	QTY	UNIT
251	0300	SEEDING CLASS III		
		Sta. 130+00 to Sta. 142+00	0.21	ACRE
253	0201	HYDRAULIC MULCH		
		Sta. 130+00 to Sta. 142+00	0.21	ACRE
261	0112	FIBER ROLLS 12IN		
		Sta. 130+00 to Sta. 142+00	922	LF

LEGEND:

SEEDING CLASS III/ HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/25/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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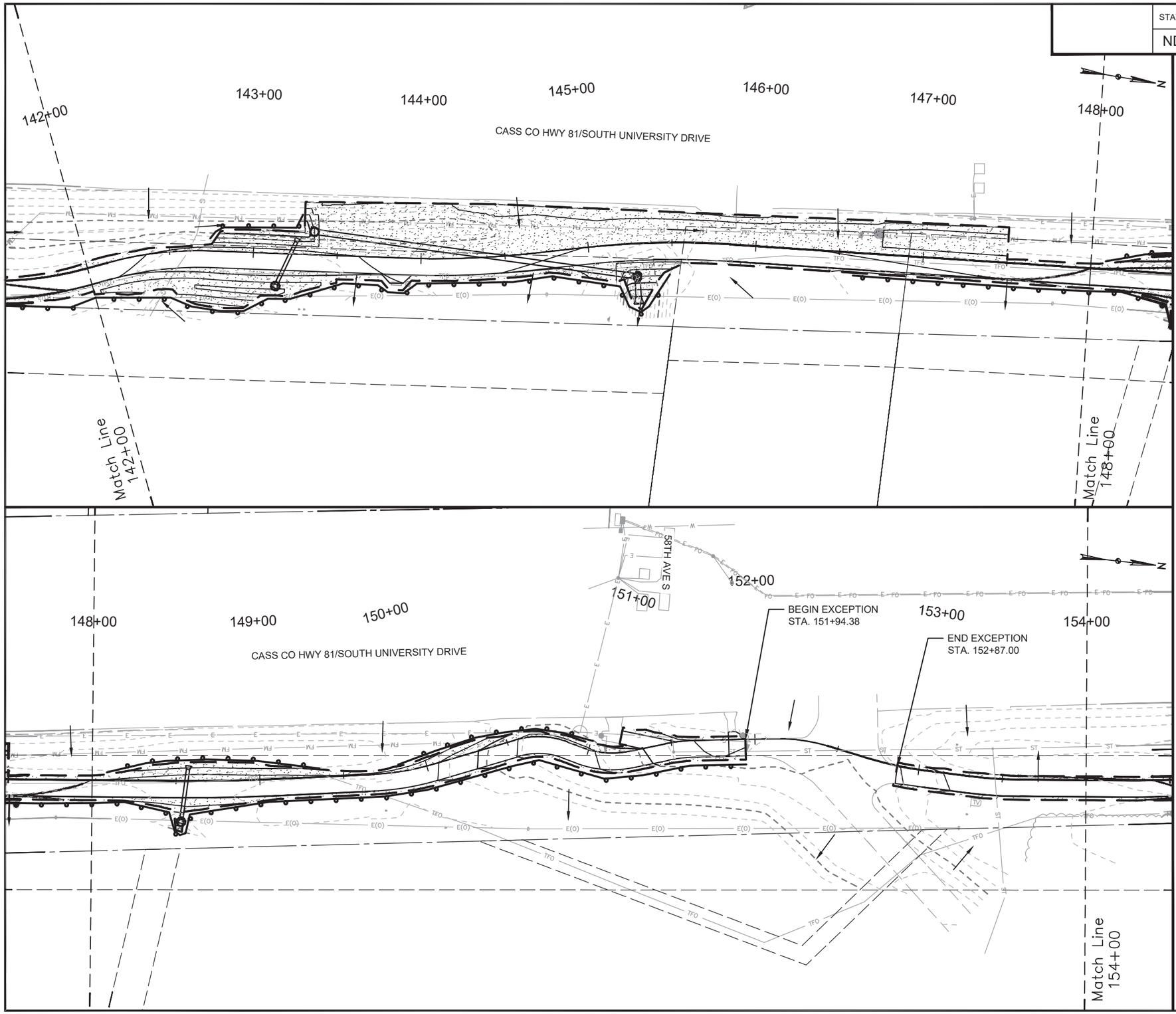
PERMANENT EROSION CONTROL STA. 130+00 TO 142+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	77	12



SPEC CODE	BID ITEM	QTY	UNIT
251 0300	SEEDING CLASS III		
	Sta. 142+00 to Sta. 154+00	0.43	ACRE
253 0201	HYDRAULIC MULCH		
	Sta. 142+00 to Sta. 154+00	0.43	ACRE
261 0112	FIBER ROLLS 12IN		
	Sta. 142+00 to Sta. 154+00	1,284	LF

LEGEND:

SEEDING CLASS III/ HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

KLJ

PERMANENT EROSION CONTROL STA. 142+00 TO 154+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	77	13

154+00 155+00 156+00 157+00 158+00 159+00 160+00

CASS CO HWY 81/SOUTH UNIVERSITY DRIVE

Match Line 154+00

Match Line 160+00

160+00 161+00 162+00 163+00 164+00 165+00 166+00

CASS CO HWY 81/SOUTH UNIVERSITY DRIVE

BEGIN EXCEPTION STA. 162+34.04

END EXCEPTION STA. 162+97.56

END PROJECT STA. 165+31.09

54TH AVE S

Match Line 160+00

Match Line 166+00

SPEC CODE	BID ITEM	QTY	UNIT
251 0300	SEEDING CLASS III		
	Sta. 154+00 to Sta. 166+00	0.14	ACRE
253 0201	HYDRAULIC MULCH		
	Sta. 154+00 to Sta. 166+00	0.14	ACRE
261 0112	FIBER ROLLS 12IN		
	Sta. 154+00 to Sta. 166+00	855	LF

LEGEND:

SEEDING CLASS III/ HYDRAULIC MULCH

FIBER ROLLS 12IN

NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

PERMANENT EROSION CONTROL STA. 154+00 TO 166+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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PRELIMINARY SURVEY COORDINATE AND CURVE DATA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	81	1

Begin PR_SharedUsePath
N 420,410.7654 E 2,895,949.8515 10+00.00

Line (1)
N6° 40' 17.99"W 643.653'
N 421,050.0601 E 2,895,875.0721 16+43.65
Line (1)

Curve (2)
BC N 421,050.0601 E 2,895,875.0721 16+43.65
CTR N 421,398.5987 E 2,898,854.7568
PI N 421,094.2000 E 2,895,869.9090

Direction Back N6° 40' 17.99"W
Radius 3,000.000'
Delta 1°41'51"(RT)
Length 88.875'
Tangent 44.441'
Chord Direction N5° 49' 22.69"W Distance 88.872'
Direction Ahead N4° 58' 27.38"W

EC N 421,138.4734 E 2,895,866.0556 17+32.53
Curve (2)

Line (3)
N4° 58' 27.38"W 345.892'
N 421,483.0630 E 2,895,836.0638 20+78.42
Line (3)

Curve (4)
BC N 421,483.0630 E 2,895,836.0638 20+78.42
CTR N 421,916.6051 E 2,900,817.2325
PI N 421,598.3395 E 2,895,826.0306

Direction Back N4° 58' 27.38"W
Radius 5,000.000'
Delta 2°39'05"(RT)
Length 231.383'
Tangent 115.712'
Chord Direction N3° 38' 54.76"W Distance 231.363'
Direction Ahead N2° 19' 22.14"W

EC N 421,713.9567 E 2,895,821.3408 23+09.80
Curve (4)

Line (5)
N2° 19' 22.14"W 548.341'
N 422,261.8469 E 2,895,799.1167 28+58.14
Line (5)

Line (6)
Non-Tangent Radial Bearing S87° 40' 37.86"W
N2° 48' 32.00"W 531.229'
N 422,792.4380 E 2,895,773.0840 33+89.37
Line (6)

Line (7)
Non-Tangent Radial Bearing S87° 40' 37.86"W
N1° 59' 01.83"W 163.818'
N 422,956.1580 E 2,895,767.4130 35+53.19
Line (7)

Line (8)
Non-Tangent Radial Bearing S87° 40' 37.86"W
N2° 41' 56.08"W 287.932'
N 423,243.7710 E 2,895,753.8550 38+41.12
Line (8)

Line (9)
Non-Tangent Radial Bearing S87° 40' 37.86"W
N2° 45' 42.55"W 2,493.368'
N 425,734.2426 E 2,895,633.7142 63+34.49
Line (9)

Line (10)
Non-Tangent Radial Bearing S87° 40' 37.86"W
N3° 34' 37.72"W 520.192'
N 426,253.4216 E 2,895,601.2581 68+54.68
Line (10)

Curve (11)
BC N 426,253.4216 E 2,895,601.2581 68+54.68
CTR N 426,690.1684 E 2,902,587.6200
PI N 426,353.6838 E 2,895,594.9903

Direction Back N3° 34' 37.72"W
Radius 7,000.000'
Delta 1°38'40"(RT)
Length 200.902'
Tangent 100.458'
Chord Direction N2° 45' 17.79"W Distance 200.895'
Direction Ahead N1° 55' 57.86"W

EC N 426,454.0847 E 2,895,591.6022 70+55.59
Curve (11)

Line (12)
N1° 55' 57.86"W 120.630'
N 426,574.6462 E 2,895,587.5338 71+76.22
Line (12)

Curve (13)
BC N 426,574.6462 E 2,895,587.5338 71+76.22
CTR N 426,564.5283 E 2,895,287.7045
PI N 426,600.0904 E 2,895,586.6752

Direction Back N1° 55' 57.86"W
Radius 300.000'
Delta 9°42'05"(LT)
Length 50.796'
Tangent 25.459'
Chord Direction N6° 47' 00.12"W Distance 50.735'
Direction Ahead N11° 38' 02.38"W

EC N 426,625.0260 E 2,895,581.5412 72+27.01
Curve (13)

Line (14)
N11° 38' 02.38"W 8.634'
N 426,633.4829 E 2,895,579.8001 72+35.65
Line (14)

Curve (15)
BC N 426,633.4829 E 2,895,579.8001 72+35.65
CTR N 426,693.9806 E 2,895,873.6368
PI N 426,657.4899 E 2,895,574.8573
Direction Back N11° 38' 02.38"W
Radius 300.000'
Delta 9°20'30"(RT)
Length 48.912'
Tangent 24.511'
Chord Direction N6° 57' 47.50"W Distance 48.858'
Direction Ahead N2° 17' 32.62"W

EC N 426,681.9808 E 2,895,573.8769 72+84.56
Curve (15)

Line (16)
N2° 17' 32.62"W 273.553'
N 426,955.3154 E 2,895,562.9350 75+58.11
Line (16)

Curve (17)
BC N 426,955.3154 E 2,895,562.9350 75+58.11
CTR N 426,959.3153 E 2,895,662.8549
PI N 426,969.3659 E 2,895,562.3725

Direction Back N2° 17' 32.62"W
Radius 100.000'
Delta 16°00'31"(RT)
Length 27.940'
Tangent 14.062'
Chord Direction N5° 42' 42.84"E Distance 27.849'
Direction Ahead N13° 42' 58.30"E

EC N 426,983.0266 E 2,895,565.7067 75+86.05
Curve (17)

Line (18)
N13° 42' 58.30"E 21.014'
N 427,003.4410 E 2,895,570.6893 76+07.07
Line (18)

Curve (19)
BC N 427,003.4410 E 2,895,570.6893 76+07.07
CTR N 427,050.8636 E 2,895,376.3929
PI N 427,049.8378 E 2,895,582.0135

Direction Back N13° 42' 58.30"E
Radius 200.000'
Delta 26°51'39"(LT)
Length 93.762'
Tangent 47.759'
Chord Direction N0° 17' 09.00"E Distance 92.905'
Direction Ahead N13° 08' 40.30"W

EC N 427,096.3452 E 2,895,571.1528 77+00.83
Curve (19)

Line (20)
N13° 08' 40.30"W 17.700'
N 427,113.5814 E 2,895,567.1277 77+18.53
Line (20)

Curve (21)
BC N 427,113.5814 E 2,895,567.1277 77+18.53
CTR N 427,159.0631 E 2,895,761.8876
PI N 427,130.8493 E 2,895,563.0952

Direction Back N13° 08' 40.30"W
Radius 200.000'
Delta 10°08'00"(RT)
Length 35.372'
Tangent 17.732'
Chord Direction N8° 04' 40.13"W Distance 35.326'
Direction Ahead N3° 00' 39.97"W

EC N 427,148.5572 E 2,895,562.1637 77+53.90
Curve (21)

Line (22)
N3° 00' 39.97"W 56.750'
N 427,205.2292 E 2,895,559.1827 78+10.65
Line (22)

Curve (23)
BC N 427,205.2292 E 2,895,559.1827 78+10.65
CTR N 427,217.0484 E 2,895,783.8720
PI N 427,228.7485 E 2,895,557.9455

Direction Back N3° 00' 39.97"W
Radius 225.000'
Delta 11°57'05"(RT)
Length 46.933'
Tangent 23.552'
Chord Direction N2° 57' 52.35"E Distance 46.848'
Direction Ahead N8° 56' 24.68"E

EC N 427,252.0141 E 2,895,561.6055 78+57.58
Curve (23)

Line (24)
N8° 56' 24.68"E 19.498'
N 427,271.2748 E 2,895,564.6355 78+77.08
Line (24)

Curve (25)
BC N 427,271.2748 E 2,895,564.6355 78+77.08
CTR N 427,298.4704 E 2,895,391.7616
PI N 427,288.6310 E 2,895,567.3659

Direction Back N8° 56' 24.68"E
Radius 175.000'
Delta 11°27'59"(LT)
Length 35.022'
Tangent 17.570'
Chord Direction N3° 12' 25.29"E Distance 34.963'
Direction Ahead N2° 31' 34.10"W

EC N 427,306.1836 E 2,895,566.5915 79+12.10
Curve (25)

Line (26)
N2° 31' 34.10"W 915.425'
N 428,220.7190 E 2,895,526.2440 88+27.53
Line (26)
Line (27)
Non-Tangent Radial Bearing N87° 28' 25.90"E
N2° 38' 00.05"W 118.317'
N 428,338.9110 E 2,895,520.8080 89+45.85
Line (27)

Line (28)
Non-Tangent Radial Bearing N87° 28' 25.90"E
N2° 31' 25.86"W 73.873'
N 428,412.7120 E 2,895,517.5550 90+19.72
Line (28)

Line (29)
Non-Tangent Radial Bearing N87° 28' 25.90"E
N0° 25' 56.49"W 41.273'
N 428,453.9841 E 2,895,517.2436 90+60.99
Line (29)

Curve (30)
BC N 428,453.9841 E 2,895,517.2436 90+60.99
CTR N 428,450.2111 E 2,895,017.2578
PI N 428,489.0198 E 2,895,516.9792

Direction Back N0° 25' 56.49"W
Radius 500.000'
Delta 8°01'00"(LT)
Length 69.959'
Tangent 35.037'
Chord Direction N4° 26' 26.57"W Distance 69.902'
Direction Ahead N8° 26' 56.65"W

EC N 428,523.6762 E 2,895,511.8312 91+30.95
Curve (30)

Line (31)
N8° 26' 56.65"W 236.377'
N 428,757.4879 E 2,895,477.1003 93+67.33
Line (31)

Curve (32)
BC N 428,757.4879 E 2,895,477.1003 93+67.33
CTR N 428,684.0228 E 2,894,982.5268
PI N 428,780.9627 E 2,895,473.6133

Direction Back N8° 26' 56.65"W
Radius 500.000'
Delta 5°26'06"(LT)
Length 47.429'
Tangent 23.732'
Chord Direction N11° 09' 59.62"W Distance 47.411'
Direction Ahead N13° 53' 02.58"W

EC N 428,804.0017 E 2,895,467.9185 94+14.76
Curve (32)

Line (33)
N13° 53' 02.58"W 286.723'
N 429,082.3472 E 2,895,399.1172 97+01.48
Line (33)

Curve (34)
BC N 429,082.3472 E 2,895,399.1172 97+01.48
CTR N 428,530.4442 E 2,893,166.3156
PI N 429,389.7886 E 2,895,323.1239

Direction Back N13° 53' 02.58"W
Radius 2,300.000'
Delta 15°40'48"(LT)
Length 629.430'
Tangent 316.694'
Chord Direction N21° 43' 26.35"W Distance 627.468'
Direction Ahead N29° 33' 50.12"W

EC N 429,665.2511 E 2,895,166.8688 103+30.91
Curve (34)

Line (35)
N29° 33' 50.12"W 369.001'
N 429,986.2100 E 2,894,984.8060 106+99.91
Line (35)

Line (36)
Non-Tangent Radial Bearing N60° 26' 09.88"E
N28° 58' 08.01"W 258.672'
N 430,212.5180 E 2,894,859.5220 109+58.58
Line (36)

Line (37)
Non-Tangent Radial Bearing N60° 26' 09.88"E
N30° 35' 36.69"W 267.670'
N 430,442.9285 E 2,894,723.2927 112+26.25
Line (37)

Curve (38)
BC N 430,442.9285 E 2,894,723.2927 112+26.25
CTR N 431,918.8665 E 2,897,219.6114
PI N 430,611.1696 E 2,894,623.8209

Direction Back N30° 35' 36.69"W
Radius 2,900.000'
Delta 7°42'41"(RT)
Length 390.305'
Tangent 195.447'
Chord Direction N26° 44' 16.33"W Distance 390.010'
Direction Ahead N22° 52' 55.96"W

EC N 430,791.2365 E 2,894,547.8235 116+16.56
Curve (38)

Line (39)
N22° 52' 55.96"W 251.349'
N 431,022.8063 E 2,894,450.0893 118+67.91
Line (39)

Curve (40)
BC N 431,022.8063 E 2,894,450.0893 118+67.91
CTR N 431,217.2253 E 2,894,910.7424
PI N 431,069.8645 E 2,894,430.2284

Direction Back N22° 52' 55.96"W
Radius 500.000'
Delta 11°39'56"(RT)
Length 101.802'
Tangent 51.078'
Chord Direction N17° 02' 57.73"W Distance 101.627'
Direction Ahead N11° 12' 59.50"W

EC N 431,119.9666 E 2,894,420.2929 119+69.71
Curve (40)

Line (41)
N11° 12' 59.50"W 190.401'
N 431,306.7311 E 2,894,383.2565 121+60.11
Line (41)

Curve (42)
BC N 431,306.7311 E 2,894,383.2565 121+60.11
CTR N 431,598.5071 E 2,895,854.6051
PI N 431,357.1242 E 2,894,373.2633

Direction Back N11° 12' 59.50"W
Radius 1,500.000'
Delta 3°55'23"(RT)
Length 102.709'
Tangent 51.374'
Chord Direction N9° 15' 17.78"W Distance 102.689'
Direction Ahead N7° 17' 36.06"W

EC N 431,408.0829 E 2,894,366.7414 122+62.82
Curve (42)

Line (43)
N7° 17' 36.06"W 68.437'
N 431,475.9658 E 2,894,358.0534 123+31.26
Line (43)

Curve (44)
BC N 431,475.9658 E 2,894,358.0534 123+31.26
CTR N 430,460.3701 E 2,886,422.7799
PI N 431,638.9457 E 2,894,337.1944

Direction Back N7° 17' 36.06"W
Radius 8,000.000'
Delta 2°21'12"(LT)
Length 328.572'
Tangent 164.309'
Chord Direction N8° 28' 11.86"W Distance 328.549'
Direction Ahead N9° 38' 47.67"W

EC N 431,800.9317 E 2,894,309.6611 126+59.83
Curve (44)

Line (45)
N9° 38' 47.67"W 61.165'
N 431,861.2319 E 2,894,299.4116 127+20.99
Line (45)

Curve (46)
BC N 431,861.2319 E 2,894,299.4116 127+20.99
CTR N 432,112.5872 E 2,895,778.2018
PI N 431,896.1791 E 2,894,293.4715

Direction Back N9° 38' 47.67"W
Radius 1,500.000'
Delta 2°42'27"(RT)
Length 70.884'
Tangent 35.448'
Chord Direction N8° 17' 34.07"W Distance 70.877'
Direction Ahead N6° 56' 20.47"W

EC N 431,931.3678 E 2,894,289.1889 127+91.88
Curve (46)

Line (47)
N6° 56' 20.47"W 580.063'
N 432,507.1816 E 2,894,219.1098 133+71.94
Line (47)

Line (48)
Non-Tangent Radial Bearing S83° 03' 39.53"W
N7° 03' 43.04"W 764.513'
N 433,265.8945 E 2,894,125.1187 141+36.45
Line (48)

Curve (49)
BC N 433,265.8945 E 2,894,125.1187 141+36.45
CTR N 433,241.3060 E 2,893,926.6360
PI N 433,297.2101 E 2,894,121.2393

Direction Back N7° 03' 43.04"W
Radius 200.000'
Delta 17°55'55"(LT)
Length 62.594'
Tangent 31.555'
Chord Direction N16° 01' 40.32"W Distance 62.339'
Direction Ahead N24° 59' 37.59"W

EC N 433,325.8100 E 2,894,107.9067 141+99.05
Curve (49)

Line (50)
N24° 59' 37.59"W 13.373'
N 433,337.9310 E 2,894,102.2562 142+12.42
Line (50)

Curve (51)
BC N 433,337.9310 E 2,894,102.2562 142+12.42
CTR N 433,422.4350 E 2,894,283.5269
PI N 433,366.0090 E 2,894,089.1669

Direction Back N24° 59' 37.59"W
Radius 200.000'
Delta 17°36'35"(RT)
Length 61.470'
Tangent 30.979'
Chord Direction N16° 11' 20.06"W Distance 61.228'
Direction Ahead N7° 23' 02.52"W

EC N 433,396.7311 E 2,894,085.1855 142+73.89
Curve (51)

NOTES:
Date Survey Completed 03/2026
All coordinates and measurements on this document derived from the US Survey Foot definition.

☐ Assumed Coordinates

☒ All coordinates on this sheet are North Dakota State Plane Coordinates.They are derived from the "North American Datum of 1983", NAD83, 2011 Reference Frame; North Dakota South Zone;

Scale Factor = 1.00000

INITIALIZING BENCH MARK OPUS

☒ NAVD-88 GEOID 18
☐ NGVD-29

☒ ENGLISH UNITS
☐ METRIC UNITS

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 3/ /26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

KLJ

SURVEY COORDINATE & CURVE DATA

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

Aug 25, 2026 - 1:46pm - C:\Users\ZACHNE~1\AppData\Local\Temp\AcPublish_5068\2503-10999_081CD.dwg

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PRELIMINARY SURVEY COORDINATE AND CURVE DATA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	81	2

Line (52)
N7° 23' 02.52"W 117.076'
N 433,512.8362 E 2,894,070.1390 143+90.97
Line (52)

Curve (53)
BC N 433,512.8362 E 2,894,070.1390 143+90.97
CTR N 433,448.5765 E 2,893,574.2855
PI N 433,549.3815 E 2,894,065.4029

Direction Back N7° 23' 02.52"W
Radius 500.000'
Delta 8°25'49"(LT)
Length 73.569'
Tangent 36.851'
Chord Direction N11° 35' 57.18"W Distance 73.502'
Direction Ahead N15° 48' 51.83"W

EC N 433,584.8375 E 2,894,055.3603 144+64.53
Curve (53)

Line (54)
N15° 48' 51.83"W 32.368'
N 433,615.9799 E 2,894,046.5394 144+96.90
Line (54)

Curve (55)
BC N 433,615.9799 E 2,894,046.5394 144+96.90
CTR N 433,752.2410 E 2,894,527.6142
PI N 433,658.2950 E 2,894,034.5540

Direction Back N15° 48' 51.83"W
Radius 500.000'
Delta 10°03'13"(RT)
Length 87.734'
Tangent 43.980'
Chord Direction N10° 47' 15.48"W Distance 87.621'
Direction Ahead N5° 45' 39.13"W

EC N 433,702.0526 E 2,894,030.1394 145+84.64
Curve (55)

Line (56)
N5° 45' 39.13"W 173.580'
N 433,874.7560 E 2,894,012.7160 147+58.22
Line (56)

Line (57)
N5° 45' 39.13"W 90.628'
N 433,964.9263 E 2,894,003.6190 148+48.84
Line (57)

Curve (58)
BC N 433,964.9263 E 2,894,003.6190 148+48.84
CTR N 433,864.5495 E 2,893,008.6696
PI N 433,993.6982 E 2,894,000.7164

Direction Back N5° 45' 39.13"W
Radius 1,000.000'
Delta 3°18'46"(LT)
Length 57.820'
Tangent 28.918'
Chord Direction N7° 25' 02.21"W Distance 57.812'
Direction Ahead N9° 04' 25.29"W

EC N 434,022.2542 E 2,893,996.1559 149+06.66
Curve (58)

Line (59)
N9° 04' 25.29"W 61.320'
N 434,082.8072 E 2,893,986.4854 149+67.98
Line (59)

Curve (60)
BC N 434,082.8072 E 2,893,986.4854 149+67.98
CTR N 434,059.1515 E 2,893,838.3624
PI N 434,100.6253 E 2,893,983.6398

Direction Back N9° 04' 25.29"W
Radius 150.000'
Delta 13°43'07"(LT)
Length 35.915'
Tangent 18.044'
Chord Direction N15° 55' 58.77"W Distance 35.829'
Direction Ahead N22° 47' 32.25"W

EC N 434,117.2602 E 2,893,976.6497 150+03.90
Curve (60)

Line (61)
N22° 47' 32.25"W 50.764'
N 434,164.0602 E 2,893,956.9842 150+54.66
Line (61)

Curve (62)
BC N 434,164.0602 E 2,893,956.9842 150+54.66
CTR N 434,183.4298 E 2,894,003.0800
PI N 434,179.4274 E 2,893,950.5269

Direction Back N22° 47' 32.25"W
Radius 50.000'
Delta 36°52'27"(RT)
Length 32.179'
Tangent 16.669'
Chord Direction N4° 21' 18.87"W Distance 31.626'
Direction Ahead N14° 04' 54.52"E

EC N 434,195.5952 E 2,893,954.5825 150+86.84
Curve (62)

Line (63)
N14° 04' 54.52"E 9.613'
N 434,204.9191 E 2,893,956.9214 150+96.45
Line (63)

Curve (64)
BC N 434,204.9191 E 2,893,956.9214 150+96.45
CTR N 434,217.0844 E 2,893,908.4239
PI N 434,218.8607 E 2,893,960.4185

Direction Back N14° 04' 54.52"E
Radius 50.000'
Delta 32°04'37"(LT)
Length 27.992'
Tangent 14.374'
Chord Direction N1° 57' 23.75"W Distance 27.628'
Direction Ahead N17° 59' 42.02"W

EC N 434,232.5311 E 2,893,955.9781 151+24.45
Curve (64)

Line (65)
N17° 59' 42.02"W 21.834'
N 434,253.2972 E 2,893,949.2328 151+46.28
Line (65)

Curve (66)
BC N 434,253.2972 E 2,893,949.2328 151+46.28
CTR N 434,284.1906 E 2,894,044.3411
PI N 434,261.9350 E 2,893,946.4270

Direction Back N17° 59' 42.02"W
Radius 100.000'
Delta 10°22'44"(RT)
Length 18.114'
Tangent 9.082'
Chord Direction N12° 48' 20.18"W Distance 18.090'
Direction Ahead N7° 36' 58.35"W

EC N 434,270.9369 E 2,893,945.2233 151+64.39
Curve (66)

Line (67)
N7° 36' 58.35"W 47.712'
N 434,318.2279 E 2,893,938.8997 152+12.11
Line (67)

Curve (68)
BC N 434,318.2279 E 2,893,938.8997 152+12.11
CTR N 434,331.4816 E 2,894,038.0175
PI N 434,333.9830 E 2,893,936.7930

Direction Back N7° 36' 58.35"W
Radius 100.000'
Delta 18°03'49"(RT)
Length 31.527'
Tangent 15.895'
Chord Direction N1° 24' 56.06"E Distance 31.396'
Direction Ahead N10° 26' 50.47"E

EC N 434,349.6148 E 2,893,939.6753 152+43.63
Curve (68)

Line (69)
N10° 26' 50.47"E 26.732'
N 434,375.9040 E 2,893,944.5228 152+70.37
Line (69)

Curve (70)
BC N 434,375.9040 E 2,893,944.5228 152+70.37
CTR N 434,412.1704 E 2,893,747.8384
PI N 434,392.3000 E 2,893,947.5460

Direction Back N10° 26' 50.47"E
Radius 200.000'
Delta 9°31'50"(LT)
Length 33.268'
Tangent 16.672'
Chord Direction N5° 40' 55.53"E Distance 33.229'
Direction Ahead N0° 55' 00.59"E

EC N 434,408.9702 E 2,893,947.8128 153+03.63
Curve (70)

Line (71)
N0° 55' 00.59"E 26.887'
N 434,435.8534 E 2,893,948.2430 153+30.52
Line (71)

Curve (72)
BC N 434,435.8534 E 2,893,948.2430 153+30.52
CTR N 434,439.8537 E 2,893,698.2750
PI N 434,450.9255 E 2,893,948.4842

Direction Back N0° 55' 00.59"E
Radius 250.000'
Delta 6°54'04"(LT)
Length 30.112'
Tangent 15.074'
Chord Direction N2° 32' 01.31"W Distance 30.093'
Direction Ahead N5° 59' 03.21"W

EC N 434,465.9173 E 2,893,946.9127 153+60.63
Curve (72)

Line (73)
N5° 59' 03.21"W 69.461'
N 434,535.0000 E 2,893,939.6710 154+30.09
Line (73)

Line (74)
Non-Tangent Radial Bearing N84° 00' 56.79"E
N7° 31' 45.53"W 129.761'
N 434,663.6420 E 2,893,922.6680 155+59.85
Line (74)

Line (75)
Non-Tangent Radial Bearing N84° 00' 56.79"E
N7° 41' 40.21"W 443.545'
N 435,103.1930 E 2,893,863.2813 160+03.40
Line (75)

Curve (76)
BC N 435,103.1930 E 2,893,863.2813 160+03.40
CTR N 435,069.7202 E 2,893,615.5323
PI N 435,136.8882 E 2,893,858.7288

Direction Back N7° 41' 40.21"W
Radius 250.000'
Delta 15°29'24"(LT)
Length 67.588'
Tangent 34.001'
Chord Direction N15° 26' 22.20"W Distance 67.382'
Direction Ahead N23° 11' 04.19"W

EC N 435,168.1435 E 2,893,845.3428 160+70.99
Curve (76)

Line (77)
N23° 11' 04.19"W 32.424'
N 435,197.9493 E 2,893,832.5776 161+03.41
Line (77)

Curve (78)
BC N 435,197.9493 E 2,893,832.5776 161+03.41
CTR N 435,296.3726 E 2,894,062.3880
PI N 435,230.6112 E 2,893,818.5891

Direction Back N23° 11' 04.19"W
Radius 250.000'
Delta 16°10'41"(RT)
Length 70.590'
Tangent 35.531'
Chord Direction N15° 05' 43.72"W Distance 70.356'
Direction Ahead N7° 00' 23.25"W

EC N 435,265.8773 E 2,893,814.2549 161+74.00
Curve (78)

Line (79)
N7° 00' 23.25"W 177.053'
N 435,441.6079 E 2,893,792.6578 163+51.05
Line (79)

Curve (80)
BC N 435,441.6079 E 2,893,792.6578 163+51.05
CTR N 435,459.9051 E 2,893,941.5377
PI N 435,470.5339 E 2,893,789.1028

Direction Back N7° 00' 23.25"W
Radius 150.000'
Delta 21°59'24"(RT)
Length 57.570'
Tangent 29.144'
Chord Direction N3° 59' 18.98"E Distance 57.217'
Direction Ahead N14° 59' 01.21"E

EC N 435,498.6867 E 2,893,796.6377 164+08.62
Curve (80)

Line (81)
N14° 59' 01.21"E 16.656'
N 435,514.7760 E 2,893,800.9440 164+25.28
Line (81)

Curve (82)
BC N 435,514.7760 E 2,893,800.9440 164+25.28
CTR N 435,540.6304 E 2,893,704.3440
PI N 435,534.4967 E 2,893,806.2221

Direction Back N14° 59' 01.21"E
Radius 100.000'
Delta 23°04'36"(LT)
Length 40.276'
Tangent 20.415'
Chord Direction N3° 26' 43.40"E Distance 40.005'
Direction Ahead N8° 05' 34.42"W

EC N 435,554.7082 E 2,893,803.3481 164+65.56
Curve (82)

Line (83)
N8° 05' 34.42"W 50.531'
N 435,604.7356 E 2,893,796.2345 165+16.09
Line (83)

Curve (84)
BC N 435,604.7356 E 2,893,796.2345 165+16.09
CTR N 435,576.5799 E 2,893,598.2263
PI N 435,618.9357 E 2,893,794.2153

Direction Back N8° 05' 34.42"W
Radius 200.000'
Delta 8°12'14"(LT)
Length 28.637'
Tangent 14.343'
Chord Direction N12° 11' 41.31"W Distance 28.612'
Direction Ahead N16° 17' 48.20"W

EC N 435,632.7023 E 2,893,790.1905 165+44.72
Curve (84)

Line (85)
N16° 17' 48.20"W 27.044'
N 435,658.6600 E 2,893,782.6016 165+71.77
Line (85)

Curve (86)
BC N 435,658.6600 E 2,893,782.6016 165+71.77
CTR N 435,602.5377 E 2,893,590.6373
PI N 435,680.4942 E 2,893,776.2182

Direction Back N16° 17' 48.20"W
Radius 200.000'
Delta 12°58'41"(LT)
Length 45.302'
Tangent 22.748'
Chord Direction N22° 47' 08.58"W Distance 45.205'
Direction Ahead N29° 16' 28.96"W

EC N 435,700.3372 E 2,893,765.0944 166+17.07
Curve (86)

Line (87)
N29° 16' 28.96"W 8.125'
N 435,707.4242 E 2,893,761.1214 166+25.19
Line (87)

Curve (88)
BC N 435,707.4242 E 2,893,761.1214 166+25.19
CTR N 435,744.0990 E 2,893,826.5428
PI N 435,720.3302 E 2,893,753.8864

Direction Back N29° 16' 28.96"W
Radius 75.000'
Delta 22°19'10"(RT)
Length 29.216'
Tangent 14.796'
Chord Direction N18° 06' 54.05"W Distance 29.032'
Direction Ahead N6° 57' 19.14"W

EC N 435,735.0169 E 2,893,752.0947 166+54.41
Curve (88)

Line (89)
N6° 57' 19.14"W 121.208'
N 435,855.3330 E 2,893,737.4170 167+75.62
Line (89)

N 435,855.3330 E 2,893,737.4170 167+75.62
End PR_SharedUsePath

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/25/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

KLJ

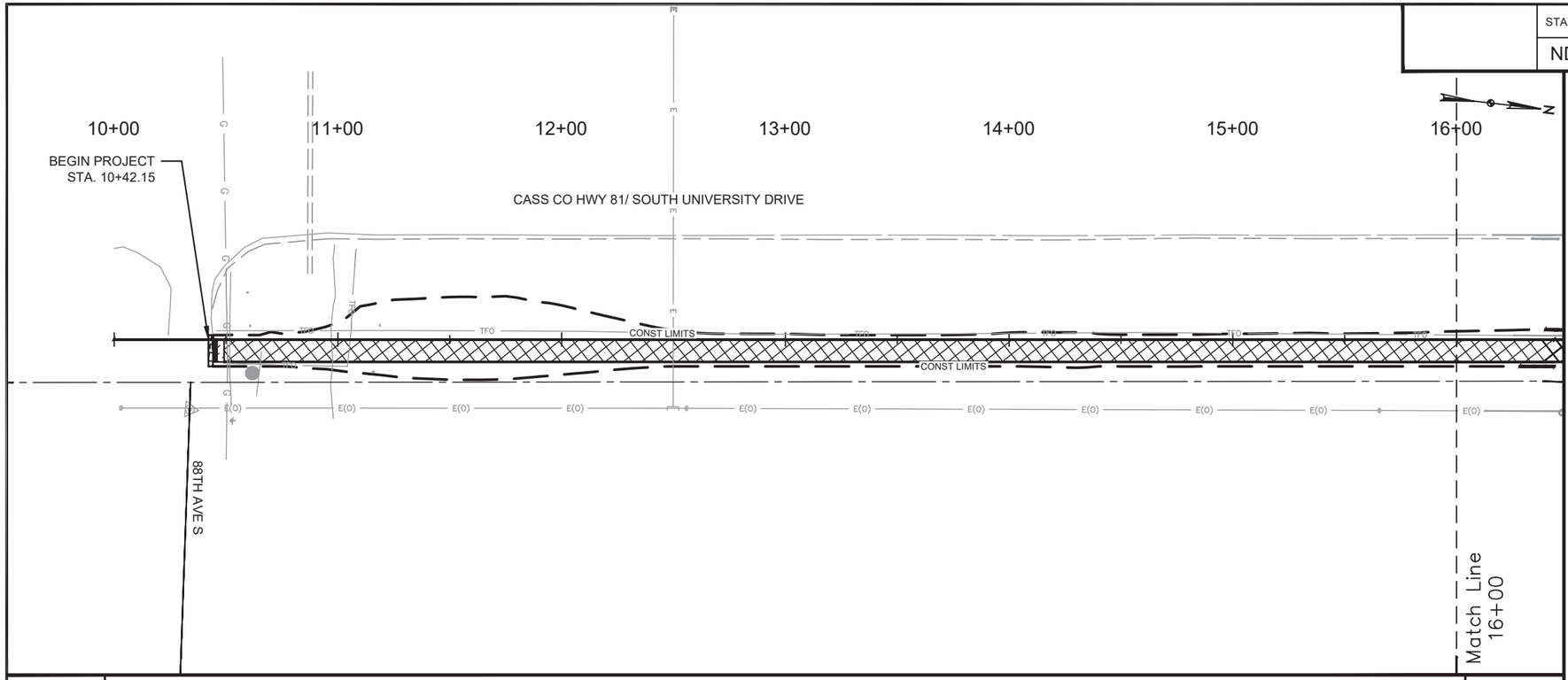
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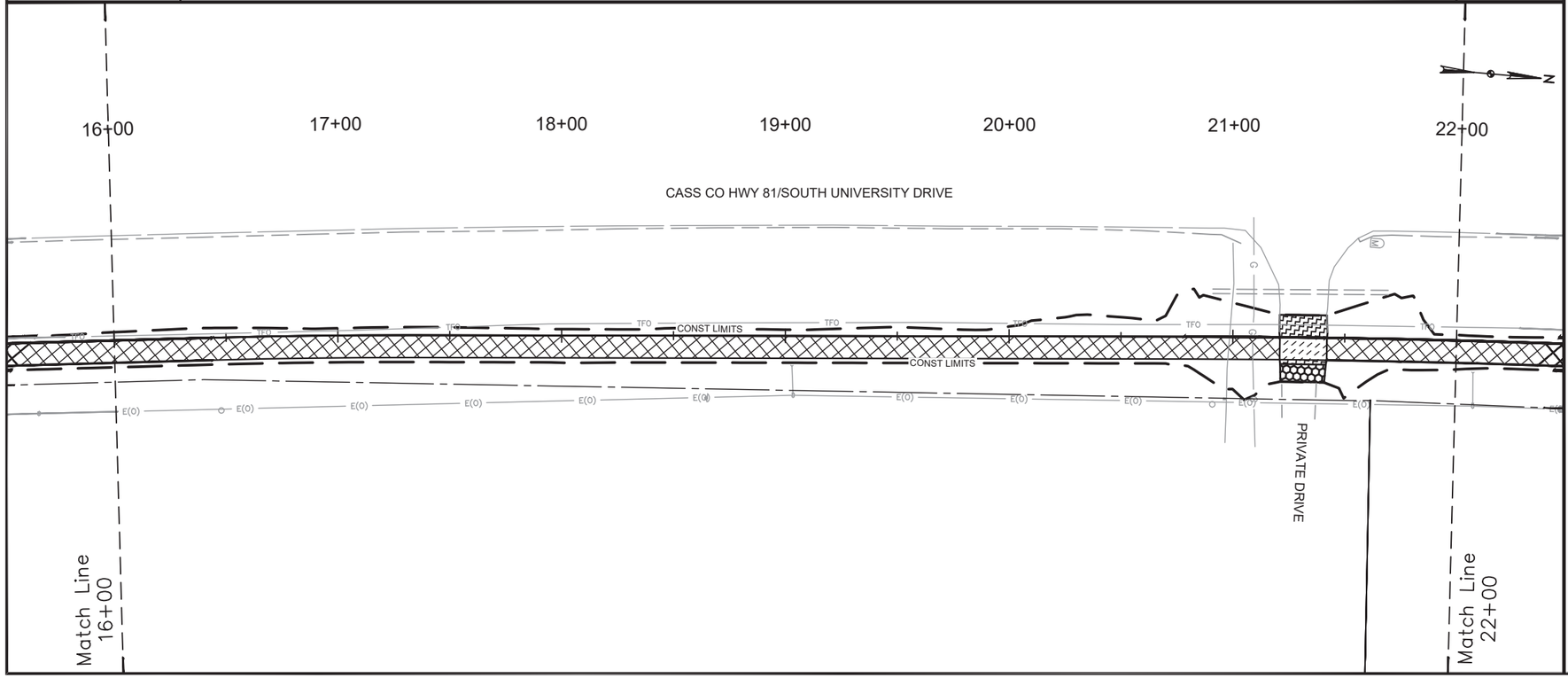
DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	90	1





SPEC	CODE	BID ITEM	QTY	UNIT
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT Sta. 10+00 to Sta. 22+00	12.4	TON
750	0120	SIDEWALK CONCRETE 5IN REINF Sta. 10+00 to Sta. 22+00	1,255	SY
750	1016	DRIVEWAY CONCRETE 6IN REINFORCED Sta. 10+00 to Sta. 22+00	29	SY
750	2115	DETECTABLE WARNING PANELS Sta. 10+00 to Sta. 22+00	20	SF

LEGEND:

- COMMERCIAL HMA
- MILL & OVERLAY (COMMERCIAL HMA)
- 5IN SIDEWALK CONCRETE REINFORCED
- 6IN DRIVEWAY CONCRETE REINFORCED
- DETECTABLE WARNING PANEL

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

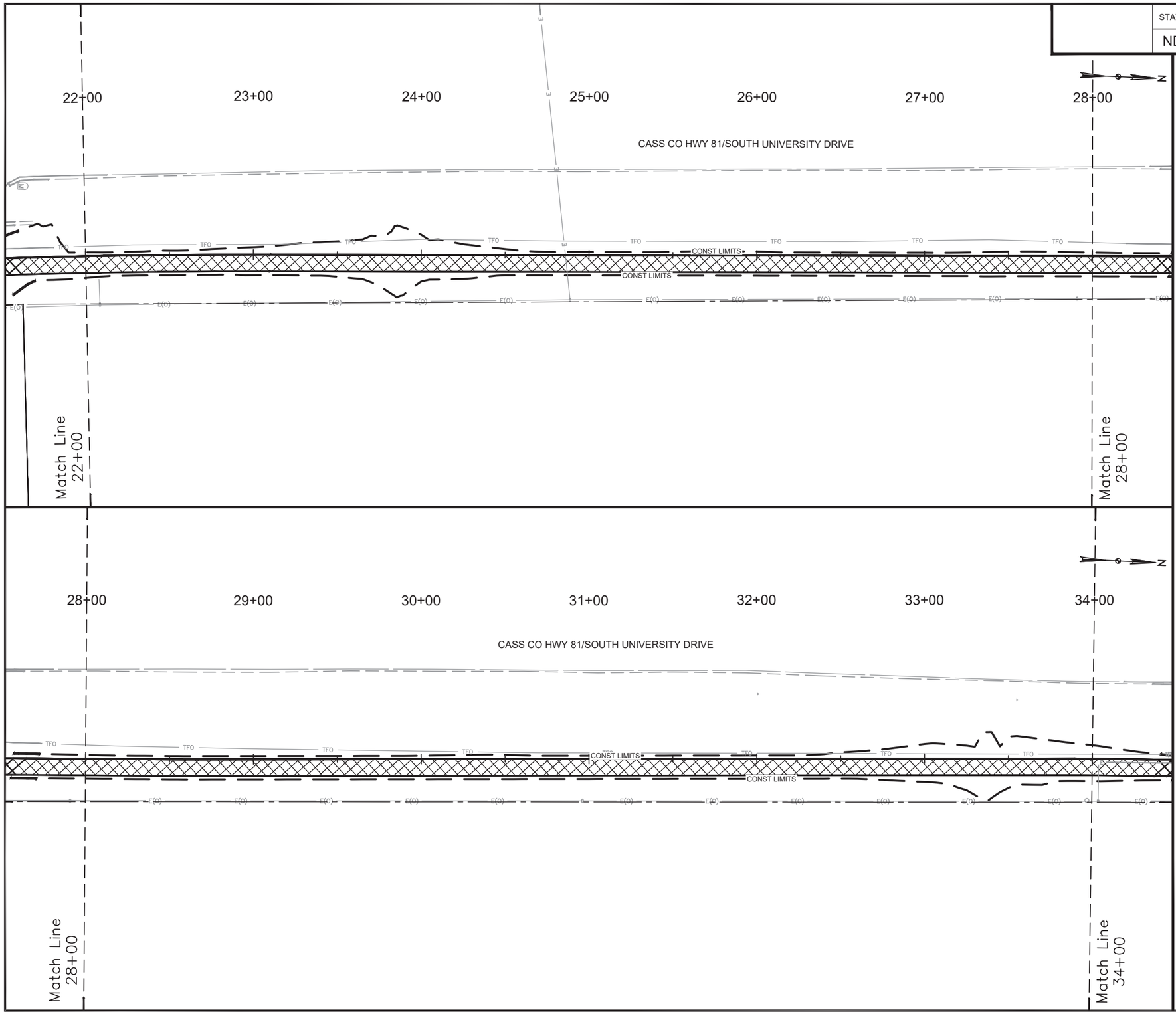
PAVING LAYOUT
STA. 10+00 TO 22+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	90	2



SPEC	CODE	BID ITEM	QTY	UNIT
750	0120	SIDEWALK CONCRETE 5IN REINF		
		Sta. 22+00 to Sta. 34+00	1,333	SY

LEGEND:

- COMMERCIAL HMA
- MILL & OVERLAY (COMMERCIAL HMA)
- 5IN SIDEWALK CONCRETE REINFORCED
- 6IN DRIVEWAY CONCRETE REINFORCED
- DETECTABLE WARNING PANEL

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

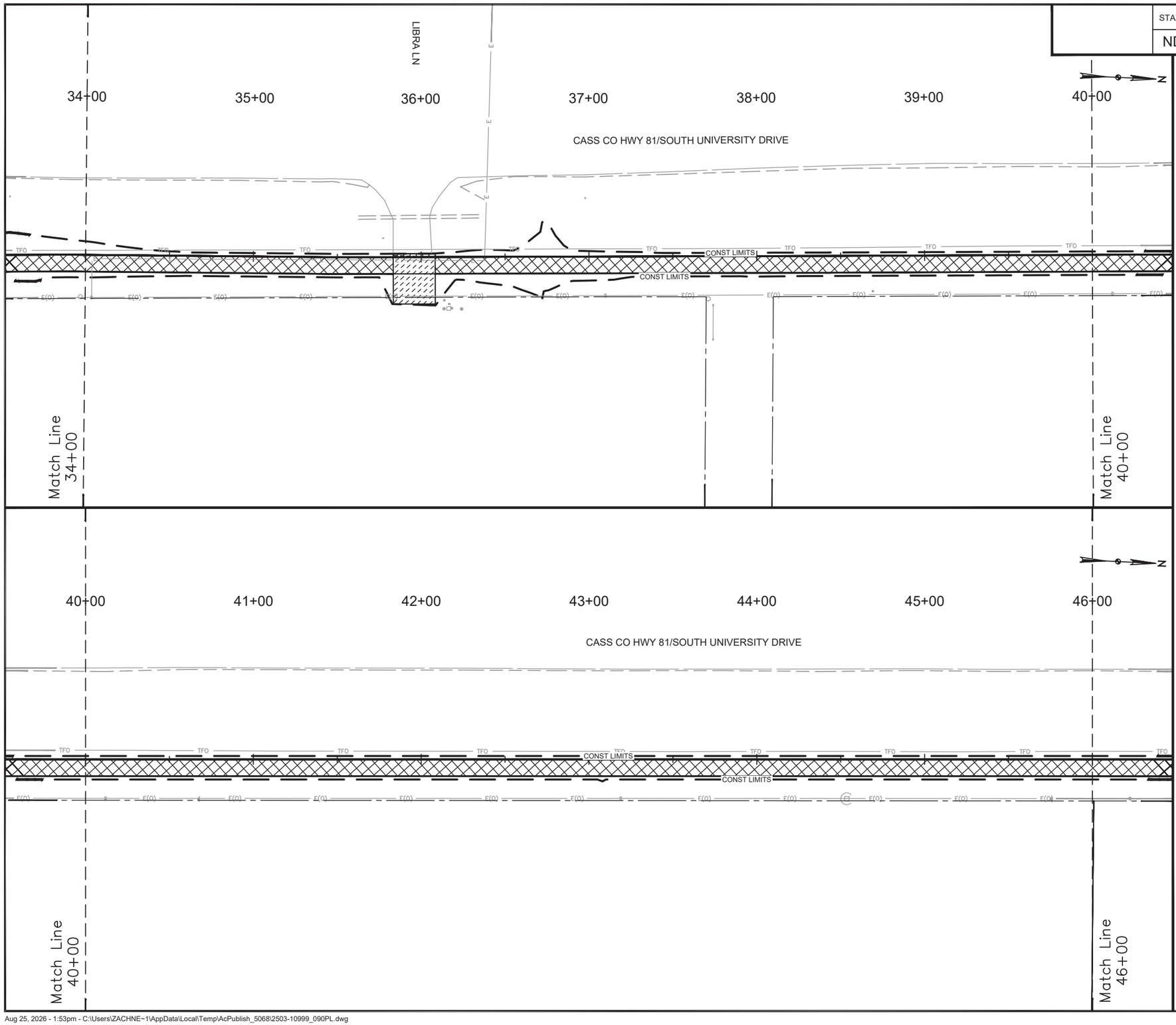
PAVING LAYOUT
STA. 22+00 TO 34+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	90	3



SPEC	CODE	BID ITEM	QTY	UNIT
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT		
		Sta. 34+00 to Sta. 46+00	1.9	TON
750	0120	SIDEWALK CONCRETE 5IN REINF		
		Sta. 34+00 to Sta. 46+00	1,306	SY
750	1016	DRIVEWAY CONCRETE 6IN REINFORCED		
		Sta. 34+00 to Sta. 46+00	78	SY

LEGEND:

- COMMERCIAL HMA
- MILL & OVERLAY (COMMERCIAL HMA)
- 5IN SIDEWALK CONCRETE REINFORCED
- 6IN DRIVEWAY CONCRETE REINFORCED
- DETECTABLE WARNING PANEL

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/15/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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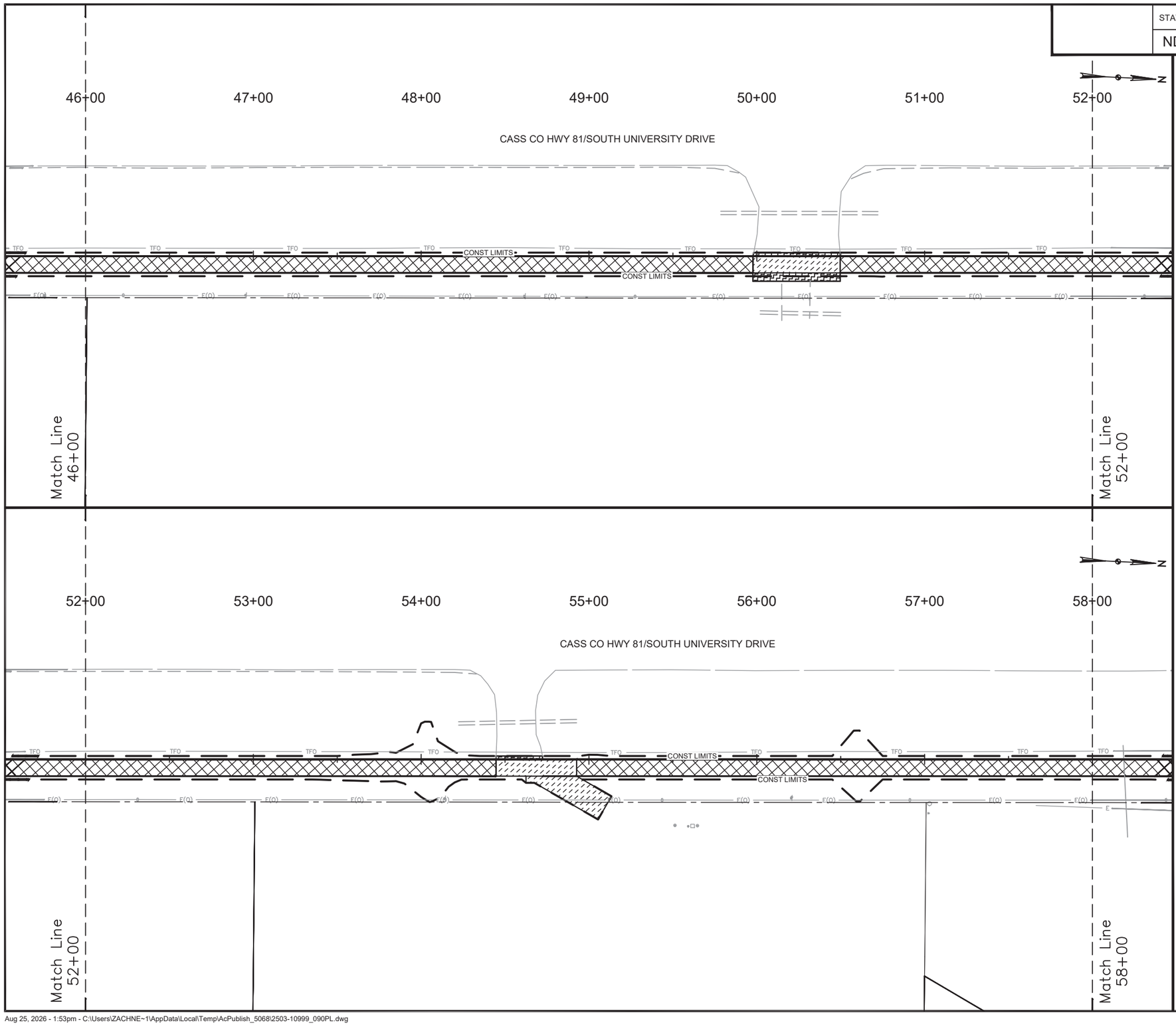
PAVING LAYOUT
STA. 34+00 TO 46+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	90	4



SPEC	CODE	BID ITEM	QTY	UNIT
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT Sta. 46+00 to Sta. 58+00	15.5	TON
750	0120	SIDEWALK CONCRETE 5IN REINF Sta. 46+00 to Sta. 58+00	1,222	SY
750	1016	DRIVEWAY CONCRETE 6IN REINFORCED Sta. 46+00 to Sta. 58+00	179	SY

LEGEND:

- COMMERCIAL HMA
- MILL & OVERLAY (COMMERCIAL HMA)
- 5IN SIDEWALK CONCRETE REINFORCED
- 6IN DRIVEWAY CONCRETE REINFORCED
- DETECTABLE WARNING PANEL

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/15/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

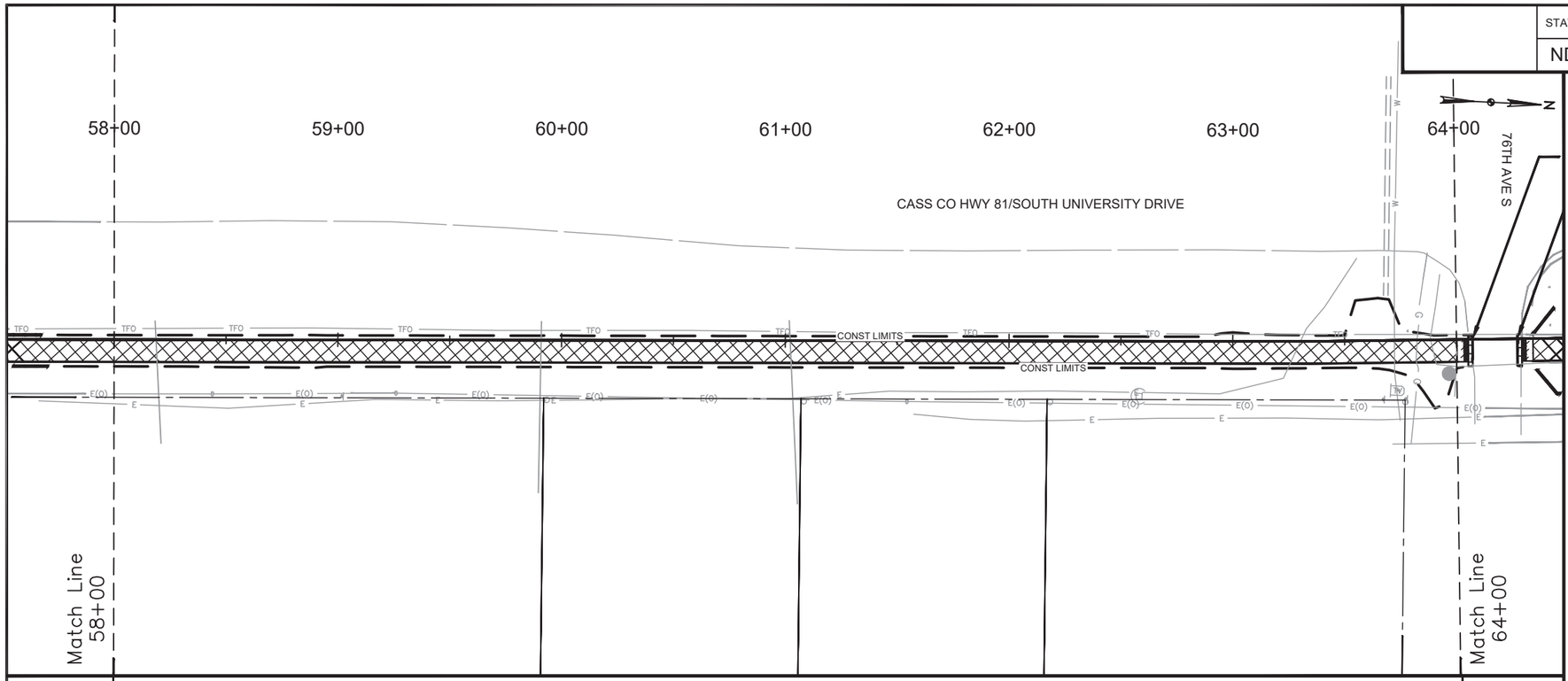
PAVING LAYOUT
STA. 46+00 TO 58+00

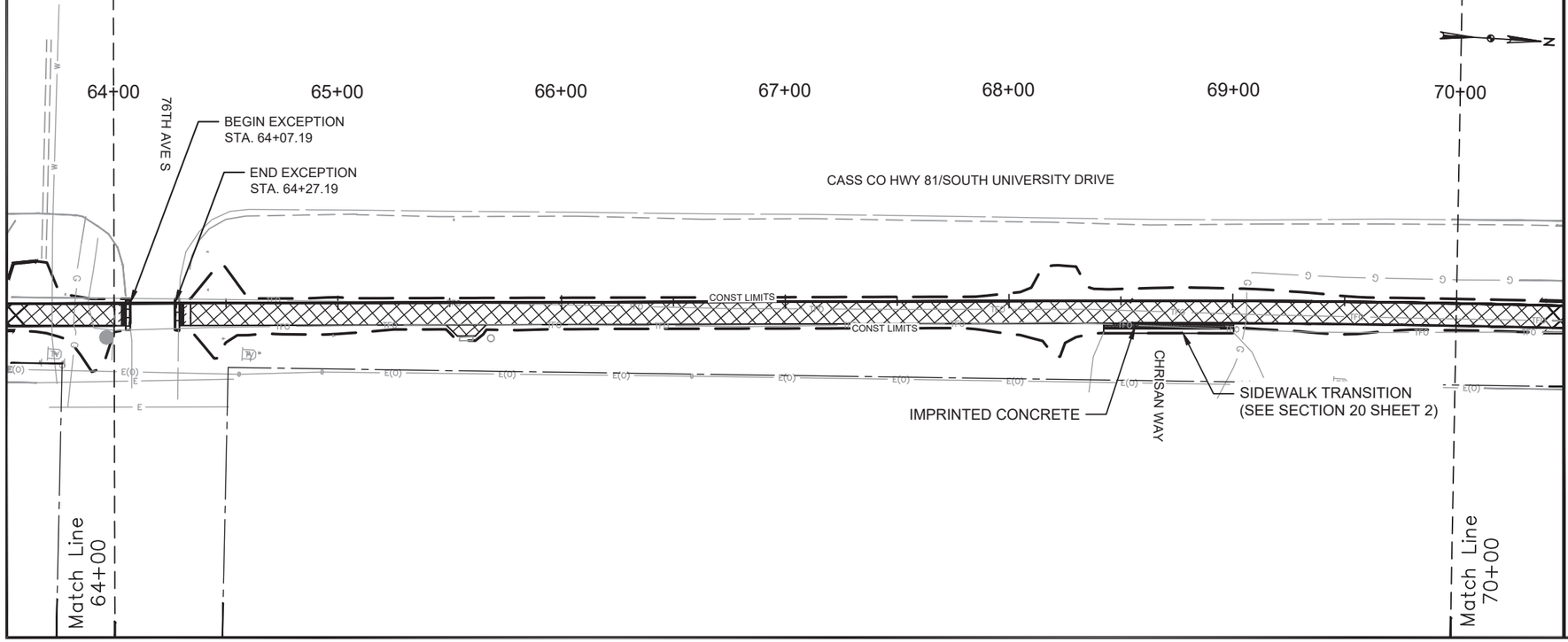
DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	90	5





SPEC	CODE	BID ITEM	QTY	UNIT
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT Sta. 58+00 to Sta. 70+00	2.1	TON
748	0190	CURB & GUTTER-TYPE I 30IN Sta. 58+00 to Sta. 70+00	58	LF
750	0030	PIGMENTED IMPRINTED CONCRETE Sta. 58+00 to Sta. 70+00	12.9	SY
750	0120	SIDEWALK CONCRETE 5IN REINF Sta. 58+00 to Sta. 70+00	1,303	SY
750	1016	DRIVEWAY CONCRETE 6IN REINFORCED Sta. 58+00 to Sta. 70+00	11	SY
750	2115	DETECTABLE WARNING PANELS Sta. 58+00 to Sta. 70+00	40	SF

LEGEND:

- COMMERCIAL HMA
- MILL & OVERLAY (COMMERCIAL HMA)
- 5IN SIDEWALK CONCRETE REINFORCED
- 6IN DRIVEWAY CONCRETE REINFORCED
- DETECTABLE WARNING PANEL

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/25/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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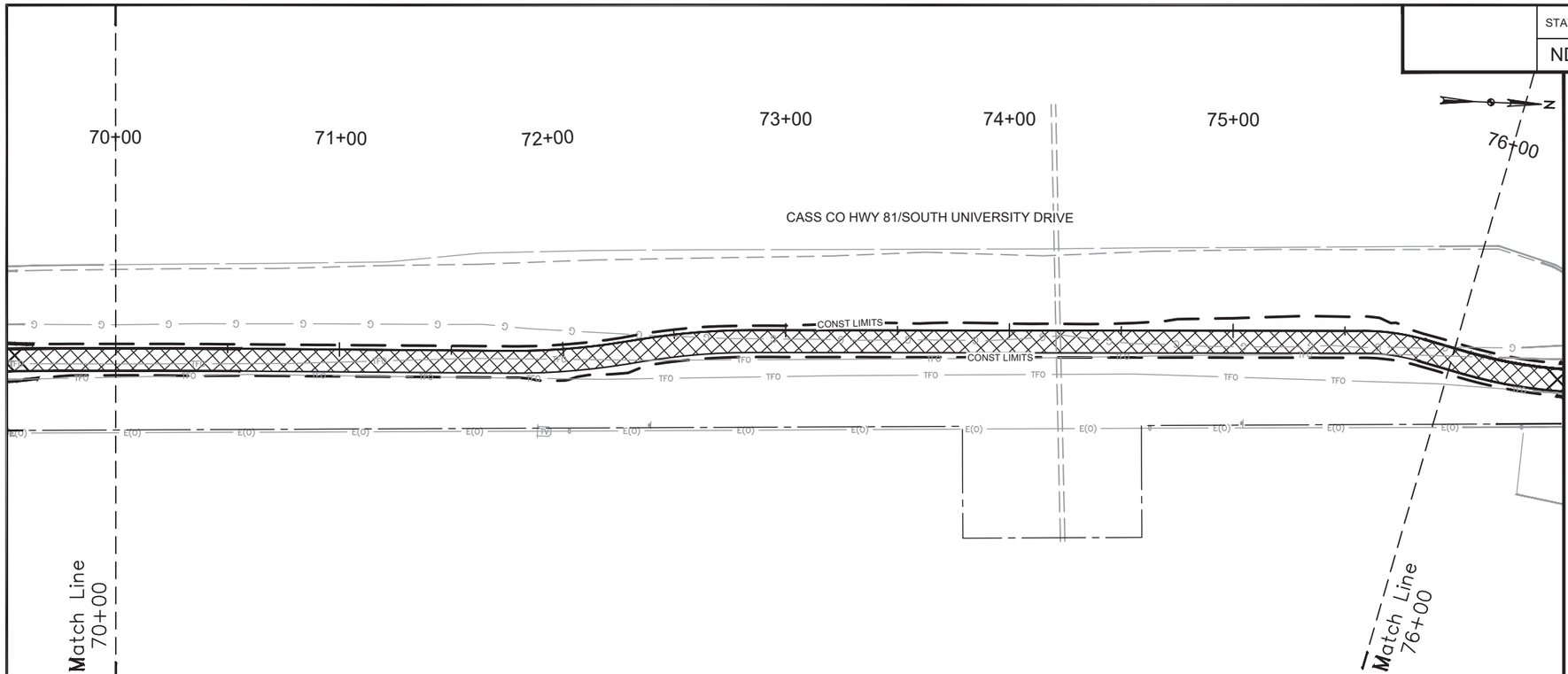
PAVING LAYOUT STA. 58+00 TO 70+00

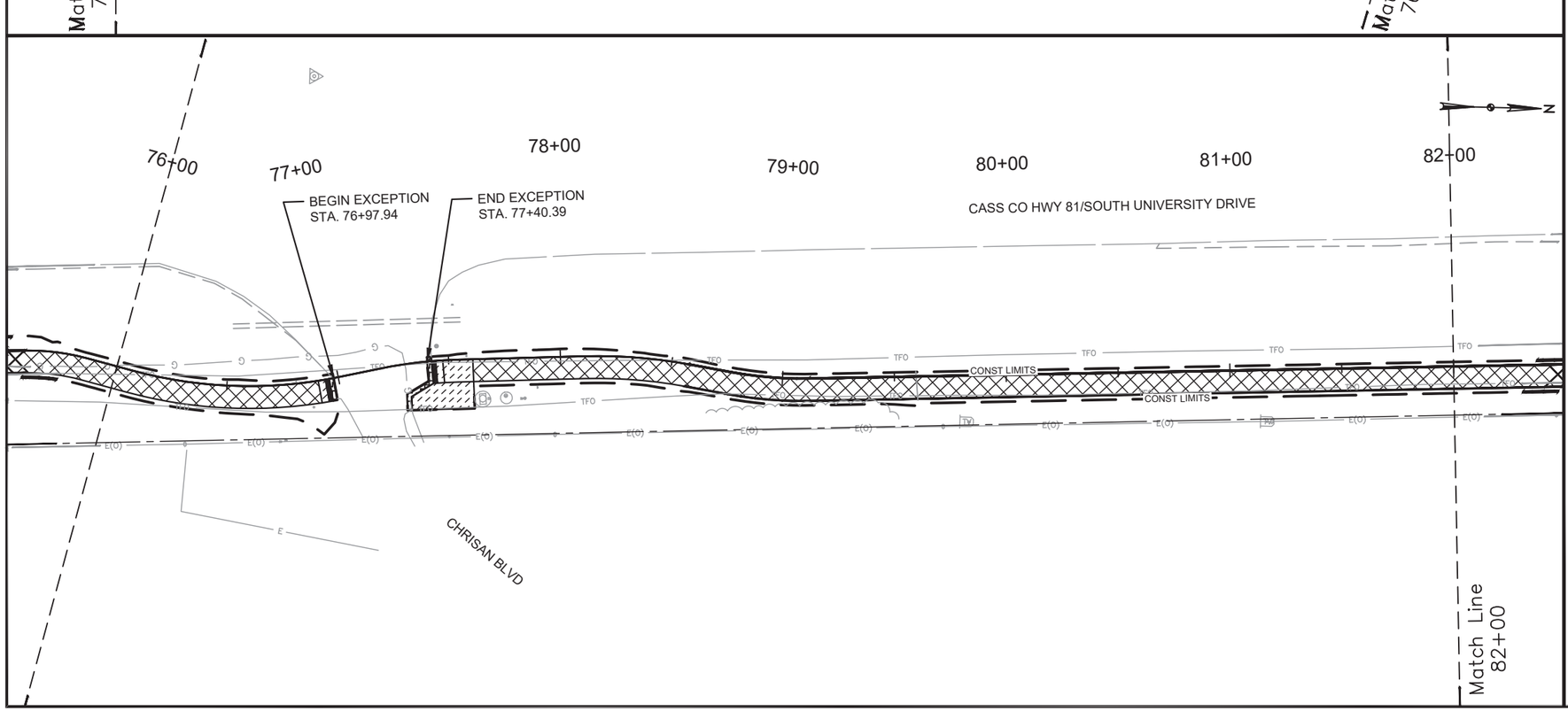
DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	90	6





SPEC	CODE	BID ITEM	QTY	UNIT
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT		
		Sta. 70+00 to Sta. 82+00	2.9	TON
750	0120	SIDEWALK CONCRETE 5IN REINF		
		Sta. 70+00 to Sta. 82+00	1,256	SY
750	1016	DRIVEWAY CONCRETE 6IN REINFORCED		
		Sta. 70+00 to Sta. 82+00	60	SY
750	2115	DETECTABLE WARNING PANELS		
		Sta. 70+00 to Sta. 82+00	40	SF

LEGEND:

- COMMERCIAL HMA
- MILL & OVERLAY (COMMERCIAL HMA)
- 5IN SIDEWALK CONCRETE REINFORCED
- 6IN DRIVEWAY CONCRETE REINFORCED
- DETECTABLE WARNING PANEL

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/ /26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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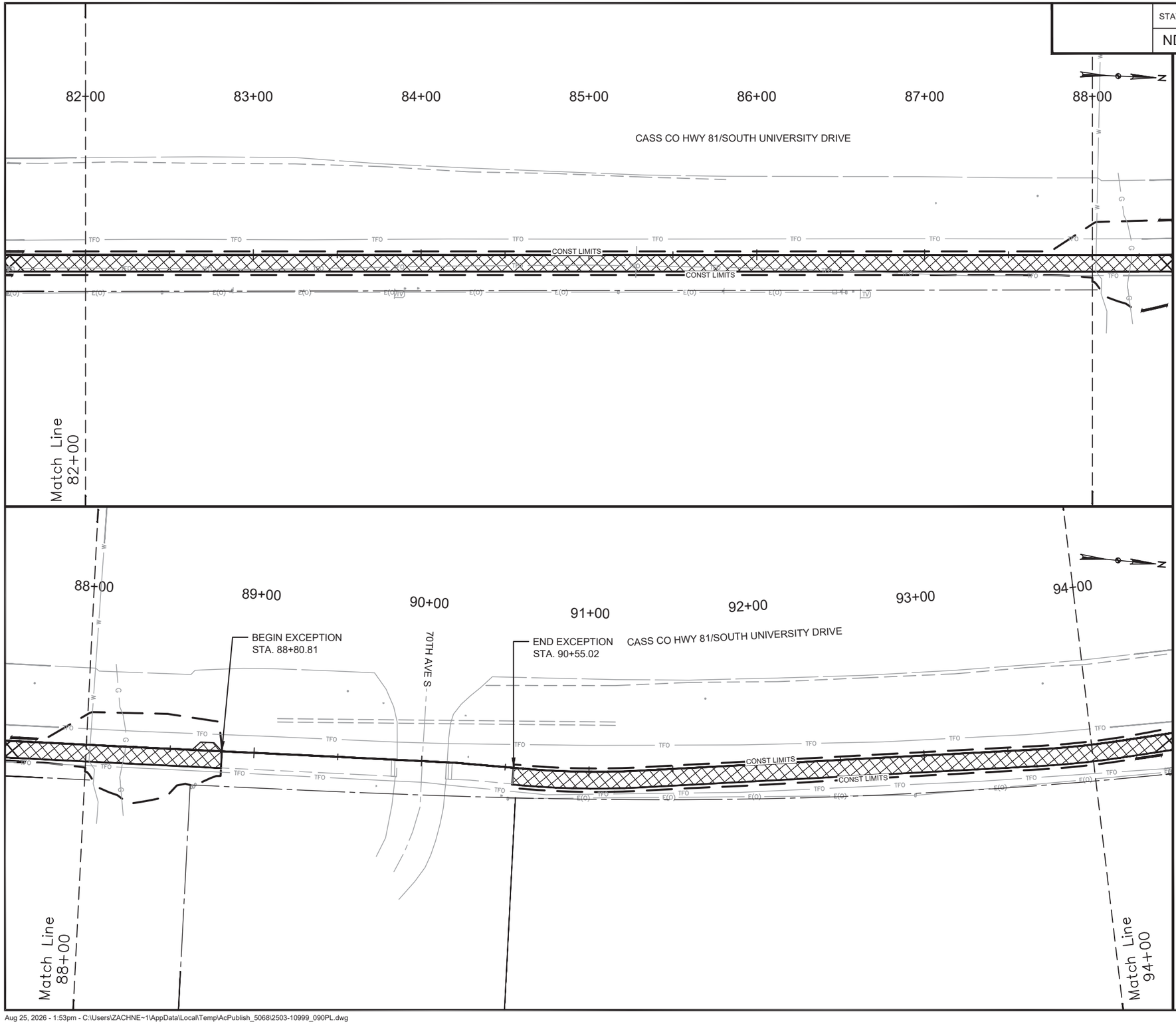
PAVING LAYOUT
STA. 70+00 TO 82+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	90	7



SPEC	CODE	BID ITEM	QTY	UNIT
750	0120	SIDEWALK CONCRETE 5IN REINF		
		Sta. 82+00 to Sta. 94+00	1,148	SY

LEGEND:

- COMMERCIAL HMA
- MILL & OVERLAY (COMMERCIAL HMA)
- 5IN SIDEWALK CONCRETE REINFORCED
- 6IN DRIVEWAY CONCRETE REINFORCED
- DETECTABLE WARNING PANEL

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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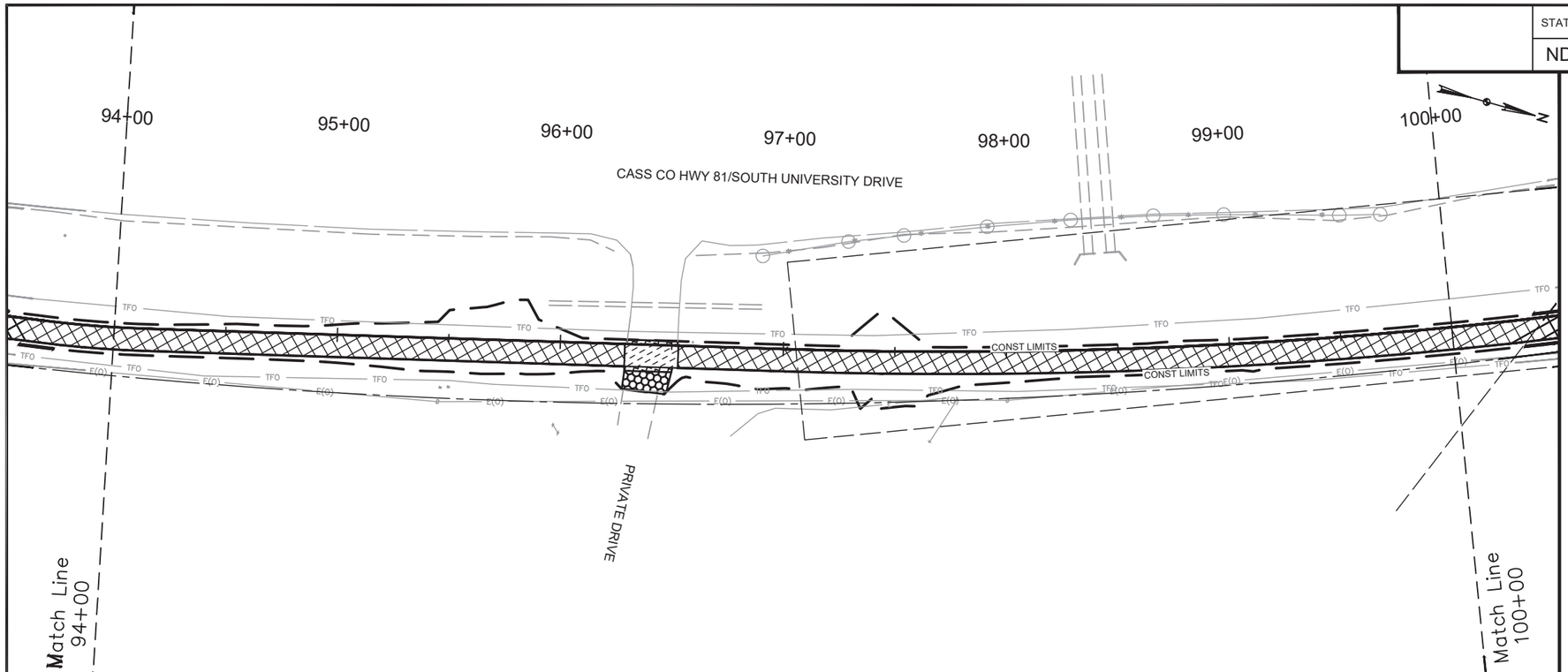
PAVING LAYOUT
STA. 82+00 TO 94+00

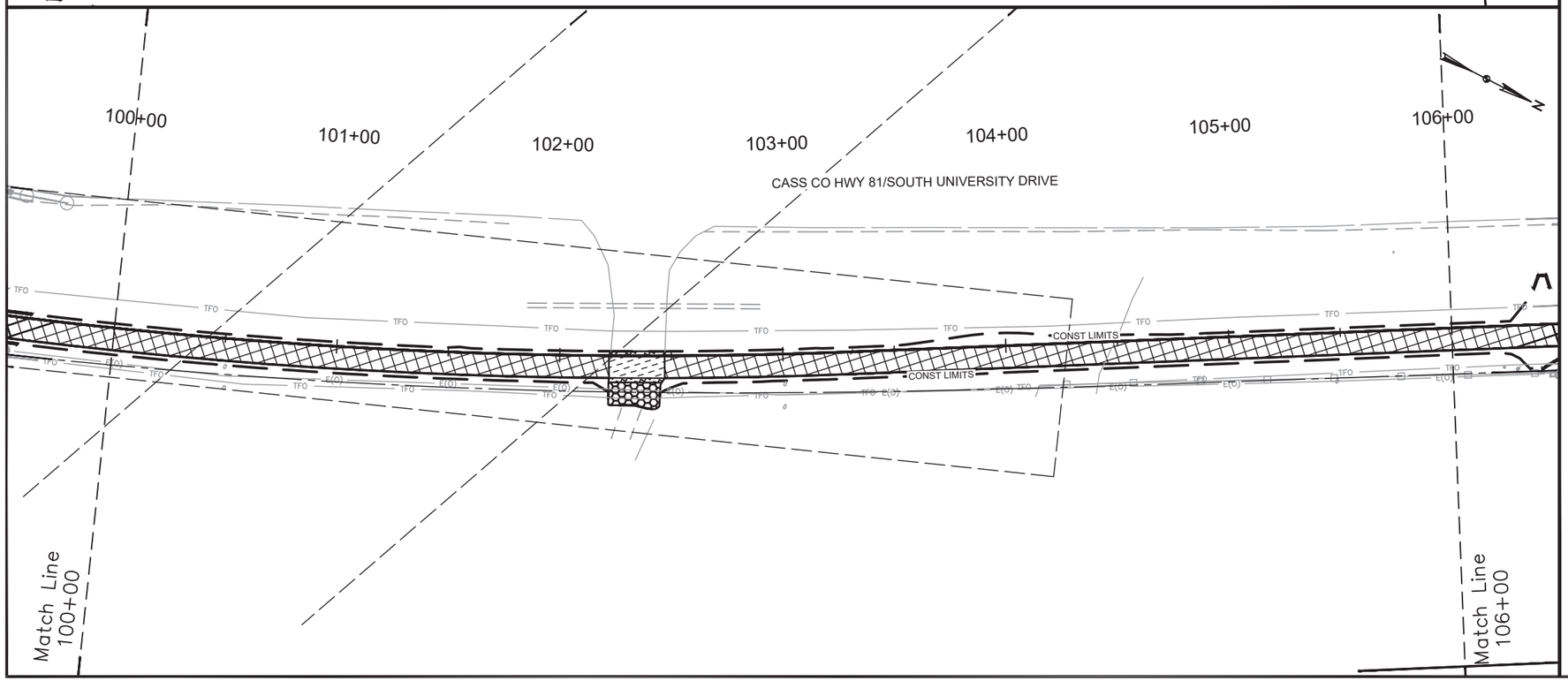
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ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	90	8





SPEC	CODE	BID ITEM	QTY	UNIT
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT Sta. 94+00 to Sta. 106+00	12.3	TON
750	0120	SIDEWALK CONCRETE 5IN REINF Sta. 94+00 to Sta. 106+00	1,281	SY
750	1016	DRIVEWAY CONCRETE 6IN REINFORCED Sta. 94+00 to Sta. 106+00	54	SY

LEGEND:

- COMMERCIAL HMA
- MILL & OVERLAY (COMMERCIAL HMA)
- 5IN SIDEWALK CONCRETE REINFORCED
- 6IN DRIVEWAY CONCRETE REINFORCED
- DETECTABLE WARNING PANEL

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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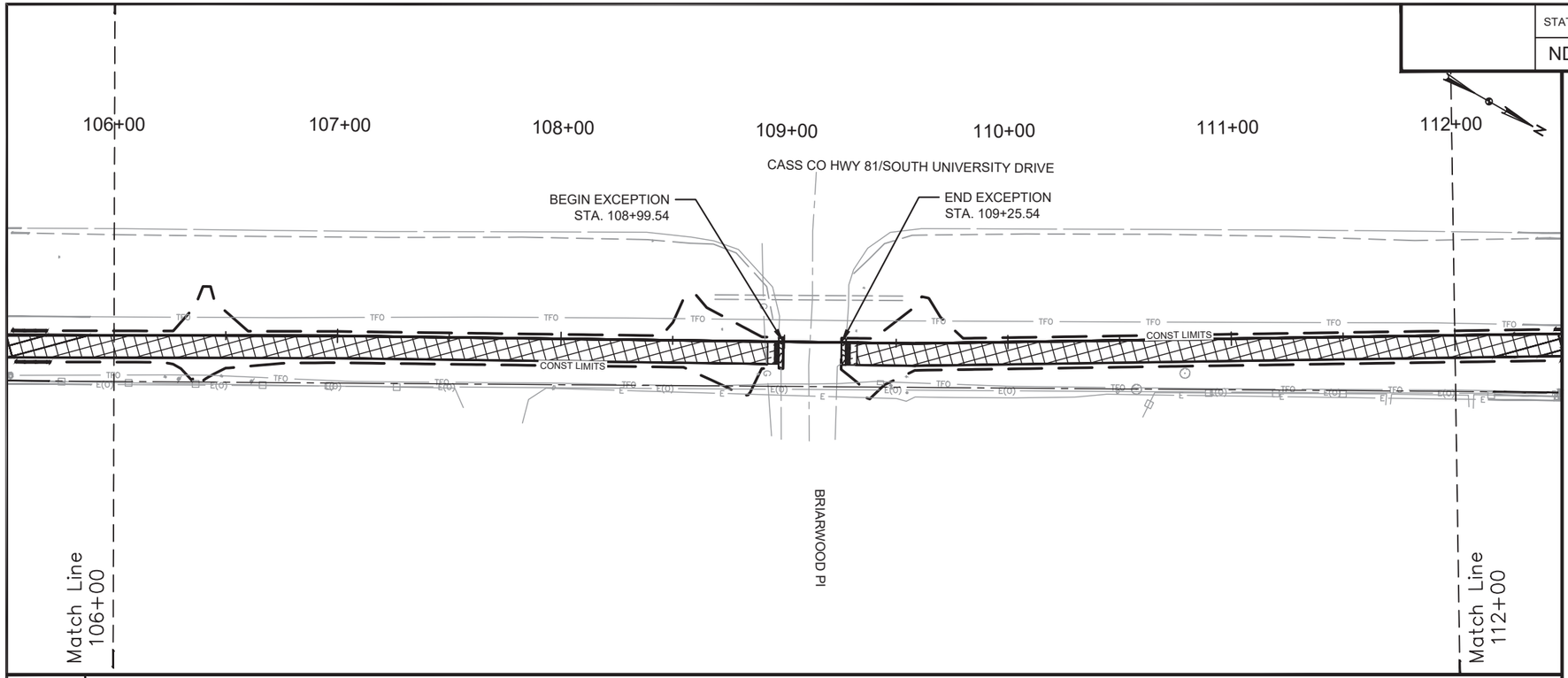
PAVING LAYOUT
STA. 94+00 TO 106+00

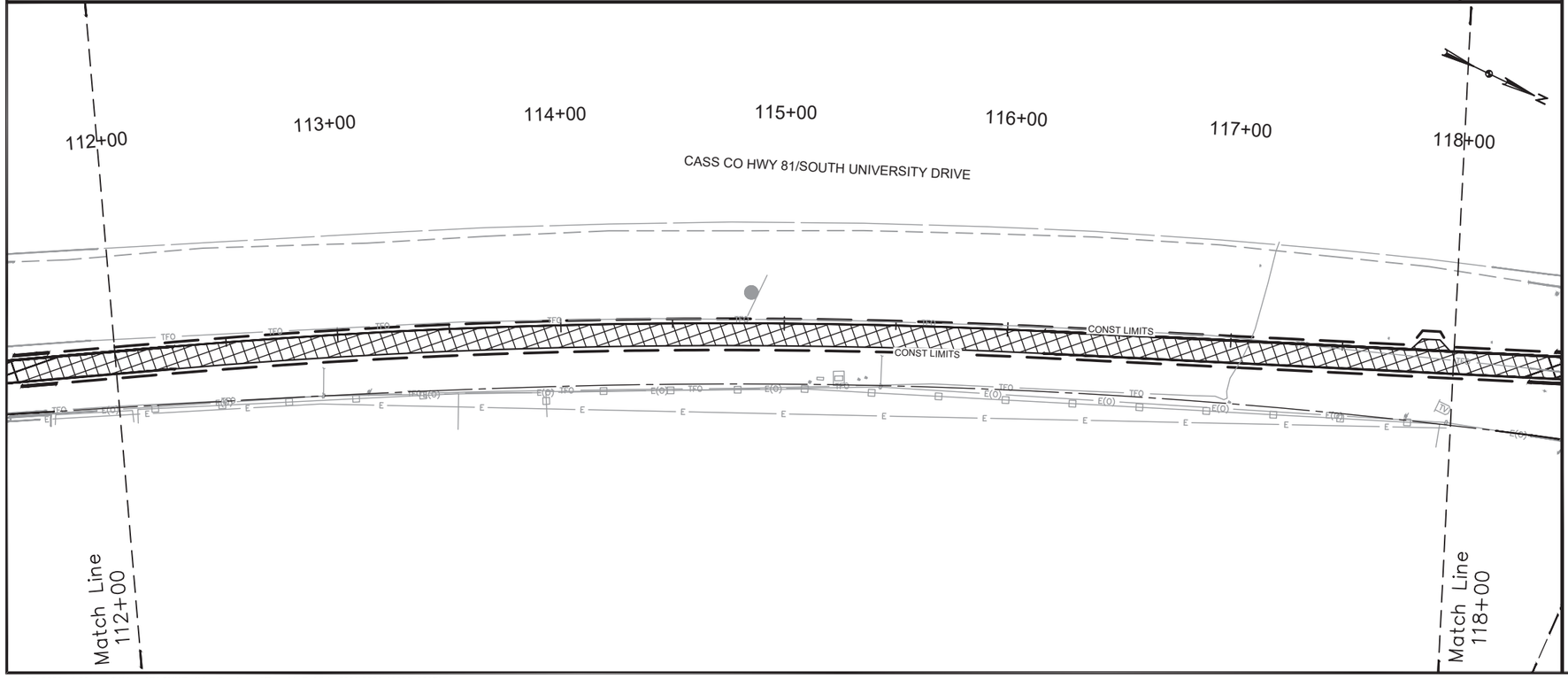
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ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	90	9





SPEC	CODE	BID ITEM	QTY	UNIT
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT Sta. 106+00 to Sta. 118+00	1.9	TON
750	0120	SIDEWALK CONCRETE 5IN REINF Sta. 106+00 to Sta. 118+00	1,295	SY
750	1016	DRIVEWAY CONCRETE 6IN REINFORCED Sta. 106+00 to Sta. 118+00	11	SY
750	2115	DETECTABLE WARNING PANELS Sta. 106+00 to Sta. 118+00	40	SF

LEGEND:

- COMMERCIAL HMA
- MILL & OVERLAY (COMMERCIAL HMA)
- 5IN SIDEWALK CONCRETE REINFORCED
- 6IN DRIVEWAY CONCRETE REINFORCED
- DETECTABLE WARNING PANEL

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/25/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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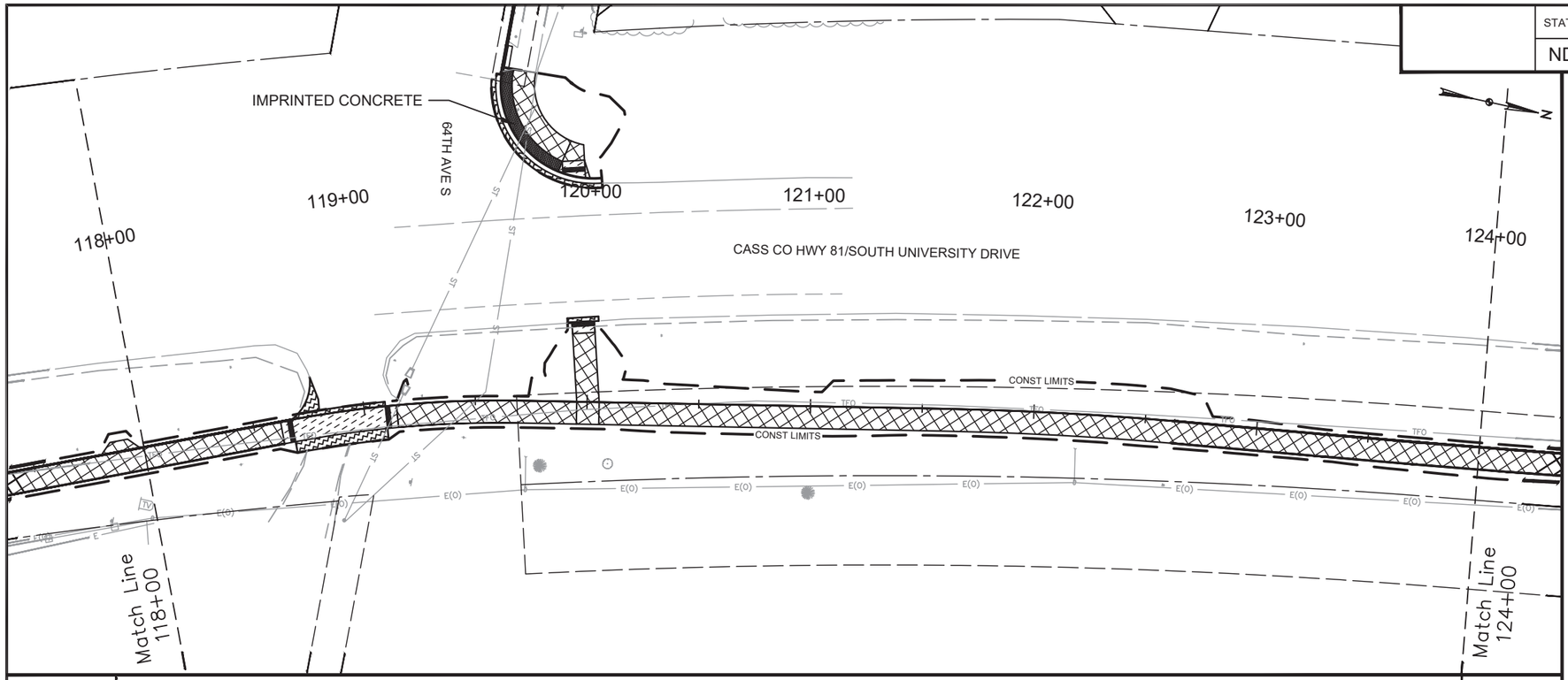
PAVING LAYOUT
STA. 106+00 TO 118+00

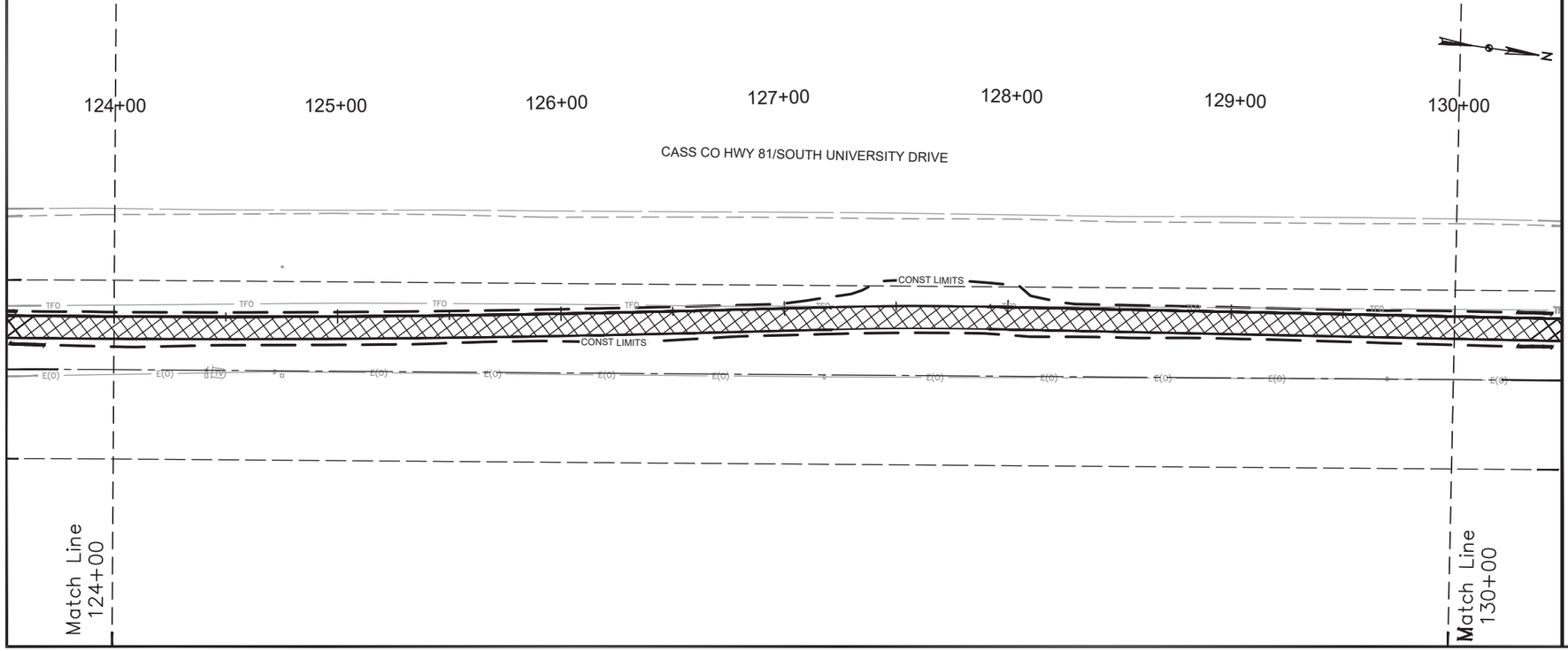
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ND	TMA-TAU-CRP-8-984(183)	90	10





SPEC	CODE	BID ITEM	QTY	UNIT
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT Sta. 118+00 to Sta. 130+00	19.7	TON
748	0190	CURB & GUTTER-TYPE I 30IN Sta. 118+00 to Sta. 130+00	75	LF
750	0030	PIGMENTED IMPRINTED CONCRETE Sta. 118+00 to Sta. 130+00	27.6	SY
750	0120	SIDEWALK CONCRETE 5IN REINF Sta. 118+00 to Sta. 130+00	1,364	SY
750	1016	DRIVEWAY CONCRETE 6IN REINFORCED Sta. 118+00 to Sta. 130+00	72	SY
750	2115	DETECTABLE WARNING PANELS Sta. 118+00 to Sta. 130+00	80	SF

LEGEND:

- COMMERCIAL HMA
- MILL & OVERLAY (COMMERCIAL HMA)
- 5IN SIDEWALK CONCRETE REINFORCED
- 6IN DRIVEWAY CONCRETE REINFORCED
- DETECTABLE WARNING PANEL

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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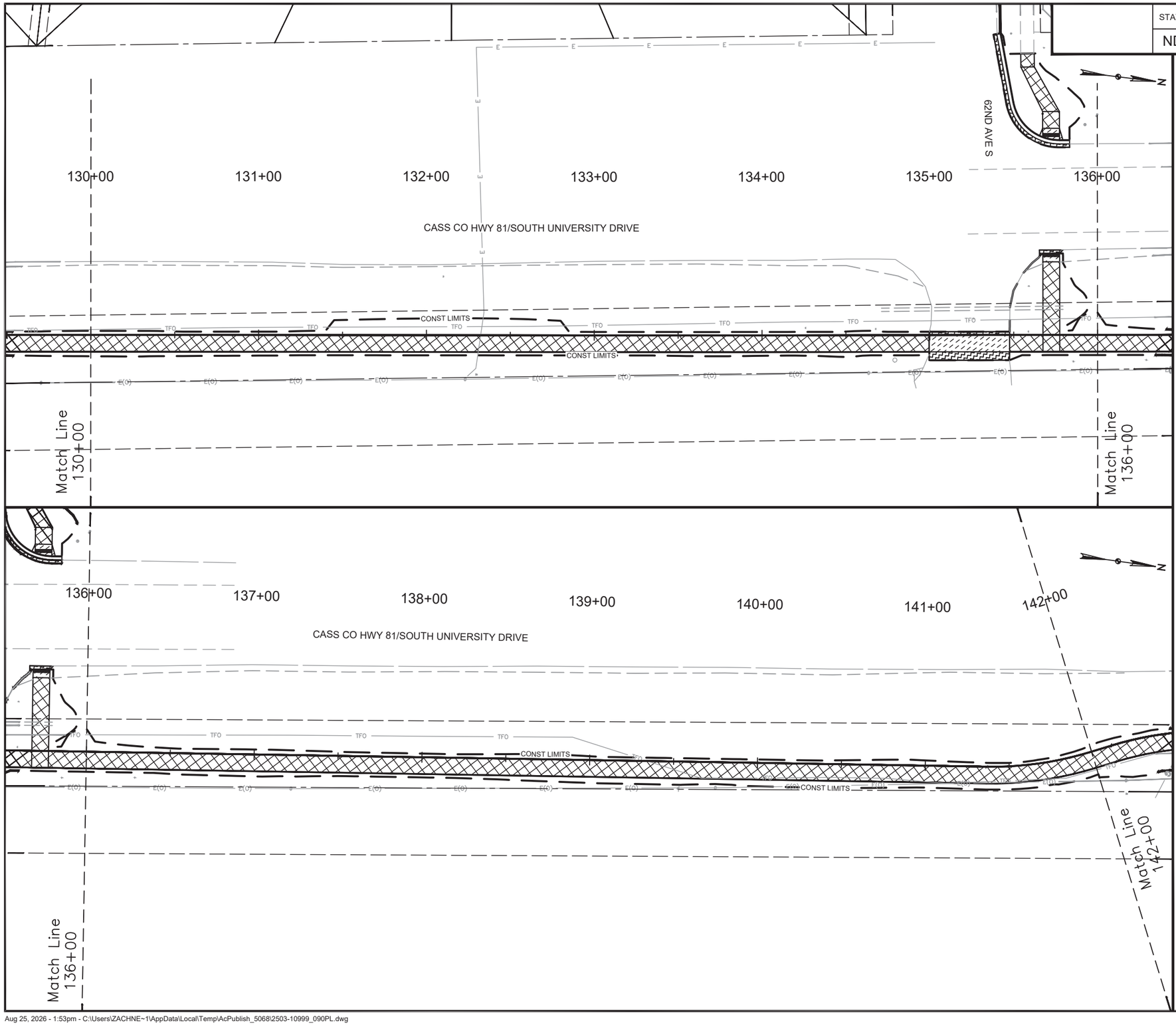
PAVING LAYOUT
STA. 118+00 TO 130+00

DRWN. BY	CHK'D BY	PROJECT NO.
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ND	TMA-TAU-CRP-8-984(183)	90	11



SPEC	CODE	BID ITEM	QTY	UNIT
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT		
		Sta. 130+00 to Sta. 142+00	20.2	TON
748	0190	CURB & GUTTER-TYPE I 30IN		
		Sta. 130+00 to Sta. 142+00	87	LF
750	0120	SIDEWALK CONCRETE 5IN REINF		
		Sta. 130+00 to Sta. 142+00	1,375	SY
750	1016	DRIVEWAY CONCRETE 6IN REINFORCED		
		Sta. 130+00 to Sta. 142+00	67	SY
750	2115	DETECTABLE WARNING PANELS		
		Sta. 130+00 to Sta. 142+00	40	SF

LEGEND:

- COMMERCIAL HMA
- MILL & OVERLAY (COMMERCIAL HMA)
- 5IN SIDEWALK CONCRETE REINFORCED
- 6IN DRIVEWAY CONCRETE REINFORCED
- DETECTABLE WARNING PANEL

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/15/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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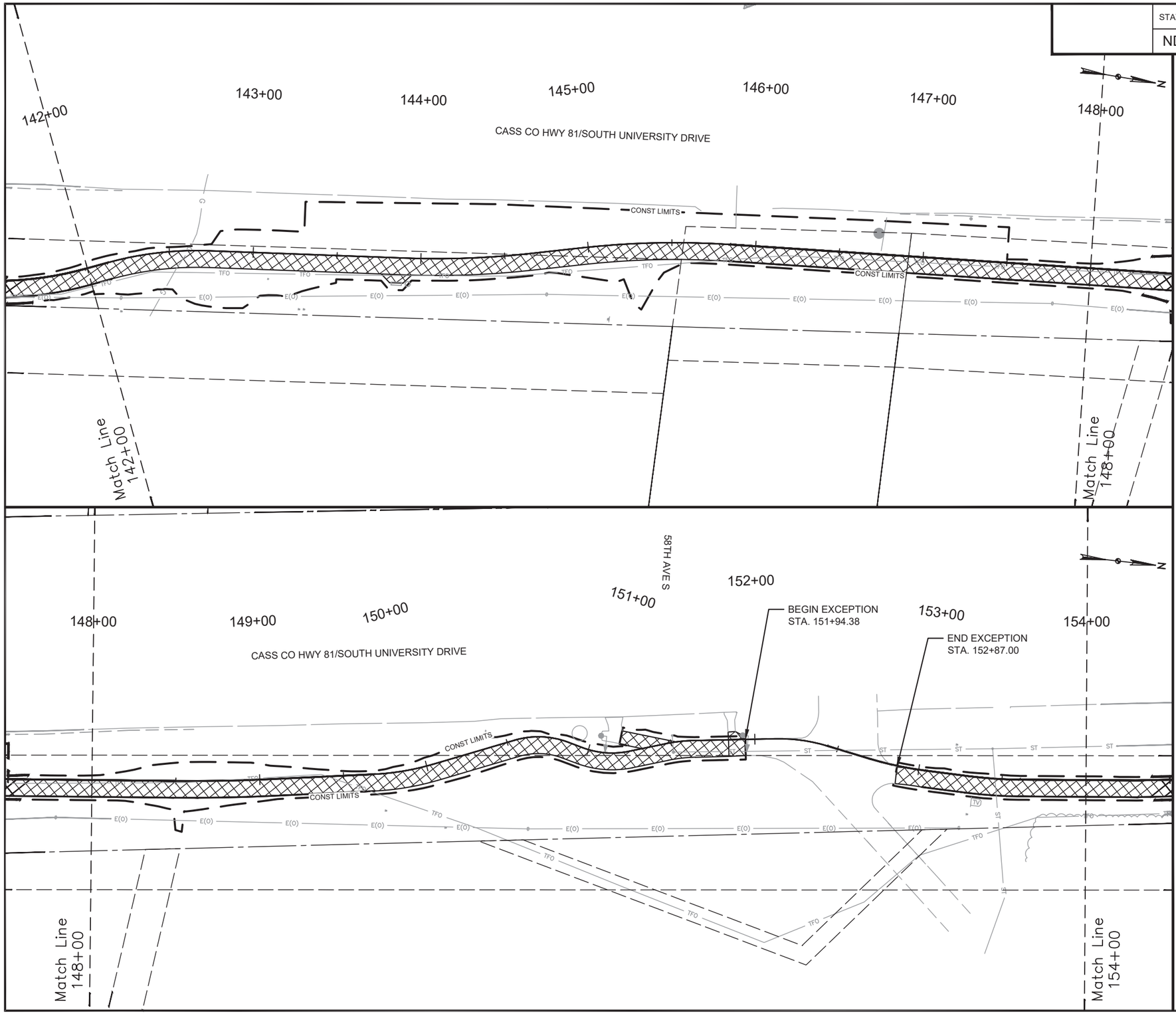
PAVING LAYOUT
STA. 130+00 TO 142+00

DRWN. BY	CHK'D BY	PROJECT NO.
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ND	TMA-TAU-CRP-8-984(183)	90	12



SPEC	CODE	BID ITEM	QTY	UNIT
750	0120	SIDEWALK CONCRETE 5IN REINF		
		Sta. 142+00 to Sta. 154+00	1,261	SY

LEGEND:

- COMMERCIAL HMA
- MILL & OVERLAY (COMMERCIAL HMA)
- 5IN SIDEWALK CONCRETE REINFORCED
- 6IN DRIVEWAY CONCRETE REINFORCED
- DETECTABLE WARNING PANEL

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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PAVING LAYOUT
STA. 142+00 TO 154+00

DRWN. BY	CHK'D BY	PROJECT NO.
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ND	TMA-TAU-CRP-8-984(183)	90	13

154+00 155+00 156+00 157+00 158+00 159+00 160+00

CASS CO HWY 81/SOUTH UNIVERSITY DRIVE

CONST LIMITS

Match Line 154+00

Match Line 160+00

160+00 161+00 162+00 163+00 164+00 165+00 166+00

CASS CO HWY 81/SOUTH UNIVERSITY DRIVE

BEGIN EXCEPTION STA. 162+34.04

END EXCEPTION STA. 162+97.56

END PROJECT STA. 165+31.09

54TH AVE S

CONST LIMITS

Match Line 160+00

Match Line 166+00

SPEC	CODE	BID ITEM	QTY	UNIT
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT Sta. 154+00 to Sta. 166+00	2.9	TON
748	0190	CURB & GUTTER-TYPE I 30IN Sta. 154+00 to Sta. 166+00	4	LF
750	0120	SIDEWALK CONCRETE 5IN REINF Sta. 154+00 to Sta. 166+00	1,178	SY
750	1016	DRIVEWAY CONCRETE 6IN REINFORCED Sta. 154+00 to Sta. 166+00	17	SY
750	2115	DETECTABLE WARNING PANELS Sta. 154+00 to Sta. 166+00	40	SF

LEGEND:

- COMMERCIAL HMA
- MILL & OVERLAY (COMMERCIAL HMA)
- 5IN SIDEWALK CONCRETE REINFORCED
- 6IN DRIVEWAY CONCRETE REINFORCED
- DETECTABLE WARNING PANEL

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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PAVING LAYOUT
STA. 154+00 TO 166+00

DRWN. BY	CHK'D BY	PROJECT NO.
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ND	TMA-TAU-CRP-8-984(183)	100	1

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
E5-1-48	48"x48"	EXIT GORE		35	
G20-1-60	60"x24"	ROAD WORK NEXT __ MILES		28	
G20-1b-60	60"x24"	NO WORK IN PROGRESS (Sign and installation only)		18	
G20-2-48	**48"x24"**	**END ROAD WORK**	**4**	**26**	**104**
G20-4-36	36"x18"	PILOT CAR FOLLOW ME (Mounted to back of pilot car)		18	
G20-4b-36	36"x30"	WAIT FOR PILOT CAR		18	
G20-50a-72	72"x36"	ROAD WORK NEXT __ MILES RT & LT ARROWS		43	
G20-52a-72	72"x24"	ROAD WORK NEXT __ MILES RT or LT ARROW		36	
G20-55-96	96"x48"	SPEED LIMIT ENFORCED - MINIMUM FEE $150 WHEN WORKERS PRESENT		59	
M1-1-36	36"x36"	INTERSTATE ROUTE MARKER (Post and installation only)		11	
M1-4-24	24"x24"	U.S. ROUTE MARKER (Post and installation only)		10	
M1-5-24	24"x24"	STATE ROUTE MARKER (Post and installation only)		10	
M3-1-24	24"x12"	NORTH (Mounted on route marker post)		7	
M3-2-24	24"x12"	EAST (Mounted on route marker post)		7	
M3-3-24	24"x12"	SOUTH (Mounted on route marker post)		7	
M3-4-24	24"x12"	WEST (Mounted on route marker post)		7	
M4-8-24	24"x12"	DETOUR (Mounted on route marker post)		7	
M4-9-30	30"x24"	DETOUR ARROW RIGHT or LEFT/AHD AND RT or LT		15	
M4-9A-30	**30"x24"**	**BICYCLE & PEDESTRIAN DETOUR LT or RT ARROW**	**7**	**15**	**105**
M4-10-48	48"x18"	DETOUR (INSIDE ARROW) RIGHT or LEFT (Mounted on barricade)		7	
M5-1-21	21"x15"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)		7	
M5-1-30	30"x21"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)		9	
M6-1-21	21"x15"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)		7	
M6-1-30	30"x21"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)		9	
M6-3-21	21"x15"	DIRECTIONAL ARROW UP (Mounted on route marker post)		7	
R1-1-48	48"x48"	STOP		32	
R1-2-60	60"x60"	YIELD		29	
R2-1-36	**36"x48"**	**SPEED LIMIT __ (Portable only)**	**6**	**30**	**180**
R2-1-48	**48"x60"**	**SPEED LIMIT __**	**4**	**39**	**156**
R2-1aP-24	**24"x18"**	**MINIMUM FEE $150 (Mounted on Speed Limit post)**	**5**	**10**	**50**
R3-2-48	48"x48"	NO LEFT TURN		35	
R4-1-48	48"x60"	DO NOT PASS		39	
R4-7-12	**12"x18"**	**KEEP RIGHT**	**4**	**2**	**8**
R4-7-48	48"x60"	KEEP RIGHT		39	
R5-1-48	48"x48"	DO NOT ENTER		35	
R6-1-54	54"x18"	ONE WAY RIGHT or LEFT (Mounted on STOP or DO NOT ENTER post)		14	
R7-1-12	12"x18"	NO PARKING ANY TIME		11	
R9-9-24	**24"x12"**	**SIDEWALK CLOSED (Mounted on barricade)**	**35**	**3**	**105**
R9-11-24	**24"x12"**	**SIDEWALK CLOSED AHEAD CROSS HERE (Mounted on barricade)**	**3**	**3**	**9**
R10-6-24	24"x36"	STOP HERE ON RED		16	
R11-2-48	48"x30"	ROAD CLOSED (Mounted on barricade)		12	
R11-2a-48	48"x30"	STREET CLOSED (Mounted on barricade)		12	
R11-3a-60	60"x30"	ROAD CLOSED __ MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)		15	
R11-3c-60	60"x30"	STREET CLOSED __ MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)		15	
R11-4a-60	60"x30"	STREET CLOSED TO THRU TRAFFIC (Mounted on barricade)		15	
W1-3-48	48"x48"	REVERSE TURN RIGHT or LEFT		35	
W1-4-48	**48"x48"**	**REVERSE CURVE RIGHT or LEFT**	**2**	**35**	**70**
W1-4b-48	48"x48"	TWO LANE REVERSE CURVE RIGHT or LEFT		35	
W1-6-48	48"x24"	ONE DIRECTION LARGE ARROW		26	
W3-1-48	48"x48"	STOP AHEAD		35	
W3-3-48	48"x48"	SIGNAL AHEAD		35	
W3-4-48	**48"x48"**	**BE PREPARED TO STOP**	**2**	**35**	**70**
W3-5-48	**48"x48"**	**SPEED REDUCTION AHEAD**	**5**	**35**	**175**
W4-2-48	48"x48"	LANE ENDS RIGHT or LEFT		35	
W5-1-48	**48"x48"**	**ROAD NARROWS**	**1**	**35**	**35**
W5-8-48	48"x48"	THRU TRAFFIC RIGHT LANE		35	
W5-9-48	48"x48"	ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW		35	
W6-3-48	48"x48"	TWO WAY TRAFFIC		35	
W8-1-48	48"x48"	BUMP		35	
W8-3-48	48"x48"	PAVEMENT ENDS		35	
W8-7-48	48"x48"	LOOSE GRAVEL		35	
W8-11-48	48"x48"	UNEVEN LANES		35	
W8-12-48	48"x48"	NO CENTER LINE		35	
W8-17-48	48"x48"	SHOULDER DROP-OFF SYMBOL		35	
W8-53-48	48"x48"	TRUCKS ENTERING HIGHWAY		35	
W8-54-48	48"x48"	TRUCKS ENTERING AHEAD or __ FT or _ MILE		35	
W8-55-48	48"x48"	TRUCKS CROSSING AHEAD or __ FT or _ MILE		35	
W8-56-48	48"x48"	TRUCKS EXITING HIGHWAY		35	
W9-3a-48	48"x48"	CENTER LANE CLOSED SYMBOL		35	
W13-1P-30	30"x30"	__ MPH ADVISORY SPEED PLAQUE (Mounted on warning sign post)		14	
W14-3-64	64"x48"	NO PASSING ZONE		28	
W16-2P-30	30"x24"	__ FEET PLAQUE (Mounted on warning sign post)		10	
W20-1-48	**48"x48"**	**ROAD WORK AHEAD or _FT or _ MILE**	**22**	**35**	**770**
W20-2-48	48"x48"	DETOUR AHEAD or __ FT or _ MILE		35	
W20-3-48	48"x48"	ROAD or STREET CLOSED AHEAD or __ FT or _ MILE		35	
W20-4-48	48"x48"	ONE LANE ROAD AHEAD or __ FT or _ MILE		35	
W20-5-48	48"x48"	RIGHT or CENTER or LEFT LANE CLOSED AHEAD or __ FT or _ MILE		35	
W20-7-48	**48"x48"**	**FLAGGER**	**2**	**35**	**70**
W20-8-18	**18"x18"**	**STOP - SLOW PADDLE Back to Back**	**2**	**5**	**10**
W20-52P-54	54"x12"	NEXT __ MILES (Mounted on warning sign post)		12	
W21-1-48	48"x48"	WORKERS		35	
W21-2-48	48"x48"	FRESH OIL		35	

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
W21-3-48	48"x48"	ROAD MACHINERY AHEAD or __ FT or _ MILE		35	
W21-5-48	48"x48"	SHOULDER WORK		35	
W21-5a-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED		35	
W21-5b-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED AHEAD or __ FT or _ MILE		35	
W21-6-48	48"x48"	SURVEY CREW		35	
W21-50-48	48"x48"	BRIDGE PAINTING AHEAD or __ FT		35	
W21-51-48	48"x48"	MATERIAL ON ROADWAY		35	
W21-52-48	48"x48"	PAVEMENT BREAKS		35	
W21-53-48	48"x48"	RUMBLE STRIPS AHEAD		35	
W22-8-48	48"x48"	FRESH OIL LOOSE ROCK		35	
W24-1-48	48"x48"	DOUBLE REVERSE CURVE		35	

SPECIAL SIGNS

SPEC & CODE

704-1000	**TRAFFIC CONTROL SIGNS**	**TOTAL UNITS**	**1917**

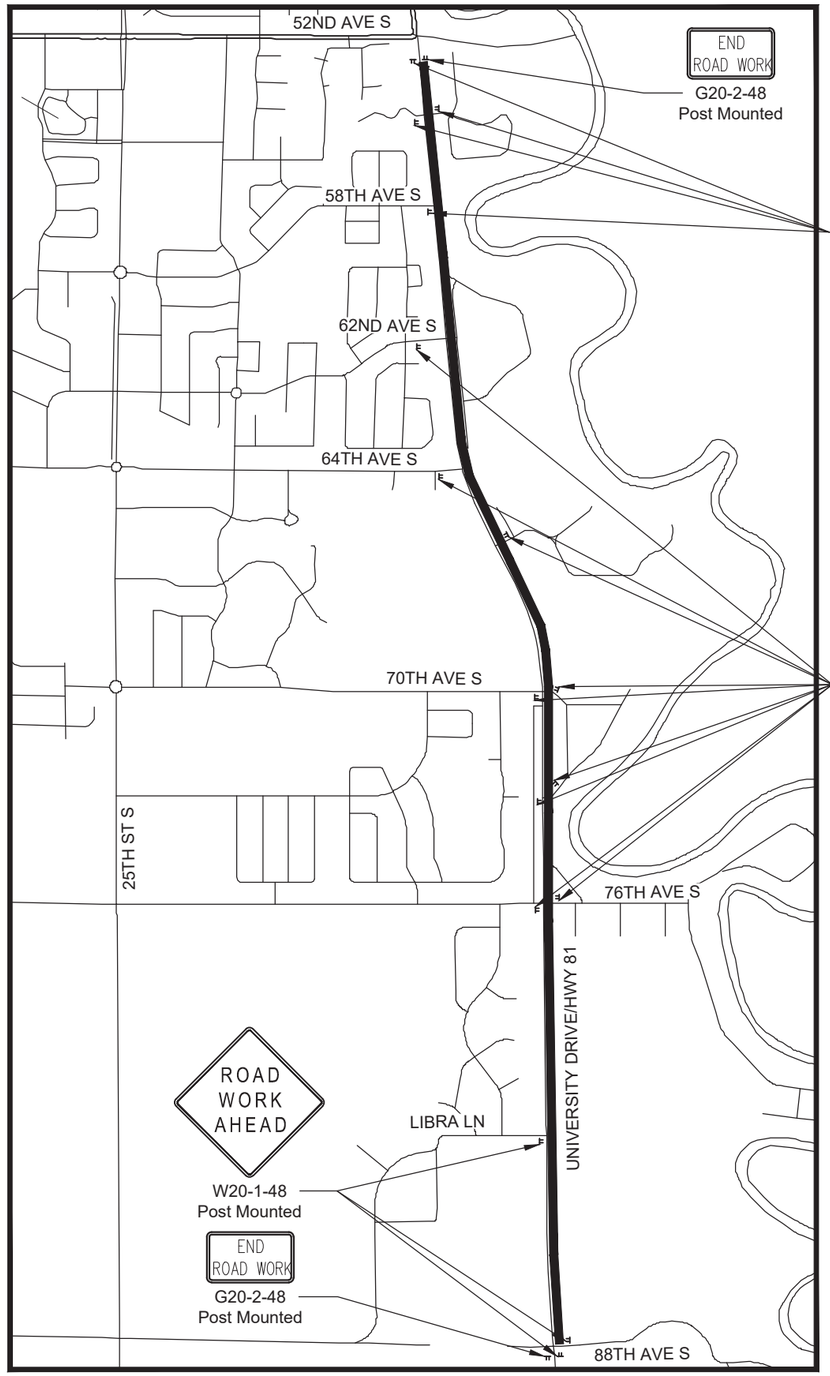
SPEC & CODE	DESCRIPTION	UNIT	QUANTITY
704-0100	**FLAGGING**	**MHR**	**200**
704-1048	PORTABLE RUMBLE STRIPS	EACH	
704-1050	TYPE I BARRICADES	EACH	
704-1052	**TYPE III BARRICADES**	**EACH**	**7**
704-1054	**SIDEWALK BARRICADE**	**EA**	**38**
704-1056	**PEDESTRIAN CHANNELIZATION**	**LF**	**60**
704-1060	**DELINEATOR DRUMS**	**EACH**	**282**
704-1065	TRAFFIC CONES	EACH	
704-1067	**TUBULAR MARKERS**	**EACH**	**110**
704-1070	DELINEATOR	EACH	
704-1072	FLEXIBLE DELINEATORS	EACH	
704-1080	STACKABLE VERTICAL PANELS	EACH	
704-1081	VERTICAL PANELS - BACK TO BACK	EACH	
704-1085	SEQUENCING ARROW PANEL - TYPE A	EACH	
704-1086	SEQUENCING ARROW PANEL - TYPE B	EACH	
704-1087	SEQUENCING ARROW PANEL - TYPE C	EACH	
704-1500	OBLITERATION OF PVMT MK	SF	
704-2108	**TEMPORARY CURB RAMP**	**EA**	**1**
704-3501	PORTABLE PRECAST CONCRETE MED BARRIER	LF	
704-3510	PRECAST CONCRETE MED BARRIER - STATE FURNISHED	EACH	
762-0200	RAISED PAVEMENT MARKERS	EACH	
762-0420	SHORT TERM 4IN LINE - TYPE R	LF	
762-0430	SHORT TERM 4IN LINE - TYPE NR	LF	

NOTE:
If additional signs are required, units will be calculated using the formula from Section III-18.06 of the Design Manual.
http://www.dot.nd.gov/

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

Traffic Control Devices List

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TMA-TAU-CRP-8-984(183)	100	2



The sign layout as shown is for general information purposes only. The contractor will be required to conform to MUTCD and the Standard Drawings when installing the traffic control signing.

N

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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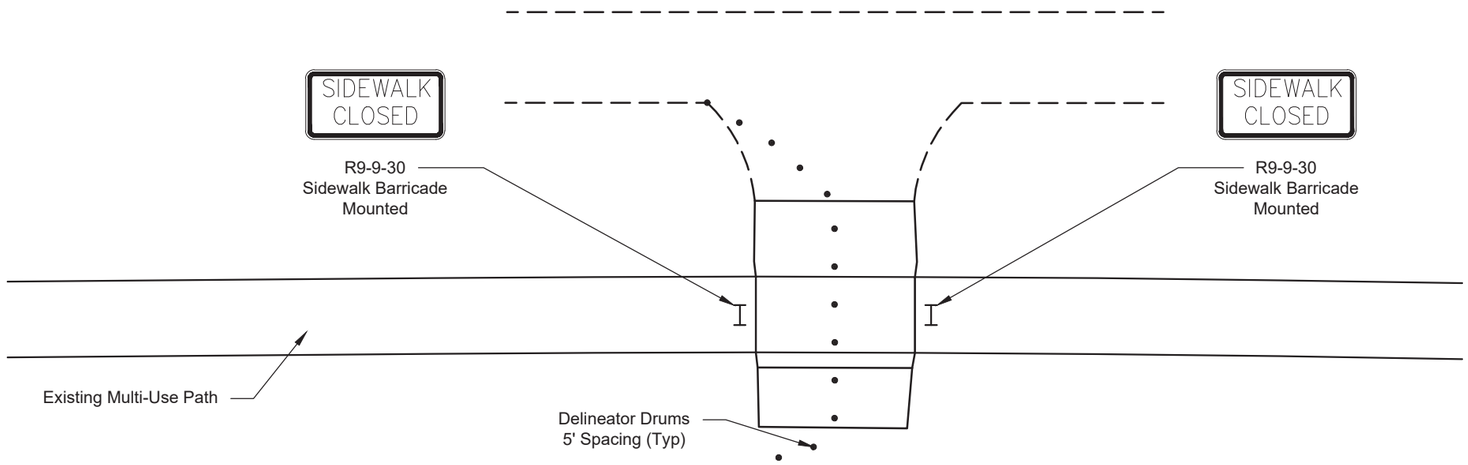
TRAFFIC CONTROL SIGNING LAYOUT

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

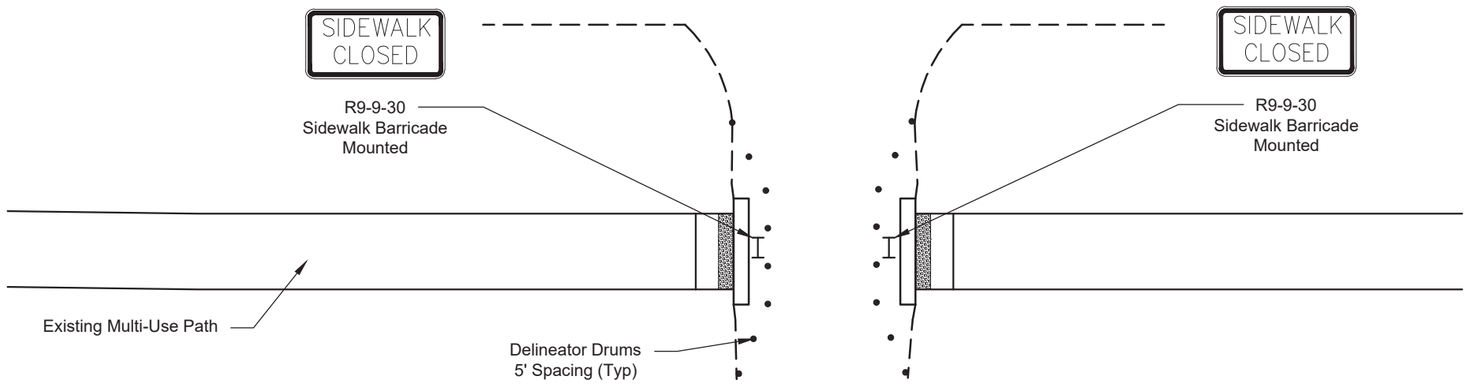
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TMA-TAU-CRP-8-984(183)	100	3



Typical Field Drive and Private Drive Closure Layout



Typical Street Closure Layout

Notes
1. Coordinate field and private drive closures with owners. Maintain one lane of traffic with a minimum width of 12' at all times.
2. Maintain two lanes of traffic with a minimum width of 28' at all street closures. If needed, phase the street closure to only close one side at a time to maintain the minimum width.

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

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CASS COUNTY, NORTH DAKOTA

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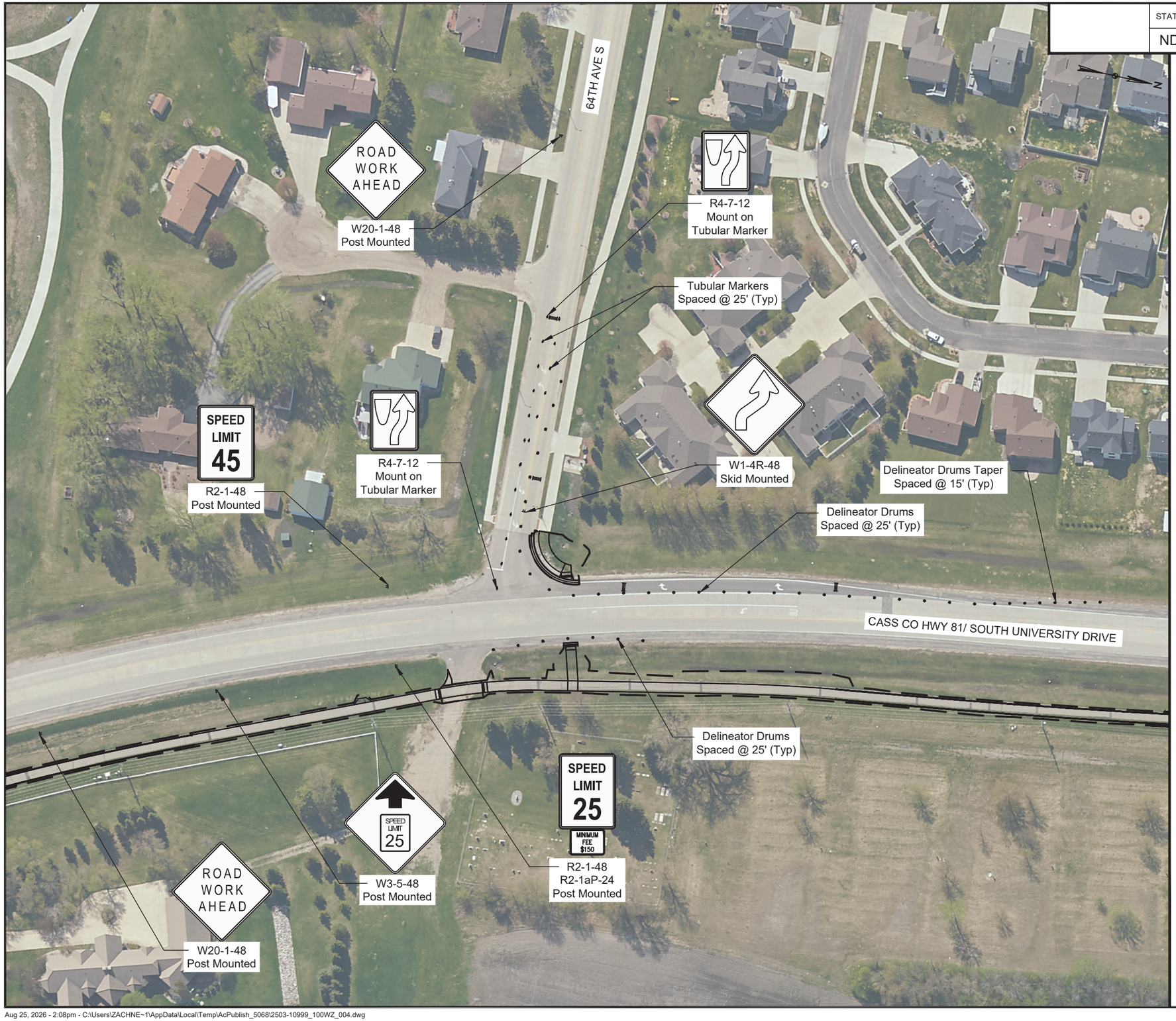
SIDEWALK BARRICADE

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TMA-TAU-CRP-8-984(183)	100	4



LEGEND:

- DELINEATOR DRUM
- TUBULAR MARKER
- TYPE III BARRICADE

50 0 50 100
scale 1"=100' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

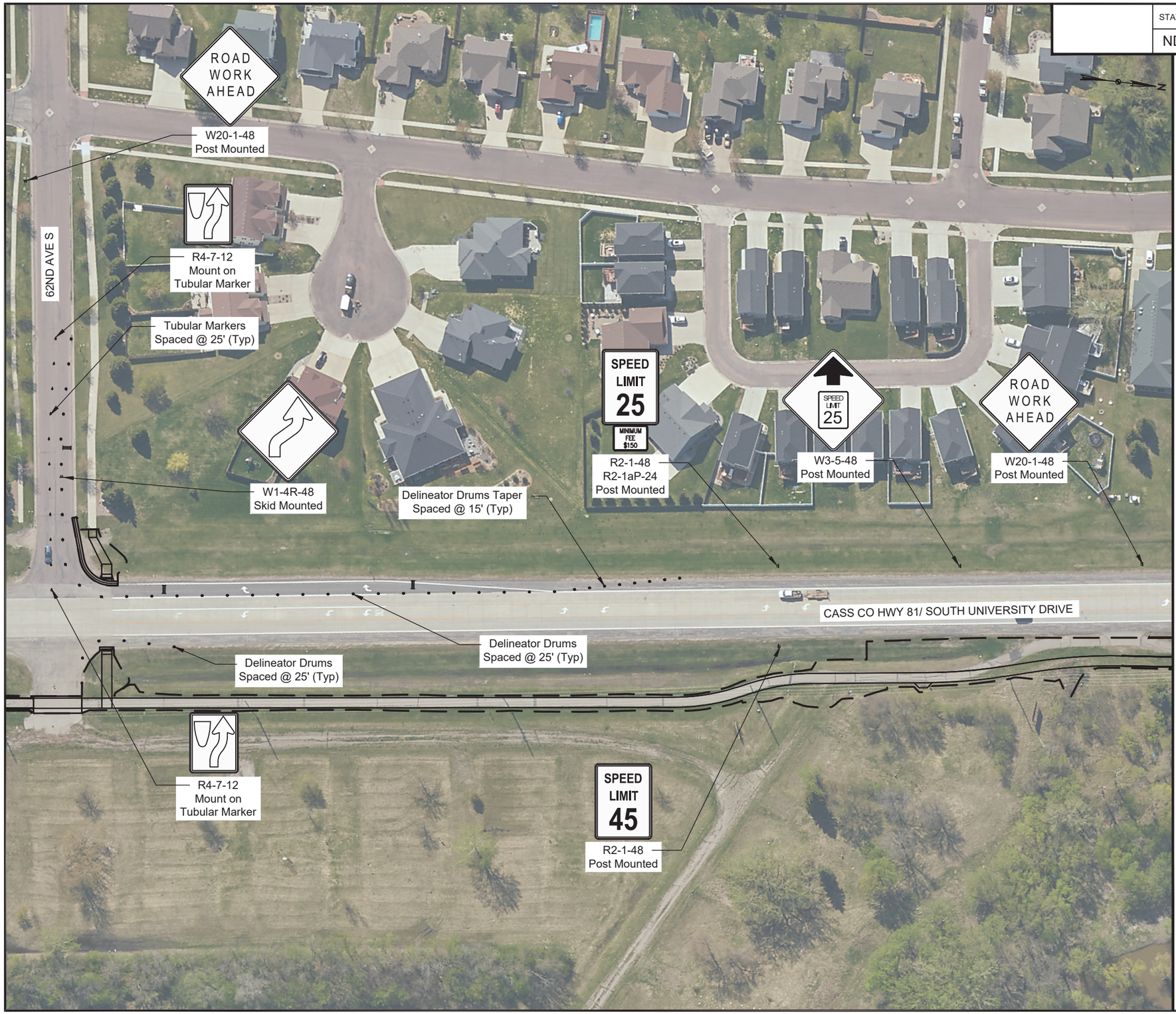
TRAFFIC CONTROL 64TH AVE S

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TMA-TAU-CRP-8-984(183)	100	5



LEGEND:

- DELINEATOR DRUM
- TUBULAR MARKER
- TYPE III BARRICADE

50 0 50 100
scale 1"=100' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/25/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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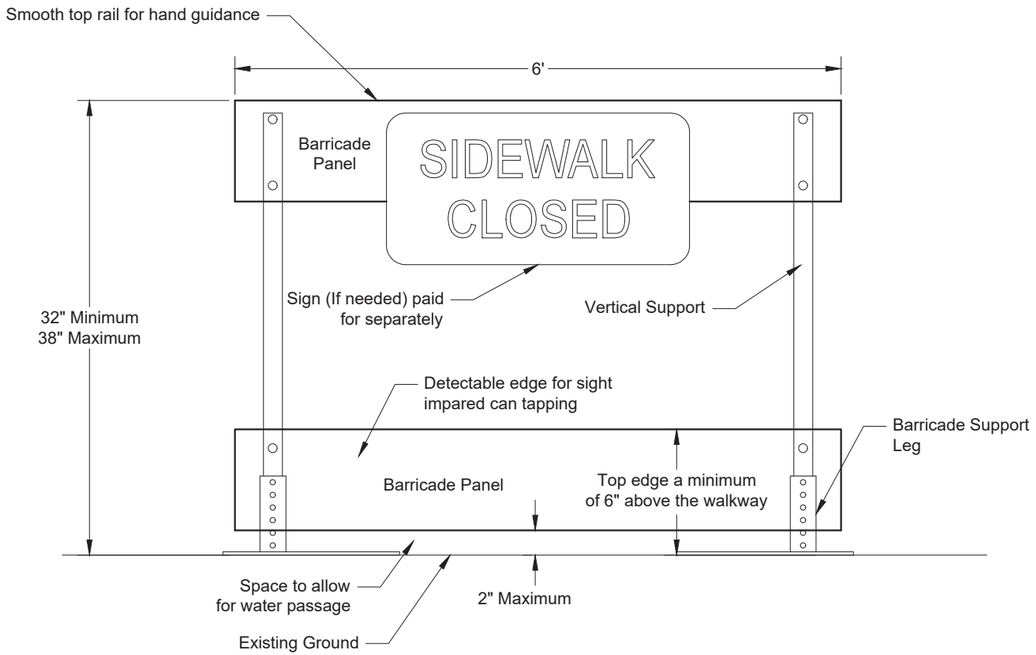
TRAFFIC CONTROL
62ND AVE S

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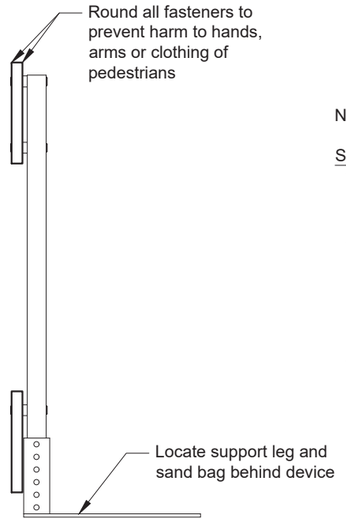
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TMA-TAU-CRP-8-984(183)	100	6



Front View

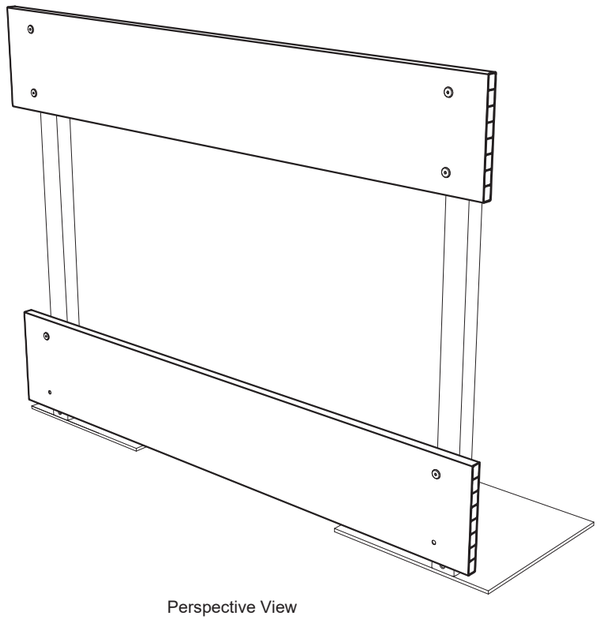


End View

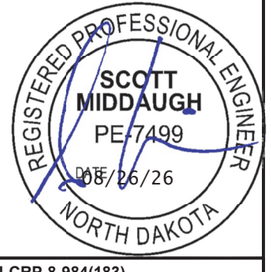
NOTES:

Sidewalk Barricades

1. Provide self standing sidewalk barricade with no supports extending into the pedestrians path.
2. Use orange or orange and white diagonal striped barricade panels contrasting with the walkway surface.
3. Provide ADA compliant and NCHRP 350 or Mash Test Level 3 (TL3) approved sidewalk barricades.
4. Include all costs to furnish, maintain and remove sidewalk barricades in the price bid for "Sidewalk Barricade".



Perspective View



TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

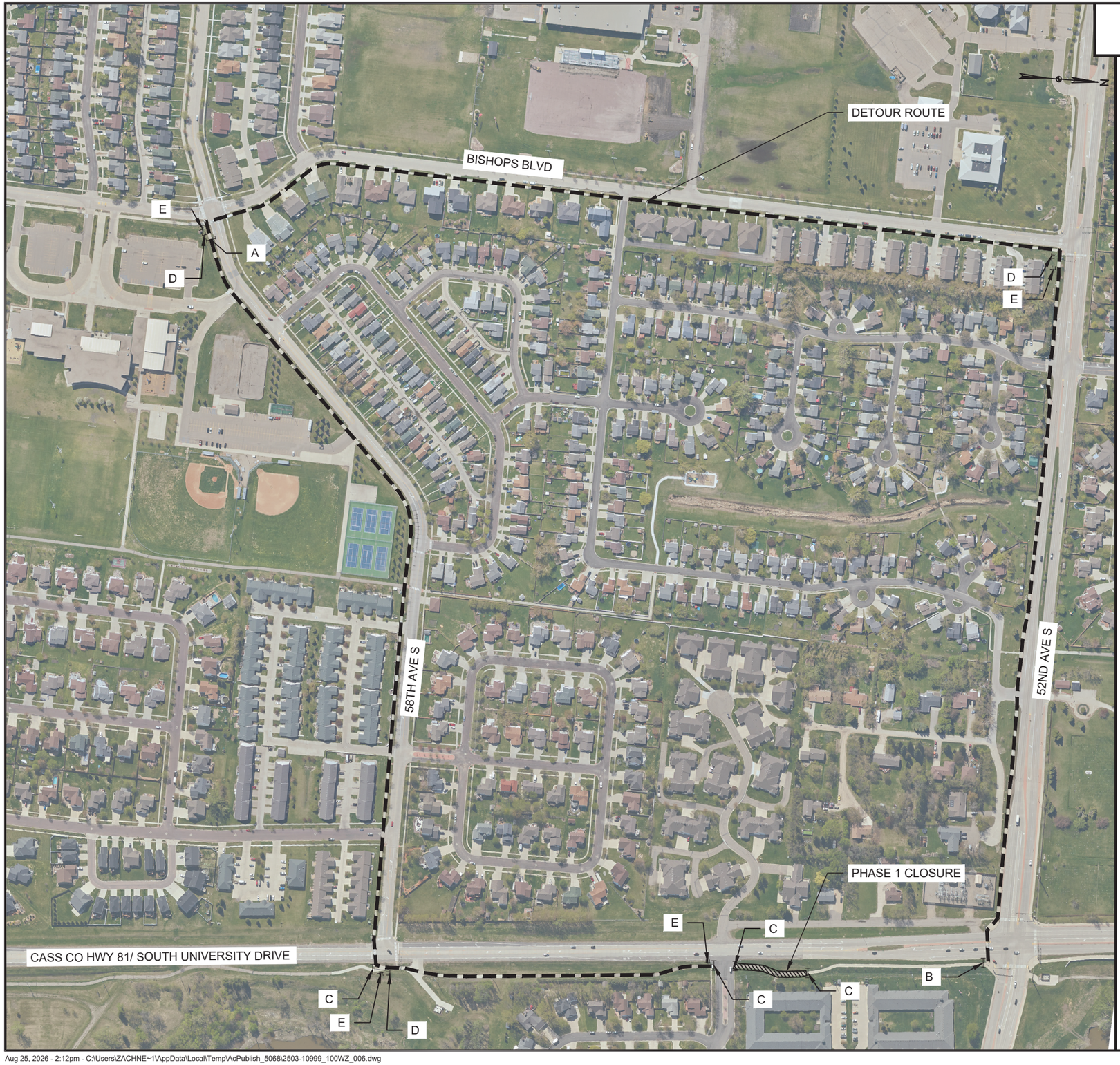
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SIDEWALK BARRICADE

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TMA-TAU-CRP-8-984(183)	100	7

R9-11L
SIDEWALK BARRICADE MOUNTED

A



R9-11R
SIDEWALK BARRICADE MOUNTED

B



R9-9-24
SIDEWALK BARRICADE MOUNTED

C



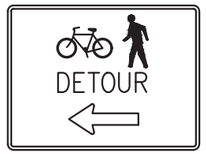
M4-9a(R)-30
POST MOUNTED

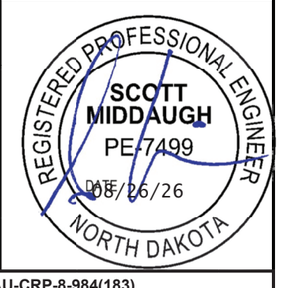
D



M4-9a(L)-30
POST MOUNTED

E





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CASS COUNTY, NORTH DAKOTA

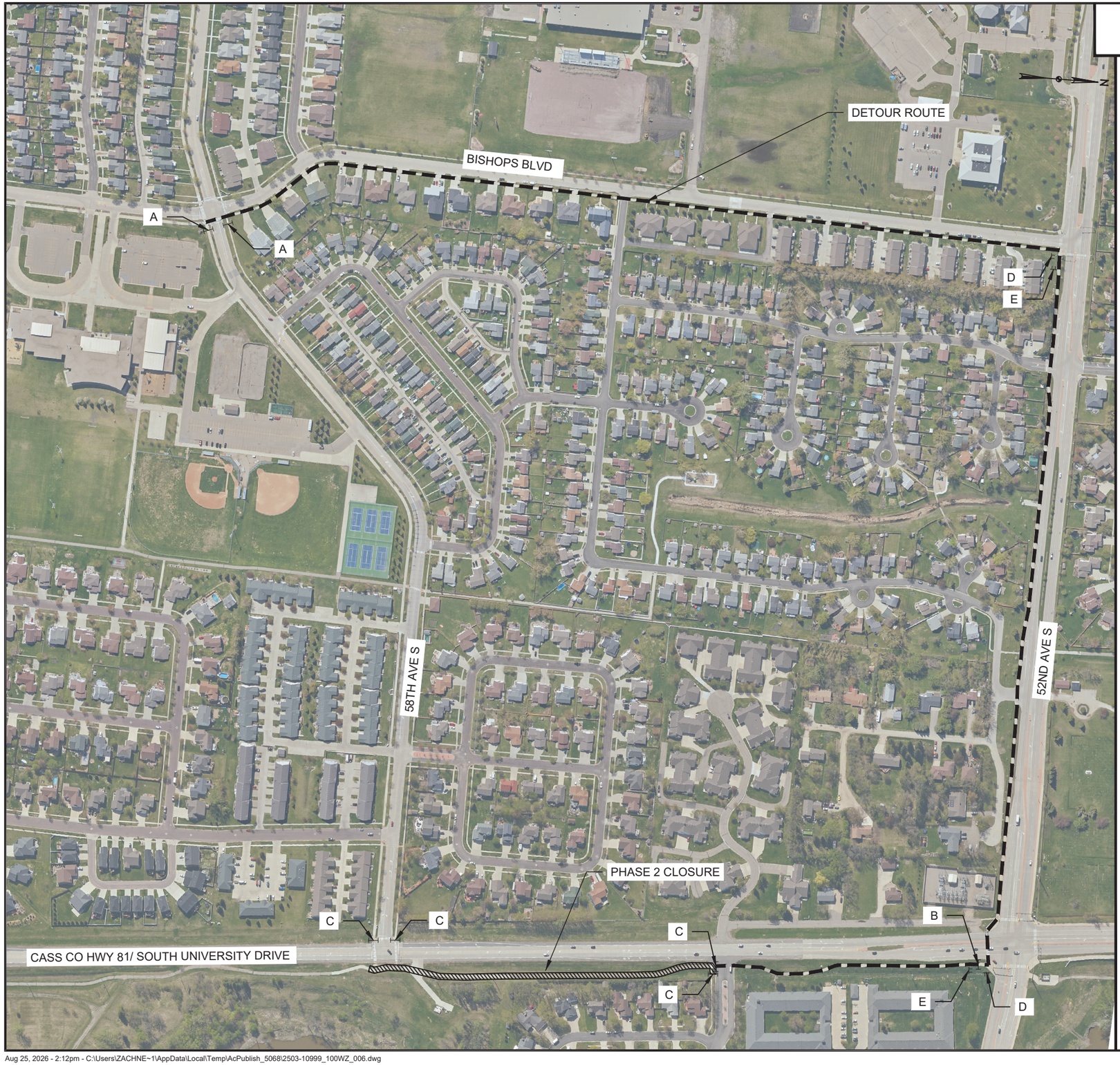
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PEDESTRIAN DETOUR PHASE 1

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ZBN	BJT	2503-10999

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TMA-TAU-CRP-8-984(183)	100	8

R9-11L
SIDEWALK BARRICADE MOUNTED

A



R9-11R
SIDEWALK BARRICADE MOUNTED

B



R9-9-24
SIDEWALK BARRICADE MOUNTED

C



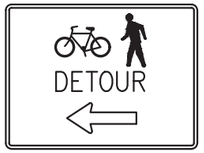
M4-9a(R)-30
POST MOUNTED

D



M4-9a(L)-30
POST MOUNTED

E





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CASS COUNTY, NORTH DAKOTA

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PEDESTRIAN DETOUR PHASE 2

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ZBN	BJT	2503-10999

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	ND	TMA-TAU-CRP-8-984(183)	100	9



LEGEND:

- TEMPORARY PEDESTRIAN SURFACING
- PEDESTRIAN WALKWAY
- TUBULAR MARKERS
- TEMPORARY CURB RAMP

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/25/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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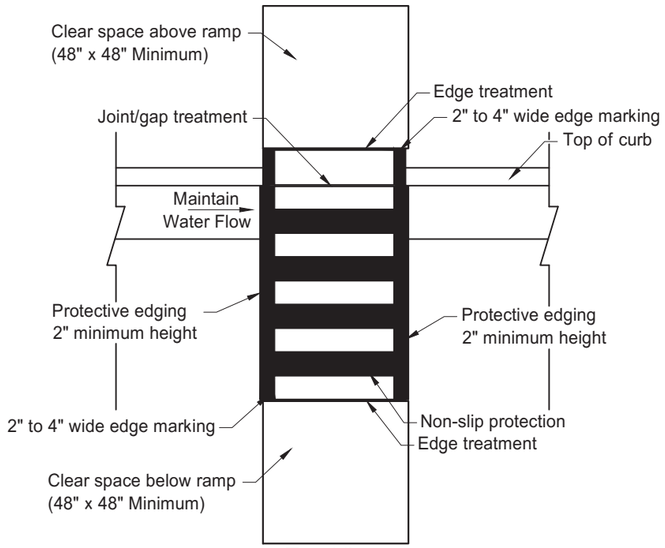
PEDESTRIAN DETOUR PHASE 2

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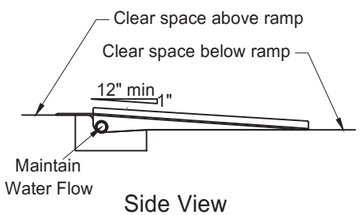
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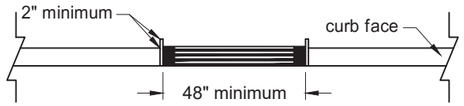
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TMA-TAU-CRP-8-984(183)	100	10



Top View

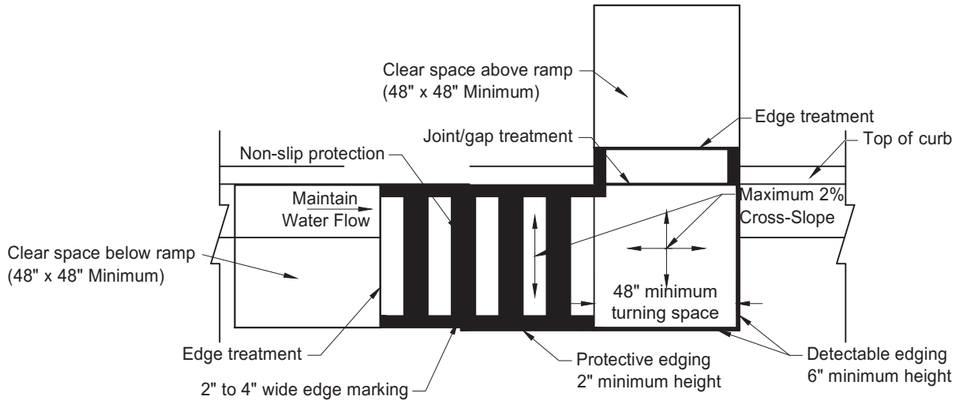


Side View

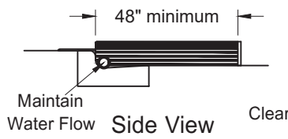


Front View

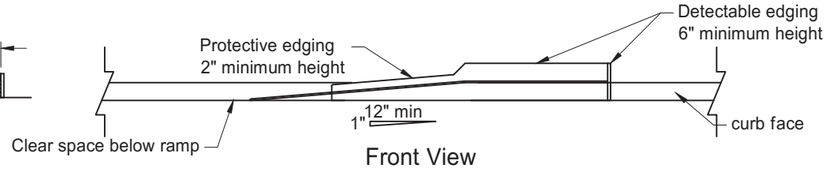
Temporary Perpendicular Curb Ramp



Top View



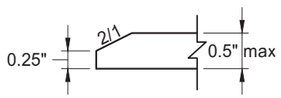
Side View



Front View

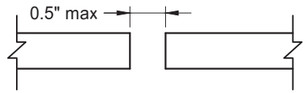
Temporary Parallel Curb Ramp

Edge Treatment



Maximum Surface
Height Change Detail

Joint/Gap Treatment



Maximum Width
Lateral Joints or Gaps

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/ /26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

TEMPORARY PEDESTRIAN CURB RAMP DETAILS

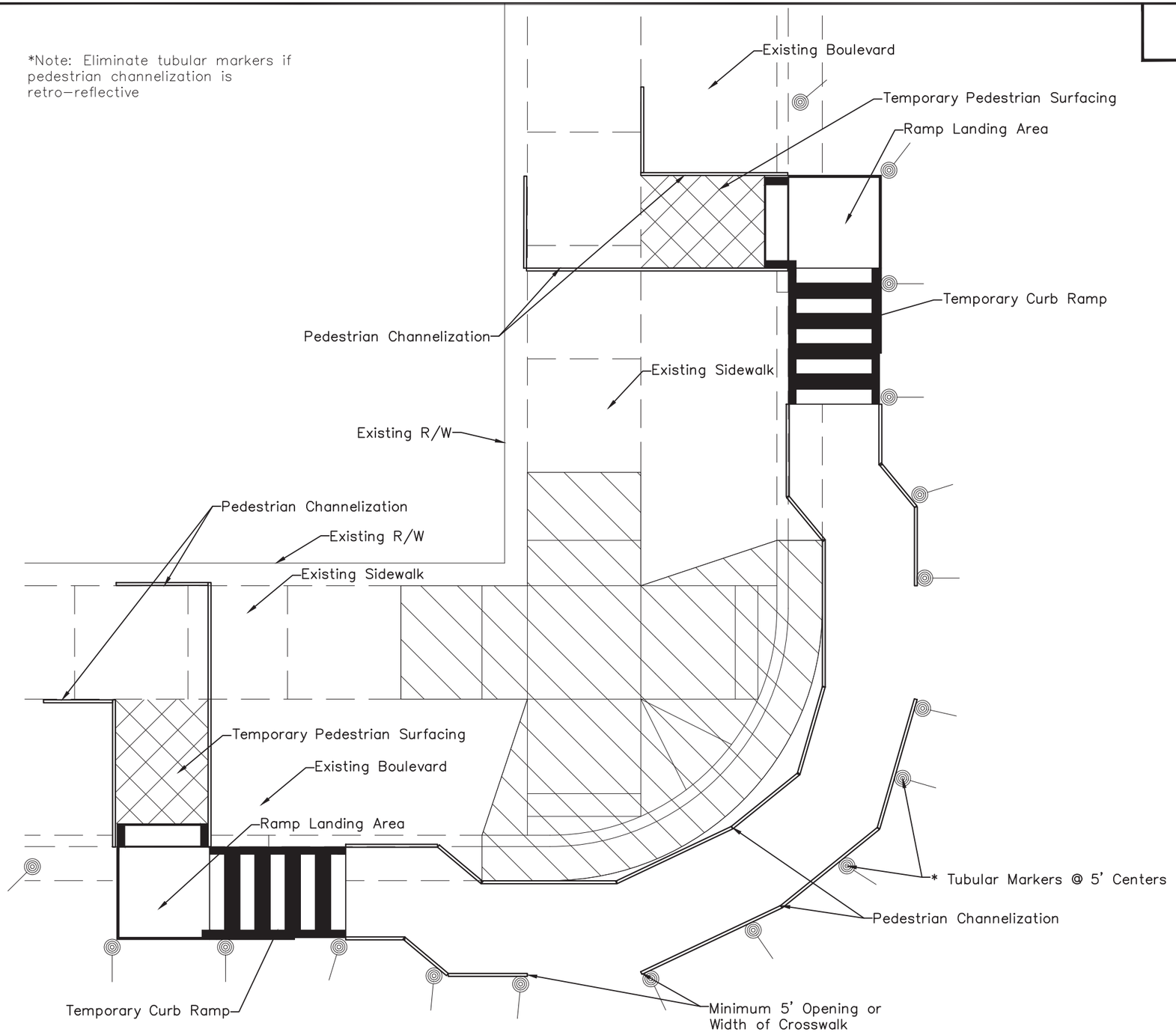
DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TMA-TAU-CRP-8-984(183)	100	11

*Note: Eliminate tubular markers if pedestrian channelization is retro–reflective



REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

TEMPORARY PEDESTRIAN ACCESS ROUTE

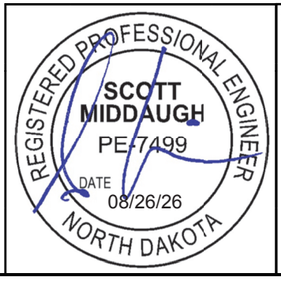
DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
N.D.	TMA-TAU-CRP-8-984(183)	110	1

Station / RP	Sign No.	Assembly No.	Flat Sheet For Signs IV SF	Flat Sheet For Signs XI SF	Sign Support Length 1st LF	2nd LF	3rd LF	4th LF	Vert Clear-ance FT	Support Size	Max Post Len LF	Sleeve Length 1st LF	2nd LF	3rd LF	4th LF	Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
10+61 Lt	R1-1-18	100		1.9	6.2				4.0	2 x 2 12 ga	21.4						1	4	2.25 x 2.25 12 ga				
11+16 Rt	D11-1-24	29	3.0		6.3				4.0	2 x 2 12 ga	13.6						1	4	2.25 x 2.25 12 ga				
11+19 Lt	M4-6P-12, D11-1-24		3.5		7.3				4.0	2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga				Special Assembly A
63+78 Lt	R5-3-24	14		4.0	6.8				4.0	2 x 2 12 ga	13.0						1	4	2.25 x 2.25 12 ga				
63+96 Rt	R1-1-18	100		1.9	6.2				4.0	2 x 2 12 ga	21.4						1	4	2.25 x 2.25 12 ga				
64+42 Lt	R1-1-18	100		1.9	6.2				4.0	2 x 2 12 ga	21.4						1	4	2.25 x 2.25 12 ga				
64+79 Rt	R5-3-24	14		4.0	6.8				4.0	2 x 2 12 ga	13.0						1	4	2.25 x 2.25 12 ga				
64+98 Rt	D11-1-24	29	3.0		6.3				4.0	2 x 2 12 ga	13.6						1	4	2.25 x 2.25 12 ga				
76+81 Lt	R5-3-24	14		4.0	6.8				4.0	2 x 2 12 ga	13.0						1	4	2.25 x 2.25 12 ga				
76+87 Rt	R1-1-18	100		1.9	6.2				4.0	2 x 2 12 ga	21.4						1	4	2.25 x 2.25 12 ga				
77+58 Lt	R1-1-18	100		1.9	6.2				4.0	2 x 2 12 ga	21.4						1	4	2.25 x 2.25 12 ga				
77+89 Rt	R5-3-24	14		4.0	6.8				4.0	2 x 2 12 ga	13.0						1	4	2.25 x 2.25 12 ga				
89+74 Rt	R1-1-18	100		1.9	6.2				4.0	2 x 2 12 ga	21.4						1	4	2.25 x 2.25 12 ga				
90+28 Lt	R1-1-18	100		1.9	6.2				4.0	2 x 2 12 ga	21.4						1	4	2.25 x 2.25 12 ga				
108+72 Lt	R5-3-24	14		4.0	6.8				4.0	2 x 2 12 ga	13.0						1	4	2.25 x 2.25 12 ga				
108+89 Rt	R1-1-18	100		1.9	6.2				4.0	2 x 2 12 ga	21.4						1	4	2.25 x 2.25 12 ga				
109+32 Lt	R1-1-18	100		1.9	6.2				4.0	2 x 2 12 ga	21.4						1	4	2.25 x 2.25 12 ga				
109+55 Rt	R5-3-24	14		4.0	6.8				4.0	2 x 2 12 ga	13.0						1	4	2.25 x 2.25 12 ga				
117+71 Lt	D11-1-24	29	3.0		6.3				4.0	2 x 2 12 ga	13.6						1	4	2.25 x 2.25 12 ga				
118+17 Lt	R5-3-24	14		4.0	6.8				4.0	2 x 2 12 ga	13.0						1	4	2.25 x 2.25 12 ga				
118+41 Rt	R1-1-18	100		1.9	6.2				4.0	2 x 2 12 ga	21.4						1	4	2.25 x 2.25 12 ga				
119+27 Lt	R1-1-18	100		1.9	6.2				4.0	2 x 2 12 ga	21.4						1	4	2.25 x 2.25 12 ga				
119+44 Rt	R5-3-24	14		4.0	6.8				4.0	2 x 2 12 ga	13.0						1	4	2.25 x 2.25 12 ga				
119+69 Rt	D11-1-24	29	3.0		6.3				4.0	2 x 2 12 ga	13.6						1	4	2.25 x 2.25 12 ga				
119+82 Lt	Reset Signs																			2	1		
134+68 Lt	R5-3-24	14		4.0	6.8				4.0	2 x 2 12 ga	13.0						1	4	2.25 x 2.25 12 ga				
135+86 Rt	R5-3-24	14		4.0	6.8				4.0	2 x 2 12 ga	13.0						1	4	2.25 x 2.25 12 ga				
161+54 Lt	D11-1-24	29	3.0		6.3				4.0	2 x 2 12 ga	13.6						1	4	2.25 x 2.25 12 ga				
161+79 Lt	R5-3-24	14		4.0	6.8				4.0	2 x 2 12 ga	13.0						1	4	2.25 x 2.25 12 ga				
162+12 Rt	R1-1-18	100		1.9	6.2				4.0	2 x 2 12 ga	21.4						1	4	2.25 x 2.25 12 ga				
163+03 Rt	Reset Sign																			1	1		



Sign Summary
Perforated Tube

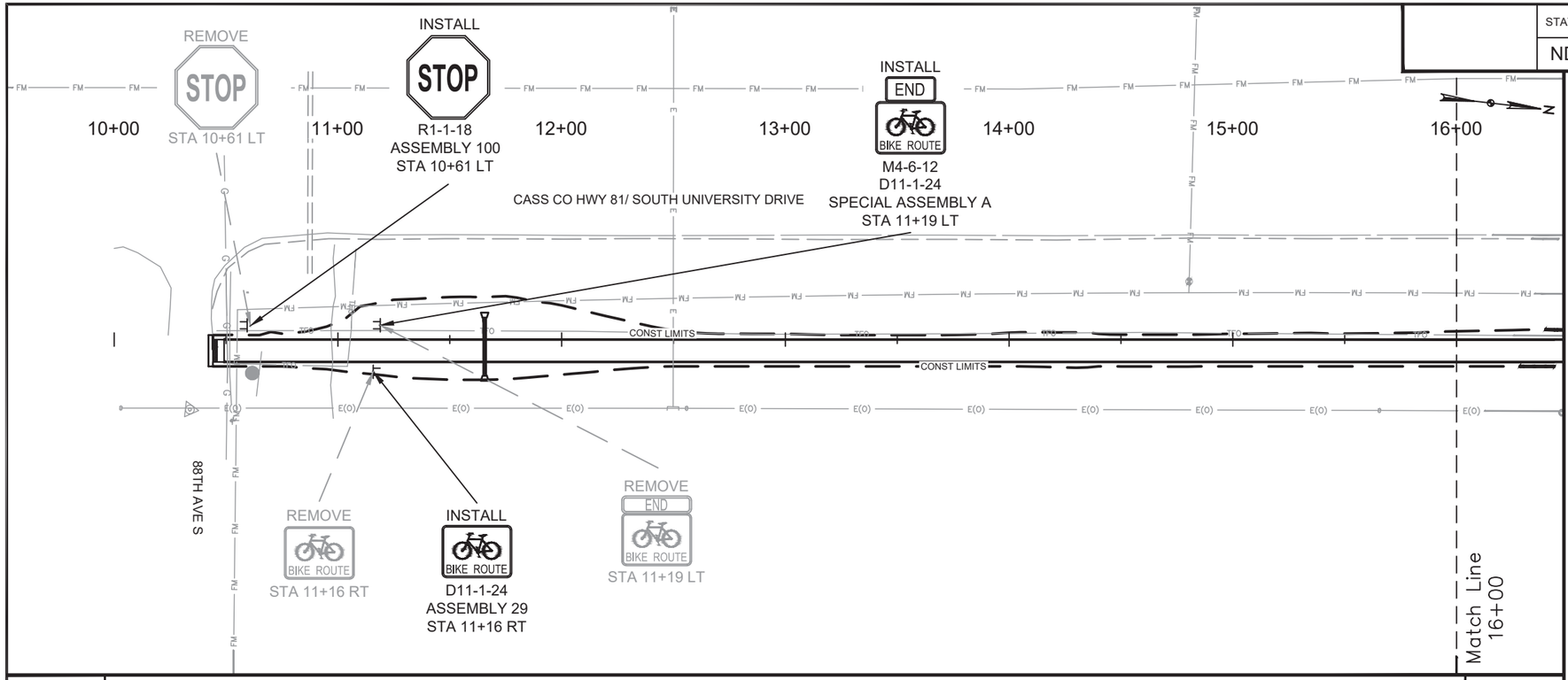
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	N.D.	TMA-TAU-CRP-8-984(183)	110	2

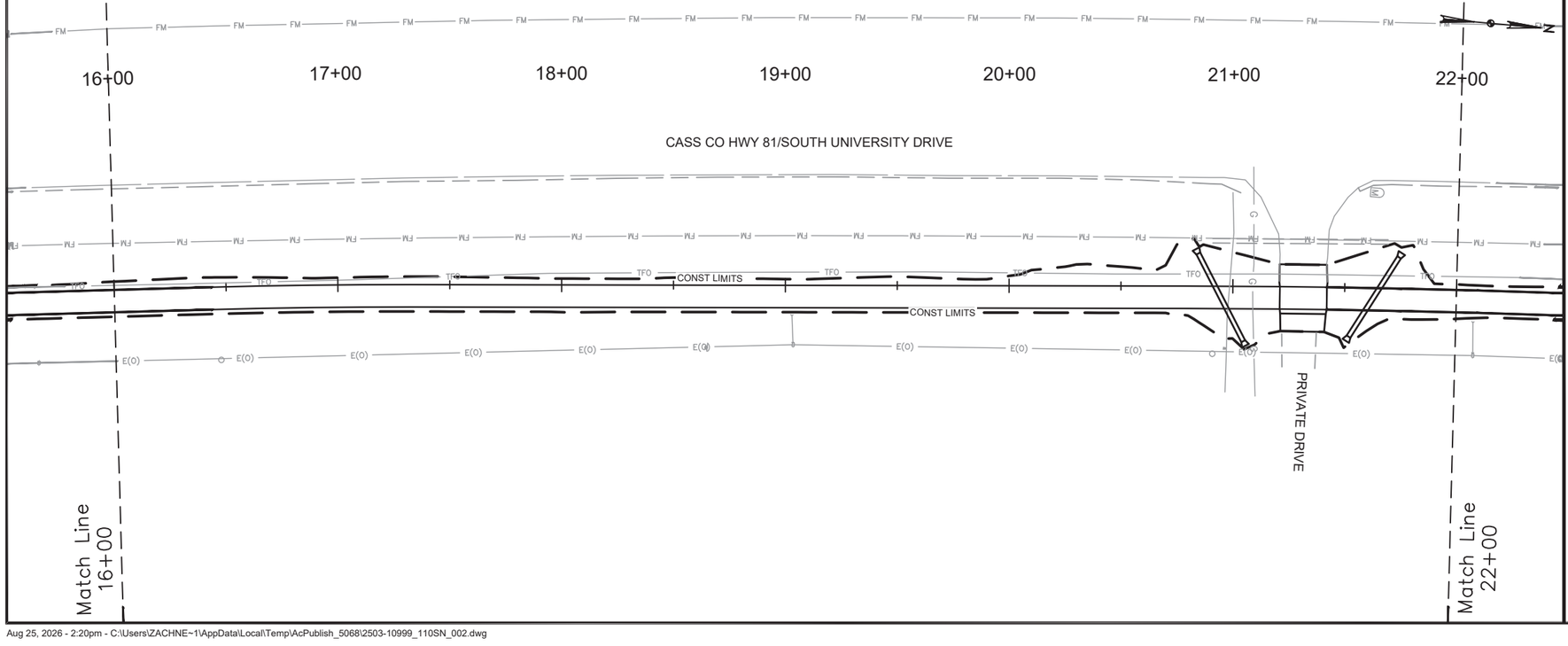
Station / RP	Sign No.	Assembly No.	Flat Sheet For Signs IV SF	Flat Sheet For Signs XI SF	Sign Support Length 1st LF	2nd LF	3rd LF	4th LF	Vert Clear-ance FT	Support Size	Max Post Len LF	Sleeve Length 1st LF	2nd LF	3rd LF	4th LF	Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
163+23 Lt	R1-1-18	100		1.9	6.2				4.0	2 x 2 12 ga	21.4						1	4	2.25 x 2.25 12 ga				
163+32 Rt	R5-3-24	14		4.0	6.8				4.0	2 x 2 12 ga	13.0						1	4	2.25 x 2.25 12 ga				
163+70 Rt	D11-1-24	29	3.0		6.3				4.0	2 x 2 12 ga	13.6						1	4	2.25 x 2.25 12 ga				
Sub Total			21.5	72.7		**Total**	207.3										**Total**	128.0		3	2	0	
Grand Total			**21.5**	**72.7**		**Total**	**207.3**										**Total**	**128**	**0**	**3**	**2**	**0**	



Sign Summary
Perforated Tube

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	110	3





SPEC	CODE	BID ITEM	QTY	UNIT
754	0805	OBJECT MARKERS - CULVERTS		
		Sta. 11+66, LT & RT	2	EA
		Sta. 20+95, LT & RT	2	EA
		Sta. 21+63, LT & RT	2	EA

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/13/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

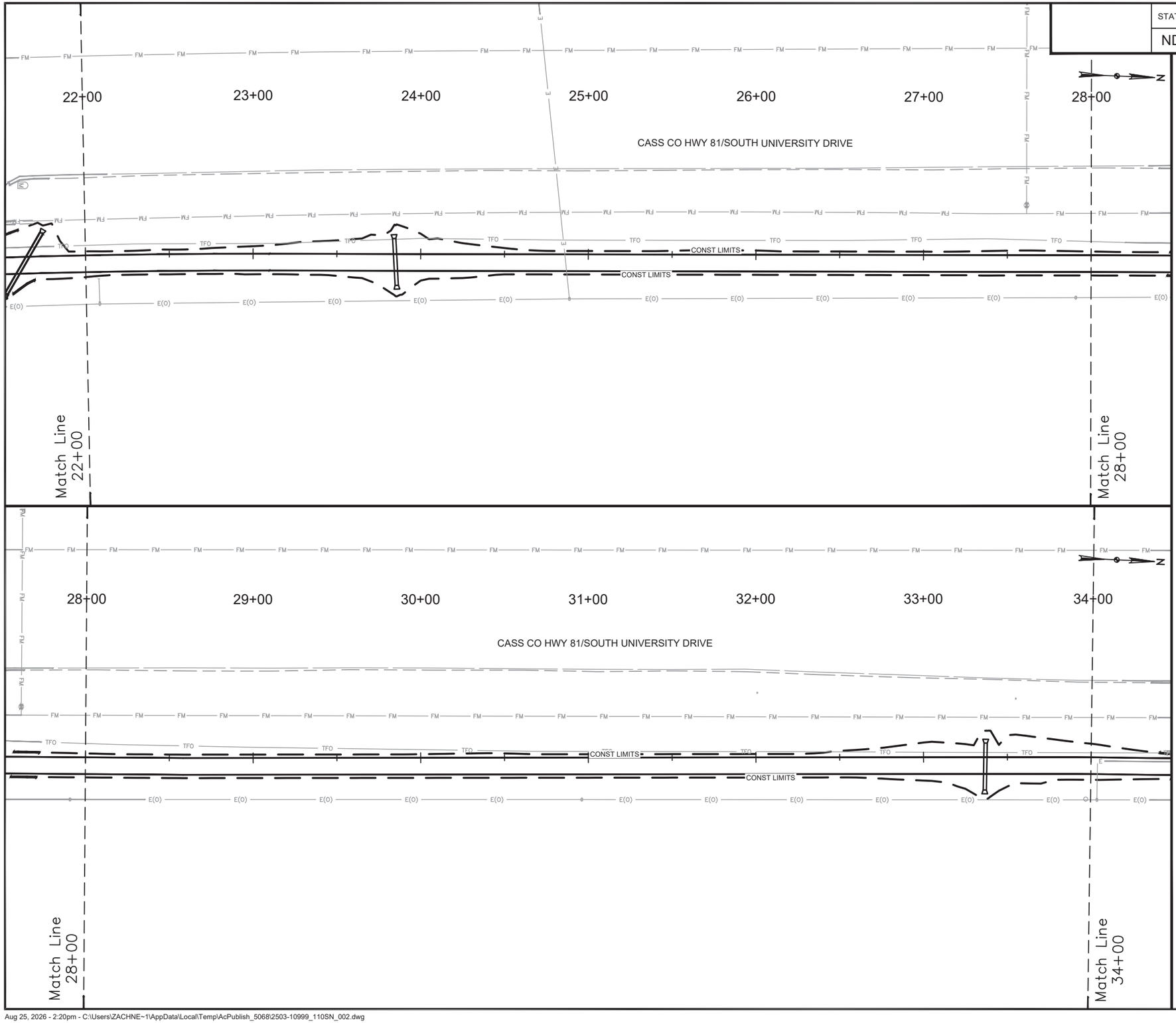
SIGNING LAYOUT
STA. 10+00 TO 22+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	110	4



SPEC	CODE	BID ITEM	QTY	UNIT
754	0805	OBJECT MARKERS - CULVERTS		
		Sta. 23+85, LT & RT	2	EA
		Sta. 33+37, LT & RT	2	EA

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

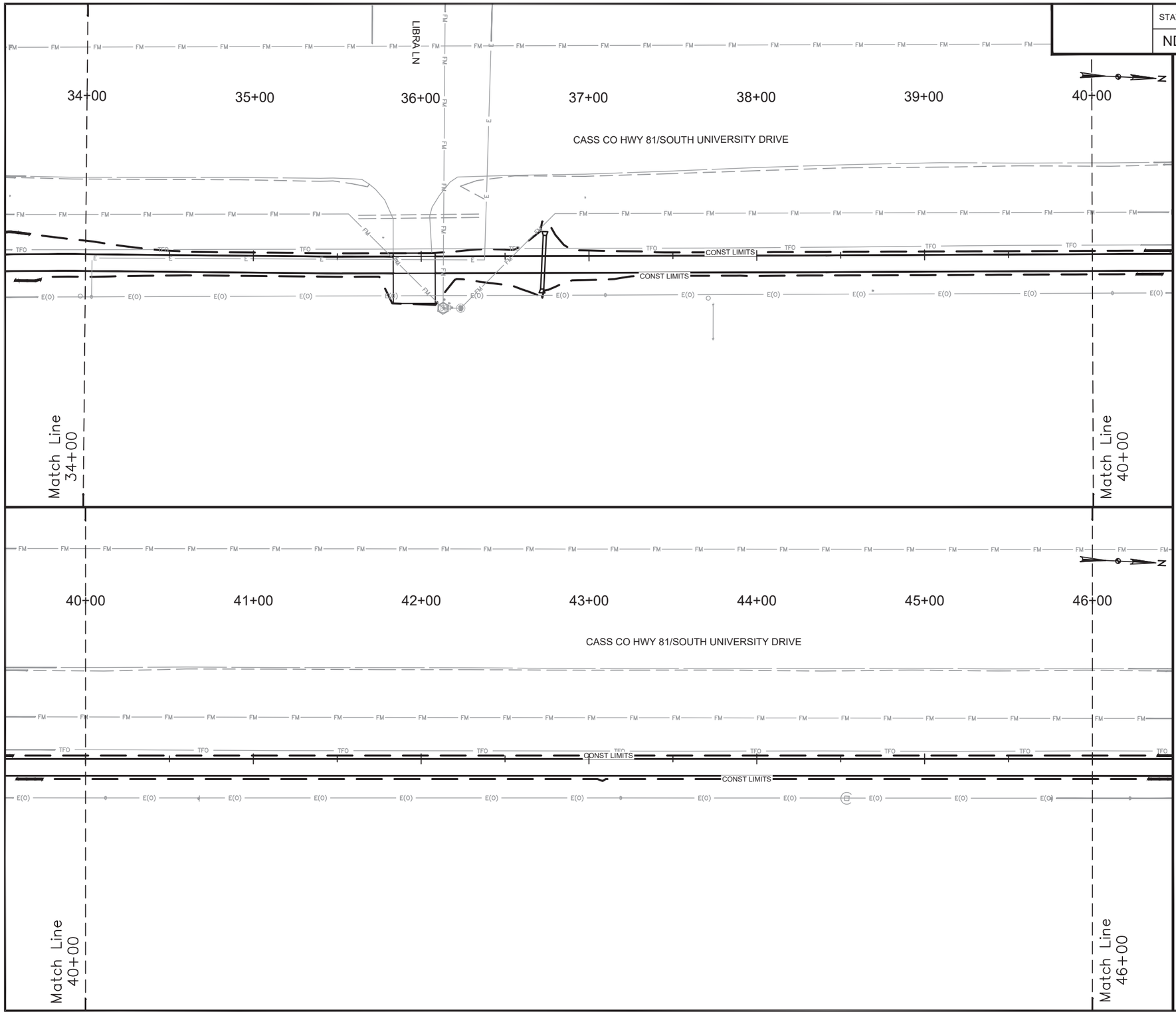
SIGNING LAYOUT STA. 22+00 TO 34+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	110	5



SPEC	CODE	BID ITEM	QTY	UNIT
754	0805	OBJECT MARKERS - CULVERTS		
		Sta 36+73, LT & RT	2	EA

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/5/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

KLJ

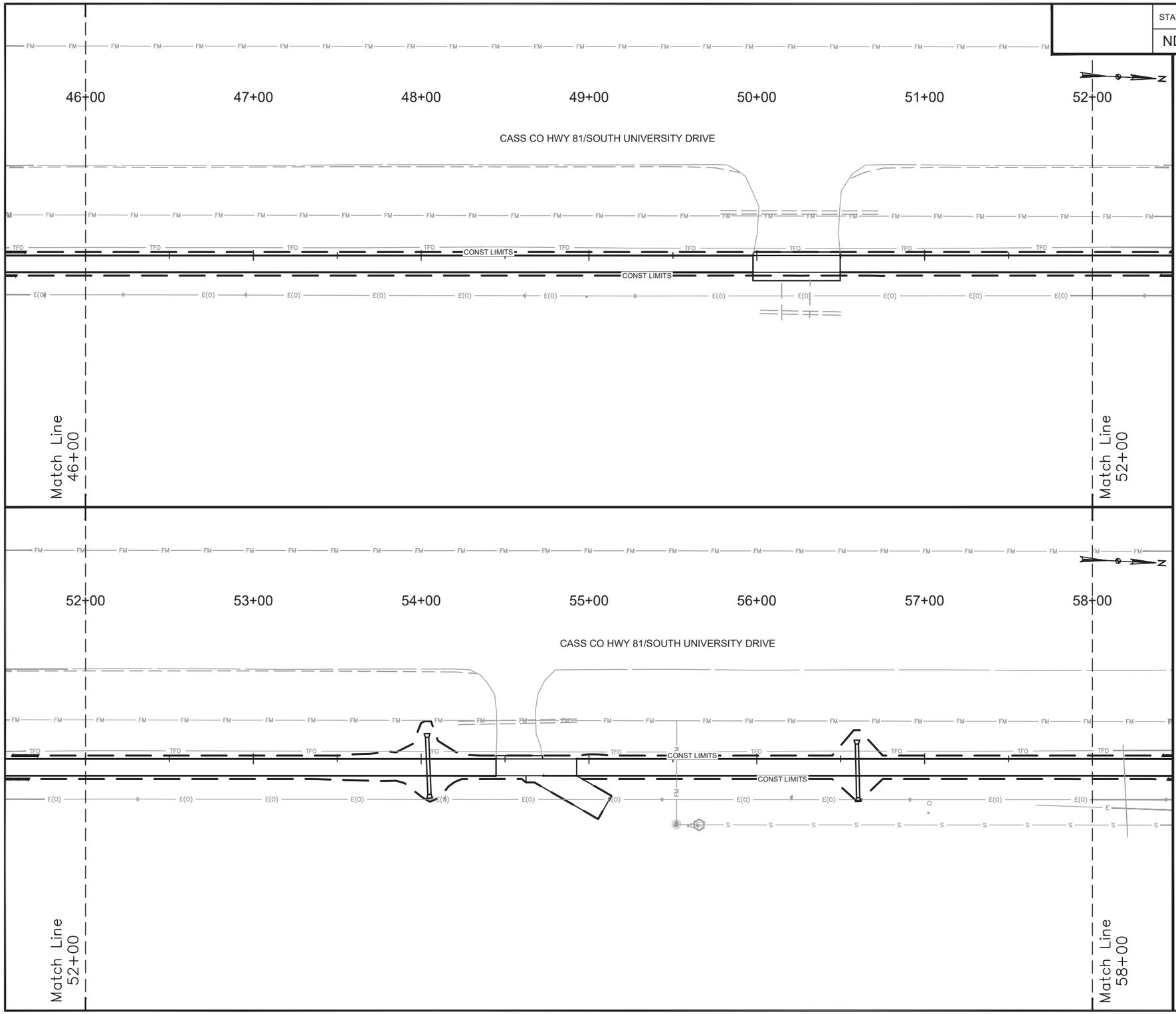
SIGNING LAYOUT
STA. 34+00 TO 46+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	110	6



SPEC	CODE	BID ITEM	QTY	UNIT
754	0805	OBJECT MARKERS - CULVERTS		
		Sta. 54+04, LT & RT	2	EA
		Sta. 56+60, LT & RT	2	EA

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/5/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

KLJ

SIGNING LAYOUT
STA. 46+00 TO 58+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	110	7

58+00 59+00 60+00 61+00 62+00 63+00 64+00

CASS CO HWY 81/SOUTH UNIVERSITY DRIVE

76TH AVE S

REMOVE NO MOTOR VEHICLES STA 63+78 LT

INSTALL NO MOTOR VEHICLES R5-3-24 ASSEMBLY 14 STA 63+78 LT

CONST LIMITS

REMOVE STOP STA 63+96 RT

INSTALL STOP R1-1-18 ASSEMBLY 100 STA 63+96 RT

Match Line 58+00

Match Line 64+00

64+00 65+00 66+00 67+00 68+00 69+00 70+00

REMOVE STOP STA 64+42 LT

INSTALL STOP R1-1-18 ASSEMBLY 100 STA 64+42 LT

CASS CO HWY 81/SOUTH UNIVERSITY DRIVE

CONST LIMITS

REMOVE NO MOTOR VEHICLES STA 64+49 RT

INSTALL NO MOTOR VEHICLES R5-3-24 ASSEMBLY 14 STA 64+79 RT

REMOVE BIKE ROUTE STA 64+98 RT

INSTALL BIKE ROUTE D11-1-24 ASSEMBLY 29 STA 64+98 RT

CHRISAN WAY

Epoxy 24" White Cross Walk (10' Long)

Match Line 64+00

Match Line 70+00

SPEC	CODE	BID ITEM	QTY	UNIT
754	0805	OBJECT MARKERS - CULVERTS		
		Sta. 63+80, LT & RT	2	EA
		Sta. 64+47, LT & RT	2	EA
		Sta. 68+21, LT & RT	2	EA
762	0117	EPOXY PVMT MK 24IN LINE		
		Sta.58+00 to Sta. 70+00	60	LF

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

KLJ

SIGNING LAYOUT STA. 58+00 TO 70+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	110	8

70+00 71+00 72+00 73+00 74+00 75+00 76+00

CASS CO HWY 81/SOUTH UNIVERSITY DRIVE

CONST LIMITS

CONST LIMITS

Match Line 70+00

76+00 77+00 78+00 79+00 80+00 81+00 82+00

CASS CO HWY 81/SOUTH UNIVERSITY DRIVE

INSTALL
NO MOTOR VEHICLES
R5-3-24
ASSEMBLY 14
STA 76+81 LT

REMOVE
STOP
STA 77+58 LT

INSTALL
STOP
R1-1-18
ASSEMBLY 100
STA 77+58 LT

CONST LIMITS

CONST LIMITS

REMOVE
NO MOTOR VEHICLES
STA 76+81 LT

REMOVE
STOP
STA 76+87 RT

INSTALL
STOP
R1-1-18
ASSEMBLY 100
STA 76+87 RT

CHRISAN BLVD

REMOVE
NO MOTOR VEHICLES
STA 77+89 RT

INSTALL
NO MOTOR VEHICLES
R5-3-24
ASSEMBLY 14
STA 77+89 RT

Match Line 76+00

Match Line 82+00

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/25/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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SIGNING LAYOUT
STA. 70+00 TO 82+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	110	9

82+00 83+00 84+00 85+00 86+00 87+00 88+00

CASS CO HWY 81/SOUTH UNIVERSITY DRIVE

CONST LIMITS

CONST LIMITS

Match Line 82+00

Match Line 88+00

88+00 89+00 90+00 91+00 92+00 93+00 94+00

CASS CO HWY 81/SOUTH UNIVERSITY DRIVE

70TH AVE S

CONST LIMITS

CONST LIMITS

REMOVE STOP STA 89+74 RT

INSTALL STOP R1-1-18 ASSEMBLY 100 STA 89+74 RT

REMOVE STOP STA 90+28 LT

INSTALL STOP R1-1-18 ASSEMBLY 100 STA 90+28 LT

Match Line 88+00

Match Line 94+00

SPEC	CODE	BID ITEM	QTY	UNIT
754	0805	OBJECT MARKERS - CULVERTS		
		Sta. 88+33, LT & RT	2	EA

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/13/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

KLJ

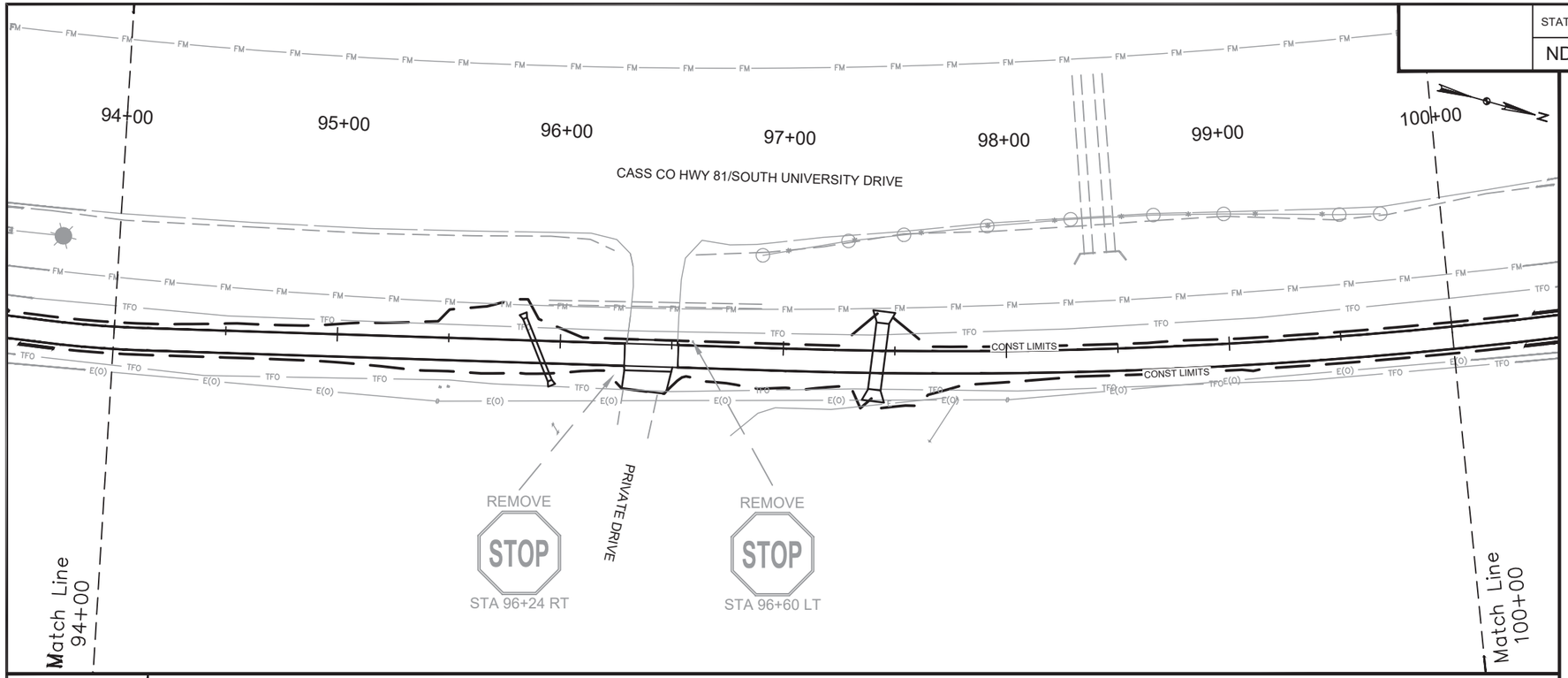
SIGNING LAYOUT STA. 82+00 TO 94+00

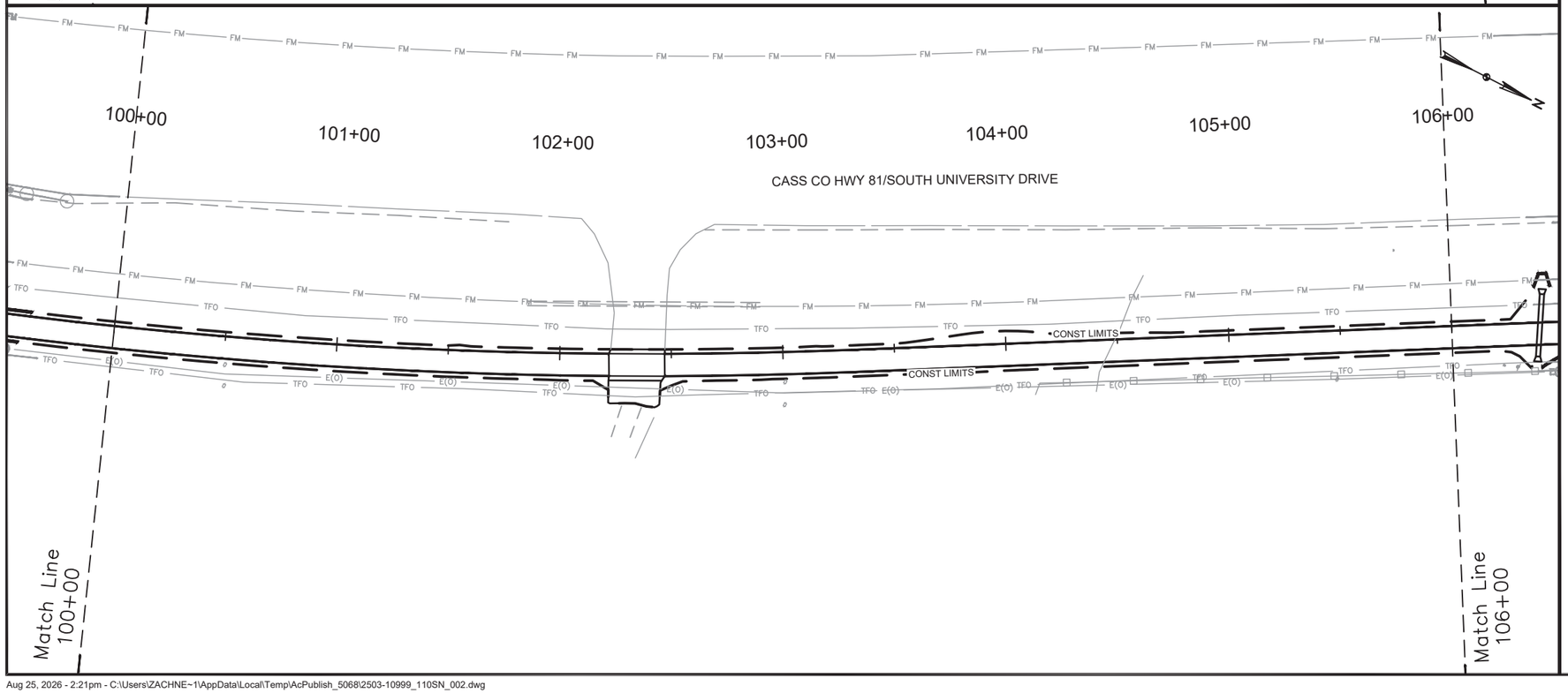
DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	110	10





SPEC	CODE	BID ITEM	QTY	UNIT
754	0805	OBJECT MARKERS - CULVERTS		
		Sta. 95+90, LT & RT	2	EA
		Sta. 97+43, LT & RT	2	EA

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/25/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

KLJ

SIGNING LAYOUT
STA. 94+00 TO 106+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	110	11

106+00 107+00 108+00 109+00 110+00 111+00 112+00

CASS CO HWY 81/SOUTH UNIVERSITY DRIVE

REMOVE STOP STA 109+32 LT

INSTALL STOP R1-1-18 ASSEMBLY 100 STA 109+32 LT

CONST LIMITS

REMOVE NO MOTOR VEHICLES STA 108+72 LT

INSTALL NO MOTOR VEHICLES R5-3-24 ASSEMBLY 14 STA 108+72 LT

REMOVE STOP STA 108+89 RT

INSTALL STOP R1-1-18 ASSEMBLY 100 STA 108+89 RT

BRIARWOOD PI

REMOVE NO MOTOR VEHICLES STA 109+55 RT

INSTALL NO MOTOR VEHICLES R5-3-24 ASSEMBLY 14 STA 109+55 RT

Match Line 106+00

Match Line 112+00

112+00 113+00 114+00 115+00 116+00 117+00 118+00

CASS CO HWY 81/SOUTH UNIVERSITY DRIVE

CONST LIMITS

REMOVE BIKE ROUTE YIELD TO PEDS STA 117+71 LT

INSTALL BIKE ROUTE D11-1-24 ASSEMBLY 29 STA 117+71 LT

Match Line 112+00

Match Line 118+00

SPEC	CODE	BID ITEM	QTY	UNIT
754	0805	OBJECT MARKERS - CULVERTS		
		Sta. 106+40, LT & RT	2	EA
		Sta. 108+71, LT & RT	2	EA
		Sta. 109+49, LT & RT	2	EA

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

KLJ

SIGNING LAYOUT STA. 106+00 TO 118+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	110	12

REMOVE & RESET
University Dr S
64 Ave S
STA 119+82 LT

PEDESTRIAN FLASHING BEACONS
(SEE SECTION 150)

64TH AVE S

INSTALL
STOP
R1-1-18
ASSEMBLY 100
STA 119+27 LT

INSTALL
NO MOTOR VEHICLES
R5-3-24
ASSEMBLY 14
STA 118+17 LT

Preformed Patterned
White 24" (10' Long)

CASS CO HWY 81/SOUTH UNIVERSITY DRIVE

REMOVE
NO MOTOR VEHICLES
STA 118+17 LT

REMOVE
STOP
STA 119+27 LT

CONST LIMITS

INSTALL
BIKE ROUTE
D11-1-24
ASSEMBLY 29
STA 119+69 RT

REMOVE
STOP
STA 118+41 RT

INSTALL
STOP
R1-1-18
ASSEMBLY 100
STA 118+41 RT

REMOVE
NO MOTOR VEHICLES
STA 119+44 RT

INSTALL
NO MOTOR VEHICLES
R5-3-24
ASSEMBLY 14
STA 119+44 RT

REMOVE
BIKE ROUTE
YIELD TO PEDS
STA 119+69 RT

Match Line
118+00

Match Line
124+00

Match Line
124+00

Match Line
130+00

CASS CO HWY 81/SOUTH UNIVERSITY DRIVE

SPEC	CODE	BID ITEM	QTY	UNIT
754	0805	OBJECT MARKERS - CULVERTS Sta. 119+99, LT	2	EA
762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED Sta. 118+00 to Sta. 130+00	140	LF

scale 1"=60' (30 0 30 60 feet)

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

SIGNING LAYOUT
STA. 118+00 TO 130+00

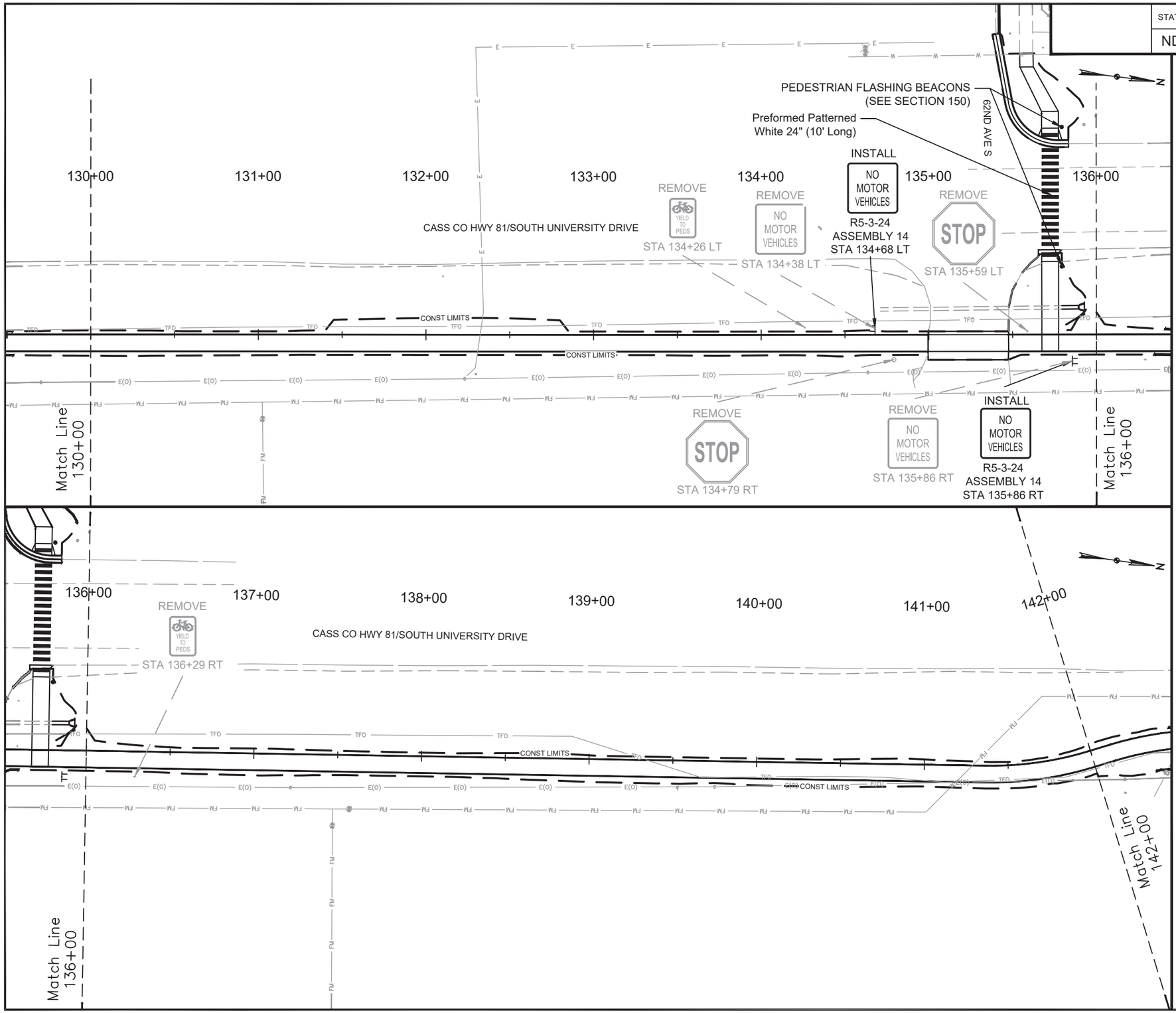
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ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	110	13

SPEC	CODE	BID ITEM	QTY	UNIT
754	0805	OBJECT MARKERS - CULVERTS		
		Sta. 135+84, LT	1	EA
762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED		
		Sta. 130+00 to Sta. 142+00	160	LF



30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/25/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

KLJ

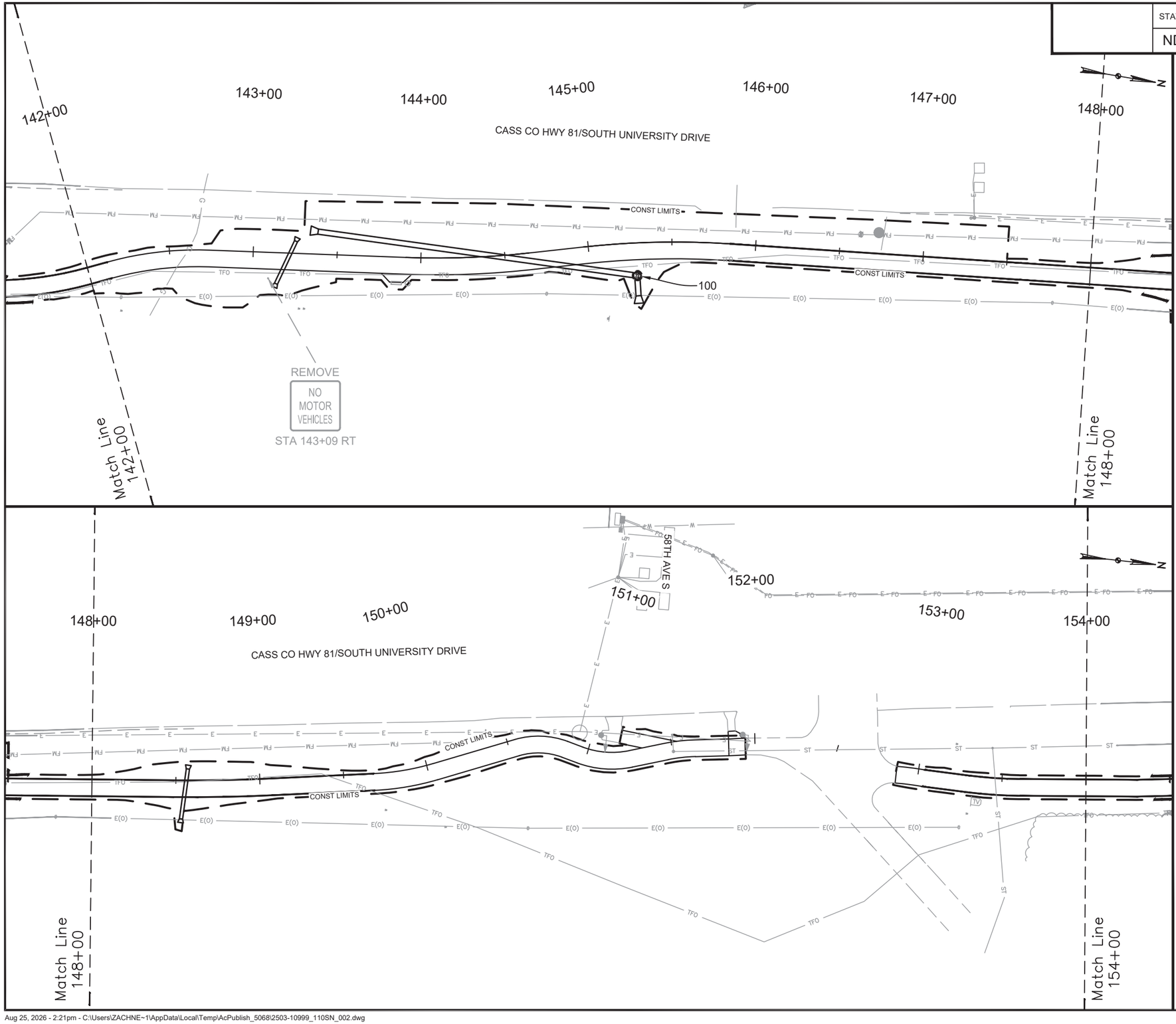
SIGNING LAYOUT
STA. 130+00 TO 142+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	110	14



SPEC	CODE	BID ITEM	QTY	UNIT
754	0805	OBJECT MARKERS - CULVERTS		
		Sta. 143+20, LT & RT	2	EA
		Sta. 143+38, LT	1	EA
		Sta. 145+30, RT	1	EA
		Sta. 148+55, LT & RT	2	EA

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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SIGNING LAYOUT
STA. 142+00 TO 154+00

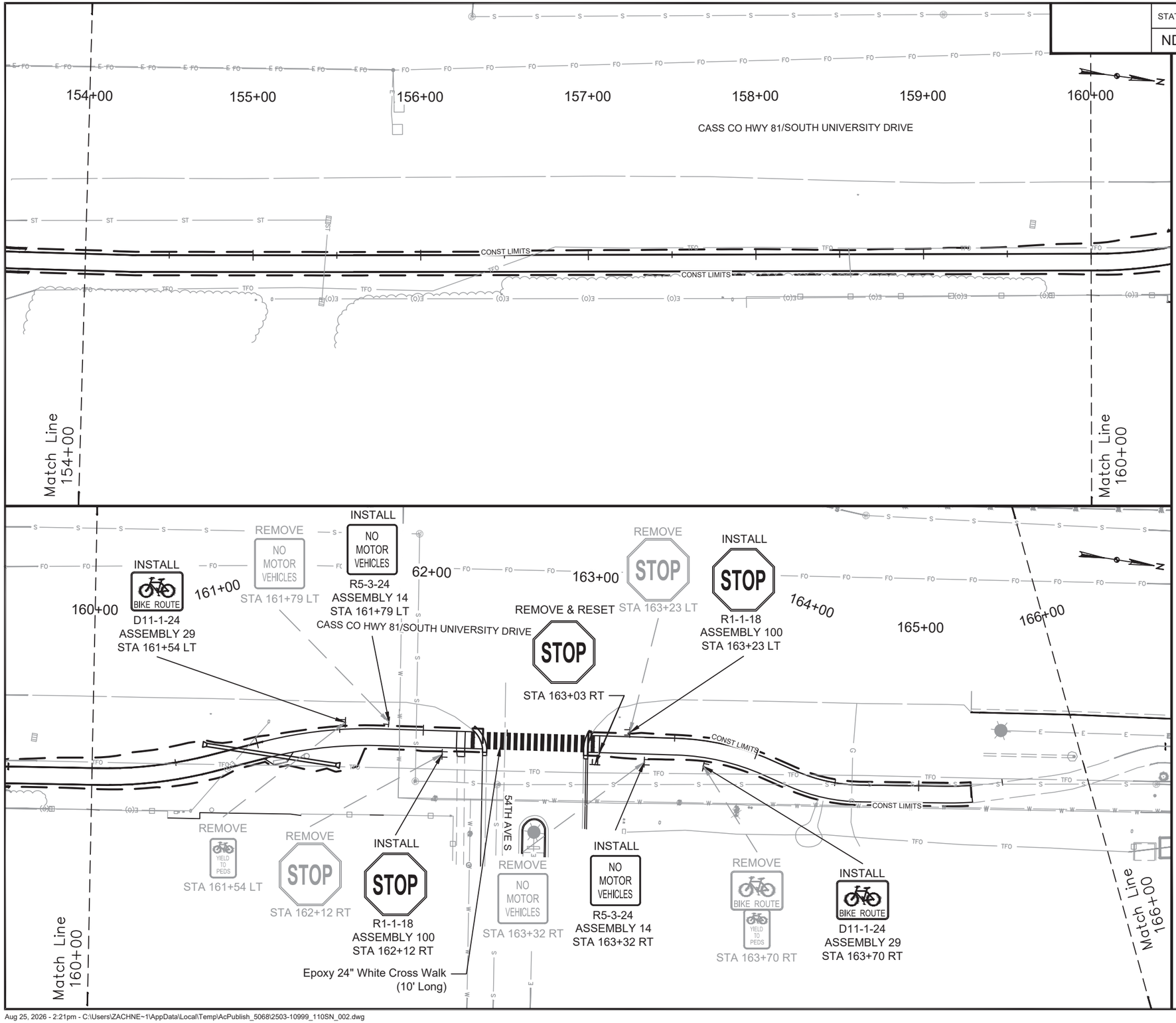
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ZBN	BJT	2503-10999

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	110	15

SPEC	CODE	BID ITEM	QTY	UNIT
754	0805	OBJECT MARKERS - CULVERTS		
		Sta. 161+07, LT & RT	2	EA
762	0117	EPOXY PVMT MK 24IN LINE		
		Sta. 154+00 to Sta. 166+00	150	LF



30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 08/26/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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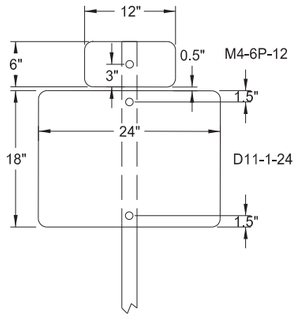
SIGNING LAYOUT
STA. 154+00 TO 166+00

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TMA-TAU-CRP-8-984(183)	110	16



Special Assembly A
Area = 3.5 SF
(Perforated Steel Tube)

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 6/15/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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SIGNING LAYOUT
SPECIAL ASSEMBLY

DRWN. BY	CHK'D. BY	PROJECT NO.
DRAFTER	ENGINEER	PROJECT#

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TMA-TAU-CRP-8-984(183)	150	1

64TH AVE S

62ND AVE S

CASS CO HWY 81/SOUTH UNIVERSITY DRIVE

CASS CO HWY 81/SO

116+00 117+00 118+00 119+00 120+00 121+00 122+00

+00 132+00 133+00 134+00 135+00 136+00 137+00 13

CONST LIMITS

TFO

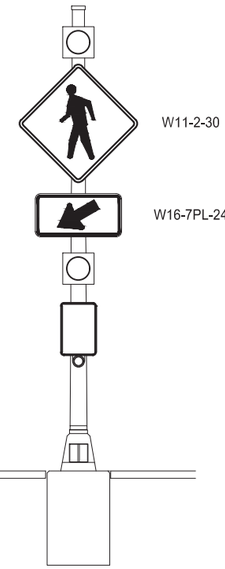
E(O)

E

FM

W

ST



POST MOUNTED
PEDESTRIAN FLASHER

Sta. 119+99.65, 105.73' LT
Sta. 120+05.31, 26.41' Lt
Sta. 135+79.45, 123.76' LT
Sta. 135+79.46, 40.57' LT

30 0 30 60
scale 1"=60' feet

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE 8/25/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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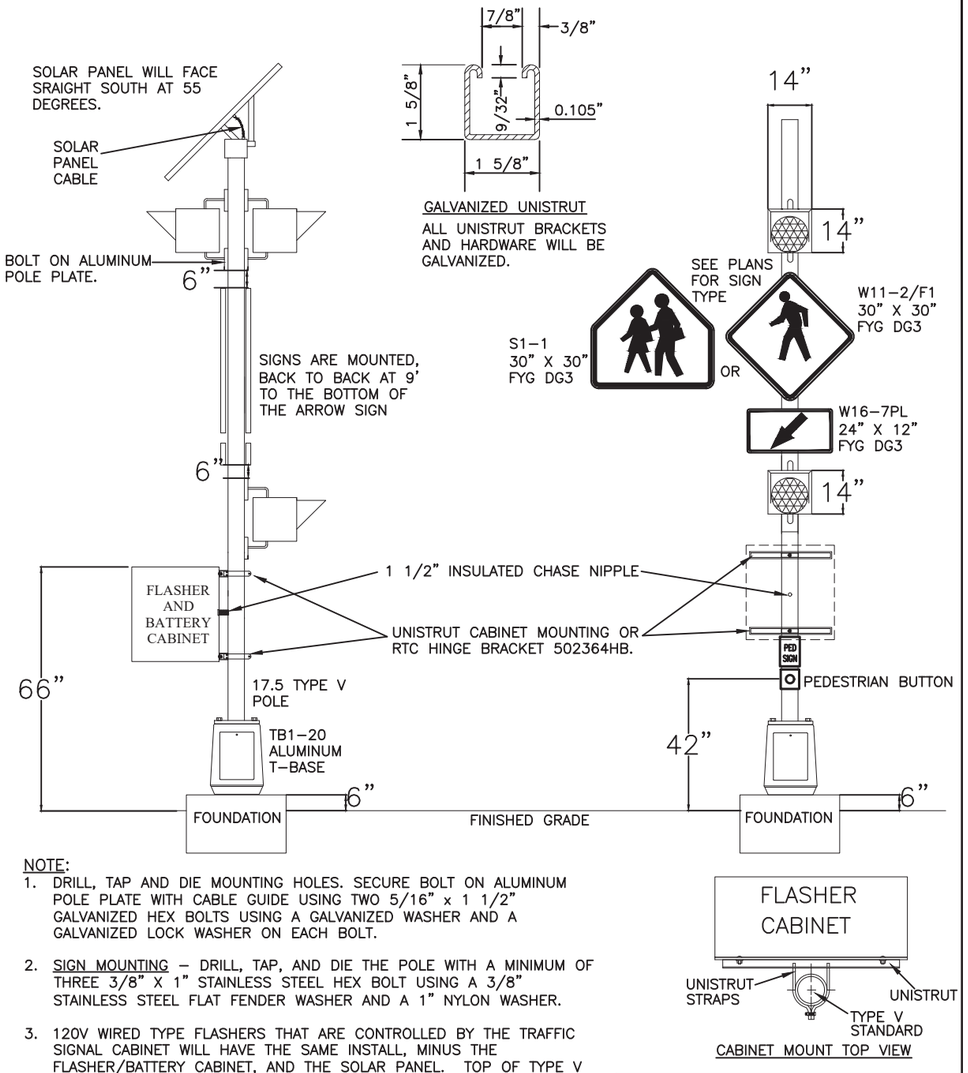
FLASHING BEACON LAYOUT

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TMA-TAU-CRP-8-984(183)	150	2



NOTE:

1. DRILL, TAP AND DIE MOUNTING HOLES. SECURE BOLT ON ALUMINUM POLE PLATE WITH CABLE GUIDE USING TWO 5/16" x 1 1/2" GALVANIZED HEX BOLTS USING A GALVANIZED WASHER AND A GALVANIZED LOCK WASHER ON EACH BOLT.
2. SIGN MOUNTING – DRILL, TAP, AND DIE THE POLE WITH A MINIMUM OF THREE 3/8" X 1" STAINLESS STEEL HEX BOLT USING A 3/8" STAINLESS STEEL FLAT FENDER WASHER AND A 1" NYLON WASHER.
3. 120V WIRED TYPE FLASHERS THAT ARE CONTROLLED BY THE TRAFFIC SIGNAL CABINET WILL HAVE THE SAME INSTALL, MINUS THE FLASHER/BATTERY CABINET, AND THE SOLAR PANEL. TOP OF TYPE V WILL HAVE A WEATHER PROOF WELL SECURED ALUMINUM CAP.
4. ALL DRILLED OPENINGS INTO THE FLASHER CABINET WILL BE CAULKED WITH SIKAFLEX 15LM.

FARGO ENGINEERING DEPARTMENT	SECTION: 4200	DRAWING: 5.21
	REVISION: 2025	
	PEDESTRIAN FLASHER	
	APPROVED: TAK	DATE: TBD, 2025

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAUGH
PE-7499
DATE: 8/25/26
NORTH DAKOTA

TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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SIDEWALK & ADA DETAILS

DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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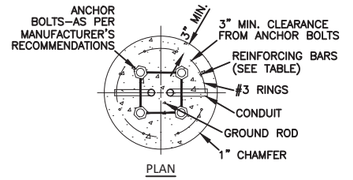
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TMA-TAU-CRP-8-984(183)	150	3

TRAFFIC SIGNAL STANDARD FOUNDATION SELECTION TABLE

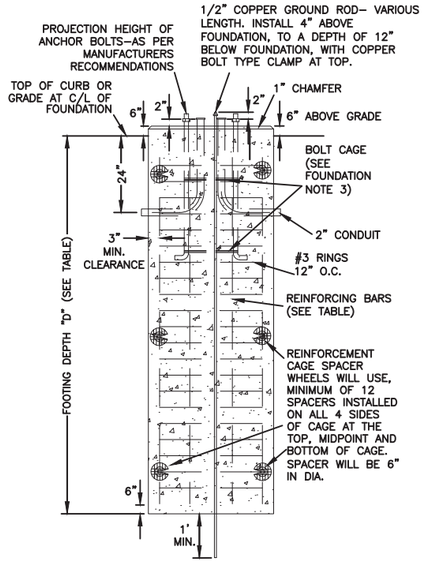
SIGNAL STANDARD DESCRIPTION	24" DIA. FOOTING DEPTH	30" DIA. FOOTING DEPTH	36" DIA. FOOTING DEPTH	42" DIA. FOOTING DEPTH
TYPE V STANDARD				
10–14' HEIGHT	4'	–	–	–
15'–17' HEIGHT	6'	–	–	–
TYPE IV SIGNAL STANDARD				
0'–25' MAST ARM	–	11'	11'	11'
26'–30' MAST ARM	–	12'	12'	12'
31'–35' MAST ARM	–	12'	12'	12'
36'–39' MAST ARM	–	13'	13'	13'
40'–45' MAST ARM	–	15'	15'	15'
46'–50' MAST ARM	–	16'	15'	15'
51'–55' MAST ARM	–	16'	16'	16'
56'–60' MAST ARM	–	17'	17'	17'
61'–65' MAST ARM	–	18'	18'	18'
COMBO SIGNAL STANDARD 30' MT HEIGHT				
0'–25' MAST ARM	–	11'	11'	11'
26'–30' MAST ARM	–	12'	12'	12'
31'–35' MAST ARM	–	13'	13'	13'
36'–39' MAST ARM	–	14'	14'	14'
40'–45' MAST ARM	–	16'	15'	15'
46'–50' MAST ARM	–	16'	16'	16'
51'–55' MAST ARM	–	17'	16'	16'
56'–60' MAST ARM	–	18'	17'	17'
61'–65' MAST ARM	–	19'	18'	18'
COMBO SIGNAL STANDARD 40' MT HEIGHT				
0'–25' MAST ARM	–	12'	12'	12'
26'–30' MAST ARM	–	13'	13'	13'
31'–35' MAST ARM	–	13'	13'	13'
36'–39' MAST ARM	–	14'	14'	14'
40'–45' MAST ARM	–	16'	15'	15'
46'–50' MAST ARM	–	16'	16'	16'
51'–55' MAST ARM	–	17'	16'	16'
56'–60' MAST ARM	–	18'	17'	17'
61'–65' MAST ARM	–	19'	18'	18'
COMBO SIGNAL STANDARD 50' MT HEIGHT				
0'–25' MAST ARM	–	12'	12'	12'
26'–30' MAST ARM	–	13'	13'	13'
31'–35' MAST ARM	–	13'	13'	13'
36'–39' MAST ARM	–	14'	14'	14'
40'–45' MAST ARM	–	16'	16'	16'
46'–50' MAST ARM	–	16'	16'	16'
51'–55' MAST ARM	–	17'	17'	17'
56'–60' MAST ARM	–	18'	18'	17'
61'–65' MAST ARM	–	19'	19'	18'

FOUNDATION REINFORCING TABLE

FOOTING DEPTH	LONGITUDINAL REINFORCING
12' OR LESS	8 – #5
13'–14'	8 – #6
15'–16'	8 – #7
17'–19'	8 – #8



PLAN



24", 30", 36", & 42"
DIAMETER FOUNDATIONS

FOUNDATION NOTES:

1. SEE PLANS FOR CORRECT LOCATION OF FOUNDATION. THE GRADE AND EXACT LOCATION WILL BE ESTABLISHED BY THE ENGINEER IN THE FIELD.
2. THE FOUNDATION WILL PROVIDE A MINIMUM OF 3" OF CONCRETE COVER FROM THE ANCHOR BOLTS TO THE REBAR CAGE AND A MINIMUM OF 3" OF CONCRETE COVER OVER THE REBAR CAGE TO THE OUTSIDE OF THE FOUNDATION. THE DIAMETER OF THE FOUNDATION WILL BE INCREASED TO ACCOMMODATE A LARGER BOLT CIRCLE.
3. AN ANCHOR BOLT CAGE WILL BE SHOP FABRICATED FROM #6 BAR CIRCLE OR 3/4" SQUARE STOCK OR APPROVED EQUAL WELDED TO THE INSIDE OF THE ANCHOR BOLT TO HOLD ALIGNMENT.
4. GROUND ROD WILL BE PLACED PRIOR TO CONCRETE PLACEMENT. THE ROD WILL PROJECT 4" ABOVE THE FINISHED FOUNDATION AND WILL EXTEND 12" BELOW THE FOUNDATION BOTTOM.
5. CONDUIT BENDS WILL BE 90°. CONDUIT WILL BE LOCATED 24" MINIMUM BELOW GROUND LEVEL. A SPARE 2" CONDUIT WILL BE INSTALL IN EACH FOUNDATION WITH BOTH ENDS PLUGGED AS PER SPARE CONDUIT SPECIFICATION.

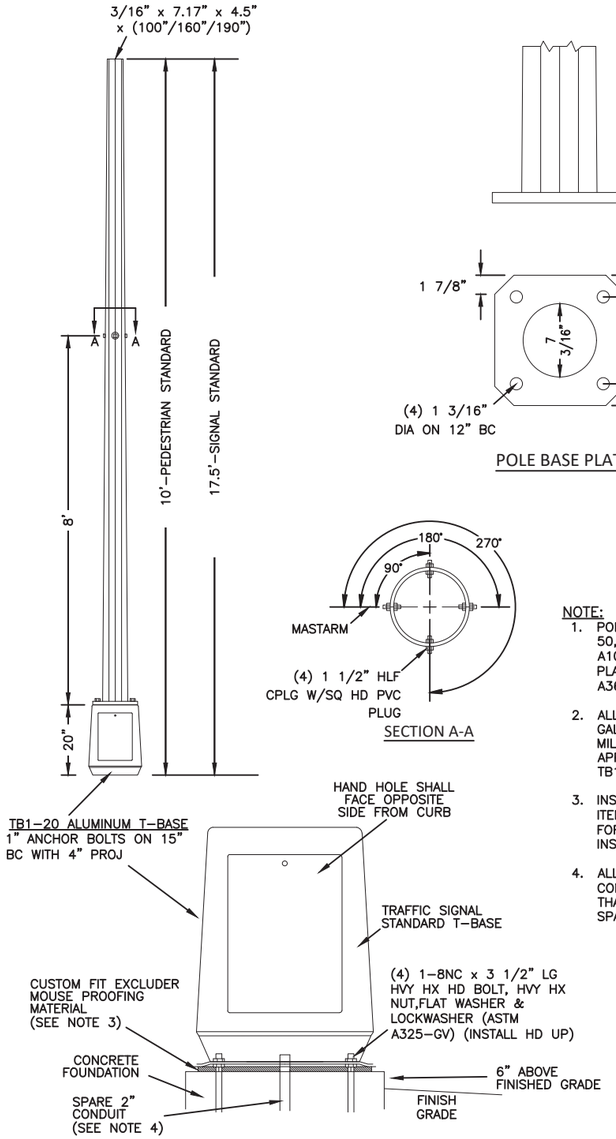
CONCRETE NOTES:

1. CONCRETE USED IN THE WORK, WILL BE PORTLAND CEMENT CONCRETE MIXED AND PROPORTIONED AS SPECIFIED IN SECTION 2100 OF THE CITY OF FARGO STANDARD SPECIFICATIONS FOR CONSTRUCTION.
2. CONTRACTOR IS RESPONSIBLE FOR CALLING OR NOTIFYING ENGINEER BEFORE CONCRETE IS ORDERED, NO CONCRETE WILL BE INSTALLED UNTIL CONCRETE IS TESTED.
3. CONCRETE WILL MEET THE FOLLOWING TESTS:
   - 3.1. AIR CONTENT BETWEEN 5% TO 8%
   - 3.2. SLUMP BETWEEN 2" TO 4"
   - 3.3. MAX TEMP OF 90 DEGREES
4. CONCRETE WILL ATTAIN A COMPRESSIVE STRENGTH OF 3500 PSI BEFORE SIGNAL STANDARD IS INSTALLED AND WILL ATTAIN A COMPRESSIVE STRENGTH OF 4500 PSI WITHIN 28 DAYS TO BE ACCEPTED.
5. IF FOUNDATION IS DRILLED/EXCAVATED IN AN AREA THAT IS CAVING IN, THE AREA WILL BE SHORED TO A DEPTH THAT PREVENTS ANY CAVING IN. CONTRACTOR WILL FILL AND COMPACT CAVED IN AREA AROUND FOUNDATION TO ENGINEERS SATISFACTION. IF CONTRACTOR IS NOT ABLE TO COMPACT TO 90% COMPACTION, FLOWABLE FILL WILL BE USED.

GENERAL NOTES:

1. RINGS WILL BE SPACED AT EQUAL SPACING TO A MAXIMUM OF 12" OC, STARTING WITH THE FIRST AT 6" FROM THE TOP OF THE LONGITUDINAL REINFORCING BAR, AND THE LAST RING APPROX 6" FROM THE BOTTOM OF THE LONGITUDINAL BAR. REINFORCING RINGS WILL HAVE A MIN OF 12" OVERLAP.
2. ALL REINFORCING STEEL TO BE GRADE 40 OR 60.
3. SEE PLANS FOR CONDUIT SIZE, NUMBER OF BENDS AND CORRECT POSITIONING FOR EACH FOUNDATION.
4. THE TOP OF THE FOUNDATION WILL BE CIRCULAR. IF APPROVED BY THE ENGINEER A SQUARE CASING MAY BE USED. PRIOR TO FINAL GRADING OR SIDEWALK PLACEMENT THE CASING TUBES WILL BE REMOVED TO A POINT 6" BELOW GRADE.
5. IF FOUNDATIONS NEED TO BE INSTALLED NEAR EXISTING LOCATES SUCH AS, WATER OR SEWER PIPE, SHORING WILL BE INSTALLED PRIOR TO CONCRETE PLACEMENT. IF VOIDS ARE CREATED DUE TO DRILLING FOUNDATIONS VOIDS WILL BE FILLED WITH A CONCRETE FLOWABLE FILL.

FARGO ENGINEERING DEPARTMENT	SECTION: 4200	DRAWING: 5.1
	REVISION: 2025	
	TRAFFIC SIGNAL FOUNDATION	
	APPROVED: TAK	DATE: TBD, 2025



TYPE V TRAFFIC SIGNAL STANDARDS

POLE BASE PLATE

SECTION A-A

NOTE:

1. POLE MATERIAL–HIGH STRENGTH LOW ALLOY STEEL 50,000 PSI MIN. YIELD PER ASTM A572 OR A1011(A871 OR A606 IF SELF WEATHERING) BASE PLATE MATERIAL–36,000 PSI MIN. YIELD PER ASTM A36 (A588 IF SELF WEATHERING)
2. ALL TYPE V SIGNAL STANDARDS WILL BE HOT DIPPED GALVANIZED, AND WILL BE MANUFACTURED BY MILLERBERND OR VALMONT MANUFACTURING, OR APPROVED EQUAL AND HAVE AN AKRON FOUNDRY TB1–20 ALUMINUM BREAKAWAY T–BASE INSTALLED.
3. INSTALL AN XCLUDER LIGHT POLE GASKET 2800G ITEM#162728. AN ADDITIONAL GASKET MAY BE NEED FOR A PROPER SEAL IF GAPS ARE PRESENT AFTER INSTALLING THE FIRST GASKET.
4. ALL FOUNDATIONS WILL HAVE ONE SPARE 2" CONDUIT, PLUGGED WITH AN EXPANDABLE PIPE PLUG THAT IS LABELED WITH THE DIRECTION OF THE SPARE CONDUIT.

FARGO ENGINEERING DEPARTMENT	SECTION: 4200	DRAWING: 5.2
	REVISION: 2025	
	TYPE V SIGNAL STANDARD	
	APPROVED: TAK	DATE: TBD, 2025



TMA-TAU-CRP-8-984(183)
CASS COUNTY, NORTH DAKOTA

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SIDEWALK & ADA DETAILS

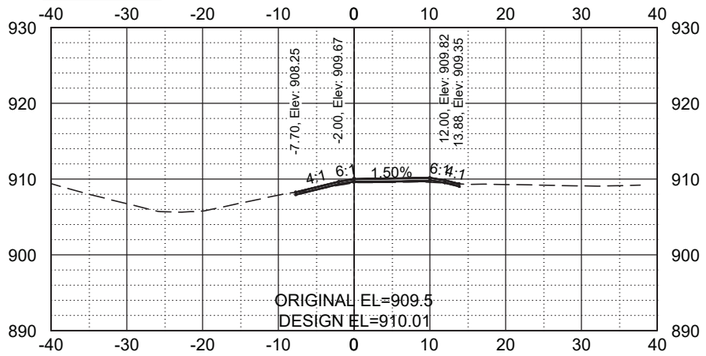
DRWN. BY	CHK'D BY	PROJECT NO.
ZBN	BJT	2503-10999

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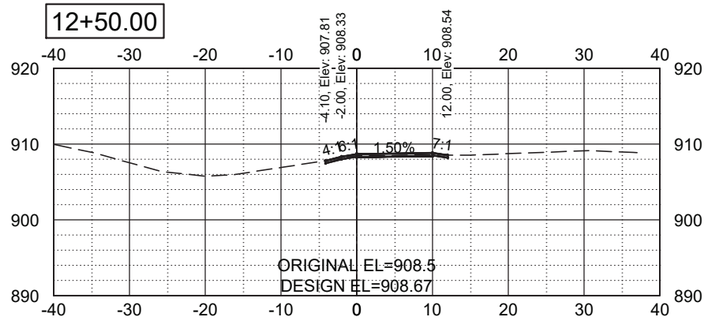
CROSS-SECTIONS

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	200	1

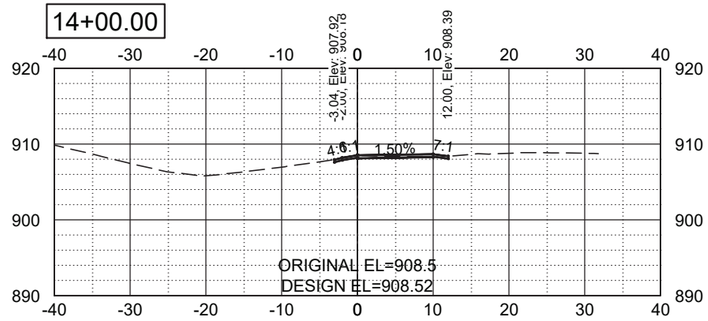
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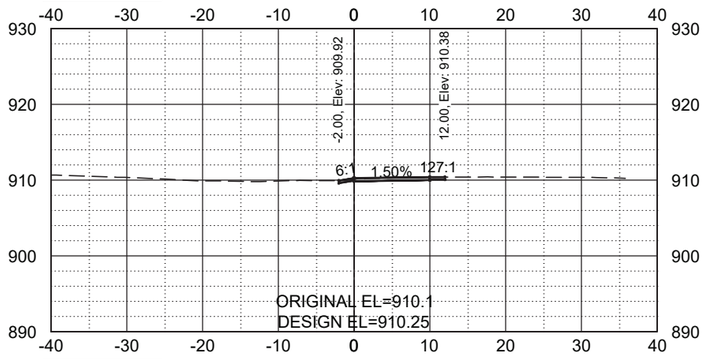
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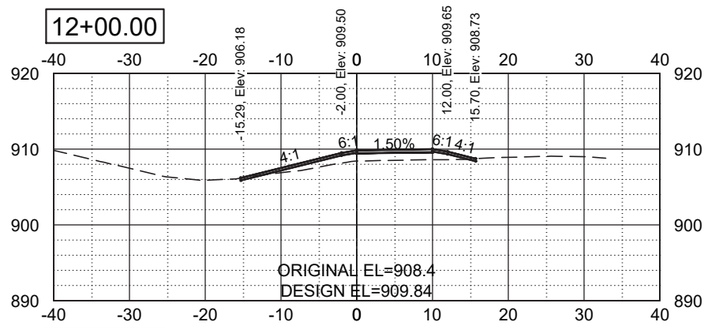
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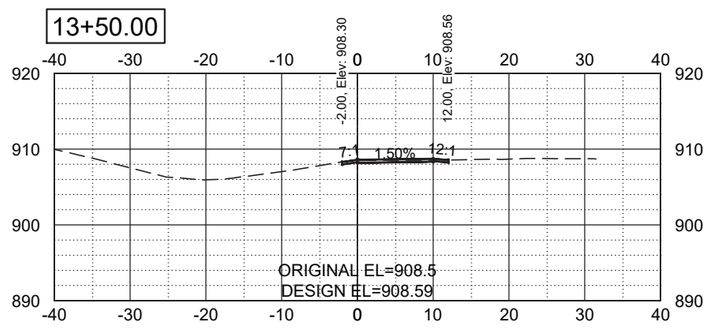
10+50.00



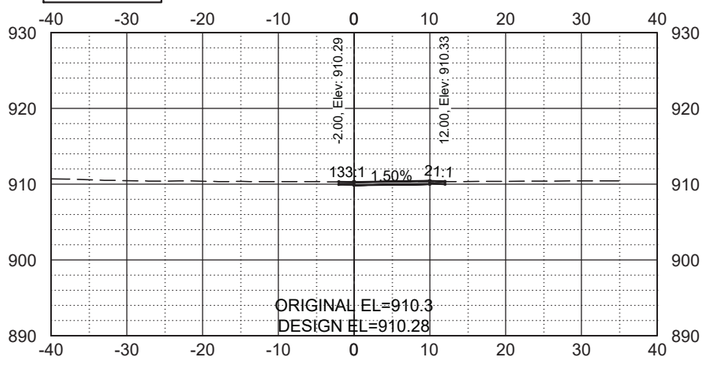
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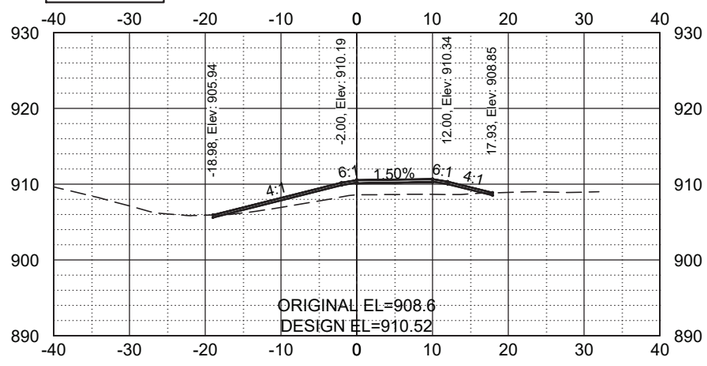
13+50.00



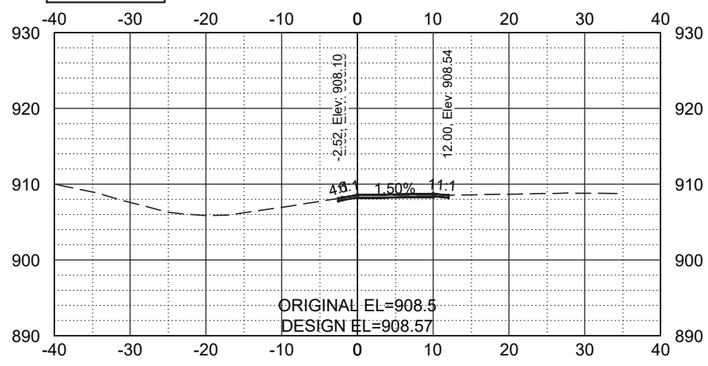
10+44.15



11+50.00



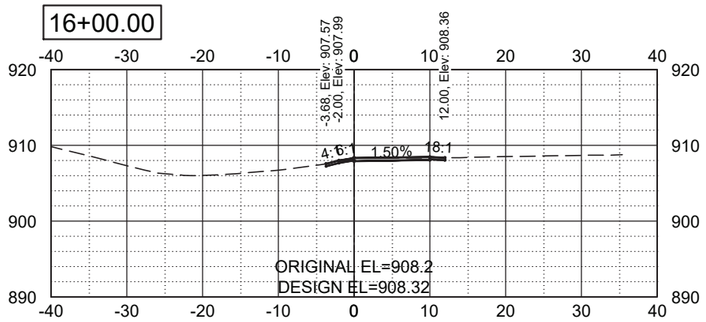
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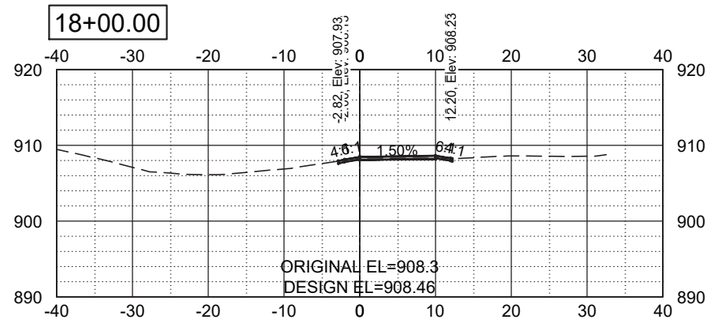


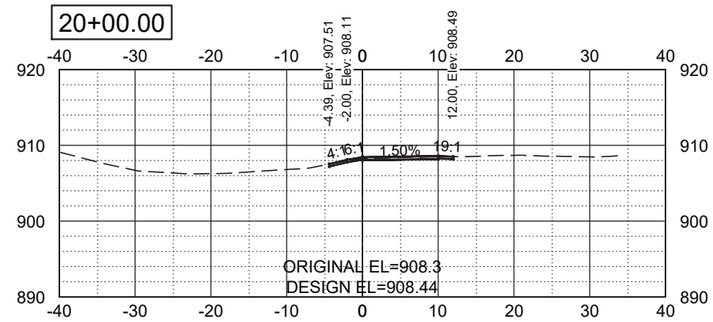
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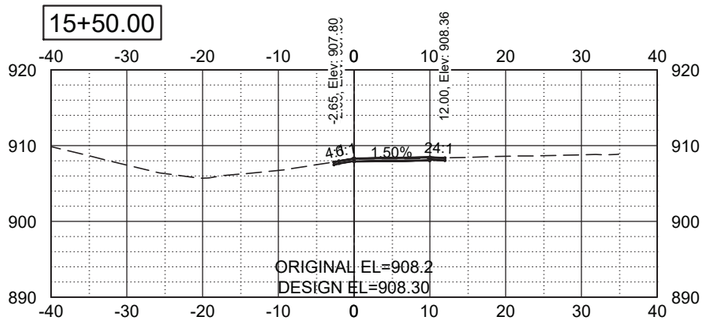
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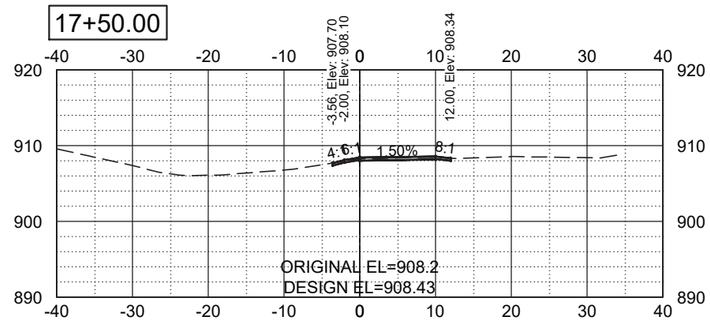
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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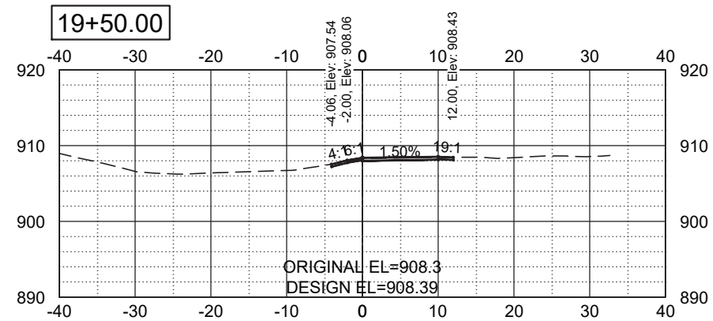


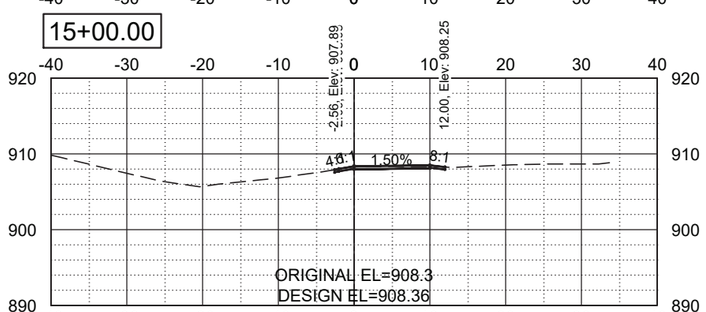


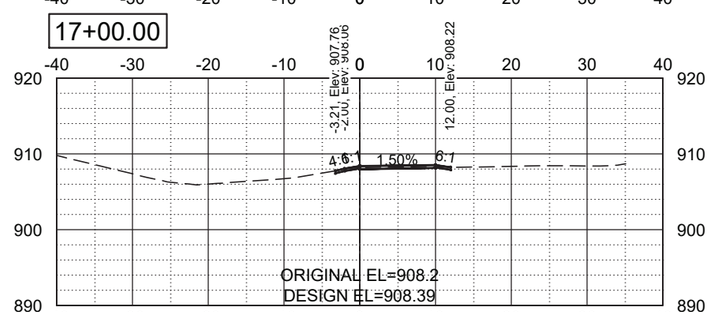


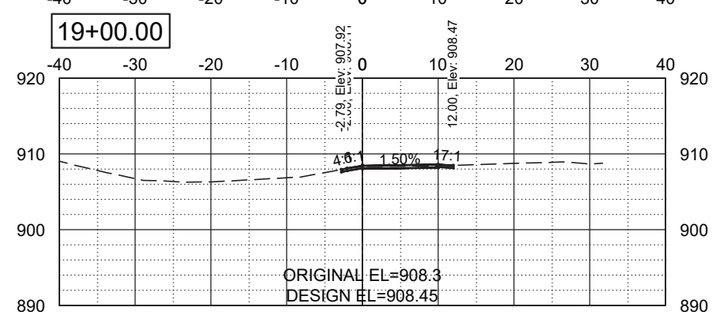


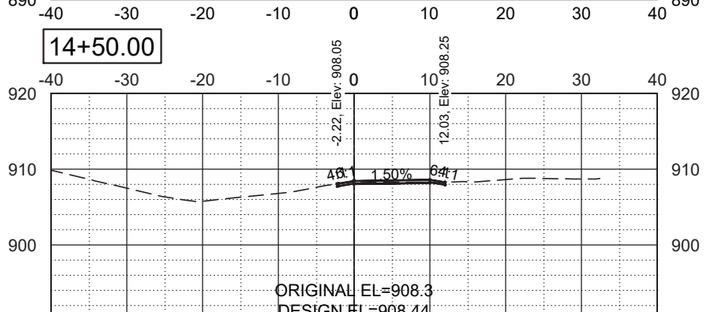


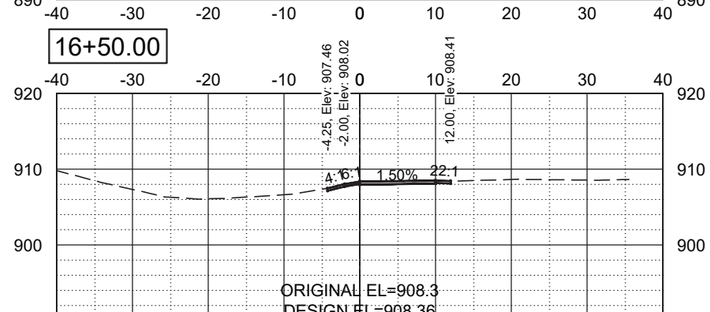


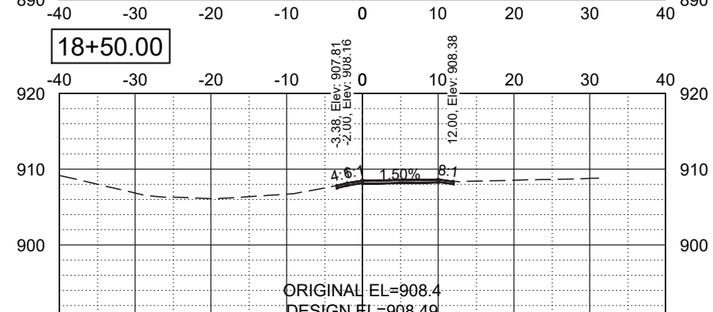








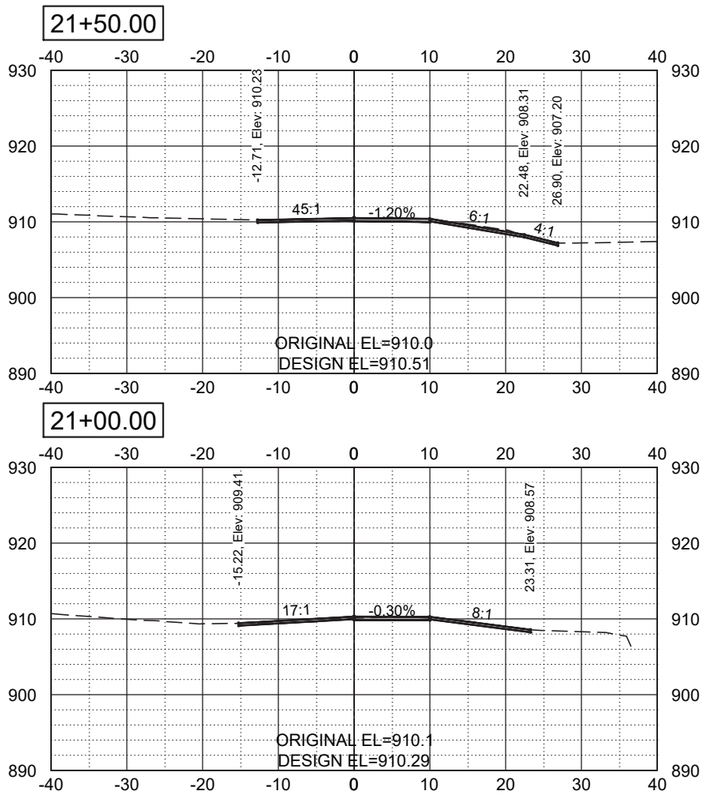


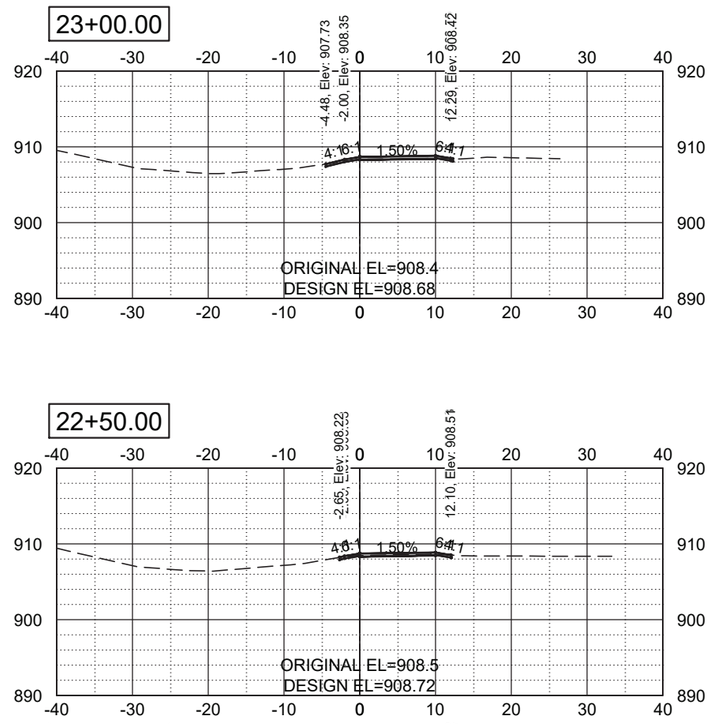


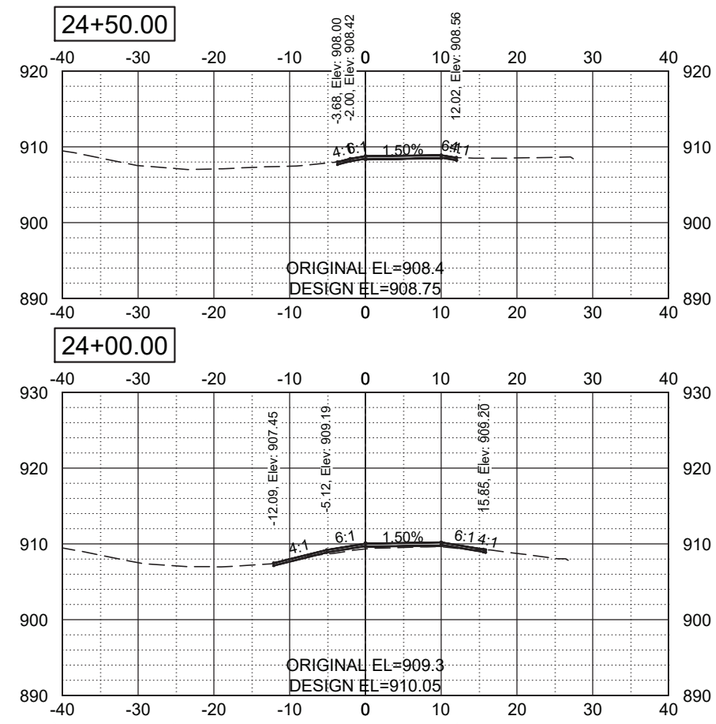
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CROSS-SECTIONS

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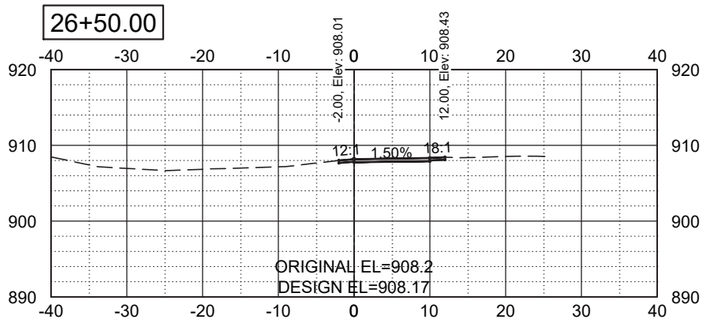


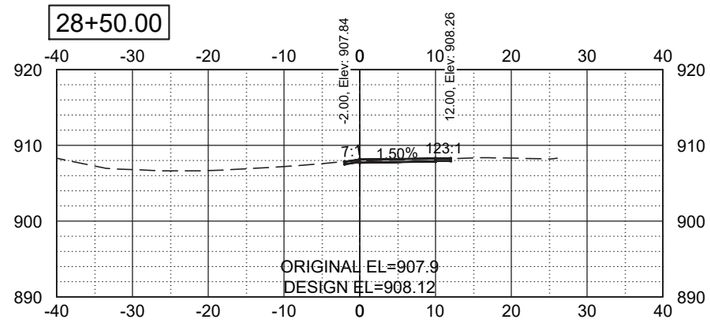


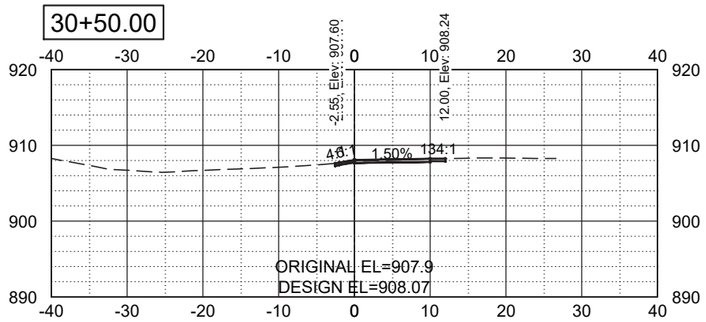
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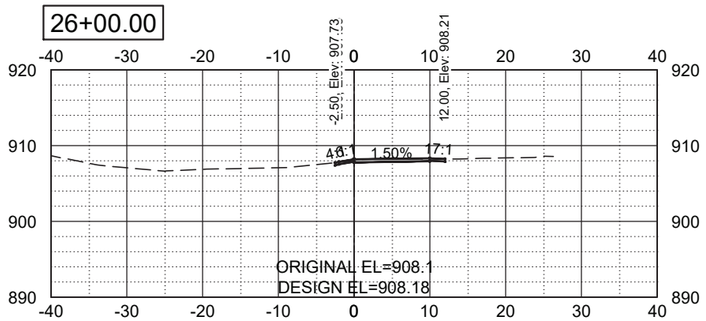
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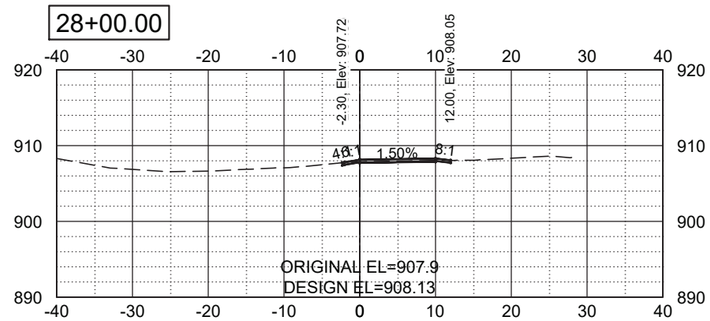
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	200	4

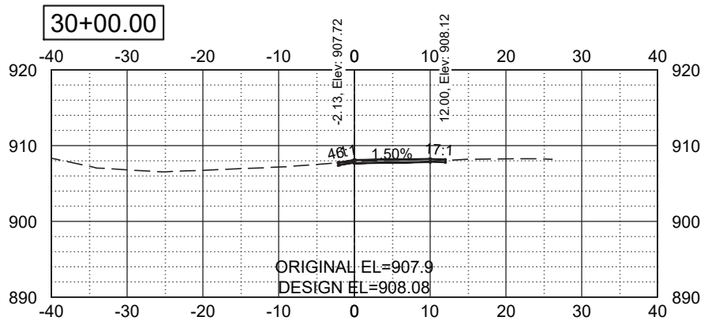


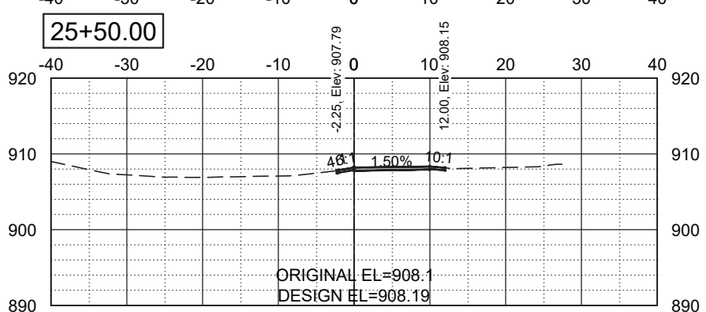


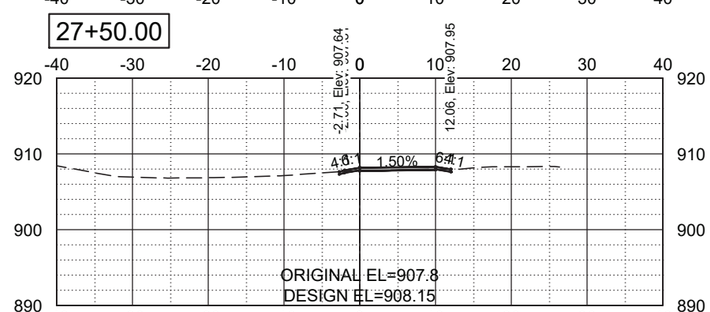


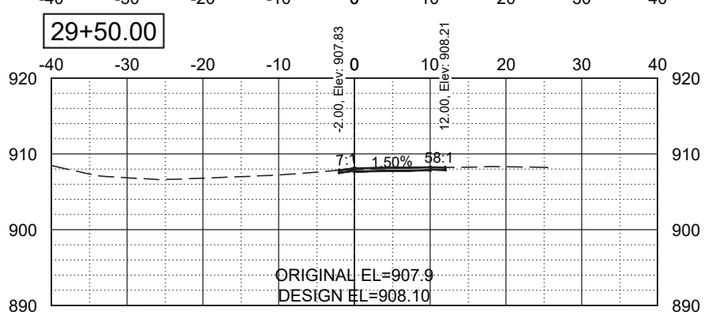


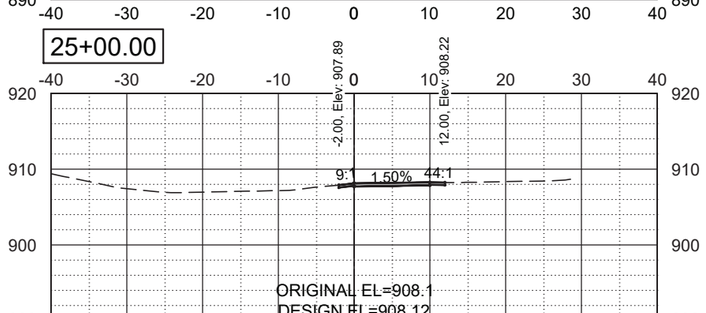


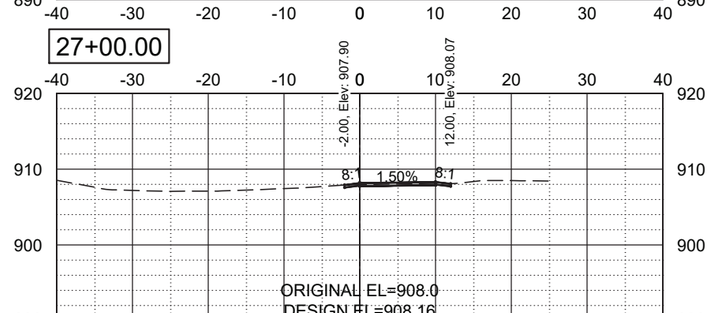


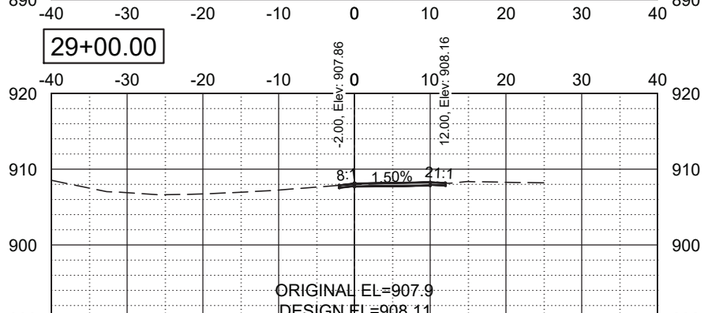








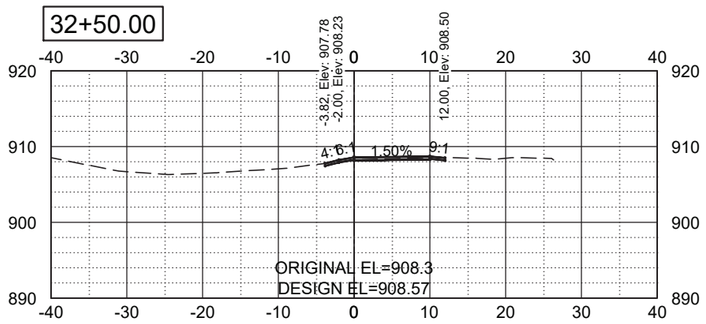


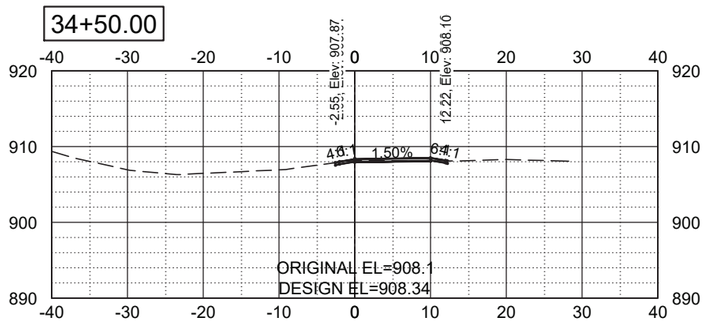


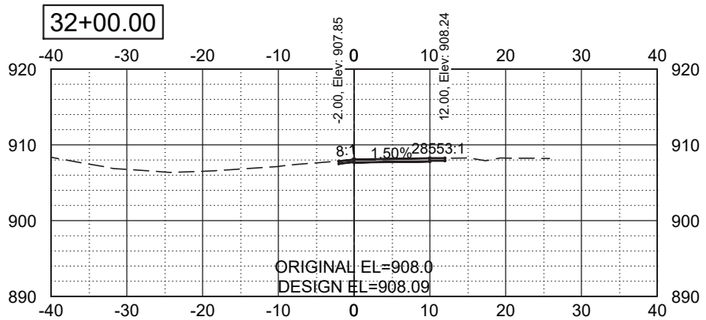
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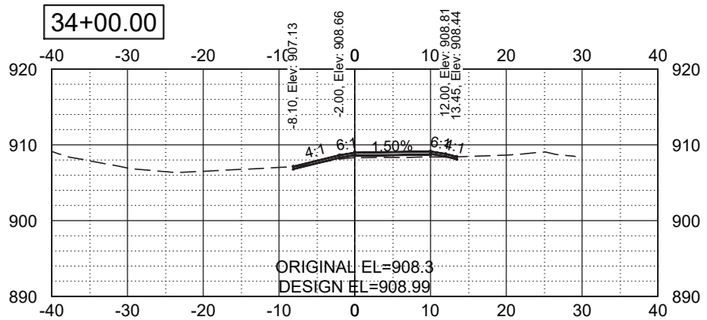
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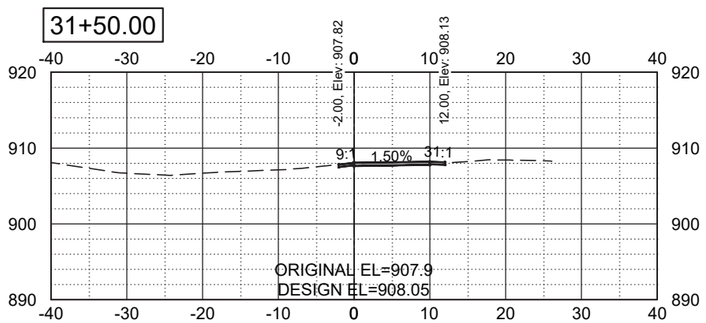
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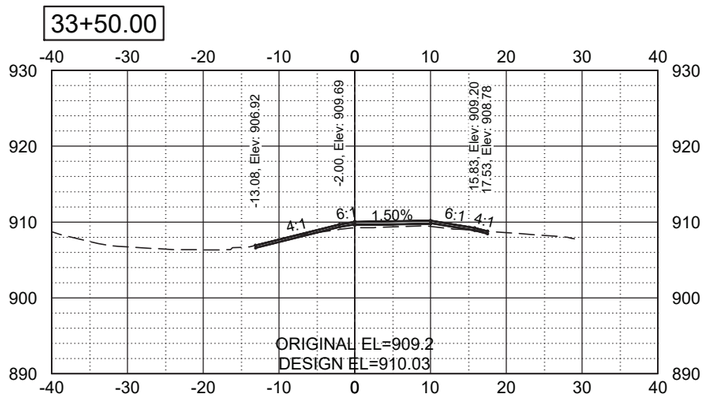


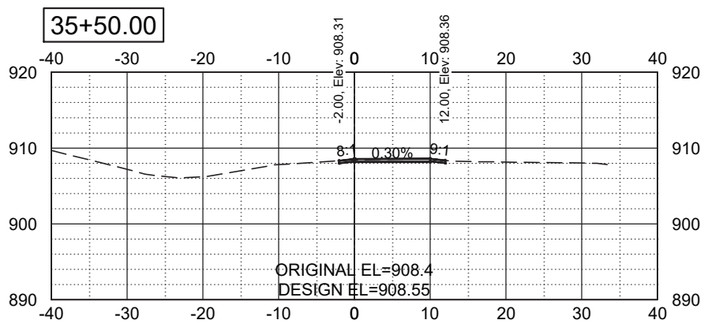


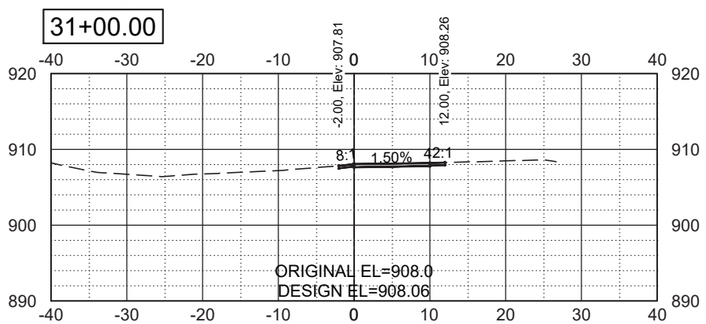


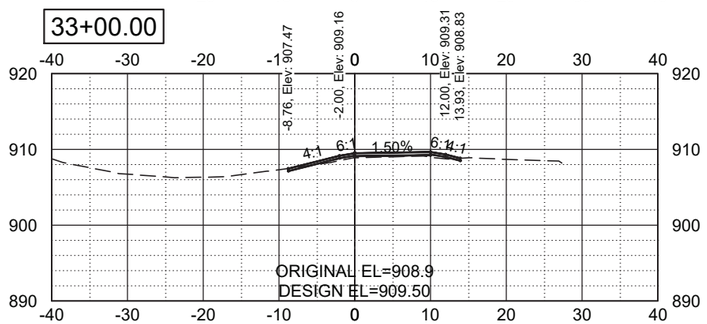


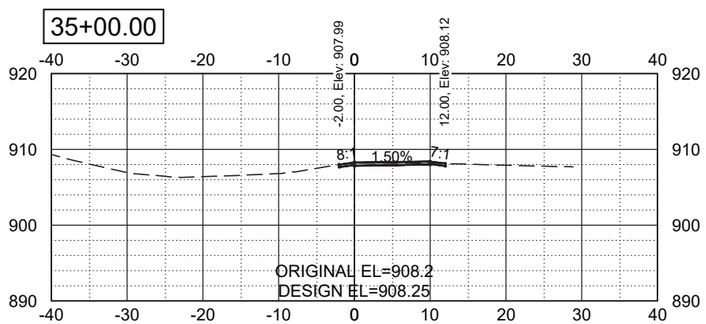








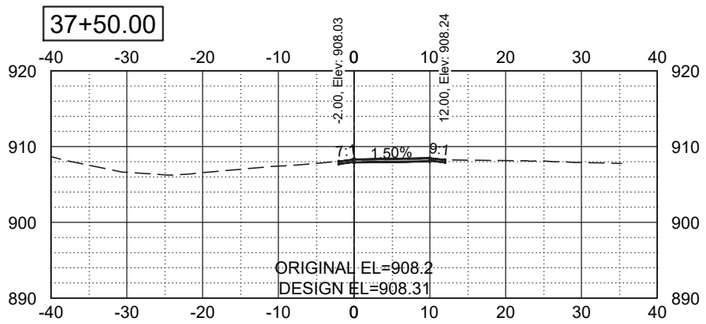


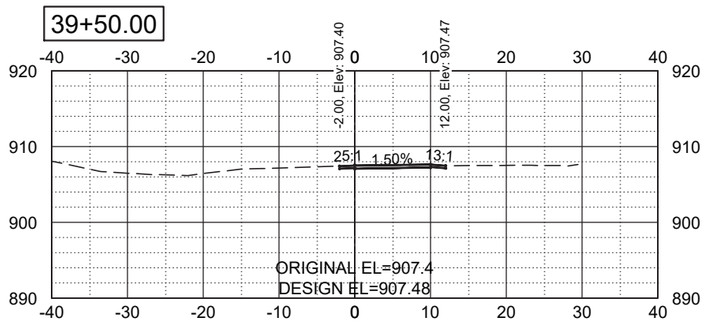


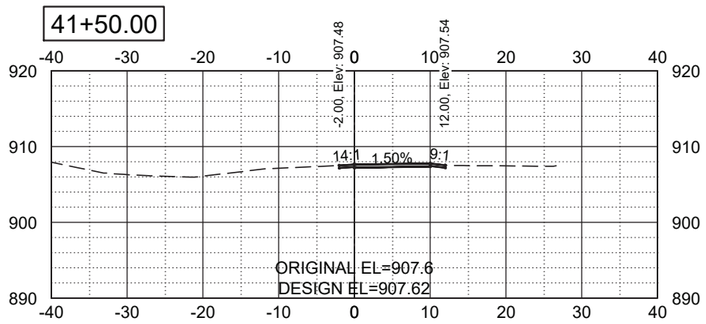
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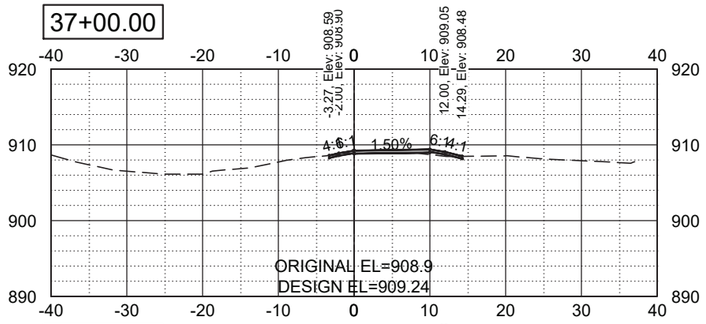
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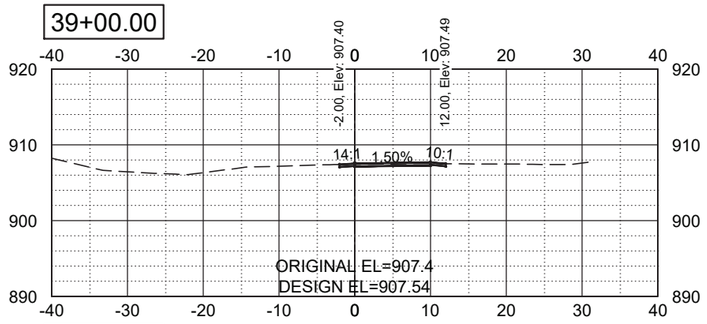
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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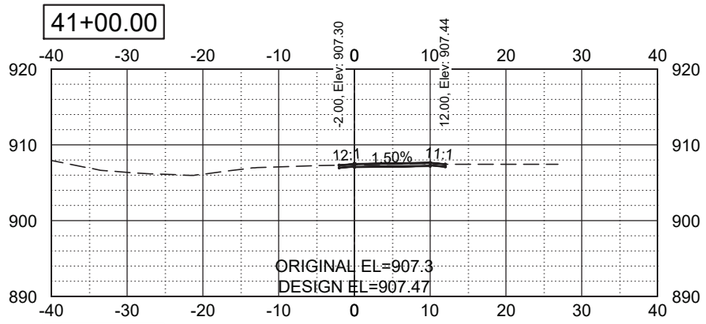


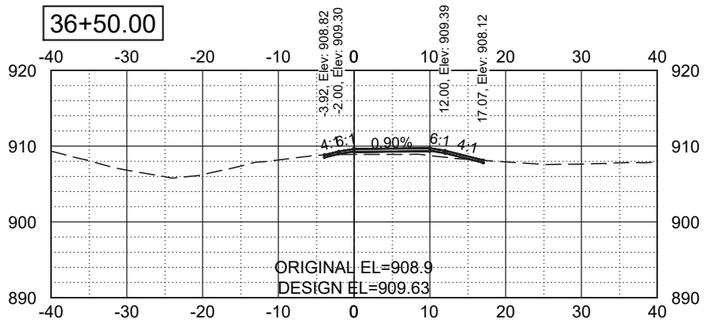


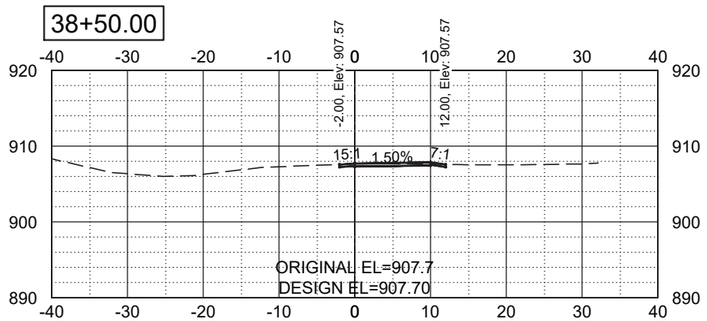


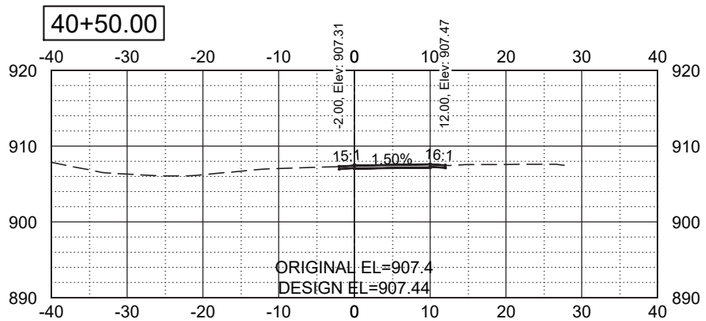


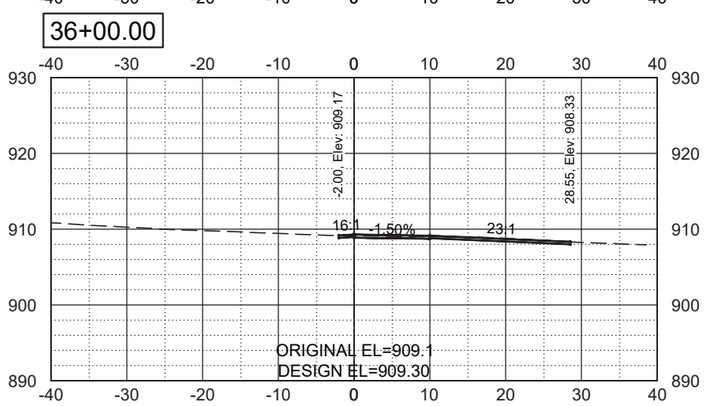


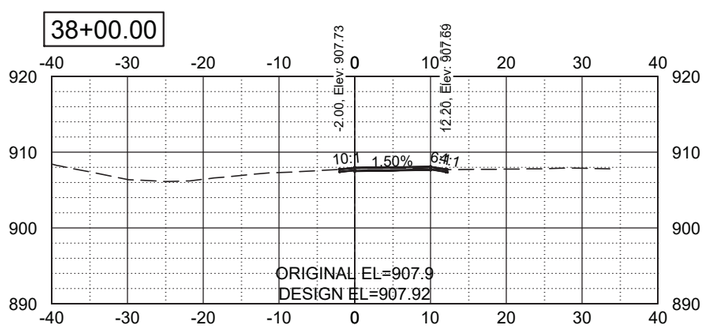


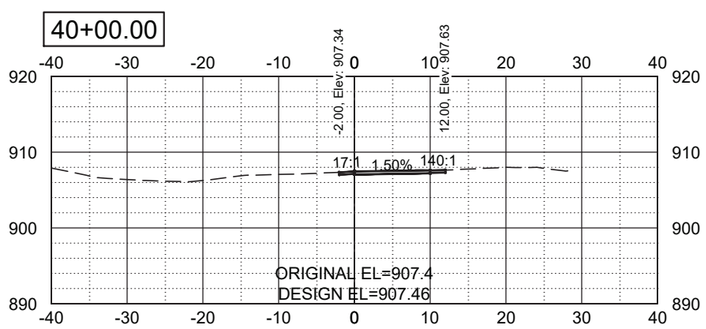








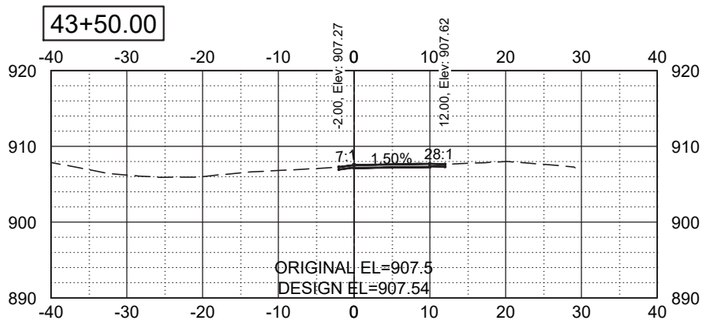


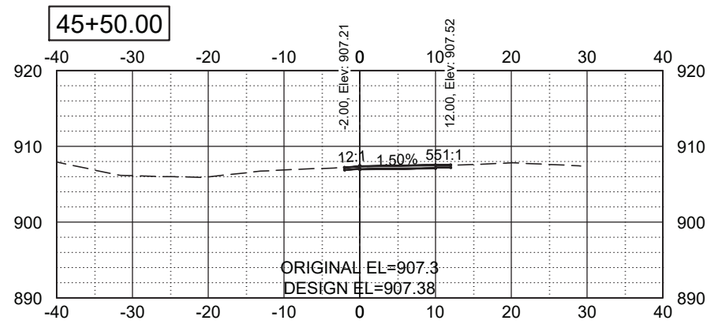


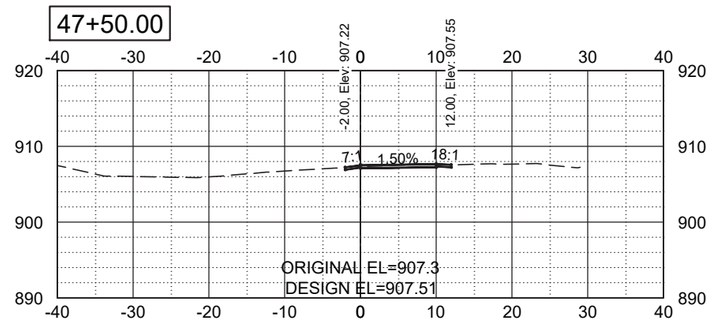
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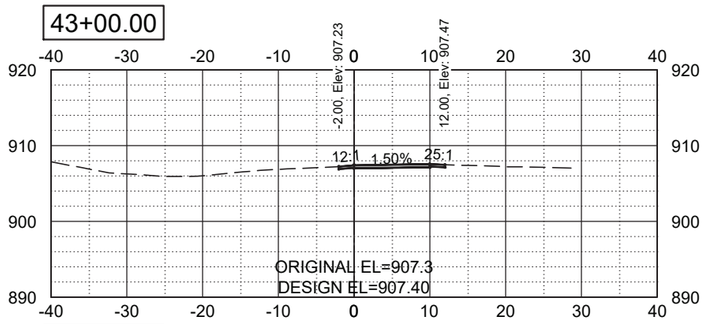
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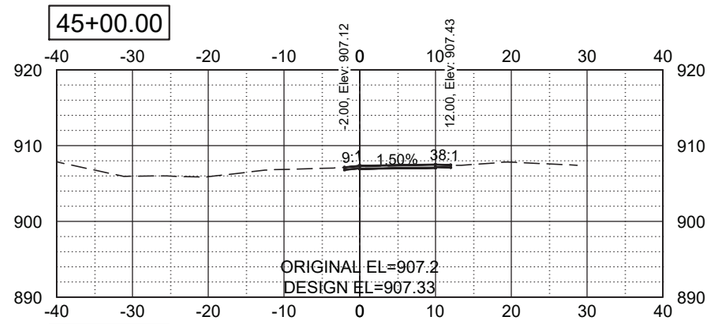
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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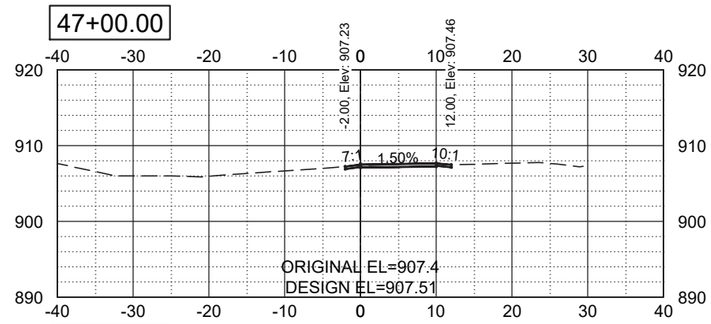


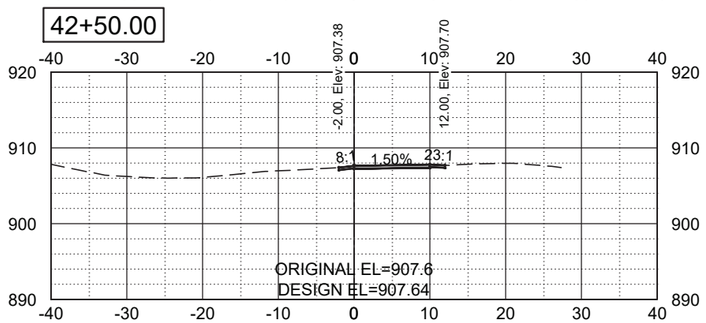


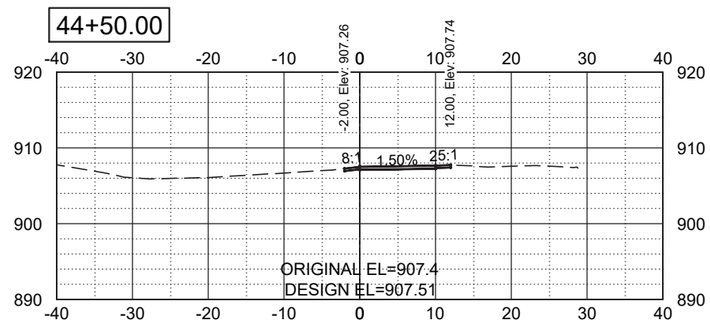


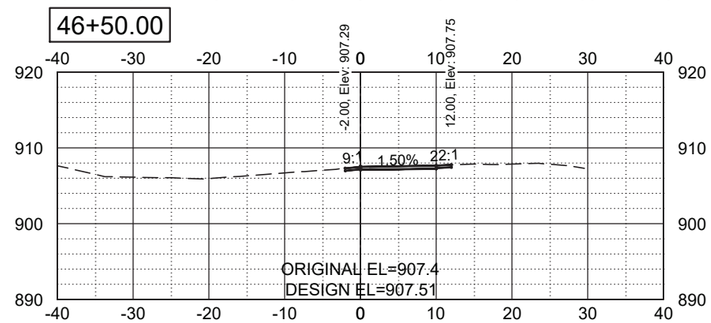


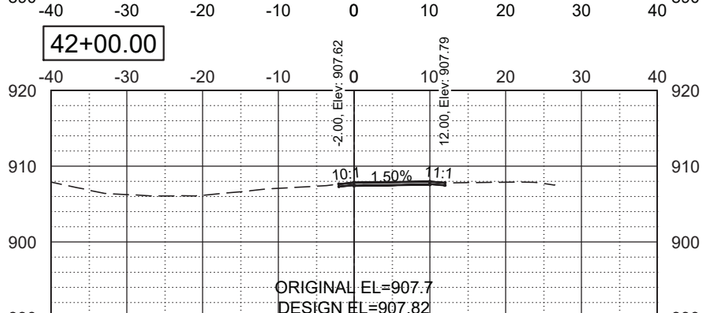


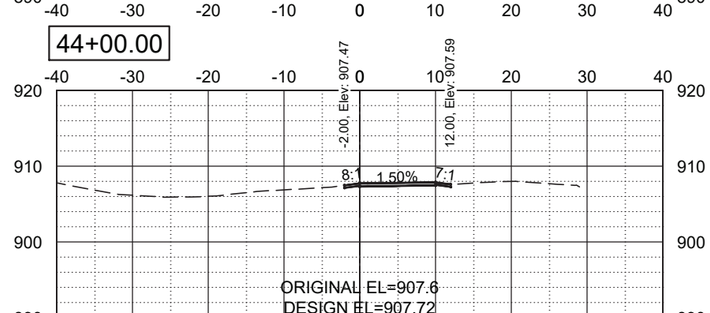


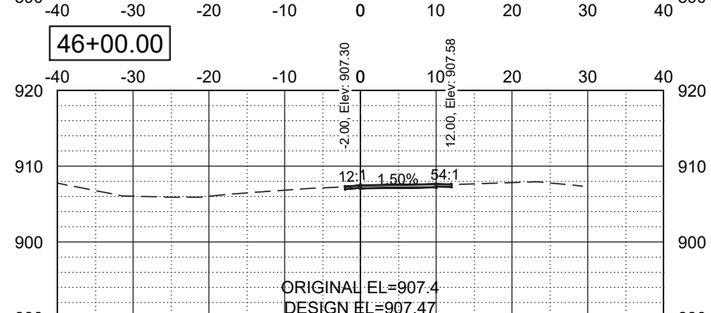








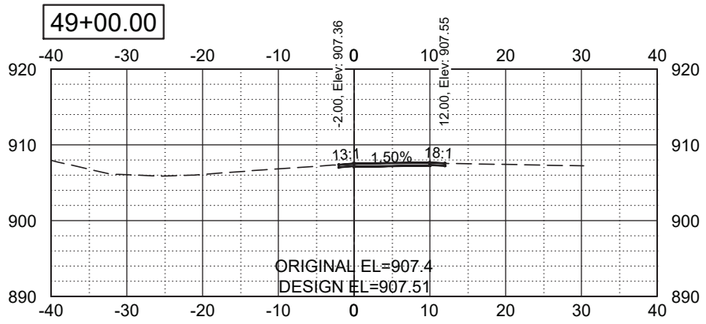


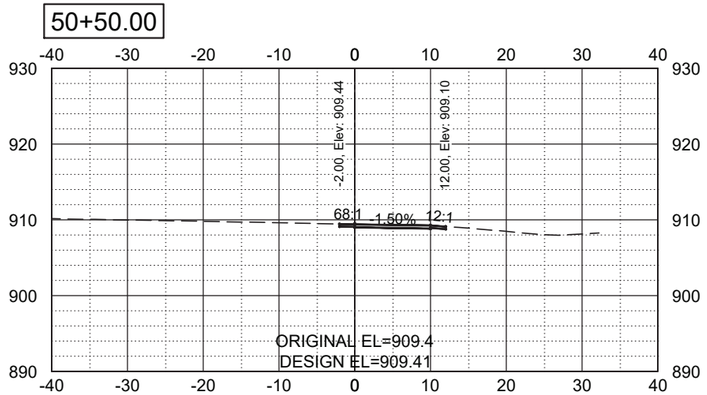


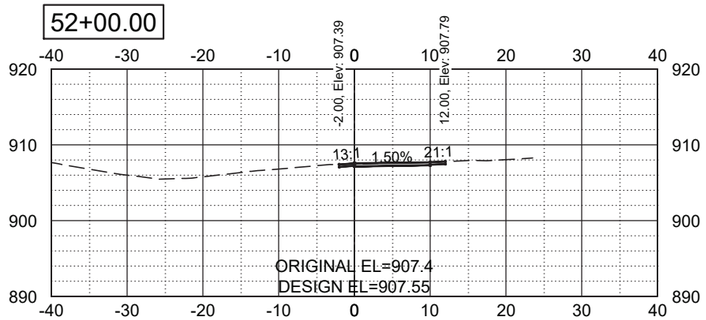
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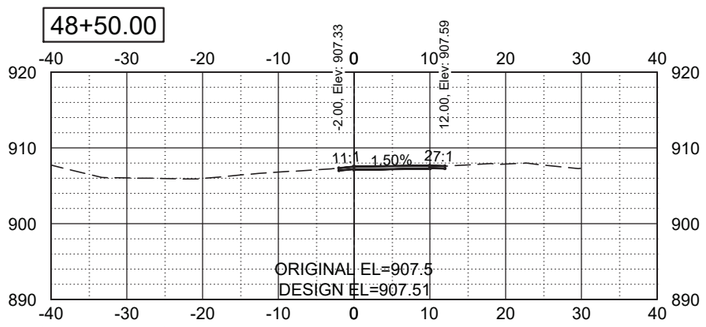
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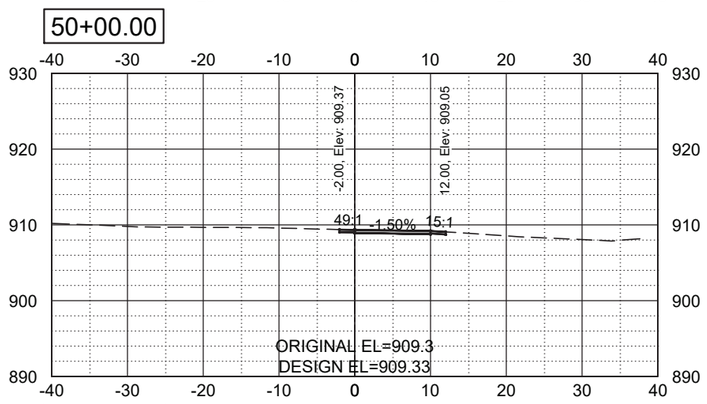
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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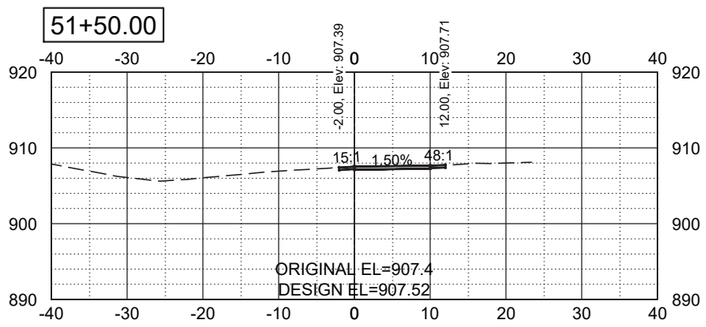


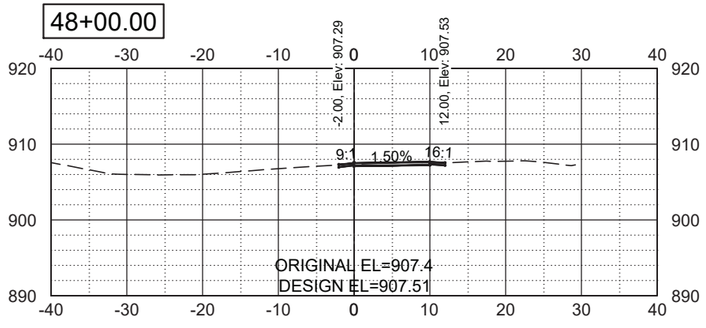


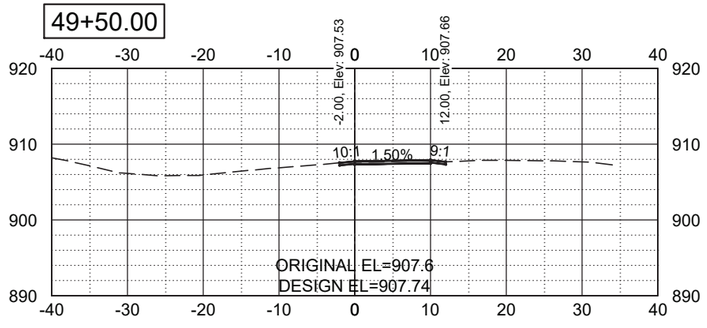


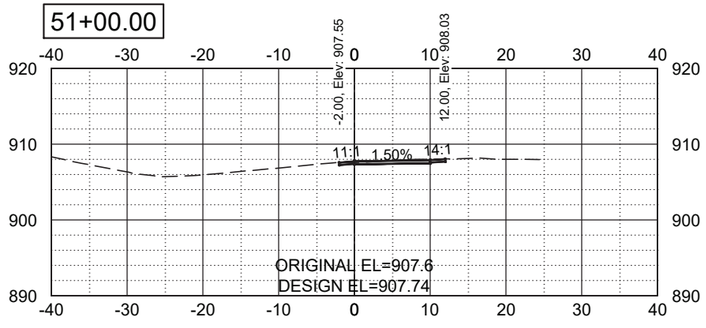








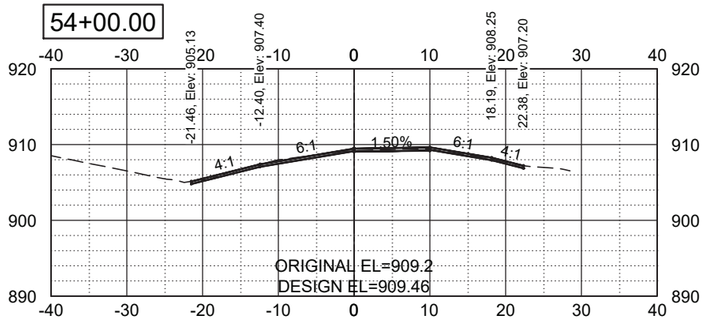


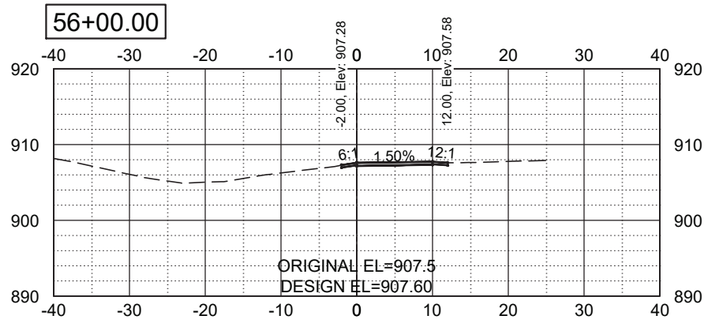


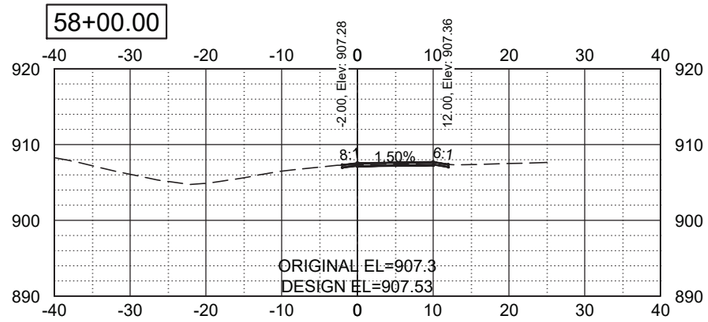
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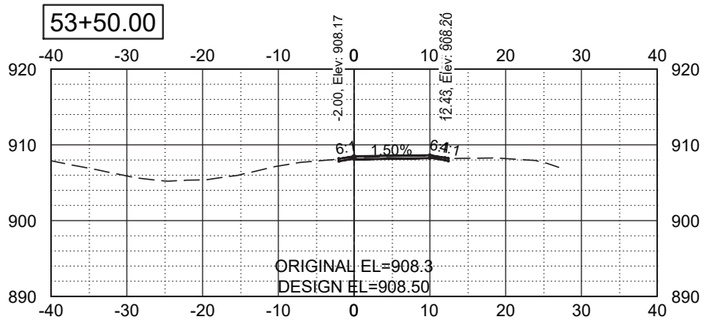
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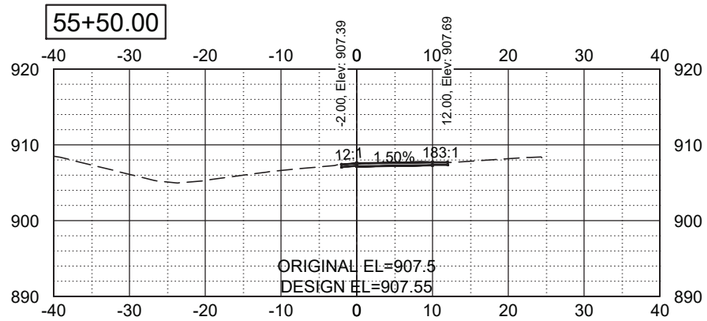
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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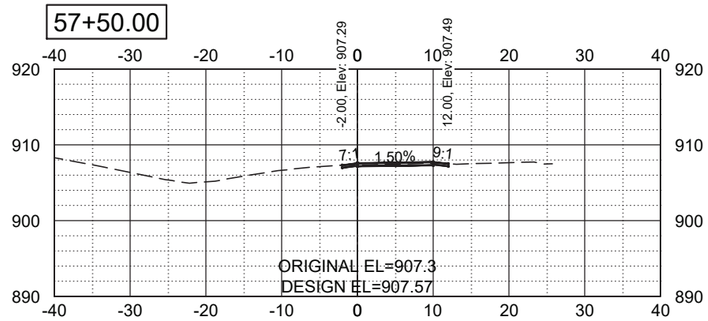


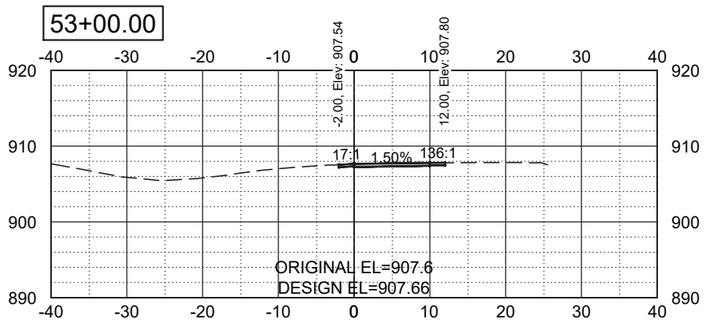


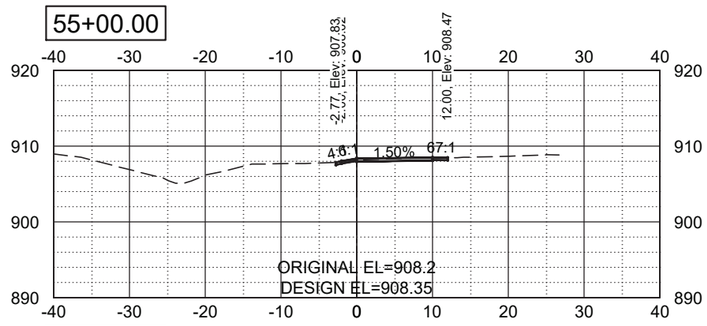


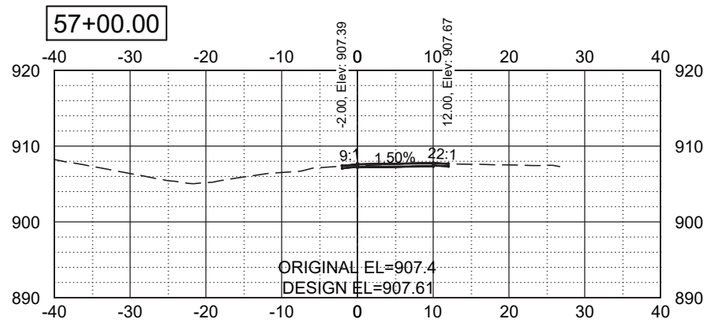


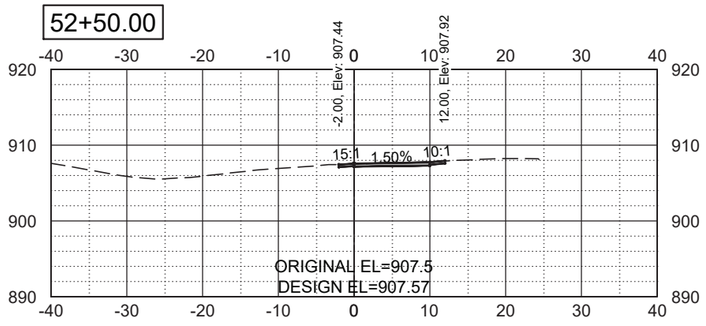


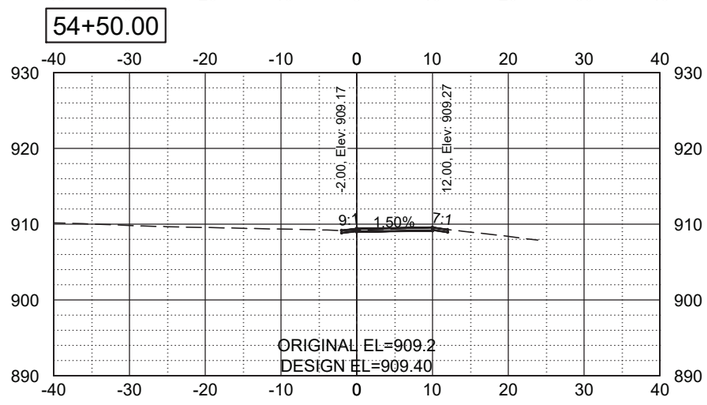


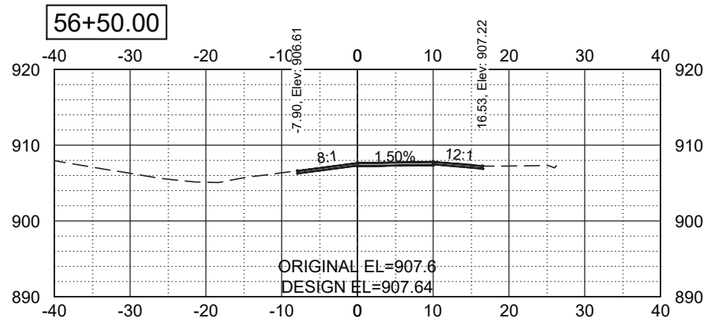








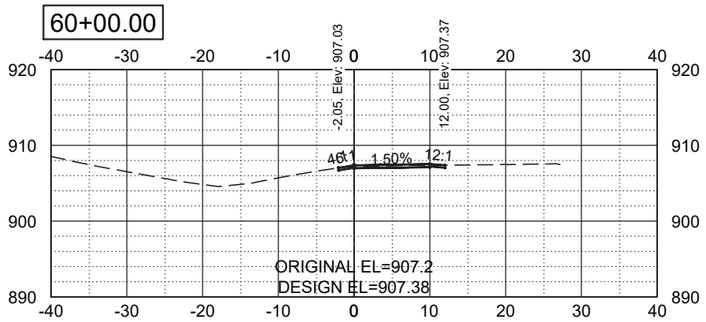


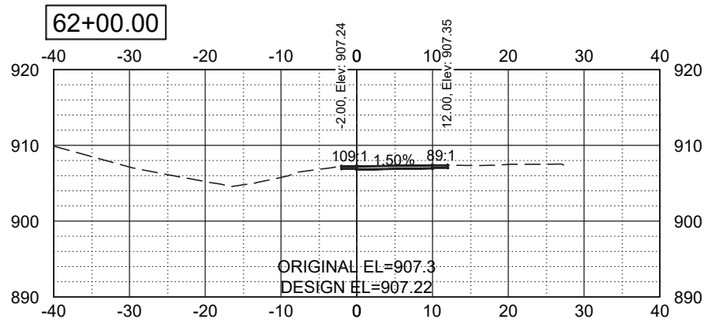


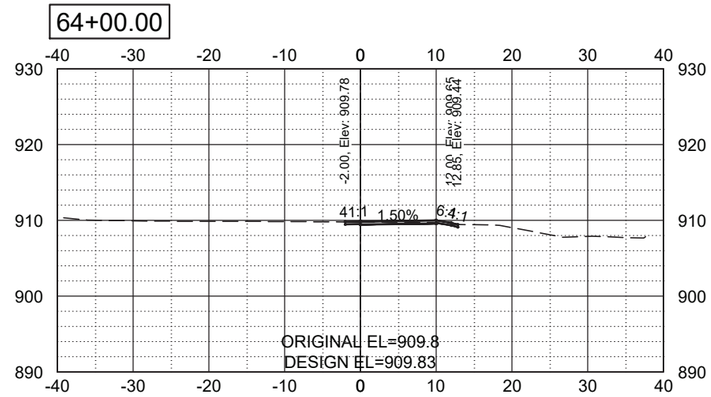
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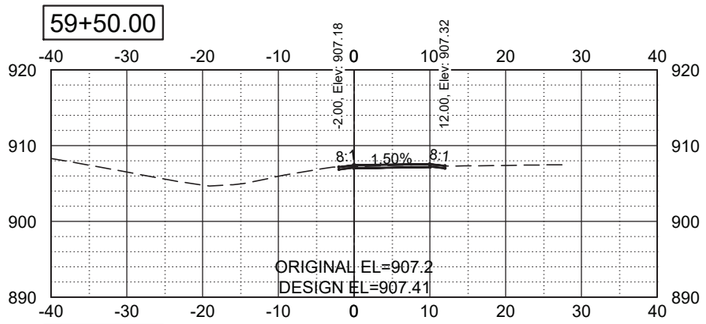
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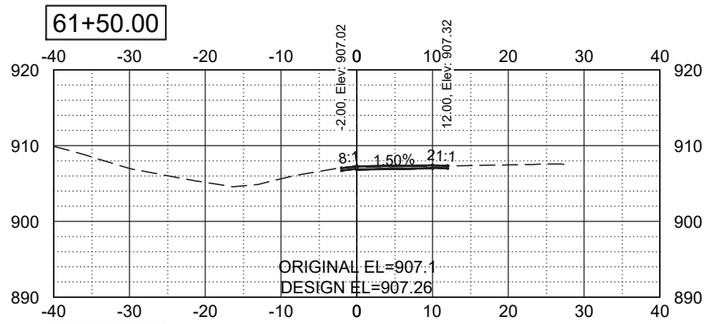
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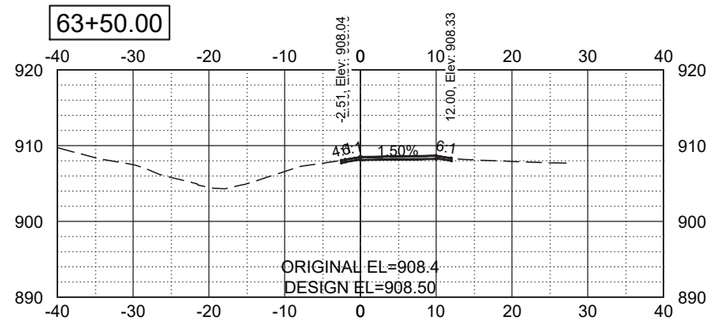


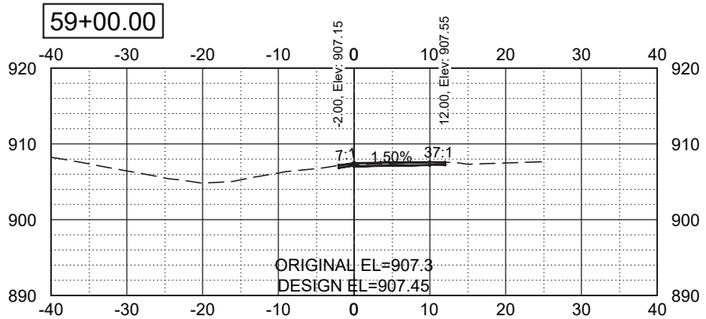


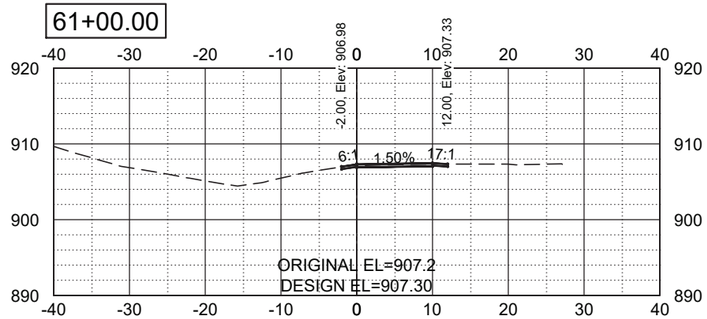


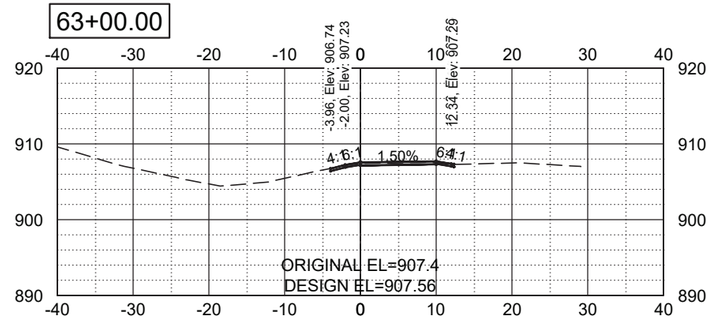


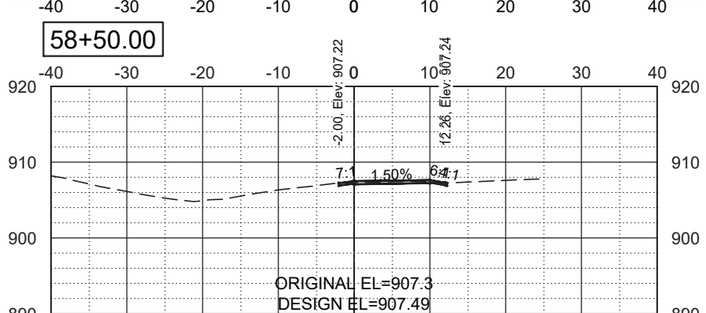


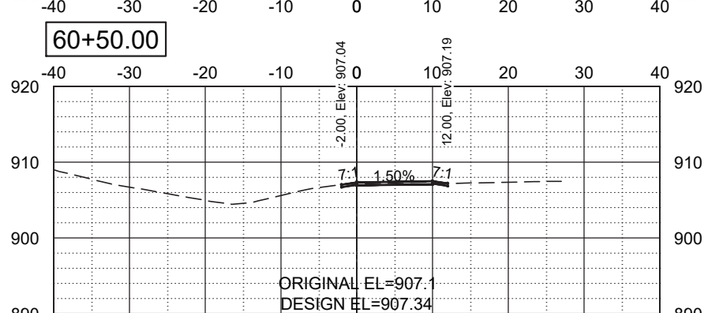


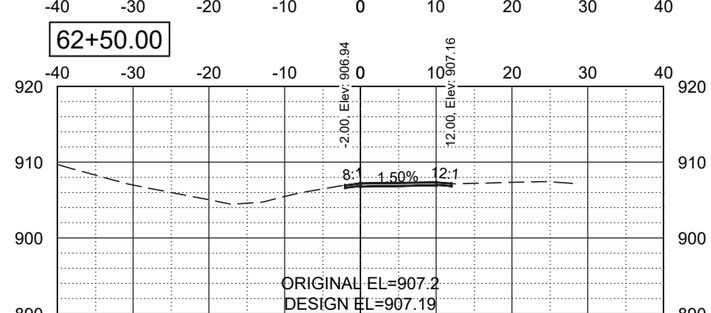










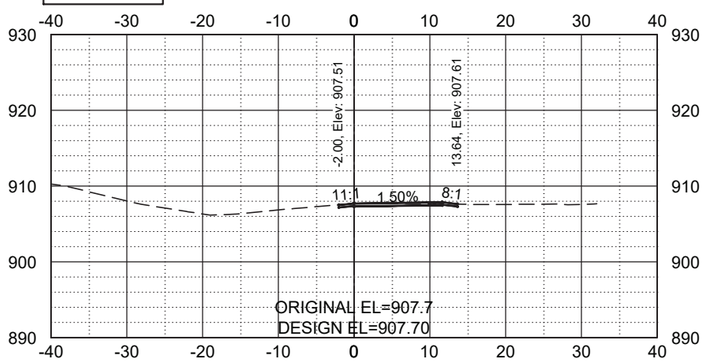


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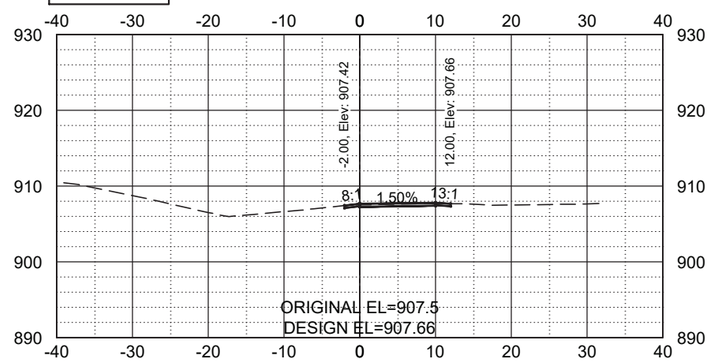
CROSS-SECTIONS

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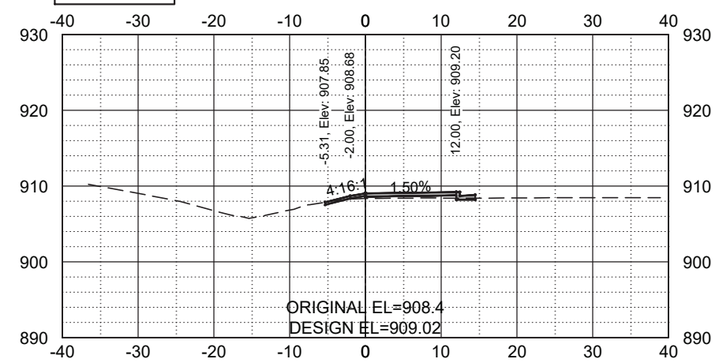
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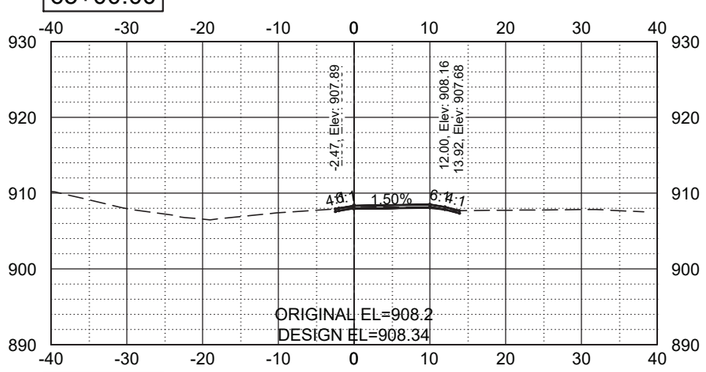
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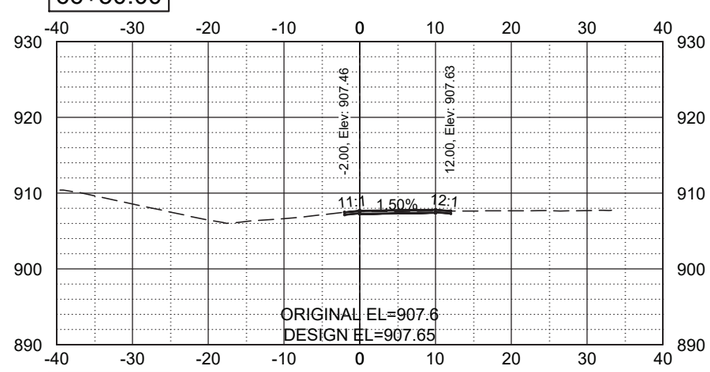
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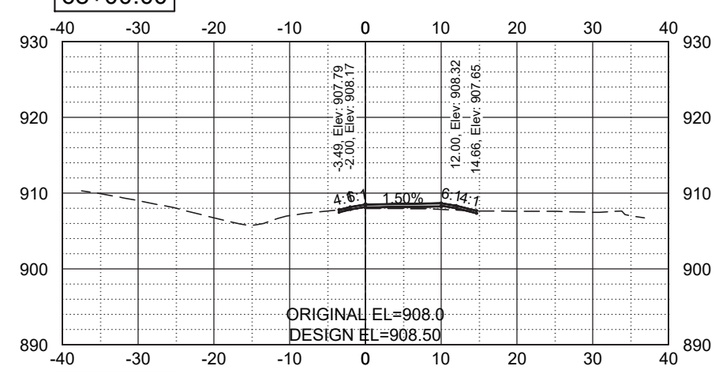
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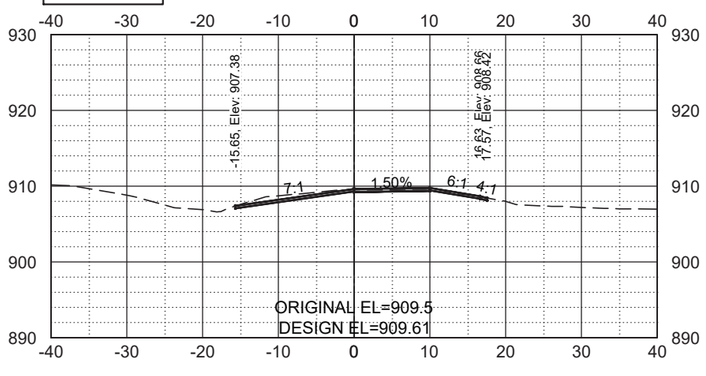
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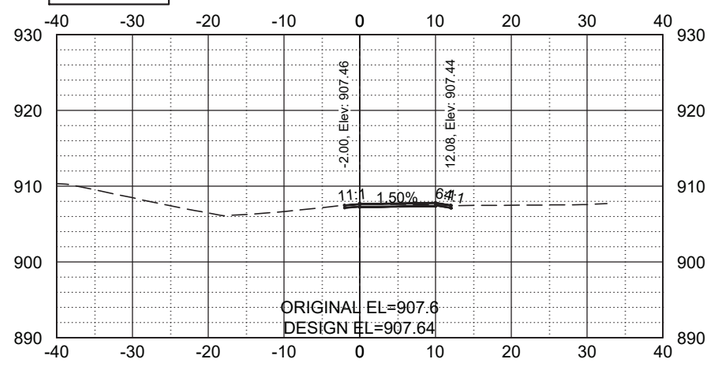
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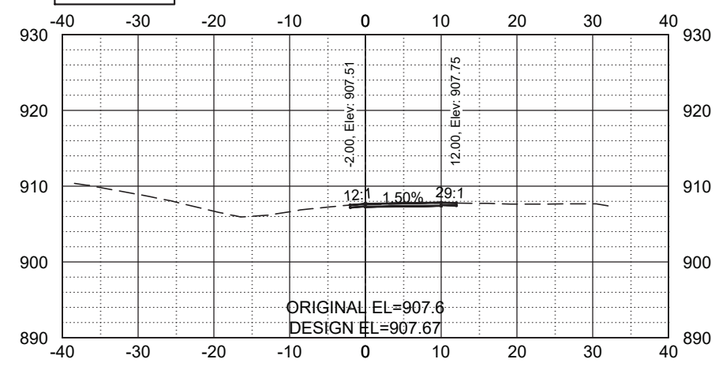
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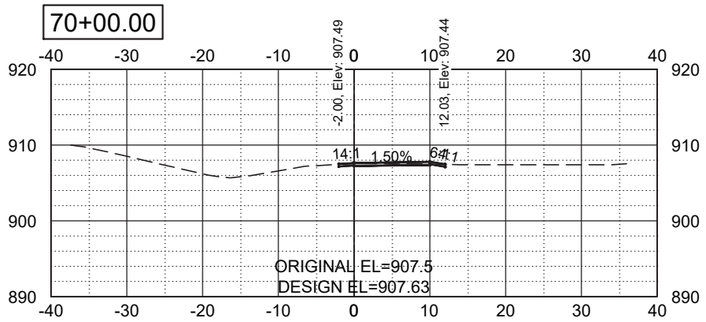
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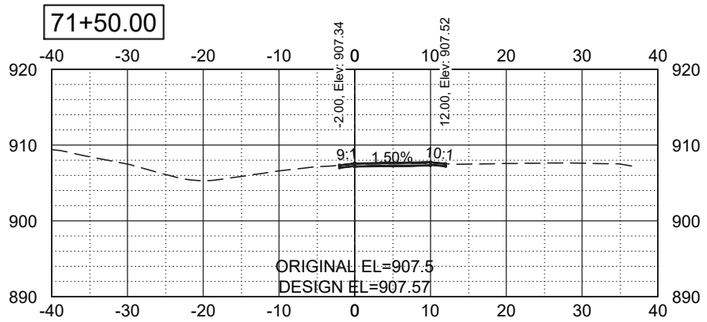


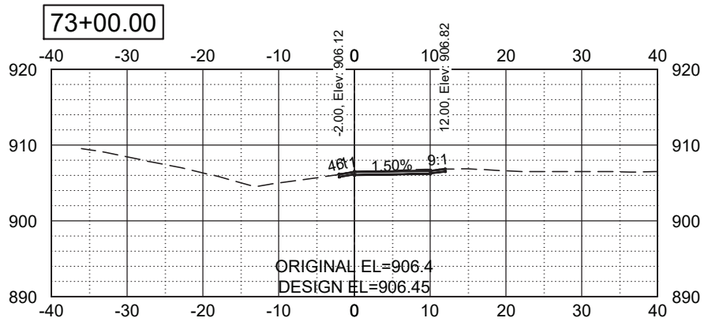
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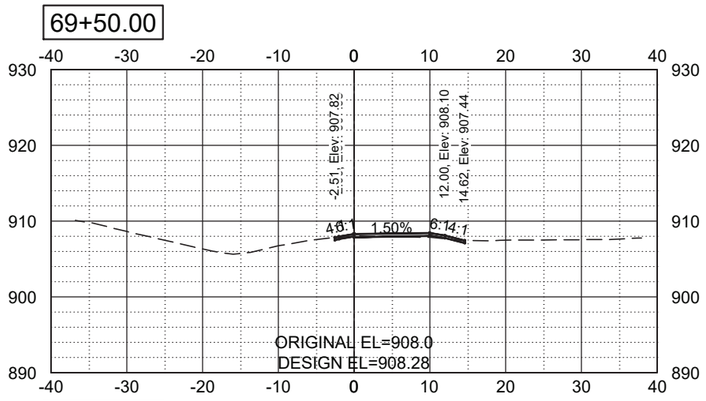
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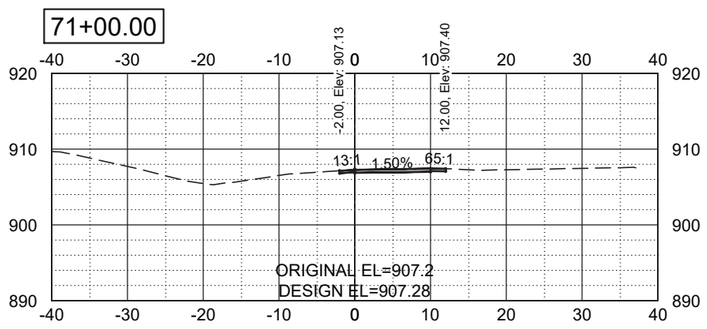
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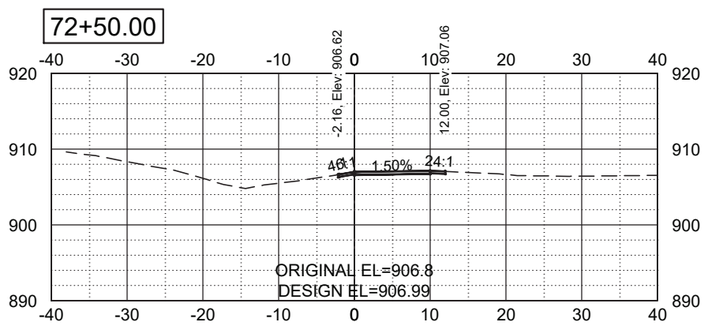


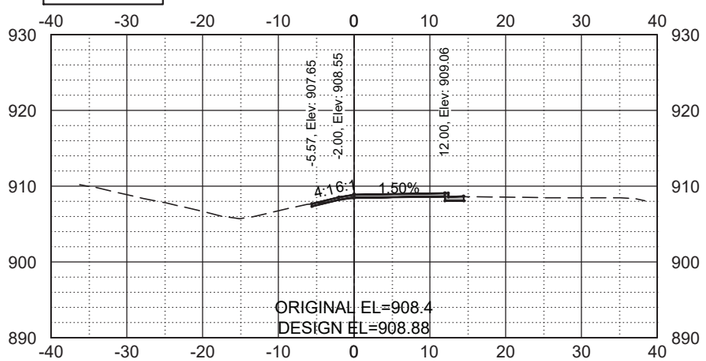


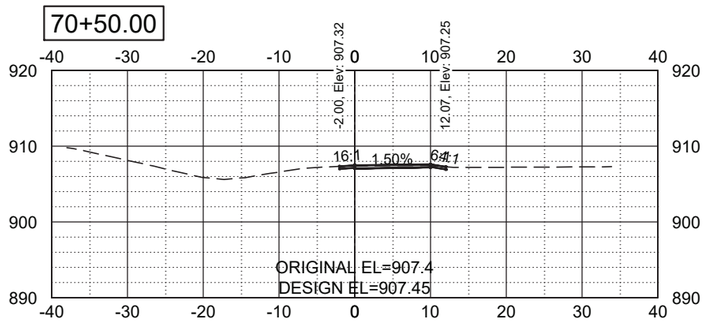


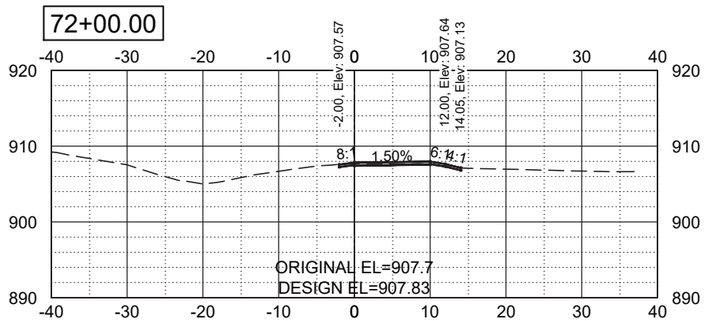








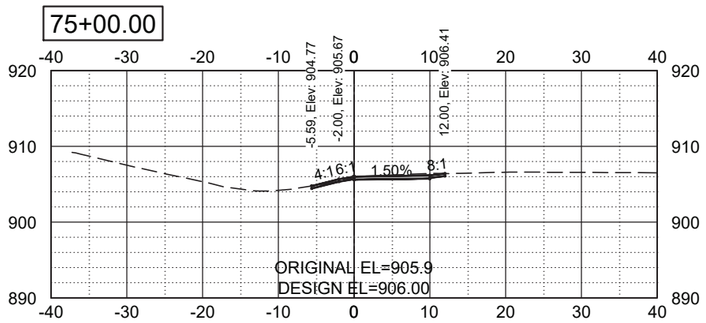


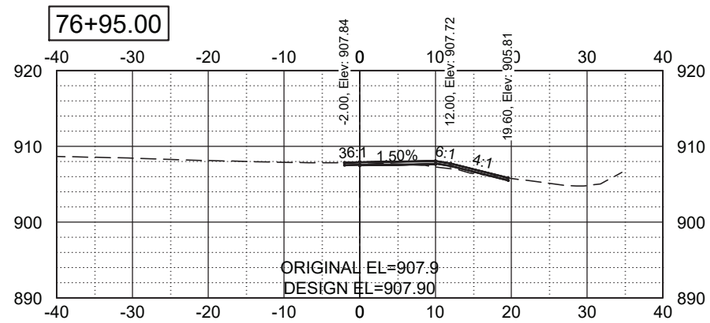


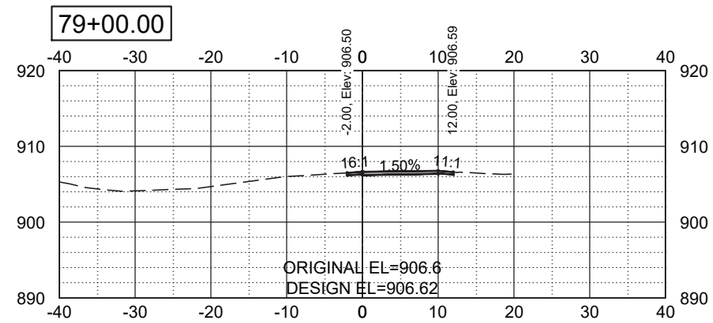
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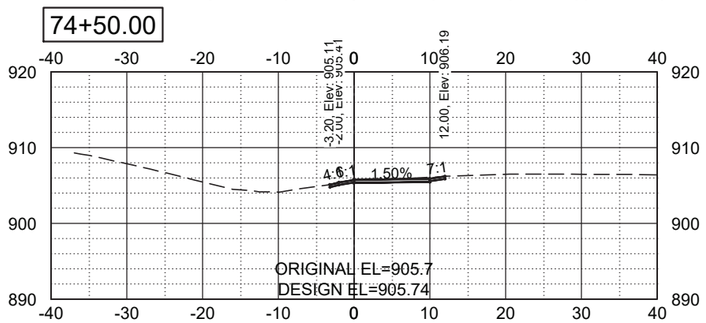
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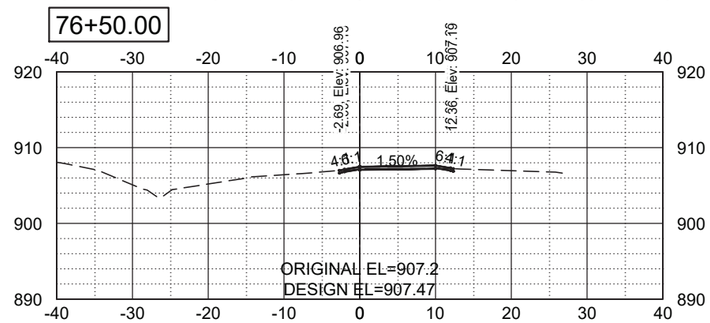
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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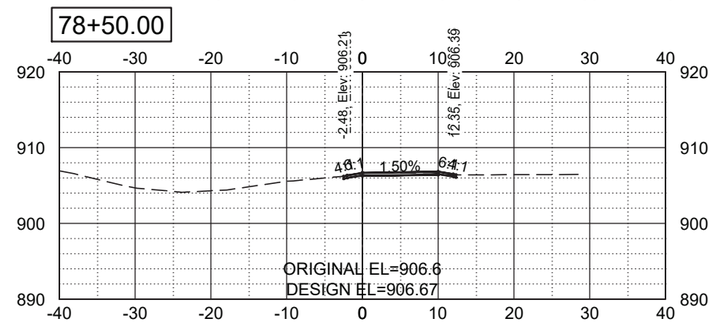


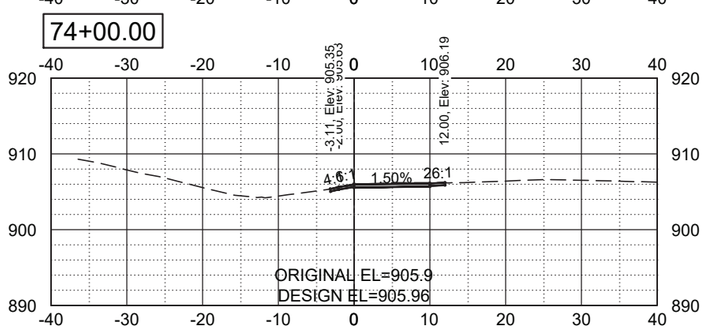


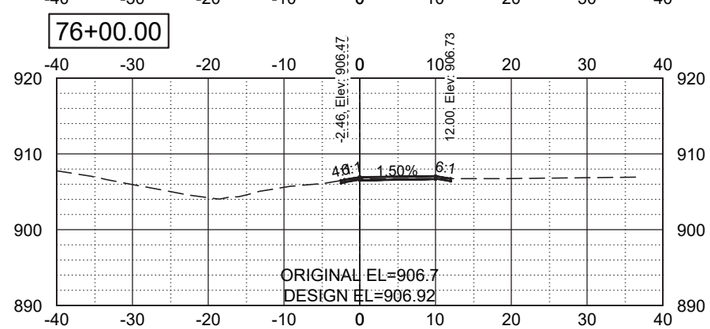


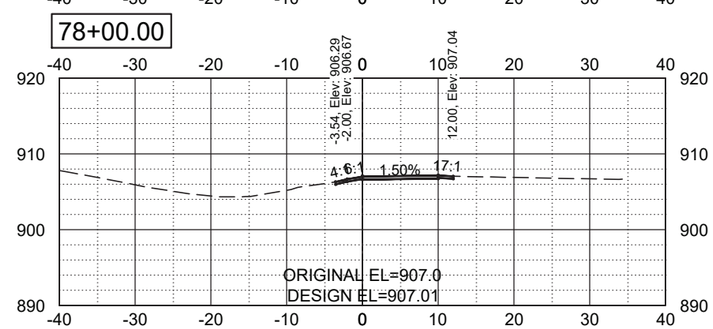


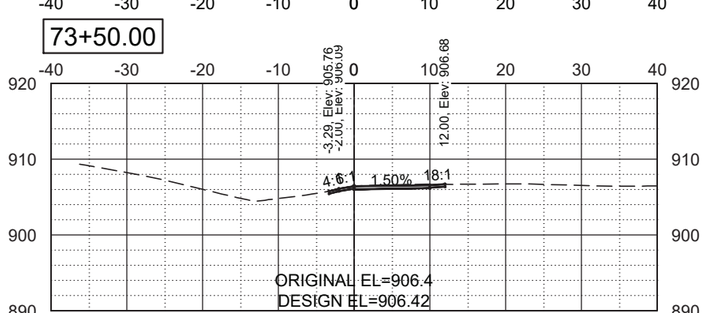


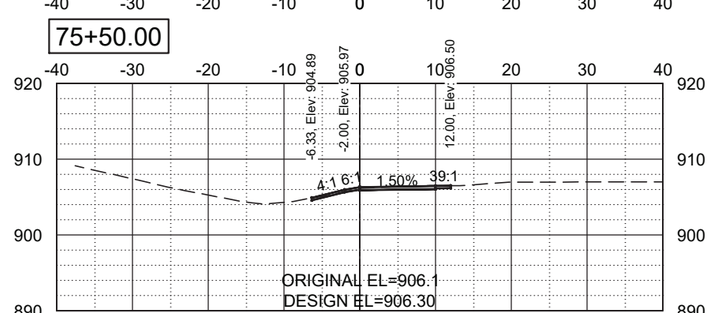


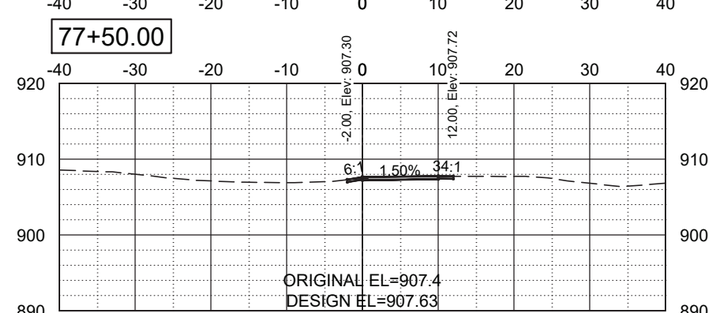








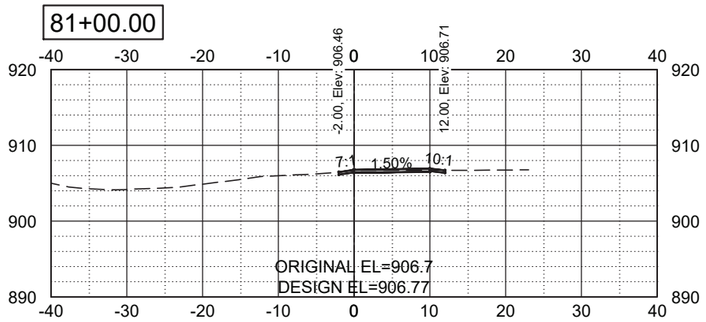


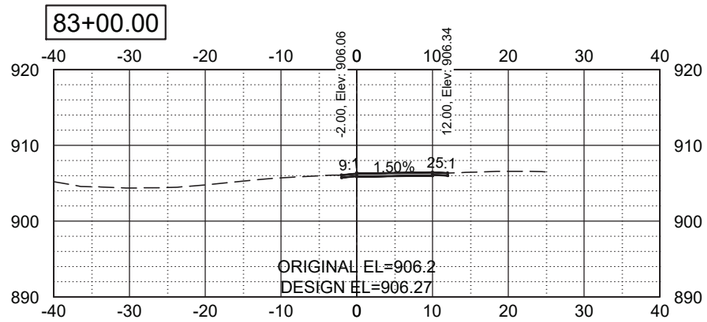


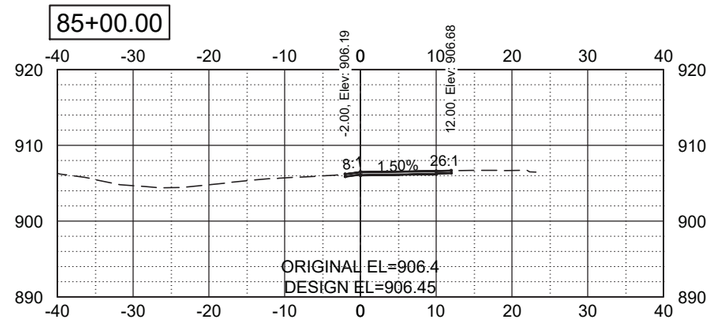
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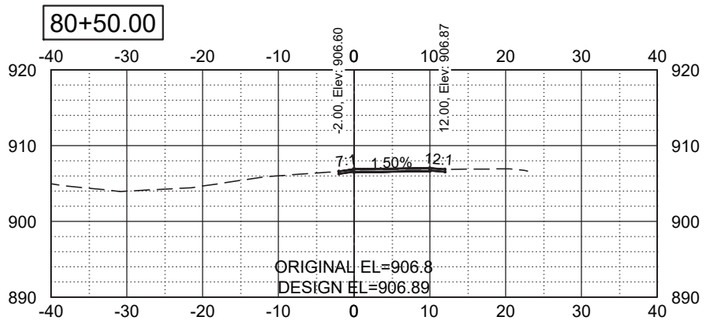
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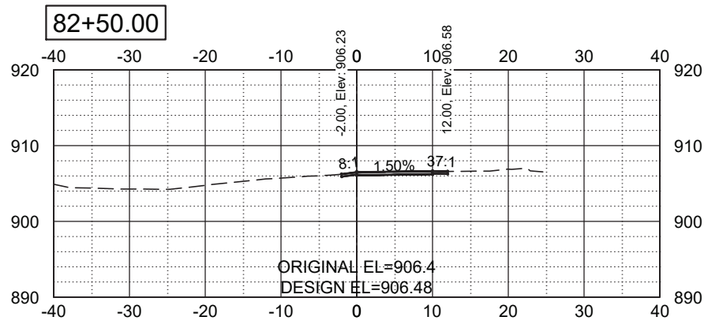
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	200	14

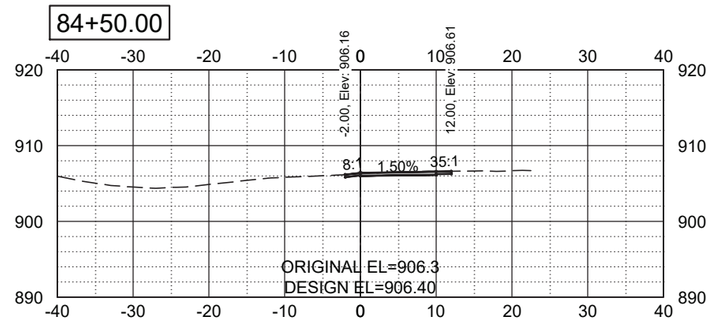


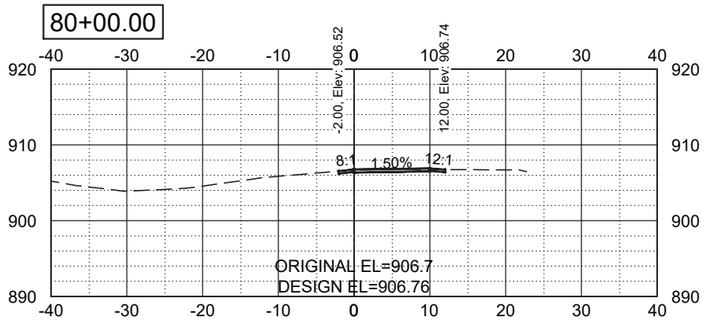


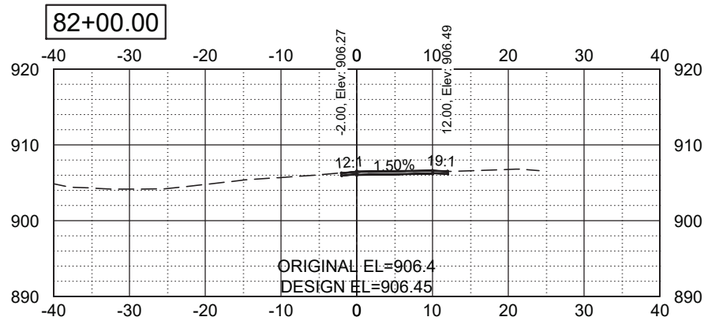


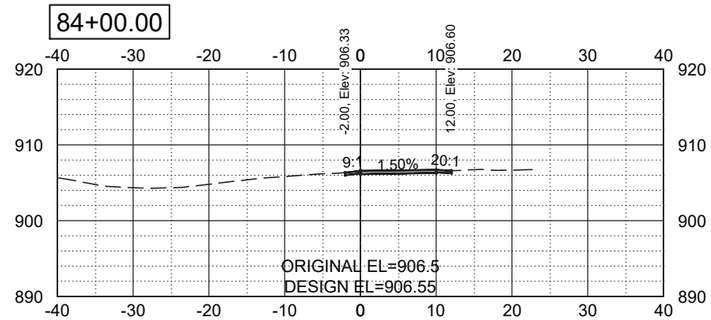


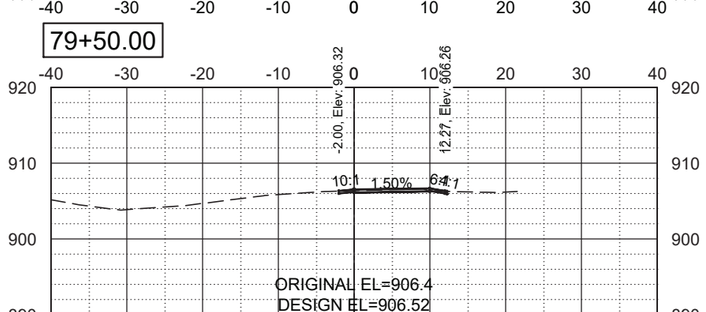


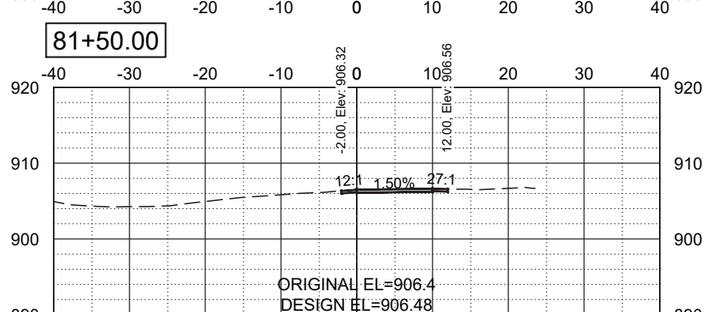


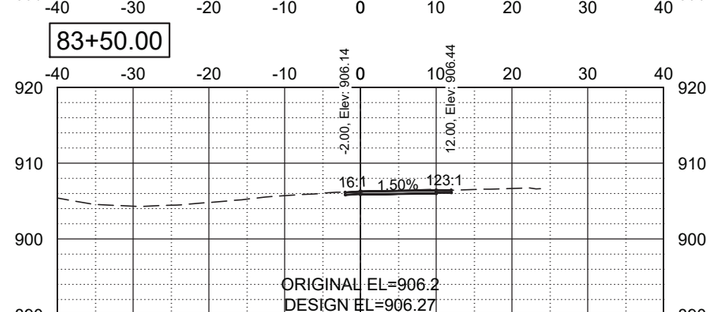








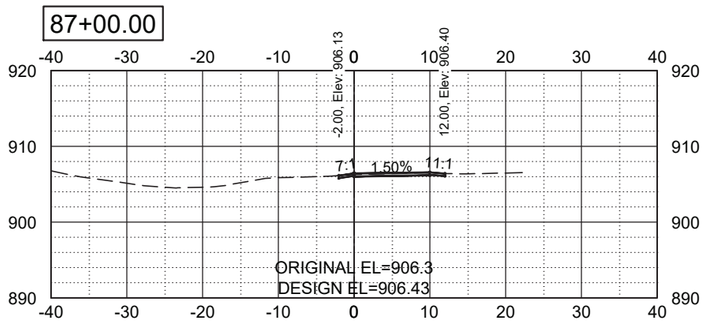


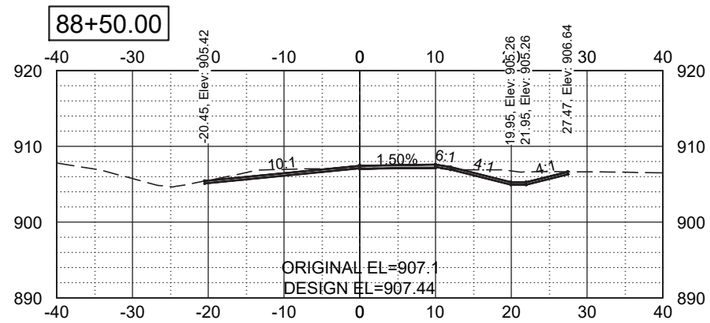


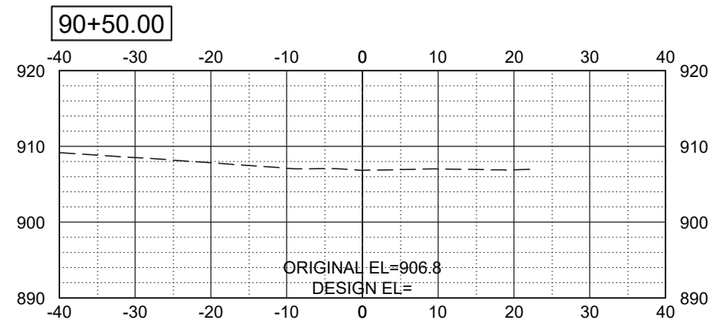
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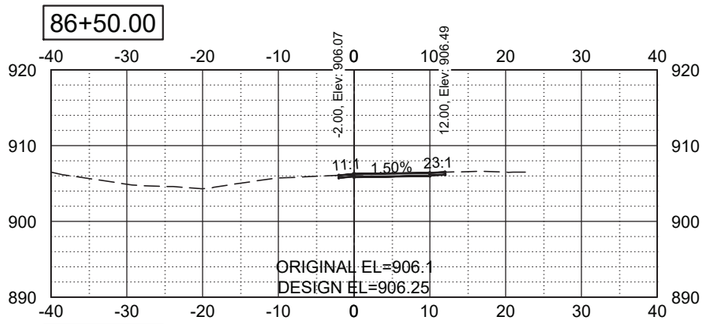
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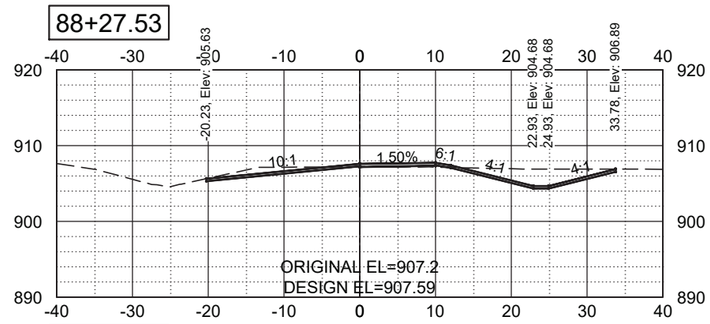
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	200	15

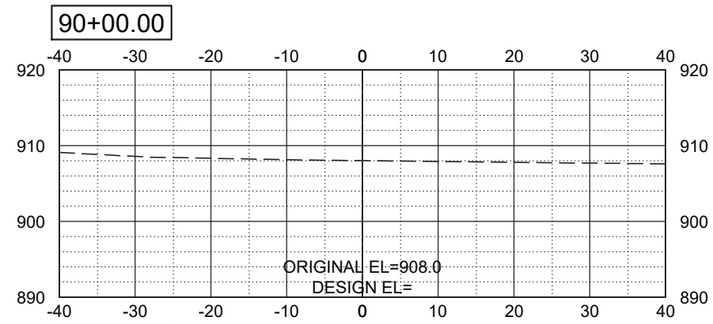


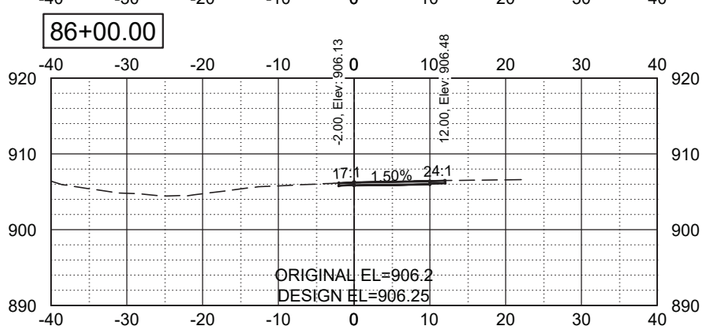


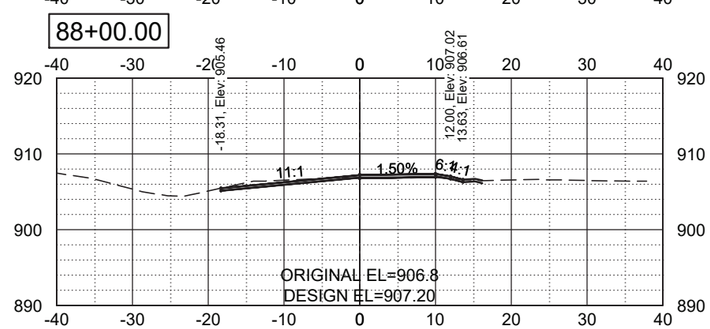


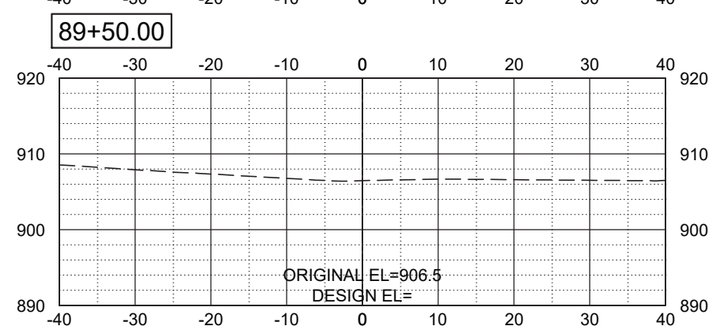


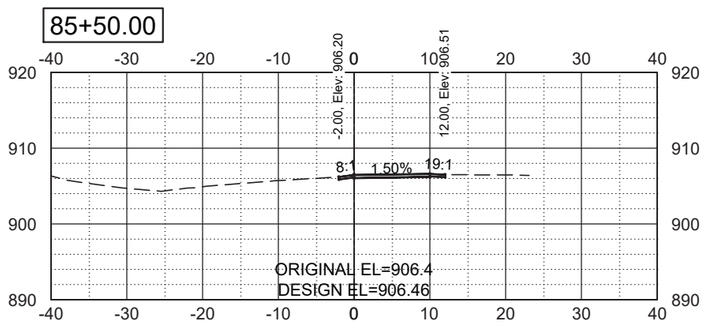


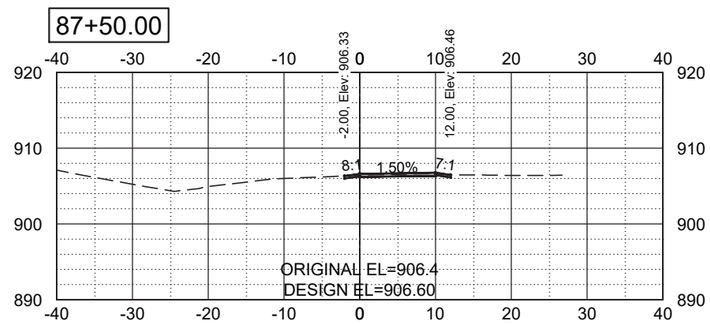


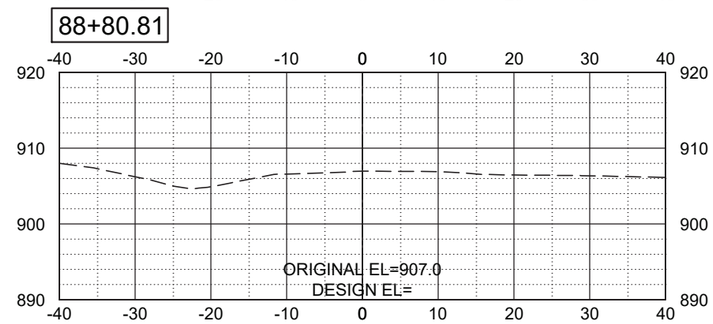








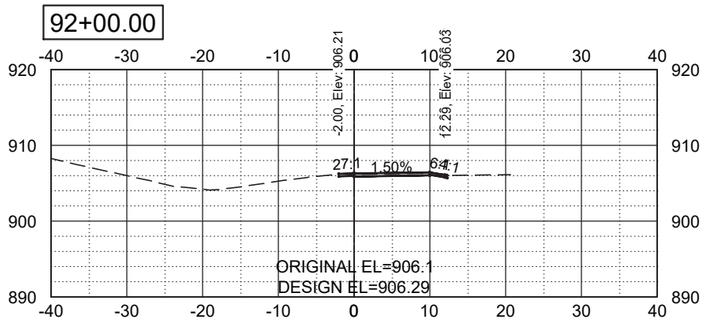


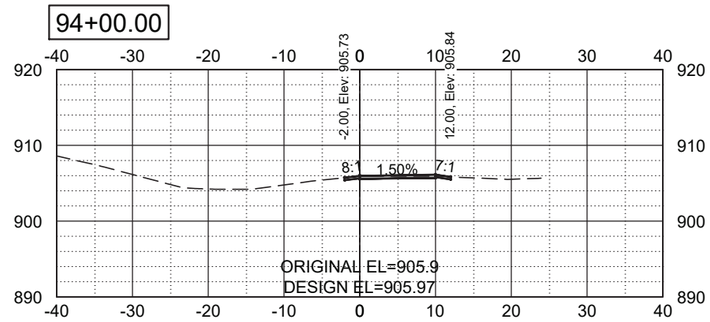


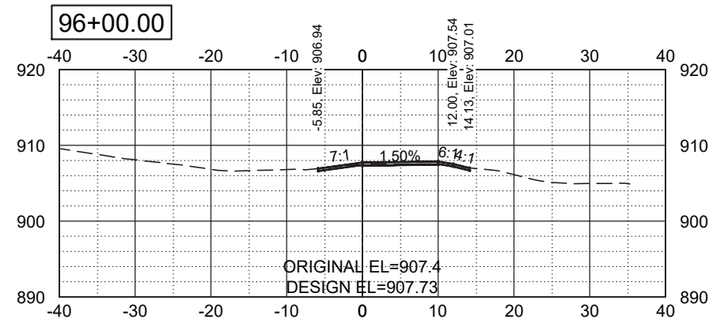
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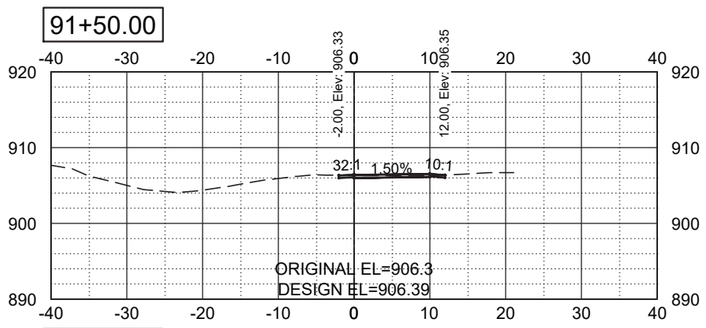
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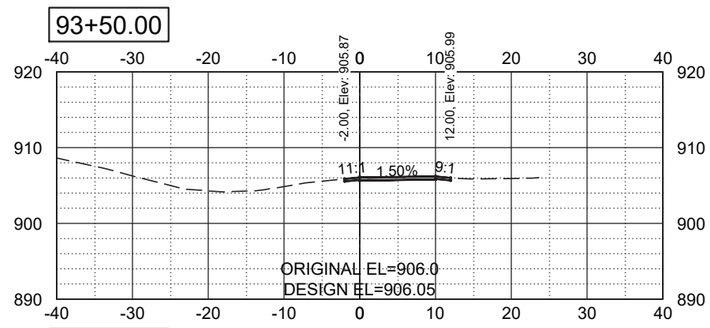
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	200	16

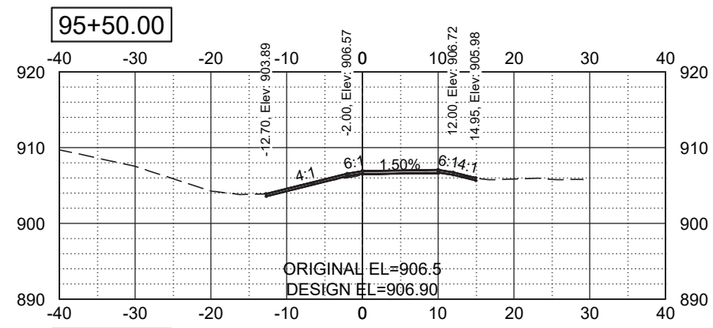


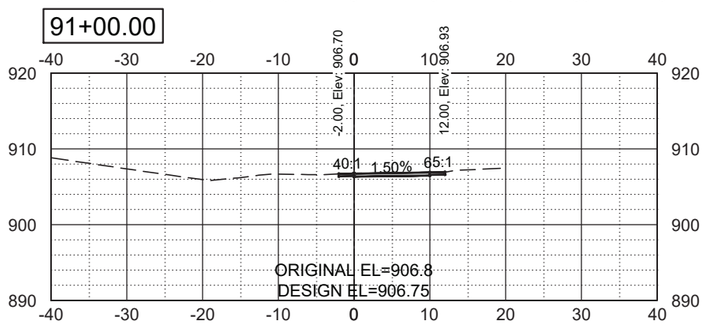


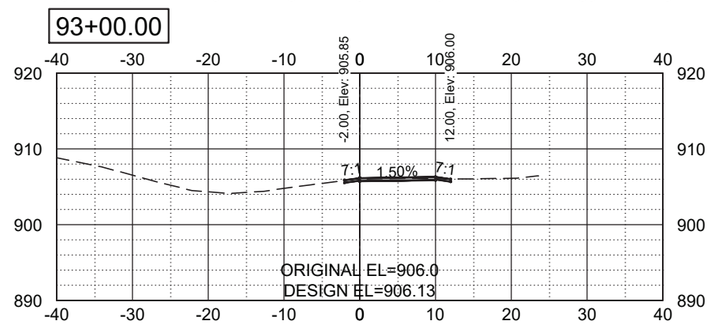


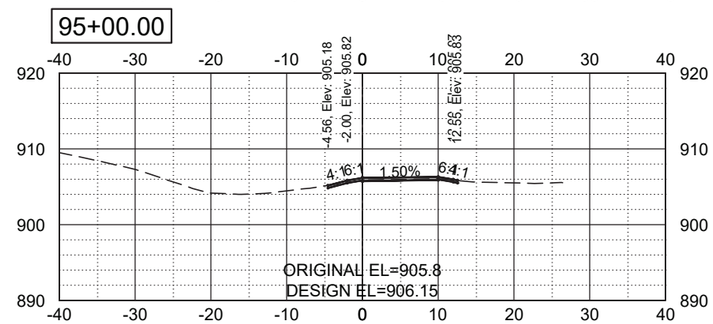


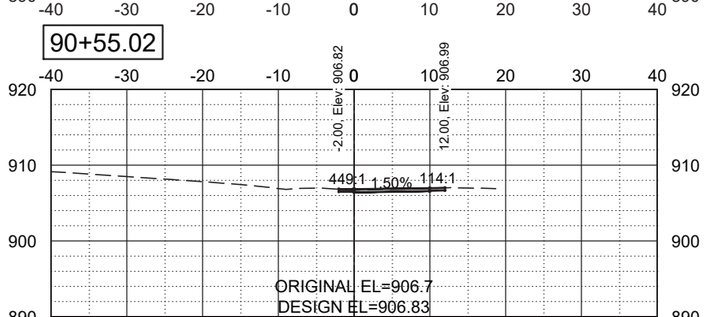


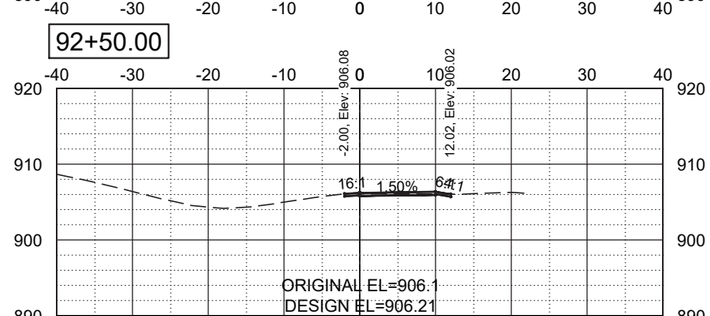


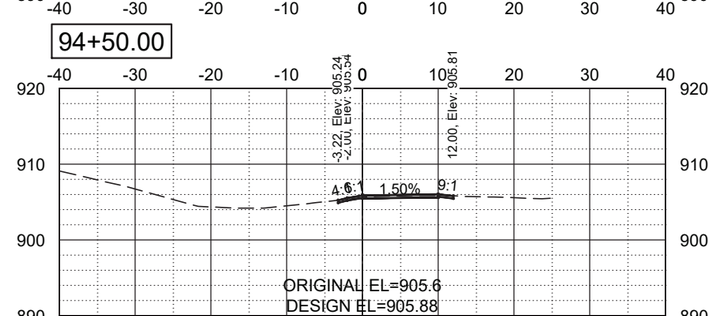








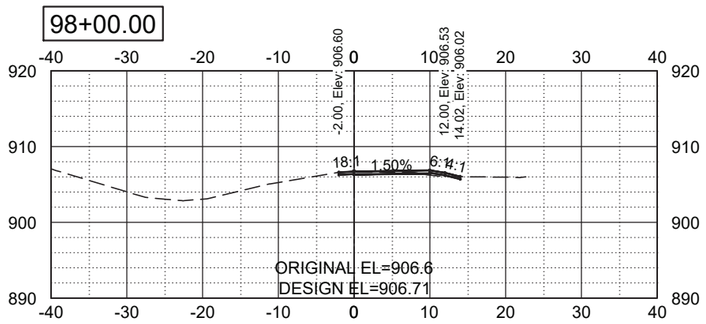


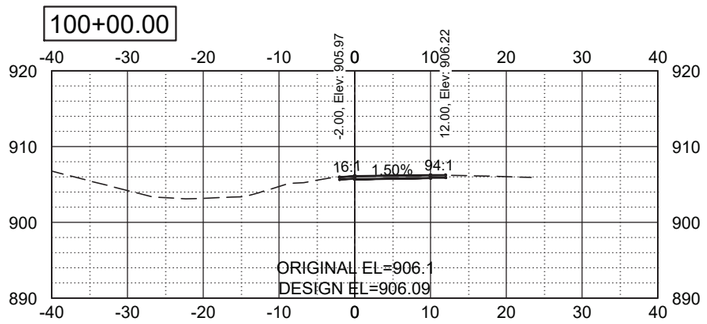


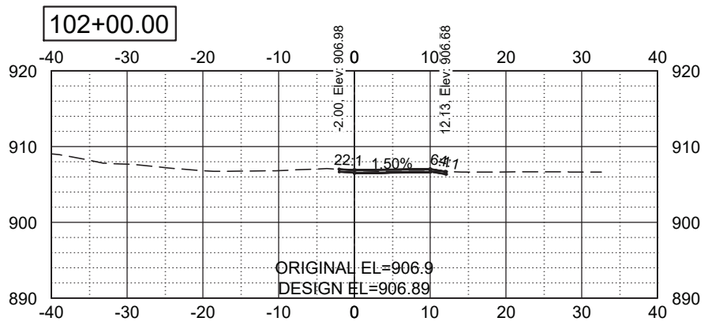
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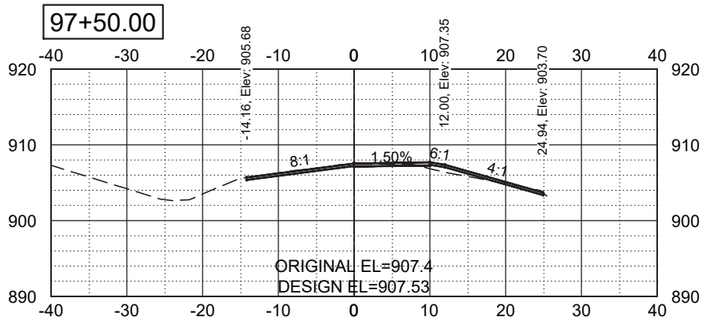
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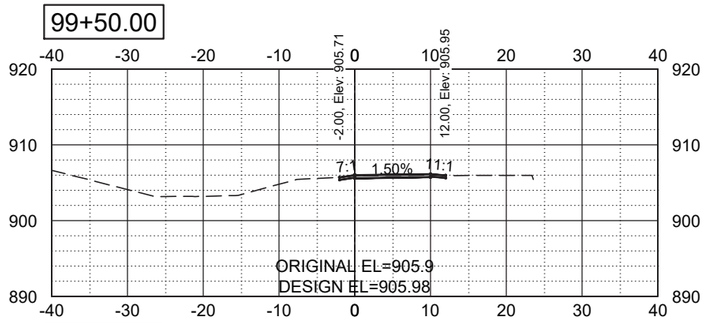
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	200	17

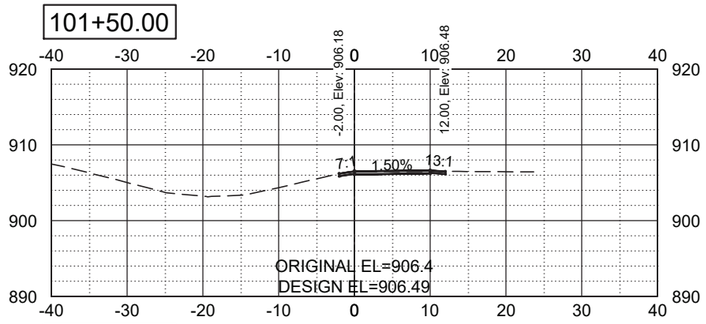


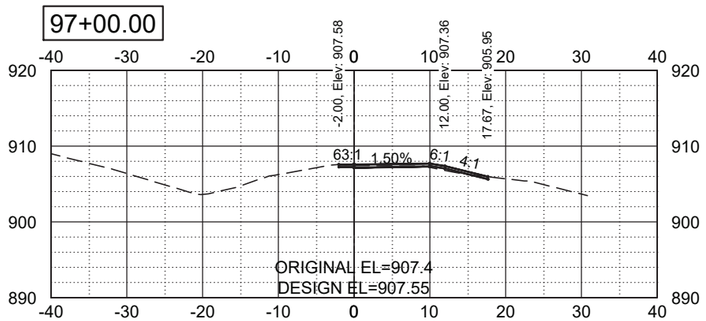


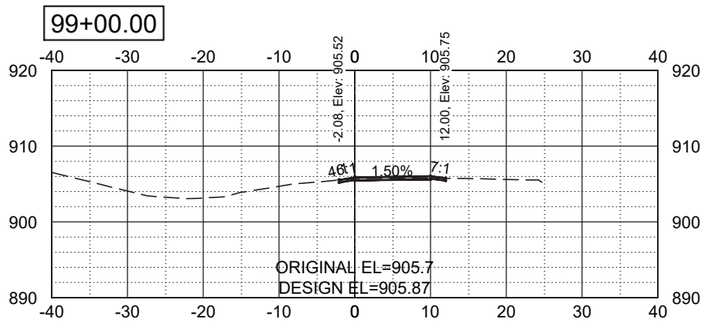


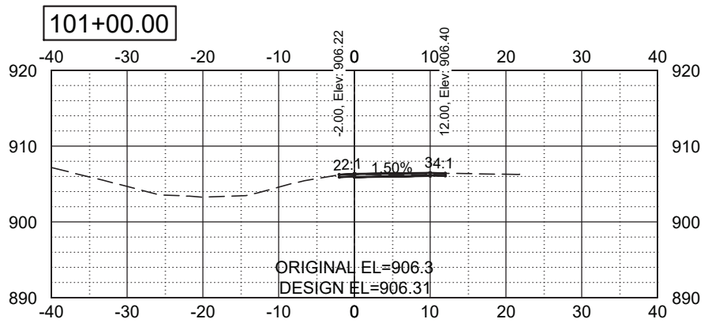


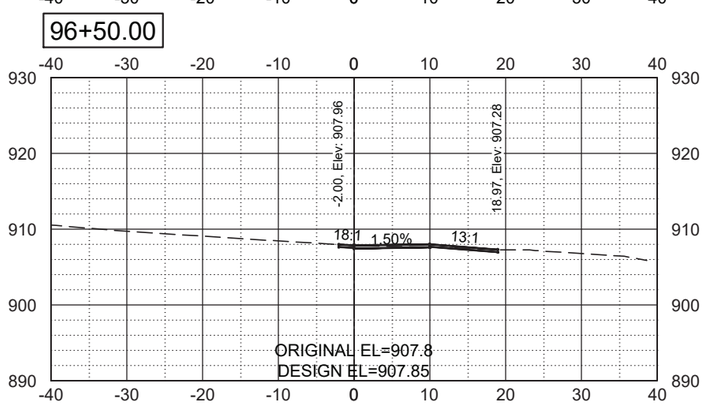


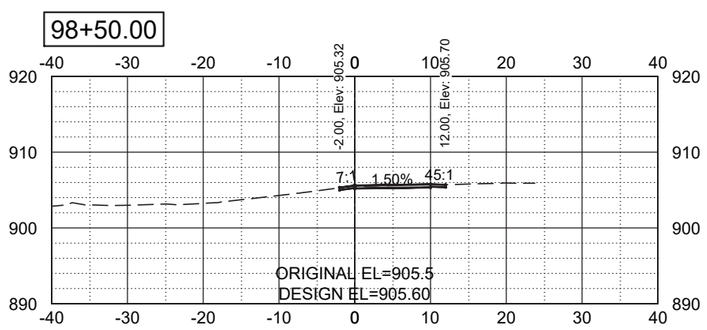


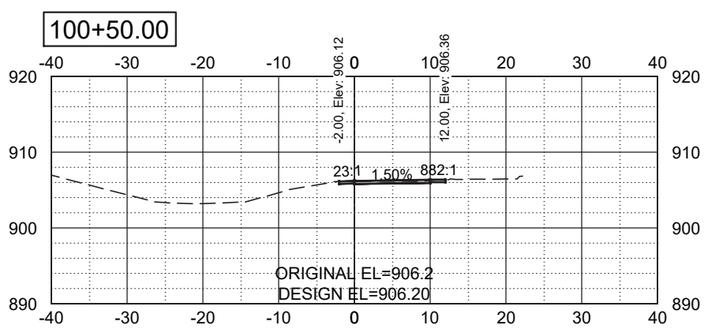










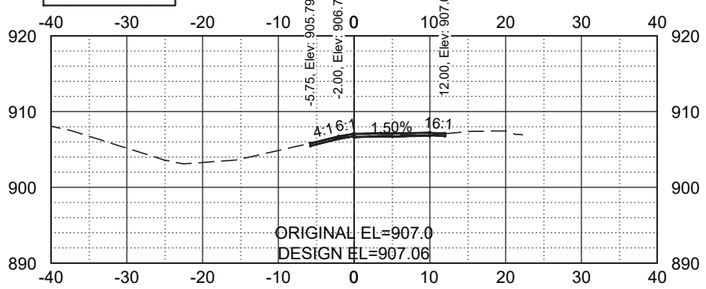


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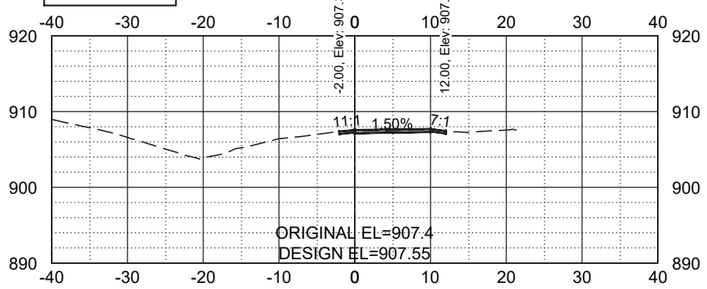
CROSS-SECTIONS

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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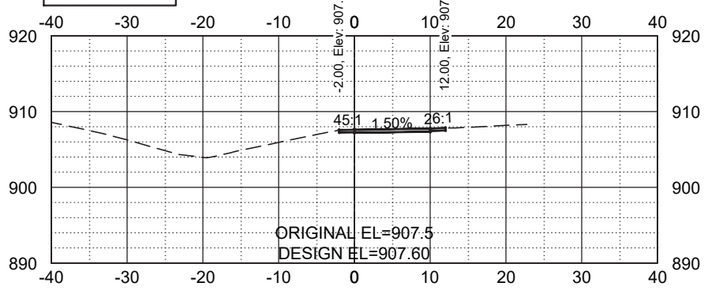
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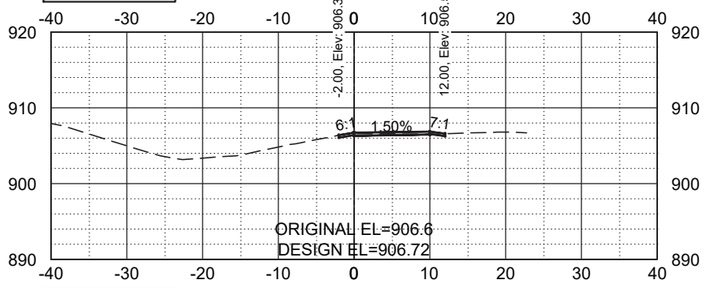
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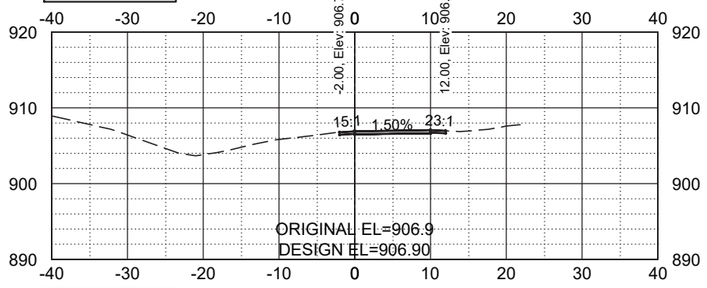
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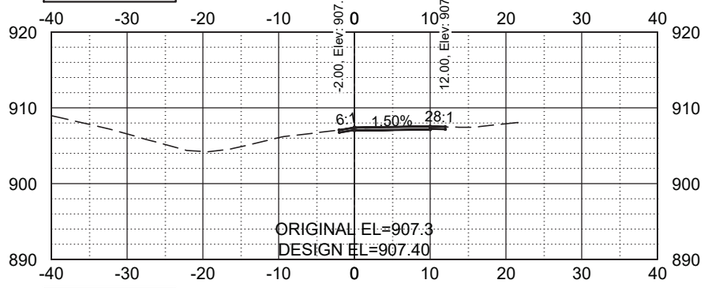
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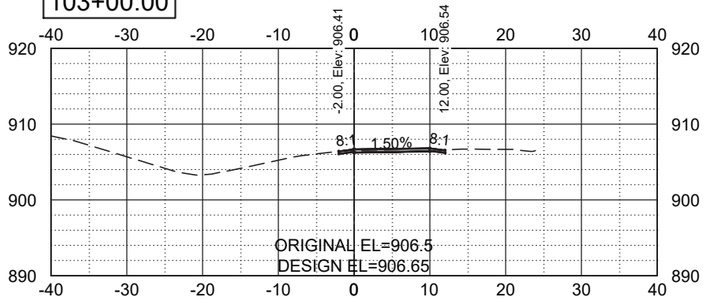
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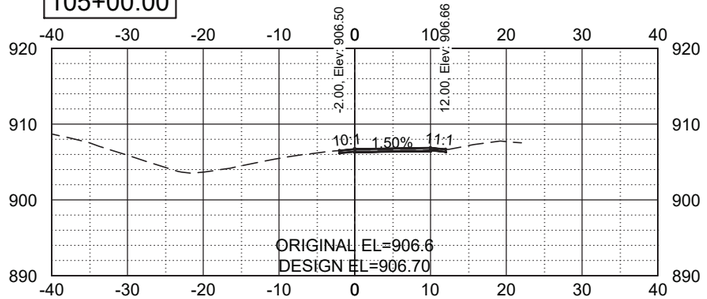
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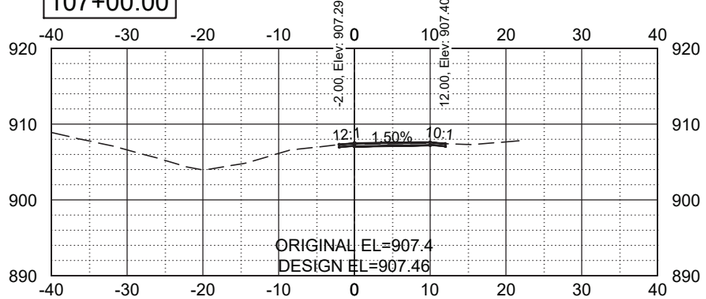
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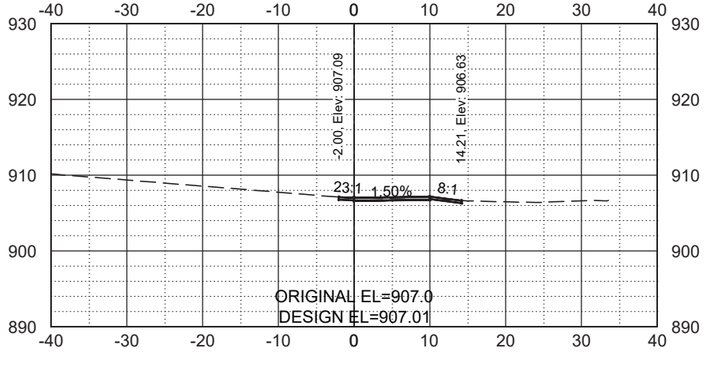
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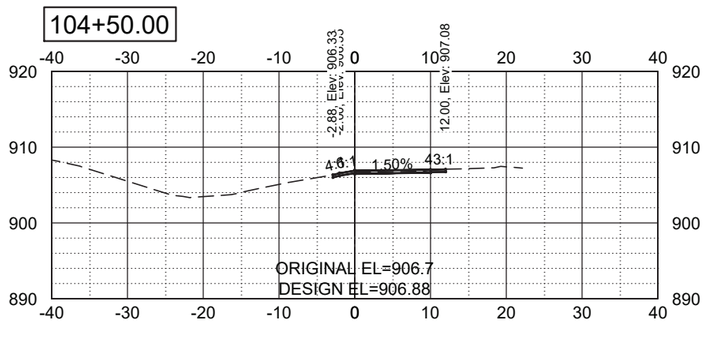
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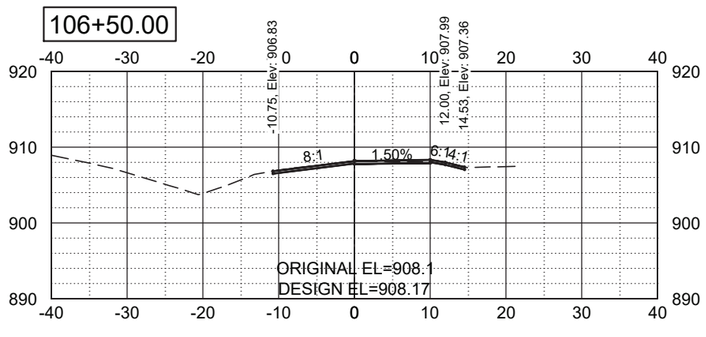
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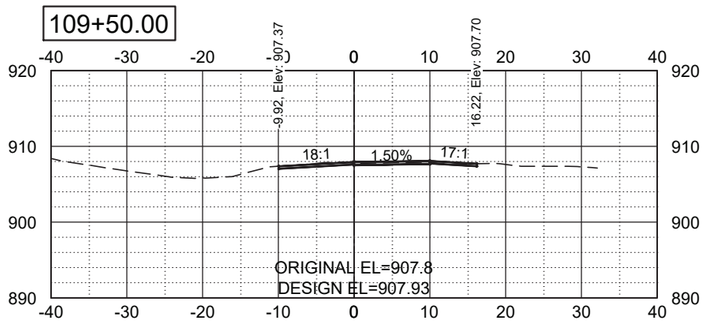
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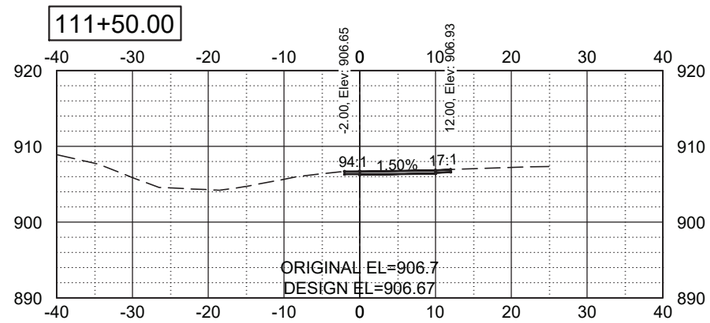


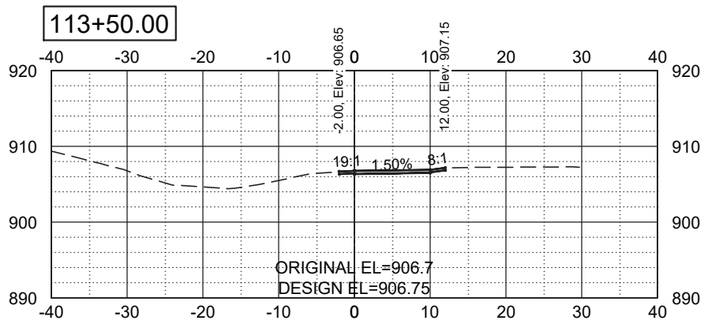
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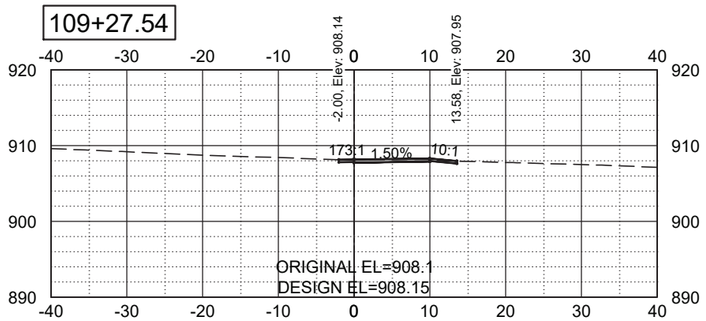
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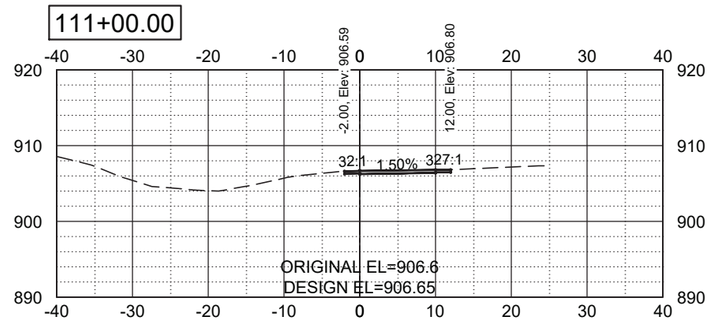
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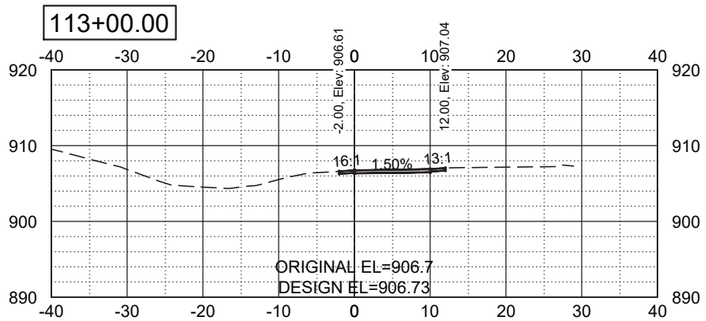


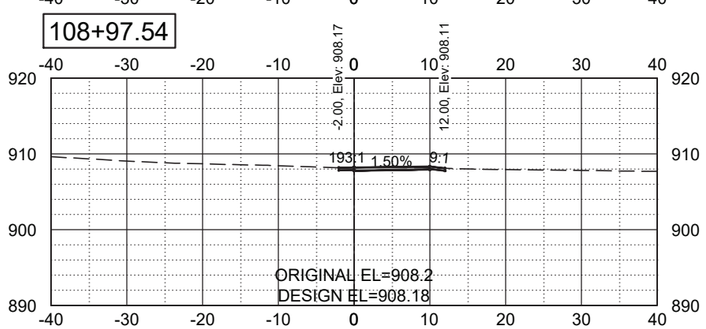


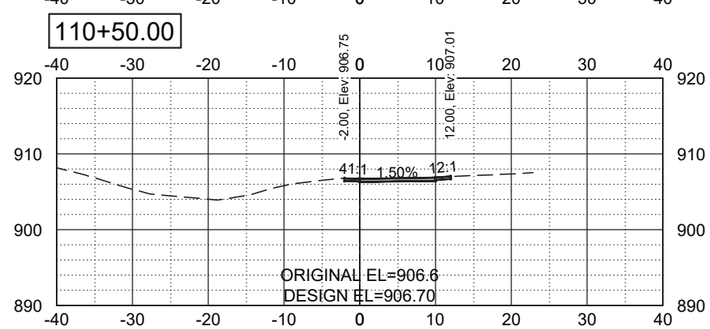


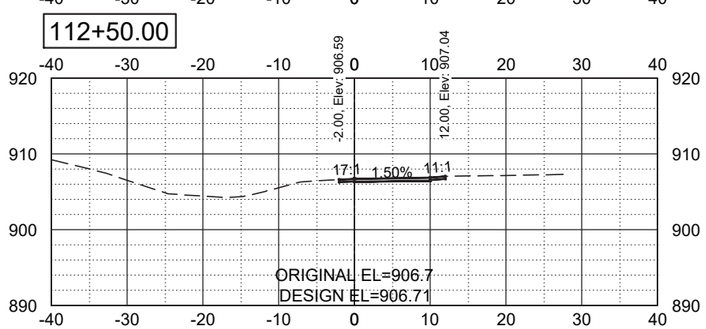


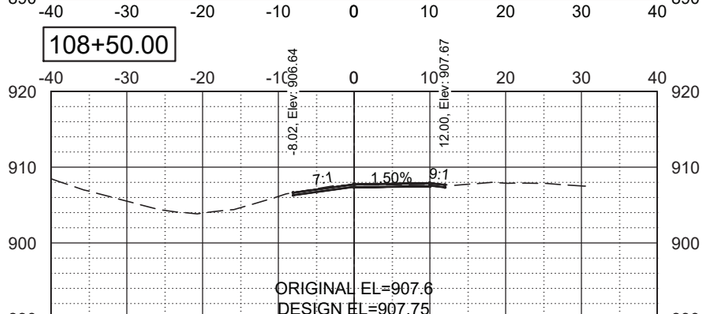


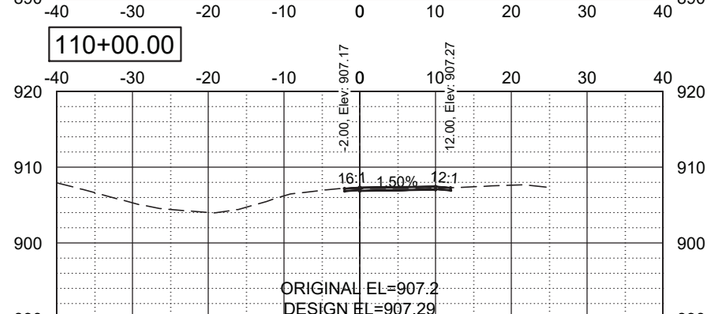


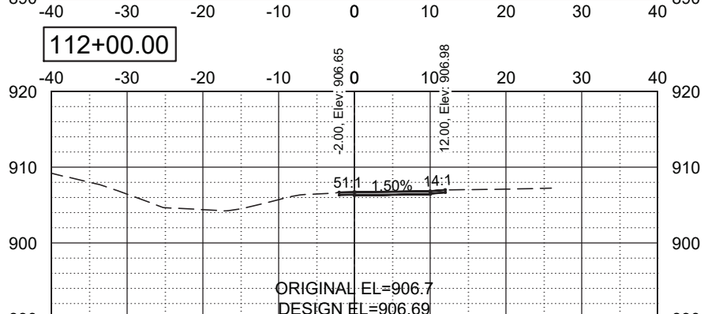








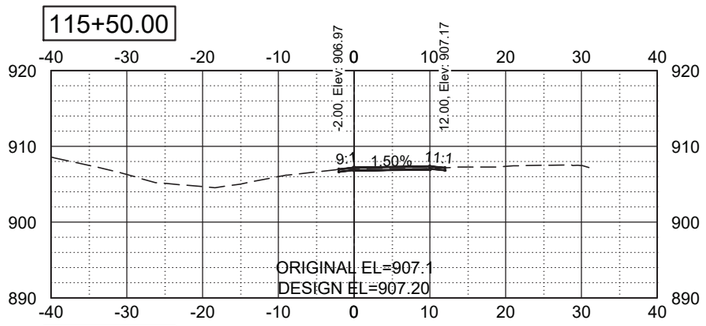


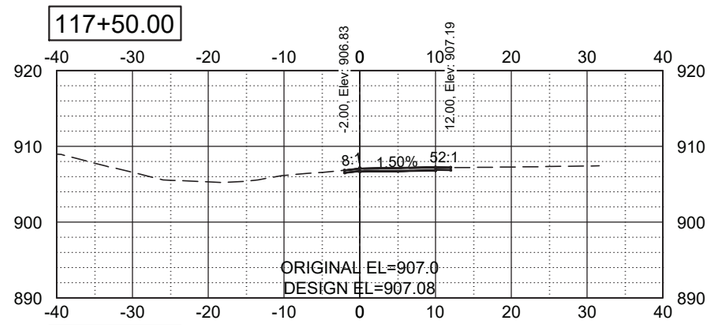


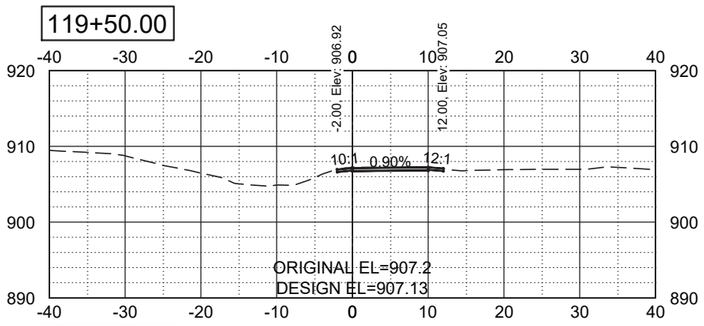
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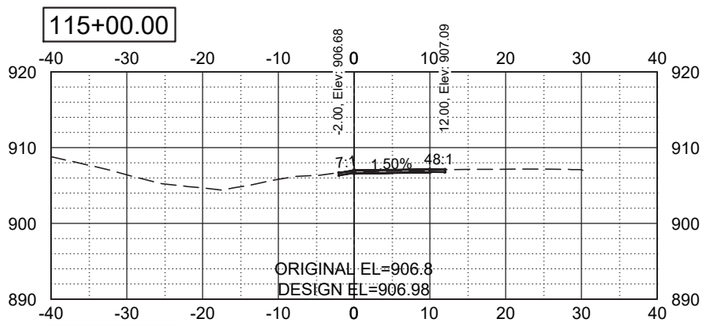
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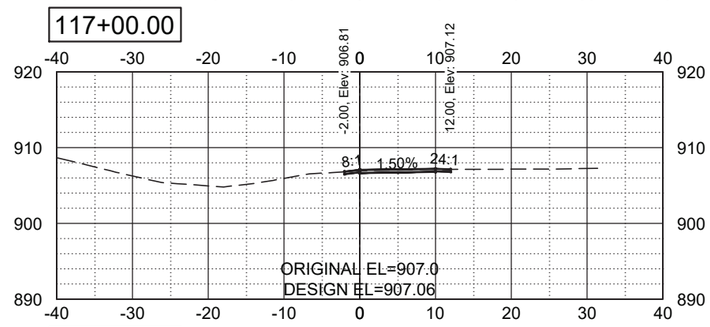
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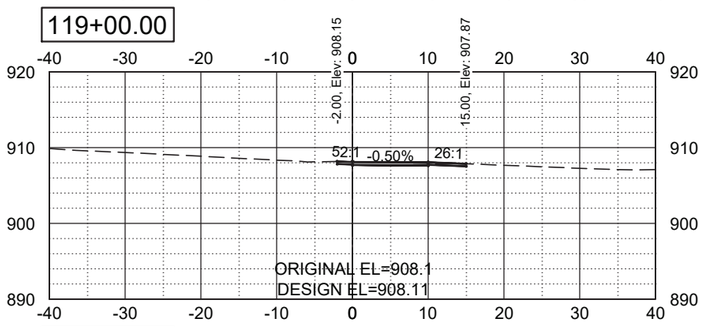


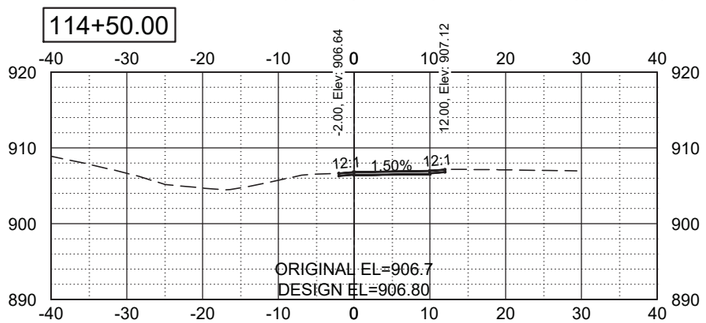


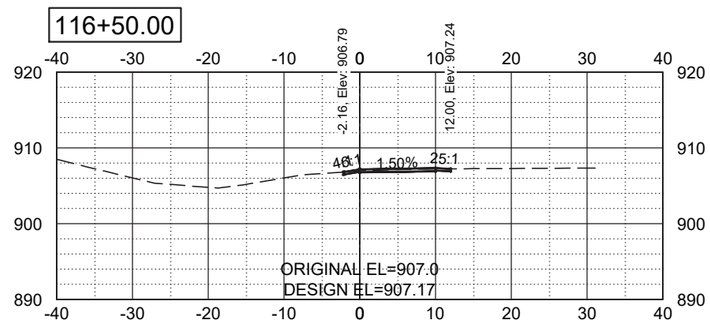


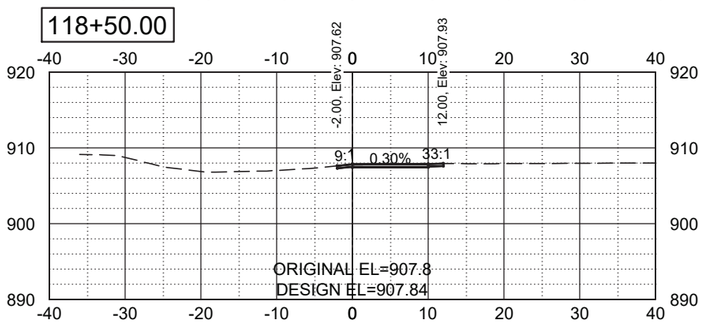


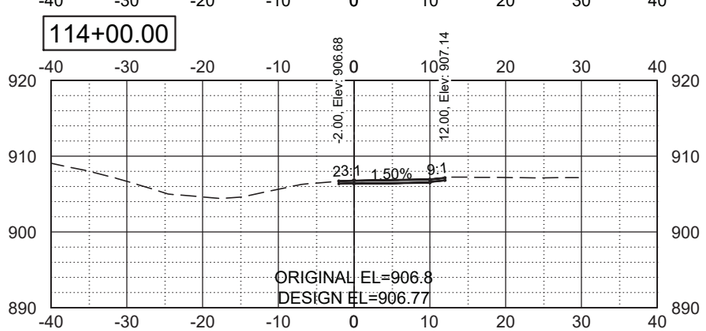


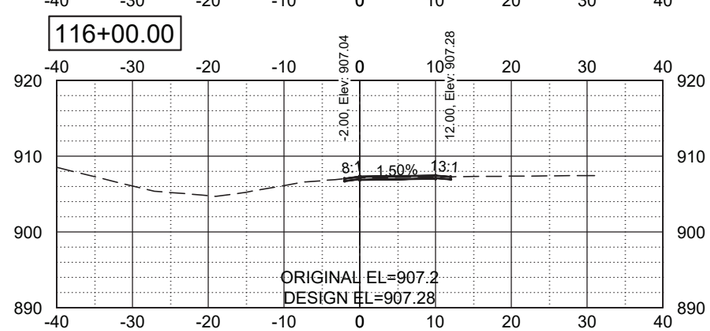


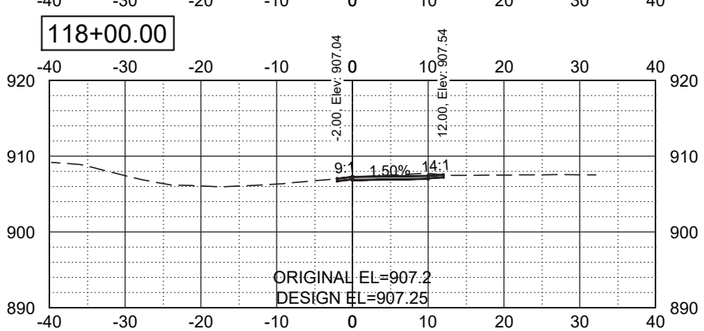








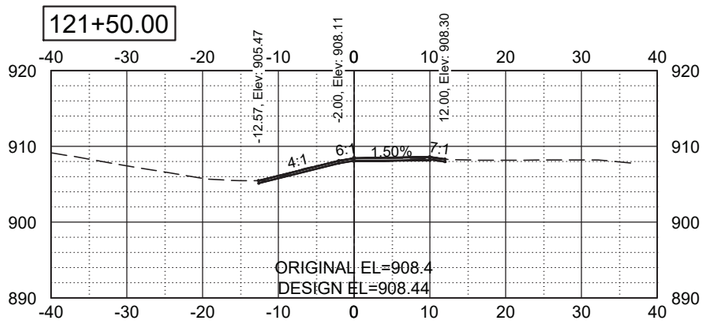


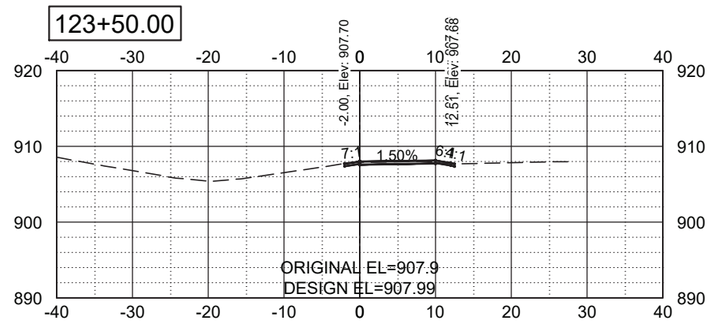


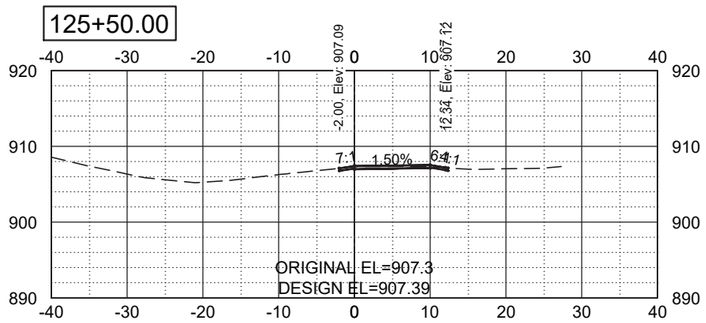
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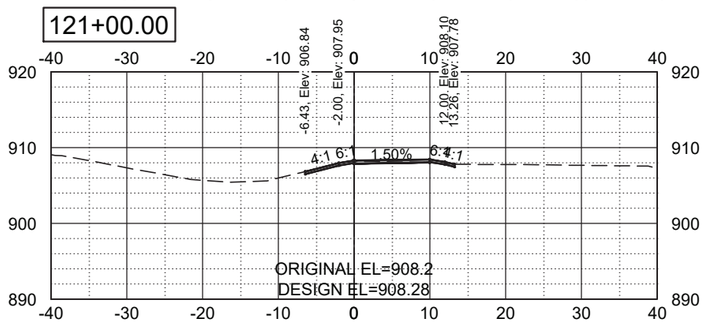
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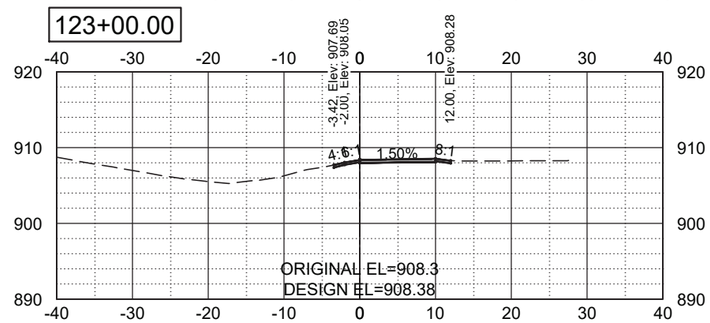
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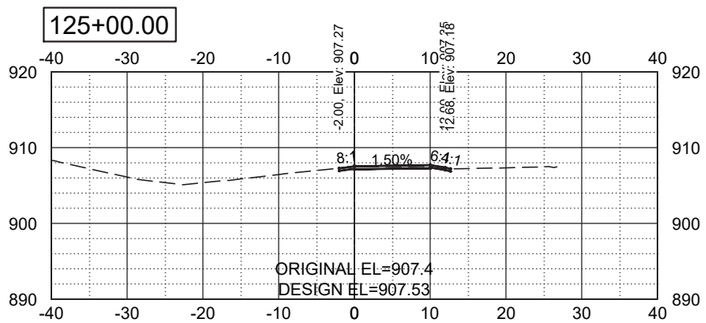


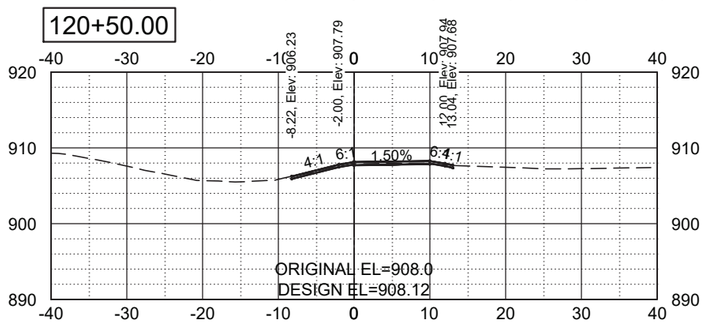


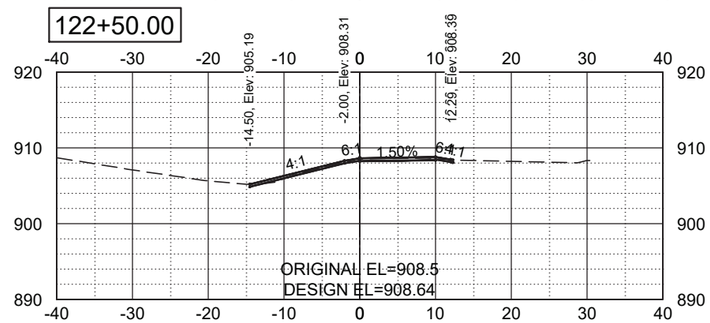


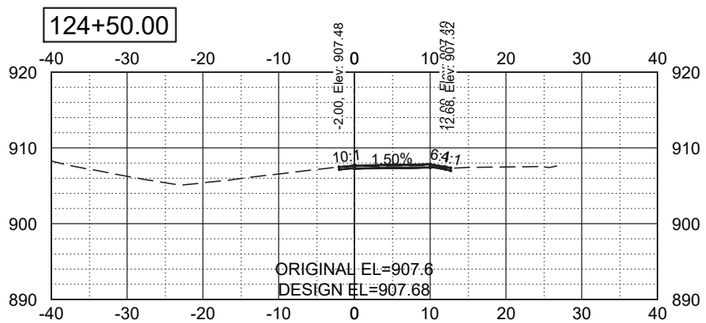


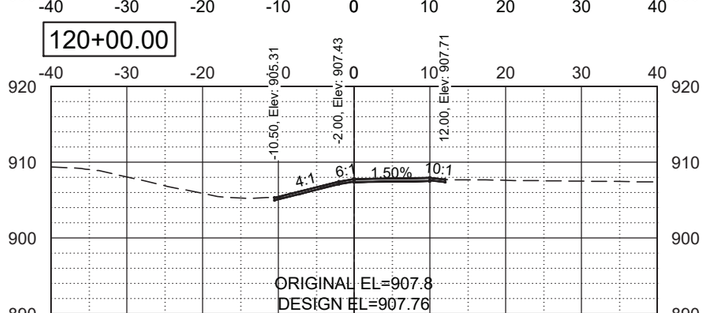


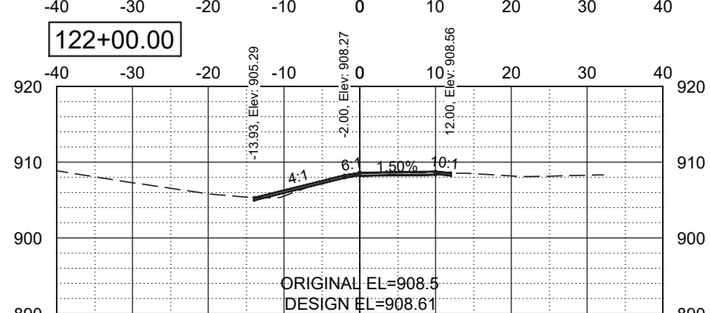


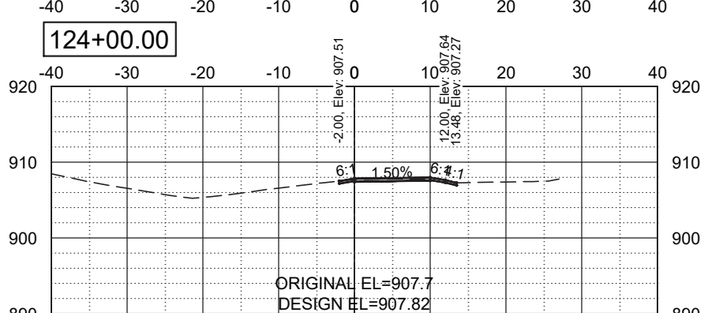








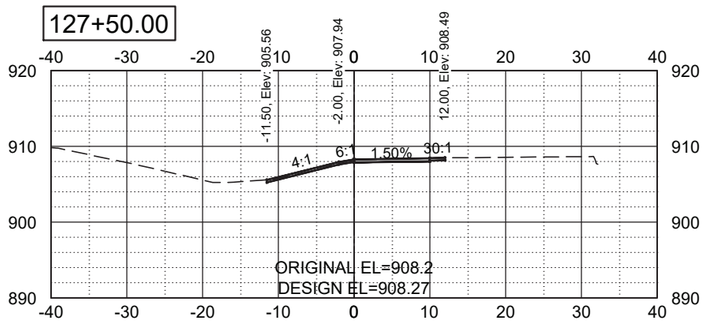


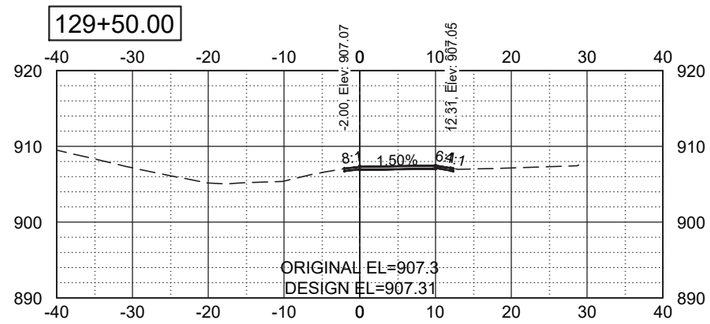


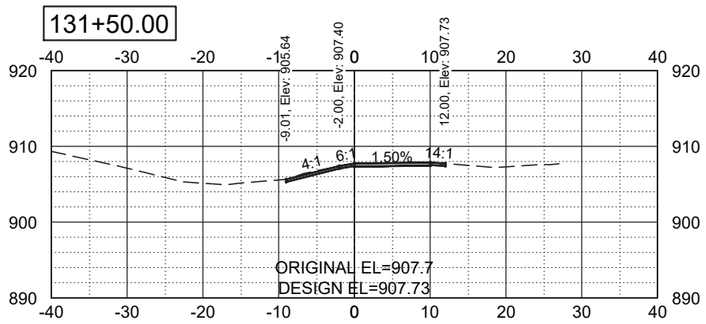
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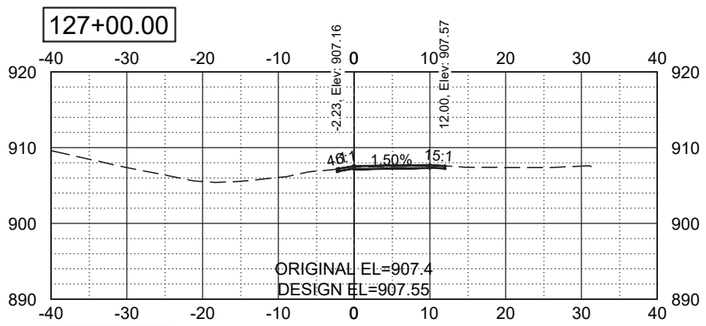
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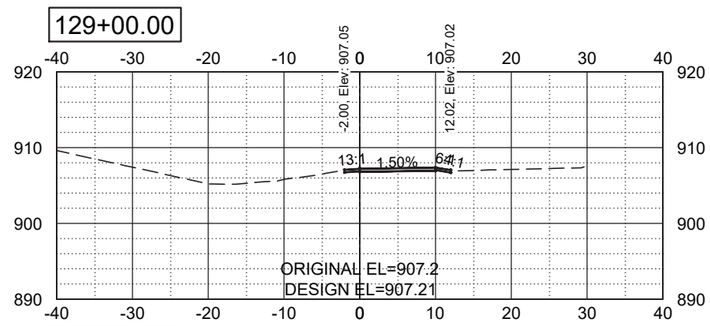
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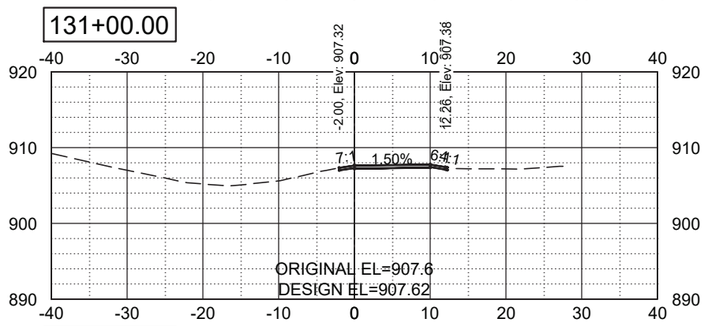


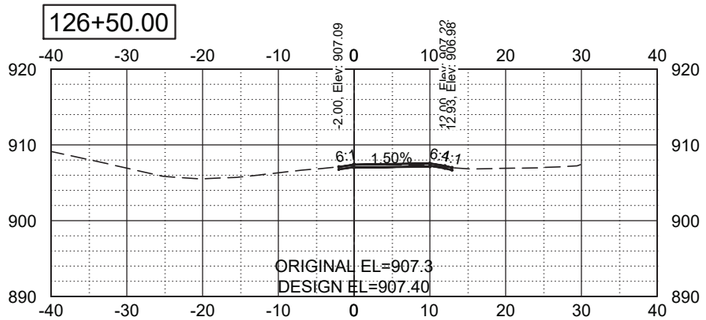


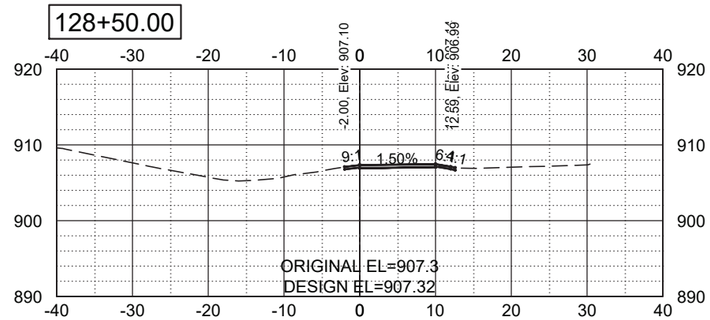


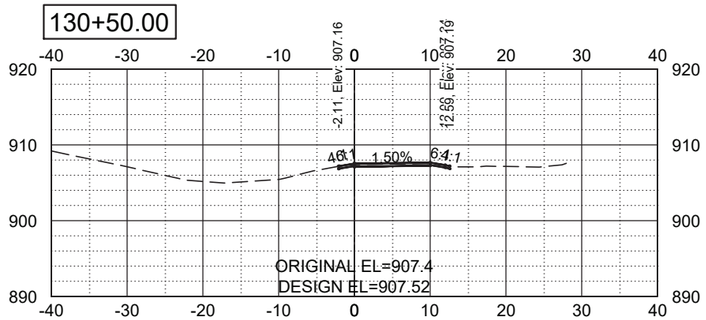


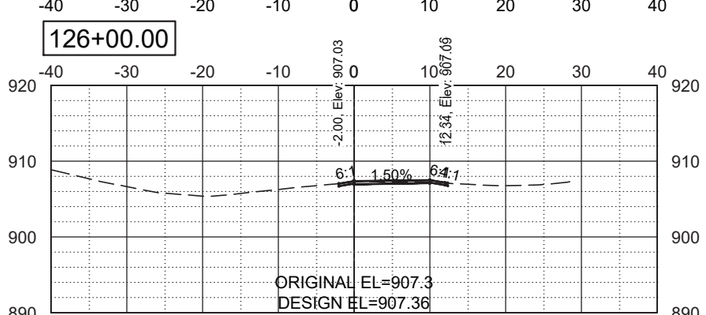


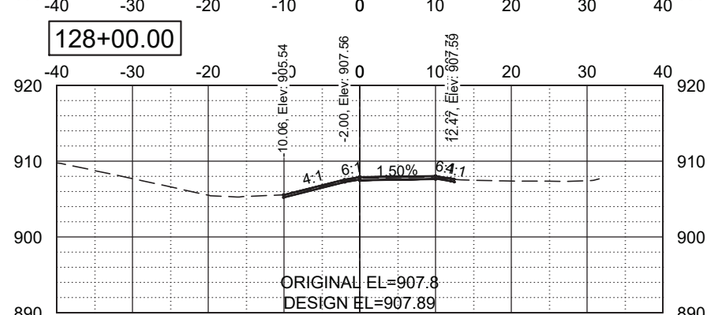


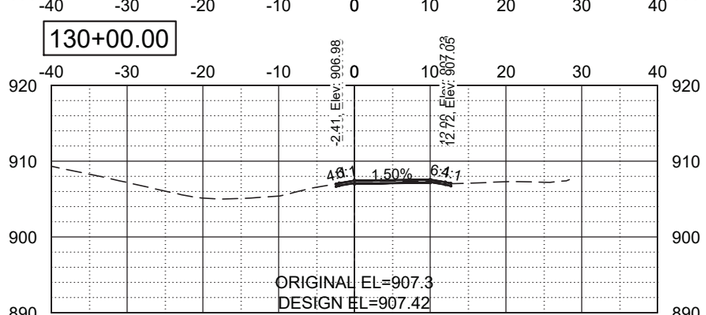








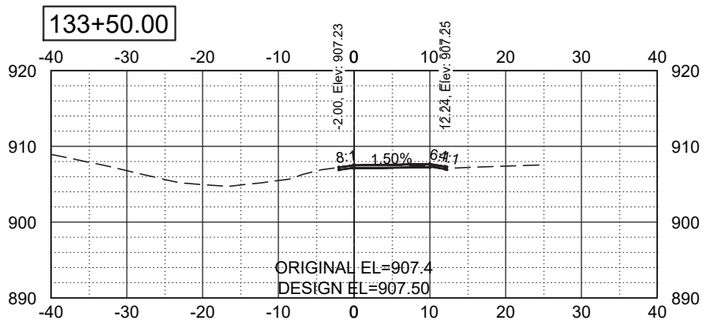


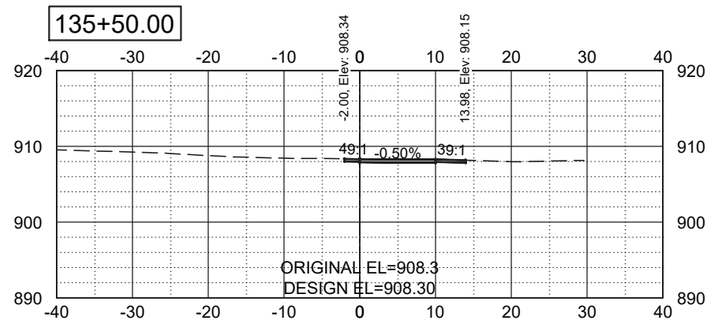


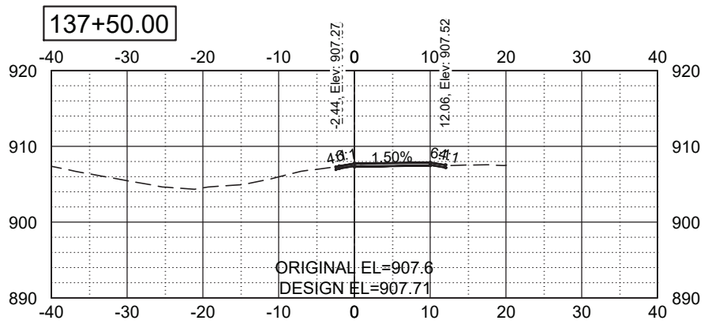
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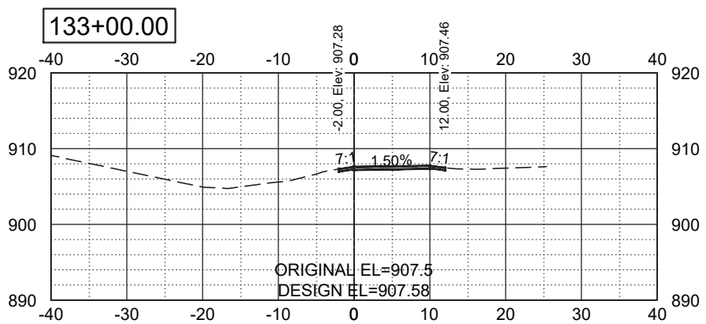
CROSS-SECTIONS

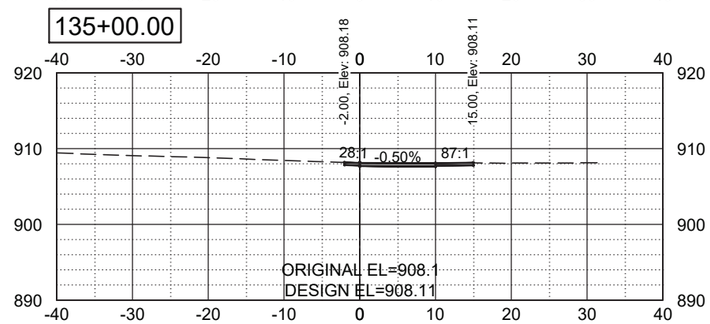
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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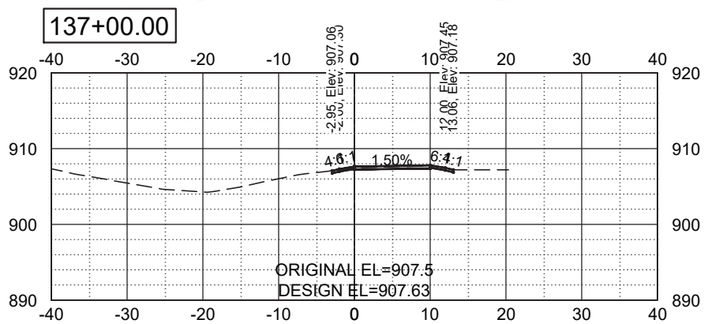


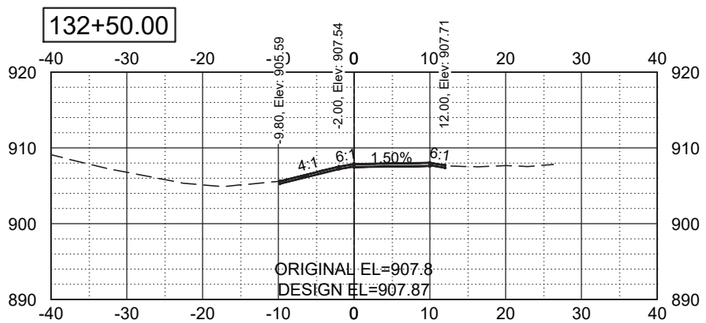


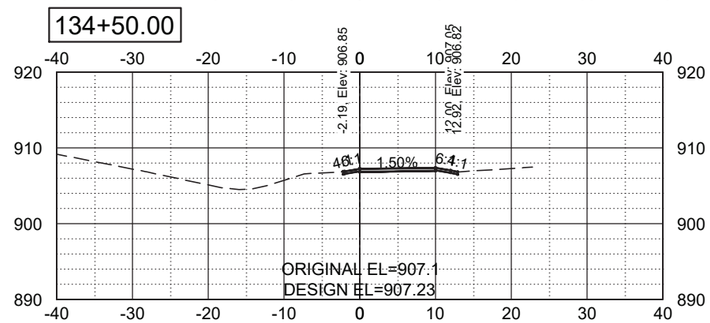


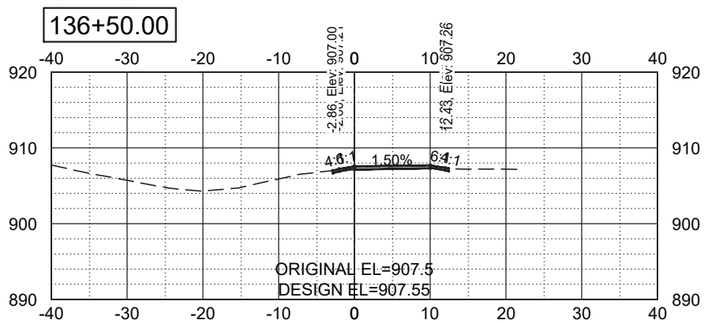


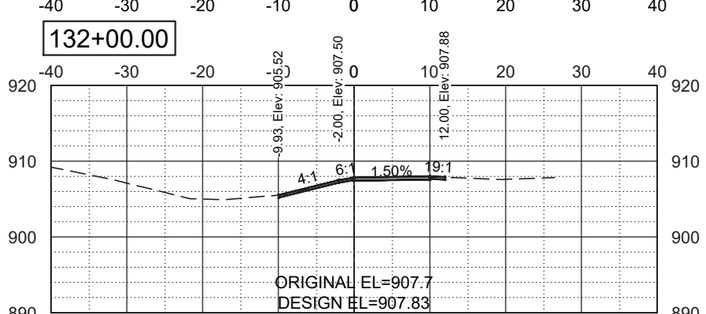


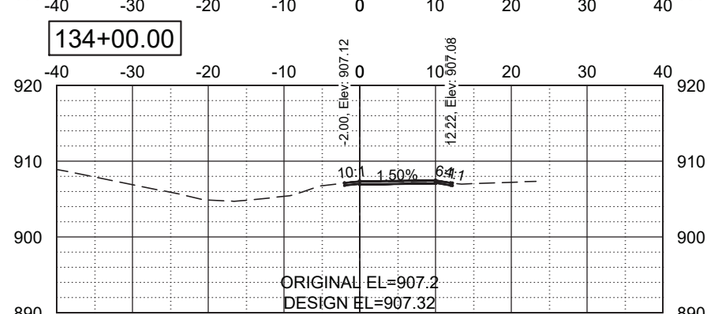


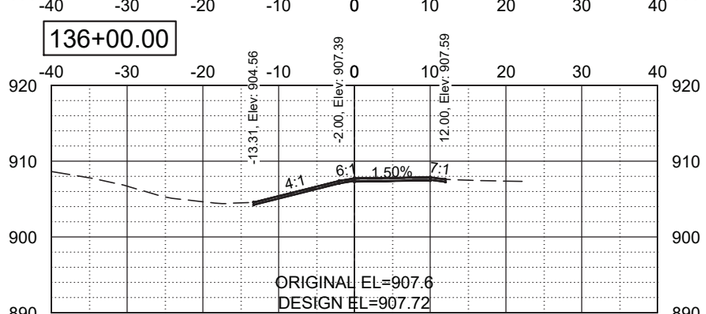








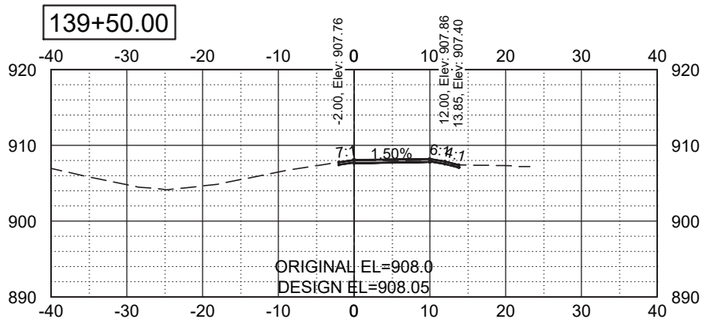


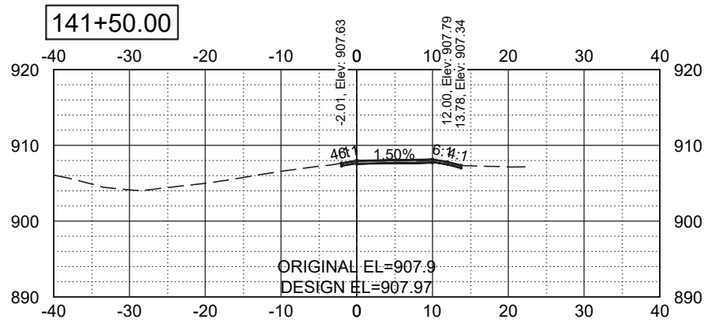


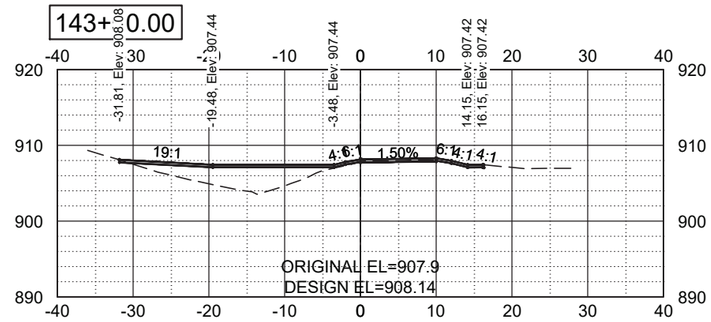
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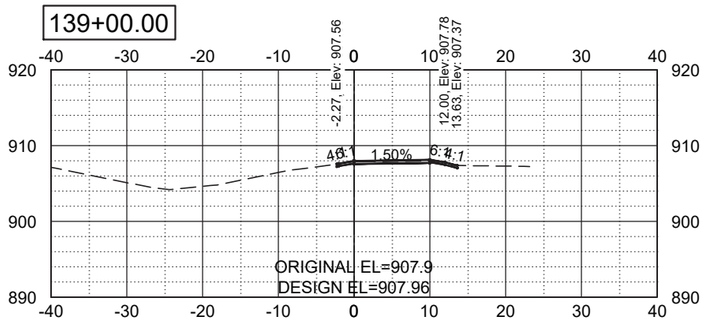
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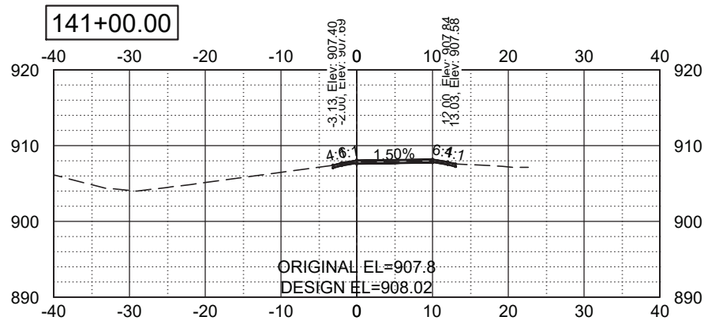
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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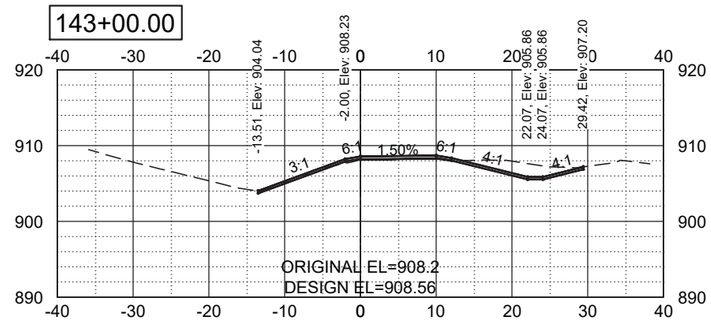


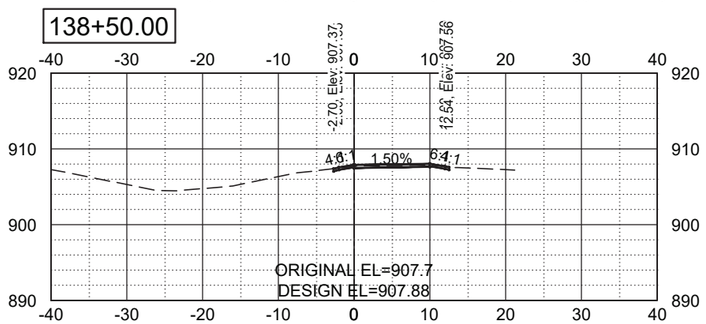


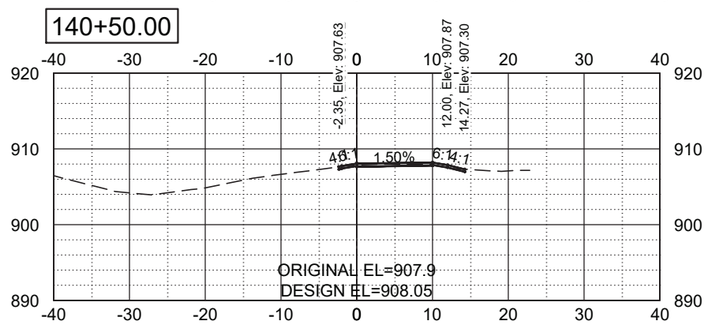


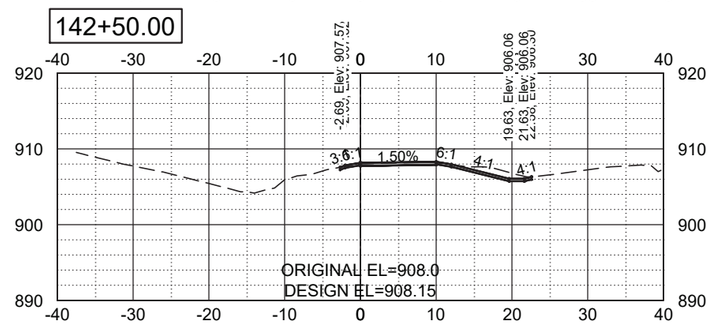


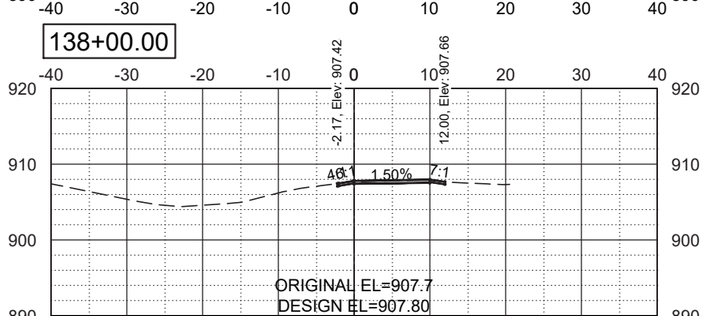


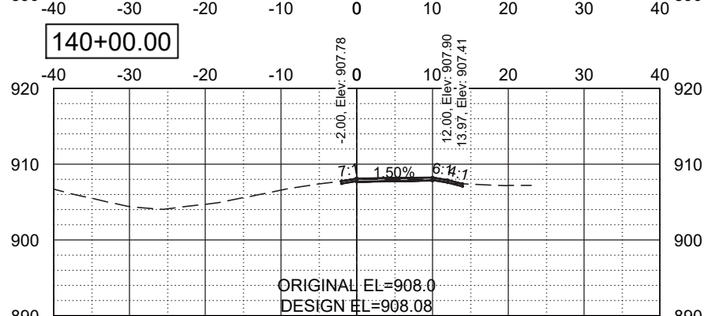


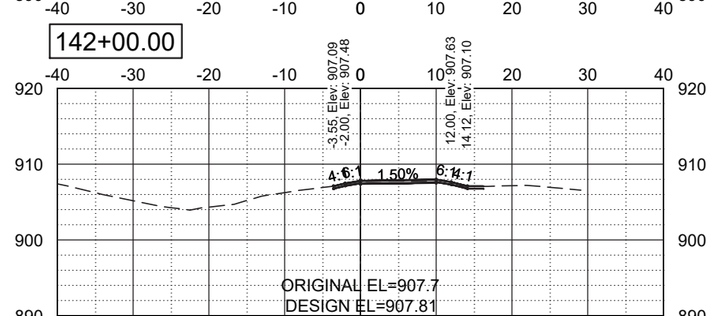








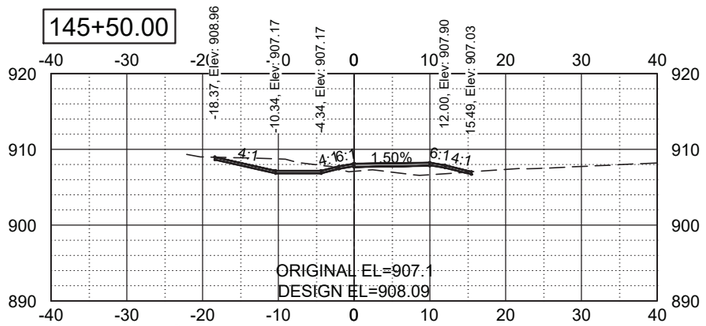


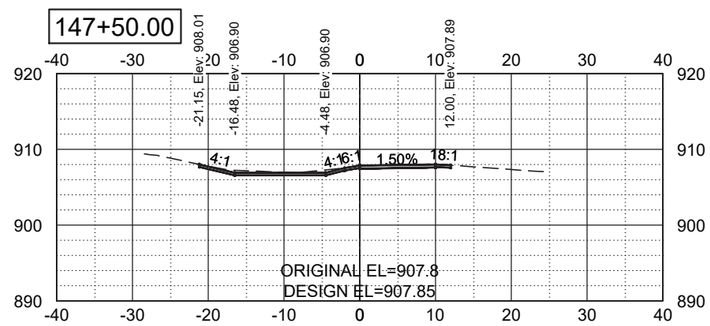


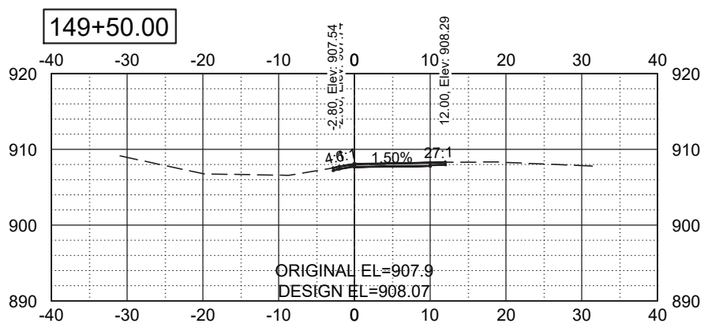
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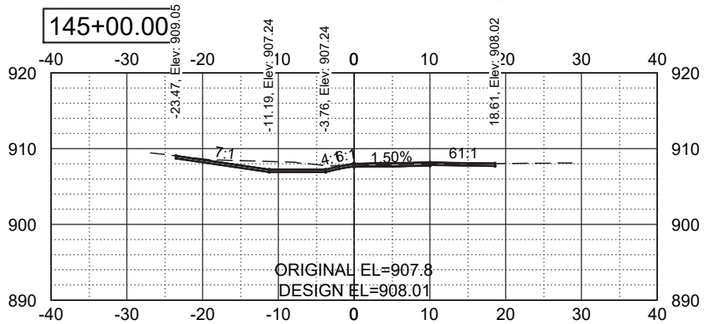
CROSS-SECTIONS

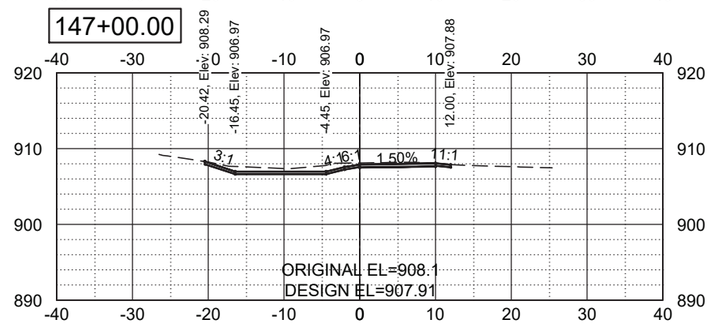
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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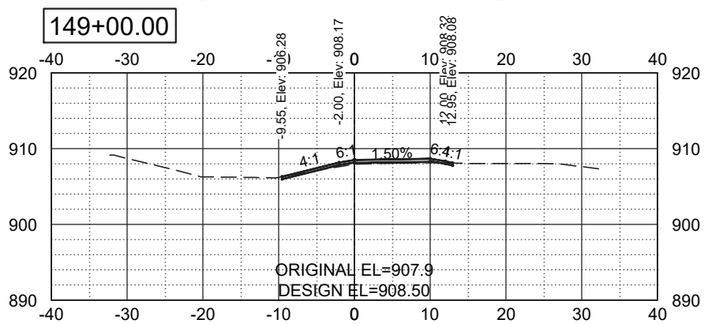


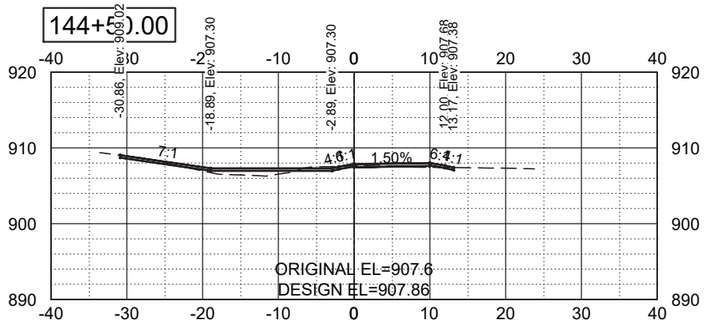


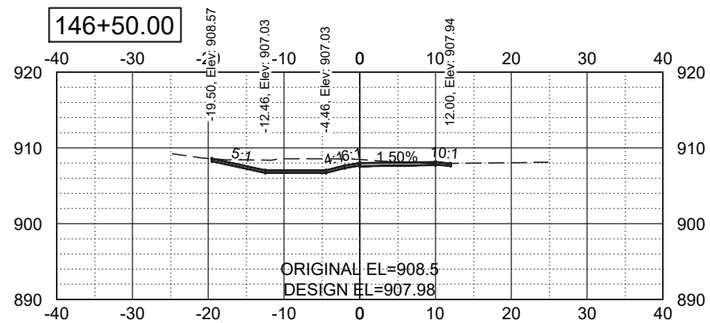


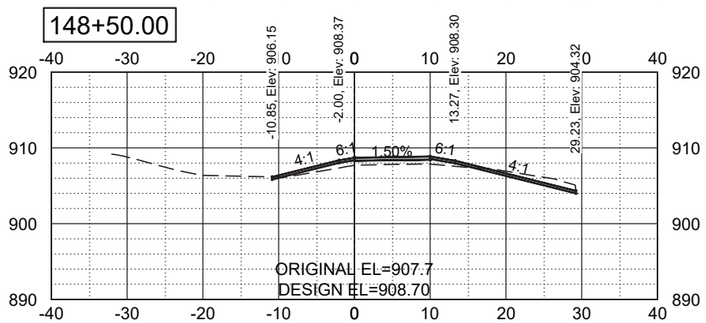


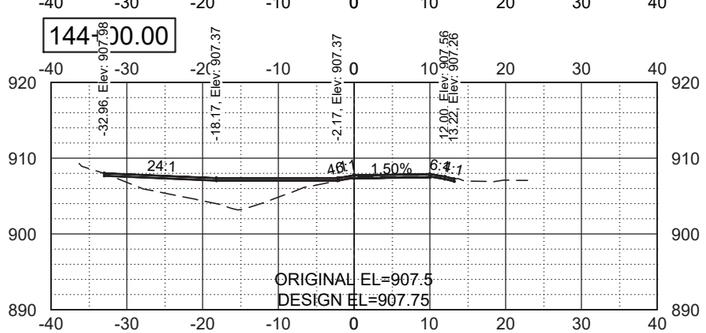


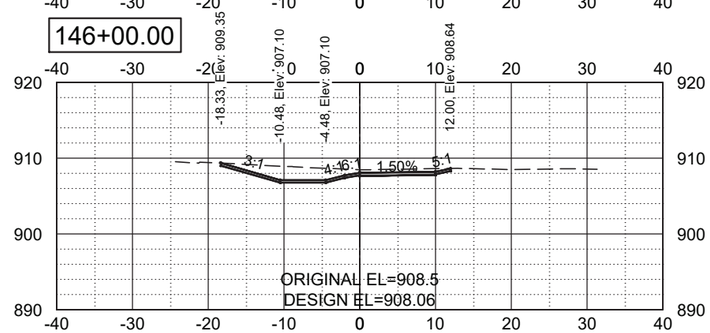


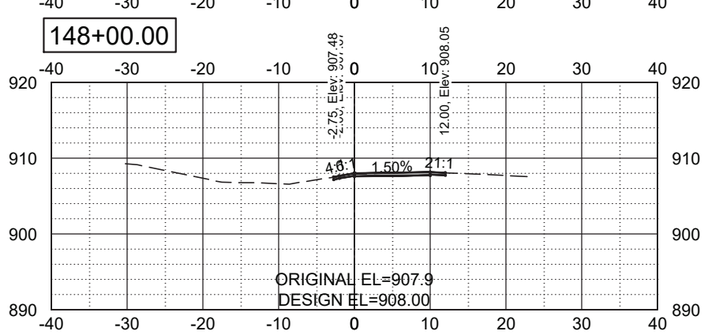










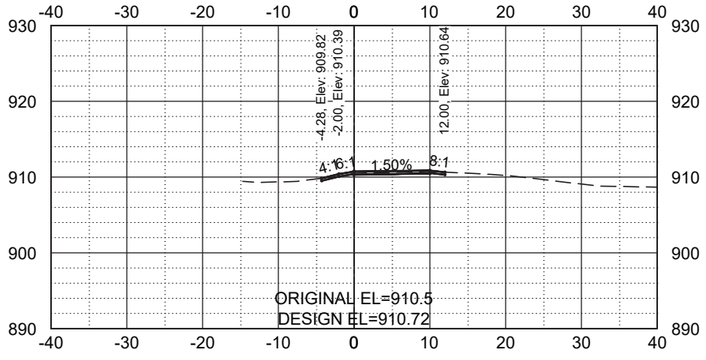


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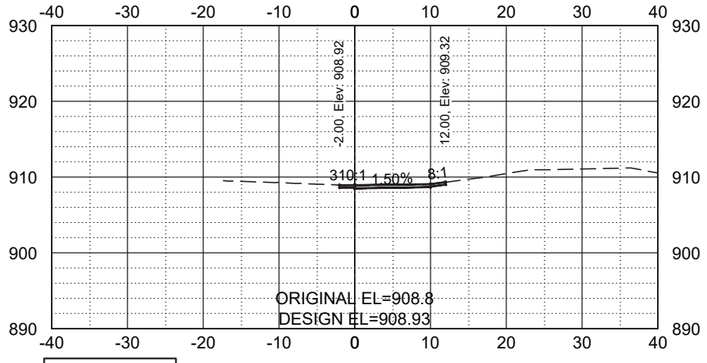
CROSS-SECTIONS

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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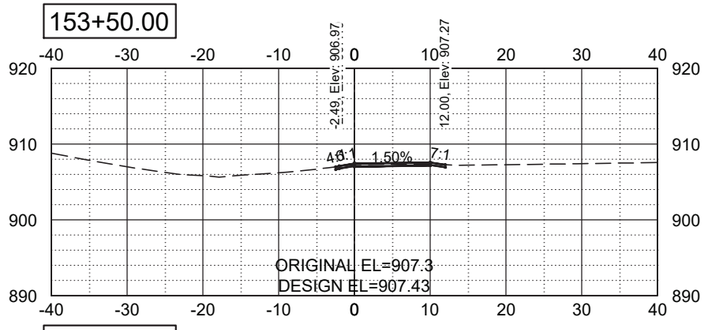
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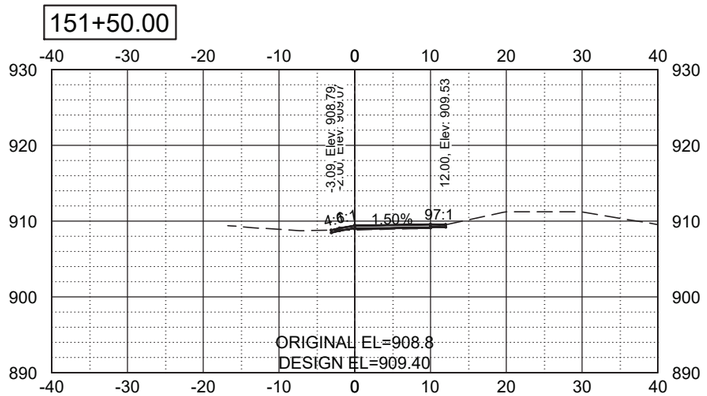
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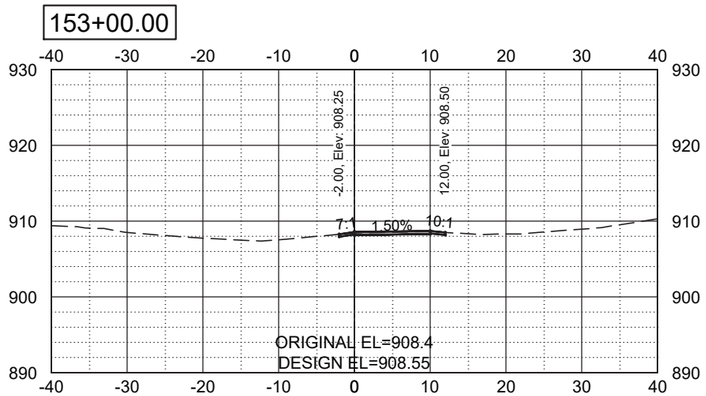
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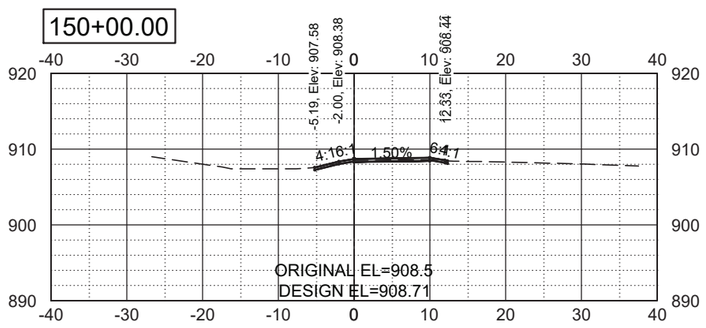
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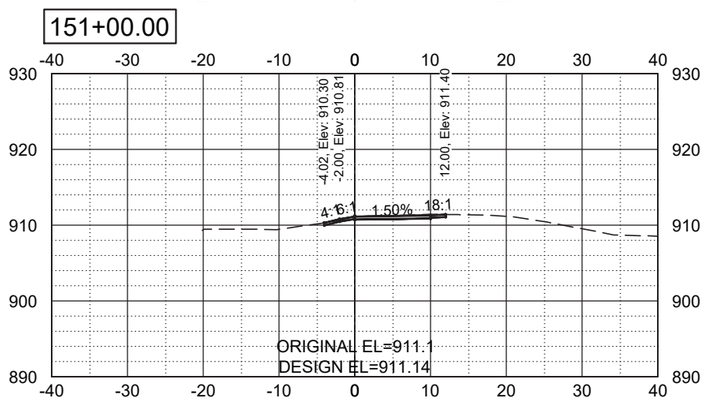
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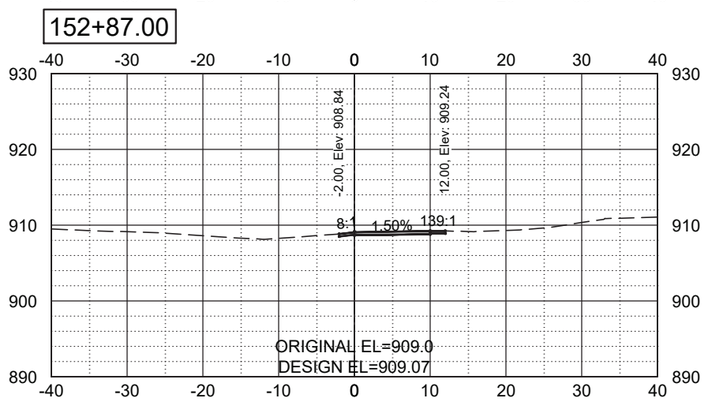
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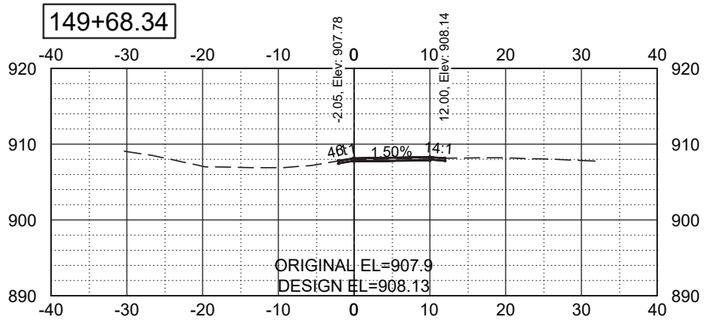
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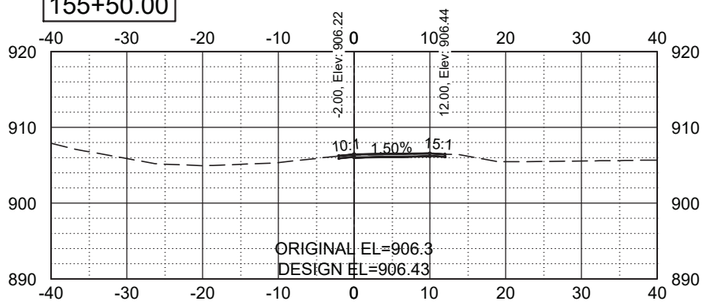


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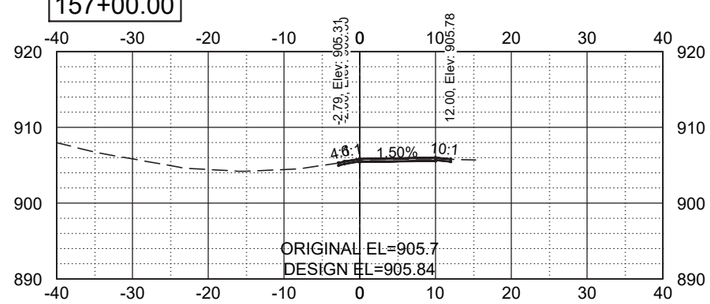
CROSS-SECTIONS

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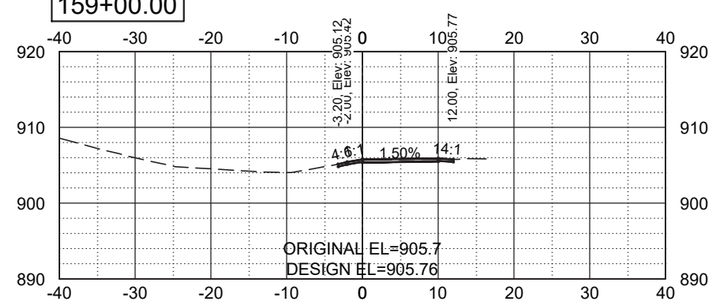
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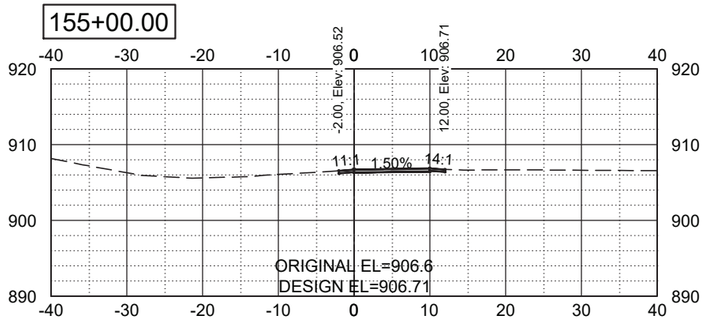
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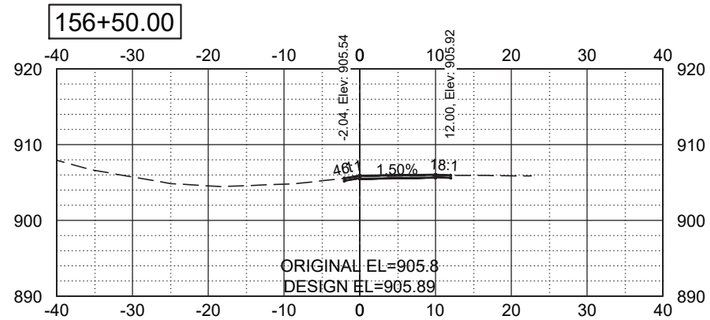
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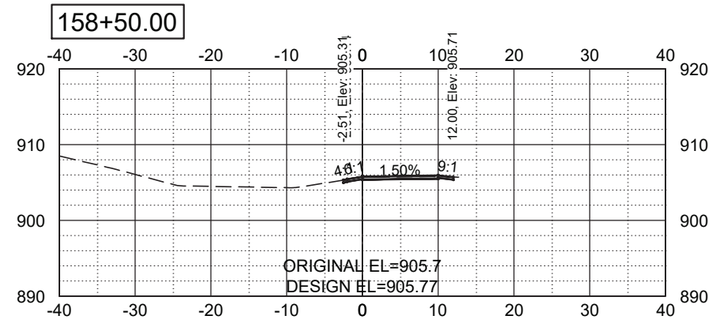
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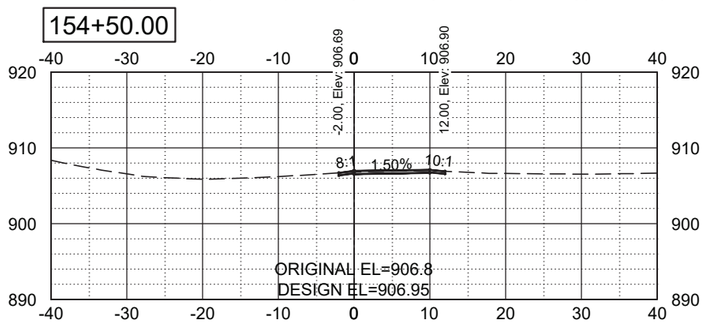
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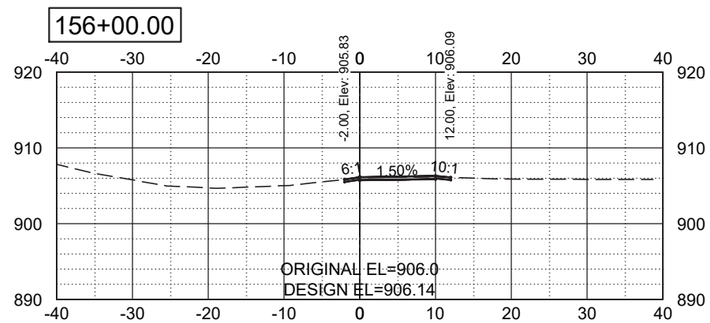
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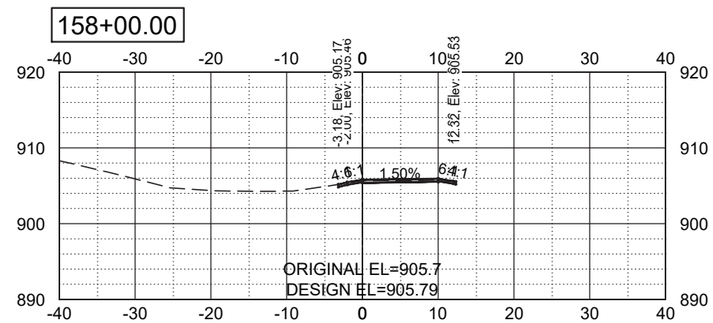
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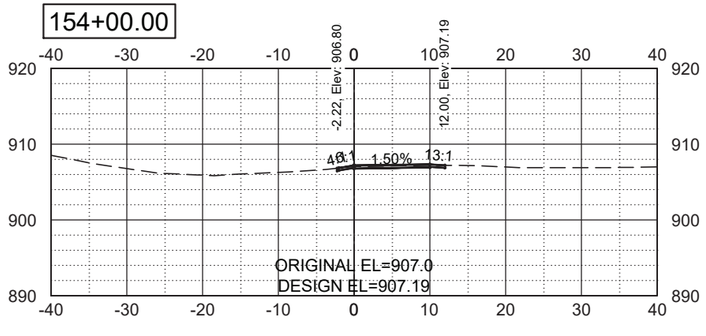
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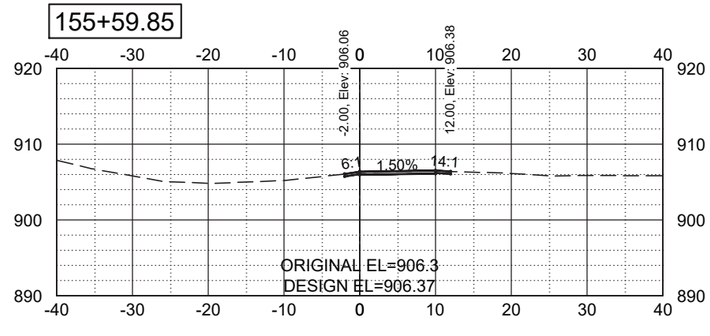
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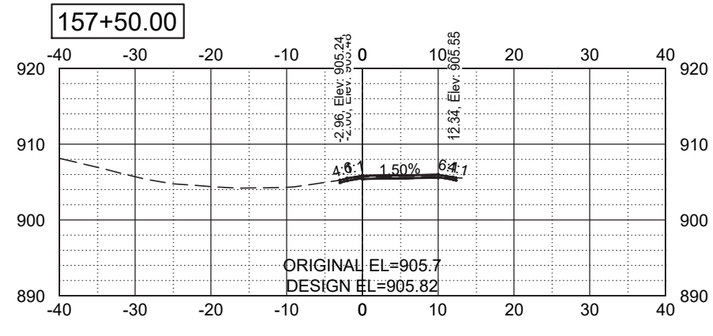
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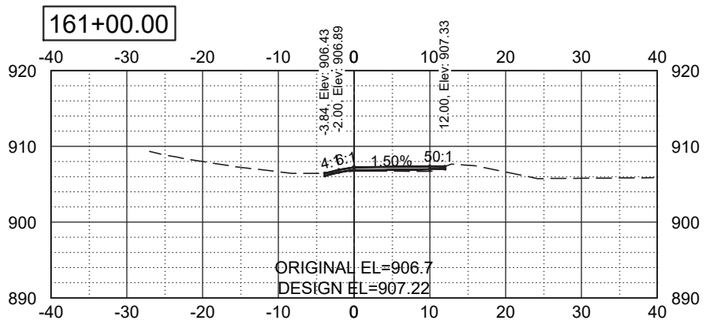
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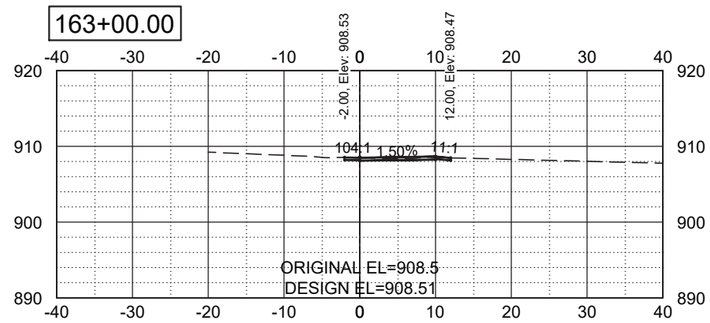


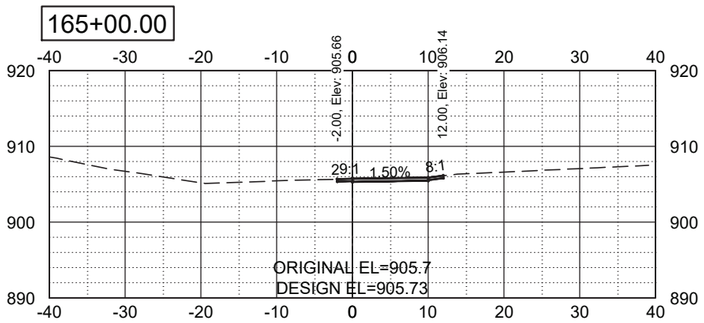
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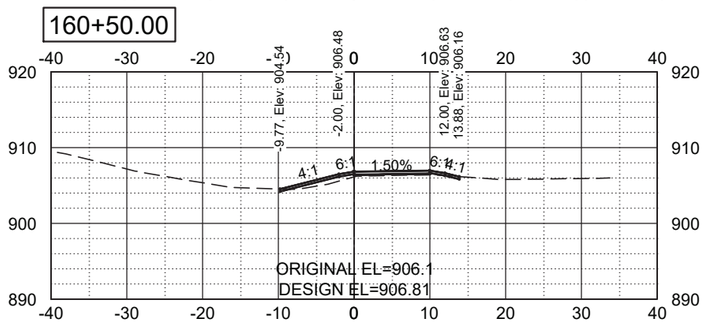
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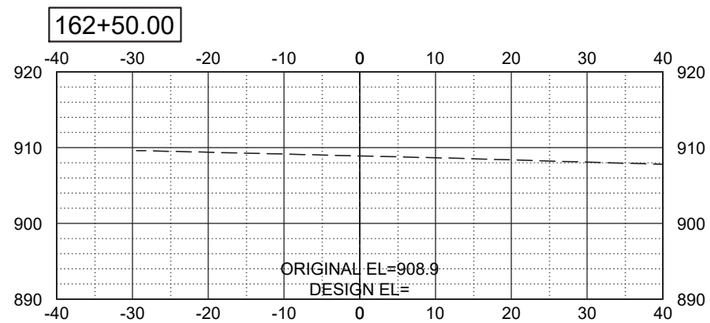
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	200	28

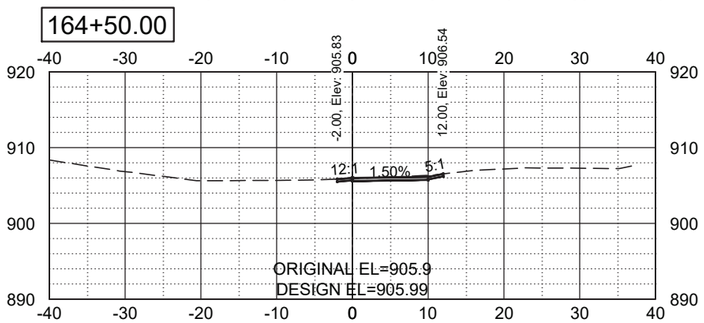


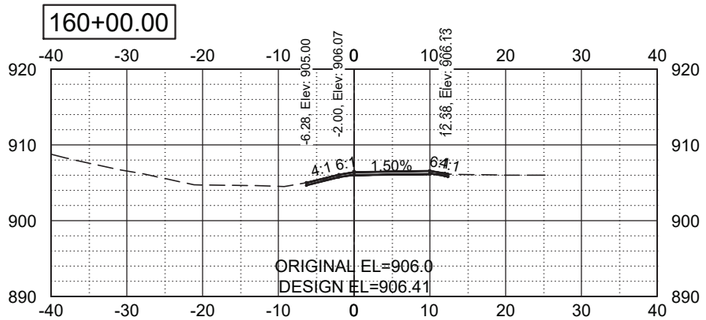


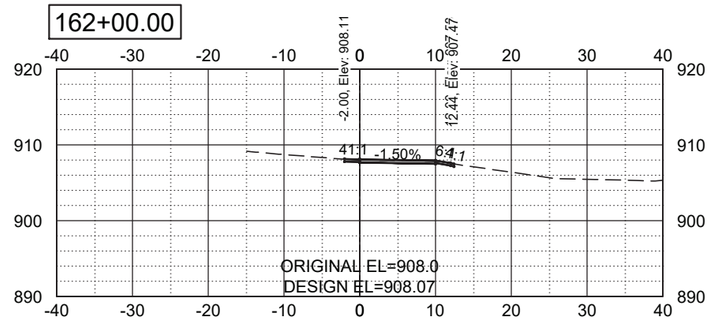


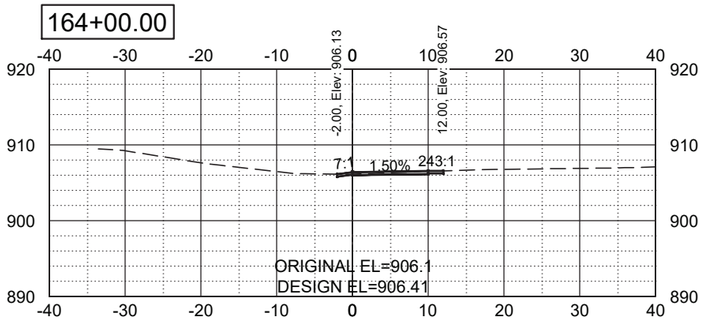


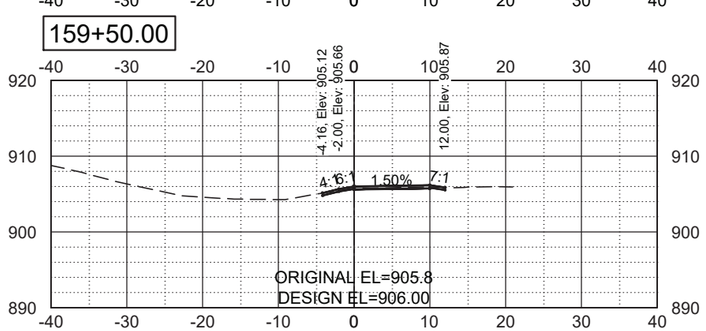


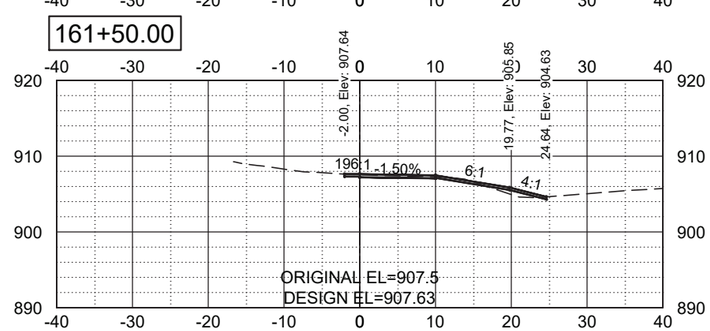


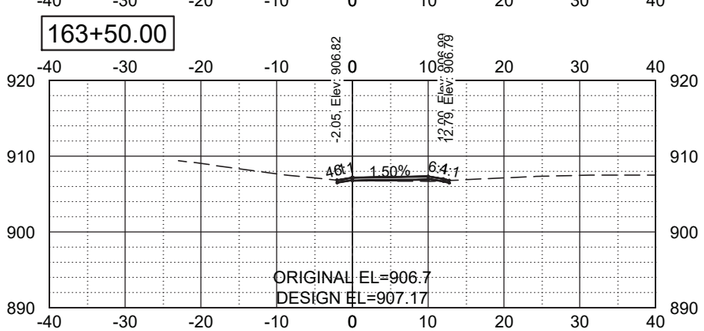








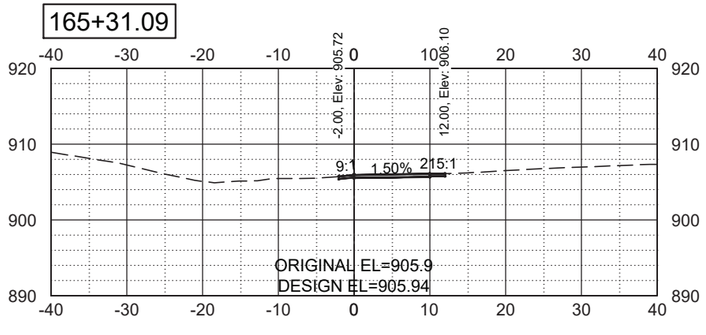




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CROSS-SECTIONS

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TMA-TAU-CRP-8-984(183)	200	29



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