MINNEHAHA CREEK
WATERSHED DISTRICT
QUALITY OF WATER, QUALITY OF LIFE

Meeting: Board of Managers
Meeting date: 3/13/2025
Agenda Item #: 10.1
Item type: Permit

Title: Permit 24-560: Highway 11 Road Project, Carver County

Prepared by: Name: Maggie Menden
mmenden@minnehahacreek.org

Recommendation
Approval of MCWD permit 24-560 in accordance with submitted plans, and with permit issuance on receipt of the following:

- 100% construction plans
- Final wetland buffer vegetation and maintenance plan
- Final Wetland Conservation Act documentation
- Executed programmatic maintenance agreement (PMA), amending the PMA between MCWD and Applicant dated November 2, 2006, and establishing Applicant's maintenance obligations pursuant to the Stormwater Management, Wetland Protection, and Waterbody Crossings & Structures rules

Project Scope and Setting
Proposed Project
Carver County ("Applicant") proposes design changes to and reconstruction of Highway 11. Highway 11 is a two-lane highway that connects Highway 7 and Highway 5 in the City of Victoria. The purpose of the Project is to improve traffic safety, enhance access to Carver Park Reserve, and expand opportunities for walking and biking. The Project includes widening the shoulders to eight feet, adjusting the curve geometry to meet current design standards, and adding turn lanes at critical points to enhance traffic flow and safety. Additionally, a new mixed-use trail will be built to create a direct link between Carver Park Reserve and downtown Victoria.

Location and Hydrology
Adjacent to the Project corridor are lands owned by Three Rivers Park District (TRPD) and several private properties. Lake Auburn is west of the corridor, and Sunny, Stone, and Zumbra Lakes lie to the east. The entirety of the road corridor lies within the Six Mile Creek subwatershed, with 43% draining northeast to Stone Lake, 16% draining west to Lake Auburn West, 18% east to a local low point, and 23% draining southwest to Lake Auburn East. Water from Stone Lake and Zumbra Lake drain south and west, respectively, into Sunny Lake before continuing through an unnamed wetland and passing through an 18" culvert to East Auburn Lake.

Regulatory Framework
The project triggers the following MCWD rules: Erosion Control, Floodplain Alteration, Wetland Protection, Stormwater Management, and Waterbody Crossings & Structures. MCWD staff and District Engineer have reviewed the Project and concluded it meets each of these rules.

Additionally, the Project is subject to state and federal wetland permitting as impacts to wetlands are proposed. MCWD serves as the Local Government Unit (LGU) for the Wetland Conservation Act (WCA) within the City of Victoria. MCWD has worked in close coordination with the Technical Evaluation Panel (TEP), which includes the Minnesota Department of Natural Resources (DNR), Board of Water and Soil Resources (BWSR), and Carver County Soil and Water Conservation District (CCSWD), to review the proposed impacts against the applicable regulations. A discussion of this wetland review is provided further below.

As a condition of approval, Staff recommends that the existing Programmatic Maintenance Agreement between MCWD and Carver County (November 2, 2006) be updated and executed to memorialize Applicant's maintenance obligations under this permit for wetland buffers, waterbody crossings and structures, and stormwater management facilities.

Reason for Board Consideration
The District Administrator has directed this permit application be presented to and considered by the Board of Managers for decision, due to long-standing interest of Zumbra Lake homeowners in high water level issues and concerns raised by these residents during the permit's public notice period regarding the configuration of the culvert under Highway 11 which conveys drainage from Stone, Sunny and Zumbra Lakes, west into Auburn Lake.

MCWD Rule Analysis
Erosion Control
MCWD's Erosion Control Rule applies to projects disturbing more than 5,000 square feet of ground surface. The project proposes to disturb 33.9 acres; therefore, the rule applies. The Applicant proposes to incorporate Best Management Practices (BMPs) such as erosion control blankets to stabilize disturbed areas, silt fences, floating silt curtains, and inlet protection along the corridor. These BMPs can be found in the Project's SWPPP within Attachment A.

Staff have reviewed the proposed plans and have found them to be complete and compliant with all Erosion Control Rule requirements.

Floodplain Alteration
MCWD's Floodplain Alteration Rule applies to a project that proposes to fill, excavate, or grade within the floodplain of a waterbody. Any proposed fill within the floodplain must be offset so there is no loss in flood storage between the ordinary high water and 100-year high water elevation of the waterbody. The Project proposes to place 327 cubic yards (cy) of fill within the 100-year floodplain of Lake Auburn.

To meet rule requirements, the Applicant is proposing 504 cy of flood storage along the northwest side of Lake Auburn (see Attachment B). Therefore, the Project provides adequate compensatory storage for the proposed fill. The City of Victoria intends to use the remaining excess flood storage to offset floodplain fill associated with its Highway 5/11 roundabout project.

Staff and the District Engineer have reviewed the proposed plans and have found them to be complete and compliant with Floodplain Alteration Rule requirements.

Wetland Conservation Act and Wetland Protection
The Minnesota Wetland Conservation Act (WCA) is administered by a local government unit (LGU) as defined in Minnesota Statutes 103G.005, subdivision 10i. Within the City of Victoria, MCWD is the LGU for WCA.

WCA governs proposed impacts to wetlands associated with draining or filling, guides for sequencing analysis and specifies requirements to replace lost wetland function. The Project proposes 1.14 acres of wetland impacts, associated with the shoulder widening and trail construction along the corridor, and with floodplain mitigation area on the northern edge of Lake Auburn.

Staff have administered the WCA in accordance with Chapter 8420, and, in consultation with the Technical Evaluation Panel (TEP) members, have determined that 0.71 acres of the proposed 1.14 acres of wetland impacts meet the criteria for replacement pursuant to the state's Local Government Road Wetland Replacement Program (LGRWRP). This program was established to provide wetland impact replacement for qualifying road reconstruction, repair and rehabilitation projects conducted by local road authorities. The state agency BWSR maintains a wetland credit bank to provide replacement credits for wetland impacts incurred as a result of a qualifying project. To qualify, eligible road projects must involve repair, rehabilitation, reconstruction, or replacement of a road to meet state or federal design or safety standards; and must minimize wetland impacts. BWSR has approved this eligibility for the impacts related to the road reconstruction, as the Project proposes to reconstruct a currently serviceable road to meet state design and safety standards, has minimized wetland impacts, and does not involve new roads for the sole purpose of capacity expansion.

The remaining 0.43 acres of impact are for excavation in wetland, which is not subject to WCA, but is subject to Section 3 of the MCWD Wetland Protection Rule, which requires replacement for excavation impacts that are not regulated under WCA. The impacts are occurring to provide compensatory flood storage to offset the fill in the Lake Auburn floodplain. This excavation is located within Type 2 wetlands along the north side of Lake Auburn. These impacts require replacement at a 2:1 ratio, and replacement must be sited in the following order: within the same subwatershed, within the same watershed, within the same eight-digit Hydrologic Unit Code (HUC 8) as the impact. The Applicant has followed this sequencing and found that there are no available wetland replacement credits within the Six Mile Creek subwatershed or the Minnehaha Creek Watershed. MCWD staff concurs in this assessment. The Applicant proposes to use wetland bank credits from a bank within the same HUC 8, using wetland bank 1722 in Anoka County, thereby satisfying MCWD replacement requirements.

Pursuant to MCWD's Wetland Protection Rule, the Applicant must establish and maintain vegetated wetland buffer downgradient from new and reconstructed hard surface, and around wetland disturbed by the replacement conveyance structure. Per section 5(b), an applicant is not required to acquire property or right-of-way to meet the applicable buffer width under this rule. The Applicant is providing wetland buffer within the full extent of Right of Way, which will be established using MnDOT approved Wet Ditch Mix (see Attachment A). In accordance with 4(c), the Applicant will meet monumentation requirements and maintain the wetland buffers pursuant to the Programmatic Maintenance Agreement and provided vegetation maintenance plan, which will include all components of 7(e).

Staff have reviewed the proposed plans and have found them to be complete and compliant with all Wetland Protection Rule requirements.

Stormwater Management

MCWD's Stormwater Management Rule is triggered by the increase of impervious surface along the corridor. There are currently 8.6 acres of impervious surface. The proposed work would reconstruct 3.9 acres and create 6.1 acres of additional impervious surface. Proposed conditions total 14.7 acres of impervious surface.

Per Table 2 of the Stormwater Rule, this Linear Transportation Project requires volume control equal to one inch over the 6.1 acres of new impervious surface, or 22,216 cubic feet (cf) of volume control. The soils on site are identified as predominantly Hydrologic Group D (clay) soils. Therefore, infiltration is prohibited per the Stormwater Rule and volume reduction cannot feasibly be provided. To meet volume control requirements, the applicant is proposing a non-volume reduction practice, filtration. The applicant must provide twice the required volume reduction equal to two inches over the new impervious surface or 44,432 cf.

The Applicant is proposing to meet volume control requirements by incorporating filtration trenches and ditch checks along the side of the road. The trench design and filtration components are consistent with recommendations in the Minnesota Stormwater Manual and will provide 44,952 cf of volume control. The treatment of 6.3 acres of impervious surface via 44,952 cf of volume control is generally estimated to provide around 6 lbs/year of Total Phosphorus (TP) removal and 1,600 lbs/year of Total Suspended Solids (TSS) removal.

In addition, the Applicant must provide rate control for the entire site. Peak runoff rate from the site may not increase, in aggregate, for design events, and if there is an increase at a specific point of site discharge, the Applicant must demonstrate no adverse local impact on water resource values or infrastructure. The site ultimately discharges to four points: Stone Lake to the northeast (Stone Lake Outfall), the low point to the east (Low Point East Outfall), West Lake Auburn to the west (Lake Auburn West Outfall), and East Lake Auburn to the southwest (Lake Auburn East Outfall). The Applicant provided hydraulic and hydrologic (H&H) modeling to demonstrate how peak discharge rates will be changed at each of the four discharge points. The H&H modeling demonstrates a decrease in peak discharge rates to Lake Auburn West, Lake Auburn East, and the low point to the east during the 2-year, 10-year, and 100-year storm events, respectively. The H&H modeling also demonstrates a decrease in peak discharge rates from the site in aggregate. There is a proposed decrease in the peak discharge rates to Stone Lake during the 2-year and 100-year storm events, but an increase of 1.98 cfs during the 10-year storm event. Nevertheless, there is no proposed increase in storm bounce 10-year storm event for Stone Lake. The MCWD engineer finds that the increase in peak discharge rate for the 10-year

event will have no adverse local impact on water resource value of Stone Lake. Therefore, the increased peak discharge rate to Stone Lake during the 10-year event is allowable under the Stormwater Rule and the project meets rate control criterion of the Stormwater Management Rule (see Attachment C).

The MCWD engineer has reviewed, and concurs in, the Applicant's modeling of impacts to downgradient waterbodies for the two waterbodies immediately downstream of the site discharge points, Stone Lake and Lake Auburn. H&H modeling provided demonstrates no increase in storm bounce during the 2-year, 10-year, and 100-year design storm events. The H&H modeling provided demonstrates no increase in storm bounce during the 2-year, 10-year, and 100-year design events. Therefore, the criterion for impacts to downgradient lakes is met per the Stormwater Management Rule.

The County will maintain the filtration trenches and ditch checks pursuant to the Programmatic Maintenance Agreement.

Staff and the District Engineer have reviewed the proposed plans and have found them to be complete and compliant with all Stormwater Management Rule requirements.

Waterbody Crossings & Structures

MCWD's Waterbody Crossings & Structures Rule applies when a structure is to be placed below the top of bank of a waterbody. Four proposed pipe replacements therefore trigger this rule.

An existing 24" corrugated metal pipe (CMP) with an 18" high-density polyethylene (HDPE) liner conveys water from Stone and Sunny Lake, under Highway 11, through a watercourse to Auburn Lake. This pipe is proposed to be replaced as part of the project.

The Applicant proposes to replace the existing pipe with an 18-inch HDPE pipe that flows into a 48-inch-diameter outlet control structure (OCS) with an overflow grate at the top. The structure then outflows through a 21-inch reinforced concrete pipe (RCP) downstream to East Auburn Lake. The upstream 18-inch pipe is proposed to maintain the high-water level of watercourse upstream. The OCS grate will provide a secondary outlet in case the primary 18-inch culvert becomes clogged. The downstream 21-inch RCP pipe is proposed after the overflow control structure to allow overflow from the upstream wetland and the project without affecting the performance of the upstream 18-inch pipe (see page 96 of Attachment A).

Per Section 3(b) of the regulation, a project in a watercourse may not increase upstream or downstream flood stage.

To assess the potential impact to the upstream and downstream 100-year flood stage within the watercourse, the Applicant updated the MCWD XPSWMM model, provided September 2023, based on field survey data collected as a part of the Project. The Links for which invert elevations were updated are SMC-15CR11 and SMC-25CR11. Loss coefficients for CMWD-25CR11 were also updated to reflect the current understanding of existing conditions. The updated XPSWMM Model, or Corrected Existing Model, has been used to represent existing conditions based on the more recent, or best available, survey data to evaluate the effect of the proposed structure on the 100-year flood stage of downstream and upstream waterbodies (see Attachment D). The District Engineer has reviewed this modeling and the proposed design and finds that it meets Section 3(b) by not increasing the 100-year flood stage in either upstream or downstream water bodies.

The three remaining culverts are proposed to contact a waterbody but are not proposed within a watercourse, and are therefore required to maintain hydraulic capacity.

- The proposed culvert replacement north of Grimm Road is replacing an existing 60-inch RCP culvert with a new 60-inch RCP culvert. The culvert is elongated to account for the road widening and proposed trail. To maintain the hydraulic capacity the upstream invert and slope of the pipe will match the existing conditions. Therefore, hydraulic capacity is retained in the proposed condition.

- The proposed culvert replacement between Grimm Road and Carver Park Road is replacing an existing 24-inch RCP culvert with a new 24-inch RCP culvert. The culvert is elongated to account for the road widening and proposed trail, but upstream invert and slope of the pipe will match the existing conditions. Therefore, hydraulic capacity is retained in the proposed condition.
- The proposed culvert replacement north of Carver Park Road is replacing an existing 18-inch RCP culvert with a new 18-inch RCP culvert. The culvert is elongated to account for the road widening and proposed trail, but upstream invert and slope of the pipe will match the existing conditions. Therefore, hydraulic capacity is retained in the proposed condition.

Applying the criteria of the rule, the Applicant has demonstrated compliance in several ways. Each pipe serves a public purpose as part of a publicly managed stormwater infrastructure system. The design retains existing hydraulic capacity by ensuring the pipes can accommodate anticipated flow rates. Additionally, the pipes do not impact navigational capacity or aquatic and wildlife passage, as they maintain existing characteristics such as slope and flow conditions. To prevent scour and erosion, the Applicant has incorporated riprap at the pipe outlets, which dissipates energy and stabilizes the surrounding soil.

The County will maintain the culverts pursuant to the Programmatic Maintenance Agreement. Staff and the District Engineer have reviewed the proposed plans and have found them to be complete and compliant with Waterbody Crossings & Structures Rule requirements.

Public Interest
Pursuant to MCWD's Procedural Rule, public notice of Board consideration of this application is to be given to all properties within 600 feet. Historically, Zumbra Lake residents have had an interest in the culvert under Highway 11, which conveys water from Stone, Sunny and Zumbra Lake, into Lake Auburn. For this reason, MCWD staff opted to expand the public notice geography to include all Zumbra Lake residents.

Background
In June 2014, 13.24 inches of rain fell, more than triple the normal monthly total. These June events caused flooding and high water on many lakes across the District. 17 lakes experienced record-breaking high-water levels. One of those lakes was Zumbra. Sixteen properties were affected in 2014, with 64% of damages being to landscape. Five principal residential structures were impacted, with total damage estimated at $118,000.

Following the 2014 flooding event, in response to resident requests for modifications to culverts that serve as the outlet for Zumbra Lake, and to the County Road 11 culvert, MCWD was asked to assume a lead role in multi-jurisdictional partnership alongside the Department of Natural Resources, Carver County, the City of Victoria and Three Rivers Park District, to gather and analyze information related to the system hydraulics.

In a July 9, 2015 Report adopted by the MCWD Board of Managers, and in supplemental analyses between 2016 and 2017 (Attachment E), the partners found that:

- A review of historical aerials showed that the natural system was altered, potentially increasing hydraulic connectivity with lakes downstream of Zumbra between 1937 and 1957
- A historical review of lake management, crossing elevations, and development within the Zumbra-Sunny watershed found that no changes would have prevented impacts from the 2014 events.
- A review of MNDNR and TRPD records indicate that the overall hydraulic capacity between Lake Zumbra and Lale Auburn has not changed significantly in over 45 years.
- Several properties riparian to Zumbra Lake have land, low floor or low openings at or below the 100-year high water level.
- Sunny's water levels rise faster and higher than Zumbra's creating a backflow effect, and, therefore, requests to expand the Zumbra outlet would worsen flooding not improve it.

- Modifications to increase the capacity of the Lake Zumbra outlet and Highway 11 culvert may cause an unacceptable increase in water levels to downstream landowners.
- In 2017 MCWD met again with residents at Victoria City Hall with Carver County elected officials, the Victoria Mayor, staff and consultants, and representatives from Three Rivers Park District. Residents were advised that, while there may be significant permitting and landowner challenges, a flap gate to prevent backflow may provide measured relief from backwater effects. Based on feedback from residents at that time, this solution was not advanced.

MCWD Public Notice

During the public notice period members of the Zumbra Ridge Homeowners Association (HOA) expressed interest and concerns with the proposed culvert design. In response, MCWD and the Carver County Highway 11 Project Manager hosted a meeting on February 25, 2025, to discuss the project with Zumbra Ridge HOA representatives.
The purpose of this meeting was to clarify project responsibilities and review resident concerns related to culvert function and regulatory compliance.

During the meeting, representatives from the Zumbra Ridge HOA expressed concern that the culvert design proposed by Carver County does not adequately address their backflow, high water, and drawdown concerns on Lake Zumbra, and requested that an alternative design be pursued. Residents attending the meeting also expressed a desire to have been better engaged through the design process.

Following this meeting, representatives from the Zumbra Ridge HOA requested that MCWD neither review nor approve the permit application in its current form. However, the application is complete pursuant to Minnesota Statutes 15.99, and complies with applicable MCWD Rules. Carver County has published the project for bids, and has requested that the application be considered at this time. Given the public interest, the District Administrator scheduled the permit application for consideration at the March 13, 2025, Board Meeting, for which MCWD staff issued a second public notice.

Summary and Conclusion

MCWD has acknowledged resident concerns regarding high water at Zumbra Lake for many years, and has acted as a convener, collaborator and technical lead to investigate the issue in partnership with the owners of infrastructure, Carver County and Three Rivers Park District, the City of Victoria as the local land use authority, and the Department of Natural Resources, which exercises regulatory jurisdiction over water level control structures for state public waters like the ones in question.

Based on past study, changes to the County Road 11 culvert may not produce a measurable return on investment for high water at Zumbra, unless completed in coordination with culvert changes through the system, and changes to capacity would likely increase 100-year flood elevations for downstream property owners. These changes would require significant coordination with downstream landowners, including private landowners and Three Rivers Park District, as well extensive permit coordination with the DNR and MCWD.

More broadly, under its permitting authority, the MCWD reviews a proposed application for conformance to its rules. Carver County has proposed a transportation improvement project, including a culvert design in keeping with the hydraulic capacity that has been in place at this location for decades. The application meets all MCWD rule requirements.

As such, MCWD staff recommends that the Board approve the permit as proposed, with conditions as outlined herein.

Attachments

A: Construction Plans
B: Floodplain Mitigation Area
C: Drainage Summary
D: Culvert Technical Memo
E: 2017 Supplement to Flood Study
F: Emails from Residents

MINNESOTA DEPARTMENT OF TRANSPORTATION

CARVER COUNTY

CONSTRUCTION PLAN FOR: FULL DEPTH RECLAMATION, GRADING, AGGREGATE BASE, BITUMINOUS AND AGGREGATE SURFACING, CULVERTS, SIGNING, AND PAVEMENT MARKING

LOCATED ON CSAH 11 **FROM** 935' S OF TH 7 **TO** 1295' N OF TH 5

SAP 010-611-027
CP 218931
SEC 03/04/10/11, TWP 116N, R24W

CSAH 11

GROSS LENGTH	12,453.70	FT	2.359	MILES
BRIDGES LENGTH	N/A	FT	N/A	MILES
EXCEPTIONS LENGTH	N/A	FT	N/A	MILES
NET LENGTH	12,453.70	FT	2.359	MILES

DESIGN DESIGNATION

FOR:	CSAH 11
ADT (CURRENT YEAR) 2024	3,530
ADT (FUTURE YEAR) 2044	4,300
FUNCTIONAL CLASS	MINOR ARTERIAL
NO. OF TRAFFIC LANES	2
NO. OF PARKING LANES	0
SHOULDER WIDTH	6' - 8'
R-VALUE	15
TON DESIGN	10
ESALS	1,500,000
DESIGN SPEED (MPH)	55

BASED ON STOPPING SIGHT DISTANCE
3.5 FT HEIGHT OF EYE
2.0 FT HEIGHT OF OBJECT

DESIGN SPEED NOT ACHIEVED AT (EXISTING CURVE WITH POSTED 40 MPH) - [1]
STA: 201+00
TO STA: 217+45

DESIGN DESIGNATION

FOR:	TRAIL
DESIGN SPEED (MPH)	20

BASED ON STOPPING SIGHT DISTANCE
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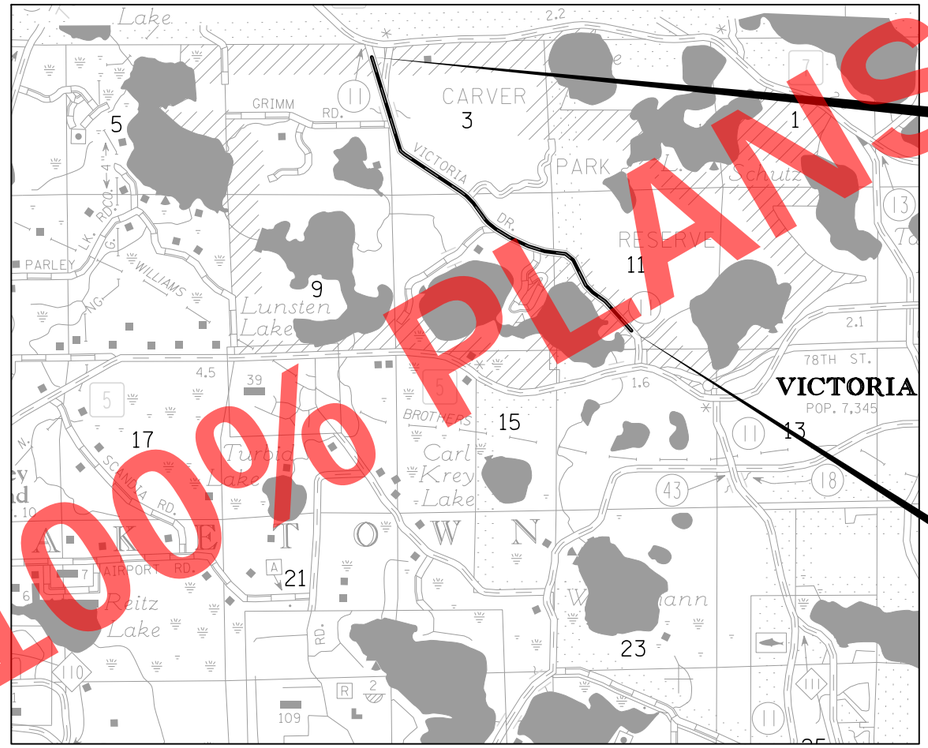
0.0 FT HEIGHT OF OBJECT

[1]



BEGIN SAP 010-611-027;
CP 218931
CSAH 11 100+00.00

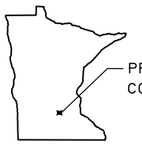
END SAP 010-611-027;
CP 218931
CSAH 11 224+53.70

SCALES

PLAN	100	
PROFILE	100 HORIZ.	10 VERT.
INDEX MAP	5,280	
GENERAL LAYOUT	1,000	

THE PLAN INDICATES THE GENERAL LOCATION OF KNOWN UTILITIES ON THE PROJECT. ALL UTILITY LOCATIONS ARE APPROXIMATE. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITY LOCATIONS AND ELEVATIONS WITH THE UTILITY COMPANIES.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".



PROJECT LOCATION
COUNTY: CARVER

GOVERNING SPECIFICATIONS

THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE LATEST EDITION OF THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD) INCLUDING THE LATEST "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

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CO.01-E.05	CITY OF VICTORIA SANITARY SEWER PLAN

THIS PLAN CONTAINS 238 SHEETS

ALLIANT

SIGNATURE: _____ NAME: _____

DESIGN ENGINEER: I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE: _____ LICENSE NUMBER: _____

_____ DATE: _____
APPROVED THREE RIVERS PARK DISTRICT

_____ DATE: _____
APPROVED CARVER COUNTY: COUNTY HIGHWAY ENGINEER

_____ DATE: _____
APPROVED CITY OF VICTORIA: CITY ENGINEER

_____ DATE: _____
DISTRICT STATE AID ENGINEER:
REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY

_____ DATE: _____
APPROVED FOR STATE AID FUNDING: STATE AID ENGINEER

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 1 OF 220 SHEETS

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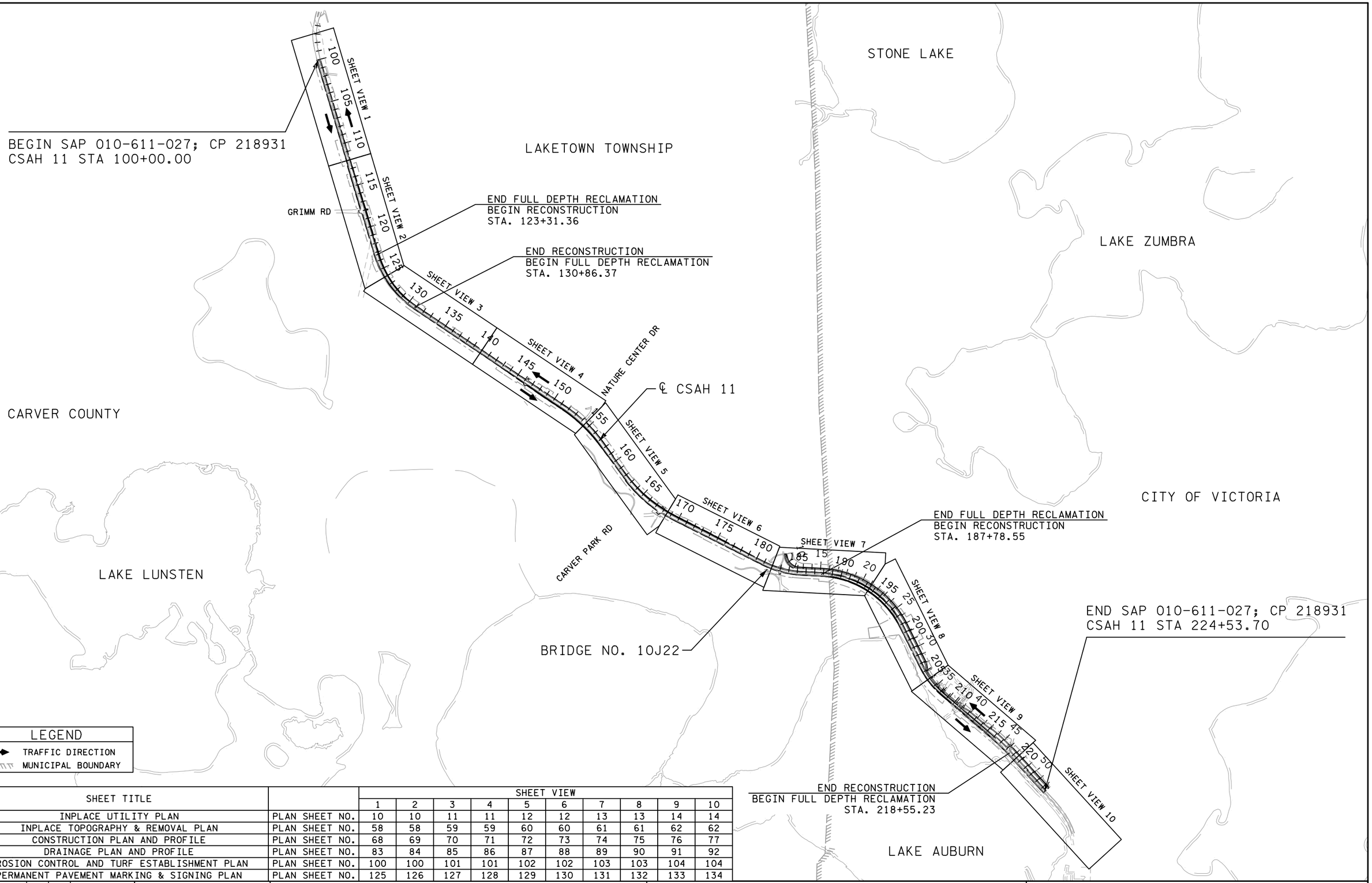

LEGEND

- TRAFFIC DIRECTION
- MUNICIPAL BOUNDARY

SHEET TITLE		SHEET VIEW									
		1	2	3	4	5	6	7	8	9	10
INPLACE UTILITY PLAN	PLAN SHEET NO.	10	10	11	11	12	12	13	13	14	14
INPLACE TOPOGRAPHY & REMOVAL PLAN	PLAN SHEET NO.	58	58	59	59	60	60	61	61	62	62
CONSTRUCTION PLAN AND PROFILE	PLAN SHEET NO.	68	69	70	71	72	73	74	75	76	77
DRAINAGE PLAN AND PROFILE	PLAN SHEET NO.	83	84	85	86	87	88	89	90	91	92
EROSION CONTROL AND TURF ESTABLISHMENT PLAN	PLAN SHEET NO.	100	100	101	101	102	102	103	103	104	104
PERMANENT PAVEMENT MARKING & SIGNING PLAN	PLAN SHEET NO.	125	126	127	128	129	130	131	132	133	134

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE: Eric Nelson
DATE 01/10/25 LICENSE # 43560

GENERAL LAYOUT

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 2 OF 220 SHEETS

8:29:16 AM
1/22/2025
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STATEMENT OF ESTIMATED QUANTITIES

TAB	SHEET NO	ITEM NO	DESCRIPTION		UNITS	TOTAL ESTIMATED QUANTITY	SAP 010-611-027 QUANTITY		NON-PARTICIPATING QUANTITY
							ROADWAY	STORM SEWER	
		2011.601	SETTLEMENT MONITORING		LUMP SUM	1	1		
-		2021.501	MOBILIZATION		LUMP SUM	1	1		
-		2031.502	FIELD OFFICE		EACH	1	1		
B	8	2101.502	CLEARING		EACH	36	16		20
B	8	2101.502	GRUBBING		EACH	36	16		20
B	8	2101.505	CLEARING		ACRE	5.4	5.4		
F	9	2101.505	GRUBBING		ACRE	5.4	5.4		
D	8	2104.502	REMOVE PIEZOMETER		EACH	9	9		
ST	116	2104.502	REMOVE SIGN		EACH	17	17		
-		2104.502	REMOVE LIFT STATION		EACH	1			1
ST	116	2104.502	SALVAGE SIGN		EACH	22	22		
ST	116	2104.502	SALVAGE SIGN TYPE SPECIAL		EACH	2	2		
ST	116	2104.502	SALVAGE SIGN PANEL TYPE SPECIAL	(1)	EACH	8	8		
B	8	2104.503	SAWING BIT PAVEMENT (FULL DEPTH)		LIN FT	185	185		
I	93	2104.503	REMOVE PIPE CULVERTS		LIN FT	1095	1095		
B	8	2104.503	REMOVE CURB & GUTTER		LIN FT	73	73		
B	8	2104.503	SALVAGE FENCE		LIN FT	318	318		
B	8	2104.504	REMOVE BITUMINOUS PAVEMENT		SQ YD	13317	13317		
B	8	2104.602	SALVAGE MAIL BOX SUPPORT		EACH	1	1		
-		2104.603	ABANDON PIPE SEWER		LIN FT	2000			2000
A	7	2106.507	EXCAVATION - COMMON	(P)	CU YD	45488	45238		250
A	7	2106.507	EXCAVATION - MUCK		CU YD	1514	1514		
C	8	2106.507	SELECT GRANULAR EMBANKMENT (CV)		CU YD	2356	2356		
A,J	7	2106.507	COMMON EMBANKMENT (CV)	(P)	CU YD	93774	93774		
-		2106.601	DEWATERING	(2)	LUMP SUM	1	1		
D	8	2106.602	PIEZOMETER		EACH	9	9		
D	8	2106.602	SETTLEMENT PLATES		EACH	14	14		
D	8	2108.504	GEOTEXTILE FABRIC TYPE 5		SQ YD	4573	4573		
-		2111.519	TEST ROLLING		ROAD STA	160	160		
C	8	2118.507	AGGREGATE SURFACING (CV) CLASS 2		CU YD	2192	2192		
C	8	2211.507	AGGREGATE BASE (CV) CLASS 5	(P)	CU YD	11597	11537		60
F	9	2215.504	FULL DEPTH RECLAMATION	(P)	SQ YD	23853	23853		
B	8	2232.504	MILL BITUMINOUS SURFACE (3.0")		SQ YD	23853	23853		
G	9	2232.603	MILLED SINUSOIDAL RUMBLE STRIPS		LIN FT	24760	24760		
-		2301.504	CONCRETE PAVEMENT 8.0"		SQ YD	76			76
C,-	8	2360.509	TYPE SP 9.5 WEARING COURSE MIX (3,C)		TON	11682	11667		15
C	8	2360.509	TYPE SP 12.5 NON WEAR COURSE MIX (3,B)		TON	5238	5238		
-		2433.603	SEAL SUBSTRUCTURE JOINTS		LIN FT	132	132		
J		2451.507	COARSE FILTER AGGREGATE (CV)		CU YD	503	503		
J		2451.507	FINE FILTER AGGREGATE (CV)		CU YD	184	184		
K	94	2451.507	FINE AGGREGATE BEDDING (CV)		CU YD	1159	1159		
-		2451.607	TRENCH STABILIZATION MATERIAL (CV)	(3)	CU YD	350			350
K	94	2501.502	18" CAS PIPE APRON		EACH	1	1		
K	94	2501.502	15" RC PIPE APRON		EACH	1		1	
K	94	2501.502	21" RC PIPE APRON		EACH	1	1		
K	94	2501.502	24" RC PIPE APRON		EACH	10	10		
K	94	2501.502	30" RC PIPE APRON		EACH	1	1		
K	94	2501.502	36" RC PIPE APRON		EACH	2	2		
K	94	2501.502	15" CAS SAFETY APRON & GRATE DES 3128		EACH	8	8		
K	94	2501.502	15" RC SAFETY APRON		EACH	2		2	
K	94	2501.502	24" RC SAFETY APRON		EACH	3	3		
K	94	2501.503	15" CAS PIPE CULVERT		LIN FT	212	212		
K	94	2501.503	18" RC PIPE CULVERT DES 3006		LIN FT	116	116		
K	94	2501.503	21" RC PIPE CULVERT DES 3006 CL IV		LIN FT	150	150		
K	94	2501.503	24" RC PIPE CULVERT DES 3006		LIN FT	380	380		
K	94	2501.503	24" RC PIPE CULVERT DES 3006 CL III		LIN FT	266	266		
K	94	2501.503	30" RC PIPE CULVERT DES 3006		LIN FT	86	86		
K	94	2501.503	36" RC PIPE CULVERT DES 3006 CL III		LIN FT	112	112		
J		2502.502	6" PRECAST CONCRETE HEADWALL		EACH	15	15		
J		2502.503	6" PE PIPE DRAIN		LIN FT	2866	2866		

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SPECIFIC NOTES:

(P) DENOTES PLAN QUANTITY

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(3) TO BE USED AS DIRECTED BY THE ENGINEER.

(4) INCLUDES INSTALLATION OF OWNER SUPPLIED PUMPS, VALVES, FITTINGS, PIPE, LABOR, AND ANY OTHER APPLICABLE ITEMS TO CONSTRUCT AND MAKE OPERATIONAL.

(5) INCLUDES ALL MATERIALS AND LABOR NOT INCLUDED IN WET WELL/VALVE MANHOLE CONSTRUCTION FOR INSTALLATION OF ALL PLUMBING, PIPING, FITTINGS, AND ELECTRICAL EQUIPMENT.

(6) INFA SHIELD CHIMNEY SEAL OR APPROVED EQUAL.

(7) INCLUDES ALL LABOR AND MATERIALS NECESSARY TO INSTALL CABINET AND ELECTRICAL APPURTENCES, WIRE SYSTEM, AND CONNECT ALL APPLICABLE ELECTRICAL ITEMS FROM THE AVAILABLE POWER SORCE.

(8) LOCATE MARKER/TRACER WIRE ACCESS POST. (SEE SHEET C1.01 FOR DETAILS.) 1

(9) NON-PARTICIPATING QUANTITY IS FOR SANITARY SEWER STRUCTURES. 1

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B	8	REMOVALS TABULATION
C	8	SURFACING MATERIAL TABULATION
D	8	GEOTECHNICAL TREATMENT TABULATION
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NO	DATE	DWN	CKD	REVISIONS
1	01/27/25	GMK	EN	ADDENDUM #1

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/27/25 LICENSE # 43560

STATEMENT OF ESTIMATED QUANTITIES
SHEET 1 OF 2

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 3 OF 220 SHEETS

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STATEMENT OF ESTIMATED QUANTITIES

TAB	SHEET NO	ITEM NO	DESCRIPTION		UNITS	TOTAL ESTIMATED QUANTITY	SAP 010-611-027 QUANTITY		NON-PARTICIPATING QUANTITY
							ROADWAY	STORM SEWER	
J		2502.503	6" PERF PE PIPE DRAIN		LIN FT	6611	6611		
J		2502.602	12" PE INSPECTION TEES		EACH	23	23		
-		2503.503	8" PVC PIPE SEWER		LIN FT	160			160
K	94	2503.503	18" PVC PIPE SEWER		LIN FT	15	15		
K	94	2503.503	15" RC PIPE SEWER DES 3006 CL IV		LIN FT	318		318	
		2503.601	TEMPORARY BYPASS PUMPING		LUMP SUM	1			1
-		2503.602	LIFT STATION	(4)	EACH	1			1
-		2503.602	STANDARD VALVE MANHOLE		EACH	1			1
-		2503.602	AIR RELIEF MANHOLE		EACH	1			1
-		2503.602	CONNECT TO EXISTING SANITARY SEWER		EACH	1			1
-		2503.603	4" PVC FORCE MAIN		LIN FT	1950			1950
-		2504.608	DUCTILE IRON FITTINGS		POUND	1537			1537
K	94	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPECIAL		EACH	1	1		
K	94	2506.502	CASTING ASSEMBLY		EACH	8	4	2	2
K	94	2506.503	CONST DRAINAGE STRUCTURE DESIGN SD-48		LIN FT	7.6		7.6	
K	94	2506.503	CONST DRAINAGE STRUCTURE DES 48-4020	(9)	LIN FT	70	31		39
-		2506.601	CONSTRUCT LIFT STATION	(5)	LUMP SUM	1			1
-		2506.602	INSTALL MANHOLE		EACH	2			2
-		2506.602	DRAINAGE STRUCTURE WRAP	(6)	EACH	3			3
K	94	2511.504	GEOTEXTILE FILTER TYPE 3		SQ YD	303	303		
K	94	2511.507	RANDOM RIPRAP CLASS II		CU YD	66	66		
C	8	2521.518	3" BITUMINOUS WALK		SQ FT	40788	40788		
E	8	2521.602	DRILL & GROUT REINF BAR (EPOXY COATED)		EACH	60	60		
E	8	2521.618	CONCRETE CURB RAMP WALK		SQ FT	637	637		
C	8	2531.503	CONCRETE CURB & GUTTER DESIGN B612		LIN FT	82	82		
C	8	2531.503	CONCRETE CURB & GUTTER DESIGN B624		LIN FT	543	543		
E	8	2531.603	CONCRETE CURB & GUTTER		LIN FT	83	83		
E	8	2531.618	TRUNCATED DOMES		SQ FT	76	76		
		2540.602	BOLLARD		EACH	4			4
H	9	2540.602	INSTALL MAIL BOX SUPPORT		EACH	1	1		
-		2545.502	SERVICE CABINET	(7)	EACH	1			1
H	9	2557.603	INSTALL FENCE		LIN FT	318	318		
-		2563.601	TRAFFIC CONTROL SUPERVISOR		LUMP SUM	1	1		
-		2563.601	TRAFFIC CONTROL		LUMP SUM	1	1		
-		2563.602	PORTABLE CHANGEABLE MESSAGE SIGN		EACH	4	4		
-	C1.01	2564.502	OBJECT MARKER	(8)	EACH	5			5
ST	116	2564.602	INSTALL SIGN		EACH	23	23		
ST	116	2564.602	INSTALL SIGN PANEL SPECIAL		EACH	8	8		
ST	116	2564.602	INSTALL SIGN TYPE SPECIAL	(1)	EACH	2	2		
ST	116	2564.618	SIGN		SQ FT	44	44		
-		2573.501	EROSION CONTROL SUPERVISOR		LUMP SUM	1	1		
F	9	2573.502	STORM DRAIN INLET PROTECTION		EACH	4	4		
F	9	2573.502	CULVERT END CONTROLS		EACH	14	14		
F	9	2573.503	SILT FENCE, TYPE MS		LIN FT	15629	15629		
F	9	2573.503	FLOTATION SILT CURTAIN TYPE STILL WATER		LIN FT	80	80		
F	9	2573.503	SEDIMENT CONTROL LOG TYPE COMPOST		LIN FT	3214	3214		
J		2574.507	FILTER TOPSOIL BORROW		CU YD	735	735		
F	9	2574.508	FERTILIZER TYPE 1		POUND	4177	4177		
F	9	2574.508	FERTILIZER TYPE 3		POUND	22758	22758		
F	9	2575.505	DISK ANCHORING		ACRE	19.2	19.2		
F	9	2575.509	MULCH MATERIAL TYPE 3		TON	38	38		
F	9	2575.608	SEED SOUTHERN BOULEVARD		POUND	3342	3342		
F	9	2575.608	SEED MESIC INSLOPE		POUND	1014	1014		
F	9	2575.608	SEED WET DITCH		POUND	608	608		
F	9	2575.608	SEED SOUTHERN TALLGRASS ROADSIDE		POUND	560	560		
PM	116	2582.503	4" SOLID LINE MULTI COMP GR IN (WR)		LIN FT	852	852		
PM	116	2582.503	6" SOLID LINE MULTI COMP GR IN (WR)		LIN FT	26544	26544		
PM	116	2582.503	4" BROKEN LINE MULTI COMP GR IN (WR)		LIN FT	600	600		
PM	116	2582.503	4" DBLE SOLID LINE MULTI COMP GR IN (WR)		LIN FT	14416	14416		
PM	116	2582.518	PAVT MSSG PREF THERMO GR IN		SQ FT	185	185		

SPECIFIC NOTES:

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NO	DATE	DWN	CKD	REVISIONS
1	01/27/25	GMK	EN	ADDENDUM #1

ALLIANT

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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/27/25 LICENSE # 43560

STATEMENT OF ESTIMATED QUANTITIES
SHEET 2 OF 2

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 4 OF 220 SHEETS

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SOIL AND CONSTRUCTION NOTES

1. USE OF THE WORD "INCIDENTAL" IN THESE CONSTRUCTION DOCUMENTS WILL BE CONSIDERED TO MEAN WORK FOR WHICH NO DIRECT COMPENSATION WILL BE MADE.
2. IN PERMANENT AREAS OF CONSTRUCTION WHERE TURF ESTABLISHMENT IS REQUIRED, PROVIDE FOR A MINIMUM DEPTH OF 6-INCH COMMON TOPSOIL BORROW (SEE MNDOT STANDARD SPECIFICATION 3877) UNLESS STATED OTHERWISE IN THE PLAN. QUANTITY OF TOPSOIL BORROW IS INCLUDED IN COMMON EMBANKMENT.
3. TOPSOIL STRIPPED AS PART OF THE PROJECT WILL BECOME PROPERTY OF THE CONTRACTOR. EROSION CONTROL METHODS FOR PROTECTING TOPSOIL STOCKPILES WILL BE THE CONTRACTORS RESPONSIBILITY. EXCESS TOPSOIL WILL BE REMOVED AND DISPOSED OF OUT SIDE THE PROJECT LIMITS AT NO ADDITIONAL COST TO THE COUNTY.
4. TO THE EXTENT FEASIBLE, THE CONTRACTOR SHALL PERFORM EXCAVATION AND EMBANKMENT TO CONSTRUCT THE PROPOSED SLOPES AND THE PROPOSED PAVEMENTS TO THEIR GRADING GRADE PRIOR TO REMOVAL OF THE EXISTING PAVEMENT. WHEN REMOVING PAVEMENTS, FULL-DEPTH SAWCUTS SHOULD BE MADE PERPENDICULAR TO THE ROADWAY CENTERLINE.
5. EXCESS EXCAVATION MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR. DISPOSAL OF EXCESS EXCAVATED MATERIAL SHALL BE IN ACCORDANCE WITH MNDOT STANDARD SPECIFICATION 2106.3J AND SHALL BE DISPOSED OF OFF THE RIGHT OF WAY, AT NO ADDITIONAL COMPENSATION, AND IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
6. CONTRACTOR SHALL PROVIDE FOR REMOVAL AND DISPOSAL (OUTSIDE THE CONSTRUCTION ZONE) OF INPLACE STRUCTURES THAT WILL INTERFERE WITH CONSTRUCTION. DISPOSAL OF ITEMS REMOVED UNDER THIS CONTRACT WILL BE IN ACCORDANCE WITH THE REQUIREMENTS OF 2104.3C3.
7. NO EXTRA PAYMENT WILL BE MADE FOR TEMPORARY STOCKPILING OF RECLAIM OR EXCAVATION/EMBANKMENT MATERIAL.
8. THE AGGREGATE BASE CONSTRUCTION WILL BE A COMBINATION OF MATERIAL GENERATED DURING FULL DEPTH RECLAMATION (ACCORDING TO MNDOT STANDARD SPECIFICATION 2215) AND AGGREGATE BASE CLASS 5 IMPORTED FOR CONSTRUCTION (ACCORDING TO MNDOT STANDARD SPECIFICATION 2211). SEE TYPICAL SECTOINS.
9. THE EXISTING PAVEMENT THICKNESS VARIES THROUGHOUT THE PROJECT. SEE THE BORING LOGS FOR THICKNESS AT ALL BORING LOCATIONS. SEE TYPICAL SECTIONS FOR A SUMMARY OF OBSERVED EXISTING BITUMINOUS THICKNESS.
10. GRADING GRADE IS DEFINED AS THE BOTTOM OF THE AGGREGATE BASE MATERIALS (MNDOT STANDARD SPECIFICATION 2106).
11. EXCAVATION AND EMBANKMENT CONSTRUCTION SHALL MEET THE REQUIREMENTS OF MNDOT STANDARD SPECIFICATION 2106.
12. WHERE MATCHING TO INPLACE ROADWAYS CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE TOP OF THE PROPOSED GRADING GRADE, WHICHEVER IS DEEPER, THEN TAPER AT 1:20 (V:H) TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION AT THAT LOCATION.
13. SEE COMPACTION CRITERIA TABLE BELOW FOR COMPACTION TESTING METHOD REQUIRED FOR AGGREGATE AND EMBANKMENT CONSTRUCTION. TEST ROLLING SHALL BE PERFORMED ON THE SUBGRADE AND AGGREGATE BASE LAYER IN THE RECONSTRUCTED AREAS NOTED ON THE PLANS. TEST ROLLING IS ALSO REQUIRED FOR AGGREGATE BASE IN FULL DEPTH RECLAMATION AREAS.
14. COMPACTION OF ROADWAY BITUMINOUS SURFACE ITEMS WILL BE ACCOMPLISHED IN ACCORDANCE WITH SPEC 2360.3D1 "MAXIMUM DENSITY METHOD". TRAIL BITUMINOUS SURFACE ITEMS WILL USE THE QUALITY COMPACTION TESTING METHOD.
15. WHERE UNSUITABLE MATERIAL IS ENCOUNTERED DURING COMMON EXCAVATION, THE CONTRACTOR SHALL PLACE MATERIAL THAT MATCHES ADJACENT INPLACE SUITABLE SOILS TO THE EXTENT PRACTICAL AS DIRECTED BY THE ENGINEER.
16. THE TOP OF BACKSLOPES AND THE TOE OF FILL SLOPES SHALL BE ROUNDED TO NATURALIZE THE CONSTRUCTION EVEN THOUGH THE CROSS SECTIONS DO NOT SHOW ANY SUCH ROUNDING.
17. THE CONSTRUCTION LIMITS AS SHOWN IN THE PLANS REPRESENT THE POINT OF INTERSECTION BETWEEN THE REQUIRED FILL OR CUT SLOPE AND THE EXISTING GROUNDLINE AS DEPICTED ON THE CROSS SECTIONS. THE CONSTRUCTION LIMITS DO NOT INCLUDE AREAS REQUIRED FOR SLOPE ROUNDING.
18. IF ORGANIC SOILS OR UNSTABLE SOILS ARE PRESENT, THESE SOILS SHALL BE REMOVED FROM THE CRITICAL SUBGRADE ZONE, WHICH IS DEFINED AS THE SUBGRADE PORTION BENEATH AND WITHIN THREE VERTICAL FEET OF THE TOP OF THE SUBGRADE.
19. A COMPACTION SUBCUT IS REQUIRED FOLLOWING THE REMOVAL OF ORGANIC OR UNSTABLE SOILS. COMPACTION SUBCUT IS THE CONSTRUCTION OF A UNIFORM THICKNESS SUBCUT BELOW A DESIGNATED GRADE TO PROVIDE UNIFORMITY AND COMPACTION WITHIN THE SUBCUT ZONE. THE SUBCUT BOTTOM MUST BE EXPOSED TO ALLOW BOTTOM SHAPING AND COMPACTION. COMPACTION SUBCUT INCLUDES SCARIFYING THE EXPOSED SOILS TO A DEPTH OF 12 INCHES, MOISTURE CONDITIONING, AND COMPACTING THE SOILS. THE REPLACEMENT FILL SHALL BE GRANULAR EMBANKMENT.
20. THE CONTRACTOR IS HEREBY REMINDED OF HIS RESPONSIBILITY UNDER STATE LAW TO CONTACT ALL UTILITIES THAT MAY HAVE FACILITIES IN THE AREA. CONTACT MUST BE MADE THROUGH GOPHER STATE ONE-CALL.
21. CERTAIN RELOCATION OF EXISTING UTILITIES WILL BE REQUIRED AS A RESULT OF THIS PROJECT. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY POTENTIAL UTILITY CONFLICTS, VERIFY UTILITY CONFLICTS, AND COORDINATE WITH THE RESPECTIVE UTILITY COMPANIES TO AVOID UNNECESSARY DELAYS. NO COMPENSATION WILL BE MADE FOR DELAYS ASSOCIATED WITH THE CONTRACTOR'S FAILURE TO ADEQUATELY COORDINATE WITH UTILITY COMPANIES.
22. ELECTRIC, TELEPHONE/CABLE, AND FIBER OPTIC LINES SHOWN ON THE DRAWINGS AND CROSS-SECTIONS ARE PLOTTED FROM THE BEST INFORMATION AVAILABLE AT THE TIME OF PLAN PREPARATION, BUT MAY NOT REFLECT ACTUAL LOCATIONS OR ELEVATIONS. THE CONTRACTOR WILL VERIFY LOCATION OF UTILITIES BEFORE BEGINNING CONSTRUCTION WHICH MAY BE AFFECTED BY A UTILITY CONFLICT. THE CONTRACTOR WILL GIVE 48 HOURS NOTICE TO THE OWNERS OF KNOWN UTILITIES BEFORE STARTING ANY OPERATIONS AFFECTING THOSE PROPERTIES OR BEGINNING EXCAVATION IN THE VICINITY OF THOSE PROPERTIES. THE CONTRACTORS ATTENTION IS DIRECTED TO SECTION 1507 IN THE STANDARD SPECIFICATIONS. UTILITY COMPANIES MAY RELOCATE THEIR FACILITIES CONCURRENTLY WITH THE CONSTRUCTION OPERATIONS UNDER THIS CONTRACT. THE CONTRACTOR WILL SCHEDULE CONSTRUCTION IN COOPERATION WITH UTILITY RELOCATION.
23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING FACILITIES OUTSIDE THE CONSTRUCTION LIMITS RESULTING FROM NEGLIGENCE.
24. REMOVE ALL SOILS AND SEDIMENT TRACKED OR OTHERWISE DEPOSITED ONTO PUBLIC AND PRIVATE PAVEMENT AREAS. REMOVAL SHALL OCCUR ON A DAILY BASIS WHEN TRACKING OCCURS. SWEEPING MAY BE ORDERED AT ANY TIME IF CONDITIONS WARRANT.
25. THE CONTRACTOR WILL COOPERATE WITH CARVER COUNTY AS IT RELATES TO PERPETUATING SURVEY MONUMENTATION. ADVANCED NOTICE OF DISTURBANCE OF MONUMENTS SHOULD BE MADE TO THE CARVER COUNTY SURVEYORS OFFICE AT 952-361-1024.

COMPACTION CRITERIA TABLE		
ITEM	DESCRIPTION	COMPACTION TESTING METHOD
2106	EMBANKMENT > 3 FT BELOW GRADING GRADE - NON GRANULAR - NOT MEETING 3149	QUALITY COMPACTION
2106	EMBANKMENT < 3 FT BELOW GRADING GRADE - NON GRANULAR - NOT MEETING 3149	QUALITY COMPACTION
2106	EMBANKMENT > 3 FT BELOW GRADING GRADE - GRANULAR - MEETING 3149	QUALITY COMPACTION
2106	EMBANKMENT < 3 FT BELOW GRADING GRADE - GRANULAR - MEETING 3149	QUALITY COMPACTION
2106	TRENCH BACKFILL AND WITHIN 3 FT OF UTILITY STRUCTURE > 3 FT BELOW GRADING GRADE	QUALITY COMPACTION
2106	TRENCH BACKFILL AND WITHIN 3 FT OF UTILITY STRUCTURE < 3 FT BELOW GRADING GRADE	QUALITY COMPACTION
2106	EMBANKMENT OUTSIDE OF "ROAD CORE" - EXCLUDING TRENCH/STRUCTURE BACKFILL	QUALITY COMPACTION
2211	AGGREGATE BASE COURSE	QUALITY COMPACTION
ALL	TEMPORARY WORK	QUALITY COMPACTION

EROSION CONTROL NOTES

26. SEDIMENT CONTROL MUST BE IN PLACE AND APPROVED BY THE ENGINEER BEFORE ANY PHASE OF CONSTRUCTION CAN BEGIN.
27. A ROCK CONSTRUCTION ENTRANCE WILL BE PLACED AT ALL ENTRANCES THAT LEAD TO THE PROJECT SIDE IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN AND THE APPROVED STANDARD DETAILS. ALL ROADS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. PAID FOR AS STABILIZED CONSTRUCTION EXIT (LUMP SUM).
28. INLET PROTECTION WILL BE PLACED AT ALL CATCH INLETS WITHIN THE PROJECT AREA PER STANDARD DETAILS.
29. TEMPORARY STABLIZATION MEASURES SHALL BE EMPLOYED WITHIN 200 FEET OF THE NORMAL WETTED PERIMETER OF ALL DISCHARGE POINTS WITHIN 24 HOURS. MULCH IS NOT AN APPROVED MEASURE.
30. IN THE EVENT THAT PERMANENT STABILIZATION CANNOT BE IMPLEMENTED WITHIN 7 DAYS AFTER CONSTRUCTION ACTIVITY IN THE DISTURBED AREA HAS CEASED, TEMPORARY STABILIZATION BMPS MUST BE SCHEDULED TO OCCUR WITHIN THAT 7 DAY TIME FRAME.
31. IF RAIN IS IN THE FORECAST DURING DITCH WORK, CONTRACTOR TO PLACE PROPER PERIMETER CONTROL AT THE DOWNGRADIENT EXTENT OF THE STABILIZED WORK.
32. ALL STOCKPILES MUST HAVE DOWNGRADIENT PERIMETER CONTROL IMPLEMENTED AND MAINTAINED AT ALL TIMES. STOCKPILES TO RECEIVE TEMPORARY STABILIZATION IF UNWORKED FOR 7 DAYS.
33. STABILIZATION OF DISTURBED AREAS SHALL BE DONE BY PERMANENT TURF ESTABLISHMENT WHENEVER POSSIBLE.
34. IN THE EVENT THAT DEWATERING OPERATIONS NEED TO OCCUR, A DEWATERING PLAN MUST BE SUBMITTED AND APPROVED BY THE ENGINEER BEFORE ANY OPERATIONS TAKE PLACE. THE PLAN MUST BE DEVELOPED IN ACCORDANCE WITH THE SWPPP GUIDELINES.
35. ADDITIONAL EROSION AND SEDIMENT CONTROL MAY BE ADDED DURING ANY PHASE OF CONSTRUCTION AS DIRECTED BY THE ENGINEER.
36. FINAL STABILIZATION WILL BE ACHIEVED WHEN ALL AREAS ARE STABILIZED WITH A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70%. ALL PERMANENT STORMWATER MANAGEMENT SYSTEMS MUST BE CONSTRUCTED AND IN A WORKING MANNER. ALL TEMPORARY BMP MEASURES MUST ALSO BE REMOVED BEFORE A PERMIT NOTICE OF TERMINATION IS FILED.

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ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

SOILS AND CONSTRUCTION NOTES

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 5 OF 220 SHEETS

EARTHWORK TABULATIONS — A

STATION TO STATION	EXCAVATION - COMMON (1)	EXCAVATION - MUCK	SELECT GRANULAR EMBANKMENT (CV)	COMMON EMBANKMENT (CV) (2)
	CU YD	CU YD	CU YD	CU YD
SAP 010-611-027				
CSAH 11				
100+00 TO 100+50	71			84
100+50 TO 101+00	66			136
101+00 TO 101+50	75			171
101+50 TO 102+00	95			160
102+00 TO 102+50	100			170
102+50 TO 103+00	83			186
103+00 TO 103+50	76			182
103+50 TO 104+00	76			182
104+00 TO 104+50	79	28		202
104+50 TO 105+00	70	50		223
105+00 TO 105+50	68	39		230
105+50 TO 106+00	71	36		241
106+00 TO 106+50	90	37		252
106+50 TO 107+00	113	19		237
107+00 TO 107+50	111			264
107+50 TO 108+00	82			269
108+00 TO 108+50	58			221
108+50 TO 109+00	55			194
109+00 TO 109+50	74			168
109+50 TO 110+00	135			165
110+00 TO 110+50	247			175
110+50 TO 111+00	338			175
111+00 TO 111+50	324			168
111+50 TO 112+00	220			158
112+00 TO 112+50	164			204
112+50 TO 113+00	123			317
113+00 TO 113+50	77			448
113+50 TO 114+00	90			660
114+00 TO 114+50	93			694
114+50 TO 115+00	85			514
115+00 TO 115+50	80			464
115+50 TO 116+00	80			463
116+00 TO 116+50	84			397
116+50 TO 117+00	94			324
117+00 TO 117+50	111			300
117+50 TO 118+00	101			425
118+00 TO 118+50	92			521
118+50 TO 119+00	105			523
119+00 TO 119+50	104			532
119+50 TO 120+00	97			488
120+00 TO 120+50	87			430
120+50 TO 121+00	78			387
121+00 TO 121+50	79			368
121+50 TO 122+00	79			366
122+00 TO 122+50	83			366
122+50 TO 123+00	84			364
123+00 TO 123+50	103			361
123+50 TO 124+00	129			356
124+00 TO 124+50	134			402
124+50 TO 125+00	133			460
125+00 TO 125+50	136			441
125+50 TO 126+00	141			355
126+00 TO 126+50	142			263
126+50 TO 127+00	146			199
127+00 TO 127+50	149			155
127+50 TO 128+00	148			131
128+00 TO 128+50	152			145
128+50 TO 129+00	135			161
129+00 TO 129+50	128			211
129+50 TO 130+00	130			285
130+00 TO 130+50	129			336

EARTHWORK TABULATIONS — A

STATION TO STATION	EXCAVATION - COMMON (1)	EXCAVATION - MUCK	SELECT GRANULAR EMBANKMENT (CV)	COMMON EMBANKMENT (CV) (2)
	CU YD	CU YD	CU YD	CU YD
130+50 TO 131+00	109			363
131+00 TO 131+50	79			311
131+50 TO 132+00	70			226
132+00 TO 132+50	61			191
132+50 TO 133+00	57			181
133+00 TO 133+50	58			164
133+50 TO 134+00	61			143
134+00 TO 134+50	66			142
134+50 TO 135+00	69			151
135+00 TO 135+50	73			150
135+50 TO 136+00	79			154
136+00 TO 136+50	79			158
136+50 TO 137+00	83			148
137+00 TO 137+50	82			149
137+50 TO 138+00	87			161
138+00 TO 138+50	87			154
138+50 TO 139+00	72	71		220
139+00 TO 139+50	60	131		287
139+50 TO 140+00	56	110		275
140+00 TO 140+50	55	50		206
140+50 TO 141+00	56			151
141+00 TO 141+50	61			153
141+50 TO 142+00	58			159
142+00 TO 142+50	56			189
142+50 TO 143+00	62			238
143+00 TO 143+50	72			362
143+50 TO 144+00	79			458
144+00 TO 144+50	78			441
144+50 TO 145+00	80			366
145+00 TO 145+50	73			263
145+50 TO 146+00	64			216
146+00 TO 146+50	68			212
146+50 TO 147+00	74			281
147+00 TO 147+50	76			363
147+50 TO 148+00	107			402
148+00 TO 148+50	141			486
148+50 TO 149+00	152			639
149+00 TO 149+50	123			683
149+50 TO 150+00	84			523
150+00 TO 150+50	72			341
150+50 TO 151+00	81			228
151+00 TO 151+50	116			189
151+50 TO 152+00	136			205
152+00 TO 152+50	143			233
152+50 TO 153+00	154			259
153+00 TO 153+50	155			290
153+50 TO 154+00	125			213
154+00 TO 154+50	109			153
154+50 TO 155+00	123			215
155+00 TO 155+50	172			254
155+50 TO 156+00	196			257
156+00 TO 156+50	172			249
156+50 TO 157+00	174			236
157+00 TO 157+50	168			225
157+50 TO 158+00	159			221
158+00 TO 158+50	160			222
158+50 TO 159+00	156			229
159+00 TO 159+50	105			216
159+50 TO 160+00	60			206
160+00 TO 160+50	69	35		290

EARTHWORK TABULATIONS — A

STATION TO STATION	EXCAVATION - COMMON (1)	EXCAVATION - MUCK	SELECT GRANULAR EMBANKMENT (CV)	COMMON EMBANKMENT (CV) (2)
	CU YD	CU YD	CU YD	CU YD
160+50 TO 161+00	75	71		326
161+00 TO 161+50	75	72		268
161+50 TO 162+00	70	36		208
162+00 TO 162+50	63			186
162+50 TO 163+00	67			270
163+00 TO 163+50	73			339
163+50 TO 164+00	72			320
164+00 TO 164+50	82			313
164+50 TO 165+00	85			347
165+00 TO 165+50	74			346
165+50 TO 166+00	71			366
166+00 TO 166+50	67			330
166+50 TO 167+00	62			252
167+00 TO 167+50	59			194
167+50 TO 168+00	58			160
168+00 TO 168+50	64			215
168+50 TO 169+00	70			256
169+00 TO 169+50	66			237
169+50 TO 170+00	64			235
170+00 TO 170+50	66			261
170+50 TO 171+00	68			274
171+00 TO 171+50	70			260
171+50 TO 172+00	71			256
172+00 TO 172+50	73			261
172+50 TO 173+00	74			267
173+00 TO 173+50	70			260
173+50 TO 174+00	85			222
174+00 TO 174+50	104			219
174+50 TO 175+00	109			244
175+00 TO 175+50	111			245
175+50 TO 176+00	118			252
176+00 TO 176+50	106			248
176+50 TO 177+00	94			237
177+00 TO 177+50	110			232
177+50 TO 178+00	153			191
178+00 TO 178+50	131			190
178+50 TO 179+00	70			210
179+00 TO 179+50	61			193
179+50 TO 180+00	55			184
180+00 TO 180+50	53			186
180+50 TO 181+00	53			164
181+00 TO 181+50	45			100
181+50 TO 182+00	52	38		151
182+00 TO 182+50	53	69		222
182+50 TO 183+00	37	31		126
183+00 TO 183+50	68			55
183+50 TO 184+00	99			62
184+00 TO 184+50	66			83
184+50 TO 185+00	44			167
185+00 TO 185+50	82			628
185+50 TO 186+00	117			1171
186+00 TO 186+50	121			1367
186+50 TO 187+00	122			1446
187+00 TO 187+50	122			1345

NOTES:
(1) EXCAVATION - COMMON INCLUDES TOPSOIL STRIPPING.
(2) COMMON EMBANKMENT INCLUDES TOPSOIL PLACEMENT.

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NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

TABULATIONS

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 6 OF 220 SHEETS

EARTHWORK TABULATIONS					A
STATION TO STATION			EXCAVATION - COMMON (1)	EXCAVATION - MUCK	SELECT GRANULAR EMBANKMENT (CV)	COMMON EMBANKMENT (CV) (2)
			CU YD	CU YD	CU YD	CU YD
187+50	TO	188+00	167			1087
188+00	TO	188+50	207			758
188+50	TO	189+00	229			451
189+00	TO	189+50	291			319
189+50	TO	190+00	403			292
190+00	TO	190+50	562			272
190+50	TO	191+00	719			246
191+00	TO	191+50	859			215
191+50	TO	192+00	971			202
192+00	TO	192+50	799			191
192+50	TO	193+00	468			183
193+00	TO	193+50	315			240
193+50	TO	194+00	281			381
194+00	TO	194+50	270	35		485
194+50	TO	195+00	251	56		521
195+00	TO	195+50	230	21		484
195+50	TO	196+00	222			491
196+00	TO	196+50	223			722
196+50	TO	197+00	203			887
197+00	TO	197+50	168			832
197+50	TO	198+00	151			824
198+00	TO	198+50	163			947
198+50	TO	199+00	174			998
199+00	TO	199+50	179			1073
199+50	TO	200+00	174			1143
200+00	TO	200+50	151			1075
200+50	TO	201+00	131			1170
201+00	TO	201+50	131			1106
201+50	TO	202+00	144			817
202+00	TO	202+50	166			775
202+50	TO	203+00	173			848
203+00	TO	203+50	164			907
203+50	TO	204+00	153			1028
204+00	TO	204+50	154			873
204+50	TO	205+00	159			671
205+00	TO	205+50	155			670
205+50	TO	206+00	138			584
206+00	TO	206+50	132			515
206+50	TO	207+00	142			359
207+00	TO	207+50	129			168
207+50	TO	208+00	107			88
208+00	TO	208+50	118	102		172
208+50	TO	209+00	130	178		296
209+00	TO	209+50	133	138		290
209+50	TO	210+00	134	61		184
210+00	TO	210+50	171			89
210+50	TO	211+00	249			119
211+00	TO	211+50	302			231
211+50	TO	212+00	313			281
212+00	TO	212+50	308			275
212+50	TO	213+00	297			317
213+00	TO	213+50	249			378
213+50	TO	214+00	183			411
214+00	TO	214+50	164			428
214+50	TO	215+00	147			461
215+00	TO	215+50	155			561
215+50	TO	216+00	177			605
216+00	TO	216+50	172			516
216+50	TO	217+00	158			413
217+00	TO	217+50	162			285
217+50	TO	218+00	196			165
218+00	TO	218+50	257			137

EARTHWORK TABULATIONS					A
STATION TO STATION			EXCAVATION - COMMON (1)	EXCAVATION - MUCK	SELECT GRANULAR EMBANKMENT (CV)	COMMON EMBANKMENT (CV) (2)
			CU YD	CU YD	CU YD	CU YD
218+50	TO	219+00	296			161
219+00	TO	219+50	320			190
219+50	TO	220+00	370			216
220+00	TO	220+50	417			218
220+50	TO	221+00	444			204
221+00	TO	221+50	467			197
221+50	TO	222+00	410			189
222+00	TO	222+50	299			173
222+50	TO	223+00	231			189
223+00	TO	223+50	188			227
223+50	TO	224+00	163			250
224+00	TO	224+50	123			235
CSAH 11 SUBTOTAL			35855	1514		85987
CSAH 11_TRAIL						
10+00	TO	10+50	215			44
10+50	TO	11+00	308			68
11+00	TO	11+50	159			57
11+50	TO	12+00	45			33
12+00	TO	12+50	5			156
CSAH 11_TRAIL SUBTOTAL			732			358
TOTAL SAP 010-611-027			**36587**	**1514**		**86345**

EARTHWORK TABULATIONS				A
STATION TO STATION			EXCAVATION - COMMON (1)	SELECT GRANULAR EMBANKMENT (CV)	COMMON EMBANKMENT (CV) (2)
			CU YD	CU YD	CU YD
SAP 010-611-027					
CSAH 11 SURCHARGE (3)					
198+50	TO	199+00	812	233	716
199+00	TO	199+50	1613	469	1423
199+50	TO	200+00	1601	472	1415
200+00	TO	200+50	1601	472	1415
200+50	TO	201+00	1613	474	1406
201+00	TO	201+50	800	236	707
TOTAL SAP 010-611-027			**8040**	**2356**	**7082**

NOTES:
(1) EXCAVATION - COMMON INCLUDES TOPSOIL STRIPPING.
(2) COMMON EMBANKMENT INCLUDES TOPSOIL PLACEMENT.
(3) SURCHARGE EMBANKMENT FROM STA 198+50 TO STA 201+50. SEE DETAILS ON SHEETS 26 TO 27.

EARTHWORK SUMMARY						
ROADWAY / LOCATION	FROM STATION	TO STATION	EXCAVATION - COMMON (1)	EXCAVATION - MUCK	SELECT GRANULAR EMBANKMENT (CV)	COMMON EMBANKMENT (CV)
			CU YD	CU YD	CU YD	CU YD
SAP 010-611-027						
CSAH 11	100+00	224+50	35855	1514		85987
CSAH 11 TRAIL	10+00	12+50	732			358
FLOODPLAIN MITIGATION (2)			611			35
CSAH 11 SURCHARGE (3)			8040		2356	7082
		TOTAL	**45238**	**1514**	**2356**	**93462**

NOTES:
(1) ALL EXCAVATION IS CONSIDERED EXCAVATION COMMON. TOPSOIL STRIPPING IS INCLUDED WITH EXCAVATION - COMMON QUANTITY.
(2) EARTHWORK CALCULATED USING A COMPARISON BETWEEN EXISTING AND PROPOSED SURFACE MODELS.
(3) SURCHARGE EMBANKMENT FROM STA 198+50 TO STA 201+50. SEE DETAILS ON SHEETS 26 TO 27.

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ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

TABULATIONS

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 7 OF 220 SHEETS

REMOVAL TABULATION — B

STATION FROM	STATION TO	CLEARING	GRUBBING	CLEARING	GRUBBING	SALVAGE MAIL BOX SUPPORT	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	REMOVE CURB & GUTTER	SALVAGE FENCE	REMOVE BITUMINOUS PAVEMENT	FULL DEPTH RECLAMATION	MILL BITUMINOUS SURFACE (3.0")
		EACH	EACH	ACRE	ACRE	EACH	LIN FT	LIN FT	LIN FT	SQ YD	SQ YD	SQ YD
CSAH 11 - SAP 010-611-027												
100+00.0	112+00.0	2	2	0.40	0.40		40				3217	3217
112+00.0	126+00.0	2	2	0.12	0.12					848	3178	3178
126+00.0	140+00.0	1	1							1569	2363	2363
140+00.0	154+50.0			0.15	0.15		27				3994	3994
154+50.0	168+50.0			0.43	0.43						3952	3952
168+50.0	182+00.0			0.82	0.82				221		3538	3538
182+00.0	193+50.0	1	1	1.10	1.10				97	2070	1683	1683
193+50.0	206+00.0	2	2	1.53	1.53					4060		
206+00.0	219+50.0	7	7	0.77	0.77	1	88	73		4770	377	377
219+50.0	224+53.7	1	1	0.08	0.08		30				1551	1551
TOTALS:		**16**	**16**	**5.4**	**5.4**	**1**	**185**	**73**	**318**	**13317**	**23853**	**23853**

SURFACING MATERIAL TABULATION — C

STATION FROM	STATION TO	AGGREGATE SURFACING (CV) CLASS 2	AGGREGATE BASE (CV) CLASS 5 (1)	3" BITUMINOUS WALK	TYPE SP 9.5 WEARING COURSE MIXTURE (3,C) (SPWEA340C)	TYPE SP 12.5 NON WEAR COURSE MIX (3,B) (SPNWB330B)	CONCRETE CURB & GUTTER DESIGN B612	CONCRETE CURB & GUTTER DESIGN B624
		CY	CY	SF	TON	TON	LIN FT	LIN FT
CSAH 11 - SAP 010-611-027								
100+00.0	112+00.0	276	450		884	423		
112+00.0	126+00.0	247	1120		1553	729		
126+00.0	140+00.0	267	1235		1148	504		
140+00.0	154+50.0	303	664		1430	663		
154+50.0	168+50.0	149	680		1682	728		
168+50.0	182+00.0	279	596		1278	595		
182+00.0	193+50.0	179	1509	11087	1009	396		53
193+50.0	206+00.0	209	2410	12777	1022	424	82	490
206+00.0	219+50.0	189	2537	11884	1241	574		
219+50.0	224+53.7	94	336	5040	420	202		
TOTALS:		**2192**	**11537**	**40788**	**11667**	**5238**	**82**	**543**

GEOTECHNICAL TREATMENT TABULATION — D

ALIGN.	STATION FROM	STATION TO	OFFSET	REMOVE PIEZOMETER	PIEZOMETER	SETTLEMENT PLATES	GEOTEXTILE FABRIC TYPE 5	REMARKS
				EACH	EACH	EACH	SQ YD	
SAP 010-611-027								
CSAH 11	198+35.00	201+65.00					4573	
CSAH 11	199+00.00			1	1	1		
CSAH 11	199+00.00		10.0' L			1		
CSAH 11	199+50.00			1	1	1		
CSAH 11	199+50.00		10.0' L			1		
CSAH 11	199+50.00		15.0' R	1	1	1		MID SLOPE
CSAH 11	199+50.00		40.0' R	1	1	1		CSAH 11 SHLD
CSAH 11	200+00.00			1	1	1		
CSAH 11	200+00.00		15.0' L			1		
CSAH 11	200+00.00		15.0' L	1	1	1		
CSAH 11	200+00.00		20.0' L			1		
CSAH 11	200+50.00			1	1	1		
CSAH 11	200+50.00		15.0' R	1	1	1		MID SLOPE
CSAH 11	201+00.00			1	1	1		
CSAH 11	201+00.00		15.0' L	1	1	1		MID SLOPE
CSAH 11	201+00.00		40.0' R			1		
TOTALS:				**9**	**9**	**14**	**4573**	

REMOVALS NOTES:

(1) AGGREGATE BASE (CV) CLASS 5 QUANTITY REPRESENTS MATERIAL THAT WILL BE NEEDED IN addition TO MATERIAL GENERATED BY RECLAIM OPERATIONS. SEE TYPICAL SECTIONS FOR DETAILS.

CONCRETE CURB AND GUTTER AND SIDEWALK — E

STATION FROM	STATION TO	LOCATION	DRILL & GROUT REINF BAR (EPOXY COATED) QUADRANT BACK OF CURB	DRILL & GROUT REINF BAR (EPOXY COATED) QUADRANT LANDING	DRILL & GROUT REINF BAR (EPOXY COATED) QUADRANT END OF CURB TIE IN	CONCRETE CURB RAMP WALK	CONCRETE CURB & GUTTER (ADA)	TRUNCATED DOMES
			EACH	EACH	EACH	SQ FT	LIN FT	SQ FT
CSAH 11 - SAP 027-619-026								
210+27	210+86	WISTERIA ST	12	16		316	43	38
217+78	218+32	THE HUMANITY ALLIANCE DRIVEWAY	12	16	4	321	40	38
TOTALS:			**24**	**32**	**4**	**637**	**83**	**76**

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ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE: Eric Nelson
DATE 01/10/25 LICENSE # 43560

TABULATIONS

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 8 OF 220 SHEETS

EROSION CONTROL & TURF ESTABLISHMENT TABULATION — F

STATION TO STATION	STORM DRAIN INLET PROTECTION	CULVERT END CONTROLS	SILT FENCE, TYPE MS	FLOTATION SILT CURTAIN TYPE STILL WATER	SEDIMENT CONTROL LOG TYPE COMPOST	MULCH MATERIAL TYPE 3	FERTILIZER TYPE 1	FERTILIZER TYPE 3	DISK ANCHORING	SEED MESIC INSLOPE	SEED SOUTHERN TALLGRASS ROADSIDE	SEED SOUTHERN BOULEVARD	SEED WET DITCH
	EACH	EACH	LIN FT	LIN FT	LIN FT	TON	POUND	POUND	ACRE	POUND	POUND	POUND	POUND
CSAH 11 - SP 010-611-027													
100+00 TO 112+00		2	780		80	3		2337	1.6	88	92		35
112+00 TO 126+00		2	1910		300	4		2053	1.9	73	36		67
126+00 TO 140+00			1200		90	3		2299	1.7	74	88		41
140+00 TO 154+50		3	1490		110	4		1844	1.9	71	45		49
154+50 TO 168+50		3	1490		560	4		1962	1.8	71	53		49
168+50 TO 182+00			1270		20	3		2728	1.6	75	117		43
182+00 TO 193+50	1	1	1630		50	5	991	1668	2.3	104	25	793	44
193+50 TO 206+00	1	1	2540	80	750	6	598	1604	2.9	95	17	478	49
206+00 TO 219+50	2	2	1780		180	4	427	2310	1.9	148	38	342	57
219+50 TO 224+54			1010		540	2	2161	3951	1.1	216	48	1729	123
FLOODPLAIN EXCAVATION			529		534	1			0.5				51
TOTAL SP 010-611-027	**4**	**14**	**15629**	**80**	**3214**	**38**	**4177**	**22758**	**19.2**	**1014**	**560**	**3342**	**608**

MUMBLE STRIP TABULATION — G

LOCATION	STATION FROM	STATION TO	LENGTH (1) LIN FT
CSAH 11 - SAP 010-611-027			
LT	100+00.0	122+31.4	2231
	131+86.4	153+67.4	2181
	159+55.6	160+96.6	141
	170+75.5	179+93.1	918
	186+45.6	202+00.0	1554
CL	100+00.0	117+71.0	1771
	118+31.4	153+97.0	3566
	154+30.4	167+55.9	1326
	167+97.2	202+00.0	3403
RT	100+00.0	122+46.0	2246
	118+59.0	150+46.9	3188
	158+23.3	162+32.5	409
	168+30.4	181+50.9	1321
	183+36.4	186+78.6	342
	200+32.4	202+00.0	168
TOTALS:			**24760**

TABULATION NOTES:

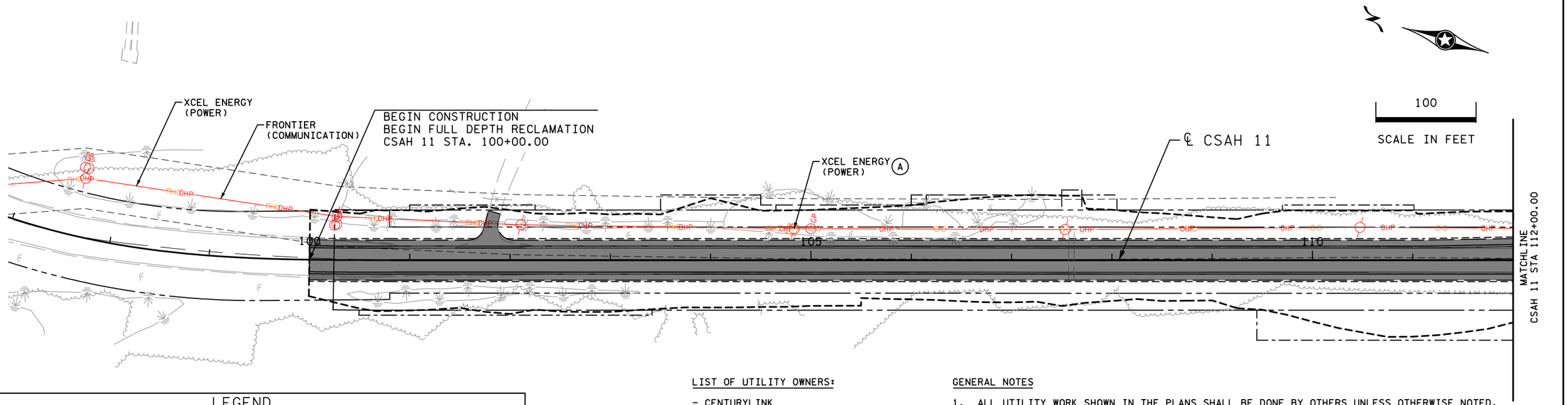
(1) PAID FOR AS MILLED SINUSOIDAL RUMBLE STRIPS. SEE STANDARD DETAILS.

MISC INSTALLATION TABULATION — H

STATION FROM	STATION TO	INSTALL MAIL BOX SUPPORT EACH	INSTALL FENCE LIN FT
CSAH 11 - SAP 010-611-027			
178+44.8	180+65.3		225
181+96.7	182+37.8		43
183+84.7	184+34.4	1	50
218+43.7			
TOTALS:		**1**	**318**

1

1



LEGEND

CONSTRUCTION LIMITS		SANITARY SEWER	>>
EXISTING RIGHT OF WAY		GAS MAIN	G
PROPOSED RIGHT OF WAY		OVERHEAD POWER	OHP
TEMPORARY EASEMENT		OVERHEAD COMMUNICATION	OHU
PROPOSED DRAINAGE AND UTILITY EASEMENT		COMMUNICATION BURIED	OO
PROPOSED TRAIL EASEMENT		FIBER OPTIC BURIED	F/O -BUR
PROPOSED SURFACING		TELEVISION CABLE BURIED	TV-BUR
		POWER BURIED	P-BUR

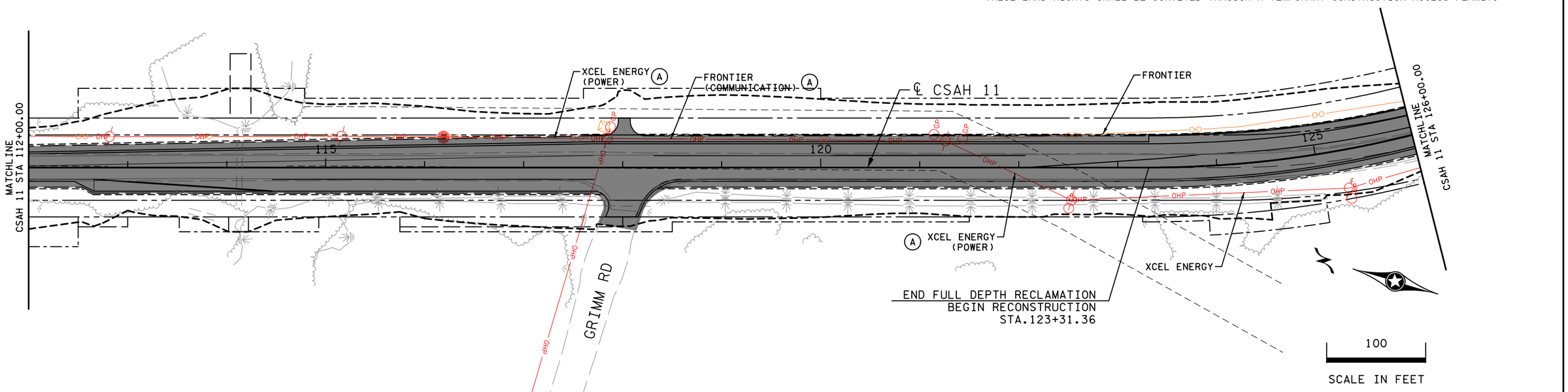
UTILITY ACTION LEGEND	
A	RELOCATE

LIST OF UTILITY OWNERS:

- CENTURYLINK
- CENTER POINT ENERGY
- CITY OF VICTORIA
- FRONTIER COMMUNICATIONS (FRONTIER)
- THREE RIVERS PARK DISTRICT
- XCEL ENERGY (XCEL)

GENERAL NOTES

1. ALL UTILITY WORK SHOWN IN THE PLANS SHALL BE DONE BY OTHERS UNLESS OTHERWISE NOTED.
2. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-22, ENTITLED "STANDARD GUIDELINE FOR INVESTIGATING AND DOCUMENTING EXISTING UTILITIES".
3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE GOPHER STATE EXCAVATION NOTICE SYSTEM, REQUIRED BY MINNESOTA STATURE 216D, FOR ALL UNDERGROUND UTILITY LOCATIONS.
4. THE APPROXIMATE PORTIONS OF EXISTING UTILITY FACILITIES THAT ARE EXPECTED TO BE SEE "UTILITY ACTION LEGEND" FOR DESCRIPTIONS OF IMPACT.
5. STORM SEWER AND CULVERT REMOVALS ARE SHOWN ON THE REMOVAL PLAN.
6. PROPOSED STORM SEWER AND CULVERTS ARE SHOWN IN THIS PLAN FOR REFERENCE. SEE DRAINAGE PLAN FOR DETAILS.
7. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.



NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

INPLACE UTILITY PLANS

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 10 OF 220 SHEETS

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1/22/2025
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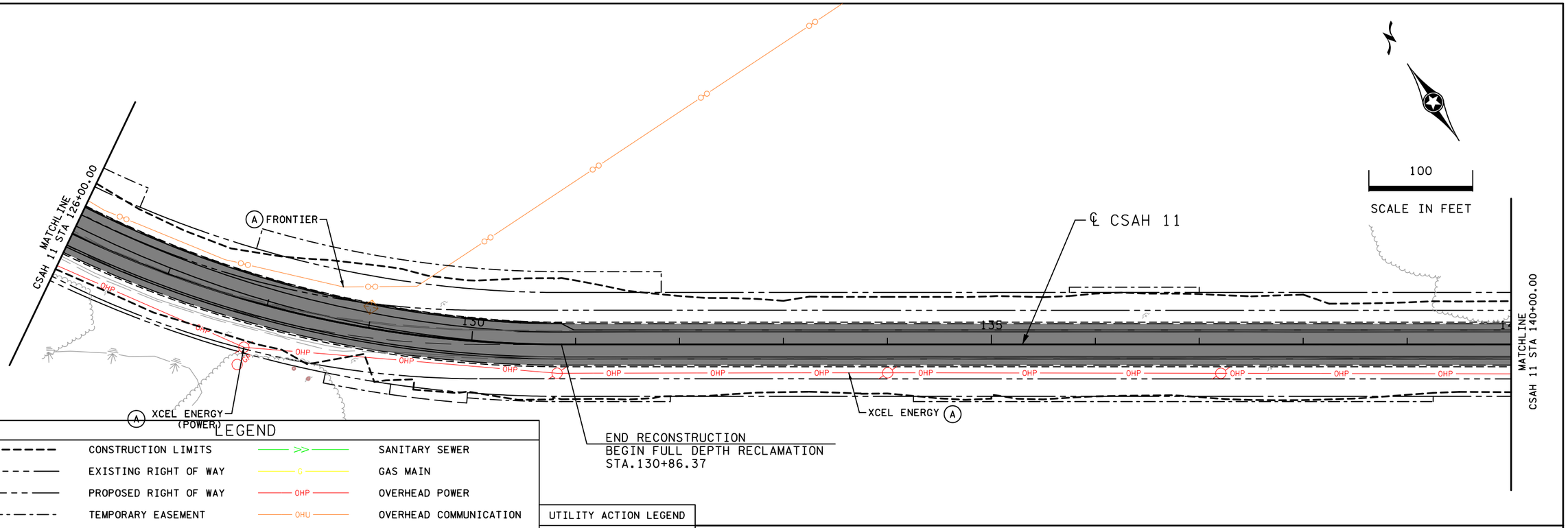
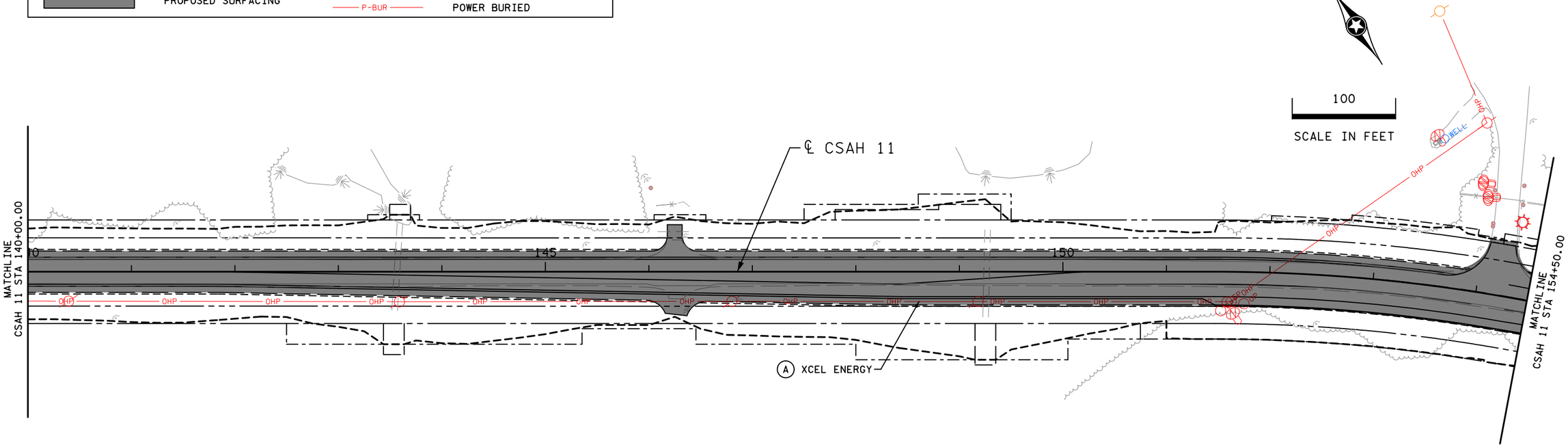


LEGEND

CONSTRUCTION LIMITS	>>	SANITARY SEWER
EXISTING RIGHT OF WAY	G	GAS MAIN
PROPOSED RIGHT OF WAY	OHP	OVERHEAD POWER
TEMPORARY EASEMENT	OHU	OVERHEAD COMMUNICATION
PROPOSED DRAINAGE AND UTILITY EASEMENT		COMMUNICATION BURIED
PROPOSED TRAIL EASEMENT	F/O -BUR	FIBER OPTIC BURIED
PROPOSED SURFACING	TV-BUR	TELEVISION CABLE BURIED
	P-BUR	POWER BURIED

UTILITY ACTION LEGEND

(A) RELOCATE



NO	DATE	DWN	CKD	REVISIONS

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SIGNATURE:
DATE 01/10/25 LICENSE # 43560

INPLACE UTILITY PLANS

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 11 OF 220 SHEETS

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LEGEND

CONSTRUCTION LIMITS		SANITARY SEWER	SAN
EXISTING RIGHT OF WAY		GAS MAIN	G
PROPOSED RIGHT OF WAY		OVERHEAD POWER	OHP
TEMPORARY EASEMENT		OVERHEAD COMMUNICATION	OHU
PROPOSED DRAINAGE AND UTILITY EASEMENT		COMMUNICATION BURIED	
PROPOSED TRAIL EASEMENT		FIBER OPTIC BURIED	F/O -BUR
PROPOSED SURFACING		TELEVISION CABLE BURIED	TV-BUR
		POWER BURIED	P-BUR

100

SCALE IN FEET

THREE RIVERS PARK DISTRICT

℄ CSAH 11

MATCHLINE
CSAH 11 STA 154+50.00

155

160

165

MATCHLINE
CSAH 11 STA 168+50.00

CSAH 11 STA 168+50.00

THREE RIVERS PARK DISTRICT
(FIBER OPTIC)

XCEL ENERGY
(POWER)

CARVER PARK RD

CENTURYLINK

UTILITY ACTION LEGEND

(A) RELOCATE

100

SCALE IN FEET

℄ CSAH 11

(A) XCEL ENERGY

170

175

180

MATCHLINE
CSAH 11 STA 168+50.00

MATCHLINE
CSAH 11 STA 182+00.00

CENTURYLINK

THREE RIVERS PARK DISTRICT

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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SIGNATURE:

DATE 01/10/25 LICENSE # 43560

INPLACE UTILITY PLANS

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 12 OF 220 SHEETS

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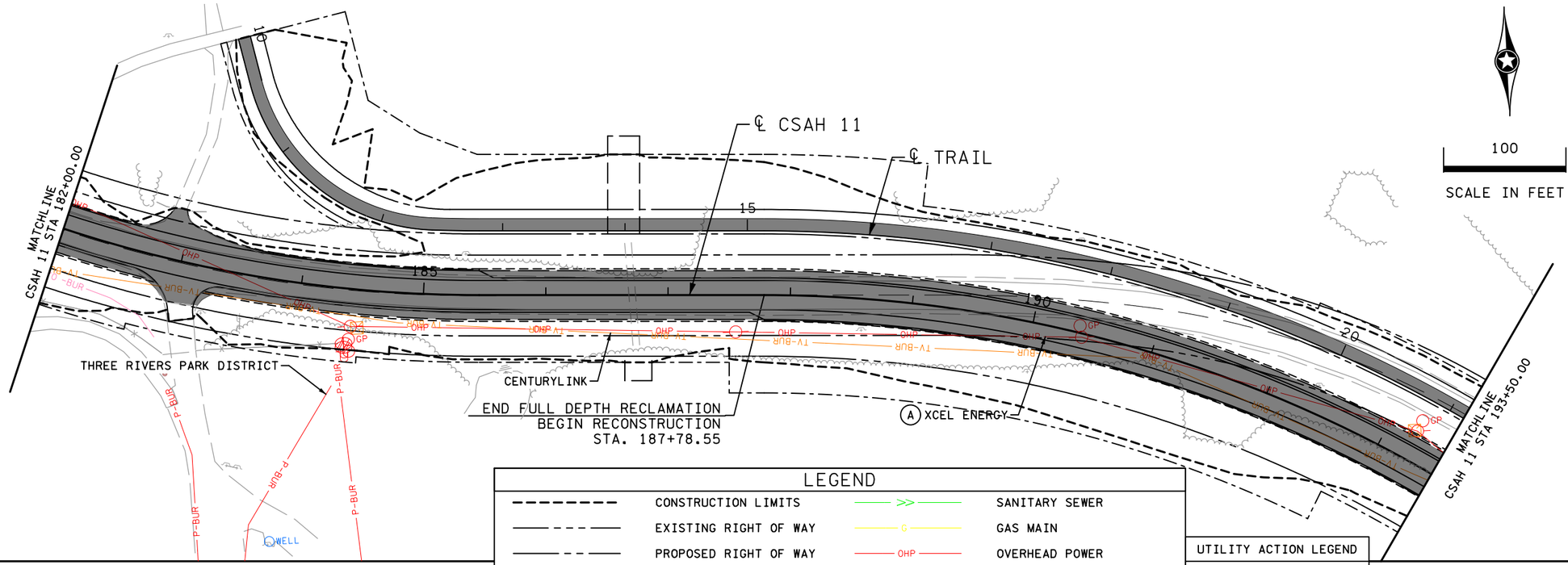
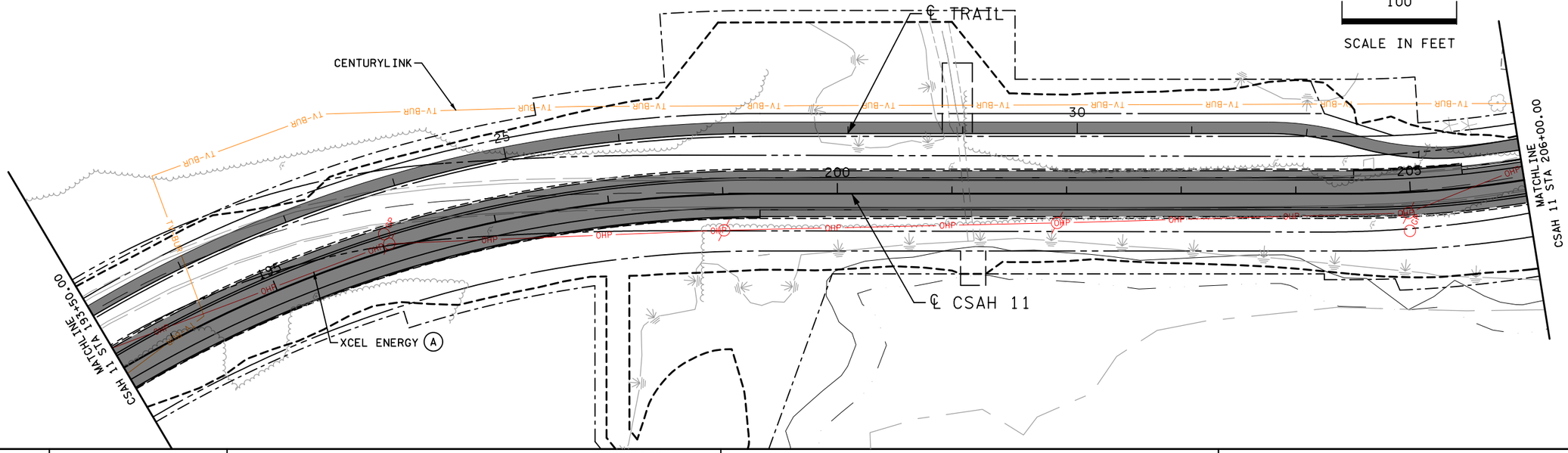


LEGEND			
	CONSTRUCTION LIMITS	SAN	SANITARY SEWER
	EXISTING RIGHT OF WAY	G	GAS MAIN
	PROPOSED RIGHT OF WAY	OHP	OVERHEAD POWER
	TEMPORARY EASEMENT	OHU	OVERHEAD COMMUNICATION
	PROPOSED DRAINAGE AND UTILITY EASEMENT	C/O	COMMUNICATION BURIED
	PROPOSED TRAIL EASEMENT	F/O -BUR	FIBER OPTIC BURIED
	PROPOSED SURFACING	TV-BUR	TELEVISION CABLE BURIED
		P-BUR	POWER BURIED

UTILITY ACTION LEGEND	
(A)	RELOCATE



NO	DATE	DWN	CKD	REVISIONS

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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

INPLACE UTILITY PLANS

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 13 OF 220 SHEETS

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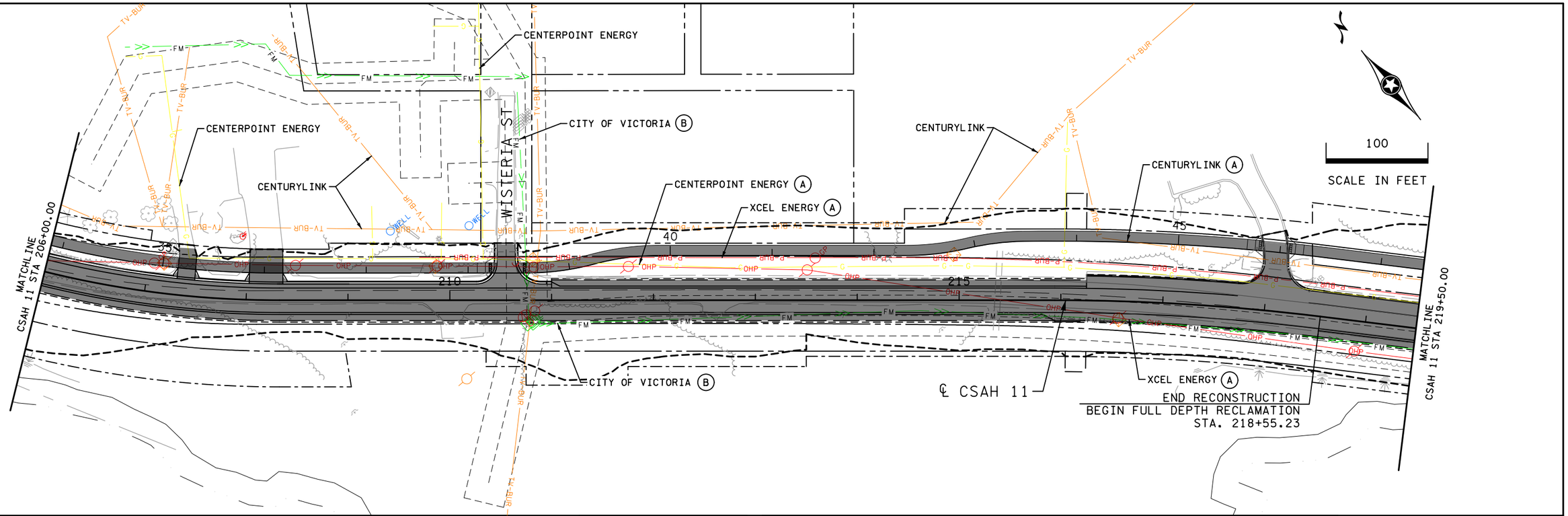
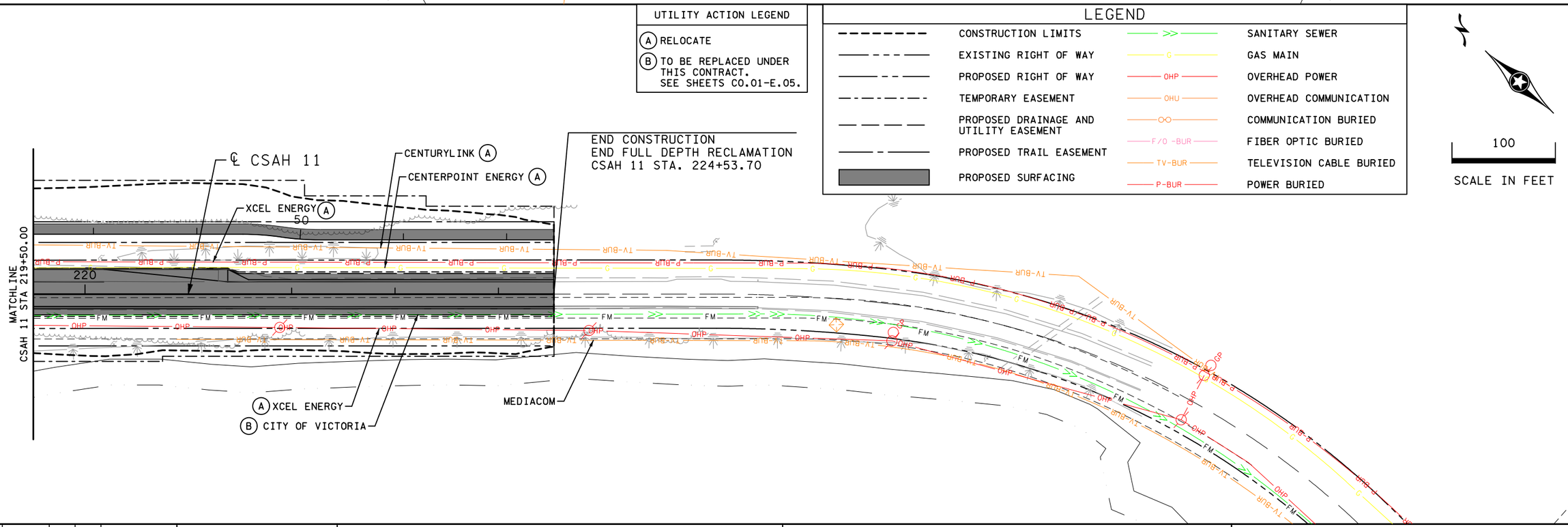


UTILITY ACTION LEGEND
(A) RELOCATE
(B) TO BE REPLACED UNDER THIS CONTRACT. SEE SHEETS CO.01-E.05.

LEGEND			
	CONSTRUCTION LIMITS	SAN	SANITARY SEWER
	EXISTING RIGHT OF WAY	G	GAS MAIN
	PROPOSED RIGHT OF WAY	OHP	OVERHEAD POWER
	TEMPORARY EASEMENT	OHU	OVERHEAD COMMUNICATION
	PROPOSED DRAINAGE AND UTILITY EASEMENT	COM	COMMUNICATION BURIED
	PROPOSED TRAIL EASEMENT	F/O -BUR	FIBER OPTIC BURIED
	PROPOSED SURFACING	TV-BUR	TELEVISION CABLE BURIED
		P-BUR	POWER BURIED



NO	DATE	DWN	CKD	REVISIONS

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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

INPLACE UTILITY PLANS

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 14 OF 220 SHEETS

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GENERAL NOTES

1. TYPICAL SECTIONS ARE NOT TO SCALE.

2. ALL CROSS SLOPES ARE EXPRESSED IN FT PER FT. CROSS SLOPES VARY THROUGHOUT THE CORRIDOR.

3. ALL DIMENSIONS LOCATED AT CURB AND GUTTER ARE MEASURED TO FACE OF CURB UNLESS OTHERWISE NOTED.

4. SEE INPLACE TOPOGRAPHY, UTILITIES, AND REMOVAL PLAN FOR RECLAMATION LIMITS AND SAW CUT LOCATIONS.

5. UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES WILL BE THE SAME AS THE PROPOSED DRIVING SURFACE.

6. PER SPEC 1205.2 ADDITIONAL INFORMATION CAN BE REFERENCED IN THE SOILS REPORT AND RECOMMENDATIONS.

7. MAXIMUM SUPERELEVATION ROLLOVER SHALL BE 0.07 FT/FT. FOR DETAILS SEE SUPERELEVATION PLANS.

8. MAXIMUM SUPERELEVATION ROLLOVER BETWEEN THROUGH LANE AND TURN LANE SHALL BE 0.04 FT/FT. FOR DETAILS SEE SUPERELEVATION PLANS.

9. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.

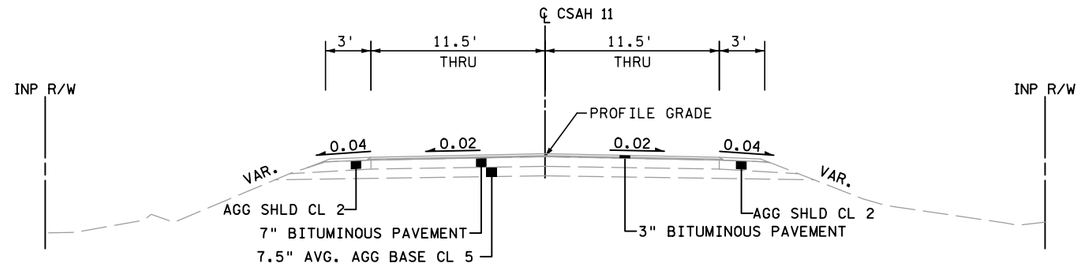
PAVEMENT REMOVAL AND RECLAMATION NOTES:

A. IN AREAS WHERE REMOVE BITUMINOUS PAVEMENT IS CALLED FOR IN THE REMOVAL PLAN, ALL EXISTING BITUMINOUS PAVEMENT AND AGGREGATE SHALL BE REMOVED.

B. IN AREAS WHERE FULL DEPTH RECLAMATION IS CALLED FOR IN THE REMOVAL PLAN, A 12-INCH DEPTH HAS BEEN PLANNED FOR THE RECLAMATION. THIS 12-INCH DEPTH WAS USED IN CALCULATING THE RECLAIM MATERIAL GENERATED AND THE ESTIMATED QUANTITY OF IMPORTED AGGREGATE BASE THAT WILL BE REQUIRED.

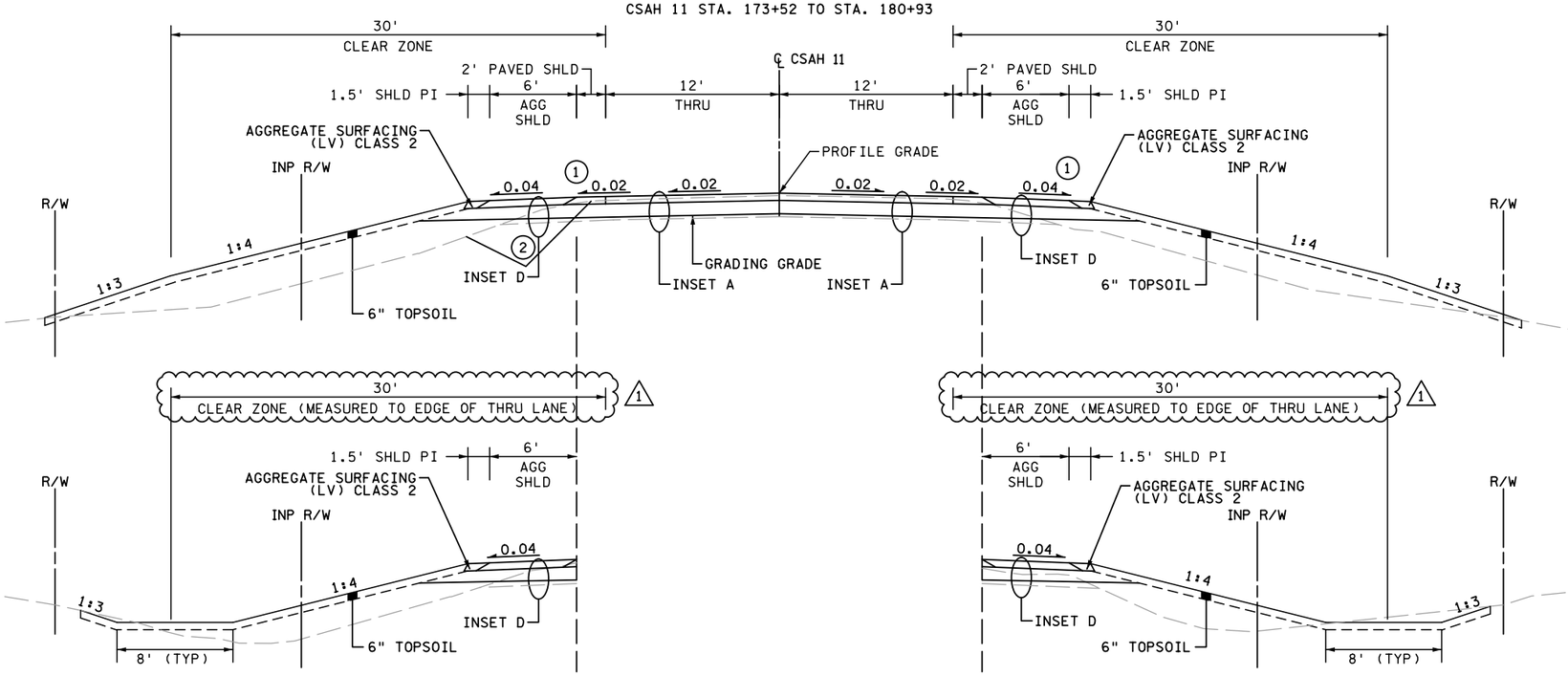
C. THE DEPTH OF FULL DEPTH RECLAMATION MAY NEED TO BE ADJUSTED DUE TO MATERIAL THICKNESSES ENCOUNTERED IN THE FIELD. SEE GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.

EXISTING CSAH 11



PROPOSED CSAH 11 - SHOULDER WIDENING

CSAH 11 STA. 100+00 TO STA. 112+66
CSAH 11 STA. 130+86 TO STA. 148+42
CSAH 11 STA. 159+35 TO STA. 161+97
CSAH 11 STA. 173+52 TO STA. 180+93



SPECIFIC NOTES:

(1) BITUMINOUS SAFETY EDGE. SEE STANDARD PLAN 5-297.220.

(2) EXCAVATION-MUCK AT THE FOLLOWING LOCATIONS:
- STA 104+50 TO STA 106+50
- STA 139+00 TO STA 140+00
- STA 160+50 TO STA 161+50
SEE CROSS SECTIONS FOR DEPTHS.

TYPICAL 8' DITCH BOTTOM

CSAH 11 STA. 100+50 TO STA. 107+60
CSAH 11 STA. 109+50 TO STA. 112+00
CSAH 11 STA. 133+25 TO STA. 138+00
CSAH 11 STA. 144+50 TO STA. 148+42
CSAH 11 STA. 176+00 TO STA. 178+50

TYPICAL 8' DITCH BOTTOM

CSAH 11 STA. 100+50 TO STA. 105+50
CSAH 11 STA. 109+00 TO STA. 112+66
CSAH 11 STA. 130+86 TO STA. 142+00
CSAH 11 STA. 159+50 TO STA. 161+97
CSAH 11 STA. 173+52 TO STA. 179+83

NO	DATE	DWN	CKD	REVISIONS
1	01/24/25	GMK	EN	ADDENDUM #1

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/24/25 LICENSE # 43560

TYPICAL SECTIONS

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 15 OF 220 SHEETS

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SPECIFIC NOTES:

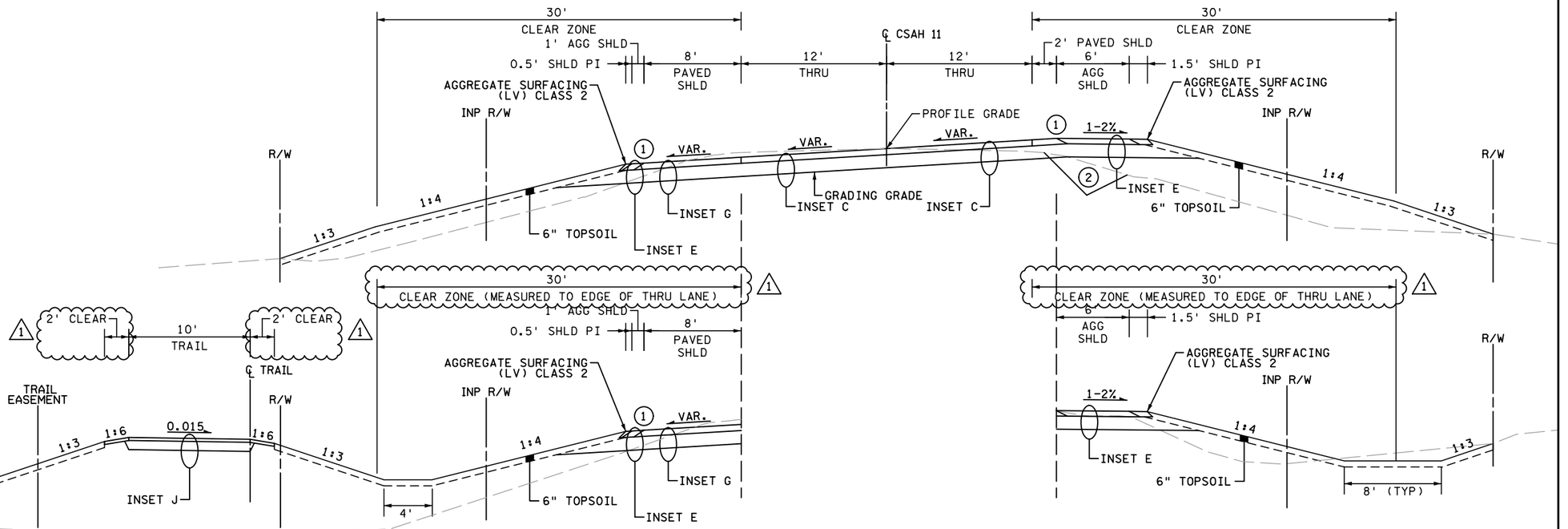
(1) BITUMINOUS SAFETY EDGE. SEE STANDARD PLAN 5-297.220.

(2) EXCAVATION-MUCK FROM STA 194+50 TO STA 195+00.
SEE CROSS SECTIONS FOR DEPTHS.

(3) SURCHARGE EMBANKMENT FROM STA 198+50 TO STA 201+50.
SEE DETAILS ON SHEETS 26 TO 27.

PROPOSED CSAH 11 - CURVE CORRECTION

CSAH 11 STA. 123+31 TO STA. 130+86
CSAH 11 STA. 187+79 TO STA. 199+32



TYPICAL 4' DITCH DEPTH

CSAH 11 STA. 187+79 TO STA. 199+32 (3)

TYPICAL 8' DITCH BOTTOM

CSAH 11 STA. 123+31 TO STA. 124+50
CSAH 11 STA. 129+50 TO STA. 130+86
CSAH 11 STA. 187+79 TO STA. 193+00

GENERAL NOTES

1. TYPICAL SECTIONS ARE NOT TO SCALE.

2. ALL CROSS SLOPES ARE EXPRESSED IN FT PER FT.
CROSS SLOPES VARY THROUGHOUT THE CORRIDOR.

3. ALL DIMENSIONS LOCATED AT CURB AND GUTTER
ARE MEASURED TO FACE OF CURB UNLESS
OTHERWISE NOTED.

4. SEE INPLACE TOPOGRAPHY, UTILITIES, AND REMOVAL
PLAN FOR RECLAMATION LIMITS AND SAW CUT
LOCATIONS.

5. UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE
CROSS SLOPES WILL BE THE SAME AS THE PROPOSED
DRIVING SURFACE.

6. PER SPEC 1205.2 ADDITIONAL INFORMATION CAN BE
REFERENCED IN THE SOILS REPORT AND RECOMMENDATIONS.

7. MAXIMUM SUPERELEVATION ROLLOVER SHALL BE 0.07 FT/FT.
FOR DETAILS SEE SUPERELEVATION PLANS.

8. MAXIMUM SUPERELEVATION ROLLOVER BETWEEN
THROUGH LANE AND TURN LANE SHALL BE 0.04 FT/FT.
FOR DETAILS SEE SUPERELEVATION PLANS.

9. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED
BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL
BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.

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NO	DATE	DWN	CKD	REVISIONS
1	01/24/25	GMK	EN	ADDENDUM #1

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE: Eric Nelson
DATE 01/24/25 LICENSE # 43560

TYPICAL SECTIONS

SAP 010-611-027; CP 218931 (CSAH 11)

GENERAL NOTES

1. TYPICAL SECTIONS ARE NOT TO SCALE.
2. ALL CROSS SLOPES ARE EXPRESSED IN FT PER FT. CROSS SLOPES VARY THROUGHOUT THE CORRIDOR.
3. ALL DIMENSIONS LOCATED AT CURB AND GUTTER ARE MEASURED TO FACE OF CURB UNLESS OTHERWISE NOTED.
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7. MAXIMUM SUPERELEVATION ROLLOVER SHALL BE 0.07 FT/FT. FOR DETAILS SEE SUPERELEVATION PLANS.
8. MAXIMUM SUPERELEVATION ROLLOVER BETWEEN THROUGH LANE AND TURN LANE SHALL BE 0.04 FT/FT. FOR DETAILS SEE SUPERELEVATION PLANS.
9. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.

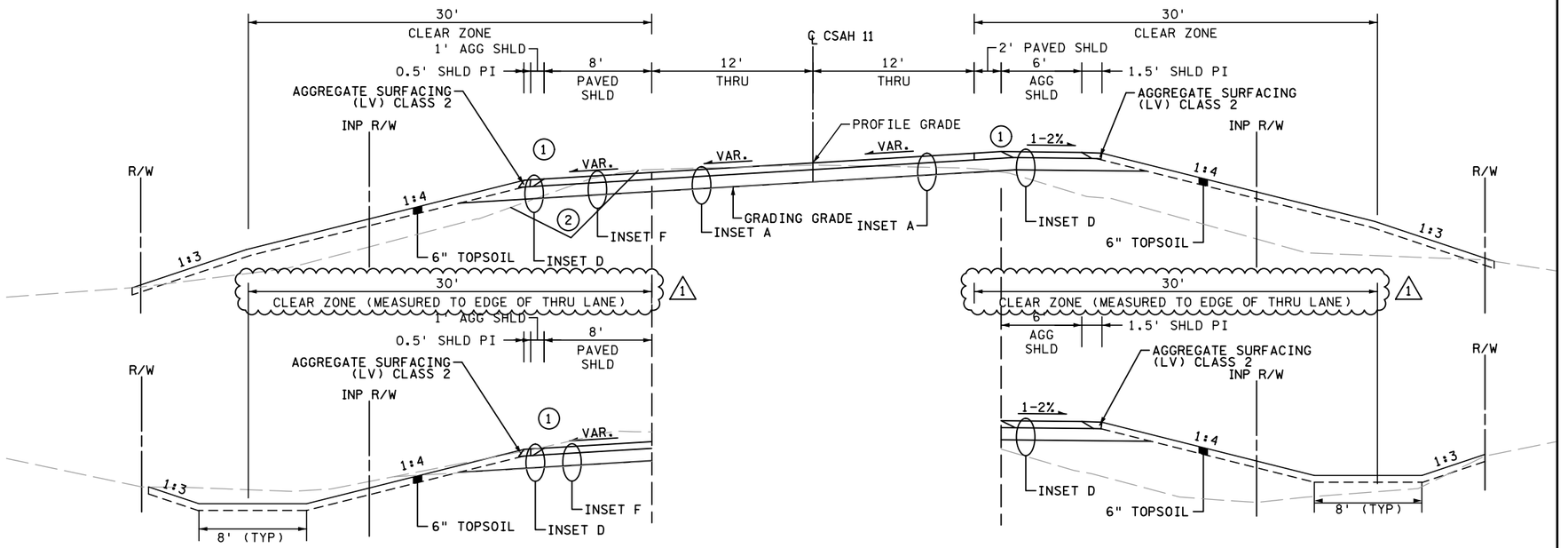
SPECIFIC NOTES:

(1) BITUMINOUS SAFETY EDGE. SEE STANDARD PLAN 5-297.220.

(2) EXCAVATION-MUCK FROM STA 182+00 TO STA 182+50. SEE CROSS SECTIONS FOR DEPTHS.

PROPOSED CSAH 11 - SUPERELEVATION

CSAH 11 STA. 151+47 TO STA. 157+23
CSAH 11 STA. 161+97 TO STA. 169+75
CSAH 11 STA. 180+93 TO STA. 185+46



TYPICAL 8' DITCH BOTTOM

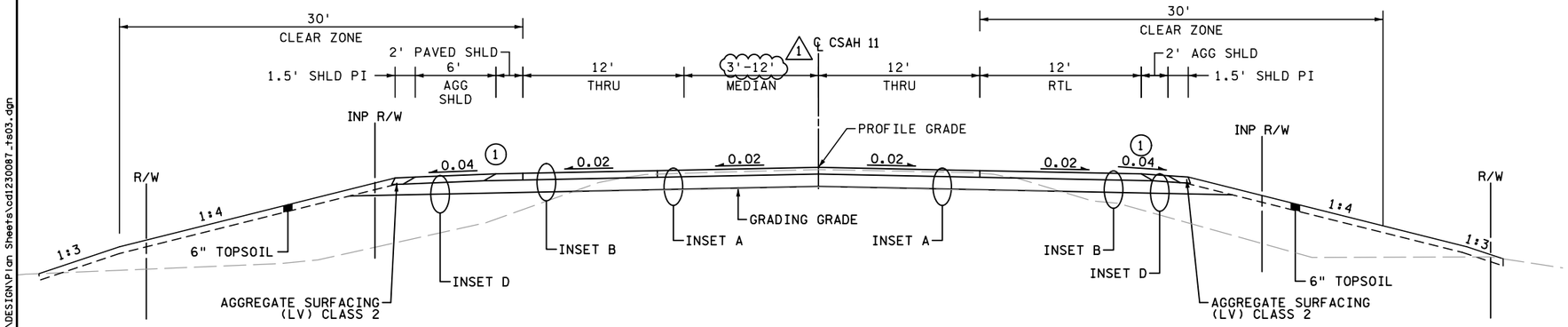
CSAH 11 STA. 151+47 TO STA. 157+23

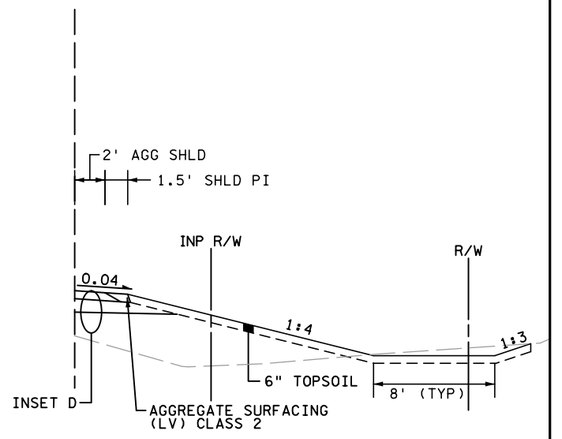
TYPICAL 8' DITCH BOTTOM

CSAH 11 STA. 151+47 TO STA. 155+50
CSAH 11 STA. 156+37 TO STA. 157+23
CSAH 11 STA. 161+97 TO STA. 162+25
CSAH 11 STA. 164+50 TO STA. 165+00
CSAH 11 STA. 168+00 TO STA. 169+75
CSAH 11 STA. 183+75 TO STA. 184+50

PROPOSED CSAH 11 - SB RIGHT TURN LANE

CSAH 11 STA. 112+66 TO STA. 117+71





TYPICAL 8' DITCH BOTTOM

CSAH 11 STA. 116+00 TO STA. 117+71
CSAH 11 STA. 157+23 TO STA. 157+75

NO	DATE	DWN	CKD	REVISIONS
1	01/24/25	GMK	EN	ADDENDUM #1

ALLIANT

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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/24/25 LICENSE # 43560

TYPICAL SECTIONS

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 17 OF 220 SHEETS

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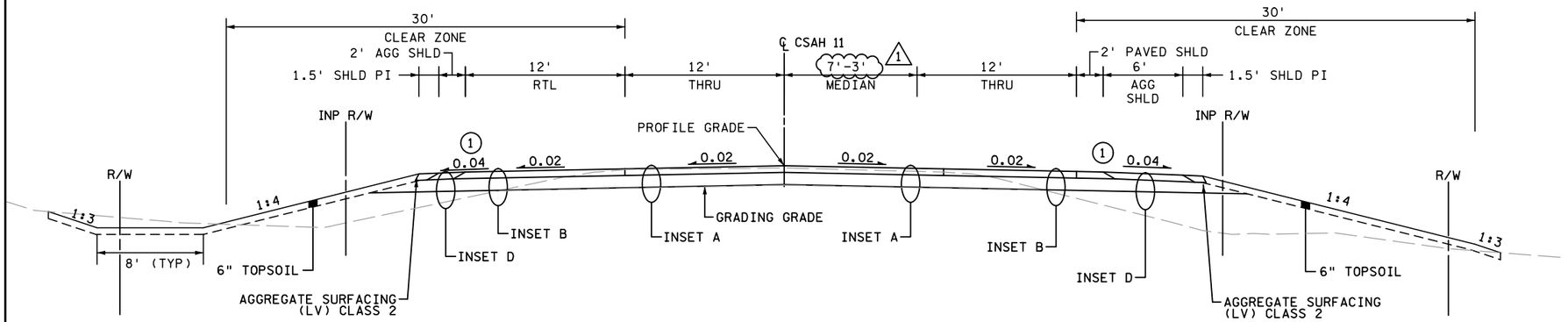
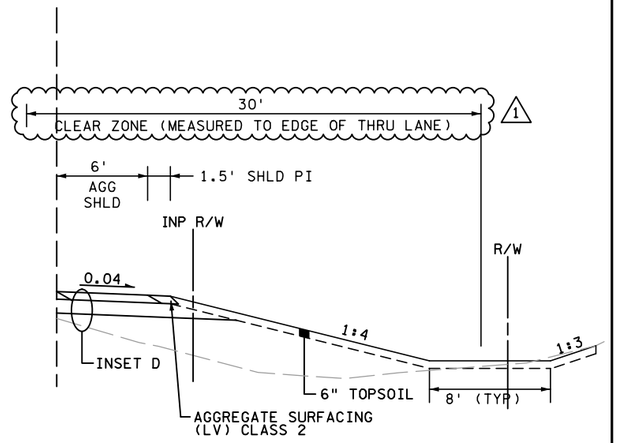
PROPOSED CSAH 11 - NB RIGHT TURN LANE

CSAH 11 STA. 157+23 TO STA. 159+35



TYPICAL 8' DITCH BOTTOM

CSAH 11 STA. 157+23 TO STA. 157+75



SPECIFIC NOTES:

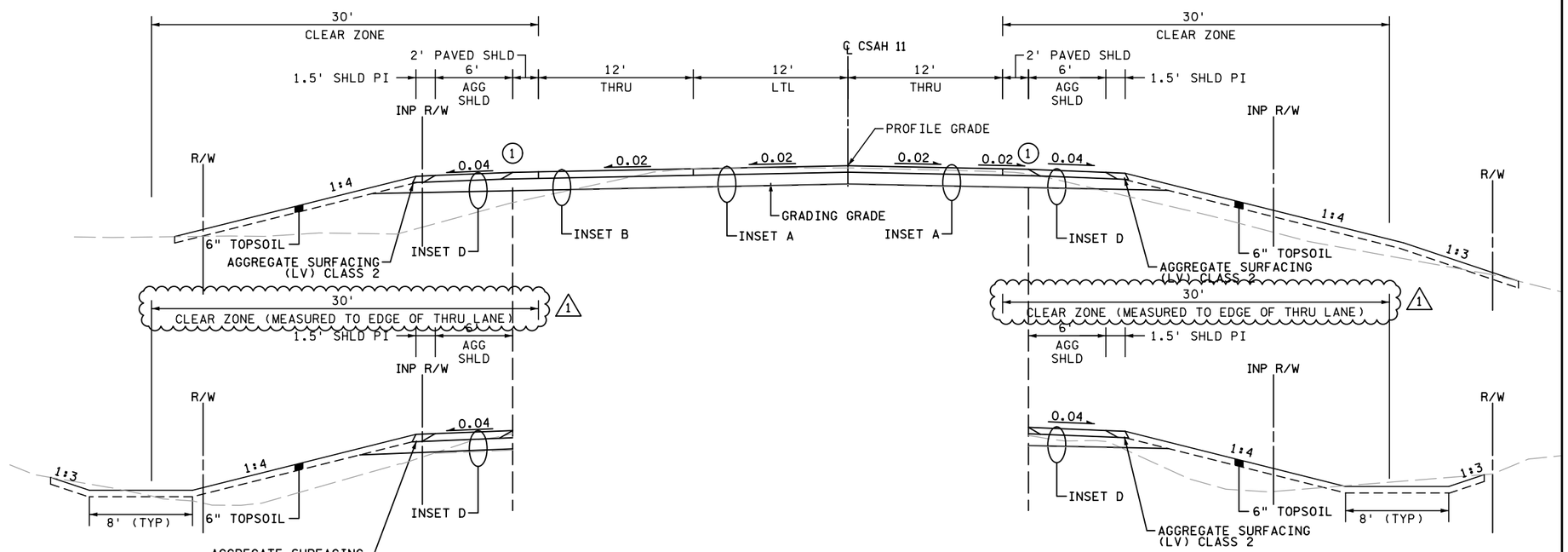
(1) BITUMINOUS SAFETY EDGE. SEE STANDARD PLAN 5-297.220.

GENERAL NOTES

1. TYPICAL SECTIONS ARE NOT TO SCALE.
2. ALL CROSS SLOPES ARE EXPRESSED IN FT PER FT. CROSS SLOPES VARY THROUGHOUT THE CORRIDOR.
3. ALL DIMENSIONS LOCATED AT CURB AND GUTTER ARE MEASURED TO FACE OF CURB UNLESS OTHERWISE NOTED.
4. SEE INPLACE TOPOGRAPHY, UTILITIES, AND REMOVAL PLAN FOR RECLAMATION LIMITS AND SAW CUT LOCATIONS.
5. UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES WILL BE THE SAME AS THE PROPOSED DRIVING SURFACE.
6. PER SPEC 1205.2 ADDITIONAL INFORMATION CAN BE REFERENCED IN THE SOILS REPORT AND RECOMMENDATIONS.
7. MAXIMUM SUPERELEVATION ROLLOVER SHALL BE 0.07 FT/FT. FOR DETAILS SEE SUPERELEVATION PLANS.
8. MAXIMUM SUPERELEVATION ROLLOVER BETWEEN THROUGH LANE AND TURN LANE SHALL BE 0.04 FT/FT. FOR DETAILS SEE SUPERELEVATION PLANS.
9. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.

PROPOSED CSAH 11 - LEFT TURN LANE

CSAH 11 STA. 117+71 TO STA. 123+31
CSAH 11 STA. 148+42 TO STA. 151+47
CSAH 11 STA. 169+75 TO STA. 173+52



TYPICAL 8' DITCH BOTTOM

CSAH 11 STA. 148+42 TO STA. 149+25

TYPICAL 8' DITCH BOTTOM

CSAH 11 STA. 117+71 TO STA. 123+31
CSAH 11 STA. 151+00 TO STA. 151+47
CSAH 11 STA. 169+75 TO STA. 173+52

NO	DATE	DWN	CKD	REVISIONS
1	01/24/25	GMK	EN	ADDENDUM #1

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/24/25 LICENSE # 43560

TYPICAL SECTIONS

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 18 OF 220 SHEETS

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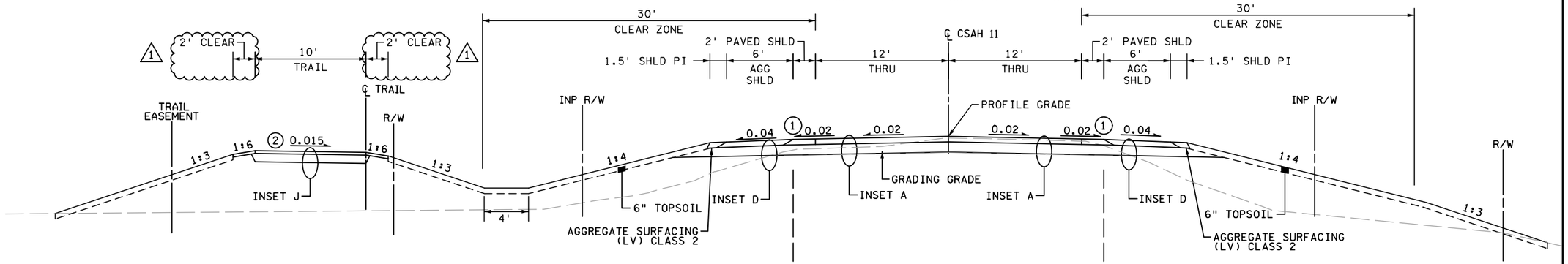
PROPOSED CSAH 11 - SHOULDER WIDENING W/ TRAIL

CSAH 11 STA. 185+46 TO STA. 187+79
CSAH 11 STA. 199+32 TO STA. 205+47
CSAH 11 STA. 211+00 TO STA. 216+25
CSAH 11 STA. 221+38 TO STA. 224+54 (4)



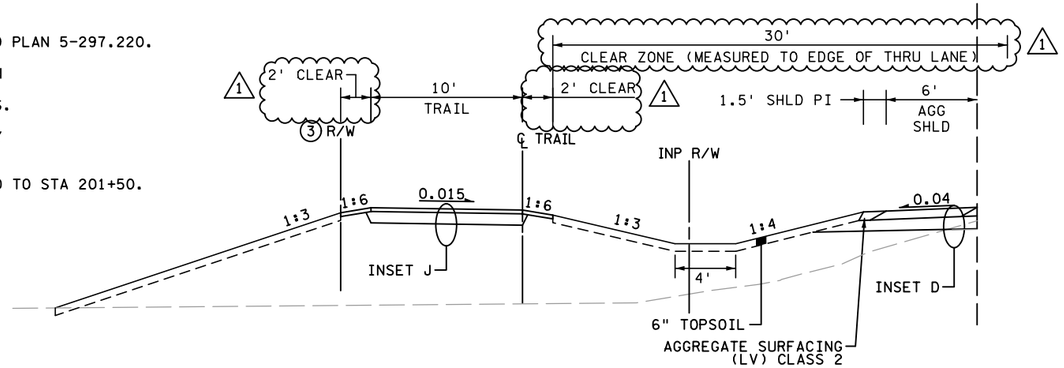
SPECIFIC NOTES:

(1) BITUMINOUS SAFETY EDGE. SEE STANDARD PLAN 5-297.220.

(2) TRAIL CROSS SLOPE TRANSITION BETWEEN STA. 185+00 TO STA. 185+50. SEE SUPERELEVATION PLANS FOR DETAILS.

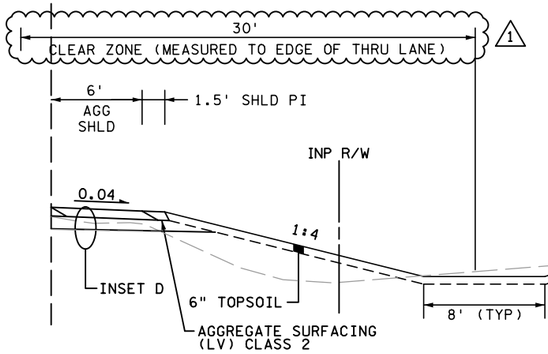
(3) PROPOSED ROW FOLLOWS PARCEL BOUNDARY BETWEEN STA. 208+81 TO STA. 214+47.

(4) SURCHARGE EMBANKMENT FROM STA 198+50 TO STA 201+50. SEE DETAILS ON SHEETS 26 TO 27.



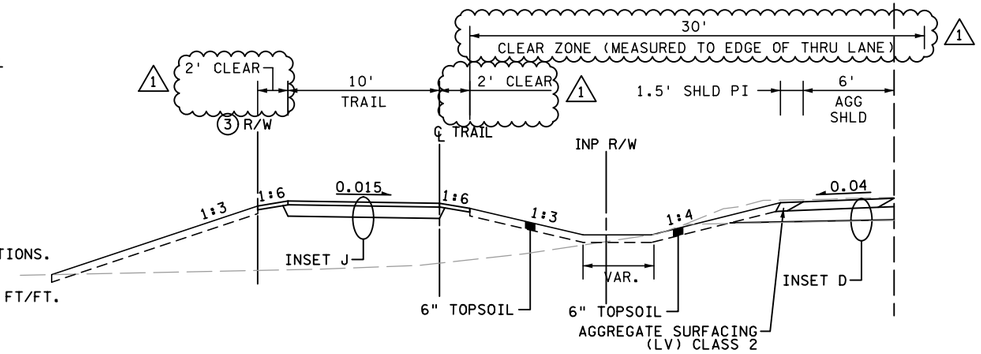
TYPICAL 2' DITCH DEPTH

CSAH 11 STA. 212+06 TO STA. 214+49



TYPICAL 8' DITCH BOTTOM

CSAH 11 STA. 187+50 TO STA. 187+79
CSAH 11 STA. 210+50 TO STA. 213+50



TYPICAL DITCH TRANSITION

CSAH 11 STA. 203+76 TO STA. 205+47
CSAH 11 STA. 211+00 TO STA. 212+06
CSAH 11 STA. 214+50 TO STA. 216+25

GENERAL NOTES

1. TYPICAL SECTIONS ARE NOT TO SCALE.

2. ALL CROSS SLOPES ARE EXPRESSED IN FT PER FT. CROSS SLOPES VARY THROUGHOUT THE CORRIDOR.

3. ALL DIMENSIONS LOCATED AT CURB AND GUTTER ARE MEASURED TO FACE OF CURB UNLESS OTHERWISE NOTED.

4. SEE INPLACE TOPOGRAPHY, UTILITIES, AND REMOVAL PLAN FOR RECLAMATION LIMITS AND SAW CUT LOCATIONS.

5. UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES WILL BE THE SAME AS THE PROPOSED DRIVING SURFACE.

6. PER SPEC 1205.2 ADDITIONAL INFORMATION CAN BE REFERENCED IN THE SOILS REPORT AND RECOMMENDATIONS.

7. MAXIMUM SUPERELEVATION ROLLOVER SHALL BE 0.07 FT/FT. FOR DETAILS SEE SUPERELEVATION PLANS.

8. MAXIMUM SUPERELEVATION ROLLOVER BETWEEN THROUGH LANE AND TURN LANE SHALL BE 0.04 FT/FT. FOR DETAILS SEE SUPERELEVATION PLANS.

9. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.

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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/24/25 LICENSE # 43560

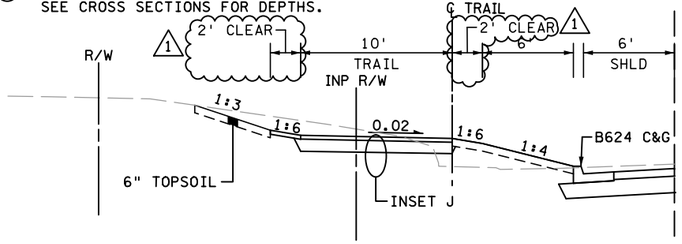
TYPICAL SECTIONS

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 19 OF 220 SHEETS

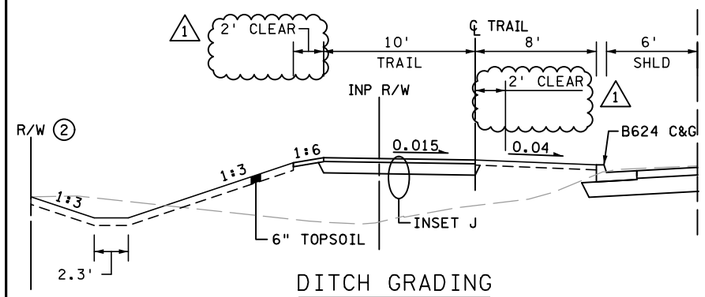
SPECIFIC NOTES:

1. BITUMINOUS SAFETY EDGE. SEE STANDARD PLAN 5-297.220.
2. PROPOSED ROW FOLLOWS PARCEL BOUNDARY BETWEEN STA. 208+81 TO STA. 214+47.
3. EXCAVATION-MUCK FROM STA 208+50 TO STA 209+50. SEE CROSS SECTIONS FOR DEPTHS.



TRAIL GRADING

CSAH 11 STA. 205+47 TO STA. 207+00

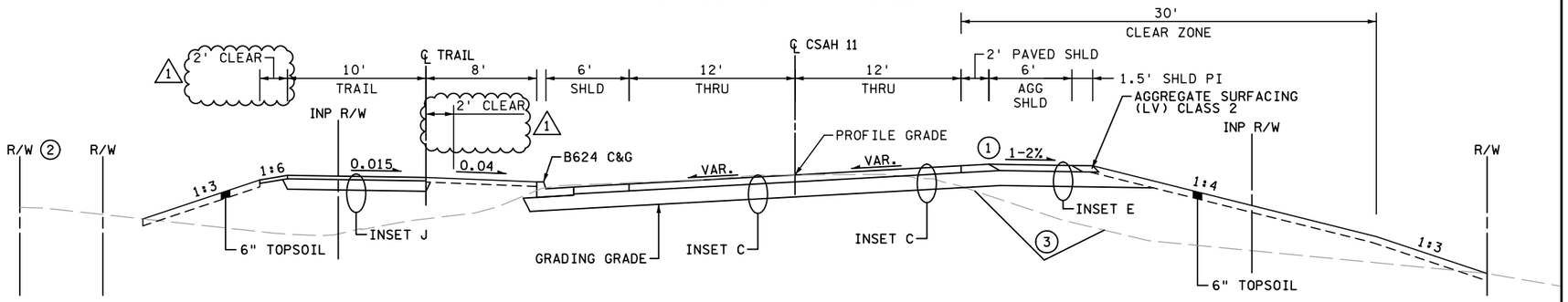


DITCH GRADING

CSAH 11 STA. 210+13.87 TO STA. 210+36.52

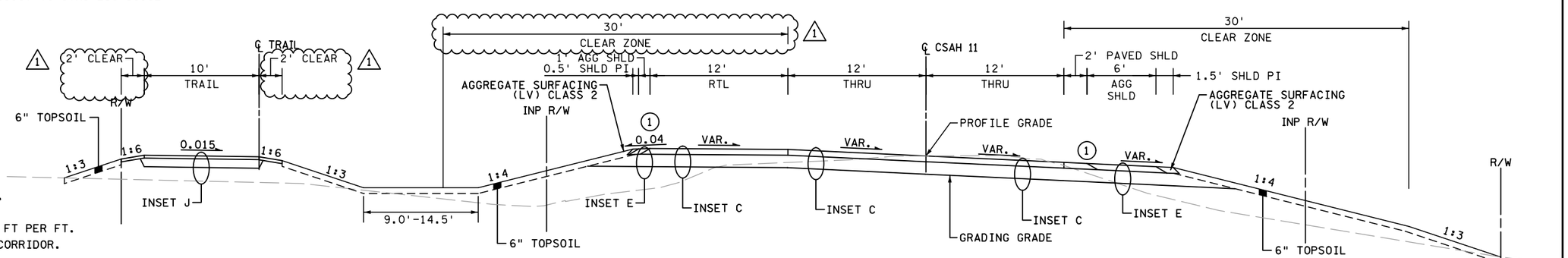
PROPOSED CSAH 11 - URBAN SECTION

CSAH 11 STA. 207+00 TO STA. 211+00



PROPOSED CSAH 11 - TURN LANE WITH TRAIL

CSAH 11 STA. 216+25 TO STA. 221+38

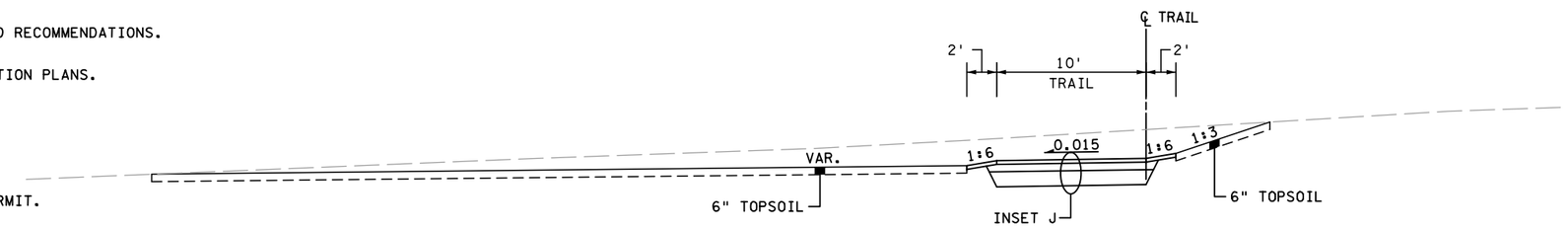


GENERAL NOTES

1. TYPICAL SECTIONS ARE NOT TO SCALE.
2. ALL CROSS SLOPES ARE EXPRESSED IN FT PER FT. CROSS SLOPES VARY THROUGHOUT THE CORRIDOR.
3. ALL DIMENSIONS LOCATED AT CURB AND GUTTER ARE MEASURED TO FACE OF CURB UNLESS OTHERWISE NOTED.
4. SEE INPLACE TOPOGRAPHY, UTILITIES, AND REMOVAL PLAN FOR RECLAMATION LIMITS AND SAW CUT LOCATIONS.
5. UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES WILL BE THE SAME AS THE PROPOSED DRIVING SURFACE.
6. PER SPEC 1205.2 ADDITIONAL INFORMATION CAN BE REFERENCED IN THE SOILS REPORT AND RECOMMENDATIONS.
7. MAXIMUM SUPERELEVATION ROLLOVER SHALL BE 0.07 FT/FT. FOR DETAILS SEE SUPERELEVATION PLANS.
8. MAXIMUM SUPERELEVATION ROLLOVER BETWEEN THROUGH LANE AND TURN LANE SHALL BE 0.04 FT/FT. FOR DETAILS SEE SUPERELEVATION PLANS.
9. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.

PROPOSED TRAIL

CSAH 11 STA. 10+00 TO STA. 12+85



NO	DATE	DWN	CKD	REVISIONS
1	01/24/25	GMK	EN	ADDENDUM #1

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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/24/25 LICENSE # 43560

TYPICAL SECTIONS

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 20 OF 220 SHEETS

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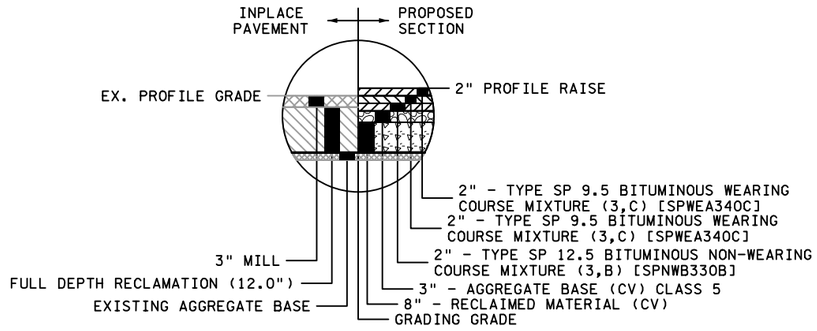
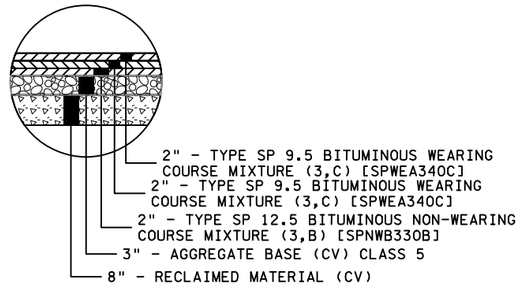
INSET A



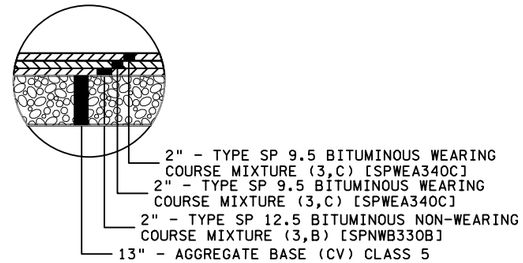
INSET B

TURN LANE AND SHOULDER WIDENING



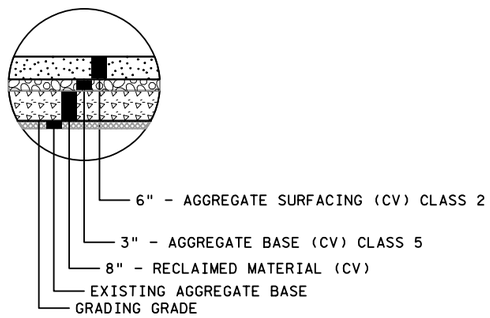
INSET C

RECONSTRUCTED BITUMINOUS ROADWAY



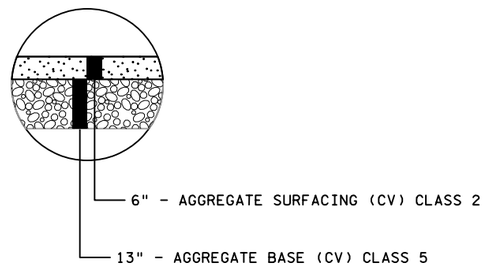
INSET D

AGGREGATE SHOULDER ON RECLAIMED BASE



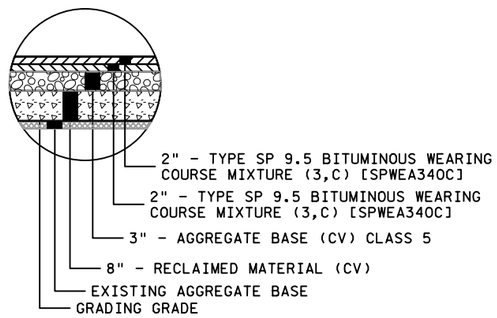
INSET E

AGGREGATE SHOULDER ON RECONSTRUCTED BASE



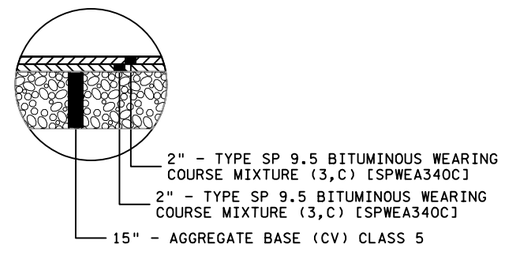
INSET F

8' WIDE BITUMINOUS SHOULDER ON RECLAIMED BASE



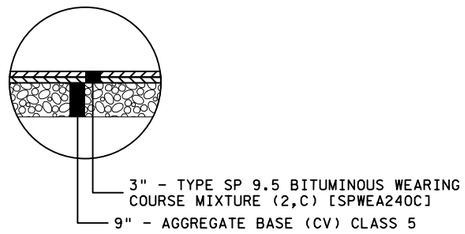
INSET G

8' WIDE SHOULDER ON RECONSTRUCTED BASE



INSET J

BITUMINOUS TRAIL



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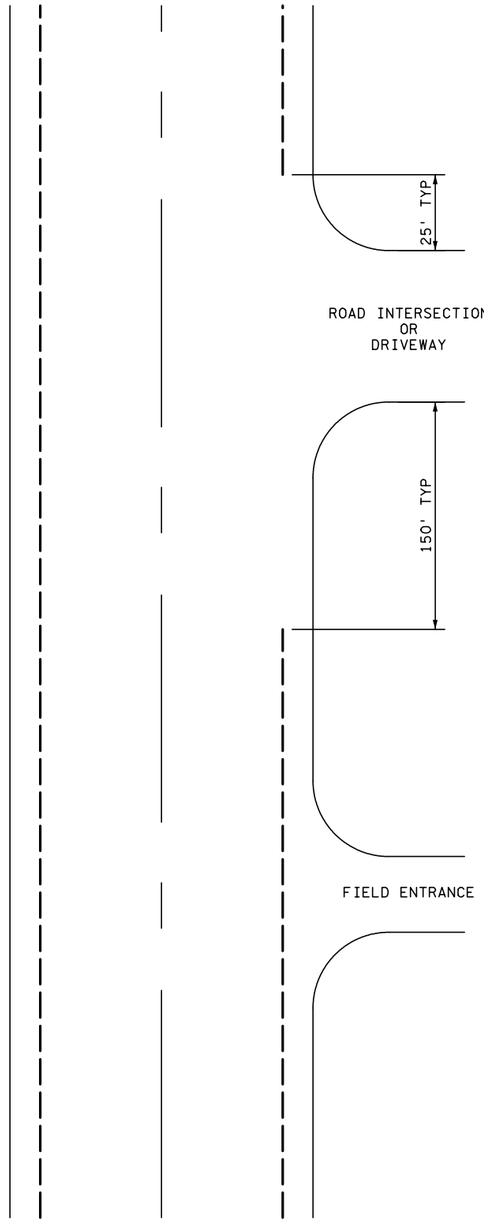
PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

TYPICAL SECTIONS

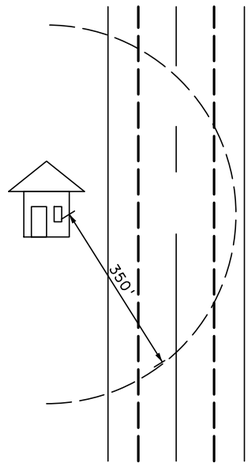
SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 21 OF 220 SHEETS



BREAK EDGELINE MUMBLE STRIPS ON THE APPROACH TO DRIVEWAYS AND INTERSECTING ROADS.

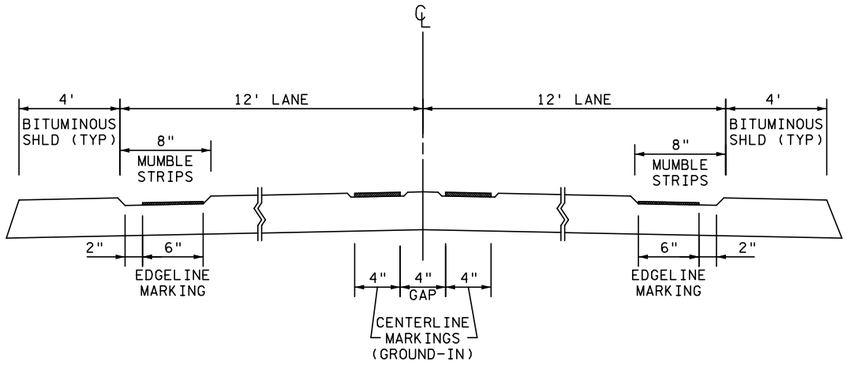
BREAKS
AT INTERSECTIONS

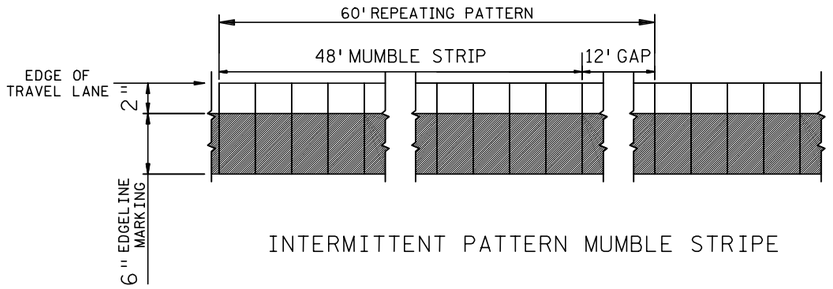


BREAK EDGELINE MUMBLE STRIPS ON BOTH SIDES OF THE ROAD WITHIN A 350' RADIUS OF A RESIDENCE.

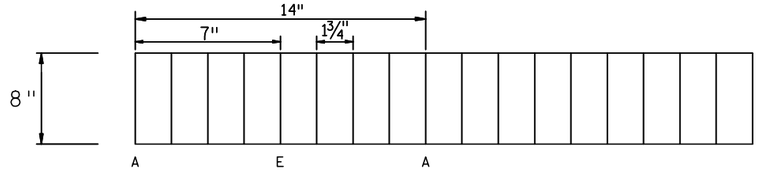
BREAKS
NEAR RESIDENCES

CSAH 11

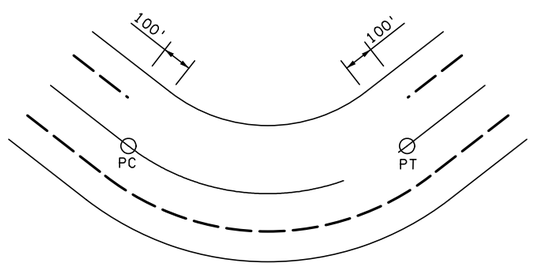




INTERMITTENT PATTERN MUMBLE STRIPE

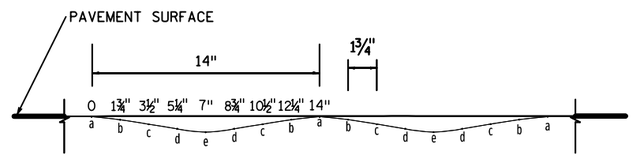


PLAN VIEW



BREAK EDGELINE MUMBLE STRIPS ON THE INSIDE OF HORIZONTAL CURVES WITH A RADIUS OF 2000' OR LESS; OMIT MUMBLE STRIPS FROM 100' BEFORE THE PC TO 100' BEYOND THE PT.

BREAKS AT
HORIZONTAL CURVES



PROFILE VIEW

	DEPTH	
LOCATION	MIL	INCHES
a	62.5	1/16"
b	156	5/32"
c	281	9/32"
d	438	7/16"
e	500	1/2"

*DEPTH TOLERANCE IS 1/16 ALONG THE LENGTH OF THE SINUSOIDAL WAVE

MUMBLE STRIP NOTES:

1. MUMBLE STRIPS SHALL BE PAID FOR AS MILLED SINUSOIDAL RUMBLE STRIPS (LIN FT).
2. MUMBLE STRIPS SHALL BE MILLED INTO BITUMINOUS SURFACE AFTER FINAL COMPACTION AND BEFORE FINAL PAVEMENT MARKINGS ARE INSTALLED.
3. EDGELINE PAVEMENT MARKINGS SHALL BE GROUND IN WHEN NOT WITHIN THE MILLED MUMBLE STRIPS.
4. EDGELINE MUMBLE STRIPS SHALL BE INSTALLED ON CSAH 11 BETWEEN TH 7 AND TH 5 EXCEPT WHERE BREAKS ARE CALLED FOR ON THIS DETAIL SHEET.
5. SEE SHEET 9 FOR TABULATION OF MUMBLE STRIP LOCATIONS BY STATION RANGE.

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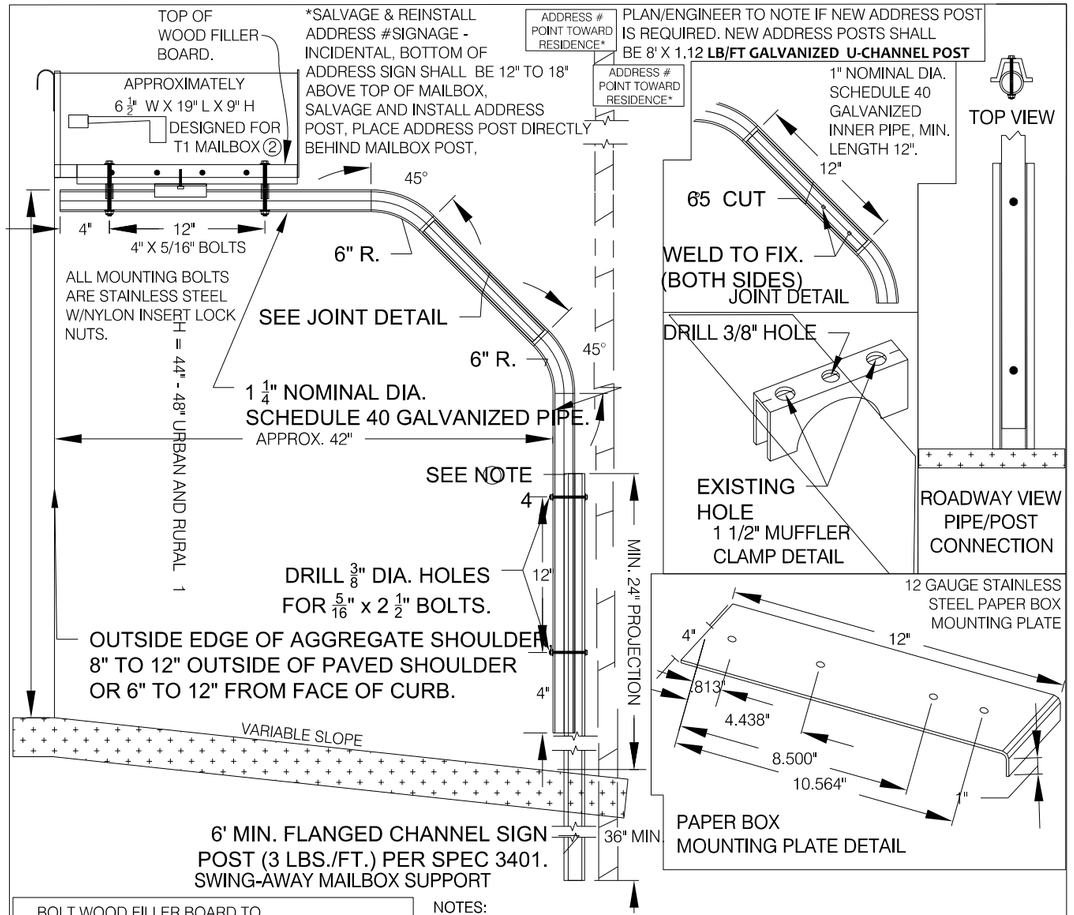
PRINT NAME: ERIC NELSON
SIGNATURE: Eric Nelson
DATE 01/10/25 LICENSE # 43560

STANDARD DETAILS
MNDOT STANDARD DETAILS

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 22 OF 220 SHEETS



NOTES:

MAILBOX LOCATIONS SHOULD BE STAKED BEFORE INSTALLATION FOR PROPER HEIGHT AND DISTANCE FROM THE ROADWAY. ONCE STAKED, THE INSTALLER MUST NOTIFY THE ENGINEER AND THE POST OFFICE. THE ENGINEER AND THE POSTMASTER SHALL APPROVE THE STAKED LOCATIONS PRIOR TO FINAL INSTALLATION.

IN ACCORDANCE WITH THE CRASH TEST REPORT, THE RECOMMENDED MINIMUM SPACING CENTER TO CENTER BETWEEN MULTIPLE MAILBOXES OF THIS TYPE SHALL BE EQUAL TO THE HEIGHT OF EACH PARTICULAR MAILBOX. SEE NOTE 1.

1. ANY CHANGE IN HEIGHT MUST BE APPROVED BY LOCAL POSTMASTER.
2. THIS DESIGN MAY BE USED WITH A TYPE 2 MAILBOX. INSTALLER MUST MAKE PROPER SIZE ADJUSTMENTS TO THE TREATED WOOD FILLER BOARD AND ADJUST ALUMINUM MOUNTING PLATE TO ACCOMMODATE THE PAPER BOX.
3. FOR MOUNTING PAPER BOX, USE TWO 1 1/4" STAINLESS STEEL BOLTS, TWO 1 1/4" STAINLESS STEEL FENDER WASHERS (1 1/4" DIA., 1 1/4" HOLE), TWO STAINLESS STEEL NYLON INSERT NUTS.
4. CHANNEL POST CANNOT EXCEED 6" ABOVE TOP BOLT.

*ALL MOUNTING BOLTS ARE STAINLESS STEEL W/NYLON INSERT LOCK NUTS.

*NO RIB-BACK POSTS (MARION STEEL) ALLOWED.

MAILBOX SUPPORT DETAIL

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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

STANDARD DETAILS
CARVER COUNTY PLATES

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 23 OF 220 SHEETS

STANDARD PLATES

PLATE NO.	DESCRIPTION
3000M	REINFORCED CONCRETE PIPE (6 SHEETS)
3006H	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
3007F	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3022C	PRECAST CONCRETE SAFETY APRON (3 SHEETS)
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3110G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE-ARCH
3114H	SECTIONAL CONCRETE APRON FOR REINFORCED CONCRETE PIPE-ARCH
3122K	METAL APRON FOR C.M. PIPE-ARCH CULVERT
3123J	METAL APRON FOR C.S. PIPE
3124B	METAL APRON CONNECTION
3128H	METAL SAFETY APRON & GRATE (2 SHEETS)
3129A	METAL APRON FOR CORRUGATED POLYETHYLENE PIPE (USE AT ENTRANCES AND DRIVEWAYS)
3132A	GRATE FOR 1:4 PRECAST CONCRETE APRONS
3133D	RIPRAP AT RCP OUTLETS
3145G	CONCRETE PIPE OR PRECAST BOX CULVERT TIES
4006L	MANHOLE OR CATCH BASIN PRECAST - DESIGNS G AND H
4010I	CONCRETE ADJUSTING RINGS
4011E	PRECAST CONCRETE BASE
4020J	MANHOLE OR CATCH BASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS) (2 SHEETS)
4026B	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4110F	COVER CASTING FOR MANHOLE (FOR USE IN ALL TRAFFIC AREAS) * CASTING NO. 715 AND 716
4132G	CATCH BASIN FRAME CASTING (FOR SQUARE GRATE) - CASTING NO. 805
4143E	STOOL GRATE & CONCRETE FRAME (MEDIAN DRAINS) - CASTING NO. 731
4154B	CATCH BASIN GRATE CASTING - CASTING NO. 816
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7100H	CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V)
7111J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
8000K	TEMPORARY CHANNELIZERS (3 SHEETS)
9000E	APPROACHES AND ENTRANCES - RECOMMENDED STANDARDS

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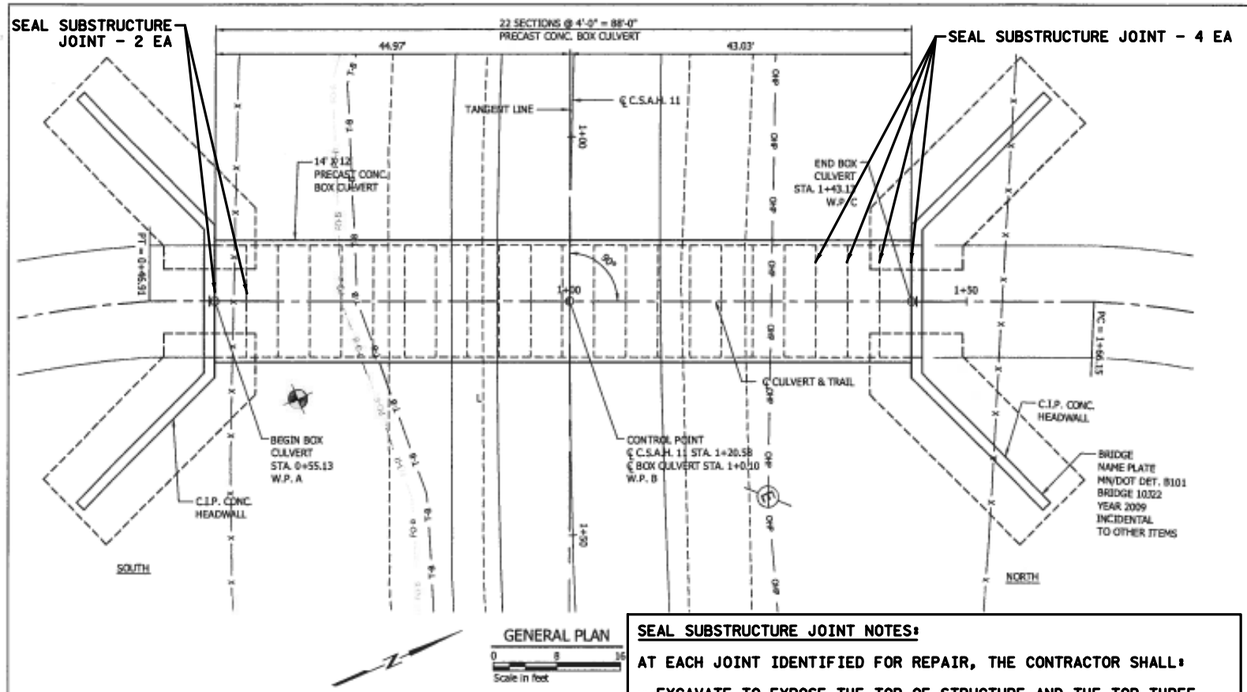
PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

STANDARD DETAILS
MNDOT STANDARD PLATES

SAP 010-611-027; CP 218931 (CSAH 11)



GENERAL PLAN

Scale in feet: 0 8 16

SEAL SUBSTRUCTURE JOINT NOTES:

AT EACH JOINT IDENTIFIED FOR REPAIR, THE CONTRACTOR SHALL:

- **EXCAVATE TO EXPOSE THE TOP OF STRUCTURE AND THE TOP THREE FEET OF VERTICAL SIDEWALLS.**
- **REMOVE EXISTING FAILED JOINT SEALANT AS NEEDED.**
- **FURNISH AND INSTALL NEW JOINT SEALANT PER THE SPECIFICATIONS.**
- **BACKFILL AND COMPACT EXCAVATION TO EXISTING GRADES.**

CONSTRUCTION NOTES:

THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

THE FIRST TWO DIGITS OF EACH BAR MARK INDICATE THE BAR SIZE IN MILLIMETERS. BARS MARKED WITH THE SUFFIX "E" SHALL BE EPOXY COATED IN ACCORDANCE WITH SPEC. 3301. ALL BARS SHALL BE GRADE 60.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".

CONSTRUCTION OF CAST-IN-PLCE HEADWALL AND BOX CULVERT SHALL BE IN ACCORDANCE WITH MN/DOT SPEC. 2411, EXCEPT AS NOTED.

EXCAVATION AND EARTHWORK NOTES:

EXCAVATION AND BACKFILL FOR THE CAST-IN-PLACE HEADWALL AND BOX CULVERT SHALL BE IN ACCORDANCE WITH MN/DOT SPEC. 2451, EXCEPT AS NOTED.

CLEARING AND GRUBBING, ARE COVERED IN OTHER PORTIONS OF THE CONTRACT AND ARE NOT INCLUDED IN THE BID ITEM "STRUCTURE EXCAVATION"

THE BID ITEM "STRUCTURE EXCAVATION" SHALL INCLUDE SUBCUT EXCAVATION AND REPLACEMENT OF BACKFILL, FOUNDATION PREPARATION, AND SHAPING FOR THE PRECAST CONCRETE BOX CULVERT AND CAST-IN-PLACE CONCRETE HEADWALLS AS SHOWN ON THE PLANS.

UPPER LIMIT FOR COMMON EXCAVATION SHALL BE THE EXISTING GRADE OUTSIDE OF THE ROADWAY. THE UPPER LIMIT WITHIN THE ROADWAY SHALL BE THE BASE OF REMOVED ITEMS SUCH AS CURB & GUTTER, BITUMINOUS AND BASE AGGREGATES. COORDINATE GUARDRAIL AND OTHER REMOVALS PRIOR TO START. SALVAGE AND STOCKPILE TOPSOIL FROM EACH EMBANKMENT WITHIN THE EXCAVATION AREA.

LOWER LIMIT FOR THE COMMON EXCAVATION SHALL BE THE BOTTOM OF HEADWALL FOOTINGS AND THE LOWER LIMIT SHOWN IN THE SECTION THRU CULVERT; AND OUTWARD BEYOND THE STRUCTURE, BEFORE SLOPING UPWARD.

THE SIDE SLOPE EXCAVATION IS DETERMINED BY OSHA REGULATIONS AND IN-SITU SOILS. THE SLOPE SHOWN IS ESTIMATED ONLY. CONTRACTOR SHALL REVIEW GEOTECHNICAL REPORT AND ACTUAL CONDITIONS.

GRANULAR BACKFILL SHALL BE IN ACCORDANCE WITH MN/DOT SPEC 3149.2D, EXCEPT MODIFIED TO LESS THAN 10% PASSING A NO. 200 SIEVE.

COMPACT GRANULAR BACKFILL IN 8-INCH LAYERS TO 100% DENSITY IN ACCORDANCE WITH MN/DOT SPEC. 2105.3F1, UNLESS RECOMMENDED OTHERWISE THE GEOTECHNICAL ENGINEER.

DESIGN DATA

BOX CULVERT DESIGNED IN ACCORDANCE WITH AASHTO "STANDARD SPECIFICATION FOR HIGHWAY BRIDGES", 1996 AND MN/DOT BRIDGE DESIGN MANUAL.

HS25 LIVE LOAD

HEADWALL RETAINING WALL CRITERIA - SEE SHEET S0.02

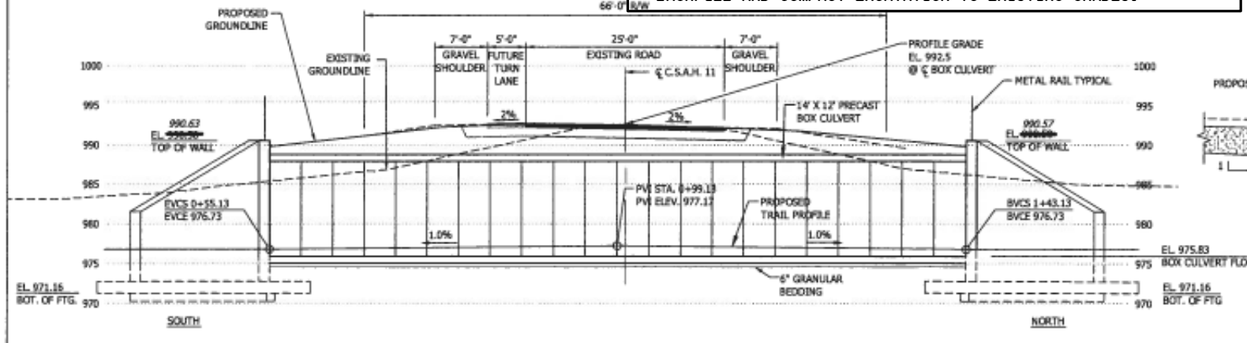
MATERIAL PROPERTIES:
CAST-IN-PLACE CONCRETE HEADWALL:
$f'c$ = 4 K.S.I. n = 8
f_y = 60 K.S.I. REINFORCEMENT

PRECAST BOX CULVERT:
SEE BARREL DETAIL SHEET

LIST OF SHEETS

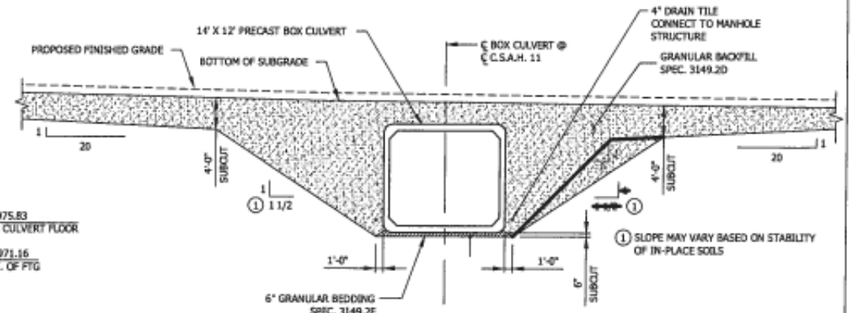
NO.	DESCRIPTION
1	GENERAL PLAN AND ELEVATION
2	HEADWALL PLAN AND NOTES
3	HEADWALL SECTIONS
4	HEADWALL ELEVATION AND RAILING DETAILS
5	BARREL DETAILS

DRAWINGS OF RECORD
OCTOBER 13, 2010



GENERAL ELEVATION

Scale in feet: 0 8 16



TYPICAL TRANSVERSE SECTION

Scale in feet: 0 8 16

DIMENSIONS BETWEEN WORKING POINTS

POINT	STATION	X-COORDINATE	Y-COORDINATE	A	B	C
A	0+55.13	~~521090.608~~	~~184827.676~~		44.97	88.0
B	1+0.10	521108.607	184869.087	44.97		43.03
C	1+43.13	~~521125.830~~	~~184908.520~~	88.0	43.03	

POINT	STATION	X-COORDINATE	Y-COORDINATE
A	0+55.13	*521090.608*	*184827.676*
B	1+0.10		
C	1+43.13	*521125.830*	*184908.520*

CERTIFIED BY: _____ (LICENSED PROFESSIONAL ENGINEER) May 11, 2009 (DATE)
NAME: GARY W. MORDEN LIC. NO.: 25552

Bonestroo
St. Paul Office
2335 West Highway 36
St. Paul, MN 55113
Phone: 651-636-4600
Fax: 651-636-1311
www.bonestroo.com

TITLE: GENERAL PLAN AND ELEVATION

DES: GWM	DR: LMT	APPROVED:	BRIDGE NO.
CHK: BLF	CHK: GWM		10J22

SHEET NO. S0.01

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE: _____
DATE 01/10/25 LICENSE # 43560

DESIGN DETAILS
SEAL SUBSTRUCTURE JOINT DETAIL

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 25 OF 220 SHEETS

8:34:49 AM
1/22/2025
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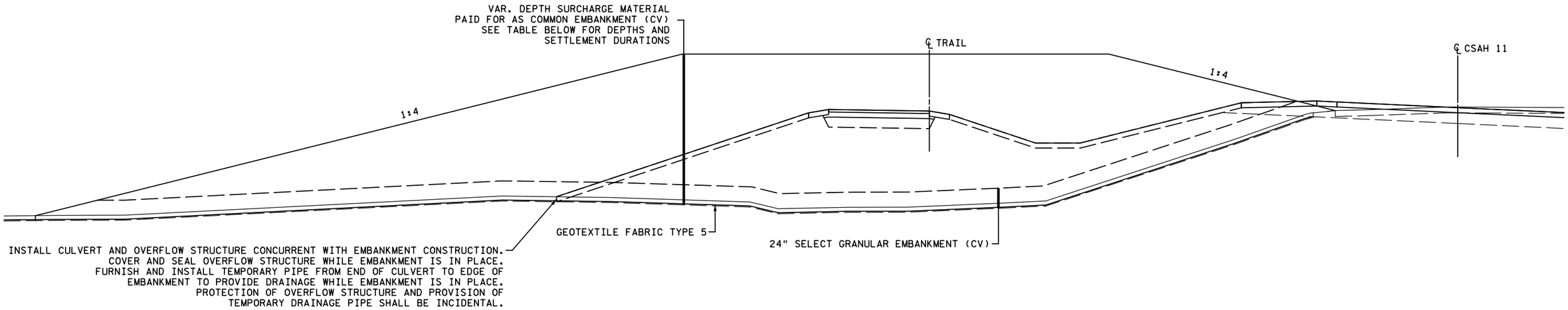
SURCHARGE TYPICAL SECTION

CSAH 11 STA. 198+50 TO 201+50



SURCHARGE EMBANKMENT & SETTLEMENT DURATION SUMMARY

STAGE	SETTLEMENT MITIGATION APPROACH	STAGE FILL HEIGHT	CUMULATIVE FILL HEIGHT	DURATION (MONTHS)
STAGE 1	STRIP EXISTING TOPSOIL PLACE GEOTECHNICAL FABRIC TYPE 5 PLACE 2 FEET SELECT GRANULAR EMBANKMENT (CV) PLACE 2 FEET COMMON EMBANKMENT (CV)	4	4	0 - 3
STAGE 2	PLACE 4 FEET COMMON EMBANKMENT (CV)	4	8	3 - 6
STAGE 3	PLACE 3 FEET COMMON EMBANKMENT (CV)	3	11	6 - 9
STAGE 4	PLACE 2 FEET COMMON EMBANKMENT (CV)	2	13	9 - 12
STAGE 5	PLACE 2 FEET COMMON EMBANKMENT (CV)	2	15	12 - 16
STAGE 6	REMOVE SURCHARGE EMBANKMENT TO PROPOSED GRADING GRADE	-	11 - 12	

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1/22/2025
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NO	DATE	DWN	CKD	REVISIONS

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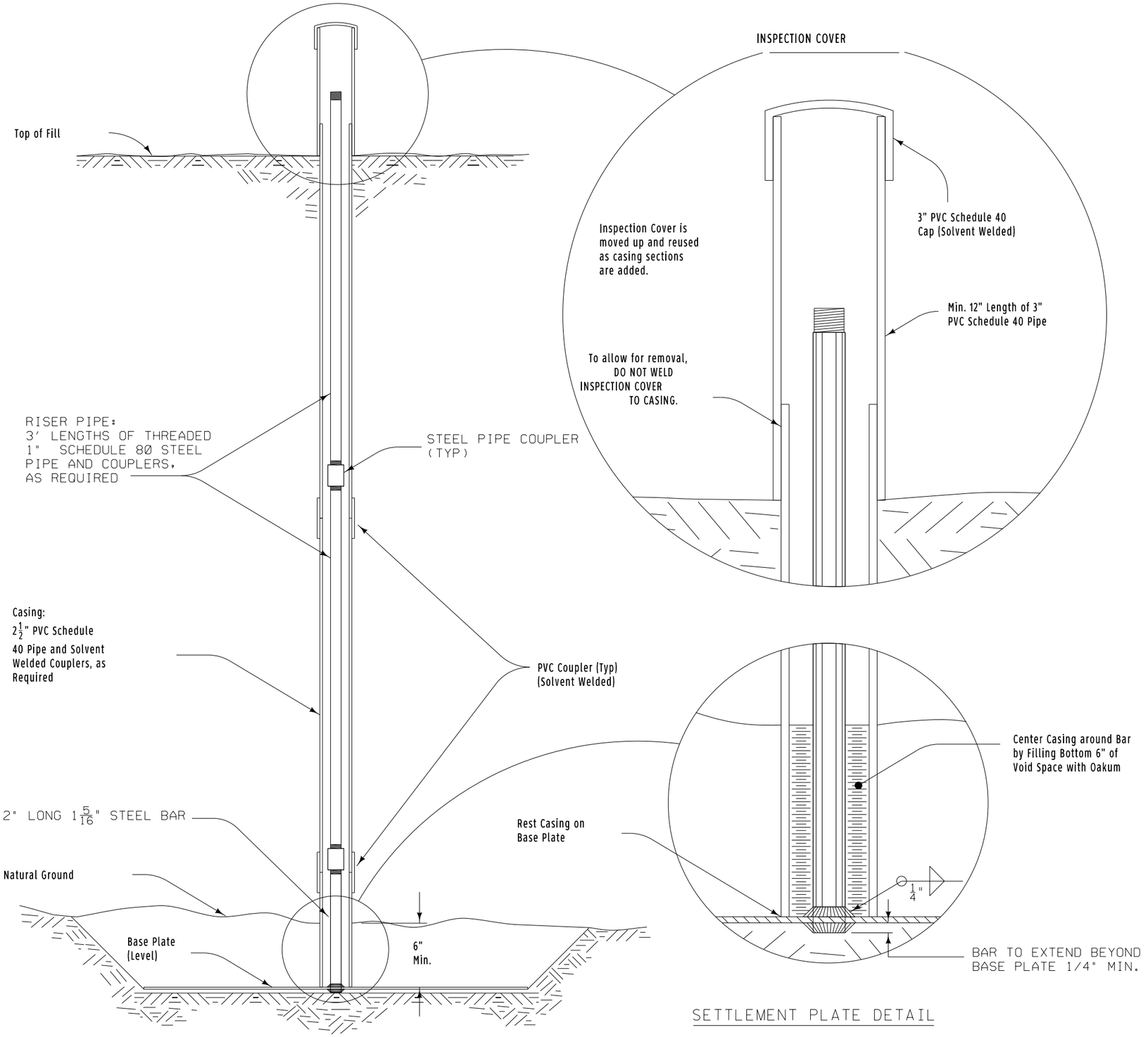
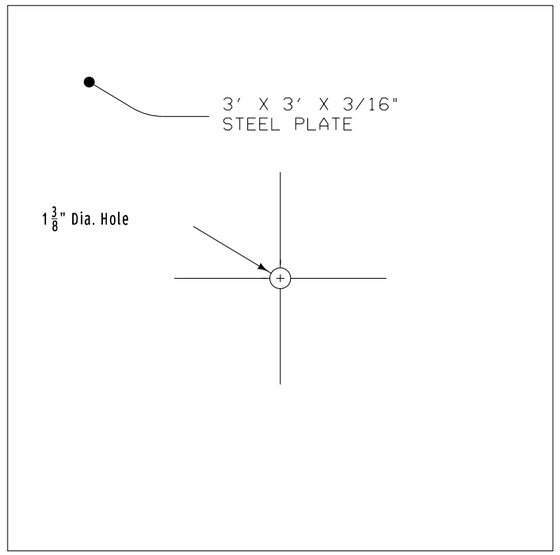
PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

SURCHARGE DETAILS

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 26 OF 220 SHEETS





BASE PLATE

SETTLEMENT PLATE DETAIL

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1/22/2025
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NO	DATE	DWN	CKD	REVISIONS

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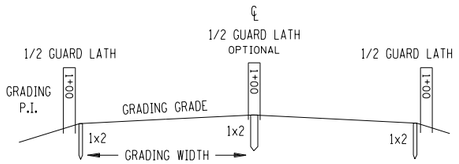
PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

SURCHARGE DETAILS
SETTLEMENT PLATE DETAIL

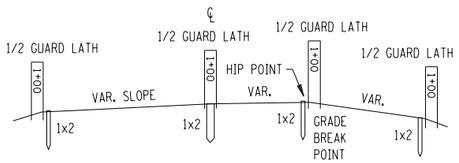
SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 27 OF 220 SHEETS

BLUE TOPS

NORMAL SECTION

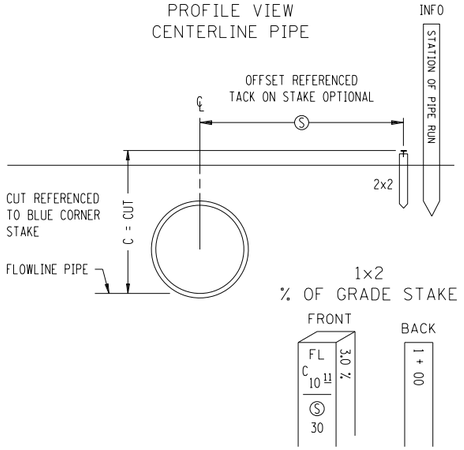


TRANSITION SECTION



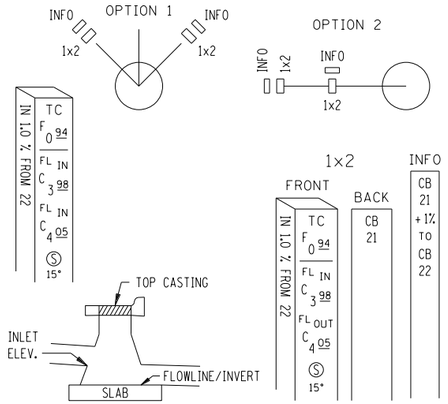
PIPE STAKING

PROFILE VIEW CENTERLINE PIPE



CATCH BASIN OR MANHOLE (CB/MH)

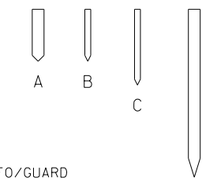
TOP VIEWS



FLOWLINE/INVERT + 0.7'

STANDARD STAKES

TYPES:
REFERENCE (REF)
INFORMATIONAL (INFO)
VISIBILITY (VIS)
GUARD (GUARD)



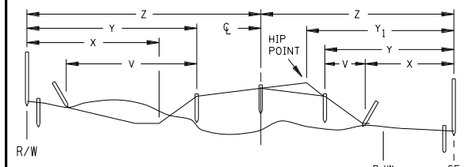
SIZES:
A = 2" X 2" X VAR. REF/INFO/GUARD
B = 1" X 2" X VAR. REF/INFO/GUARD
C = 1" X 2" X VAR. REF
D = LATH INFO/VIS/GUARD
1x2 OR LATH = INFO STAKES

ABBREVIATIONS

BBL = BARREL (PIPE)
B.C. = BACK CURB
C & G = CURB & GUTTER
C = CUT
CAP = CORR. ALUM. PIPE
CB = CATCH BASIN
℄ = CENTERLINE
CL & GR = CLEAR & GRUB
CMP = CORR. METAL PIPE
COR = CORNER
CR = CROWN
CSP = CORR. STEEL PIPE
℄ = DITCH CUT
D.E. = DRAINAGE EASEMENT
DI = DROP INLET
EB = EASTBOUND
E.M. = EDGE BITUMINOUS MAT
E.S. = EDGE CONCRETE SLAB
F = FILL
FF = FRONT FACE
FL = FLOW LINE
FL IN = FLOWLINE INLET
FL OUT = FLOWLINE OUTLET
GR = GRADE
GW = GRADING WIDTH
HH = HANDHOLE
HP = HIP POINT
LT = LEFT
MH = MANHOLE
NB = NORTHBOUND
Ⓢ = OFFSET
PAR = PARCEL
% = PERCENT GRADE
P.E. = PERM. EASEMENT
RAD = RADIUS POINT
RCP = REINF. CONC. PIPE
RP = REFERENCE POINT
RSC = REINF. SECT. CONC.
RT = RIGHT
R/W = RIGHT OF WAY
SB = SOUTHBOUND
SCP = SECT. CONC. PIPE
SH = SHOULDER
TC = TOP CASTING
OR TOP CURB
T.E. = TEMP. EASEMENT
3 :1 = SLOPE (EXAMPLE)
WB = WESTBOUND
WP = WORKING POINTS

SLOPE STAKES

SINGLE ROADWAY - EXAMPLE 'A'



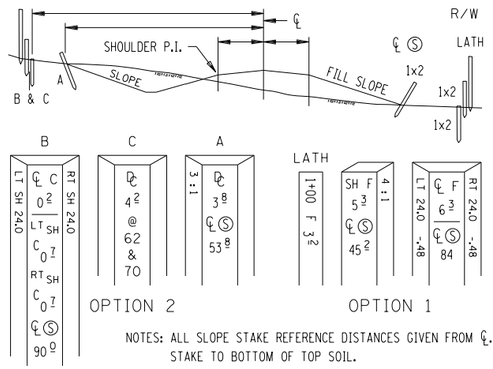
STAKE 'A'
FULL LATH AND HUB-STATION
DIST. TO ℄ WITH CUT/FILL TO ℄ (Z)
DIST. TO SHLD. WITH CUT/FILL TO SHLD. (Y) (Y1)
DIST. TO TOE OF SLOPE, CUT/FILL FROM HUB (X)
OFFSET TO SAFTY SLOPE
OFFSET TO HIP POINT

STAKE 'B'
FULL LATH
DITCH CUT/SHLD. FILL
SLOPE RATED
DISTANCE TO INSLOPE TOE (V1) OR SHOULDER (AS APPLIES) (V)

NOTE:
BLUE TOPS REQUIRED ON ℄ AND BOTH SHOULDERS AT MINIMUM
ALL CULVERTS TO BE STAKED
MINIMUM DATA TO BE PROVIDED
STAKE TO BOTTOM OF TOPSOIL

SLOPE STAKES

SINGLE ROADWAY - EXAMPLE 'B'

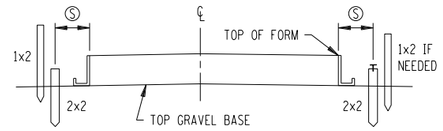


OPTION 2 OPTION 1

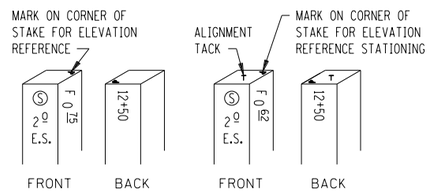
NOTES: ALL SLOPE STAKE REFERENCE DISTANCES GIVEN FROM ℄. STAKE TO BOTTOM OF TOP SOIL.

KEY STAKES: BLUE TOP SET AT R/W BOUNDARY LT. & RT. MAY BE EXCEPTIONS TO SETTING STAKE ON R/W.

CONCRETE PAVING STATIONARY FORM



OFFSET TO CONTRACTOR'S OPTION



NOTE INFORMATION ON STAKE IF NECESSARY

RECOMMENDED STAKING INTERVALS

FIGURE A

	SLOPE STAKES	SUB GRADE B.T.	CLASS MATERIAL B.T.	CONC PAVT	C & G	CL & GR LIMITS	MUCK EXC.	R/W	TEMP. EASE.
TANGENT	100	100	100	50	50	ALL CORNERS	100	ALL CORNERS	ALL CORNERS
HORIZ. CURVE									
0 - 3°	100	100	100	50	50	ALL CORNERS	100	ALL CORNERS	ALL CORNERS
OVER 3° -	100	50	50	25	25	ALL CORNERS	100	ALL CORNERS	ALL CORNERS
VERT. CURVE									
'M' 100' CHORD 0 - .25	100	100	100	50	50				
'M' OVER .25	100	50	50	25	25				
TRAN.		50	50						

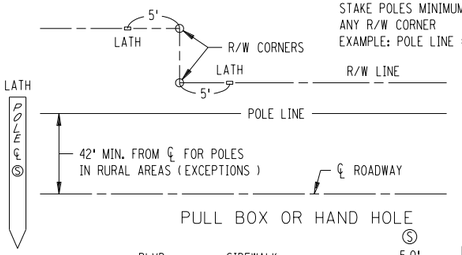
STAKING TOLERANCES (FEET)

	HORIZONTAL	VERTICAL
CONSTRUCTION LIMITS	± 1.5	
CLEARING & GRUBBING	2.0	
SLOPES STAKES	2.0	± 0.2
KEY STAKES	0.2	0.03
DRAINAGE STAKES	0.05	0.05
CURB & GUTTER	0.07	0.03
PAVING	0.05	0.03
ALIGNMENT	0.07	
UTILITY	0.10	0.05
STRUCTURAL	0.02	0.02
GUARD RAIL	0.5	
BUILDINGS	0.04	
O.H. SIGNS	0.05	0.05
MUCK EXCAVATION LIMITS	2.0	
R/W B-POINTS	0.10	
NOISE WALLS	1.0	0.5

THE TOLERANCES ARE RELATIVE TO PROJECT DATUM

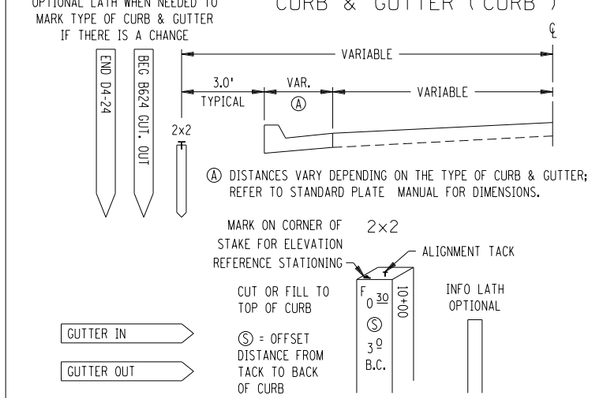
UTILITY (UTIL)

STAKE POLES MINIMUM OF 5 FT. FROM ANY R/W CORNER
EXAMPLE: POLE LINE = R/W LINE

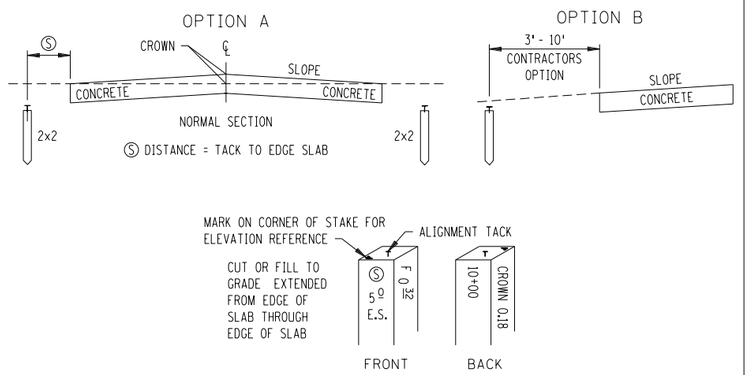


CURB & GUTTER (CURB)

OPTIONAL LATH WHEN NEEDED TO MARK TYPE OF CURB & GUTTER IF THERE IS A CHANGE



CONCRETE PAVING - SLIP FORM



DISCLAIMER

THESE STAKING INFORMATION SHEETS ARE FOR INFORMATION PURPOSES ONLY. STAKING PROCEDURES VARY AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION BY CIRCUMSTANCES AND/OR AGREEMENTS BETWEEN SURVEY CREW AND CONTRACTOR.

LEAD EXPERT OFFICE	BRYAN DODDS DIRECTOR OFFICE OF LAND MANAGEMENT	STAKING INFORMATION SHEET	APPROVED: 08-06-2014 REVISED:	CHRISTOPHER ROY STATE DESIGN ENGINEER	STANDARD PLAN 5-297.115	1 OF 2

STANDARD PLAN

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 28 OF 220 SHEETS

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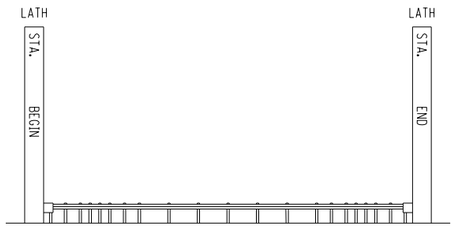
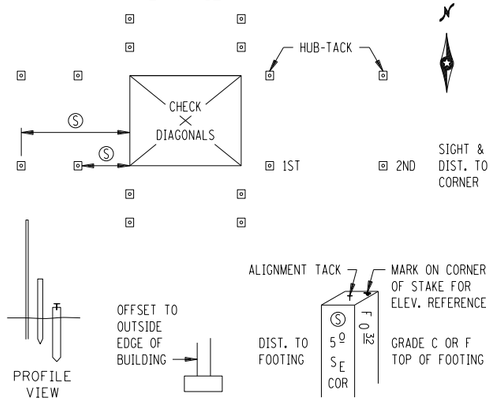
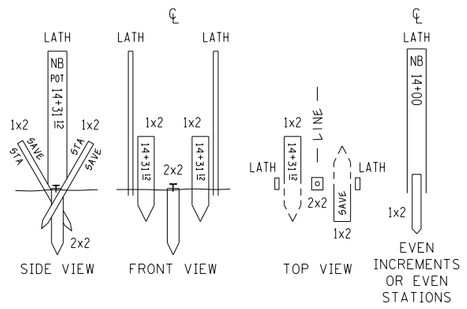
GUARDRAIL (GUARD)



BUILDING (BUILD) FOUNDATION / FOOTING



ALIGNMENT POINTS (ALIGN)



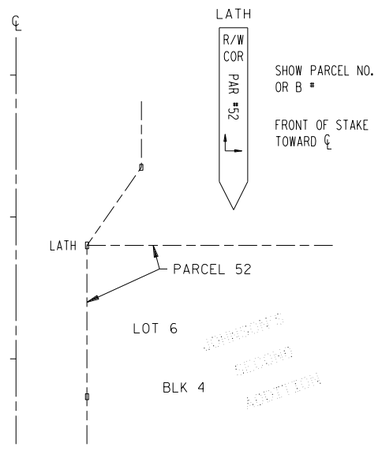
STAKE C = 2"X 2" HUB (LENGTH MAY VARY) SET AS TEMPORARY STAKE. MAY BE REPLACED BY MnDOT MARKER AFTER CONSTRUCTION IS COMPLETED.

SET AT GROUND LEVEL (TEMPORARY CONSTRUCTION STAKE).

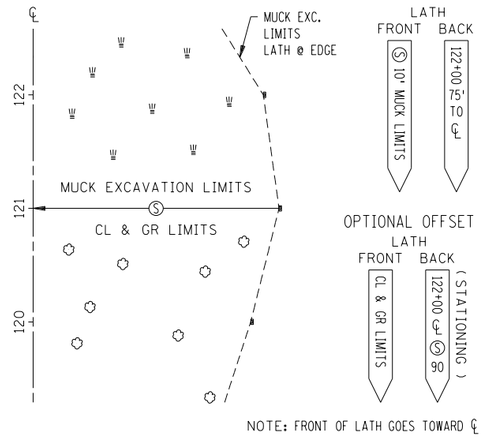
TACK SET AT ALIGNMENT POINTS.

STAKE A = GUARD STAKES SET AT ANGLE IN GROUND 6" EACH SIDE OF STAKE D, WITH STATIONING READ WHEN LOOKING UP STATION.

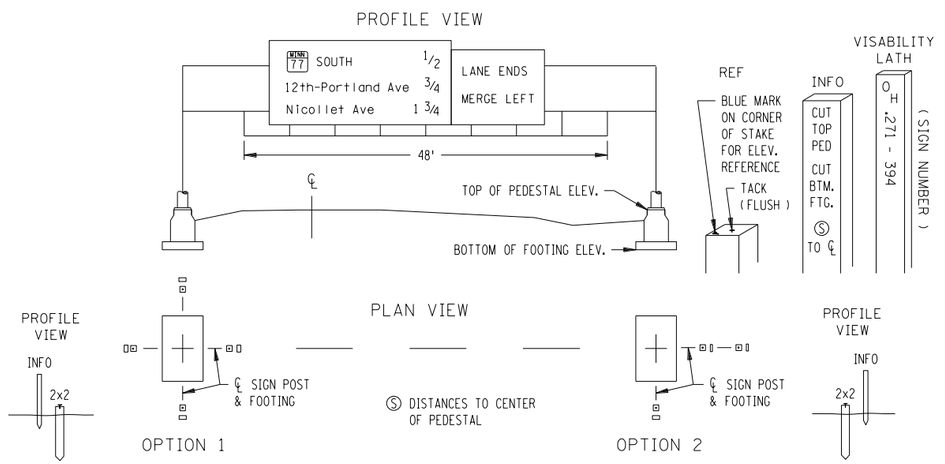
R/W & TEMP. EASEMENT (R/W)



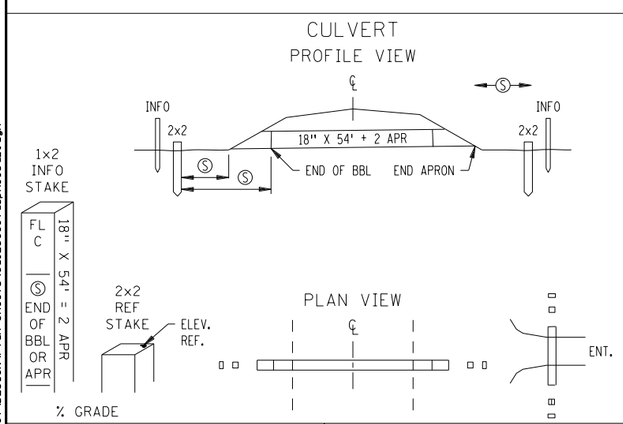
CLEAR & GRUBBING LIMITS (CLEAR) OR MUCK EXCAVATION LIMITS (MUCK)

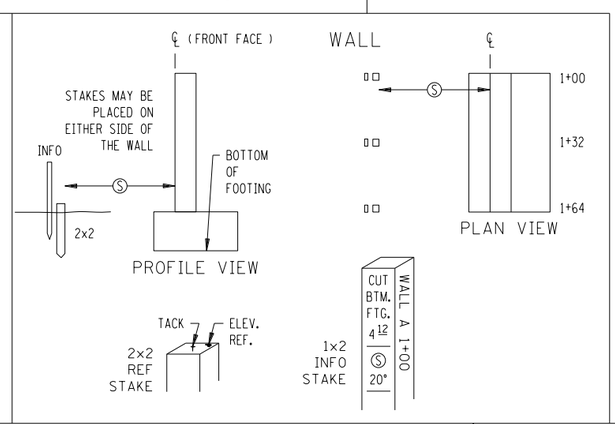


OVERHEAD SIGNS (SIGN)

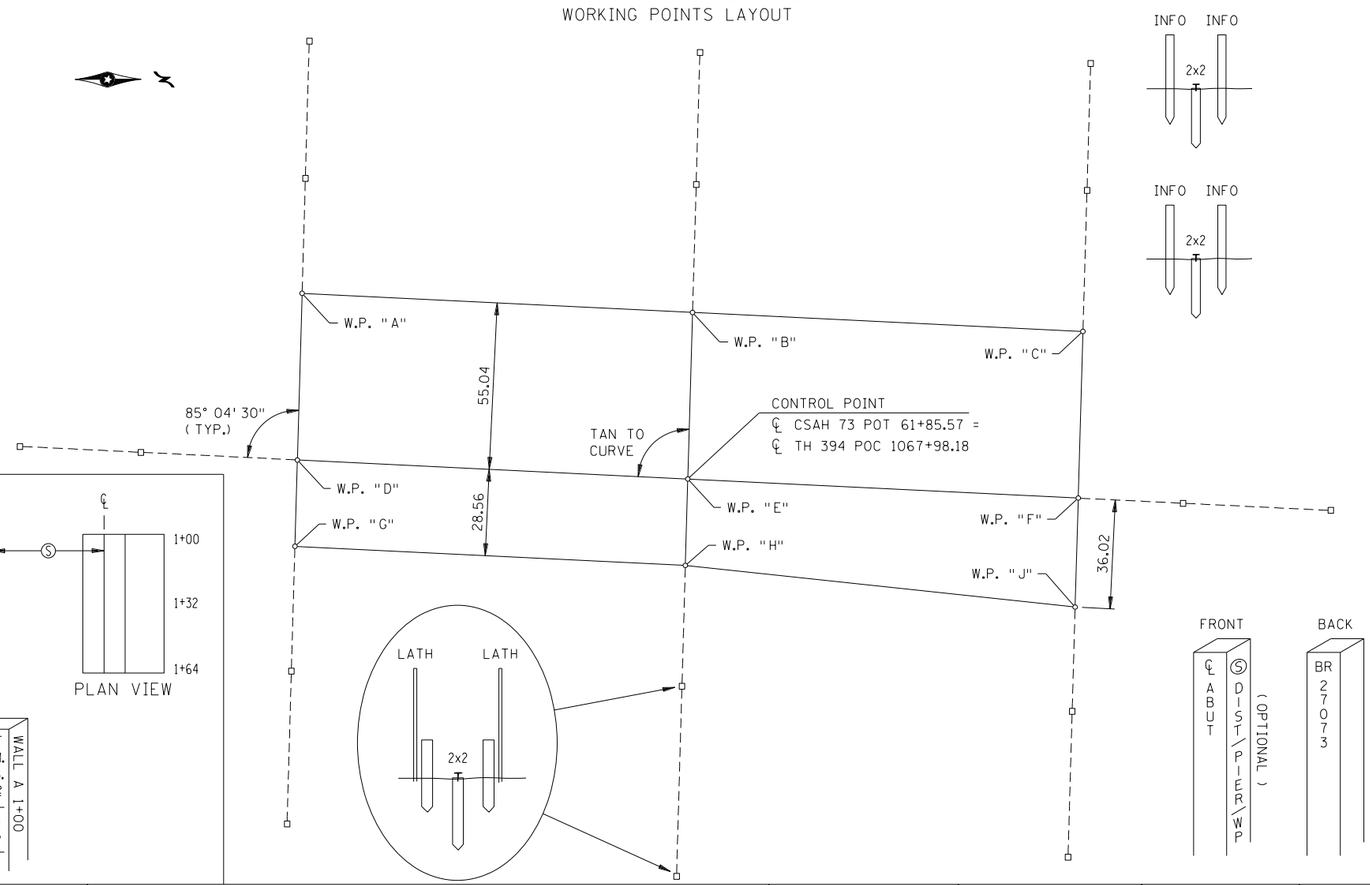


CULVERT





BRIDGESTAKING (BRIDGE)
WORKING POINTS LAYOUT



LEAD EXPERT OFFICE	BRYAN DODDS DIRECTOR OFFICE OF LAND MANAGEMENT	STAKING INFORMATION SHEET	APPROVED: 08-06-2014 REVISED:	CHRISTOPHER ROY STATE DESIGN ENGINEER	STANDARD PLAN 5-297.115	2 OF 2

STANDARD PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

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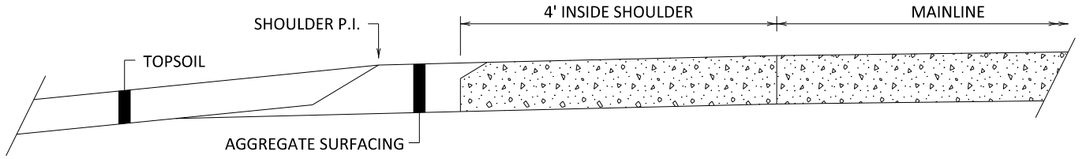
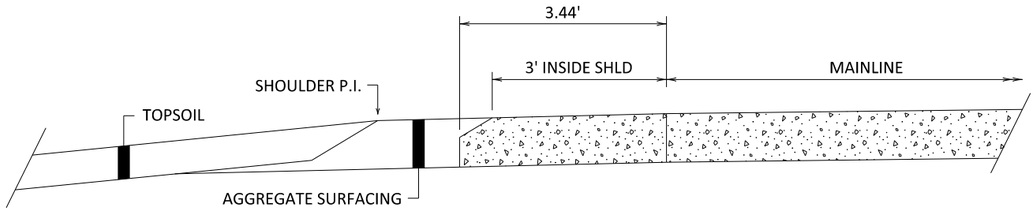
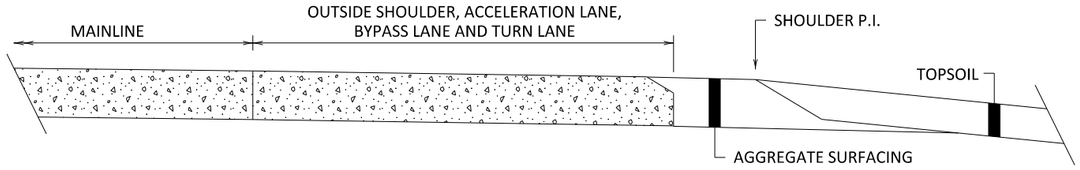


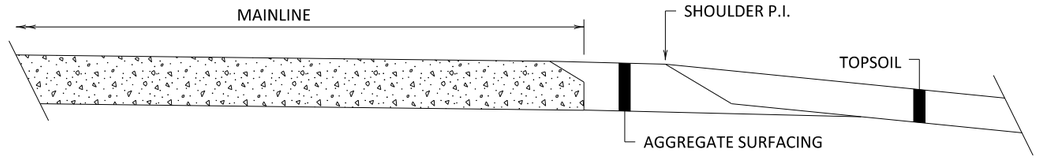
4' INSIDE CONCRETE SHOULDER ①



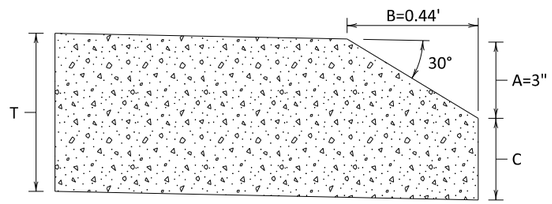
3' INSIDE CONCRETE SHOULDER ②



CONCRETE PAVEMENT WITH OUTSIDE SHOULDER (8' OR LESS), ACCELERATION LANES, BYPASS LANES OR TURN LANES①

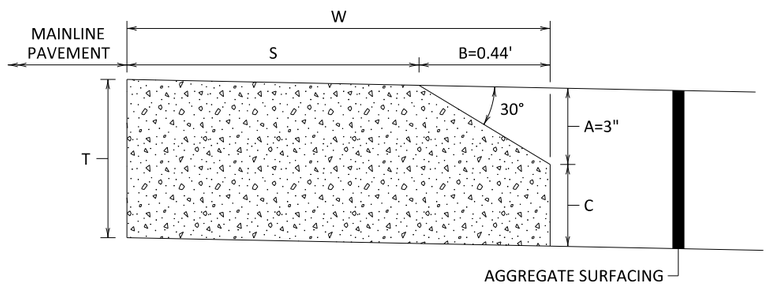


CONCRETE PAVEMENT WITH AGGREGATE SHOULDERING①



CONCRETE SAFETY EDGE HEIGHT	
PAVEMENT THICKNESS, T	EDGE HEIGHT C=T-3
5"	2"
6"	3"
7"	4"
8"	5"
9"	6"
10"	7"

CONCRETE SAFETY EDGE HEIGHT



CONCRETE SAFETY EDGE WIDTH			
DESIGNED SHOULDER WIDTH	PAVED SHOULDER WIDTH, W	SAFETY EDGE WIDTH, B	TOP SURFACE WIDTH, S
3'	3.44'	0.44'	3'
4'	4'	0.44'	3.56'
6'	6'	0.44'	5.56'
8'	8'	0.44'	7.56'

CONCRETE SAFETY EDGE WIDTH
FOR CONCRETE SHOULDERS ≤ 8' WIDE

NOTES:

CONSTRUCT THE SAFETY EDGE ALONG ALL CONCRETE PAVEMENT EDGES ADJACENT TO AGGREGATE SURFACING.
THIS INCLUDES:
- MAINLINE ROADWAYS
- SHOULDERS 8' WIDE OR LESS
- RAMPS AND LOOPS
- ACCELERATION, BYPASS AND TURN LANES

PROVIDE THE SAFETY EDGE ALONG THE ROADWAY THROUGH UNPAVED ENTRANCES SUCH AS FARM ACCESSES, UNPAVED DRIVEWAYS, AND GRAVEL ROAD ACCESSES. FOR PAVED PUBLIC ENTRANCES AND PAVED DRIVEWAYS, STOP THE SAFETY EDGE AND MATCH THE PROPOSED CONSTRUCTED PAVEMENT TO THE EXISTING CONDITIONS OR FOLLOW THE DESIGN PLANS. SHORT SECTIONS OF HANDWORK MAY BE NECESSARY FOR TRANSITIONS AND TURNOUTS.

SAFETY EDGE IS OPTIONAL FOR PAVED SHOULDER WIDTHS GREATER THAN 8'.

SEE TYPICAL SECTIONS FOR SAFETY EDGE PLACEMENT LOCATIONS.

① INTEGRATE THE CONCRETE SAFETY EDGE WITHIN THE DESIGNED PAVEMENT EDGE. DO NOT ADD THE CONCRETE SAFETY EDGE TO THE OUTSIDE EDGE OF THE DESIGNED PAVEMENT WIDTH.

② WHEN CONSTRUCTING A 3' INSIDE SHOULDER, PLACE THE SAFETY EDGE OUTSIDE THE 3' SHOULDER WIDTH, PROVIDING AT LEAST 3' OF TOP CONCRETE SHOULDER SURFACE WIDTH.

LEAD EXPERT OFFICE	CURT TURGEON DIRECTOR OFFICE OF MATERIALS & ROAD RESEARCH		SAFETY EDGE CONCRETE PAVEMENT	APPROVED: 02-21-2024 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.220	1 OF 2

0 03/20/24

STANDARD PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

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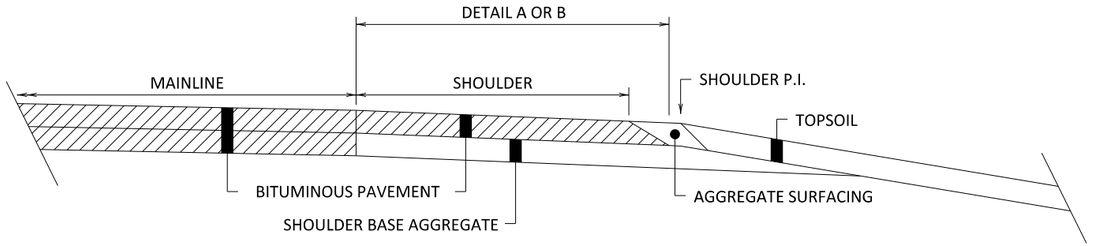
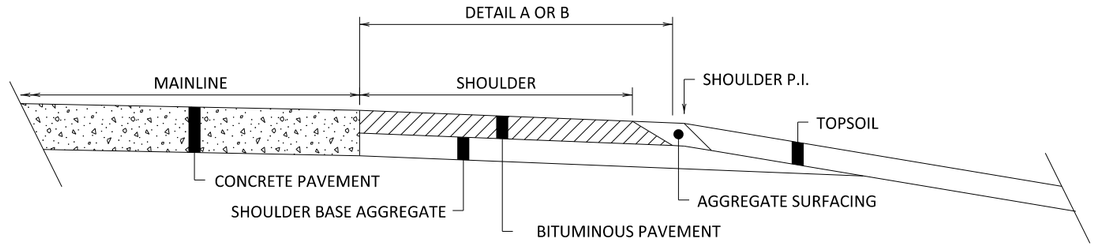
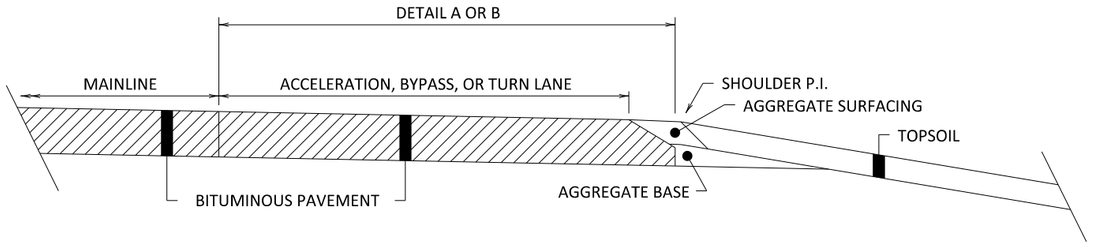


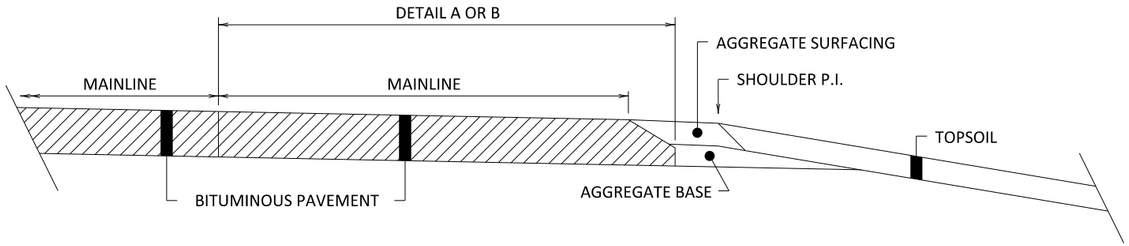
BITUMINOUS PAVEMENT WITH BITUMINOUS SHOULDERS (8' OR LESS)



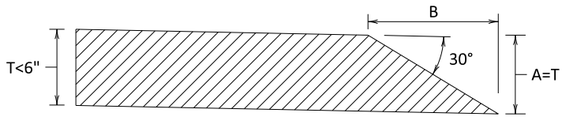
CONCRETE PAVEMENT WITH BITUMINOUS SHOULDERS (8' OR LESS)



BITUMINOUS PAVEMENT WITH ACCELERATION LANES, BYPASS LANES OR TURN LANES

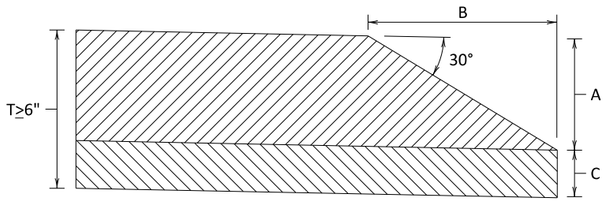


BITUMINOUS PAVEMENT WITH AGGREGATE SHOULDERING



DETAIL A
PAVEMENT THICKNESS <6"

FOR BITUMINOUS PAVEMENT THICKNESS < 6"	
PAVEMENT THICKNESS, T	B
2"	3.5"
3"	5.2"
4"	6.9"
5"	8.7"



DETAIL B
PAVEMENT THICKNESS≥ 6"

FOR BITUMINOUS PAVEMENT THICKNESS ≥ 6"			
PAVEMENT THICKNESS, T	A	B	C
6"	5"	8.7"	1"
8"	5"	8.7"	3"
10"	5"	8.7"	5"
12"	5"	8.7"	7"

NOTES:

CONSTRUCT THE SAFETY EDGE ALONG ALL BITUMINOUS PAVEMENT EDGES ADJACENT TO AGGREGATE SURFACING. THIS INCLUDES:
- MAINLINE ROADWAYS
- SHOULDERS 8' WIDE OR LESS
- RAMPS AND LOOPS
- ACCELERATION, BYPASS AND TURN TURN LANES

CONSTRUCT THE SAFETY EDGE USING A MANUFACTURED SHOE DEVICE ATTACHED TO THE PAVING MACHINE. A SINGLE-PLATE STRIKE-OFF METHOD IS NOT ALLOWED.

PROVIDE THE SAFETY EDGE ALONG THE ROADWAY THROUGH UNPAVED ENTRANCES SUCH AS FARM ACCESSES, UNPAVED DRIVEWAYS, AND GRAVEL ROAD ACCESSES. FOR PAVED PUBLIC ENTRANCES AND PAVED DRIVEWAYS, STOP THE SAFETY EDGE AND MATCH THE PROPOSED CONSTRUCTED PAVEMENT TO THE EXISTING CONDITIONS OR FOLLOW THE DESIGN PLANS. SHORT SECTIONS OF HANDWORK MAY BE NECESSARY FOR TRANSITIONS AND TURNOUTS.

SAFETY EDGE IS OPTIONAL FOR PAVED SHOULDER WIDTHS GREATER THAN 8'.

SEE TYPICAL SECTIONS FOR SAFETY EDGE PLACEMENT LOCATIONS.

THE SAFETY EDGE IS ADDED TO THE OUTSIDE OF THE REQUIRED BITUMINOUS TOP SURFACE WIDTH SHOWN IN THE PLANS.

LEAD EXPERT OFFICE		SAFETY EDGE BITUMINOUS PAVEMENT	APPROVED: 02-21-2024 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.220	2 OF 2

0 03/20/24

STANDARD PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

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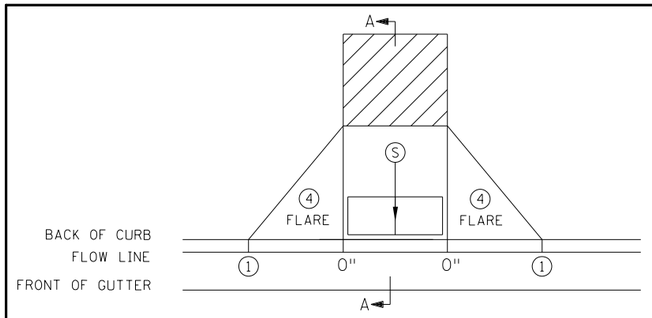
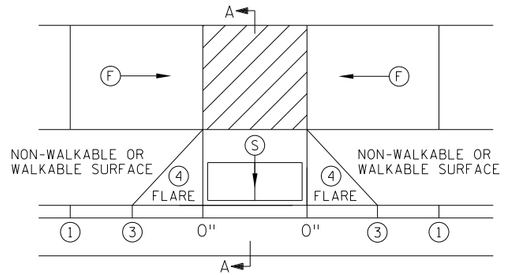
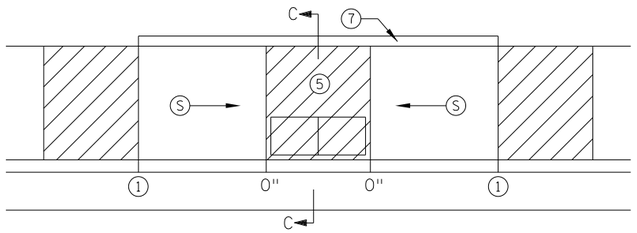


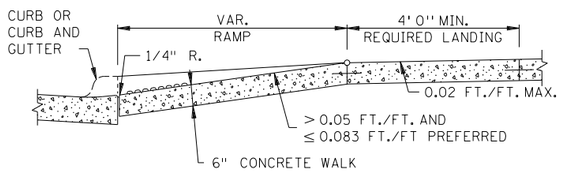
PERPENDICULAR



TIERED PERPENDICULAR

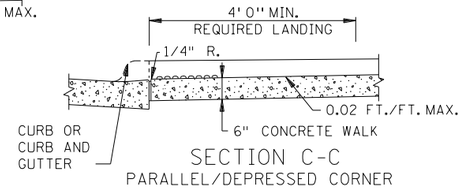


PARALLEL



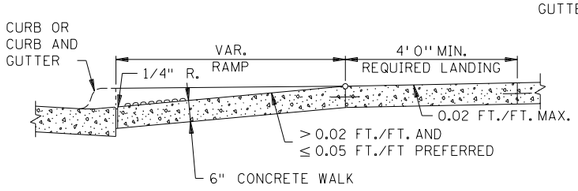
SECTION A-A

PERPENDICULAR/TIERED/DIAGONAL



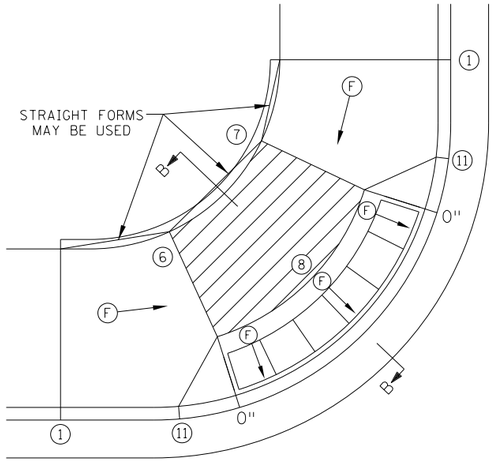
SECTION C-C

PARALLEL/DEPRESSED CORNER

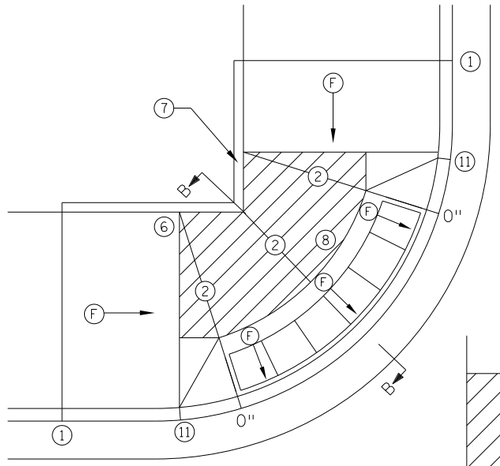


SECTION B-B

FAN

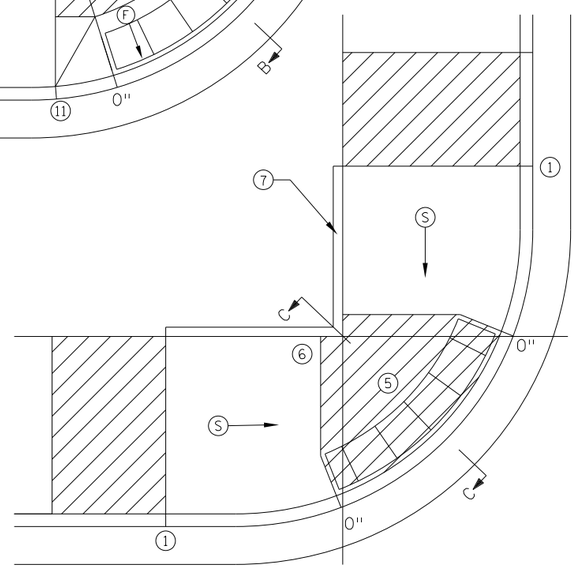


FAN (10)

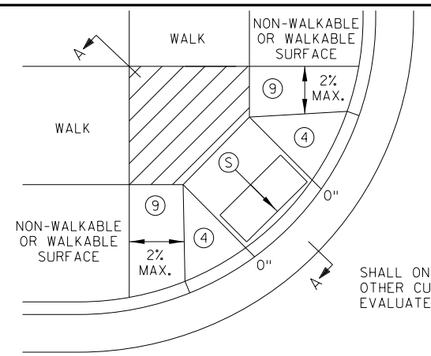


MODIFIED FAN (10)

USED WHEN RIGHT-OF-WAY IS CONSTRAINED



DEPRESSED CORNER



DIAGONAL

SHALL ONLY BE USED AFTER ALL OTHER CURB RAMP TYPES HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%.

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL RUNNING SLOPE IS GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL, THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH. (EXCEPT AS STATED IN (6) BELOW.

TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 OF 6 FOR ALL SEPARATELY POURED INITIAL LANDINGS.

WHEN SIDEWALK IS AT BACK OF CURB, TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

MAINTAIN POSITIVE BOULEVARD DRAINAGE TO TOP OF CURB.

ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.

WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.

RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.

(1) MATCH FULL HEIGHT CURB.

(2) 4' MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.

(3) 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.

(4) SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.

(5) DETECTABLE WARNINGS MAY BE PART OF THE 4' X 4' MIN. LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.

(6) THE GRADE BREAK SHALL BE PERPENDICULAR TO THE BACK OF WALK. THIS WILL ENSURE THAT THE GRADE BREAK IS PERPENDICULAR TO THE DIRECTION OF TRAVEL. (TYPICAL FOR ALL)

(7) WHEN ADJACENT TO GRASS, GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS LESS THAN 5% RUNNING SLOPE SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.

(8) A 7' MIN TOP RADIUS GRADE BREAK IS REQUIRED TO BE CONSTRUCTIBLE.

(9) PAVE FULL WALK WIDTH.

(10) "S" SLOPES ON FANS SHALL ONLY BE USED WHEN ALL OTHER FEASIBLE OPTIONS HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.

(11) INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3" CURB HEIGHT. REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

(S) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

(F) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.

LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.

X" CURB HEIGHT

LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION	PEDESTRIAN CURB RAMP DETAILS	APPROVED: 11-04-2021 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.250	1 OF 6

STANDARD PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

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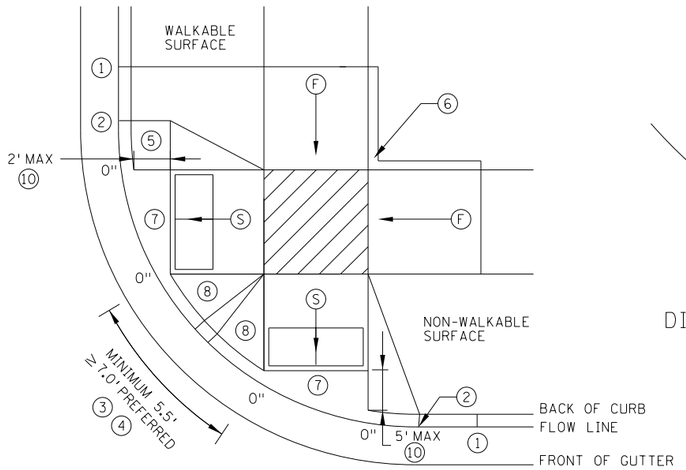
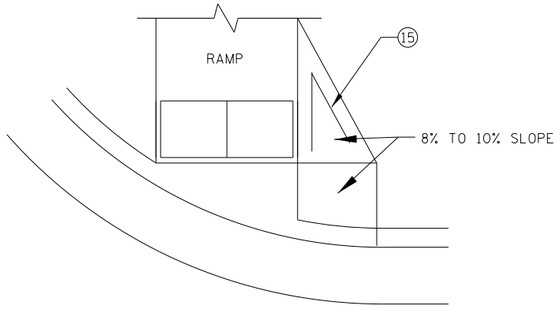
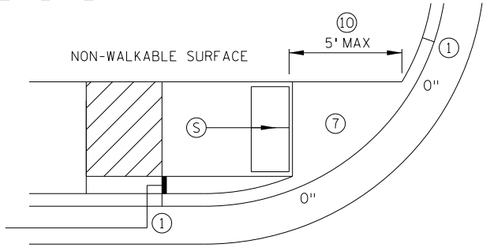


COMBINED DIRECTIONAL

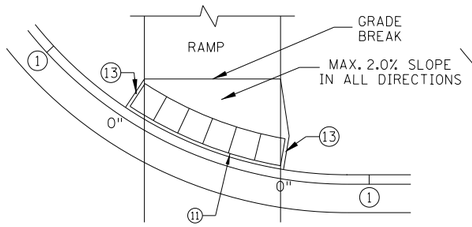


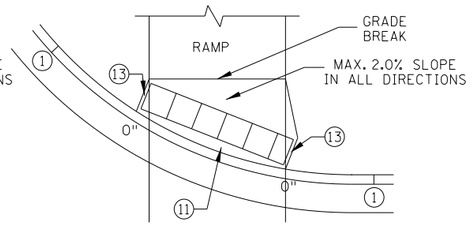
DIRECTIONAL RAMP WALKABLE FLARE

IF NON-CONCRETE BLVD. IS CONSTRUCTED AND IS LESS THAN 2' IN WIDTH AT TOP OF CURB TRANSITION, PAVE CONCRETE RAMP WIDTH TO ADJACENT BACK OF CURB.



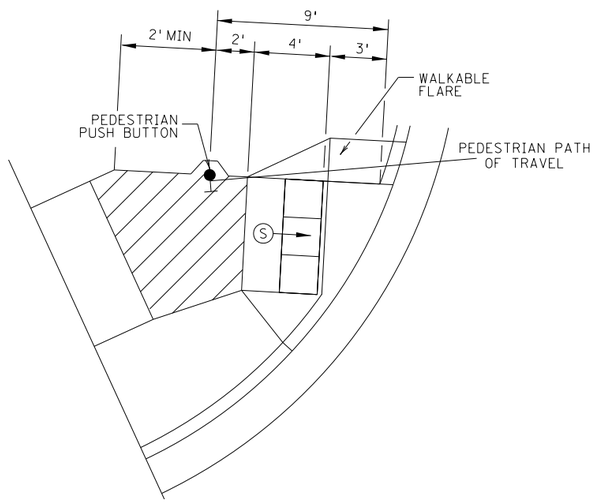
STANDARD ONE-WAY DIRECTIONAL ⑨





DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫

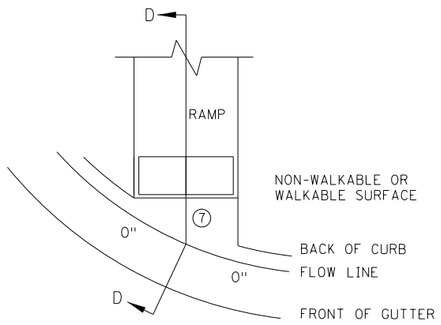
ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB

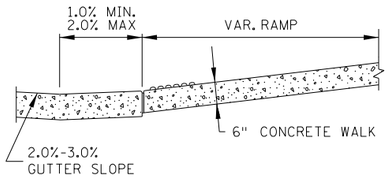


SEMI-DIRECTIONAL RAMP ③④⑨

3' DOME SETBACK, 4' LONG RAMP AND PUSH BUTTON 9' FROM THE BACK OF CURB

PRIMARILY USED FOR APS APPLICATIONS WHERE THE PAR DOES NOT CONTINUE PAST THE PUSH BUTTON (DEAD-END SIDEWALK)





SECTION D-D

CURB FOR DIRECTIONAL RAMPS ⑭

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE.

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOP GRADE BREAK OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL. THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH.

TO ENSURE INITIAL RAMPS AND INITIAL LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS SHALL BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 AND THE ADA SPECIAL PROVISION (PROSECUTION OF WORK).

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

WHEN THE BOULEVARD IS 4' WIDE OR LESS, THE TOP OF CURB TAPER SHALL MATCH THE RAMP SLOPES TO REDUCE NEGATIVE BOULEVARD SLOPES FROM THE TOP BACK OF CURB TO THE PAR.

ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.

WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.

RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB. SEE NOTES ⑩ & ⑪ FOR INFORMATION REGARDING RECTANGULAR DETECTABLE WARNING PLACEMENT.

① MATCH FULL CURB HEIGHT.

② 3" HIGH CURB WHEN USING A 3' LONG RAMP
4" HIGH CURB WHEN USING A 4' LONG RAMP.

③ 3" MINIMUM CURB HEIGHT (5.5' MIN. DISTANCE REQUIRED BETWEEN DOMES)
4" PREFERRED (7' MIN. DISTANCE REQUIRED BETWEEN DOMES).

④ THE "BUMP" IN BETWEEN THE RAMPS SHOULD NOT BE IN THE PATH OF TRAVEL FOR COMBINED DIRECTIONAL RAMPS. IF THIS OCCURS MODIFY THE RAMP LOCATION OR SWITCH RAMP TO A FAN/DEPRESSED CORNER.

⑤ WHEN USING CONCRETE PAVED FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A WALKABLE SURFACE, DIRECTIONAL RAMP FLARES SHALL BE USED. SEE THE DETAIL ON THIS SHEET.

⑥ GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.

⑦ MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.

⑧ 8% TO 10% WALKABLE FLARE.

⑨ PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.

⑩ FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.

⑪ RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK UP TO 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.

⑫ FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH. THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.

⑬ THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

⑭ TO BE USED FOR ALL DIRECTIONAL RAMPS, EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB.

⑮ PLACE 2 NO. 4 BARS 4 INCHES FROM SIDE OF FORMS WITH A MINIMUM 2 INCHES OF CONCRETE COVER ALONG EACH SIDE OF FLARE (INCIDENTAL).

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

(S) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

(F) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.

LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.

X" CURB HEIGHT

LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION	PEDESTRIAN CURB RAMP DETAILS	APPROVED: 11-04-2021 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.250	2 OF 6

STANDARD PLAN

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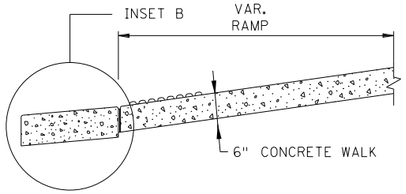
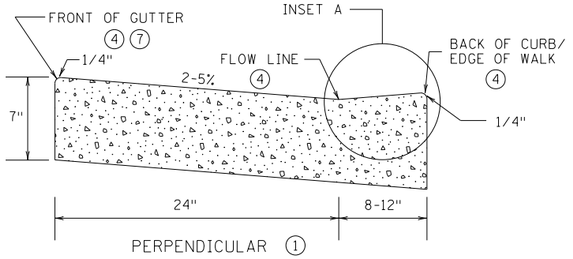
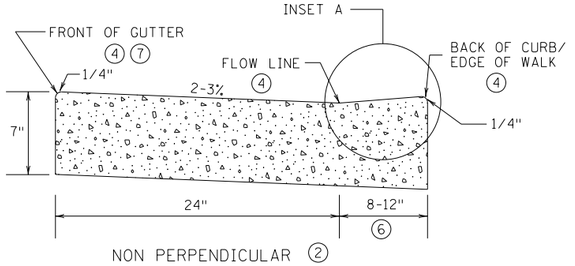
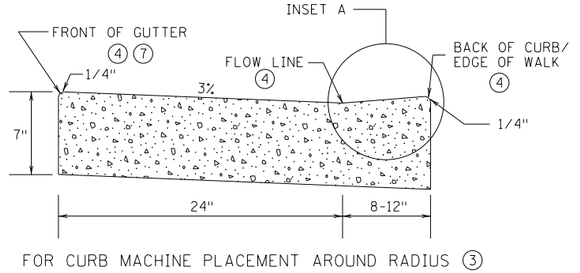




PERPENDICULAR (1)

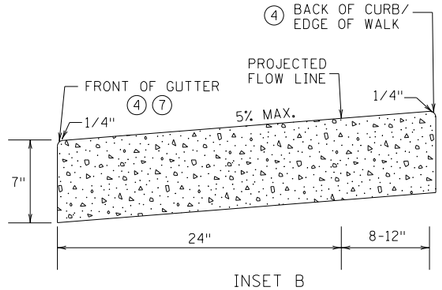


NON PERPENDICULAR (2)

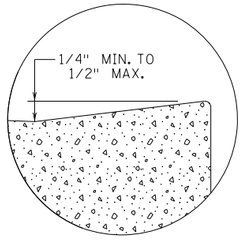


FOR CURB MACHINE PLACEMENT AROUND RADIUS (3)
(REGARDLESS OF RAMP TYPE)

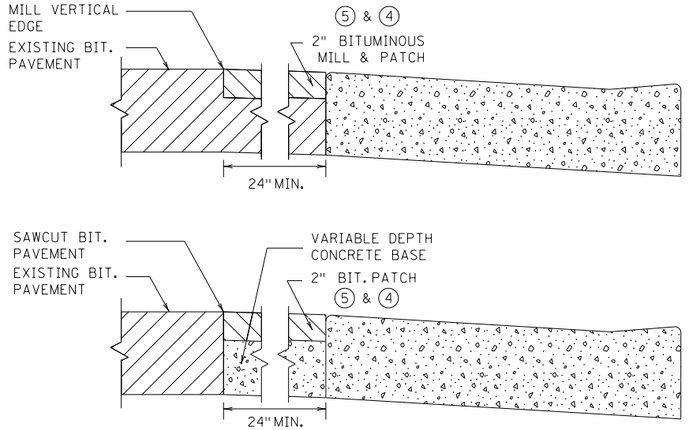
PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL



INSET B
OUTFLOW GUTTER (8)



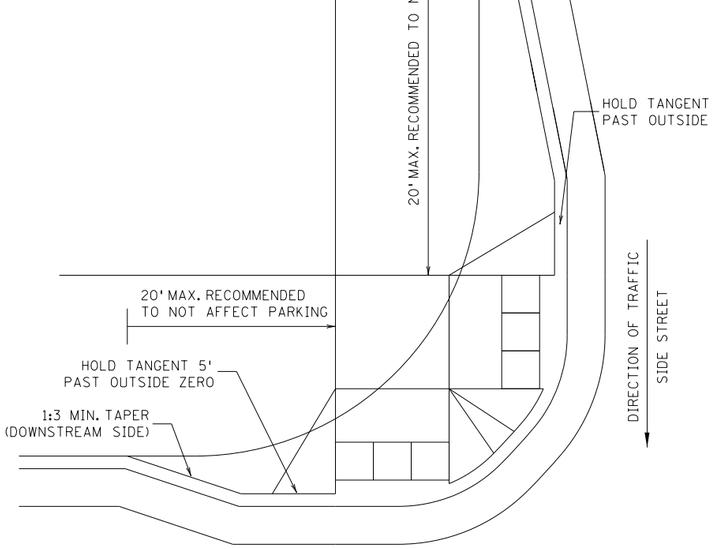
INSET A



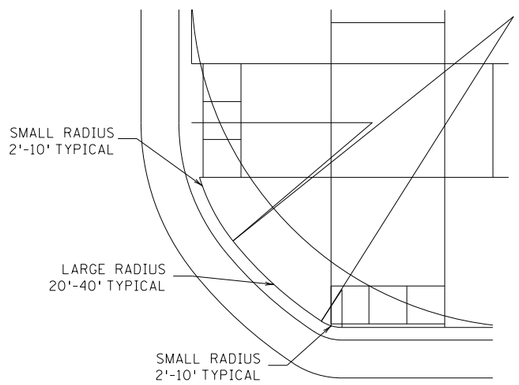
ONLY ALLOWED PER ENGINEER'S APPROVAL

PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER

FOR USE ON CURB RAMP RETROFITS



ADA CURB EXTENSION WITH COMPOUND RADIUS (BUMP OUT) (11)



COMBINED DIRECTIONAL (10)
(COMPOUND RADIUS)

NOTES:

POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM.

NO PONDING SHALL BE PRESENT IN THE PAR.

ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.

(1) FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMPS.

(2) FOR USE AT CURB RAMPS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS & DEPRESSED CORNERS.

(3) BEGIN GUTTER SLOPE TRANSITION 10' OUTSIDE OF ALL CURB RAMPS.

(4) THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4".

(5) ELEVATION CHANGE TAKES PLACE FROM THE EXISTING TO NEW FRONT OF GUTTER. PATCH IS USED TO MATCH THE NEW GUTTER FACE INTO THE EXISTING ROADWAY.

(6) VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS. SEE SHEET 2 FOR DIRECTIONAL CURB SLOPE REQUIREMENTS.

(7) TOP FRONT OF GUTTER SHALL BE CONSTRUCTED FLUSH WITH PROPOSED ADJACENT PAVEMENT ELEVATION. TOP 1.5" OF THE GUTTER FACE MUST BE A FORMED EDGE. PAR GUTTER SHALL NOT BE OVERLAID.

(8) SHOULD BE USED AT VERTICALLY CONSTRAINED AREAS WHEN AT A DRAINAGE HIGH POINT OR SUPER ELEVATED ROADWAY SEGMENTS.

(9) DRILL AND GROUT NO. 4 EPOXY-COATED 18" LONG TIE BARS AT 30" CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT 1' MINIMUM FROM ALL JOINTS.

(10) HELPS PROVIDE TWO SEPARATE RAMPS, REDUCES THE DOME SETBACK LENGTH AND MINIMIZES DIRECTIONAL CURB. THIS RADIUS DESIGN CLOSELY FOLLOWS THE TURNING VEHICLE PATH WHILE OPTIMIZING CURB RAMP LENGTH.

(11) CURB EXTENSIONS SHOULD BE USED IN VERTICALLY CONSTRAINED AREAS, USUALLY IN DOWNTOWN ROADWAY SEGMENTS WHERE ON-STREET PARKING IS AVAILABLE. CURB EXTENSIONS SHOULD BE CONSIDERED FOR APS INTERSECTIONS WHERE SPACE IS LIMITED. PUSH BUTTONS MUST MEET APS CRITERIA AS DESCRIBED IN THE PUSH BUTTON LOCATION DETAIL SHEET.

LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION		PEDESTRIAN CURB RAMP DETAILS	APPROVED: 11-04-2021 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.250	3 OF 6

STANDARD PLAN

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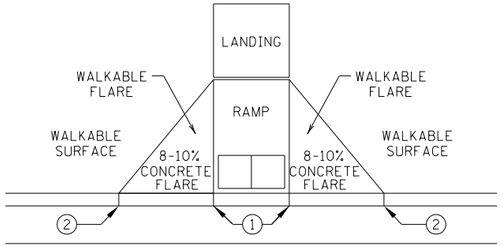
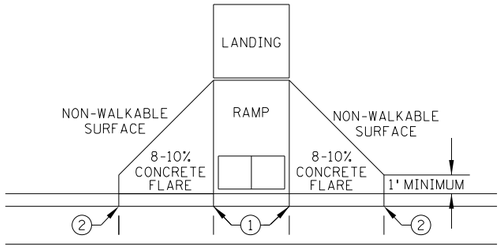
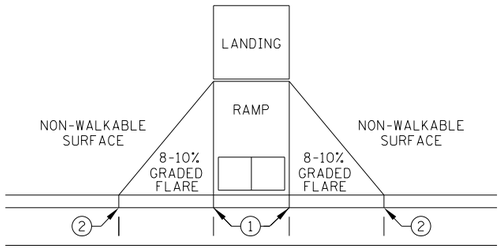


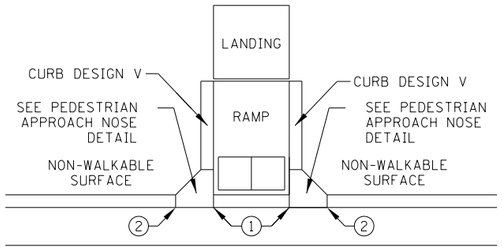
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

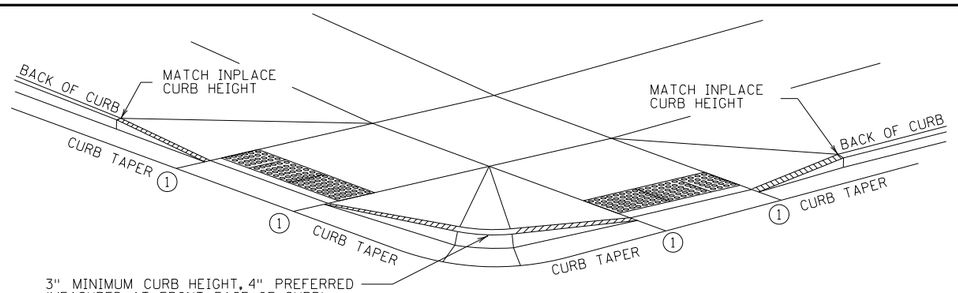


GRADED FLARES

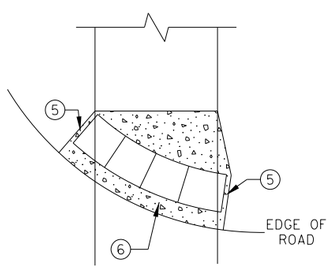


RETURNED CURB ④

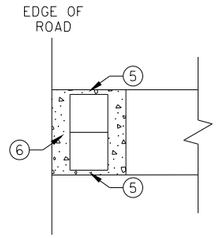
TYPICAL SIDE TREATMENT OPTIONS ③ ⑩



DETECTABLE EDGE WITH ⑦
CURB AND GUTTER

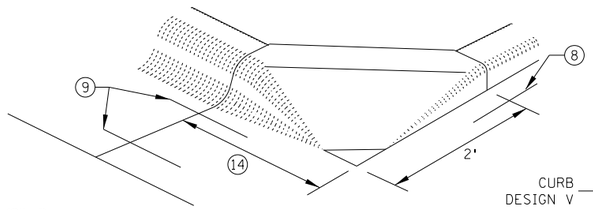


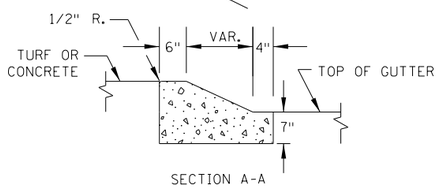
RADIAL DETECTABLE WARNING



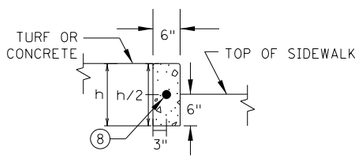
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER





SECTION A-A



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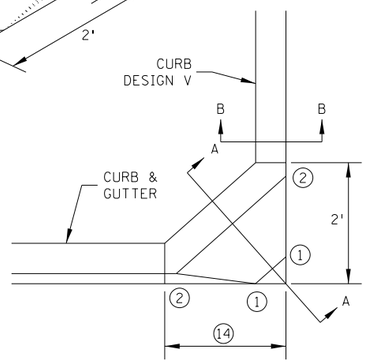
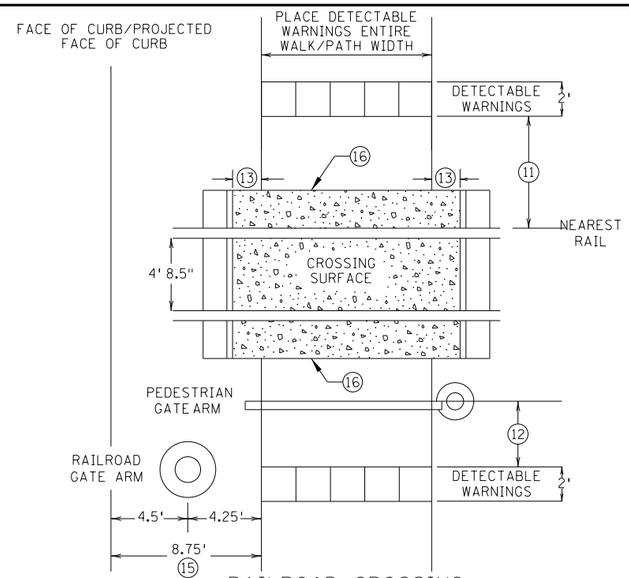


PEDESTRIAN APPROACH
NOSE DETAIL
(FOR RETURNED CURB
SIDE TREATMENT)



RAILROAD CROSSING
PLAN VIEW

NOTES:

INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3 INCH CURB HEIGHT. INCREASE CURB TAPER LENGTH AT LESS THAN 8% OR REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

SEE STANDARD PLATE 7038 AND THIS SHEET FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.

A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.

CONCRETE FLARE LENGTHS ADJACENT TO NON-WALKABLE SURFACES SHOULD BE LESS THAN 8' LONG MEASURED ALONG THE RAMPS FROM THE BACK OF CURB.

① 0" CURB HEIGHT. SEE INSET A ON SHEET 3 OF 6.

② FULL CURB HEIGHT.

③ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.

④ TYPICALLY USED FOR MEDIANS AND ISLANDS.

⑤ WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY. MAINTAIN 3" MAX. BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

⑥ IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNINGS SHALL BE PLACED 1' FROM THE EDGE OF BITUMINOUS ROADWAY AND/OR BITUMINOUS SHARED-USE PATH TO PROVIDE VISUAL CONTRAST.

⑦ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB. CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS WITHIN 3" OF THE EDGE OF THE DETECTABLE WARNINGS. AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY STANDARDS.

⑧ DRILL AND GROUT 1 - NO. 4 12" LONG REINFORCEMENT BAR (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE V CURB.

⑨ DRILL AND GROUT 2 - NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE CURB AND GUTTER.

⑩ SIDE TREATMENT EXAMPLES SHOWN ARE WHEN THE INITIAL LANDING IS APPROXIMATELY LEVEL WITH THE FULL HEIGHT CURB (I.E. 6' LONG RAMP FOR 6" HIGH CURB). WHEN THE INITIAL LANDING IS MORE THAN 1" BELOW FULL HEIGHT CURB REFER TO SHEETS 1 & 2 TO MODIFY THE CURB HEIGHT TAPERS AND MAINTAIN POSITIVE BOULEVARD DRAINAGE. CONSTRUCT THESE TAPERS AT 0"-3" AT 8-10%, THEN LESS THAN 5% FROM 3" CURB TO FULL CURB HEIGHT.

⑪ NEAREST EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 12' MINIMUM TO 15' MAXIMUM FROM THE NEAREST RAIL. FOR SKEWED RAILWAYS IN NO INSTANCE SHALL THE DETECTABLE WARNING BE CLOSER THAN 12' MEASURED PERPENDICULAR TO THE NEAREST RAIL.

⑫ WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 2' FROM THE APPROACHING SIDE OF THE GATE ARM. THIS CRITERIA GOVERNS OVER NOTE ⑪.

⑬ CROSSING SURFACE SHALL EXTEND 2' MINIMUM PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.

⑭ 3' FOR MEDIANS AND SPLITTER ISLANDS. NOSE CAN BE REDUCED TO 2' ON FREE RIGHT ISLANDS.

⑮ SIDEWALK TO BE PLACED 8.75' MIN. FROM THE FACE OF CURB/PROJECTED FACE OF CURB. THIS ENSURES MIN. CLEARANCE BETWEEN THE SIDEWALK AND GATE ARM COUNTERWEIGHT SUPPORTS.

⑯ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.

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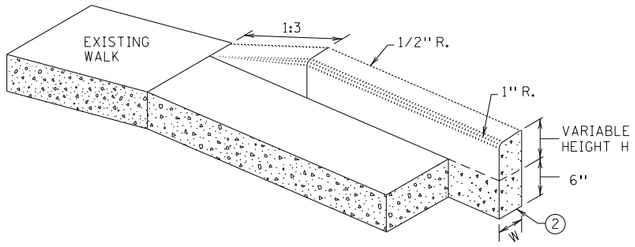
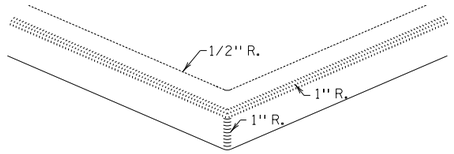


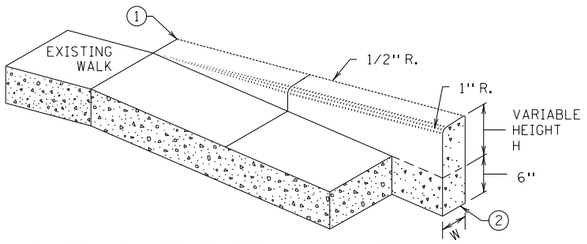
V CURB ADJACENT TO LANDSCAPE

CURB WITHIN SIDEWALK LIMITS



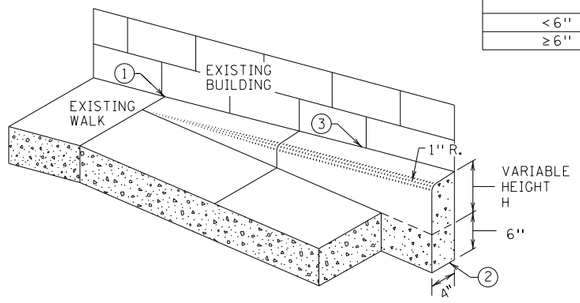
V CURB INTERSECTION

CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"

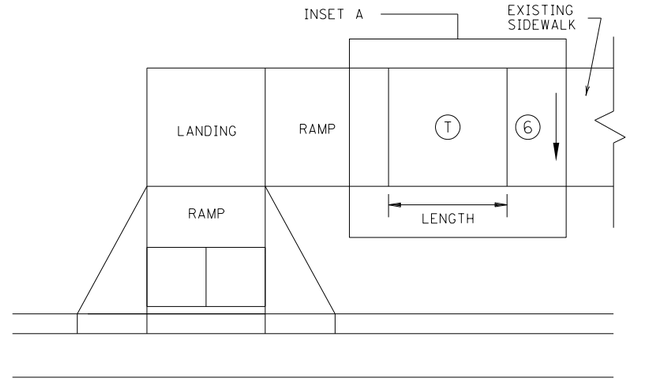


V CURB ADJACENT TO LANDSCAPE

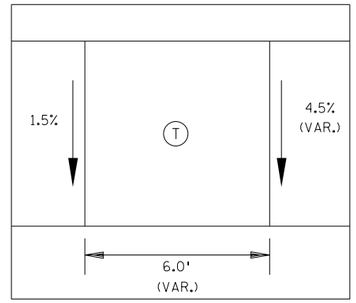
CURB OUTSIDE SIDEWALK LIMITS



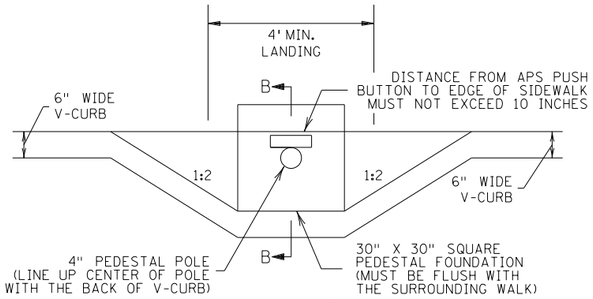
V CURB ADJACENT TO BUILDING OR BARRIER



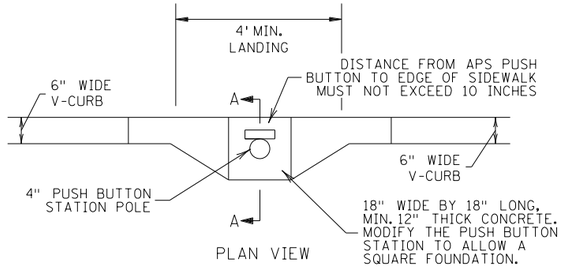
TRANSITION PANEL ④⑤



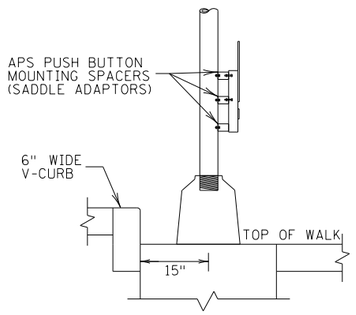
INSET A



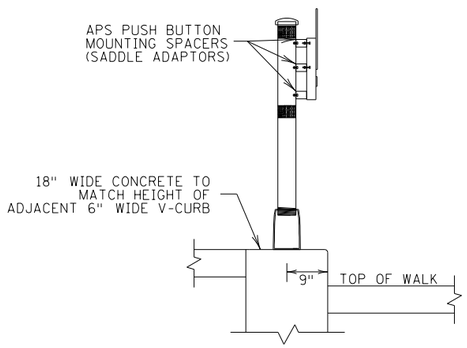
PLAN VIEW



PLAN VIEW



SECTION B-B



SECTION A-A

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)

PUSH BUTTON STATION (V-CURB)

NOTES:

A WALKABLE FLARE IS AN 8-10% CONCRETE FLARE THAT IS REQUIRED WHEN THE FLARE IS ADJACENT TO A WALKABLE SURFACE, OR WHEN THE PEDESTRIAN PATH OF TRAVEL OF A PUSH BUTTON TRAVERSES THE FLARE.

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

WHERE RIGHT-OF-WAY ALLOWS, USE OF V CURB SHOULD BE MINIMIZED. GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.

V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.

V CURB NEXT TO BUILDING SHALL BE A 4" WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.

(1) END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.

(2) ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.

(3) CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM ½" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.

(4) THE MAX. RATE OF CROSS SLOPE TRANSITIONING IS 1' LINEAR FOOT OF SIDEWALK PER HALF PERCENT CROSS SLOPE. WHEN PAR WIDTH IS GREATER THAN 6' OR THE RUNNING SLOPE IS GREATER THAN 5%, DOUBLE THE CALCULATED TRANSITION LENGTH.

(5) TRANSITION PANELS ARE TO ONLY BE USED AFTER THE RAMP, OR IF NEEDED, LANDING ARE AT THE FULL CURB HEIGHT (TYPICAL SECTION).

(6) EXISTING CROSS SLOPE GREATER THAN 2.0%.

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

(S) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.

(T) TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK. SEE THIS SHEET FOR ADDITIONAL INFORMATION.

LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION		PEDESTRIAN CURB RAMP DETAILS	APPROVED: 11-04-2021 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.250	5 OF 6

STANDARD PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 36 OF 220 SHEETS

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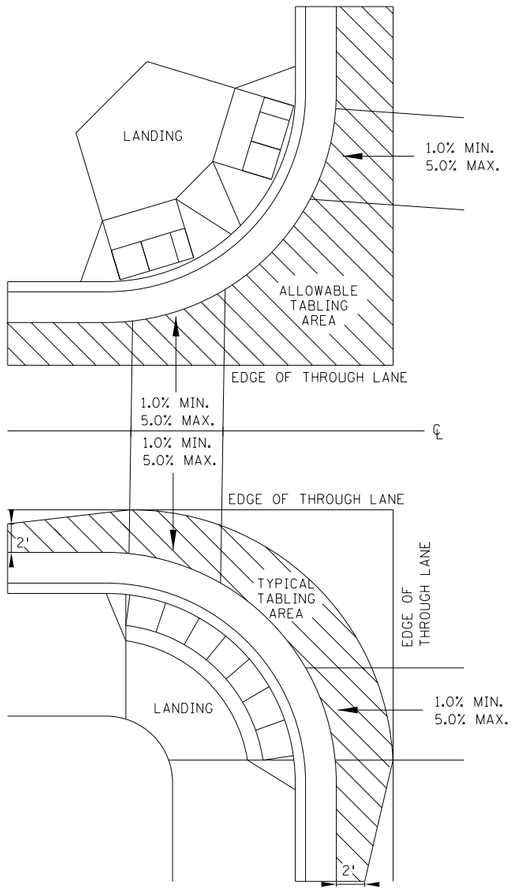
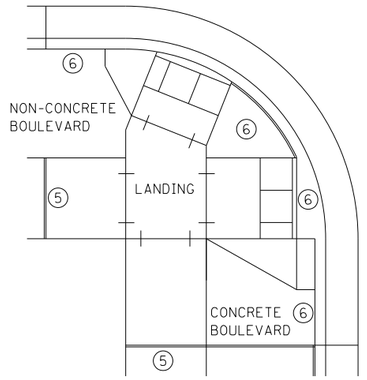
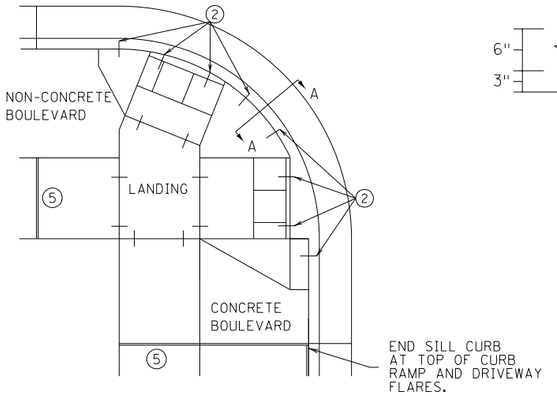


CURB LINE AND ROAD CROSSING ADJUSTMENTS

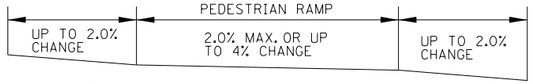


EXPANSION MATERIAL PLACEMENT
FOR CONCRETE ROADWAYS



CURB LINE REINFORCEMENT ④
PLACEMENT ON BITUMINOUS ROADWAYS

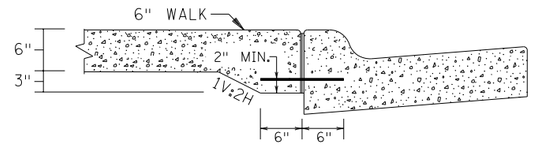
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



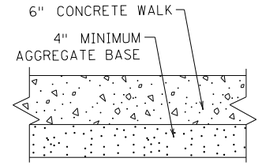
FLOW LINE PROFILE "TABLE" - FAN

FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS

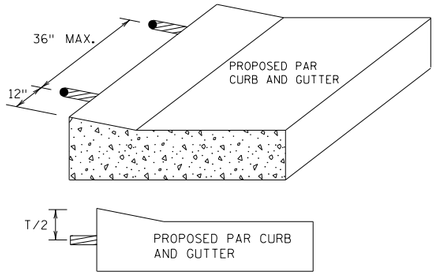
FLOW LINE PROFILE RAISE - FAN

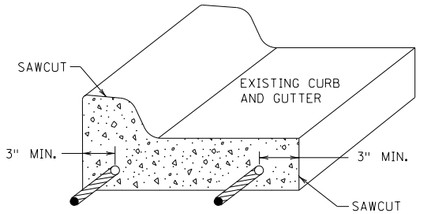


SECTION VIEW A-A
THICKENED SECTION
THROUGH CURB RAMP FLARES



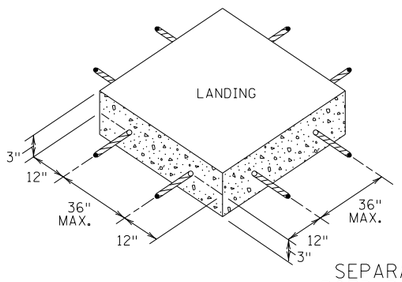
TYPICAL SIDEWALK SECTION
WITHIN INTERSECTION CORNER

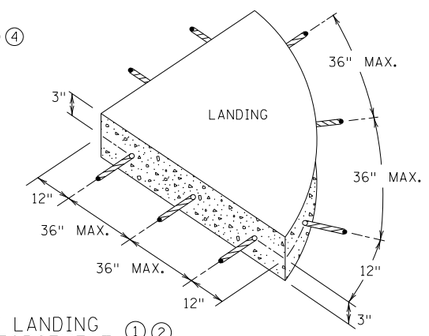




CURB AND GUTTER
REINFORCEMENT ③

CURB RAMP REINFORCEMENT DETAILS ②④





SEPARATE LANDING
POUR REINFORCEMENT ①②

GENERAL NOTES:

"TABLING" OF CROSSWALKS MEANS MAINTAINING LESS THAN 2% CROSS SLOPE WITHIN A CROSSWALK, IS REQUIRED WHEN A ROADWAY IS IN A STOP OR YIELD CONDITION AND THE PROJECT SCOPE ALLOWS.

RECONSTRUCTION PROJECTS: ON FULL PAVEMENT REPLACEMENT PROJECTS "TABLING" OF ENTIRE CROSSWALK SHALL OCCUR WHEN FEASIBLE.

MILL & OVERLAY PROJECTS: "TABLING" OF FLOW LINES, IN FRONT OF THE PEDESTRIAN RAMP, IS REQUIRED WHEN THE EXISTING FLOW LINE IS GREATER THAN 2%. WARPING OF THE BITUMINOUS PAVEMENT CAN NOT EXTEND INTO THE THROUGH LANE. TABLE THE FLOW LINE TO 2% OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA;

1) 1.0% MIN. CROSS-SLOPE OF THE ROAD
2) 5.0% MAX. CROSS-SLOPE OF THE ROAD
3) "TABLE" FLOW LINE UP TO 4% CHANGE FROM EXISTING SLOPE IN FRONT OF PEDESTRIAN RAMP
4) UP TO 2% CHANGE IN FLOW LINE FROM EXISTING SLOPE BEYOND THE PEDESTRIAN CURB RAMP

STAND-ALONE ADA RETROFITS: FOLLOW MILL & OVERLAY CRITERIA ABOVE HOWEVER ALL PAVEMENT WARPING IS DONE WITH BITUMINOUS PATCHING ON BITUMINOUS ROADWAYS AND FULL-DEPTH APRON REPLACEMENT ON CONCRETE ROADWAYS.

RAISING OF CURB LINES SHOULD OCCUR IN VERTICALLY CONSTRAINED AREAS. RAISE THE CURB LINES ENOUGH TO ALLOW COMPLIANT RAMPS OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA;

1) 1.0% MIN. AND 5.0% MAXIMUM CROSS-SLOPE OF THE ROAD
2) 1.0% MIN. FLOW LINE (ON EITHER SIDE OF PEDESTRIAN RAMP) TO MAINTAIN POSITIVE DRAINAGE
3) 5.0% RECOMMENDED MAX. FLOW LINE
4) LONGITUDINAL THROUGH LANE ROADWAY TAPERS SHOULD BE 1" VERTICAL PER 15' HORIZONTAL

NOTES:

① TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET FOR ALL SEPARATELY POURED INITIAL LANDINGS.

② DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) AT 36" MAXIMUM CENTER TO CENTER MINIMUM 12" SPACING FROM CONSTRUCTION JOINTS. BARS TO BE ADJUSTED TO MATCH RAMP GRADE. BARS TO BE PAID BY EACH.

③ DRILL AND GROUT 2 - NO. 4 X 12" LONG (6" EMBEDDED) REINFORCEMENT BARS (EPOXY COATED). REINFORCEMENT REQUIRED FOR ALL CONSTRUCTION JOINTS. BARS TO BE PAID BY EACH.

④ THIS CURB LINE REINFORCEMENT DETAIL SHALL BE USED ON BITUMINOUS ROADWAYS. FOR CONCRETE ROADWAYS, SEE NOTE 6.

⑤ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.

⑥ USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.

LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION		PEDESTRIAN CURB RAMP DETAILS	APPROVED: 11-04-2021 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.250	6 OF 6

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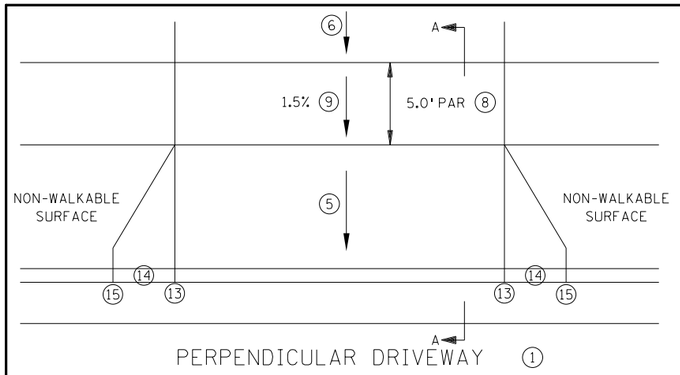
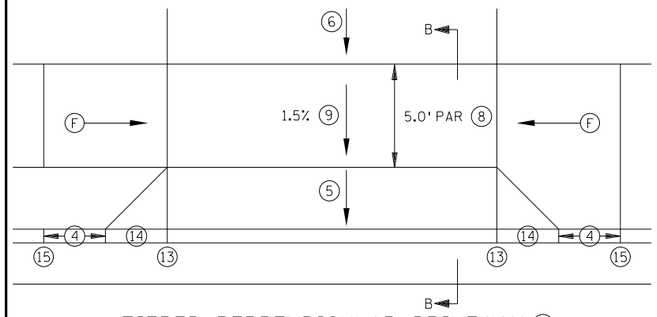
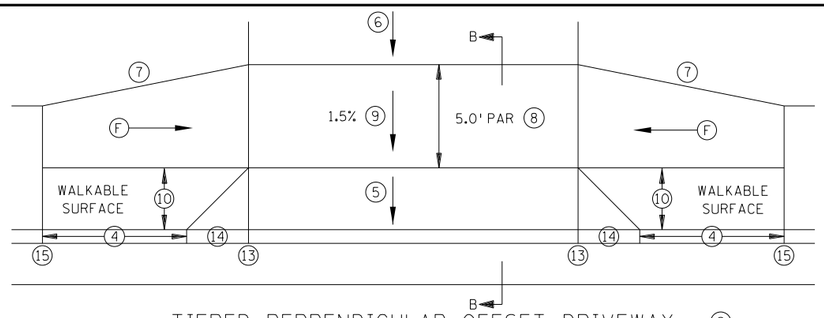


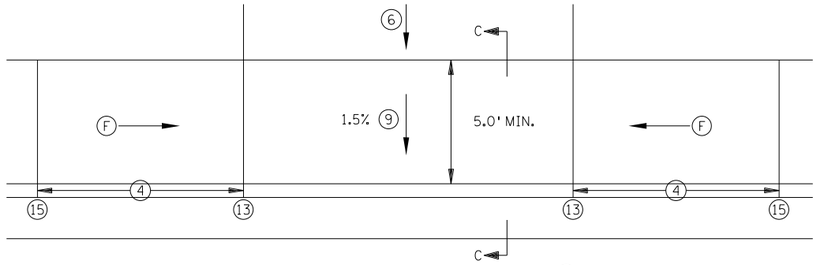
PERPENDICULAR DRIVEWAY ①



TIERED PERPENDICULAR DRIVEWAY ②



TIERED PERPENDICULAR OFFSET DRIVEWAY ②



PARALLEL DRIVEWAY ③

LEGEND	
F	INDICATES DRIVEWAY RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%

NOTES:

ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURE FROM BACK OF CURB.

IN URBAN ROADWAY SECTIONS, 6" CURB HEIGHT SHOULD BE USED WHEN 6' OR GREATER BOULEVARD WIDTH IS PROPOSED. WHEN BOULEVARD IS LESS THAN 6' WIDE, 4" CURB HEIGHT SHOULD BE USED.

MAINTAIN EXISTING DRAINAGE PATTERNS FLOWING TO PUBLIC RIGHT OF WAY.

ACQUIRE ADEQUATE L3 TO ALLOW FOR A CONTINUOUS PAR PROFILE (UNIFORM TYPICAL SIDEWALK SECTION) THROUGH THE DRIVEWAY APRON.

IN NO CASE SHALL SIDEWALK PROFILES EXCEED 5.0%, EXCEPT SIDEWALK PROFILES CAN MATCH ROADWAY GRADE IF ROADWAY GRADE IS GREATER THAN 5.0%. RAMPS FOR DRIVEWAYS ARE REQUIRED TO FOLLOW THE ABOVE SIDEWALK CRITERIA.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PEDESTRIAN ACCESS ROUTE (PAR). 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

DRIVEWAY TYPES FROM MOST PREFERRED TO LEAST PREFERRED ARE AS FOLLOWS: PERPENDICULAR, TIERED PERPENDICULAR, TIERED PERPENDICULAR OFFSET & PARALLEL.

① PERPENDICULAR DRIVEWAYS ARE THE STANDARD AND STARTING POINT FOR ALL DRIVEWAY DESIGN AND CONSTRUCTION. SHOULD BE USED TO ACHIEVE CONTINUOUS PAR PROFILE THROUGH THE DRIVEWAY. OBTAINING A PERPENDICULAR DRIVEWAY DESIGN BECOMES MORE CRITICAL WITH STEEP ROADWAY PROFILES.

② TO BE USED WHEN PERPENDICULAR DRIVEWAY DESIGN CANNOT BE ACHIEVED. THE DRIVEWAY PAR IS BELOW ROADWAY CURB HEIGHT. THIS DRIVEWAY TYPE CAN BE USED FOR BOTH PAVED (AS SHOWN) AND GRASS BOULEVARDS.

③ TO BE USED WHEN PERPENDICULAR AND TIERED PERPENDICULAR DRIVEWAY DESIGN CANNOT BE ACHIEVED. CAN BE USED FOR STEEP NEGATIVE SLOPED DRIVEWAYS. DW CURB TYPE 2 SHOULD BE USED TO RAISE PAR ABOVE GUTTER AND REDUCE "ROLLER COASTER" EFFECT. 4" HIGH ROADWAY CURB SHOULD BE USED TO REDUCE "ROLLER COASTER" EFFECT ESPECIALLY WHEN MULTIPLE DRIVEWAYS ARE PRESENT.

④ TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

⑤ 8% STANDARD, 10% MAX. FOR COMMERCIAL AND 12% MAX. FOR RESIDENTIAL. SEE GENERAL NOTES ON SHEET 2 FOR MORE INFORMATION.

⑥ S3 8% MAXIMUM, IF THE SLOPE IS EXCEEDED OR CONTINUED FOR MORE THAN 5', ANALYZE VEHICLE TEMPLATES FOR VERTICAL CLEARANCE. IF EXISTING DRIVEWAY IS NEGATIVELY DRAINING, S3 CAN BECOME SLIGHTLY MORE NEGATIVE TO ACHIEVE PERPENDICULAR DRIVEWAY DESIGN IF THE VERTICAL CLEARANCE IS ACHIEVED IN VEHICLE TEMPLATES.

⑦ 1:3 MIN. 1:5 PREFERRED FOR DRIVEWAY RETROFIT PROJECTS. 1:10 PREFERRED FOR SIDEWALK REPLACEMENT PROJECTS.

⑧ 5.0' MIN. PAR WIDTH IS THE STANDARD THROUGH DRIVEWAYS. IF FEASIBLE WIDEN DRIVEWAY PAR WIDTH TO MATCH APPROACHING SIDEWALK PAR WIDTHS. IN VERTICALLY CONSTRAINED AREAS PAR WIDTHS CAN INCREMENTALLY BE REDUCED TO 4.5' OR 4' MIN AFTER ALL OTHER OPTIONS HAVE BEEN APPLIED.

⑨ THE PEDESTRIAN ACCESS ROUTE, MAY NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.

⑩ SIDEWALK OFFSET TO BE LESS THAN OR EQUAL TO HALF THE APPROACHING SIDEWALK WIDTH.

⑪ INTEGRAL DRIVEWAY APRON TO BE POURED MONOLITHICALLY/INTEGRAL WITH THE CURB AND GUTTER. SEE SHEET 2 FOR MORE INFORMATION.

⑫ SEE SHEET 2 FOR CURB TYPE INFORMATION.

⑬ 0" CURB IS AT FLOW LINE. SEE DRIVEWAY TABLE FOR BACK OF CURB HEIGHTS.

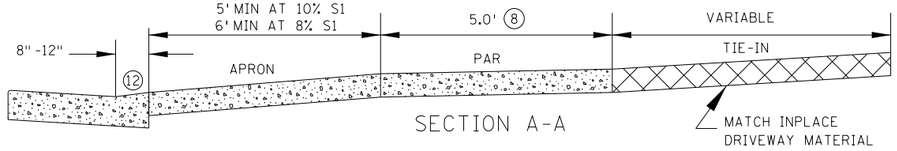
⑭ 3' LONG AT 8-10% PREFERRED FOR INITIAL CURB TAPER. REDUCE CURB TAPER SLOPE IF NECESSARY TO MATCH ADJACENT SIDEWALK GRADES.

⑮ MATCH FULL CURB HEIGHT.

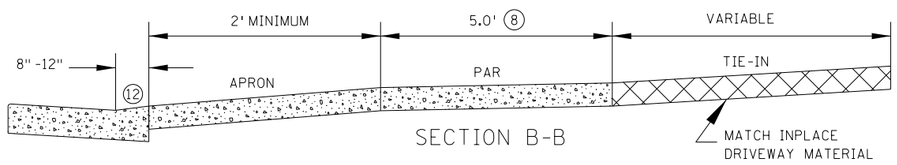
⑯ 1:2 TAPER RATE ON INTEGRAL DRIVEWAY APRONS.

⑰ SEE SHEET 4 FOR WHEN 6" WALK IS REQUIRED.

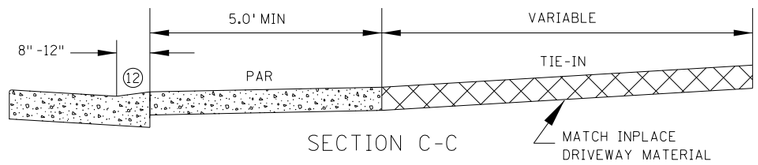
WITH 4" CURB HEIGHT;
3' MIN AT 10% S1
4' MIN AT 8% S1
WITH 6" CURB HEIGHT;
5' MIN AT 10% S1
6' MIN AT 8% S1



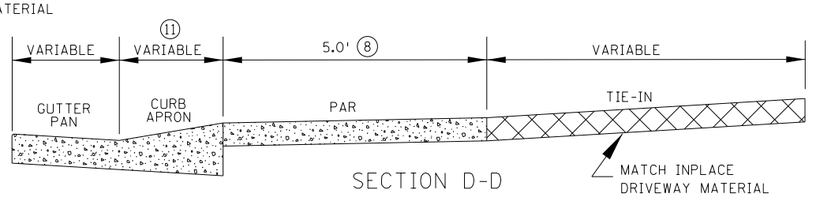
SECTION A-A



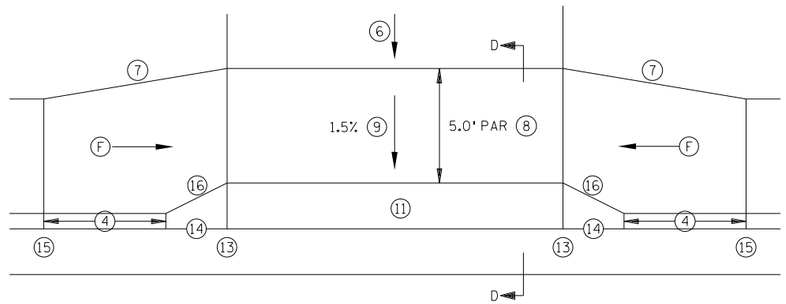
SECTION B-B



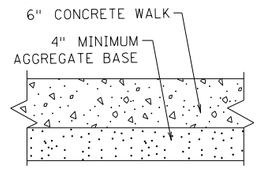
SECTION C-C



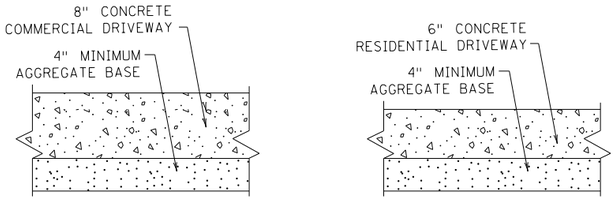
SECTION D-D



INTEGRAL DRIVEWAY APRON



TYPICAL SIDEWALK SECTION ⑰



TYPICAL DRIVEWAY SECTIONS

LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION		DRIVEWAY AND SIDEWALK DETAILS	APPROVED: 11-04-2021 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.254	1 OF 4

STANDARD PLAN

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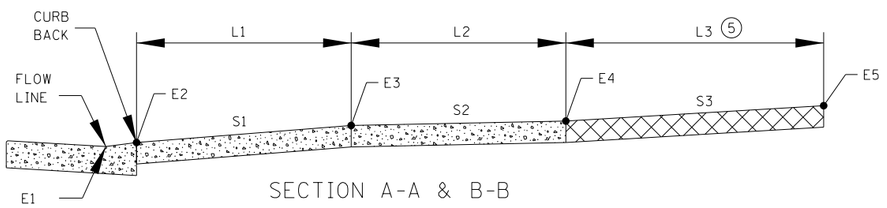
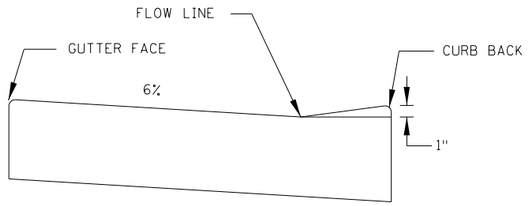
DRIVEWAY TABLE (1)

STATION	SIDE	DRIVEWAY TYPE (2)	CURB TYPE (3)	E1	E2	L1	S1	E3	L2	S2 (4)	E4	L3 (5)	S3	EXISTING (6)	E5	COMMENTS
						FT	%		FT	%		FT	%	%		



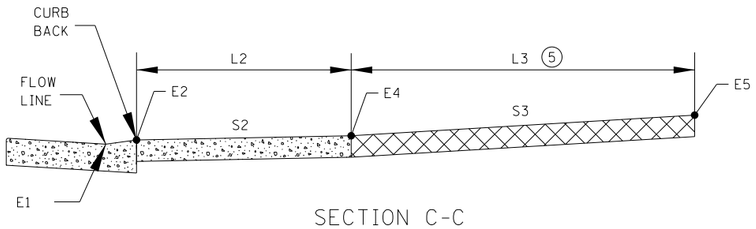
SECTION A-A & B-B

(REFER TO PREVIOUS SHEET)



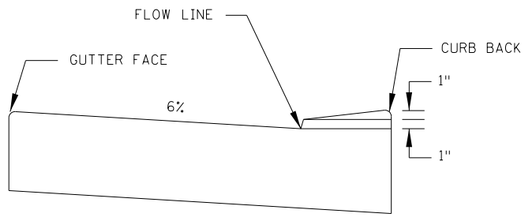
DW CURB TYPE 1

STANDARD CURB AT DRIVEWAY



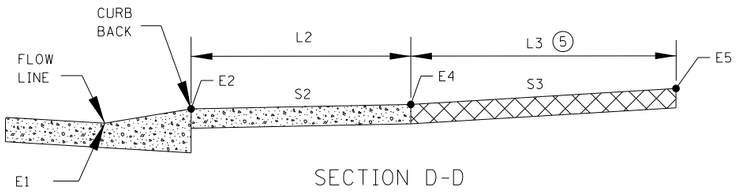
SECTION C-C

(REFER TO PREVIOUS SHEET)



DW CURB TYPE 2

VERTICALLY CONSTRAINED



SECTION D-D

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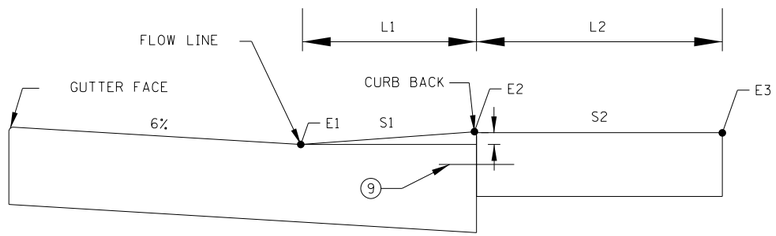

INTEGRAL DRIVEWAY APRON (IDA)

TYPICAL INTEGRAL DRIVEWAY APRON (7)

CURB TYPE	L1	E2	S1 (8)
	FT		%
IDA 216	1.33	+0.16	12.5
IDA 220	1.67	+0.16	10
IDA 324	2	+0.24	12.5
IDA 432	2.67	+0.33	12.5

NOTES:

ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.

DW CURB TYPE 1 SHALL BE USED WHEN THE DRIVEWAY ACTS AS A PEDESTRIAN RAMP. THE MAX. APRON SLOPE MUST ADHERE TO ADA CRITERIA AS WELL. DW CURB TYPE 1 SHOULD BE USED IF THERE IS ON STREET PARKING.

WHERE ROADWAY DRAINAGE IS A CONCERN (NEGATIVE SLOPED APRON) DW CURB TYPE 2 CAN BE USED TO HELP KEEP THE WATER ON PUBLIC RIGHT OF WAY.

S1 8% STANDARD, 10% MAX. COMMERCIAL AND 12% MAX. RESIDENTIAL. IF EXISTING GRADES ARE STEEPER DO NOT MAKE GRADES APPRECIABLY WORSE BY USING BEST PRACTICES SUCH AS DRIVEWAY CURB HEIGHTS, EXTENDING L3 AND/OR STEEPEN S3.

S3 8% MAXIMUM. IF THIS SLOPE IS EXCEEDED OR CONTINUED FOR MORE THAN 5', ANALYZE VEHICLE TEMPLATES FOR VERTICAL CLEARANCE. SEE FACILITY DESIGN GUIDE, CHAPTER 6, FOR GEOMETRIC DESIGNS OF DRIVEWAYS.

(1) EXAMPLE SHOWN TO BE INCLUDED IN PLAN FOR EACH DRIVEWAY THAT HAS PAR THROUGH IT.

(2) REFERS TO THE FOLLOWING TYPES; PERPENDICULAR DRIVEWAY, TIERED PERPENDICULAR OFFSET DRIVEWAY, TIERED PERPENDICULAR DRIVEWAY, PARALLEL DRIVEWAY, AND INTEGRAL DRIVEWAY APRON.

(3) DW CURB TYPE 1 IS THE STANDARD AND SHALL BE THE STARTING POINT FOR ALL PERPENDICULAR AND TIERED DRIVEWAYS. DW CURB TYPE 2 SHALL ONLY BE USED AFTER UTILIZING BEST PRACTICES SUCH AS MAXIMIZING S1, S3, AND L3.

(4) SHOULD BE DESIGNED AT 1.5%.

(5) ACQUIRE ADEQUATE L3 TO ALLOW FOR CONTINUOUS PAR PROFILE (UNIFORM SIDEWALK SECTION) THROUGH THE DRIVEWAY APRON.

(6) PROVIDE INPLACE TIE-IN SLOPE INFORMATION AT BACK OF PROPOSED WALK (S3 AREA).

(7) INFORMATION TO BE INCORPORATED INTO DRIVEWAY TABLE WHEN INTEGRAL DRIVEWAY APRON IS USED. OTHER CURB HEIGHTS & CURB APRON LENGTHS CAN BE USED.

(8) L1 & S1 FOR INTEGRAL DRIVEWAY APRON IS TO FLOWLINE. 12.5% IS MAXIMUM PREFERRED SLOPE.

(9) TIE ADJACENT SECTIONS. CONCRETE DRIVEWAY APRON AND CONCRETE DRIVEWAY SIDEWALK SHALL BE CONSTRUCTED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. DRILL AND GROUT OR CAST IN-PLACE THROUGH HOLES IN THE FORMS NO. 4 X 12" LONG TIE BARS (EPOXY COATED), 36" MAXIMUM SPACING WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINT.

LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION	DRIVEWAY AND SIDEWALK DETAILS	APPROVED: 11-04-2021 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.254	2 OF 4

STANDARD PLAN

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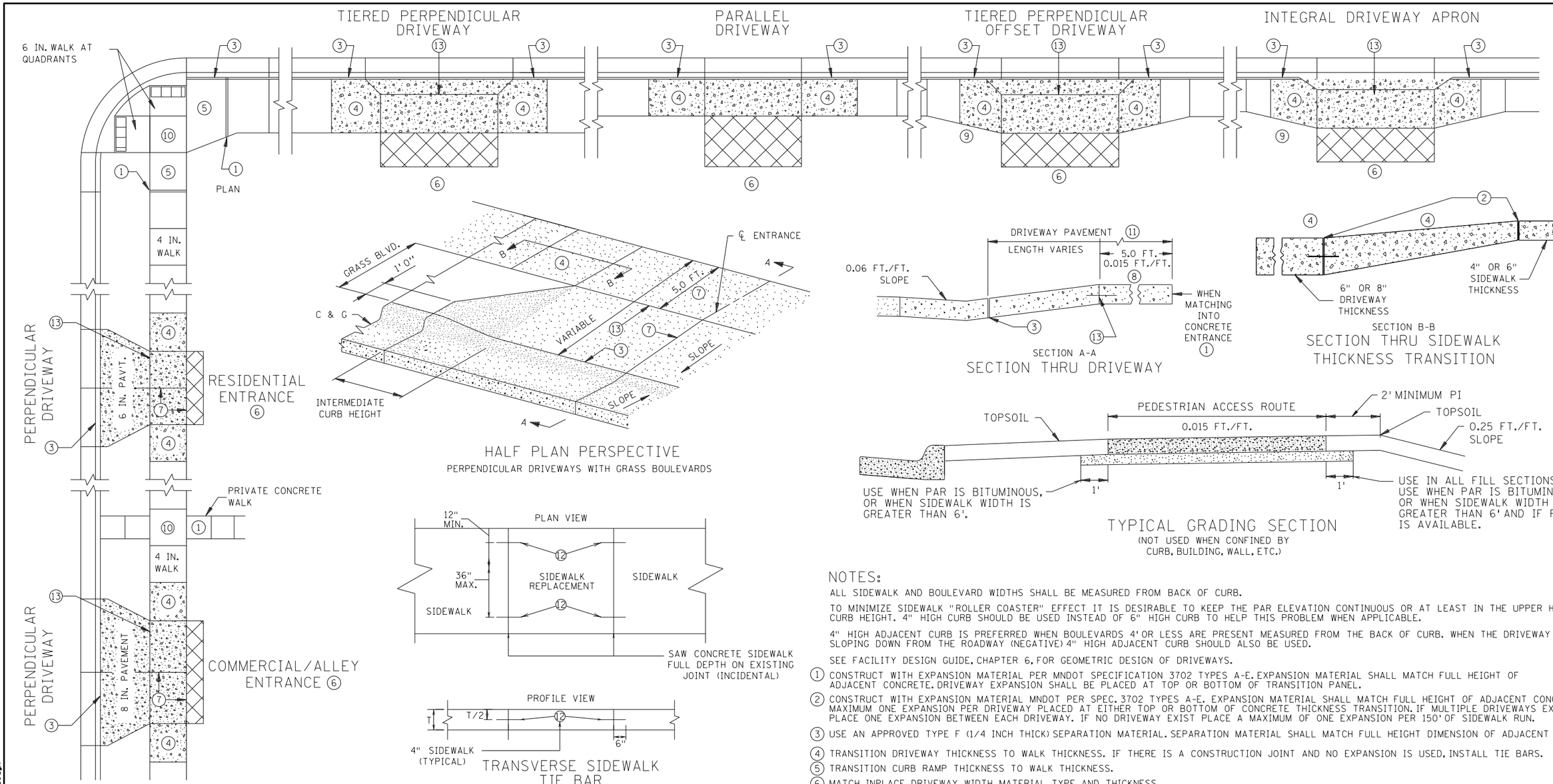

SIDEWALK LONGITUDINAL JOINT TIE BAR TABLE

SIDEWALK WIDTH, W	SIDEWALK THICKNESS, T	TIE BAR SIZE	LENGTH	SPACING
> 7'	4"	No. 4	12"	24"
>10'	6"	No. 4	12"	36"

FOR 4" CONCRETE ONLY: CAST IN PLACE BARS MUST BE SUPPORTED WITH P-STAKES OR REINFORCEMENT BASKETS FOR FULL WIDTH CONCRETE PLACEMENTS.

FOR 6" CONCRETE ONLY: DRILL AND GROUT OR CAST IN PLACE THROUGH HOLES IN THE FORMS REQUIRED FOR STAGED ADJACENT CONCRETE PLACEMENTS.

NOTES:

ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.

TO MINIMIZE SIDEWALK "ROLLER COASTER" EFFECT IT IS DESIRABLE TO KEEP THE PAR ELEVATION CONTINUOUS OR AT LEAST IN THE UPPER HALF OF CURB HEIGHT. 4" HIGH CURB SHOULD BE USED INSTEAD OF 6" HIGH CURB TO HELP THIS PROBLEM WHEN APPLICABLE.

4" HIGH ADJACENT CURB IS PREFERRED WHEN BOULEVARDS 4' OR LESS ARE PRESENT MEASURED FROM THE BACK OF CURB. WHEN THE DRIVEWAY IS SLOPING DOWN FROM THE ROADWAY (NEGATIVE) 4" HIGH ADJACENT CURB SHOULD ALSO BE USED.

SEE FACILITY DESIGN GUIDE, CHAPTER 6, FOR GEOMETRIC DESIGN OF DRIVEWAYS.

(1) CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE. DRIVEWAY EXPANSION SHALL BE PLACED AT TOP OR BOTTOM OF TRANSITION PANEL.

(2) CONSTRUCT WITH EXPANSION MATERIAL MNDOT PER SPEC. 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE. MAXIMUM ONE EXPANSION PER DRIVEWAY PLACED AT EITHER TOP OR BOTTOM OF CONCRETE THICKNESS TRANSITION. IF MULTIPLE DRIVEWAYS EXIST PLACE ONE EXPANSION BETWEEN EACH DRIVEWAY. IF NO DRIVEWAY EXIST PLACE A MAXIMUM OF ONE EXPANSION PER 150' OF SIDEWALK RUN.

(3) USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.

(4) TRANSITION DRIVEWAY THICKNESS TO WALK THICKNESS. IF THERE IS A CONSTRUCTION JOINT AND NO EXPANSION IS USED, INSTALL TIE BARS.

(5) TRANSITION CURB RAMP THICKNESS TO WALK THICKNESS.

(6) MATCH INPLACE DRIVEWAY WIDTH, MATERIAL TYPE AND THICKNESS.

(7) FORM CONTRACTION JOINT AS NEEDED TO PRODUCE APPROXIMATELY SQUARE PANELS. CONCRETE PANEL SIZE SHOULD NOT EXCEED 1 1/2 : 1 LENGTH X WIDTH. 81 SF FOR 6" CONCRETE DRIVEWAY WITH 9'X9' MAXIMUM PANEL SIZE. 144 SF FOR 8" CONCRETE DRIVEWAY WITH 12'X12' MAXIMUM PANEL SIZE. MATCH DRIVEWAY APRON AND SIDEWALK JOINTS.

(8) THE PEDESTRIAN ACCESS ROUTE CROSS-SLOPE, SHALL NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.

(9) 1:10 MIN. SIDEWALK OFFSET TAPER REQUIRED FOR SIDEWALK REPLACEMENT PROJECTS. 1:3 MIN. AND 1:5 MIN. PREFERRED SIDEWALK OFFSET TAPER FOR DRIVEWAY REPLACEMENT.

(10) LANDING REQUIRED, SEE NEXT SHEET FOR MORE INFORMATION.

(11) CONCRETE DRIVEWAY APRON AND CONCRETE DRIVEWAY SIDEWALK SECTIONS SHALL BE CONSTRUCTED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. ENGINEER'S APPROVAL REQUIRED FOR MONOLITHIC PLACEMENTS.

(12) DRILL AND GROUT NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINTS. 1' MINIMUM FROM ADJACENT CONCRETE JOINTS. BARS TO BE ADJUSTED TO MATCH SIDEWALK GRADES. TO BE PAID BY EACH.

(13) DRILL AND GROUT OR CAST IN-PLACE THROUGH HOLES IN THE FORMS NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINTS. 1' MINIMUM FROM ADJACENT CONCRETE JOINTS.

LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION	DRIVEWAY AND SIDEWALK DETAILS	APPROVED: 11-04-2021 REVISED: 12-23-2021	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.254	3 OF 4

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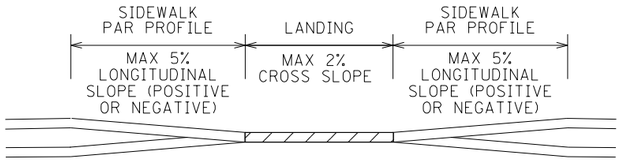
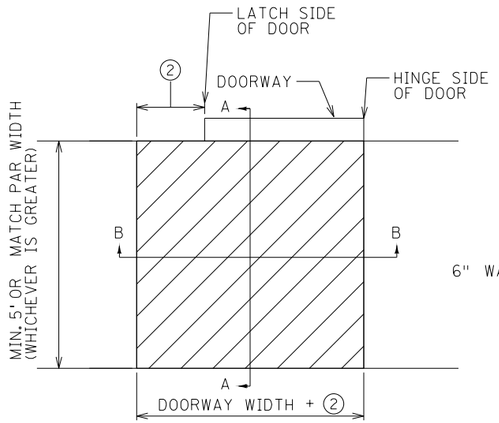
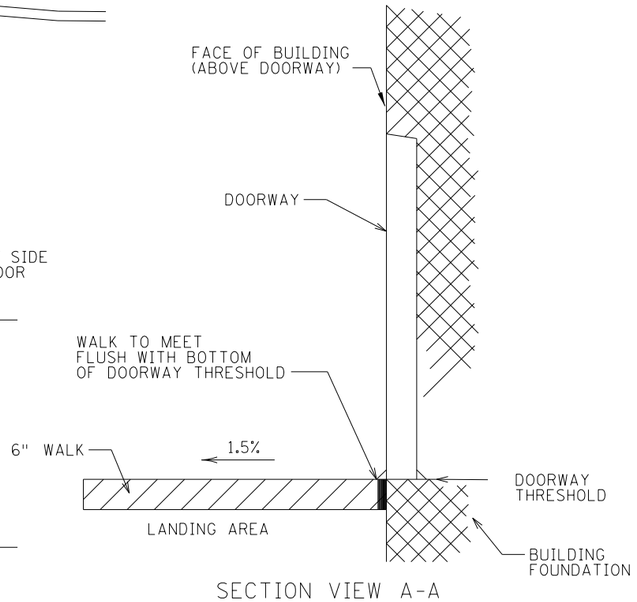


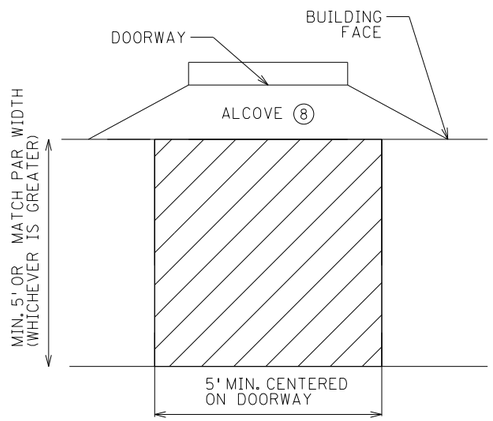
SECTION VIEW B-B



PLAN VIEW DOORWAY

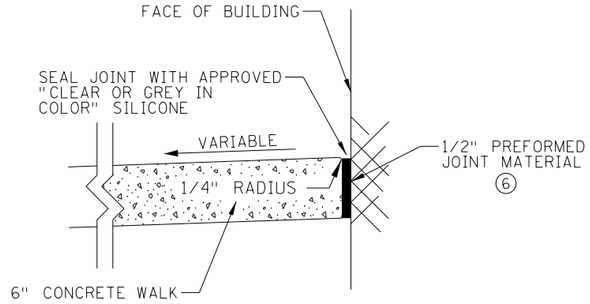


SECTION VIEW A-A

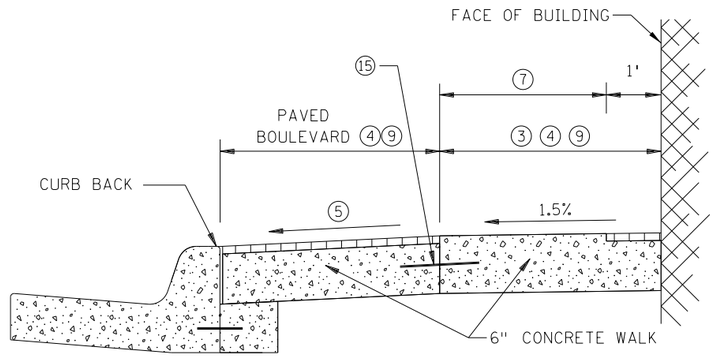


PLAN VIEW DOORWAY WITH ALCOVE

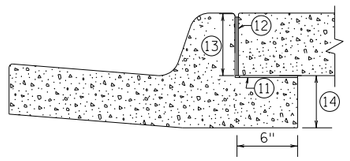
SIDEWALK LANDING REQUIREMENTS ①



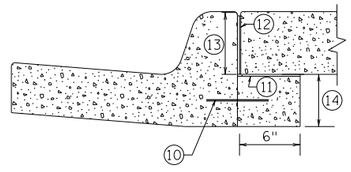
BUILDING JOINT SEAL (INCIDENTAL)



DOWNTOWN SIDEWALK TYPICAL SECTION



SLIP FORM SILL



FIXED FORM SILL

SILL CURB SHOULD BE USED AT ALL LOCATIONS WHEN CONCRETE WALK IS AT BACK OF CURB, INCLUDING PAVED BOULEVARD.

SILL CURB SHALL NOT BE USED IN CURB RAMP AND DRIVEWAY AREAS, INCLUDING CONCRETE FLARES.

SILL CURB WITH 4" WALK CAN USE FIXED OR SLIP FORM OPTIONS.

NOTES:

6" WALK IS REQUIRED:
1) IN ALL SIDEWALK LOCATIONS WHERE VARIABLE SLOPED CONCRETE BOULEVARDS ARE PAVED, SUCH AS COMMERCIAL (STORE FRONT, DOWNTOWN) AREAS.
2) ANYTIME DRILL AND REINFORCEMENT IS USED TO TIE LONGITUDINAL JOINTS TOGETHER.
3) TO ELIMINATE LONGITUDINAL JOINT WHEN INCREASING PANEL SIZE OVER 36SF.
4) AT LOCATIONS WHERE MAINTENANCE EQUIPMENT WILL SUBJECT CONCRETE TO HEAVY LOADS.

ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.

FIELD ADJUST SIDEWALK PROFILES TO MEET ALL DOORWAY THRESHOLDS.

SIDEWALK MUST MAINTAIN POSITIVE DRAINAGE AWAY FROM THE BUILDING TO THE ROADWAY.

SEE SPECIAL PROVISIONS FOR SILICONE SPECIFICATIONS.

(1) LANDING CRITERIA IS REQUIRED FOR ALL DOORS, STEPS, AND PRIVATE WALKS. FEASIBILITY DECREASES WITH NARROWER BOULEVARDS AND STEEPER SIDEWALK PROFILES.
(2) 18" MIN. WHEN DOOR SWINGS OUTWARD FROM BUILDING. 12" MIN WHEN DOOR SWINGS INWARD FROM BUILDING.
(3) 6' MIN. PAR REQUIRED WHEN ADJACENT TO BUILDINGS.
(4) 2/3 PAR TO 1/3 BOULEVARD SHOULD BE USED WHEN FEASIBLE. HOLD UNIFORM BOULEVARD WIDTH. 4' PREFERRED MINIMUM BOULEVARD.
(5) 1%-5% FOR THE MAJORITY OF THE BLOCK, WITH EXCEPTIONS UP TO 8% IN CONSTRAINED AREAS.
(6) CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM ½" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.
(7) TO MINIMIZE VIBRATION AND ROLLING RESISTANCE, AREA SHALL BE FREE OF PAVERS, STAMPED CONCRETE, AND/OR EXCESSIVE JOINTING.
(8) 2% MAX. PER BUILDING CODE. IF GREATER THAN 2%, FLATTEN AS FEASIBLE.
(9) FORM CONTRACTION JOINTS AS NEEDED TO PRODUCE APPROXIMATELY SQUARE PANEL SIZE. CONRETE PANEL SIZE SHOULD NOT EXCEED 1½ : 1 LENGTH X WIDTH.
(10) DRILL AND GROUT NO. 4 X 8" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINTS. 1' MINIMUM FROM ADJACENT CONCRETE JOINTS. TIE BARS SHALL BE EMBEDDED 4" WITH 2" MINIMUM CONCRETE COVER AND ARE INCIDENTAL TO SILL PLACEMENT.
(11) FURNISH AND INSTALL THE FULL WIDTH OF THE TOP OF SILL A MINIMUM 2ML THICK POLYTHENE SHEETING.
(12) USE AN APPROVED TYPE F (¼ INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.
(13) DIMENSION TO BE SAME AS SIDEWALK THICKNESS, 4" MIN.
(14) 6" WALK: 5" MIN. FOR B424; 7" MIN. FOR B624
4" WALK: 7" MIN. FOR B424; 9" MIN. FOR B624
(15) DRILL AND GROUT NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONCRETE JOINTS.

LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION		DRIVEWAY AND SIDEWALK DETAILS	APPROVED: 11-04-2021 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.254	4 OF 4

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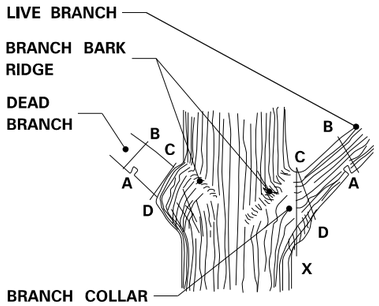


BRANCHES PRUNED AT TRUNK

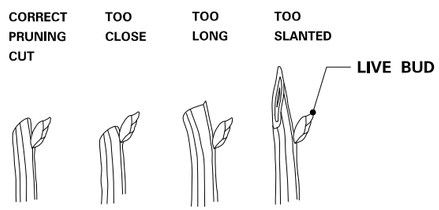
(SHIGO METHOD)

STEPS TO PRUNING WITH PRUNING SAW:

1. CUT PART WAY THROUGH THE BRANCH AT POINT A.
2. CUT COMPLETELY THROUGH BRANCH FROM POINT B TO A.
3. AT BRANCH COLLAR CUT FROM POINT C TO D.

INCORRECT CUT FROM POINT C TO X (TOO CLOSE) WILL RESULT IN DISCONTINUOUS CALLUS FORMATION AFTER ONE SEASON OF GROWTH.

CORRECT CUT FROM POINT C TO D (LEAVING BRANCH COLLAR BUT NOT THE STUB FROM POINT B TO A) WILL RESULT IN CONTINUOUS DOUGHNUT SHAPED CALLUS FORMATION AFTER ONE SEASON OF GROWTH.



BRANCHES PRUNED TO LIVE BUD

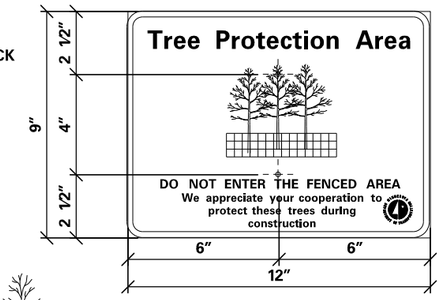
PRUNING NOTES:

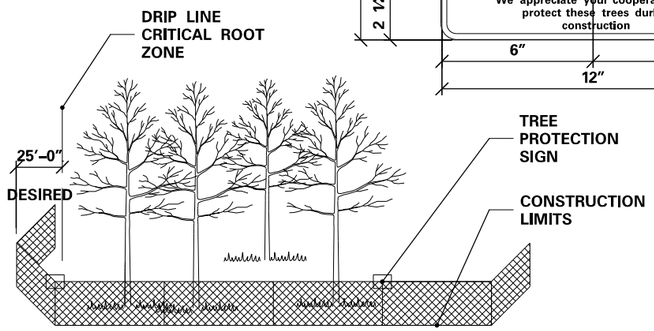
1. PRUNE USING CLEAN AND SHARP SCISSOR–TYPE PRUNER OR PRUNING SAW.
2. THE BEST TIME TO PRUNE IS LATE DORMANT SEASON OR EARLY SPRING.
3. AVOID PRUNING OAKS IN APRIL, MAY, JUNE OR JULY.
4. IF PRUNING IS NECESSARY OR IF WOUNDS OCCUR TO OAK TREES IN APRIL, MAY, JUNE OR JULY, IMMEDIATELY PAINT CUT SURFACE OR WOUND WITH LATEX PAINT OR SHELLAC.

PRUNING

(MnDOT 2571.3E.1 and 2571.3K.2.a(9))

1. FABRICATE 12″ X 9″ X 3⁄8″ SIGN WITH 0.75″ RADIUS CORNERS.
2. SIGN SHALL BE WHITE WITH BLACK LETTERING.
3. ATTACH SIGN TO POST USING 1″ LENGTH WOOD SCREWS.

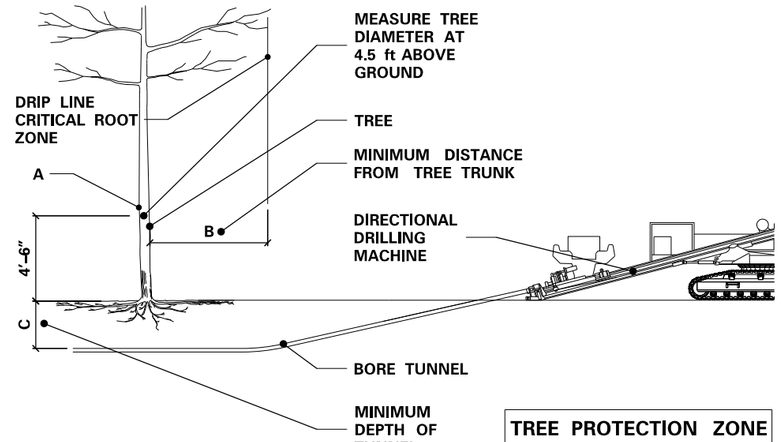




1. FURNISH AND INSTALL TEMPORARY FENCE AT THE TREE'S DRIPLINE OR CONSTRUCTION LIMITS AS SPECIFIED, PRIOR TO ANY CONSTRUCTION.
2. WHEN POSSIBLE PLACE FENCE 25 FEET BEYOND THE DRIP LINE.
3. PLACE TREE PROTECTION SIGNS ALONG FENCE AT 50′ INTERVALS.

TEMPORARY FENCE

(MnDOT 2572.3A.1)



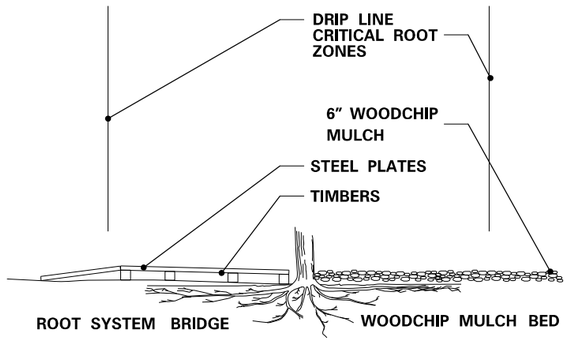
NOTE:

1. (A) IS THE DIAMETER OF TREES MEASURED 4′–6″ FEET ABOVE THE GROUND AND IS TERMED THE "DIAMETER AT BREAST HEIGHT," (DBH).
2. USING A TREE DIAMETER TAPE, WRAP THE TAPE AROUND THE GIRTH OF THE TREE, AT THE DBH, BEING CAREFUL NOT TO TWIST THE TAPE.

TREE PROTECTION ZONE		
A	B	C
< 2″	2′	2′
2–4″	4′	2.5′
> 4–9″	6′	2.5′
> 9–14″	10′	3′
> 14–19″	12′	3.25′
> 19″	15′	4′

UTILITY CONSTRUCTION

(MnDOT 2572.3A.5)



IF CONSTRUCTION VEHICLES MUST PASS OVER ROOT ZONES, THE CONTRACTOR MUST EITHER:

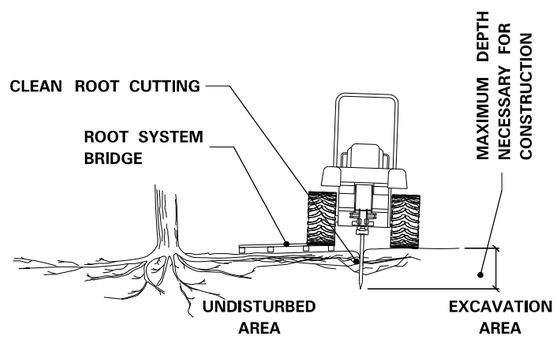
1. CONSTRUCT ROOT SYSTEM BRIDGES WITH STEEL PLATE SUPPORTED ON WOOD TIMBERS PLACED RADIALLY TO THE TREE TRUNK.

OR

2. PLACE A 6 INCH LAYER OF WOODCHIP MULCH OVER A TYPE III GEOTEXTILE (MnDOT 3733).

OTHER VEGETATION PROTECTION MEASURES

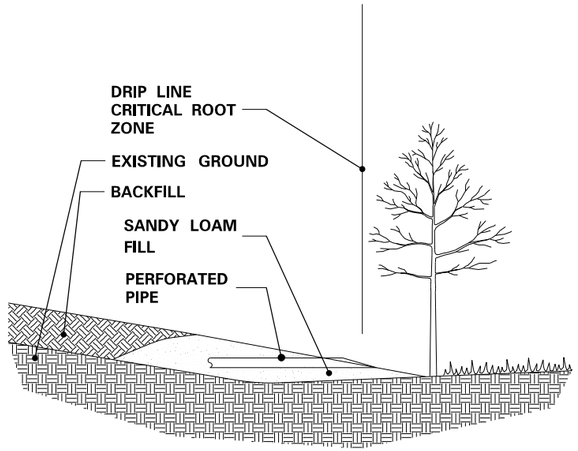
(MnDOT 2572.3A.12)



1. WHEN DESIGNATED IN THE PLAN OR DIRECTED BY THE ENGINEER, PRIOR TO EXCAVATION, ALL TREE ROOTS WILL BE CLEANLY CUT BY A VIBRATORY PLOW OR OTHER APPROVED ROOT CUTTER.
2. THE TREE ROOTS WILL BE CUT CLEANLY TO THE MINIMUM DEPTH NECESSARY FOR CONSTRUCTION.
3. IMMEDIATELY, AND CLEANLY CUT DAMAGED AND EXPOSED ROOTS.
4. ROOT ENDS EXPOSED BY EXCAVATION ACTIVITIES SHALL BE IMMEDIATELY COVERED WITH A 6″ LAYER OF ADJACENT SOIL.
5. EXPOSED CUT OAK ROOTS SHALL BE IMMEDIATELY (WITHIN 5 MINUTES) TREATED WITH A WOUND DRESSING MATERIAL CONSISTING OF LATEX PAINT OR SHELLAC.

CLEAN ROOT CUTTING

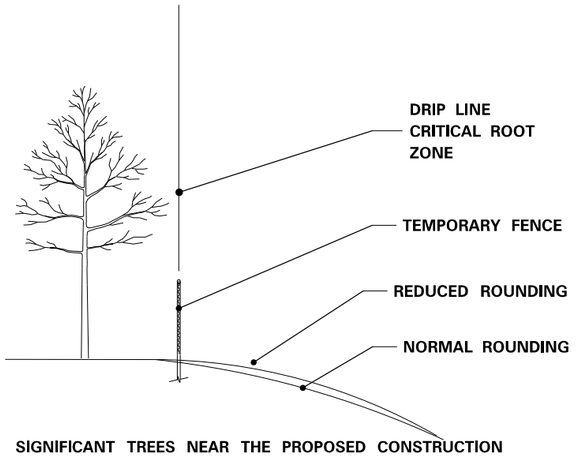
(MnDOT 2572.3A.2)



1. ANY FILL REQUIRED WITHIN THE DRIP LINE OF TREES, IS UNCOMPACTED ROOTING TOPSOIL BORROW.
2. EXCESSIVE FILL MAY REQUIRE PLACING PERFORATED PIPE WITH AT LEAST ONE DAYLIGHTED END OPENING AS AN AERATION SYSTEM.

ROOTING TOPSOIL BORROW

(MnDOT 2572.3A.4)



SIGNIFICANT TREES NEAR THE PROPOSED CONSTRUCTION LIMITS WILL BE IDENTIFIED IN THE PLAN OR BY THE ENGINEER AND WILL BE PRESERVED BY THE CONTRACTOR.

1. PLACE THE TEMPORARY FENCE.
2. REDUCE SLOPE ROUNDING WHERE ROOT ZONES ARE DISTURBED BY NORMAL SLOPE ROUNDING.
3. VARY BACKSLOPE STEEPNESS TO AVOID TREE LOSS OR UNNECESSARY ROOT DAMAGE.

SLOPE ROUNDING

LEAD EXPERT OFFICE	LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		PROTECTION AND RESTORATION OF VEGETATION	APPROVED: 12-11-2015 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.302	1 OF 1

STANDARD PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

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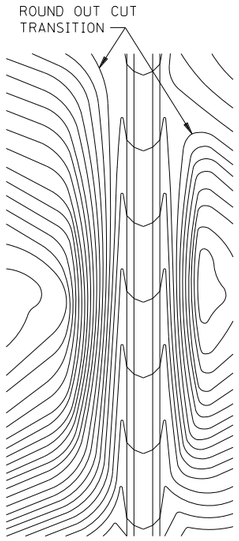
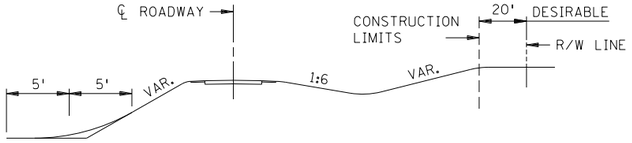
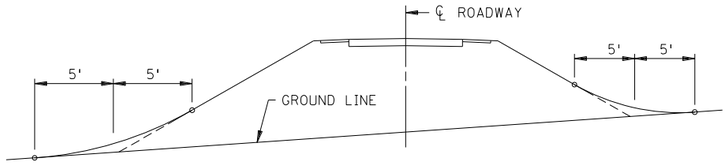


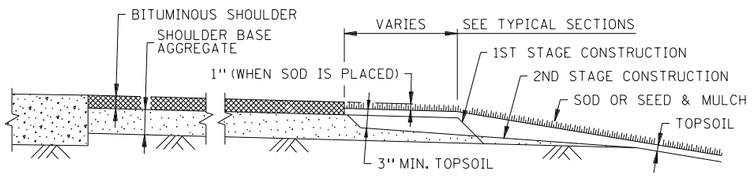
CONTOURING ROAD CUTS



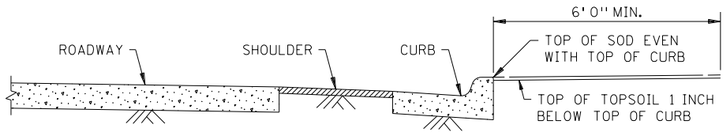
ROUNDING SHOULDERS AND BACKSLOPES



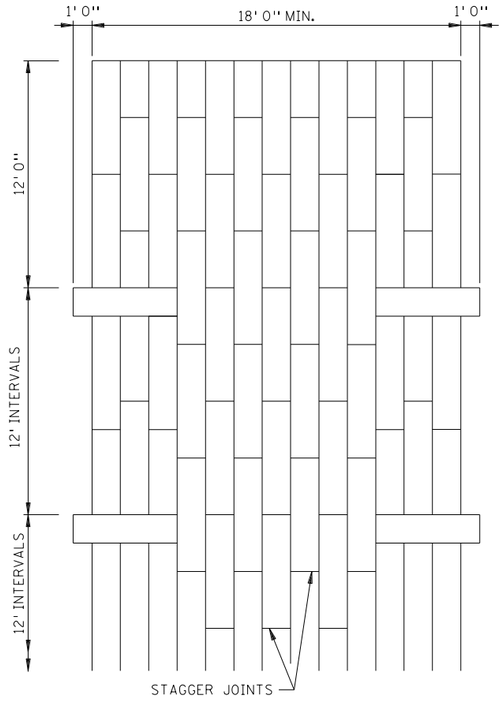
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



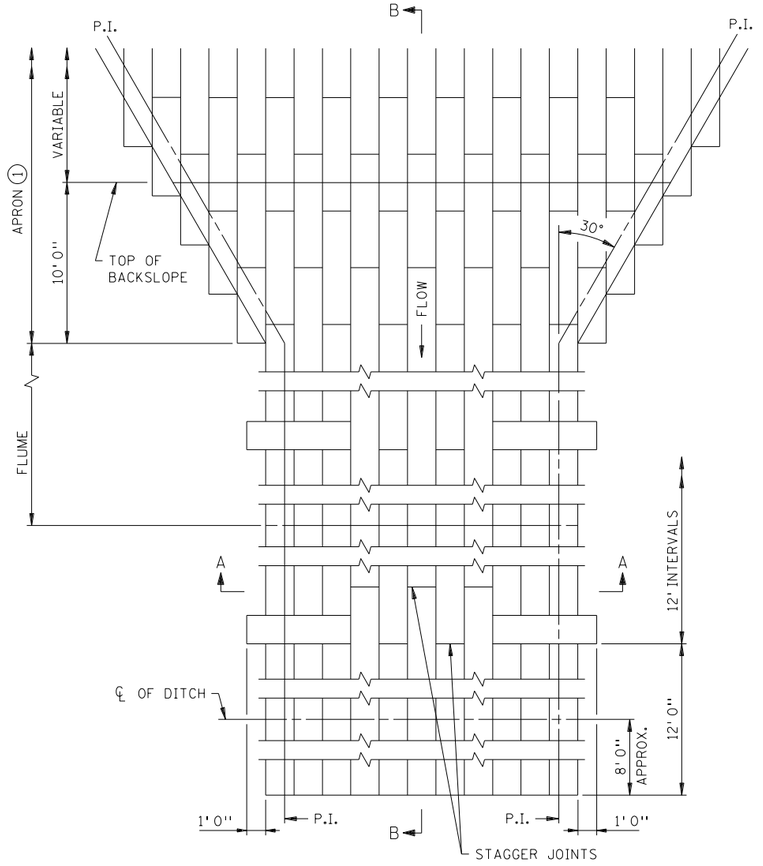
SHAPING AND TOPSOILING INSLOPES



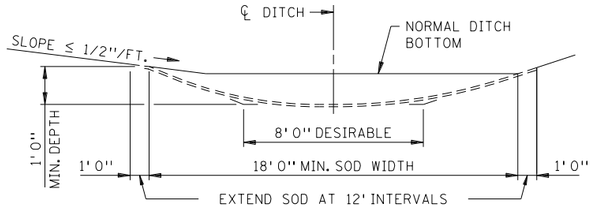
SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED



PLAN VIEW

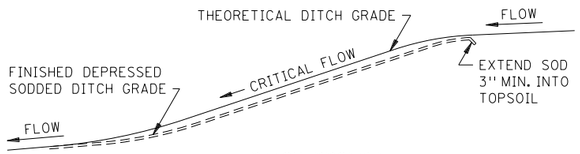


PLAN VIEW



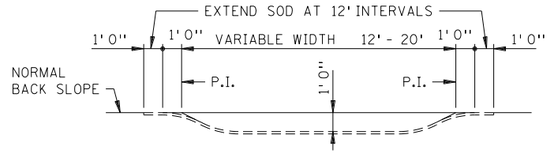
SODDED DITCH CROSS SECTION

WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.), FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.

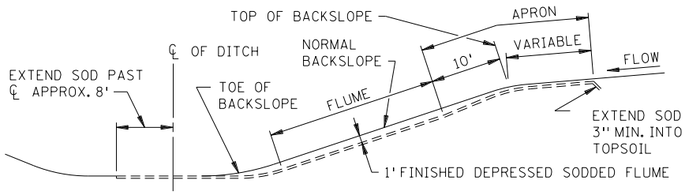


DITCH PROFILE

SODDED DITCH DETAILS



SECTION A-A



SECTION B-B

SODDED FLUME DETAILS

NOTES:

SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.

(1) CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

LEAD EXPERT OFFICE	LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		PERMANENT EROSION CONTROL ALONG ROADWAYS, DITCHES AND FLUMES	APPROVED: 02-28-2017 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.404	1 OF 3

STANDARD PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

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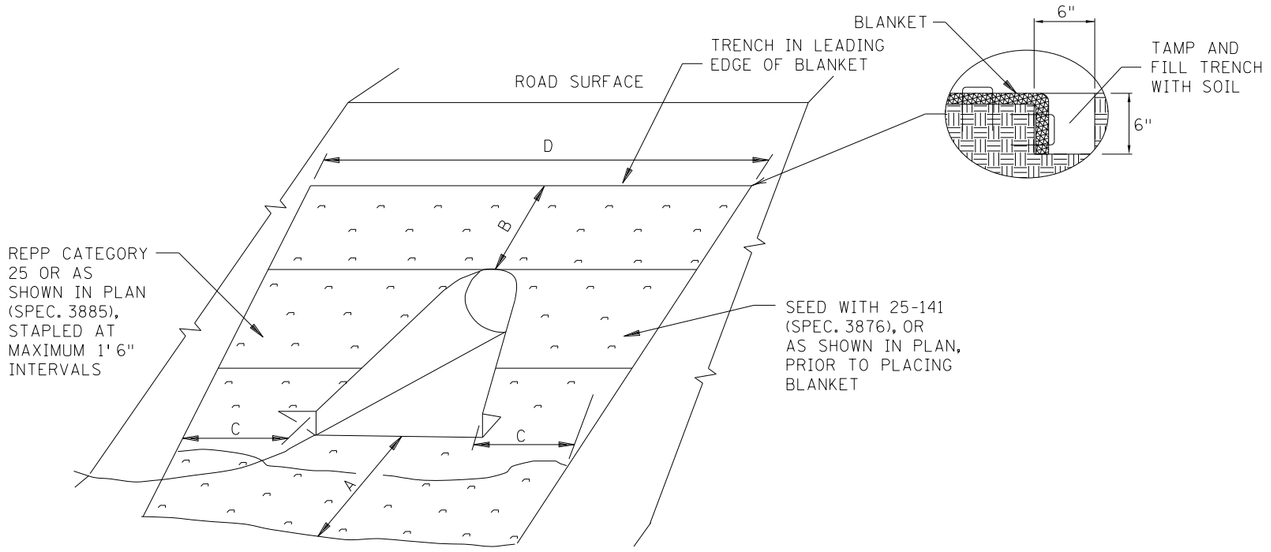
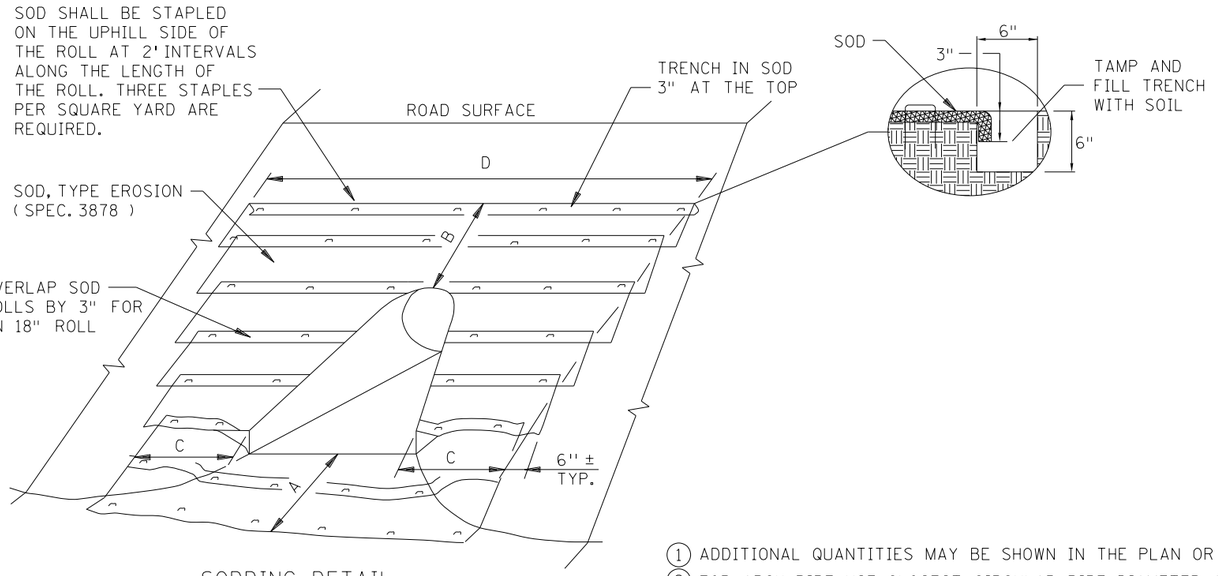


ROLLED EROSION PREVENTION PRODUCT (BLANKET) & SEED DETAIL



SODDING DETAIL

CULVERT INLET APRON ①										
CULVERT DIAMETER ②	SOD OR REPP (SQ. YDS.)						"A"	"B"	"C"	"D"
	CIRCULAR AND ARCH PIPE METAL APRON (PLATE 3123, PLATE 3122)	CIRCULAR AND ARCH PIPE CONCRETE APRON (PLATE 3100, PLATE 3110)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:4 SLOPE (PLATE 3148)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:6 SLOPE (PLATE 3148)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:6 SLOPE (PLATE 3128)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:4 SLOPE (PLATE 3128)				
15"	9	9	8	8	N/A	N/A	3'	1.5'	3'	13'
18"	13	12	12	14	16	N/A	3'	3'	3'	16'
21"	14	14	14	16	18	14	3'	3'	3'	17'
24"	16	15	16	19	21	17	3'	3'	3'	18'
27"	N/A	20	N/A	N/A	N/A	N/A	3'	4.5'	3'	20'
30"	23	22	25	30	32	N/A	3'	4.5'	3'	22'
36"	34	34	39	48	51	37	4.5'	4.5'	4.5'	27'
42"	43	40	51	64	N/A	N/A	4.5'	6'	4.5'	30'
48"	54	50	66	82	N/A	N/A	4.5'	7.5'	4.5'	34'
54"	65	58	81	102	N/A	N/A	4.5'	9'	4.5'	37'
60"	69	59	91	115	N/A	N/A	4.5'	9'	4.5'	39'
66"	69	63	N/A	N/A	N/A	N/A	4.5'	9'	4.5'	39'
72"	78	72	99	122	N/A	N/A	4.5'	10.5'	4.5'	41'

CULVERT OUTLET APRON ①										
CULVERT DIAMETER ②	SOD OR REPP (SQ. YDS.)						"A"	"B"	"C"	"D"
	CIRCULAR AND ARCH PIPE METAL APRON (PLATE 3123, PLATE 3122)	CIRCULAR AND ARCH PIPE CONCRETE APRON (PLATE 3100, PLATE 3110)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:4 SLOPE (PLATE 3148)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:6 SLOPE (PLATE 3148)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:6 SLOPE (PLATE 3128)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:4 SLOPE (PLATE 3128)				
15"	10	10	9	10	N/A	N/A	4.5'	1.5'	3'	13'
18"	13	13	12	14	15	N/A	6'	1.5'	3'	14'
21"	16	14	16	18	19	15	6'	1.5'	3'	15'
24"	18	18	18	21	22	18	7.5'	1.5'	3'	16'
27"	N/A	19	N/A	N/A	N/A	N/A	7.5'	1.5'	3'	17'
30"	23	23	24	28	29	N/A	9'	1.5'	3'	18'
36"	36	35	38	47	48	37	10.5'	1.5'	4.5'	23'
42"	43	40	47	58	N/A	N/A	12'	1.5'	4.5'	25'
48"	50	46	57	70	N/A	N/A	13.5'	1.5'	4.5'	27'
54"	57	50	67	84	N/A	N/A	15'	1.5'	4.5'	29'
60"	74	63	90	113	N/A	N/A	16.5'	1.5'	6'	33'
66"	75	67	N/A	N/A	N/A	N/A	16.5'	1.5'	6'	33'
72"	77	70	92	114	N/A	N/A	16.5'	1.5'	6'	34'

NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

AREA SHOWN IN SQUARE YARDS IS FOR ONE CULVERT END.

QUANTITIES ARE CALCULATED TO INCLUDE SOD REQUIRED TO PROVIDE A 3" OVERLAP ON ALL 18" WIDE ROLLS. THIS ALLOWS FOR SHRINKAGE OF THE SOD.

FOR PIPE ARCHES USE EQUIVALENT PIPE DIAMETER TO APPROXIMATE AREA.

FOR CORRUGATED POLYETHYLENE PIPE METAL APRON (PLATE 3129), USE THE METAL APRON COLUMN (PLATE 3123).

AREAS AND DIMENSIONS ARE APPROXIMATE AND ARE BASED ON APRON SIDE SLOPES OF NO STEEPER THAN 1:2, UNLESS INDICATED AS FOR SAFETY APRONS.

CARE SHOULD BE TAKEN IN SELECTING SOD TO STABILIZE THE APRON. RIP-RAP SHOULD BE USED FOR FLOW VELOCITIES GREATER THAN 6 FPS.

① ADDITIONAL QUANTITIES MAY BE SHOWN IN THE PLAN OR REQUIRED BY THE ENGINEER.
② FOR ARCH PIPE USE CLOSEST CIRCULAR PIPE DIAMETER AND APRON SLOPE. DIAMETERS LARGER THAN 72" REQUIRE SPECIAL DESIGNS.

LEAD EXPERT OFFICE	MARNI KARNOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		PERMANENT EROSION CONTROL TURF ESTABLISHMENT DETAIL AT CULVERT ENDS	APPROVED: 01-08-2020 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.404	2 OF 3

STANDARD PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

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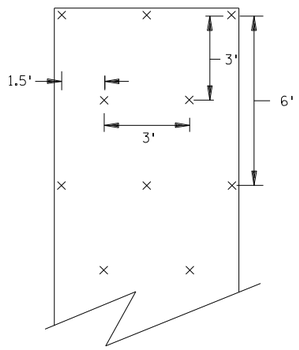
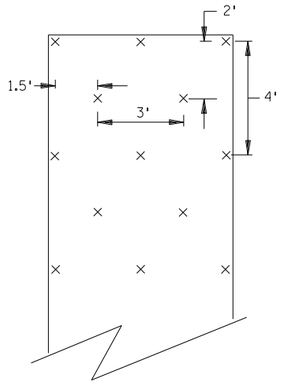
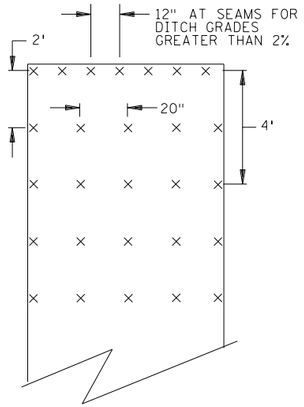


SLOPES FLATTER THAN 1:2
120 STAPLES PER 100 SQ YD

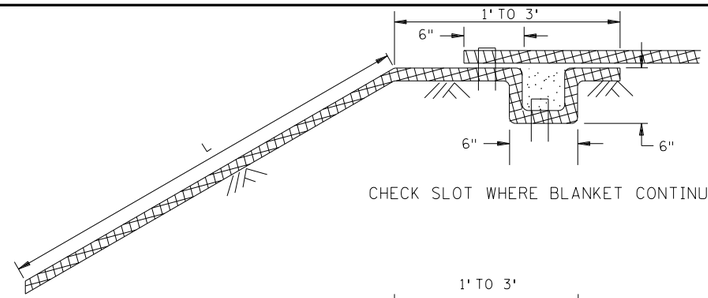


SLOPES 1:2 TO 1:1
170 STAPLES PER 100 SQ YD

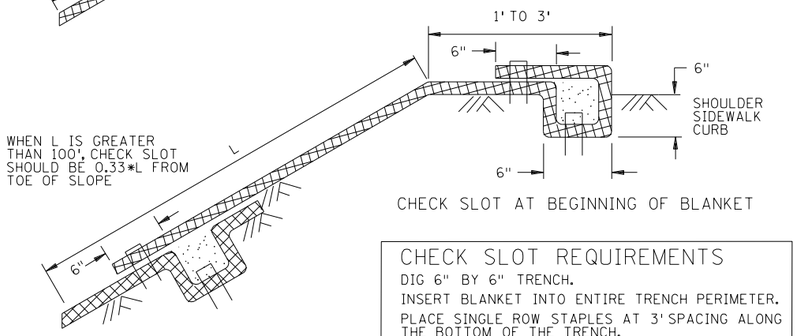


CHANNEL AND DITCH APPLICATIONS
350 STAPLES PER 100 SQ YD

BLANKET STAPLE PATTERN



CHECK SLOT WHERE BLANKET CONTINUES



CHECK SLOT AT BEGINNING OF BLANKET

CHECK SLOT REQUIREMENTS

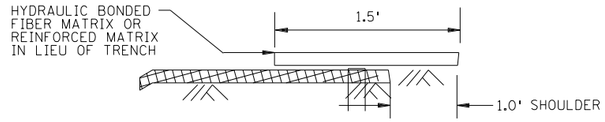
DIG 6" BY 6" TRENCH.

INSERT BLANKET INTO ENTIRE TRENCH PERIMETER.

PLACE SINGLE ROW STAPLES AT 3' SPACING ALONG THE BOTTOM OF THE TRENCH.

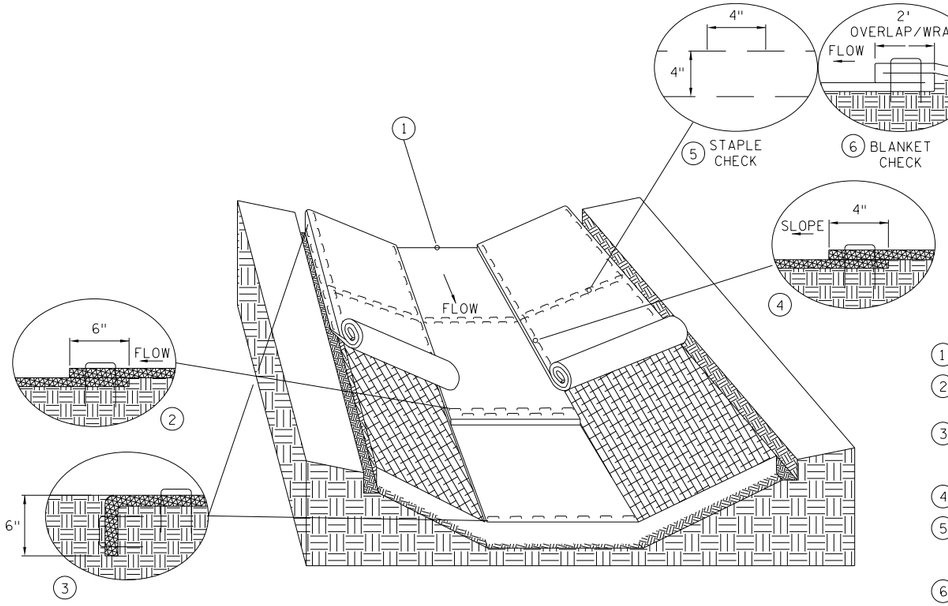
BACKFILL TRENCH WITH SOIL AND TAMP.

PLACE SINGLE ROW STAPLES AT 3' SPACING ON OVERLAP.

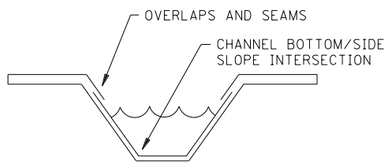


CHECK SLOT ALTERNATIVE
PLACE SINGLE ROW STAPLES AT 12" SPACING

CHECK SLOT DETAILS



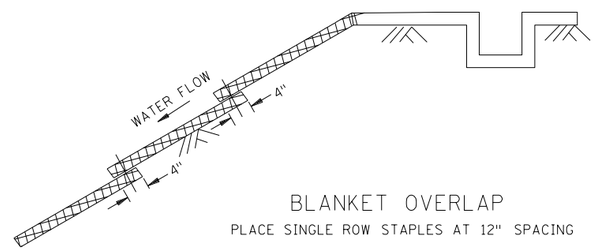
DITCH BLANKET STAPLE DETAIL



DITCH BLANKET CRITICAL POINTS (7)

NOTES:

1. USE CHECK SLOT DETAIL (NO ALTERNATES).
2. PLACE DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER.
3. USE 6" X 6" TRENCH TO PLACE BLANKET. PLACE SINGLE ROW OF STAPLES ON TOP AND TRENCH SIDES AT 12" SPACING. BACKFILL TRENCH WITH SOIL AND TAMP.
4. PLACE SINGLE ROW OF STAPLES AT 12" SPACING.
5. USE STAPLE CHECK FOR CHANNEL SLOPES LESS THAN 2.5%. GRADE AT 100' INTERVALS. PLACE DOUBLE ROW OF STAPLES STAGGERED 4" APART AND AT 4" SPACING.
6. USE BLANKET CHECKS FOR THE FOLLOWING SLOPES:
   2.5%-3% 100' INTERVALS
   3%-5% 50' INTERVALS
   5%-7% 25' INTERVALS
7. CRITICAL POINTS SHALL BE SECURED WITH PROPER STAPLE PATTERNS.



BLANKET OVERLAP
PLACE SINGLE ROW STAPLES AT 12" SPACING

GENERAL BLANKET INSTALLATION REQUIREMENTS

REPP = ROLLED EROSION PREVENTION PRODUCT.

PREPARE SOIL AS PER SPECIFICATION 2574.

LAY PARALLEL OR PERPENDICULAR TO THE DIRECTION OF WATER FLOW.

OVERLAP ADJACENT STRIP EDGES A MINIMUM OF 4".

OVERLAP BLANKET 6" (MINIMUM) AT EACH END. OVERLAP BOTTOM END OF UPPER BLANKET OVER TOP END OF LOWER BLANKET. STAPLE ALONG OVERLAP EVERY 1.5'.

THE UPPERMOST BLANKET OF ALL SLOPE APPLICATIONS MUST START IN A CHECK SLOT. IF SLOPE LENGTH (L) IS 100' OR GREATER, INSERT BLANKET INTO A CHECK SLOT ⅓ FROM THE BOTTOM OF THE SLOPE.

LEAD EXPERT OFFICE	MARNI KARNOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		PERMANENT EROSION CONTROL REPP (BLANKET) STAPLE PATTERN FOR SLOPES	APPROVED: 01-08-2020 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.404	3 OF 3

STANDARD PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

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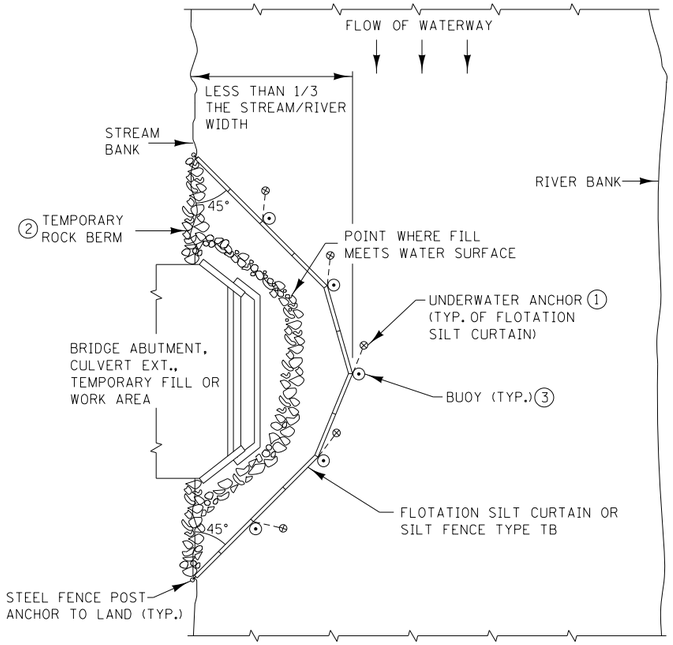
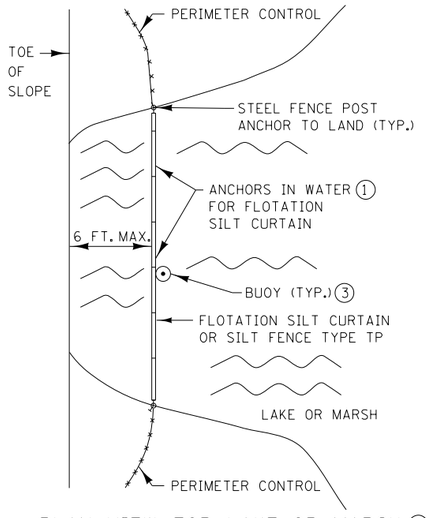
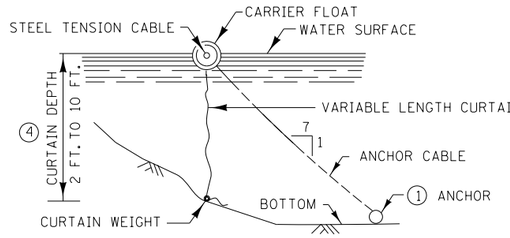


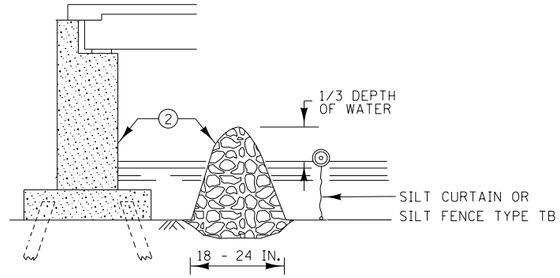
PLAN VIEW FOR STREAM ⑤



PLAN VIEW FOR LAKE OR MARSH ⑤



FLOTATION SILT CURTAIN



TEMPORARY ROCK BERM
FOR SEDIMENT CONTROL

INSTALLATION GUIDELINES
SILT FENCE TYPE TB

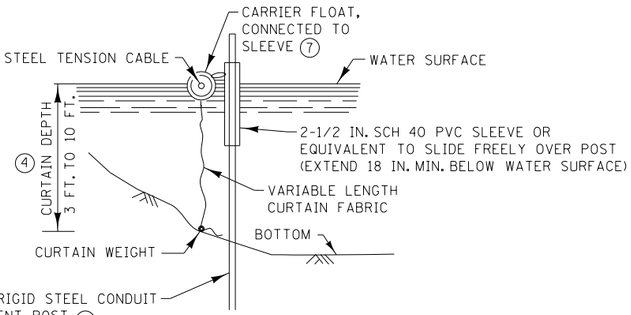
MINIMUM WATER DEPTH: 1 FT.
MAXIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER VELOCITY: 5 FT./SEC.

INSTALLATION GUIDELINES ④
FLOTATION SILT CURTAIN
TYPE: STILL WATER

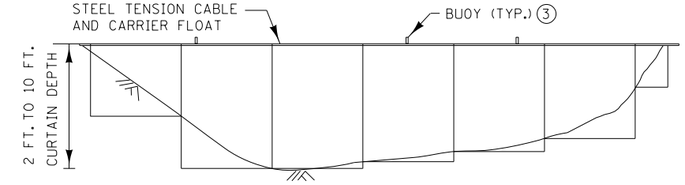
MINIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER DEPTH: 10 FT.
MAXIMUM WATER VELOCITY: 2 FT./SEC.
MAXIMUM WAVE HEIGHT: 1 FT

INSTALLATION GUIDELINES ④
FLOTATION SILT CURTAIN
TYPE: MOVING WATER

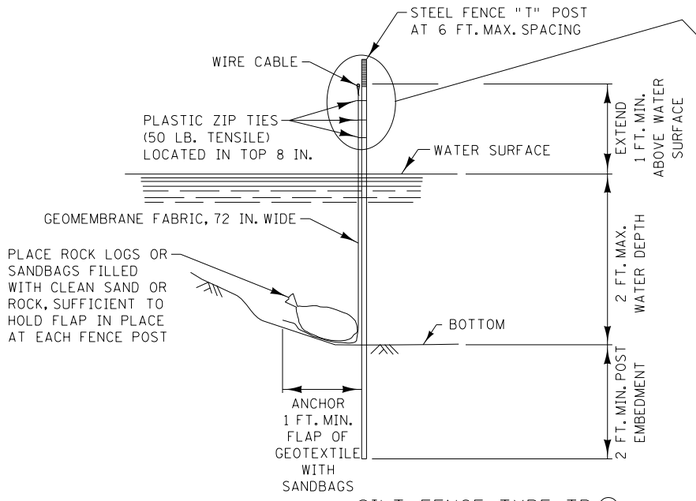
MINIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER DEPTH: 10 FT.
MAXIMUM WATER VELOCITY: 5 FT./SEC.
MAXIMUM WAVE HEIGHT: 2 FT.



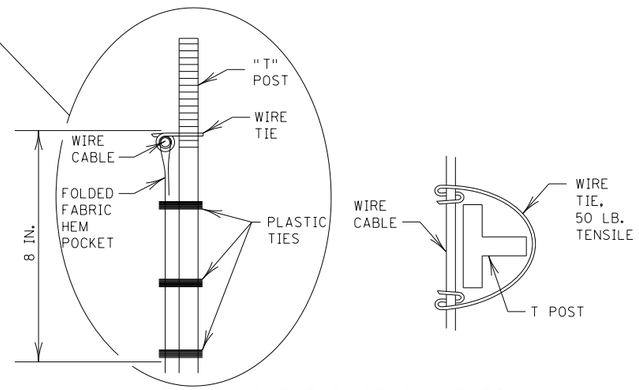
ALTERNATE FLOTATION SILT CURTAIN



FRONT VIEW FOR FLOTATION SILT CURTAIN



SILT FENCE TYPE TB ⑥



FABRIC/CABLE/POST CONNECTION

NOTES:

SEE SPECS. 2573, 3886, 3887 & 3893.

① FOR ANCHOR SPACING AND WEIGHT REQUIREMENTS, SEE SPEC. 2573.

② IN AREAS WHERE THE PLAN CALLS FOR RIPRAP AT A BRIDGE, CULVERT, OR SLOPE, A TEMPORARY ROCK BERM CONSTRUCTED FROM THE RIPRAP CAN BE USED TO PROVIDE ADDITIONAL PROTECTION. WHEN THE WORK IS COMPLETE THE RIPRAP CAN THEN BE MOVED TO THE PERMANENT LOCATION INDICATED IN THE PLANS. THE TEMPORARY ROCK BERM IS INCIDENTAL.

③ ON U.S. COAST GUARD OR OTHER MOTORIZED WATERWAYS, BUOYS ARE REQUIRED TO MARK THE ENDS AND SPECIAL AREAS FOR VISIBILITY. PLACE BUOYS AS REQUIRED FOR NAVIGATIONAL PURPOSES.

④ MINIMUM WATER DEPTH APPLIES TO THE DEEPEST POINT ALONG THE FLOTATION SILT CURTAIN OR SILT FENCE TYPE TB FOR DETERMINING APPLICABILITY OF FLOTATION SILT CURTAIN OR SILT FENCE TYPE TB.

⑤ SILT CURTAIN SHOULD BE REMOVED WHEN THE AREA CONTRIBUTING DIRECT RUNOFF HAS BEEN TEMPORARILY OR PERMANENTLY STABILIZED. SILT CURTAIN SHOULD ALSO BE REMOVED BEFORE WINTER IF ICE UP OR ICE FLOW IS ANTICIPATED.

⑥ EMBED POST INTO BOTTOM A MINIMUM OF 40% OF THE WATER DEPTH (INCLUDING WAVE HEIGHT), BUT IN NO CASE SHALL EMBEDMENT BE LESS THAN 2 FEET.

⑦ ANCHOR FLOAT MUST BE CONNECTED SECURELY TO SLEEVE WITH A MINIMUM TENSILE STRENGTH OF 100 LBS. CONNECTION METHOD MUST ALLOW FOR SLEEVE TO MOVE FREELY ON POST.

⑧ PROVIDE SUFFICIENT NUMBER OF POST ANCHORS TO MAINTAIN SILT CURTAIN POSITION.

LEAD EXPERT OFFICE	LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP	TEMPORARY SEDIMENT CONTROL SILT CURTAIN OR SILT FENCE TYPE TB	APPROVED: 02-28-2017 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.405	1 OF 8

STANDARD PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 46 OF 220 SHEETS

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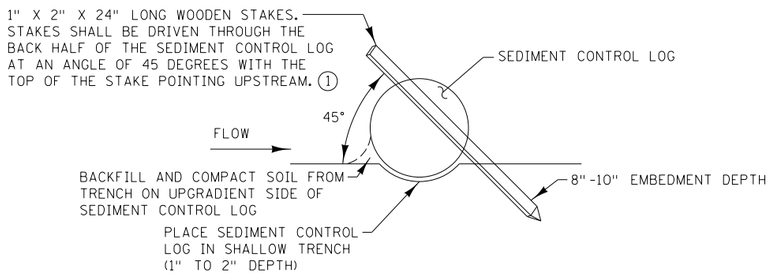
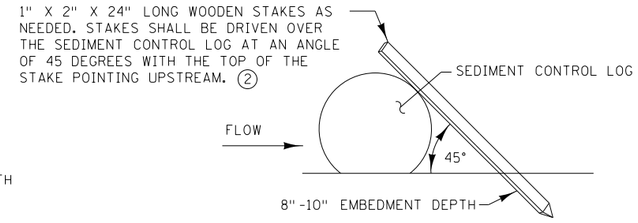
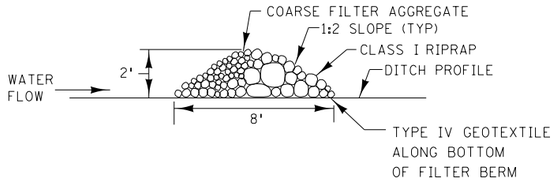


TYPES: STRAW, WOOD FIBER, OR COIR

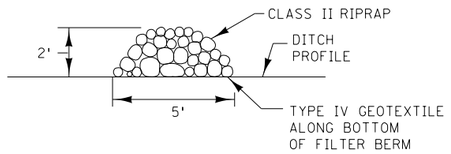


TYPES: WOOD CHIP, COMPOST, OR ROCK

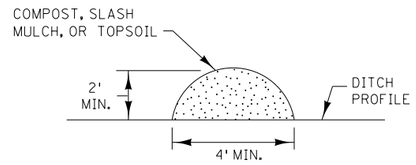
SEDIMENT CONTROL LOGS



TYPE 3 (ROCK WEEPER)

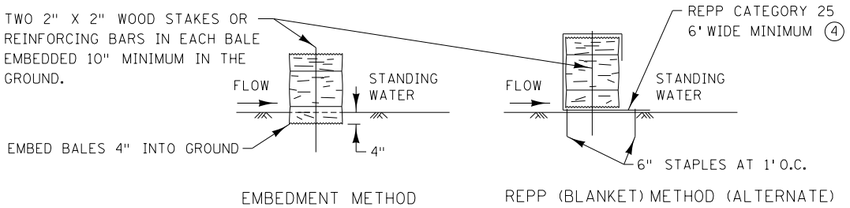


TYPE 5 (ROCK)



TYPE 1 (COMPOST), TYPE 2 (SLASH MULCH), OR TYPE 4 (TOPSOIL)

FILTER BERMS



EMBEDMENT METHOD

REPP (BLANKET) METHOD (ALTERNATE)

BALE BARRIERS(3)

NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

SEE SPECS. 2573, 3149, 3874, 3882, 3885, 3886, AND 3897.

(1) SPACE BETWEEN STAKES SHALL BE A MAXIMUM OF 1' FOR DITCH CHECKS OR 2' FOR OTHER APPLICATIONS.

(2) PLACE STAKES AS NEEDED TO PREVENT MOVEMENT OF SEDIMENT CONTROL LOGS PLACED ON SLOPES OR AS NEEDED DUE TO OTHER FACTORS. STAKES SHALL BE INCIDENTAL.

(3) TO BE USED FOR CRITICAL PERIMETER CONTROL AREAS WHERE STANDING WATER OCCURS (6" MAXIMUM DEPTH). BALES SHALL CONSIST OF TYPE 1 MULCH OF APPROXIMATELY 14" X 18" X 36" LONG. BALES SHALL BE PLACED ON EDGE AND BUTTED TIGHT TO ADJACENT BALES.

(4) INSTEAD OF TRENCHING, PLACE BALE ON THE REPP (BLANKET) AND WRAP BLANKET AROUND THE BALE. PLACE STAKE THROUGH BALE AND BLANKET.

LEAD EXPERT OFFICE	MARNI KARNOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		TEMPORARY SEDIMENT CONTROL FILTER BERMS, SEDIMENT CONTROL LOGS, AND BALE BARRIERS	APPROVED: 01-08-2020 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.405	2 OF 8

	STANDARD PLAN	SAP 010-611-027; CP 218931 (CSAH 11) SHEET NO. 47 OF 220 SHEETS

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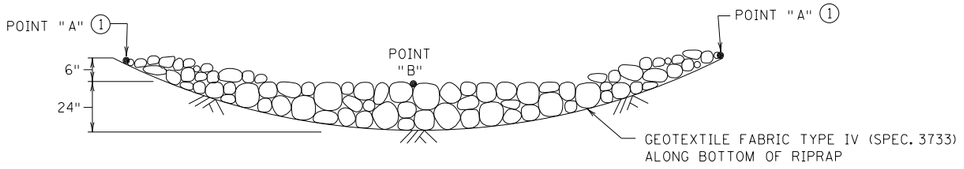
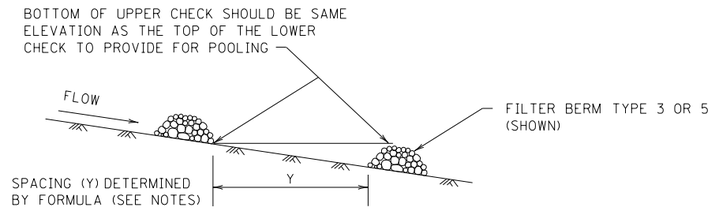
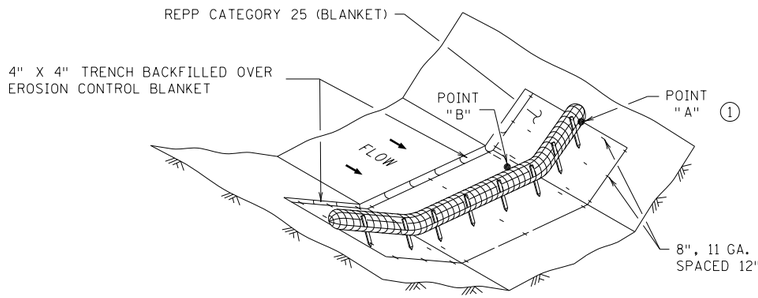
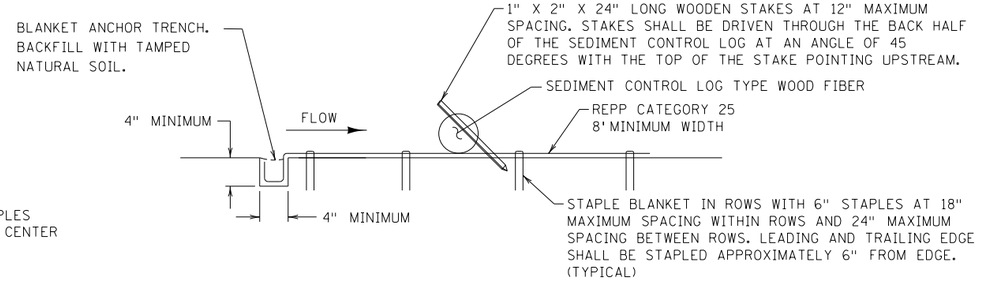


ROCK DITCH CHECKS
FILTER BERMS TYPE 3 (ROCK WEEPER) OR FILTER TYPE 5 (ROCK) ③
FOR USE ON ROUGH-GRADED AREAS
ONLY FOR USE OUTSIDE CLEAR ZONE ②

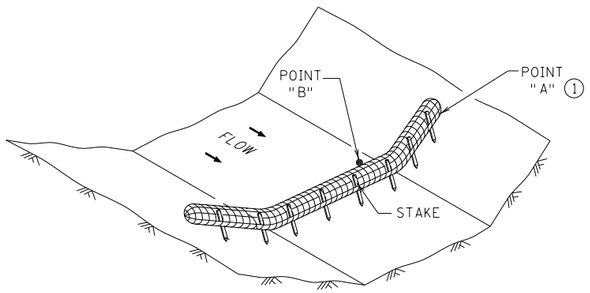


DITCH CHECK SPACING
FOR ALL FILTER BERM TYPES





SEDIMENT CONTROL LOG TYPE REPP (BLANKET) SYSTEM ④



SEDIMENT CONTROL LOG TYPE WOOD FIBER, OR TYPE COMPOST ⑤
FOR USE ON ROUGH GRADED AREAS

NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

SEE SPECS. 2573, 3601, 3733, 3885, 3886 & 3889.

FOR DITCH CHECKS, PLACE SEDIMENT CONTROL LOG PERPENDICULAR TO FLOW AND IN A CRESCENT SHAPE WITH THE ENDS FACING UPSTREAM.

APPROXIMATE SPACING BETWEEN EACH DITCH CHECK SHOULD BE DETERMINED FROM THE FOLLOWING SPACING FORMULA:

$$\text{APPROXIMATE SPACING OF DITCH CHECKS (FT.)} = Y = \frac{\text{DITCH CHECK HEIGHT (FT.)}}{\text{\% CHANNEL SLOPE}} \times 100$$

① POINT "A" MUST BE A MINIMUM OF 6" HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

② ROCK DITCH CHECKS PLACED WITHIN THE CLEAR ZONE ARE TO BE 18" OR LESS IN HEIGHT. A 1:6 APPROACH AND DEPARTURE SLOPE SHALL BE PROVIDED.

③ DITCH GRADE 3% - 5%, MAX. FLOW VELOCITY 12 FT./SEC.

④ DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 4.5 FT./SEC.

⑤ DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 1.5 FT./SEC.

LEAD EXPERT OFFICE	MARNI KARNOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		TEMPORARY SEDIMENT CONTROL DITCH CHECK	APPROVED: 01-08-2020 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.405	3 OF 8

STANDARD PLAN

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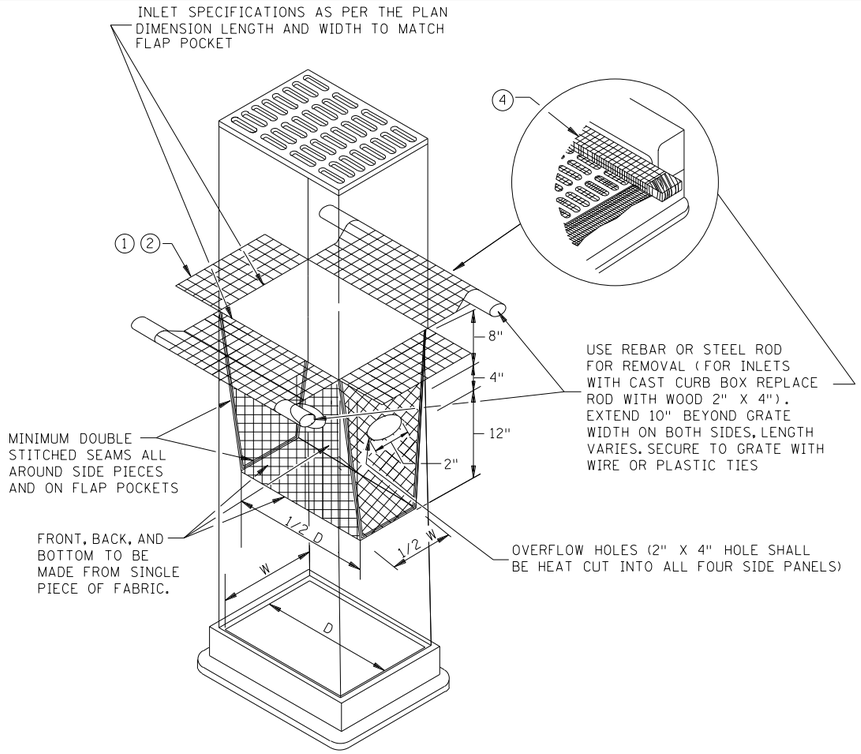
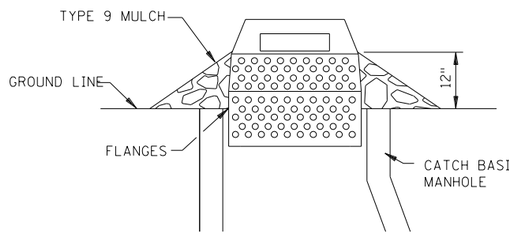


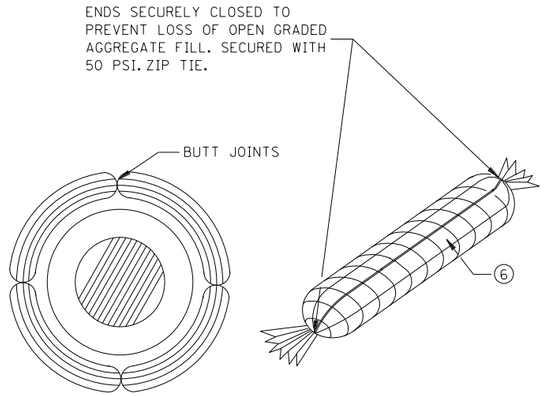
FILTER BAG INSERT ③

(CAN BE INSTALLED IN ANY INLET TYPE
WITH OR WITHOUT A CURB BOX)

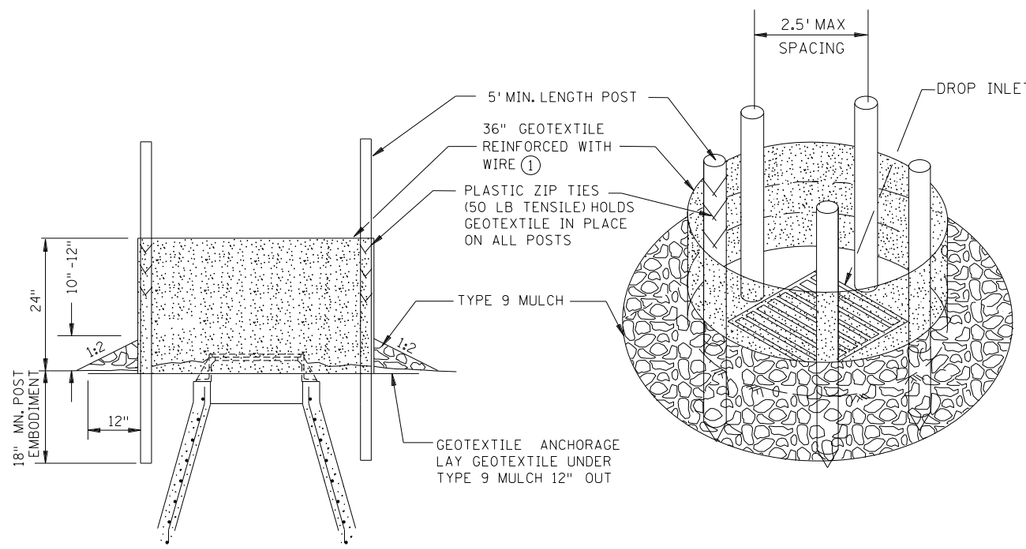


SEDIMENT CONTROL INLET HAT

NOTE:
THE SEDIMENT CONTROL BARRIER SHALL BE A METAL OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE THE CATCH BASIN/MANHOLE; HAVE PERFORATIONS TO ALLOW FOR WATER INFILTRATION; HAVE AN OVERFLOW OPENING, FLANGES AND A LID/COVER.

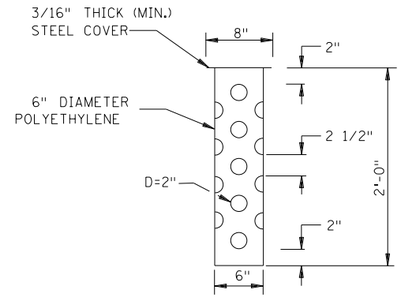


ROCK LOG/COMPOST LOG

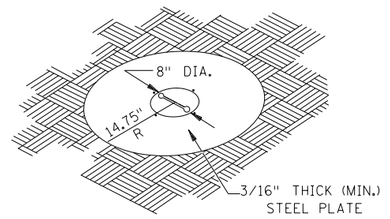


SILT FENCE RING AND ROCK FILTER BERM

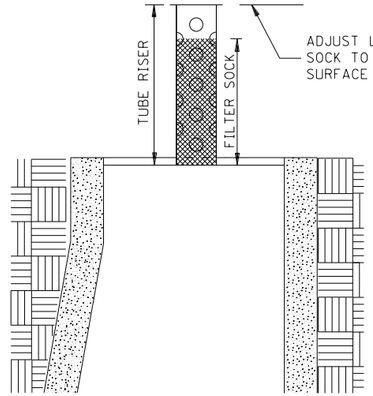
USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 or LESS



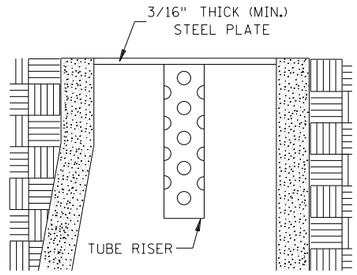
TUBE RISER



PERSPECTIVE VIEW



SECTION
(UP POSITION)



SECTION
(DOWN POSITION)

POP-UP HEAD

NOTES:
SEE SPECS. 2573, 3137, & 3886.

DEVICES MUST BE ADJUSTED ACCORDINGLY AS TO NOT CAUSE FLOODING ON ROADWAY THAT WOULD IMPEED TRAFFIC FLOW.

1. ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.
2. FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
3. INSTALLATION NOTES:
   DO NOT PLACE FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE PLACED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES. WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3 INCH SIDE CLEARANCE.
4. FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2 INCH X 4 INCH OR USE A ROCK SOCK OR SAND BAGS IN PLACE OF THE FLAP POCKETS.
5. SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE FLOODING OF THE ROADWAY.
6. GEOTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER. SEAM TO BE JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PROVIDE A HEAT BONDED SEAM (OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE CONFORMING TO SPEC. 3137 TABLE 3137-1; CA-3 GRADATION.

LEAD EXPERT OFFICE	LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP	TEMPORARY SEDIMENT CONTROL STORM DRAIN INLET PROTECTION	APPROVED: 02-28-2017 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.405	4 OF 8

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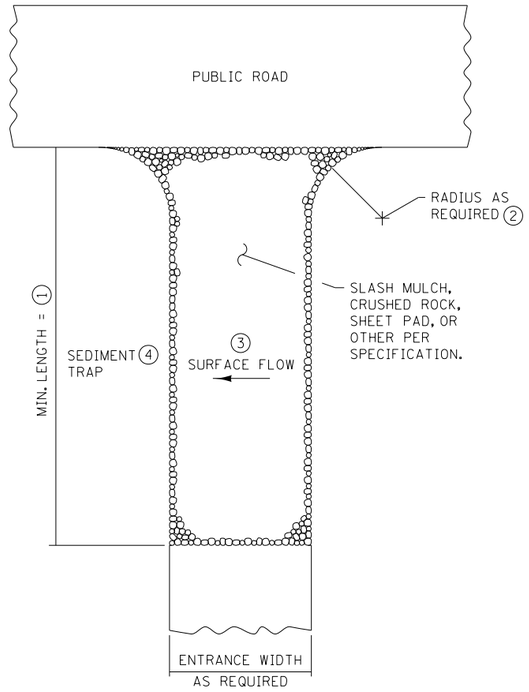
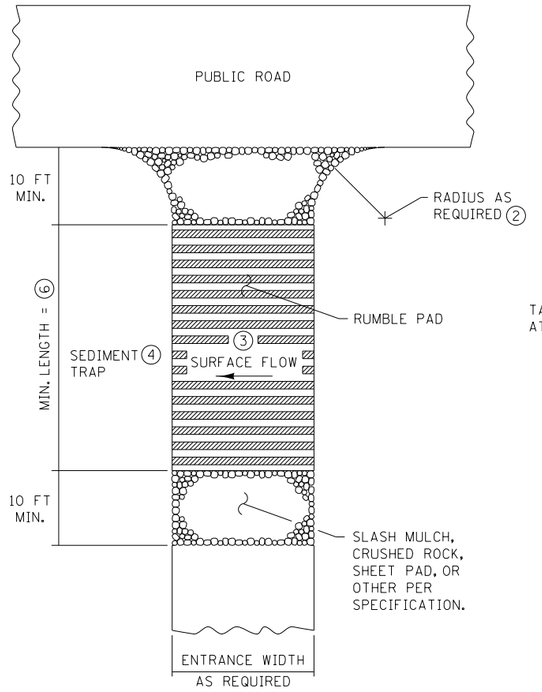
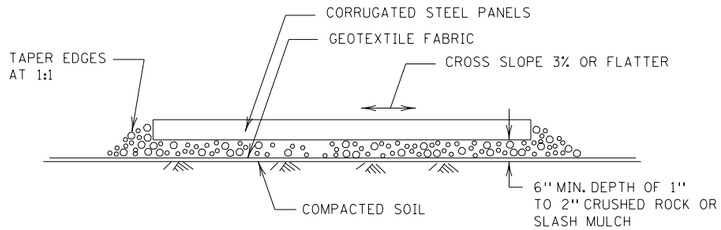


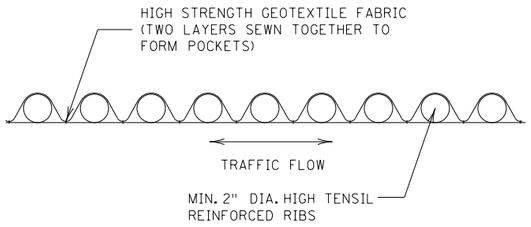
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT ⑤⑦



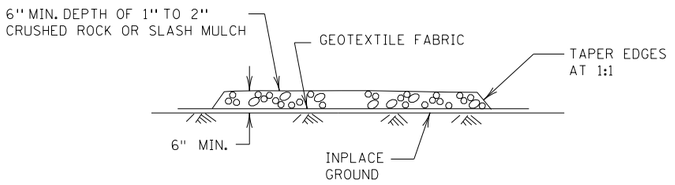
RUMBLE PAD CONSTRUCTION EXIT ⑤⑦



RUMBLE PAD



SHEET PAD



SLASH MULCH OR CRUSHED ROCK

NOTES:

SEE SPECS. 2573 & 3882.

(1) MINIMUM LENGTH SHALL BE THE GREATER OF 50 FEET OR A LENGTH SUFFICIENT TO ALLOW A MINIMUM OF 5 TIRE ROTATIONS ON THE PROVIDED PAD. MINIMUM LENGTH SHALL BE CALCULATED USING THE LARGEST TIRE WHICH WILL BE USED IN TYPICAL OPERATIONS.

(2) PROVIDE RADIUS OR WIDEN PAD SUFFICIENTLY TO PREVENT VEHICLE TIRES FROM TRACKING OFF OF PAD WHEN LEAVING SITE.

(3) IF RUNOFF FROM DISTURBED AREAS FLOWS TOWARD CONSTRUCTION EXITS, PREVENT RUNOFF FROM DRAINING DIRECTLY TO PUBLIC ROAD OVER CONSTRUCTION EXIT BY CROWNING THE EXIT OR SLOPING TO ONE SIDE. IF SURFACE GRADING IS INSUFFICIENT, PROVIDE OTHER MEANS OF INTERCEPTING RUNOFF.

(4) IF RUNOFF FROM CONSTRUCTION EXITS WILL DRAIN OFF OF PROJECT SITE, PROVIDE SEDIMENT TRAP WITH STABILIZED OVERFLOW.

(5) IF A TIRE WASH OFF IS REQUIRED THE CONSTRUCTION EXITS SHALL BE GRADED TO DRAIN THE WASH WATER TO A SEDIMENT TRAP.

(6) MINIMUM LENGTH OF RUMBLE PAD SHALL BE 20 FEET, OR AS REQUIRED TO REMOVE SEDIMENT FROM TIRES. IF SIGNIFICANT SEDIMENT IS TRACKED FROM THE SITE, THE RUMBLE PAD SHALL BE LENGTHENED OR THE DESIGN MODIFIED TO PROVIDE ADDITIONAL VIBRATION. WASH-OFF LENGTH SHALL BE AS REQUIRED TO EFFECTIVELY REMOVE CONSTRUCTION SEDIMENT FROM VEHICLE TIRES.

(7) MAINTENANCE OF CONSTRUCTION EXITS SHALL OCCUR WHEN THE EFFECTIVENESS OF SEDIMENT REMOVAL HAS BEEN REDUCED. MAINTENANCE SHALL CONSIST OF REMOVING SEDIMENT AND CLEANING THE MATERIALS OR PLACING ADDITIONAL MATERIAL (SLASH MULCH OR CRUSHED ROCK) OVER SEDIMENT FILLED MATERIAL TO RESTORE EFFECTIVENESS.

LEAD EXPERT OFFICE	LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP	TEMPORARY SEDIMENT CONTROL STABILIZED CONSTRUCTION EXIT	APPROVED: 02-28-2017 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.405	5 OF 8

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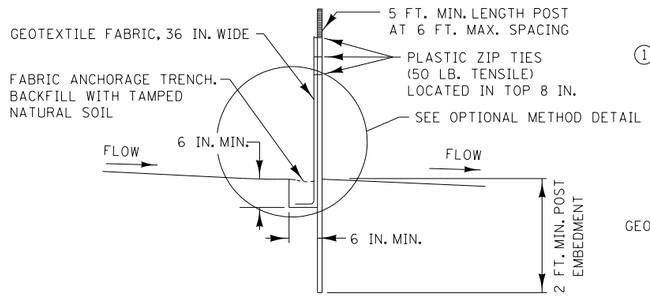
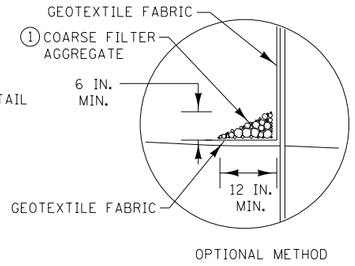
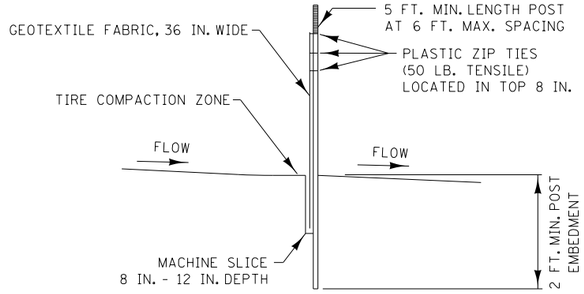


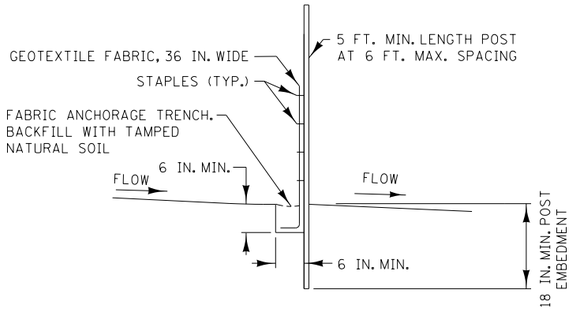
SILT FENCE TYPE HI ②
(HAND INSTALLED)



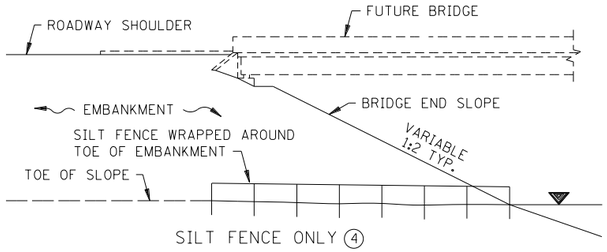
OPTIONAL METHOD



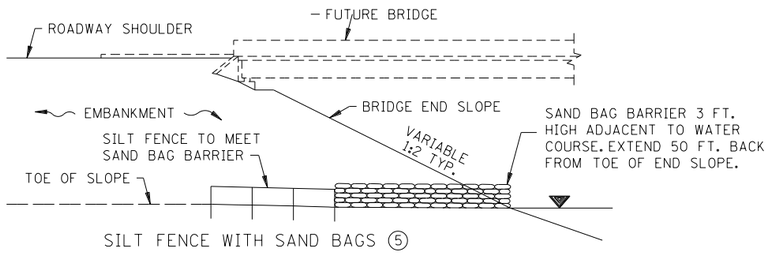
SILT FENCE TYPE MS ②
(MACHINE SLICED)



SILT FENCE TYPE PA ③
(PREASSEMBLED)

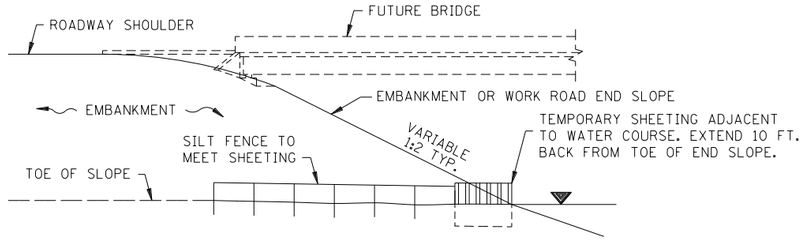


SILT FENCE ONLY ④

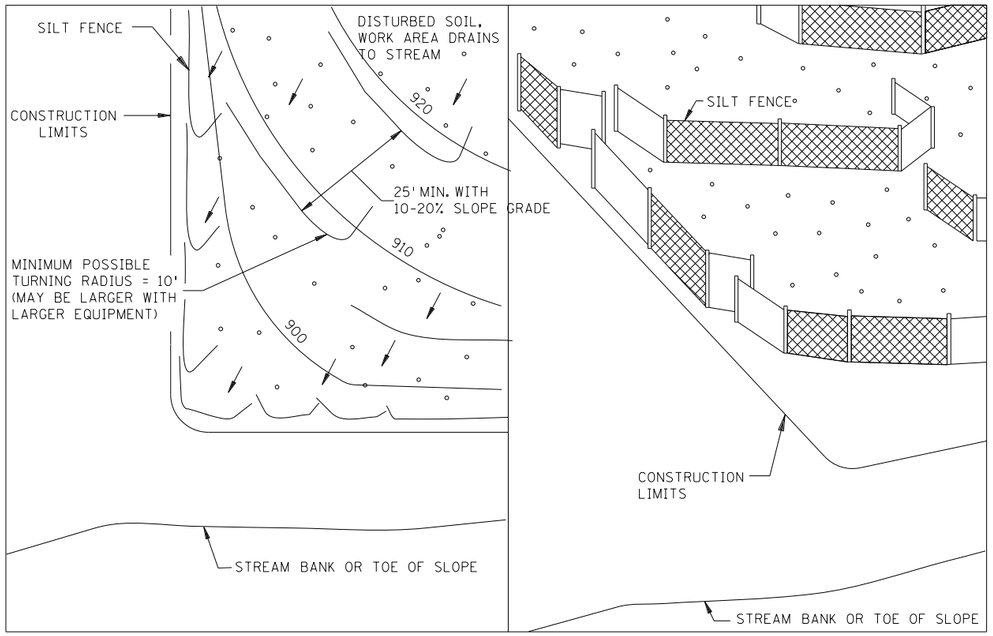


SILT FENCE WITH SAND BAGS ⑤

INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER



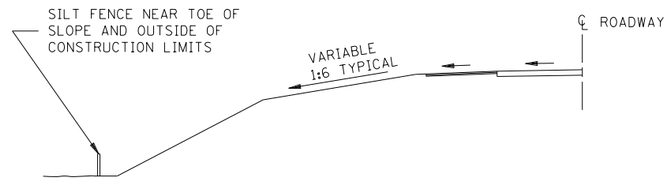
SILT FENCE WITH SHEETING ⑥



PLAN VIEW

PERSPECTIVE VIEW

J-HOOK INSTALLATION



LOCATION AT TOE OF ROADWAY EMBANKMENT

NOTES:

SEE SPECS. 2573, 3149 & 3886.

① COARSE FILTER AGGREGATE (SPEC. 3149) SHALL BE INCIDENTAL.

② TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 1 ACRE.

③ TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 0.25 ACRE.

④ WATER COURSE FLOW VELOCITY: STANDING.
CONTRIBUTING SLOPE AREA: 1./2 ACRE.

⑤ WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC.
CONTRIBUTING SLOPE AREA: 1. ACRE.

⑥ WATER COURSE FLOW VELOCITY: 8 TO 15 FT./SEC.
CONTRIBUTING SLOPE AREA: 3 ACRES.

LEAD EXPERT OFFICE	LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		TEMPORARY SEDIMENT CONTROL SILT FENCE	APPROVED: 02-28-2017 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.405	6 OF 8

STANDARD PLAN

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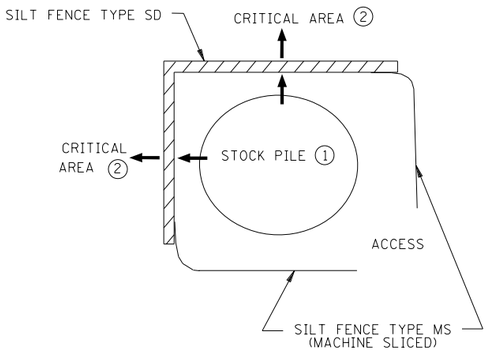
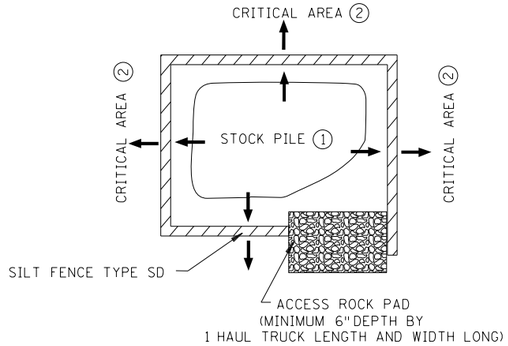
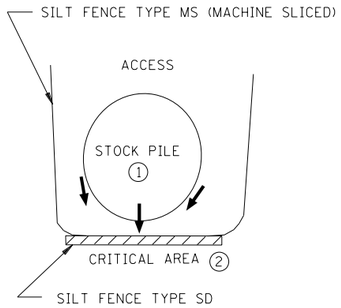
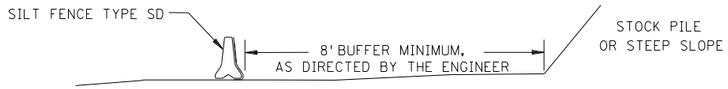


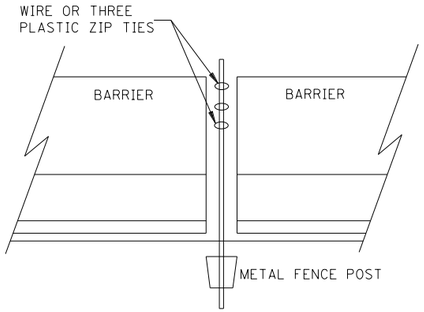




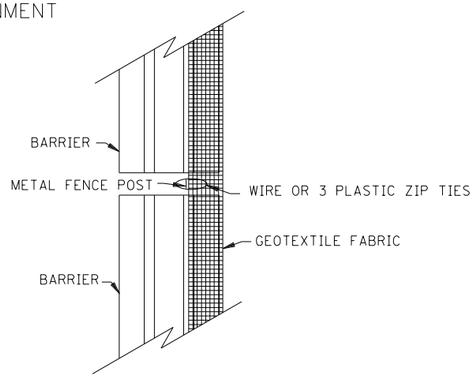
STOCK PILE CONTAINMENT



STOCKPILE SEDIMENT CONTROL

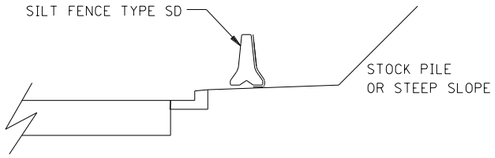


PROFILE VIEW

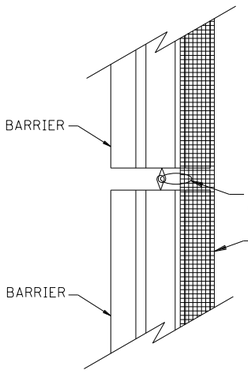


TOP VIEW

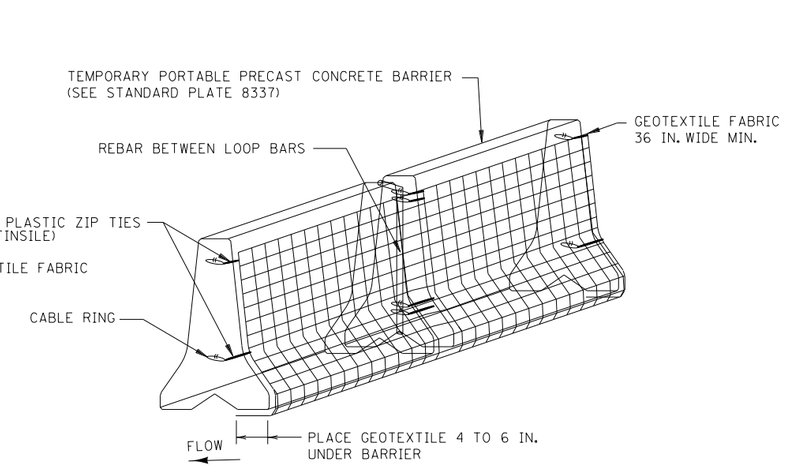
SILT FENCE TYPE SD (SUPER DUTY)
BARRIER WITHOUT LOOP BARS



CURB AND GUTTER PROTECTION SYSTEM

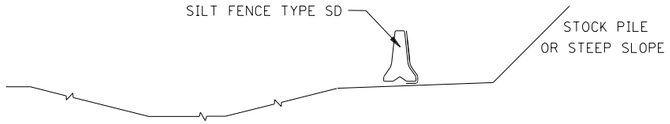


TOP VIEW



PERSPECTIVE VIEW

SILT FENCE TYPE SD (SUPER DUTY)
BARRIER WITH LOOP BARS



DITCH PROTECTION SYSTEM

NOTES:

SEE SPECS. 2533, 2573 & 3886.

SILT FENCE TYPE SD USED TO PROTECT CRITICAL AREAS FROM SHEET FLOW, AND AREAS WHERE OTHER SILT FENCES CANNOT BE PLACED. MAXIMUM CONTRIBUTING AREA: 1 ACRE.

PLACE SILT FENCE TYPE SD ALONG A CONSTANT ELEVATION.

SILT FENCE TYPE SD CAN UTILIZE EITHER A CONCRETE, OR WATER FILLED, TEMPORARY MEDIAN BARRIER.

(1) PLACING STOCK PILES NEXT TO AN ENVIRONMENTALLY SENSITIVE AREA IS NOT RECOMMENDED. WHEN THERE ARE NO FEASIBLE ALTERNATIVES, PLACE SILT FENCE SD AS SHOWN OR AS DIRECTED BY THE ENGINEER.

(2) CRITICAL AREAS INCLUDE WETLANDS, JUDICIAL DITCHES, STREAMS, WATER BODIES, AND OTHER AREAS REQUIRING PROTECTION.

LEAD EXPERT OFFICE	LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		TEMPORARY SEDIMENT CONTROL SUPER DUTY SILT FENCE	APPROVED: 02-28-2017 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.405	7 OF 8

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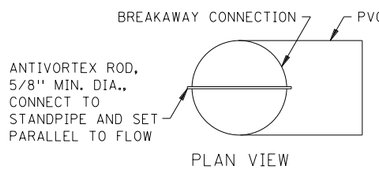
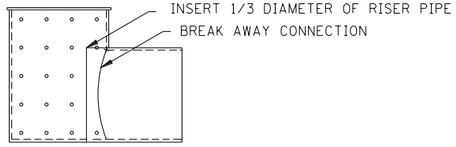
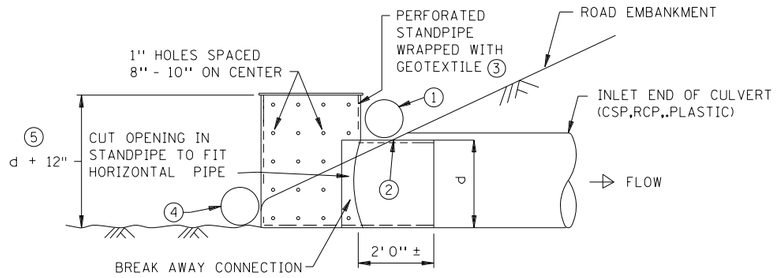


PLAN VIEW



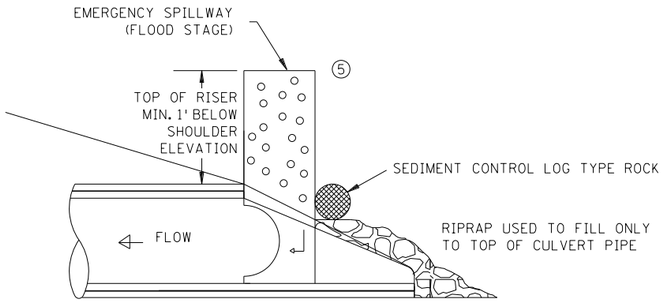
CULVERT STANDPIPE



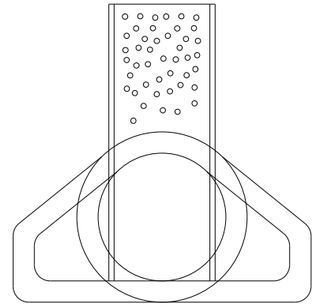
ELEVATION VIEW OF CULVERT INSTALLATION

CULVERT STANDPIPE INSERT (D-RISER)

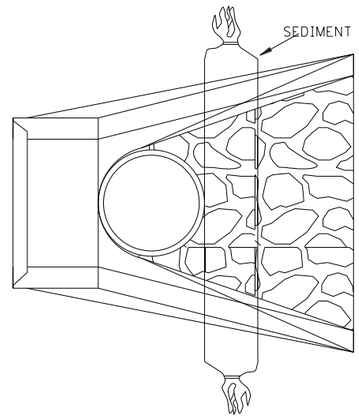
d= CULVERT SIZE: 12" - 36"



LONGITUDINAL SECTION



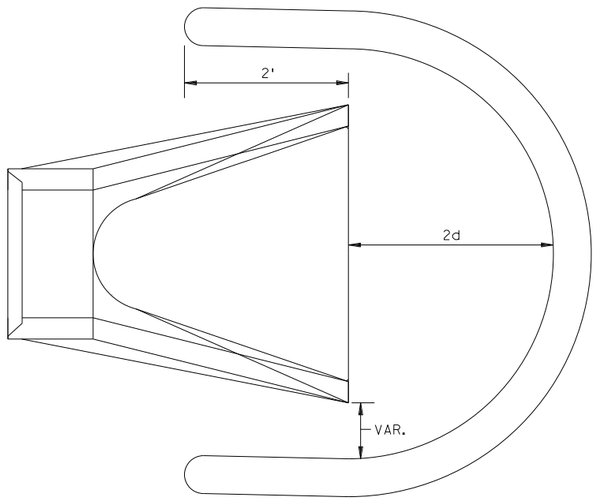
END VIEW



TOP VIEW

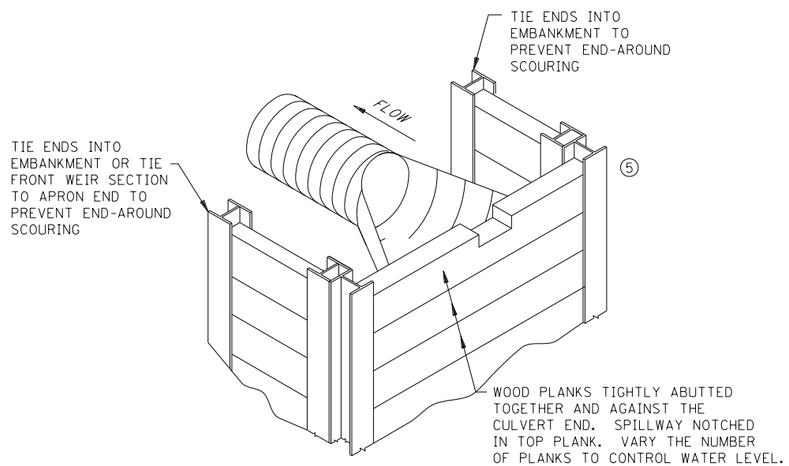
NOTE: SEDIMENT CONTROL LOG TYPE ROCK MAY BE WRAPPED AROUND RISER

CULVERT STANDPIPE INSERT (D-RISER)



SEDIMENT CONTROL LOG WEIR
(COMPOST, WOOD CHIP, OR ROCK)

d = CULVERT SIZE: 12"-36"



WOOD PLANK WEIR

NOTES:

SEE SPECS. 2573, 3891 & 3893.

FOR USE WHEN TEMPORARY PONDING IS NEEDED IN DITCH SECTIONS FOR SEDIMENT CONTROL.

MANUFACTURED ALTERNATIVES LISTED ON MnDOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED AT NO ADDITIONAL COST.

① ROCK LOG OR SANDBAG TO HOLD STANDPIPE AND ACT AS A SEAL BETWEEN RISER PIPE AND CULVERT.

② PLACE CULVERT APRON AND SLIDE TEMPORARY STANDPIPE INTO CSP OR RCP CULVERT.

③ ALL GEOTEXTILE USED FOR CULVERT PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886 FOR MACHINE SLICED.

④ ROCK LOG OR RIP RAP TO HOLD STANDPIPE AND ACT AS A FILTER BETWEEN RISER PIPE AND CULVERT.

⑤ HEIGHT OVERFLOW NOT TO CAUSE FLOODING OF ROAD OR ADJACENT PROPERTIES.

LEAD EXPERT OFFICE	LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		TEMPORARY SEDIMENT CONTROL CULVERT END CONTROLS	APPROVED: 02-28-2017 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.405	8 OF 8

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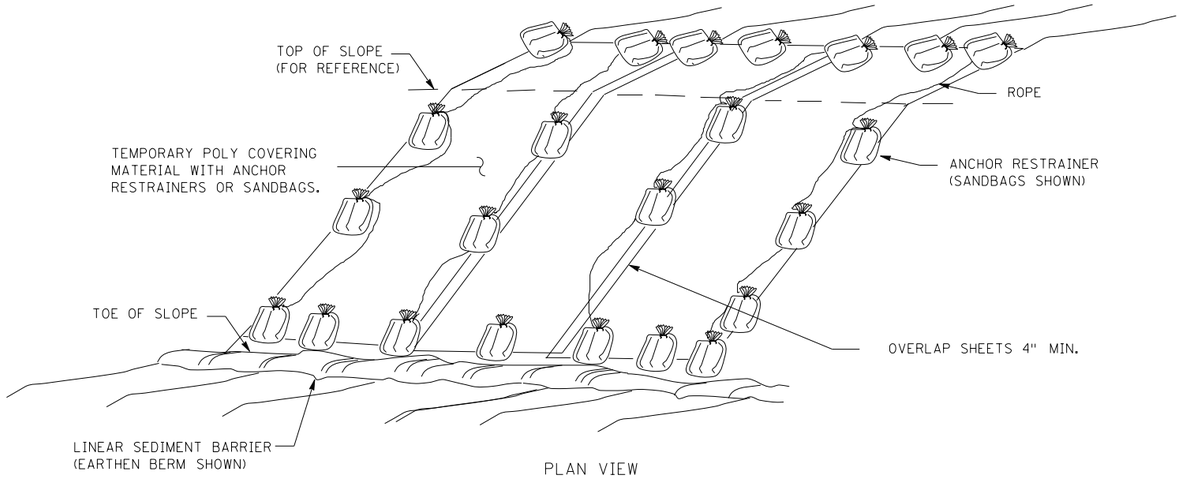
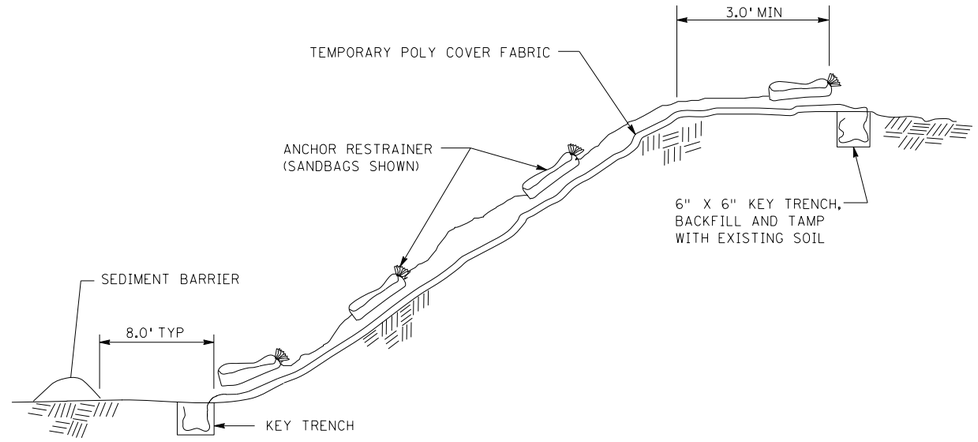
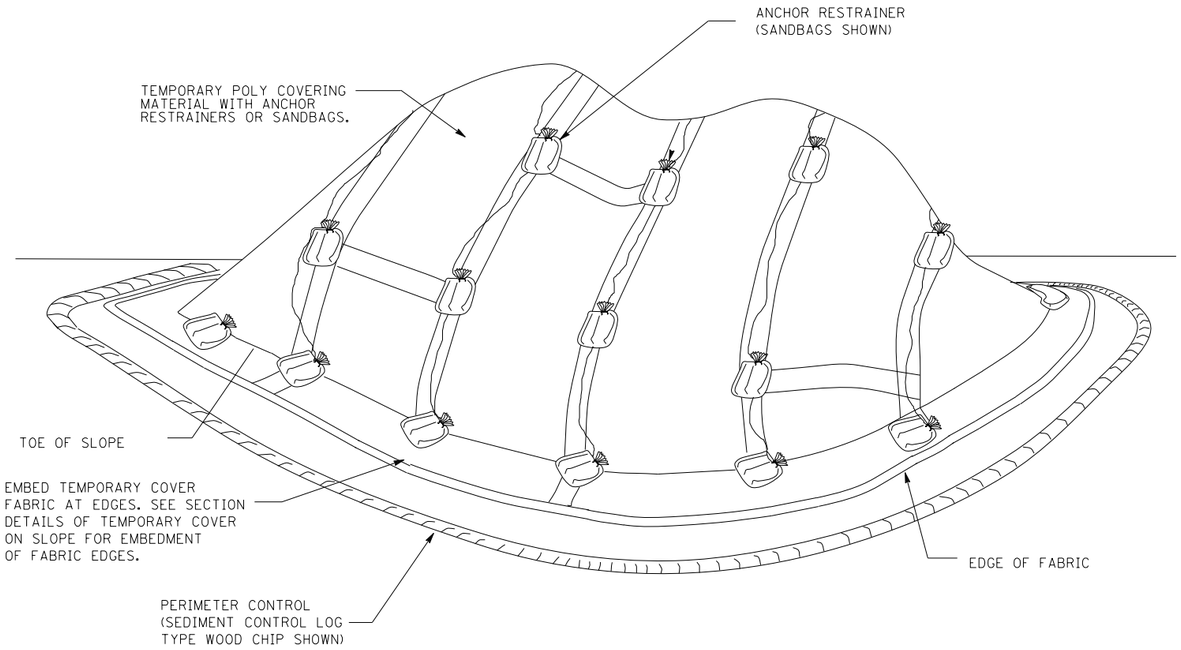


PLAN VIEW

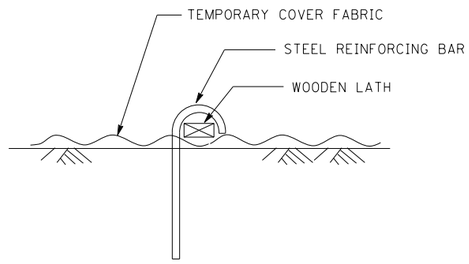


ELEVATION VIEW

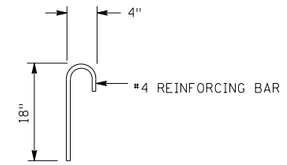
TEMPORARY POLY COVER ON SLOPE



TEMPORARY POLY COVER ON STOCKPILE



ANCHOR RESTRAINER
(STEEL BAR AND WOODEN LATH OPTION)



STEEL REINFORCING BAR DETAIL

NOTES:

ANCHOR RESTRAINERS: TYPE, QUANTITY, AND SPACING ARE INCIDENTAL TO POLY COVER. PROVIDE ON CORNERS AND SEAMS OF POLY COVER MATERIAL TO KEEP FROM BLOWING OFF. NO MINIMUM SPACING REQUIRED.

PERIMETER CONTROL: USE SEDIMENT CONTROL LOGS TYPE WOOD CHIP OR COMPOST, INCIDENTAL.

LEAD EXPERT OFFICE	LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		TEMPORARY EROSION CONTROL TEMPORARY POLY COVERINGS	APPROVED: 02-28-2017 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.409	1 OF 1

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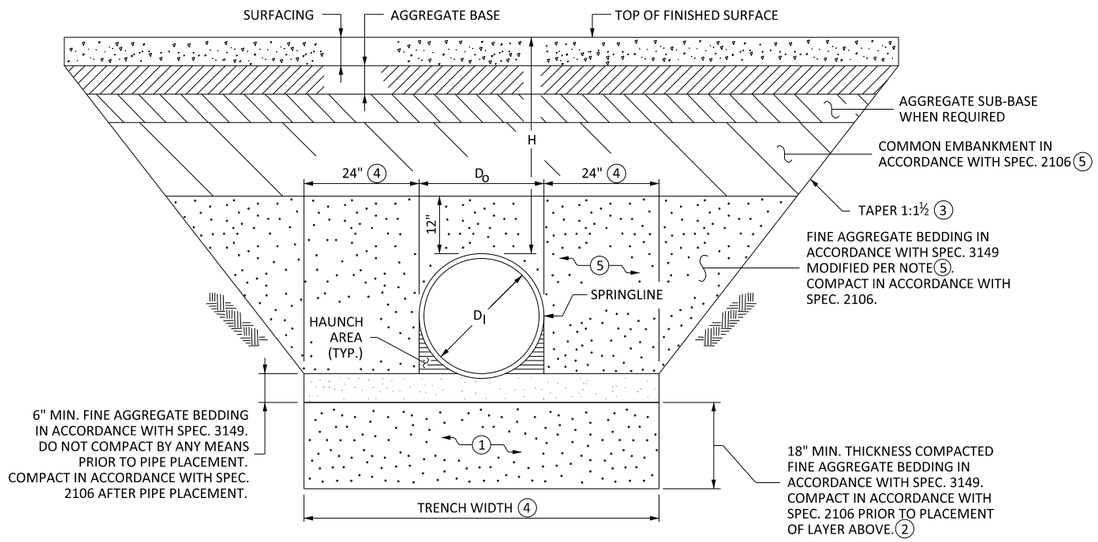
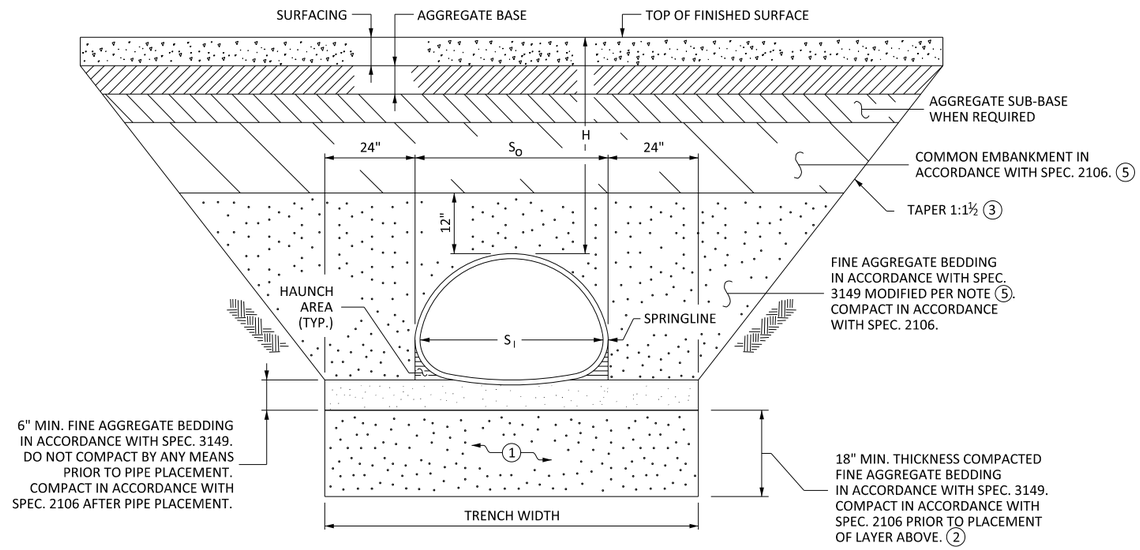


STANDARD FLEXIBLE PIPE CULVERT BEDDING



STANDARD FLEXIBLE PIPE ARCH CULVERT BEDDING

PLASTIC PIPE WITH H > 10' (4)

PIPE DIA.	TRENCH WIDTH
12"	5' 2"
15"	5' 6"
18"	5' 9"
24"	6' 6"
30"	8' 0"
36"	9' 6"
42"	11' 0"
48"	12' 6"

LEGEND

D_I = INSIDE DIAMETER OF ROUND PIPE (INCHES).
D_O = OUTSIDE DIAMETER OF ROUND PIPE (INCHES).
S_I = INSIDE SPAN OF PIPE-ARCH (INCHES).
S_O = OUTSIDE SPAN OF PIPE-ARCH (INCHES).
H = FILL COVER HEIGHT OVER PIPE (FEET).

= UNDISTURBED SOIL

= COMPACTED BEDDING

= LOOSE BEDDING, COMPACTED AFTER PIPE PLACEMENT

CONSTRUCTION SEQUENCE

1. PLACE AND COMPACT 18" OF FINE AGGREGATE BEDDING TO THE REQUIREMENTS OF SPEC. 2106.
2. LOOSELY PLACE 6" OF FINE AGGREGATE BEDDING MATERIAL (SPEC. 3149) TO GRADE. DO NOT COMPACT PRIOR TO PIPE PLACEMENT.
3. FOR PIPES WITH BELL, REMOVE MATERIAL IN BELL AREA PRIOR TO PLACEMENT.
4. FURNISH AND INSTALL PIPE TO GRADE.
5. AFTER PLACEMENT OF THE PIPE, PLACE ADDITIONAL BEDDING AND COMPACT THE FULL LENGTH ON BOTH SIDES OF THE PIPE UNDERNEATH THE HAUNCH AREA BY FIRST SHOVEL SLICING (MANUALLY SHOVE THE BLADE END OF A SHOVEL AT AN ANGLE DOWN THE ENTIRE LENGTH OF THE HAUNCH UNDER THE PIPE). THEN COMPACT THE HAUNCH AT AN ANGLE USING A POWERED MECHANICAL OR PNEUMATIC DEVICE (I.E. POLE TAMPER, JUMPING JACK, OR SIMILAR).
6. COMPACT THE REMAINING MATERIAL OUTSIDE THE HAUNCH AREA TO THE REQUIREMENTS OF SPEC. 2106 ENSURING THAT THE ENTIRE LENGTH OF PIPE IS SUPPORTED UNIFORMLY BY BEDDING.
7. PLACE AND COMPACT BACKFILL EVENLY AND SIMULTANEOUSLY IN 6" LIFTS ON EACH SIDE OF THE PIPE TO 12" ABOVE TOP OF PIPE WHEN COMPACTED.
8. COMPLETE REMAINING BACKFILL.
9. PIPE PLACEMENT MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

NOTES

STANDARD BEDDING FOR FLEXIBLE PIPE CULVERTS WITHOUT TREATMENTS.

METAL ENTRANCE CULVERTS (FIELD AND DRIVEWAY CULVERTS) DO NOT NEED BEDDING UNLESS SPECIFIED IN THE PLANS OR SPECIAL PROVISIONS.

PLASTIC CULVERTS REQUIRE BEDDING IN ACCORDANCE WITH SPEC. 2501. BEDDING COSTS FOR PLASTIC ENTRANCE CULVERTS IS INCLUDED IN THE CONTRACT UNIT PRICE OF THE RELEVANT CULVERT PAY ITEM.

FLEXIBLE PIPE INCLUDES METAL AND PLASTIC MATERIAL SUCH AS CORRUGATED POLYPROPYLENE (PP) AND CORRUGATED POLYETHYLENE (CP).

UNLESS OTHERWISE NOTED IN THE PLAN, BEDDING QUANTITIES ARE COMPUTED FOR THE FULL LENGTH OF THE PIPE AND APRON, AND WILL NOT BE ADJUSTED FOR CHANGES TO MEET OSHA REQUIREMENTS.

WHEN RIPRAP IS REQUIRED AT THE APRON END, SEE STANDARD PLATE OR PLAN FOR RIPRAP PLACEMENT AND QUANTITIES. FOR APRONS WITHOUT RIPRAP PLACE 6" MIN. FINE AGGREGATE BEDDING UNDER APRONS. USE A TRENCH WIDTH EQUAL TO THE PIPE TRENCH WIDTH.

CONTRACT PAY ITEM FOR FINE AGGREGATE BEDDING INCLUDES THE COST OF EXCAVATION, PLACEMENT AND COMPACTION.

RECYCLED CONCRETE AGGREGATE (RCA) IS PROHIBITED IN FINE AGGREGATE BEDDING AND BACKFILL.

EXCAVATION AND BACKFILL WITH COMMON EMBANKMENT ARE NOT TABULATED SEPARATELY BUT ARE INCLUDED IN THE CONTRACT UNIT PRICE OF THE RELEVANT CULVERT PAY ITEM.

EXCAVATE AND CONSTRUCT ALL TRENCHES AND SLOPES IN ACCORDANCE WITH OSHA REQUIREMENTS.

ALL SLOPES SHOWN AS (V):(H).

PIPE SIZE IS BASED ON THE NOMINAL INSIDE DIAMETER OR SPAN.

PROTECT ALL PIPE DURING CONSTRUCTION IN ACCORDANCE WITH SPEC. 2501.

PLACE MULTIPLE PIPE CULVERTS WITH A CLEARANCE OF 24" OR GREATER BETWEEN STRINGS OF PIPE.

(1) IF APPROVED BY THE ENGINEER, IN WET CONDITIONS THE CONTRACTOR MAY SUBSTITUTE 18" OF COARSE FILTER AGGREGATE IN ACCORDANCE WITH 3149, COMPACTED TO THE QUALITY COMPACTION REQUIREMENTS OF SPEC. 2106. WRAP WITH GEOTEXTILE FABRIC TYPE 4 IN ACCORDANCE WITH SPEC. 3733. SEAM ALL FABRIC SIDES AND ENDS IN ACCORDANCE WITH SPEC. TABLE 3733-1 INCLUDING FOOTNOTE (e) OR OVERLAP A MINIMUM OF 3', ALL AT NO ADDITIONAL COST.
(2) FOR INSTALLATIONS ON INTACT BEDROCK, OMIT THIS LAYER.
(3) OVER-EXCAVATION BENEATH TAPERS IS NOT PERMITTED UNLESS REQUIRED BY OSHA. (TYP.)
(4) USE THERMOPLASTIC PIPE TABLE FOR TRENCH WIDTHS FOR THERMOPLASTIC PIPES WITH MORE THAN 10' OF FILL OVER THE PIPE.
(5) MAXIMUM EMBANKMENT PARTICLE SIZE WITHIN 2' OF PIPE IS 3" FOR METAL PIPES AND 1" FOR THERMOPLASTIC PIPES.

LEAD EXPERT OFFICE: EDWARD LUTGEN, OFFICE DIRECTOR BRIDGE OFFICE		STANDARD CULVERT BEDDING FOR FLEXIBLE PIPE (WITHOUT TREATMENTS)	APPROVED: 11-15-2024	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.440	1 OF 1

STANDARD PLAN

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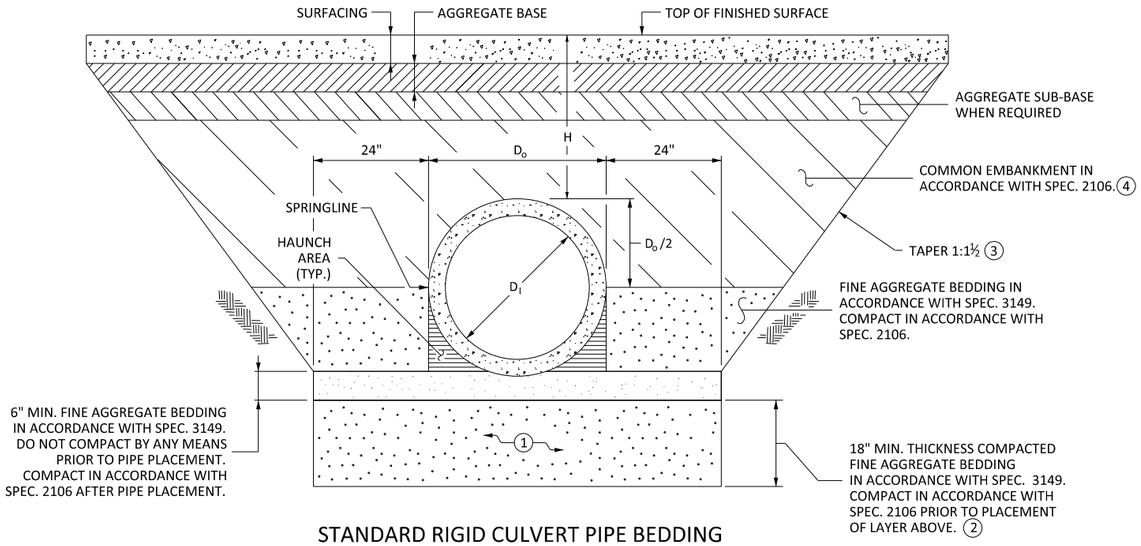
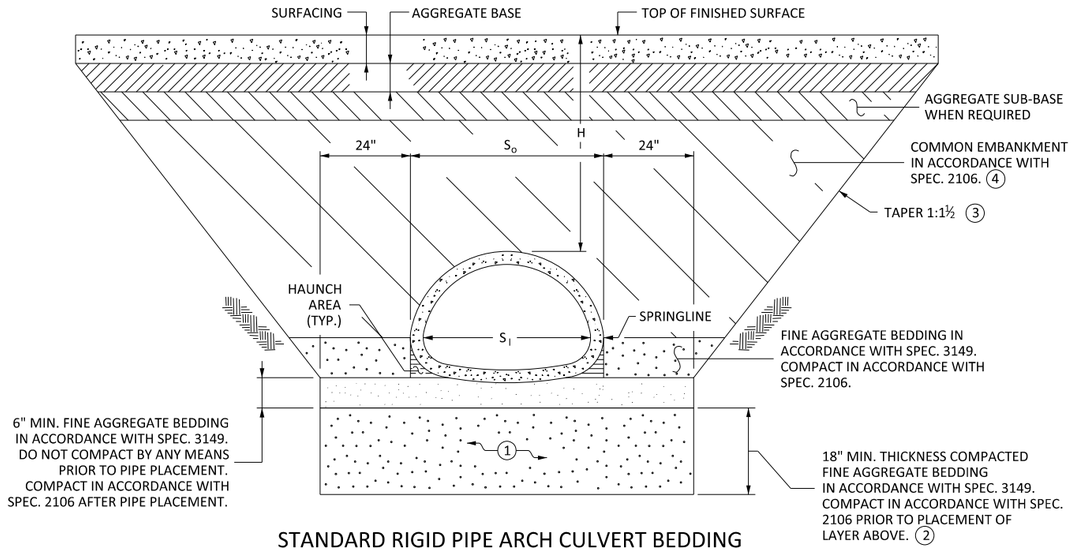


STANDARD RIGID CULVERT PIPE BEDDING



STANDARD RIGID PIPE ARCH CULVERT BEDDING

LEGEND

D_I = INSIDE DIAMETER OF ROUND PIPE (INCHES).
D_o = OUTSIDE DIAMETER OF ROUND PIPE (INCHES).
S_I = INSIDE SPAN OF PIPE-ARCH (INCHES).
S_o = OUTSIDE SPAN OF PIPE-ARCH (INCHES).
H = FILL COVER HEIGHT OVER PIPE (FEET).

= UNDISTURBED SOIL

= COMPACTED BEDDING

= LOOSE BEDDING, COMPACTED AFTER PIPE PLACEMENT

CONSTRUCTION SEQUENCE

1. PLACE AND COMPACT 18" OF FINE AGGREGATE BEDDING TO THE REQUIREMENTS OF SPEC. 2106.
2. LOOSELY PLACE 6" OF FINE AGGREGATE BEDDING (SPEC. 3149) TO GRADE. DO NOT COMPACT PRIOR TO PIPE PLACEMENT.
3. FOR PIPES WITH BELL, REMOVE MATERIAL IN BELL AREA PRIOR TO PLACEMENT.
4. FURNISH AND INSTALL PIPE TO GRADE.
5. AFTER PLACEMENT OF THE PIPE, PLACE ADDITIONAL BEDDING AND COMPACT THE FULL LENGTH ON BOTH SIDES OF THE PIPE UNDERNEATH THE HAUNCH AREA BY FIRST SHOVEL SLICING (MANUALLY SHOVE THE BLADE END OF A SHOVEL AT AN ANGLE DOWN THE ENTIRE LENGTH OF THE PIPE IN THE HAUNCHH AREA) THEN COMPACT THE HAUNCH AT AN ANGLE USING A POWERED MECHANICAL OR PNEUMATIC DEVICE (I.E. POLE TAMPER, JUMPING JACK, OR SIMILAR).
6. COMPACT THE REMAINING MATERIAL OUTSIDE THE HAUNCH AREA TO THE REQUIREMENTS OF SPEC. 2106 ENSURING THAT THE ENTIRE LENGTH OF PIPE IS SUPPORTED UNIFORMLY BY BEDDING.
7. PLACE AND COMPACT BACKFILL EVENLY AND SIMULTANEOUSLY IN 6" LIFTS ON EACH SIDE OF THE PIPE UP TO THE SPRINGLINE WHEN COMPACTED.
8. COMPLETE REMAINING BACKFILL.

NOTES

STANDARD BEDDING FOR RIGID PIPE CULVERTS WITHOUT TREATMENTS.

RIGID PIPE INCLUDES CONCRETE.

ENTRANCE CULVERTS (FIELD AND DRIVEWAY CULVERTS) DO NOT NEED BEDDING UNLESS SPECIFIED IN THE PLANS OR SPECIAL PROVISIONS.

UNLESS OTHERWISE NOTED IN THE PLAN, BEDDING QUANTITIES ARE COMPUTED FOR THE FULL LENGTH OF THE PIPE AND APRON, AND WILL NOT BE ADJUSTED FOR CHANGES TO MEET OSHA REQUIREMENTS.

WHEN RIPRAP IS REQUIRED AT THE APRON END, SEE STANDARD PLATE OR PLAN FOR RIPRAP PLACEMENT AND QUANTITIES. FOR APRONS WITHOUT RIPRAP PLACE 6" MIN. FINE AGGREGATE BEDDING UNDER APRONS. USE A TRENCH WIDTH EQUAL TO THE PIPE TRENCH WIDTH.

CONTRACT PAY ITEM FOR FINE AGGREGATE BEDDING INCLUDES THE COST OF EXCAVATION, PLACEMENT AND COMPACTION.

RECYCLED CONCRETE AGGREGATE (RCA) IS PROHIBITED IN FINE AGGREGATE BEDDING AND BACKFILL.

EXCAVATION AND BACKFILL WITH COMMON EMBANKMENT ARE NOT TABULATED SEPARATELY BUT ARE INCLUDED IN THE CONTRACT UNIT PRICE OF THE RELEVANT CULVERT PAY ITEM.

EXCAVATE AND CONSTRUCT ALL TRENCHES AND SLOPES IN ACCORDANCE WITH OSHA REQUIREMENTS.

ALL SLOPES SHOWN AS (V):(H).

PIPE SIZE IS BASED ON THE NOMINAL INSIDE DIAMETER OR SPAN.

PROTECT ALL PIPE DURING CONSTRUCTION IN ACCORDANCE WITH SPEC. 2501.

PLACE MULTIPLE PIPE CULVERTS WITH A CLEARANCE OF 24" OR GREATER BETWEEN STRINGS OF PIPE.

(1) IF APPROVED BY THE ENGINEER, IN WET CONDITIONS THE CONTRACTOR MAY SUBSTITUTE 18" OF COARSE FILTER AGGREGATE IN ACCORDANCE WITH SPEC. 3149, COMPACTED TO THE QUALITY COMPACTION REQUIREMENTS OF SPEC. 2106. WRAP WITH GEOTEXTILE FABRIC TYPE 4 IN ACCORDANCE WITH SPEC. 3733. SEAM ALL FABRIC SIDES AND ENDS IN ACCORDANCE WITH SPEC. TABLE 3733-1 INCLUDING FOOTNOTE (e) OR OVERLAP A MINIMUM OF 3', ALL AT NO ADDITIONAL COST.
(2) FOR INSTALLATIONS ON INTACT BEDROCK, OMIT THIS LAYER.
(3) OVER-EXCAVATION BENEATH TAPERS IS NOT PERMITTED UNLESS REQUIRED BY OSHA. (TYP.)
(4) MAXIMUM EMBANKMENT PARTICLE SIZE WITHIN 2' OF RIGID PIPE IS 3".

LEAD EXPERT OFFICE	EDWARD LUTGEN OFFICE DIRECTOR BRIDGE OFFICE		STANDARD CULVERT BEDDING FOR RIGID PIPE (WITHOUT TREATMENTS)	APPROVED: 11-15-2024	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.441	1 OF 1

STANDARD PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 56 OF 220 SHEETS

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1/23/2025
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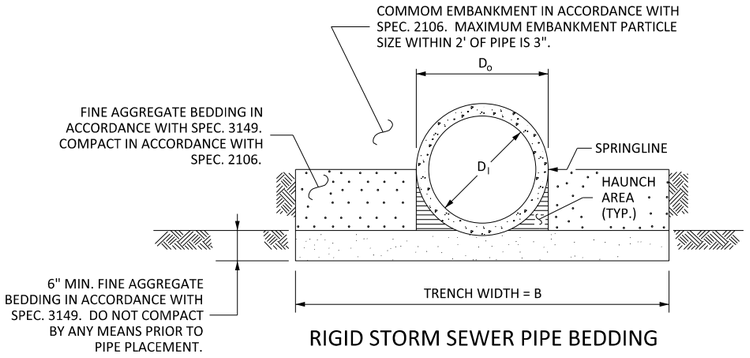
1

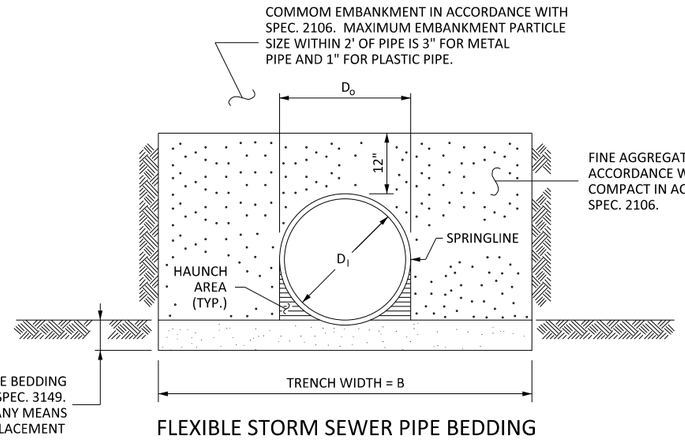


RIGID STORM SEWER PIPE BEDDING

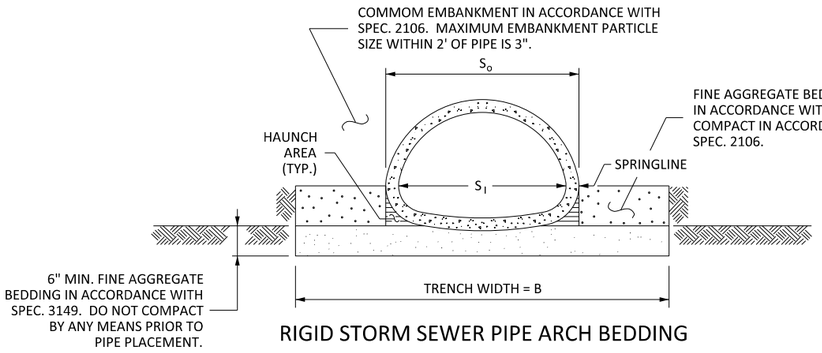
TRENCH BASE WIDTH (1) (2)	
PIPE DIA. D_I OR S_I	TRENCH WIDTH B
< 42"	D_o + 24"
42" TO 54"	1.5 x D_o
> 54"	D_o + 36"

PLASTIC PIPE WITH H > 10' (1) (2)

PIPE DIA.	TRENCH WIDTH (FEET)
12"	5' 2"
15"	5' 6"
18"	5' 9"
24"	6' 6"
30"	8' 0"
36"	9' 6"
42"	11' 0"
48"	12' 6"



FLEXIBLE STORM SEWER PIPE BEDDING



RIGID STORM SEWER PIPE ARCH BEDDING

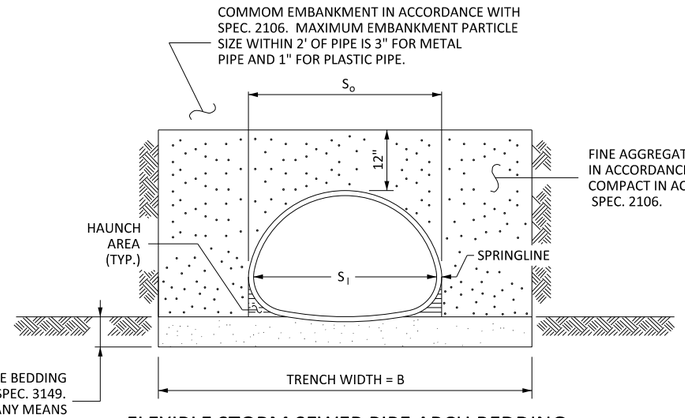
LEGEND

D_I = INSIDE DIAMETER OF ROUND PIPE (INCHES).
D_o = OUTSIDE DIAMETER OF ROUND PIPE (INCHES).
S_I = INSIDE SPAN OF PIPE-ARCH (INCHES).
S_o = OUTSIDE SPAN OF PIPE-ARCH (INCHES).
H = FILL COVER HEIGHT OVER PIPE (FEET).

= UNDISTURBED SOIL

= COMPACTED BEDDING

= LOOSE BEDDING, COMPACTED AFTER PIPE PLACEMENT



FLEXIBLE STORM SEWER PIPE ARCH BEDDING

CONSTRUCTION SEQUENCE

1. LOOSELY PLACE 6" OF FINE AGGREGATE BEDDING MATERIAL TO GRADE. DO NOT COMPACT PRIOR TO PIPE PLACEMENT.
2. FOR PIPES WITH BELL, REMOVE MATERIAL IN BELL AREA PRIOR TO PLACEMENT.
3. FURNISH AND INSTALL PIPE TO GRADE.
4. AFTER PLACEMENT OF THE PIPE, PLACE ADDITIONAL FINE AGGREGATE BEDDING AND COMPACT THE FULL LENGTH ON BOTH SIDES OF THE PIPE UNDERNEATH THE HAUNCH AREA BY FIRST SHOVEL SLICING (MANUALLY SHOVE THE BLADE END OF SHOVEL AT AN ANGLE DOWN THE ENTIRE LENGTH OF HAUNCH UNDER THE PIPE). THEN COMPACT THE HAUNCH AT AN ANGLE USING A POWERED MECHANICAL OR PNEUMATIC DEVICE (I.E. POLE TAMPER, JUMPING JACK, OR SIMILAR).
5. COMPACT THE REMAINING MATERIAL OUTSIDE THE HAUNCH AREA TO THE REQUIREMENTS OF SPEC. 2106 ENSURING THAT THE ENTIRE LENGTH OF PIPE IS SUPPORTED UNIFORMLY BY BEDDING.
6. PLACE AND COMPACT BACKFILL EVENLY AND SIMULTANEOUSLY IN 6" LIFTS ON EACH SIDE OF THE PIPE UP TO THE SPRINGLINE FOR RIGID PIPE AND 12" ABOVE THE TOP OF THE PIPE FOR FLEXIBLE PIPE WHEN COMPACTED.
7. COMPLETE REMAINING BACKFILL.

NOTES

EXCAVATE AND CONSTRUCT ALL TRENCHES AND SLOPES IN ACCORDANCE WITH OSHA REQUIREMENTS.

PIPE SIZE IS BASED ON THE NOMINAL INSIDE DIAMETER OR SPAN.

PROTECT ALL PIPE DURING CONSTRUCTION IN ACCORDANCE WITH SPEC. 2503.

WHEN RIPRAP IS REQUIRED AT THE APRON END, SEE STANDARD PLATE OR PLAN FOR RIPRAP PLACEMENT AND QUANTITIES. FOR APRONS WITHOUT RIPRAP PLACE 6" MIN. FINE AGGREGATE BEDDING UNDER APRONS. USE A TRENCH WIDTH EQUAL TO THE PIPE TRENCH WIDTH.

FINE AGGREGATE BEDDING INCLUDING THE COST OF EXCAVATION, PLACEMENT AND COMPACTION IS INCLUDED IN THE CONTRACT UNIT PRICE OF THE RELEVANT STORM SEWER PAY ITEM.

EXCAVATION AND BACKFILL WITH COMMON EMBANKMENT ARE NOT TABULATED SEPARATELY BUT ARE INCLUDED IN THE CONTRACT UNIT PRICE OF THE RELEVANT STORM SEWER PAY ITEM.

RIGID PIPE INCLUDES CONCRETE. FLEXIBLE PIPE INCLUDES METAL, AND PLASTIC MATERIALS SUCH AS CORRUGATED POLYPROPYLENE (PP), CORRUGATED POLYETHYLENE (CP) AND POLYVINYL CHLORIDE (PVC).

(1) MODIFY TRENCH WIDTH AND SLOPE AS NECESSARY TO COMPLY WITH OSHA REQUIREMENTS.

(2) USE PLASTIC PIPE TABLE FOR TRENCH WIDTHS WHEN FILL HEIGHT IS GREATER THAN 10'.

LEAD EXPERT OFFICE	EDWARD LUTGEN OFFICE DIRECTOR BRIDGE OFFICE		STANDARD STORM SEWER BEDDING FOR RIGID AND FLEXIBLE PIPE	APPROVED: 11-15-2024	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.442	1 OF 1

STANDARD PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 57 OF 220 SHEETS

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1/23/2025
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GENERAL NOTES

1. ALL STATION CALLOUTS REFERENCE THE ADJACENT ALIGNMENT UNLESS OTHERWISE NOTED.
2. CONTRACTOR TO VERIFY REMOVAL LIMITS WITH ENGINEER PRIOR TO PERFORMING SAWCUTTING OR TREE REMOVALS.
3. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.

SPECIFIC NOTES

(1) SAWING BITUMINOUS PAVEMENT (FULL DEPTH).

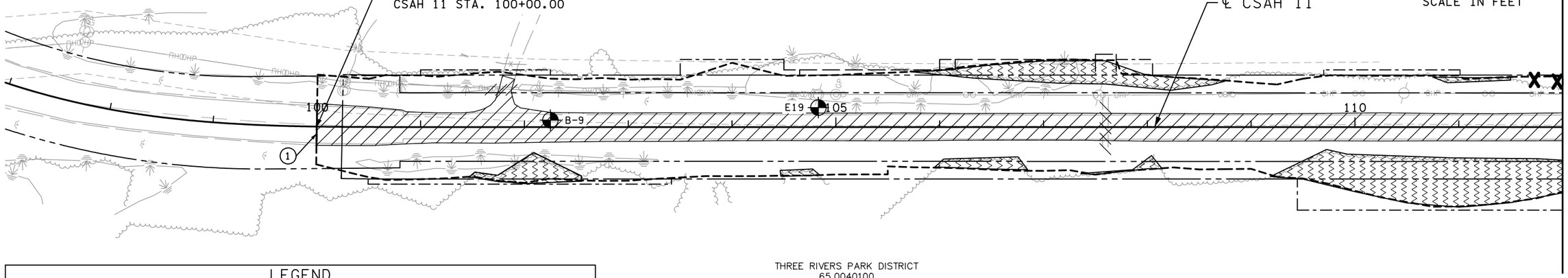
THREE RIVERS PARK DISTRICT
65.0030100

THREE RIVERS PARK DISTRICT
65.0040100

BEGIN CONSTRUCTION
BEGIN FULL DEPTH RECLAMATION
CSAH 11 STA. 100+00.00

℄ CSAH 11

100
SCALE IN FEET



THREE RIVERS PARK DISTRICT
65.0040100

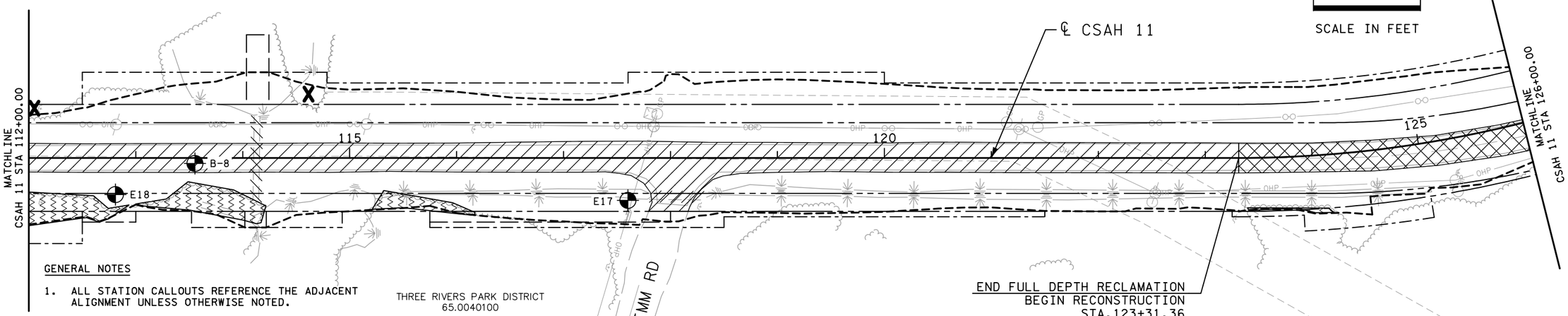
LEGEND

CONSTRUCTION LIMITS	REMOVE PIPE CULVERT
EXISTING RIGHT OF WAY	REMOVE CURB & GUTTER
PROPOSED RIGHT OF WAY	CLEARING & GRUBBING (EACH)
TEMPORARY EASEMENT	CLEARING & GRUBBING (ACRE)
PROPOSED DRAINAGE AND UTILITY EASEMENT	FULL DEPTH RECLAMATION
PROPOSED TRAIL EASEMENT	REMOVE BITUMINOUS PAVEMENT
	GEOTECHNICAL BORING LOCATION

THREE RIVERS PARK DISTRICT
65.0030100

100
SCALE IN FEET

℄ CSAH 11



GENERAL NOTES

1. ALL STATION CALLOUTS REFERENCE THE ADJACENT ALIGNMENT UNLESS OTHERWISE NOTED.
2. CONTRACTOR TO VERIFY REMOVAL LIMITS WITH ENGINEER PRIOR TO PERFORMING SAWCUTTING OR TREE REMOVALS.
3. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.

THREE RIVERS PARK DISTRICT
65.0040100

END FULL DEPTH RECLAMATION
BEGIN RECONSTRUCTION
STA.123+31.36

THREE RIVERS PARK DISTRICT
65.0030100

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

INPLACE TOPOGRAPHY & REMOVAL PLAN

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 58 OF 220 SHEETS

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1/22/2025
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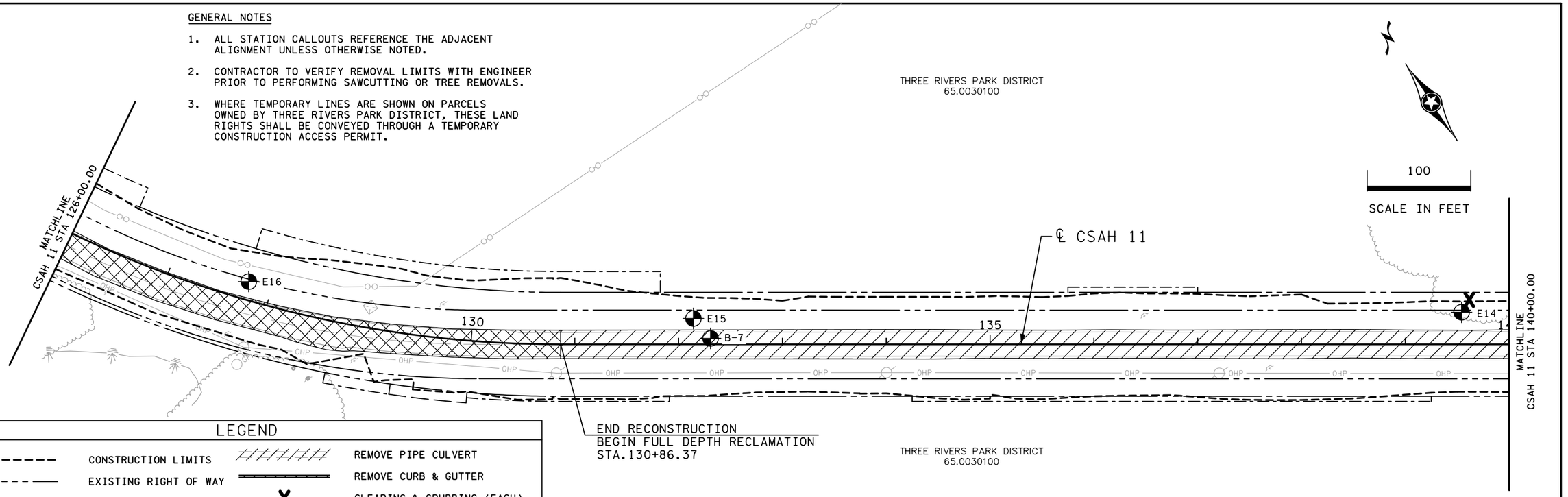
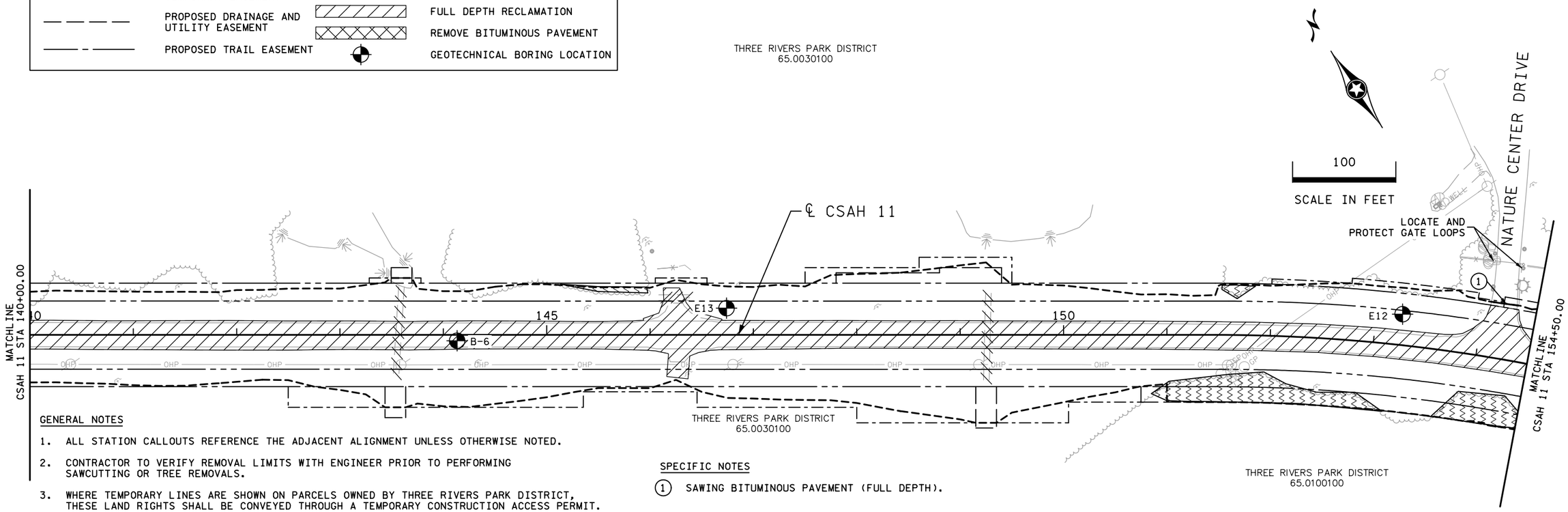
GENERAL NOTES

1. ALL STATION CALLOUTS REFERENCE THE ADJACENT ALIGNMENT UNLESS OTHERWISE NOTED.
2. CONTRACTOR TO VERIFY REMOVAL LIMITS WITH ENGINEER PRIOR TO PERFORMING SAWCUTTING OR TREE REMOVALS.
3. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.



LEGEND

CONSTRUCTION LIMITS	REMOVE PIPE CULVERT
EXISTING RIGHT OF WAY	REMOVE CURB & GUTTER
PROPOSED RIGHT OF WAY	CLEARING & GUTTER (EACH)
TEMPORARY EASEMENT	CLEARING & GRUBBING (ACRE)
PROPOSED DRAINAGE AND UTILITY EASEMENT	FULL DEPTH RECLAMATION
PROPOSED TRAIL EASEMENT	REMOVE BITUMINOUS PAVEMENT
	GEOTECHNICAL BORING LOCATION



GENERAL NOTES

1. ALL STATION CALLOUTS REFERENCE THE ADJACENT ALIGNMENT UNLESS OTHERWISE NOTED.
2. CONTRACTOR TO VERIFY REMOVAL LIMITS WITH ENGINEER PRIOR TO PERFORMING SAWCUTTING OR TREE REMOVALS.
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SPECIFIC NOTES

(1) SAWING BITUMINOUS PAVEMENT (FULL DEPTH).

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

INPLACE TOPOGRAPHY & REMOVAL PLAN

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 59 OF 220 SHEETS

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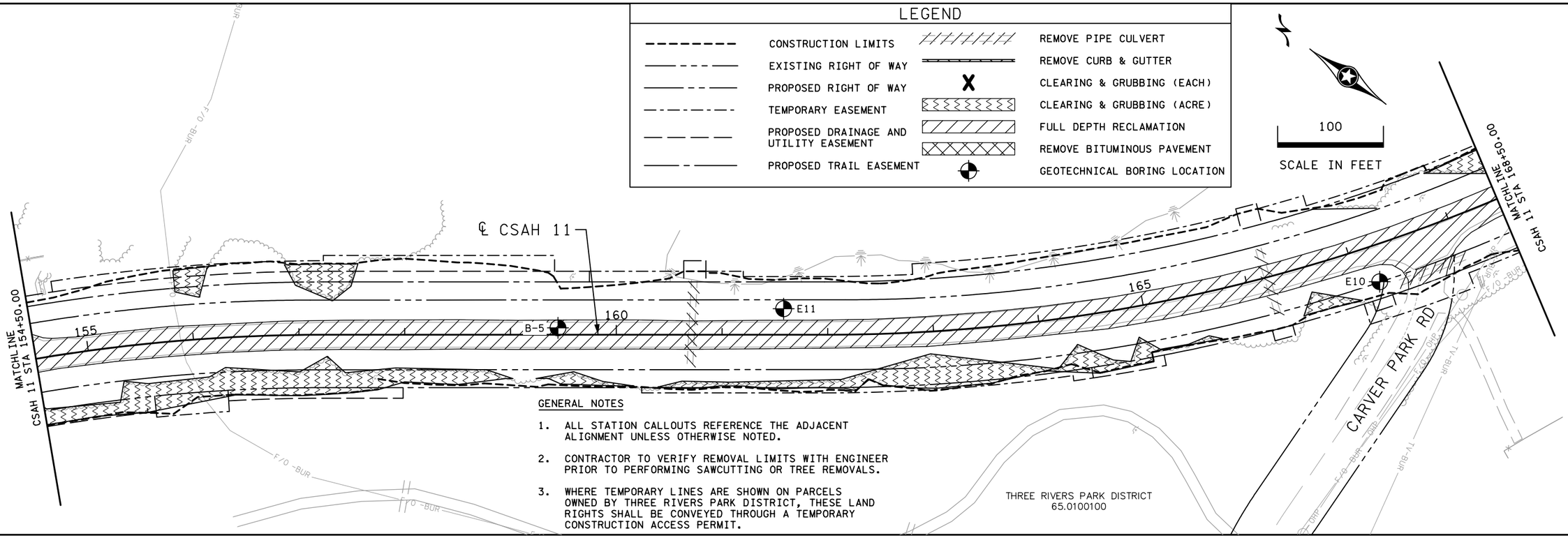
LEGEND

- CONSTRUCTION LIMITS
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- TEMPORARY EASEMENT
- PROPOSED DRAINAGE AND UTILITY EASEMENT
- PROPOSED TRAIL EASEMENT
- REMOVE PIPE CULVERT
- REMOVE CURB & GUTTER
- CLEARING & GRUBBING (EACH)
- CLEARING & GRUBBING (ACRE)
- FULL DEPTH RECLAMATION
- REMOVE BITUMINOUS PAVEMENT
- GEOTECHNICAL BORING LOCATION



GENERAL NOTES

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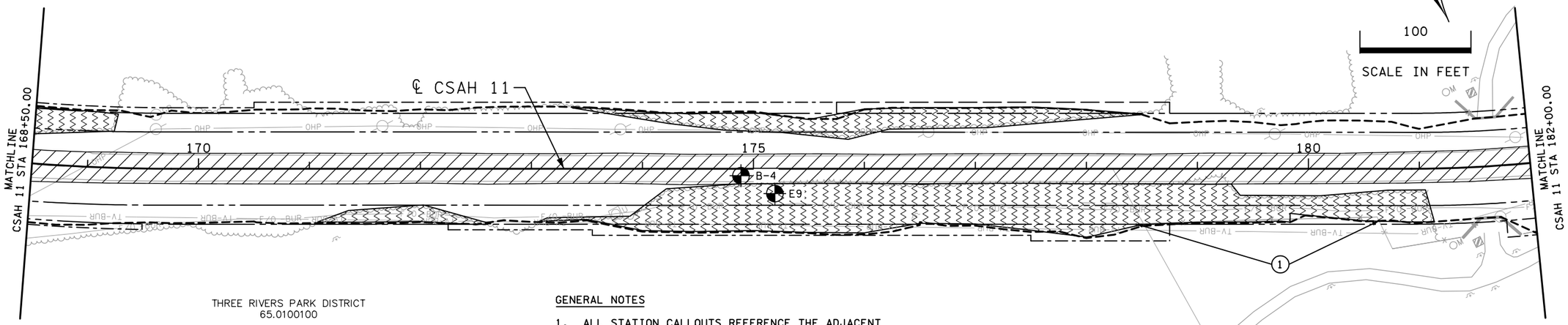
2. CONTRACTOR TO VERIFY REMOVAL LIMITS WITH ENGINEER PRIOR TO PERFORMING SAWCUTTING OR TREE REMOVALS.
3. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.

THREE RIVERS PARK DISTRICT
65.0100100

THREE RIVERS PARK DISTRICT
65.0100100



GENERAL NOTES

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3. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.

THREE RIVERS PARK DISTRICT
65.0100100

THREE RIVERS PARK DISTRICT
07.0100100

SPECIFIC NOTES

(1) SALVAGE FENCE.

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1/22/2025
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NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

INPLACE TOPOGRAPHY & REMOVAL PLAN

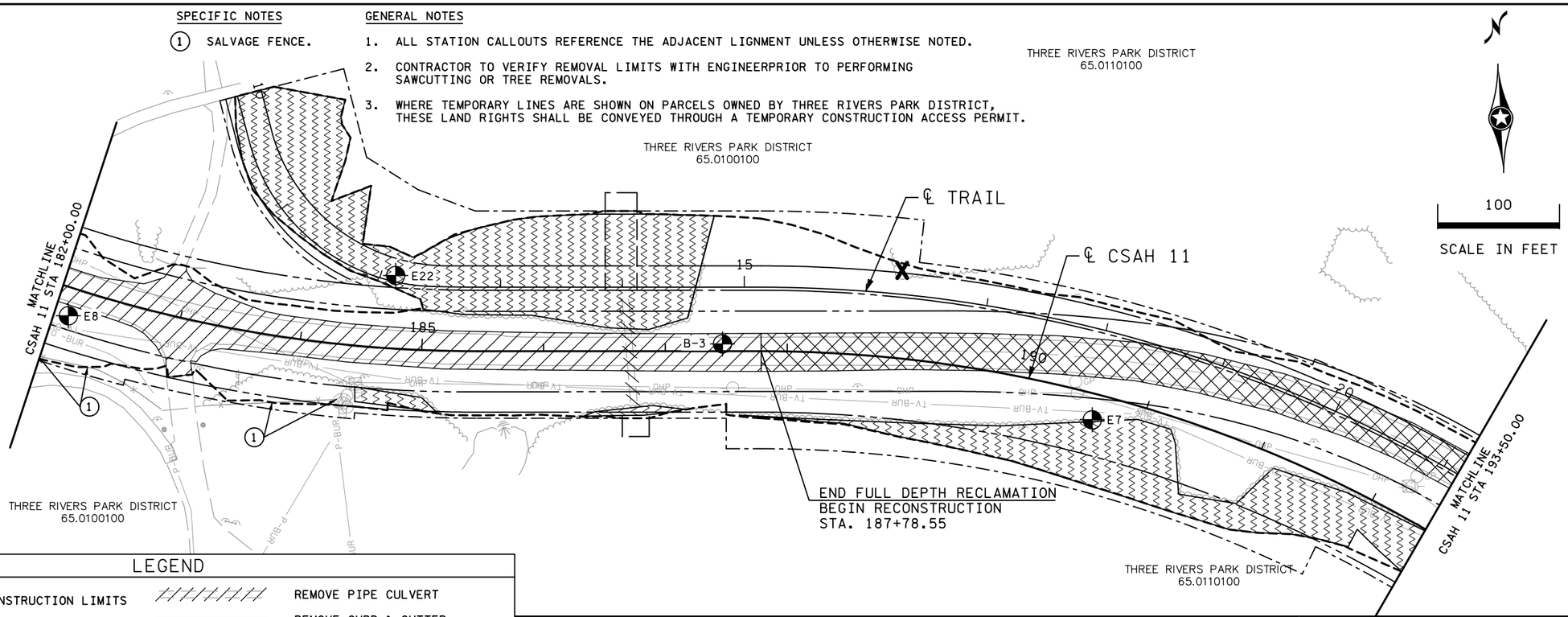
SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 60 OF 220 SHEETS

SPECIFIC NOTES

(1) SALVAGE FENCE.

GENERAL NOTES

1. ALL STATION CALLOUTS REFERENCE THE ADJACENT LIGNMENT UNLESS OTHERWISE NOTED.
2. CONTRACTOR TO VERIFY REMOVAL LIMITS WITH ENGINEERPRIOR TO PERFORMING SAWCUTTING OR TREE REMOVALS.
3. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.

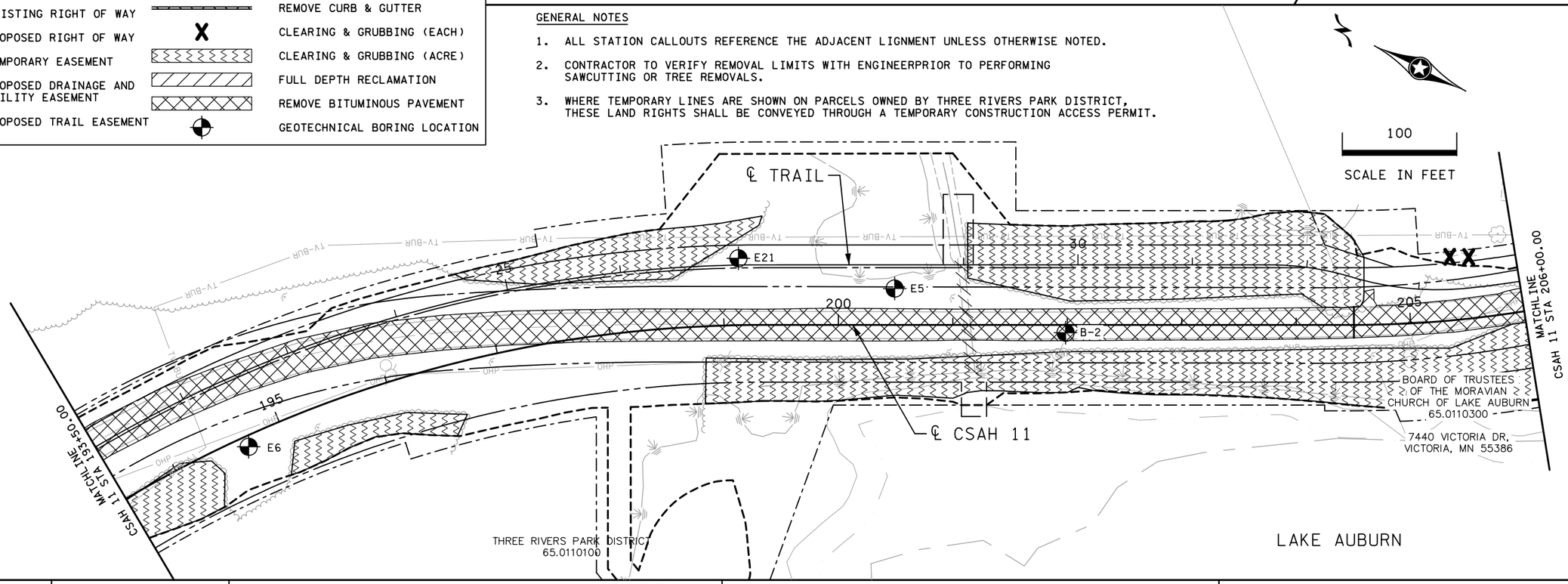


LEGEND

CONSTRUCTION LIMITS	REMOVE PIPE CULVERT
EXISTING RIGHT OF WAY	REMOVE CURB & GUTTER
PROPOSED RIGHT OF WAY	CLEARING & GRUBBING (EACH)
TEMPORARY EASEMENT	CLEARING & GRUBBING (ACRE)
PROPOSED DRAINAGE AND UTILITY EASEMENT	FULL DEPTH RECLAMATION
PROPOSED TRAIL EASEMENT	REMOVE BITUMINOUS PAVEMENT
	GEOTECHNICAL BORING LOCATION

GENERAL NOTES

1. ALL STATION CALLOUTS REFERENCE THE ADJACENT LIGNMENT UNLESS OTHERWISE NOTED.
2. CONTRACTOR TO VERIFY REMOVAL LIMITS WITH ENGINEERPRIOR TO PERFORMING SAWCUTTING OR TREE REMOVALS.
3. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.



NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

INPLACE TOPOGRAPHY & REMOVAL PLAN

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 61 OF 220 SHEETS

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1/22/2025
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BOARD OF TRUSTEES OF THE MORAVIAN CHURCH OF LAKE AUBURN
65.0110300

7440 VICTORIA DR,
VICTORIA, MN 55386

THE MORAVIAN CHURCH OF LAKE AUBURN
65.3100060

7460 VICTORIA DR,
VICTORIA, MN 55386

NICHOLAS P HUGHES
65.3100080

7520 VICTORIA DR,
VICTORIA, MN 55386

GREGORY WITTA
65.3100070

7510 VICTORIA DR,
VICTORIA, MN 55386

WISTERIA ST

GREGORY & HEIDI PAVETT
65.3100110

7500 VICTORIA DR,
VICTORIA, MN 55386

THE HUMANITY ALLIANCE
65.0110220

7600 VICTORIA DR,
VICTORIA, MN 55386

℄ TRAIL

℄ CSAH 11

MATCHLINE
CSAH 11 STA 206+00.00

MATCHLINE
CSAH 11 STA 219+50.00

E1 E2 E3 E4

35 40 45

210 215

BOARD OF TRUSTEES OF THE MORAVIAN CHURCH OF LAKE AUBURN
65.0110300

7440 VICTORIA DR,
VICTORIA, MN 55386

THE MORAVIAN CHURCH OF LAKE AUBURN
65.0110210
CERT. 22471

7545 VICTORIA DR,
VICTORIA, MN 55386

THREE RIVERS PARK DISTRICT
65.0110200

LAKE AUBURN

LAKE AUBURN

END RECONSTRUCTION
BEGIN FULL DEPTH RECLAMATION
STA. 218+55.23

100
SCALE IN FEET

GENERAL NOTES

1. ALL STATION CALLOUTS REFERENCE THE ADJACENT ALIGNMENT UNLESS OTHERWISE NOTED.
2. CONTRACTOR TO VERIFY REMOVAL LIMITS WITH ENGINEER PRIOR TO PERFORMING SAWCUTTING OR TREE REMOVALS.
3. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.

SPECIFIC NOTES

(1) SAWING BITUMINOUS PAVEMENT (FULL DEPTH).
(2) PROTECT EXISTING CURB (INCIDENTAL).
(3) RELOCATE ELECTRONIC CHURCH SIGN BY OTHERS.
(4) SALVAGE MAIL BOX SUPPORT.

LEGEND

- CONSTRUCTION LIMITS
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- TEMPORARY EASEMENT
- PROPOSED DRAINAGE AND UTILITY EASEMENT
- PROPOSED TRAIL EASEMENT
- REMOVE PIPE CULVERT
- REMOVE CURB & GUTTER
- CLEARING & GRUBBING (EACH)
- CLEARING & GRUBBING (ACRE)
- FULL DEPTH RECLAMATION
- REMOVE BITUMINOUS PAVEMENT
- GEOTECHNICAL BORING LOCATION

THREE RIVERS PARK DISTRICT
65.0110100

END CONSTRUCTION
END FULL DEPTH RECLAMATION
CSAH 11 STA. 224+53.70

℄ TRAIL

℄ CSAH 11

MATCHLINE
CSAH 11 STA 219+50.00

E1 E20 B-1

50 220

100
SCALE IN FEET

THREE RIVERS PARK DISTRICT
65.0110100

CITY OF VICTORIA
65.0144500

THREE RIVERS PARK DISTRICT
65.0110200

LAKE AUBURN

GENERAL NOTES

1. ALL STATION CALLOUTS REFERENCE THE ADJACENT ALIGNMENT UNLESS OTHERWISE NOTED.
2. CONTRACTOR TO VERIFY REMOVAL LIMITS WITH ENGINEER PRIOR TO PERFORMING SAWCUTTING OR TREE REMOVALS.
3. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.

SPECIFIC NOTES

(1) SAWING BITUMINOUS PAVEMENT (FULL DEPTH).

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1/22/2025
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NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

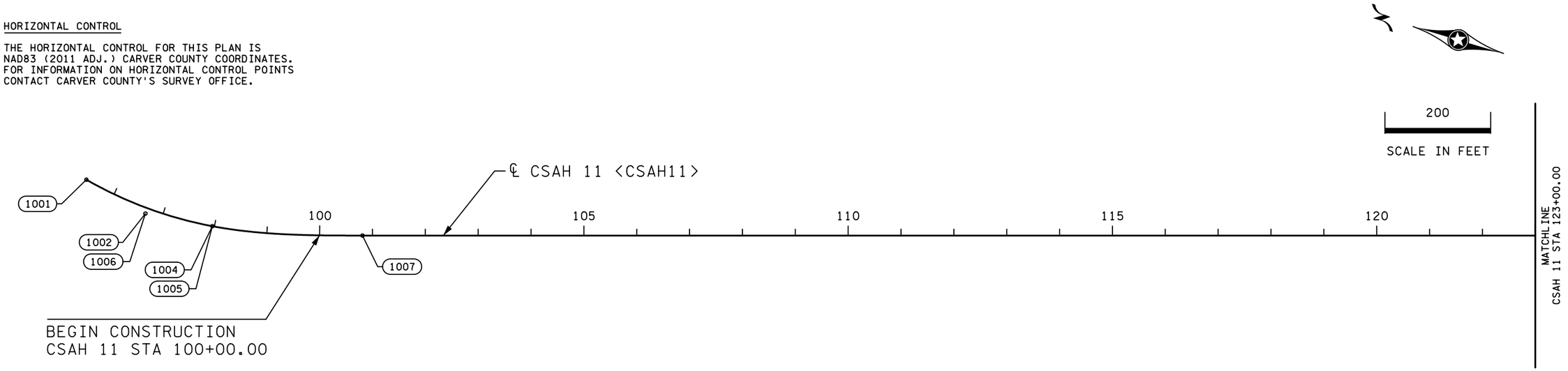
INPLACE TOPOGRAPHY & REMOVAL PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 62 OF 220 SHEETS

HORIZONTAL CONTROL

THE HORIZONTAL CONTROL FOR THIS PLAN IS NAD83 (2011 ADJ.) CARVER COUNTY COORDINATES. FOR INFORMATION ON HORIZONTAL CONTROL POINTS CONTACT CARVER COUNTY'S SURVEY OFFICE.



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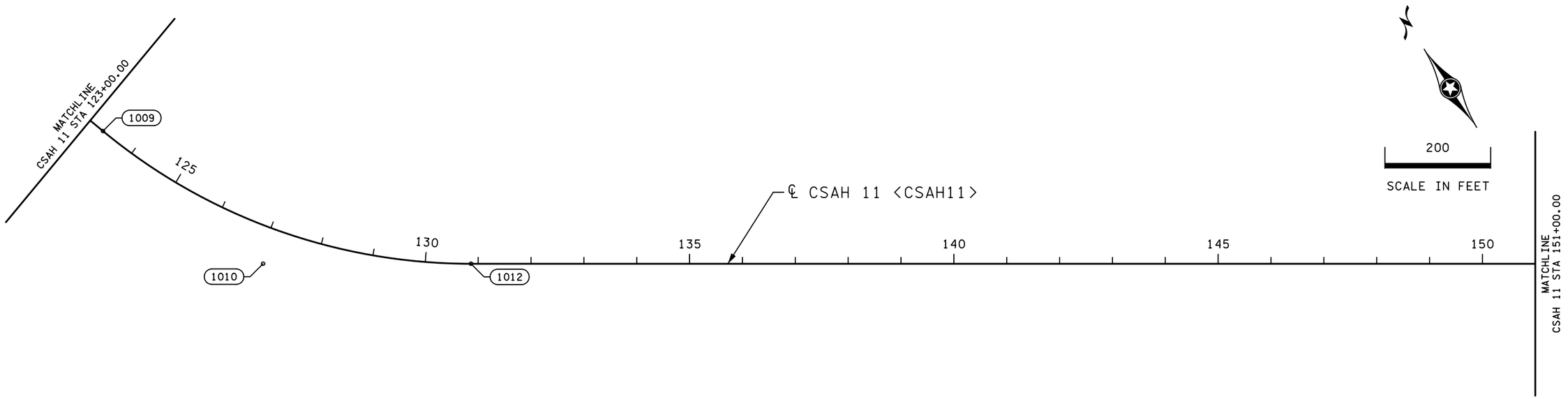
(XXXX) ALIGNMENT POINT



LEGEND

(XXXX) ALIGNMENT POINT

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE: Eric Nelson
DATE 01/10/25 LICENSE # 43560

ALIGNMENT PLAN AND TABULATION

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 63 OF 220 SHEETS

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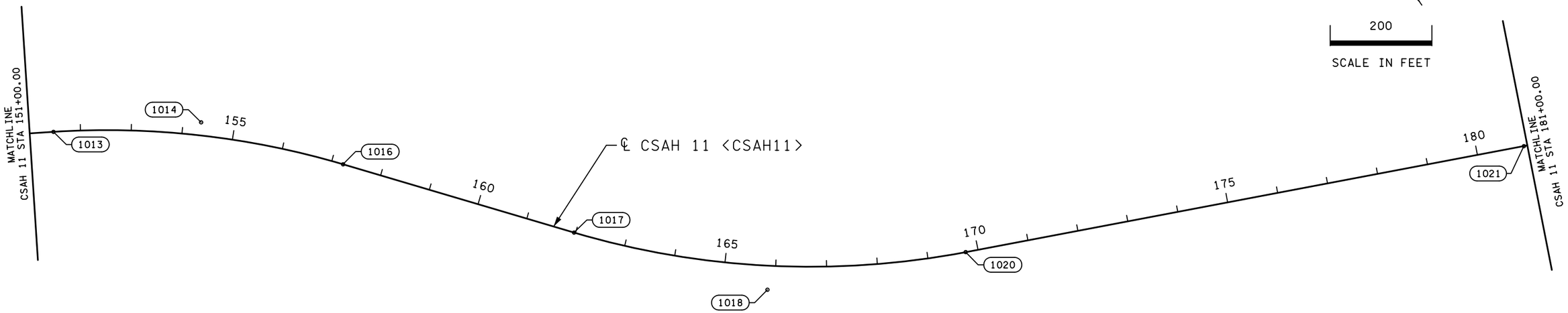

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SCALE IN FEET

LEGEND	
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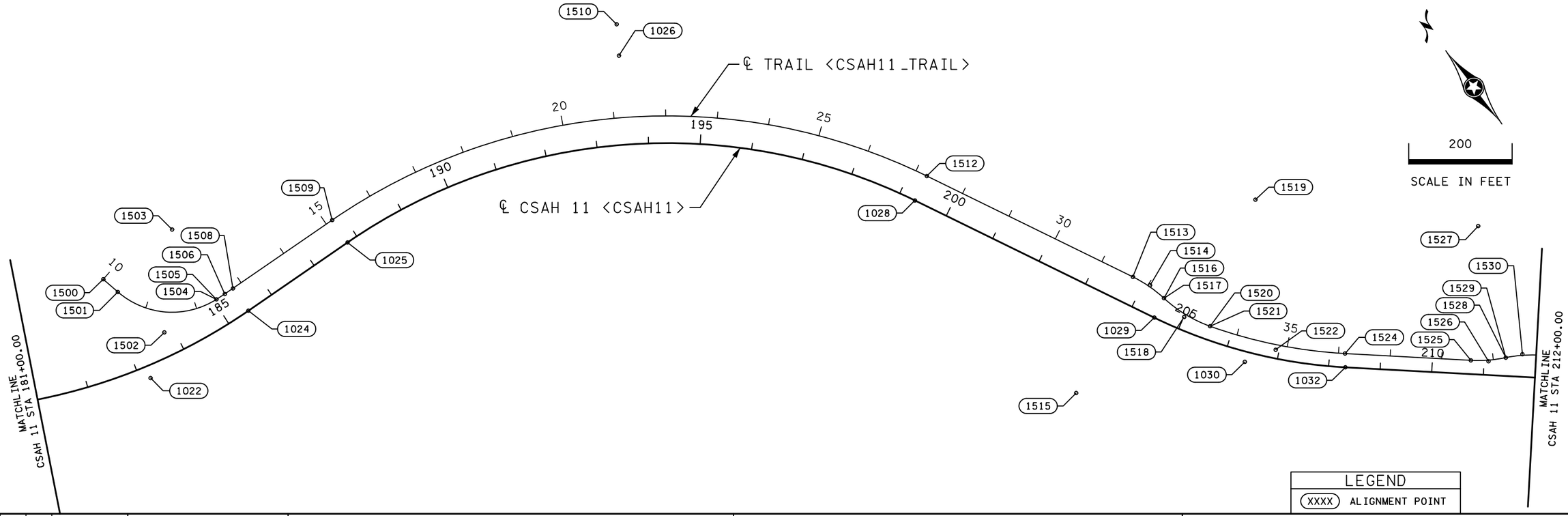

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SCALE IN FEET

LEGEND	
XXXX	ALIGNMENT POINT

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NO	DATE	DWN	CKD	REVISIONS

ALLIANT

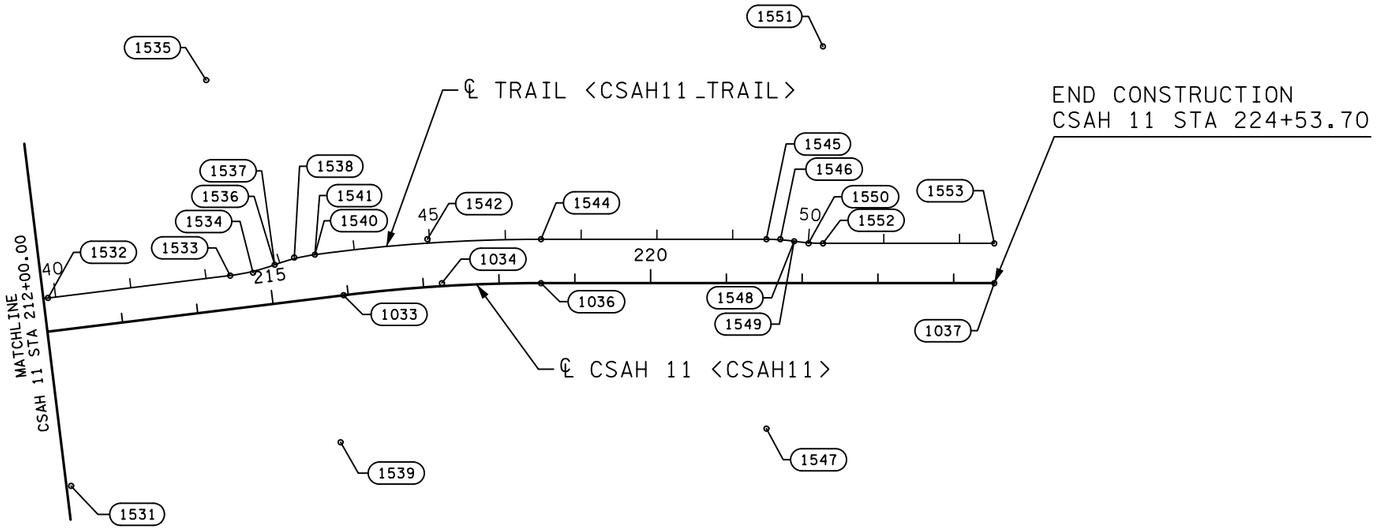
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

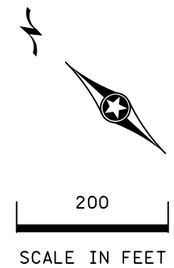
PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

ALIGNMENT PLAN AND TABULATION

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 64 OF 220 SHEETS





LEGEND	
XXXX	ALIGNMENT POINT

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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SIGNATURE:
DATE 01/10/25 LICENSE # 43560

ALIGNMENT PLAN AND TABULATION

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 65 OF 220 SHEETS

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1/22/2025
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ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
		CSAH 11 <CSAH11>								
1001	PC	95+40.773						515,932.6043	191,114.0447	193° 19' 24.00"
1002	PI	96+69.649	19° 08' 58.99" LT	7° 29' 58.01"	764.000'	128.876'	255.348'	515,902.9053	190,988.6373	PI
1003, 1008	CC	(1)						516,676.0413	190,937.9839	
1004	CS	97+96.121						515,915.9880	190,860.4269	174° 10' 25.01"
1005	CS	97+96.121						515,915.9880	190,860.4269	174° 10' 25.01"
1006	PI	98+91.437	10° 41' 12.17"	7° 29' 58.01"	95.316'	190.347'	285.000'	515,925.6640	190,765.6034	PI
1007	ST	100+81.121						515,979.7673	190,583.1069	163° 29' 12.84"
1009	PC	123+31.359						516,619.3625	188,425.6811	163° 29' 12.84"
1010	PI	127+24.689	39° 39' 02.71" LT	5° 15' 06.03"	1,091.000'	393.330'	755.012'	516,731.1605	188,048.5740	PI
1011	CC	(1)						517,665.3639	188,735.7810	
1012	PT	130+86.370						517,057.8736	187,829.5600	123° 50' 10.13"
1013	PC	151+46.906						518,769.4235	186,682.2129	123° 50' 10.13"
1014	PI	154+37.968	20° 09' 49.93" RT	3° 30' 00.17"	1,637.000'	291.062'	576.103'	519,011.1890	186,520.1440	PI
1015	CC	(1)						517,857.9096	185,322.4661	
1016	PT	157+23.009						519,182.2707	186,284.6702	144° 00' 00.06"
1017	PC	161+96.819						519,460.7692	185,901.3497	144° 00' 00.06"
1018	PI	165+93.665	27° 15' 13.75" LT	3° 30' 00.17"	1,637.000'	396.846'	778.670'	519,694.0292	185,580.2945	PI
1019	CC	(1)						520,785.1302	186,863.5538	
1020	PT	169+75.489						520,048.4161	185,401.6983	116° 44' 46.31"
1021	PC	180+93.050						521,046.4081	184,898.7521	116° 44' 46.31"
1022	PI	183+22.604	23° 45' 51.20" LT	5° 15' 06.03"	1,091.000'	229.554'	452.507'	521,251.4019	184,795.4438	PI
1023	CC	(1)						521,537.4008	185,873.0247	
1024	PT	185+45.558						521,480.6451	184,783.5020	92° 58' 55.10"
1025	PC	187+78.545						521,713.3172	184,771.3815	92° 58' 55.10"
1026	PI	194+16.004	60° 35' 40.19" RT	5° 15' 06.03"	1,091.000'	637.459'	1,153.813'	522,349.9127	184,738.2198	PI
1027	CC	(1)						521,656.5615	183,681.8588	
1028	PT	199+32.358						522,633.5837	184,167.3571	153° 34' 35.29"
1029	PC	204+48.058						522,863.0718	183,705.5326	153° 34' 35.29"
1030	PI	(2) 1 206+42.966	22° 57' 12.56" LT	5° 58' 05.92"	960.000'	194.908'	384.589'	522,949.8066	183,530.9864	PI
1031	CC	(1)						523,722.7797	184,132.7355	
1032	PT	208+32.647						523,097.7441	183,404.0857	130° 37' 22.73"
1033	PC	215+94.037						523,675.6470	182,908.3608	130° 37' 23.18"
1034	PI	217+24.792	7° 00' 09.68" RT	2° 40' 52.07"	2,137.000'	130.755'	261.184'	523,774.8911	182,823.2289	PI
1035	CC	(1)						522,284.2883	181,286.3590	
1036	PT	218+55.222						523,863.0159	182,726.6326	137° 37' 32.86"
1037	POT	224+53.696						524,266.3695	182,284.5045	

SPECIFIC NOTES:

(1) ALIGNMENT POINT IS NOT SHOWN ON ALIGNMENT PLAN VIEW.

(2) DESIGN SPEED OF 40 MPH. 1

NO	DATE	DWN	CKD	REVISIONS
1	01/24/25	GMK	EN	ADDENDUM #1

ALLIANT

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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/24/25 LICENSE # 43560

ALIGNMENT TABULATION

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 66 OF 220 SHEETS

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ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
TRAIL <CSAH11_TRAIL>										
1500	POT	10+00.000						521,295.0199	185,002.7164	
1501	PC	10+37.389						521,302.4809	184,966.0790	168° 29' 22.23"
1502	PI	11+56.621	73° 23' 11.81" LT	35° 48' 35.50"	160.000'	119.231'	204.934'	521,326.2732	184,849.2457	PI
1503	CC							521,459.2630	184,998.0066	
1504	PCC	12+42.324						521,445.0319	184,838.6407	95° 06' 10.42"
1505	PCC	12+42.324						521,445.0319	184,838.6407	95° 06' 10.42"
1506	PI	12+61.547	2° 07' 15.32" LT	5° 31' 01.80"	1,038.500'	19.223'	38.442'	521,464.1790	184,836.9309	PI
1507	CC	(1)						521,537.4008	185,873.0247	
1508	PT	12+80.766						521,483.3762	184,835.9309	92° 58' 55.10"
1509	PC	15+13.753						521,716.0483	184,823.8104	92° 58' 55.10"
1510	PI	21+81.887	60° 35' 40.19" RT	5° 00' 38.02"	1,143.500'	668.134'	1,209.335'	522,383.2774	184,789.0529	PI
1511	CC	(1)						521,656.5615	183,681.8588	
1512	PT	27+23.089						522,680.5990	184,190.7197	153° 34' 35.29"
1513	PC	31+67.007						522,878.1439	183,793.1781	153° 34' 35.29"
1514	PI	32+03.903	16° 47' 27.11" RT	22° 55' 05.92"	250.000'	36.896'	73.264'	522,894.5629	183,760.1363	PI
1515	CC							522,654.2616	183,681.9273	
1516	PRC	32+40.271						522,900.7368	183,723.7601	170° 22' 02.40"
1517	PRC	32+40.271						522,900.7368	183,723.7601	170° 22' 02.40"
1518	PI	32+93.532	23° 09' 14.27" LT	22° 02' 12.62"	260.000'	53.261'	105.069'	522,909.6491	183,671.2495	PI
1519	CC							523,157.0710	183,767.2661	
1520	PCC	33+45.340						522,938.4908	183,626.4729	147° 12' 48.13"
1521	PCC	33+45.340						522,938.4908	183,626.4729	147° 12' 48.13"
1522	PI	34+79.960	16° 35' 25.40" LT	6° 12' 19.23"	923.330'	134.620'	267.357'	523,011.3893	183,513.2987	PI
1523	CC	(1)						523,714.7279	184,126.4673	
1524	PT	36+12.697						523,113.5674	183,425.6504	130° 37' 22.73"
1525	PC	38+56.445						523,298.5753	183,266.9507	130° 37' 22.73"
1526	PI	38+90.627	14° 58' 45.21" LT	22° 02' 12.62"	260.000'	34.182'	67.974'	523,324.5195	183,244.6957	PI
1527	CC							523,467.8557	183,464.2933	
1528	PRC	39+24.419						523,355.3344	183,229.9027	115° 38' 37.52"
1529	PRC	39+24.419						523,355.3344	183,229.9027	115° 38' 37.52"
1530	PI	39+57.286	14° 58' 45.21" RT	22° 55' 05.92"	250.000'	32.867'	65.359'	523,384.9641	183,215.6787	PI
1531	CC							523,247.1408	183,004.5272	
1532	PT	39+89.778						523,409.9105	183,194.2797	130° 37' 22.73"
1533	PC	42+32.109						523,593.8418	183,036.5035	130° 37' 22.73"
1534	PI	42+62.561	13° 21' 38.40" LT	22° 02' 12.62"	260.000'	30.453'	60.629'	523,616.9555	183,016.6766	PI
1535	CC							523,763.1222	183,233.8462	
1536	PRC	42+92.737						523,644.0253	183,002.7273	117° 15' 44.33"
1537	PRC	42+92.737						523,644.0253	183,002.7273	117° 15' 44.33"
1538	PI	43+20.218	12° 32' 44.82" RT	22° 55' 05.92"	250.000'	27.481'	54.741'	523,668.4533	182,990.1395	PI
1539	CC							523,529.5091	182,780.4977	
1540	PCC	43+47.479						523,689.5637	182,972.5459	129° 48' 29.14"
1541	PCC	43+47.479						523,689.5637	182,972.5459	129° 48' 29.14"

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
TRAIL <CSAH11_TRAIL>										
1542	PI	44+97.464	7° 49' 03.72" RT	2° 36' 36.76"	2,195.064'	149.985'	299.505'	523,804.7812	182,876.5227	PI
1543	CC	(1)						522,284.2435	181,286.3128	
1544	PT	46+46.983						523,905.8666	182,765.7199	137° 37' 32.86"
1545	PC	49+44.625						524,106.4678	182,545.8348	137° 37' 32.86"
1546	PI	49+63.032	8° 25' 19.88" RT	22° 55' 05.92"	250.000'	18.408'	36.749'	524,118.8739	182,532.2361	PI
1547	CC							523,921.7781	182,377.3424	
1548	PRC	49+81.373						524,129.1545	182,516.9670	146° 02' 52.74"
1549	PRC	49+81.373						524,129.1545	182,516.9670	146° 02' 52.74"
1550	PI	50+00.517	8° 25' 19.88" LT	22° 02' 12.62"	260.000'	19.144'	38.219'	524,139.8463	182,501.0871	PI
1551	CC							524,344.8259	182,662.1766	
1552	PT	50+19.592						524,152.7486	182,486.9444	137° 37' 32.86"
1553	POT	52+45.723						524,305.1543	182,319.8879	

SPECIFIC NOTES:

(1) ALIGNMENT POINT IS NOT SHOWN ON ALIGNMENT PLAN VIEW.

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NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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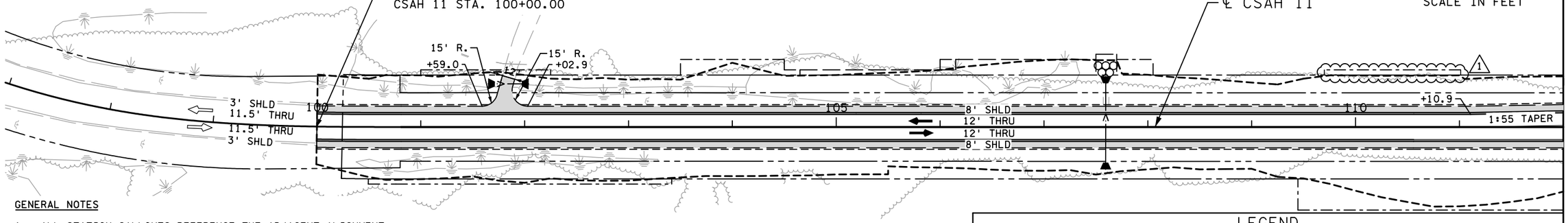
PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

ALIGNMENT TABULATION

SAP 010-611-027; CP 218931 (CSAH 11)

THREE RIVERS PARK DISTRICT
65.0030100

THREE RIVERS PARK DISTRICT
65.0040100



THREE RIVERS PARK DISTRICT
65.0040100

100
SCALE IN FEET

GENERAL NOTES

1. ALL STATION CALLOUTS REFERENCE THE ADJACENT ALIGNMENT UNLESS OTHERWISE NOTED.
2. ALL DIMENSION LOCATED AT CURB AND GUTTER ARE MEASURED TO FACE OF CURB UNLESS OTHERWISE NOTED.
3. SEE TYPICAL SECTIONS FOR PAVEMENT INSET DETAILS.
4. LANE DIMENSIONS ARE TO FULL PAVEMENT WIDTH.
5. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.

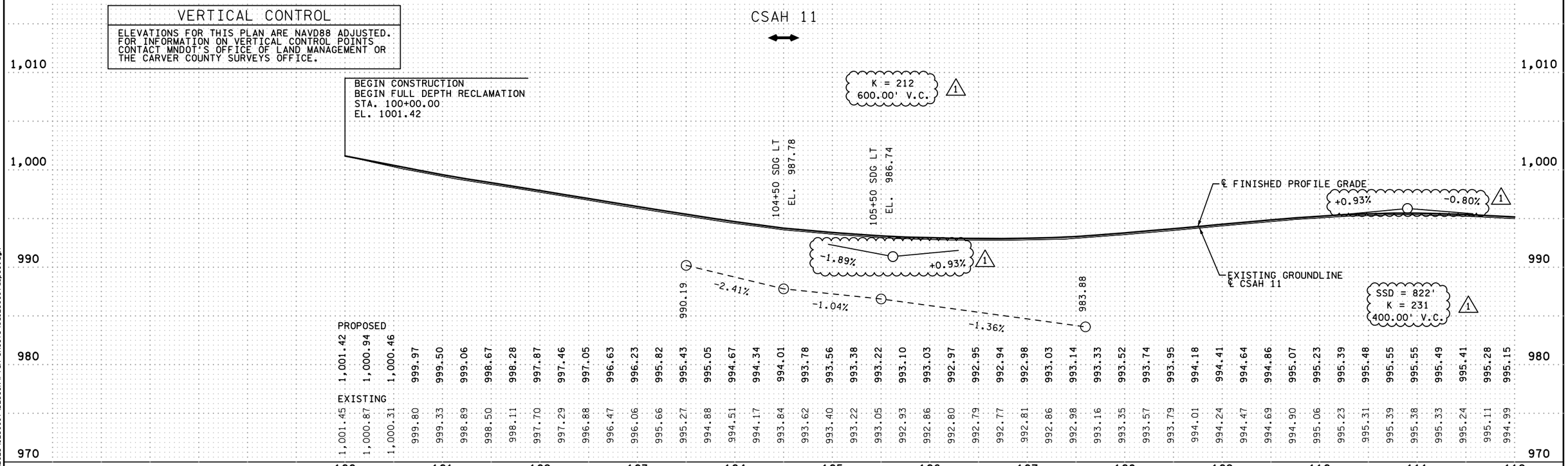
LEGEND

CONSTRUCTION LIMITS		TRAFFIC DIRECTION	
EXISTING RIGHT OF WAY		SUPERELEVATION TRANSITION	
PROPOSED RIGHT OF WAY		PAVED SHOULDER WIDENING	
TEMPORARY EASEMENT		AGGREGATE SHOULDER WIDENING	
PROPOSED DRAINAGE AND UTILITY EASEMENT		TRAIL	
PROPOSED TRAIL EASEMENT			

VERTICAL CONTROL

ELEVATIONS FOR THIS PLAN ARE NAVD88 ADJUSTED. FOR INFORMATION ON VERTICAL CONTROL POINTS CONTACT MNDOT'S OFFICE OF LAND MANAGEMENT OR THE CARVER COUNTY SURVEYS OFFICE.

CSAH 11



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	995.82	995.43	995.05	994.67	994.34	994.01	993.78	993.56	993.38	993.22	993.10	993.03	992.97
	992.95	992.94	992.98	993.03	993.14	993.33	993.52	993.74	993.95	994.18	994.41	994.64	994.86
	995.07	995.23	995.39	995.48	995.55	995.55	995.49	995.41	995.28	995.15			
EXISTING	1,001.45	1,000.87	1,000.31	999.80	999.33	998.89	998.50	998.11	997.70	997.29	996.88	996.47	996.06
	995.66	995.27	994.88	994.51	994.17	993.84	993.62	993.40	993.22	993.05	992.93	992.86	992.80
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NO	DATE	DWN	CKD	REVISIONS
1	01/24/25	GMK	EN	ADDENDUM #1

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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/24/25 LICENSE # 43560

CONSTRUCTION PLAN & PROFILE

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 68 OF 220 SHEETS

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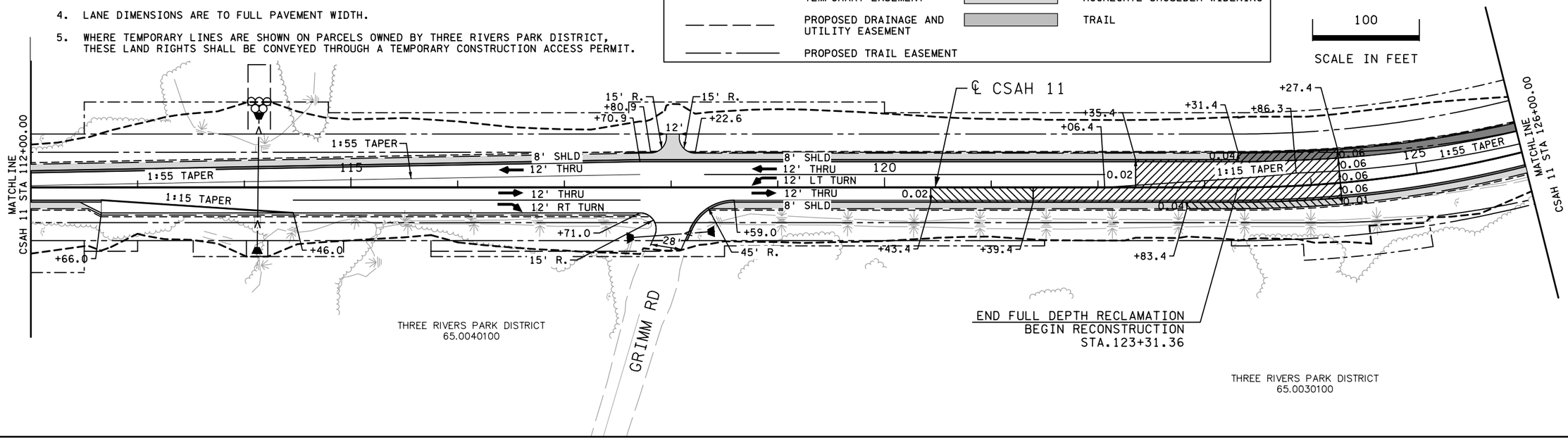
GENERAL NOTES

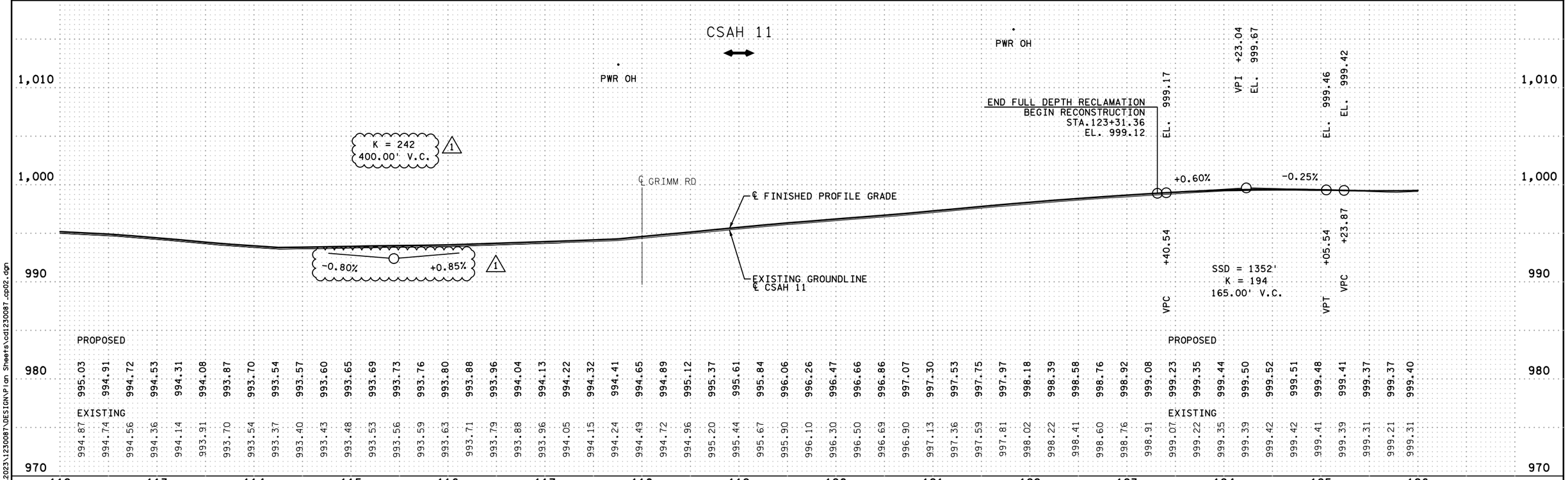
1. ALL STATION CALLOUTS REFERENCE THE ADJACENT ALIGNMENT UNLESS OTHERWISE NOTED.
2. ALL DIMENSION LOCATED AT CURB AND GUTTER ARE MEASURED TO FACE OF CURB UNLESS OTHERWISE NOTED.
3. SEE TYPICAL SECTIONS FOR PAVEMENT INSET DETAILS.
4. LANE DIMENSIONS ARE TO FULL PAVEMENT WIDTH.
5. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.

LEGEND

CONSTRUCTION LIMITS		TRAFFIC DIRECTION	
EXISTING RIGHT OF WAY		SUPERELEVATION TRANSITION	
PROPOSED RIGHT OF WAY		PAVED SHOULDER WIDENING	
TEMPORARY EASEMENT		AGGREGATE SHOULDER WIDENING	
PROPOSED DRAINAGE AND UTILITY EASEMENT		TRAIL	
PROPOSED TRAIL EASEMENT			

100
SCALE IN FEET





NO	DATE	DWN	CKD	REVISIONS
1	01/24/25	GMK	EN	ADDENDUM #1

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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/24/25 LICENSE # 43560

CONSTRUCTION PLAN & PROFILE

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 69 OF 220 SHEETS

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1/23/2025
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GENERAL NOTES

1. ALL STATION CALLOUTS REFERENCE THE ADJACENT ALIGNMENT UNLESS OTHERWISE NOTED.
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3. SEE TYPICAL SECTIONS FOR PAVEMENT INSET DETAILS.
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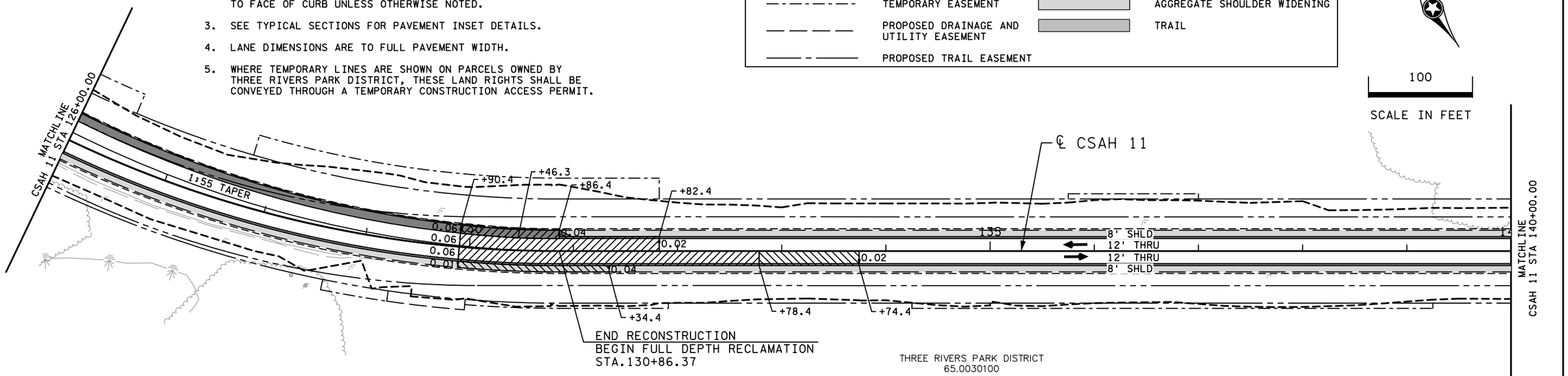
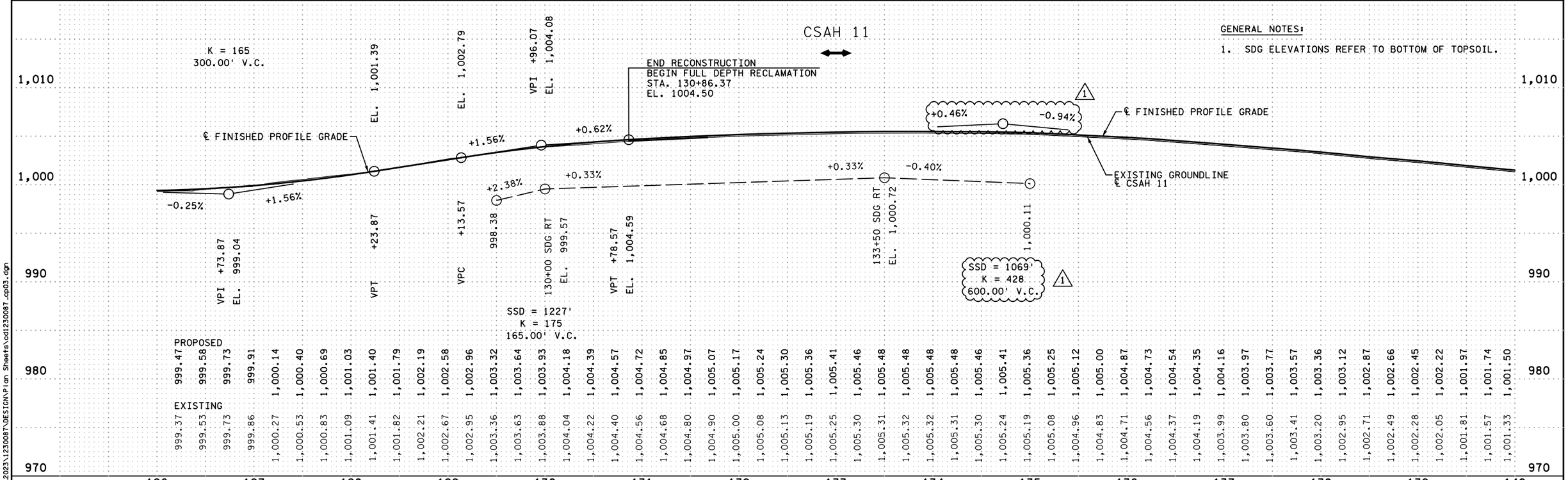
LEGEND

CONSTRUCTION LIMITS		TRAFFIC DIRECTION	
EXISTING RIGHT OF WAY		SUPERELEVATION TRANSITION	
PROPOSED RIGHT OF WAY		PAVED SHOULDER WIDENING	
TEMPORARY EASEMENT		AGGREGATE SHOULDER WIDENING	
PROPOSED DRAINAGE AND UTILITY EASEMENT		TRAIL	
PROPOSED TRAIL EASEMENT			

100

SCALE IN FEET





GENERAL NOTES:

1. SDG ELEVATIONS REFER TO BOTTOM OF TOPSOIL.

NO	DATE	DWN	CKD	REVISIONS
1	01/24/25	GMK	EN	ADDENDUM #1

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CONSTRUCTION PLAN & PROFILE

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 70 OF 220 SHEETS

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1/23/2025
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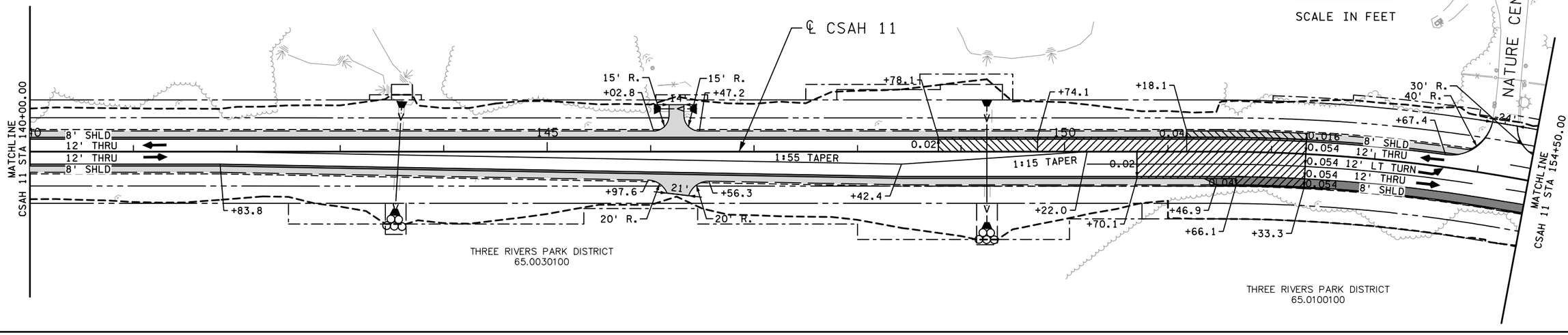
GENERAL NOTES

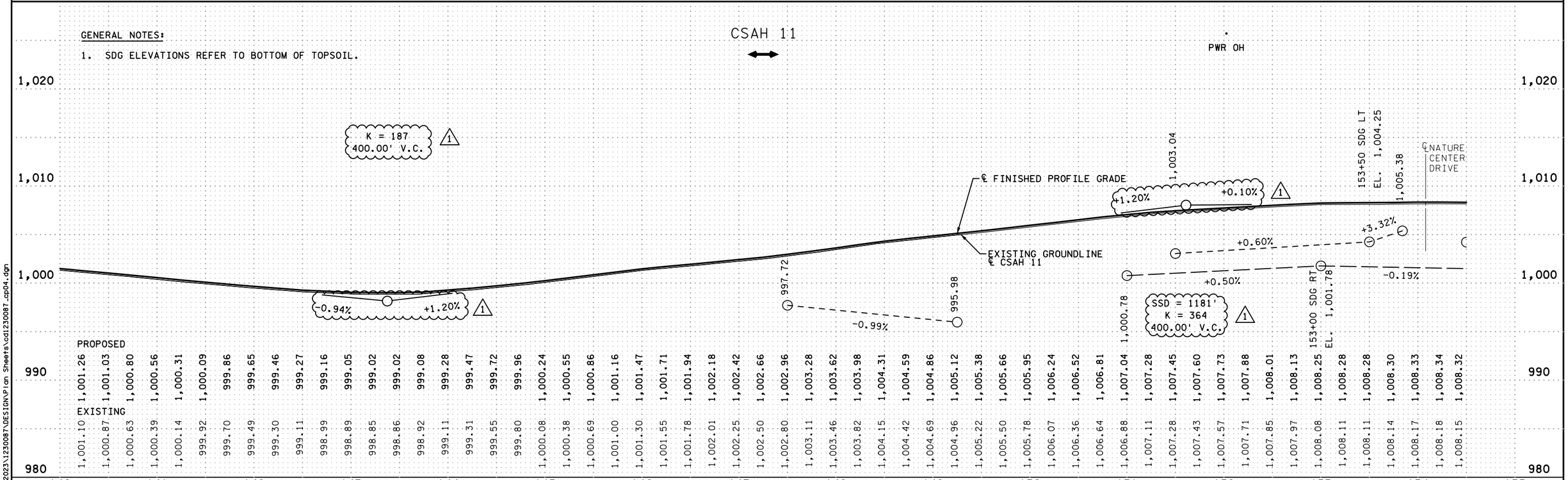
1. ALL STATION CALLOUTS REFERENCE THE ADJACENT ALIGNMENT UNLESS OTHERWISE NOTED.
2. ALL DIMENSION LOCATED AT CURB AND GUTTER ARE MEASURED TO FACE OF CURB UNLESS OTHERWISE NOTED.
3. SEE TYPICAL SECTIONS FOR PAVEMENT INSET DETAILS.
4. LANE DIMENSIONS ARE TO FULL PAVEMENT WIDTH.
5. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.

LEGEND

CONSTRUCTION LIMITS		TRAFFIC DIRECTION	
EXISTING RIGHT OF WAY		SUPERELEVATION TRANSITION	
PROPOSED RIGHT OF WAY		PAVED SHOULDER WIDENING	
TEMPORARY EASEMENT		AGGREGATE SHOULDER WIDENING	
PROPOSED DRAINAGE AND UTILITY EASEMENT		TRAIL	
PROPOSED TRAIL EASEMENT			

100
SCALE IN FEET





NO	DATE	DWN	CKD	REVISIONS
1	01/24/25	GMK	EN	ADDENDUM #1

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/24/25 LICENSE # 43560

CONSTRUCTION PLAN & PROFILE

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 71 OF 220 SHEETS

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1/23/2025
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1. ALL STATION CALLOUTS REFERENCE THE ADJACENT ALIGNMENT UNLESS OTHERWISE NOTED.
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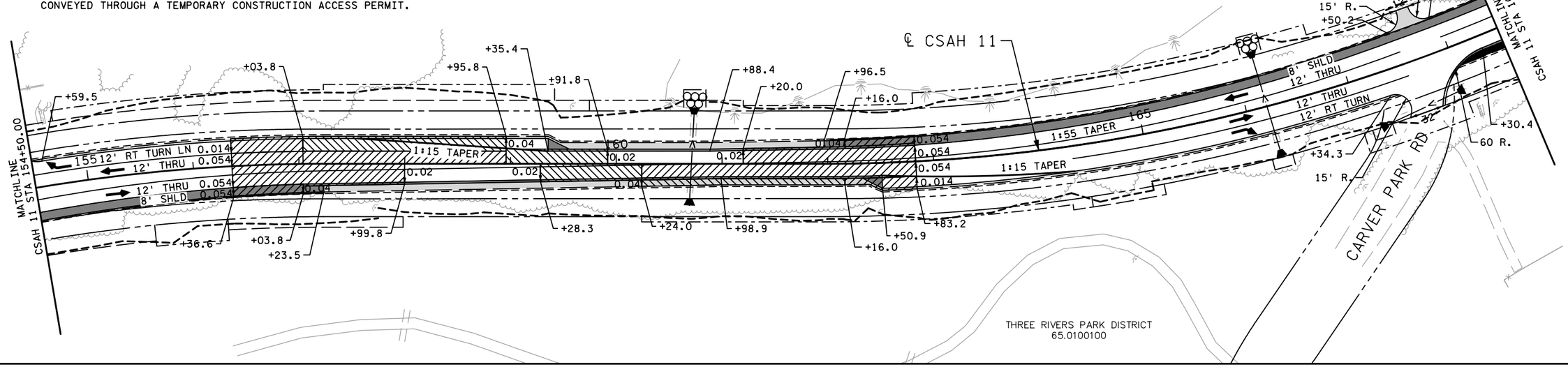
LEGEND

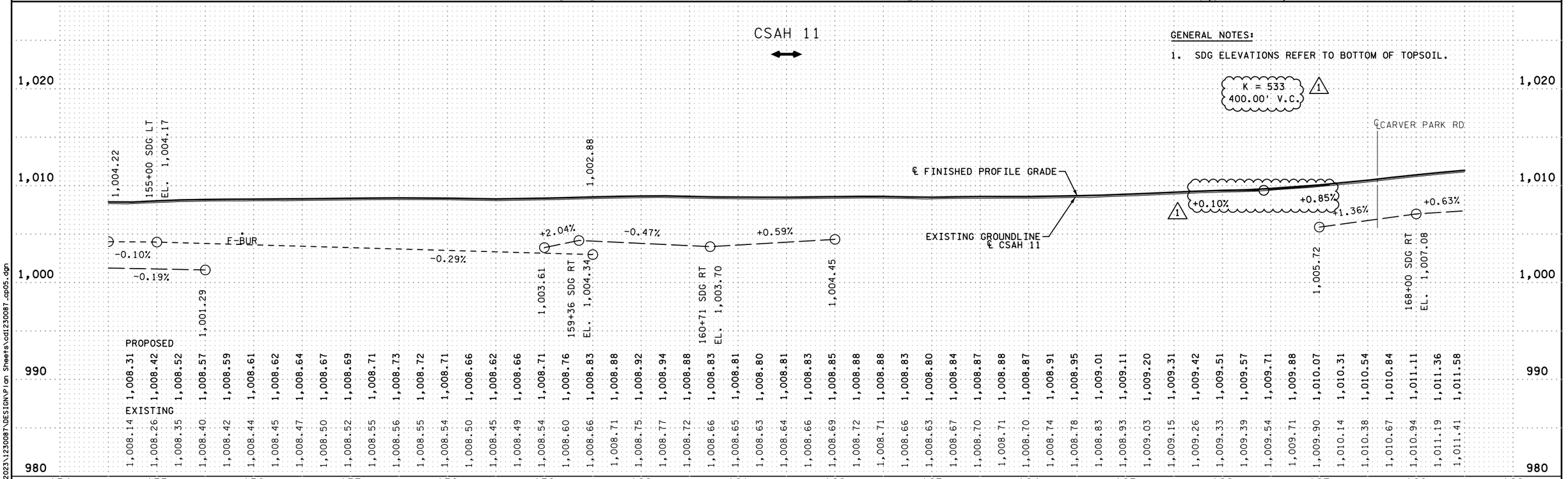
CONSTRUCTION LIMITS	TRAFFIC DIRECTION
EXISTING RIGHT OF WAY	SUPERELEVATION TRANSITION
PROPOSED RIGHT OF WAY	PAVED SHOULDER WIDENING
TEMPORARY EASEMENT	AGGREGATE SHOULDER WIDENING
PROPOSED DRAINAGE AND UTILITY EASEMENT	TRAIL
PROPOSED TRAIL EASEMENT	

100
SCALE IN FEET

THREE RIVERS PARK DISTRICT
65.0100100



THREE RIVERS PARK DISTRICT
65.0100100



NO	DATE	DWN	CKD	REVISIONS
1	01/24/25	GMK	EN	ADDENDUM #1

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DATE 01/24/25 LICENSE # 43560

CONSTRUCTION PLAN & PROFILE

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 72 OF 220 SHEETS

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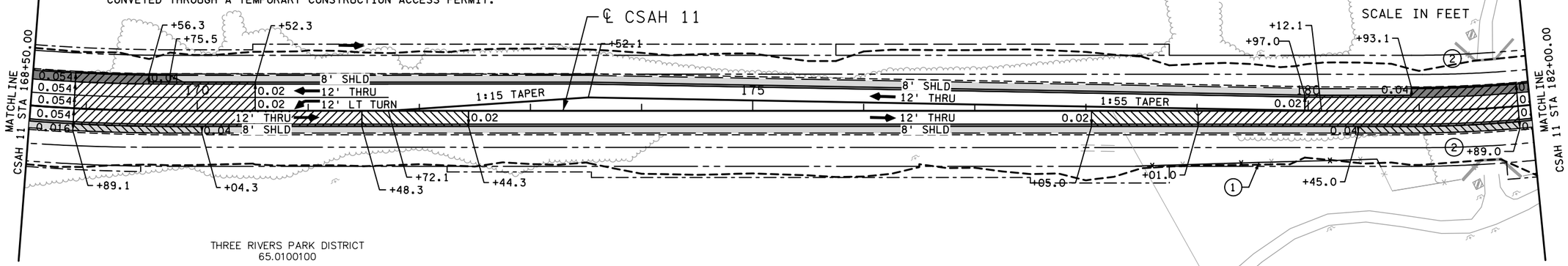
LEGEND

CONSTRUCTION LIMITS	TRAFFIC DIRECTION
EXISTING RIGHT OF WAY	SUPERELEVATION TRANSITION
PROPOSED RIGHT OF WAY	PAVED SHOULDER WIDENING
TEMPORARY EASEMENT	AGGREGATE SHOULDER WIDENING
PROPOSED DRAINAGE AND UTILITY EASEMENT	TRAIL
PROPOSED TRAIL EASEMENT	

100
SCALE IN FEET

THREE RIVERS PARK DISTRICT
65.0100100

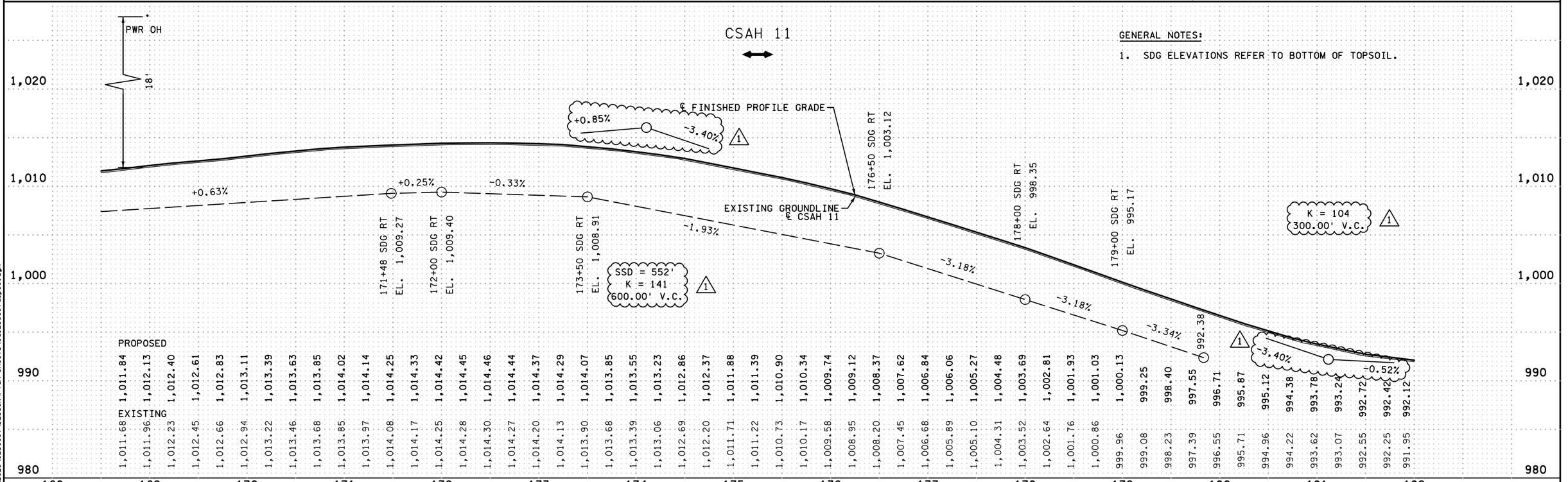


THREE RIVERS PARK DISTRICT
65.0100100

THREE RIVERS PARK DISTRICT
07.0100100

SPECIFIC NOTES

1. INSTALL SALVAGED FENCE OUTSIDE OF PROPOSED ROW. CONNECTIONS TO INPLACE FENCE SHALL BE INCIDENTAL.
2. REPAIR PEDESTRIAN TUNNEL JOINTS (PAID FOR AS SEAL SUBSTRUCTURE JOINTS). SEE DETAIL ON SHEET 25 AND SPECIAL PROVISIONS.



GENERAL NOTES:

1. SDG ELEVATIONS REFER TO BOTTOM OF TOPSOIL.

	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182
PROPOSED	1,011.84	1,012.13	1,012.40	1,012.61	1,012.83	1,013.11	1,013.39	1,013.63	1,013.85	1,014.02	1,014.14	1,014.25	1,014.33	1,014.42	1,014.45
EXISTING	1,011.68	1,011.96	1,012.23	1,012.45	1,012.66	1,012.94	1,013.22	1,013.46	1,013.68	1,013.85	1,013.97	1,014.08	1,014.17	1,014.25	1,014.28

	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194
PROPOSED	1,014.46	1,014.44	1,014.37	1,014.29	1,014.07	1,013.85	1,013.55	1,013.23	1,012.86	1,012.37	1,011.88	1,011.39	1,010.90	1,010.34	1,009.74
EXISTING	1,014.30	1,014.27	1,014.20	1,014.13	1,013.90	1,013.68	1,013.39	1,013.06	1,012.69	1,012.20	1,011.71	1,011.22	1,010.73	1,010.17	1,009.58

	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209
PROPOSED	1,009.12	1,008.37	1,007.62	1,006.84	1,006.06	1,005.27	1,004.48	1,003.69	1,002.81	1,001.93	1,001.03	1,000.13	999.25	998.40	997.55
EXISTING	1,008.95	1,008.20	1,007.45	1,006.68	1,005.89	1,005.10	1,004.31	1,003.52	1,002.64	1,001.76	1,000.86	999.96	999.08	998.23	997.39

	210	211	212	213	214	215	216	217	218	219	220
PROPOSED	996.71	995.87	995.12	994.38	993.78	993.24	992.72	992.42	992.12		
EXISTING	996.55	995.71	994.96	994.22	993.62	993.07	992.55	992.25	991.95		

NO	DATE	DWN	CKD	REVISIONS
1	01/24/25	GMK	EN	ADDENDUM #1

ALLIANT

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PRINT NAME: ERIC NELSON
SIGNATURE:
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CONSTRUCTION PLAN & PROFILE

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 73 OF 220 SHEETS

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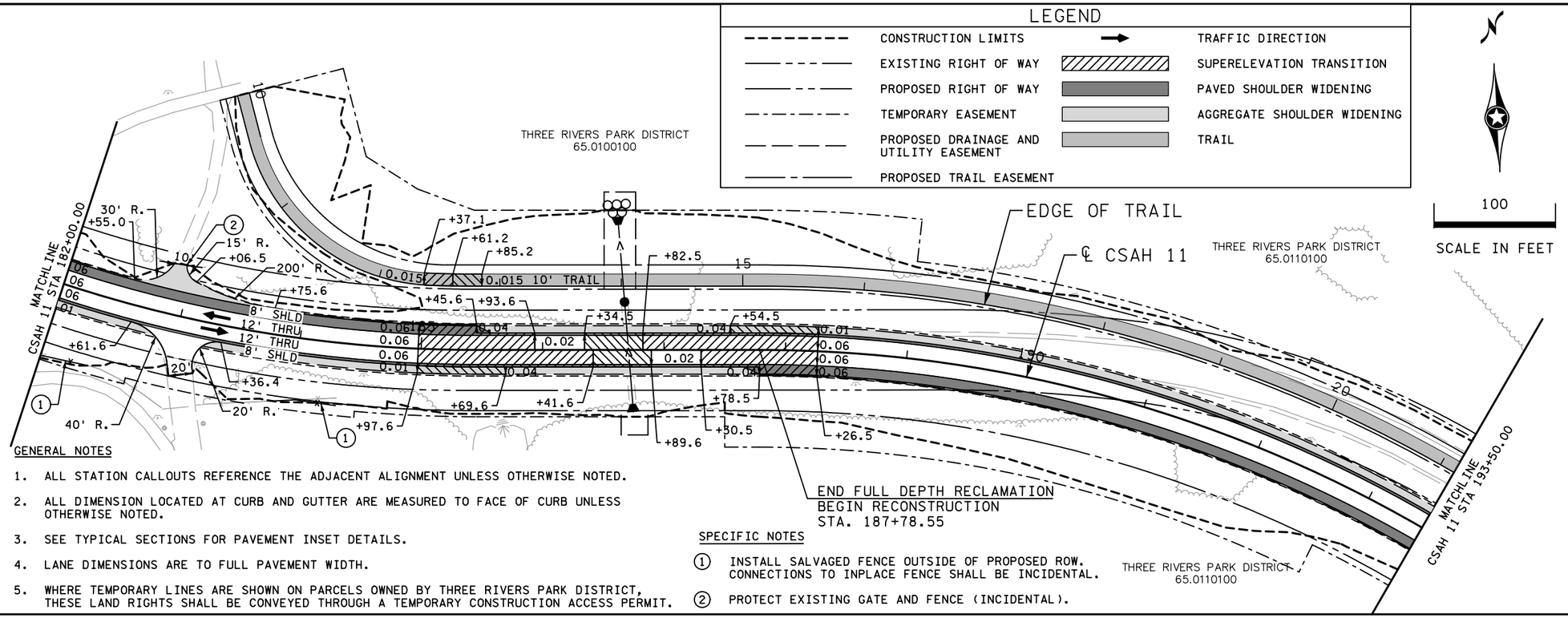

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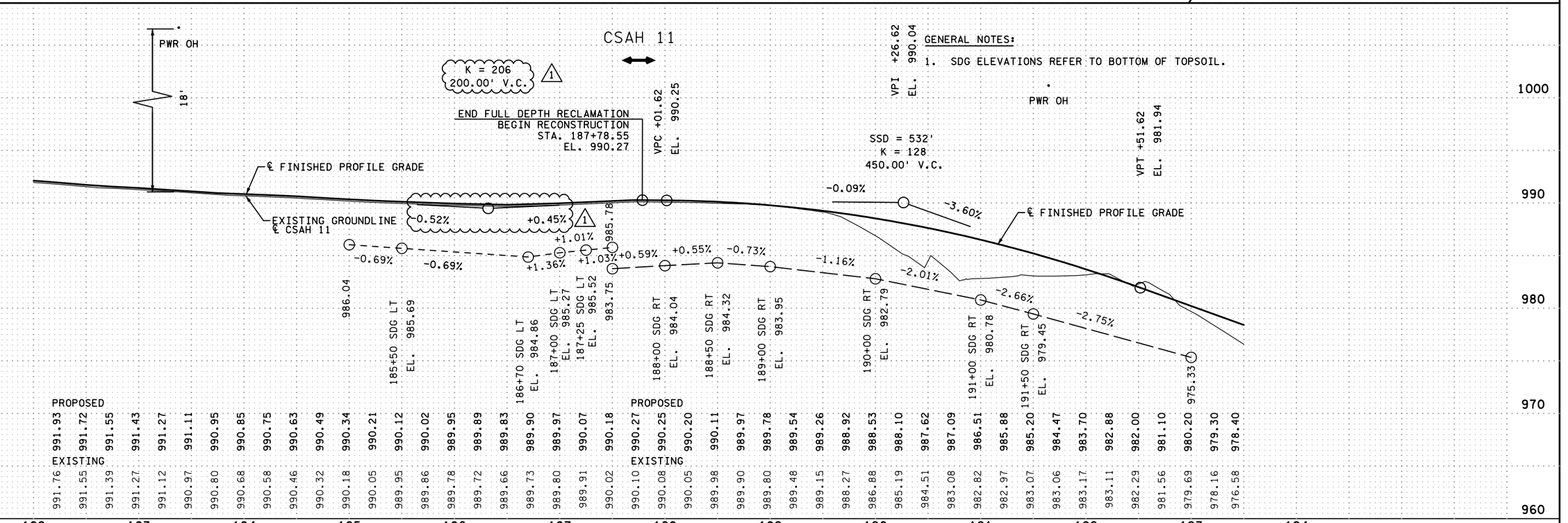
5. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.

SPECIFIC NOTES

① INSTALL SALVAGED FENCE OUTSIDE OF PROPOSED ROW. CONNECTIONS TO INPLACE FENCE SHALL BE INCIDENTAL.

② PROTECT EXISTING GATE AND FENCE (INCIDENTAL).



GENERAL NOTES:

1. SDG ELEVATIONS REFER TO BOTTOM OF TOPSOIL.

NO	DATE	DRN	CKD	REVISIONS
1	01/24/25	GMK	EN	ADDENDUM #1

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CONSTRUCTION PLAN & PROFILE

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 74 OF 220 SHEETS

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SPECIFIC NOTES

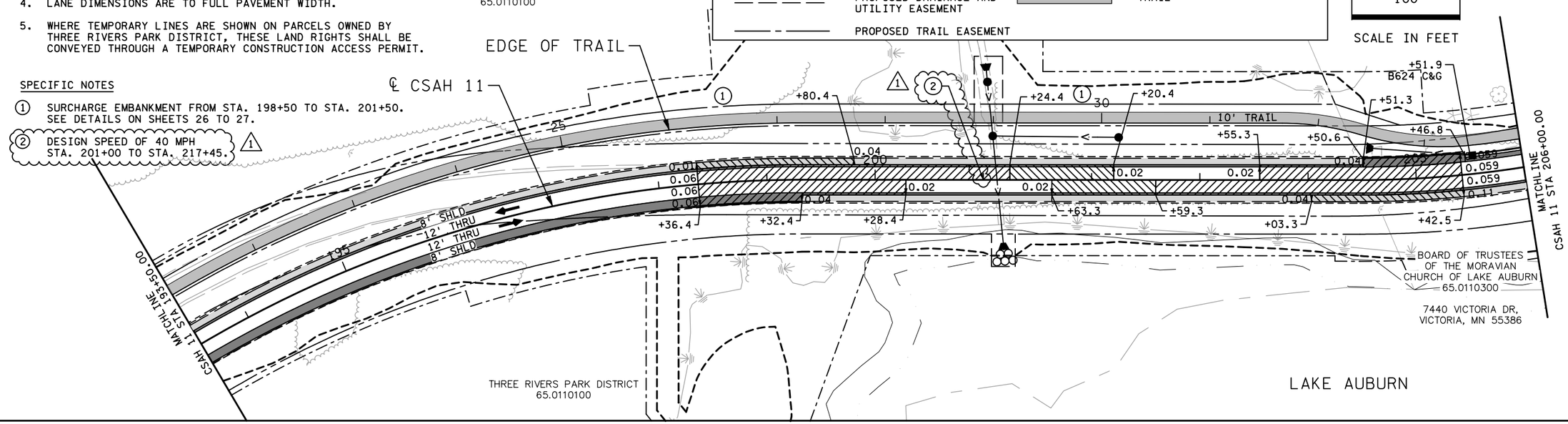
(1) SURCHARGE EMBANKMENT FROM STA. 198+50 TO STA. 201+50. SEE DETAILS ON SHEETS 26 TO 27.

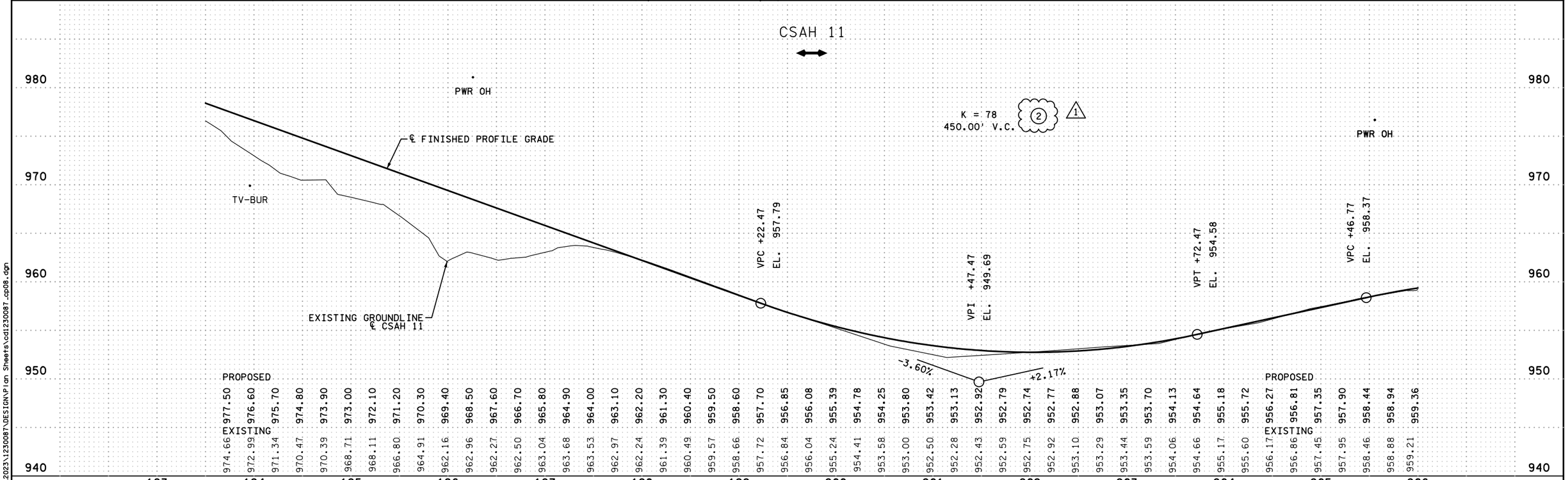
(2) DESIGN SPEED OF 40 MPH STA. 201+00 TO STA. 217+45.

LEGEND

CONSTRUCTION LIMITS		TRAFFIC DIRECTION	
EXISTING RIGHT OF WAY		SUPERELEVATION TRANSITION	
PROPOSED RIGHT OF WAY		PAVED SHOULDER WIDENING	
TEMPORARY EASEMENT		AGGREGATE SHOULDER WIDENING	
PROPOSED DRAINAGE AND UTILITY EASEMENT		TRAIL	
PROPOSED TRAIL EASEMENT			

100
SCALE IN FEET





NO	DATE	DWN	CKD	REVISIONS
1	01/24/25	GMK	EN	ADDENDUM #1

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SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 75 OF 220 SHEETS

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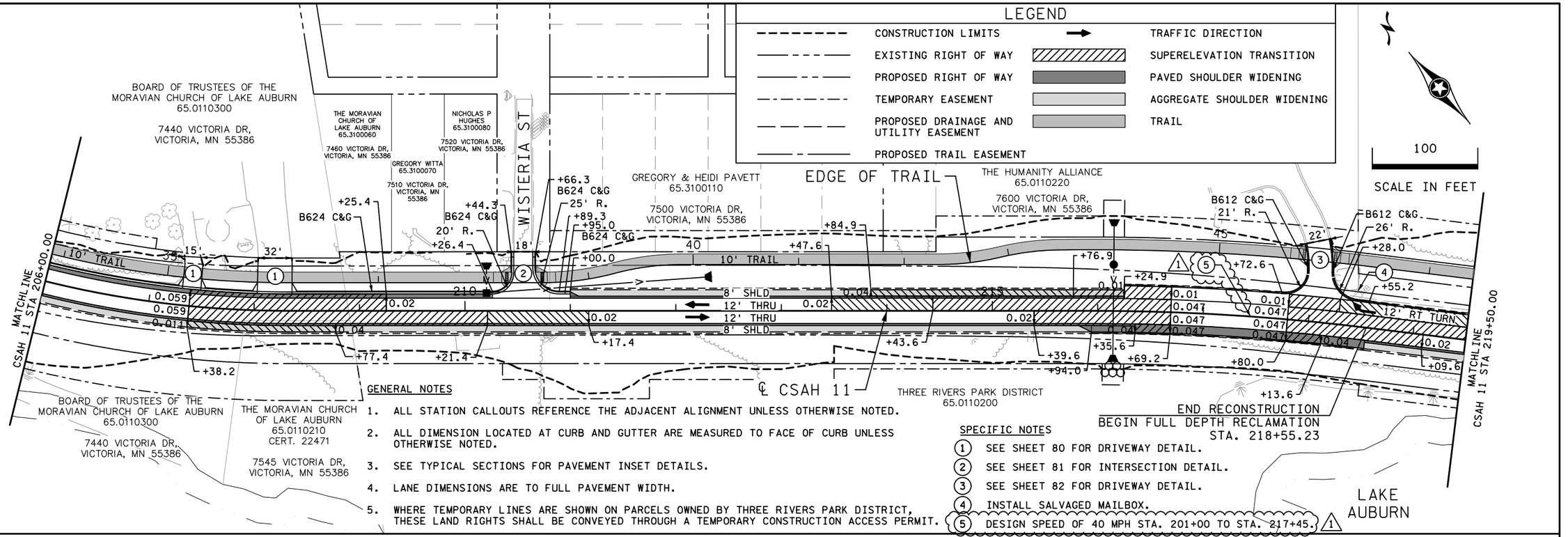

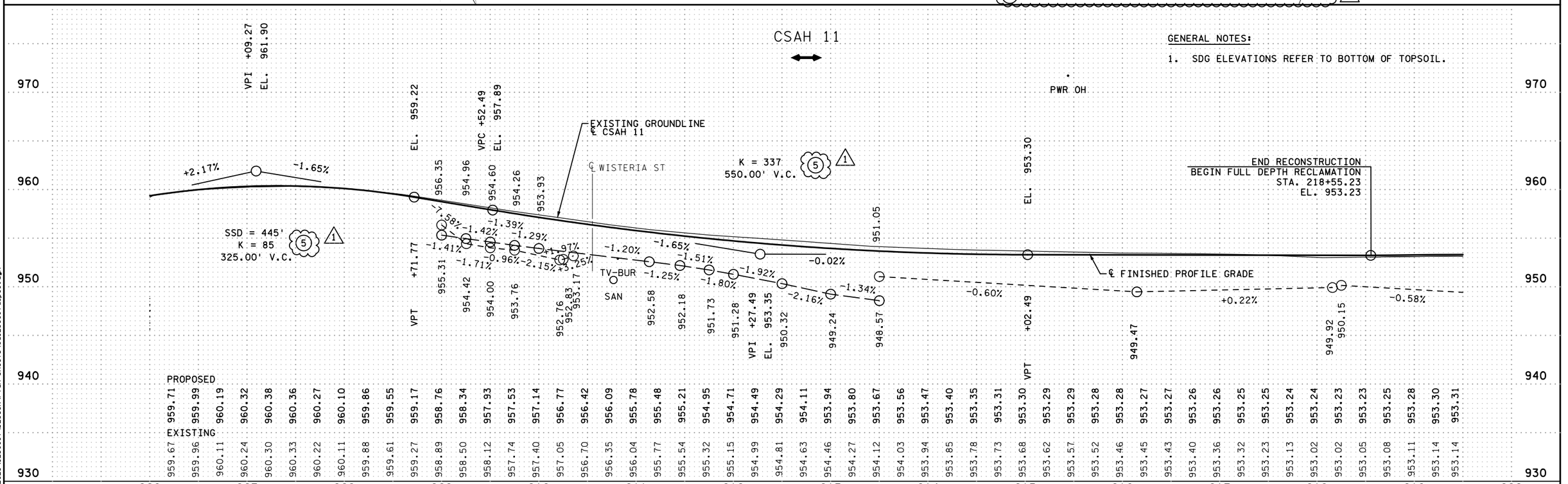

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CONSTRUCTION PLAN & PROFILE

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 76 OF 220 SHEETS

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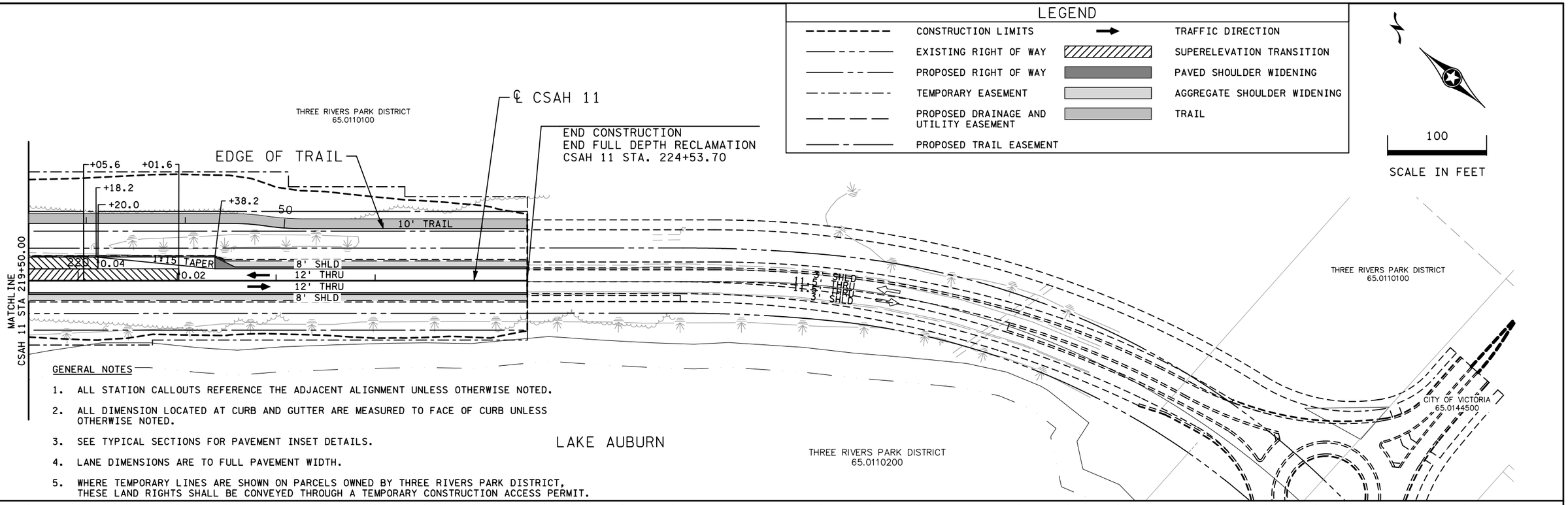

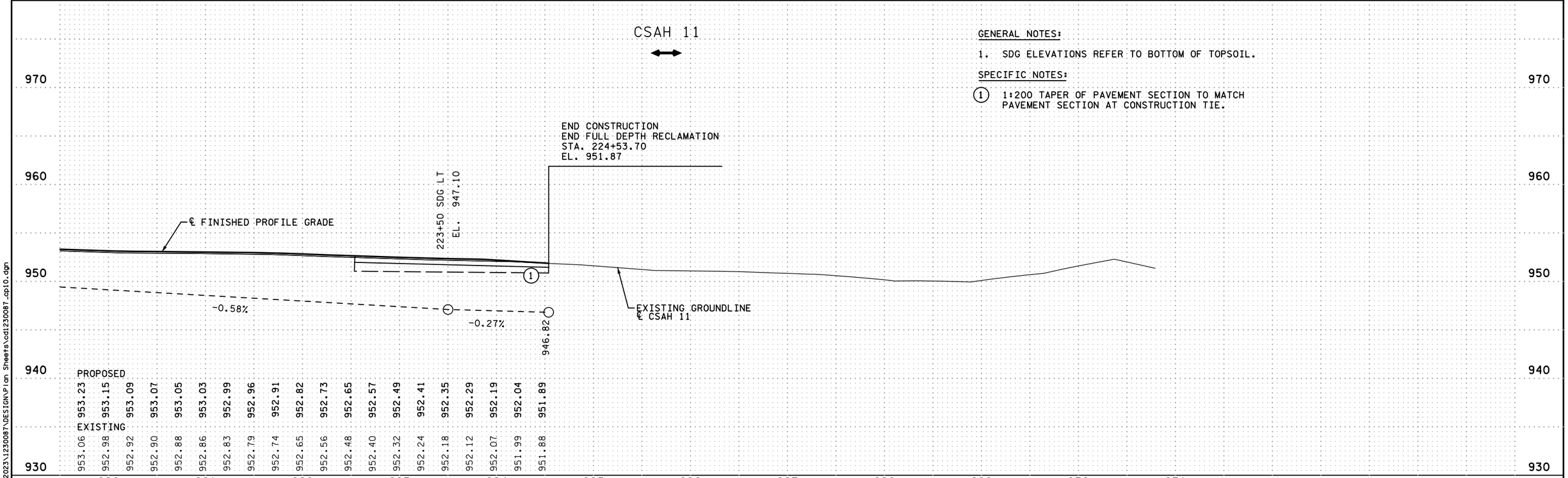

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NO	DATE	DWN	CKD	REVISIONS

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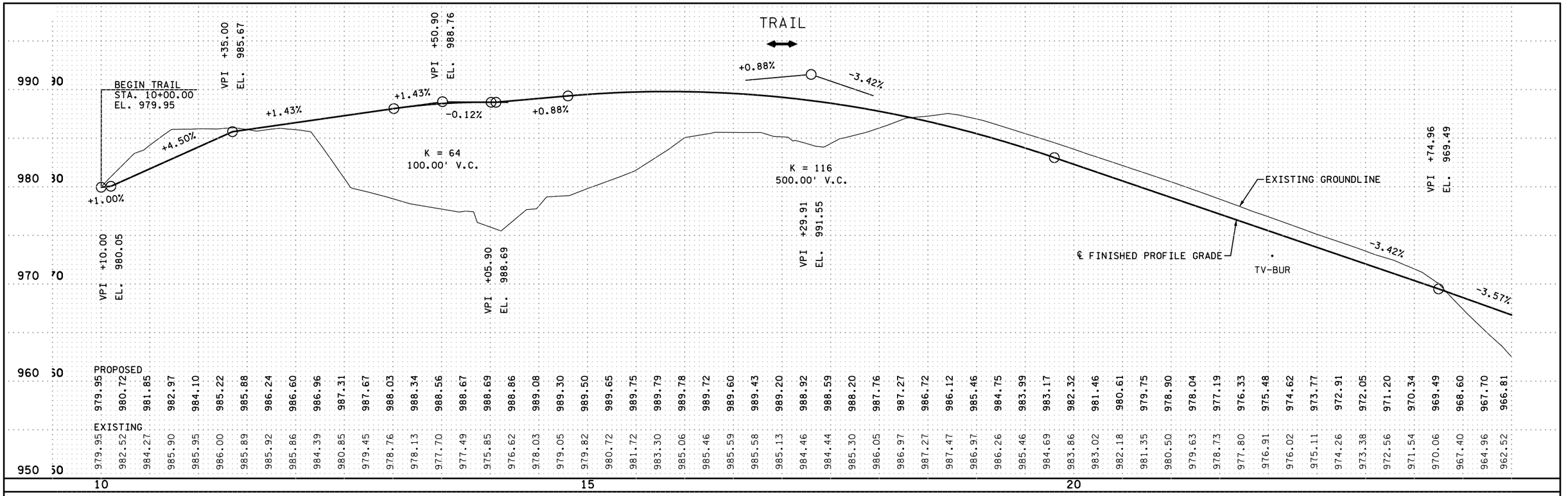
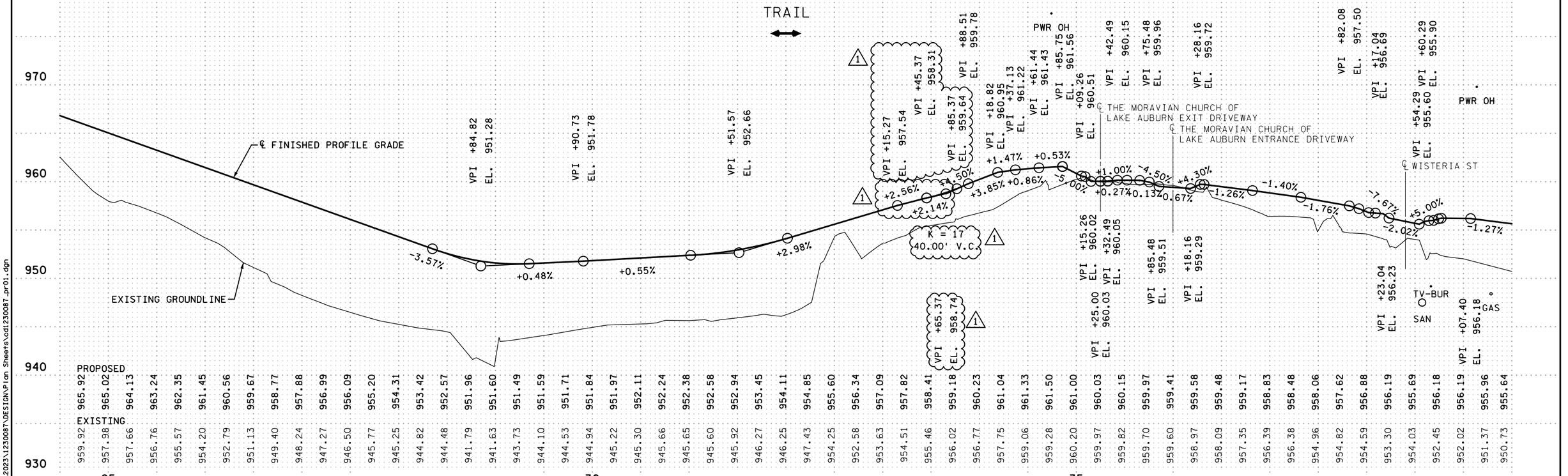
CONSTRUCTION PLAN & PROFILE

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 77 OF 220 SHEETS





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PROFILES
CSAH 11 TRAIL

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 78 OF 220 SHEETS

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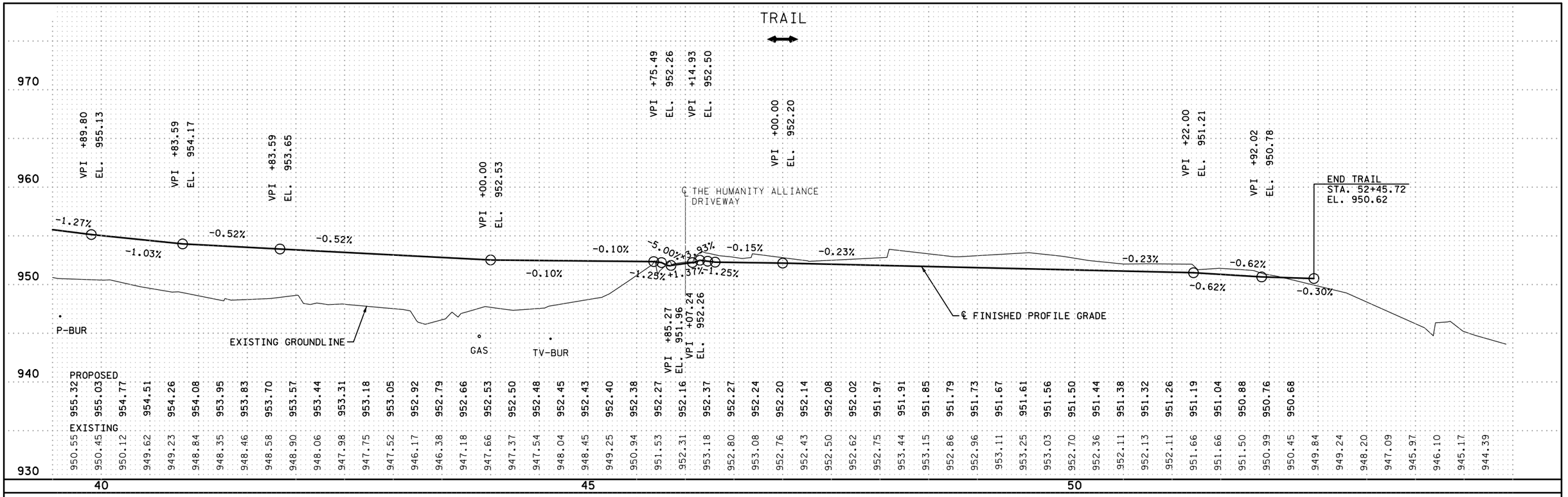

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PROFILES
CSAH 11 TRAIL

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 79 OF 220 SHEETS

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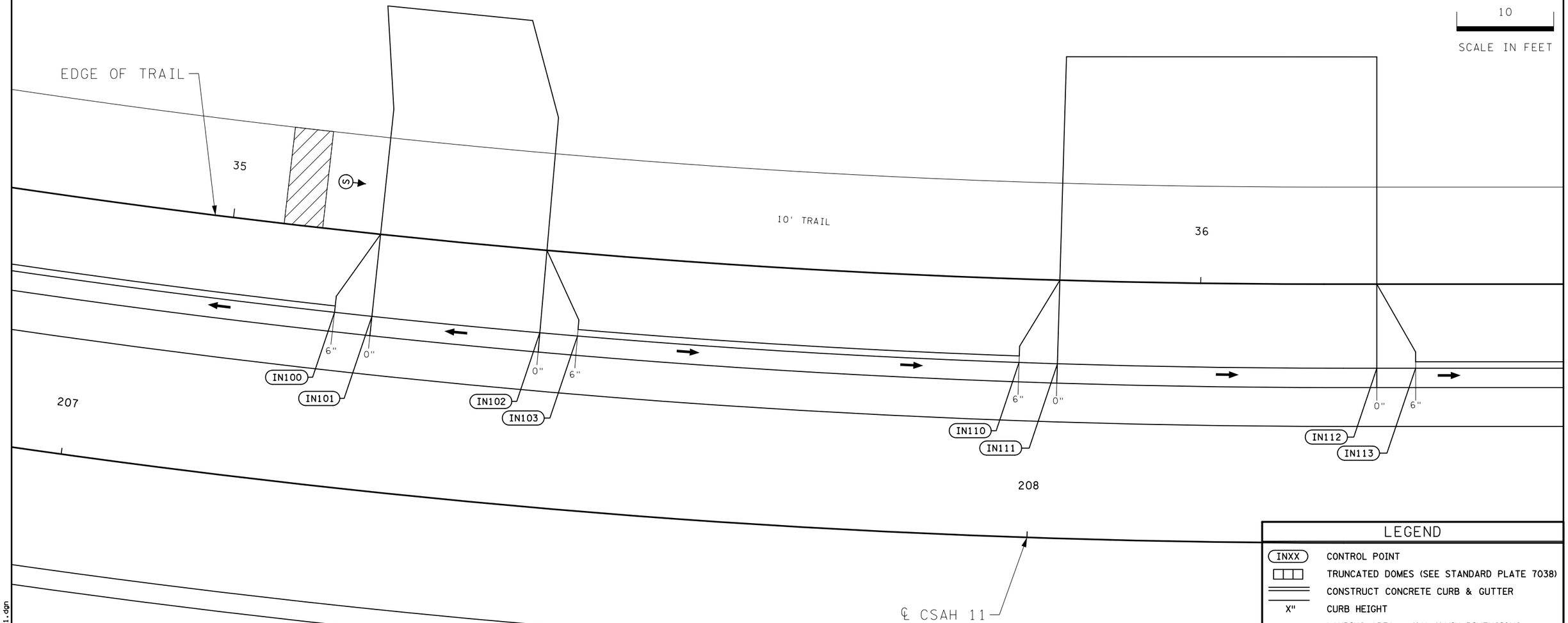
DRIVEWAY TABULATION

STATION	SIDE	DRIVEWAY TYPE	CURB TYPE	E1	E2	L1 FT	S1 %	E3	L2 FT	S2 %	E4	L3 FT	S3 %	EXISTING %	E5	DRIVEWAY MATERIAL	WIDTH FT
TH 75																	
207+30.4	NORTH	PERPENDICULAR	1	959.31	959.39	7.84	8.00%	960.02	10	1.50%	960.17	13.63	10.95%	9.50%	961.66	BITUMINOUS	18
207+48.1	SOUTH			959.33	959.41	7.86	8.14%	960.05	10	1.50%	960.20	14.1367	9.76%	8.74%	961.58		
208+02.5	NORTH	PERPENDICULAR	1	959.24	959.32	7.95	2.39%	959.51	10	1.50%	959.66	13.04	1.38%	3.84%	959.84	BITUMINOUS	34
208+36.1	SOUTH			959.00	959.08	8.00	2.62%	959.29	10	1.50%	959.44	13.42	-3.65%	0.60%	958.95		

10

SCALE IN FEET



THE MORAVIAN CHURCH OF LAKE AUBURN EXIT				
NO.	DESCRIPTION	X	Y	ELEVATION
IN100	FULL CURB HEIGHT	523,034.25	183,489.86	959.31
IN101	0" CURB HEIGHT	523,036.90	183,487.03	959.31
IN102	0" CURB HEIGHT	523,048.94	183,474.48	959.33
IN103	FULL CURB HEIGHT	523,051.67	183,471.69	959.34
THE MORAVIAN CHURCH OF LAKE AUBURN ENTRANCE				
NO.	DESCRIPTION	X	Y	ELEVATION
IN110	FULL CURB HEIGHT	523,084.46	183,439.98	959.25
IN111	0" CURB HEIGHT	523,087.37	183,437.31	959.24
IN112	0" CURB HEIGHT	523,112.07	183415.51	959.00
IN113	FULL CURB HEIGHT	523,115.11	183412.91	958.97

GENERAL NOTES:

1. SEE STD. PLAN 5-297.250 FOR PEDESTRIAN RAMP DETAILS.
2. SEE STD. PLANS 5-297.254 FOR DRIVEWAY AND SIDEWALK DETAILS.
3. CONTROL POINT FOR CURB AND GUTTER IS AT FLOW LINE.
4. FORM AND PLACE ALL INITIAL LANDINGS SEPERATELY WITH AN INDEPENDENT CONCRETE POUR. SEE STD. PLAN 5-297.250 FOR REINFORCEMENT DETAILS.

LEGEND

- INXX — CONTROL POINT
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- X" — CURB HEIGHT
- LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- (S) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
- (F) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
- (T) — TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK.
- DRAINAGE FLOW ARROW

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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DATE 01/10/25 LICENSE # 43560

INTERSECTION DETAILS

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 80 OF 220 SHEETS

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1/22/2025
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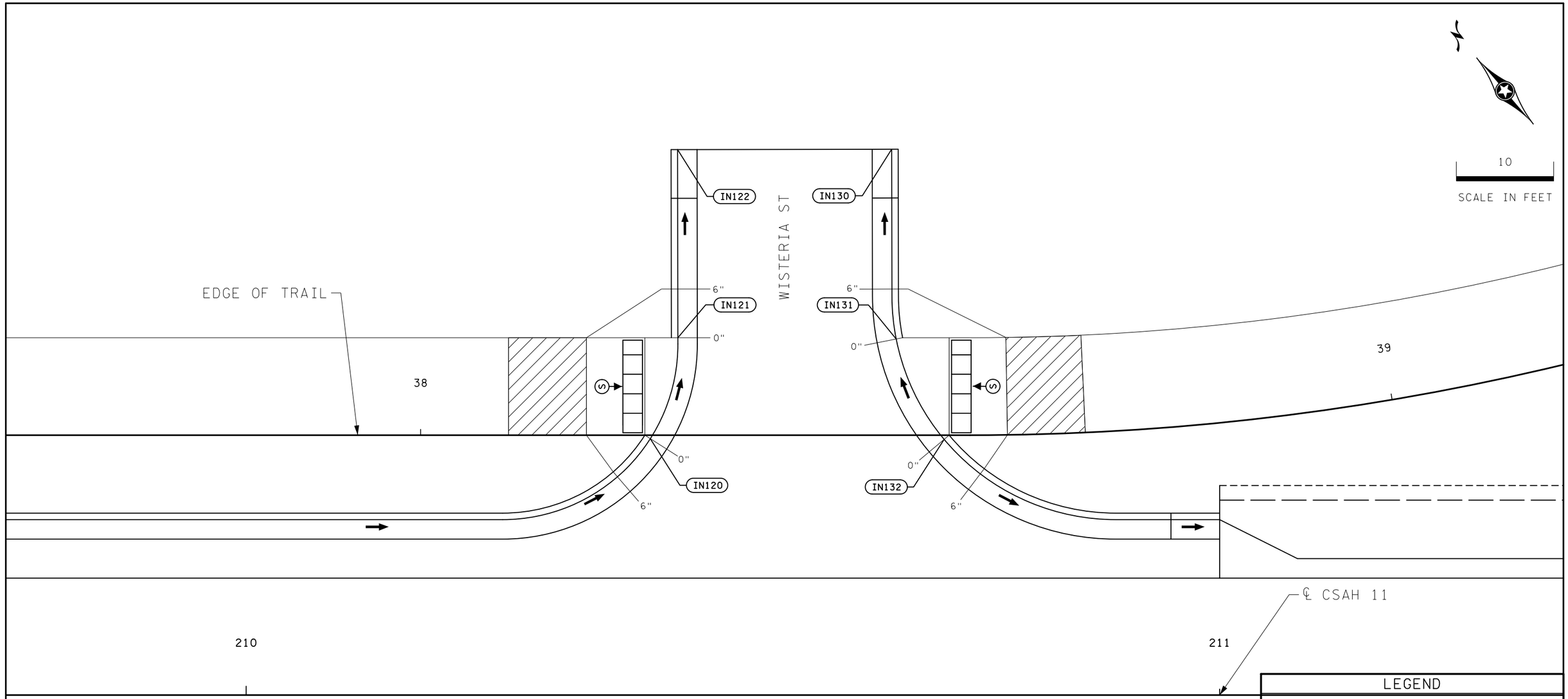

WISTERIA ST				
NO.	DESCRIPTION	X	Y	ELEVATION
		NW QUAD		
IN120	0" CURB HEIGHT	523,273.41	183,288.06	956.20
IN121	0" CURB HEIGHT	523,282.30	183,294.09	956.01
IN122	END CURB	523,294.85	183,308.76	954.50
		NE QUAD		
IN130	BEGIN CURB	523,311.57	183,294.47	954.64
IN131	0" CURB HEIGHT	523,299.24	183,279.38	955.35
IN132	0" CURB HEIGHT	523,296.27	183,268.36	955.57

GENERAL NOTES:

1. SEE STD. PLAN 5-297.250 FOR PEDESTRIAN RAMP DETAILS.
2. SEE STD. PLANS 5-297.254 FOR DRIVEWAY AND SIDEWALK DETAILS.
3. CONTROL POINT FOR CURB AND GUTTER IS AT FLOW LINE.
4. FORM AND PLACE ALL INITIAL LANDINGS SEPERATELY WITH AN INDEPENDENT CONCRETE POUR. SEE STD. PLAN 5-297.250 FOR REINFORCEMENT DETAILS.

LEGEND

- (INXX) CONTROL POINT
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- X" CURB HEIGHT
- LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- (S) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
- (F) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
- (T) TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK.
- DRAINAGE FLOW ARROW

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

INTERSECTION DETAILS

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 81 OF 220 SHEETS

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1/22/2025
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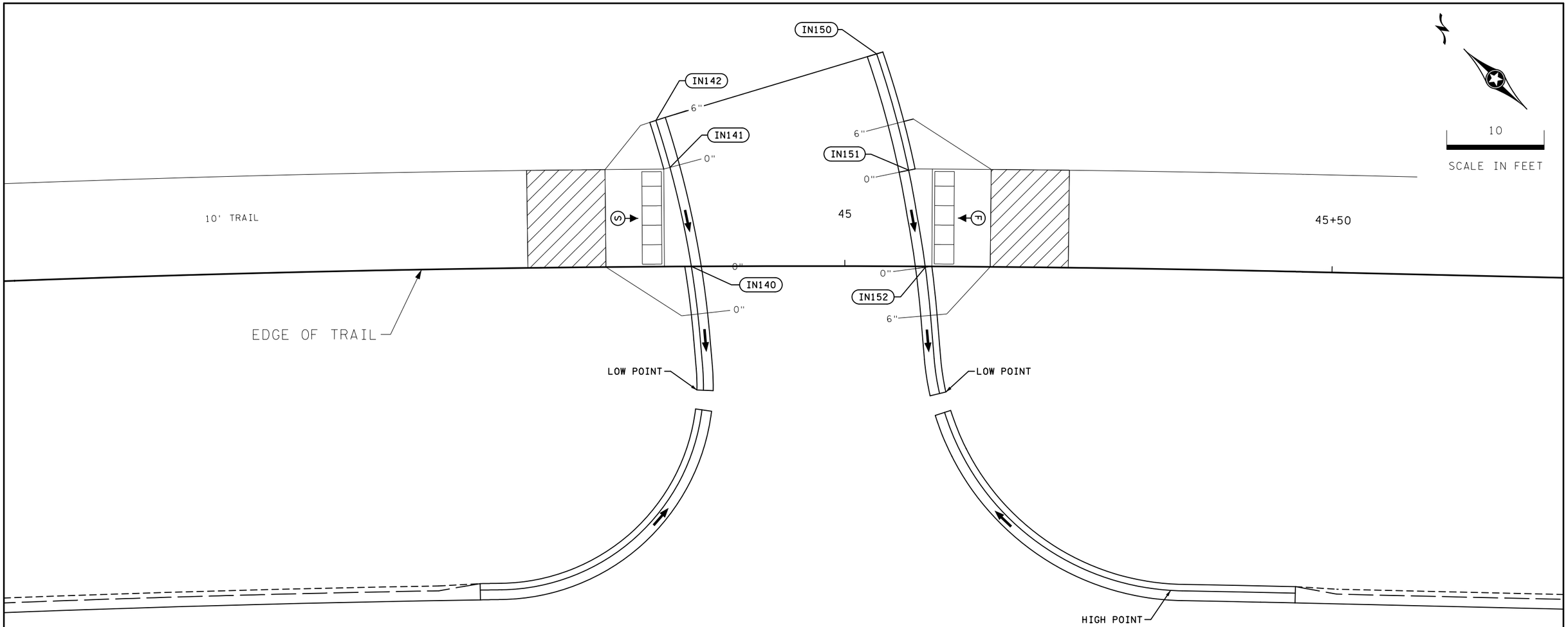

THE HUMANITY ALLIANCE DRIVEWAY				
NO.	DESCRIPTION	X	Y	ELEVATION
		NW QUAD		
IN140	0" CURB HEIGHT	523,863.00	182,811.53	951.93
IN141	0" CURB HEIGHT	523,868.77	182,820.05	952.08
IN142	END CURB	823,871.26	182,824.42	952.10
		NE QUAD		
IN150	BEGIN CURB	523,891.83	182,812.78	952.45
IN151	0" CURB HEIGHT	523,885.47	182,802.15	952.38
IN152	0" CURB HEIGHT	523,879.45	182,794.03	952.23

GENERAL NOTES:

1. SEE STD. PLAN 5-297.250 FOR PEDESTRIAN RAMP DETAILS.
2. SEE STD. PLANS 5-297.254 FOR DRIVEWAY AND SIDEWALK DETAILS.
3. CONTROL POINT FOR CURB AND GUTTER IS AT FLOW LINE.
4. FORM AND PLACE ALL INITIAL LANDINGS SEPERATELY WITH AN INDEPENDENT CONCRETE POUR. SEE STD. PLAN 5-297.250 FOR REINFORCEMENT DETAILS.

LEGEND

- (INXX) — CONTROL POINT
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- X" — CURB HEIGHT
- LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- (S) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
- (F) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
- (T) — TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK.
- DRAINAGE FLOW ARROW

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

INTERSECTION DETAILS

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 82 OF 220 SHEETS

8:47:21 AM
1/22/2025
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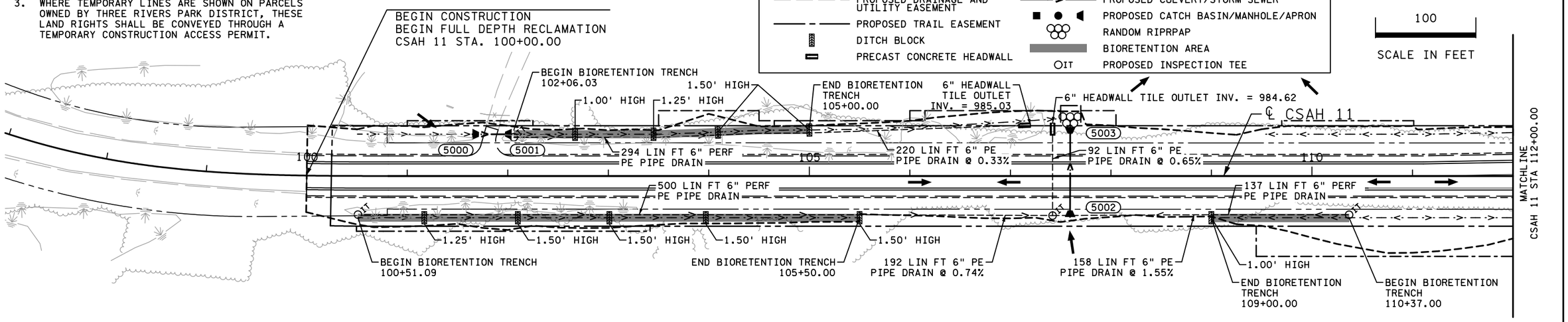
GENERAL NOTES

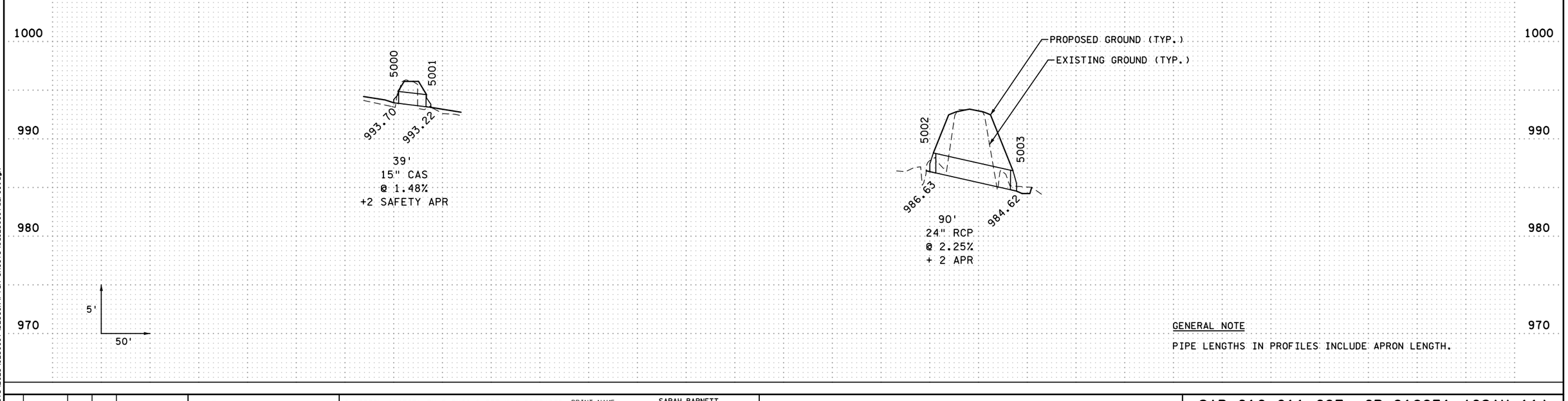
1. ALL STATION CALLOUTS REFERENCE THE ADJACENT ALIGNMENT UNLESS OTHERWISE NOTED.
2. SEE CONSTRUCTION PROFILES AND CROSS SECTIONS FOR SPECIAL DITCH GRADES.
3. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.

LEGEND

- CONSTRUCTION LIMITS
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- TEMPORARY EASEMENT
- PROPOSED DRAINAGE AND UTILITY EASEMENT
- PROPOSED TRAIL EASEMENT
- DITCH BLOCK
- PRECAST CONCRETE HEADWALL
- SURFACE FLOW DIRECTION
- (XXXX) STRUCTURE NUMBER
- PROPOSED DITCH FLOW LINE
- PROPOSED PIPE DRAIN
- PROPOSED CULVERT/STORM SEWER
- PROPOSED CATCH BASIN/MANHOLE/APRON
- RANDOM RIPRPAP
- BIORETENTION AREA
- IT PROPOSED INSPECTION TEE

100
SCALE IN FEET





GENERAL NOTE

PIPE LENGTHS IN PROFILES INCLUDE APRON LENGTH.

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: SARAH BARNETT
SIGNATURE:
DATE 01/10/25 LICENSE # 58796

DRAINAGE PLAN & PROFILE

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 83 OF 220 SHEETS

8:47:33 AM
1/22/2025
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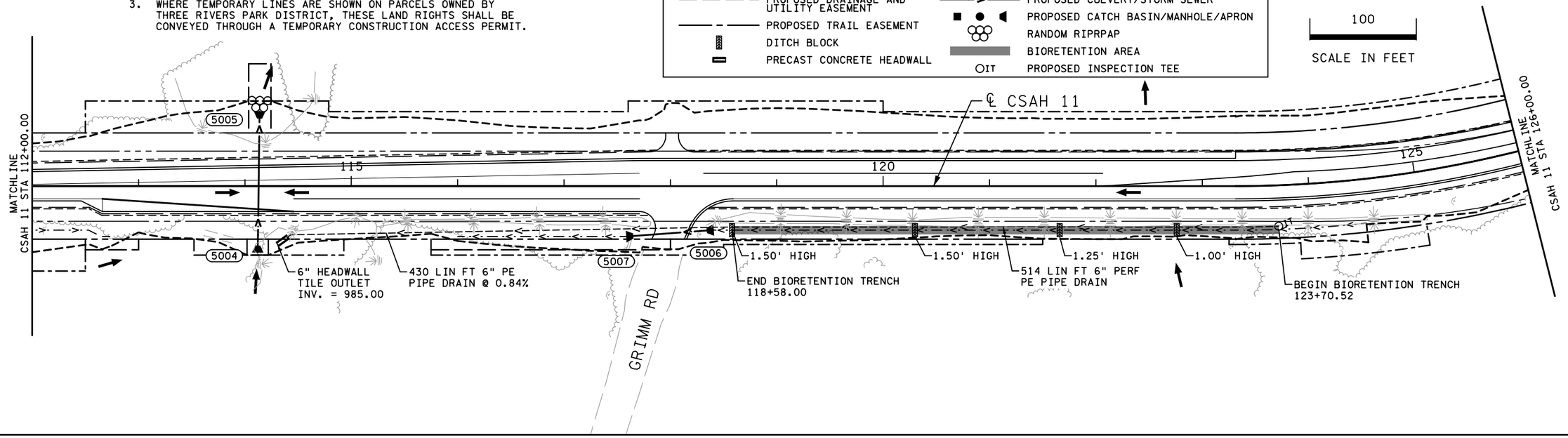
GENERAL NOTES

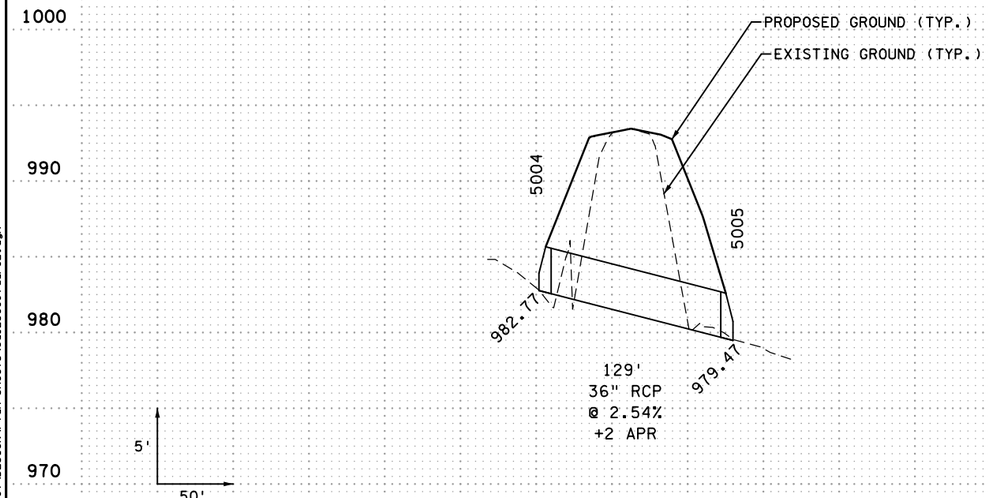
1. ALL STATION CALLOUTS REFERENCE THE ADJACENT ALIGNMENT UNLESS OTHERWISE NOTED.
2. SEE CONSTRUCTION PROFILES AND CROSS SECTIONS FOR SPECIAL DITCH GRADES.
3. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.

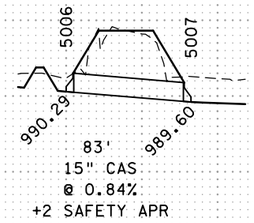
LEGEND

- CONSTRUCTION LIMITS
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- TEMPORARY EASEMENT
- PROPOSED DRAINAGE AND UTILITY EASEMENT
- PROPOSED TRAIL EASEMENT
- DITCH BLOCK
- PRECAST CONCRETE HEADWALL
- SURFACE FLOW DIRECTION
- (XXXX) STRUCTURE NUMBER
- PROPOSED DITCH FLOW LINE
- PROPOSED PIPE DRAIN
- PROPOSED CULVERT/STORM SEWER
- PROPOSED CATCH BASIN/MANHOLE/APRON
- RANDOM RIPRPAP
- BIORETENTION AREA
- IT PROPOSED INSPECTION TEE

100
SCALE IN FEET







GENERAL NOTE

PIPE LENGTHS IN PROFILES INCLUDE APRON LENGTH.

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: SARAH BARNETT
SIGNATURE:
DATE 01/10/25 LICENSE # 58796

DRAINAGE PLAN & PROFILE

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 84 OF 220 SHEETS

8:47:47 AM
1/22/2025
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GENERAL NOTES

1. ALL STATION CALLOUTS REFERENCE THE ADJACENT ALIGNMENT UNLESS OTHERWISE NOTED.
2. SEE CONSTRUCTION PROFILES AND CROSS SECTIONS FOR SPECIAL DITCH GRADES.
3. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.

LEGEND

CONSTRUCTION LIMITS	SURFACE FLOW DIRECTION
EXISTING RIGHT OF WAY	XXXX STRUCTURE NUMBER
PROPOSED RIGHT OF WAY	PROPOSED DITCH FLOW LINE
TEMPORARY EASEMENT	PROPOSED PIPE DRAIN
PROPOSED DRAINAGE AND UTILITY EASEMENT	PROPOSED CULVERT/STORM SEWER
PROPOSED TRAIL EASEMENT	PROPOSED CATCH BASIN/MANHOLE/APRON
DITCH BLOCK	RANDOM RIPRPAP
PRECAST CONCRETE HEADWALL	BIORETENTION AREA
	IT PROPOSED INSPECTION TEE

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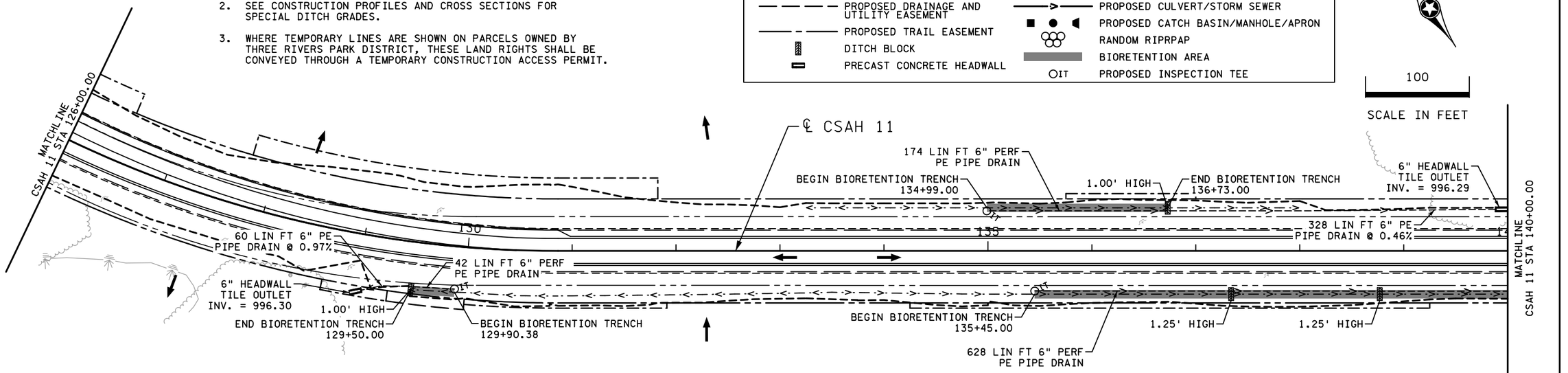
SCALE IN FEET



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NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: SARAH BARNETT
SIGNATURE:
DATE 01/10/25 LICENSE # 58796

DRAINAGE PLAN & PROFILE

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 85 OF 220 SHEETS

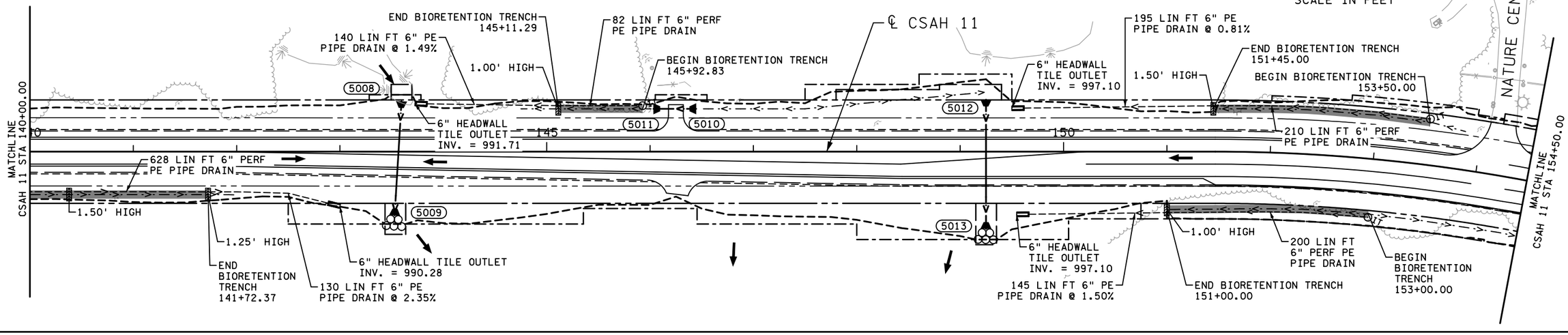
LEGEND

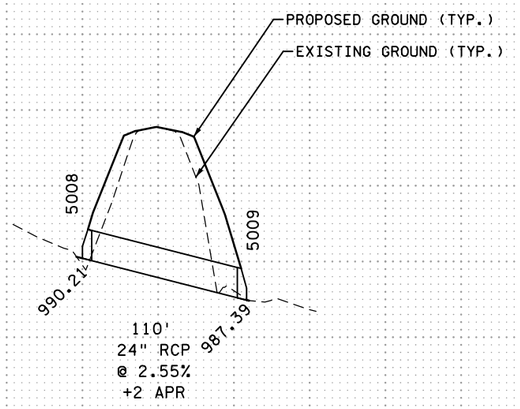
CONSTRUCTION LIMITS	SURFACE FLOW DIRECTION
EXISTING RIGHT OF WAY	XXXX STRUCTURE NUMBER
PROPOSED RIGHT OF WAY	PROPOSED DITCH FLOW LINE
TEMPORARY EASEMENT	PROPOSED PIPE DRAIN
PROPOSED DRAINAGE AND UTILITY EASEMENT	PROPOSED CULVERT/STORM SEWER
PROPOSED TRAIL EASEMENT	PROPOSED CATCH BASIN/MANHOLE/APRON
DITCH BLOCK	RANDOM RIPRPAP
PRECAST CONCRETE HEADWALL	BIORETENTION AREA
	OIT PROPOSED INSPECTION TEE

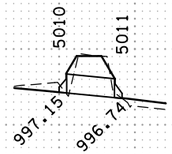
GENERAL NOTES

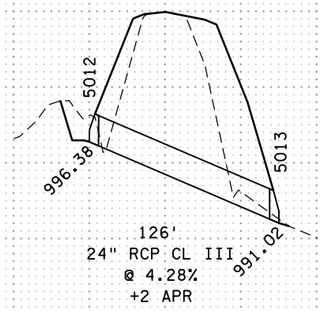
1. ALL STATION CALLOUTS REFERENCE THE ADJACENT ALIGNMENT UNLESS OTHERWISE NOTED.
2. SEE CONSTRUCTION PROFILES AND CROSS SECTIONS FOR SPECIAL DITCH GRADES.
3. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.

100
SCALE IN FEET









GENERAL NOTE

PIPE LENGTHS IN PROFILES INCLUDE APRON LENGTH.

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: SARAH BARNETT
SIGNATURE:
DATE 01/10/25 LICENSE # 58796

DRAINAGE PLAN & PROFILE

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 86 OF 220 SHEETS

8:48:12 AM
1/22/2025
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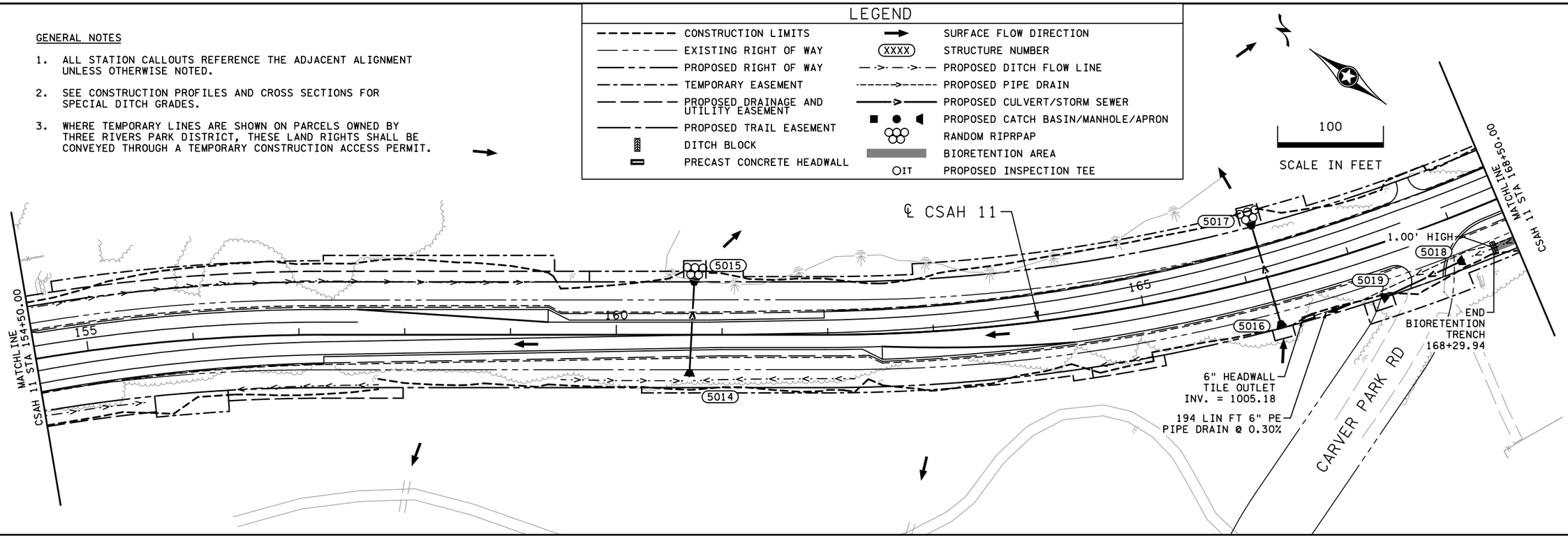
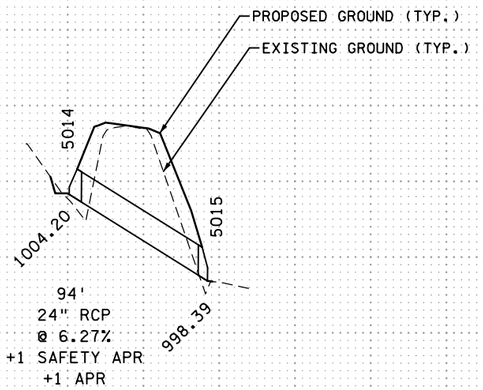
GENERAL NOTES

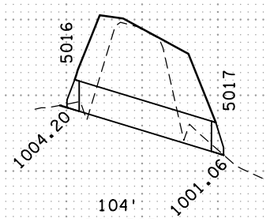
1. ALL STATION CALLOUTS REFERENCE THE ADJACENT ALIGNMENT UNLESS OTHERWISE NOTED.
2. SEE CONSTRUCTION PROFILES AND CROSS SECTIONS FOR SPECIAL DITCH GRADES.
3. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.

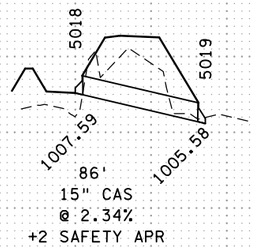
LEGEND

- CONSTRUCTION LIMITS
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- TEMPORARY EASEMENT
- PROPOSED DRAINAGE AND UTILITY EASEMENT
- PROPOSED TRAIL EASEMENT
- DITCH BLOCK
- PRECAST CONCRETE HEADWALL
- SURFACE FLOW DIRECTION
- (XXXX) STRUCTURE NUMBER
- PROPOSED DITCH FLOW LINE
- PROPOSED PIPE DRAIN
- PROPOSED CULVERT/STORM SEWER
- PROPOSED CATCH BASIN/MANHOLE/APRON
- RANDOM RIPRPAP
- BIORETENTION AREA
- OIT PROPOSED INSPECTION TEE









1010 1000 990 980

5' / 50'

GENERAL NOTE

PIPE LENGTHS IN PROFILES INCLUDE APRON LENGTH.

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: SARAH BARNETT
SIGNATURE:
DATE 01/10/25 LICENSE # 58796

DRAINAGE PLAN & PROFILE

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 87 OF 220 SHEETS

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1/22/2025
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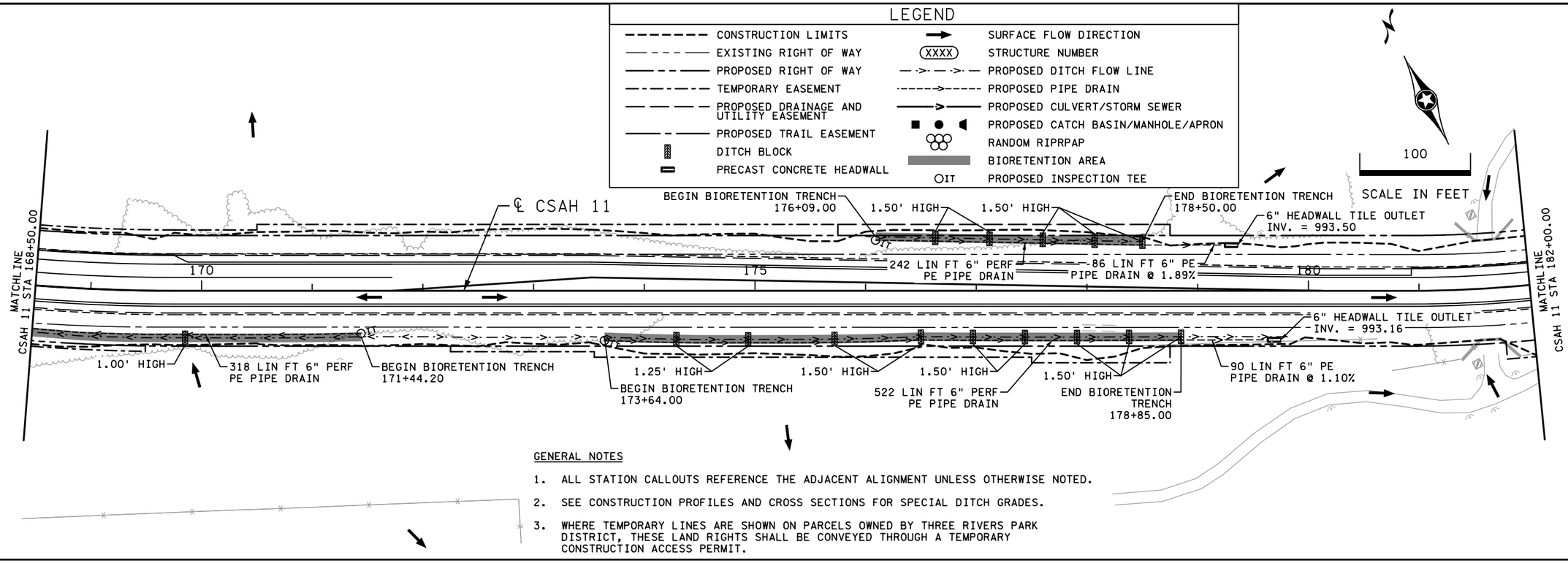

GENERAL NOTES

1. ALL STATION CALLOUTS REFERENCE THE ADJACENT ALIGNMENT UNLESS OTHERWISE NOTED.
2. SEE CONSTRUCTION PROFILES AND CROSS SECTIONS FOR SPECIAL DITCH GRADES.
3. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.

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1/22/2025
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NO	DATE	DWN	CKD	REVISIONS

ALLIANT

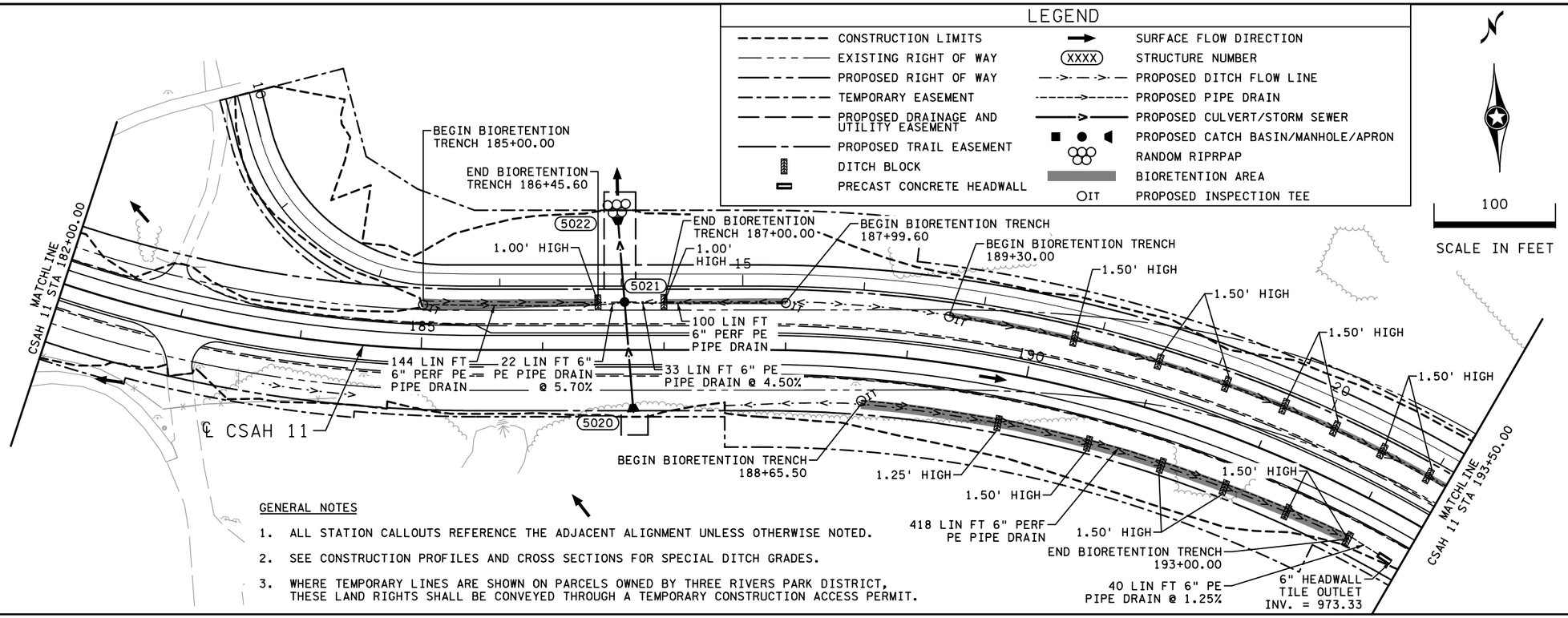
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: SARAH BARNETT
SIGNATURE:
DATE 01/10/25 LICENSE # 58796

DRAINAGE PLAN & PROFILE

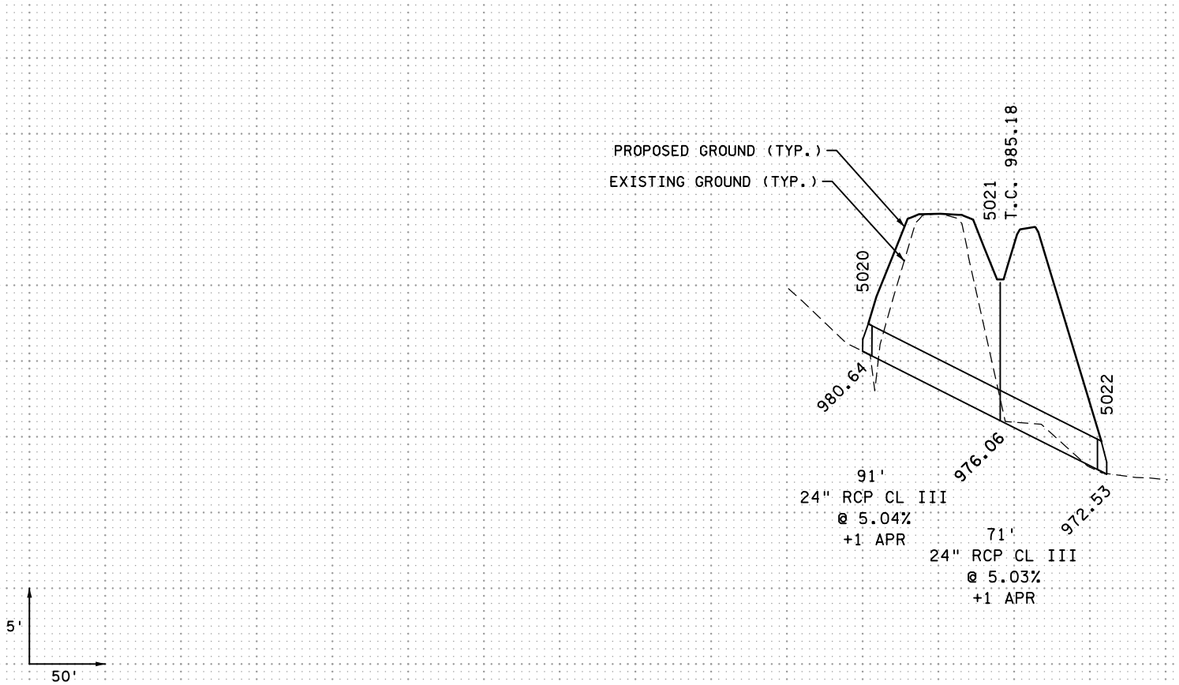
SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 88 OF 220 SHEETS



GENERAL NOTES

1. ALL STATION CALLOUTS REFERENCE THE ADJACENT ALIGNMENT UNLESS OTHERWISE NOTED.
2. SEE CONSTRUCTION PROFILES AND CROSS SECTIONS FOR SPECIAL DITCH GRADES.
3. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.



GENERAL NOTE

PIPE LENGTHS IN PROFILES INCLUDE APRON LENGTH.

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: SARAH BARNETT
SIGNATURE:
DATE 01/10/25 LICENSE # 58796

DRAINAGE PLAN & PROFILE

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 89 OF 220 SHEETS

8:48:42 AM
1/22/2025
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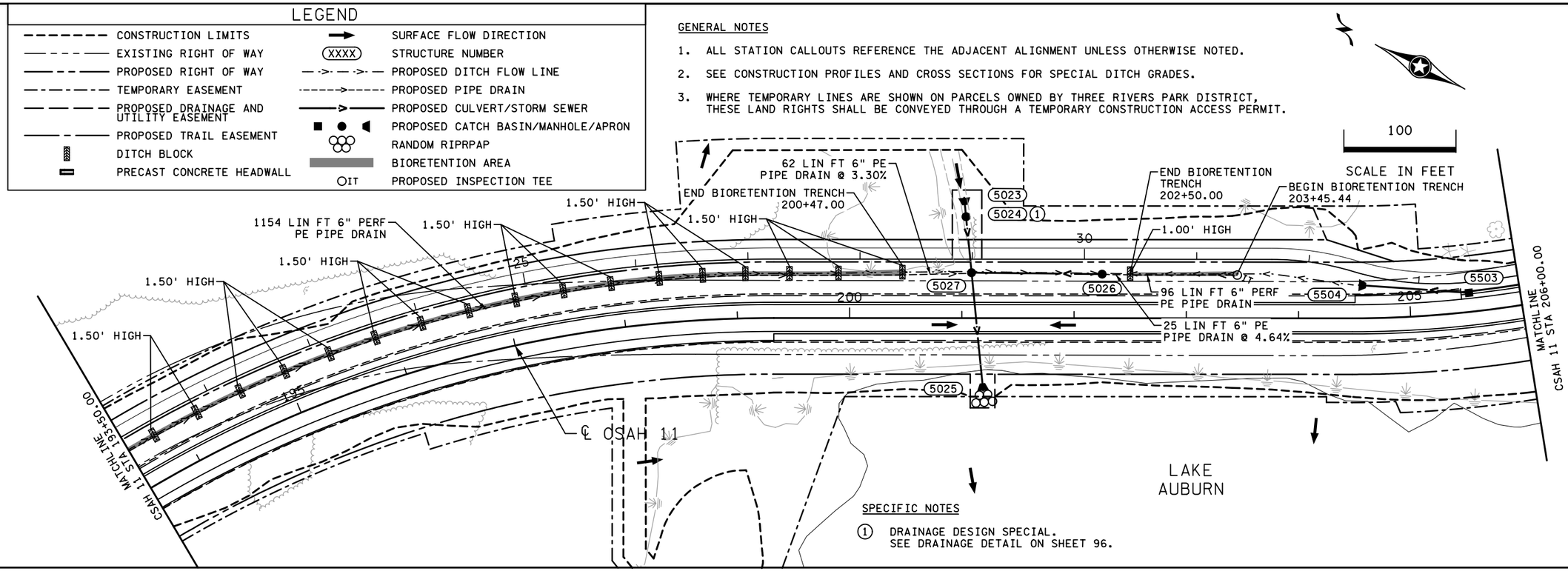
LEGEND

CONSTRUCTION LIMITS	SURFACE FLOW DIRECTION
EXISTING RIGHT OF WAY	XXXX STRUCTURE NUMBER
PROPOSED RIGHT OF WAY	PROPOSED DITCH FLOW LINE
TEMPORARY EASEMENT	PROPOSED PIPE DRAIN
PROPOSED DRAINAGE AND UTILITY EASEMENT	PROPOSED CULVERT/STORM SEWER
PROPOSED TRAIL EASEMENT	PROPOSED CATCH BASIN/MANHOLE/APRON
DITCH BLOCK	RANDOM RIPRPAP
PRECAST CONCRETE HEADWALL	BIORETENTION AREA
	IT PROPOSED INSPECTION TEE

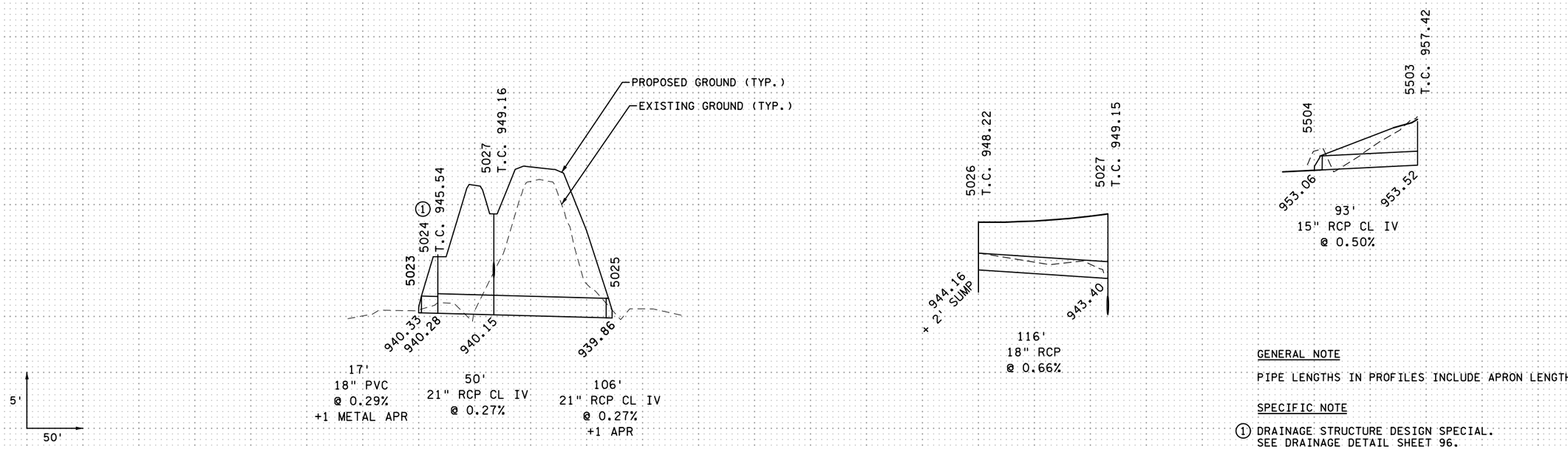
GENERAL NOTES

1. ALL STATION CALLOUTS REFERENCE THE ADJACENT ALIGNMENT UNLESS OTHERWISE NOTED.
2. SEE CONSTRUCTION PROFILES AND CROSS SECTIONS FOR SPECIAL DITCH GRADES.
3. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.



SPECIFIC NOTES

(1) DRAINAGE DESIGN SPECIAL. SEE DRAINAGE DETAIL ON SHEET 96.



GENERAL NOTE

PIPE LENGTHS IN PROFILES INCLUDE APRON LENGTH.

SPECIFIC NOTE

(1) DRAINAGE STRUCTURE DESIGN SPECIAL. SEE DRAINAGE DETAIL SHEET 96.

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1/22/2025
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NO	DATE	DWN	CKD	REVISIONS

ALLIANT

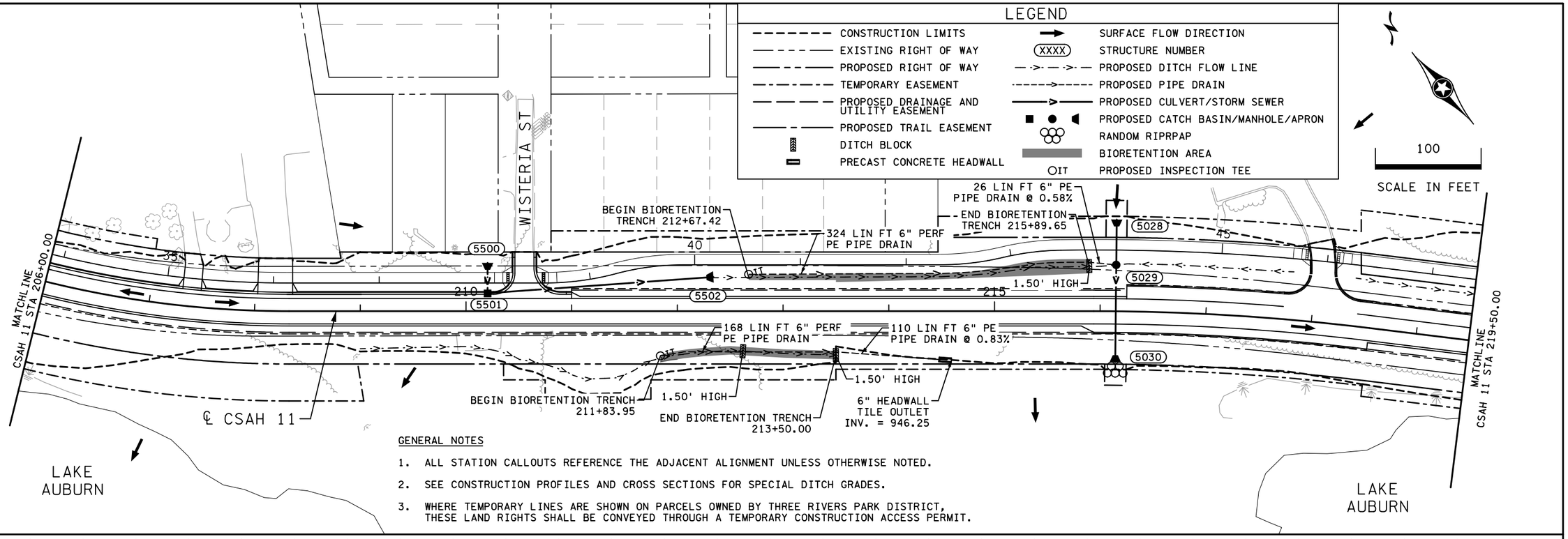
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: SARAH BARNETT
SIGNATURE:
DATE 01/10/25 LICENSE # 58796

DRAINAGE PLAN & PROFILE

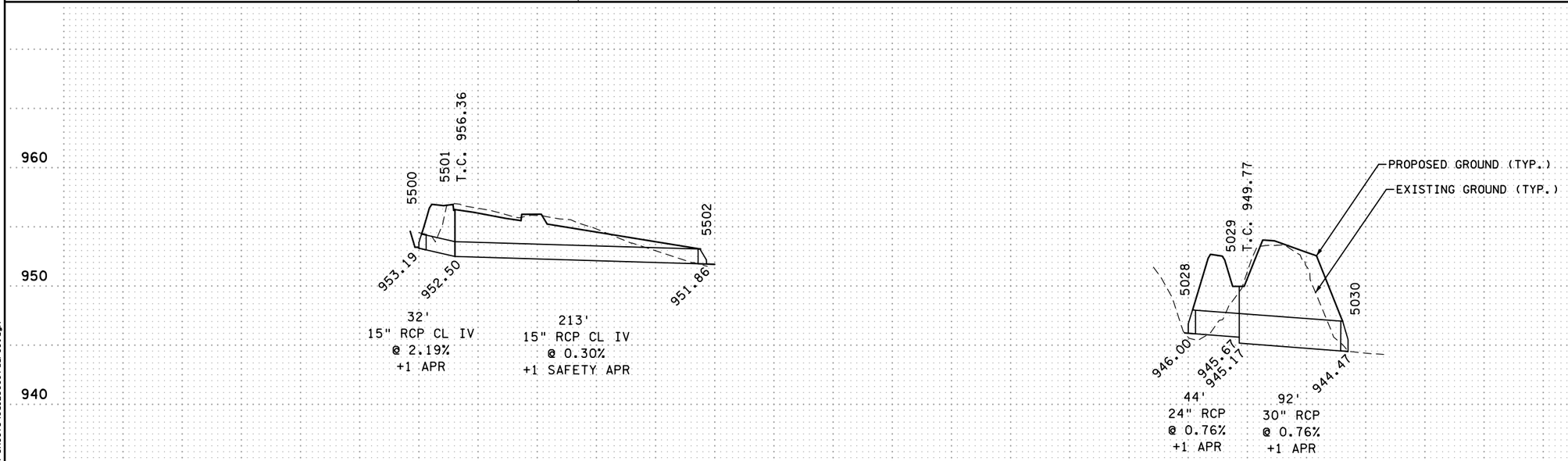
SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 90 OF 220 SHEETS



GENERAL NOTES

1. ALL STATION CALLOUTS REFERENCE THE ADJACENT ALIGNMENT UNLESS OTHERWISE NOTED.
2. SEE CONSTRUCTION PROFILES AND CROSS SECTIONS FOR SPECIAL DITCH GRADES.
3. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.



GENERAL NOTE

PIPE LENGTHS IN PROFILES INCLUDE APRON LENGTH.

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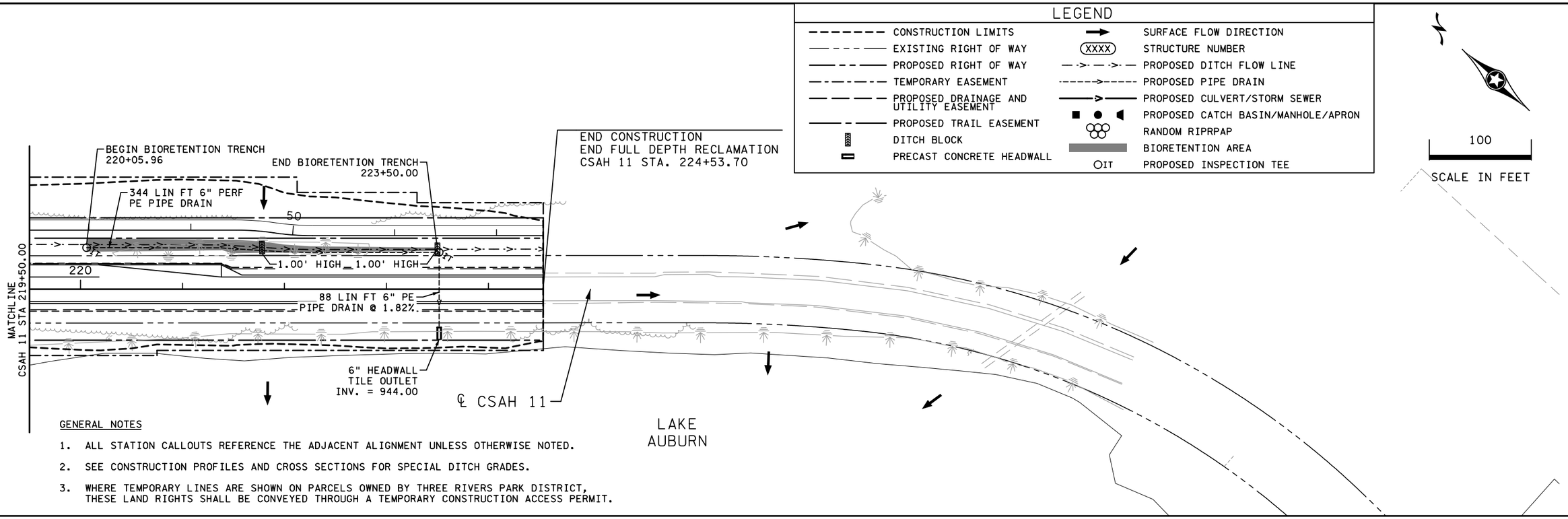
PRINT NAME: SARAH BARNETT
SIGNATURE:
DATE 01/10/25 LICENSE # 58796

DRAINAGE PLAN & PROFILE

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 91 OF 220 SHEETS



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2. SEE CONSTRUCTION PROFILES AND CROSS SECTIONS FOR SPECIAL DITCH GRADES.
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DRAINAGE PLAN & PROFILE

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 92 OF 220 SHEETS

EXISTING DRAINAGE TABULATION — I

ALIGNMENT	STATION TO STATION	LOCATION	INPLACE SIZE AND TYPE	REMOVE PIPE CULVERTS (1)
				LIN FT
SAP 010-611-027; CP 218931 (CSAH 11)				
CSAH11	101+65.06 TO 101+93.38	LT	15" CMP	28
CSAH11	107+59.81 TO 107+59.51	LT/RT	24" RCP	52
CSAH11	113+61.85 TO 113+88.08	RT	15" CMP	28
CSAH11	114+12.38 TO 114+13.43	LT/RT	60" RCP	78
CSAH11	117+80.14 TO 118+28.30	RT	15" CMP	48
CSAH11	143+54.17 TO 143+59.44	LT/RT	24" RCP	88
CSAH11	146+06.95 TO 146+38.35	LT	15" CMP	32
CSAH11	149+27.37 TO 149+25.27	LT/RT	24" RCP	86
CSAH11	160+69.69 TO 160+73.80	LT/RT	18" RCP	80
CSAH11	166+21.18 TO 166+18.96	LT/RT	18" CMP	64
CSAH11	167+37.53 TO 167+99.86	RT	15" CMP	64
CSAH11	177+95.63 TO 178+25.67	RT	15" CMP	30
CSAH11	186+67.25 TO 186+74.18	LT/RT	24" RCP	86
CSAH11	201+06.85 TO 201+06.10	LT/RT	18" HDPE	112
CSAH11	209+62.46 TO 209+90.12	LT	12" CMP	28
CSAH11	210+08.20 TO 210+12.99	LT	12" CMP	5
CSAH11	210+40.56 TO 210+78.20	LT	12" CMP	38
CSAH11	212+45.39 TO 212+71.37	LT	15" CMP	26
CSAH11	215+36.28 TO 215+40.20	LT/RT	24" RCP	78
CSAH11	217+82.86 TO 218+25.82	LT	15" X 24" RCP	44
			TOTAL	**1095**

NOTES:
(1) PAY ITEM INCLUDES LENGTH OF APRON. REMOVAL OF APRONS SHALL BE INCIDENTAL.

BIORETENTION TRENCH TABULATION — J

ALIGNMENT	STATION TO STATION	LOCATION	COARSE FILTER AGGREGATE (CV)	FINE FILTER AGGREGATE (CV)	FILTER TOPSOIL BORROW	6" PRECAST CONCRETE HEADWALL	6" PE PIPE DRAIN	6" PERF PE PIPE DRAIN	COMMON EMBANKMENT (CV)	12" PE INSPECTION TEES
			CU YD	CU YD	CU YD	EACH	LIN FT	LIN FT	CU YD	EACH
SAP 010-611-027; CP 218931 (CSAH 11)										
CSAH11	102+06 TO 105+00	LT	22.4	8.2	32.7	1	220	294	15.8	1
CSAH11	100+51 TO 105+50	RT	38.0	13.9	55.6	1	284	500	24.9	2
CSAH11	110+37 TO 109+00	RT	10.4	3.8	15.2		158	137	1.7	1
CSAH11	123+70 TO 118+58	RT	39.1	14.3	57.1	1	430	514	15.8	1
CSAH11	129+90 TO 129+50	RT	3.2	1.2	4.7	1	60	42	1.7	1
CSAH11	134+99 TO 136+73	LT	13.2	4.8	19.3	1	328	174	1.7	1
CSAH11	135+45 TO 141+72	RT	47.8	17.4	69.8	1	130	628	17.0	1
CSAH11	145+93 TO 145+11	LT	6.2	2.3	9.1	1	140	82	4.7	1
CSAH11	153+00 TO 151+00	RT	15.2	5.6	22.2	1	145	200	1.7	1
CSAH11	153+50 TO 151+45	LT	16.0	5.8	23.3	1	195	210	5.4	1
CSAH11	171+44 TO 168+30	RT	24.2	8.8	35.3	1	194	318	3.4	1
CSAH11	176+09 TO 178+50	LT	18.4	6.7	26.9	1	86	242	27.0	1
CSAH11	173+64 TO 178+85	RT	39.7	14.5	58.0	1	90	522	44.3	1
CSAH11	185+00 TO 186+45	LT	11.0	4.0	16.0		22	144	1.6	1
CSAH11	188+00 TO 187+00	LT	7.6	2.8	11.1		33	100	1.2	1
CSAH11	188+65 TO 193+00	RT	31.8	11.6	46.4	1	40	418	30.3	1
CSAH11	189+30 TO 200+47	LT	87.8	32.1	128.2		62	1154	92.3	1
CSAH11	203+45 TO 202+50	LT	7.3	2.7	10.7		25	96	1.1	1
CSAH11	211+84 TO 213+50	RT	12.8	4.7	18.7	1	110	168	10.8	1
CSAH11	212+67 TO 215+90	LT	24.6	9.0	36.0		26	324	5.3	1
CSAH11	220+06 TO 223+50	LT	26.2	9.6	38.2	1	88	344	4.0	2
		TOTAL	**503**	**184**	**735**	**15**	**2866**	**6611**	**312**	**23**

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DATE 01/10/25 LICENSE # 58796

DRAINAGE TABULATION

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 93 OF 220 SHEETS

PROPOSED DRAINAGE TABULATION

K

STRUCTURE NUMBER		STRUCTURE LOCATION (1)					TOP OF CASTING ELEV	FLOWS FROM PIPE OUTLET ELEV	FLOWS TO PIPE INLET ELEV	SLOPE OF PIPE %	CASTING ASSEMBLY		STRUCTURE CONSTRUCTION (8)			STEPS REQ'D (4)	PIPE CULVERT DES 3006 (2) (3)						15" CAS PIPE CULVERT (2)	15" RC PIPE SEWER DES 3006 CL IV (2) (3)	18" PVC PIPE SEWER	PIPE APRON						SAFETY APRON		15" CAS SAFETY APR & GRATE DES 3128	FINE AGGREGATE BEDDING (CV)	GEOTEXTILE FILTER TYPE 3	RANDOM RIPRAP CLASS II	NOTES
					COORDINATES								SD-48	48-4020	SPECIAL		18" RC	21" RC CL IV	24" RC	24" RC CL III	30" RC	36" RC CL III				15" RC	18" CAS	21" RC	24" RC	30" RC	36" RC	15" RC	24" RC					
FLOWS FROM	FLOWS TO	ALIGN.	STATION	OFFSET	X	Y					TYPE	EACH	LIN FT		EACH		LIN FT									EACH						EACH		EACH	CU YD	SQ YD	CU YD	
SAP 010-611-027; CP 218931 (CSAH 11)																																				
5000	5001	CSAH11	101+64.7	41.5 LT	516043.3	190514.8	APRON	993.70	993.22	1.48												30											1	35.3			(7)
5001		CSAH11	102+02.8	41.5 LT	516054.2	190478.2	APRON	993.22																									1				(7)
5002	5003	CSAH11	107+59.5	40.8 RT	516133.5	189921.1	APRON	986.63	984.62	2.25									78											1				65.7			
5003		CSAH11	107+59.5	48.7 LT	516219.3	189946.6	APRON	984.62																						1					29.7	6.2	
5004	5005	CSAH11	114+12.1	60.3 RT	516300.2	189289.9	APRON	982.77	979.47	2.54											112										1			125.9			
5005		CSAH11	114+13.9	69.6 LT	516425.3	189325.1	APRON	979.47																							1				45.9	10.6	
5006	5007	CSAH11	118+40.8	41.3 RT	516440.3	188884.3	APRON	990.29	989.60	0.84												74											1	75.2			(7)
5007		CSAH11	117+58.5	47.4 RT	516411.1	188961.4	APRON	989.60																									1				(7)
5008	5009	CSAH11	143+59.6	48.8 LT	518142.6	187161.2	APRON	990.21	987.39	2.55									98											1				79.6			
5009		CSAH11	143+52.9	61.7 RT	518075.5	187073.1	APRON	987.39																						1					29.7	6.2	
5010	5011	CSAH11	146+44.7	41.5 LT	518375.3	186996.3	APRON	997.15	996.74	0.99												32											1	38.0			(7)
5011		CSAH11	146+03.2	41.5 LT	518340.9	187019.5	APRON	996.74																									1				(7)
5012	5013	CSAH11	149+25.0	50.4 LT	518613.2	186847.6	APRON	996.38	991.02	4.28								114											1				92.0			
5013		CSAH11	149+25.0	74.7 RT	518543.5	186743.7	APRON	991.02																						1					29.7	6.2	
5014	5015	CSAH11	160+69.0	40.0 RT	519353.3	185981.2	APRON	1004.20	998.39	6.27									78													1		68.6			(6)
5015		CSAH11	160+73.9	53.8 LT	519432.1	186032.4	APRON	998.39																						1					29.7	6.2	
5016	5017	CSAH11	166+21.6	49.3 RT	519720.9	185555.5	APRON	1004.20	1001.06	3.04									88													1		75.9			(6)
5017		CSAH11	166+18.0	54.1 LT	519783.4	185637.9	APRON	1001.06																									1			29.7	6.2	
5018	5019	CSAH11	168+00.2	41.9 RT	519873.6	185453.6	APRON	1007.59	1005.58	2.34												76											1	77.9			(7)
5019		CSAH11	167+17.0	50.1 RT	519798.4	185495.1	APRON	1005.58																									1				(7)
5020	5021	CSAH11	186+75.4	51.1 RT	521607.6	184725.7	APRON	980.64	976.06	5.04								86											1				66.4			
5021	5022	CSAH11	186+70.7	39.4 LT	521607.7	184816.4	985.18	976.06	972.53	5.03	M-11	1		9.4		YES				66													51.8			
		CSAH11	186+69.9	39.4 LT	521606.9	184816.4																															
5022		CSAH11	186+65.6	109.4 LT	521606.3	184886.5	APRON	972.53																						1					29.7	6.2	
5023	5024	CSAH11	201+02.0	107.3 LT	522805.1	184063.1	APRON	940.33	940.28	0.29															15		1							19.5			
5024	5027	CSAH11	201+02.9	90.3 LT	522790.3	184054.8	945.54	940.28	940.15	0.27					1			50																33.7	16.5	4.5	(5)
		CSAH11	201+03.7	90.3 LT	522790.7	184054.1																															
5027	5025	CSAH11	201+07.8	40.5 LT	522747.9	184028.2	949.16	940.15	939.86	0.27	A-4D	1		9.6		YES		100																71.3			
		CSAH11	201+08.6	40.5 LT	522748.3	184027.5																															
5025		CSAH11	201+19.0	64.7 RT	522658.7	183971.4	APRON	939.86																						1					24.1	4.7	
5026	5027	CSAH11	202+25.0	39.2 LT	522799.0	183922.8	948.22	944.16	943.40	0.66	M-11	1		6.3		YES	116																71.6			(9)
		CSAH11	202+24.2	39.2 LT	522798.6	183923.4																															
5503	5504	CSAH11	205+54.0	17.0 LT	522929.6	183622.6	957.42	953.52	953.06	0.50	B-9	1	3.8									86															
5504		CSAH11	204+59.6	30.0 LT	522895.0	183708.9	APRON	953.06																									1				(7)
5500	5501	CSAH11	210+21.4	48.6 LT	523272.7	183318.0	APRON	953.19	952.50	2.19												26					1										
5501	5502	CSAH11	210+20.7	17.0 LT	523251.5	183294.6	956.36	952.50	951.86	0.30	B-9	1	3.8									206															
		CSAH11	210+21.4	17.0 LT	523252.1	183294.1																															
5502		CSAH11	212+34.1	31.7 LT	523423.1	183166.8	APRON	951.86																									1				(7)
5028	5029	CSAH11	216+14.7	86.9 LT	523748.5	182960.2	APRON	946.00	945.52	0.76									38											1				32.1			
5029	5030	CSAH11	216+15.0	44.0 LT	523720.5	182927.7	949.77	945.17	944.47	0.76	M-11	1		4.9		YES					86													78.1			
		CSAH11	216+15.7	43.7 LT	523720.9	182927.1																															
5030		CSAH11	216+18.0	48.2 RT	523662.0	182856.5	APRON	944.47																							1				37.4	8.2	
TOTAL												**6**	**7.6**	**31.0**	**1**		**116**	**150**	**380**	**266**	**86**	**112**	**212**	**318**	**15**	**1**	**1**	**1**	**10**	**1**	**2**	**2**	**3**	**8**	**1159.0**	**303.0**	**66.0**	

NOTES:
(1) STATION, OFFSET, COORDINATES, AND TOP OF CASTING ELEVATIONS FOR EACH POINT NUMBER ARE GIVEN AT THE CENTER OF GRATE OR COVER INVERT ELEVATIONS ARE GIVEN AT CENTER OF STRUCTURE OR APRON END. FOR STRUCTURES WITH TWO LINES OF INFORMATION, THE FIRST LINE SPECIFY THE CENTER OF GRATE OR COVER CASTING AND THE SECOND LINE COORDINATES SPECIFY THE CENTER OF STRUCTURE.
(2) LENGTH GIVEN TO END OF BARREL (DOES NOT INCLUDE APRON).
(3) TIE ALL JOINTS ON CONCRETE PIPES AND APRONS PER STANDARD PLATE 3145.
(4) STRUCTURES WITH PAY HEIGHT DEPTHS GREATER THAN 4.5' MUST INCLUDE MANHOLE STEPS 16" ON CENTER. SEE STANDARD PLATE 4180.
(5) PAID FOR AS CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL. SEE SHEET 96 FOR DETAILS. PAY ITEM CONSISTS OF CONCRETE STRUCTURE AND REBAR, AND ALL HARDWARE REQUIRED FOR A COMPLETE INSTALLATION.
(6) SAFETY APRON MUST FIT 1:4 SLOPE.
(7) SAFETY APRON MUST FIT 1:6 SLOPE.
(8) UTILIZE HDPE ADJUSTMENT RINGS.
(9) 2 FT SUMP.

CASTING ASSEMBLY

ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING	STANDARD PLATE NO.	TOTALS (10)
A-4D	700-4 ROUND		4101	1
		715	4110	
B-9	805		4132	2
		816	4154	
M-11	ROUND CONC.		4143	3
		731	4143	
			TOTAL	**6**

NOTES:
(10) SUMMARY TABULATION DOES NOT INCLUDE CASTING CONSTRUCTED AS PART DRAINAGE STRUCTURE DESIGN SPECIAL.

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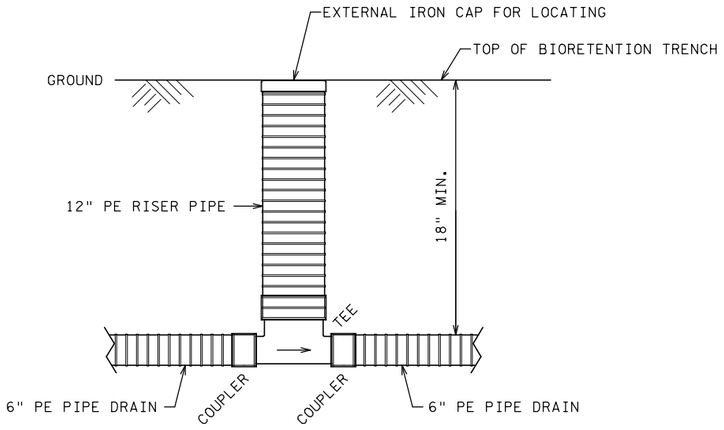
DRAINAGE TABULATION

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 94 OF 220 SHEETS



12" PE INSPECTION TEES

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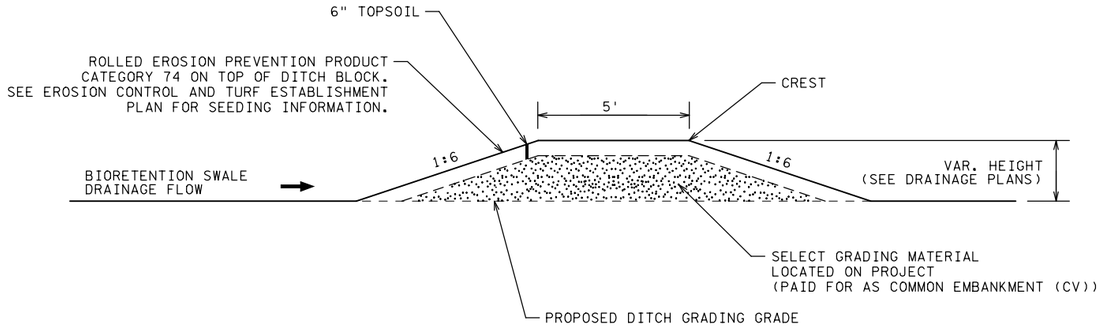

DITCH BLOCK DETAIL

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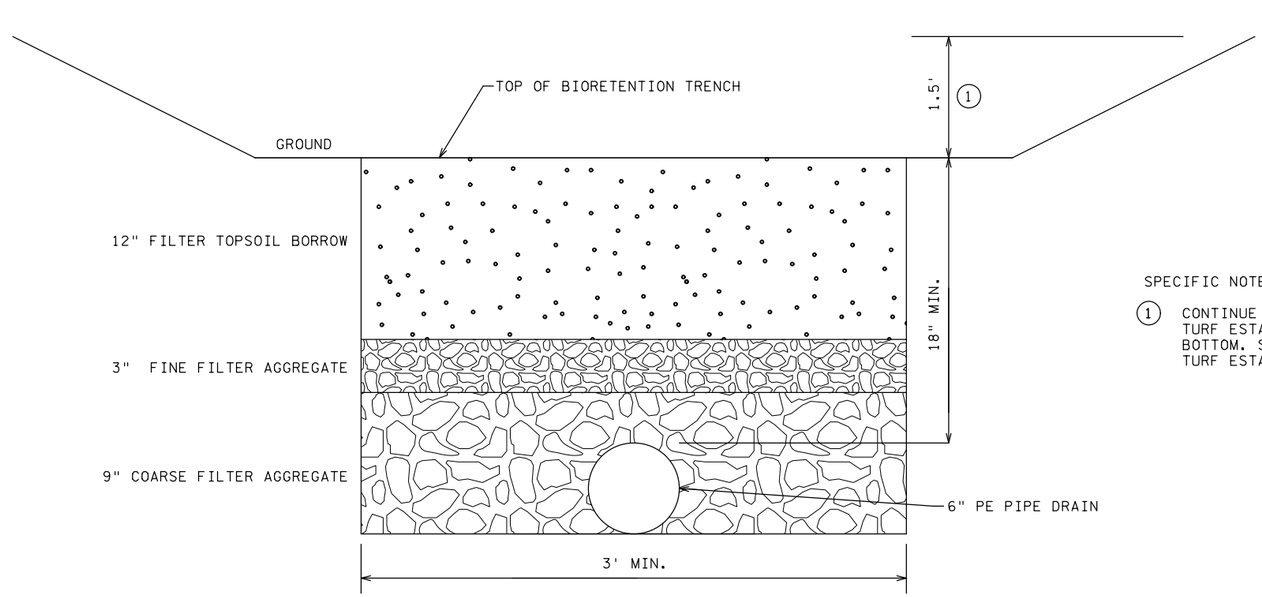

SPECIFIC NOTES:

(1) CONTINUE WET DITCH PERMANANT TURF ESTABLISHMENT 1.5' ABOVE DITCH BOTTOM. SEE EROSION CONTROL AND TURF ESTABLISHMENT PLAN FOR SEED MIX.

BIORETENTION TRENCH

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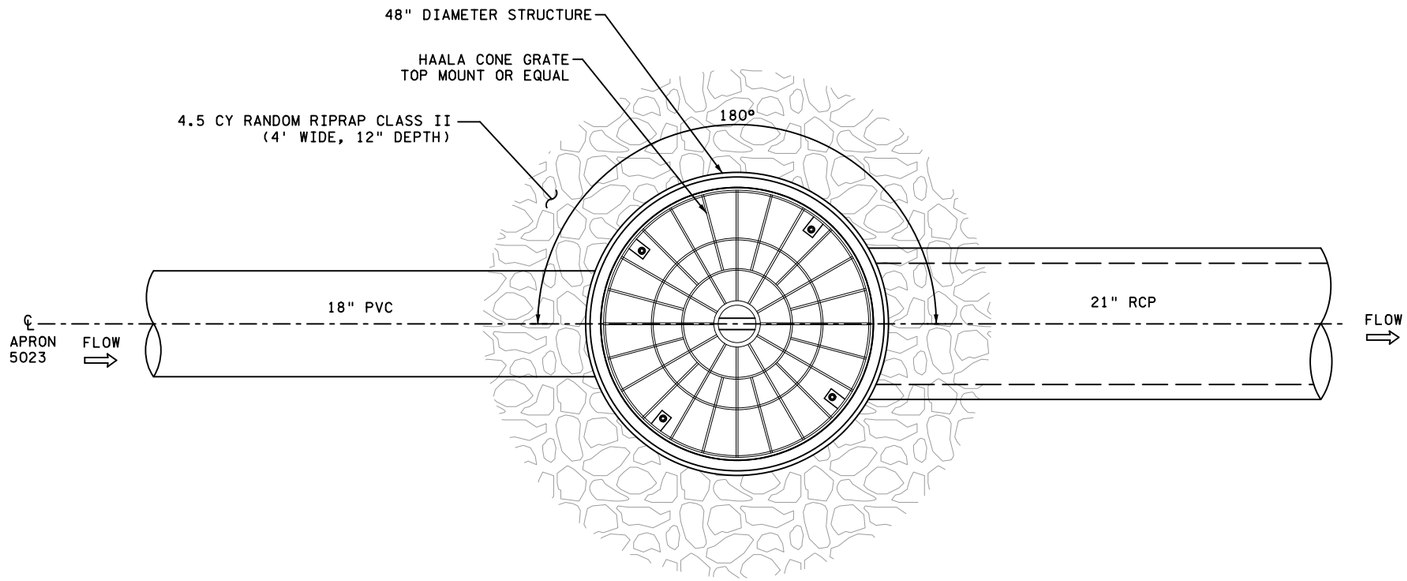
DRAINAGE DETAILS

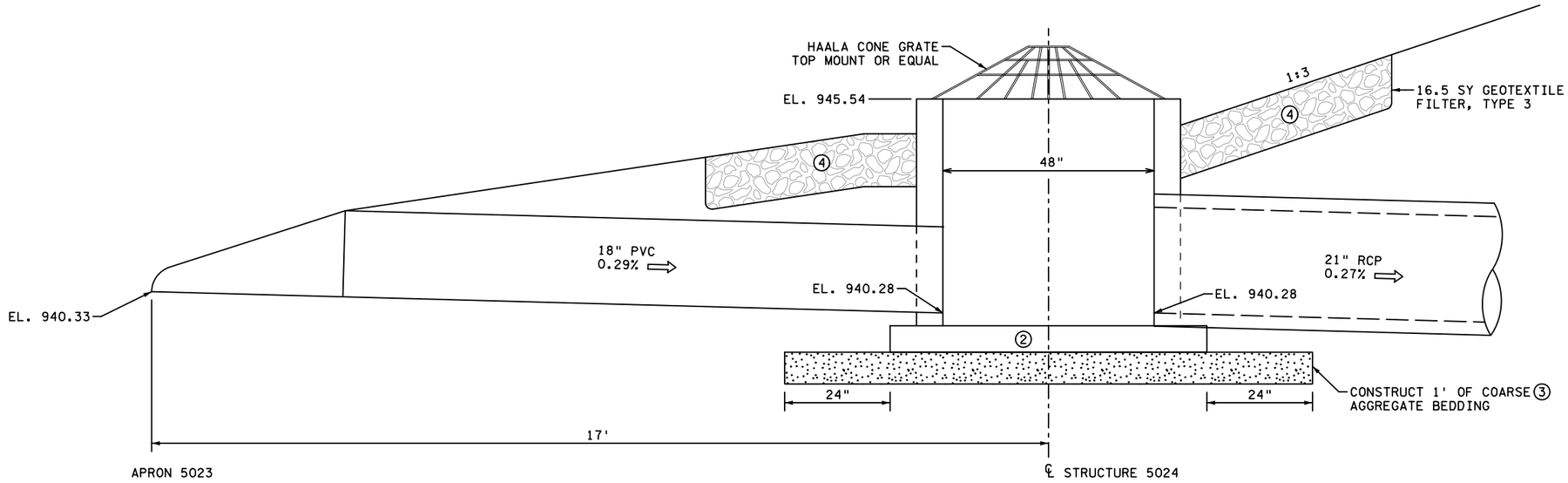
SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 95 OF 220 SHEETS

SPECIFIC NOTES:

1. PRECAST MANHOLE STRUCTURE TYPE 4020 PER STANDARD PLATE 4020.
2. CONCRETE BASE PER STANDARD PLATE 4011.
3. IF WET CONDITIONS ARE ENCOUNTERED, COMPACT TO THE QUALITY COMPACTION REQUIREMENTS OF SPEC. 2105. WRAP WITH GEOTEXTILE FABRIC TYPE 4 PER SPEC. 3733. SEAM ALL FABRIC SIDES AND ENDS PER SPEC. TABLE 3733-1 OR OVERLAP A MINIMUM OF 3 FT.
4. RIPRAP PLACED AROUND THE PERIMETER OF GRATE MUST BE FLUSH WITH FINISHED SOIL GRADE AS SHOWN IN DETAIL.





DRAINAGE STRUCTURE DESIGN SPECIAL

NO SCALE

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DRAINAGE DETAILS

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 96 OF 220 SHEETS

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE

PROJECT DESCRIPTION/LOCATION

SAP 010-611-027 IS LOCATED ON CSAH 11 FROM 935' S OF TH 7 TO 1295' N OF TH 5 IN THE CITY OF VICTORIA IN CARVER COUNTY, MN. THE PLANNED SCOPE OF THE PROJECT INCLUDES: FULL DEPTH RECLAMATION, GRADING, AGGREGATE BASE, BITUMINOUS AND AGGREGATE SURFACING, CULVERTS, SIGNING, AND PAVEMENT MARKING.

THE PROJECT PROPOSES BIORETENTION AREAS AS A PERMANENT STORMWATER TREATMENT SYSTEM.

SWPPP PERSONNEL AND TRAINING

THIS SWPPP WAS PREPARED BY MARTHA BURKET CERTIFIED IN THE DESIGN OF CONSTRUCTION SWPPPS. CERTIFICATION WAS THROUGH AN UMN ONLINE COURSE (OPENING 9/5/2023) WITH REBECCA FORMAN AS THE INSTRUCTOR.

THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AN EROSION CONTROL SUPERVISOR WITH VALID CERTIFICATION THAT IS RESPONSIBLE FOR OVERSEEING THE IMPLEMENTATION OF THE SWPPP. THE CONTRACTOR MUST PROVIDE PROOF OF CERTIFICATION AT THE PRECONSTRUCTION MEETING AND WILL NOT BE ALLOWED TO COMMENCE WORK UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED TO THE PROJECT ENGINEER.

PROVIDE AT LEAST ONE CERTIFIED INSTALLER FOR EACH CONTRACTOR OR SUBCONTRACTOR THAT PLACES EROSION CONTROL MEASURES. WORK WILL NOT BE ALLOWED TO COMMENCE UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED TO THE PROJECT ENGINEER.

CHAIN OF RESPONSIBILITY

CARVER COUNTY AND THE CONTRACTOR ARE CO-PERMITEES FOR THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION PERMIT. THE CONTRACTOR IS RESPONSIBLE TO COMPLY WITH ALL ASPECTS OF THE NPDES CONSTRUCTION PERMIT AT ALL TIMES UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA. THE PROJECT ENGINEER WILL ENSURE THAT THE CONTRACTOR'S EROSION AND SEDIMENT CONTROL SUPERVISOR FULFILLS THEIR DUTIES.

LAND FEATURE CHANGES

TOTAL DISTURBED AREA	33.94 ACRES
WITHIN THE DISTURBED AREA: TOTAL EXISTING IMPERVIOUS SURFACE AREA	8.62 ACRES
WITHIN THE DISTURBED AREA: TOTAL PROPOSED IMPERVIOUS SURFACE AREA	14.74 ACRES
TOTAL PROPOSED NET CHANGE IN IMPERVIOUS SURFACE AREA	6.12 ACRES

LOCATION OF SWPPP ELEMENTS

THE REQUIRED SWPPP ELEMENTS ARE LOCATED IN SEVERAL PLACES WITHIN THE PLAN SET. THE NOTES AND TABLE BELOW ARE A QUICK REFERENCE FOR THE CONTRACTOR AND PROJECT ENGINEER TO USE IN THE FIELD. THERE MAY BE ADDITIONAL REQUIRED SWPPP ELEMENTS INCLUDED ON THE PROJECT THAT ARE NOT LISTED ON THIS SHEET.

SWPPP SHEET DESCRIPTIONS	LOCATION
TEMPORARY EROSION CONTROL MEASURES	SHEETS NO. 100 - 104
PERMANENT EROSION CONTROL MEASURES	SHEETS NO. 100 - 104
DIRECTION OF FLOW	SHEETS NO. 83 - 92
FINAL STABILIZATION	SHEETS NO. 100 - 104
SOILS AND CONSTRUCTION NOTES	SHEET NO. 5
DRAINAGE TABULATION	SHEETS NO. 93 - 94
DRAINAGE PROFILES	SHEETS NO. 83 - 92
DRAINAGE DETAILS	SHEETS NO. 95 - 96
EROSION AND SEDIMENT CONTROL STANDARD PLANS	SHEETS NO. 43 - 54
EROSION CONTROL TABULATION	SHEETS NO. 9
TURF ESTABLISHMENT TABULATION	SHEETS NO. 9
SITE MAP	SHEETS NO. 99

STORMWATER CALCULATIONS AND ADDITIONAL HYDRAULIC DESIGN INFORMATION ARE AVAILABLE UPON REQUEST.

SOIL TYPES

SOIL TYPES TYPICALLY FOUND ON THIS PROJECT ARE LOAM AND MUCK.

ENVIRONMENTAL REVIEW

THERE ARE NO STORMWATER MITIGATION MEASURES REQUIRED AS A RESULT OF AN ENVIRONMENTAL, ARCHEOLOGICAL OR AGENCY REVIEW. ALL MITIGATION MEASURES HAVE BEEN ADDRESSED IN THIS PLAN SET OR THE SPECIAL PROVISIONS.

THIS PROJECT IS NOT LOCATED IN A WELL HEAD PROTECTION AREA.

THE SOUTHERN PORTION OF THE PROJECT IS LOCATED IN A LOW VULNERABILITY DRINKING WATER SUPPLY MANAGEMENT AREA (DWSMA).

THIS PROJECT IS NOT LOCATED IN A KARST AREA.

THIS PROJECT IS NOT LOCATED IN AN EMERGENCY RESPONSE AREA (ERA) PER DEPARTMENT OF HEALTH.

LONG TERM MAINTENANCE AND OPERATION

CARVER COUNTY IS RESPONSIBLE FOR THE LONG TERM MAINTENANCE AND OPERATION OF THE PERMANENT STORMWATER SYSTEM.

SPECIAL AND IMPAIRED WATERS THAT ARE LOCATED WITHIN ONE MILE (AERIAL RADIUS) OF THE PROJECT LIMITS AND RECEIVE RUNOFF FROM THE PROJECT SITE.

WATERBODY NAME	IMPAIRMENT(S) OR SPECIAL STATUS
WEST AUBURN	FISH BIOASSESSMENTS
LUNDSTEN SOUTH	NUTRIENTS
EAST AUBURN	FISH BIOASSESSMENTS; NUTRIENTS
ZUMBRA-SUNNY	FISH BIOASSESSMENTS; MERCURY IN FISH TISSUE
CHURCH	NUTRIENTS
STEIGER	FISH BIOASSESSMENTS; MERCURY IN FISH TISSUE

THE IMPAIRED WATERS (LISTED IN THE TABLE ABOVE) ARE EACH IMPAIRED WITH AT LEAST ONE CONSTRUCTION-RELATED IMPAIRMENT.

AREAS OF ENVIRONMENTAL SENSITIVITY (AES)

WETLANDS WITHIN AND NEAR THE PROJECT BOUNDARY ARE SHOWN ON THE EROSION CONTROL AND TURF ESTABLISHMENT PLANS.

WORK IN WATER RESTRICTIONS

THE FOLLOWING TYPES OF WATERS HAVE WORK IN WATER EXCLUSIONS. NO WORK IN THE WATER IS ALLOWED DURING THE EXCLUSION DATES. SEE DNR PERMIT FOR WHICH WATERBODIES THIS APPLIES TO.

WATERBODY	NO WORK DURING
LAKES	APRIL 1 - JUNE 30
NON-TROUT STREAMS	MARCH 15 - JUNE 15
TROUT STREAMS	SEPTEMBER 1 - APRIL 1

PROJECT CONTACTS

PROJECT ORGANIZATION CONTACTS	NAME	PHONE
CONTRACTOR'S EROSION AND SEDIMENT CONTROL SUPERVISOR	TBD	
CONTRACTOR'S EROSION AND SEDIMENT CONTROL INSTALLER	TBD	
DESIGN PROJECT MANAGER	JORDAN VAN OORT	952-836-4018
THREE RIVERS PARK DISTRICT	JOSH BOWE	612-280-7951
CONSTRUCTION MANAGER	TBD	
MINNESOTA POLLUTION CONTROL AGENCY	JOSH NORMAN	651-757-2389
MINNESOTA DEPARTMENT OF NATURAL RESOURCES	PATTY FOWLER	612-708-7732
MINNEHAHA CREEK WATERSHED DISTRICT	ANDREW STEPHENSON	952-641-4504
ARMY CORPS OF ENGINEERS	TBD	
MPCA DUTY OFFICER 24 HR EMERGENCY NOTIFICATION	651-649-5451 OR 1(800)-422-0798	

SITE INSPECTION AND MAINTENANCE

INSPECT THE ENTIRE CONSTRUCTION SITE A MINIMUM OF ONCE EVERY SEVEN DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. INSPECT ALL TEMPORARY AND PERMANENT WATER QUALITY MANAGEMENT, EROSION PREVENTION AND SEDIMENT CONTROL BMPS UNTIL THE SITE HAS UNDERGONE FINAL STABILIZATION AND THE NOT HAS BEEN SUBMITTED. INSPECT SURFACE WATER INCLUDING DRAINAGE DITCHES FOR SIGNS OF EROSION AND SEDIMENT DEPOSITION. INSPECT CONSTRUCTION SITE VEHICLE EXIT LOCATIONS FOR EVIDENCE OF TRACKING ONTO PAVED SURFACES. INSPECT SURROUNDING PROPERTIES FOR EVIDENCE OF OFF SITE SEDIMENT ACCUMULATION. INSPECT INFILTRATION AREAS FOR SIGNS OF SEDIMENT DEPOSITION AND COMPACTION (TO ENSURE THAT EQUIPMENT IS NOT BEING DRIVEN ACROSS THE AREA).

RECORD ALL INSPECTIONS AND MAINTENANCE ACTIVITIES IN WRITING WITHIN 24 HOURS. SUBMIT INSPECTION REPORTS IN A FORMAT THAT IS ACCEPTABLE TO THE PROJECT ENGINEER. INCLUDE THE FOLLOWING IN THE RECORDS OF EACH INSPECTION AND MAINTENANCE ACTIVITY:

A. DATE AND TIME OF INSPECTIONS
B. NAME OF PERSONS CONDUCTING INSPECTIONS
C. FINDINGS OF INSPECTIONS, INCLUDING RECOMMENDATIONS FOR CORRECTIVE ACTIONS
D. CORRECTIVE ACTIONS TAKEN, INCLUDING DATES, TIMES, AND PARTY COMPLETING MAINTENANCE ACTIVITIES
E. DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 0.5 INCH IN 24 HOURS
F. IF DISCHARGE OBSERVED, PHOTOGRAPHS AND DESCRIPTION OF DISCHARGE
G. DOCUMENTS AND CHANGES MADE TO SWPPP
H. PHOTOGRAPHS OF DEWATERING ACTIVITIES AND DOCUMENTATION OF NUISANCE CONDITIONS

REPLACE, REPAIR OR SUPPLEMENT ALL NONFUNCTIONAL BMPS BY THE END OF THE NEXT BUSINESS DAY FOLLOWING DISCOVERY UNLESS LISTED DIFFERENTLY BELOW:

A. REPAIR, REPLACE, OR SUPPLEMENT PERIMETER CONTROL DEVICES WHEN IT BECOMES NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT OF THE DEVICE. COMPLETE REPAIRS BY THE END OF THE NEXT BUSINESS DAY FOLLOWING DISCOVERY.
B. REPAIR OR REPLACE INLET PROTECTION DEVICES WHEN THEY BECOME NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT AND/OR DEPTH OF THE DEVICE.
C. DRAIN AND REMOVE SEDIMENT FROM TEMPORARY AND PERMANENT SEDIMENT BASINS ONCE THE SEDIMENT HAS REACHED 1/2 THE STORAGE VOLUME. COMPLETE WORK WITHIN 72 HOURS OF DISCOVERY.
D. REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS INCLUDING DRAINAGE WAYS, CATCH BASINS, AND OTHER DRAINAGE SYSTEMS. RESTABILIZE ANY AREAS THAT ARE DISTURBED BY SEDIMENT REMOVAL OPERATIONS. SEDIMENT REMOVAL AND STABILIZATION MUST BE COMPLETED WITHIN 7 DAYS OF DISCOVERY. PREPARE AND SUBMIT A SITE MANAGEMENT PLAN FOR WORKING IN SURFACE WATERS. CONTACT ALL APPROPRIATE AUTHORITIES PRIOR TO WORKING IN SURFACE WATERS.
E. REMOVE TRACKED SEDIMENT FROM PAVED SURFACES BOTH ON AND OFF SITE WITHIN 24 HOURS OF DISCOVERY. STREET SWEEPING MAY HAVE TO OCCUR MORE OFTEN TO MINIMIZE OFF SITE IMPACTS. LIGHTLY WET THE PAVEMENT PRIOR TO SWEEPING.
F. MAINTAIN ALL BMPS UNTIL WORK HAS BEEN COMPLETED, SITE HAS UNDERGONE FINAL STABILIZATION, AND THE NOTICE OF TERMINATION (NOT) HAS BEEN SUBMITTED TO THE MPCA.

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NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

STORM WATER POLLUTION PREVENTION PLANS

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 97 OF 220 SHEETS

STORMWATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE (CONTINUED)

STABILIZATION TIME FRAMES

AREA	TIME FRAME	NOTES
LAST 200 LINEAL FEET OF DRAINAGE DITCH OR SWALE	WITHIN 24 HOURS OF CONNECTION TO SURFACE WATER OR PROPERTY EDGE	1, 2, 3
REMAINING PORTIONS OF DRAINAGE DITCH OR SWALE	7 DAYS	1, 3
PIPE AND CULVERT OUTLETS	24 HOURS	
EXPOSED SOILS AND STOCKPILES	7 DAYS	1
WITHIN 200 FEET OF A PUBLIC WATER	24 HOURS	7

1. INITIATE STABILIZATION IMMEDIATELY WHEN CONSTRUCTION HAS TEMPORARILY OR PERMANENTLY CEASED ON ANY PORTION OF THE SITE. COMPLETE STABILIZATION WITHIN THE TIME FRAME LISTED. IN MANY INSTANCES THIS WILL REQUIRE STABILIZATION TO OCCUR MORE THAN ONCE DURING THE COURSE OF THE PROJECT. TEMPORARY SOIL STOCKPILES WITHOUT SIGNIFICANT CLAY OR SILT AND STOCKPILED AND CONSTRUCTED ROAD BASE ARE EXEMPT FROM THE STABILIZATION REQUIREMENT.

2. STABILIZE WETTED PERIMETER OF DITCH (I.E. WHERE THE DITCH GETS WET).

3. APPLICATION OF MULCH, HYDROMULCH, TACKIFIER AND POLYACRYLAMIDE ARE NOT ACCEPTABLE STABILIZATION METHODS IN THESE AREAS.

4. STABILIZE ALL AREAS OF THE SITE PRIOR TO THE ONSET OF WINTER. ANY WORK STILL BEING PERFORMED WILL BE SNOW MULCHED, SEEDED, AND BLANKETED WITHIN THE TIME FRAMES IN THE NPDES PERMIT.

5. TOPSOIL BERMS MUST BE STABILIZED WITHIN 24 HOURS IN ORDER TO BE CONSIDERED PERIMETER CONTROL BMPS. USE RAPID STABILIZATION.

6. KEEP DITCHES AND EXPOSED SOILS IN AN EVEN ROUGH GRADED CONDITION IN ORDER TO BE ABLE TO APPLY EROSION CONTROL MULCHES, HYDROMULCHES AND BLANKETS.

7. SEE WATER RESOURCE NOTES FOR A LIST OF PUBLIC WATER EXCLUSION DATES. TWENTY FOUR HOUR STABILIZATION REQUIREMENT ONLY APPLIES DURING THE EXCLUSION DATES.

GENERAL SWPPP NOTES FOR CONSTRUCTION ACTIVITY

1. AMEND THE SWPPP AND DOCUMENT ANY AND ALL CHANGES TO THE SWPPP AND ASSOCIATED PLAN SHEETS WITHIN 7 DAYS. STORE THE SWPPP AND ALL AMENDMENTS ON SITE AT ALL TIMES.

2. PREPARE AND SUBMIT A SITE MANAGEMENT PLAN FOR THE ENGINEER'S ACCEPTANCE FOR CONCRETE MANAGEMENT, CONCRETE SLURRY APPLICATION AREAS, WORK IN AND NEAR AREAS OF ENVIRONMENTAL SENSITIVITY, AREAS IDENTIFIED IN THE PLANS AS "SITE MANAGEMENT PLAN AREA", ANY WORK THAT WILL REQUIRE DEWATERING, AND AS REQUESTED BY THE ENGINEER. SUBMIT ALL SITE MANAGEMENT PLANS TO THE ENGINEER IN WRITING. ALLOW A MINIMUM OF 7 DAYS FOR MNDOT TO REVIEW AND ACCEPT SITE MANAGEMENT PLAN SUBMITTALS. WORK WILL NOT BE ALLOWED TO COMMENCE IF A SITE MANAGEMENT PLAN IS REQUIRED UNTIL ACCEPTANCE HAS BEEN GRANTED BY THE ENGINEER. THERE WILL BE NO EXTRA TIME ADDED TO THE CONTRACT DUE TO THE UNTIMELY SUBMITTAL.

3. IT IS THE DESIGNER'S INTENT THAT THE CONTRACTOR BUILD PONDS AND INSTALL EROSION CONTROL BMPS BEFORE PUTTING THEM INTO ACTIVE SERVICE TO THE MAXIMUM EXTENT PRACTICABLE.

4. BURNING OF ANY MATERIAL IS NOT ALLOWED WITHIN PROJECT BOUNDARY.

5. DO NOT DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS. DELINEATE AREAS NOT TO BE DISTURBED PRIOR TO STARTING GROUND DISTURBING ACTIVITIES. IF IT BECOMES NECESSARY TO DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS OBTAIN WRITTEN PERMISSION FROM THE PROJECT ENGINEER PRIOR TO PROCEEDING. PRESERVE ALL NATURAL BUFFERS SHOWN ON THE PLANS.

6. ROUTE STORMWATER AROUND UNSTABILIZED AREAS OF THE SITE WHENEVER FEASIBLE. PROVIDE EROSION CONTROL AND VELOCITY DISSIPATION DEVICES AS NEEDED TO KEEP CHANNELS FROM ERODING AND TO PREVENT NUISANCE CONDITIONS AT THE OUTLET.

7. DIRECT DISCHARGES FROM BMPS TO VEGETATED AREAS WHENEVER FEASIBLE. PROVIDE VELOCITY DISSIPATION DEVICES AS NEEDED TO PREVENT EROSION.

8. THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS SHALL BE PLACED AS NECESSARY TO MINIMIZE EROSION FROM DISTURBED SURFACES AND TO CAPTURE SEDIMENT ON SITE. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF ANY REMOVAL WORK AND/OR GROUND DISTURBING ACTIVITIES COMMENCE. SILT FENCE SHOULD FOLLOW, AS CLOSE AS POSSIBLE, TO A SINGLE CONTOUR LINE.

9. ESTABLISH SEDIMENT CONTROL DEVICES ON ALL DOWN GRADIENT PERIMETERS AND UPGRADIENT OF ANY BUFFER ZONES BEFORE ANY UP GRADIENT LAND DISTURBING ACTIVITIES BEGIN. MAINTAIN SEDIMENT CONTROL DEVICES UNTIL CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.

10. LOCATE PERIMETER CONTROL ON THE CONTOUR TO CAPTURE OVERLAND, LOW- VELOCITY SHEET FLOWS DOWN GRADIENT OF ALL EXPOSED SOILS AND PRIOR TO DISCHARGING TO SURFACE WATERS. PLACE J-HOOKS AT A MAXIMUM OF 100 FOOT INTERVALS.

11. PROVIDE PERIMETER CONTROL AROUND ALL STOCKPILES. PLACE BMP A MINIMUM 5 FEET FROM THE TOE OF SLOPE WHERE FEASIBLE. DO NOT PLACE STOCKPILES IN NATURAL BUFFER AREAS, SURFACE WATERS OR STORMWATER CONVEYANCES.

12. FLOATING SILT CURTAIN IS ALLOWED AS PERIMETER CONTROL FOR IN WATER WORK ONLY. INSTALL THE FLOATING SILT CURTAIN AS CLOSE TO SHORE AS POSSIBLE. PLACE PERIMETER CONTROL BMP ON LAND IMMEDIATELY AFTER THE IN WATER WORK IS COMPLETED.

13. DITCH CHECKS WILL BE PLACED AS INDICATED ON THE PLANS DURING ALL PHASES OF CONSTRUCTION.

14. PROTECT STORM SEWER INLETS AT ALL TIMES WITH THE APPROPRIATE INLET PROTECTION FOR EACH SPECIFIC PHASE OF CONSTRUCTION. PROVIDE INLET PROTECTION DEVICES WITH EMERGENCY OVERFLOW CAPABILITIES. SILT FENCE PLACED IN THE INLET GRATE IS NOT AN ACCEPTABLE INLET PROTECTION BMP FOR GRADING OPERATIONS. SILT FENCE PLACED IN THE GRATE IS ONLY ALLOWED FOR SHORT INTERVALS DURING MILLING OR PAVING OPERATIONS. INLET PROTECTION DEVICES MAY NEED TO BE PLACED MULTIPLE TIMES IN THE SAME LOCATION OVER THE LIFE OF THE CONTRACT. INLET PROTECTION DEVICES WILL BE PAID FOR ONCE PER INLET REGARDLESS OF THE NUMBER OF TIMES THE BMP IS PLACED. KEEP ALL STORM SEWER INLET PROTECTION DEVICES IN GOOD FUNCTIONAL CONDITION AT ALL TIMES. REPLACE INLET PROTECTION DEVICE WITH A SUITABLE ALTERNATIVE IF THE PROJECT ENGINEER DEEMS AN INLET PROTECTION DEVICE TO BE NONFUNCTIONAL, IN POOR CONDITION, INEFFECTIVE, OR NOT APPROPRIATE FOR THE CURRENT CONSTRUCTION ACTIVITIES. THERE WILL BE NO COST TO MNDOT FOR REPLACEMENT OF INLET PROTECTION DEVICES.

15. PLACE CONSTRUCTION EXITS, AS NECESSARY, TO PREVENT TRACKING OF SEDIMENT ONTO PAVED SURFACES BOTH ON AND OFF THE PROJECT SITE. PROVIDE CONSTRUCTION EXITS OF SUFFICIENT SIZE TO PREVENT TRACK OUT. MAINTAIN CONSTRUCTION EXITS WHEN EVIDENCE OF TRACKING IS DISCOVERED. REGULAR STREET SWEEPING IS NOT AN ACCEPTABLE ALTERNATIVE TO PROPER CONSTRUCTION EXIT INSTALLATION AND MAINTENANCE.

16. DISCHARGE TURBID OR SEDIMENT LADEN WATER TO TEMPORARY SEDIMENT BASINS WHENEVER FEASIBLE. IN THE EVENT THAT IT IS NOT FEASIBLE TO DISCHARGE THE SEDIMENT LADEN WATER TO A TEMPORARY SEDIMENT BASIN, THE WATER MUST BE TREATED SO THAT IT DOES NOT CAUSE A NUISANCE CONDITION IN THE RECEIVING WATERS OR TO DOWNSTREAM LANDOWNERS. CLEAN OUT ALL PERMANENT STORMWATER BASINS REGARDLESS OF WHETHER USED AS TEMPORARY SEDIMENT BASINS OR TEMPORARY SEDIMENT TRAPS TO THE DESIGN CAPACITY AFTER ALL UPGRADIENT LAND DISTURBING ACTIVITY IS COMPLETED.

17. PROVIDE SCOUR PROTECTION AT ANY OUTFALL OF DEWATERING ACTIVITIES.

18. PROVIDE STABILIZATION IN ANY TRENCHES CUT FOR DEWATERING OR SITE DRAINING PURPOSES.

19. REMOVE SEDIMENT FROM STORMWATER SYSTEM AT END OF PROJECT.

20. PRESERVE A 50 FOOT NATURAL BUFFER OR (IF BUFFER IS INFEASIBLE) PROVIDE REDUNDANT SEDIMENT CONTROLS WHEN A SURFACE WATER IS LOCATED WITHIN 50 FEET OF LAND DISTURBANCE AND STORMWATER FLOWS TO THE SURUFACE WATER.

21. PERMITTEES MUST INSPECT AND PHOTOGRAPH DEWATERING DISCHARGES AT THE BEGINNING AND AT LEAST ONCE EVERY 24 HOURS DURING OPERATION. IF NUISANCE CONDITIONS RESULT FROM DISCHARGE, PERMITTEES MUST CEASE DEWATERING.

22. WHEN SUBMITTING THE NOT, PERMITTEES MUST INCLUDE GROUND OR AERIAL PHOTOGRAPHS SHOWING THAT PERMANENT COVER REQUIREMENTS HAVE BEEN MET.

POLLUTION PREVENTION

1. PROVIDE A SPILL KIT AT EACH WORK LOCATION ON THE SITE.

2. STORE ALL BUILDING MATERIALS THAT HAVE THE POTENTIAL TO LEACH POLLUTANTS, PESTICIDES, HERBICIDES, INSECTICIDES, FERTILIZERS, TREATMENT CHEMICALS, AND LANDSCAPE MATERIALS UNDER COVER AND WITH SECONDARY CONTAINMENT.

3. PROVIDE A SECURE STORAGE AREA WITH RESTRICTED ACCESS FOR ALL HAZARDOUS MATERIALS AND TOXIC WASTE. RETURN ALL HAZARDOUS MATERIALS AND TOXIC WASTE TO THE DESIGNATED STORAGE AREA AT THE END OF THE BUSINESS DAY UNLESS INFEASIBLE. STORE ALL HAZARDOUS MATERIALS AND TOXIC WASTE (INCLUDING BUT NOT LIMITED TO OIL, DIESEL FUEL, GASOLINE, HYDRAULIC FLUIDS, PAINT, PETROLEUM BASED PRODUCTS, WOOD PRESERVATIVES, ADDITIVES, CURING COMPOUNDS, AND ACIDS) IN SEALED CONTAINERS WITH SECONDARY CONTAINMENT. CLEAN UP SPILLS IMMEDIATELY.

4. STORE, COLLECT AND DISPOSE OF ALL SOLID WASTE.

5. POSITION ALL PORTABLE TOILETS SO THAT THEY ARE SECURE AND CANNOT BE TIPPED OR KNOCKED OVER. PROPERLY DISPOSE OF ALL SANITARY WASTE.

6. FUEL AND MAINTAIN VEHICLES IN A DESIGNATED CONTAINED AREA WHENEVER FEASIBLE. USE DRIP PANS OR ABSORBENT MATERIALS TO PREVENT SPILLS OR LEAKED CHEMICALS FROM DISCHARGING TO SURFACE WATER OR STORMWATER CONVEYANCES. PROVIDE A SPILL KIT AT EACH LOCATION THAT VEHICLES AND EQUIPMENT ARE FUELED OR MAINTAINED AT.

7. LIMIT VEHICLE AND EQUIPMENT WASHING TO A DEFINED AREA OF THE SITE. CONTAIN RUNOFF FROM THE WASHING AREA TO A TEMPORARY SEDIMENT BASIN OR OTHER EFFECTIVE CONTROL. PROPERLY DISPOSE OF ALL WASTE GENERATED BY VEHICLE AND EQUIPMENT WASHING. ENGINE DEGREASING IS NOT ALLOWED ON THE SITE.

8. PROVIDE EFFECTIVE CONTAINMENT FOR ALL LIQUID AND SOLID WASTES GENERATED BY WASHOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS. LIQUID AND SOLID WASHOUT WASTES MUST NOT CONTACT THE GROUND. DESIGN THE CONTAINMENT SO THAT IT DOES NOT RESULT IN RUNOFF FROM THE WASHOUT OPERATIONS OR CONTAINMENT AREA.

9. CREATE AND FOLLOW A WRITTEN DISPOSAL PLAN FOR ALL WASTE MATERIALS. INCLUDE IN THE PLAN HOW THE MATERIAL WILL BE DISPOSED OF AND THE LOCATION OF THE DISPOSAL SITE. SUBMIT PLAN TO THE ENGINEER.

10. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT DISCHARGE OR PLACEMENT OF BITUMINOUS GRINDINGS, CUTTINGS, MILLINGS, AND OTHER BITUMINOUS WASTES FROM AREAS OF EXISTING OR FUTURE VEGETATED SOILS AND FROM ALL WATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES.

11. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT CONCRETE DUST, PARTICLES, CONCRETE WASH OUT, AND OTHER CONCRETE WASTES FROM LEAVING MNDOT RIGHT OF WAY, DEPOSITING IN EXISTING OR FUTURE VEGETATED AREAS, AND FROM ENTERING STORMWATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT SAW CUT SLURRY AND PLANING WASTE FROM LEAVING MNDOT RIGHT OF WAY AND FROM ENTERING STORMWATER CONVEYANCE SYSTEMS INCLUDING DITCHES AND CULVERTS.

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PRINT NAME: ERIC NELSON
SIGNATURE: [signature]
DATE 01/10/25 LICENSE # 43560

STORM WATER POLLUTION PREVENTION PLANS

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 98 OF 220 SHEETS

STORMWATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE (CONTINUED)

WATER RELATED PERMITS

AGENCY	TYPE OF PERMIT
MINNESOTA POLLUTION CONTROL AGENCY	NPDES CONSTRUCTION PERMIT
	SECTION 401 CERTIFICATION
MINNEHAHA CREEK WATERSHED DISTRICT	WATERSHED DISTRICT PERMIT
DEPARTMENT OF NATURAL RESOURCES	WORK IN PUBLIC WATERS
	WATER APPROPRIATIONS GENERAL PERMIT - TEMPORARY PROJECTS
US ARMY CORPS OF ENGINEERS	SECTION 404 CLEAN WATER ACT
BOARD OF WATER AND SOIL RESOURCES	WETLAND CONSERVATION ACT

REVIEW ALL PERMITS FOR ANY SPECIAL CONDITIONS THAT WILL EFFECT CONSTRUCTION OF THE PROJECT.

ALL TEMPORARY DEWATERING SHALL BE DISCHARGED TO AN APPROVED LOCATION FOR TREATMENT PRIOR TO DISCHARGE TO THE RECEIVING WATER. SUBMIT A SITE MANAGEMENT PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK.

WATER RESOURCE NOTES

THESE NOTES ALONG WITH THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE ARE INTENDED TO GIVE INFORMATION ON CRITICAL DRAINAGE FEATURES, NATURAL RESOURCES AND CONTRACTOR OPERATIONS THAT MAY IMPACT DRAINAGE AND NATURAL RESOURCES.

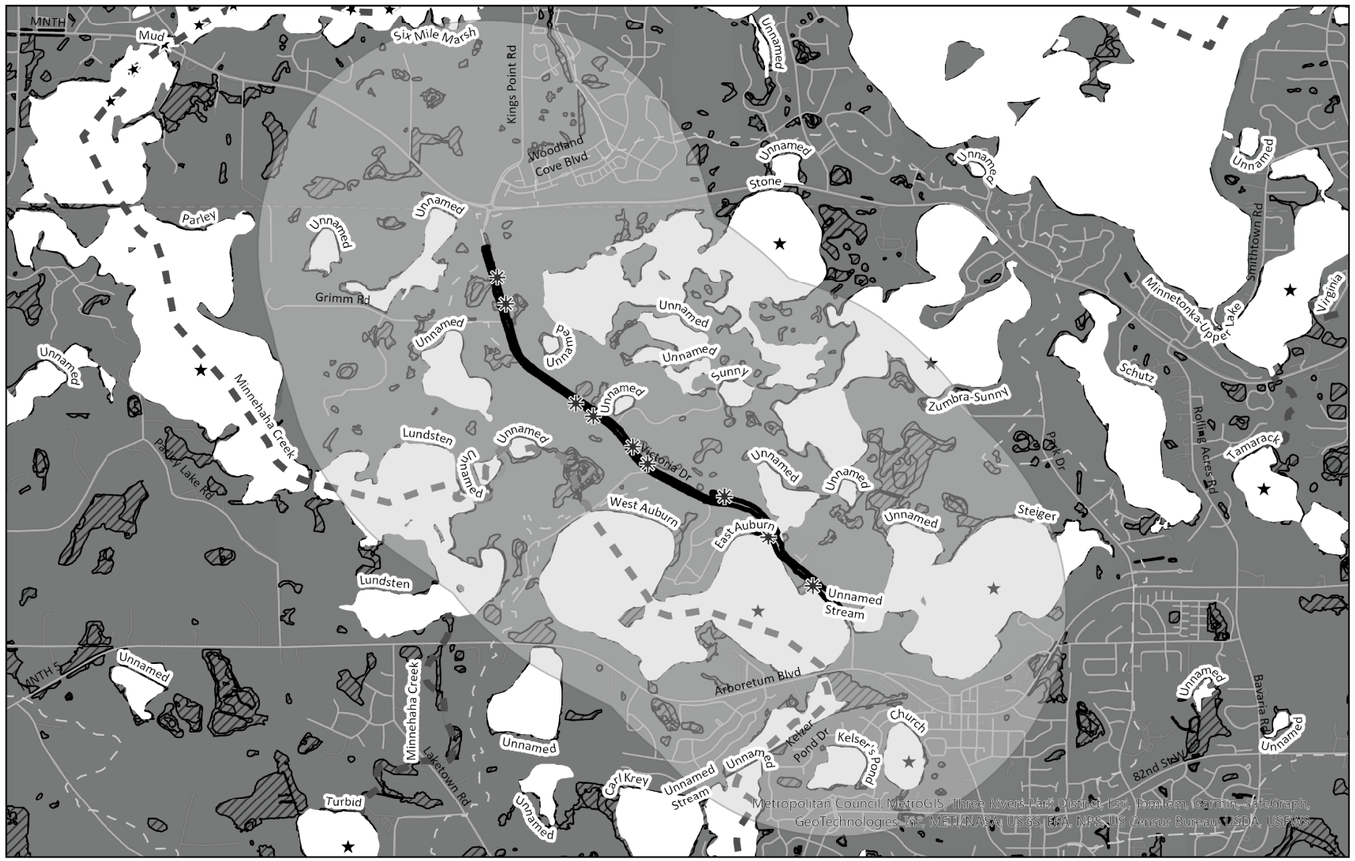
1. THE SIZE AND ELEVATION OF CULVERTS, STORM SEWER PIPES, CATCH BASINS, PONDS, INFILTRATION/FILTRATION BASINS, PERMEABLE AND IMPERMEABLE DITCH BLOCKS AND OVERFLOW DEVICES HAVE BEEN SPECIFICALLY DESIGNED TO CONFORM TO MNDOT DESIGN STANDARDS, MINNESOTA POLLUTION CONTROL AGENCY (MPCA) AND WATERSHED DISTRICT PERMIT REQUIREMENTS. CHANGING THESE ITEMS OR THE DIRECTION OF FLOW FROM WHAT IS SHOWN ON THE PLANS MAY CAUSE PROBLEMS OFF THE PROJECT AND COULD MEAN THE PROJECT IS OUT OF COMPLIANCE WITH APPROVED DRAINAGE PERMITS. ANY CHANGES TO THE SIZE, ELEVATION OR DIRECTION OF FLOW OF THE DRAINAGE SYSTEM MUST BE APPROVED BY CARVER COUNTY.

2. SUBSOIL ALL DISTURBED GREEN SPACES EXCEPT AS LISTED IN 2574.3 A.5.

3. ANY SUBSURFACE DRAINAGE TILES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED, REPLACED OR REROUTED, AND CONNECTED TO THE EXISTING TILE OR DRAINAGE SYSTEM TO ENSURE THAT EXISTING UPLAND DRAINAGE IS PERPETUATED. THIS SHOULD BE DONE TO THE APPROVAL AND SATISFACTION OF THE ENGINEER.

4. PERFORM POST INSTALLATION MANDREL TESTING OF ALL PLASTIC PIPE.

RECEIVING WATERS SITE MAP



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Receiving Waters Site Map

0 0.5 1 Miles

Legend

- Impaired Streams
- Impaired Lakes
- Level 7 Minor Watersheds
- National Wetland Inventory
- DNR Public Waters Basins
- DNR Public Waters Watercourses
- Project Area
- Project 1 Mile Buffer
- Discharge Points

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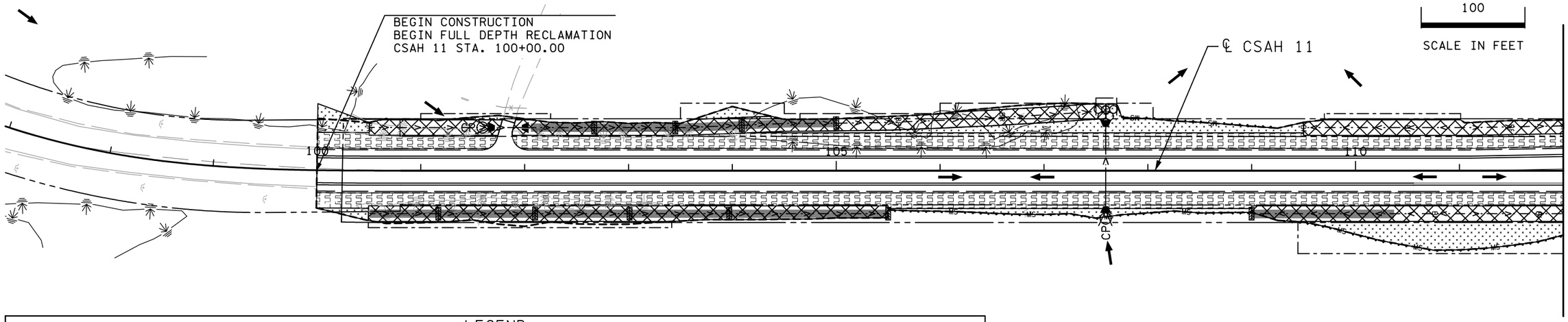
STORM WATER POLLUTION PREVENTION PLANS

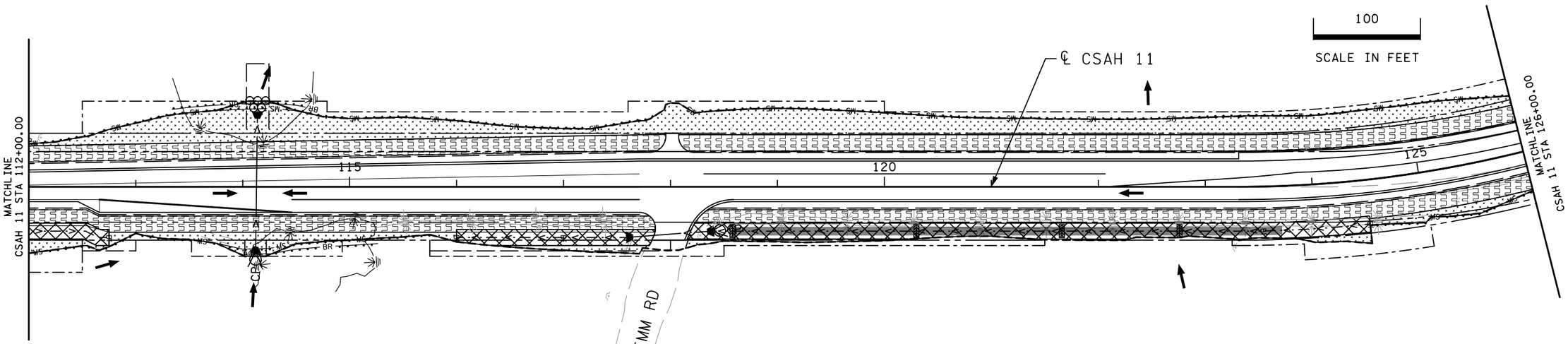
GENERAL NOTES:

1. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.



LEGEND

- CONSTRUCTION LIMITS
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- TEMPORARY EASEMENT
- PROPOSED DRAINAGE AND UTILITY EASEMENT
- PROPOSED TRAIL EASEMENT
- DITCH BLOCK
- RANDOM RIPRPAP
- DRAINAGE FLOW ARROW
- WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)
- WET DITCH
- OTHER AQUATIC RESOURCES
- BR SEDIMENT CONTROL LOG TYPE COMPOST
- FLOATING SILT CURTAIN, TYPE STILL WATER
- MS SILT FENCE, TYPE MACHINE SLICED
- CP CULVERT END CONTROLS
- STORM INLET PROTECTION
- BIORETENTION AREA
- SEED MESIC INSLOPE @ 65 LBS/ACRE
  FERT. TYPE 3 (22-5-10 @ 350 LBS/ACRE
- SEED SOUTHERN TALLGRASS ROADSIDE
  @ 26 LBS/ACRE
  FERT. TYPE 3 (22-5-10 @ 350 LBS/ACRE)
  MULCH MATERIAL TYPE 3
- SEED WET DITCH @ 20 LBS/ACRE
  FERT. TYPE 3 (22-5-10 @ 350 LBS/ACRE)
  MULCH MATERIAL TYPE 3
- SEED SOUTHERN BOULEVARD @ 160 LBS/ACRE
  FERT. TYPE 1 (22-10-20 @ 200 LBS/ACRE)
  MULCH MATERIAL TYPE 3



GENERAL NOTES:

1. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

EROSION CONTROL AND TURF ESTABLISHMENT PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 100 OF 220 SHEETS

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1/22/2025
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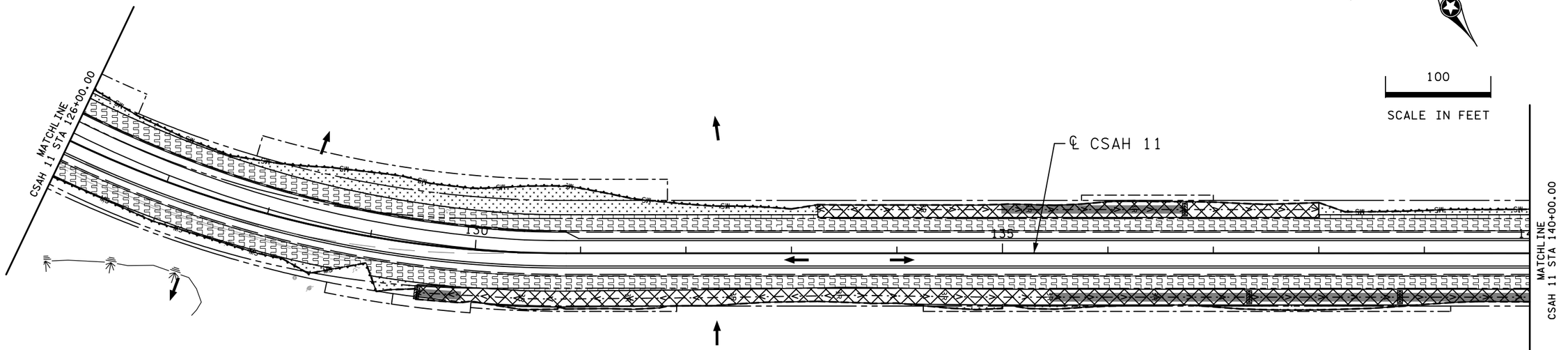
GENERAL NOTES:

1. WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.



LEGEND

- CONSTRUCTION LIMITS
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- TEMPORARY EASEMENT
- PROPOSED DRAINAGE AND UTILITY EASEMENT
- PROPOSED TRAIL EASEMENT
- DITCH BLOCK
- RANDOM RIPRPAP
- DRAINAGE FLOW ARROW
- WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)
- WET DITCH
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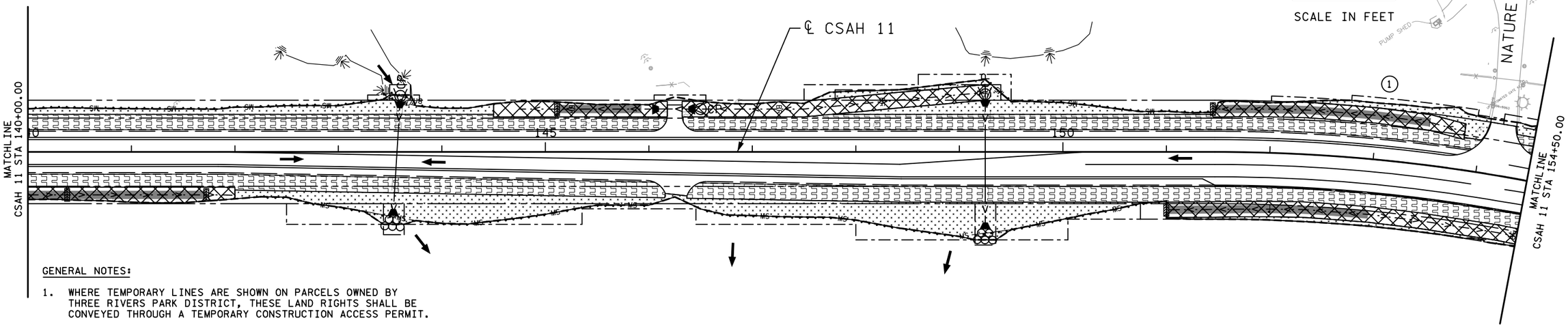
  MULCH MATERIAL TYPE 3
- SEED SOUTHERN BOULEVARD @ 160 LBS/ACRE
  FERT. TYPE 1 (22-10-20 @ 200 LBS/ACRE)
  MULCH MATERIAL TYPE 3

SPECIFIC NOTES:

(1) PROJECT WORK IS WITHIN 200 FEET OF DNR PUBLIC WATERS BASIN FROM APPROXIMATELY STA. 152+00 TO 153+80 (LT).



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NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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PRINT NAME: ERIC NELSON
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DATE 01/10/25 LICENSE # 43560

EROSION CONTROL AND TURF ESTABLISHMENT PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 101 OF 220 SHEETS

LEGEND

- CONSTRUCTION LIMITS
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- TEMPORARY EASEMENT
- PROPOSED DRAINAGE AND UTILITY EASEMENT
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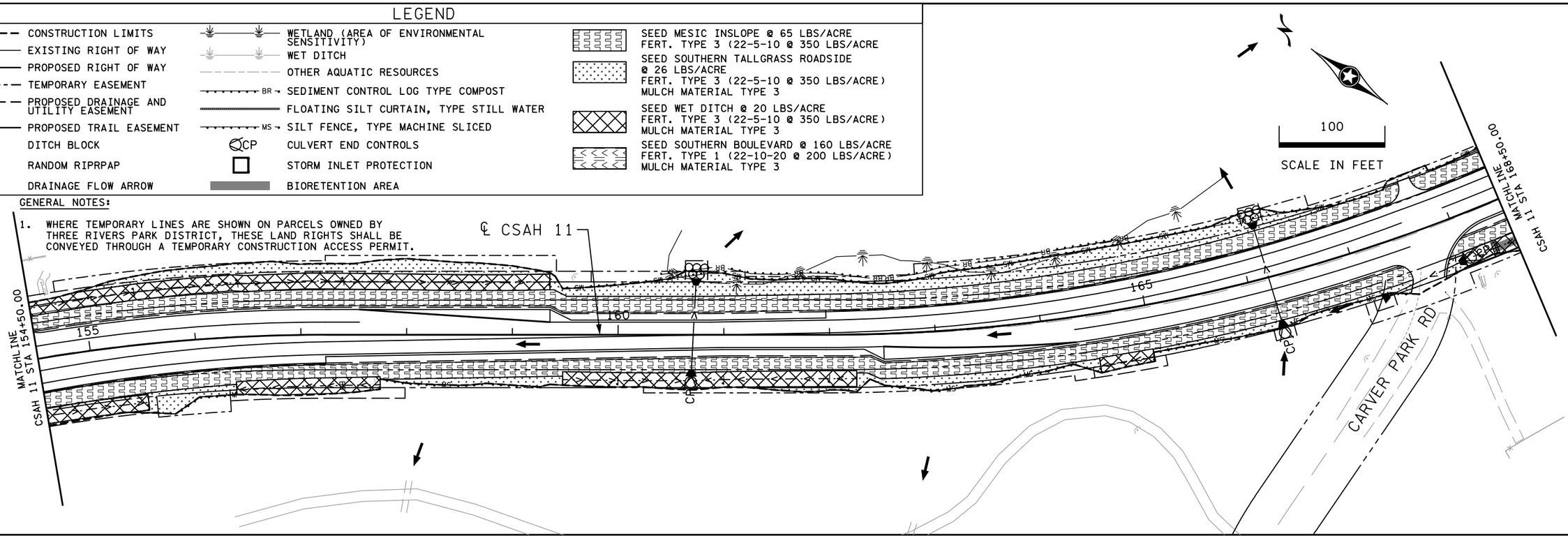

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EROSION CONTROL AND TURF ESTABLISHMENT PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 102 OF 220 SHEETS

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1/22/2025
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GENERAL NOTES:

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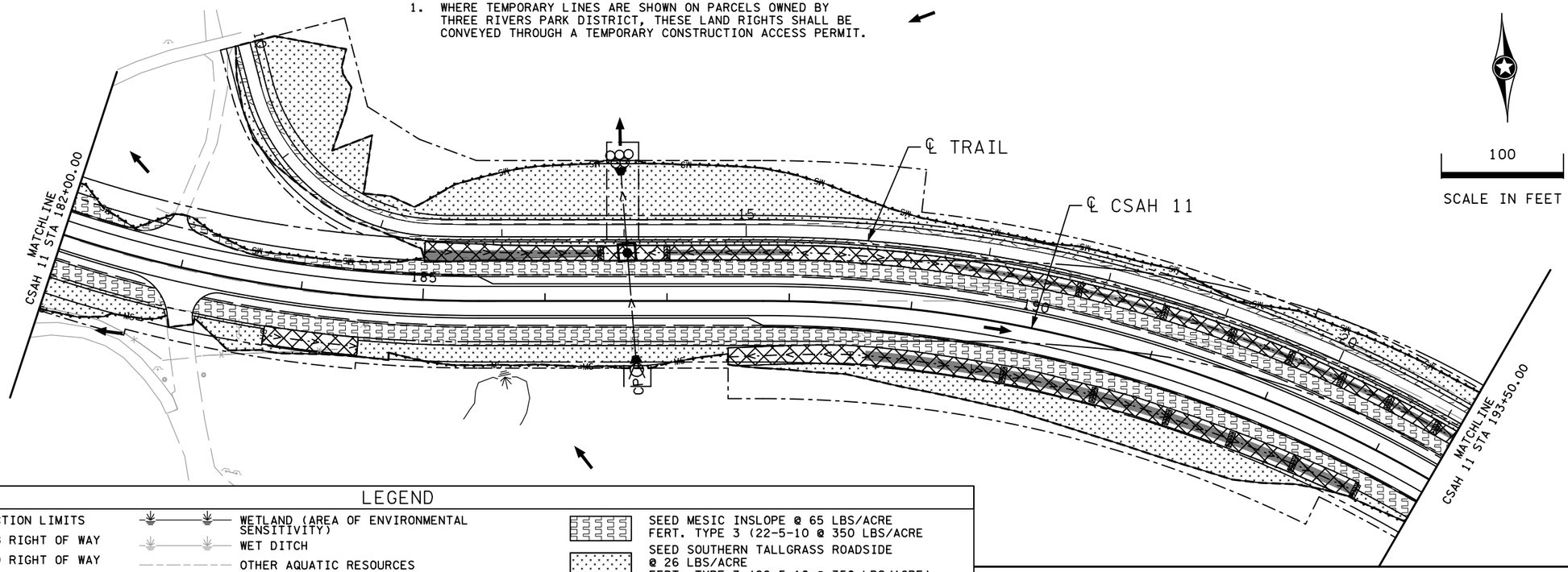

LEGEND

- CONSTRUCTION LIMITS
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- TEMPORARY EASEMENT
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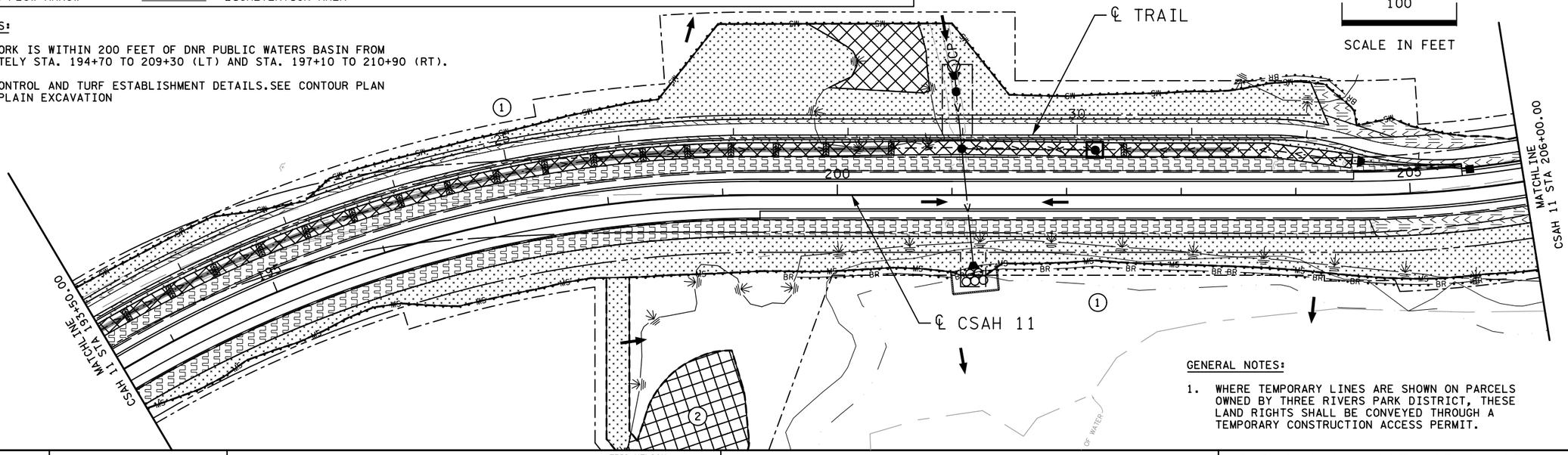
SPECIFIC NOTES:

(1) PROJECT WORK IS WITHIN 200 FEET OF DNR PUBLIC WATERS BASIN FROM APPROXIMATELY STA. 194+70 TO 209+30 (LT) AND STA. 197+10 TO 210+90 (RT).

(2) EROSION CONTROL AND TURF ESTABLISHMENT DETAILS.SEE CONTOUR PLAN FOR FLOODPLAIN EXCAVATION



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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

EROSION CONTROL AND TURF ESTABLISHMENT PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 103 OF 220 SHEETS

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1/22/2025
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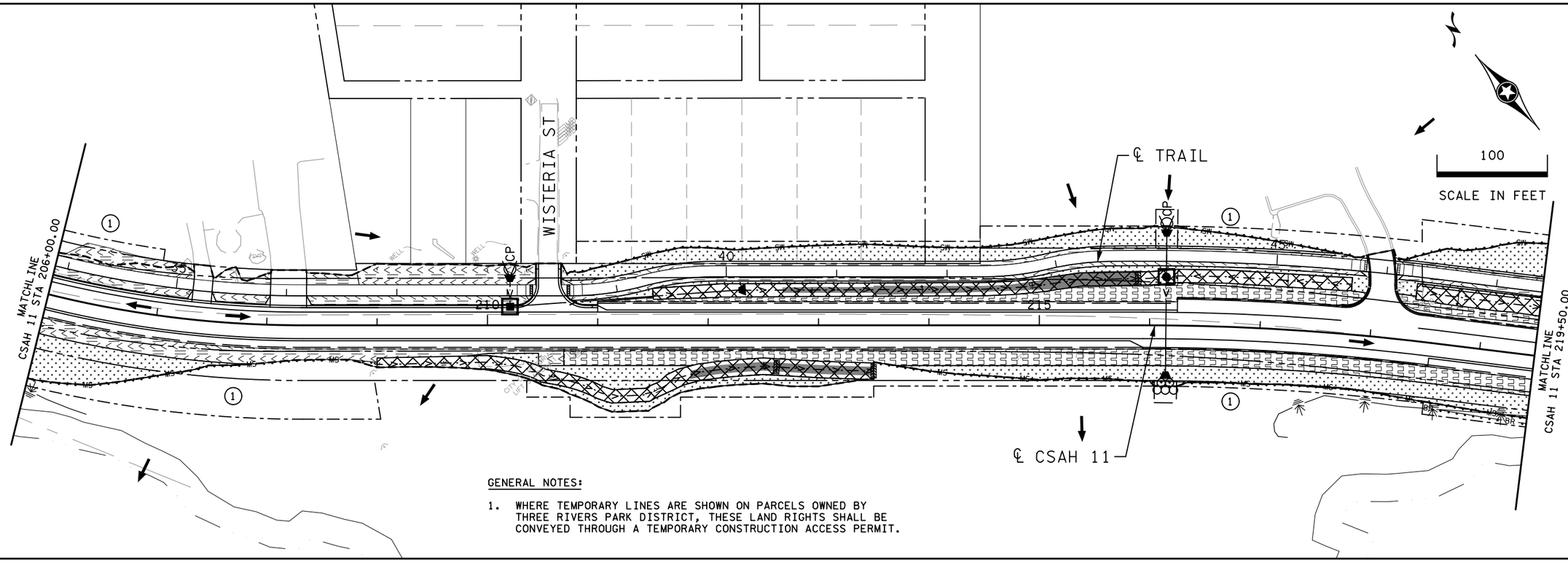

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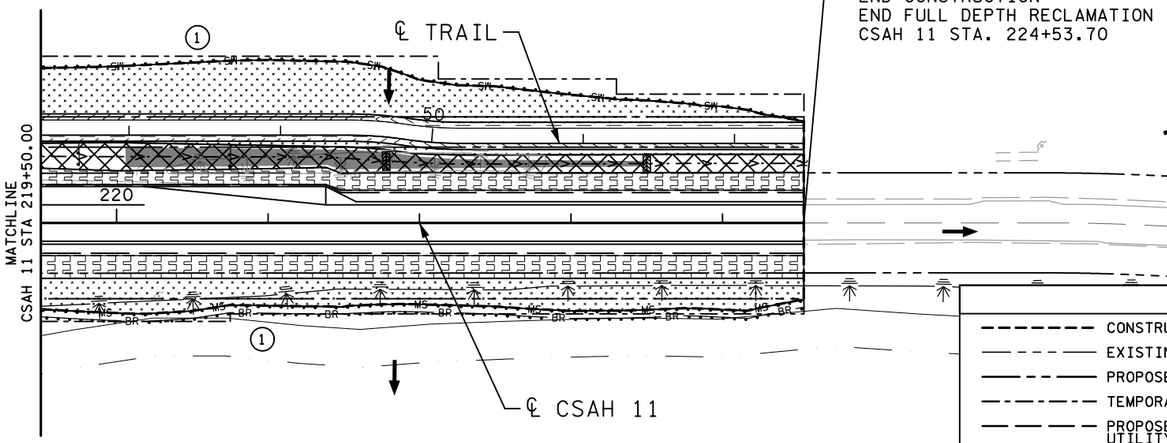

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LEGEND

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- EXISTING RIGHT OF WAY
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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

EROSION CONTROL AND TURF ESTABLISHMENT PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 104 OF 220 SHEETS

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1/22/2025
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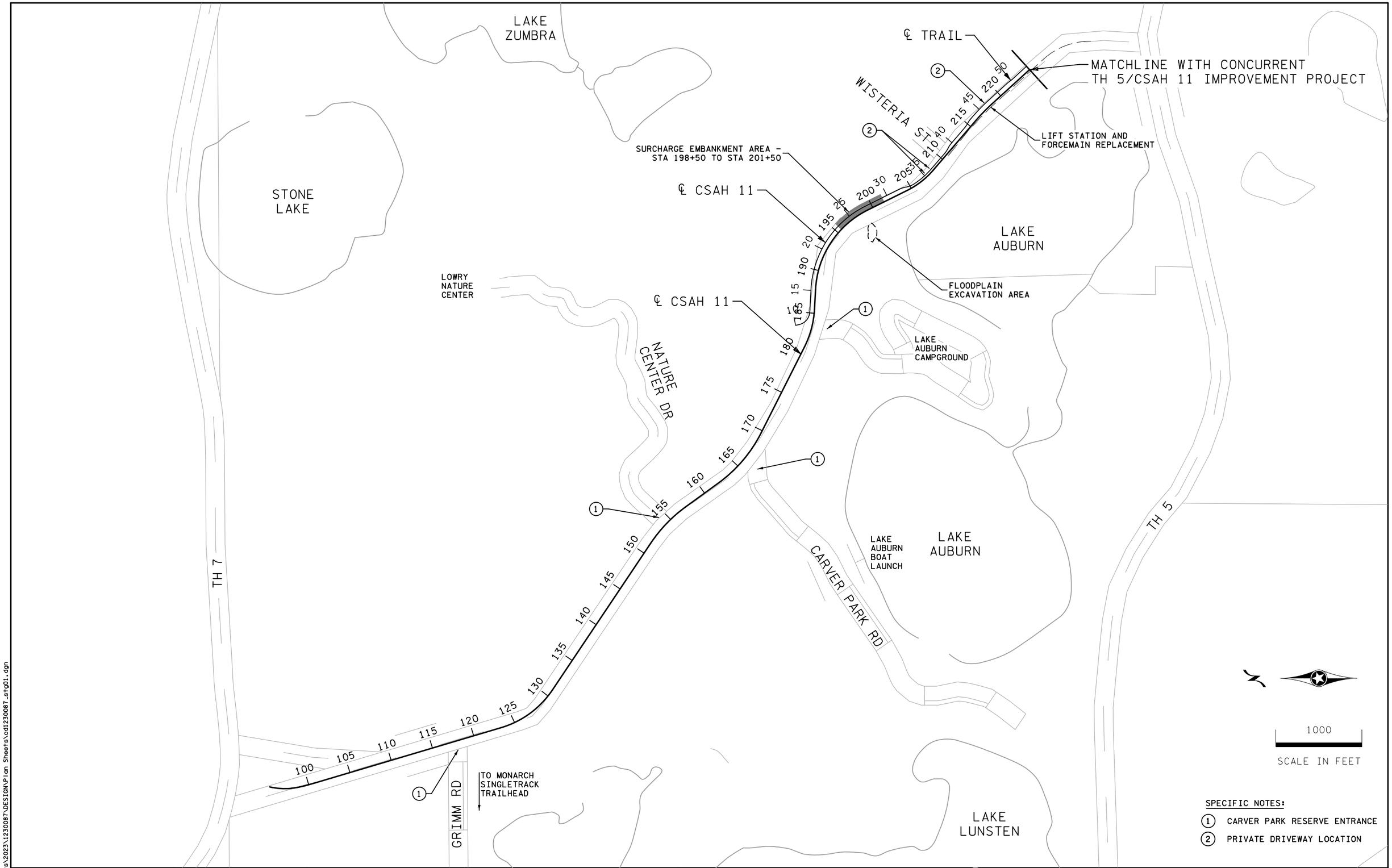

SPECIFIC NOTES:

(1) CARVER PARK RESERVE ENTRANCE

(2) PRIVATE DRIVEWAY LOCATION

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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PRINT NAME: ERIC NELSON

SIGNATURE: Eric Nelson

DATE 01/10/25 LICENSE # 43560

STAGING PLAN

OVERVIEW

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 105 OF 220 SHEETS

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1/22/2025
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GENERAL NOTES:

1. CSAH 11 SHALL REMAIN OPEN FOR LOCAL ACCESS, INCLUDING ACCESS TO CARVER PARK RESERVE FACILITIES, THROUGHOUT CONSTRUCTION. TRAFFIC MAY BE REDUCED TO ALTERNATING ONE-WAY TRAFFIC WITH FLAGGERS ON A DAILY BASIS FOR OPERATIONS SUCH AS CULVERT REPLACEMENTS AND SANITARY SEWER WORK, BUT MUST BE RESTORED TO A STABLE, DEFINED, AND PASSABLE TWO-WAY CONDITION AT THE END OF EACH WORKING DAY.

2. THE CONTRACTOR IS HEREBY ADVISED THAT THE TH 5/CSAH 11 INTERSECTION IMPROVEMENTS PROJECT TO THE SOUTH WILL BE UNDER CONSTRUCTION CONCURRENTLY AND WILL IMPACT TRAFFIC CONTROL AND PROJECT SEQUENCING. THE CONTRACTOR IS EXPECTED TO FULLY COORDINATE AND COOPERATE WITH THE CONCURRENT PROJECT. SAID COORDINATION, INCLUDING ALL PROVISIONS TO MODIFY TRAFFIC CONTROL AS NEEDED, SHALL BE INCIDENTAL.

3. THE CONTRACTOR SHALL PREPARE A DETAILED AND PHASED CONSTRUCTION SCHEDULE FOR EACH PLANNED CONSTRUCTION PHASE FOR OWNER REVIEW AND APPROVAL PRIOR TO INITIATING ANY CONSTRUCTION. THE SCHEDULE SHALL BE ACCOMPANIED BY A TRAFFIC CONTROL PLAN FOR EACH PHASE. INITIAL PREPARATION OF THE SCHEDULE AND ROUTINE UPDATING THROUGHOUT THE PROJECT SHALL BE INCIDENTAL. PREPARATION OF ALL REQUIRED TRAFFIC CONTROL PLANS SHALL BE INCLUDED IN THE LUMP SUM PAY ITEM FOR TRAFFIC CONTROL.

TRAFFIC CONTROL NOTES:

1. THE CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN THE DEVICES IN THE DETOUR PLAN.

2. FIELD CONDITIONS MAY REQUIRE MODIFICATION OF THIS LAYOUT AS DEEMED NECESSARY BY THE ENGINEER.

3. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ANY WORK AREAS NEAR TRAFFIC IN ACCORDANCE WITH THE MN MUTCD.

4. THE TRAFFIC CONTROL INSTALLED SHALL MEET THE FOLLOWING ACCESS REQUIREMENTS:
   - MAINTAIN ONE STABLE, DEFINED, AND PASSABLE LANE IN EACH DIRECTION OF CSAH 11 TO FACILITATE LOCAL ACCESS.
   - MAINTAIN ACCESS TO THE CARVER PARK RESERVE.
   - MAINTAIN ACCESS TO THE PRIVATE DRIVEWAYS SHOWN ON THE STAGING PLAN OVERVIEW.
   - MAINTAIN ACCESS TO PARK ROADS AND ENTRANCES SHOWN ON THE STAGING OVERVIEW.
   - PROVIDE POSTED DETOUR ROUTE UNTIL THE ENGINEER DETERMINES THAT CSAH 11 CAN BE REOPENED TO THRU TRAFFIC.

6. ALL TRAFFIC CONTROL DEVICES THAT ARE NOT CONSISTENT WITH TRAFFIC OPERATIONS SHALL BE COVERED, REMOVED, OR REVISED.

7. ALL WORK RELATED TO INSTALLING, MAINTAINING, AND REMOVING TRAFFIC CONTROL DEVICES IN WORK AREAS AND DETOUR SIGNAGE SHALL BE PAID FOR UNDER ITEM 2563.601 TRAFFIC CONTROL.

8. TEMPORARY TRAFFIC CONTROL SHALL INCLUDE WAYFINDING SIGNAGE TO CARVER PARK RESERVE FACILITIES IF EXISTING ENTRANCE SIGNS ARE TEMPORARILY REMOVED OR OBSCURED FROM SIGHT.

STAGING NARRATIVE:

1. THE FOLLOWING ACTIVITIES SHALL COMMENCE IN THE FIRST PHASE OF THE CONTRACTOR SCHEDULE:

   -CULVERT REPLACEMENT AND OTHER UNDERGROUND UTILITY WORK WITHIN THE EXISTING ROADWAY. WITH OWNER APPROVAL, THE CONTRACTOR WILL BE ALLOWED A FULL CLOSURE WITH DETOUR TO FACILITATE UNDERGROUND UTILITY WORK UNTIL JUNE 1, 2025. AFTER JUNE 1, ALL WORK THAT INTERFERES WITH THRU TRAFFIC IN EITHER DIRECTION MUST BE COMPLETED USING FLAGGERS AND REOPENED TO TRAFFIC IN BOTH DIRECTIONS AT THE END OF EACH WORKING DAY. PROVISION OF FLAGGERS SHALL BE INCIDENTAL.

   - EXCAVATION AND STABILIZATION OF THE FLOODPLAIN MITIGATION AREA.

   - CONSTRUCTION OF THE REPLACEMENT LIFT STATION AND FORCEMAIN, INCLUDING TIE-INS TO EXISTING SYSTEMS, TO MAINTAIN FULL FUNCTION OF THE SANITARY SEWER SYSTEM AND ALLOW REMOVAL/ABANDONMENT OF THE EXISTING SYSTEM AS NOTED IN THE PLANS.

   - SURCHARGE EMBANKMENT AREA.

2. THE REMAINDER OF THE ROADWAY CONSTRUCTION CAN BE PHASED ACCORDING TO THE CONTRACTOR'S PROPOSED SCHEDULE AND TRAFFIC CONTROL PLAN, SUBJECT TO REVIEW AND APPROVAL BY THE OWNER.

3. THE CONTRACTOR SHALL LEAVE THE EXISTING CSAH 11 PAVEMENT IN PLACE AS LONG AS FEASIBLE TO ALLOW LOCAL TRAFFIC.

4. ONCE DISTURBED, ALL AREAS WITHIN CARVER PARK RESERVE MUST BE COMPLETED AND STABILIZED WITHIN 180 DAYS (6 MONTHS) OF INITIAL DISTURBANCE.

5. SEE THE SPECIAL PROVISIONS FOR REQUIRED COMPLETION DATES FOR INTERIM MILESTONES, SUBSTANTIAL COMPLETION, AND FINAL ACCEPTANCE.

SIGNING NOTES:

1. ALL TEMPORARY SIGNS ARE REQUIRED TO BE CRASHWORTHY PER THE AASHTO MANUAL FOR ASSESSING SAFETY HARDWARE 2016 (MASH-2016). TEMPORARY SIGN STRUCTURES THAT ARE CRASHWORTHY UNDER THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM REPORT 350 (NCHRP-350) MAY BE USED PROVIDED THE DEVICES WERE ACQUIRED BY THE CONTRACTOR PRIOR TO DECEMBER 31ST, 2019. THE MINNESOTA TYPE "C" AND "D" BRACED LEG U-CHANNEL (KNEE BRACE) SIGN SUPPORT IS NOT ALLOWED.

2. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE FINAL SIGNS TO ASSURE THAT THE FINAL SIGNS ARE PLACED AS NEEDED, OR PROVIDE TEMPORARY SIGNING UNTIL THE FINAL SIGNING IS PLACED.

3. WHEN MULTIPLE GROUND MOUNTED SIGN STRUCTURES ARE PLACED ADJACENT TO EACH OTHER THERE SHOULD BE NO MORE THAN 2 POSTS WITHIN 84'' OF EACH OTHER. WHEN THIS SPACING CAN NOT BE MAINTAINED, THEN SIGN STRUCTURES SHALL BE OFFSET, AND STAGGERED WITH A MINIMUM OF 4' BETWEEN SIGN STRUCTURES BOTH LATERALLY AND LONGITUDINALLY.

4. WHEN A SIGN OR BARRICADE IS ORIENTED SUCH THAT VISIBILITY TO ROAD USERS INCLUDING BIKES AND PEDESTRIANS IS REDUCED ENOUGH TO CAUSE A HAZARD, DELINEATE THE SIGN/BARRICADE WITH APPROPRIATE DEVICES.

5. TEMPORARY SIGNS SHALL BE PLACED SUCH THAT OBSTACLES DO NOT BLOCK THEM FROM BEING VIEWED BY APPROACHING ROAD USERS. OBSTACLES MAY INCLUDE, BUT ARE NOT LIMITED TO, LIGHT POLES, TREES, SIGNS, AND BUILDINGS.

6. TEMPORARY SIGNS SHALL BE PLACED AND ORIENTED APPROXIMATELY AS SHOWN IN THE PLAN, AT RIGHT ANGLES TO DIRECTION OF AND FACING THE TRAFFIC THEY ARE INTENDED TO SERVE, UNLESS OTHERWISE SPECIFIED.

7. LONGITUDINAL DROPOFFS SHALL BE SIGNED AS SHOWN IN THE "MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL" PAGES (6K-aj) THRU (6K-al) UNLESS OTHERWISE SPECIFIED IN THESE PLANS.

8. AFTER REMOVAL OF SIGN AND/OR SIGN BASE, BACK FILL, COMPACT, AND LEVEL SOIL TO MATCH SURROUNDING SOIL.

CONSTRUCTION INFORMATION SIGNING:

1. THE CONTRACTOR SHALL USE CONSTRUCTION INFORMATION SIGNING AS SHOWN IN THE PLAN WHICH ARE TO BE USED AS FOLLOWS:

   PLACE THE G20-X1 ADVANCE CLOSURE NOTICE SIGN(S) 7 DAYS PRIOR TO THE PLANNED CLOSURE DATE.

   PLACE G20-X2 ADVANCE NOTICE SIGNS 14 DAYS PRIOR TO THE WORK STARTING DATE. ONCE WORK BEGINS, COVER THE START DATE LEGEND WITH SUGGESTED PLAQUE CONTAINED IN THIS PLAN. IF NO ALTERNATE MESSAGE IS SHOWN IN THE PLAN OR APPROVED BY THE ENGINEER, DISPLAY THE CORRECT ESTIMATED FINISH DATE, MONTH, OR SEASON.

   IF CONSTRUCTION INFORMATION SIGNING IS NO LONGER VISIBLE TO THE MOTORING PUBLIC ONCE WORK BEGINS, MOVE SAID SIGNING TO A SITE IN ADVANCE OF THE WORK ZONE OR CLOSURE AS SHOWN IN THE PLAN OR APPROVED BY THE ENGINEER.

   THE CONTRACTOR SHALL PLACE AND MAINTAIN TWO PORTABLE CHANGEABLE MESSAGE SIGNS AT EACH END OF THE PROJECT. THE INTENT FOR THESE SIGNS IS TO PROVIDE INFORMATION AND GUIDANCE TO EVENTS AT CARVER PARK RESERVE FACILITIES. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AND THREE RIVERS PARK DISTRICT TO UPDATE AND MODIFY MESSAGING THROUGHOUT CONSTRUCTION. MODIFICATIONS TO THE MESSAGING AS REQUESTED BY THE OWNER SHALL BE INCIDENTAL, REGARDLESS OF THE NUMBER OF MODIFICATIONS REQUESTED.

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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PRINT NAME: ERIC NELSON
SIGNATURE: [signature]
DATE 01/10/25 LICENSE # 43560

STAGING PLAN
NARRATIVE

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 106 OF 220 SHEETS

8:51:19 AM
1/22/2025
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"W" SERIES

SIGN	SIGN NO.	COLOR	SIZE (IN. x IN.) (W x H)	ASSEMBLY (IN. x IN.) (W x H)	NUMBER OF POSTS	POST SPACING (INCHES)
NORTH SOUTH	M3-1, M3-3	BLACK ON WHITE	24" x 12"			
CARVER 11 COUNTY	M1-X4	BLACK ON WHITE	24" x 24"	48" x 84"	1	
ROAD WORK AHEAD	W20-1	BLACK ON ORANGE	48" x 48"			
NORTH SOUTH	M3-1, M3-3	BLACK ON WHITE	24" x 12"			
CARVER 11 COUNTY	M1-X4	BLACK ON WHITE	24" x 24"	48" x 84"	1	
DETOUR AHEAD	W20-2	BLACK ON ORANGE	48" x 48"			

"G" SERIES

SIGN	SIGN NO.	COLOR	SIZE (W x H)	ASSEMBLY (W x H)	NUMBER OF POSTS	POST SPACING (INCHES)
CARVER 11 COUNTY ROAD WORK 5 TO 7 BEGINS MON DY ENDS MON DY	G20-X2 (2)	BLACK ON ORANGE	96" x 84"	96" x 84"	2	48
CARVER 11 COUNTY ROAD WORK 7 TO 5 BEGINS MON DY ENDS MON DY	G20-X2 (2)	BLACK ON ORANGE	96" x 84"	96" x 84"	2	48

"M" SERIES

SIGN	SIGN NO.	COLOR	SIZE (W x H)	ASSEMBLY (W x H)	NUMBER OF POSTS	POST SPACING (INCHES)
DETOUR	M4-8	BLACK ON ORANGE	24" x 12"			
NORTH SOUTH	M3-1, M3-3	BLACK ON WHITE	24" x 12"			
CARVER 11 COUNTY	M1-X4	BLACK ON WHITE	24" x 24"			
				24" x 63"	1	
	M5-1, M5-3, M6-1, M6-3	BLACK ON WHITE	21" x 15"			
END DETOUR	M4-8a	BLACK ON ORANGE	24" x 18"			
NORTH SOUTH	M3-1, M3-3	BLACK ON WHITE	24" x 12"	24" x 54"	1 (1)	
CARVER 11 COUNTY	M1-X4	BLACK ON WHITE	24" x 24"			

BARRICADE MOUNTED SIGNS

SIGN	SIGN NO.	COLOR	SIZE (W x H)
ROAD CLOSED TO THRU TRAFFIC	R11-4	BLACK ON WHITE	60" x 30"
DETOUR	M4-10	BLACK ON ORANGE	48" x 18"
DETOUR			

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN INCHES.

SPECIFIC NOTES:

(1) MAY USE 2" SQUARE TUBE POST WITH FIN BASE.

(2) SEE SPECIAL SIGN DETAILS SHEET FOR SIGN DETAILS.

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

STAGING PLAN
TABULATION

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 107 OF 220 SHEETS

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1/22/2025
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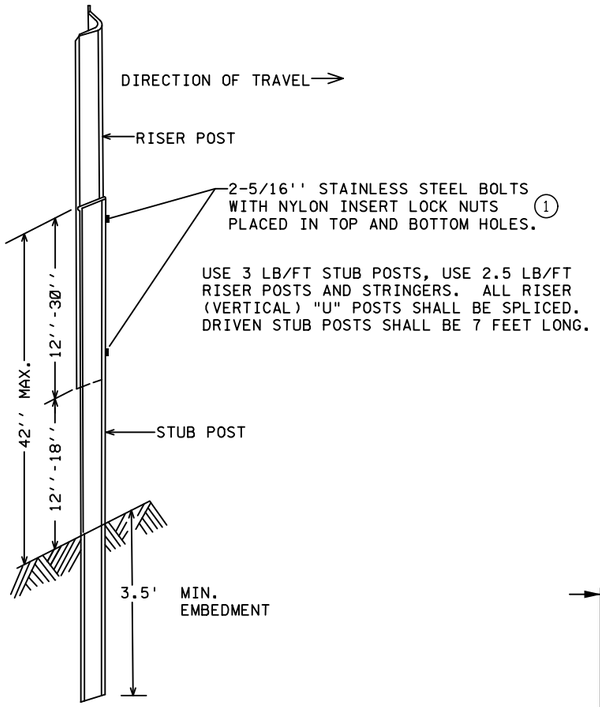
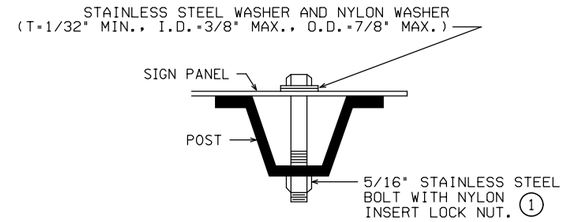
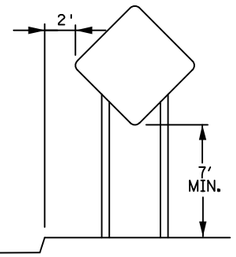


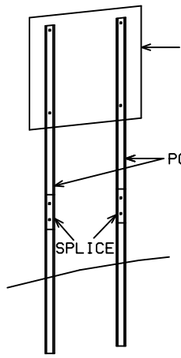
"U" POST BREAKAWAY SPLICE

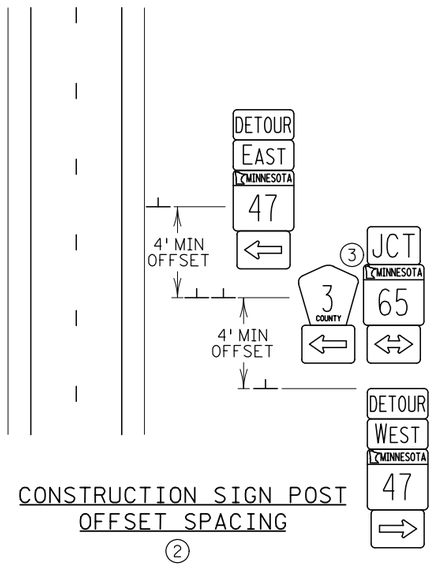


U-POST MOUNTING

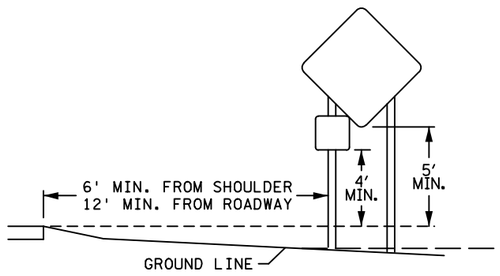


TYPICAL BUSINESS, COMMERCIAL, AND RESIDENTIAL DESIGN





CONSTRUCTION SIGN POST OFFSET SPACING (2)



TYPICAL RURAL DESIGN

GENERAL NOTES:

1. SIGNS TO BE PLACED ON DRIVEN U-POSTS SHALL BE PLACED IN ACCORDANCE WITH TABLE 1. IF THE TTC PLAN PLACES POST MOUNTED TEMPORARY SIGNS ADJACENT TO EXISTING STRUCTURES THERE SHALL BE NO MORE THAN TWO U-POST WITHIN 84 INCHES OF EACH OTHER ALIGNED IN THE SAME PLANE SO AS NOT TO COMPROMISE THAT STRUCTURE'S AND THE NEW DEVICE'S CRASHWORTHINESS. IF IT IS NOT POSSIBLE TO MAINTAIN THIS SPACING THEN THE POST MOUNTED TEMPORARY SIGNS SHALL BE PLACED OFFSET, AND STAGGERED WITH A MIN OF 4' BETWEEN THE SIGN STRUCTURES. SIGN PANELS SHALL BE PLACED ON SIGN STRUCTURES TO MEET THE 5' MIN DEPICTED ON THE TYPICAL RURAL DESIGN DETAIL, AND THE 7' MIN DEPICTED ON THE TYPICAL BUSINESS, COMMERCIAL, OR RESIDENTIAL AREA DESIGN DETAIL ON THIS SHEET.
2. ANY SIGN PANEL LARGER THAN WHAT IS LISTED ON TABLE 1 SHALL BE INSTALLED ON SQUARE TUBE.
3. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR PUNCHING HOLES.
4. A 48" X 48" WARNING SIGN INSTALLED ON TWO U-CHANNEL POSTS MAY BE SUPPLEMENTED WITH UP TO ONE 24" X 12" CARDINAL DIRECTION PLAQUE AND ONE 30" X 24" ROUTE MARKER, PROVIDED SUPPLEMENTAL SIGNS ARE MOUNTED IN THE UPPER TRAFFIC SIDE CORNER OF THE WARNING SIGN(S).

SPECIFIC NOTES:

(1) FOR TEMPORARY CONSTRUCTION SIGN FRAMING, THE CONTRACTOR MAY USE GRADE 5 ZINC PLATED BOLTS IN LIEU OF STAINLESS STEEL BOLTS FOR ALL BOLTED CONNECTIONS

(2) WHEN MULTIPLE GROUND MOUNTED SIGN STRUCTURES ARE PLACED ADJACENT TO EACH OTHER THERE SHOULD BE NO MORE THAN 2 POSTS WITHIN 84'' OF EACH OTHER. WHEN THIS SPACING CAN NOT BE MAINTAINED, THEN SIGN STRUCTURES SHALL BE OFFSET, AND STAGGERED WITH A MINIMUM OF 4' BETWEEN SIGN STRUCTURES BOTH LATERALLY AND LONGITUDINALLY. EXAMPLE SHOWS DETOUR SIGNAGE, BUT THIS REQUIREMENT APPLIES TO ALL SIGNAGE.

(3) INPLACE AND/OR OTHER CONSTRUCTION SIGNING.

TABLE 1

HEIGHT IN INCHES \ WIDTH IN INCHES	12	18	24	30	36	42	48	54	60	66	72	78	84	90
12	1	1	1	1	1	1	1	1	1	2/42	2/42	2/42	2/48	2/54
18	1	1	1	1	1	1	1	1	2/42	2/42	2/42	2/42	2/48	2/54
24	1	1	1	1	1	1	2/30	2/36	2/42	2/42	2/42	2/42	2/48	2/54
30	1	1	1	1	1	2/24	2/30	2/36	2/42	2/42	2/42	2/42	2/48	2/54
36	1	1	1	1	2/18	2/24	2/30	2/36	2/42	2/42	2/42	▨	▨	▨
42	1	1	1	2/12	2/18	2/24	2/30	2/36	2/42	2/42	▨	▨	▨	▨
48	1	1	1	2/12	2/18	2/24	2/30	2/36	2/42	▨	▨	▨	▨	▨
54	1	1	2/12	2/12	2/18	2/24	2/30	▨	▨	▨	▨	▨	▨	▨
60	1	1	2/12	2/12	2/18	2/24	▨	▨	▨	▨	▨	▨	▨	▨
66	▨	▨	2/12	2/12	2/18	▨	▨	▨	▨	▨	▨	▨	▨	▨
72	▨	▨	2/12	2/12	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
78	▨	▨	2/12	2/12	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
84	▨	▨	2/12	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
90	▨	▨	2/12	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨

NUMBER OF POST(S)/SPACING

▨ REQUIRES SQUARE TUBE POSTS

NOT TO BE USED FOR PLANS LET AFTER DECEMBER 31ST, 2024. REMOVE NOTE BEFORE INSERTING DETAIL INTO PLAN

PUBLISHED BY OTE 02/8/2022 | MODIFIED BY | NCHRP 350 COMPLIANT GROUND MOUNTED TEMPORARY SIGN INSTALLATION DETAILS

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE: Eric Nelson
DATE 01/10/25 LICENSE # 43560

TEMPORARY SIGN FRAMING AND INSTALLATION DETAIL

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 108 OF 220 SHEETS

8:51:34 AM
1/22/2025
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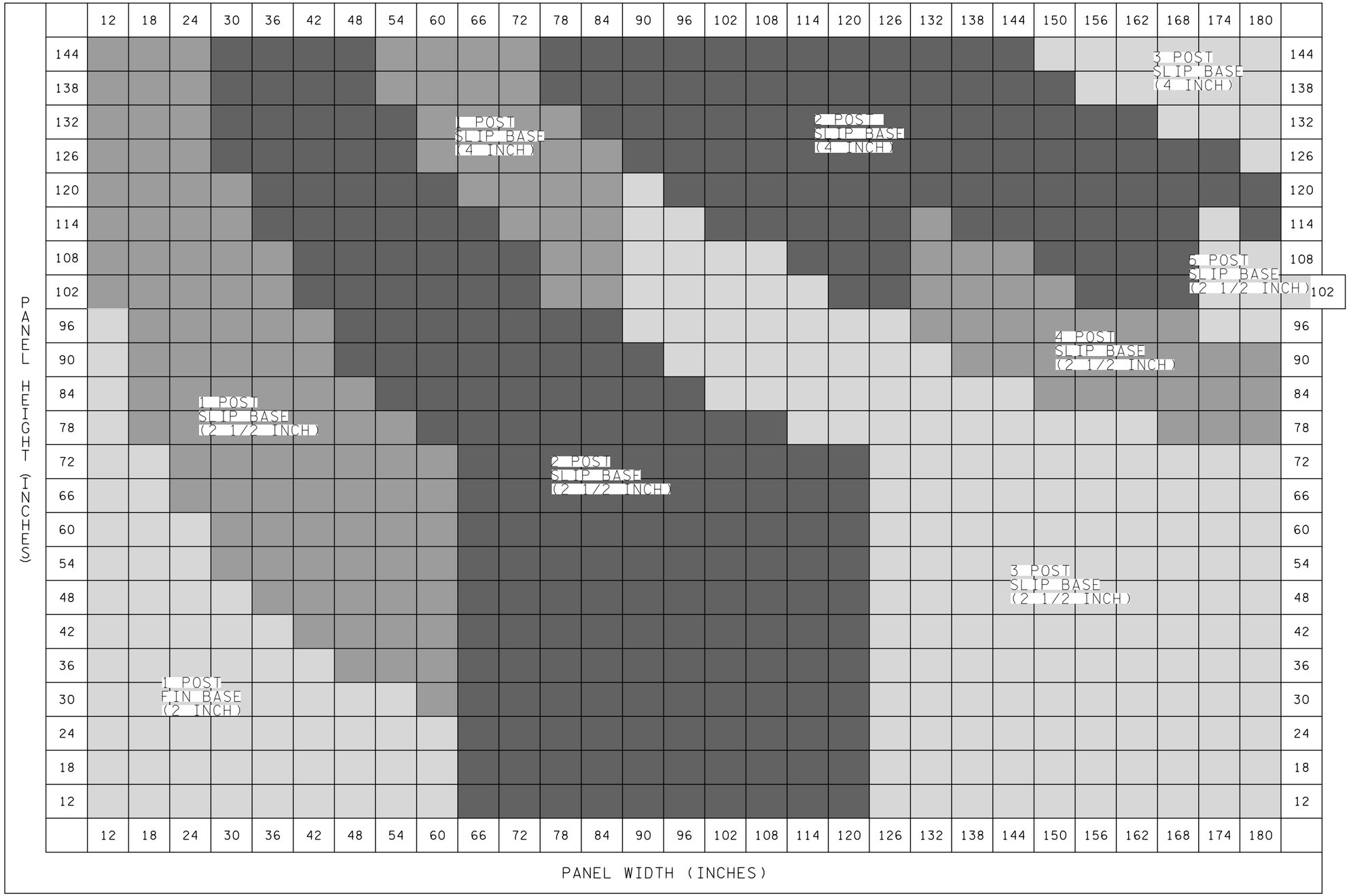

SLIP BASE RISER POST 4 INCH, 8 GAUGE
SLIP BASE RISER POST 2-1/2 INCH, 10 GAUGE WITH 2-3/16 INCH INSERT
FIN BASE RISER POST 2 IN, 12 GAUGE

BASED ON 90 MPH WIND LOAD

UPDATED 09/17/2021

8:51:42 AM
1/22/2025
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NO	DATE	DWN	CKD	REVISIONS

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I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

TEMPORARY SQUARE TUBE GROUND MOUNTED
WINDLOADING CHART

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 109 OF 220 SHEETS

SQUARE TUBE POST SPACING (INCHES)

PANEL WIDTH (INCHES)

	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120	126	132	138	144	150	156	162	168	174	180	186	192	198	204	210	216	222	228	234	240	246	252	258	264	270	276	282	288	294	300	306	312	318	324	330	336
2 POST	12	12	12	18	24	30	30	36	36	42	42	48	48	48	54	54	60	60	66	66	72	72	78	78	84	84	90	90	96	96	102	102	108	108	114	114	120	120																		
3 POST													42	42	42	42	42	48	48	48	48	48	54	54	54	60	60	60	66	66	66	72	72	72	78	78	78	84	84	84	90	90	90	96	96	96	102	102	102	108	108	108	114	114
4 POST																				42	42	42	42	42	52	48	48	48	48	48	54	54	54	54	60	60	60	60	66	66	66	66	72	72	72	72	78	78	78	78	84	84	84	84
5 POST																											42	42	42	42	42	42	42	48	48	48	48	48	54	54	54	54	54	60	60	60	60	60	66	66	66	66	66	72
6 POST																																		42	42	42	42	42	42	42	42	48	48	48	48	48	54	54	54	54	54	60	60
7 POST																																							42	42	42	42	42	42	42	42	42	48	48	48	48	48	48
8 POST																																																42	42	42	42	42	42	42

18 24 30 36 42 48 54 60 66 72 78 84 90 96 102 108 114 120 126 132 138 144 150 156 162 168 174 180 186 192 198 204 210 216 222 228 234 240 246 252 258 264 270 276 282 288 294 300 306 312 318 324 330 336
PANEL WIDTH (INCHES)

DISTANCES ARE CENTER - TO - CENTER OF POSTS.

UPDATED 09/17/2021

8:51:49 AM
1/22/2025
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NO	DATE	DWN	CKD	REVISIONS

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PRINT NAME: ERIC NELSON
SIGNATURE: [signature]
DATE 01/10/25 LICENSE # 43560

TEMPORARY SQUARE TUBE POST SPACING CHART

GENERAL NOTES;

1. GROUND MOUNTED SQUARE TUBE SIGN STRUCTURES PLACED WITHIN 50' OF THE RADIUS END OF AN INTERSECTION SHALL BE PLACED ON ONE 2" OR 2-1/2" POST.
2. FOR 2" SQUARE TUBE RISER POST IN SOIL, USE FIN BASE PLACED PER MANUFACTURER'S SPECIFICATIONS. USE A 2" X 2" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE RISER POST. PLACE 3/8" STAINLESS STEEL BOLT THROUGH THE 5TH HOLE DOWN FROM THE TOP OF THE BASE. RISER POST SHALL REST ON THE BOLT.
3. FOR 2-1/2" SQUARE TUBE RISER POST IN SOIL, USE SLIP BASE PLACED PER MANUFACTURER'S SPECIFICATIONS USING A 10 GAUGE , 2-1/2" X 2-1/2" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE RISER POST WITH A 10 GAUGE 2-3/16" X 2-3/16" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE INTERNAL INSERT.

SPECIFIC NOTES;

① IF ANY PART OF A SIGN OR SIGN ASSEMBLY EXTENDS MORE THAN 4" INTO THE PEDESTRIAN FACILITY, THE MINIMUM HEIGHT TO BOTTOM OF THE SIGN OR SIGN ASSEMBLY SHALL BE 7'.

② 6' - 12' FROM EDGE OF ROADWAY, MUST BE A MINIMUM OF 6' FROM EDGE OF PAVED SHOULDER (WHEN PRESENT).

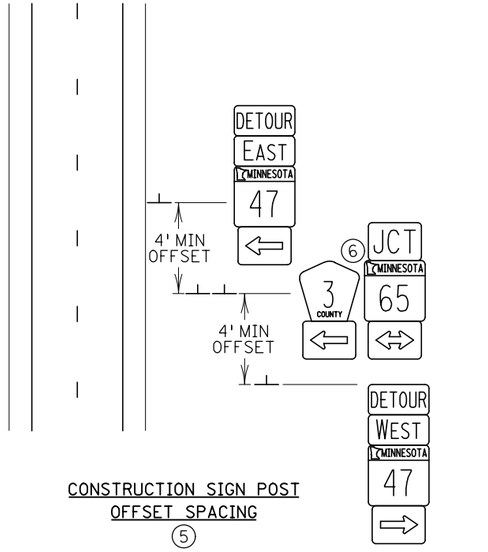
③ IF GROUND MOUNTED TEMPORARY SIGN OR SIGN ASSEMBLY IS PLACED ON 2-1/2" SQUARE TUBE RISER POST(S), THE MINIMUM CLEARANCE FROM THE GROUND LINE TO THE BOTTOM OF THE LOWEST SIGN ON THE ASSEMBLY SHALL BE 7', OR AS SHOWN IN DETAIL, WHICHEVER IS GREATER.

④ 5' MINIMUM IN RURAL. 7' MINIMUM IN BUSINESS, COMMERCIAL, OR RESIDENTIAL AREAS.

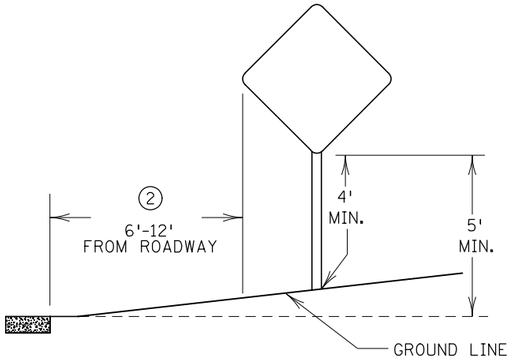
⑤ WHEN MULTIPLE GROUND MOUNTED SIGN STRUCTURES ARE PLACED ADJACENT TO EACH OTHER THERE SHOULD BE NO MORE THAN 2 POSTS WITHIN 84" OF EACH OTHER. WHEN THIS SPACING CAN NOT BE MAINTAINED, THEN SIGN STRUCTURES SHALL BE OFFSET, AND STAGGERED WITH A MINIMUM OF 4' BETWEEN SIGN STRUCTURES BOTH LATERALLY AND LONGITUDINALLY. EXAMPLE SHOWS DETOUR SIGNAGE, BUT THIS REQUIREMENT APPLIES TO ALL SIGNAGE.

⑥ INPLACE AND/OR OTHER CONSTRUCTION SIGNING.

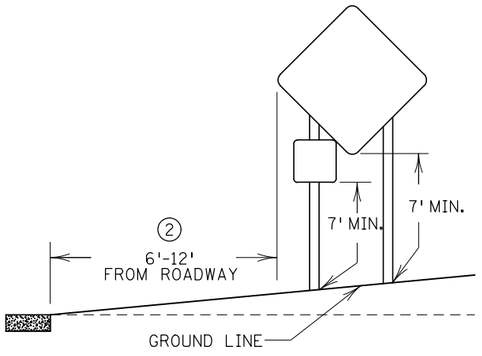
NOT TO SCALE



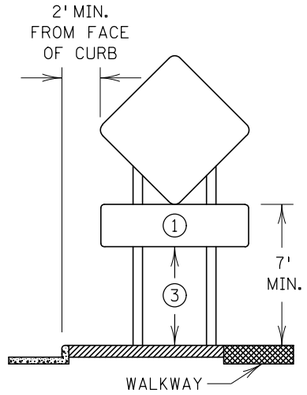
CONSTRUCTION SIGN POST OFFSET SPACING ⑤



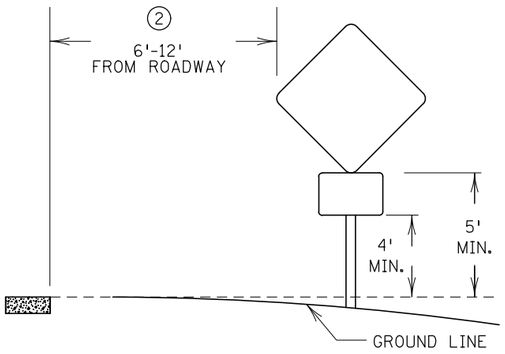
TYPICAL RURAL DESIGN AND 2" RISER POST



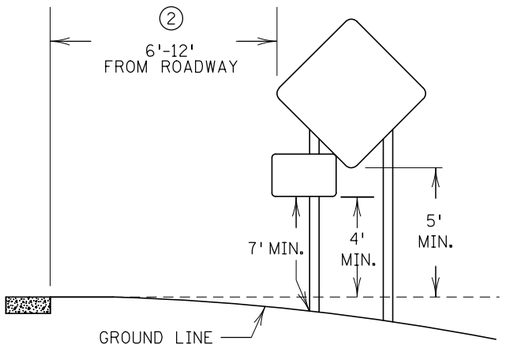
TYPICAL RURAL DESIGN WITH SUPPLEMENTAL PLAQUE AND 2-1/2" RISER POST



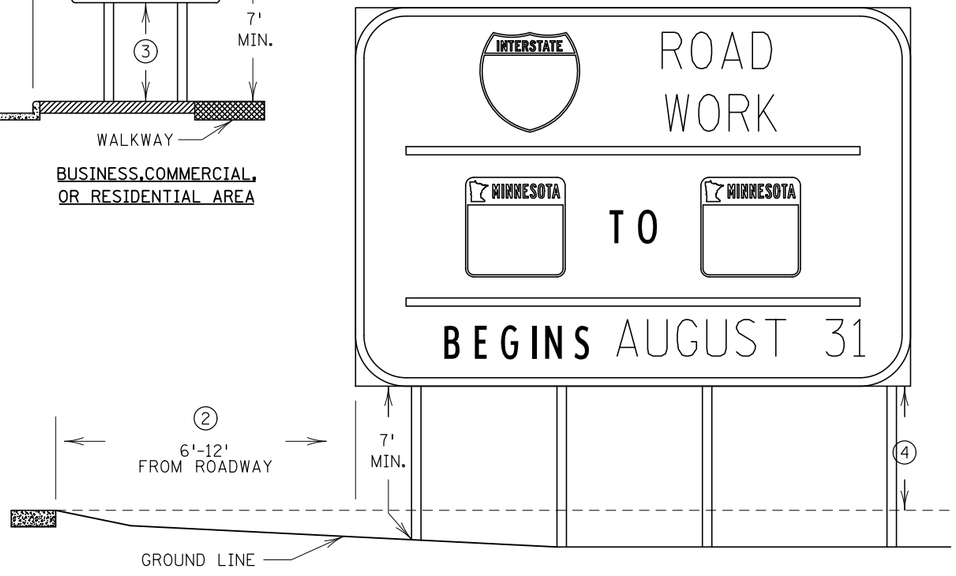
BUSINESS,COMMERCIAL, OR RESIDENTIAL AREA



TYPICAL RURAL DESIGN WITH SUPPLEMENTAL PLAQUE AND 2" RISER POST



TYPICAL RURAL DESIGN 2-1/2" RISER POST



TYPICAL G20-X2 DESIGN

PUBLISHED BY OTE 03/15/2021 | MODIFIED BY | TEMPORARY SQUARE TUBE GROUND MOUNTED SIGN PLACEMENT

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

TEMPORARY SQUARE TUBE GROUND MOUNTED SIGN PLACEMENT

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 111 OF 220 SHEETS

8:51:57 AM
1/22/2025
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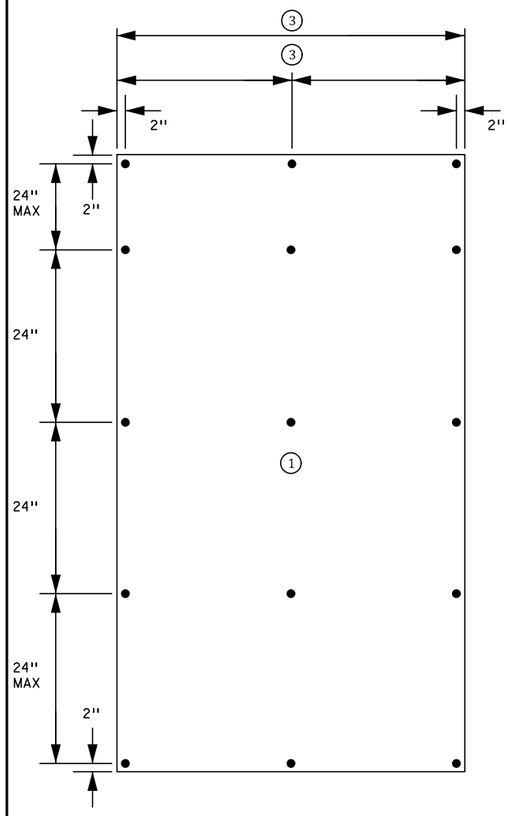
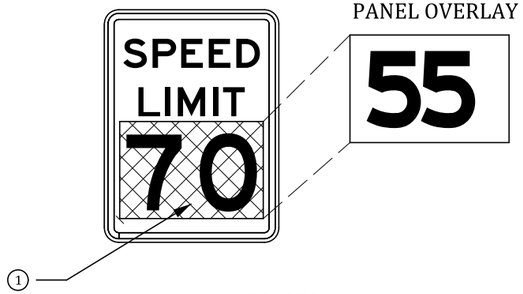
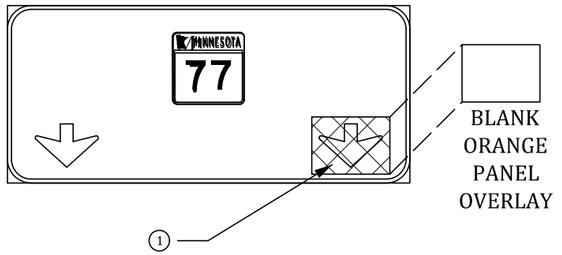
FASTENER SPACING DETAIL
HORIZONTAL PLACEMENT



R2-1

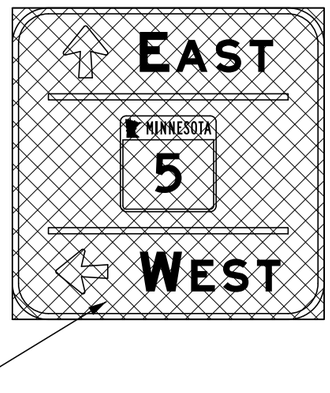
BLACK ON WHITE
PANEL OVERLAY



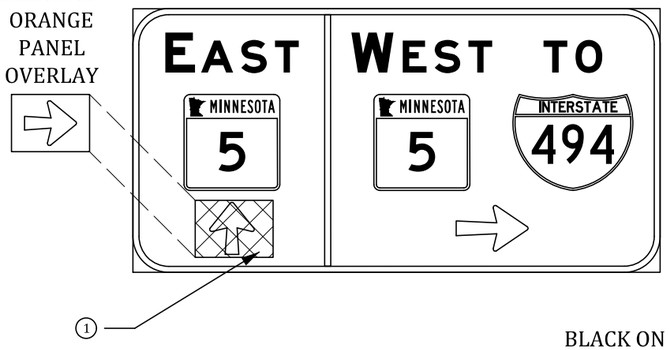


BLANK
ORANGE
PANEL
OVERLAY

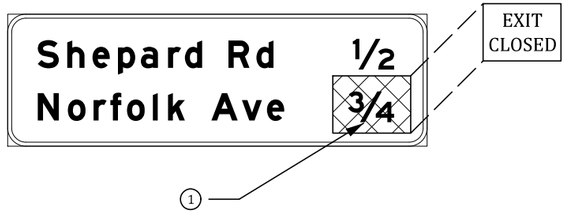
BLANK
NON-REFLECTIVE
GREEN
COVER

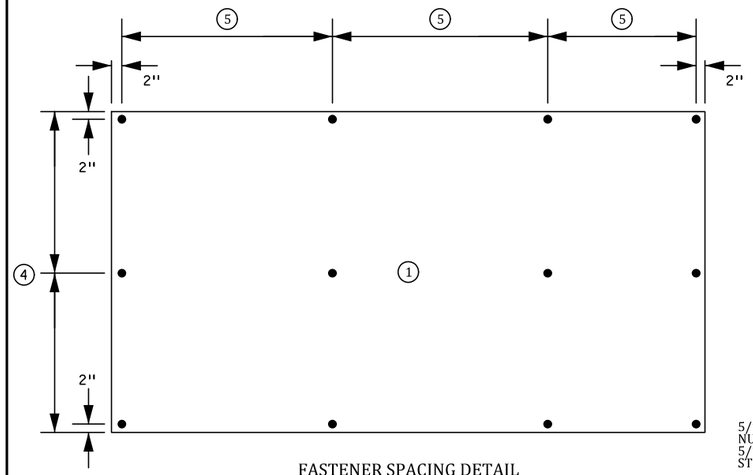


BLACK ON
ORANGE
PANEL
OVERLAY



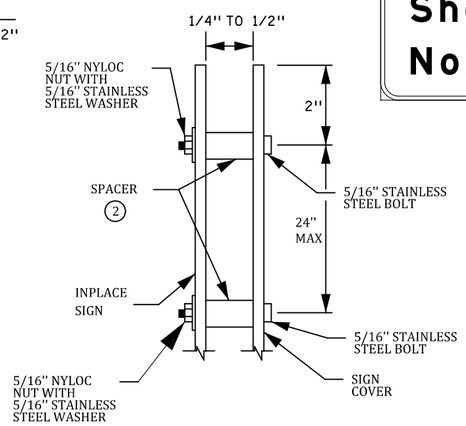
BLACK ON
ORANGE
PANEL
OVERLAY





FASTENER SPACING DETAIL
VERTICAL PLACEMENT

SPACER DETAIL



GENERAL NOTES:

1. SIGN COVERS ARE USED TO COVER THE ENTIRE PANEL OF A INPLACE SIGN. THE COVER SHALL BE BLANK, GREEN IN COLOR, AND MADE OF A RIGID NON-REFLECTIVE MATERIAL (SHEET ALUMINUM, PLYWOOD, CORRUGATED PLASTIC). OTHER MATERIALS MAY BE USED AS APPROVED BY THE ENGINEER.
2. SIGN PANEL OVERLAYS ARE USED TO MODIFY THE MESSAGE OF AN INPLACE SIGN PANEL. THE PANEL OVERLAY SHALL BE MADE OF SHEET ALUMINUM WITH THE APPROPRIATE SHEETING MATERIAL AS SPECIFIED ON THE MNDOT SHEETING FOR RIGID TEMPORARY WORK ZONE SIGNS APL. THE MESSAGE SHALL FOLLOW THE REQUIREMENTS OF THE "MNDOT STANDARD SIGNS AND MARKINGS MANUAL" OR THE "FHWA STANDARD HIGHWAY SIGNS MANUAL" (AND SUPPLEMENTS). THE SIGN PANEL OVERLAY SHALL BE RECTANGULAR IN SHAPE AND FULLY COVER THE MESSAGE ELEMENT(S) BEING MODIFIED.

   SIGN PANEL OVERLAY WITH A MESSAGE SHALL BE BLACK ON FLUORESCENT ORANGE ON ALL SIGNS EXCEPT FOR REGULATORY SIGNS WHICH SHALL BE THE PROPER COLOR ON A WHITE BACKGROUND.

   BLANK SIGN PANEL OVERLAYS SHALL BE FLUORESCENT ORANGE ON ALL SIGNS.

   DO NOT COVER OR MODIFY THE "STOP" (R1-1), "YIELD" (R1-2), OR THE (W14-3) NO PASSING ZONE SIGNS, THESE SIGNS SHALL BE REMOVED IF THEY NO LONGER APPLY OR CONFLICT WITH WORK ZONE SIGNING.
3. MINIMIZE DAMAGE TO THE INPLACE SIGN PANEL. DO NOT APPLY TAPE TO THE INPLACE SIGN SHEETING.
4. SPACERS (SUCH AS PLASTIC OR RUBBER) SHALL BE A MATERIAL THAT WILL NOT HARM THE INPLACE SIGN SHEETING FACE.
5. ATTACH SIGN COVER PANEL OR PANEL OVERLAY USING HARDWARE SHOWN IN THE SPACER DETAIL.
6. IF SHEET METAL SCREWS ARE USED TO PLACE CORRUGATED PLASTIC AS A SIGN COVER PANEL, PLACE FENDER WASHERS BETWEEN THE SCREW HEADS AND THE CORRUGATED PLASTIC.
7. REMOVE ALL COVERING MATERIAL, MOUNTING HARDWARE, AND FASTENERS WHEN SIGN COVER PANEL OR PANEL OVERLAY IS REMOVED.
8. NO HANDLE OR OTHER LIFTING DEVICE SHALL BE LEFT ATTACHED TO ANY SIGN COVER PANEL AFTER PLACEMENT.

SPECIFIC NOTES:

① THE SIGN COVER OR PANEL OVERLY SHALL FULLY COVER THE MESSAGE BEING COVERED OR MODIFIED.

② PLACE SIGN COVER AND PANEL OVERLAYS WITH SPACERS THAT PROVIDE A SPACING OF 1/4 IN TO 1/2 IN BETWEEN THE COVER MATERIAL AND THE INPLACE SIGN. THE SPACERS SHALL HAVE AN OUTSIDE DIAMETER BETWEEN 3/8 IN TO 7/8 IN. EACH FASTENER REQUIRES A SPACER.

③ IF THE SIGN COVER OR PANEL OVERLAY IS GREATER THAN 48 IN WIDE, THE FASTENER SPACING SHALL BE NO GREATER THAN 24 IN. IF THE SIGN COVER OR PANEL OVERLAY IS LESS THAN 24 IN WIDE, DO NOT PLACE A CENTER FASTENER (UNLESS REQUIRED BY SPECIFIC NOTE ④).

④ VERTICAL SPACING FOR FASTENERS IS 50% OF THE SIGN COVER OR PANEL OVERLAY. IF THE SIGN COVER OR PANEL OVERLAY IS LESS THAN 24 IN HIGH, DO NOT PLACE A CENTER FASTENER (UNLESS REQUIRED PER SPECIFIC NOTE ⑤).

⑤ HORIZONTAL SPACING FOR FASTENERS SHALL NOT BE LESS THAN 15 IN OR MORE THAN 24 IN.

ASSEMBLY NOTES:

1. DRILL 11/32 IN HOLES ON THE SIGN COVER OR PANEL OVERLAY IN ACCORDANCE WITHHELD FASTENER SPACING DETAILS.
2. ATTACH PLASTIC SPACERS TO SIGN COVER OR PANEL OVERLAY WITH DOUBLE FACED TAPE. CENTERED BEHIND EACH DRILLED HOLE.
3. POSITION THE COVER OR OVERLAY MATERIAL OVER THE SIGN OR MESSAGE TO BE MODIFIED.
4. DRILL ALL THE OUTSIDE HOLES THROUGH THE INPLACE SIGN PANEL AND ATTACH THE COVER OR OVERLAY MATERIAL WITH APPROPRIATE FASTENERS.
5. DRILL ALL THE INNER HOLES THROUGH THE INPLACE SIGN PANEL AND ATTACH WITH APPROPRIATE FASTENERS.

PUBLISHED BY OTE 08/17/2023

MODIFIED BY

TEMPORARY SIGN COVERING AND MODIFICATION DETAIL

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE: Eric Nelson
DATE 01/10/25 LICENSE # 43560

TEMPORARY SIGN COVERING

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 112 OF 220 SHEETS

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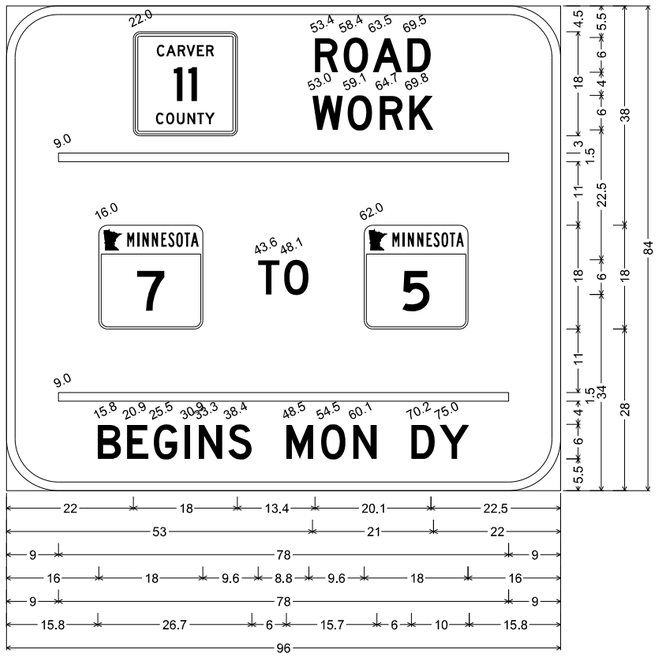
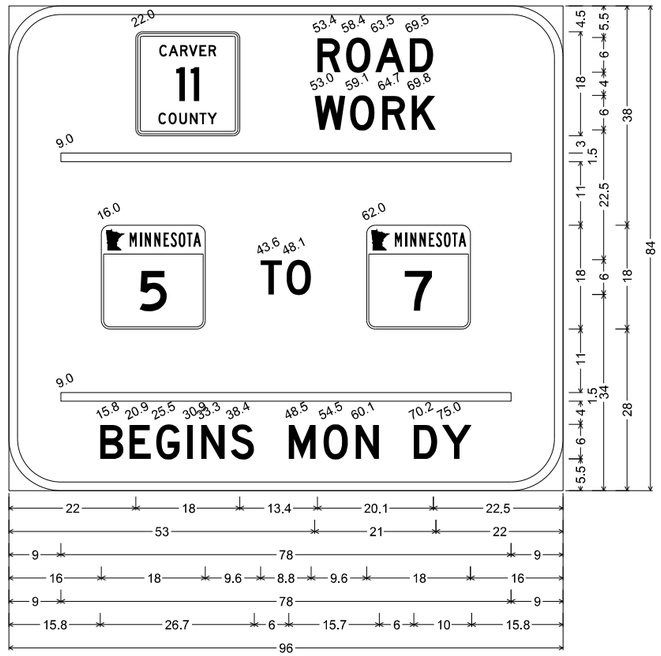
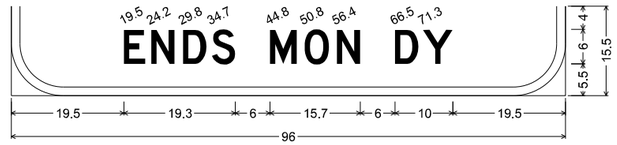


WZ-1;
9.0" Radius, 1.5" Border, Black on Orange;
"ROAD", D 2K; "WORK", D 2K; State Highway 7 M1-5M; "TO", D 2K;
State Highway 5 M1-5M; "BEGINS", D 2K; "MON DY", D 2K;



WZ-2;
9.0" Radius, 1.5" Border, Black on Orange;
"ROAD", D 2K; "WORK", D 2K; State Highway 5 M1-5M; "TO", D 2K;
State Highway 7 M1-5M; "BEGINS", D 2K; "MON DY", D 2K;



WZ-3;
9.0" Radius, 1.5" Border, Black on Orange;
"ENDS", D 2K; "MON DY", D 2K;

GENERAL NOTES:

A. ALL DIMENSIONS ARE IN INCHES.

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

SPECIAL SIGN DETAIL

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 113 OF 220 SHEETS

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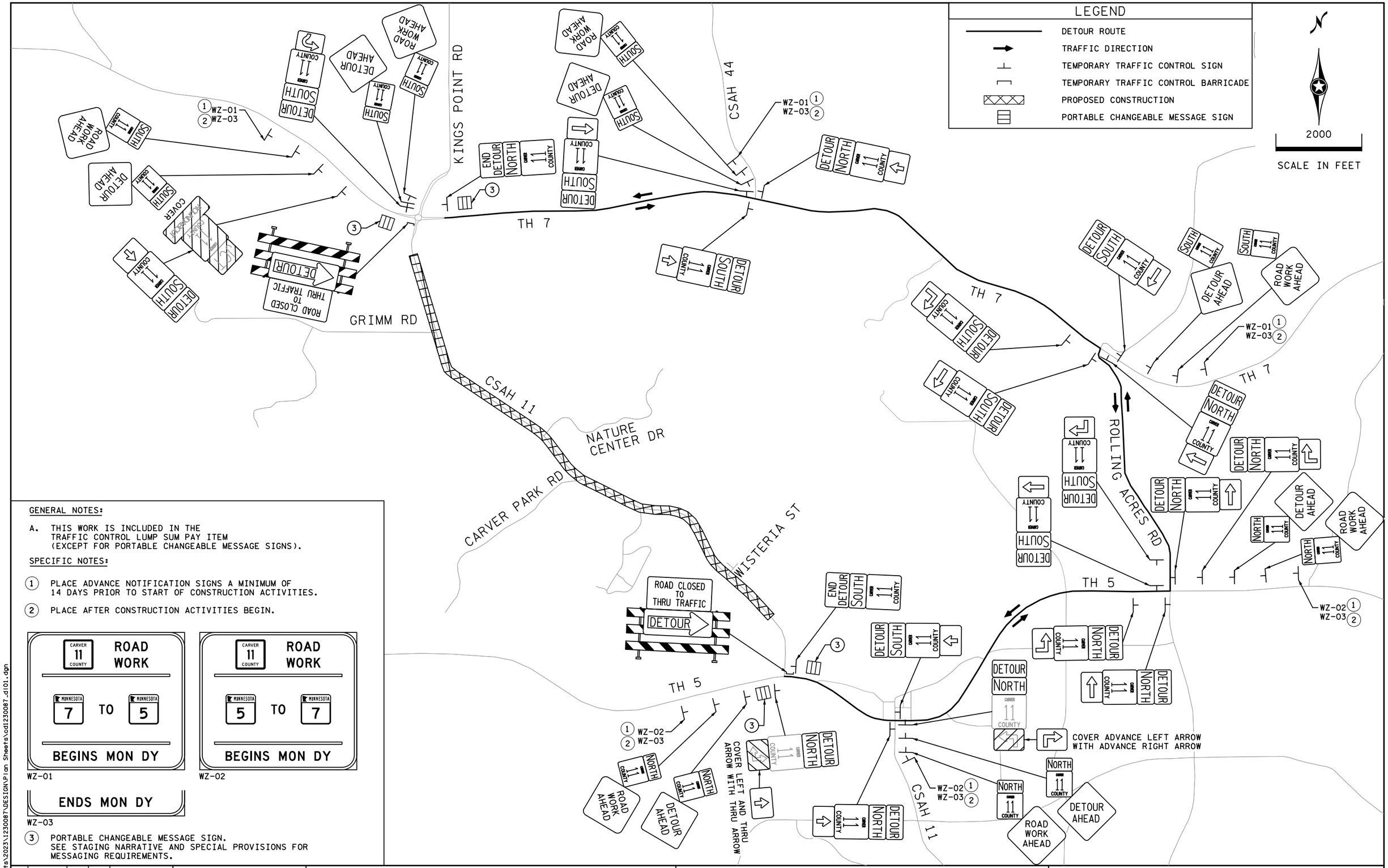

GENERAL NOTES:

A. THIS WORK IS INCLUDED IN THE TRAFFIC CONTROL LUMP SUM PAY ITEM (EXCEPT FOR PORTABLE CHANGEABLE MESSAGE SIGNS).

SPECIFIC NOTES:

(1) PLACE ADVANCE NOTIFICATION SIGNS A MINIMUM OF 14 DAYS PRIOR TO START OF CONSTRUCTION ACTIVITIES.

(2) PLACE AFTER CONSTRUCTION ACTIVITIES BEGIN.

(3) PORTABLE CHANGEABLE MESSAGE SIGN. SEE STAGING NARRATIVE AND SPECIAL PROVISIONS FOR MESSAGING REQUIREMENTS.

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

STAGING PLAN
DETOUR LAYOUT

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 114 OF 220 SHEETS

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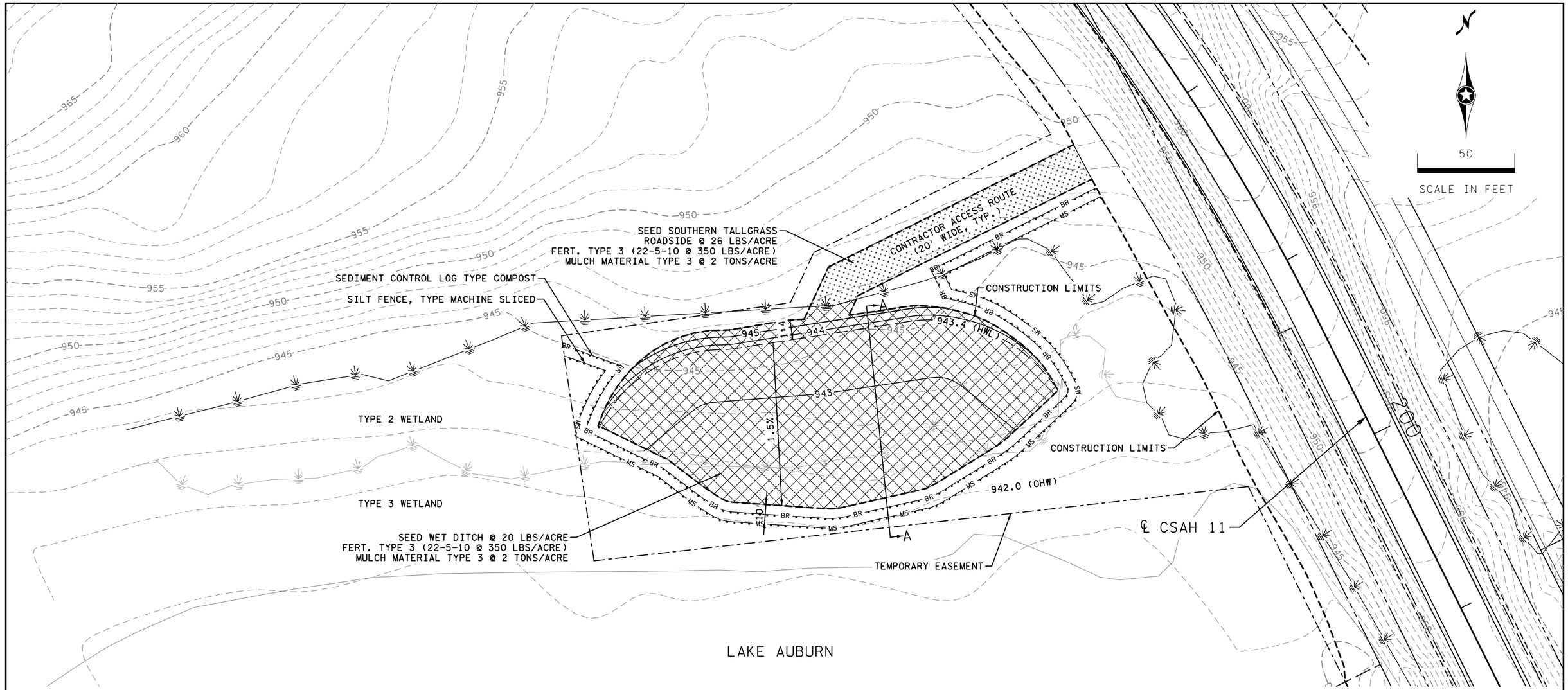

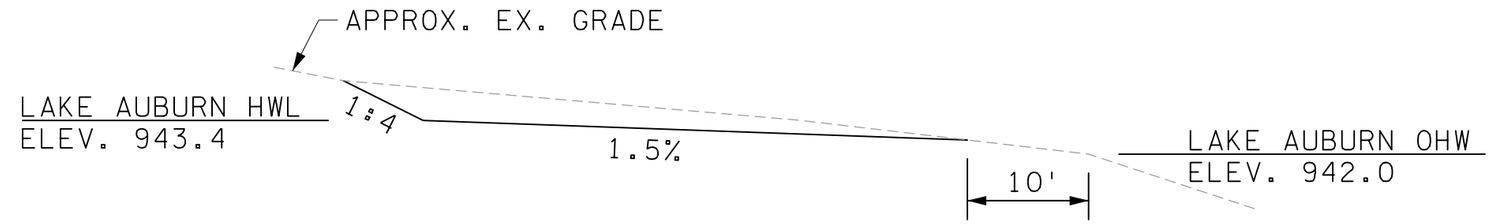

SECTION A-A

GENERAL NOTES:

1. CONTOURS ARE SHOWN AT FINISHED GRADE (TOP OF TOPSOIL).
2. CONTOUR INTERVAL = 1.0'

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

CONTOUR PLAN
FLOODPLAIN EXCAVATION

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 115 OF 220 SHEETS

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1/22/2025
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PERMANENT PAVEMENT MARKING PLAN

PERMANENT PAVEMENT MARKING TABULATION				PM
TAB	SHEET NO	ITEM	UNIT	TOTAL MARKINGS QUANTITY
PM-A	117	4" SOLID LINE MULTI-COMPONENT GROUND IN (WR)	LIN FT	852
PM-A	117	6" SOLID LINE MULTI-COMPONENT GROUND IN (WR)	LIN FT	26544
PM-A	117	4" BROKEN LINE MULTI-COMPONENT GROUND IN (WR)	LIN FT	600
PM-A	117	4" DOUBLE SOLID LINE MULTI-COMPONENT GROUND IN (WR)	LIN FT	14416
PM-B	117	PAVEMENT MESSAGE PREFORM THERMOPLASTIC GROUND IN	SQ FT	185

SIGNING PLAN

PERMANENT SIGNING SUMMARY					ST
TAB	SHEET NO	ITEM NO	ITEM	UNIT	TOTAL SAP 027-619-026 QUANTITIES
ST-A	117, 118	2104.502 /01220	REMOVE SIGN	EACH	17
ST-A	117, 118	2104.502 /03300	SALVAGE SIGN	EACH	22
ST-B	118	2104.502 /03390	SALVAGE SIGN TYPE SPECIAL	EACH	2
ST-B	118	2104.502 /03470	SALVAGE SIGN PANEL TYPE SPECIAL	EACH	8
ST-B	118	2564.602 /01519	INSTALL SIGN PANEL TYPE SPECIAL	EACH	8
ST-A	117, 118	2564.602 /01515	INSTALL SIGN	EACH	31
ST-B	118	2564.602 /01820	INSTALL SIGN TYPE SPECIAL	EACH	2
ST-A	117, 118	2564.618 /00010	SIGN	SQ FT	260

STANDARD PLANS	
NUMBER	DESCRIPTION
5-297.701	STANDARD SIGN PLACEMENT
5-297.702	DELINEATOR AND MARKER PLACEMENT
5-297.718	SQUARE-TUBE SIGN MOUNTING DETAILS
5-297.719	SQUARE TUBE SIDE-BY-SIDE SIGN MOUNTING DETAILS
5-297.720	SQUARE TUBE NO PASSING ZONE SIGN MOUNTING DETAILS
5-297.721	THREE WALL BASE - FOR 1-3/4" SQUARE TUBE RISER POST
5-297.722	FIN BASE - FOR 2" SQUARE-TUBE RISER POST IN SOIL
5-297.724	SLIP BASE ASSEMBLY - FOR 2-1/2" SQUARE-TUBE RISER POST
5-297.731	SIGN MOUNTING DETAILS FOR SIGNAL MAST ARMS

GENERAL INFORMATION:

1. MOUNTING HEIGHT IS MINIMUM (WITH A + 6 INCH TOLERANCE).
2. SEE CURRENT MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR STANDARD SIGN DESIGNS, SPLICE PLATES, STRINGERS, AND PUNCHING CODES.
3. SEE STANDARD PLANS, STANDARD PLATES, AND DETAILS FOR SIGN STRUCTURE INSTALLATION AND PLACEMENT.
4. STANDARD SIGN PANELS ARE LISTED IN THE TABULATIONS WITH TWO DIMENSIONS THAT MAY NOT BE THEIR ACTUAL WIDTH OR HEIGHT, BUT INSTEAD ARE LENGTHS OF THEIR SIDES OR DIAMETER. SEE THE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ACTUAL DIMENSIONS OF THESE PANELS BASED UPON THE CORRESPONDING DIMENSIONS FROM THE TABULATIONS.
5. SIGN AND DELINEATOR / MARKER TABULATIONS DISPLAY SIGN PANEL AND SUPPORT INFORMATION FOR PROPOSED SIGNS. SIGNS BEING REMOVED OR SALVAGED MAY NOT INCLUDE PANEL OR SUPPORT INFORMATION IN THE TABULATION.
6. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE MNDOT "TRAFFIC ENGINEERING MANUAL" AND THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD).
7. ALL SIGNS ARE SHOWN IN THEIR APPROXIMATE LOCATIONS. ANY NECESSARY REARRANGEMENT SHALL BE AS DIRECTED BY THE ENGINEER.

INDEX

XXX TITLE SHEET
XXX PERMANENT PAVEMENT MARKING NOTES AND TABULATIONS
XXX-XXX SIGNING TABULATIONS
XXX-XXX DETAILS
XXX-XXX ROADWAY LAYOUTS

SYMBOLS & MATERIALS LEGEND

— — BROKEN LINE-40' CYCLE (10' LINE, 30' GAP), UNLESS SHOWN OTHERWISE IN THE PLAN

- - - - - DOTTED LINE-8' CYCLE (2' LINE, 6' GAP), UNLESS SHOWN OTHERWISE IN THE PLAN

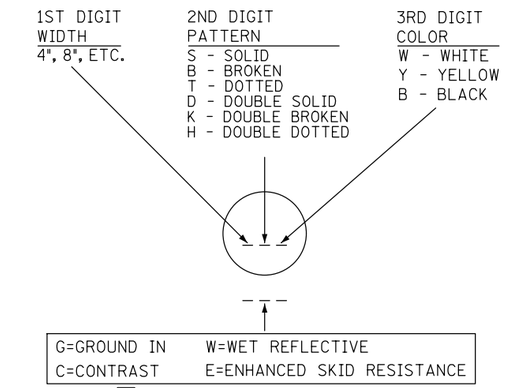
PAVEMENT MESSAGE - RIGHT ARROW (RA)

PAVEMENT MESSAGE - LEFT ARROW (LA)

STRIPING KEY

CIRCLE-MULTI COMP (---) OCTAGON-PREF THERMO (---)

TRIANGLE-PAINT (---)



EXAMPLE: 4SW / GCW = 4" SOLID LINE WHITE PREF THERMO GROUND IN, CONTRAST, WET REFLECTIVE

SIGNING ABBREVIATIONS

R	ROUND POST
SQ	SQUARE TUBE

SIGNING LEGEND

⊥ SIGN

⊥⊥ SIGN (BACK-TO-BACK)

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ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

PERMANENT PAVEMENT MARKING & SIGNING PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 116 OF 220 SHEETS

PERMANENT PAVEMENT MARKING PLAN

NOTES & GUIDELINES

GENERAL INFORMATION:

1. SEE 2582 IN THE SPECIAL PROVISIONS FOR PAVEMENT MARKING SPOTTING RESPONSIBILITIES.
2. EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS, AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY AN AGENCY PLACED YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE MAINLINE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALK.
3. DO NOT APPLY THE PAVEMENT MARKINGS WHEN WEATHER AND OTHER CONDITIONS CAUSE A FILM OF DUST OR DEBRIS TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL IS APPLIED.
4. THE FILLING OF TANKS, POURING OF MATERIALS OR CLEANING OF EQUIPMENT SHALL NOT BE PERFORMED ON UNPROTECTED PAVEMENT SURFACES UNLESS ADEQUATE PROVISIONS ARE MADE TO PREVENT SPILLAGE OF MATERIAL.

PAVEMENT MARKING LINEAR MARKINGS — PM-A

ITEM	UNIT	YELLOW	WHITE	PROJECT TOTAL QTY
		QTY CSAH 11 SAP 010-611-027	QTY CSAH 11 SAP 010-611-027	
4" SOLID LINE MULTI-COMPONENT GROUND IN (WR)	LIN FT	852		852
6" SOLID LINE MULTI-COMPONENT GROUND IN (WR)	LIN FT		26544	26544
4" BROKEN LINE MULTI-COMPONENT GROUND IN (WR)	LIN FT	600		600
4" DOUBLE SOLID LINE MULTI-COMPONENT GROUND IN (WR)	LIN FT	14416		14416

PAVEMENT MARKING MESSAGES — PM-B

CODE	MESSAGE	TYPE	AREA SQ FT	QTY CSAH 11 SAP 010-611-027	PROJECT TOTAL QTY	PROJECT TOTAL AREA
PAVEMENT MESSAGE PREFORM THERMOPLASTIC GROUND IN						
PMA-2L	LT ARROW	STANDARD	15.45	6	6	92.7
PMA-2R	RT ARROW	STANDARD	15.45	6	6	92.7
					SUBTOTAL	**185.4**

SIGN AND DELINEATOR / MARKER — ST-A

SIGN NUMBER	PANEL CODE	PANEL LEGEND	PANEL SIZE (W x H)	PANEL MOUNTING HEIGHT	SUPPORT TYPE	SUPPORT NUMBER OF POSTS	REMOVE SIGN	SIGN	SALVAGE SIGN	INSTALL SIGN	SALVAGE SIGN TYPE SPECIAL	INSTALL SIGN TYPE SPECIAL
			INCH	FEET			EACH	SQ FT	EACH	EACH	EACH	EACH
SAP 010-611-027												
C-1	W1-2	CURVE RIGHT	30 x 30	7	U	1			1	1		
	W13-1P	35 MPH PLAQUE	18 x 18						1	1		
C-2	M2-1	JCT (BLUE)	21 x 15	7	U	1			1	1		
	M1-5M	WINNESOTA HWY 11	24 x 24						1	1		
C-3	W14-3	NO PASSING ZONE	36 x 36 x 48	7	U	1			1 (1) 1	1		
(1) C-3.1		CARVER PARK RESERVE SIGN	INPLACE		U						1	1
C-4	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7	U	1		6.25		(1)	(1)	
C-5	C-100		INPLACE	7	U	1						
			INPLACE									
	R1-1	STOP	36 x 36						1 1	1		
	W1-2	CURVE LEFT	30 x 30	7	U	1	1					
	W13-1P	45 MPH PLAQUE	18 x 18				1					
C-6	R3-7L	LEFT LANE MUST TURN LEFT	30 x 30	7	U	1		6.25	1	(1)	(1)	
	W1-8	CHEVRON	18 x 24	5	U	1	1					
	W1-8	CHEVRON	18 x 24	5	U	1	1					
	W1-8	CHEVRON	18 x 24	5	U	1	1					
	W1-8	CHEVRON	18 x 24	5	U	1	1		1			
C-7		PARK BOUNDARY SIGN	INPLACE		U				1	1		
	W1-2	CURVE RIGHT	30 x 30	7	U	(1) 1	1					
	W13-1P	45 MPH PLAQUE	18 x 18				1					
	W14-3	NO PASSING ZONE	36 x 36 x 48	7	U	1	1		1			

TABULATION NOTES:
(1) SEE SIGN AND DELINEATOR / MARKER TYPE SPECIAL TABULATION FOR DETAILS.
(2) POST BACK-TO-BACK.

NO	DATE	DWN	CKD	REVISIONS
1	01/27/25	GMK	EN	ADDENDUM #1

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE: Eric Nelson
DATE 01/27/25 LICENSE # 43560

PERMANENT PAVEMENT MARKING & SIGNING PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 117 OF 220 SHEETS

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SIGN AND DELINEATOR / MARKER — ST-A

SIGN NUMBER	PANEL		SIZE (W x H)	MOUNTING HEIGHT	SUPPORT		REMOVE SIGN	SIGN	SALVAGE SIGN	INSTALL SIGN	SALVAGE SIGN TYPE SPECIAL	INSTALL SIGN TYPE SPECIAL
	PANEL CODE	LEGEND			TYPE	NUMBER OF POSTS						
			INCH	FEET			EACH	SQ FT	EACH	EACH	EACH	EACH
C-8	W11-2	PEDESTRIAN CROSSING	30 x 30	7	U	1			1	1		
	W14-3	NO PASSING ZONE	36 x 36 x 48	7	U	1	1		(1)			
C-9	W11-2	PEDESTRIAN CROSSING	30 x 30	7	U	1			1	1		
C-10	R3-7L	LEFT LANE MUST TURN LEFT	30 x 30	7	U	1				1		
C-11	C-101		INPLACE	7	U	1						
			INPLACE									
	R1-1	STOP	36 x 36						(1) 1	1		
		LOWRY NATURE CENTER	INPLACE		U							
C-12	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7	U	1		6.25			(1)	
C-13	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7	U	1		6.25				
C-14	W1-7	DOUBLE ARROW	48 x 24	7	U	1			(1) 1	1		
C-15	C-102		INPLACE	7	U	1						
			INPLACE									
	R1-1	STOP	36 x 36						1	1		
		KING OBSERVATION AREA MAINTENANCE SHOP LAKE AUBURN ACCESS	INPLACE		U							
C-16	R3-7L	LEFT LANE MUST TURN LEFT	30 x 30	7	U	1		6.25			(1)	
C-17	R1-1	STOP	36 x 36		U	1			(1) 1	1		
(1) C-17.1		LAKE AUBURN CAMPGROUND	INPLACE		U						1	1
	W1-2	CURVE RIGHT	30 x 30	7	U	1	1		(1)			
	W13-1P	50 MPH PLAQUE	18 x 18				1					
C-18	R16-X13	VEHICLE NOISE LAWS ENFORCED	36 x 42		U	2			1	1		
C-19	I2-X4	VICTORIA POP 10,546	54 x 24	7	U	1			1	1		
C-20	W3-5	SPEED LIMIT 40 MPH AHEAD	36 x 36	7	U	2			1	1		
		END 40 MILE SPEED	INPLACE	7	U		1					
C-21	R3-9dP	END PLAQUE	30 x 12	7	U	1		2.50			(1)	
	R2-1	SPEED LIMIT 40 MPH	24 x 30					5.00				
C-22	R2-1	SPEED LIMIT 40 MPH	24 x 30	7	U	1			1	1		
	W1-2	CURVE LEFT	30 x 30	7	U	1	1		(1)			
	W13-1P	50 MPH PLAQUE	18 x 18				1					
		MORAVIAN CHURCH BOUNDARY	INPLACE		U							
		MORAVIAN CHURCH BOUNDARY	INPLACE		U							
		MORAVIAN CHURCH BOUNDARY	INPLACE		U							
C-23	C-103		INPLACE	7	U	1						
			INPLACE									
	R1-1	STOP	36 x 36						(1) 1	1		
C-24	W14-2	NO OUTLET	30 x 30	7	U	1			1	1		
	W14-3	NO PASSING ZONE	36 x 36 x 48	7	U	1	1					
C-25	R2-1	SPEED LIMIT 40 MPH	24 x 30	7	U	1	1	5.00			(1)	
C-26	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7	U	1			(1) 1	1		
C-27	W14-3	NO PASSING ZONE	36 x 36 x 48	7	U	(1) 2			1	1		
	W3-5	SPEED LIMIT 40 MPH AHEAD	36 x 36						1	1		
SAP 010-611-027 TOTAL							**17**	**44**	**(1) 22**	**23**	**(1) 2**	**2**

TABULATION NOTES:
(1) SEE SIGN AND DELINEATOR / MARKER TYPE SPECIAL TABULATION FOR DETAILS.
(2) POST BACK-TO-BACK.

SIGN AND DELINEATOR / MARKER TYPE SPECIAL — ST-B

SIGN NUMBER	PANEL		SIZE (W x H)	SUPPORT			SALVAGE SIGN PANEL TYPE SPECIAL	INSTALL SIGN PANEL TYPE SPECIAL
	PANEL CODE	LEGEND		NUMBER OF POSTS	TYPE	(1) SURFACE TYPE		
			INCH				EACH	EACH
C-100	STREET SLAT	GRIMM RD	INPLACE	MOUNT ABOVE C-5			1	1
	STREET SLAT	VICTORIA DR	INPLACE				1	1
C-101	STREET SLAT	NATURE CENTER DR	INPLACE	MOUNT ABOVE C-11			1	1
	STREET SLAT	VICTORIA DR	INPLACE				1	1
C-102	STREET SLAT	CARVER PARK RD	INPLACE	MOUNT ABOVE C-15			1	1
	STREET SLAT	VICTORIA DR	INPLACE				1	1
C-103	STREET SLAT	WISTERIA ST	INPLACE	MOUNT ABOVE C-23			1	1
	STREET SLAT	VICTORIA DR	INPLACE				1	1
SAP 010-611-027 TOTAL							**8**	**8**

NO	DATE	DWN	CKD	REVISIONS
1	01/27/25	GMK	EN	ADDENDUM #1

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/27/25 LICENSE # 43560

PERMANENT PAVEMENT MARKING & SIGNING PLAN

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 118 OF 220 SHEETS

10:44:32 AM
1/26/2025
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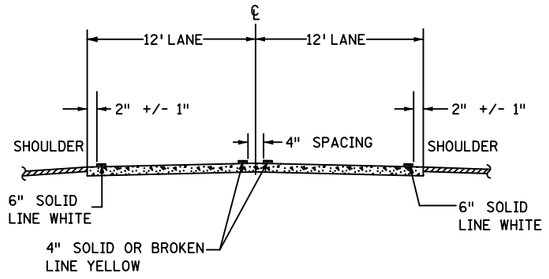
TWO-LANE, TWO-WAY



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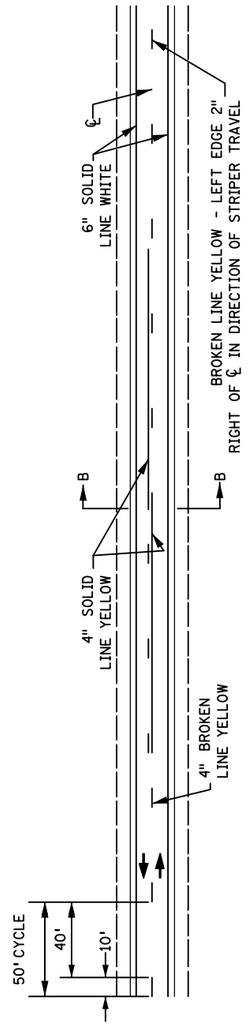
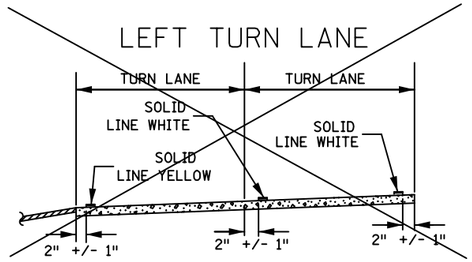


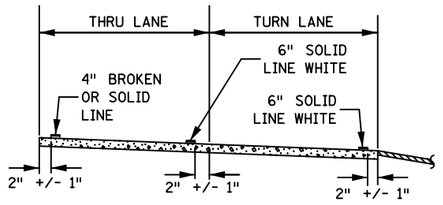
PUBLISHED BY OTE: 16 NOV 2021 | MODIFIED:

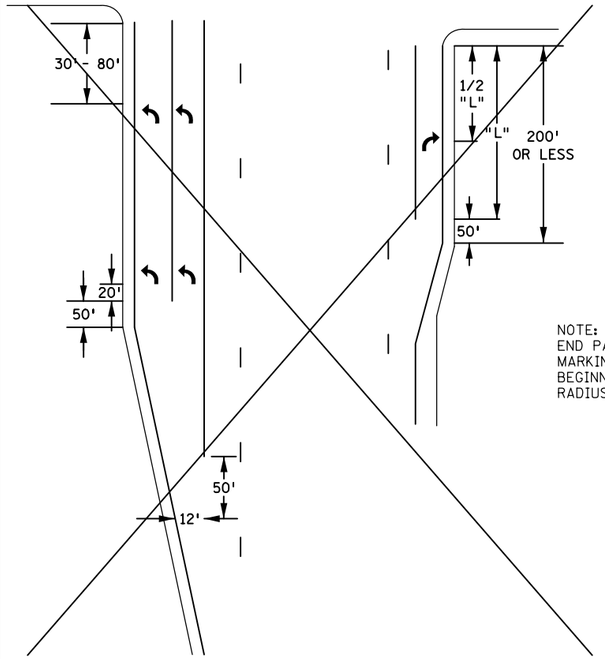
TURN LANE WITH ARROW MESSAGE

LEFT TURN LANE

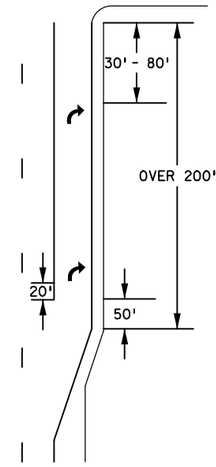


RIGHT TURN LANE





NOTE:
END PAVEMENT MARKINGS AT BEGINNING OF RADIUS



PUBLISHED BY OTE: 16 NOV 2021 | MODIFIED:

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1/22/2025
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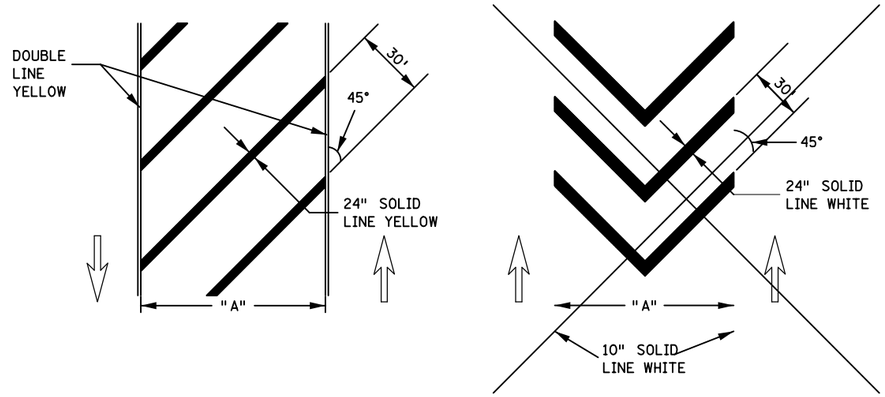
PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

PERMANENT PAVEMENT MARKING & SIGNING PLAN

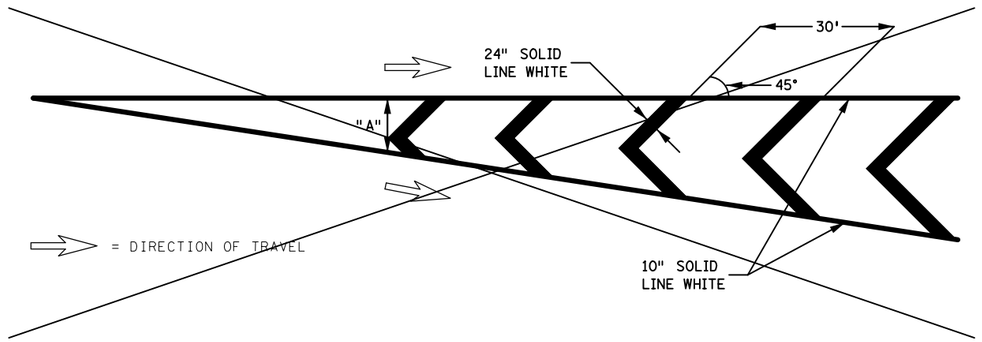
SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 119 OF 220 SHEETS

CROSSHATCHING

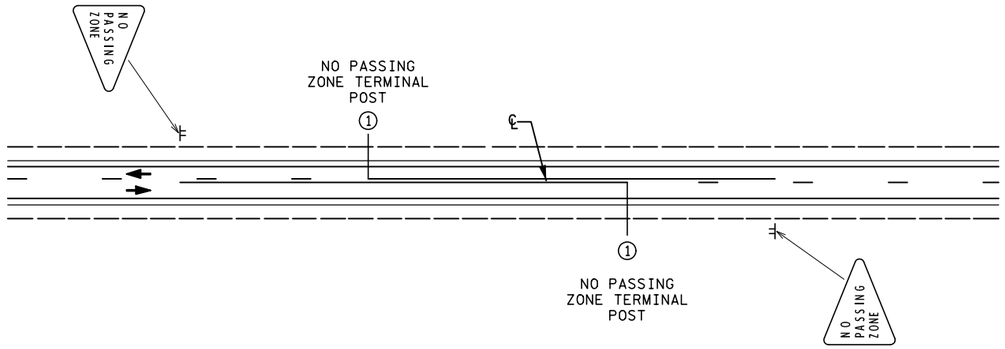


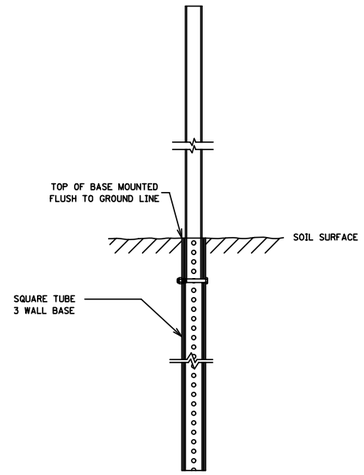
WHEN "A" IS LESS THAN 4' NO CROSSHATCHING REQUIRED.



PUBLISHED BY OTE: 16 NOV 2021 | MODIFIED:

NO-PASSING ZONE TERMINAL POST





NO PASSING
ZONE TERMINAL
POST
②

① PLACE POSTS AT THE END OF EACH NO PASSING ZONE.

② REFER TO SPECIAL PROVISION 2564 "TERMINAL POST" FOR FURTHER DETAILS RELATING TO INSTALLATION, PLACEMENT, AND DEVICE STANDARDS.

PUBLISHED BY OTE: 10 OCT 2023 | MODIFIED:

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1/22/2025
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NO	DATE	DWN	CKD	REVISIONS

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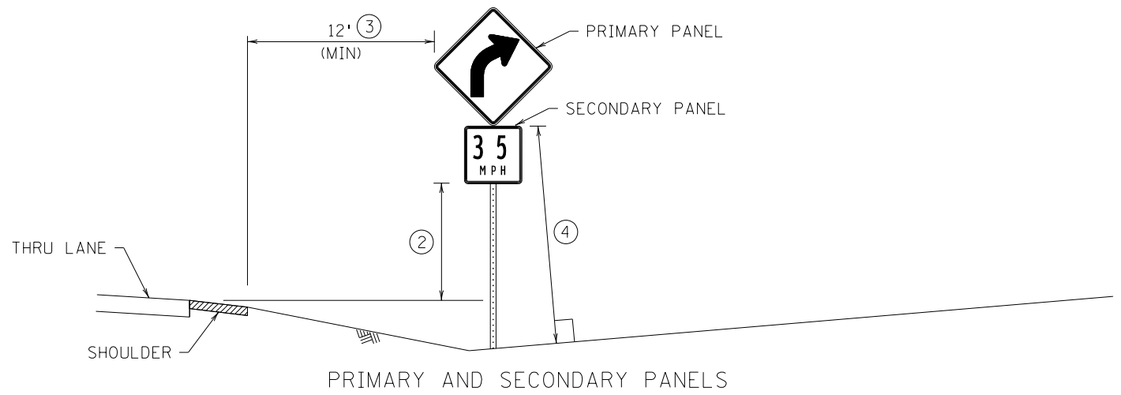
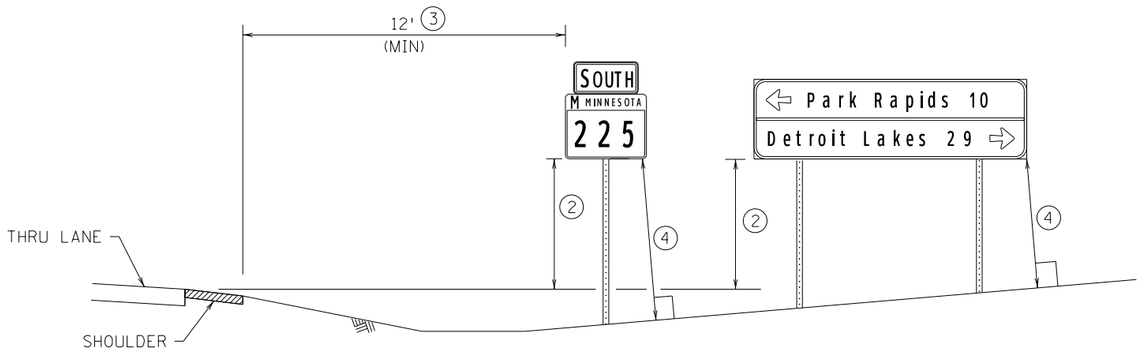
PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

PERMANENT PAVEMENT MARKING & SIGNING PLAN

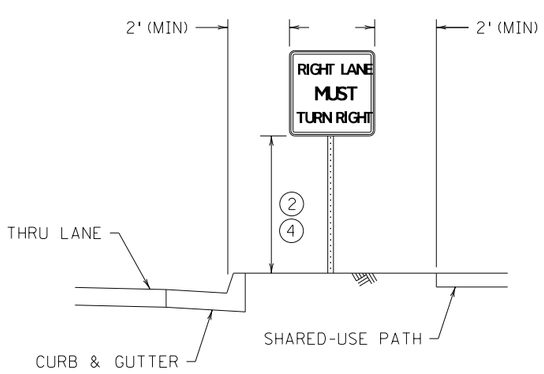
SAP 010-611-027; CP 218931 (CSAH 11)



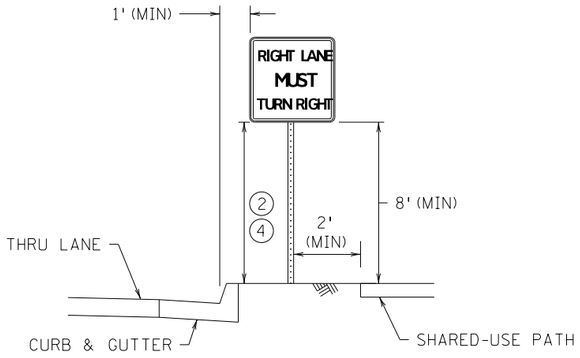
PRIMARY AND SECONDARY PANELS



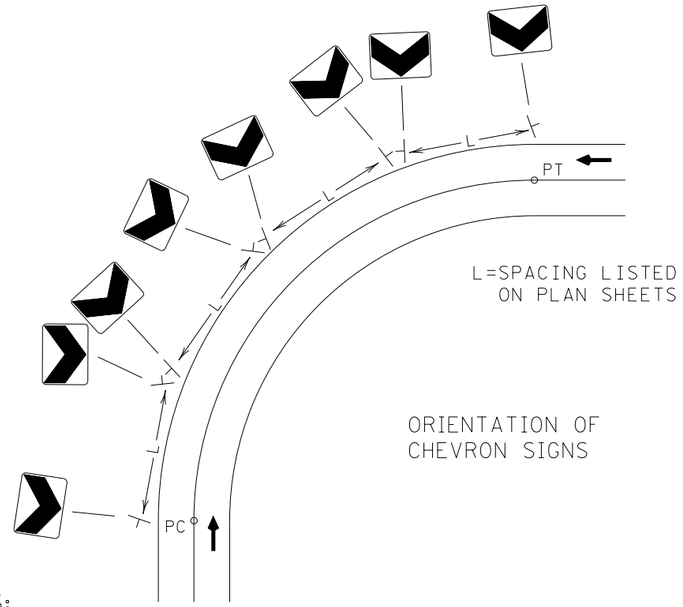
STANDARD LOCATIONS



BOULEVARD LOCATIONS
6' TO 12' WIDE



BOULEVARD LOCATIONS (1)
LESS THAN 6' WIDE



L=SPACING LISTED
ON PLAN SHEETS

ORIENTATION OF
CHEVRON SIGNS

NOTES:

PLACE SIGNS AND ORIENT THEM APPROXIMATELY AS SHOWN IN THE PLAN, AT RIGHT ANGLES TO THE DIRECTION OF, AND FACING THE TRAFFIC THEY ARE INTENDED TO SERVE, UNLESS OTHERWISE SPECIFIED. TO AVOID SPECULAR GLARE, TURN SIGNS APPROXIMATELY THREE DEGREES AWAY FROM APPROACHING TRAFFIC.

IF A SIGN NEEDS TO BE REPOSITIONED FROM THE PROPOSED PLAN LOCATION IN ORDER TO AVOID CONFLICTS WITH UTILITIES OR OBSTACLES, CONTACT THE PROJECT ENGINEER.

MOUNT SIGN FACES PLUMB.

LATERAL CLEARANCES GIVEN APPLY TO RIGHT AND/OR LEFT SIDE INSTALLATION.

ERECT OR CONSTRUCT SIGN SUPPORT SO THAT NO PORTION OF THE SIGN PANEL IS WITHIN 15' OF THE RAIL OF A RAILROAD TRACK.

PLACE SIGNS SUCH THAT OBSTACLES DO NOT BLOCK THEM FROM BEING VIEWED BY THE APPROACHING TRAFFIC.

PLACE SIGNS A MINIMUM OF 10' FROM THE NEAREST OBSTACLE. OBSTACLES MAY INCLUDE, BUT ARE NOT LIMITED TO, LIGHT POLES, TREES, SIGNS, AND BUILDINGS. SIGNS MAY BE PLACED CLOSER TO SIGNS IN TIGHT AREAS, BUT NO MORE THAN TWO POSTS IN A 7' DIAMETER CIRCLE.

AVOID PLACING SIGNS IN DITCH BOTTOMS.

(1) ONLY USE WHEN BOULEVARD IS TOO NARROW TO OBTAIN ADEQUATE CURBED LOCATION SIGN OFFSETS.

(2) ALL SIGN MOUNTING HEIGHTS ARE MEASURED VERTICALLY FROM THE BOTTOM OF THE LOWEST SIGN PANEL TO THE TOP OF THE CURB, OR IN ABSENCE OF CURB, TO THE NEAR EDGE OF THE THRU-LANE PAVEMENT. SEE SIGN TABULATIONS.

(3) MINIMUM OFFSET MAY BE REDUCED TO AT LEAST 6' FROM SHOULDER AND AT LEAST 12' FROM THRU LANE IF SITE CONDITIONS PROHIBIT A 12' OFFSET FROM SHOULDER.

(4) CRASHWORTHY HEIGHT IS AT LEAST 7' FOR BREAKAWAY STRUCTURES AND AT LEAST 4' FOR BENDABLE STRUCTURES. SEE SPECIFIC SQUARE TUBE BASE STRUCTURE PLAN FOR CRASH RESPONSE TYPE. THE CRASHWORTHY HEIGHT IS MEASURED TO THE BOTTOM OF THE PRIMARY SIGN PANEL EXCLUDING ANY SECONDARY SIGN PANELS, MARKERS, DELINEATORS, AND REFERENCE LOCATION SIGN PANELS. ANY SECONDARY SIGN PANELS MOUNTED TO MORE THAN ONE POST ARE CONSIDERED PRIMARY SIGN PANELS FOR CRASHWORTHY PURPOSES.

LEAD EXPERT OFFICE	BRIAN SORENSON STATE TRAFFIC ENGINEER OFFICE OF TRAFFIC ENGINEERING		STANDARD SIGN PLACEMENT	APPROVED: 08-09-2023 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.701	1 OF 1

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

PERMANENT PAVEMENT MARKING & SIGNING PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 121 OF 220 SHEETS

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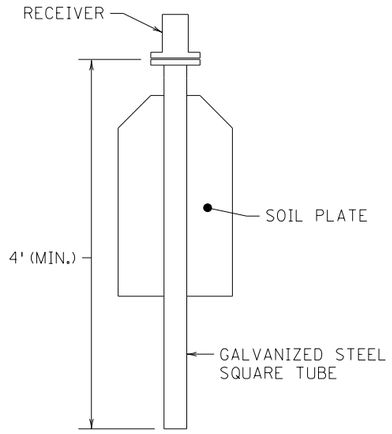
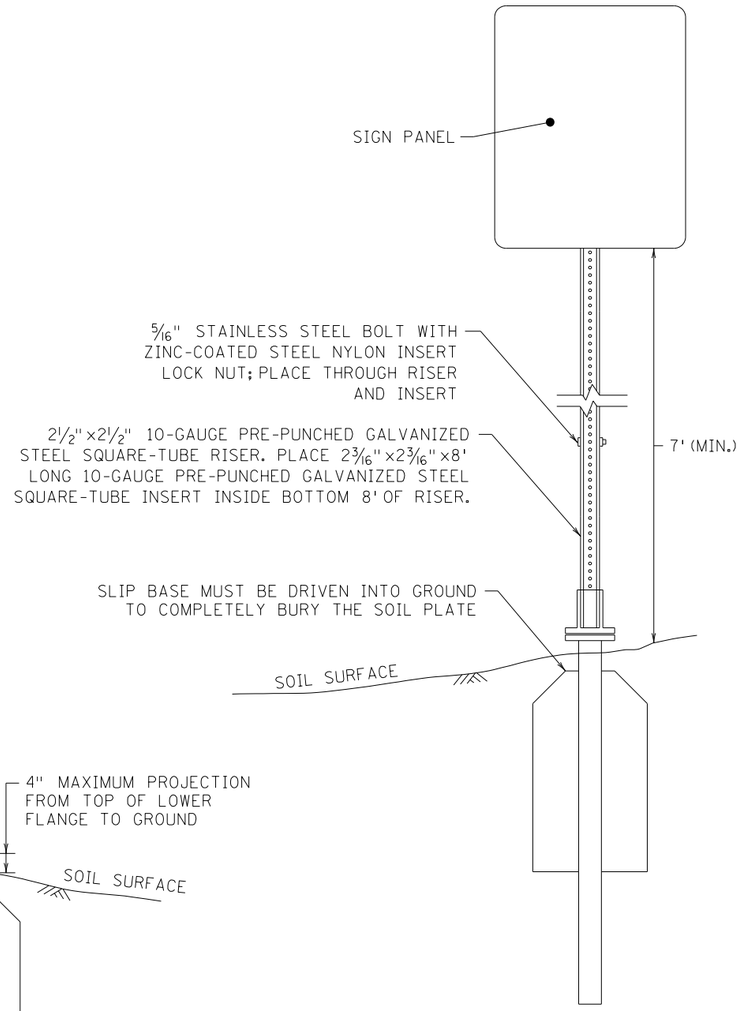
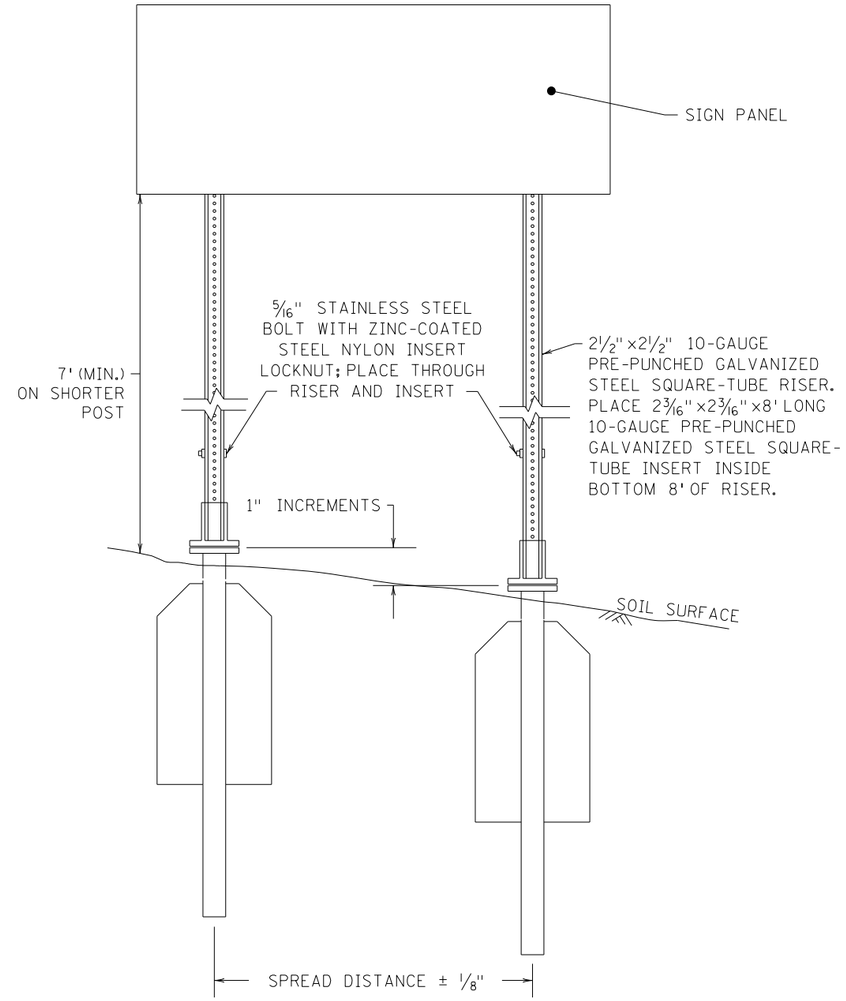


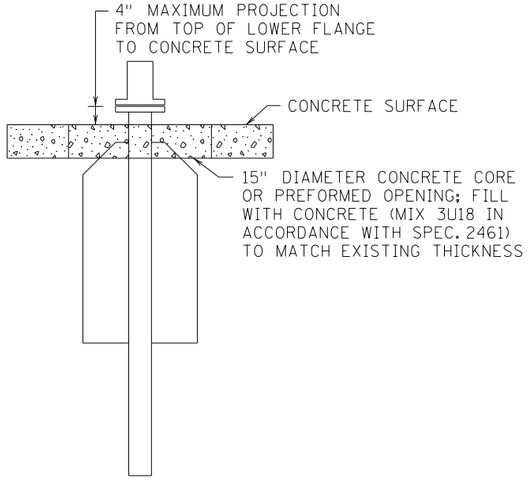
PROPRIETARY SLIP BASE ASSEMBLY ①



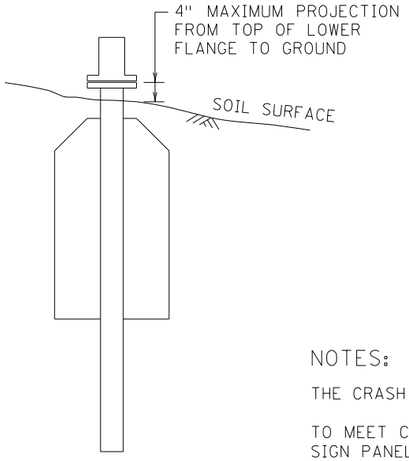
SLIP BASE ASSEMBLY WITH SINGLE-POST SIGN
TYPICAL PLACEMENT IN SOIL



SLIP BASE ASSEMBLY WITH MULTIPLE-POST SIGN ②
TYPICAL PLACEMENT IN SOIL



SLIP BASE ASSEMBLY IN CONCRETE



SLIP BASE ASSEMBLY IN SOIL

NOTES:

THE CRASH RESPONSE TYPE FOR THIS STRUCTURE IS BREAKAWAY.

TO MEET CRASHWORTHY REQUIREMENTS, THE DISTANCE BETWEEN THE BOTTOM OF THE PRIMARY SIGN PANEL AND THE GROUND SURFACE BELOW ANY PORTION OF THE PRIMARY SIGN PANEL MUST BE A MINIMUM OF 7'. SEE SIGNING PLAN TABULATIONS FOR MOUNTING HEIGHT.

1/16"-THICK LEVELING SHIMS MAY BE USED TO PLUMB TOP HALF. PLACE SHIMS UNDER TEFLON-COATED SLIP WASHER. MAXIMUM OF TWO SHIMS PER NOTCH POINT.

FOR SIGN PANEL MOUNTING DETAILS, SEE STANDARD PLAN 5-297.718.

SQUARE TUBE SIGN POST IN ACCORDANCE WITH MnDOT SPEC. 3402.

① USE APPROVED PRODUCT FROM THE SIGN STRUCTURES PAGE OF THE SIGNING SECTION OF THE APPROVED PRODUCTS LIST.

② FOR MULTIPLE-POST APPLICATIONS, ENSURE SOIL PLATES ARE COMPLETELY BURIED. IF SOIL SURFACE IS NOT LEVEL, DRIVE THE BASES UNTIL THEY ARE OFFSET IN 1" INCREMENTS. THE BASES MUST BE TRUE AND SQUARE WITH ONE ANOTHER TO ENSURE PROPER UNRESTRICTED INSERTION OF STEEL TUBE RISERS. MOUNT SIGN PANELS LEVEL.

LEAD EXPERT OFFICE	BRIAN SORENSON STATE TRAFFIC ENGINEER OFFICE OF TRAFFIC ENGINEERING	SLIP BASE ASSEMBLY FOR 2½" SQUARE-TUBE RISER POST	APPROVED: 08-09-2023 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.724	1 OF 1

NO	DATE	DWN	CKD	REVISIONS

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PERMANENT PAVEMENT MARKING & SIGNING PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 122 OF 220 SHEETS

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1/22/2025
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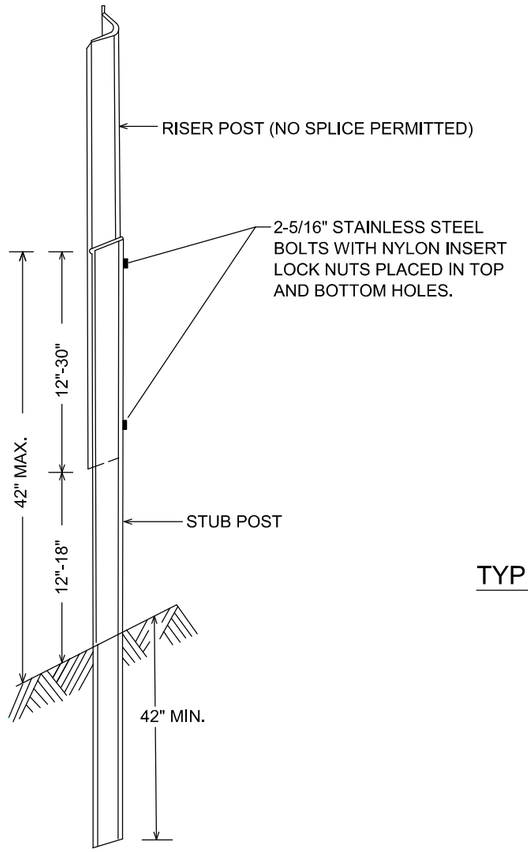
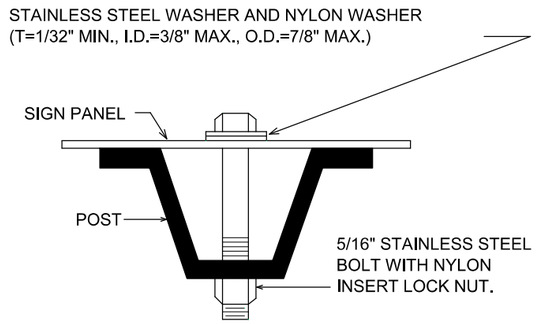
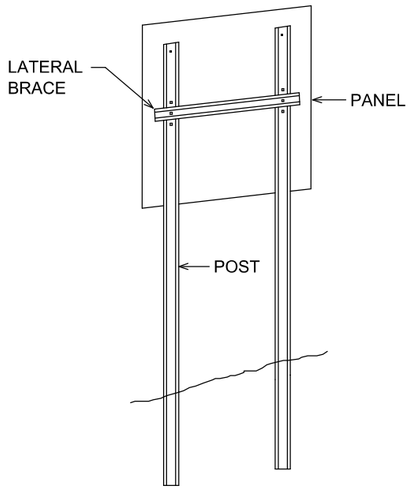
TYPE C & D POST



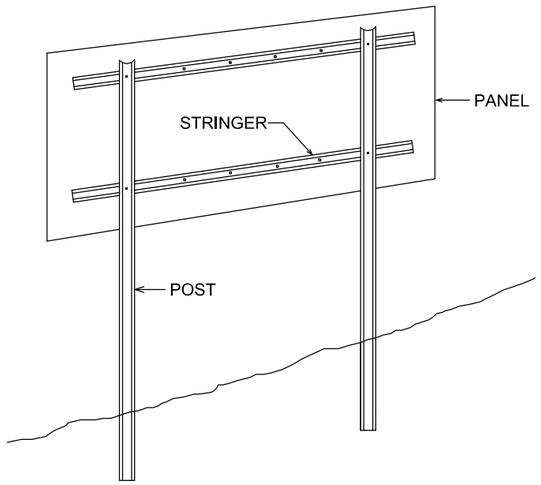
U POST BREAKAWAY SPLICE



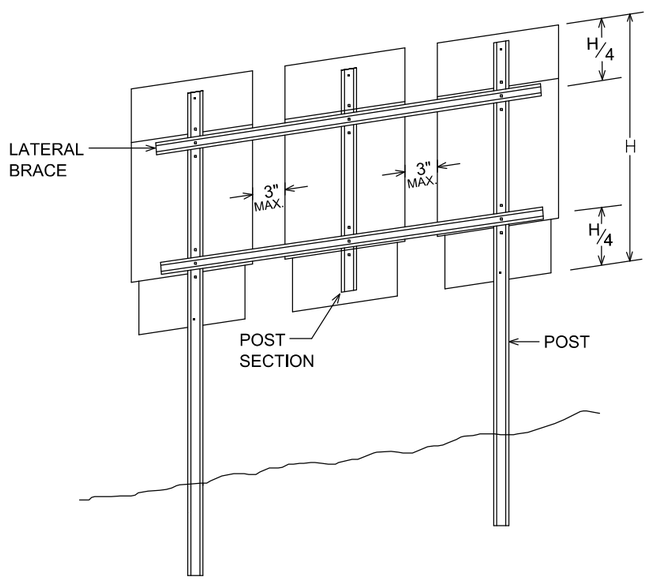
U POST MOUNTING
TYPE C SIGNS



TYPICAL TYPE C INSTALLATION



TYPICAL TYPE D INSTALLATION



MODIFIED TYPE C INSTALLATION

NOTES:

1. USE 3 LB/FT STUB POSTS. SHALL CONFORM TO MNDOT 3401.
2. USE 2.5 LB/FT RISER POSTS, STRINGERS, KNEE BRACES AND LATERAL BRACES. ALL SHALL CONFORM TO MNDOT 3401.
3. ~~SEE SIGN DATA SHEETS FOR NUMBER OF POSTS, KNEE BRACES, POST LENGTHS AND SPACINGS, AS DETERMINED FROM TEM CHARTS 6.3 AND 6.4.~~
4. ~~IF MORE THAN TWO POSTS ARE NEEDED, THE MINIMUM SPACING SHALL BE 45" BETWEEN POSTS.~~
5. TYPE D SIGN PANELS SHALL BE BOLTED TO STRINGERS AT 24" MAXIMUM INTERVALS IN ACCORDANCE WITH THE TYPE D STRINGER AND PANEL-JOINT DETAIL (SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL).
6. MOUNTING (PUNCH CODE) FOR TYPE C SIGN PANELS SHALL BE AS INDICATED IN THE MNDOT STANDARD SIGNS AND MARKINGS MANUAL UNLESS OTHERWISE SPECIFIED.
7. ALL RISER (VERTICAL) U POSTS SHALL BE SPLICED. DRIVEN STUB POSTS SHALL BE AT LEAST 7' LONG.
8. USE STAINLESS STEEL 5/16" BOLTS, WASHERS AND NYLON INSERT LOCK NUTS AS SHOWN FOR ALL GROUND MOUNTED AND OVERHEAD MOUNTED SIGNS.
9. STAINLESS STEEL WASHER WITH SAME DIMENSIONS SHALL BE PROVIDED BETWEEN ALL NYLON WASHERS AND BOLT HEADS.
10. BRACING STUBS SHALL BE NO MORE THAN 4" ABOVE GROUND AND EMBEDDED AT LEAST 42".
11. ~~A-FRAME BRACKET SHALL BE STEEL CONFORMING TO MNDOT 3306 AND GALVANIZED IN ACCORDANCE WITH MNDOT 3394.~~
12. COLLARS SHALL BE USED TO SHIM OVERLAYS AND LEGEND COMPONENTS AWAY FROM PANEL WHERE INTERFERENCE WITH BOLT HEADS IS ENCOUNTERED. MNDOT 3352.2A6.
13. 2 POST TYPE C SIGNS SHALL BE REINFORCED WITH AT LEAST ONE LATERAL BRACE. INSTALLATIONS WHERE THE TOTAL PANEL HEIGHT IS 60" OR MORE SHALL HAVE TWO LATERAL BRACES LOCATED APPROXIMATELY AT THE QUARTER POINTS.
14. WHERE 2 SINGLE POST TYPE C SIGNS ARE INSTALLED SIDE BY SIDE, THEY SHALL BE REINFORCED LATERALLY BY AT LEAST 2 BRACES, BOLTED AT EACH POST AND LOCATED APPROXIMATELY AT THE QUARTER POINTS.
15. WHERE 3 OR MORE TYPE C SIGNS ARE INSTALLED SIDE BY SIDE, THEY SHALL BE REINFORCED LATERALLY BY AT LEAST 2 BRACES, BOLTED AT EACH POST AND POST SECTION AND LOCATED APPROXIMATELY AT THE QUARTER POINTS AS SHOWN IN MODIFIED TYPE C INSTALLATION.

TYPE C & D SIGN

STRUCTURAL DETAILS

REVISED: 5-5-2017

MODIFIED 5-31-2024

8:53:29 AM
1/22/2025
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NO	DATE	DWN	CKD	REVISIONS

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PRINT NAME: ERIC NELSON
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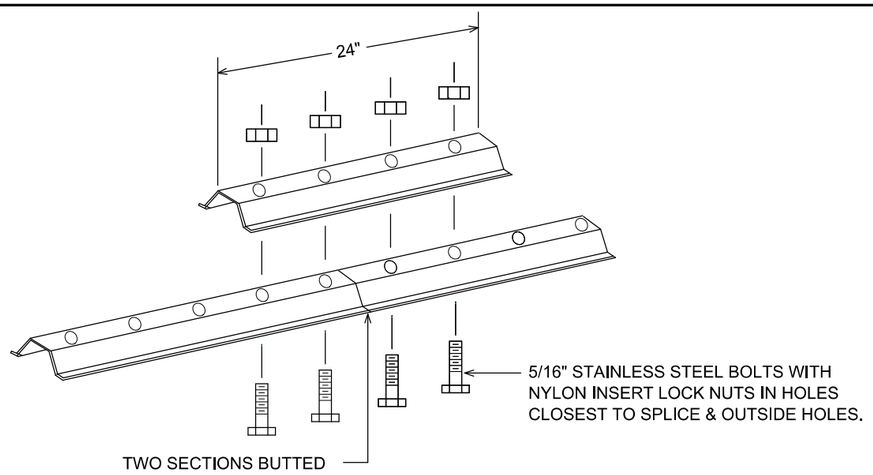
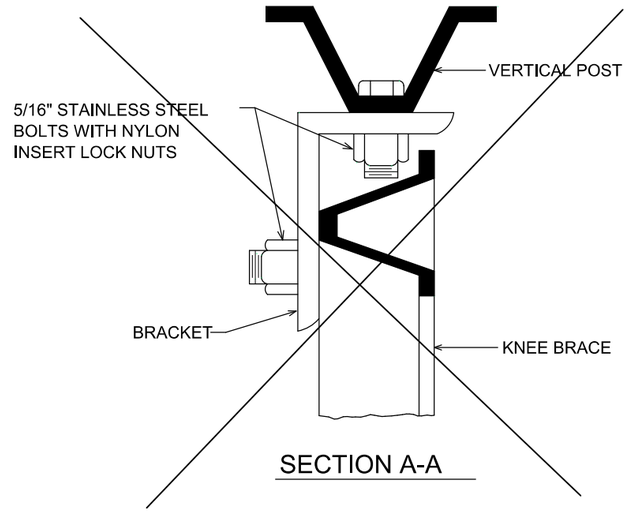
DATE 01/10/25 LICENSE # 43560

PERMANENT PAVEMENT MARKING & SIGNING PLAN

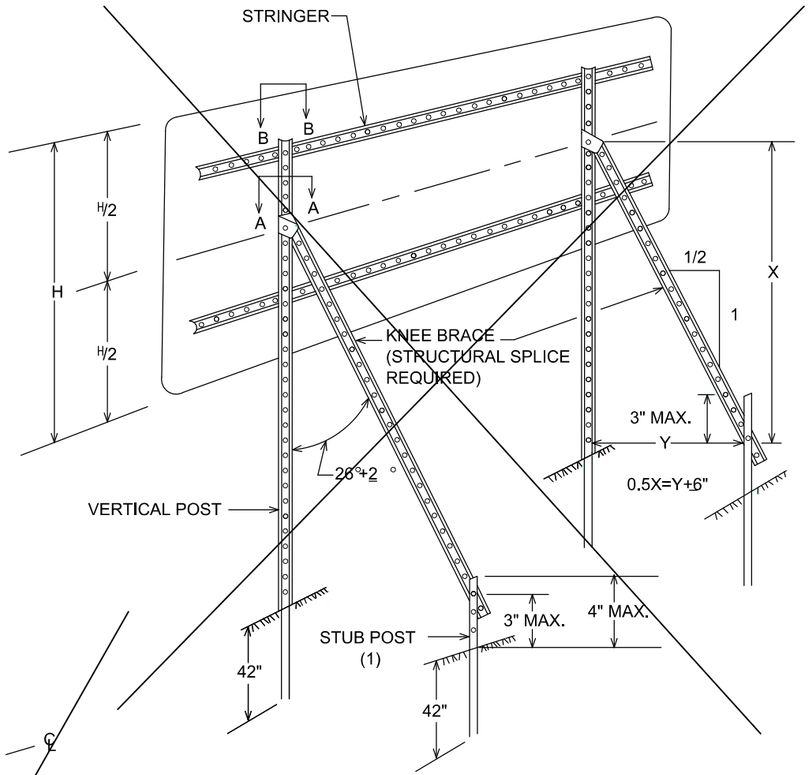
SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 123 OF 220 SHEETS

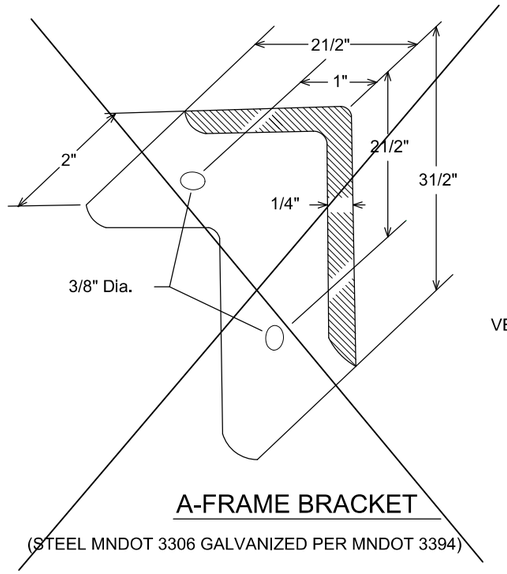


LATERAL BRACE OR STRINGER SPLICE DETAIL (EXPLODED VIEW)



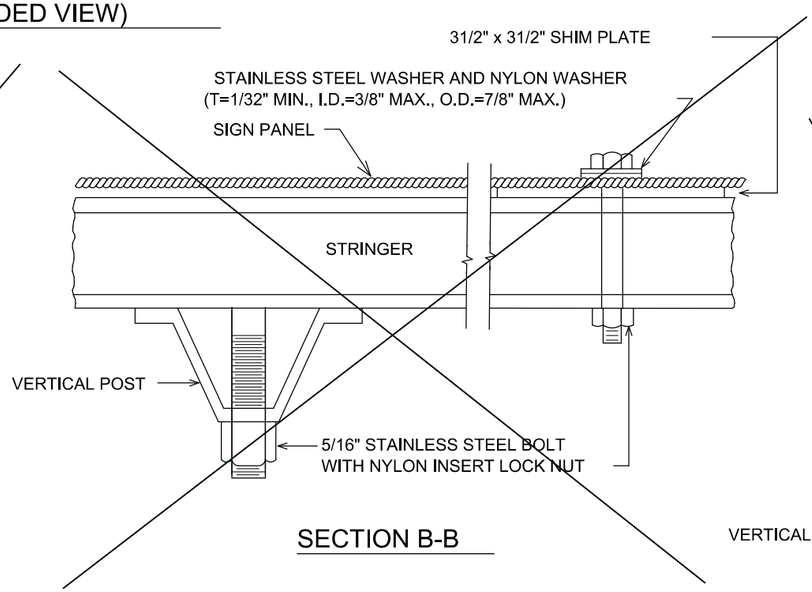
SECTION A-A



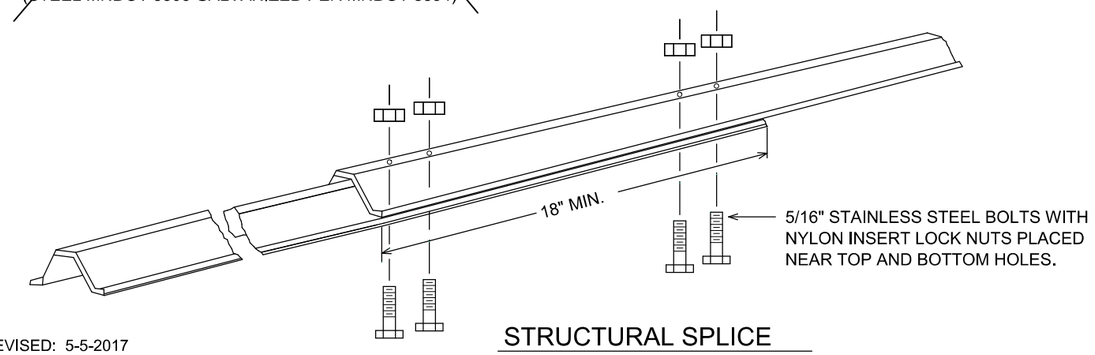


A-FRAME BRACKET

(STEEL MNDOT 3306 GALVANIZED PER MNDOT 3394)

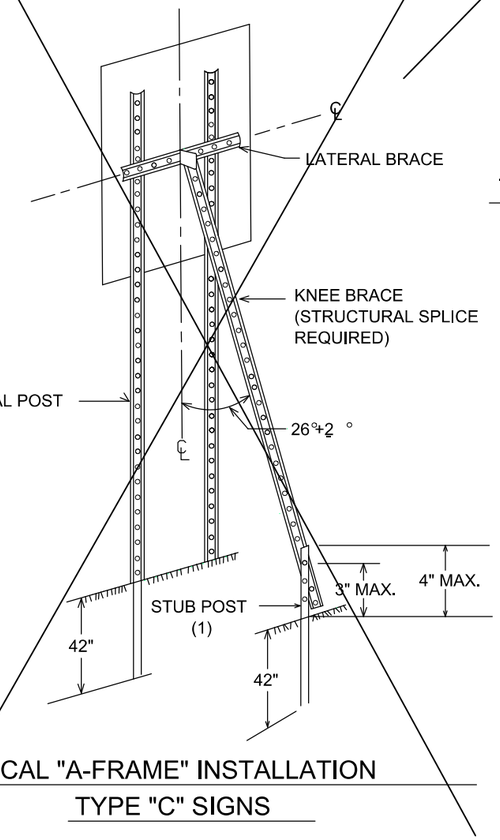


SECTION B-B



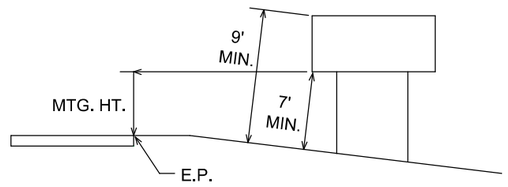
STRUCTURAL SPLICE

(USE WHEN IT IS NECESSARY TO FABRICATE THE CORRECT LENGTH OF POST FROM TWO PIECES)



TYPICAL "A-FRAME" INSTALLATION TYPE "C" SIGNS

TYPICAL "A-FRAME" INSTALLATION TYPE "D" SIGNS



TYPICAL MOUNTING

(1) ~~OFFSET STUB POST 1' TOWARD ROADWAY RELATIVE TO VERTICAL POST. ATTACH STUB POST AND KNEE BRACE BACK TO BACK.~~

TYPE C & D SIGN

STRUCTURAL DETAILS

REVISED: 5-5-2017

MODIFIED 5-31-2024

Sheet 2 of 2

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

PERMANENT PAVEMENT MARKING & SIGNING PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 124 OF 220 SHEETS

8:53:37 AM
1/22/2025
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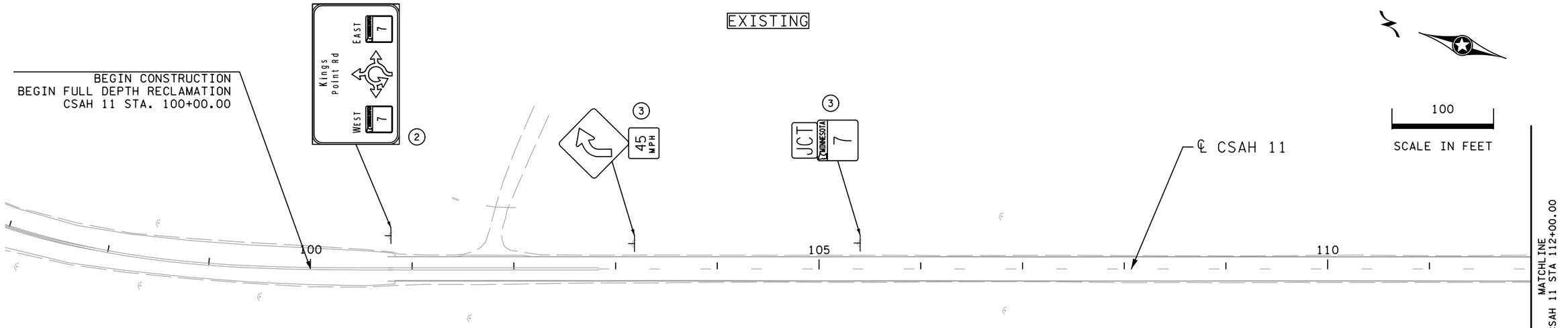
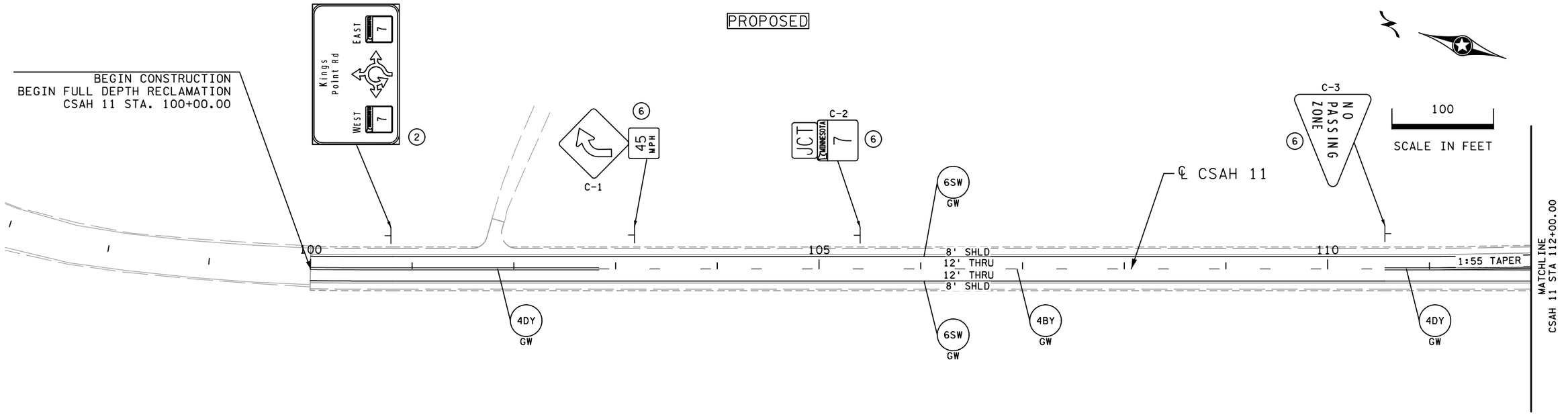


SPECIFIC NOTES:

1. FURNISH & INSTALL
2. INPLACE
3. SALVAGE
4. REMOVE
6. INSTALL
7. SALVAGE SIGN TYPE SPECIAL
8. INSTALL SIGN TYPE SPECIAL

PROPOSED



GENERAL NOTES:

1. SEE TYPICAL SECTION ON SHEET 22 FOR LANE WIDTHS, STRIPE PLACEMENT, AND MILLED SINUSOIDAL RUMBLE STRIP DETAILS.
2. SEE PAVEMENT MARKING LEGEND ON SHEET 116.

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

PERMANENT PAVEMENT MARKING & SIGNING PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 125 OF 220 SHEETS

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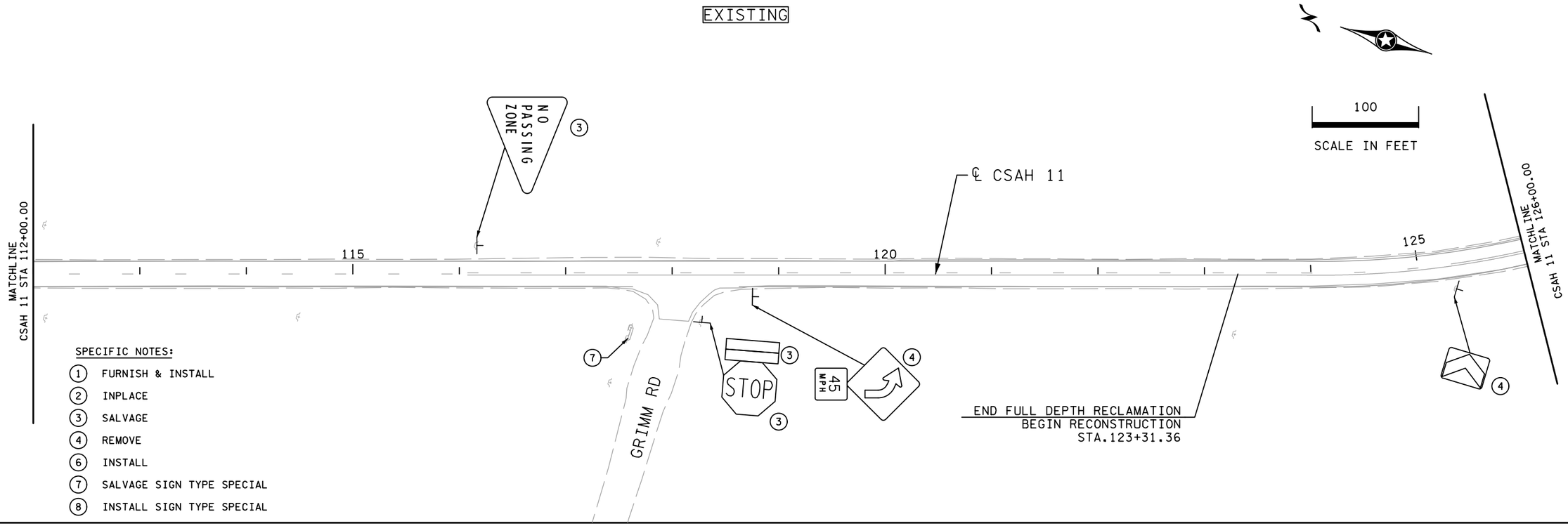
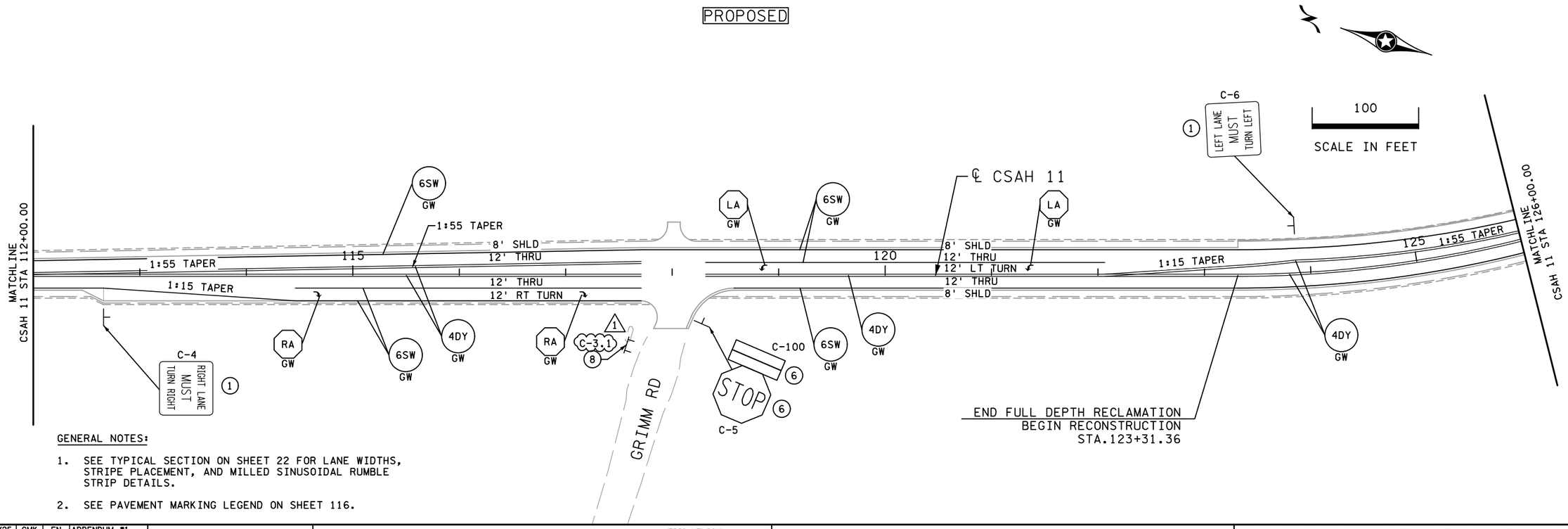


SPECIFIC NOTES:

1. FURNISH & INSTALL
2. INPLACE
3. SALVAGE
4. REMOVE
6. INSTALL
7. SALVAGE SIGN TYPE SPECIAL
8. INSTALL SIGN TYPE SPECIAL

PROPOSED



GENERAL NOTES:

1. SEE TYPICAL SECTION ON SHEET 22 FOR LANE WIDTHS, STRIPE PLACEMENT, AND MILLED SINUSOIDAL RUMBLE STRIP DETAILS.
2. SEE PAVEMENT MARKING LEGEND ON SHEET 116.

NO	DATE	DWN	CKD	REVISIONS
1	01/27/25	GMK	EN	ADDENDUM #1

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/27/25 LICENSE # 43560

PERMANENT PAVEMENT MARKING & SIGNING PLAN

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 126 OF 220 SHEETS

10:44:40 AM
1/26/2025
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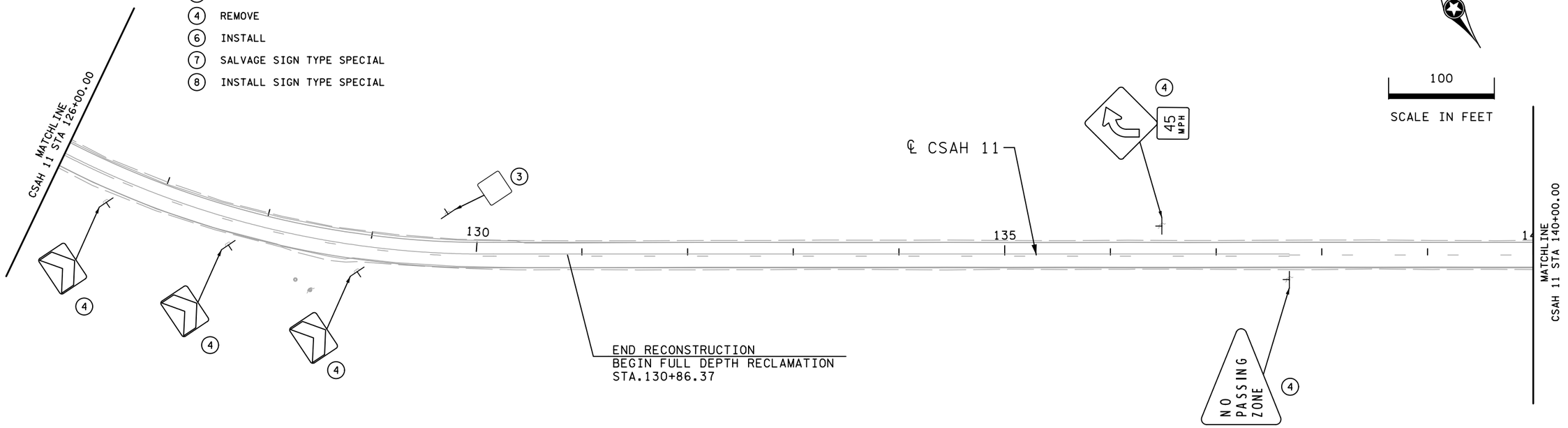
SPECIFIC NOTES:

1. FURNISH & INSTALL
2. INPLACE
3. SALVAGE
4. REMOVE
6. INSTALL
7. SALVAGE SIGN TYPE SPECIAL
8. INSTALL SIGN TYPE SPECIAL

EXISTING



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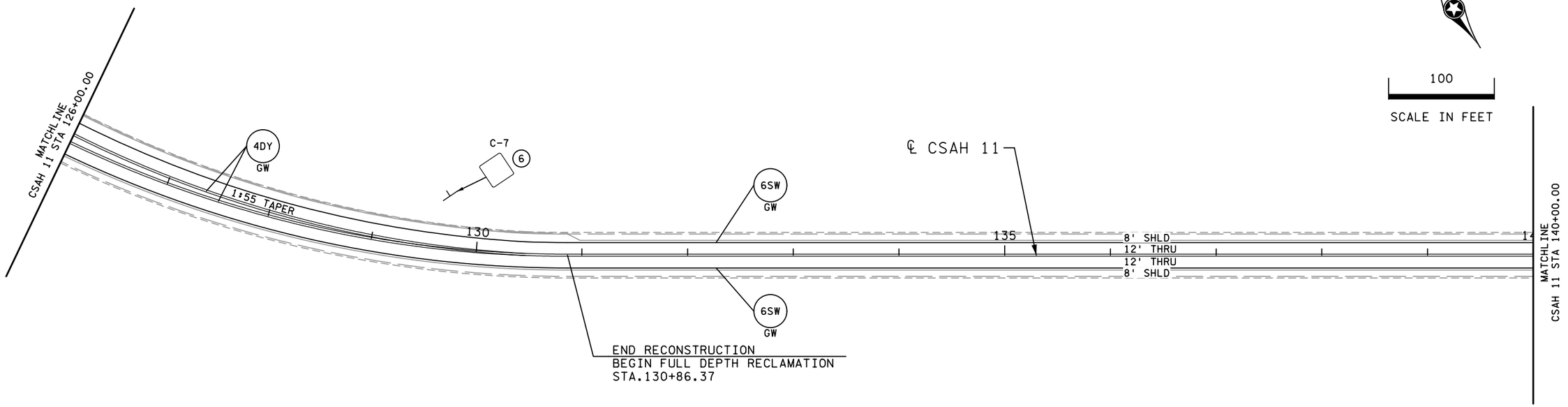
SCALE IN FEET

GENERAL NOTES:

1. SEE TYPICAL SECTION ON SHEET 22 FOR LANE WIDTHS, STRIPE PLACEMENT, AND MILLED SINUSOIDAL RUMBLE STRIP DETAILS.
2. SEE PAVEMENT MARKING LEGEND ON SHEET 116.

PROPOSED



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SCALE IN FEET

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1/22/2025
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NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

PERMANENT PAVEMENT MARKING & SIGNING PLAN

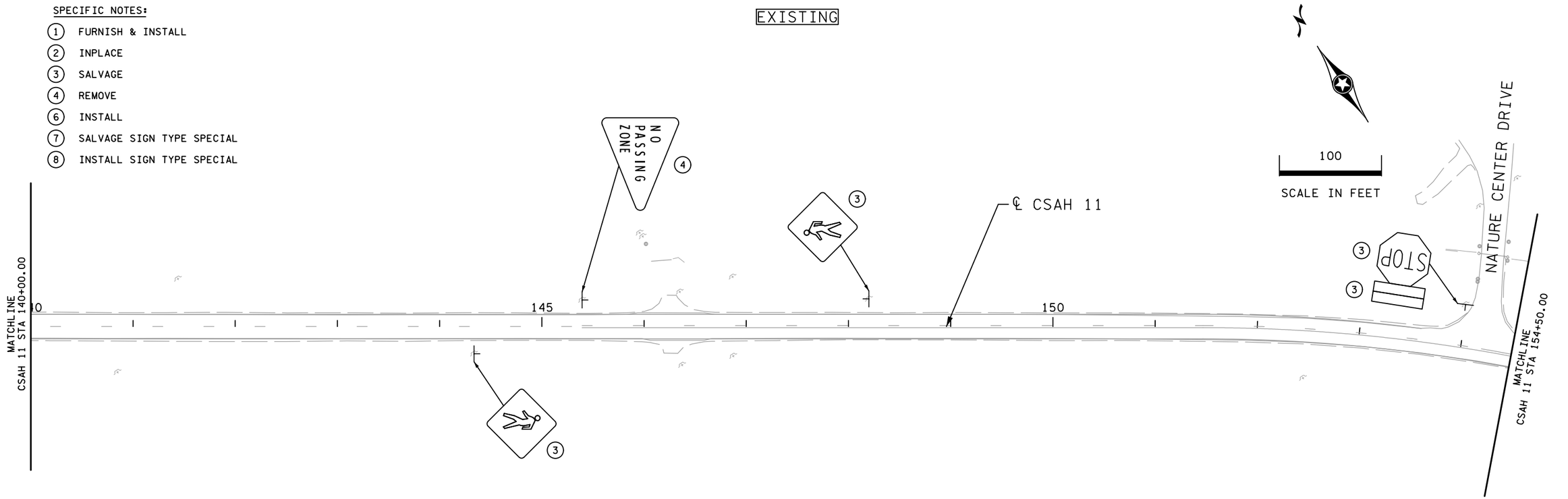
SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 127 OF 220 SHEETS

SPECIFIC NOTES:

1. FURNISH & INSTALL
2. INPLACE
3. SALVAGE
4. REMOVE
6. INSTALL
7. SALVAGE SIGN TYPE SPECIAL
8. INSTALL SIGN TYPE SPECIAL

EXISTING



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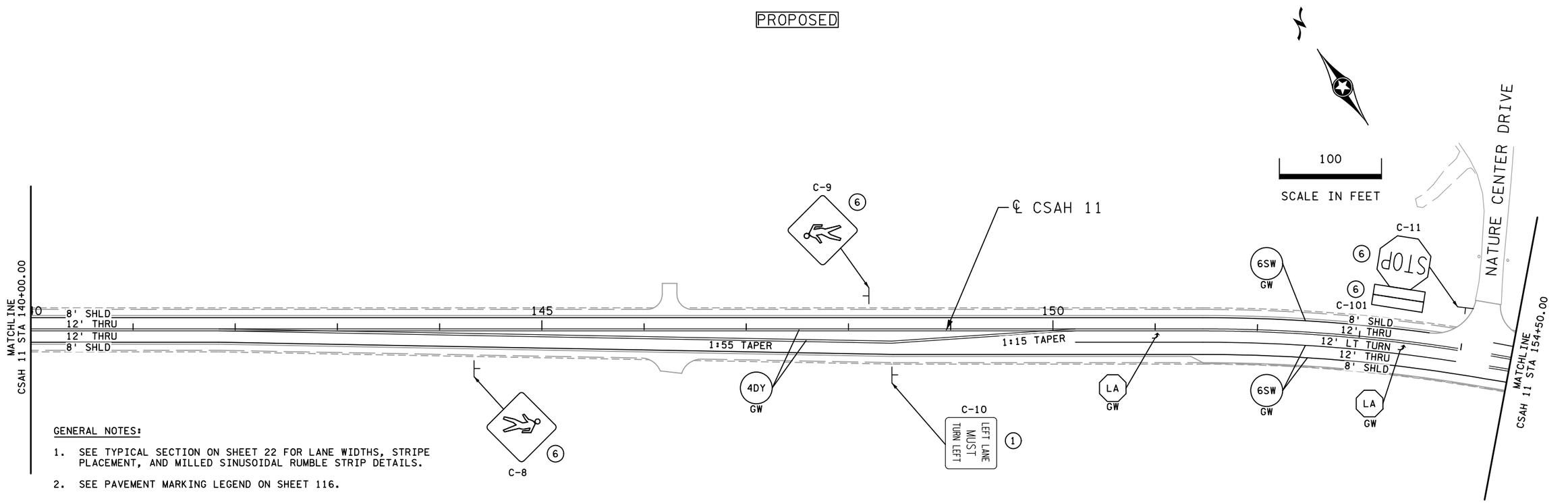

GENERAL NOTES:

1. SEE TYPICAL SECTION ON SHEET 22 FOR LANE WIDTHS, STRIPE PLACEMENT, AND MILLED SINUSOIDAL RUMBLE STRIP DETAILS.
2. SEE PAVEMENT MARKING LEGEND ON SHEET 116.

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

PERMANENT PAVEMENT MARKING & SIGNING PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 128 OF 220 SHEETS

8:54:08 AM
1/22/2025
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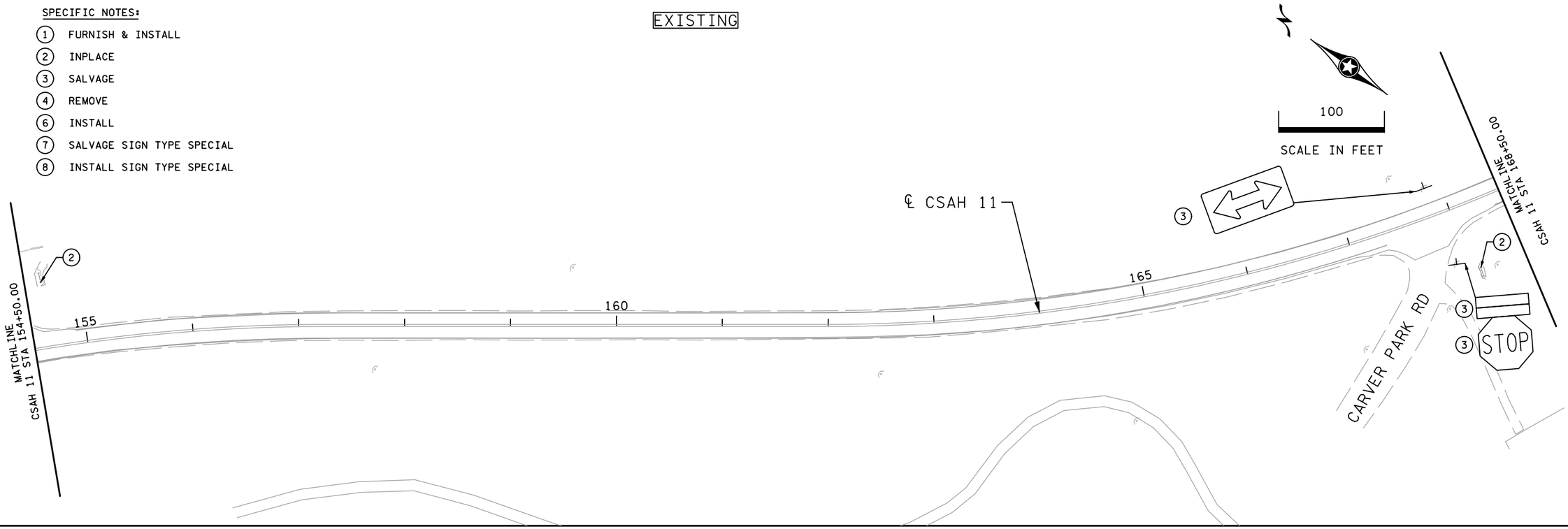
SPECIFIC NOTES:

1. FURNISH & INSTALL
2. INPLACE
3. SALVAGE
4. REMOVE
6. INSTALL
7. SALVAGE SIGN TYPE SPECIAL
8. INSTALL SIGN TYPE SPECIAL

EXISTING



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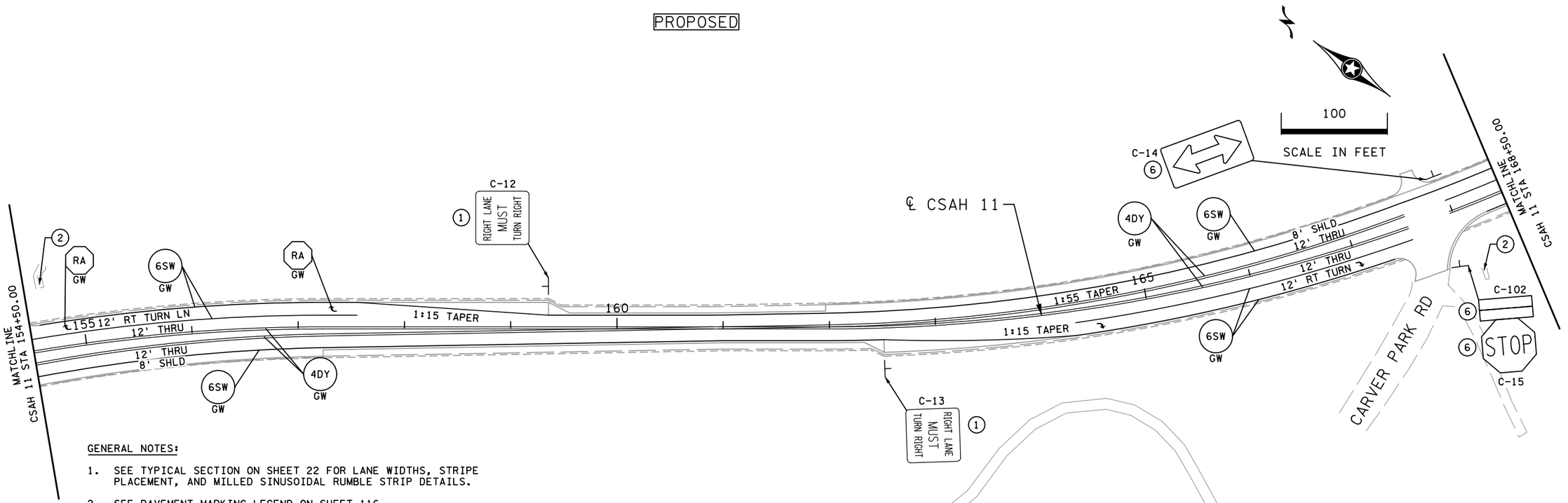

GENERAL NOTES:

1. SEE TYPICAL SECTION ON SHEET 22 FOR LANE WIDTHS, STRIPE PLACEMENT, AND MILLED SINUSOIDAL RUMBLE STRIP DETAILS.
2. SEE PAVEMENT MARKING LEGEND ON SHEET 116.

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

PERMANENT PAVEMENT MARKING & SIGNING PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 129 OF 220 SHEETS

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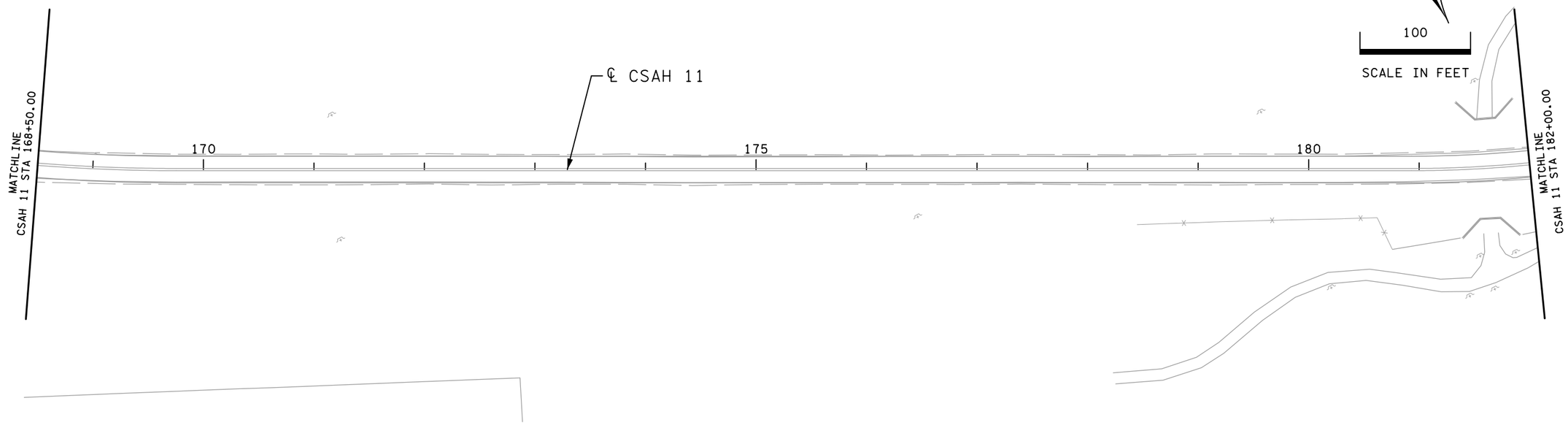
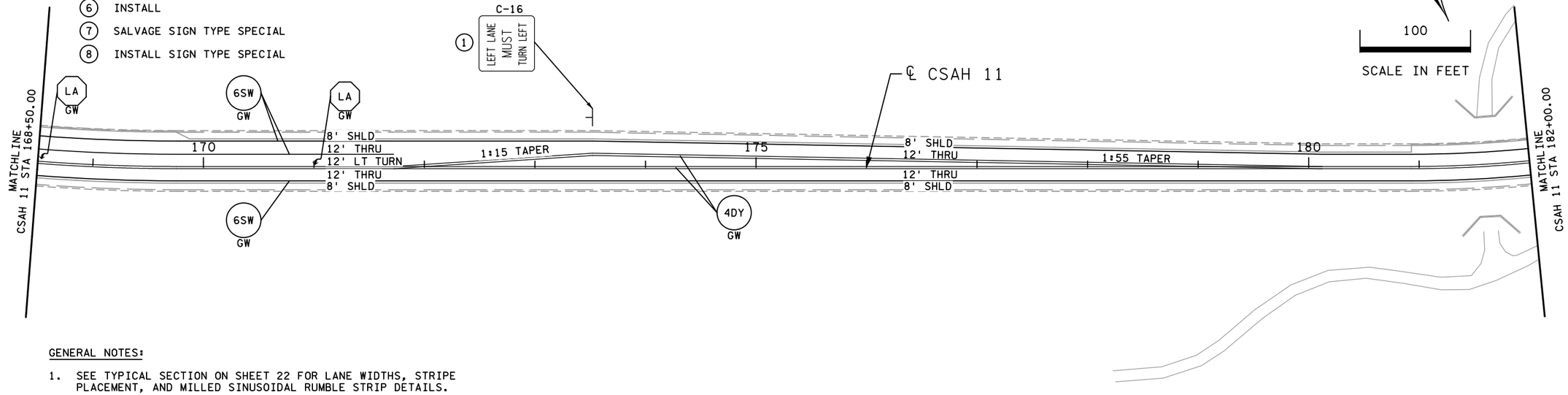


PROPOSED

SPECIFIC NOTES:

1. FURNISH & INSTALL
2. INPLACE
3. SALVAGE
4. REMOVE
6. INSTALL
7. SALVAGE SIGN TYPE SPECIAL
8. INSTALL SIGN TYPE SPECIAL



GENERAL NOTES:

1. SEE TYPICAL SECTION ON SHEET 22 FOR LANE WIDTHS, STRIPE PLACEMENT, AND MILLED SINUSOIDAL RUMBLE STRIP DETAILS.
2. SEE PAVEMENT MARKING LEGEND ON SHEET 116.

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

PERMANENT PAVEMENT MARKING & SIGNING PLAN

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. 130 OF 220 SHEETS

8:54:24 AM
1/22/2025
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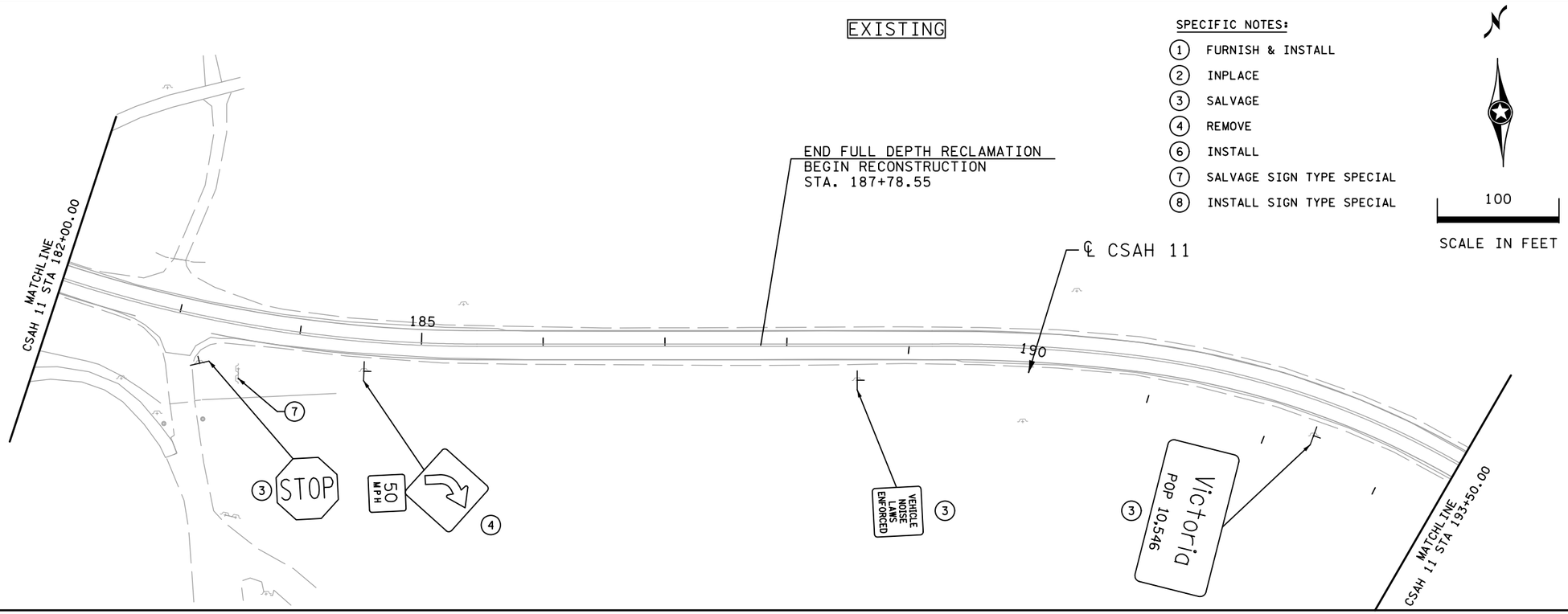
EXISTING

SPECIFIC NOTES:

1. FURNISH & INSTALL
2. INPLACE
3. SALVAGE
4. REMOVE
6. INSTALL
7. SALVAGE SIGN TYPE SPECIAL
8. INSTALL SIGN TYPE SPECIAL



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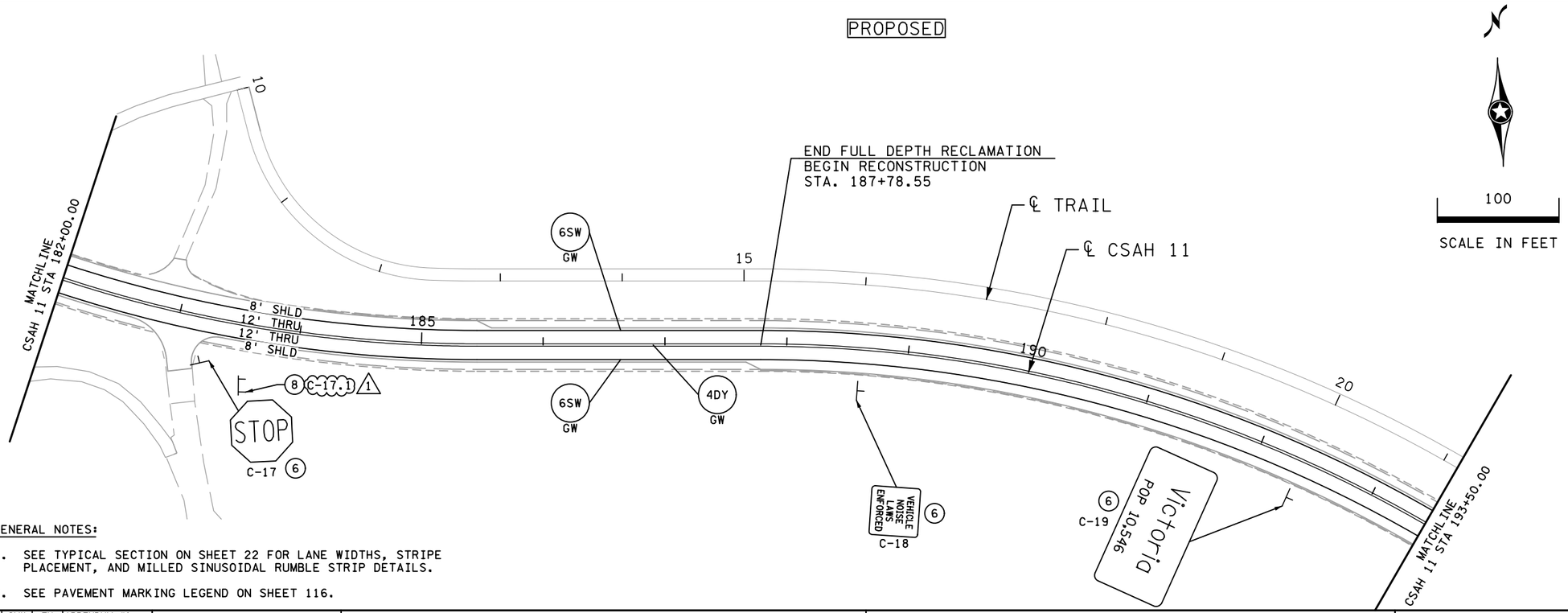

GENERAL NOTES:

1. SEE TYPICAL SECTION ON SHEET 22 FOR LANE WIDTHS, STRIPE PLACEMENT, AND MILLED SINUSOIDAL RUMBLE STRIP DETAILS.
2. SEE PAVEMENT MARKING LEGEND ON SHEET 116.

NO	DATE	DWN	CKD	REVISIONS
1	01/27/25	GMK	EN	ADDENDUM #1

ALLIANT

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE: Eric Nelson
DATE 01/27/25 LICENSE # 43560

PERMANENT PAVEMENT MARKING & SIGNING PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 131 OF 220 SHEETS

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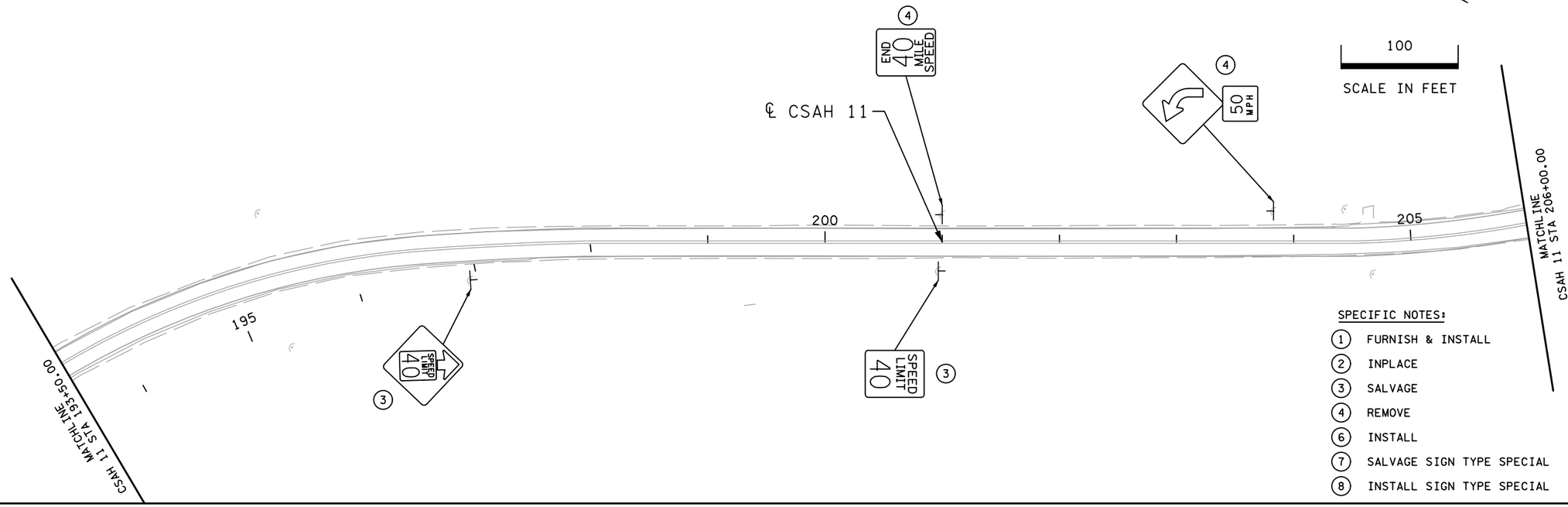


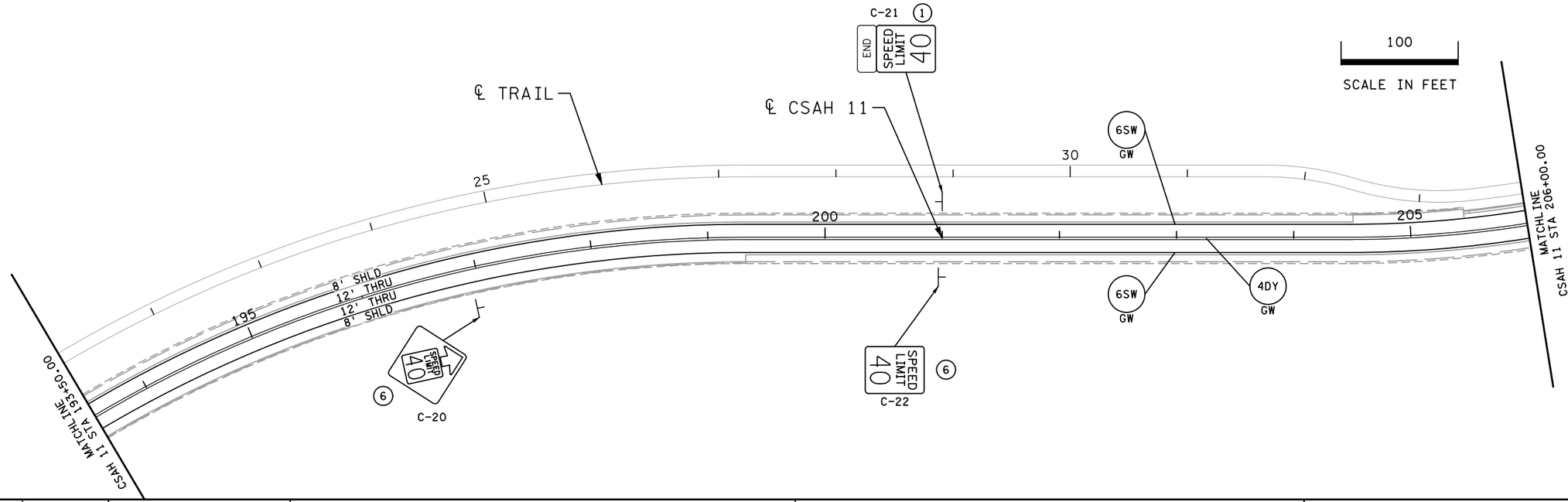
SPECIFIC NOTES:

1. FURNISH & INSTALL
2. INPLACE
3. SALVAGE
4. REMOVE
6. INSTALL
7. SALVAGE SIGN TYPE SPECIAL
8. INSTALL SIGN TYPE SPECIAL

GENERAL NOTES:

1. SEE TYPICAL SECTION ON SHEET 22 FOR LANE WIDTHS, STRIPE PLACEMENT, AND MILLED SINUSOIDAL RUMBLE STRIP DETAILS.
2. SEE PAVEMENT MARKING LEGEND ON SHEET 116.

PROPOSED



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1/22/2025
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NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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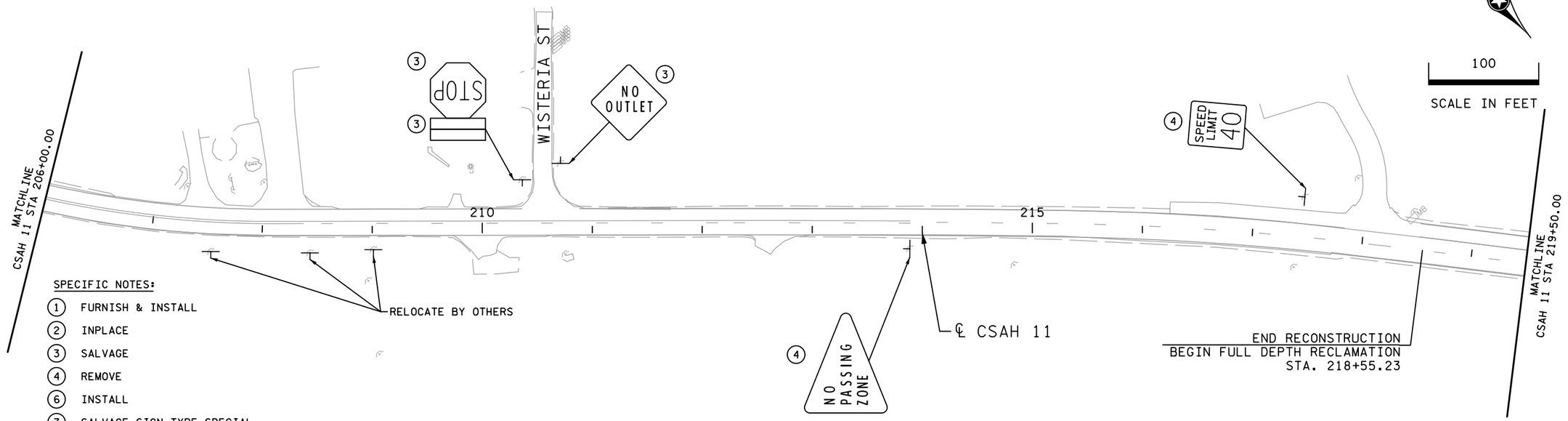
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

PERMANENT PAVEMENT MARKING & SIGNING PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 132 OF 220 SHEETS

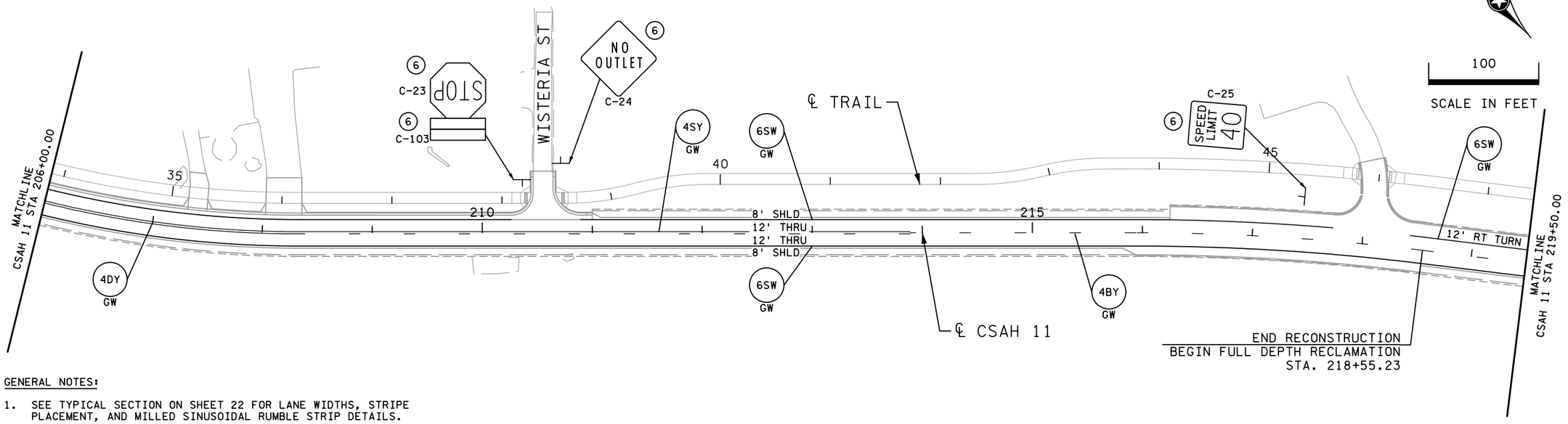
EXISTING



SPECIFIC NOTES:

1. FURNISH & INSTALL
2. INPLACE
3. SALVAGE
4. REMOVE
6. INSTALL
7. SALVAGE SIGN TYPE SPECIAL
8. INSTALL SIGN TYPE SPECIAL

PROPOSED



GENERAL NOTES:

1. SEE TYPICAL SECTION ON SHEET 22 FOR LANE WIDTHS, STRIPE PLACEMENT, AND MILLED SINUSOIDAL RUMBLE STRIP DETAILS.
2. SEE PAVEMENT MARKING LEGEND ON SHEET 116.

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1/22/2025
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NO	DATE	DWN	CKD	REVISIONS

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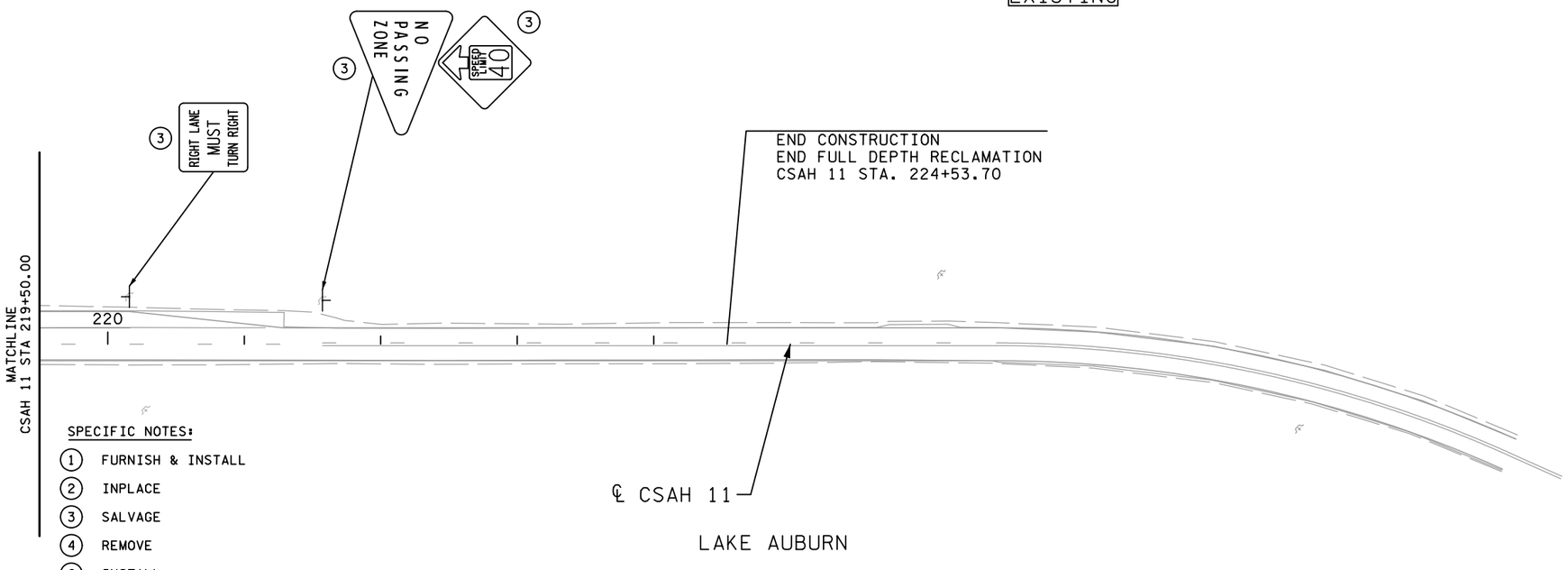
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

PERMANENT PAVEMENT MARKING & SIGNING PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. 133 OF 220 SHEETS

EXISTING



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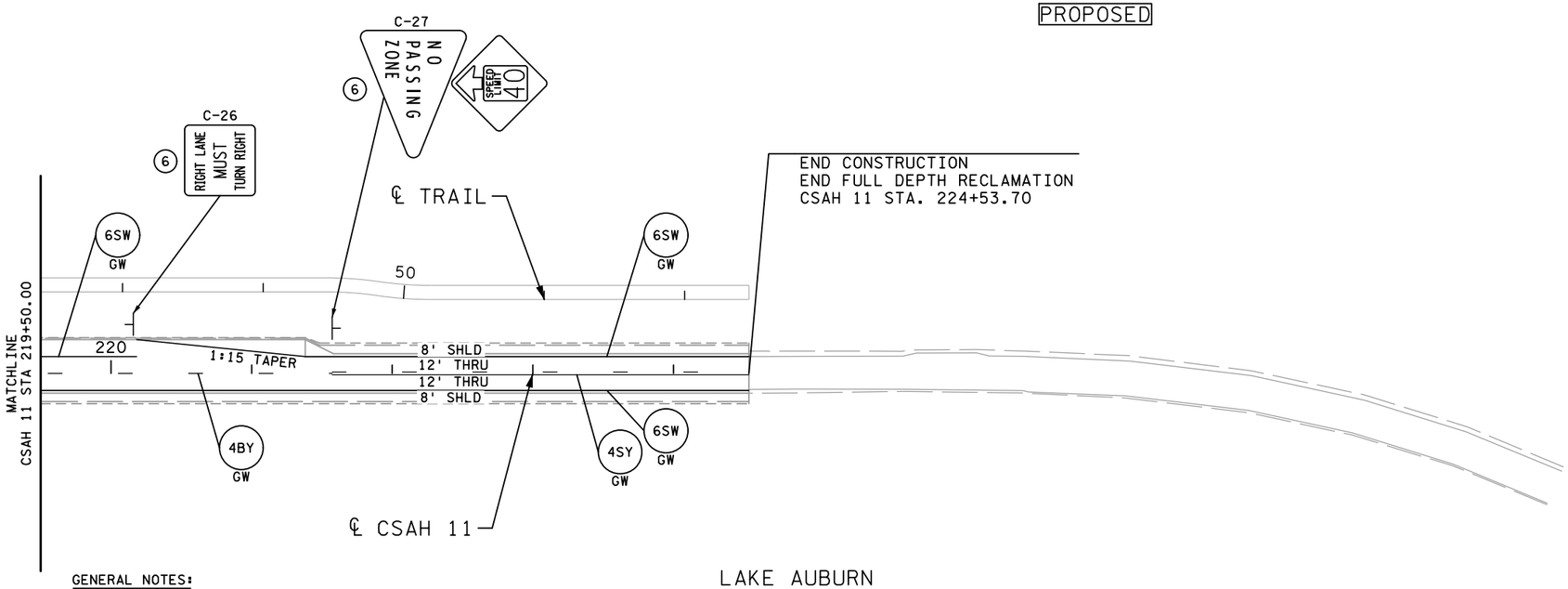
SCALE IN FEET

SPECIFIC NOTES:

1. FURNISH & INSTALL
2. INPLACE
3. SALVAGE
4. REMOVE
6. INSTALL
7. SALVAGE SIGN TYPE SPECIAL
8. INSTALL SIGN TYPE SPECIAL

PROPOSED



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SCALE IN FEET

GENERAL NOTES:

1. SEE TYPICAL SECTION ON SHEET 22 FOR LANE WIDTHS, STRIPE PLACEMENT, AND MILLED SINUSOIDAL RUMBLE STRIP DETAILS.
2. SEE PAVEMENT MARKING LEGEND ON SHEET 116.

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 01/10/25 LICENSE # 43560

PERMANENT PAVEMENT MARKING & SIGNING PLAN

SAP 010-611-027; CP 218931 (CSAH 11)

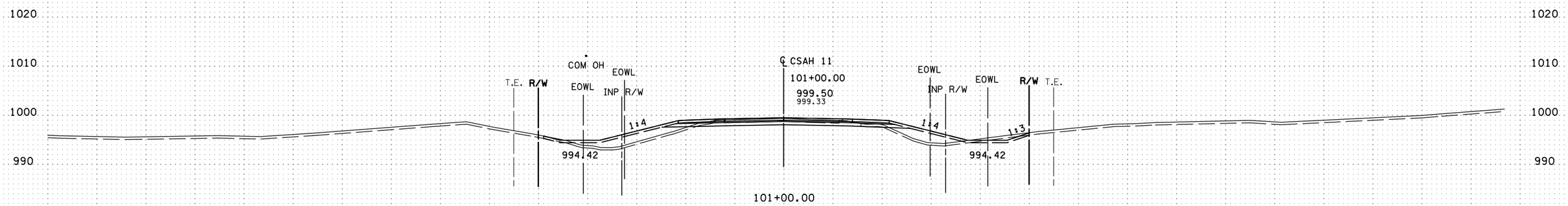
SHEET NO. 134 OF 220 SHEETS

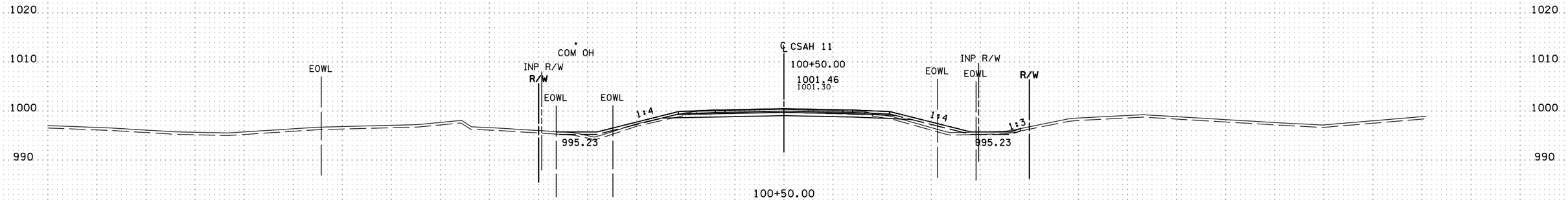
8:54:54 AM
1/22/2025
...\Projects\2023\1230087\DESIGN\Plan Sheets\cd1230087_psl0.dgn

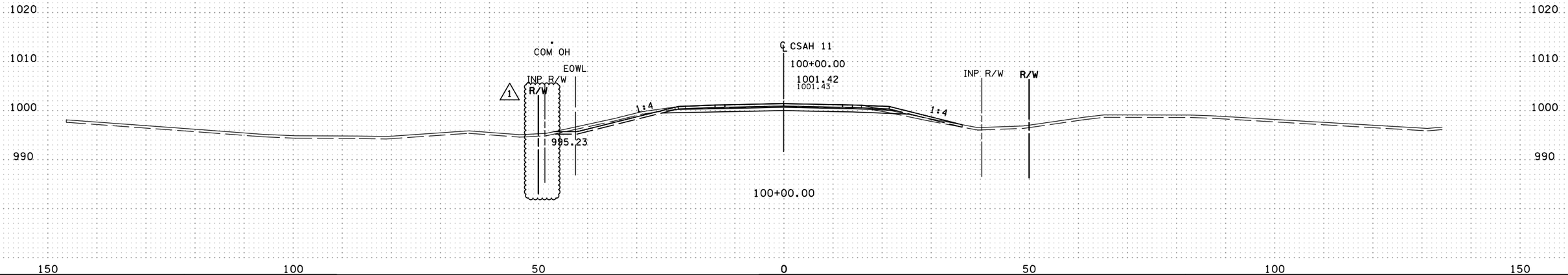
GENERAL NOTES:

ALL UTILITIES SHOWN IN THE CROSS SECTIONS ARE INPLACE.
UTILITY ELEVATIONS AND LOCATIONS ARE APPROXIMATE.
DITCH GRADE ELEVATIONS ARE TO BOTTOM OF TOPSOIL.

WHERE TEMPORARY LINES ARE SHOWN ON PARCELS OWNED
BY THREE RIVERS PARK DISTRICT, THESE LAND RIGHTS SHALL
BE CONVEYED THROUGH A TEMPORARY CONSTRUCTION ACCESS PERMIT.







150 100 50 0 50 100 150

NO	DATE	DWN	CKD	REVISIONS
1	01/24/25	GMK	EN	ADDENDUM #1

ALLIANT

CSAH 11 CROSS SECTIONS
STA. 100+00.00 - 101+00.00

SAP 010-611-027; CP 218931 (CSAH 11)
SHEET NO. X1 OF X86 SHEETS

3:29:41 PM
1/23/2025
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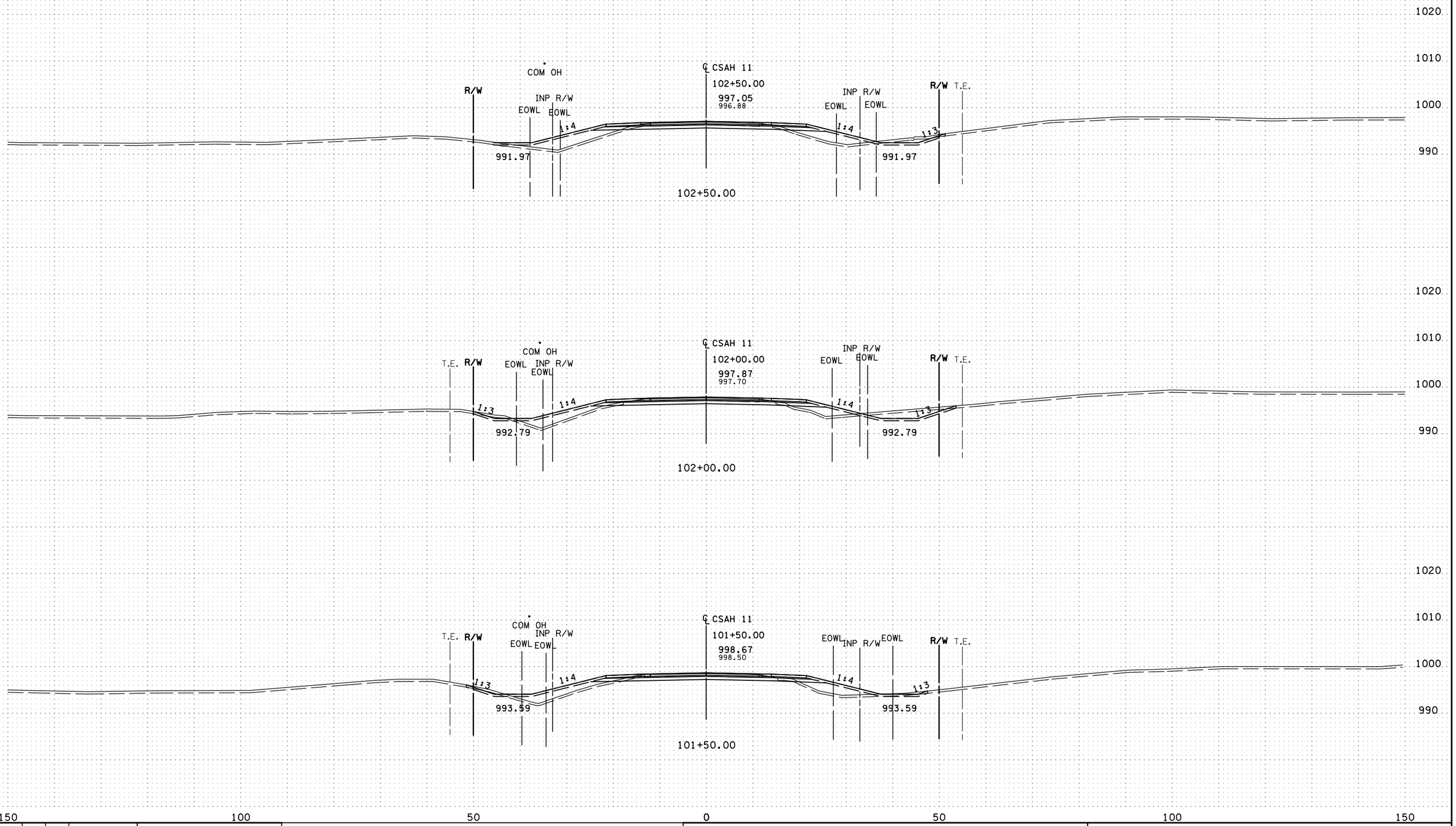

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NO	DATE	DWN	CKD	REVISIONS

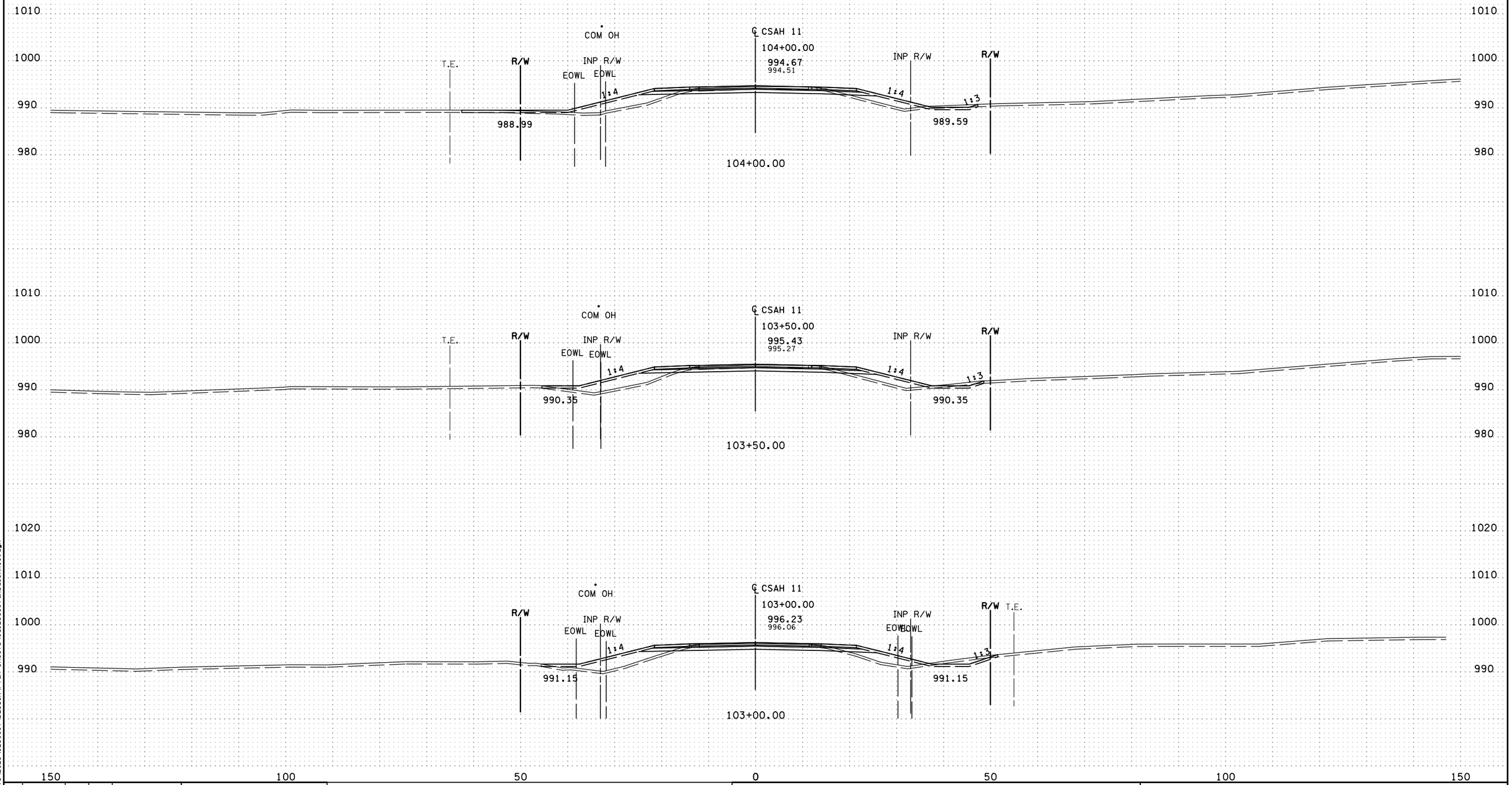
ALLIANT

CSAH 11 CROSS SECTIONS

STA. 101+50.00 - 102+50.00

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. X2 OF X86 SHEETS



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NO	DATE	DWN	CKD	REVISIONS

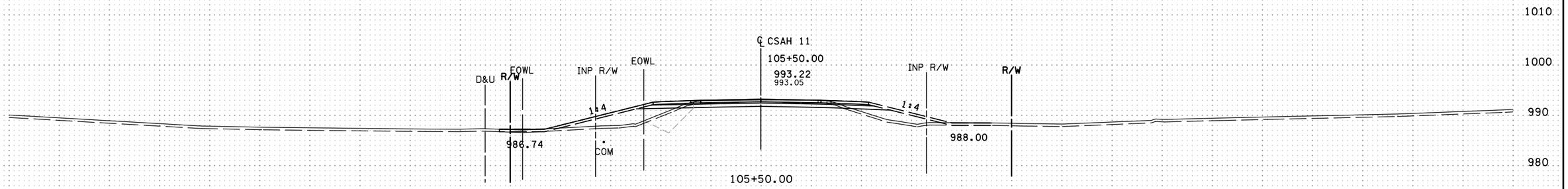
ALLIANT

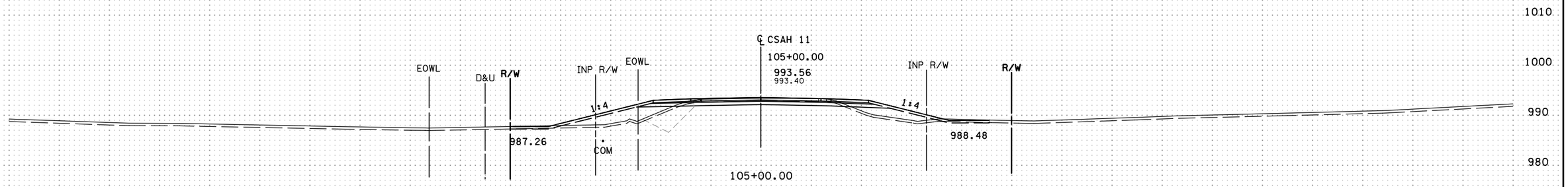
CSAH 11 CROSS SECTIONS

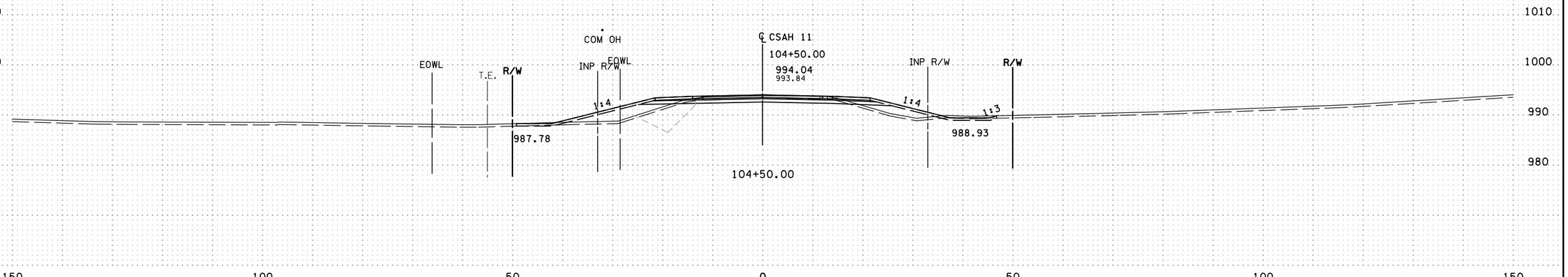
STA. 103+00.00 - 104+00.00

SAP 010-611-027; CP 218931 (CSAH 11)

SHEET NO. X3 OF X86 SHEETS







NO	DATE	DWN	CKD	REVISIONS

ALLIANT

CSAH 11 CROSS SECTIONS

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SAP 010-611-027; CP 218931 (CSAH 11)

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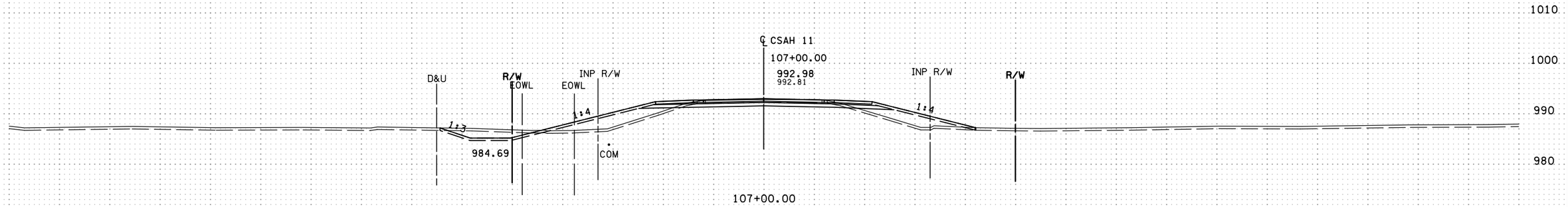

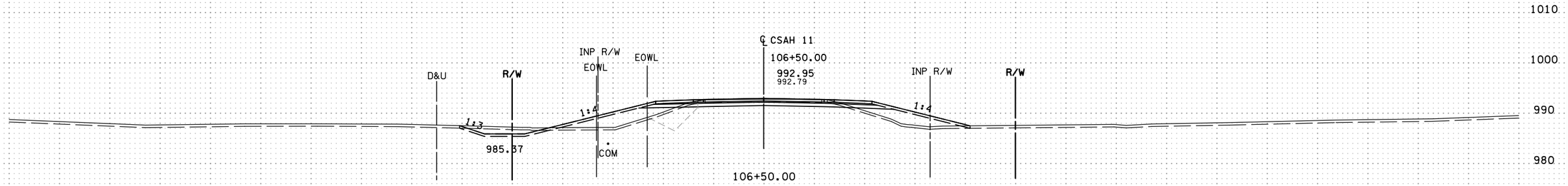

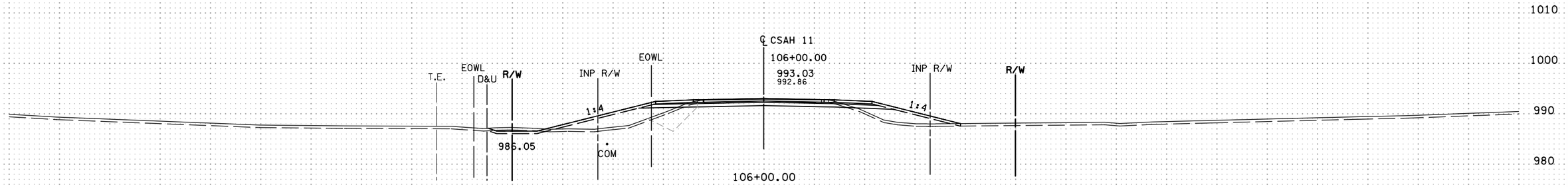

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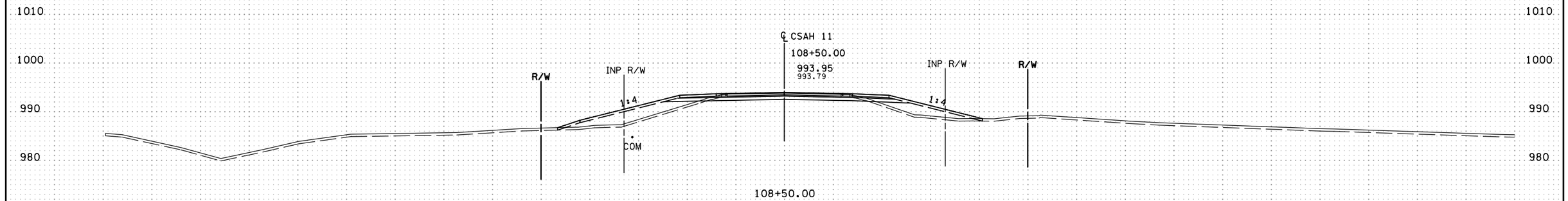

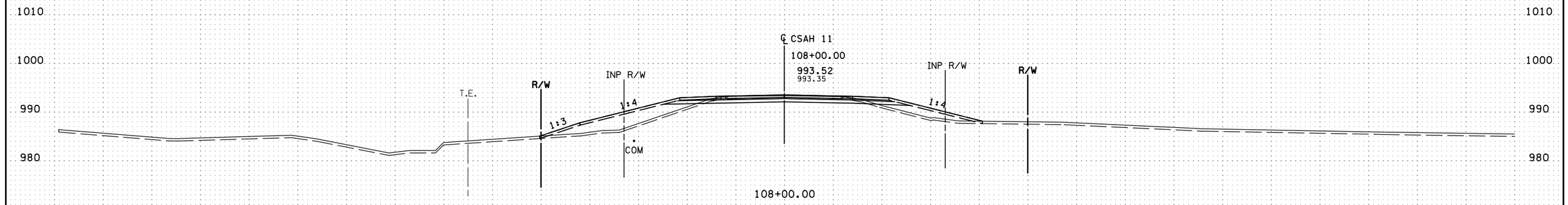

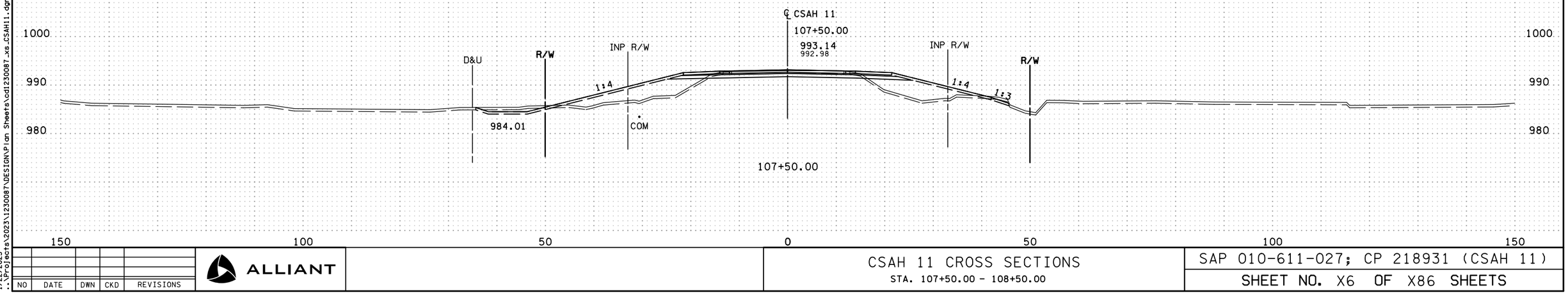

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SAP 010-611-027; CP 218931 (CSAH 11)

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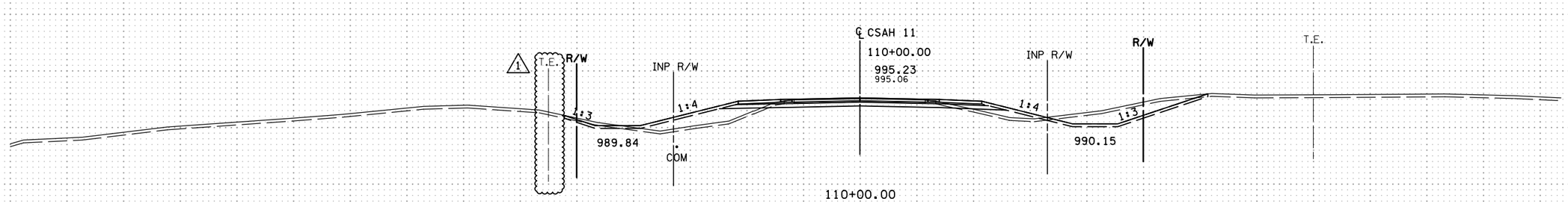

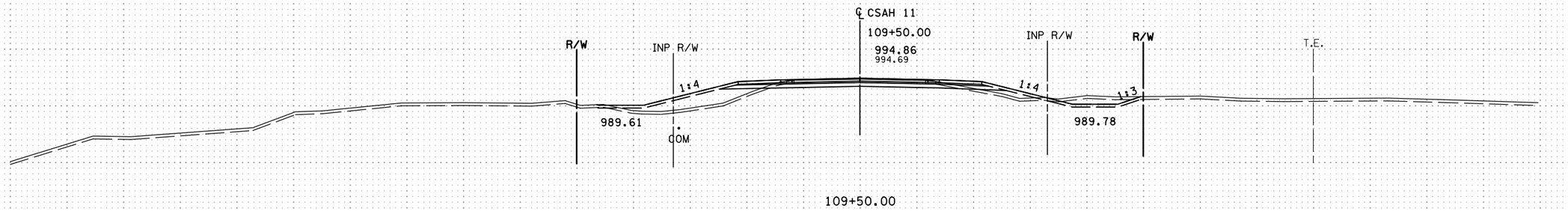

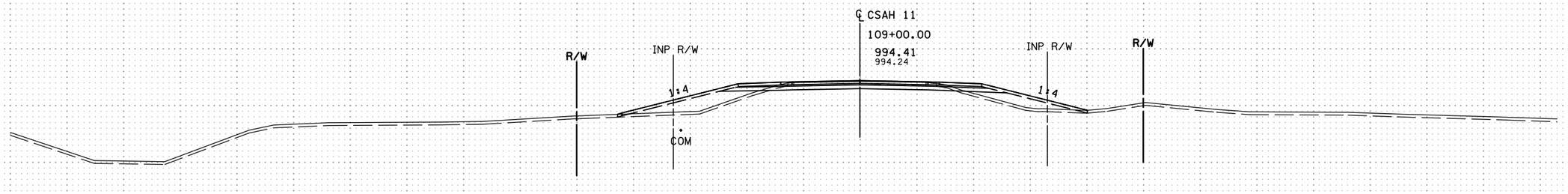

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1	01/24/25	GMK	EN	ADDENDUM #1

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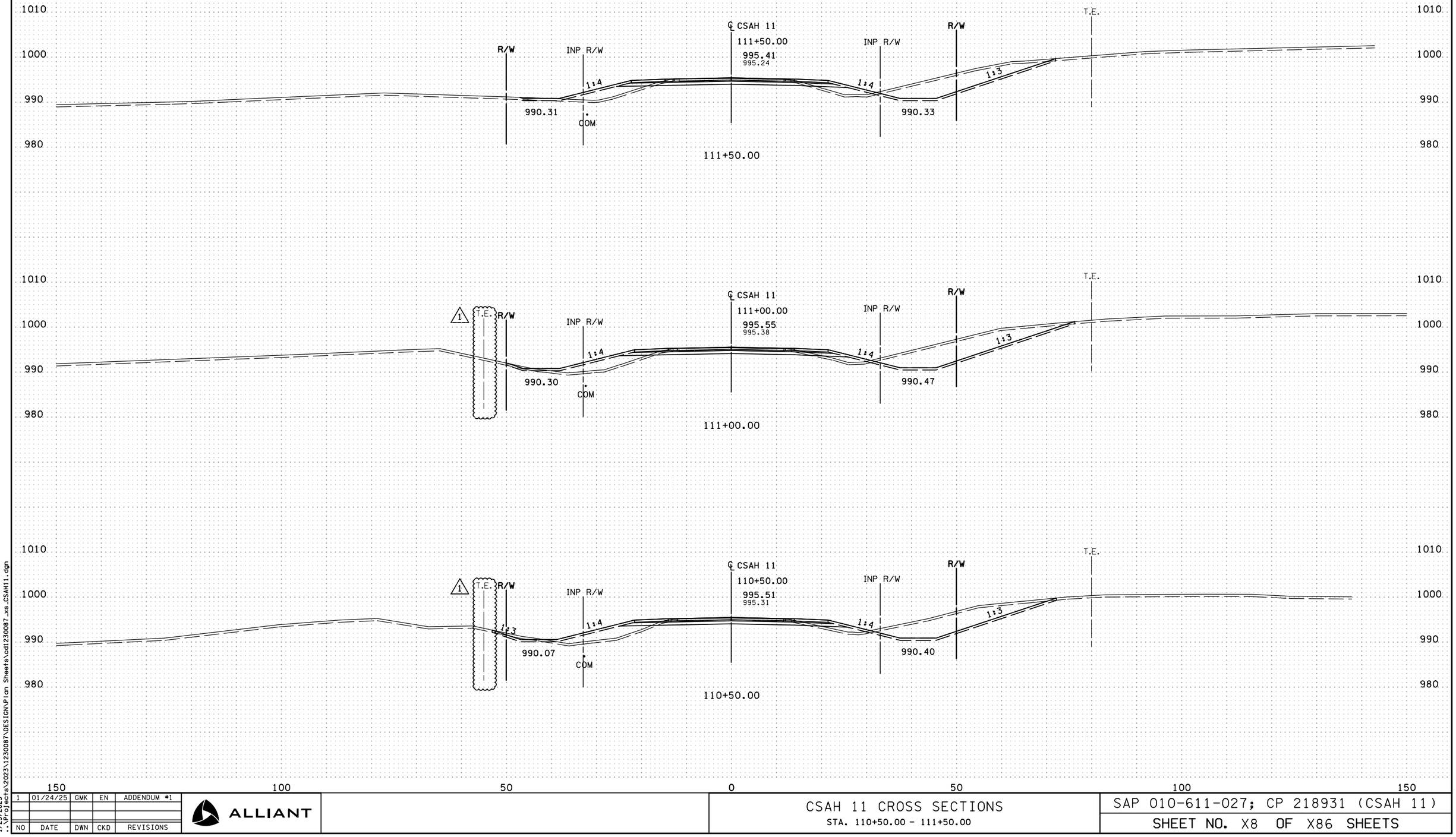

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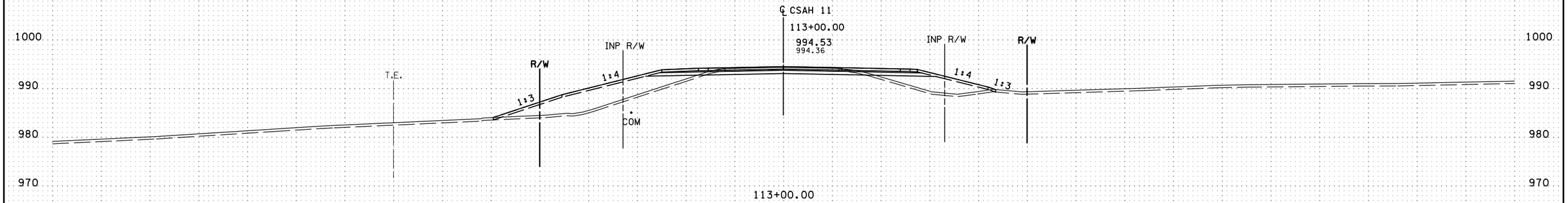

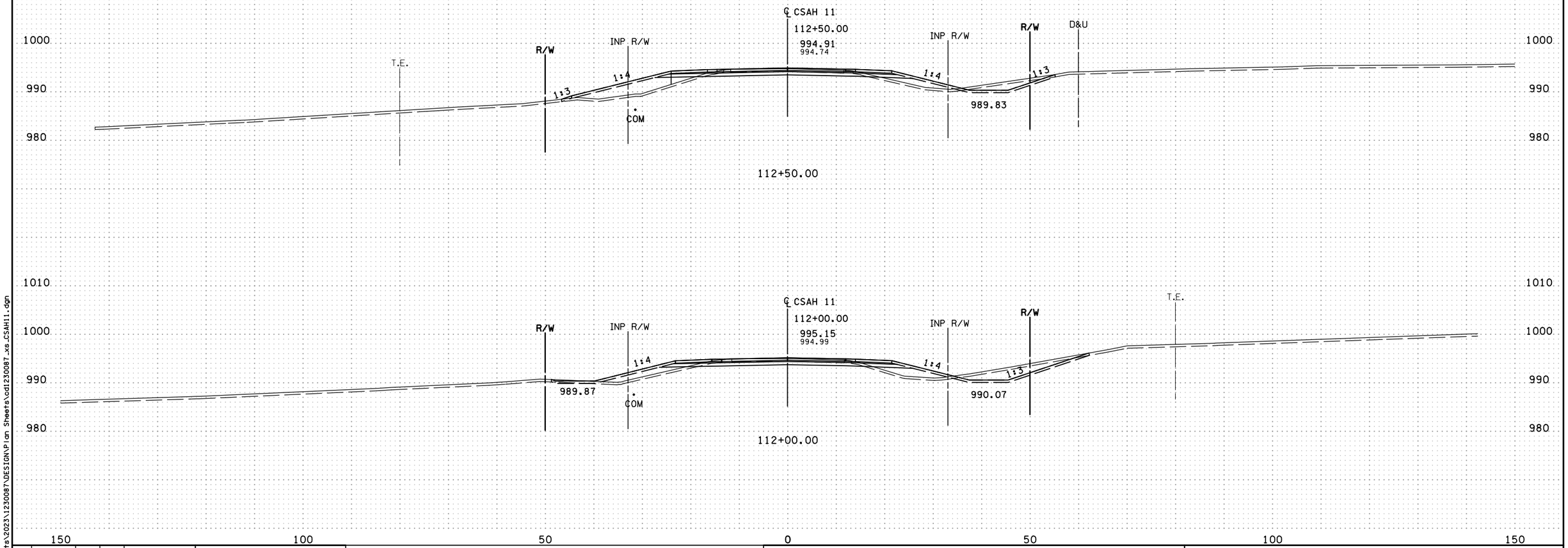

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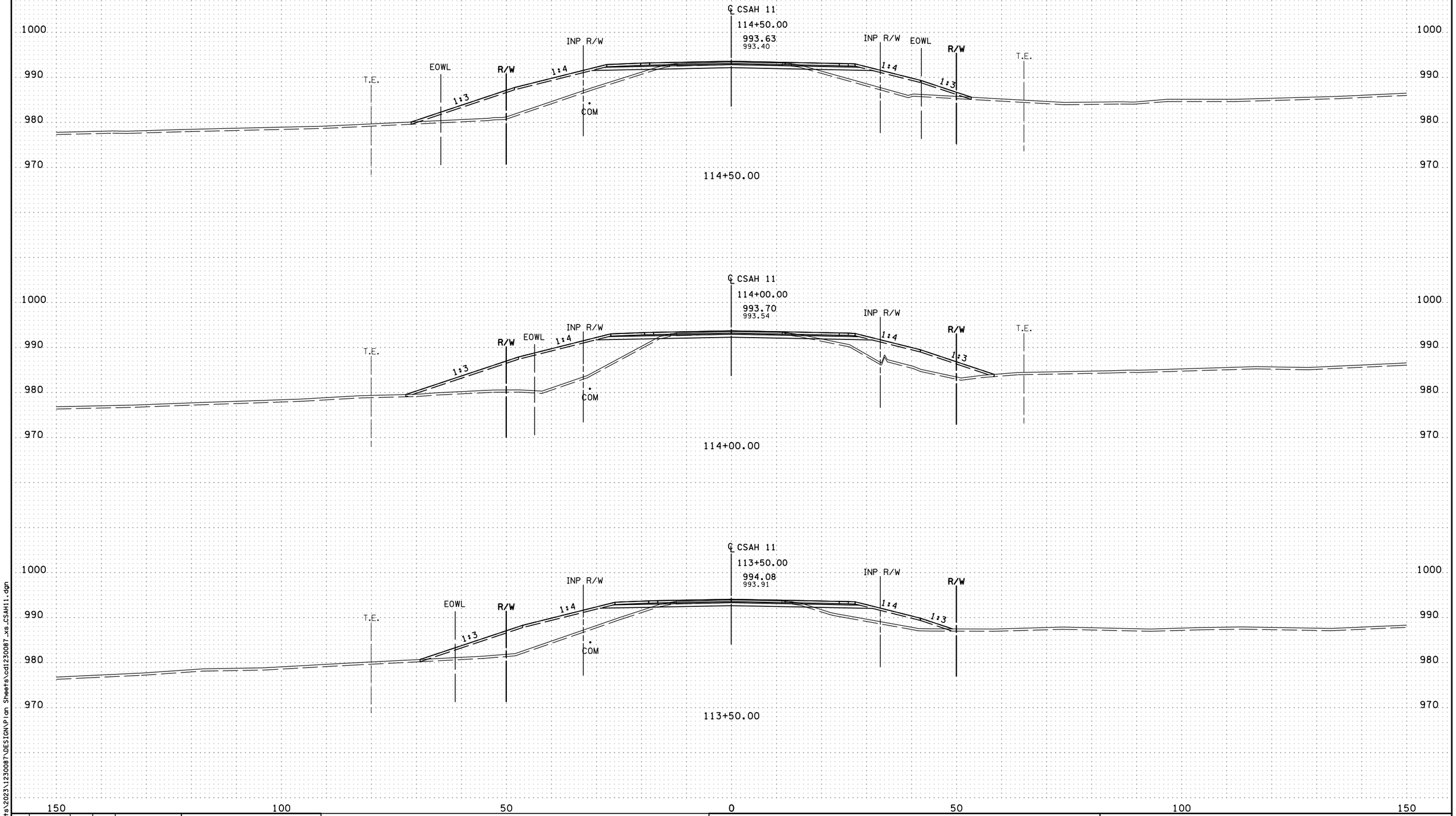

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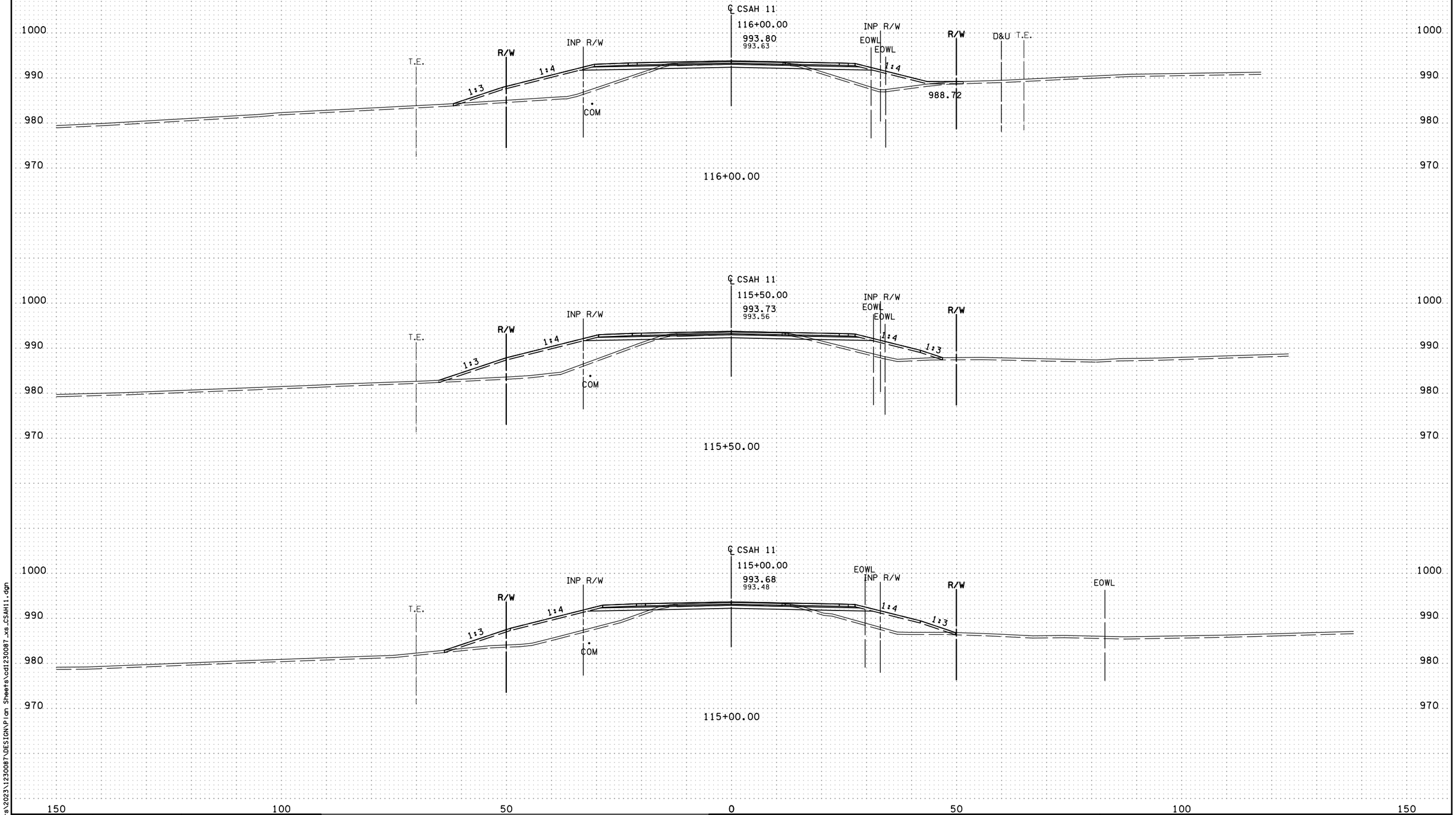

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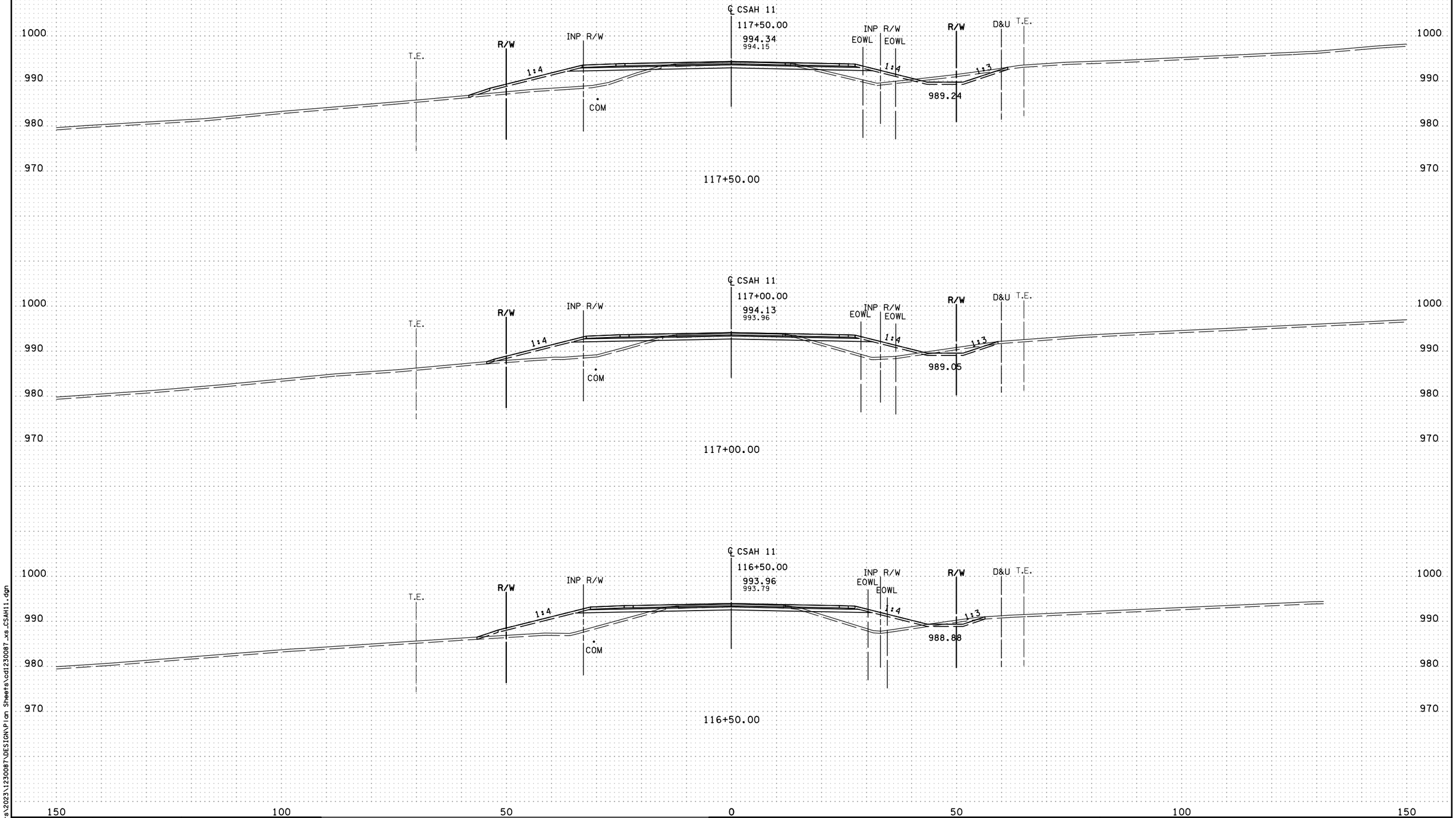

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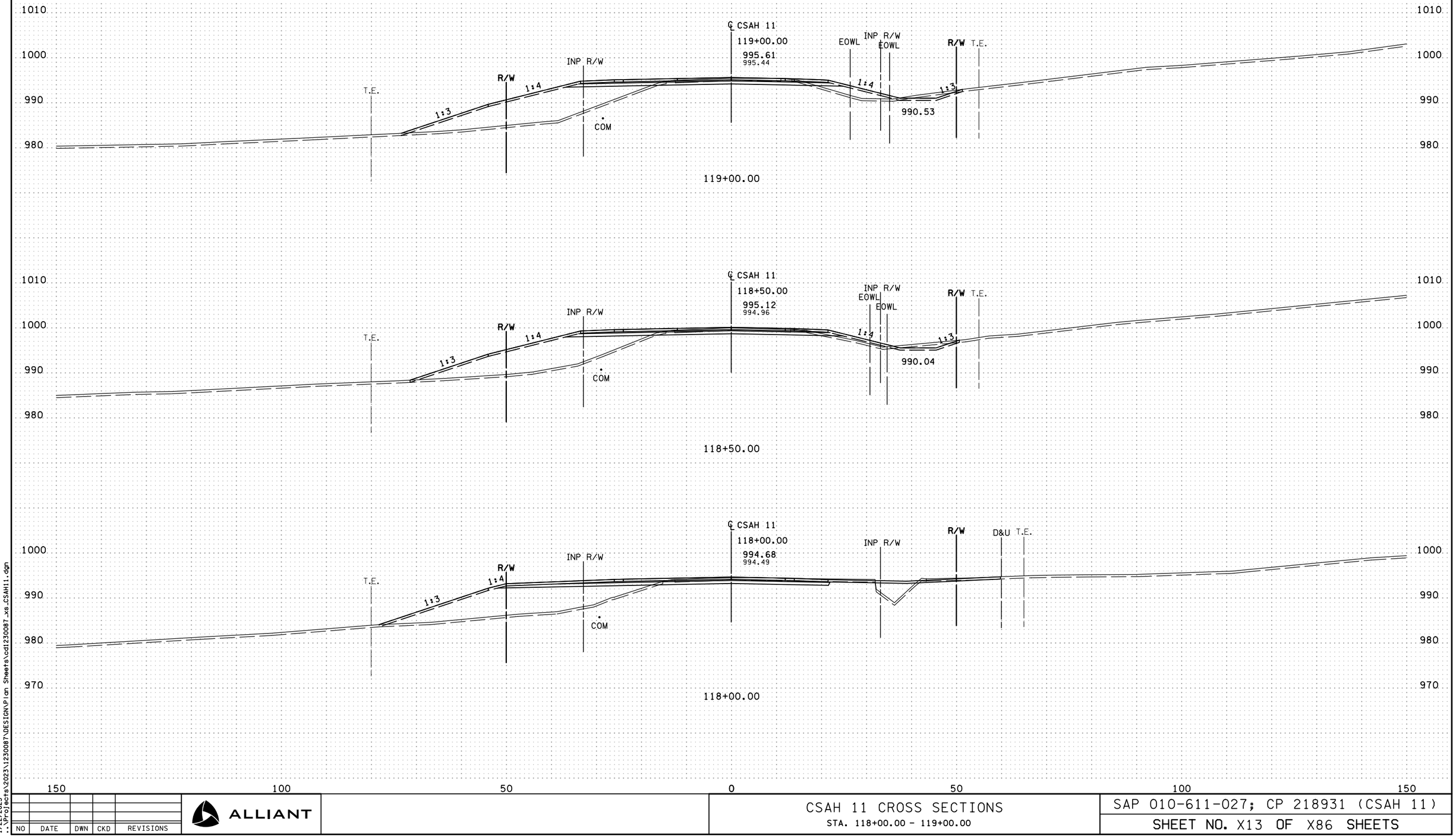

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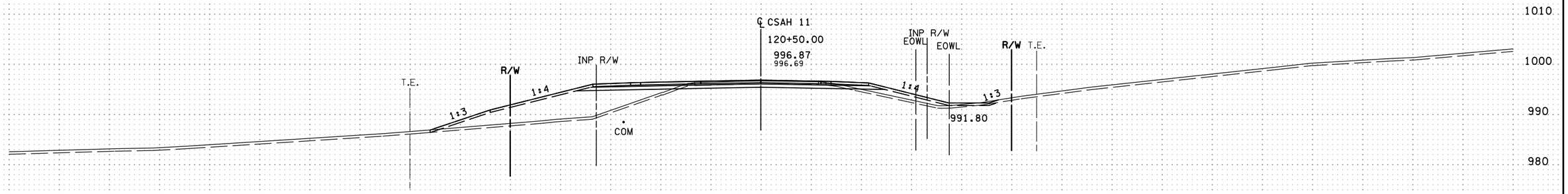

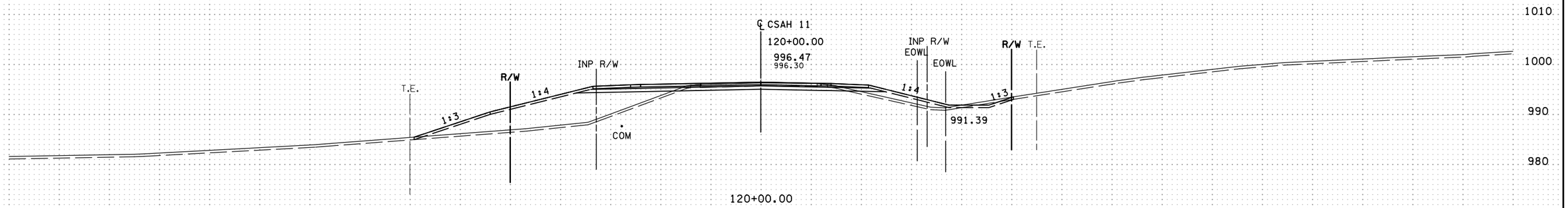

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SAP 010-611-027; CP 218931 (CSAH 11)

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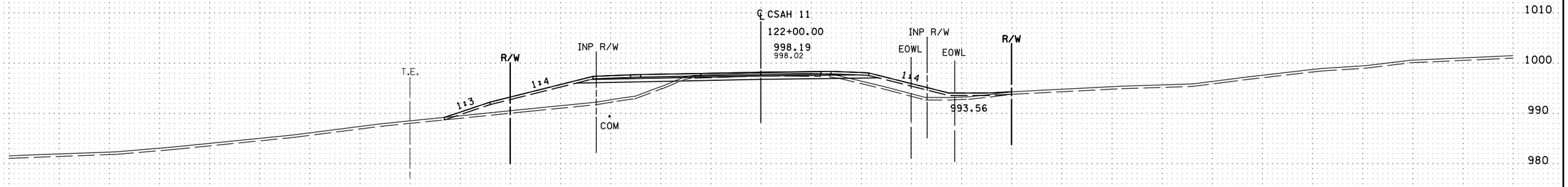

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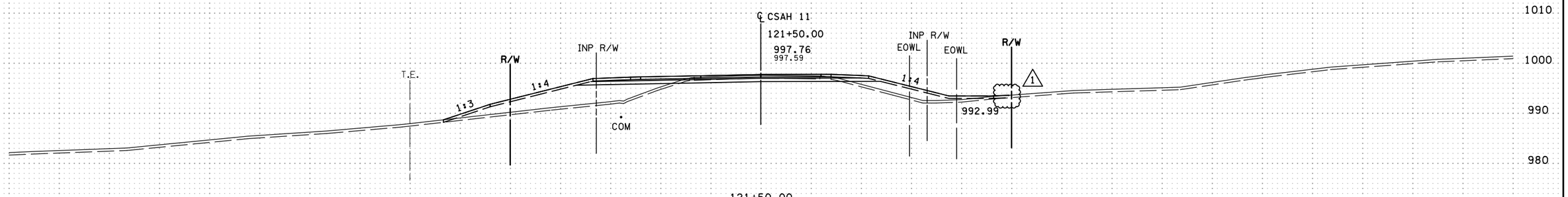

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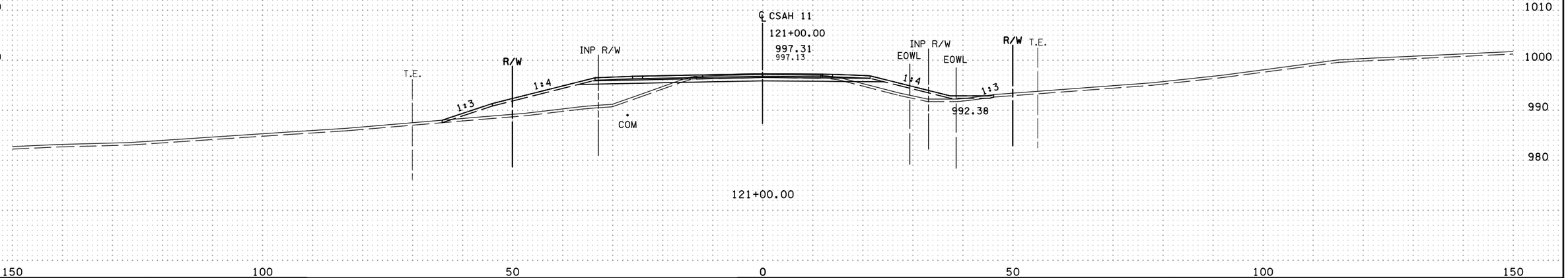

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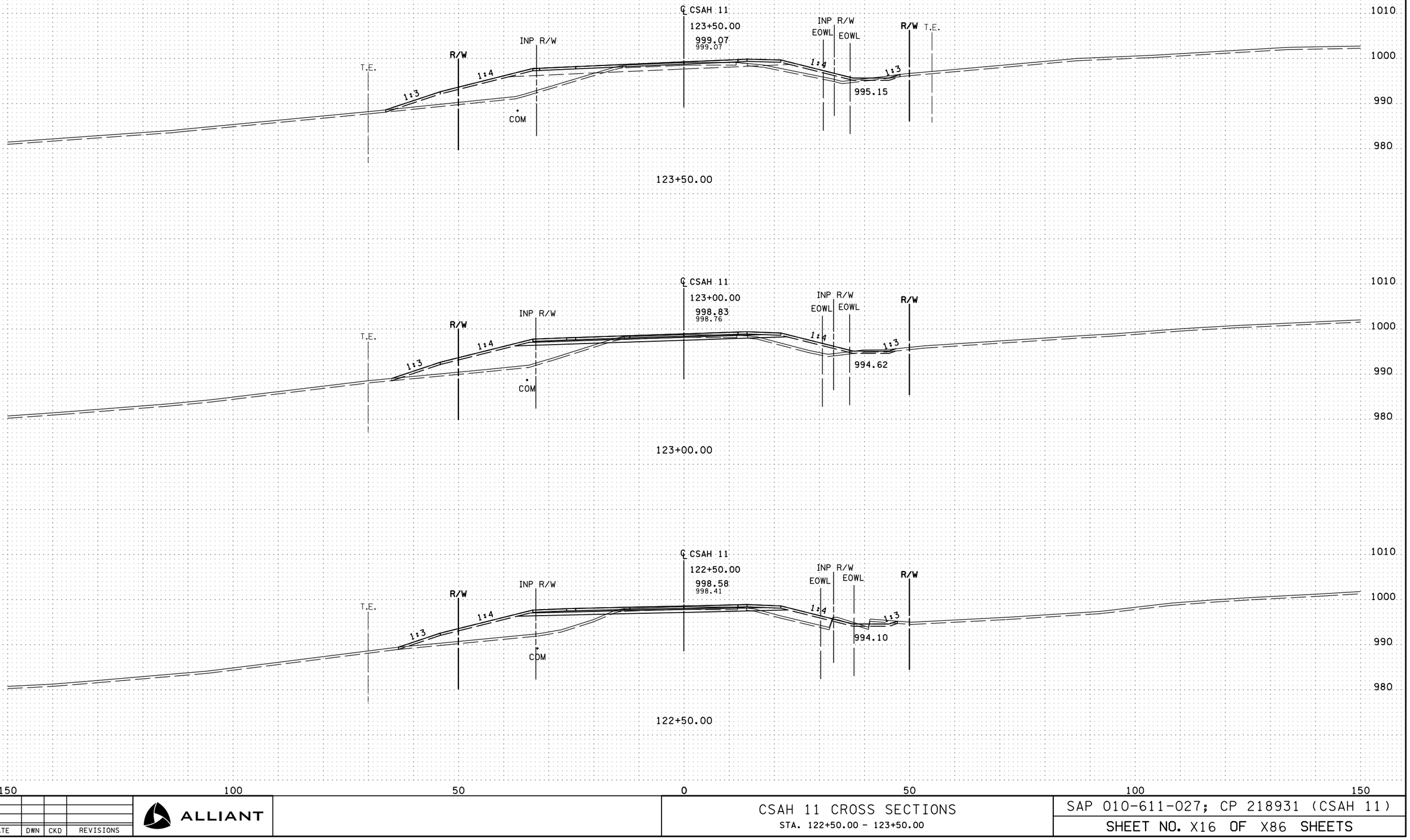

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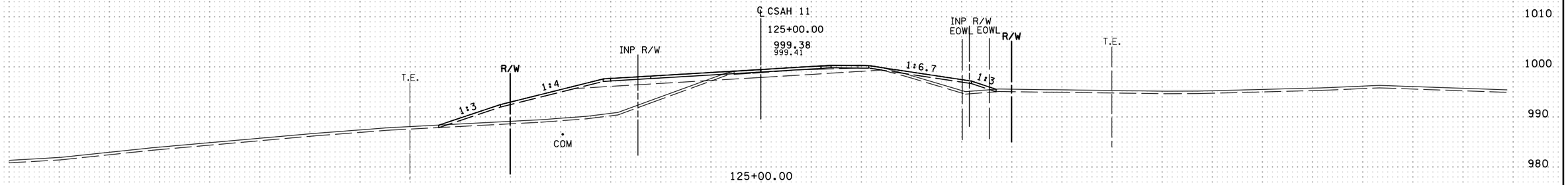

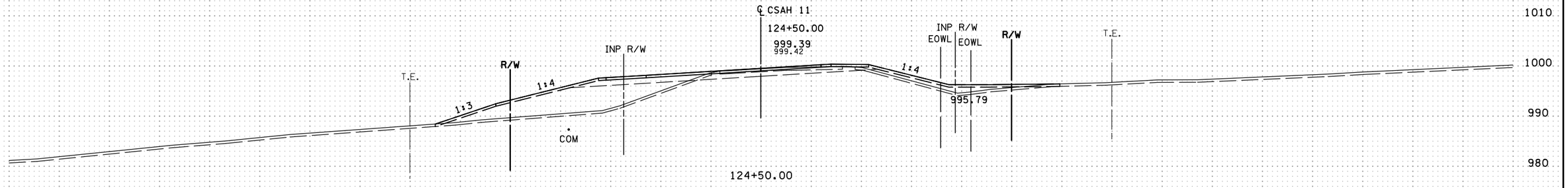

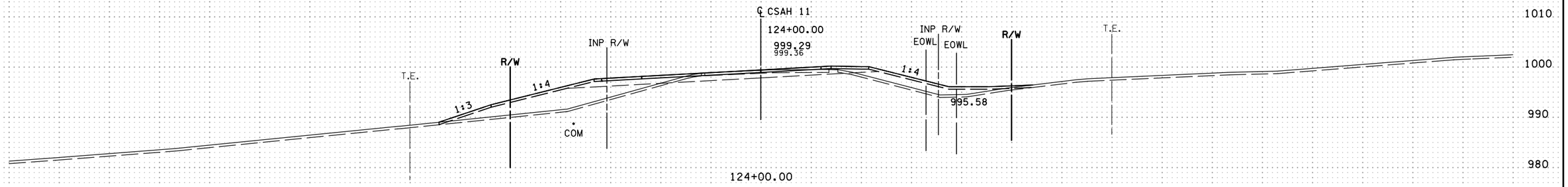

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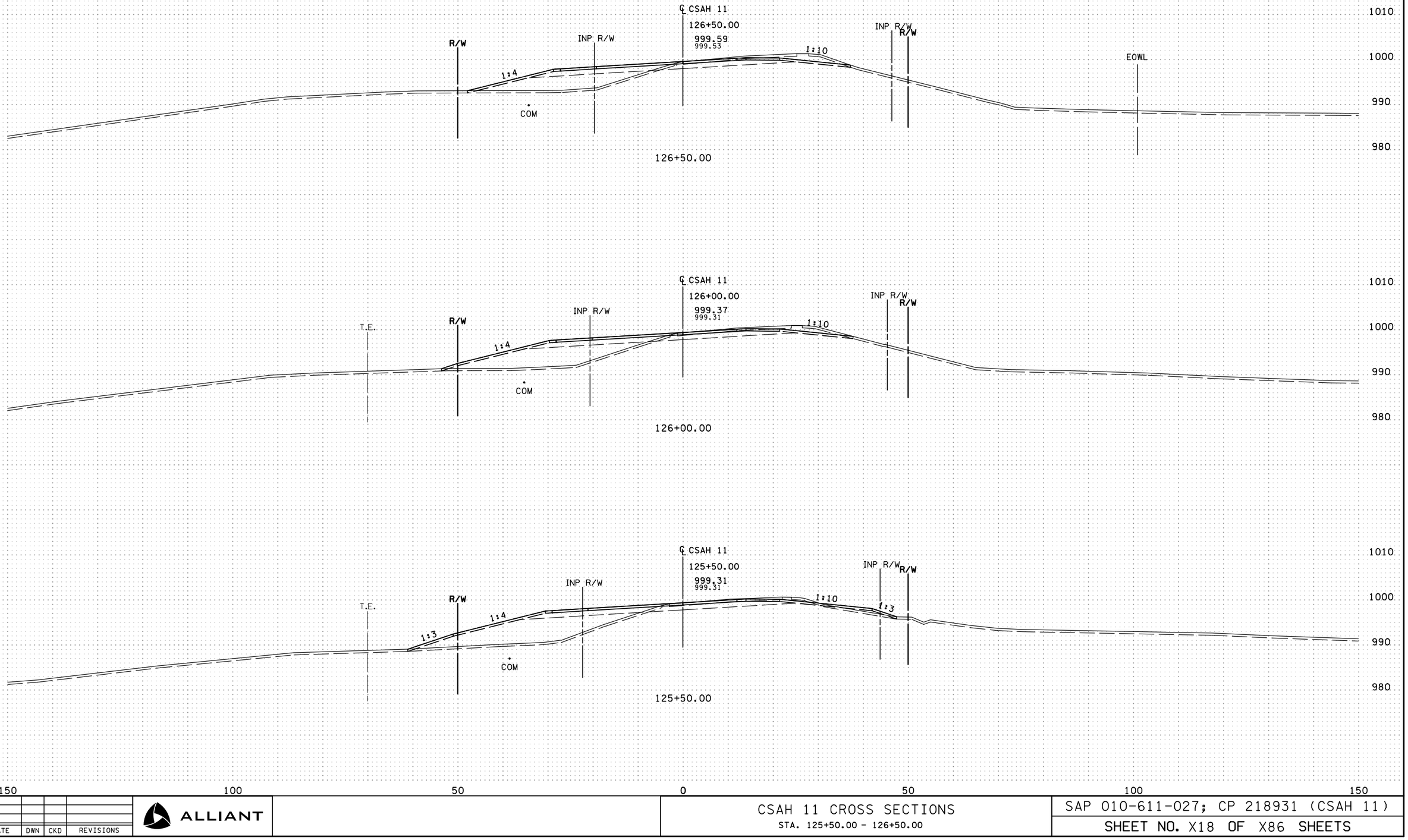

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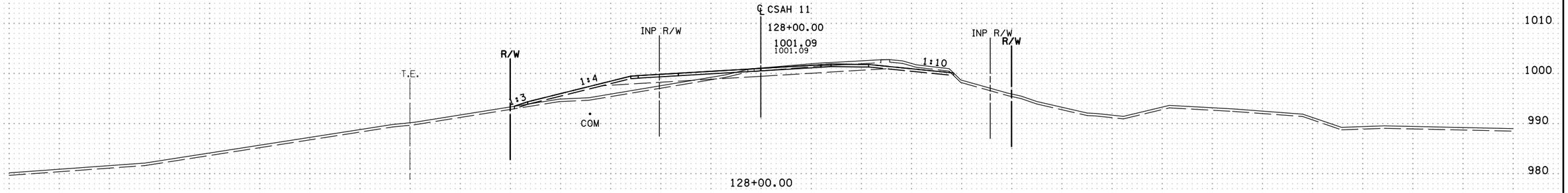

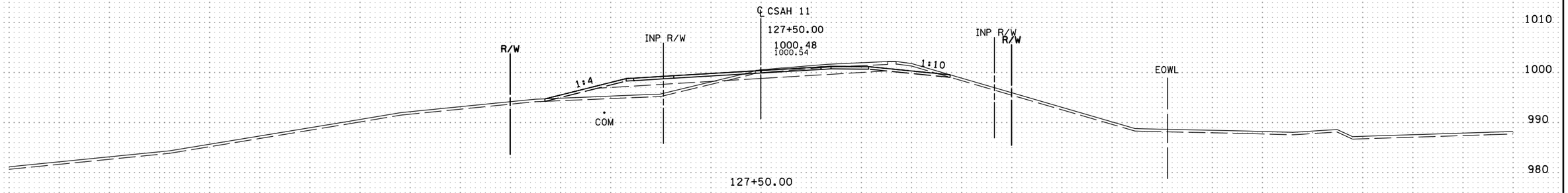

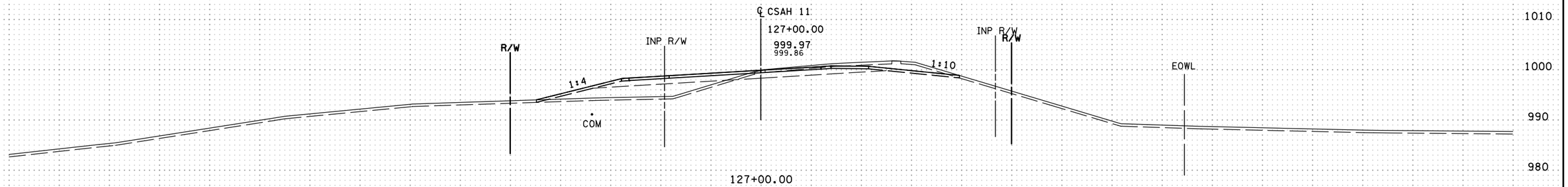

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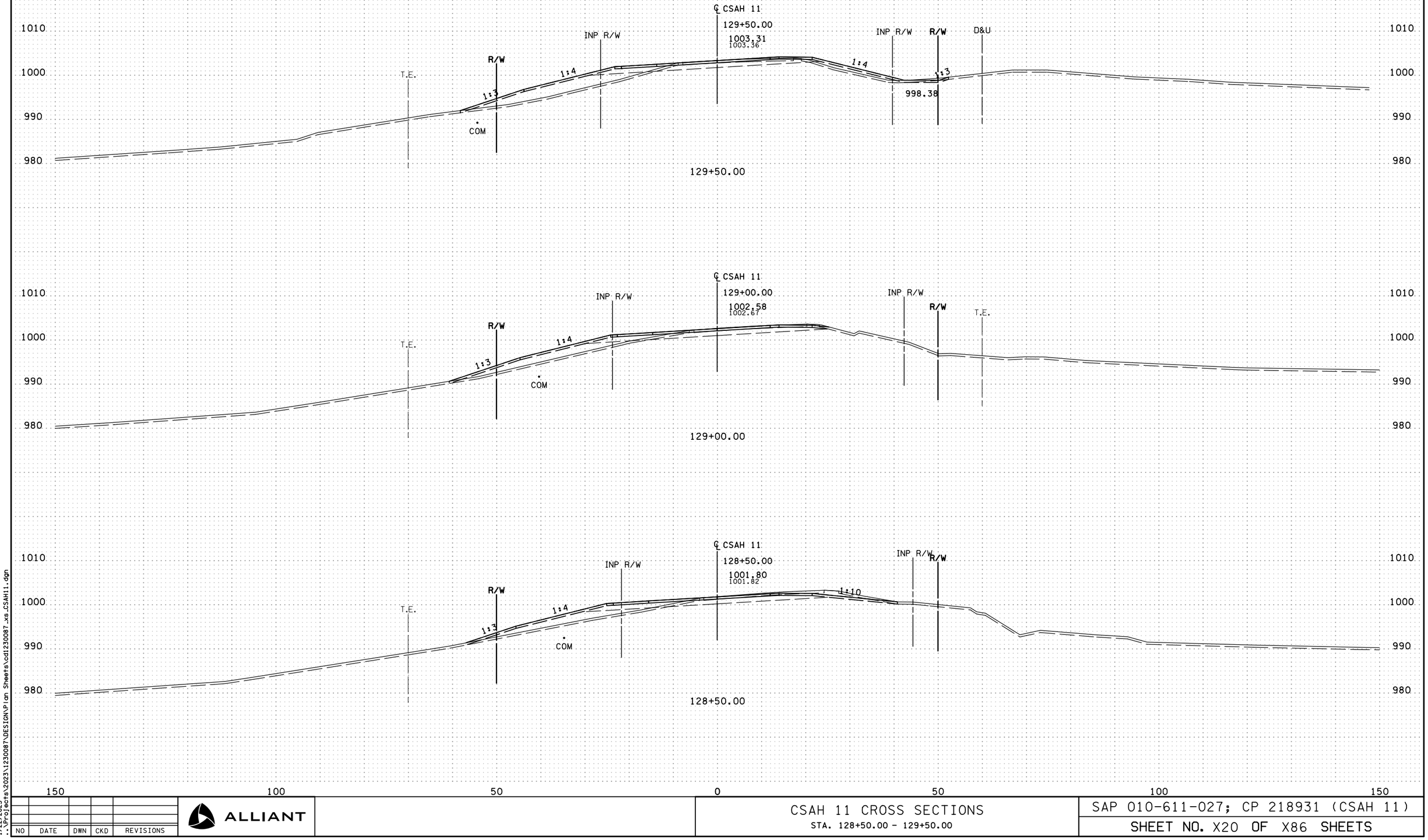

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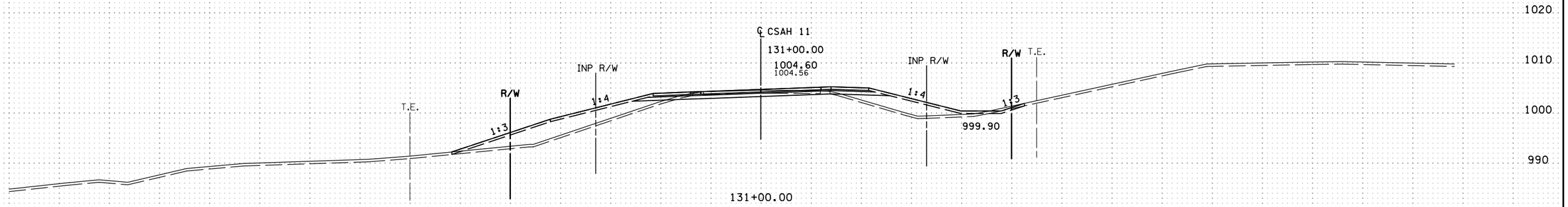

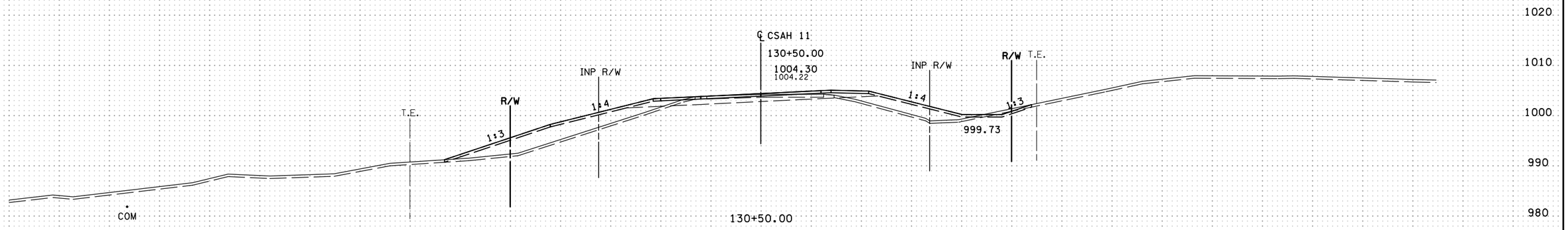

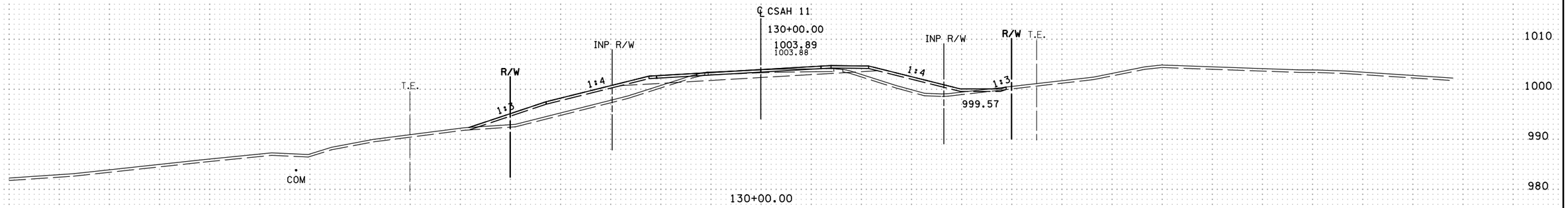

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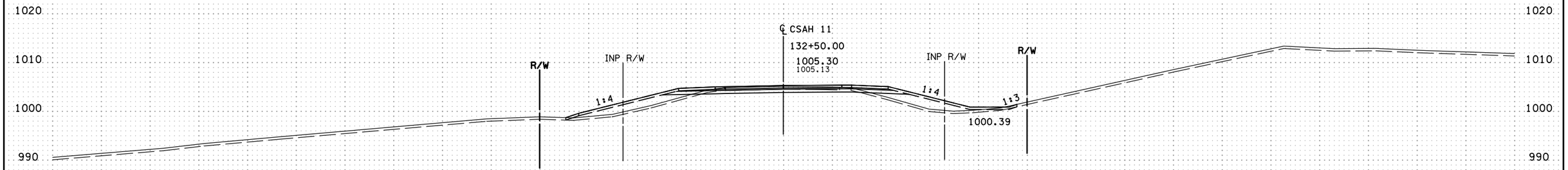

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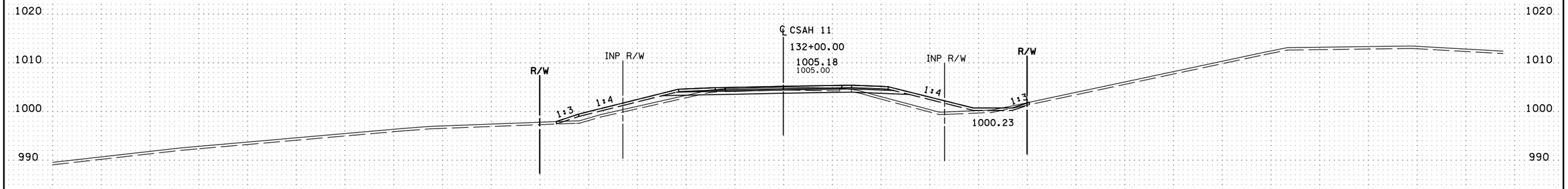

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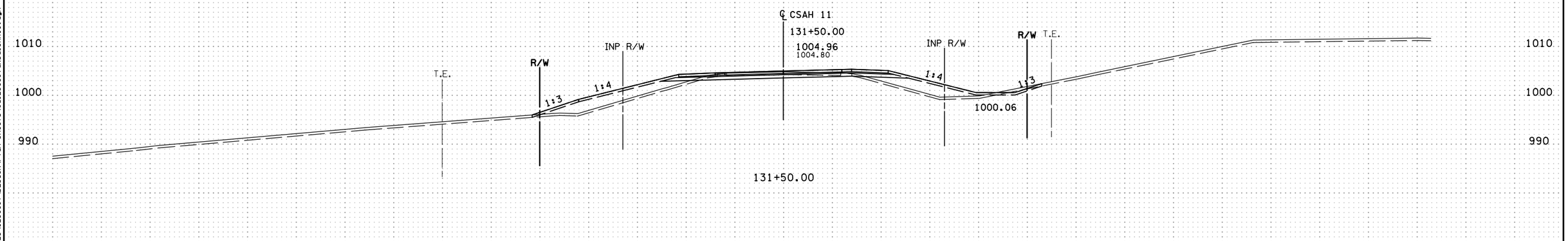

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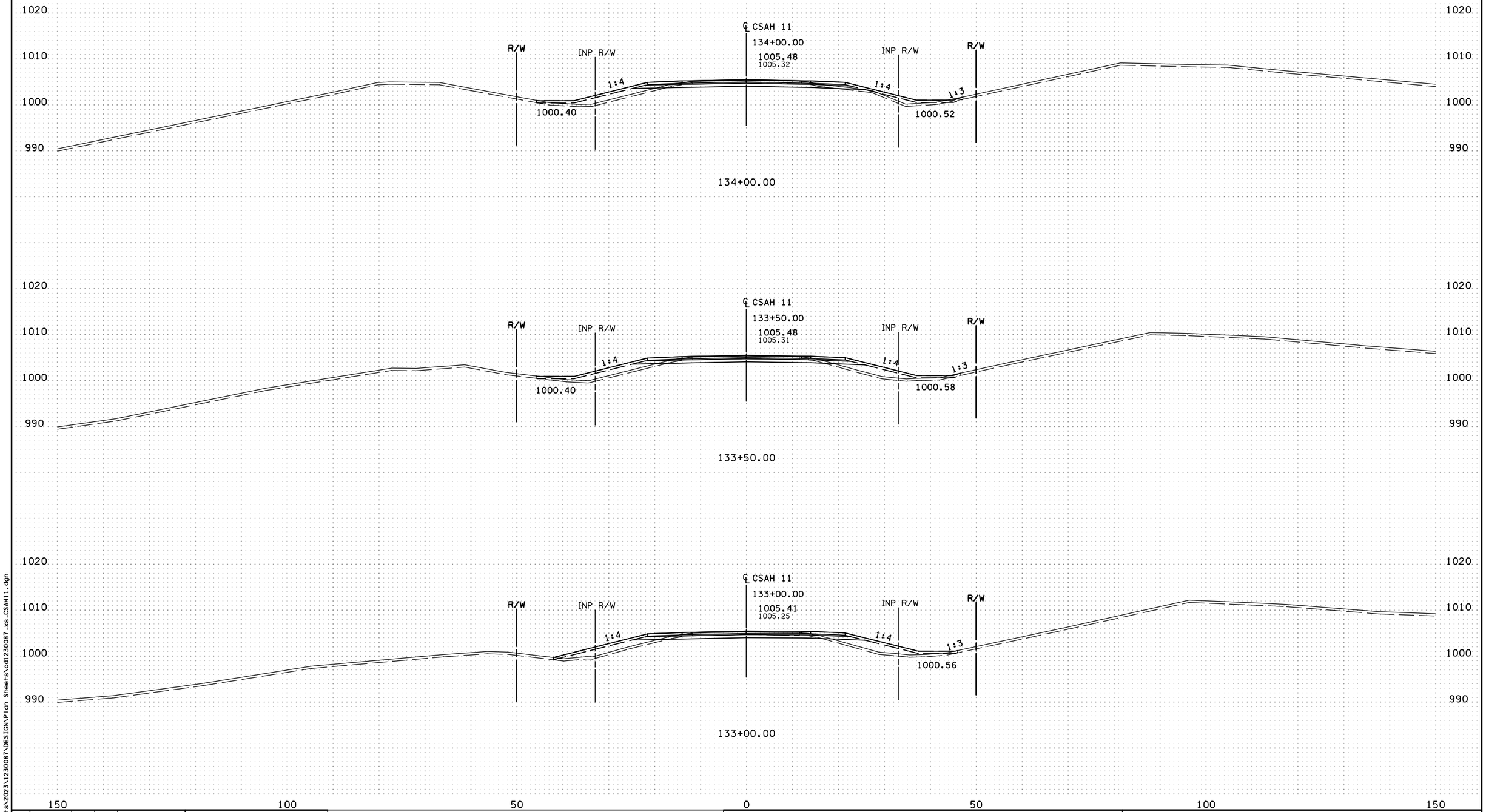

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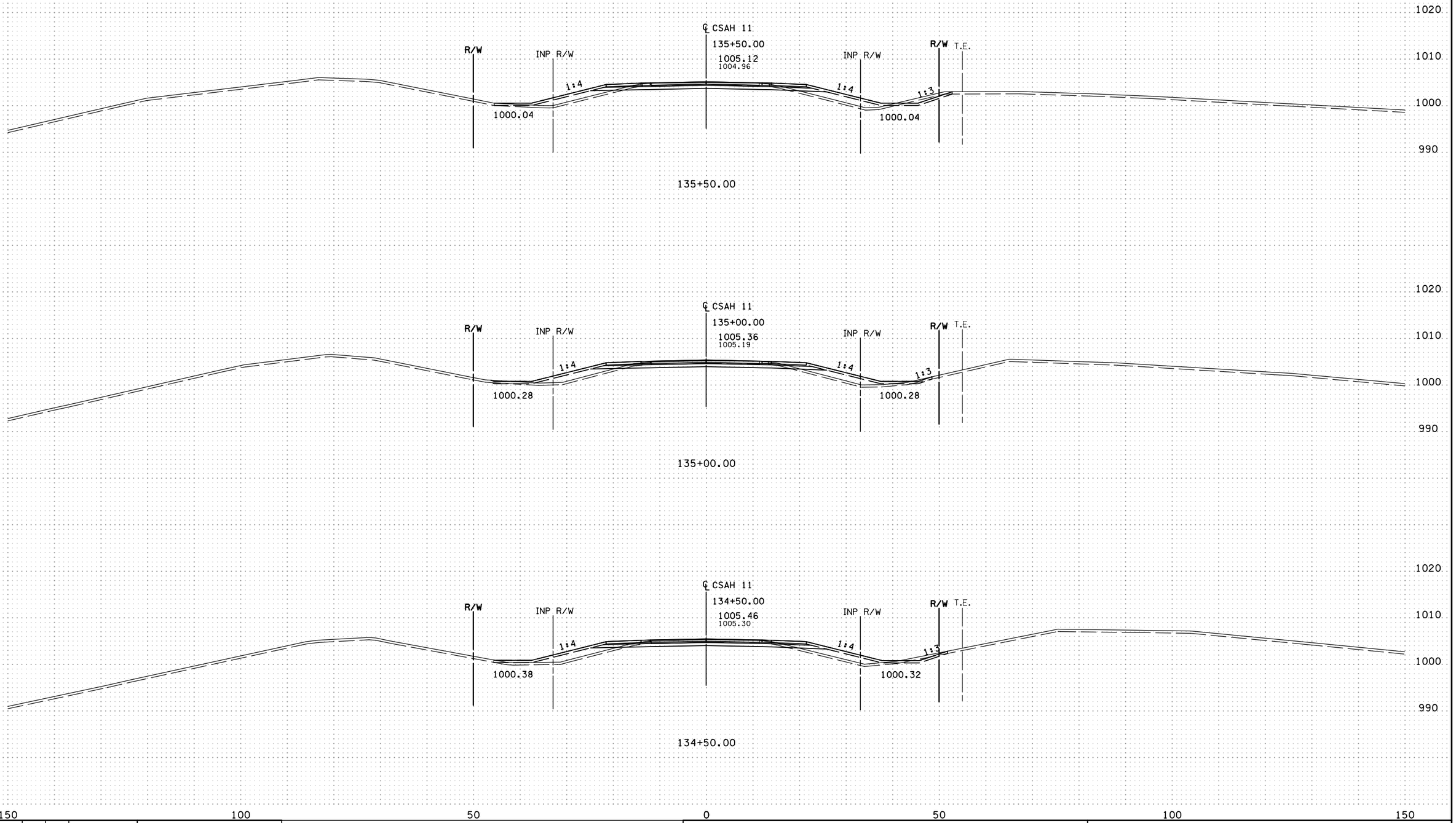

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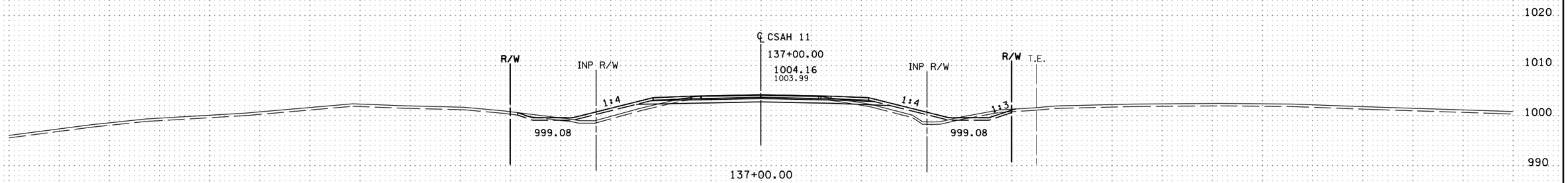

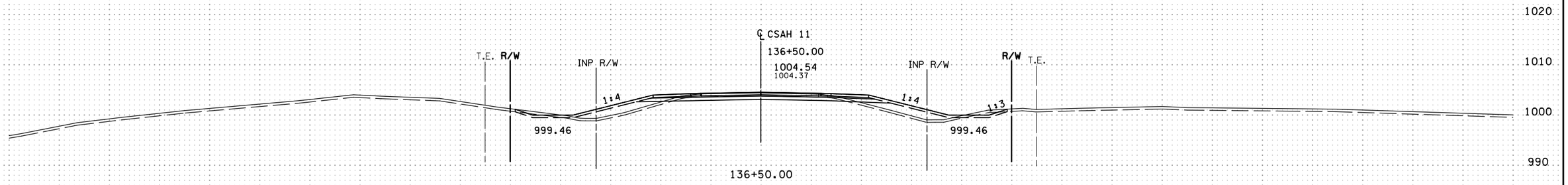

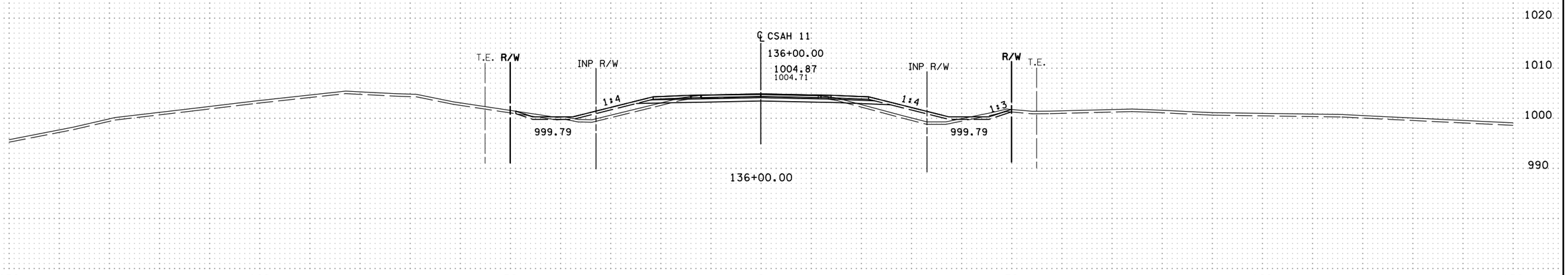

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NO	DATE	DWN	CKD	REVISIONS

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SAP 010-611-027; CP 218931 (CSAH 11)
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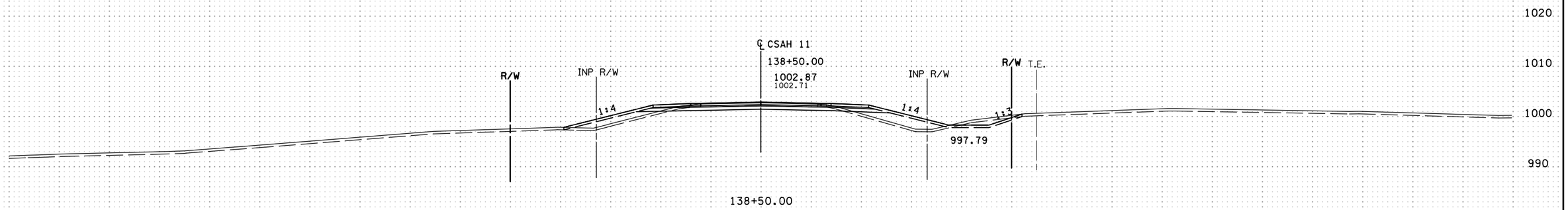

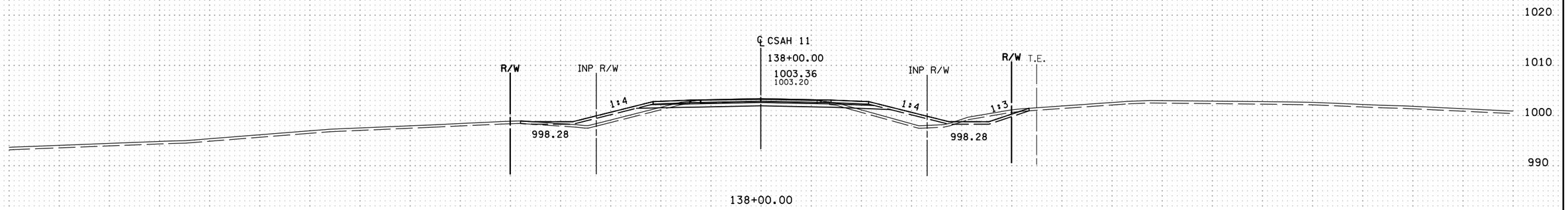

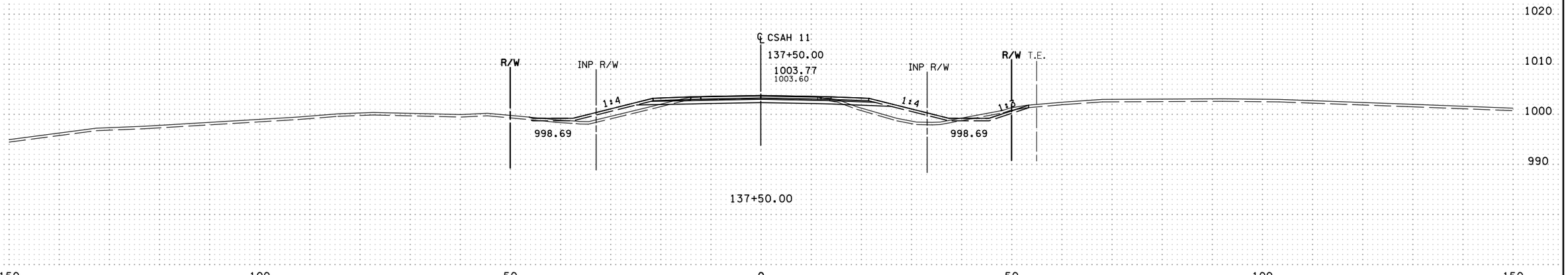

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SAP 010-611-027; CP 218931 (CSAH 11)

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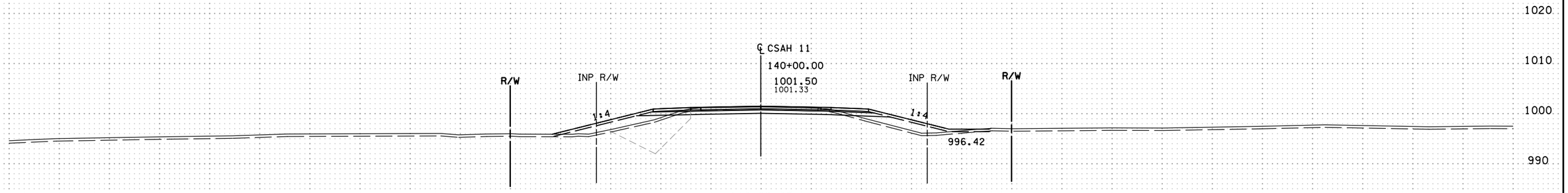

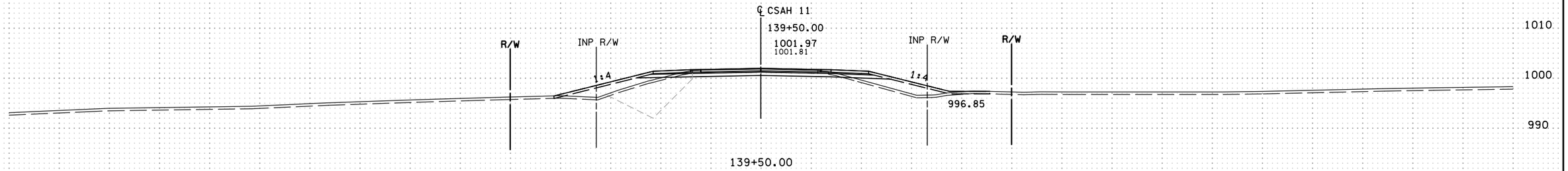

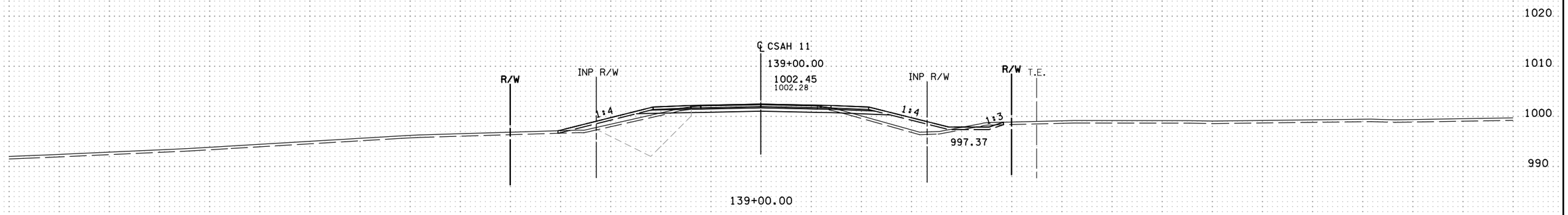

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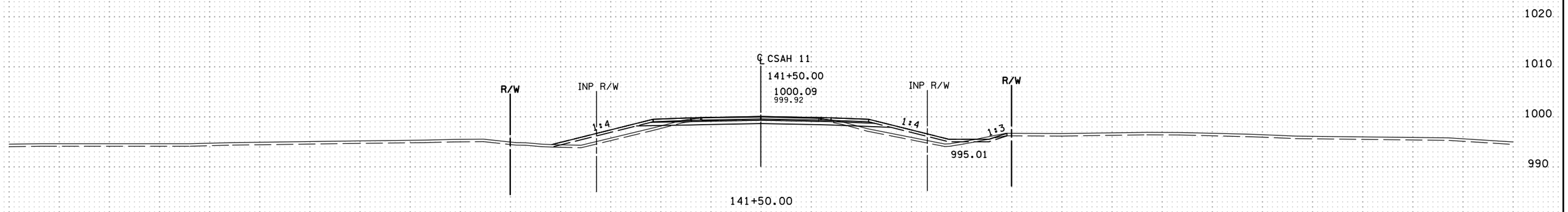

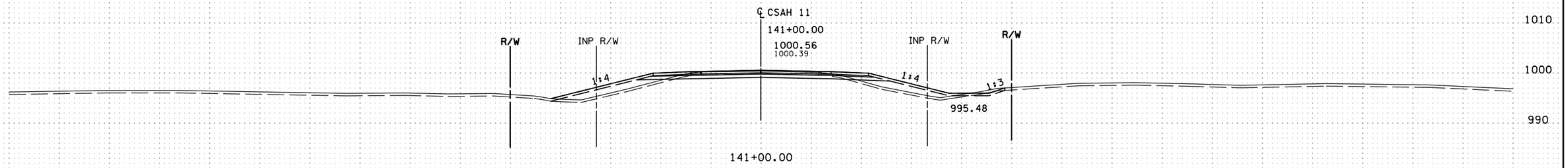

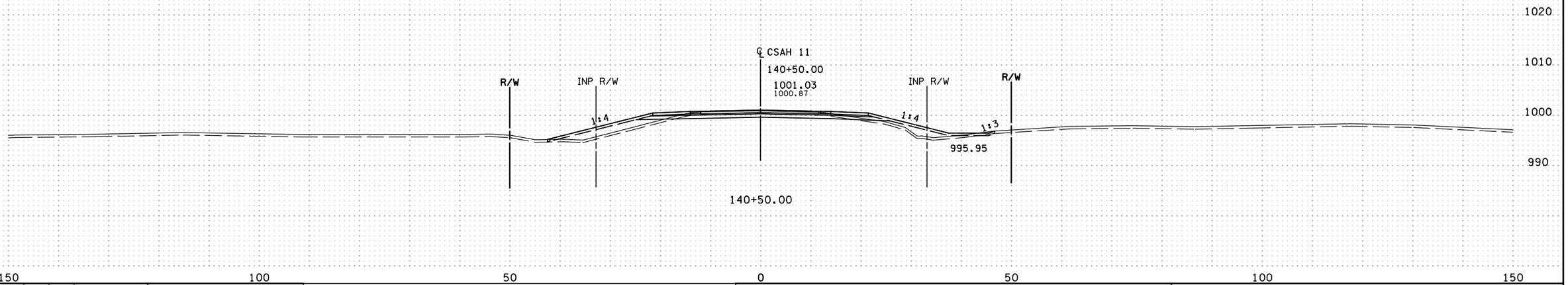

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SAP 010-611-027; CP 218931 (CSAH 11)
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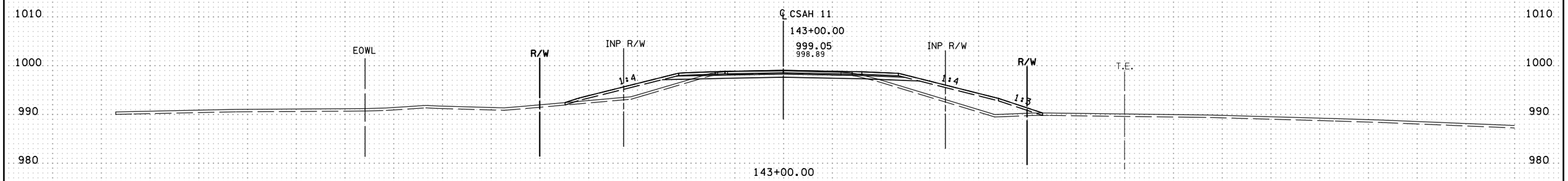

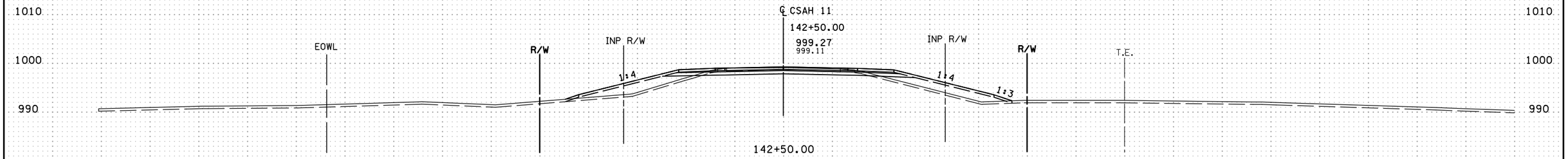

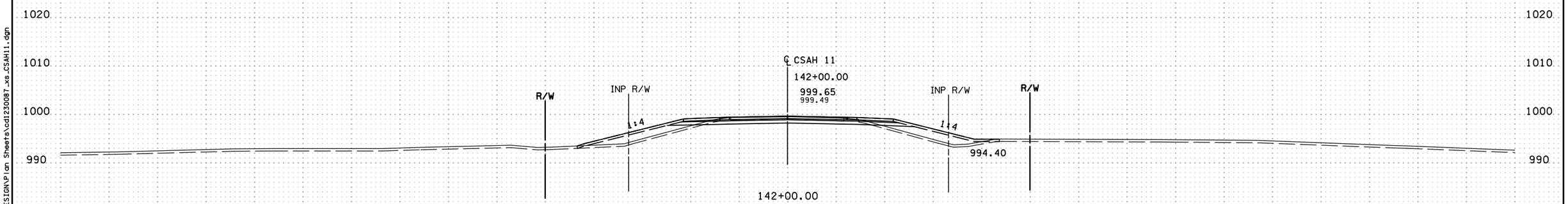

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NO	DATE	DWN	CKD	REVISIONS

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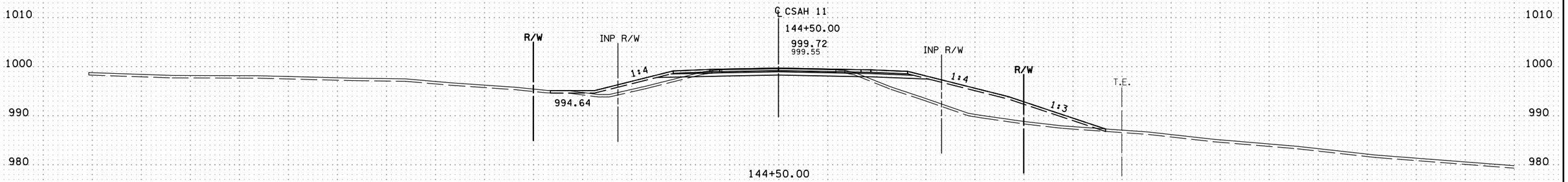

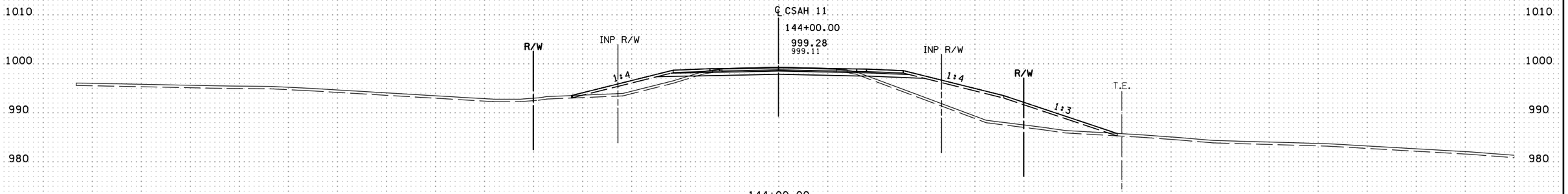

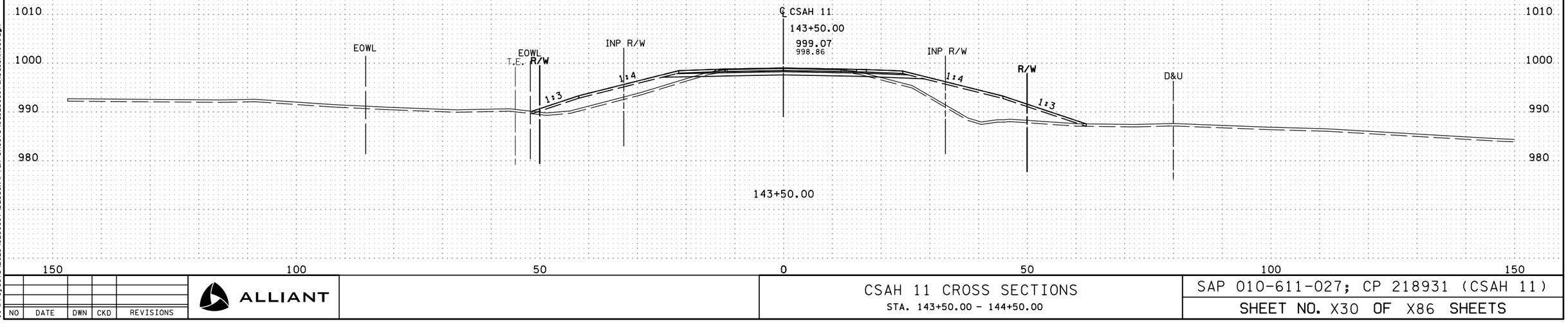

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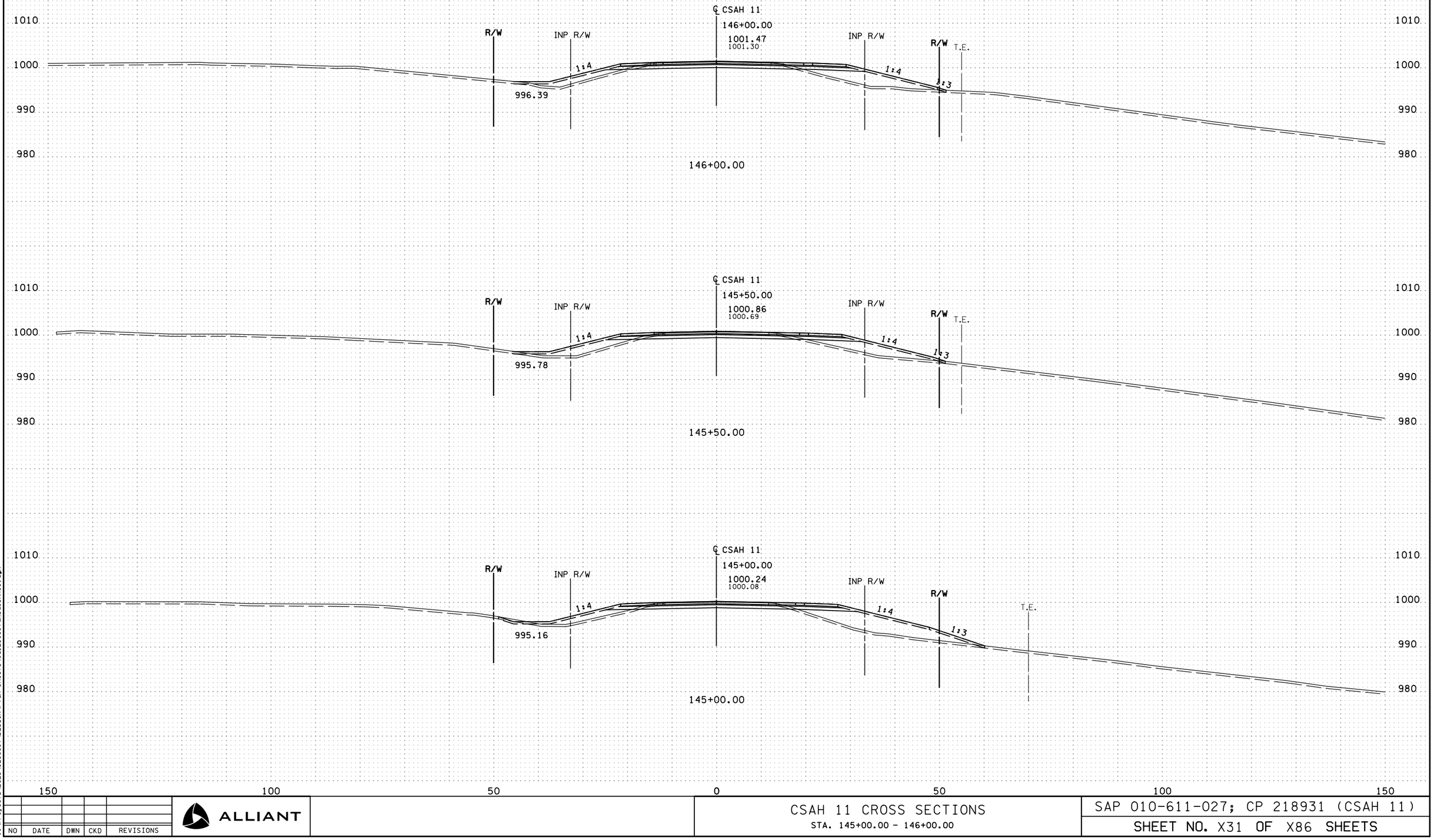

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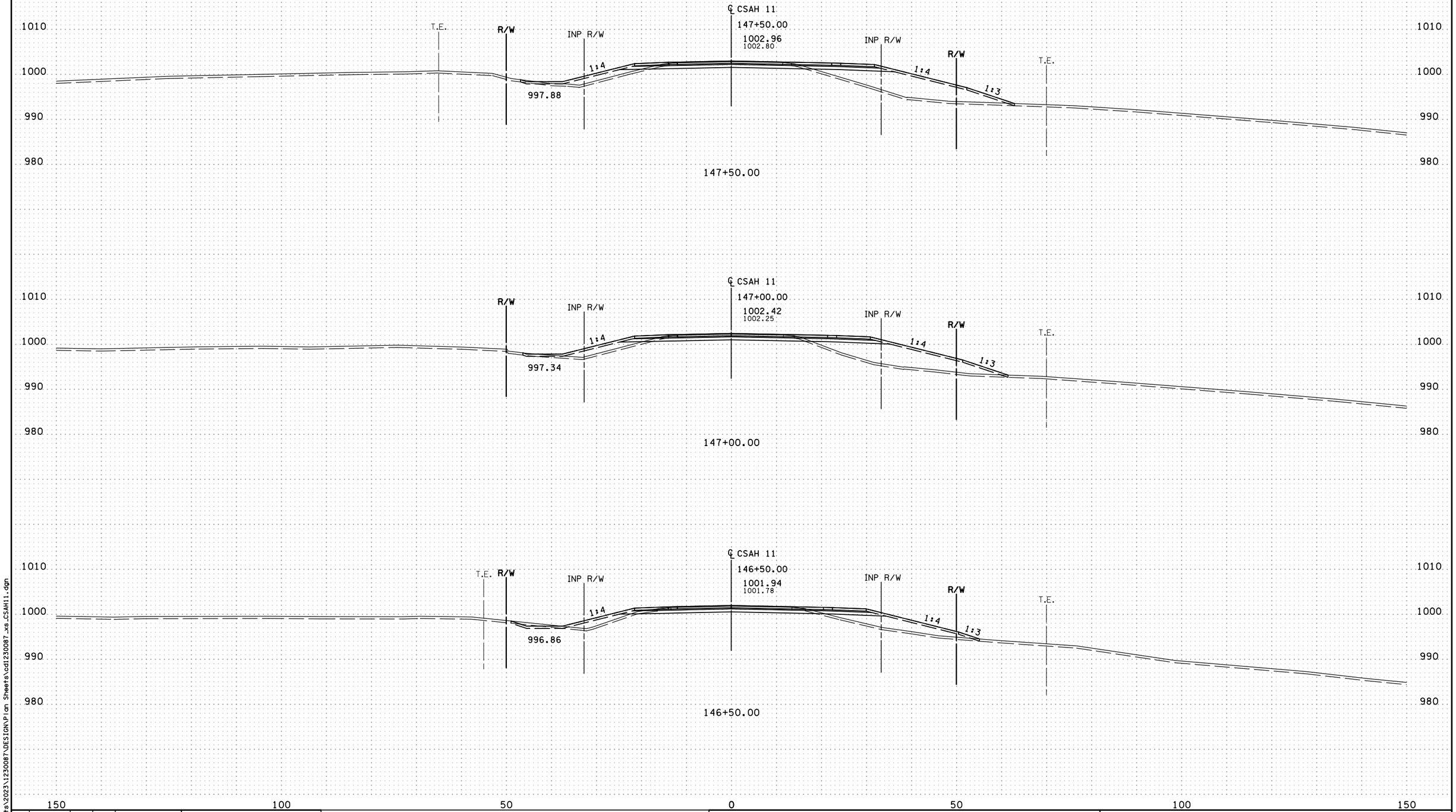

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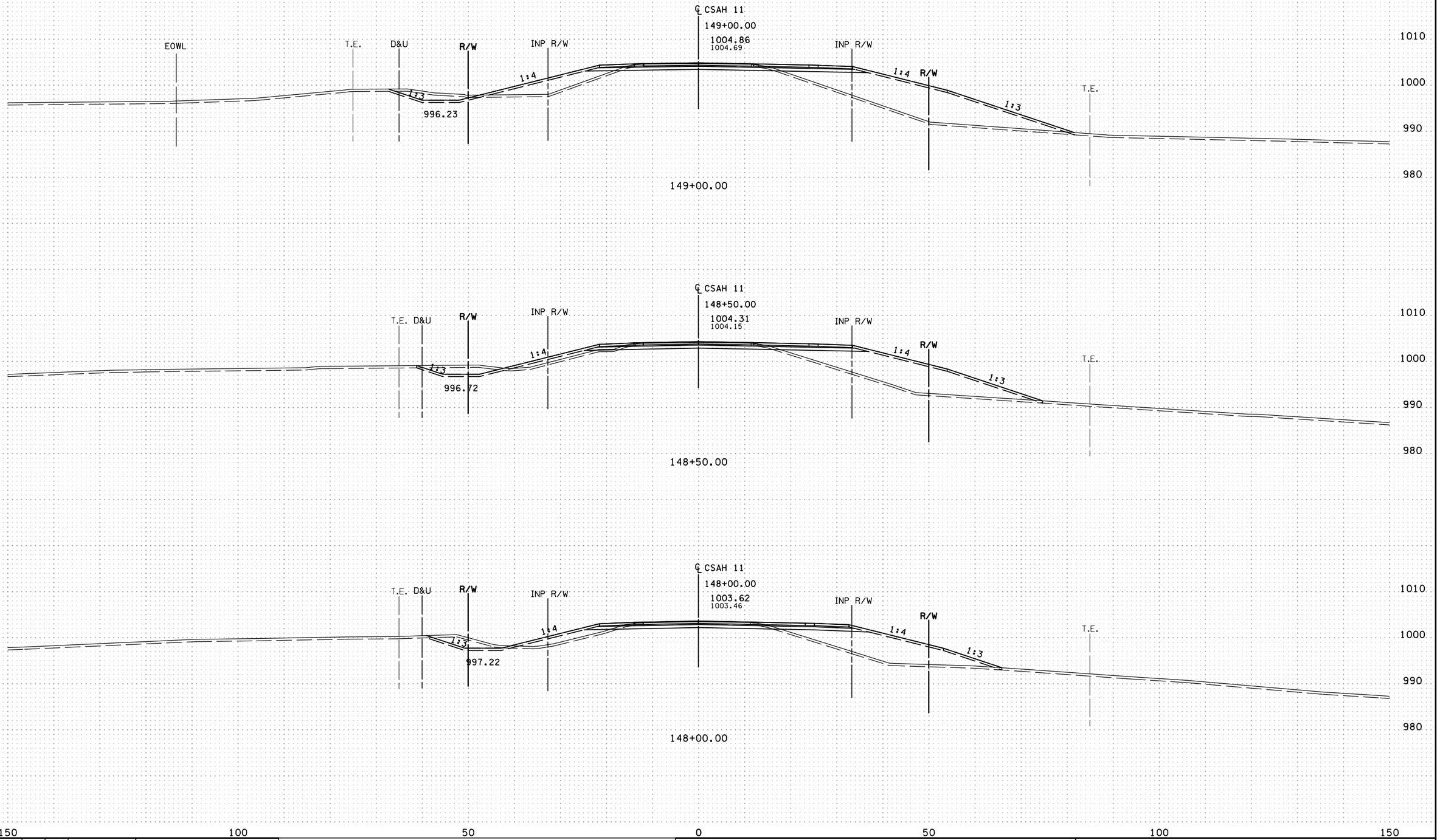

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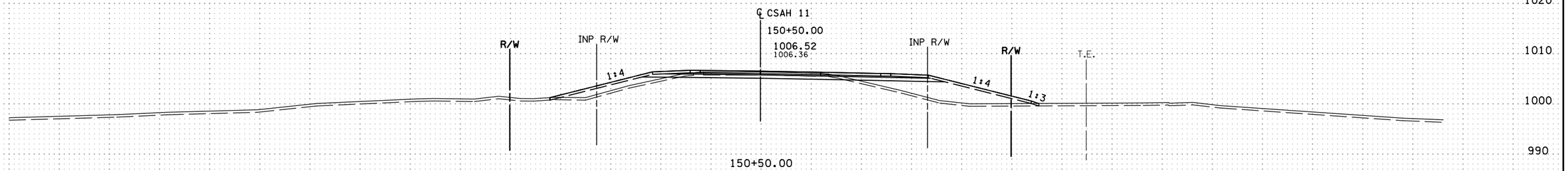

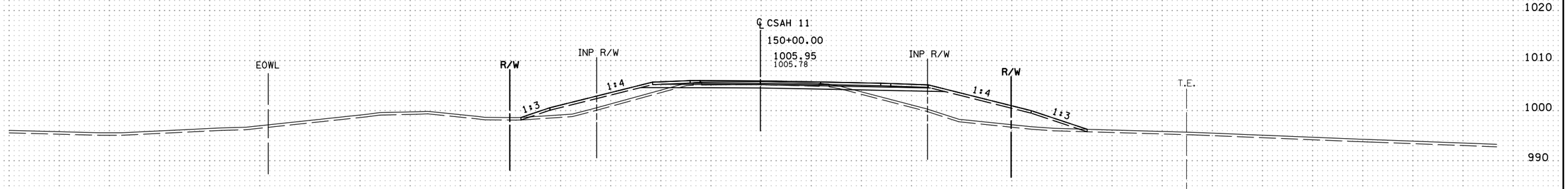

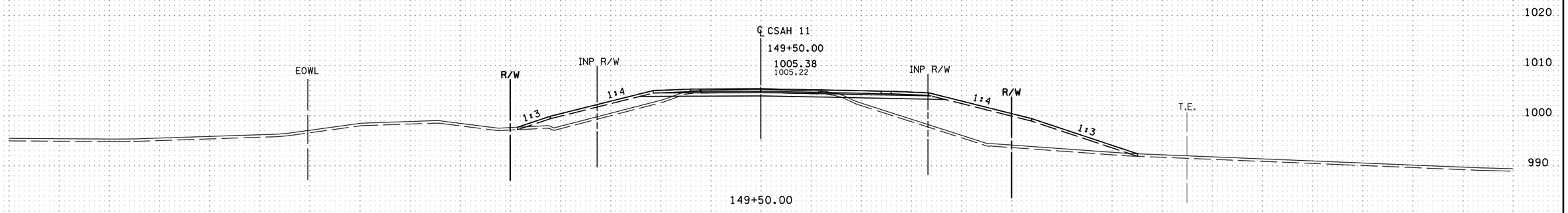

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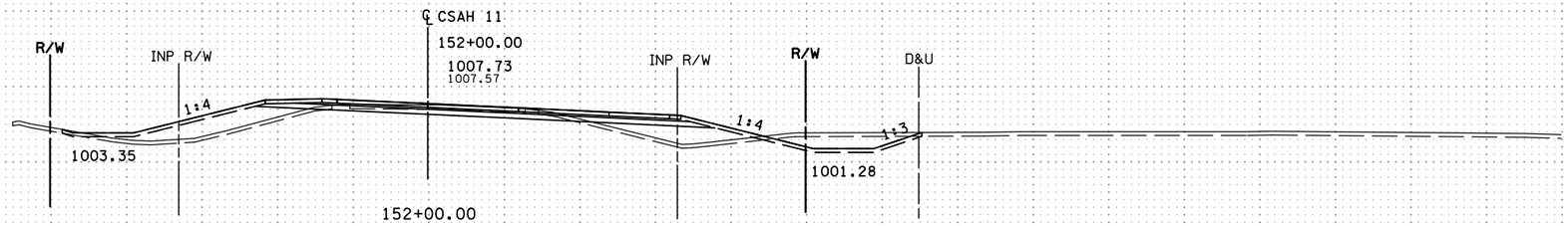

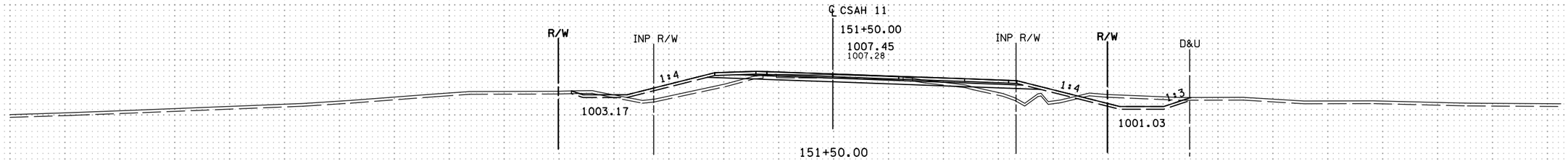

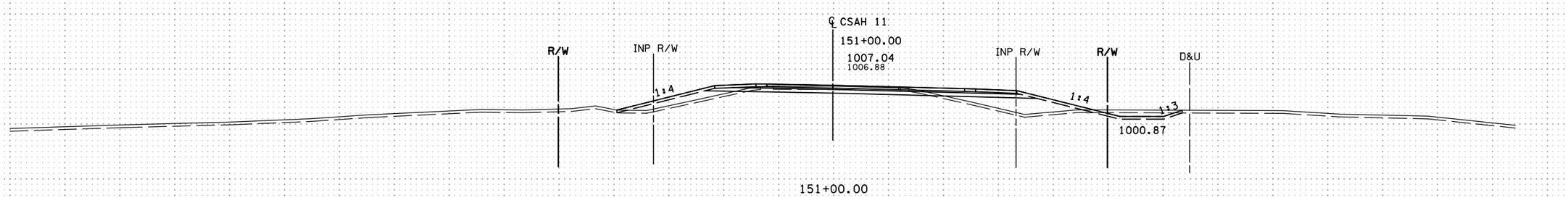

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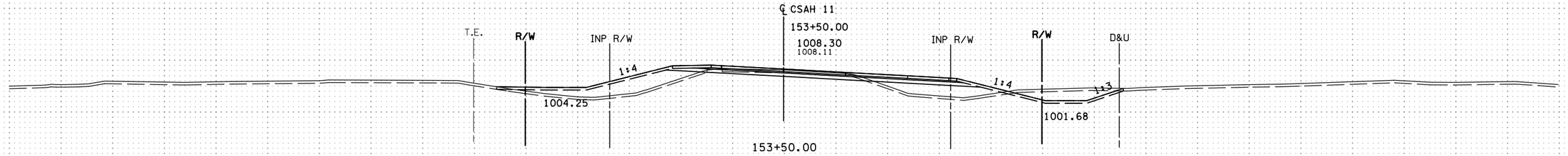

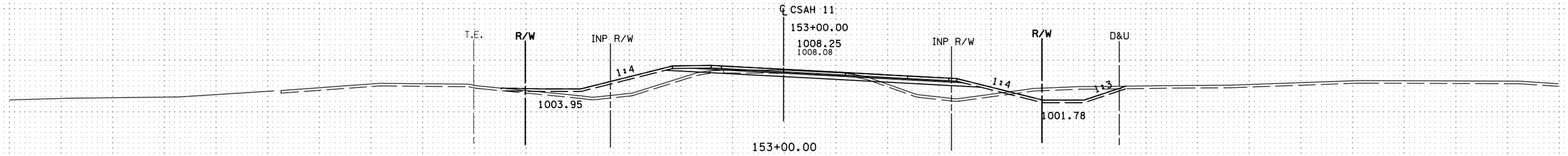

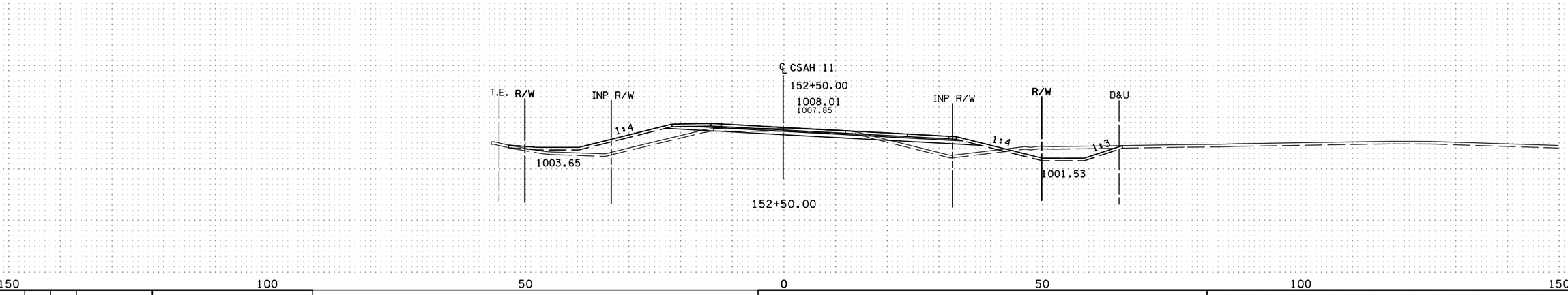

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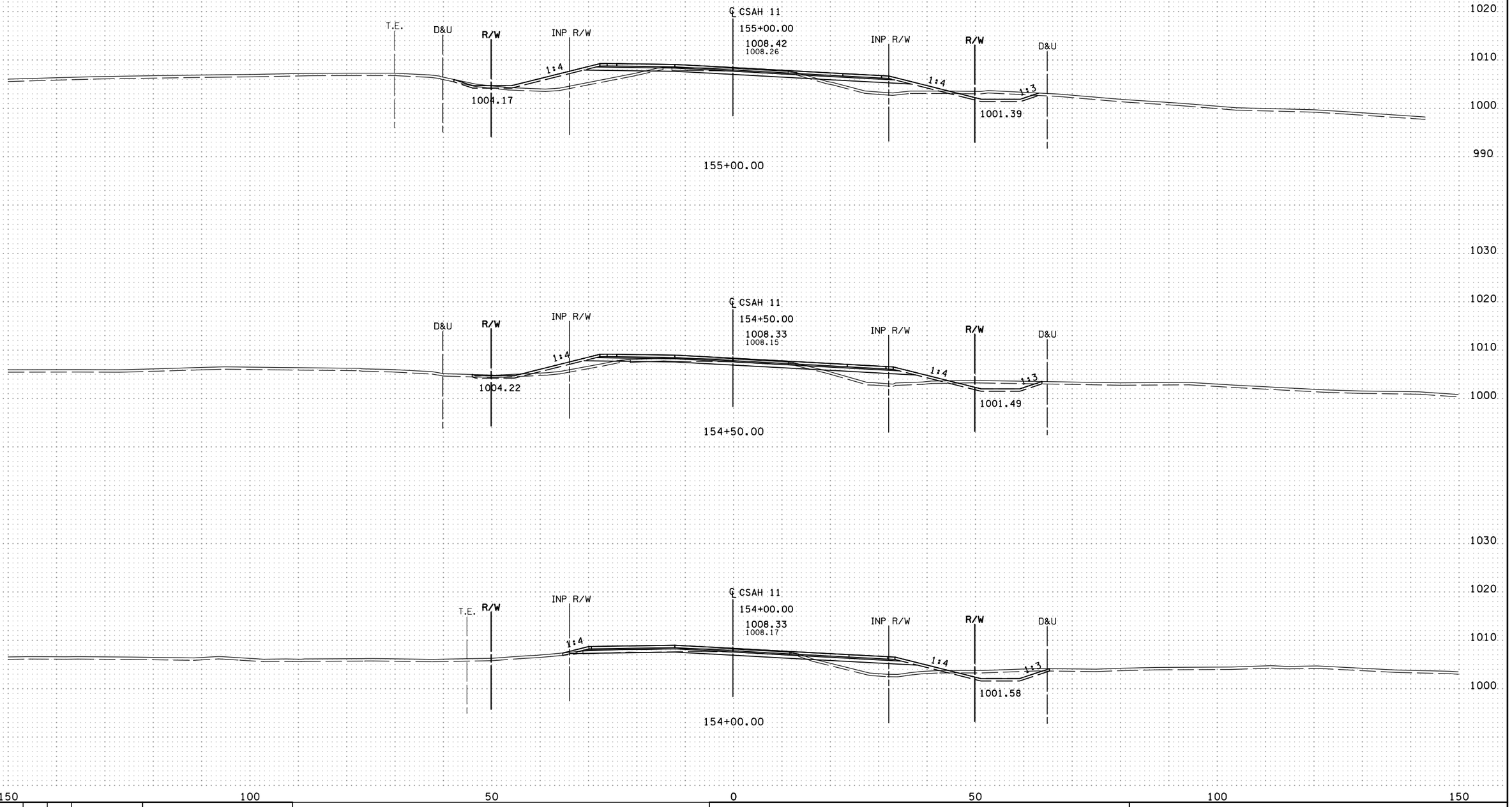

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SAP 010-611-027; CP 218931 (CSAH 11)

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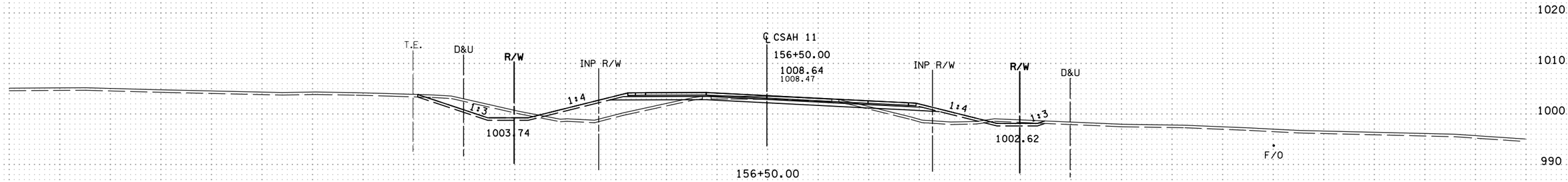

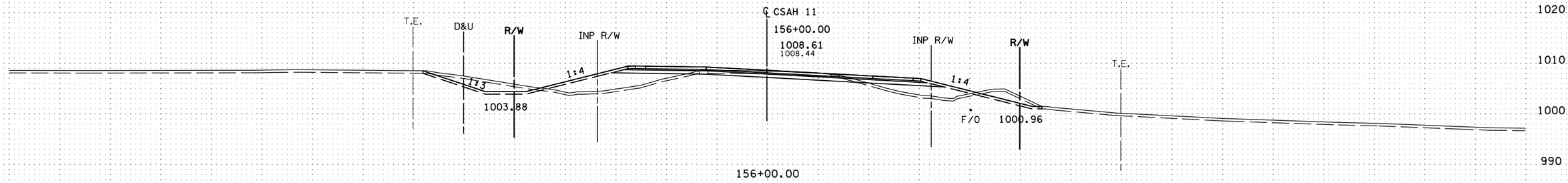

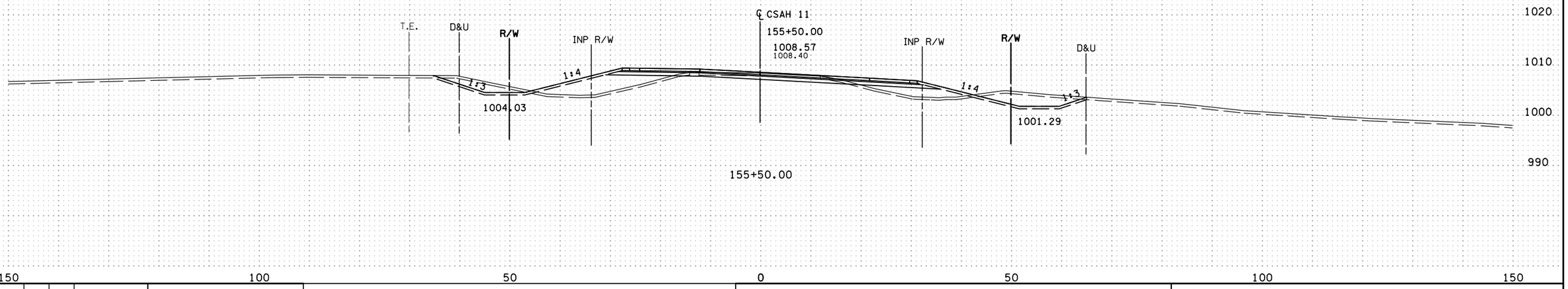

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SAP 010-611-027; CP 218931 (CSAH 11)
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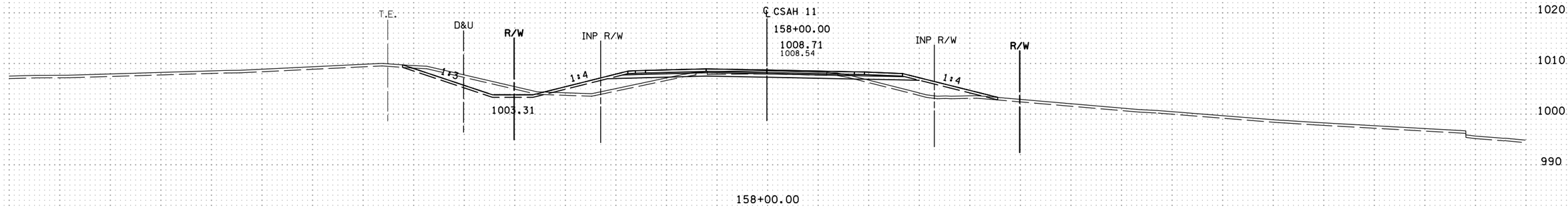

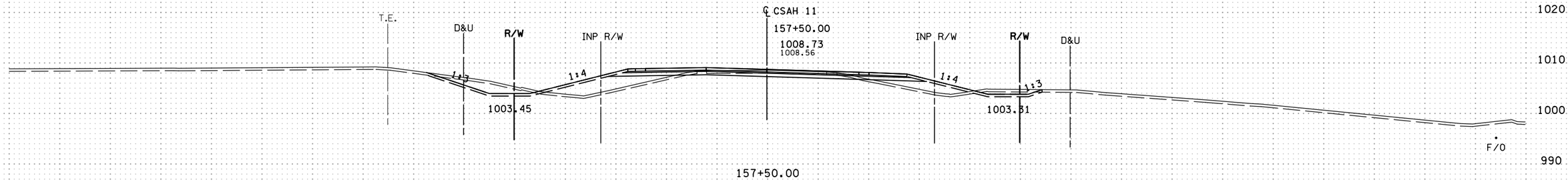

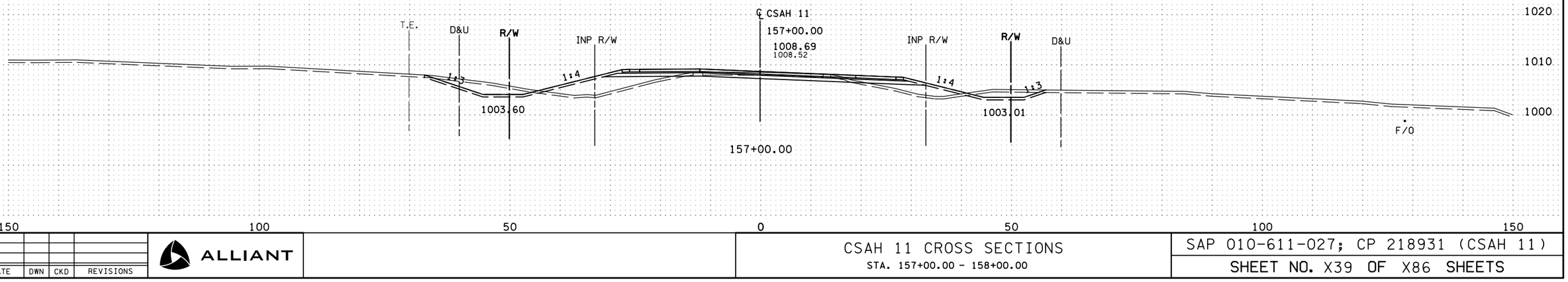

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NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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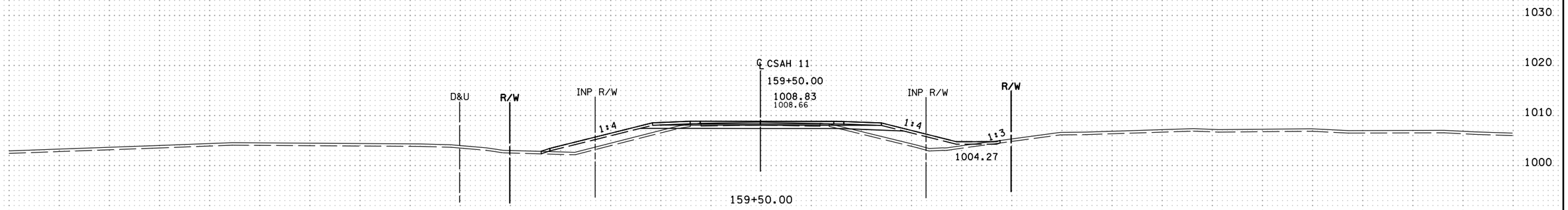

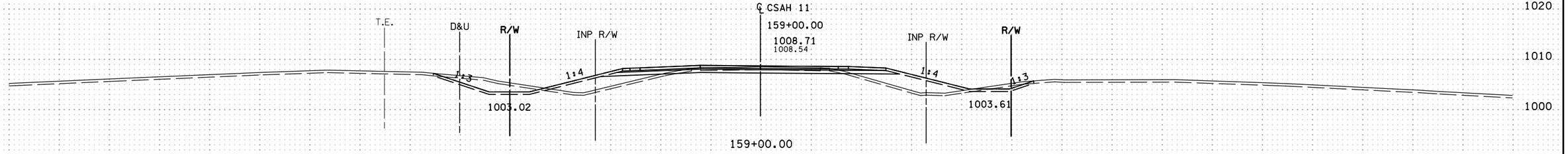

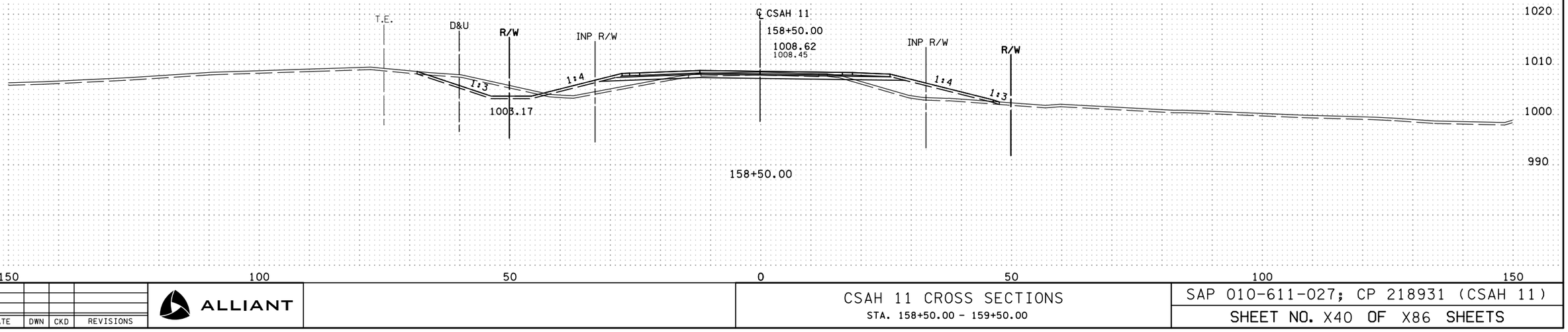

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NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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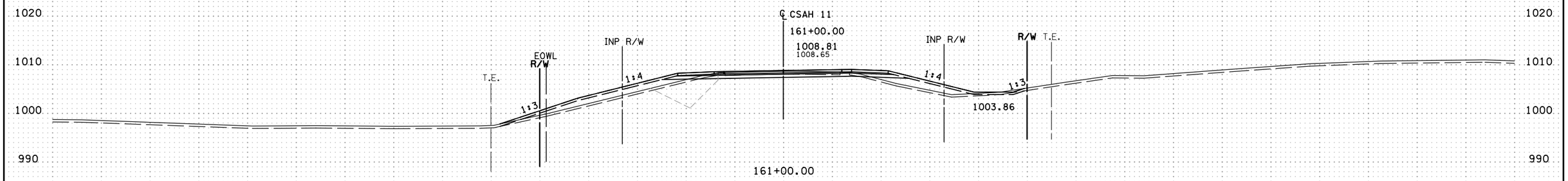

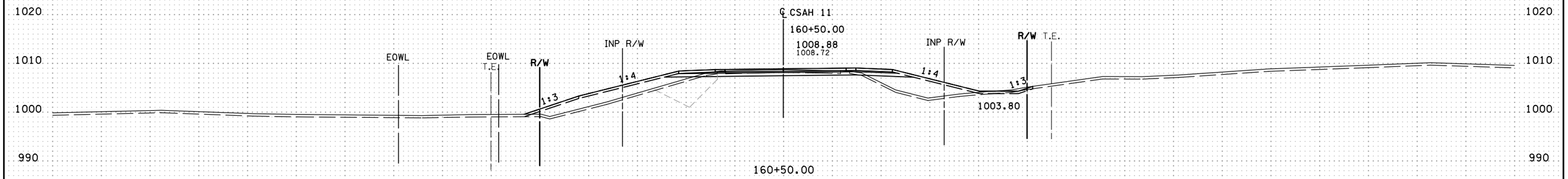

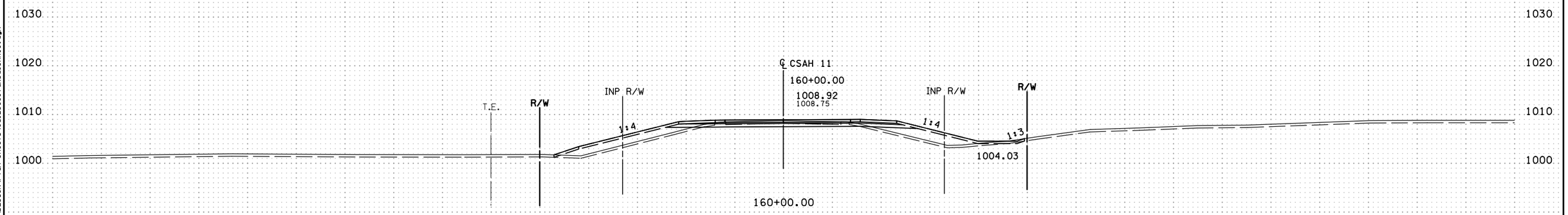

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NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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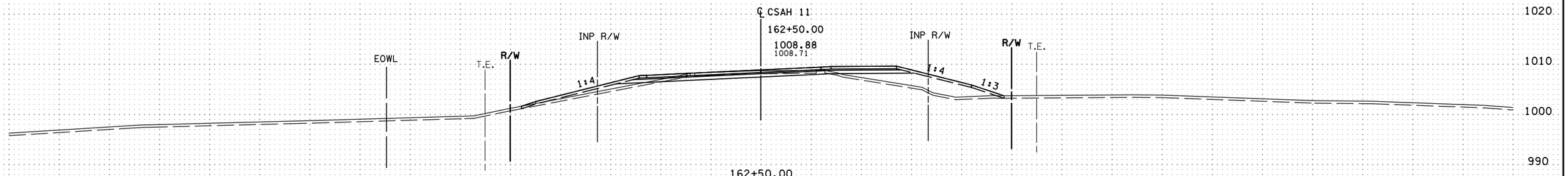

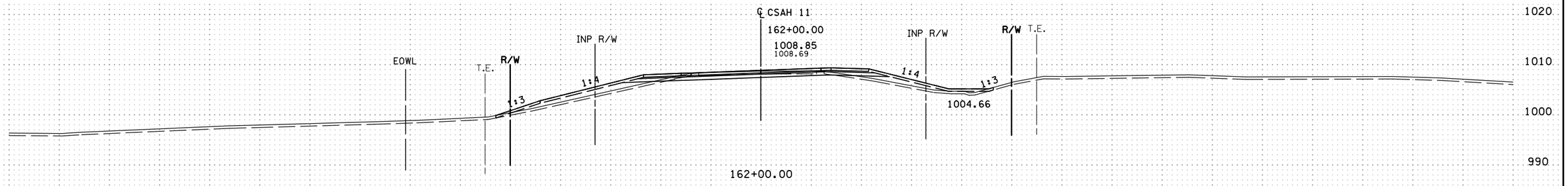

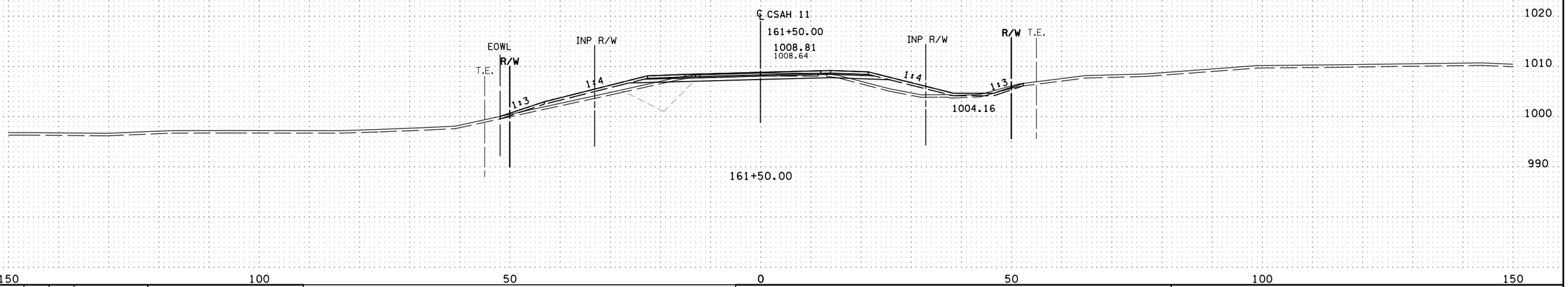

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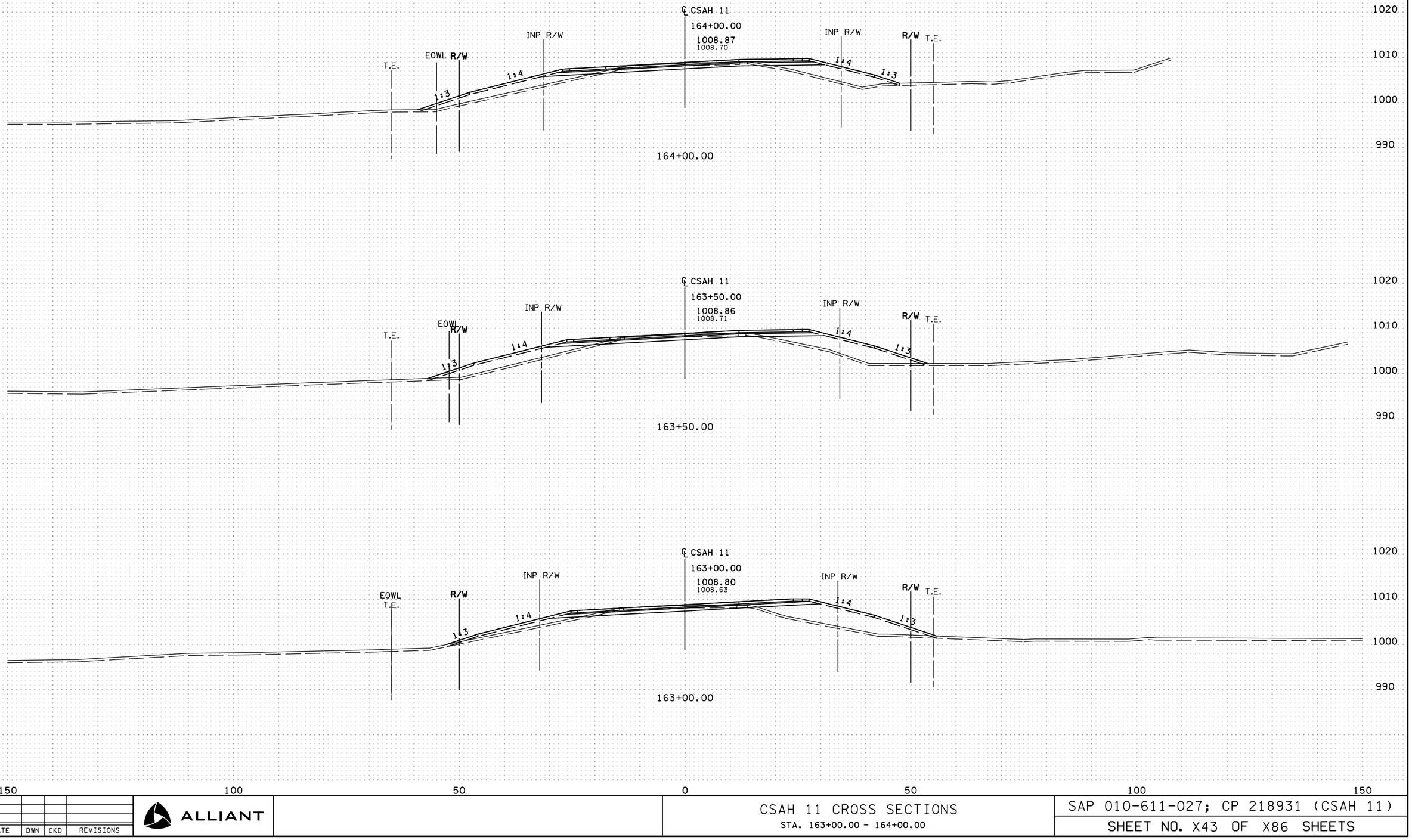

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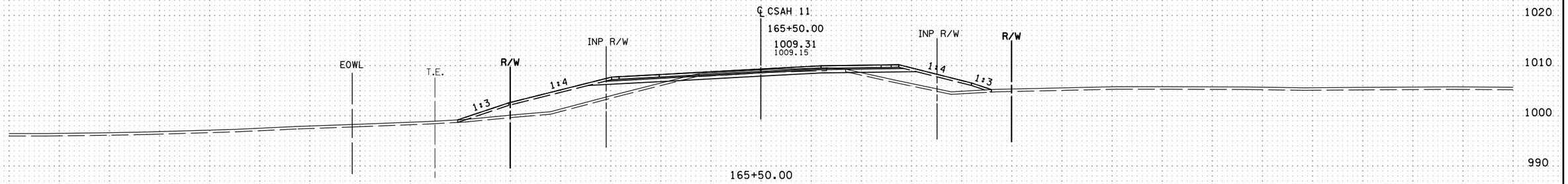

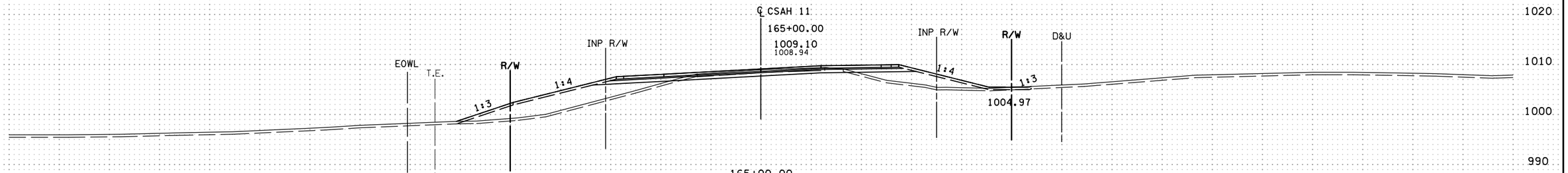

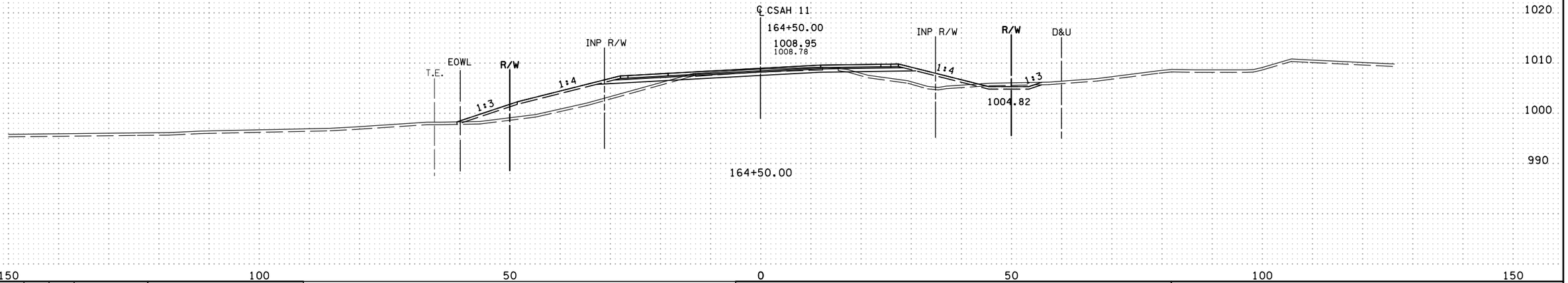

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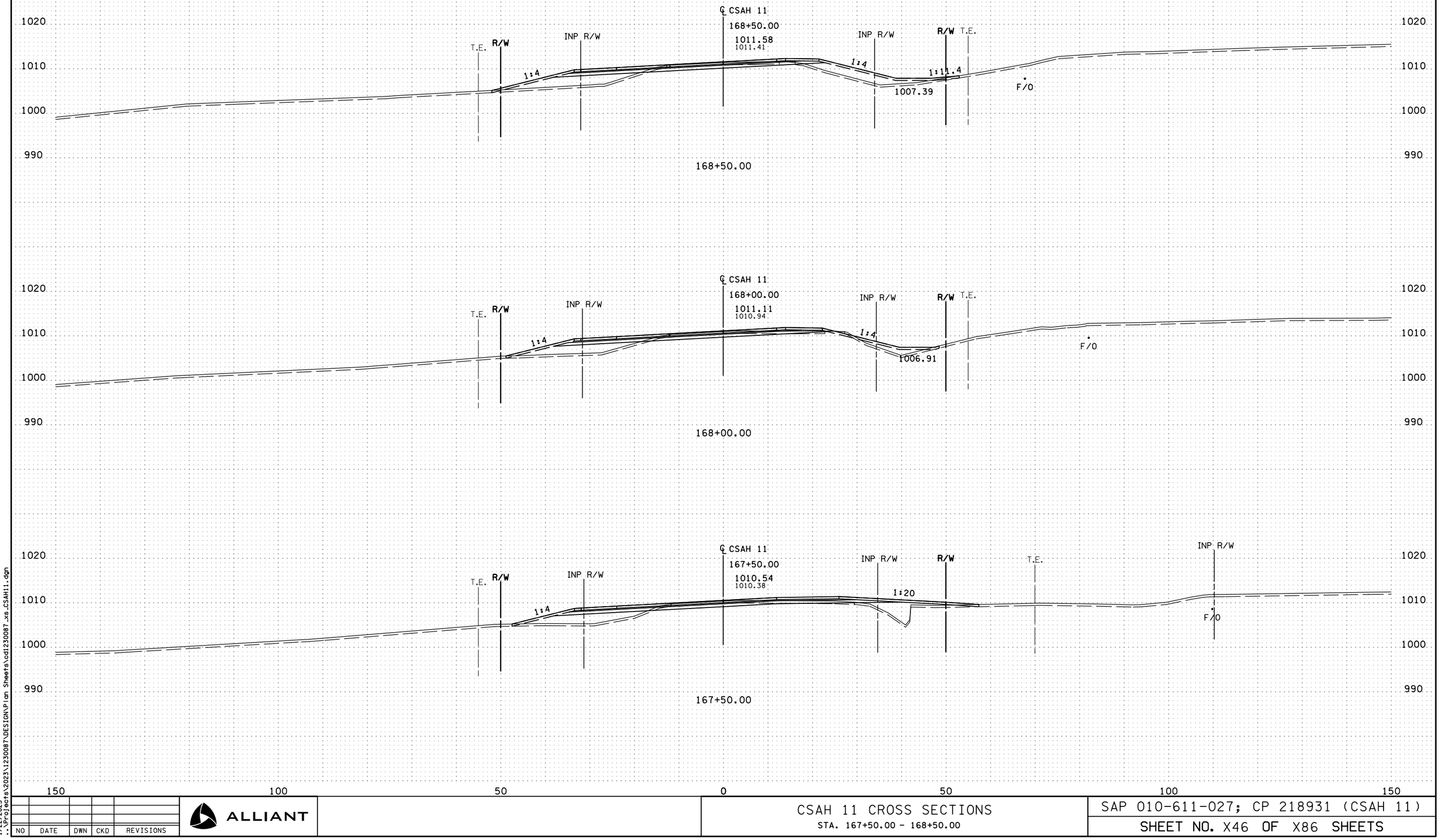

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SAP 010-611-027; CP 218931 (CSAH 11)

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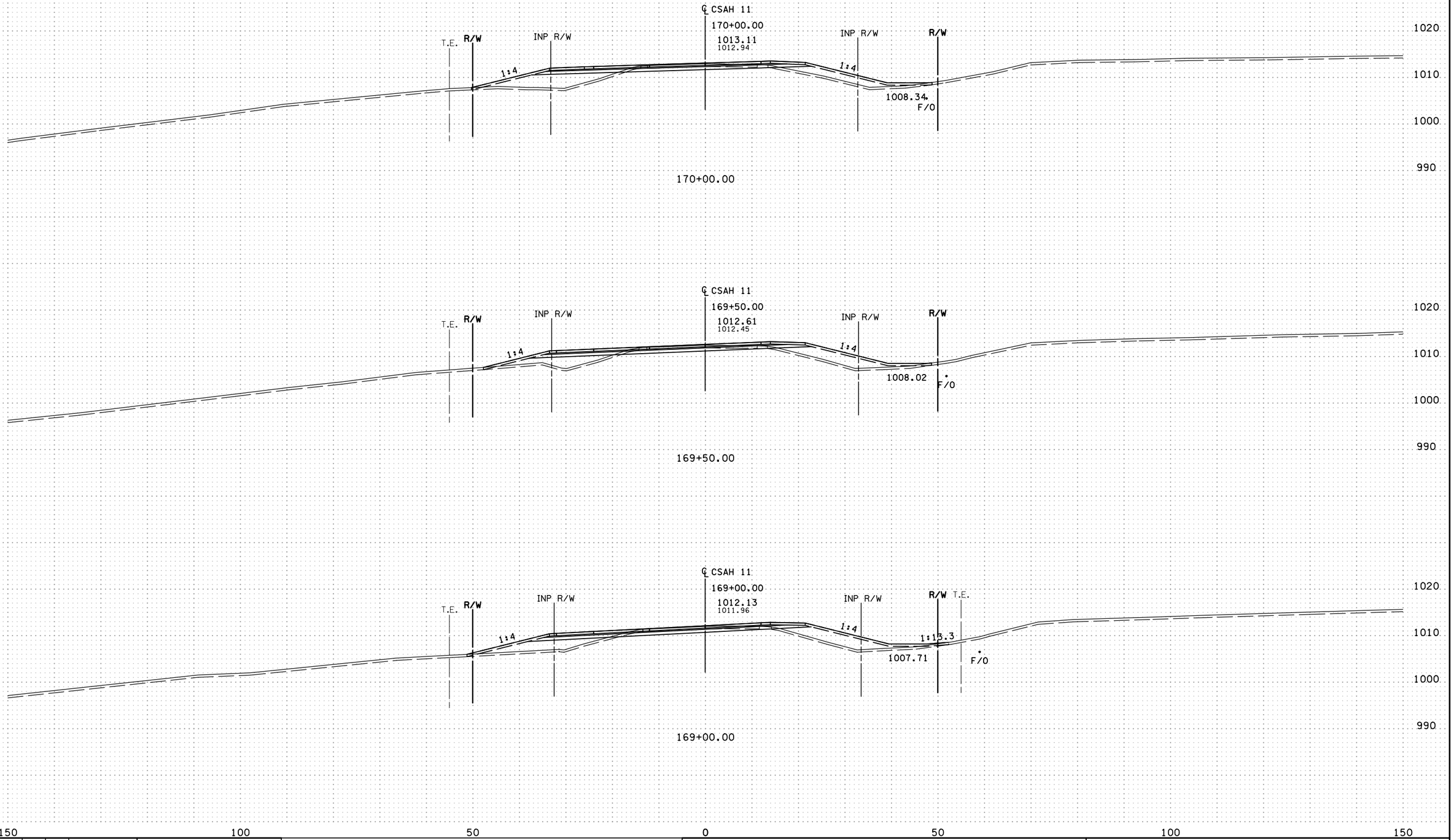

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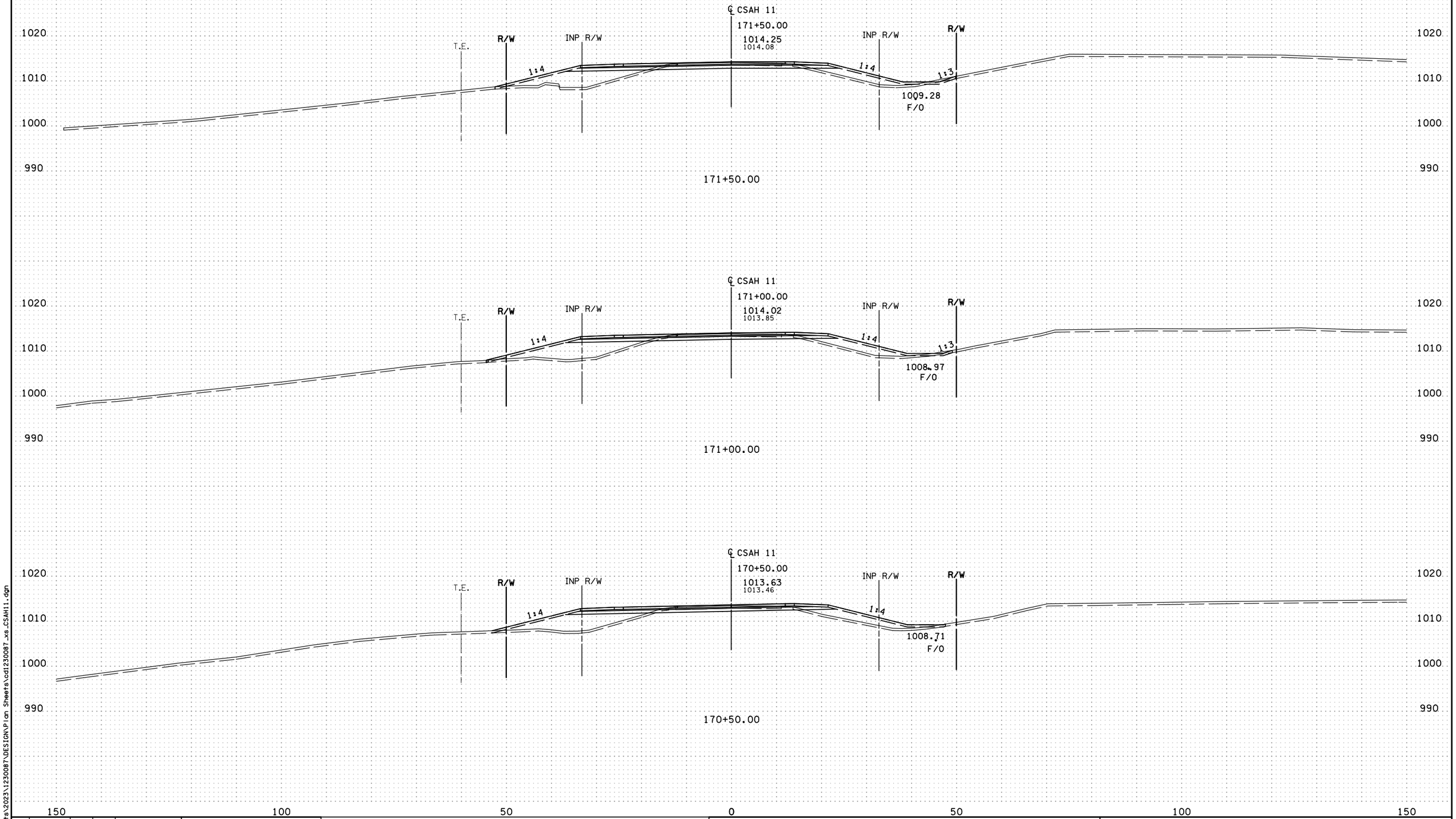

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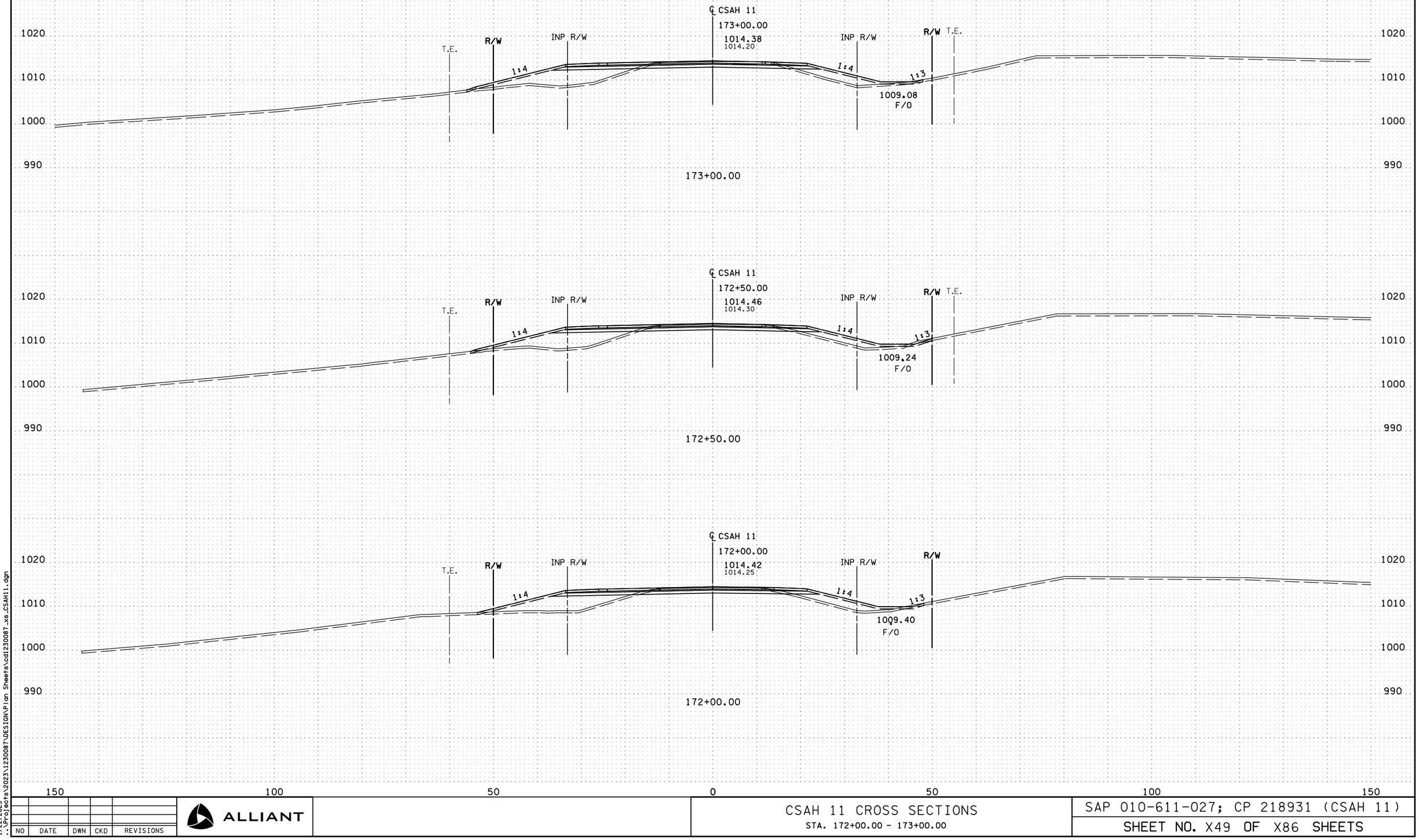

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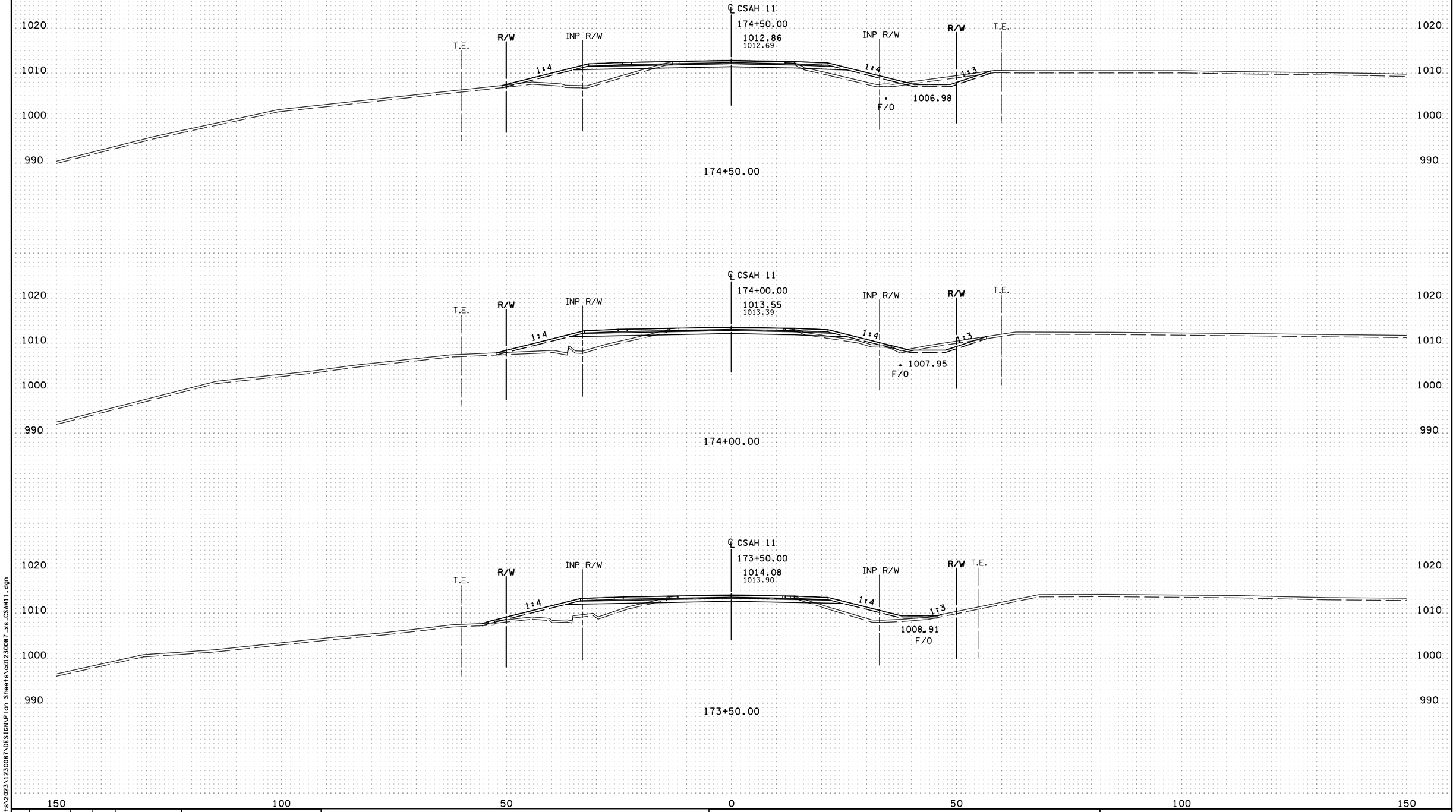

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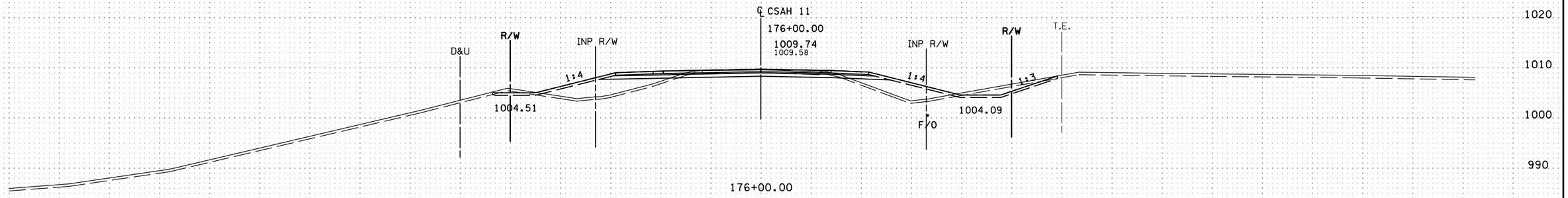

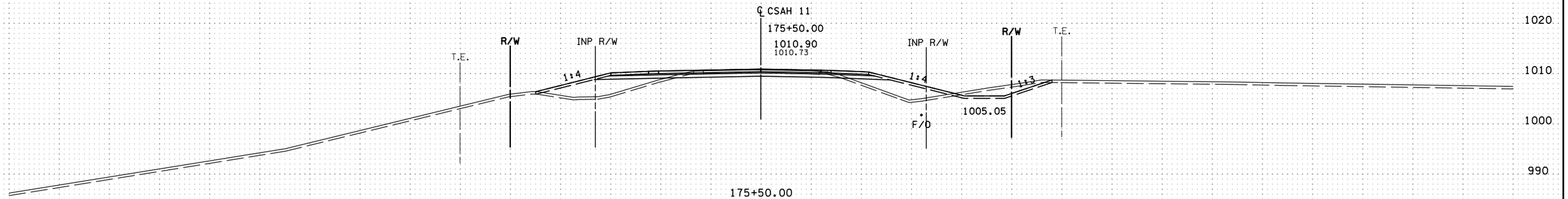

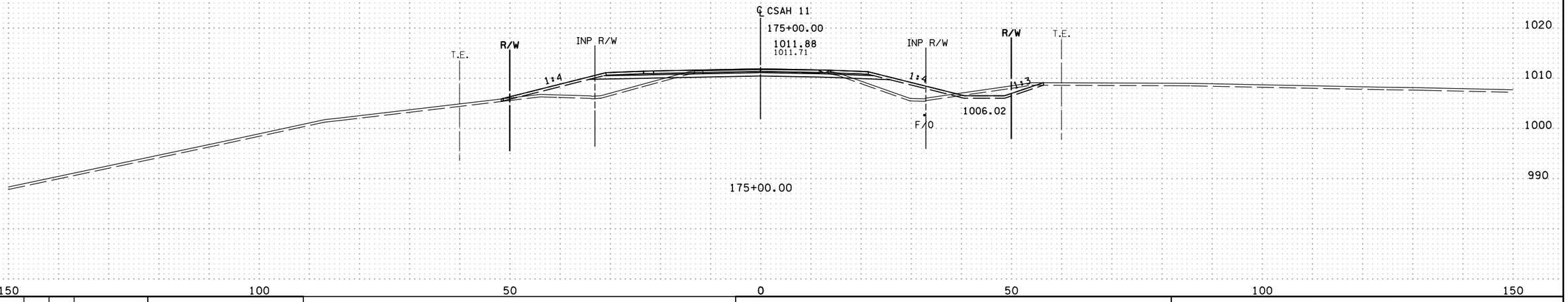

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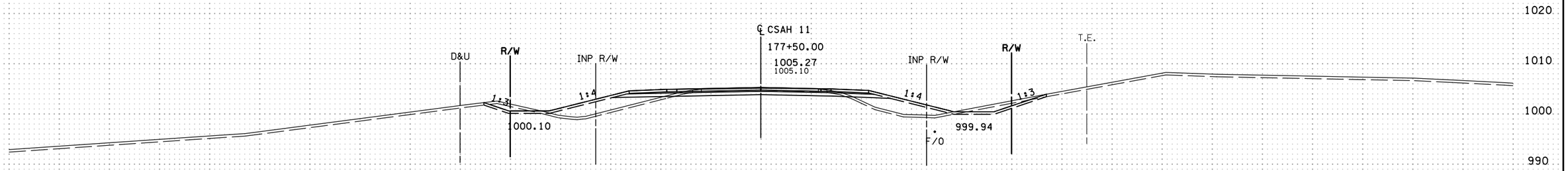

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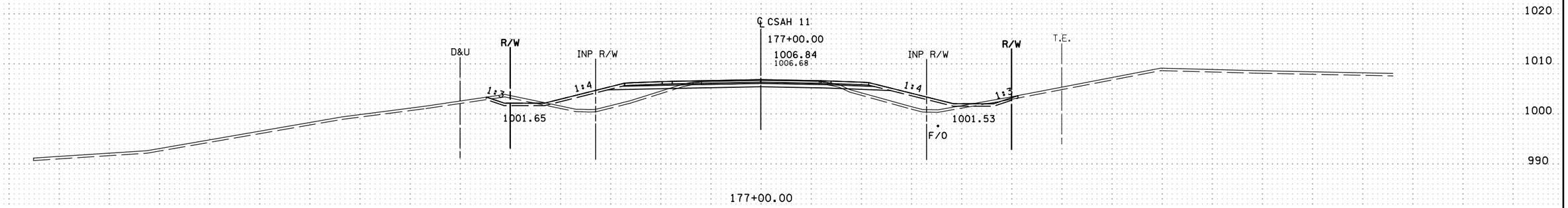

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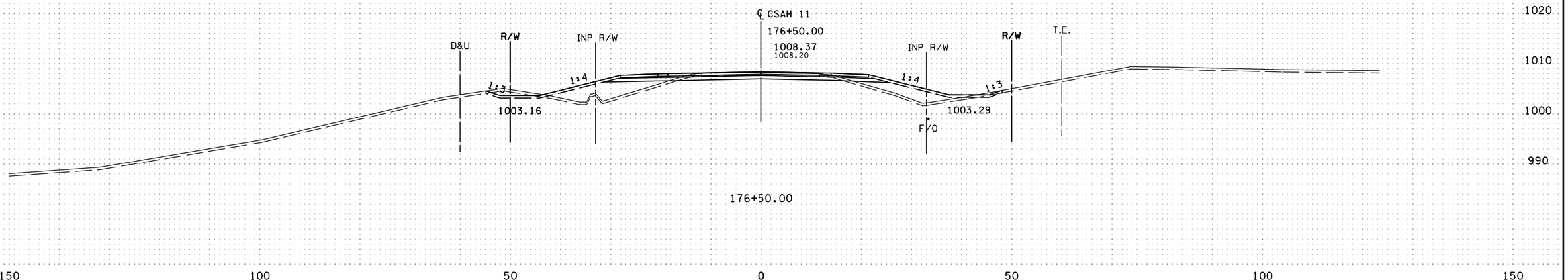

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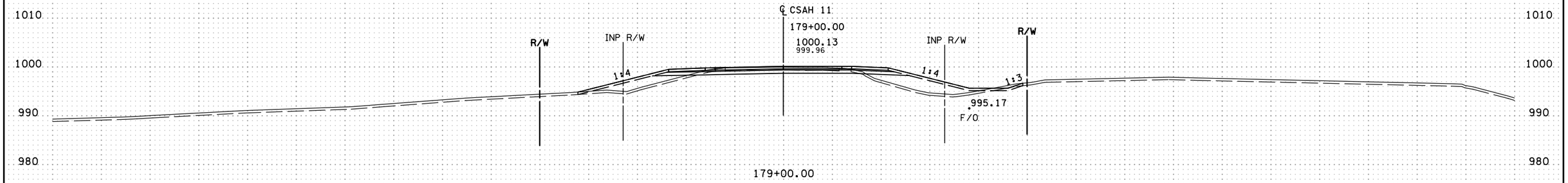

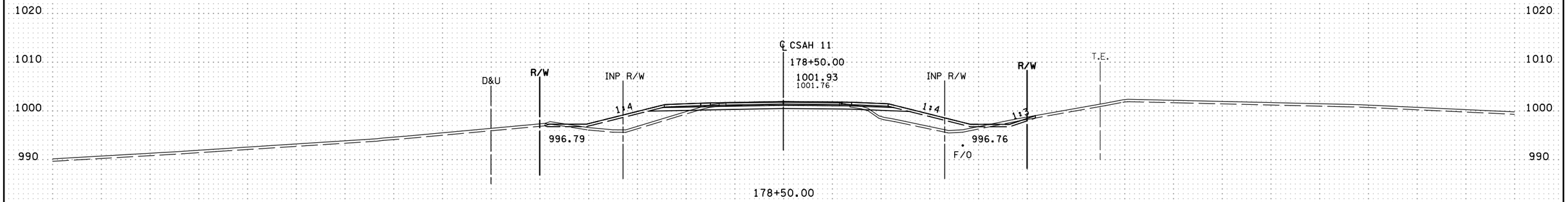

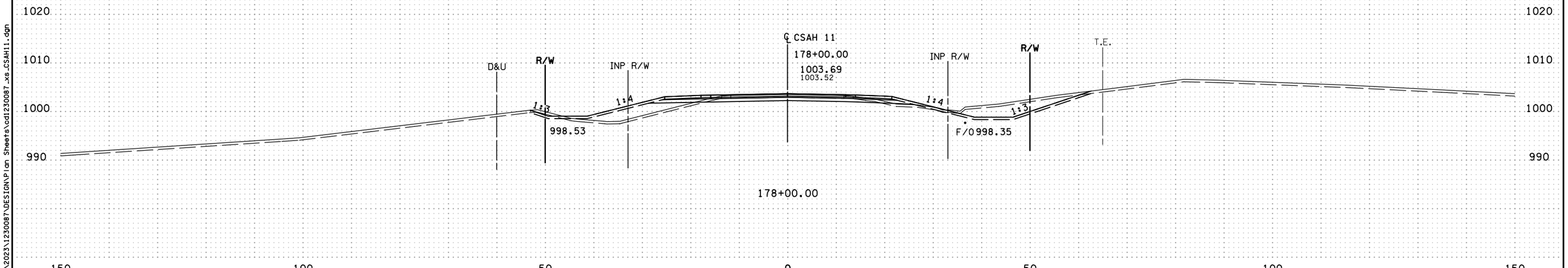

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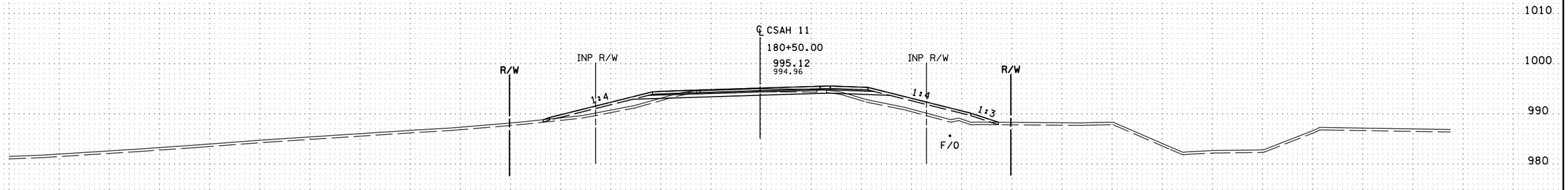

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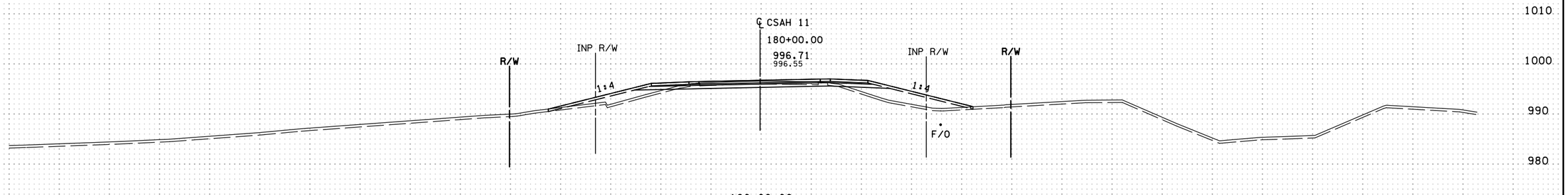

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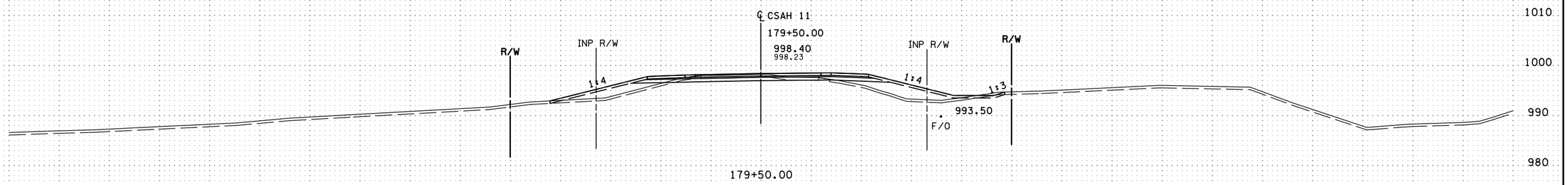

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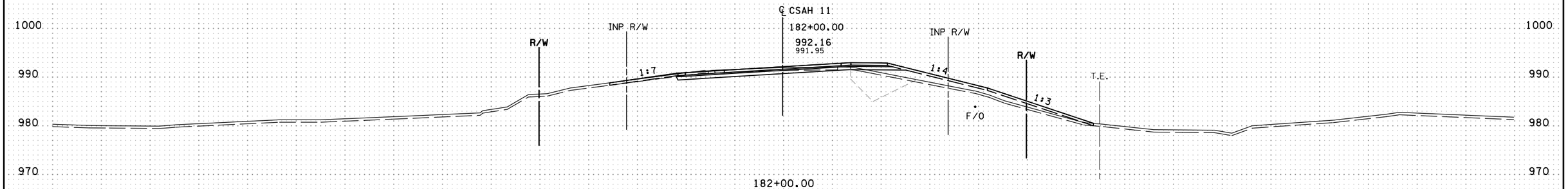

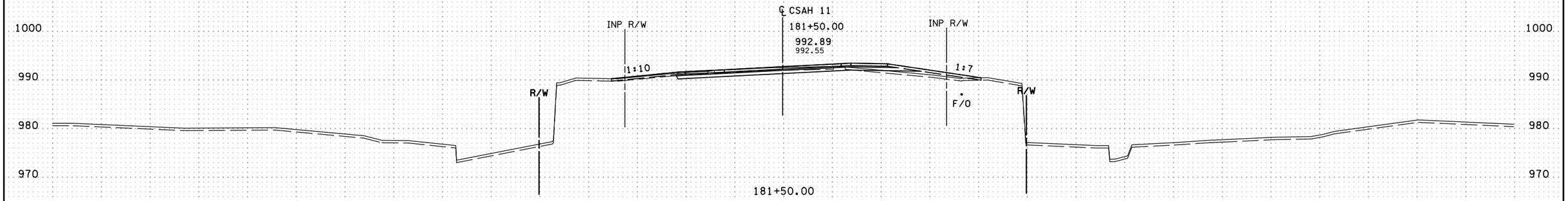

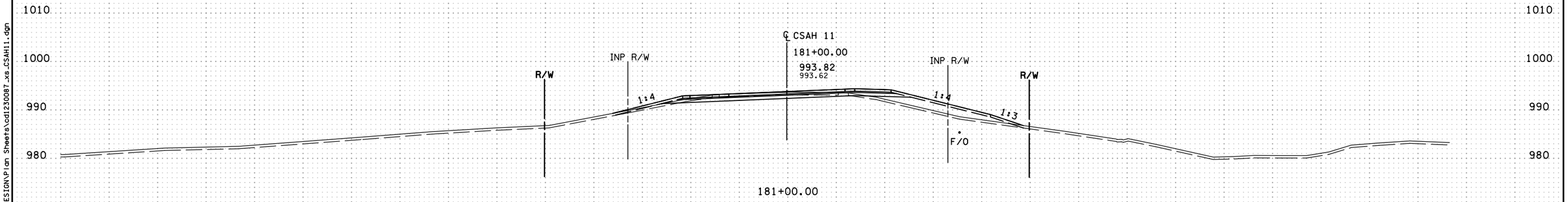

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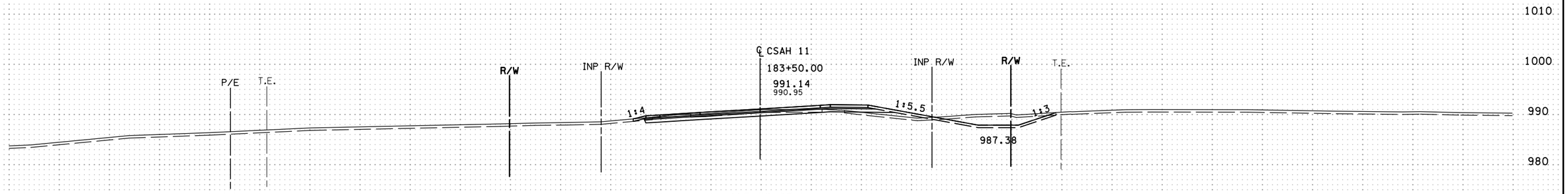

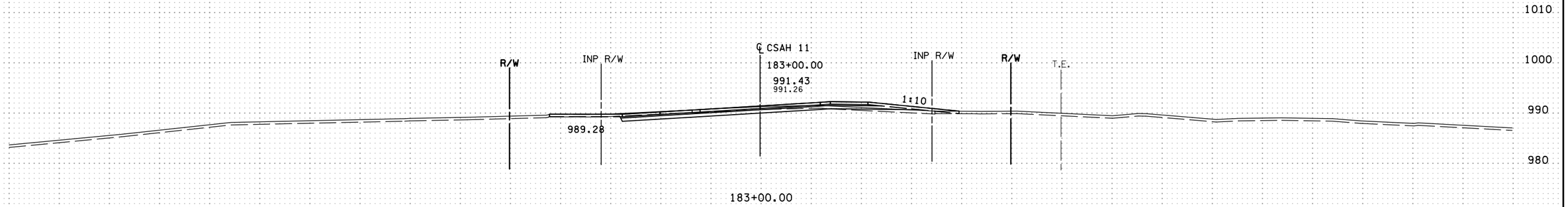

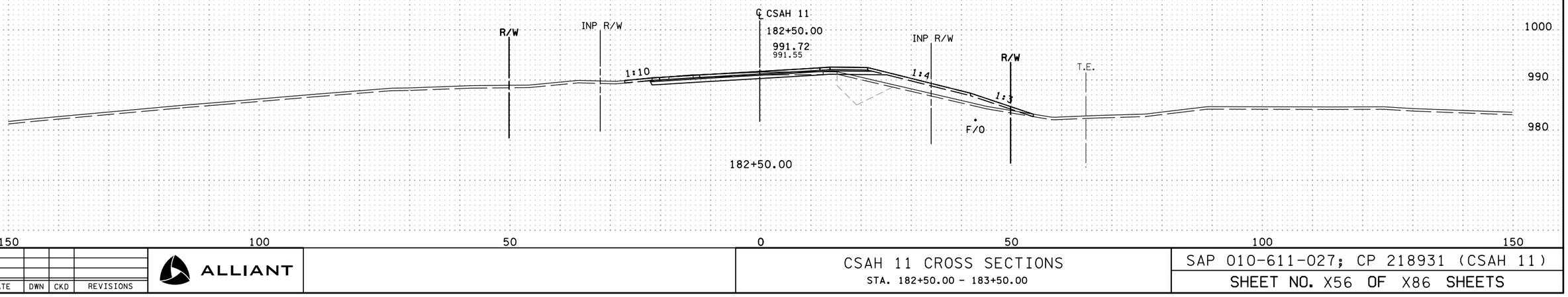

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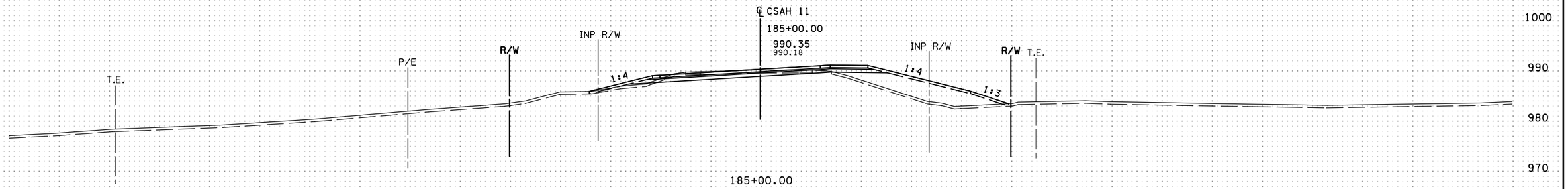

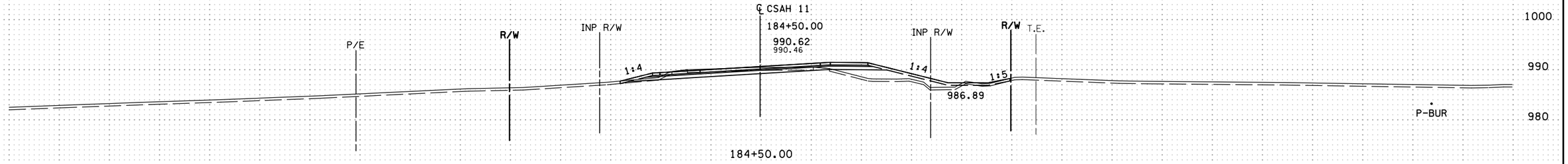

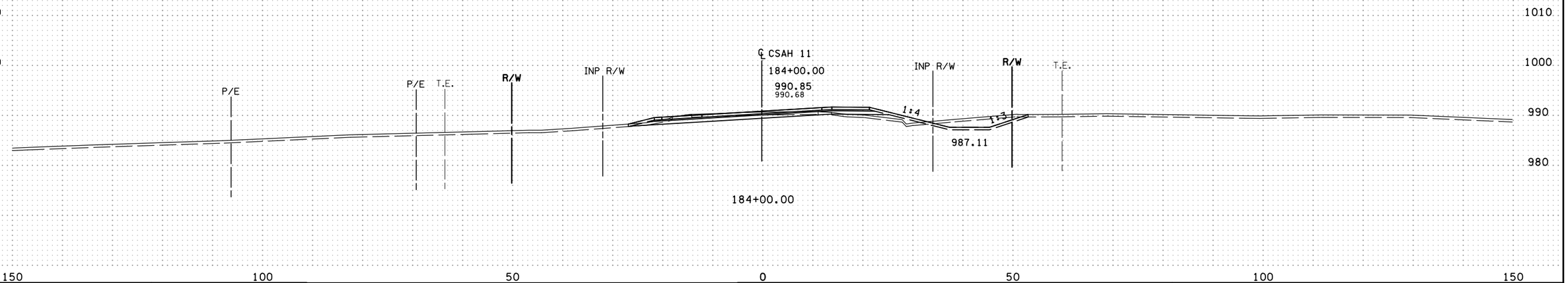

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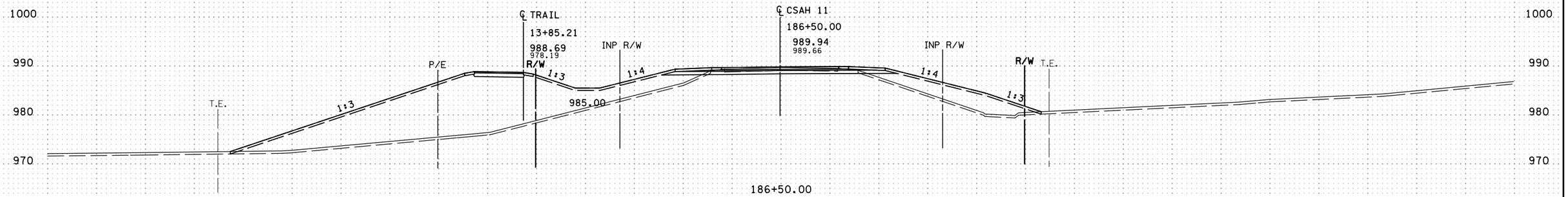

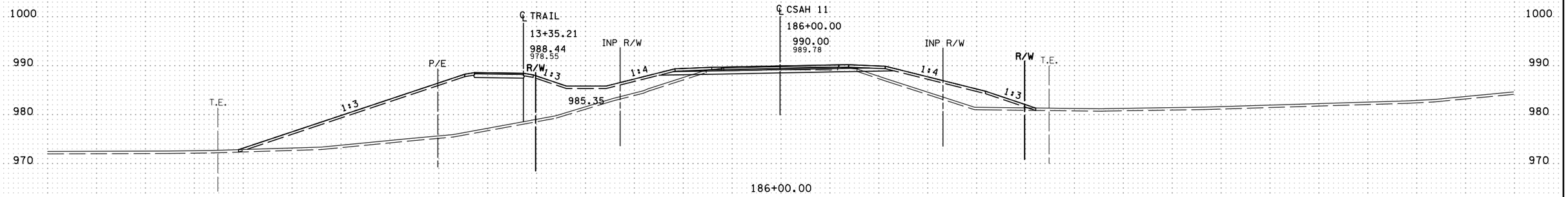

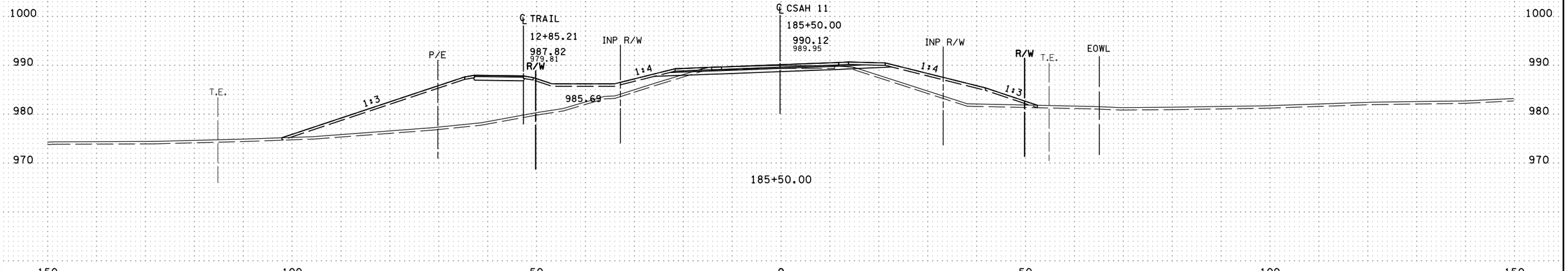

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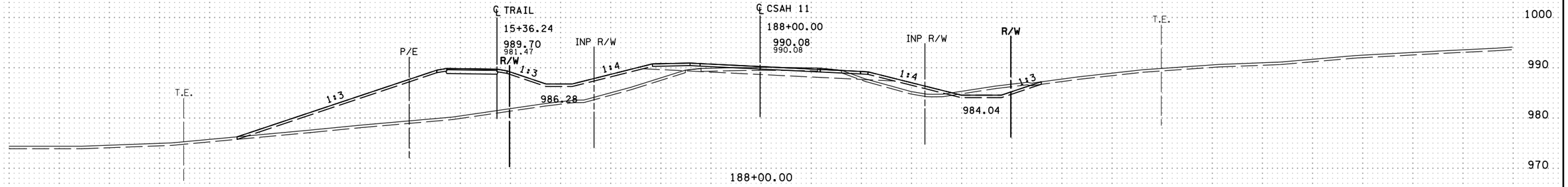

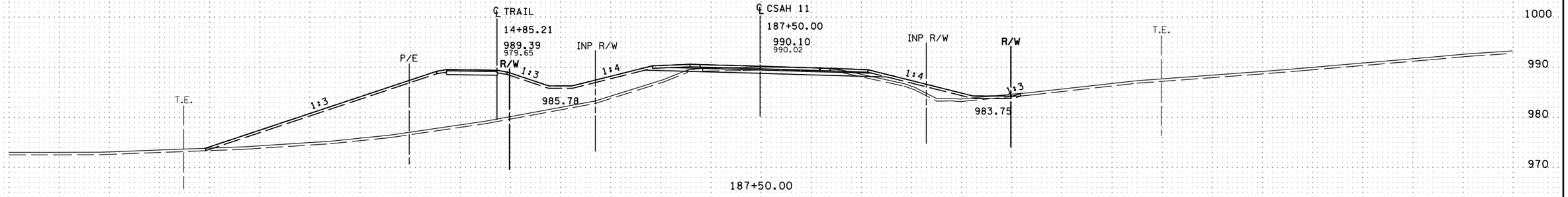

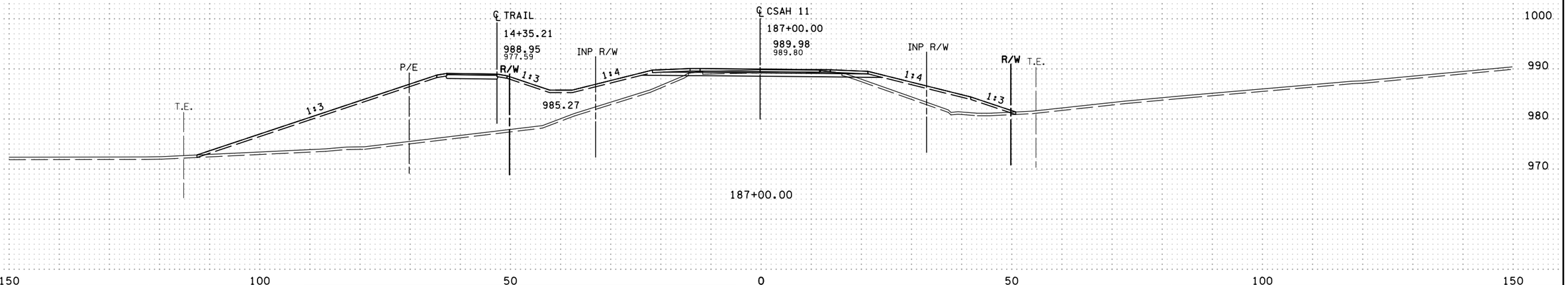

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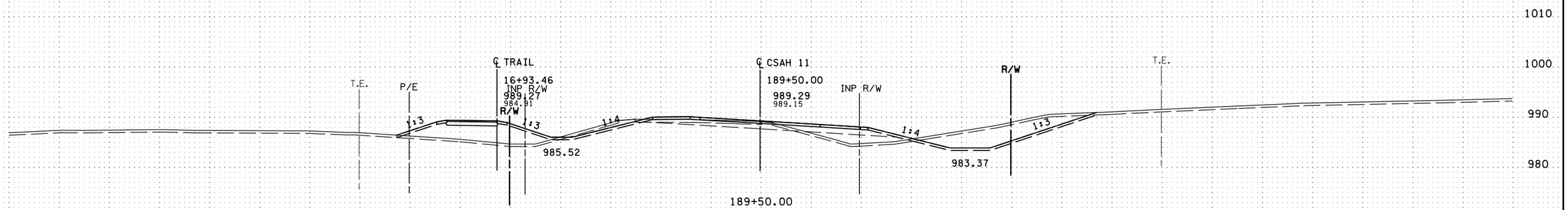

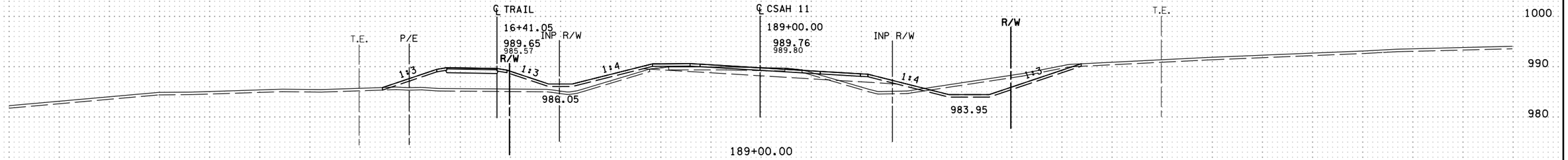

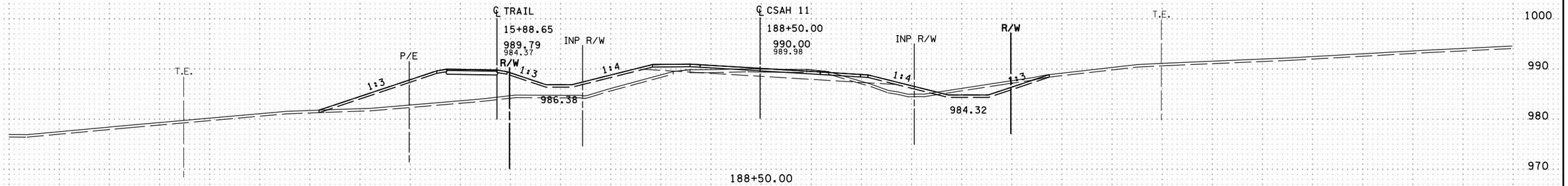

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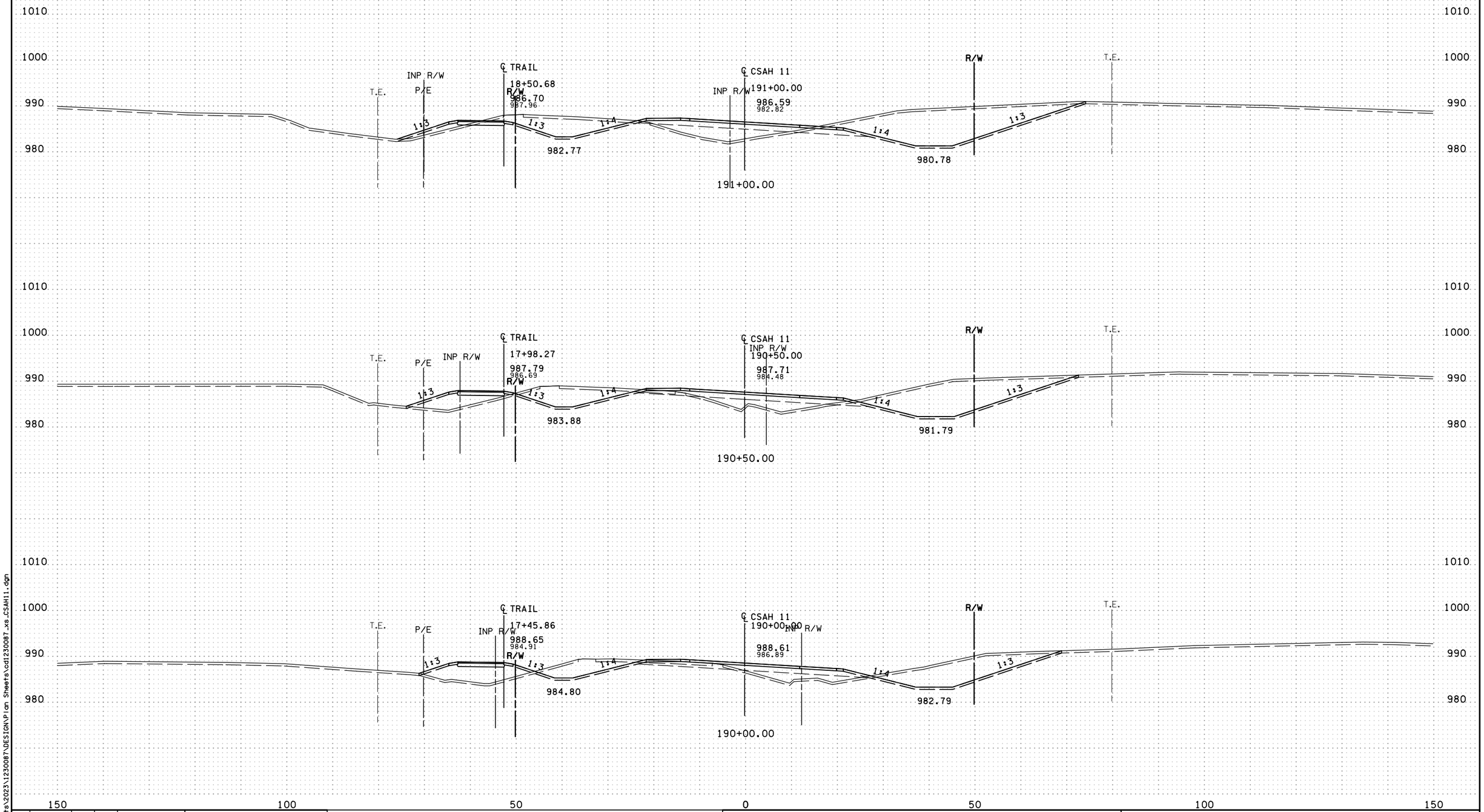

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SAP 010-611-027; CP 218931 (CSAH 11)

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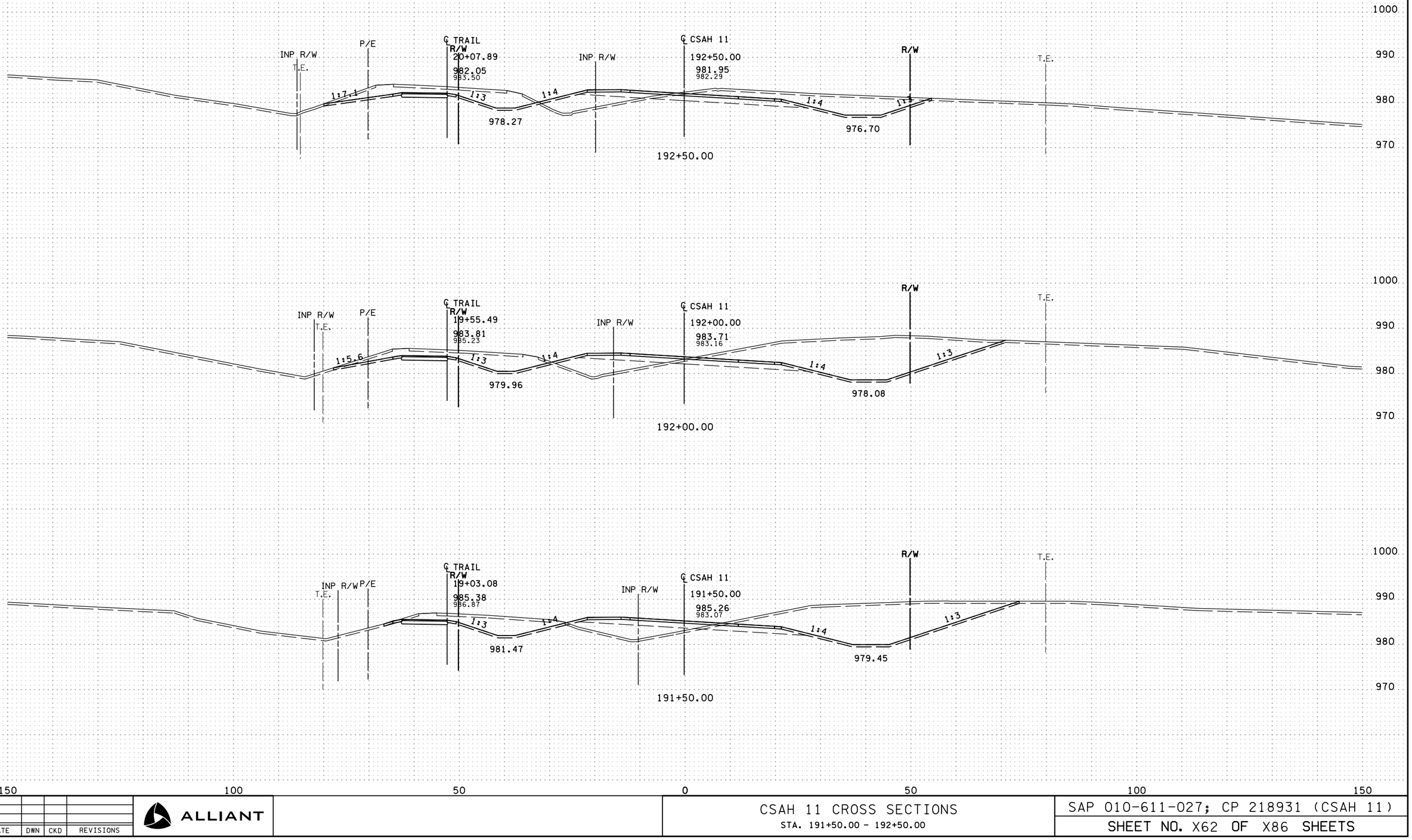

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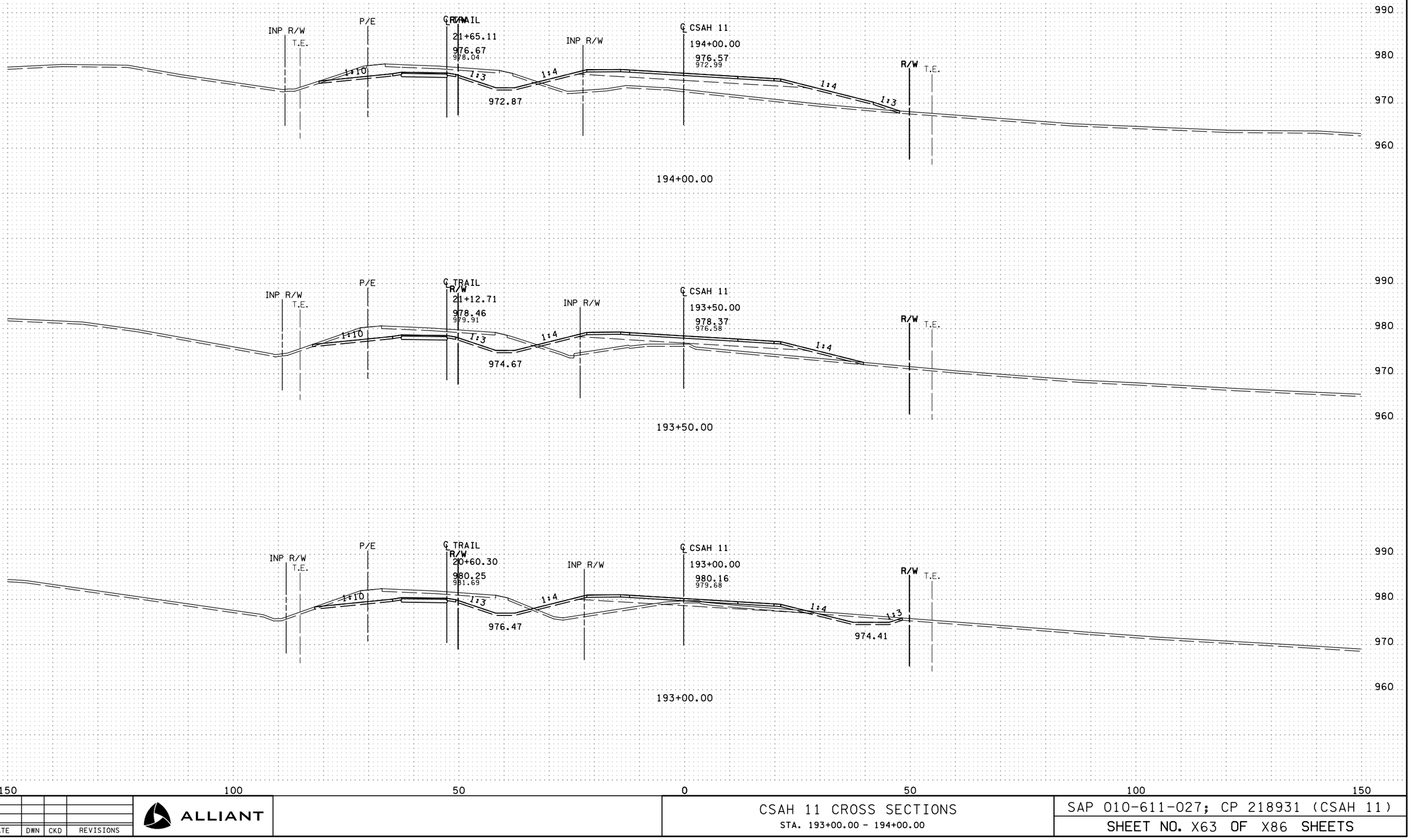

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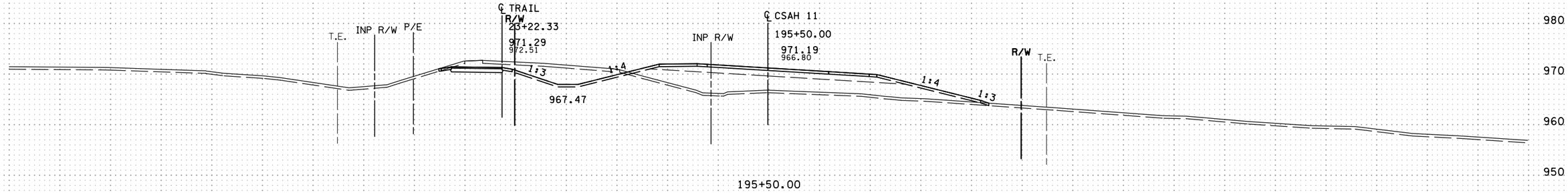

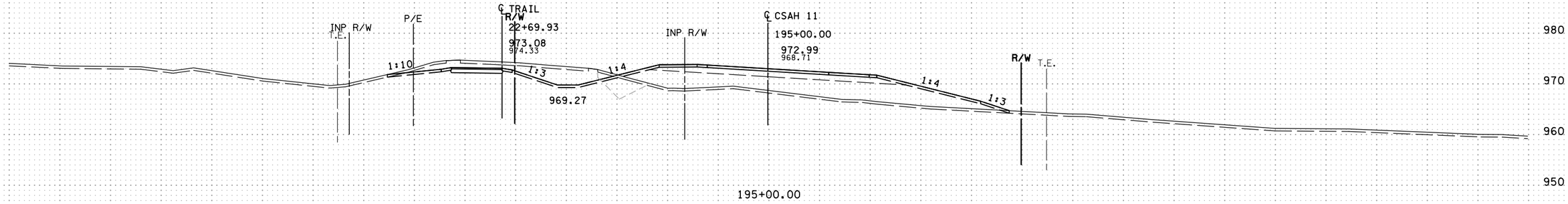

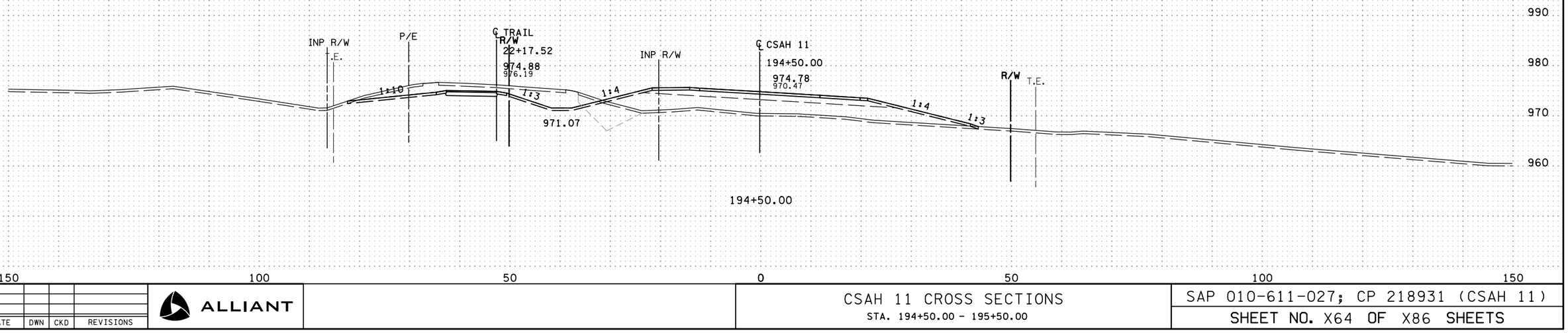

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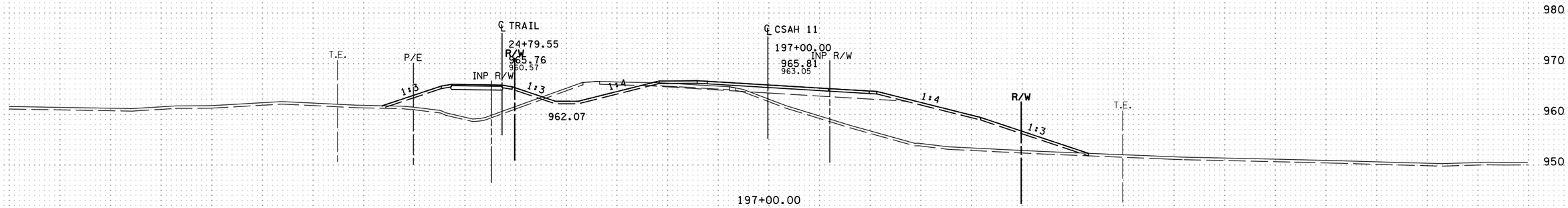

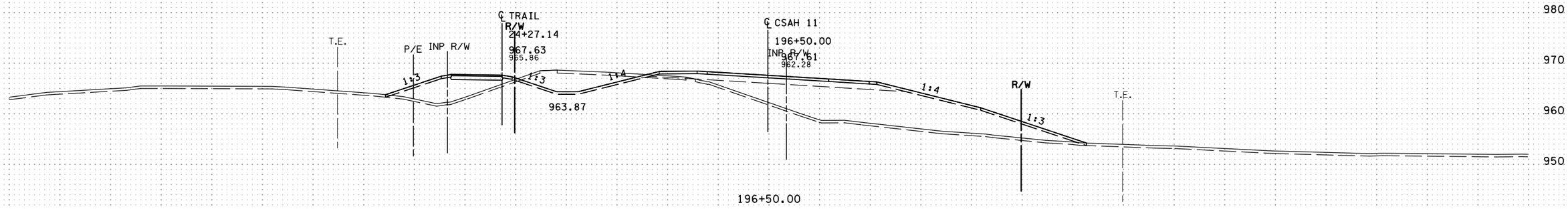

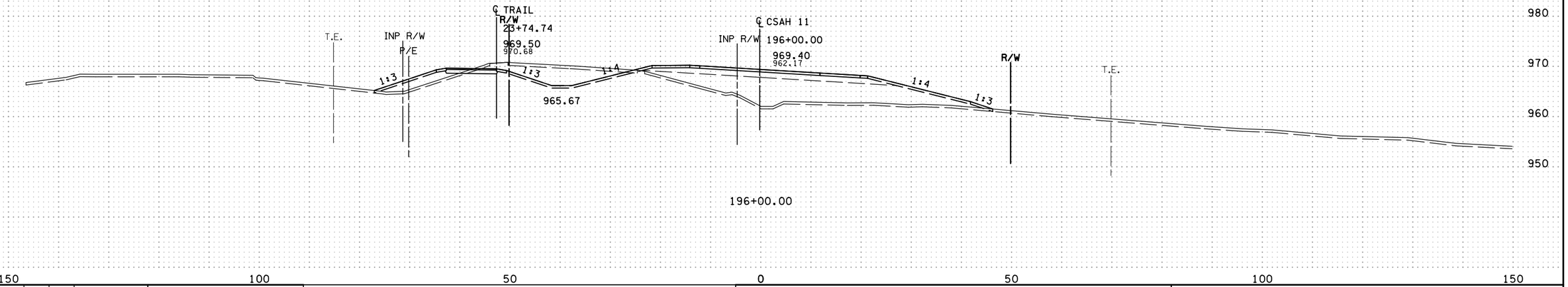

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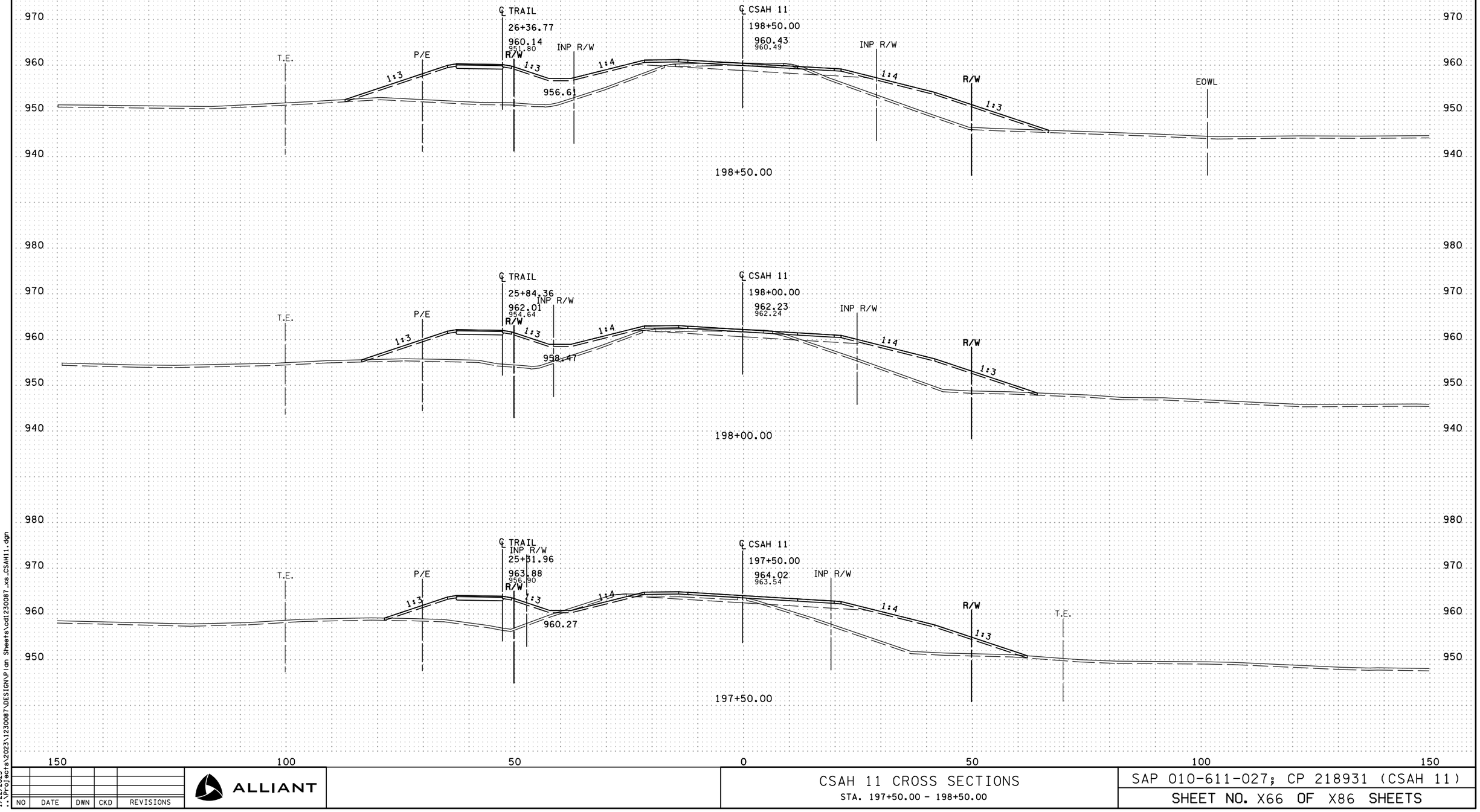

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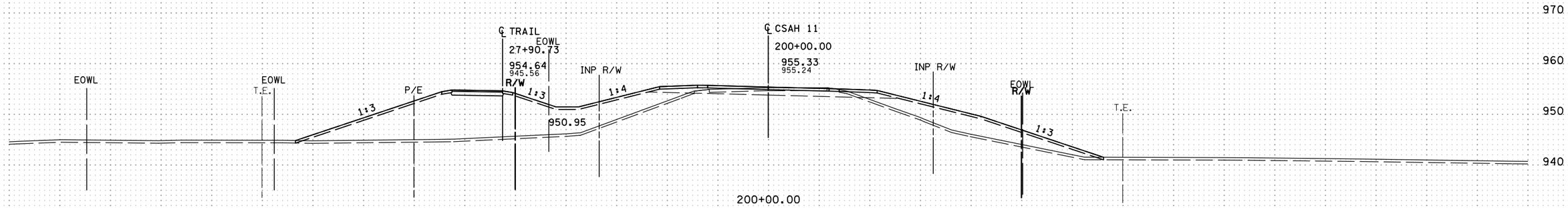

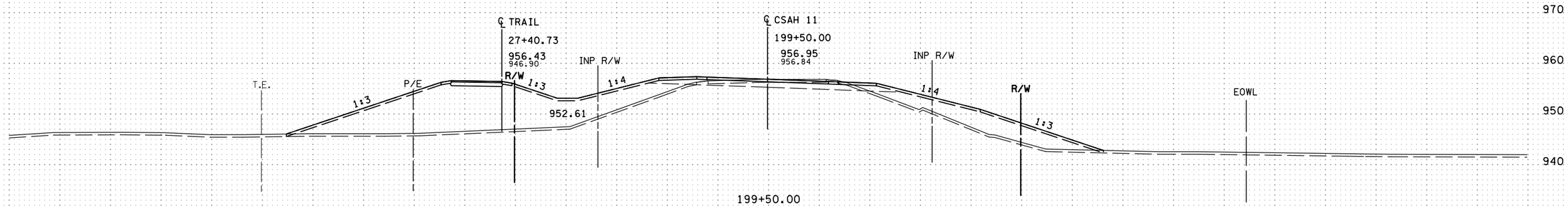

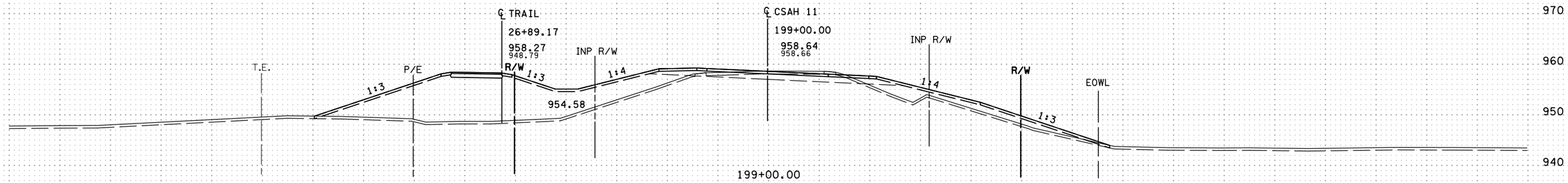

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SAP 010-611-027; CP 218931 (CSAH 11)

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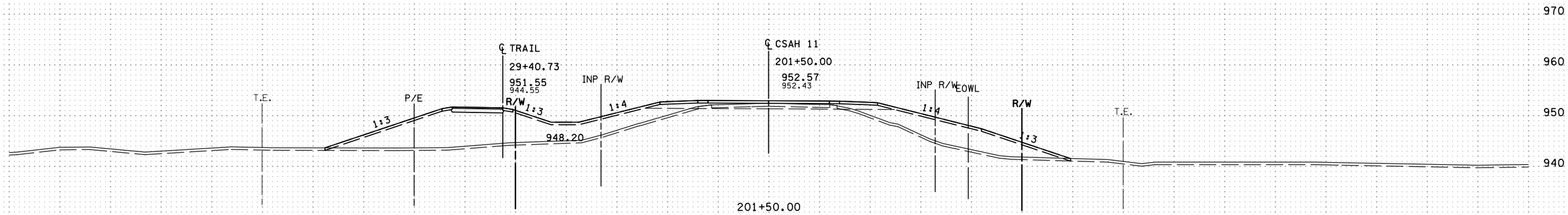

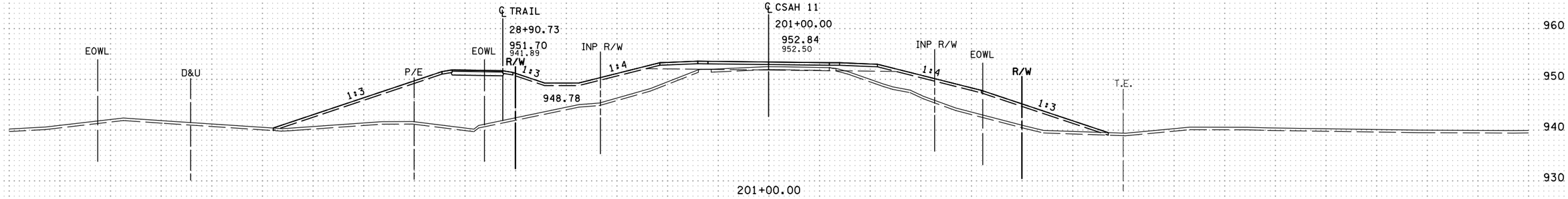

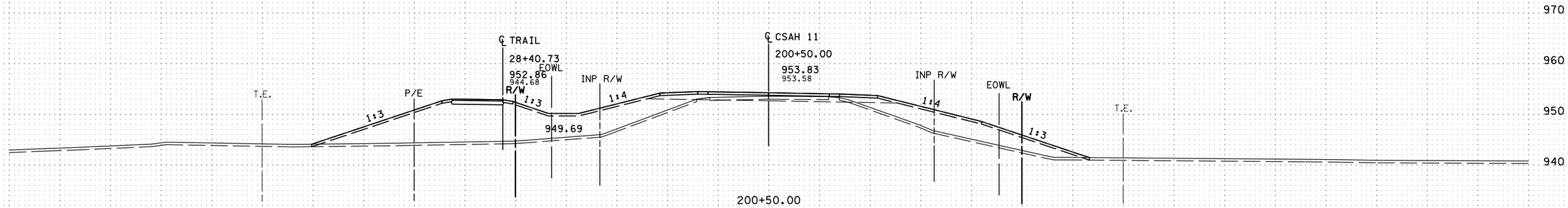

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