

Schram Park Pedestrian Bridge and Improvements

MANCHESTER, IOWA



LOCATION MAP
NOT TO SCALE

GENERAL NOTES:

1. THESE ARE FOR AN EDUCATIONAL PROJECT AND NOT FOR CONSTRUCTION.
2. TYPICAL DRAWINGS ARE INCLUDED TO SHOW MATERIAL ESTIMATES.
3. UTILITIES SHOWN ARE FOR REFERENCE ONLY AND MAY NOT INCLUDE ALL UTILITIES IN THE AREA.

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TITLE SHEET

Project Manager: CRS
Designer: ALL
Date: 12/11/2020
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Sheet
A.01

LEGEND IS FROM SUDAS

	Existing	Proposed
Contour w/ Elevation		
Board Fence		
Chain Link Fence		
Barbed Wire Fence		
Woven Fence		
Barbed Wire and Woven Fence		
Tree Line		
Tree Stump		
Deciduous Tree		
Coniferous Tree		
Tree To Be Removed		
Shrub		
Soil Boring		
Underground Telephone		
Overhead Telephone		
Fiber Optic Telephone		
Underground Electric		
Overhead Electric		
Underground Television		
Overhead Television		
Gas Main with Size		
High Pressure Gas Main w/ Size		
Water Main with Size		
Sanitary Sewer with Size		
Septic Tank		
Storm Sewer with Size		
Manhole		
Storm Sewer Intake		
Beehive Intake		
Fire Hydrant		
Water Main Valve		
Water Service Valve		
Utility Pole		
Street Light		
Traffic Sign		
Traffic Signal Cable		

	Existing	Proposed
Telephone Junction Box		
Gas Valve		
Cable TV Junction Box		
Fence Post or Guard Post		
Underground Storage Tank		
Above Ground Storage Tank		
Satellite Dish		
Interstate Highway Symbol		
U.S. Highway Symbol		
State Highway Symbol		
County Road Highway Symbol		
Benchmark		
Concrete Monument		
Terrace		
Earth Dam or Dike		
Edge of Water		
Existing Drainage Channel		
Well		
Traffic Signal Pedestal		
Traffic Signal with Mast Arm		
Traffic Signal Cabinet Controller		
Flared End Section		
Guy Anchor		
Mailbox		
Speed Limit Sign		
Mile Marker Post		
Electric Box		
Rail Road Signal Control Box		
Top of Embankment		
Drainage Course		
Rip Rap		
Gabion		
Concrete Surface		
Granular Surface		
Concrete Wall		
Timber Wall		
Railroad Track		

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LEGEND		
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A.02



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PHASE 1

PHASE 2

PHASE 3

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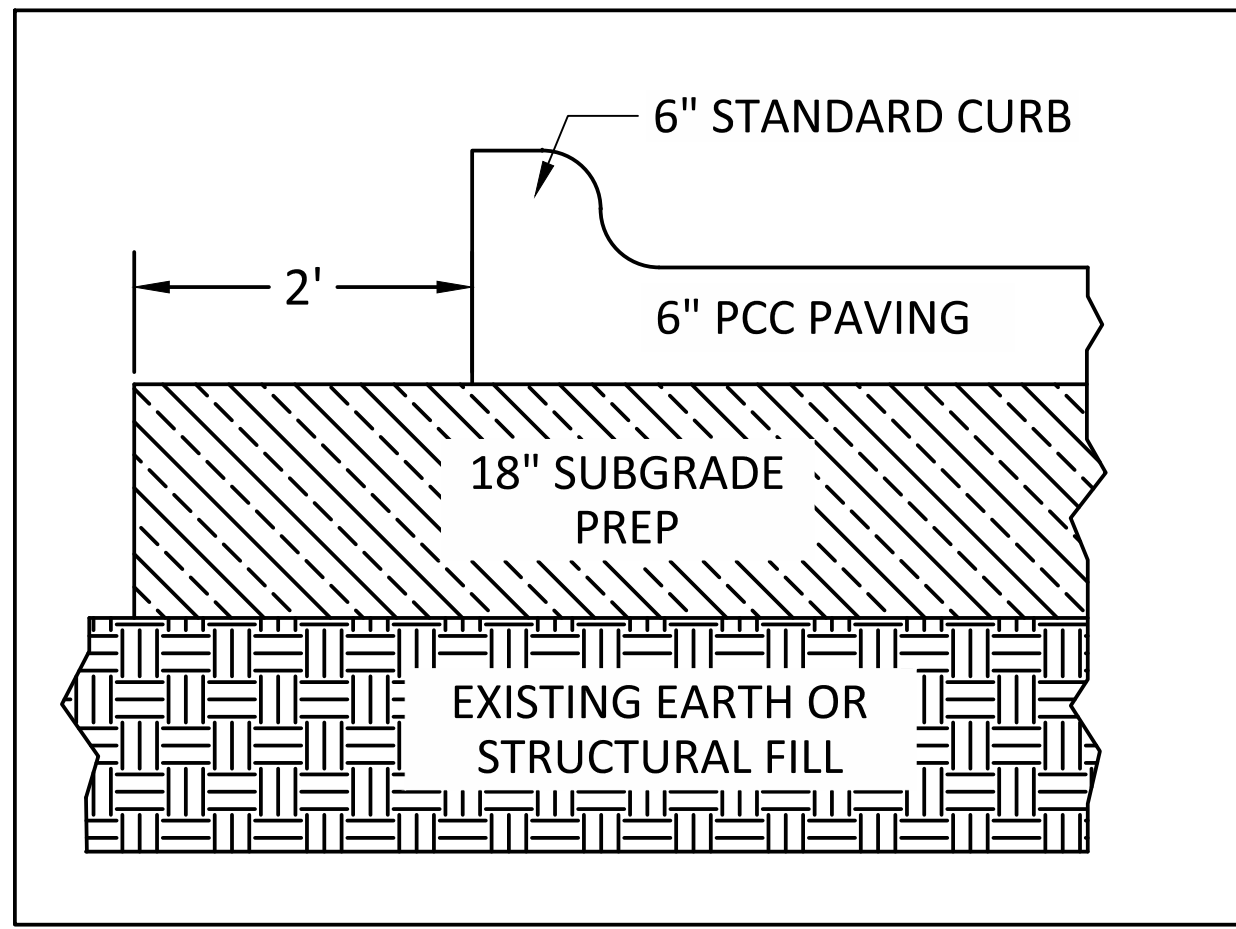
AERIAL MAP WITH PHASING

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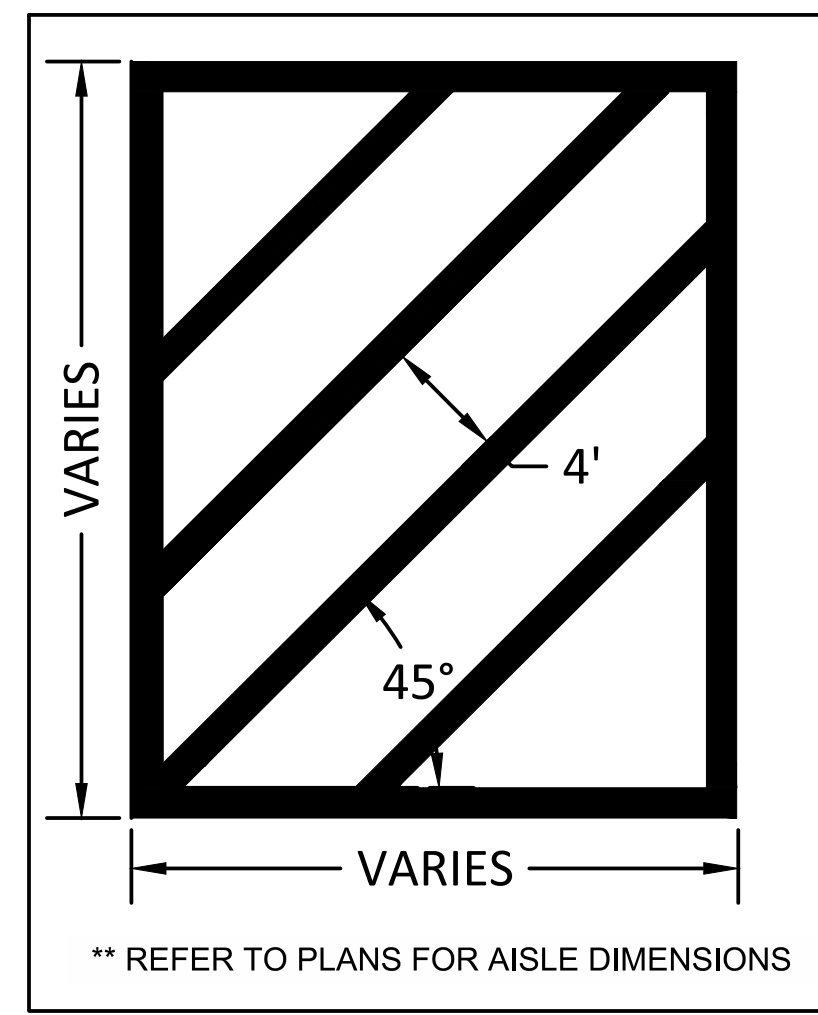


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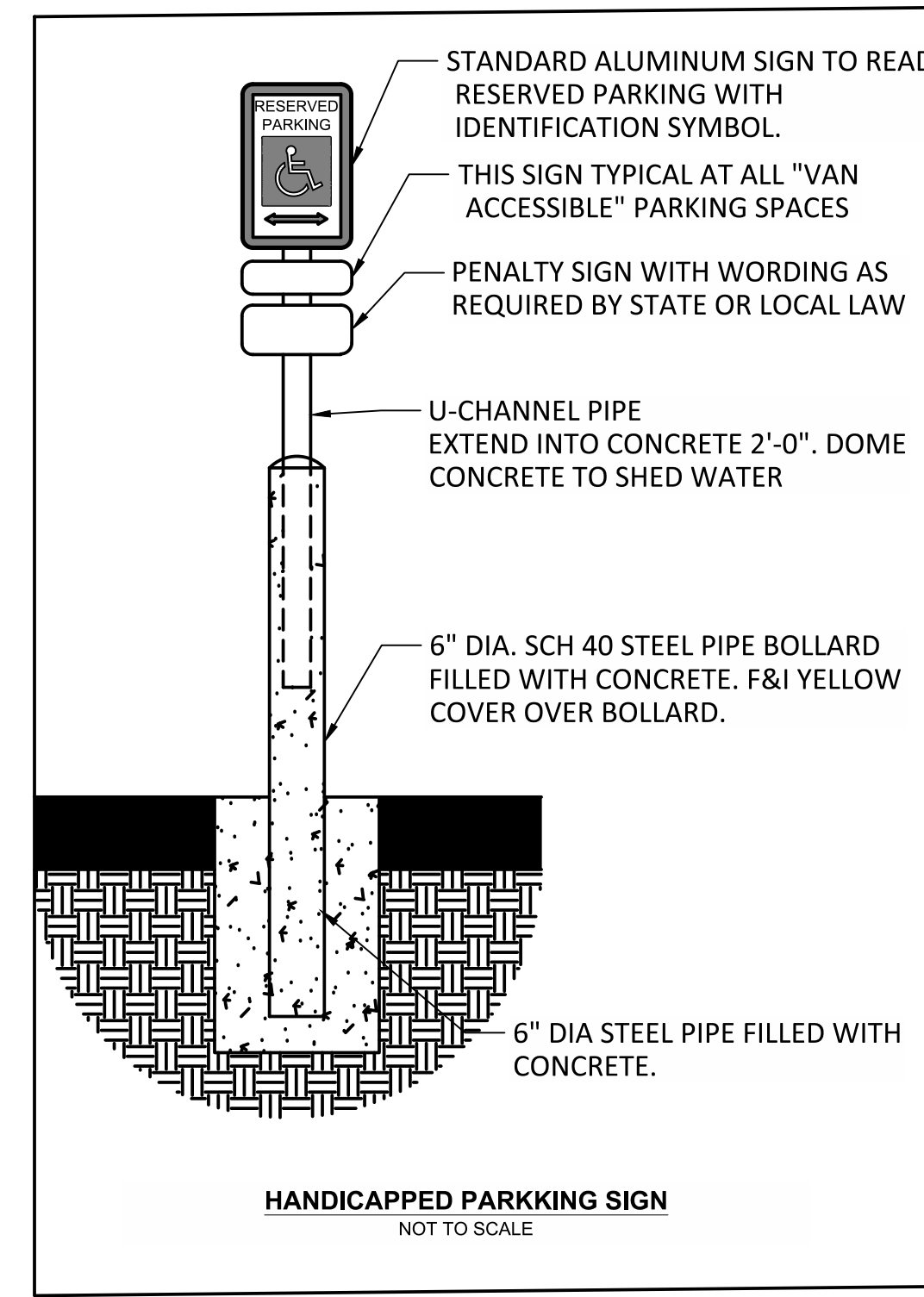
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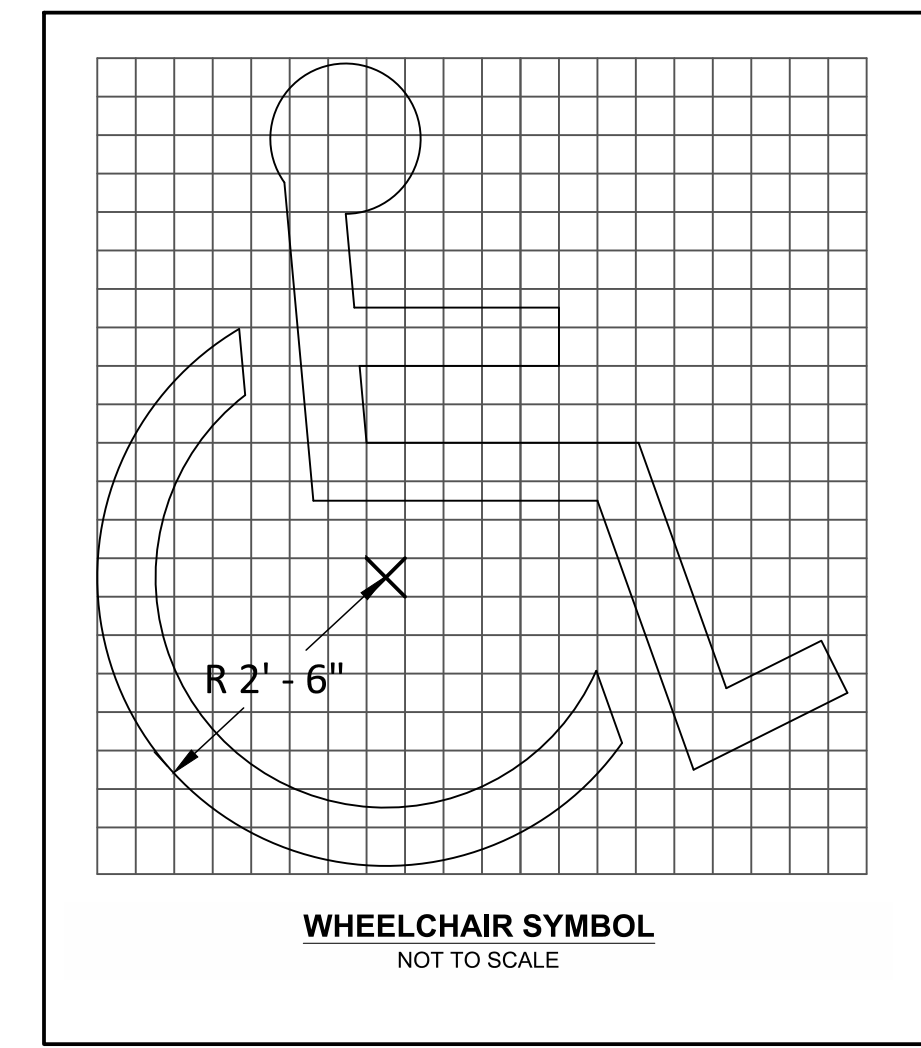
TYPICAL PCC SITE PAVING OPTION
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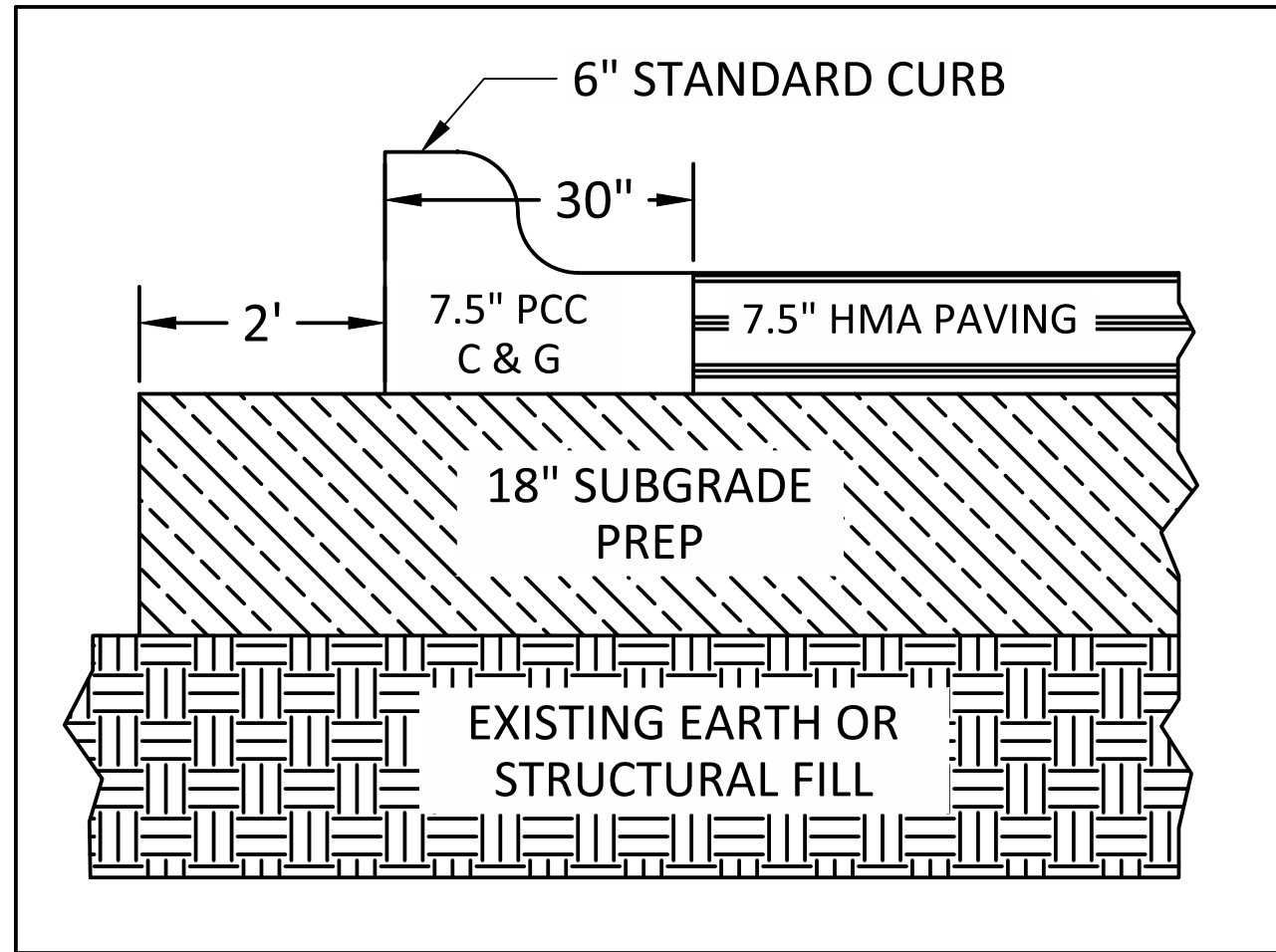
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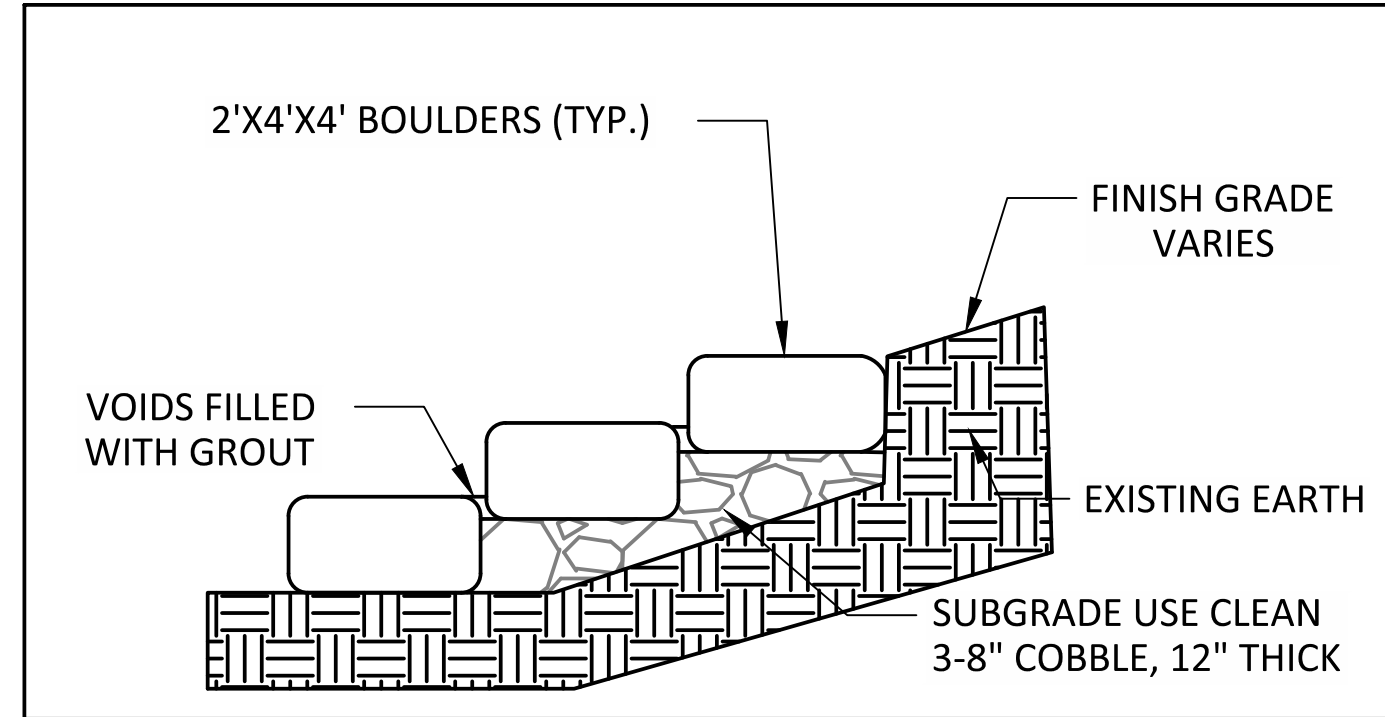
HANDICAPPED PARKING SIGN
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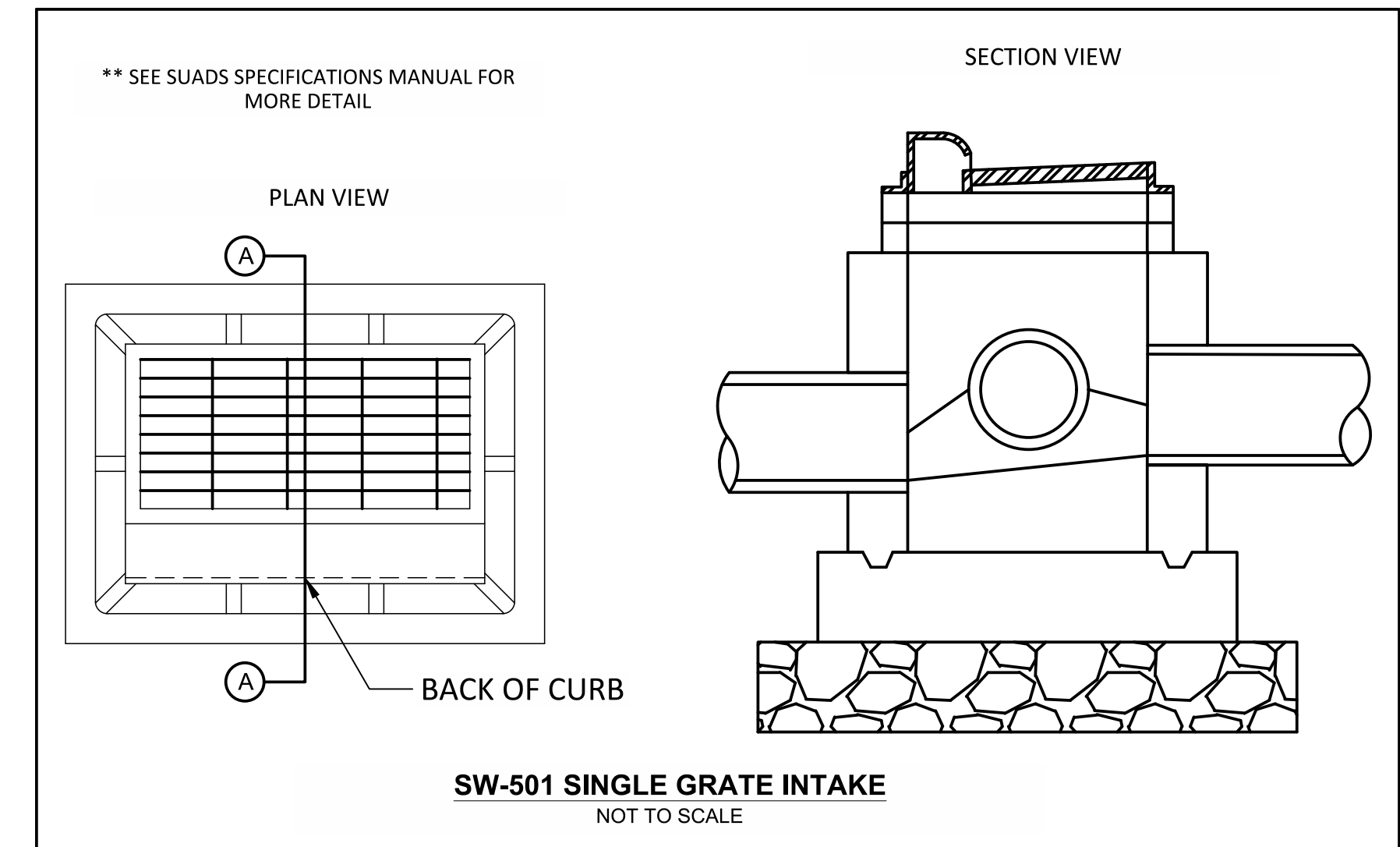
WHEELCHAIR SYMBOL
NOT TO SCALE



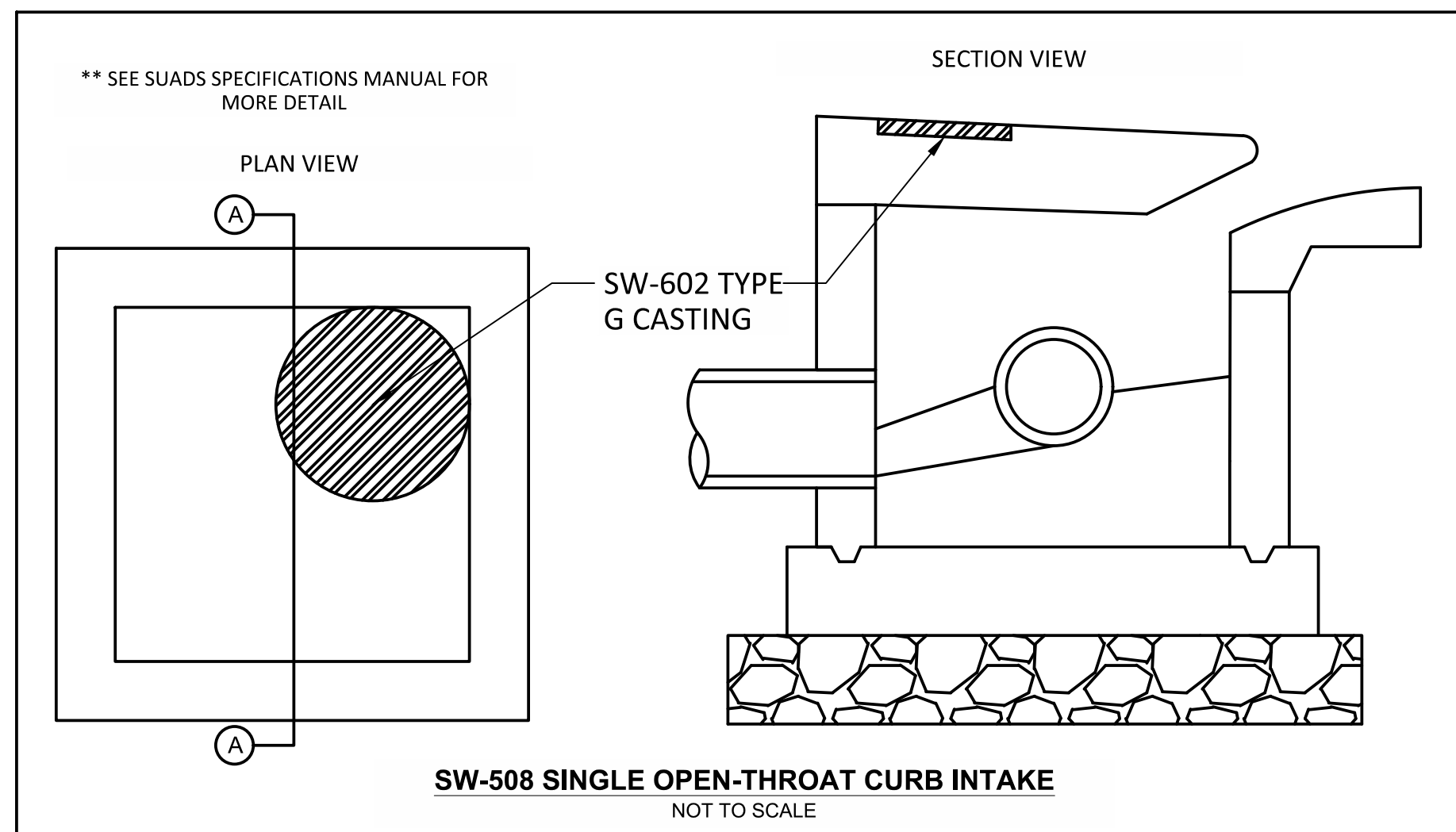
TYPICAL HMA SITE PAVING OPTION
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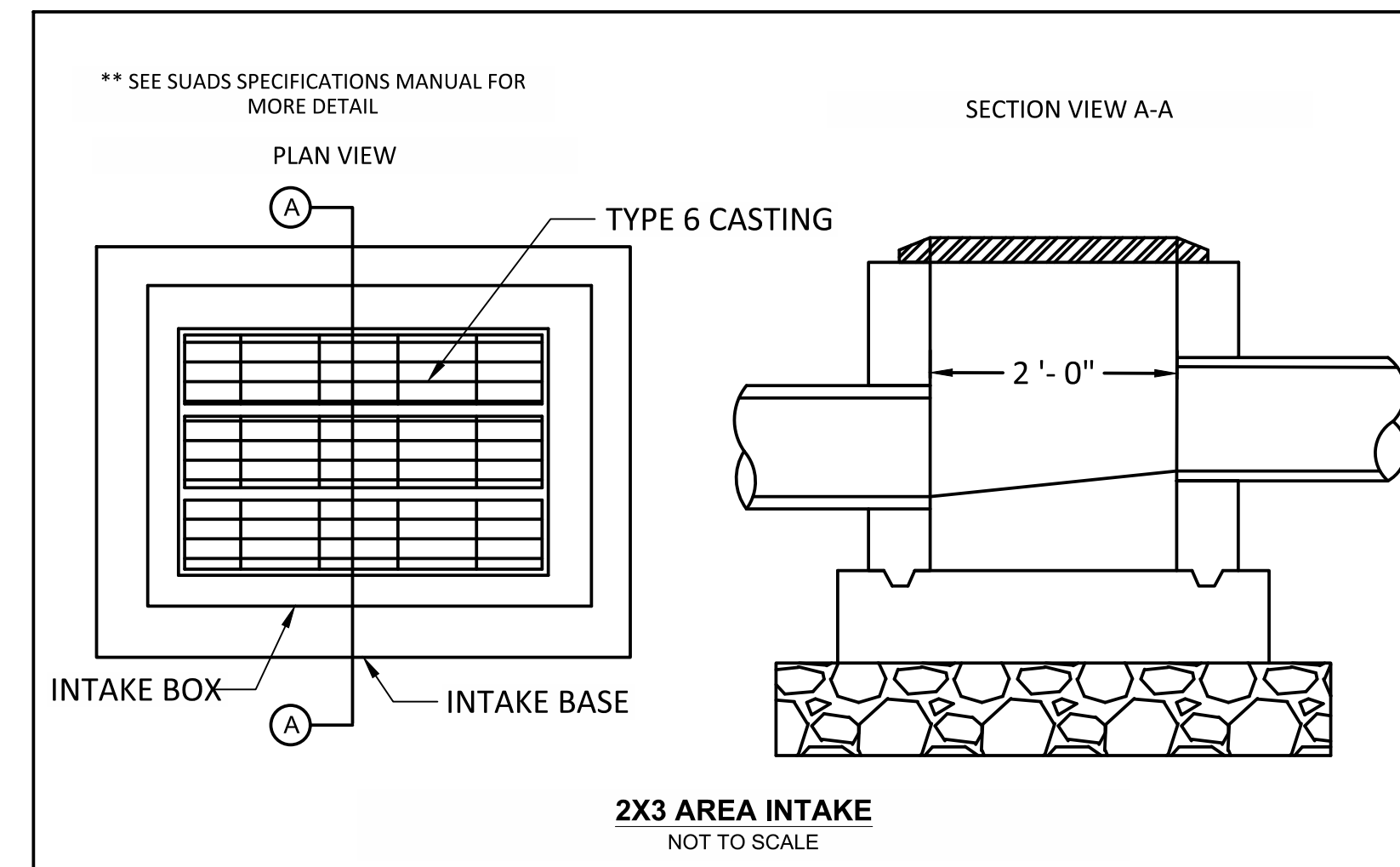
TERRACED ROCK SECTION
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SW-501 SINGLE GRATE INTAKE
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SW-508 SINGLE OPEN-THROAT CURB INTAKE
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2X3 AREA INTAKE
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TYPICAL SECTIONS

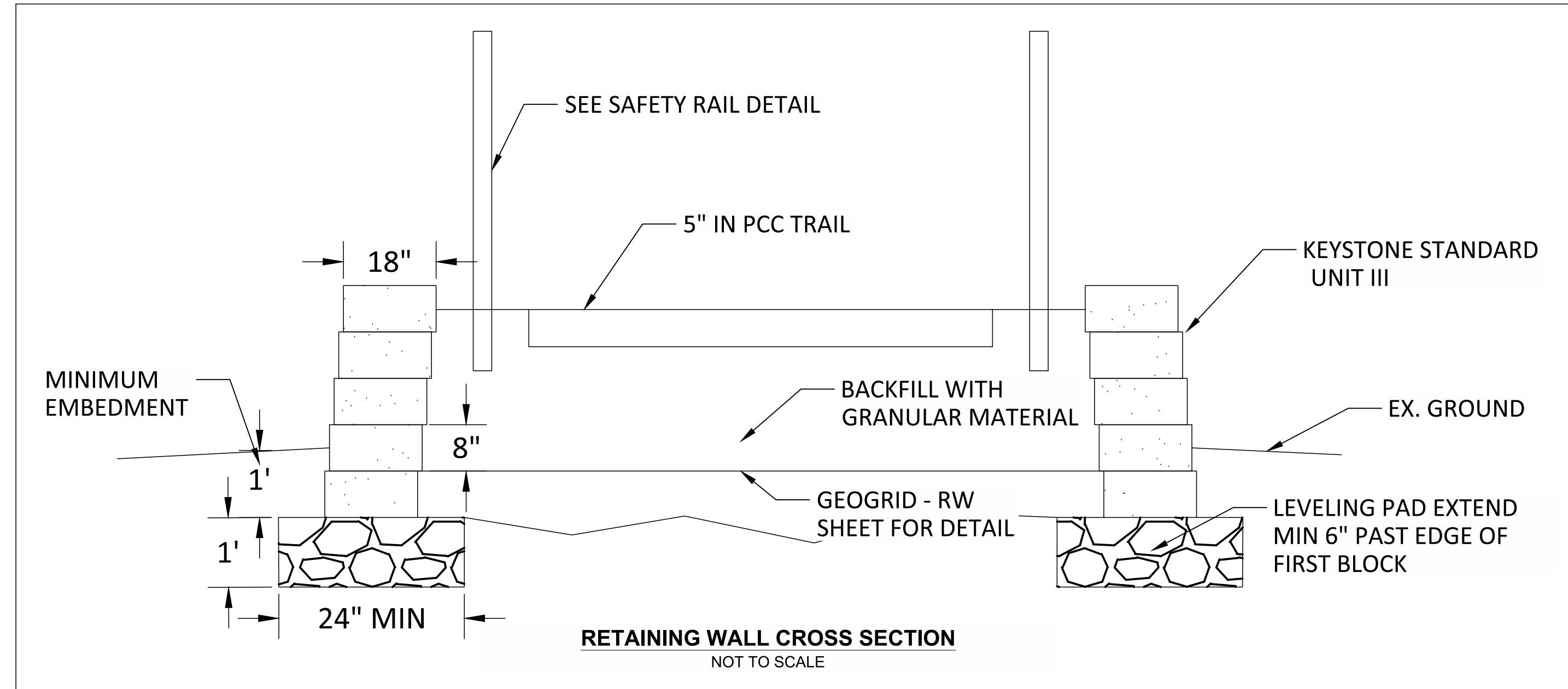
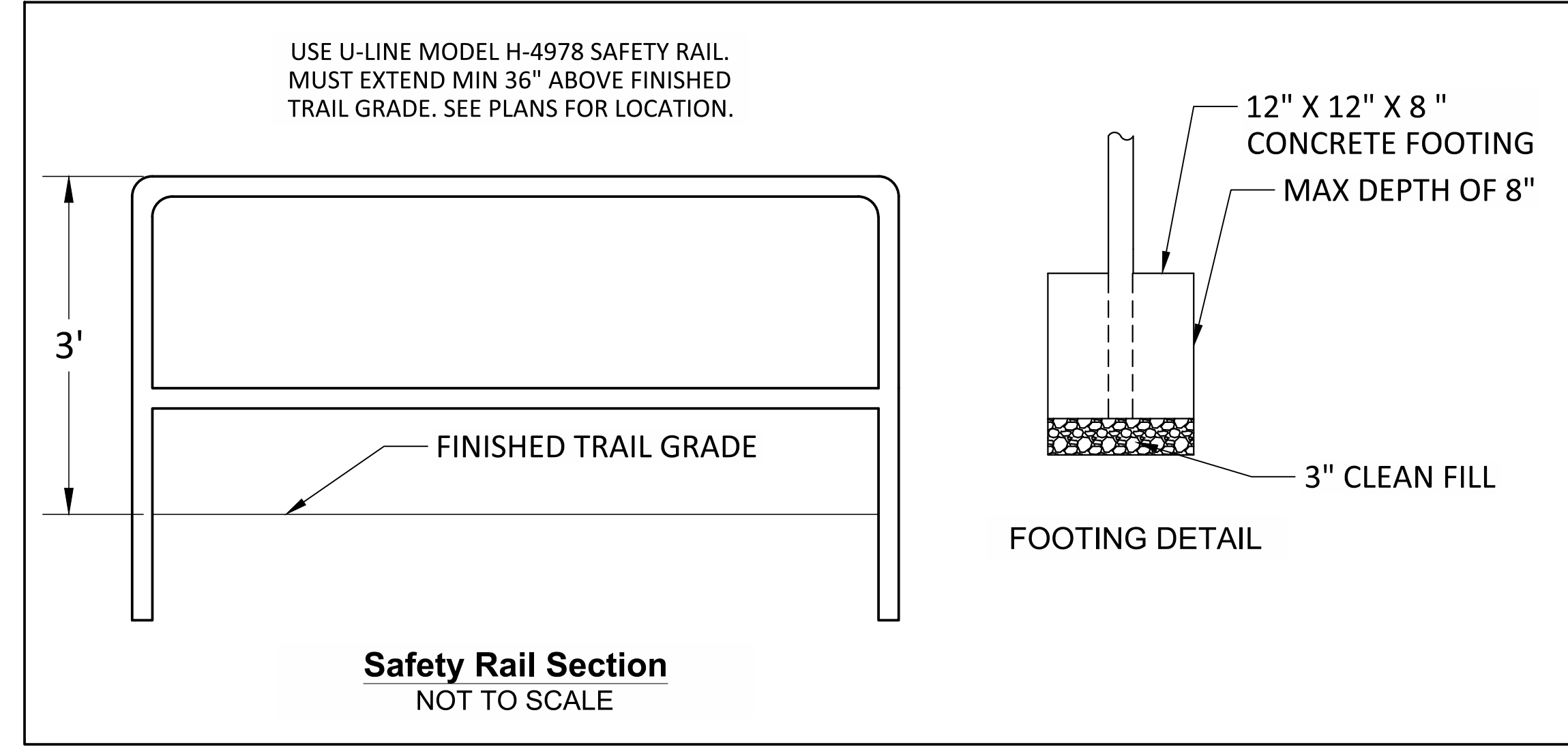
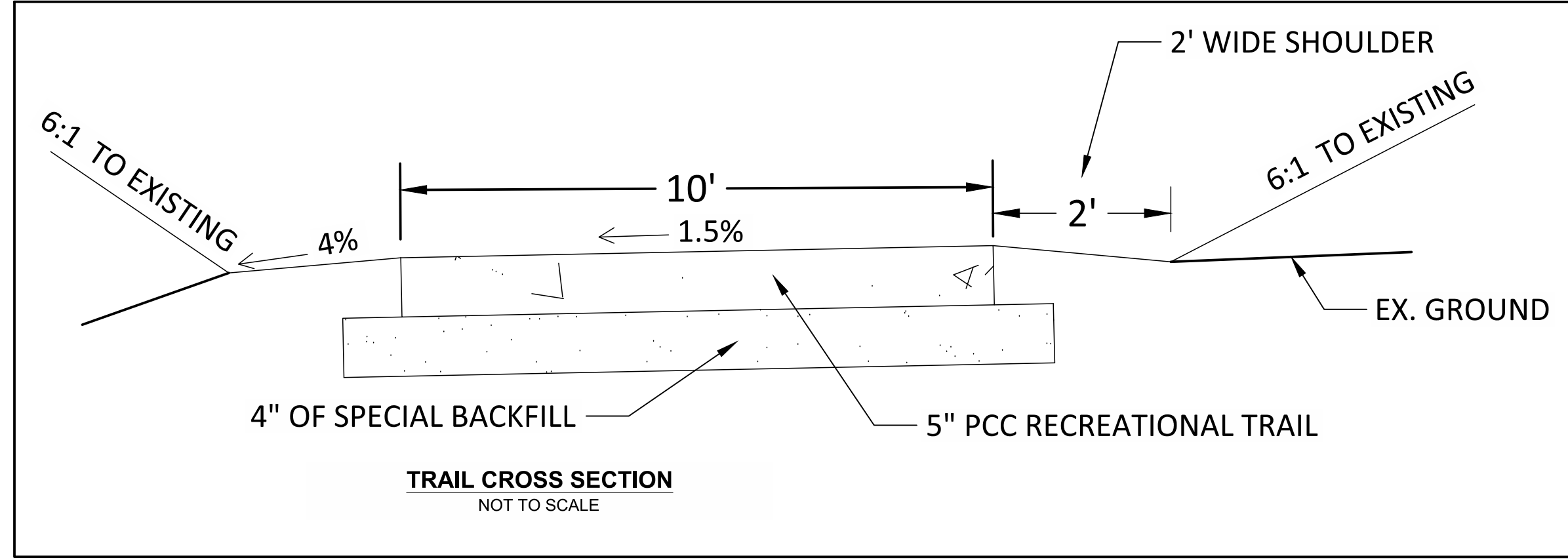
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B.01

NOTES:

1. USE SALVAGED GRAVEL FROM TRAIL TO CONNECT EX TRAIL TO PROPOSED TRAIL. GRADE FROM NEW TRAIL SURFACE TO EXISTING GROUND TO PROMOTE DRAINAGE.
2. USE SALVAGED PARKING LOT MATERIAL TO CONNECT TO PROPOSED PAVING AT ENTRANCE. GRADE FROM NEW GRAVEL SURFACE TO EXISTING GROUND.



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TYPICAL SECTIONS

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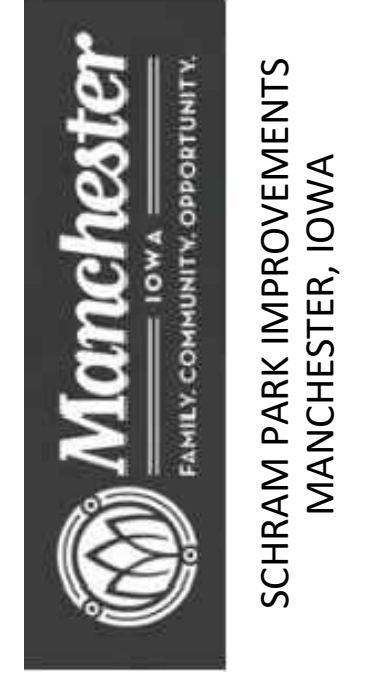
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4. SEE B SHEETS FOR RAILING DETAIL.
5. SEE B SHEETS FOR RETAINING WALL DETAIL.

- NOTES:**
1. USE KEYSTONE STANDARD UNIT III, APPROX. 18" X 8" X 18".
 2. USE GEOGRID - MIRAGRID(R) 8XT, PLACE AT TOP OF FIRST BLOCK AND THEN EVERY THIRD BLOCK THERE AFTER.
 3. USE A GRANULAR BACKFILL - COMPLY WITH MANUFACTURER SPECS FOR BACKFILL MATERIAL.

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RETAINING WALL PROFILE	
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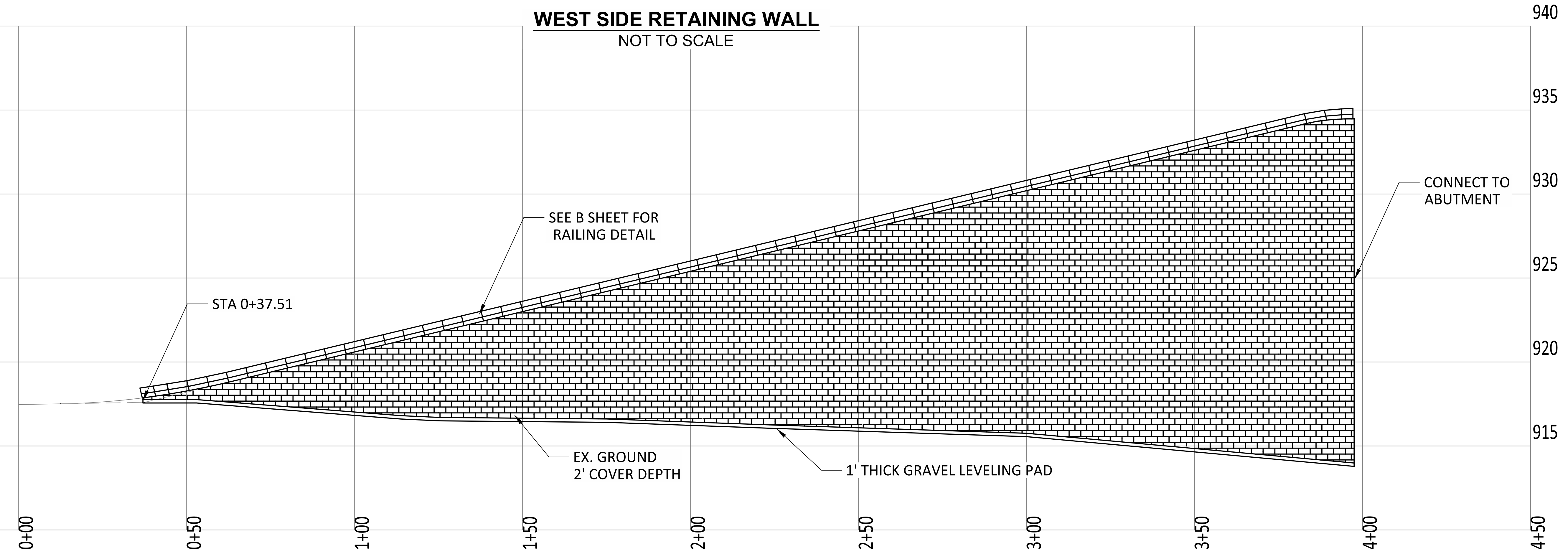
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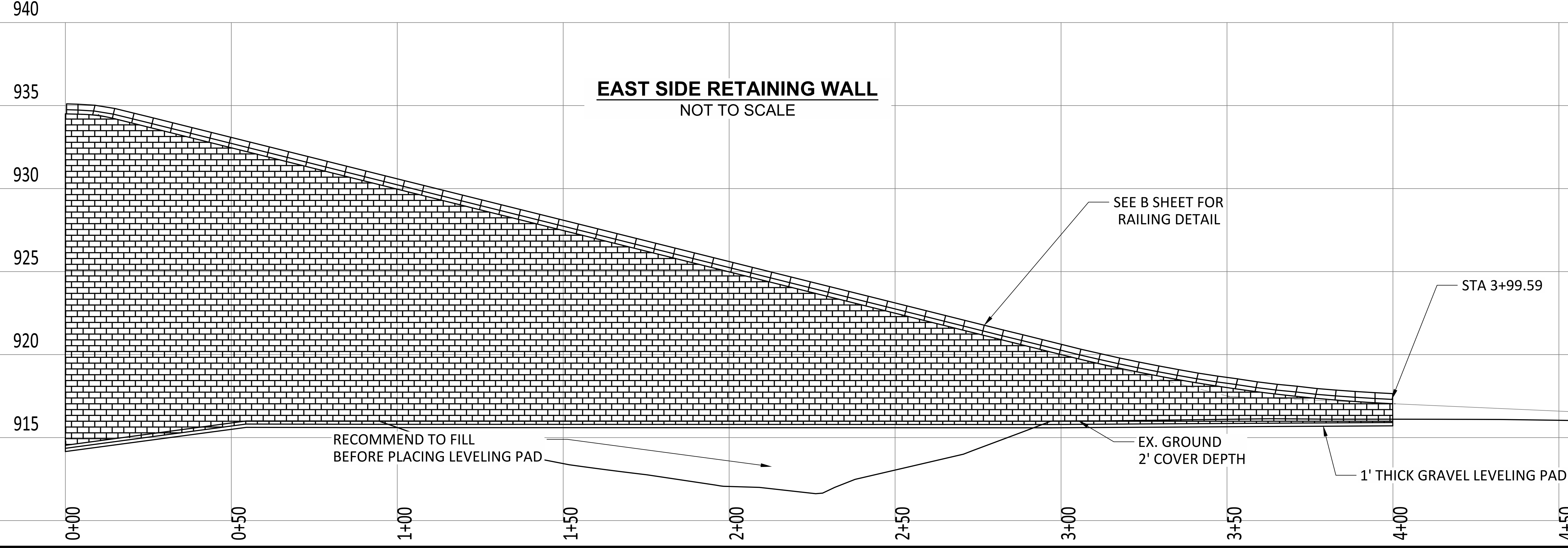
WEST SIDE RETAINING WALL

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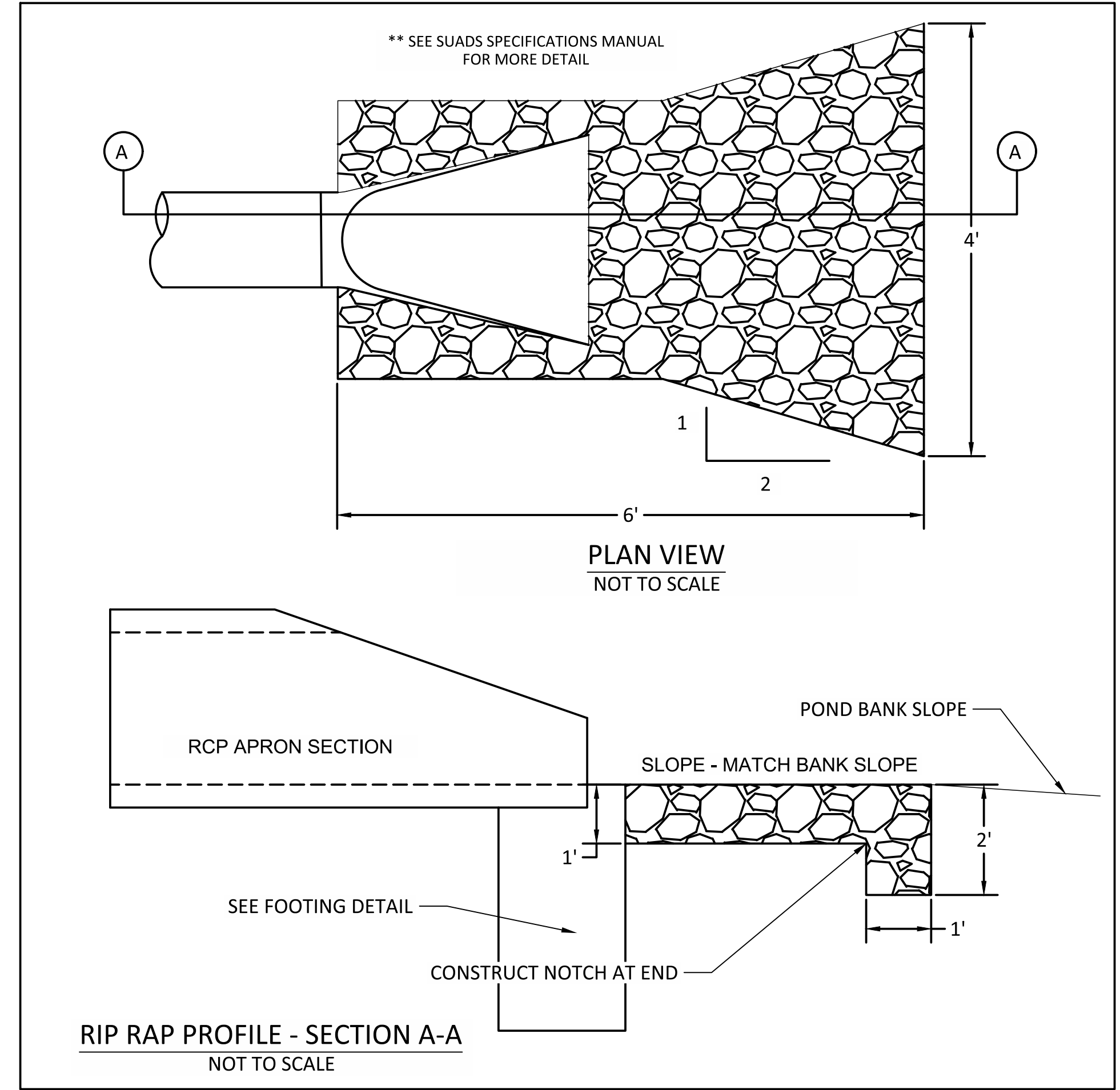
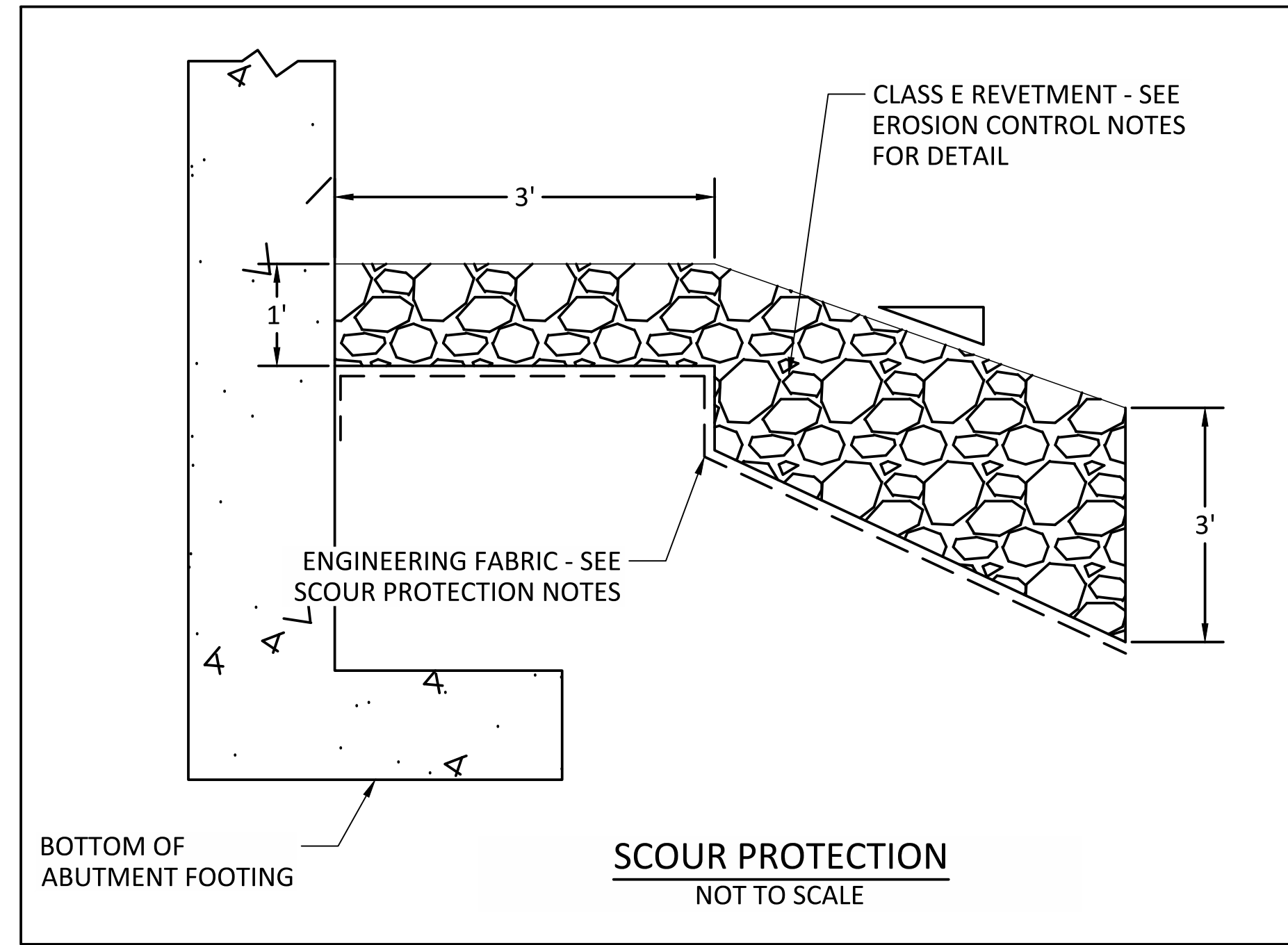
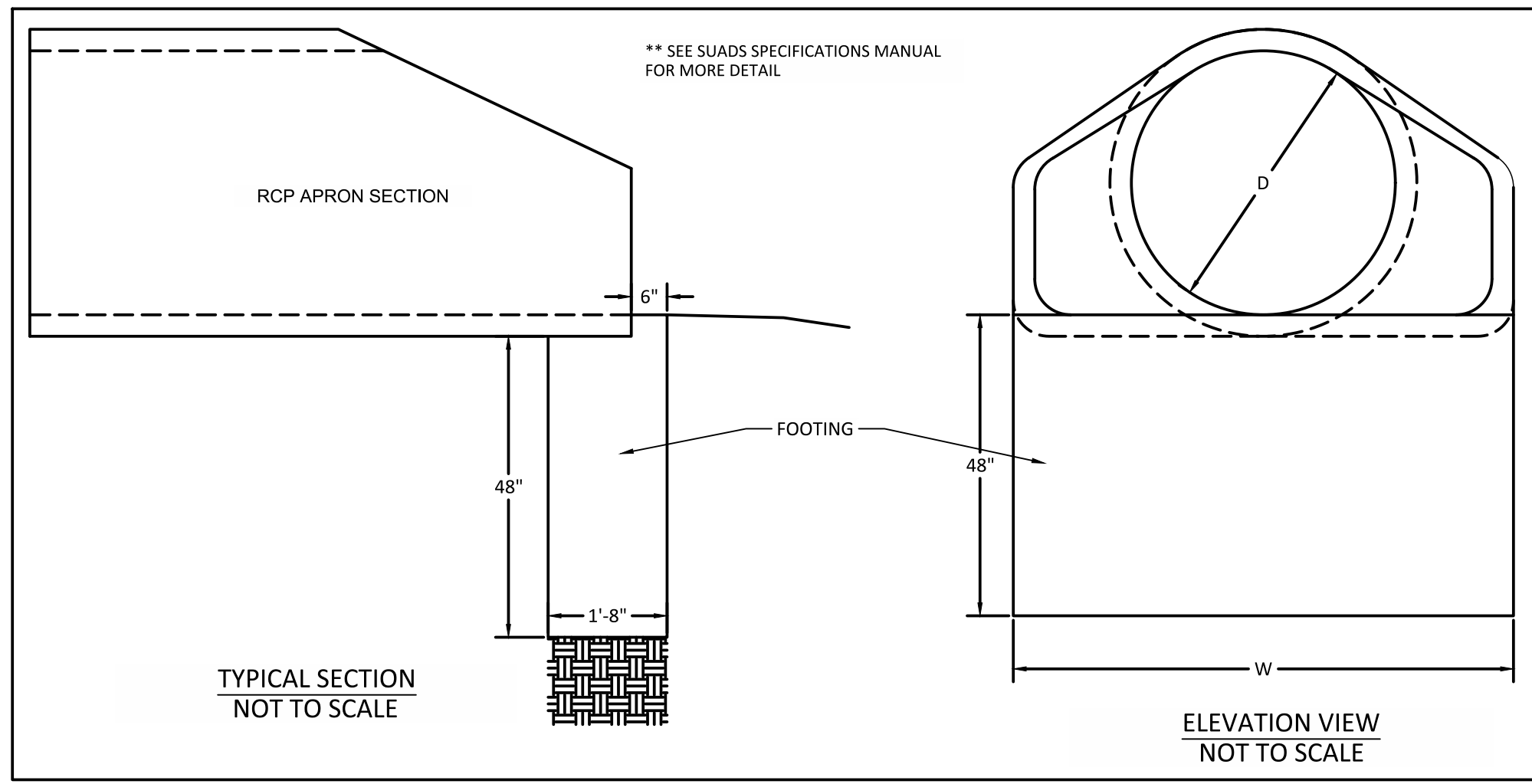
EAST SIDE RETAINING WALL

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SCOUR PROTECTION NOTES:

HEAVY ENGINEERING FABRIC TO PLACED UNDERNEATH ALL REVETMENT AND BURIED IN EXISTING GROUND AT ENDS TO PREVENT UNDERMINING.

MINIMUM OF 10' CLASS E REVETMENT PLACED UPSTREAM, DOWNSTREAM, AND PARALLEL TO ABUTMENT. REVETMENT SHOULD BE 3' THICK. SEE PLANS FOR LOCATION.

HARD ARMOUR HAS BEEN SUCCESSFUL ON OTHER NEARBY SECTIONS OF THE RIVER, CONSIDER CREATING HARD ARMOUR HERE.

EROSION CONTROL NOTES:

EROSION CONTROL IS LISTED AS A LUMP SUM AND CONTAINS, INSTALLATION OF INTAKE PROTECTION, SILT FENCE AS REQUIRED, AND THE INSTALLATION OF RIP RIP.

CONSTRUCT A CONCRETE WASHOUT ON SITE. REMOVE ONCE CONCRETE HAS HARDENED.

AS SOON AS FINISH GRADING HAS BEEN COMPLETED, TOP SOIL SHALL BE INSTALLED AND ANY NECESSARY SEEDING COMPLETED. INSTALL SILT FENCE AND INTAKE PROTECTION AS REQUIRED.

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REMOVALS - EAST SIDE OF RIVER	
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ESTIMATED PROJECT QUANTITIES			
Item No.	Item	Unit	Quantity
1	Erosion control Measures	LS	1
2	Class 10 Excavation, Cut	CY	282
3	Rip Rap/Revetmetn Class E	TON	146
4	Granular backfill	CY	3830
5	Natural Stone	SF	6800
6	Rectangular Area Intake	EA	3
7	Seeding and Fertilizing (Urban)	ACRE	0.45
8	5in PCC Trail	SY	2179
9	5in PCC Pad	SY	14
10	Storm Sewer, 12 in	LF	485
11	Pipe Apron, 12 in	EA	4
12	Footing for Concrete Apron	EA	2
13	Special Backfill for Trail	TON	652
14	Mobilization	LS	1
15	Removal of Sidewalk	SY	22
16	Removal of Trail	SY	11
17	Sidewalk, 5in PCC Replacment	SY	22
18	Detectable Warnings	SF	16
19	Painted Pavement Markings	LF	524
20	SW-501 Intake with Grate	EA	1
21	SW-508 Intake	EA	1
22	Removal of Fence	LS	1
23	Bollard and Sign	EA	1
24	Segmental block retaining wall	SF	16000
25	Prefab bridge 180x10	LS	1
26	Structural concrete	SY	34
27	Bridge Installation	LS	1
28	Abutments	EA	2
29	Safety rail	LF	1600
30	HP 10x42	LF	720
31	Clearing and Grubbing	ACRE	0.2
32	Subdrain & Outlet	LS	1

Division II - HMA Paving Option			
	PCC Curb and Gutter, 30", 7.5 " Thick	SY	356
	PCC 4 in Sloped Curb 30", 7.5" Thick	SY	34
	Pavement, HMA, 7.5"	TON	843
	Asphalt Binder PG 58-28S Standard Traffic- 5%	TON	43

Division III - PCC Paving Option			
	Pavement, PCC, 6"	SY	2530

Division IV - Gravel Surface Paving Option			
	Gravel for parking lot	TON	133

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ESTIMATED PROJECT QUANTITIES

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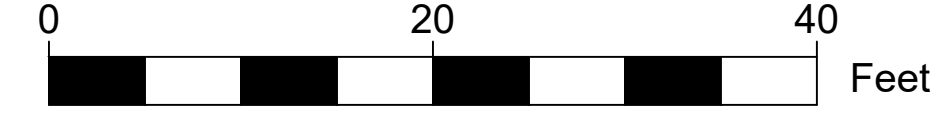
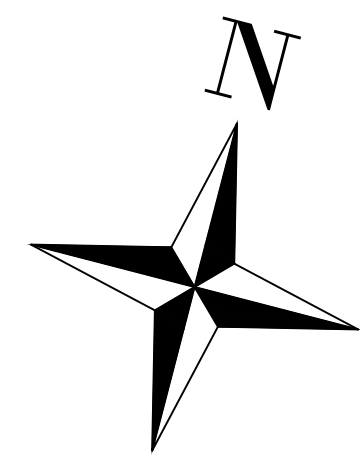
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REMOVALS - POND AREA		
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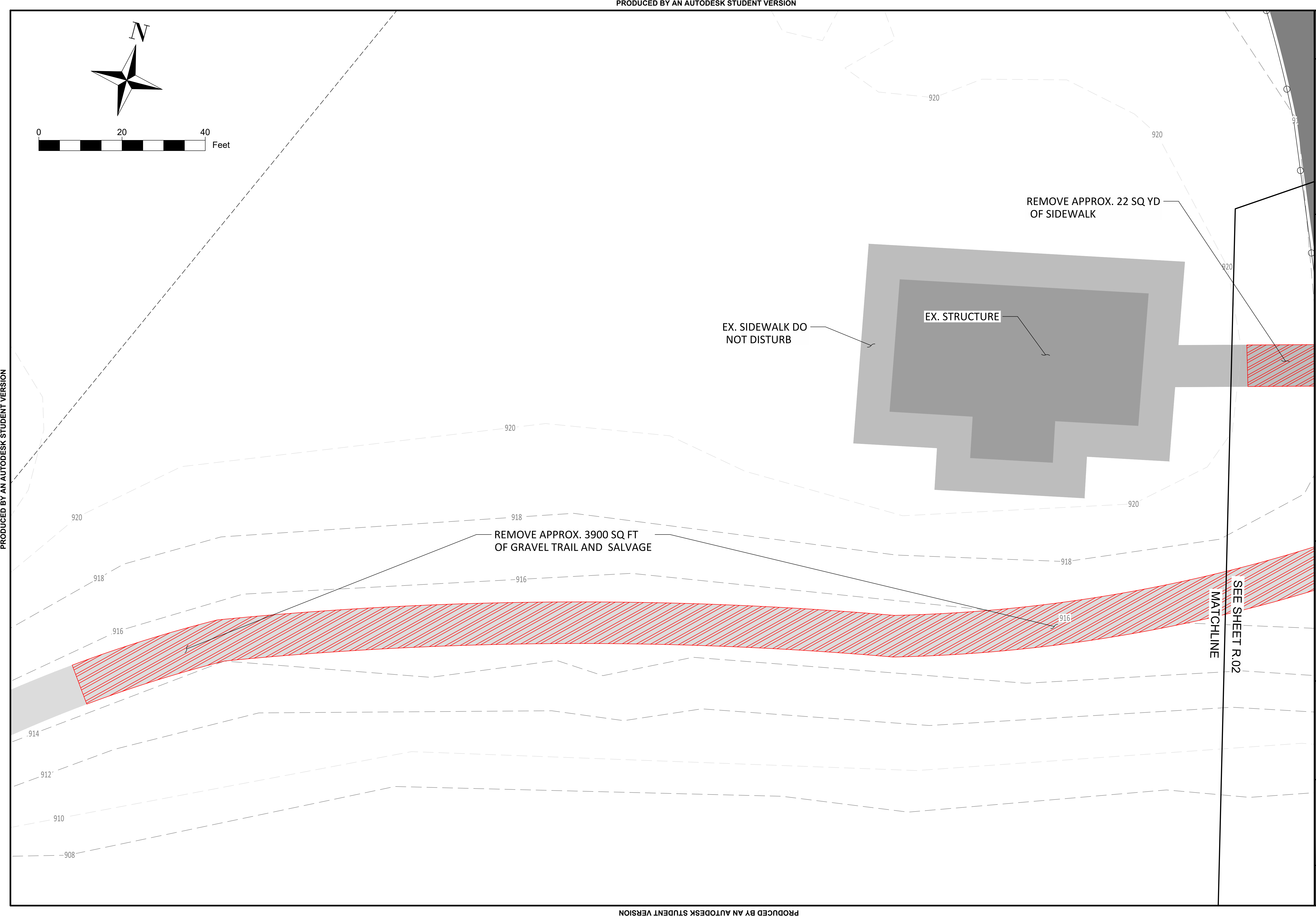
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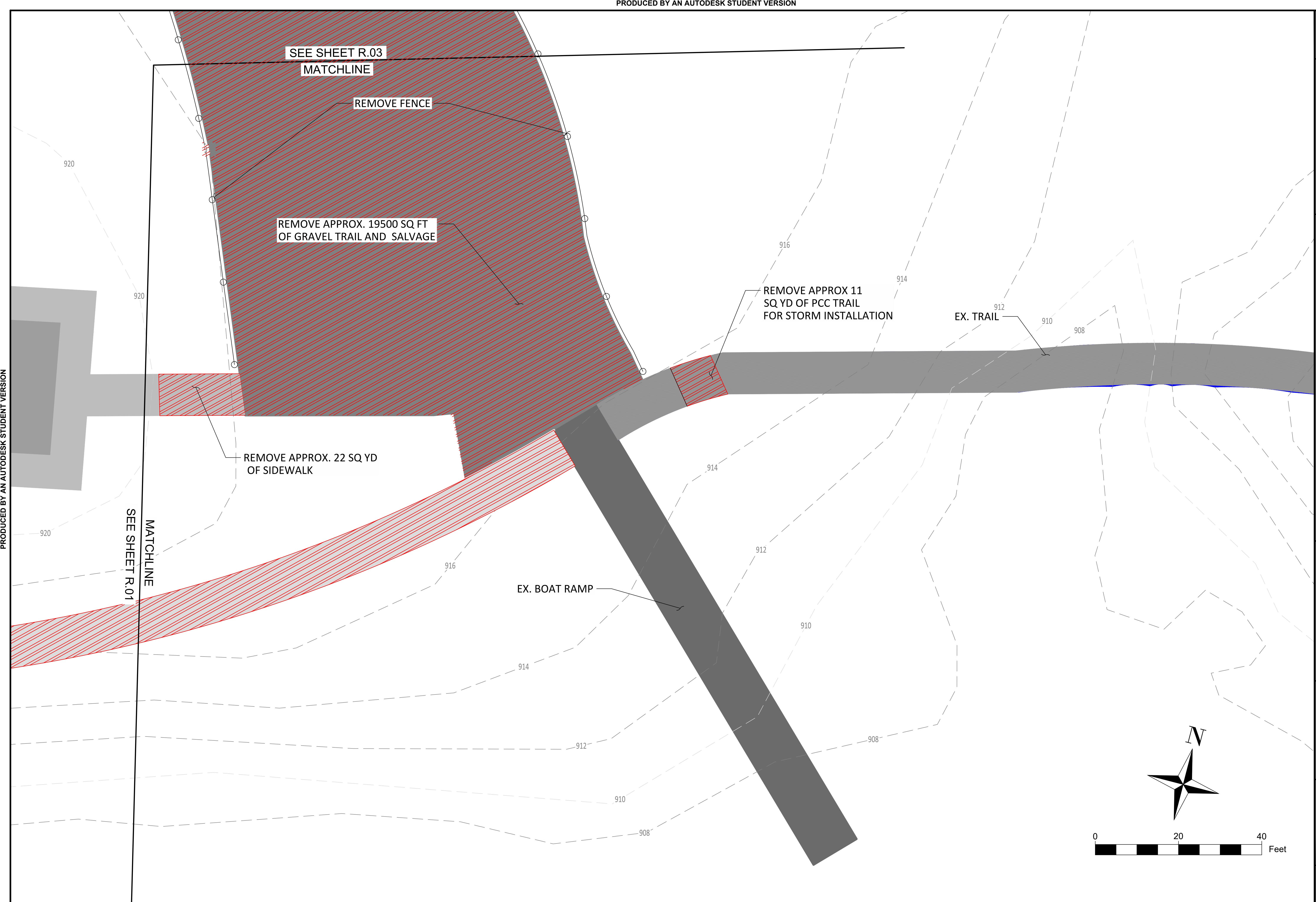
REMOVALS - PARKING LOT AREA	
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REMOVALS - PARKING LOT
AREA

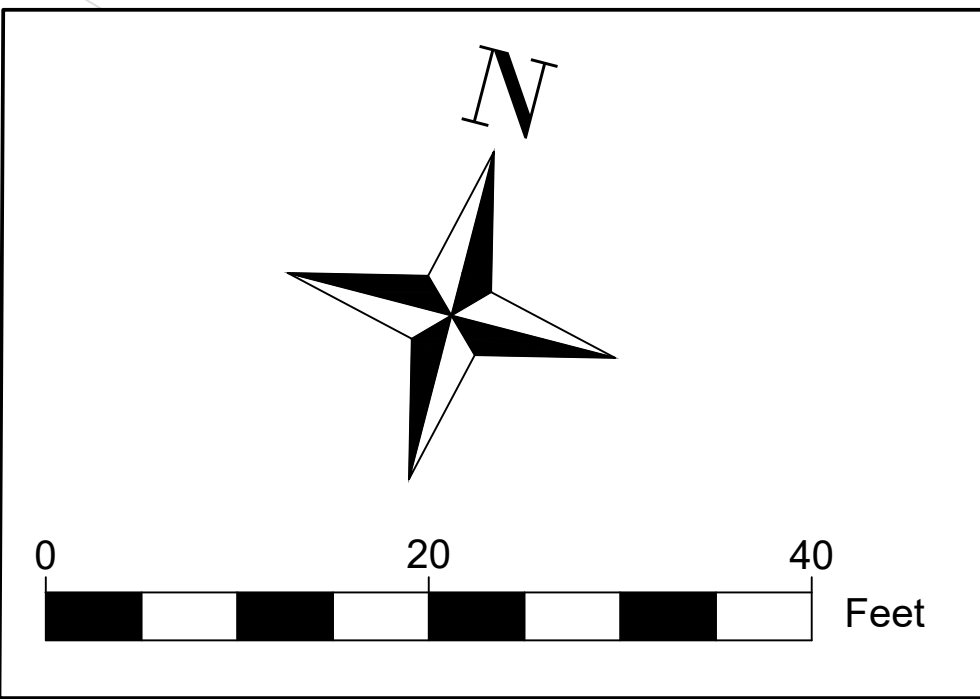
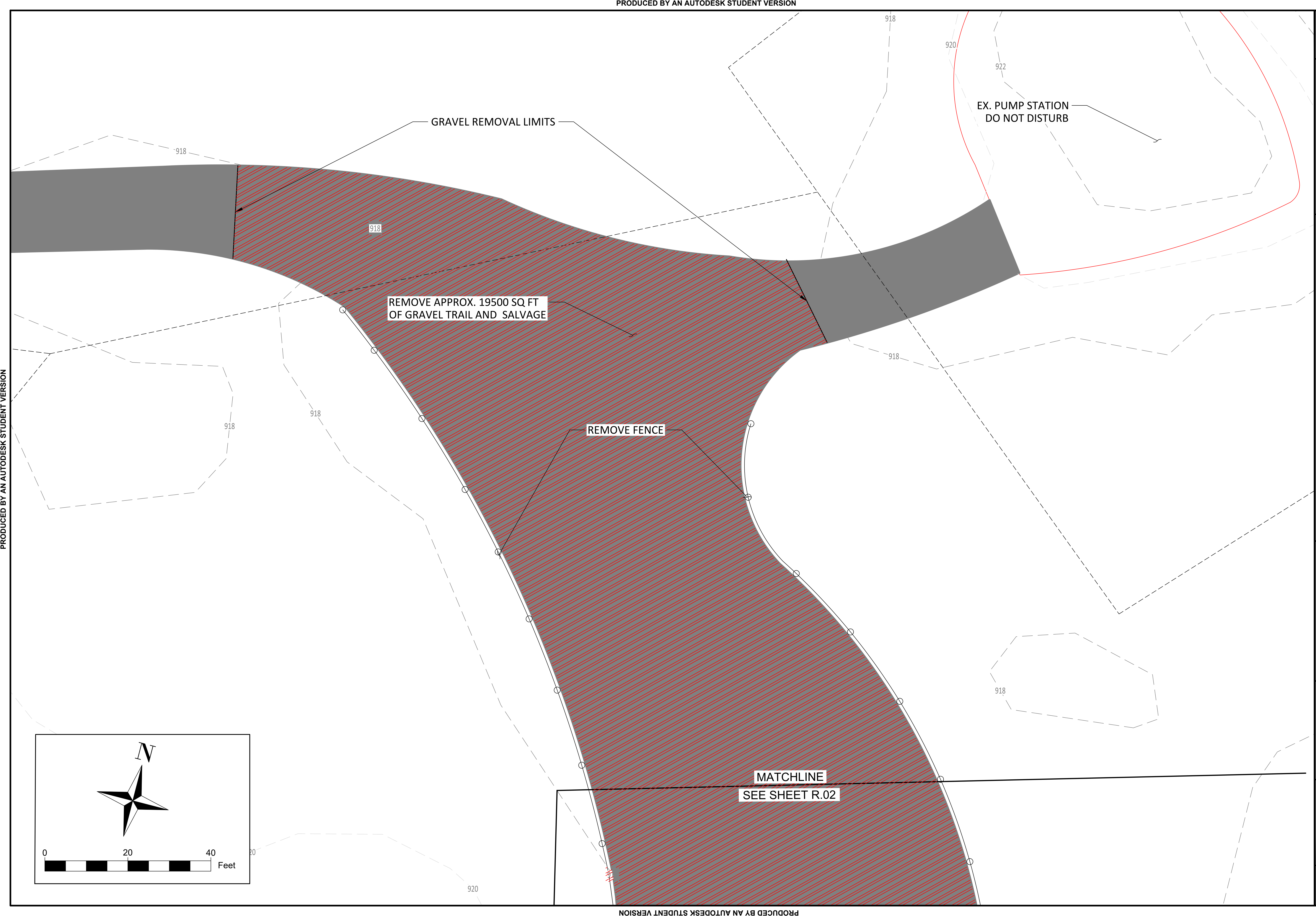
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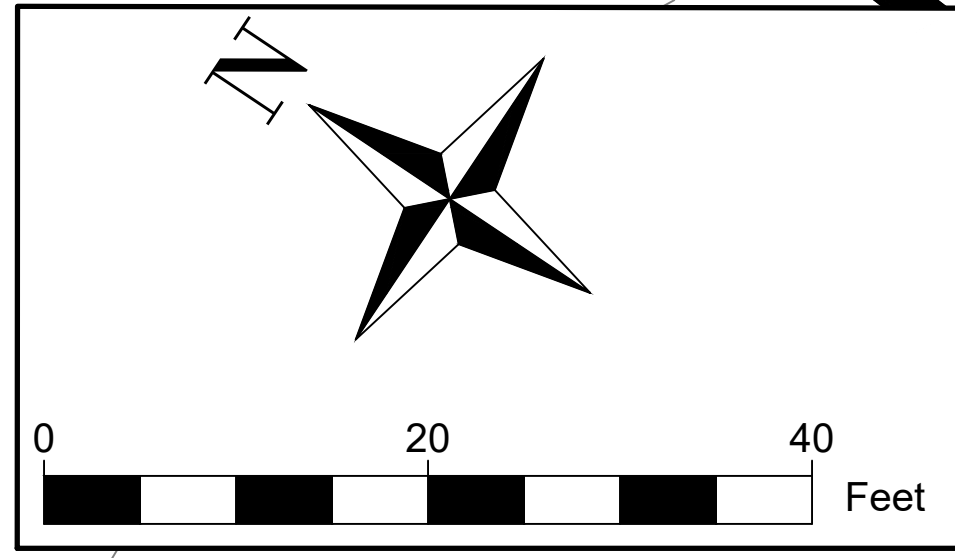


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- PROPOSED BRIDGE
- PROPOSED RETAINING WALL

CITY OF MANCHESTER (DEED)

PROPOSED TRAIL CENTERLINE

PROPOSED RETAINING WALL

REMOVE TREES AND DEBRIS NECESSARY TO CONSTRUCT RETAINING WALL - BOTH SIDES

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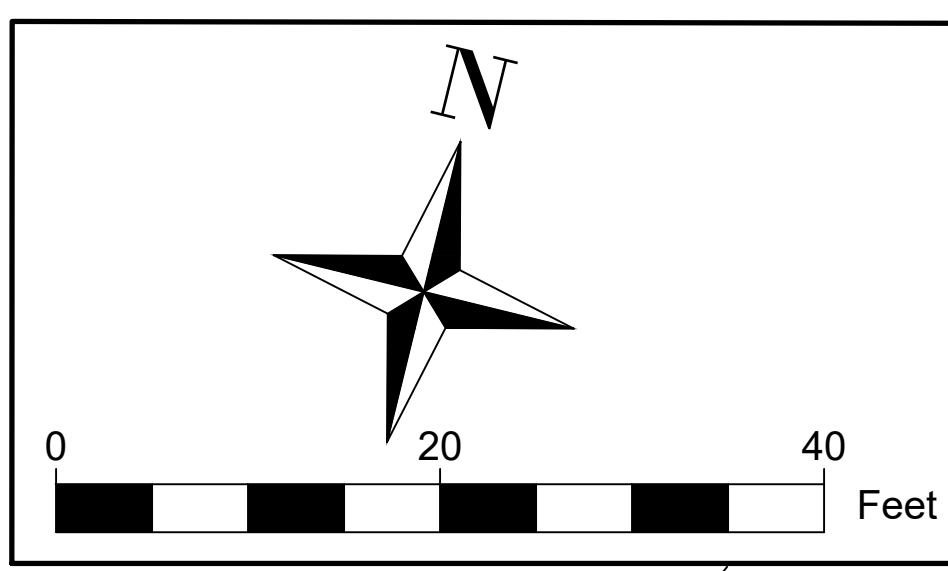
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REMOVALS - EAST SIDE OF RIVER

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Sheet R.04



- PROPOSED TRAIL
- PROPOSED PARKING LOT
- PROPOSED BLEACHER PAD
- PROPOSED SIDEWALK
- EX. BOAT RAMP
- EX. SIDEWALK
- ▣ PROPOSED TERRACE STEPS
- EX. GRAVEL TRAIL
- EX. STRUCTURE

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OVERALL SITE AND GRADING
PLAN

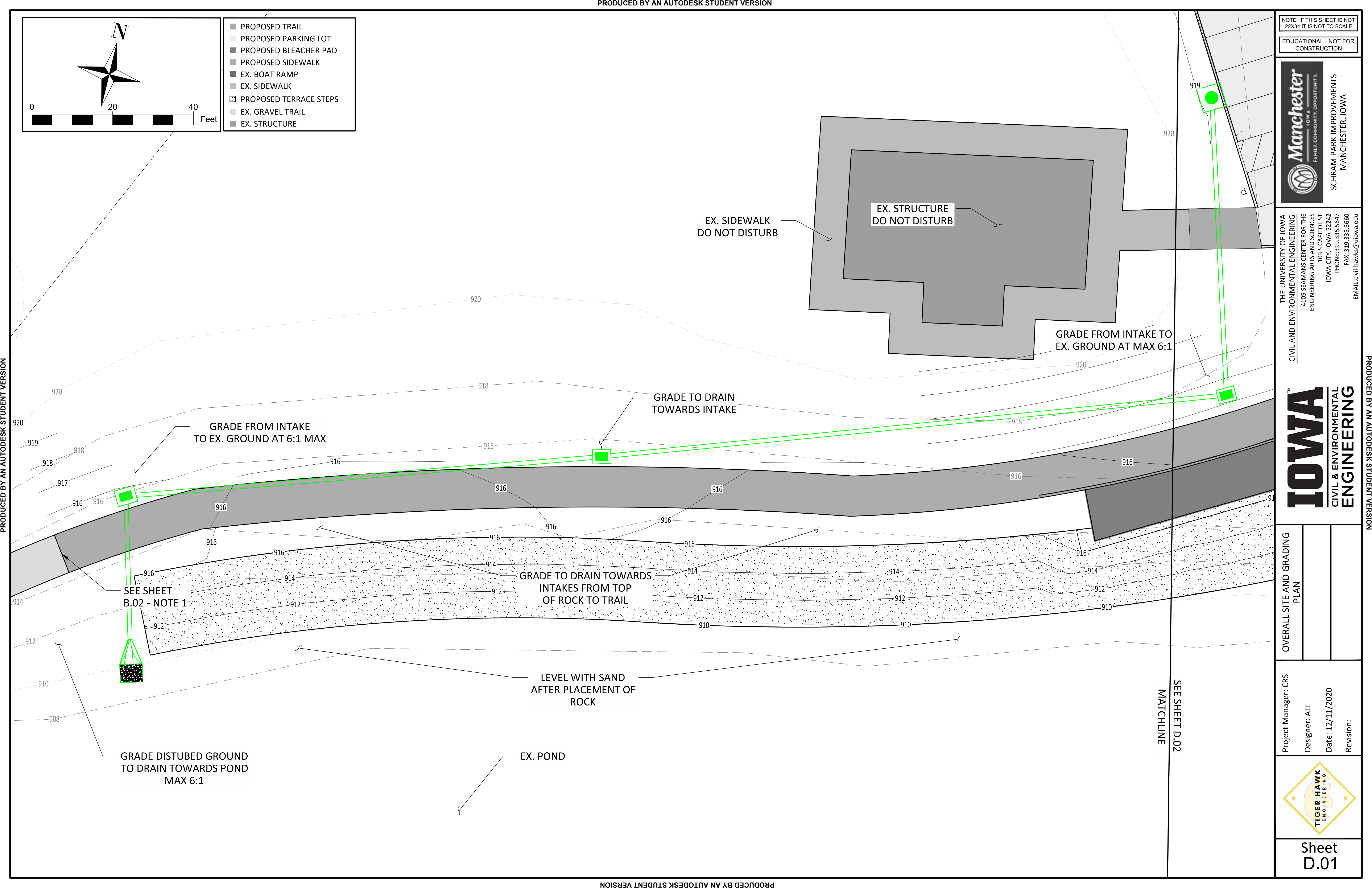
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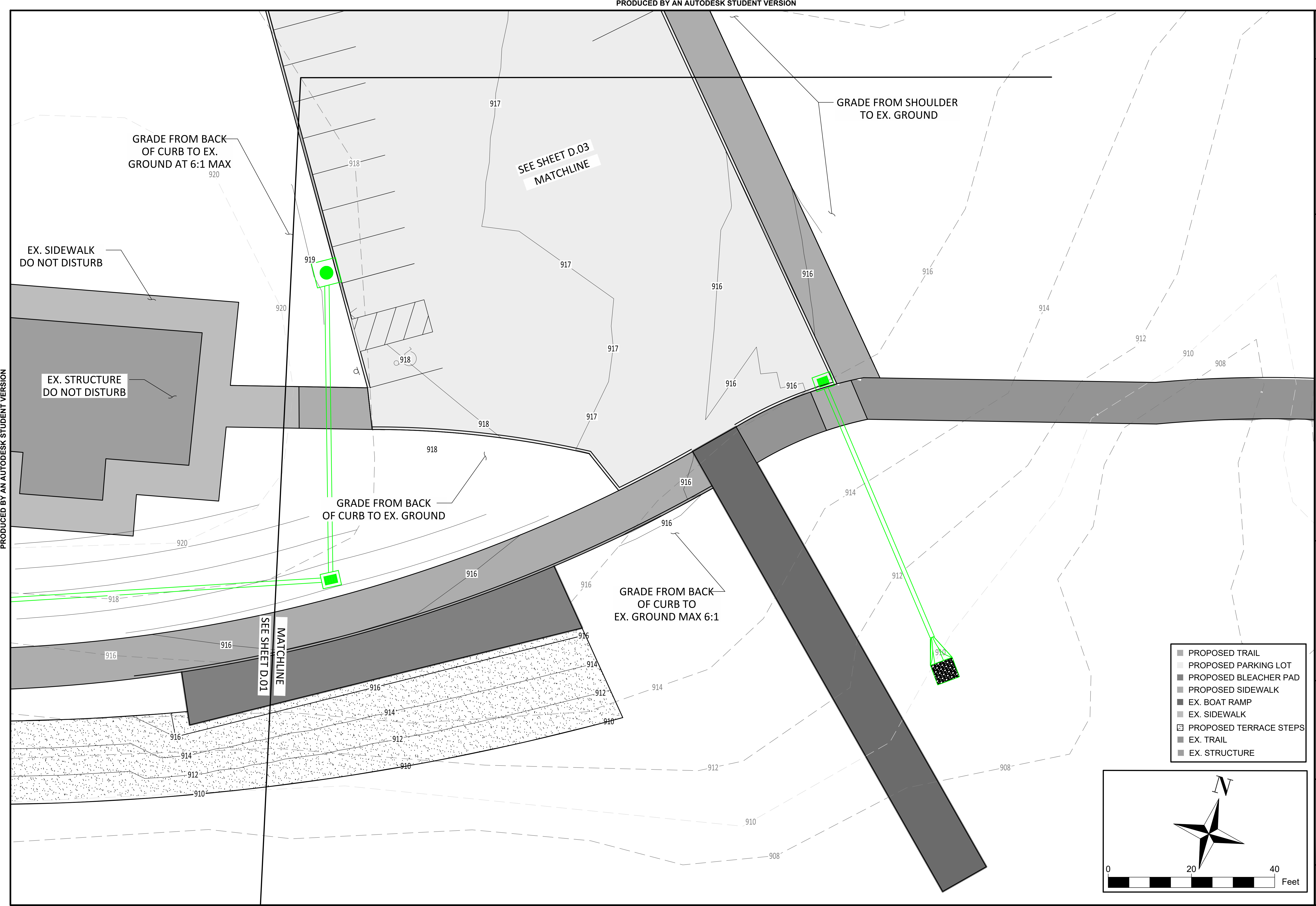
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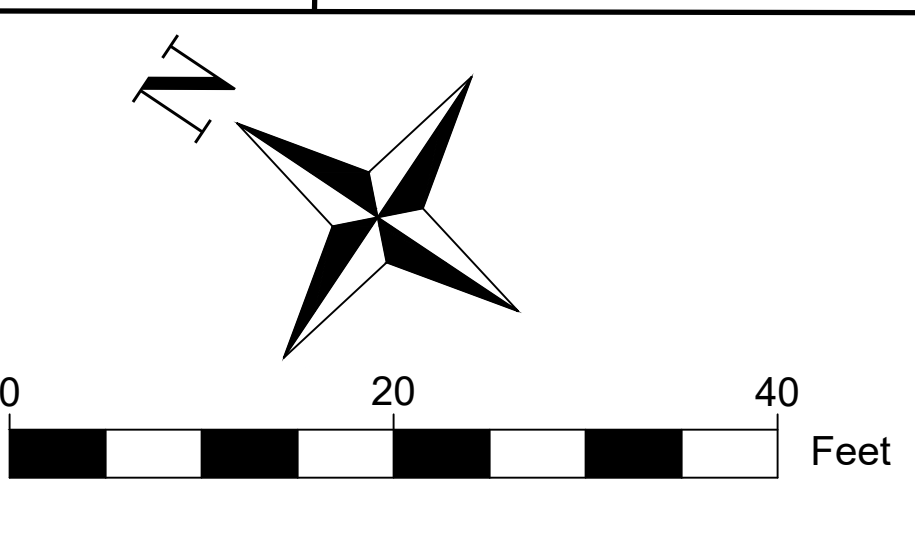
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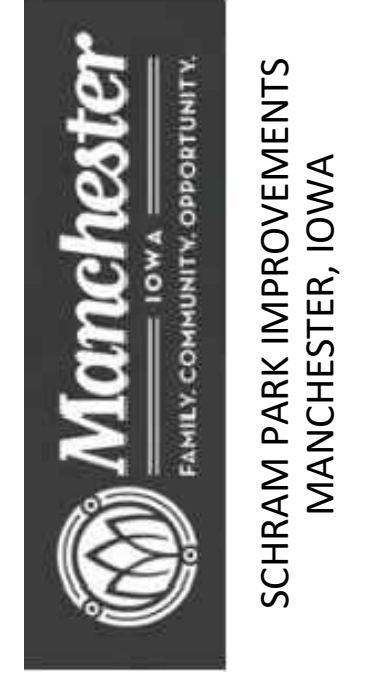




- PROPOSED TRAIL
- PROPOSED PARKING LOT
- EX. SIDEWALK
- EX. GRAVEL PARKING LOT

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PLAN

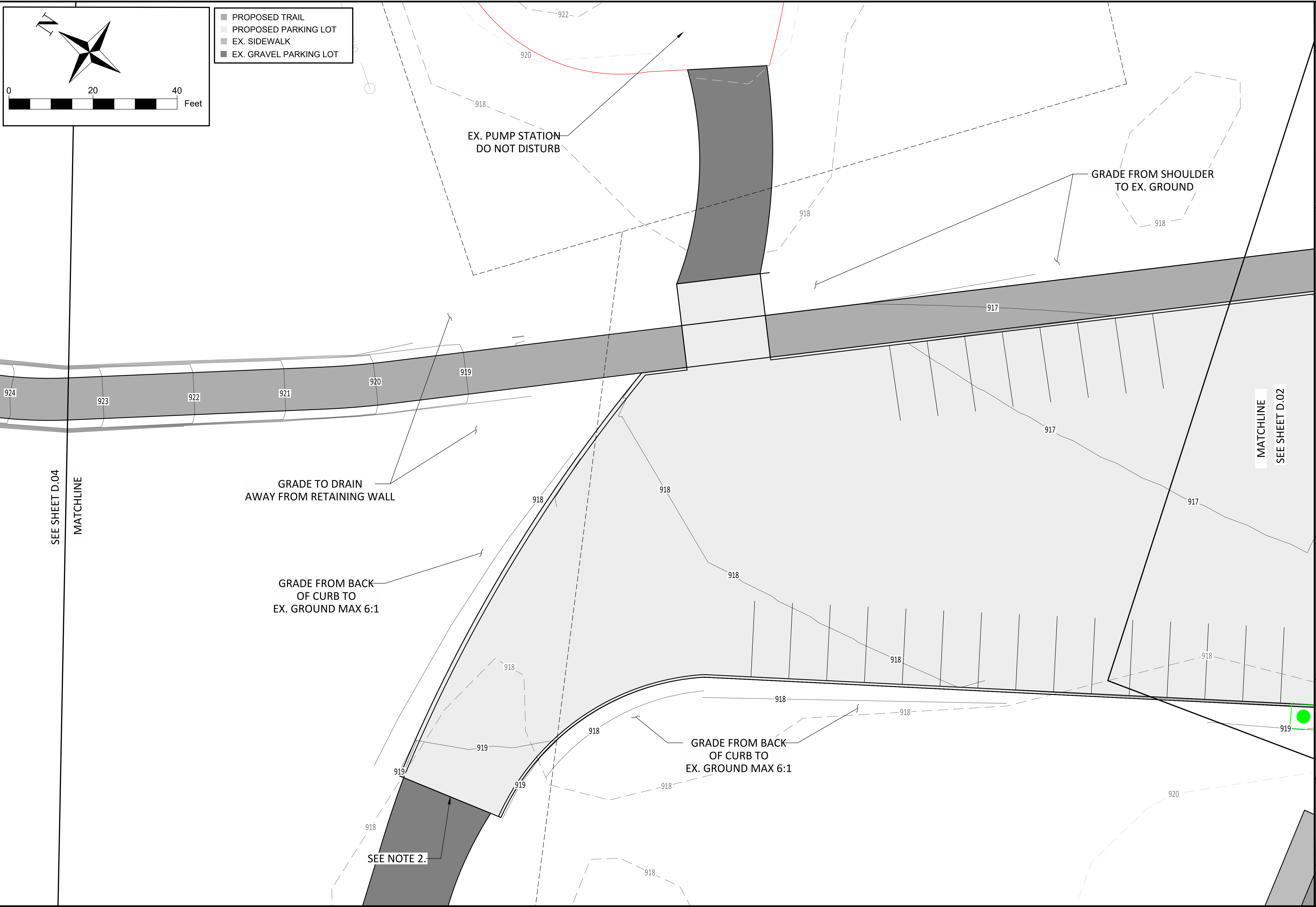
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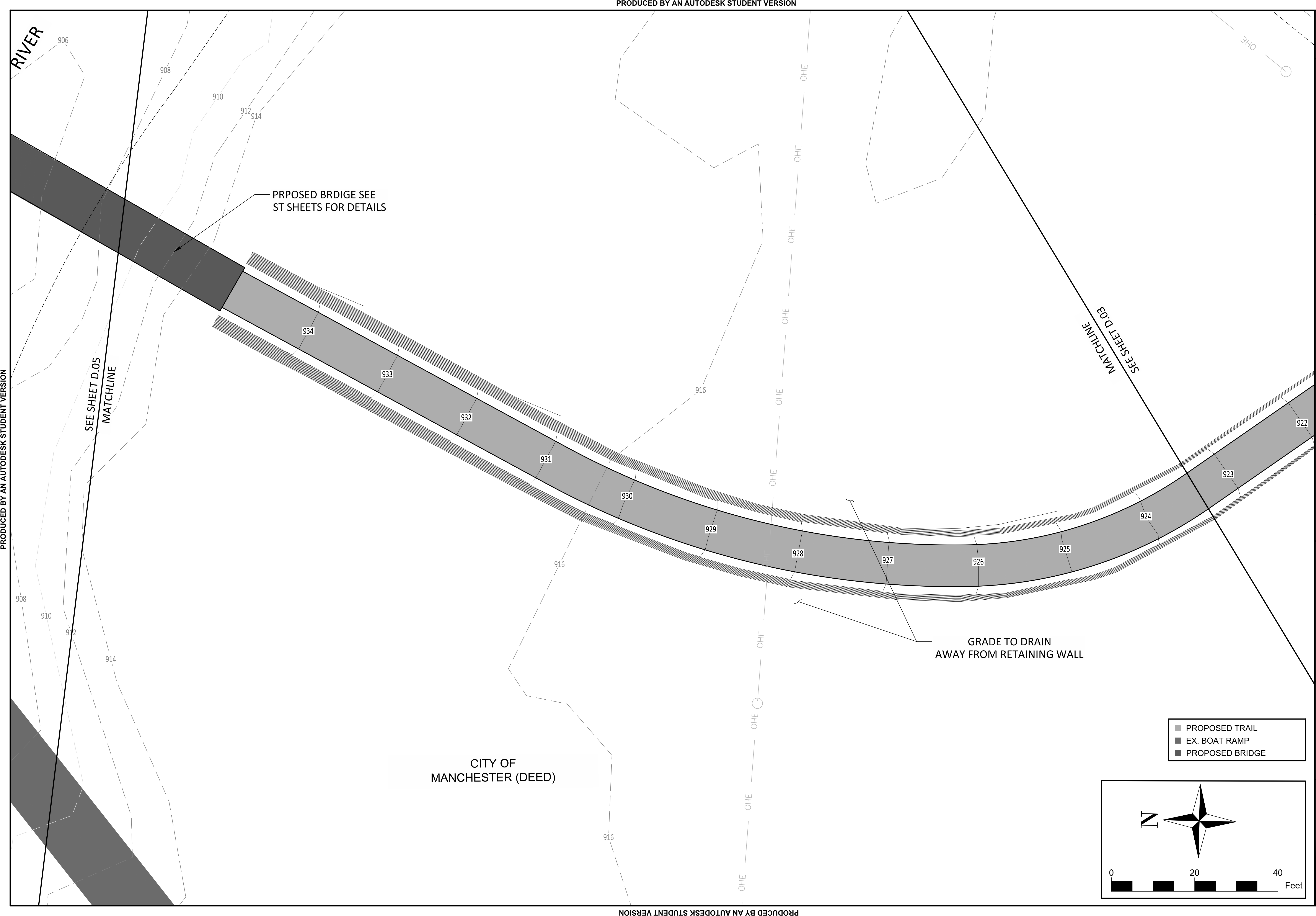


OVERALL SITE AND GRADING PLAN	
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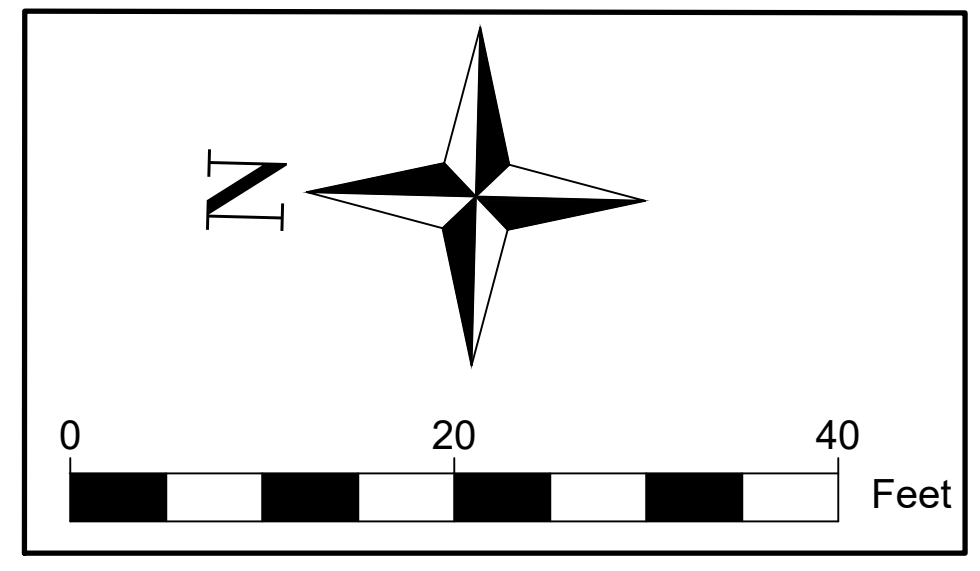
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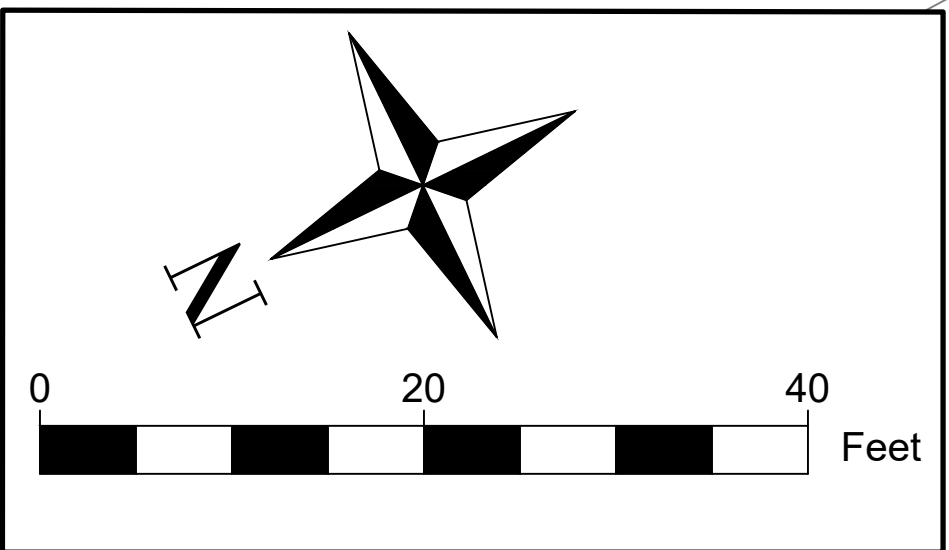


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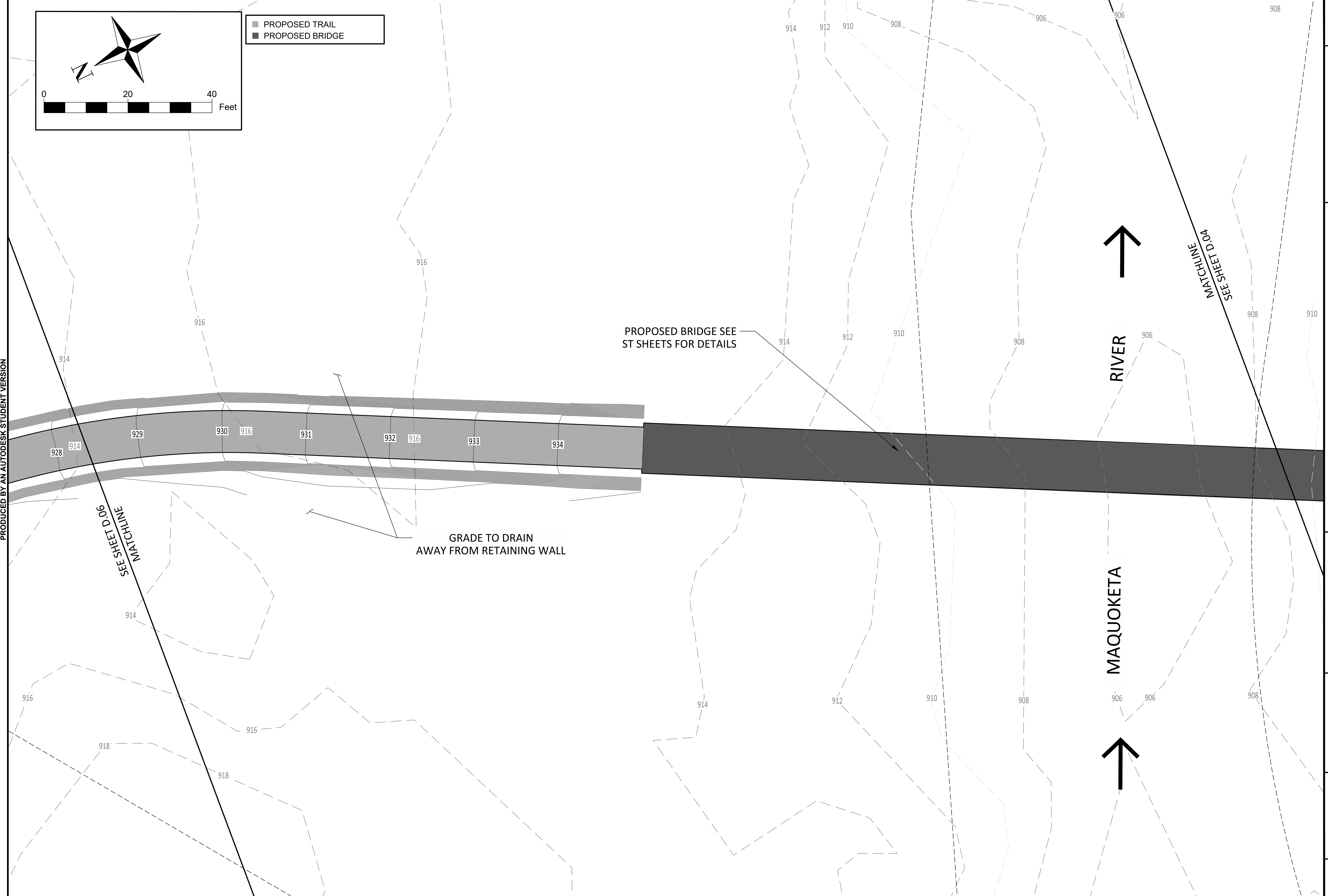


- PROPOSED TRAIL
- EX. BOAT RAMP
- PROPOSED BRIDGE



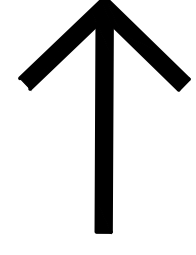


■ PROPOSED TRAIL
 ■ PROPOSED BRIDGE



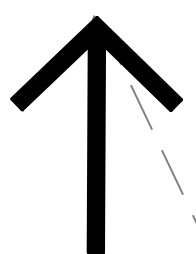
PROPOSED BRIDGE SEE
 ST SHEETS FOR DETAILS

GRADE TO DRAIN
 AWAY FROM RETAINING WALL



RIVER

MAQUOKETA



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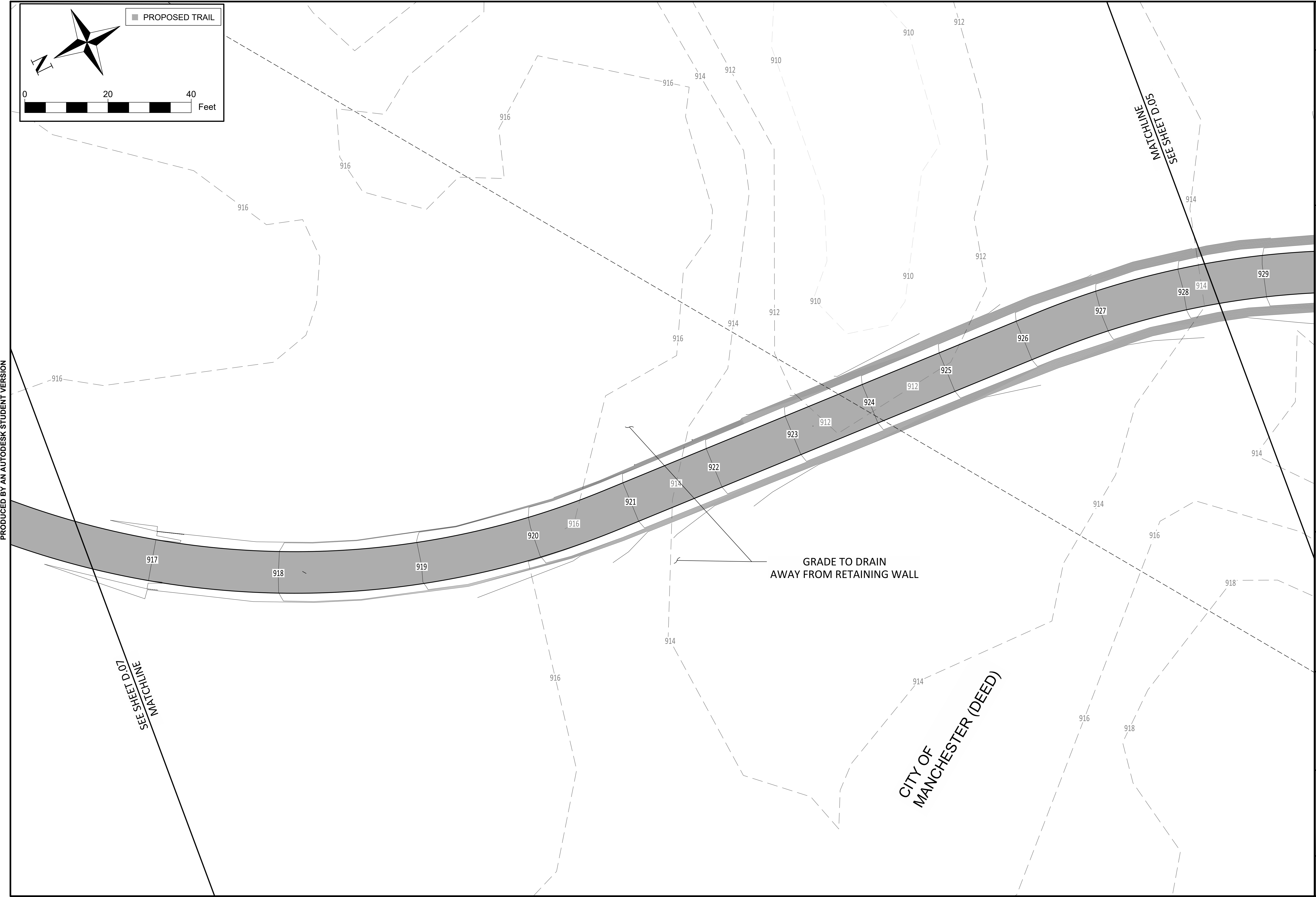
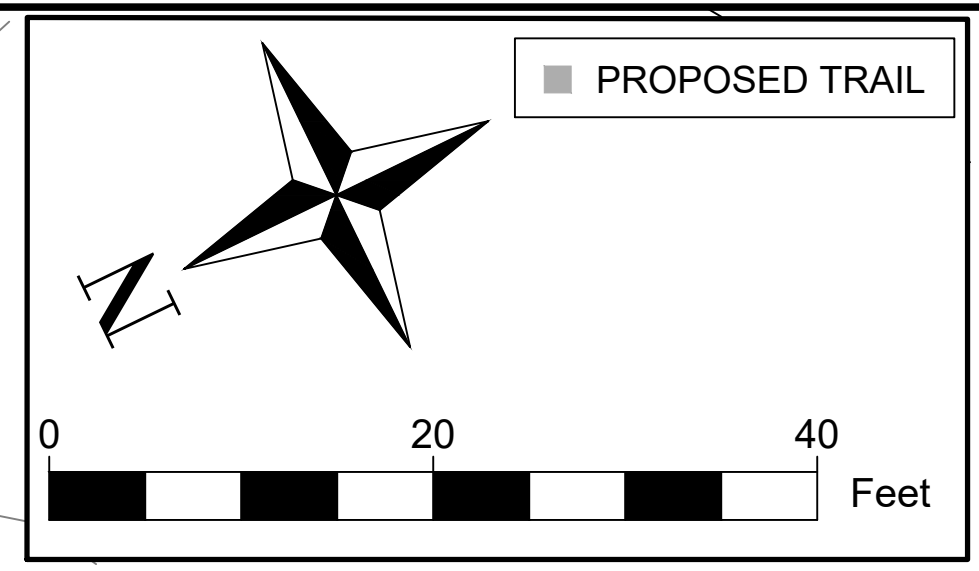
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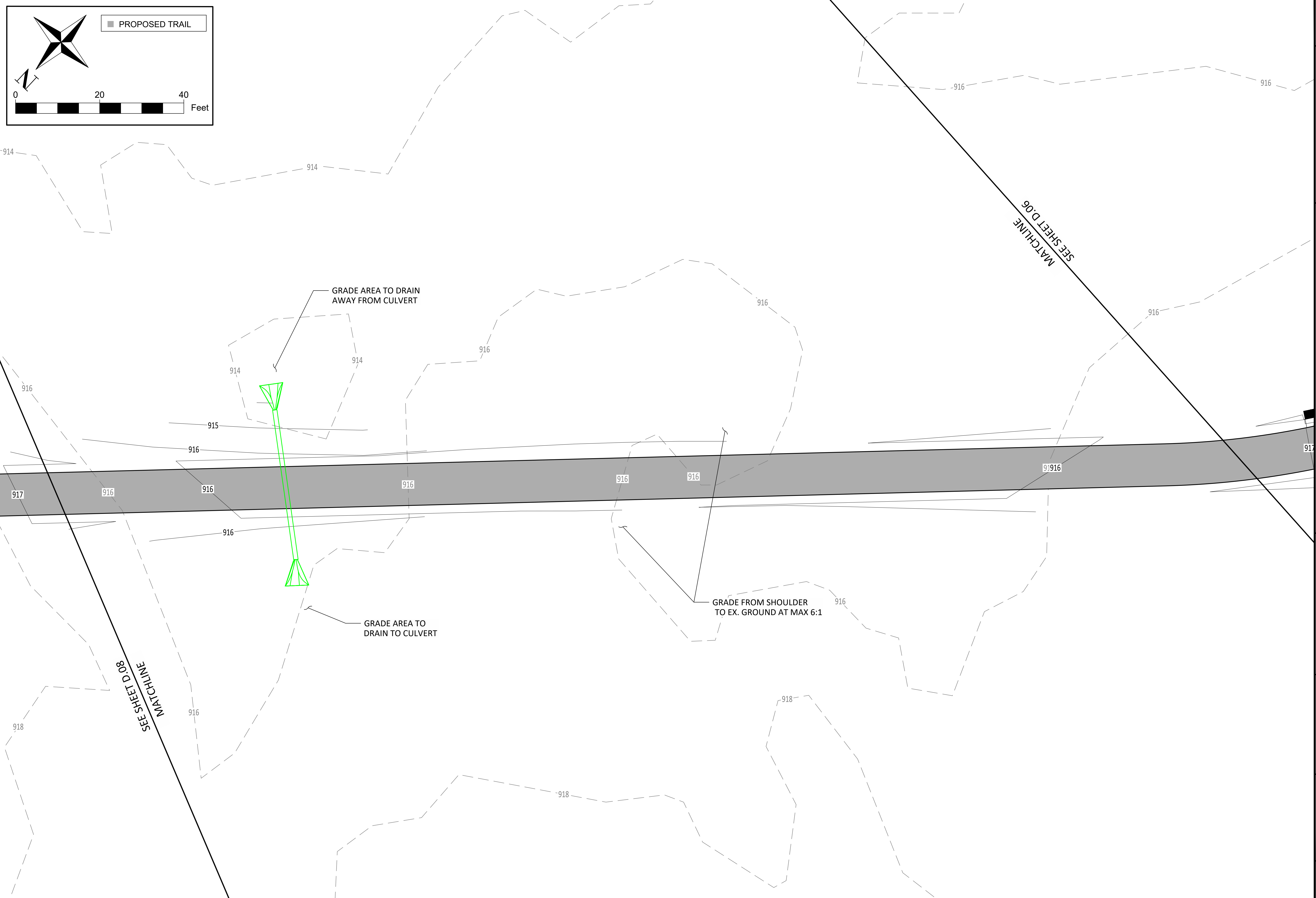


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PROPOSED TRAIL

0 20 40 Feet



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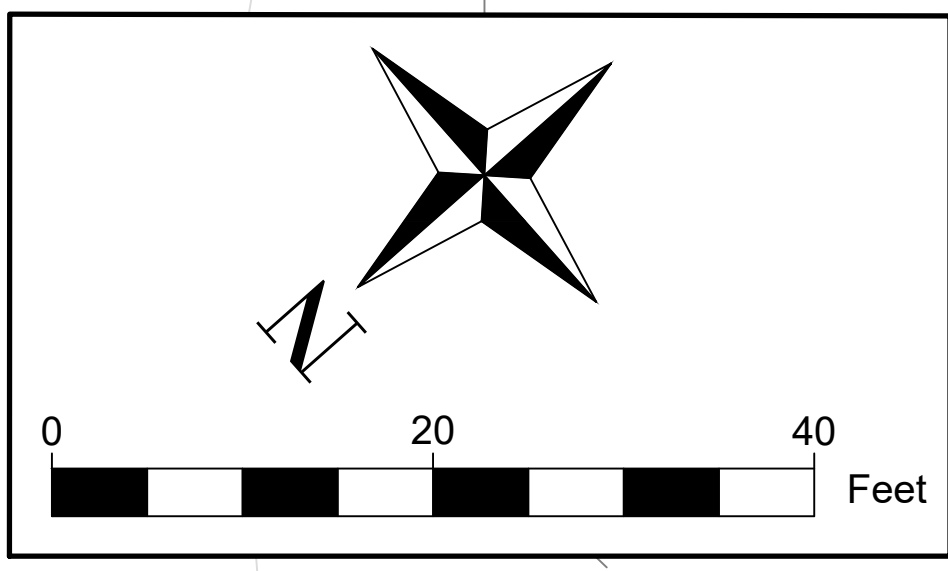


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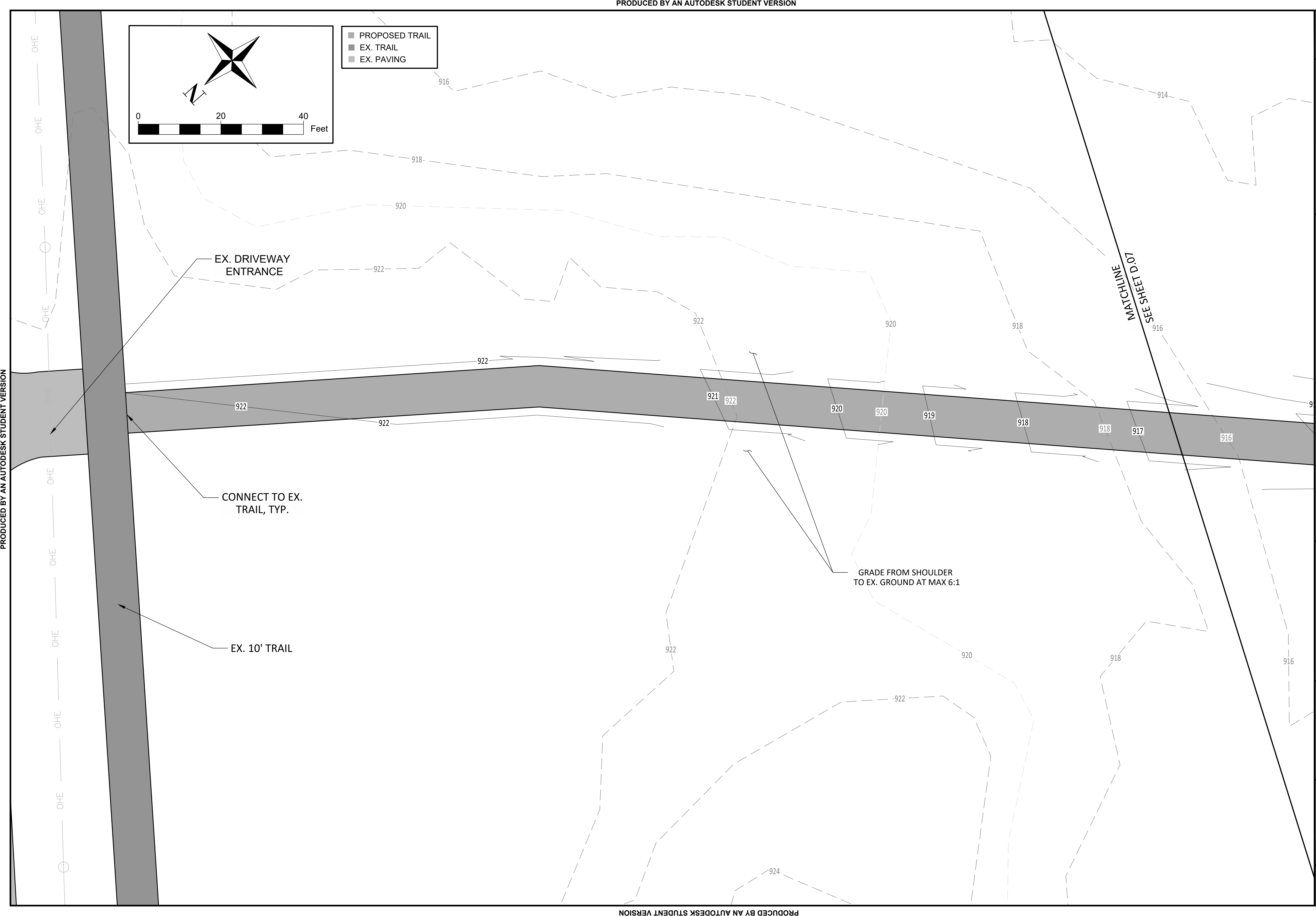
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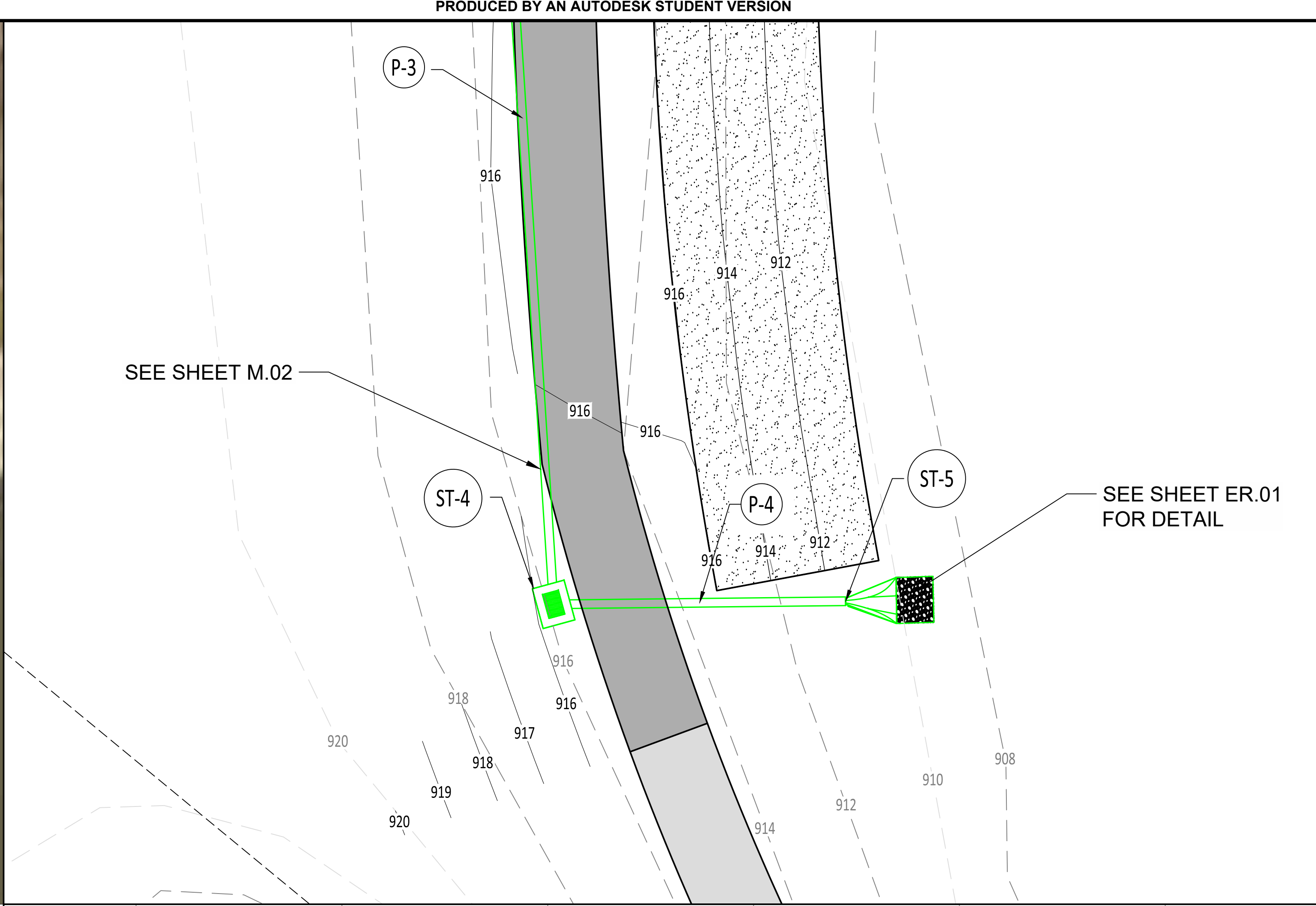
- PROPOSED TRAIL
- EX. TRAIL
- EX. PAVING



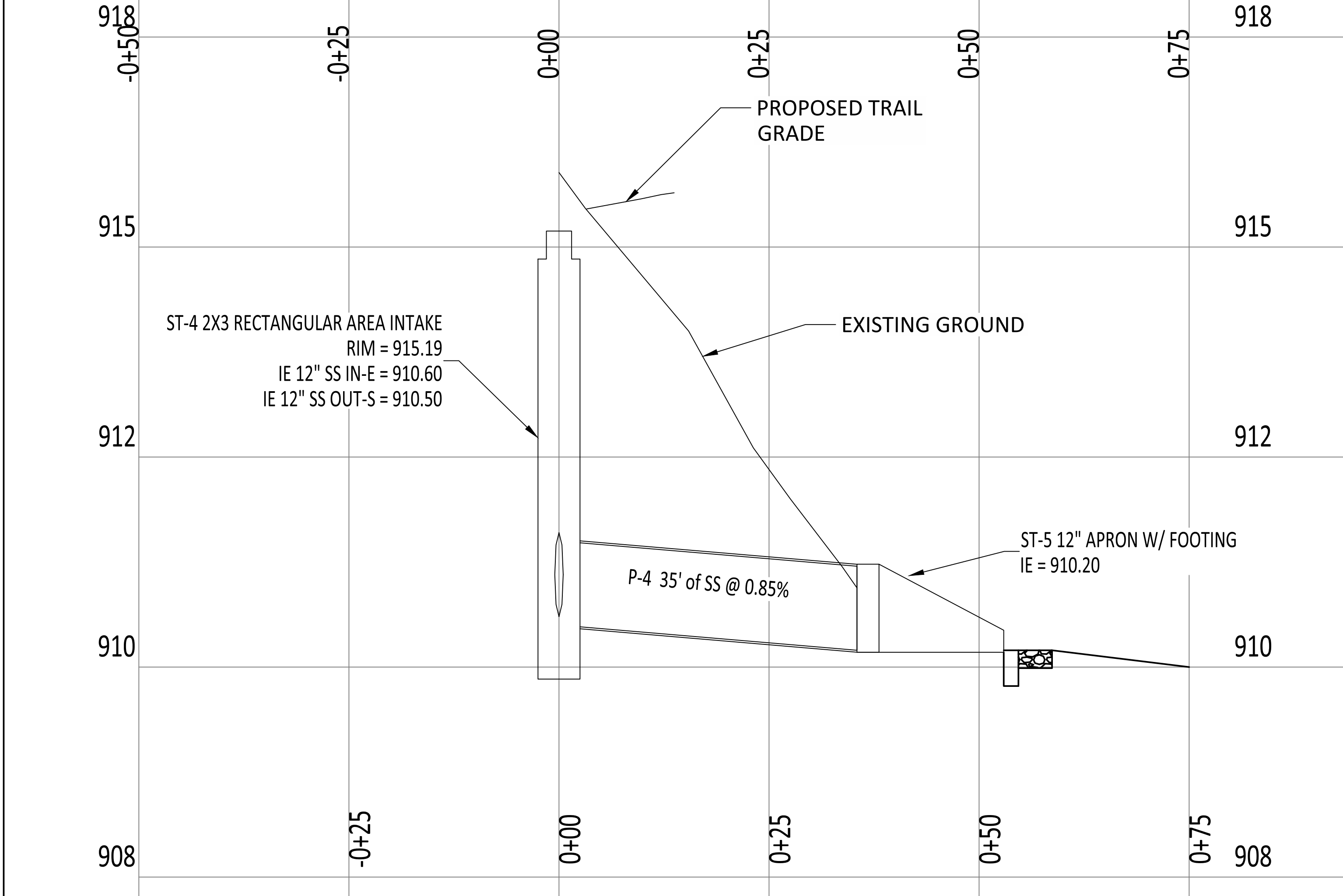
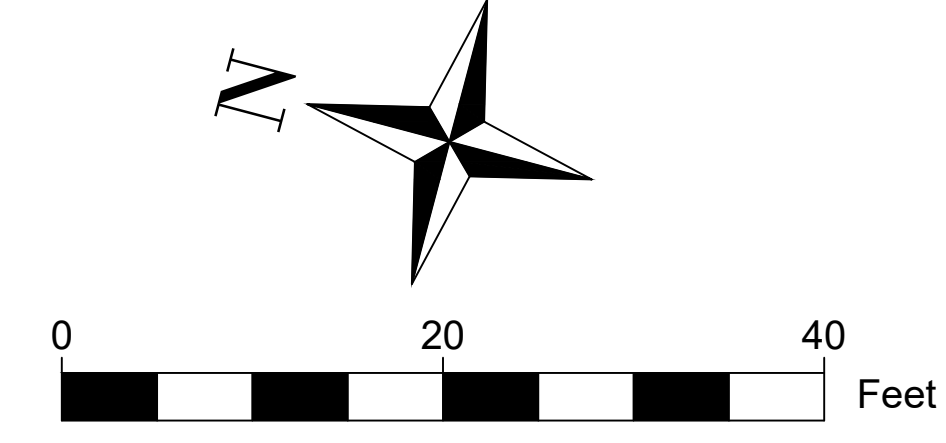
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PROPOSED STORM SEWER LOCATION



- PROPOSED TRAIL
- EX. GRAVEL TRAIL



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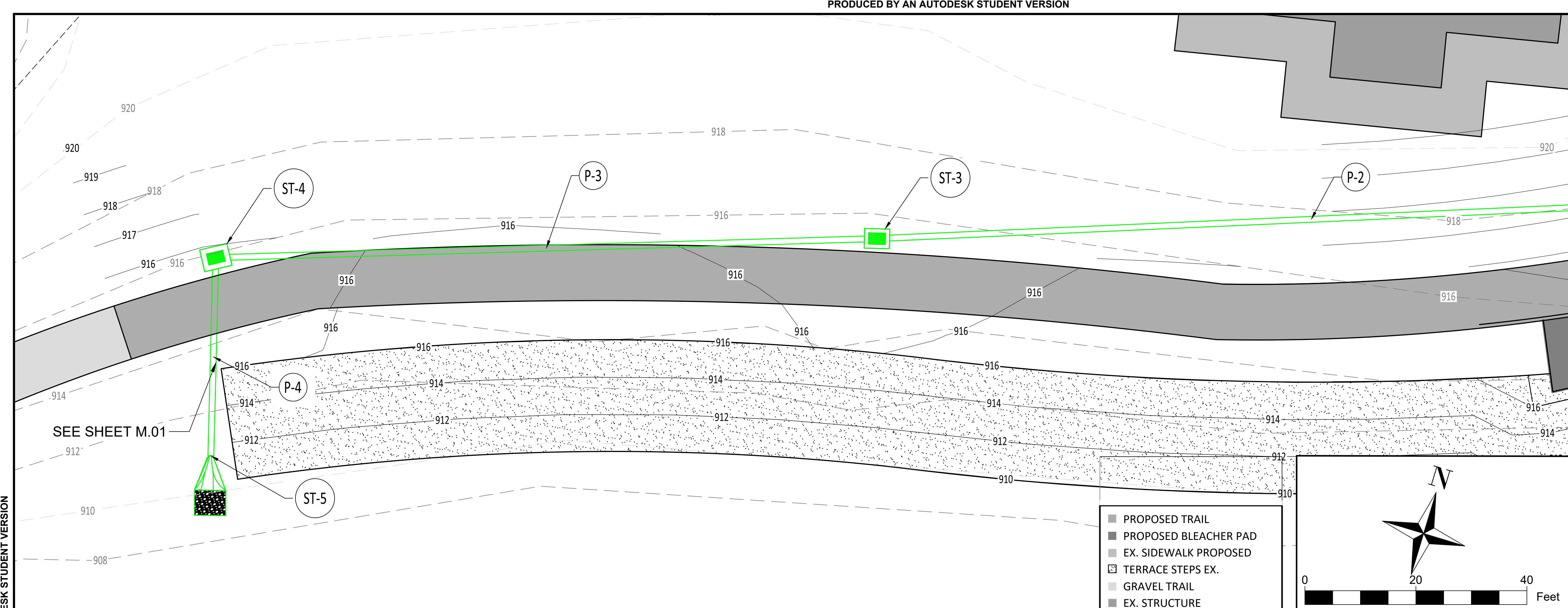
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UTILITY PLAN AND PROFILE		
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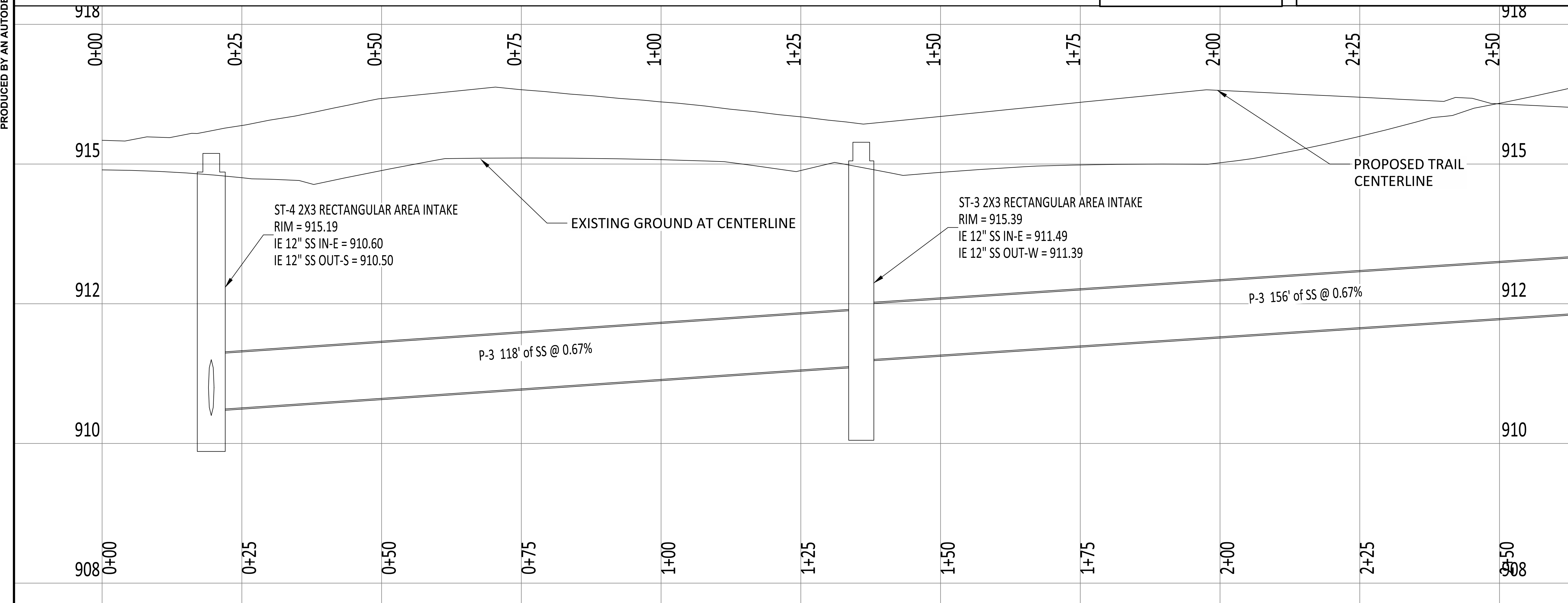
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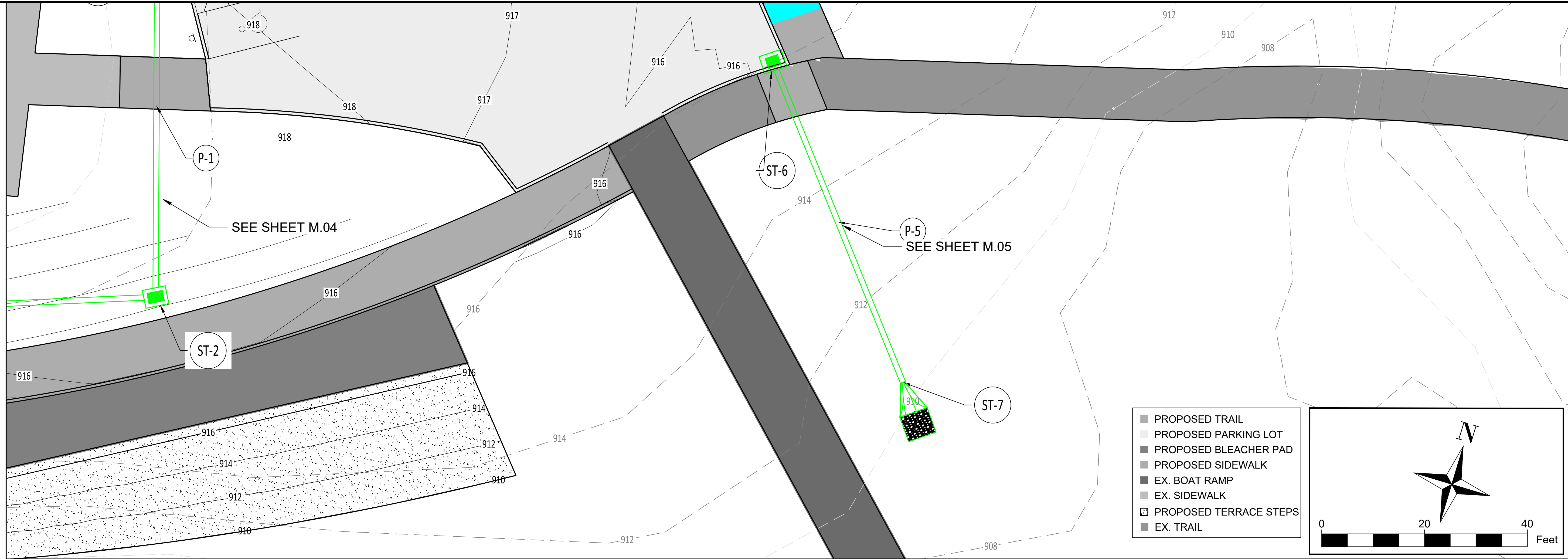
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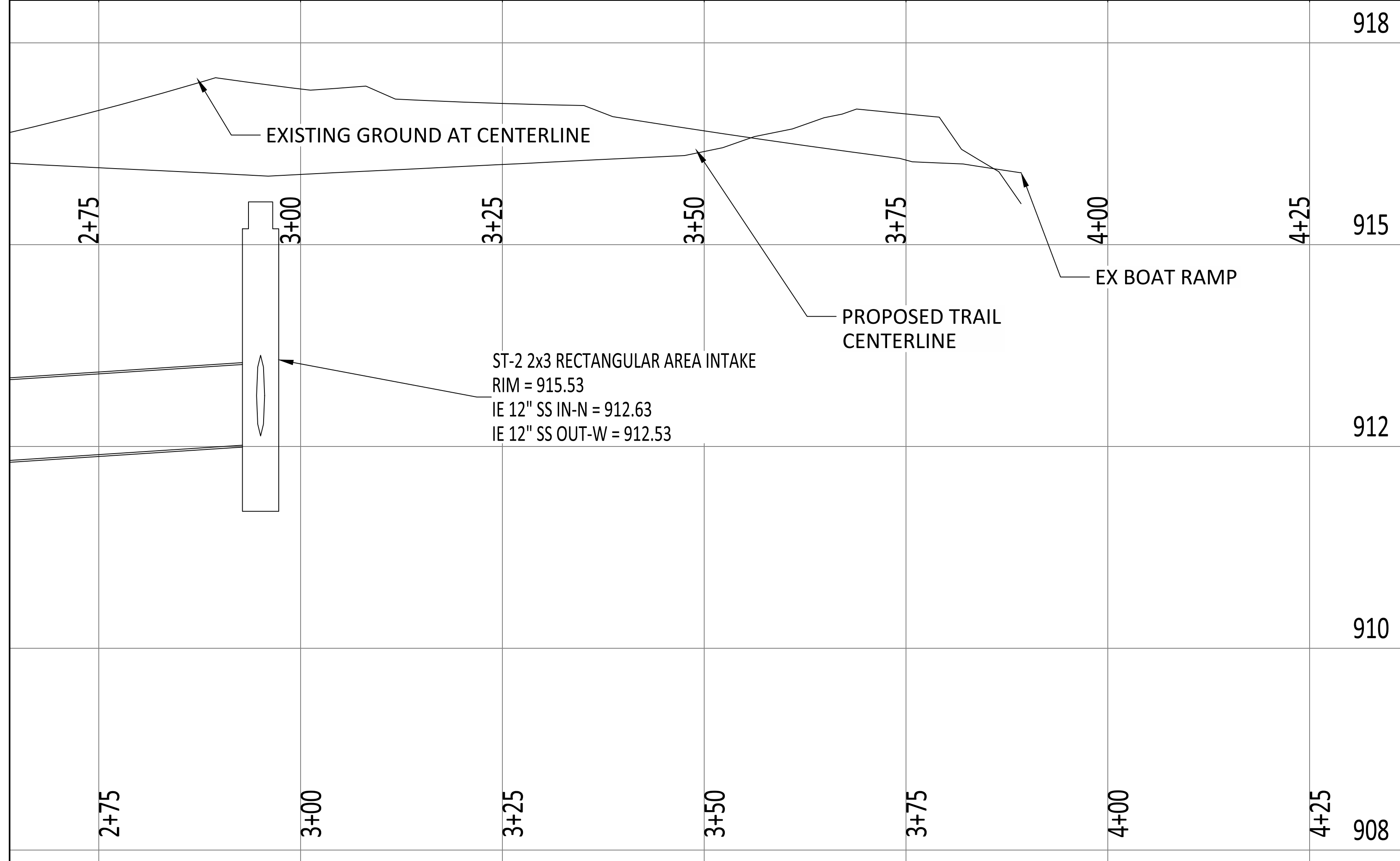
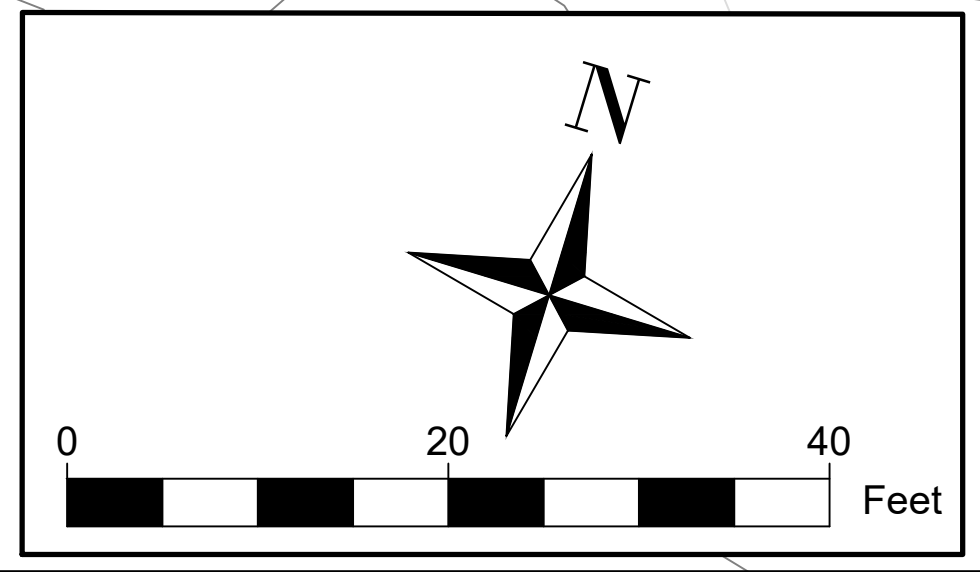
MATCHLINE



MATCHLINE



- PROPOSED TRAIL
- PROPOSED PARKING LOT
- PROPOSED BLEACHER PAD
- PROPOSED SIDEWALK
- EX. BOAT RAMP
- EX. SIDEWALK
- PROPOSED TERRACE STEPS
- EX. TRAIL



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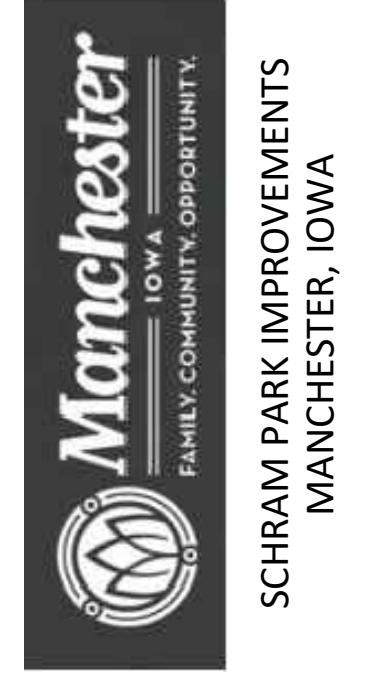
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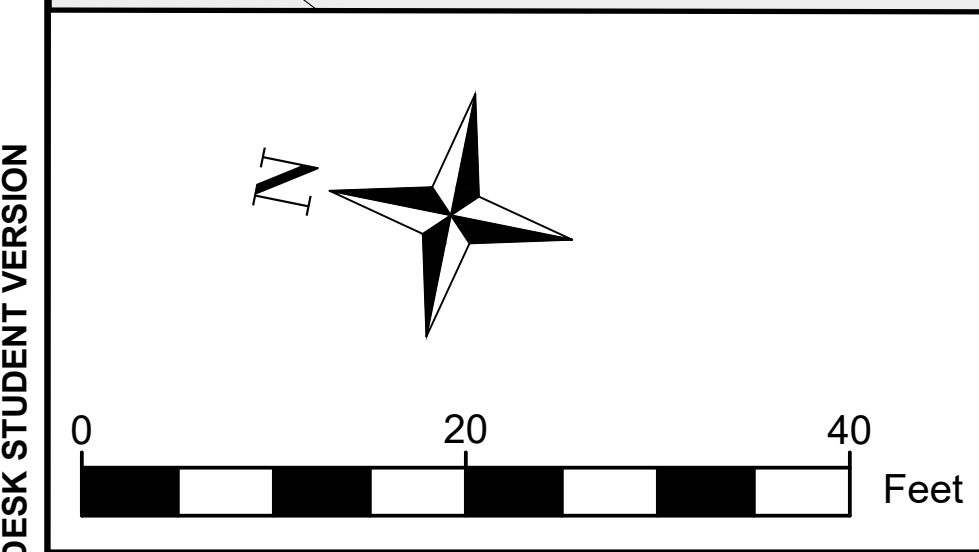


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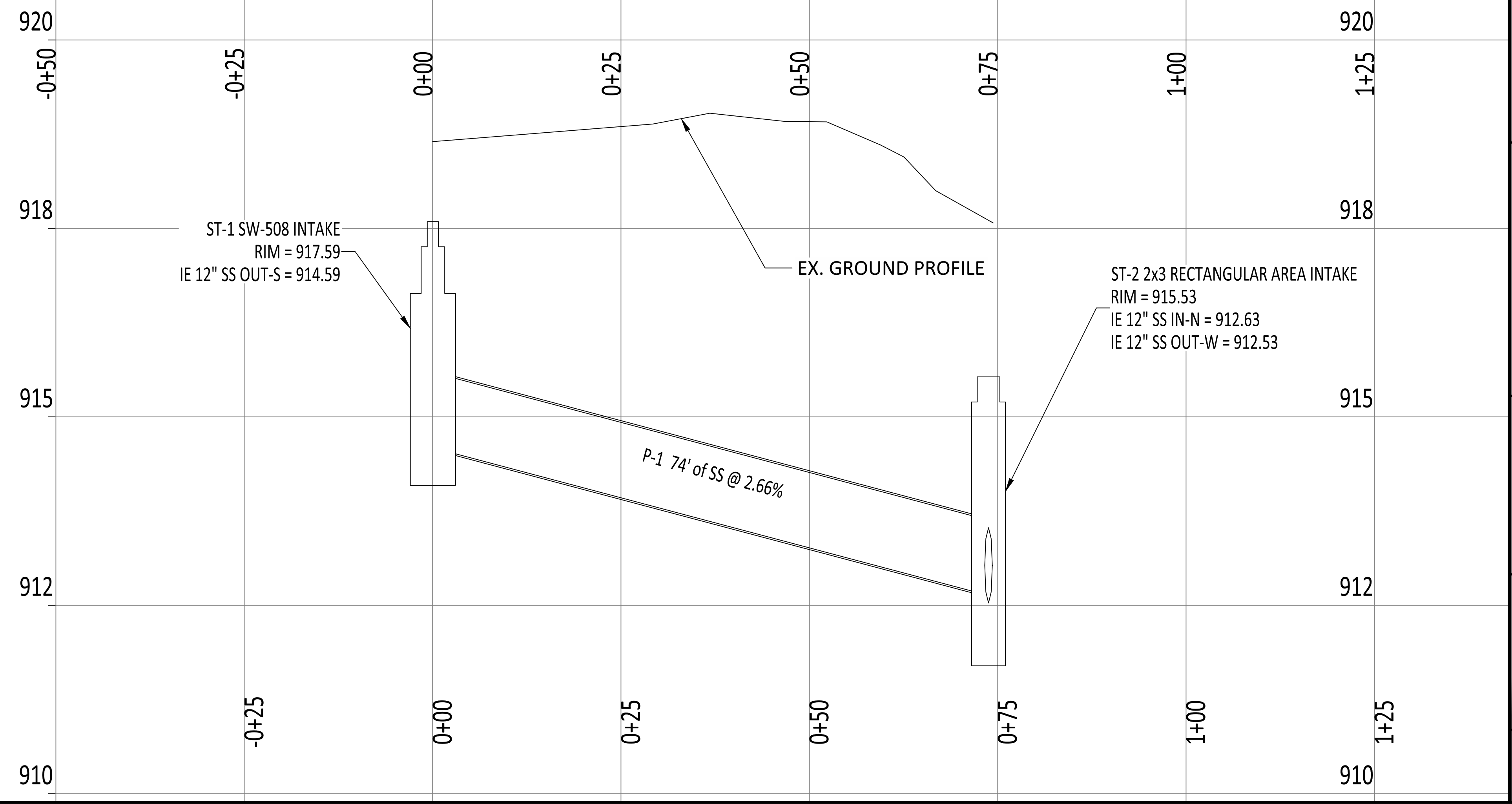
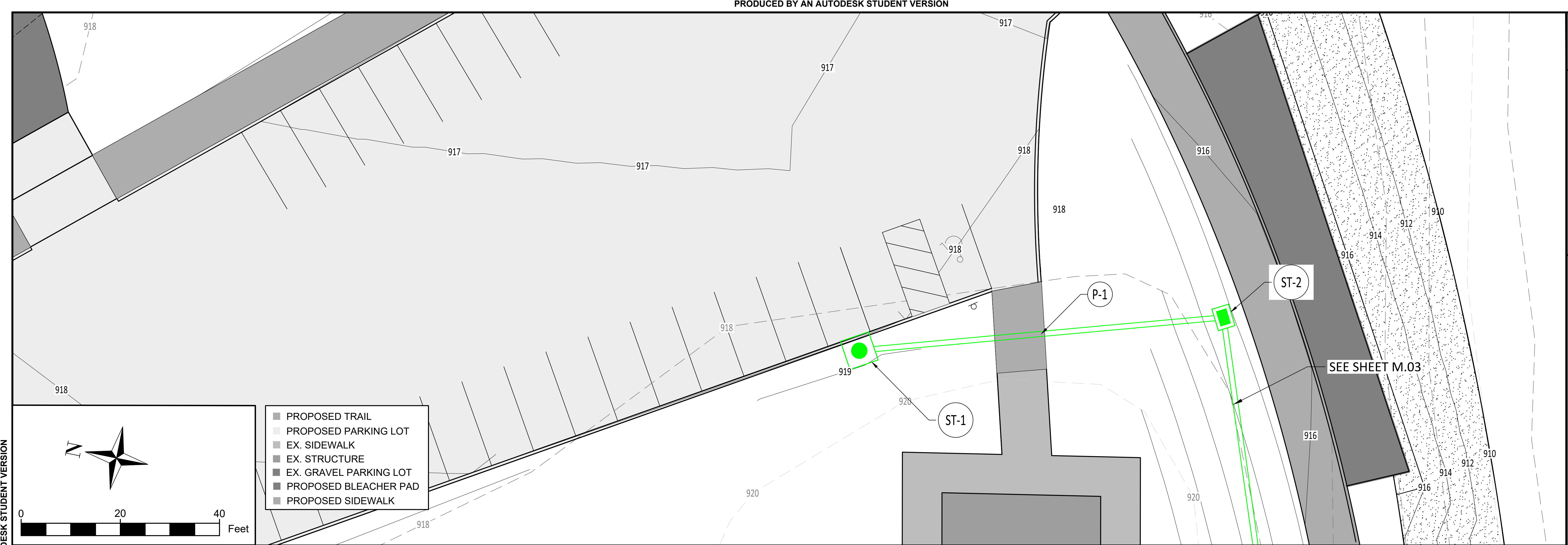
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- PROPOSED TRAIL
- PROPOSED PARKING LOT
- EX. SIDEWALK
- EX. STRUCTURE
- EX. GRAVEL PARKING LOT
- PROPOSED BLEACHER PAD
- PROPOSED SIDEWALK



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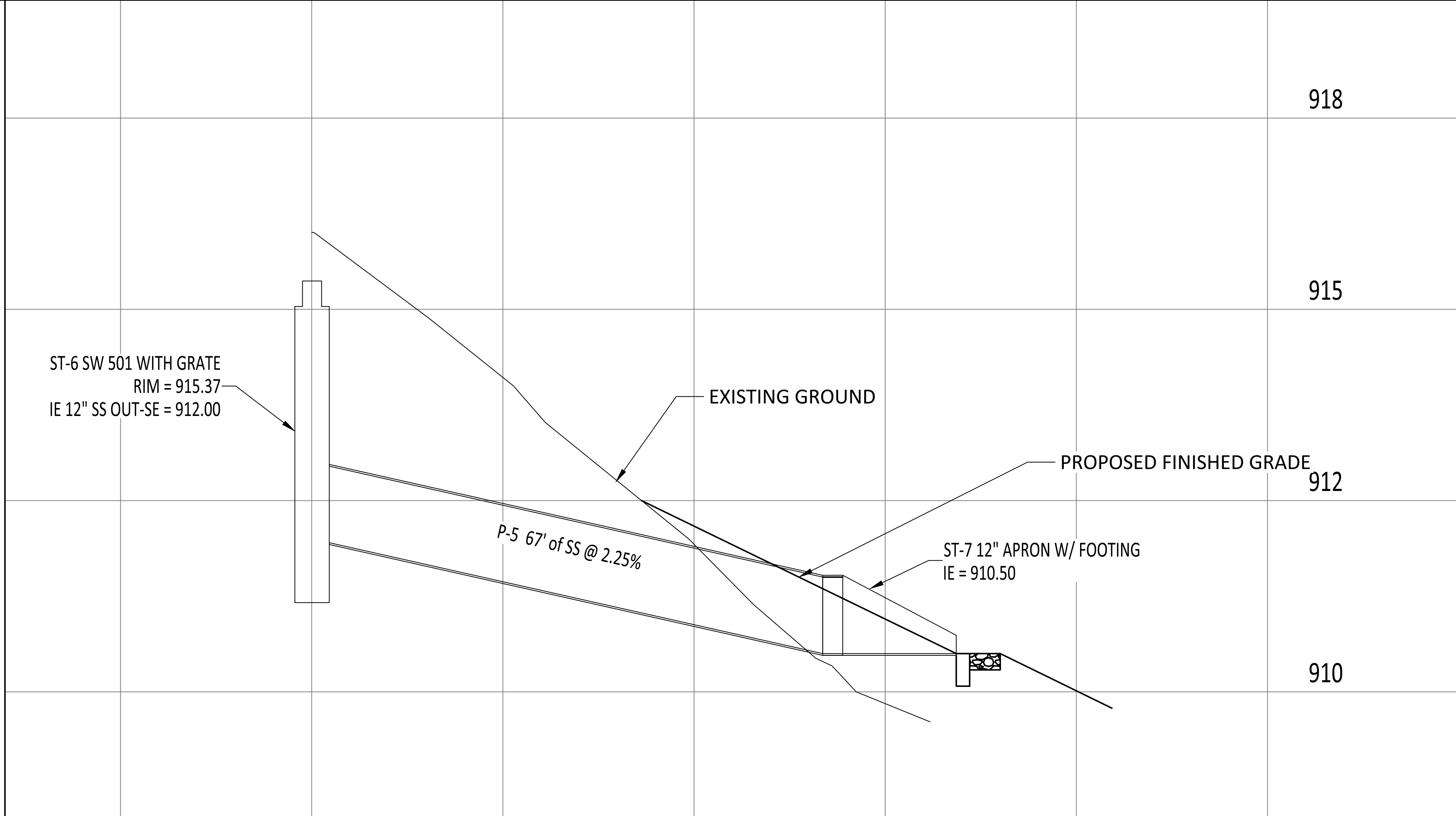
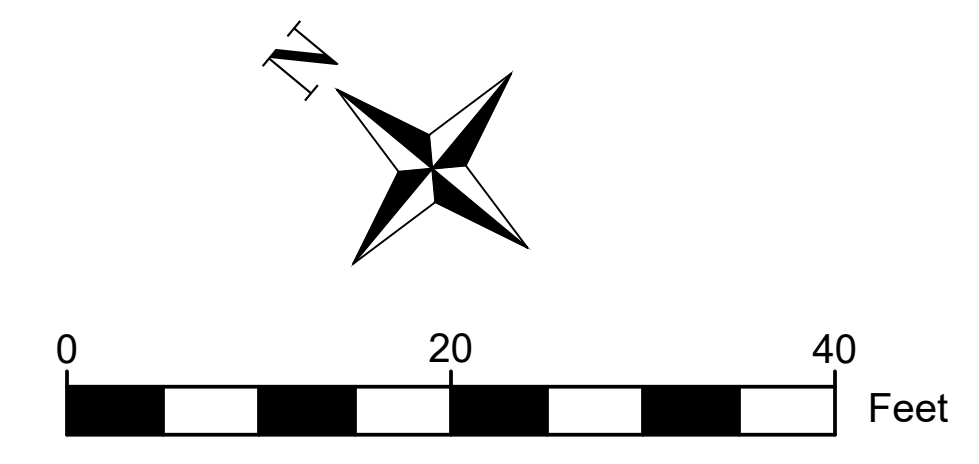
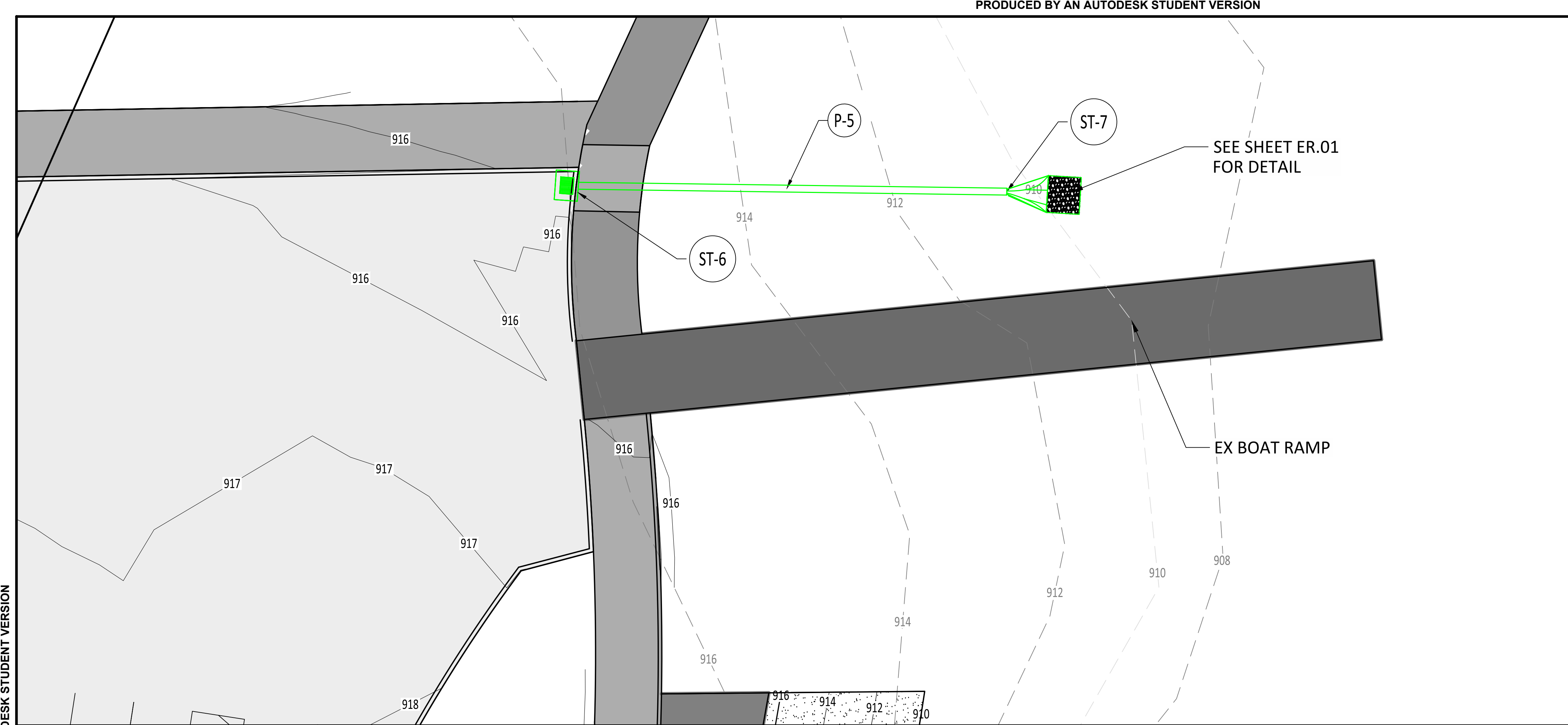
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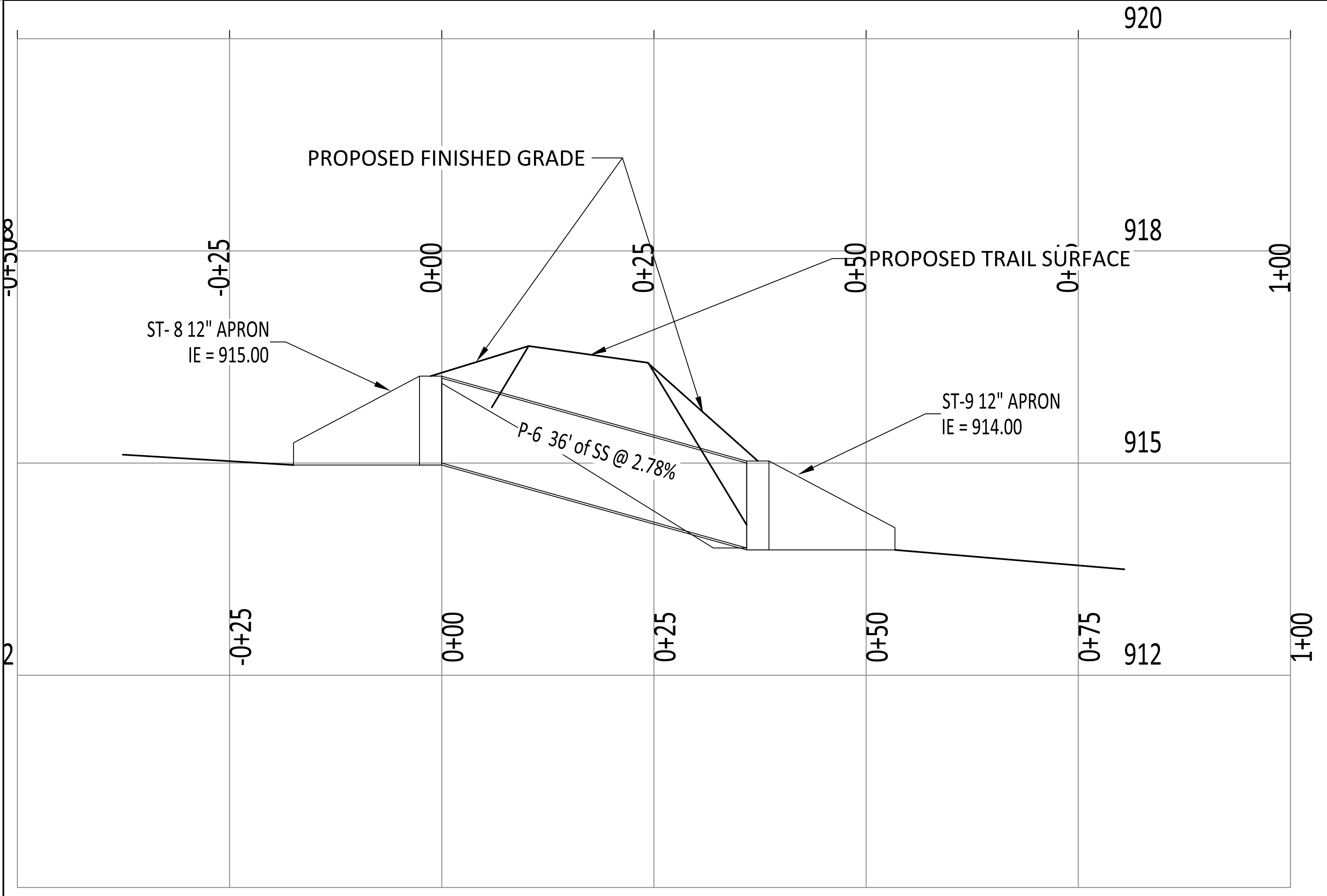
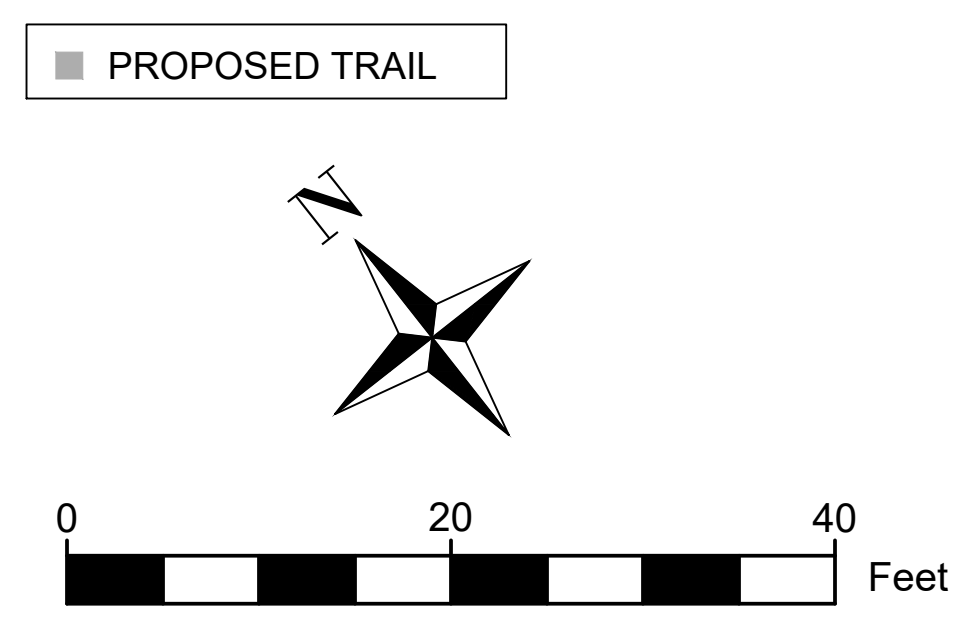
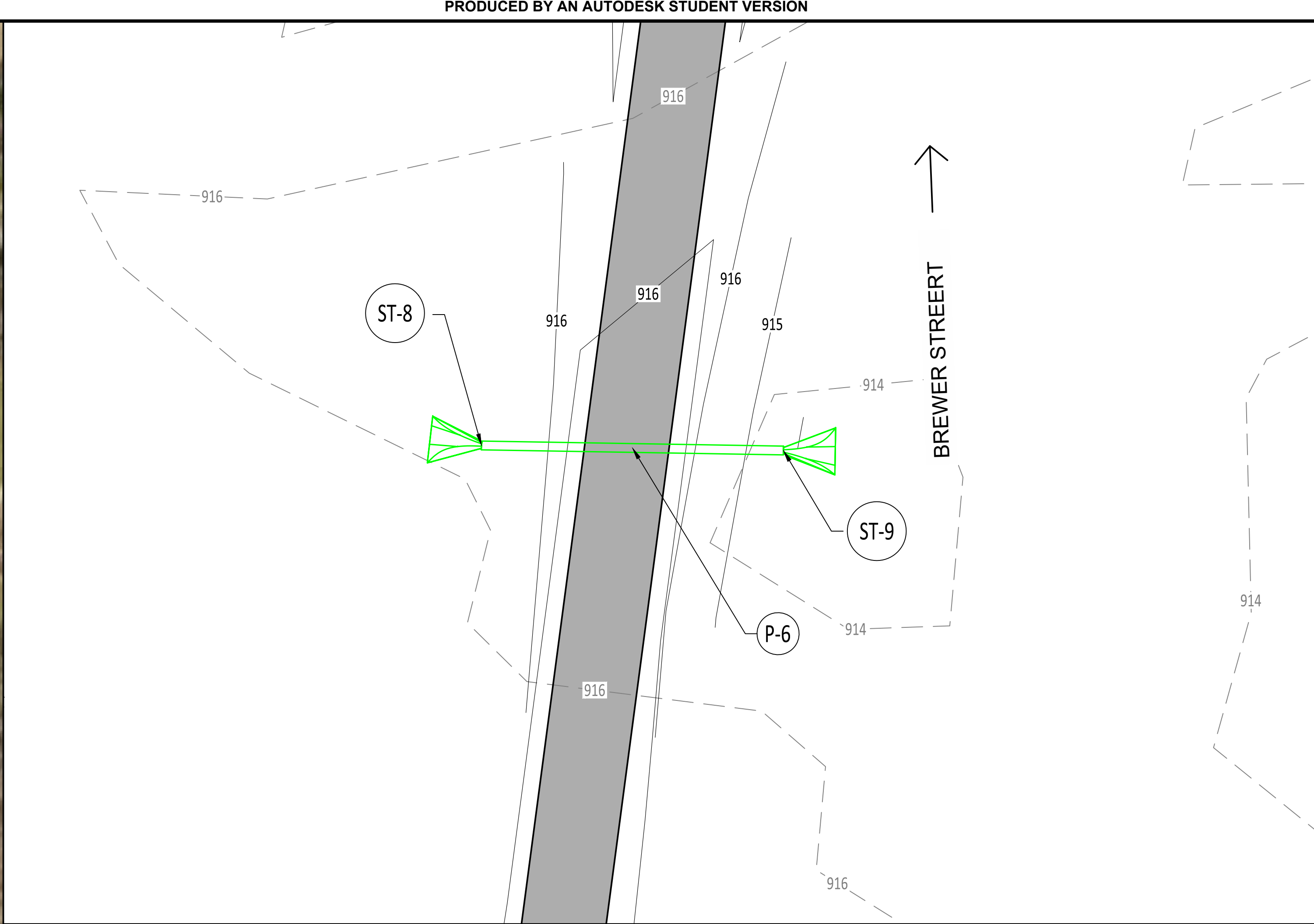
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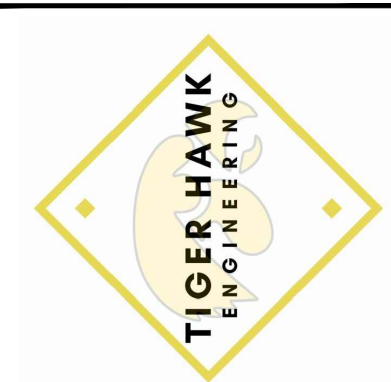
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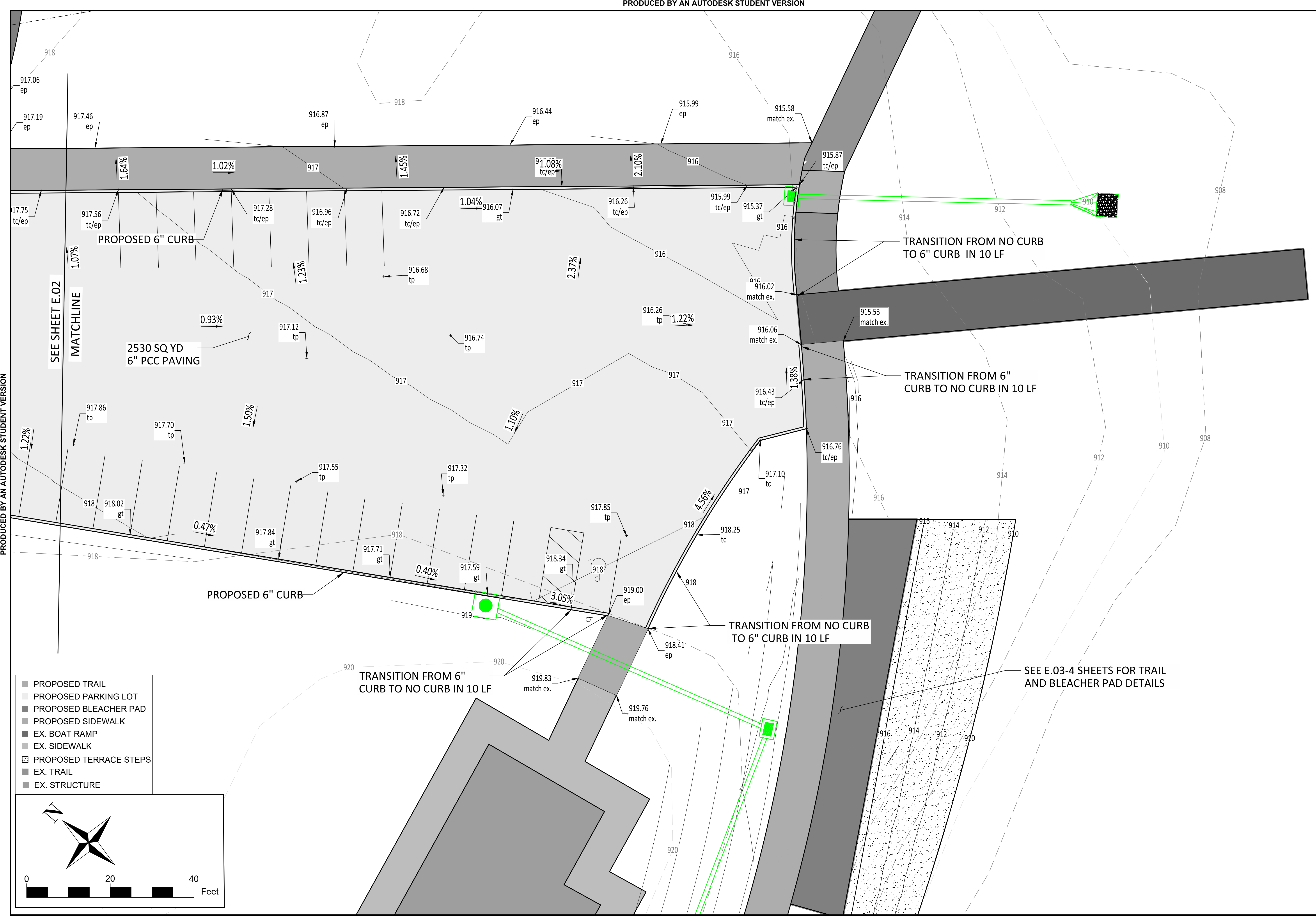
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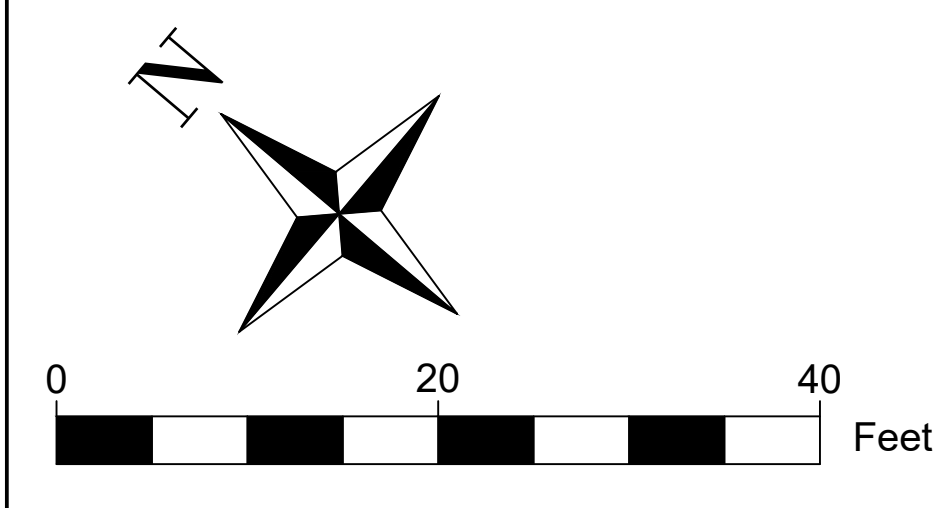
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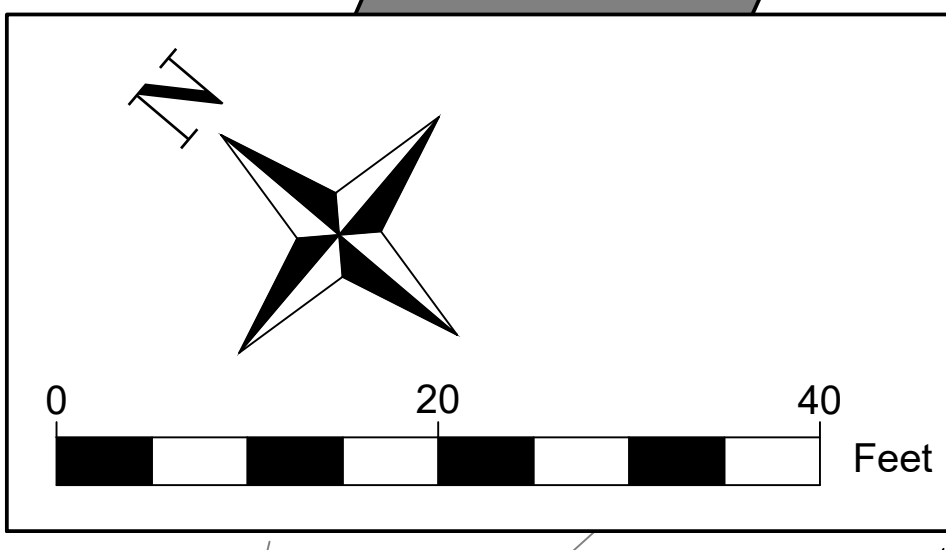
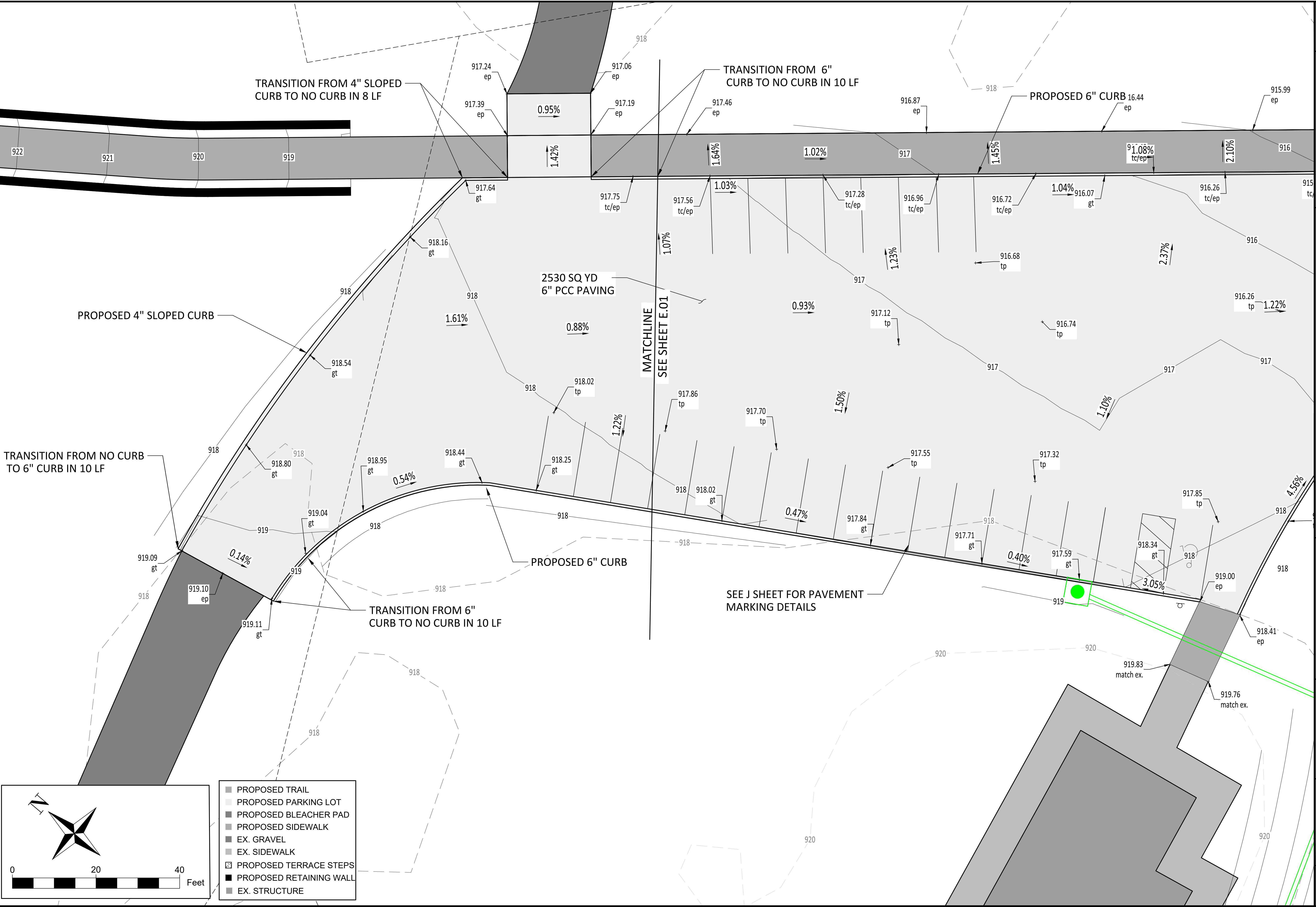
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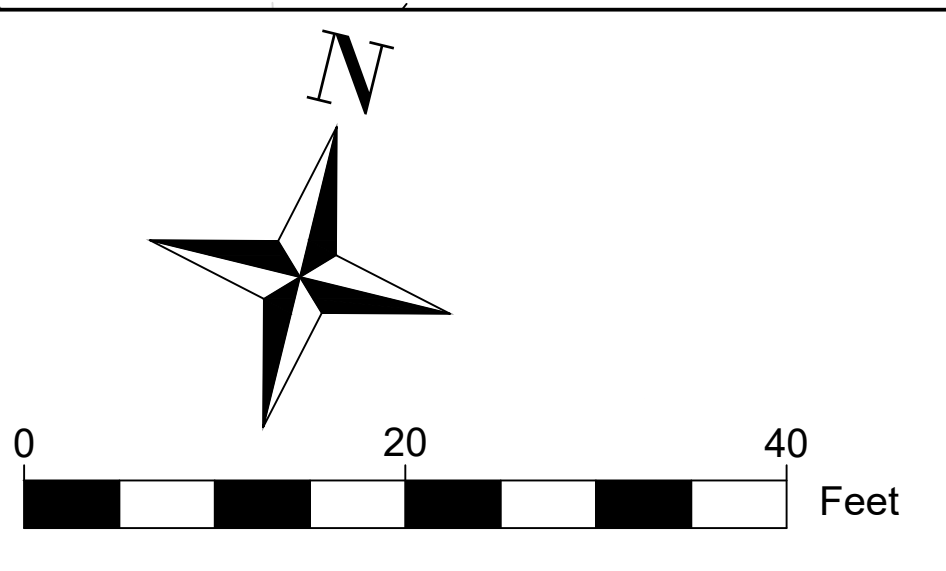
- PROPOSED TRAIL
- PROPOSED PARKING LOT
- PROPOSED BLEACHER PAD
- PROPOSED SIDEWALK
- EX. BOAT RAMP
- EX. SIDEWALK
- PROPOSED TERRACE STEPS
- EX. TRAIL
- EX. STRUCTURE



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- PROPOSED TRAIL
- PROPOSED PARKING LOT
- PROPOSED BLEACHER PAD
- PROPOSED SIDEWALK
- EX. GRAVEL
- EX. SIDEWALK
- ▣ PROPOSED TERRACE STEPS
- PROPOSED RETAINING WALL
- EX. STRUCTURE



- PROPOSED TRAIL
- PROPOSED BLEACHER PAD
- EX. SIDEWALK
- EX. STRUCTURE
- PROPOSED BLEACHER PAD
- PROPOSED RETAINING WALL

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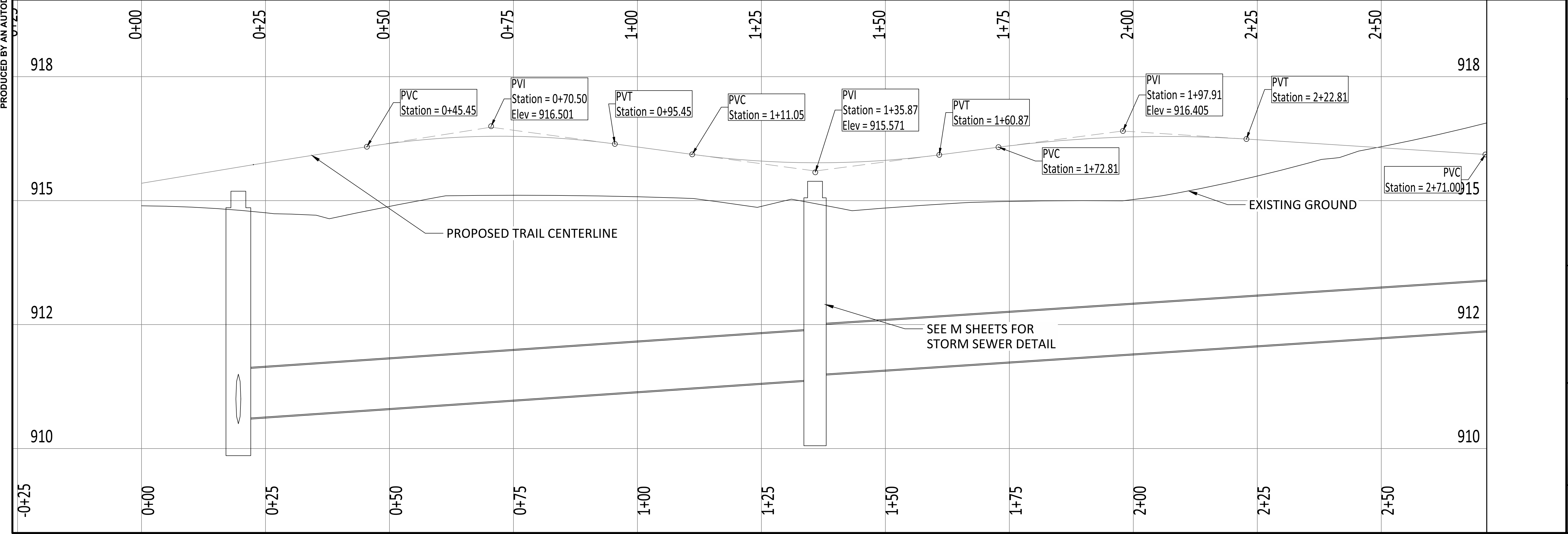
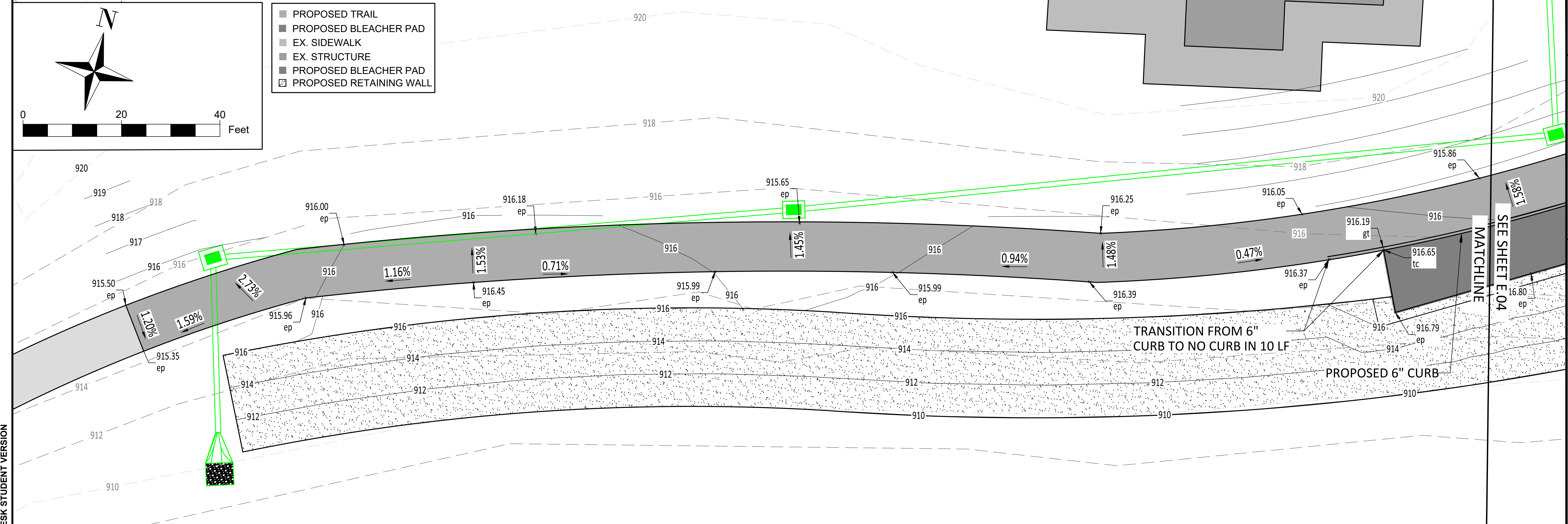
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TRAIL PLAN AND PROFILE

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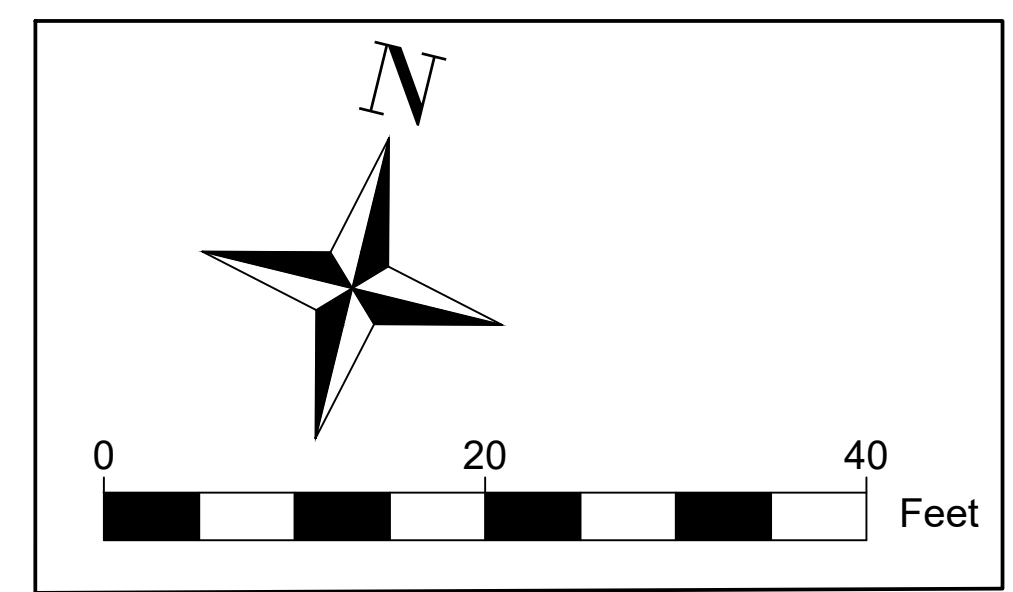
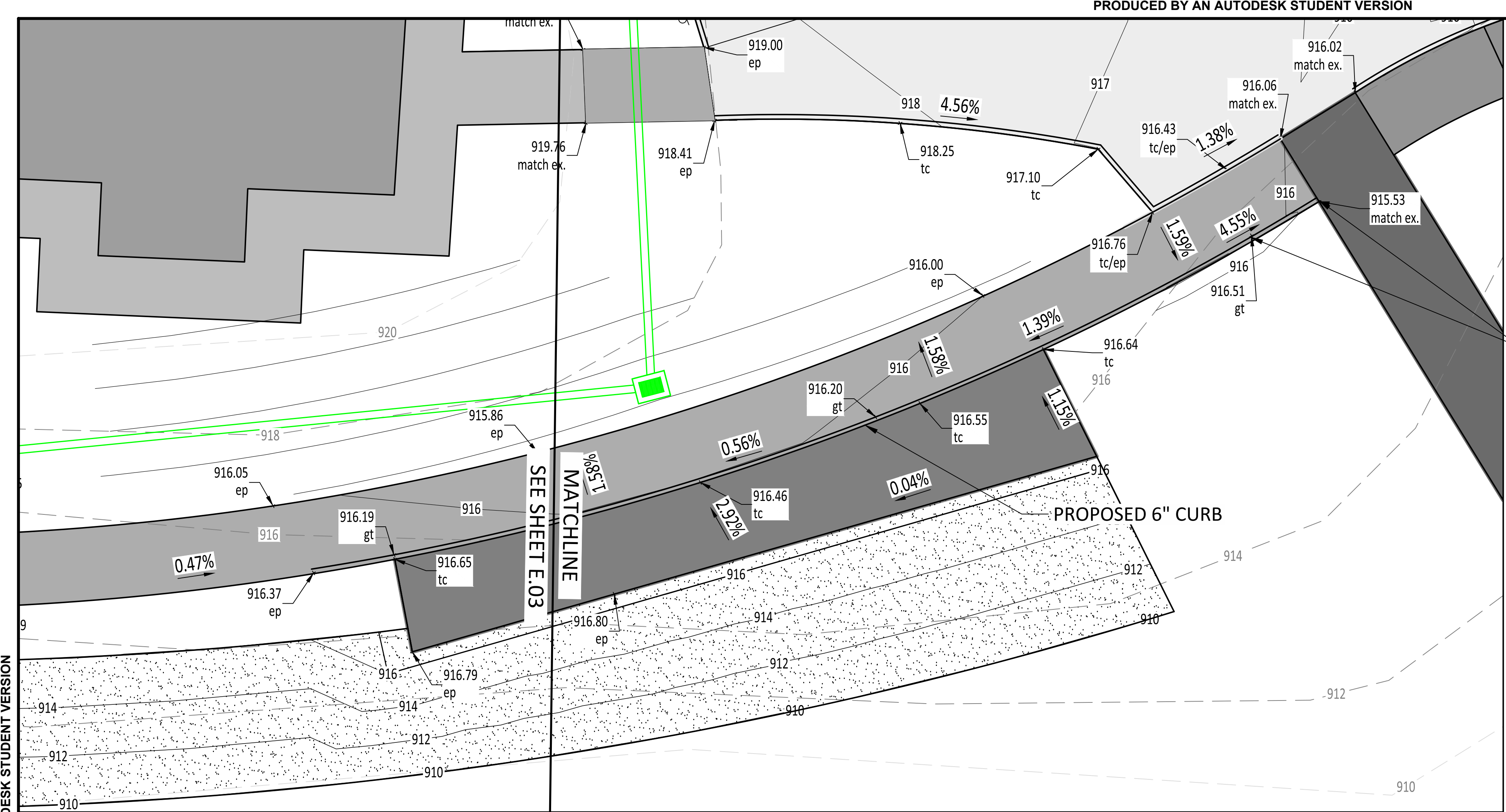


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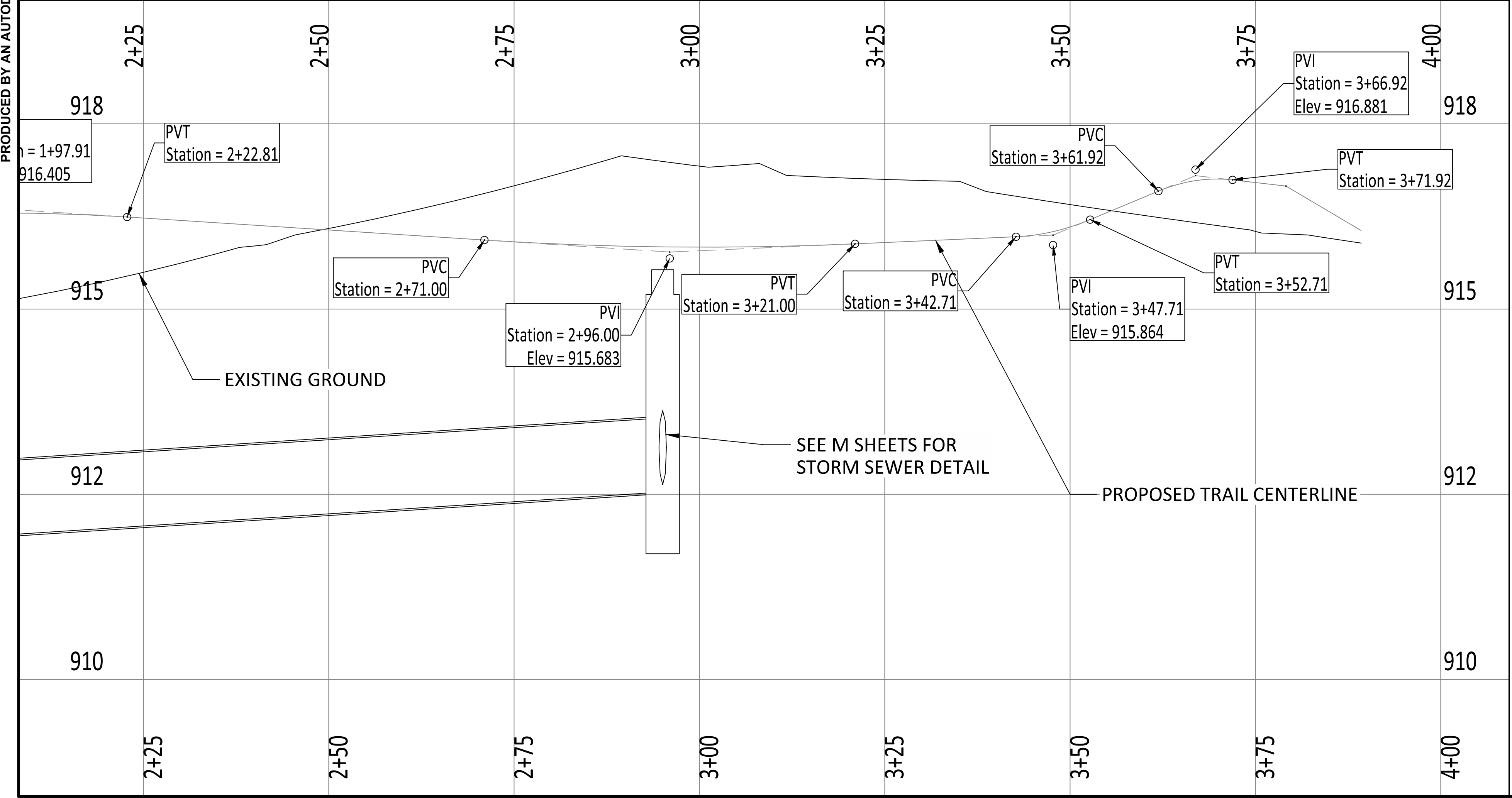
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- PROPOSED TRAIL
- PROPOSED BLEACHER PAD
- EX. SIDEWALK
- EX. STRUCTURE
- PROPOSED BLEACHER PAD
- ▣ PROPOSED RETAINING WALL
- PROPOSED SIDEWALK
- EX. TRAIL
- EX. BOAT RAMP

TRANSITION FROM 6" CURB TO NO CURB IN 10 LF



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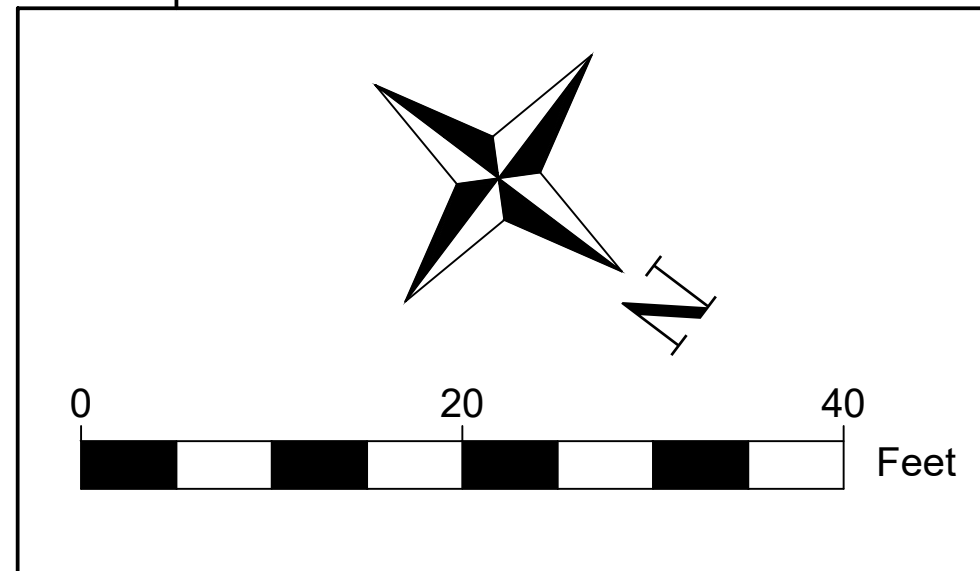
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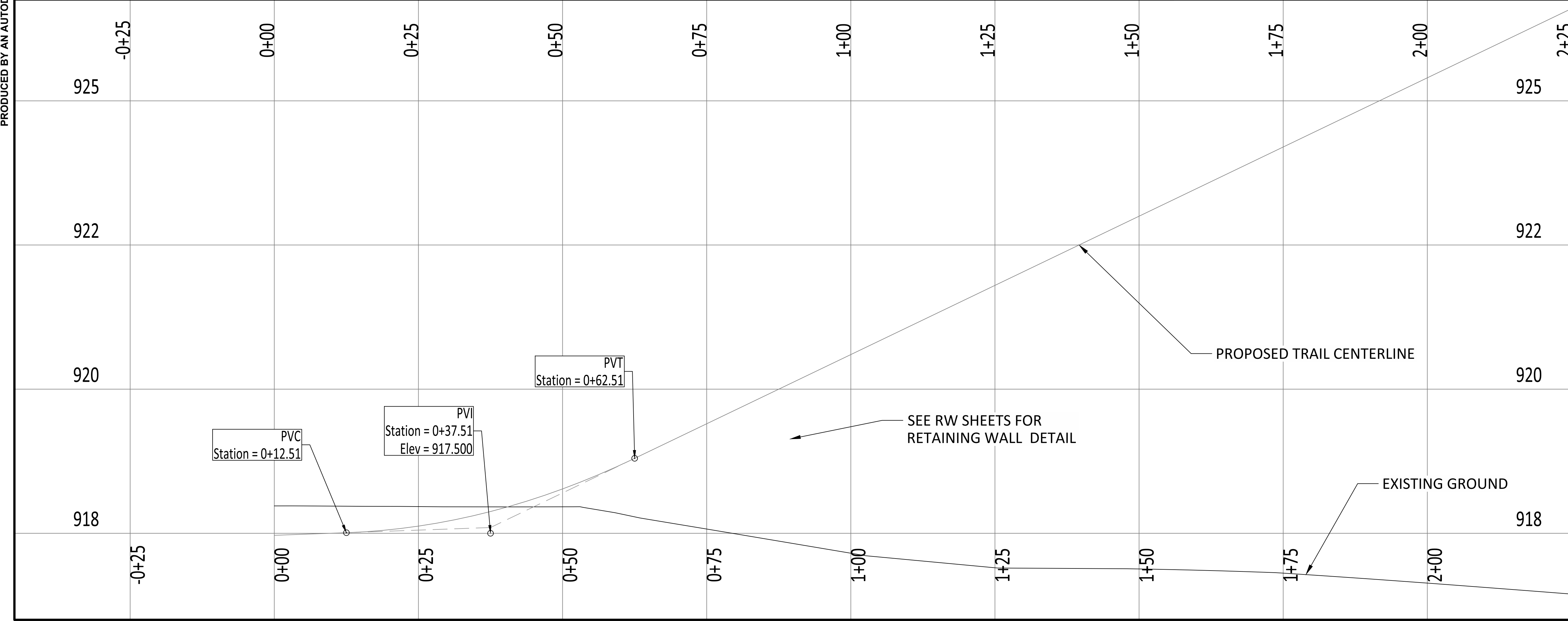
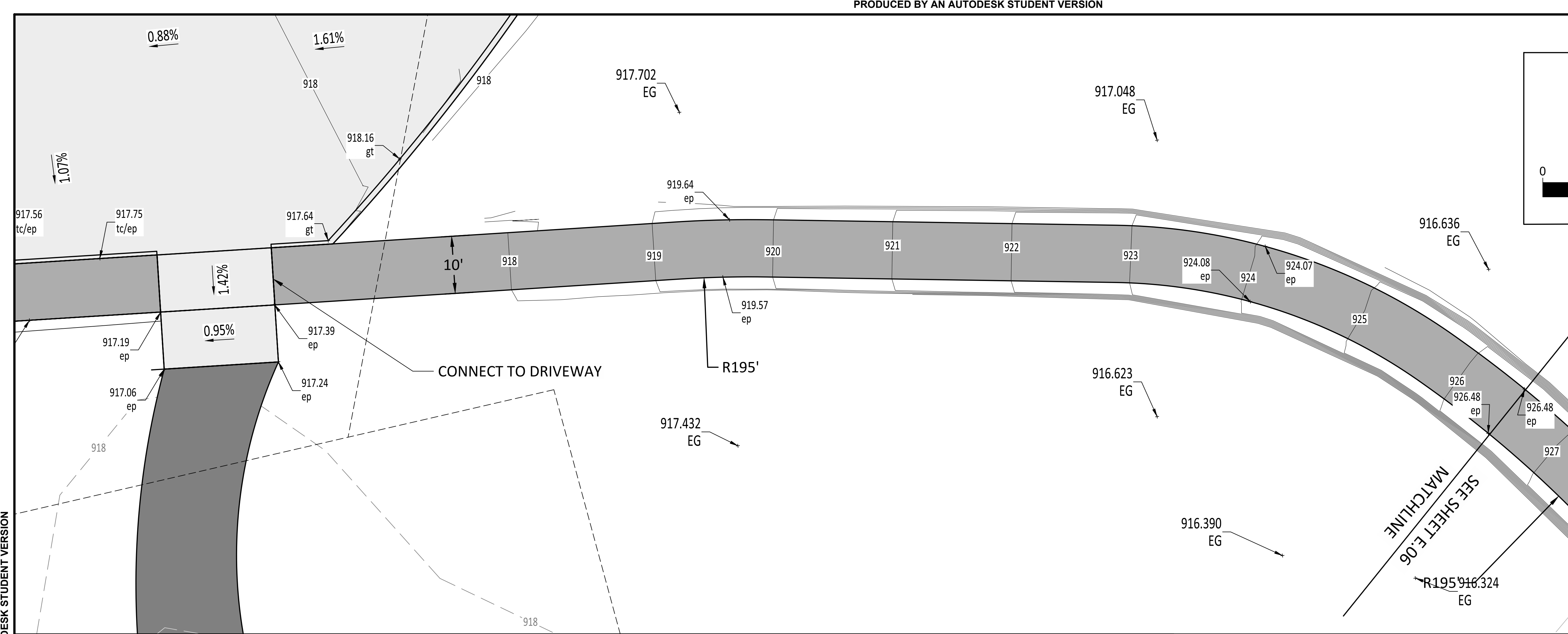
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E.05



- PROPOSED TRAIL
- PROPOSED PARKING LOT
- EX. GRAVEL SURFACE



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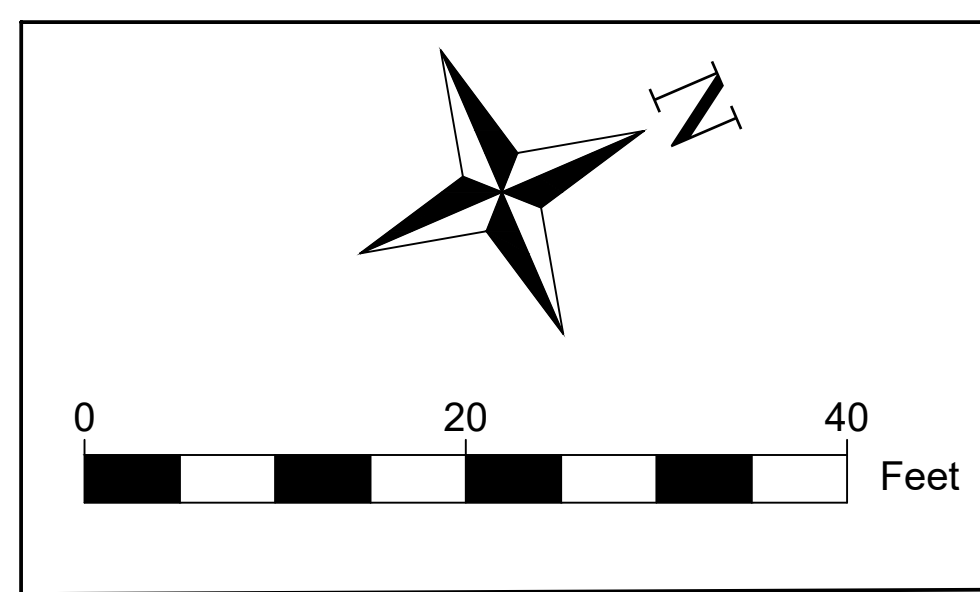
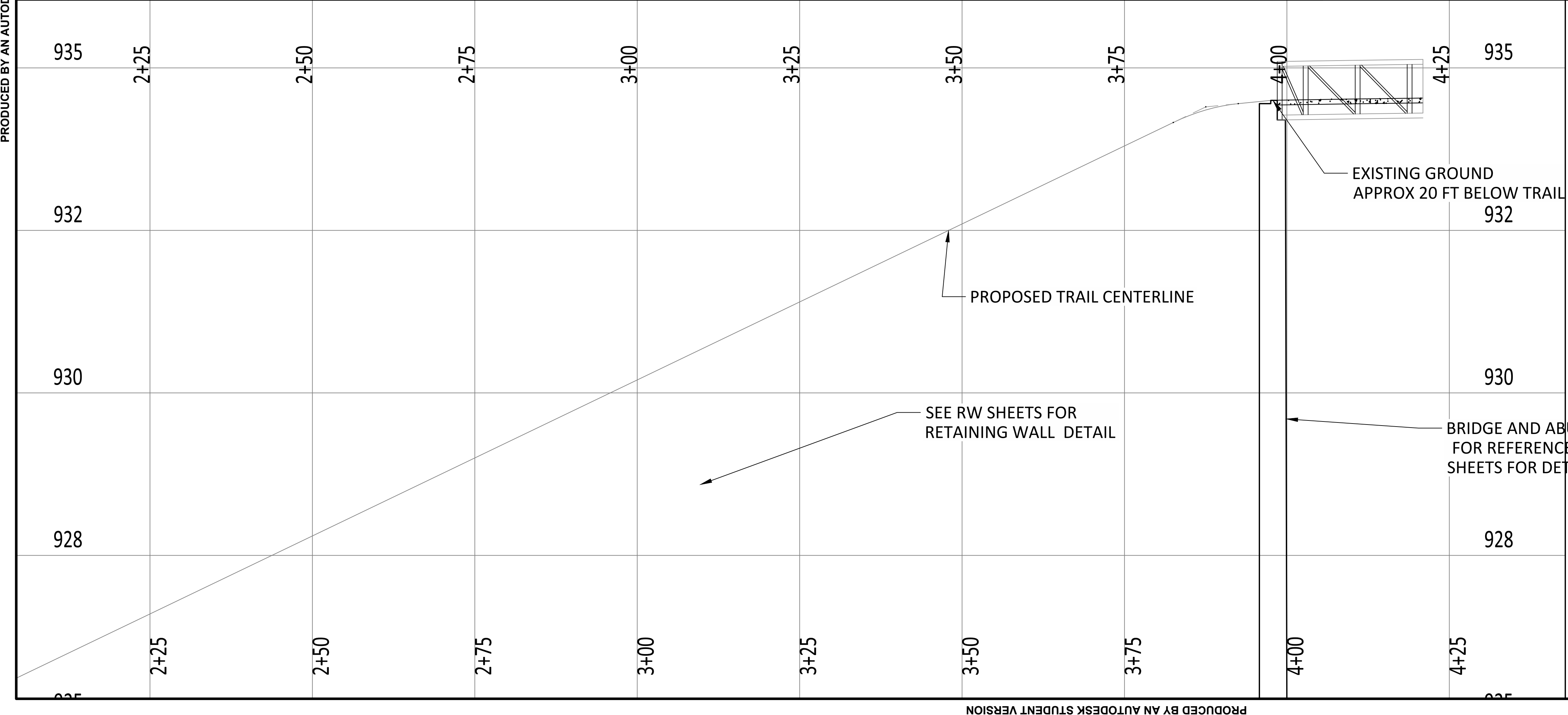
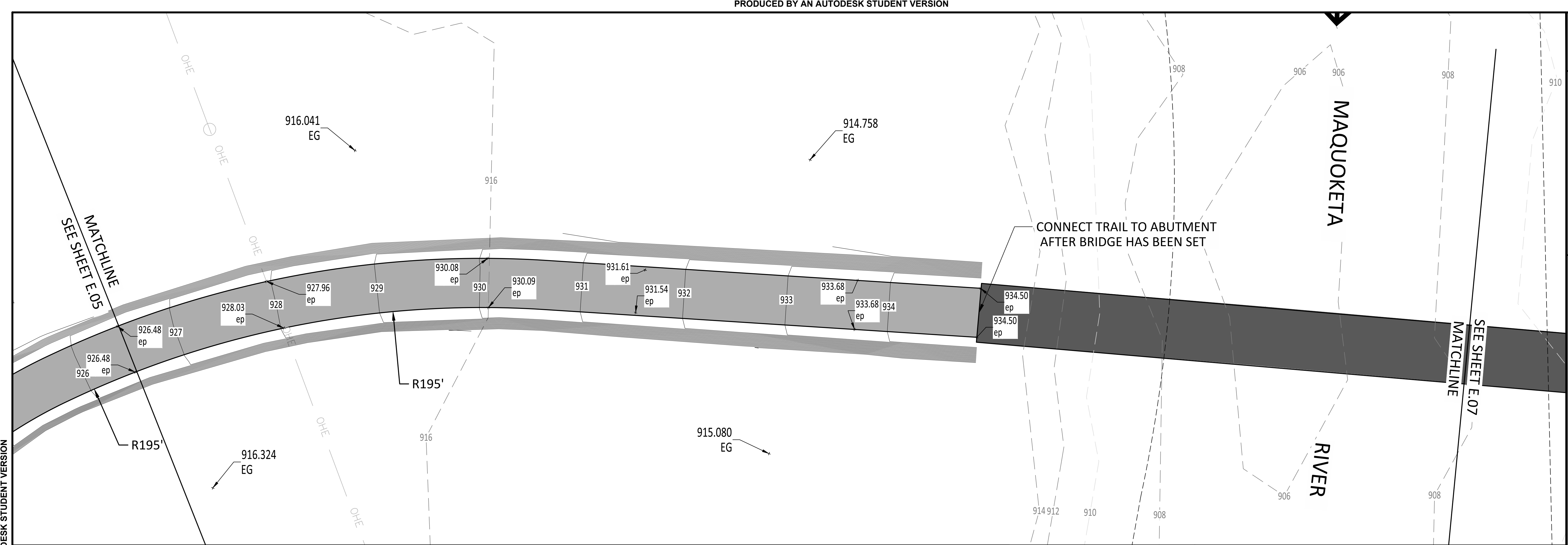


TRAIL PLAN AND PROFILE	
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Sheet E.06



- PROPOSED BRIDGE
- PROPOSED TRAIL

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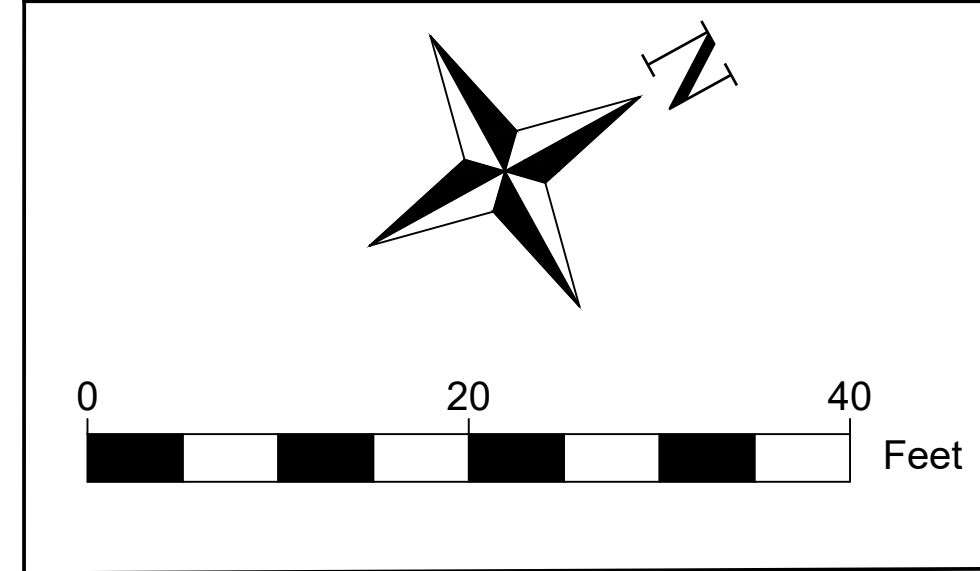
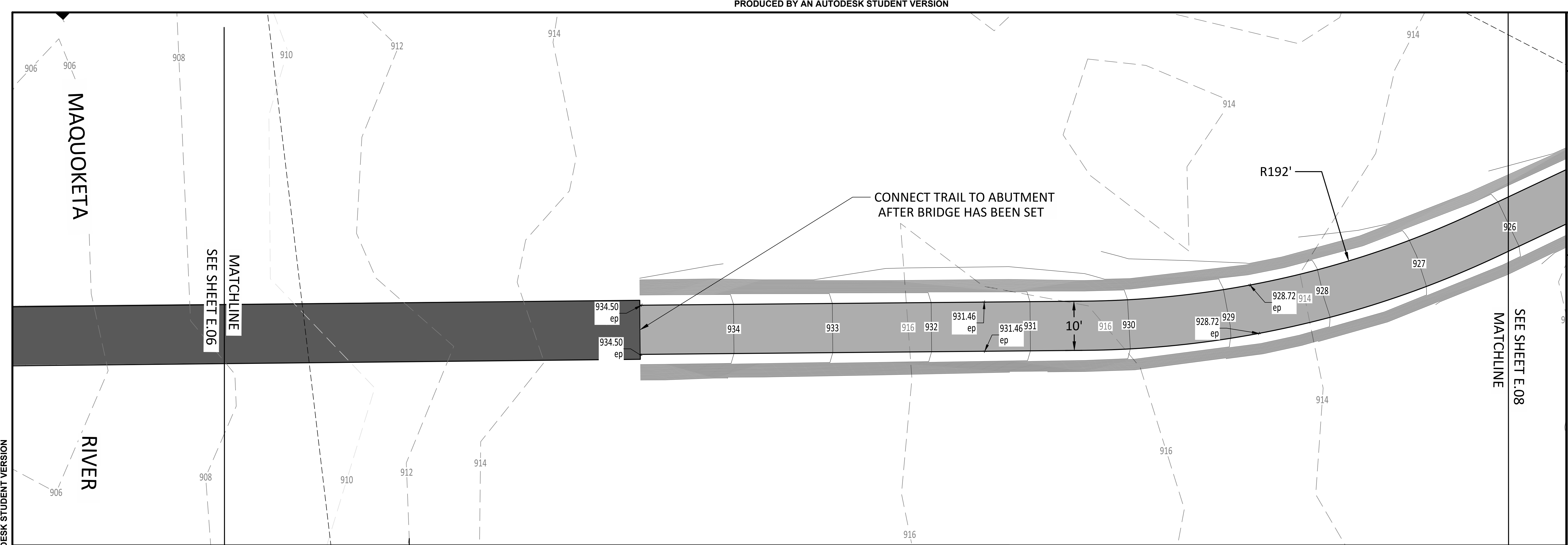
TRAIL PLAN AND PROFILE

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Designer: ALL
Date: 12/11/2020
Revision:

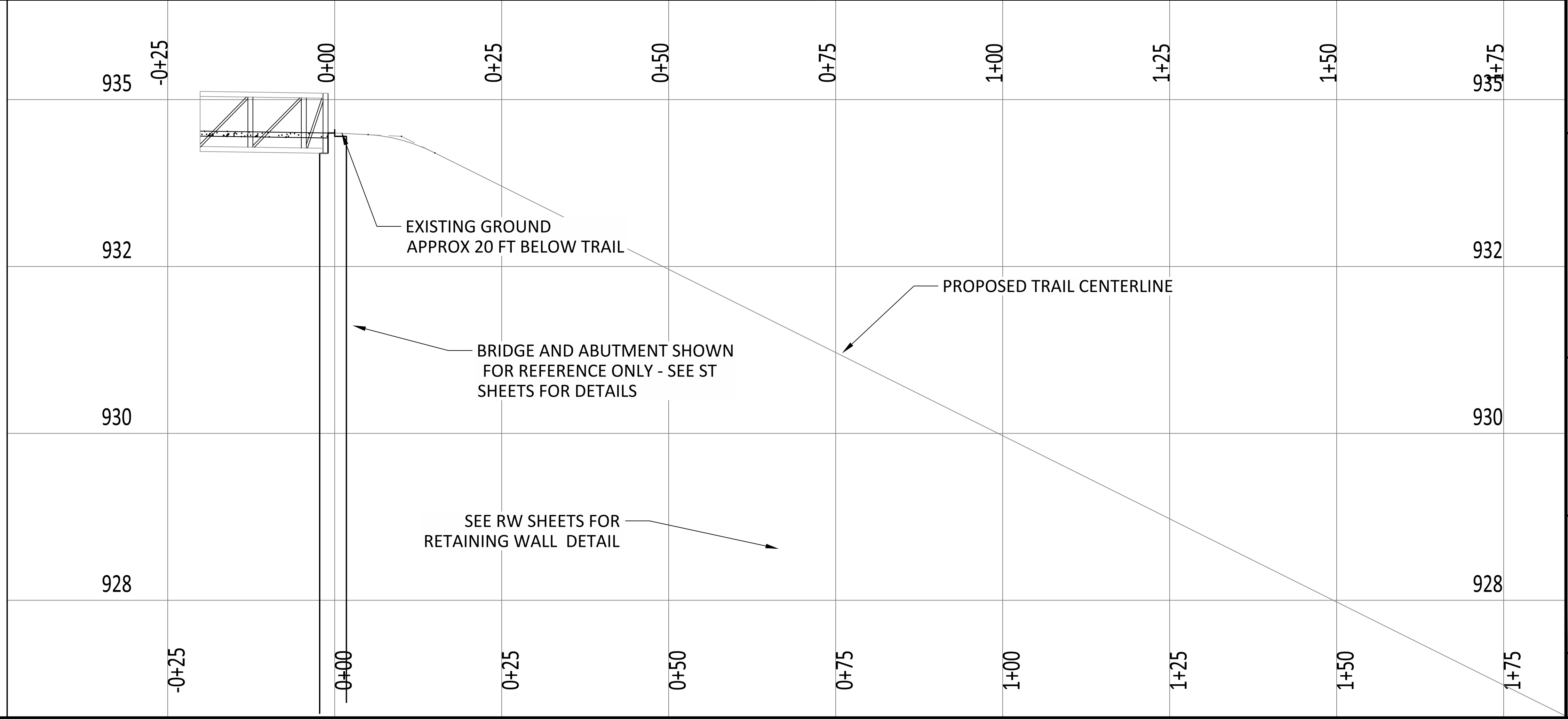


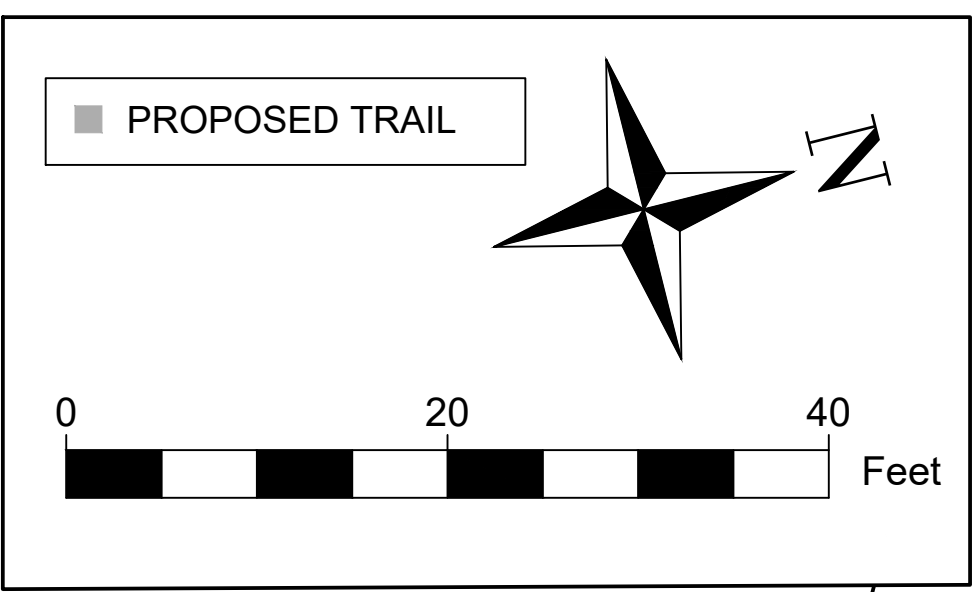
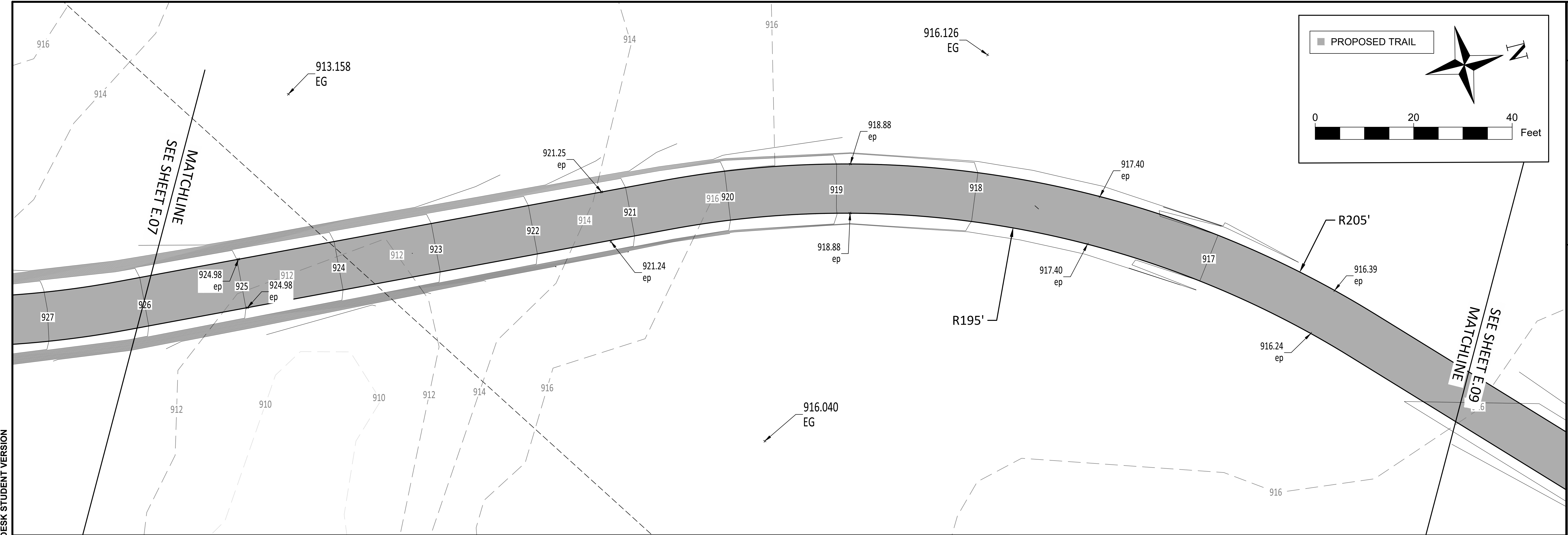
Sheet E.07

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- PROPOSED BRIDGE
- PROPOSED TRAIL





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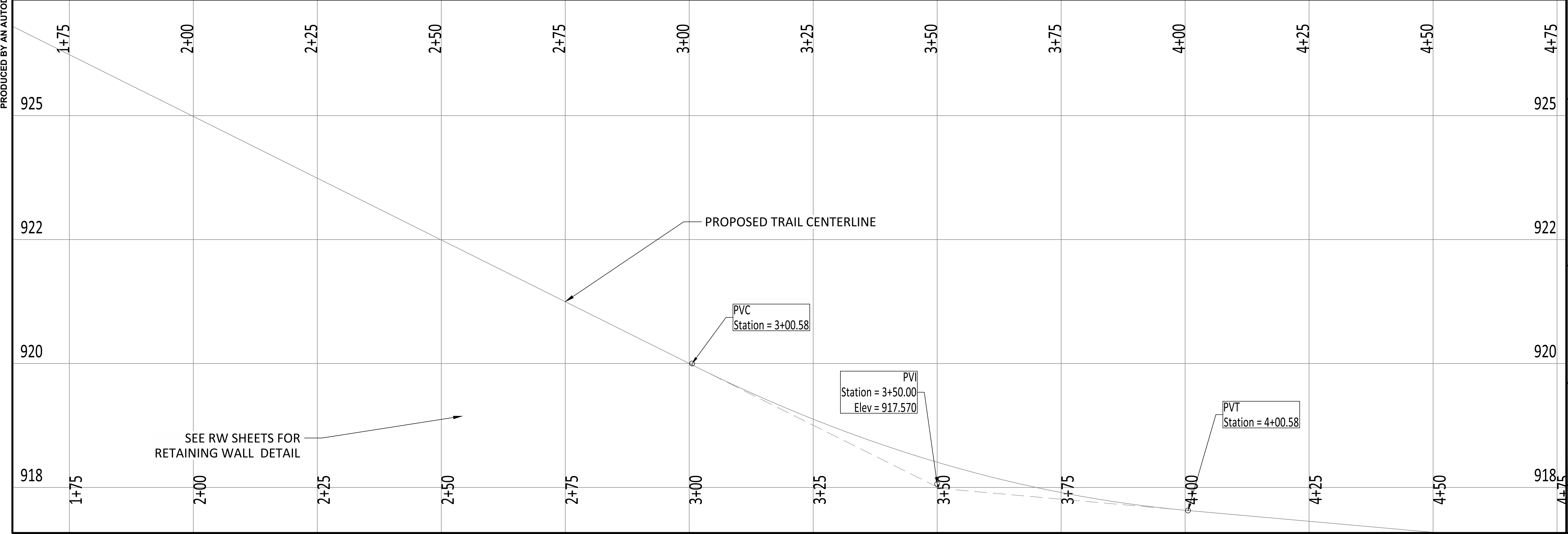
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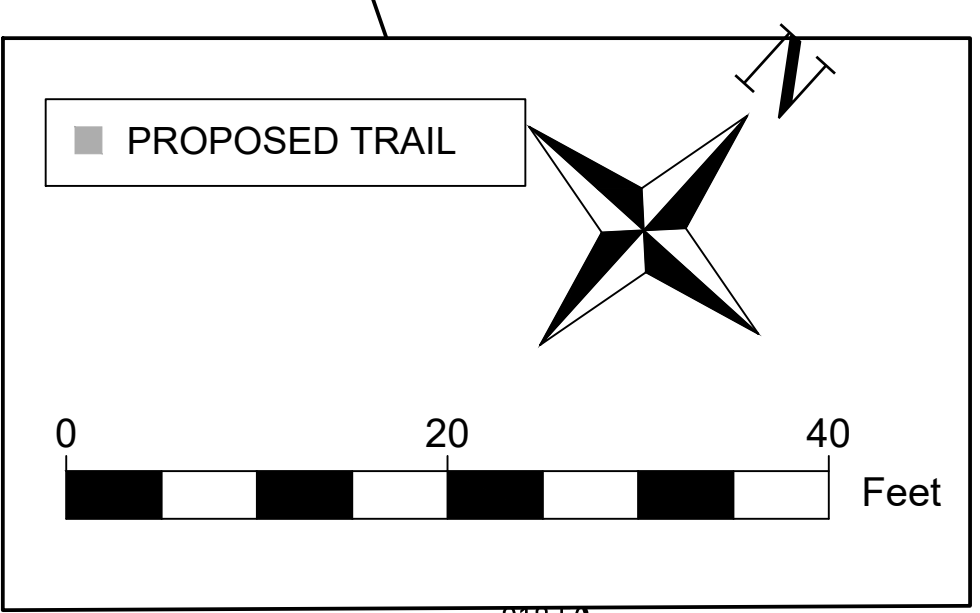
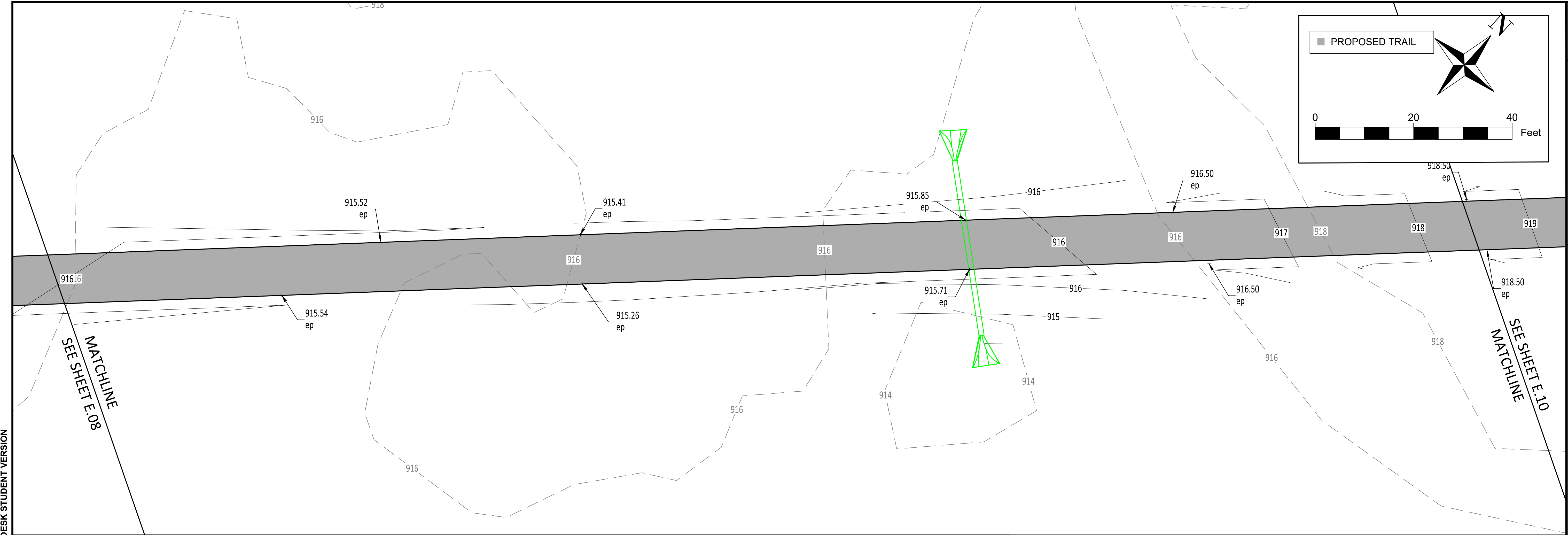


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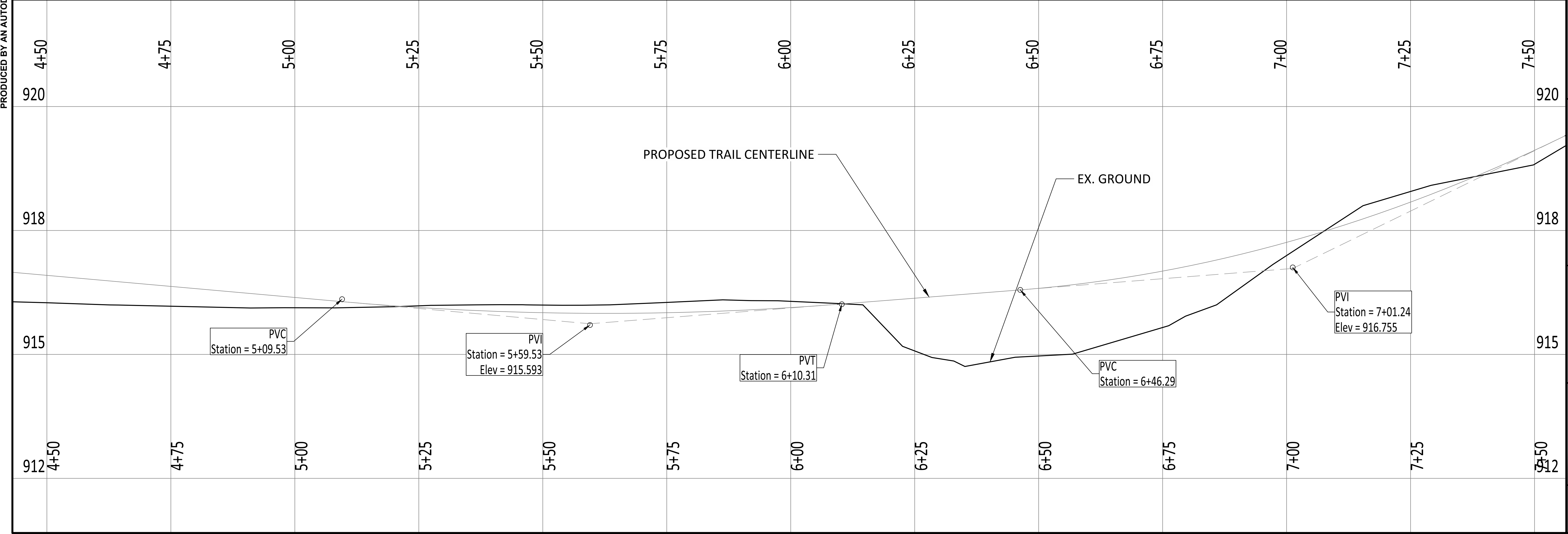
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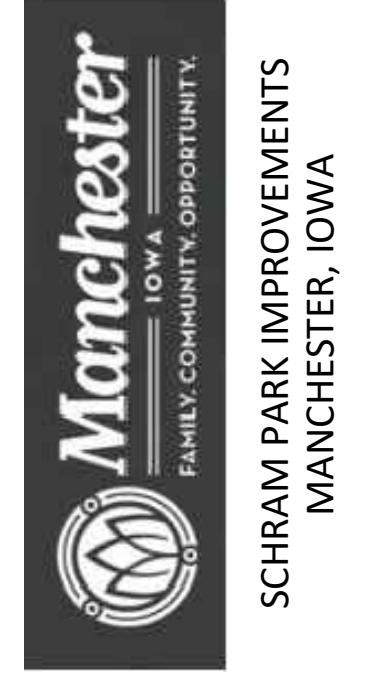
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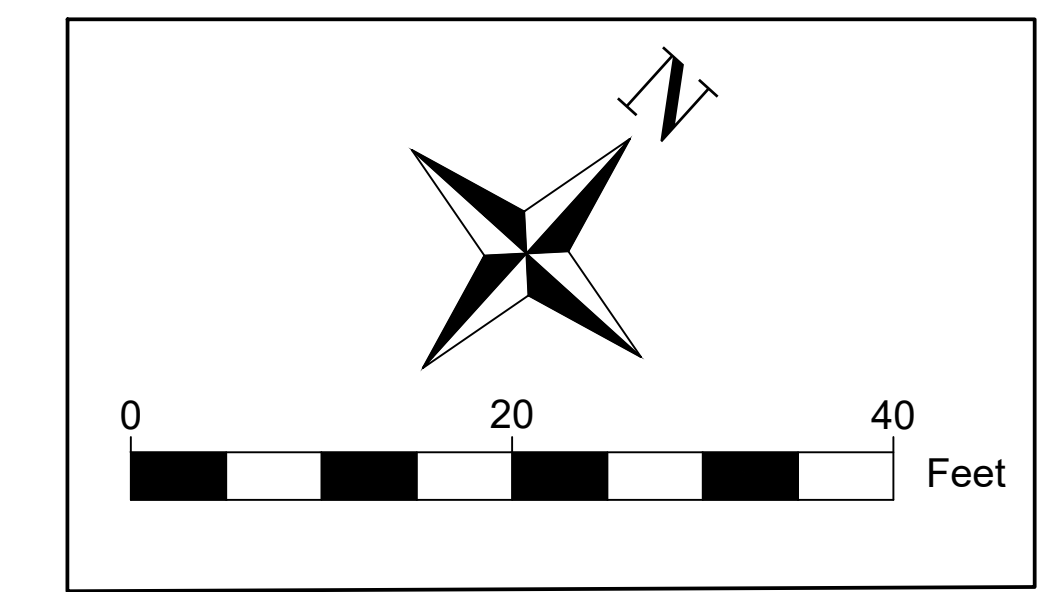
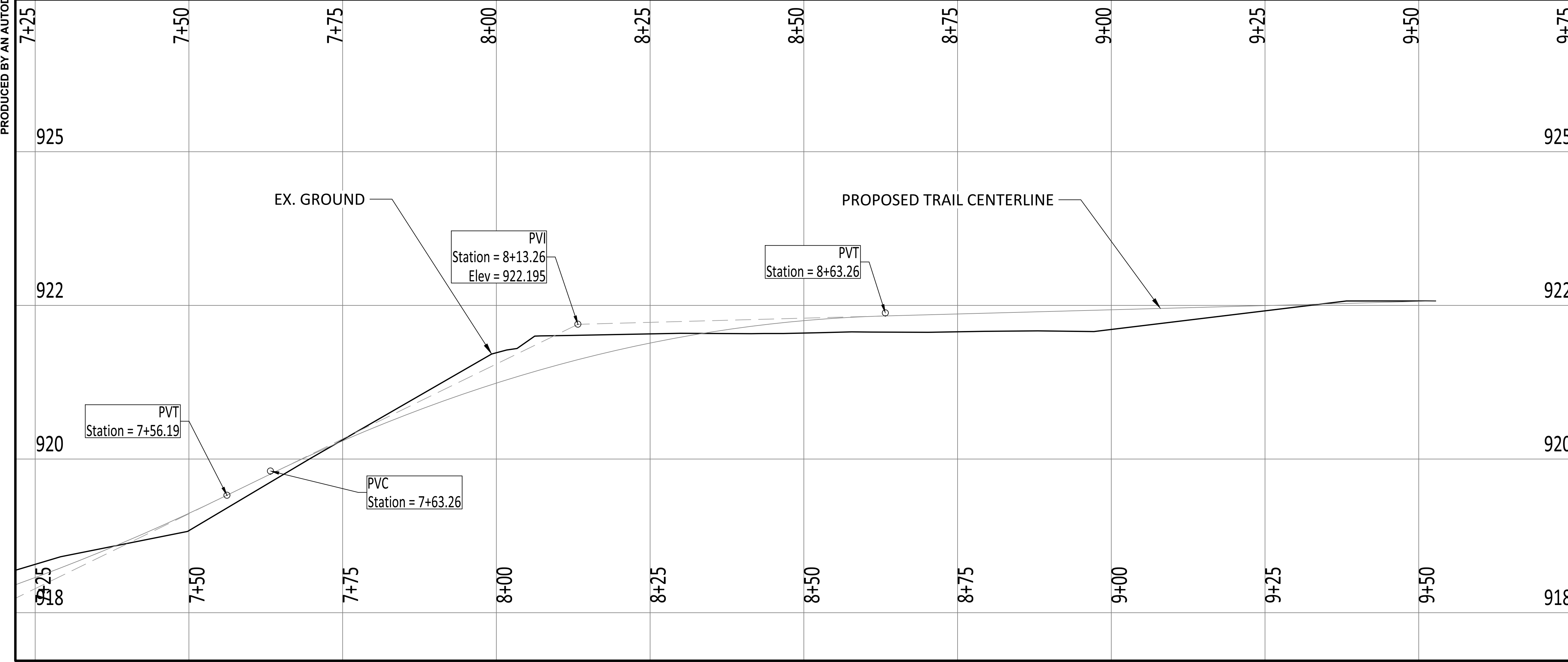
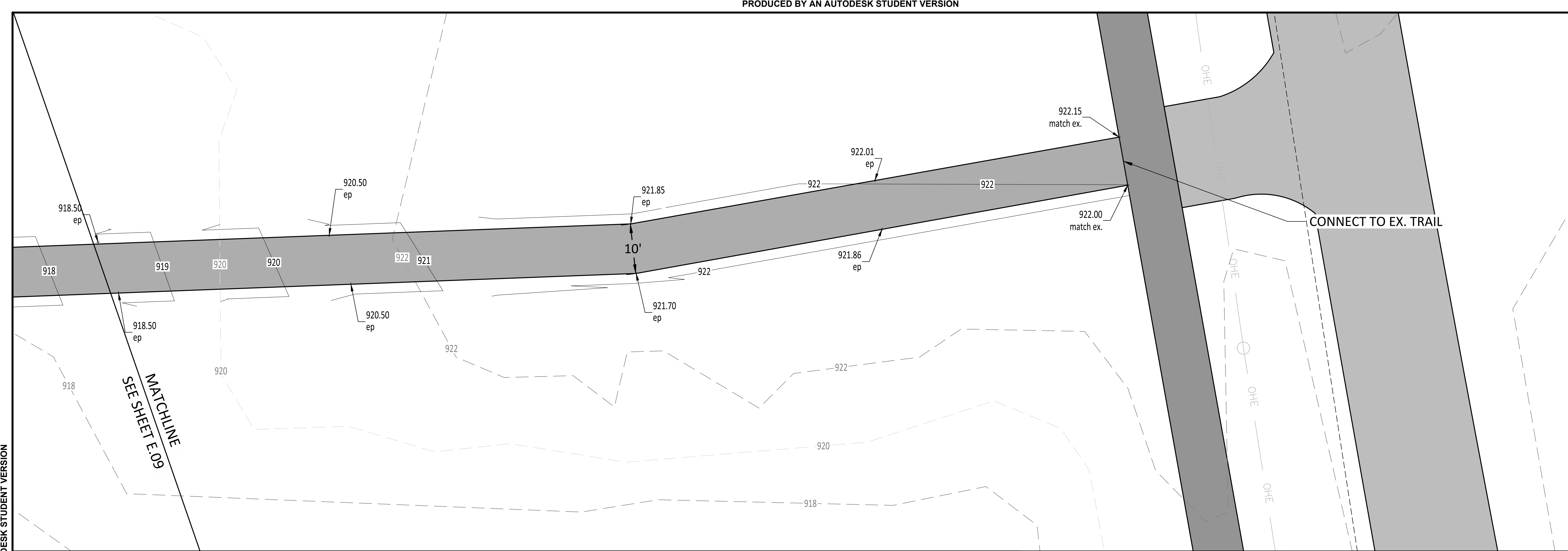
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Sheet E.10

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- PROPOSED TRAIL
- EX. TRAIL
- EX. PAVING



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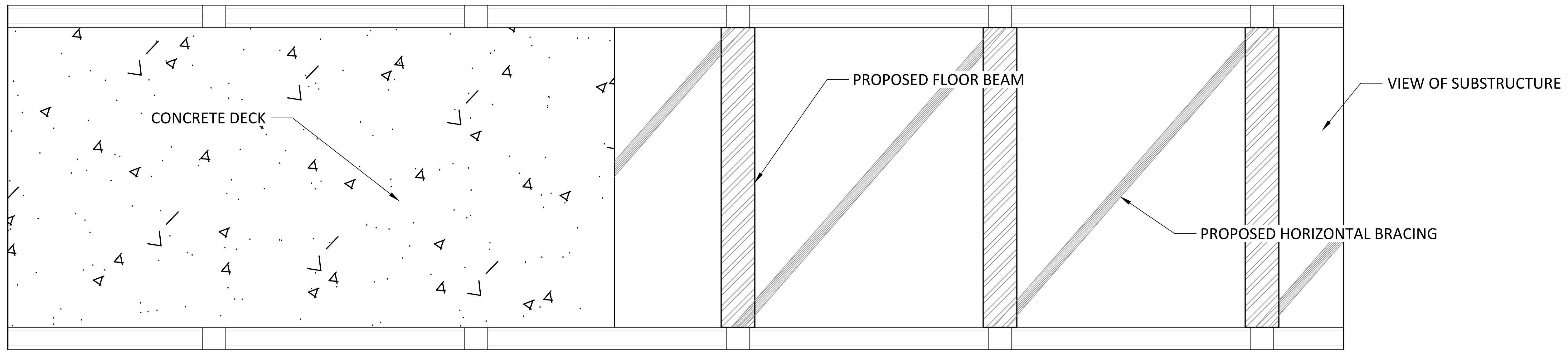
PAVEMENT MARKING DETAILS

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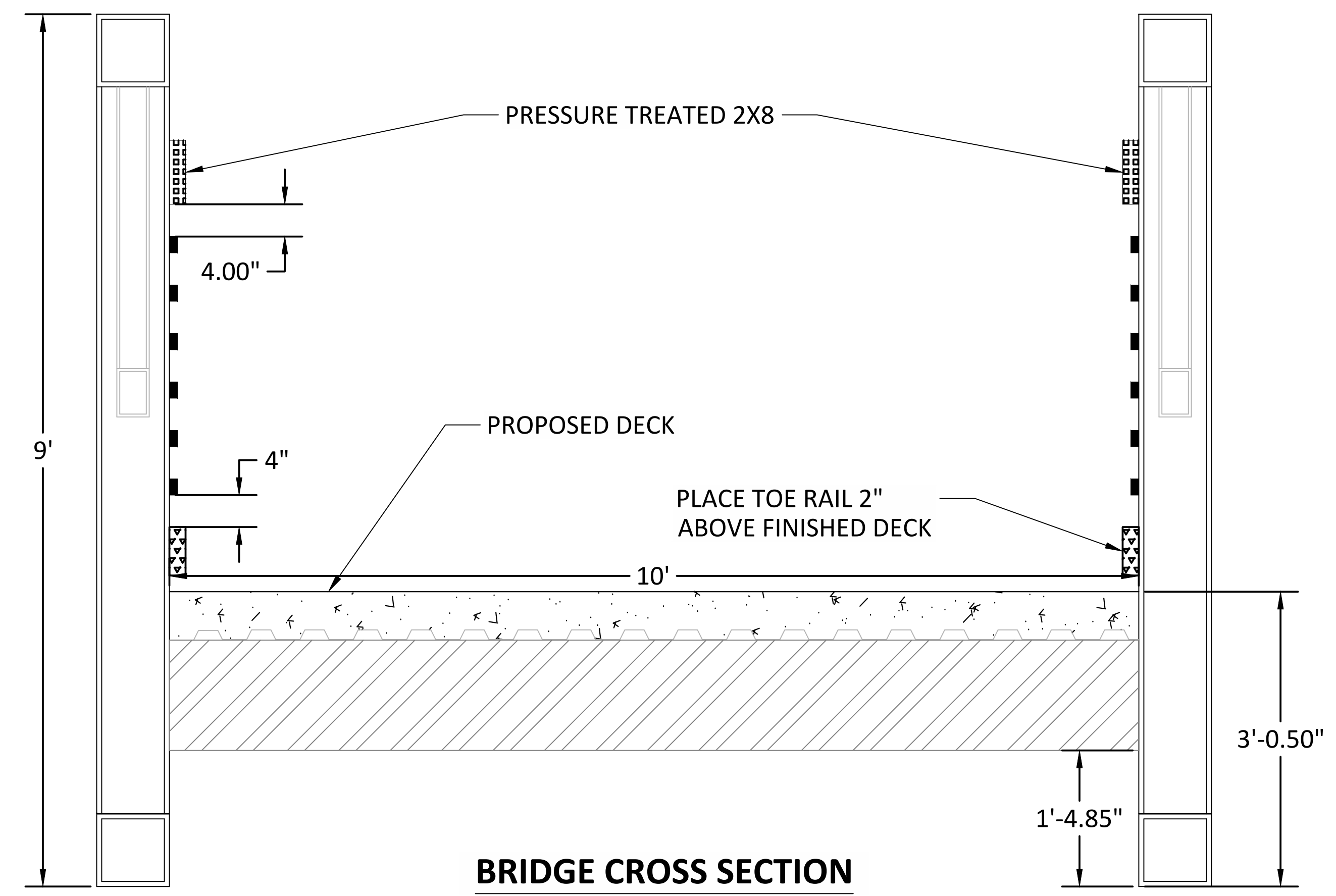
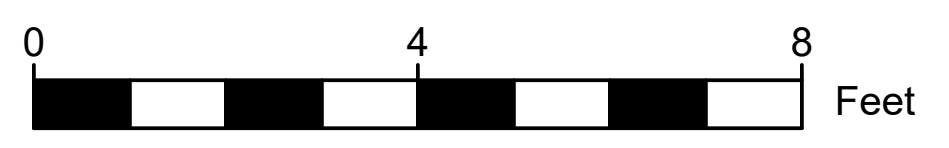
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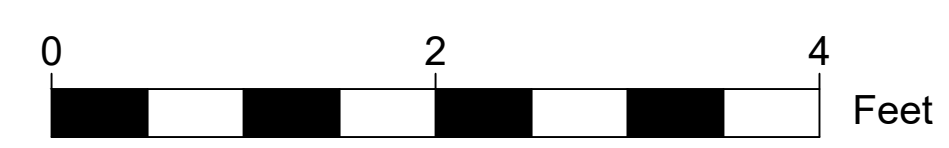
Sheet
J.01



BRIDGE OVERHEAD VIEW



BRIDGE CROSS SECTION



Location (ft) from West Abutment	Deflection (in)	Camber (in)
West Abutment	0	0
4	2.9	2.875
12	4.76	4.75
20	7.06	7.0625
28	9.34	9.3125
36	11.5	11.5
44	13.26	13.25
52	15.17	15.1875
60	16.61	16.625
68	17.55	17.5625
76	18.58	18.5625
84	19.08	19.0625
92	19.24	19.25

Location (ft) from West Abutment	Deflection (in)	Camber (in)
92	19.24	19.25
100	19.08	19.0625
108	18.58	18.5625
116	17.55	17.5625
124	16.61	16.625
132	15.17	15.1875
140	13.26	13.25
148	11.5	11.5
156	9.34	9.3125
164	7.06	7.0625
172	4.76	4.75
180	2.9	2.875
East Abutment	0	0

BRIDGE DEFLECTIONS AND CAMBER

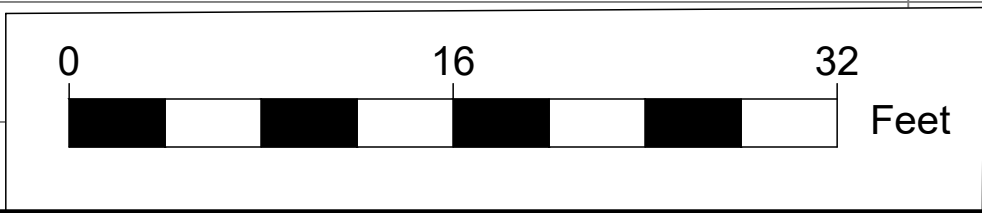
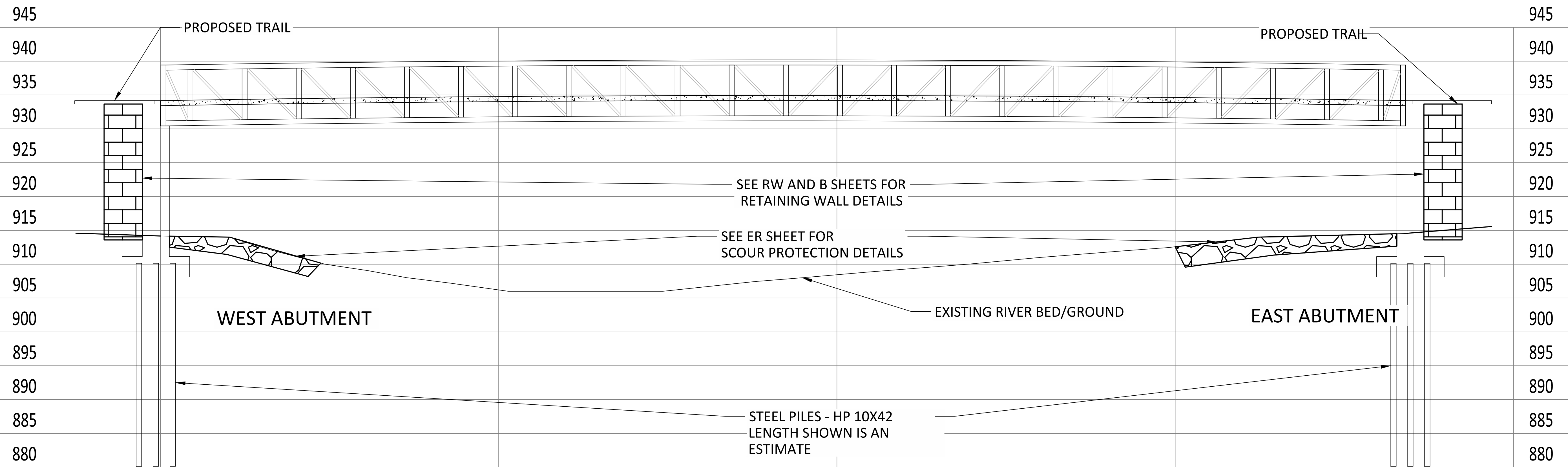
NOTE:
ALL REBAR USED IN THE DECK SHALL BE #6 EPOXY COATED AND PLACED AT 6" O.C.

- VERTICAL POSTS
- DIAGONAL BRACING
- BRIDGE DECK
- CHORD
- ▨ FLOOR BEAM
- ▨ DECK SUPPORT
- ▨ FLOOR BRACING
- SAFETY RAILS
- ▨ TOE PLATE
- ▨ RUB RAIL

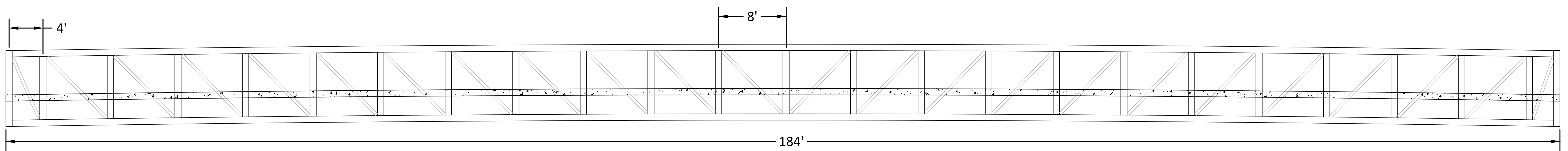
Member Schedule	
Truss members	
Top Chord	HSS 9x9x5/8
Bottom Chord	HSS 9x9x5/8
Vertical	HSS 8x8x3/8
End Post	HSS 9x9x5/8
Diagonal	HSS 6x4x5/16
Floor system	
Brace Diagonal	HSS 4x4x5/16
Brace Horizontal	HSS 4x4x5/16
Floor Beam	W 14x43
Railing	
Toe Rail	PL 6x5/16
Rub Rail	2x8
Safety Rail	HSS 2x1x1/8

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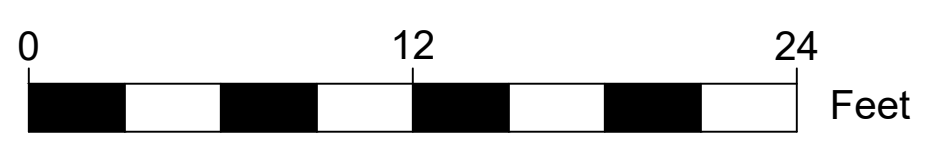


LONGITUDINAL CROSS SECTION ALONG CENTERLINE OF PROPOSED BRIDGE



LONGITUDINAL CROSS SECTION OF PROPOSED BRIDGE

- VERTICAL POSTS
- DIAGONAL BRACING
- BRIDGE DECK
- CHORD



NOTE:
 BOTH END BAYS TO BE 4' FROM FIRST INTERIOR POST TO OUTSIDE EDGE OF THE END POST. ALL INTERIOR BAYS TO BE 8' CENTER TO CENTER. CAMBER DETAILS ARE PROVIDED ON THE NEXT PAGE FOR REFERENCE ONLY.
 SEE SHEET ST.02 FOR A DECK CROSS SECTION AND DECK OVERHEAD VIEW SHOWING HORIZONTAL BRACING.
 SEE SHEET ST.03 FOR ABUTMENT DETAILS.

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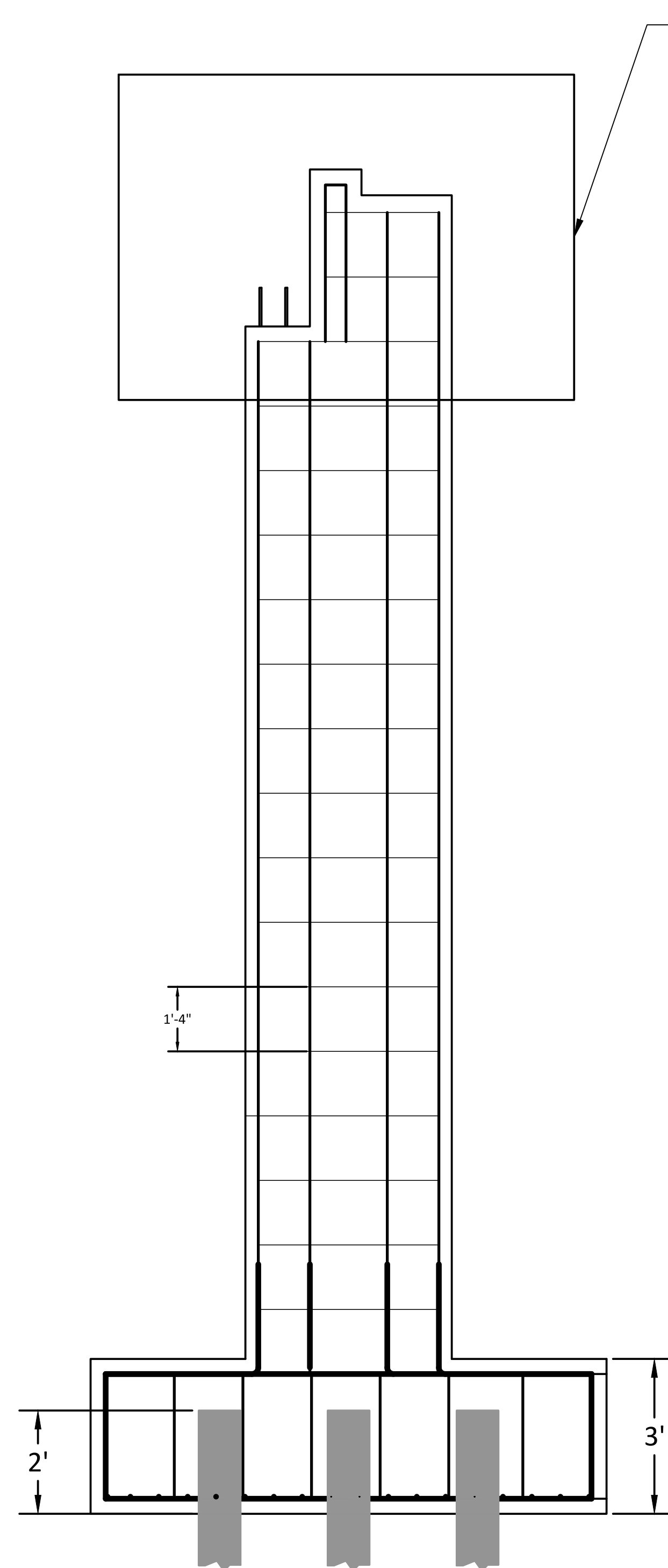
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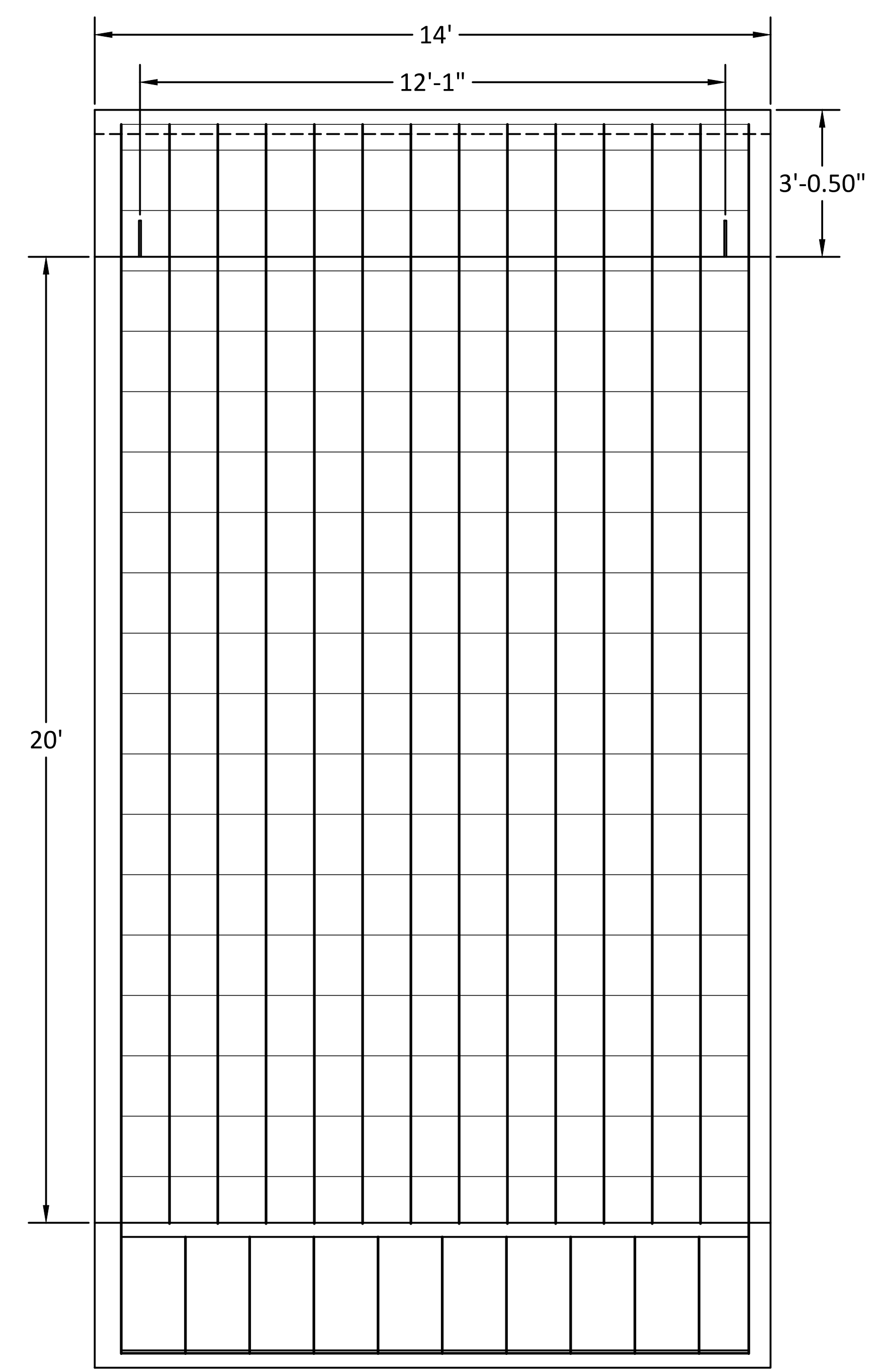
BRIDGE PROFILE AND CROSS SECTION	
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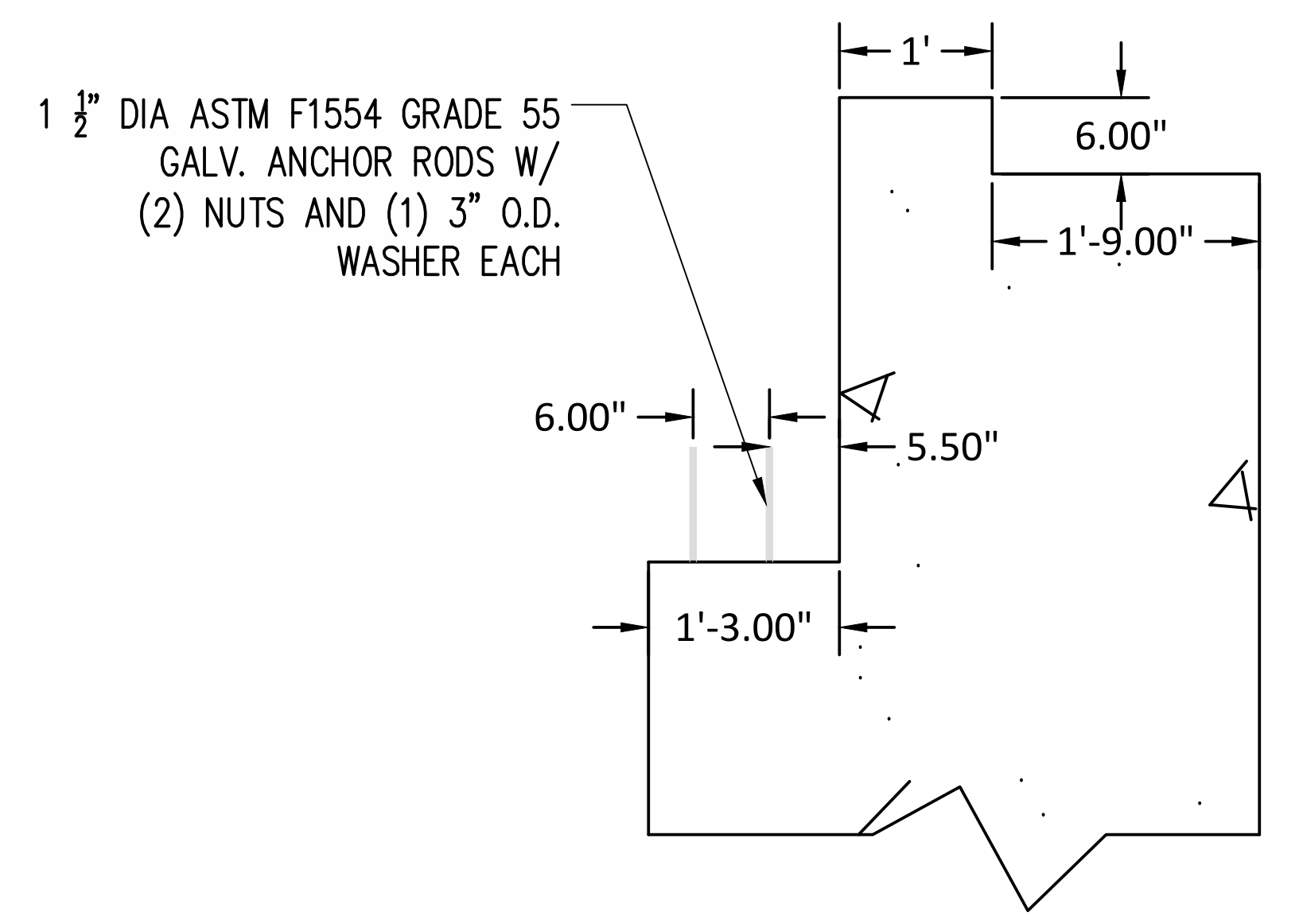
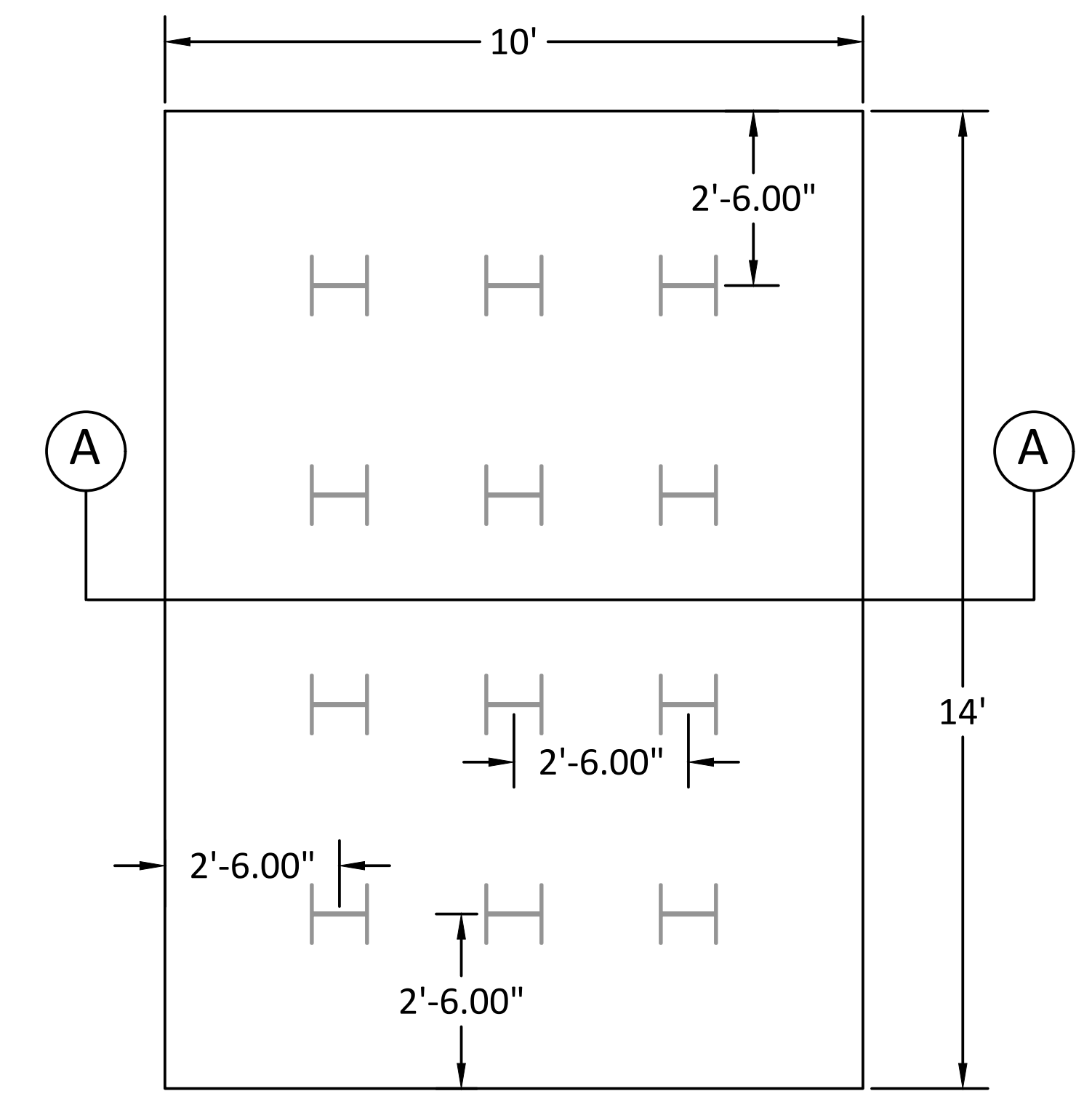




ABUTMENT CROSS SECTION AT CENTERLINE A-A



ABUTMENT PROFILE VIEW- FACING WEST FROM RIVER

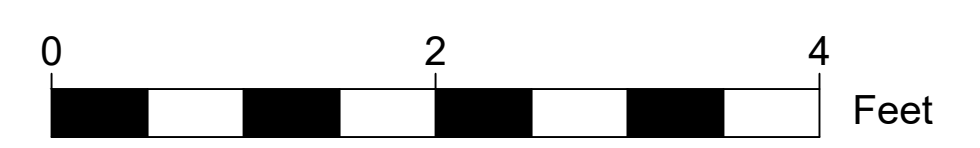


BRIDGE CONNECTION TO ABUTMENT DETAIL
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NOTE:
ALL REBAR SHALL BE EPOXY COATED AND HAVE 3" OF COVER.
EXTEND #8 BARS 2' INTO THE STEM.

PILES TO BE HP 10X42. PILE SHALL BE EMBEDDED 2' INTO FOOTING, AND HAVE 1 FOOT OF COVER.

- #4 BAR
- #6 BAR
- #8BAR



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BRIDGE PROFILE AND CROSS SECTION

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Sheet ST.03

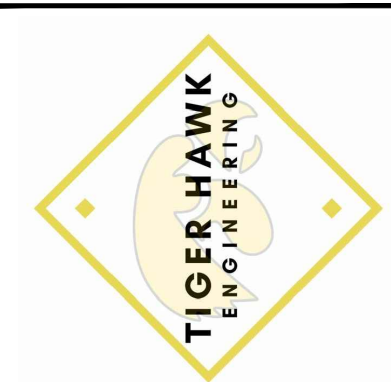


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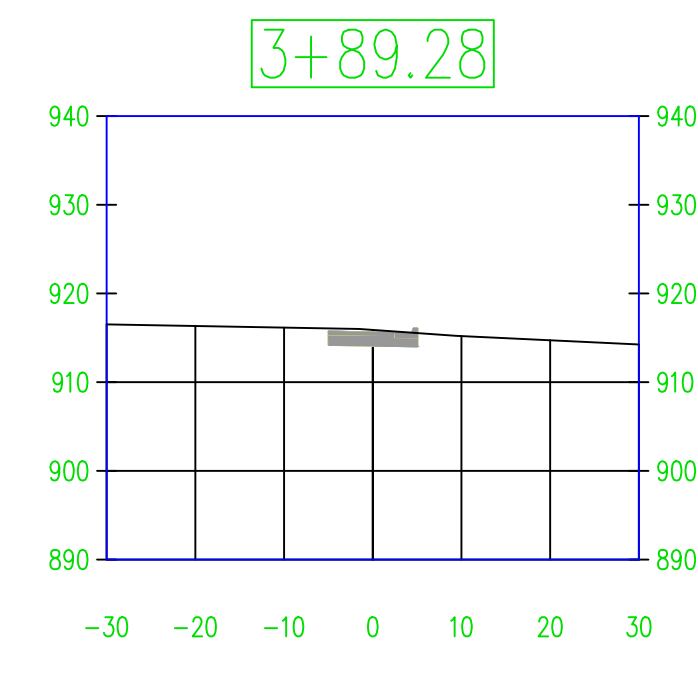
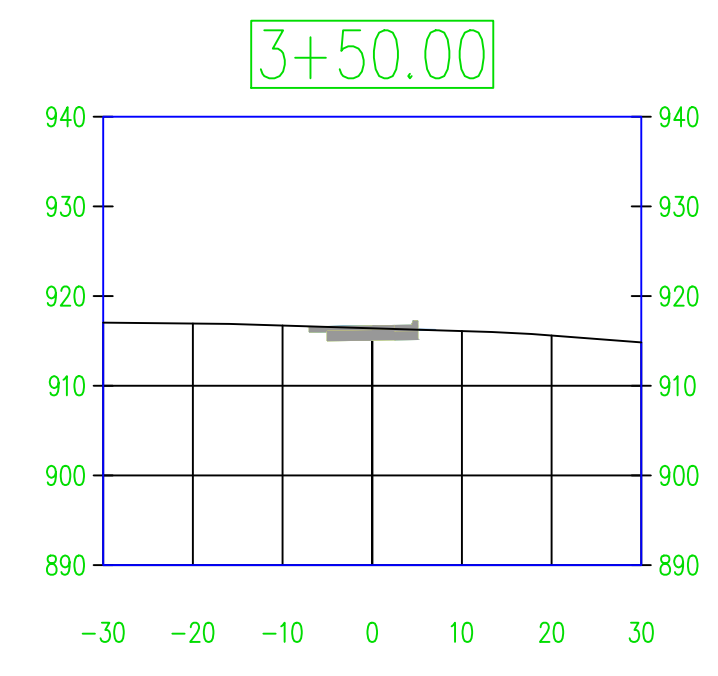
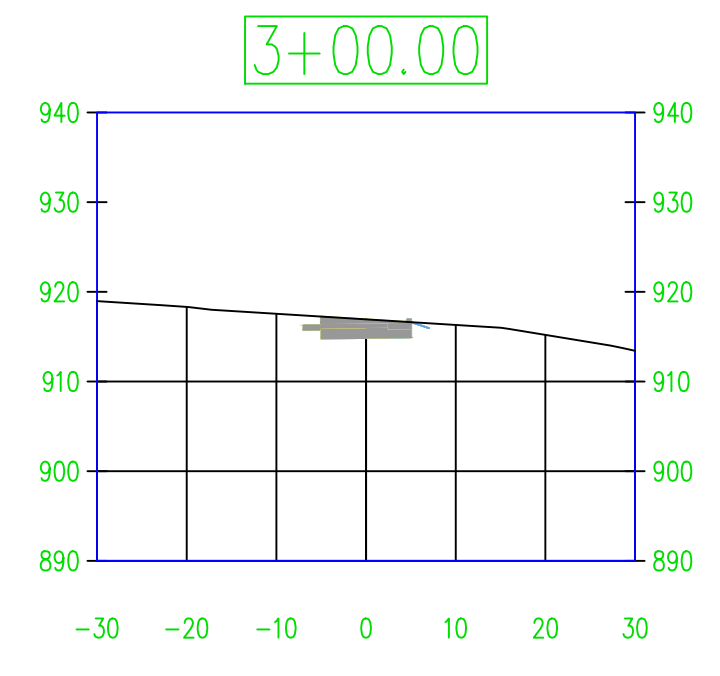
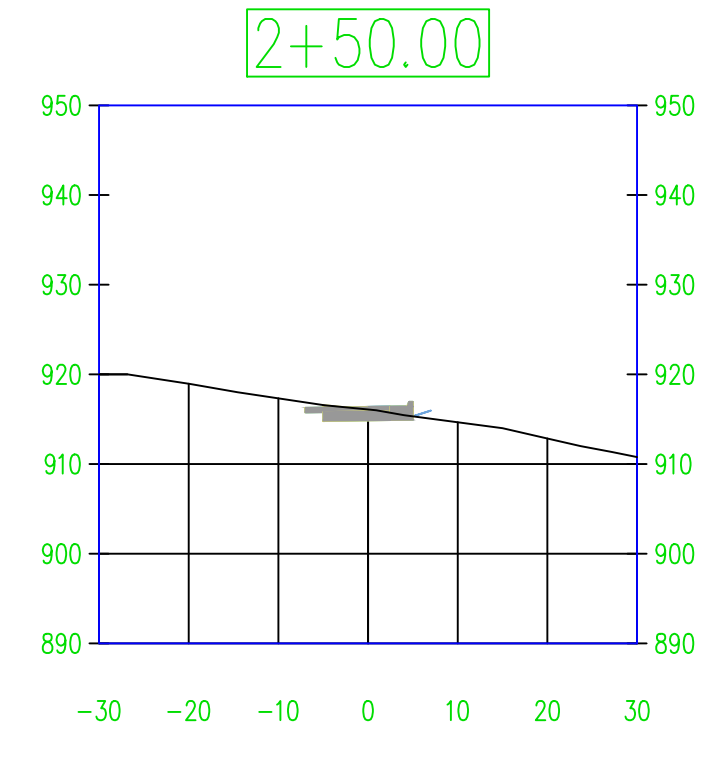
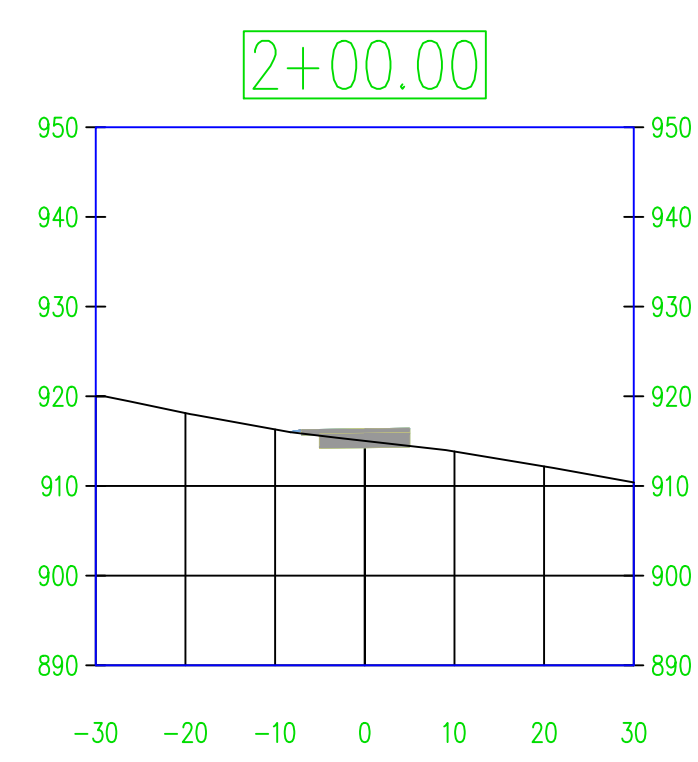
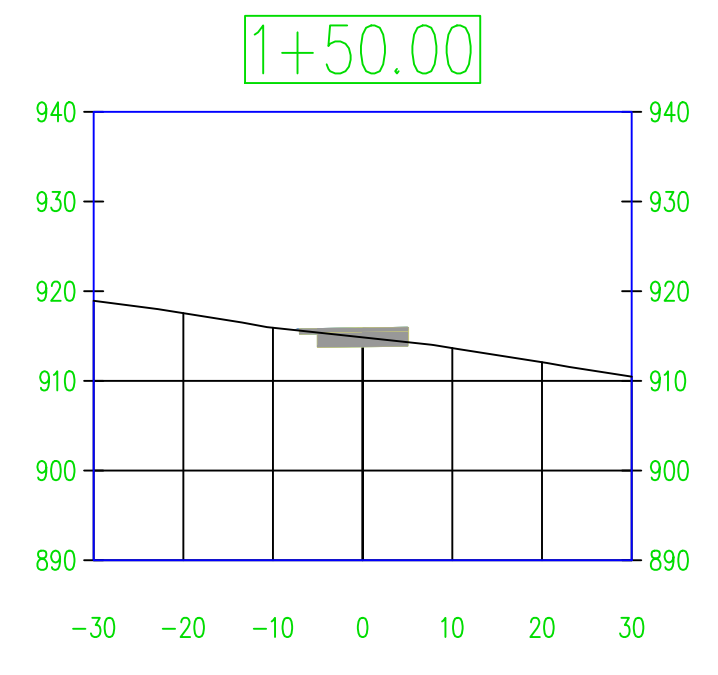
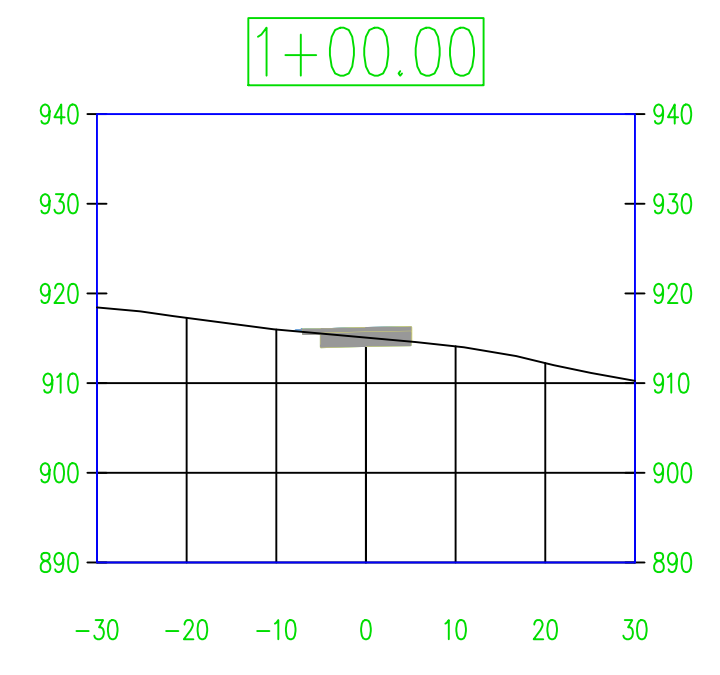
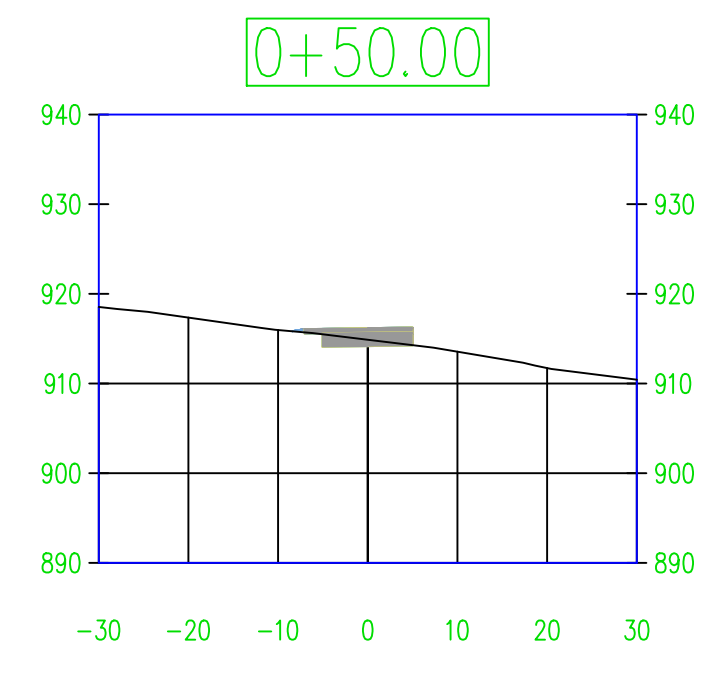
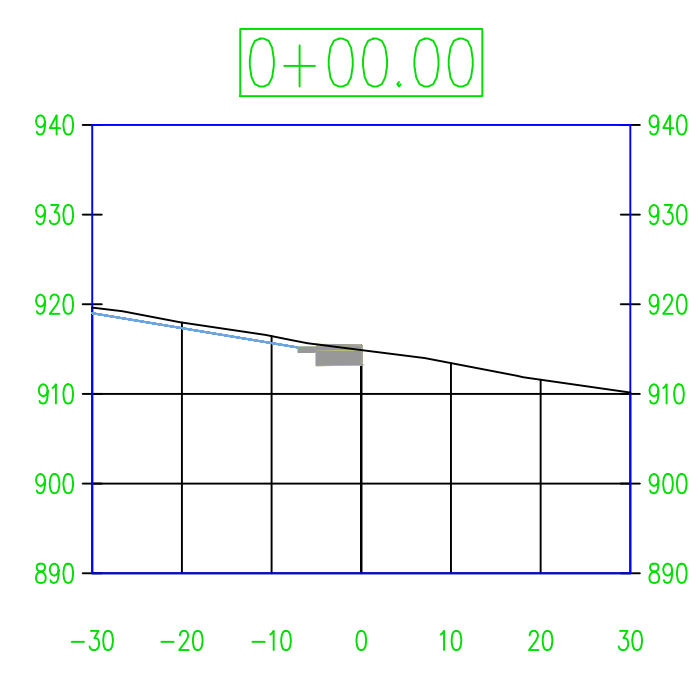
POND TRAIL CROSS SECTIONS

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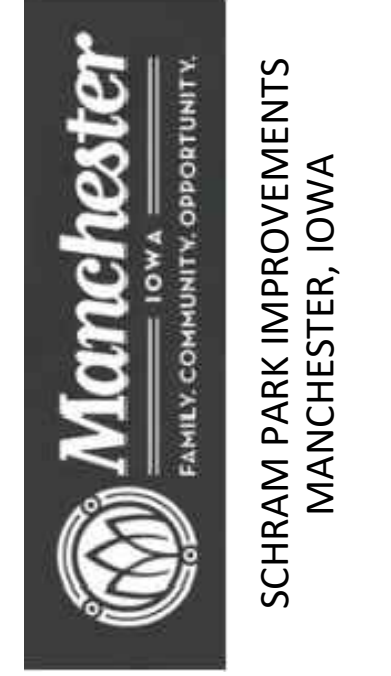


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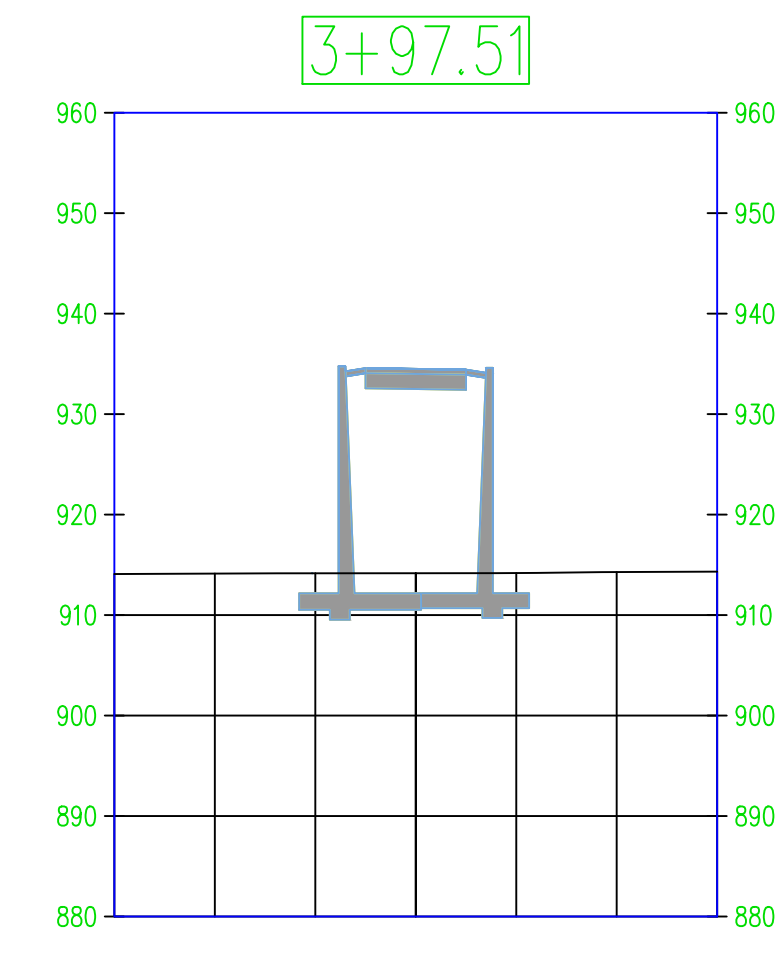
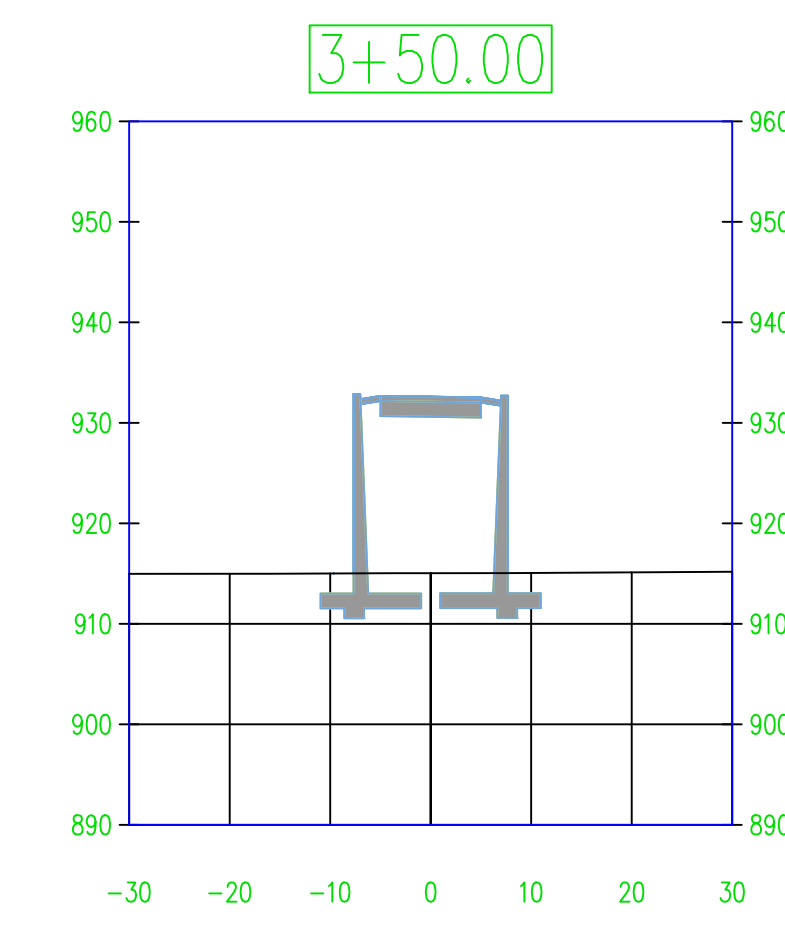
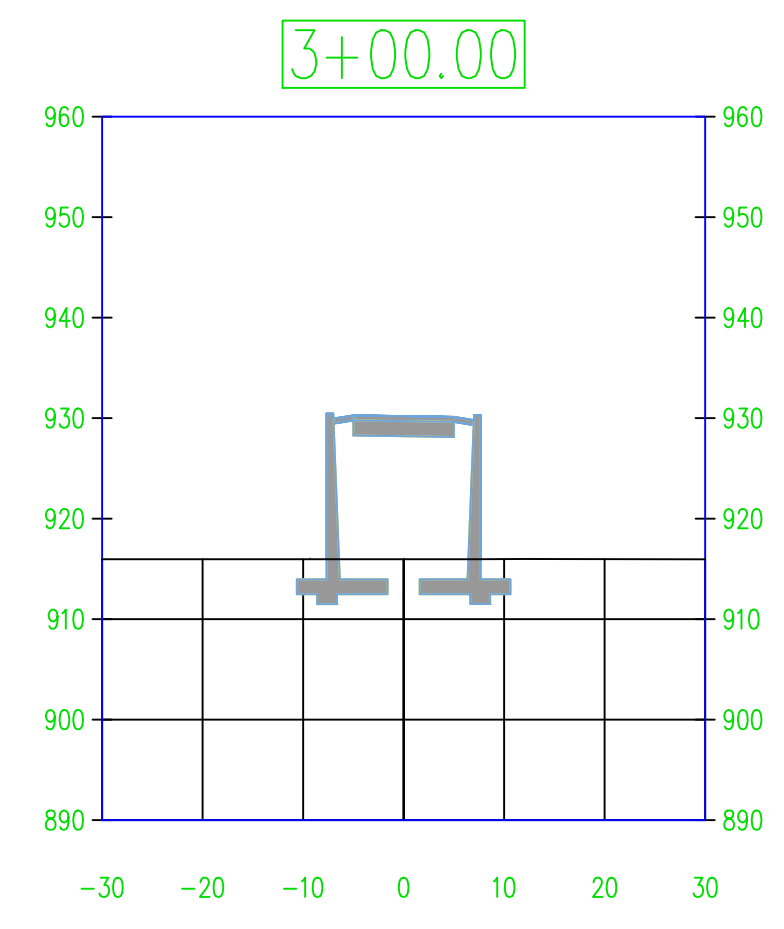
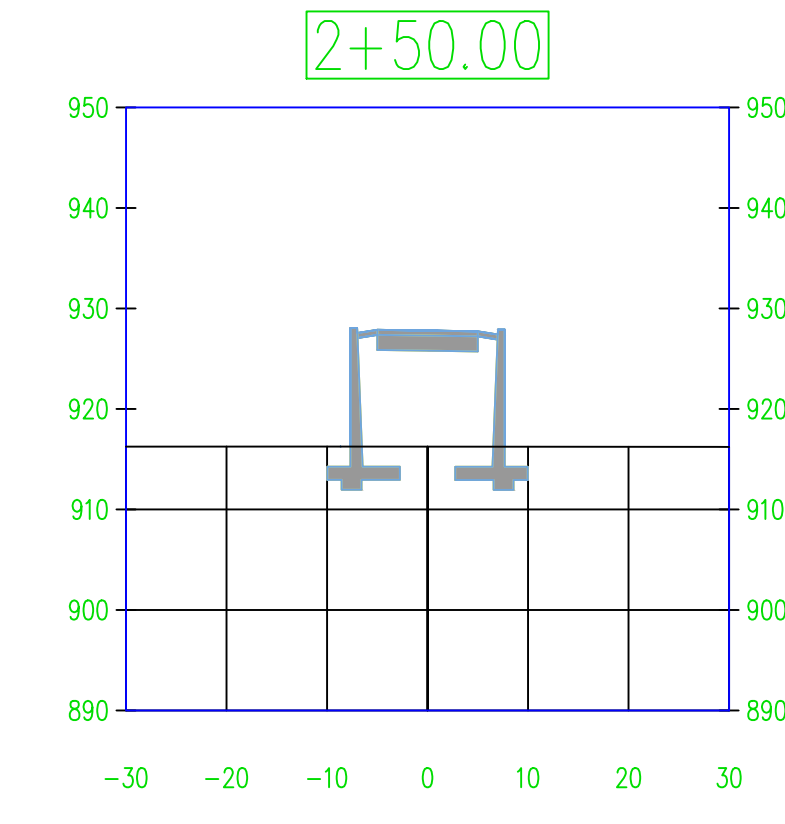
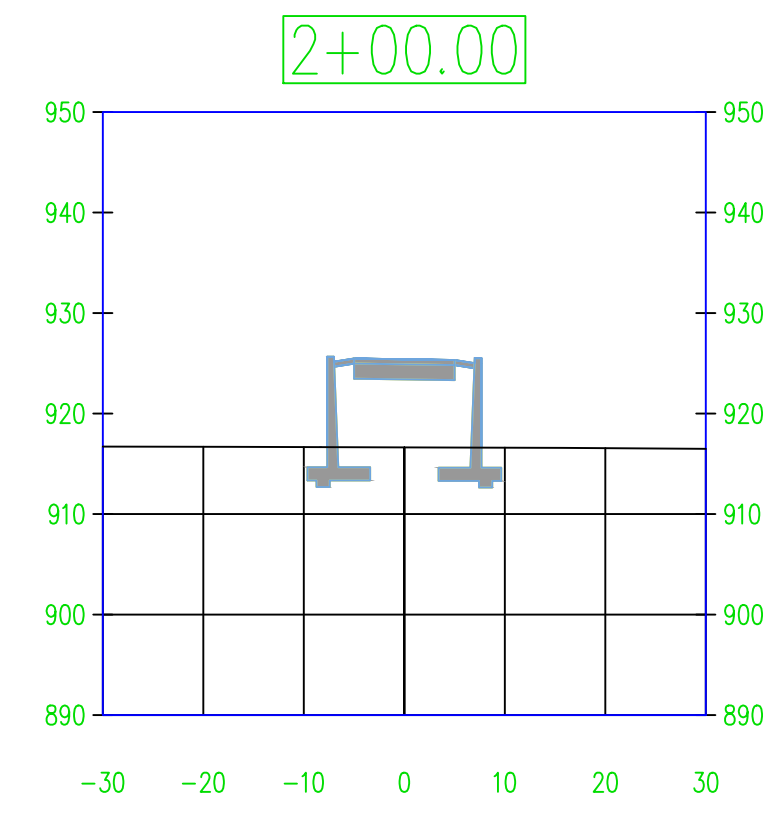
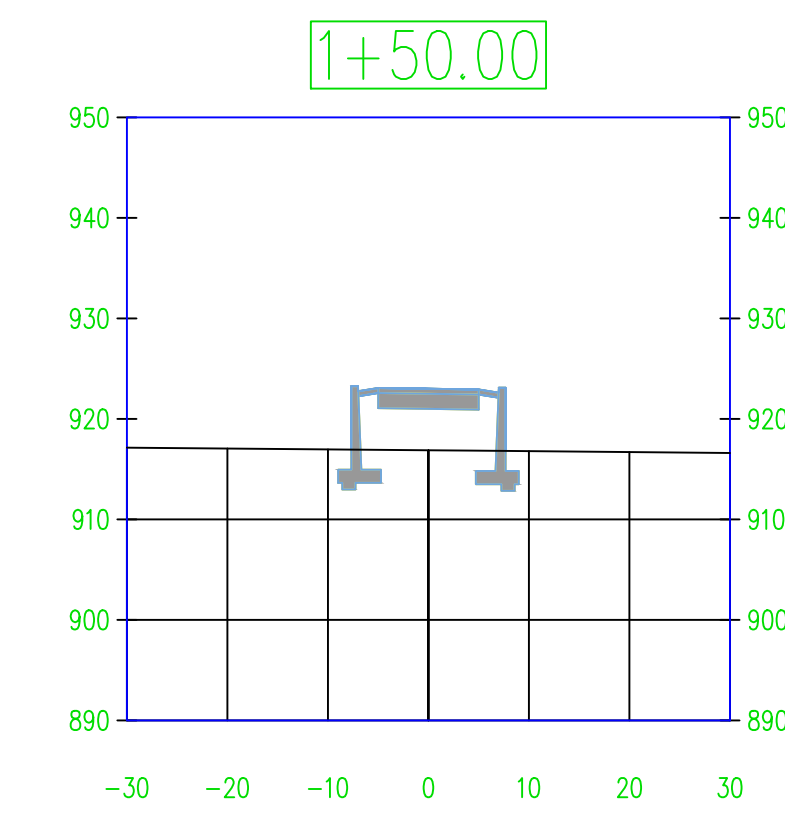
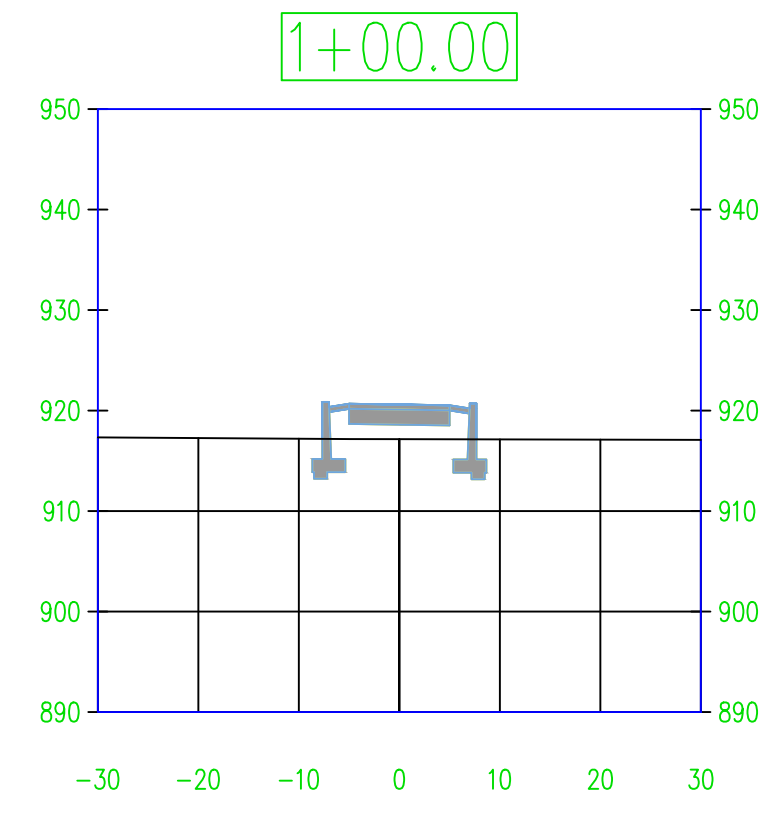
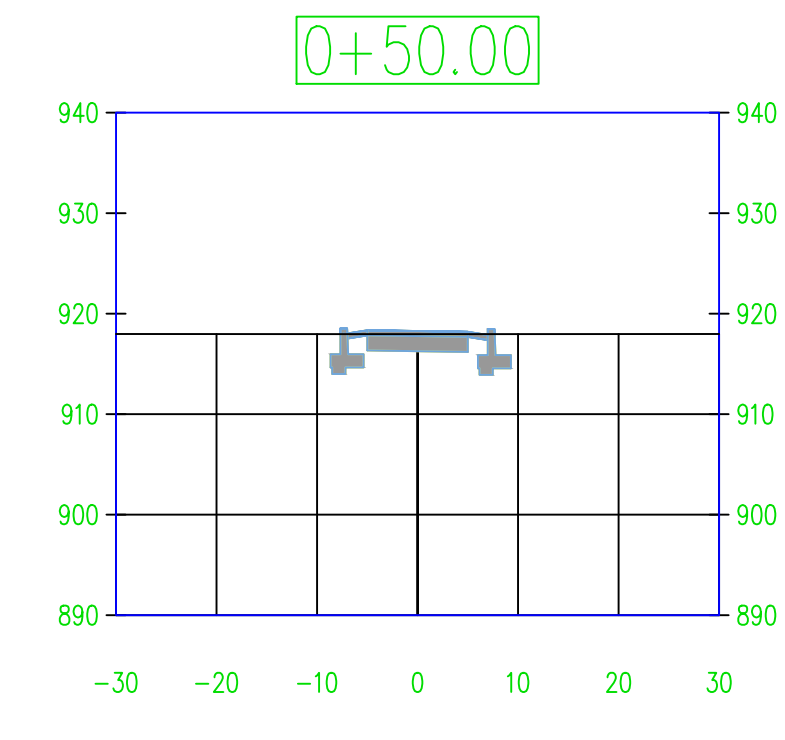
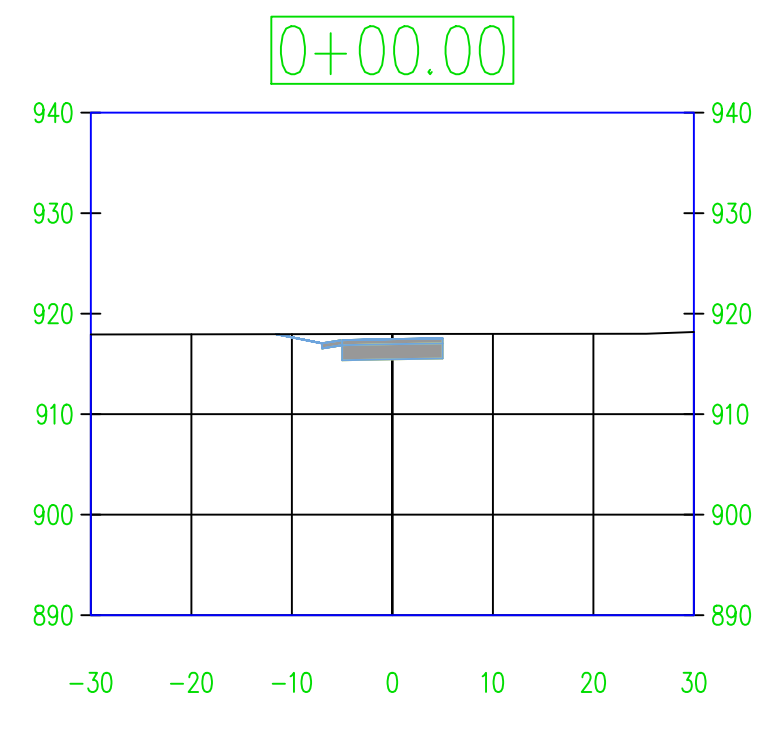
WEST SIDE TRAIL AND RETAINING WALL CROSS SECTIONS

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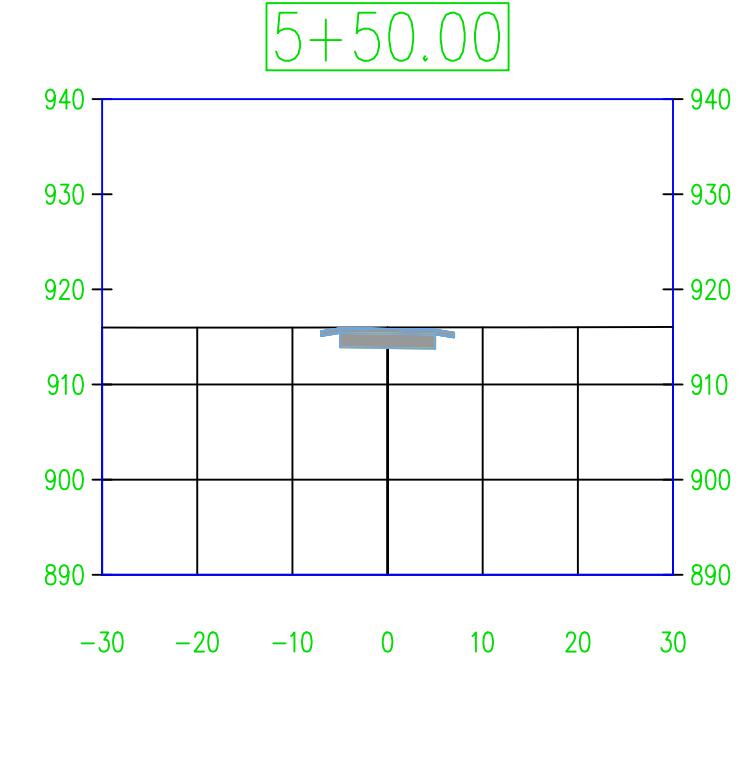
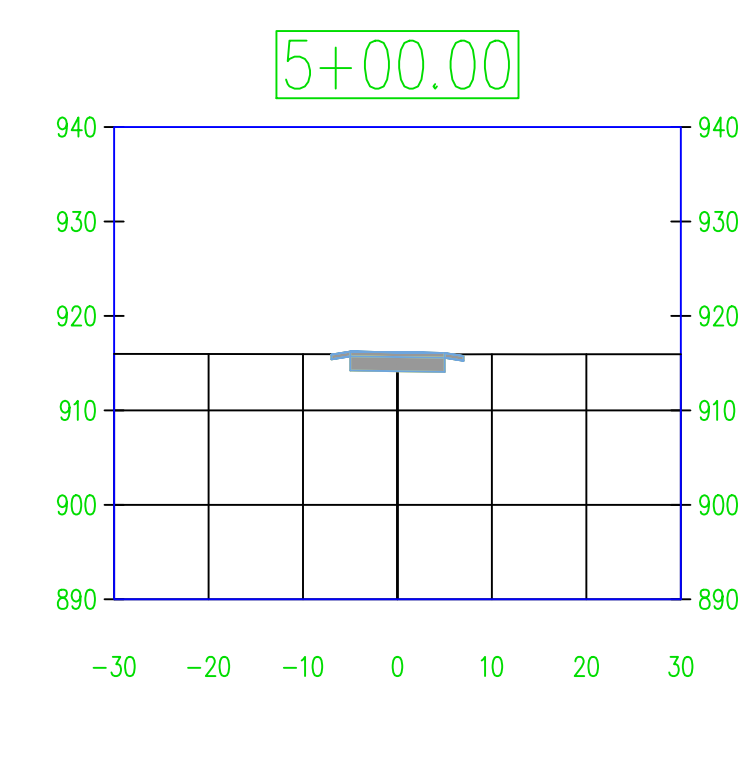
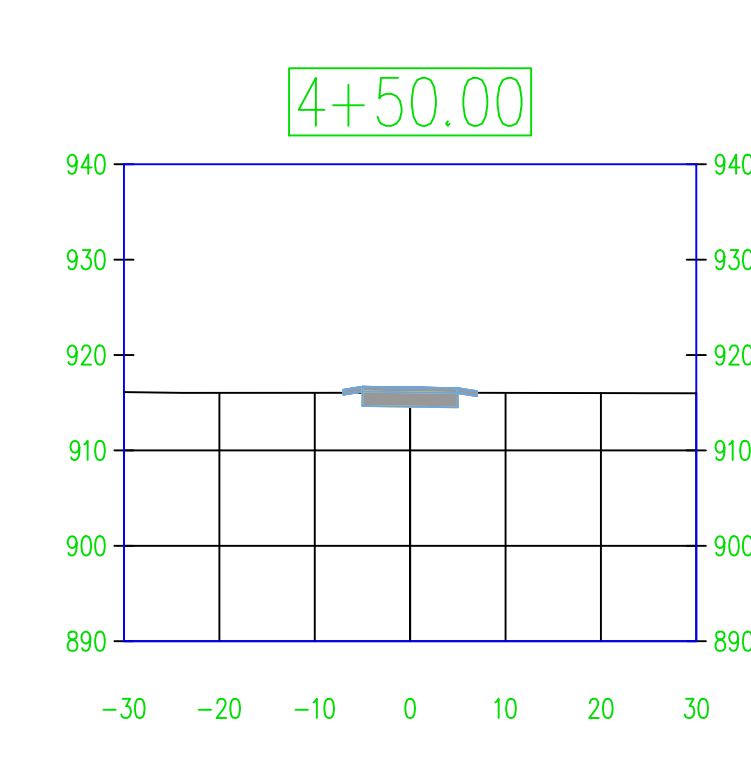
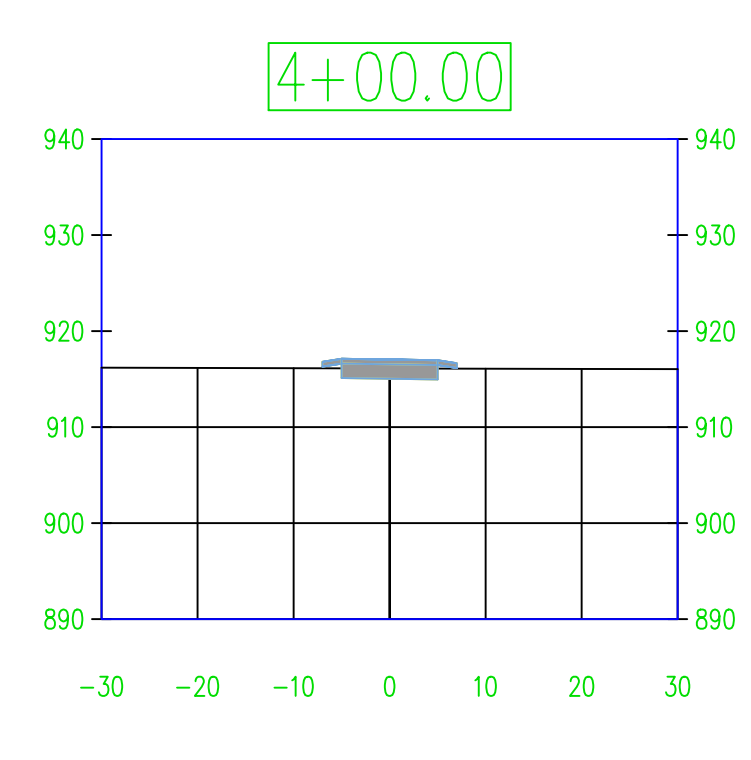
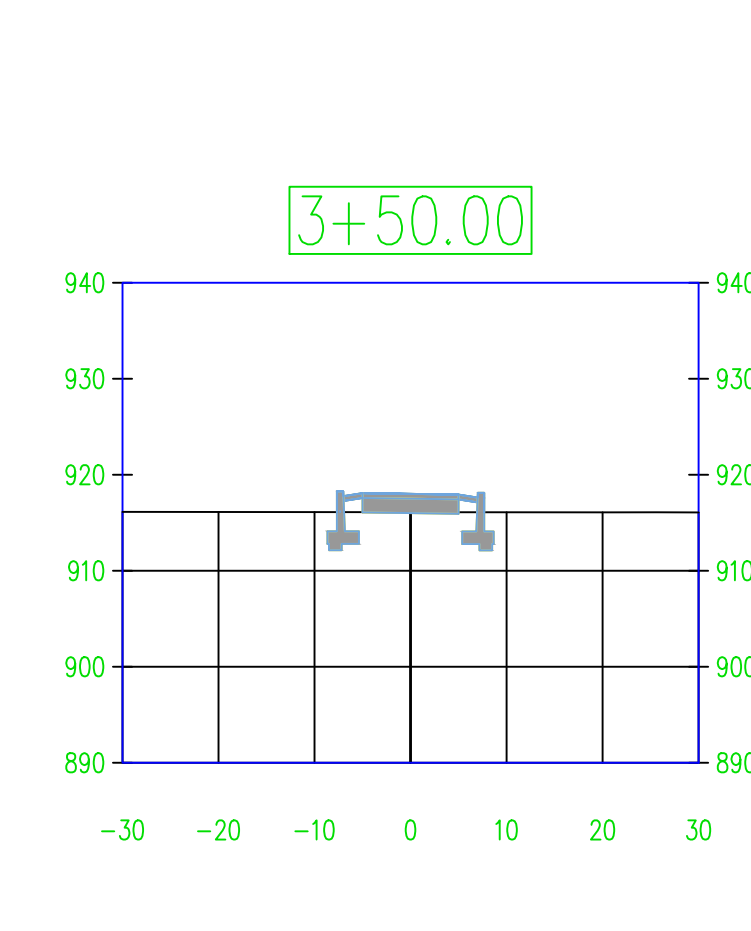
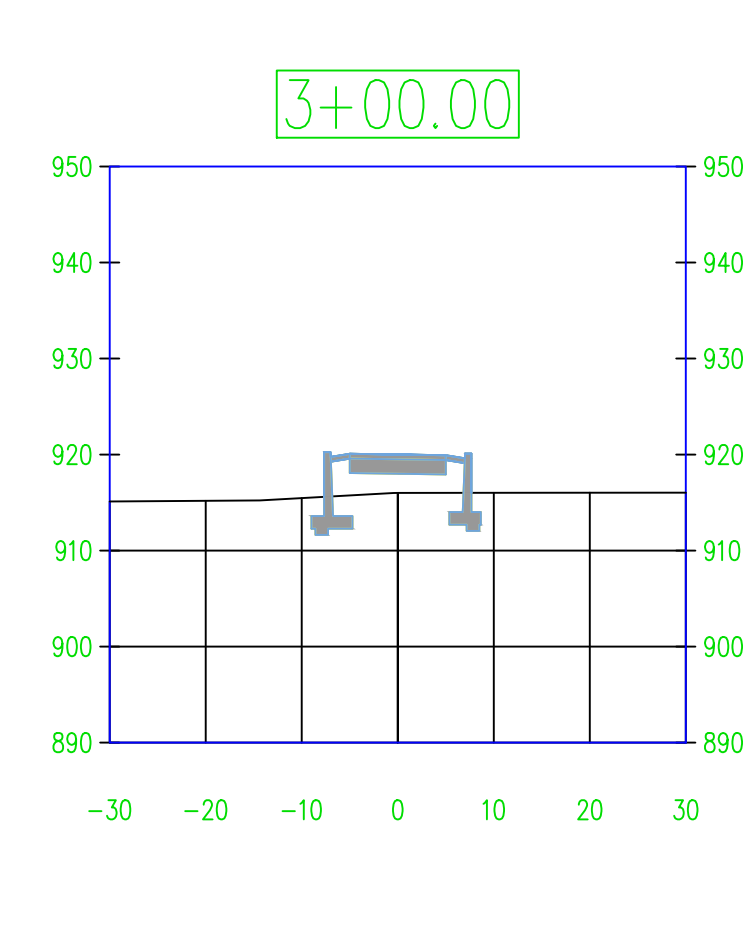
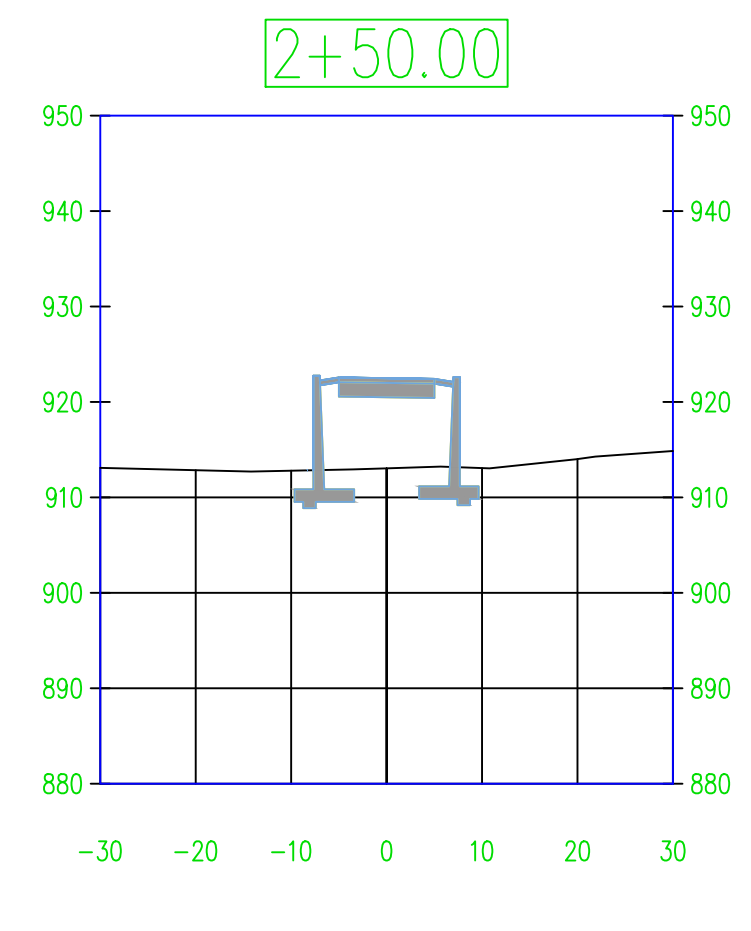
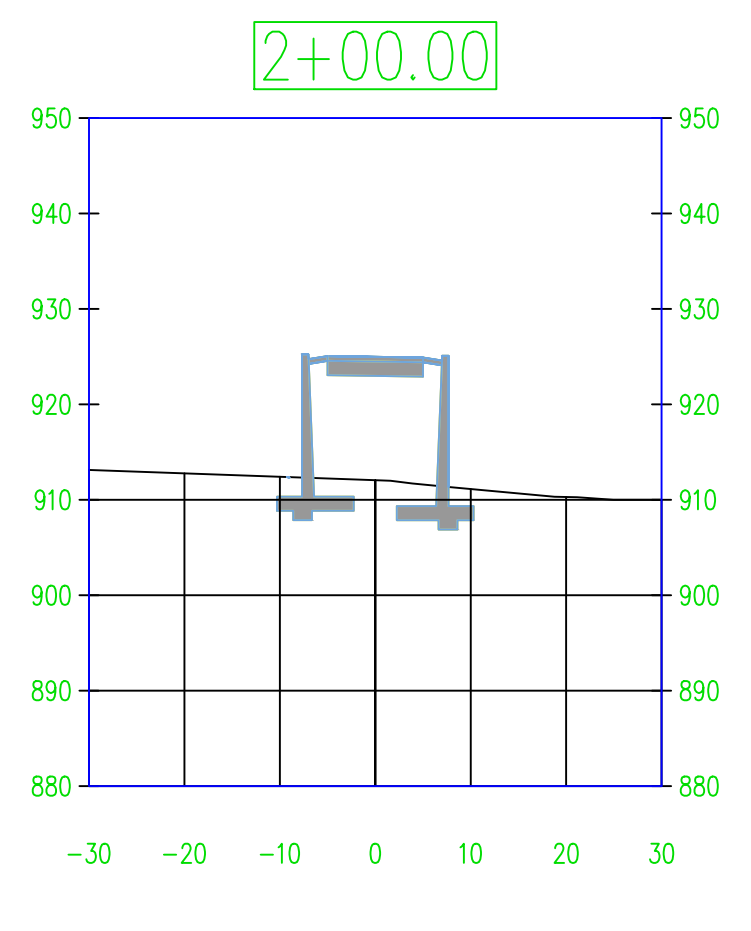
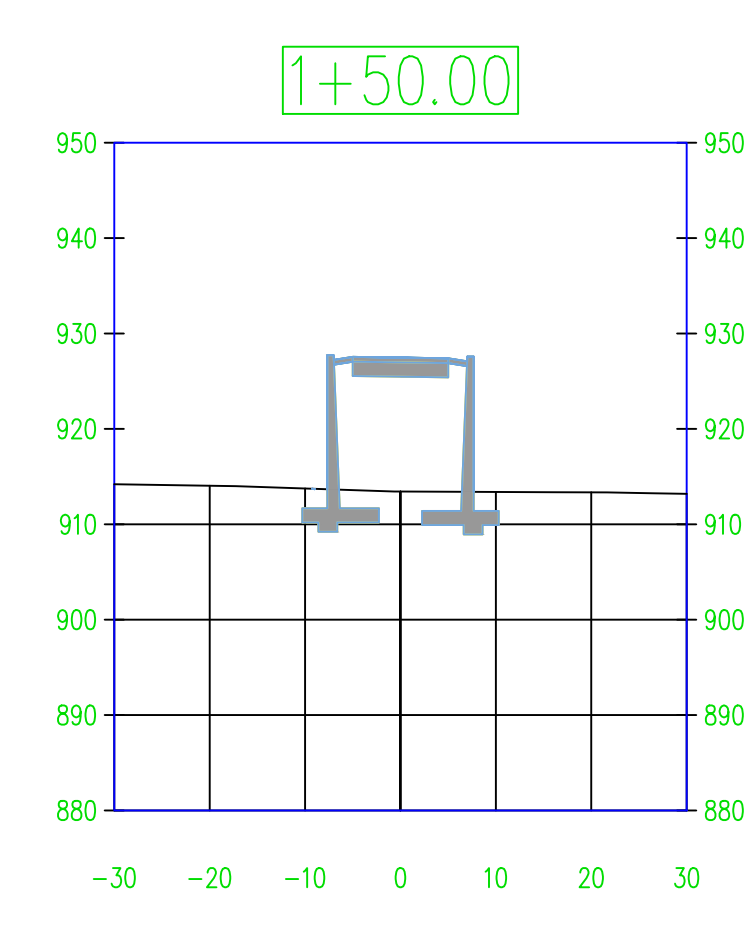
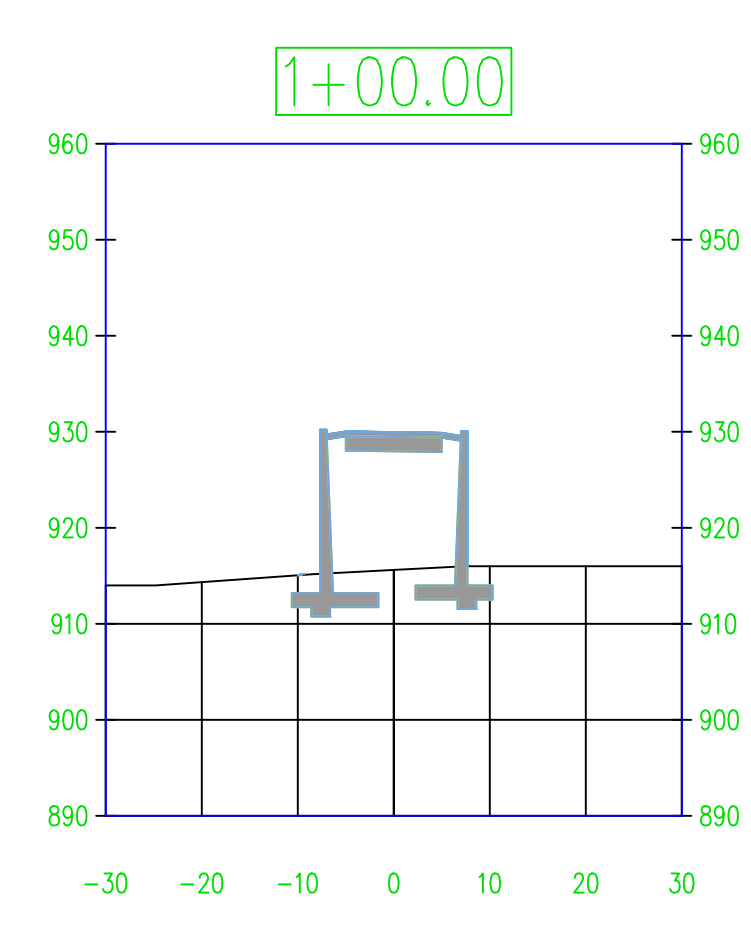
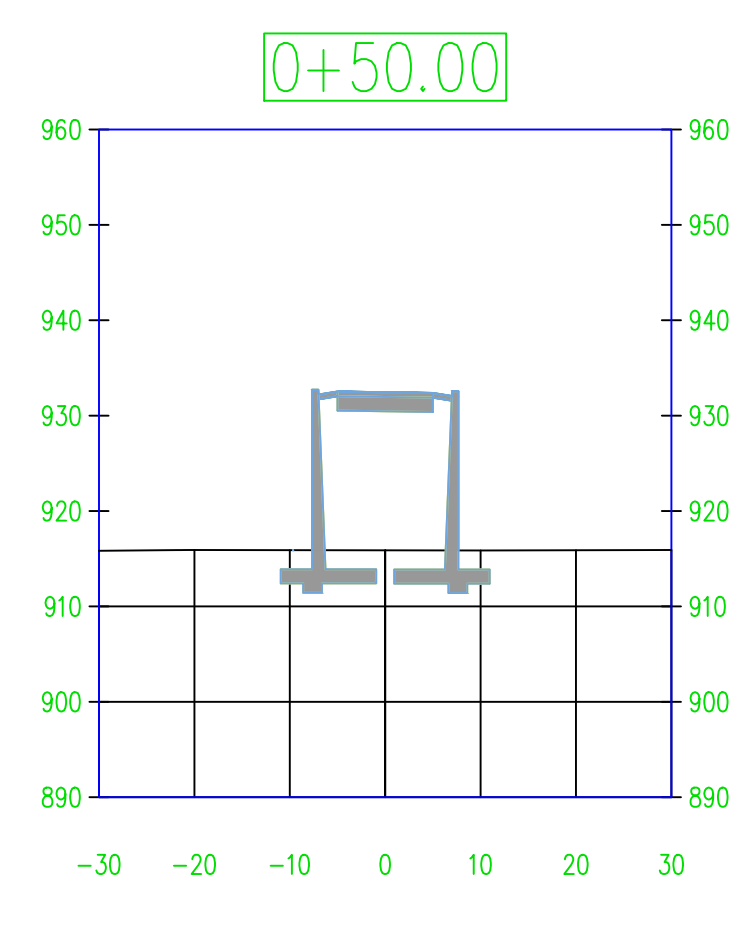
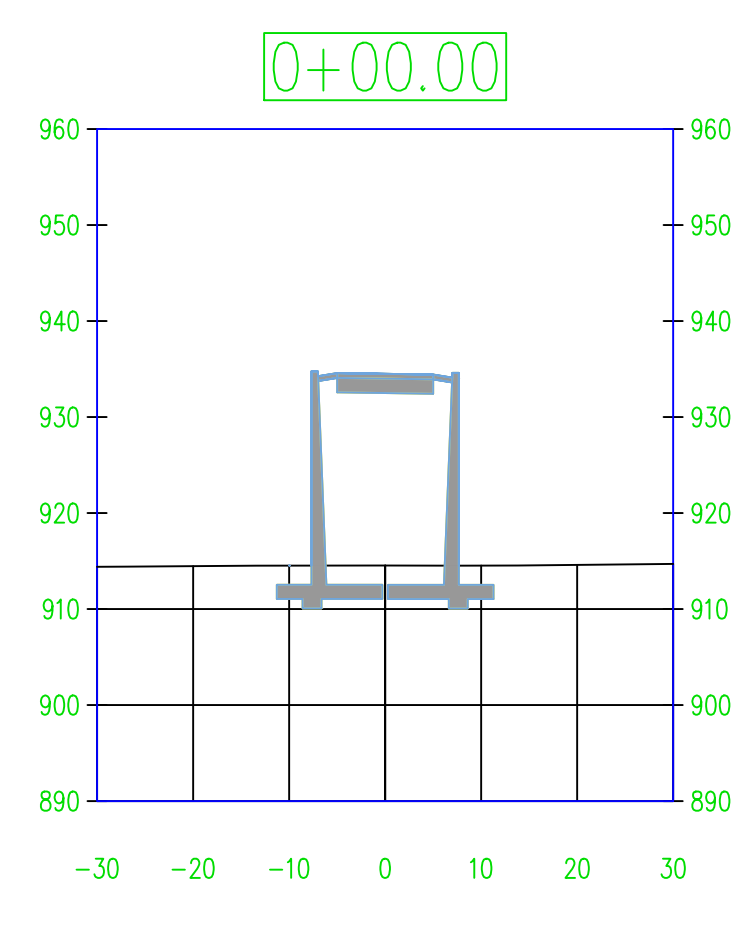


EAST SIDE TRAIL AND RETAINING WALL CROSS SECTIONS

Project Manager: CRS
Designer: ALL
Date: 12/11/2020
Revision:



Sheet X.03



NOTE: IF THIS SHEET IS NOT 22X34 IT IS NOT TO SCALE

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EAST SIDE TRAIL AND RETAINING WALL CROSS SECTIONS

Project Manager: CRS
Designer: ALL
Date: 12/11/2020
Revision:



Sheet X.04

