

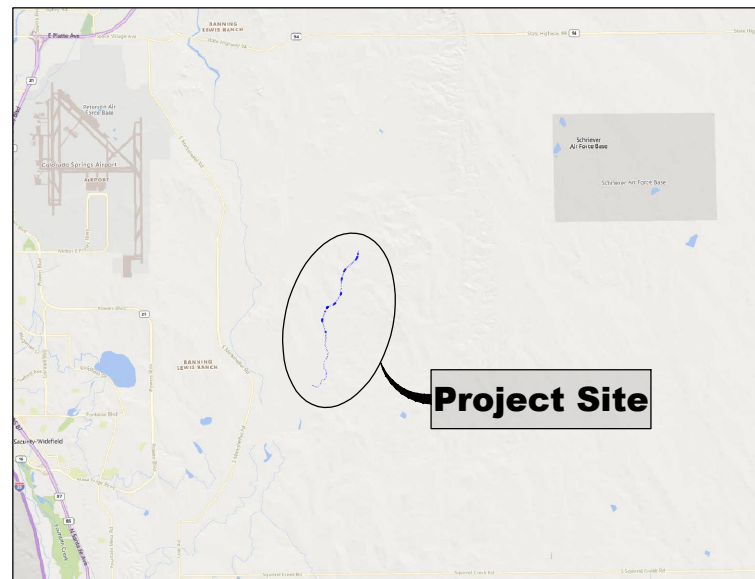


# ROLLING MEADOWS CHANNEL & FLOODPLAIN MODIFICATION

## THE LANDHUIS COMPANY

60% DESIGN PLANS  
MARCH 2023

MATRIX PROJECT No. 21.1129.009



VICINITY MAP  
N.T.S.

VERTICAL DATUM: THE ELEVATIONS ON THIS PROJECT ARE REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929.

HORIZONTAL DATUM: THE COORDINATES FOR THIS PROJECT ARE NAD83/2011 COLORADO STATE PLANE CENTRAL ZONE GRID COORDINATES.

AERIAL PHOTO: PROVIDED BY AERIAL MAPPING SERVICES

BENCHMARK STATEMENT: THE BENCHMARK USED FOR THIS SURVEY IS FIMS MONUMENT NUMBER 202. A U.S. GEOLOGICAL SURVEY BRASS CAP STAMPED '11 HA 1947' IN A CONCRETE PAD, LOCATED ALONG DRENNAN ROAD, APPROXIMATELY 0.5 MILES EAST OF MARKSHEFFEL ROAD, APPROXIMATELY 200 FEET EAST OF A BRIDGE. THE MARK IS 32 FEET NORTH OF THE PAVEMENT, 23 FEET EAST OF A NORTH TO SOUTH FENCE LINE, AND 2 FEET NORTHEAST OF A POWER POLE."

PROPERTY INFORMATION: PARCEL LINES AND PROPERTY OWNERSHIP INFORMATION SHOWN WERE PROVIDED BY AN ALTA SURVEY.



LOCATION MAP  
SCALE: 1" = 4,000'

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Applicable Specifications (City of Colorado Springs - Drainage Criteria Manual (DCM))			
100	General Provisions	622	Channel Embankment and Backfill
620	Drainage Channels	624	Riprap and Grouted Riprap Channel Construction
621	Channel Excavation	900	Seeding, Fertilizer, Mulching, and Sodding
Applicable Specifications (Mile High Flood District - Urban Storm Drainage Criteria Manual)			
01 71 13	Mobilization	31 23 33	Trenching and Backfill
01 55 26	Traffic Control	31 25 00	Erosion and Sediment Control
01 56 39	Temporary Tree and Plant Protection	31 37 00	Riprap, Boulders, and Bedding
31 11 00	Clearing and Grubbing	32 91 13	Topsoil
31 14 13	Topsoil Stripping and Stockpiling	32 92 19	Seeding
31 23 00	Excavation and Fill	32 93 00	Landscape Planting
31 23 19	Dewatering	32 93 43	Soil Bioengineering or Shoreline Stabilization

REFERENCE DRAWINGS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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Know what's below.  
**Call** before you dig.

**GENERAL NOTES:**

1. THE LOCATIONS OF EXISTING ABOVE GROUND AND UNDERGROUND UTILITIES ARE SHOWN IN THEIR APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. CONTRACTOR TO CALL FOR UTILITY LOCATOR AT LEAST 3 CALENDAR DAYS BEFORE EARTHWORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL ABOVE GROUND AND UNDERGROUND UTILITIES. IN THE EVENT THAT THE CONTRACTOR UTILITY VERIFICATION RESULTS IN EXISTING STRUCTURES OR UTILITIES BEING IN CONFLICT WITH THE PROPOSED WORK OF THIS CONTRACT, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY UTILITIES AND COORDINATE ANY NEEDED MODIFICATIONS TO THE PROPOSED WORK AS DIRECTED BY AFFECTED AGENCY OR UTILITY.
2. THE CONTRACTOR SHALL COORDINATE WITH ALL AFFECTED UTILITY OWNERS TO ESTABLISH THE REQUIREMENTS AND METHODS TO ACCOMMODATE THE PROTECTION, TEMPORARY SUPPORT, ADJUSTMENT OR RELOCATION OF UTILITIES PRIOR TO THE START OF CONSTRUCTION.
3. OVERHEAD UTILITIES ARE NOT INDICATED ON PROFILE OR SECTION DRAWINGS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING AND MAINTAINING IN CONTINUOUS OPERATION, ALL EXISTING STRUCTURES. NOT ALL POTENTIALLY IMPACTED STRUCTURES MAY BE SHOWN ON THE DRAWINGS AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ALL STRUCTURES INCLUDING BUT NOT LIMITED TO STREETS, CURB AND GUTTER, BRIDGE PIERS AND ABUTMENTS, CREEK BANK PROTECTION OF VARIOUS TYPES, CREEK DROP STRUCTURES, SIGNS, PEDESTRIAN WALKS, RETAINING WALLS AND FENCING. IN THE EVENT THAT A STRUCTURE OR UTILITY IS DAMAGED DURING CONSTRUCTION THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER OF THE FACILITY IN WRITING AND COORDINATE AND COOPERATE WITH NEEDED REPAIRS PER THE APPROPRIATE SPECIFICATIONS ACCORDING TO THE OWNER'S DIRECTION.
5. THE CONTRACTOR SHALL CONFIRM THE RECEIPT OF ALL NECESSARY PERMITS AND APPROVALS BEFORE THE START OF CONSTRUCTION.
6. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARDS OF THE CITY OF COLORADO SPRINGS, EL PASO COUNTY, AND THE MILE HIGH FLOOD DISTRICT, AS NOTED, UNLESS SPECIFICALLY DETAILED OTHERWISE ON THESE PLANS AND ASSOCIATED SPECIFICATIONS.
7. THE CONTRACTOR SHALL MAINTAIN AT THE SITE AT ALL TIMES ONE SIGNED COPY OF THE PROJECT DRAWINGS AND SPECIFICATIONS, ONE COPY OF THE STORMWATER MANAGEMENT PLAN AND ONE COPY OF ALL REQUIRED PERMITS.
8. THE CONTRACTOR SHALL CONDUCT THEIR OPERATIONS IN SUCH A WAY THAT THE AREA OF DISTURBANCE IS MINIMIZED. ALL EXISTING TREES, SHRUBS AND VEGETATION SHALL BE PROTECTED UNLESS OTHERWISE NOTED ON THE DRAWINGS. NO TREES SHALL BE REMOVED WITHOUT APPROVAL. DESIGNATED ACCESS SHALL BE MINIMAL AND AGREED UPON WITH THE ENGINEER PRIOR TO CONSTRUCTION ACTIVITIES.
9. FOR ALL SITE GRADING, SMOOTH, PARABOLIC TRANSITIONS SHALL BE MADE BETWEEN CHANGES IN SLOPE.
10. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING STABLE EXCAVATIONS AND TEMPORARY SLOPES AND FOR SATISFYING ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS. THIS INCLUDES BUT IS NOT LIMITED TO BENCHING, SHORING, AND SLOPING AS NEEDED FOR CONSTRUCTION.
11. CONSTRUCTION OF THE PROPOSED WORK WILL TAKE PLACE WITHIN THE CHANNEL AND WATER CONTROL MEASURES WILL BE REQUIRED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACCEPTANCE AND CONTROL OF DRAINAGE WATER FROM AREAS ADJACENT TO EAST FORK JIMMY CAMP CREEK AND FOR FLOW WITHIN EAST FORK JIMMY CAMP CREEK AND ITS TRIBUTARIES INCLUDING STORMWATER OUTFALLS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ESTABLISHING MEANS AND METHODS OF GROUND AND SURFACE WATER CONTROL APPROPRIATE FOR CONSTRUCTION IN ACCORDANCE WITH THE REQUIREMENTS OF THE PROJECT DRAWINGS AND SPECIFICATIONS AND ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS AND PERMITS.
12. THE CONTRACTOR SHALL PREPARE AND MAINTAIN THE STORMWATER MANAGEMENT PLAN AND OBTAIN THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT THROUGH THE COLORADO DEPARTMENT OF PUBLIC HEALTH (CDPHE) AND ALL OTHER APPROPRIATE FEDERAL, STATE AND LOCAL PERMITS. ADDITIONAL INFORMATION IS PROVIDED ON THE GRADING AND EROSION CONTROL PLANS.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR AS-BUILT DRAWINGS TO BE MAINTAINED AND SUBMITTED TO THE CITY OF COLORADO SPRINGS AND EL PASO COUNTY.
14. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ON-SITE SURVEY CONTROL AND CONSTRUCTION STAKING.
15. CONTRACTOR SHALL FENCE OFF CRITICAL AREAS TO BE PROTECTED AT THE DISCRETION OF THE CITY OF COLORADO SPRINGS AND EL PASO COUNTY.
16. THE CONTRACTOR SHALL DEVELOP A TRAFFIC CONTROL PLAN FOR PLANNED ACCESS TO THE SITE AND FOR EXITING AND ENTERING PUBLIC ROADS.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING AND MAINTAINING PHYSICAL AND LEGAL ACCESS TO THE PROJECT SITE AND SHALL LIMIT TRANSPORTATION TO AND FROM THE SITE TO THOSE APPROVED BY THE CITY OF COLORADO SPRINGS AND EL PASO COUNTY.
18. THE CONTRACTOR SHALL TAKE MEASURES TO PREVENT AND MANAGE SPILLS OF TOXIC MATERIALS, SUCH AS EQUIPMENT FUELS
19. ALL MATERIALS USED SHALL BE NEW AND WITHOUT FLAWS OR DEFECTS OF ANY TYPE AND SHALL BE THE BEST OF THEIR CLASS AND KIND.
20. WORK INCLUDES FURNISHING OF LABOR, MATERIALS, TOOLS, AND EQUIPMENT TO COMPLETE THE CONSTRUCTION OF ALL ELEMENTS OF THE DESIGN PLANS.

## ABBREVIATIONS

☐	CENTER LINE	APPROX.	APPROXIMATE
HCL	HORIZONTAL CONTROL LINE	MIN.	MINIMUM
DIA	DIAMETER	MAX.	MAXIMUM
EX./EXIST	EXISTING	HORIZ	HORIZONTAL
PR./PROP	PROPOSED	VERT.	VERTICAL
EL./ELEV	ELEVATION	DIST.	DISTANCE
FT.	FEET	NTS	NOT TO SCALE
INV.	INVERT	TYP	TYPICAL
LF	LINEAR FEET	O.C.	ON CENTER
LT	LEFT	L.O.C.	LIMITS OF CONSTRUCTION
N,S,E,W	NORTH, SOUTH, EAST, WEST	RR	RAILROAD
P	PROPERTY LINE	BCL	BANKFULL CONTROL LINE
ROW	RIGHT-OF-WAY	TCL	THALWEG CONTROL LINE
RT	RIGHT	BLR	BANNING LEWIS RANCH
SF	SQUARE FEET		
STA.	STATION		

## STANDARD SYMBOLS

	CENTER LINE
	PROPERTY LINE
	EXISTING CONTOURS: 2' AND 10' INTERVALS UNLESS OTHERWISE NOTED
	PROPOSED CONTOURS: 2' AND 10' INTERVALS UNLESS OTHERWISE NOTED
	LIMITS OF DISTURBANCE
	CONSTRUCTION ACCESS
	R.O.W.
	EASEMENT
	FENCE

## LEGEND

PROPOSED SOIL RIPRAP

PROPOSED SOIL RIPRAP - BURIED WITH TOPSOIL & REVEGETATION

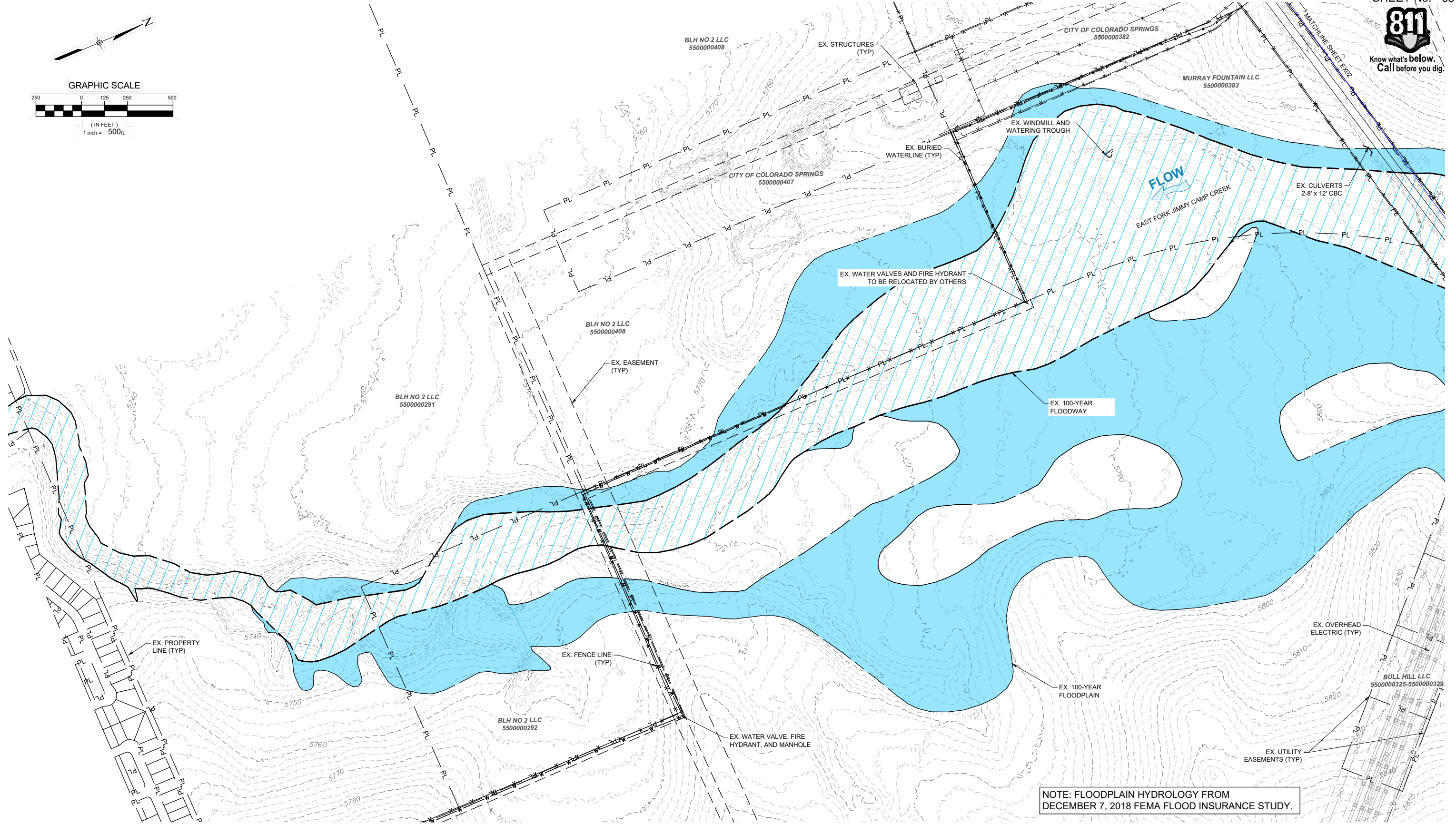
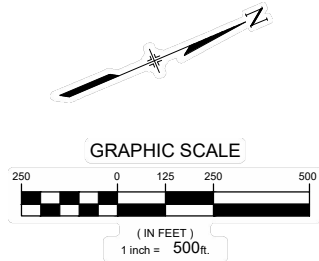
PROPOSED SCULPTED CONCRETE DROP STRUCTURE

PROPOSED COUNTY ACCESS ROAD

PR. 100-YR FLOODPLAIN BOUNDARY (3,600 OR 4,400 CFS)

[illegible]





REFERENCE DRAWINGS			
X-1129-MDG22x34			
X-1129-009-AERIAL			
X-1129-009-EX FLOODPLAIN			
X-1129-PARCELS			
X-1129-UTILITIES			
No.	DATE	DESCRIPTION	BY
REVISIONS			
COMPUTER FILE MANAGEMENT			
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**60% DESIGN PLANS**

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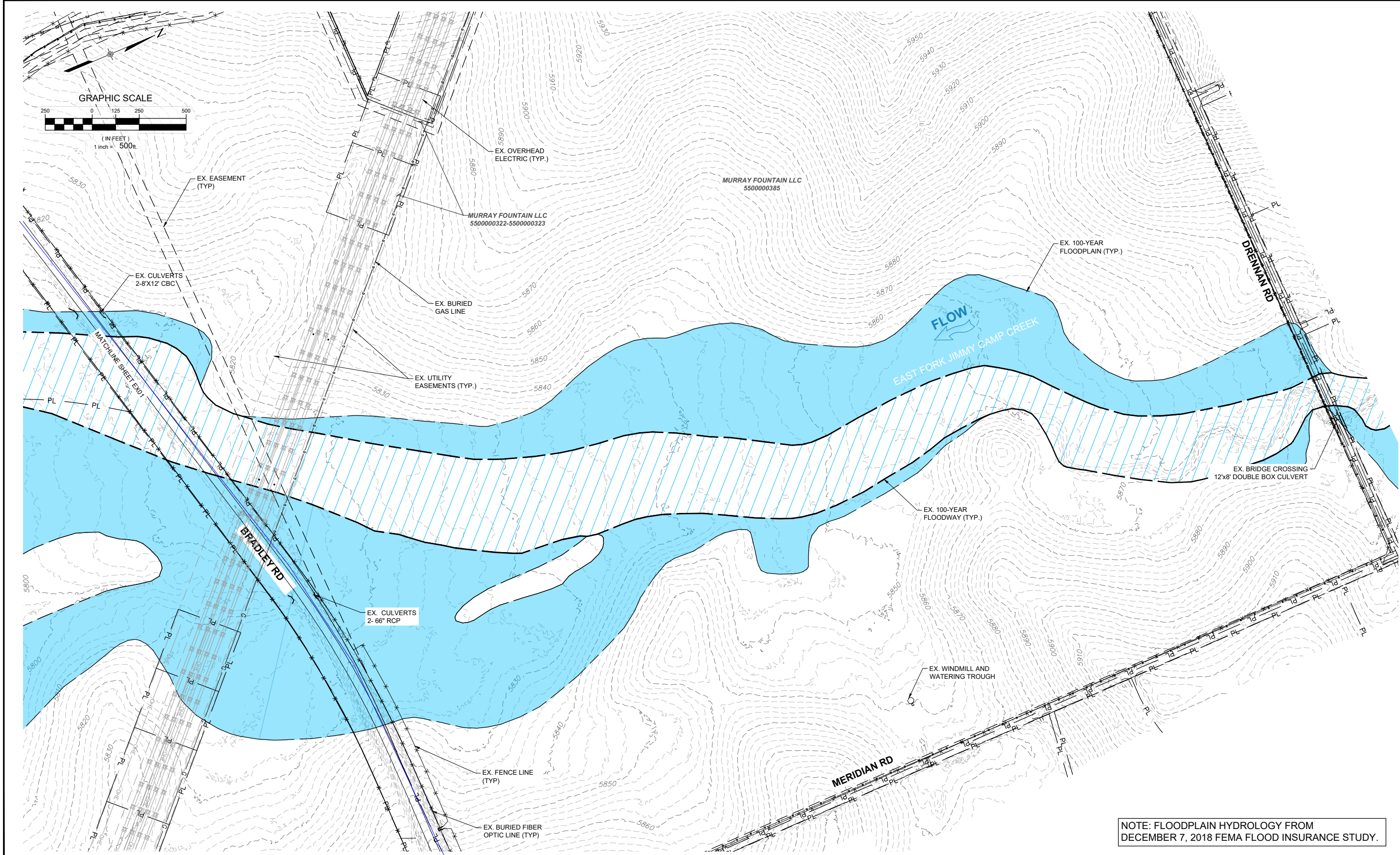
SEAL

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FOR AND ON BEHALF OF  
MATRIX DESIGN GROUP, INC.  
PROJECT No. 21.1129.009

THE LANDHUIS COMPANY			
ROLLING MEADOWS CHANNEL & FLOODPLAIN MODIFICATION 60% DESIGN PLANS			
EXISTING CONDITIONS - LOWER REACH			
DESIGNED BY: TKM	SCALE: 1" = 500'	DATE ISSUED: MARCH 2023	DRAWING No. EX01
CHECKED BY: EAL	HORIZ: N/A	SHEET: 03 OF 47	
	VERT: N/A		





NOTE: FLOODPLAIN HYDROLOGY FROM DECEMBER 7, 2018 FEMA FLOOD INSURANCE STUDY.

REFERENCE DRAWINGS				
X-1129-MDG22x34 X-1129-009-AERIAL X-1129-009-EX FLOODPLAIN X-1129-PARCELS X-1129-UTILITIES				
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		REVISIONS		
COMPUTER FILE MANAGEMENT				
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**60% DESIGN PLANS**

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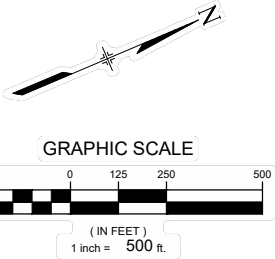
SEAL

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GOVERNING AGENCIES AND  
IS SUBJECT TO CHANGE

FOR AND ON BEHALF OF  
MATRIX DESIGN GROUP, INC.  
PROJECT No. 21.1129.009

THE LANDHUIS COMPANY			
ROLLING MEADOWS CHANNEL & FLOODPLAIN MODIFICATION 60% DESIGN PLANS			
EXISTING CONDITIONS - UPPER REACH			
DESIGNED BY: TKM	SCALE: HORIZ 1" = 500'	DATE ISSUED: MARCH 2023	DRAWING No. EX02
CHECKED BY: AJS	VERT. N/A	SHEET 04 OF 47	



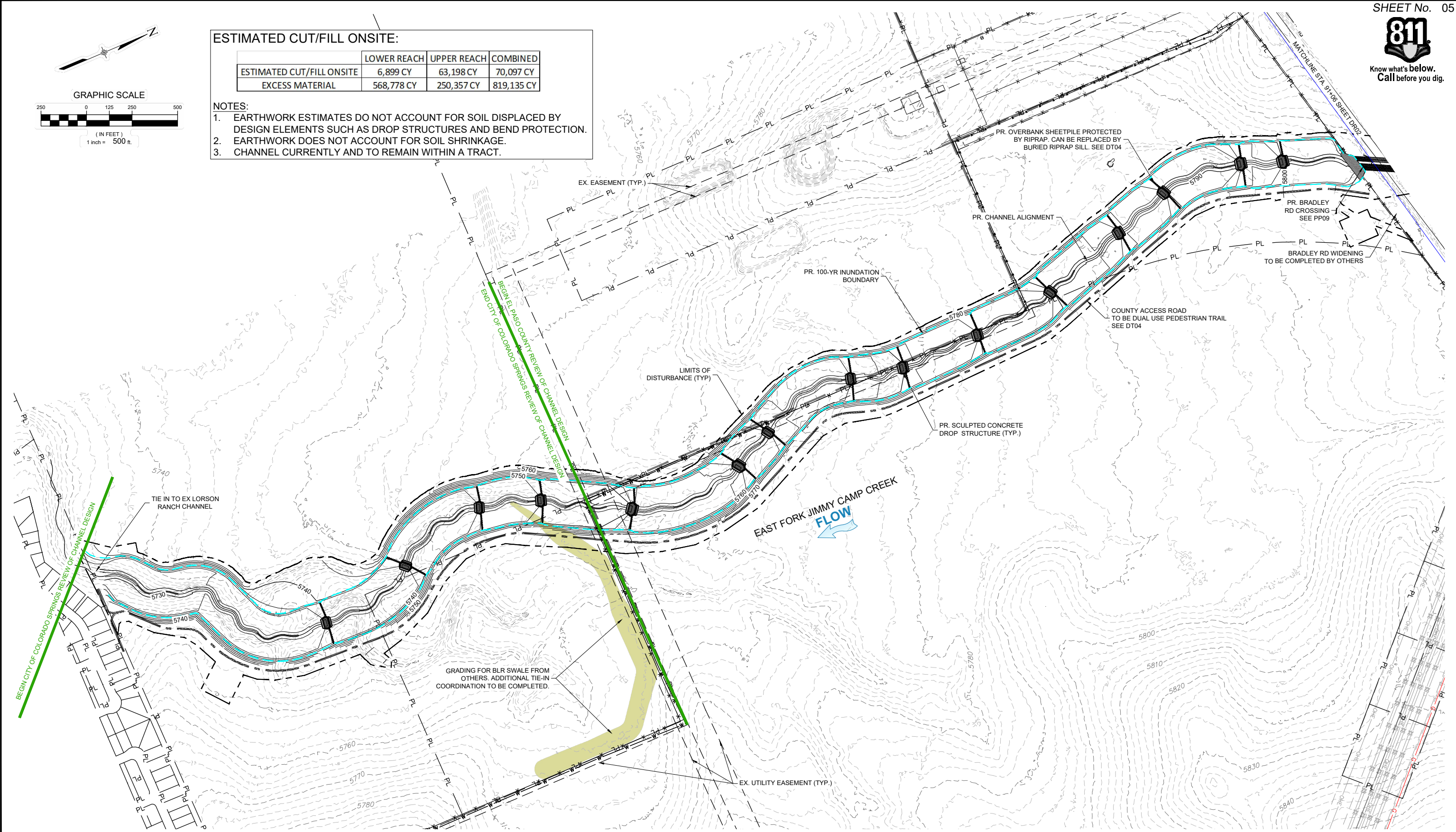


ESTIMATED CUT/FILL ONSITE:

	LOWER REACH	UPPER REACH	COMBINED
ESTIMATED CUT/FILL ONSITE	6,899 CY	63,198 CY	70,097 CY
EXCESS MATERIAL	568,778 CY	250,357 CY	819,135 CY

NOTES:

1. EARTHWORK ESTIMATES DO NOT ACCOUNT FOR SOIL DISPLACED BY DESIGN ELEMENTS SUCH AS DROP STRUCTURES AND BEND PROTECTION.
2. EARTHWORK DOES NOT ACCOUNT FOR SOIL SHRINKAGE.
3. CHANNEL CURRENTLY AND TO REMAIN WITHIN A TRACT.



REFERENCE DRAWINGS			
X-1129.009-AERIAL X-1129-MDG22x34 X-1129-PARCELS X-1129.009-EX-TOP X-1129-PR-STRUCT X-1129-UTILITIES 43132-CONTROL			
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COMPUTER FILE MANAGEMENT			
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**60% DESIGN PLANS**

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PREPARED BY:

**Matrix**  
Excellence by Design

SEAL

**PRELIMINARY**  
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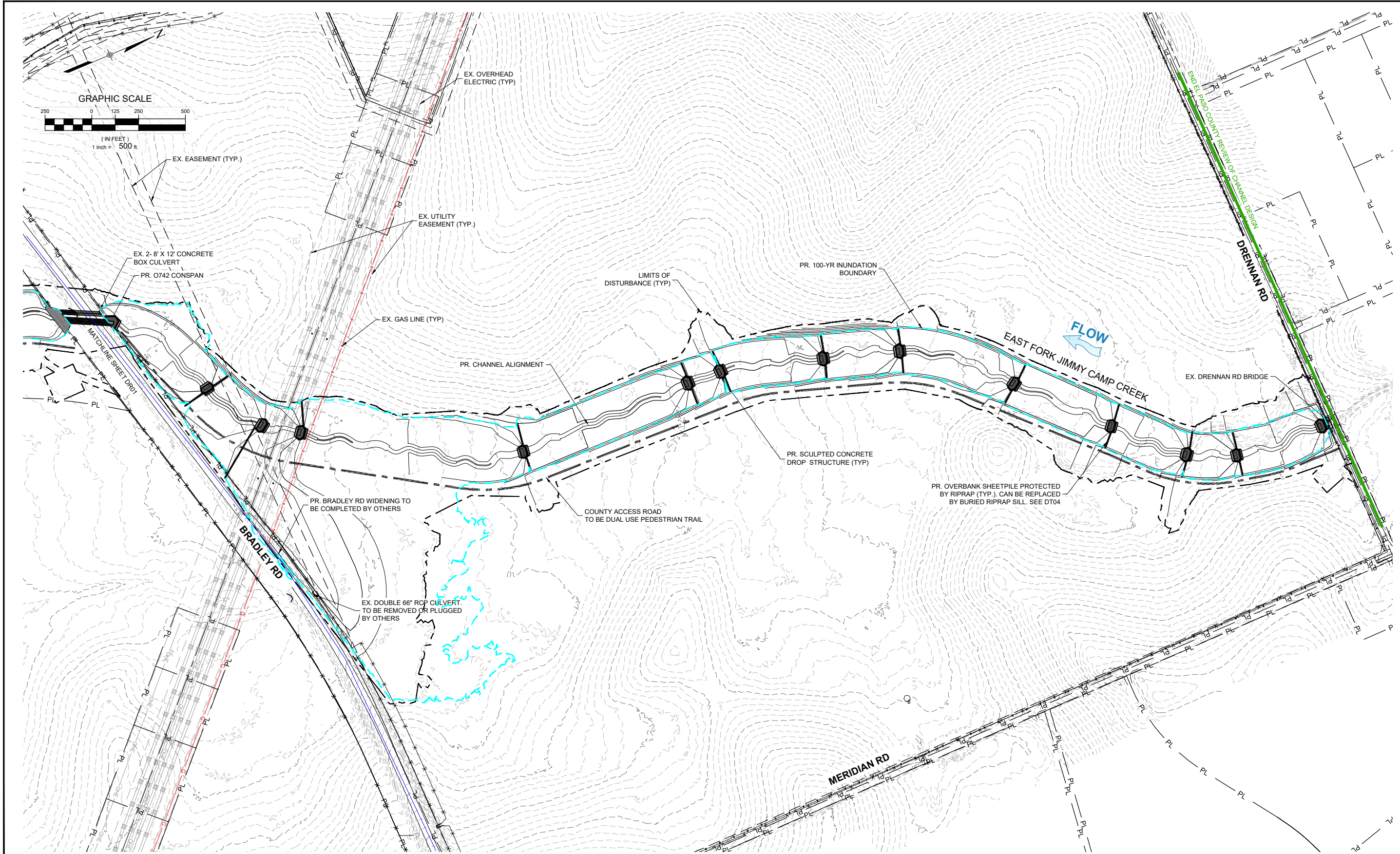
FOR AND ON BEHALF OF  
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PROJECT No. 21.1129.009

THE LANDHUIS COMPANY			
ROLLING MEADOWS CHANNEL & FLOODPLAIN MODIFICATION 60% DESIGN PLANS			
OVERALL DRAINAGE PLAN - LOWER REACH			
DESIGNED BY: TKM	SCALE: HORIZ 1" = 500'	DATE ISSUED: MARCH 2023	DRAWING No. DR01
CHECKED BY: AJS	VERT. N/A	SHEET 05 OF 47	





Know what's below.  
Call before you dig.



REFERENCE DRAWINGS			
X-1129.009-AERIAL X-1129-MDG22x34 X-1129-PARCELS X-1129.009-EX-TOPO X-1129-PR STRUCT X-1129-UTLITIES 43135-CONTROL			
No.	DATE	DESCRIPTION	BY
COMPUTER FILE MANAGEMENT			
FILE NAME: S:\21.1129.009 Rolling Hills Floodplain and Permitting\Dwg\Design Plans\1129.009-DR01.dwg			
CTB FILE: Matrix(black).ctb			
PLOT DATE: May 2, 2023 2:33:02 PM			
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.			

**60% DESIGN PLANS**

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SEAL

**PRELIMINARY**  
THIS DRAWING HAS NOT BEEN APPROVED BY GOVERNING AGENCIES AND IS SUBJECT TO CHANGE

FOR AND ON BEHALF OF  
MATRIX DESIGN GROUP, INC.  
PROJECT No. 21.1129.009

THE LANDHUIS COMPANY			
ROLLING MEADOWS CHANNEL & FLOODPLAIN MODIFICATION 60% DESIGN PLANS			
OVERALL DRAINAGE PLAN - UPPER REACH			
DESIGNED BY: TKM	SCALE: HORIZ 1" = 500'	DATE ISSUED: MARCH 2023	DRAWING No. DR02
CHECKED BY: AJS	VERT. N/A	SHEET 06 OF 47	



Topographic map showing a road and various survey points. The map includes a graphic scale (1 inch = 600 feet), a north arrow, and a '60DN TARGET' label. The map is titled 'H202' and 'H203'.

Key features and labels:

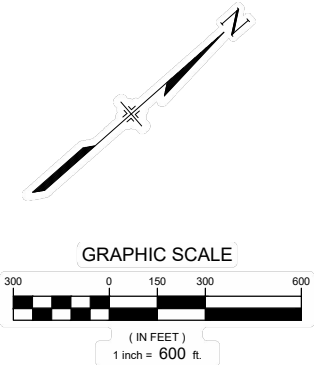
- Survey Points:** L1-L86 and C1-C86 are distributed along the road and in the surrounding terrain.
- 60DN TARGET:** Located at station 224, with coordinates 5776.75.
- SET60DNAIL DRONECNTRL:** Located at station 212, with coordinates 5793.29.
- END LOWER REACH:** STA. 0+00.00, N=1,333,154.05, E=3,248,835.17.
- END LOWER REACH:** STA. 91+06.25, N=1,340,485.89, E=3,250,215.83.
- GRAPHIC SCALE:** 1 inch = 600 feet.
- North Arrow:** Indicated by a line with an arrow pointing towards the top of the map.
- Contour Lines:** Labeled with elevations such as 5740, 5750, 5760, 5770, 5780, 5790, 5800, 5810, 5820, 5830, 5840, 5850, 5860, 5870, 5880, 5890, 5900, 5910, 5920, 5930, 5940, 5950, 5960, 5970, 5980, 5990, 6000, 6010, 6020, 6030, 6040, 6050, 6060, 6070, 6080, 6090, 6100, 6110, 6120, 6130, 6140, 6150, 6160, 6170, 6180, 6190, 6200, 6210, 6220, 6230, 6240, 6250, 6260, 6270, 6280, 6290, 6300, 6310, 6320, 6330, 6340, 6350, 6360, 6370, 6380, 6390, 6400, 6410, 6420, 6430, 6440, 6450, 6460, 6470, 6480, 6490, 6500, 6510, 6520, 6530, 6540, 6550, 6560, 6570, 6580, 6590, 6600, 6610, 6620, 6630, 6640, 6650, 6660, 6670, 6680, 6690, 6700, 6710, 6720, 6730, 6740, 6750, 6760, 6770, 6780, 6790, 6800, 6810, 6820, 6830, 6840, 6850, 6860, 6870, 6880, 6890, 6900, 6910, 6920, 6930, 6940, 6950, 6960, 6970, 6980, 6990, 7000, 7010, 7020, 7030, 7040, 7050, 7060, 7070, 7080, 7090, 7100, 7110, 7120, 7130, 7140, 7150, 7160, 7170, 7180, 7190, 7200, 7210, 7220, 7230, 7240, 7250, 7260, 7270, 7280, 7290, 7300, 7310, 7320, 7330, 7340, 7350, 7360, 7370, 7380, 7390, 7400, 7410, 7420, 7430, 7440, 7450, 7460, 7470, 7480, 7490, 7500, 7510, 7520, 7530, 7540, 7550, 7560, 7570, 7580, 7590, 7600, 7610, 7620, 7630, 7640, 7650, 7660, 7670, 7680, 7690, 7700, 7710, 7720, 7730, 7740, 7750, 7760, 7770, 7780, 7790, 7800, 7810, 7820, 7830, 7840, 7850, 7860, 7870, 7880, 7890, 7900, 7910, 7920, 7930, 7940, 7950, 7960, 7970, 7980, 7990, 8000, 8010, 8020, 8030, 8040, 8050, 8060, 8070, 8080, 8090, 8100, 8110, 8120, 8130, 8140, 8150, 8160, 8170, 8180, 8190, 8200, 8210, 8220, 8230, 8240, 8250, 8260, 8270, 8280, 8290, 8300, 8310, 8320, 8330, 8340, 8350, 8360, 8370, 8380, 8390, 8400, 8410, 8420, 8430, 8440, 8450, 8460, 8470, 8480, 8490, 8500, 8510, 8520, 8530, 8540, 8550, 8560, 8570, 8580, 8590, 8600, 8610, 8620, 8630, 8640, 8650, 8660, 8670, 8680, 8690, 8700, 8710, 8720, 8730, 8740, 8750, 8760, 8770, 8780, 8790, 8800, 8810, 8820, 8830, 8840, 8850, 8860, 8870, 8880, 8890, 8900, 8910, 8920, 8930, 8940, 8950, 8960, 8970, 8980, 8990, 9000, 9010, 9020, 9030, 9040, 9050, 9060, 9070, 9080, 9090, 9100, 9110, 9120, 9130, 9140, 9150, 9160, 9170, 9180, 9190, 9200, 9210, 9220, 9230, 9240, 9250, 9260, 9270, 9280, 9290, 9300, 9310, 9320, 9330, 9340, 9350, 9360, 9370, 9380, 9390, 9400, 9410, 9420, 9430, 9440, 9450, 9460, 9470, 9480, 9490, 9500, 9510, 9520, 9530, 9540, 9550, 9560, 9570, 9580, 9590, 9600, 9610, 9620, 9630, 9640, 9650, 9660, 9670, 9680, 9690, 9700, 9710, 9720, 9730, 9740, 9750, 9760, 9770, 9780, 9790, 9800, 9810, 9820, 9830, 9840, 9850, 9860, 9870, 9880, 9890, 9900, 9910, 9920, 9930, 9940, 9950, 9960, 9970, 9980, 9990, 10000.

[illegible]





POINT TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	1346435.2980	3254054.5570	5891.75	usgs BM HA-12
31	1346305.1740	3250455.7720	5972.91	CP-31 #5REBAR
218	1343734.7330	3254117.2450	5864.38	SET 60D NAIL TARGET



REFERENCE DRAWINGS			
X-1129-MDG22x34			
X-1129-PARCELS			
X-1129-FIELD			
X-1129-UTILITIES			
X-1129-CONTROL PTS			
X-1129-CONTROL PTS_1.24.2023			
No.	DATE	DESCRIPTION	BY
COMPUTER FILE MANAGEMENT			
FILE NAME: S:\21.1129.009 Rolling Hills Floodplain and Permitting\Drawings\Design Plans\1129.009-HZ01-02.dwg			
CTB FILE: Matrix(black).ctb			
PLOT DATE: May 3, 2023 3:57:19 PM			
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.			

**60% DESIGN PLANS**

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PREPARED BY:

**Matrix**  
Excellence by Design

SEAL

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FOR AND ON BEHALF OF  
MATRIX DESIGN GROUP, INC.  
PROJECT No. 21.1129.009

THE LANDHUIS COMPANY				
ROLLING HILLS CHANNEL AND FLOODPLAIN MODIFICATIONS 60% DESIGN PLANS				
HORIZONTAL CONTROL PLAN - UPPER REACH				
DESIGNED BY:	TKM	SCALE	DATE ISSUED:	MARCH 2023
CHECKED BY:	AJS	HORIZ 1" = 600'	SHEET	08 OF 47
				DRAWING No. HZ02





LOWER SECTION

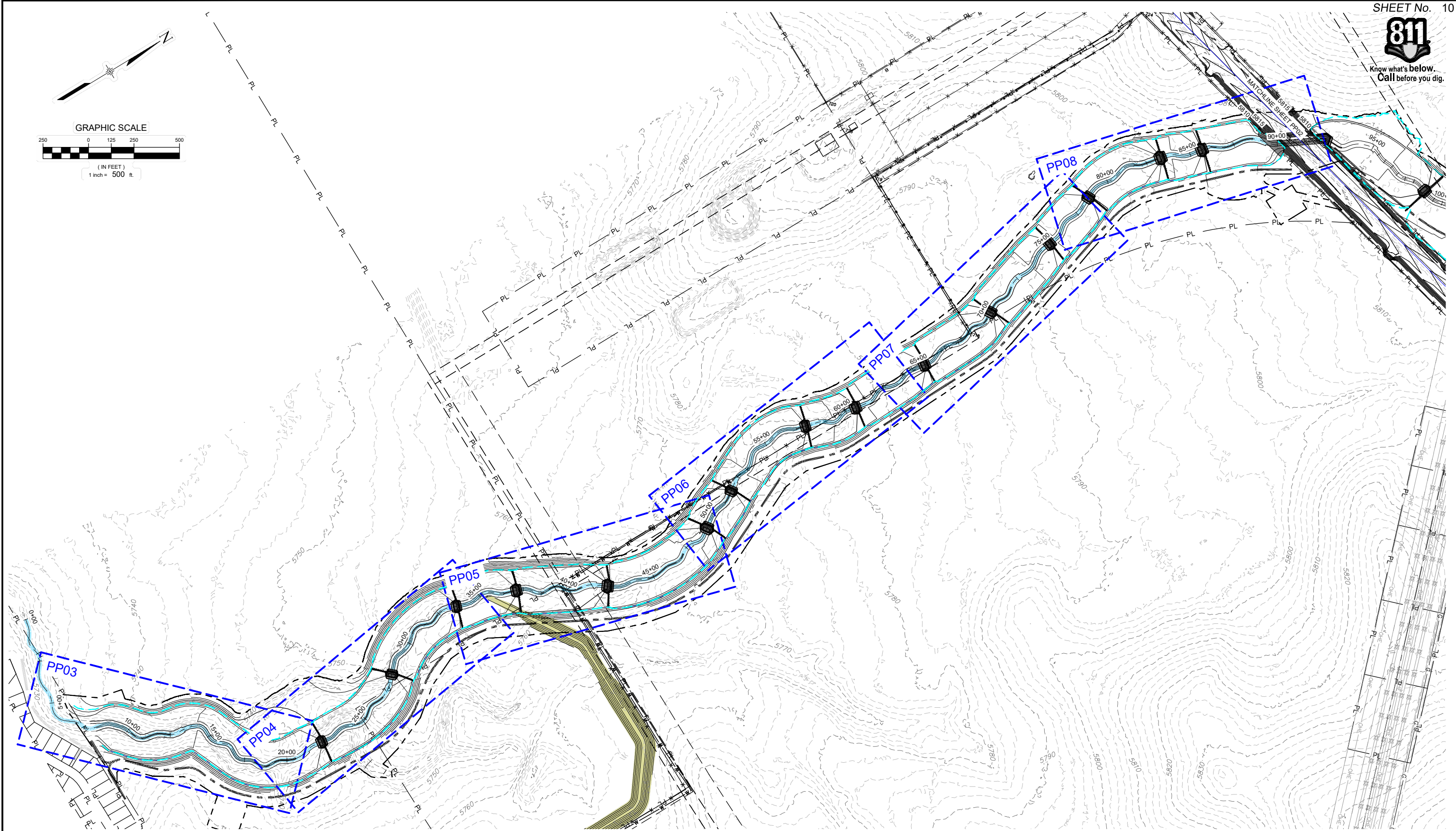
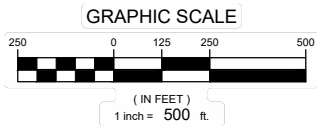
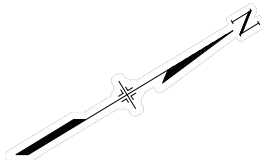
LINE TABLE			LINE TABLE			LINE TABLE			LINE TABLE			CURVE TABLE				CURVE TABLE				CURVE TABLE				CURVE TABLE				CURVE TABLE			
LINE #	BEARING	DISTANCE	LINE #	BEARING	DISTANCE	LINE #	BEARING	DISTANCE	LINE #	BEARING	DISTANCE	CURVE #	ARC LENGTH	RADIUS	DELTA ANGLE	CURVE #	ARC LENGTH	RADIUS	DELTA ANGLE	CURVE #	ARC LENGTH	RADIUS	DELTA ANGLE	CURVE #	ARC LENGTH	RADIUS	DELTA ANGLE	CURVE #	ARC LENGTH	RADIUS	DELTA ANGLE
L1	S79°44'29"E	31.55'	L26	N22°05'03"E	45.06'	L51	N06°55'12"W	31.22'	L76	N40°37'52"W	31.40'	C1	53.62	126.83'	24°13'14"	C26	92.54	84.00'	63°07'12"	C51	39.38	80.00'	28°12'23"	C76	39.38	80.00'	28°12'23"	C1	53.62	126.83'	24°13'14"
L2	S65°31'15"E	31.60'	L27	N41°02'09"W	30.32'	L52	N35°07'35"W	119.31'	L77	N01°17'52"E	35.64'	C2	39.04	47.92'	46°40'40"	C27	36.67	50.00'	42°01'09"	C52	32.69	57.72'	32°26'56"	C77	32.69	57.72'	32°26'56"	C2	39.04	47.92'	46°40'40"
L3	N77°48'05"E	31.07'	L28	N00°59'00"E	33.16'	L53	N02°40'40"W	31.00'	L78	N26°59'11"W	108.02'	C3	82.15	95.00'	49°32'49"	C28	44.76	90.00'	28°29'42"	C53	59.41	73.77'	46°08'39"	C78	59.41	73.77'	46°08'39"	C3	82.15	95.00'	49°32'49"
L4	S52°39'06"E	40.92'	L29	N27°30'42"W	30.81'	L54	N48°49'19"W	32.23'	L79	N12°00'38"E	30.86'	C4	88.86	111.12'	45°48'51"	C29	44.99	129.84'	19°51'05"	C54	62.88	65.90'	54°40'05"	C79	44.99	129.84'	19°51'05"	C4	88.86	111.12'	45°48'51"
L5	N81°32'03"E	31.70'	L30	N47°21'48"W	121.84'	L55	N05°50'46"E	34.62'	L80	N18°11'10"W	45.00'	C5	64.10	109.00'	33°41'48"	C30	38.31	54.34'	40°23'39"	C55	46.98	115.26'	23°21'20"	C80	38.31	54.34'	40°23'39"	C5	64.10	109.00'	33°41'48"
L6	S64°46'09"E	29.70'	L31	N06°58'09"W	34.71'	L56	N17°30'34"W	32.72'	L81	N32°28'08"E	32.36'	C6	115.26	82.97'	79°35'28"	C31	82.02	125.00'	37°35'48"	C56	83.09	100.00'	47°36'27"	C81	82.02	125.00'	37°35'48"	C6	115.26	82.97'	79°35'28"
L7	N35°38'22"E	35.00'	L32	N44°33'57"W	29.90'	L57	N30°05'53"E	29.55'	L82	N10°34'22"E	130.66'	C7	38.23	76.43'	28°39'37"	C32	76.39	65.00'	67°20'10"	C57	20.33	75.50'	15°25'43"	C82	76.39	65.00'	67°20'10"	C7	38.23	76.43'	28°39'37"
L8	N64°18'00"E	31.73'	L33	N22°46'13"E	32.22'	L58	N14°40'10"E	122.92'	L83	N41°12'55"E	29.70'	C8	58.33	62.30'	53°38'46"	C33	42.51	50.44'	48°17'28"	C58	36.22	86.00'	24°07'55"	C83	42.51	50.44'	48°17'28"	C8	58.33	62.30'	53°38'46"
L9	N10°39'14"E	44.26'	L34	N25°31'15"W	29.70'	L59	N38°48'05"E	30.67'	L84	N08°49'33"E	106.12'	C9	61.49	98.42'	35°47'38"	C34	74.63	94.57'	45°13'03"	C59	51.75	50.00'	59°17'58"	C84	74.63	94.57'	45°13'03"	C9	61.49	98.42'	35°47'38"
L10	N46°26'51"E	40.93'	L35	N19°41'48"E	100.00'	L60	N20°29'53"W	31.23'	L85	N35°27'33"E	44.47'	C10	54.87	136.00'	23°06'56"	C35	58.27	107.26'	31°07'27"	C60	34.18	65.00'	30°07'51"	C85	58.27	107.26'	31°07'27"	C10	54.87	136.00'	23°06'56"
L11	N69°33'48"E	41.20'	L36	N11°25'39"W	30.27'	L61	N09°37'57"E	123.18'	L86	N05°32'49"E	45.17'	C11	71.73	67.50'	60°53'09"	C36	75.67	80.00'	54°11'47"	C61	43.44	67.00'	37°09'06"	C86	71.73	67.50'	60°53'09"	C11	71.73	67.50'	60°53'09"
L12	N08°40'38"E	29.65'	L37	N42°46'08"E	30.92'	L62	N27°31'08"W	29.73'	L87	N52°12'17"E	42.64'	C12	59.02	115.60'	29°15'09"	C37	34.23	79.96'	24°31'38"	C62	54.32	64.80'	48°01'49"	C87	59.02	115.60'	29°15'09"	C12	59.02	115.60'	29°15'09"
L13	N37°55'47"E	33.69'	L38	N18°14'30"E	101.86'	L63	N20°30'40"E	30.80'	L88	N26°45'46"E	120.57'	C13	60.92	92.00'	37°56'31"	C38	46.94	74.07'	36°18'22"	C63	75.15	105.00'	41°00'32"	C88	60.92	92.00'	37°56'31"	C13	60.92	92.00'	37°56'31"
L14	N00°00'44"W	30.79'	L39	N54°32'53"E	30.50'	L64	N20°29'51"W	30.07'				C14	39.71	100.82'	22°34'07"	C39	60.18	60.78'	56°43'37"	C64	39.77	81.43'	27°59'00"	C89	39.71	100.82'	22°34'07"	C14	39.71	100.82'	22°34'07"
L15	N22°33'23"E	31.00'	L40	N22°10'45"W	30.10'	L65	N07°29'08"E	112.52'				C15	57.72	49.97'	66°10'41"	C40	59.43	61.10'	55°43'34"	C65	39.06	67.06'	33°22'05"	C90	57.72	49.97'	66°10'41"	C15	57.72	49.97'	66°10'41"
L16	N88°44'03"E	44.57'	L41	N53°32'50"E	31.83'	L66	N25°52'57"W	30.12'				C16	58.80	70.00'	48°07'45"	C41	68.11	82.00'	47°35'28"	C66	92.49	120.00'	44°09'43"	C91	58.80	70.00'	48°07'45"	C16	58.80	70.00'	48°07'45"
L17	N40°36'19"E	39.68'	L42	N05°57'22"E	31.20'	L67	N18°16'47"E	30.97'				C17	43.48	48.13'	51°45'22"	C42	59.89	112.00'	30°38'17"	C67	71.37	84.50'	48°23'38"	C92	43.48	48.13'	51°45'22"	C17	43.48	48.13'	51°45'22"
L18	S87°38'19"E	43.00'	L43	N36°35'39"E	109.89'	L68	N30°06'51"W	30.95'				C18	52.24	50.43'	59°21'16"	C43	71.84	125.46'	32°48'39"	C68	40.37	49.00'	47°12'22"	C93	52.24	50.43'	59°21'16"	C18	52.24	50.43'	59°21'16"
L19	N33°00'25"E	36.10'	L44	N03°47'00"E	29.60'	L69	N17°05'31"E	30.58'				C19	27.64	48.19'	32°51'57"	C44	41.98	105.00'	22°54'36"	C69	41.58	49.20'	48°25'18"	C94	27.64	48.19'	32°51'57"	C19	27.64	48.19'	32°51'57"
L20	N65°52'21"E	32.65'	L45	N26°41'36"E	35.26'	L70	N31°19'47"W	86.68'				C20	55.93	50.00'	64°05'40"	C45	92.94	139.86'	38°04'28"	C70	43.51	67.00'	37°12'33"	C95	55.93	50.00'	64°05'40"	C20	55.93	50.00'	64°05'40"
L21	N01°46'42"E	38.70'	L46	N11°22'52"W	39.59'	L71	N05°52'46"E	30.27'				C21	38.69	76.52'	28°58'07"	C46	24.53	64.49'	21°47'36"	C71	41.74	52.93'	45°11'16"	C96	38.69	76.52'	28°58'07"	C21	38.69	76.52'	28°58'07"
L22	N30°44'49"E	34.16'	L47	N10°24'44"E	38.57'	L72	N39°18'30"W	30.10'				C22	100.42	130.00'	44°15'24"	C47	53.26	63.14'	48°19'44"	C72	88.01	120.59'	41°48'55"	C97	100.42	130.00'	44°15'24"	C22	100.42	130.00'	44°15'24"
L23	N13°30'35"W	36.80'	L48	N37°55'00"W	30.16'	L73	N02°30'25"E	30.80'				C23	31.37	84.43'	21°17'03"	C48	61.06	69.30'	50°29'08"	C73	75.31	105.21'	41°00'36"	C98	31.37	84.43'	21°17'03"	C23	31.37	84.43'	21°17'03"
L24	N07°46'28"E	100.00'	L49	N12°34'08"E	33.67'	L74	N38°30'10"W	29.70'				C24	22.04	49.03'	25°45'42"	C49	43.22	51.60'	47°59'30"	C74	57.67	106.96'	30°53'43"	C99	22.04	49.03'	25°45'42"	C24	22.04	49.03'	25°45'42"
L25	N17°59'14"W	30.83'	L50	N35°25'21"W	114.96'	L75	N07°36'28"W	100.00'				C25	63.64	91.00'	40°04'18"	C50	66.49	133.66'	28°30'09"	C75	38.92	67.53'	33°01'24"	C100	63.64	91.00'	40°04'18"	C25	63.64	91.00'	40°04'18"

UPPER SECTION

LINE TABLE			LINE TABLE			LINE TABLE			LINE TABLE			CURVE TABLE				CURVE TABLE				CURVE TABLE				CURVE TABLE							
LINE #	BEARING	DISTANCE	LINE #	BEARING	DISTANCE	LINE #	BEARING	DISTANCE	LINE #	BEARING	DISTANCE	CURVE #	ARC LENGTH	RADIUS	DELTA ANGLE	CURVE #	ARC LENGTH	RADIUS	DELTA ANGLE	CURVE #	ARC LENGTH	RADIUS	DELTA ANGLE	CURVE #	ARC LENGTH	RADIUS	DELTA ANGLE				
L89	N64°39'37"E	32.52'	L114	N53°53'58"E	36.52'	L139	N49°54'31"E	27.62'	L164	N11°12'51"E	79.92'	C88	60.97	90.00'	38°48'45"	C113	38.51	44.00'	50°09'07"	C138	45.36	44.10'	58°56'02"	C163	39.08	60.00'	37°19'19"				
L90	N08°25'46"E	23.37'	L115	N25°39'44"E	30.58'	L140	N05°02'14"W	41.20'	L165	N03°15'01"W	41.20'	C89	49.07	38.00'	56°13'51"	C114	24.64	50.00'	28°14'14"	C139	48.32	50.39'	54°56'45"	C164	34.33	136.00'	14°27'52"				
L91	N43°05'57"E	29.18'	L116	N28°51'45"W	28.21'	L141	N47°29'52"E	27.43'	L166	N40°28'15"E	31.80'	C90	66.56	110.00'	34°40'11"	C115	41.87	44.00'	54°31'29"	C140	41.26	45.00'	52°32'06"	C165	38.15	50.00'	43°43'16"				
L92	N86°32'45"E	36.24'	L117	N26°48'44"E	28.32'	L142	N15°42'46"E	99.84'	L167	N03°30'18"E	28.56'	C91	68.25	90.00'	43°26'48"	C116	42.76	44.00'	55°40'29"	C141	40.50	73.00'	31°47'06"	C166	28.39	44.00'	36°57'57"				
L93	N67°17'29"E	35.60'	L118	N07°54'53"E	101.67'	L143	N50°17'21"E	38.39'	L168	N31°31'54"W	36.14'	C92	26.88	80.00'	19°15'15"	C117	25.07	76.00'	18°53'51"	C142	67.59	112.00'	34°34'35"	C167	45.86	75.00'	35°02'12"				
L94	N84°13'38"E	33.18'	L119	N17°49'53"W	40.63'	L144	N11°13'32"E	28.84'	L169	N03°16'17"W	27.88'	C93	23.65	80.00'	16°56'09"	C118	59.31	132.00'	25°44'46"	C143	34.09	50.00'	39°03'49"	C168	34.53	70.00'	28°15'37"				
L95	N47°05'00"E	39.29'	L120	N23°18'42"E	28.57'	L145	N23°42'50"E	28.00'	L170	N27°19'06"E	30.31'	C94	58.35	90.00'	37°08'39"	C119	35.90	50.00'	41°08'35"	C144	29.75	136.50'	12°29'18"	C169	26.69	50.00'	30°35'23"				
L96	N79°53'42"E	73.88'	L121	N05°23'32"W	100.21'	L146	N59°26'33"E	35.48'	L171	N00°37'31"E	86.32'	C95	51.54	90.00'	32°48'43"	C120	35.07	70.00'	28°42'14"	C145	37.41	60.00'	35°43'43"	C170	23.29	50.00'	26°41'35"				
L97	N50°20'27"E	40.62'	L122	N18°14'56"E	27.60'	L147	N32°02'26"E	38.27'				C96	61.90	120.00'	29°33'16"	C121	41.26	100.00'	23°38'28"	C146	23.91	50.00'	27°24'07"					C121	41.26	100.00'	23°38'28"
L98	N81°15'39"E	24.94'	L123	N14°33'13"W	27.99'	L148	N73°09'50"E	41.60'				C97	54.57	100.60'	31°04'42"	C122	33.08	57.79'	32°48'09"	C147	53.47	74.50'	41°07'23"					C122	33.08	57.79'	32°48'09"
L99	N26°18'49"E	35.84'	L124	N20°02'16"E	39.22'	L149	N20°09'48"E	30.81'				C98	57.54	60.00'	54°56'49"	C123	46.49	77.00'	34°35'28"	C148	41.63	45.00'	53°00'01"					C123	46.49	77.00'	34°35'28"
L100	N54°33'32"E	58.43'	L125	N19°44'43"W	33.82'	L150	N19°44'43"W	107.50'				C99	34.51	107.50'	28°14'42"	C124	83.32	120.00'	39°46'59"	C149	28.32	45.00'	36°03'10"					C124	83.32	120.00'	39°46'59"
L101	N08°02'22"E	27.41'	L126	N04°33'21"E	27.95'	L151	N24°46'48"E	27.23'				C100	41.41	51.00'	46°31'09"	C125	50.90	120.00'	24°18'04"	C150	54.87	100.00'	31°26'10"					C125	50.90	120.00'	24°18'04"
L102	N39°46'31"E	100.86'	L127	N26°07'46"E	29.98'	L152	N66°16'00"E	41.77'				C101	38.77	70.00'	31°44'09"	C126	37.65	100.00'	31°34'25"	C151	94.85	131.00'	41°29'12"					C126	37.65	100.00'	31°34'25"
L103	N49°05'13"E	41.69'	L128	N20°00'01"W	29.99'	L153	N46°23'38"E	34.20'				C102	21.13	130.00'	9°18'42"	C127	37.04	46.00'	46°07'47"	C152	41.62	120.00'	19°52'22"					C127	37.04	46.00'	46°07'47"
L104	N05°21'56"E	31.03'	L129	N01°40'38"E	100.94'	L154	N19°01'52"E	41.22'				C103	76.31	100.00'	43°43'17"	C128	43.89	116.00'	21°40'39"	C153	38.21	80.00'	27°21'47"					C128	43.89	116.00'	21°40'39"
L105	N55°13'42"E	41.11'	L130	N13°01'45"E	29.45'	L155	N80°55'27"E	28.99'				C104	65.27	75.00'	49°51'47"	C129	19.81	100.00'	11°21'07"	C154	47.64	44.10'	61°53'35"					C129	19.81	100.00'	11°21'07"
L106	N13°14'32"E	36.02'	L131	N01°41'46"W	100.78'	L156	N39°20'29"E	100.63'				C105	68.88	94.00'	41°59'11"	C130	33.41	130.00'	14°43'31"	C155	39.92	55.00'	41°34'58"					C130	33.41	130.00'	14°43'31"
L107	N57°49'30"E	35.10'	L132	N36°15'08"E	32.27'	L157	N74°12'13"E	28.77'				C106	77.81	100.00'	44°34'58"	C131	86.10	130.00'	37°56'54"	C156	41.98	69.00'	34°51'43"					C131	86.10	130.00'	37°56'54"
L108	N02°41'26"W	29.69'	L133	N02°13'58"W	33.72'	L158	N19°27'09"E	42.72'				C107	46.58	44.10'	60°30'55"	C132	29.62	44.10'	38°29'06"	C157	76.45	80.00'	54°45'04"					C132	29.62	44.10'	38°29'06"
L109	N45°09'35"E	33.10'	L134	N35°41'19"E	37.07'	L159	N73°11'42"E	28.77'				C108	40.09	48.00'	47°51'00"	C133	44.92	67.88'	37°55'17"	C158	46.90	50.00'	53°44'33"					C133	44.92	67.88'	37°55'17"
L110	N17°45'29"E	41.36'	L135	N07°44'54"W	45.95'	L160	N21°36'09"E	35.70'				C109	28.69	60.00'	27°24'06"	C134	42.47	56.03'	43°26'13"	C159	41.42	46.00'	51°35'33"					C134	42.47	56.03'	43°26'13"
L111	N68°22'04"E	27.93'	L136	N42°26'46"E	27.44'	L161	N38°46'27"E	99.65'				C110	45.05	51.00'	50°36'34"	C135	41.17	47.00'	50°11'39"	C160	20.98	70.00'	47°10'18"					C135	41.17	47.00'	50°11'39"
L112	N44°02'07"E	29.27'	L137	N13°46'44"E	93.47'	L162	N06°35'31"W	26.90'				C111	25.48	60.00'	24°19'57"	C136	56.04	112.00'	28°40'02"	C161	34.84	44.00'	45°21'58"					C136	56.04	112.00'	28°40'02"
L113	N03°44'51"E	31.65'	L138	N09°01'31"W	38.43'	L163	N48°32'10"E	32.65'				C112	31.01	44.10'	40°17'16"	C137	31.84	80.00'	22°48'15"	C162	50.03	52.00'	55°07'41"					C137	31.84	80.00'	22°48'15"



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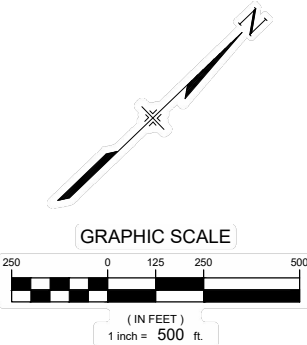
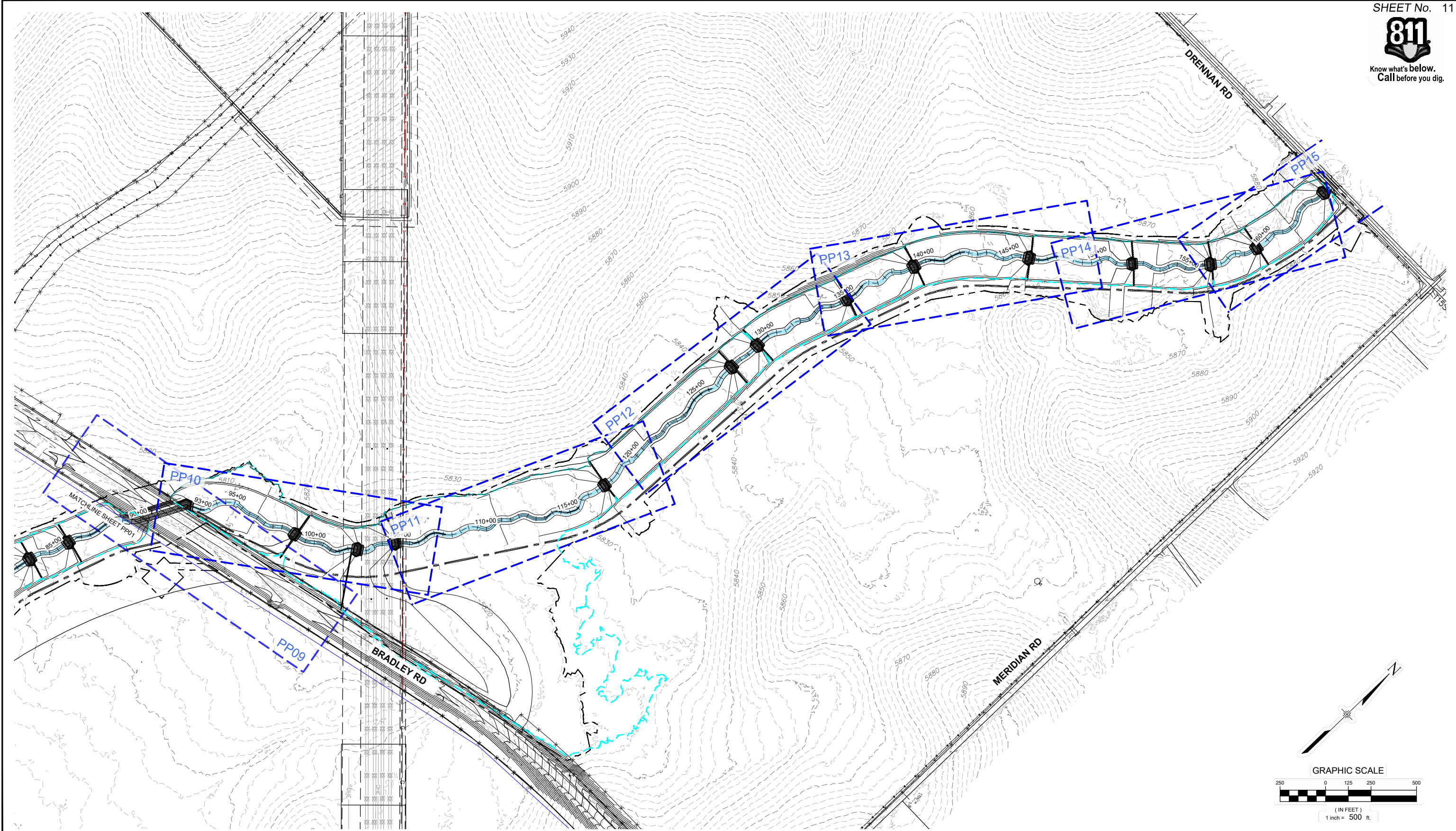
FOR AND ON BEHALF OF  
MATRIX DESIGN GROUP, INC.  
PROJECT No. 21.1129.009

THE LANDHUIS COMPANY			
ROLLING MEADOWS CHANNEL & FLOODPLAIN MODIFICATION 60% DESIGN PLANS			
PLAN AND PROFILE OVERVIEW - LOWER REACH			
DESIGNED BY: TKM	SCALE: HORIZ. 1" = 500'	DATE ISSUED: MARCH 2023	DRAWING No. PP01
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PREPARED BY:

**Matrix**  
Excellence by Design

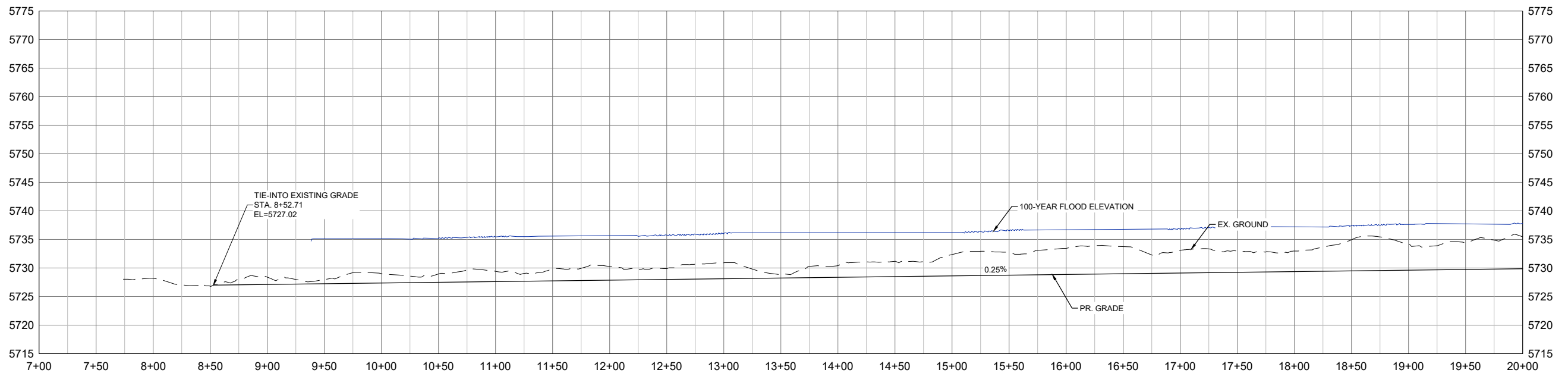
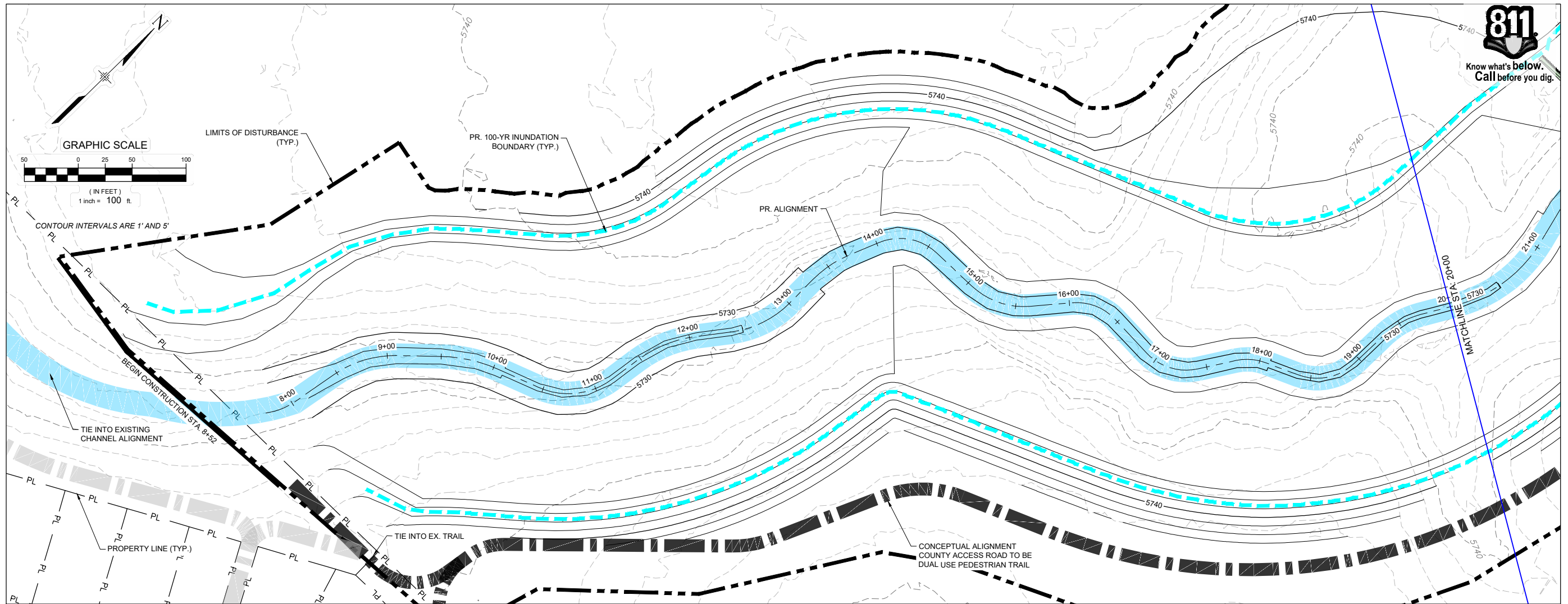
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PROJECT No. 21.1129.009

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ROLLING MEADOWS CHANNEL & FLOODPLAIN MODIFICATION 60% DESIGN PLANS			
PLAN AND PROFILE OVERVIEW - UPPER REACH			
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			11 OF 47
			DRAWING No. PP02





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No.	DATE	DESCRIPTION REVISIONS	BY
COMPUTER FILE MANAGEMENT			
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CTB FILE: Matrix(black).ctb			
PLOT DATE: May 2, 2023 3:50:49 PM			
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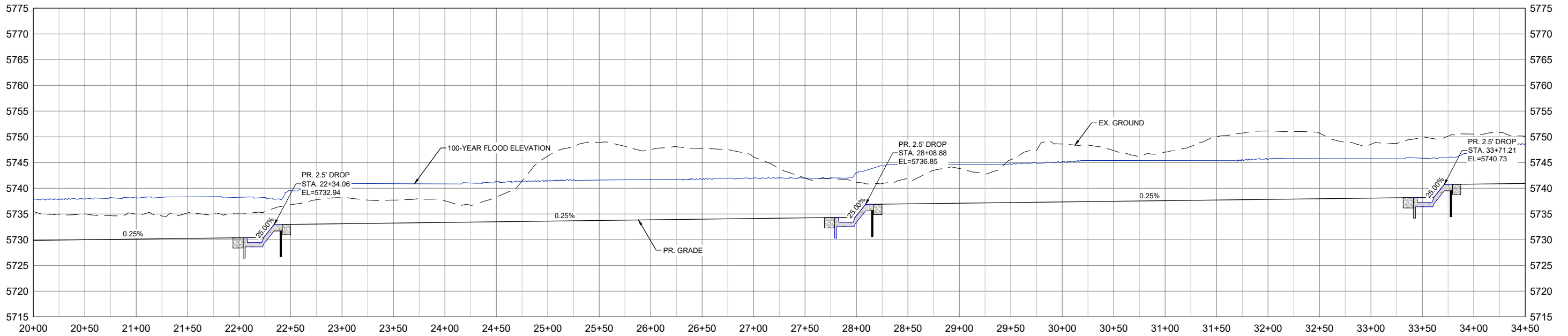
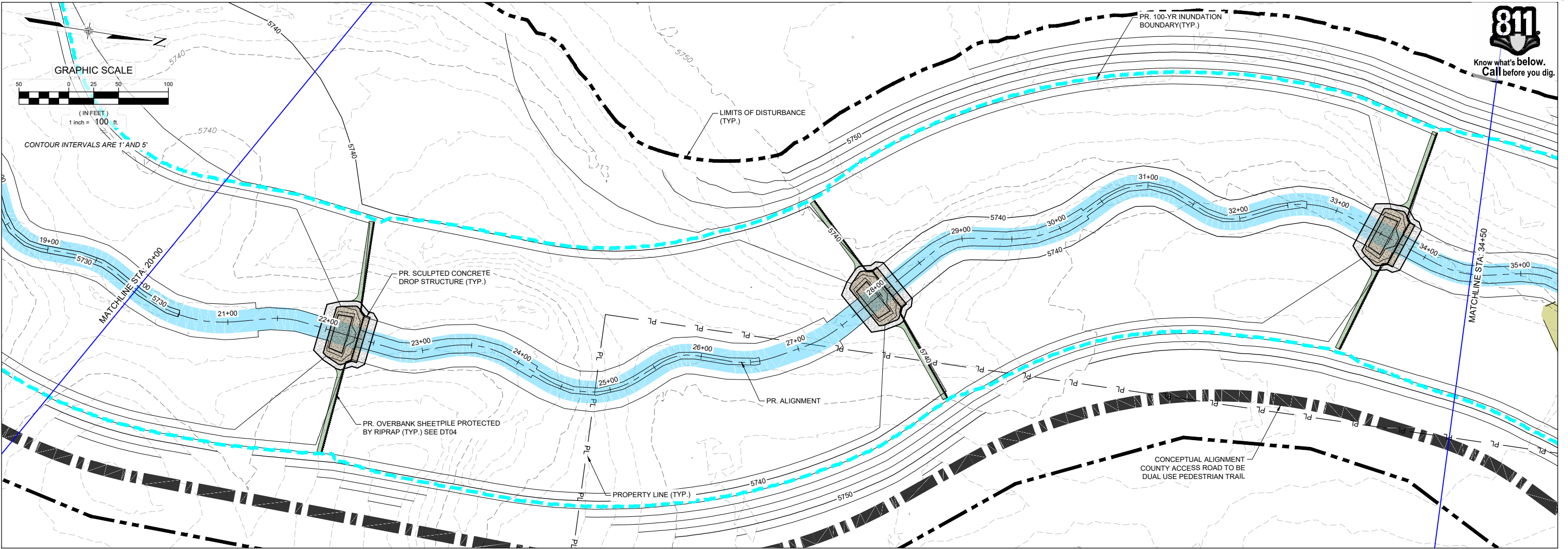
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PROJECT No. 21.1129.009

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No.	DATE	DESCRIPTION	BY
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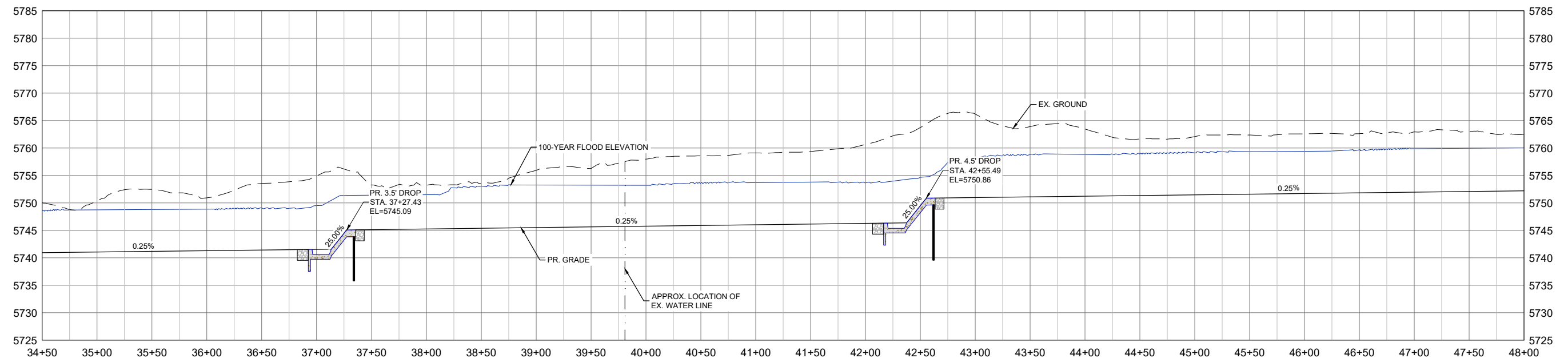
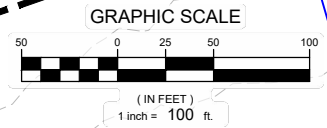
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X-1129-PP STRUCT					
X-1128-UTILITIES					
X-1128-MDG2x34					
<b>No.</b>	<b>DATE</b>	<b>DESCRIPTION</b>			<b>BY</b>
<b>REVISIONS</b>					
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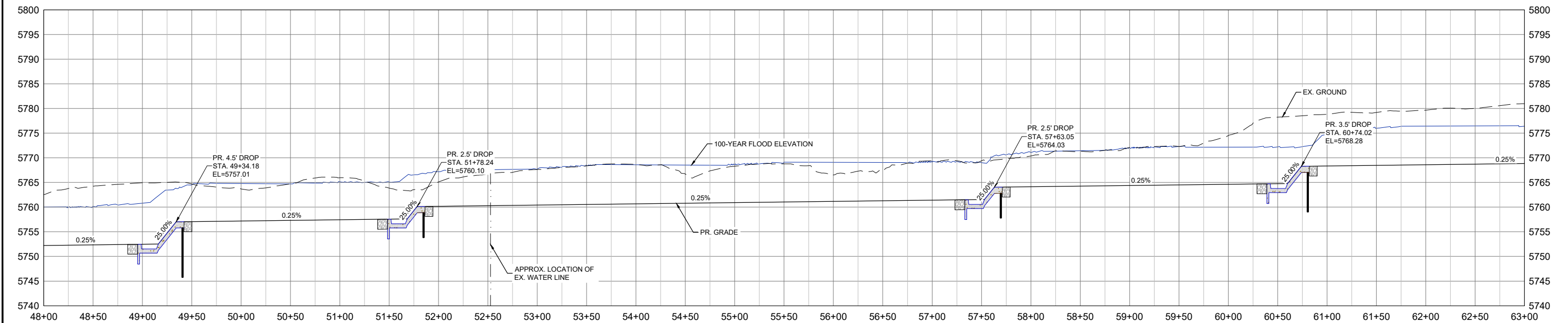
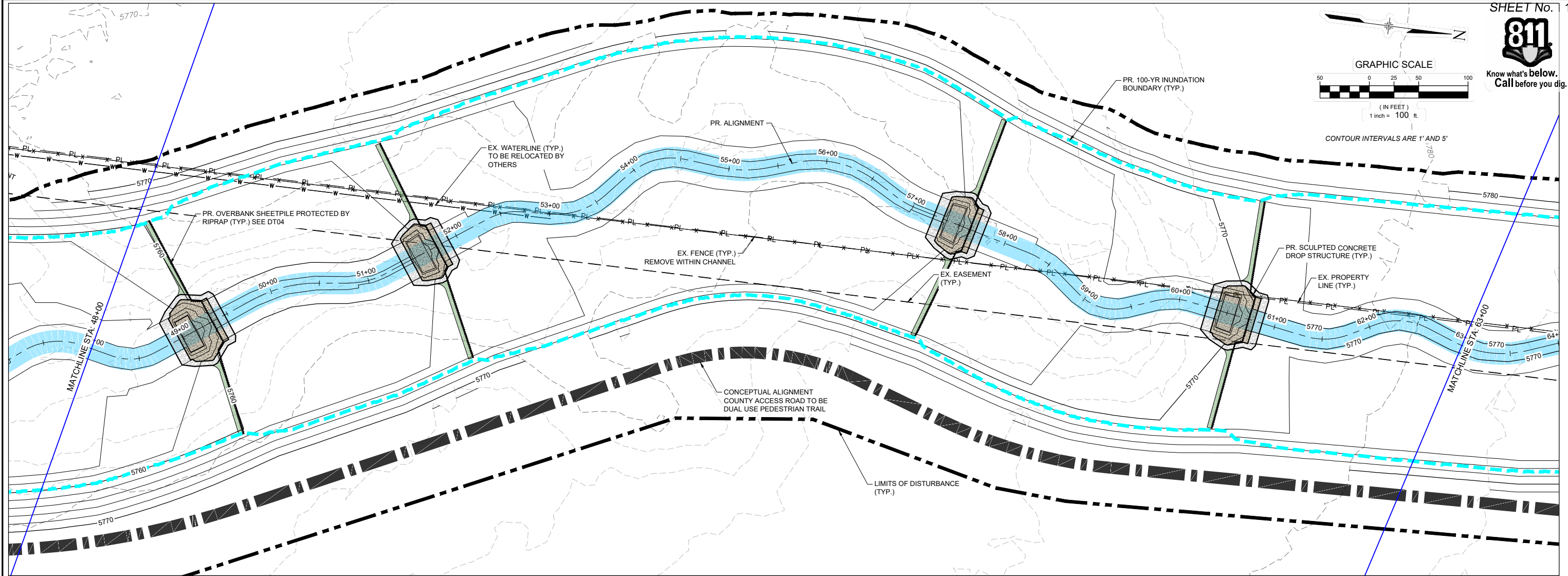
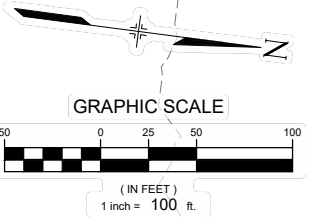
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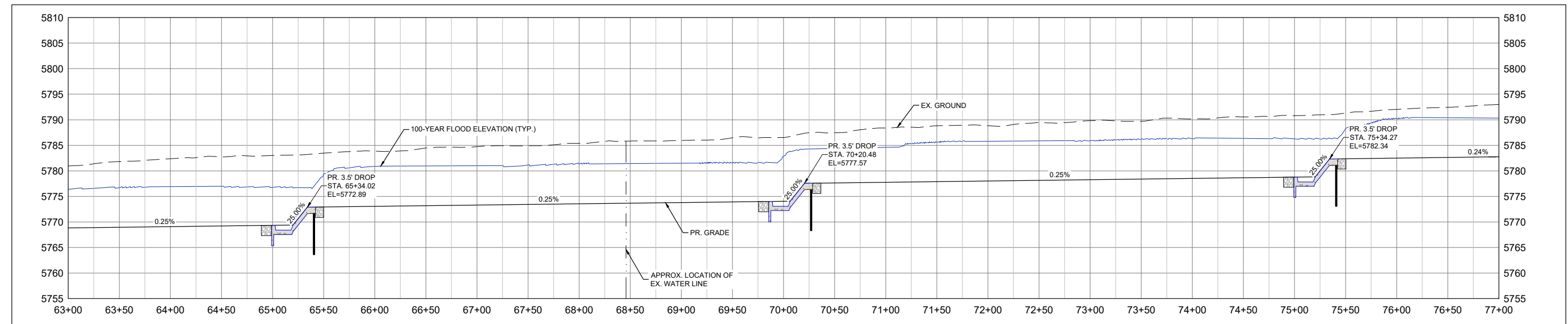
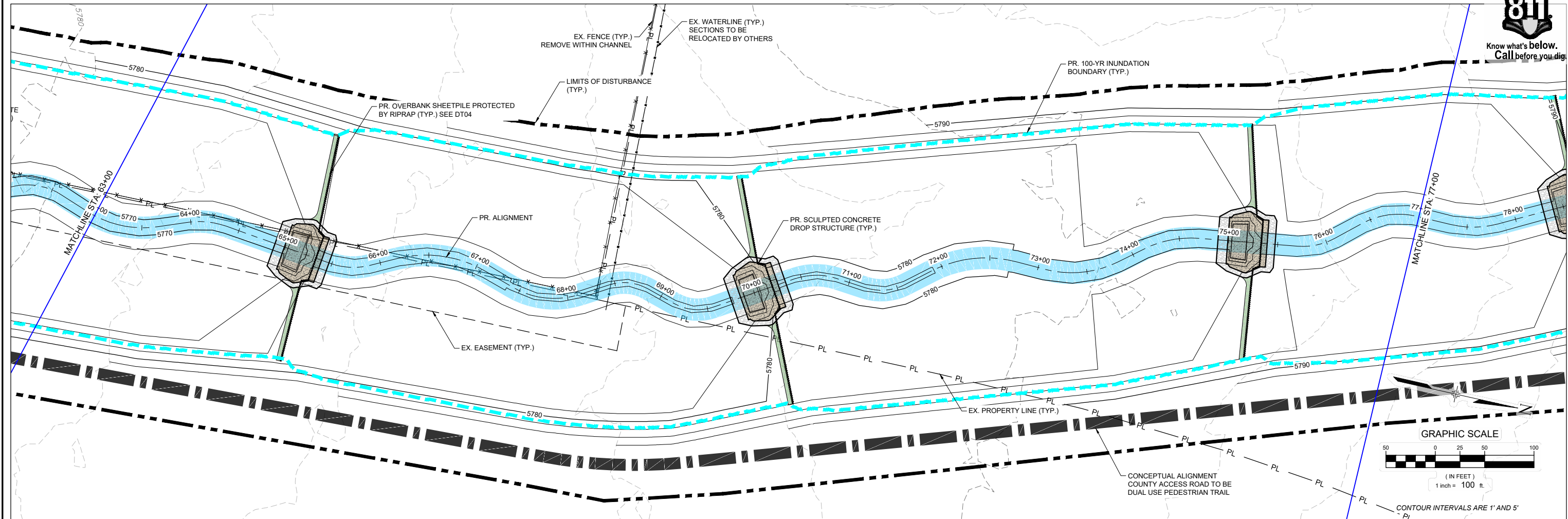


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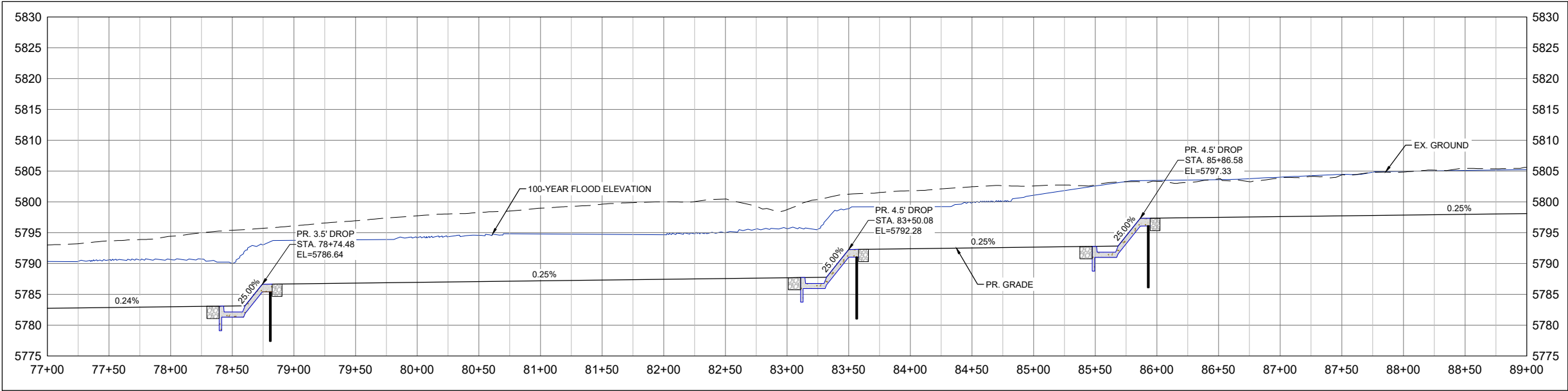
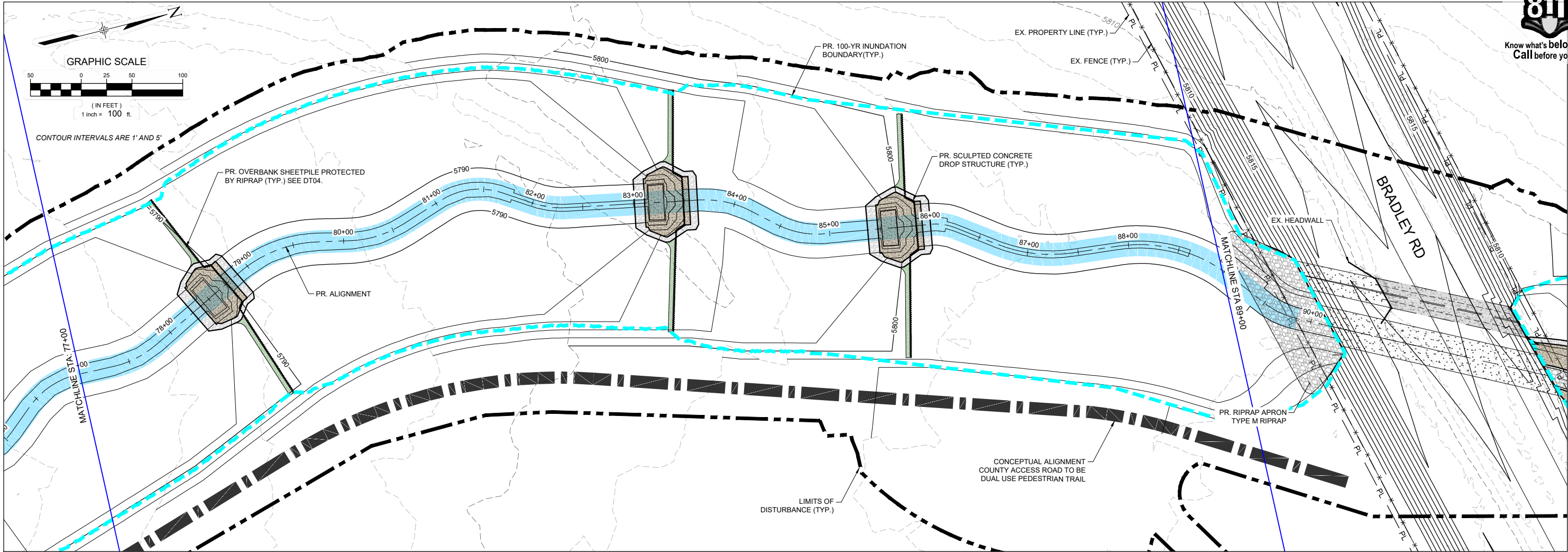
REFERENCE DRAWINGS				60% DESIGN PLANS		<div>THE LANDHUIS COMPANY</div>		<div>PREPARED BY: Matrix Excellence by Design</div>		SEAL		THE LANDHUIS COMPANY						
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		REVISIONS									HORIZ 1" = 100'		VERT. 1" = 20'		SHEET		15 OF 47	
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No.	DATE	DESCRIPTION	BY	COMPUTER FILE MANAGEMENT				PLAN AND PROFILE STA. 63+00 - 77+00			
FILE NAME: S:\21.1129.009 Rolling Hills Floodplain and Permitting\Drawings\Design Plans\1129.009-PP01-08 DS Alignment_60%.dwg				FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC. PROJECT No. 21.1129.009				DESIGNED BY: TKM EAL CHECKED BY: AJS			
CTB FILE: Matrix(black).ctb				PREPARED BY: Matrix Excellence by Design				SCALE HORIZ 1" = 100' VERT. 1" = 20'			
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X-1129-PR STRUCT			
X-1129-UTILITIES			
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COMPUTER FILE MANAGEMENT			
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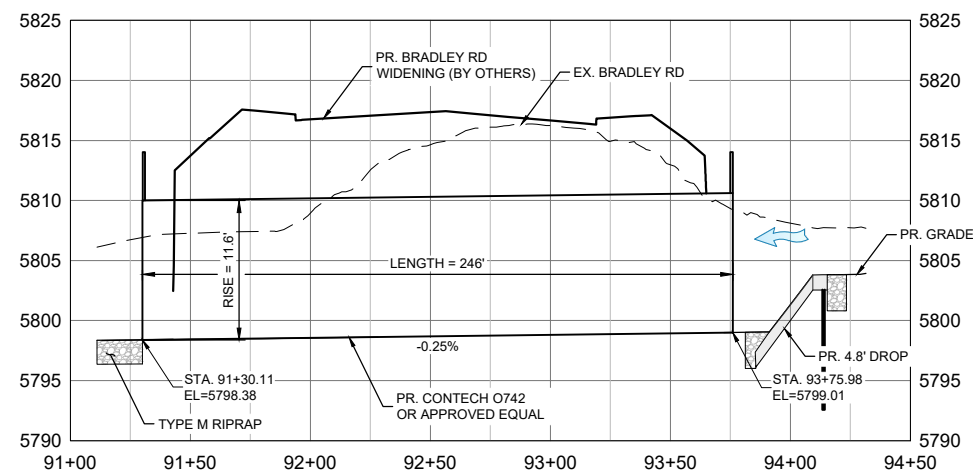
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PROJECT No. 21.1129.009

THE LANDHUIS COMPANY  
ROLLING MEADOWS CHANNEL & FLOODPLAIN MODIFICATION  
60% DESIGN PLANS

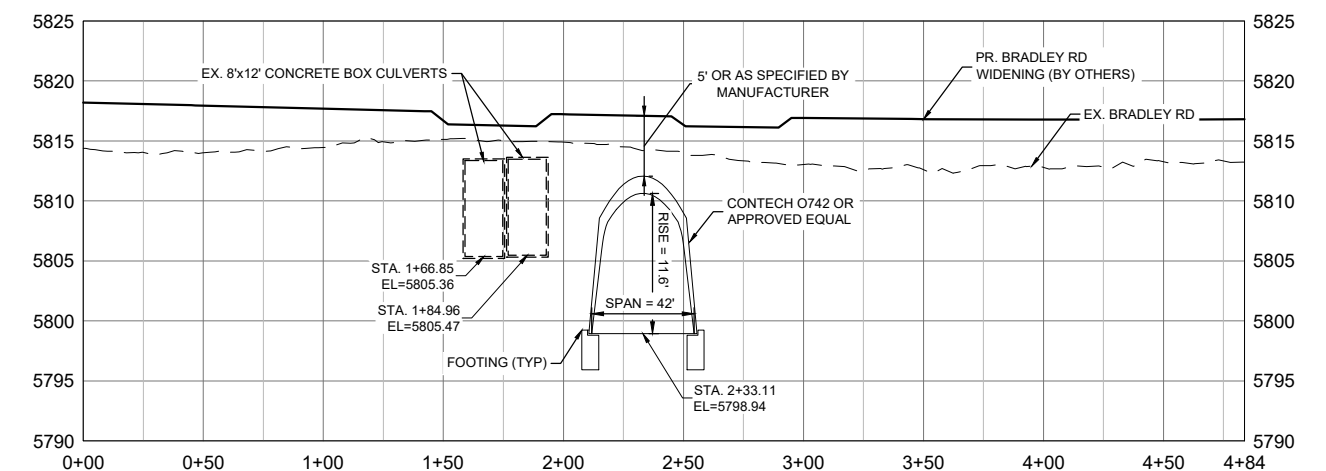
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STA. 77+00 - 89+00

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CHECKED BY: AJS	VERT. 1" = 20'	SHEET 17 OF 47	





NOTE: HORIZONTAL SCALE: 1" = 80'  
FOLLOWS THE PR. CHANNEL ALIGNMENT VERTICAL SCALE: 1" = 20'



**B-B' CROSS SECTION AT BRADLEY RD.**

( IN FEET )  
1 inch = 20 ft.

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PROJECT No. 21.1129.009

## ROLLING MEADOWS CHANNEL & FLOODPLAIN MODIFICATION 60% DESIGN PLANS

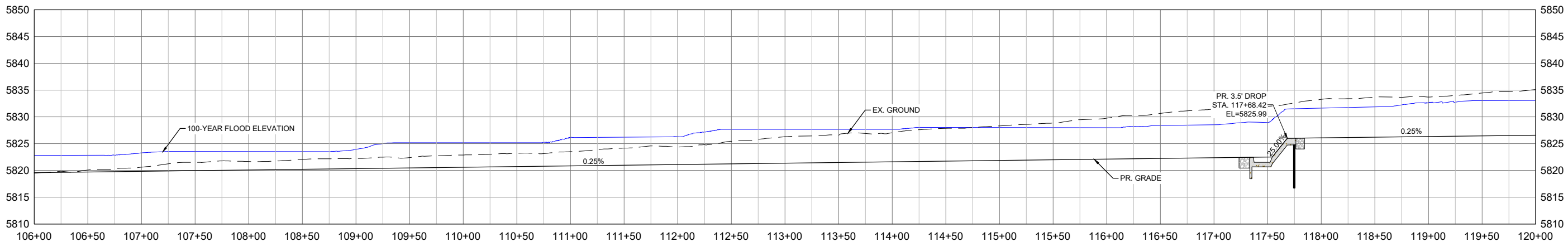
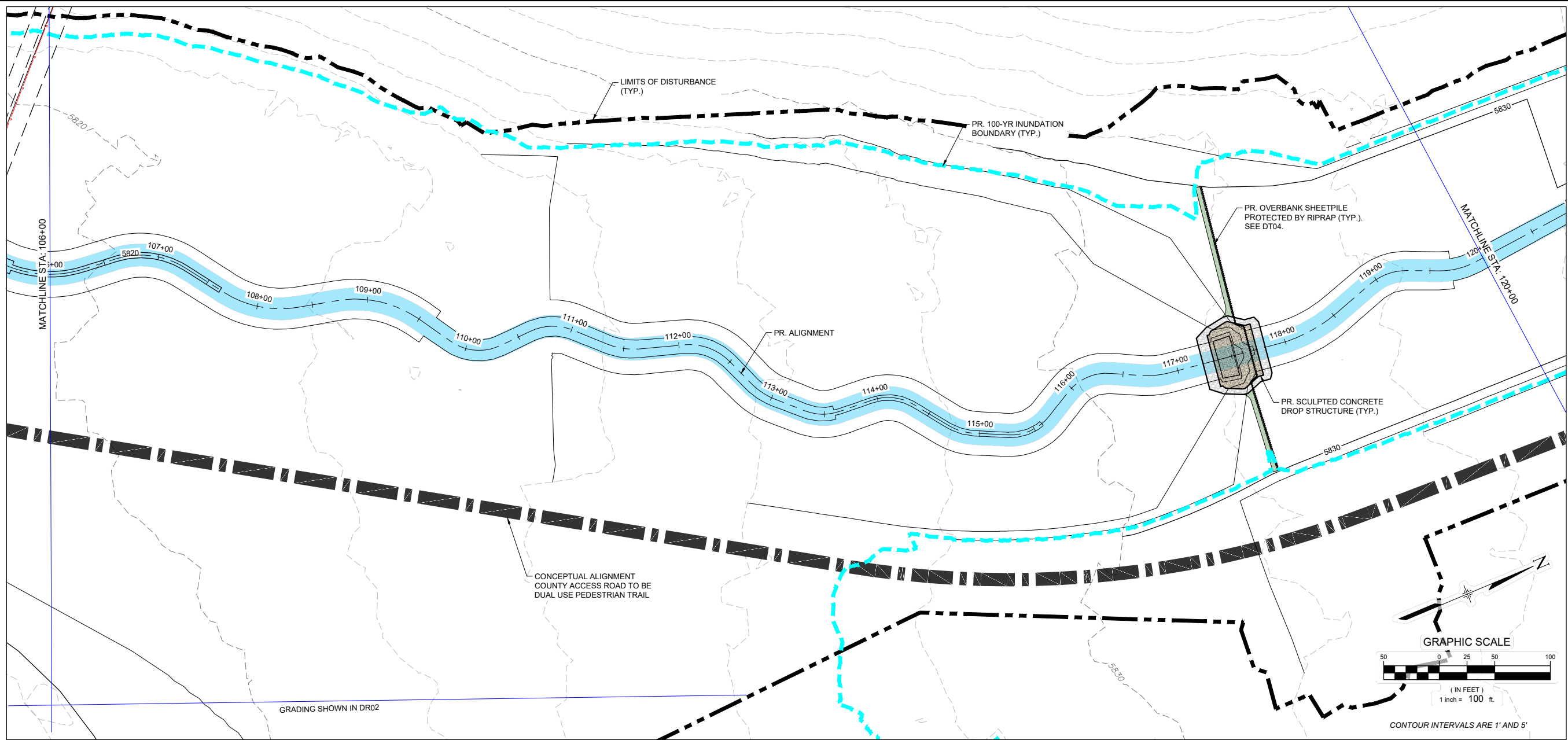
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DESIGNED BY:	TKM	SCALE	DATE ISSUED:	MARCH 2023	DRAWING No. <b>PP09</b>
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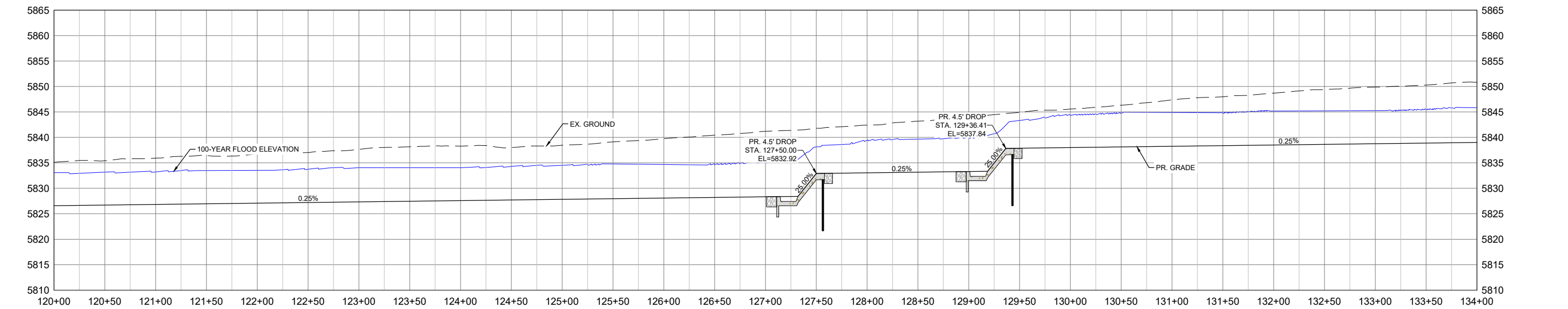
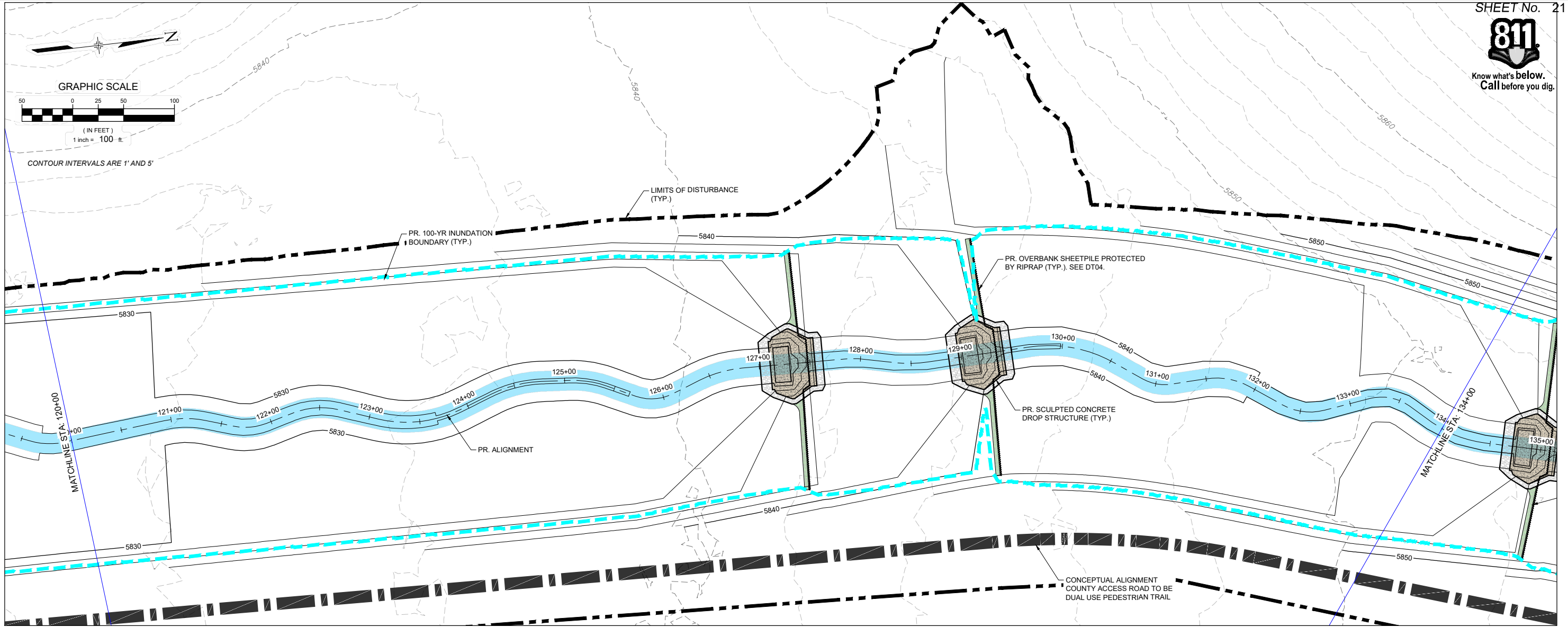


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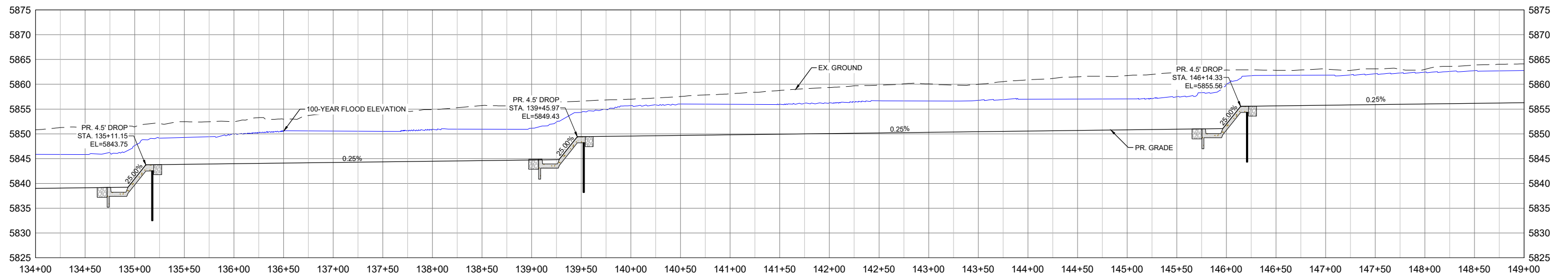
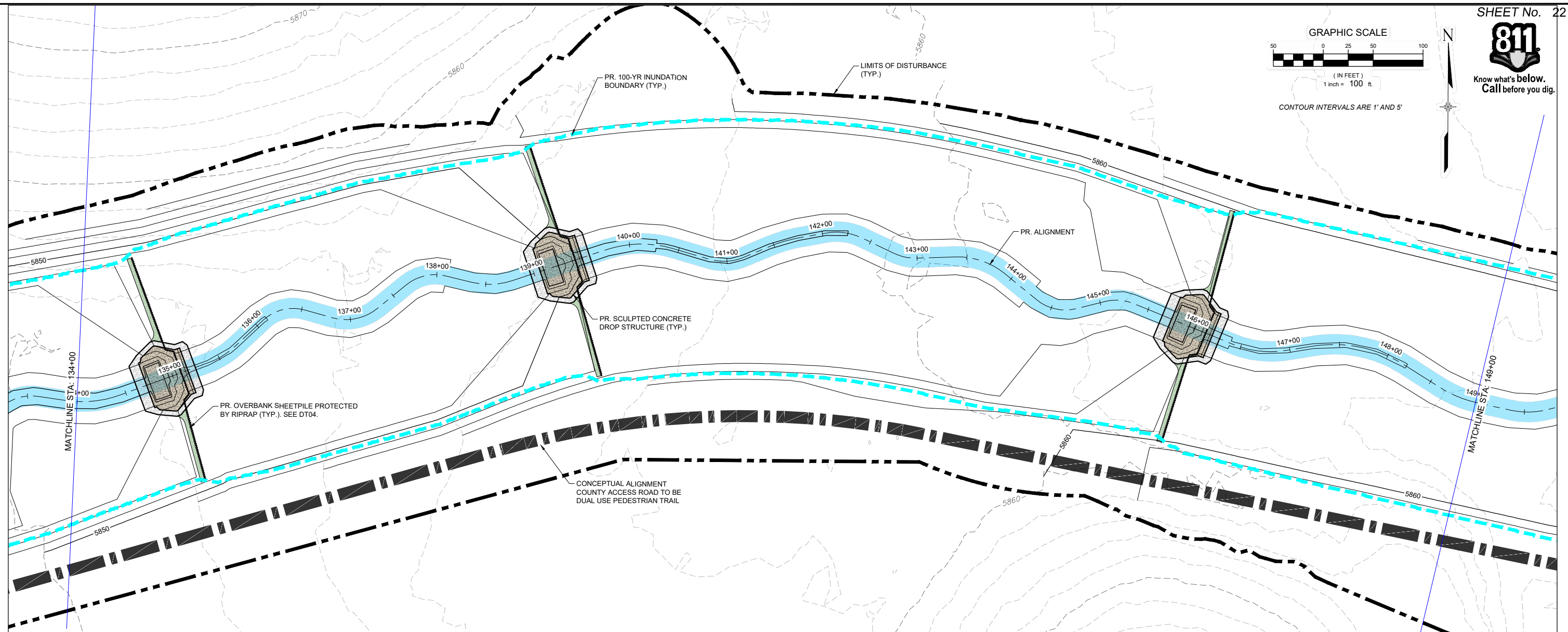
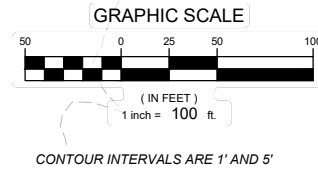




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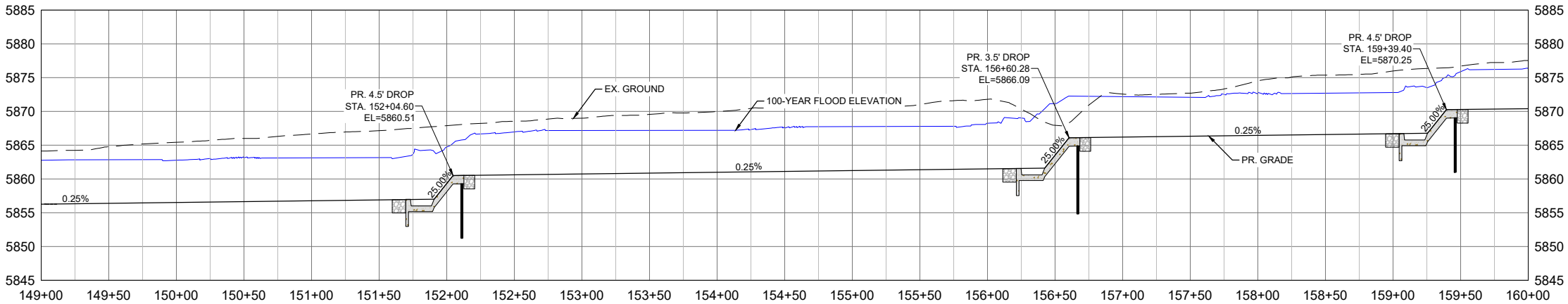
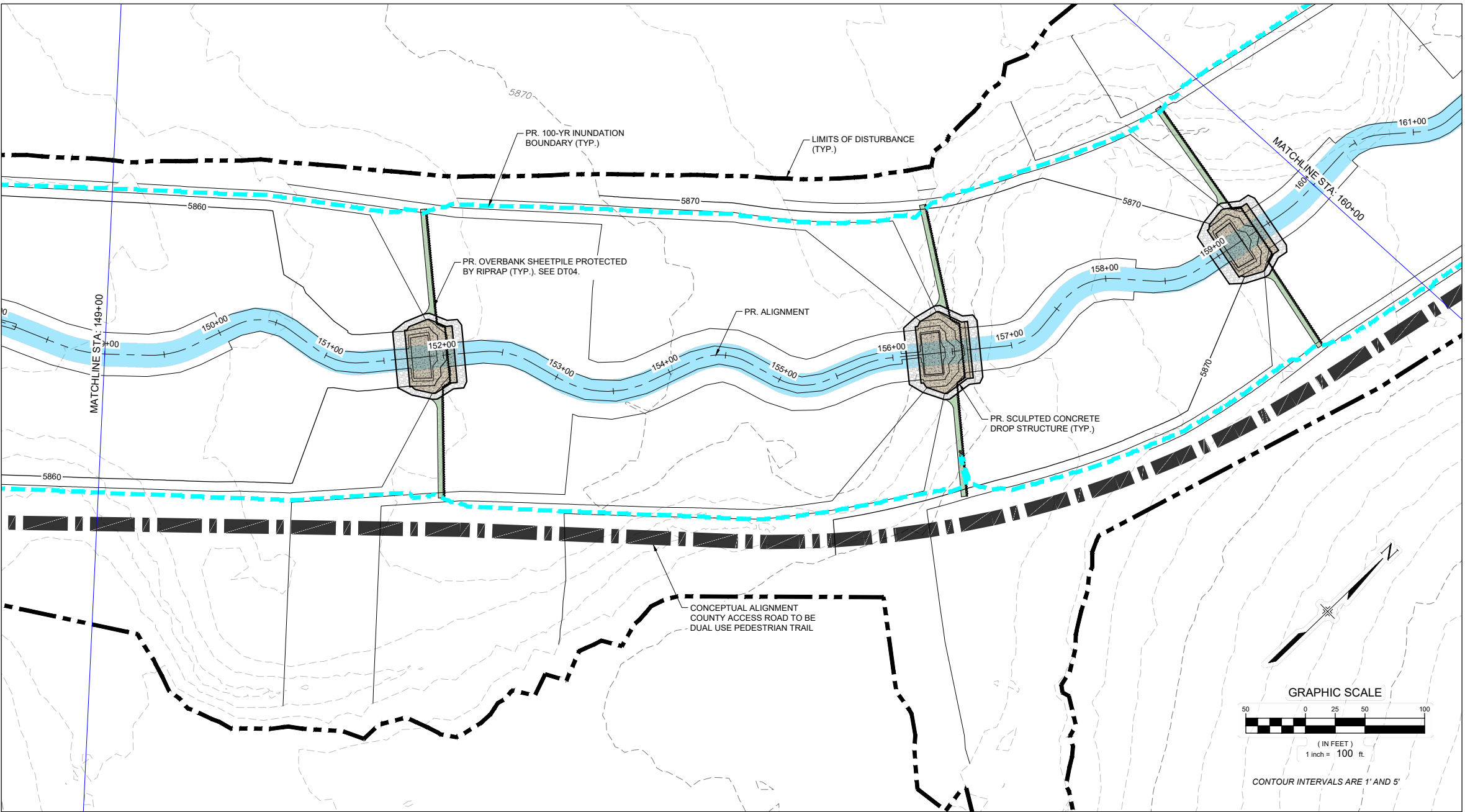


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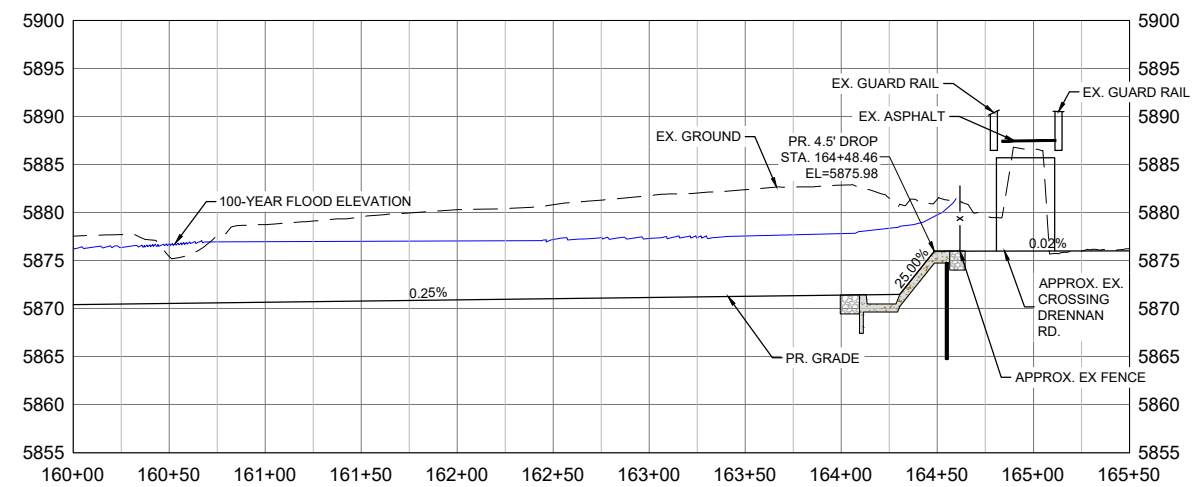




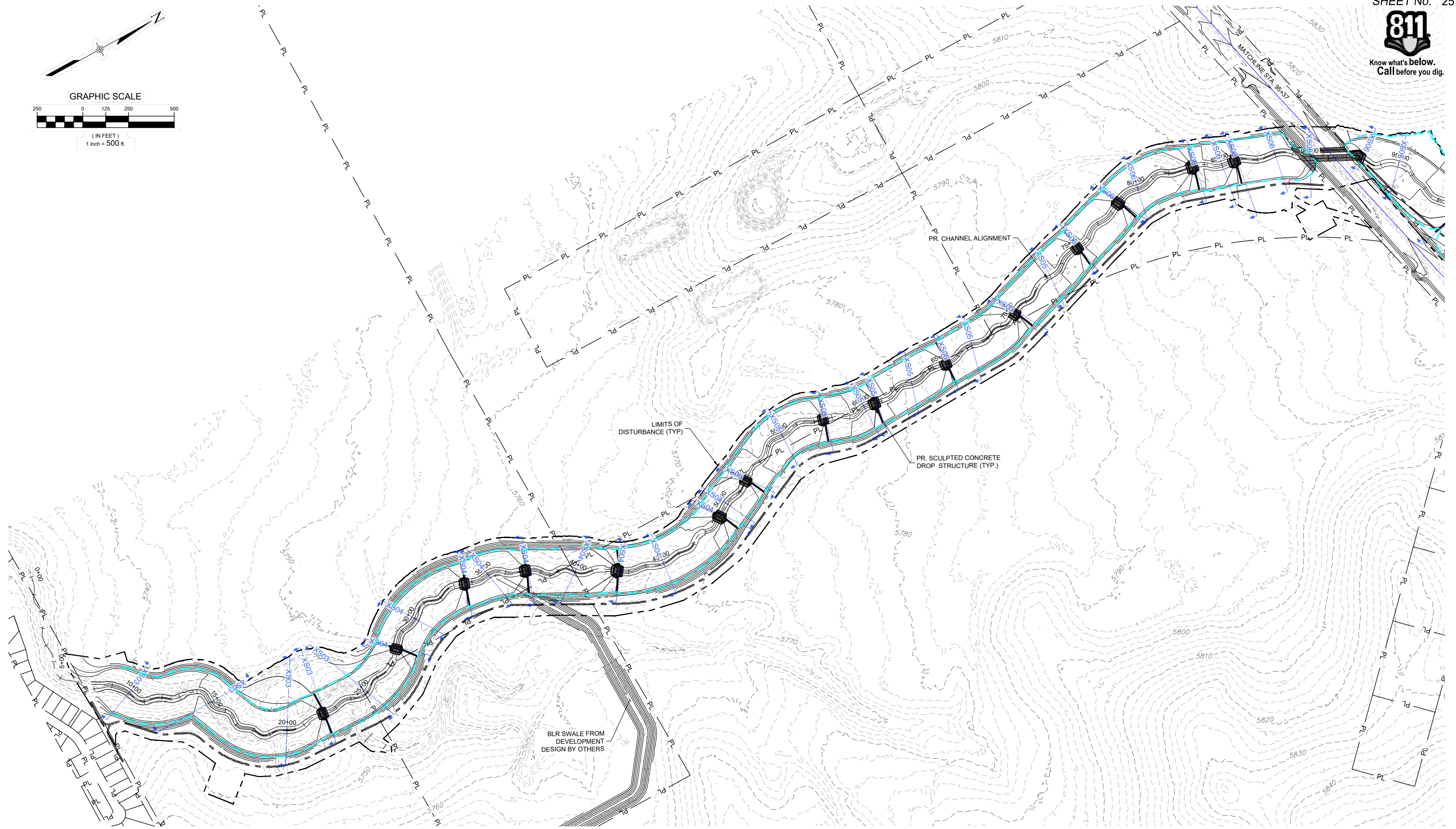
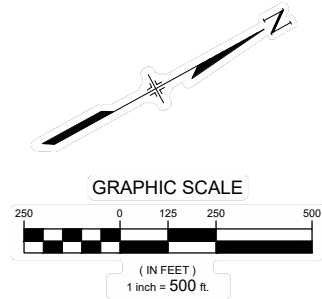
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REFERENCE DRAWINGS			
X-1129-MDG22x34			
X-1129-PR STRUCT			
X-1129-PARCELS			
No.	DATE	DESCRIPTION	BY
REVISIONS			
COMPUTER FILE MANAGEMENT			
FILE NAME: S:\21.1129.009 rolling hills floodplain and permitting\Dwg\design plans\1129.009-XS01-XX.dwg			
CTB FILE: Matrix(black).ctb			
PLOT DATE: March 7, 2023 2:38:16 PM			
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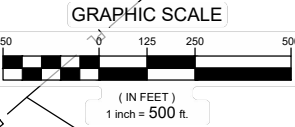
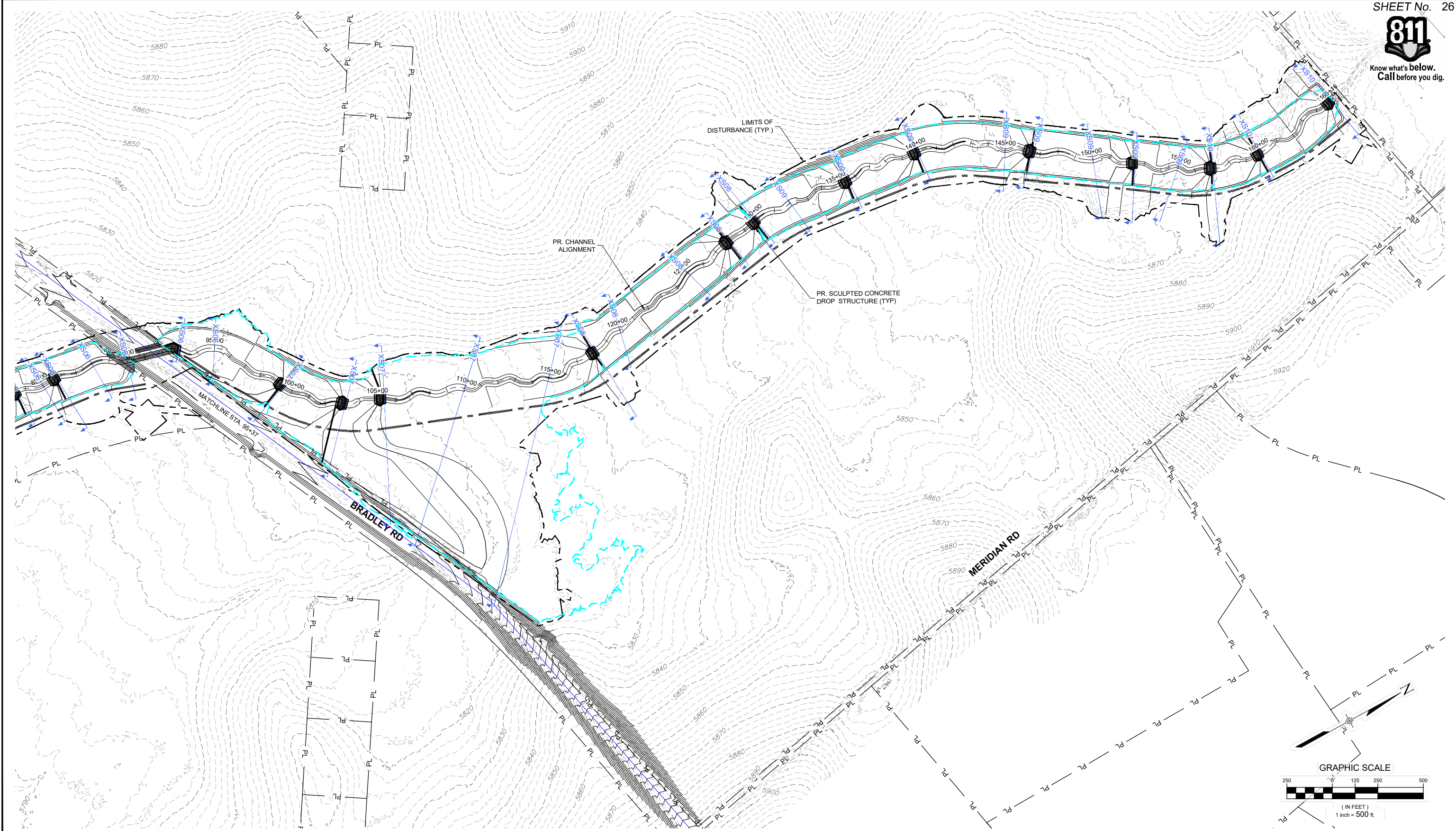
FOR AND ON BEHALF OF  
MATRIX DESIGN GROUP, INC.  
PROJECT No. 21.1129.009

THE LANDHUIS COMPANY			
ROLLING MEADOWS CHANNEL & FLOODPLAIN MODIFICATION 60% DESIGN PLANS			
CROSS SECTION OVERVIEW - LOWER REACH			
DESIGNED BY: TKM	SCALE: HORIZ 1" = 500'	DATE ISSUED: MARCH 2023	DRAWING No. XS01
CHECKED BY: AJS	VERT. N/A	SHEET 25 OF 47	





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X-1129-MDG22x34			
X-1129-PR STRUCT			
X-1129-PARCELS			
No.	DATE	DESCRIPTION	BY
REVISIONS			
COMPUTER FILE MANAGEMENT			
FILE NAME: S:\21.1129.009 rolling hills floodplain and permitting\Dwg\design plans\1129.009-XS01-XX.dwg			
CTB FILE: Matrix(black).ctb			
PLOT DATE: March 7, 2023 2:38:40 PM			
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PREPARED BY:

**Matrix**  
Excellence by Design

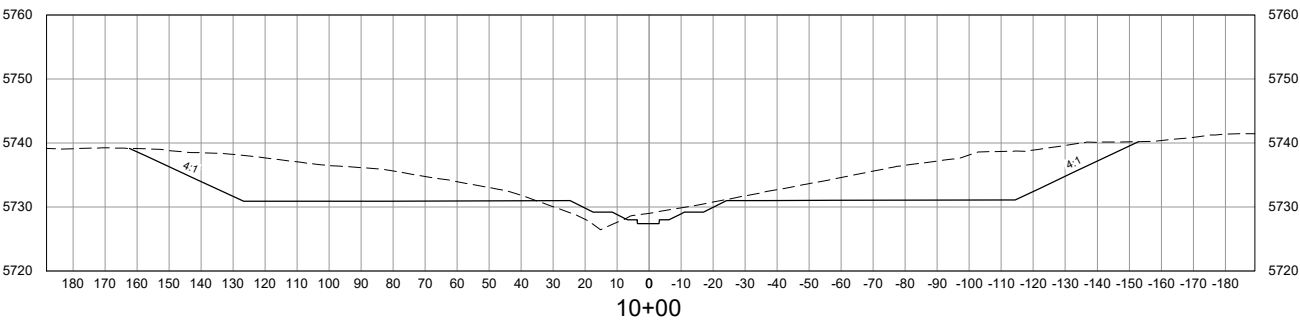
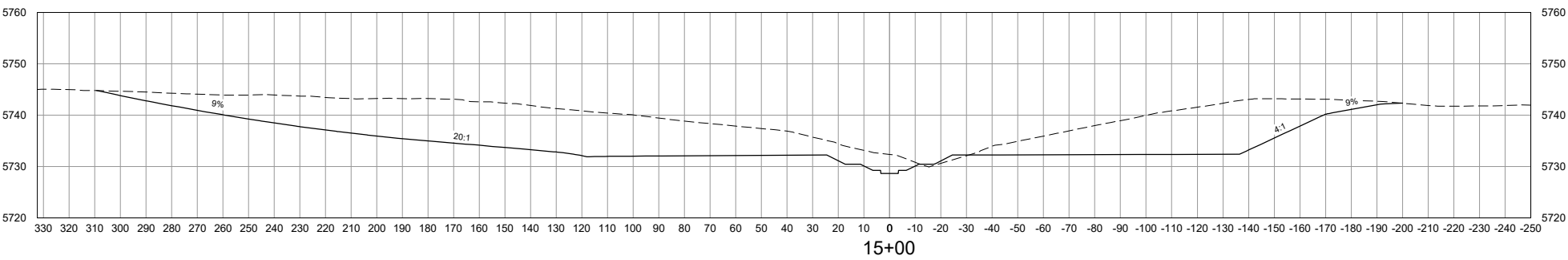
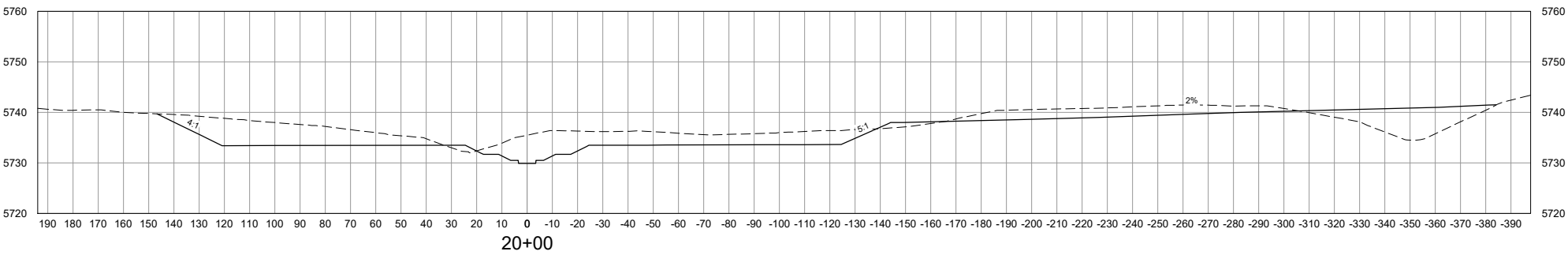
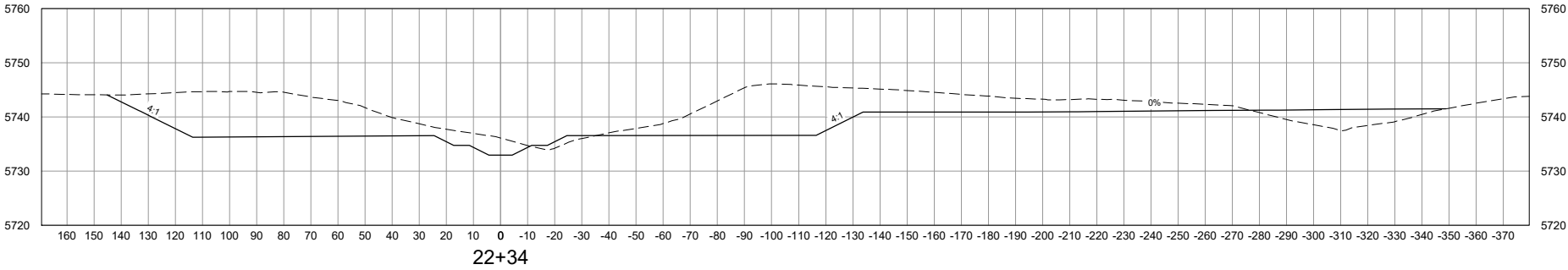
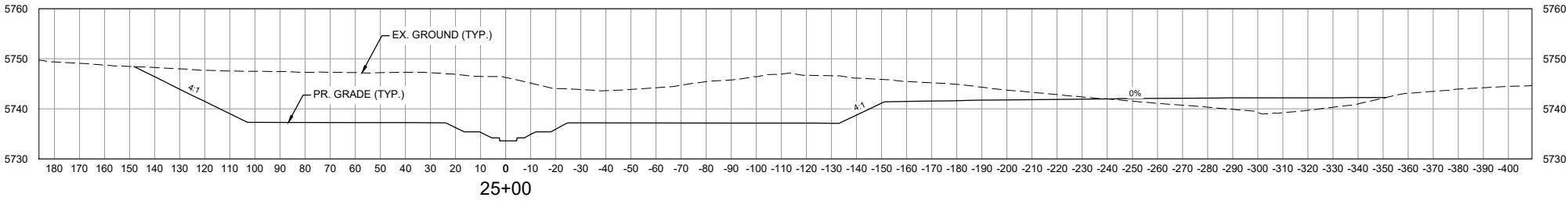
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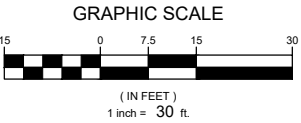
FOR AND ON BEHALF OF  
MATRIX DESIGN GROUP, INC.  
PROJECT No. 21.1129.009

THE LANDHUIS COMPANY			
ROLLING MEADOWS CHANNEL & FLOODPLAIN MODIFICATION 60% DESIGN PLANS			
CROSS SECTION OVERVIEW - UPPER REACH			
DESIGNED BY:	TKM	SCALE	DATE ISSUED:
DRAWN BY:	EAL	HORIZ 1" = 500'	MARCH 2023
CHECKED BY:	AJS	VERT. N/A	SHEET
DRAWING No.			XS02
26 OF 47			

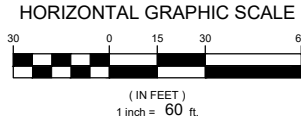




VERTICAL SCALE: 1" = 30'

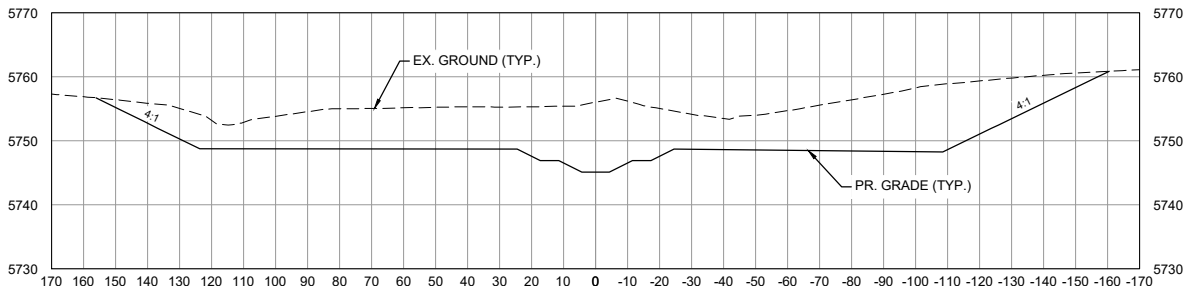


HORIZONTAL SCALE: 1" = 60'

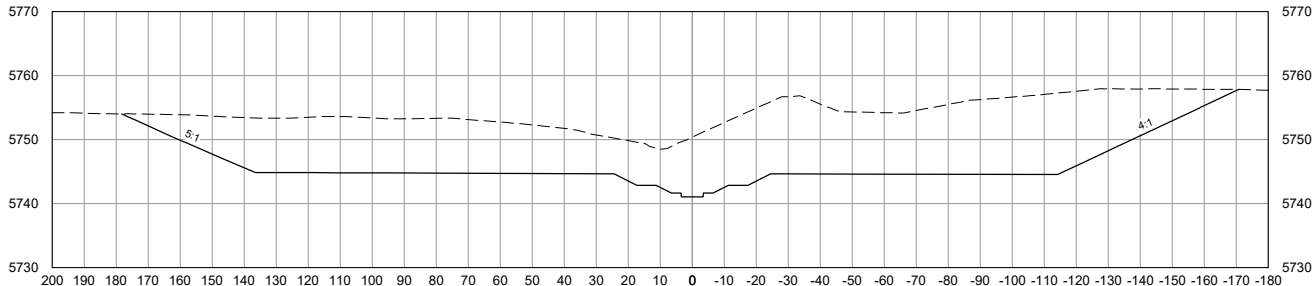


NOTE:  
ALL CROSS SECTIONS ARE  
SHOWN LOOKING  
DOWNSTREAM

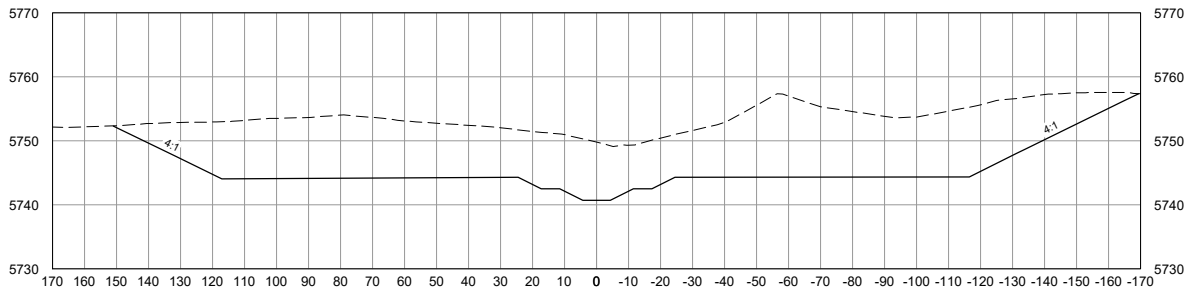
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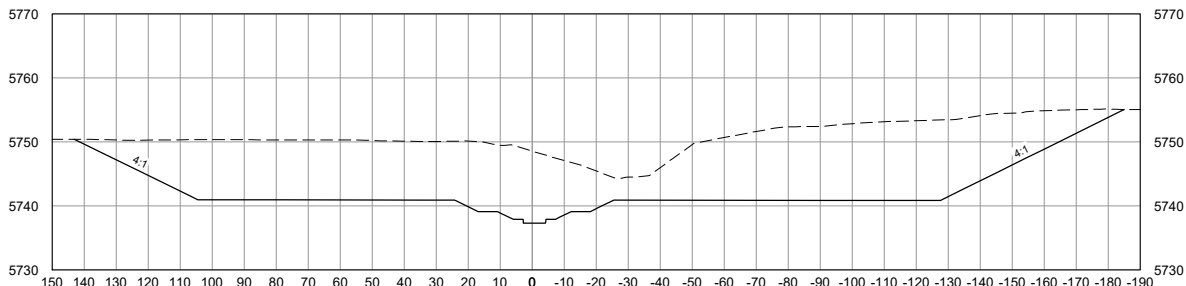
37+27



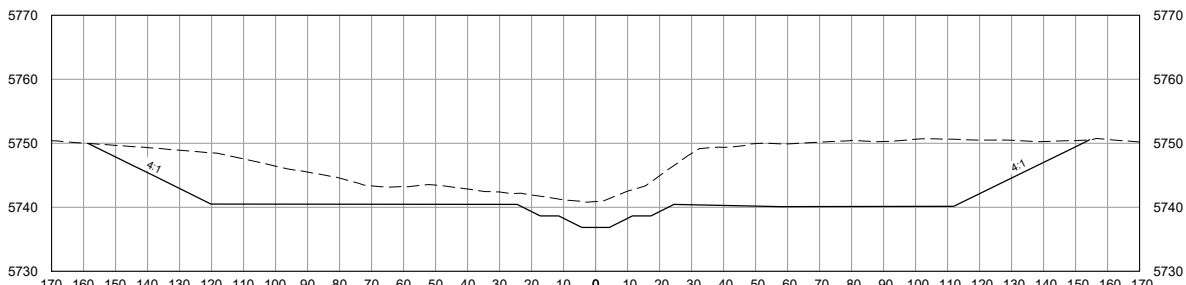
35+00



33+71



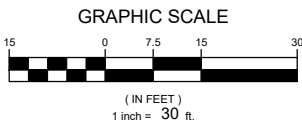
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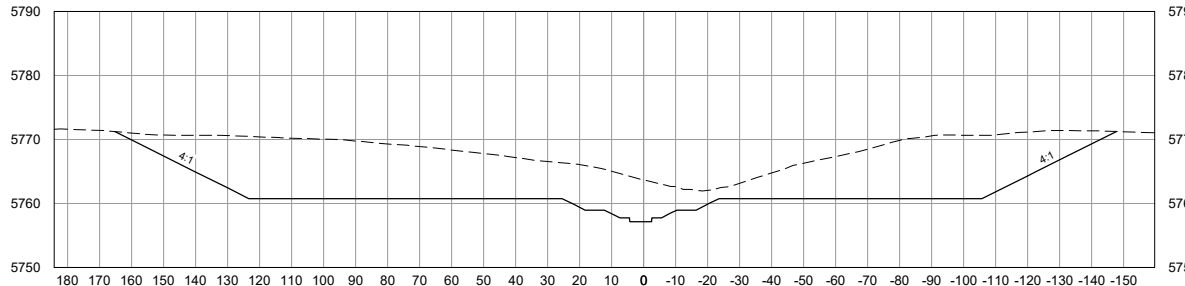
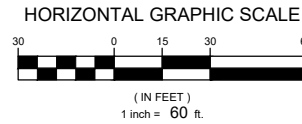
28+09

NOTE:  
ALL CROSS SECTIONS ARE  
SHOWN LOOKING  
DOWNSTREAM

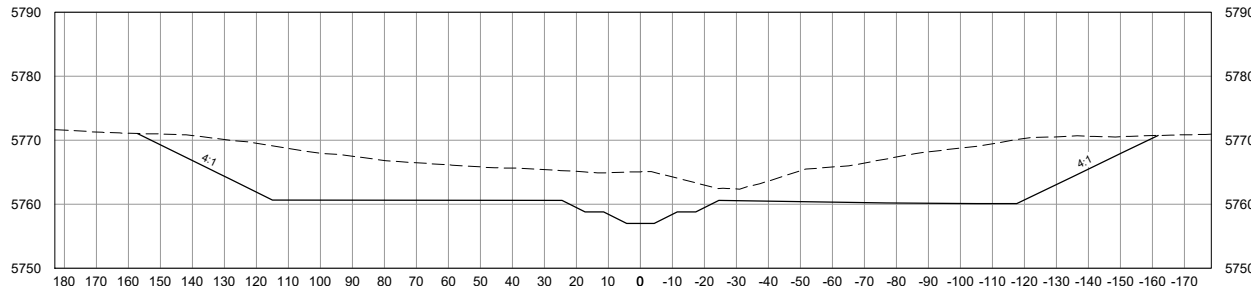
VERTICAL SCALE: 1" = 30'



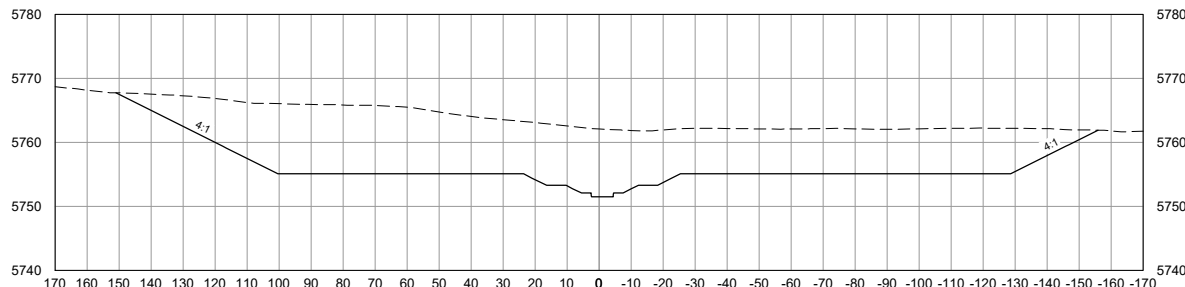
HORIZONTAL SCALE: 1" = 60'



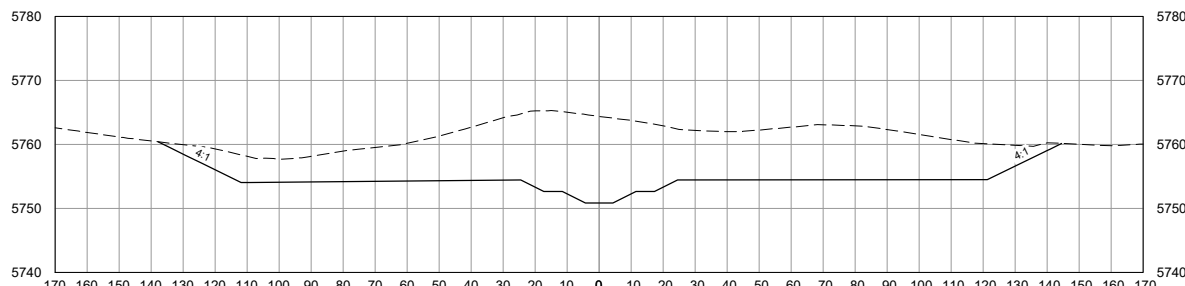
50+00



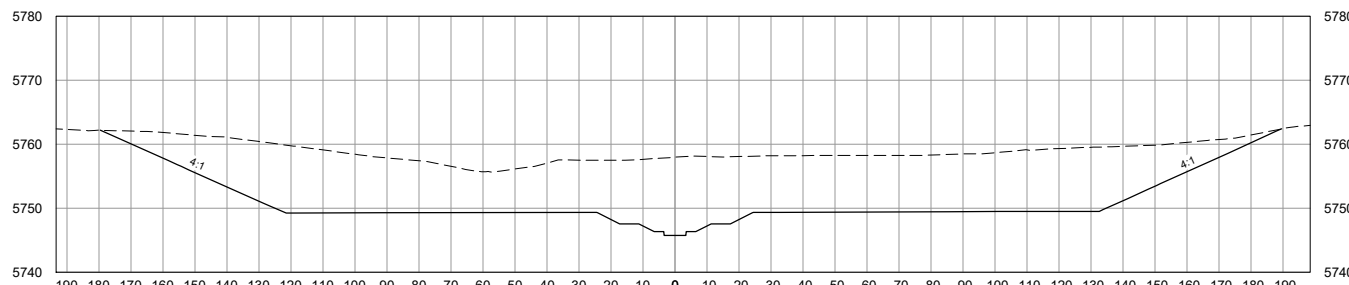
49+34



45+00



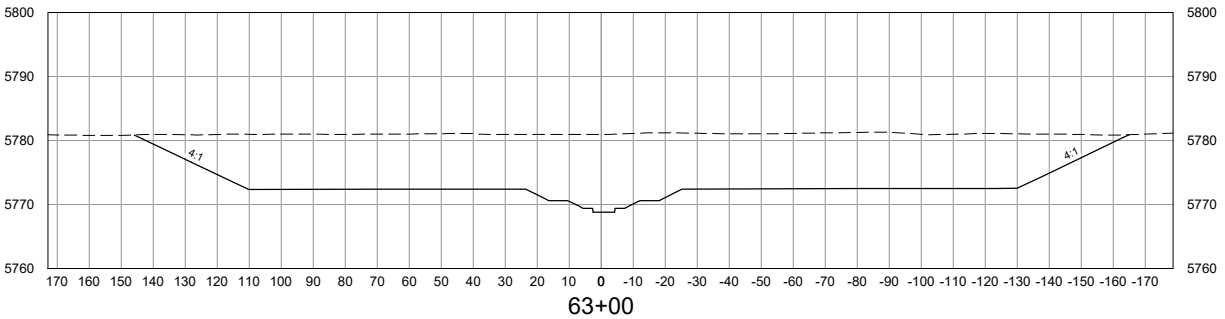
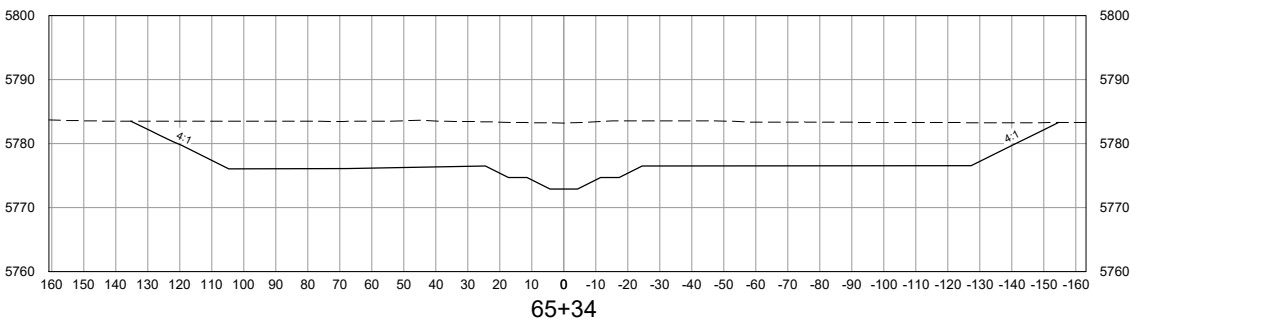
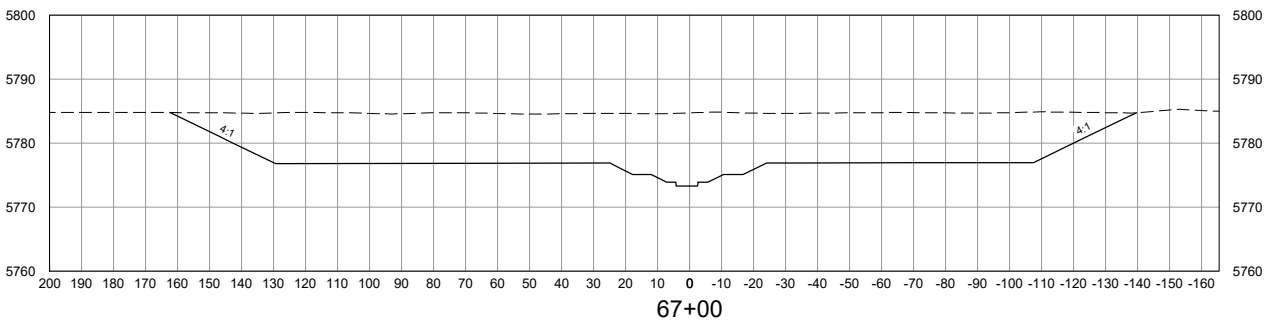
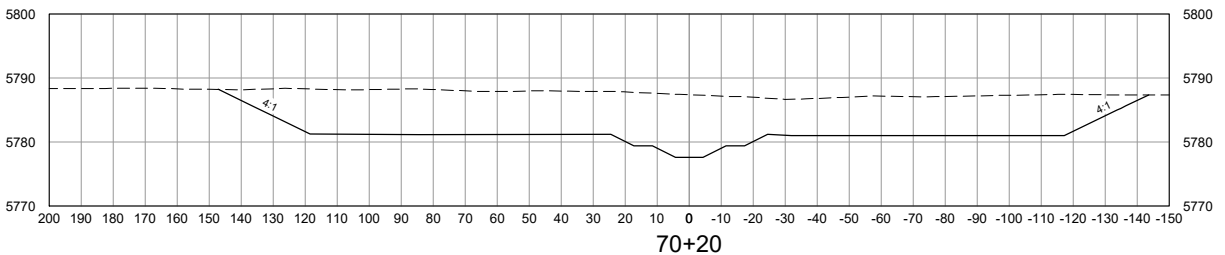
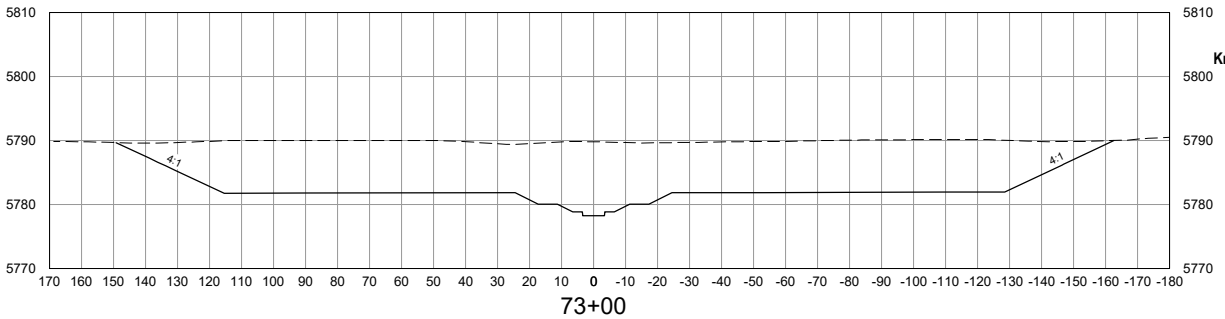
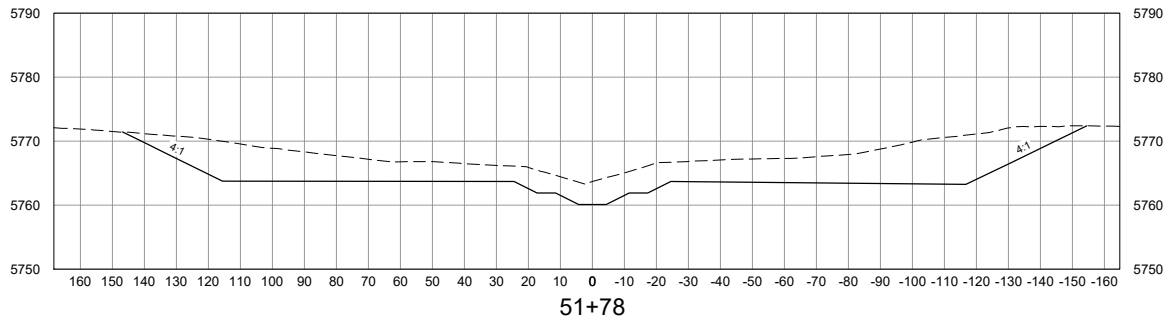
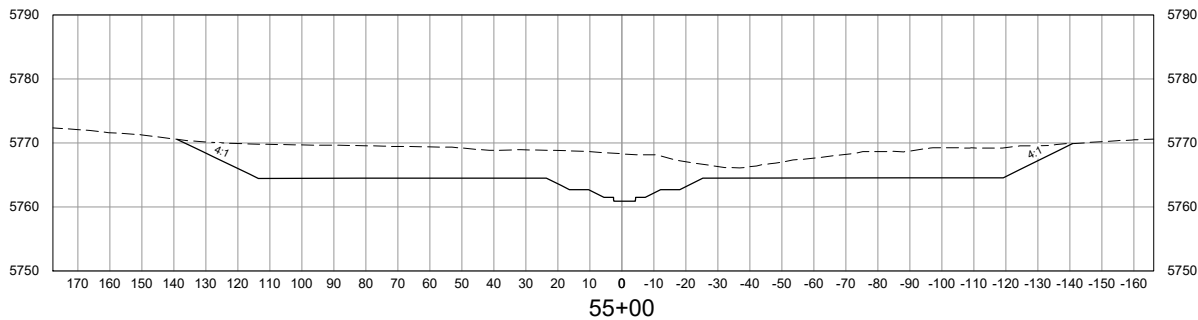
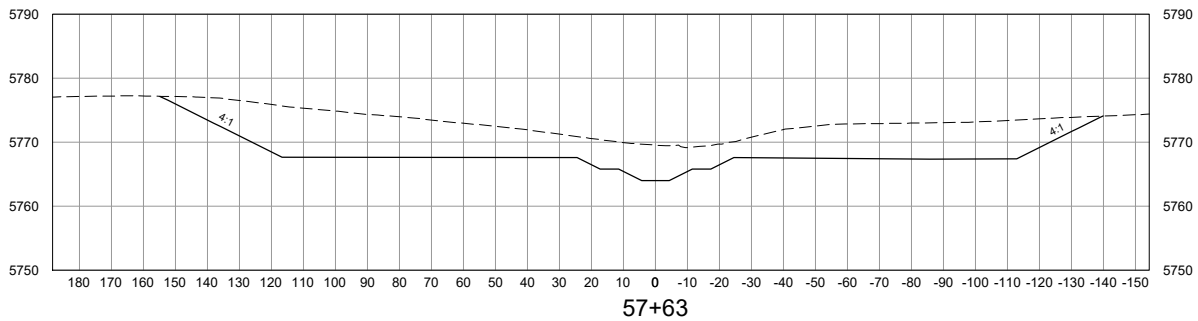
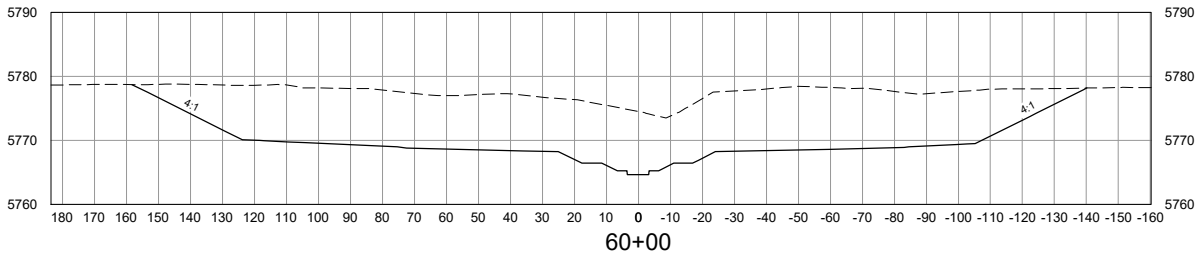
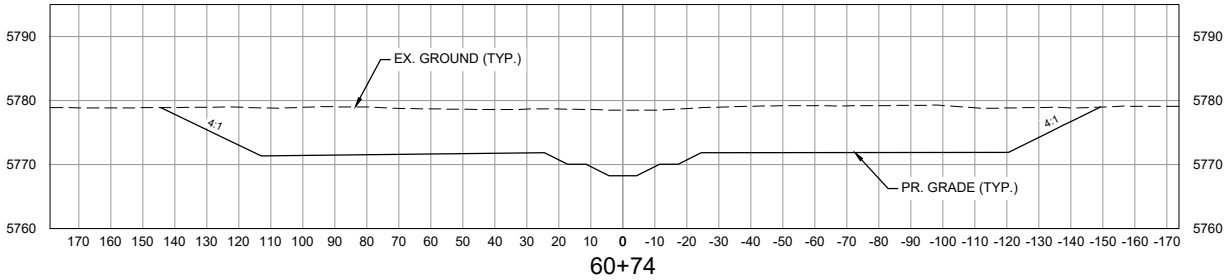
42+55



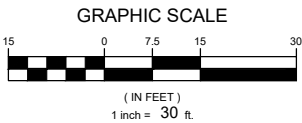
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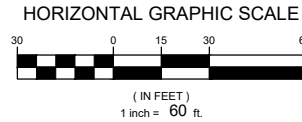




VERTICAL SCALE: 1" = 30'



HORIZONTAL SCALE: 1" = 60'



NOTE:  
ALL CROSS SECTIONS ARE  
SHOWN LOOKING  
DOWNSTREAM

REFERENCE DRAWINGS				
	No.	DATE	DESCRIPTION	BY
			REVISIONS	
COMPUTER FILE MANAGEMENT				
FILE NAME: S:\21.1129.009 Rolling Hills Floodplain and Permitting\Drawings\Design Plans\1129.009-XS01-XX.dwg				
CTB FILE: Matrix(black).ctb				
PLOT DATE: March 7, 2023 12:40:05 PM				
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.				

60% DESIGN PLANS

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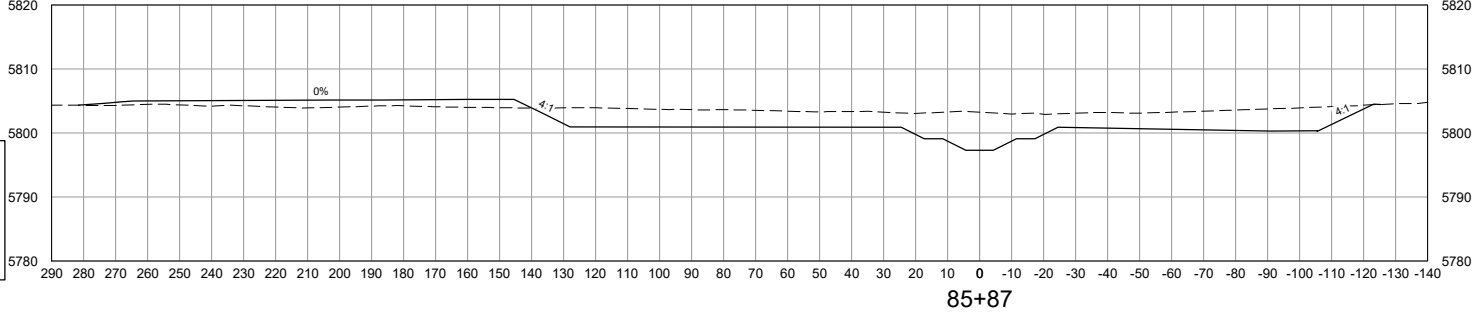
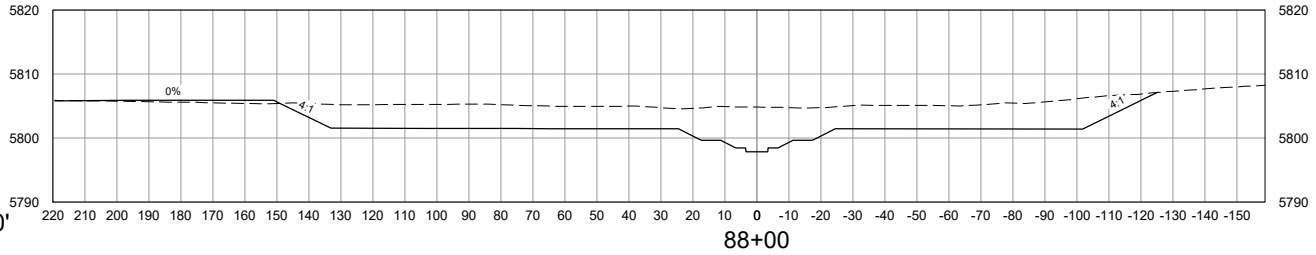
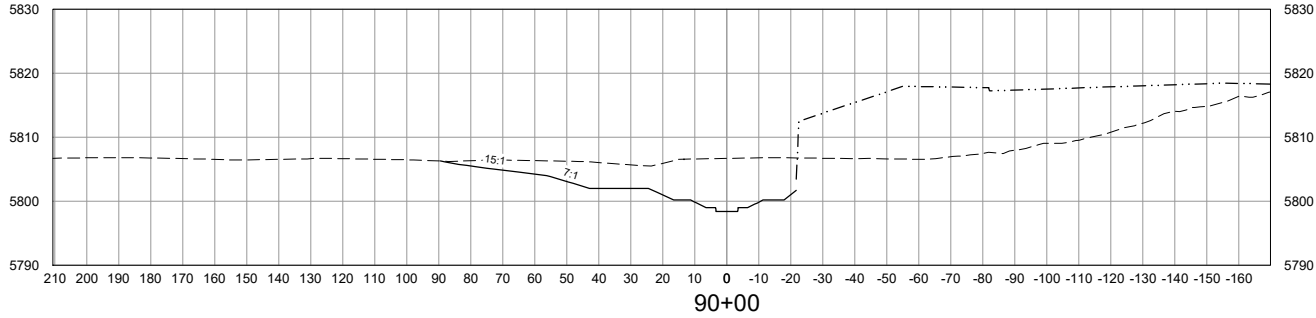
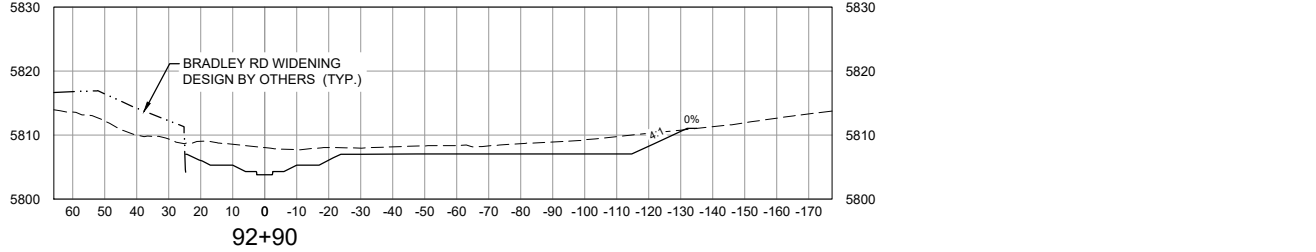
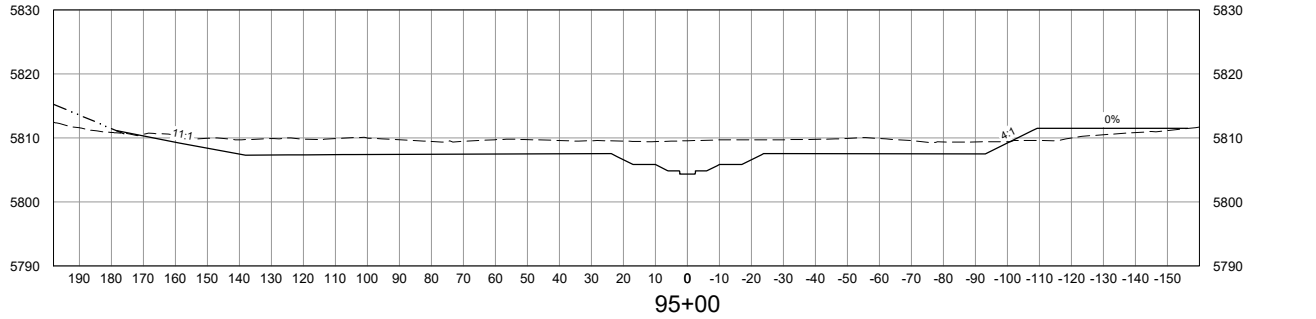
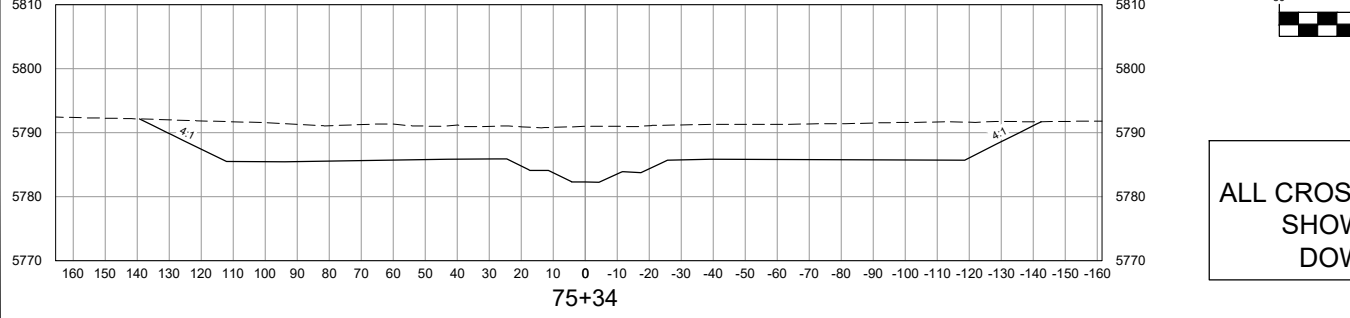
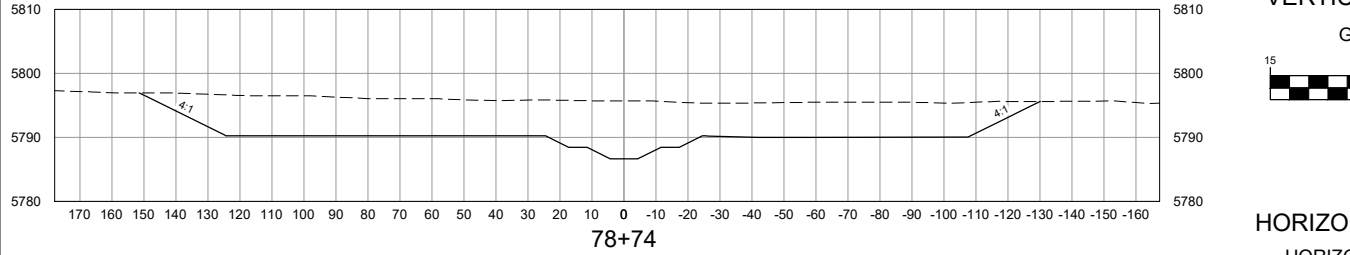
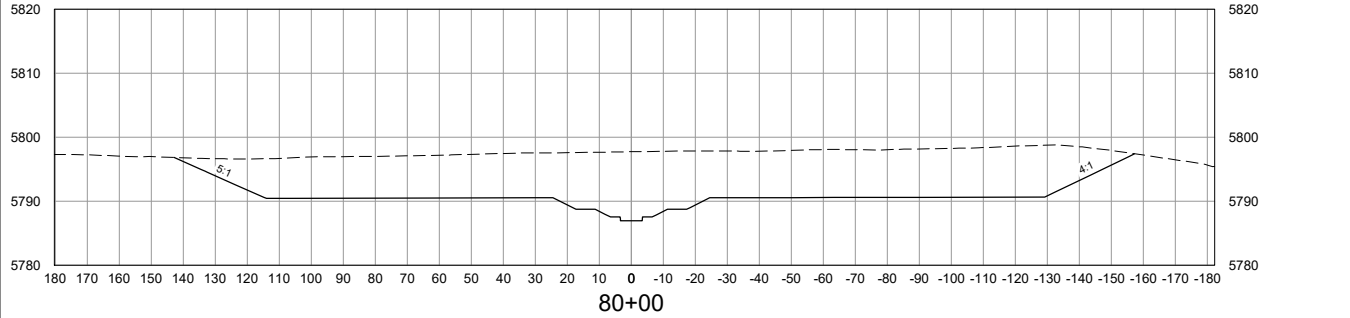
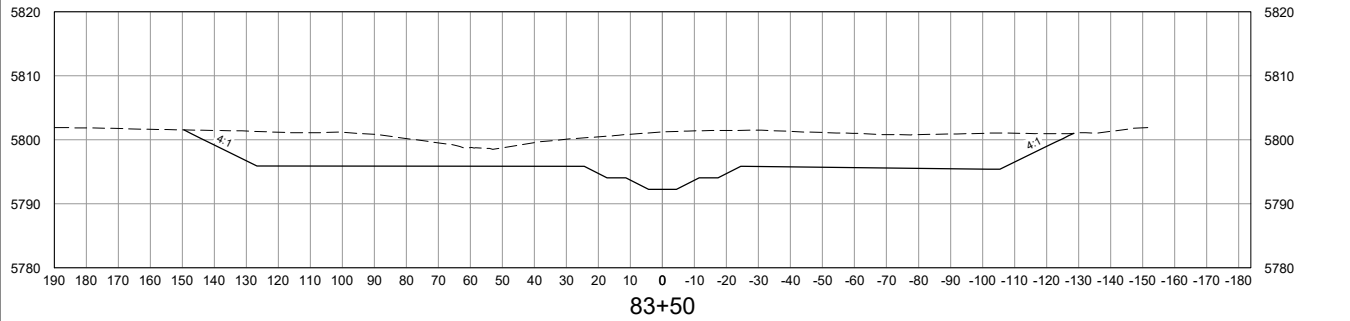
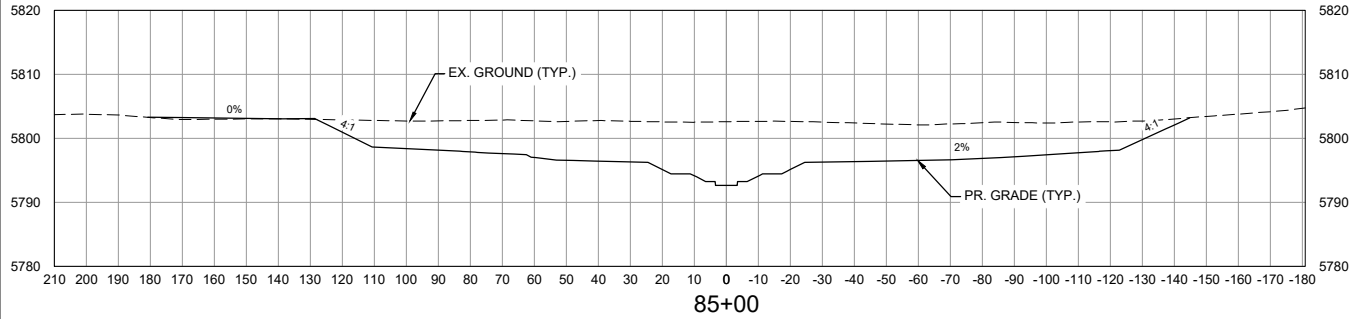
SEAL  
**PRELIMINARY**  
THIS DRAWING HAS NOT  
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IS SUBJECT TO CHANGE

FOR AND ON BEHALF OF  
MATRIX DESIGN GROUP, INC.  
PROJECT No. 21.1129.009

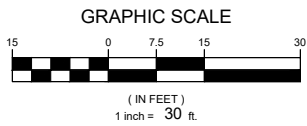
THE LANDHUIS COMPANY  
ROLLING MEADOWS CHANNEL & FLOODPLAIN MODIFICATION  
60% DESIGN PLANS

CROSS SECTIONS  
STA. 51+78 - 73+00

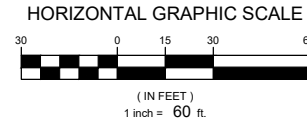
DESIGNED BY:	TKM	SCALE	DATE ISSUED:	MARCH 2023	DRAWING No.
DRAWN BY:	EAL	HORIZ 1" = 60'			
CHECKED BY:	AJS	VERT. 1" = 30'	SHEET	29 OF 47	XS05



VERTICAL SCALE: 1" = 30'



HORIZONTAL SCALE: 1" = 60'



NOTE:  
ALL CROSS SECTIONS ARE  
SHOWN LOOKING  
DOWNSTREAM

REFERENCE DRAWINGS			
X-1129-MDG22x34			
X-1129-PR STRUCT			
X-1129-PARCELS			
No.	DATE	DESCRIPTION	BY
REVISIONS			
COMPUTER FILE MANAGEMENT			
FILE NAME: S:\21.1129.009 Rolling Hills Floodplain and Permitting\Dwg\Design Plans\1129.009-XS01-XX.dwg			
CTB FILE: Matrix(black).ctb			
PLOT DATE: March 7, 2023 12:40:31 PM			
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.			

60% DESIGN PLANS

NOTICE:  
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PREPARED BY:



SEAL

PRELIMINARY  
THIS DRAWING HAS NOT  
BEEN APPROVED BY  
GOVERNING AGENCIES AND  
IS SUBJECT TO CHANGE

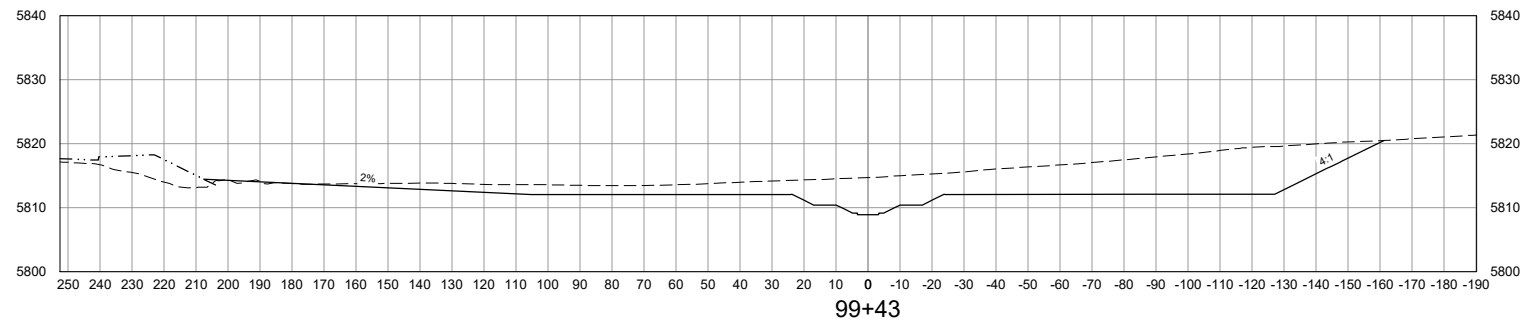
FOR AND ON BEHALF OF  
MATRIX DESIGN GROUP, INC.  
PROJECT No. 21.1129.009

THE LANDHUIS COMPANY  
ROLLING MEADOWS CHANNEL & FLOODPLAIN MODIFICATION  
60% DESIGN PLANS

CROSS SECTIONS  
STA. 75+34 - 95+00

DESIGNED BY: TKM	SCALE: HORIZ 1" = 60'	DATE ISSUED: MARCH 2023	DRAWING No. XS06
CHECKED BY: AJS	VERT. 1" = 30'	SHEET 30 OF 47	



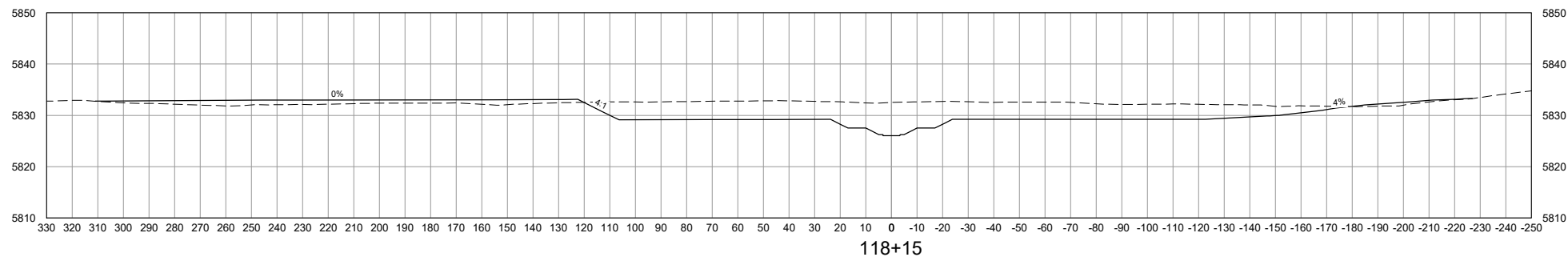


( IN FEET )  
1 inch = 60 ft.

( IN FEET )  
1 inch = 30 ft.

NOTE:  
ALL CROSS SECTIONS ARE  
SHOWN LOOKING  
DOWNSTREAM


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NOTE:  
ALL CROSS SECTIONS ARE  
SHOWN LOOKING  
DOWNSTREAM

**GRAPHIC SCALE**

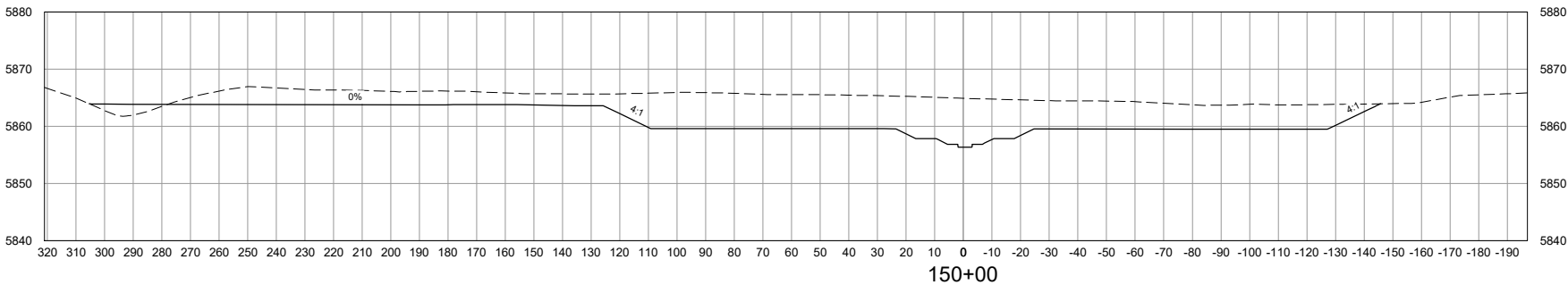
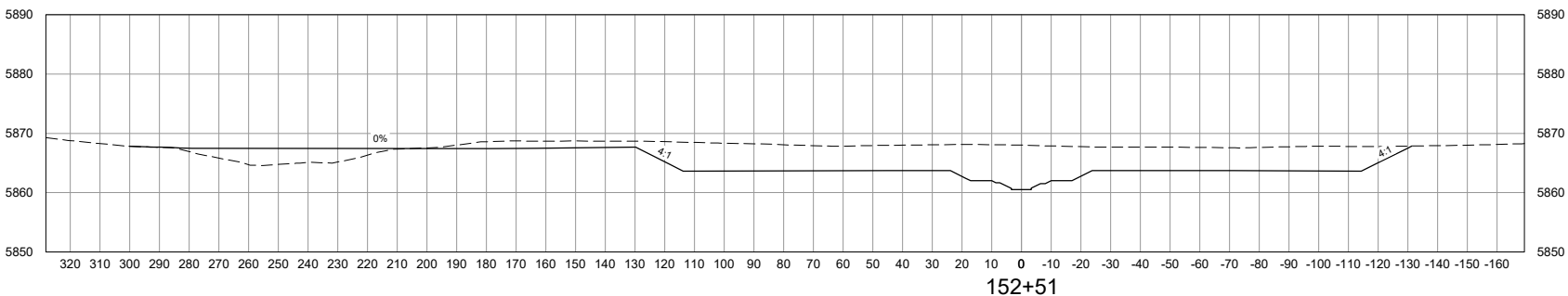
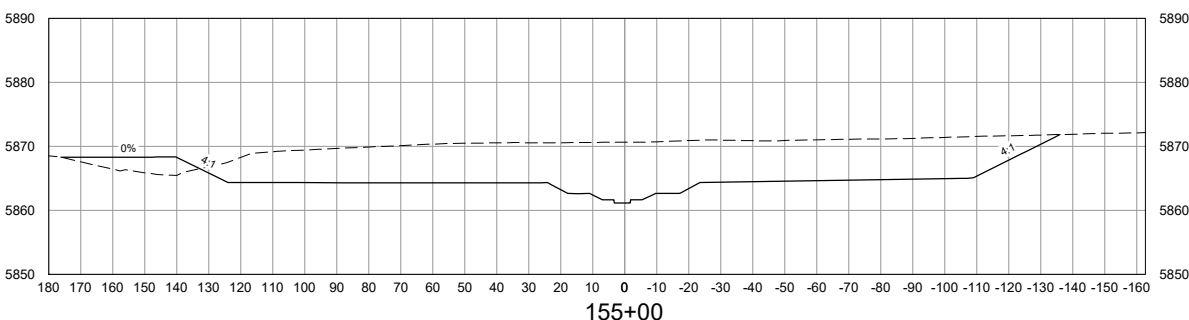
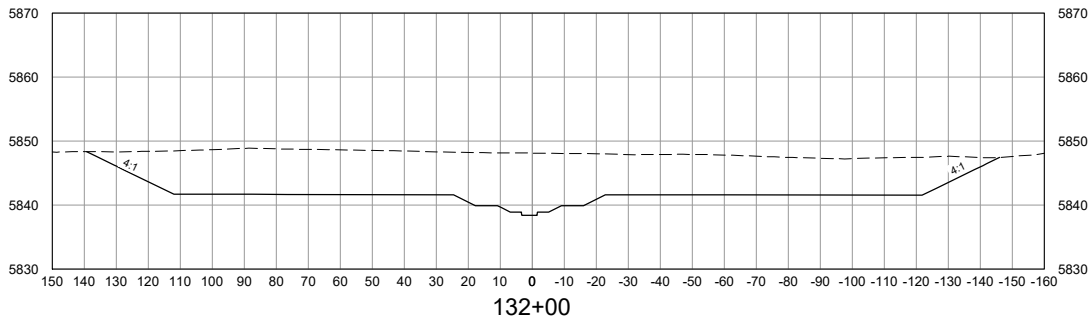
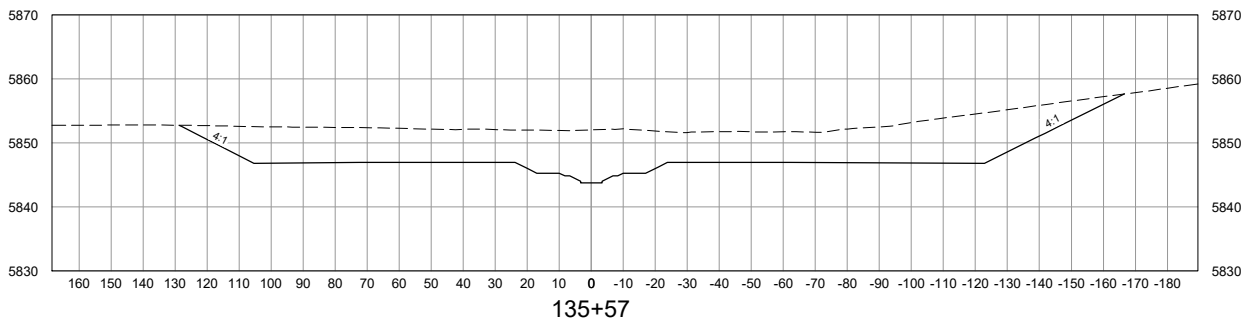
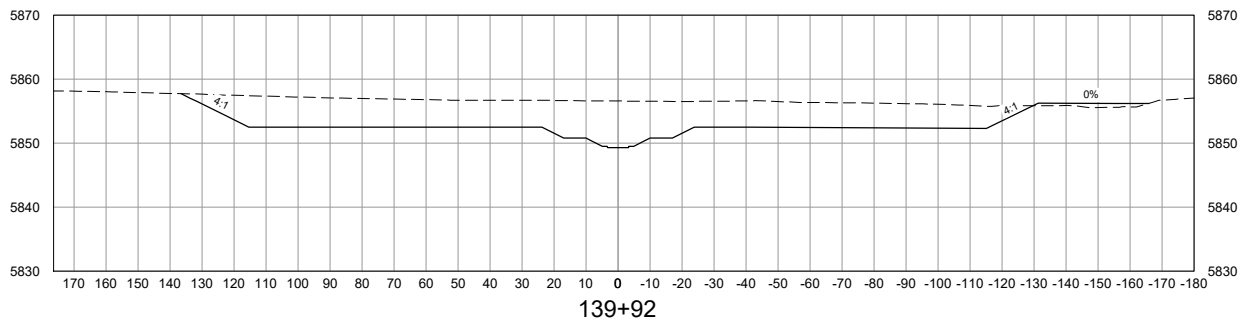
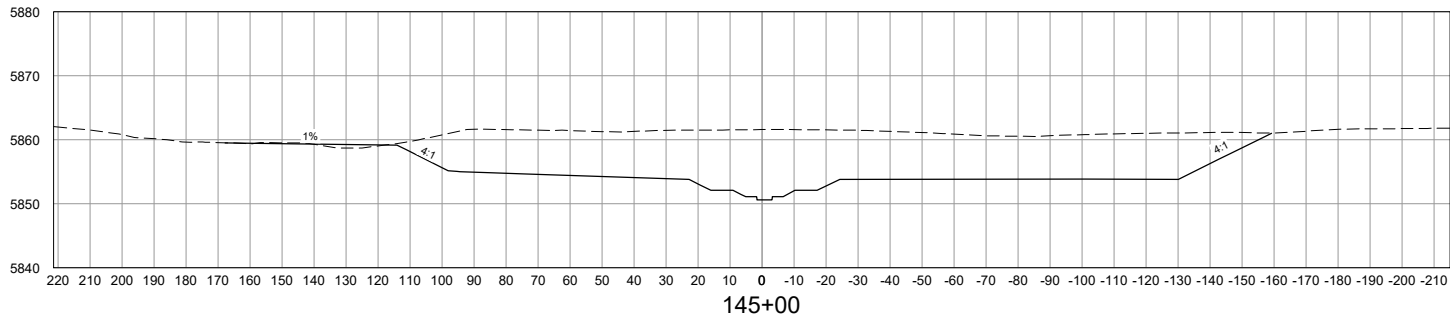


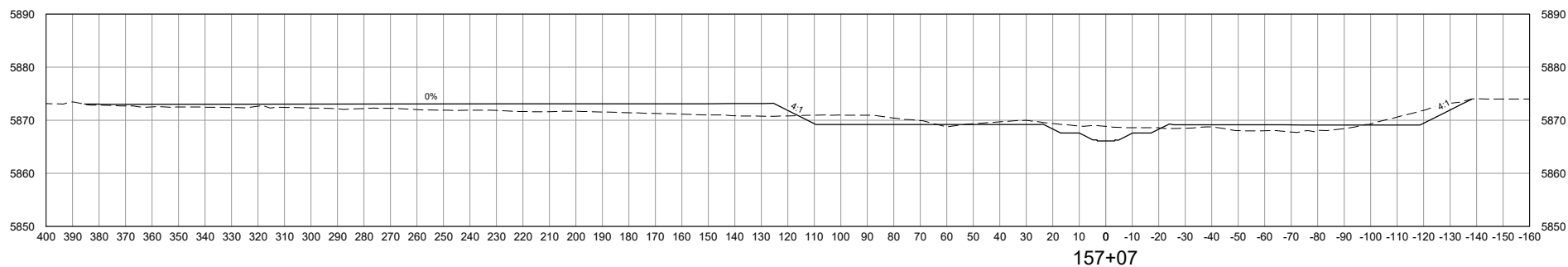
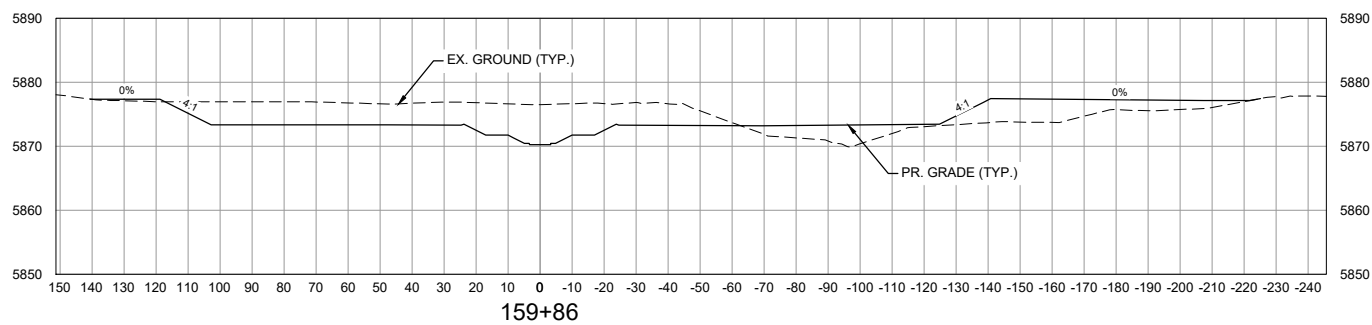
( IN FEET )  
1 inch = 30 ft.

**HORIZONTAL GRAPHIC SCALE**



( IN FEET )  
1 inch = 60 ft.

[illegible]



REFERENCE DRAWINGS					
X-1128-MDG222/34					
X-1128-PP STRUCT					
X-1128-PARCELS					
No.	DATE		DESCRIPTION		BY
			REVISIONS		
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MATRIX DESIGN GROUP, INC  
PROJECT No. 21.1129.009

ROLLING MEADOWS CHANNEL & FLOODPLAIN MODIFICATION  
60% DESIGN PLANS

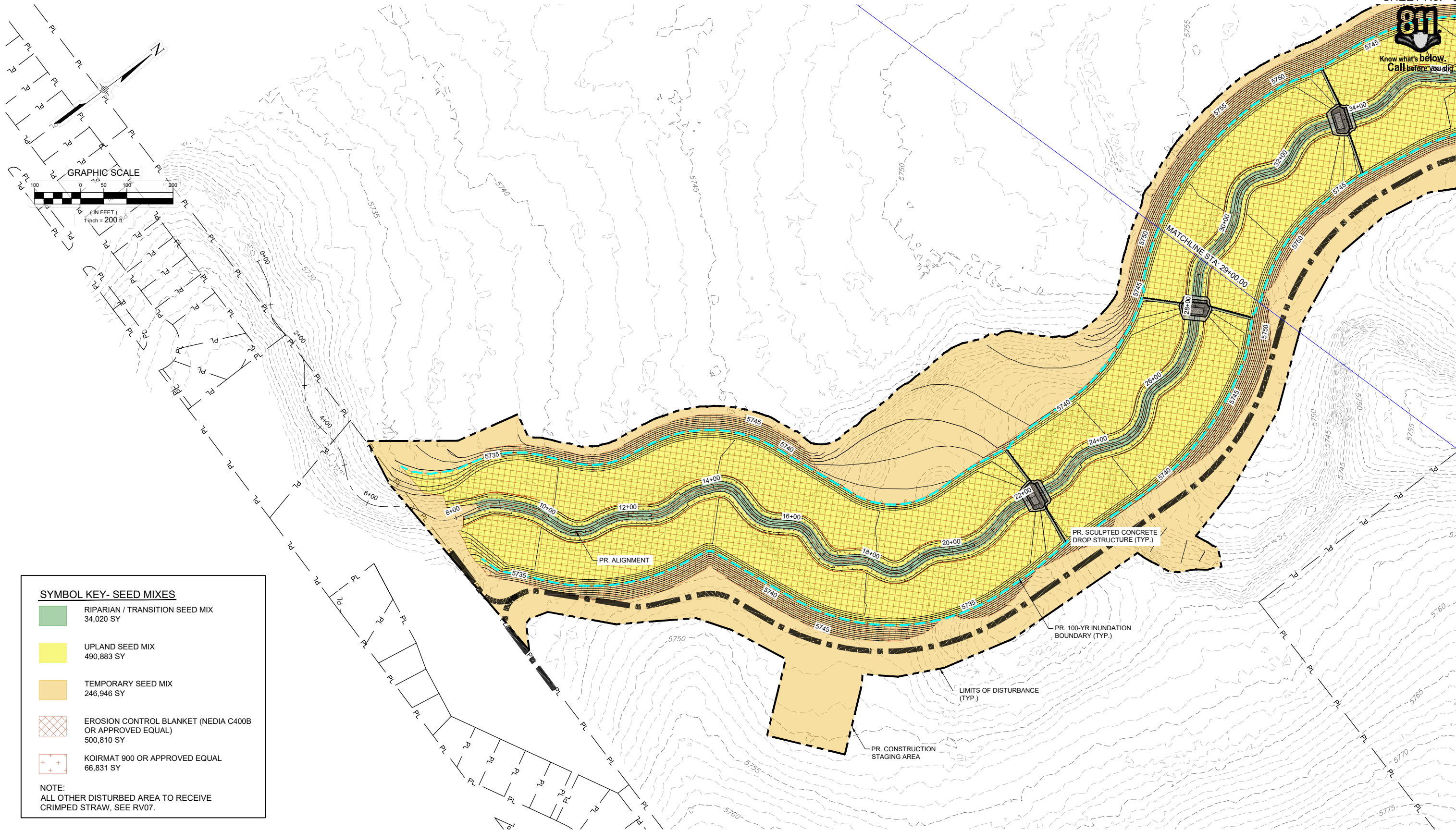
CROSS SECTIONS  
STA. 157+06 - 164+94

DESIGNED BY:	TKM	SCALE	DATE ISSUED:	MARCH 2023	DRAWING No. <b>XS10</b>
DRAWN BY:	EAL	HORIZ. 1" = 60'			
CHECKED BY:	AJS	VERT. 1" = 30'	SHEET	34 OF 47	





Know what's below.  
Call before you dig.



**SYMBOL KEY- SEED MIXES**

- RIPARIAN / TRANSITION SEED MIX  
34,020 SY
- UPLAND SEED MIX  
490,883 SY
- TEMPORARY SEED MIX  
246,946 SY
- EROSION CONTROL BLANKET (NEDIA C400B OR APPROVED EQUAL)  
500,810 SY
- KOIRMAT 900 OR APPROVED EQUAL  
66,831 SY

NOTE:  
ALL OTHER DISTURBED AREA TO RECEIVE  
CRIMPED STRAW, SEE RV07.

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X-1129-PR STRUCT			
X-1129-PARCELS			
X-1129-PR-REVEG			
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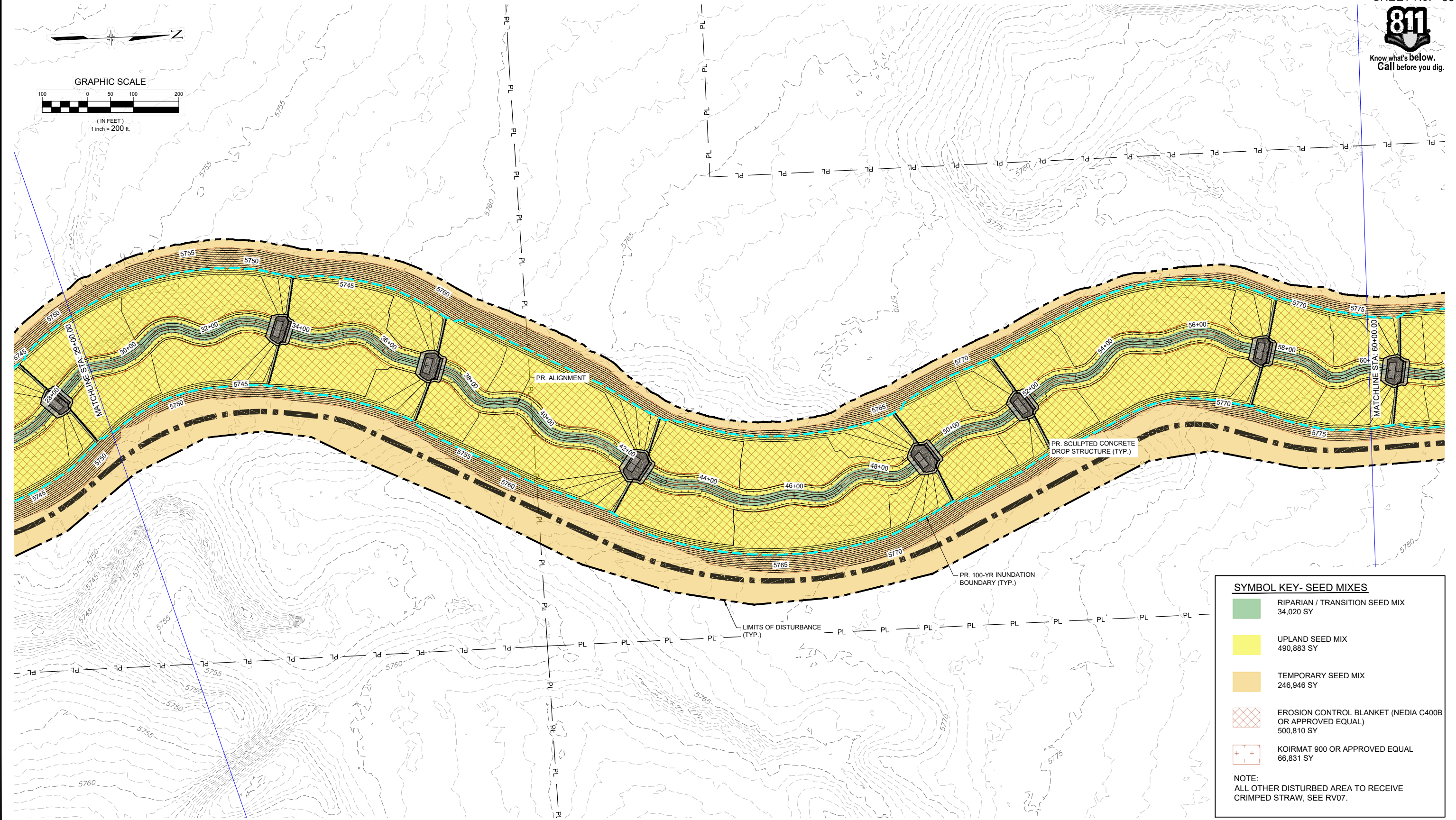
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 **Matrix**  
Excellence by Design

THE LANDHUIS COMPANY			
ROLLING MEADOWS CHANNEL & FLOODPLAIN MODIFICATION 60% DESIGN PLANS			
REVEGETATION PLAN STA. 7+00 - 29+00			
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CHECKED BY: AJS			
FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC. PROJECT No. 21.1129.009			





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34,020 SY
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490,883 SY
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500,810 SY
- KOIRMAT 900 OR APPROVED EQUAL  
66,831 SY

NOTE:  
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X-1129-PR STRUCT			
X-1129-PARCELS			
X-1129-PR-REV6			
No.	DATE	DESCRIPTION	BY
COMPUTER FILE MANAGEMENT			
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REVEGETATION PLAN STA. 29+00 - 60+00			
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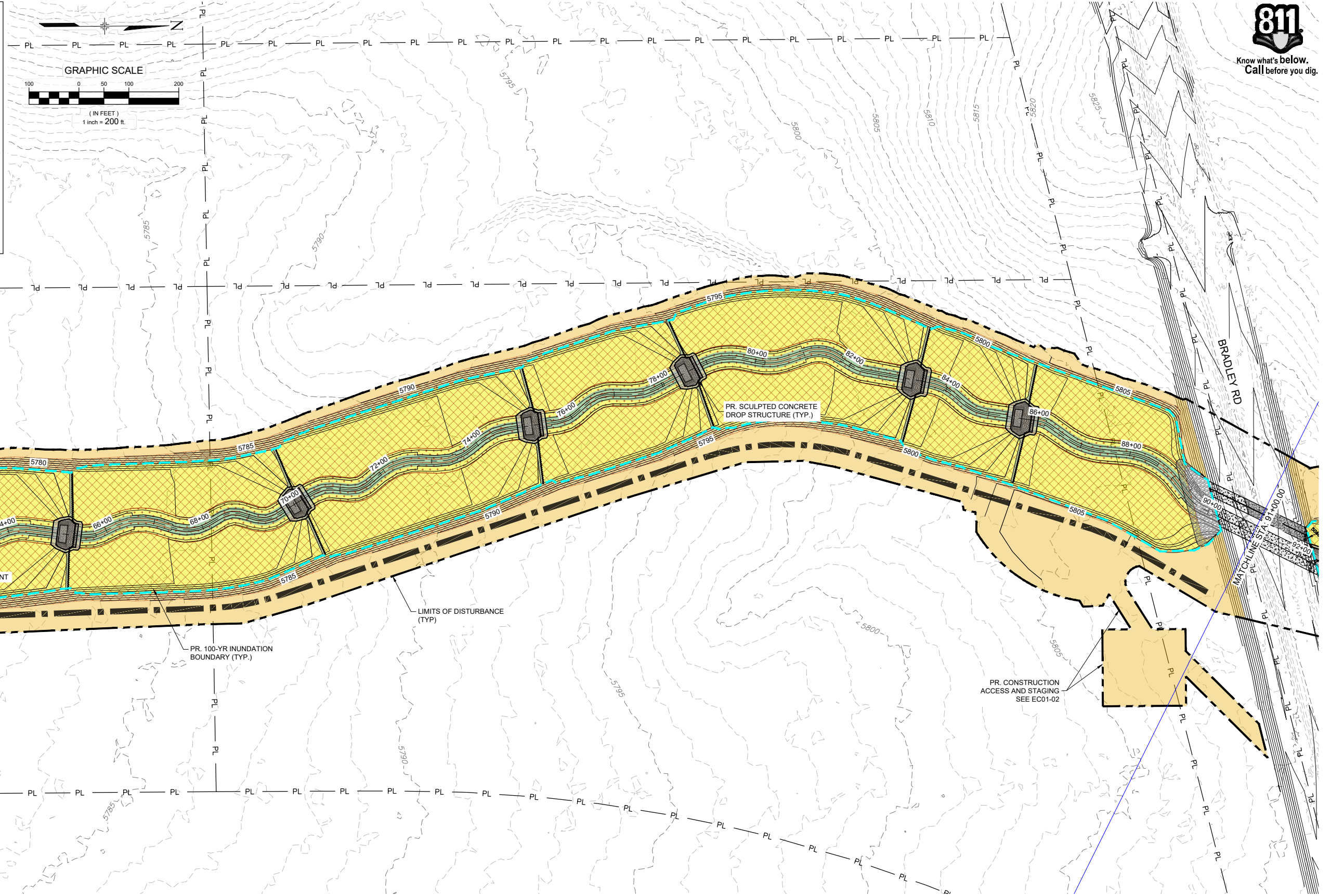




SYMBOL KEY- SEED MIXES

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34,020 SY
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490,883 SY
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500,810 SY
- KOIRMAT 900 OR APPROVED EQUAL  
66,831 SY

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FOR AND ON BEHALF OF  
MATRIX DESIGN GROUP, INC.  
PROJECT No. 21.1129.009

THE LANDHUIS COMPANY			
ROLLING MEADOWS CHANNEL & FLOODPLAIN MODIFICATION 60% DESIGN PLANS			
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DESIGNED BY: EEG	SCALE: HORIZ 1" = 200'	DATE ISSUED: MARCH 2023	DRAWING No. RV03
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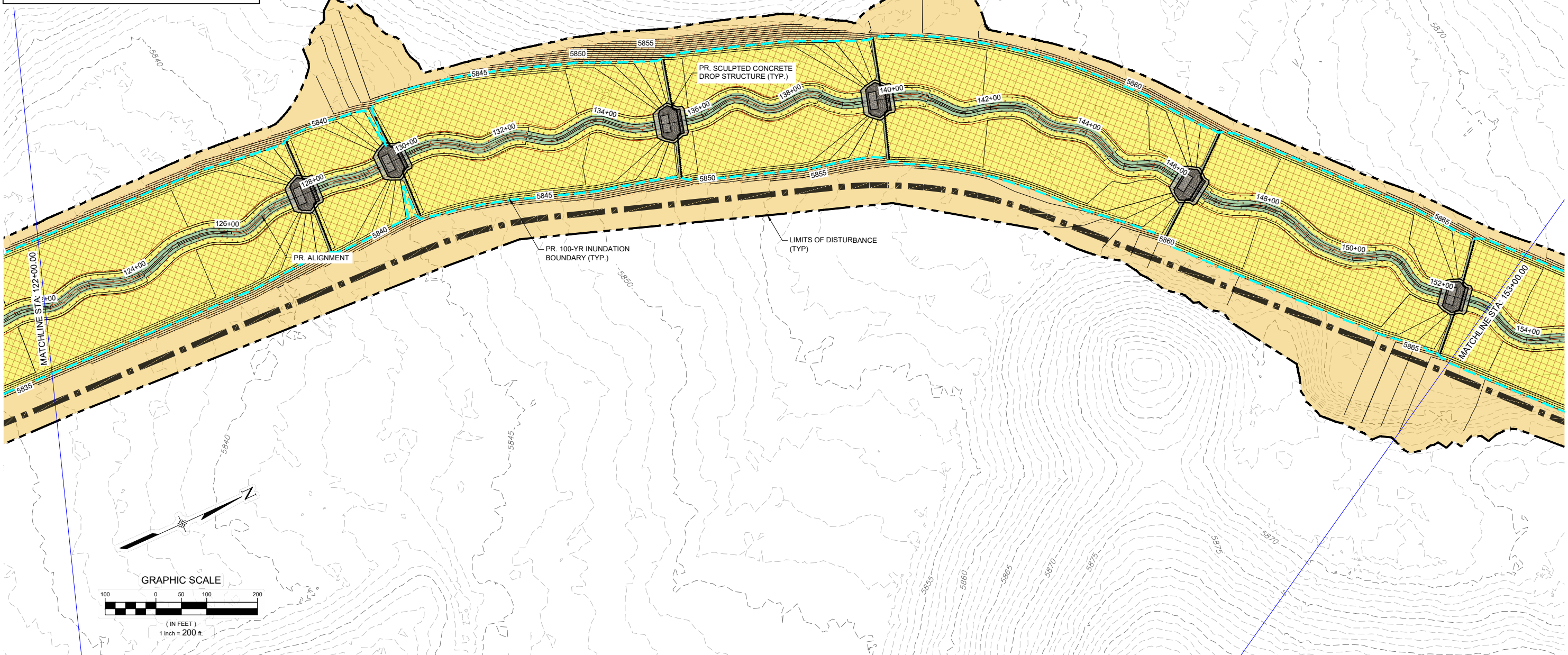




SYMBOL KEY- SEED MIXES

- RIPARIAN / TRANSITION SEED MIX  
34,020 SY
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NOTE:  
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X-1129-MDG22x34			
X-1129-PR STRUCT			
X-1129-PARCELS			
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No.	DATE	DESCRIPTION	BY
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PROJECT No. 21.1129.009

THE LANDHUIS COMPANY  
ROLLING MEADOWS CHANNEL & FLOODPLAIN MODIFICATION  
60% DESIGN PLANS

REVEGETATION PLAN  
STA. 122+00 - 153+00

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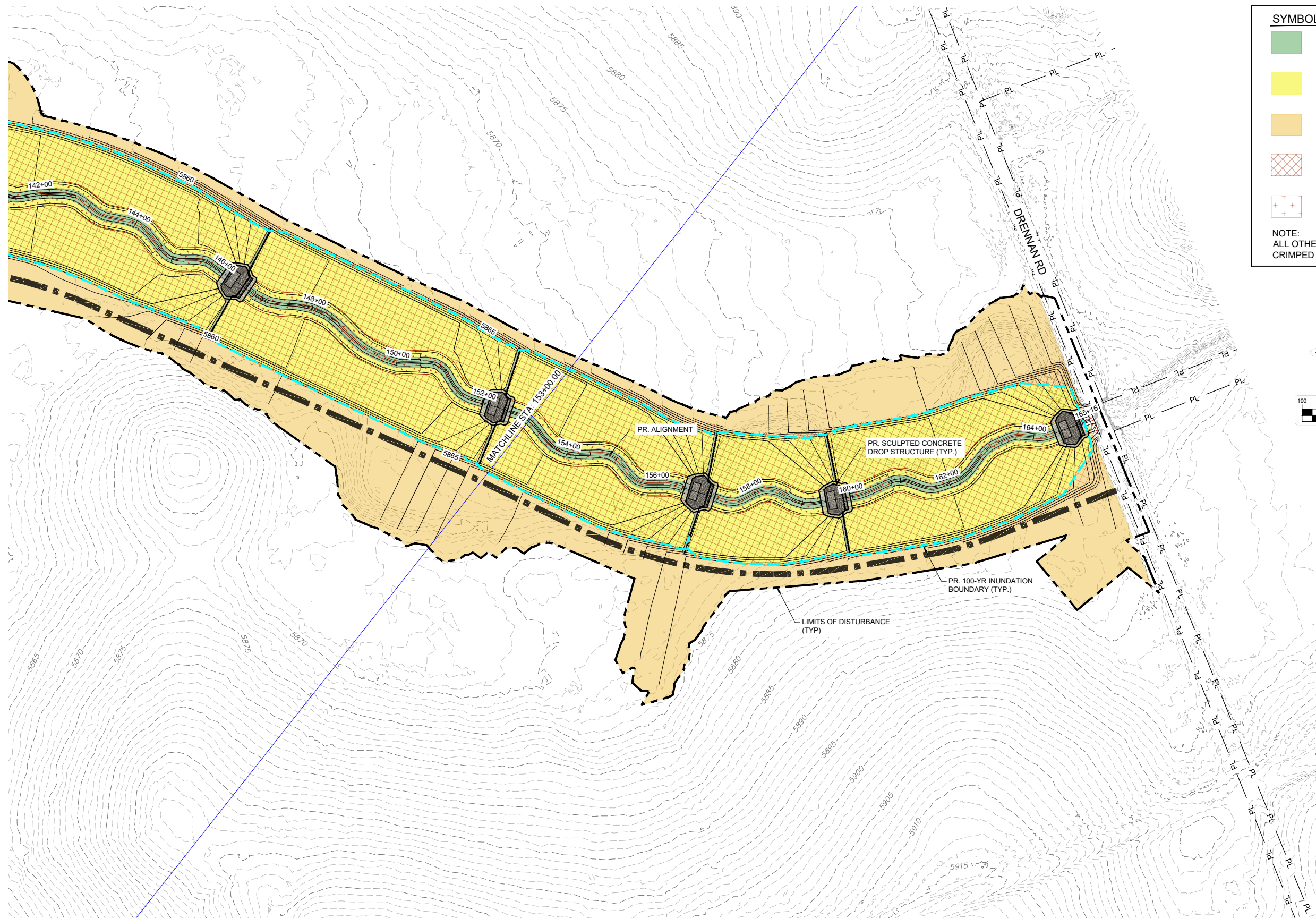
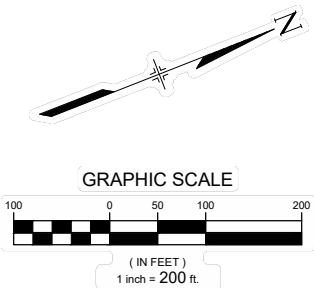




SYMBOL KEY- SEED MIXES

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34,020 SY
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- TEMPORARY SEED MIX  
246,946 SY
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OR APPROVED EQUAL)  
500,810 SY
- KOIRMAT 900 OR APPROVED EQUAL  
66,831 SY

NOTE:  
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X-1129-PR STRUCT			
X-1129-PARCELS			
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CHECKED BY: AJS	VERT: N/A		





Riparian Transition Seed Mix						
Scientific Name	Variety	Common Name	PLS lbs/ac	% of Seed Mix by Wgt	PLS/sq ft	% of PLS/sq ft
<b>Graminoids</b>						
<i>Andropogon gerardi</i>	vns.	big bluestem	2.00	5	7	4
<i>Bouteloua gracilis</i>	CO Native	blue grama	1.00	3	17	10
<i>Distichlis spicata</i>	vns.	inland saltgrass	0.60	2	7	4
<i>Juncus balticus</i>	vns.	Baltic rush	0.12	0	8	5
<i>Koeleria macrantha</i>	vns.	prairie junegrass	0.10	0	5	3
<i>Nassella viridula</i>	vns.	green needlegrass	4.00	10	15	10
<i>Schizachyrium scoparium</i>	Cimarron	little bluestem	1.20	3	5	3
<i>Sporobolus airoides</i>	vns.	alkali sacaton	0.15	0	6	4
<i>Sporobolus cryptandrus</i>	vns.	sand dropseed	0.12	0	15	10
<i>Panicum obtusum</i>	vns.	vine mesquite	5.00	13	17	10
<i>Pascopyron smithii</i>	Arriba	western wheatgrass	5.00	13	15	10
<i>Panicum virgatum</i>	Blackwell	switchgrass	2.00	5	12	7
Graminoid Total			21.29	55	130	81
<b>Forbs</b>						
<i>Asclepias speciosa</i>	vns.	showy milkweed	4	10	7	4
<i>Helianthus annuus</i>	vns.	common sunflower	2.00	5	2	1
<i>Echinacea moench</i>	vns.	purple coneflower	1.50	4	5	3
<i>Liatris punctata</i>	vns.	dotted blazing star	4.00	10	6	4
<i>Monarda fistulosa</i>	vns.	wild bergamot	0.20	1	6	4
<i>Vicia americana</i>	vns.	American vetch	5.50	14	4	3
Forb Total			17.20	45	30	19
Total			38.49	100	160	100
*var. = variety; vns. = variety not specified						

Upland Seed Mix						
Scientific Name	Variety	Common Name	PLS lbs/ac	% of Seed Mix by Wgt	PLS/sq ft	% of PLS/sq ft
<b>Graminoids</b>						
<i>Acantherum hymenoides</i>	Paloma	Indian ricegrass	1.50	4	6	4
<i>Bouteloua curtipendula</i>	vns.	sideoats grama	2.00	6	7	5
<i>Bouteloua gracilis</i>	CO Native	blue grama	1.50	4	25	17
<i>Pascopyron smithii</i>	Arriba	western wheatgrass	5.00	15	15	10
<i>Schizachyrium scoparium</i>	Cimarron	little bluestem	1.80	5	8	5
<i>Hesperostipa comata</i>	vns.	needle and thread	2.75	8	9	6
<i>Andropogon gerardi</i>	vns.	big bluestem	2.00	6	7	4
<i>Nassella viridula</i>	vns.	green needlegrass	3.50	10	13	9
<i>Andropogon hallii</i>	vns.	sand bluestem	6.00	18	13	9
<i>Pleuraphis jamesii</i>	Viva	James' galleta	2.00	6	7	5
<i>Bouteloua dactyloides</i>	vns.	buffalograss	1.00	3	8	5
Graminoid Total			29.05	86	118	80
<b>Forbs and Sub-Shrubs</b>						
<i>Artemisia ludoviciana</i>	vns.	white sagebrush	0.05	0	5	3
<i>Dalea purpurea</i> var. <i>purpurea</i>	Kaneb	purple prairie clover	0.50	1	4	2
<i>Gaillardia aristata</i>	vns.	blanketflower	1.50	4	5	3
<i>Heterotheca villosa</i>	vns.	hairy false goldenaster	0.50	1	6	4
<i>Rudbeckia laciniata</i>	vns.	cutleaf coneflower	1.00	3	6	4
<i>Helianthus maximiliani</i>	vns.	Maximilian sunflower	1.20	4	5	4
Forb and Sub-Shrub Total			4.75	14	30	20
Total			33.80	100	148	100
*var. = variety; vns. = variety not specified						

Shrub Overseed Mix						
Scientific Name	Variety	Common Name	PLS lbs/ac	% by Wgt	PLS/sq ft	% of PLS/sq ft
<b>Shrubs</b>						
<i>Amorpha canescens</i>	vns.	leadplant	0.50	1	2	15
<i>Atriplex canescens</i>	vns.	fourwing saltbush	3.00	8	3	20
<i>Eriogonum nauseosum</i>	vns.	rubber rabbitbrush	0.20	1	2	12
<i>Krascheninnikovia lanata</i>	vns.	winterfat	2.5	7	6	42
<i>Prunus pumila</i>	vns.	western sandcherry	30	83	2	11
Total			36.20	100	15	100
*var. = variety; vns. = variety not specified						

Temporary Seed Mix						
Scientific Name	Variety	Common Name	PLS lbs/ac	% by Weight	PLS/sq ft	% of PLS/sq ft
<b>Graminoids</b>						
<i>Acantherum hymenoides</i>	Paloma	Indian ricegrass	2.00	6	7	6
<i>Elymus trachycaulus</i>	Pryor	slender wheatgrass	8.00	24	29	25
<i>Bouteloua gracilis</i>	CO Native	blue grama	1.50	4	25	21
<i>Pascopyron smithii</i>	Arriba	western wheatgrass	8.00	24	24	21
<i>Elymus canadensis</i>	vns.	Canada wildrye	8.00	24	21	18
<i>Bouteloua dactyloides</i>	vns.	buffalograss	1.50	4	12	10
Total			29.00	86	119	100
*var. = variety; vns. = variety not specified						

REVEGETATION NOTES:

1. ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE FREE OF NOXIOUS SPECIES, UNDESIRABLE SPECIES AS DEFINED IN THE SEEDING SPECIFICATION, AND AGGRESSIVE NON-NATIVE SPECIES INCLUDING BUT NOT LIMITED TO CHEATGRASS, KOCHIA, SMOOTH BROME, AND RUSSIAN THISTLE.
2. ALL MATERIALS SHALL BE FURNISHED IN ORIGINAL MANUFACTURER'S SHIPPING BAGS OR CONTAINERS AND REMAIN IN THESE BAGS OR CONTAINERS UNTIL THEY ARE USED. ALL MATERIALS SHALL BE STORED IN A MANNER THAT WILL PREVENT THEM FROM COMING INTO CONTACT WITH PRECIPITATION, SURFACE WATER, OR ANY OTHER CONTAMINATING SUBSTANCE. ANY MATERIALS THAT HAVE BECOME WET, MOLDY, OR OTHERWISE DAMAGED IN TRANSIT OR IN STORAGE SHALL NOT BE USED.
3. AFTER ROUGH GRADING HAS BEEN COMPLETED, A MINIMUM OF 2 COMPOSITE SOIL SAMPLES, 1 FROM THE SEED MIX AREA SUBSOILS AND 1 FROM THE TOPSOIL STOCKPILE, SHALL BE COLLECTED FROM THE PROJECT AREA AND SUBMITTED FOR SOIL FERTILITY AND TEXTURE TESTING PRIOR TO APPLICATION OF SOIL CONDITIONER, SEEDING, OR PLANTING. A COMPOSITE SAMPLE IS COMPRISED OF AT LEAST 4 INDIVIDUAL GRAB SAMPLES CAPTURING THE TOP 6 INCHES OF SOIL. EXACT LOCATIONS OF SAMPLES TO BE DETERMINED BY THE PROJECT ECOLOGIST / LANDSCAPE ARCHITECT. A RECOMMENDED SOIL CONDITIONING AMENDMENT AND APPLICATION RATE SHALL BE DETERMINED BASED ON THE SOIL TEST RESULTS. NO SOIL CONDITIONING, SEEDING, OR PLANTING SHALL OCCUR PRIOR TO SOIL TEST AND UNTIL A SOIL CONDITIONING AMENDMENT IS ACCEPTED.
- TOPSOIL:
4. IF THE SOIL FERTILITY TESTING INDICATES NATIVE TOPSOIL MEETS THE MINIMUM SPECIFICATIONS, NATIVE MATERIAL MAY BE REUSED UNAMENDED AS DETERMINED BY THE PROJECT ECOLOGIST / LANDSCAPE ARCHITECT. IF SOIL FERTILITY TESTING INDICATES NATIVE TOPSOIL DOES NOT MEET MINIMUM SPECIFICATIONS, THE PROJECT ECOLOGIST / LANDSCAPE ARCHITECT SHALL CONFIRM THE REQUIRED APPLICATION RATE OF COMPOST AMENDMENT OR SOIL CONDITIONER PER THE CONSTRUCTION DOCUMENTS AS NECESSARY TO MEET THE MINIMUM SPECIFICATIONS.
5. WITHIN THE PROJECT AREA, ANY AREAS WITH ADEQUATE TOPSOIL SHALL BE SALVAGED AND STOCKPILED FOR REUSE.
6. TOPSOIL SHALL BE PLACED TO A MINIMUM DEPTH OF 6 INCHES ON ALL DISTURBED AREAS. WHERE SOIL AMENDMENT IS REQUIRED, IT SHALL BE EVENLY DISTRIBUTED AND TILLED TO A DEPTH OF 12 INCHES MINIMUM OR AS SPECIFIED BY THE PRODUCT MANUFACTURER INSTRUCTIONS. IF DEPTH IS NOT POSSIBLE, NOTIFY PROJECT ENGINEER IMMEDIATELY. RECOMMENDATIONS OR MODIFICATIONS TO DEPTH OF TOPSOIL SHALL BE DETERMINED BY THE PROJECT ECOLOGIST / LANDSCAPE ARCHITECT BASED ON THE SOIL TEST RESULTS. NO SOIL CONDITIONING, SEEDING, OR PLANTING SHALL OCCUR PRIOR TO SOIL TEST AND UNTIL TOPSOIL TESTING IS ACCEPTED.
7. HUMATE SOIL CONDITIONER WILL BE APPLIED AT A RATE OF 250 POUNDS PER ACRE AND SHALL BE TOPICALLY APPLIED OR AS SPECIFIED BY THE PRODUCT MANUFACTURER INSTRUCTIONS.

SOIL AMENDMENT:

8. FOR BIDDING PURPOSES, IT IS ASSUMED ALL SEEDING AREAS OUTSIDE OF 10 FEET FROM THE ACTIVE WATERWAY SHALL BE AMENDED WITH 3 CUBIC YARDS OF ORGANIC, WEED FREE, CLASS A COMPOST PER 1,000 S.F AND ALL SEEDING AREAS, INCLUDING ALONG THE ACTIVE WATERWAY, SHALL BE AMENDED WITH HUMATE SOIL CONDITIONER THAT SHALL BE APPLIED AT A RATE OF 250 POUNDS PER ACRE. FINAL COMPOST AMENDMENT AND SOIL CONDITIONER APPLICATION RATES SHALL BE CONFIRMED BY THE PROJECT ECOLOGIST / LANDSCAPE ARCHITECT FROM THE RESULTS OF THE SOIL FERTILITY TESTS.
9. SOIL AMENDMENTS

COMPOST: COMPOST SHALL BE CLASS A AS DEFINED BY CFR TITLE 40, PART 503 OR CLASS 1 AS DESCRIBED IN THE TABLE BELOW. THE AMOUNT OF COMPOST ADDED TO THE SOIL MAY VARY DEPENDING ON SOIL TEST RESULTS.

Compost Parameters	Reported As	Requirements	Test Method
pH	pH units	6.0 - 8.4	TMECC 04.11-A
Soluble Salts (Electrical Conductivity)	dS m <sup>-1</sup> or mmhos cm <sup>-1</sup>	0-3 mmhos/cm	TMECC 04.11-A
Moisture Content	%, wet weight basis	35 - 60%	TMECC 03.09-A
Organic Matter Content	%, dry weight basis	30 - 70%	TMECC 05.07-A
Particle Size (Sieve Sizes)	%, dry weight basis for each sieve fraction	Passing 1 inch - 100% 1/2 inch - 95%	TMECC 02.02-B
Man-made Inert Contamination	%, dry weight basis	< 1%	TMECC 03.08-A
Stability (Respirometry)	mg CO <sub>2</sub> - C per g TS per day mg CO <sub>2</sub> - C per g OM per day	8 or below	TMECC 05.08-B
Select Pathogens	(PASS/FAIL) Limits: Salmonella < 3 MPN/4grams of TS, or Coliform Bacteria <1000 MPN/gram	Pass	TMECC 07.01-B Fecal Coliforms, or 07.02 Salmonella
Trace Metals	(PASS/FAIL) Limits (mg kg <sup>-1</sup> dw basis): As 41, Cd 38, Cu 1500, Pb 300, Hg 17, Ni 420, Se 100, Zn 2800	Pass	TMECC 04.06
Maturity (Bioassay) Percent	%, (average)	> 80%	TMECC 05.05-A
Emergency Relative Seeding Vigor	%, (average)	> 80%	

Notes: The Contractor shall provide a CTR in accordance with subsection 106.13 of CDOT standard specifications confirming that the material has been tested in accordance with TMECC.

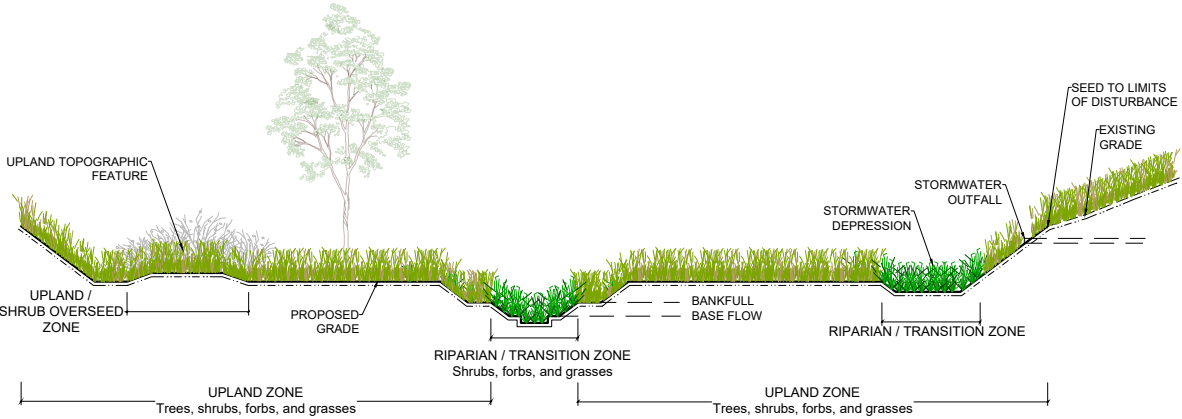
10. HUMATE SOIL CONDITIONER, NATURAL MINERAL, CARBON, AND HUMIC ACID-BASED SOIL CONDITIONER SHOULD HAVE THE FOLLOWING CHARACTERISTICS:
  - HUMIC ACIDS >50%
  - ORGANIC MATTER >85%
  - 1%N, <0.1% AS P2O5, <0.10%K AS K2O
  - PH 3-4
  - APPLICATION RATE IS ASSUMED TO BE 250 LBS/ACRE FOR BIDDING PURPOSES BUT IS DEPENDENT ON SOIL TEST RESULTS. HUMATE WORKS BEST WHEN MINIMUM DAILY SOIL TEMPERATURES REACH 55°F AND IS THOROUGHLY MIXED INTO SOIL. CAN BE TOPICALLY APPLIED IF SITE CONDITIONS DO NOT ALLOW PROPER MIXING.
11. CONTRACTOR SHALL SUBMIT A LAB TEST OF THE COMPOST SAMPLE TO BE USED FOR APPROVAL. LAB TEST OF COMPOST SHALL BE TAKEN FROM THE SAME SOURCE THAT IS TO BE USED ON THIS PROJECT. LAB TEST SHALL BE TAKEN A MAXIMUM OF SIX (6) MONTHS PRIOR TO APPLICATION. THE COMPOST SHALL BE TESTED IN ACCORDANCE WITH THE U.S. COMPOSTING COUNCIL'S TEST METHODS FOR EXAMINING OF COMPOSTING AND COMPOST (TMECC) MANUAL.

SITE PREPARATION:

12. ALL DISTURBED AREAS SHALL BE RIPPED TO A MINIMUM DEPTH OF TWELVE (12) INCHES, WITH NO MORE THAN A TEN (10) INCH INTERVAL BETWEEN FURROWS. SLOPES FLATTER THAN 2:1 SHALL HAVE A WELL SETTLED SEEDBED EIGHT (8) INCHES DEEP. SLOPES 2:1 OR STEEPER SHALL BE LEFT IN A ROUGHENED CONDITION.
13. SLOPES SHALL BE FREE OF SOIL CLODS, STICKS, STONES, AND DEBRIS IN EXCESS OF FOUR (4) INCHES IN ANY DIMENSION, AND BE BROUGHT TO THE DESIRED GRADE AND LINE. SOIL PREPARATION FOR SEEDING SHALL NOT OCCUR WHEN SOIL IS FROZEN OR IN AN EXTREME WET OR DRY CONDITION.
14. DRAGGING EXCAVATOR TEETH IS NOT AN ACCEPTABLE METHOD FOR RIPPING.

SEEDING:

15. CONTRACTOR SHALL BE REQUIRED TO SUBMIT SIGNED STATEMENTS OF GUARANTEE, SEED CERTIFICATIONS, AND SEED LOT ANALYSIS FROM VENDORS WHO SUPPLY SEED AND SOIL CONDITIONER. SEED CERTIFICATION SHOULD PROVIDE INFORMATION THAT THE SEED FURNISHED IS FROM A LOT THAT HAS BEEN TESTED BY A RECOGNIZED LABORATORY FOR SEED TESTING WITHIN TWELVE (12) MONTHS PRIOR TO THE DATE OF SEEDING AND SHALL BE FREE OF NOXIOUS OR UNDESIRABLE SPECIES AS APPROVED BY THE PROJECT ECOLOGIST / LANDSCAPE ARCHITECT PRIOR TO PURCHASE. ANY SEED PURCHASED PRIOR TO APPROVAL IS DONE AT THE CONTRACTORS EXPENSE AND MAY NOT BE BILLED TO THE PROJECT.
16. ANY SUBSTITUTIONS OF SEED SPECIES MUST BE APPROVED BY THE PROJECT ECOLOGIST / LANDSCAPE ARCHITECT PRIOR TO DELIVERY OF SEED TO CONSTRUCTION SITE.
17. ALL SEED SHALL BE FURNISHED IN BAGS OR CONTAINERS CLEARLY AND PROPERLY LABELED TO SHOW THE NAME AND ADDRESS OF THE SUPPLIER, THE SEED NAME, THE LOT NUMBER, NET WEIGHT, ORIGIN, THE PERCENT OF WEED SEED CONTENT, THE GUARANTEED PERCENTAGE OF PURITY AND GERMINATION, POUNDS OF PURE LIVE SEED (PLS) OF EACH SEED SPECIES, AND THE TOTAL POUNDS OF PLS IN THE CONTAINER. ALL SEED SHALL BE GUARANTEED FOR PURITY AND GERMINATION, FREE OF NOXIOUS WEED SEED AND SUPPLIED ON A PURE LIVE SEED (PLS) BASIS.
18. CONTRACTOR IS RESPONSIBLE TO MEET THE SUCCESS RATE OF SEEDING ESTABLISHMENT AS DEFINED IN THE SPECIFICATIONS.
19. SEED MIXES SHALL BE INSTALLED WITH A 2' OVERLAP BETWEEN SEED AREAS.
20. NATIVE SEEDING SHALL BE RESTRICTED TO BETWEEN SPRING THAW AND MAY 15 AND BETWEEN OCTOBER 15 UNTIL CONSISTENT GROUND FREEZE AND SHALL NOT BE APPLIED DURING INCLEMENT WEATHER INCLUDING RAIN AND HIGH WINDS, OR WHEN SOIL MOISTURE IS TOO HIGH TO EVENLY DISTRIBUTE SEED.
21. SEEDING SHALL BE ACCOMPLISHED WITHIN 24 HOURS OF PREPARING THE SEEDING SURFACE.
22. SEEDING OR PLANTING SHALL NOT OCCUR WHEN THE GROUND IS FROZEN, WHEN FREEZING TEMPERATURES ARE FORECASTED WITHIN 24 HOURS, OR WHEN CONDITIONS ARE OTHERWISE UNSUITABLE.
23. DRILL SEEDING OR BROADCAST SEEDING SHALL BE USED FOR REVEGETATION. THE SIZE AND SLOPE OF THE DISTURBED AREA SHALL DETERMINE WHICH SEEDING METHOD(S) IS APPROPRIATE AND ACCEPTABLE. WHERE FEASIBLE, DRILL SEEDING IS THE REQUIRED METHOD. IF BROADCAST SEEDING IS EMPLOYED, EITHER BY HAND, SPREADER, OR OTHER APPROVED MEANS, THE SEEDING RATE (PLS LBS/ACRE) SHALL BE DOUBLED AS SHOWN ON THE DESIGN PLAN. HYDROMULCHING, HYDRAULIC SEEDING, AND STRAW MULCHING WILL NOT BE ACCEPTED UNLESS APPROVED BY THE PROJECT ENGINEER / LANDSCAPE ARCHITECT.
24. FOR SLOPES EQUAL TO OR LESS THAN 3:1, SEED SHALL BE PLANTED USING A RANGELAND DRILL WITH A SMALL SEED/LEGUME BOX AND AN AGITATOR BOX FOR FLUFFY OR BULKY SEED. SEED ROWS SHALL BE SPACED SEVEN (7) TO TEN (10) INCHES APART, AND PLANTED ½ INCH TO ¾ INCH DEEP. THE DRILL SHALL HAVE DOUBLE-DISK FURROW OPENERS WITH DEPTH BANDS AND PACKER WHEELS. SEEDING SHALL BE ACCOMPLISHED USING BI-DIRECTIONAL DRILLING AND WITH THE SECOND DIRECTION FOLLOWING THE SLOPE CONTOUR. THE DRILL EQUIPMENT SHALL BE CALIBRATED EACH DAY OR WHENEVER THERE IS A CHANGE IN THE SEED MIX TO ENSURE PROPER SEED DISTRIBUTION AND RATE.
25. FOR SLOPES GREATER THAN 3:1, SEED SHALL BE BROADCAST BY HAND OR MECHANICAL SPREADER. ALL SEED SOWN BY BROADCAST-TYPE SEEDERS SHALL BE RAKED IN OR COVERED WITH SOIL TO A DEPTH OF AT LEAST ¼ INCH. BROADCAST SEEDING SHALL PROCEED ON FRESHLY DISTURBED (RAKED OR HARROWED) SOIL SURFACE AND BROADCAST SEED SHALL BE IMMEDIATELY RAKED OR HARROWED INTO THE SURFACE. RAKING SHALL BE ACCOMPLISHED USING METAL-TINED GARDEN OR LANDSCAPE RAKES; NO PLASTIC LEAF RAKES SHALL BE ALLOWED. IF HARROWING IS USED, AN ENGLISH HARROW OR ITS EQUIVALENT SHALL BE REQUIRED. BROADCAST SEEDING SHALL BE AVOIDED WHEN WIND SPEED EXCEEDS 15 MILES-PER-HOUR.
26. FOLLOWING SEEDING, HEAVY MACHINERY SHALL NOT BE DRIVEN ACROSS SEEDING AREAS TO AVOID RE-COMPACTION OF SOILS.
27. ACCESS ROUTES SHALL BE REVEGETATED AFTER CONSTRUCTION. SEED AND BLANKET ALONG ACCESS SHOULD MATCH HYDROLOGIC ZONES AS SHOWN IN REVEGETATION PLANS AND AS DIRECTED BY THE PROJECT ECOLOGIST / LANDSCAPE ARCHITECT.
- EROSION CONTROL:
28. ALL EROSION CONTROL FABRIC, BLANKET, OR MATTING SHALL BE INSTALLED PERPENDICULAR TO THE CHANNEL UNLESS OTHERWISE APPROVED BY THE PROJECT ENGINEER.
29. CONTRACTOR SHALL SUBMIT SAMPLES OF THE EROSION CONTROL FABRIC, BLANKET, AND/OR MATTING, GROUND ANCHORING DEVICES, AND METHOD OF ANCHORING PRIOR TO INSTALLATION FOR APPROVAL.



REFERENCE DRAWINGS

X-1129-MDG22x34

X-1129-PR STRUCT

X-1129-PARCELS

X-1129-PR REVEG

No.

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DESCRIPTION

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DRAWN BY: EAL  
CHECKED BY: AJS

SCALE  
HORIZ N/A  
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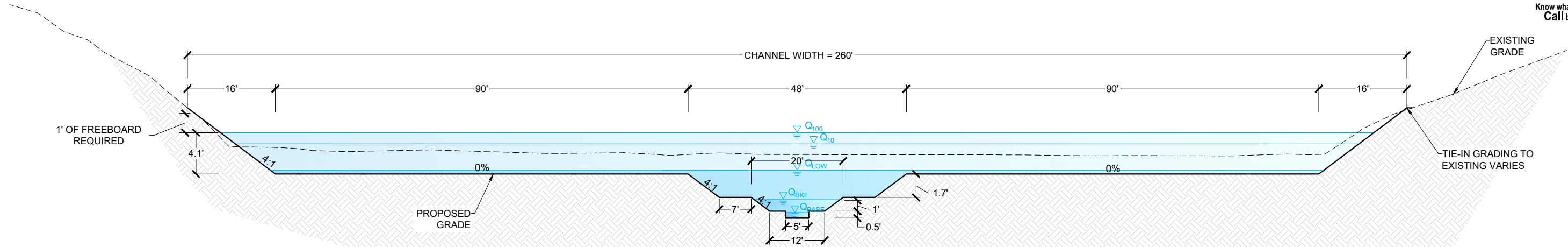
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SHEET 41 OF 47

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THE LANDHUIS COMPANY

ROLLING MEADOWS CHANNEL & FLOODPLAIN MODIFICATION  
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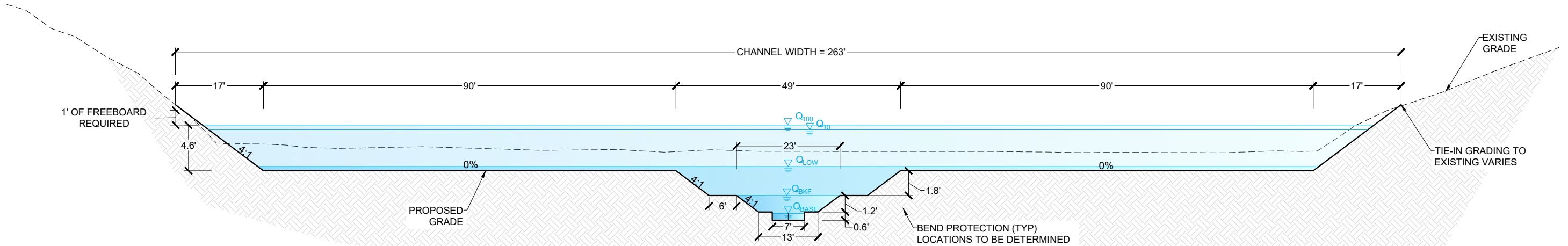
REVEGETATION PLAN  
NOTES & SCHEDULE



UPPER CHANNEL TYPICAL SECTION  
STA 92+06 TO 165+37; SLOPE = 0.25%  
NOT TO SCALE NOTE 3:1 VERTICAL EXAGGERATION

	FLOW (CFS)	VELOCITY (FT/S)	FROUDE NO.	MAX. DEPTH
Q <sub>BASE</sub>	2	1.03	0.29	0.39
Q <sub>BKF</sub>	25	1.14	0.25	1.60
Q <sub>LOW</sub>	183	1.05	0.21	3.58
Q <sub>10</sub>	2320	2.80	0.27	6.29
Q <sub>100</sub>	3600	3.29	0.28	7.32

NOTE:  
FLOODPLAIN DEPTH VARIES BASED  
ON CHANNEL HYDRAULICS.



LOWER CHANNEL TYPICAL SECTION  
STA 00+00 TO 90+98; SLOPE = 0.25%  
NOT TO SCALE NOTE 3:1 VERTICAL EXAGGERATION

	FLOW (CFS)	VELOCITY (FT/S)	FROUDE NO.	MAX. DEPTH
Q <sub>BASE</sub>	4	1.19	0.30	0.48
Q <sub>BKF</sub>	40	1.39	0.27	1.89
Q <sub>LOW</sub>	227	1.15	0.22	4.02
Q <sub>10</sub>	3729	3.33	0.29	7.74
Q <sub>100</sub>	4400	3.54	0.29	8.21

FLOW DATA SOURCES:  
Q<sub>100</sub> - FEMA FIS  
Q<sub>10</sub> - 2015 DBPS  
Q<sub>LOW</sub> - CITY/COUNTY EQUATIONS  
Q<sub>BKF</sub> - MATRIX REGRESSION EQUATIONS  
Q<sub>BASE</sub> - MIN. CONSTRUCTIBLE CHANNEL  
SEE CHANNEL DESIGN REPORT FOR ADDITIONAL DETAIL.

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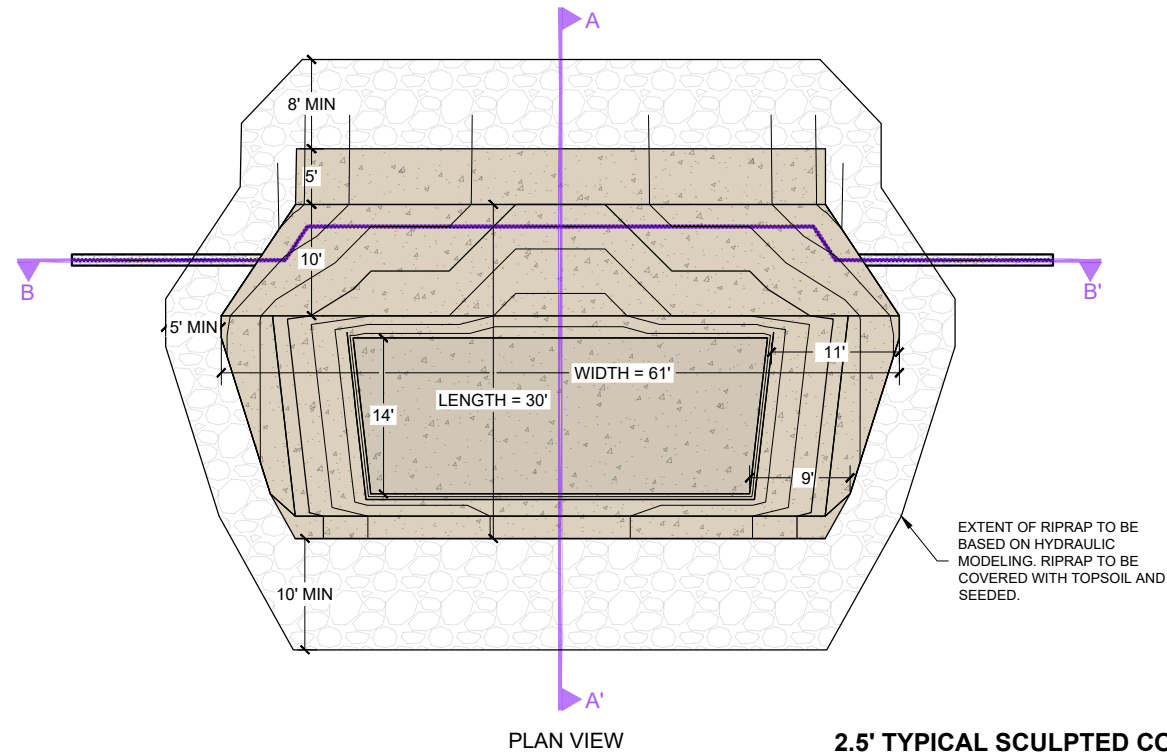
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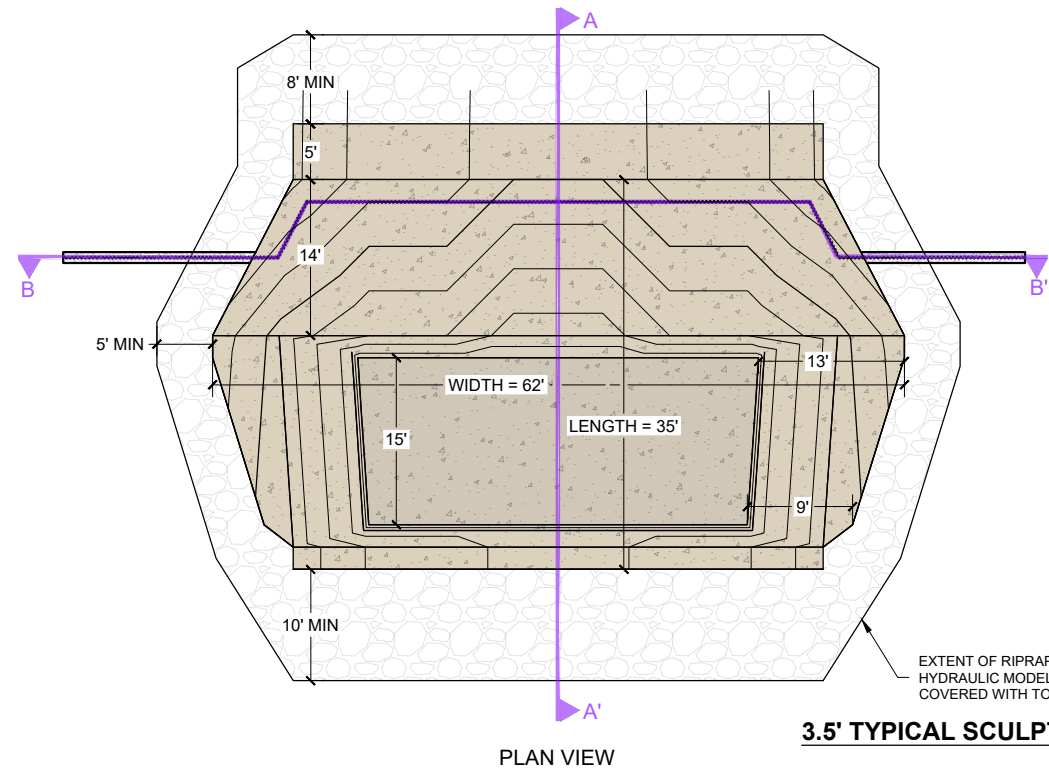
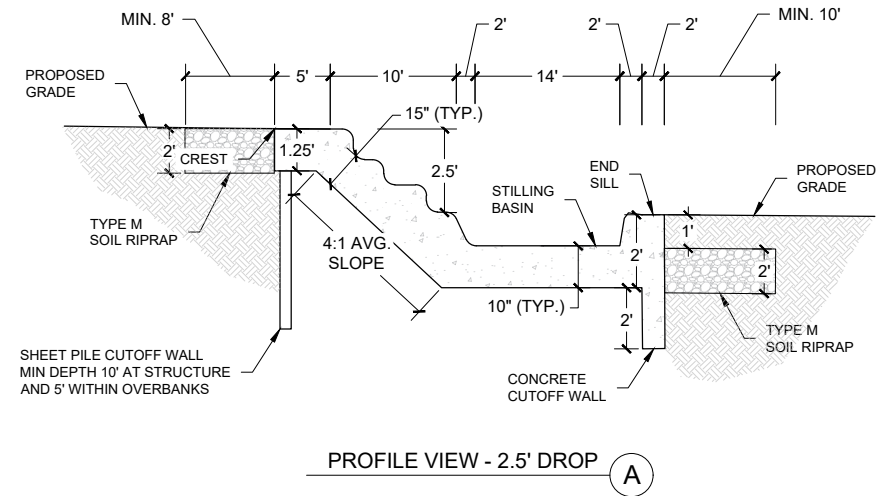
TYPICAL DESIGN CHANNEL SECTION

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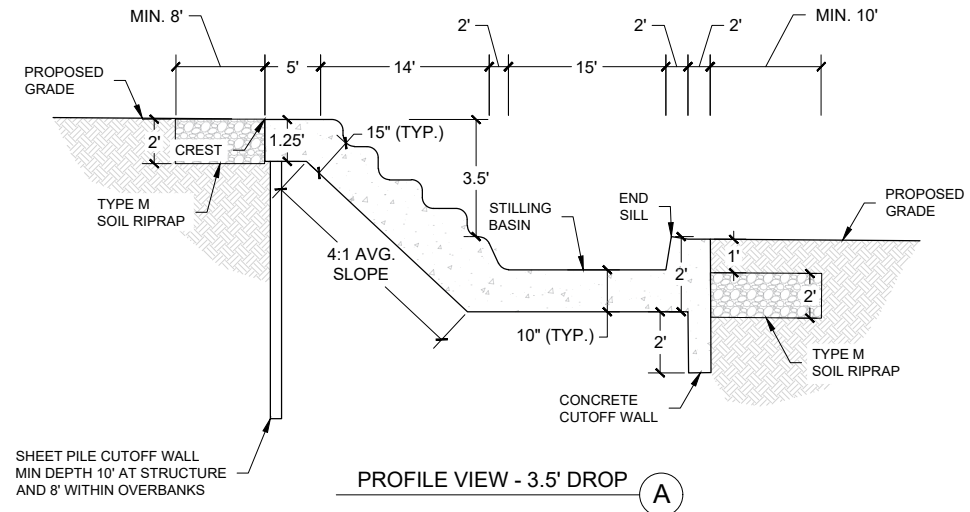




2.5' TYPICAL SCULPTED CONCRETE DROP STRUCTURE



3.5' TYPICAL SCULPTED CONCRETE DROP STRUCTURE



PLAN AND PROFILE VIEW OF TYPICAL SCULPTED CONCRETE DROP STRUCTURES

NOT TO SCALE

- NOTES:
1. DROPS SHOWN ARE TYPICAL FOR THE UPSTREAM CHANNEL SECTION. MINOR VARIATION IN THE DROPS EXIST BETWEEN UPSTREAM AND DOWNSTREAM CHANNEL SECTIONS.
  2. FOR ALL DROPS, DOWNSTREAM CUTOFF WALL DEPTH IS SET TO PROTECT AGAINST RISK OF DOWNSTREAM DEGRADATION, WITH MINIMUM DEPTH BEING 2'.
  3. STILLING BASIN OF ALL DROPS IS 1'.
  4. PROFILES FOR ALL DROPS CAN BE SEEN IN PP03-PP15. PROFILES FOR EACH CONCRETE DROP STRUCTURE WILL BE PROVIDED AT 90% DESIGN.

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X-1129-MDG22x34			
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REVISIONS			
COMPUTER FILE MANAGEMENT			
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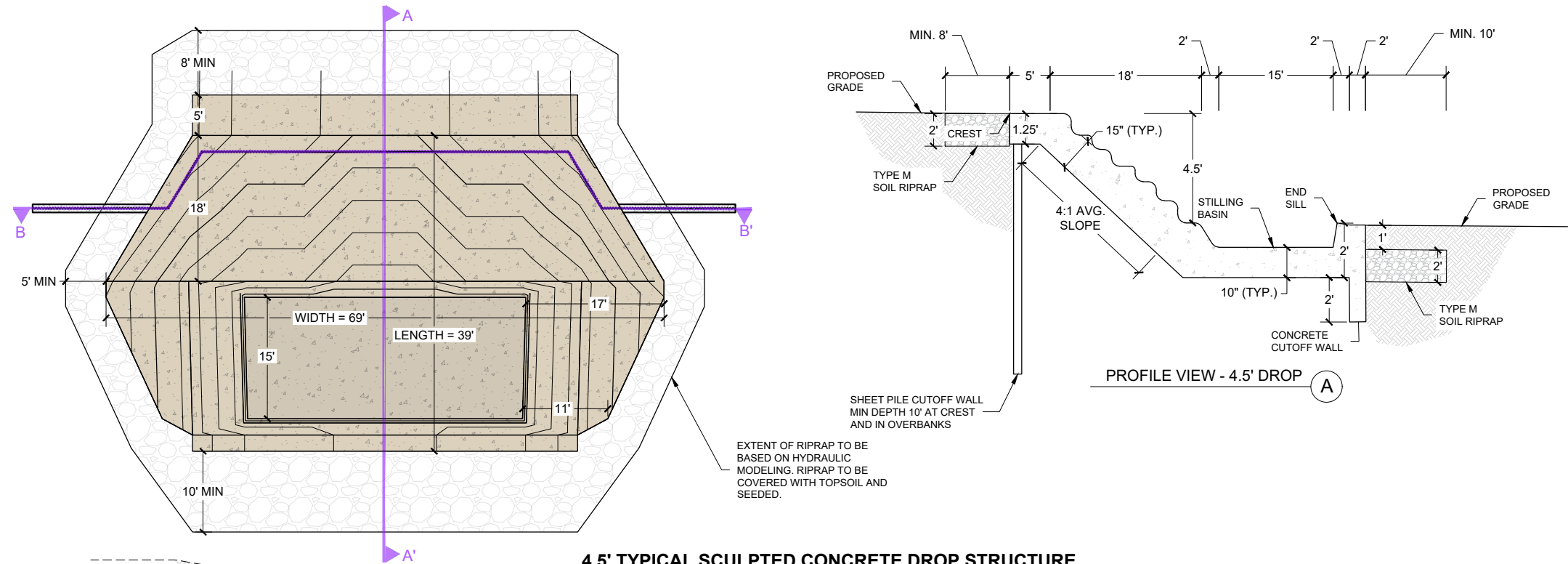
THE LANDHUIS COMPANY

ROLLING MEADOWS CHANNEL & FLOODPLAIN MODIFICATION

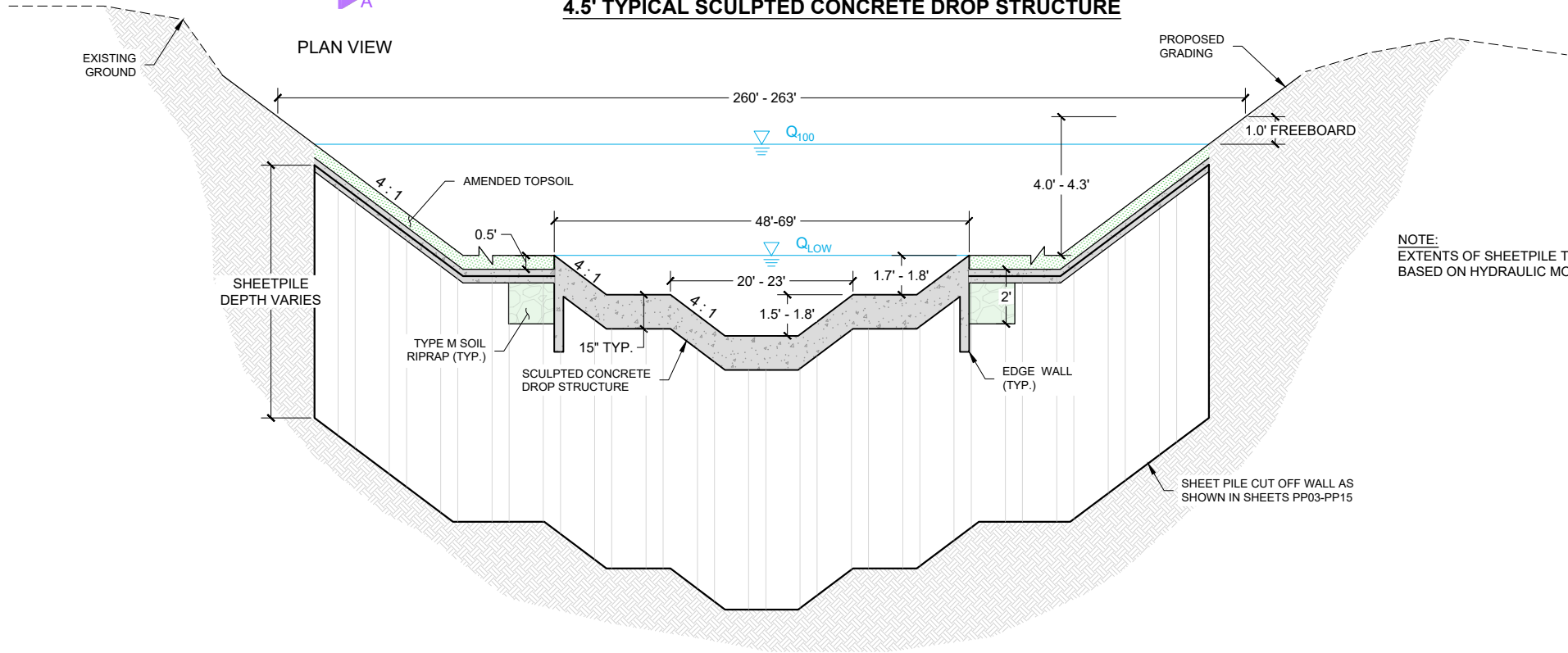
60% DESIGN PLANS

TYPICAL DROP STRUCTURE

PLAN AND PROFILE VIEWS



4.5' TYPICAL SCULPTED CONCRETE DROP STRUCTURE



CROSS SECTION VIEW - ALL DROPS

TYPICAL SCULPTED CONCRETE DROP STRUCTURES

NOT TO SCALE

REFERENCE DRAWINGS			
X-1129-MDG22x34			
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CTB FILE: Matrix(black).ctb			
PLOT DATE: March 7, 2023 1:00:25 PM			
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.			

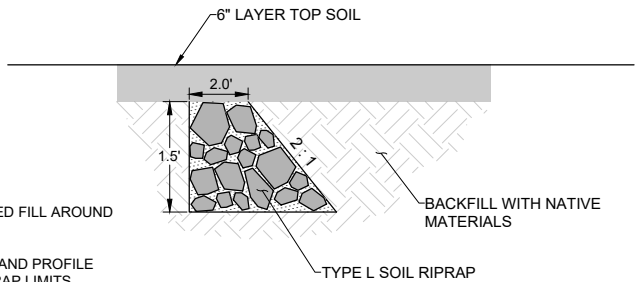
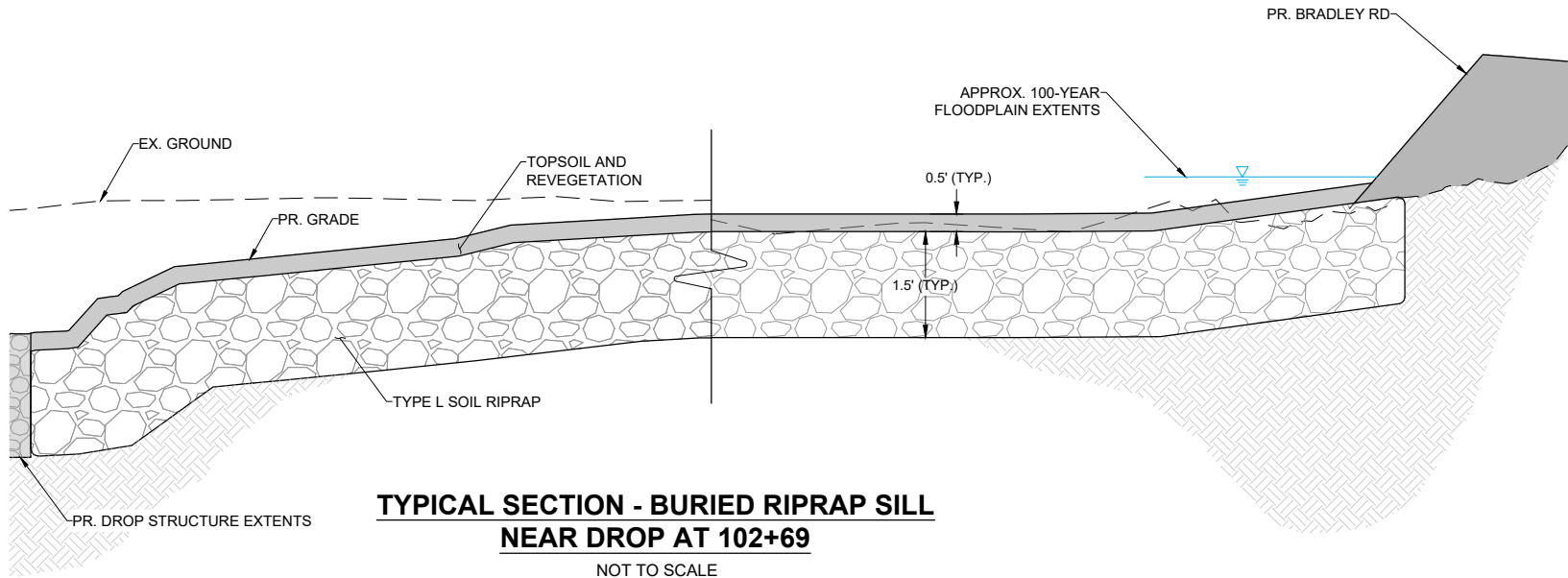
60% DESIGN PLANS

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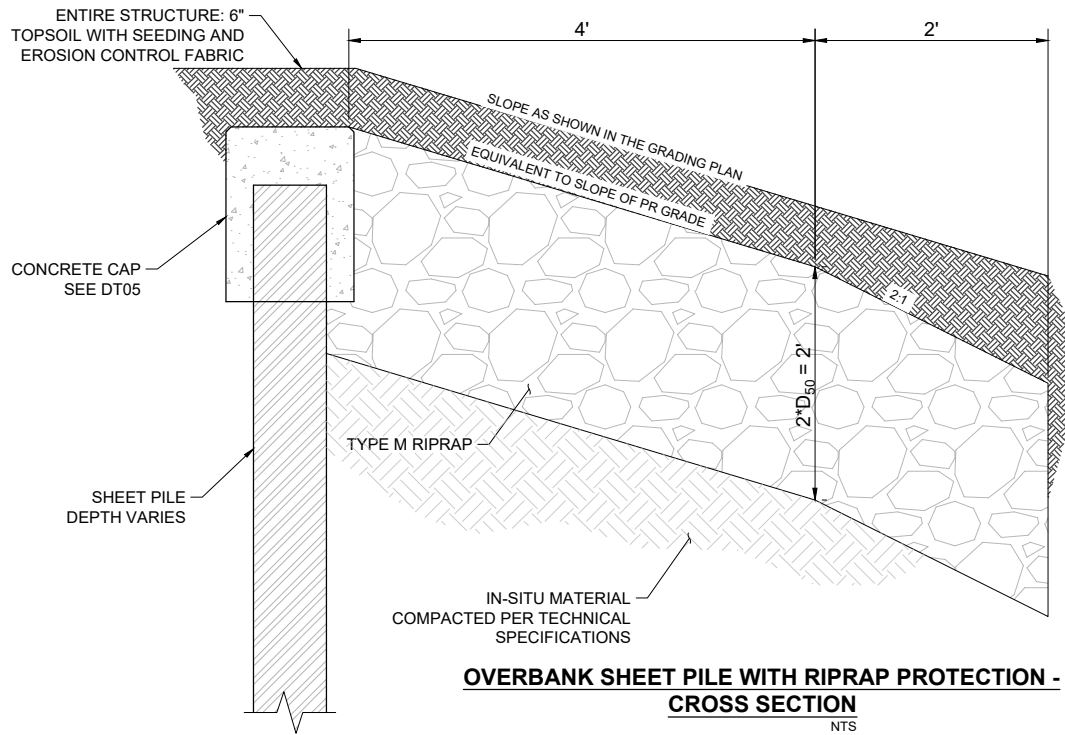
THE LANDHUIS COMPANY			
ROLLING MEADOWS CHANNEL & FLOODPLAIN MODIFICATION 60% DESIGN PLANS			
TYPICAL DROP STRUCTURE			
DESIGNED BY: TKM	SCALE: HORIZ N/A	DATE ISSUED: MARCH 2023	DRAWING No. DT03
CHECKED BY: AJS	VERT. N/A	SHEET 44 OF 47	



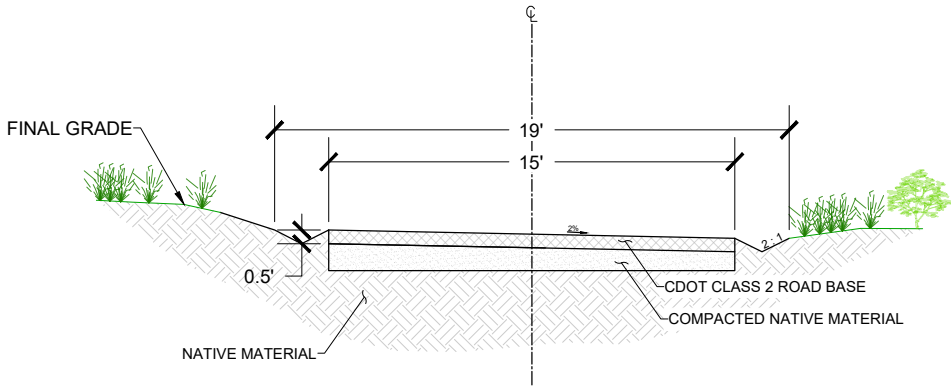


- NOTES
- 1) PLACE COMPACTED FILL AROUND RIPRAP SILLS.
  - 2) SEE SHEET PLAN AND PROFILE SHEETS FOR RIPRAP LIMITS.

TYPICAL PROFILE -  
BURIED RIPRAP SILL

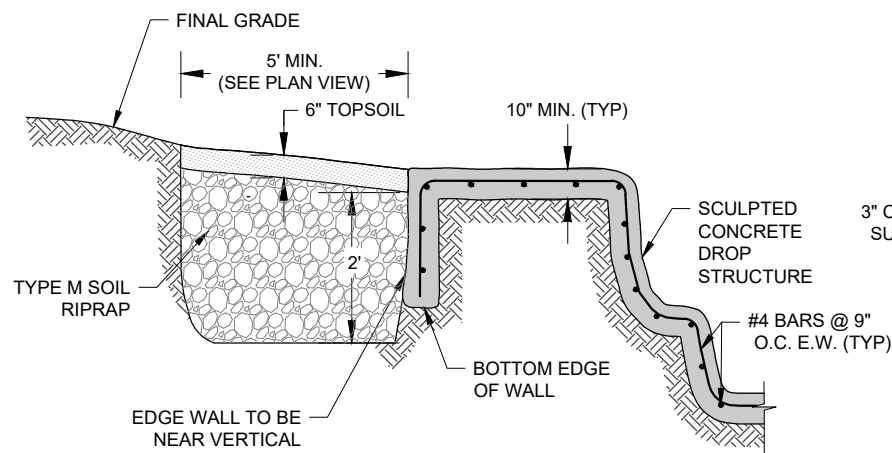


- NOTES:
1. SHEETPILE TO BE PLACED WHERE NOTED IN THE PP SHEETS.



TYPICAL COUNTY ACCESS ROAD CROSS SECTION  
NTS

REFERENCE DRAWINGS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															</
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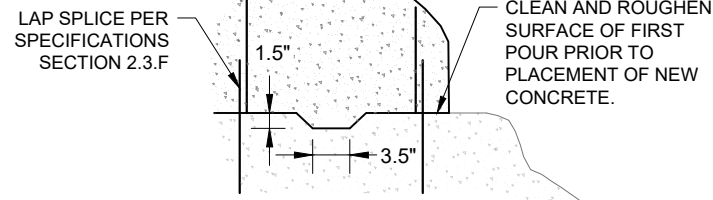


NOTES:

1. DETAIL APPLIES TO THE OUTER PERIMETER OF THE STRUCTURE.
2. SEE THE REBAR PLACEMENT DETAIL FOR RIPRAP LIMITS IN THE CHANNEL PORTION OF THE STRUCTURE.

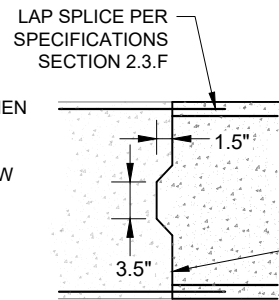
STRUCTURE EDGE WALL DETAIL (SC)

NTS



HORIZONTAL CONSTRUCTION JOINT DETAIL

NTS

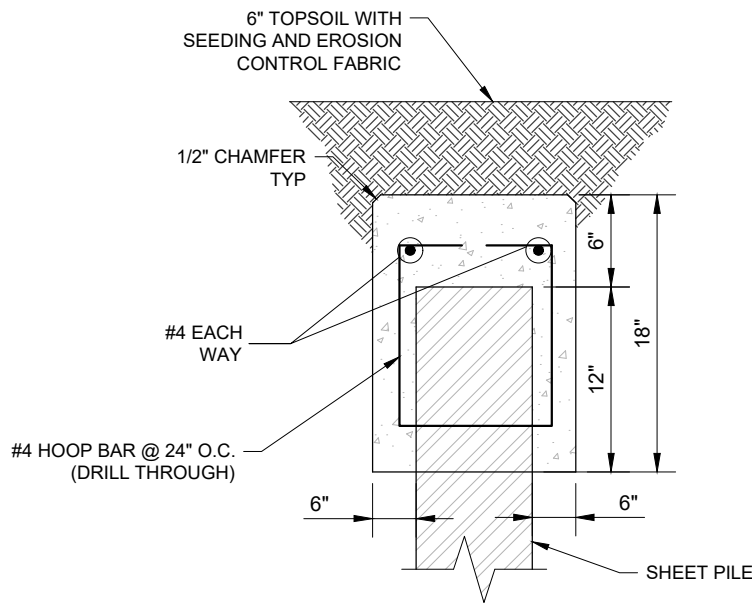


LONGITUDINAL CONSTRUCTION JOINT DETAIL

NTS

GENERAL CONSTRUCTION JOINT NOTES:

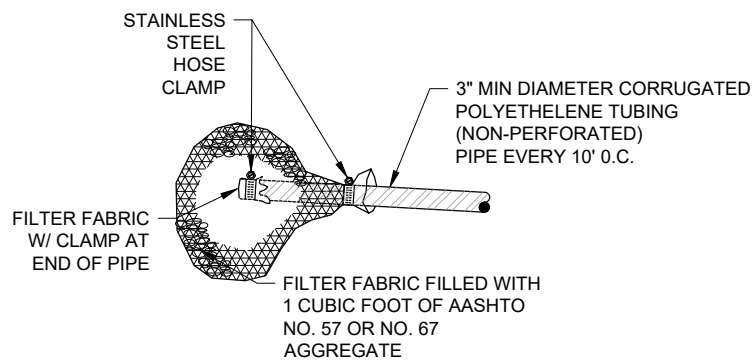
1. CONTRACTOR MUST SHOW THE LOCATION OF CONSTRUCTION JOINTS IN THE SCULPTED CONCRETE CONSTRUCTION PLAN. CONSTRUCTION JOINT LOCATIONS REQUIRE ENGINEER APPROVAL PRIOR TO INSTALLATION.
2. LONGITUDINAL JOINTS ARE NOT PERMITTED IN BASE FLOW CHANNEL
3. PLACE HORIZONTAL CONSTRUCTION JOINTS PERPENDICULAR TO THE DIRECTION OF FLOW IN THE BASE FLOW CHANNEL.



CONCRETE SHEET PILE CAP

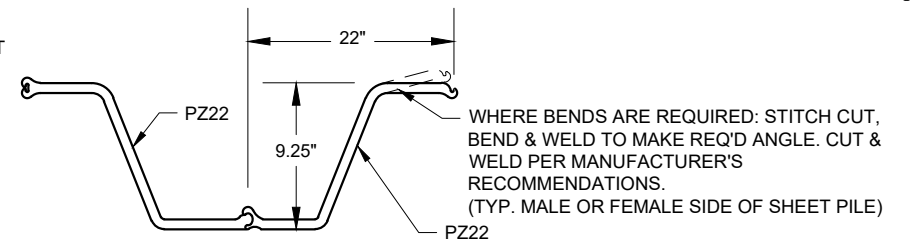
NTS

NOTE:  
CAN BE REPLACED WITH STEEL CAP



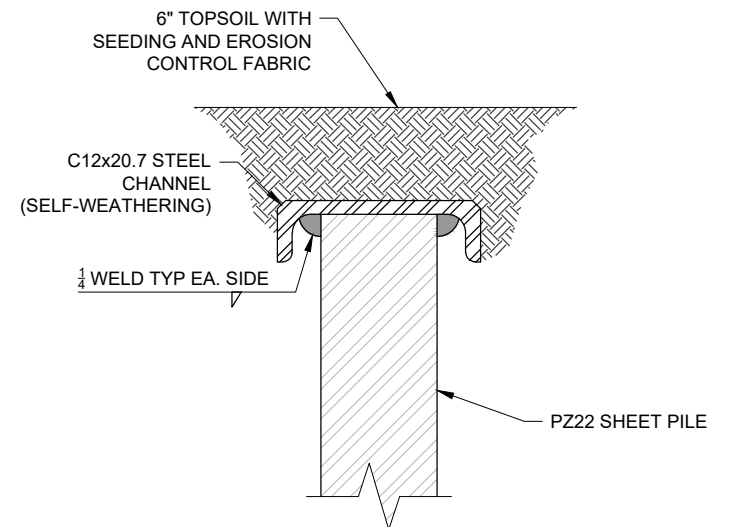
WEEP DRAINS (SCULPTED CONCRETE)

NTS



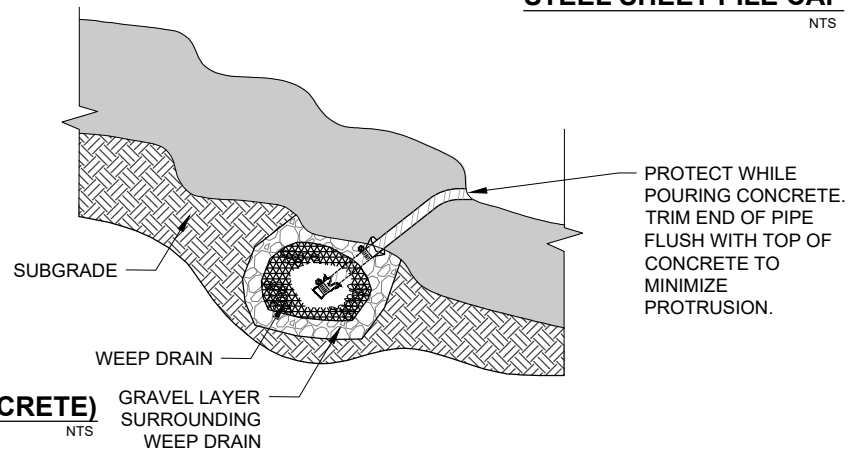
PZ22 SHEET PILE DETAIL

NTS



STEEL SHEET PILE CAP

NTS



REFERENCE DRAWINGS			
X-1129-MDG22x34			
No.	DATE	DESCRIPTION	BY
REVISIONS			
COMPUTER FILE MANAGEMENT			
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CTB FILE: Matrix(black).ctb			
PLOT DATE: March 7, 2023 1:01:19 PM			
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**60% DESIGN PLANS**

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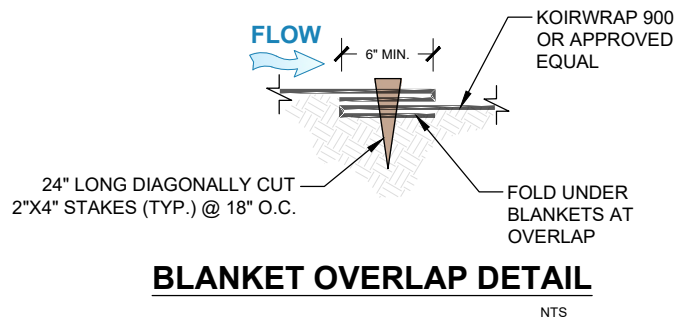
SEAL

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FOR AND ON BEHALF OF  
MATRIX DESIGN GROUP, INC.  
PROJECT No. 21.1129.009

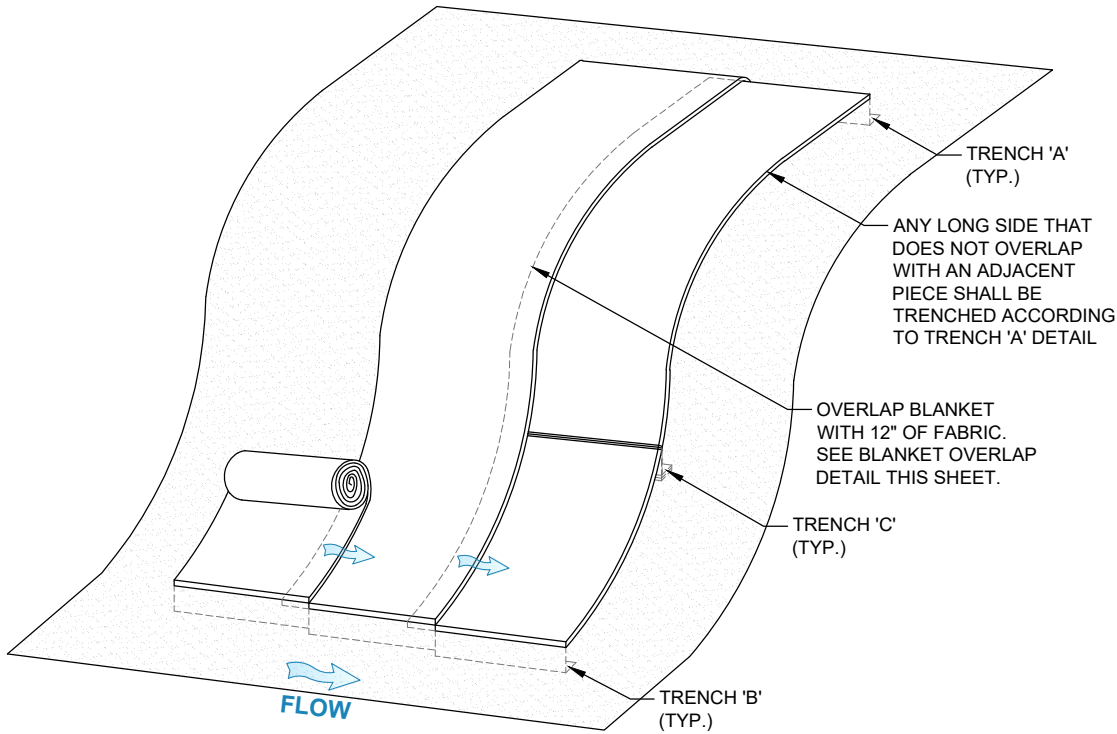
THE LANDHUIS COMPANY			
ROLLING MEADOWS CHANNEL & FLOODPLAIN MODIFICATION 60% DESIGN PLANS			
TYPICAL GRADE CONTROL DETAILS SCULPTED CONCRETE DROP STRUCTURE			
DESIGNED BY: TKM	SCALE: HORIZ N/A	DATE ISSUED: MARCH 2023	DRAWING No. DT05
CHECKED BY: AJS	VERT. N/A	SHEET 46 OF 47	



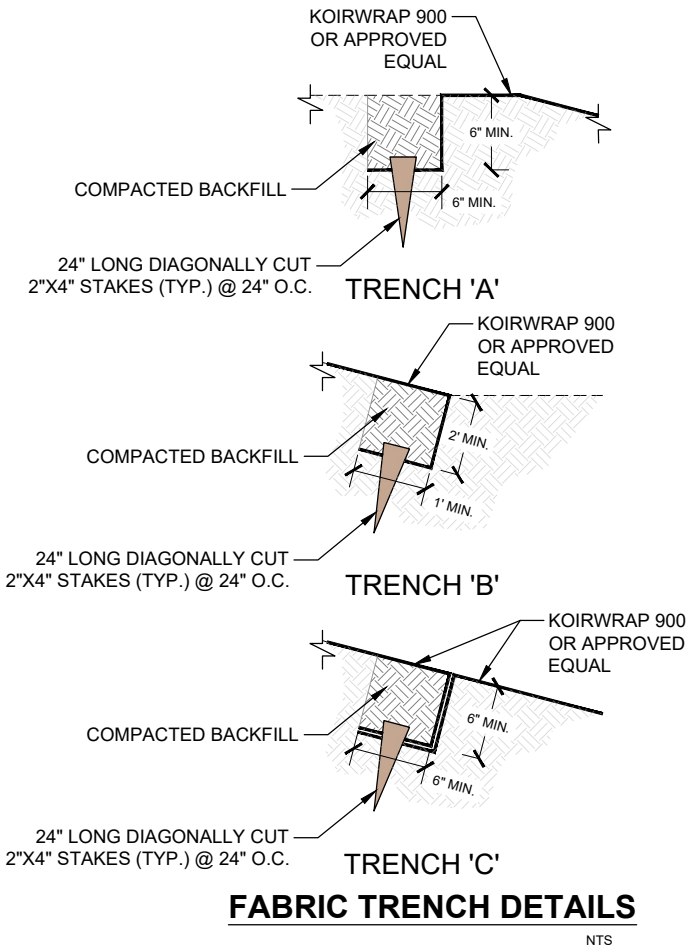


BLANKET OVERLAP DETAIL

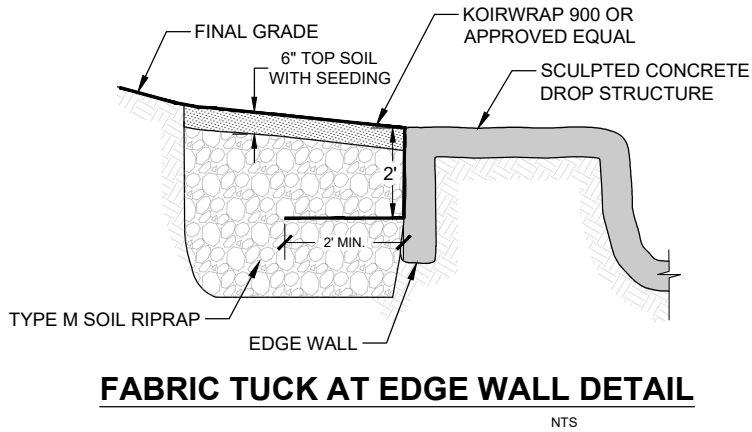
WOOD STAKE DETAIL



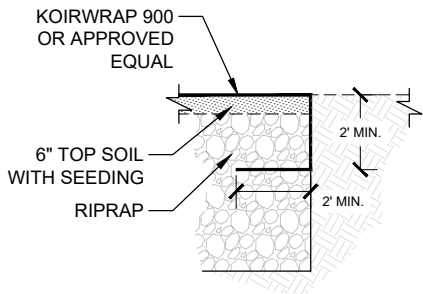
EROSION CONTROL BLANKET SLOPE INSTALLATION DETAIL



FABRIC TRENCH DETAILS



FABRIC TUCK AT EDGE WALL DETAIL



FABRIC TRENCH IN RIPRAP DETAIL

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