FUTURE FISHERIES IMPROVEMENT PROGRAM GRANT APPLICATION

All sections must be addressed, or the application will be considered invalid

I. APPLICANT INFORMATION

A. Applicant Name: Trout Unlimited – Paul Parson

Mailing Address: 312 N. Higgins, Suite 200

City: Missoula State: MT Zip: 59802

Telephone: (406) 218-8635 E-mail: paul.parson@tu.org

B. Contact Person (if different than applicant): SAME

Address:

City: State: Zip:

Telephone: E-mail:

C. Landowner and/or Lessee Name (if different than applicant): Lolo National Forest (Easement through Albert Creek Fish and Wildlife Preserve)

Mailing Address: 24 Fort Missoula Road

City: Missoula State: MT Zip: 59804

Telephone: (406) 329-3750 E-mail: traci.sylte@usda.gov

II. PROJECT INFORMATION

A. Project Name: Albert Creek Culvert Replacement

River, stream, or lake: Albert Creek

Location: Township: 14N Range: 21W Section: 16

Latitude: 46.97430 Longitude: -114.27039 *Within project (decimal degrees)*

County: Missoula

B. Purpose of Project:

The purpose of the Albert Creek Culvert Replacement project is to upgrade an undersized culvert on a Lolo National Forest system road. Albert Creek has a resident bull trout population that has limited migratory pathways due to the undersized culvert barrier.

C. Brief Project Description (attach additional information to end of application). Please include the anticipated construction schedule:

Albert Creek is a tributary to the Middle Clark Fork draining the Northern Bitterroot mountains. The confluence with the Clark Fork is about 3 miles downstream from the Harpers Bridge access near Missoula and Frenchtown. Albert Creek is a relatively small watershed with widely varying aquatic habitat conditions. The headwaters are mostly undeveloped and aquatic conditions in these reaches are high quality. The lower half of the watershed flows through private property and becomes dewatered before entering the Middle Clark Fork River. Conditions for bull trout in these reaches are poor. Albert Creek currently supports a moderate sized population of resident bull trout. Two culvert barriers exist on roads in the lower two miles of Albert Creek. These barriers pose 2-3 foot jumps that may be passable for an adult fluvial fish under certain flow regimes.

This watershed is currently mostly important as a resident population, but with removal of the barrier and improved flows, could be a more important fluvial stream. This project will replace the upper barrier with a 12-foot wide bottomless arch structure. The USFWS *Columbia Headwaters Recovery Unit Implementation Plan for Bull Trout (2015)* lists this culvert barrier as a demographic threat to bull trout and recommends replacement.

The design of the bottomless arch structure is nearing completion. TU is working with the Lolo National Forest to raise additional funding to complete the construction of the new bottomless arch in the summer of 2024. TU will manage the construction.

The construction schedule will be conducted within the fish window. In-stream construction will be completed between July 15th and September 1st, 2024.

D. What was the cause of habitat degradation and how will the project correct the cause?

The habitat is degraded at this location by the existing culvert that is undersized and limits aquatic organism passage. The project will replace the existing culvert with a properly sized bottomless arch to allow for migratory movement.

E. Length of stream or size of lake that will be treated (project extent): 100 feet

Length/size of impact, if larger than project extent (e.g., stream miles opened): 9 miles

F. Project Budget Summary:

Grant Request (Dollars):	**$**	**45,300.00**
Matching Dollars:	**$**	**197,500.00**
Matching In-Kind Services:*	**$**	**2,500.00**
**salaries of government employees are not considered matching contributions*		
Other Contributions (not part of this app)	**$**	
Total Project Cost:	**$**	**244,297.90**

G. Attach itemized (line item) budget – *see budget template*

H. Attach project location map(s) that include:

- [x] Extent of the project, including context (relation to major landmark or town)
- [x] Indication of public and private property
- [ ] Riparian buffer locations and widths (if applicable) and grazing locations

I. Attach project plans:

[x] Detailed sketches or plan views with the location and proposed restoration

[x] Pre-project photographs (GPS location strongly recommended)

[ ] If water leasing or water salvage is involved, attach a supplemental questionnaire (*https://myfwp.mt.gov/getRepositoryFile?objectID=36110*)

J. Attach letters or statements of support (e.g., landowner consent, community or public support, and FWP fisheries support). List any other project partners:

Lolo National Forest
FWP

III. MAINTENANCE AND MONITORING (attach additional information to end of application):

A. A 20-year maintenance commitment is required*. Please confirm that you will ensure this protection and describe your approach. Attach any relevant maintenance plans. Yes [x] No [ ]

**If it is a water leasing project, describe the length of the agreement.*

The Lolo National Forest is committed to the success of this AOP project with engineering, fisheries and hydrology staff.

B. Will grazing be part of or adjacent to the project? If so, describe or attach land management plans, including short term and long-term grazing regimes. If the landowner is not the applicant, please describe their involvement in the project. *If you want assistance with grazing plan development, note your need.*

No, grazing will not be part of or adjacent to the project.

C. Will the project be monitored to determine if goals were met? If so, what are the short-term and long-term plans to assess benefits and lessons learned? Were pre-project data collected? Will monitoring information be shared with FWP?

The USFS and TU will monitor road, stream and vegetation for success.

Fisheries monitoring was conducted pre-project by FWP and the Lolo National Forest. Post-project monitoring will be conducted by the Lolo National Forest and FWP.

IV. PROJECT BENEFITS (attach additional information to end of application):

A. What species of fish will benefit from this project?

Fish populations within Albert Creek include primarily native westslope cutthroat trout and bull trout. Albert Creek has a fish passage barrier approximately 2 miles downstream of the project with a population of westslope cutthroat trout and bull trout above the barrier. The lower barrier ensures non-native populations are not migrating up Albert Creek from the Clark Fork.

B. How will the project protect or enhance wild fish habitat?

The primary enhancement for fish habitat will be the replacement of a listed fish passage barrier with a properly sized bottomless arch.

C. What is the expected improvement to fish populations, both short term and long term? How might the project translate to angler success?

With the replacement of the barrier, fish populations are expected to improve in both the short term and long term. Fish will be able to migrate upstream to access 9 miles of headwater habitat. Angler success should increase due to this project as Albert Creek is a tributary to the Clark Fork.

D. Will the project increase public fishing opportunity for wild fish and, if so, how? Is public fishing allowed onsite? If not, describe how the public would access the project benefits.

Yes. The project is approximately 2 miles from the confluence with the Clark Fork River. The upgraded culvert will improve the fishery in Albert Creek. The stream is easily accessible for wade fishing.

E. Aside from angling, what local or large-scale public benefits will be realized from this project?

This project will improve water quality through road regrading, sediment reduction and improved aquatic organism passage. Additionally, the larger culvert will decrease the chance of a road-stream crossing failure due to a large hydrologic event.

F. Will the project interfere with water or property rights of adjacent landowners? (explain):

No, the project will not interfere with water or property rights of adjacent landowners.

G. Will the project result in the development of commercial recreational use on the site (including paid access)? Explain:

No. The project footprint is relatively small and public access is available to the stream on the site.

H. Is this project associated with the reclamation of past mining activity?

No.

Each approved project applicant must enter into a written agreement with Montana Fish, Wildlife & Parks specifying terms and duration of the project. The applicant must obtain all applicable permits prior to project construction. A competitive bid process must be followed when using State funds.

V. AUTHORIZING STATEMENT

I (we) hereby declare that the information and all statements to this application are true, complete, and accurate to the best of my (our) knowledge and that the project or activity complies with rules of the Future Fisheries Improvement Program.

Applicant Signature: Paul Parson *Paul Parson* Date: 11/15/23

Submittal: **Applications must be signed and received on or before November 15 and May 15 to be considered for the subsequent funding period**. Late or incomplete applications will be rejected.

Mail to:	FWP Future Fisheries Fish Habitat Bureau PO Box 200701 Helena, MT 59620-0701	Email:	Future Fisheries Coordinator FWPFFIP@mt.gov (electronic submissions must be signed) For files over 10MB, use https://transfer.mt.gov and send to mmcgree@mt.gov

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

Both tables must be completed or the application will be returned

PROJECT COSTS					CONTRIBUTIONS			
WORK ITEMS (Itemize by Category)	**NUMBER OF UNITS**	**UNIT DESCRIPTION***	**COST/UNIT**	**TOTAL COST**	**FUTURE FISHERIES REQUEST**	**MATCH (Cash or Services)****	**OTHER (Not part of this application)**	**TOTAL**
Personnel* **								
Construction Staking Survey	1	Lump Sum	$5,000.00	$ 5,000.00		5,000.00		$ 5,000.00
Design	1	Lump Sum	$20,265.40	$ 20,265.40		20,265.40		$ 20,265.40
Engineering				$ -				$ -
Permitting	1	Lump Sum				-		$ -
Oversight	10	days	$640.00	$ 6,400.00		6,400.00		$ 6,400.00
Maintenance						-		$ -
			Sub-Total	$ 31,665.40	$ -	$ 31,665.40	$ -	$ 31,665.40
Travel								
Mileage	500	miles	$0.66	$ 327.50		327.50		$ 327.50
Per diem		days		$ -		-		$ -
			Sub-Total	$ 327.50	$ -	$ 327.50	$ -	$ 327.50
Construction Materials** **								
Culvert Backfill	215	CY	$65.00	$ 13,975.00		13,975.00		$ 13,975.00
Structural Excavation	1	Lump Sum	$7,500.00	$ 7,500.00		7,500.00		$ 7,500.00
Placed Rip Rap	20	CY	$95.00	$ 1,900.00		1,900.00		$ 1,900.00
Geocell Footing Stabilization	75	SY	$110.00	$ 8,250.00	8,250.00			$ 8,250.00
Crushed Aggregate, Surfacing	150	CY	$65.00	$ 9,750.00		9,750.00		$ 9,750.00
Unclassified Borrow	600	CY	$55.00	$ 33,000.00		33,000.00		$ 33,000.00
Precast Concrete Footing	122	LF	$275.00	$ 33,550.00	33,550.00			$ 33,550.00
12' x 6'-3" Structural Plate Arch	60	LF	$1,050.00	$ 63,000.00		63,000.00		$ 63,000.00
Streambed Rock	20	CY	$100.00	$ 2,000.00		2,000.00		$ 2,000.00
Bank Rock	35	CY	$100.00	$ 3,500.00	3,500.00			$ 3,500.00
Rock Structures	20	CY	$200.00	$ 4,000.00		4,000.00		$ 4,000.00
Slash Filter Windrow	125	LF	$8.00	$ 1,000.00		1,000.00		$ 1,000.00
								$ -
				$ -				$ -
			Sub-Total	$ 181,425.00	$ 45,300.00	$ 136,125.00	$ -	$ 181,425.00
Equipment, Labor, and Mobilization								
Mobilization	1	Lump Sum	$19,800.00	$ 19,800.00		19,800.00		$ 19,800.00
Dewatering, Soil Erosion and Pollution Control	1	Lump Sum	$3,000.00	$ 3,000.00		3,000.00		$ 3,000.00

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

Removal of Existing Pipe	1	Each	$3,000.00	$ 3,000.00		3,000.00		$ 3,000.00
Drainage Excavation	1	Each	$1,000.00	$ 1,000.00		1,000.00		$ 1,000.00
Large Dump Truck	16	Hour	$110.00	$ 1,760.00		1,760.00		$ 1,760.00
Excavator	16	Hour	$145.00	$ 2,320.00		2,320.00		$ 2,320.00
								$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
			Sub-Total	$ 30,880.00	$ -	$ 30,880.00	$ -	$ 30,880.00
			TOTALS	$ 244,297.90	$ 45,300.00	$ 198,997.90	$ -	$ 244,297.90

OTHER REQUIREMENTS:

All of the columns in the budget table and the matching contribution table MUST be completed appropriately or the application will be invalid. Please see the example budget sheet for additional clarification.

*Units = feet, hours, inches, etc. Do not use lump sum unless there is no other way to describe the costs.

**Can include in-kind materials. Justification for in-kind labor (e.g. hourly rates used). Do not use government salaries as match. Describe here or in text.

***The Review Panel suggests that design and oversight costs associated with a proposed project not exceed 15% of the total project budget. If design and oversight costs are in excess of 15%, applications may require a justification or minimum of two competitive bids for the cost of undertaking the project. For projects that include a maintenance request, it must not exceed 10% of the total project cost.

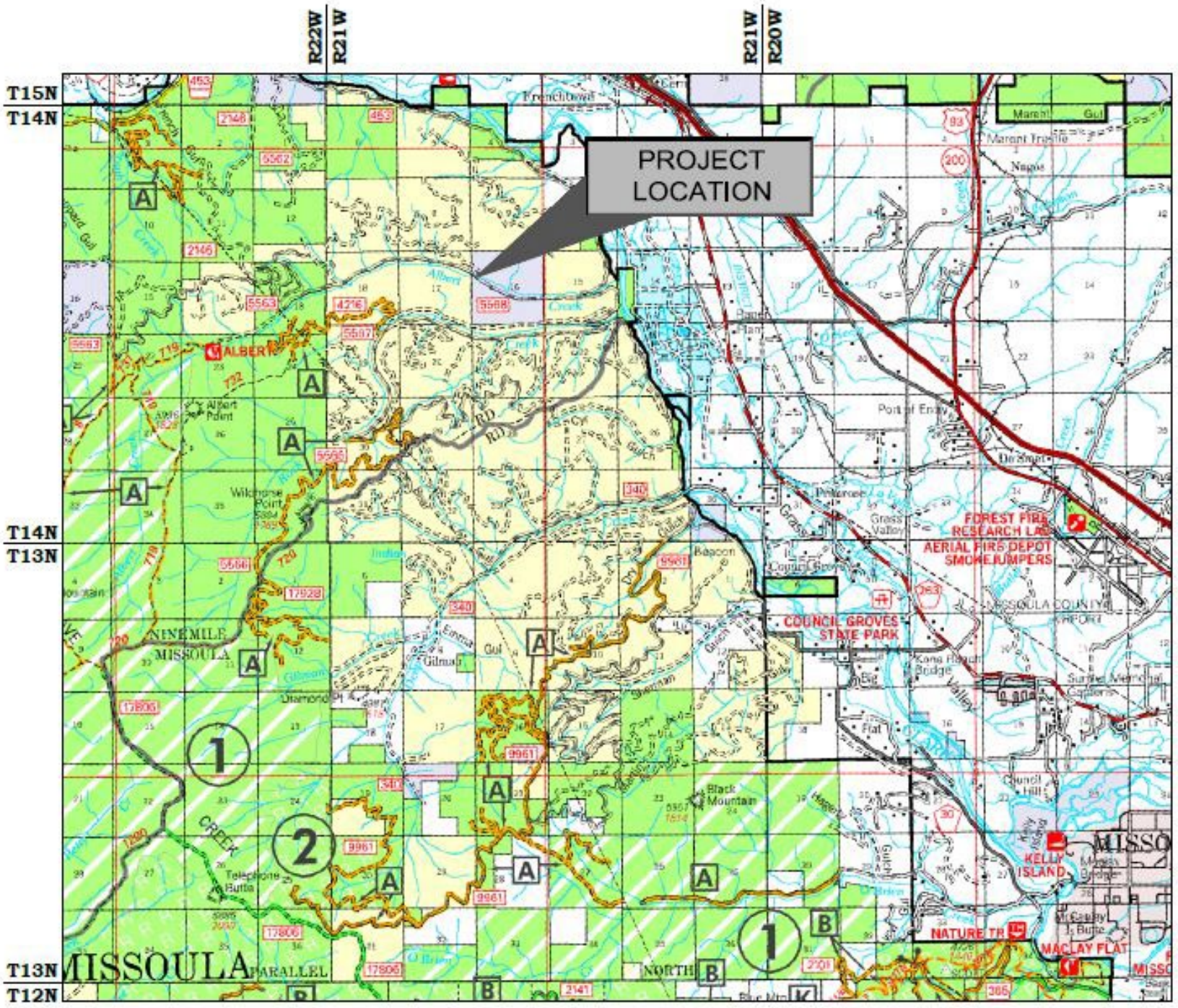
****The Review Panel recommends a maximum fencing cost of $1.50 per foot. Additional costs may be the responsibility of the applicant and/or partners.

Additional details:

APPLICATION MATCHING CONTRIBUTIONS

(do not include requested funds or contributions not associated with the application)

CONTRIBUTOR	IN-KIND	CASH	TOTAL	Secured? (Y/N)
USFS	$ -	$ 195,000.00	$ 195,000.00	Y
Westslope Chapter Of Trout Unlimited	$ -	$ 2,500.00	$ 2,500.00	N
Trout Unlimited	$ 2,500.00		$ 2,500.00	Y
		$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
TOTALS	$ 2,500.00	$ 197,500.00	$ 200,000.00	



VICINITY MAP

Albert Creek Existing 72”x43” Fish Passage Barrier (Downstream)

Albert Creek Existing 72”x43” Fish Passage Barrier (Upstream)

United States Department of Agriculture **Forest Service** **Lolo National Forest** **Building 24, Fort Missoula Missoula, MT 59804-7297 406 329-3750**

November 10, 2023

Future Fisheries Improvement Program
c/o Michelle McGree
Montana Fish, Wildlife & Parks
P.O. Box 200701
1420 E. 6th Avenue
Helena, MT 59620-0701

RE: Trout Unlimited Funding Request for Albert Creek Culvert Replacement

Dear Panel Members:

Please accept this letter as the Lolo National Forest's support and endorsement of Trout Unlimited's application for funding for a culvert replacement on Albert Creek, a primary, northernly flowing tributary to the Middle Clark Fork River just west of Missoula, Montana. To date, the Lolo National Forest, LNF, has secured $195,000 for this project, which is replacing a substantially undersized culvert and fish barrier with a 72" x 43" bottomless arch meeting our stream simulation policy standards. We're in need of matching funding to meet conditions of funding initiatives for partnerships and to address total funding needs.

Albert Creek is a cold-water stream of high native fish importance for the LNF, and with climate change scenarios, it will become of even greater importance. Working with Trout Unlimited, we've had great success on many projects across the forest over the years. We expect this project to have similar great results towards major fisheries connectivity benefits, and also towards reducing future risks of sediment delivery from culvert failure. This project has been on our priority list for many years, and we are excited to finish.

We really appreciate your consideration,

Sincerely,

/s/ Traci Sylte

Traci L. Sylte, PE/hydrologist
Watershed Program Manager
Lolo National Forest

/s/ Josh Schulze

Josh Schulze, Fisheries Biologist
Fisheries Program Manager
Lolo National Forest

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE, REGION 1

CONSTRUCTION PLANS FOR:

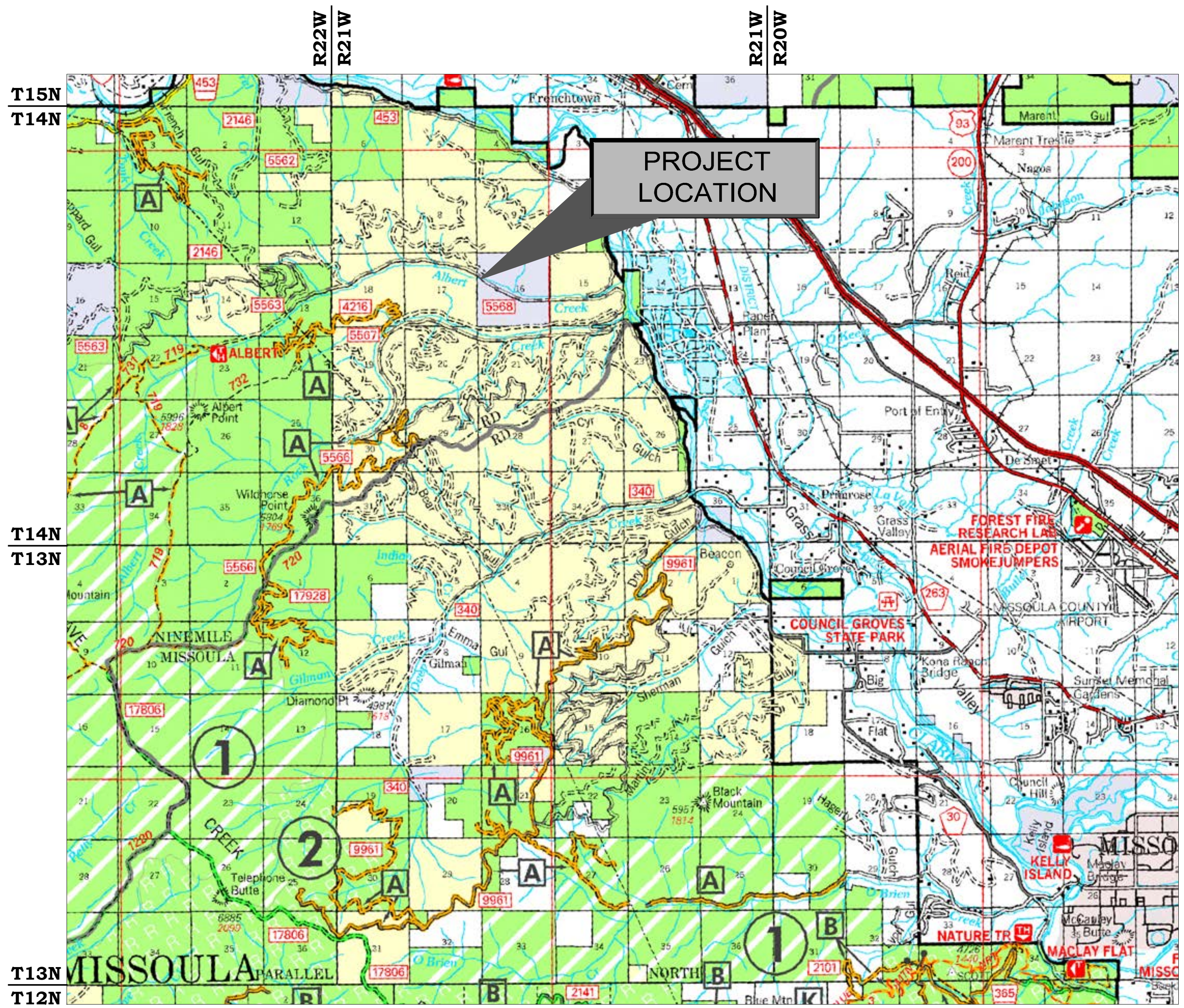
ALBERT CREEK AOP CULVERT REPLACEMENT

NATIONAL FOREST SERVICE ROAD 5568 MILEPOST 1.5
LOLO NATIONAL FOREST
NINEMILE RANGER DISTRICT

LOCATION MAP

INDEX TO SHEETS

NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATED QUANTITIES & GENERAL NOTES
3	PROJECT CONTROL & LAYOUT POINTS
4	TYPICAL ROAD SECTIONS & FILL WARPING DETAILS
5	DRAIN DIP DETAILS
6	ROAD PLAN & PROFILE
7	SPUR ROAD PLAN & PROFILE
8	CULVERT GENERAL LAYOUT
9	STRUCTURE EXCAVATION & BACKFILL
10	FOOTING DETAILS
11	PRECAST DETAILS
12	STREAM SIMULATION DETAILS
13	SLASH FILTER WINDROW DETAIL
14	DEWATERING REQUIREMENTS
XS1 - XS3	ROAD CROSS-SECTIONS



VICINITY MAP

APPROVED:

FOREST SUPERVISOR — DATE
LOLO NATIONAL FOREST

RECOMMENDED:

FOREST ENGINEER — DATE
LOLO NATIONAL FOREST

RECOMMENDED:

DISTRICT RANGER — DATE
NINEMILE RANGER DISTRICT

DRAFT FINAL PLANS
NOT FOR CONSTRUCTION

MATERIAL SOURCES

GOVERMNET FURNISHED

THERE ARE NO GOVERNMENT FURNISHED MATERIALS FOR THIS PROJECT

DJ&A ENGINEERS PLANNERS SURVEYORS

SUMMARY OF ESTIMATED QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY		COMMENTS
15101	MOBILIZATION	LUMP SUM	ALL		INCLUDES TEMPORARY TRAFFIC CONTROL.
15221	CONSTRUCTION SURVEY AND STAKING	LUMP SUM	ALL		LICENSED SURVEYOR REQUIRED
15713	DEWATERING & SOIL EROSION & POLLUTION CONTROL	LUMP SUM	ALL		SEE GENERAL NOTES.
20301	REMOVAL OF EXISTING CORRUGATED STEEL PIPE, DISPOSAL METHOD A	EACH	1		
20425	DRAINAGE EXCAVATION, TYPE DRAIN DIP	EACH	1		
20411*	UNCLASSIFIED BORROW	CUBIC YARD	600	CQ	COMMERCIAL SOURCE. IN-PLACE QUANTITY, NOT ADJUSTED FOR SHRINK/SWELL. MATERIAL CONSERVED FROM EXCAVATION MEETING 704.06 MAY BE USED OUTSIDE OF CULVERT BACKFILL ZONE.
20803*	CULVERT BACKFILL	CUBIC YARD	215	CQ	COMMERCIAL SOURCE. QUANTITY IS IN-PLACE AND NOT ADJUSTED FOR SHRINK/SWELL.
20806	STRUCTURAL EXCAVATION	LUMP SUM	ALL		SEE SHEET 9
25101*	PLACED RIPRAP, CLASS 2	CUBIC YARD	20	CQ	COMMERCIAL SOURCE
27201*	GEOCELL FOOTING STABILIZATION, 6" DEPTH	SQUARE YARD	75		INCLUDES COARSE GRANULAR BACKFILL (COMMERCIAL SOURCE)
30207*	CRUSHED AGGREGATE, SURFACING	CUBIC YARD	150	CQ	COMMERCIAL SOURCE. IN-PLACE QUANTITY
55217*	PRECAST CONCRETE MEMBER, CULVERT FOOTING	LINEAR FOOT	122	CQ	
60303*	12'-0" SPAN, 6'-3" RISE CORRUGATED STEEL STRUCTURAL PLATE ARCH, 0.111" THICKNESS	LINEAR FOOT	60	CQ	
62201A	EQUIPMENT RENTAL, LARGE DUMP TRUCK	HOUR	16		
62201B	EQUIPMENT RENTAL, HYDRAULIC EXCAVATOR WITH THUMB	HOUR	16		
64801*	PLACED STREAMBED SIMULATION ROCK, BED CLASS 4, METHOD A	CUBIC YARD	20	CQ	COMMERCIAL SOURCE.MATERIAL MEETING THE SPECIFIED GRADATION SALVAGED FROM THE EXCAVATION MAY ALSO BE USED.
64804*	PLACED CHANNEL ROCK FOR CULVERT BANKS, CLASS CR-1, METHOD A	CUBIC YARD	35	CQ	COMMERCIAL SOURCE. FOR USE IN CHANNEL BANK CONSTRUCTION. APPROPRIATELY SIZED ROCKS SALVAGED FROM THE EXCAVATION MAY ALSO BE USED.
64806*	PLACED CHANNEL ROCK STRUCTURES, CLASS CR-2, METHOD A	CUBIC YARD	20	CQ	COMMERCIAL SOURCE. FOR USE IN ROCK WEIR & RANDOM ROCK CONSTRUCTION. APPROPRIATELY SIZED ROCKS SALVAGED FROM THE EXCAVATION MAY ALSO BE USED.
67050	SLASH FILTER WINDROW	LINEAR FOOT	125		GOVERNMENT SOURCE. SEE DETAIL ON SHEET 13

*CQ = CONTRACT QUANTITY (SEE SECTION 109.02(B) OF THE STANDARD SPECIFICATIONS)

GENERAL NOTES

DESIGN: THIS STRUCTURE IS DESIGNED FOR HL-93 LIVE LOADING IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION.

HYDROLOGY AND HYDRAULICS: THIS STRUCTURE HAS BEEN DESIGNED TO PASS THE ANNUAL PEAK FLOW HAVING A 100-YEAR RECURRENCE INTERVAL (Q100) OF 326 CFS WITH A HEADWATER DEPTH TO CULVERT RISE RATIO LESS THAN 0.8. THE 2-YEAR RECURRENCE INTERVAL (Q2) FLOW IS 86.7 CFS.

SPECIFICATIONS: CONSTRUCT THE PROJECT IN COMPLIANCE WITH FEDERAL HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROAD AND BRIDGES ON FEDERAL HIGHWAY PROJECTS (FP-14) AND APPLICABLE FOREST SERVICE SUPPLEMENTAL SPECIFICATIONS.

DEWATERING & EROSION CONTROL PLAN: SUBMIT A SOIL EROSION AND SEDIMENT CONTROL PLAN ALONG WITH A DEWATERING PLAN TO THE CONTRACTING OFFICER FOR APPROVAL AT LEAST SEVEN (7) DAYS PRIOR TO BEGINNING WORK. SEE SECTION 157 OF THE SUPPLEMENTAL SPECIFICATIONS FOR DETAILS. CONSTRUCT TEMPORARY MEANS TO DIVERT THE FLOW OF THE LIVE STREAM AS NECESSARY TO PERFORM WORK. DO NOT PUMP WATER FROM EXCAVATIONS DIRECTLY INTO THE LIVE STREAM.

DISPOSAL: ALL MATERIALS DESIGNATED FOR REMOVAL BECOME THE PROPERTY OF THE CONTRACTOR AND ARE TO BE DISPOSED OF BY REMOVING FROM THE FOREST IN AN ENVIRONMENTALLY SAFE MANNER IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS.

TEMPORARY TRAFFIC CONTROL: SUBMIT A TEMPORARY TRAFFIC CONTROL PLAN TO THE CONTRACTING OFFICER FOR APPROVAL AT LEAST 30 DAYS PRIOR TO INTENDED USE.

IN-STREAM WORK: ALL IN-STREAM WORK WILL BE DONE BETWEEN JULY 15TH AND SEPTEMBER 1ST, OR WHEN THE CHANNEL IS DRY. ALLOWANCE SHALL BE GIVEN TO THE FOREST SERVICE TO CAPTURE AND REMOVE FISH AND OTHER AQUATIC ORGANISMS FROM WITHIN THE CONSTRUCTION WORK AREA PRIOR TO AND DURING WORK ACTIVITIES.

CONCRETE: USE CLASS A(AE) CONCRETE FOR PRECAST MEMBERS. THE REQUIRED 28-DAY COMPRESSIVE STRENGTH (F'S) IS 5,000 PSI WITH AN ENTRAINED AIR CONTENT OF 5% ± 1%. FINISH ALL PRECAST ELEMENTS WITH AN ORDINARY SURFACE FINISH. MAKE ALL CONCRETE IN ACCORDANCE WITH AN APPROVED MIX DESIGN. CHAMFER ALL EXPOSED EDGES OF CONCRETE 3/4" AND THE FILLET ALL ACUTE ANGLES 3" UNLESS OTHERWISE NOTED.

REINFORCING STEEL: USE REINFORCING STEEL OF THE DEFORMED TYPE CONFORMING TO AASHTO M31 (ASTM A615) GRADE 60. CONCRETE COVER IS AS SHOWN; WHERE NOT SHOWN IT MUST CONFORM TO AASHTO. CUT AND BEND REINFORCING STEEL IN CONFORMANCE WITH ACI 315. LAP SPLICE BARS 2' MIN.

HARDWARE AND STRUCTURAL STEEL: USE SHAPES, PLATES AND BARS MEETING THE REQUIREMENTS OF ASTM A36, UNLESS OTHERWISE SPECIFIED IN THESE PLANS. USE HARDWARE MEETING THE REQUIREMENTS OF ASTM A325, EXCEPT AS NOTED IN THE DRAWINGS.

WELDING: WELD IN ACCORDANCE WITH THE STRUCTURAL WELDING CODE, AWS D1.1. A CERTIFIED WELDER IS REQUIRED.

POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1000	1029423.63	779016.07	3430.93	BOTTOM OF FOOTING - UPSTREAM
1001	1029410.38	779015.85	3430.93	BOTTOM OF FOOTING - UPSTREAM
1002	1029422.62	779077.06	3429.99	BOTTOM OF FOOTING - DOWNSTREAM
1003	1029409.37	779076.84	3429.99	BOTTOM OF FOOTING - DOWNSTREAM

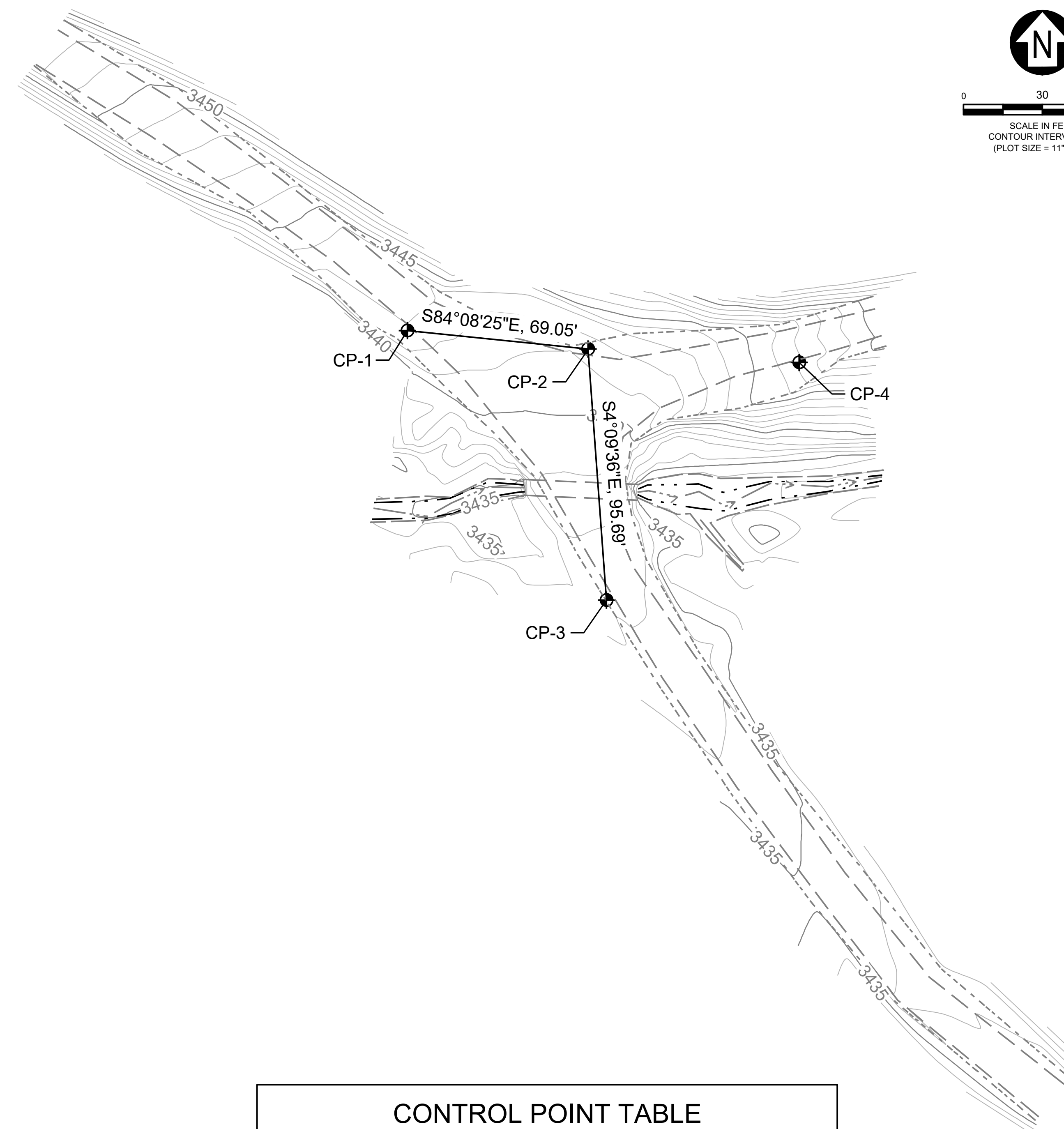
CULVERT LAYOUT POINTS

SEE SHEET 8 FOR LOCATION OF CULVERT INVERT POINTS

CENTERLINE POINTS

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
7000	1029243.20	779161.55	3434.11	STA 10+20.00 - BEGIN ROAD CONSTRUCTION
7001	1029267.23	779143.59	3434.83	STA 10+50.00 - ROAD CENTERLINE
7002	1029287.25	779128.62	3435.55	STA 10+75.00 - ROAD CENTERLINE
7003	1029307.27	779113.65	3436.46	STA 11+00.00 - ROAD CENTERLINE
7004	1029335.88	779092.27	3438.09	STA 11+35.72 - PC
7005	1029347.62	779084.13	3438.85	STA 11+50.00 - BEGIN TRANSITION
7006	1029358.90	779077.40	3439.59	STA 11+63.14 - PT
7007	1029391.16	779059.58	3441.66	STA 12+00.00 - ROAD CENTERLINE
7008	1029395.54	779057.16	3441.91	STA 12+05.00 - END TRANSITION
7009	1029407.98	779050.28	3442.56	STA 12+19.21 - PC
7010	1029416.52	779045.36	3442.95	STA 12+29.07 - ROAD CENTERLINE AT CULVERT
7011	1029434.01	779033.87	3443.62	STA 12+50.00 - SPUR ROAD CONNECTION
7012	1029453.64	779018.41	3444.13	STA 12+75.00 - ROAD CENTERLINE
7013	1029471.74	779001.18	3444.57	STA 13+00.00 - ROAD CENTERLINE
7014	1029485.01	778986.22	3445.00	STA 13+20.00 - BEGIN DRAIN DIP
7015	1029495.85	778972.10	3445.50	STA 13+37.81 - PT
7016	1029517.50	778941.86	3445.65	STA 13+75.00 - ROAD CENTERLINE
7017	1029532.06	778921.53	3446.85	STA 14+00.00 - ROAD CENTERLINE
7018	1029537.88	778913.40	3447.43	STA 14+10.00 - END DRAIN DIP
7019	1029543.70	778905.27	3447.70	STA 14+20.00 - END ROAD CONSTRUCTION

ROAD CENTERLINE POINTS



N

0 30 60

SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 11" x 17")

CONTROL POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP-1	1029477.34	778981.34	3442.84	SET RPC
CP-2	1029470.30	779050.03	3441.31	SET RPC
CP-3	1029374.85	779056.97	3436.92	SET RPC
CP-4	1029465.22	779130.24	3446.91	SET RPC

SURVEY CONTROL POINTS

SET-RPC = REBAR WITH PLASTIC CAP SET BY DJ&A

REVISION	DATE	DESCRIPTION
-	-	-

DESIGNER TO PROJ. NO. 7394
DRAWN TO DATE SEP-2023
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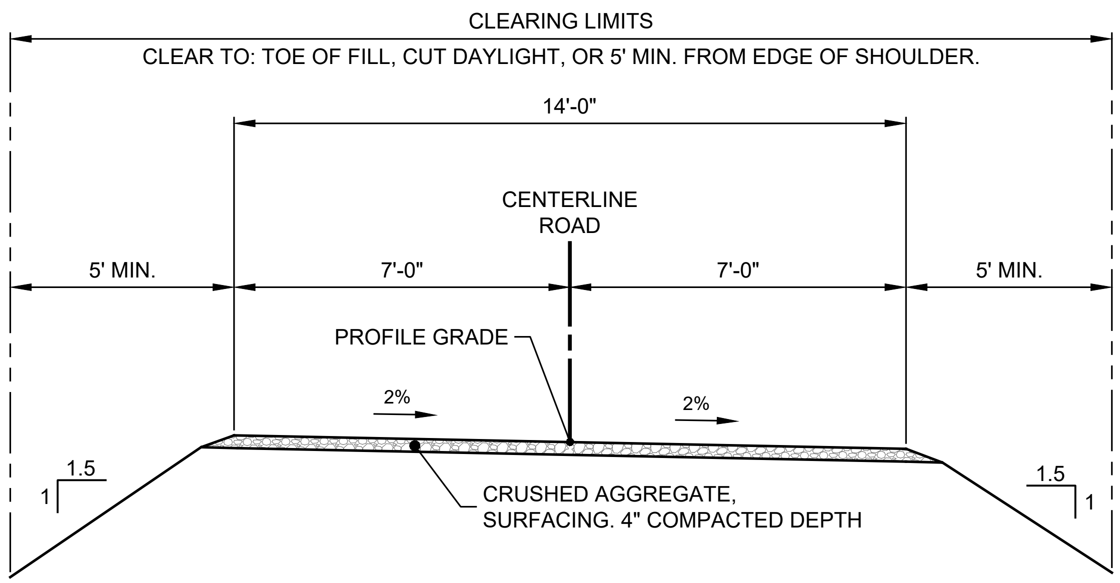
DJ&A ENGINEERS PLANNERS SURVEYORS

ALBERT CREEK AOP CULVERT REPLACEMENT

PROJECT CONTROL & LAYOUT POINTS

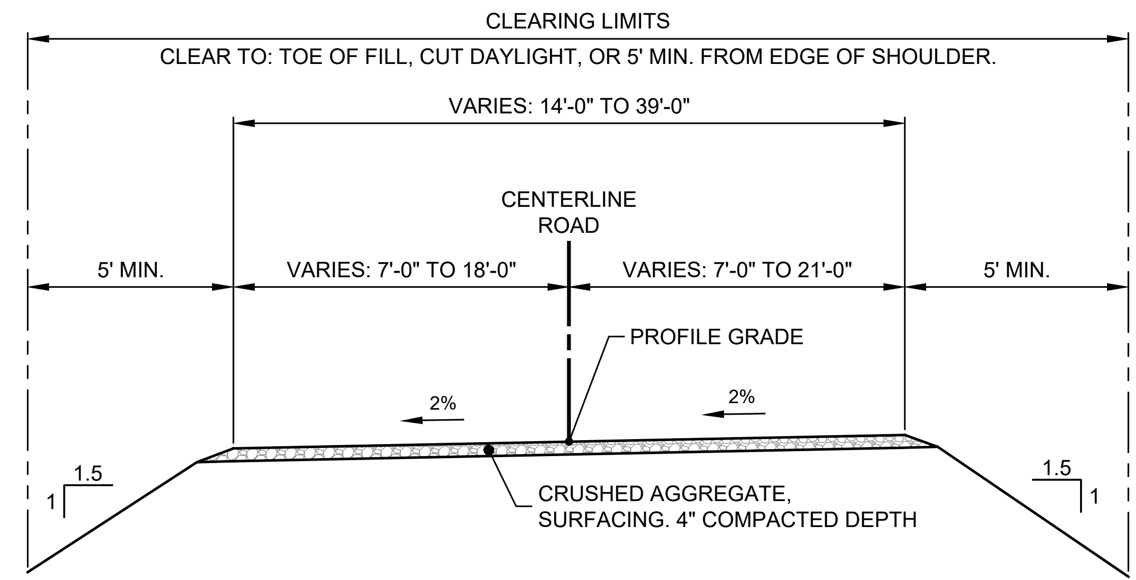
SHEET 3 OF 14



TYPICAL ROAD SECTION 1

NOT TO SCALE

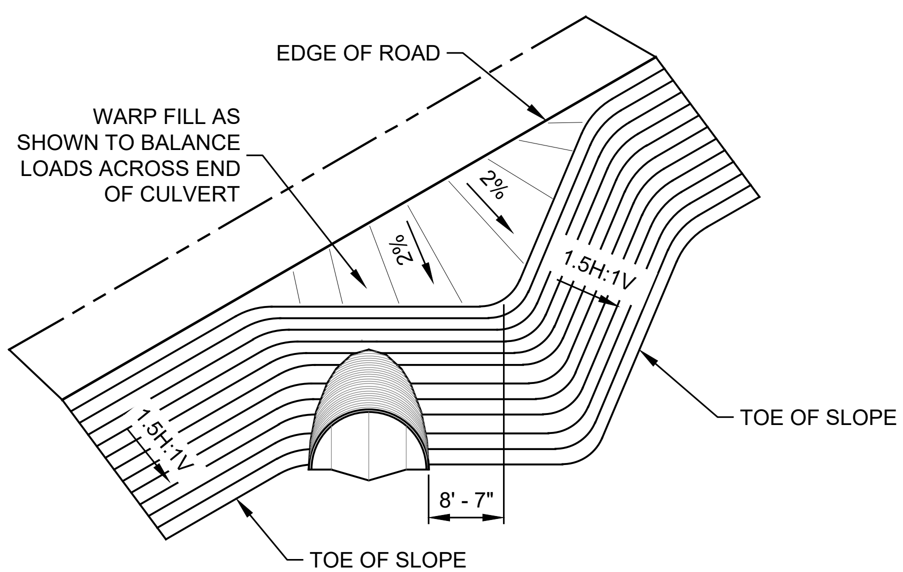
STA 10+20 - 11+50 - TYPICAL ROAD SECTION 1
STA 11+50 - 12+05 - TRANSITION TO TYPICAL ROAD SECTION 2



TYPICAL ROAD SECTION 2

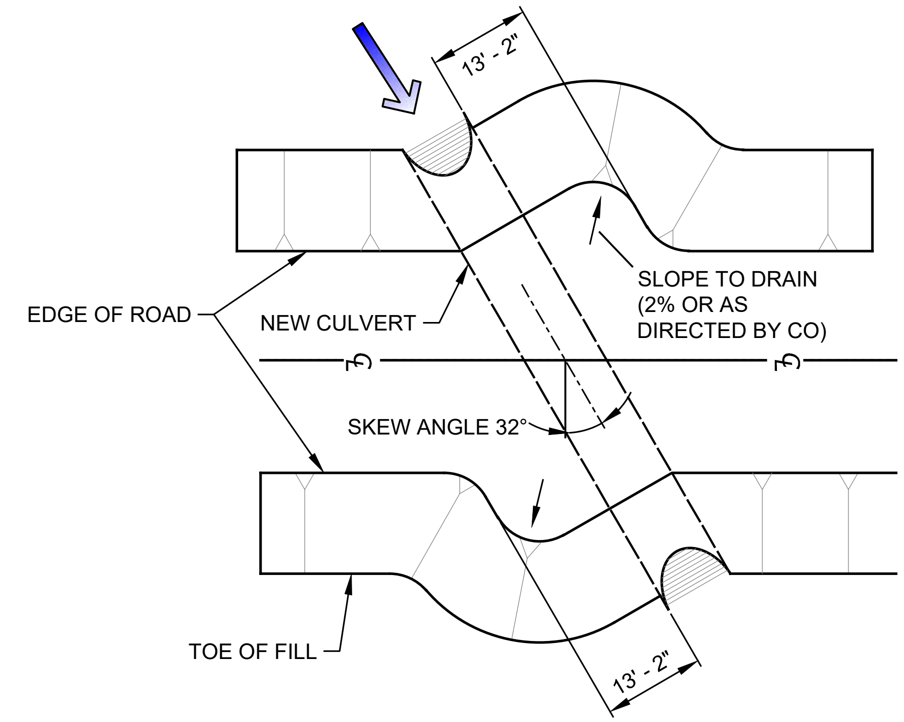
NOT TO SCALE

STA 11+50 - 12+05 - TRANSITION TO TYPICAL ROAD SECTION 2
STA 12+05 - 14+00 - TYPICAL ROAD SECTION 2



FILL WARPING ISOMETRIC VIEW

NOT TO SCALE



FILL WARPING PLAN VIEW

NOT TO SCALE

TYPICAL FILL WARPING DETAILS

NOT TO SCALE

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-	-	-

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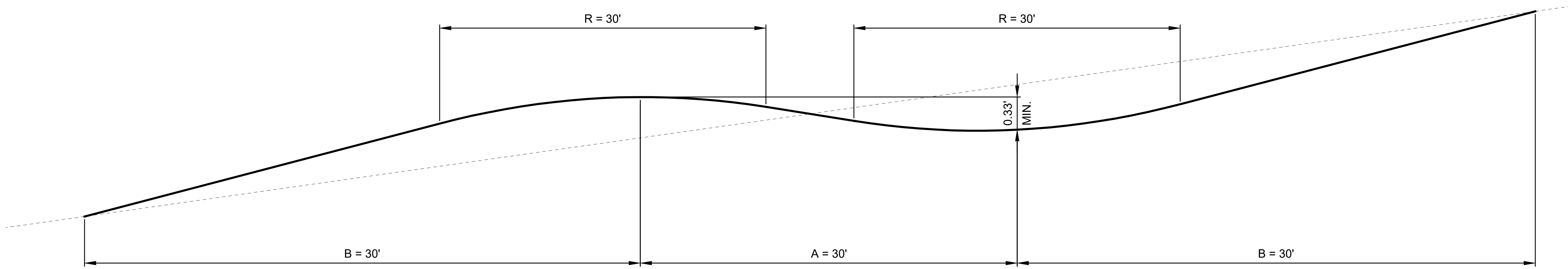
ALBERT CREEK AOP CULVERT REPLACEMENT

TYPICAL ROAD SECTIONS & FILL WARPING DETAILS



DRAIN DIP

NOT TO SCALE

GRADE (%)	LOWBOY				GRADE (%)	LOG TRUCK				GRADE (%)	4X4 (FIRE ENGINE)			
	LENGTH	TAPER	ROUNDING			LENGTH	TAPER	ROUNDING			LENGTH	TAPER	ROUNDING	
	A(ft)	B(ft)	%	R(ft)		A(ft)	B(ft)	%	R(ft)		A(ft)	B(ft)	%	R(ft)
0-5	30	30	7	30	0-5	20	25	10	20	0-5	10	15	19	10
6-9	30	50	7	30	6-9	20	40	10	20	6-9	10	20	19	10
10-12	30	60	7	30	10-12	20	50	10	20	10-30	10	10	19	10
				15					15					5

CHORD LENGTH FOR ROUNDING, TYPICAL

NOTES:
1. MINIMUM CROSS SLOPE OF DRAINLINE: 2% MIN AND 4% MAX.
2. SKEW OF DRAINLINE SHALL BE 0-25 DEGREES.
3. WHEN RIPRAP IS SPECIFIED AT OUTLET, IT SHALL BE SHAPED TO ASSURE WATER GOES ONTO RIPRAP, NOT AROUND. INSTRUMENT SHALL BE USED TO DETERMINE LOW POINT.
4. RIPRAP TOP ELEVATION SHALL BE AT TOP OF FINISHED OUTLET GRADE, NOT SUBGRADE.
5. TAPER LENGTHS SHALL BE WITHIN 10% OF LISTED LENGTHS.

REVISION	DATE	DESCRIPTION
-	-	-

DESIGNER TO | PROJ. NO. 7394
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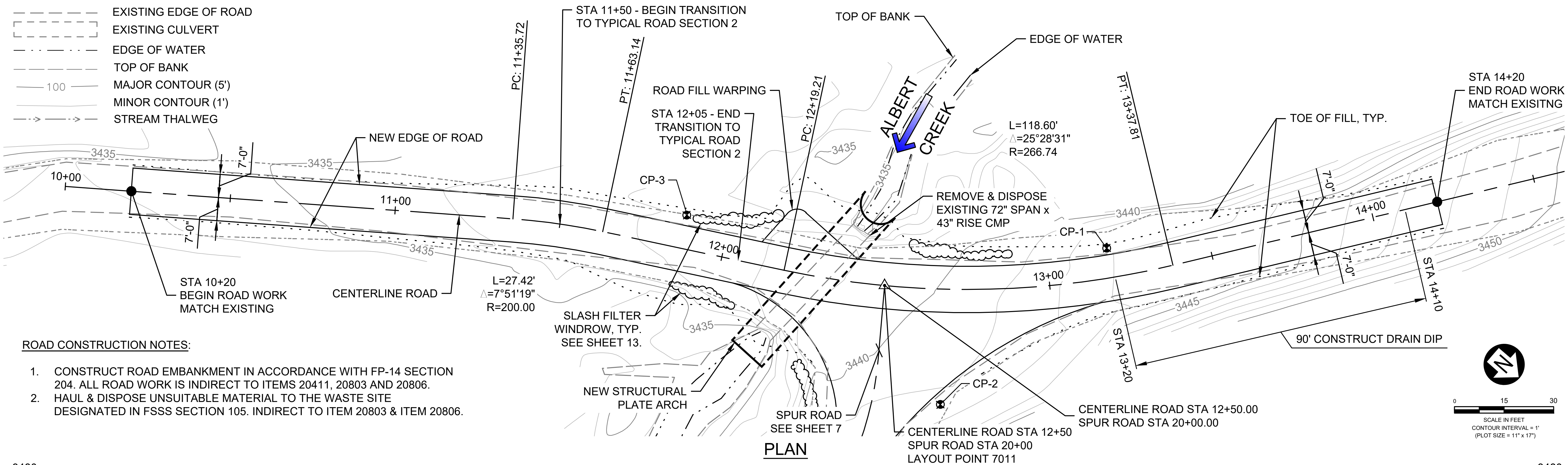
ALBERT CREEK AOP CULVERT REPLACEMENT

DRAIN DIP DETAILS

LEGEND

EXISTING FEATURES

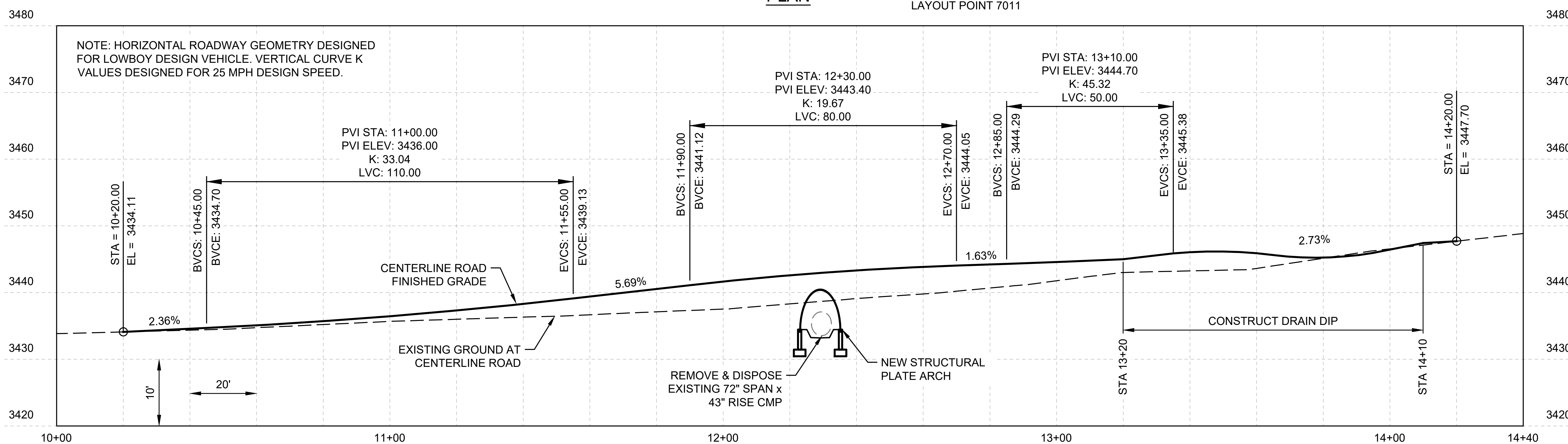
- EXISTING EDGE OF ROAD
- EXISTING CULVERT
- EDGE OF WATER
- TOP OF BANK
- 100 MAJOR CONTOUR (5')
- MINOR CONTOUR (1')
- STREAM THALWEG



PLAN

ROAD CONSTRUCTION NOTES:

1. CONSTRUCT ROAD EMBANKMENT IN ACCORDANCE WITH FP-14 SECTION 204. ALL ROAD WORK IS INDIRECT TO ITEMS 20411, 20803 AND 20806.
2. HAUL & DISPOSE UNSUITABLE MATERIAL TO THE WASTE SITE DESIGNATED IN FSSS SECTION 105. INDIRECT TO ITEM 20803 & ITEM 20806.



PROFILE

REVISION	DATE	DESCRIPTION
-	-	-

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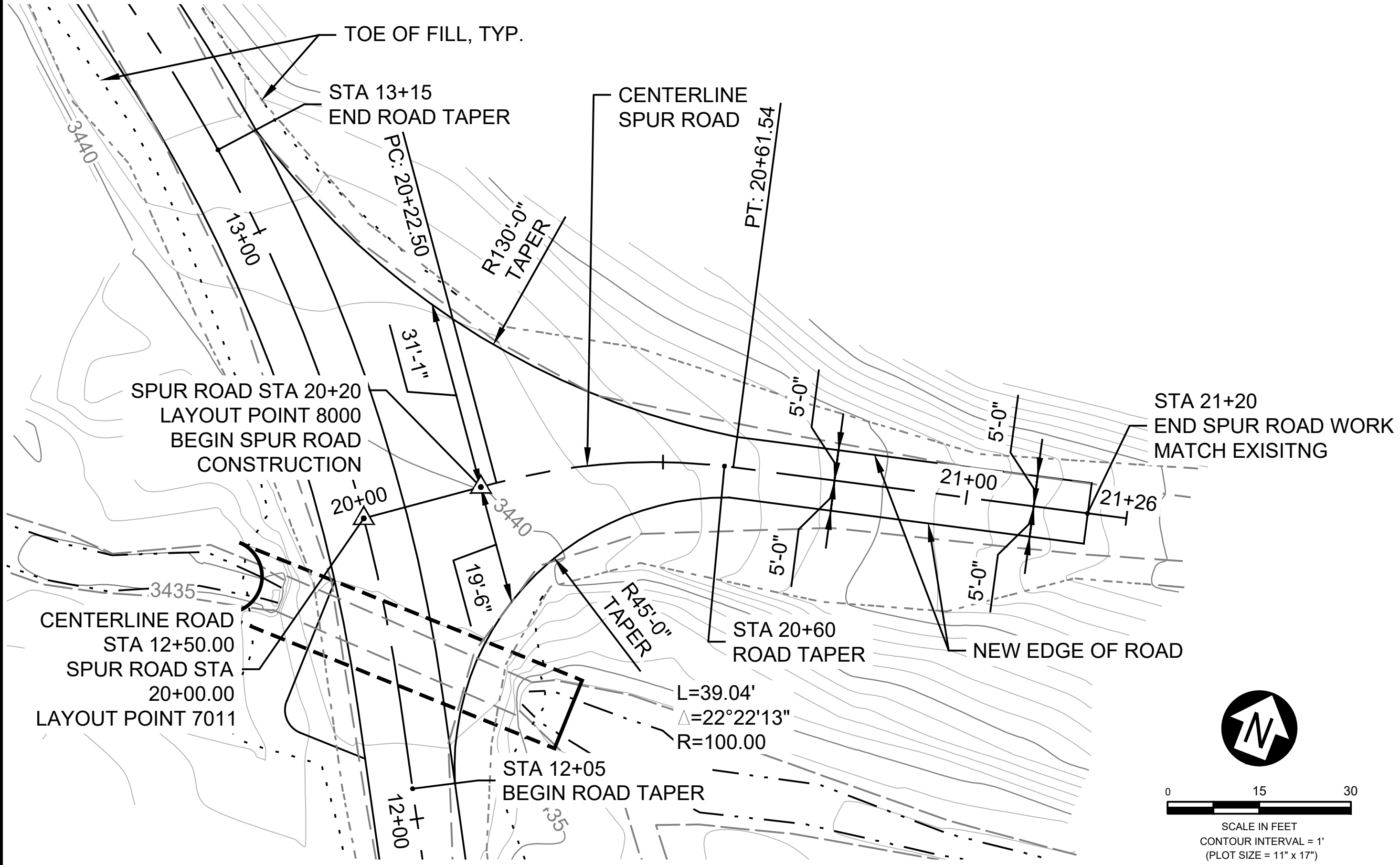
ALBERT CREEK AOP CULVERT REPLACEMENT

ROAD PLAN & PROFILE

SHEET 6 OF 14

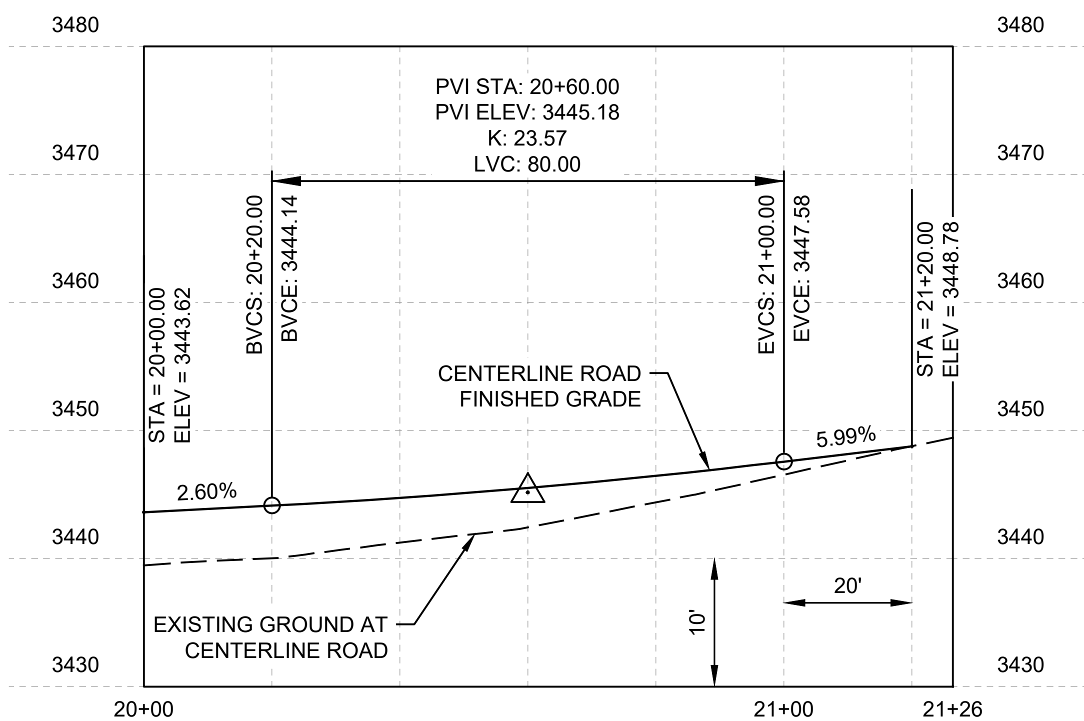


PLAN

SHOULDER EXTENTS:

BEGIN TAPER ON ALBERT CREEK ROAD AT STA 12+05 (RIGHT)
END TAPER ON SPUR ROAD AT STA 20+60 (RIGHT)
RADIUS OF TAPER: 45'-0"

BEGIN TAPER ON SPUR ROAD AT STA 20+60 (LEFT)
END TAPER ON ALBERT CREEK ROAD AT STA 13+15 (RIGHT)
RADIUS OF TAPER: 135'-0"



PROFILE

CENTERLINE POINTS				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
8000	1029445.74	779050.07	3444.14	STA 20+20.00 - BEGIN SPUR ROAD CONSTRUCTION
8001	1029447.20	779052.10	3444.22	STA 20+22.50 - PC
8002	1029456.17	779067.10	3444.74	STA 20+40.00 - ROAD CENTERLINE
8003	1029463.42	779087.34	3445.59	STA 20+61.54 - PT
8004	1029472.42	779124.73	3447.58	STA 21+00.00 - ROAD CENTERLINE
8005	1029477.11	779144.17	3448.78	STA 21+20.00 - END SPUR ROAD CONSTRUCTION

SPUR ROAD CENTERLINE POINTS

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-	-	-

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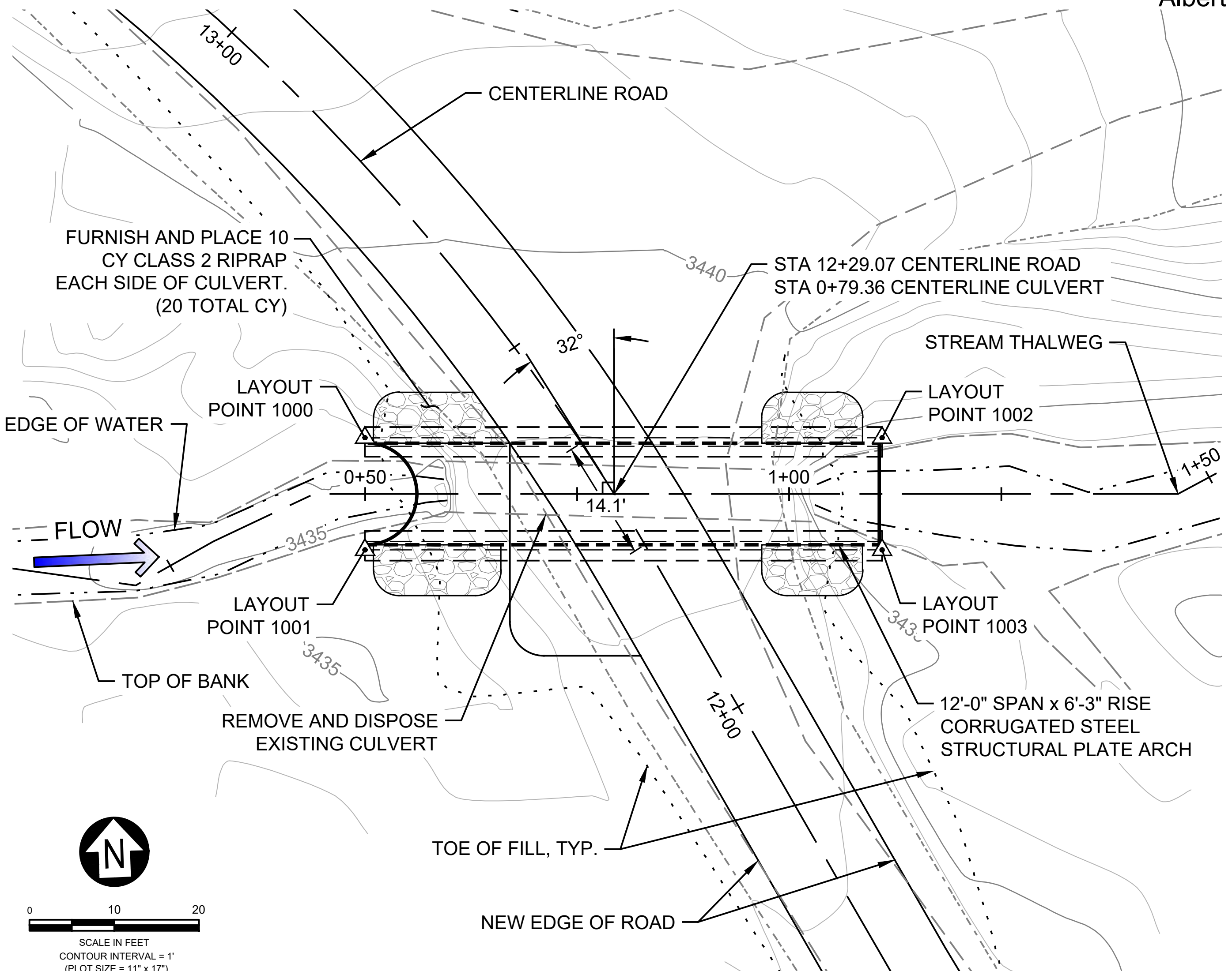
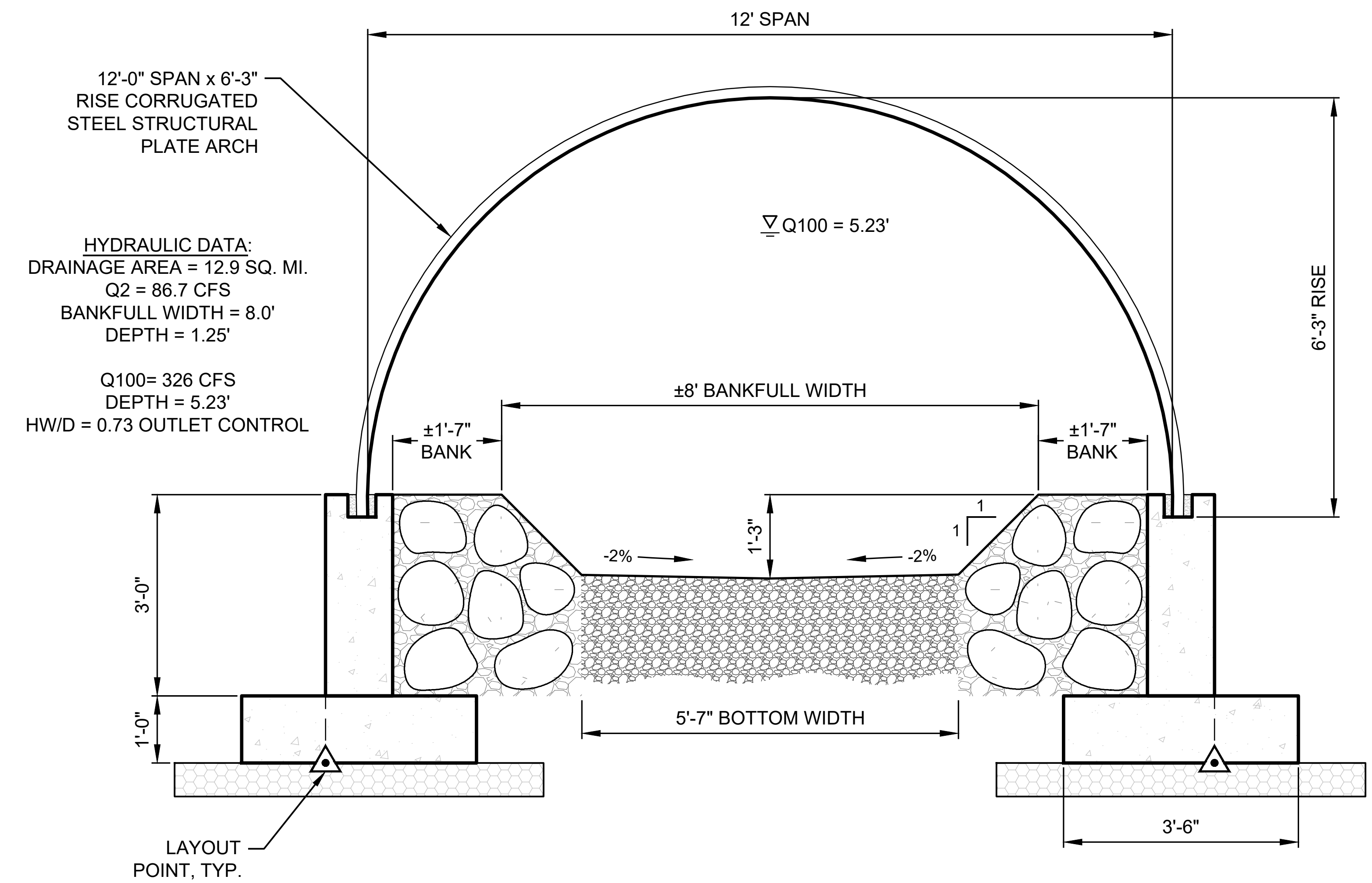
DJ&A ENGINEERS PLANNERS SURVEYORS

ALBERT CREEK AOP CULVERT REPLACEMENT

SPUR ROAD PLAN & PROFILE

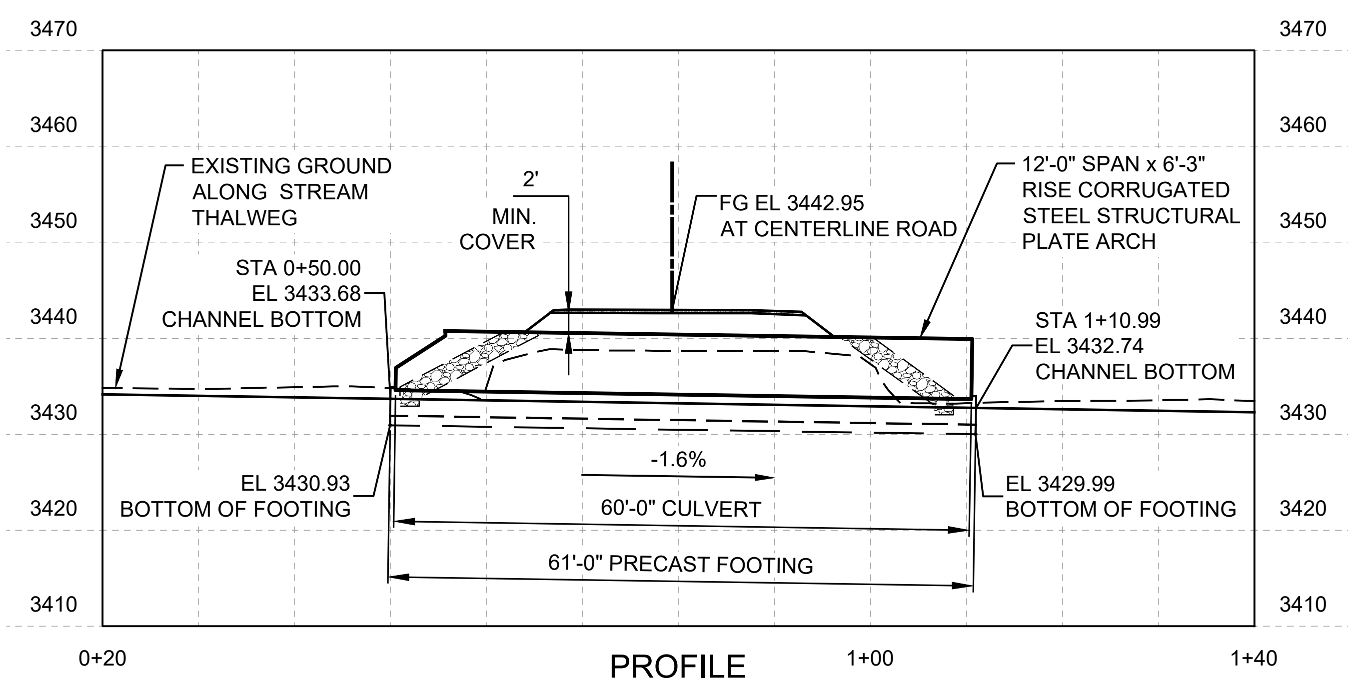


PLAN

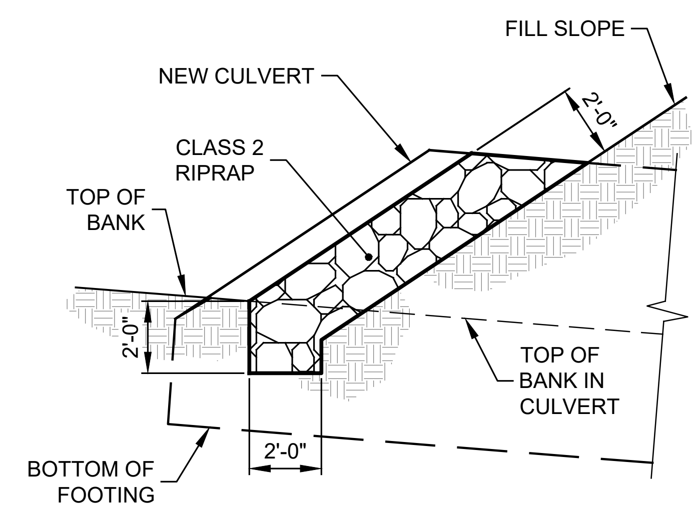


TYPICAL STUCTURAL PLATE PIPE ARCH SECTION

NOT TO SCALE

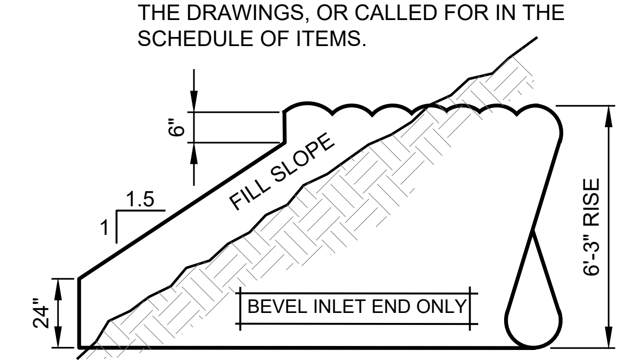


PROFILE



CULVERT RIPRAP DETAIL

1. THE ENDS OF CULVERTS SHALL NOT BE CUT ON A SKEW UNLESS SHOWN ON THE DRAWINGS, OR CALLED FOR IN THE SCHEDULE OF ITEMS.



BEVELED END DETAIL

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-	-	-

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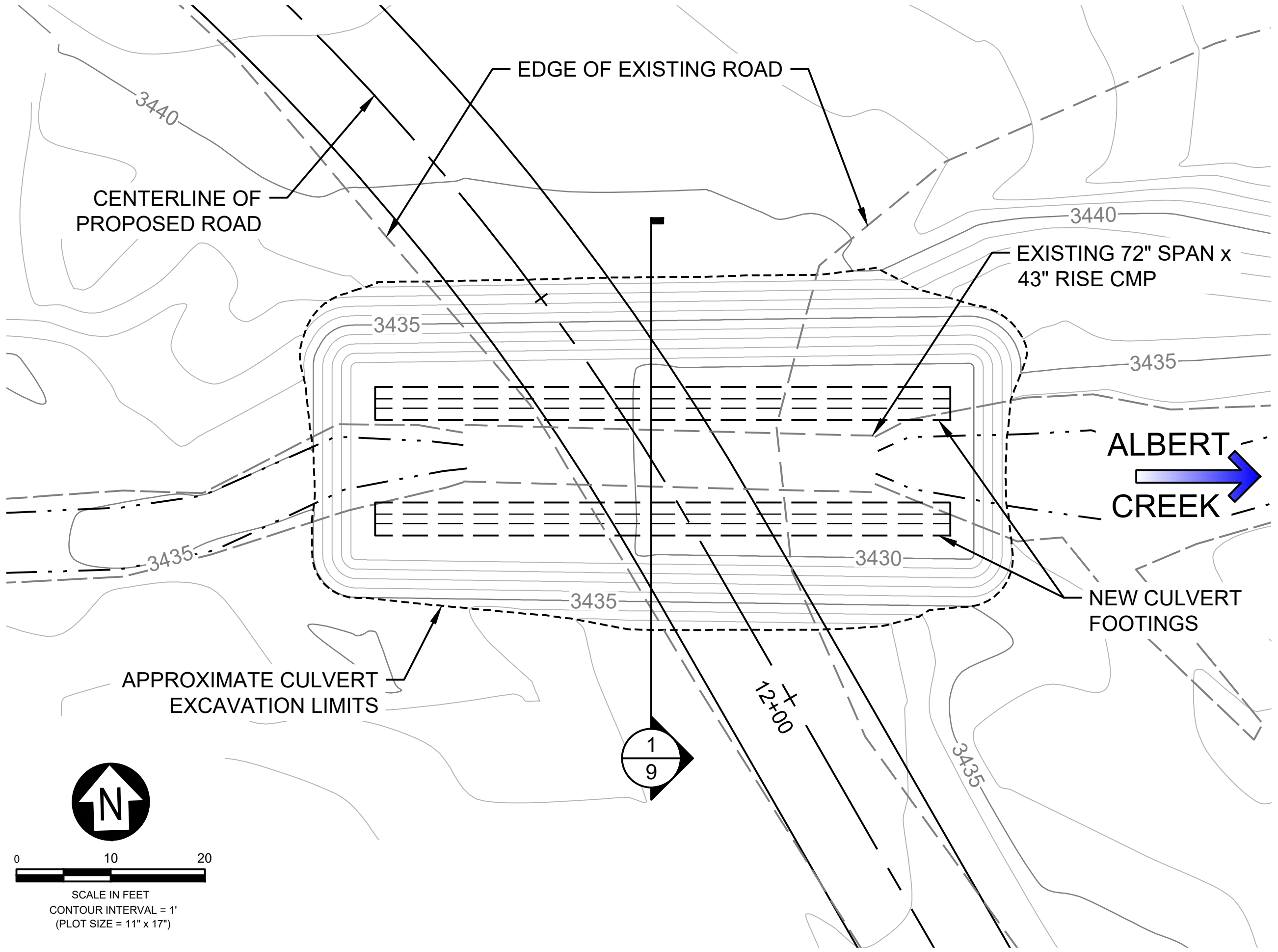
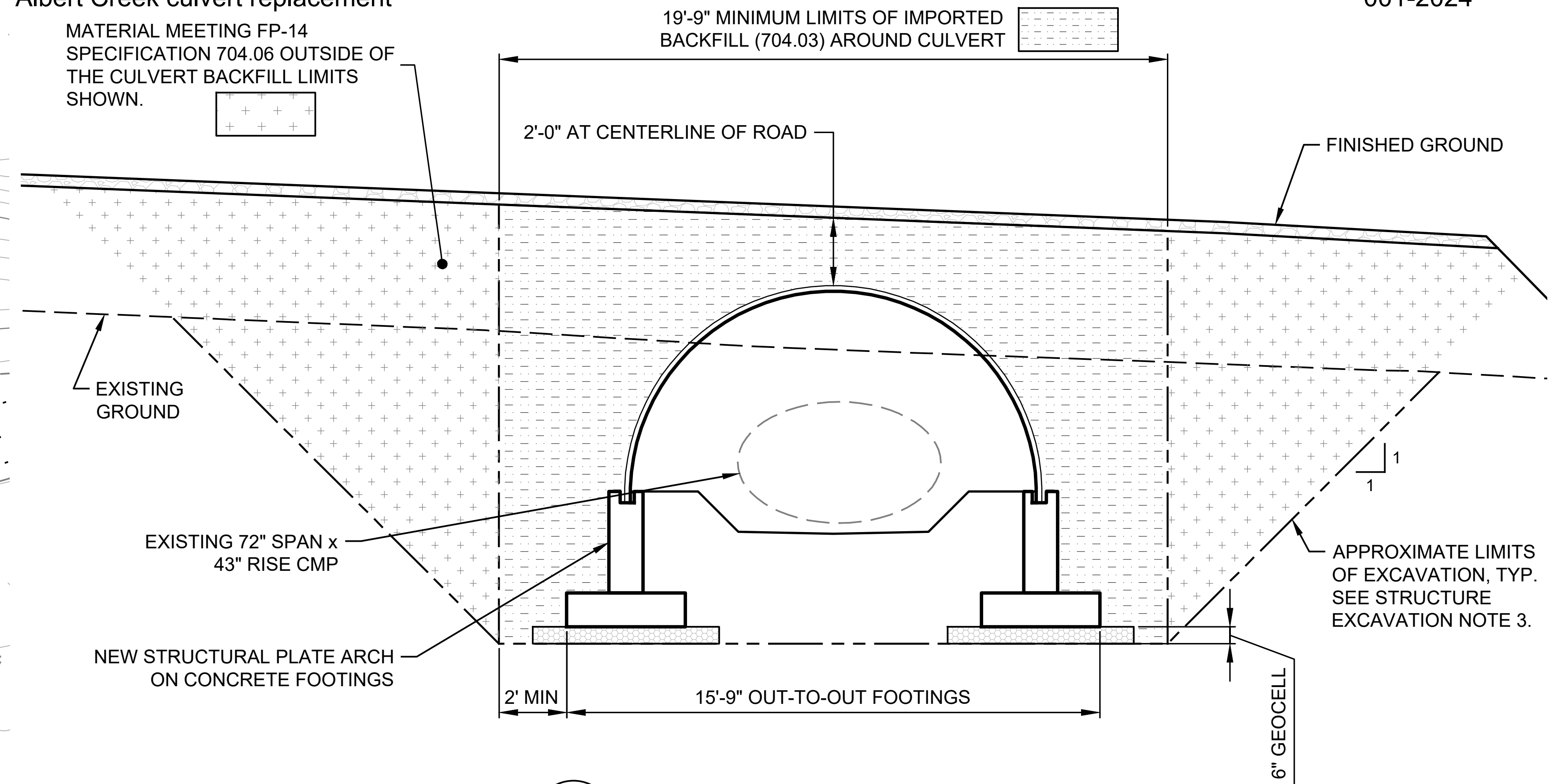
ALBERT CREEK AOP CULVERT REPLACEMENT

CULVERT GENERAL LAYOUT

SHEET 8 OF 14



PLAN



1/9 STRUCTURE EXCAVATION SECTION
NOT TO SCALE

STRUCTURE EXCAVATION NOTES

1. COMPLETE STRUCTURE EXCAVATION IN ACCORDANCE WITH FP-14 SECTION 208.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR EXCAVATION SUPPORT AND COMPLIANCE WITH ALL APPLICABLE OSHA REGULATIONS.
3. EXCAVATION LIMITS SHOWN ARE APPROXIMATE BASED ON OSHA SLOPING AND BENCHING REQUIREMENTS AND AN ASSUMED SOIL TYPE FROM LIMITED SURFACE OBSERVATIONS AT THE SITE. ACTUAL CONDITIONS MAY VARY. THE CONTRACTOR IS RESPONSIBLE FOR MAKING ADJUSTMENTS TO THE CUT SLOPES AND EXCAVATION QUANTITIES BASED ON THE ACTUAL SOIL TYPES ENCOUNTERED. NOTIFY THE CO IMMEDIATELY IF BEDROCK OR SOFT, UNSUITABLE SOILS ARE FOUND.
4. SUBMIT AN EXCAVATION PLAN FOR APPROVAL THAT INCLUDES, AS A MINIMUM, THE FOLLOWING: DRAWINGS AND A WRITTEN OUTLINE ILLUSTRATING AND DESCRIBING THE PROPOSED EXCAVATION LIMITS, METHODS, EQUIPMENT TO BE USED, LOCATION OF STOCKPILES, AND ESTIMATED QUANTITIES. THE EXCAVATION PLAN MUST COMPLY WITH ALL APPLICABLE OSHA REQUIREMENTS AND LIST THE SOIL TYPE ASSUMED. CHANGES TO THE EXCAVATION LIMITS SHOWN HERE FOR THE CONTRACTOR'S DEWATERING METHODS OR CONTRACTOR CONVENIENCE MUST BE SHOWN ON THE PLAN AND ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE EXCAVATION PLAN IS INCIDENTAL TO THE WORK.

STRUCTURE BACKFILL NOTES

1. PLACE BACKFILL IN ACCORDANCE WITH FP-14 SECTION 208 WITH MATERIAL MEETING THE REQUIREMENTS OF SECTION 704.03, BACKFILL.
2. BACKFILL LIMITS SHOWN HERE ARE THE MINIMUM REQUIREMENTS AND THE QUANTITY FOR ITEM 20803 IS BASED ON THESE LIMITS.
3. IT IS ASSUMED THAT MATERIAL FROM STRUCTURE EXCAVATION AT THIS SITE WILL NOT BE SUITABLE FOR RE-USE AS BACKFILL BUT WILL MEET THE REQUIREMENTS FOR UNCLASSIFIED BORROW. REMOVE AND HAUL ALL UNSUITABLE MATERIAL TO THE DESIGNATED WASTE SITE.
4. COMPACT BACKFILL IN ACCORDANCE WITH FP-14 SECTION 208.10, PERFORM COMPACTION TESTS AS REQUIRED AND SUBMIT TEST RESULTS TO THE CO.

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-	-	-

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DRAWN	TO	DATE	SEP-2023
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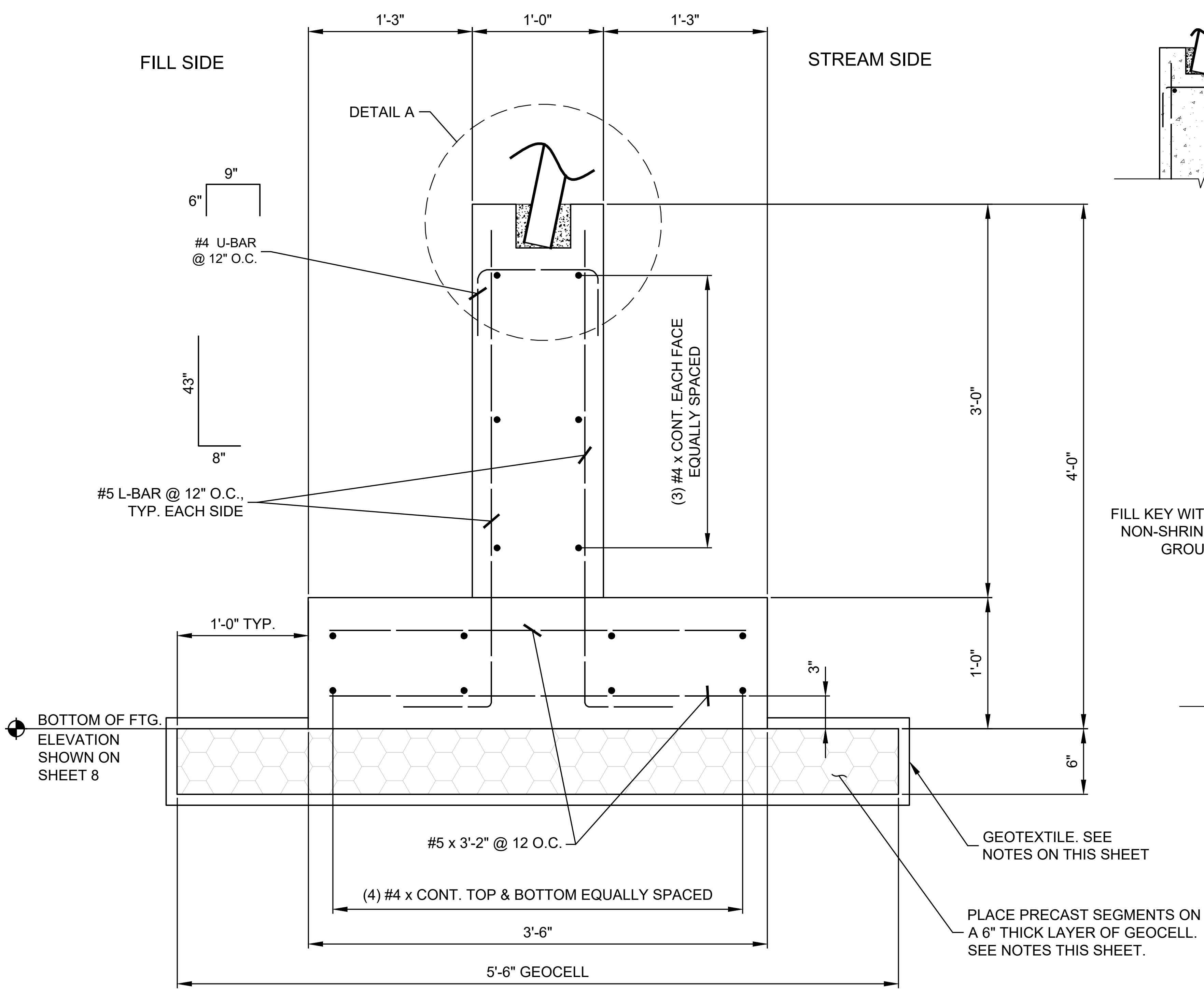
DJ&A ENGINEERS PLANNERS SURVEYORS

ALBERT CREEK AOP CULVERT REPLACEMENT

STRUCTURE EXCAVATION & BACKFILL

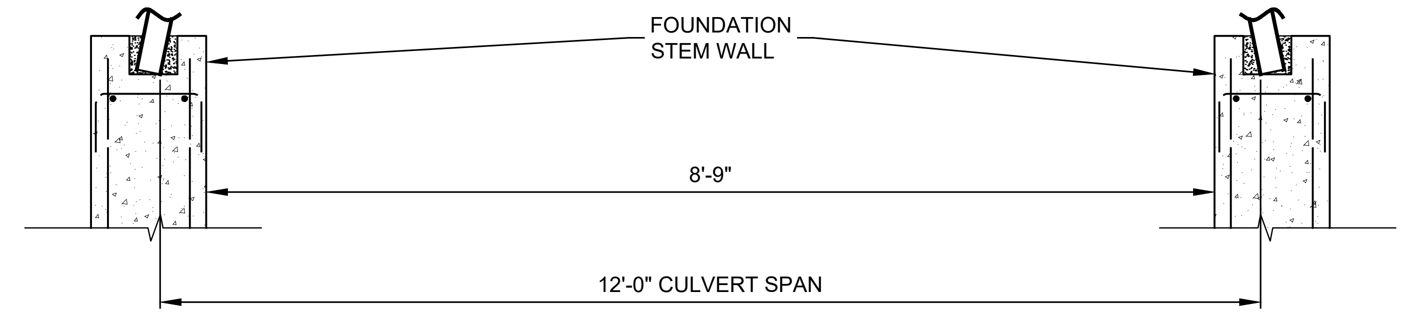


FOOTING DETAIL

NOT TO SCALE

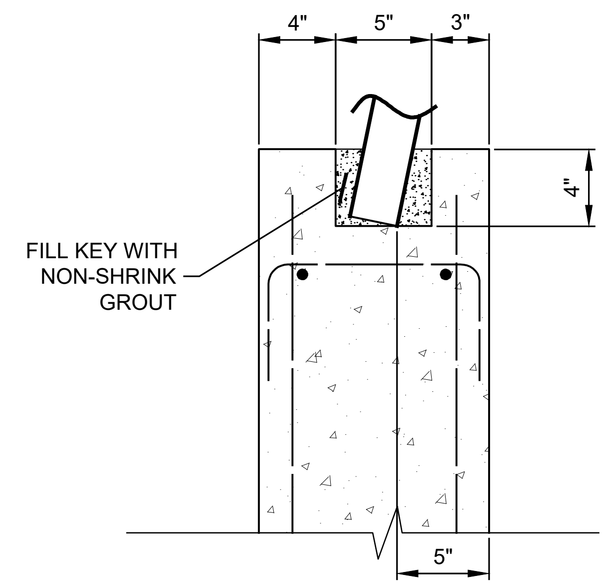
NOTES:

1. PROVIDE 2" CLEAR COVER FOR ALL REINFORCEMENT UNLESS OTHERWISE SHOWN.
2. O.C. = ON CENTER.
3. USE 18" MIN. LAP SPLICE FOR ALL REINF. BARS



INSTALLATION DETAIL

NOT TO SCALE



DETAIL A

NOT TO SCALE

FOUNDATION NOTES

1. A FOUNDATION INVESTIGATION HAS NOT BEEN CONDUCTED AT THIS SITE. NOTIFY THE CO IMMEDIATELY IF BEDROCK OR VERY SOFT CLAY SOILS ARE ENCOUNTERED WITHIN THE LIMITS OF THE FOUNDATION SHOWN IN THESE PLANS. IN NO CASE SHOULD THE FOOTING BE PLACED DIRECTLY ON LARGE BOULDERS, RANDOM OUTCROPPINGS OF BEDROCK, OR SOFT SOILS WITHOUT PRIOR APPROVAL OF THE CO.
2. PREPARE FOUNDATION IN ACCORDANCE WITH SECTION 208 OF THE SPECIFICATIONS. FOUNDATION MUST BE APPROVED IN WRITING BY THE CO PRIOR TO PLACING THE GEOCELL.

INFORMATIONAL QUANTITIES

ITEM DESCRIPTION	UNIT	QUANTITY
STRUCTURAL CONCRETE, CLASS A(AE)	CUBIC YARD	30
REINFORCING STEEL	POUNDS	3340

INFORMATIONAL QUANTITIES SHOWN ABOVE ARE FOR THE PRECAST CULVERT FOOTING AND CONSIDERED INDIRECT TO ITEM 55217.

GEOCELL NOTES

1. PLACE GEOCELL ON UNDISTURBED SUBGRADE.
2. INSTALL GEOCELL IN ACCORDANCE WITH FOREST SERVICE SUPPLEMENTAL SPECIFICATIONS (FSSS) 272.06, HOLDING LINES AND GRADES IN PLACE WITH SUITABLE SIDE FORMS (I.E. "STRETCHER FRAMES" OR STEEL STAKES) TO ENSURE CELLS ARE EXPANDED TO THE MINIMUM DIMENSION REQUIRED BY THE MANUFACTURER.
3. BACKFILL GEOCELL WITH COARSE GRANULAR BACKFILL PER FSSS SUBSECTION 703.03(c).
4. PLACE CLASS 1, TYPE A SEPARATION GEOTEXTILE UNDER GEOCELL AND WRAP OVER TOP AFTER BACKFILLING (INCIDENTAL TO ITEM 27201).
5. EXTEND GEOCELL 1' MINIMUM BEYOND LIMITS OF FOOTING ON ALL SIDES.

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-	-	-

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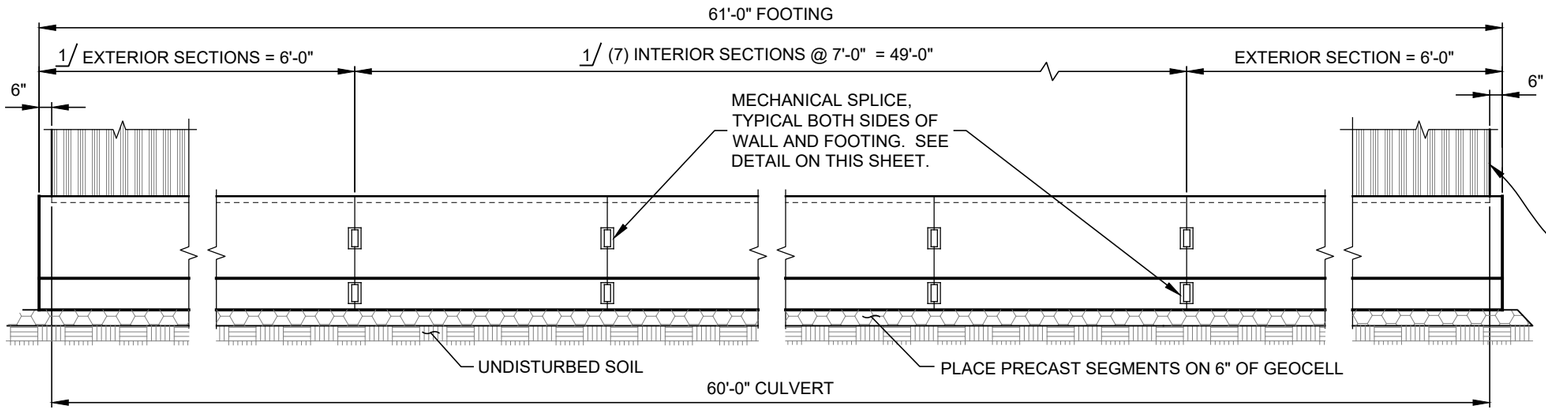
ALBERT CREEK AOP CULVERT REPLACEMENT

FOOTING DETAILS



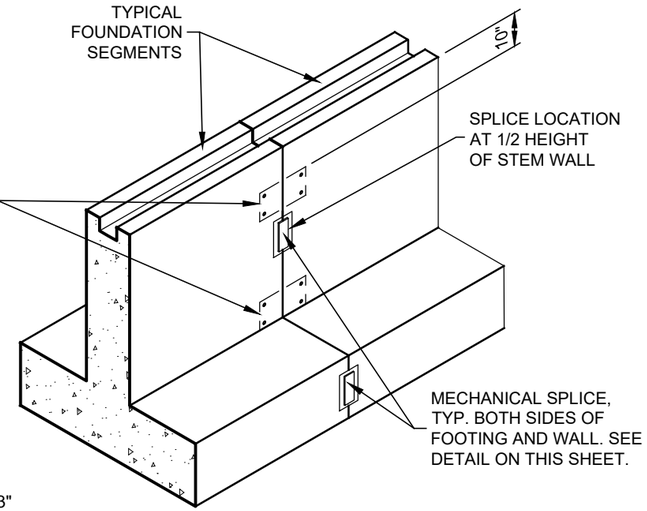
1/ CONTRACTOR MAY ADJUST PRECAST SEGMENT LENGTHS SHOWN DEPENDING UPON SETTING EQUIPMENTS CAPABILITIES. FOOTING WEIGHT IS APPROXIMATELY 1000 LB/FT.

PRECAST FOUNDATION ELEVATION

NOT TO SCALE

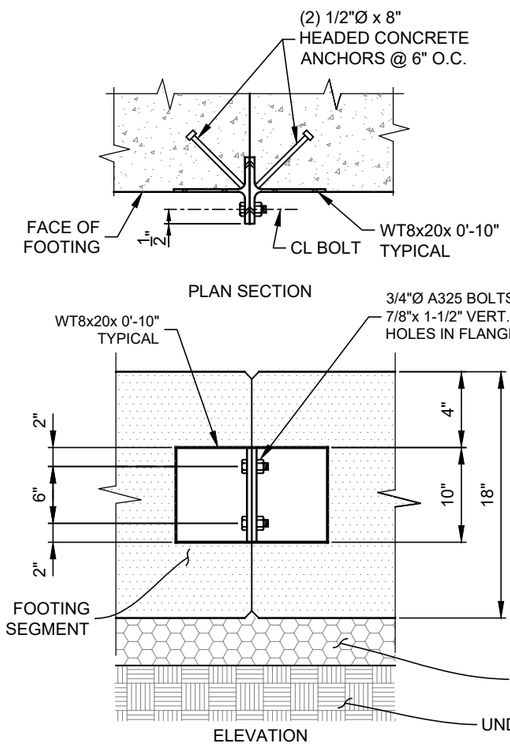
PRIOR TO FABRICATING PRECAST FOOTINGS SUBMIT FOR APPROVAL SHOP DRAWINGS DETAILING SEGMENT LENGTHS, SPLICE CONNECTIONS, PROPOSED CONCRETE MIX DESIGN, PICK LOCATIONS, AND SELECTED CONNECTION FOR CULVERT.

OTHER PRECAST/PREFABRICATED FOOTING OPTIONS THAT MEET SIZE, STRENGTH AND FUNCTIONALITY OF CONCRETE FOOTINGS SHOWN MAY BE SUBMITTED FOR REVIEW AND APPROVAL.

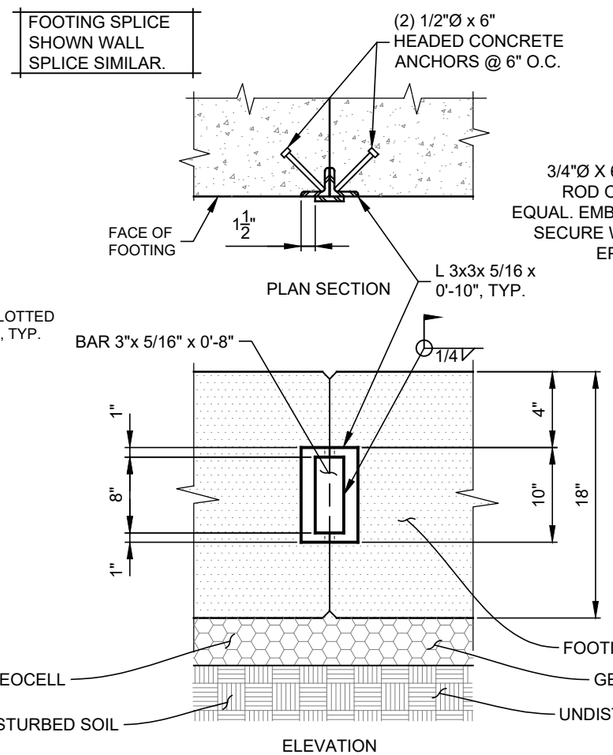


TYPICAL PRECAST SEGMENT

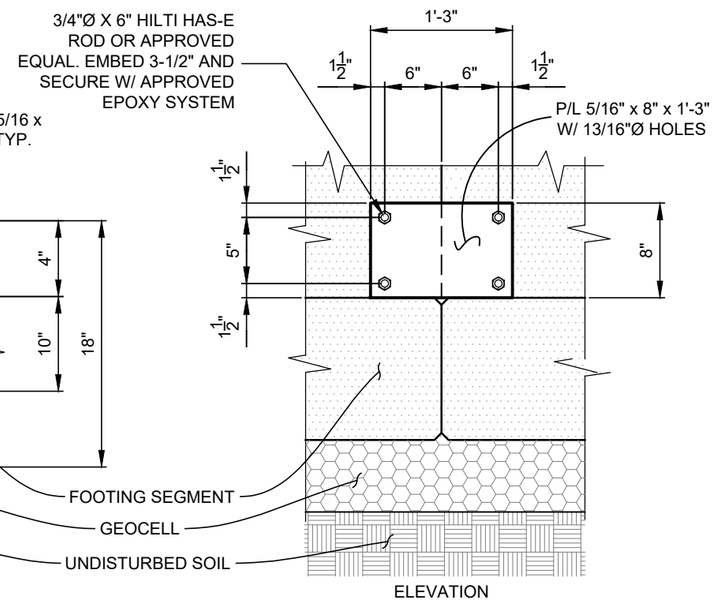
Not to Scale



BOLTED ALTERNATE



WELDED ALTERNATE



POST-INSTALLED ANCHORS ALTERNATE

MECHANICAL SPLICE DETAIL

NOT TO SCALE

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-	-	-

DESIGNER TO | PROJ. NO. 7394
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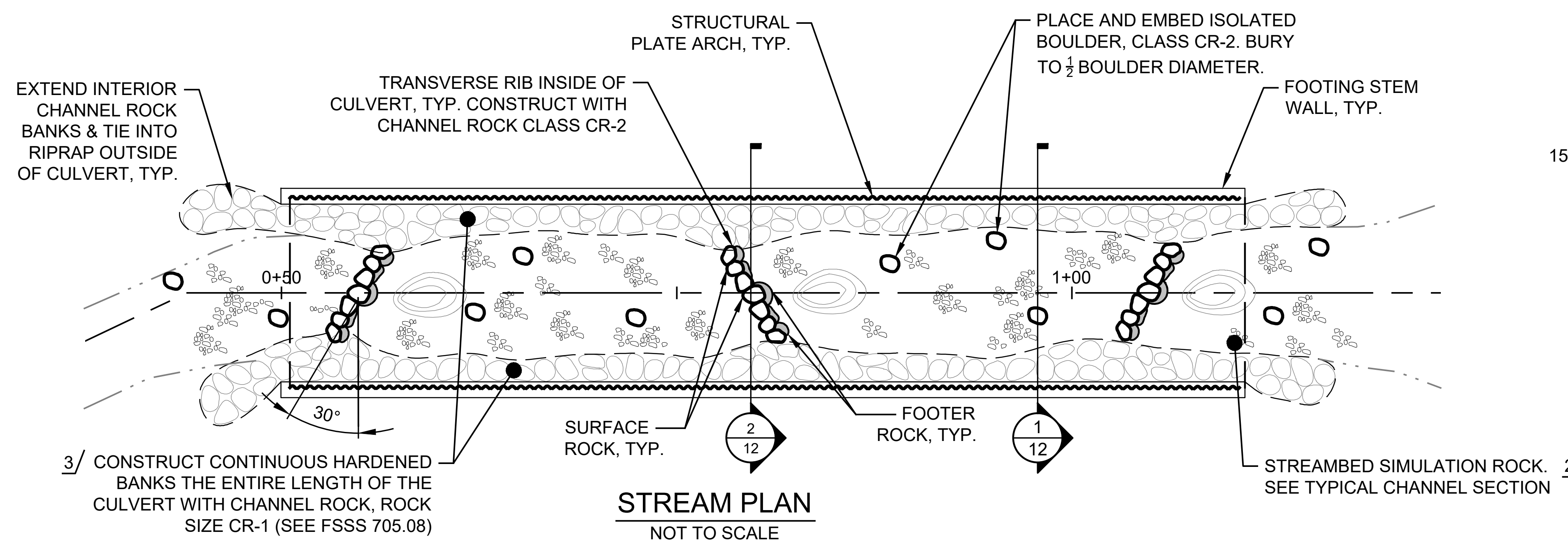
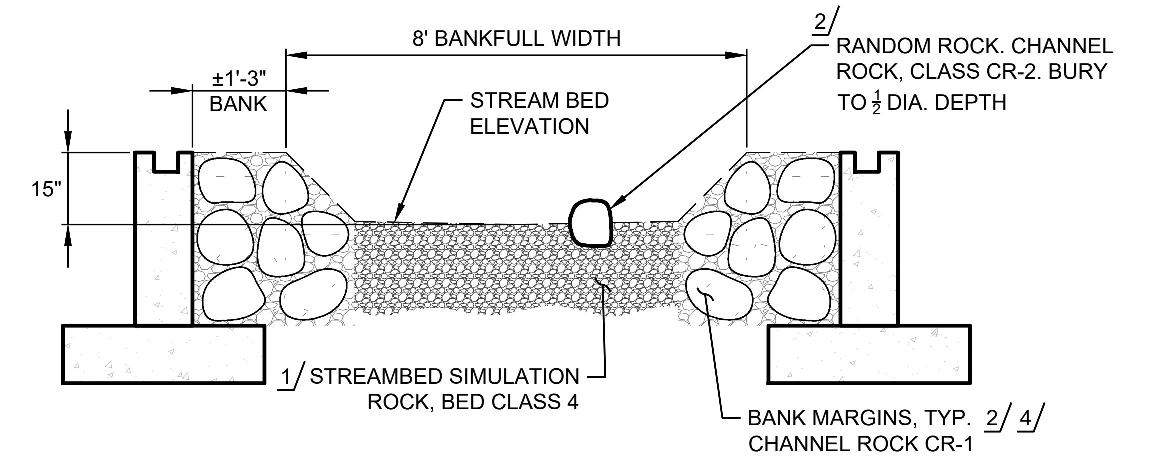
ALBERT CREEK AOP CULVERT REPLACEMENT

PRECAST DETAILS

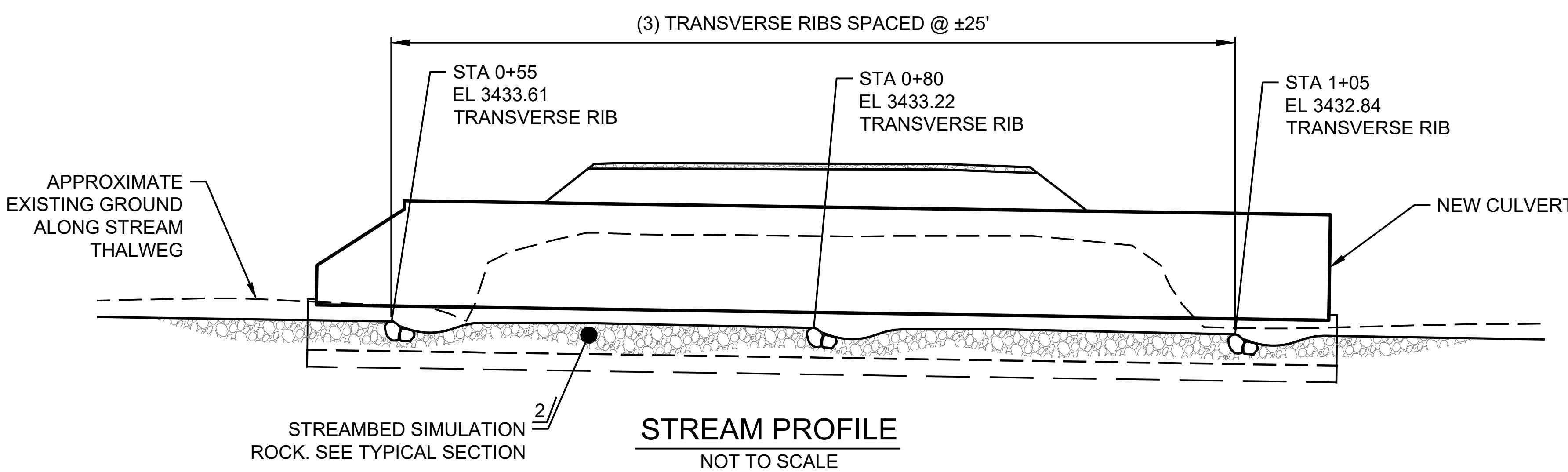
SHEET OF 11 14



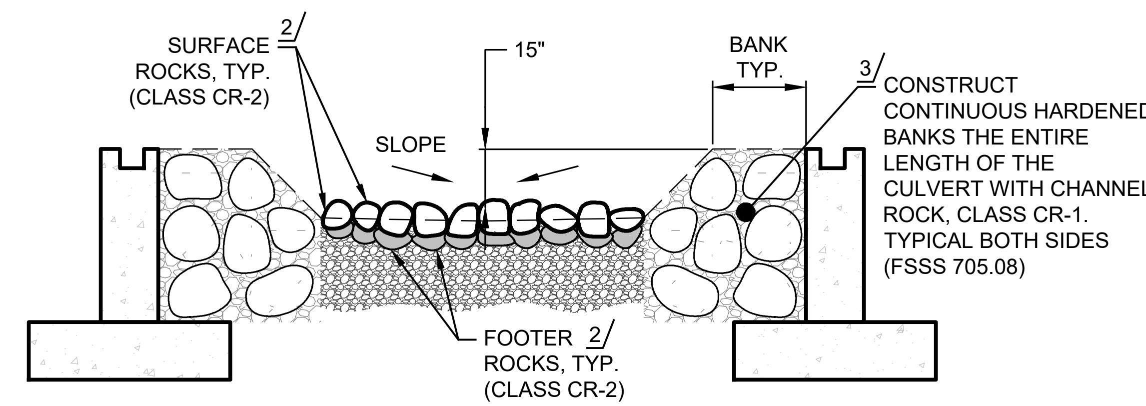
STREAM PLAN
NOT TO SCALE



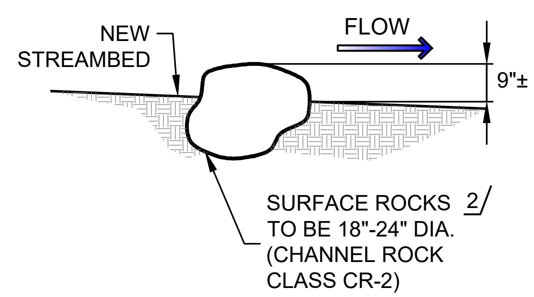
1 12 TYPICAL CHANNEL SECTION
NOT TO SCALE



STREAM PROFILE
NOT TO SCALE



2 12 TYPICAL TRANSVERSE RIB SECTION
NOT TO SCALE



A 12 RANDOM ROCK DETAIL
NOT TO SCALE

FOOTNOTES:

1/ USE NATIVE MATERIAL SALVAGED FROM THE EXCAVATION MEETING THE SPECIFICATIONS FOR STREAM SIMULATION ROCK, BED CLASS 4 (SEE SUBSECTION 705.08A OF THE SPECIFICATIONS) TO FORM CHANNEL BED WITHIN THE CULVERT.

2/ THE FINAL CHANNEL BOTTOM SHOULD BE A DENSE, WELL INTERLOCKED STREAMBED WITH LOW PERMEABILITY. COMPACT EACH LAYER AND FILL SURFACE VOIDS BY WASHING IN FINE MATERIAL. USE WATER PRESSURE, TAMPING RODS, AND SIMILAR HAND OPERATED EQUIPMENT TO FORCE FINE MATERIAL INTO ALL SURFACE VOIDS. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT THE STREAM FLOW DOES NOT GO SUBSURFACE THROUGH THE CULVERT FOR A 48 HOUR PERIOD AFTER RE-WATERING.

3/ ROCKS SALVAGED FROM THE EXCAVATION MEETING THE SPECIFICATION FOR CHANNEL ROCK, CLASS CR-1 & CLASS CR-2 MAY BE USED. (SEE SUBSECTION 705.08B OF THE SPECIFICATIONS)

4/ THE SPACING AND CONFIGURATION OF ROCK AND ROCK WEIRS MAY BE ADJUSTED IN THE FIELD BY THE CO TO FIT THE ACTUAL STREAMBED CONDITIONS.

5/ INTER-MIX FINE NATIVE MATERIAL AS DIRECTED BY CO DURING PLACEMENT OF CHANNEL ROCK BANK TO SEAL VOIDS THROUGHOUT THE SECTION.

REVISION	DATE	DESCRIPTION
-	-	-

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ALBERT CREEK AOP CULVERT REPLACEMENT

STREAM SIMULATION DETAILS

SHEET 12 OF 14

SLASH FILTER WINDROW NOTES:

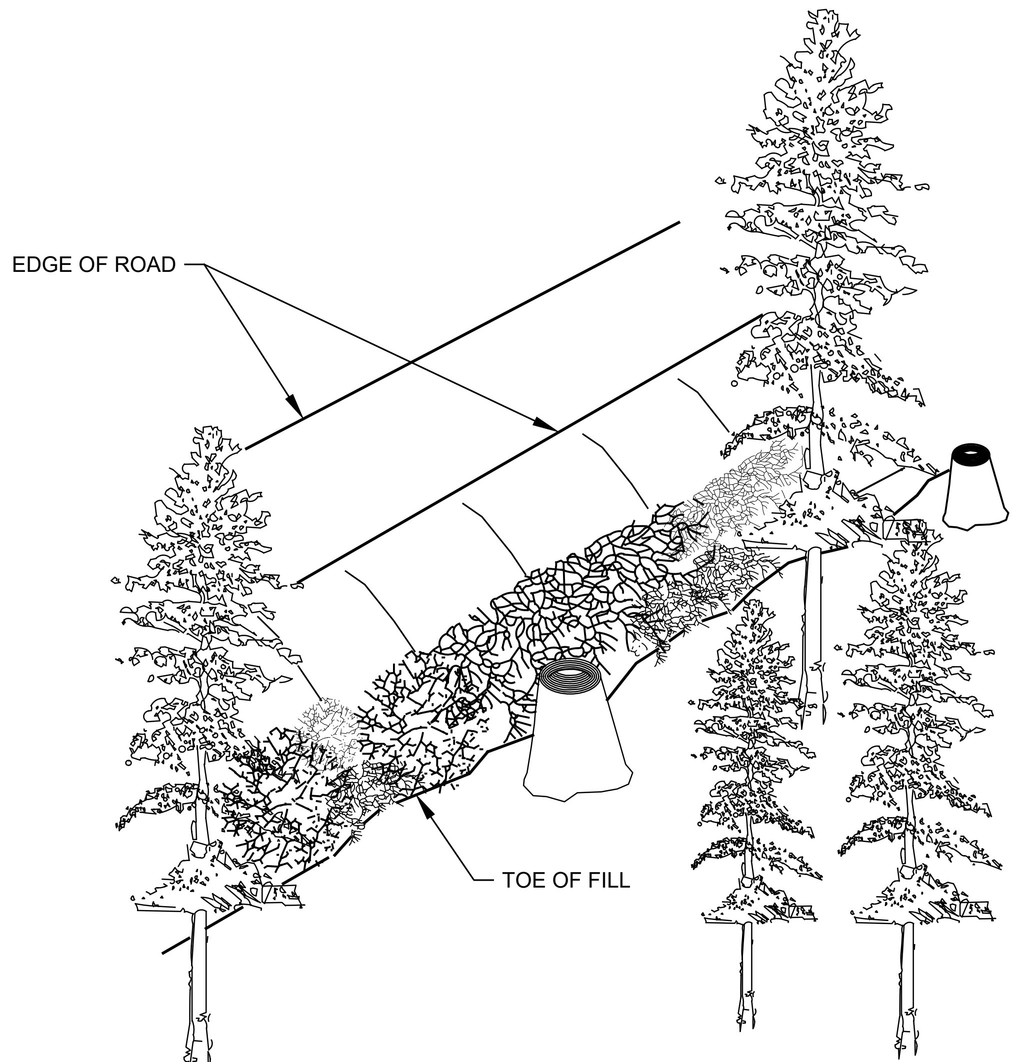
1.) USE SLASH MATERIAL GENERATED FROM CLEARING AND GRUBBING. STOCKPILE MATERIALS BEFORE CONSTRUCTING WINDROWS.

2.) SLASH, LIMBS AND TOPS MUST BE SMALLER THAN 12 FEET LONG AND 6 INCHES DIAMETER. DO NOT USE STUMPS AND ROOT WADS.

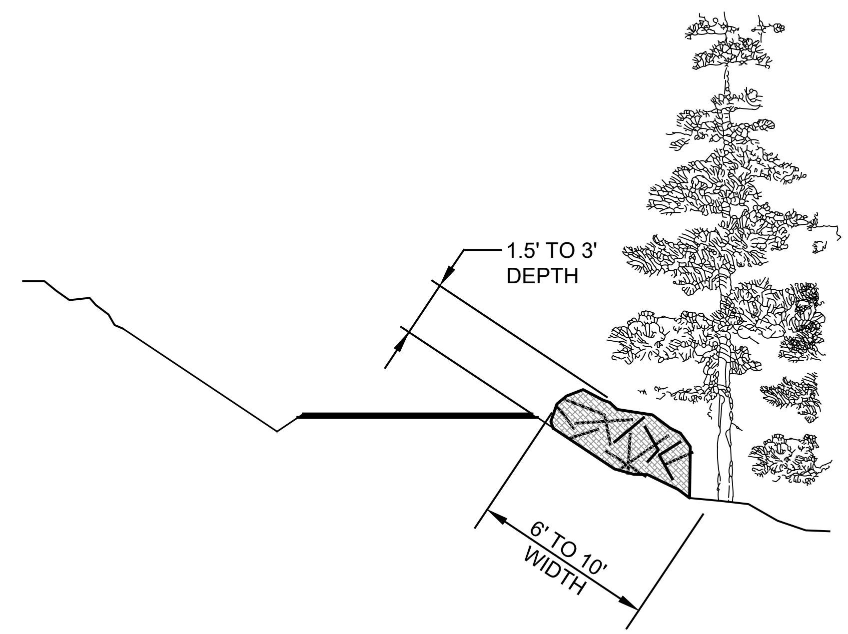
3.) PLACE SLASH AT THE TOE OF THE NEW FILL SLOPE WITH A BACKHOE AND TAMP INTO PLACE WITH THE BUCKET. SLASH SHOULD BE TAMPED SO IT IS EMBEDDED APPROXIMATELY 6 INCHES INTO THE SURFACE TO PREVENT WATER FROM RUNNING UNDER THE WINDROW.

4.) DO NOT INTERFERE WITH THE FUNCTIONING OF DRAINAGE STRUCTURES OR BLOCK STREAM CHANNELS WITH WINDROWS.

5.) IF SUFFICIENT QUANTITY OF SLASH MATERIAL IS NOT GENERATED ON-SITE FROM CLEARING OPERATIONS, A SOURCE WILL BE PROVIDED WITHIN 1/2 MILES OF THE PROJECT SITE. ALL COSTS ASSOCIATED WITH CUTTING, HAUL, AND PLACING SLASH TO BE INCLUDED IN ITEM 67050.



TYPICAL INSTALLATION



WINDROW DIMENSIONS

SLASH FILTER WINDROW

NOT TO SCALE

9/4/23 16:23 TANNER.OLSON F:\7394 TU LOLO NF ALBERT CREEK AOP DESIGN\DRAWINGS\DWG\CIVIL\2 DESIGN\7394 DESIGN V2.DWG

REVISION	DATE	DESCRIPTION
-	-	-

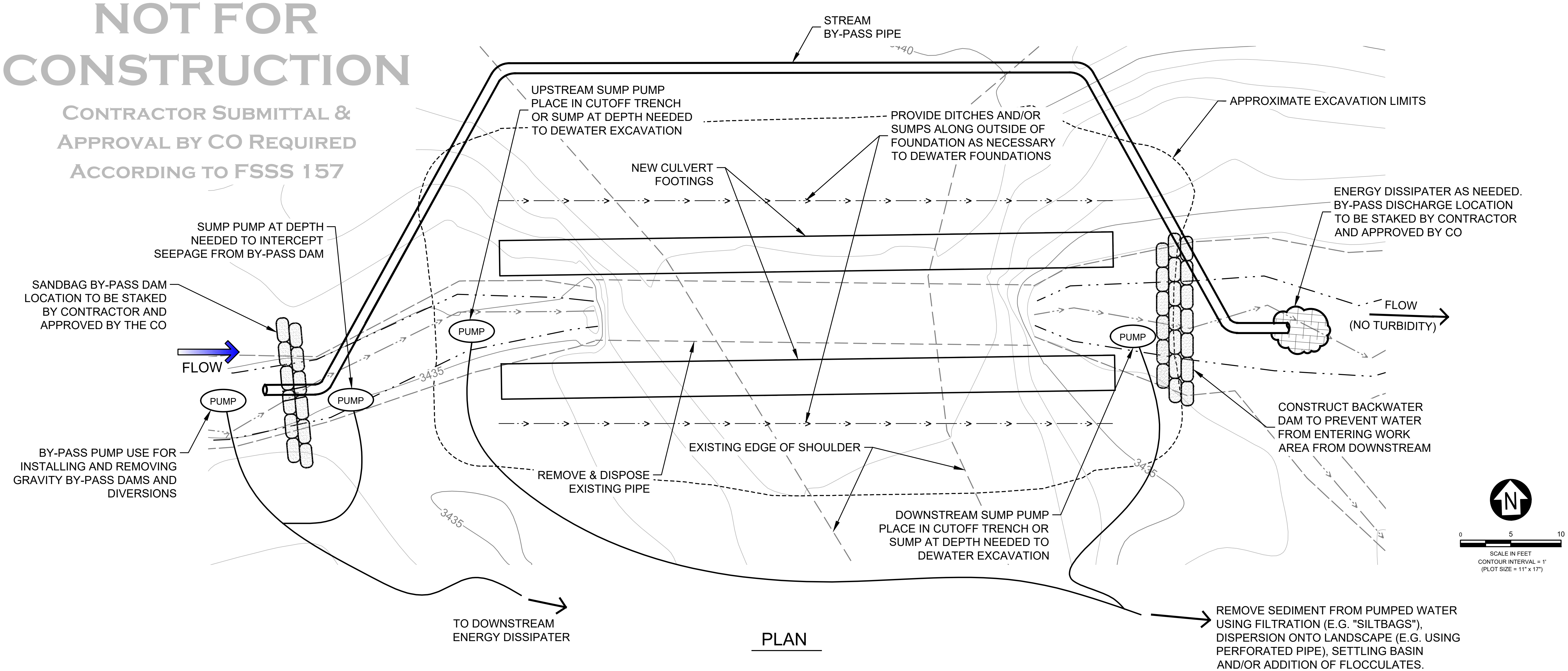
DESIGNER TO PROJ. NO. 7394
DRAWN TO DATE SEP-2023
CHECKED BK SURVEYED DJ&A, P.C.

DJ&A ENGINEERS PLANNERS SURVEYORS

ALBERT CREEK AOP CULVERT REPLACEMENT

SLASH FILTER WINDROW DETAIL

SHEET 13 OF 14



PLAN

NOTES:

1. DEWATER EXCAVATIONS IN ACCORDANCE WITH FP-14 SECTIONS 208, 209 AND 157, AS APPLICABLE, AND THE REQUIREMENTS SHOWN. PROTECT AGAINST SOIL EROSION AND SEDIMENTATION DURING CONSTRUCTION IN ACCORDANCE WITH FP-14 SECTION 157 AND THE PROJECT PERMITS.
2. DEWATERING IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. DEVELOP AND SUBMIT TO THE CO A PROJECT-SPECIFIC DEWATERING PLAN WITH THE EXCAVATION PLAN FOR APPROVAL. AT A MINIMUM, THE DEWATERING PLAN MUST INCLUDE DRAWINGS AND A WRITTEN OUTLINE ILLUSTRATING AND DESCRIBING PROPOSED LAYOUT, METHODS, EQUIPMENT AND ANTICIPATED STREAM FLOW VOLUME. APPROVAL OF THE CONTRACTOR'S DEWATERING PLAN DOES NOT RELIEVE THE CONTRACTOR FROM COMPLETING THE WORK AS REQUIRED. IF THE CONTRACTOR'S METHODS ARE NOT PRODUCING ADEQUATE RESULTS, THE CONTRACTOR MUST STOP WORK IMMEDIATELY, RE-EVALUATE, AND SUBMIT A REVISED DEWATERING PLAN. DO NOT PROCEED WITH WORK UNTIL THE REVISED DEWATERING PLAN IS APPROVED BY THE CO. RE-SUBMITTAL OF THE DEWATERING PLAN, IF REQUIRED, IS INCIDENTAL TO THE WORK.
3. THIS SHEET ILLUSTRATES THE GENERAL DEWATERING REQUIREMENTS AND POSSIBLE METHODS AND EQUIPMENT AND IS NOT CONSIDERED ADEQUATE OR COMPLETE FOR THIS PROJECT.
4. CONTRACTOR IS RESPONSIBLE FOR SIZING ALL PUMPS, DAMS, BYPASS PIPE, OPEN CHANNELS, AND ANY OTHER MEANS PROPOSED TO DIVERT THE STREAM FLOW.
5. ALL WORK IN THE VICINITY OF THE STREAM IS TO BE COMPLETED IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS. STANDING OR RUNNING WATER IN THE WORK AREA DOES NOT RELIEVE THE CONTRACTOR FROM MEETING THE SPECIFICATIONS.
6. WASH THE NEWLY CONSTRUCTED CHANNEL PRIOR TO RE-WATERING. THIS INCLUDES HOSING THE NEW CHANNEL AND PUMPING THE TURBID WATER ONTO EITHER VEGETATED GROUND OR A SETTLING BASIN IN ACCORDANCE WITH THE APPROVED DEWATERING PLAN. RETURN THE STREAM FLOW TO THE NEWLY CONSTRUCTED CHANNEL SLOWLY AND IN A MANNER TO MINIMIZE SEDIMENTATION.

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-	-	-

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ALBERT CREEK AOP CULVERT REPLACEMENT

DEWATERING REQUIREMENTS

ALBERT CREEK AOP

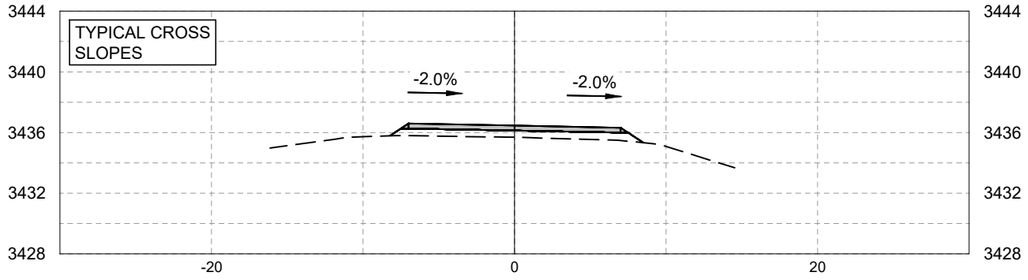
CULVERT REPLACEMENT

ROAD CROSS SECTIONS

PREPARED BY : DJ&A ENGINEERS PLANNERS SURVEYORS

SHEET XS1 OF XS3

11+00.00



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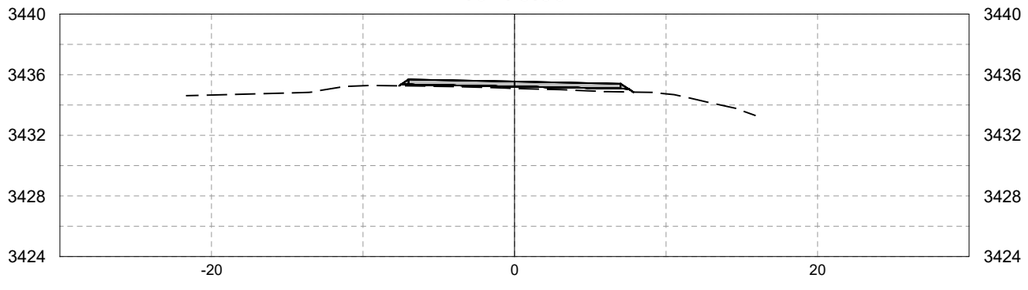

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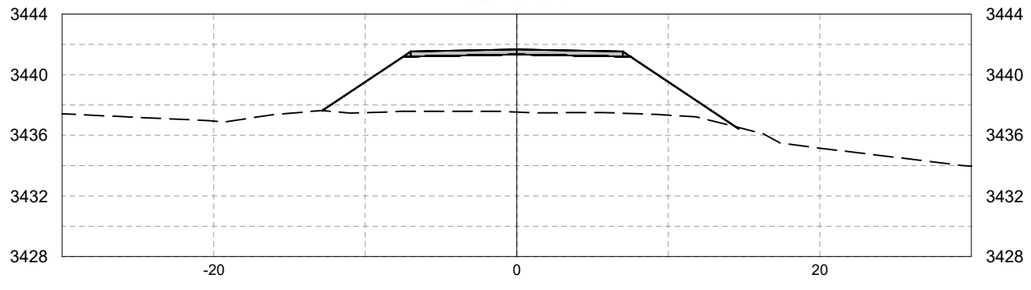

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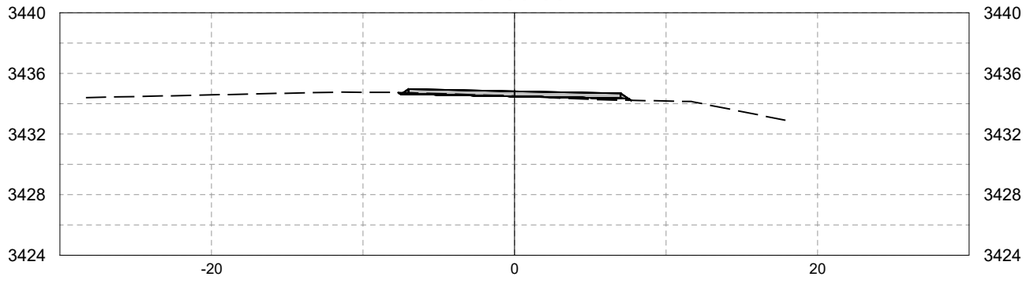

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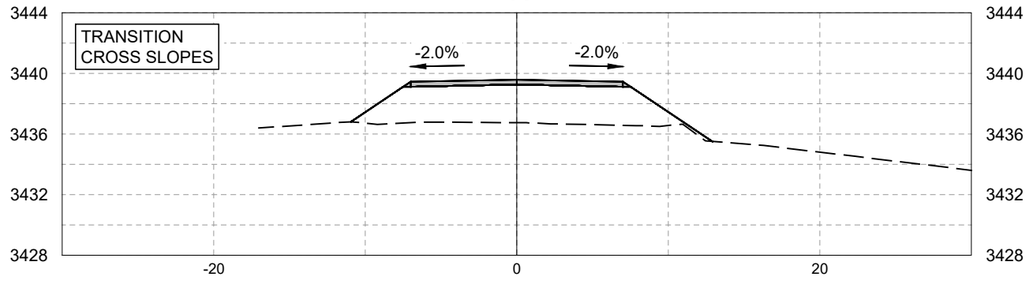

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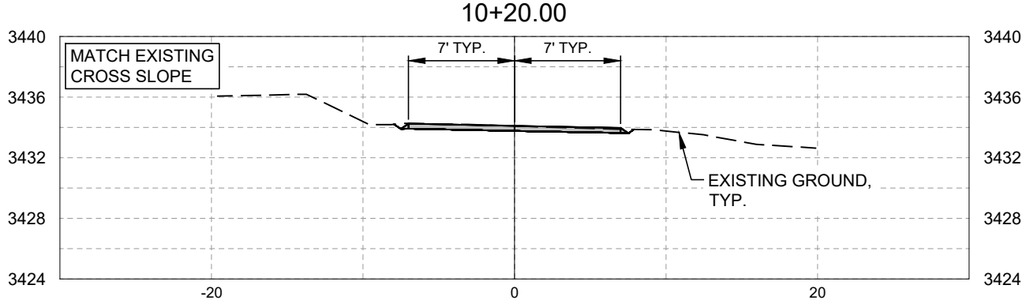

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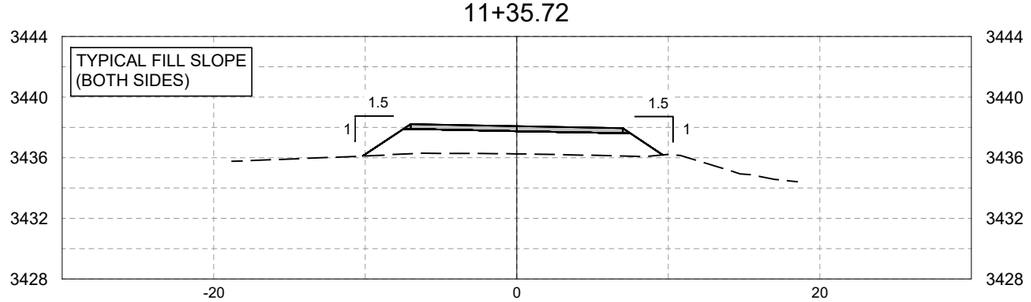


ALBERT CREEK AOP

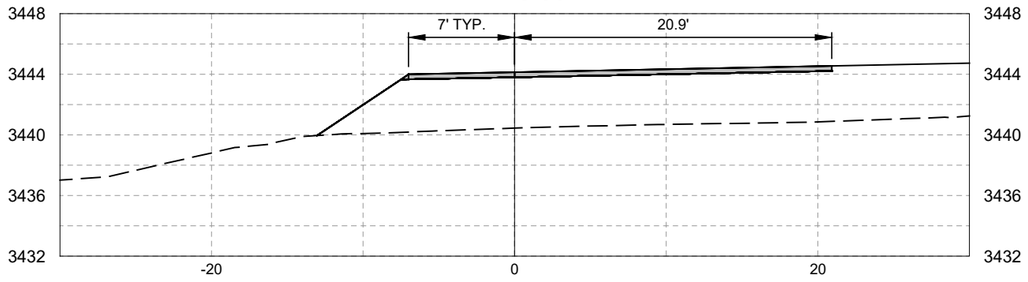
CULVERT REPLACEMENT

ROAD CROSS SECTIONS

PREPARED BY : DJ&A ENGINEERS PLANNERS SURVEYORS

SHEET XS2 OF XS3

12+75.00



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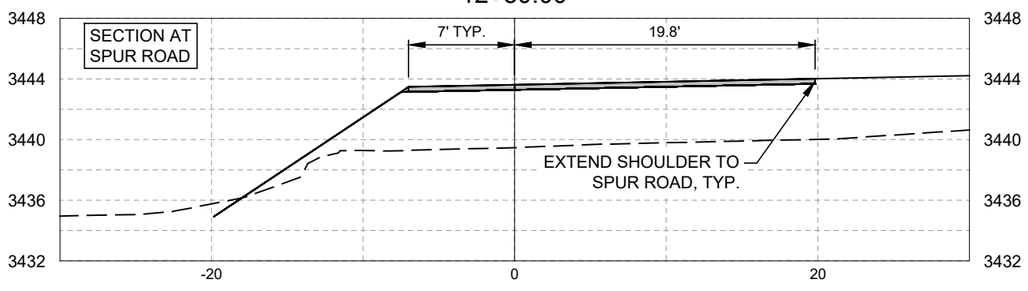

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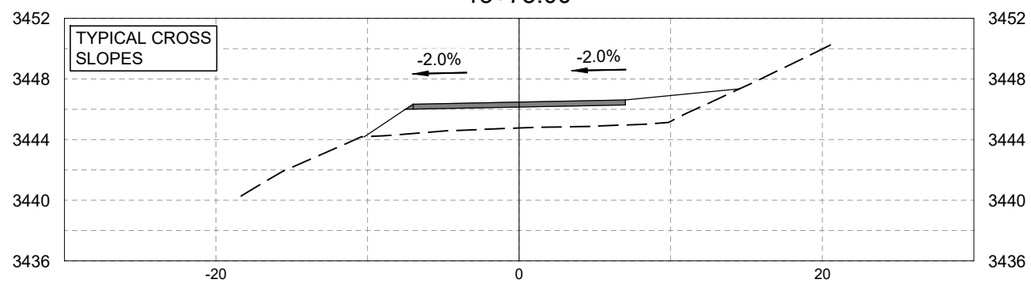

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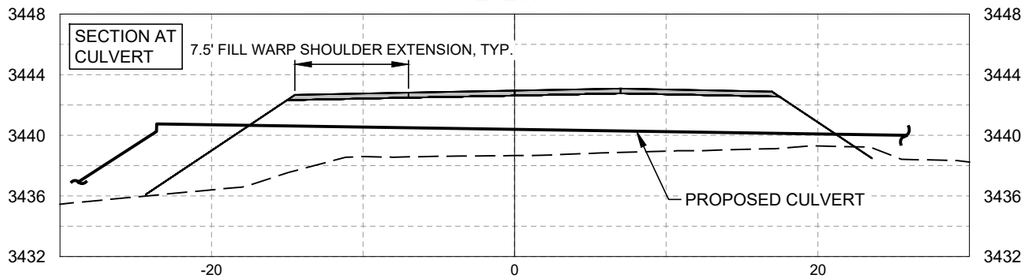

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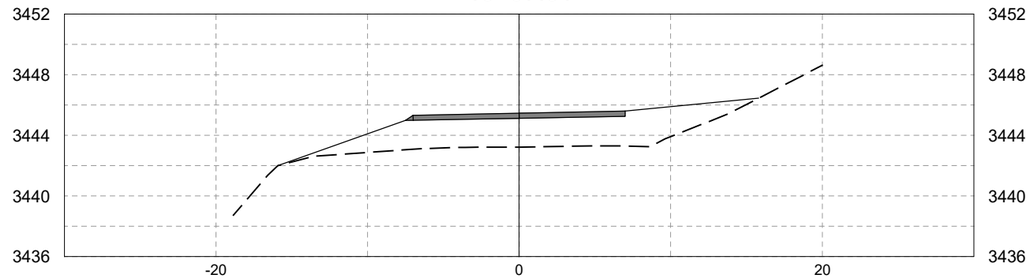

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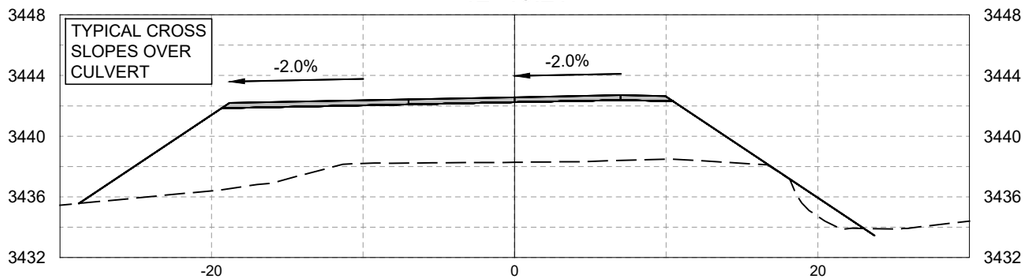

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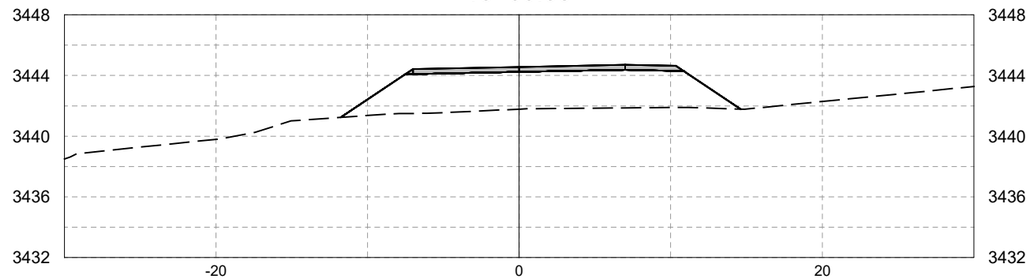

ALBERT CREEK AOP

CULVERT REPLACEMENT

ROAD CROSS SECTIONS

PREPARED BY : DJ&A ENGINEERS PLANNERS SURVEYORS

SHEET XS3 OF XS3