

# INDIANA DEPARTMENT OF NATURAL RESOURCES

## JACKSON - WASHINGTON STATE FOREST

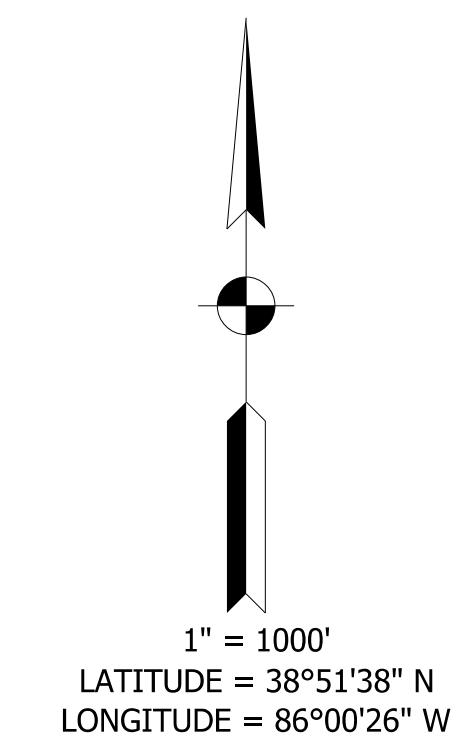
### PROJECT NO: ENG # 2409635019

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SHEET NO.	DESCRIPTION
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13	CONCRETE HEADWALL DETAIL SHEET
14 - 16	PIPE SECTIONS

UTILITIES	
<b>FIBER OPTICS:</b> JACKSON COUNTY REMC ATTN: LANCE ADAMS 274 E. BASE RD. BROWNSTOWN, IN 47220 812-277-6442 LADAMS@JACKSONREMC.COM	<b>CABLE TV:</b> COMCAST ATTN: TOM DAVIS 1470 JACKSON STREET COLUMBUS, IN 47201 765-692-0676 (WORK) 765-545-0234 (CELL) THOMAS_DAVIS@COMCAST.COM
<b>WATER</b> JACKSON COUNTY WATER ATTN: LARRY MCINTOSH 1119 W SPRING ST BROWNSTOWN, IN 47220 812-358-3654 MANAGER@JACKSONCOUNTYWATER.COM	<b>TELEPHONE:</b> FRONTIER COMMUNICATION ATTN: ROBIN BRANSON 24373 CR 45 ELKHART, IN 56416 574-875-3789 ROBIN.H.BRANSON@FTR.COM

UTILITIES INSIDE PARK
<b>WATER</b> JACKSON WASHINGTON STATE PARK ATTN: JOSH KUSH 814-421-3198 JKUSH@DNR.IN.GOV ATTN: JEREMY STEINKAMP 812-358-2160
FOR UNDERGROUND UTILITIES, CALL: WITHIN INDIANA 1-800-382-5544 (TOLLFREE) FROM OUTSIDE INDIANA 1-800-428-5200 (TOLLFREE)

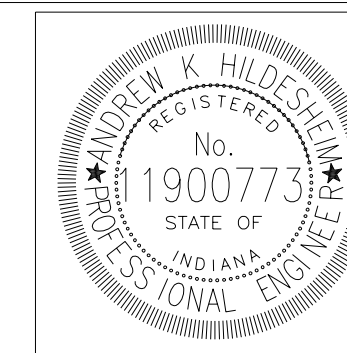
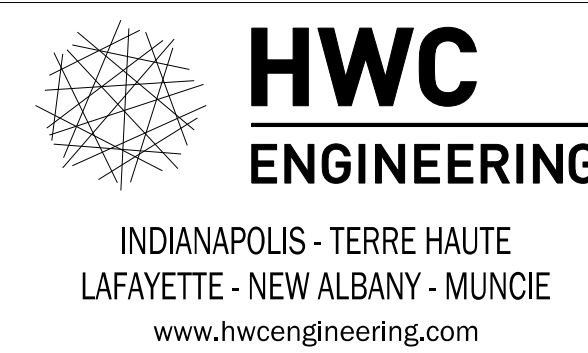
PROJECT DESCRIPTION  
 PIPE REPLACEMENTS IN THE JACKSON - WASHINGTON STATE FOREST. THIS PROJECT IS LOCATED IN SECTION 19, T-5-N, R-5-E, BROWNSTOWN TOWNSHIP, JACKSON COUNTY, INDIANA.



## JACKSON COUNTY

INDIANA DEPARTMENT OF TRANSPORTATION  
 STANDARD SPECIFICATIONS DATED 2024  
 TO BE USED WITH THESE PLANS

W:\INDIA\_2023-405-S IDNR Jack-Wash CA and Pipes\Design\CAD\RD\Title.dgn  
 REVISION 3.0  
 12/4/2024  
 10:15:20 AM  
 1:1000



PLANS PREPARED BY:	HWC ENGINEERING	812-675-4458 PHONE NUMBER
CERTIFIED BY:	<i>Andrew K. Hildesheim</i>	12-6-24 DATE

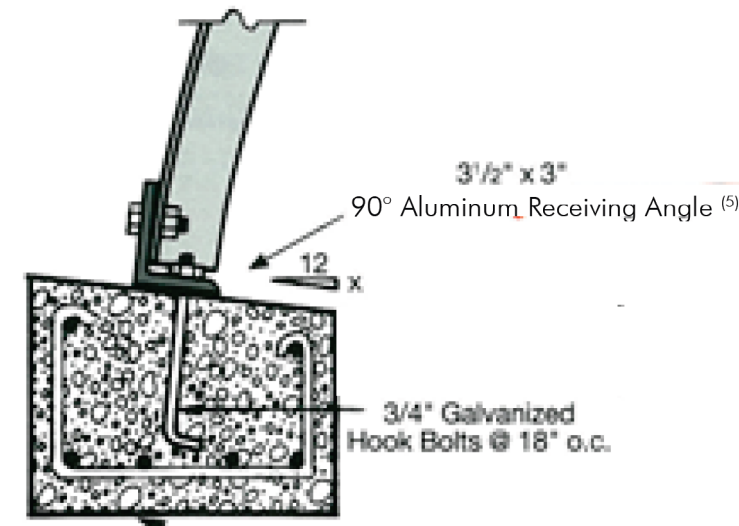
SHEETS		
1	of	16
PROJECT		
ENG # 2409635019		

NOTE: FOUNDATION DETAIL PROVIDED SHALL BE USED AS A REFERENCE FOR QUANTITY PURPOSES, CONTRACTOR IS RESPONSIBLE FOR OBTAINING FOUNDATION DESIGN WITH STEEL REINFORCEMENT FROM SUPPLIER. SUPPLIER FOUNDATION DETAILS SHALL SUPERSEDE PLAN DETAILS ONCE APPROVED BY ENGINEER.

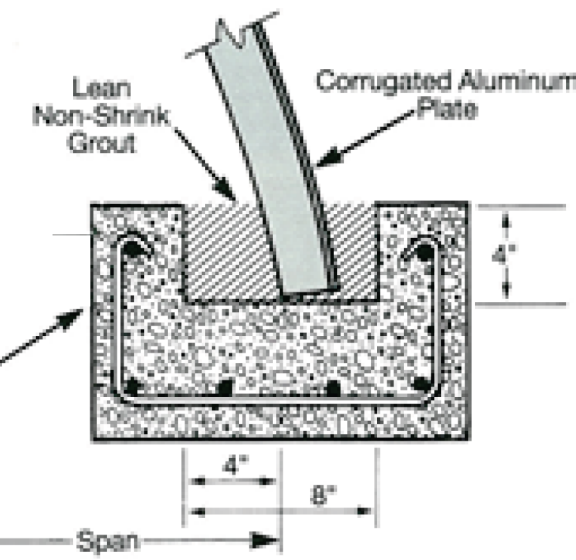
**FOUNDATION DETAILS**

FOUNDATION DIMENSIONS SHALL BE 3.5' WIDE PER GEOTECH RECOMMENDATIONS. DEPTHS OF FOUNDATIONS CAN BE OBTAINED FROM THE STRUCTURE DATA TABLE.

**Concrete Footing with Angle**



**Slotted Concrete Footing**

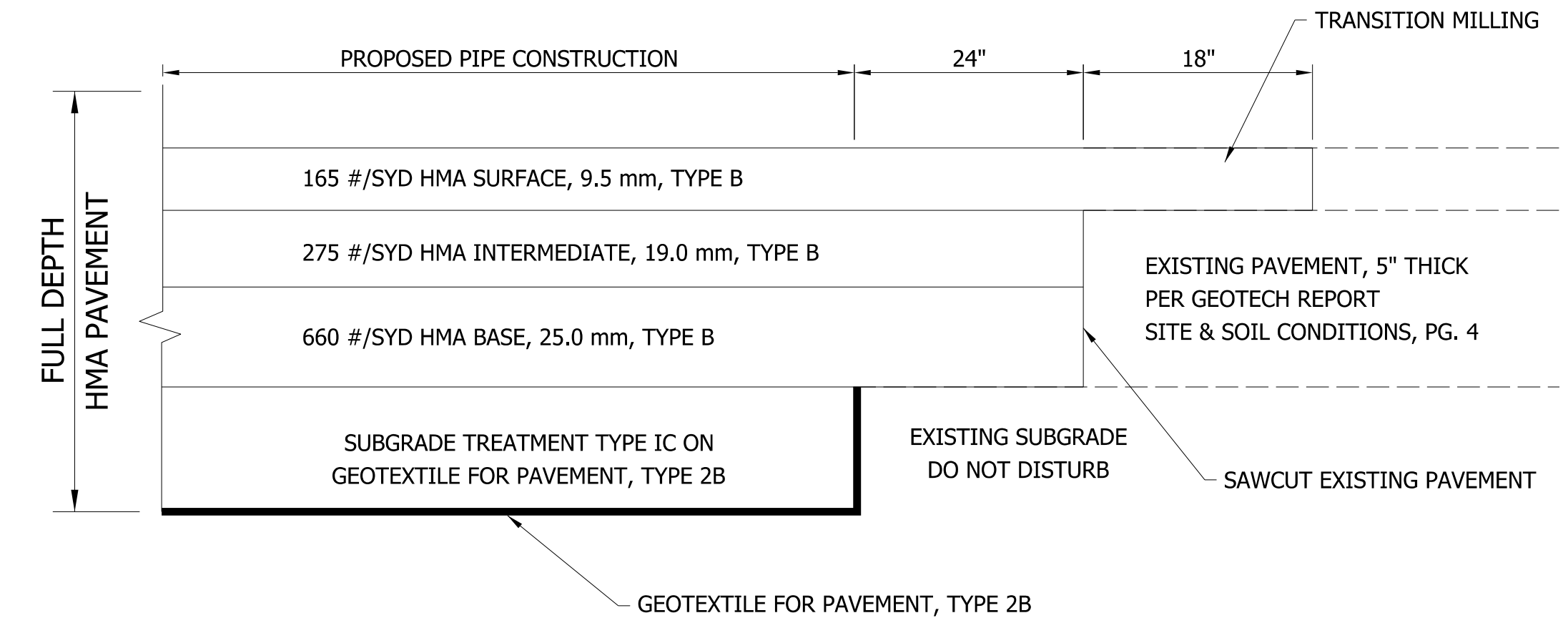


**Notes**  
Maintain enough clearance between the rebar and aluminum to avoid galvanic corrosion.

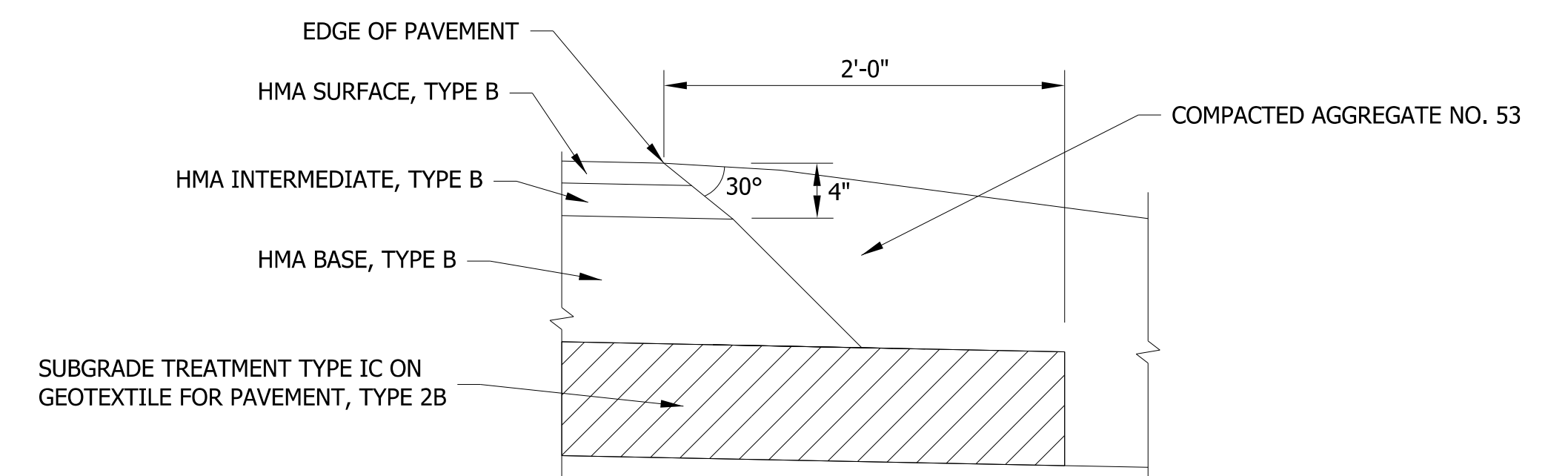
**ALUMINUM ARCH PIPE FOOTING DETAILS**  
CLV - 414 & CLV - 446  
NOT TO SCALE

NOTE: MATCH EXISTING CROSS SLOPES WITHIN FULL DEPTH PAVEMENT REPLACEMENT LIMITS, AS SHOWN ON PLAN SHEETS. BOUNDARIES OF FULL DEPTH PAVEMENT REPLACEMENT LIMITS SHALL BE EXISTING EDGES OF PAVEMENT, AS SHOWN ON PLAN SHEETS.

CONTRACTOR SHALL COORDINATE WITH THE OWNER REGARDING LOCATIONS FOR FULL DEPTH AND PARTIAL DEPTH PAVEMENT PATCHING, REFER TO SPECIAL PROVISIONS FOR ADDITIONAL DETAILS.

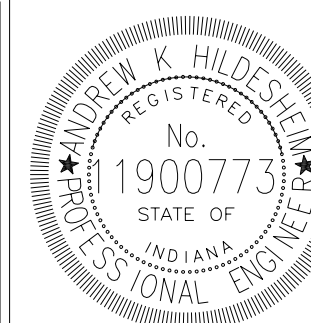


**PAVEMENT DETAIL**  
NOT TO SCALE



**SAFETY EDGE DETAIL**  
NTS

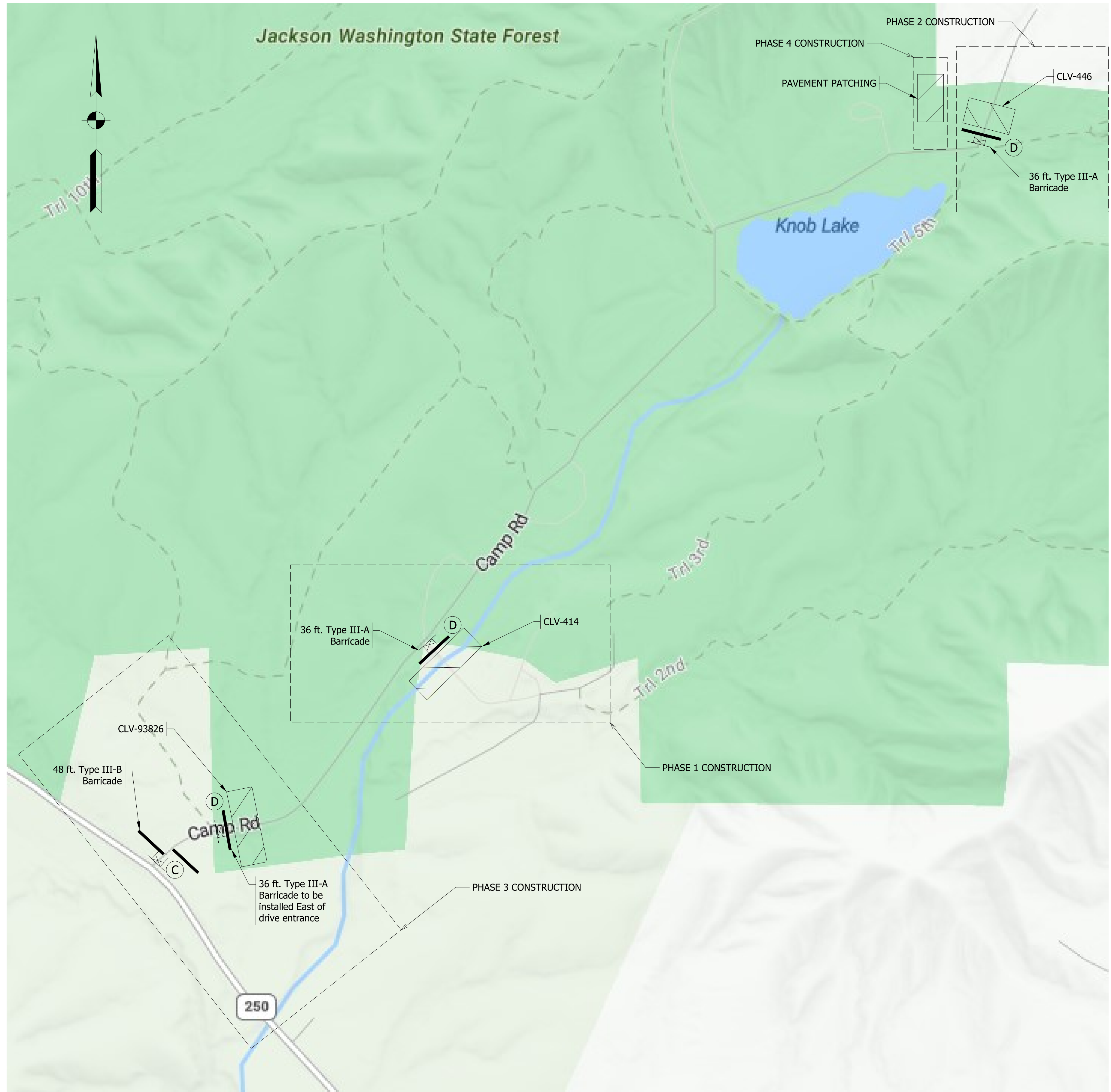
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 12/4/2024  
 10:15:29 AM  
 P:\2024  
 1918-003



RECOMMENDED FOR APPROVAL: *Andrew Hildesheim* 12/6/2024  
 DESIGN ENGINEER DATE  
 DESIGNED: AKH DRAWN: AKH  
 CHECKED: DPL CHECKED: DPL

**INDIANA DEPARTMENT OF NATURAL RESOURCES**  
**TYPICAL SECTION & MISCELLANEOUS DETAILS**

HORIZONTAL SCALE	BRIDGE FILE
N/A	
VERTICAL SCALE	DESIGNATION
N/A	
SURVEY BOOK	SHEETS
	2 of 16
CONTRACT	PROJECT
	2409635019



**PHASE 1 CONSTRUCTION:**

1. CLOSE ENTRANCE TO JACKSON WASHINGTON STATE FOREST UTILIZING BARRICADE WITH ROAD CLOSED SIGN ASSEMBLY FOR THROUGH TRAFFIC WITH TYPE III-B BARRICADE. PROVIDE ROAD CLOSED SIGN ASSEMBLY WITH TYPE III-A BARRICADE AT ENTRANCE TO SIDE ROAD, AS SHOWN ON LAYOUT DRAWING.
2. REMOVE & REPLACE EXISTING 48" CMP WITH 11' x 4.5' CORRUGATED ALUMINUM ARCH PIPE W/ END SECTIONS, CLV-414.

**PHASE 2 CONSTRUCTION**

1. MAINTAIN BARRICADE WITH ROAD CLOSED SIGN ASSEMBLY FOR THROUGH TRAFFIC AT THE ENTRANCE TO JACKSON WASHINGTON STATE FOREST, AS SHOWN ON LAYOUT DRAWING. RELOCATE ROAD CLOSED SIGN ASSEMBLY WITH TYPE III-A BARRICADE FROM PHASE I TO PHASE II PROJECT LOCATION.
2. REMOVE & REPLACE EXISTING 60" CMP WITH 11' x 4.5' CORRUGATED ALUMINUM ARCH PIPE W/ ARCH CIP HEADWALL & WINGWALLS, CLV-446.

**PHASE 3 CONSTRUCTION:**

1. MAINTAIN BARRICADE WITH ROAD CLOSED SIGN ASSEMBLY FOR THROUGH TRAFFIC AT THE ENTRANCE TO JACKSON WASHINGTON STATE FOREST, AS SHOWN ON LAYOUT DRAWING. RELOCATE ROAD CLOSED SIGN ASSEMBLY WITH TYPE III-A BARRICADE EAST OF EXISTING PICNIC AREA AT STA. 10+00.
2. REMOVE & REPLACE EXISTING 48" CMP WITH 48" RCP W/ CONCRETE END SECTION, CLV-93826.
3. REMOVE ALL CONSTRUCTION SIGNS AFTER CULVERT CONSTRUCTION IS COMPLETE FOR CLV-93826.

**PHASE 4 CONSTRUCTION**

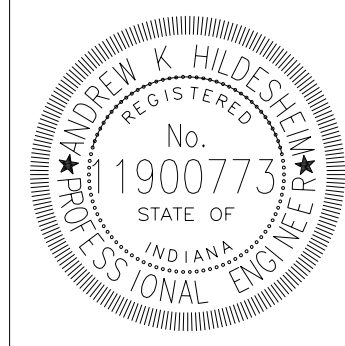
1. PERFORM FULL DEPTH & PARTIAL DEPTH PAVEMENT PATCHING UNDER TEMPORARY ROAD CLOSURE AND FLAGGING OPERATIONS. COORDINATE WITH OWNER ON LOCATION OF PATCHING.



**MOT LAYOUT DRAWING**  
NOT TO SCALE

**LEGEND**

- Construction Area
- Standard Type III-A Barricade as Required
- Standard Type III-B Offsetting Barricades as Required
- Typical Sign Standard (Road Closure Assembly)



RECOMMENDED FOR APPROVAL	<i>Calvin F. Williams</i>	12/6/2024
DESIGNED:	AKH	DATE
DRAWN:	AKH	
CHECKED:	DPL	
	DPL	

**INDIANA DEPARTMENT OF NATURAL RESOURCES**

**MAINTENANCE OF TRAFFIC DETOUR LAYOUT**

HORIZONTAL SCALE	BRIDGE FILE
1" = 20'	
VERTICAL SCALE	DESIGNATION
1" = 2'	
SURVEY BOOK	SHEETS
	3 of 17
CONTRACT	PROJECT
	2409635019

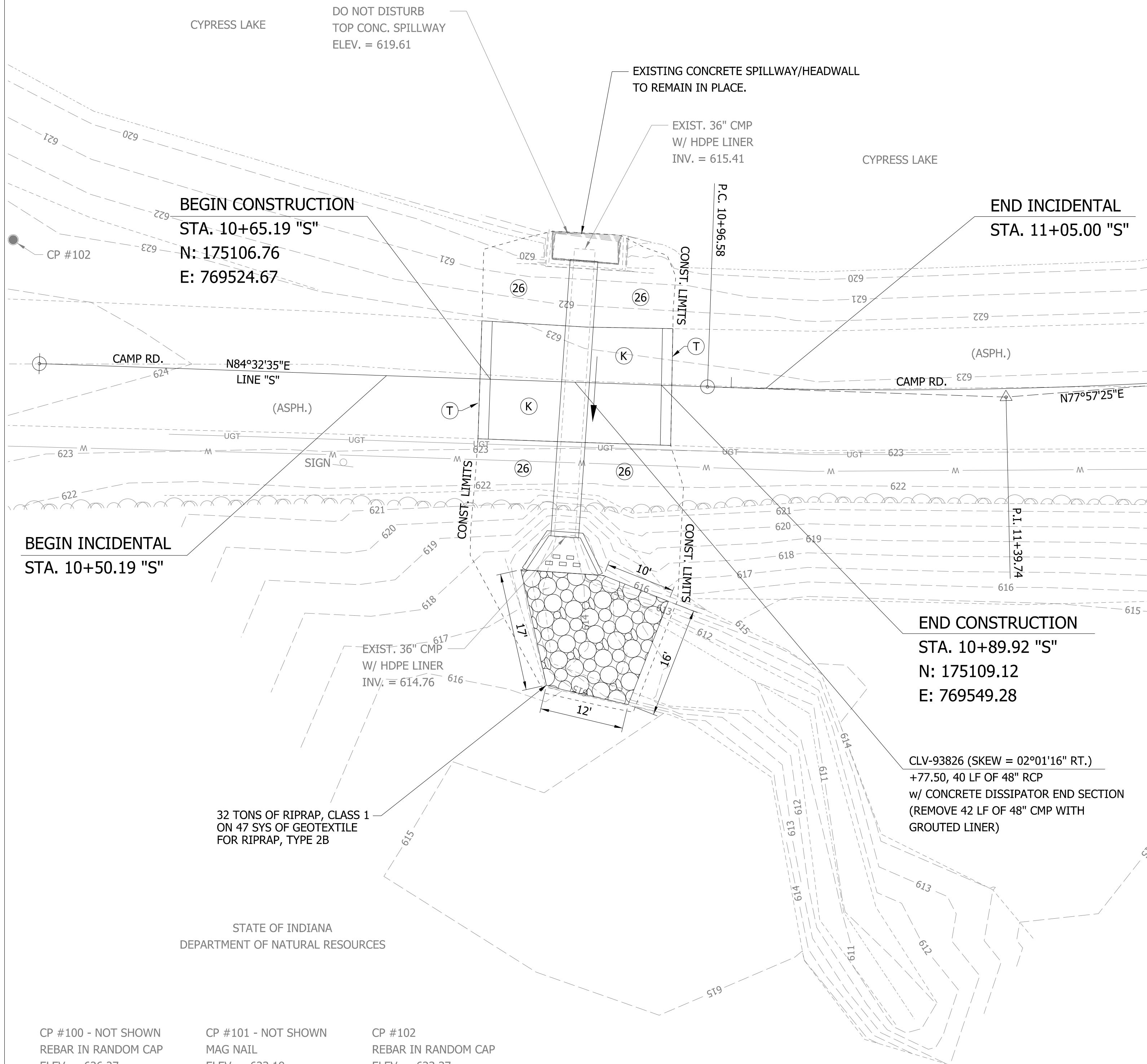
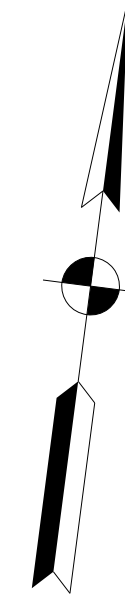
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 PLOT: 2024  
 PLOT: 2024

10+00

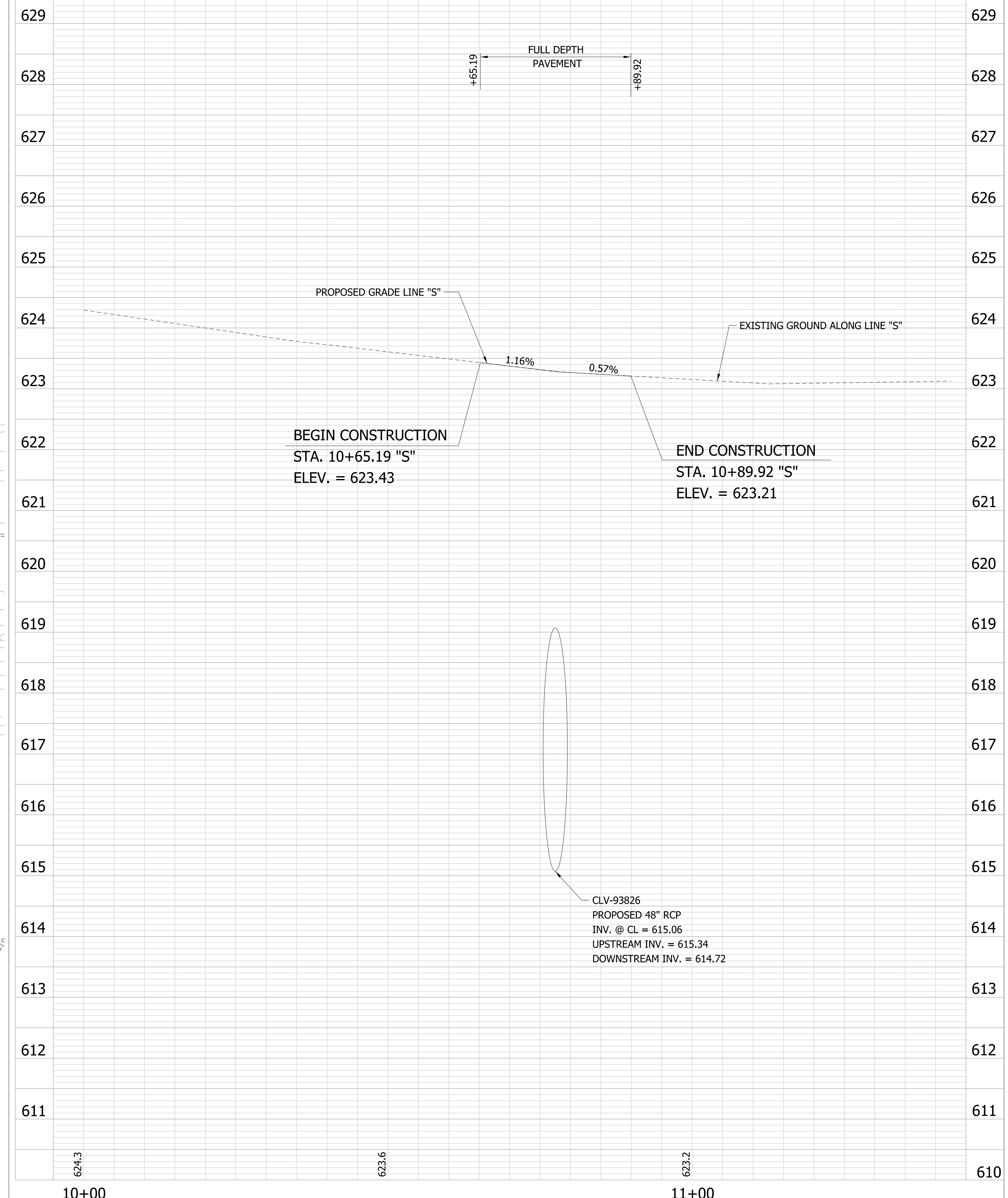
11+00

STATE OF INDIANA  
DEPARTMENT OF NATURAL RESOURCES

P.I. = 11+39.74  
N = 175113.85  
E = 769598.88  
DELTA = 6°35'10" LT.  
D = 7°38'22"  
R = 750.00'  
T = 43.15'  
L = 86.21'  
E = 1.24'

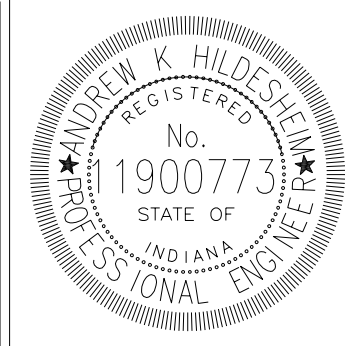


NOTE: THE PROPOSED GRADE OF LINE "S" IS TO MATCH THE EX. PROFILE GRADE.



CP #100 - NOT SHOWN REBAR IN RANDOM CAP ELEV. = 626.27 N = 174933.47' E = 769217.92'	CP #101 - NOT SHOWN MAG NAIL ELEV. = 623.19 N = 175135.98' E = 769666.37'	CP #102 REBAR IN RANDOM CAP ELEV. = 623.37 N = 175117.81' E = 769453.71'
--	---	--

- (K) FULL DEPTH HMA PAVEMENT  
165 LBS/SYD HMA SURFACE, 9.5 mm, TYPE B on  
275 LBS/SYD HMA INTERMEDIATE, 19.0 mm, TYPE B on  
660 LBS/SYD HMA BASE, 25.0 mm, TYPE B on  
SUBGRADE TREATMENT, TYPE IC on  
GEOTEXTILE FOR PAVEMENT, TYPE 2B
- (T) TRANSITION MILLING  
165 LBS/SYD HMA SURFACE TYPE B ON  
MILLING, ASPHALT, 1.5 IN.
- (26) MULCHED SEEDING, TYPE R



RECOMMENDED FOR APPROVAL: *Andrew Hildesheim* 12/6/2024 DATE  
DESIGN ENGINEER

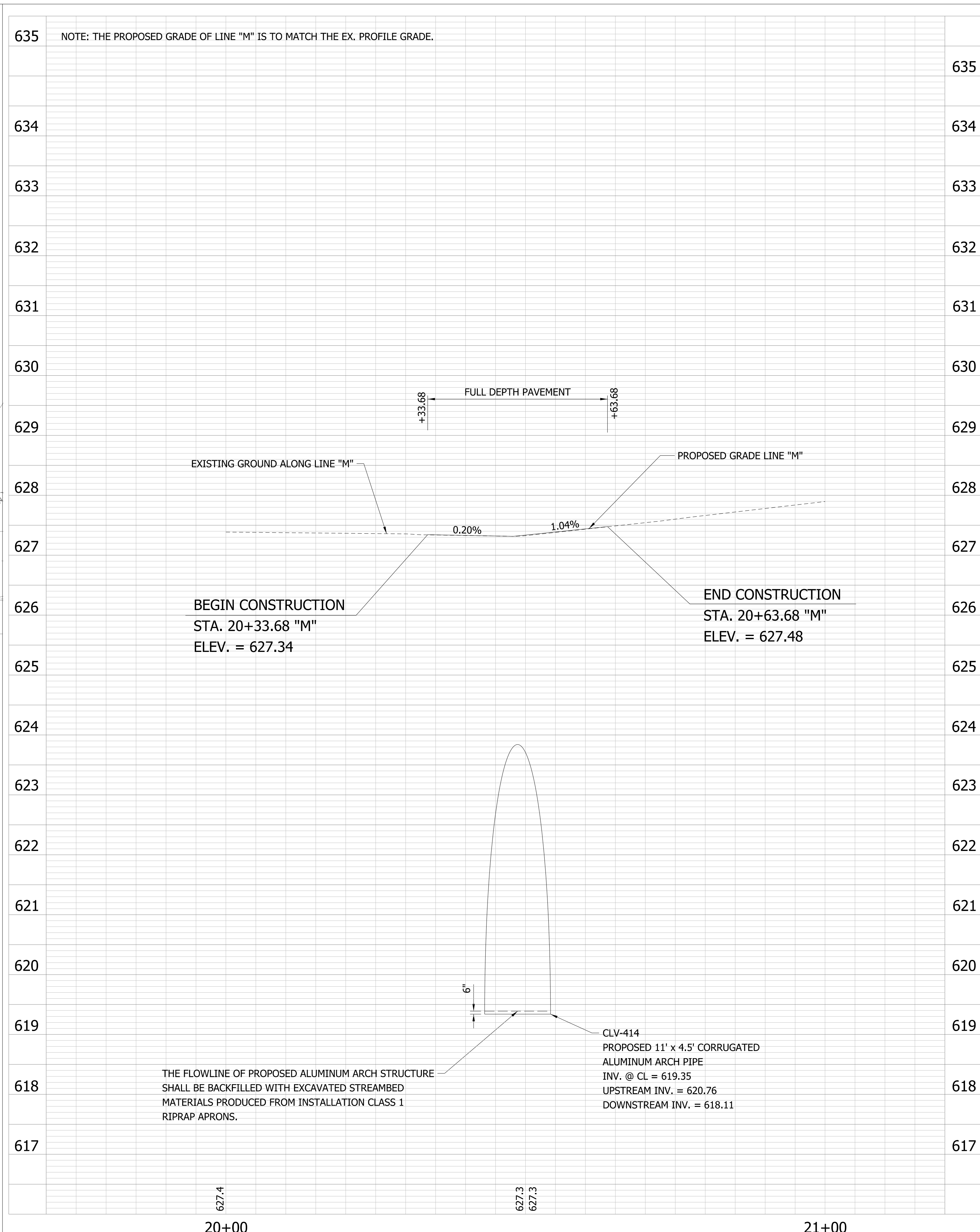
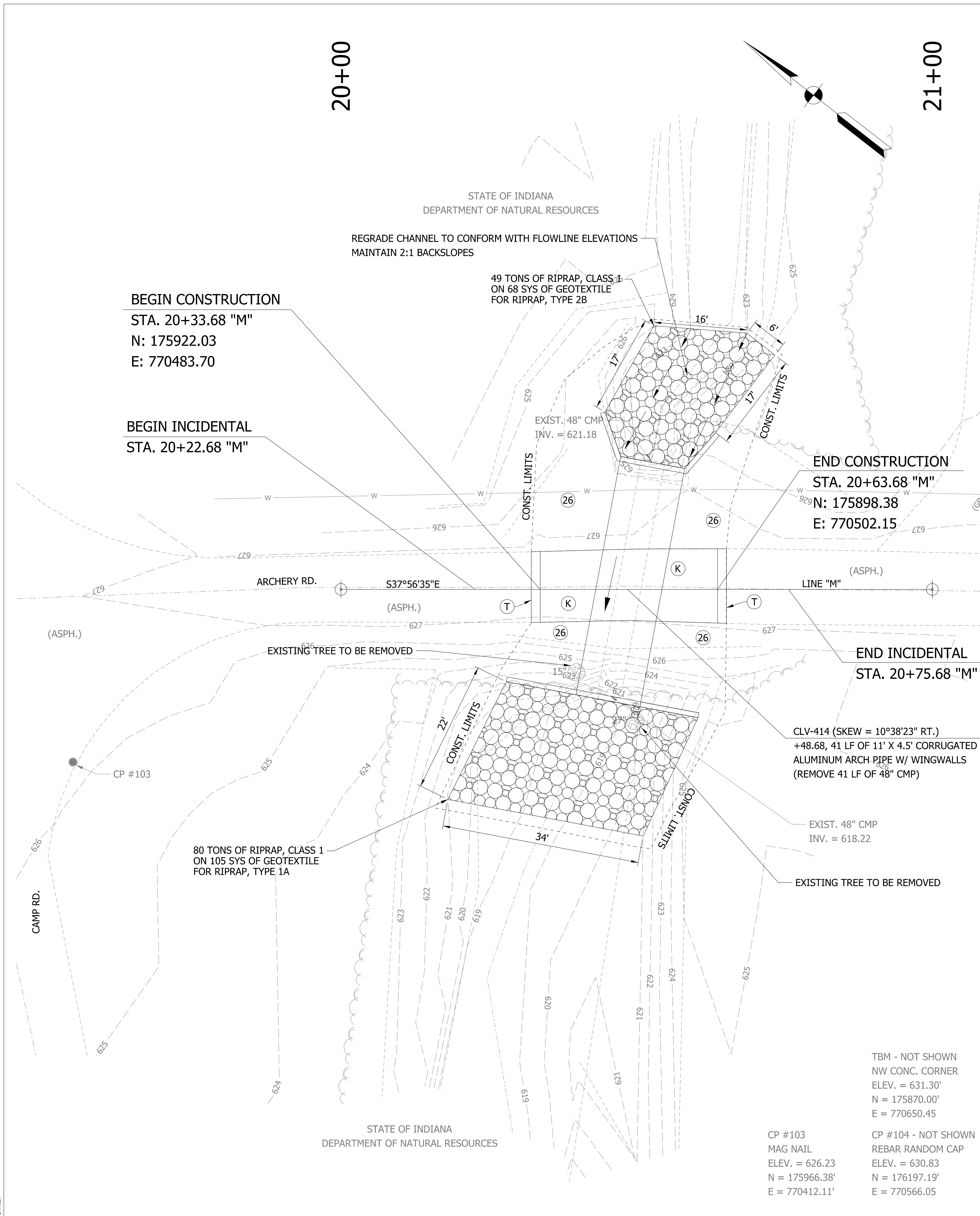
DESIGNED: AKH DRAWN: AKH  
CHECKED: DPL CHECKED: DPL

INDIANA DEPARTMENT OF NATURAL RESOURCES

PLAN AND PROFILE SHEET  
CAMP RD - CLV - 93826

HORIZONTAL SCALE 1" = 10'	BRIDGE FILE
VERTICAL SCALE 1" = 2'	DESIGNATION
SURVEY BOOK	SHEETS
CONTRACT	4 of 16
	PROJECT
	2409635019

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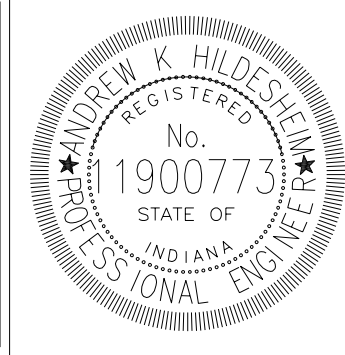


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 10:15:55 AM  
 13:39596

- (K)** FULL DEPTH HMA PAVEMENT  
165 LBS/SYD HMA SURFACE, 9.5 mm, TYPE B on  
275 LBS/SYD HMA INTERMEDIATE, 19.0 mm, TYPE B on  
660 LBS/SYD HMA BASE, 25.0 mm, TYPE B on  
SUBGRADE TREATMENT, TYPE IC on  
GEOTEXTILE FOR PAVEMENT, TYPE 2B
- (T)** TRANSITION MILLING  
165 LBS/SYD HMA SURFACE, 9.5 mm, TYPE B on  
MILLING, ASPHALT, 1.5 IN.
- (26)** MULCHED SEEDING, TYPE R

CP #103  
 MAG NAIL  
 ELEV. = 626.23  
 N = 175966.38'  
 E = 770412.11'

CP #104 - NOT SHOWN  
 REBAR RANDOM CAP  
 ELEV. = 630.83  
 N = 176197.19'  
 E = 770566.05



RECOMMENDED FOR APPROVAL: *Andrew Hildebrand* 12/6/2024  
 DESIGN ENGINEER DATE

DESIGNED: AKH DRAWN: AKH  
 CHECKED: DPL CHECKED: DPL

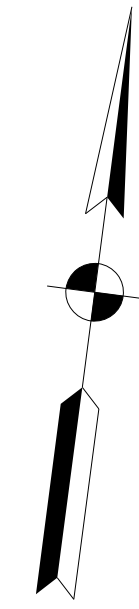
**INDIANA DEPARTMENT OF NATURAL RESOURCES**  
**PLAN & PROFILE SHEET**  
**ARCHERY ROAD - CLV-414**

HORIZONTAL SCALE 1" = 10'	BRIDGE FILE
VERTICAL SCALE 1" = 2'	DESIGNATION
SURVEY BOOK	SHEETS
CONTRACT	5 of 16
	PROJECT 2409635019

30+00

31+00

P.I. = 30+71.51  
N = 178263.65  
E = 772956.32  
DELTA = 6°36'30" RT.  
D = 38°11'50"  
R = 150.00'  
T = 8.66'  
L = 17.30'  
E = 0.25'



BEGIN CONSTRUCTION  
STA. 30+35.00 "N"  
N: 178263.32  
E: 772919.81

BEGIN INCIDENTAL  
STA. 30+25.00 "N"

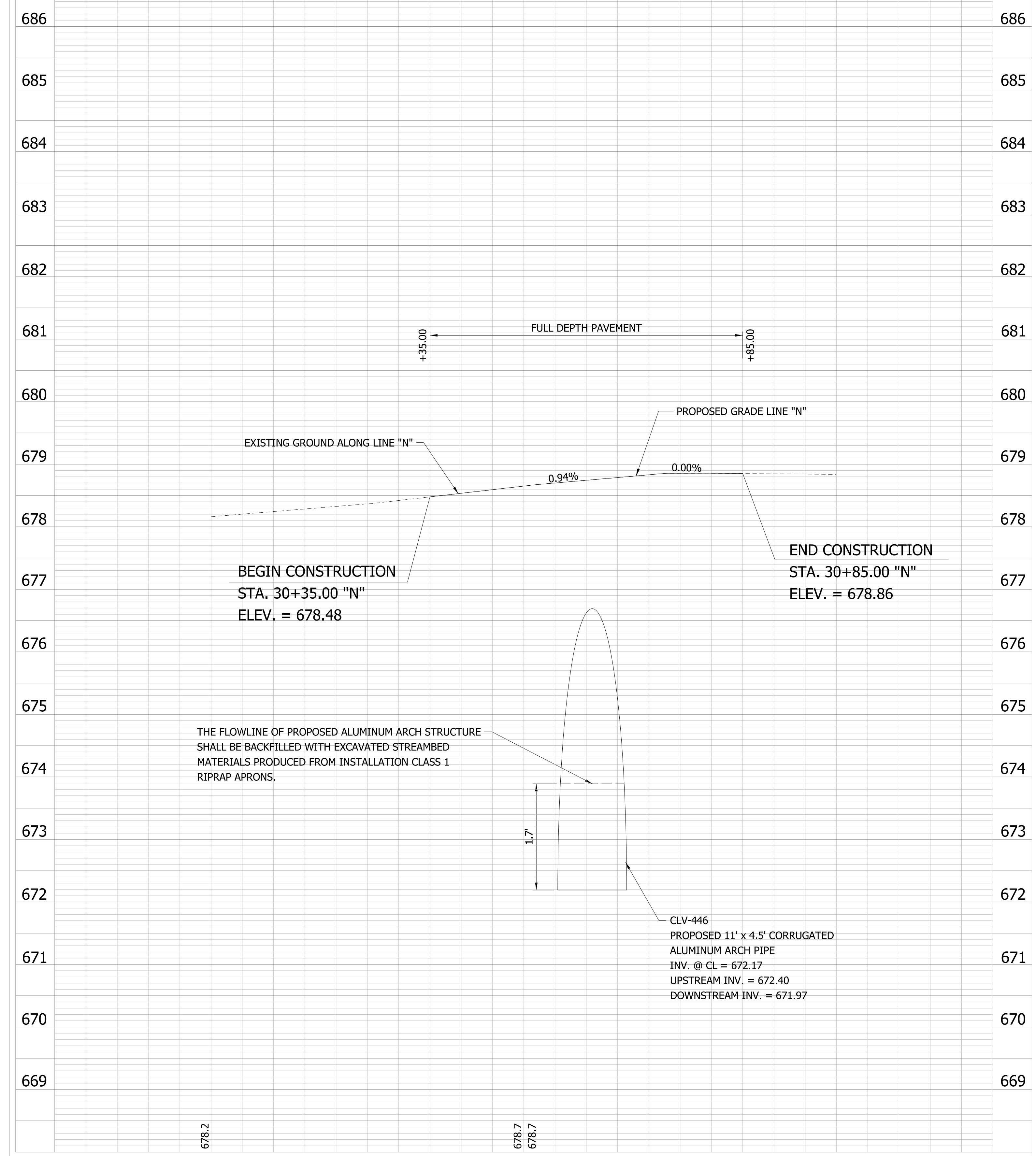
END CONSTRUCTION  
STA. 30+85.00 "N"  
N: 178262.21  
E: 772969.75

END INCIDENTAL  
STA. 30+86.50 "N"

BEGIN CONSTRUCTION  
STA. 30+35.00 "N"  
ELEV. = 678.48

END CONSTRUCTION  
STA. 30+85.00 "N"  
ELEV. = 678.86

NOTE: THE PROPOSED GRADE OF LINE "N" IS TO MATCH THE EX. PROFILE GRADE.



CLV-446 (SKEW = 04°07'26" LT.)  
+60.82, 26 LF OF 11' X 4.5' CORRUGATED  
ALUMINUM ARCH PIPE W/ ARCH CIP  
HEADWALL & WINGWALLS  
(REMOVE 21 LF OF EXIST. 60" CMP)

46 TONS OF RIPRAP, CLASS 1  
ON 63 SYS OF GEOTEXTILE  
FOR RIPRAP, TYPE 2B

WOOD PEDESTRIAN  
BRIDGE

STATE OF INDIANA  
DEPARTMENT OF NATURAL RESOURCES

EXIST. 60" CMP  
INV. = 671.69

EXIST. 60" CMP  
INV. = 671.44

EXISTING STONE HEADWALLS  
TO BE REMOVED & REUSED.  
REFER TO DETAILS.

EXISTING WOOD POSTS TO BE REMOVED.

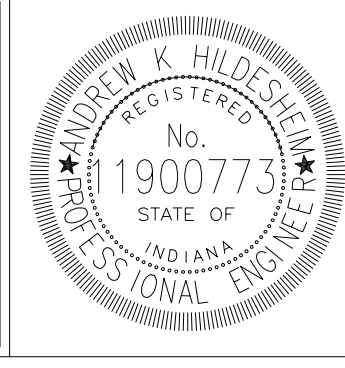
TBM - NOT SHOWN  
SE CONC. CORNER  
ELEV. = 682.80  
N = 178327.97'  
E = 773098.85'

CP #105  
MAG NAIL  
ELEV. = 678.04  
N = 178256.51'  
E = 772906.79'

CP #106 - NOT SHOWN  
MAG NAIL  
ELEV. = 682.73  
N = 178270.51'  
E = 772697.95'

VA124813023-405-5 DMR Jack-Vish EC - Civil Plans Design/CAD/Plan - North Pipe.dgn  
12/14/2024 10:15:58 AM  
13:59:58

- (K) FULL DEPTH HMA PAVEMENT  
165 LBS/SYD HMA SURFACE, 9.5 mm, TYPE B on  
275 LBS/SYD HMA INTERMEDIATE, 19.0 mm, TYPE B on  
660 LBS/SYD HMA BASE, 25.0 mm, TYPE B on  
SUBGRADE TREATMENT, TYPE IC on  
GEOTEXTILE FOR PAVEMENT, TYPE 2B
- (26) MULCHED SEEDING, TYPE R
- (T) TRANSITION MILLING  
165 LBS/SYD HMA SURFACE, 9.5 mm, TYPE B on  
MILLING, ASPHALT, 1.5 IN.
- (K1) FULL DEPTH GRAVEL ROAD  
4", COMPACTED AGGREGATE, NO. 73 on  
6", COMPACTED AGGREGATE, NO. 53 on  
SUBGRADE TREATMENT, TYPE IC on  
GEOTEXTILE FOR PAVEMENT, TYPE 2B



RECOMMENDED FOR APPROVAL: *Andrew Hildesheim* DESIGN ENGINEER 12/6/2024 DATE

DESIGNED: AKH DRAWN: AKH  
CHECKED: DPL CHECKED: DPL

INDIANA DEPARTMENT OF NATURAL RESOURCES

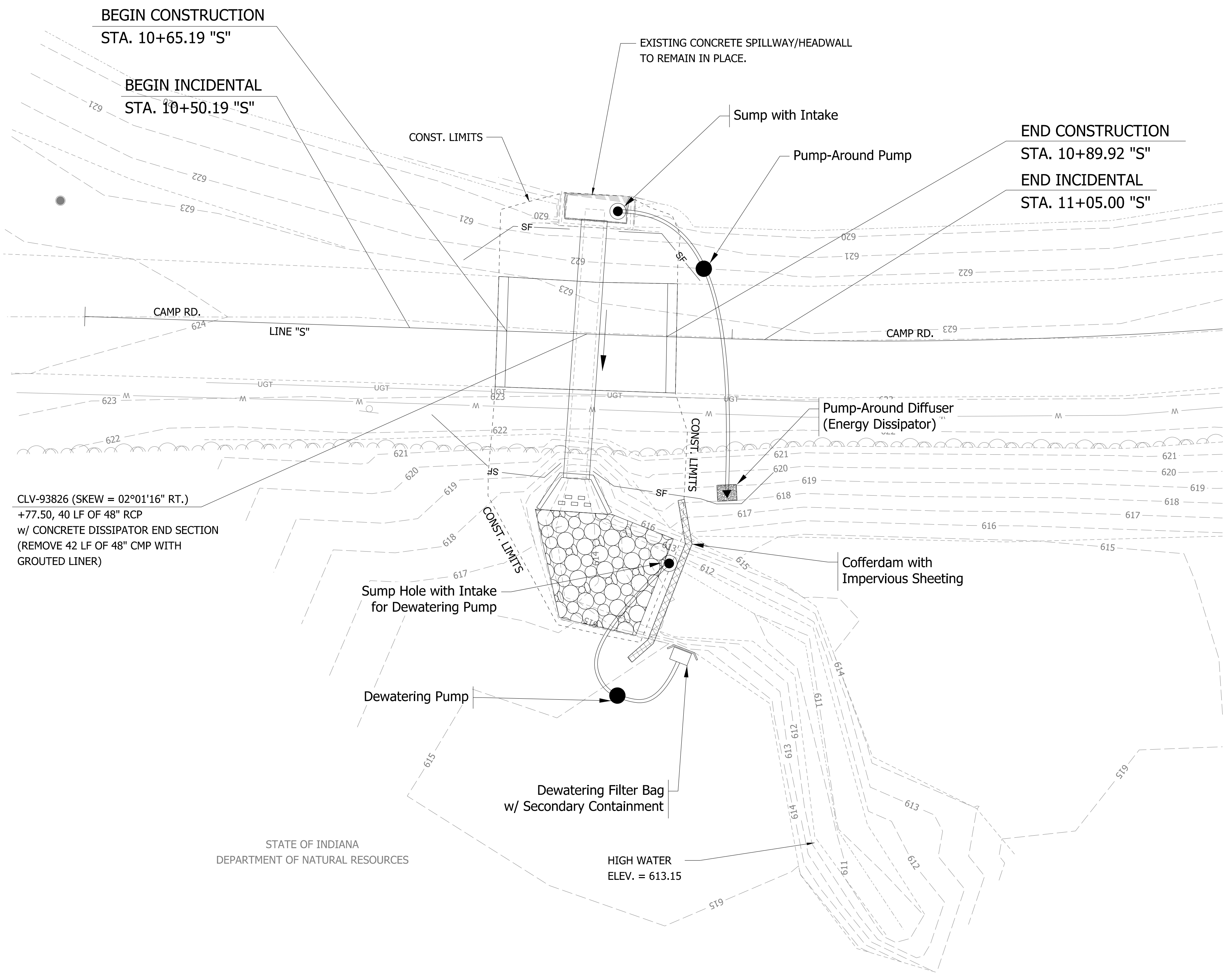
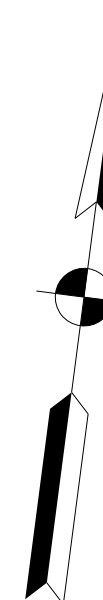
PLAN AND PROFILE SHEET  
CAMP RD - CLV - 446

HORIZONTAL SCALE 1" = 10'	BRIDGE FILE
VERTICAL SCALE 1" = 2'	DESIGNATION
SURVEY BOOK	SHEETS
CONTRACT	6 of 16
	PROJECT 2409635019

10+00

11+00

STATE OF INDIANA  
DEPARTMENT OF NATURAL RESOURCES



**EROSION CONTROL NOTES**

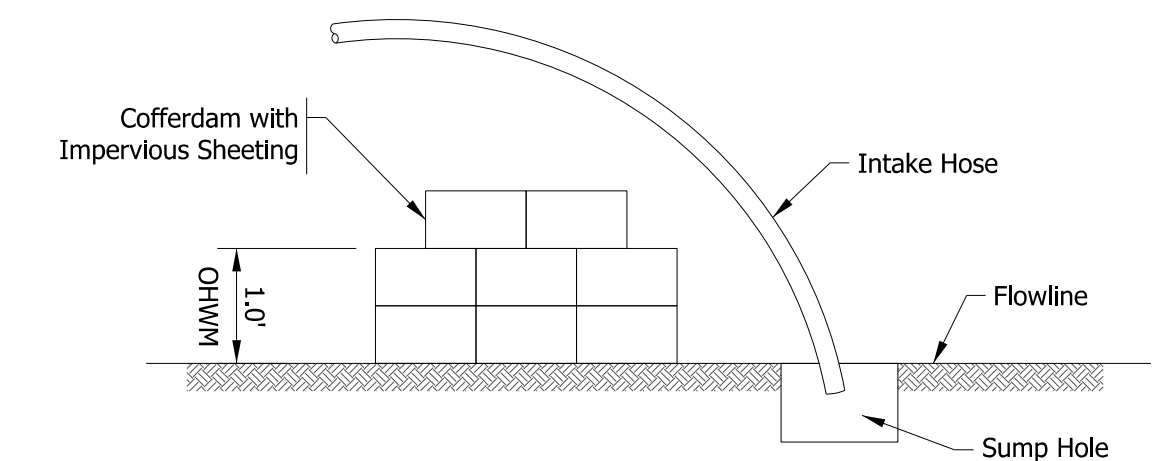
- Erosion Control Blanket shall be placed on all graded slopes 3:1 and steeper and in concentrated flow areas (i.e. roadside ditches).
- Permanent Seeding and Mulching to be placed on all disturbed areas, unless noted otherwise. Native Wetland Seed Mix shall be used in disturbed areas of wetlands.
- Protect existing inlets with Inlet Protection where there is potential to be impacted by sediment and/or debris from construction. Inlet Protection must be below grate with overflow capacity.
- See plans for final placement of Riprap.
- Do not disturb wetlands outside of construction limits.

**PUMP-AROUND NOTES**

- Adjust outlet stabilization if bank erosion is present.
- Adjust Pump capacity as necessary to handle stream water volume.
- Repair leaks and/or otherwise stabilize Cofferdams if water is back flowing into work area.
- Pump Around discharge shall not be outleted directly into stream.

**LEGEND**

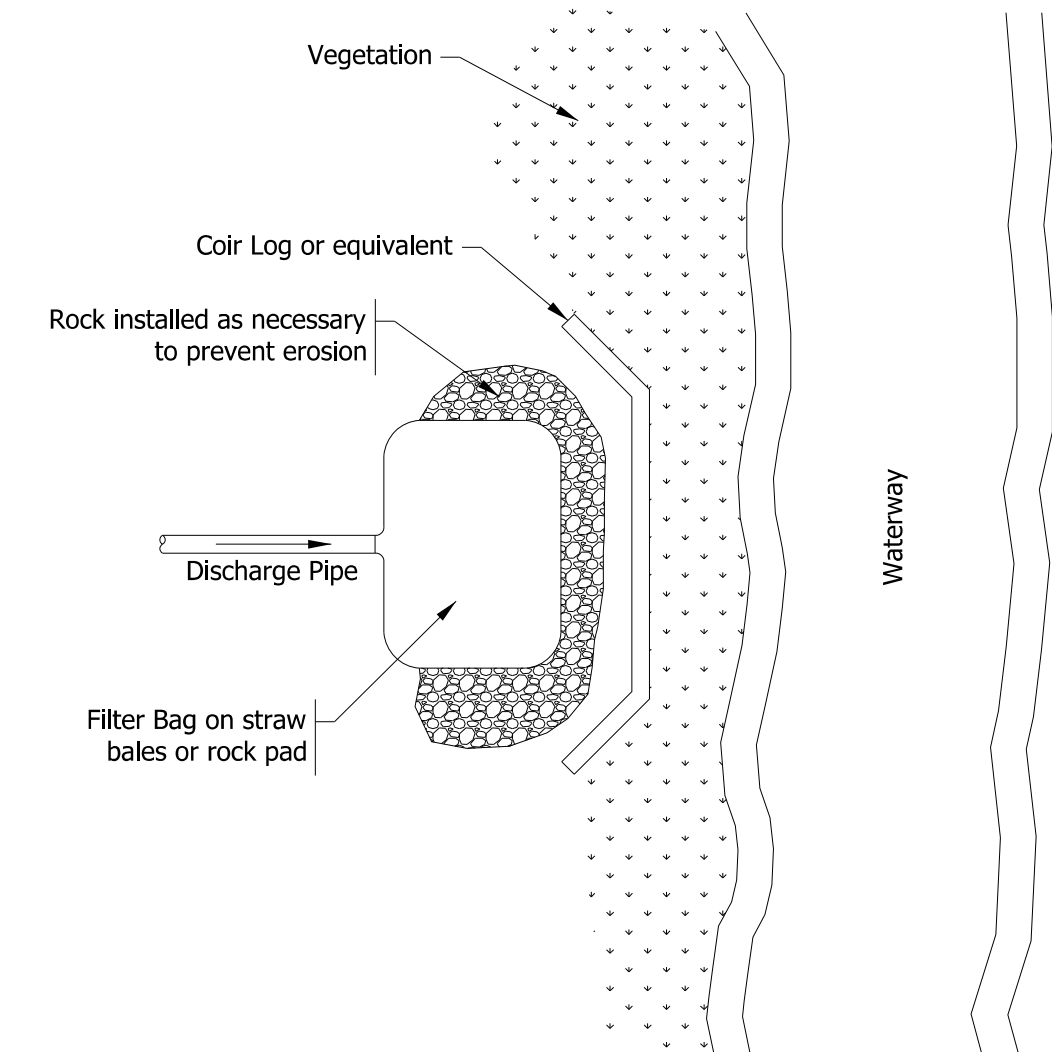
- Revetment or Class 1 Riprap on Geotextile, Type 2B
- Temporary Check Dam, Revetment Riprap
- Filter Sock or Silt Fence
- Erosion Control Blanket
- Temporary Diversion Ditch
- Inlet Protection



**COFFERDAM / SUMP HOLE WORK AREA DETAIL**  
Not to Scale

**DEWATERING INSTALLATION NOTES**

- The Contractor shall provide, operate, and maintain Dewatering Systems of sufficient size and capacity to permit excavation and subsequent construction in dry conditions.
- The Contractor shall inspect dewatering setups each workday and maintain for effective operating condition. Maintenance of dewatering setups should be proactive, not reactive. Inspect as soon as possible (and always within 24 hours) following a storm that causes surface erosion, and perform necessary maintenance.
- Where dewatering setup has failed, repair or replacement should be initiated upon discovery of the failure.
- Dewatering setup to be removed after work in waterway is complete.
- Area to be stabilized with riprap, where riprap from dewatering setup can be incorporated into final, permanent riprap or with INDOT seed mix type R.
- The Contractor must use filter bags for dewatering trenches. Filter bag shall be placed as far downstream as possible, on level pad, discharging to a ditch and not directly into a storm sewer.

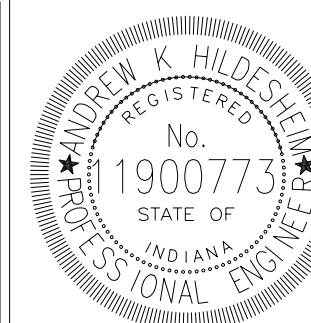


**DEWATERING FILTER BAG DETAIL**  
Not to Scale

NOTE: CONTRACTOR SHALL COORDINATE WITH PARK TO LOWER LAKE WATER ELEVATION DURING CONSTRUCTION.

STATE OF INDIANA  
DEPARTMENT OF NATURAL RESOURCES

W:\1518\151823-405-S\DMR Jack+Vish 03.mxd  
 12/4/2024 10:16:01 AM  
 1:3:59998



RECOMMENDED FOR APPROVAL *Colin F. Williams* 12/6/2024 DATE  
DESIGN ENGINEER

DESIGNED: AKH DRAWN: AKH  
CHECKED: DPL CHECKED: DPL

INDIANA DEPARTMENT OF NATURAL RESOURCES  
**EROSION CONTROL SHEET**  
CAMP RD - CLV - 93826

HORIZONTAL SCALE	BRIDGE FILE
1" = 10'	
VERTICAL SCALE	DESIGNATION
N/A	
SURVEY BOOK	SHEETS
	7 of 16
CONTRACT	PROJECT
	2409635019

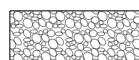





**EROSION CONTROL NOTES**

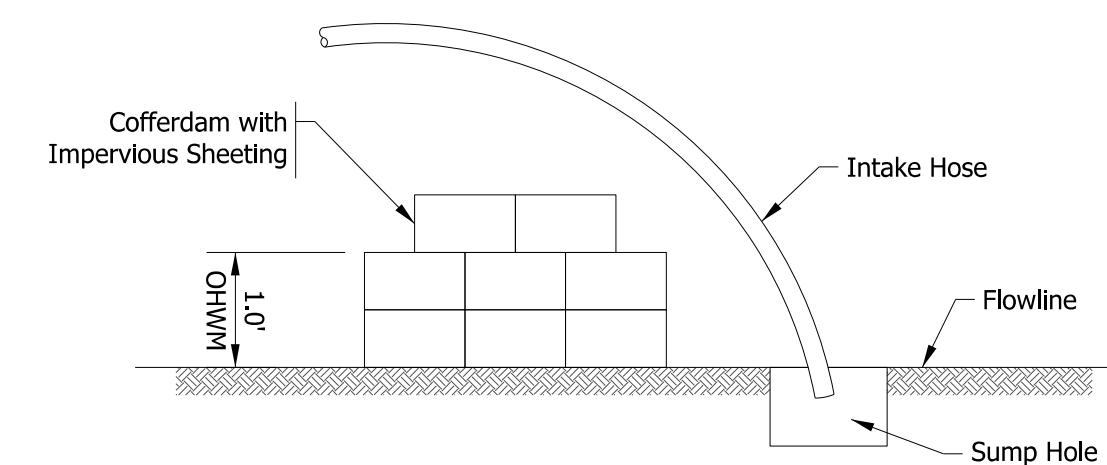
- Erosion Control Blanket shall be placed on all graded slopes 3:1 and steeper and in concentrated flow areas (i.e. roadside ditches).
- Permanent Seeding and Mulching to be placed on all disturbed areas, unless noted otherwise. Native Wetland Seed Mix shall be used in disturbed areas of wetlands.
- Protect existing inlets with Inlet Protection where there is potential to be impacted by sediment and/or debris from construction. Inlet Protection must be below grate with overflow capacity.
- See plans for final placement of Riprap.
- Do not disturb wetlands outside of construction limits.

**PUMP-AROUND NOTES**

- Adjust outlet stabilization if bank erosion is present.
- Adjust Pump capacity as necessary to handle stream water volume.
- Repair leaks and/or otherwise stabilize Cofferddams if water is back flowing into work area.
- Pump Around discharge shall not be outleted directly into stream.

**LEGEND**

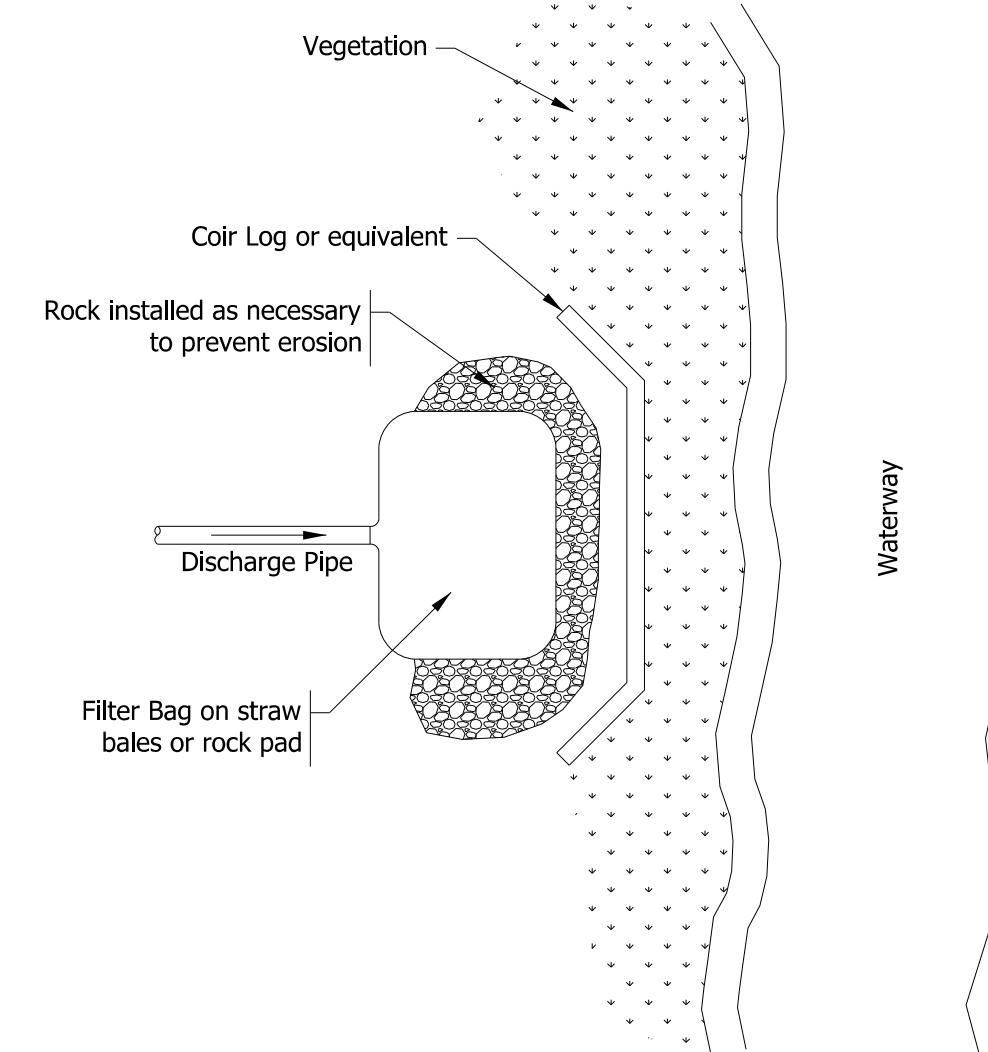
-  Revetment or Class 1 Riprap on Geotextile, Type 2B
-  Temporary Check Dam, Revetment Riprap
-  Filter Sock or Silt Fence
-  Erosion Control Blanket
-  Temporary Diversion Ditch
-  Inlet Protection



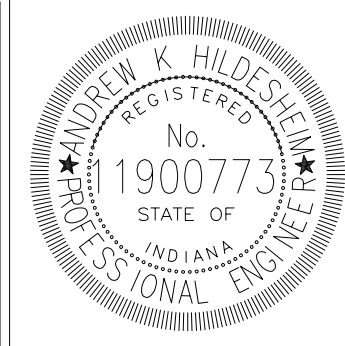
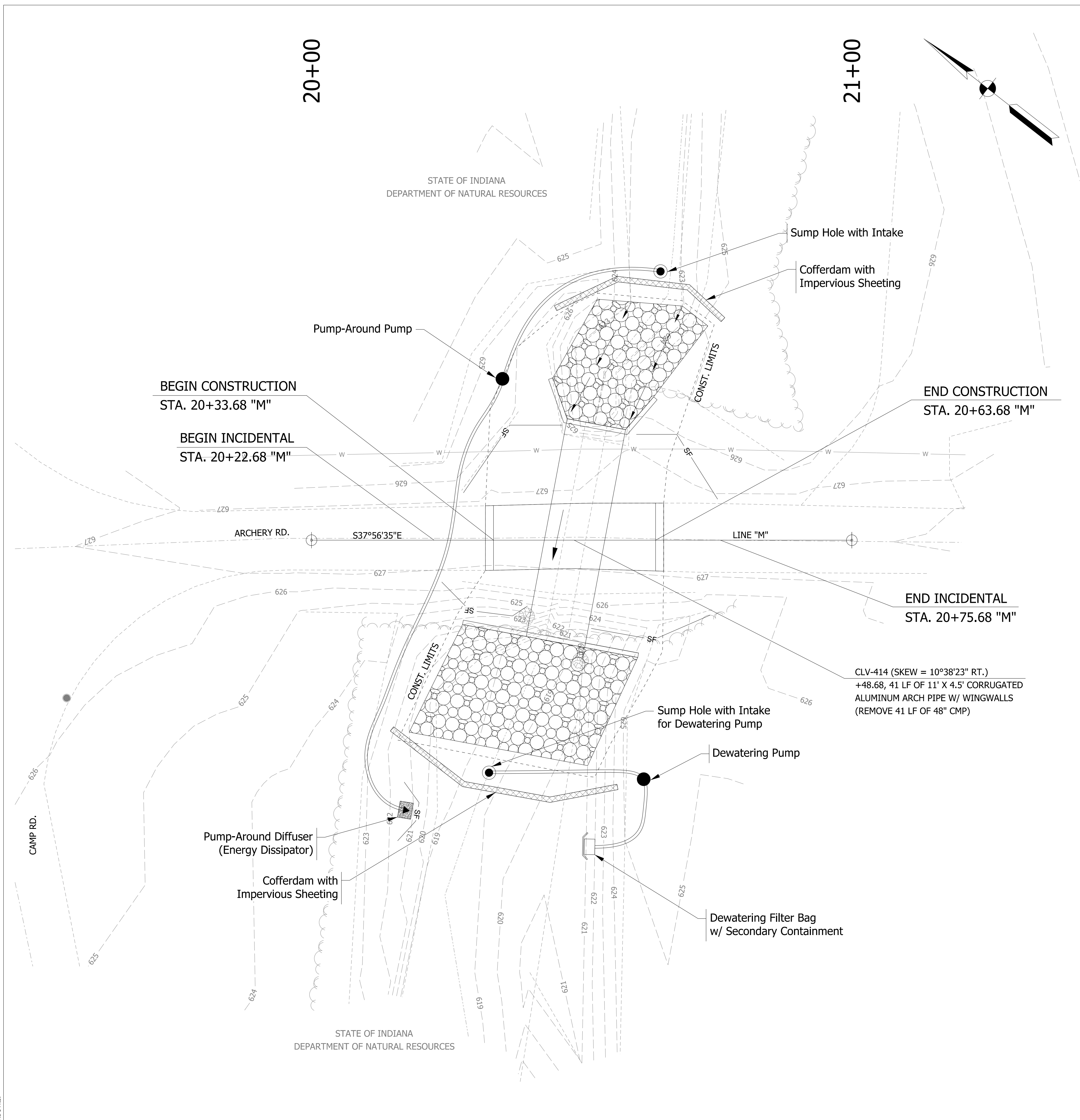
**COFFERDAM / SUMP HOLE WORK AREA DETAIL**  
Not to Scale

**DEWATERING INSTALLATION NOTES**

- The Contractor shall provide, operate, and maintain Dewatering Systems of sufficient size and capacity to permit excavation and subsequent construction in dry conditions.
- The Contractor shall inspect dewatering setups each workday and maintain for effective operating condition. Maintenance of dewatering setups should be proactive, not reactive. Inspect as soon as possible (and always within 24 hours) following a storm that causes surface erosion, and perform necessary maintenance.
- Where dewatering setup has failed, repair or replacement should be initiated upon discovery of the failure.
- Dewatering setup to be removed after work in waterway is complete.
- Area to be stabilized with riprap, where riprap from dewatering setup can be incorporated into final, permanent riprap or with INDOT seed mix type R.
- The Contractor must use filter bags for dewatering trenches. Filter bag shall be placed as far downstream as possible, on level pad, discharging to a ditch and not directly into a storm sewer.



**DEWATERING FILTER BAG DETAIL**  
Not to Scale



RECOMMENDED FOR APPROVAL *Andrew K. Hildesheim* 12/6/2024 DATE  
DESIGN ENGINEER  
DESIGNED: AKH DRAWN: AKH  
CHECKED: DPL CHECKED: DPL

**INDIANA DEPARTMENT OF NATURAL RESOURCES**  
**EROSION CONTROL SHEET**  
**ARCHERY ROAD - CLV-414**

HORIZONTAL SCALE	BRIDGE FILE
1" = 10'	
VERTICAL SCALE	DESIGNATION
N/A	
SURVEY BOOK	SHEETS
	8 of 16
CONTRACT	PROJECT
	2409635019

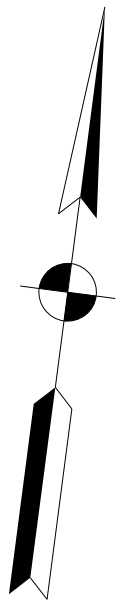
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 12/4/2024  
 10:16:04 AM  
 13:59596



30+00

31+00

STATE OF INDIANA  
DEPARTMENT OF NATURAL RESOURCES



BEGIN CONSTRUCTION  
STA. 30+35.00 "N"

Cofferdam with  
Impervious Sheeting

Sump Hole with Intake

CONST. LIMITS

Sump Hole with Intake

END CONSTRUCTION  
STA. 30+85.00 "N"

END INCIDENTAL  
STA. 30+86.50 "N"

BEGIN INCIDENTAL  
STA. 30+25.00 "N"

Sump Hole with Intake  
for Dewatering Pump

Dewatering Pump

Dewatering Filter Bag  
w/ Secondary Containment

Pump-Around Pump

Pump-Around Diffuser  
(Energy Dissipator)

Cofferdam with  
Impervious Sheeting

CLV-446 (SKEW = 04°07'26" LT.)  
+60.82, 26 LF OF 11' X 4.5' CORRUGATED  
ALUMINUM ARCH PIPE  
W/ 2 ARCH CIP HEADWALL & WINGWALLS  
(REMOVE 21 LF OF EXIST. 60" CMP)

STATE OF INDIANA  
DEPARTMENT OF NATURAL RESOURCES

**EROSION CONTROL NOTES**

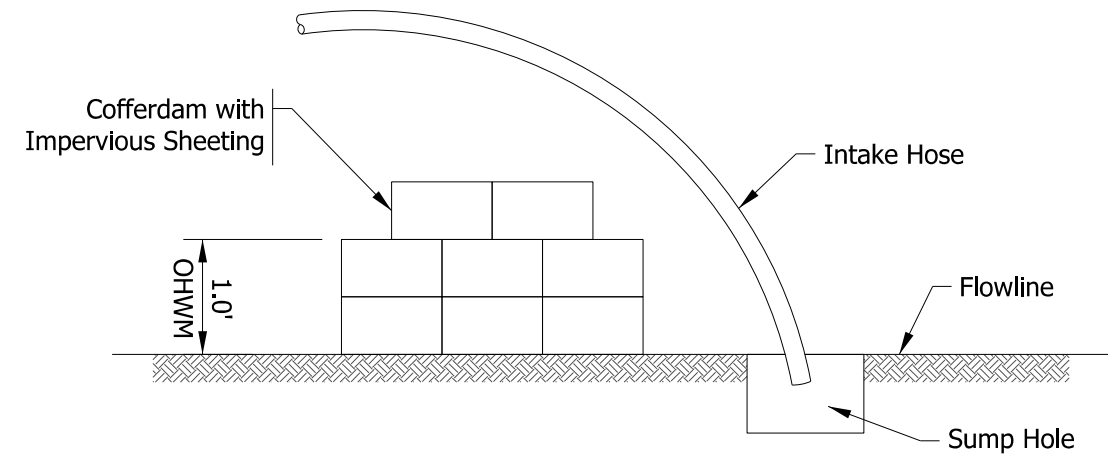
- Erosion Control Blanket shall be placed on all graded slopes 3:1 and steeper and in concentrated flow areas (i.e. roadside ditches).
- Permanent Seeding and Mulching to be placed on all disturbed areas, unless noted otherwise. Native Wetland Seed Mix shall be used in disturbed areas of wetlands.
- Protect existing inlets with Inlet Protection where there is potential to be impacted by sediment and/or debris from construction. Inlet Protection must be below grate with overflow capacity.
- See plans for final placement of Riprap.
- Do not disturb wetlands outside of construction limits.

**PUMP-AROUND NOTES**

- Adjust outlet stabilization if bank erosion is present.
- Adjust Pump capacity as necessary to handle stream water volume.
- Repair leaks and/or otherwise stabilize Cofferdams if water is back flowing into work area.
- Pump Around discharge shall not be outleted directly into stream.

**LEGEND**

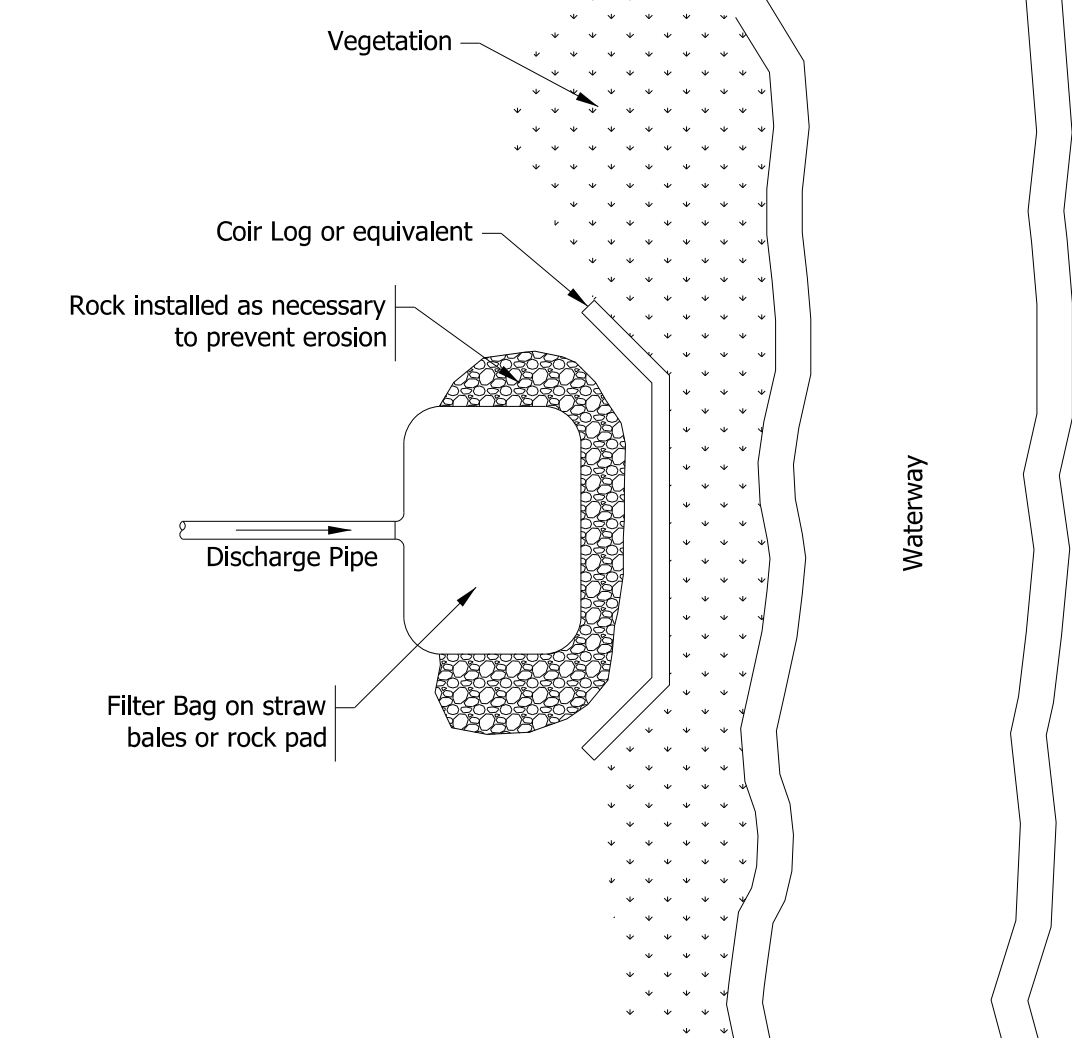
- Revetment or Class 1 Riprap on Geotextile, Type 2B
- Temporary Check Dam, Revetment Riprap
- Filter Sock or Silt Fence
- Erosion Control Blanket
- Temporary Diversion Ditch
- Inlet Protection



**COFFERDAM / SUMP HOLE WORK AREA DETAIL**  
Not to Scale

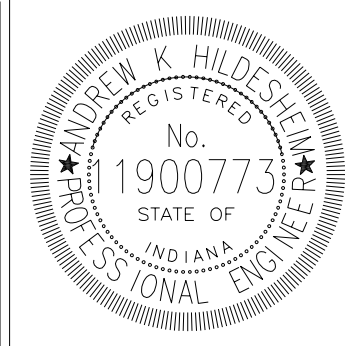
**DEWATERING INSTALLATION NOTES**

- The Contractor shall provide, operate, and maintain Dewatering Systems of sufficient size and capacity to permit excavation and subsequent construction in dry conditions.
- The Contractor shall inspect dewatering setups each workday and maintain for effective operating condition. Maintenance of dewatering setups should be proactive, not reactive. Inspect as soon as possible (and always within 24 hours) following a storm that causes surface erosion, and perform necessary maintenance.
- Where dewatering setup has failed, repair or replacement should be initiated upon discovery of the failure.
- Dewatering setup to be removed after work in waterway is complete.
- Area to be stabilized with riprap, where riprap from dewatering setup can be incorporated into final, permanent riprap or with INDOT seed mix type R.
- The Contractor must use filter bags for dewatering trenches. Filter bag shall be placed as far downstream as possible, on level pad, discharging to a ditch and not directly into a storm sewer.



**DEWATERING FILTER BAG DETAIL**  
Not to Scale

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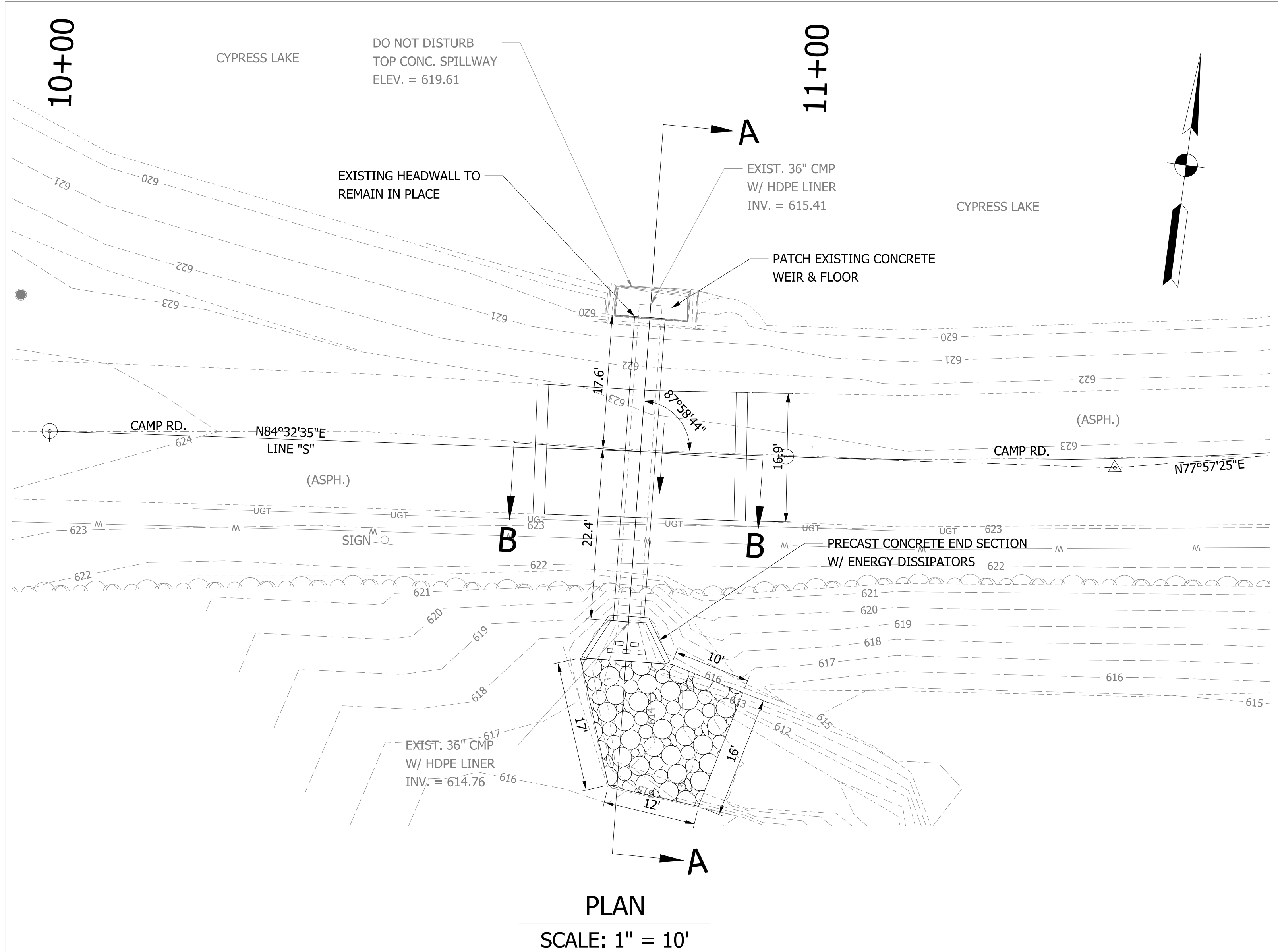
RECOMMENDED FOR APPROVAL: *Colin F. Williams* 12/6/2024 DATE  
DESIGN ENGINEER

DESIGNED: AKH DRAWN: AKH  
CHECKED: DPL CHECKED: DPL

**INDIANA DEPARTMENT  
OF NATURAL RESOURCES**

**EROSION CONTROL SHEET  
CAMP RD - CLV - 446**

HORIZONTAL SCALE	BRIDGE FILE
1" = 10'	
VERTICAL SCALE	DESIGNATION
N/A	
SURVEY BOOK	SHEETS
	9 of 16
CONTRACT	PROJECT
	2409635019



PLAN  
SCALE: 1" = 10'

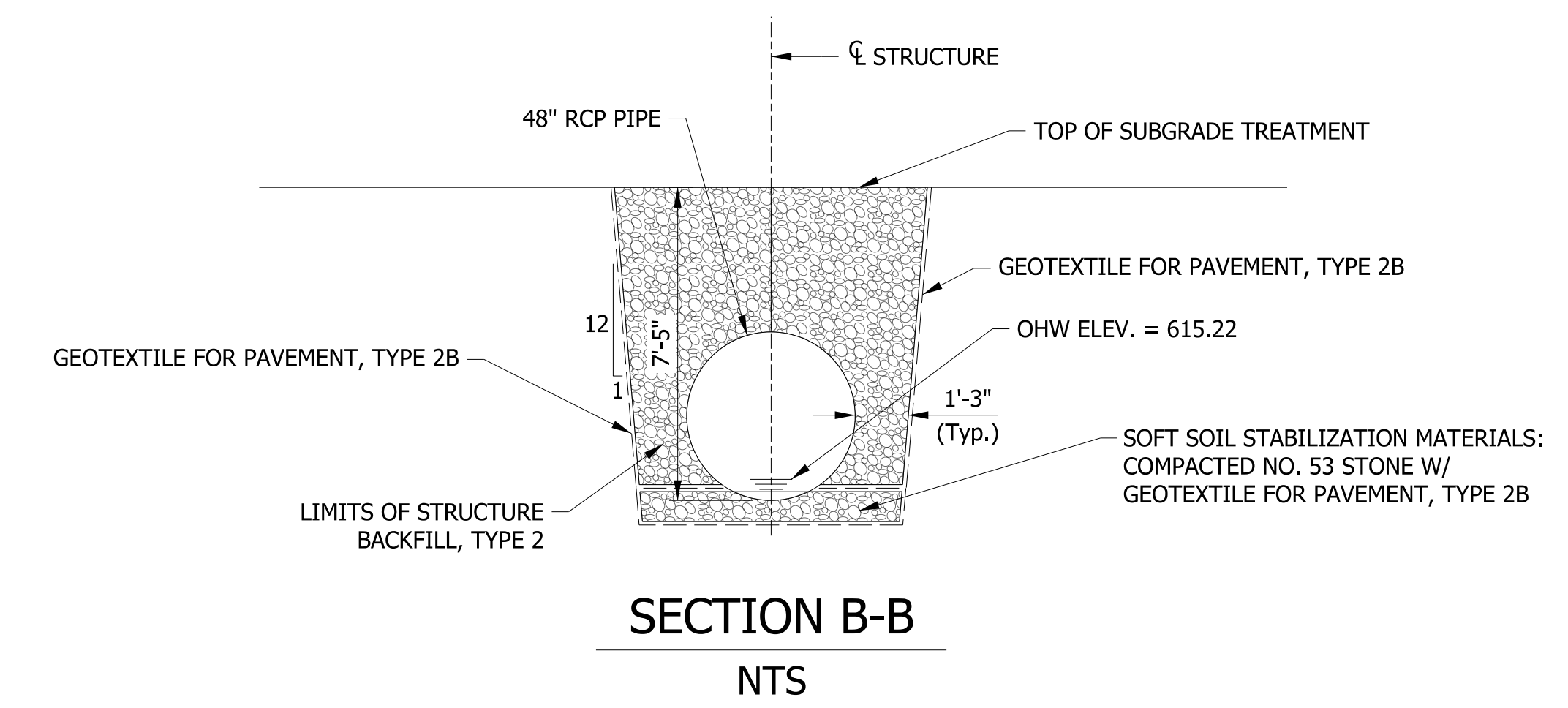
GEOTECHNICAL REPORT SOIL PARAMETERS	VALUE
RESISTANCE FACTOR	0.45
NOMINAL BEARING RESISTANCE (PSF)	5,555
FACTORED BEARING RESISTANCE (PSF)	2,500
ADHESION BETWEEN FOUNDATIONS & SOIL (PSF)	390
TOTAL UNIT WEIGHT OF BACKFILL MATERIAL (PCF)	120
ANGLE OF INTERNAL FRICTION OF BACKFILL (DEGREES)	30
ANGLE OF INTERNAL FRICTION BETWEEN WALL & BACKFILL (DEGREES)	21
INTERNAL FRICTION OF INDOT NO. 8 STONE, 1ST LAYER BELOW FOOTING (DEGREES)	38
COHESION OF COHESIVE SOIL, 2ND LAYER (PSF)	650

NOTE: GEOTECHNICAL REPORT SOIL PARAMETERS FOR INFORMATION ONLY.

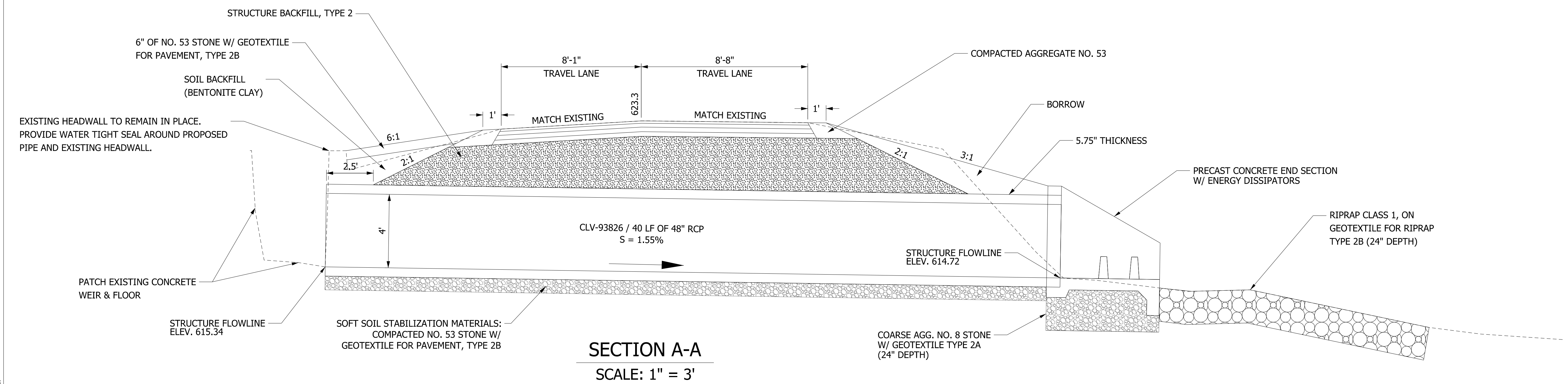
48" REINFORCED CONCRETE PIPE STRUCTURE  
40' LENGTH, 02°01'16" SKEW  
CAMP ROAD, BROWNSTOWN TOWNSHIP  
JACKSON COUNTY, INDIANA

- NOTES:
- CONTRACTOR SHALL VERIFY THE PROPOSED FLOWLINE.
  - REFER TO HEADWALL DETAIL SHEET FOR ADDITIONAL INFORMATION.
  - FOR ADDITIONAL INFORMATION REGARDING STRUCTURE BACKFILL REFER TO INDOT STANDARD DRAWINGS E 715-BKFL-01 & E 715-BKFL-03

- GEOTECHNICAL REPORT NOTES:
- BEDROCK NOT ENCOUNTERED BY SOIL BORINGS AT CLV 93826, PER GEOTECHNICAL REPORT.
  - PER GEOTECH REPORT, EXPOSED TRENCH BOTTOM FOR PROPOSED CULVERT SHALL BE EXAMINED BY A GEOTECHNICAL ENGINEER OR EXPERIENCED SOIL TECHNICIAN TO IDENTIFY SOFT SOILS. SOFT SOILS SHALL BE REMOVED AND REPLACED WITH COMPACTED NO. 53 STONE OR "B" BORROW WITH GEOTEXTILE FOR PAVEMENT, TYPE 2B. THE COST OF EXCAVATION AND BACKFILL MATERIALS SHALL BE PAID FOR WITH REMEDIATION ALLOWANCE.
  - FOR ADDITIONAL INFORMATION REGARDING ROCK AND GROUNDWATER ELEVATIONS REFER TO GEOTECHNICAL REPORT.

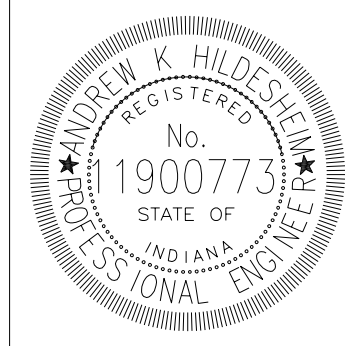


SECTION B-B  
NTS



SECTION A-A  
SCALE: 1" = 3'

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 13:59598



RECOMMENDED FOR APPROVAL  
*Andrew Hildesheim*  
 DESIGN ENGINEER  
 12/6/2024 DATE

DESIGNED: AKH DRAWN: AKH  
 CHECKED: DPL CHECKED: DPL

INDIANA DEPARTMENT  
OF NATURAL RESOURCES

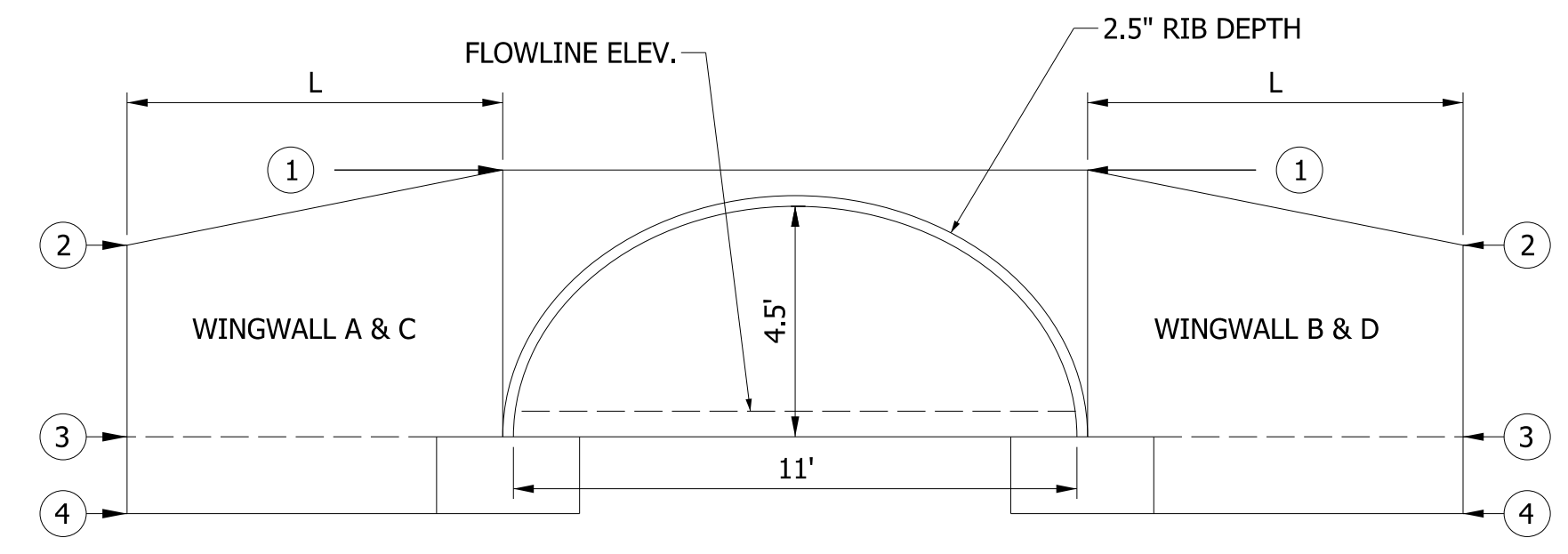
STRUCTURE DETAIL SHEET  
CAMP ROAD - CLV-93826

HORIZONTAL SCALE AS SHOWN	BRIDGE FILE
VERTICAL SCALE AS SHOWN	DESIGNATION
SURVEY BOOK	SHEETS
CONTRACT	10 of 16 PROJECT
	2409635019

11' x 4.5' CORRUGATED ALUMINUM ARCH PIPE  
 41' LENGTH, 10°38'23" SKEW  
 CAMP ROAD, BROWNSTOWN TOWNSHIP  
 JACKSON COUNTY, INDIANA

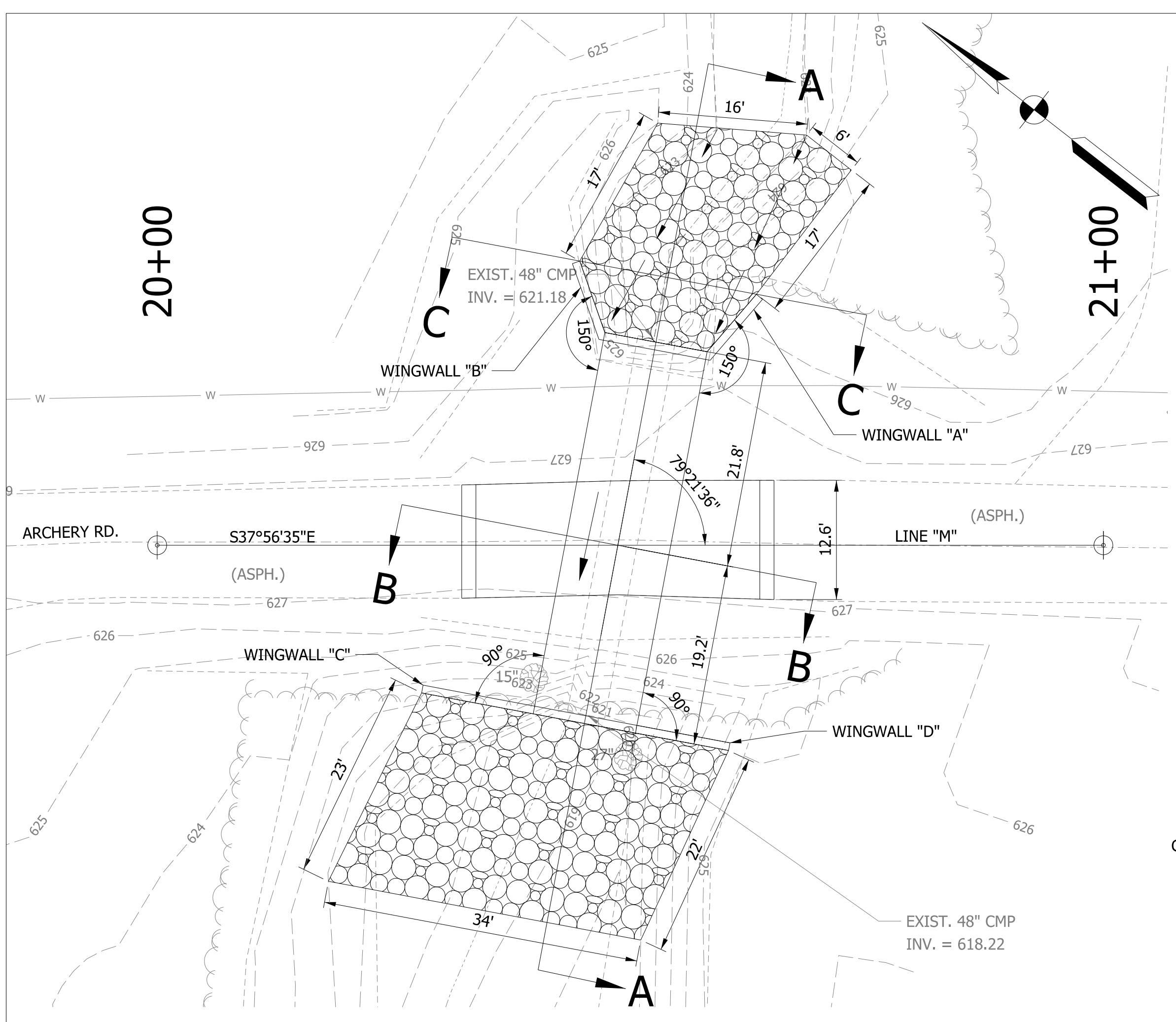
- NOTES:
- CONTRACTOR SHALL VERIFY THE PROPOSED FLOWLINE.
  - FOR ADDITIONAL INFORMATION REGARDING STRUCTURE BACKFILL REFER TO INDOT STANDARD DRAWINGS E 715-BKFL-01 & E 715-BKFL-03.
  - CONTRACTOR'S CULVERT FABRICATOR SHALL DESIGN ALL FOUNDATIONS, WINGWALLS, AND HEADWALLS REQUIRED FOR THE INSTALLATION OF THE PROPOSED 11' x 4.5' CORRUGATED ALUMINUM PIPE ARCH WITHIN THE PARAMETERS PROVIDED IN THE PLANS.
- GEOTECHNICAL REPORT NOTES:
- BEDROCK NOT ENCOUNTERED BY SOIL BORINGS AT CLV 414, PER GEOTECHNICAL REPORT.
  - PER GEOTECH REPORT, BOTTOM OF FOUNDATIONS ARE LOCATED 4' BELOW FLOWLINE.
  - FOR ADDITIONAL INFORMATION REGARDING ROCK AND GROUNDWATER ELEVATIONS REFER TO GEOTECHNICAL REPORT.

SOIL PARAMETERS FOR DESIGN OF ARCH CULVERT FOUNDATIONS	VALUE
RESISTANCE FACTOR	0.45
NOMINAL BEARING RESISTANCE (PSF)	5,555
FACTORED BEARING RESISTANCE (PSF)	2,500
ADHESION BETWEEN FOUNDATIONS & SOIL (PSF)	390
TOTAL UNIT WEIGHT OF BACKFILL MATERIAL (PCF)	120
ANGLE OF INTERNAL FRICTION OF BACKFILL (DEGREES)	30
ANGLE OF INTERNAL FRICTION BETWEEN WALL & BACKFILL (DEGREES)	21
INTERNAL FRICTION OF INDOT NO. 8 STONE, 1ST LAYER BELOW FOOTING (DEGREES)	38
COHESION OF COHESIVE SOIL, 2ND LAYER (PSF)	650

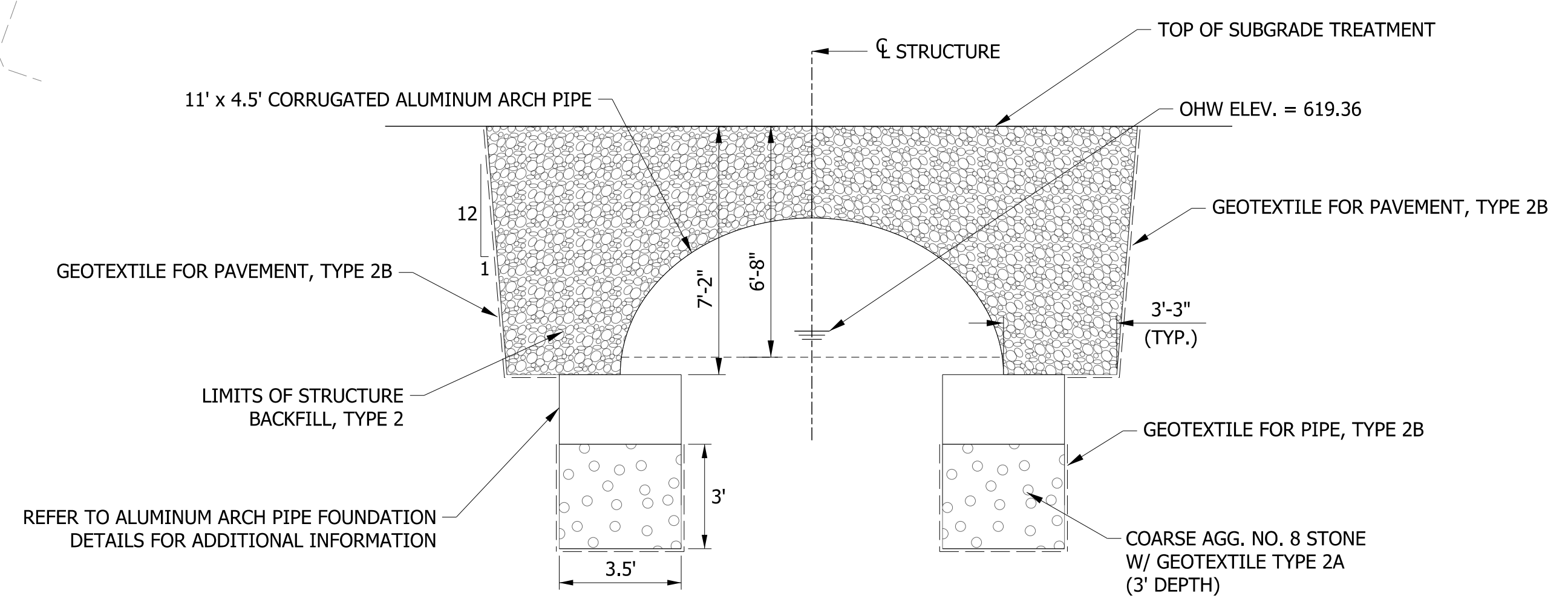


WINGWALL	1	2	3	4	L
A	626.97	625.00	620.76	617.26	8.0'
B	626.97	626.00	620.76	617.26	8.0'
C	624.32	624.00	618.11	614.61	12.0'
D	624.32	624.00	618.11 </td <td>614.61</td> <td>10.0'</td>	614.61	10.0'

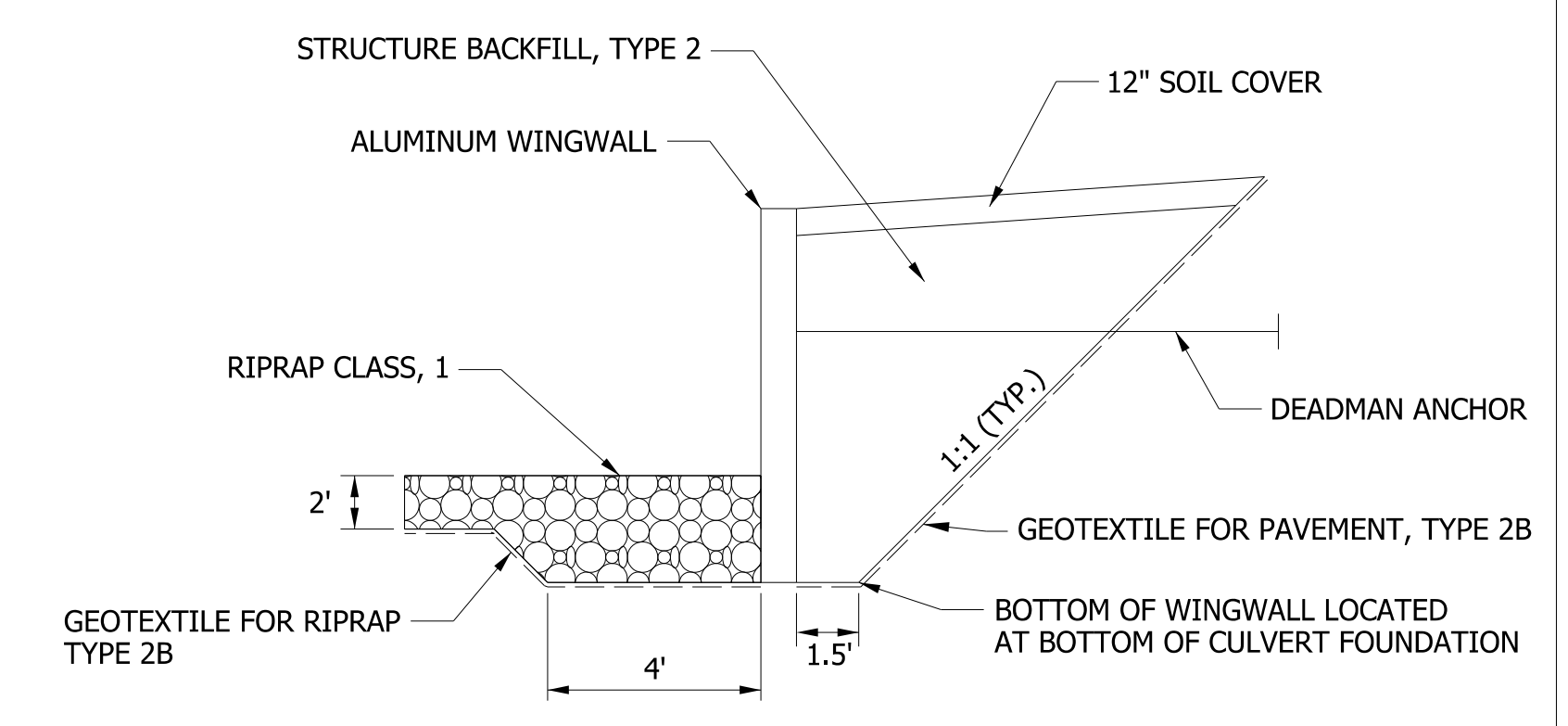
WINGWALL ELEVATIONS  
 NTS



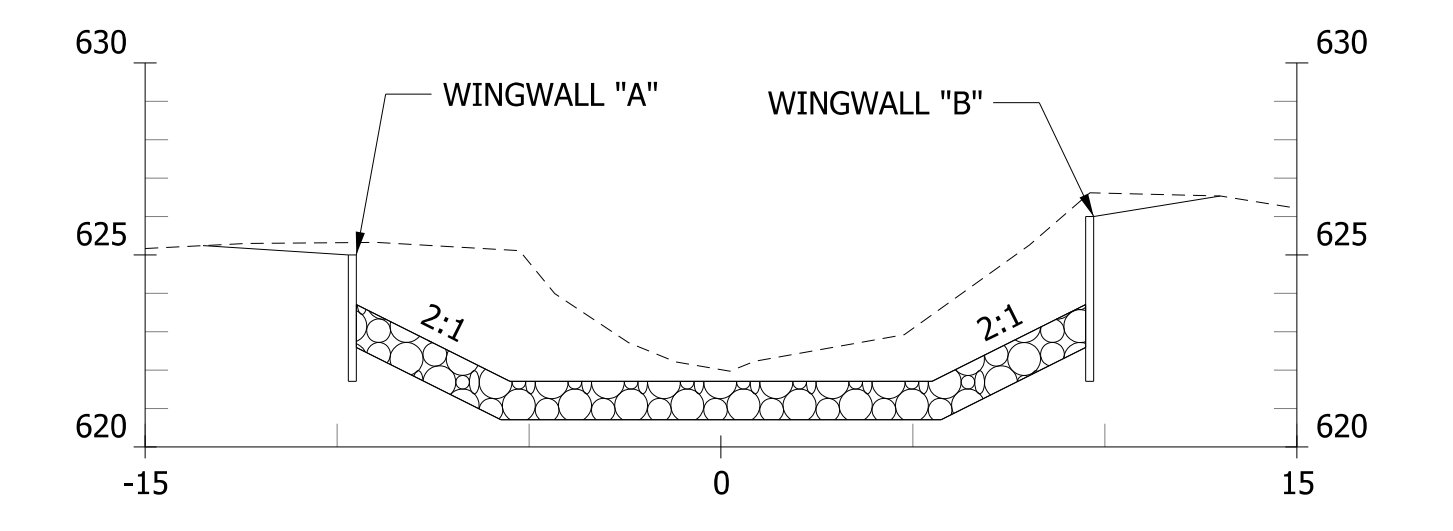
PLAN  
 SCALE: 1" = 10'



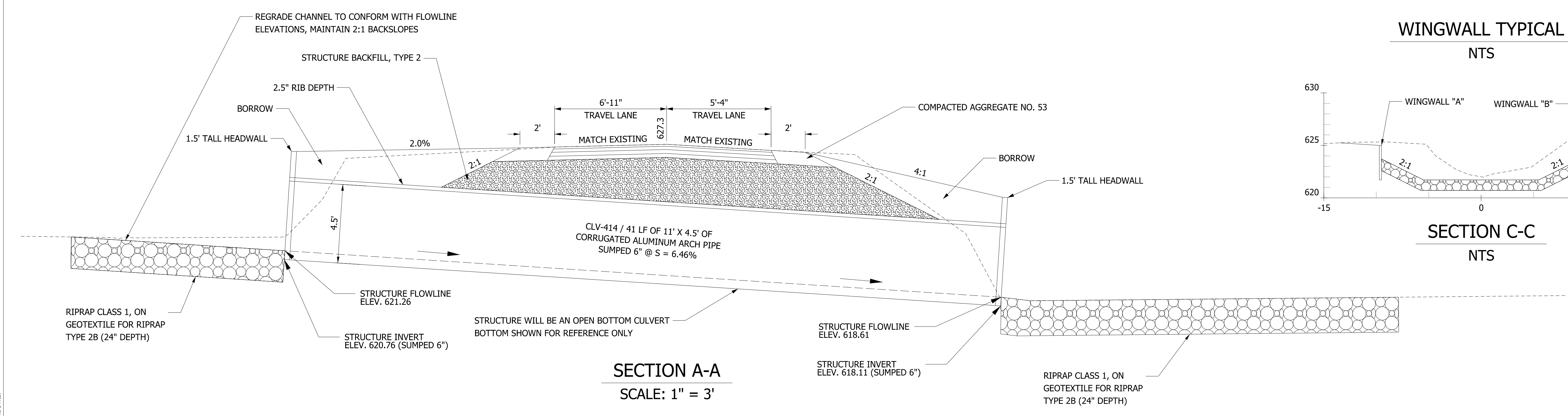
SECTION B-B  
 NTS



WINGWALL TYPICAL  
 NTS

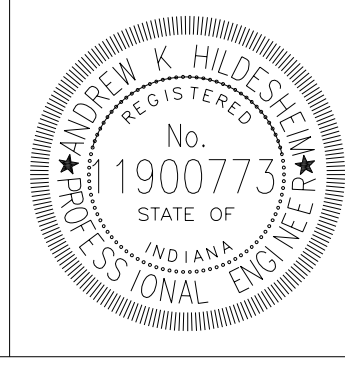


SECTION C-C  
 NTS



SECTION A-A  
 SCALE: 1" = 3'

NOTE: FLOWLINE THROUGH CULVERT SHALL BE BACKFILLED WITH EXCAVATED STREAM MATERIAL AS SHOWN ON PLANS.



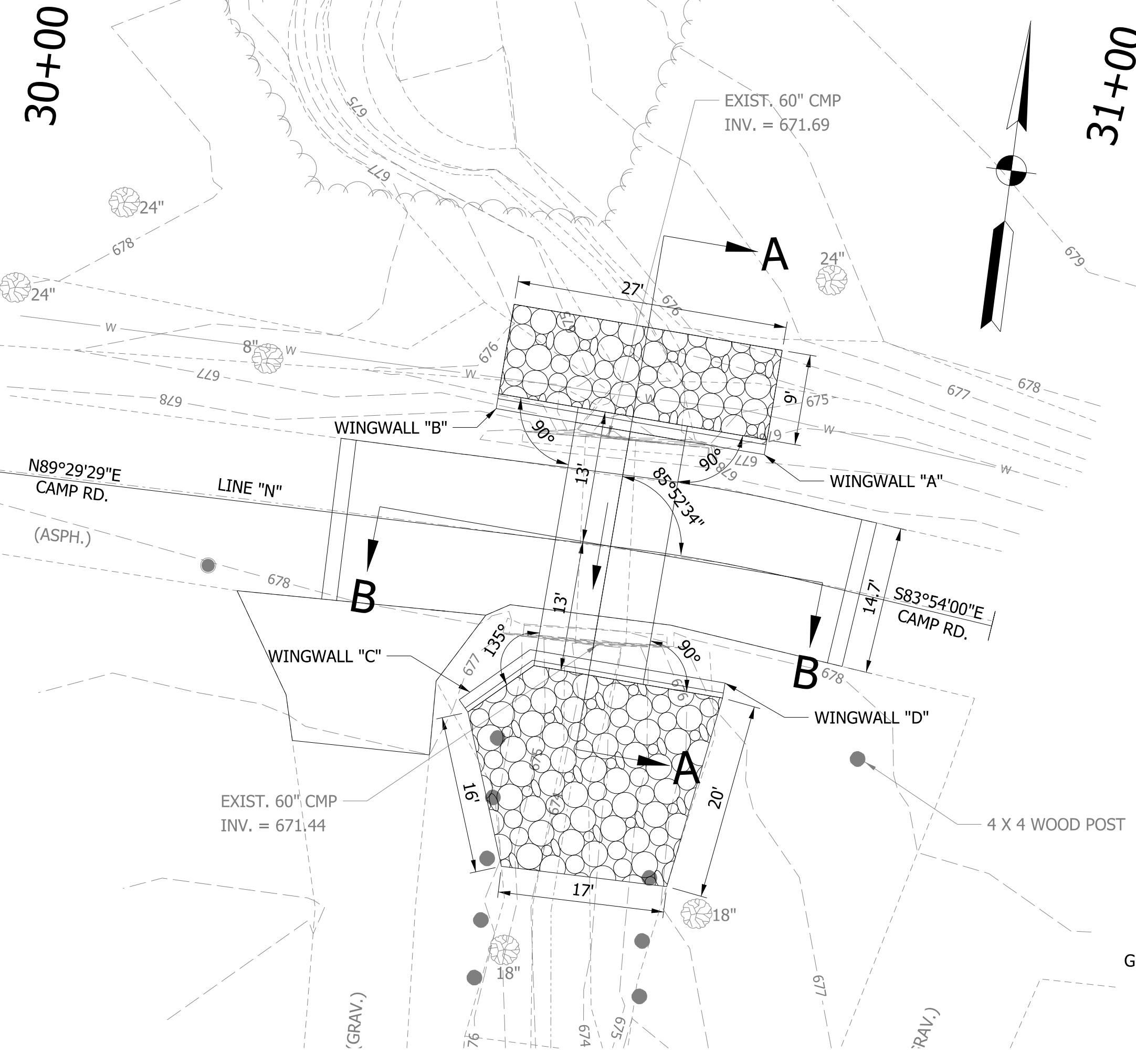
RECOMMENDED FOR APPROVAL: *Andrew Hildesheim*  
 DESIGN ENGINEER 12/6/2024 DATE

DESIGNED: AKH DRAWN: AKH  
 CHECKED: DPL CHECKED: DPL

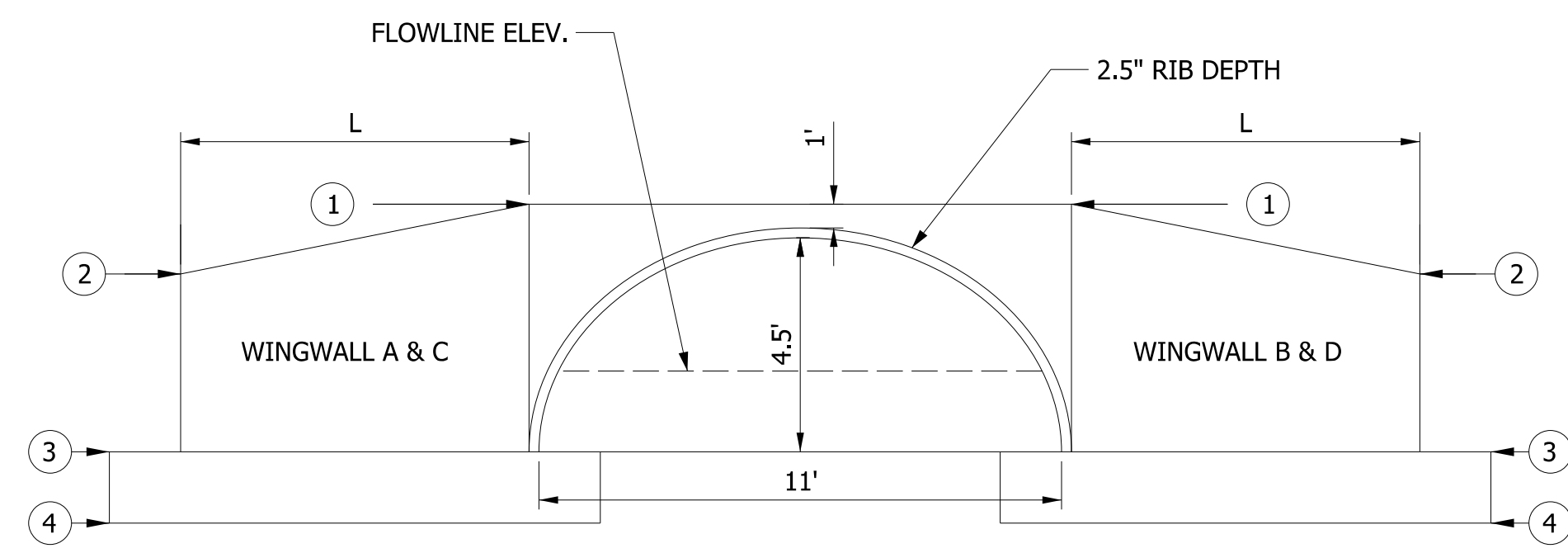
INDIANA DEPARTMENT OF NATURAL RESOURCES  
 STRUCTURE DETAIL SHEET  
 ARCHERY ROAD - CLV-414

HORIZONTAL SCALE AS SHOWN	BRIDGE FILE
VERTICAL SCALE AS SHOWN	DESIGNATION
SURVEY BOOK	SHEETS
CONTRACT	11 of 16
	PROJECT
	2409635019

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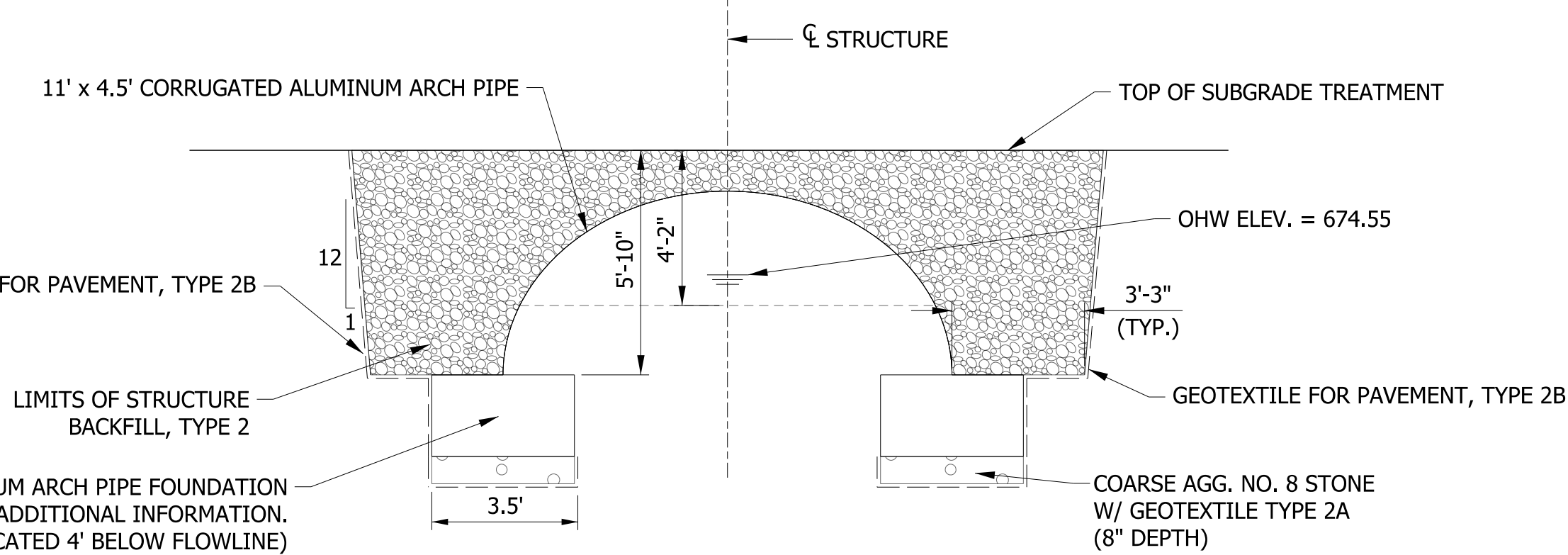


**PLAN**  
SCALE: 1" = 10'

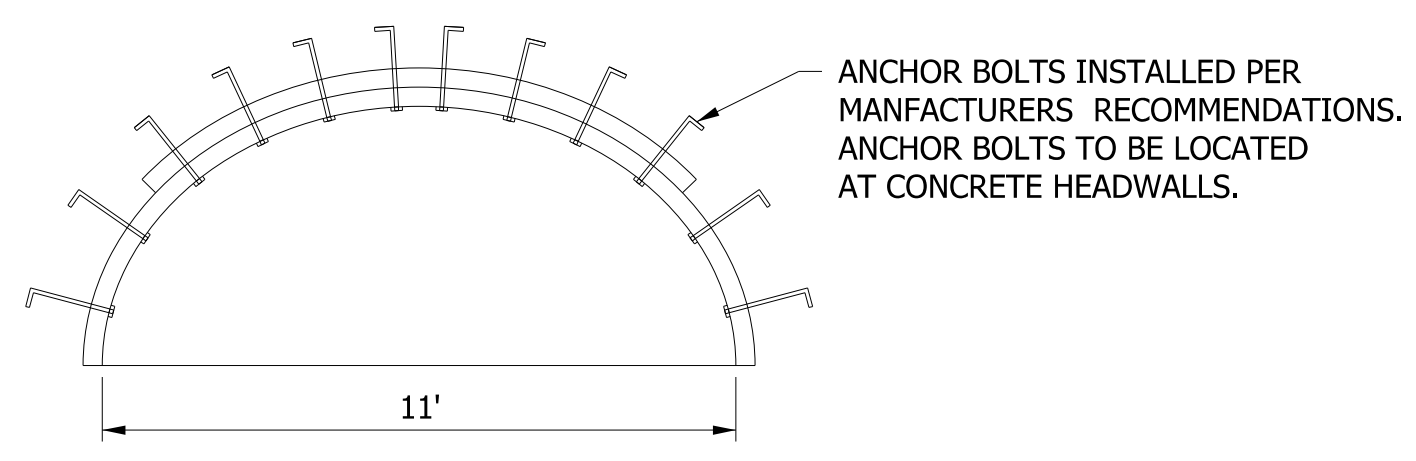


WINGWALL	1	2	3	4	L
A	678.11	678.11	668.50	666.50	8.0
B	678.11	678.11	668.50	666.50	8.0
C	677.68	677.00	668.50	666.50	8.0
D	677.68	677.50	668.50	666.50	8.0

**WINGWALL ELEVATIONS**  
NTS

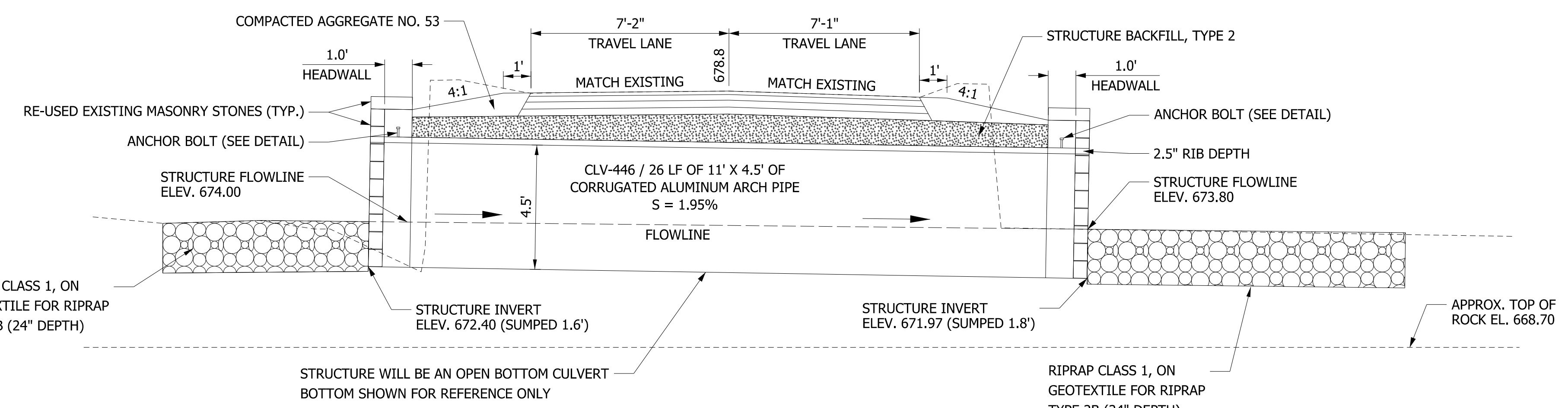


**SECTION B-B**  
NTS

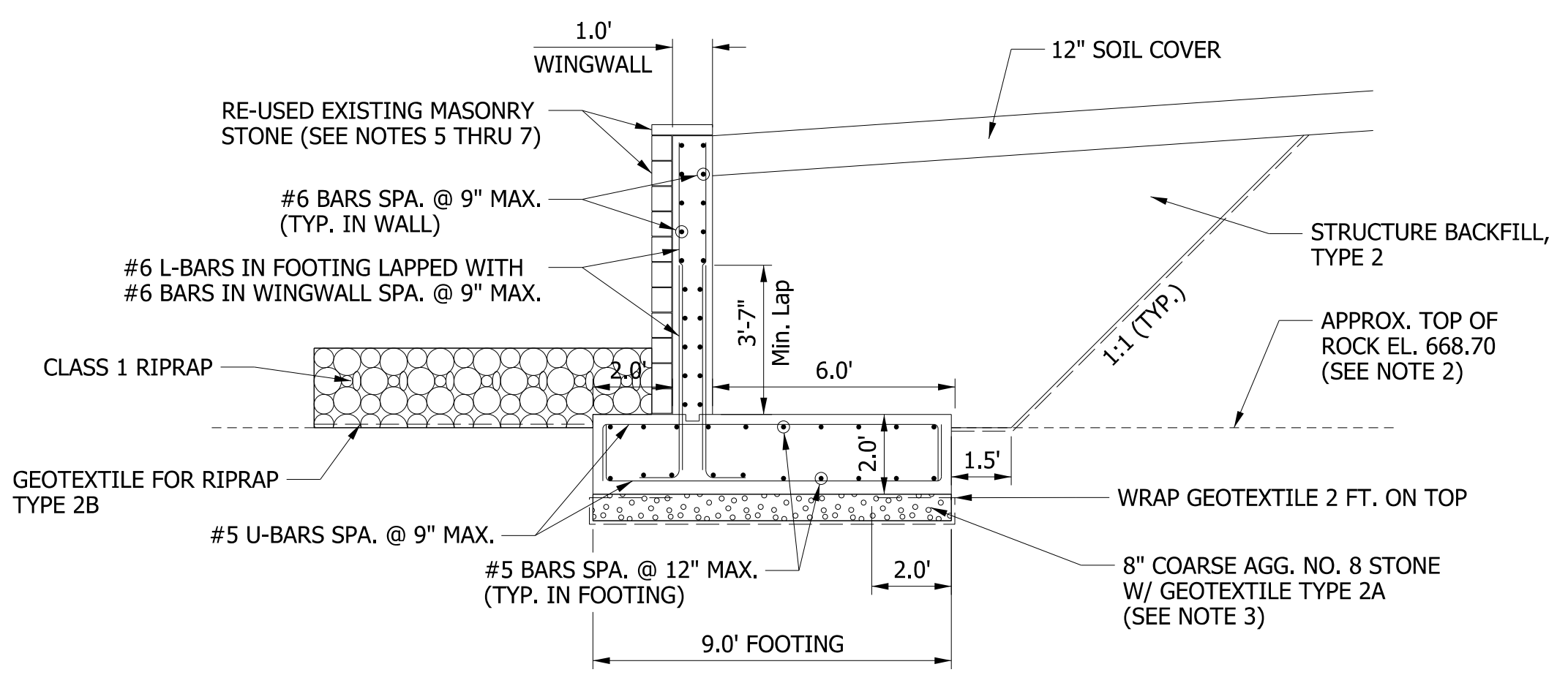


**ANCHOR BOLT DETAIL**  
NTS

SOIL PARAMETERS FOR DESIGN OF ARCH CULVERT FOUNDATIONS	VALUE
RESISTANCE FACTOR	0.45
NOMINAL BEARING RESISTANCE (PSF)	11,111
FACTORED BEARING RESISTANCE (PSF)	5,000
ADHESION BETWEEN FOUNDATIONS & SOIL (PSF)	1,500
TOTAL UNIT WEIGHT OF BACKFILL MATERIAL (PCF)	120
ANGLE OF INTERNAL FRICTION OF BACKFILL (DEGREES)	30
ANGLE OF INTERNAL FRICTION BETWEEN WALL & BACKFILL (DEGREES)	21
COHESION OF FOUNDATION MATERIAL (PSF)	2,500



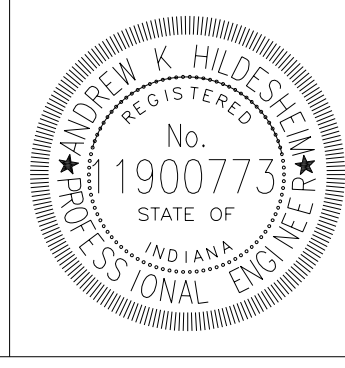
**SECTION A-A**  
SCALE: 1" = 3'



**WINGWALL TYPICAL**  
NTS

- WINGWALL / HEADWALL NOTES:
- PROPOSED REINFORCING SHOWN IN WINGWALL VALID FOR REINFORCING IN HEADWALL.
  - CONTRACTOR SHALL VERIFY EXISTING TOP OF ROCK ELEVATION.
  - 8" LAYER OF COURSE AGGREGATE NO. 8 STONE ONLY REQUIRED IF FOOTING IS NOT REQUIRED TO BE KEYED INTO ROCK.
  - REINFORCING STEEL COVER SHALL BE 3" IN FOOTINGS, EXCEPT BOTTOM STEEL WHICH SHALL BE 4", AND 2" IN ALL OTHER PARTS.
  - ALL EXISTING MASONRY STONES SHALL BE REMOVED, CLEANED, AND RE-USED ON OUTSIDE FACE AND TOP OF PROPOSED WALL.
  - CONTRACTOR SHALL USE APPROVED CONSTRUCTION ADHESIVE TO ATTACH MASONRY STONES TO PROPOSED CONCRETE.
  - CONTRACTOR SHALL USE APPROVED GROUT MATERIAL BETWEEN ALL MASONRY STONES.

NOTE: FLOWLINE THROUGH CULVERT SHALL BE BACKFILLED WITH EXCAVATED STREAM MATERIAL AS SHOWN ON PLANS.



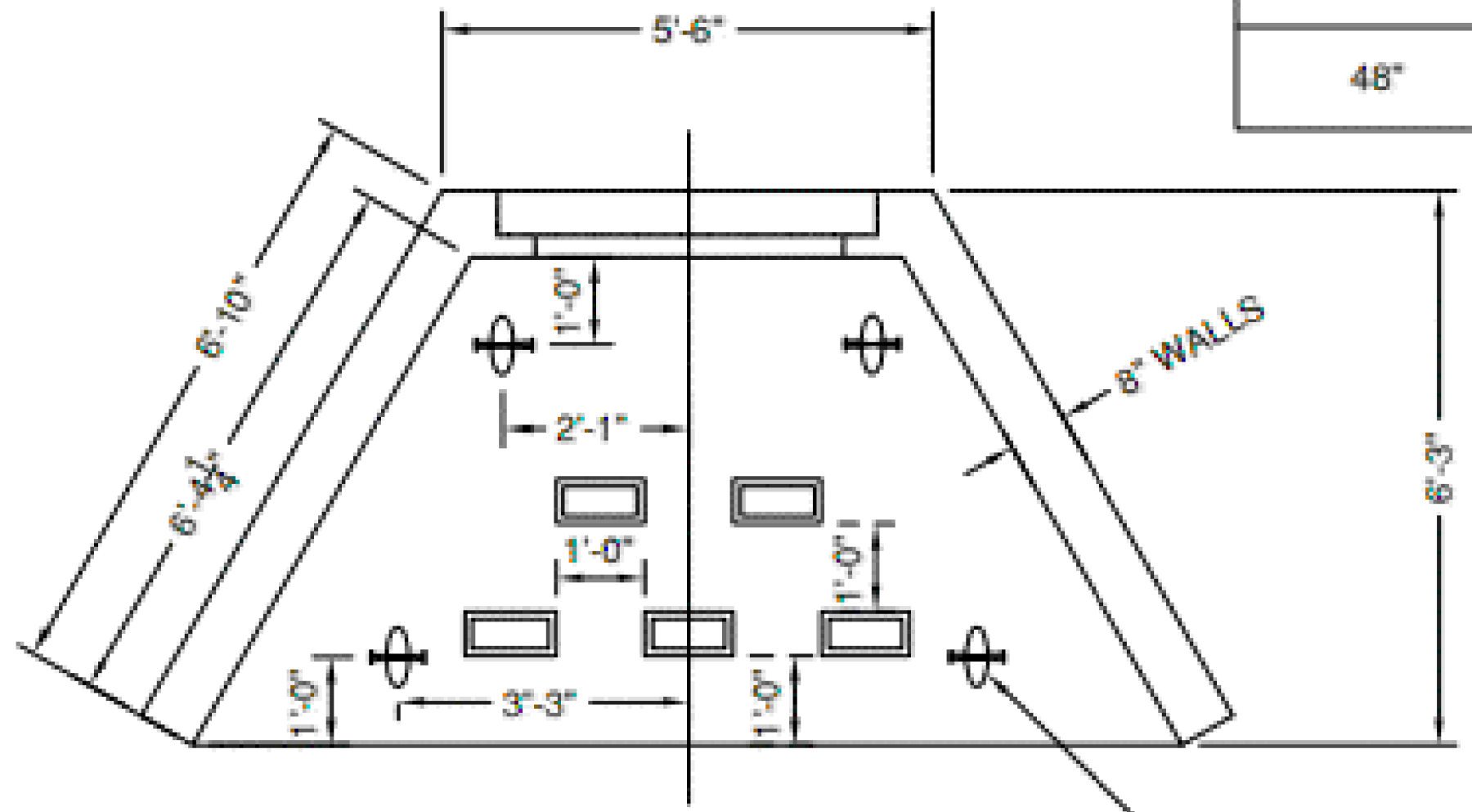
RECOMMENDED FOR APPROVAL: *Andrew Hildesheim* DESIGN ENGINEER 12/6/2024 DATE  
 DESIGNED: AKH DRAWN: AKH  
 CHECKED: DPL CHECKED: DPL

INDIANA DEPARTMENT OF NATURAL RESOURCES  
 STRUCTURE DETAIL SHEET  
 CAMP ROAD - CLV-446

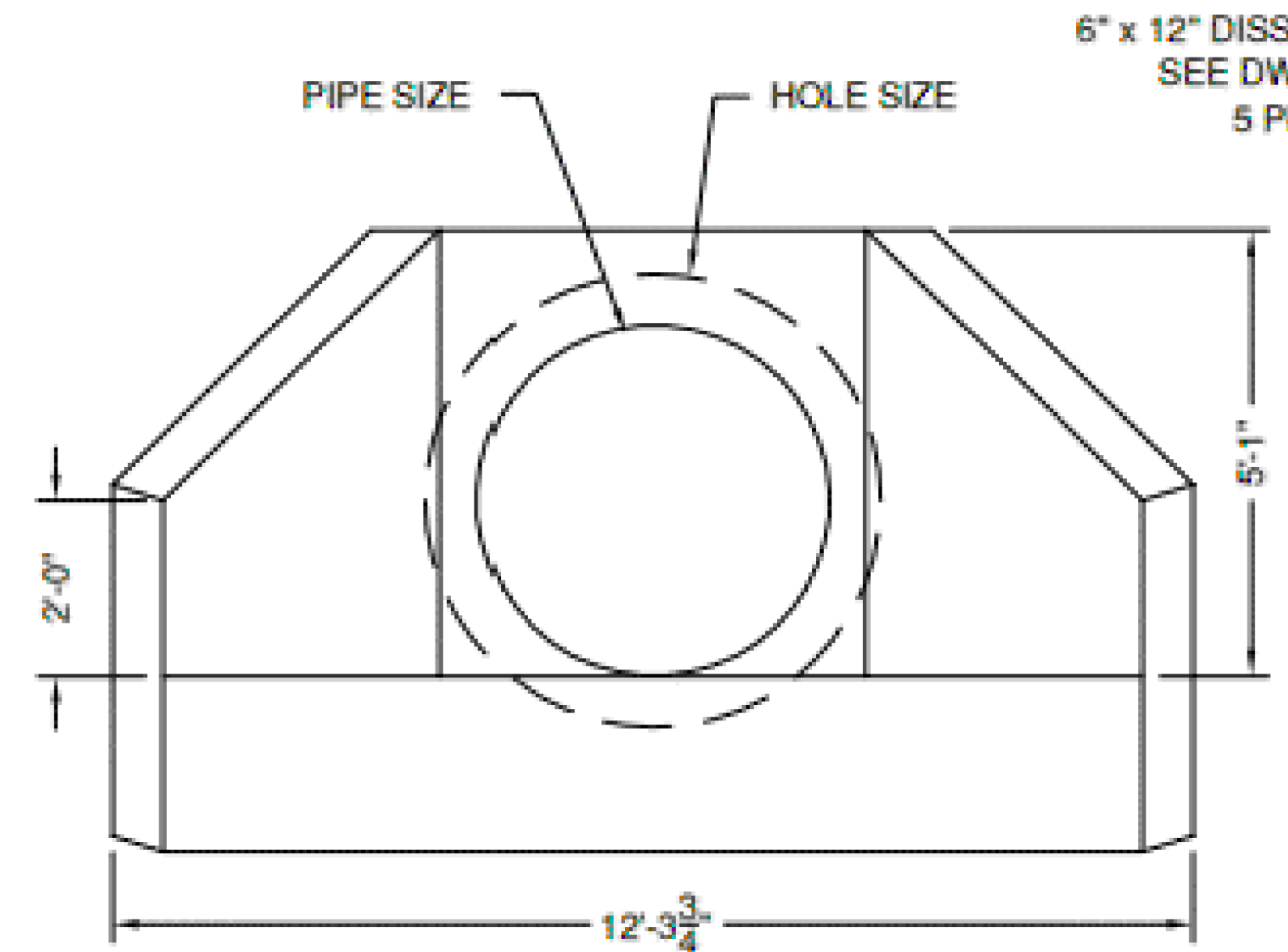
HORIZONTAL SCALE AS SHOWN	BRIDGE FILE
VERTICAL SCALE AS SHOWN	DESIGNATION
SURVEY BOOK	SHEETS
CONTRACT	12 of 16
	PROJECT
	2409635019

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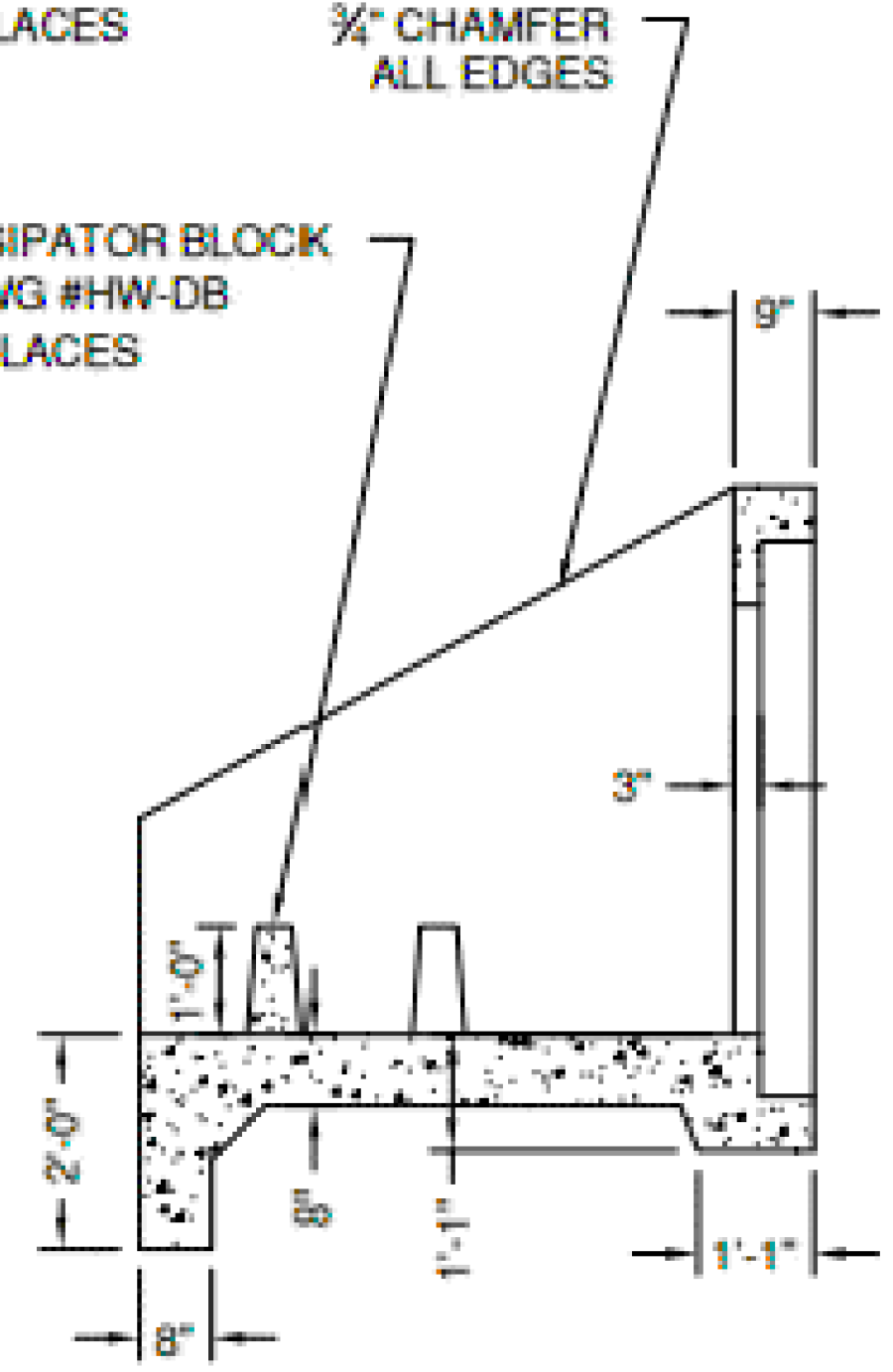
Pipe Size	Hole Size	Weight
42"	55"	14,115#
48"	62"	13,670#



**PLAN VIEW**



**FRONT VIEW**



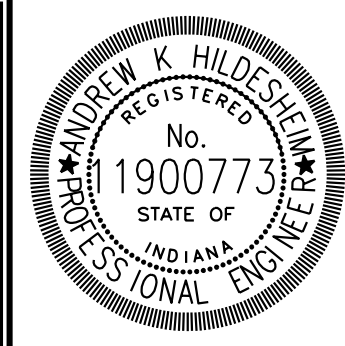
**SECTION VIEW**

**SLOPED & FLARED DISSIPATOR HEADWALL DETAIL**

NTS

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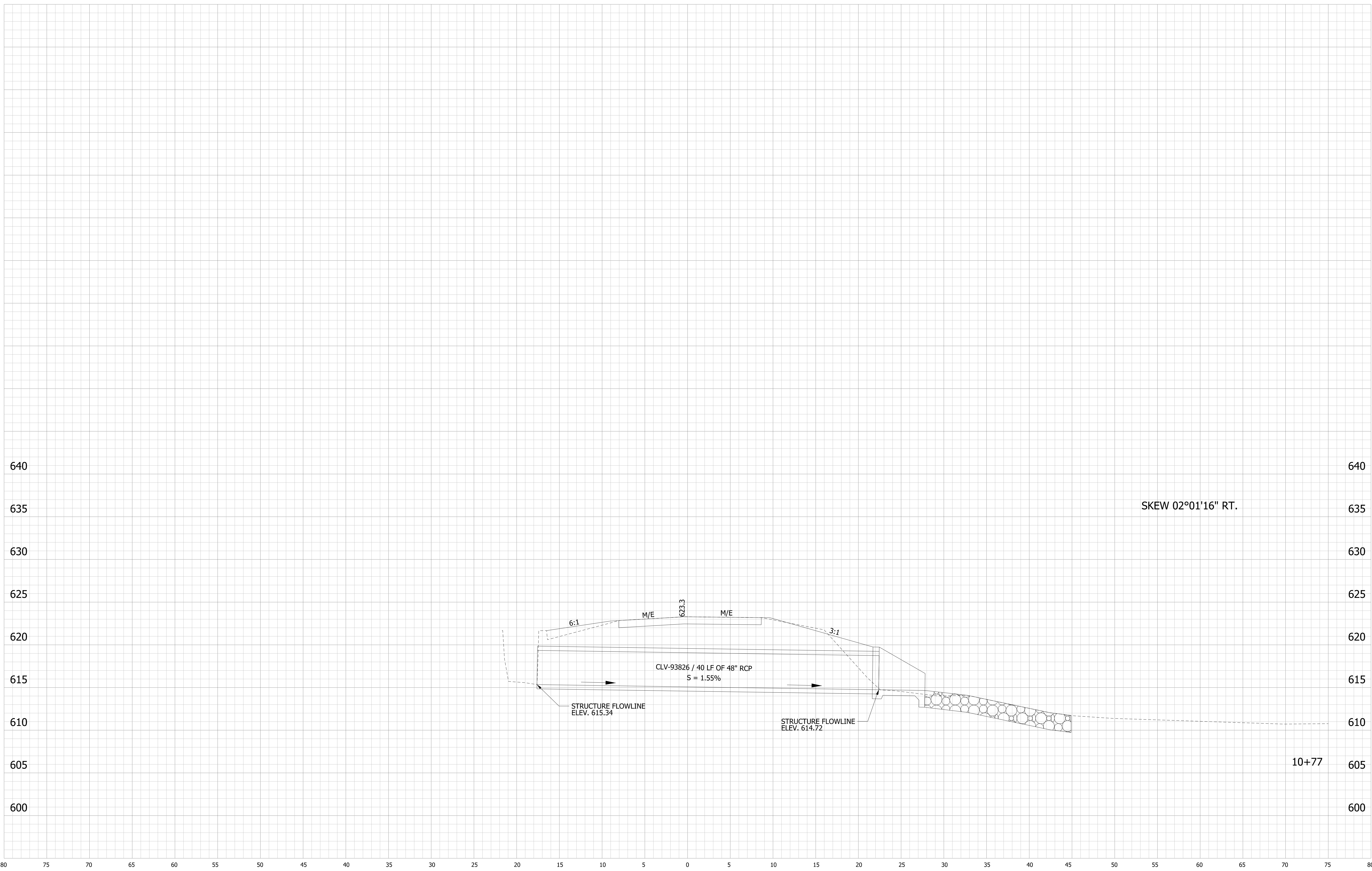
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RECOMMENDED FOR APPROVAL	<i>Andrew Hildesheim</i>	12/6/2024
DESIGNED:	AKH	DRAWN:
CHECKED:	DPL	CHECKED:

INDIANA DEPARTMENT OF NATURAL RESOURCES	
CULVERT - 93826 48" RCP - HEADWALL DETAIL	

HORIZONTAL SCALE	BRIDGE FILE
N/A	
VERTICAL SCALE	DESIGNATION
N/A	
SURVEY BOOK	SHEETS
	13 of 16
CONTRACT	PROJECT
	2409635019

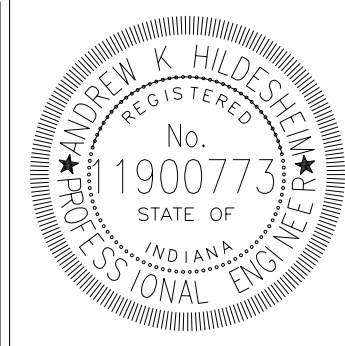


SKEW 02°01'16" RT.

10+77

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M/E = MATCH EXISTING SLOPE

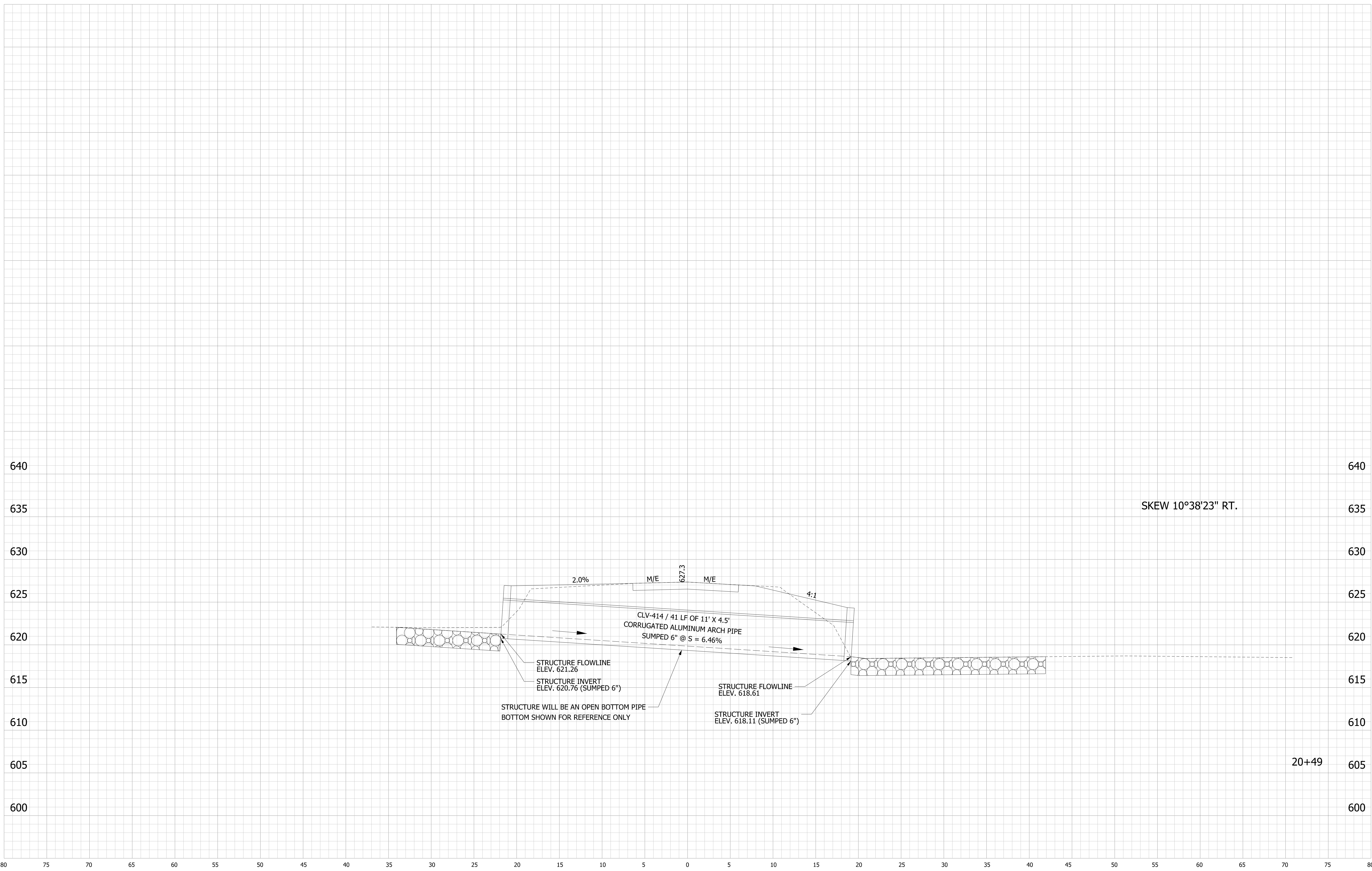



RECOMMENDED FOR APPROVAL	<i>Andrew Hildesheim</i>	12/6/2024
	DESIGN ENGINEER	DATE
DESIGNED: AKH	DRAWN: AKH	
CHECKED: DPL	CHECKED: DPL	

INDIANA DEPARTMENT  
OF NATURAL RESOURCES

PIPE SECTION - LINE "S"  
CLV - 93826

HORIZONTAL SCALE	BRIDGE FILE
1" = 5'	
VERTICAL SCALE	DESIGNATION
1" = 5'	
SURVEY BOOK	SHEETS
	14 of 16
CONTRACT	PROJECT
	2409635019

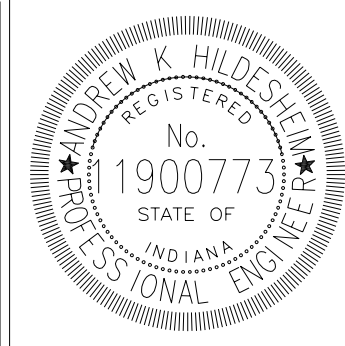


SKEW 10°38'23" RT.

20+49

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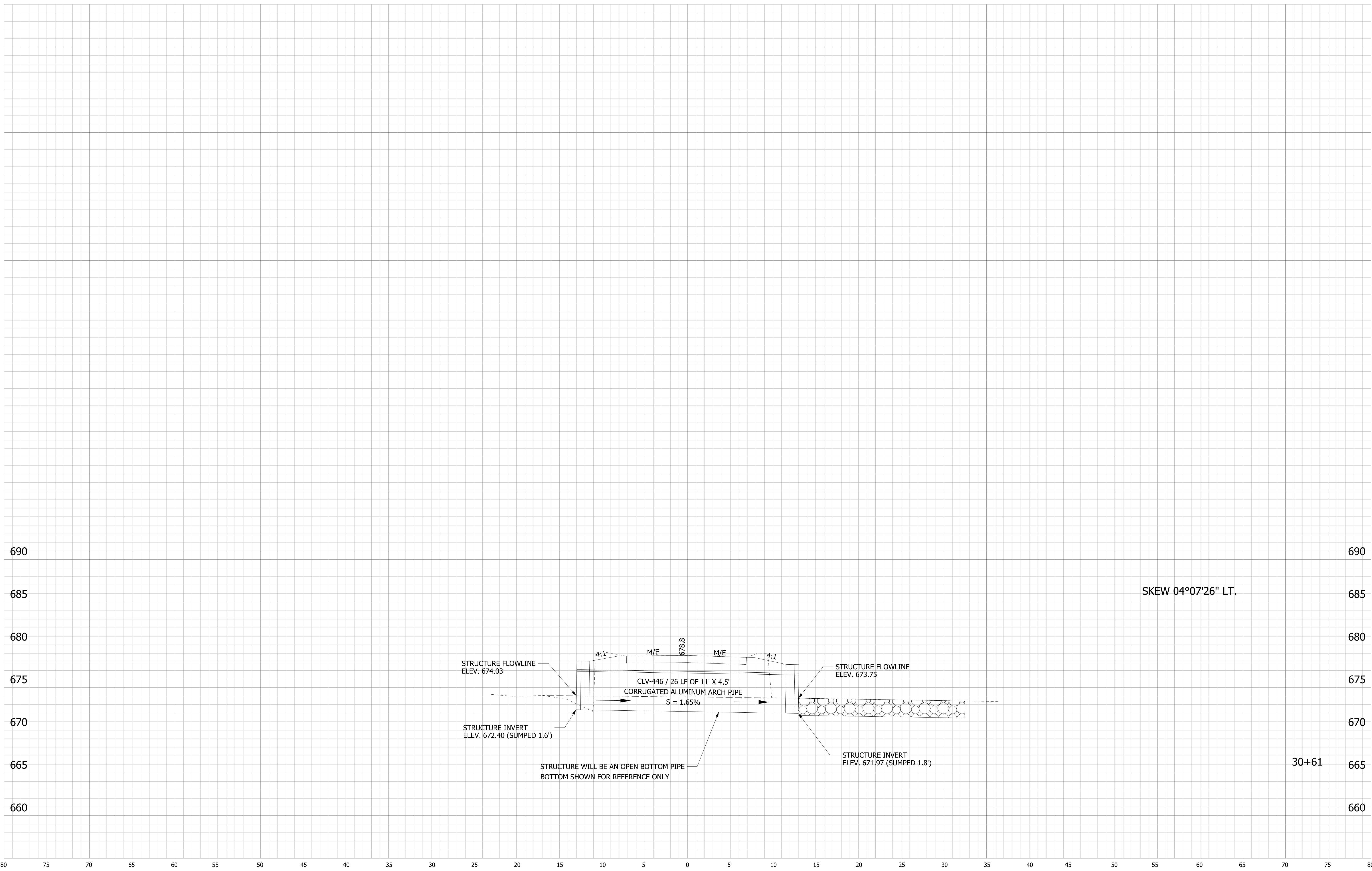
NOTE: FLOWLINE THROUGH CULVERT SHALL BE BACKFILLED WITH EXCAVATED STREAM MATERIAL AS SHOWN ON PLANS.  
 M/E = MATCH EXISTING SLOPE

RECOMMENDED FOR APPROVAL: *Andrew Hildesheim* 12/6/2024  
 DESIGN ENGINEER DATE  
 DESIGNED: AKH DRAWN: AKH  
 CHECKED: DPL CHECKED: DPL

INDIANA DEPARTMENT OF NATURAL RESOURCES  
 PIPE SECTION - LINE "M"  
 CLV - 414

HORIZONTAL SCALE 1" = 5'	BRIDGE FILE
VERTICAL SCALE 1" = 5'	DESIGNATION
SURVEY BOOK	SHEETS
CONTRACT	15 of 16
	PROJECT
	2409635019



SKEW 04°07'26" LT.

30+61

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 14-09999

NOTE: FLOWLINE THROUGH CULVERT SHALL BE BACKFILLED WITH EXCAVATED STREAM MATERIAL AS SHOWN ON PLANS.

M/E = MATCH EXISTING SLOPE




RECOMMENDED FOR APPROVAL	<i>Andrew K. Hildebrand</i>	12/6/2024
	DESIGN ENGINEER	DATE
DESIGNED:	AKH	DRAWN:
		AKH
CHECKED:	DPL	CHECKED:
		DPL

INDIANA DEPARTMENT  
OF NATURAL RESOURCES

PIPE SECTION - LINE "N"  
CLV - 446

HORIZONTAL SCALE	BRIDGE FILE
1" = 5'	
VERTICAL SCALE	DESIGNATION
1" = 5'	
SURVEY BOOK	SHEETS
	16 of 16
CONTRACT	PROJECT
	2409635019