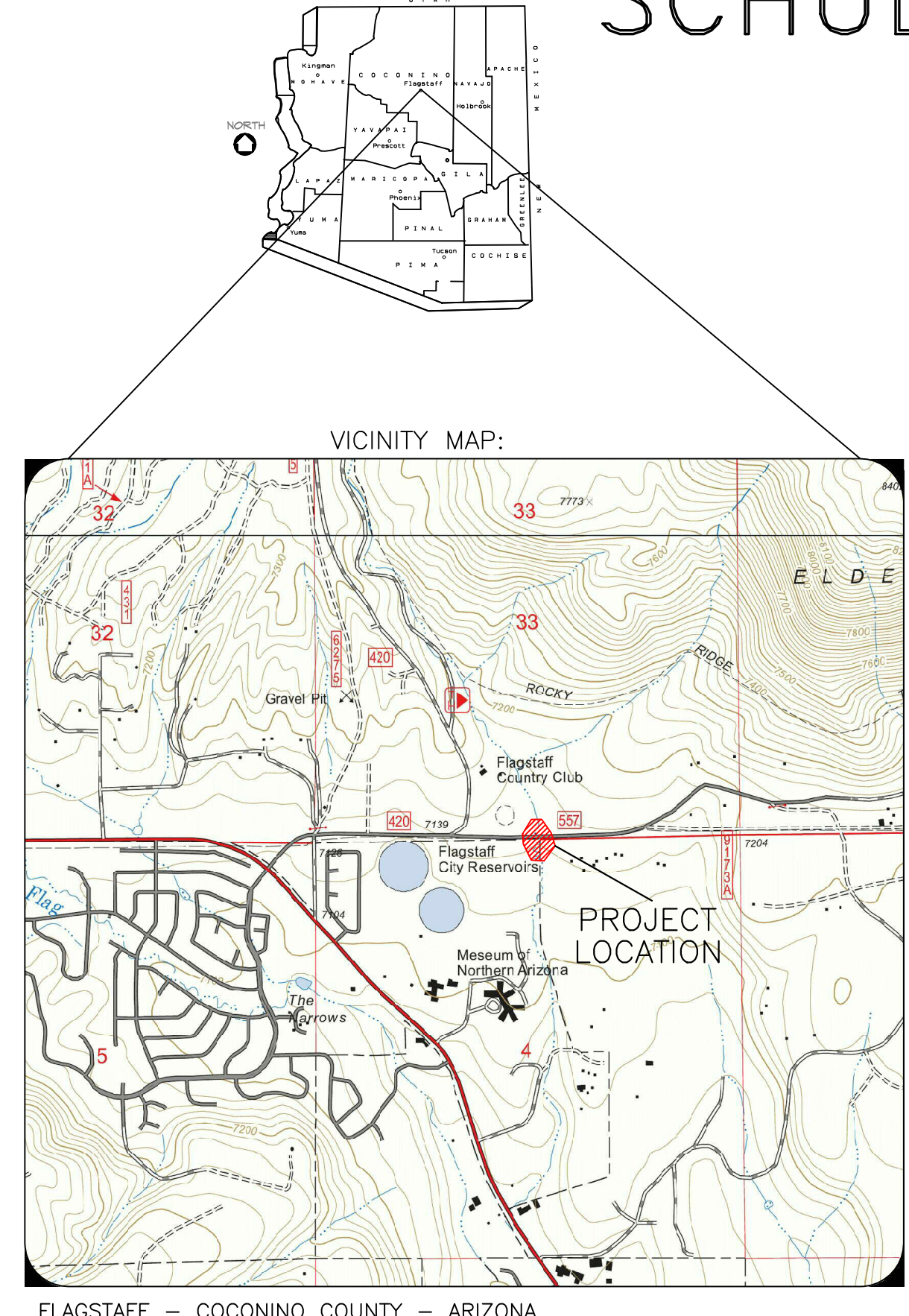



# SCHULTZ CREEK/MT. ELDEN LOOKOUT ROAD CROSSING

## TRIPLE BOX CULVERT

### PRE-FINAL SUBMITTAL



PREPARED FOR:

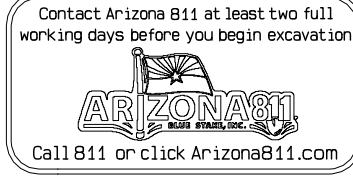
 **COCONINO COUNTY PUBLIC WORKS**  
5600 E. COMMERCE AVE  
FLAGSTAFF, AZ 86004

PREPARED BY:

 **NATURAL CHANNEL DESIGN, INC.**  
2900 N. WEST ST., #5  
FLAGSTAFF, AZ 86004  
PHONE: (928) 774-2336

SHEET INDEX:

SHEET #	DESCRIPTION
1	LOCATION, LEGEND, ACKNOWLEDGMENTS, & COUNTY NOTES
2	NOTES, QUANTITY SUMMARY, SURVEY INFORMATION & TCE
3	ROAD REALIGNMENT PLAN & PROFILE
4	ROAD LAYOUT & SECTION DETAIL
5	GUARDRAIL & SAFETY RAIL DETAILS
6	TRIPLE BOX CULVERT LAYOUT & DETAIL
7	BOX CULVERT AND SAFETY RAIL ADDITIONAL DETAILS
8	SCHULTZ CREEK CHANNEL PLAN & PROFILE
9	GRADING LAYOUT & CROSS SECTIONS
10	ROCK STRUCTURES & RIPRAP LAYOUT & DETAIL
11	GAS LINE EASEMENT CROSS SECTIONS
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14	SEDEMENT & EROSION CONTROL PLAN

 **ARIZONA 811**  
Call 811 or click Arizona811.com

UNDERGROUND UTILITIES LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE UTILITY LOCATIONS WERE PLOTTED FROM A COMBINATION OF FIELD DATA, RECORD DATA, LANDOWNER INFORMATION, AND UTILITY MAPS PROVIDED BY OTHERS, AND MAY NOT REFLECT ALL EXISTING UTILITIES OR THE EXACT LOCATION. LOCATION OF ALL EXISTING UTILITIES SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF AND ANY DAMAGE TO EXISTING UTILITIES. CALL BEFORE YOU DIG (DIAL 811).

CONCEPT APPROVAL:

COCONINO COUNTY ENGINEER APPROVAL

APPROVED BY \_\_\_\_\_ DATE \_\_\_\_\_  
COCONINO COUNTY APPROVES THESE PLANS FOR CONCEPT ONLY. ALL LIABILITY FOR ERRORS OR OMISSIONS IS THE RESPONSIBILITY OF THE DESIGN ENGINEER.

UTILITY ACKNOWLEDGEMENT:

ARIZONA PUBLIC SERVICE (ELECTRIC)

ACKNOWLEDGED BY \_\_\_\_\_ DATE \_\_\_\_\_

KINDER MORGAN

ACKNOWLEDGED BY \_\_\_\_\_ DATE \_\_\_\_\_

CENTURY LINK/LUMEN

ACKNOWLEDGED BY \_\_\_\_\_ DATE \_\_\_\_\_

PLAN LEGEND:

EXISTING FEATURES	DESCRIPTION
	PARCEL BOUNDARY (APPROX.)
	EXISTING MAJOR CONTOUR (5 FT)
	EXISTING MINOR CONTOUR (1 FT)
	EXISTING (APPROX.) EDGE OF ROAD
	FLOW LINE
	TREE EXISTING TO REMAIN
	EXISTING UNDERGROUND TEL/COM LINE
	EXISTING UNDERGROUND ELECTRIC LINE
	EXISTING GAS LINE
	EXISTING BUILDING (APPROXIMATE)
NEW FEATURES	
	PROPOSED MAJOR CONTOUR (5 FT)
	PROPOSED MINOR CONTOUR (1 FT)
	LIMITS OF FILL
	LIMITS OF CUT
	NEW ASPHALTIC CONCRETE
	ROCK CHUTE/ARMOUR/RIPRAP
	ARTICULATING CONCRETE MAT
	EROSION CONTROL BLANKET
	ROCK CROSS VANE WEIR
	TEST PIT/POTHOLE
	TREE EXISTING TO REMOVE
	ROCK SILL

ABBREVIATIONS:

~	APPROXIMATELY
IN	INCH
AB	AGGREGATE BASE
AC	ACRE
ACB	ARTICULATING CONCRETE BLOCKS
APPROX	APPROXIMATELY
CL	CENTER LINE
CONC	CONCRETE
CP	CONTROL POINT
CY	CUBIC YARD
DBH	DIAMETER AT BREAST HEIGHT
DIA	DIAMETER
DTL	DETAIL
DWG	DRAWING
EA	EACH
ELEV	ELEVATION
EOP	EDGE OF PAVEMENT
EX	EXISTING
FG	FINISHED GRADE ELEVATION
FT	FEET
H	HEIGHT
IN.	INCH
L	LENGTH
LBS	POUNDS
LF	LINEAR FEET
LS	LUMP SUM
MAX	MAXIMUM
M.E.	MATCH EXISTING
MIN	MINIMUM
MISC	MISCELLANEOUS
N/A	NOT APPLICABLE
NCD	NATURAL CHANNEL DESIGN, INC.
NO.	NUMBER
NPI	NON-PAY ITEM
NTS	NOT TO SCALE
OC	ON CENTER
PROP.	PROPOSED
PSI	POUNDS PER SQUARE INCH
PLS	PURE LIVE SEED
PP	POWER POLE
PT	POINT
REQD	REQUIRED
SCH	SCHEDULE
SF	SQUARE FEET
SHT	SHEET
STA	STATION
STD	STANDARD
SY	SQUARE YARD
TBD	TO BE DETERMINED
TN	TONS
TYP	TYPICAL
VLV	VALVE
W	WIDTH
W/	WITH

**COCONINO COUNTY GENERAL NOTES**

- APPROVAL OF THESE PLANS BY THE COUNTY PUBLIC WORKS IS FOR A TWO-YEAR PERIOD, SUBSEQUENT TO THE DATE OF APPROVAL IF CONSTRUCTION WORK IS NOT STARTED WITHIN THE TWO-YEAR PERIOD OR HAS BEEN DISCONTINUED FOR ANY REASON FOR LONGER THAN TWO YEARS, THE PLANS SHALL BE RESUBMITTED FOR REVIEW AND RE-APPROVAL IN ACCORDANCE WITH ARIZONA TECHNICAL BOARD OF REGISTRATION.
- PLAN REVIEW BY THE COUNTY DOES NOT EXTEND TO MATERIAL QUANTITIES SHOWN ON THE PLANS.
- A FLOOD PLAIN USE PERMIT, ISSUED BY THE COCONINO COUNTY COMMUNITY DEVELOPMENT DEPARTMENT IS REQUIRED FOR THE WORK WITHIN THE COUNTY'S FLOOD PLAIN.
- A FLOOD PLAIN USE PERMIT, ISSUED BY THE CITY OF FLAGSTAFF IS REQUIRED FOR THE WORK WITHIN THE CITY'S FLOOD PLAIN.
- THE CONTRACTOR SHALL OBTAIN A COPY OF THE 404 NW PERMIT AND BE FAMILIAR WITH THE REGULATIONS ESTABLISHED BY THE CLEAN WATER ACT SECTION 404.
- THE COUNTY SHALL BE NOTIFIED FORTY-EIGHT (48) HOURS PRIOR TO BEGINNING DIFFERENT PHASES OF CONSTRUCTION SO THAT COUNTY INSPECTOR MAY BE SCHEDULED.
- FOR CONSTRUCTION PURPOSES, THE FOLLOWING PRECEDENCE OF STANDARDS WILL PREVAIL: CURRENT COCONINO COUNTY PUBLIC WORKS ENGINEERING DEPARTMENT STANDARDS; CURRENT MAG STANDARDS; INTERNATIONAL BUILDING CODE (IBC); PROJECT SPECIFIC PLANS AND SPECIFICATIONS; ADOT STANDARDS - OR OTHER SPECIFICATIONS APPROVED BY THE COUNTY ENGINEER AND WITH GENERALLY ACCEPTED GOOD CONSTRUCTION PRACTICE. ALL WORK AND MATERIALS WHICH DO NOT CONFORM TO THE STANDARDS AND SPECIFICATIONS ARE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
- ANY WORK PERFORMED WITHOUT THE KNOWLEDGE AND APPROVAL OF THE COUNTY ENGINEER, IS SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
- THE COUNTY ENGINEER MAY SUSPEND THE WORK BY WRITTEN NOTICE WHEN, IN THEIR JUDGMENT, PROGRESS IS UNSATISFACTORY, WORK BEING DONE IS UNAUTHORIZED OR DEFECTIVE, WEATHER CONDITIONS ARE UNSUITABLE, OR THERE IS DANGER TO THE PUBLIC HEALTH OR SAFETY.
- THE COUNTY ENGINEER MAY ORDER ANY OR ALL MATERIALS USED IN THE WORK TO BE TESTED ACCORDING TO MAG OR ADOT MATERIAL TESTING REQUIREMENTS, AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) AND THE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) STANDARDS. THE CONTRACTOR SHALL, AT THEIR EXPENSE, HIRE A QUALIFIED TESTING LABORATORY TO PERFORM QUALITY CONTROL (QC) DURING ALL PHASES OF CONSTRUCTION, AS STATED IN COCONINO COUNTY STANDARDS, OR AS DIRECTED IN THE SPECIAL PROVISIONS.
- LOCAL FIRE DEPARTMENT, COUNTY ENGINEERING DIVISION AND OTHER EMERGENCY RESPONDER'S APPROVAL IS REQUIRED FOR OBSTRUCTION OF ACCESS OR WATER SYSTEM SHUTDOWN - SUBMISSION OF TRAFFIC CONTROL PLANS IS REQUIRED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE STREETS AND OF PARTIALLY COMPLETED PORTIONS OF THE WORK UNTIL FINAL ACCEPTANCE OF THE WORK. ANY ROADS REQUIRED TO BE CLOSED FOR THE CONSTRUCTION ACTIVITY SHALL BE REOPENED WITHIN A REASONABLE TIME OR UPON ORDER OF COUNTY ENGINEER, THE REGULATION AND CONTROL OF THIS TRAFFIC SHALL BE AS DIRECTED BY THE COUNTY ENGINEER.
- APPROVAL OF A PORTION OF THE WORK IN PROGRESS DOES NOT GUARANTEE ITS FINAL ACCEPTANCE. TESTING AND EVALUATION MAY CONTINUE UNTIL WRITTEN FINAL ACCEPTANCE OF A COMPLETE WORKABLE UNIT. ANY DEFECTS WHICH APPEAR IN THE WORK WITHIN ONE YEAR FROM THE DATE OF ACCEPTANCE AND WHICH ARE DUE TO IMPROPER WORKMANSHIP OR INFERIOR MATERIALS SUPPLIED SHALL BE CORRECTED BY OR AT THE EXPENSE OF THE OWNER/DEVELOPER OR THE CONTRACTOR.
- ACCEPTANCE OF COMPLETED PUBLIC IMPROVEMENTS WILL NOT BE GIVEN UNTIL DEFECTIVE OR UNAUTHORIZED WORK IS REMOVED, AND FINAL CLEAN-UP IS COMPLETE.
- LOCATION OF UNDERGROUND UTILITIES BEFORE WORK IS BEGUN IS TO BE ACCOMPLISHED IN ACCORDANCE WITH ARS 40-360.22.
- IF WORK IS DONE ON PRIVATE PROPERTY IN RELATION TO A PROJECT CONSTRUCTED UNDER THESE STANDARDS, THE CONTRACTOR WILL PROVIDE THE COUNTY WITH WRITTEN AUTHORIZATION FROM THE PROPERTY OWNER TO DO SO.
- THE ESTABLISHMENT AND USE OF TEMPORARY CONSTRUCTION YARDS SHALL REQUIRE WRITTEN AUTHORIZATION FROM THE COUNTY PUBLIC WORKS DEPARTMENT.
- COUNTY APPROVAL OF THESE PLANS IS FOR CONCEPT ONLY. ALL LIABILITY RESULTING FROM ERRORS OR OMISSIONS IS THE RESPONSIBILITY OF THE PERMITTEE AND/OR HIS CONSULTANTS AND EMPLOYEES; COCONINO COUNTY DOES NOT VERIFY OR GUARANTEE THE MEASUREMENTS, CALCULATIONS, OWNERSHIP, OR CONCLUSIONS INDICATED BY THE CREATOR OF THESE PLANS.

SCHULTZ CREEK/MT. ELDEN LOOKOUT ROAD CROSSING TRIPLE BOX CULVERT COCONINO COUNTY, AZ - PUBLIC WORKS

LOCATION, LEGEND, ACKNOWLEDGMENTS, & COUNTY NOTES

DRAWN BY: CL  
DESIGNED BY: CL, MK  
REVIEWED BY: \_\_\_\_\_  
NO. DATE BY REVISION

UNAUTHORIZED CHANGES, REVISIONS, OR ALTERATIONS TO THESE PLANS ARE THE RESPONSIBILITY OF THE DESIGN ENGINEER. ANY CHANGES MUST BE APPROVED BY THE COUNTY ENGINEER AND MUST BE REFLECTED IN THESE PLANS.

DATE: 05/06/2023  
DRAWING NUMBER: COVER 1  
NCD PROJECT NUMBER: 22-431AZ  
SHEET NUMBER: 1 OF 14

PRELIMINARY PRE-FINAL SUBMITTAL

Natural Channel Design  
2900 N. WEST ST., #5  
FLAGSTAFF, ARIZONA  
(928) 774-2336

**TRAFFIC CONTROL**

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING, SUBMITTING AND OBTAINING APPROVAL OF A COMPLETE TRAFFIC CONTROL PLAN IN ACCORDANCE WITH CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND COCONINO COUNTY PUBLIC WORKS. A PERMIT SHALL NOT BE ISSUED UNTIL ACCEPTANCE IS GRANTED FROM A COUNTY REPRESENTATIVE.

**EROSION CONTROL, SEDIMENT CONTROL AND SWPPP**

1. TOTAL DISTURBANCE ASSOCIATED WITH THIS PROJECT IS ANTICIPATED TO BE APPROXIMATELY 1.4 ACRES WITHIN THE LIMITS OF DISTURBANCE IDENTIFIED BY THESE PLANS. ADDITIONAL DISTURBANCE MAY OCCUR DUE TO THE CONTRACTOR'S MEANS AND METHODS AND NEEDS FOR STAGING EQUIPMENT AND MATERIALS. A NOTICE OF INTENT FOR CONSTRUCTION ACTIVITY DISCHARGES TO ADEQ AND COMPLIANCE WITH ARIZONA STORMWATER CONSTRUCTION GENERAL PERMIT IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL EXERCISE BEST MANAGEMENT PRACTICES DURING CONSTRUCTION TO MINIMIZE THE GENERATION OF EROSION AND SEDIMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREPARATION AND IMPLEMENTATION OF A JOB SITE EROSION & SEDIMENT CONTROL PLAN AND OBTAINING APPROVAL FROM THE COUNTY INSPECTOR PRIOR TO STARTING CONSTRUCTION.

**LOG AND WOODY DEBRIS REMOVAL**

1. LOGS AND BRANCHES 6 INCHES IN DIAMETER AND SMALLER, SLASH AND WOODY DEBRIS RESULTING FROM TREE REMOVAL OPERATIONS SHALL BE MULCHED AND HAULED FROM THE SITE AND DISPOSED OF IN A LEGAL MANNER AND TO A LOCATION AS DETERMINED BY THE ENGINEER WITHIN THE GREATER FLAGSTAFF AREA.  
2. LOGS AND BRANCHES GREATER THAN 6 INCHES IN DIAMETER SHALL CUT TO LENGTHS AS SPECIFIED BY CCPM AND HAULED FROM THE SITE TO THE NEAREST FIREWOOD STAGING AREA AS DESIGNATED BY THE USFS AND/OR THE ENGINEER.

**PROTECTION OF EXISTING VEGETATION**

1. CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT TREES AND OTHER VEGETATION THAT ARE TO REMAIN. UNLESS SPECIFICALLY MARKED FOR REMOVAL, VEGETATION SHALL BE PROTECTED FROM DAMAGE THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL REPAIR ANY DAMAGE RESULTING FROM THE CONTRACTOR'S OPERATIONS OR NEGLIGENCE. THE CONTRACTOR IS REQUIRED TO NOTIFY AND COORDINATE WITH NCD AND COUNTY PUBLIC WORKS PERSONNEL PRIOR TO REMOVING EXCESS TREES OR VEGETATION AND ALL EFFORTS WILL BE MADE TO PRESERVE STANDING LIVE TREES NOT OTHERWISE WITHIN THE TREE CLEARING LIMITS.

**REVEGETATION NOTES**

**SOIL PREPARATION:**

1. PRIOR TO SEEDING, PREPARE THE SOIL BY SCARIFYING THE UPPER TWO INCHES OF THE FINISHED GRADE TO ENSURE THE SOIL IS IN ROUGHENED CONDITION FAVORABLE FOR SEED GERMINATION AND GROWTH. OVERLY COMPACTED EQUIPMENT ACCESS ROUTES MAY REQUIRE SCARIFICATION TO 6 INCHES FOLLOWED BY SMOOTHING TO ROUGHENED CONDITION FREE OF CLOUDS.  
2. ALL EQUIPMENT USED ON-SITE SHALL BE PRESSURE WASHED TO REMOVE INVASIVE WEED SEEDS PRIOR TO MOBILIZATION TO THE SITE. EQUIPMENT SHALL BE INSPECTED AND APPROVED BY THE COUNTY INSPECTOR PRIOR TO MOBILIZATION TO THE SITE.

**SEEDING:**

1. RESEEDING OF ALL AREAS DISTURBED BY THE NEW CONSTRUCTION, INCLUDING NEW CHANNELS, EMBANKMENTS, ETC., BUT EXCLUDING ROAD AND DRIVEWAY SURFACES, SHALL INCLUDE THE FOLLOWING SEED MIX. THE RESEEDED AREA SHALL INCLUDE STAGING AND CONSTRUCTION ACCESS AREA(S). THE TOTAL ESTIMATED AREAS TO BE RESEEDED IS APPROXIMATELY 2 ACRES. ADDITIONAL SEEDING MAY BE NECESSARY DEPENDING ON CONTRACTORS' MEANS AND METHODS.

Common Name	Species Name	Lbs PLS/ac.
Blue Grama	Bouteloua gracilis	1.2
Little Bluestem	Schizachyrium scoparium	2.8
Slender Wheatgrass	Elymus trachycaulus	5.0
Arizona Fescue	Festuca arizonica	2.4
Prairie Junegrass	Koeleria macrantha	0.2
Muttongrass	Poa fendleriana	0.6
TOTAL Lbs. PLS/ac.		12.2

2. NO SUBSTITUTION OF SPECIFIED SEED IS ALLOWED WITHOUT PRIOR APPROVAL FROM COUNTY OR ENGINEER.  
3. SEED SHALL BE APPLIED UNIFORMLY AND SHALL OCCUR PRIOR TO INSTALLATION OF EROSION CONTROL BLANKETS.  
4. SEEDING MAY BE PLACED BY BROADCAST SEEDING METHOD AND SHALL BE INCORPORATED INTO THE SOIL, BUT NOT MORE THAN 0.5" TO 1.0" DEEP.  
5. SEED SHALL BE WEED FREE AND SHALL BE PURCHASED FROM A REPUTABLE SUPPLIER. SEED TAG LABELS SHALL BE PROVIDED TO THE COUNTY INSPECTOR PRIOR TO PLACEMENT.  
6. REFER TO "COCONINO COUNTY SEEDING SPECIFICATION" FOR GENERAL CONDITIONS & REQUIREMENTS, MATERIALS, METHODS, AND MEASUREMENT AND PAYMENT INFORMATION. THIS DOCUMENT CAN BE FOUND ONLINE AT <https://www.coconino.az.gov/DocumentCenter/View/43710/Seeding-Spec>

**QUANTITIES SUMMARY**

ITEM	KEYNOTE	DESCRIPTION:	UNIT:	QUANTITY:
1	-	CONSTRUCTION LAYOUT SURVEY & AS-BUILT/RECORD DRAWING	LS	1
2	-	NPDES AND SWPPP NOI, NOT, INSTALLATION OF MEASURES & MAINTENANCE	LS	1
3	-	CONSTRUCTION MATERIAL TESTING	LS	1
4	-	MOBILIZATION & DEMOBILIZATION	LS	1
5	-	TRAFFIC CONTROL	LS	1
6	101	CLEAR & GRUB	EA	0.7
7	102	REMOVE AND DISPOSE TREE AND STUMP GREATER THAN 12 INCHES	AC	7
8	103	REMOVE AND DISPOSE EXISTING CMP UNDER ROAD	LS	1
9	104	SAW CUT AND REMOVE AC PAVEMENT	SY	667
10	105	COORDINATE WITH UTILITIES FOR RELOCATION OF INTERFERING UTILITIES	LS	1
11	106	EARTHWORK GRADE, SHAPE, COMPACT, AND DISPOSE EXCAVATION (CUT) PLACE, SHAPE, AND COMPACT (FILL) HAULOFF	CY CY CY	1426 701 725
12	107	CONSTRUCT THREE-BARREL BOX CULVERT	LS	1
14	109	CONSTRUCT ROCK SILLS USING 30" FEATURE ROCK	LF	198
15	110	CONSTRUCT ROCK CROSS-VANE WEIR USING 48" FEATURE ROCK	EA	1
16	111	PLACE RIPRAP D50=12" TO 24" DEPTH D50=18" TO 36" DEPTH	CY CY LS	144 418 1
17	112	PLACE ARTICULATED CONCRETE MAT	LS	1
18	113	INSTALL 5" AC PAVEMENT	SY	826
19	114	RESEED DISTURBED TOPSOIL	AC	2
20	115	CONSTRUCT W-BEAM GUARDRAIL	LF	200
21	116	PLACE DOUBLE-NET ECB	SY	835
22	117	CONSTRUCT FIBER SAFETY RAIL	LF	90
23	120	PLACE EROSION WADDLE	LF	185
24	121	INSTALL (APS PROVIDED) PULL BOX PER APS REQUIREMENTS	EA	2
25	122	INSTALL (LUMEN PROVIDED) PULL BOX PER LUMEN REQUIREMENTS	EA	2
26	123	INTERCEPT EXISTING 2(2") ELECTRIC CONDUIT AND BRING TO TRENCH.	EA	2
27	124	SAW CUT, TRENCH, AND PATCH AC TO RETRIEVE UTILITIES UNDER ROAD	SY	14
28	125	INSTALL (3)2" PVC ELECTRIC CONDUIT PER APS REQUIREMENTS	LF	1050
29	126	INSTALL 4" HDPE TELE./COMM. CONDUIT PER LUMEN REQUIREMENTS	LF	350
30	127	EXCAVATE AND BACKFILL TRENCH FOR COMBINED UTILITIES	LF	350
31	128	PROVIDE CONCRETE ENCASEMENT FOR UTILITIES UNDER RIPRAP	11 CY	

**QUANTITY SUMMARY NOTES**

- A PAY ITEM IS INCLUDED FOR CLEARING AND GRUBBING. THIS SHALL INCLUDE THE REMOVAL AND DISPOSAL OF ALL TREES 12 INCHES AND SMALLER (MEASURED AT 12" ABOVE GROUND) AND OTHER VEGETATION IN DIRECT CONFLICT WITH THE BASIN GRADING, INCLUDING ALL ROOT BALLS AND SLASH, ETC.
- REMOVAL OF TREES GREATER THAN 12 IN. DIA. ARE QUANTIFIED WITHIN THE BID SCHEDULE. REMOVAL OF TREES SMALLER THAN 12 IN. DIA. ARE CONSIDERED INCIDENTAL TO THE COST OF THE PROJECT CLEARING & GRUBBING. EXISTING VEGETATION ROOT MAT AND MISCELLANEOUS SURFACE ORGANICS MUST ALSO BE REMOVED PRIOR TO PLACEMENT OF NEW FILL AND/OR STRUCTURES. CONTRACTOR SHALL USE CAUTION TO MINIMIZE DISTURBANCE AS MUCH AS POSSIBLE TO THE ESTABLISHED VEGETATION NOT SCHEDULED FOR REMOVAL. GENERALLY, VEGETATION OUTSIDE OF THE CUT OR FILL LIMITS AS SHOWN ON THE PLAN SHALL BE PRESERVED.
- COST OF ALL OTHER REMOVAL/DISPOSAL ITEMS NOT SPECIFICALLY LISTED SHALL INCLUDE TRANSPORTATION AND DISPOSAL AT AN ACCEPTED DISPOSAL FACILITY SUCH AS THE CINDER LAKE LANDFILL OR OTHER AS APPROVED.
- EARTHWORK NOTES:  
A. VOLUME OF CUT AND FILL HAS BEEN ESTIMATED HEREIN AND QUANTIFIED IN CUBIC YARDS.  
B. NO SHRINK OR SWELL FACTORS HAVE BEEN APPLIED.  
C. EXCAVATION RELATED TO PLACEMENT OF RIPRAP AND ACM PRODUCT HAS BEEN ACCOUNTED FOR WITHIN THE EARTHWORK ESTIMATE.  
D. EXCAVATION VOLUME INCLUDES EXCAVATION TO SUBGRADE FOR 3-BARREL BOX CULVERT.  
E. SITE DERIVED EXCAVATED MINERAL SOIL, FREE OF ORGANICS, ROOT MATS, ETC., AND CONTAINING PARTICLES NO GREATER THAN 3" IN SIZE MAY BE USED AS NEEDED FILL WITHIN THE PROJECT FOR SUBGRADE, BERM OR MISCELLANEOUS FILL PLACEMENT.  
F. COBBLES AND BOULDERS LARGER THAN 3" SCREENED FROM EXCAVATED MATERIAL MAY BE USED AS RIPRAP AND/OR FEATURE ROCKS WHERE THE SIZE OR GRADATION MEETS THAT CALLED FOR WITHIN THE PLANS.  
G. ANY EXCESS EXCAVATED SOILS, COBBLES, BOULDERS, TRASH OR OTHER DEBRIS ENCOUNTERED WITHIN THE PROJECT LIMITS DURING CONSTRUCTION SHALL BE REMOVED FROM THE SITE AT THE CONTRACTOR'S EXPENSE.  
H. ALL FINISHED SURFACES SHALL BE SMOOTH, FREE OF DEBRIS AND GENERALLY PLEASING IN APPEARANCE, GIVING A "FINISHED" LOOK TO THE PROJECT.  
I. EARTHWORK GRADING PROCEDURES SHALL BE PER THE RECOMMENDATIONS OF THE SOILS REPORT FOR THIS PROJECT BY SPEEDIE AND ASSOCIATES, REPORT 230072SF.
- TRAFFIC CONTROL: THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO COCONINO COUNTY PUBLIC WORKS FOR APPROVAL THAT IS COMPATIBLE WITH THEIR MEANS AND METHODS OF CONSTRUCTION AND MEETS MUTCD REQUIREMENTS. UPON APPROVAL, THE CONTRACTOR SHALL IMPLEMENT AND MAINTAIN THAT TRAFFIC CONTROL PLAN, AS REQUIRED, THROUGH DURATION OF CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN A RIGHT-OF-WAY ENCROACHMENT PERMIT FROM COCONINO COUNTY PUBLIC WORKS. A PAY ITEM IS INCLUDED WITHIN THE QUANTITY SUMMARY FOR TRAFFIC CONTROL.
- RESEEDING SHALL INCLUDE PREPARING THE SEED BED AND SUPPLYING AND PLACING THE SEED AND MULCH PER THE SEEDING SPECIFICATIONS ON THIS SHEET.
- CONTRACTOR SHALL PROTECT IN PLACE EXISTING FEATURES TO REMAIN AS NECESSARY TO ENSURE NO DAMAGE OCCURS DURING CONSTRUCTION. ITEMS TO BE PROTECTED IN PLACE MAY INCLUDE ELECTRICAL BOXES/TRANSFORMERS, TOWER PEDESTALS, TREES, UNDERGROUND UTILITIES, ETC. THE COST (IF ANY) OF PROVIDING PROTECTION AS NECESSARY SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AS A WHOLE. COCONINO COUNTY PUBLIC WORKS IS COORDINATING WITH THE INDIVIDUAL FRANCHISE UTILITIES PRIOR TO THE START OF CONSTRUCTION TO FACILITATE RELOCATIONS IN CONFLICT WITH THE GRADING. IF THE UTILITIES HAVE NOT COMPLETED RELOCATION PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR WILL BE REQUIRED TO COORDINATE AS NECESSARY WITH THOSE UTILITY COMPANIES.
- A PAY ITEM FOR TRENCHING, BACKFILL, AND INSTALLATION OF NEW CONDUIT IS INCLUDED WITHIN THE QUANTITY SUMMARY TO FACILITATE THE RELOCATION OF ELECTRIC AND TELCOM UTILITY LINES.
- A PAY ITEM FOR SWPPP IS INCLUDED WITHIN THE QUANTITY SUMMARY. ALSO SEE THE SEDIMENT AND EROSION CONTROL NOTES THIS SHEET AND THE EROSION AND SEDIMENT CONTROL PLANS, SHEET 14.
- A PAY ITEM FOR MOBE/DEMOBE IS INCLUDED WITHIN THE QUANTITY SUMMARY.
- CONTRACTOR SHALL RETAIN A REGISTERED LAND SURVEYOR LICENSED IN THE STATE OF ARIZONA TO PROVIDE CONSTRUCTION STAKING, LAYOUT, AND AS-BUILT SURVEY FOR IMPROVEMENTS SHOWN HEREIN. LIMITS OF DISTURBANCE SHALL BE CLEARLY IDENTIFIED WITH STAKING & FLAGGING AND MAINTAINED THROUGHOUT CONSTRUCTION AS TO ENSURE CONSTRUCTION ACTIVITY WILL REMAIN WITHIN THESE LIMITS AND NOT EXTEND ONTO ADJACENT PRIVATE PROPERTIES.
- CONTRACTOR SHALL PROVIDE 10 DAYS PRIOR TO STARTING THE PROJECT TO CORRDINATE WITH STAKEHOLDERS, INCLUDING COCONINO COUNTY, CITY OF FLAGSTAFF, MUSEUM OF NORTHERN ARIZONA, AND THE USFS FOR VALUE MANAGEMENT STRATEGY.

**SURVEY INFORMATION**

VERTICAL DATUM: NAVD 1988  
GEOID: 18  
UNITS: INTERNATIONAL FEET  
COORDINATE SYSTEM: NAD 1983 MODIFIED ARIZONA STATE PLANE, CENTRAL ZONE.

**CONTROL POINTS:**

DESCRIPTION:	NORTHING	EASTING	ELEVATION
SECTION CORNER ALUMINUM CAP	1542625.48	777210.97	7142.2
12" SPIKE #1	1542634.80	777388.12	7141.2
12" SPIKE #2	1542656.07	777162.97	7140.8
MAG NAIL #1	1542631.80	776686.46	7143.8
MAG NAIL #2	1542655.61	778173.78	7153.9

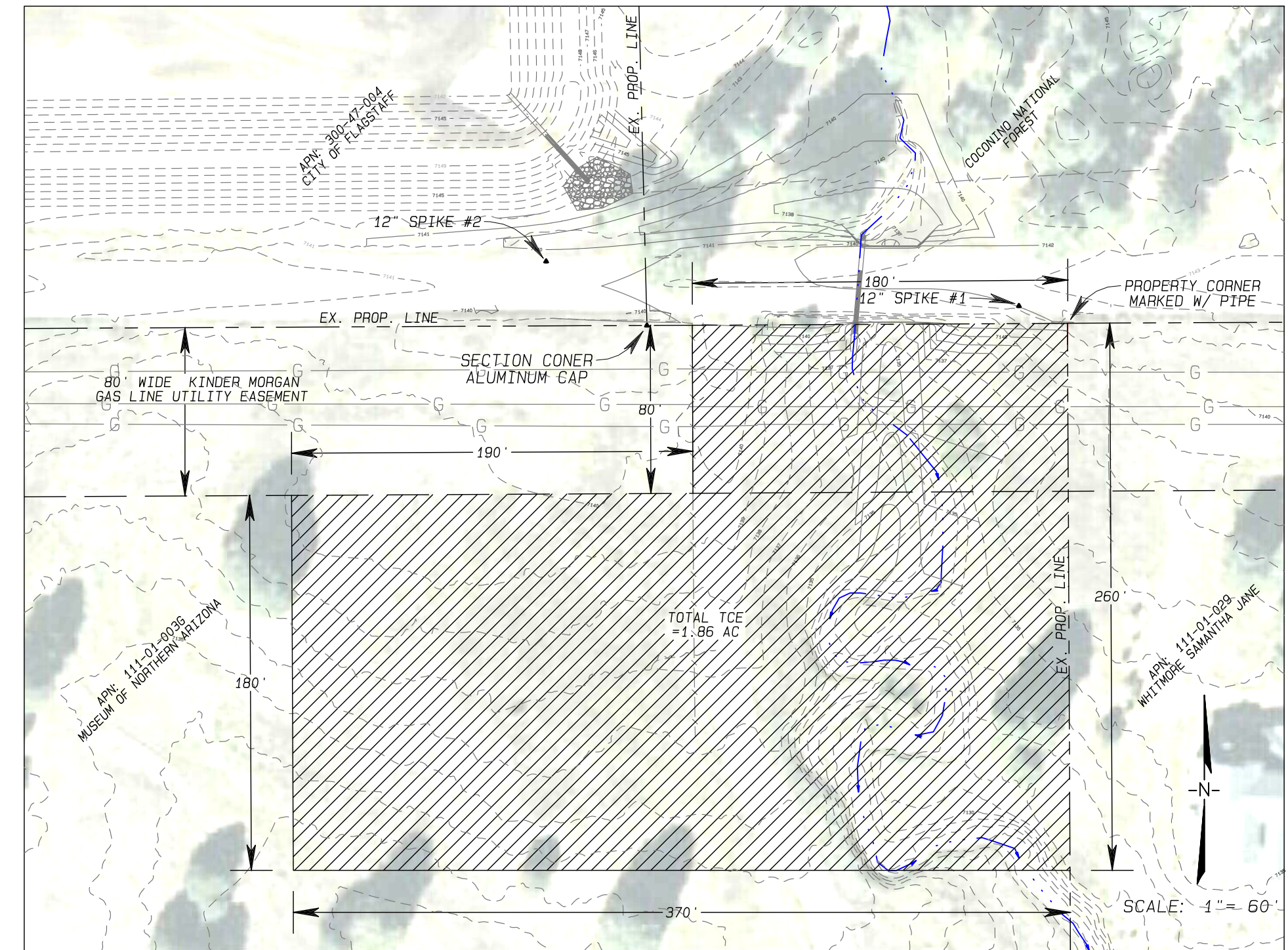
LOCATIONS SHOWN ON SHEET 3

**SURVEY NOTES**

- TOPOGRAPHICAL SURVEY OF THE SITE WAS PROVIDED BY COCONINO COUNTY AND WAS COMPLETED ON 1/5/2023
- THE TOPOGRAPHICAL SURVEY WAS AUGMENTED WITH LIDAR INFORMATION PROVIDED BY COCONINO COUNTY AND WAS CONDUCTED IN 2019.
- PROPERTY BOUNDARIES WERE MODIFIED FROM COCONINO COUNTY GIS DATABASE TO FIT TOPO DATA. HOWEVER, THE PROPERTY BOUNDARIES IN THIS PLAN ARE FOR ILLUSTRATIVE PURPOSES ONLY AND SHOULD NOT BE USED TO DETERMINE REAL PROPERTY BOUNDARIES.

**TEMPORARY CONSTRUCTION EASEMENT**

APN: 111-01-003G - MUSEUM OF NORTHERN ARIZONA - APPROVAL PENDING



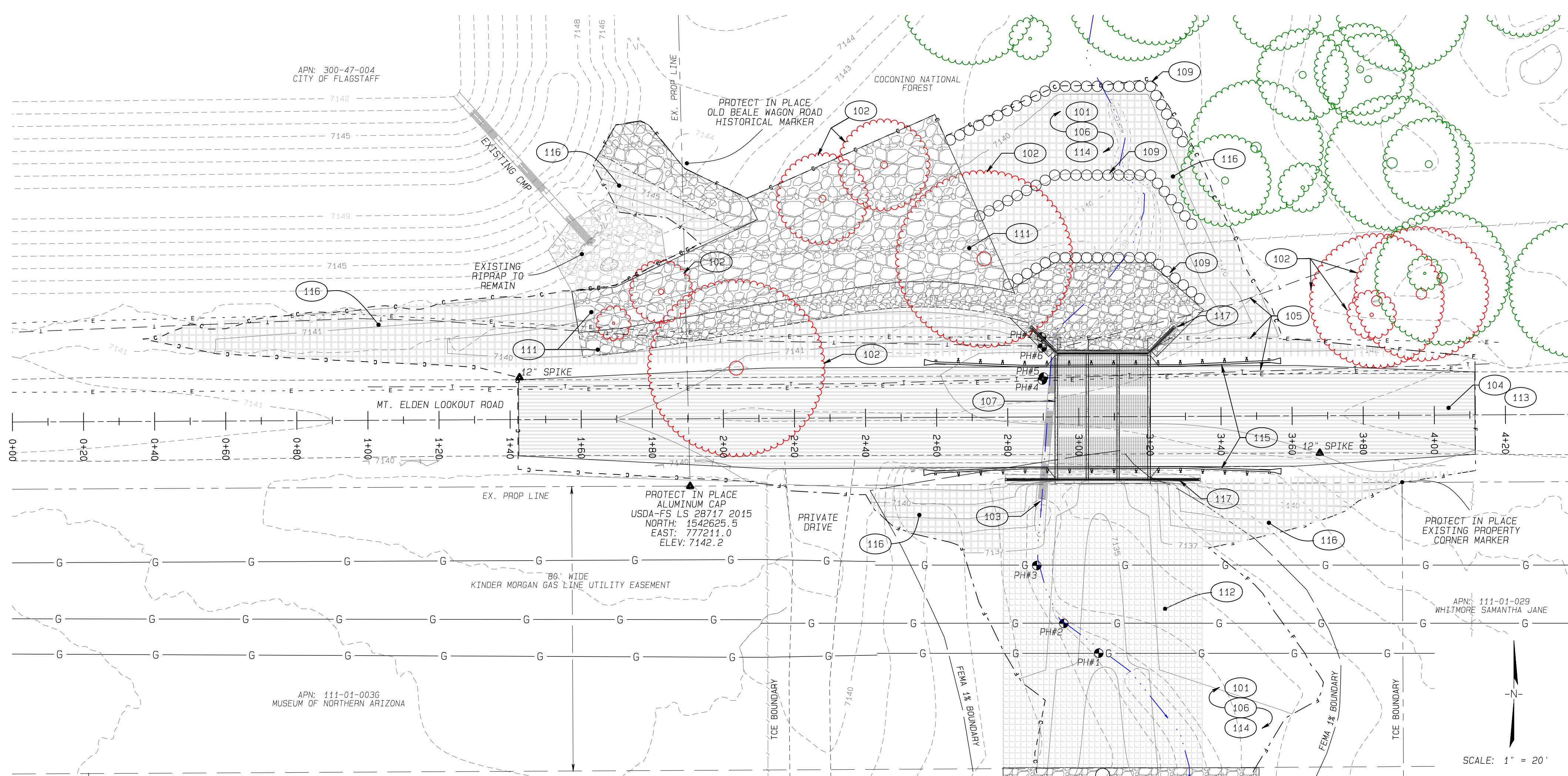
UNAUTHORIZED CHANGES & USES  
THIS DRAWING IS THE PROPERTY OF THE DESIGNER AND IS NOT TO BE REPRODUCED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF THE DESIGNER.  
DATE: 05/06/2023  
NCD PROJECT NUMBER: 22-431AZ  
DRAWING NUMBER: COVER 2  
SHEET NUMBER: 2 OF 14

PRELIMINARY  
PRE-FINAL  
SUBMITTAL

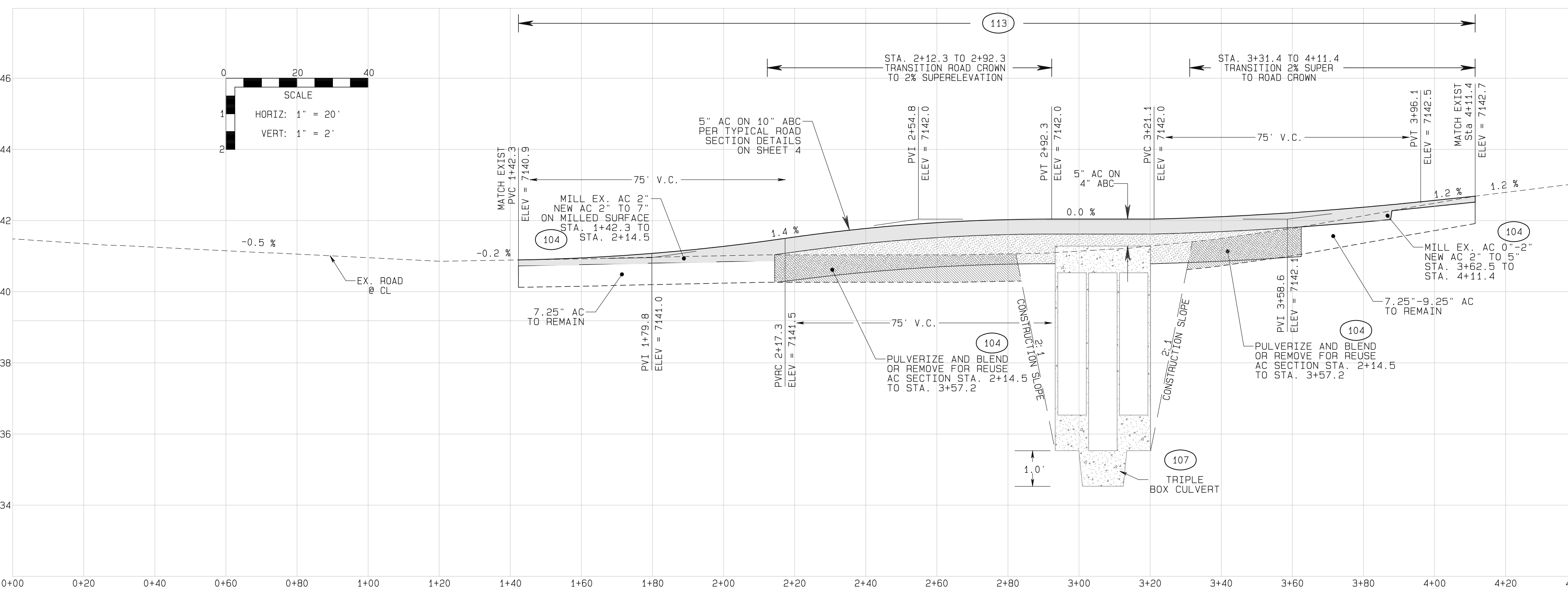
SCHULTZ CREEK/MT. ELDEN LOOKOUT ROAD CROSSING  
TRIPLE BOX CULVERT  
COCONINO COUNTY, AZ - PUBLIC WORKS  
NOTES, QUANTITY SUMMARY, SURVEY INFORMATION & TCE

DESIGNED BY:	CL	MK
REVIEWED BY:	DATE	REVISION

Natural Channel Design  
2900 N. WEST ST.  
Flagstaff, Arizona  
(928) 774-2336



SCHULTZ CREEK/ELDEN LOOKOUT ROAD CROSSING - ROAD PLAN



SCHULTZ CREEK/ELDEN LOOKOUT ROAD CROSSING - ROAD PROFILE

CONSTRUCTION NOTES:

- | NOTE | QTY. | UNIT | DESCRIPTION   |
|------|------|------|---|
| 101  | 0.7  | AC   | CLEAR AND GRUB AREA WITHIN CONSTRUCTION LIMITS PER MAG SPECIFICATIONS, SECTION 201. QUANTITY TO INCLUDE TREES AND STUMPS 12" OR LESS PER MAG SPECIFICATIONS.  |
| 102  | 7    | EA   | REMOVE TREES AND STUMPS (GREATER THAN 12" AS MEASURED 12" ABOVE GROUND).  |
| 103  | 1    | LS   | REMOVE AND DISPOSE OF EXISTING CMP CULVERT UNDER ROAD.  |
| 104  | 667  | SY   | MILL, PULVERIZE, AND BLEND AS INDICATED IN ROAD PROFILE (THIS SHEET) EXISTING AC PAVEMENT STA. 1+42.3 TO STA. 4+11.4 EXISTING ASPHALT CONCRETE MAY BE PULVERIZED AND REUSED IN ROADWAY EMBANKMENT PER MAG SPEC 301.2.1  |
| 105  | 1    | LS   | COORDINATE WITH UTILITIES FOR RELOCATION OF EXISTING TELCOM AND ELECTRIC UTILITY LINES THAT ARE IN CONFLICT WITH THE PROJECT. SEE SHEET 12 FOR UTILITY-RELOCATION OVERVIEW AND CONDUIT DETAILS  |
| 106  | **   |      | GRADE, SHAPE AND COMPACT NEW CHANNEL PER MAG SECTION 215. EARTHWORK ACCOUNTED FOR ON SHEET 2. SEE CULVERT INLET/OUTLET GRADING PLAN AND DETAIL (SHEET 8), ROAD SIDE DITCH DETAIL (SHEET 9), BERM DETAIL (SHEET 9) AND ROAD SECTION DETAIL (SHEET 4).  |
| 107  | 1    | LS   | CONSTRUCT 3-BARREL CONCRETE BOX CULVERT CROSSING WITH VERTICALLY OFFSET CENTER BARREL AND WINGWALLS, 4'x8' OUTSIDE BARRELS AND 4'-11.5'x8' CENTER BARREL. REFER TO ADOT SD 6.01 AND SD 6.03. SEE BOX CULVERT DETAIL (SHEET 6) FOR CULVERT PLACEMENT, WING WALL CONFIGURATION, & SITE SPECIFIC DETAILS.  |
| 109  | 198  | LF   | CONSTRUCT ROCK SILLS (3 EA) USING 30 IN. DIA. FEATURE ROCK AND 18 IN. DIA. FOOTER ROCK. SEE ROCK SILL DETAIL (SHEET 10) FOR SILL PLACEMENT AND CONSTRUCTION DETAILS.  |
| 111  | **   |      | PLACE RIPRAP 24 INCH THICK D50-12" OR 36" THICK D50-18" AS INDICATED. AT THE LOCATIONS PROVIDED IN RIPRAP DETAIL AND PER MAG SECTION 220. TOP OF RIPRAP SHALL APPROXIMATE DESIGN GRADE WITHIN 1/3 D50 AND DEPTH OF RIPRAP SHALL EXTEND TWO TIMES D50 BELOW FINISH GRADE. SEE RIPRAP LAYOUT DETAIL, SHEET 10. RIPRAP QUANTITY 'CY' IS PROVIDED ON SHEET 2.   |
| 112  | 498  | SY   | INSTALL ARTICULATING CONCRETE BLOCK (CONTECH 50-S OR APPROVED EQUAL PER KINDER MORGAN REQUIREMENTS) PER PLAN, LAYOUT, AND DETAILS PROVIDED ON SHEET 13. FINISHED TOP OF INSTALLED ACB SHALL MATCH DESIGN GRADE. UNIT QUANTITY OF 'SY' INCLUDES INSTALLATION OF 8 FT. BY 20 FT. X 6" ACM MATTRESSES (28 EA.), GEOTEXTILE UNDERLAYMENT, EDGE TERMINATIONS, AND MAT TO MAT CONNECTIONS.  |
| 113  | 826  | SY   | INSTALL AC PAVEMENT. 5 IN. AC ON 10 IN ABC. AC TO BE "HIGH TRAFFIC 1/2 INCH MIX" PER MAG SECTION 710 AND PROJECT SPECIAL PROVISIONS. BINDER SHALL BE PG 64-28 PER MAG SECTION 711. MAINTAIN EXISTING HORIZONTAL ALIGNMENT AND ADJUST VERTICAL ALIGNMENT PER THE PROFILE. THIS SHEET AND THE LAYOUT ON SHEET 4. PROVIDE 5 IN. MINIMUM THICKNESS AC SURFACE COURSE ON TOP OF CONCRETE BOX CULVERT ON 4" ABC. MATCH EXISTING ROAD AT EXTENTS AND TRANSITION NEW ROAD TO 2% SUPERELEVATION CROSS SLOPE OVER BOX CULVERT PER THE TYPICAL DETAILS ON SHEET 4. |
| 114  | 1    | AC   | RESEED ALL EXPOSED TOPSOIL DISTURBED BY CONSTRUCTION ACTIVITIES. USE SEED MIX AND APPLICATION RATE AS SPECIFIED IN RESEEDING NOTES, SHEET 2.  |
| 115  | 200  | LF   | CONSTRUCT W-BEAM GUARDRAIL ON BOTH SIDES OF ROAD FROM ± STA. 2+56.5 TO 3+56.5. QUANTITY TO INCLUDE GUARD RAIL PER ADOT S.D. C-10.07 AND MSKT TERMINAL END SECTION PER THE RSI DETAIL, SHEET 5. INCLUDE STEEL POSTS WITH INSTALLATION IN AREAS BEHIND HEADWALL CONCRETE.   |
| 116  | 835  | SY   | PLACE DOUBLE NET EROSION CONTROL BLANKET (ECB) ON DISTURBED SLOPES 5% OR GREATER WHICH ARE NOT OTHERWISE ARMORED WITH RIPRAP OR ACM. WESTERN EXCELSIOR ALL NATURAL EXCEL CS-3 OR APPROVED EQUAL. INSTALL PER MANUFACTURERS DETAILS & SPECIFICATIONS.  |
| 117  | 90   | LF   | CONSTRUCT PEDESTRIAN SAFETY RAIL ON TOP OF CULVERT EDGE BEAM AND WINGWALLS. USE COR-TEN OR APPROVED EQUAL SELF RUSTING STEEL. DO NOT PAINT RAILING. REFER TO MAG STANDARD DETAIL 145 (PROVIDED ON SHEET 7) FOR DIMENSIONS.  |

\*\* QUANTITY ACCOUNTED FOR ON ANOTHER SHEET.

POTHOLE INFORMATION

POTHOLE	NORTHING	EASTING	ELEVATION	FOUND
#1	1542578.5	777325.9	7131.8	GAS LINE
#2	1542586.8	777316.1	7130.4	GAS LINE
#3	1542603.1	777308.5	7131.3	GAS LINE
#4	1542655.4	777310.1	7135.3	TEL/COM 4" CONDUIT
#5	1542656.2	777310.4	7134.4	ELECTRIC 1" DIRECT BURY
#6	1542664.5	777310.0	7139.4	TEL/COM DIRECT BURY
#7	1542667.5	777309.8	7134.6	ELECTRIC 2" CONDUIT

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DATE: 05/06/2023  
NCD PROJECT NUMBER: 22-431AZ

DRAWING NUMBER: PLAN 1  
SHEET NUMBER: 3 OF 14

PRELIMINARY  
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SCHULTZ CREEK/MT. ELDEN LOOKOUT ROAD CROSSING  
TRIPLE BOX CULVERT  
COCONINO COUNTY, AZ - PUBLIC WORKS

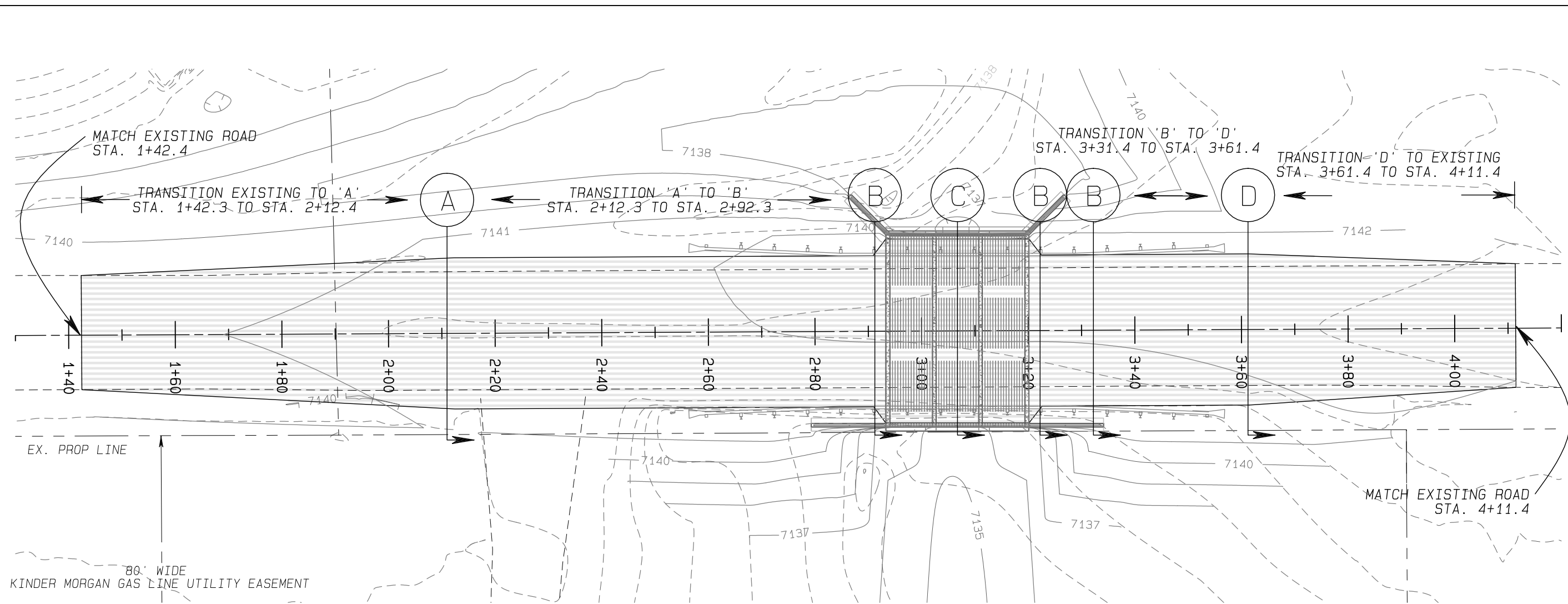
ROAD REALIGNMENT PLAN & PROFILE

DRAWN BY: CL  
DESIGNED BY: CL, MK  
REVIEWED BY:

NO. DATE BY REVISION

Natural Channel Design

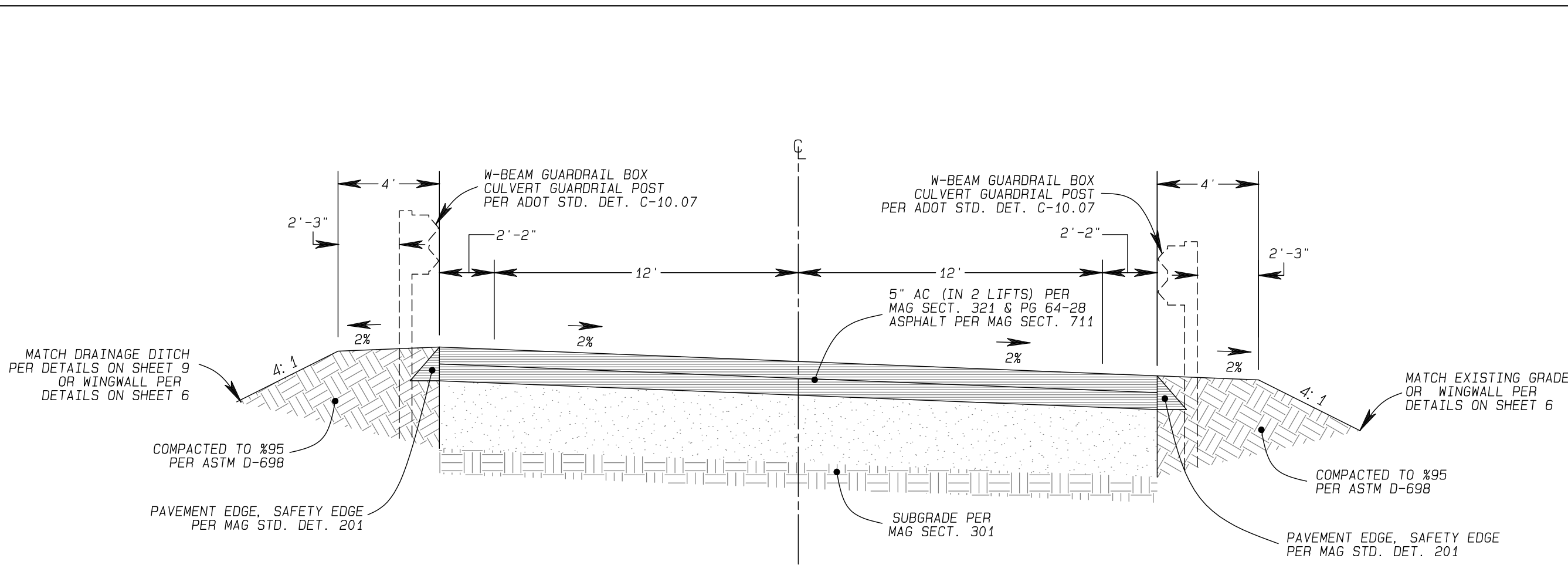
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Flagstaff, Arizona  
(928) 774-2336



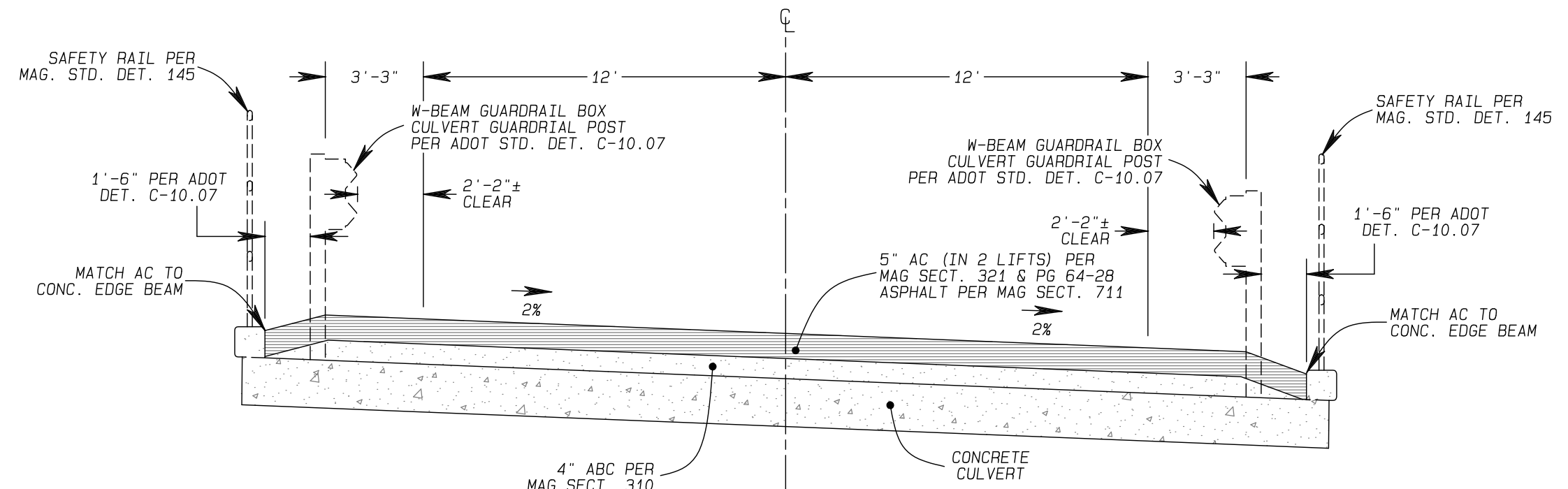
SCHULTZ CREEK/ELDEN LOOKOUT ROAD CROSSING – ROAD LAYOUT SCHEMATIC

ROAD LAYOUT POINTS TABLE

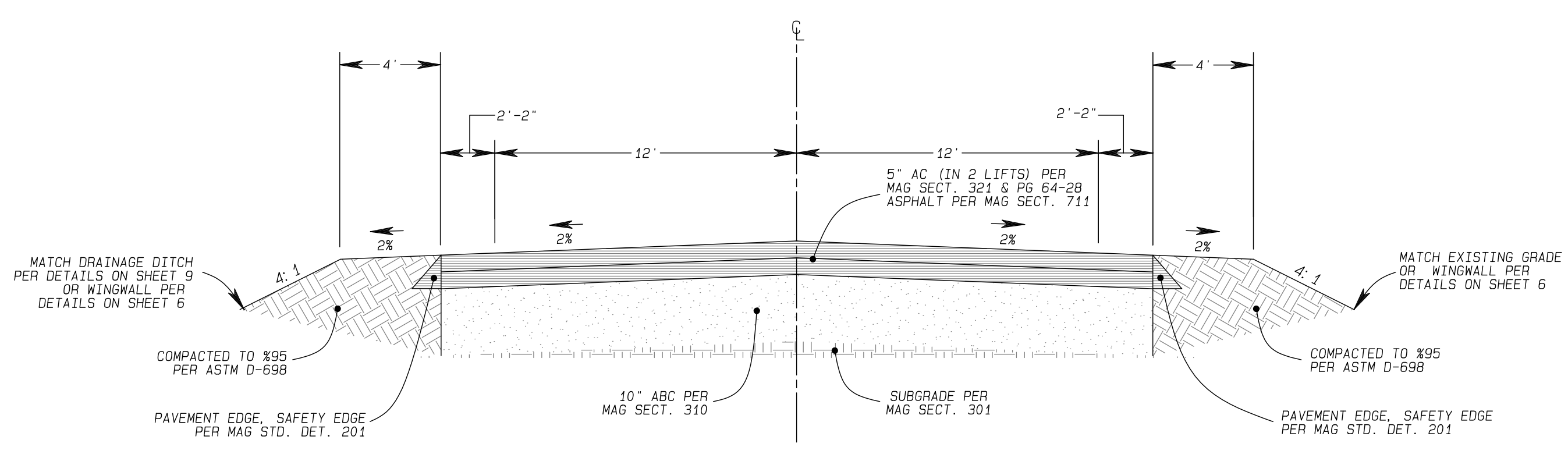
NORTH EP LAYOUT POINTS TABLE					ROAD CL LAYOUT POINTS TABLE					SOUTH EP LAYOUT POINTS TABLE													
STA.	DESC.	OFF CL	NORTHING	EASTING	ELEV.	STA.	DESC.	OFF CL	NORTHING	EASTING	ELEV.	STA.	DESC.	OFF CL	NORTHING	EASTING	ELEV.						
1+42.4	N. EP		MATCH EXISTING EP					1+42.3	CL		MATCH EXISTING CL					1+42.4	S. EP		MATCH EXISTING EP				
1+60.0	N. EP	11.9' Lt.	1542656.2	777180.3	7140.7	1+60.0	CL	0.0	1542644.3	777180.3	7141.0	1+60.0	S. EP	11.2' Rt.	1542633.1	777180.4	7140.7	1+60.0	S. EP	11.2' Rt.	1542633.1	777180.4	7140.7
1+80.0	N. EP	12.8' Lt.	1542657.2	777200.3	7140.8	1+80.0	CL	0.0	1542644.4	777200.3	7141.1	1+80.0	S. EP	12.3' Rt.	1542632.1	777200.4	7140.8	1+80.0	S. EP	12.3' Rt.	1542632.1	777200.4	7140.8
2+00.0	N. EP	13.6' Lt.	1542658.1	777220.3	7141.0	2+00.0	CL	0.0	1542644.5	777220.3	7141.3	2+00.0	S. EP	13.5' Rt.	1542631.0	777220.4	7141.0	2+00.0	S. EP	13.5' Rt.	1542631.0	777220.4	7141.0
2+12.3	N. EP	14.2' Lt.	1542658.7	777232.6	7141.1	2+12.4	CL	0.0	1542644.6	777232.7	7141.4	2+12.4	S. EP	14.2' Rt.	1542630.4	777232.8	7141.1	2+12.4	S. EP	14.2' Rt.	1542630.4	777232.8	7141.1
2+20.0	N. EP	14.2' Lt.	1542658.8	777240.3	7141.3	2+20.0	CL	0.0	1542644.6	777240.3	7141.5	2+20.0	S. EP	14.2' Rt.	1542630.4	777240.4	7141.3	2+20.0	S. EP	14.2' Rt.	1542630.4	777240.4	7141.3
2+40.0	N. EP	14.2' Lt.	1542658.9	777260.3	7141.7	2+40.0	CL	0.0	1542644.7	777260.3	7141.8	2+40.0	S. EP	14.2' Rt.	1542630.5	777260.4	7141.5	2+40.0	S. EP	14.2' Rt.	1542630.5	777260.4	7141.5
2+60.0	N. EP	14.2' Lt.	1542659.0	777280.3	7142.0	2+60.0	CL	0.0	1542644.8	777280.3	7141.9	2+60.0	S. EP	14.2' Rt.	1542630.6	777280.4	7141.7	2+60.0	S. EP	14.2' Rt.	1542630.6	777280.4	7141.7
2+80.0	N. EP	14.2' Lt.	1542659.0	777300.3	7142.2	2+80.0	CL	0.0	1542644.9	777300.3	7142.0	2+80.0	S. EP	14.2' Rt.	1542630.7	777300.4	7141.7	2+80.0	S. EP	14.2' Rt.	1542630.7	777300.4	7141.7
2+91.0	N. EP	14.2' Lt.	1542659.1	777311.2	7142.3	2+91.0	CL	0.0	1542644.9	777311.3	7142.0	2+91.0	S. EP	14.2' Rt.	1542630.8	777311.4	7141.8	2+91.0	S. EP	14.2' Rt.	1542630.8	777311.4	7141.8
2+93.3			MATCH CULVERT CROSS SECTION 'C'					2+93.3	CL	0.0	1542645.0	777313.6	7142.0	2+93.3			MATCH CULVERT CROSS SECTION 'C'						
3+00.0			MATCH CULVERT CROSS SECTION 'C'					3+00.0	CL	0.0	1542645.0	777320.3	7142.0	3+00.0			MATCH CULVERT CROSS SECTION 'C'						
3+20.0			MATCH CULVERT CROSS SECTION 'C'					3+20.0	CL	0.0	1542645.1	777340.3	7142.0	3+20.0			MATCH CULVERT CROSS SECTION 'C'						
3+20.4			MATCH CULVERT CROSS SECTION 'C'					3+20.4	CL	0.0	1542645.1	777340.5	7142.0	3+20.4			MATCH CULVERT CROSS SECTION 'C'						
3+22.5	N. EP	14.2' Lt.	1542659.3	777342.8	7142.3	3+22.5	CL	0.0	1542645.1	777342.9	7142.0	3+22.5	S. EP	14.2' Rt.	1542630.9	777342.9	7141.8	3+22.5	S. EP	14.2' Rt.	1542630.9	777342.9	7141.8
3+40.0	N. EP	14.2' Lt.	1542659.3	777360.3	7142.3	3+40.0	CL	0.0	1542645.2	777360.3	7142.1	3+40.0	S. EP	14.2' Rt.	1542631.0	777360.4	7141.8	3+40.0	S. EP	14.2' Rt.	1542631.0	777360.4	7141.8
3+60.0	N. EP	14.2' Lt.	1542659.4	777380.3	7142.4	3+60.0	CL	0.0	1542645.3	777380.3	7142.2	3+60.0	S. EP	14.2' Rt.	1542631.1	777380.4	7141.9	3+60.0	S. EP	14.2' Rt.	1542631.1	777380.4	7141.9
3+61.4	N. EP	14.2' Lt.	1542659.4	777381.7	7142.4	3+61.4	CL	0.0	1542645.3	777381.7	7142.2	3+61.4	S. EP	14.2' Rt.	1542631.1	777381.8	7141.9	3+61.4	S. EP	14.2' Rt.	1542631.1	777381.8	7141.9
3+80.0	N. EP	13.4' Lt.	1542659.8	777400.3	7142.4	3+80.0	CL	0.0	1542645.4	777400.3	7142.4	3+80.0	S. EP	13.0' Rt.	1542632.3	777400.4	7142.1	3+80.0	S. EP	13.0' Rt.	1542632.3	777400.4	7142.1
4+00.0	N. EP	12.6' Lt.	1542658.0	777420.3	7142.4	4+00.0	CL	0.0	1542645.5	777420.3	7142.6	4+00.0	S. EP	11.8' Rt.	1542633.7	777420.4	7142.3	4+00.0	S. EP	11.8' Rt.	1542633.7	777420.4	7142.3
4+11.4	N. EP		MATCH EXISTING EP					4+11.4	CL		MATCH EXISTING CL					4+11.4	S. EP		MATCH EXISTING EP				



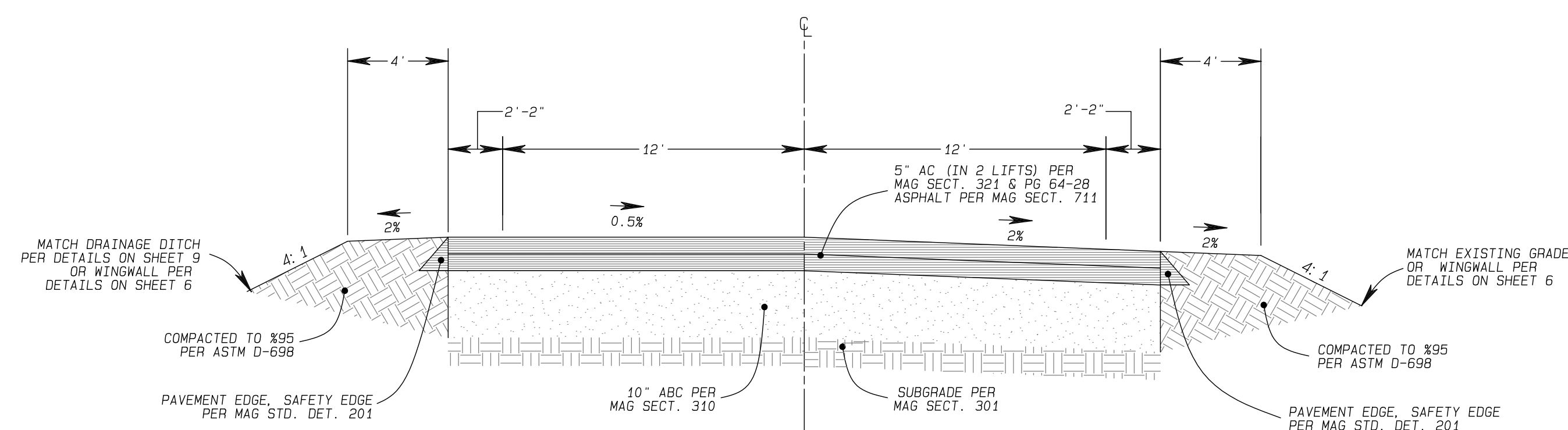
TYPICAL SECTION DETAIL - ROAD #2 SUPERPOSITION  
STA. 2+92.3 TO STA. 3+21.4  
NOT TO SCALE



TYPICAL SECTION DETAIL - ROAD ON CULVERT  
STA. 2+93.3 TO STA. 3+20.4 (ON CULVERT)  
NOT TO SCALE



TYPICAL SECTION DETAIL - ROAD CROWN  
STA. 2+12.3  
NOT TO SCALE



TYPICAL SECTION DETAIL - MULTI-TRANSITION  
STA. 3+61.4  
NOT TO SCALE

UNAUTHORIZED CHANGES & USES  
DATE: 05/06/2023  
DRAWING NUMBER: DETAIL 1  
SHEET NUMBER: 4 OF 14

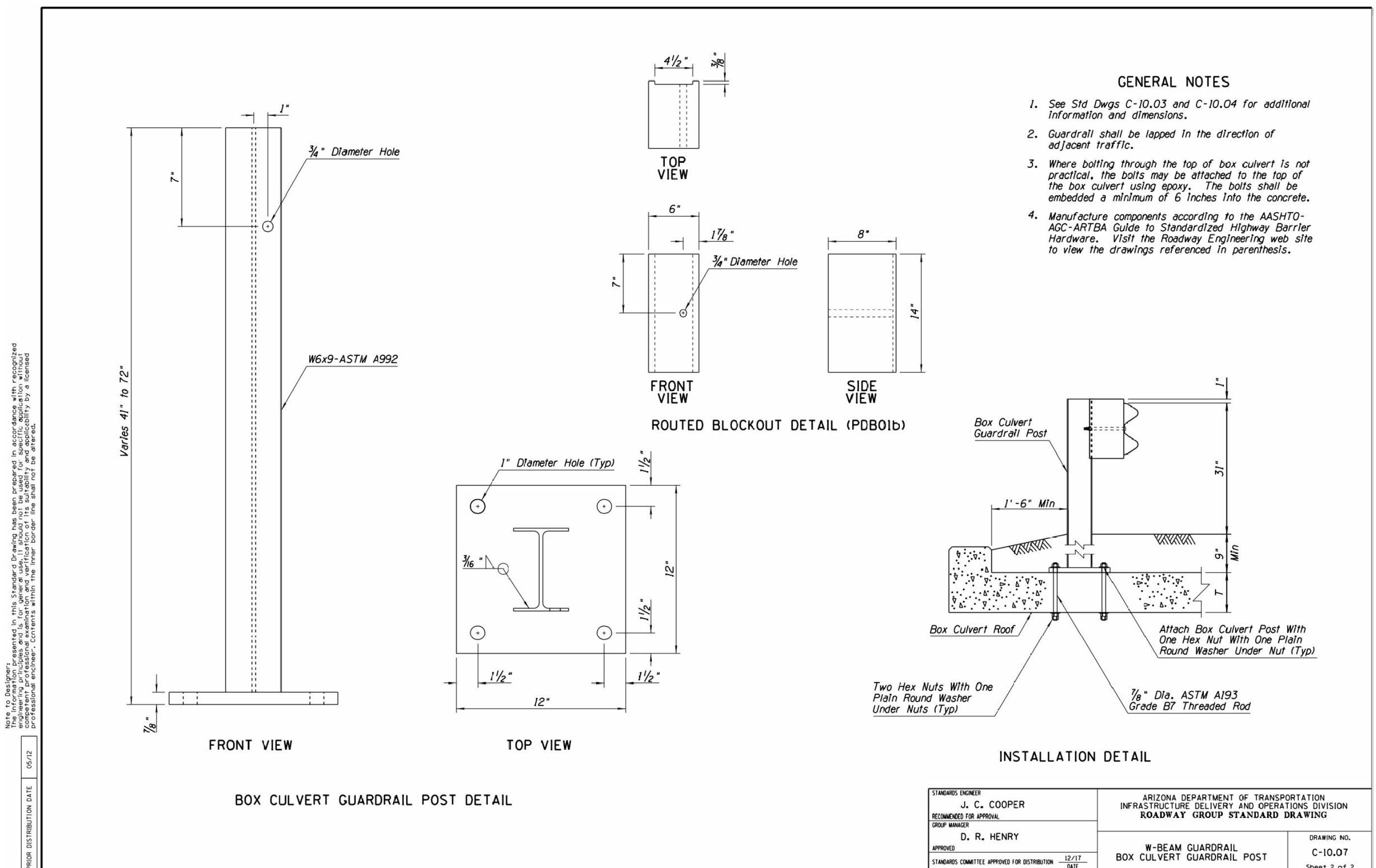
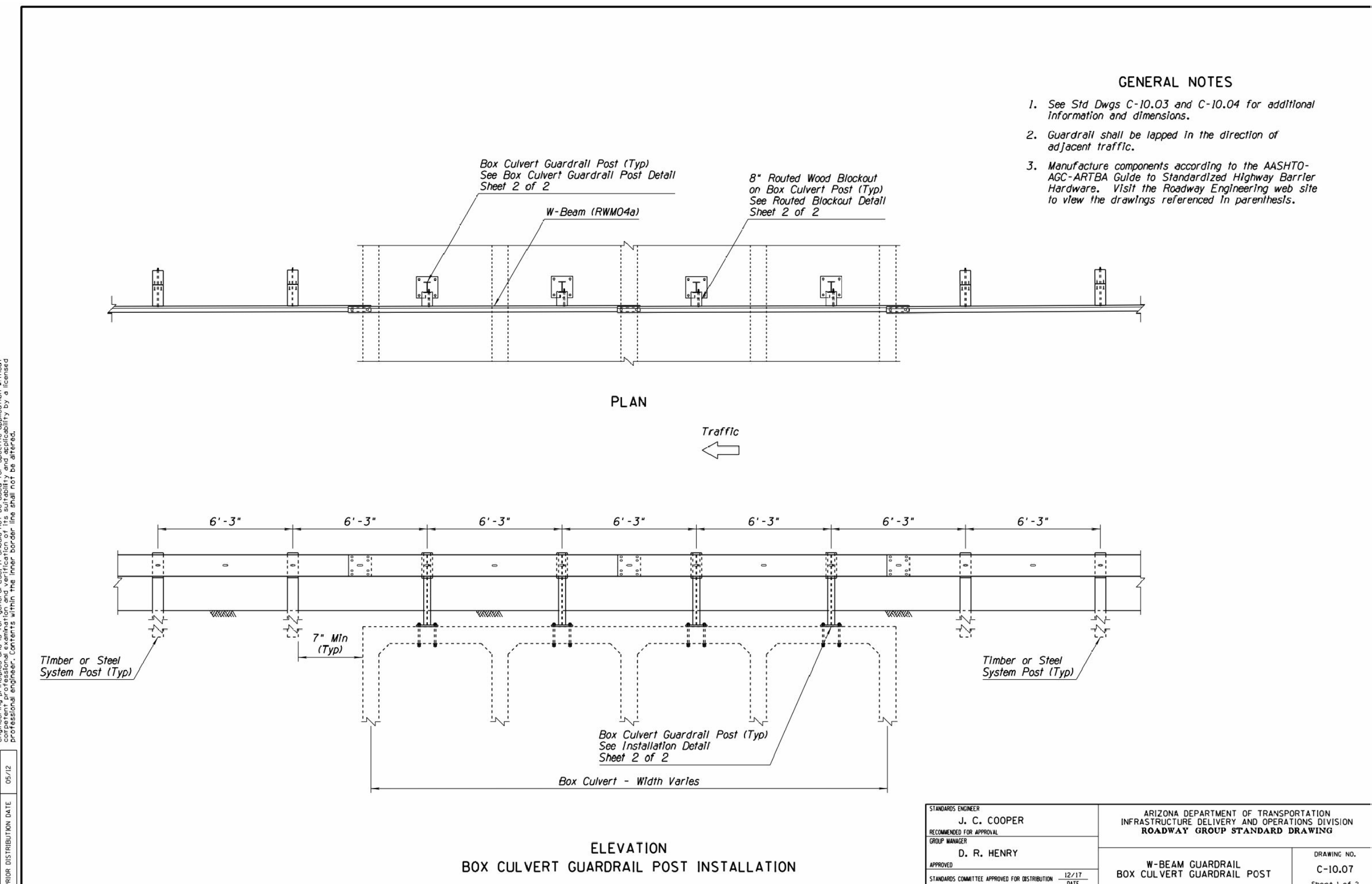
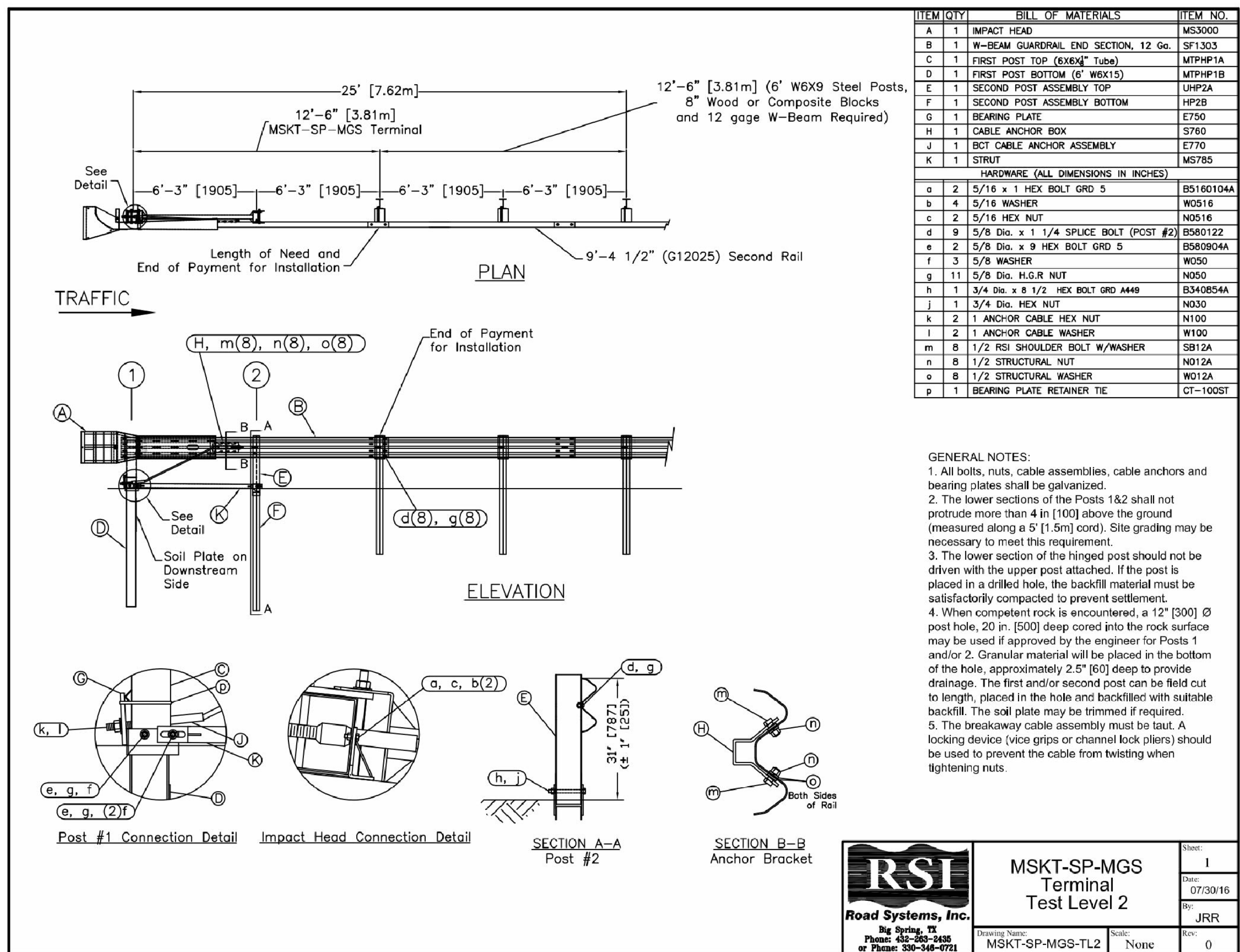
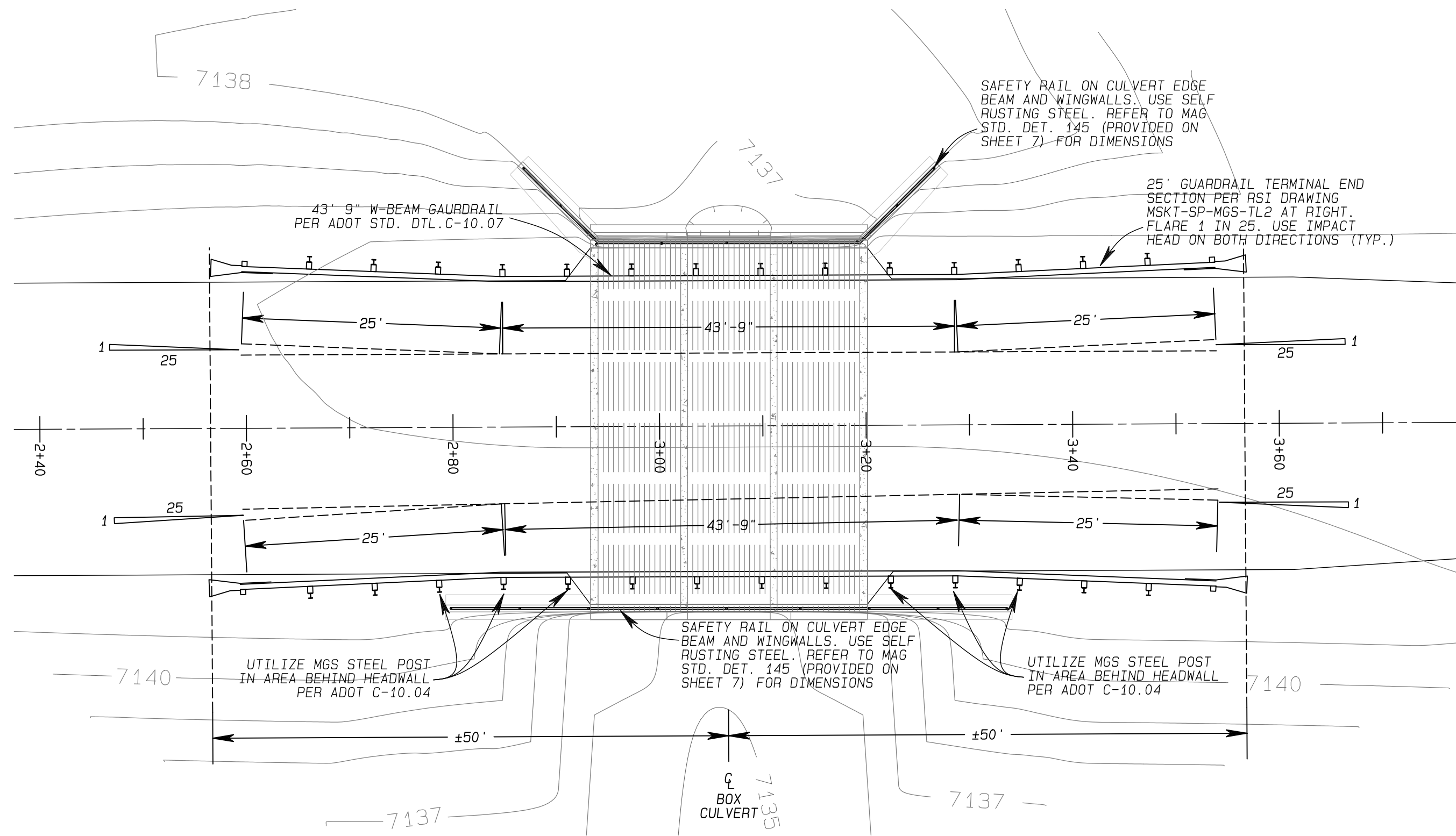
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PRE-FINAL  
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SCHULTZ CREEK/MT. ELDEN LOOKOUT ROAD CROSSING  
TRIPLE BOX CULVERT  
COCONINO COUNTY, AZ - PUBLIC WORKS  
ROAD LAYOUT & SECTION DETAIL

DESIGNED BY:	CL, MK	REVIEWED BY:	DATE	REVISION

Natural Channel Design  
2900 N. WEST ST. #6004  
Flagstaff, Arizona  
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SCHULTZ CREEK CROSSING – GUARDRAIL & SAFETY RAILING DETAIL



SCHULTZ CREEK/MT. ELDEN LOOKOUT ROAD CROSSING  
 TRIPLE BOX CULVERT  
 COCONINO COUNTY, AZ – PUBLIC WORKS  
 GUARDRAIL & SAFETY RAIL DETAILS

DESIGNED BY: CL, MK	REVISION
DATE	BY
NO.	DATE

DRAWN BY: CL  
 REVIEWED BY: CL, MK  
 DATE: 05/06/2023  
 SHEET NUMBER: 5 OF 14  
 PROJECT NUMBER: 22-431AZ  
 DRAWING NUMBER: DETAIL 2

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 SUBMITTAL

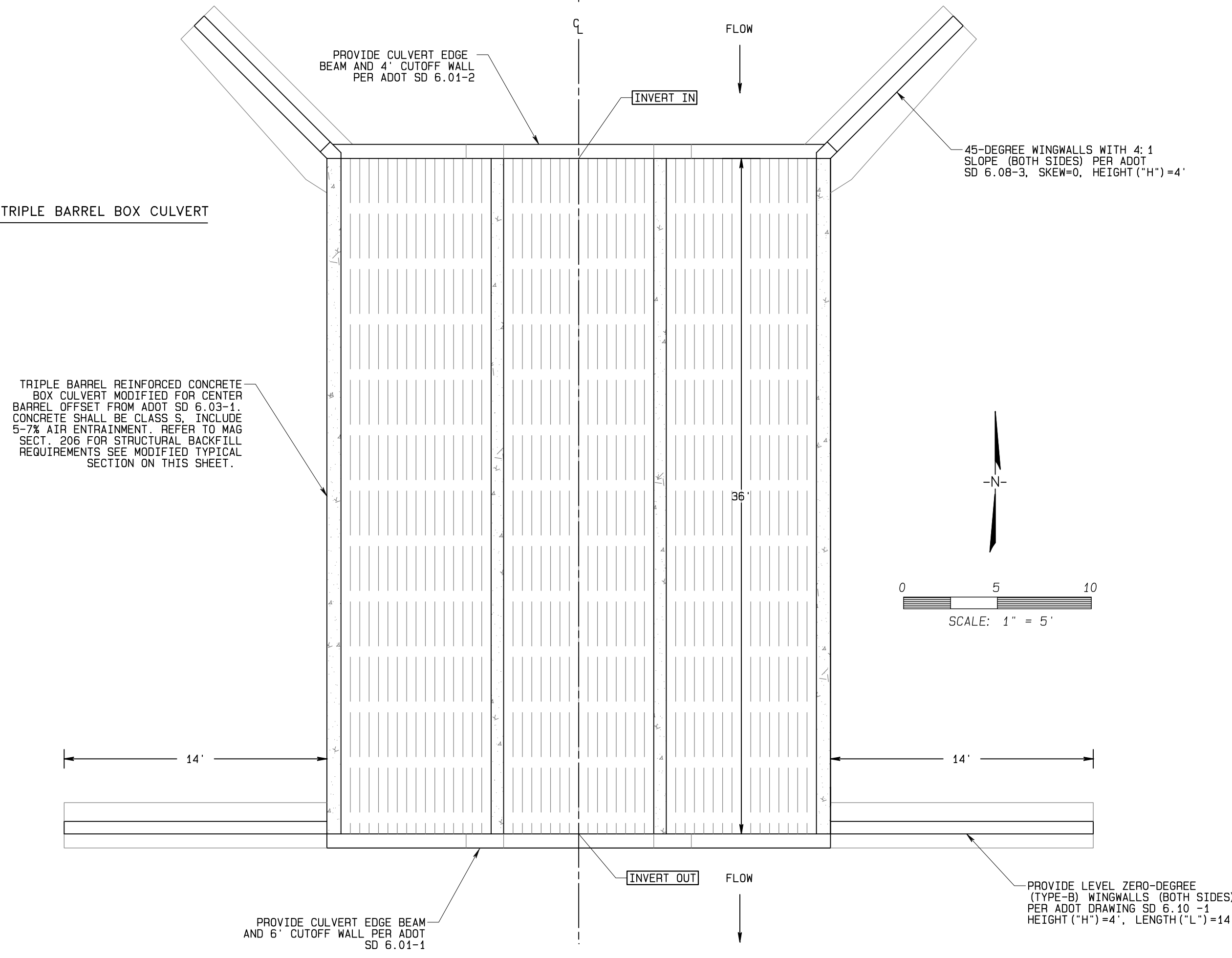
Natural Channel Design  
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 PHOENIX, ARIZONA  
 (602) 774-2336

# SCHULTZ CREEK CROSSING – TRIPLE BARREL OFFSET BOX CULVERT DETAIL

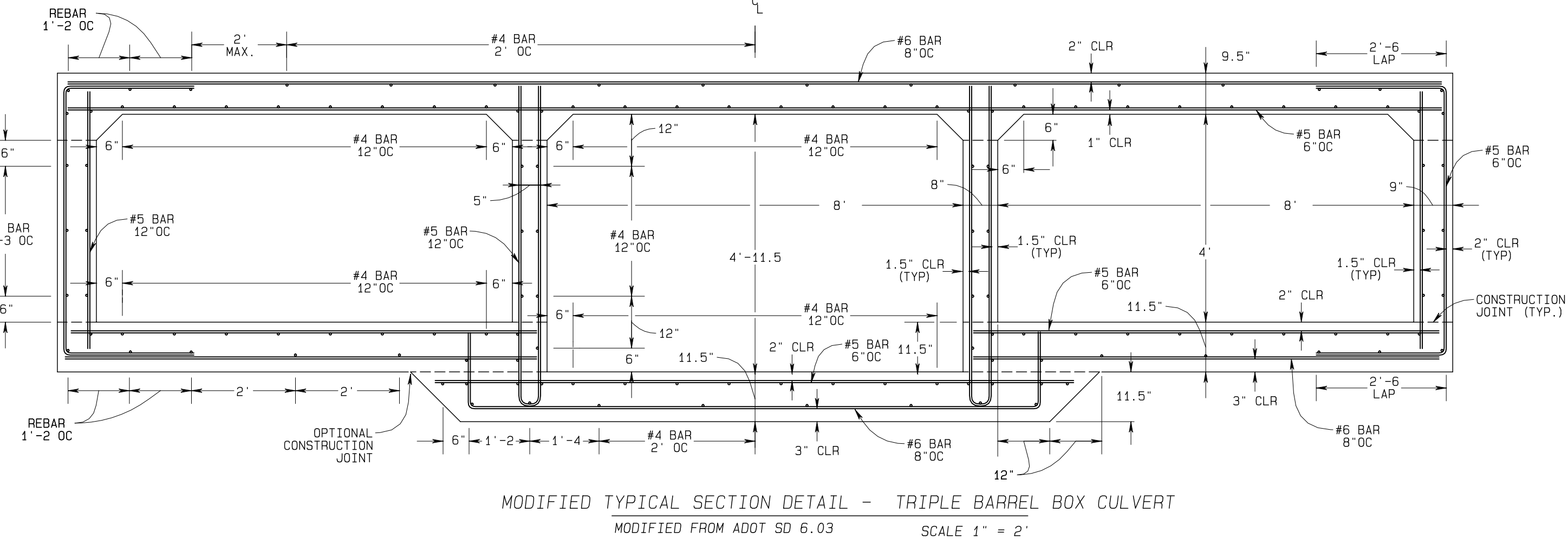
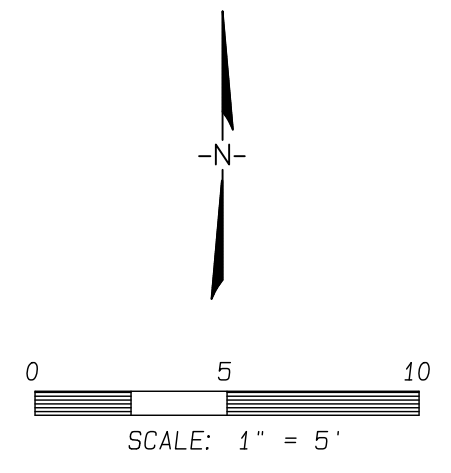
TRIPLE BARREL BOX CULVERT CENTER LINE LAYOUT POINTS TABLE

DESCRIPTION	NORTHING	EASTING	ELEVATION
INV. IN	1542663.0	777327.0	1735.9
INV. OUT	1542627.0	777327.0	7135.2

SCHEMATIC: TRIPLE BARREL BOX CULVERT



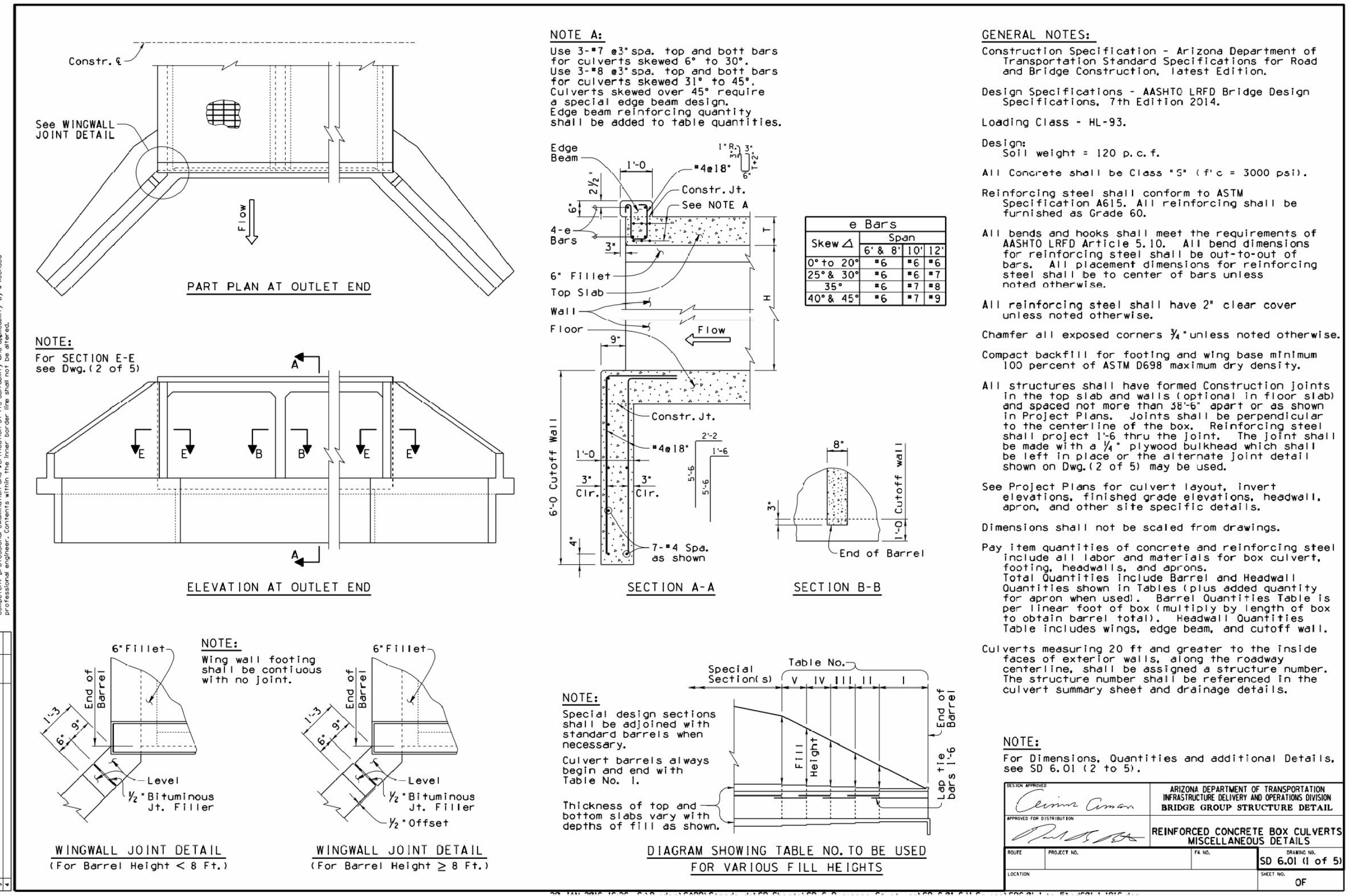
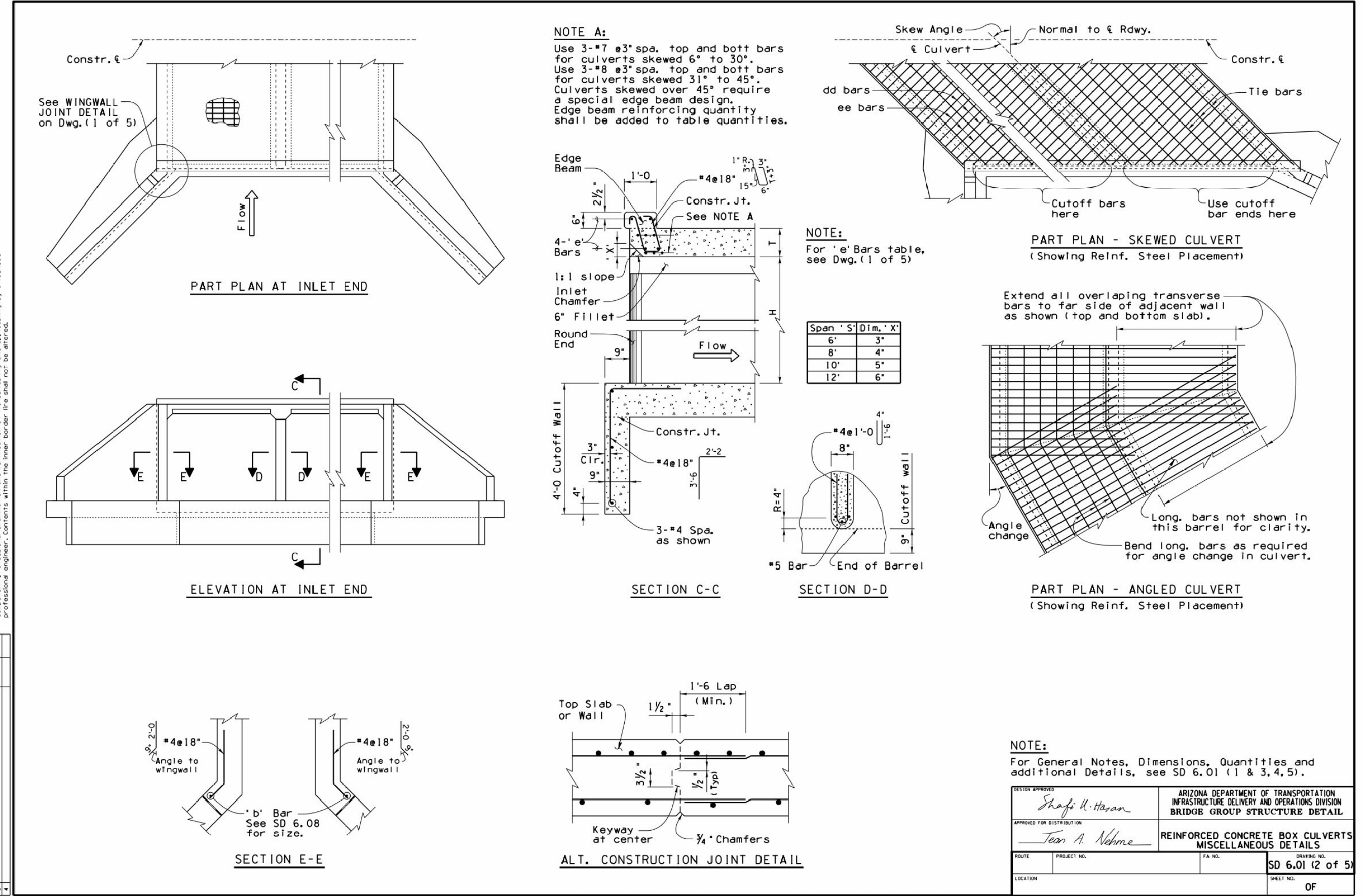
TRIPLE BARREL REINFORCED CONCRETE BOX CULVERT MODIFIED FOR CENTER BARREL OFFSET FROM ADOIT SD 6.03-1. CONCRETE SHALL BE CLASS S, INCLUDE 5-7% AIR ENTRAINMENT. REFER TO MAG SECT. 206 FOR STRUCTURAL BACKFILL REQUIREMENTS. SEE MODIFIED TYPICAL SECTION ON THIS SHEET.



MODIFIED TYPICAL SECTION DETAIL - TRIPLE BARREL BOX CULVERT  
MODIFIED FROM ADOIT SD 6.03 SCALE 1" = 2"

Notes to Designer: This schematic detail has been prepared by AutoCAD with appropriate dimensions and annotations. It is intended to be used as a guide for construction. The designer is responsible for verifying the accuracy of the information and for providing any necessary modifications. The engineer is responsible for providing any necessary annotations. The designer is not responsible for the accuracy of the information or for providing any necessary modifications. The engineer is responsible for providing any necessary annotations.

Notes to Designer: This schematic detail has been prepared by AutoCAD with appropriate dimensions and annotations. It is intended to be used as a guide for construction. The designer is responsible for verifying the accuracy of the information and for providing any necessary modifications. The engineer is responsible for providing any necessary annotations. The designer is not responsible for the accuracy of the information or for providing any necessary modifications. The engineer is responsible for providing any necessary annotations.



UNAUTHORIZED CHANGES & USES	DATE: 05/06/2023	DRAWING NUMBER: DETAIL 3
DATE: 05/06/2023	PROJECT NUMBER: 22-431AZ	SHEET NUMBER: 6 OF 14

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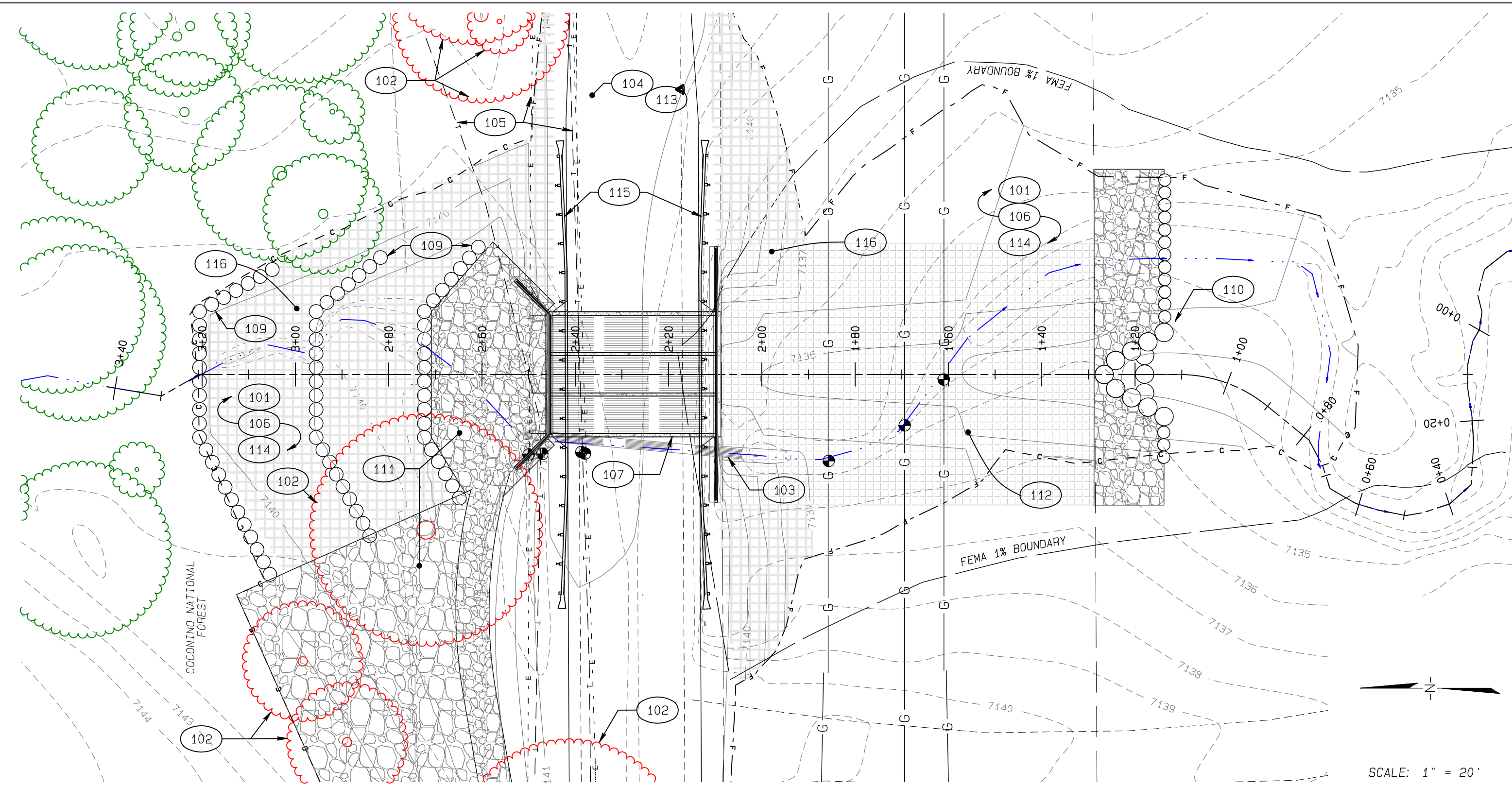
SCHULTZ CREEK/MT. ELDEN LOOKOUT ROAD CROSSING  
TRIPLE BOX CULVERT  
COCONINO COUNTY, AZ – PUBLIC WORKS

DESIGNED BY: JF	REVISION
DATE	BY
NO.	REVISION

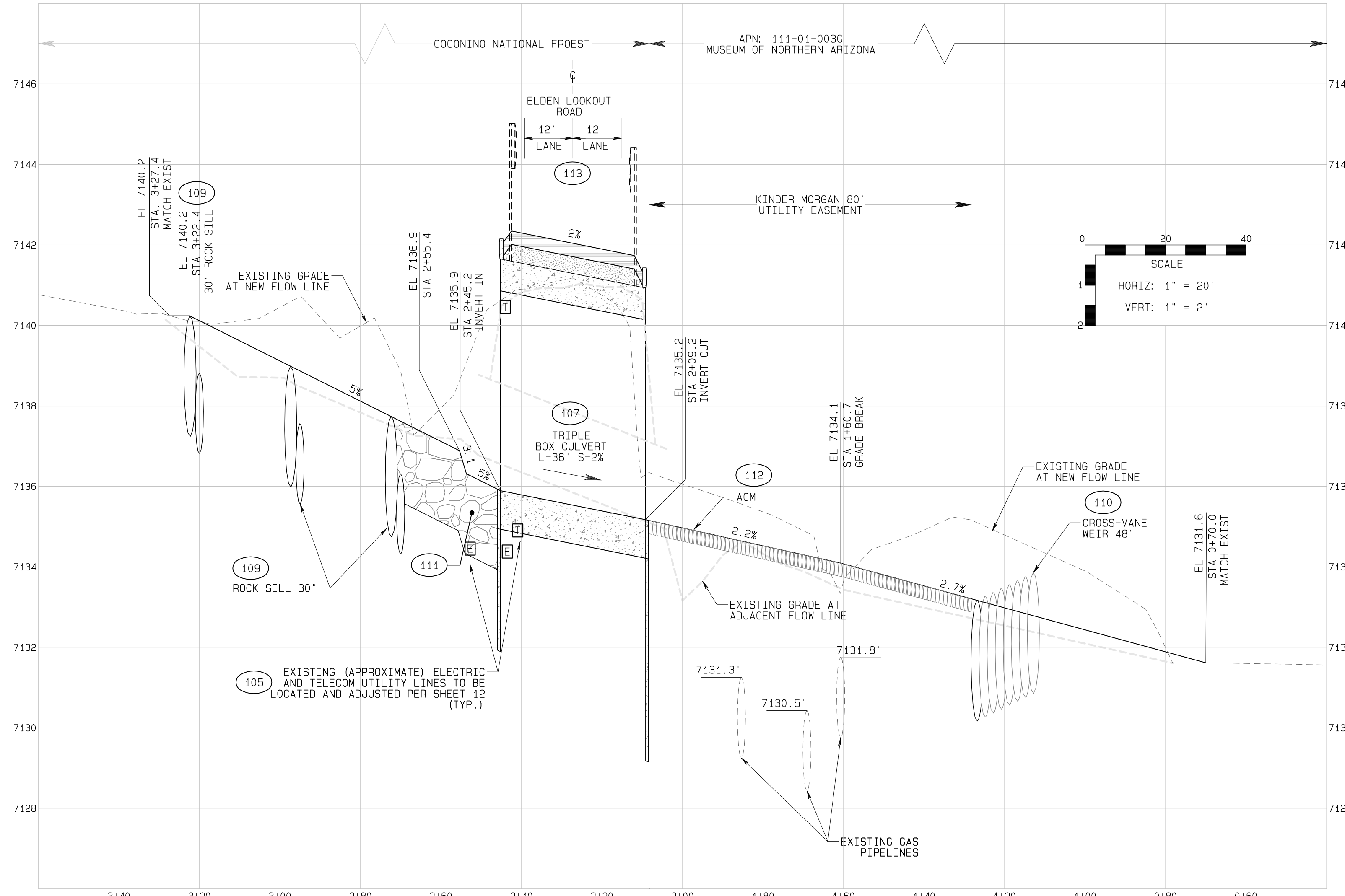
TRIPLE BOX CULVERT LAYOUT & DETAIL

Natural Channel Design  
2900 N. WEST ST., 86004  
PHOENIX, ARIZONA  
(928) 774-2336





SCHULTZ CREEK/ELDEN LOOKOUT ROAD CROSSING - PLAN



ELDEN LOOKOUT ROAD CROSSING - PROFILE

CONSTRUCTION NOTES:

- | NOTE | QTY. | UNIT | DESCRIPTION   |
|------|------|------|---|
| 101  | **   |      | CLEAR AND GRUB AREA WITHIN CONSTRUCTION LIMITS PER MAG SPECIFICATIONS, SECTION 201. QUANTITY TO INCLUDE TREES AND STUMPS 12" OR LESS PER MAG SPECIFICATIONS.  |
| 102  | **   |      | REMOVE TREES AND STUMPS (GREATER THAN 12" AS MEASURED 12" ABOVE GROUND).  |
| 103  | **   |      | REMOVE AND DISPOSE OF EXISTING CMP CULVERT UNDER ROAD.  |
| 104  | **   |      | MILL, PULVERIZE, AND BLEND AS INDICATED IN ROAD PROFILE (THIS SHEET) EXISTING AC PAVEMENT STA. 1+42.3 TO STA. 4+11.4 EXISTING ASPHALT CONCRETE MAY BE PULVERIZED AND REUSED IN ROADWAY EMBANKMENT PER MAG SPEC 301.2.1  |
| 105  | **   |      | COORDINATE WITH UTILITIES FOR RELOCATION OF EXISTING TELCOM AND ELECTRIC UTILITY LINES THAT ARE IN CONFLICT WITH THE PROJECT. SEE SHEET 12 FOR UTILITY RELOCATION OVERVIEW AND CONDUIT DETAILS  |
| 106  | **   |      | GRADE, SHAPE AND COMPACT NEW CHANNEL PER MAG SECTION 215. EARTHWORK ACCOUNTED FOR ON SHEET 2. SEE CULVERT INLET/OUTLET GRADING DETAIL (SHEET 8), ROAD SIDE DITCH DETAIL (SHEET 9), BERM DETAIL (SHEET 9) AND ROAD SECTION DETAIL (SHEET 4).   |
| 107  | **   |      | CONSTRUCT 3-BARREL CONCRETE BOX CULVERT CROSSING WITH VERTICALLY OFFSET CENTER BARREL AND WINGWALLS. 4'x8' OUTSIDE BARRELS AND 4'-11.5'x8' CENTER BARREL REFER TO ADOT SD 6.01 AND SD 6.03. SEE BOX CULVERT DETAIL (SHEET 6) FOR CULVERT PLACEMENT, WING WALL CONFIGURATION, & SITE SPECIFIC DETAILS.   |
| 109  | **   |      | CONSTRUCT ROCK SILLS (3 EA) USING 30 IN. DIA. FEATURE ROCK AND 18 IN. DIA. FOOTER ROCK. SEE ROCK SILL DETAIL (SHEET 10) FOR SILL PLACEMENT AND CONSTRUCTION DETAILS.  |
| 110  | 1 EA |      | CONSTRUCT ROCK CROSS VANE WEIR USING 48" FEATURE ROCK AND 24" FOOTER ROCK. SEE CROSS VANE WEIR DETAIL (SHEET 10) FOR PLACEMENT AND CONSTRUCTION DETAILS.  |
| 111  | **   |      | PLACE RIPRAP 24 INCH THICK D50=12" OR 36" THICK D50=18" AS INDICATED. AT THE LOCATIONS PROVIDED IN RIPRAP DETAIL AND PER MAG SECTION 220. TOP OF RIPRAP SHALL APPROXIMATE DESIGN GRADE WITHIN 1/3 D50 AND DEPTH OF RIPRAP SHALL EXTEND TWO TIMES D50 BELOW FINISH GRADE. SEE RIPRAP LAYOUT DETAIL, SHEET 9. RIPRAP QUANTITY 'CY' IS PROVIDED ON SHEET 2.  |
| 112  | **   |      | INSTALL ARTICULATING CONCRETE BLOCK (CONTECH 50-S OR APPROVED EQUAL PER KINDER MORGAN REQUIREMENTS) PER PLAN, LAYOUT, AND DETAILS PROVIDED ON SHEET 10. FINISHED TOP OF INSTALLED ACB SHALL MATCH DESIGN GRADE. UNIT QUANTITY OF 'SY' INCLUDES INSTALLATION OF 8 FT. BY 20 FT. X 6" ACM MATTRESSES (28 EA.), GEOTEXTILE UNDERLAYMENT, EDGE TERMINATIONS, AND MAT TO MAT CONNECTIONS.  |
| 113  | **   |      | INSTALL AC PAVEMENT. 5 IN. AC ON 10 IN. ABC. AC TO BE "HIGH TRAFFIC 1/2 INCH MIX" PER MAG SECTION 710 AND PROJECT SPECIAL PROVISIONS. BINDER SHALL BE PG 64-28 PER MAG SECTION 711. MAINTAIN EXISTING HORIZONTAL ALIGNMENT AND ADJUST VERTICAL ALIGNMENT PER THE PROFILE ON SHEET 3 AND THE LAYOUT ON SHEET 4. PROVIDE 5 IN. MINIMUM THICKNESS AC SURFACE COURSE ON TOP OF CONCRETE BOX CULVERT ON 4" ABC. MATCH EXISTING ROAD AT EXTENTS AND TRANSITION NEW ROAD TO 2% SUPERELEVATION CROSS SLOPE OVER BOX CULVERT PER THE TYPICAL DETAILS ON SHEET 4. |
| 114  | **   |      | RESEED ALL EXPOSED TOPSOIL DISTURBED BY CONSTRUCTION ACTIVITIES. USE SEED MIX AND APPLICATION RATE AS SPECIFIED IN RESEEDING NOTES, SHEET 2.  |
| 115  | **   |      | CONSTRUCT W-BEAM GUARDRAIL ON BOTH SIDES OF ROAD FROM ± STA. 2+56.5 TO 3+56.5. QUANTITY TO INCLUDE GUARD RAIL PER ADOT S.D. C-10.07 AND MS&T TERMINAL END SECTION PER THE RST DETAIL, SHEET 5. INCLUDE STEEL POSTS WITH INSTALLATION IN AREAS BEHIND HEADWALL CONCRETE.   |
| 116  | **   |      | PLACE DOUBLE NET EROSION CONTROL BLANKET (ECB) ON DISTURBED SLOPES 5% OR GREATER WHICH ARE NOT OTHERWISE ARMORED WITH RIPRAP OR ACM. WESTERN EXCELSTOR ALL NATURAL EXCEL CS-3 OR APPROVED EQUAL. INSTALL PER MANUFACTURERS DETAILS & SPECIFICATIONS.  |

\*\* QUANTITY ACCOUNTED FOR ON ANOTHER SHEET.

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PROJECT NUMBER:	22-431AZ
SHEET NUMBER:	8 OF 14

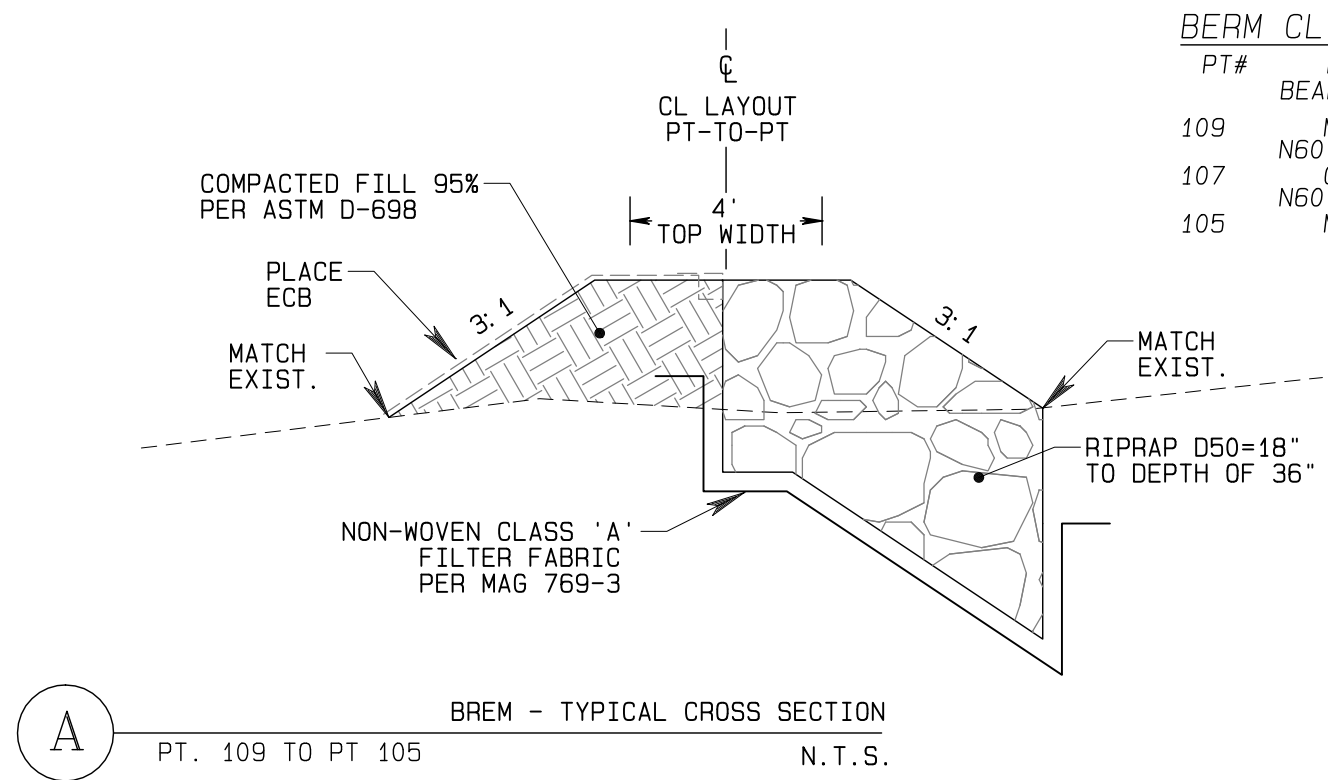
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 TRIPLE BOX CULVERT  
 COCONINO COUNTY, AZ - PUBLIC WORKS  
 SCHULTZ CREEK CHANNEL PLAN & PROFILE

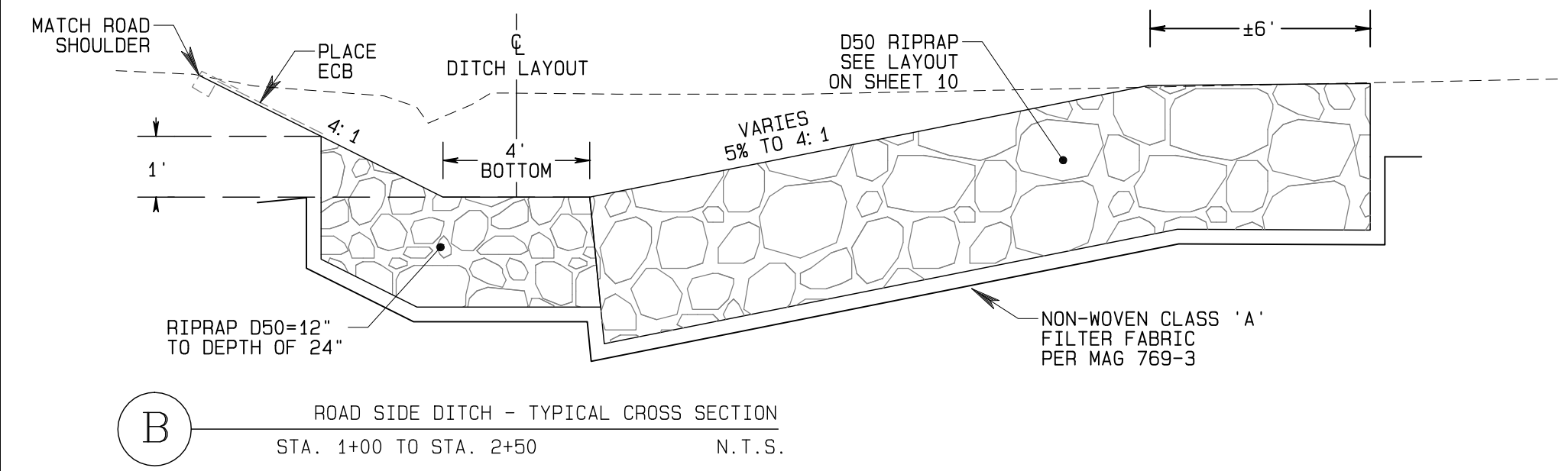
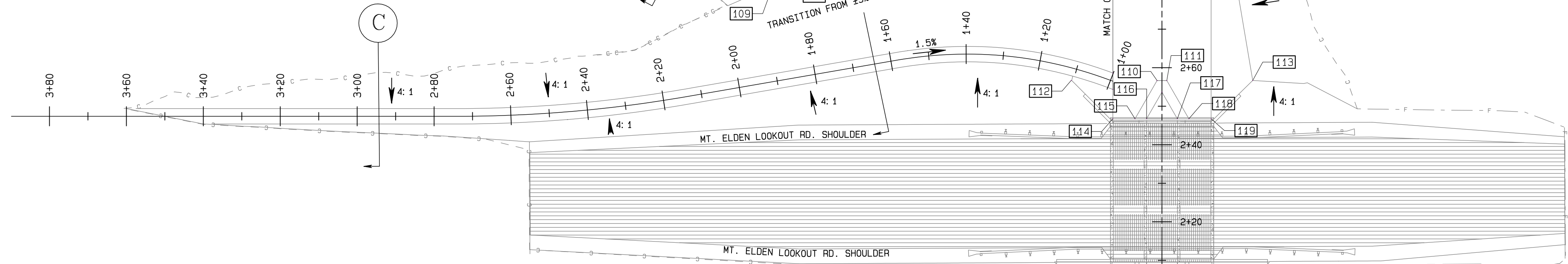
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REVIEWED BY:			
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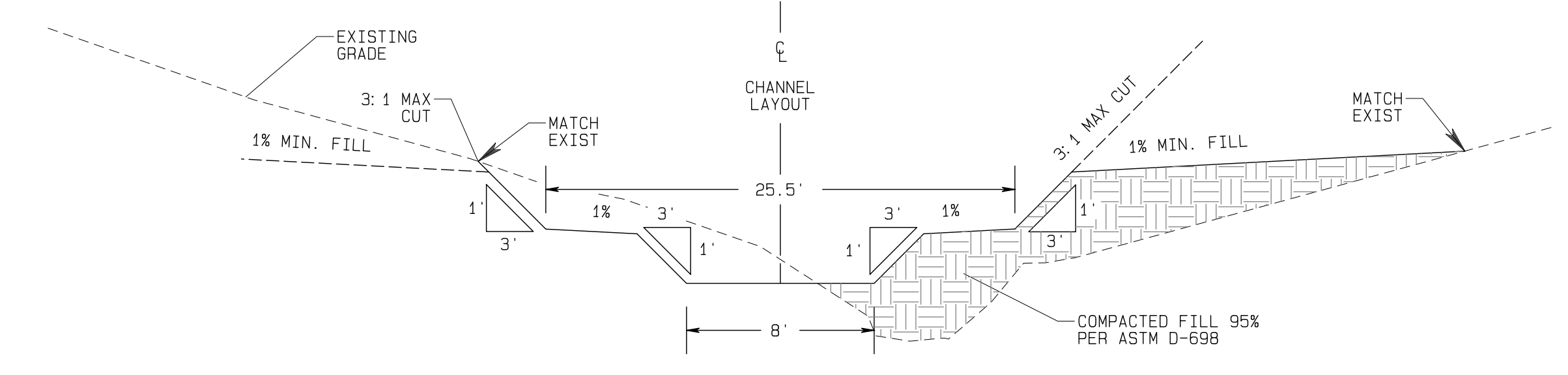
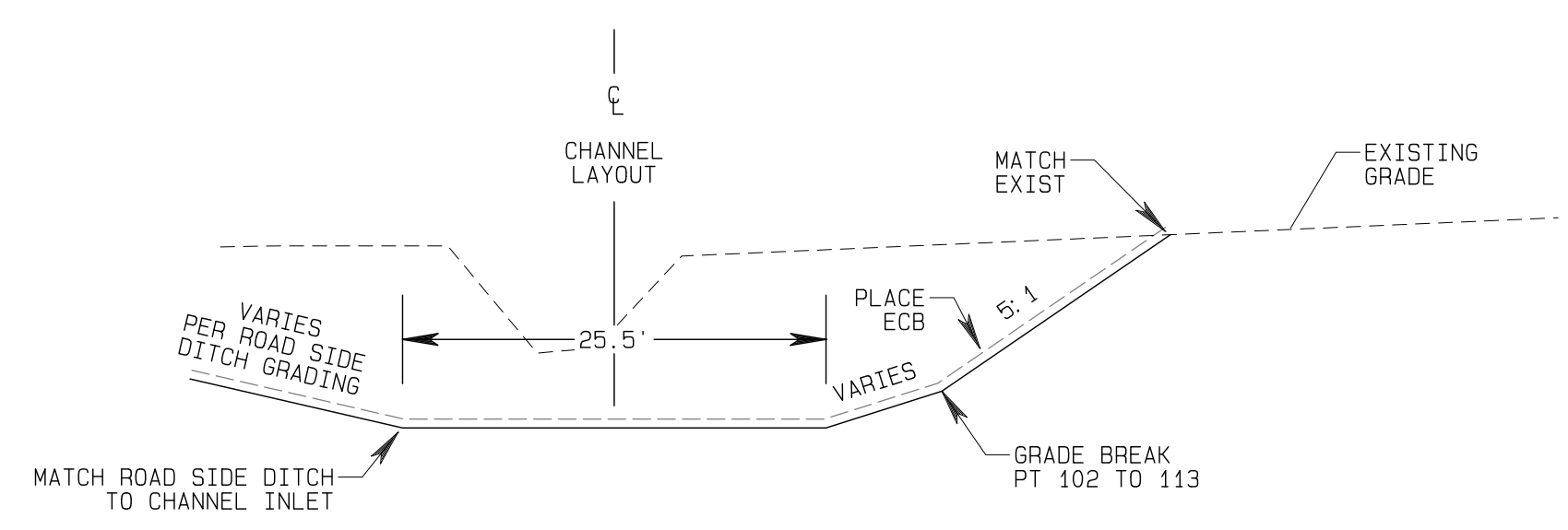
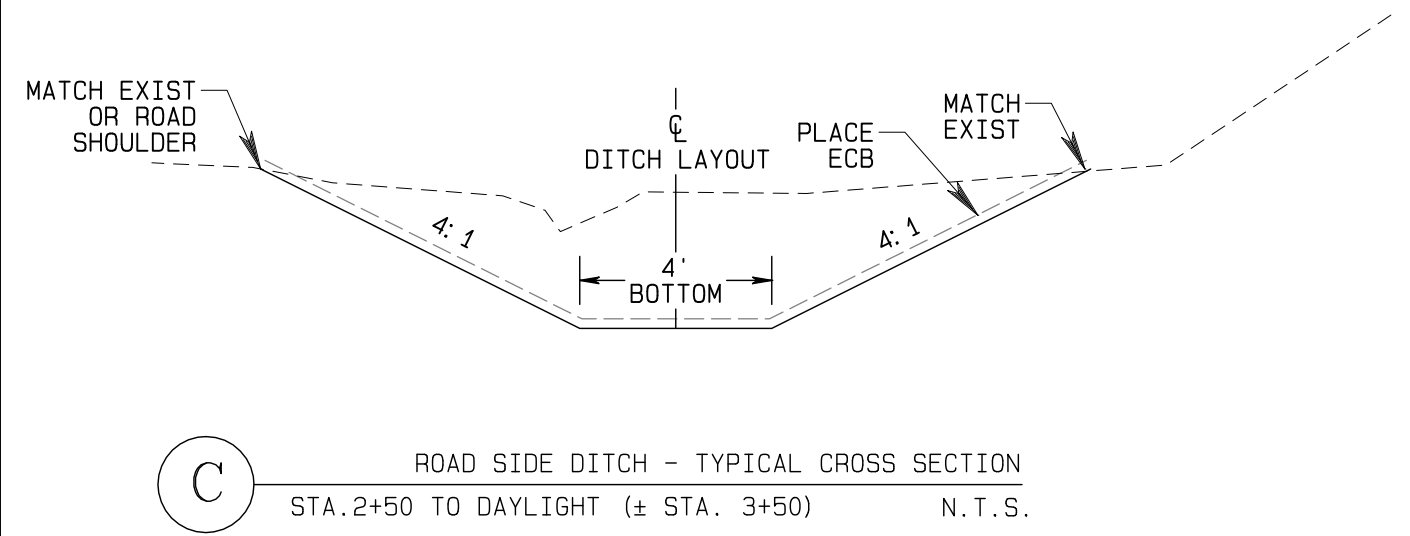
PT#	DESC.	NORTHING	EASTING	ELEV.
109	MATCH EX.	1542698.7	777225.8	7141.9
107	N60°34'11"W	1542703.0	777217.9	7144.9
105	MATCH EX.	1542720.8	777186.5	7147.3



STA.	DESC.	NORTHING	EASTING	ELEV.
1+00.0	BEGIN	1542673.9	777314.2	7137.3
1+58.7	R=29° L	1542679.3	777257.8	7138.2
2+13.8	S80°10'49"W	1542670.0	777203.5	7139.1
2+73.8	PC	1542694.8	777144.0	7140.0
3+50.0	DAYLIGHT	1542664.8	777067.8	7141.1

STA.	DESC.	NORTHING	EASTING	ELEV.
0+72.0	BEGIN	1542497.2	777307.2	7131.7
0+78.4	S62°29'15"W	1542500.1	777312.9	7132.2
0+90.1	PT	1542509.2	777320.3	7132.3
1+10.6	R=30° L	1542528.1	777327.0	7132.6
1+60.9	PT	1542578.5	777327.0	7134.1
2+09.5	DUE NORTH	1542627.0	777327.0	7135.2
2+45.5	CULV. IN	1542653.0	777327.0	7135.9
2+53.6	GB	1542671.1	777327.0	7136.2
2+56.6	DUE NORTH	1542674.1	777327.0	7137.2
3+20.5	MATCH EX.	1542738.0	777327.0	7140.1

PT#	DESC.	NORTHING	EASTING	ELEV.
101	CORNER	1542738.0	777314.2	7140.1
102	CORNER	1542738.0	777339.8	7140.1
103	CORNER	1542730.1	777279.8	7141.2
104	CORNER	1542723.9	777282.6	7140.8
106	CORNER	1542706.5	777227.0	7142.5
108	CORNER	1542699.7	777228.1	7142.0
110	CORNER	1542674.1	777325.7	7137.2
111	CORNER	1542674.1	777328.3	7137.2
112	CORNER	1542674.1	777303.4	7137.9
113	CORNER	1542674.1	777350.6	7137.9
114	CORNER	1542664.2	777314.2	7136.9
115	CORNER	1542664.2	777320.0	7136.9
116	CORNER	1542664.2	777323.0	7135.9
117	CORNER	1542664.2	777331.0	7135.9
118	CORNER	1542664.2	777334.0	7136.9
119	CORNER	1542664.2	777339.8	7136.9



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 COCONINO COUNTY, AZ - PUBLIC WORKS  
 GRADING LAYOUT & CROSS SECTIONS

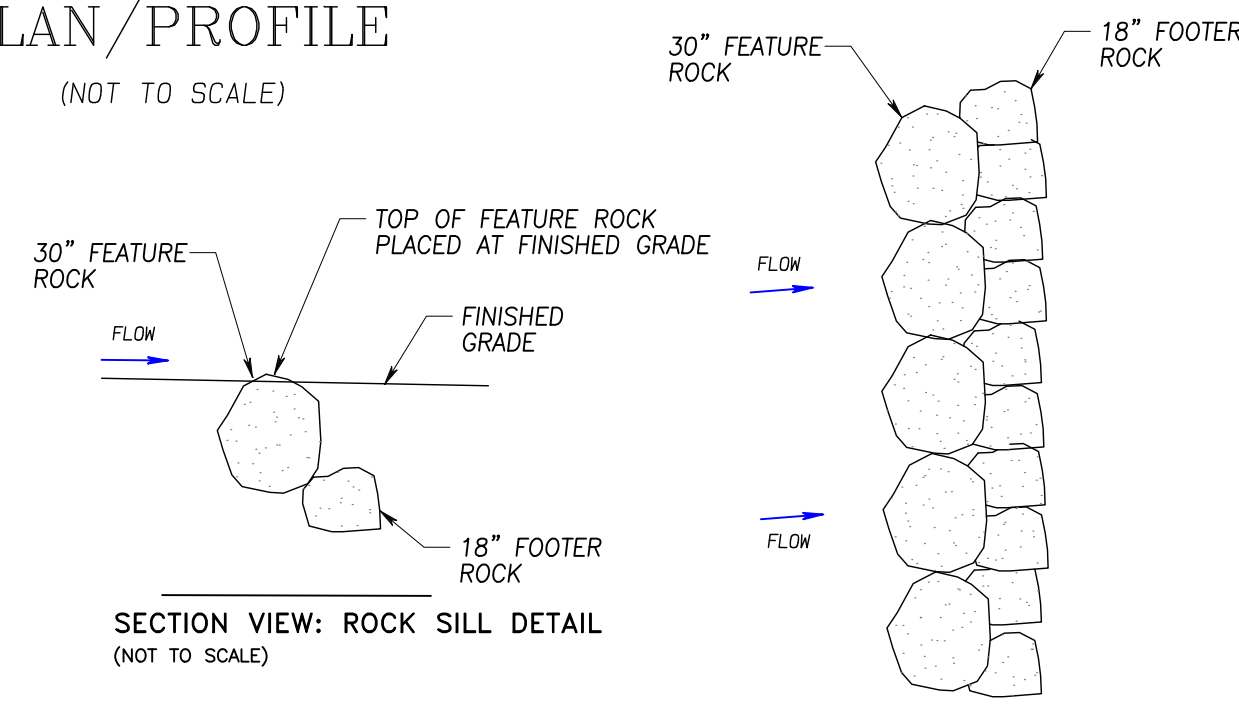
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# TYPICAL ROCK SILL

## PLAN/PROFILE

(NOT TO SCALE)



SECTION VIEW: ROCK SILL DETAIL  
(NOT TO SCALE)

PLAN VIEW: ROCK SILL DETAIL  
(NOT TO SCALE)

### ROCK SILL LAYOUT POINTS

PT#	DESC.	NORTHING	EASTING	ELEV.
501	SILL END	1542722.4	777283.1	7140.7
502	SILL CORNER	1542738.0	777313.5	7140.1
503	SILL CORNER	1542738.0	777340.5	7140.1
504	SILL END	1542721.1	777350.3	7140.7
505	SILL END	1542701.6	777292.5	7139.0
506	SILL CORNER	1542713.0	777313.5	7139.0
507	SILL CORNER	1542713.0	777340.5	7139.0
508	SILL END	1542698.1	777353.0	7139.7
509	SILL END	1542682.6	777301.0	7137.7
510	SILL CORNER	1542689.8	777313.5	7138.0
511	SILL CORNER	1542689.8	777340.5	7138.0
512	SILL END	1542677.3	777355.4	7138.7

### RIPRAP ROCK GRADATION

D50=12"		D50=18"	
% PASSING (BY WT.)	DIAMETER (IN.)	% PASSING (BY WT.)	DIAMETER (IN.)
100	= 18	100	= 27
85	= 16	85	= 24
50	= 12	50	= 18
15	= 8	15	= 12

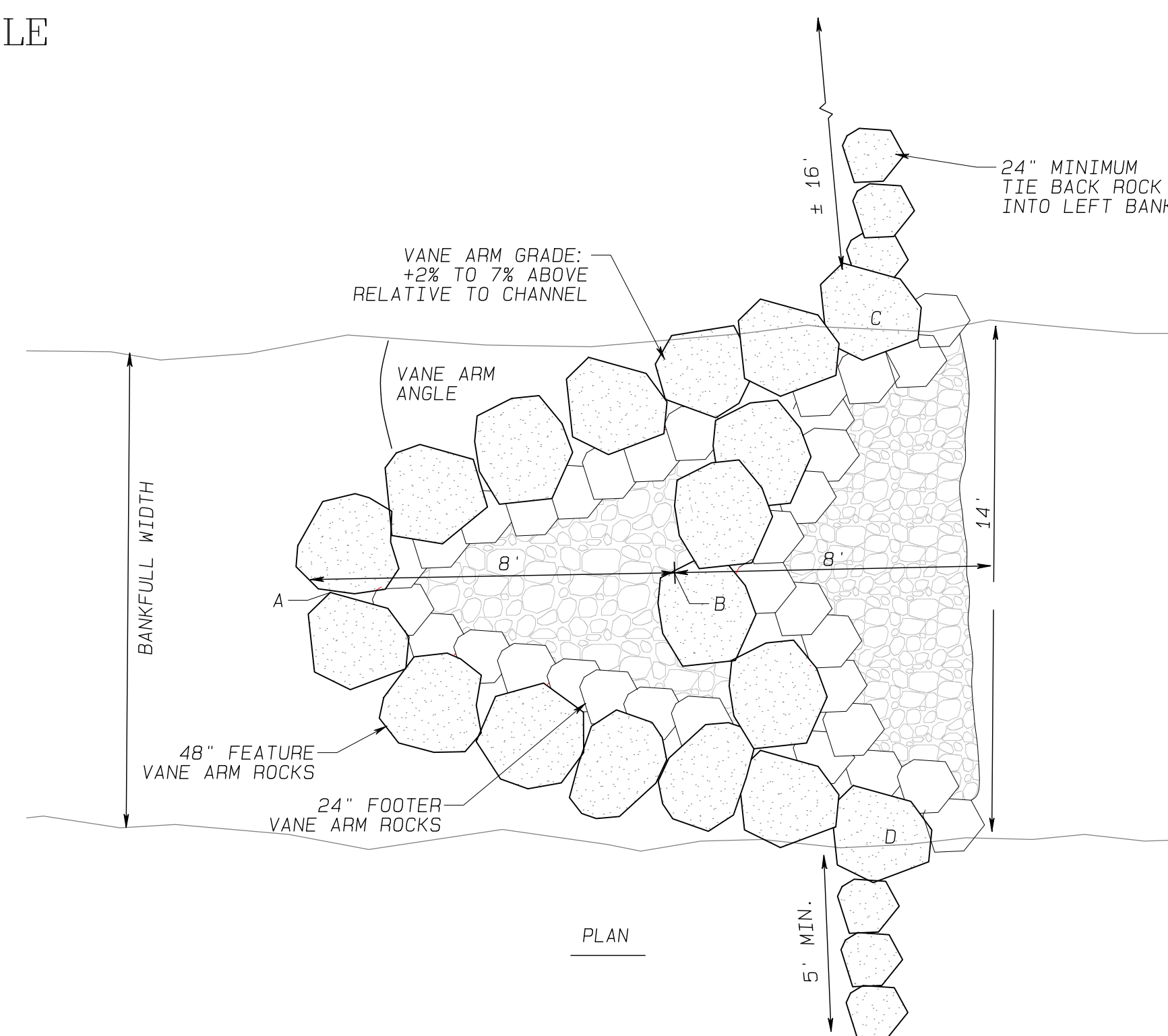
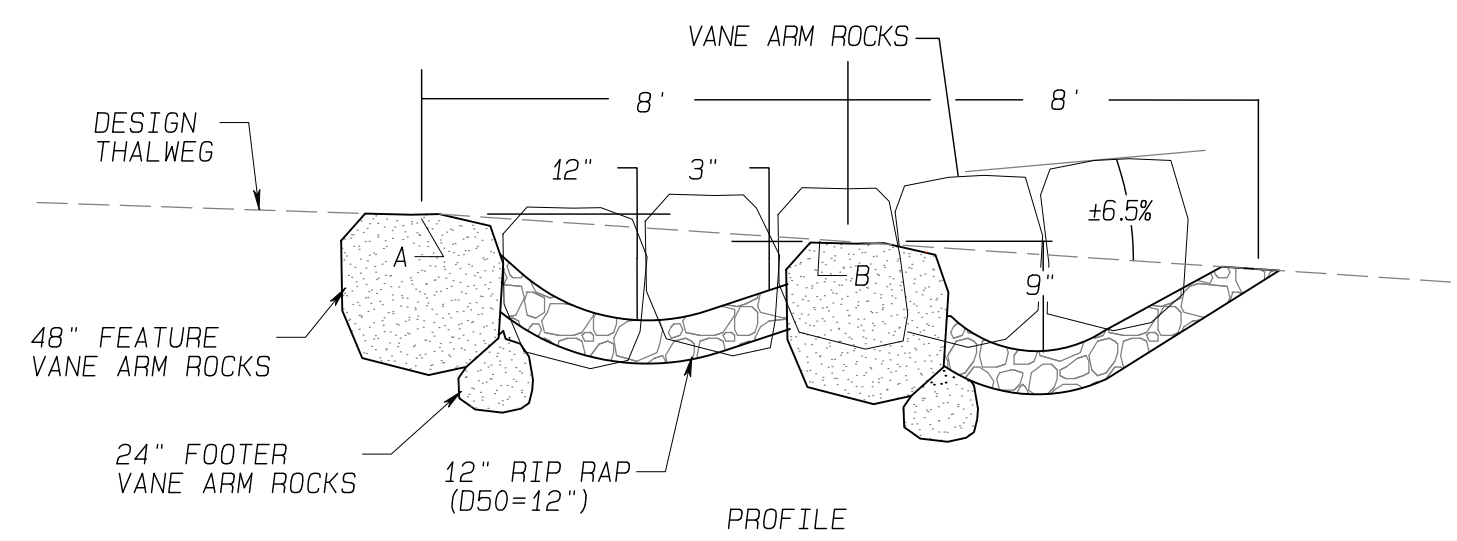
### RIPRAP LAYOUT POINTS

PT#	DESC.	NORTHING	EASTING	ELEV.
520	RAP CORNER	1542680.3	777177.7	7141.7
521	RAP CORNER	1542681.5	777189.9	7141.3
522	RAP CORNER	1542700.5	777229.9	7141.9
523	RAP CORNER	1542706.6	777227.0	7142.5
524	RAP CORNER	1542730.1	777279.8	7141.2
525	RAP CORNER	1542546.3	777299.0	7136.5
526	RAP CORNER	1542546.2	777371.0	7135.5
527	RAP CORNER	1542531.3	777299.0	7135.6
528	RAP CORNER	1542531.2	777371.0	7135.2

# TYPICAL CROSS VANE WEIR

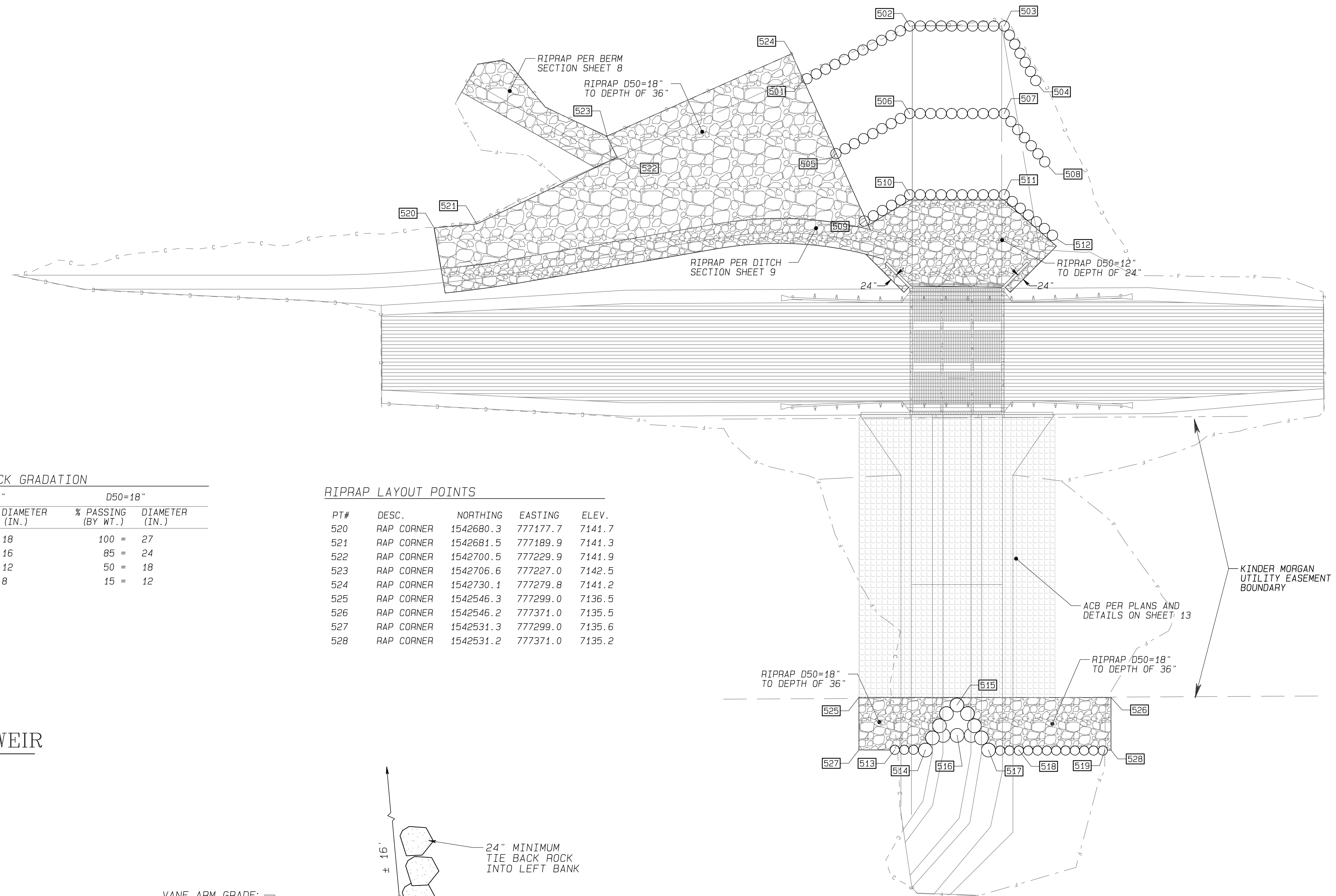
## PLAN/PROFILE

(NOT TO SCALE)



### ROCK VANE WEIR LAYOUT POINTS

PT#	DESC.	NORTHING	EASTING	ELEV.
513	TIE END	1542531.2	777309.2	7135.1
514	WEIR 'D'	1542531.2	777318.0	7133.7
515	WEIR 'A'	1542544.1	777327.0	7133.1
516	WEIR 'B'	1542535.4	777327.1	7132.8
517	WEIR 'C'	1542531.2	777336.0	7133.7
518	TIE MATCH	1542531.2	777344.7	7134.7
519	TIE END	1542531.2	777369.3	7135.0



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SHEET NUMBER: 10 OF 14  
NCD PROJECT NUMBER: 22-431AZ

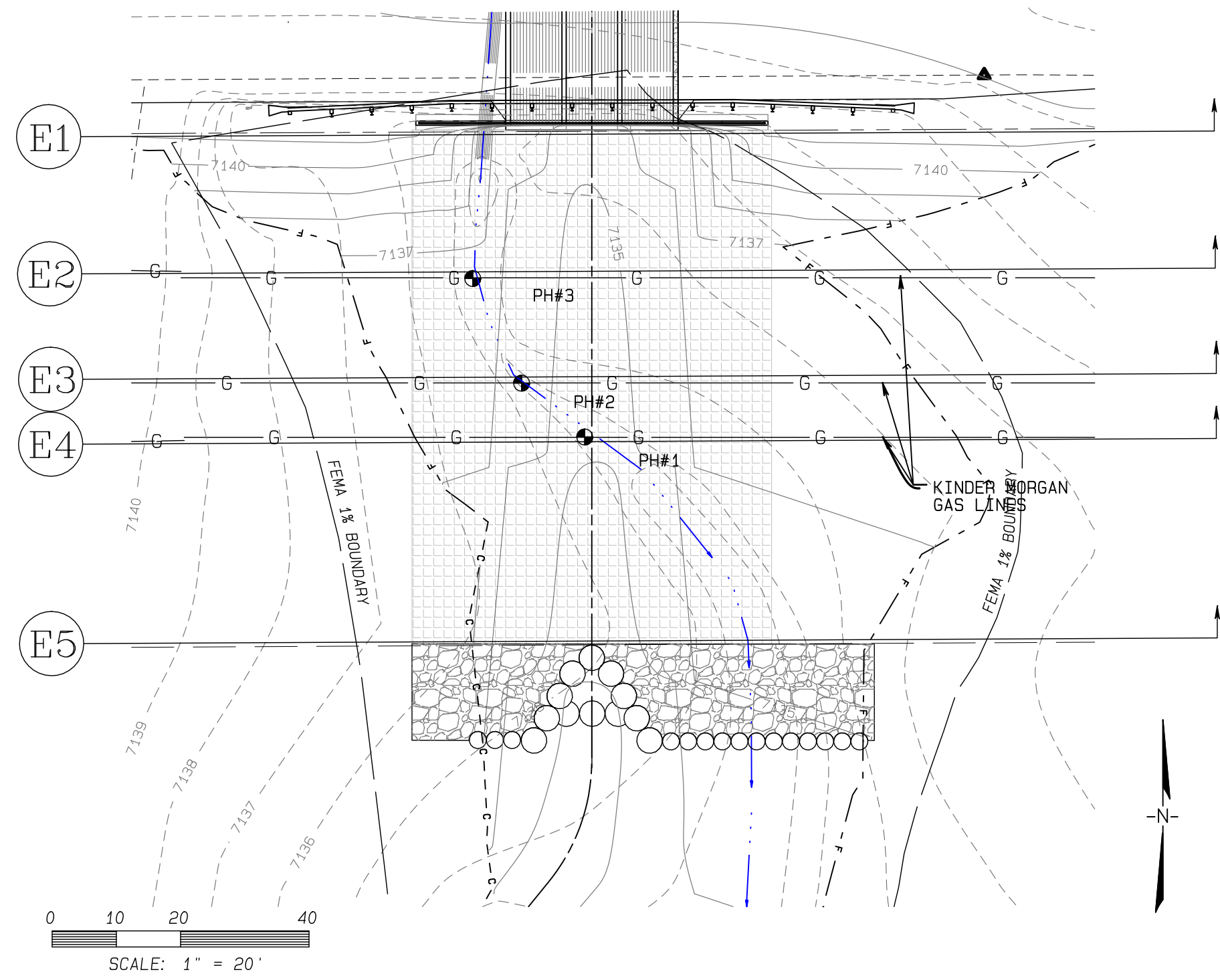
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TRIPLE BOX CULVERT  
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ROCK STRUCTURES & RIPRAP LAYOUT & DETAIL

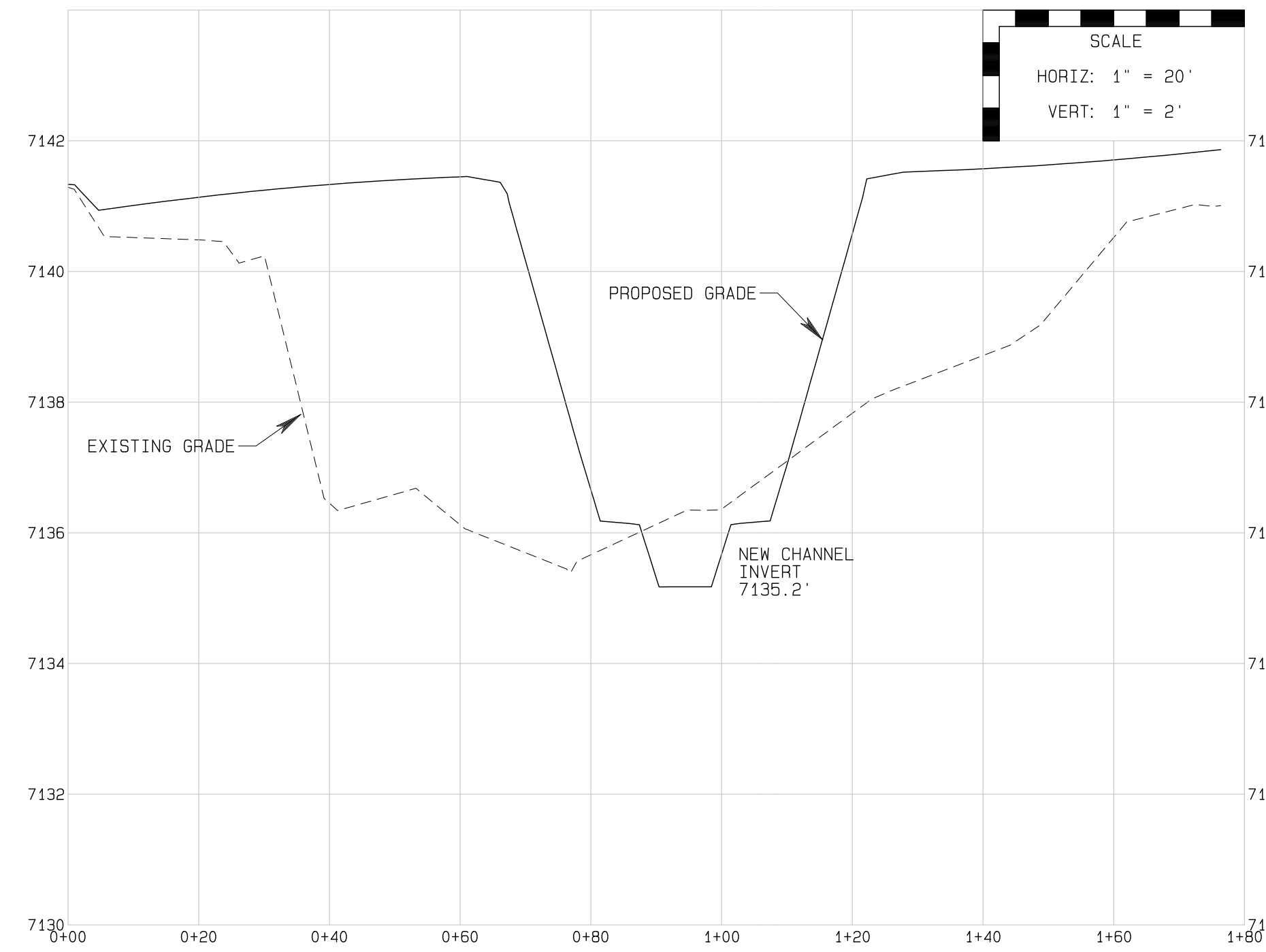
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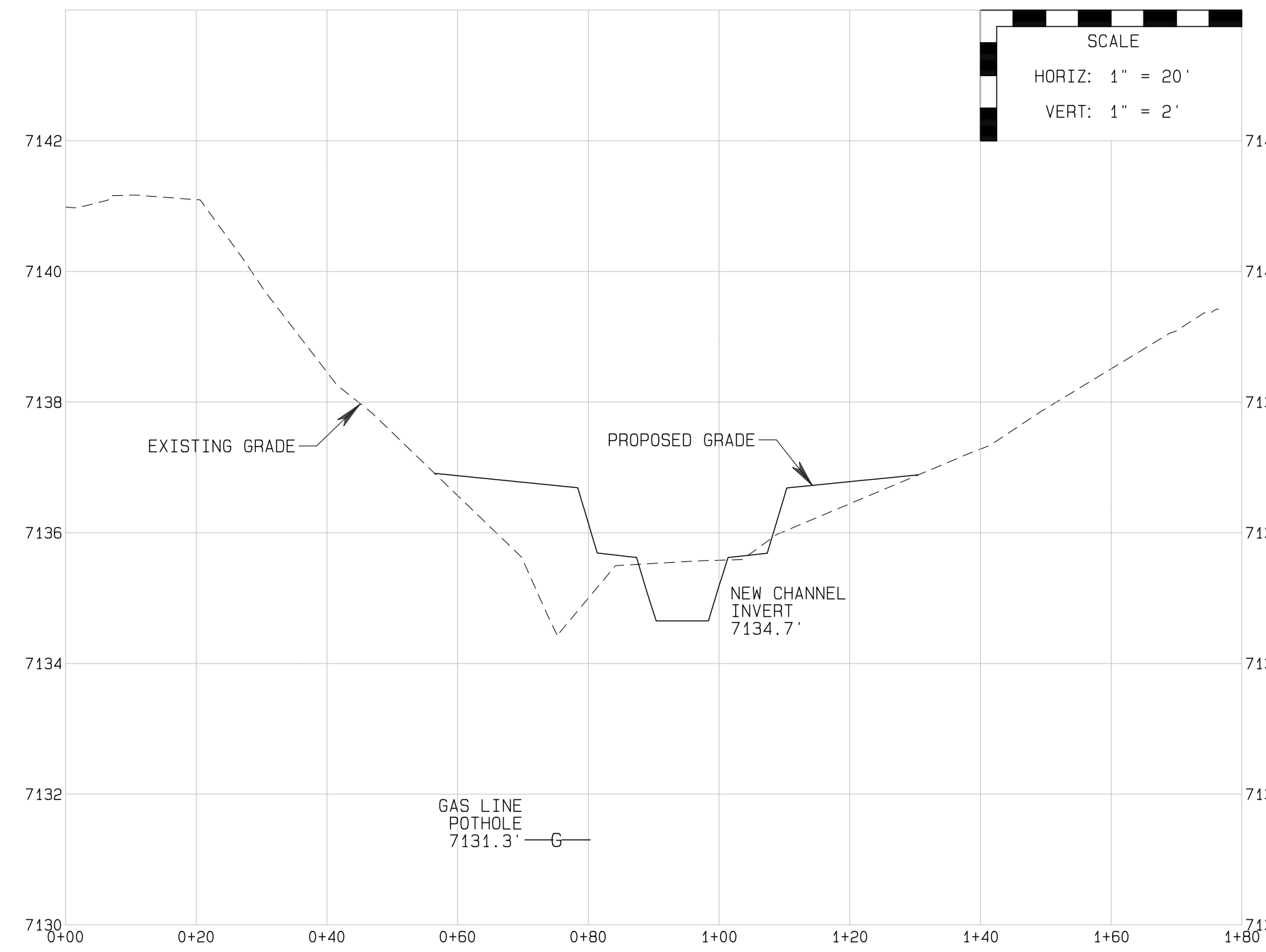
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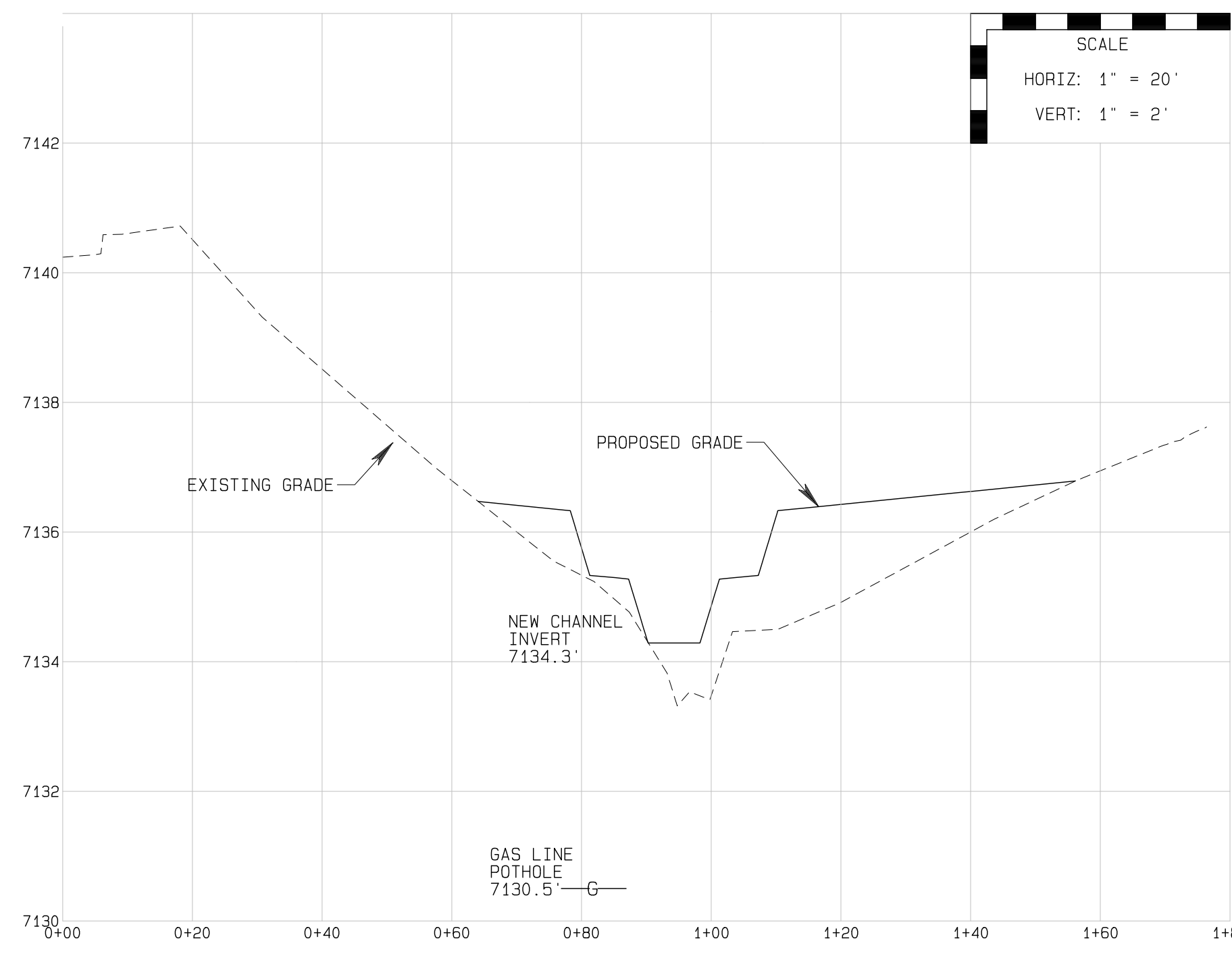
SCHULTZ CREEK - EASEMENT CROSS SECTIONS  
PLAN VIEW



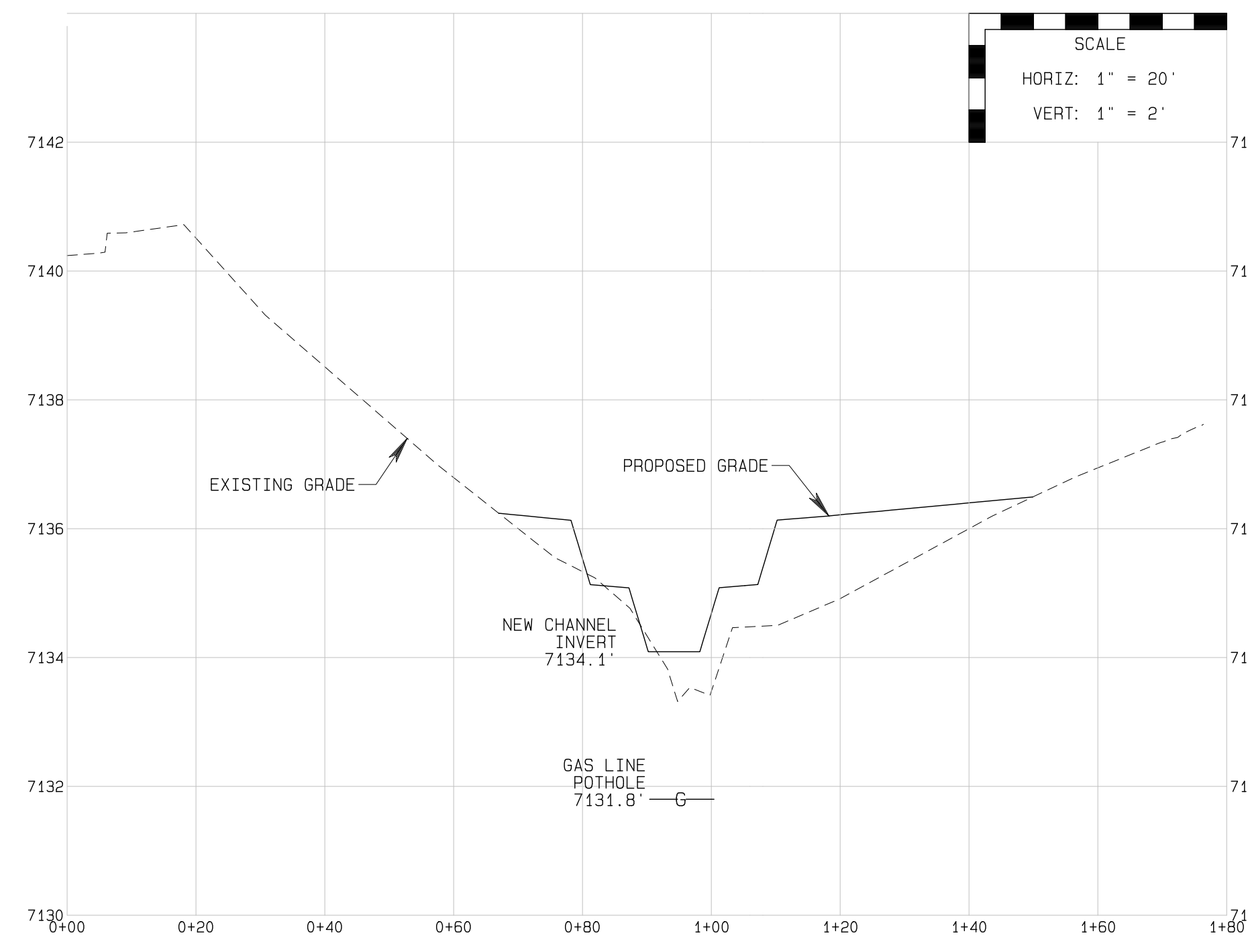
E1 CROSS SECTION E1 - NORTH EASEMENT BOUNDARY  
RIVER STATION 2+05.0 1" = 20'



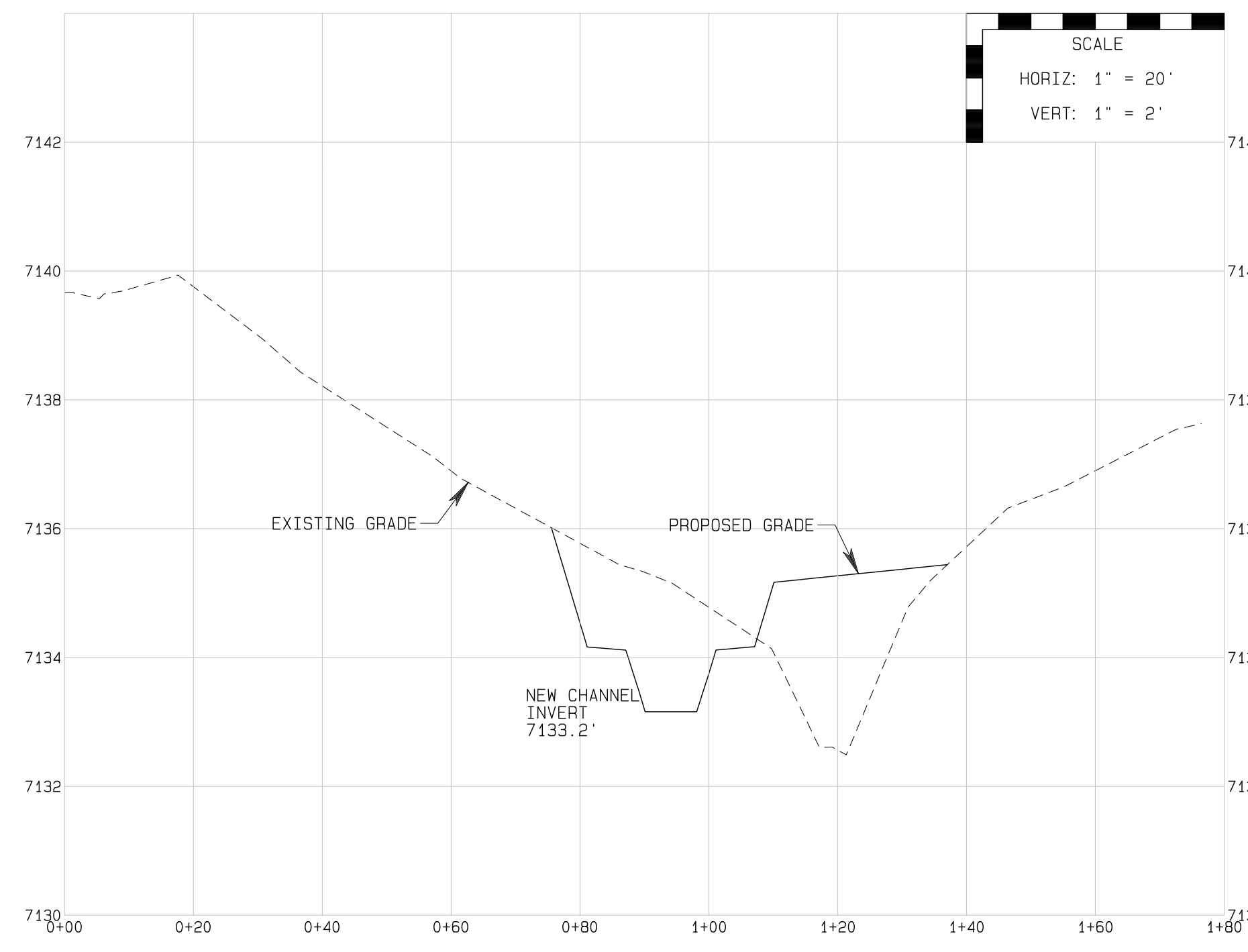
E2 CROSS SECTION E2 - NORTH GAS PIPELINE  
RIVER STATION 1+86.5 1" = 20'



E3 CROSS SECTION E3 - MIDDLE GAS PIPELINE  
RIVER STATION 1+70.1 1" = 20'



E4 CROSS SECTION E4 - SOUTH GAS PIPELINE  
RIVER STATION 1+60.2 1" = 20'



E5 CROSS SECTION E5 - SOUTH EASEMENT BOUNDARY  
RIVER STATION 1+25.0 1" = 20'

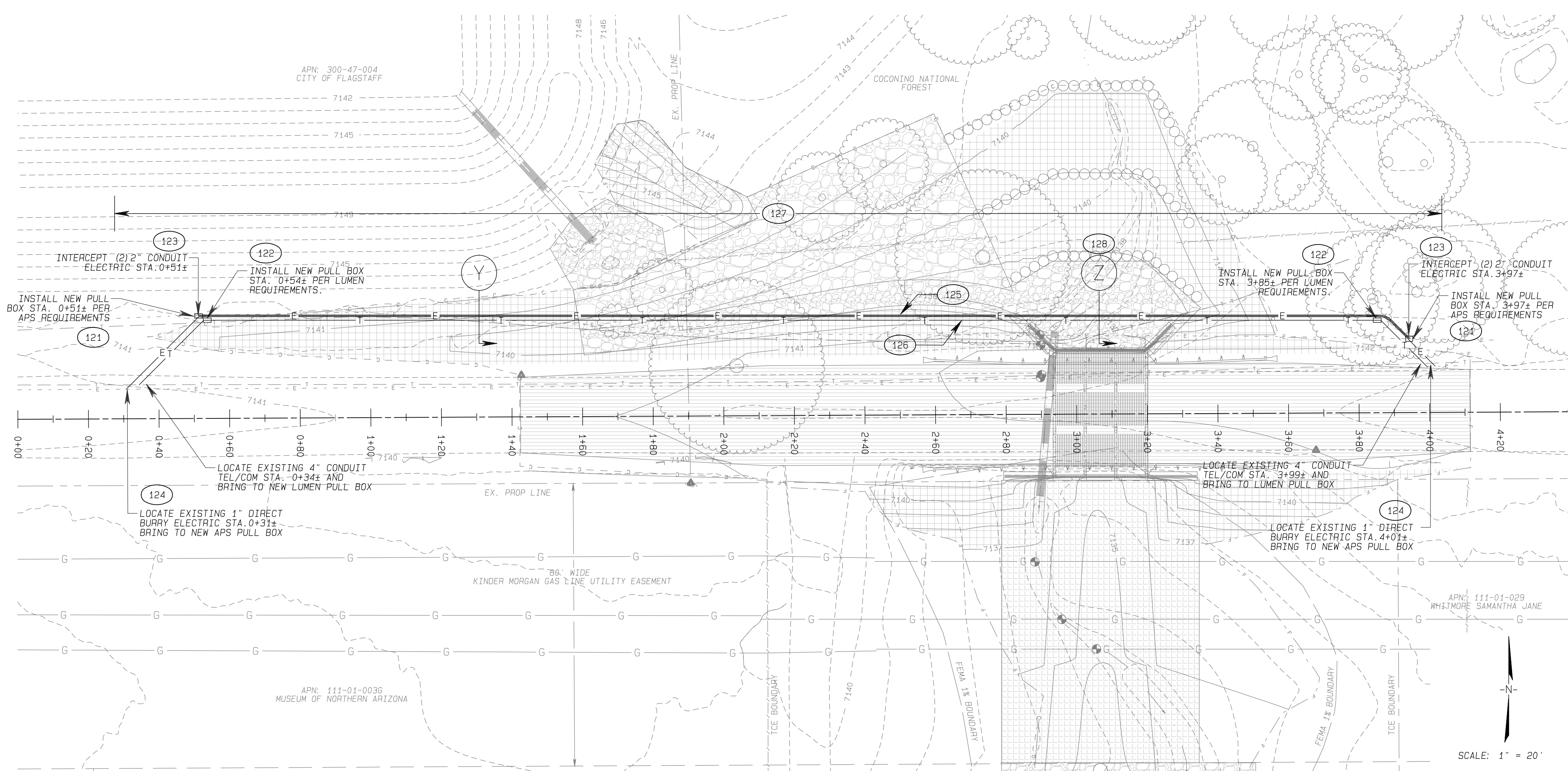
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SHEET NUMBER: 11 OF 14

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SCHULTZ CREEK/MT. ELDEN LOOKOUT ROAD CROSSING  
TRIPLE BOX CULVERT  
COCONINO COUNTY, AZ - PUBLIC WORKS  
GAS LINE EASEMENT CROSS SECTIONS

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SCHULTZ CREEK/ELDEN LOOKOUT ROAD CROSSING - UTILITIES PLAN

**CONSTRUCTION NOTES:**

NOTE	QTY.	UNIT	DESCRIPTION
121	2	EA	INSTALL NEW PULL BOX (PROVIDED BY APS) PER APS REQUIREMENTS
122	2	EA	INSTALL NEW PULL BOX (PROVIDED BY LUMEN) PER LUMEN REQUIREMENTS
123	2	EA	INTERCEPT EXISTING (2) 2" ELECTRIC CONDUIT NORTH OF ROAD AND BRING TO NEW COMBINED UTILITY TRENCH
124	14	SY	SAW CUT AC, TRENCH, AND PATCH AS REQUIRED TO RETRIEVE ELECTRIC AND TELCO UTILITIES IN ROAD TO BE RELOCATED. SEE MAG DETAIL 200-1 AND 200-2 FOR TRENCH BACKFILL AND SURFACE REPLACEMENT DETAILS. UNIT QUANTITY IN "SY" IS FOR AC REPLACEMENT IN ADDITION TO NOTE 113
125	1050	LF	INSTALL (3) 2" ELECTRIC PVC CONDUIT PER APS REQUIREMENTS IN COMBINED UTILITY TRENCH. SEE TRENCH DETAILS ON THIS SHEET.
126	350	LF	INSTALL 4" ELECTRIC HDPE CONDUIT PER LUMEN REQUIREMENTS IN COMBINED UTILITIES TRENCH. SEE TRENCH DETAILS ON THIS SHEET.
127	350	LF	EXCAVATE TRENCH FOR COMBINED UTILITIES 43" DEPTH AND 28" WIDTH. ADDITIONAL DEPTH MAY BE REQUIRED WHERE UTILITIES CROSS EACH OTHER TO PROVIDE 2' MINIMUM SEPARATION AT UTILITY CROSSINGS. SEE COMBINED UTILITIES TRENCH DETAIL ON THIS SHEET. SEE MAG DETAIL 200-1 AND 200-2 FOR BACKFILL DETAILS.
128	11	CY	PROVIDE CONCRETE ENCASUREMENT OF UTILITIES UNDER RIPRAP AS INDICATED ON COMBINED UTILITIES TRENCH DETAILS DETAIL

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DRAWING NUMBER: DETAIL 5  
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SCHULTZ CREEK/MT. ELDEN LOOKOUT ROAD CROSSING  
TRIPLE BOX CULVERT  
COCONINO COUNTY, AZ - PUBLIC WORKS

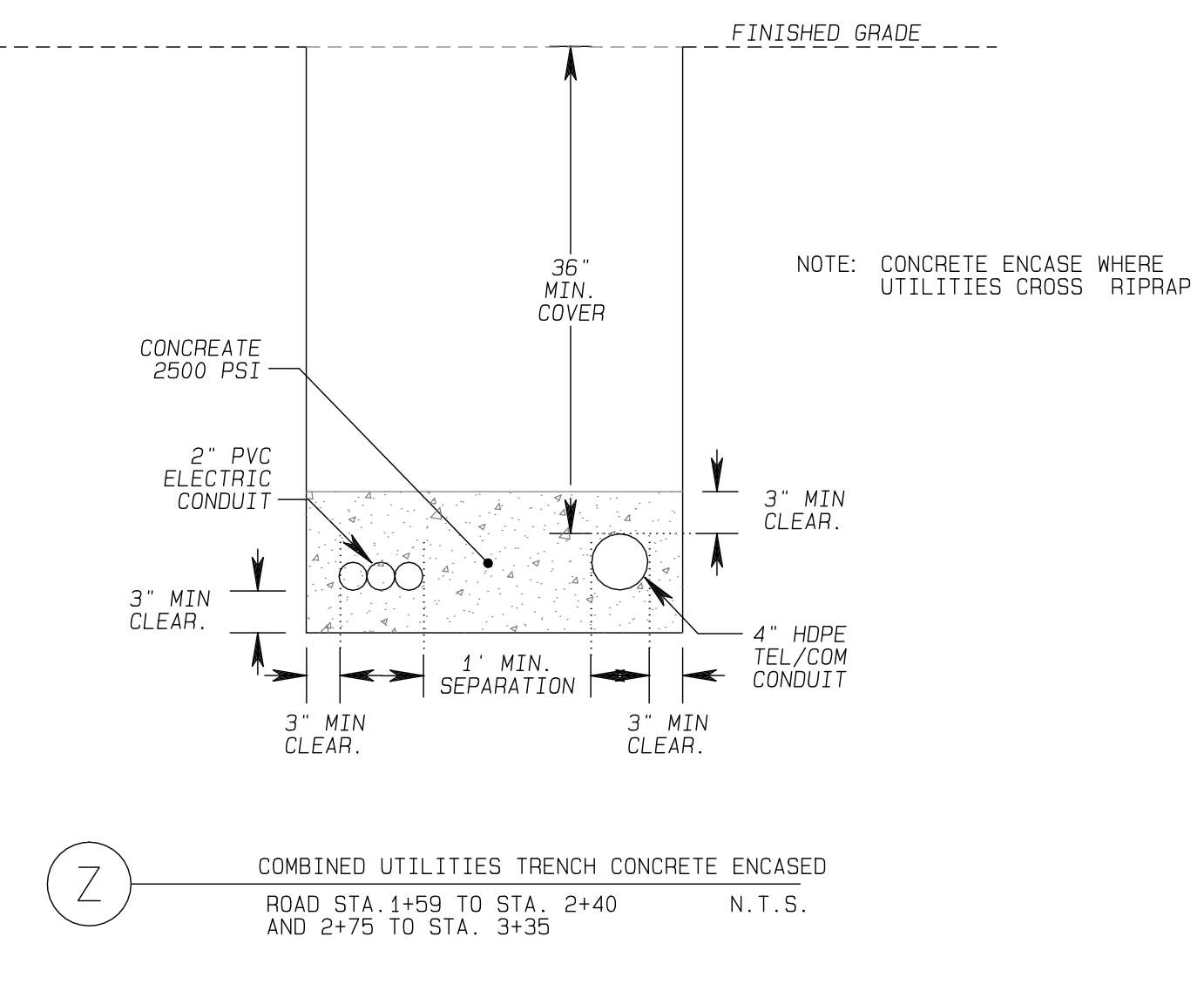
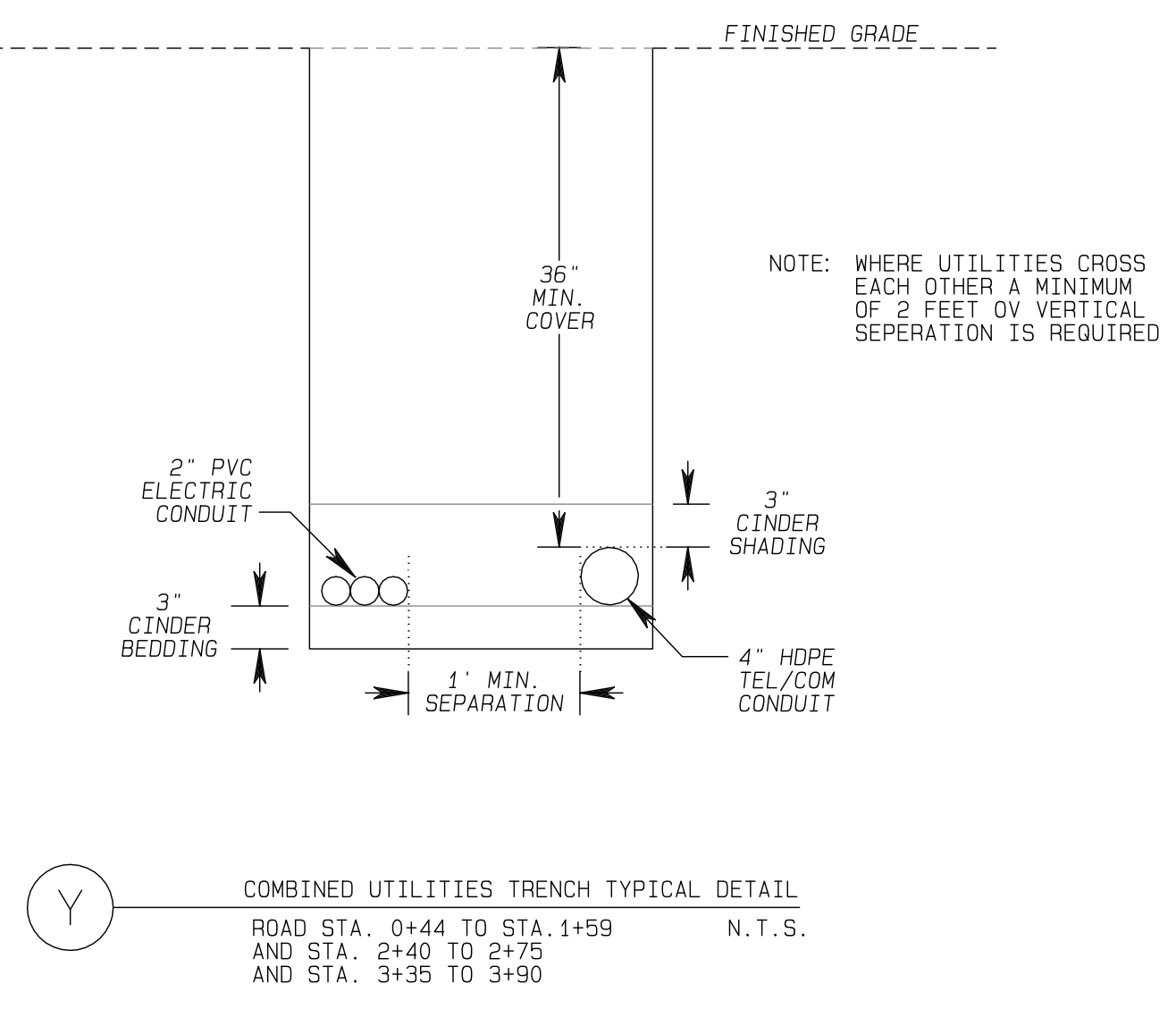
UTILITIES RELOCATION OVERVIEW

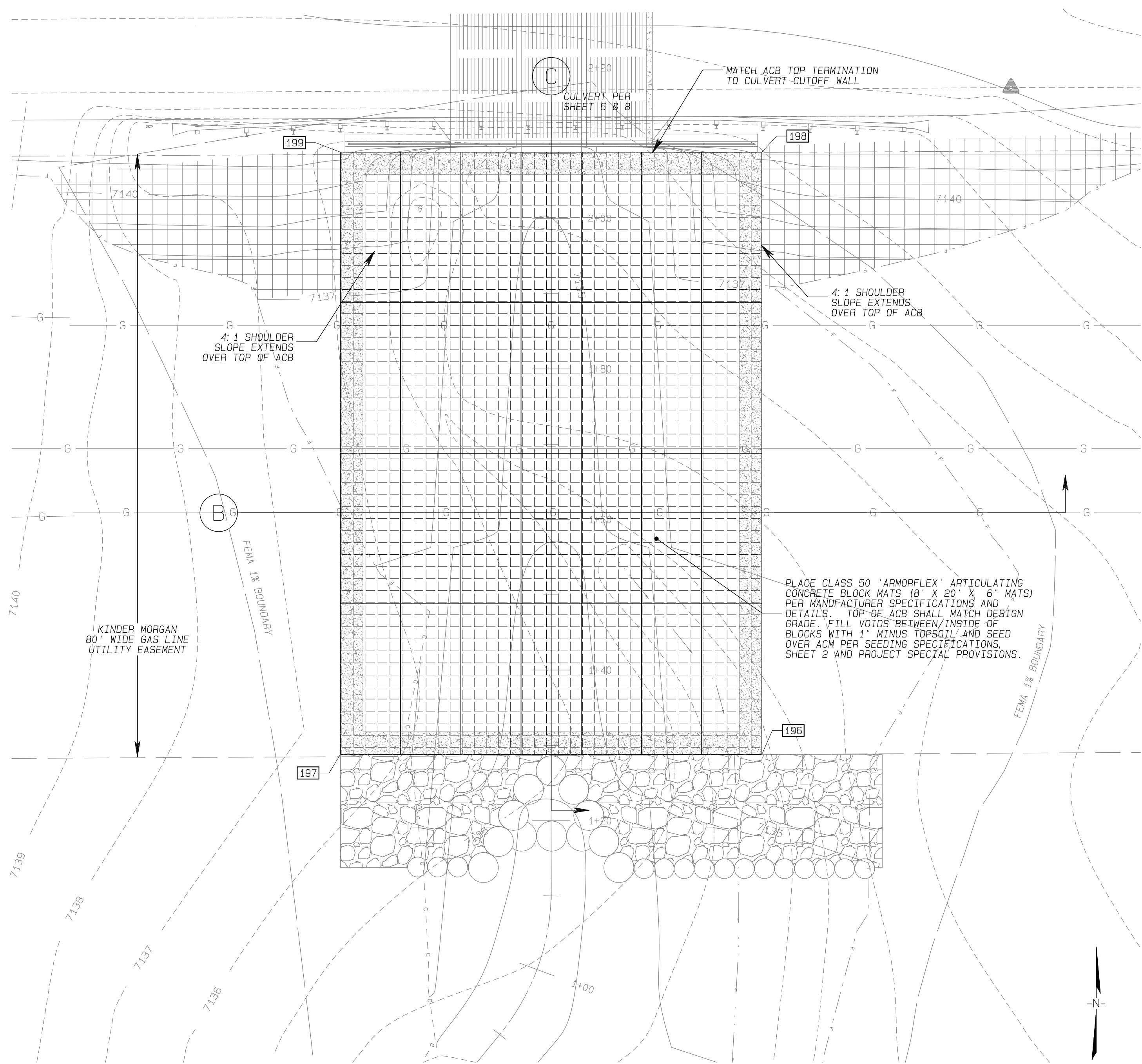
NO.	DATE	BY	REVISION

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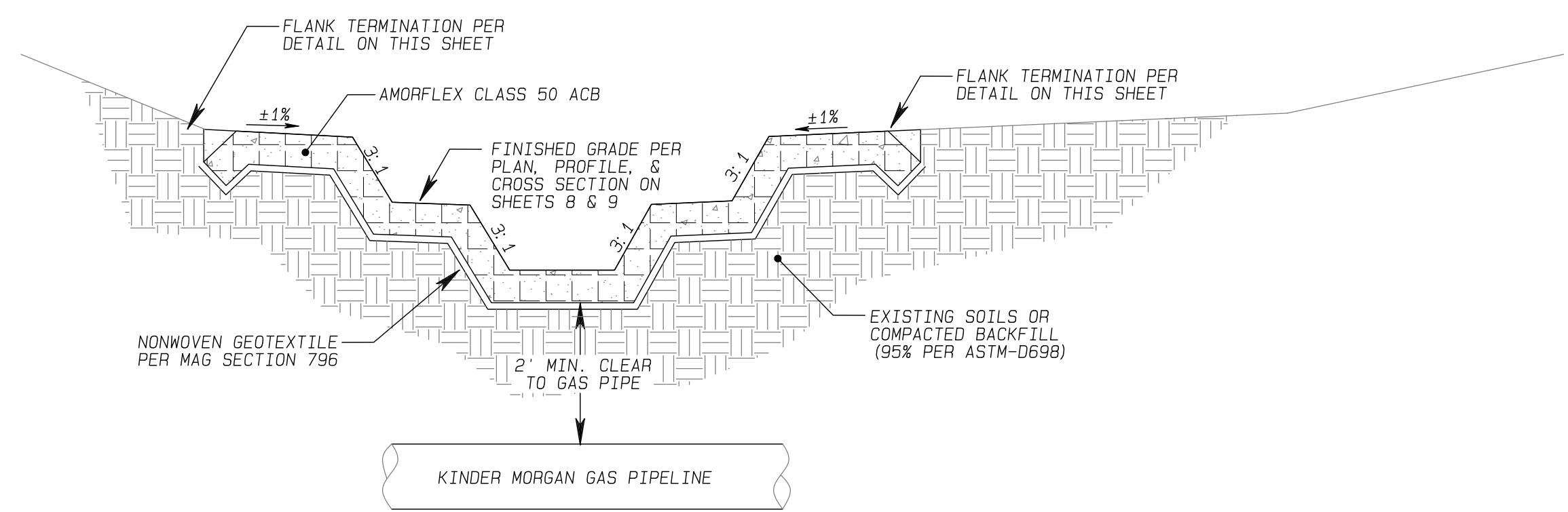
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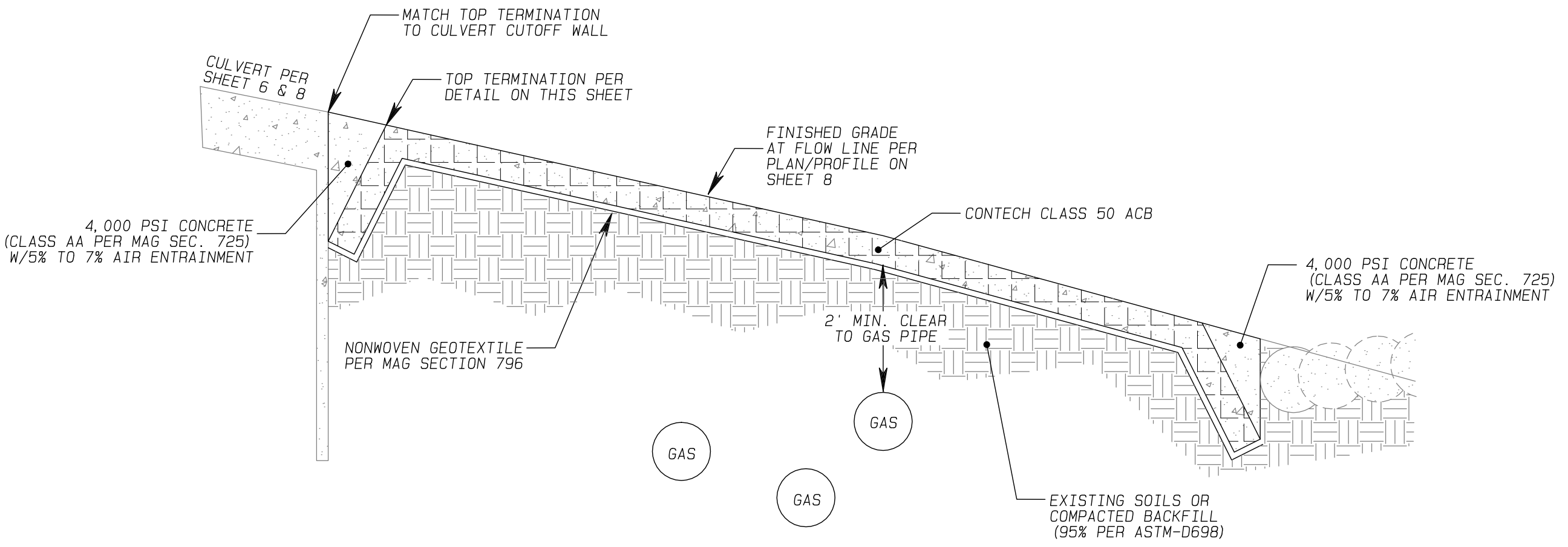


SCHULTZ CREEK/ELDEN LOOKOUT ROAD CROSSING - ACB MAT PLAN

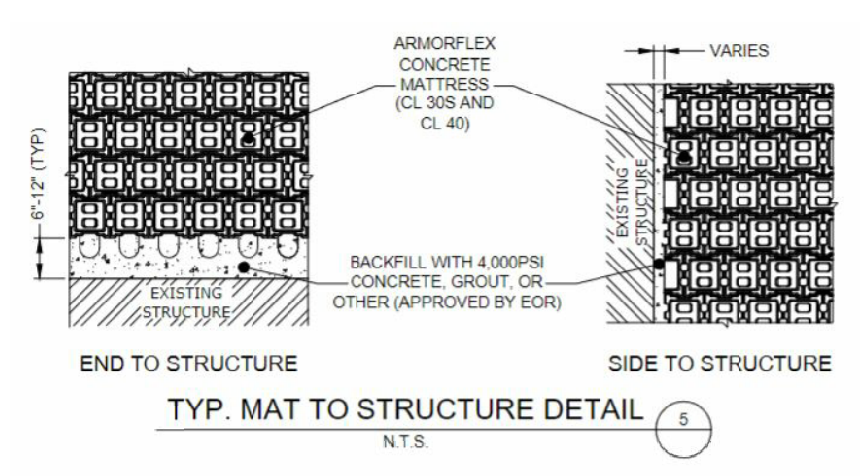
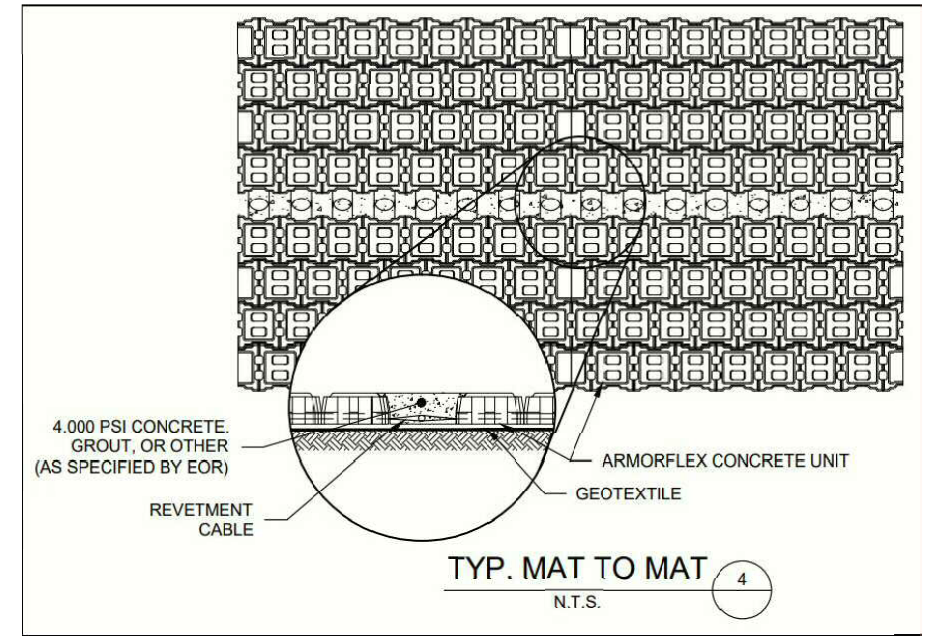
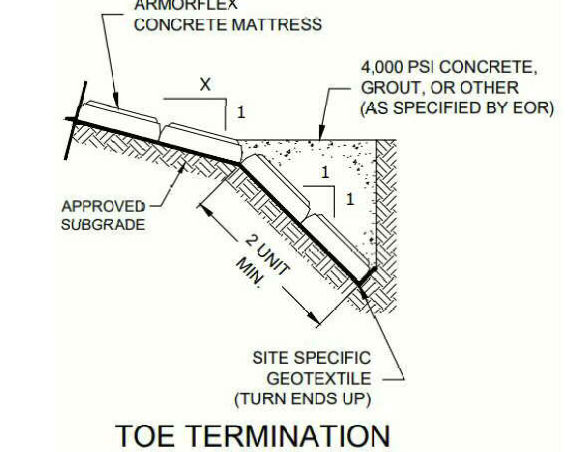
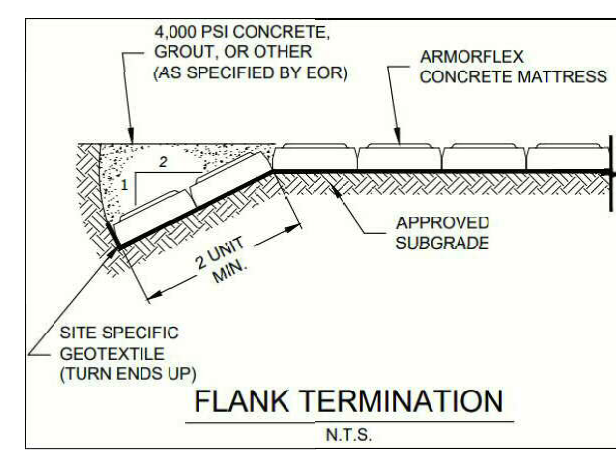
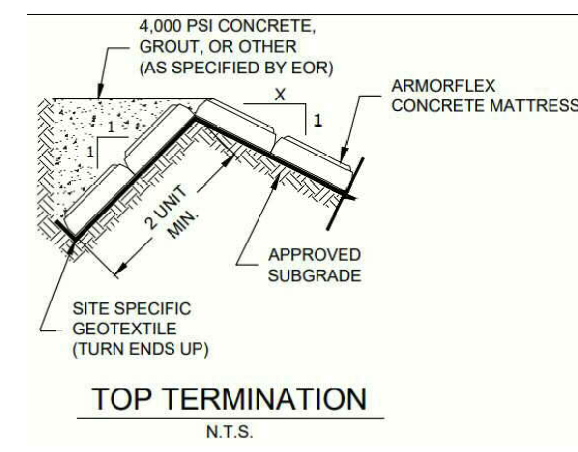
SCALE: 1" = 10'



(B) ACB EROSION PROTECTION - TYPICAL CROSS SECTION PERPENDICULAR TO FLOW N.T.S.



(C) ACB EROSION PROJECTION - TYPICAL PROFILE AT FLOW LINE N.T.S.



ACB (ARMORFLEX-50) MATS CORNER POINTS LAYOUT TABLE

PT#	DESC.	NORTHING	EASTING	ELEV.
196	SE CORNER	1542546.3	777355.0	7135.3
197	SW CORNER	1542546.3	777299.0	7136.5
198	NE CORNER	1542626.3	777355.0	7141.4
199	NW CORNER	1542626.3	777299.0	7141.3

UNAUTHORIZED CHANGES & USES  
 DATE: 05/06/2023  
 NCD PROJECT NUMBER: 22-431AZ  
 DRAWING NUMBER: DETAIL 6  
 SHEET NUMBER: 13 OF 14

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SCHULTZ CREEK/MT. ELDEN LOOKOUT ROAD CROSSING  
 TRIPLE BOX CULVERT  
 COCONINO COUNTY, AZ - PUBLIC WORKS  
 ARTICULATING CONCRETE BLOCK PLAN AND DETAILS

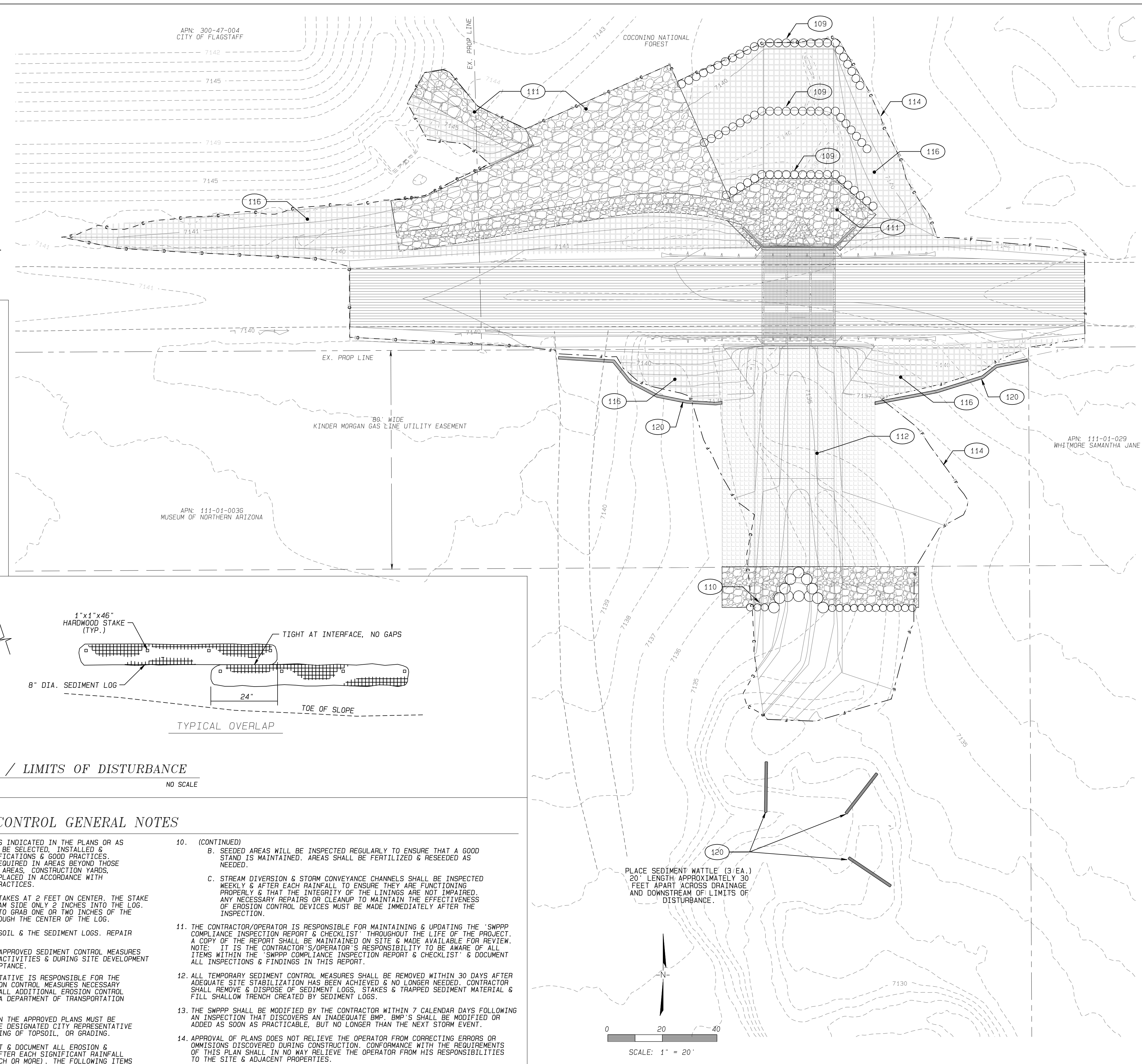
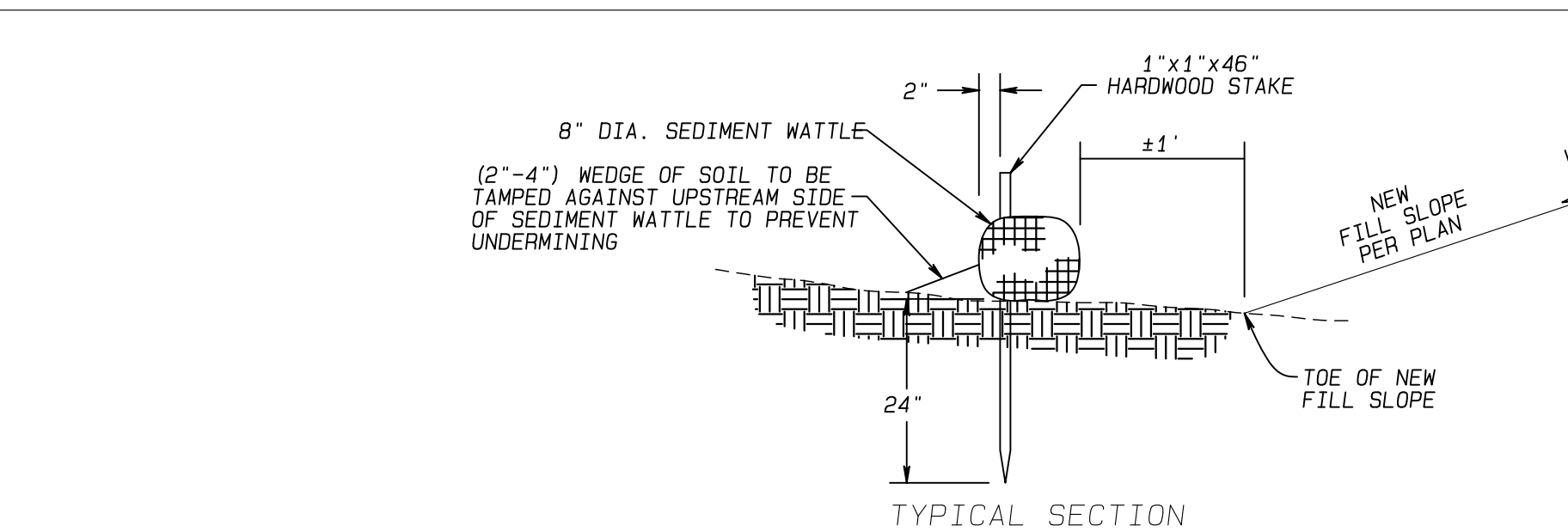
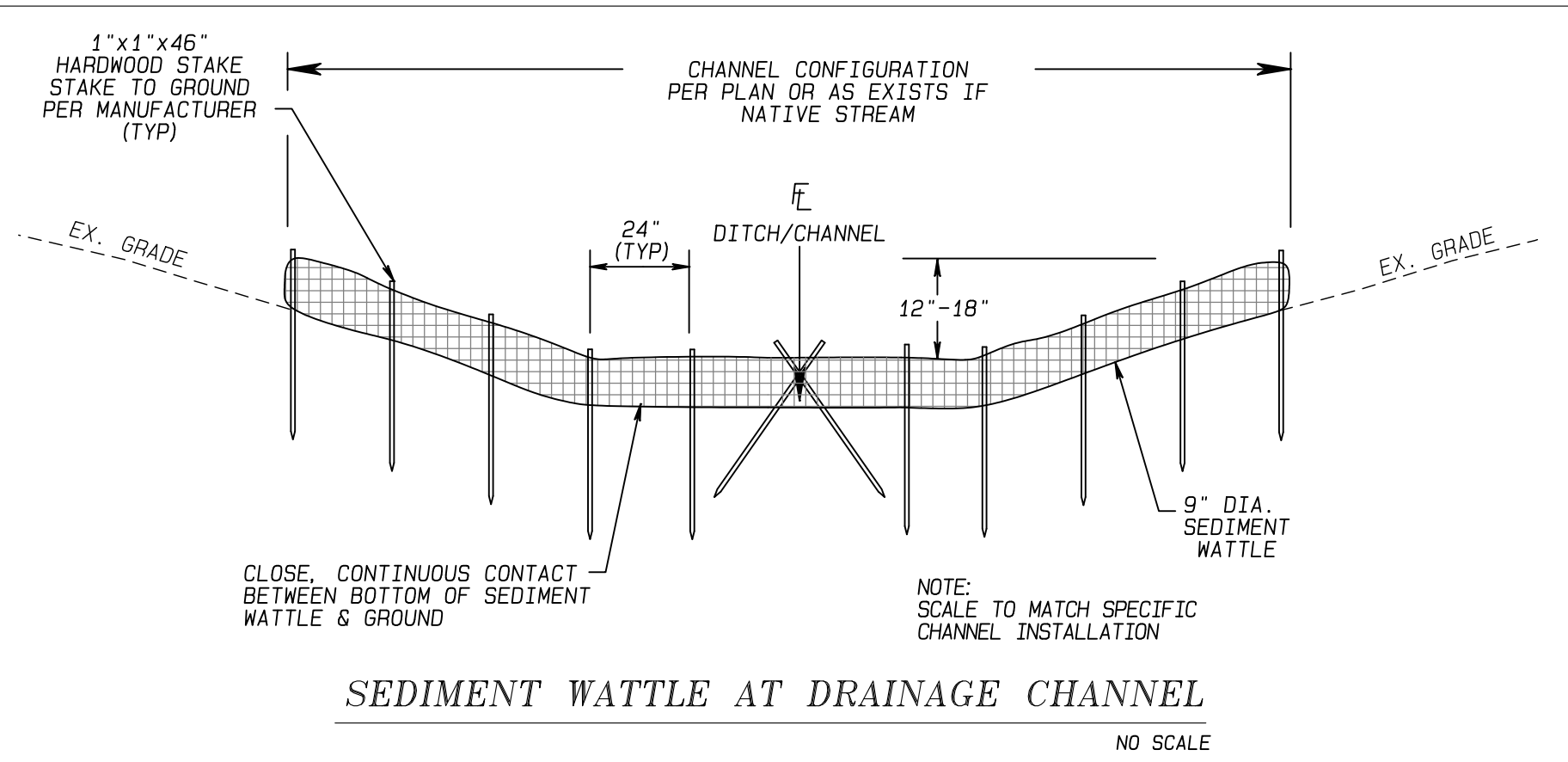
NO.	DATE	BY	REVISION

Drawn by: JF  
 Designed by: JF  
 Reviewed by: JF  
 Natural Channel Design  
 2900 N. WEST ST. #6004  
 Flagstaff, Arizona  
 (928) 774-2336

SEDIMENT AND EROSION CONTROL NOTES:

LONG TERM STABILIZATION

- | NOTE   | QTY. | UNIT | DESCRIPTION   |
|--|------|------|---|
| 109  | **   |      | CONSTRUCT ROCK SILLS (3 EA) USING 30 IN. DIA. FEATURE ROCK AND 18 IN. DIA. FOOTER ROCK. SEE ROCK SILL DETAIL (SHEET 10) FOR SILL PLACEMENT AND CONSTRUCTION DETAILS.  |
| 110  | **   |      | CONSTRUCT ROCK CROSS VANE WEIR USING 48" FEATURE ROCK AND 24" FOOTER ROCK. SEE CROSS VANE WEIR DETAIL (SHEET 10) FOR PLACEMENT AND CONSTRUCTION DETAILS.  |
| 111  | **   |      | PLACE RIPRAP 24 INCH THICK D50=12" OR 36" THICK D50=18" AS INDICATED. AT THE LOCATIONS PROVIDED IN RIPRAP DETAIL AND PER MAG SECTION 220. TOP OF RIPRAP SHALL APPROXIMATE DESIGN GRADE WITHIN 1/3 D50 AND DEPTH OF RIPRAP SHALL EXTEND TWO TIMES D50 BELOW FINISH GRADE. SEE RIPRAP LAYOUT DETAIL, SHEET 10. RIPRAP QUANTITY 'CY' IS PROVIDED ON SHEET 2.                     |
| 112  | **   |      | INSTALL ARTICULATING CONCRETE BLOCK (CONTECH 50-S OR APPROVED EQUAL PER KINDER MORGAN REQUIREMENTS) PER PLAN, LAYOUT, AND DETAILS PROVIDED ON SHEET 10. FINISHED TOP OF INSTALLED ACB SHALL MATCH DESIGN GRADE. UNIT QUANTITY OF 'SY' INCLUDES INSTALLATION OF 8 FT. BY 20 FT. X 6" ACM MATS (28 EA.) GEOTEXTILE UNDERLAYMENT, EDGE TERMINATIONS, AND MAT TO MAT CONNECTIONS. |
| 114  | **   |      | RESEED ALL EXPOSED TOPSOIL DISTURBED BY CONSTRUCTION ACTIVITIES. USE SEED MIX AND APPLICATION RATE AS SPECIFIED IN RESEEDING NOTES, SHEET 2.  |
| <b>SHORT TERM &amp; CONSTRUCTION PHASE STABILIZATION</b> |      |      |   |
| 116  | **   |      | PLACE DOUBLE NET EROSION CONTROL BLANKET (ECB) ON DISTURBED SLOPES 5% OR GREATER WHICH ARE NOT OTHERWISE ARMORED WITH RIPRAP OR ACM. WESTERN EXCELSIOR ALL NATURAL EXCEL CS-3 OR APPROVED EQUAL.  |
| 120  | 185  | LF   | PLACE 8" DIA. SEDIMENT WATTLES PER THE PLAN AND DETAILS PROVIDED ON THIS SHEET. MAINTAIN WATTLE THROUGHOUT THE DURATION OF THE PROJECT AND INSPECT DAILY. REMOVE SEDIMENT AS REQUIRED. REMOVE SEDIMENT WATTLES AND DISPOSE UPON PROJECT COMPLETION.   |
- \*\* QUANTITY ACCOUNTED FOR ON ANOTHER SHEET.



- EROSION & SEDIMENT CONTROL GENERAL NOTES**
- CONSTRUCTION ACTIVITIES THAT DISTURB GREATER THAN OR EQUAL TO 1 ACRE REQUIRE COVERAGE UNDER ADOE'S 2020 CONSTRUCTION GENERAL PERMIT (CGP). CONTRACTOR AND/OR OWNER SHALL OBTAIN A COPY OF THE CGP AND THE NOI FORMS THROUGH THE ADOE WEBSITE AT: <http://azdoeq.gov/node/524>
  - PROJECT DESCRIPTION:  
THE PROJECT INCLUDES AN APPROXIMATE 4,300 LF ADDITION TO THE FLAGSTAFF URBAN TRAIL SYSTEM (FUTS), EXTENDING FROM WITHIN FT. TUTHILL COUNTY PARK AT ITS WESTERN END AND CONNECTING TO AN EXISTING FUTS TRAIL ALONG PULLIAM DRIVE. THE TRAIL WILL PASS THROUGH ONE BARREL OF AN EXISTING 2-BARREL CONCRETE BOX CULVERT THAT CROSSES BENEATH I-17 AND US89A. ONE BARREL WILL REMAIN FOR DRAINAGE PURPOSES AND THE OTHER BARREL WILL BE CONVERTED TO PEDESTRIAN USE.  
PROJECT LOCATION: MT ELDEN LOOKOUT ROAD, APPROXIMATELY 1100 FEET EAST OF SCHULTZ PASS ROAD INTERSECTION FLAGSTAFF, ARIZONA  
SW 1/4 OF SE 1/4 S33 T22N R7E G6SRM  
LATITUDE & LONGITUDE: N 35°14'35"; W 111°39'27"  
PROJECT AREA: 1.4± ACRES - ASSUMED AREA OF DISTURBANCE AS DEFINED & BOUND BY THE FINAL LIMITS OF CONSTRUCTION PLUS 20' ALLOWANCE FOR PERIMETER ACCESS. ACTUAL AREA OF DISTURBANCE MAY EXCEED 1.4 ACRES DUE TO OTHER GROUND DISTURBING ACTIVITIES RELATED TO CONSTRUCTION INGRESS/EGRESS, TEMPORARY TRAFFIC DIVERSIONS, STAGING AREA(S), ACCESS, ETC.  
HYDROLOGIC SOIL GROUP: C-D  
NEAREST RECEIVING WATERS: SCHULTZ CREEK
  - A COPY OF THE SCHULTZ CREEK CROSSING PLAN FOR THIS PROJECT, TOGETHER WITH A COPY OF THE NOTICE OF INTENT (NOI) & THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP), SHALL BE MAINTAINED ON THE SITE & AVAILABLE FOR REVIEW. THOSE ELEMENTS OF THE GRADING & DRAINAGE PLAN PERTINENT TO OR REFERENCED ON THE SWPPP SHALL BE CONSIDERED A PART OF THE SWPPP.
  - SEDIMENT WATTLES SHALL BE LOCATED AS INDICATED IN THE PLANS OR AS DIRECTED BY THE ENGINEER. THEY SHALL BE SELECTED, INSTALLED & MAINTAINED WITH MANUFACTURER'S SPECIFICATIONS & GOOD PRACTICES. ADDITIONAL SEDIMENT WATTLES MAY BE REQUIRED IN AREAS BEYOND THOSE INDICATED HEREIN (SUCH AS AT STAGING AREAS, CONSTRUCTION YARDS, ETC.) MAY BE NECESSARY AND SHALL BE PLACED IN ACCORDANCE WITH GENERALLY ACCEPTED BEST MANAGEMENT PRACTICES.
  - STAKE WITH 1"x1"x46" MIN. HARDWOOD STAKES AT 2 FEET ON CENTER. THE STAKE SHALL BE PLACED THROUGH THE DOWNSTREAM SIDE ONLY 2 INCHES INTO THE LOG. IT IS ONLY NECESSARY FOR THE STAKES TO GRAB ONE OR TWO INCHES OF THE NETTING. DO NOT DRIVE THE STAKES THROUGH THE CENTER OF THE NETTING.
  - MAKE SURE NO GAPS EXIST BETWEEN THE SOIL & THE SEDIMENT LOGS. REPAIR ANY RILLS OR GULLIES.
  - ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES & DURING SITE DEVELOPMENT UNTIL PROJECT CLOSE-OUT & FINAL ACCEPTANCE.
  - THE CONTRACTOR'S AUTHORIZED REPRESENTATIVE IS RESPONSIBLE FOR THE INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION & SEDIMENTATION. ALL ADDITIONAL EROSION CONTROL MEASURES SHALL CONFORM TO THE ARIZONA DEPARTMENT OF TRANSPORTATION EROSION & POLLUTION CONTROL MANUAL.
  - ALL EROSION CONTROL MEASURES SHOWN ON THE APPROVED PLANS MUST BE IN PLACE, INSPECTED & APPROVED BY THE DESIGNATED CITY REPRESENTATIVE PRIOR TO CLEARING & GRUBBING, STRIPPING OF TOPSOIL, OR GRADING.
  - THE CONTRACTOR/OPERATOR SHALL INSPECT & DOCUMENT ALL EROSION & SEDIMENT CONTROL MEASURES WEEKLY & AFTER EACH SIGNIFICANT RAINFALL (GREATER THAN OR EQUAL TO HALF AN INCH OR MORE). THE FOLLOWING ITEMS WILL BE INSPECTED IN PARTICULAR:  
A. SEDIMENT WATTLES & OTHER TEMPORARY SEDIMENT BARRIERS WILL BE INSPECTED REGULARLY FOR UNDERMINING OR DETERIORATION. ALL ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT DEPOSITION REACHES HALF WAY TO THE TOP OF THE BARRIER.
  - (CONTINUED)  
B. SEEDED AREAS WILL BE INSPECTED REGULARLY TO ENSURE THAT A GOOD STAND IS MAINTAINED. AREAS SHALL BE FERTILIZED & RESEED AS NEEDED.  
C. STREAM DIVERSION & STORM CONVEYANCE CHANNELS SHALL BE INSPECTED WEEKLY & AFTER EACH RAINFALL TO ENSURE THEY ARE FUNCTIONING PROPERLY & THAT THE INTEGRITY OF THE LININGS ARE NOT IMPAIRED. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF EROSION CONTROL DEVICES MUST BE MADE IMMEDIATELY AFTER THE INSPECTION.
  - THE CONTRACTOR/OPERATOR IS RESPONSIBLE FOR MAINTAINING & UPDATING THE 'SWPPP COMPLIANCE INSPECTION REPORT & CHECKLIST' THROUGHOUT THE LIFE OF THE PROJECT. A COPY OF THE REPORT SHALL BE MAINTAINED ON SITE & MADE AVAILABLE FOR REVIEW. NOTE: IT IS THE CONTRACTOR'S/OPERATOR'S RESPONSIBILITY TO BE AWARE OF ALL ITEMS WITHIN THE 'SWPPP COMPLIANCE INSPECTION REPORT & CHECKLIST' & DOCUMENT ALL INSPECTIONS & FINDINGS IN THIS REPORT.
  - ALL TEMPORARY SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER ADEQUATE SITE STABILIZATION HAS BEEN ACHIEVED & NO LONGER NEEDED. CONTRACTOR SHALL REMOVE & DISPOSE OF SEDIMENT LOGS, STAKES & TRAPPED SEDIMENT MATERIAL & FILL SHALLOW TRENCH CREATED BY SEDIMENT LOGS.
  - THE SWPPP SHALL BE MODIFIED BY THE CONTRACTOR WITHIN 7 CALENDAR DAYS FOLLOWING AN INSPECTION THAT DISCOVERS AN INADEQUATE BMP. BMP'S SHALL BE MODIFIED OR ADDED AS SOON AS PRACTICABLE, BUT NO LONGER THAN THE NEXT STORM EVENT.
  - APPROVAL OF PLANS DOES NOT RELIEVE THE OPERATOR FROM CORRECTING ERRORS OR OMISSIONS DISCOVERED DURING CONSTRUCTION. CONFORMANCE WITH THE REQUIREMENTS OF THIS PLAN SHALL IN NO WAY RELIEVE THE OPERATOR FROM HIS RESPONSIBILITIES TO THE SITE & ADJACENT PROPERTIES.
  - THE CONTRACTOR SHALL REPAIR ANY DAMAGED EROSION CONTROL MEASURE IMMEDIATELY AFTER THE DAMAGE HAS OCCURRED.
  - LOCATIONS OF SEDIMENT WATTLES DEPICTED HEREIN ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD LOCATING EROSION PROTECTION MEASURES AS SHOWN & PROVIDING ADDITIONAL MEASURES AS DEEMED NECESSARY IN THE FIELD.
- PLACE SEDIMENT WATTLE (3 EA.) 20' LENGTH APPROXIMATELY 30 FEET APART ACROSS DRAINAGE AND DOWNSTREAM OF LIMITS OF DISTURBANCE.
- SCALE: 1" = 20'

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DATE: 05/06/2023  
DRAWING NUMBER: DETAIL 7  
SHEET NUMBER: 14 OF 14

PRELIMINARY  
PRE-FINAL  
SUBMITTAL

SCHULTZ CREEK/MT. ELDEN LOOKOUT ROAD CROSSING  
TRIPLE BOX CULVERT  
COCONINO COUNTY, AZ - PUBLIC WORKS

SEDEMENT & EROSION CONTROL PLAN

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