EL PASO COUNTY

FINAL DESIGN OF THE PROPOSED CIVIL ENGINEERING DESIGN BEACON LITE ROAD IMPROVEMENTS MONUMENT, COLORADO APRIL 11, 2025

AD SET

R-1

TABULATION OF LENGTH

STATION	FEET ROADWAY	FEET MAJOR STRUCTURE
HCL BEACON LITE ROAD STA. 8+64.00 TO 51+50.00	4,290.54	
HCL WAKONDA WAY STA. 103+10.00 TO 106+22.44	312.44	
HCL BRICKER ROAD STA. 10+00.00 TO 10+89.30	89.30	
TOTAL	4,692.28	0.00
SUMMARY OF PROJECT LENGTH	FEET	MILES
ROADWAY LENGTH (NET LENGTH)	4,692.28	.889
MAJOR STRUCTURE LENGTH (NET LENGTH)	0.00	0.000
TOTAL LENGTH (NET LENGTH)	4,692.28	.889

R-1

ENGINEER'S STATEMENT

THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR DETAILED ROADWAY, DRAINAGE, GRADING AND EROSION CONTROL PLANS AND SPECIFICATIONS, AND SAID PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH APPLICABLE MASTER DRAINAGE PLANS AND MASTER TRANSPORTATION PLANS. SAID PLANS AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR ROADWAY AND DRAINAGE FACILITIES ARE DESIGNED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARATION OF THESE DETAILED PLANS AND SPECIFICATIONS.

ENGINEER OF RECORD SIGNATURE DATE

OWNER'S STATEMENT:

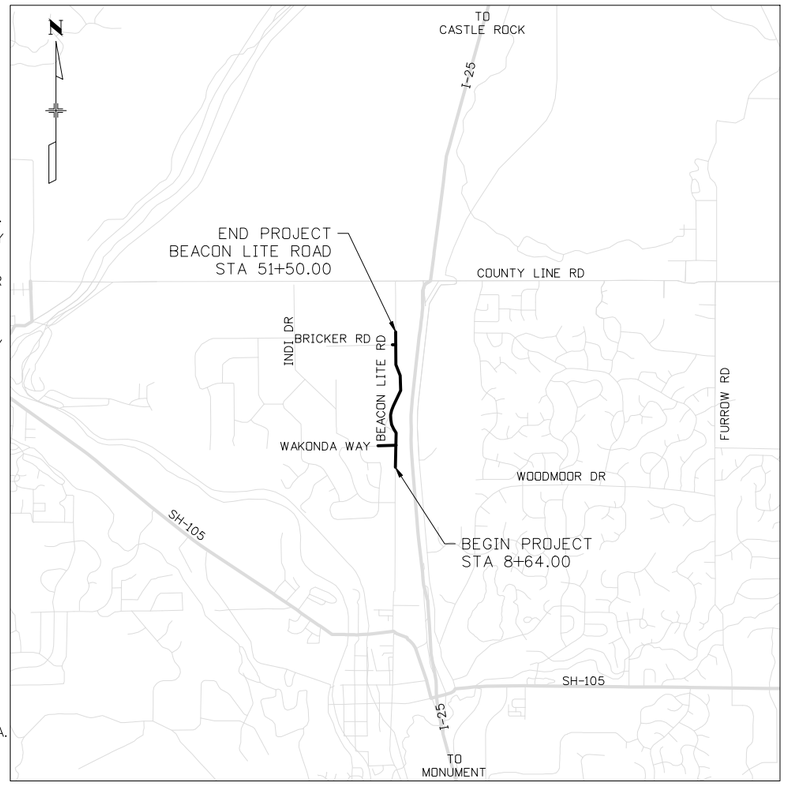
I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN AND ALL OF THE REQUIREMENTS SPECIFIED IN THESE DETAILED PLANS AND SPECIFICATIONS.

OWNER SIGNATURE DATE

EL PASO COUNTY:

COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/ OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/ OR ACCURACY OF THIS DOCUMENT. FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUAL VOLUMES 1 AND 2, AND ENGINEERING CRITERIA MANUAL, AS AMENDED. IN ACCORDANCE WITH ECM SECTION 1.12, THESE CONSTRUCTION DOCUMENTS WILL BE VALID FOR CONSTRUCTION FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTRUCTION HAS NOT STARTED WITHIN THOSE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTOR'S DISCRETION.

JOSHUA PALMER, P.E.
COUNTY ENGINEER SIGNATURE DATE



PROJECT LOCATION MAP

0' 2,500' 5,000' 10,000'

Title Sheet 1 Inch = 5,000' Feet
Projected Lineal Units = U.S. Survey Feet

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UTILITY CONTACTS

COMPANY	TYPE	CONTACT	PHONE	EMAIL
BLACK HILLS ENERGY	GAS	BOB SWATEK	(719) 332-5856	BOB.SWATEK@BLACKHILLSCORP.COM
COMCAST	FIBER	TOD BELL	(719) 313-1567	TOD_BELL@COMCAST.COM
CENTURY LINK	FIBER	LARRY GURULE	(719) 369-6259	LARRY.GURULE@LUMEN.COM
CORE ELECTRIC COOPERATIVE	ELECTRIC	SHANNON KASPER	(720) 733-5484	SKASPER@CORE.COOP
MOUNTAIN VIEW ELECTRIC	ELECTRIC	LES ULFERS	(719) 494-2682	LES.U@MVEA.COOP
TOWN OF MONUNMENT WATER	WATER	TOM THARNISH	(719) 884-8039	TTHARNISH@TOMGOV.ORG
MONUMENT SANITATION DIST.	SEWER	MARK PARKER	(719) 481-4886	PARKER@MSAN.CO
ZAYO	FIBER	JAMES BLACK	(719) 216-8508	JAMESR.BLACK@ZAYO.COM

Print Date: 04/11/2025
File Name: 175644_TITLE.dwg
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R-1

Sheet Revisions

Date:	Comments	Init.
06/01/23	RFC	EMK
03/07/25	PROJ. LIMITS CHANGE	PDM

EL PASO COUNTY COLORADO

PIKES PEAK RURAL TRANSPORTATION AUTHORITY PPRTA

BEACON LITE ROAD IMPROVEMENTS
TITLE SHEET

Project No./Code
128558

Designer: KRS
Detailer: RBR
Sheet Subset: TITLE
Structure Numbers
Subset Sheets: 1 OF 1

Sheet Number 1

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COLORADO
DEPARTMENT OF TRANSPORTATION

M&S STANDARDS PLANS LIST

July 31, 2019

REVISED ON DECEMBER 20, 2024

ALL OF THE M&S STANDARD PLANS, AS SUPPLEMENTED AND REVISED, APPLY TO THIS PROJECT WHEN USED BY DESIGNATED PAY ITEM OR SUBSIDIARY ITEM.

THE M&S STANDARD PLANS USED TO DESIGN THIS PROJECT ARE INDICATED BY A MARKED BOX ■, AND WILL BE ATTACHED TO THE PLANS. ALL THE OTHER M&S STANDARD PLANS ARE STILL ELIGIBLE FOR CONSTRUCTION IF APPROVED BY AN APPROPRIATE CDOT ENGINEER.

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Unit Information Unit Leader Initials

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Sheet Revisions

Date:	Comments	Init.
06/01/23	RFC	EMK

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
STANDARD PLANS LIST

Project No./Code
128558

Designer: KRS
Detailer: RBR
Sheet Subset: STND PLN
Structure Numbers
Subset Sheets: 1 OF 1

Sheet Number 2

GENERAL NOTES:

1. PROJECT BENCHMARK: ALL ELEVATIONS SHOWN ON THESE PLANS ARE REFERENCED TO THE PROJECT BENCHMARKS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFEGUARDING THE PROJECT BENCHMARKS AND OTHER SURVEY MONUMENTS. DAMAGED MONUMENTS SHALL BE REESTABLISHED AND REPLACED BY THE LICENSED LAND SURVEYOR AT THE EXPENSE OF THE PARTY RESPONSIBLE FOR THE DAMAGE.

2. GEOTECHNICAL INFORMATION FOR THIS PROJECT IS BASED UPON TWO GEOTECHNICAL INVESTIGATION REPORTS BY SHANNON AND WILSON, INC. DATED SEPTEMBER 2020 FOR THE COUNTY LINE AREA AND APRIL 2022 FOR THE BEACON LITE AREA. THE CONTRACTOR SHALL PERFORM WORK IN ACCORDANCE WITH THE GEOTECHNICAL RECOMMENDATIONS.

3. SULFATE EXPOSURE CLASS IS CLASS 0 FOR SULFATE RESISTANCE (CDOT, 2019b). SEE GEOTECHNICAL REPORT FOR MORE INFORMATION.

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4. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE COLORADO DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION DATED 2023; AND AS SUBSEQUENTLY REVISED; THE CDOT STANDARD PLANS M&S STANDARDS DATED JULY 31, 2019 AND REVISED; OR AS OTHERWISE NOTED IN THE PROJECT PLANS AND SPECIAL PROVISIONS.

5. THE CONTRACTOR SHALL HAVE: ONE (1) SIGNED COPY OF THE PLANS ACCEPTED BY THE EL PASO COUNTY ENGINEER, ONE (1) COPY OF THE CONSTRUCTION SPECIFICATIONS FOR THE PROJECT, ONE (1) COPY OF THE COLORADO DEPARTMENT OF TRANSPORTATION STANDARD PLANS (M&S STANDARDS), AND ONE (1) COPY OF THE COLORADO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AT THE JOB SITE AT ALL TIMES.

6. IN THE EVENT THE CONTRACTOR ALLOWS, AUTHORIZES, APPROVES OR CONSTRUCTS ITEMS THAT DIFFER FROM THE APPROVED PLANS, SPECIFICATIONS OR OTHER CONTRACT DOCUMENTS, WITHOUT WRITTEN APPROVAL BY THE ENGINEER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY LIABILITY ARISING FROM SUCH CHANGES.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, AND ANY OTHER NEEDED ACTION TO PROTECT THE LIFE, HEALTH AND SAFETY OF THE PUBLIC AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACTOR.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE JOB SITE CONDITIONS THROUGHOUT THE DURATION OF CONSTRUCTION, INCLUDING SAFETY OF ALL PERSONS AND PROTECTION OF PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED ONLY TO WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE OWNER, THE ENGINEER AND THE GOVERNING JURISDICTION HARMLESS FOR ANY AND ALL LIABILITY, IN CONNECTION WITH THE PERFORMANCE OF WORK, EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER, THE ENGINEER OR THE GOVERNING JURISDICTION.

9. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING IN THE EVENT OF A DISCREPANCY BETWEEN CRITERIA PRIOR TO CONSTRUCTION.

10. UNLESS OTHERWISE DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL CONTAIN ALL WORK WITHIN THE RIGHT OF WAY AND TEMPORARY OR PERMANENT EASEMENTS AS SHOWN ON THE PLANS AND CROSS SECTIONS (ROW SHOWN ON PLANS IS APPROXIMATE AND SHOULD BE VERIFIED IN THE FIELD). ANY DISTURBANCE BEYOND THESE LIMITS SHALL BE RESTORED TO ORIGINAL CONDITION BY THE CONTRACTOR AT THE CONTRACTOR'S OWN EXPENSE. CONSTRUCTION ACTIVITIES IN ADDITION TO NORMAL CONSTRUCTION SHALL INCLUDE THE PARKING OF VEHICLES OR EQUIPMENT, DISPOSAL OF LITTER, AND ANY OTHER ACTION WHICH WOULD ALTER EXISTING CONDITIONS.

11. UNLESS OTHERWISE INDICATED ON THE PLANS, THE DECISION TO BRACE, SHORE AND/OR SHEET PILE FOR STRUCTURE EXCAVATION SHALL BE ENTIRELY THE CONTRACTOR'S RESPONSIBILITY AND WILL BE INCLUDED IN THE COST OF LABOR. HOWEVER, IF THE ENGINEER IS OF THE OPINION THAT AT ANY POINT THE TRENCH WALLS ARE NOT PROPERLY SUPPORTED; THE ENGINEER MAY ORDER THE PLACEMENT OF ADDITIONAL SUPPORTS BY AND AT THE EXPENSE OF THE CONTRACTOR. COMPLIANCE WITH SUCH ORDER SHALL NOT RELIEVE OR RELEASE THE CONTRACTOR FROM RESPONSIBILITIES FOR THE SAFETY OF THE WORK. ALL WORK SHALL BE IN ACCORDANCE WITH ALL STATE AND FEDERAL OSHA REGULATIONS. THE CONTRACTOR SHALL TAKE NOTE

GENERAL NOTES CONT'D:

THAT EXISTING UTILITIES NEAR THE PROPOSED EXCAVATION SHALL BE PROTECTED DURING CONSTRUCTION. TEMPORARY SHORING IS RECOMMENDED TO LIMIT TRENCH WIDTH AND POTENTIAL DAMAGE TO EXISTING UTILITIES.

12. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT (1-800-922-1987) OR 811 FOR LOCATION OF UNDERGROUND UTILITIES AT LEAST 48 HOURS PRIOR TO EXCAVATION. THE CONTRACTOR SHALL NOTIFY OTHER APPLICABLE UTILITY COMPANIES AS WELL TO OBTAIN FIELD LOCATES OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

13. LOCATIONS OF UNDERGROUND UTILITIES AS SHOWN ON THE PLANS WERE TAKEN FROM THE SUE INVESTIGATION PERFORMED BY FARNSWORTH GROUP DATE 02/25/2022. SUE PERFORMED AT LEVEL (A-D), SEE SUE PLANS FOR LEVEL AT SPECIFIC LOCATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXISTENCE AND/OR LOCATION OF ALL UNDERGROUND UTILITIES AND PARTICIPATE IN THE RESOLUTION OF ANY CONFLICTS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

14. EXISTING UTILITY FACILITIES TO BE RELOCATED OR ADJUSTED AT UTILITY OWNERS EXPENSE. CONTACT UTILITY OWNER PRIOR CONSTRUCTION TO CONFIRM RELOCATION STATUS. ALL EXISTING UTILITY FACILITIES SHOWN TO REMAIN IN PLACE WITHIN THE CONSTRUCTION LIMITS SHALL BE PROTECTED BY THE CONTRACTOR.

15. THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES BY USING EVERY REASONABLE MEANS, INCLUDING FIELD LOCATION OF THE UTILITY. REPAIR OF DAMAGE TO THE EXISTING UTILITIES DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL DOCUMENT THE CONDITION OF EXISTING UTILITIES (VISIBLE FACILITIES) WITH THE ENGINEER AND UTILITY REPRESENTATIVES PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.

16. ACTIVE WATER LINES MUST REMAIN IN SERVICE DURING CONSTRUCTION. COORDINATION WITH TOWN ON MONUMENT REQUIRED FOR SERVICE DISRUPTIONS.

17. THE CONTRACTOR MUST KEEP ALL EQUIPMENT OPERATIONS A MINIMUM OF 10 FEET FROM EXISTING OVERHEAD ELECTRIC LINES. IF THIS IS NOT FEASIBLE, OR CONDITIONS WARRANT ADDITIONAL PROTECTION OR POLE STABILIZATION, THE CONTRACTOR MUST CONTACT THE UTILITY OWNER TO ARRANGE PROTECTIVE COVERING AND POLE STABILIZATION. A MINIMUM OF 48 HOURS NOTICE IS REQUIRED.

18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING NEARBY PUBLIC OR PRIVATE STREETS OF MUD AND DEBRIS, DUE TO CONSTRUCTION ACTIVITIES, ON A DAILY BASIS OR AS DIRECTED BY THE ENGINEER. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF OTHER WORK.

19. THE CONTRACTOR SHALL TAKE PRECAUTIONARY MEASURES TO PROTECT THE EXISTING VEGETATION INSIDE AND OUTSIDE THE PROJECT LIMITS. THE CONTRACTOR SHALL FENCE ALL VEGETATION TO BE UNDISTURBED PRIOR TO COMMENCING WORK. ANY COST INCURRED FOR DAMAGE OF SUCH MATERIAL DUE TO CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

20. ALL FENCE RESETS WITHIN THE ROW ARE TO BE MOVED TO ROW LINE. FENCE RESETS OUTSIDE OF THE ROW LINE TO BE MOVED TO LOCATIONS PER COUNTY ENGINEER. CONTRACTOR TO COORDINATE WITH COUNTY ENGINEER FOR LOCATIONS.

21. THE CONTRACTOR SHALL CLEAN THE SANITARY FACILITY A MINIMUM OF TWICE PER WEEK. THE COST CLEANING WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST.

PAVEMENT CONSTRUCTION NOTES:

1. HOT MIX ASPHALT SHALL BE TOP LIFT (GRADE SX)(75)(PG 64-28), AND ALL LIFTS BELOW (GRADE SX)(75)(PG 64-28).

2. THE "PIKES PEAK REGION ASPHALT PAVING SPECIFICATIONS", VERSION 6, DATED MARCH 28, 2022 SHALL APPLY TO ASPHALT PAVING MATERIALS AND CONSTRUCTION PROCEDURES EXCEPT WHERE NOTED ON THE PROJECT PLANS AND/OR PROJECT SPECIAL PROVISIONS.

3. FOR PLAN QUANTITIES OF PAVEMENT MATERIALS, THE FOLLOWING RATES OF APPLICATION WERE USED:
   HOT MIX ASPHALT.....@ 115 LBS./SQ.YD./INCH
   AGGREGATE BASE COURSE CLASS 6.....@ 133 LBS./CU.FT.

PAVEMENT CONSTRUCTION NOTES CONT'D:

4. ASPHALT JOINTS SHALL FALL ON LANE LINES, SHOULDER LINES OR MEDIAN LINES OR AS APPROVED BY COUNTY ENGINEER

5. PRIOR TO PLACING HOT MIX ASPHALT, THE PAVED SURFACE SHALL BE SWEPT AND CLEANED. THIS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE HOT MIX ASPHALT PAVEMENT ITEMS.

6. A TACK COAT OF EMULSIFIED ASPHALT (SLOW SETTING) IS TO BE APPLIED BETWEEN PAVEMENT COURSES TO IMPROVE THE BOND. DILUTED EMULSIFIED ASPHALT FOR TACK COAT SHALL CONSIST OF 1 PART EMULSIFIED ASPHALT AND 1 PART WATER. RATES OF APPLICATION SHALL BE AT 0.05 GALLONS PER SQUARE YARD. THE COST OF EMULSIFIED ASPHALT SHALL BE INCLUDED IN THE COST OF ITEMS 403 HOT MIX ASPHALT.

7. SAWCUTTING ASPHALT OR CONCRETE NECESSARY FOR THE WORK WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK FOR REMOVAL.

8. THE FOLLOWING SHALL BE FURNISHED WITH EACH HOT MIX LAYER. THE EQUIPMENT SHALL BE USED ON ALL PASSES AND LIFTS OF HOT MIX PAVEMENT PLACED.
   A. A SKI TYPE DEVICE AT LEAST 30 FEET IN LENGTH
   B. SHORT SKI OR SHORT SHOE
   C. AT LEAST 1500 FEET OF CONTROL LINE AND STAKES

9. WHERE NEW PAVEMENT IS TO ABUT TO EXISTING PAVEMENT, THE EXISTING PAVEMENT SHALL BE REMOVED TO A NEAT VERTICAL LINE BY FULL DEPTH SAWING. SAWING WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE I NCLUDED IN THE COST OF THE PROJECT. THE CONTRACTOR WILL BE REQUIRED TO PAINT THE EDGE OF THE CUT PAVEMENT WITH DILUTED EMULSIFIED ASPHALT (SLOW SETTING) PRIOR TO PAVING OPERATIONS. VERTICAL EDGES SHALL NOT REMAIN OVERNIGHT. RATES OF APPLICATION OF DILUTED EMULSIFIED ASPHALT SHALL BE AS DETERMINED BY THE ENGINEER AT THE TIME OF APPLICATION.

10. A TACK COAT OF EMLSIFIED ASPHALT (SLOW SETTING) IS TO BE APPLIED BETWEEN PAVEMENT COURSES TO IMPROVE THE BOND. DILUTED EMULSIFIED ASPHALT FOR TACK COAT SHALL CONSIST OF ONE PART EMULSIFIED ASPHALT TO ONE PART WATER. THE DILUTION RATIO MAY CHANGE TO 3:2 F OR "WINTER"PAVING. VERIFY WITH THE ENGINEER PRIOR TO PAVING. THE TACK COAT OF EMULSIFIED ASPHALT RATE OF APPLICATION SHALL BE 0.10 GAL/SQ. YD. TACK COAT WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN ITEM 403 HOT MIX ASPHALT.

11. BEFORE PLACEMENT OF THE TACK COAT, THE CONTRACTOR SHALL CLEAN THE EXISTING PAVEMENT SURFACE BY MEANS OF A POWER BROOM VACUUM SYSTEM OR OTHER APPROVED METHOD. CLEANING WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE PROJECT.

12. ANY LAYER OF HOT MIX PAVEMENT THAT IS TO HAVE A SUCCEEDING LAYER PLACED THEREON SHALL BE COMPLETED FULL WIDTH BEFORE THE SUCCEEDING LAYER IS PLACED.

EARTHWORK/GRADING NOTES:

1. DEPTH OF MOISTURE-DENSITY CONTROL FOR THIS PROJECT SHALL BE AS FOLLOWS:
   BASES OF CUTS AND FILLS - 1 FOOT
   FULL DEPTH OF ALL EMBANKMENTS ON THIS PROJECT.

2. EXCAVATION REQUIRED FOR COMPACTION OF BASES OF CUTS AND FILLS WILL BE CONSIDERED AS SUBSIDIARY TO THAT OPERATION AND WILL NOT BE PAID FOR SEPARATELY.

3. GRADING WILL BE INSPECTED BY AN OWNER'S REPRESENTATIVE DURING ALL EXCAVATIONS TO EVALUATE CHANGING CONDITIONS.

4. TYPES OF COMPACTION FOR THIS PROJECT WILL BE AS FOLLOWS:

   ITEM 203-AASHTO T-99
   ITEM 206 & 304 AASHTO T-180

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3/7/25
PROFESSIONAL ENGINEER

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EL PASO COUNTY
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PPRTA PIKES PEAK RURAL TRANSPORTATION AUTHORITY

BEACON LITE ROAD IMPROVEMENTS
GENERAL NOTES

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EARTHWORK/GRADING NOTES CONT'D:

5. TYPE OF COMPACTION FOR THIS PROJECT WILL BE AASHTO T-180. WATER FOR COMPACTION WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.

6. IT IS ESTIMATED THAT APPROXIMATELY 1000 CUBIC YARDS OF MUCK EXCAVATION MAY BE NEEDED FOR THIS PROJECT. IF NEED IS DETERMINED, IT SHALL BE APPROVED BY THE ENGINEER PRIOR TO EXCAVATION.

DRAINAGE NOTES:

1. ALL PIPE LENGTHS ARE GIVEN AND PAID FOR IN THE HORIZONTAL DIMENSION, AND HAVE BEEN ROUNDED TO THE NEAREST FOOT. THE CONTRACTOR SHALL SUPPLY THE ADDITIONAL LENGTH OF PIPE TO ACCOUNT FOR SLOPES AND INCLUDED IN THE COST OF THE WORK. THE PIPE LENGTHS PROVIDED DO NOT INCLUDE THE LENGTH OF FLARED END SECTIONS.

2. ALL DOWNSTREAM CONCRETE FLARED END SECTIONS MUST BE INSTALLED WITH JOINT FASTENERS. IN ADDITION, JOINT FASTENERS SHALL BE INSTALLED ON ALL PIPE JOINTS WITHIN 15-FEET OF THE DOWNSTREAM END OF ALL CULVERTS. CONCRETE FASTENERS TO BE INCLUDED IN THE PRICE OF THE WORK.

3. ALL PIPE MATERIAL SHALL BE REINFORCED CONCRETE PIPE (RCP) CLASS III UNLESS OTHERWISE SPECIFIED. STRENGTH CLASS OF ALL RCP SHALL BE IN ACCORDANCE WITH CDOT M-603-2 AND SECTION 706.02 OF THE STANDARD SPECIFICATION.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEWATERING AND DIVERSION INCLUDING, BUT NOT LIMITED TO, LIVE STREAM FLOW AND GROUNDWATER. THE CONTRACTOR SHALL OBTAIN THE APPLICABLE DEWATERING PERMIT FOR CONSTRUCTION AT THE SITE. THIS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK. THE CONTRACTOR SHALL COMPLY WITH ALL PERMIT REQUIREMENTS.

5. THE CONTRACTOR IS REQUIRED TO KEEP EXISTING CULVERTS FUNCTIONAL AND MAINTAIN PROPER STORMWATER CONVEYANCE UNTIL THE PROPOSED DRAINAGE FACILITIES ARE CONSTRUCTED AND FUNCTIONING PROPERLY. EXISTING CULVERT LOCATIONS FOR REMOVAL AND/OR ABANDONMENT ARE CALLED OUT ON THE PLANS. EXISTING DRAINAGE FACILITIES TO REMAIN SHALL BE PROTECTED IN PLACE, UNLESS OTHERWISE NOTED.

6. THE CONTRACTOR SHALL PROVIDE SIGNED AND SEALED SHOP DRAWINGS FOR ALL NON CDOT/EL PASO COUNTY STANDARD DRAINAGE STRUCTURES FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO CONSTRUCTION OF THE STRUCTURE.

7. OTHER UTILITIES MAY BE CROSSED OR OTHERWISE IMPACT DRAINAGE CONSTRUCTION. CONTRACTOR SHALL PROTECT EXISTING UTILITIES IN PLACE. UNLESS NOTED OTHERWISE, PROTECTION OF EXISTING UTILITIES, INCLUDING INCIDENTAL SHORING, WILL NOT BE MEASURED OR PAID SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE WORK.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING PIPE SIZES, LENGTHS AND LOCATIONS PRIOR TO ORDERING AND DELIVERY OF THE PIPE MATERIAL TO THE SITE.

9. RUBBER GASKETS SHALL BE USED FOR ALL RCP JOINTS IN ACCORDANCE WITH ASTM C443. THE COST OF ALL THE JOINT GASKETS, CRADLE, COLLARS AND PIPE CONNECTIONS FOR THE STORM SEWER CONSTRUCTION SHALL BE INCLUDED IN THE COST OF THE PIPE.

10. TRACER WIRE TO BE INCLUDED IN THE PIPE INSTALLATION COST. SEE DRAINAGE DETAILS FOR TRACER WIRE DETAILS.

11. EMBANKMENT PROTECTOR (TYPE 5) CONSTRUCTION INCLUDES ALL REQUIRED MATERIALS, LABOR, AND EQUIPMENT AS WELL AS CONCRETE SLOPE PAVING AND CURB, TYPE 4 (SECTION M) AS SHOWN ON CDOT STANDARD PLAN NO. M-615-2.

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THIS STAMP APPLIES TO DRAINAGE NOTES

ENVIRONMENTAL NOTES:

1. THE CONTRACTOR SHALL COMPLY WITH THE MIGRATORY BIRD TREATY ACT (MBTA) AND THE BALD AND GOLDEN EAGLE PROTECTION ACT (BGEPA), AT ALL TIMES, INCLUDING CONDUCTING PRE-CONSTRUCTION SURVEYS FOR NESTING BIRDS SET FORTH BY U.S. FISH AND WILDLIFE SERVICE (USFWS). THE CONTRACTOR SHALL SCHEDULE WORK TO AVOID TAKING (PURSUE, HUNT, TAKE, CAPTURE OR KILL; ATTEMPT TO TAKE, CAPTURE, KILL OR POSSESS) MIGRATORY BIRDS PROTECTED BY THE MBTA AND BGEPA. THE INCIDENTAL TAKING OF A MIGRATORY BIRD SHALL BE REPORTED TO USFWS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PENALTIES LEVIED BY THE USFWS FOR THE TAKING OF A MIGRATORY BIRD. THE CONTRACTOR SHALL RETAIN A QUALIFIED WILDLIFE BIOLOGIST, WITH A MINIMUM OF THREE YEARS' EXPERIENCE CONDUCTING MIGRATORY BIRD SURVEYS, TO IMPLEMENT THE REQUIREMENTS OF THE MBTA AND BGEPA. THE CONTRACTOR SHALL SUBMIT DOCUMENTATION OF THE BIOLOGIST'S EDUCATION AND EXPERIENCE TO THE ENGINEER FOR ACCEPTANCE PRIOR TO COMMENCEMENT OF ANY ASSOCIATED WORK. A BIOLOGIST WITH LESS EXPERIENCE MAY BE USED BY THE CONTRACTOR SUBJECT TO THE ACCEPTANCE OF THE ENGINEER BASED ON REVIEW OF THE BIOLOGIST'S QUALIFICATIONS. DOCUMENTATION OF THE NEST SURVEYS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.

2. THE WILDLIFE BIOLOGIST RETAINED BY THE CONTRACTOR SHALL COMPLETE RAPTOR NEST SURVEYS TO EVALUATE THE PRESENCE OF ACTIVE RAPTOR NESTS WITHIN THE STUDY AREA. IF AN ACTIVE NEST IS LOCATED IN OR NEAR THE STUDY AREA, THE USFWS AND CPW SHALL BE CONTACTED REGARDING USE OF SEASONAL BUFFERS TO PREVENT DISTURBANCE TO NESTING BIRDS DURING CONSTRUCTION.

3. TREE TRIMMING AND/OR REMOVAL ACTIVITIES SHALL BE COMPLETED BEFORE BIRDS BEGIN TO NEST OR AFTER THE YOUNG HAVE FLEDGED. IN COLORADO, MOST NESTING AND REARING ACTIVITIES OCCUR BETWEEN APRIL 1 AND AUGUST 31, HOWEVER, SINCE SOME BIRDS NEST AS EARLY AS FEBRUARY 15, A NESTING BIRD SURVEY SHALL BE CONDUCTED BY A QUALIFIED BIOLOGIST BEFORE ANY TREE TRIMMING OR REMOVAL ACTIVITIES BEGIN. THE CONTRACTOR SHALL FOLLOW THE PROVISIONS OF THE MIGRATORY BIRD TREATY ACT (MBTA) THROUGHOUT THE DURATION OF CONSTRUCTION

4. IF CONSTRUCTION-RELATED ACTIVITIES OCCUR BETWEEN FEBRUARY 15 AND AUGUST 31 THEN A PRE-CONSTRUCTION SURVEY FOR NESTING BIRDS MUST BE COMPLETED BY A QUALIFIED BIOLOGIST. NO CONSTRUCTION ACTIVITIES WILL OCCUR WITHIN 50 FEET OF AN ACTIVE NEST UNTIL THE NEST BECOMES INACTIVE OR THE YOUNG HAVE FLEDGED.

5. A PRE-CONSTRUCTION SURVEY FOR NESTING RAPTORS MUST BE COMPLETED WITHIN A HALF-MILE BUFFER OF THE PROJECT LIMITS. IF ANY NESTING RAPTORS OCCUR WITHIN THE BUFFER AREA, THEN COLORADO PARKS AND WILDLIFE (CPW) "RECOMMENDED BUFFER ZONES AND SEASONAL RESTRICTIONS FOR COLORADO RAPTORS GUIDELINES SHOULD BE FOLLOWED. CPW MAY REDUCE THE BUFFER REQUIREMENTS BASED ON CONDITIONS OF THE STUDY AREA AND TYPE OF WORK BEING DONE, BUT MUST BE CONSULTED FOR APPROVAL PRIOR TO CONSTRUCTION WITHIN THE RECOMMENDED BUFFER ZONE OF AN ACTIVE NEST.

6. CLEARING AND GRUBBING OF VEGETATION THAT MAY DISTURB GROUND NESTING BIRDS SHALL BE COMPLETED BEFORE BIRDS BEGIN TO NEST OR AFTER THE YOUNG HAVE FLEDGED. IF WORK ACTIVITIES ARE PLANNED BETWEEN APRIL 1 AND AUGUST 31, VEGETATION SHALL BE REMOVED AND/OR TRIMMED TO A HEIGHT OF SIX (6) INCHES OR LESS PRIOR TO APRIL 1. ONCE VEGETATION HAS BEEN REMOVED AND/OR TRIMMED, APPROPRIATE MEASURES, I.E., REPEATED MOWING/TRIMMING, SHALL BE IMPLEMENTED TO ASSURE VEGETATION DOES NOT GROW TO MORE THAN SIX (6) INCHES. FAILURE TO MAINTAIN VEGETATION HEIGHT OF SIX (6) INCHES OR LESS MAY POSTPONE PROJECT CONSTRUCTION.

7. THE FOLLOWING WEED MANAGEMENT STRATEGIES WILL BE IMPLEMENTED:

   A. VEHICLES SHALL BE INSPECTED BEFORE THEY ARE USED FOR CONSTRUCTION TO ENSURE THAT THEY ARE FREE OF SOIL AND DEBRIS CAPABLE OF TRANSPORTING NOXIOUS WEED SEEDS OR ROOTS. HEAVY CONSTRUCTION EQUIPMENT SHALL BE CLEANED AND POWER WASHED PRIOR TO USE ON THE PROJECT SITE AND BEFORE LEAVING THE SITE.

ENVIRONMENTAL NOTES CONT'D:

   B. MATERIAL FOR EROSION BALES, MULCHING, OR COMPOST SHALL CONSIST OF CERTIFIED WEED-FREE MATERIAL. COLORADO CERTIFIED WEED-FREE STRAW IS IDENTIFIED BY BLUE AND ORANGE TWINE BINDING THE BALES (CDOT STANDARD SPECIFICATIONS, PAGE 190). MATERIALS FOR MULCHING SHALL CONSIST OF CERTIFIED WEED-FREE STRAW OF OATS, BARLEY, WHEAT OR TRITICALE CERTIFIED UNDER THE CDA WEED-FREE FORAGE CERTIFICATION PROGRAM (CDOT STANDARD SPECIFICATIONS, PAGE 231). IN ADDITION, CERTIFIED WEED-FREE STRAW SHALL BE FREE OF CHEATGRASS.

   C. FERTILIZER WILL NOT BE USED IN SEEDED AREAS BECAUSE IT CAN ENHANCE THE GROWTH OF NOXIOUS WEEDS AT THE EXPENSE OF DESIRED VEGETATION.

8. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT, OR VEHICLES ARE STAGED OR PARKED WITHIN 25' (HORIZONTAL) FROM DRAINAGE AREAS, UNLESS SPECIFICALLY ALLOWED AS NOTED IN THE PLANS.

9. THE CONTRACTOR SHALL ENSURE THAT NO STAGING OF EQUIPMENT, VEHICLES, OR MATERIALS WILL BE ALLOWED WITHIN ANY BLACK-TAILED PRAIRIE DOG (BTPD) COLONY AT ANY TIME.

10. THE CONTRACTOR SHALL NOT PARK ANY VEHICLES OR EQUIPMENT IN, OR DISTURB ANY AREAS NOT APPROVED BY THE ENGINEER; THE CONTRACTOR SHALL ADHERE TO THE CONSTRUCTION LIMITS AS NOTED IN THE PLANS AND DEMARCATE THE WORK AREA TO PREVENT GROUND DISTURBANCE OUTSIDE THOSE PRESCRIBED AREAS.

11. THE CONTRACTOR SHALL REMOVE IN A TIMELY MANNER ALL SEDIMENT, MUD, DEBRIS, OR OTHER POTENTIAL POLLUTANTS WHICH MAY BE DISCHARGED TO, OR ACCUMULATE IN, THE FLOW LINES AND PUBLIC RIGHT-OF-WAYS AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PROJECT.

12. BIODEGRADABLE HYDRAULIC FLUID SHALL BE USED WHEN WORKING IN OR ADJACENT TO SURFACE WATER AS SPECIFIED BY THE EL PASO COUNTY STORMWATER DRAINAGE CRITERIA.

13. ORANGE PLASTIC FENCING WILL BE USED TO DEFINE NO-WORK AREAS.

14. WORKERS ON THIS PROJECT MUST FOLLOW CDOT SPECIFICATION 250 - ENVIRONMENTAL, HEALTH AND SAFETY MANAGEMENT.

   A. ALTHOUGH ENCOUNTERING IMPACTED SOIL OR GROUNDWATER IS NOT EXPECTED, WORKERS SHALL BE ALERT DURING EXCAVATION FOR ANY VISUAL OR OLFACTORY SIGNS OF IMPACTS. IF IMPACTED SOIL AND/OR GROUNDWATER IS ENCOUNTERED, WORK WILL STOP IMMEDIATELY AND THE PROCEDURES OUTLINED IN THE CDOT SPECIFICATION 250 AND SUBSECTION 107.25.8 SHALL BE FOLLOWED.

   B. IN THE UNLIKELY EVENT THAT SUSPECTED ACM IS ENCOUNTERED, INCLUDING WITH BURIED UTILITIES, WORKERS MUST FOLLOW CDOT SPECIFICATION 250.07 - ASBESTOS-CONTAINING MATERIAL MANAGEMENT AND CDOT ASBESTOS- CONTAMINATED SOIL MANAGEMENT STANDARD OPERATING PROCEDURE. ADDITIONALLY, DEPENDING ON THE TYPE OF ACM, THIS MATERIAL MUST ALSO BE ABATED IN ACCORDANCE WITH EITHER SECTION 5.5 OF THE SOLID WASTE REGULATIONS, OR REGULATION NO. 8 OF THE AIR QUALITY CONTROL COMMISSION REGULATIONS. WORKERS ON THIS PROJECT MUST FOLLOW CDOT SPECIFICATION 250 - ENVIRONMENTAL, HEALTH AND SAFETY MANAGEMENT.

15. ALTHOUGH NOT ANTICIPATED, THE CONTRACTOR SHALL FENCE OFF ALL DISCOVERED PALEONTOLOGICAL SITES (ANIMAL BONES OR FOSSILS), SUBJECT TO THE ACCEPTANCE OF CDOT.

   A. IF PALEONTOLOGICAL RESOURCES ARE UNCOVERED DURING PROJECT CONSTRUCTION, THE ENGINEER AND CDOT'S PALEONTOLOGIST, NICOLE PEAVEY (NICOLE.PEAVEY@STATE.CO.US AND 303-757-9632) SHOULD BE NOTIFIED IMMEDIATELY.

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THIS STAMP APPLIES TO EARTHWORK / GRADING & ENVIRONMENTAL NOTES

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COLORADO

PIKES PEAK RURAL TRANSPORTATION AUTHORITY PPRTA

BEACON LITE ROAD IMPROVEMENTS
GENERAL NOTES

Project No./Code: 128558

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ENVIRONMENTAL NOTES CONT'D:

B. NICOLE PEAVEY, CDOT PALEONTOLOGIST REQUESTS THE FOLLOWING NOTIFICATION: 14 DAYS ADVANCE NOTICE PRIOR TO EXCAVATION IN PREVIOUSLY UNDISTURBED AREAS (I.E. FOR WIDENING EFFORTS BEYOND THE ORIGINAL ROAD SHOULDER), SO THAT SHE HAS THE OPTION OF VISITING THE SITE TO SPOT-CHECK FOR FOSSIL RESOURCES.

16. IF ANY ARCHAEOLOLGICAL RESOURCES ARE FOUND (E.G., ARTIFACTS SUCH AS, BUT NOT LIMITED TO, HISTORICAL TRASH LIKE BOTTLES, DISHWARE, HOUSEHOLD OR MINING ITEMS, ETC.; PREHISTORIC STONE TOOLS SUCH AS PROJECTILE POINTS OR OTHER FLAKED STONE ITEMS; OR FEATURES SUCH AS BUILDING FOUNDATIONS, TRAILS, WAGON ROADS, RAILROAD GRADES, STONE WALL REMAINS, MINE ADITS, OR PROSPECT PITS; OR PREHISTORIC FEATURES LIKE HEARTHS, ETC.), WORK WILL BE IMMEDIATELY HALTED IN THE VICINITY OF THE FIND, THE ENGINEER NOTIFIED, AND A CERTIFIED ARCHEOLOGIST WILL PROMPTLY NOTIFIED.

17. IF BONES OF POTENTIAL HUMAN ORIGIN ARE DISCOVERED DURING CONSTRUCTION, GROUND-DISTURBING WORK MUST BE STOPPED IN THE VICINITY OF THE DISCOVER, AND THE COUNTY CORONER, THE COUNTY SHERIFF, THE COLORADO STATE HISTORIC PRESERVATION OFFICER (SHPO), AND THE COLORADO STATE ARCHEOLOGIST WILL BE PROMPTLY NOTIFIED. WORK CANNOT RESUME IN THE VICINITY OF THE FIND UNTIL CLEARANCE IS GRANTED.

SIGNING & PAVEMENT MARKING NOTES:

1. ALL SIGNING AND STRIPING WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE COLORADO SUPPLEMENT OF THE MUTCD, CDOT STANDARDS FOR ROAD AND BRIDGE CONSTRUCTION, AND THE M & S STANDARD PLANS.

2. SIGNS NOT IDENTIFIED ON THE PLANS SHALL REMAIN IN PLACE AND BE PROTECTED DURING CONSTRUCTION.

3. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING UTILTIES PRIOR TO SIGN POST INSTALLATION. ANY DAMAGE TO UTILITIES FROM SIGN INSTALLATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

4. EXISTING SIGNS SHALL BE MAINTAINED/RELOCATED AS NECESSARY DURING CONSTRUCTION. ANY EXISTING SIGNS THAT CONFLICT WITH TEMPORARY SIGNS SHALL BE MASKED OR REMOVED.

5. THE CONTRACTOR SHALL TAKE CARE IN THE REMOVAL, STORAGE AND INSTALLATION PROCESS INVOLVED WITH THE RESETTING OF EXISTING SIGNS. SIGNS SUBJECT TO DAMAGE SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

6. SIGNS THAT ARE REMOVED SHALL BE RETURNED TO EL PASO COUNTY TRAFFIC OPERATIONS. CONTACT 719-520-6460 TO MAKE ARRAGEMENTS.

PHASING & TRAFFIC CONTROL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC DURING CONSTRUCTION. THE INTENT OF THE INCLUDED PHASING/TRAFFIC CONTROL PLANS IS TO CONVEY TO THE CONTRACTOR THE GENERAL DESIGN ELEMENTS REQUIRED TO CONSTRUCT THE PROJECT. THE PHASING AND TRAFFIC CONTROL PLANS ARE NOT BINDING AND THE CONTRACTOR MAY DEVELOP THEIR OWN PHASING AND TRAFFIC CONTROL PLANS.

2. THE CONTRACTOR SHALL SUBMIT TO EL PASO COUNTY FOR REVIEW AND APPROVAL, A CONSTRUCTION PHASING AND TRAFFIC CONTROL PLAN CONFORMING TO THE LATEST EDITIONS OF THE EL PASO COUNTY STANDARDS AND SPECIFICATIONS, CDOT'S M & S STANDARDS, CDOT'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND THE 2009 MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES A MINIMUM TWO WEEKS PRIOR TO COMMENCING WORK.

3. CONSTRUCTION WORK SHALL NOT BEGIN UNTIL ALL ADVANCE CONSTRUCTION SIGNS ARE IN PLACE AND APPROVED BY THE ENGINEER. PORTABLE VARIABLE MESSAGE SIGNS PROVIDING PUBLIC NOTIFICATION SHALL BE POSTED A MINIMUM OF FOURTEEN (14) DAYS IN ADVANCE OF THE START OF THE PROJECT.

4. PORTABLE VARIABLE MESSAGE SIGNS SHALL BE PROVIDED TO CONVEY RELEVANT MESSAGING OF TRAFFIC ALIGNMENT CHANGES WHEN THEY OCCUR.

PHASING & TRAFFIC CONTROL NOTES CONT'D:

5. ALL CONSTRUCTION SIGNS AND OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE AND APPROVED BY THE ENGINEER PRIOR TO TRAFFIC MOVEMENT SWITCHES.

6. ALL TRAFFIC CONTROL SHALL BE PER THE APPROVED TRAFFIC CONTROL PLANS DEVELOPED BY THE CONTRACTOR OR AS DIRECTED BY THE ENGINEER.

7. ALL TRAFFIC CONTROL DEVICES, CONCRETE BARRIERS, REFLECTORIZED DRUMS, SIGNS, PAVEMENT MARKINGS AND CHANNELIZATION DEVICES SHALL CONFORM TO THE LATEST EL PASO COUNTY, CDOT, & MUTCD STANDARDS.

8. CONTRACTOR SHALL MAINTAIN MINIMUM 10' LANES UNLESS OTHERWISE APPROVED BY THE ENGINEER.

9. CONTRACTOR SHALL REMOVE ALL EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH TEMPORARY PAVEMENT MARKINGS.

10. PAVEMENT MARKING PAINT SHALL BE USED FOR ALL TEMPORARY MARKINGS UNLESS OTHERWISE NOTED.

11. EXISTING SIGNS SHALL BE MAINTAINED/RELOCATED AS NECESSARY DURING CONSTRUCTION. ANY EXISTING SIGNS THAT CONFLICT WITH TEMPORARY SIGNS SHALL BE MASKED OR REMOVED. THE COST OF MAINTAINING, RELOCATION, OR MASKING EXISTING SIGNS DURING CONSTRUCTION IS INCLUDED IN THE COST OF WORK.

12. BASED ON SIGHT DISTANCE AND OTHER CONSIDERATIONS, THE FINAL LOCATIONS OF SIGNS ARE SUBJECT TO APPROVAL OF THE ENGINEER.

13. SIGNS SHALL NOT BE MOUNTED, FASTENED, OR ATTACHED TO ANY CHANNELIZING DRUMS OR CONES.

14. PORTABLE MESSAGE SIGN PANELS SHALL BE FULL MATRIX TYPE AND USED AS DIRECTED BY THE ENGINEER.

15. FLAGGER SYMBOL SIGNS SHALL BE INSTALLED AND FLAGGERS SHALL BE UTILIZED AS DEEMED NECESSARY AND AS APPROVED BY THE ENGINEER.

16. TWENTY-FOUR HOUR EMERGENCY VEHICLE ACCESS SHALL BE MAINTAINED FOR ALL STREETS AND PROPERTIES WITHIN THE PROJECT LIMITS.

17. THE CONTRACTOR SHALL MAINTAIN EXISTING TRAFFIC SIGNS AS NECESSARY TO ACCOMMODATE NEW CONSTRUCTION AND TRAFFIC MOVEMENTS AS APPROVED BY THE ENGINEER.

18. CONTRACTOR SHALL SAFELY COVER TRENCHES AND RESTORE TRAFFIC TO NORMAL CONDITIONS WHEN NOT WORKING IN THE AREA.

19. THE CONTRACTOR SHALL BEAR RESPONSIBILITY AND EXPENSE FOR MAINTAINING ADEQUATE DRAINAGE AND SAFE DRIVING CONDITIONS AT ALL TIMES. THIS WORK SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF RELATED WORK.

20. ALL CONSTRUCTION ACTIVITIES SHALL BE COMPLETED DURING DAYLIGHT HOURS BETWEEN 7:00 AM AND 7:00 PM, MONDAY THROUGH FRIDAY, EXCLUDING FEDERAL HOLIDAYS UNLESS OTHERWISE APPROVED BY THE ENGINEER. LANE CLOSURES WILL NOT BE PERMITTED OVERNIGHT OR OVER WEEKENDS.

21. THE CONTRACTOR IS REQUIRED TO PREPARE CONSTRUCTION PHASING PLANS TO BE SUBMITTED FOR APPROVAL TO THE ENGINEER PRIOR TO CONSTRUCTION. PHASING PLANS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE WORK.

SURVEY NOTES:

1. THE CONTRACTOR SHALL CAREFULLY PRESERVE ALL MONUMENTS, BENCH MARKS, PROPERTY MARKERS, AND REFERENCE POINTS. IN CASE OF HIS DESTRUCTION OF THESE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESETTING SAME, AT HIS SOLE EXPENSE, AND SHALL BE RESPONSIBLE FOR ANY LOSS OF TIME THAT MAY BE CAUSED.

2. STATIONING LATH SHALL BE REMOVED AS DIRECTED AND AT NO ADDITIONAL COST TO THE PROJECT.

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THIS STAMP APPLIES TO
SIGNING / PAVEMENT &
PHASING / TRAFFIC CONTROL NOTES

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EL PASO COUNTY
COLORADO

PIKES PEAK RURAL TRANSPORTATION AUTHORITY PPRTA

BEACON LITE ROAD IMPROVEMENTS
GENERAL NOTES

Project No./Code
128558

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	NOTES	Subset Sheets:	3 OF 4

Sheet Number 5

STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS

1. STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS. ALL WORK AND EARTH DISTURBANCE SHALL BE DONE IN A MANNER THAT MINIMIZES POLLUTION OF ANY ON-SITE OR OFF-SITE WATERS, INCLUDING WETLANDS.

2. NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.

3. A SEPARATE STORMWATER MANAGEMENT PLAN (SMWP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. MANAGEMENT OF THE SWMP DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE DESIGNATED QUALIFIED STORMWATER MANAGER OR CERTIFIED EROSION CONTROL INSPECTOR. THE SWMP SHALL BE LOCATED ON-SITE AT ALL TIMES DURING CONSTRUCTION AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.

4. ONCE THE ESQCP IS APPROVED AND A "NOTICE TO PROCEED" HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL MEASURES AS INDICATED ON THE APPROVED GEC. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR, ENGINEER, AND EL PASO COUNTY WILL BE HELD PRIOR TO ANY CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE APPLICANT TO COORDINATE THE MEETING TIME AND PLACE WITH COUNTY STAFF.

5. CONTROL MEASURES MUST BE INSTALLED PRIOR TO COMMENCEMENT OF ACTIVITIES THAT COULD CONTRIBUTE POLLUTANTS TO STORMWATER. CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, AND DISTURBED LAND AREAS SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF THE DISTURBANCE.

6. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE MAINTAINED AND REMAIN IN EFFECTIVE OPERATING CONDITION UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND FINAL STABILIZATION IS ESTABLISHED. ALL PERSONS ENGAGED IN LAND DISTURBANCE ACTIVITIES SHALL ASSESS THE ADEQUACY OF CONTROL MEASURES AT THE SITE AND IDENTIFY IF CHANGES TO THOSE CONTROL MEASURES ARE NEEDED TO ENSURE THE CONTINUED EFFECTIVE PERFORMANCE OF THE CONTROL MEASURES. ALL CHANGES TO TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES MUST BE INCORPORATED INTO THE STORMWATER MANAGEMENT PLAN.

7. TEMPORARY STABILIZATION SHALL BE IMPLEMENTED ON DISTURBED AREAS AND STOCKPILES WHERE GROUND DISTURBING CONSTRUCTION ACTIVITY HAS PERMANENTLY CEASED OR TEMPORARILY CEASED FOR LONGER THAN 14 DAYS.

8. FINAL STABILIZATION MUST BE IMPLEMENTED AT ALL APPLICABLE CONSTRUCTION SITES. FINAL STABILIZATION IS ACHIEVED WHEN ALL GROUND DISTURBING ACTIVITIES ARE COMPLETE AND ALL DISTURBED AREAS EITHER HAVE A UNIFORM VEGETATIVE COVER WITH INDIVIDUAL PLANT DENSITY OF 70 PERCENT OF PRE-DISTURBANCE LEVELS ESTABLISHED OR EQUIVALENT PERMANENT ALTERNATIVE STABILIZATION METHOD IS IMPLEMENTED. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED UPON FINAL STABILIZATION AND BEFORE PERMIT CLOSURE.

9. ALL PERMANENT STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AS DESIGNED IN THE APPROVED PLANS. ANY PROPOSED CHANGES THAT EFFECT THE DESIGN OR FUNCTION OF PERMANENT STORMWATER MANAGEMENT STRUCTURES MUST BE APPROVED BY THE ECM ADMINISTRATOR PRIOR TO IMPLEMENTATION.

10. EARTH DISTURBANCES SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY MINIMIZE ACCELERATED SOIL EROSION AND RESULTING SEDIMENTATION. ALL DISTURBANCES SHALL BE DESIGNED, CONSTRUCTED, AND COMPLETED SO THAT THE EXPOSED AREA OF ANY DISTURBED LAND SHALL BE LIMITED TO THE SHORTEST PRACTICAL PERIOD OF TIME. PRE-EXISTING VEGETATION SHALL BE PROTECTED AND MAINTAINED WITHIN 50 HORIZONTAL FEET OF A WATERS OF THE STATE UNLESS SHOWN TO BE INFEASIBLE AND SPECIFICALLY REQUESTED AND APPROVED.

11. COMPACTION OF SOIL MUST BE PREVENTED IN AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES OR WHERE FINAL STABILIZATION WILL BE ACHIEVED BY VEGETATIVE COVER. AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES SHALL ALSO BE PROTECTED FROM SEDIMENTATION DURING CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED. IF COMPACTION PREVENTION IS NOT FEASIBLE DUE TO SITE CONSTRAINTS, ALL AREAS DESIGNATED FOR INFILTRATION AND VEGETATION CONTROL MEASURES MUST BE LOOSENED PRIOR TO INSTALLATION OF THE CONTROL MEASURE(S).

12. ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE A STABILIZED CONVEYANCE DESIGNED TO MINIMIZE EROSION AND THE DISCHARGE OF SEDIMENT OFF-SITE.

13. CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO ENTER STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES. CONCRETE WASHOUTS SHALL NOT BE LOCATED IN AN AREA WHERE SHALLOW GROUNDWATER MAY BE PRESENT, OR WITHIN 50 FEET OF A SURFACE WATER BODY, CREEK OR STREAM.

14. DURING DEWATERING OPERATIONS, UNCONTAMINATED GROUNDWATER MAY BE DISCHARGED ON-SITE, BUT SHALL NOT LEAVE THE SITE IN THE FORM OF SURFACE RUNOFF UNLESS AN APPROVED STATE DEWATERING PERMIT IS IN PLACE.

15. EROSION CONTROL BLANKETING OR OTHER PROTECTIVE COVERING SHALL BE USED ON SLOPES STEEPER THAN 3:1.

16. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL WASTES FROM THE CONSTRUCTION SITE FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REGULATORY REQUIREMENTS. NO CONSTRUCTION DEBRIS, TREE SLASH, BUILDING MATERIAL WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, OR DISCHARGED AT THE SITE.

17. WASTE MATERIALS SHALL NOT BE TEMPORARILY PLACED OR STORED IN THE STREET, ALLEY, OR OTHER PUBLIC WAY, UNLESS IN ACCORDANCE WITH AN APPROVED TRAFFIC CONTROL PLAN. CONTROL MEASURES MAY BE REQUIRED BY EL PASO COUNTY ENGINEERING IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.

18. TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFF-SITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.

19. THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, SOIL, AND SAND THAT MAY ACCUMULATE IN ROADS, STORM DRAINS AND OTHER DRAINAGE CONVEYANCE SYSTEMS AND STORMWATER APPURTENANCES AS A RESULT OF SITE DEVELOPMENT.

20. THE QUANTITY OF MATERIALS STORED ON THE PROJECT SITE SHALL BE LIMITED, AS MUCH AS PRACTICAL, TO THAT QUANTITY REQUIRED TO PERFORM THE WORK IN AN ORDERLY SEQUENCE. ALL MATERIALS STORED ON-SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER, IN THEIR ORIGINAL CONTAINERS, WITH ORIGINAL MANUFACTURER'S LABELS.

21. NO CHEMICAL(S) HAVING THE POTENTIAL TO BE RELEASED IN STORMWATER ARE TO BE STORED OR USED ON-SITE UNLESS PERMISSION FOR THE USE OF SUCH CHEMICAL(S) IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING APPROVAL FOR THE USE OF SUCH CHEMICAL(S), SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.

22. BULK STORAGE OF ALLOWED PETROLEUM PRODUCTS OR OTHER ALLOWED LIQUID CHEMICALS IN EXCESS OF 55 GALLONS SHALL REQUIRE ADEQUATE SECONDARY CONTAINMENT PROTECTION TO CONTAIN ALL SPILLS ON-SITE AND TO PREVENT ANY SPILLED MATERIALS FROM ENTERING STATE WATERS, ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR OTHER FACILITIES.

23. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE CURB AND GUTTER OR DITCH EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES.

24. OWNER/DEVELOPER AND THEIR AGENTS SHALL COMPLY WITH THE "COLORADO WATER QUALITY CONTROL ACT" (TITLE 25, ARTICLE 8, CRS), AND THE "CLEAN WATER ACT" (33 USC 1344), IN ADDITION TO THE REQUIREMENTS OF THE LAND DEVELOPMENT CODE, DCM VOLUME II AND THE ECM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (1041, NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND OTHER LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, LOCAL, OR COUNTY AGENCIES, THE MOST RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.

25. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE ONLY AT APPROVED CONSTRUCTION ACCESS POINTS.

26. PRIOR TO CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.

27. A WATER SOURCE SHALL BE AVAILABLE ON-SITE DURING EARTHWORK OPERATIONS AND SHALL BE UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.

28. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY [SHANNON AND WILSON, DATED SEPTEMBER 2020 FOR THE COUNTY LINE AREA AND APRIL 2022 FOR THE BEACON LITE AREA. AND SHALL BE CONSIDERED A PART OF THESE PLANS.

29. AT LEAST TEN (10) DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB ONE (1) ACRE OR MORE, THE OWNER OR OPERATOR OF CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A STORMWATER MANAGEMENT PLAN (SWMP), OF WHICH THIS GRADING AND EROSION CONTROL PLAN MAY BE A PART. FOR INFORMATION OR APPLICATION MATERIALS CONTACT:

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT WATER QUALITY CONTROL DIVISION
WQCD - PERMITS
4300 CHERRY CREEK DRIVE SOUTH DENVER, CO 80246-1530
ATTN: PERMITS UNIT

COLORADO LICENSED
LUCY T. EAST
51734
6/1/2023
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
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Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

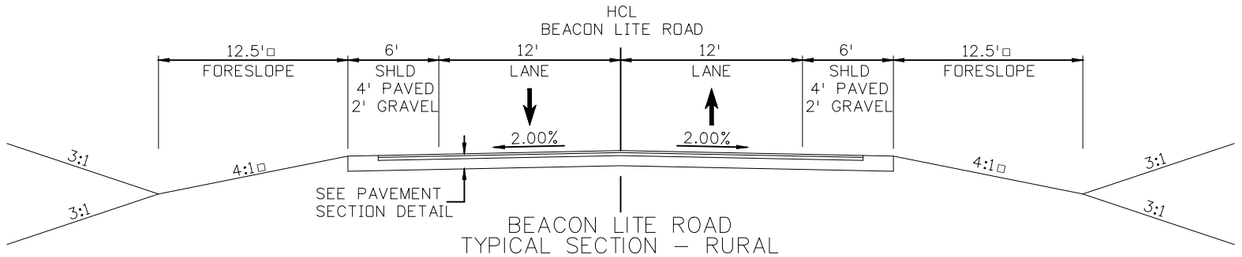
PPRTA

BEACON LITE ROAD IMPROVEMENTS
GENERAL NOTES

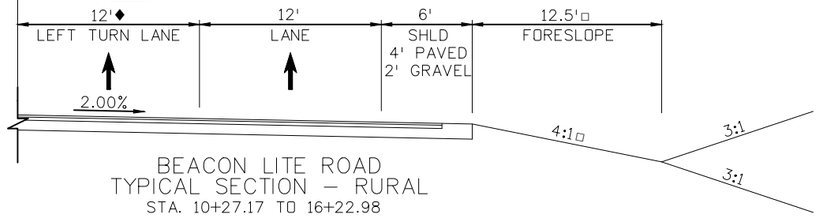
Project No./Code
128558

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	NOTES	Subset Sheets:	4 OF 4

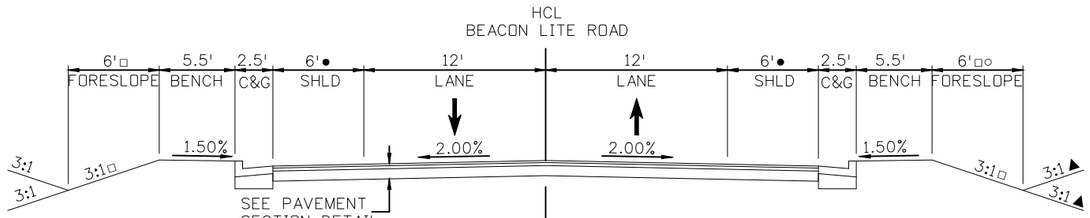
Sheet Number 6



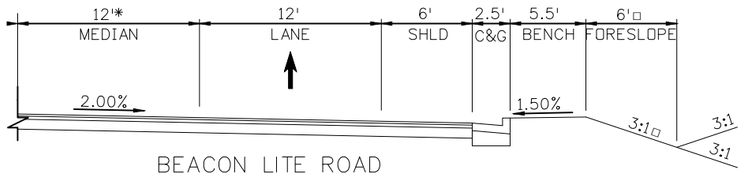
BEACON LITE ROAD
TYPICAL SECTION – RURAL
STA. 8+64.00 TO STA. 10+27.17
STA. 149+86.67 TO STA. 51+50.00 (SEE NOTE 1)
R-3



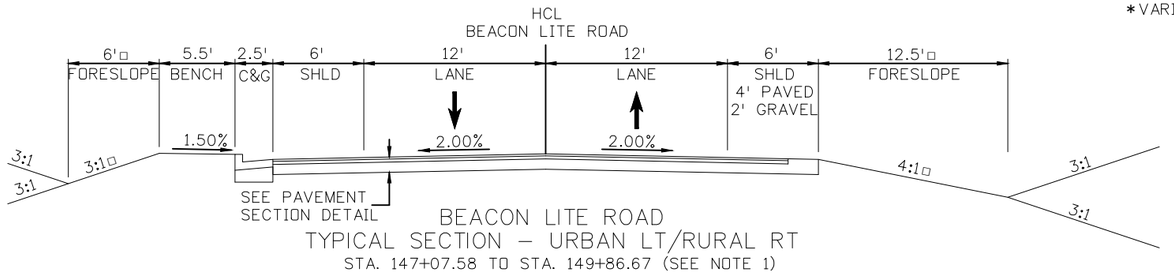
BEACON LITE ROAD
TYPICAL SECTION – RURAL
STA. 10+27.17 TO 16+22.98



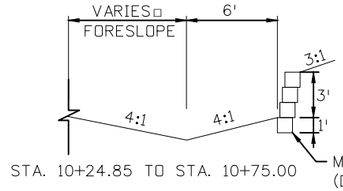
BEACON LITE ROAD
TYPICAL SECTION – URBAN
STA. 16+22.98 TO STA. 147+07.58



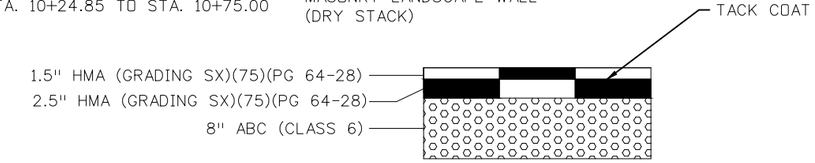
BEACON LITE ROAD
TYPICAL SECTION – URBAN
STA. 16+22.98 TO 18+75.90



BEACON LITE ROAD
TYPICAL SECTION – URBAN LT/RURAL RT
STA. 147+07.58 TO STA. 149+86.67 (SEE NOTE 1)



STA. 10+24.85 TO STA. 10+75.00



PAVEMENT SECTION DETAIL
BEACON LITE ROAD

♦ VARIES 0' TO 12' - STA. 10+27.17 TO STA. 12+66.98

□ FORESLOPE VARIES IN WIDTH AND SLOPE. VALUES SHOWN HERE ARE TYPICAL, SEE GRADING PLANS AND CROSS SECTIONS FOR MORE INFORMATION.

● 4' SHOULDER - STA. 142+08.10 TO STA. 146+94.58
▲ 2:1 BACKSLOPE - STA. 143+49.00 TO STA. 145+11.64
○ 0' FORESLOPE - STA 145+11.64 TO STA. 147+07.58

* VARIES 12' TO 0' - STA. 16+35.90 TO STA. 18+75.90

COLORADO LICENSED
PAUL DONALD MOREAU
32557
3/7/25
PROFESSIONAL ENGINEER

NOTES:
1. STATION 41+00.00 (BACK) IS EQUAL TO STA. 141+00.00 (AHEAD).
2. STATION 150+04.54 (BACK) IS EQUAL TO 50+00.00 (AHEAD).

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Unit Information Unit Leader Initials

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	Sheet Revisions		
	Date:	Comments	Init.
R-1	06/01/23	RFC	EMK
R-2	08/31/23	LANDSCAPE WALL TYP	KRS
R-3	09/09/24	PROJ. LIMITS CHANGE	KRS
	03/07/25	PROJ. LIMITS CHANGE	PDM

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
TYPICAL SECTIONS

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Designer: KRS
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Sheet Subset: TYP
Structure Numbers
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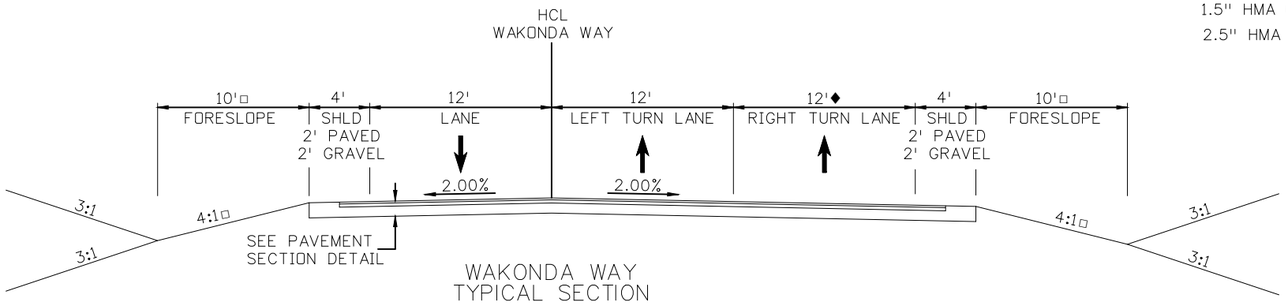
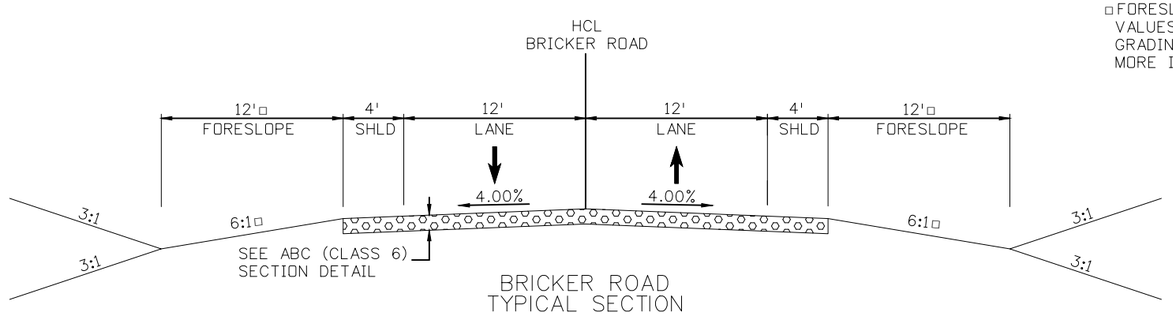
Sheet Number 7

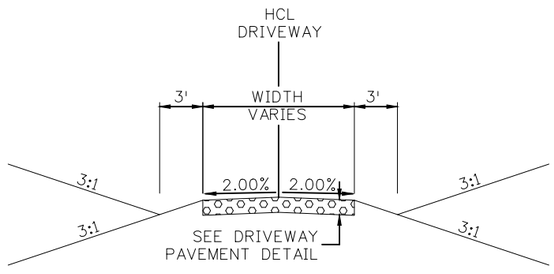


WAKONDA WAY
TYPICAL SECTION
STA. 103+10.00 TO STA. 106+22.44

◆VARIES 0' TO 12' - STA. 103+25.16 TO STA. 104+45.11

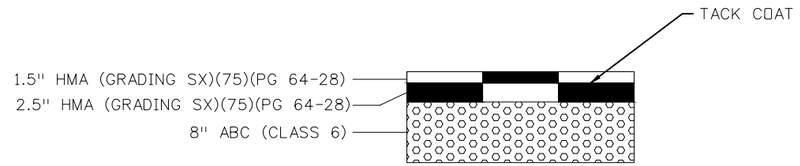


BRICKER ROAD
TYPICAL SECTION
STA. 10+00.00 TO STA. 10+89.30



DRIVEWAY
TYPICAL SECTION
SEE DRIVEWAY DETAILS FOR STATION LIMITS

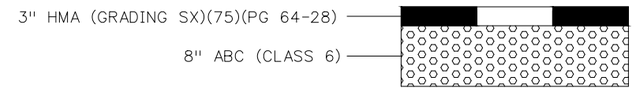
□FORESLOPE VARIES IN WIDTH AND SLOPE. VALUES SHOWN HERE ARE TYPICAL, SEE GRADING PLANS AND CROSS SECTIONS FOR MORE INFORMATION.



PAVEMENT SECTION DETAIL
WAKONDA WAY

DRIVEWAY PAVEMENT SECTIONS

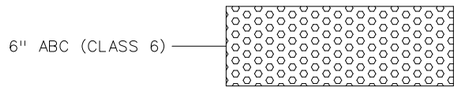
HMA



DRIVEWAY LOCATIONS

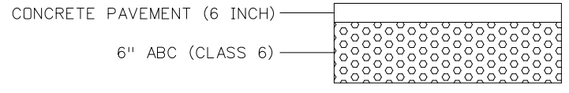
DRIVEWAY 7, 13, 16, 19

GRAVEL



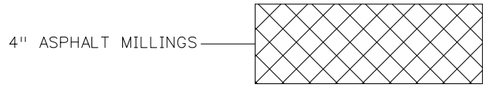
DRIVEWAY 1, 3, 4, 5, 6, 8, 10, 12
14, 15, 17, 18

CONCRETE



DRIVEWAY 2, 11

HMA MILLINGS



DRIVEWAY 9

COLORADO LICENSED
ERIC M. KING
44932
PROFESSIONAL ENGINEER
4/01/2022

Print Date: 04/29/2022
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Sheet Number 8

CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ROADWAY		DRAINAGE		STRUCTURES		SWMP		TRAFFIC		MOT		PROJECT TOTALS	
			PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.
201-00000	Clearing and Grubbing	L S	1												1	
202-00035	Removal of Pipe	LF			621										621	
202-00155	Removal of Wall	LF	56												56	
202-00210	Removal of Concrete Pavement	SY	235												235	
202-00220	Removal of Asphalt Mat	SY	3,071												3,071	
202-00810	Removal of Ground Sign	EACH									17				17	
202-01000	Removal of Fence	LF	4,046												4,046	
203-00010	Unclassified Excavation (Complete In Place)	CY	93,803												93,803	
203-00100	Muck Excavation	CY	1,000												1,000	
203-01500	Blading	HOUR							20						20	
203-01550	Dozing	HOUR							20						20	
203-01594	Combination Loader	HOUR							20						20	
203-01597	Potholing	HOUR	80												80	
203-02330	Laborer	HOUR							40						40	
207-00205	Topsoil	CY							5,713						5,713	
207-00210	Stockpile Topsoil	CY							5,713						5,713	
208-00002	Erosion Log Type 1 (12 Inch)	LF							2,810						2,810	
208-00020	Silt Fence	LF							10,004						10,004	
208-00035	Aggregate Bag	LF							91						91	
208-00045	Concrete Washout Structure	EACH							1						1	
208-00070	Vehicle Tracking Pad	EACH							2						2	
208-00106	Sweeping (Sediment Removal)	HOUR							20						20	
208-00207	Erosion Control Management	DAY							90						90	
210-00000	Reset Mailbox Structure (Special)	EACH	1												1	
210-00010	Reset Mailbox Structure	EACH	7												7	
210-00420	Reset Timbers	L S	1												1	
210-00800	Reset Stone Sign	EACH	5												5	
210-00801	Reset Stone Sign (Special)	EACH	2												2	
210-00810	Reset Ground Sign	EACH	5								7				12	
210-01000	Reset Fence	LF	1,542												1,542	
210-01011	Reset Gate	EACH	4												4	
210-01012	Reset Gate (Special)	EACH	1												1	
210-02901	Relay Riprap (Special)	SY	67												67	
210-04010	Adjust Manhole	EACH	4												4	
212-00006	Seeding (Native)	ACRE							11						11	
212-00032	Soil Conditioning	ACRE							11						11	
212-00700	Organic Fertilizer	LB							3,219						3,219	
212-00701	Compost (Mechanically Applied)	CY							698						698	
212-00703	Humate	LB							2,146						2,146	
213-00004	Mulching (Weed Free Straw)	ACRE							11						11	
213-00061	Mulch Tackifier	LB							2,146						2,146	
216-00039	Soil Retention Blanket (Straw)	SY							1,860						1,860	
217-00020	Herbicide Treatment	HOUR							20						20	
304-06007	Aggregate Base Course (Class 6)	CY	4,509		47										4,556	
403-34751	Hot Mix Asphalt (Grading SX) (75) (PG 64-28)	TON	4,445												4,445	
412-00600	Concrete Pavement (6 Inch)	SY	271												271	
420-00112	Geotextile (Drainage) (Class 1)	SY					260								260	
504-03500	Retaining Wall (Design Build)	SF					4,400								4,400	
504-08255	Masonry Landscape Wall (Dry Stack)	SF	200												200	
506-00206	Riprap (6 Inch)	CY			416		25								441	
506-00212	Riprap (12 Inch)	CY			1,030										1,030	
506-00409	Soil Riprap (9 Inch)	CY			26										26	

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32557
4/11/25
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Unit Information Unit Leader Initials

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165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1
R-2

Sheet Revisions

Date:	Comments	Init.
06/01/23	RFC	EMK
09/09/24	GEOMETRY CHANGE	KRS
03/07/25	PROJ. LIMITS CHANGE	PDM

EL PASO COUNTY
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PIKES PEAK RURAL TRANSPORTATION AUTHORITY

BEACON LITE ROAD IMPROVEMENTS
SUMMARY OF APPROXIMATE QUANTITIES

Designer: KRS
Detailer: RBR
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Sheet Number 9

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CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ROADWAY		DRAINAGE		STRUCTURES		SWMP		TRAFFIC		MOT		PROJECT TOTALS	
			PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.
601-01000	Concrete Class B	CY			55										55	
602-00020	Reinforcing Steel (Epoxy Coated)	LB			235										235	
602-00210	Welded Wire Fabric	SY			63										63	
603-01185	18 Inch Reinforced Concrete Pipe (Complete In Place)	LF			2,063										2,063	
603-01245	24 Inch Reinforced Concrete Pipe (Complete In Place)	LF			817										817	
603-01305	30 Inch Reinforced Concrete Pipe (Complete In Place)	LF			325										325	
603-01365	36 Inch Reinforced Concrete Pipe (Complete In Place)	LF			300										300	
603-02305	38x24 Inch Reinforced Concrete Pipe Elliptical (Complete In Place)	LF			337										337	
603-05018	18 Inch Reinforced Concrete End Section	EACH			6										6	
603-05024	24 Inch Reinforced Concrete End Section	EACH			1										1	
603-05030	30 Inch Reinforced Concrete End Section	EACH			1										1	
603-05036	36 Inch Reinforced Concrete End Section	EACH			1										1	
603-05130	38x24 Inch Reinforced Concrete End Section Elliptical	EACH			1										1	
604-00305	Inlet Type C (5 Foot)	EACH			4										4	
604-00310	Inlet Type C (10 Foot)	EACH			1										1	
604-00505	Inlet Type D (5 Foot)	EACH			1										1	
604-00510	Inlet Type D (10 Foot)	EACH			5										5	
604-19105	Inlet Type R L 5 (5 Foot)	EACH			12										12	
604-19110	Inlet Type R L 5 (10 Foot)	EACH			1										1	
604-20000	Outlet Structure	EACH			2										2	
604-30005	Manhole Slab Base (5 Foot)	EACH			8										8	
604-30010	Manhole Slab Base (10 Foot)	EACH			7										7	
604-30015	Manhole Slab Base (15 Foot)	EACH			2										2	
604-30020	Manhole Slab Base (20 Foot)	EACH			1										1	
607-01000	Fence Barbed Wire with Metal Posts	LF	3,809												3,809	
607-53137	Fence Chain Link (Special) (36 Inch)	LF					334								334	
608-01550	Place Asphalt Millings	SY	274												274	
609-21020	Curb and Gutter Type 2 (Section II-B)	LF	6,484												6,484	
609-24008	Gutter Type 2 (8 Foot)	LF	12												12	
612-00003	Delineator (Type III)	EACH									24				24	
614-00011	Sign Panel (Class I)	SF									90				90	
614-00012	Sign Panel (Class II)	SF									9				9	
614-01503	Steel Sign Support (2-Inch Round)(Post and Socket)(P)	EACH									11				11	
614-01573	Steel Sign Support (2-1/2 Inch Round NP-40)(Post & Slipbase)(P1)	EACH									3				3	
615-00050	Embankment Protector Type 5	EACH			3										3	
620-00000	Field Office	EACH	1												1	
620-00020	Sanitary Facility	EACH	2												2	
625-00000	Construction Surveying	L S	1												1	
626-00000	Mobilization	L S	1												1	
626-01102	Public Information Services (Tier II)	L S	1												1	
627-00008	Modified Epoxy Pavement Marking	GAL									89				89	
627-30405	Preformed Thermoplastic Pavement Marking (Word- Symbol)	SF									60				60	
627-30410	Preformed Thermoplastic Pavement Marking (Xwalk-Stop Line)	SF									50				50	
630-00000	Flagging	HOUR											1,656		1,656	
630-00002	Temporary Traffic Control	L S											1		1	
630-00007	Traffic Control Inspection	DAY											94		94	
630-00012	Traffic Control Management	DAY											208		208	
630-80355	Portable Message Sign Panel	EACH											2		2	
700-70010	F/A Minor Contract Revisions	F A	1												1	
700-70380	F/A Erosion Control	F A							1						1	
700-70381	F/A Post-Construction Erosion Control	F A							1						1	

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EL PASO COUNTY
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PPRTA PIKES PEAK RURAL TRANSPORTATION AUTHORITY

BEACON LITE ROAD IMPROVEMENTS
SUMMARY OF APPROXIMATE QUANTITIES

Designer: KRS
Detailer: RBR
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Sheet Number 10

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TABULATION OF REMOVAL QUANTITIES

LOCATION	SIDE	202-00155 REMOVAL OF WALL (LF)	202-00210 REMOVAL OF CONCRETE PAVEMENT (SY)	202-00220 REMOVAL OF ASPHALT MAT (SY)	210-00000 RESET MAILBOX STRUCTURE (SPECIAL) (EA)	210-00010 RESET MAILBOX STRUCTURE (EA)	210-00420 RESET TIMBERS (LS)	210-00800 RESET STONE SIGN (EA)	210-00801 RESET STONE SIGN (SPECIAL) (EA)	210-00810 RESET GROUND SIGN (EA)	210-02901 RELAY RIPRAP (SPECIAL) (SY)	210-04010 ADJUST MANHOLE (EA)	REMARKS
BEACON LITE RD													
8+64.00 TO 16+81.51	LT/RT			2198									
9+77.94	RT									1			
9+96.81	RT											1	
10+01.25 TO 10+08.06	RT		77										
10+78.39	RT					1							
12+35.24 TO 12+39.08	LT		43										
12+66.05	LT					1							
13+94.75	RT											1	
15+24.06	RT					1							
15+75.35	RT			RECT						1			
15+89.63	RT											1	
16+23.22	RT					1							
17+08.58 TO 17+52.15	LT	56											
26+19.87	LT							1					
26+42.76	LT							1					
34+90.17	LT							1					
35+29.01	LT							1					
35+35.76	LT				1								INCLUDES CONCRETE LEVELING PAD
37+03.48 TO 37+13.81	LT		116										
37+11.17	LT									1			
39+63.91	LT							1					
141+13.56	LT								1				INCLUDES LIGHTING AND WIRING
141+25.95 TO 141+27.92	LT			143									
141+34.97	RT									2			
141+41.34	LT								1				INCLUDES LIGHTING AND WIRING
WAKONDA WAY													R-3
103+10.00 TO 105+75.00	LT/RT			669									
103+40.83	LT					1							
103+63.92 TO 103+73.90	LT			61									
103+75.15	RT					1							
104+37.50	RT											1	
104+77.49 TO 104+86.87	RT										58		
104+87.99	RT						1						DRIVEWAY LANDSCAPING
105+17.61 TO 105+34.84	RT										9		
105+29.64	RT					1							
TOTALS		**56**	**235**	**3,071** R-3	**1**	**7** R-3	**1**	**5**	**2**	**5**	**67**	**4**	

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R-2	09/09/24	GEOMETRY CHANGE	KRS
R-3	03/07/25	PROJ. LIMITS CHANGE	PDM

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS TABULATIONS

Project No./Code: 128558

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TABULATION OF FENCING QUANTITIES

LOCATION			SIDE	202-01000 REMOVAL OF FENCE (LF)	210-01000 RESET FENCE (LF)	210-01011 RESET GATE (EACH)	210-01012 RESET GATE (SPECIAL) (EACH)	504-08255 MASONRY LANDSCAPE WALL (DRY STACK) (SF)	607-01000 FENCE BARBED WIRE WITH METAL POSTS (LF)	REMARKS
BEACON LITE RD										
8+96.40	TO	11+45.47	LT		249					
10+24.85	TO	10+75.00	RT					200		
12+15.95	TO	12+25.81	LT		21					
12+49.45	TO	13+22.31	LT		84					
17+13.00	TO	17+50.27	LT		37					
19+05.96	TO	20+34.53	RT	160						
19+05.96	TO	20+53.54	RT						164	
19+20.96	TO	19+67.02	LT	43						
20+63.08	TO	141+10.93	RT						2,222	
20+37.91			RT			1				
20+41.64	TO	141+10.97	RT	2228						
24+82.86	TO	24+90.88	RT	66						
25+64.38	TO	26+24.76	LT	77					75	
26+32.92			LT				1			MOTORIZED GATE
26+41.14	TO	26+49.18	LT	31						
26+41.19	TO	31+49.21	LT						552	
26+72.06	TO	31+48.98	LT	497						
39+60.18	TO	40+52.68	RT	106						
141+20.15			RT			1				
141+29.37	TO	142+06.40	RT	83						
141+29.37	TO	144+07.96	RT						286	
141+70.28	TO	144+07.96	RT	238						
143+87.81	TO	149+92.79	LT		758					
144+86.36	TO	145+18.15	RT		27					
145+26.20			RT			1				
145+34.24	TO	146+82.24	RT		148					
146+82.24		147+08.78	RT						39	
146+83.82	TO	147+08.78	RT	45						
147+17.22			RT			1				
147+25.72	TO	147+27.17	RT	5					5	
147+31.53	TO	147+59.77	RT	52					52	
147+58.09	TO	51+50.00	RT	397						
147+58.78	TO	51+50.00	RT						396	
50+29.76	TO	51+50.00	LT		177					
WAKONDA WAY										R-3
103+18.51	TO	103+36.71	LT	18					18	
103+36.14	TO	103+42.16	RT		20					
103+58.98	TO	103+65.86	RT		21					
TOTALS				**4,046**	**1,542** R-3	**4**	**1**	**200**	**3,809** R-3	

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R-3	03/07/25	PROJ. LIMITS CHANGE	PDM

EL PASO COUNTY
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BEACON LITE ROAD IMPROVEMENTS
TABULATIONS

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TABULATION OF SURFACING AND CONCRETE QUANTITIES

LOCATION			SIDE	304-06007	403-34751			412-00600	608-01550	609-21020	609-24008	REMARKS
					HOT MIX ASPHALT							
				AGGREGATE BASE COURSE (CLASS 6)	(GRADING SX)(75) (PG 64-28)			CONCRETE PAVEMENT (6 INCH)	PLACE ASPHALT MILLINGS	CURB AND GUTTER TYPE 2 (SECTION II-B)	GUTTER TYPE 2 (8 FOOT)	
					DRIVEWAY*	BOTTOM*	TOP					
				CY	TON	TON	TON	SY	SY	LF	LF	
BEACON LITE ROAD				THICKNESS (IN)								
				8	**3.00**	**2.50**	**1.50**	**6**	**4**	**N/A**	**N/A**	
8+64.00	TO	14+00.00	LT/RT	515		334	191					
10+11.96			RT	10				61				Drive 1
12+43.74			LT	5				30				Drive 2
14+00.00	TO	21+00.00	LT/RT	759		509	291					
15+45.13			RT	35								Drive 3
16+21.07	TO	21+00.00	LT							488		
16+24.98	TO	21+00.00	RT							490		
16+12.89			RT	19								Drive 4
20+10.45			RT	6				9				Drive 8
21+00.00	TO	28+00.00	LT/RT	622		423	242			1400		
26+36.31			LT	2				13	274			Drive 9
26+42.03			RT	2				14				North Pond
28+00.00	TO	35+00.00	LT/RT	622		423	242			1400		
35+00.00	TO	142+00.00	LT/RT	622		423	242			1400		
35+10.08			LT	62				25				Drive 10
37+01.49			LT	13				78				Drive 11
39+29.35			LT	21				7				Drive 12
141+19.48			LT	9	6			7				Drive 13
141+23.51			RT	10				7				Drive 14
142+00.00	TO	147+07.58	RT							509		
142+00.00	TO	149+04.54	LT/RT	576		388	222			713		
145+26.20			LT	7				9				Water Tower Access
147+15.02			RT	17	2			11			12	Drive 15
149+04.54	TO	149+86.67	LT							84		
149+04.54	TO	51+50.00	LT/RT	236		155	89					
WAKONDA WAY				THICKNESS (IN)								R-3
				8	**3.00**	**2.50**	**1.50**	**6**	**4**	**N/A**	**N/A**	
103+10.00	TO	105+75.00	LT/RT	249		162	93					
103+56.94			RT	18								Drive 6
103+62.19			LT	12	10							Drive 7
105+13.34			RT	36								Drive 5
BRICKER ROAD				THICKNESS (IN)								
				8	**3.00**	**2.50**	**1.50**	**6**	**4.00**	**N/A**	**N/A**	
10+89.30	TO	10+46.00	LT/RT	22								
TOTALS				**4,509**	**18**	**2,817**	**1,610**	**271**	**274**	**6,484**	**12**	
					4,445							

* INCLUDES 5% FOR IRREGULARITIES R-3

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EL PASO COUNTY COLORADO

PPRTA PIKES PEAK RURAL TRANSPORTATION AUTHORITY

BEACON LITE ROAD IMPROVEMENTS TABULATIONS

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SUMMARY OF EARTHWORK QUANTITIES			
203-00010 UNCLASSIFIED EXCAVATION (COMPLETE IN PLACE)(NET)			**CUBIC YARDS**
	FOR ROADWAY (INCLUDES DITCH GRADING AND PONDS)		102,519 R-3
	TOTAL		**102,519**
MUCK EXCAVATION			**CUBIC YARDS**
	AS DIRECTED BY THE ENGINEER		0
	TOTAL		**0**
FOR INFORMATION ONLY EARTHWORK QUANTITIES BALANCE			
EMBANKMENT MATERIAL (COMPLETE IN PLACE)(NET)			**CUBIC YARDS**
	FOR ROADWAY:	REGULAR EMBANKMENT	7,580
	TOTAL		**7,580**
COMPACTION (AASHTO T 180)			**CUBIC YARDS**
	TOTAL EMBANKMENT (NET)		7,580
	TOTAL		**7,580**
EARTHWORK QUANTITIES BALANCE			
UNCLASSIFIED EXCAVATION			**CUBIC YARDS**
	TOTAL		**102,519**
EMBANKMENT (NET)			
	TOTAL		**7,580**
EMBANKMENT (NET) TIMES COMPACTION FACTOR		**1.15**	
	TOTAL		**8,717**
EXCESS EXCAVATION TO BE REMOVED BY CONTRACTOR			
	TOTAL EXCAVATION		102,519
	TOTAL EMBANKMENT		8,717
	TOTAL EXCESS		**93,803**

R-3

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R-3	03/07/25	PROJ. LIMITS CHANGE	PDM

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PIKES PEAK RURAL TRANSPORTATION AUTHORITY PPRTA

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Sheet Number 14

TABULATION OF DRAINAGE QUANTITIES

LOCATION			SIDE	202-00035	304-06007	506-00206	506-00212	506-00409	601-01000	602-00020	602-00210	603-01185	603-01245	603-01305	603-01365	603-02305	603-05018	603-05024	603-05030	603-05036	603-05130	604-00305	604-00310	604-00505	604-00510	604-19105	604-19110	604-20000	604-30005	604-30010	604-30015	604-30020	615-00050
				REMOVAL OF PIPE	AGGREGATE BASE COURSE (CLASS 6)	RIPRAP (6 INCH)	RIPRAP (12 INCH)	SOIL RIPRAP (9 INCH)	CONCRETE CLASS B	REINFORCING STEEL (EPOXY COATED)	WELDED WIRE FABRIC	18 INCH REINFORCED CONCRETE PIPE (COMPLETE IN PLACE)	24 INCH REINFORCED CONCRETE PIPE (COMPLETE IN PLACE)	30 INCH REINFORCED CONCRETE PIPE (COMPLETE IN PLACE)	36 INCH REINFORCED CONCRETE PIPE (COMPLETE IN PLACE)	38X24 INCH REINFORCED CONCRETE PIPE ELLIPTICAL (COMPLETE IN PLACE)	18 INCH REINFORCED CONCRETE END SECTION	24 INCH REINFORCED CONCRETE END SECTION	30 INCH REINFORCED CONCRETE END SECTION	36 INCH REINFORCED CONCRETE END SECTION	38X24 INCH REINFORCED CONCRETE END SECTION ELLIPTICAL	INLET TYPE C (5 FOOT)	INLET TYPE C (10 FOOT)	INLET TYPE D (5 FOOT)	INLET TYPE D (10 FOOT)	INLET TYPE R L 5 (5 FOOT)	INLET TYPE R L 5 (10 FOOT)	OUTLET STRUCTURE	MANHOLE SLAB BASE (5 FOOT)	MANHOLE SLAB BASE (10 FOOT)	MANHOLE SLAB BASE (15 FOOT)	MANHOLE SLAB BASE (20 FOOT)	EMBANKMENT PROTECTOR TYPE 5
				LF	CY	CY	CY	CY	CY	LB	SY	LF	LF	LF	LF	LF	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
BEACON LITE ROAD																																	
8+90.71	TO	9+98.59	RT			10																											
8+91.23	TO	11+45.43	LT			26																											
9+99.61			RT	55																													
13+00.91	TO	13+65.65	RT			19																											
13+72.32	TO	13+74.11	LT/RT													58					1									1			
13+74.11	TO	15+34.63	LT										161																1				
14+00 (SOUTH POND)			RT		24	10			35	134	44																						
14+76.13	TO	14+94.15	LT/RT									5	98												1			1					
14+93.75			RT	50																													
15+29.05			RT	119																													
15+25.29	TO	15+28.74	RT									86											1										
15+25.29	TO	15+34.63	RT									48					1															1	
15+34.63	TO	16+52.79	LT													279														1			
15+61.30			RT	50																													
15+89.76	TO	16+47.21	RT											57										1									
15+74.20	TO	16+01.03	RT										45										1										
16+00.65	TO	104+00.25	LT/RT												228															1			
16+23.65			LT																														1
16+23.66			RT	20																													
16+47.21	TO	16+58.27	RT											11										1									
16+52.79	TO	19+32.49	LT									280																1					
16+52.79	TO	16+52.89	LT									16													1								
16+52.79	TO	16+52.43	RT									39													1								
16+60.26	TO	19+55.50	RT			141																											
19+55.50	TO	20+31.80	RT				12																										
19+32.49	TO	20+64.43	LT									130																		1			
20+31.98	TO	20+74.70	RT									45					1				1												
20+61.43	TO	20+64.25	RT									28													1								
20+64.43	TO	20+64.47	LT									30									1				1								
20+66.57	TO	25+50.00	LT				117																										
20+76.28	TO	26+12.30	RT			54		R-1																									
25+79.01	TO	26+10.72	LT/RT				17							97					1													1	
26+05.51	TO	26+12.69	RT									4															1						
26+05.51	TO	26+10.72	RT										33											1									
26+10.87	TO	27+73.08	RT											160										1									
26+12.28			LT	32																													
27+00 (NORTH POND)			RT		23	5			19	58	19																						
27+26.04	TO	27+30.56	RT										25					1								1							
27+30.56	TO	27+30.52	LT									28													1								
27+30.52	TO	27+30.56	RT										16																1				
27+30.56	TO	29+49.58	RT										219																	1			
27+74.68	TO	40+95.10	RT				802																										
29+49.58	TO	31+69.53	RT										220																1				
31+69.53	TO	31+69.53	LT									29													1								
31+69.53	TO	31+69.53	RT									16													1								
31+69.53	TO	33+27.31	RT									158																	1				
33+27.31	TO	34+40.58	RT									114																	1				
34+40.58	TO	35+46.50	RT									107																	1				
34+88.76			LT	41																													
35+46.48	TO	35+46.48	LT									27													1								
35+46.48	TO	35+46.48	RT									16													1								
35+46.50	TO	38+36.98	RT									292																		1			

COLORADO LICENSED
MICHAEL E. BUTTERS
32595
4/11/25
PROFESSIONAL ENGINEER

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Sheet Revisions

	Date:	Comments	Init.
R-1	09/09/24	GEOMETRY CHANGE	MEB
R-2	03/07/25	PROJ. LIMITS CHANGE	MEB
	06/01/23	RFC	LTE

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS TABULATIONS

Project No./Code 128558

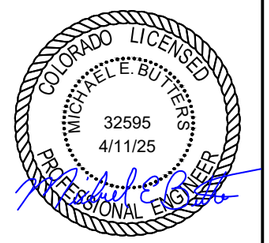
Designer: KRS
Detailer: RBR
Sheet Subset: TAB
Structure Numbers
Subset Sheets: 5 OF 8

Sheet Number 15

TABULATION OF DRAINAGE QUANTITIES

LOCATION	SIDE	202-00035 REMOVAL OF PIPE LF	304-06007 AGGREGATE BASE COURSE (CLASS 6) CY	506-00206 RIPRAP (6 INCH) CY	506-00212 RIPRAP (12 INCH) CY	506-00409 SOIL RIPRAP (9 INCH) CY	601-01000 CONCRETE CLASS B CY	602-00020 REINFORCING STEEL (EPOXY COATED) LB	602-00210 WELDED WIRE FABRIC SY	603-01185 18 INCH REINFORCED CONCRETE PIPE (COMPLETE IN PLACE) LF	603-01245 24 INCH REINFORCED CONCRETE PIPE (COMPLETE IN PLACE) LF	603-01305 30 INCH REINFORCED CONCRETE PIPE (COMPLETE IN PLACE) LF	603-01365 36 INCH REINFORCED CONCRETE PIPE (COMPLETE IN PLACE) LF	603-02305 38X24 INCH REINFORCED CONCRETE PIPE ELLIPTICAL (COMPLETE IN PLACE) LF	603-05018 18 INCH REINFORCED CONCRETE END SECTION EACH	603-05024 24 INCH REINFORCED CONCRETE END SECTION EACH	603-05030 30 INCH REINFORCED CONCRETE END SECTION EACH	603-05036 36 INCH REINFORCED CONCRETE END SECTION EACH	603-05130 38X24 INCH REINFORCED CONCRETE END SECTION ELLIPTICAL EACH	604-00305 INLET TYPE C (5 FOOT) EACH	604-00310 INLET TYPE C (10 FOOT) EACH	604-00505 INLET TYPE D (5 FOOT) EACH	604-00510 INLET TYPE D (10 FOOT) EACH	604-19105 INLET TYPE R L 5 (5 FOOT) EACH	604-19110 INLET TYPE R L 5 (10 FOOT) EACH	604-20000 OUTLET STRUCTURE EACH	604-30005 MANHOLE SLAB BASE (5 FOOT) EACH	604-30010 MANHOLE SLAB BASE (10 FOOT) EACH	604-30015 MANHOLE SLAB BASE (15 FOOT) EACH	604-30020 MANHOLE SLAB BASE (20 FOOT) EACH	615-00050 EMBANKMENT PROTECTOR TYPE 5 EACH
37+03.42	LT	28																													
38+36.98 TO 39+74.54	RT									140																		1			
39+31.45	LT	41																													
39+74.54 TO 141+51.89	RT									179																			1		
141+00.00 TO 141+40.96	RT									41					1					1											
141+19.20	RT	15																													
141+23.07	LT	56																													
141+36.47 TO 141+40.96	LT/RT									69										1											
141+36.47 TO 145+80.00	LT			27																											
141+40.96 TO 145+15.32	RT				82																										
147+28.03	RT																														1
141+51.72 TO 141+51.89	RT									16																	1				
141+51.89 TO 142+52.73	LT									28																	1				
145+22.73	RT	19																													
145+80.00 TO 149+68.34	LT			50																											
149+31.08	RT	54																													
149+33.62 TO 149+68.41	LT/RT					9				67					1											1					
149+68.41 TO 149+68.34	LT									9					1																
149+90.21	LT						R-2																								1
50+26.08 TO 51+50.47	LT			17																											
WAKONDA WAY																															R-2
103+40.70 TO 104+00.25	RT					17							72					1											1		
103+87.31	LT	41																													
104+04.63 TO 105+97.27	LT			57																											
104+00.25 TO 104+02.78	LT									16					1																
TOTALS		**621**	**47**	**416**	**1,030**	**26**	**54**	**192**	**63**	**2,063**	**817**	**325**	**300**	**337**	**6**	**1**	**1**	**1**	**1**	**4**	**1**	**1**	**5**	**12**	**1**	**2**	**8**	**7**	**2**	**1**	**3**

R-2 R-2 R-2 R-2 R-2 R-2



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R-1 R-2

Sheet Revisions

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09/09/24	GEOMETRY CHANGE	MEB
03/07/25	PROJ. LIMITS CHANGE	MEB

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
TABULATIONS

Project No./Code 128558

Designer: KRS
Detailer: RBR
Sheet Subset: TAB
Structure Numbers
Subset Sheets: 6 OF 8

Sheet Number 16

TABULATION OF SIGN QUANTITIES

SHEET NO.	SIGN NO.	SIGN CODE	ALIGNMENT	LOCATION		SIGN PANEL SIZE	BACKGROUND COLOR	202-00810	210-00810	NUMBER OF POSTS	TOTAL POST LENGTH	614-01503	614-01573	614-00011	614-00012
								REMOVAL OF GROUND SIGN	RESET GROUND SIGN			Steel Sign Support (2-Inch Round) (Post & Socket) (P)	Steel Sign Support (2-1/2 Inch Round NP-40) (Post & Slipbase) (P1)	SIGN PANEL CLASS I	SIGN PANEL CLASS II
				STATION	OFFSET			EA	EA	EA	LF	EA	EA	SF	SF
S&S 01	1-1	W2-2	BEACON LITE RD	10+60.0	27.1' RT	30"X30"	YELLOW		1						
		W16-8P	BEACON LITE RD			36"X8"	YELLOW								
S&S 01	1-2	R3-7L	BEACON LITE RD	13+47.7	37.5' RT	36"X36"	WHITE			1	11.0		1		9.00
S&S 02	2-1	R2-1	BEACON LITE RD	14+27.1	25.0' LT	24"X30"	WHITE		1						
S&S 02	2-2	D3-1 (WAKONDA WAY)	WAKONDA WAY	105+87.7	34.0' RT	-	GREEN		1						
		D3-1 (BEACON LITE RD)	WAKONDA WAY			-	GREEN								
		R1-1	WAKONDA WAY			30"X30"	RED								
S&S 02	2-3	SPECIAL - LEFT/RIGHT ONLY SIGN	WAKONDA WAY	104+45.2	37.3' RT	30"X24"	WHITE			1	11.0	1		5.00	
S&S 02	2-4	SPECIAL - CRIME WATCH	WAKONDA WAY	104+60.5	37.0' RT	-	WHITE		1						
S&S 02	2-5	W1-5	BEACON LITE RD	16+36.3	15.6' RT	30"X30"	YELLOW	1							
		W13-1P	BEACON LITE RD			18"X18"	YELLOW								
S&S 02	2-6	W1-4	BEACON LITE RD	17+28.3	31.6' RT	30"X30"	YELLOW			1	11.5	1		6.25	
S&S 02	2-7	W2-2	BEACON LITE RD	21+41.0	24.3' LT	30"X30"	YELLOW		1						
		W16-8P	BEACON LITE RD			36"X8"	YELLOW							2.00	
S&S 02	2-8	W1-8	BEACON LITE RD	19+70.7	16.4' RT	18"X24"	YELLOW	1							
S&S 03	3-1	W1-8	BEACON LITE RD	21+22.9	110.0' LT	18"X24"	YELLOW	1							
S&S 03	3-2	W1-8	BEACON LITE RD	21+64.2	141.9' LT	18"X24"	YELLOW	1							
S&S 03	3-3	W1-8	BEACON LITE RD	22+19.3	158.5' LT	18"X24"	YELLOW	1							
S&S 03	3-4	W1-8	BEACON LITE RD	22+66.3	161.2' LT	18"X24"	YELLOW	1							
S&S 03	3-5	W1-8	BEACON LITE RD	23+14.0	153.7' LT	18"X24"	YELLOW	1							
S&S 03	3-6	W1-8	BEACON LITE RD	23+52.6	139.1' LT	18"X24"	YELLOW	1							
S&S 03	3-7	W1-8	BEACON LITE RD	24+68.9	38.6' LT	18"X24"	YELLOW	1							
S&S 03	3-8	W1-8	BEACON LITE RD	25+09.9	12.8' LT	18"X24"	YELLOW	1							
S&S 03	3-9	R2-1	BEACON LITE RD	27+89.3	23.5' RT	24"X30"	WHITE			1	10.5	1		5.00	
S&S 04	4-1	W1-4	BEACON LITE RD	28+14.4	24.3' LT	30"X30"	YELLOW			1	11.5	1		6.25	
S&S 04	4-2	W1-2	BEACON LITE RD	31+23.3	24.3' RT	30"X30"	YELLOW			1	11.5	1		6.25	
S&S 04	4-3	W1-8	BEACON LITE RD	33+74.8	32.4' RT	18"X24"	YELLOW	1							
S&S 04	4-4	W1-8	BEACON LITE RD	34+29.0	36.8' RT	18"X24"	YELLOW	1							
S&S 05	5-1	W1-2	BEACON LITE RD	36+81.1	24.3' RT	30"X30"	YELLOW			1	11.5	1		6.25	
S&S 05	5-2	W1-2	BEACON LITE RD	37+66.9	24.3' LT	30"X30"	YELLOW			1	11.5	1		6.25	
S&S 05	5-3	W1-8	BEACON LITE RD	38+62.4	17.4' RT	18"X24"	YELLOW	1							
S&S 05	5-4	W1-8	BEACON LITE RD	39+20.8	19.0' RT	18"X24"	YELLOW	1							
S&S 05	5-5	S3-1	BEACON LITE RD	40+82.1	24.3' LT	30"X30"	FYG		1						
S&S 06	5-6	R2-1	BEACON LITE RD	39+06.5	24.3' LT	24"X30"	WHITE			1	10.5	1		5.00	
S&S 06	6-1	W1-8	BEACON LITE RD	144+16.1	9.6' LT	18"X24"	YELLOW	1							
S&S 06	6-2	W1-8	BEACON LITE RD	144+66.2	8.5' LT	18"X24"	YELLOW	1							
S&S 06	6-3	W1-8L	BEACON LITE RD	145+11.8	22.1' LT	18"X24"	YELLOW			1	7.0	1		3.00	
		W1-8R	BEACON LITE RD			18"X24"	YELLOW							3.00	
S&S 06	6-4	W1-5	BEACON LITE RD	147+08.7	19.4' LT	30"X30"	YELLOW	1							
		W13-1P	BEACON LITE RD			18"X18"	YELLOW								
S&S 06	6-5	W1-1	BEACON LITE RD	147+11.5	24.3' LT	30"X30"	YELLOW			1	12.0		1	6.25	
		W13-1P	BEACON LITE RD			18"X18"	YELLOW							2.25	
S&S 06	6-6	W1-2	BEACON LITE RD	142+89.0	22.3' LT	30"X30"	YELLOW			1	11.5	1		6.25	
S&S 07	6-7	W1-8L	BEACON LITE RD	144+27.2	22.1' LT	18"X24"	YELLOW			1	7.0			3.00	
		W1-8R	BEACON LITE RD			18"X24"	YELLOW							3.00	
S&S 07	6-8	W1-8L	BEACON LITE RD	144+69.3	22.1 LT	18"X24"	YELLOW			1	7.0	1		3.00	
		W1-8R	BEACON LITE RD			18"X24"	YELLOW							3.00	
S&S 09	6-9	W1-1	BEACON LITE RD	142+10.9	23.6' RT	30"X30"	YELLOW			1	12.0		1	6.25	
		W13-1P	BEACON LITE RD			18"X18"	YELLOW							2.25	
S&S 07	7-1	D3-1 ((BRICKER RD)	BEACON LITE RD	149+87.3	34.8' LT	-	GREEN		1						
		D3-1 (BEACON LITE RD)	BEACON LITE RD			-	GREEN								
		W14-1A	BEACON LITE RD			36"X8"	YELLOW								
		R1-1	BEACON LITE RD			30"X30"	RED								
							TOTALS:	17	7	15	157	11	3	90.0	9.0

R-2 R-2

COLORADO LICENSED
BRETT ANDREW HIGGINS
43265
3/7/25
PROFESSIONAL ENGINEER

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R-1
R-2

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09/09/24	GEOMETRY CHANGE	MEB
03/07/25	PROJ. LIMITS CHANGE	PDM

EL PASO COUNTY
COLORADO

PIKES PEAK RURAL TRANSPORTATION AUTHORITY PPRTA

BEACON LITE ROAD IMPROVEMENTS TABULATIONS

Project No./Code 128558

Designer: KRS
Detailer: RBR
Sheet Subset: TAB
Structure Numbers
Subset Sheets: 7 OF 8

Sheet Number 17

TABULATION OF DELINEATORS			
SHEET	ALIGNMENT	SIDE	612-00003 DELINEATOR (TYPE III) EA
S&S 01	BEACON LITE RD	RT	1
S&S 02	BEACON LITE RD	RT	5
S&S 02	BEACON LITE RD	LT	2
S&S 02	WAKONDA WAY	RT	1
S&S 02	WAKONDA WAY	LT	1
S&S 03	BEACON LITE RD	RT	2
S&S 03	BEACON LITE RD	LT	2
S&S 04	BEACON LITE RD	RT	1
S&S 04	BEACON LITE RD	LT	1
S&S 05	BEACON LITE RD	RT	3
S&S 05	BEACON LITE RD	LT	3
S&S 07	BEACON LITE RD	RT	1
S&S 07	BEACON LITE RD	LT	1
		TOTALS:	**24**

R-2

SUMMARY OF PAVEMENT MARKING QUANTITIES				
	MODIFIED EPOXY PAVEMENT MARKING (GAL)		PREFORMED THERMOPLASTIC PAVEMENT MARKING (SF)	
	627-00008		627-30405	627-30410
	WHITE	YELLOW	WORD - SYMBOL	XWALK - STOPLINE
	57.0	32.0	**60.0**	**50.0**
PROJECT TOTALS	**89.0**			

R-2

TABULATION OF PAVEMENT MARKINGS							
LOCATION	DIRECTION	MODIFIED EPOXY PAVEMENT MARKING (LF)			PREFORMED THERMOPLASTIC PAVEMENT MARKING (SF)		
		EDGE	CENTER	CHANNELIZING	WORD-SYMBOL NARROW ELONGATED ARROW 8'-10" X 2'-10" (LEFT ARROW)	WORD -SYMBOL NARROW ELONGATED ARROW 8'-10" X 2'-10" (RIGHT ARROW)	STOP LINE
		WHITE SOLID	YELLOW SOLID	WHITE SOLID	WHITE SOLID	WHITE SOLID	WHITE SOLID
		6 INCH	4 INCH	8 INCH	10.0 SF EA	10.0 SF EA	24 INCH
BEACON LITE ROAD	NB & SB	8580	7489	210	20.0		
WAKONDA WAY	EB & WB	542	554	141	20.0	20.0	50.0
	TOTAL (LF)	9,122.0	8,043.3	351.5			
	TOTAL (SF)	4,561.0	2,681.1	234.3	**40.0**	**20.0**	**50.0**
	TOTAL (GAL)	**54.0**	**32.0**	**3.0**			

R-2

COLORADO LICENSED
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43265
3/7/25
PROFESSIONAL ENGINEER

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09/09/24	GEOMETRY CHANGE	BAH
03/07/25	PROJ. LIMITS CHANGE	BAH

R-1
R-2

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
TABULATIONS

Project No./Code
128558

Designer: KRS
Detailer: RBR
Sheet Subset: TAB
Structure Numbers
Subset Sheets: 8 OF 8

Sheet Number 18

EL PASO COUNTY
STATE OF COLORADO
PUBLIC WORKS DEPARTMENT
PROJECT CONTROL DIAGRAM FOR
BEACON LITE ROAD IMPROVEMENTS

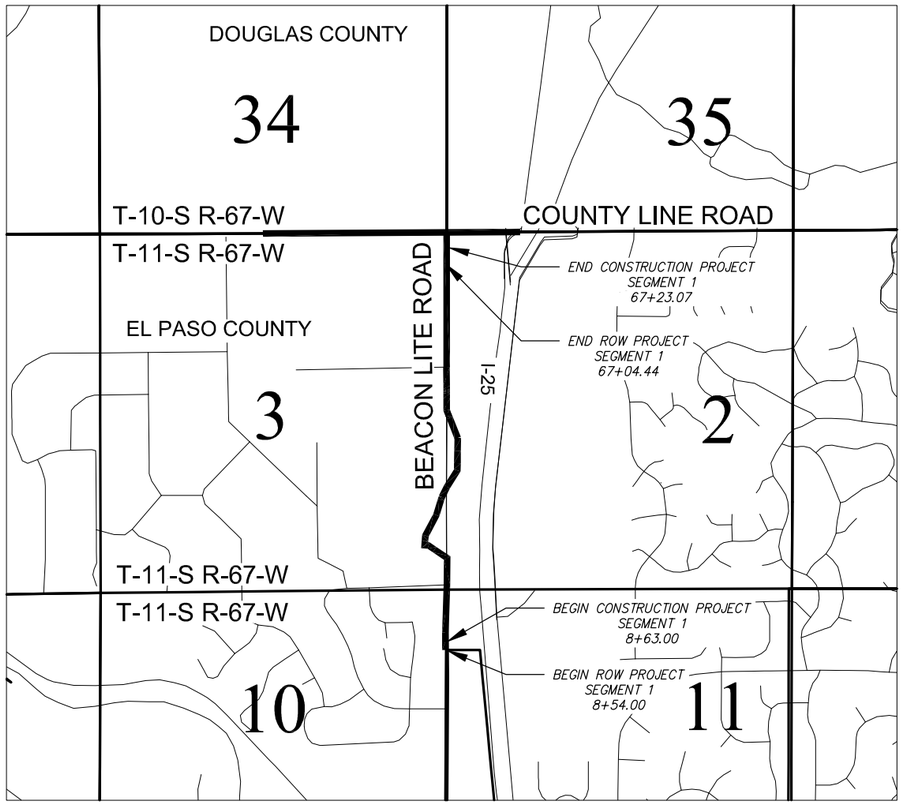
SECTIONS 34 & 35, TOWNSHIP 10 SOUTH, RANGE 67 WEST, DOUGLAS COUNTY
SECTIONS 2 & 3, TOWNSHIP 11 SOUTH, RANGE 67 WEST, EL PASO COUNTY
SECTIONS 10 & 11, TOWNSHIP 11 SOUTH, RANGE 67 WEST, EL PASO COUNTY
6TH PRINCIPAL MERIDIAN, COLORADO

SHEET NO.		INDEX OF SHEETS
3.01	(1)	TITLE SHEET
3.02	(1)	COORDINATE TABLE/PLAN SHEET
	(2)	TOTAL SHEETS

SECTION CORNER
QUARTER, SIXTEENTH AND SECTION CORNERS
SET EASEMENT MONUMENT
TEMPORARY EASEMENT POINT
RIGHT OF WAY MARKER
BLM MARKER
PROPERTY PIN
NOAA MARKER
QUARTER, SIXTEENTH AND SECTION CORNERS
FIMS
FIMS MONUMENT
WC
WITNESS CORNER
BM
BENCHMARK
NGS
NGS MARKER
EL PASO COUNTY MONUMENT
SECONDARY CONTROL MONUMENT
CDOT CONTROL
SURVEY CONTROL MONUMENT
DENSIFICATION CONTROL MONUMENT
HIGH ACCURACY REFERENCE NETWORK CONTROL MONUMENT

LEGEND

- PROPERTY, SLOPE & UTILITY EASEMENT LINE
- PERMANENT EASEMENT LINE
- TEMPORARY EASEMENT LINE
- PROPERTY BOUNDARY LINE
- PROPOSED RIGHT OF WAY LINE
- QUARTER SECTION LINE
- SECTION LINE
- SIXTEENTH SECTION LINE
- TOWNSHIP LINE (EXISTING)



N

NOT TO SCALE

NOTE: THE PROJECT CONTROL USED ON THIS SURVEY WAS SET AND THE PROJECT COORDINATES WERE ESTABLISHED BY THE EL PASO COUNTY SURVEY DEPARTMENT. THEY USED NGS VERTICAL DEEP ROD, V395 (PID #KK1315) AND IT'S GEODETIC COORDINATES, AS THEIR MAIN CONTROL POINT (CP #1). El PASO COUNTY ASSIGNED ASSUMED PROJECT COORDINATES OF 100,000 FOR THE NORTHING AND 100,000 FOR THE EASTING TO THIS POINT. ALL OTHER SURVEY POINTS WERE ESTABLISHED FROM THIS MAIN POINT.

THE SCALE FACTOR USED FOR THIS PROJECT IS 1.0003475006. THE GEOID MODEL USED FOR GPS OBSERVATIONS WAS GEOID 03.

BASIS OF BEARINGS: BEARINGS ARE BASED ON THE EAST QUARTER LINE OF SECTION 3, TOWNSHIP 11 SOUTH, RANGE 67 WEST. SAID LINE IS MONUMENTED AT THE NORTHEAST CORNER OF SAID SECTION 3 WITH A 3" ALUMINUM CAP STAMPED "PLS 17496" AND THE EAST QUARTER CORNER OF SAID SECTION 3 WITH A FOUND 2" ALUMINUM CAP STAMPED "PLS 10945", SAID LINE BEARS S0°05'45"E.

BASIS OF ELEVATIONS: PROJECT ELEVATIONS ARE BASED UPON NGS MONUMENT V395, KK1315 (EL PASO COUNTY POINT "CP #1") WITH A NAVD 88 ELEVATION OF 7346.57 FEET.

GENERAL NOTES:

1. THE PLAN SET IS SUBJECT TO CHANGE AND MAY NOT BE THE MOST CURRENT SET. IT IS THE USER'S RESPONSIBILITY TO VERIFY WITH EL PASO COUNTY THAT THIS SET IS THE MOST CURRENT. THE INFORMATION CONTAINED ON THE ATTACHED DRAWING IS NOT VALID UNLESS THIS COPY BEARS AN ORIGINAL SIGNATURE OF THE PROFESSIONAL LAND SURVEYOR HEREON NAMED.

NOTICE: ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.

SURVEYOR STATEMENT (PROJECT CONTROL DIAGRAM)

I, LORELEI A. WARD, A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF COLORADO, DO HEREBY STATE TO THE EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS THAT BASED UPON MY KNOWLEDGE, INFORMATION AND BELIEF, RESEARCH, CALCULATIONS AND EVALUATION OF THE SURVEY EVIDENCE WERE PERFORMED AND THIS PROJECT CONTROL DIAGRAM WAS PREPARED UNDER MY RESPONSIBLE CHARGE IN ACCORDANCE WITH APPLICABLE STANDARDS. THIS STATEMENT IS NOT A GUARANTY OR WARRANTY, EITHER EXPRESSED OR IMPLIED.

PLS NO. 34982

COLORADO REGISTERED
LORELEI A. WARD
34982
05/30/2023
PROFESSIONAL LAND SURVEYOR

J:\2019\0191742.00 - Beacon Lite Road\Survey\07_Drawings\2 PHASE - BEACON LITE ROW PLANS\, Silva, Scott

Print Date: January 13, 2023
File Name: Beacon Lite ROW Plan Set
Horizontal Scale: N/A Vertical Scale: N/A

Farnsworth GROUP
5775 MARK DABLING BLVD., SUITE 190
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Michael Baker INTERNATIONAL
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Sheet Revisions		
Date	Comments	Initials
–	–	–

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As Constructed
No Revisions:
Revised:
Void:

BEACON LITE ROAD IMPROVEMENTS
RIGHT OF WAY PLANS
PROJECT CONTROL TITLE SHEET

Designer: MB
Detailer: SWS
Subset: RIGHT OF WAY
Structure Numbers:
Sheets: 1 of 2

Project No./Code
EPC #128558

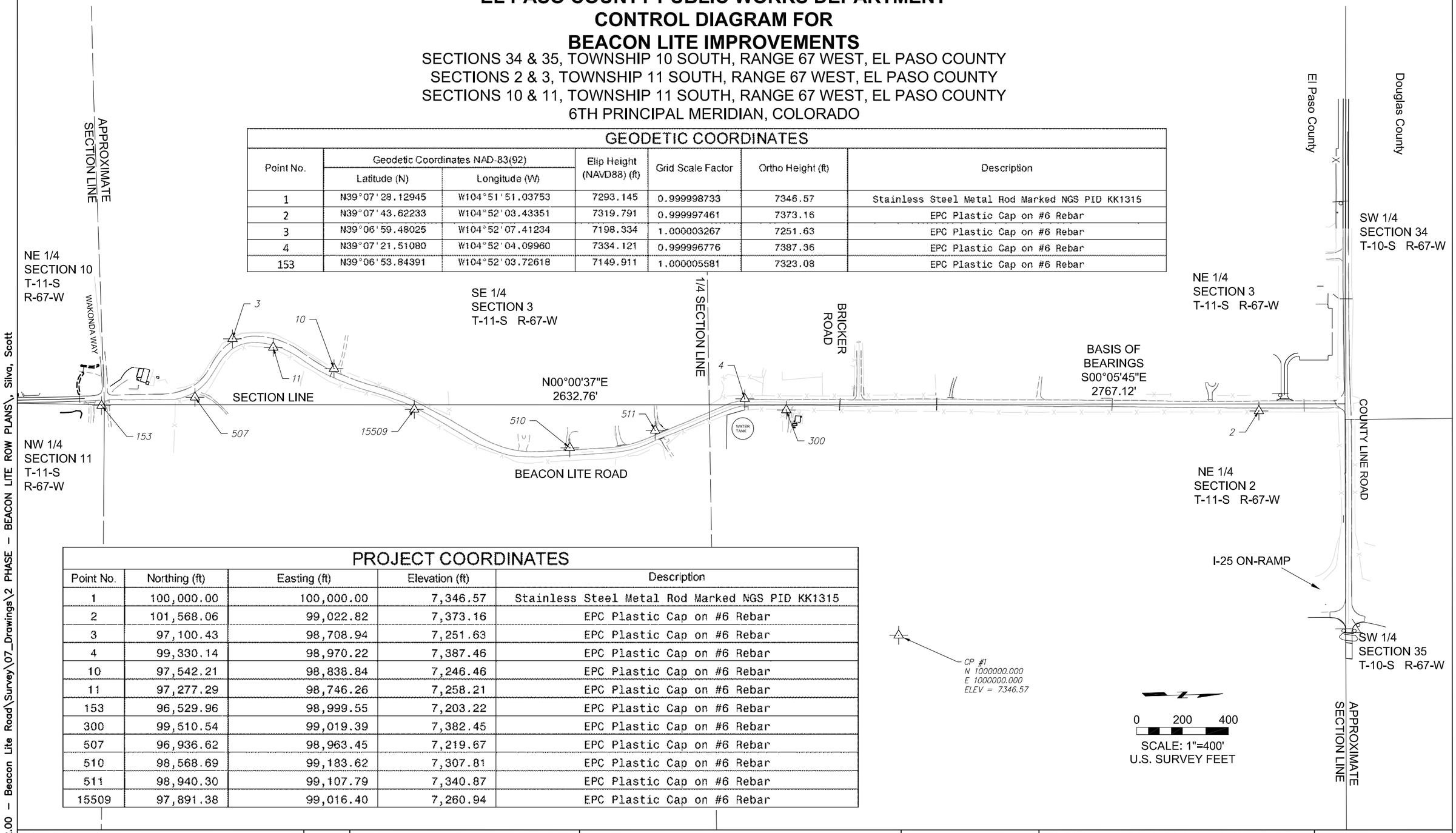
Sheet Number 19

EL PASO COUNTY PUBLIC WORKS DEPARTMENT
CONTROL DIAGRAM FOR
BEACON LITE IMPROVEMENTS

SECTIONS 34 & 35, TOWNSHIP 10 SOUTH, RANGE 67 WEST, EL PASO COUNTY
SECTIONS 2 & 3, TOWNSHIP 11 SOUTH, RANGE 67 WEST, EL PASO COUNTY
SECTIONS 10 & 11, TOWNSHIP 11 SOUTH, RANGE 67 WEST, EL PASO COUNTY
6TH PRINCIPAL MERIDIAN, COLORADO

GEODETIC COORDINATES

Point No.	Geodetic Coordinates NAD-83(92)		Ellp Height (NAVD88) (ft)	Grid Scale Factor	Ortho Height (ft)	Description
	Latitude (N)	Longitude (W)				
1	N39°07'28.12945	W104°51'51.03753	7293.145	0.999998733	7346.57	Stainless Steel Metal Rod Marked NGS PID KK1315
2	N39°07'43.62233	W104°52'03.43351	7319.791	0.999997461	7373.16	EPC Plastic Cap on #6 Rebar
3	N39°06'59.48025	W104°52'07.41234	7198.334	1.000003267	7251.63	EPC Plastic Cap on #6 Rebar
4	N39°07'21.51080	W104°52'04.09960	7334.121	0.999996776	7387.36	EPC Plastic Cap on #6 Rebar
153	N39°06'53.84391	W104°52'03.72618	7149.911	1.000005581	7323.08	EPC Plastic Cap on #6 Rebar



PROJECT COORDINATES

Point No.	Northing (ft)	Easting (ft)	Elevation (ft)	Description
1	100,000.00	100,000.00	7,346.57	Stainless Steel Metal Rod Marked NGS PID KK1315
2	101,568.06	99,022.82	7,373.16	EPC Plastic Cap on #6 Rebar
3	97,100.43	98,708.94	7,251.63	EPC Plastic Cap on #6 Rebar
4	99,330.14	98,970.22	7,387.46	EPC Plastic Cap on #6 Rebar
10	97,542.21	98,838.84	7,246.46	EPC Plastic Cap on #6 Rebar
11	97,277.29	98,746.26	7,258.21	EPC Plastic Cap on #6 Rebar
153	96,529.96	98,999.55	7,203.22	EPC Plastic Cap on #6 Rebar
300	99,510.54	99,019.39	7,382.45	EPC Plastic Cap on #6 Rebar
507	96,936.62	98,963.45	7,219.67	EPC Plastic Cap on #6 Rebar
510	98,568.69	99,183.62	7,307.81	EPC Plastic Cap on #6 Rebar
511	98,940.30	99,107.79	7,340.87	EPC Plastic Cap on #6 Rebar
15509	97,891.38	99,016.40	7,260.94	EPC Plastic Cap on #6 Rebar

J:\2019\0191742.00 - Beacon Lite Road\Survey\07_Drawings\2 PHASE - BEACON LITE ROW PLANS\, Silva, Scott

Print Date: January 13, 2023
File Name: Beacon Lite ROW Plan Set
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Sheet Revisions

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As Constructed
No Revisions:
Revised:
Void:

BEACON LITE ROAD IMPROVEMENTS
RIGHT OF WAY PLANS
CONTROL DIAGRAM

Designer: MJE
Detailer: SWS
Subset: RIGHT OF WAY
Structure Numbers:
Sheets: 2 of 2

Project No./Code
EPC #128558

Sheet Number 20

TO ESTABLISH GEOMETRIC CONTROL FOR THE CONSTRUCTION OF THIS PROJECT, THE DEPARTMENT HAS PROVIDED THE FOLLOWING INFORMATION:

Format *

- ■ Horizontal Control — Plans
- ■ Vertical Control — Plans
- ■ Roadway Alignment — Plans
- □ Original Terrain Data
- □ Other:

* Specify the information format, ie., plan sheet, computer disk, computer printout, or other. The information marked is either contained on the plans or is available from the Engineer.

TYPE OF PROJECT

- □ Landscaping
- □ Signalization
- □ Safety Improvement
- □ Asphalt Overlay
- □ Concrete Overlay
- □ Minor Widening
- ■ Major Reconstruction
- □ New Roadway Construction
- □ Bridge Replacement
- □ Bridge Widening
- □ New Bridge
- □ Other: Flood Recovery and Restoration

SURVEY WORK TO BE PERFORMED BY OTHERS:

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER SECTION 625:

- ___ ■ Establish and Maintain Project Centerline or Engineer Approved Offset Line(s)
- ___ ■ Verification and Maintenance of Horizontal and Vertical Control
- ___ ■ Verify or Determine existing grades and alignments
- ___ ■ Verify or Determine existing topography
- ___ □ GPS/RTS (Global Positioning System/Robotic Total Station) Construction Machine Control
- ___ □ Clearing and Grubbing Limits (Section 201)
- ___ □ Removal Limits (Section 202)
- ___ □ Reset Items (Section 210)
- ___ ■ Excavation and Embankment (Section 203)
  - ___ ■ Excavation
    - ___ ■ Unclassified
    - ___ □ Stripping
    - ___ □ Muck
    - ___ □ Rock
    - ___ □ Borrow
    - ___ □ Other:
    - ___ □ Potholing
  - ___ ■ Embankment
  - ___ ■ Site Grading
  - ___ □ Erosion Control (Perm)
  - ___ □ Other:
  - ___ □ As Staked Earthwork Quantities (See General Notes)

	Slope Staking (Y/N)	Grid (Y/N)	Grade (Y/N)	Special Interval
Excavation	Y	N	Y	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
Embankment	Y	N	Y	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

- ___ ■ Landscaping
  - ___ □ Top Soil (Section 207)
  - ___ □ Seeding (Section 212)
  - ___ □ Mulching (Section 213)
  - ___ □ Planting (Section 214)
  - ___ □ Herbicide (Section 217)
  - ___ ■ Other: Seeding
- ___ ■ Erosion Control (Section 208)
  - ___ □ Seeding (Temp)
  - ___ ■ Silt Fence
  - ___ □ Erosion Bales
  - ___ ■ Erosion Logs
  - ___ □ Riprap (Temp)
  - ___ □ Other:
- ___ ■ Roadway Bases
  - ___ □ Untreated Subgrade
  - ___ □ Treated Subgrade
  - ___ ■ Aggregate Base Course (Section 304)
  - ___ □ Reconditioning
  - ___ □ PMBB - Plant Mix Bituminous Base
  - ___ □ Other:

	Grid (Y/N)	Grade (Y/N)	Special Interval	Special Offset
Roadway Bases	-	-	-	-
	-	-	-	-
	N	Y	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

- ___ ■ Pavements
  - ___ ■ HMA - Hot Mix Asphalt (Section 403)
  - ___ ■ Concrete (Section 412)
  - ___ □ Heating & Scarifying Treatment
  - ___ □ Prime Coat, Tack Coat & Rejuvenating Agent (Section 407)
  - ___ □ Seal Coat or Chip Seal (Section 409)
  - ___ □ Other:

	Grid (Y/N)	Special Interval	Special Offset
Pavements	N	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-

	Tangent Interval	Curve Interval	Special Offset
Curb & Gutter	-	-	-

- ___ ■ Roadway Elements
  - ___ ■ Curb and Gutter (Section 609)
  - ___ □ Drop inlets - alignment and grades (Section 604)
  - ___ ■ Retaining Walls
  - ___ □ Guard Rail (Section 606)
  - ___ □ Sidewalk (Section 608)
  - ___ □ Overlay Stationing
  - ___ □ Other:

	Left Interval	Center Interval	Right Interval
Stationing	-	-	-

- ___ ■ Riprap (Perm) (Section 506)
- ___ □ Slope and Ditch Paving (Section 507)
- ___ ■ Minor Structures
  - ___ ■ Structure Excavation limits (Section 206)
  - ___ ■ Culverts (Section 603)
  - ___ ■ Culverts w/ Headwalls and Wingwalls (Section 601)
  - ___ □ Concrete Box Culverts w/ Headwalls and Wingwalls
  - ___ ■ Pipes (Section 603)
    - ___ □ Sanitary Sewer
    - ___ ■ Storm Sewer
    - ___ □ Water
    - ___ □ Irrigation
    - ___ □ Miscellaneous
  - ___ ■ Manholes (Section 604)
  - ___ ■ Inlets (Section 604)
  - ___ ■ Permanent Water Quality BMP (Section 208)
  - ___ ■ Other:
- ___ ■ Major Structures - Overhead Signs (Section 614), Concrete Box Culverts, Bridges - and all other structures assigned a structure number
  - ___ ■ Structure Excavation limits (Section 206)
  - ___ □ Concrete Box Culverts (Section 603) w/ Headwalls and Wingwalls (Section 601)
  - ___ □ Piling locations and cut off elevations (Section 502)
  - ___ □ Caisson locations and elevations (Section 503)
  - ___ □ Footing locations, alignment, and elevations
  - ___ □ Abutment/Pier locations, alignment, and elevations
  - ___ □ Wingwall skew angles/offsets
  - ___ □ Structural concrete form locations
  - ___ □ Substructure As-constructed survey required for Bridges (Subsection 601 .12) and Overhead signs (S-614-50)
  - ___ □ Bridge expansion joint(s) alignment and grade (longitudinal and transverse)
  - ___ □ Deck grades at Girder 10th or "n" th point locations and elevations
  - ___ □ Slope and Ditch Paving (Section 507)
  - ___ ■ Other: Retaining Wall
- ___ ■ Fencing (Section 607)
  - ___ □ Temporary
  - ___ ■ Permanent
  - ___ □ Sound Barrier
  - ___ □ Other:
- ___ □ Delineators (Section 612)
  - ___ □ Temporary
  - ___ □ Permanent
- ___ ■ Lighting (Section 613) and Traffic Control Devices (Permanent) (Section 614)
  - ___ □ Signal pole locations and elevations
  - ___ ■ Light pole locations and elevations
  - ___ □ Sign locations
  - ___ □ Field verify sign post locations, elevations, and lengths before fabrication.
  - ___ □ Other:
- ___ ■ Pavement Marking (Section 627)
  - ___ □ Striping (Temp)
  - ___ ■ Striping (Perm)
  - ___ □ Symbols
  - ___ □ Other:
- ___ □ Temporary Lighting and Construction Traffic Control Devices (Section 630)
  - ___ □ Signal pole locations and elevations (Temp)
  - ___ □ Light pole locations and elevations (Temp)
  - ___ □ Sign Locations (Temp)
  - ___ □ Other:
- ___ ■ All Easements (Temp Staking by P.L.S. Only)
- ___ ■ Right of Way (Temp Staking by P.L.S. Only)

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER SECTION 629:

- ___ □ Monumentation (Section 629)
  - ___ □ Control
  - ___ □ Right of Way
  - ___ □ Land corners, Aliquot corners
  - ___ □ Easements
  - ___ □ Reference the specified existing monuments:**
  - ___ □ Replace the specified existing monuments: **
  - ___ □ Locate monuments. It is estimated hours are required.

NOTE: All 629 items shall include adequate research, calculations, and evaluations of evidence for monuments to be set.

** A Tabulation of Survey Monuments may be provided on the plans.

GENERAL NOTES:

1. Unless indicated otherwise on this Survey Tabulation Sheet, all survey work and staking intervals shall be done in accordance with the latest edition of the CDOT Survey Manual.
2. Adequate information for establishing lines, grades, and locations for all work items have been specified on the plans. Any additional information required to stake the item or element shall be generated by the Contractor's surveyor.
3. The Contractor's surveyor shall provide an estimate of the man-hours necessary to complete the work items indicated on this sheet. A copy of this sheet, with the estimated man-hours written on the blank line to the left of the specified items, shall be submitted with the Survey Schedule to the Engineer 10 days prior to the Presurvey Conference - Construction Survey.
4. Stakes and Monuments which are damaged or destroyed by the progress of construction shall be replaced by the Contractor at no additional cost to the Department.
5. The Contractor shall furnish an As Staked (or GPS/RTS Construction Machine Control) Earthwork Quantity report to the Engineer prior to completion of twenty percent (20%) of the planned earthwork in any phase as per the CDOT Survey Manual. A printed copy of the As Staked (or GPS/RTS Construction Machine Control) Earthwork data report and a computer disk with that information on it, in the specified format shall be submitted to the Engineer. The Contractor shall field verify original ground cross sections at a maximum 500 feet intervals.
6. Prior to beginning work on any subsequent operation, such as placing base course or paving, the Contractor shall certify in writing to the Engineer that the final grade is within specified tolerance.
7. The Contractor's surveyor shall perform all field surveying and calculations necessary to tie plan grades into field grades.
8. The Contractor shall coordinate construction staking on the project with any utility work.
9. Fieldbooks shall contain daily records of points set and or measurements observed. The information recorded shall contain: date, crew members' names, point no., description, staking information, and sketches. If the survey information is collected electronically, information recorded shall be provided to the Project Engineer in a hard copy format that is intuitive, clear and related to the supplemental information recorded in the field books. All linear surveys, such as slope stakes and blue tops, shall have the station and offset information related to the measured information. Non-linear surveys such as structures staking shall have sketches relating electronic information, such as point numbers, to the sketch.
10. The Contractor's surveyor shall submit the following fieldbooks to the Engineer:
    - ■ Horizontal Control (Primary & Secondary)
    - ■ Vertical Control (i.e. Benchmarks)
    - ■ Property Pin Ties
    - □ Horizontal Alignment
    - □ Grading
    - □ Slope Staking
    - ■ Minor Structures
    - ■ Major Structures
    - □ One fieldbook for each work category shown on this sheet
    - □ Other Fieldbook(s):

COLORADO LICENSED — ERIC M. KING — 44932 — 6/01/2022 — PROFESSIONAL ENGINEER

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Unit Information Unit Leader Initials

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Sheet Revisions

Date:	Comments	Init.

EL PASO COUNTY COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS SURVEY TABULATION

Designer:	EMK	Structure Numbers	
Detailer:	EMK		
Sheet Subset:	SURV TAB	Subset Sheets:	1 OF 1

Project No./Code: 128558

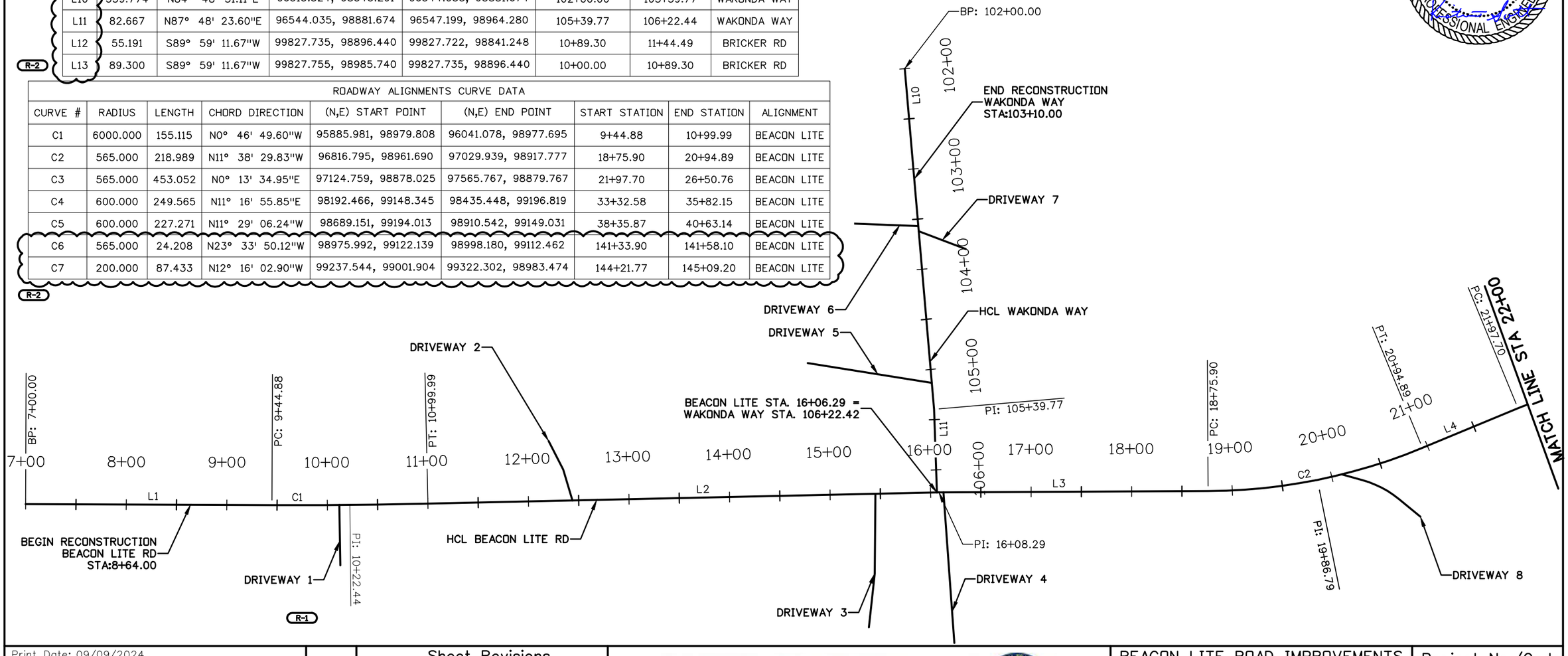
Sheet Number 21

ROADWAY ALIGNMENTS LINE DATA							
LINE	LENGTH	BEARING	(N,E) START POINT	(N,E) END POINT	START STATION	END STATION	ALIGNMENT
L1	244.878	N0° 02' 23.37"W	95641.103, 98979.978	95885.981, 98979.808	7+00.00	9+44.88	BEACON LITE
L2	508.298	N1° 31' 15.84"W	96041.078, 98977.695	96549.196, 98964.203	10+99.99	16+08.29	BEACON LITE
L3	267.610	N0° 32' 16.62"W	96549.196, 98964.203	96816.795, 98961.690	16+08.29	18+75.90	BEACON LITE
L4	102.816	N22° 44' 43.03"W	97029.939, 98917.777	97124.759, 98878.025	20+94.89	21+97.70	BEACON LITE
L5	681.826	N23° 11' 52.94"E	97565.767, 98879.767	98192.466, 99148.345	26+50.76	33+32.58	BEACON LITE
L6	253.718	N0° 38' 01.25"W	98435.448, 99196.819	98689.151, 99194.013	35+82.15	38+35.87	BEACON LITE
L7	70.759	N22° 20' 11.24"W	98910.542, 99149.031	98975.992, 99122.139	40+63.14	141+33.90	BEACON LITE
L8	263.663	N24° 47' 29.01"W	98998.180, 99112.462	99237.544, 99001.904	141+58.10	144+21.77	BEACON LITE
L9	2633.653	N0° 15' 23.22"E	99322.302, 98983.474	101955.929, 98995.262	145+09.20	71+38.31	BEACON LITE
L10	339.774	N84° 48' 51.11"E	96513.324, 98543.291	96544.035, 98881.674	102+00.00	105+39.77	WAKONDA WAY
L11	82.667	N87° 48' 23.60"E	96544.035, 98881.674	96547.199, 98964.280	105+39.77	106+22.44	WAKONDA WAY
L12	55.191	S89° 59' 11.67"W	99827.735, 98896.440	99827.722, 98841.248	10+89.30	11+44.49	BRICKER RD
L13	89.300	S89° 59' 11.67"W	99827.755, 98985.740	99827.735, 98896.440	10+00.00	10+89.30	BRICKER RD

R-2

ROADWAY ALIGNMENTS CURVE DATA								
CURVE #	RADIUS	LENGTH	CHORD DIRECTION	(N,E) START POINT	(N,E) END POINT	START STATION	END STATION	ALIGNMENT
C1	6000.000	155.115	N0° 46' 49.60"W	95885.981, 98979.808	96041.078, 98977.695	9+44.88	10+99.99	BEACON LITE
C2	565.000	218.989	N11° 38' 29.83"W	96816.795, 98961.690	97029.939, 98917.777	18+75.90	20+94.89	BEACON LITE
C3	565.000	453.052	N0° 13' 34.95"E	97124.759, 98878.025	97565.767, 98879.767	21+97.70	26+50.76	BEACON LITE
C4	600.000	249.565	N11° 16' 55.85"E	98192.466, 99148.345	98435.448, 99196.819	33+32.58	35+82.15	BEACON LITE
C5	600.000	227.271	N11° 29' 06.24"W	98689.151, 99194.013	98910.542, 99149.031	38+35.87	40+63.14	BEACON LITE
C6	565.000	24.208	N23° 33' 50.12"W	98975.992, 99122.139	98998.180, 99112.462	141+33.90	141+58.10	BEACON LITE
C7	200.000	87.433	N12° 16' 02.90"W	99237.544, 99001.904	99322.302, 98983.474	144+21.77	145+09.20	BEACON LITE

R-2



HORIZONTAL SCALE: 1"=100'

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9/10/24
PROFESSIONAL ENGINEER

Print Date: 09/09/2024
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Sheet Revisions		
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8/31/23	UPDATED DRIVE 1	KRS
9/09/24	GEOMETRY CHANGE	KRS

EL PASO COUNTY
COLORADO

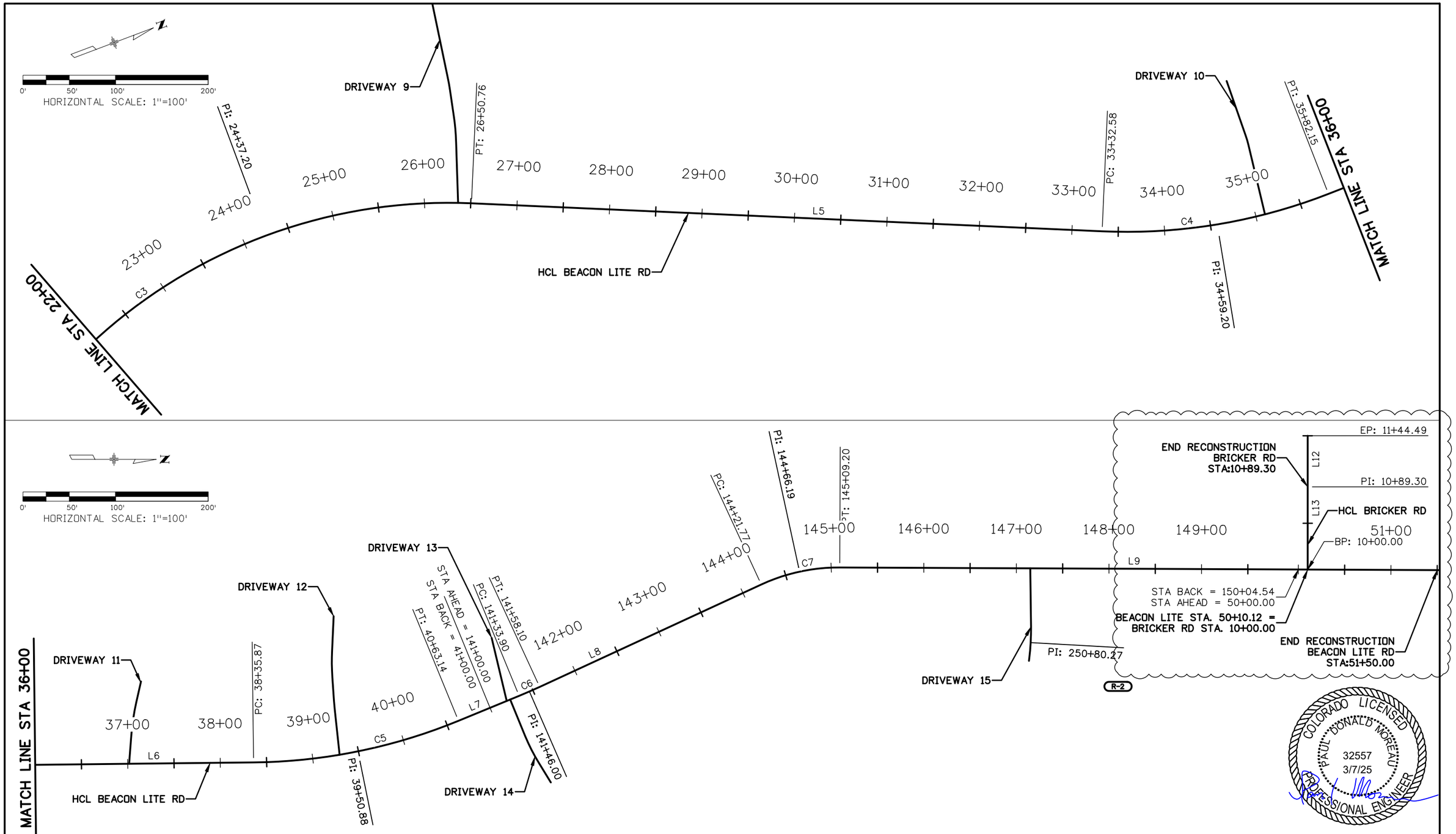
PPRTA

BEACON LITE ROAD IMPROVEMENTS
GEOMETRIC LAYOUT

Project No./Code: 128558

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	GEOMETRIC	Subset Sheets:	1 OF 6

Sheet Number 22



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Sheet Revisions		
Date:	Comments	Init.
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09/09/24	GEOMETRY CHANGE	KRS
03/07/25	PROJ. LIMITS CHANGE	PDM

EL PASO COUNTY
COLORADO

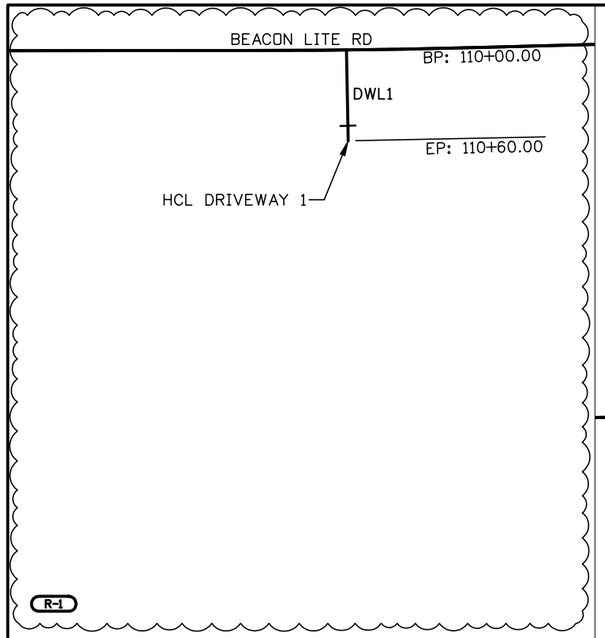
PPRTA

BEACON LITE ROAD IMPROVEMENTS
GEOMETRIC LAYOUT

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	GEOMETRIC	Subset Sheets:	2 OF 6

Project No./Code
128558

Sheet Number 23



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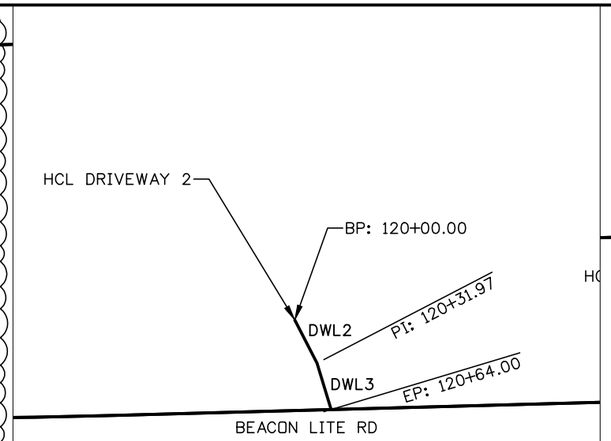

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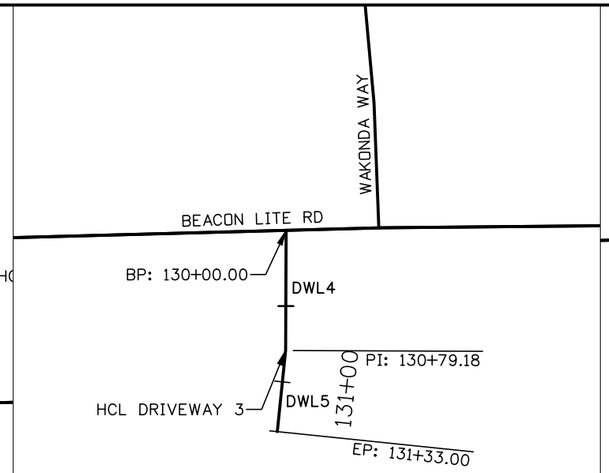

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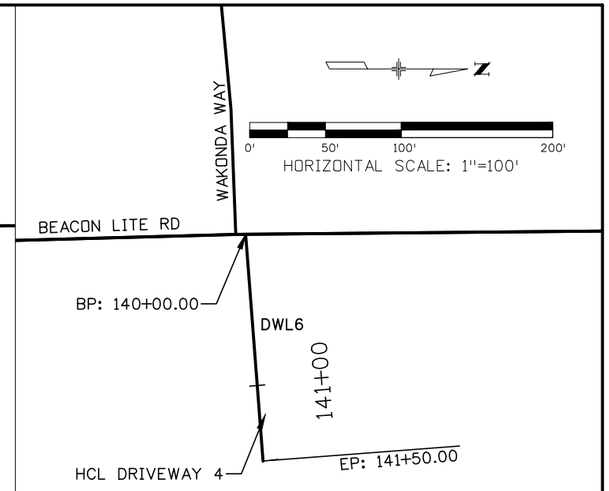

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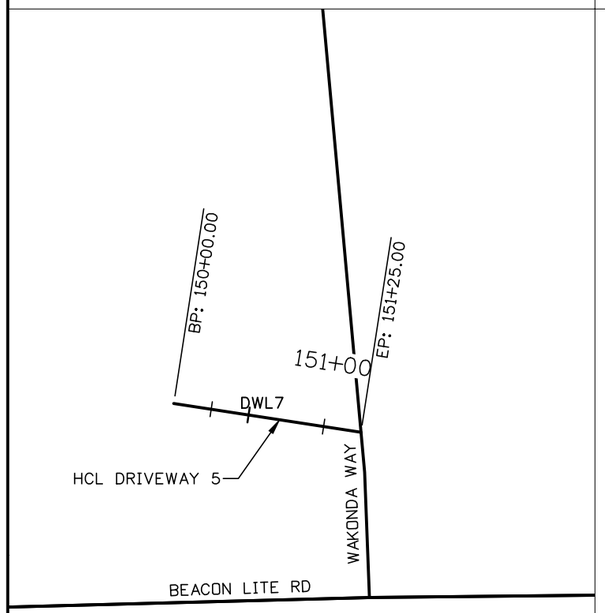
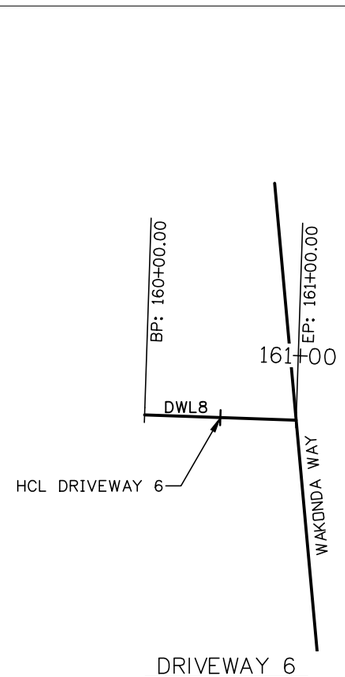


DRIVEWAY 5



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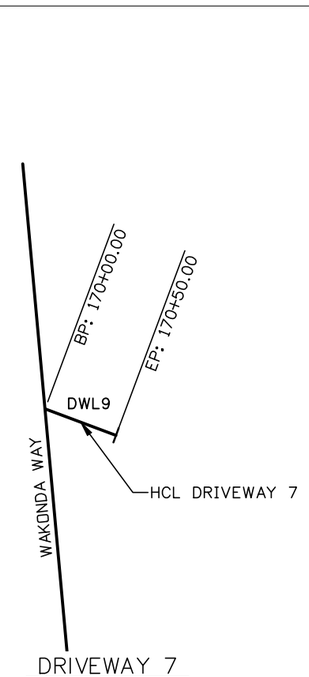

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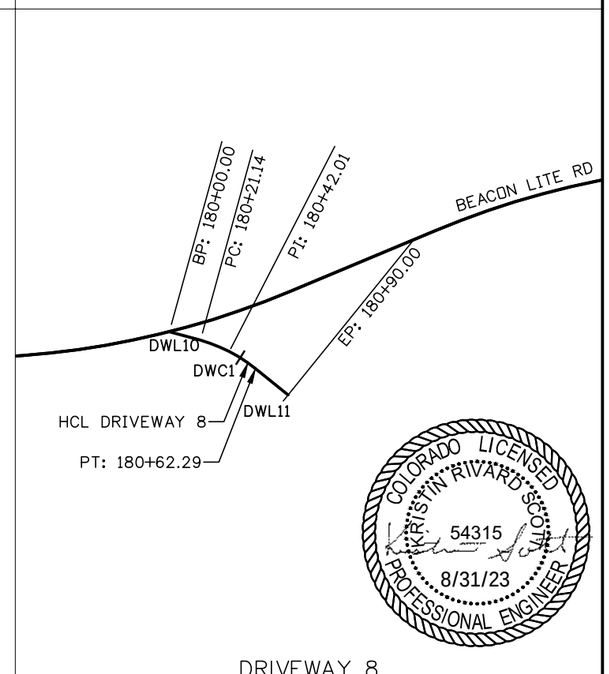

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Print Date: 04/29/2022
File Name: 175644_GEO.dwg
Horiz. Scale: 1"=100' Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions		
Date:	Comments	Init.
6/01/23	RFC	EMK
8/31/23	UPDATED DRIVE 1	KRS

EL PASO COUNTY
COLORADO

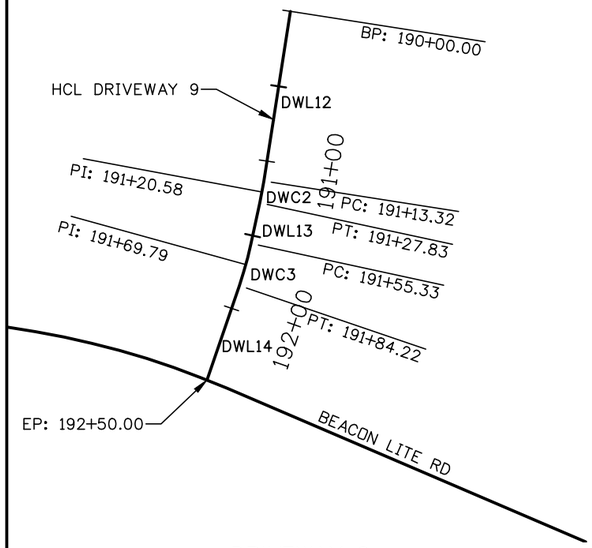
PPRTA

BEACON LITE ROAD IMPROVEMENTS
GEOMETRIC LAYOUT

Project No./Code
128558

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	GEOMETRIC	Subset Sheets:	3 OF 6

Sheet Number 24



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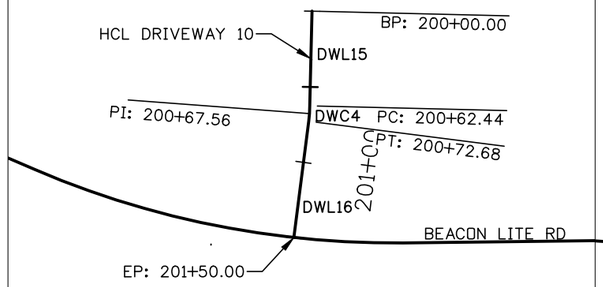

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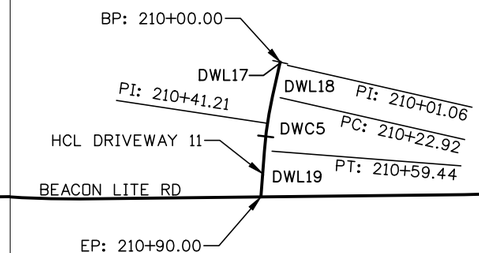

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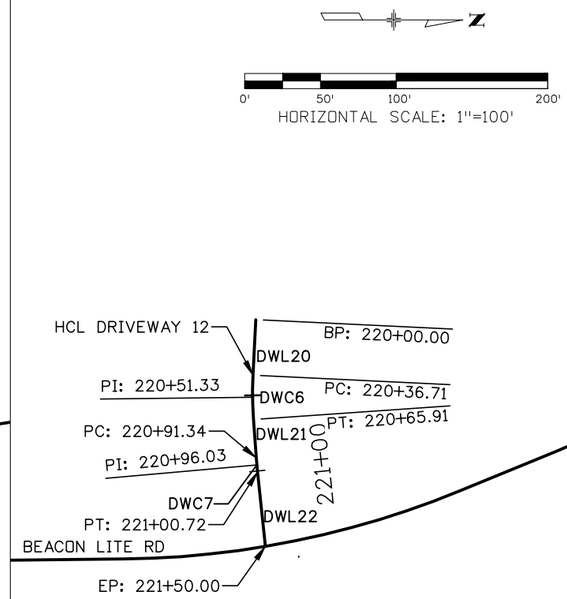

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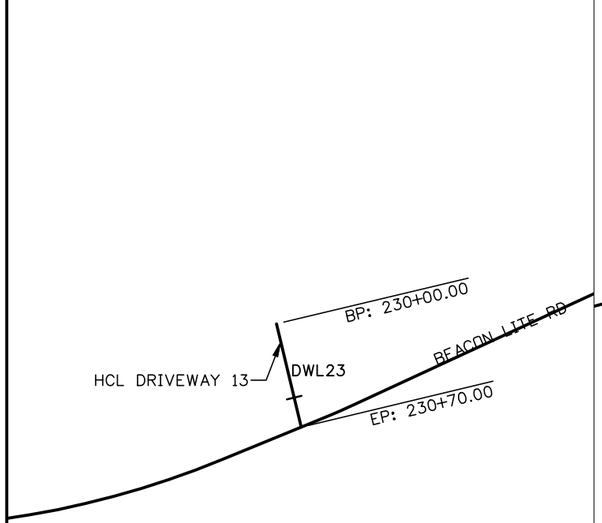

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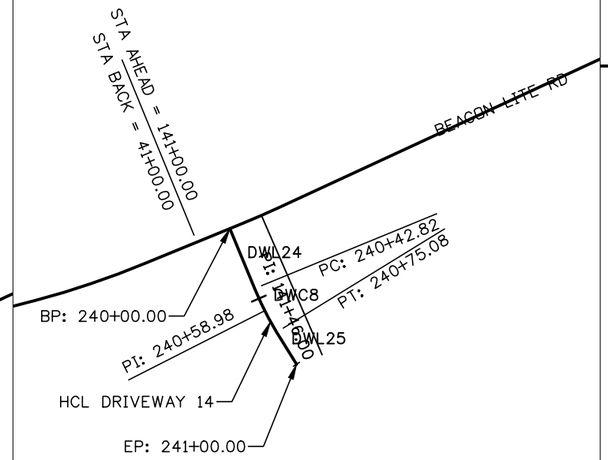

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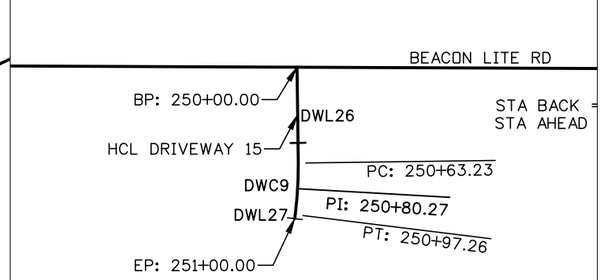

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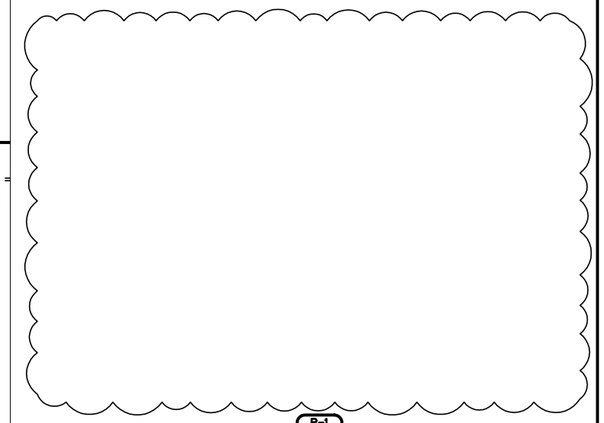


Print Date: 03/07/2025
File Name: 175644_RDW_GEO.dwg
Horiz. Scale: 1"=100' Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions		
Date:	Comments	Init.
06/01/23	RFC	EMK
03/07/25	PROJ. LIMITS CHANGE	PDM

EL PASO COUNTY
COLORADO

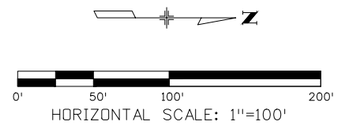
PPRTA

BEACON LITE ROAD IMPROVEMENTS
GEOMETRIC LAYOUT

Project No./Code: 128558

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	GEOMETRIC	Subset Sheets:	4 OF 6

Sheet Number 25



DRIVEWAY ALIGNMENTS LINE DATA

LINE #	LENGTH	DIRECTION	(N,E) START POINT	(N,E) END POINT	BEGIN STATION	END STATION	ALIGNMENT
DWL1	60.00	N88° 50' 11.81"E	95953.058, 98979.387	95954.277, 99039.374	110+00.00	110+60.00	Drive 1
DWL2	31.97	N62° 32' 07.77"E	96160.791, 98914.845	96175.533, 98943.208	120+00.00	120+31.97	Drive 2
DWL3	32.03	N73° 13' 50.06"E	96175.533, 98943.208	96184.775, 98973.880	120+31.97	120+64.00	Drive 2
DWL4	79.18	S89° 46' 14.52"E	96486.056, 98965.879	96485.739, 99045.059	130+00.00	130+79.18	Drive 3
DWL5	53.82	S84° 05' 55.30"E	96485.739, 99045.059	96480.205, 99098.597	130+79.18	131+33.00	Drive 3
DWL6	150.00	N85° 36' 56.62"E	96553.796, 98964.160	96565.262, 99113.721	140+00.00	141+50.00	Drive 4
DWL7	125.00	N8° 46' 55.37"E	96418.111, 98836.263	96541.645, 98855.348	150+00.00	151+25.00	Drive 5
DWL8	100.00	N1° 55' 20.40"E	96427.564, 98696.229	96527.509, 98699.584	160+00.00	161+00.00	Drive 6
DWL9	50.00	N20° 28' 39.61"E	96527.984, 98704.821	96574.824, 98722.313	170+00.00	170+50.00	Drive 7
DWL10	21.14	N15° 24' 54.47"E	96949.925, 98944.493	96970.302, 98950.112	180+00.00	180+21.14	Drive 8
DWL11	27.71	N38° 59' 41.89"E	97006.646, 98968.794	97028.181, 98986.229	180+62.29	180+90.00	Drive 8
DWL12	113.32	S81° 06' 58.05"E	97607.344, 98631.067	97589.843, 98743.029	190+00.00	191+13.32	Drive 9
DWL13	27.51	S77° 47' 27.97"E	97587.188, 98757.290	97581.371, 98784.173	191+27.83	191+55.33	Drive 9
DWL14	65.78	S71° 10' 18.05"E	97573.648, 98811.987	97552.419, 98874.247	191+84.22	192+50.00	Drive 9
DWL15	62.44	S88° 37' 46.09"E	98375.512, 99043.957	98374.018, 99106.377	200+00.00	200+62.44	Drive 10
DWL16	77.33	S82° 45' 46.43"E	98373.250, 99116.582	98363.509, 99193.292	200+72.68	201+50.00	Drive 10
DWL17	1.06	S77° 14' 05.73"E	98567.634, 99106.601	98567.400, 99107.634	210+00.00	210+01.06	Drive 11
DWL18	21.87	S77° 14' 05.73"E	98567.400, 99107.634	98562.568, 99128.960	210+01.06	210+22.92	Drive 11
DWL19	30.56	S85° 36' 10.29"E	98557.125, 99165.031	98554.782, 99195.499	210+59.44	210+90.00	Drive 11
DWL20	36.71	S87° 16' 48.64"E	98775.749, 99036.156	98774.007, 99072.824	220+00.00	220+36.71	Drive 12
DWL21	25.42	N86° 01' 38.52"E	98774.326, 99102.007	98776.088, 99127.371	220+65.91	220+91.34	Drive 12
DWL22	49.28	N83° 52' 35.37"E	98776.913, 99136.719	98782.170, 99185.716	221+00.72	221+50.00	Drive 12
DWL23	70.00	N76° 32' 03.68"E	98946.358, 99059.541	98962.658, 99127.618	230+00.00	230+70.00	Drive 13
DWL24	42.82	N67° 39' 39.05"E	98966.383, 99126.087	98982.658, 99165.692	240+00.00	240+42.82	Drive 14
DWL25	24.92	N58° 25' 06.64"E	98997.269, 99194.416	99010.320, 99215.646	240+75.08	241+00.00	Drive 14
DWL26	63.23	N89° 16' 58.24"E	99528.124, 98984.395	99528.916, 99047.621	250+00.00	250+63.23	Drive 15
DWL27	2.74	S82° 55' 08.73"E	99527.029, 99081.568	99526.690, 99084.291	250+97.26	251+00.00	Drive 15

R-2

COLORADO LICENSED
PAUL DONALD MOREAU
32557
3/7/25
PROFESSIONAL ENGINEER

Print Date: 03/07/2025
File Name: 175644_RDW_GEO.dwg
Horiz. Scale: 1"=100' Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions

	Date:	Comments	Init.
	06/01/23	RFC	EMK
R-1	09/09/24	UPDATE DRIVE 1	KRS
R-2	03/07/25	PROJ. LIMITS CHANGE	PDM

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
GEOMETRIC LAYOUT

Designer: EMK
Detailer: RBR
Sheet Subset: GEOMETRIC
Structure Numbers
Subset Sheets: 5 OF 6

Project No./Code
128558

Sheet Number 26

DRIVEWAY ALIGNMENTS CURVE DATA								
CURVE #	RADIUS	LENGTH	CHORD DIRECTION	(N,E) START POINT	(N,E) END POINT	BEGIN STATION	END STATION	ALIGNMENT
DWC1	100.000	41.155	N27° 12' 18.18"E	96970.302, 98950.112	97006.646, 98968.794	180+21.14	180+62.29	DRIVE 8
DWC2	250.000	14.508	S79° 27' 13.01"E	97589.843, 98743.029	97587.188, 98757.290	191+13.32	191+27.83	DRIVE 9
DWC3	250.000	28.883	S74° 28' 53.01"E	97581.371, 98784.173	97573.648, 98811.987	191+55.33	191+84.22	DRIVE 9
DWC4	100.000	10.239	S85° 41' 46.26"E	98374.018, 99106.377	98373.250, 99116.582	200+62.44	200+72.68	DRIVE 10
DWC5	250.000	36.512	S81° 25' 08.01"E	98562.568, 99128.960	98557.125, 99165.031	210+22.92	210+59.44	DRIVE 11
DWC6	250.000	29.201	N89° 22' 24.94"E	98774.007, 99072.824	98774.326, 99102.007	220+36.71	220+65.91	DRIVE 12
DWC7	250.000	9.385	N84° 57' 06.95"E	98776.088, 99127.371	98776.913, 99136.719	220+91.34	221+00.72	DRIVE 12
DWC8	200.000	32.262	N63° 02' 22.84"E	98982.658, 99165.692	98997.269, 99194.416	240+42.82	240+75.08	DRIVE 14
DWC9	250.000	34.025	S86° 49' 05.24"E	99528.916, 99047.621	99527.029, 99081.568	250+63.23	250+97.26	DRIVE 15

R-2

COLORADO LICENSED
PAUL DONALD MOREAU
32557
3/7/25
PROFESSIONAL ENGINEER

Print Date: 03/07/2025
File Name: 175644_RDW_GEO.dwg
Horiz. Scale: 1"=100' Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
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Sheet Revisions		
Date:	Comments	Init.
06/01/23	RFC	EMK
08/31/23	REASSIGNED GEO. #'S	KRS
03/07/25	PROJ. LIMITS CHANGE	PDM

EL PASO COUNTY
COLORADO

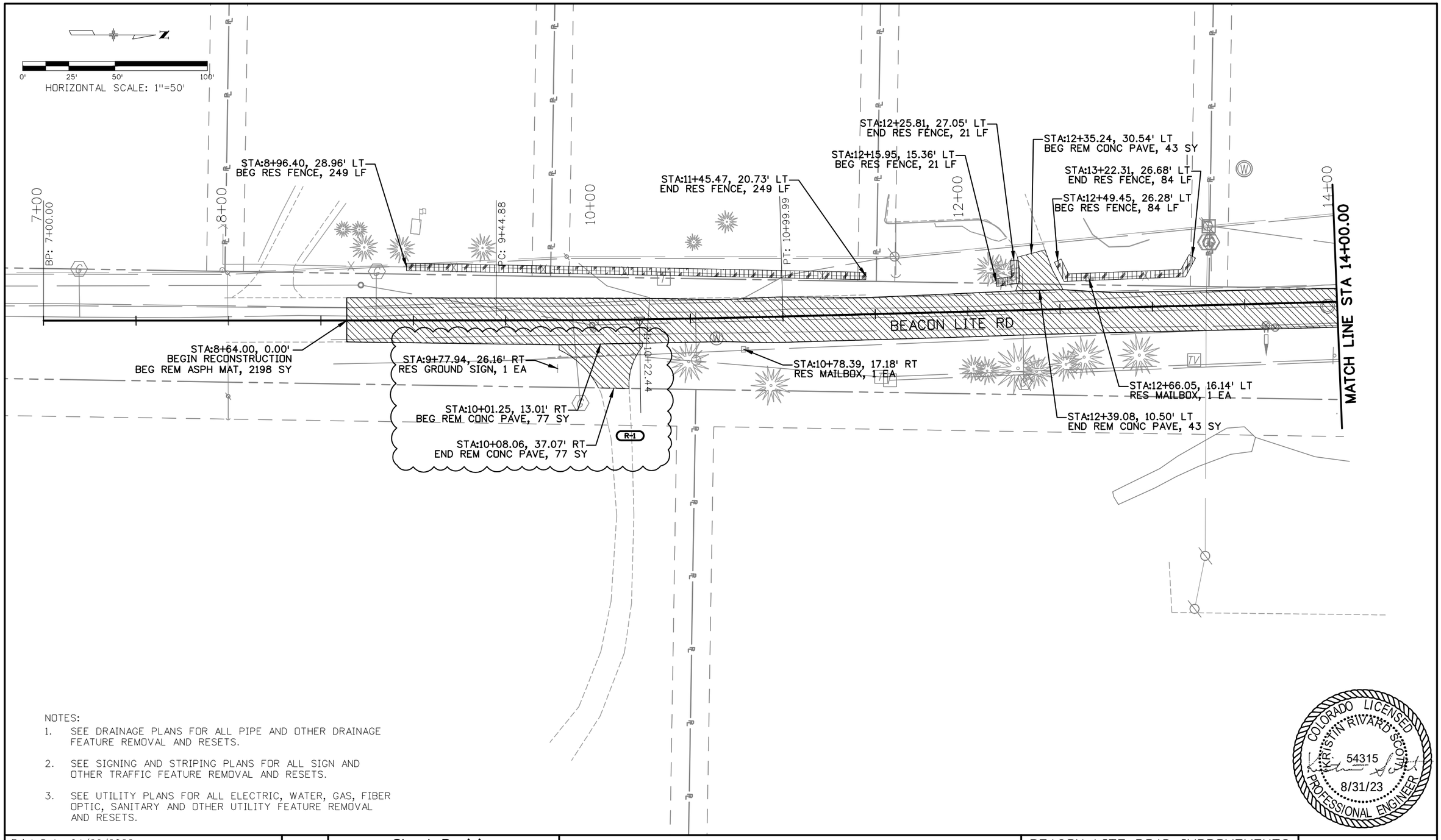
PPRTA

BEACON LITE ROAD IMPROVEMENTS
GEOMETRIC LAYOUT

Project No./Code
128558

Designer: EMK
Detailer: RBR
Sheet Subset: GEOMETRIC
Structure Numbers
Subset Sheets: 6 OF 6

Sheet Number 27



NOTES:

1. SEE DRAINAGE PLANS FOR ALL PIPE AND OTHER DRAINAGE FEATURE REMOVAL AND RESETS.
2. SEE SIGNING AND STRIPING PLANS FOR ALL SIGN AND OTHER TRAFFIC FEATURE REMOVAL AND RESETS.
3. SEE UTILITY PLANS FOR ALL ELECTRIC, WATER, GAS, FIBER OPTIC, SANITARY AND OTHER UTILITY FEATURE REMOVAL AND RESETS.

COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
8/31/23
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_REM_PLAN.dwg
Horiz. Scale: 1" = 50' Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions		
Date:	Comments	Init.
6/01/23	RFC	EMK
8/31/23	UPDATED DRIVE 1	KRS

EL PASO COUNTY
COLORADO

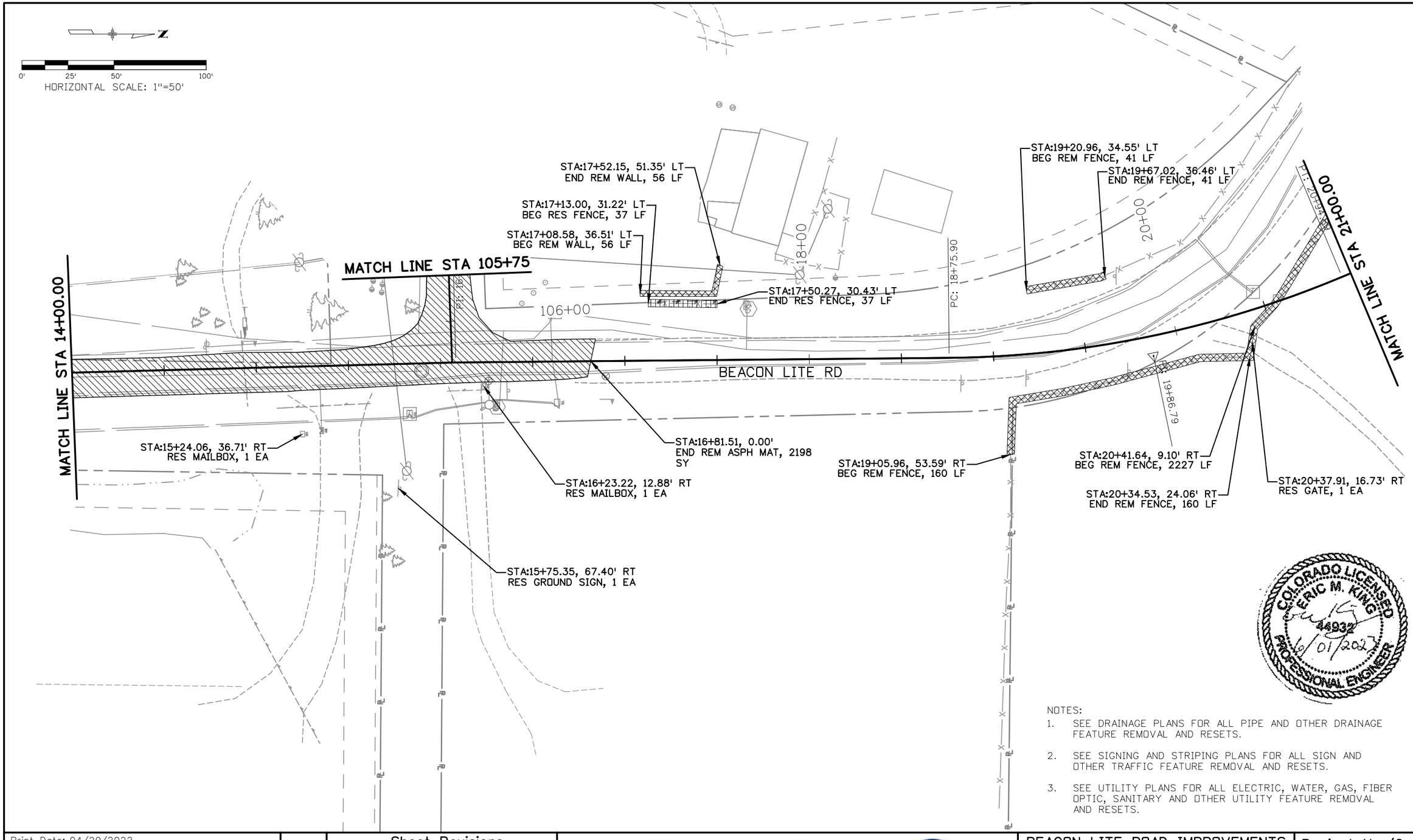
PPRTA

BEACON LITE ROAD IMPROVEMENTS
REMOVAL & RESET PLAN
BEACON LITE ROAD

Project No./Code
128558

Designer: KRS
Detailer: RBR
Sheet Subset: REMOVALS
Structure Numbers
Subset Sheets: 1 OF 8

Sheet Number 28



COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

NOTES:

1. SEE DRAINAGE PLANS FOR ALL PIPE AND OTHER DRAINAGE FEATURE REMOVAL AND RESETS.
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Print Date: 04/29/2022
File Name: 175644_REM_PLAN.dwg
Horiz. Scale: 1" = 50' Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions

Date:	Comments	Init.

EL PASO COUNTY
COLORADO

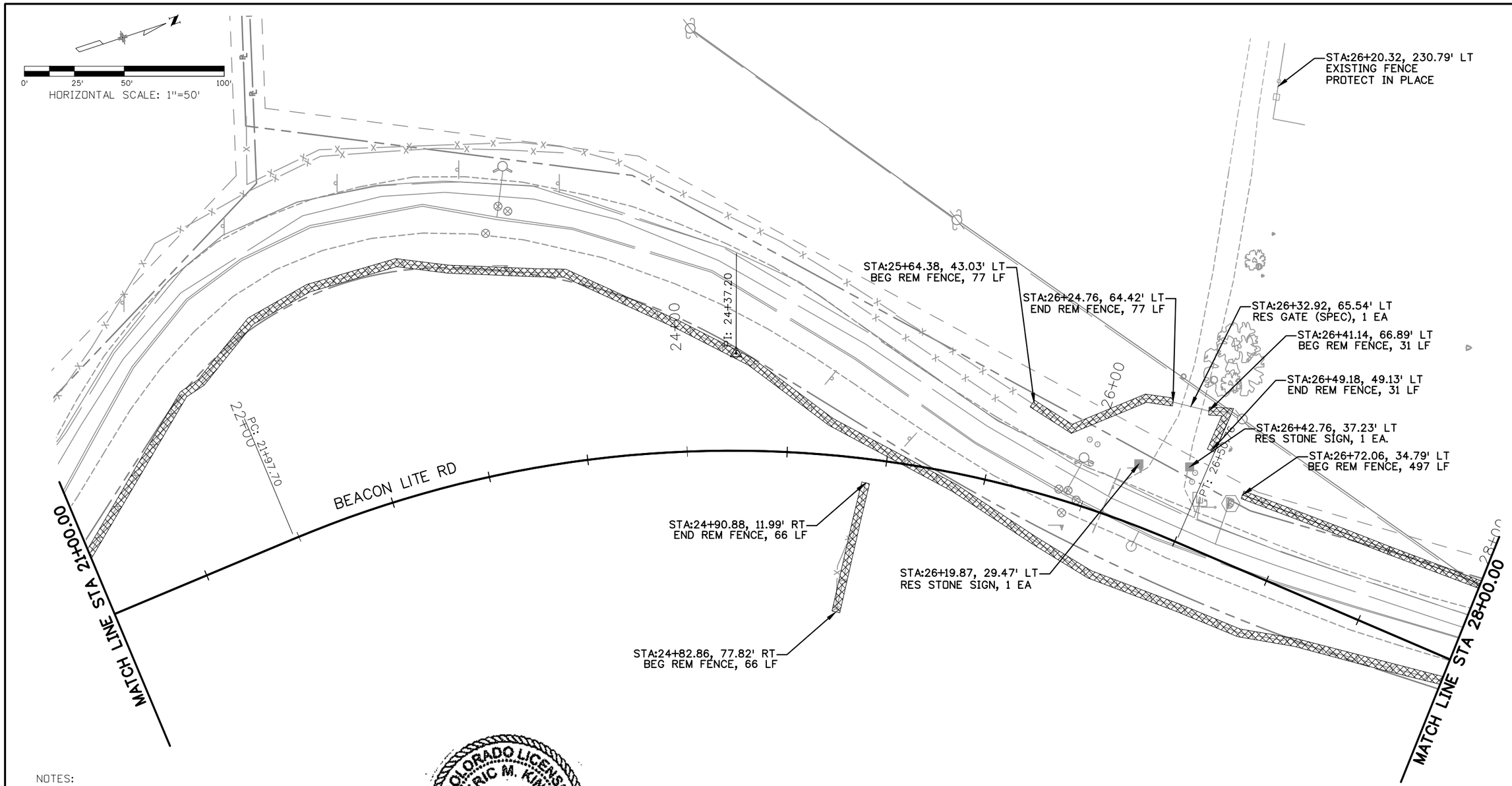
PPRTA

BEACON LITE ROAD IMPROVEMENTS
REMOVAL & RESET PLAN
BEACON LITE ROAD

Project No./Code: 128558

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	REMOVALS	Subset Sheets:	2 OF 8

Sheet Number 29



NOTES:

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2. SEE SIGNING AND STRIPING PLANS FOR ALL SIGN AND OTHER TRAFFIC FEATURE REMOVAL AND RESETS.
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COLORADO LICENSED
ERIC M. KING
44937
PROFESSIONAL ENGINEER
6/01/2022

Print Date: 04/29/2022
File Name: 175644_REM_PLAN.dwg
Horiz. Scale: 1" = 50' Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
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720.514.1100

Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

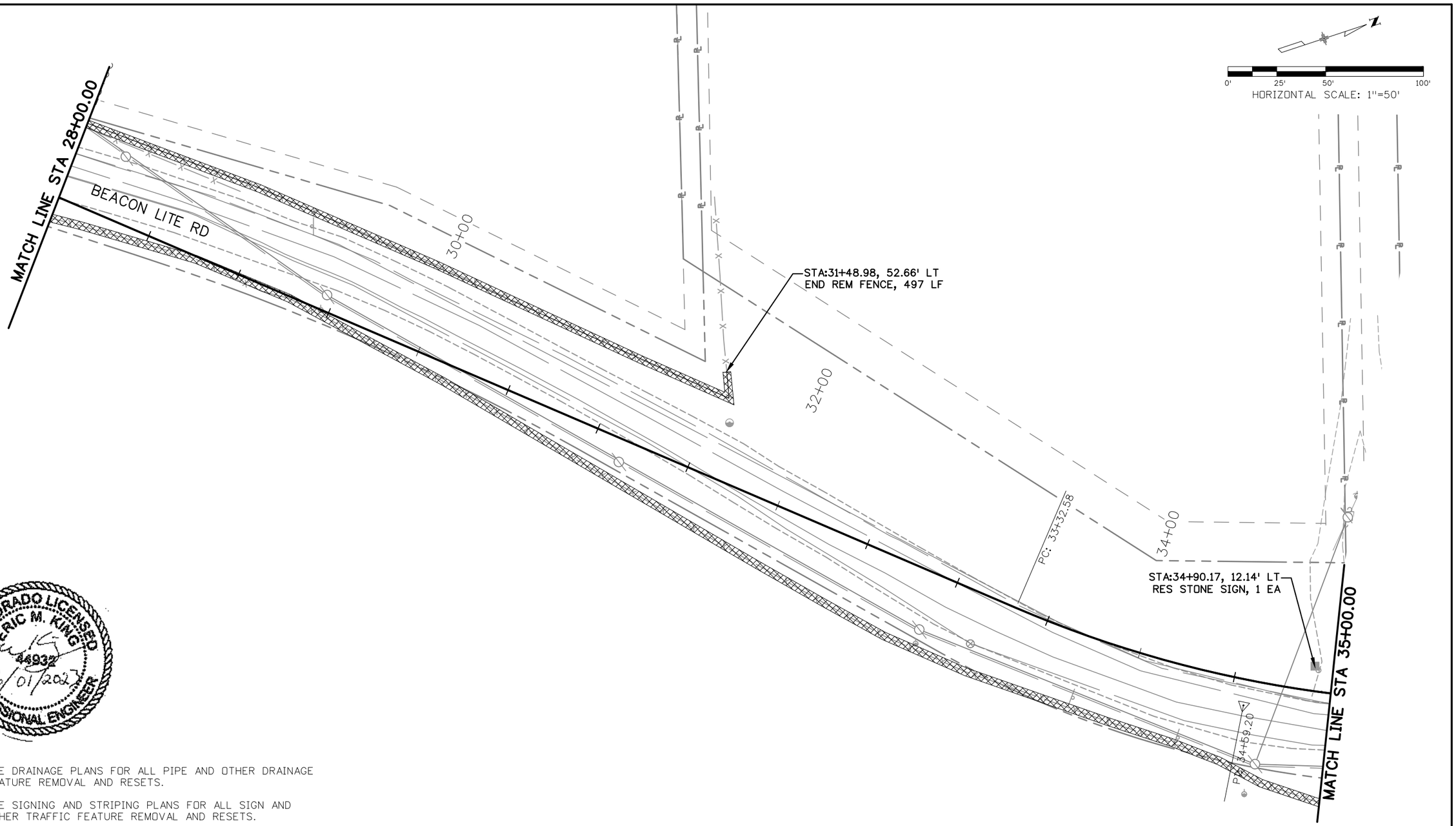
PPRTA

BEACON LITE ROAD IMPROVEMENTS
REMOVAL & RESET PLAN
BEACON LITE ROAD

Project No./Code: 128558

Designer: KRS
Detailer: RBR
Sheet Subset: REMOVALS
Structure Numbers:
Subset Sheets: 3 OF 8

Sheet Number 30



COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

NOTES:

1. SEE DRAINAGE PLANS FOR ALL PIPE AND OTHER DRAINAGE FEATURE REMOVAL AND RESETS.
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Print Date: 04/29/2022
File Name: 175644_REM_PLAN.dwg
Horiz. Scale: 1" = 50' Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
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720.514.1100

Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
REMOVAL & RESET PLAN
BEACON LITE ROAD

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	REMOVALS	Subset Sheets:	4 OF 8

Project No./Code
128558

Sheet Number 31

NOTES:

1. SEE DRAINAGE PLANS FOR ALL PIPE AND OTHER DRAINAGE FEATURE REMOVAL AND RESETS.
2. SEE SIGNING AND STRIPING PLANS FOR ALL SIGN AND OTHER TRAFFIC FEATURE REMOVAL AND RESETS.
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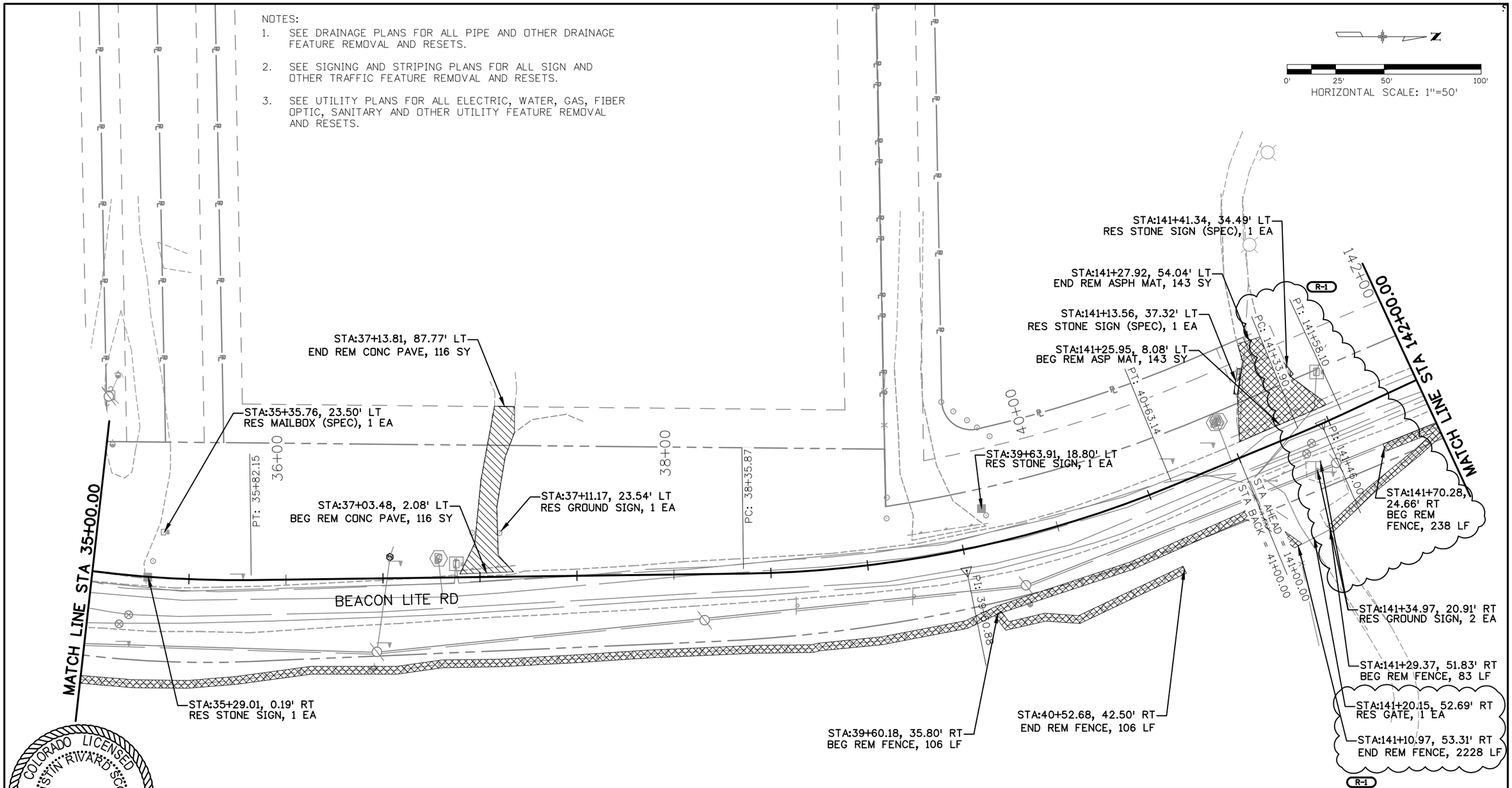

COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
9/10/24
PROFESSIONAL ENGINEER

Print Date:	09/09/2024
File Name:	175644_REM_PLAN.dwg
Horiz. Scale:	1" = 50'
Vert. Scale:	N/A
Unit Information	Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
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720.514.1100

R-1

Sheet Revisions

Date:	Comments	Init.
6/01/23	RFC	EMK
9/09/24	GEOMETRY CHANGE	KRS

EL PASO COUNTY
COLORADO

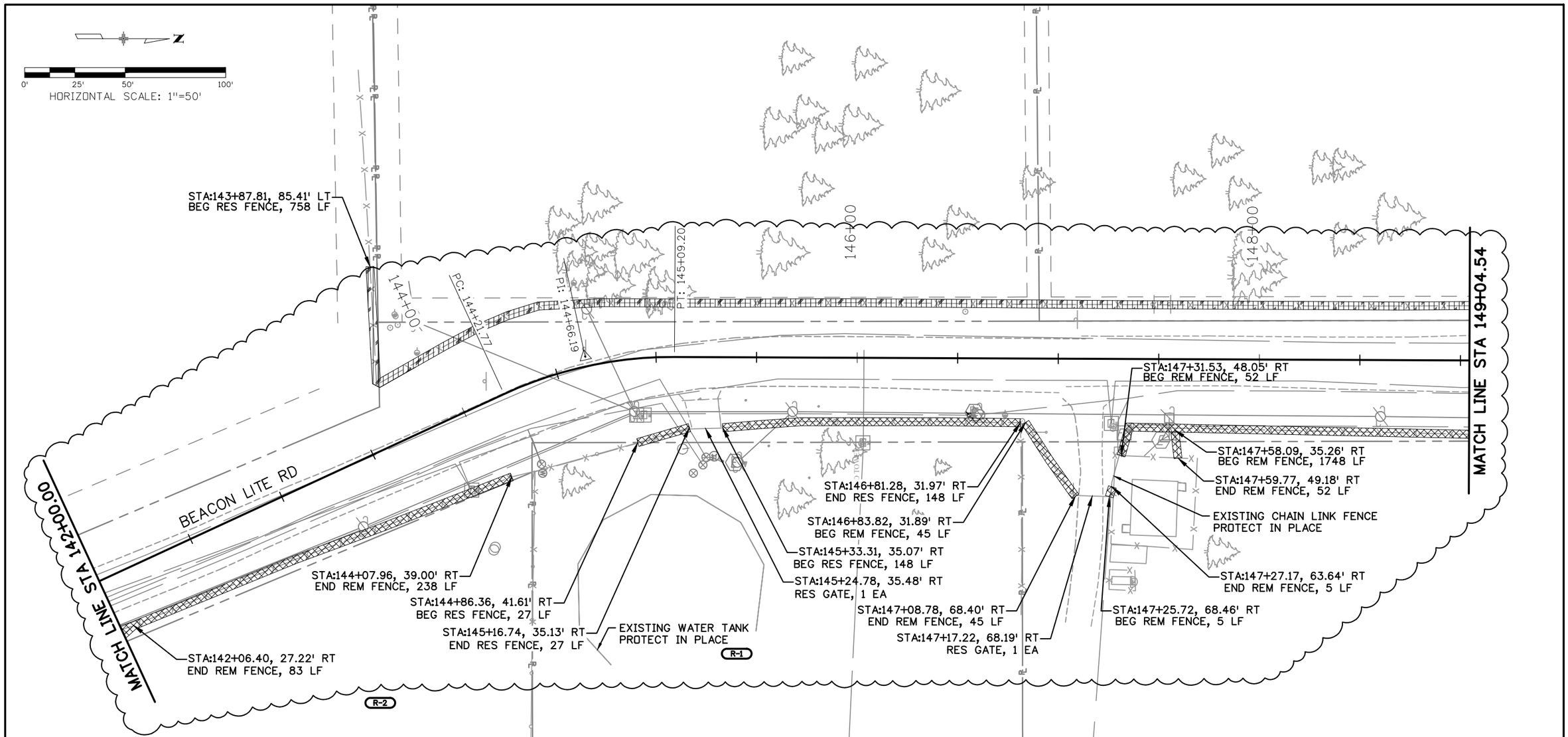
PPRTA

BEACON LITE ROAD IMPROVEMENTS
REMOVAL & RESET PLAN
BEACON LITE ROAD

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	REMOVALS	Subset Sheets:	5 OF 8

Project No./Code: 128558

Sheet Number 32



NOTES:

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COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
9/10/24
PROFESSIONAL ENGINEER

Print Date: 09/09/2024
File Name: 175644_REM_PLAN.dwg
Horiz. Scale: 1" = 50' Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions

	Date:	Comments	Init.
R-1	8/31/23	UPDATED TANK LABEL	KRS
R-2	9/09/24	GEOMETRY CHANGE	KRS

EL PASO COUNTY
COLORADO

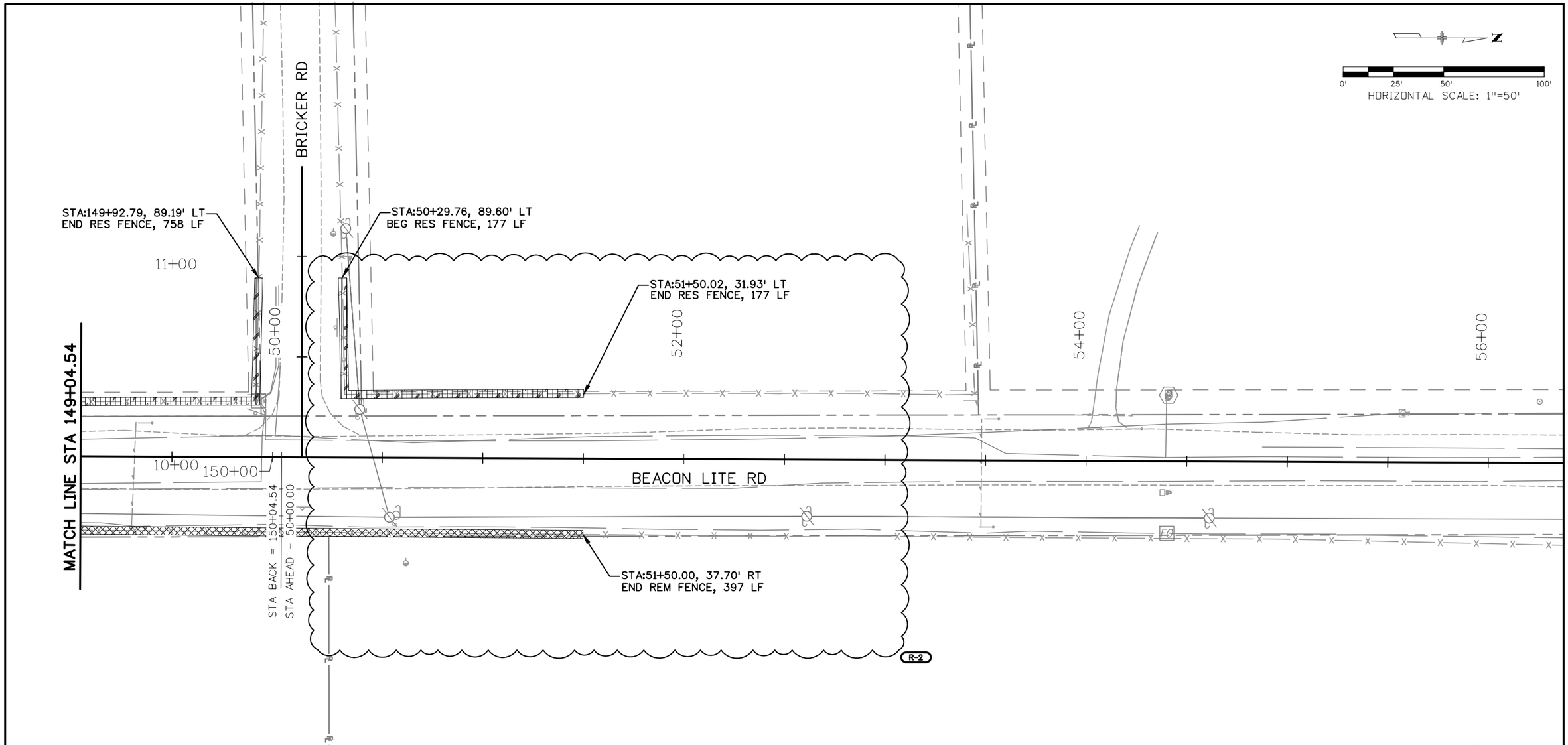
PPRTA

BEACON LITE ROAD IMPROVEMENTS
REMOVAL & RESET PLAN
BEACON LITE ROAD

Designer: KRS
Detailer: RBR
Sheet Subset: REMOVALS
Structure Numbers
Subset Sheets: 6 OF 8

Project No./Code
128558

Sheet Number 33



NOTES:

1. SEE DRAINAGE PLANS FOR ALL PIPE AND OTHER DRAINAGE FEATURE REMOVAL AND RESETS.
2. SEE SIGNING AND STRIPING PLANS FOR ALL SIGN AND OTHER TRAFFIC FEATURE REMOVAL AND RESETS.
3. SEE UTILITY PLANS FOR ALL ELECTRIC, WATER, GAS, FIBER OPTIC, SANITARY AND OTHER UTILITY FEATURE REMOVAL AND RESETS.

COLORADO LICENSED
PAUL DONALD MOREAU
32557
3/7/25
PROFESSIONAL ENGINEER

Print Date: 03/07/2025
File Name: 175644_RDW_REM.dwg
Horiz. Scale: 1" = 50' Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions

	Date:	Comments	Init.
R-1	6/01/23	RFC	EMK
R-2	9/09/24	GEOMETRY CHANGE	KRS
	3/7/25	PROJ. LIMITS CHANGE	PDM

EL PASO COUNTY
COLORADO

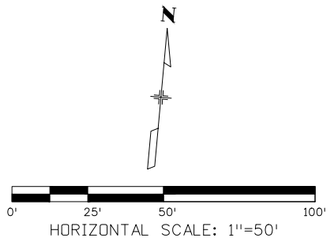
PPRTA

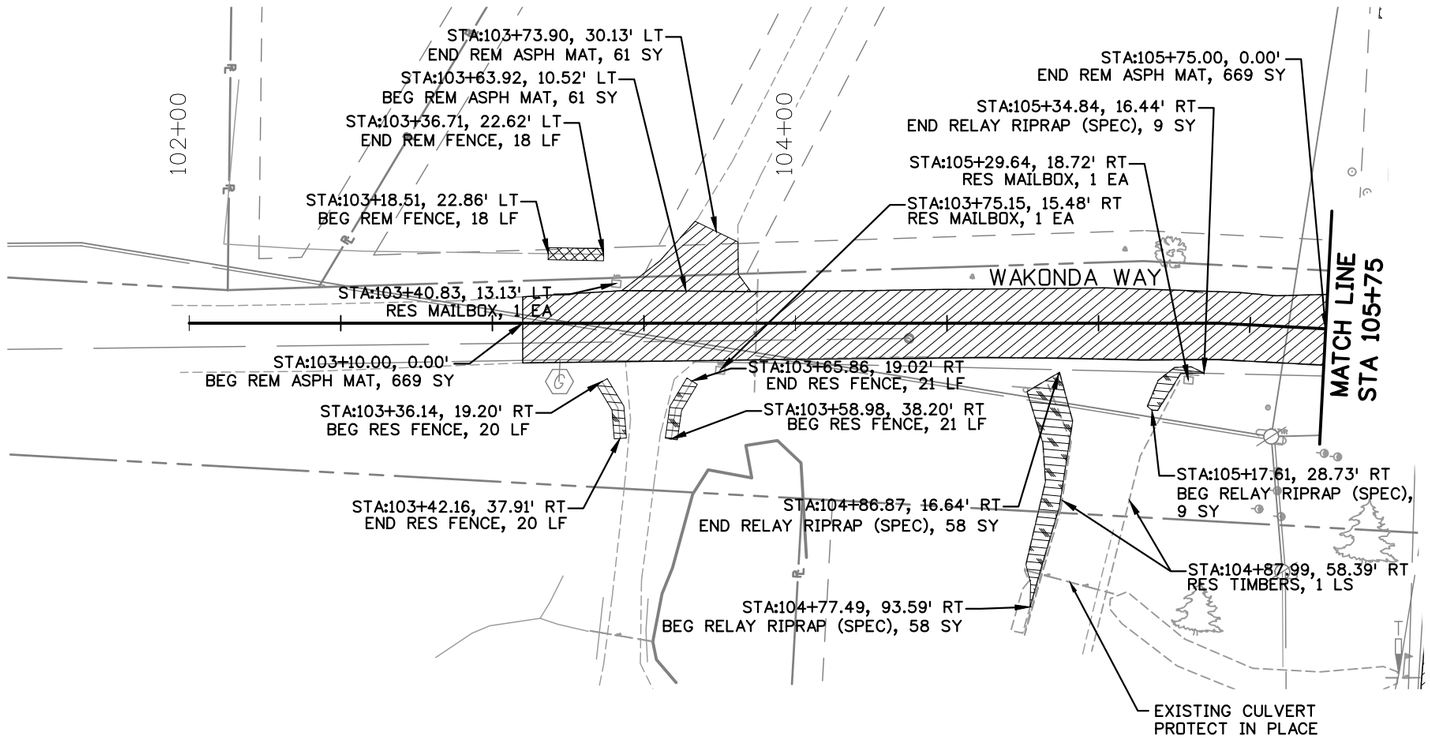
BEACON LITE ROAD IMPROVEMENTS
REMOVAL & RESET PLAN
BEACON LITE ROAD

Project No./Code
128558

Designer: KRS
Detailer: RBR
Sheet Subset: REMOVALS
Structure Numbers
Subset Sheets: 7 OF 8

Sheet Number 34





NOTES:

1. SEE DRAINAGE PLANS FOR ALL PIPE AND OTHER DRAINAGE FEATURE REMOVAL AND RESETS.
2. SEE SIGNING AND STRIPING PLANS FOR ALL SIGN AND OTHER TRAFFIC FEATURE REMOVAL AND RESETS.
3. SEE UTILITY PLANS FOR ALL ELECTRIC, WATER, GAS, FIBER OPTIC, SANITARY AND OTHER UTILITY FEATURE REMOVAL AND RESETS.

Print Date: 05/18/2022	Sheet Revisions		
File Name: 175644_REM_PLAN.dwg	Date:	Comments	Init.
Horiz. Scale: 1" = 50' Vert. Scale: N/A			
Unit Information Unit Leader Initials			
Michael Baker INTERNATIONAL — MICHAEL BAKER INTERNATIONAL, INC. 165 S. UNION BLVD., STE. 1000 LAKEWOOD, CO 80228 720.514.1100			

EL PASO COUNTY COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
REMOVAL & RESET PLAN
WAKONDA WAY

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	REMOVALS	Subset Sheets:	8 OF 8

Project No./Code
128558

Sheet Number 35

GREENWOOD LEE J
19330 BEACON LITE ROAD
7110001022

LYNN THOMAS EDWIN III
19350 BEACON LITE ROAD
7110001032

LYNN THOMAS EDWIN III
19410 BEACON LITE ROAD
7110001032

DEMPSEY JACK
19440 BEACON LITE ROAD
7110001006

0' 25' 50' 100'
HORIZONTAL SCALE: 1"=50'

STA:9+14.00, 16.00' LT
EOP ANGLE POINT

STA:8+97.49, 31.67' LT
RESET FENCE, SEE NOTE 5

TOE OF FILL (TYP)

STA:12+15.89, 31.57' LT
RESET FENCE, SEE NOTE 5

STA:11+51.60, 32.25' LT
RESET FENCE, SEE NOTE 5

HCL BEACON LITE ROAD
STA. 10+11.96 =
HCL DRIVE 1
STA. 110+00.00

STA. 10+25.00
2.00%

HCL DRIVE 2
CONC PAVE

STA:12+25.58, 31.47' LT
RESET FENCE, SEE NOTE 5

HCL BEACON LITE ROAD
STA. 12+43.74 =
HCL DRIVE 2
STA. 120+64.00

STA:12+48.96, 31.23' LT
RESET FENCE, SEE NOTE 5

STA:13+22.58, 31.51' LT
RESET FENCE,
SEE NOTE 5

STA:12+24.08, 16.00' LT
DRIVEWAY PCR, EOC

STA:12+49.09, 16.00' LT
DRIVEWAY PCR, EOC

BEACON LITE ROAD

MATCH LINE STA 14+00.00

BEACON LITE ROAD
STA:8+64.00, 0:00
BEG RECONSTRUCTION
BEG HMA PAVING, 5537 TON
BEG ABC (CL6), 5306 CY
MATCH EXISTING

EXISTING ROW (TYP)

STA:9+14.00, 16.00' RT
EOP ANGLE POINT

STA:9+71.80, 16.00' RT
DRIVEWAY PCR, EOC

HCL DRIVE 1
CONCRETE

R-1
STA:10+24.85, 26.00' RT
BEG 3 FT MASONRY LANDSCAPE WALL
(DRY STACK), 200 SF
SEE NOTE 6

STA:10+75.00, 32.66' RT
END 3 FT MASONRY LANDSCAPE WALL
(DRY STACK), 200 SF
SEE NOTE 6

STA:12+66.98, 28.00' RT
END TAPER

STA:10+54.64, 17.16' RT
DRIVEWAY PCR, EOC

STA:10+27.17, 16.00' RT
BEGIN TAPER

PROPOSED ROW (TYP)

TOP OF CUT (TYP)

PROPOSED T.E. (TYP)

PROPOSED WALL FENCE SEE
WALL PLANS FOR MORE
DETAILS

PROPOSED RETAINING WALL
SEE WALL PLANS FOR MORE
DETAILS

SOUTH DETENTION POND

BEACON LITE LLC
19375 BEACON LITE ROAD
7111001002

SPENCER FAMILY PARTNERSHIP LLLP
19475 BEACON LITE ROAD
7111001001

NOTES:

1. PROPOSED FENCE SHOWN WITH A 3 FT OFFSET FROM ROW FOR CLARITY.
2. ALL FENCE SHALL BE PLACED AT LEAST 6 INCHES FROM ROW LINE ON PRIVATE PROPERTY SIDE.
3. SEE GRADING AND DRAINAGE PLANS FOR ADDITIONAL INFORMATION.
4. SEE DRIVEWAY PLAN AND PROFILE SHEETS FOR MORE INFORMATION.
5. SEE REMOVAL AND RESET PLANS FOR QUANTITY LIMITS.
6. CONTRACTOR TO COORDINATE WALL MATERIAL WITH THE COUNTY.

COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
9/10/24
PROFESSIONAL ENGINEER

Print Date: 09/09/2024
File Name: 175644_RDW_P&P.dwg
Horiz. Scale: 1" = 50' Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions

	Date:	Comments	Init.
R-1	6/01/23	RFC	EMK
R-2	8/31/23	UPDATED DRIVE 1 DESIGN	KRS
	9/09/24	GEOMETRY CHANGE	KRS

EL PASO COUNTY
COLORADO

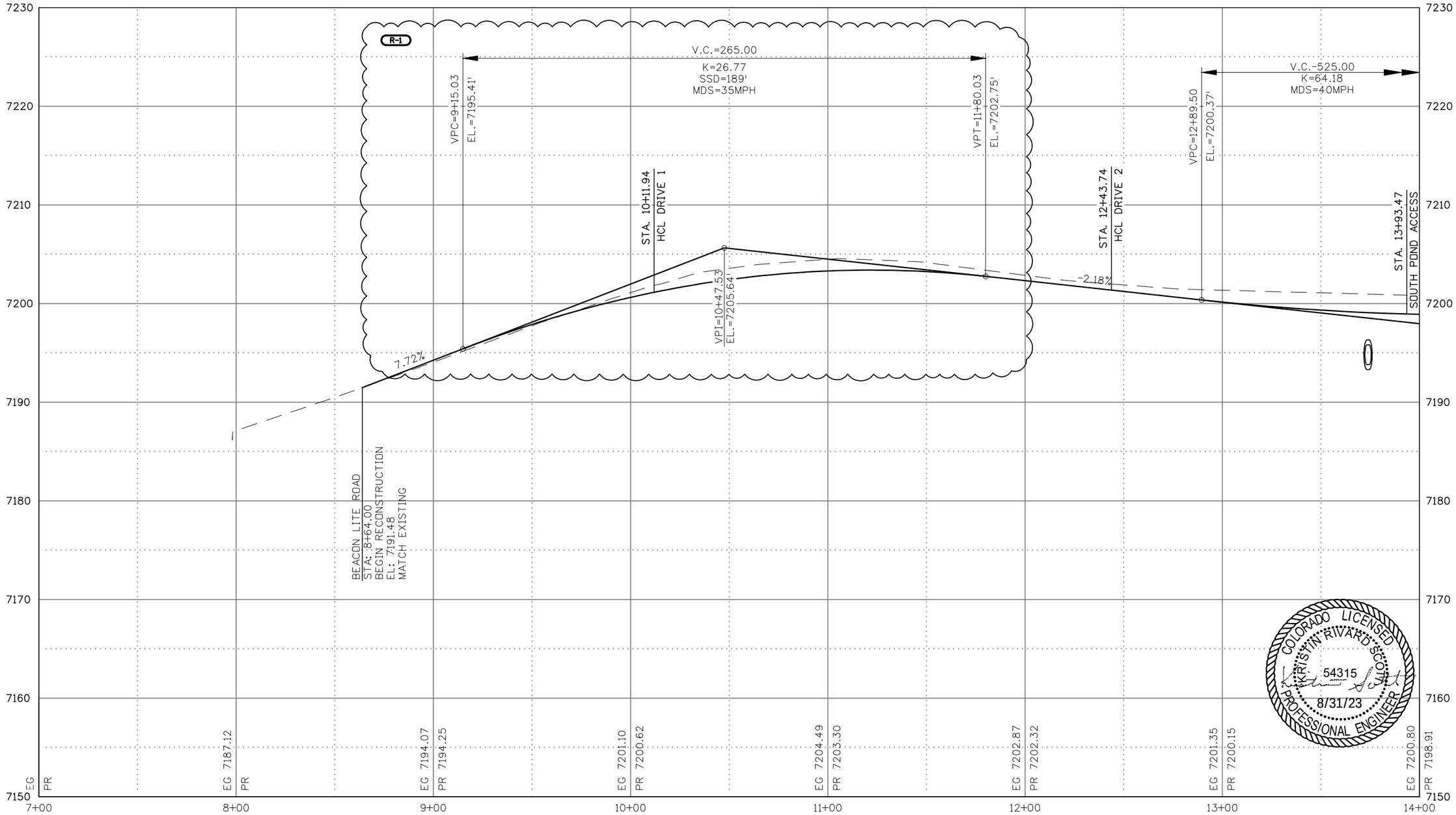
PPRTA

BEACON LITE ROAD IMPROVEMENTS
ROADWAY PLAN
BEACON LITE ROAD

Project No./Code: 128558

Designer: KRS
Detailer: RBR
Sheet Subset: ROADWAY
Structure Numbers:
Subset Sheets: 1 OF 16

Sheet Number 36



COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
8/31/23
PROFESSIONAL ENGINEER

Print Date: 08/31/2023
File Name: 175644_RDW_P&P.dwg
Horiz. Scale: 1" = 50' Vert. Scale: 1" = 10'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

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Sheet Revisions

Date:	Comments	Init.
6/01/23	RFC	EMK
8/31/23	UPDATED PROFILE AND LABELS	KRS

EL PASO COUNTY
COLORADO

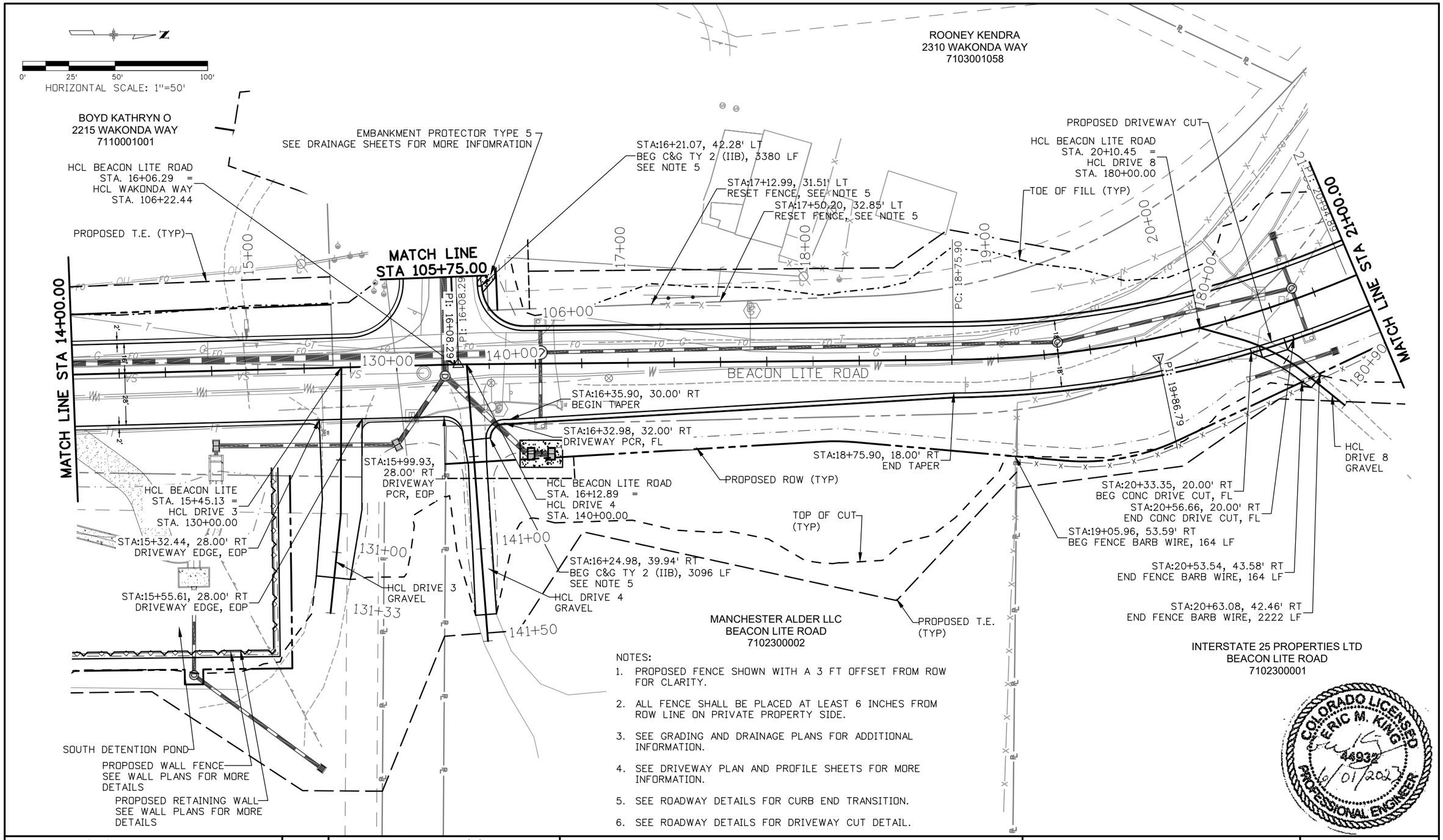
PPRTA

BEACON LITE ROAD IMPROVEMENTS
ROADWAY PROFILE
BEACON LITE ROAD

Project No./Code
128558

Designer: KRS
Detailer: RBR
Sheet Subset: ROADWAY
Structure Numbers
Subset Sheets: 2 OF 16

Sheet Number 37



NOTES:

1. PROPOSED FENCE SHOWN WITH A 3 FT OFFSET FROM ROW FOR CLARITY.
2. ALL FENCE SHALL BE PLACED AT LEAST 6 INCHES FROM ROW LINE ON PRIVATE PROPERTY SIDE.
3. SEE GRADING AND DRAINAGE PLANS FOR ADDITIONAL INFORMATION.
4. SEE DRIVEWAY PLAN AND PROFILE SHEETS FOR MORE INFORMATION.
5. SEE ROADWAY DETAILS FOR CURB END TRANSITION.
6. SEE ROADWAY DETAILS FOR DRIVEWAY CUT DETAIL.

COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022	
File Name: 175644_RDW_P&P.dwg	
Horiz. Scale: 1" = 50'	Vert. Scale: N/A
Unit Information	Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

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Sheet Revisions

Date:	Comments	Init.

EL PASO COUNTY
COLORADO

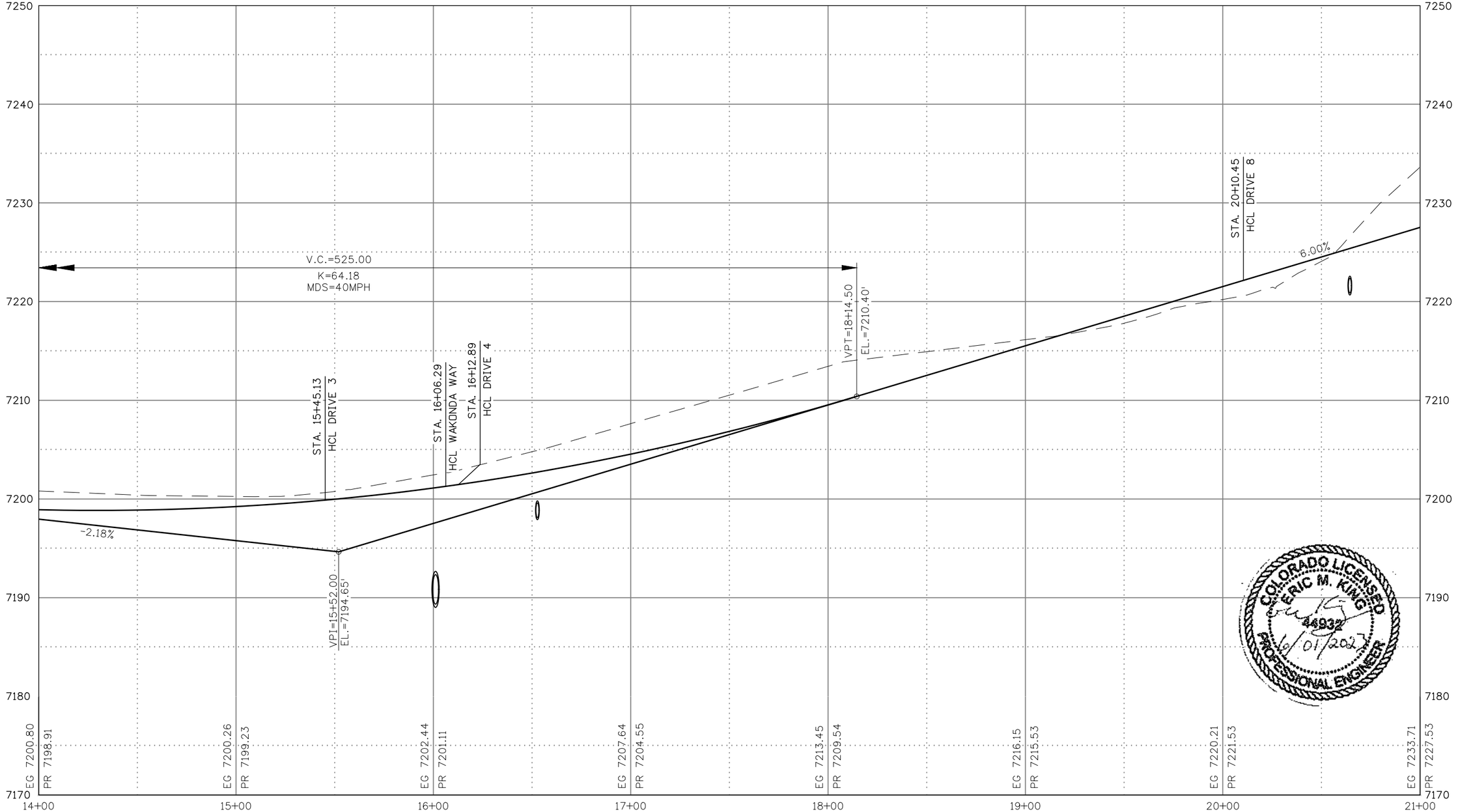
PPRTA

BEACON LITE ROAD IMPROVEMENTS
ROADWAY PLAN
BEACON LITE ROAD

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	3 OF 16

Project No./Code
128558

Sheet Number 38



COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_RDW_P&P.dwg
Horiz. Scale: 1" = 50' Vert. Scale: 1" = 10'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

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Sheet Revisions

Date:	Comments	Init.

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
ROADWAY PROFILE
BEACON LITE ROAD

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	4 OF 16

Project No./Code
128558

Sheet Number 39

ARVIDSON MATTHEW P
2360 WAKONDA WAY
7103001059

STA:26+24.76, 64.42' LT
END FENCE BARB WIRE, 75 LF

STA:26+20.22, 20.00' LT
BEG CONC DRIVE CUT, FL

PROPOSED P.E. (TYP)

STA:25+64.38, 42.50' LT
BEG FENCE BARB WIRE, 75 LF

R-1

HCL DRIVE 9
HMA MILLINGS

STA:26+41.19, 66.82' LT
BEG FENCE BARB WIRE, 552 LF

PROPOSED DRIVEWAY CUT

STA:26+50.02, 20.00' LT
END CONC DRIVE CUT, FL

TOE OF FILL (TYP)

MATCH LINE STA 21+00.00

BEACON LITE ROAD

PC: 21+97.70

PI: 24+37.20

23+00

24+00

25+00

26+00

26+50.76

27+00

191+00

192+00

192+50

28+00

18'

18'

PROPOSED CURB AND GUTTER
TYPE 2, SECTION IIB

PROPOSED ROW (TYP)

INTERSTATE 25 PROPERTIES LTD
BEACON LITE ROAD
7102300001

HCL BEACON LITE ROAD
STA. 26+36.31 =
HCL DRIVE 9
STA. 192+50.00

STA:26+22.90, 20.00' RT
BEG CONC DRIVE CUT, FL

TOP OF CUT (TYP)

STA:26+60.81, 20.00' RT
END CONC DRIVE CUT, FL

MATCH LINE STA 28+00.00

PROPOSED NORTH
DETENTION POND

PROPOSED T.E. (TYP)

0' 25' 50' 100'

HORIZONTAL SCALE: 1"=50'

NOTES:

1. PROPOSED FENCE SHOWN WITH A 3 FT OFFSET FROM ROW FOR CLARITY.
2. ALL FENCE SHALL BE PLACED AT LEAST 6 INCHES FROM ROW LINE ON PRIVATE PROPERTY SIDE.
3. SEE GRADING AND DRAINAGE PLANS FOR ADDITIONAL INFORMATION.
4. SEE DRIVEWAY PLAN AND PROFILE SHEETS FOR MORE INFORMATION.
5. SEE ROADWAY DETAILS FOR DRIVEWAY CUT DETAIL

COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
8/31/23
PROFESSIONAL ENGINEER

Print Date: 08/31/2023
File Name: 175644_RDW_P&P.dwg
Horiz. Scale: 1" = 50' Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions

Date:	Comments	Init.
6/01/23	RFC	EMK
8/31/23	UPDATED DRIVEWAY LINEWORK	KRS

EL PASO COUNTY
COLORADO

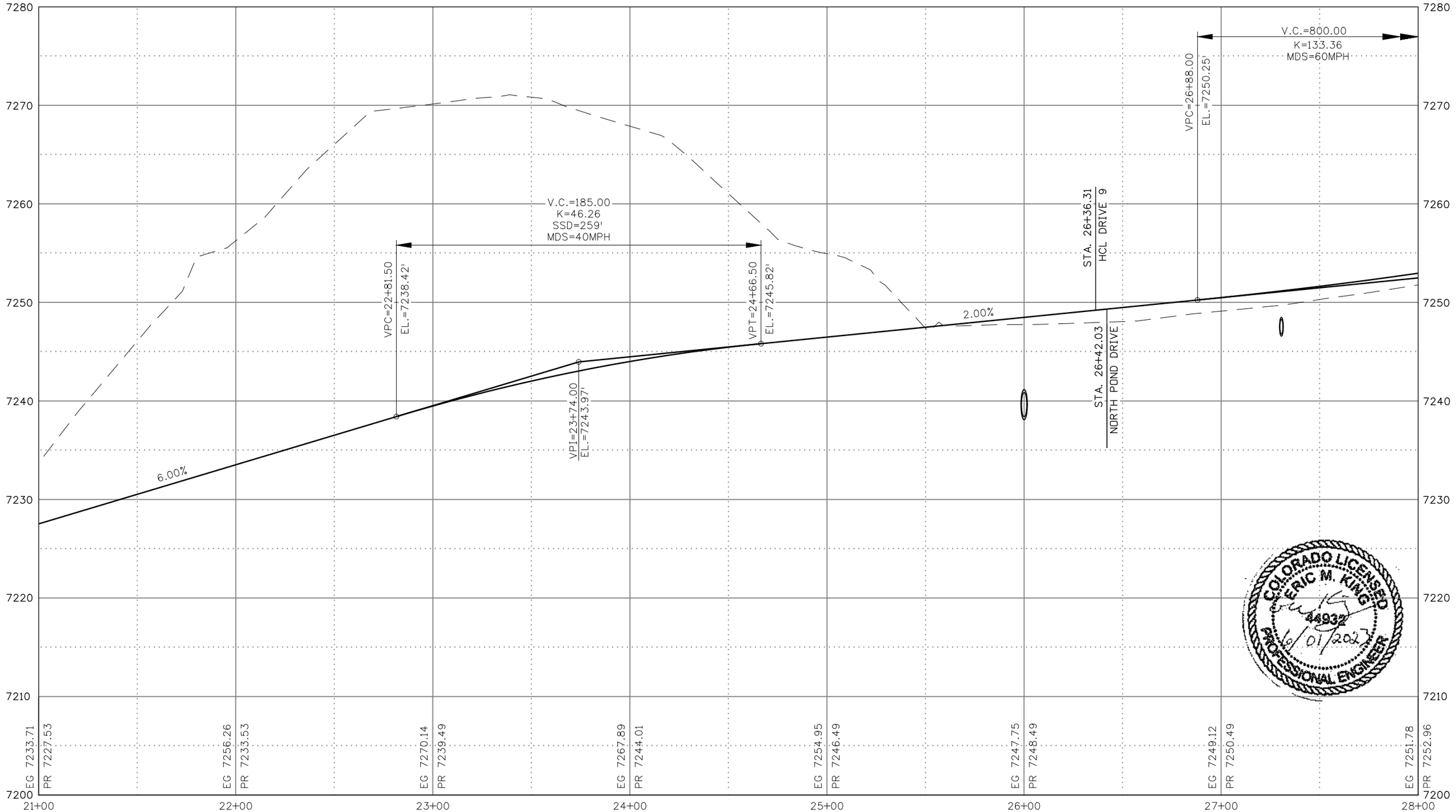
PPRTA

BEACON LITE ROAD IMPROVEMENTS
ROADWAY PLAN
BEACON LITE ROAD

Project No./Code
128558

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	5 OF 16

Sheet Number 40



COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_RDW_P&P.dwg
Horiz. Scale: 1" = 50' Vert. Scale: 1" = 10'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

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Sheet Revisions

Date:	Comments	Init.

EL PASO COUNTY
COLORADO

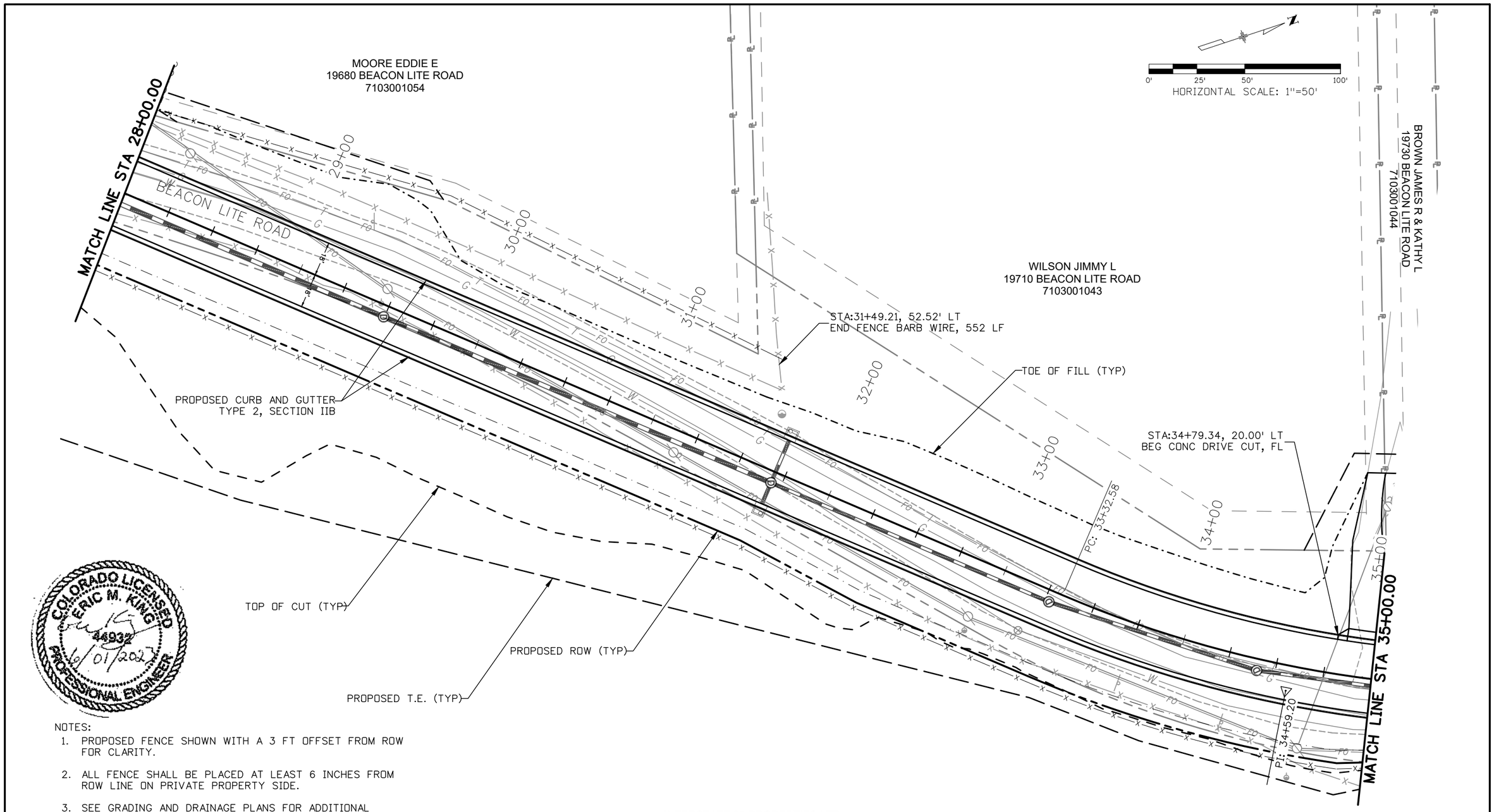
PPRTA

BEACON LITE ROAD IMPROVEMENTS
ROADWAY PROFILE
BEACON LITE ROAD

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	6 OF 16

Project No./Code
128558

Sheet Number 41



COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

NOTES:

1. PROPOSED FENCE SHOWN WITH A 3 FT OFFSET FROM ROW FOR CLARITY.
2. ALL FENCE SHALL BE PLACED AT LEAST 6 INCHES FROM ROW LINE ON PRIVATE PROPERTY SIDE.
3. SEE GRADING AND DRAINAGE PLANS FOR ADDITIONAL INFORMATION.
4. SEE ROADWAY DETAILS FOR DRIVEWAY CUT DETAIL.

INTERSTATE 25 PROPERTIES LTD
BEACON LITE ROAD
7102300001

Print Date: 05/18/2022	
File Name: 175644_RDW_P&P.dwg	
Horiz. Scale: 1" = 50' Vert. Scale: N/A	
Unit Information Unit Leader Initials	

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

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Sheet Revisions

Date:	Comments	Init.

EL PASO COUNTY
COLORADO

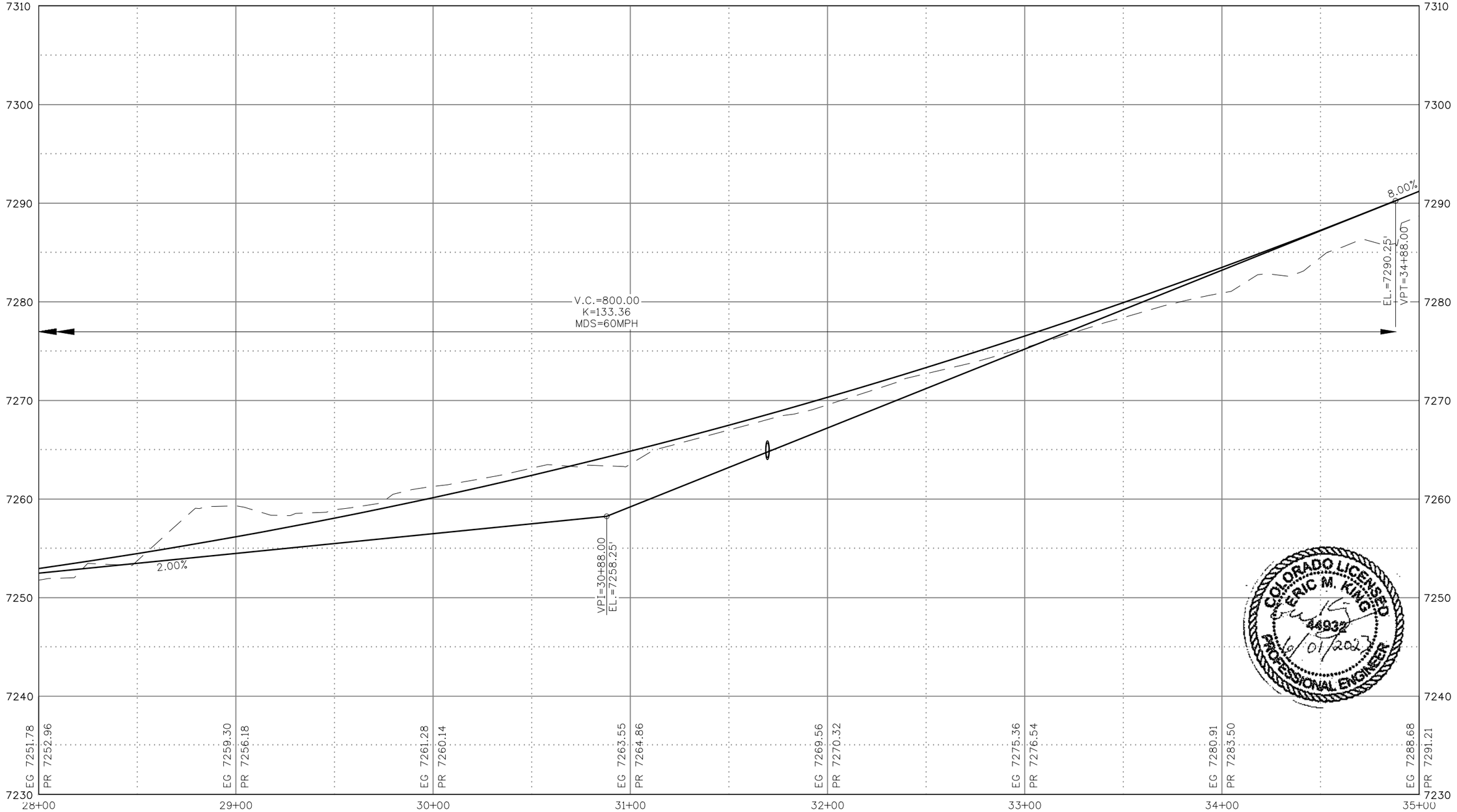
PPRTA

BEACON LITE ROAD IMPROVEMENTS
ROADWAY PLAN
BEACON LITE ROAD

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	7 OF 16

Project No./Code
128558

Sheet Number 42



COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_RDW_P&P.dwg
Horiz. Scale: 1" = 50' Vert. Scale: 1" = 10'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

0000

Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
ROADWAY PROFILE
BEACON LITE ROAD

Project No./Code: 128558

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	8 OF 16

Sheet Number 43

NOTES:

1. PROPOSED FENCE SHOWN WITH A 3 FT OFFSET FROM ROW FOR CLARITY.
2. ALL FENCE SHALL BE PLACED AT LEAST 6 INCHES FROM ROW LINE ON PRIVATE PROPERTY SIDE.
3. SEE GRADING AND DRAINAGE PLANS FOR ADDITIONAL INFORMATION.
4. SEE DRIVEWAY PLAN AND PROFILE SHEETS FOR MORE INFORMATION.
5. SEE ROADWAY DETAILS FOR DRIVEWAY CUT DETAIL.

NORDABY MARK J & TRICIA A
19790 BEACON LITE ROAD
7103001041

BROWN JAMES R & KATHY L
19730 BEACON LITE ROAD
7103001044

BESHEAR DENNIS C
19850 BEACON LITE ROAD
7103001042

NANCE BOB E &
19870 BEACON LITE ROAD
7103001052

ORTIONA CHRISTOPHER J
19890 BEACON LITE ROAD
7103001053

HORIZONTAL SCALE: 1"=50'

COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
9/10/24
PROFESSIONAL ENGINEER

MATCH LINE STA 35+00.00

MATCH LINE STA 142+00.00

BEACON LITE ROAD

HCL DRIVE 10
GRAVEL

STA:35+42.80, 20.00' LT
END CONC DRIVE CUT, FL

HCL BEACON LITE ROAD
STA. 35+10.08 =
HCL DRIVE 10
STA. 201+50.00

PROPOSED DRIVEWAY CUT

STA:36+93.63, 20.00' LT
BEG CONC DRIVE CUT, FL

PT: 35+82.15

TOE OF FILL (TYP)

HCL DRIVE 11
CONC PAVE

HCL BEACON LITE ROAD
STA. 37+01.49 =
HCL DRIVE 11
STA. 210+90.00

PROPOSED DRIVEWAY CUT

STA:37+13.67, 20.00' LT
END CONC DRIVE CUT, FL

PC: 38+35.87

PROPOSED ROW (TYP)

TOP OF CUT (TYP)

PROPOSED DRIVEWAY CUT

STA:39+20.50, 20.00' LT
BEG CONC DRIVE CUT, FL

PROPOSED CURB AND GUTTER
TYPE 2, SECTION IIB

HCL DRIVE 12
GRAVEL

HCL BEACON LITE ROAD
STA. 39+29.35 =
HCL DRIVE 12
STA. 221+50.00

PI: 39+50.88

STA:39+41.29,
20.00' LT
END CONC
DRIVE CUT, FL

PROPOSED T.E. (TYP)

STA:141+33.37, 20.00' LT
END CONC DRIVE CUT, FL

HCL DRIVE 13
HMA

HCL BEACON LITE ROAD
STA. 141+19.48 =
HCL DRIVE 13
STA. 230+70.00

STA:141+13.24, 20.00' LT
BEG CONC DRIVE CUT, FL

STA AHEAD = 141+00.00
STA BACK = 41+00.00

PI: 40+63.14

PC: 141+33.90

PI: 141+58.10

PI: 141+46.00

STA:141+13.51,
20.00' RT
BEG CONC
DRIVE CUT, FL

HCL BEACON LITE ROAD
STA. 141+23.51 =
HCL DRIVE 14
STA. 240+00.00

STA:141+33.51,
20.00' RT
END CONC
DRIVE CUT, FL

STA:141+29.37, 51.83' RT
BEG FENCE
BARB WIRE, 286 LF

HCL DRIVE 14
GRAVEL

STA:141+10.93, 53.56' RT
END FENCE BARB WIRE, 2222 LF

INTERSTATE 25 PROPERTIES LTD
BEACON LITE ROAD
7102300001

Print Date: 09/09/2024		
File Name: 175644_RDW_P&P.dwg		
Horiz. Scale: 1" = 50'	Vert. Scale: N/A	
Unit Information	Unit Leader Initials	

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions

Date:	Comments	Init.
6/01/23	RFC	EMK
9/09/24	GEOMETRY CHANGE	KRS

EL PASO COUNTY
COLORADO

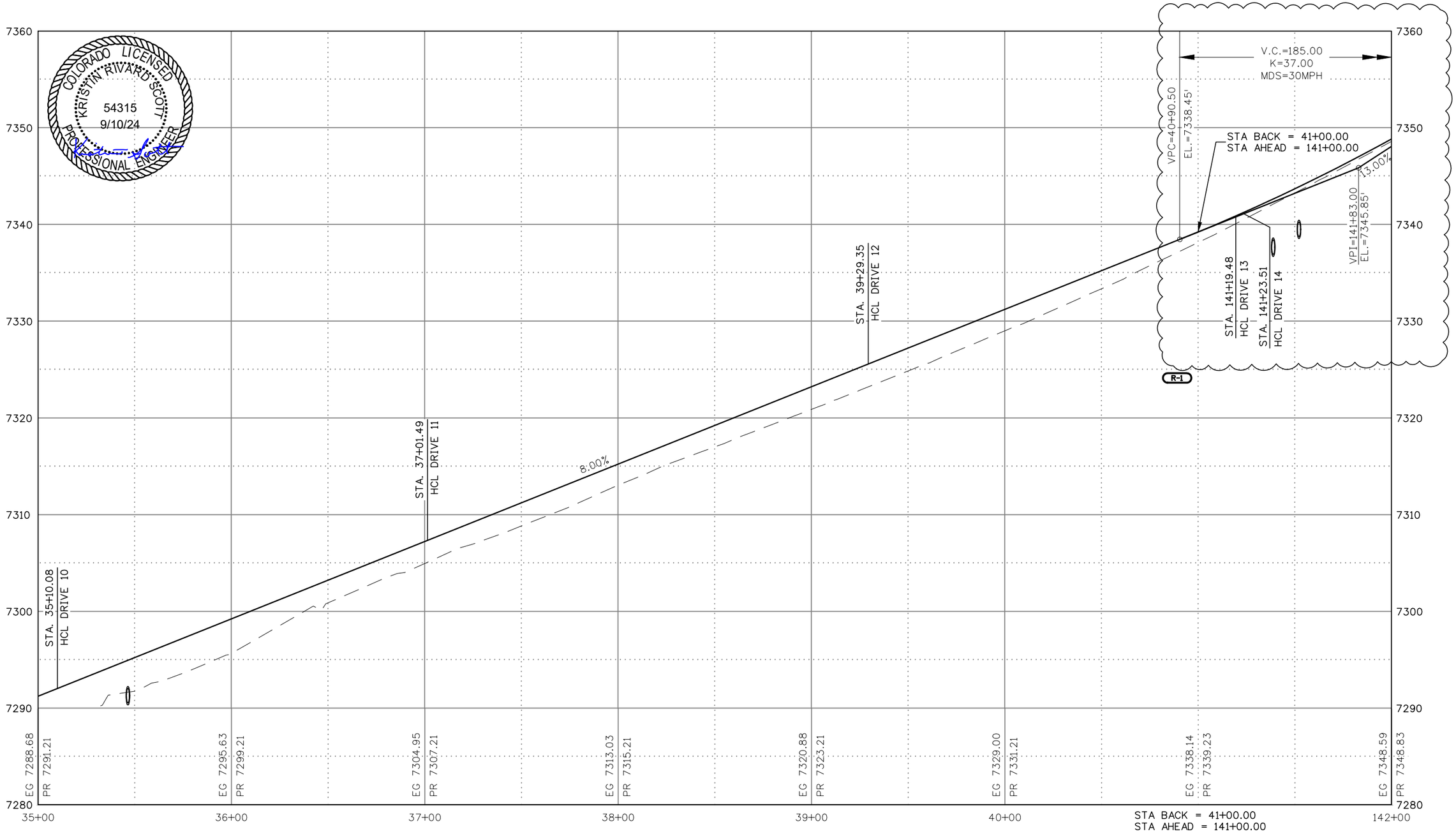
PPRTA

BEACON LITE ROAD IMPROVEMENTS
ROADWAY PLAN
BEACON LITE ROAD

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	9 OF 16

Project No./Code
128558

Sheet Number 44



Print Date: 09/09/2024
File Name: 175644_RDW_P&P.dwg
Horiz. Scale: 1" = 50' Vert. Scale: 1" = 10'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1
0000

Sheet Revisions

Date:	Comments	Init.
6/01/23	RFC	EMK
9/09/24	GEOMETRY CHANGE	KRS

EL PASO COUNTY
COLORADO

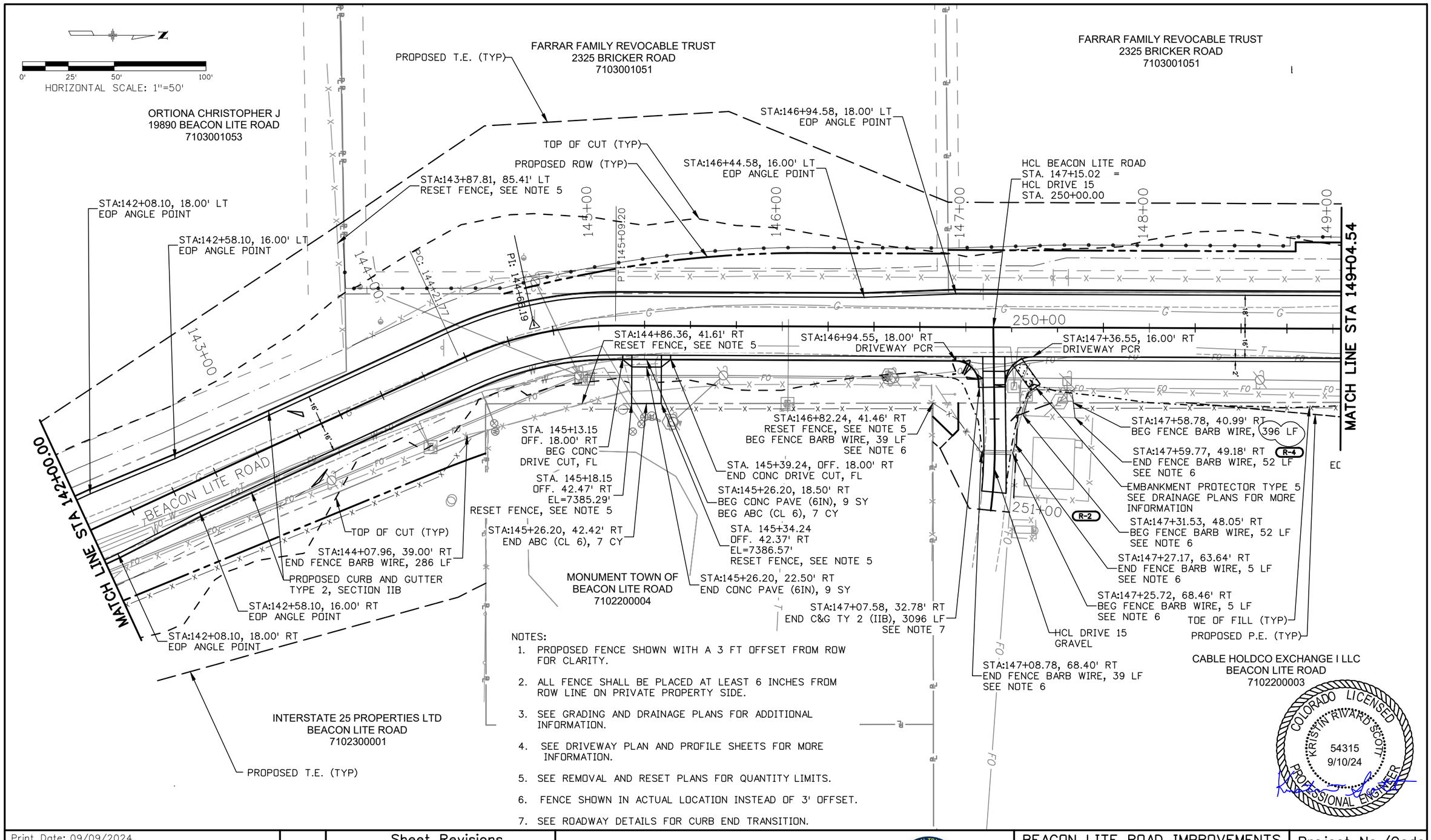
PPRTA

BEACON LITE ROAD IMPROVEMENTS
ROADWAY PROFILE
BEACON LITE ROAD

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	10 OF 16

Project No./Code
128558

Sheet Number 45



NOTES:

1. PROPOSED FENCE SHOWN WITH A 3 FT OFFSET FROM ROW FOR CLARITY.
2. ALL FENCE SHALL BE PLACED AT LEAST 6 INCHES FROM ROW LINE ON PRIVATE PROPERTY SIDE.
3. SEE GRADING AND DRAINAGE PLANS FOR ADDITIONAL INFORMATION.
4. SEE DRIVEWAY PLAN AND PROFILE SHEETS FOR MORE INFORMATION.
5. SEE REMOVAL AND RESET PLANS FOR QUANTITY LIMITS.
6. FENCE SHOWN IN ACTUAL LOCATION INSTEAD OF 3' OFFSET.
7. SEE ROADWAY DETAILS FOR CURB END TRANSITION.

COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
9/10/24
PROFESSIONAL ENGINEER

Print Date: 09/09/2024
File Name: 175644_RDW_P&P.dwg
Horiz. Scale: 1" = 50' Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions

	Date:	Comments	Init.
R-1	8/31/23	ADDED WALL AND DITCH	KRS
R-2	3/07/24	UPDATED TE	KRS
R-3	9/09/24	GEOMETRY CHANGE	KRS

EL PASO COUNTY
COLORADO

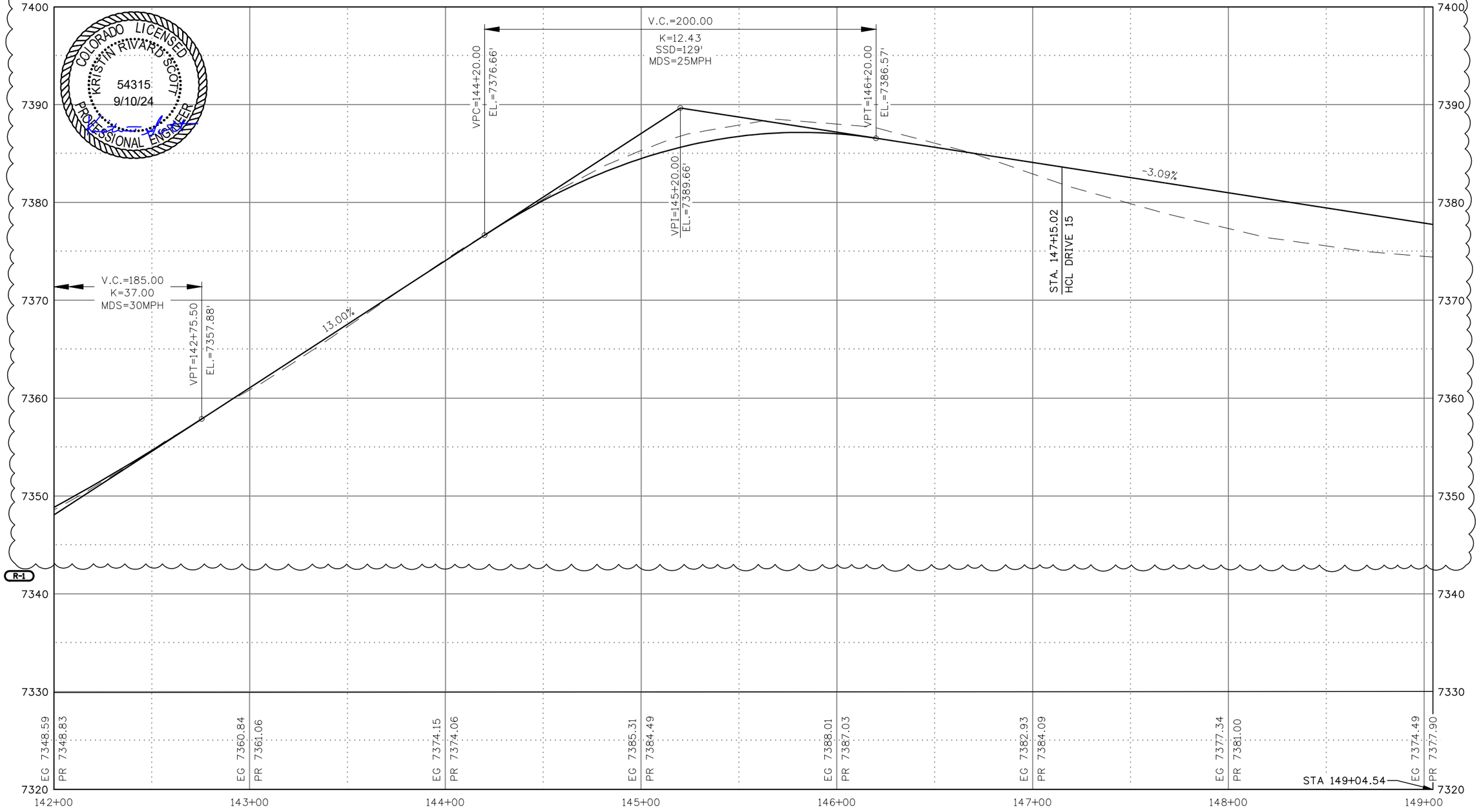
PIKES PEAK RURAL TRANSPORTATION AUTHORITY
PPRTA

BEACON LITE ROAD IMPROVEMENTS
ROADWAY PLAN
BEACON LITE ROAD

Project No./Code: 128558

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	11 OF 16

Sheet Number 46



Print Date: 09/09/2024
File Name: 175644_RDW_P&P.dwg
Horiz. Scale: 1" = 50' Vert. Scale: 1" = 10'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions

Date:	Comments	Init.
6/01/23	RFC	EMK
9/09/24	GEOMETRY CHANGE	KRS

EL PASO COUNTY
COLORADO

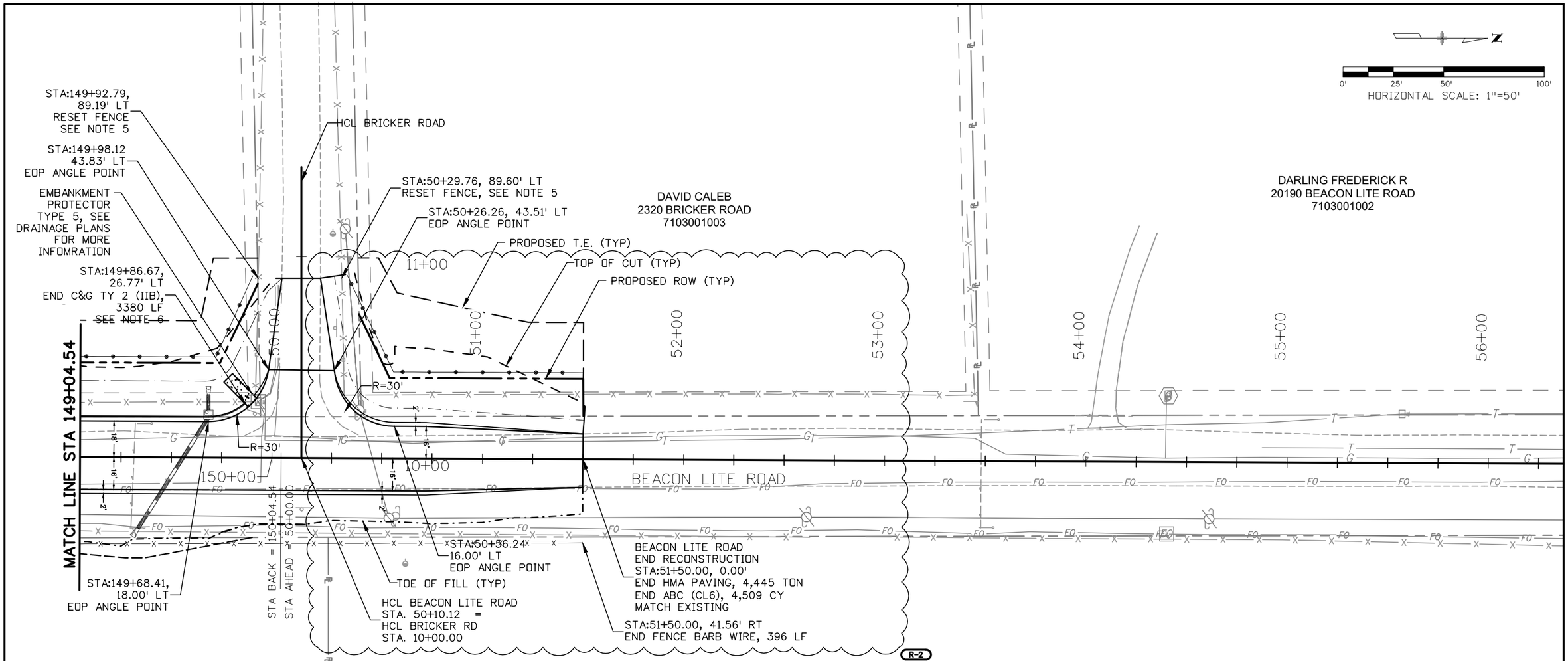
PPRTA

BEACON LITE ROAD IMPROVEMENTS
ROADWAY PROFILE
BEACON LITE ROAD

Project No./Code: 128558

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	12 OF 16

Sheet Number 47



NOTES:

1. PROPOSED FENCE SHOWN WITH A 3 FT OFFSET FROM ROW FOR CLARITY.
2. ALL FENCE SHALL BE PLACED AT LEAST 6 INCHES FROM ROW LINE ON PRIVATE PROPERTY SIDE.
3. SEE GRADING AND DRAINAGE PLANS FOR ADDITIONAL INFORMATION.
4. SEE DRIVEWAY PLAN AND PROFILE SHEETS FOR MORE INFORMATION.
5. SEE REMOVAL AND RESET PLANS FOR QUANTITY LIMITS.
6. SEE ROADWAY DETAILS FOR CURB END TRANSITION.

COLORADO LICENSED
PAUL DONALD MOREAU
32557
3/7/25
PROFESSIONAL ENGINEER

Print Date: 03/07/2025
File Name: 175644_RDW_P&P.dwg
Horiz. Scale: 1" = 50' Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions

	Date:	Comments	Init.
R-1	6/01/23	RFC	EMK
R-2	9/09/24	GEOMETRY CHANGE	KRS
	3/07/25	PROJ. LIMITS CHANGE	PDM

EL PASO COUNTY
COLORADO

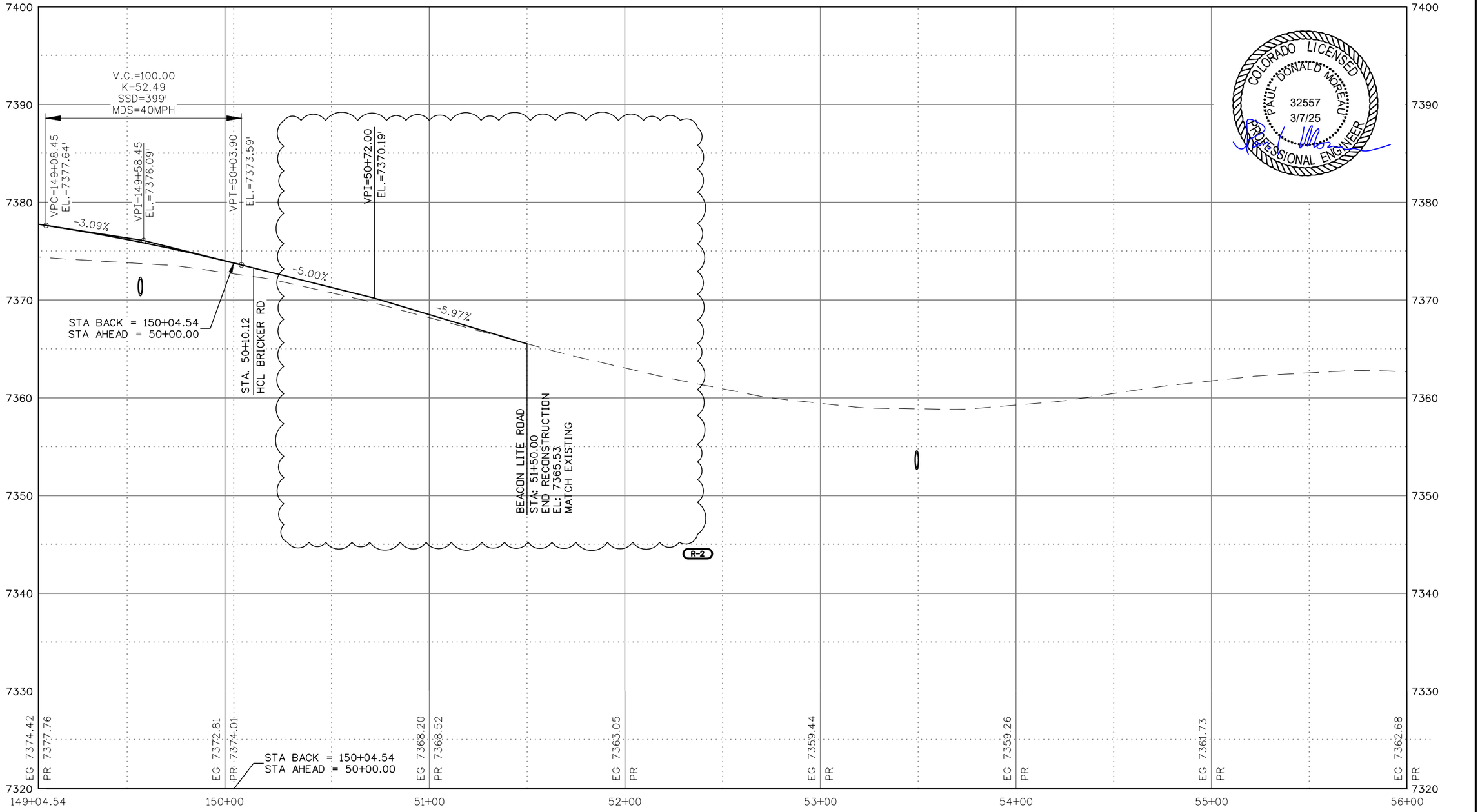
PPRTA PIKES PEAK RURAL TRANSPORTATION AUTHORITY

BEACON LITE ROAD IMPROVEMENTS
ROADWAY PLAN
BEACON LITE ROAD

Designer: KRS
Detailer: RBR
Sheet Subset: ROADWAY
Structure Numbers
Subset Sheets: 13 OF 16

Project No./Code
128558

Sheet Number 48



COLORADO LICENSED
PAUL DONALD MOREAU
32557
3/7/25
PROFESSIONAL ENGINEER

Print Date: 03/07/2025	
File Name: 175644_RDW_P&P.dwg	
Horiz. Scale: 1" = 50'	Vert. Scale: 1" = 10'
Unit Information	Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1
R-2

Sheet Revisions

Date:	Comments	Init.
6/01/23	RFC	EMK
9/09/24	GEOMETRY CHANGE	KRS
3/07/25	PROJ. LIMITS CHANGE	PDM

EL PASO COUNTY
COLORADO

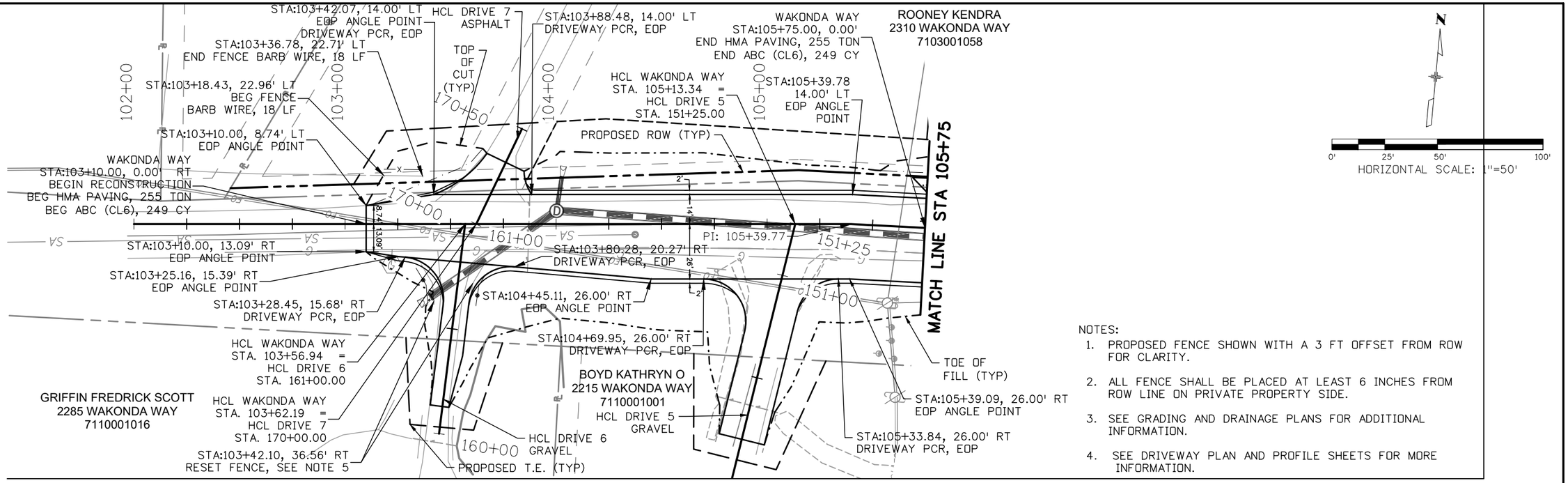
PPRTA
PIKES PEAK RURAL TRANSPORTATION AUTHORITY

BEACON LITE ROAD IMPROVEMENTS
ROADWAY PROFILE
BEACON LITE ROAD

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	14 OF 16

Project No./Code
128558

Sheet Number 49



NOTES:

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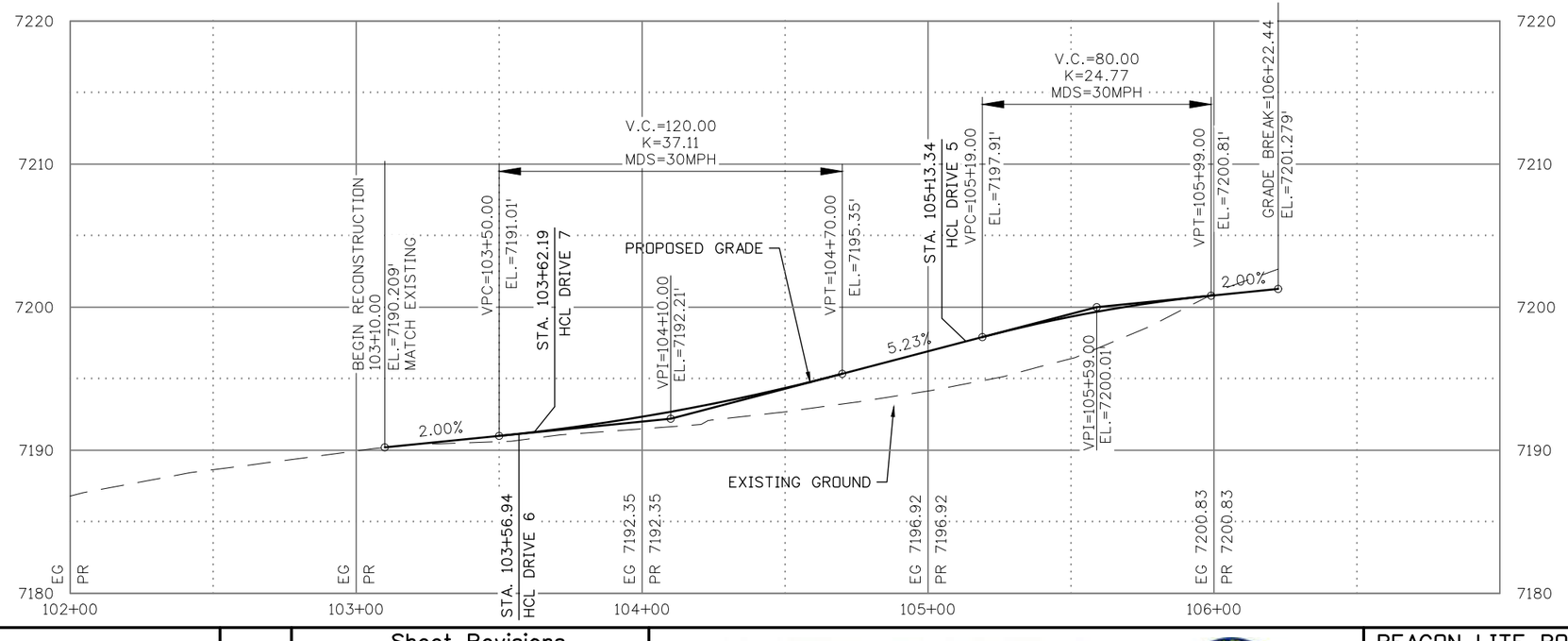
2. ALL FENCE SHALL BE PLACED AT LEAST 6 INCHES FROM ROW LINE ON PRIVATE PROPERTY SIDE.
3. SEE GRADING AND DRAINAGE PLANS FOR ADDITIONAL INFORMATION.
4. SEE DRIVEWAY PLAN AND PROFILE SHEETS FOR MORE INFORMATION.



COLORADO LICENSED
ERIC M. KING
44932
6/01/2023
PROFESSIONAL ENGINEER

Print Date: 06/01/2023			
File Name: 175644_RDW_P&P.dwg			
Horiz. Scale: 1" = 50'	Vert. Scale: N/A		
Unit Information	Unit Leader Initials		

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

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Sheet Revisions

Date:	Comments	Init.

EL PASO COUNTY
COLORADO

PPRTA

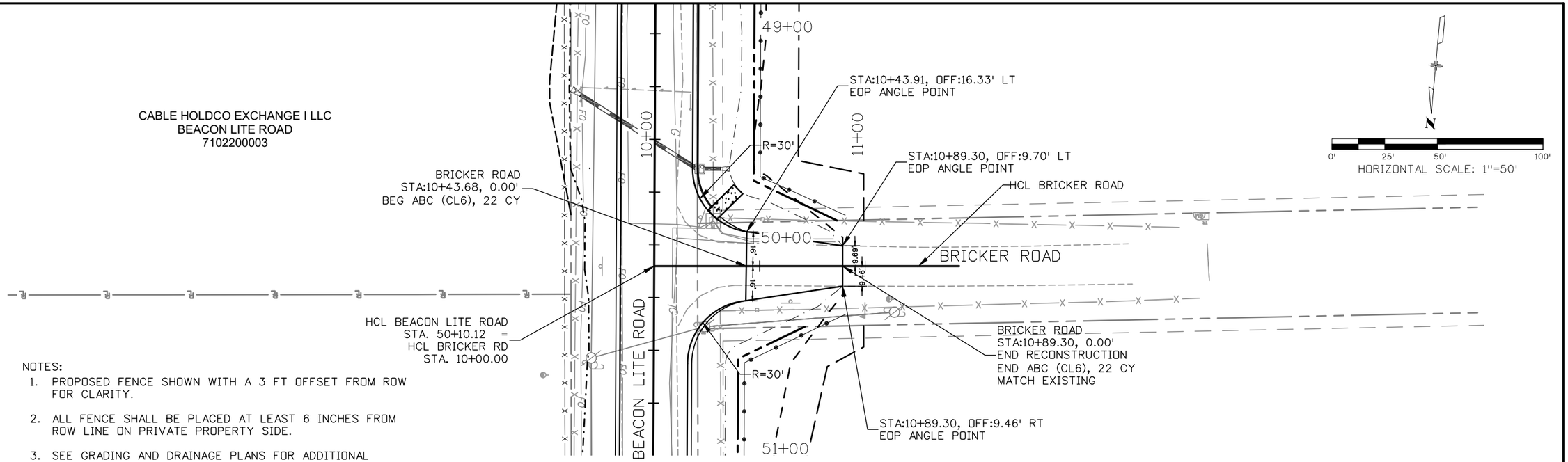
BEACON LITE ROAD IMPROVEMENTS
ROADWAY PLAN & PROFILE
WAKONDA WAY

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	15 OF 16

Project No./Code: 128558

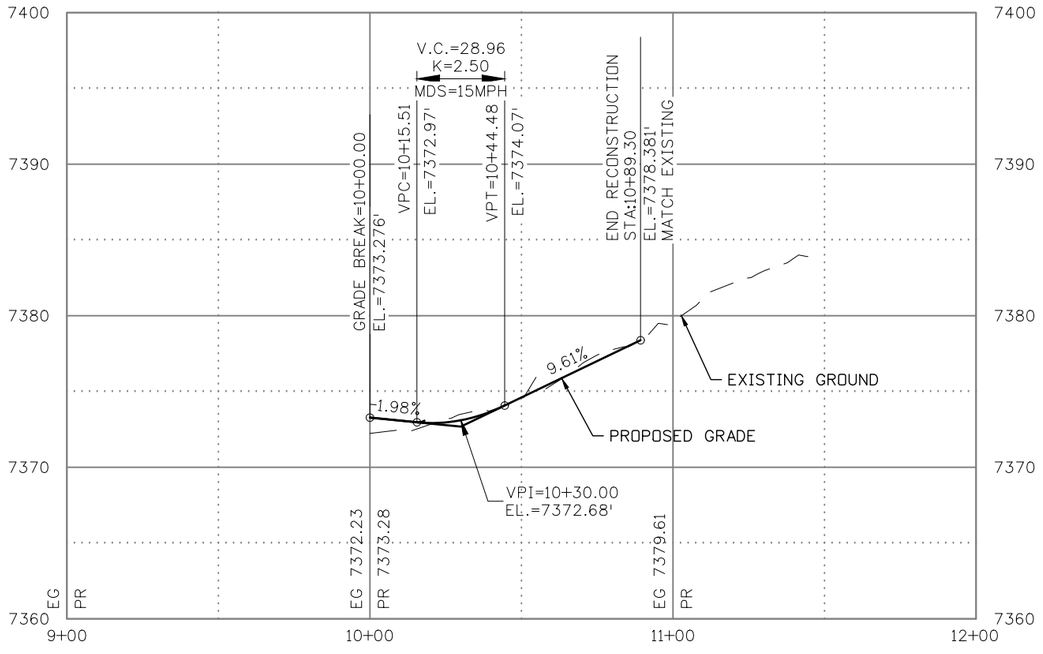
Sheet Number 50

CABLE HOLDCO EXCHANGE I LLC
BEACON LITE ROAD
7102200003



NOTES:

1. PROPOSED FENCE SHOWN WITH A 3 FT OFFSET FROM ROW FOR CLARITY.
2. ALL FENCE SHALL BE PLACED AT LEAST 6 INCHES FROM ROW LINE ON PRIVATE PROPERTY SIDE.
3. SEE GRADING AND DRAINAGE PLANS FOR ADDITIONAL INFORMATION.



COLORADO LICENSED
ERIC M. KING
44932
6/01/2023
PROFESSIONAL ENGINEER

Print Date: 06/01/2023
File Name: 175644_RDW_P&P.dwg
Horiz. Scale: 1" = 100' Vert. Scale: 1" = 20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

0000

Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

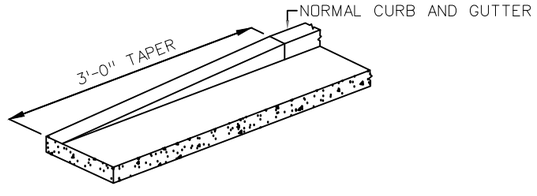
PPRTA

BEACON LITE ROAD IMPROVEMENTS
ROADWAY PLAN & PROFILE
BRICKER ROAD

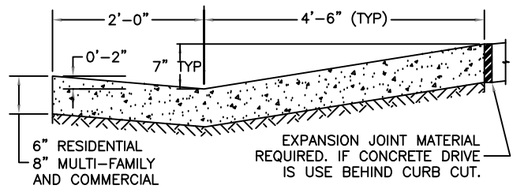
Project No./Code
128558

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	16 OF 16

Sheet Number 51



CURB TRANSISTION DETAIL
N.T.S.



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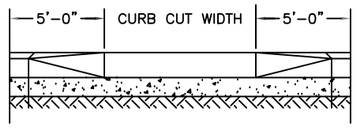
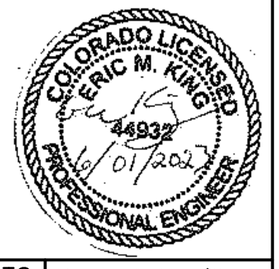


FRONT VIEW

SCALE: NOT TO SCALE

8/11/11 DATE APPROVED: André P. Brackin DEPARTMENT OF TRANSPORTATION	Driveway Cut Detail Standard Drawing REVISION DATE: 11/10/04 FILE NAME: SD_2-23	



Print Date: 04/29/2022
File Name: 175644_RDWY_DET.dwg
Horiz. Scale: N/A Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

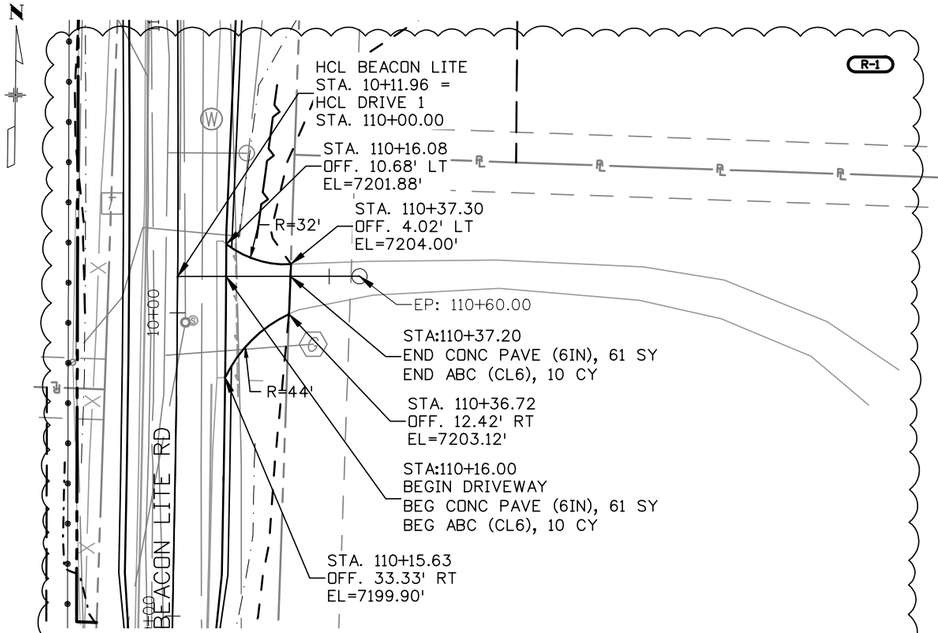
PPRTA

BEACON LITE ROAD IMPROVEMENTS
ROADWAY DETAILS

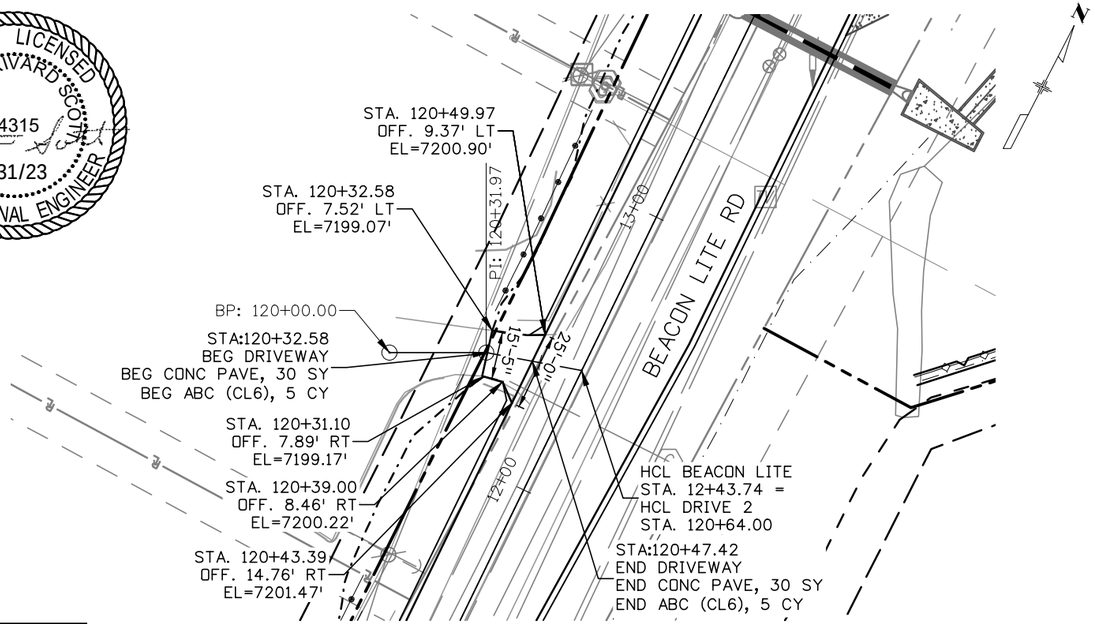
Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	RDWY DET	Subset Sheets:	1 OF 1

Project No./Code
128558

Sheet Number 52



DRIVEWAY 1



DRIVEWAY 2

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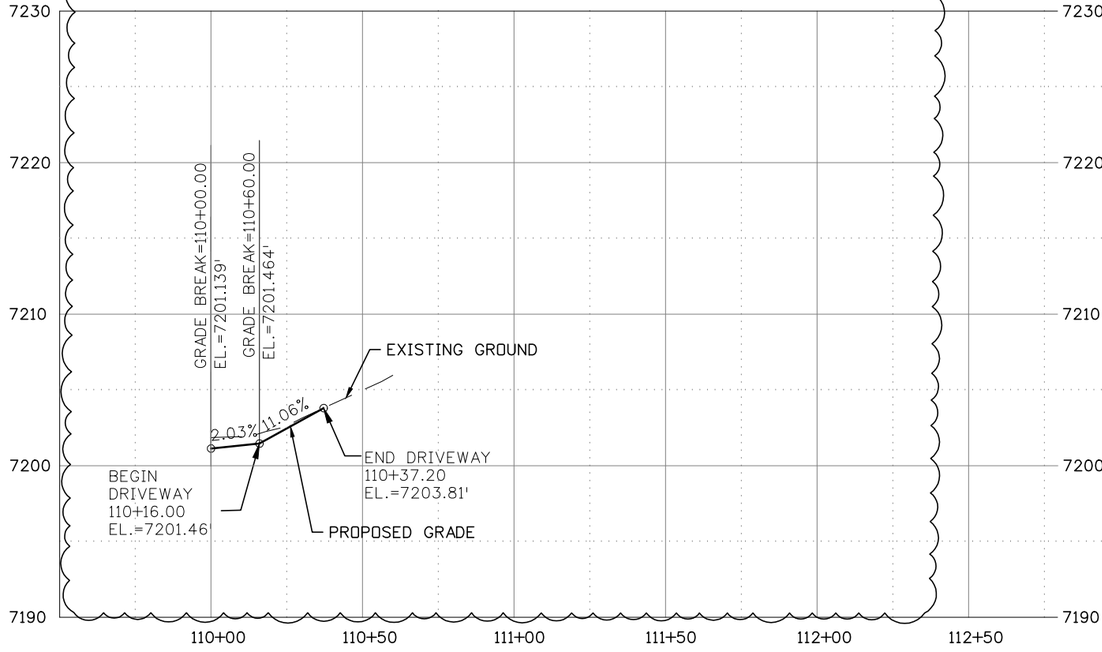
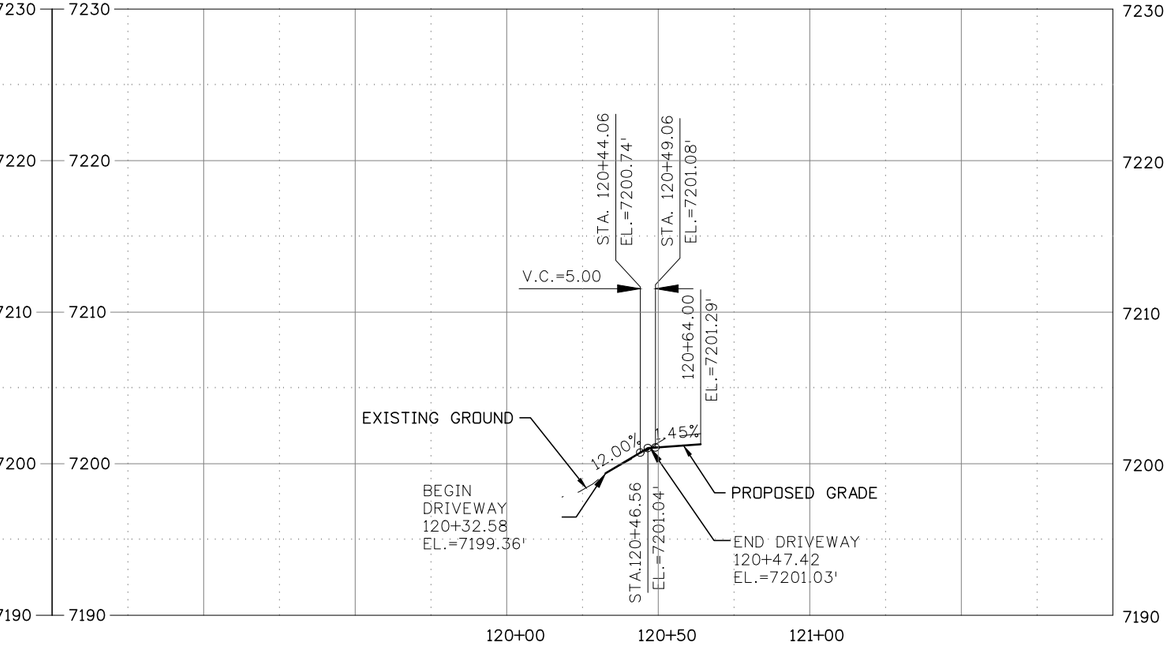




DRIVEWAY PROFILE

DRIVEWAY PROFILE

Print Date:	08/31/2023
File Name:	175644_RDW_Driveway_P&P.dwg
Horiz. Scale:	1"=50'
Vert. Scale:	1"=10'
Unit Information	Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions

Date:	Comments	Init.
6/01/23	RFC	EMK
8/31/23	UPDATED DRIVE 1	KRS

EL PASO COUNTY
COLORADO

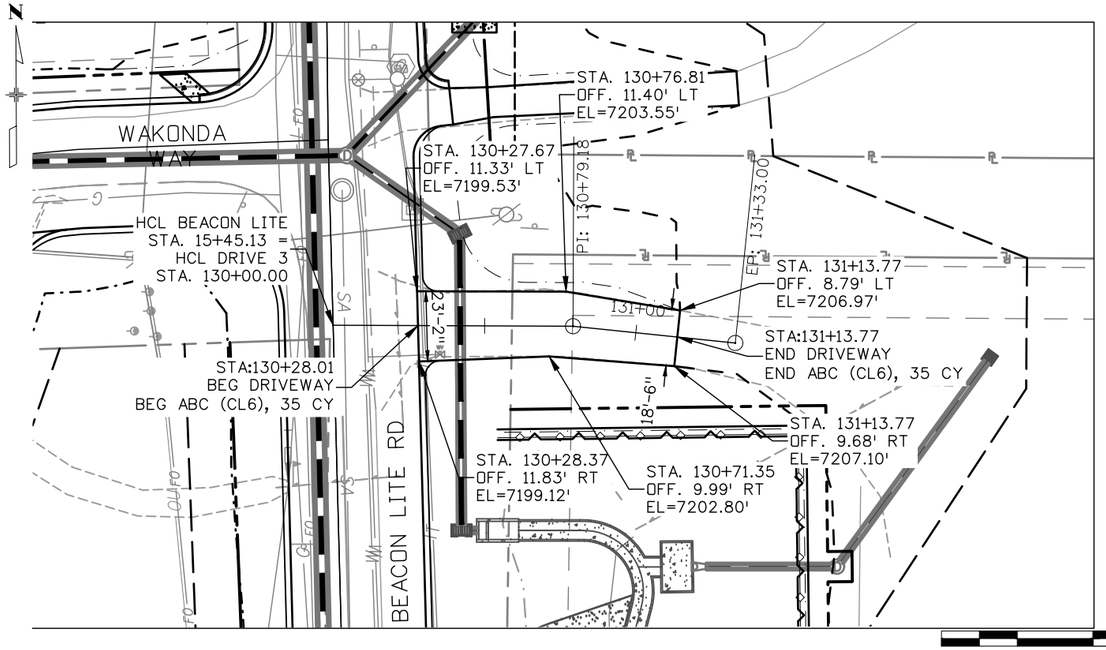
PPRTA

BEACON LITE ROAD IMPROVEMENTS
DRIVEWAY PLAN AND PROFILE NO. 1 AND NO. 2

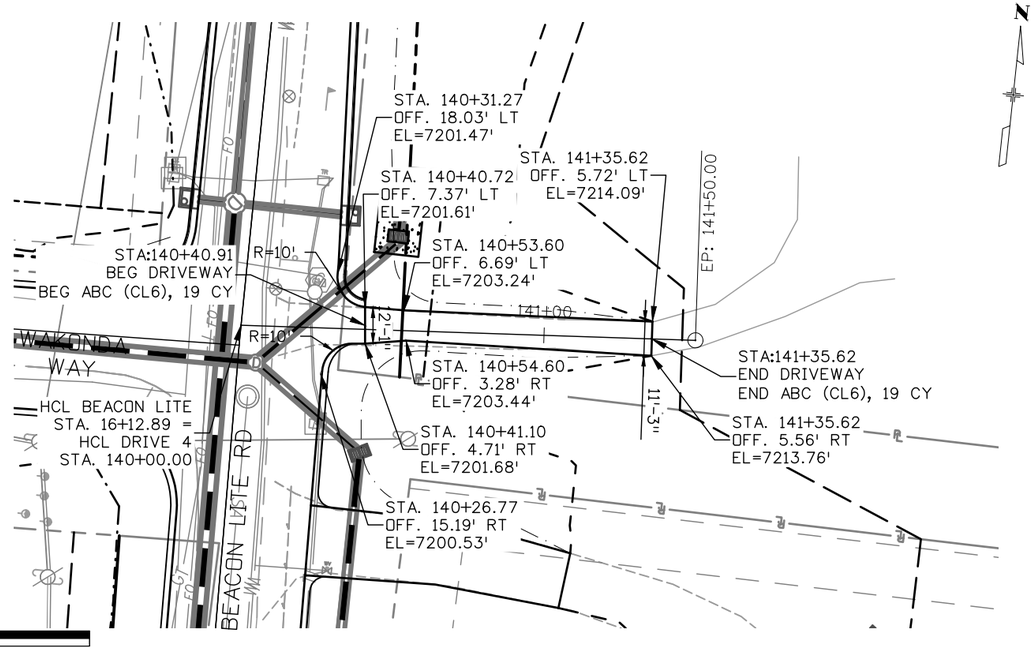
Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	DRIVEWAY	Subset Sheets:	1 OF 8

Project No./Code
128558

Sheet Number 53



DRIVEWAY 3



DRIVEWAY 4

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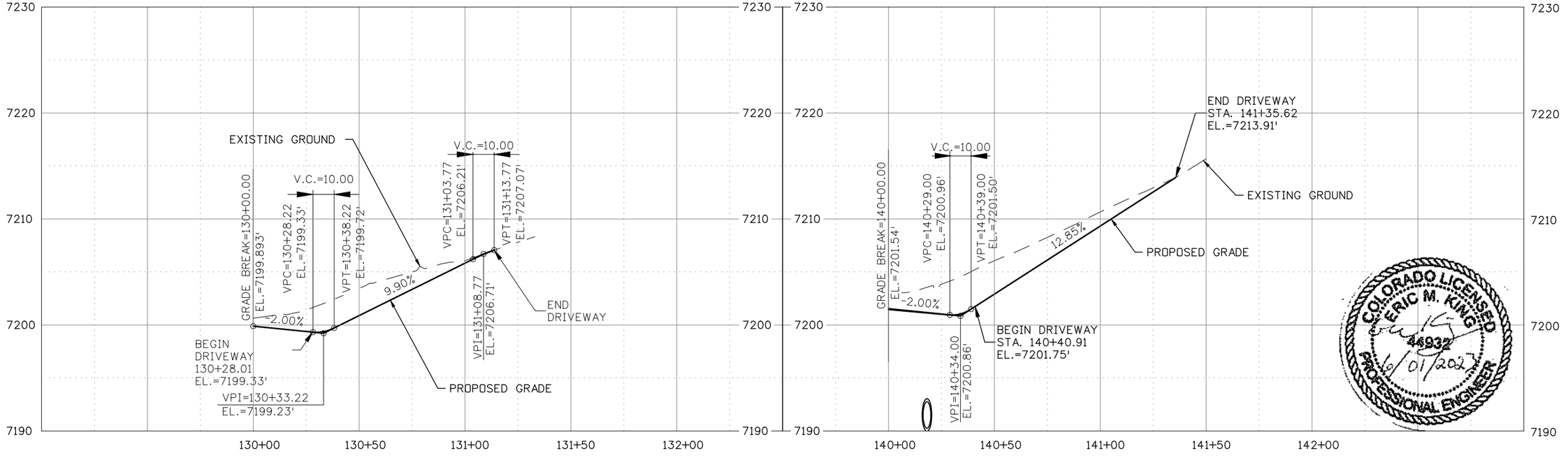


COLORADO LICENSED
ERIC M. KING
44932
06/01/2023
PROFESSIONAL ENGINEER

Print Date:	06/01/2023
File Name:	175644_RDW_Driveway_P&P.dwg
Horiz. Scale:	1"=50'
Vert. Scale:	1"=10'
Unit Information	Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

0000

Sheet Revisions

Date:	Comments	Init.

EL PASO COUNTY
COLORADO

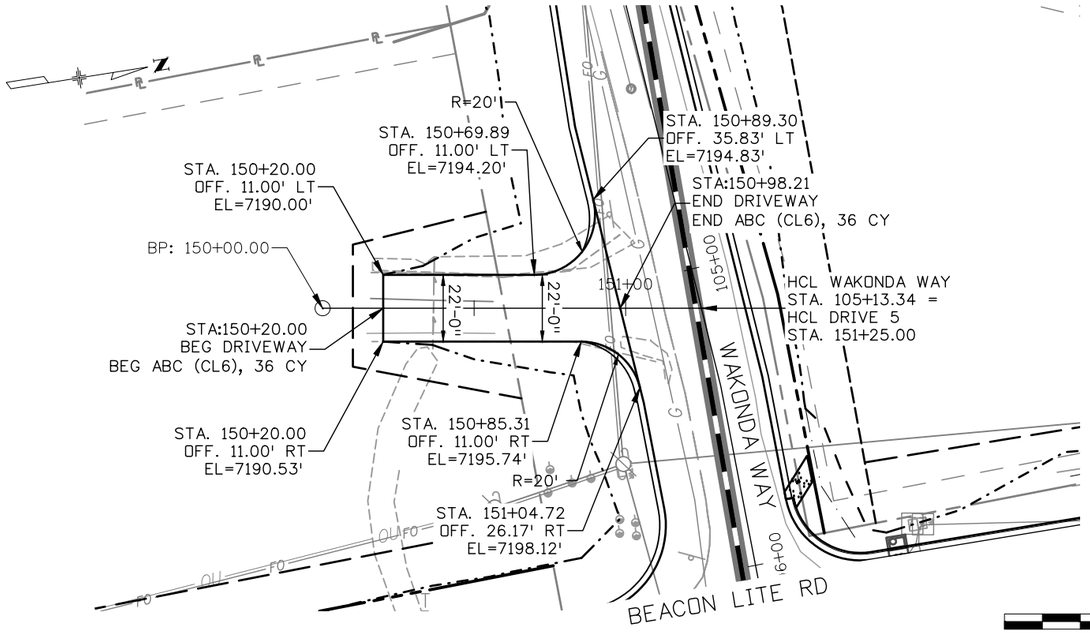
PPRTA

BEACON LITE ROAD IMPROVEMENTS
DRIVEWAY PLAN AND PROFILE NO. 3 AND NO. 4

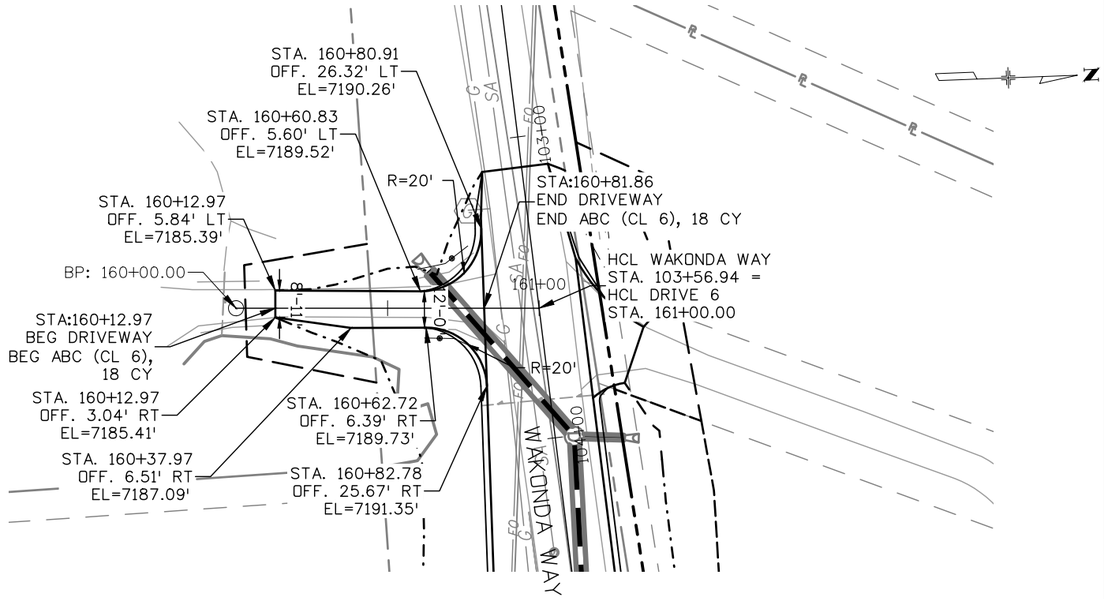
Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	DRIVEWAY	Subset Sheets:	2 OF 8

Project No./Code: 128558

Sheet Number 54

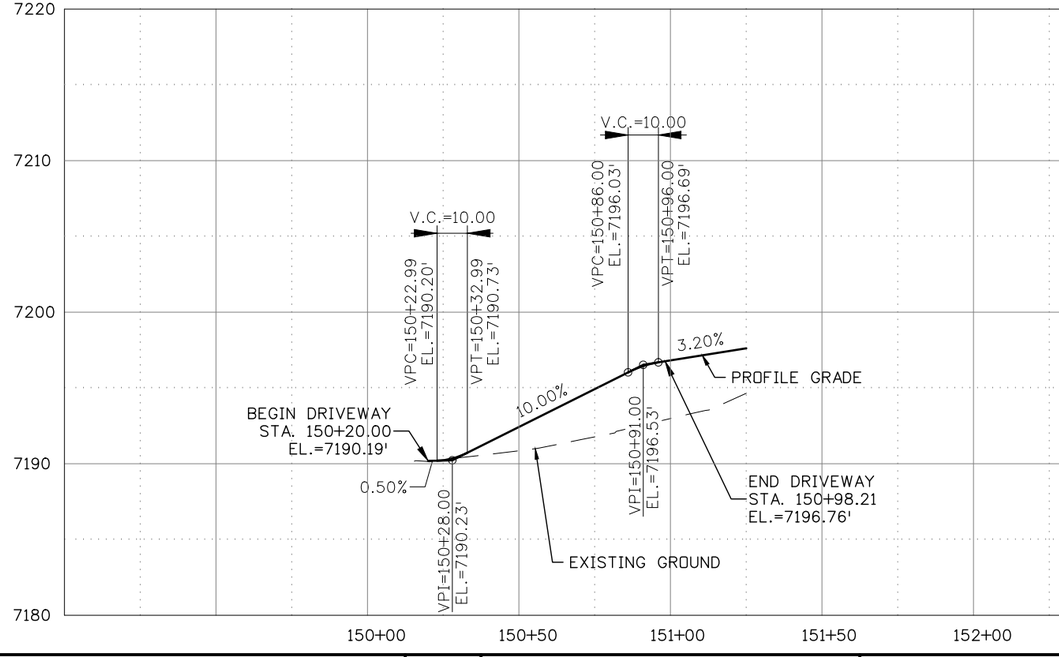


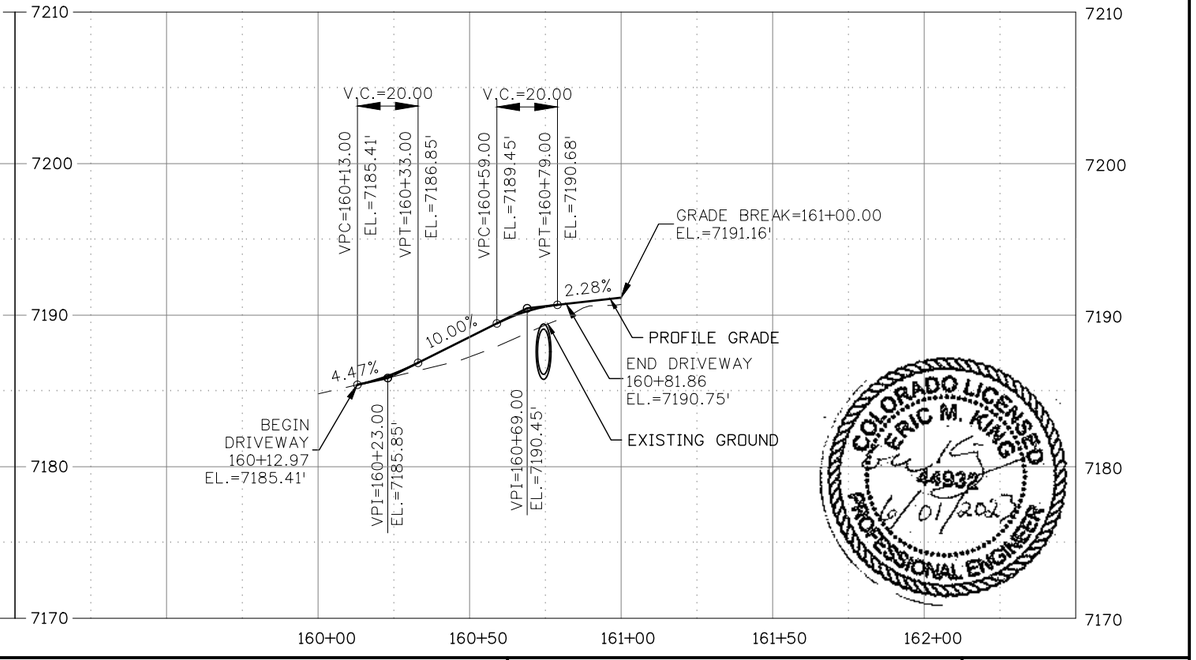
DRIVEWAY 5



DRIVEWAY 6

HORIZONTAL SCALE: 1"=50'





COLORADO LICENSED
ERIC M. KING
44932
6/01/2023
PROFESSIONAL ENGINEER

Print Date: 06/01/2023		Sheet Revisions	
File Name: 175644_RDW_Driveway_P&P.dwg		Date:	Comments / Init.
Horiz. Scale: 1"=50' Vert. Scale: 1"=10'			
Unit Information Unit Leader Initials			
Michael Baker INTERNATIONAL — MICHAEL BAKER INTERNATIONAL, INC. 165 S. UNION BLVD., STE. 1000 LAKEWOOD, CO 80228 720.514.1100	0000		

EL PASO COUNTY COLORADO

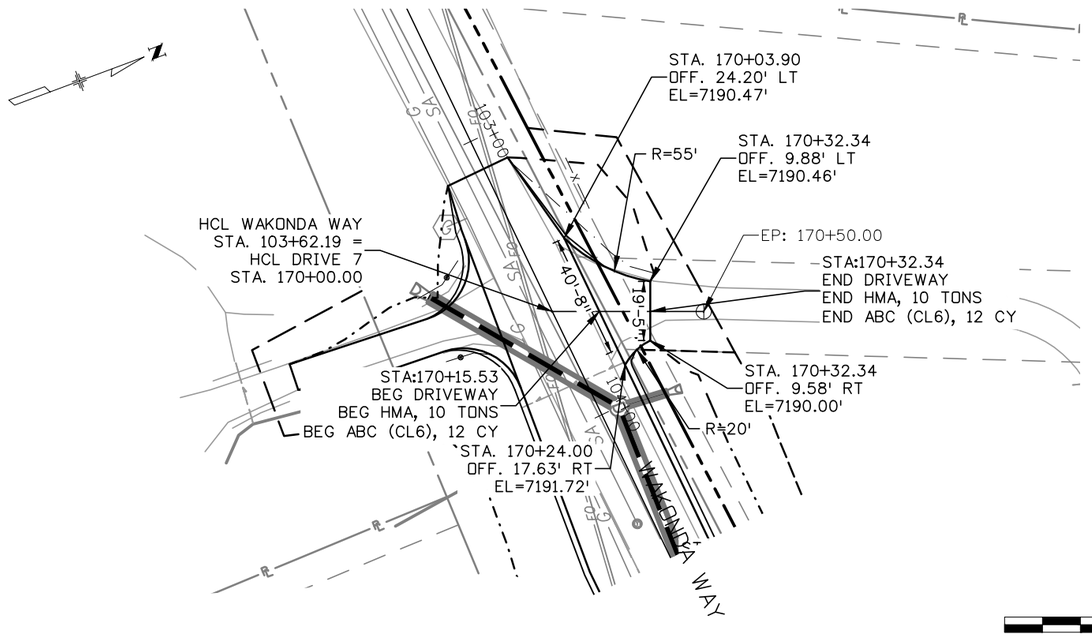
PPRTA

BEACON LITE ROAD IMPROVEMENTS
DRIVEWAY PLAN AND PROFILE
NO. 5 AND NO. 6

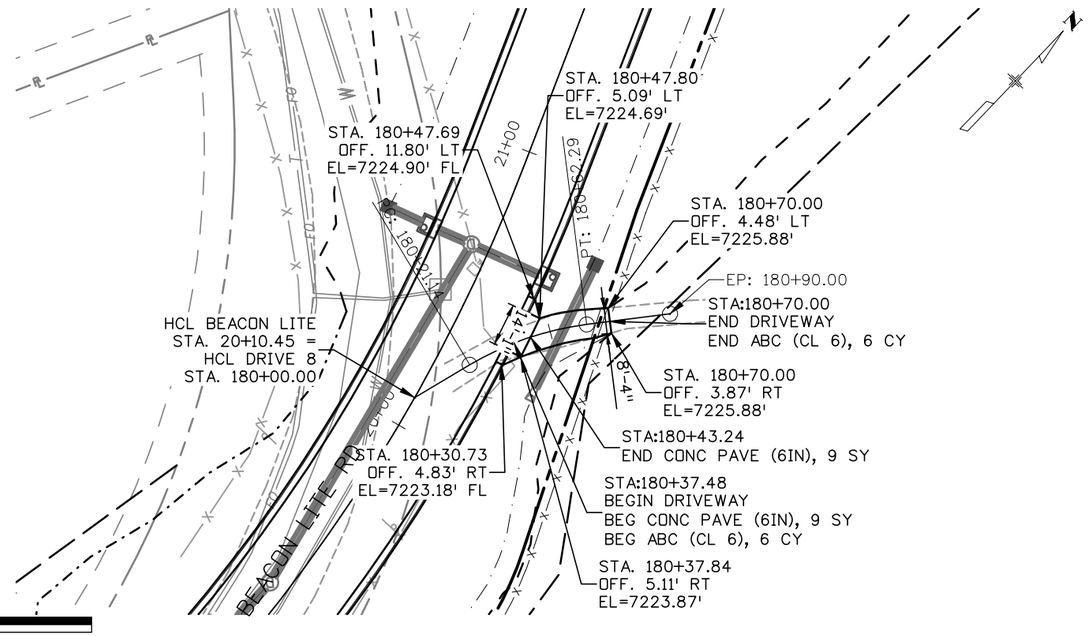
Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	DRIVEWAY	Subset Sheets:	3 OF 8

Project No./Code: 128558

Sheet Number 55



DRIVEWAY 7



DRIVEWAY 8

0' 25' 50' 100'
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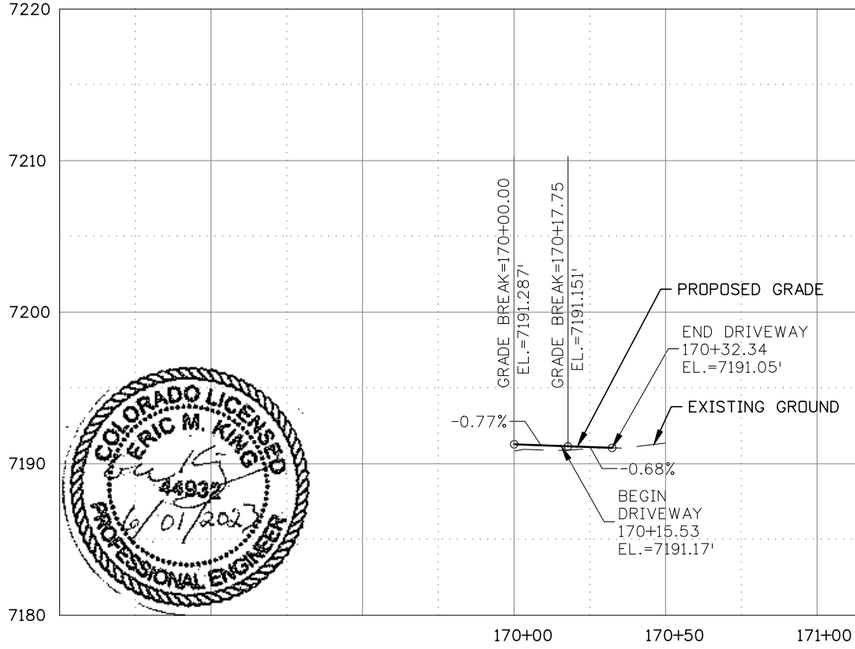
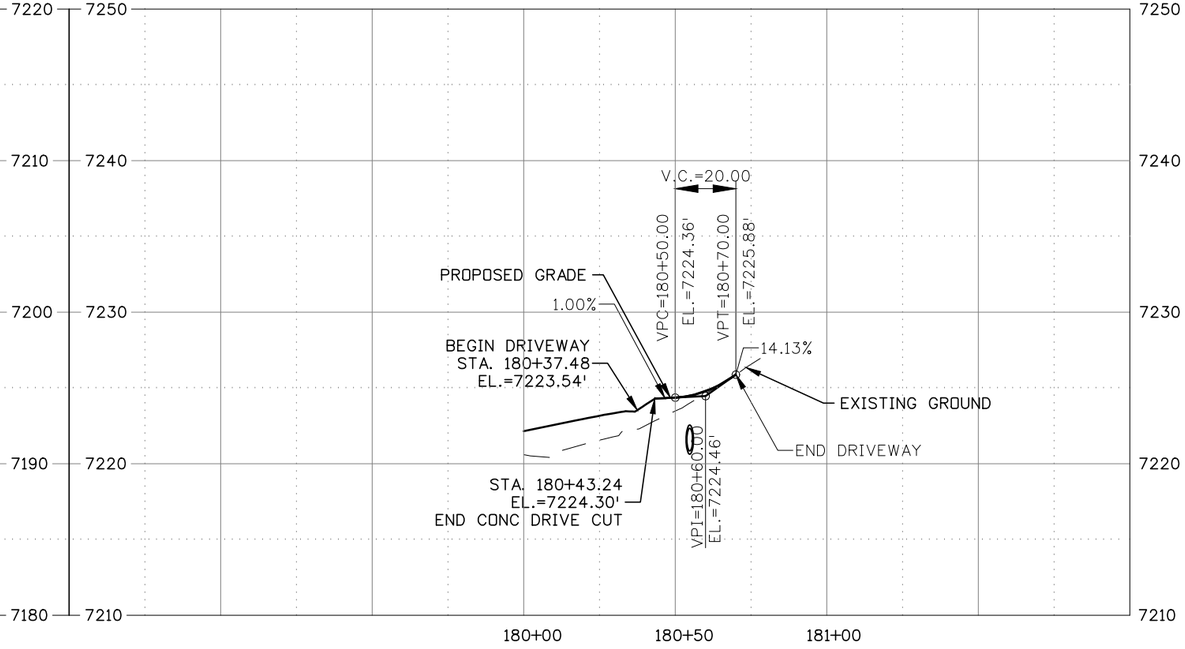




Print Date: 04/29/2022	Sheet Revisions		
File Name: 175644_RDW_Driveway_P&P.dwg	Date:	Comments	Init.
Horiz. Scale: 1"=50' Vert. Scale: 1"=10'			
Unit Information Unit Leader Initials			
Michael Baker INTERNATIONAL — MICHAEL BAKER INTERNATIONAL, INC. 165 S. UNION BLVD., STE. 1000 LAKEWOOD, CO 80228 720.514.1100			

EL PASO COUNTY COLORADO

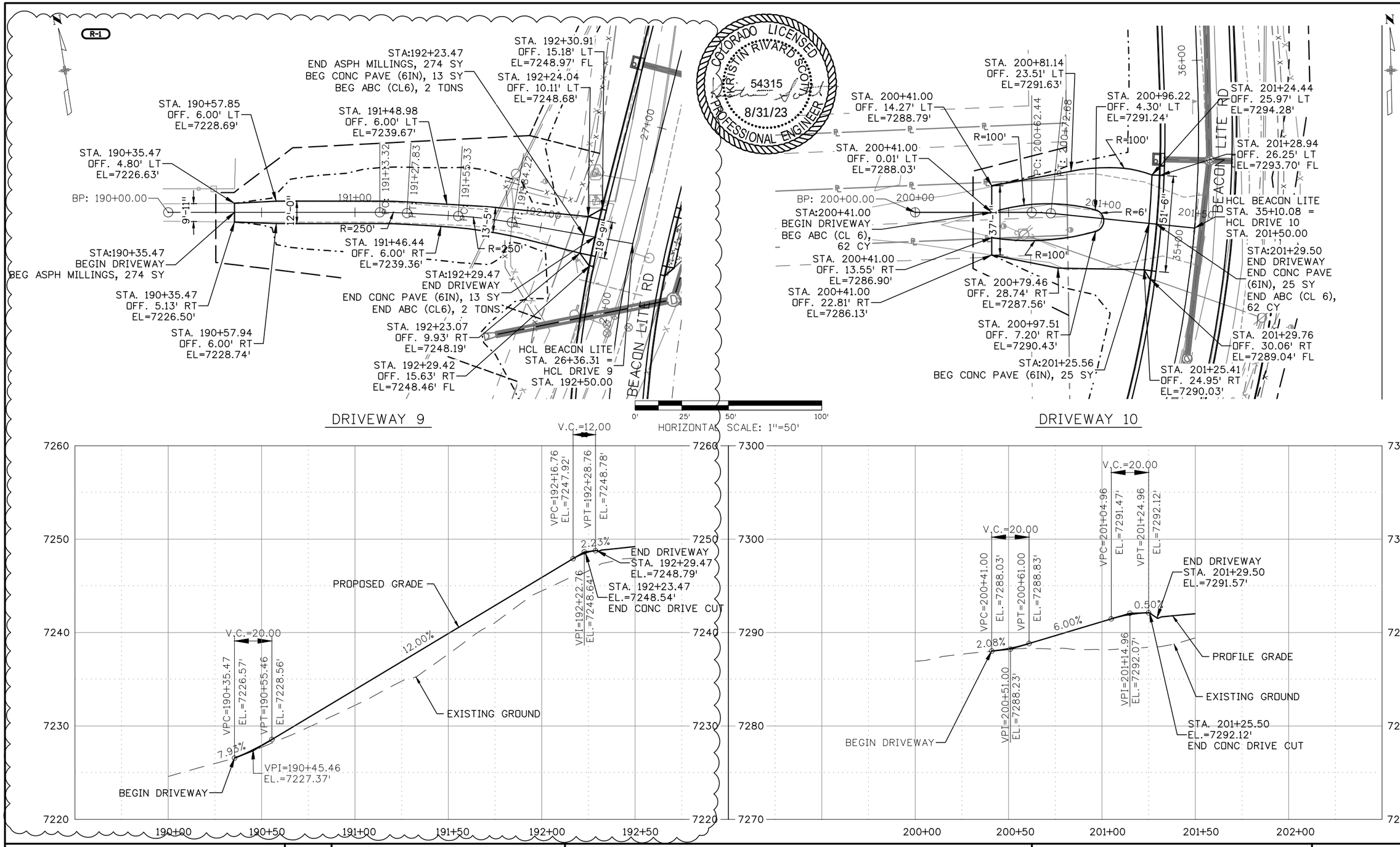
PPRTA

BEACON LITE ROAD IMPROVEMENTS
DRIVEWAY PLAN AND PROFILE
NO. 7 AND NO. 8

Project No./Code: 128558

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	DRIVEWAY	Subset Sheets:	4 OF 8

Sheet Number 56



COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
8/31/23
PROFESSIONAL ENGINEER

Print Date:	08/31/2023
File Name:	175644_RDW_Driveway_P&P.dwg
Horiz. Scale:	1"=50'
Vert. Scale:	1"=10'
Unit Information	Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions

Date:	Comments	Init.
6/01/23	RFC	EMK
8/31/23	UPDATED DRIVE 9	KRS

EL PASO COUNTY
COLORADO

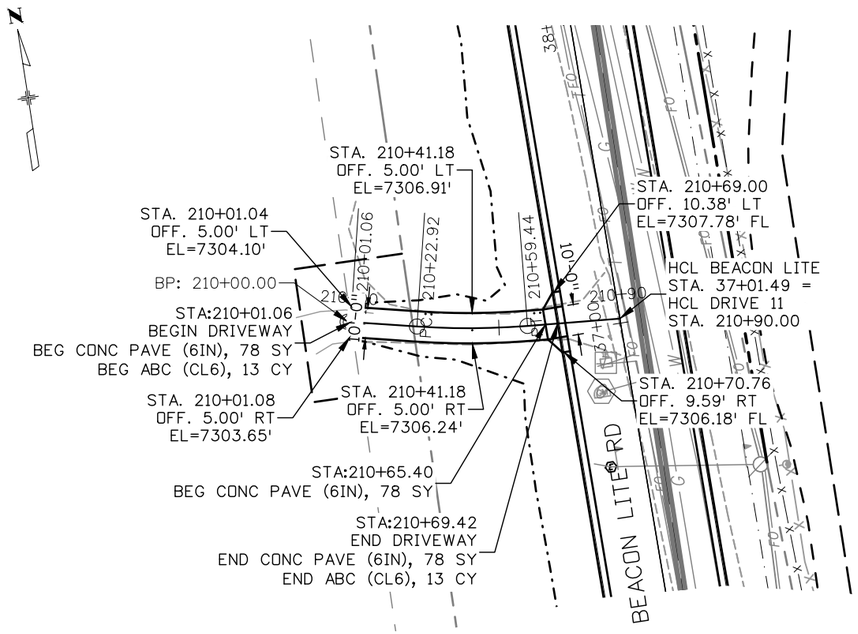
PPRTA

BEACON LITE ROAD IMPROVEMENTS
DRIVEWAY PLAN AND PROFILE NO. 9 AND NO. 10

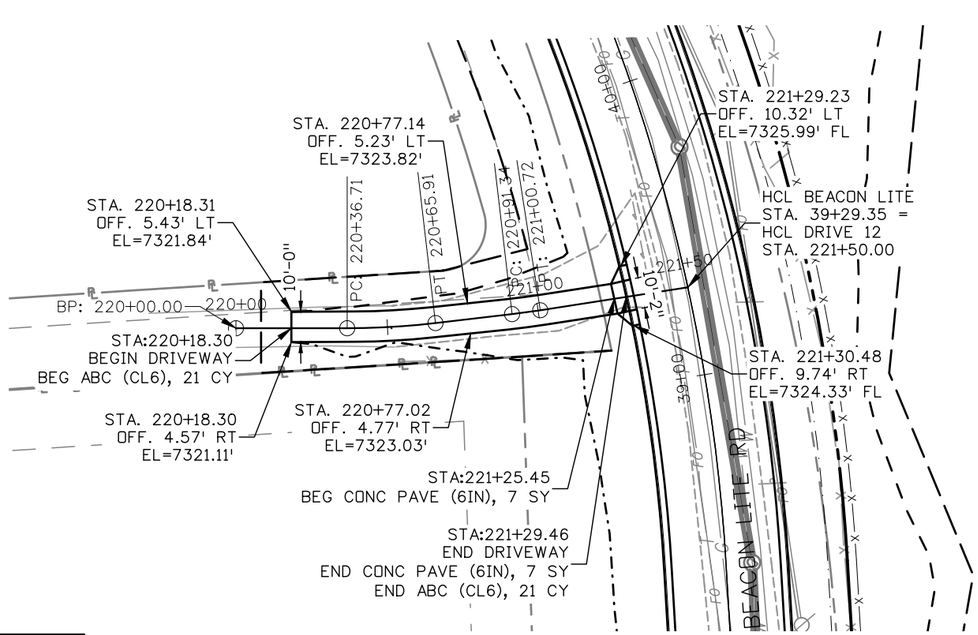
Designer:	KRS
Detailer:	RBR
Sheet Subset:	DRIVEWAY
Structure Numbers	
Subset Sheets:	5 OF 8

Project No./Code: 128558

Sheet Number: 57

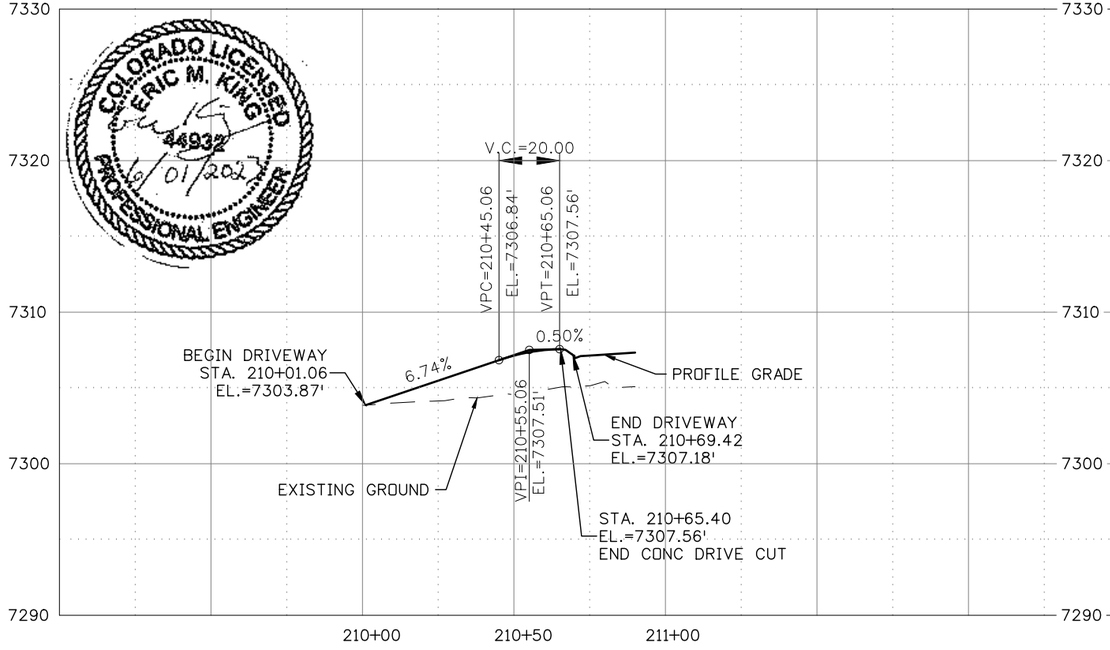


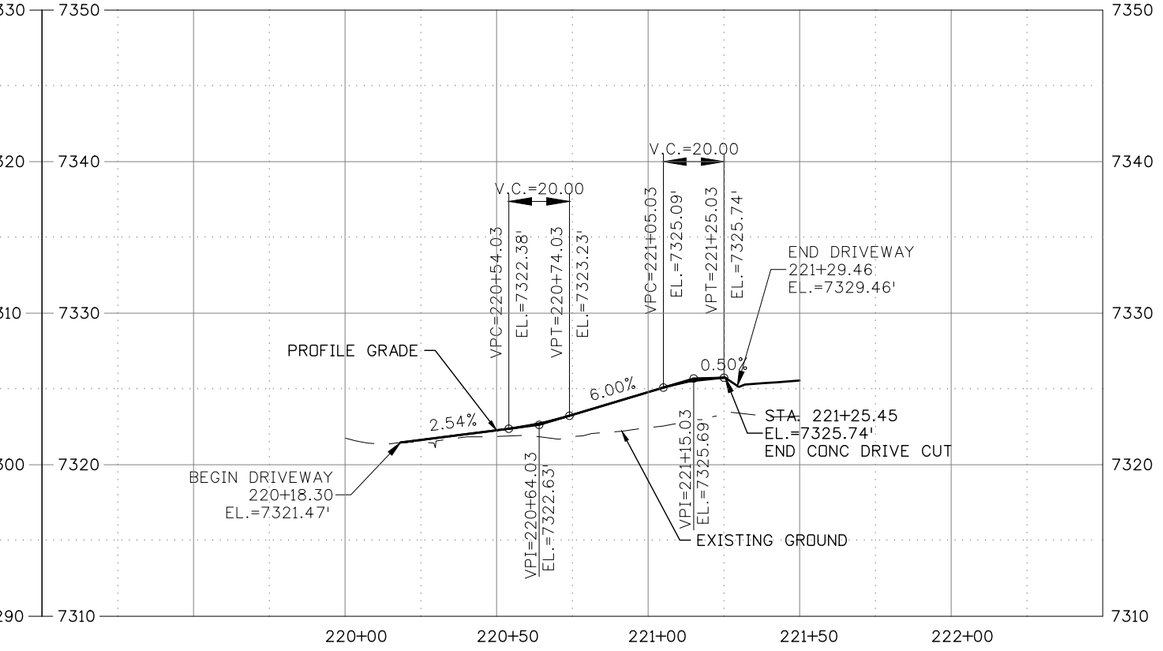
DRIVEWAY 11



DRIVEWAY 12

0' 25' 50' 100'
HORIZONTAL SCALE: 1"=50'





COLORADO LICENSED
ERIC M. KING
44932
6/01/2023
PROFESSIONAL ENGINEER

Print Date: 06/01/2023	
File Name: 175644_RDW_Driveway_P&P.dwg	
Horiz. Scale: 1"=50'	Vert. Scale: 1"=10'
Unit Information	Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

0000

Sheet Revisions

Date:	Comments	Init.

EL PASO COUNTY
COLORADO

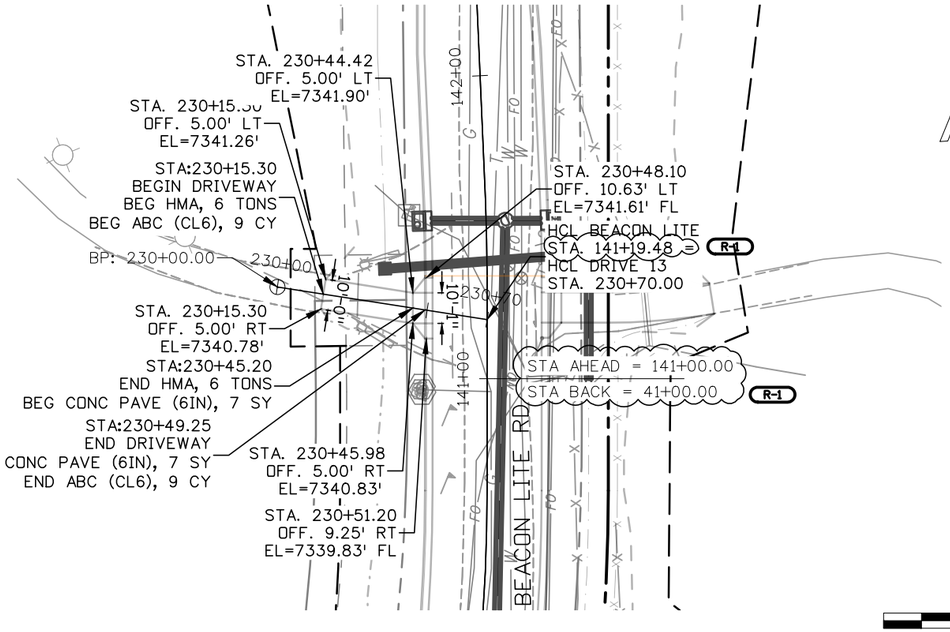
PPRTA

BEACON LITE ROAD IMPROVEMENTS
DRIVEWAY PLAN AND PROFILE
NO. 11 AND NO. 12

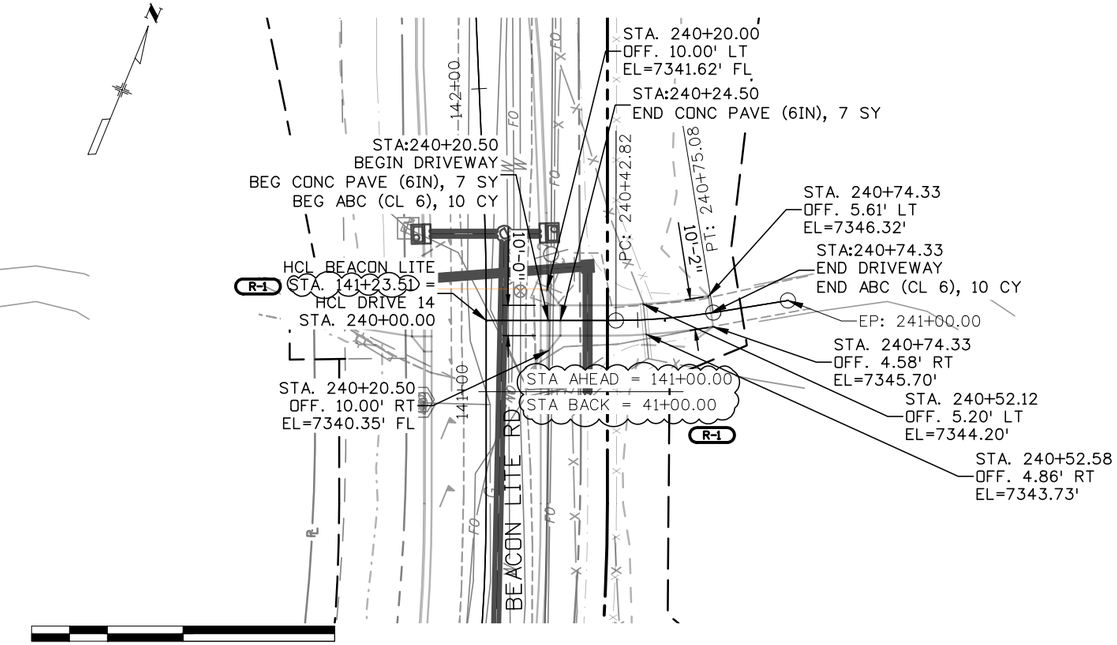
Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	DRIVEWAY	Subset Sheets:	6 OF 8

Project No./Code
128558

Sheet Number 58



DRIVEWAY 13

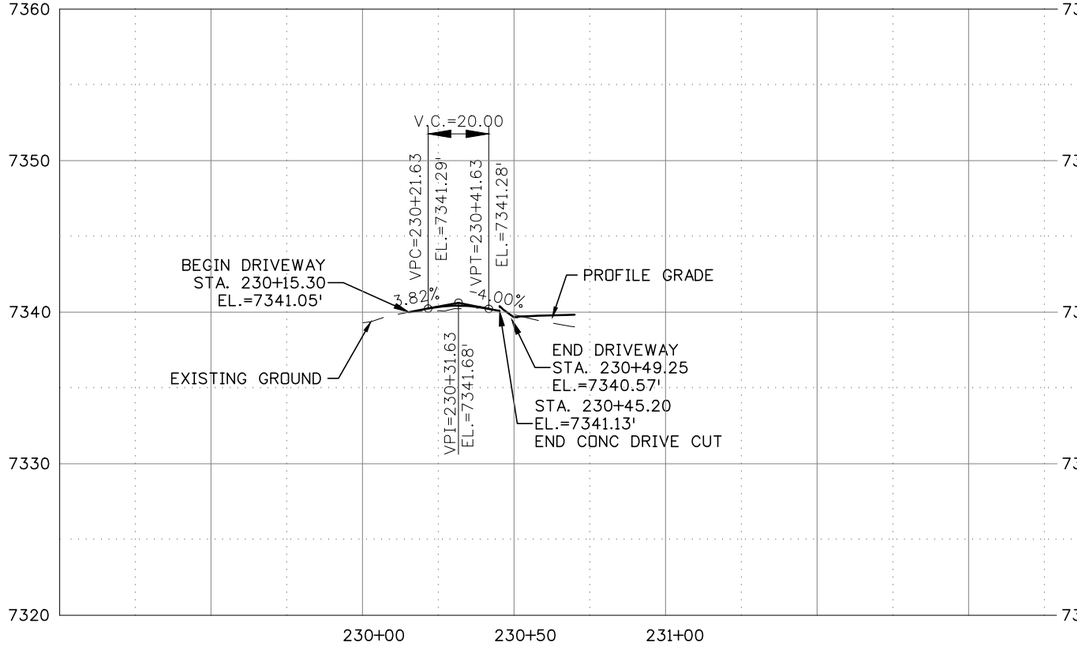


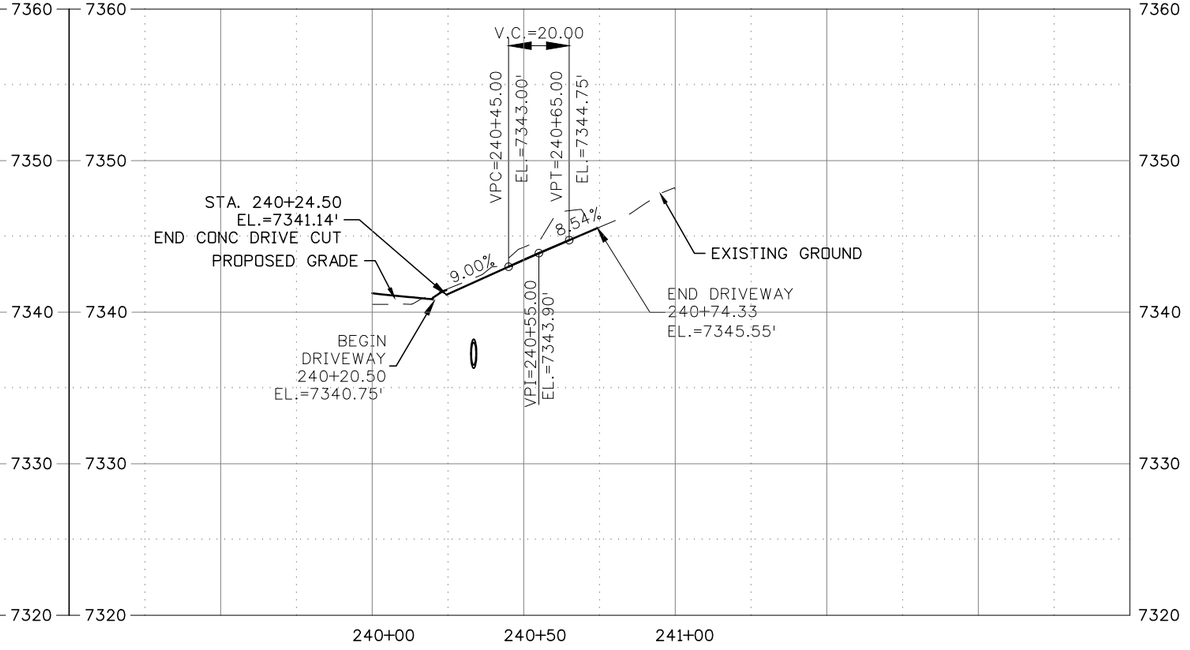
DRIVEWAY 14

0' 25' 50' 100'

HORIZONTAL SCALE: 1"=50'

COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
9/10/24
PROFESSIONAL ENGINEER





Print Date: 09/09/2024		Sheet Revisions	
File Name: 175644_RDW_Driveway_P&P.dwg		Date:	Comments	Init.
Horiz. Scale: 1"=50' Vert. Scale: 1"=10'		6/01/23	RFC	EMK
Unit Information Unit Leader Initials	R-1	9/09/24	GEOMETRY CHANGE	KRS
Michael Baker INTERNATIONAL — MICHAEL BAKER INTERNATIONAL, INC. 165 S. UNION BLVD., STE. 1000 LAKEWOOD, CO 80228 720.514.1100				

EL PASO COUNTY COLORADO

PPRTA

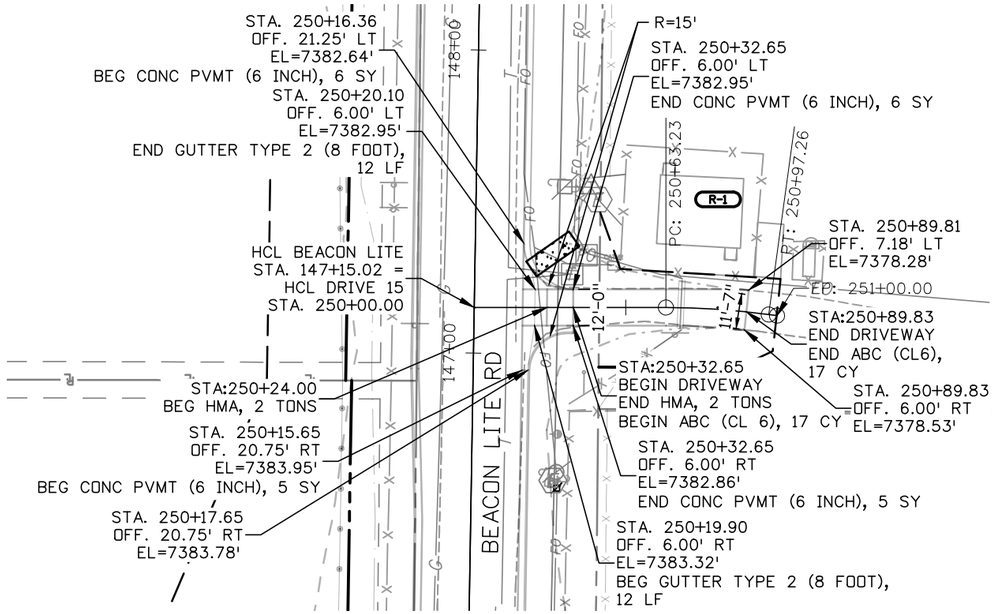
BEACON LITE ROAD IMPROVEMENTS
DRIVEWAY PLAN AND PROFILE
NO. 13 AND NO. 14

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	DRIVEWAY	Subset Sheets:	7 OF 8

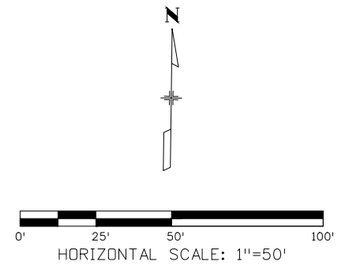
Project No./Code
128558

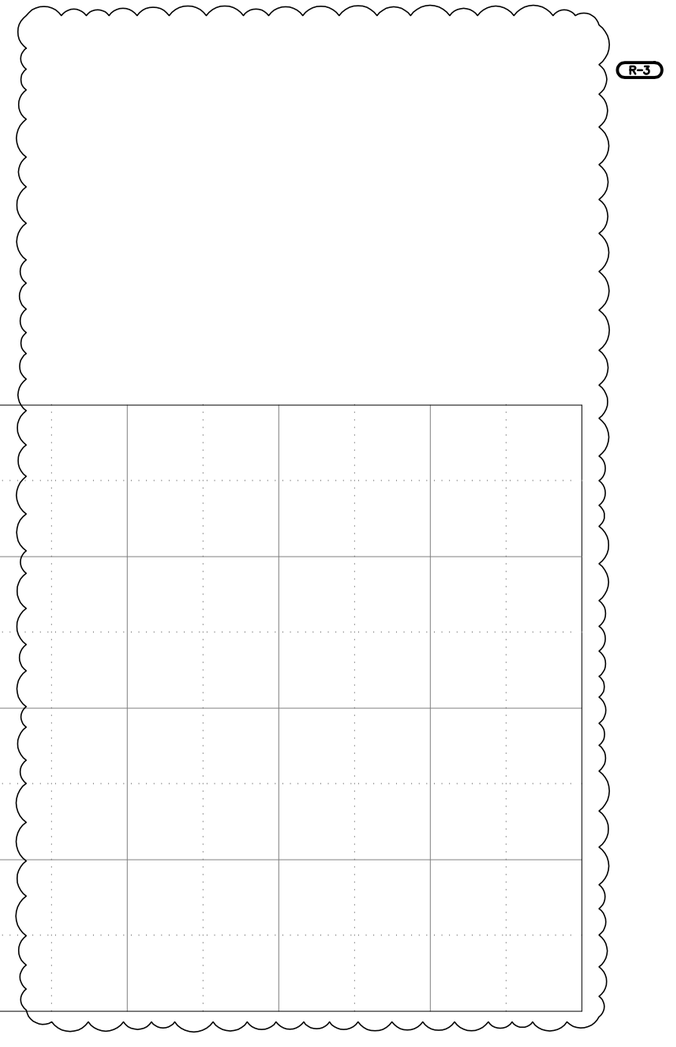
Sheet Number 59

COLORADO LICENSED
PAUL DONALD MOREAU
32557
3/7/25
PROFESSIONAL ENGINEER



DRIVEWAY 15





Print Date: 03/07/2025
File Name: 175644_RDW_DRV_P&P.dwg
Horiz. Scale: 1"=50' Vert. Scale: 1"=10'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions

	Date:	Comments	Init.
	6/01/23	RFC	EMK
R-1	3/07/24	UPDATED TE	KRS
R-2	9/09/24	GEOMETRY CHANGE	KRS
R-3	3/07/25	PROJ. LIMITS CHANGE	PDM

EL PASO COUNTY
COLORADO

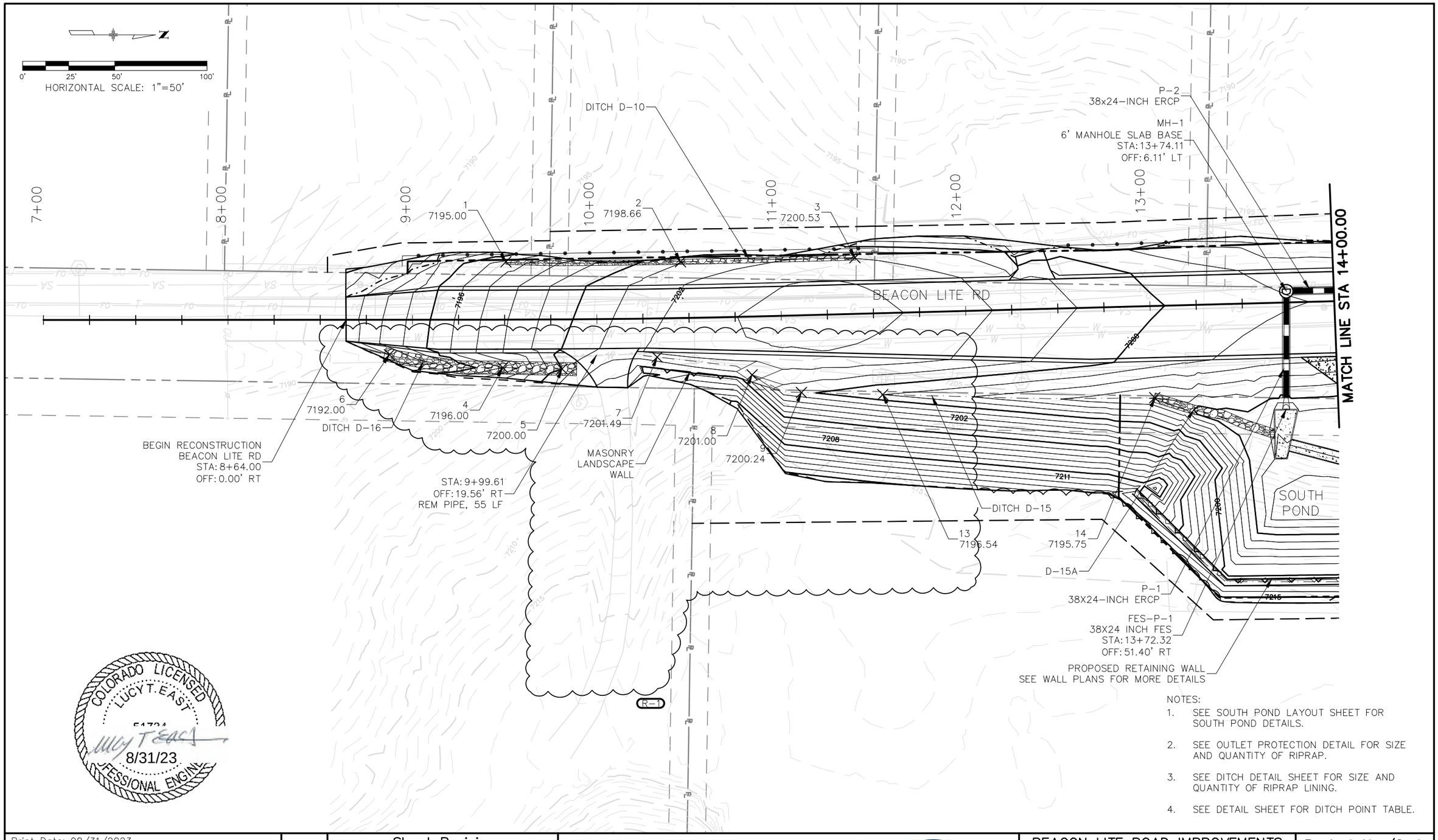
PPRTA
FIVE PEAKS REGIONAL TRANSPORTATION AUTHORITY

BEACON LITE ROAD IMPROVEMENTS
DRIVEWAY PLAN AND PROFILE
NO. 15 R-3

Designer: KRS
Detailer: RBR
Sheet Subset: DRIVEWAY
Structure Numbers
Subset Sheets: 8 OF 8

Project No./Code
128558

Sheet Number 60



NOTES:

1. SEE SOUTH POND LAYOUT SHEET FOR SOUTH POND DETAILS.
2. SEE OUTLET PROTECTION DETAIL FOR SIZE AND QUANTITY OF RIPRAP.
3. SEE DITCH DETAIL SHEET FOR SIZE AND QUANTITY OF RIPRAP LINING.
4. SEE DETAIL SHEET FOR DITCH POINT TABLE.

COLORADO LICENSED
LUCY T. EAST
51724
PROFESSIONAL ENGINEER
8/31/23

Print Date:	08/31/2023
File Name:	175644_HYD_Plans.dwg
Horiz. Scale:	1" = 50'
Vert. Scale:	N/A
Unit Information	Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions

Date:	Comments	Init.
06/01/23	RFC	LTE
08/31/23	DRIVEWAY 1 GRADING	LTE

EL PASO COUNTY
COLORADO

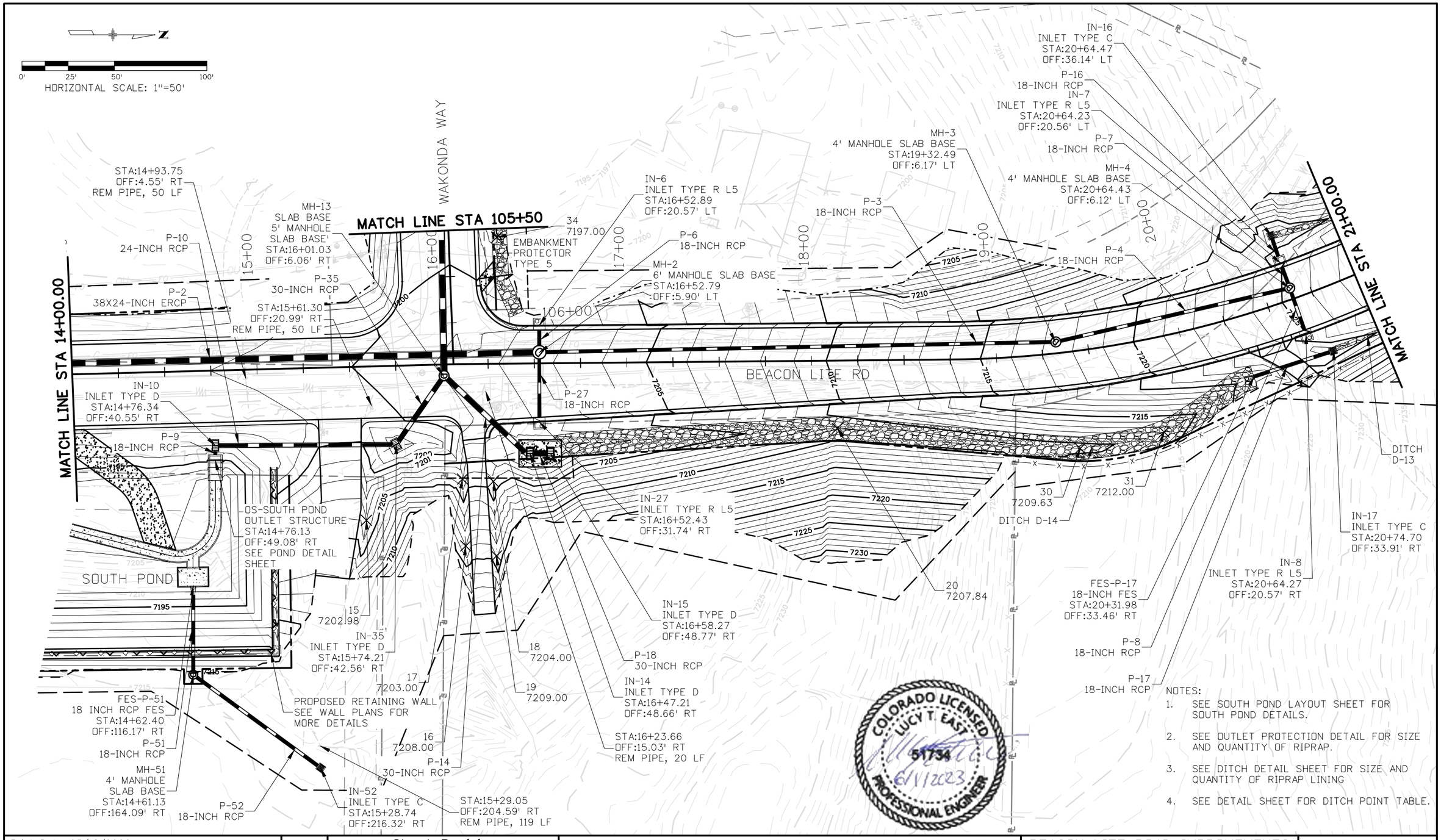
PPRTA

BEACON LITE ROAD IMPROVEMENTS GRADING AND DRAINAGE PLANS

Designer:	NED	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	DRAIN PLN	Subset Sheets:	1 OF 8

Project No./Code: 128558

Sheet Number: 61



NOTES:

1. SEE SOUTH POND LAYOUT SHEET FOR SOUTH POND DETAILS.
2. SEE OUTLET PROTECTION DETAIL FOR SIZE AND QUANTITY OF RIPRAP.
3. SEE DITCH DETAIL SHEET FOR SIZE AND QUANTITY OF RIPRAP LINING
4. SEE DETAIL SHEET FOR DITCH POINT TABLE.

COLORADO LICENSED
LUCY T. EAST
51734
6/1/2023
PROFESSIONAL ENGINEER

Print Date:	05/18/2022
File Name:	175644_HYD_Plans.dwg
Horiz. Scale:	1" = 50'
Vert. Scale:	N/A
Unit Information	Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions

Date:	Comments	Init.

EL PASO COUNTY
COLORADO

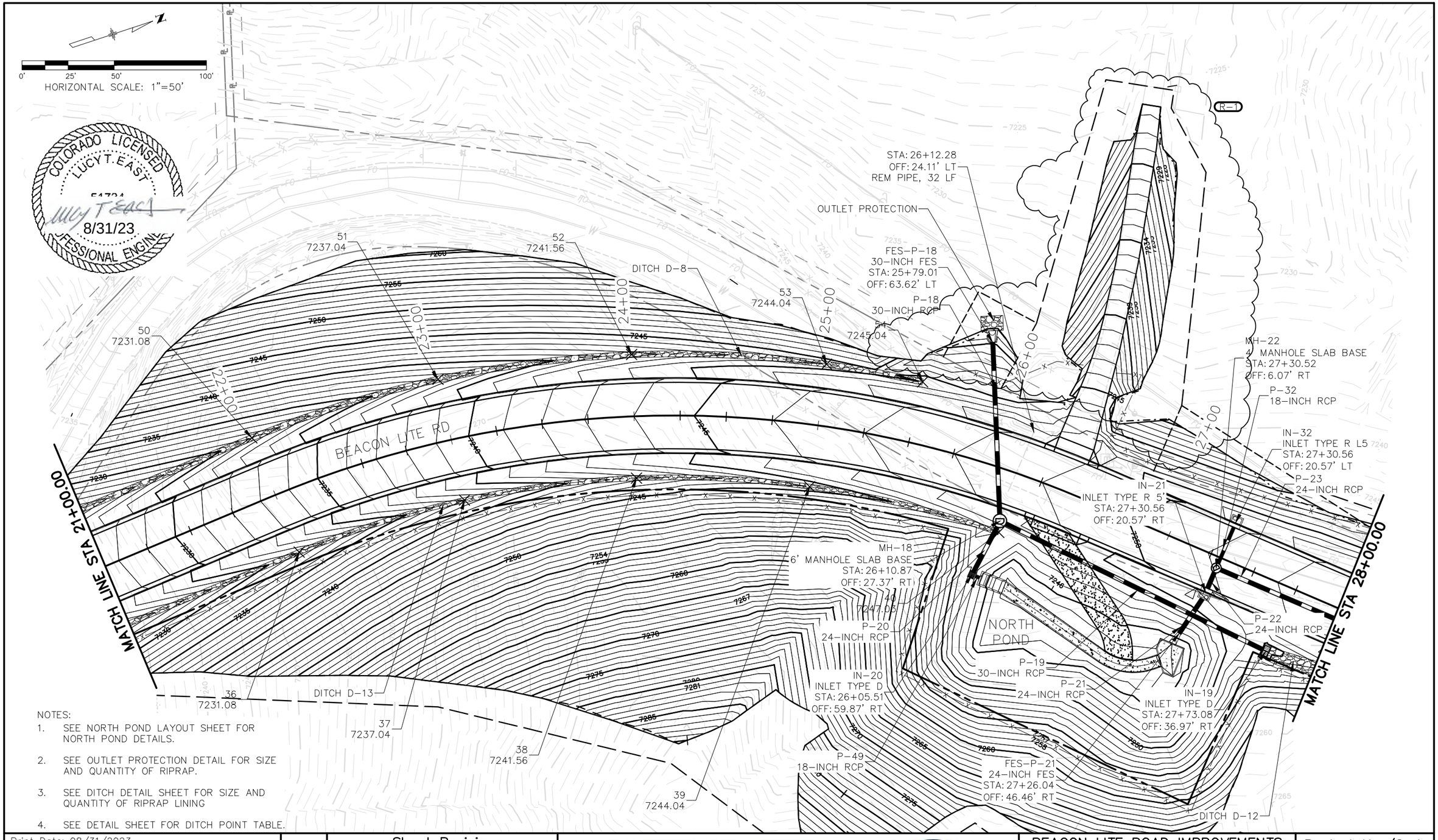
PPRTA

BEACON LITE ROAD IMPROVEMENTS GRADING AND DRAINAGE PLANS

Designer:	NED	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	DRAIN PLN	Subset Sheets:	2 OF 8

Project No./Code: 128558

Sheet Number: 62



NOTES:

1. SEE NORTH POND LAYOUT SHEET FOR NORTH POND DETAILS.
2. SEE OUTLET PROTECTION DETAIL FOR SIZE AND QUANTITY OF RIPRAP.
3. SEE DITCH DETAIL SHEET FOR SIZE AND QUANTITY OF RIPRAP LINING
4. SEE DETAIL SHEET FOR DITCH POINT TABLE.

Print Date:	08/31/2023
File Name:	175644_HYD_Plans.dwg
Horiz. Scale:	1" = 50'
Vert. Scale:	N/A
Unit Information	Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions		
Date:	Comments	Init.
06/01/23	RFC	LTE
08/31/23	DRIVEWAY 9 GRADING	LTE

EL PASO COUNTY
COLORADO

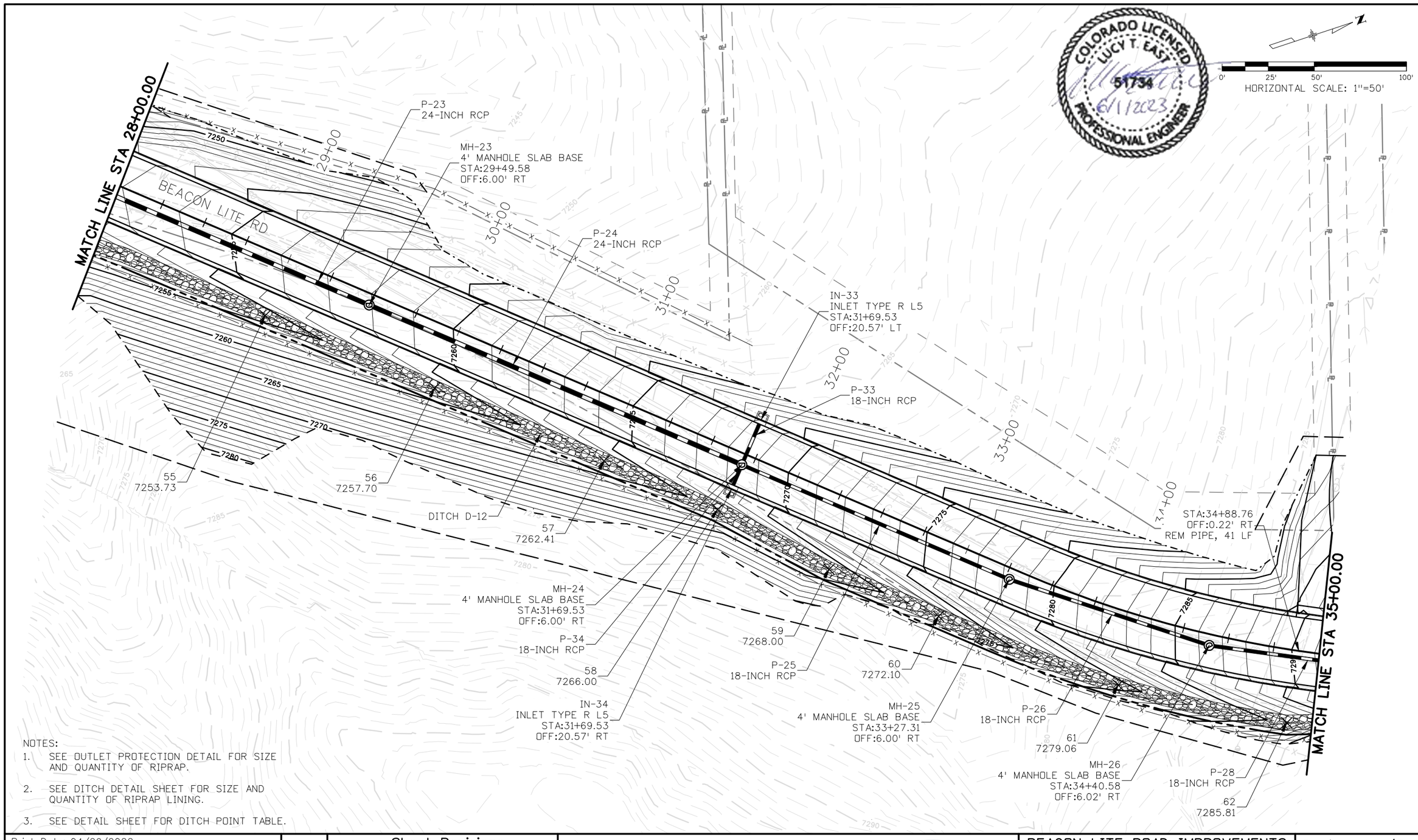
PPRTA

BEACON LITE ROAD IMPROVEMENTS
GRADING AND DRAINAGE
PLANS

Designer:	NED	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	DRAIN PLN	Subset Sheets:	3 OF 8

Project No./Code
128558

Sheet Number 63



COLORADO LICENSED
LUCY T. EAST
51734
6/1/2023
PROFESSIONAL ENGINEER

NOTES:

1. SEE OUTLET PROTECTION DETAIL FOR SIZE AND QUANTITY OF RIPRAP.
2. SEE DITCH DETAIL SHEET FOR SIZE AND QUANTITY OF RIPRAP LINING.
3. SEE DETAIL SHEET FOR DITCH POINT TABLE.

Print Date: 04/29/2022	Sheet Revisions		
File Name: 175644_HYD_Plans.dwg	Date:	Comments	Init.
Horiz. Scale: 1" = 50' Vert. Scale: N/A			
Unit Information Unit Leader Initials			
Michael Baker INTERNATIONAL — MICHAEL BAKER INTERNATIONAL, INC. 165 S. UNION BLVD., STE. 1000 LAKEWOOD, CO 80228 720.514.1100			

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
GRADING AND DRAINAGE
PLANS

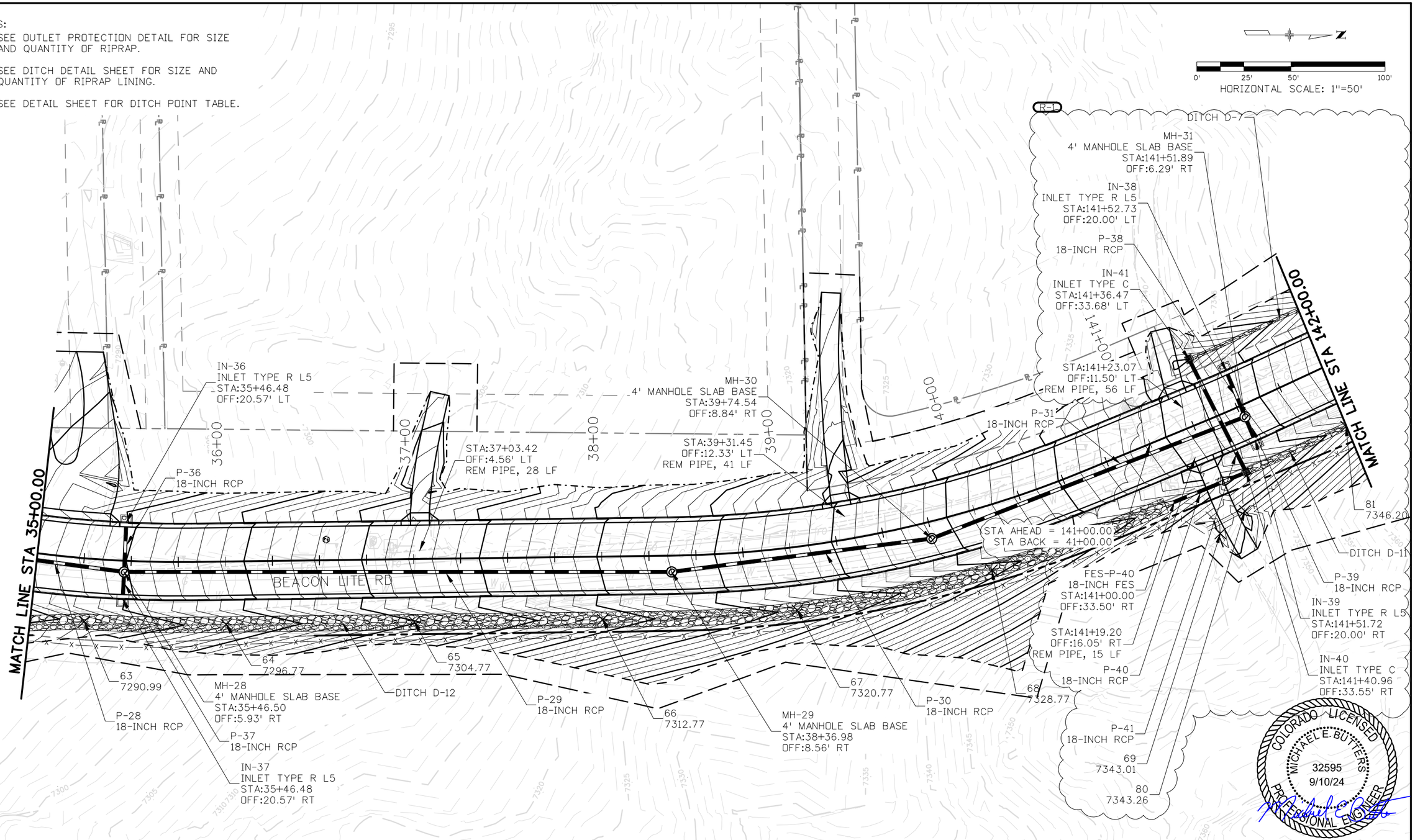
Project No./Code: 128558

Designer:	NED	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	DRAIN PLN	Subset Sheets:	4 OF 8

Sheet Number 64

NOTES:

1. SEE OUTLET PROTECTION DETAIL FOR SIZE AND QUANTITY OF RIPRAP.
2. SEE DITCH DETAIL SHEET FOR SIZE AND QUANTITY OF RIPRAP LINING.
3. SEE DETAIL SHEET FOR DITCH POINT TABLE.



Print Date: 09/09/2024			
File Name: 175644_HYD_Plans.dwg			
Horiz. Scale: 1" = 50'	Vert. Scale: N/A		
Unit Information	Unit Leader Initials		

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

0000 R-1

Sheet Revisions

Date:	Comments	Init.
06/01/23	RFC	LTE
09/09/24	GEOMETRY CHANGE	MEB

EL PASO COUNTY
COLORADO

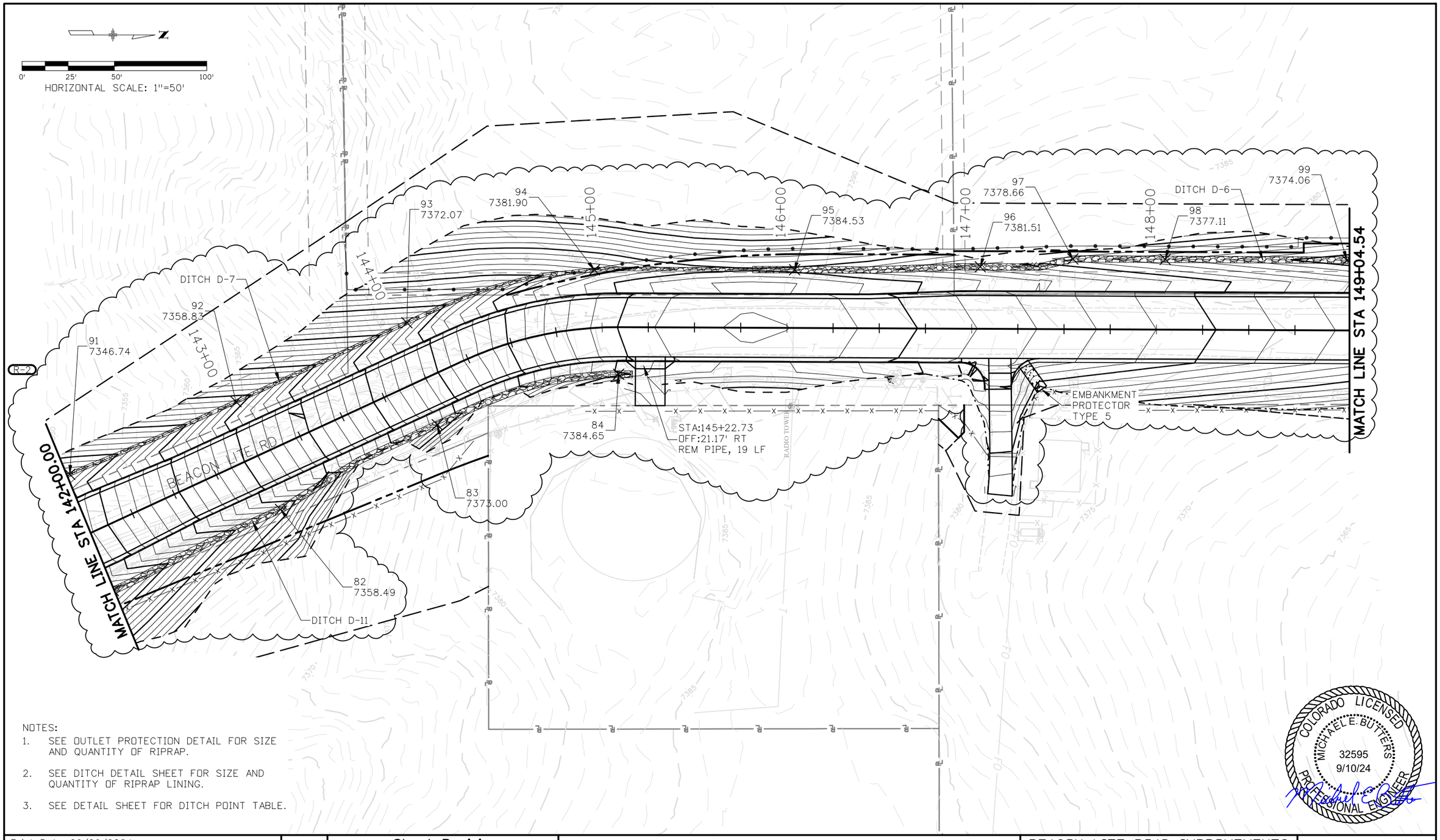
PPRTA PIKES PEAK RURAL TRANSPORTATION AUTHORITY

BEACON LITE ROAD IMPROVEMENTS GRADING AND DRAINAGE PLANS

Designer:	NED	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	DRAIN PLN	Subset Sheets:	5 OF 8

Project No./Code: 128558

Sheet Number 65



NOTES:

1. SEE OUTLET PROTECTION DETAIL FOR SIZE AND QUANTITY OF RIPRAP.
2. SEE DITCH DETAIL SHEET FOR SIZE AND QUANTITY OF RIPRAP LINING.
3. SEE DETAIL SHEET FOR DITCH POINT TABLE.

COLORADO LICENSED
MICHAEL E. BUTTERS
32595
9/10/24
PROFESSIONAL ENGINEER

Print Date: 09/09/2024
File Name: 175644_HYD_Plans.dwg
Horiz. Scale: 1" = 50' Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions

	Date:	Comments	Init.
R-1	06/01/23	RFC	LTE
R-2	08/31/23	ADDING TANK WALL	LTE
	09/09/24	GEOMETRY CHANGE	MEB

EL PASO COUNTY
COLORADO

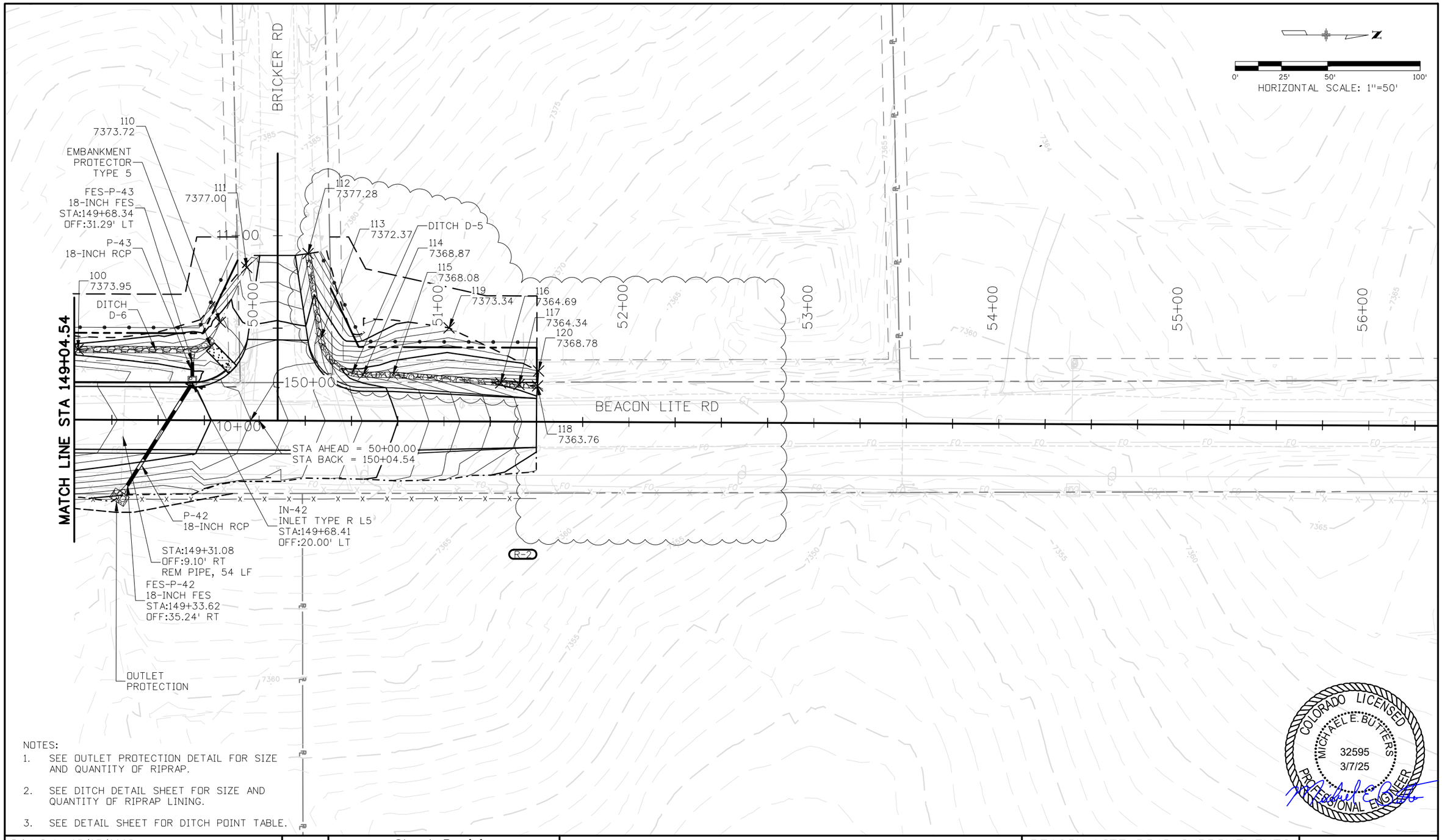
PPRTA PIKES PEAK RURAL TRANSPORTATION AUTHORITY

BEACON LITE ROAD IMPROVEMENTS
GRADING AND DRAINAGE
PLANS

Project No./Code
128558

Designer: NED
Detailer: RBR
Sheet Subset: DRAIN PLN
Structure Numbers
Subset Sheets: 6 OF 8

Sheet Number 66



NOTES:

1. SEE OUTLET PROTECTION DETAIL FOR SIZE AND QUANTITY OF RIPRAP.
2. SEE DITCH DETAIL SHEET FOR SIZE AND QUANTITY OF RIPRAP LINING.
3. SEE DETAIL SHEET FOR DITCH POINT TABLE.

COLORADO LICENSED
MICHAEL E. BUTTERS
32595
3/7/25
PROFESSIONAL ENGINEER

Print Date: 03/07/2025
File Name: 175644_HYD_Plans.dwg
Horiz. Scale: **1" = 50'** Vert. Scale: **N/A**
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions

	Date:	Comments	Init.
R-1	09/09/24	GEOMETRY CHANGE	MEB
R-2	03/07/25	PROJ. LIMITS CHANGE	MEB
	06/01/23	RFC	LTE

EL PASO COUNTY
COLORADO

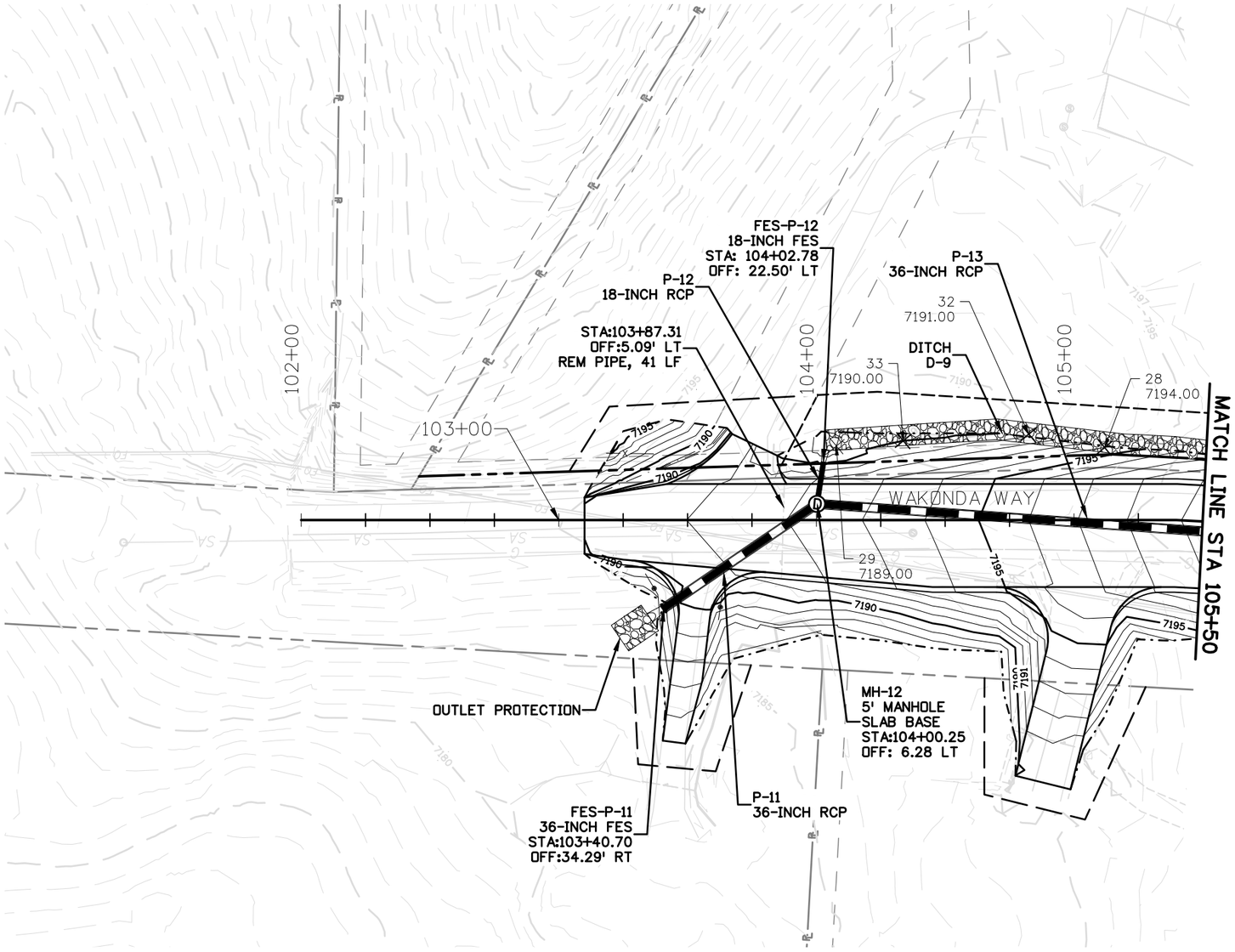
PPRTA

BEACON LITE ROAD IMPROVEMENTS GRADING AND DRAINAGE PLANS

Designer: **NCS**
Detailer: **RBR**
Sheet Subset: **DRAIN PLN**
Structure Numbers
Subset Sheets: **7** OF **8**

Project No./Code
128558

Sheet Number 67



NOTES:

1. SEE OUTLET PROTECTION DETAIL FOR SIZE AND QUANTITY OF RIPRAP.
2. SEE DITCH DETAIL SHEET FOR SIZE AND QUANTITY OF RIPRAP LINING.
3. SEE DETAIL SHEET FOR DITCH POINT TABLE.

COLORADO LICENSED
LUCY T. EAST
51734
6/1/2023
PROFESSIONAL ENGINEER

Print Date: 04/29/2022	Sheet Revisions		
File Name: 175644_HYD_Plans.dwg	Date:	Comments	Init.
Horiz. Scale: 1" = 50' Vert. Scale: N/A			
Unit Information Unit Leader Initials			
Michael Baker INTERNATIONAL — MICHAEL BAKER INTERNATIONAL, INC. 165 S. UNION BLVD., STE. 1000 LAKEWOOD, CO 80228 720.514.1100			

EL PASO COUNTY
COLORADO

PPRTA

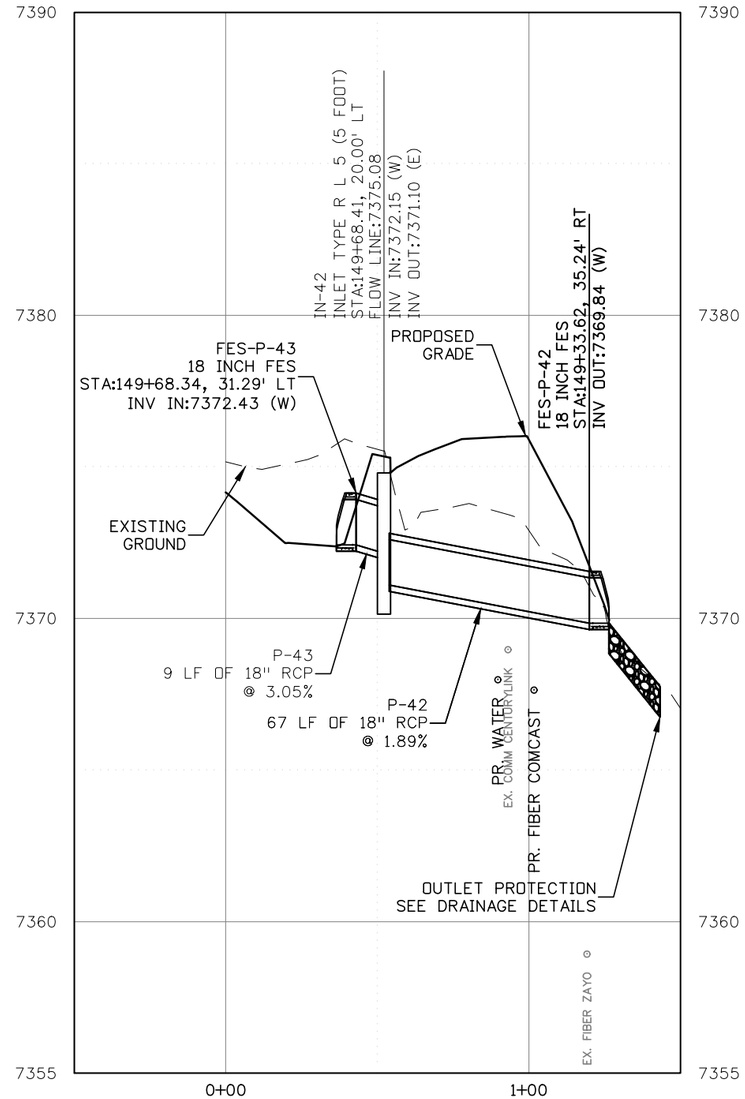
BEACON LITE ROAD IMPROVEMENTS
GRADING AND DRAINAGE
PLANS

Designer:	NED	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	DRAIN PLN	Subset Sheets:	8 OF 8

Project No./Code
128558

Sheet Number 68

R-2



P-42 & P-43

NOTES:
EXISTING CENTURYLINK COMM AND FIBER TO BE ADJUSTED DURING CONSTRUCTION. LOCATIONS SHOWN ARE APPROXIMATE BASED ON POTHOLE DATA, AND ADJUSTMENTS NEEDED FOR PROPOSED STORM SEWER.

COLORADO LICENSED
MICHAEL E. BUTTERS
32595
3/26/25
PROFESSIONAL ENGINEER

Print Date: 03/26/2025
File Name: 175644_HYD_Profiles.dwg
Horiz. Scale: 1" = 50' Vert. Scale: 1" = 5'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1
R-2

Sheet Revisions

Date:	Comments	Init.
06/01/23	RFC	LTE
09/09/24	GEOMETRY CHANGE	MEB
03/26/25	PROJ. LIMITS CHANGE	PDM

EL PASO COUNTY
COLORADO

PPRTA
PIKES PEAK RURAL TRANSPORTATION AUTHORITY

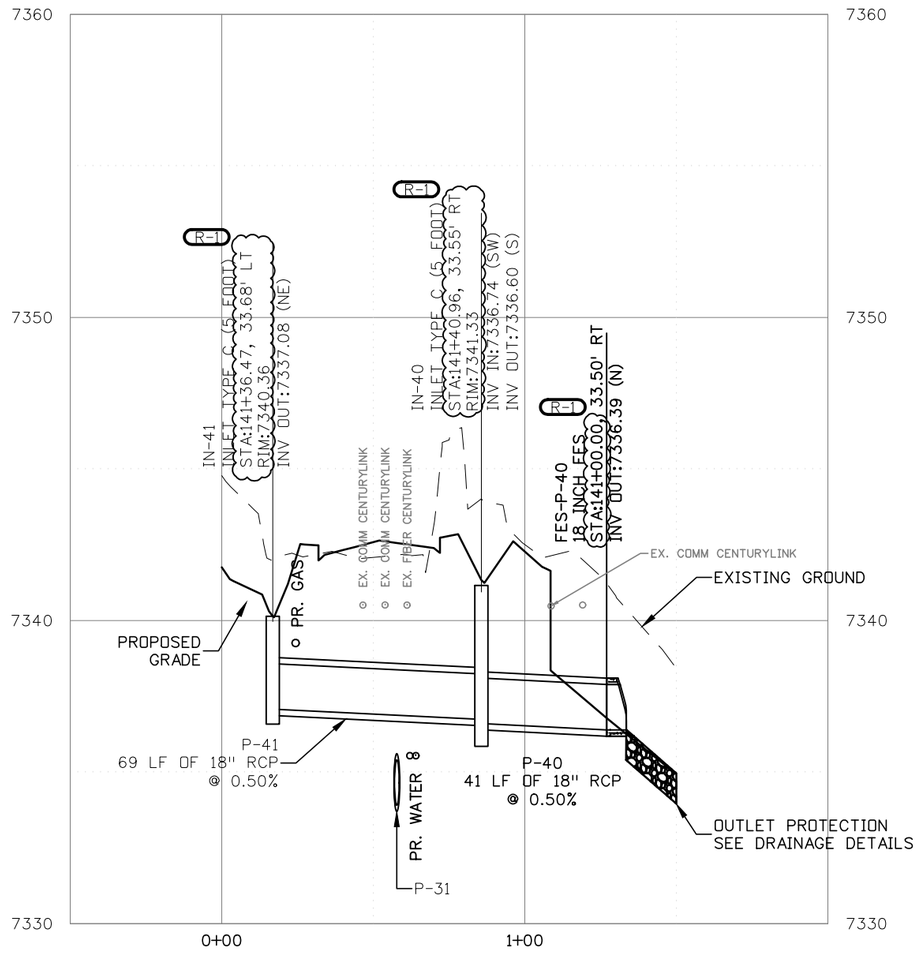
BEACON LITE ROAD IMPROVEMENTS
GRADING AND DRAINAGE
PROFILES

Designer: NED
Detailer: RBR
Sheet Subset: DRAIN PROF
Structure Numbers
Subset Sheets: 1 OF 11

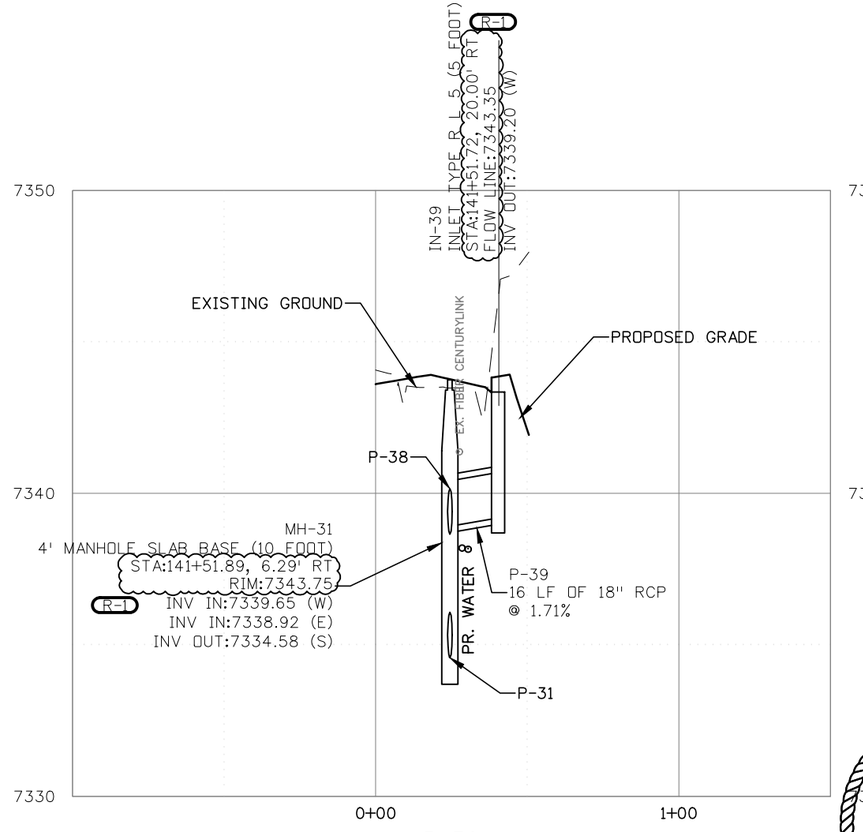
Project No./Code
128558

Sheet Number 69

NOTES:
EXISTING CENTURYLINK COMM AND FIBER TO BE ADJUSTED DURING CONSTRUCTION. LOCATIONS SHOWN ARE APPROXIMATE BASED ON POTHOLE DATA, AND ADJUSTMENTS NEEDED FOR PROPOSED STORM SEWER.



P-40 & P-41



P-39

COLORADO LICENSED
MICHAEL E. BUTTERS
32595
9/10/24
PROFESSIONAL ENGINEER

Print Date: 09/09/2024			
File Name: 175644_HYD_Profiles.dwg			
Horiz. Scale: 1" = 50' Vert. Scale: 1" = 5'			
Unit Information Unit Leader Initials			
Michael Baker INTERNATIONAL — MICHAEL BAKER INTERNATIONAL, INC. 165 S. UNION BLVD., STE. 1000 LAKEWOOD, CO 80228 720.514.1100			

R-1

Sheet Revisions

Date:	Comments	Init.
06/01/23	RFC	LTE
09/09/24	GEOMETRY CHANGE	MEB

EL PASO COUNTY COLORADO

PPRTA

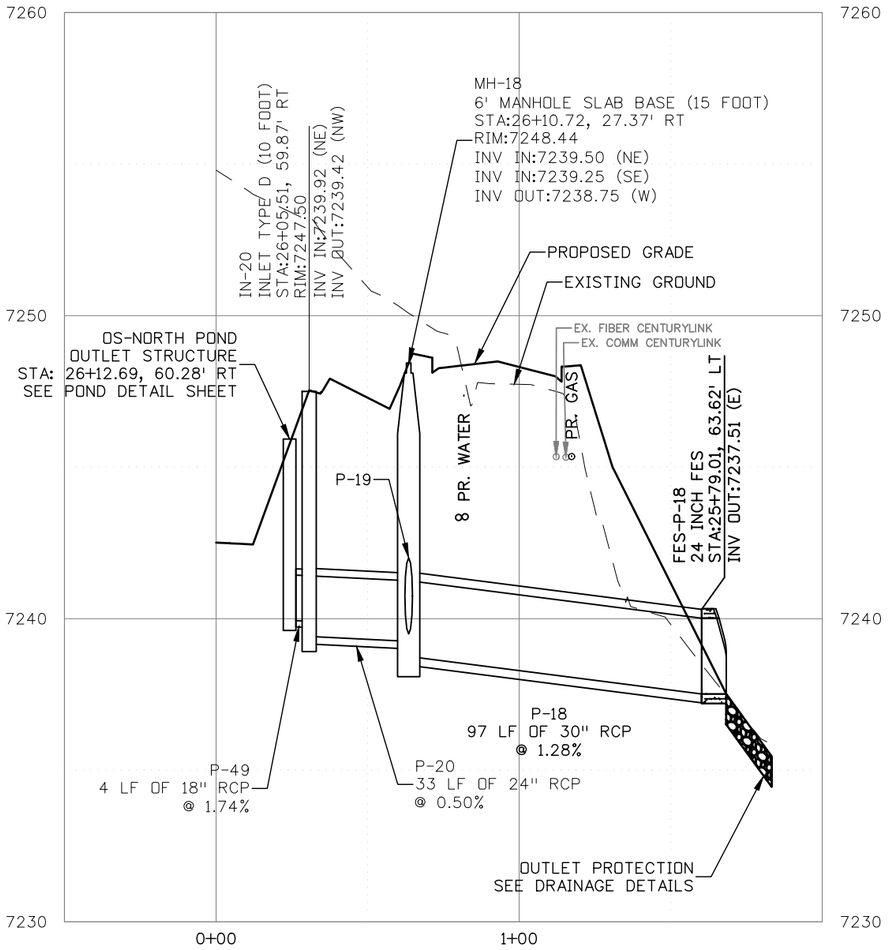
BEACON LITE ROAD IMPROVEMENTS
GRADING AND DRAINAGE
PROFILES

Project No./Code 128558

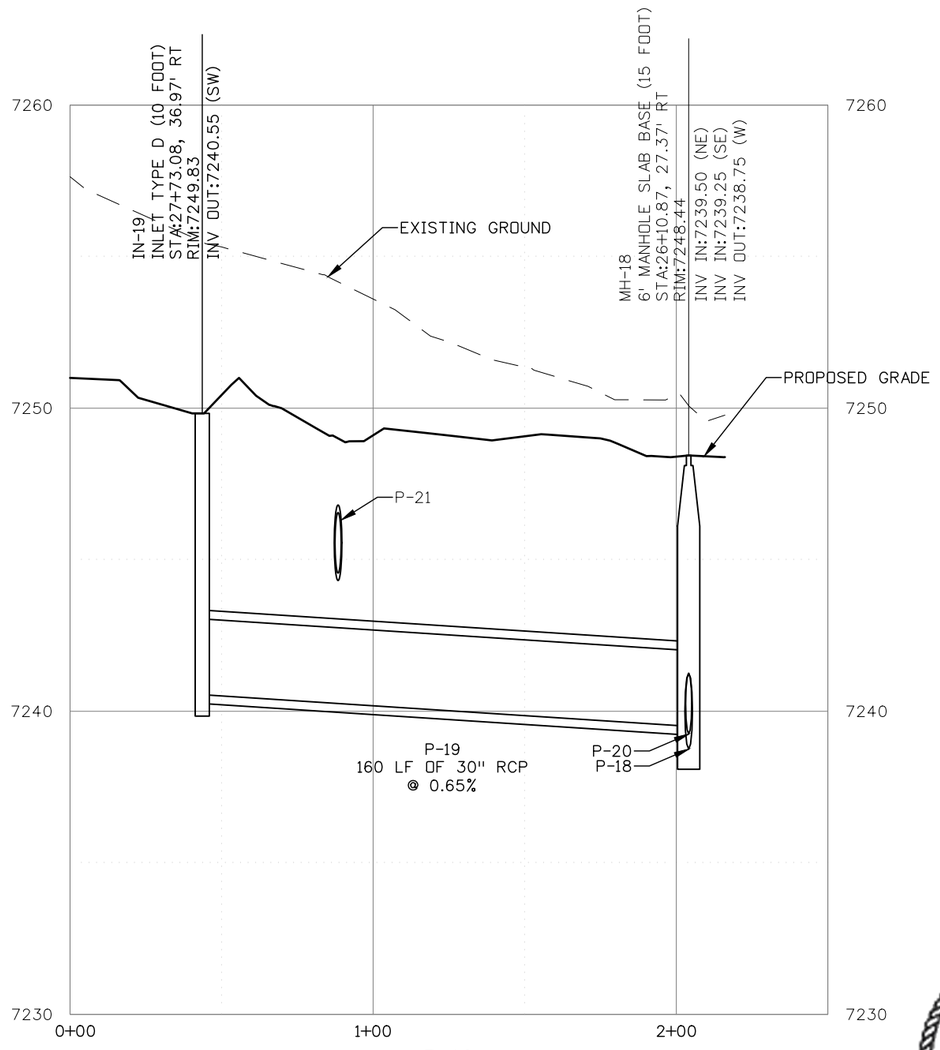
Designer:	NED	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	DRAIN PROF	Subset Sheets:	2 OF 11

Sheet Number 70

NOTES:
EXISTING CENTURYLINK COMM AND FIBER TO BE ADJUSTED DURING CONSTRUCTION. LOCATIONS SHOWN ARE APPROXIMATE BASED ON POTHOLE DATA, AND ADJUSTMENTS NEEDED FOR PROPOSED STORM SEWER.



NORTH POND OUTFALL



P-19

COLORADO LICENSED
LUCY T. EAST
51734
6/1/2023
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_HYD_Profiles.dwg
Horiz. Scale: 1" = 50' Vert. Scale: 1" = 5'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
GRADING AND DRAINAGE
PROFILES

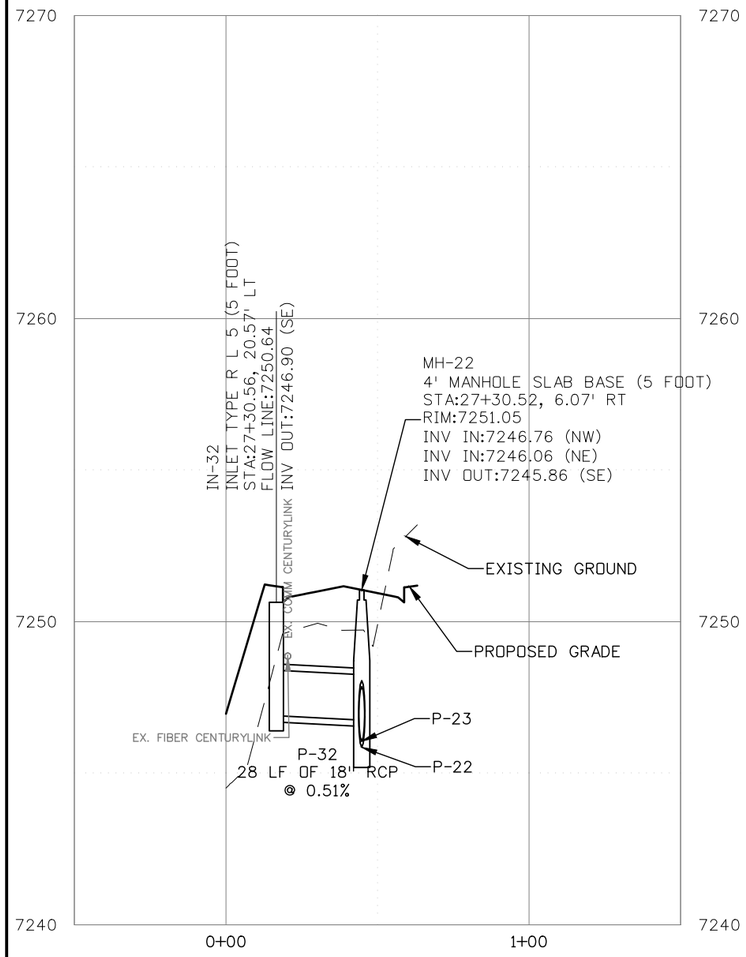
Project No./Code
128558

Designer:	NED	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	DRAIN PROF	Subset Sheets:	3 OF 11

Sheet Number 71

NOTES:
EXISTING CENTURYLINK COMM AND FIBER TO BE ADJUSTED DURING CONSTRUCTION. LOCATIONS SHOWN ARE APPROXIMATE BASED ON POTHOLE DATA, AND ADJUSTMENTS NEEDED FOR PROPOSED STORM SEWER.

COLORADO LICENSED
LUCY T. EAST
51734
6/1/2023
PROFESSIONAL ENGINEER



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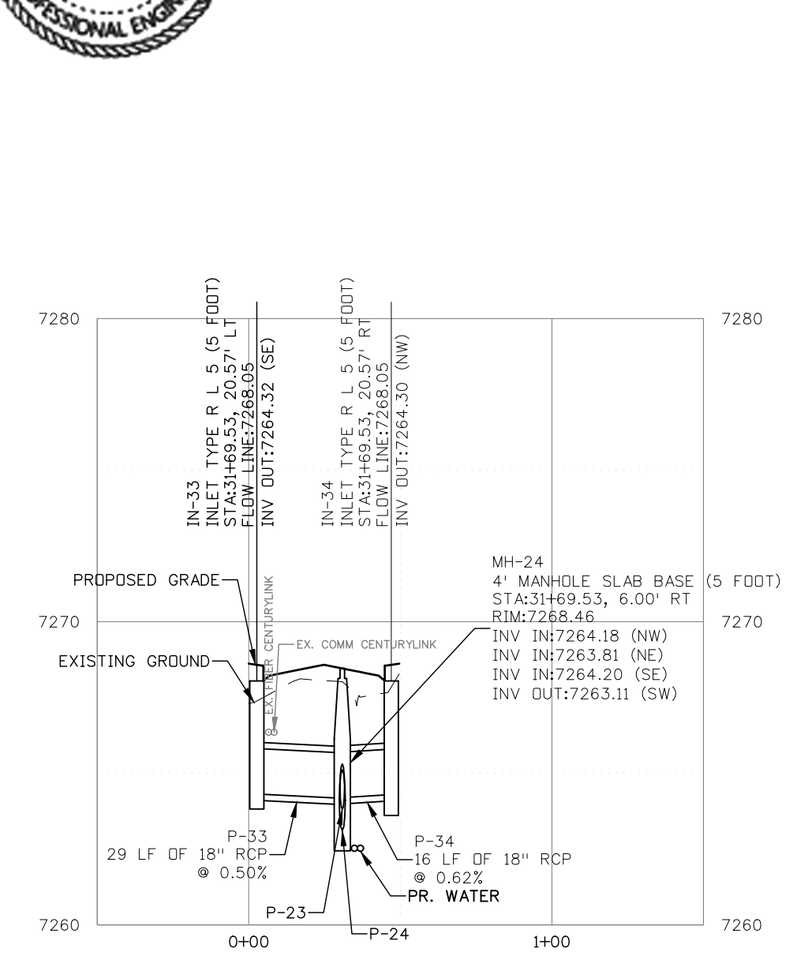
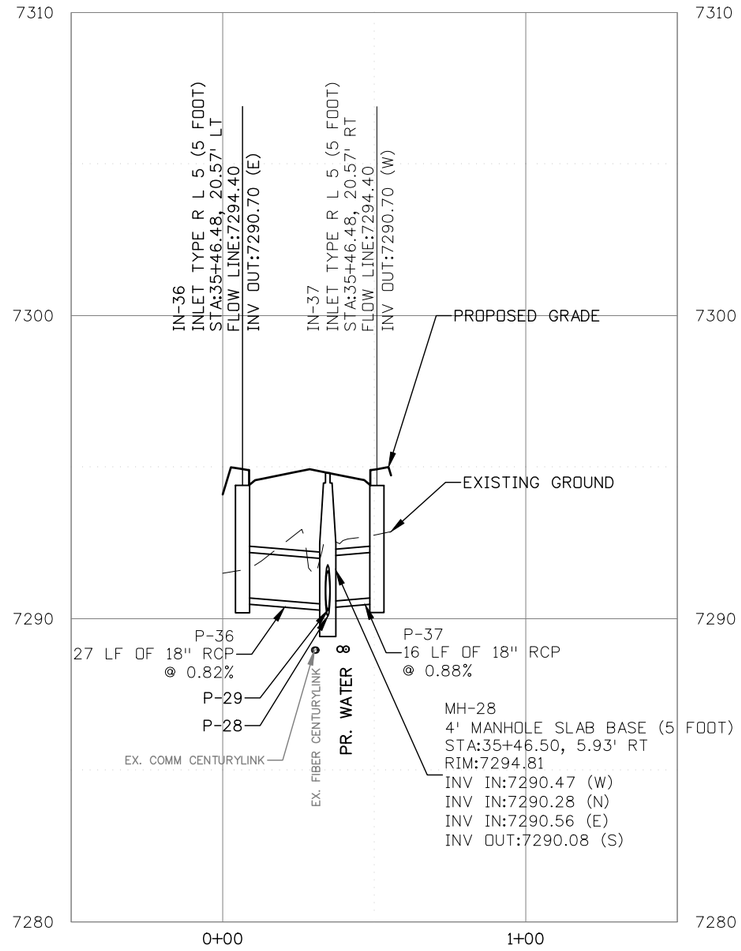


P-33 & P-34



P-36 & P-37

Print Date: 04/29/2022		
File Name: 175644_HYD_Profiles.dwg		
Horiz. Scale: 1" = 50' Vert. Scale: 1" = 5'		
Unit Information Unit Leader Initials		
Michael Baker INTERNATIONAL — MICHAEL BAKER INTERNATIONAL, INC. 165 S. UNION BLVD., STE. 1000 LAKEWOOD, CO 80228 720.514.1100		

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EL PASO COUNTY COLORADO

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BEACON LITE ROAD IMPROVEMENTS
GRADING AND DRAINAGE
PROFILES

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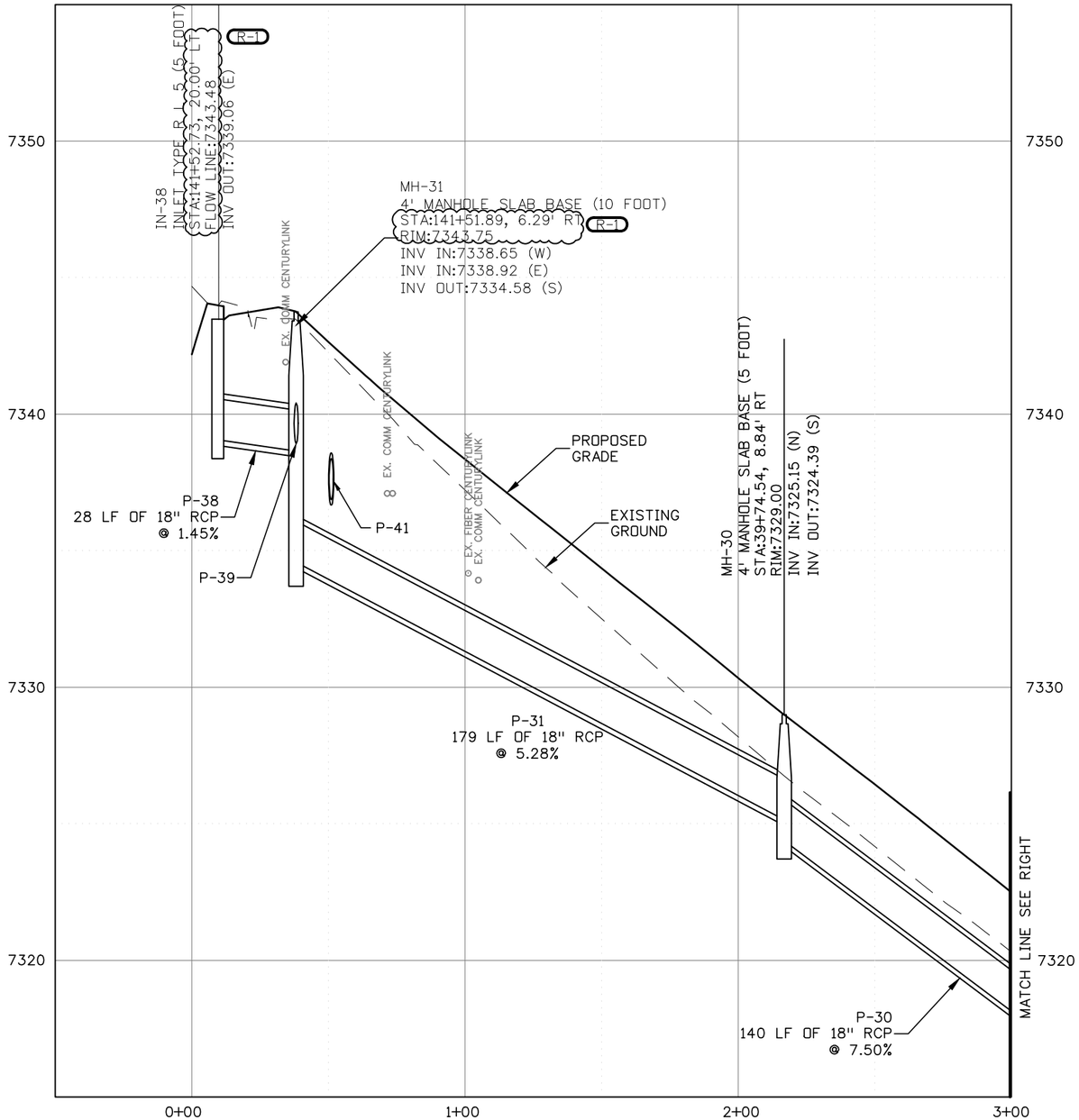
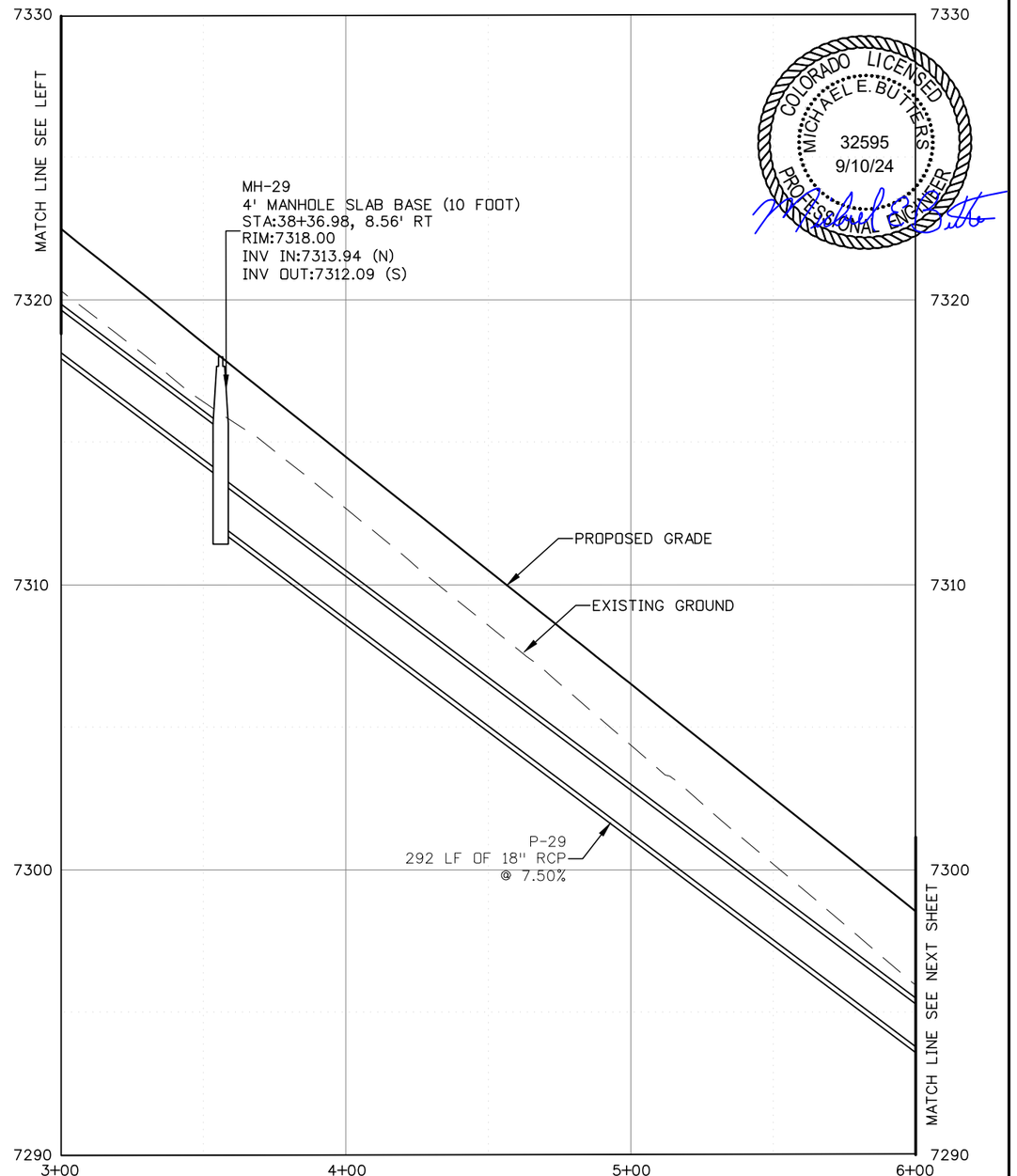
Detailer:	RBR		
Sheet Subset:	DRAIN PROF	Subset Sheets:	4 OF 11

Project No./Code
128558

Sheet Number 72



MAIN TRUNK LINE - NORTH



MAIN TRUNK LINE - NORTH

COLORADO LICENSED
MICHAEL E. BUTTERS
32595
9/10/24
PROFESSIONAL ENGINEER

NOTES:
EXISTING CENTURYLINK COMM AND FIBER TO BE ADJUSTED DURING CONSTRUCTION. LOCATIONS SHOWN ARE APPROXIMATE BASED ON POTHOLE DATA, AND ADJUSTMENTS NEEDED FOR PROPOSED STORM SEWER.

Print Date:	09/09/2024
File Name:	175644_HYD_Profiles.dwg
Horiz. Scale:	1" = 50'
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Unit Information	Unit Leader Initials

Michael Baker INTERNATIONAL
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165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

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06/01/23	RFC	LTE
09/09/24	GEOMETRY CHANGE	MEB

EL PASO COUNTY
COLORADO

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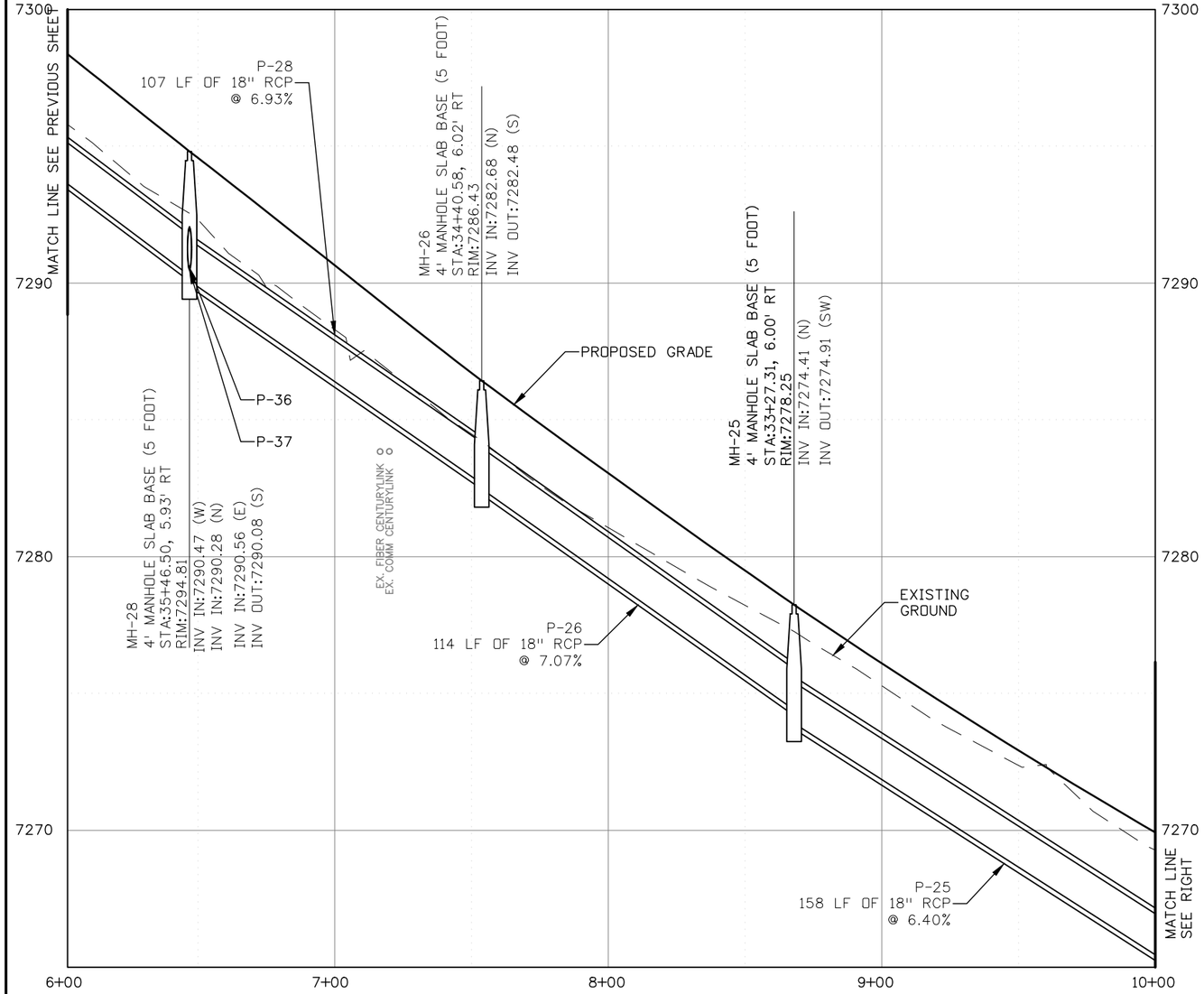
BEACON LITE ROAD IMPROVEMENTS
GRADING AND DRAINAGE
PROFILES

Designer:	NED	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	DRAIN PROF	Subset Sheets:	5 OF 11

Project No./Code
128558

Sheet Number 73



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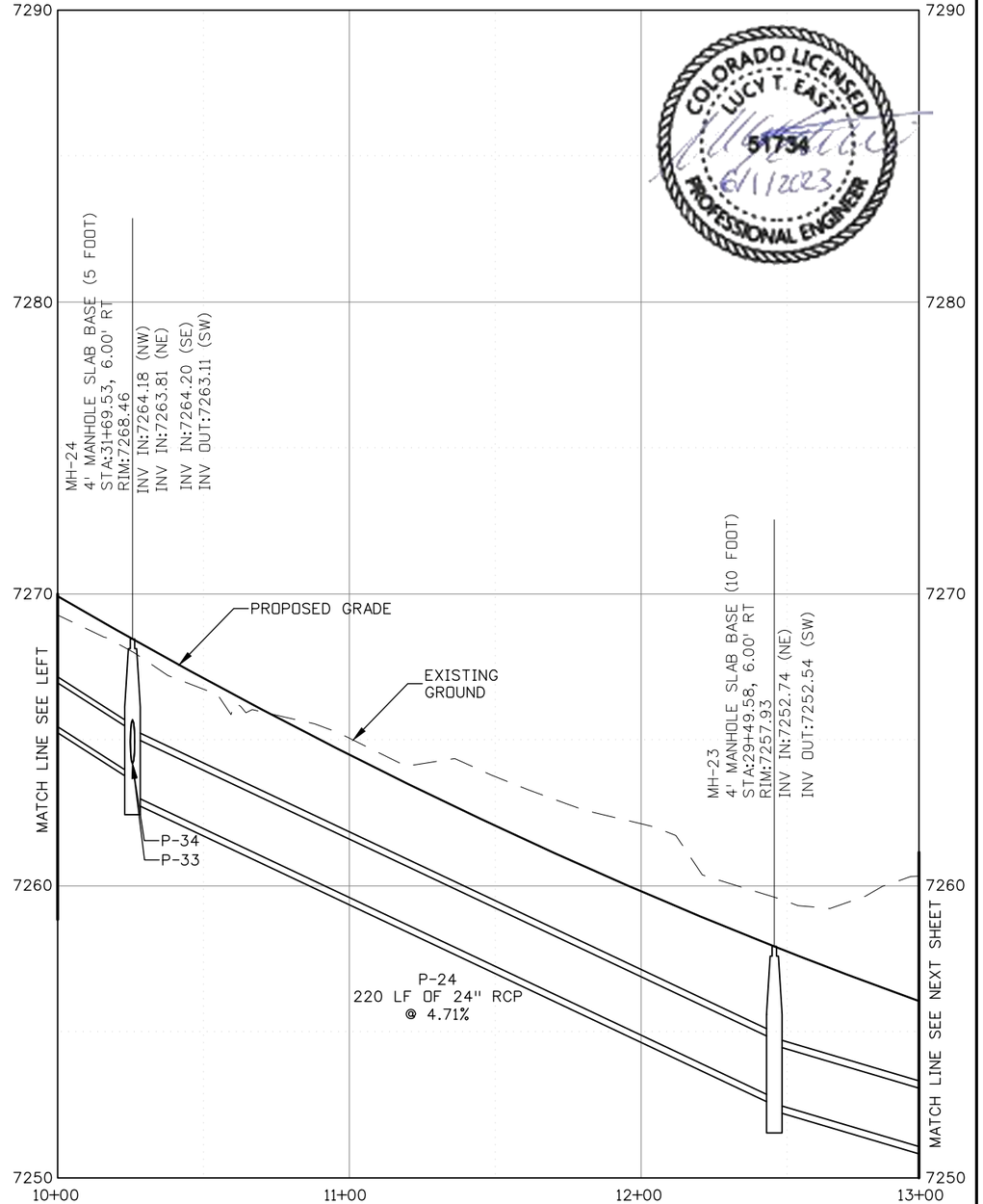

MAIN TRUNK LINE - NORTH

NOTES:
EXISTING CENTURYLINK COMM AND FIBER TO BE ADJUSTED DURING CONSTRUCTION. LOCATIONS SHOWN ARE APPROXIMATE BASED ON POTHOLE DATA, AND ADJUSTMENTS NEEDED FOR PROPOSED STORM SEWER.

COLORADO LICENSED
LUCY T. EAST
51734
6/1/2023
PROFESSIONAL ENGINEER

Print Date:	04/29/2022
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Horiz. Scale:	1" = 50'
Vert. Scale:	1" = 5'
Unit Information	Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
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EL PASO COUNTY
COLORADO

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BEACON LITE ROAD IMPROVEMENTS
GRADING AND DRAINAGE
PROFILES

Designer:	NED	Structure Numbers	
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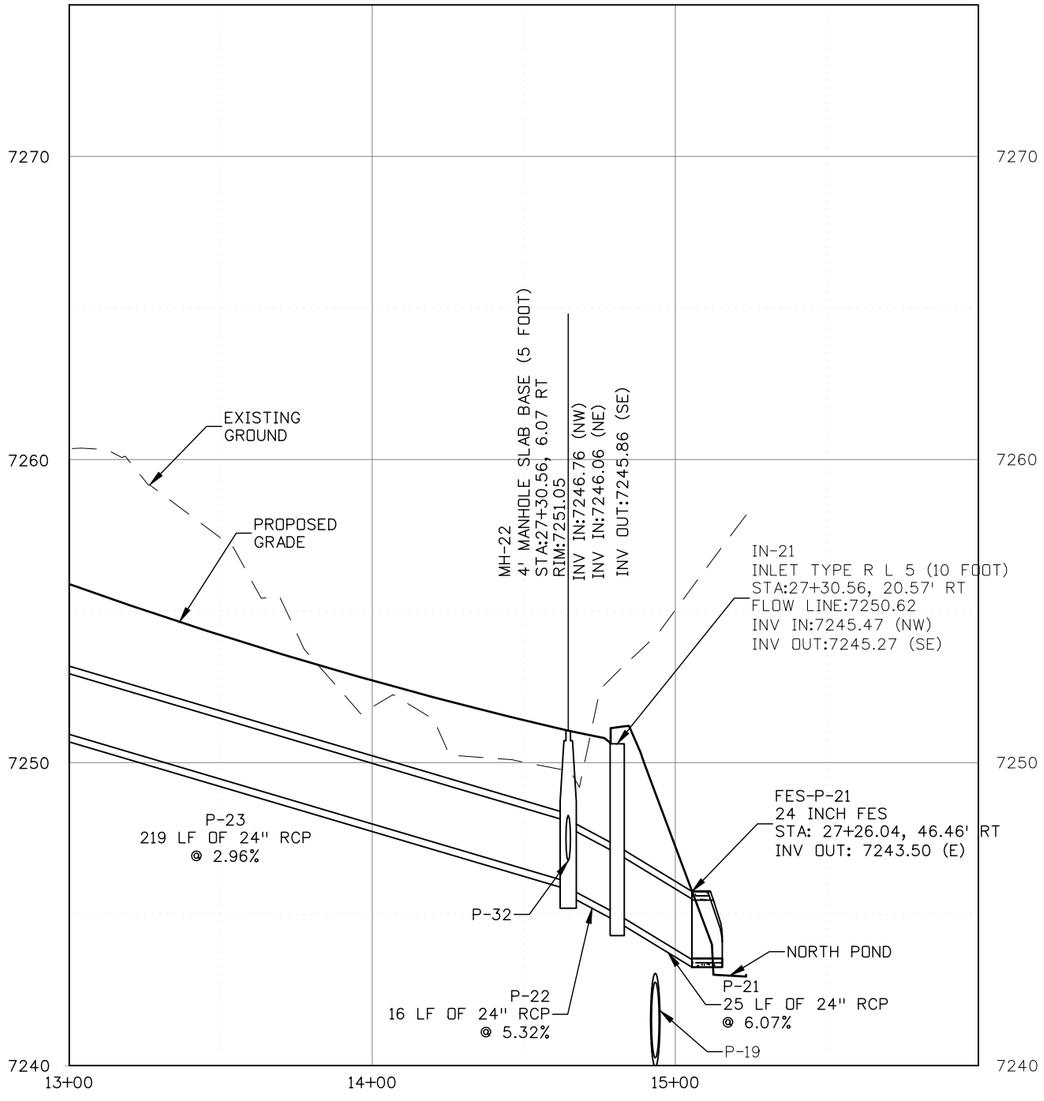
Sheet Subset:	DRAIN PROF	Subset Sheets:	6 OF 11

Project No./Code
128558

Sheet Number 74



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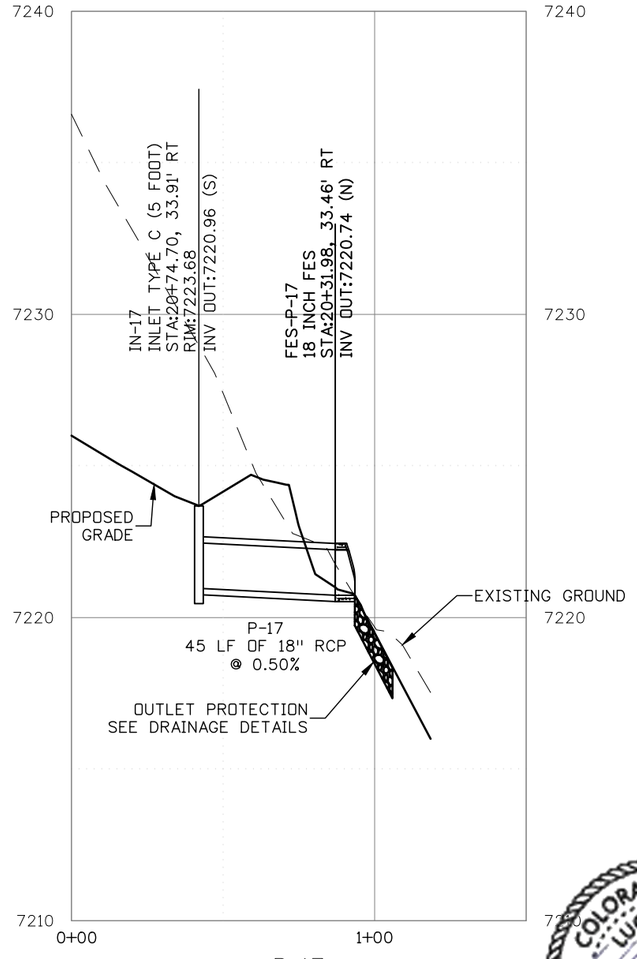

P-17

COLORADO LICENSED
LUCY T. EAST
51734
6/1/2023
PROFESSIONAL ENGINEER

Print Date: 04/29/2022		Sheet Revisions		
File Name: 175644_HYD_Profiles.dwg		Date:	Comments	Init.
Horiz. Scale: 1" = 50' Vert. Scale: 1" = 5'				
Unit Information Unit Leader Initials				
Michael Baker INTERNATIONAL — MICHAEL BAKER INTERNATIONAL, INC. 165 S. UNION BLVD., STE. 1000 LAKEWOOD, CO 80228 720.514.1100				

EL PASO COUNTY COLORADO

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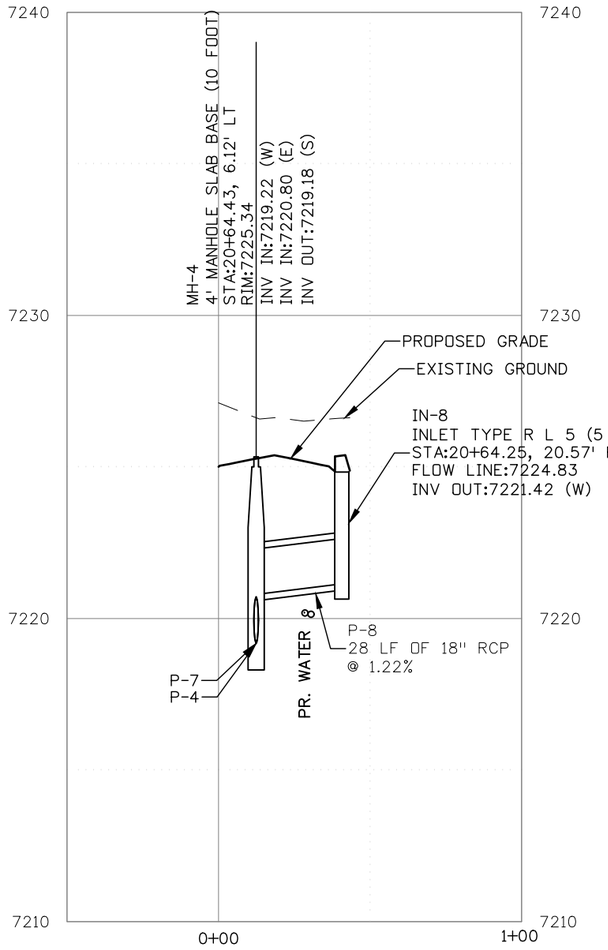
BEACON LITE ROAD IMPROVEMENTS
GRADING AND DRAINAGE
PROFILES

Designer:	NED	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	DRAIN PROF	Subset Sheets:	7 OF 11

Project No./Code
128558

Sheet Number 75



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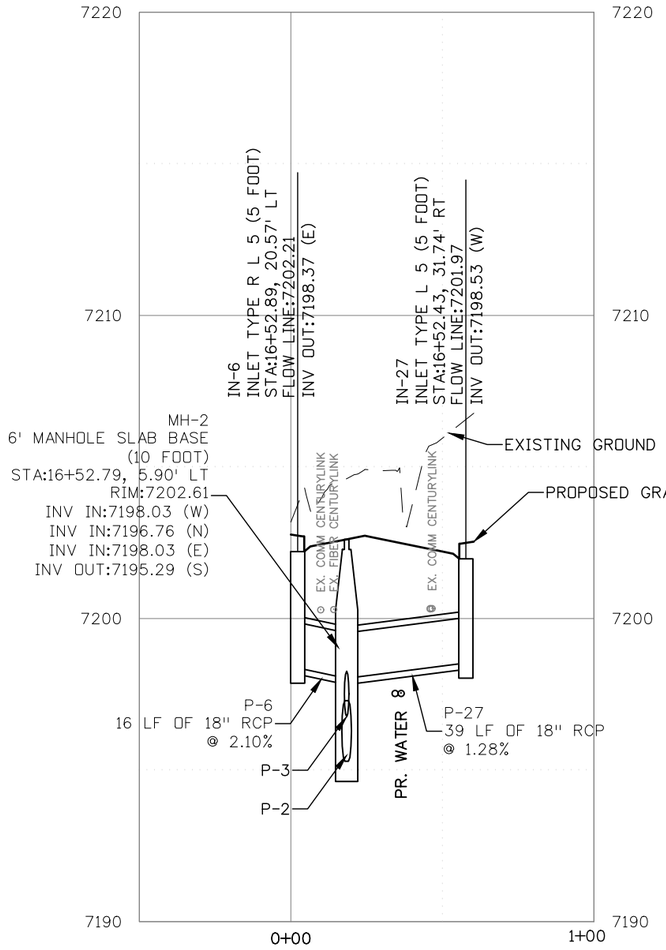
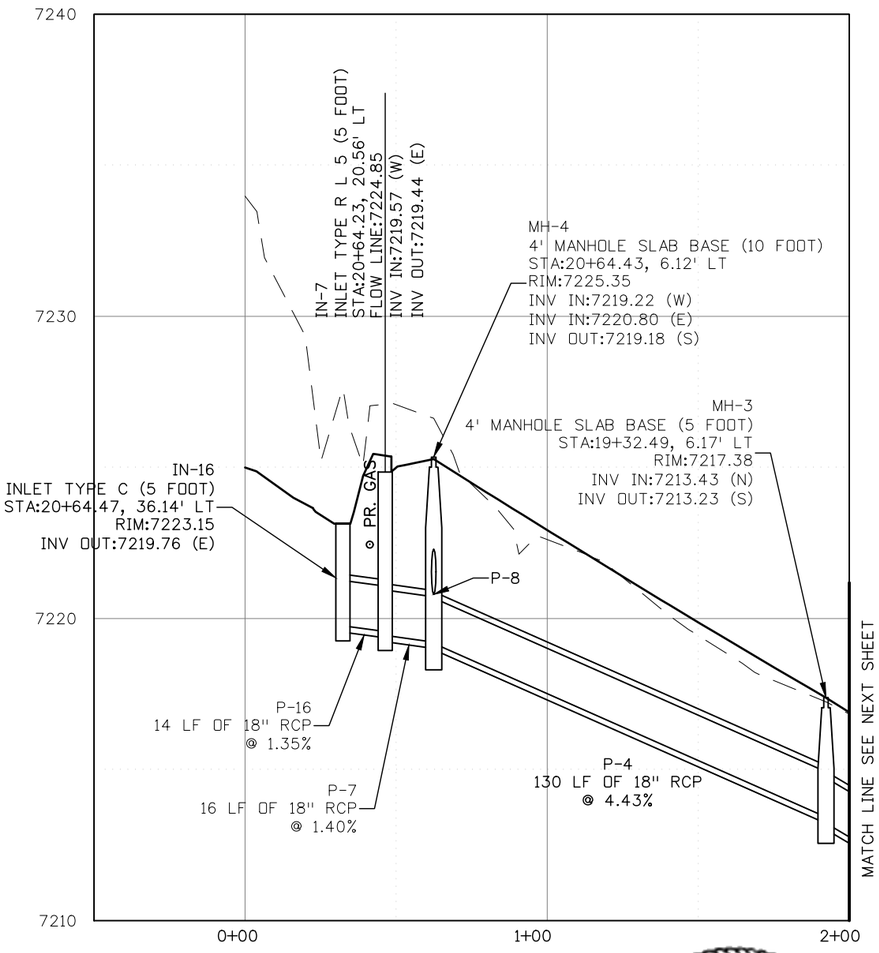


P-6 & P-27



MAIN TRUNK LINE - SOUTH

NOTES:
EXISTING CENTURYLINK COMM AND FIBER TO BE ADJUSTED DURING CONSTRUCTION. LOCATIONS SHOWN ARE APPROXIMATE BASED ON POTHOLE DATA, AND ADJUSTMENTS NEEDED FOR PROPOSED STORM SEWER.

COLORADO LICENSED
LUCY T. EAST
51734
6/1/2023
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_HYD_Profiles.dwg
Horiz. Scale: 1" = 50' Vert. Scale: 1" = 5'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
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EL PASO COUNTY COLORADO

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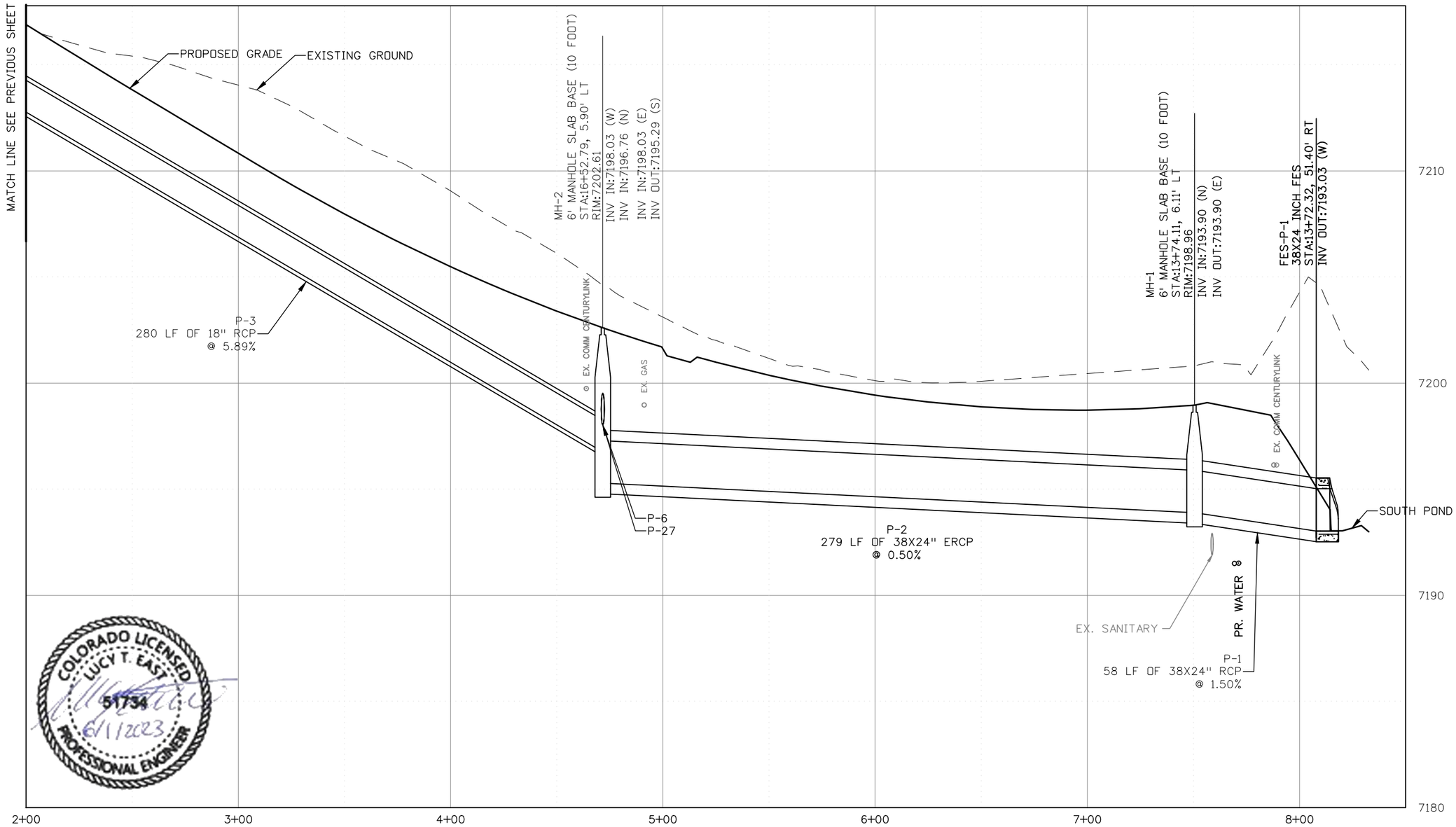
BEACON LITE ROAD IMPROVEMENTS
GRADING AND DRAINAGE
PROFILES

Project No./Code: 128558

Designer:	NED	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	DRAIN PROF	Subset Sheets:	8 OF 11

Sheet Number 76



COLORADO LICENSED
LUCY T. EAST
51734
6/1/2023
PROFESSIONAL ENGINEER

NOTES:
EXISTING CENTURYLINK COMM AND FIBER TO BE ADJUSTED DURING CONSTRUCTION. LOCATIONS SHOWN ARE APPROXIMATE BASED ON POTHOLE DATA, AND ADJUSTMENTS NEEDED FOR PROPOSED STORM SEWER.

MAIN TRUNK LINE - SOUTH

Print Date: 04/29/2022	
File Name: 175644_HYD_Profiles.dwg	
Horiz. Scale: 1" = 50' Vert. Scale: 1" = 5'	
Unit Information Unit Leader Initials	

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Date:	Comments	Init.

EL PASO COUNTY
COLORADO

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BEACON LITE ROAD IMPROVEMENTS
GRADING AND DRAINAGE
PROFILES

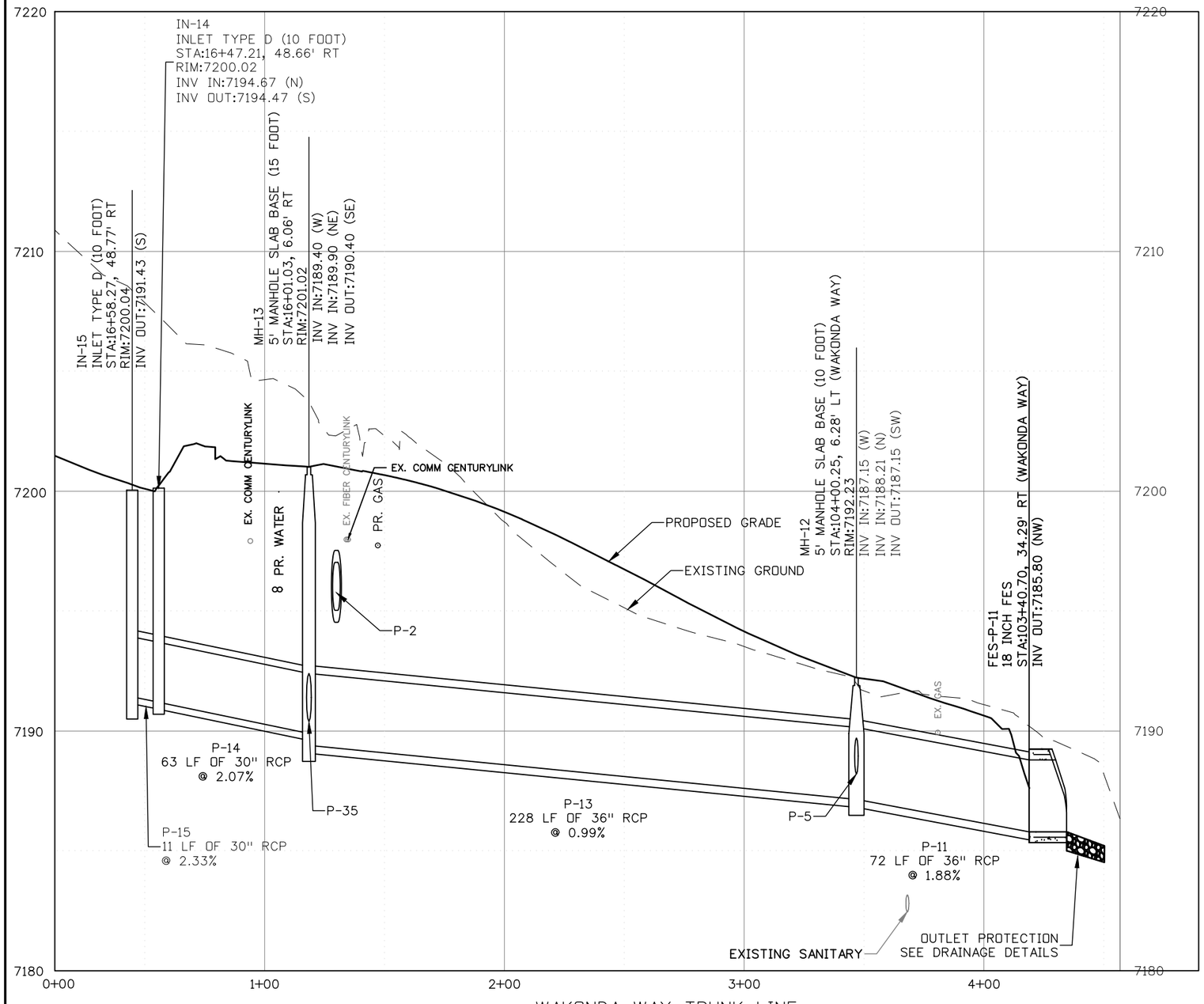
Designer:	NED	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	DRAIN PROF	Subset Sheets:	9 OF 11

Project No./Code
128558

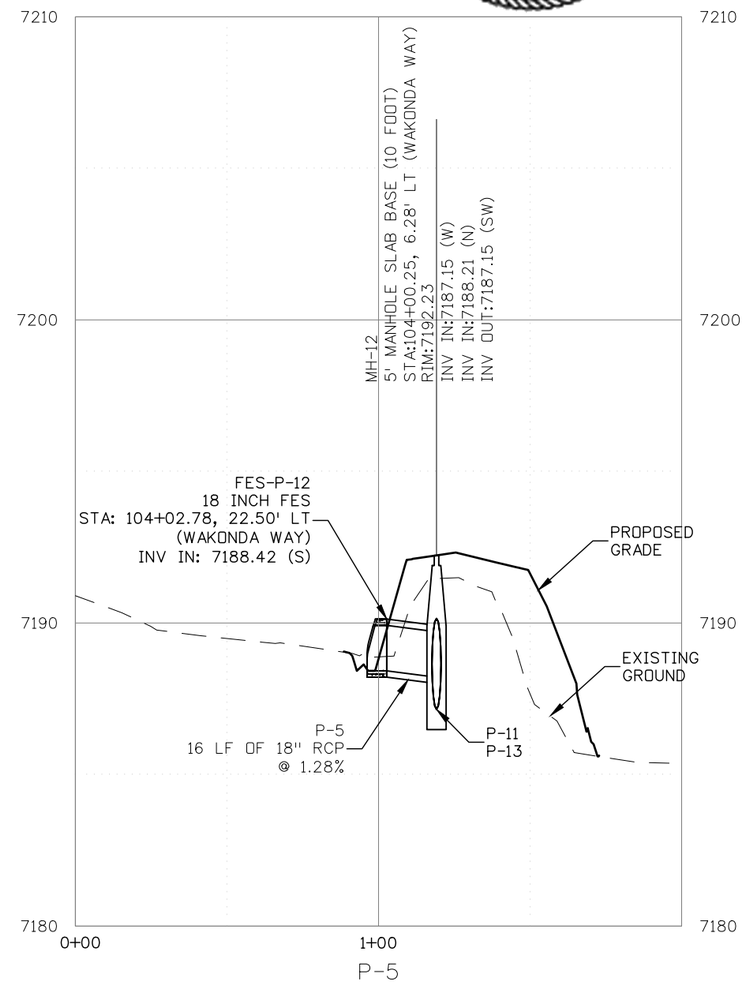
Sheet Number 77

NOTES:
EXISTING CENTURYLINK COMM AND FIBER TO BE ADJUSTED DURING CONSTRUCTION. LOCATIONS SHOWN ARE APPROXIMATE BASED ON POTHOLE DATA, AND ADJUSTMENTS NEEDED FOR PROPOSED STORM SEWER.

COLORADO LICENSED
LUCY T. EAST
51734
6/1/2023
PROFESSIONAL ENGINEER



WAKONDA WAY TRUNK LINE



P-5

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Unit Information Unit Leader Initials				
Michael Baker INTERNATIONAL — MICHAEL BAKER INTERNATIONAL, INC. 165 S. UNION BLVD., STE. 1000 LAKEWOOD, CO 80228 720.514.1100				

EL PASO COUNTY COLORADO

PPRTA

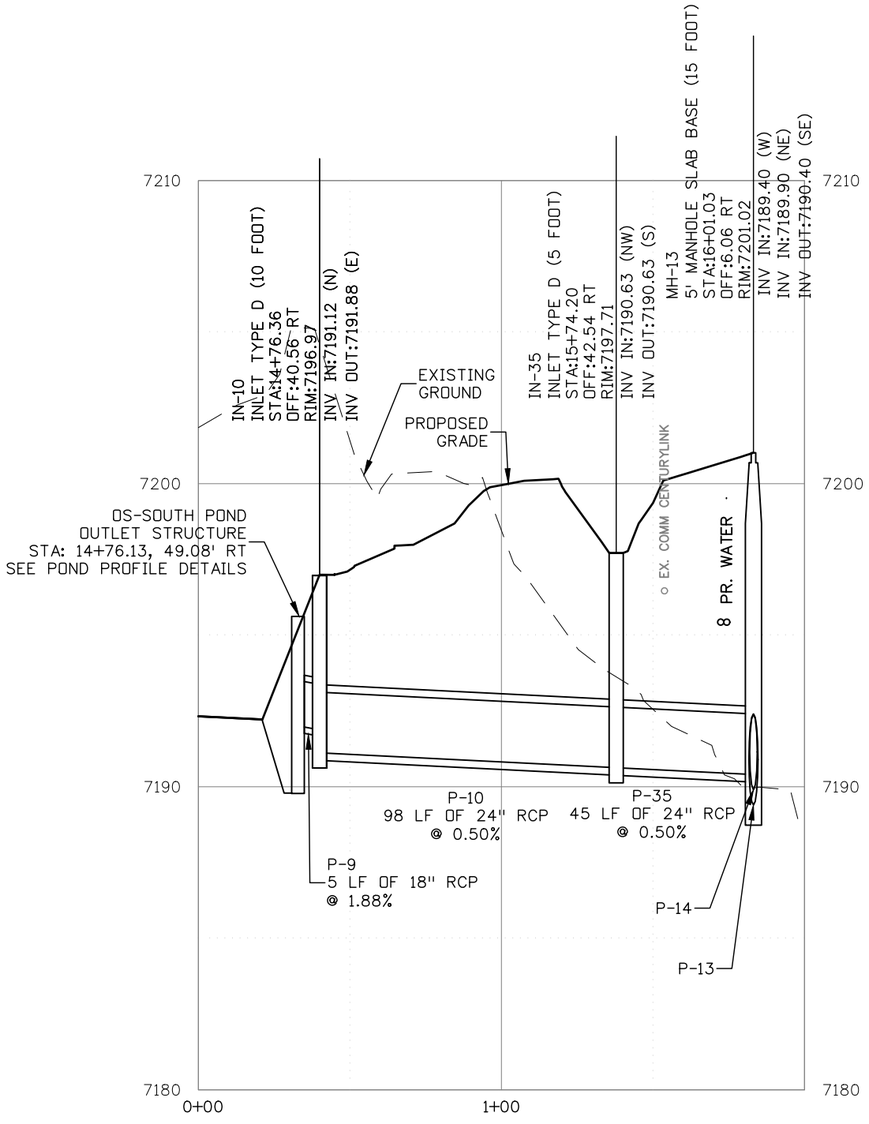
BEACON LITE ROAD IMPROVEMENTS
GRADING AND DRAINAGE
PROFILES

Project No./Code: 128558

Designer:	NED	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	DRAIN PROF	Subset Sheets:	10 OF 11

Sheet Number 78

NOTES:
EXISTING CENTURYLINK COMM AND FIBER TO BE ADJUSTED DURING CONSTRUCTION. LOCATIONS SHOWN ARE APPROXIMATE BASED ON POTHOLE DATA, AND ADJUSTMENTS NEEDED FOR PROPOSED STORM SEWER.



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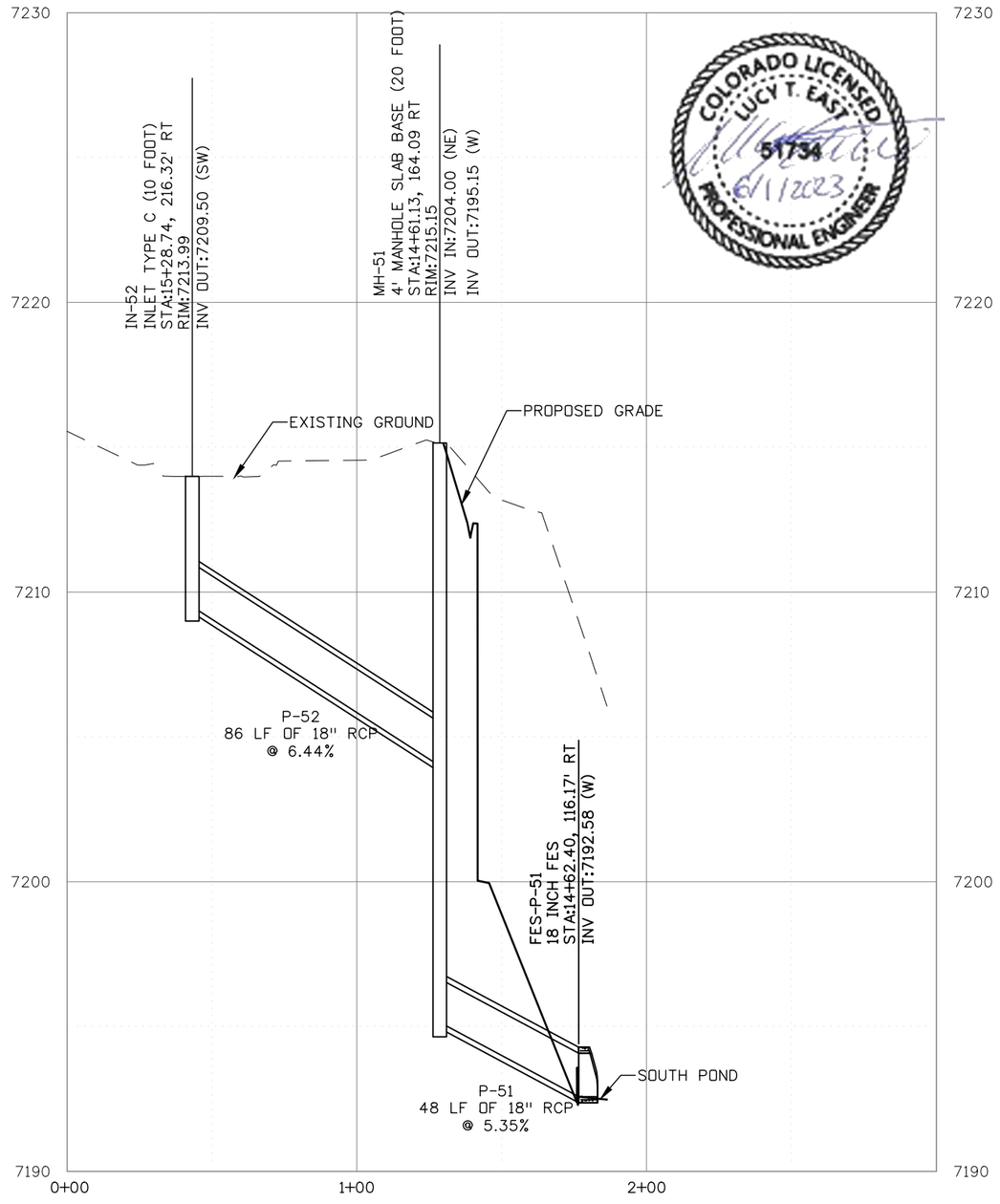


P-51 & P-52

COLORADO LICENSED
LUCY T. EAST
51734
6/1/2023
PROFESSIONAL ENGINEER

Print Date: 04/29/2022	Sheet Revisions		
File Name: 175644_HYD_Profiles.dwg	Date:	Comments	Init.
Horiz. Scale: 1" = 50' Vert. Scale: 1" = 5'			
Unit Information Unit Leader Initials			
Michael Baker INTERNATIONAL — MICHAEL BAKER INTERNATIONAL, INC. 165 S. UNION BLVD., STE. 1000 LAKEWOOD, CO 80228 720.514.1100			

EL PASO COUNTY COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
GRADING AND DRAINAGE
PROFILES

Project No./Code 128558

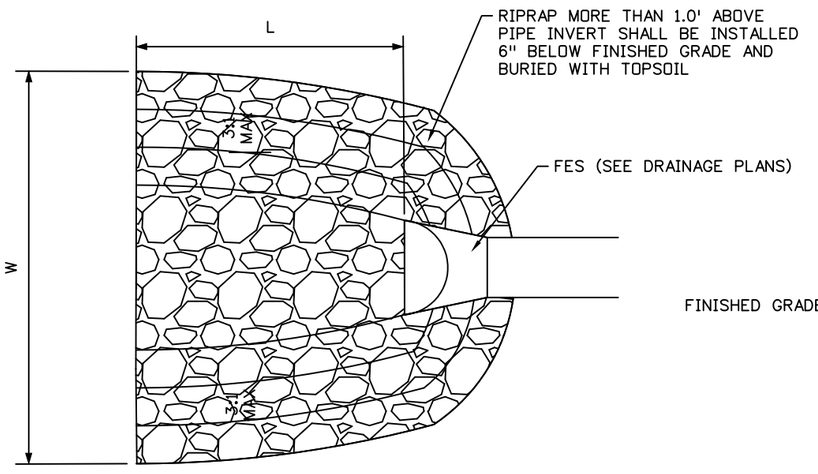
Designer:	NED	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	DRAIN PROF	Subset Sheets:	11 OF 11

Sheet Number 79

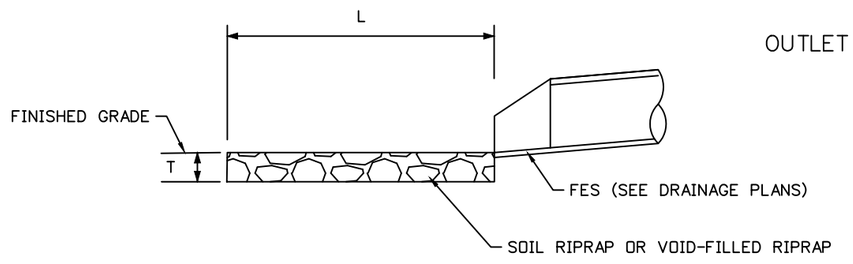
Riprap Dimensions

Pipe Name	Type of outlet protection	L (ft)	W1 (ft)	D (ft)	Width (ft)	D_{50} (inches)	Thickness (ft)	Riprap Quantity (CY)
P-11	Low Tailwater Basin	20.00	6.00	1.50	15.00	9.00	1.50	16.67
P-17	Riprap lined ditch	NA	NA	NA	NA	NA	NA	NA
P-18	Low Tailwater Basin	20.00	6.00	1.50	15.00	9.00	1.50	16.67
P-40	Riprap lined ditch	NA	NA	NA	NA	NA	NA	NA
P-42	Low Tailwater Basin	15.00	4.00	1.00	10.00	9.00	1.50	8.33

R-1



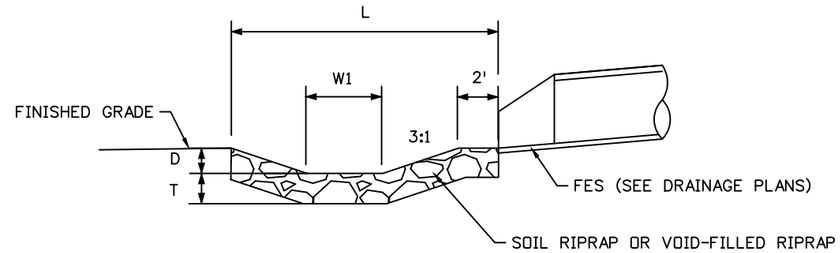
PLAN



PROFILE

DETAIL 4

OUTLET PROTECTION – RIPRAP APRON
N.T.S.



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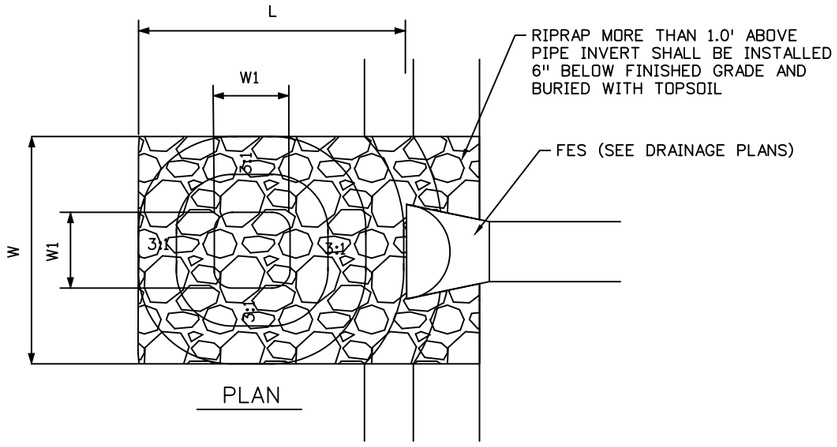


PLAN

DETAIL 5

OUTLET PROTECTION – LOW TAILWATER BASIN
N.T.S.

COLORADO LICENSED
MICHAEL E. BUTTERS
32595
3/7/25
PROFESSIONAL ENGINEER

Print Date: 03/07/2025
File Name: 175644_HYD_Drain_Details.dwg
Horiz. Scale: N/A Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions

Date:	Comments	Init.
06/01/23	RFC	LTE
03/07/25	PROJ. LIMITS CHANGE	PDM

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
DRAINAGE DETAILS
OUTLET PROTECTION

Designer: NED
Detailer: RBR
Sheet Subset: DETAILS
Structure Numbers
Subset Sheets: 1 OF 4

Project No./Code
128558

Sheet Number 80

GENERAL NOTES:

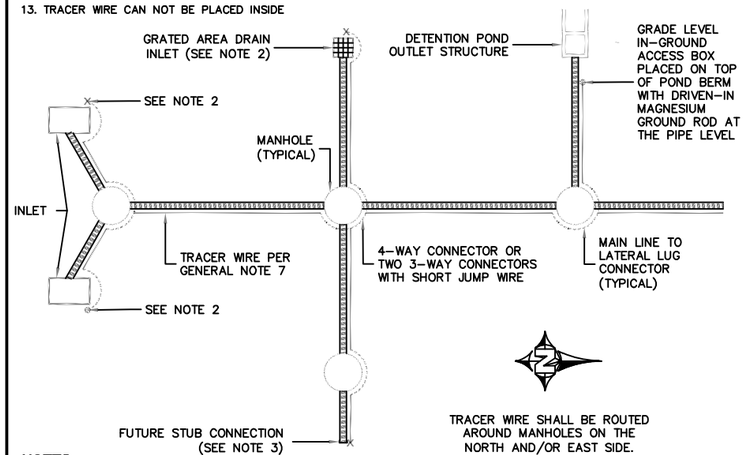
1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
2. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS (CONSTRUCTION, WORK IN RIGHT-OF-WAY, ETC.), AND NOTIFY THE COUNTY BY 1500 HOURS THE BUSINESS DAY BEFORE INSPECTION IS REQUIRED.
3. DO NOT BACKFILL INLETS PRIOR TO ONE-POUND ANODE AND 1.5# MAGNESIUM GROUND ROD INSTALLATION.

TRACER WIRE:

4. TRACER WIRE SHALL BE INSTALLED ON ALL UNDERGROUND PIPE INCLUDING CULVERTS AND UNDERDRAINS.
5. TRACER WIRE FOR STORM SEWER DRAIN LINES SHALL BE **GREEN** IN ACCORDANCE WITH AMERICAN PUBLIC WORKS ASSOCIATION (APWA) UNIFORM COLOR CODE.
6. "OPEN TRENCH" TRACER WIRE SHALL BE #8 OR #10 AWG COPPER SOLID OR #12 AWG COPPER CLAD HIGH STRENGTH WITH MINIMUM 30 MIL HDPE INSULATION THICKNESS COMPLYING WITH ASTM D-1248, AND A MINIMUM AVERAGE TENSILE BREAK LOAD OF 450-LBS, AND A 30-MIL HDPE JACKET-GREEN (TYPICAL).
7. "PIPE/SLIP LINING" TRACER WIRE SHALL BE 7X7 STRANDED COPPER CLAD STEEL, EXTREME STRENGTH WITH 4,700 LB. BREAK LOAD, WITH MINIMUM 50-MIL HDPE INSULATION THICKNESS.
8. TRACER WIRE SHALL BE SECURED EVERY 5-FEET TO 8-FEET ON THE TOP OF THE PIPE BY TAPING OR TYING TO THE PIPE.
9. A 4-WAY CONNECTOR OR (2) 3-WAY CONNECTORS WITH SHORT JUMP WIRE ARE REQUIRED AT ALL CROSSINGS.
10. TRACER WIRE SHALL BE AS CONTINUOUS AS POSSIBLE. IF SPLICING IS NECESSARY, THE ONLY APPROVED SPLICE METHOD IS A SPLIT BOLT CONNECTOR HOUSED IN A SPLIT BOLT HOUSING.
11. ANY DAMAGE OCCURRING DURING INSTALLATION OF THE TRACER WIRE MUST BE IMMEDIATELY REPAIRED BY REMOVING THE DAMAGED WIRE AND INSTALLING A NEW SECTION OF WIRE WITH APPROVED CONNECTORS. TAPING AND/OR SPRAY COATING SHALL NOT BE ALLOWED AS A CONNECTION.
12. EXPOSED WIRE SHALL BE WRAPPED WITH SCOTCH LINERLESS RUBBER SPLICING TAPE TO SEAL OUT MOISTURE, AND THEN COATED WITH SCOTCH SUPER 33+ VINYL ELECTRIC TAPE TO SEAL THE RUBBER TAPE.
13. TRACER WIRE CAN NOT BE PLACED INSIDE DRAINAGE INLETS.

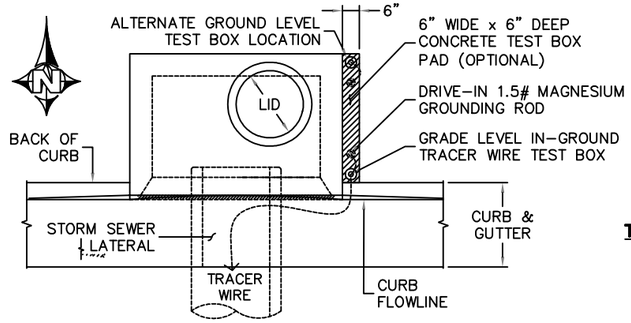
TERMINATION/ACCESS:

14. TRACER WIRE SHALL BE BROUGHT ABOVE GROUND AND CONNECT AT EACH INLET AND MANHOLE IN A GRADE LEVEL TRACER WIRE TEST BOX.
15. A MINIMUM OF 2-FEET OF EXCESS/SLACK WIRE IS REQUIRED IN ALL TRACER WIRE ACCESS BOXES AFTER MEETING FINAL ELEVATION.
16. DRIVE-IN 1.5# MAGNESIUM GROUND RODS (ANODE) WHICH SHALL BE ATTACHED TO THE END OF THE TRACER WIRE.
17. TRACER WIRE MUST BE PROPERLY GROUNDED AT ALL DEAD ENDS (INLETS, OUTFALL, ETC.), AND DRIVEN INTO NATIVE SOIL AT PIPE LEVEL.
18. TRACER WIRE TERMINATION POINTS MUST UTILIZE A WIRE ACCESS BOX.
19. TRACER WIRE ACCESS BOXES MUST INCLUDE A MANUAL INTERRUPTIBLE CONDUCTIVE/CONNECTIVE LINK BETWEEN TERMINAL FOR TRACER WIRE CONNECTION AND TERMINAL FOR GROUND ROD WIRE CONNECTION.
20. GROUNDING ANODE WIRE AND 1.5# MAGNESIUM GROUND ROD WIRE SHALL BE CONNECTED TO THE IDENTIFIED LOCATION (BOTTOM) TERMINAL IN ALL ACCESS BOXES.
21. ALL SERVICE LATERAL TRACER WIRES MUST BE PROPERLY CONNECTED TO THE MAINLINE TRACER WIRE TO ENSURE FULL TRACING/LOCATING CAPABILITIES FROM A SINGLE CONNECTION POINT.
22. TRUNK LINE TRACER WIRE SHALL BE CONTINUOUS, BY-PASSING AROUND THE OUTSIDE OF MANHOLES/STRUCTURES ON THE NORTH OR EAST SIDE, UNLESS ON THE END SECTION.
23. ALL NEW TRACER WIRE INSTALLATIONS SHALL BE TESTED AND LOCATED PRIOR TO ACCEPTANCE. TESTING AND LOCATING SHALL BE PERFORMED BY A THIRD PARTY AT THE COMPLETION OF ROUGH GRADING AND PRIOR TO FINAL ACCEPTANCE OF THE PROJECT. ANY DEFICIENCIES SHALL BE CORRECTED PRIOR TO FINAL ACCEPTANCE.
24. WHEN REPAIRS ARE PERFORMED ON STORMWATER LINE, TRACER WIRE SHALL BE TESTED PRIOR TO FINAL ACCEPTANCE.

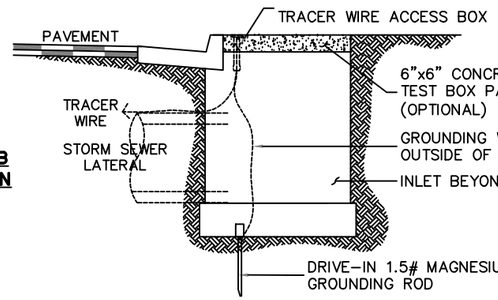


NOTES:

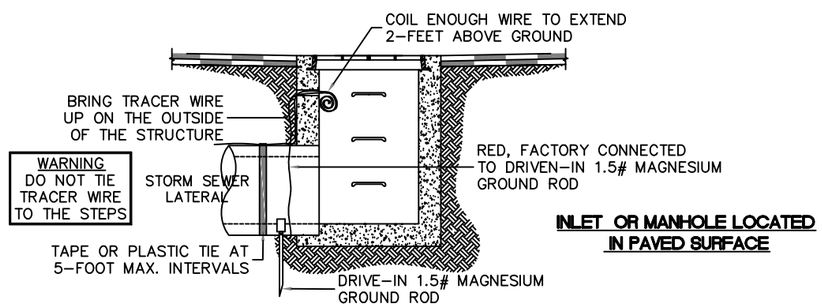
1. WIRE SHOWN AWAY FROM PIPE FOR CLARITY. WIRE SHALL BE INSTALLED ON TOP OF THE PIPE. THE WIRE SHALL BE FASTENED TO THE PIPE WITH TAPE OR PLASTIC TIES AT 5-FOOT MAXIMUM INTERVALS.
2. TRACER WIRE FOR INLETS SHALL TERMINATE AT A GRADE LEVEL IN-GROUND ACCESS BOX. DRIVE-IN MAGNESIUM GROUND ROD MUST BE USED AT ALL TERMINATION POINTS.
3. PLACE A TEST STATION WITH A DRIVEN-IN 1.5# MAGNESIUM GROUND ROD AT DEAD ENDS AND FUTURE CONNECTIONS.
4. TRACER WIRE TO BE INCLUDED IN THE PIPE INSTALLATION COST.



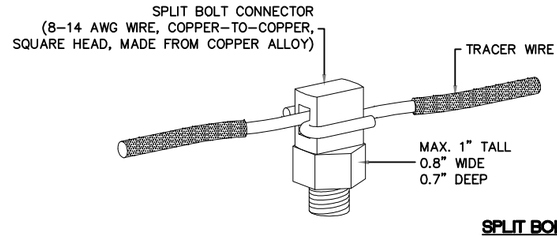
TYPICAL CURB INLET PLAN



INL TYPICAL CURB ET SECTION



INLET OR MANHOLE LOCATED IN PAVED SURFACE

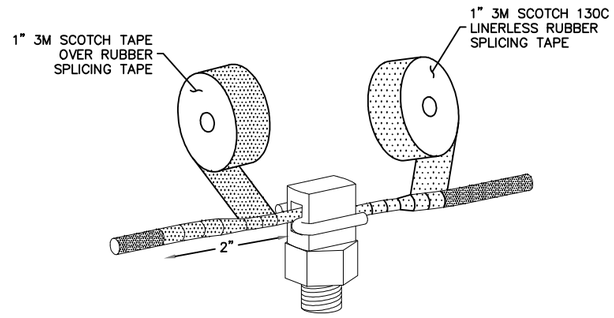


NOTE: ONCE THE WIRE SPLIT BOLT CONNECTOR IS IN PLACE IT SHALL BE ENCAPSULATED WITH A SPLIT BOLT HOUSING.

SPLIT BOLT HOUSING SPECIFICATION:

VOLTAGE – 50 VOLTS
HOUSING – HIGH IMPACT POLYPROPYLENE
SEALANT – DIELECTRIC SILICONE GEL

SPLIT BOLT CONNECTION



TAPING NOTES:

1. WRAP ALL TRACER WIRE SPLIT BOLT CONNECTORS OR EXPOSED WIRE USING 1-INCH 3M SCOTCH 130C LINERLESS RUBBER SPLICING TAPE. SEAL ALL ENDS TO PREVENT MOISTURE PENETRATION.
2. WRAP OVER RUBBER TAPE WITH 1-INCH SCOTCH 33+ VINYL TAPE TO COVER AND PROTECT RUBBER TAPE. EXTEND WRAP 2-INCHES ON BOTH SIDES OF CONNECTOR.

COLORADO LICENSED LUCY T. EAST 51734 6/1/2023 PROFESSIONAL ENGINEER

DETAIL 5
TRACER WIRE
N.T.S.

Print Date: 06/15/2022	Sheet Revisions		
File Name: 175644_HYD_Drain_Details.dwg	Date:	Comments	Init.
Horiz. Scale: N/A Vert. Scale: N/A			
Unit Information Unit Leader Initials			
Michael Baker INTERNATIONAL — MICHAEL BAKER INTERNATIONAL, INC. 165 S. UNION BLVD., STE. 1000 LAKEWOOD, CO 80228 720.514.1100			

EL PASO COUNTY COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS DRAINAGE DETAILS TRACER WIRE			Project No./Code 128558
Designer: NED	Structure Numbers		
Detailer: RBR			
Sheet Subset: DETAILS	Subset Sheets: 2 OF 4		Sheet Number 81

Ditch ID	Long Slope MIN	Long Slope MAX	Manning's n	LT Side Slope	RT Side Slope	Required Depth	Lining	Lining Top Width	Begin Lining STA	End Lining STA	Riprap D50	Riprap Thickness	Riprap Quantity	Notes
	%	%		H:V	H:V	ft		ft			in	ft	CY	
D-5	3.50	11.50	0.07	4.00	4.00	1.39	Riprap	2.87	50+26.08	51+50.47	6	1	16.83	
D-6	5.00	5.00	0.08	3.00	3.00	1.61	Riprap	3.45	145+80.00	149+68.34	6	1	49.62	
D-7	13.00	13.00	0.07	3.00	3.00	1.26	Riprap	1.40	141+36.47	145+80.00	6	1	27.10	
D-8	1.90	6.10	0.07	3.00	3.00	1.58	Riprap	3.25	20+66.57	25+50.00	12	2	116.38	
D-9	4.50	8.60	0.07	11.00	5.00	1.55	Riprap	8.00	104+04.63	105+97.27	6	1	57.08	Wakonda Stationing
D-10	3.60	5.80	0.07	4.00	4.00	1.37	Riprap	2.73	8+91.23	11+45.43	6	1	25.73	
D-11	13.00	13.00	0.08	3.00	3.00	1.54	Riprap	2.95	141+40.96	145+15.32	12	2	81.80	
D-12	3.00	8.00	0.08	3.00	3.00	2.47	Riprap	8.20	27+74.68	40+95.10	12	2	802.03	
D-13	1.60	6.00	0.07	3.00	3.00	1.48	Riprap	2.70	20+76.28	26+12.30	6	1	53.60	
D-14	1.30	6.00	0.08	3.00	3.00	3.28	Riprap	12.90	16+60.26	19+55.50	6	1	141.06	
D-14.1	18.30	18.30	0.08	3.00	3.00	1.39	Riprap	2.05	19+55.50	20+31.80	12	2	11.59	
D-15	0.50	0.90	0.03	4.00	3.00	2.07	Vegetation	7.06						
D-15A	0.01	0.01	0.07	4.00	4.00	2.07	Riprap	8.07	13+00.91	13+65.65	6	1	19.34	
D-16	5.30	11.20	0.07	4.00	3.00	1.39	Riprap	2.51	8+90.71	9+98.59	6	1	10.02	
D-17	1.50	1.50	0.03	4.00	3.00	1.37	Riprap	2.39	8+90.71	9+98.59	6	1	9.56	

R-2

COLORADO LICENSED
MICHAEL E. BUTTERS
32595
3/7/25
PROFESSIONAL ENGINEER

Print Date: 03/07/2025
File Name: 175644_HYD_Drain_Details.dwg
Horiz. Scale: N/A Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions

Date:	Comments	Init.
06/01/23	RFC	LTE
12/06/24	GEOMETRY CHANGE	MEB
03/07/25	PROJ. LIMITS CHANGE	MEB

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
DRAINAGE DETAILS
DITCH SUMMARY

Designer: NCS
Detailer: RBR
Sheet Subset: DETAILS
Structure Numbers
Subset Sheets: 3 OF 4

Project No./Code
128558

Sheet Number 82

POINT	STATION	OFFSET	ELEVATION	DESCRIPTION
1	9+50.78	-31.39	7,195.00	FL
2	10+45.90	-30.51	7,198.66	FL
3	11+40.79	-30.50	7,200.53	FL
4	9+49.00	26.00	7,196.00	FL
5	9+80.92	26.81	7,192.00	FL
6	8+87.52	18.89	7,192.00	FL
7	10+32.38	20.97	7,201.49	FL
8	10+83.67	31.24	7,201.00	FL
9	11+10.06	41.49	7,200.24	FL
10				
11				
12				
13	11+53.90	44.17	7,196.54	FL
14	13+01.26	49.81	7,195.75	FL
15	15+57.00	83.11	7,202.98	FL
16	16+11.98	98.35	7,208.00	FL
17	16+10.57	62.18	7,203.00	FL
18	16+27.26	63.66	7,204.00	FL
19	16+28.58	103.93	7,209.00	FL
20	18+13.54	36.63	7,207.84	FL
28	105+11.89	-28.17	7,194.00	FL
29	104+07.78	-28.74	7,189.00	FL
30	19+39.05	52.65	7,209.63	FL
31	19+81.41	51.05	7,212.00	FL
32	104+82.48	-33.37	7,191.00	FL
33	104+33.75	-30.78	7,190.00	FL
34	16+30.33	-68.38	7,197.00	FL
36	22+00.00	33.50	7,231.08	FL
37	23+00.00	33.50	7,237.04	FL
38	24+00.00	33.50	7,241.56	FL
39	25+00.00	33.50	7,244.04	FL
40	26+12.30	33.50	7,247.03	FL
50	22+00.00	-33.50	7,231.08	FL
51	23+00.00	-33.50	7,237.04	FL
52	24+00.00	-33.50	7,241.56	FL
53	25+00.00	-33.50	7,244.04	FL
54	25+50.00	-33.50	7,245.04	FL
55	29+00.00	33.50	7,253.73	FL
56	30+00.00	33.50	7,257.70	FL
57	31+00.00	33.50	7,262.41	FL
58	31+67.02	33.50	7,266.00	FL
59	32+35.40	39.50	7,268.00	FL
60	33+00.00	39.50	7,272.10	FL
61	34+00.00	39.50	7,279.06	FL
62	34+87.93	39.50	7,285.81	FL
63	35+27.65	33.50	7,290.99	FL
64	36+00.00	33.50	7,296.77	FL

POINT	STATION	OFFSET	ELEVATION	DESCRIPTION
65	37+00.00	33.50	7,304.77	FL
66	38+00.00	33.50	7,312.77	FL
67	39+00.00	33.50	7,320.77	FL
68	40+00.00	33.50	7,328.77	FL
69	141+16.29	58.33	7,343.01	FL
80	141+32.83	52.26	7,343.26	FL
81	141+98.24	33.50	7,346.20	FL
82	142+98.69	31.50	7,358.49	FL
83	143+94.92	25.50	7,373.00	FL
84	145+09.06	25.50	7,384.65	FL
85				
86				
87				
88				
89				
90				
91	142+03.14	-33.50	7,346.74	FL
92	143+01.29	-31.50	7,358.83	FL
93	144+03.17	-31.50	7,372.07	FL
94	144+97.54	-31.34	7,381.90	FL
95	146+04.02	-31.50	7,384.53	FL
96	147+04.54	-33.50	7,381.51	FL
97	147+54.54	-38.00	7,378.66	FL
98	148+04.54	-38.00	7,377.11	FL
99	149+02.93	-38.00	7,374.06	FL
100	149+06.54	-38.00	7,373.95	FL
110	149+83.42	-53.05	7,373.72	FL
111	149+97.48	-82.76	7,377.00	FL
112	50+26.08	-90.41	7,377.28	FL
113	50+33.18	-44.61	7,372.37	FL
114	50+56.24	-25.00	7,368.87	FL
115	50+72.24	-25.00	7,368.08	FL
116	51+30.53	-20.96	7,364.69	FL
117	51+40.50	-20.10	7,364.34	FL
118	51+50.47	-19.41	7,363.76	FL
119	51+02.51	-50.55	7,373.34	TOP OF CUT
120	51+51.04	-27.49	7,368.78	TOP OF CUT

R-3

R-3

COLORADO LICENSED
MICHAEL E. BUTTERS
32595
3/7/25
PROFESSIONAL ENGINEER

Print Date: 03/07/2025
File Name: 175644_HYD_Drain_Details.dwg
Horiz. Scale: N/A Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions

	Date:	Comments	Init.
	06/01/23	RFC	LTE
R-1	08/31/23	GRADING POINTS	LTE
R-2	09/09/24	GEOMETRY CHANGE	MEB
R-3	03/07/25	PROJ. LIMITS CHANGE	MEB

EL PASO COUNTY
COLORADO

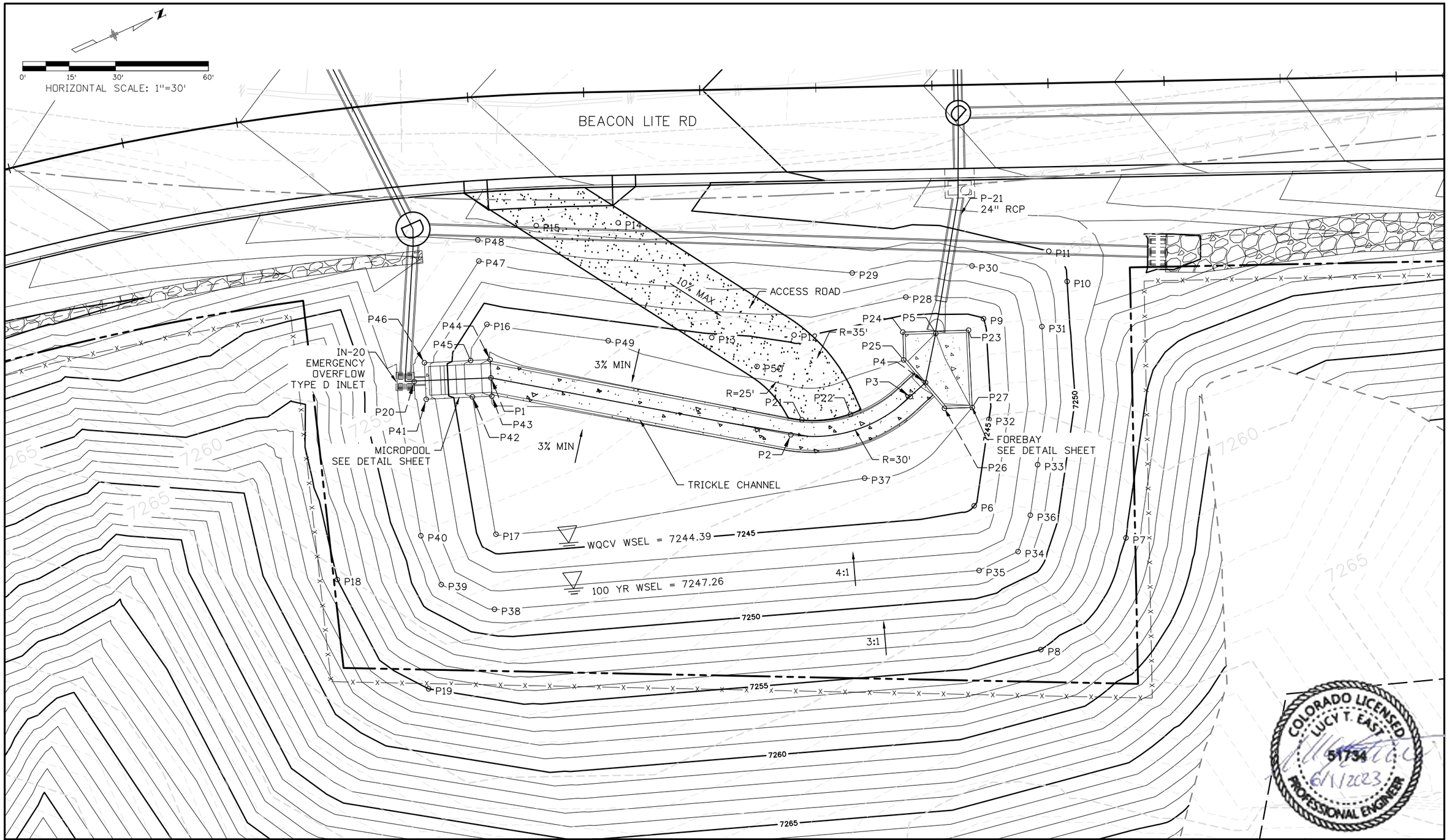
PPRTA PIKES PEAK RURAL TRANSPORTATION AUTHORITY

BEACON LITE ROAD IMPROVEMENTS
DRAINAGE DETAILS
DITCH POINT TABLE

Designer: NCS
Detailer: RBR
Sheet Subset: DETAILS
Structure Numbers
Subset Sheets: 4 OF 4

Project No./Code
128558

Sheet Number 83



COLORADO LICENSED
LUCY T. EAST
51734
6/1/2023
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_HYD_Pond Details.dwg
Horiz. Scale: 1" = 30' Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

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BEACON LITE ROAD IMPROVEMENTS
NORTH POND LAYOUT

Designer:	NED	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	POND DETAILS	Subset Sheets:	1 OF 13

Project No./Code
128558

Sheet Number 84

Point Table				
Point #	Northing	Easting	Elevation	Raw Description
1	97521.57	98927.29	7242.45	TRICKLE CHANNEL CENTERLINE
2	97575.36	98965.06	7242.78	TRICKLE CHANNEL CENTERLINE
3	97602.18	98968.17	7242.92	TRICKLE CHANNEL CENTERLINE
4	97606.43	98966.76	7242.94	FOREBAY WEIR
5	97612.78	98958.01	7243.00	FOREBAY BOTTOM OF WALL
6	97605.04	98995.24	7245.00	POND BOTTOM
7	97631.97	99015.01	7255.00	CONTOUR
8	97605.35	99029.39	7255.00	CONTOUR
9	97623.47	98959.35	7245.00	POND BOTTOM
10	97643.17	98959.46	7250.00	CONTOUR
11	97642.26	98951.89	7250.00	CONTOUR
12	97584.84	98945.75	7245.18	ACCESS RD
13	97568.46	98938.94	7244.83	ACCESS RD
14	97560.29	98908.13	7249.67	ACCESS RD
15	97543.96	98901.41	7249.31	ACCESS RD
16	97525.51	98916.41	7244.00	POND BOTTOM
17	97508.68	98958.42	7244.00	POND BOTTOM
18	97473.53	98953.24	7255.00	CONTOUR
19	97481.74	98982.79	7255.00	CONTOUR
20	97506.18	98921.20	7247.24	OVERFLOW INLET
21	97578.85	98963.09	7243.10	ACCESS RD
22	97588.85	98966.33	7243.16	ACCESS RD
23	97619.51	98960.27	7244.07	FOREBAY TOP OF WALL
24	97606.44	98954.83	7244.07	FOREBAY TOP OF WALL
25	97604.13	98960.36	7244.01	FOREBAY TOP OF WALL

Point Table				
Point #	Northing	Easting	Elevation	Raw Description
26	97607.84	98973.49	7244.00	FOREBAY TOP OF WALL
27	97613.37	98975.79	7244.00	FOREBAY TOP OF WALL
28	97610.14	98948.23	7246.00	CONTOUR
29	97601.76	98938.74	7248.00	CONTOUR
30	97625.89	98947.98	7248.00	CONTOUR
31	97634.22	98966.09	7248.00	CONTOUR
32	97615.60	98979.59	7245.00	CONTOUR
33	97621.14	98992.80	7248.00	CONTOUR
34	97609.59	99008.12	7248.00	CONTOUR
35	97600.27	99008.38	7248.00	CONTOUR
36	97615.21	99002.07	7248.00	CONTOUR
37	97585.98	98980.10	7244.00	CONTOUR
38	97501.73	98973.01	7248.00	CONTOUR
39	97493.48	98963.43	7248.00	CONTOUR
40	97493.81	98952.05	7248.00	CONTOUR
41	97506.96	98925.74	7246.49	MICROPOOL
42	97516.24	98929.36	7244.00	MICROPOOL
43	97520.13	98930.94	7242.95	MICROPOOL
44	97523.02	98923.63	7242.94	MICROPOOL
45	97519.12	98922.08	7244.00	MICROPOOL
46	97509.85	98918.41	7246.49	MICROPOOL
47	97529.55	98903.27	7247.00	CONTOUR
48	97531.22	98899.04	7248.00	CONTOUR
49	97547.88	98930.39	7244.00	CONTOUR
50	97574.79	98948.64	7244.29	ACCESS RD

COLORADO LICENSED
LUCY T. EAST
51734
6/1/2023
PROFESSIONAL ENGINEER

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Unit Information Unit Leader Initials

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165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

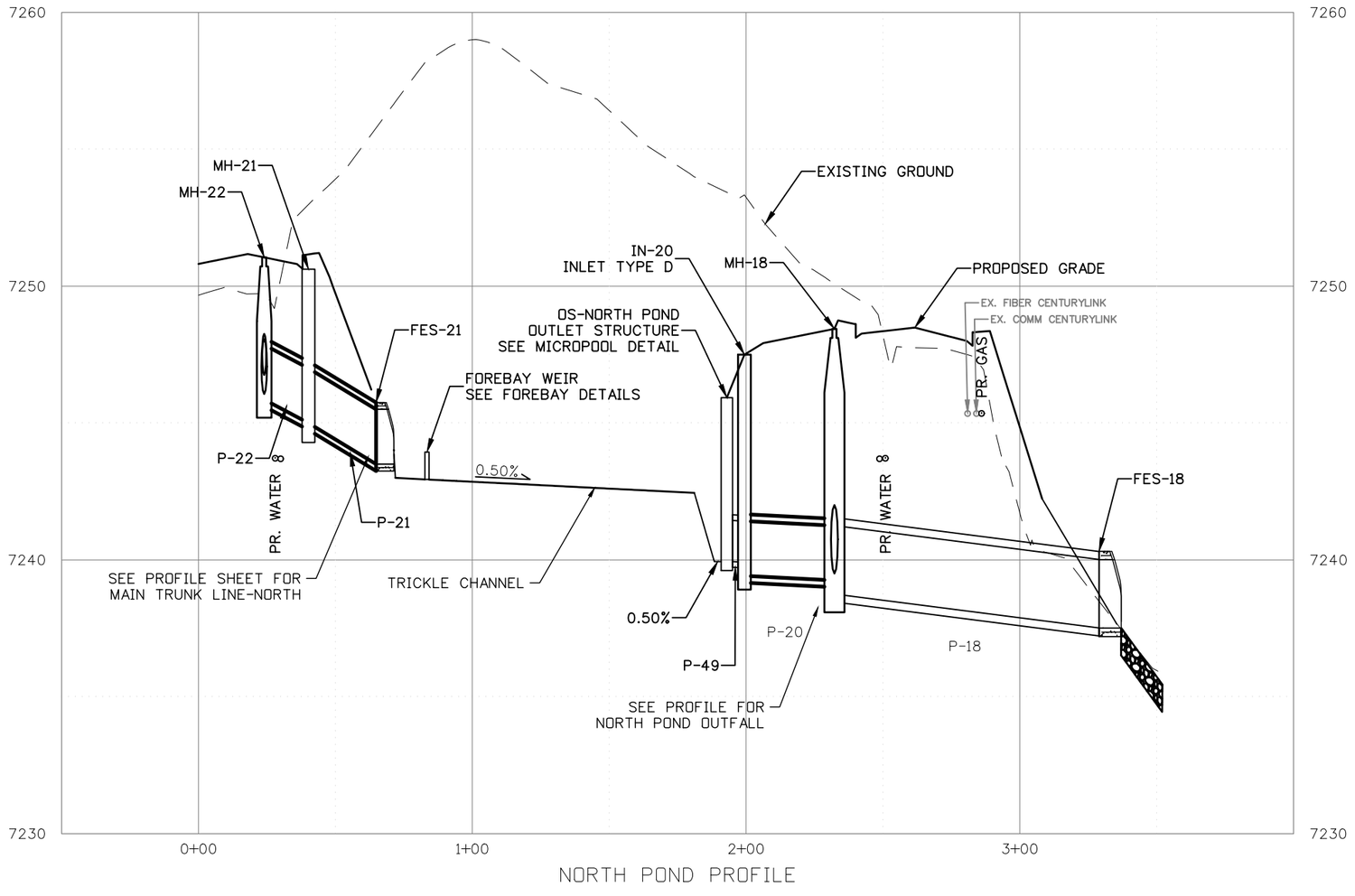
PPRTA

BEACON LITE ROAD IMPROVEMENTS
NORTH POND
CONTROL POINT TABLE

Project No./Code
128558

Designer: NED
Detailer: RBR
Sheet Subset: POND DETAILS
Structure Numbers
Subset Sheets: 2 OF 13

Sheet Number 85



NORTH POND PROFILE

COLORADO LICENSED
LUCY T. EAST
51734
6/1/2023
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_HYD_Pond Details.dwg
Horiz. Scale: N/A Vert. Scale: N/A
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EL PASO COUNTY
COLORADO

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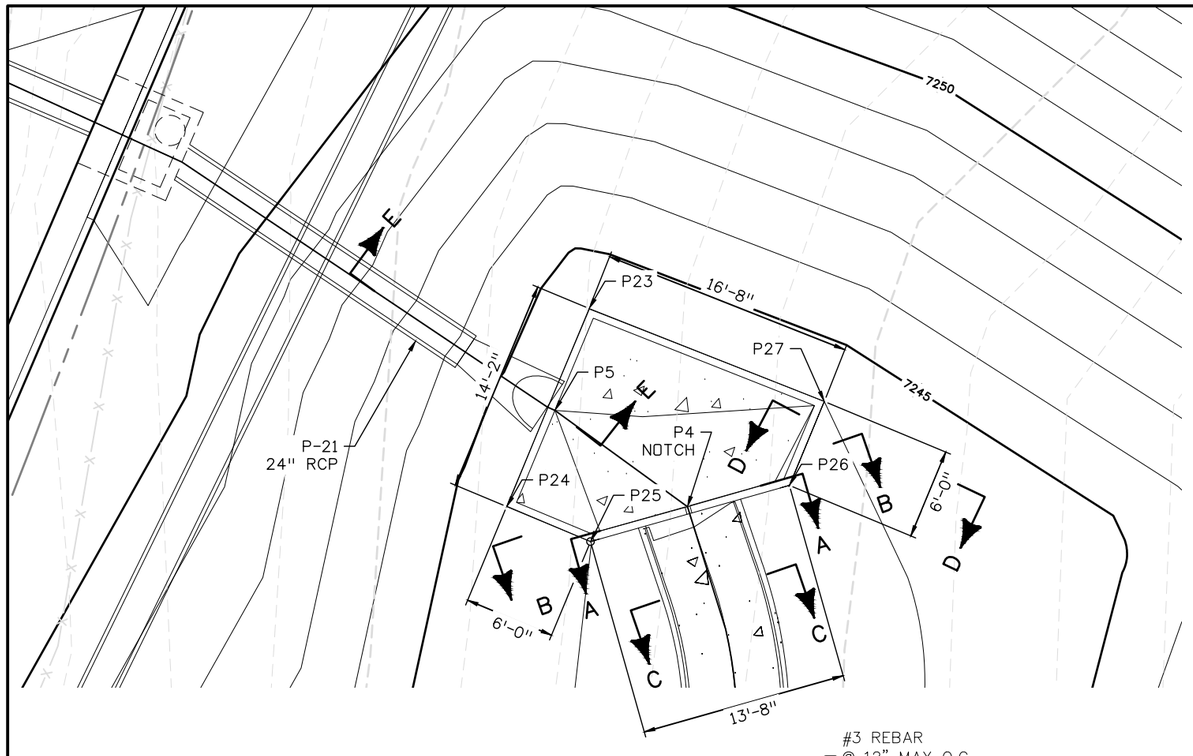
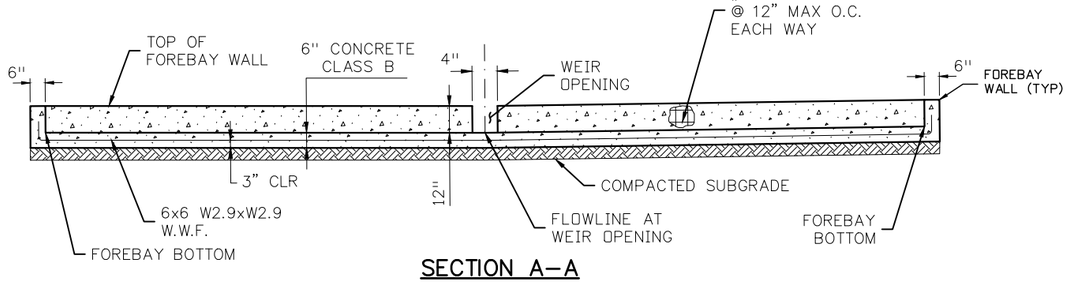
BEACON LITE ROAD IMPROVEMENTS
NORTH POND PROFILE

Designer:	NED	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	POND DETAILS	Subset Sheets:	3 OF 13

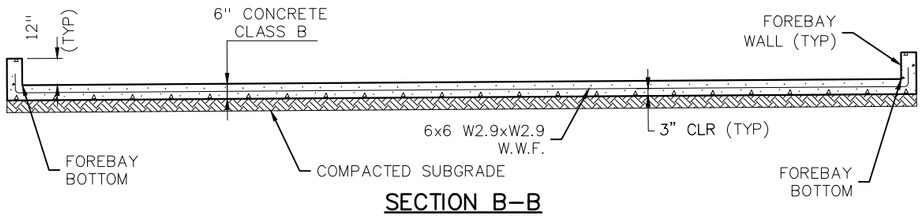
Project No./Code: 128558

Sheet Number: 86





SECTION A–A
NOT TO SCALE



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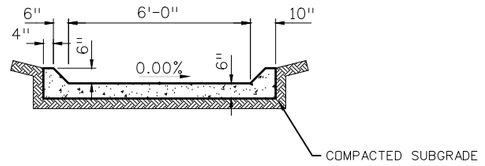
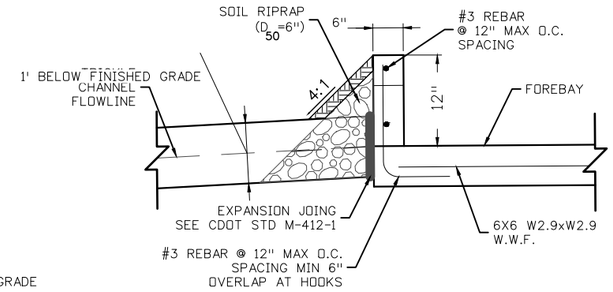
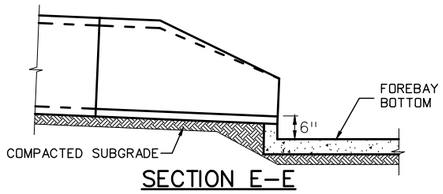
NOT TO SCALE



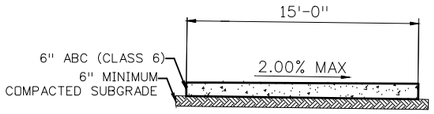
SECTION C–C
CONCRETE TRICKLE CHANNEL
NOT TO SCALE



SECTION D–D
NOT TO SCALE



SECTION E–E
NOT TO SCALE



MAINTENANCE ACCESS ROAD CROSS SECTION
NOT TO SCALE

Point Table				
Point #	Northing	Easting	Elevation	Raw Description
4	97606.43	98966.76	7242.94	FOREBAY WEIR
5	97612.78	98958.01	7243.00	FOREBAY BOTTOM OF WALL
23	97619.51	98960.27	7244.07	FOREBAY TOP OF WALL
24	97606.44	98954.83	7244.07	FOREBAY TOP OF WALL
25	97604.13	98960.36	7244.01	FOREBAY TOP OF WALL
26	97607.84	98973.49	7244.00	FOREBAY TOP OF WALL
27	97613.37	98975.79	7244.00	FOREBAY TOP OF WALL

COLORADO LICENSED
LUCY T. EAST
51734
6/1/2023
PROFESSIONAL ENGINEER

NOTES:

1. CONCRETE TRICKLE CHANNEL IS SHOWN AS MONOLITHICALLY POURED. CONTRACTOR HAS OPTION TO KEY IN OR DOWEL CURB TO CHANNEL BOTTOM AS SHOWN IN CDOT STD M–609–1. CHANNEL THICKNESS TO INCREASE FROM 6" TO 8" IF DOWEL METHOD IS USED.
2. ALL FOREBAY AND TRICKLE CHANNEL CONCRETE SHALL BE CLASS B WITH A MINIMUM 2" COVER ON ALL REINFORCEMENT UNLESS OTHERWISE NOTED.
3. CONSTRUCTION METHODS ARE SITE SPECIFIC. CONTRACTOR TO ESTABLISH CONSTRUCTION METHODS WITH OWNER'S FIELD INSPECTOR PRIOR TO CONSTRUCTION.

Print Date: 05/18/2022
File Name: 175644_HYD_Pond Details.dwg
Horiz. Scale: N/A Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions		
Date:	Comments	Init.

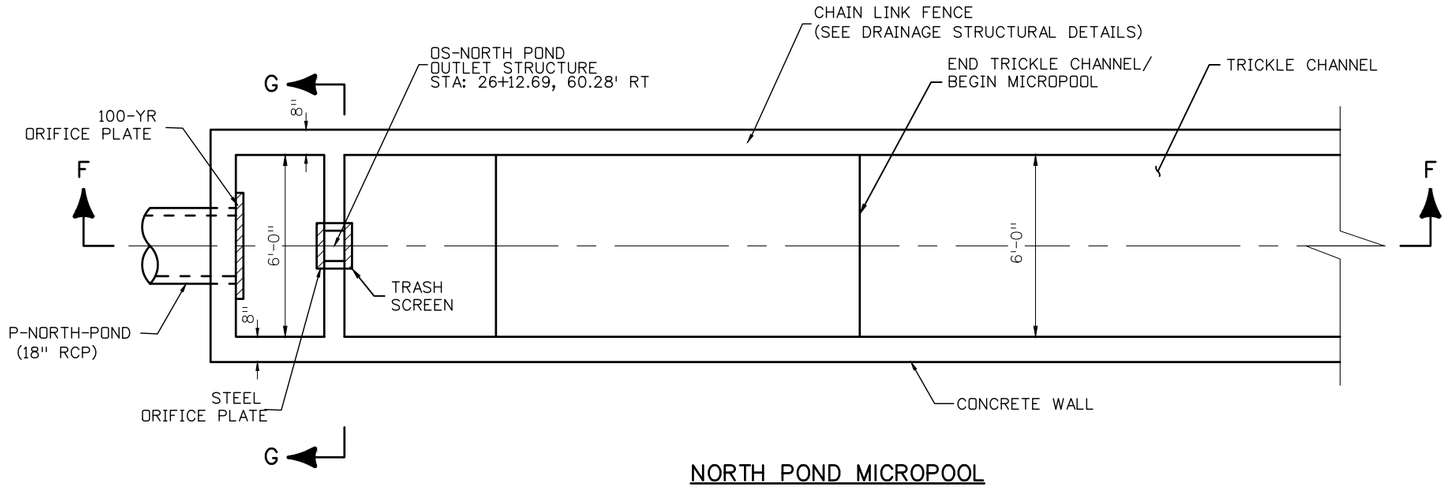
EL PASO COUNTY COLORADO

PPRTA

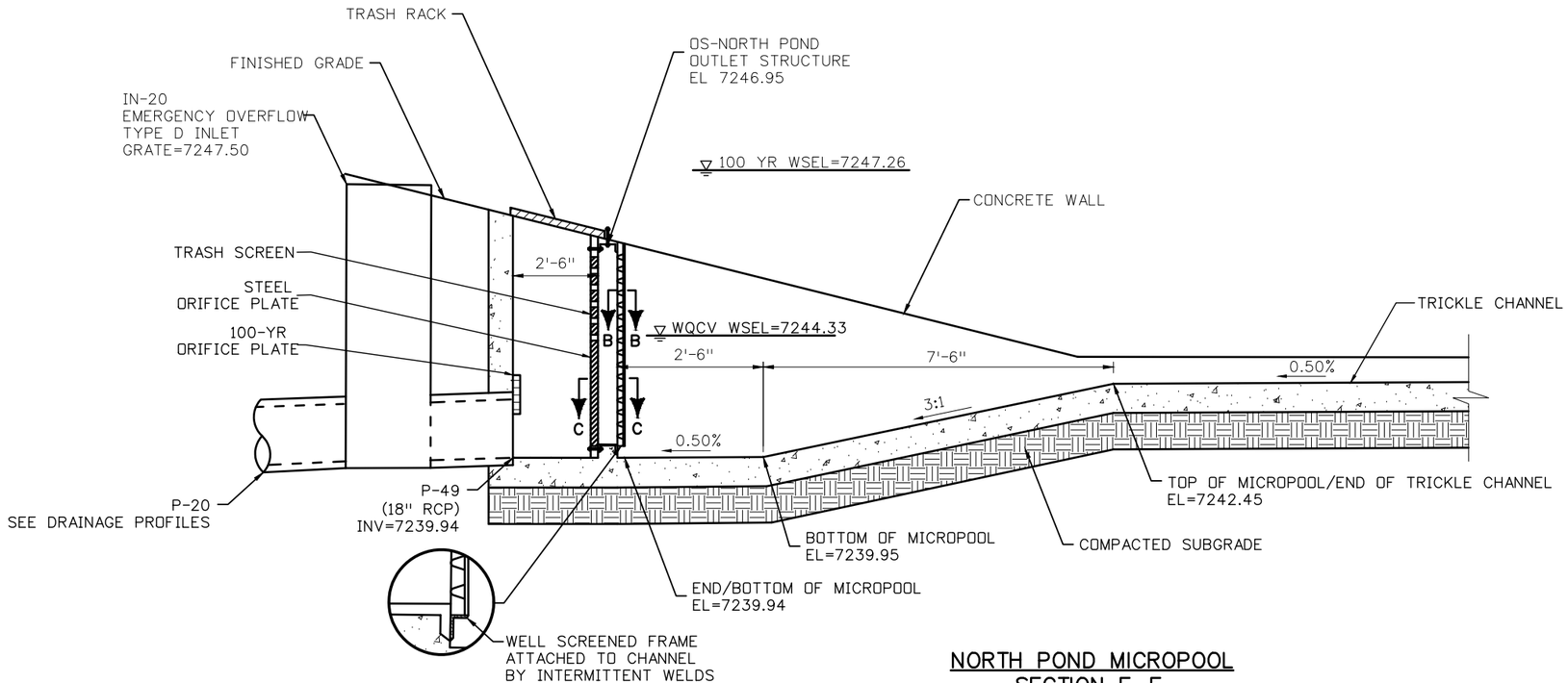
BEACON LITE ROAD IMPROVEMENTS
NORTH POND
FOREBAY DETAILS

Project No./Code: 128558

Designer: NED
Detailer: RBR
Sheet Subset: POND DETAILS
Structure Numbers:
Subset Sheets: 4 OF 13
Sheet Number 87



NORTH POND MICROPOOL
PLAN VIEW
NOT TO SCALE



NORTH POND MICROPOOL
SECTION F-F
NOT TO SCALE

NOTES:

1. SEE NORTH POND OUTLET DETAILS FOR ADDITIONAL DETAILS AND SECTION G-G.
2. SEE DRAINAGE STRUCTURAL DETAILS FOR REINFORCEMENT AND DETAILING.
3. TRASH RACK ON OUTLET STRUCTURE TO BE HINGED FOR MAINTENANCE ACCESS. HINGE ACTION TO NOT CONFLICT WITH PEDESTRIAN RAILING. SEE OUTLET STRUCTURE DETAILS.
4. ALL ITEMS SHOWN ON MICROPOOL DETAIL SHALL BE INCLUDED IN THE COST OF THE OUTLET STRUCTURE.
5. FENCE CHAIN LINK (SPECIAL)(36 INCH) NOT SHOWN FOR CLARITY. SEE SHEET 134 FOR LIMITS REQUIRED.

Print Date: 05/18/2022
File Name: 175644_HYD_Pond Details.dwg
Horiz. Scale: N/A Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

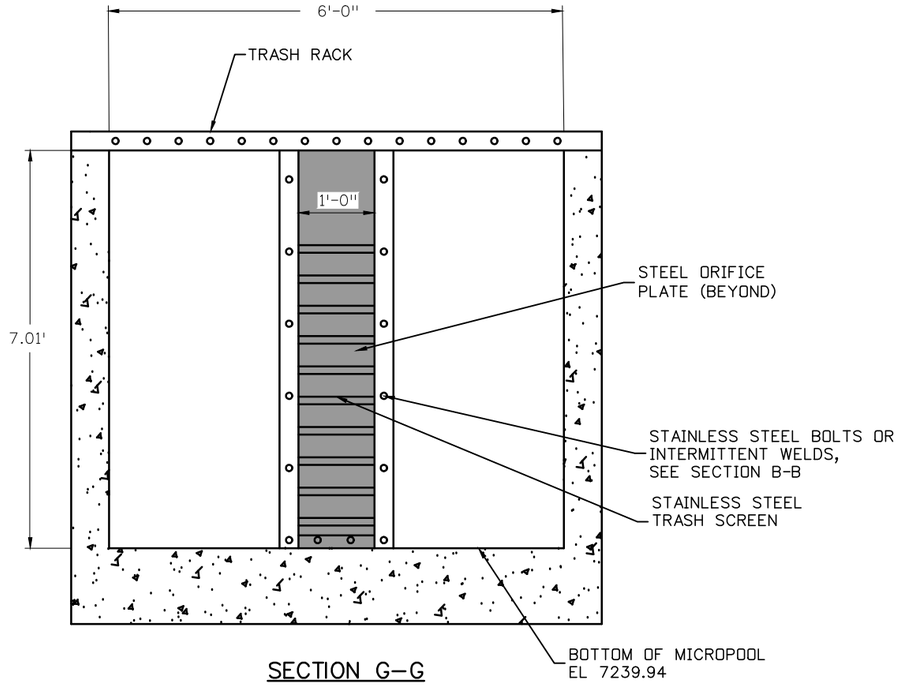
PPRTA

BEACON LITE ROAD IMPROVEMENTS
NORTH POND
MICROPOOL DETAILS

Designer:	NED	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	POND DETAILS	Subset Sheets:	5 OF 13

Project No./Code
128558

Sheet Number 88



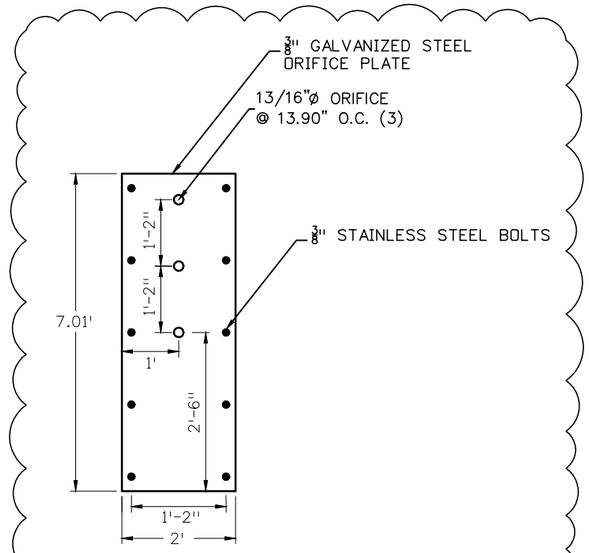
SECTION G–G
NTS

ORIFICE PLATE NOTES:

1. BOLT PLATE TO CONCRETE 12" MAX. ON CENTER.
2. A GASKET OR SEALANT IS REQUIRED TO ENSURE A WATERTIGHT SEAL WITH THE OUTLET STRUCTURE.

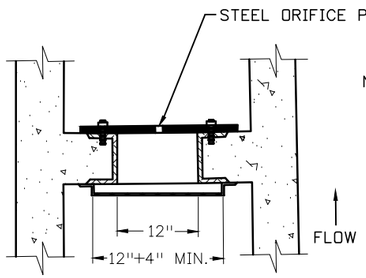
EURV AND WQCV TRASH RACKS;

1. WELL-SCREEN TRASH RACKS SHALL BE STAINLESS STEEL AND SHALL BE ATTACHED BY INTERMITTENT WELDS ALONG THE EDGE OF THE MOUNTING FRAME.
2. BAR GRATE TRASH RACKS SHALL BE ALUMINUM AND SHALL BE BOLTED USING STAINLESS STEEL HARDWARE.
3. STRUCTURAL DESIGN OF TRASH RACKS SHALL BE BASED ON FULL HYDROSTATIC HEAD WITH ZERO HEAD DOWNSTREAM OF THE RACK.
4. ORIFICE PLATE REQUIRES A GASKET OR SEALANT TO ENSURE A WATERTIGHT SEAL WITH OUTLET STRUCTURE.

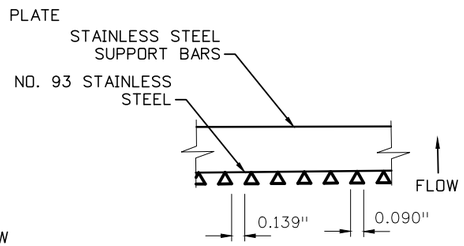


STEEL ORIFICE PLATE
NTS

R-1



SECTION B–B
NTS



SECTION C–C
NTS

COLORADO LICENSED
MICHAEL E. BÜTTERS
32595
4/11/25
PROFESSIONAL ENGINEER

Print Date: 04/11/2025			
File Name: 175644_HYD_Pond Details.dwg			
Horiz. Scale: N/A	Vert. Scale: N/A		
Unit Information	Unit Leader Initials		

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions

Date:	Comments	Init.
06/01/23	RFC	LTE
03/26/25	ADDED ORIFICE DIMS	MEB

EL PASO COUNTY
COLORADO

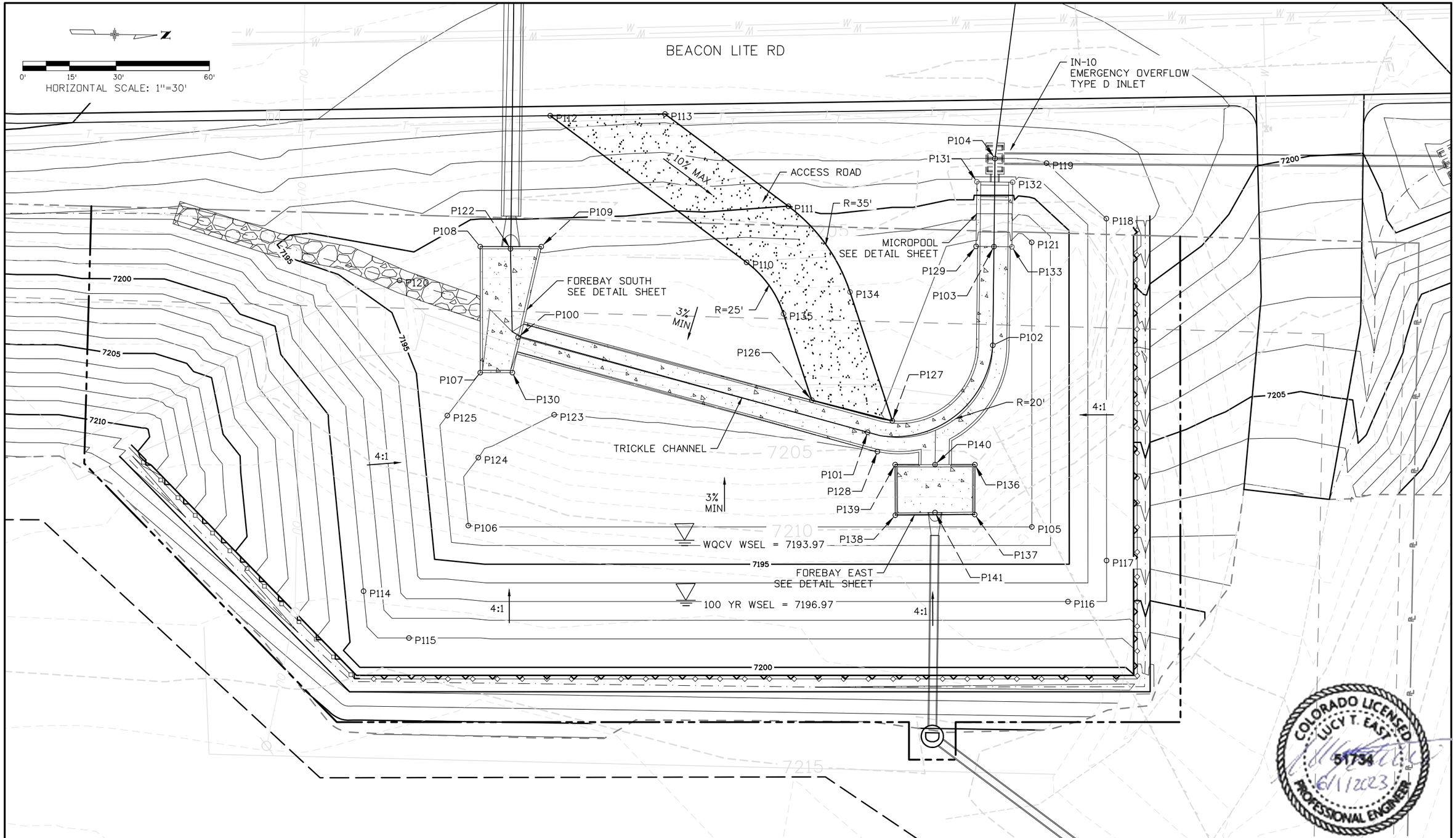
PPRTA

BEACON LITE ROAD IMPROVEMENTS
NORTH POND
OUTLET DETAILS

Designer:	NED	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	POND DETAILS	Subset Sheets:	6 OF 13

Project No./Code
128558

Sheet Number 89



COLORADO LICENSED
LUCY T. EAST
51734
6/1/2023
PROFESSIONAL ENGINEER

Print Date: 04/29/2022	Sheet Revisions		
File Name: 175644_HYD_Pond Details.dwg	Date:	Comments	Init.
Horiz. Scale: 1" = 30' Vert. Scale: N/A			
Unit Information Unit Leader Initials			
Michael Baker INTERNATIONAL — MICHAEL BAKER INTERNATIONAL, INC. 165 S. UNION BLVD., STE. 1000 LAKEWOOD, CO 80228 720.514.1100			

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
SOUTH POND
LAYOUT

Designer:	NED	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	POND DETAILS	Subset Sheets:	7 OF 13

Project No./Code
128558

Sheet Number 90

Point Table				
Point #	Northing	Easting	Elevation	Descrition
100	99047.78	96316.66	7192.29	SOUTH FOREBAY WEIR
101	99067.20	96391.80	7192.51	TRICKLE CHANNEL CENTERLINE
102	99048.24	96418.39	7192.32	TRICKLE CHANNEL CENTERLINE
103	99027.11	96418.39	7192.22	TRICKLE CHANNEL CENTERLINE
104	99008.27	96418.37	7196.97	OVERFLOW INLET
105	99087.03	96427.23	7193.00	POND BOTTOM
106	99088.22	96306.47	7193.00	POND BOTTOM
107	99055.43	96308.63	7194.00	SOUTH FOREBAY TOP OF WALL
108	99028.45	96308.30	7194.04	SOUTH FOREBAY TOP OF WALL
109	99028.29	96321.38	7194.05	SOUTH FOREBAY TOP OF WALL
110	99031.13	96365.41	7193.58	ACCESS RD
111	99019.01	96374.24	7194.99	ACCESS RD
112	99000.22	96322.96	7198.43	ACCESS RD
113	98999.57	96347.54	7198.29	ACCESS RD
114	99102.53	96284.20	7199.00	CONTOUR
115	99112.44	96294.05	7199.00	CONTOUR
116	99102.94	96435.16	7197.00	CONTOUR
117	99094.04	96443.32	7197.00	CONTOUR
118	99020.82	96442.39	7197.00	CONTOUR
119	99009.11	96429.43	7197.00	CONTOUR
120	99035.89	96291.11	7194.22	DITCH FLOWLINE
121	99026.10	96426.46	7193.00	POND BOTTOM
122	99028.85	96314.79	7193.05	SOUTH FOREBAY BOTTOM OF WALL
123	99064.25	96324.58	7193.00	CONTOUR
124	99073.63	96308.45	7193.00	CONTOUR
125	99064.70	96301.69	7194.00	CONTOUR
126	99060.47	96379.76	7193.08	ACCESS RD
127	99064.69	96397.06	7192.97	ACCESS RD
128	99071.32	96393.94	7193.00	CONTOUR
129	99027.11	96414.55	7192.73	MICROPOOL
130	99055.34	96315.52	7193.97	SOUTH FOREBAY TOP OF WALL
131	99013.27	96414.55	7195.73	MICROPOOL
132	99013.27	96422.22	7195.71	MICROPOOL
133	99027.11	96422.22	7192.64	MICROPOOL
134	99037.19	96387.65	7193.44	ACCESS RD
135	99042.04	96373.46	7193.43	ACCESS RD
136	99073.83	96414.86	7192.30	EAST FOREBAY TOP OF WALL
137	99084.53	96414.95	7192.30	EAST FOREBAY TOP OF WALL
138	99084.88	96397.94	7192.30	EAST FOREBAY TOP OF WALL
139	99074.05	96397.78	7192.30	FOREBAY TOP OF WALL
140	99073.94	96406.32	7191.30	EAST FOREBAY WEIR
141	99084.21	96406.44	7192.58	EAST FOREBAY BOTTOM OF WALL

COLORADO LICENSED
LUCY T. EAST
51734
6/1/2023
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_HYD_Pond Details.dwg
Horiz. Scale: N/A Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

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Sheet Revisions

Date:	Comments	Init.

EL PASO COUNTY
COLORADO

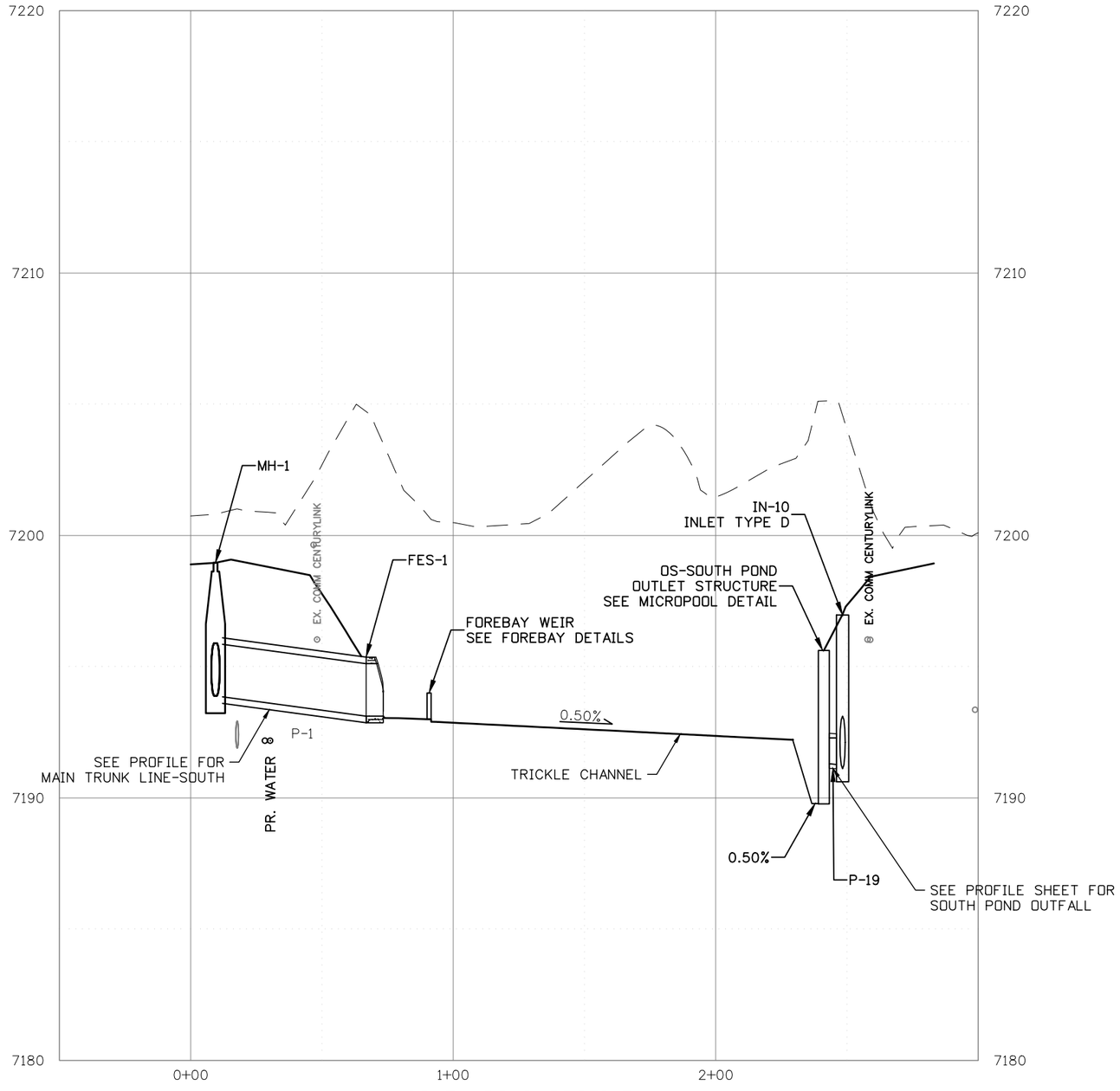
PPRTA

BEACON LITE ROAD IMPROVEMENTS
SOUTH POND
CONTROL POINT TABLE

Designer: NED
Detailer: RBR
Sheet Subset: POND DETAILS
Structure Numbers
Subset Sheets: 8 OF 13

Project No./Code
128558

Sheet Number 91



SOUTH POND PROFILE

COLORADO LICENSED
LUCY T. EAST
51734
6/1/2023
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_HYD_Pond Details.dwg
Horiz. Scale: N/A Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

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Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

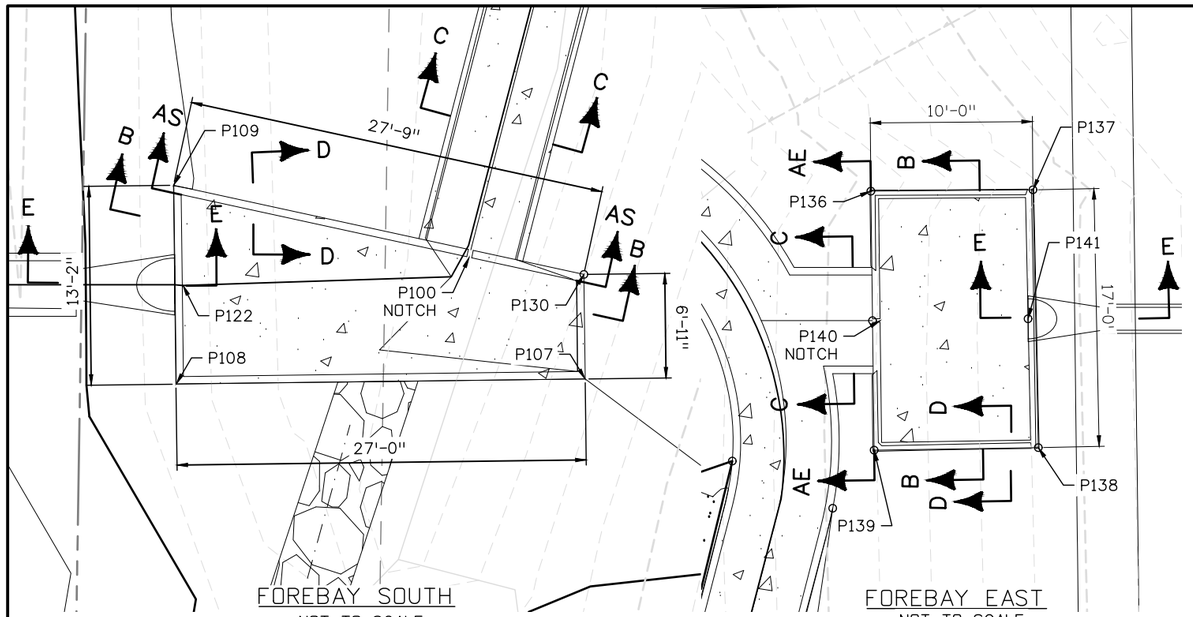
PPRTA

BEACON LITE ROAD IMPROVEMENTS
SOUTH POND
PROFILE

Project No./Code
128558

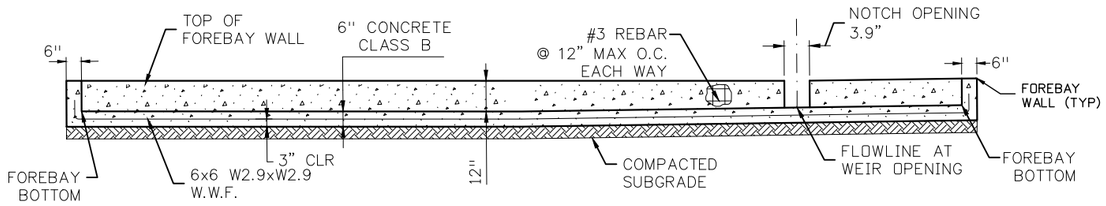
Designer:	NED	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	POND DETAILS	Subset Sheets:	9 OF 13

Sheet Number 92



FOREBAY SOUTH
NOT TO SCALE

FOREBAY EAST
NOT TO SCALE



SECTION AS–AS
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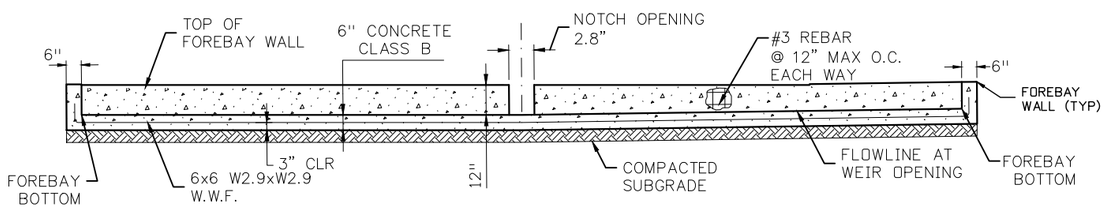

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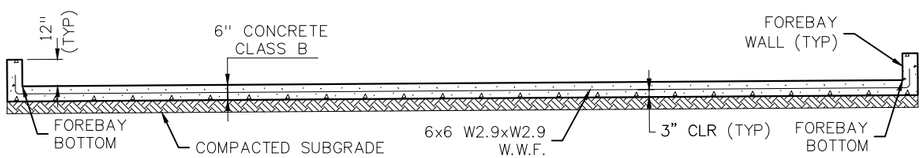
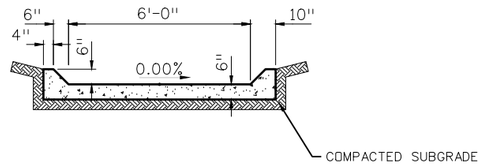
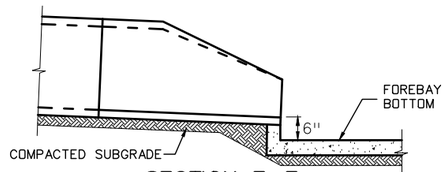


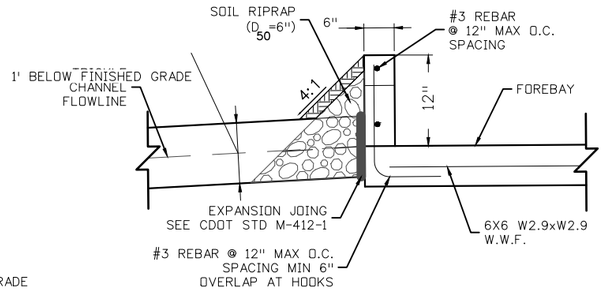
SECTION B–B
NOT TO SCALE



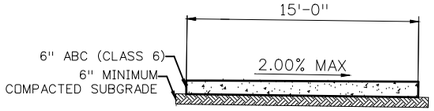
SECTION C–C
CONCRETE TRICKLE CHANNEL
NOT TO SCALE



SECTION E–E
NOT TO SCALE



SECTION D–D
NOT TO SCALE



MAINTENANCE ACCESS ROAD
CROSS SECTION
NOT TO SCALE

FOREBAY SOUTH

Point Table				
Point #	Northing	Easting	Elevation	Descrition
100	99047.78	96316.66	7192.29	SOUTH FOREBAY WEIR
107	99055.43	96308.63	7194.00	SOUTH FOREBAY TOP OF WALL
108	99028.45	96308.30	7194.04	SOUTH FOREBAY TOP OF WALL
109	99028.29	96321.38	7194.05	SOUTH FOREBAY TOP OF WALL
122	99028.85	96314.79	7193.05	SOUTH FOREBAY BOTTOM OF WALL
130	99055.34	96315.52	7193.97	SOUTH FOREBAY TOP OF WALL

FOREBAY EAST

Point Table				
Point #	Northing	Easting	Elevation	Descrition
136	99073.83	96414.86	7192.30	EAST FOREBAY TOP OF WALL
137	99084.53	96414.95	7192.30	EAST FOREBAY TOP OF WALL
138	99084.88	96397.94	7192.30	EAST FOREBAY TOP OF WALL
139	99074.05	96397.78	7192.30	FOREBAY TOP OF WALL
140	99073.94	96406.32	7191.30	EAST FOREBAY WEIR
141	99084.21	96406.44	7192.58	EAST FOREBAY BOTTOM OF WALL

NOTES:

1. CONCRETE TRICKLE CHANNEL IS SHOWN AS MONOLITHICALLY POURED. CONTRACTOR HAS OPTION TO KEY IN OR DOWEL CURB TO CHANNEL BOTTOM AS SHOWN IN CDOT STD M–609–1. CHANNEL THICKNESS TO INCREASE FROM 6" TO 8" IF DOWEL METHOD IS USED.
2. ALL FOREBAY AND TRICKLE CHANNEL CONCRETE SHALL BE CLASS B WITH A MINIMUM 2" COVER ON ALL REINFORCEMENT UNLESS OTHERWISE NOTED.
3. CONSTRUCTION METHODS ARE SITE SPECIFIC. CONTRACTOR TO ESTABLISH CONSTRUCTION METHODS WITH OWNER'S FIELD INSPECTOR PRIOR TO CONSTRUCTION.

Print Date: 05/18/2022
File Name: 175644_HYD_Pond Details.dwg
Horiz. Scale: N/A Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

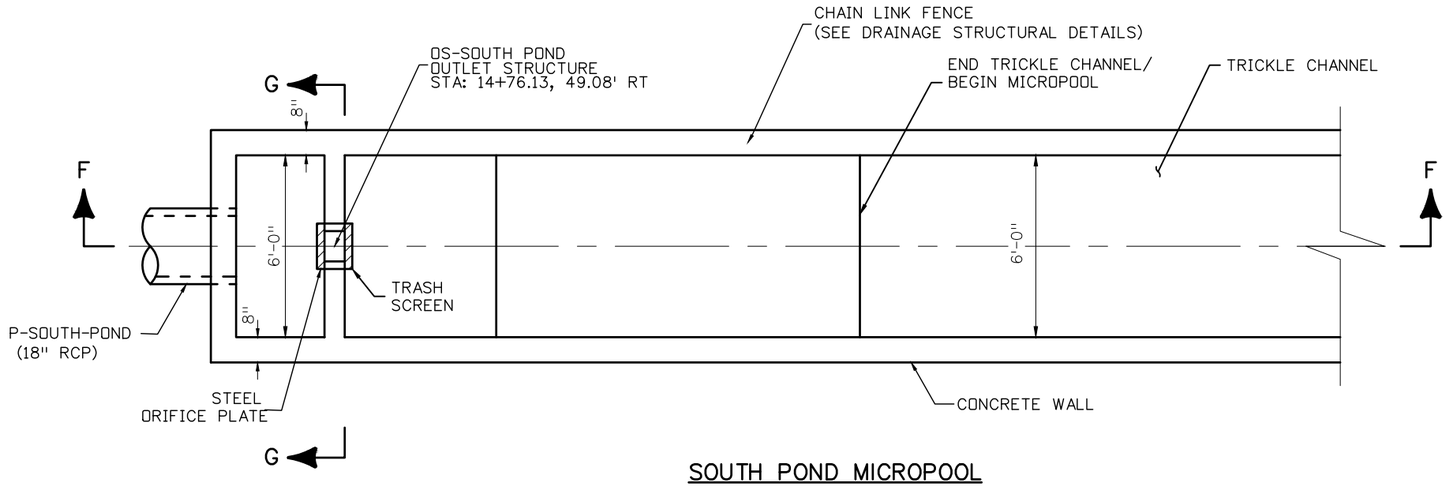
PPRTA

BEACON LITE ROAD IMPROVEMENTS
SOUTH POND FOREBAY DETAILS

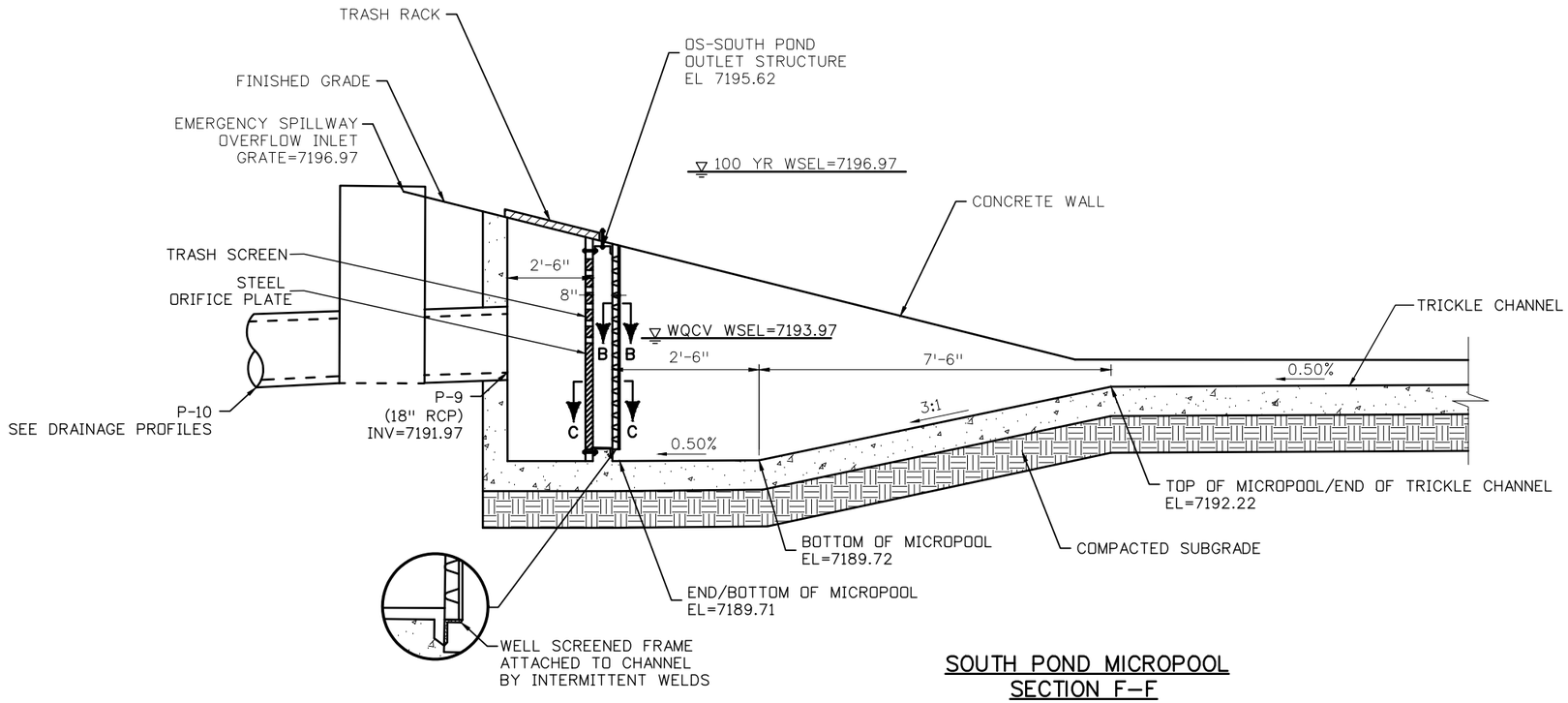
Designer: NED
Detailer: NED
Sheet Subset: POND DETAILS
Structure Numbers:
Subset Sheets: 10 OF 13

Project No./Code: 128558

Sheet Number 93



SOUTH POND MICROPOOL
PLAN VIEW
NOT TO SCALE



SOUTH POND MICROPOOL
SECTION F–F
NOT TO SCALE

NOTES:

1. SEE SOUTH POND OUTLET DETAILS FOR ADDITIONAL DETAILS AND SECTION G–G.
2. SEE DRAINAGE STRUCTURAL DETAILS FOR REINFORCEMENT AND DETAILING.
3. TRASH RACK ON OUTLET STRUCTURE TO BE HINGED FOR MAINTENANCE ACCESS. HINGE ACTION TO NOT CONFLICT WITH PEDESTRIAN RAILING. SEE OUTLET STRUCTURE DETAILS.
4. ALL ITEMS SHOWN ON MICROPOOL DETAIL SHALL BE INCLUDED IN THE COST OF THE OUTLET STRUCTURE.
5. FENCE CHAIN LINK (SPECIAL)(36 INCH) NOT SHOWN FOR CLARITY. SEE SHEET **90** FOR LIMITS REQUIRED.

Print Date: 05/18/2022
File Name: 175644_HYD_Pond Details.dwg
Horiz. Scale: N/A Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

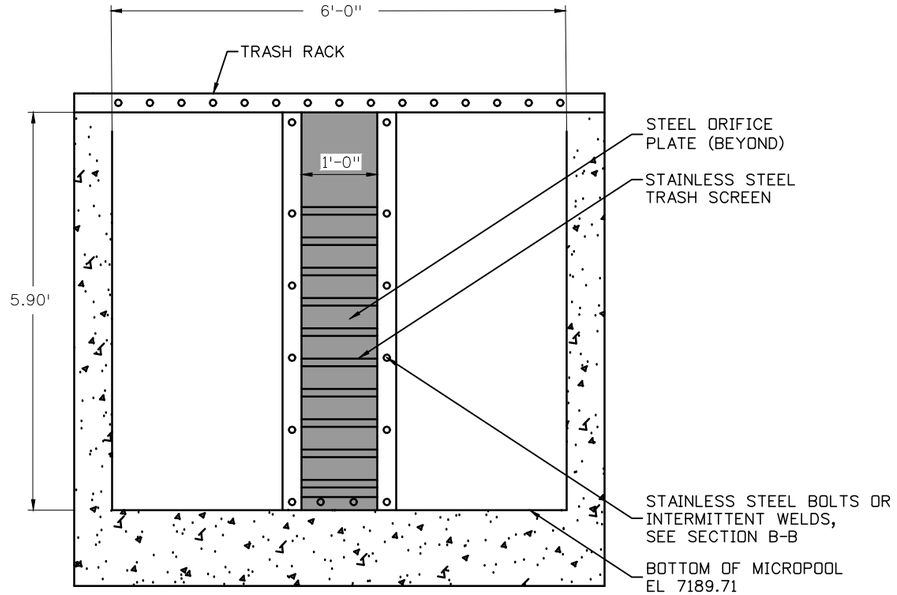
PPRTA

BEACON LITE ROAD IMPROVEMENTS
SOUTH POND
MICROPOOL DETAILS

Designer:	NED	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	POND DETAILS	Subset Sheets:	11 OF 13

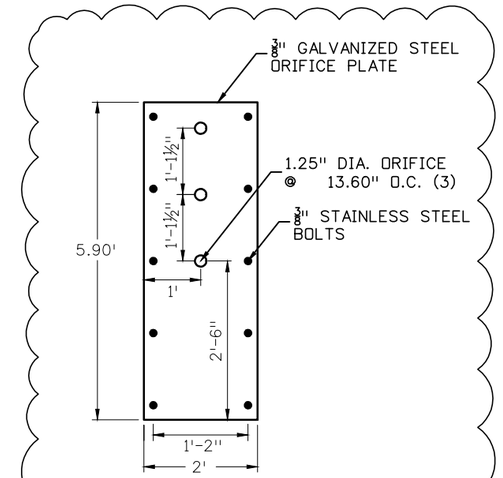
Project No./Code
128558

Sheet Number 94



SECTION G–G

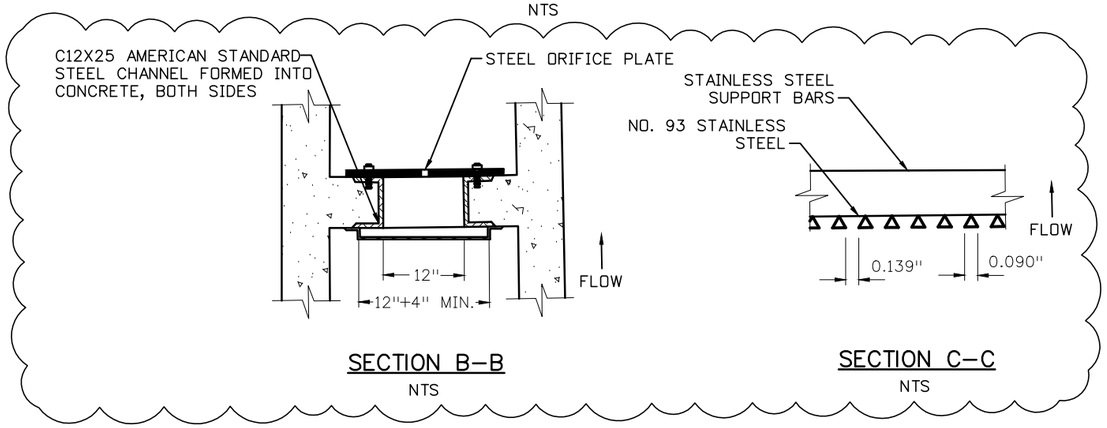
NTS



STEEL ORIFICE PLATE

NTS

R-1



SECTION B–B

NTS

SECTION C–C

NTS

R-1

ORIFICE PLATE NOTES:

1. BOLT PLATE TO CONCRETE 12" MAX. ON CENTER.

EURV AND WQCV TRASH RACKS;

1. WELL-SCREEN TRASH RACKS SHALL BE STAINLESS STEEL AND SHALL BE ATTACHED BY INTERMITTENT WELDS ALONG THE EDGE OF THE MOUNTING FRAME.
2. BAR GRATE TRASH RACKS SHALL BE ALUMINUM AND SHALL BE BOLTED USING STAINLESS STEEL HARDWARE.
3. STRUCTURAL DESIGN OF TRASH RACKS SHALL BE BASED ON FULL HYDROSTATIC HEAD WITH ZERO HEAD DOWNSTREAM OF THE RACK.

COLORADO LICENSED
MICHAEL E. BUTTERS
32595
4/11/25
PROFESSIONAL ENGINEER

Print Date: 04/11/2025
File Name: 175644_HYD_Pond Details.dwg
Horiz. Scale: N/A Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions

Date:	Comments	Init.
06/01/23	RFC	LTE
03/26/25	ADDED ORIFICE DIMS	MEB

EL PASO COUNTY
COLORADO

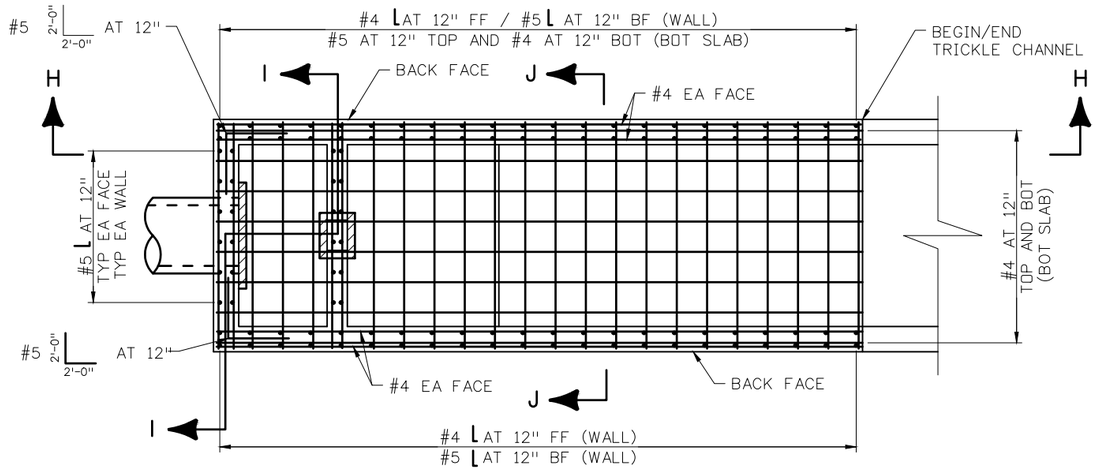
PPRTA

BEACON LITE ROAD IMPROVEMENTS
SOUTH POND
OUTLET DETAILS

Project No./Code: 128558

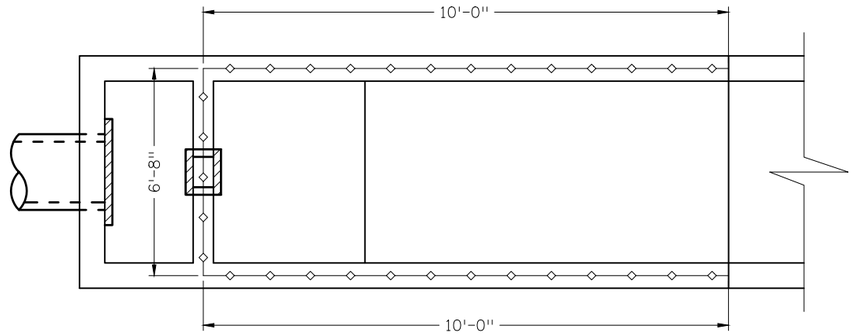
Designer: NED
Detailer: RBR
Sheet Subset: POND DETAILS
Structure Numbers:
Subset Sheets: 12 OF 13

Sheet Number 95



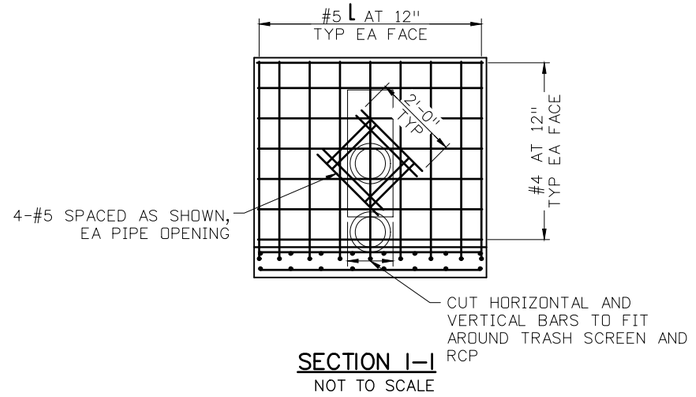
TYPICAL MICROPOOL PLAN

NOT TO SCALE



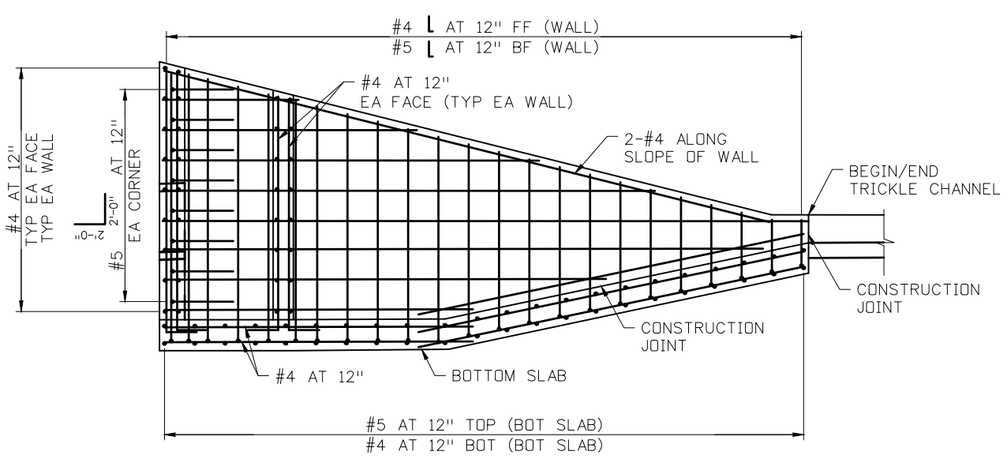
LIMITS OF FENCE CHAIN LINK (SPECIAL) (36 INCH)

NOT TO SCALE



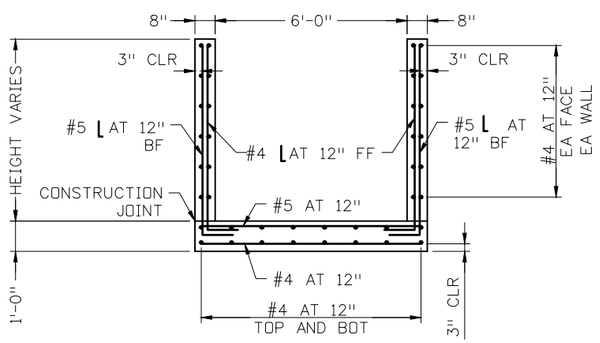
SECTION I–I

NOT TO SCALE



SECTION H–H

NOT TO SCALE



SECTION J–J

NOT TO SCALE

NOTES:

1. ALL MICROPOOL CONCRETE SHALL BE CONCRETE CLASS D, MINIMUM CONCRETE STRENGTH SHALL BE f'c = 4.5 ksi, AND SHALL MEET THE REQUIREMENTS OF SECTION 601 - STRUCTURAL CONCRETE IN THE CDOT STANDARD SPECIFICATIONS.
2. ALL REINFORCEMENT SHALL BE EPOXY COATED, GRADE 60, AND SHALL MEET THE REQUIREMENTS OF SECTION 602 - REINFORCING STEEL IN THE CDOT STANDARD SPECIFICATIONS.
3. MINIMUM REINFORCEMENT CLEARANCE IS 2.0 INCHES UNLESS SHOWN OTHERWISE.
4. SEE SHEET W4 FOR FENCE CHAIN LINK (SPECIAL)(36 INCH) DETAILS.
5. ALL WORK REQUIRED TO CONSTRUCT THE MICROPOOLS, INCLUDING ALL MATERIALS AND LABOR FOR THE CONCRETE, REINFORCEMENT AND FENCING, SHALL BE INCLUDED IN THE COST OF ITEM 604 - OUTLET STRUCTURE.
6. APPROXIMATE QUANTITIES PER MICROPOOL (FOR INFORMATION ONLY):

   CONCRETE CLASS D = 8.6 cu yd
   REINFORCMENT STEEL (EPOXY COATED) = 772 lbs
   FENCE CHAIN LINK (SPECIAL)(36 INCH) = 26.7 ft

Print Date: 04/29/2022	Sheet Revisions		
File Name: 175644_HYD_Pond Details.dwg	Date:	Comments	Init.
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Unit Information Unit Leader Initials			
Michael Baker INTERNATIONAL — MICHAEL BAKER INTERNATIONAL, INC. 165 S. UNION BLVD., STE. 1000 LAKEWOOD, CO 80228 720.514.1100			

EL PASO COUNTY COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
MICROPOOL STRUCTURAL DETAILS

Designer:	LAP	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	POND DETAILS	Subset Sheets:	13 OF 13

Project No./Code: 128558

Sheet Number: 96

Know what's below. Call before you dig.

EL PASO COUNTY

STORMWATER MANAGEMENT PLANS
CIVIL ENGINEERING DESIGN
BEACON LITE ROAD IMPROVEMENTS
MONUMENT, COLORADO
MARCH 7, 2025

R-3

ENGINEERS STATEMENT:

THIS STORMWATER MANAGEMENT PLAN WAS PREPARED UNDER MY DIRECTION AND SUPERVISION AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. SAID PLAN HAS BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR STOMRWATER MANAGEMENT PLANS. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERROS OR OMISSIONS ON MY PART IN PREPARING THIS REPORT.

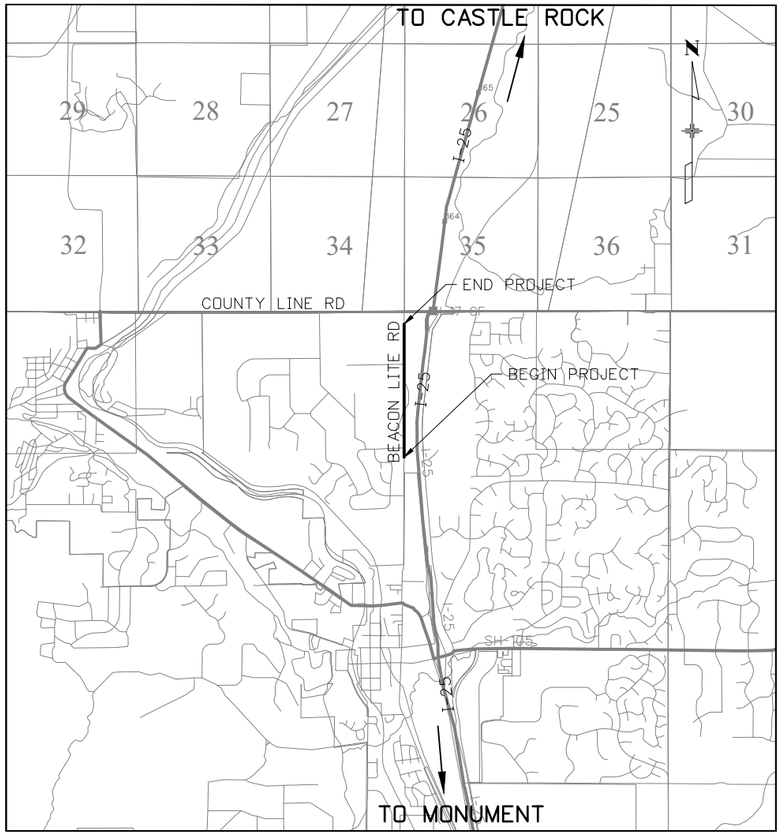
MICHAEL BUTTERS, PE _____ DATE _____

OWNERS STATEMENT:

THE OWNER WILL COMPLY WITH THE REQUIREMENTS OF THE STORMWATER MANAGEMENT PLANS.

NAME _____ DATE _____

COLORADO LICENSED
MICHAEL E. BUTTERS
32595
3/7/25
PROFESSIONAL ENGINEER



PROJECT LOCATION MAP

0' 2,500' 5,000' 10,000'

Title Sheet 1 Inch = 5000' Feet
Projected Lineal Units = U.S. Survey Feet

SHEET NO. INDEX OF SHEETS

1	STORMWATER MANAGEMENT PLANS - TITLE SHEET
2-10	STORMWATER MANAGEMENT PLANS - NOTES
11-18	STORMWATER MANAGEMENT PLANS - MAPS (BEACON LITE RD)

R-3

QUALIFIED STORMWATER MANAGER

NAME: BLAKE RILEY
COMPANY: MICHAEL BAKER INTERNATIONAL
ADDRESS: 165 S. UNION BLVD, LAKEWOOD, CO 80228

CONTRACTOR

NAME: _____
COMPANY: _____
ADDRESS: _____

Print Date: 03/07/2025
File Name: 175644_SWMP_TITLE.dwg
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Sheet Revisions

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R-2	08/31/23	TITLE DATE	LTE
R-3	09/09/24	GEOMETRY CHANGE	MEB
R-4	03/07/25	PROJ. LIMITS CHANGE	PDM

EL PASO COUNTY COLORADO

PPRTA PIKES PEAK RURAL TRANSPORTATION AUTHORITY

BEACON LITE ROAD IMPROVEMENTS
STORMWATER MANAGEMENT PLANS
TITLE SHEET

Designer: RBR
Detailer: RBR
Sheet Subset: SWMP TITLE
Structure Numbers
Subset Sheets: 1 OF 1

Project No./Code
128558

Sheet Number 97

1. SITE DESCRIPTION

The Contractor shall comply with all CDOT contractual requirements and all requirements associated with the CDPS-SCP on this project. The SWMP Administrator for Construction shall update to reflect current project site conditions.

A. PROJECT SITE LOCATION

Beacon Lite Rd from approximately 700 feet south of the intersection of Wakonda Way, to approximately 150 north of the intersection of Bricker Rd, and along Wakonda Way approximately 300 feet west of the intersection of Beacon Lite Rd. (R-2)

Location or address of construction office:
Omar Lopez, P.E.
El Paso County Dept. of Public Works
3275 Akers Dr.
Colorado Springs, CO 80922

B. PROJECT SITE DESCRIPTION:

The Project extends from Wakonda Way to Bricker Rd providing access to local residents. Significant traffic is using this route as a frontage road for Interstate 25. Beacon Lite Road is owned and maintained by El Paso County. The Project shall consist of design of safety enhancements and overall functionality. Anticipated enhancements along Beacon Lite Road include asphalt paving, horizontal and vertical improvements, intersection improvements, drainage improvements, and water quality, as applicable. The following improvements may be required on portions of the road; urban cross section, underground storm drain, and retaining walls. (R-2)

C. PROPOSED SEQUENCING FOR MAJOR CONSTRUCTION ACTIVITIES:

Construction of the project will come in phases, as laid out by the contractor. Sequencing for the construction of the project shall include the following steps; clearing and grubbing, retaining walls, culverts, roadway, grading and stabilization with seeding and planting native plants. All traffic phasing and planning before, during and after the completion of the project shall be coordinated with El Paso County, CDOT, and the City of Monument and managed by the contractor. Activities throughout the construction will be determined by the contractor and are subject to change.

D. ACRES OF DISTURBANCE:

1. Total area of construction site (LOC (PERMITTED AREA)): 14.98 acres
2. Total area of proposed disturbance (LDA): 14.48 acres
3. Total area of seeding: 10.73 acres
4. Total area of pre-project impervious surface: 24,306 sq. ft.
5. Total area of final impervious surface: 201,685 sq. ft.

(R-2)

E. EXISTING SOIL DATA:

According to the Soil Survey of El Paso County, Colorado the site consists of 4 soil types. The information was collected from the USDA (http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx). The soil types are:

1. Clayey Sand
2. Sand
3. Silty Clay
4. Silty Sand
5. Sandy Lean Clay

A preliminary soils report is available in Section 4.2 of the Geotechnical Design Report (September 2020).

F. EXISTING VEGETATION, INCLUDING PERCENT COVER:

During design the SWMP Administrator for Design in consultation with the Engineer will determine if the SWMP Administrator for Design or the SWMP Administrator for Construction will conduct the Vegetation Transects as outlined in Chapter 4.11.2 of the CDOT's Erosion Control and Stormwater Quality Guide.

Pre-Construction Date of survey: _____ % Density: _____
Description of existing vegetation:

Post-Construction Date of survey: _____ % Density: _____
Description of existing vegetation: **Date of CDPS-SCP Closure:** _____

G. POTENTIAL POLLUTANTS SOURCES: See First Construction Activities under Potential Pollutant Sources. The SWMP Administrator for Construction shall prepare a list of all potential pollutants and their locations in accordance with subsection 107.25 of the CDOT'S Standard Specifications for Road and Bridge Construction. See section 15 of the SWMP for a list of potential pollutants.

H. RECEIVING WATER:

1. Outfall locations: See drainage plans
2. Names of immediate receiving water(s) on site:
   Carpenter Creek (Offsite)
   Monument Creek (Offsite)
3. Ultimate receiving water(s):
   South Platte River
   Arkansas River
4. Horizontal distance to nearest ultimate receiving water from project:
   South Platte River (30 miles)
   Arkansas River (62 miles)
5. Description of all stream crossing located within the Construction Site Boundary:

Location	Stream Name	Description Of Any Disturbed Upland Areas
N/A		

I. ALLOWABLE NON-STORMWATER DISCHARGES:

Discharge Description	Site Map #	Method Statement (Location)
Dewatering*	N/A	
Uncontaminated Spring	N/A	
Concrete Wash Water (in-ground washout structure)	N/A	
Landscape Irrigation Return Flows	N/A	
Emergency Fire Fighting	N/A	

*Refer to CDPHE Low Risk Discharge Guidance Document of Uncontaminated Groundwater to Land. https://www.colorado.gov/pacific/sites/default/files/WQ%20LOW%20RISK%20GW.pdf

*If ground water does not meet water quality standards for receiving water a separate CDPS Dewatering Permit shall be obtained by the Contractor from CDPHE in accordance with subsections 107.02 and 107.25.

COLORADO LICENSED
MICHAEL E. BUTTERS
32595
3/7/25
PROFESSIONAL ENGINEER

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EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
STORMWATER MANAGEMENT PLANS
NOTES

Designer: RBR
Detailer: RBR
Sheet Subset: SWMP NOTES
Structure Numbers
Subset Sheets: 1 OF 9

Project No./Code
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Sheet Number 98

2. SITE MAP COMPONENTS:

Pre-Construction

A. PROJECT CONSTRUCTION POTENTIAL SITE BOUNDARIES See Stormwater Management Plans

B. ALL AREAS OF GROUND SURFACE DISTURBANCE See Stormwater Management Plans

C. AREAS OF CUT AND FILL See Stormwater Management Plans

D. LOCATION OF ALL STRUCTURAL CONTROL MEASURES IDENTIFIED IN THE SWMP
See Stormwater Management Plans

E. LOCATION OF NON-STRUCTURAL CONTROL MEASURES AS APPLICABLE IN THE SWMP
See Stormwater Management Plans

F. STREAMS, SPRINGS, WETLANDS AND OTHER STATE WATERS, INCLUDING AREAS THAT REQUIRE PRE- EXISTING VEGETATION BE MAINTAINED WITHIN 50 FEET OF A RECEIVING WATER
See Stormwater Management Plans

G. PROTECTION OF TREES, SHRUBS AND CULTURAL RESOURCES See Stormwater Management Plans

H. FLOW ARROWS THAT DEPICT STORMWATER FLOW DIRECTIONS ON-SITE AND RUNOFF DIRECTION
See Stormwater Management Plans

I. AREAS USED FOR STORING AND STOCKPILING OF MATERIALS, STAGING AREAS (field trailer, fueling, etc.) WASTE ACCUMULATION and BATCH PLANTS INCLUDING MASONRY MIXING STATIONS
See Stormwater Management Plans

J. LOCATIONS OF ALL STREAM CROSSING LOCATED WITHIN THE CONSTRUCTION SITE BOUNDARY
See Stormwater Management Plans

3. QUALIFIED STORMWATER MANAGERS:

A. SWMP ADMINISTRATOR FOR DESIGN: CDOT Certified Individual responsible for developing SWMP Plan Sheets and SWMP Site Maps during the design phase.

Name/Title	Contact Information		Certification #
Blake Riley	(720) 479-3182	blake.riley@mbakerintl.com	25EC8792

B. SWMP ADMINISTRATOR FOR CONSTRUCTION: (As defined in Subsection 208) The Contractor shall designate a SWMP Administrator for Construction upon accepting co-permittee of the permit. The SWMP Administrator for Construction shall become the operator for the SWMP and assume responsibility for all design changes to the SWMP implementation and maintenance in accordance to 208.03, the SWMP shall remain the property of CDOT. The SWMP Administrator for Construction shall be responsible for implementing, maintaining and revising SWMP, including the title and contact information. The activities and responsibilities of the SWMP Administrator for Construction shall address all aspects of the project's SWMP. (Update the information below for each new SWMP Administrator for Construction) (Copy of TECS Certification must also be included in the SWMP.)

Name/Title	Contact Information (phone & email)	Certification #	Start Date	Engineer Approval
TBD	TBD	TBD	TBD	TBD

C. EROSION CONTROL INSPECTOR: (As defined in Subsection 208) The Contractor may designate an Erosion Control Inspector. The Erosion Control Inspector shall complete duties in accordance with subsection 208.03 (c) (Copy of TECS Certification must also be included in the SWMP.)

Name/Title	Contact Information (phone & email)	Certification #	Start Date	Engineer Approval
TBD	TBD	TBD	TBD	TBD

D. PERMANENT STABILIZATION SUBJECT MATTER EXPERT: This qualified individual will be either a Regional Environmental Staff member, or an Independent Contractor Controller (Independent Assurance Program). This expert is a project team leader responsible for ensuring project adherence to requirements of the 207 and 212 Project Special Provisions as follows, and will be available for questions regarding permanent stabilization requirements.

1. Review the Topsoil Management Plan and the Permanent Stabilization Site Maps.
2. Attend the Environmental Pre-construction Conference.
3. Coordinate the Site Pre-vegetation Conference.
4. Review and recommend approval of products.
5. Review and recommend approval of the Quantities Verification Prerequisite.
6. Attend the Substantial Landscape Completion Walkthrough.
7. Attend the Final Landscape Completion Walkthrough.

Name/Title	Contact Information
TBD	TBD

4. STORMWATER MANAGEMENT CONTROLS FOR FIRST CONSTRUCTION ACTIVITIES

THE CONTRACTOR SHALL PERFORM THE FOLLOWING:

A. POTENTIAL POLLUTANT SOURCES
Evaluate, identify, locate and describe all potential sources of pollutants at the site in accordance with subsection 107.25, CDPS-SCP and place in the SWMP. All control measures related to potential pollutants shall be shown on the SWMP Site Map by the Contractor's SWMP Administrator for Construction.

B. OFFSITE DRAINAGE (RUN ON WATER)
1. Describe and record control measures on the SWMP Site Map that have been implemented to address off site run-on water in accordance with subsection 208.03.

C. VEHICLE TRACKING CONTROL
1. Control measures shall be implemented in accordance with subsection 208.04.

D. PERIMETER CONTROL
1. Perimeter control shall be established as the first item on the SWMP to prevent the potential for pollutants leaving the construction site boundaries, entering the stormwater drainage system, or discharging to state waters. Perimeter control shall be in accordance with subsection 208.04
2. Perimeter control may consist of berms, silt fence, erosion logs, existing landforms, or other control measures as approved.

COLORADO LICENSED LUCY T. EAST 51734 6/1/2023 PROFESSIONAL ENGINEER

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Sheet Revisions

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EL PASO COUNTY COLORADO

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BEACON LITE ROAD IMPROVEMENTS
STORMWATER MANAGEMENT PLANS
NOTES

Designer: RBR
Detailer: RBR
Sheet Subset: SWMP NOTES
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Sheet Number 99

5. DURING CONSTRUCTION

RESPONSIBILITIES OF THE SWMP Administrator for Construction

The SWMP should be considered a "living document" that is continuously reviewed and modified throughout the construction phasing. During construction, the following items shall be added, updated, or amended as needed by the SWMP Administrator for Construction in accordance with subsection 208.03.

During construction, indicate how items that have not been addressed during design are being handled in construction. If items are covered in the template or other sections of the SWMP, indicate below what section the discussion takes place.

A. MATERIALS HANDLING AND SPILL PREVENTION: prior to construction commencing the Contractor shall submit a Spill Prevention, Control and Countermeasure Plan, see subsection 208.06. Materials handling shall be in accordance with subsection 208.06.

B. STOCKPILE MANAGEMENT: Shall be done in accordance with subsections 107.25 and 208.07

C. CONCRETE WASHOUT: Concrete wash out water or waste from field laboratories and paving equipment shall be contained in accordance with subsection 208.05.

D. SAW CUTTING: Shall be done in accordance with subsections 107.25, 208.04, 208.05

E. STREET SWEEPING: Shall be done in accordance with subsection 208.04

6. INSPECTIONS

A. Water Quality Inspections shall be in accordance with subsection 208.03(c).
B. Permanent Stabilization Inspections shall be in accordance with subsections 207.03 and 212.05.

7. CONTROL MEASURE MAINTENANCE

A. Maintenance shall be in accordance with subsection 208.04(f).

8. RECORD KEEPING

A. Records shall be kept in accordance with subsection 208.03(d).

9. INTERIM, PERMANENT STABILIZATION and LONG TERM STORMWATER MANAGEMENT

The Contractor shall comply with all interim stabilization and permanent stabilization requirements in accordance with subsection 208.04(e).

A. SEEDING PLAN:

The following seed mixes as shown on the Permanent Stabilization Site Maps and rates shall be used:

COMMON NAME	BOTANICAL NAME	LBS. PLS PER ACRE
Ephriam crested wheatgrass	Agropyron cristatum	1.5
Oahe Intermediate wheatgrass	Agropyron intermedium	5.5
Vaughn sideoats gamma	Bouteloua curtipendula	2.0
Lincoln smooth brome	Bromus inermis leyss	3.0
Arriba western wheatgrass	Agropyron smithii	5.5
TOTAL		17.5

B. SEEDING APPLICATION: The following seeding methods shall be used for all areas which are not surfaced and as shown on the Permanent Stabilization Site Maps. Soil compaction shall be minimized for areas where permanent stabilization will be achieved through vegetative cover.

R-2

SEEDING METHOD (subsection 212.05)	ACRE
Seeding (Native) Drill, CDOT Pay Item 212-00706	10.73
TOTAL	10.73

The Contractor shall provide the location of where seed is stored and access to stored seed locations to the Engineer. Seed stored by the Contractor for longer than 30 days will be rejected.

C. MULCHING APPLICATION: Apply a minimum of 2 tons of certified weed free hay or 2 1/2 tons of certified
weed free straw per acre and in accordance with Section 213, and mechanically crimp it into the soil in combination with an organic mulch tackifier.

1. Prior to winter shutdown or the summer seeding window closure: Uncompleted slopes shall be mulched with 2 tons of mulching (weed free) per acre, mechanically crimped into the topsoil in combination with an organic mulch tackifier in accordance with subsections 208 and 213.

NOTE: For mulch tackifier application rate:
Use 200 lb/ac for powder portion
Use 300 lb/ac for wood fiber portion
Use 2000 gal/ac for water portion
ONLY THE POWDER PORTION (200 lb/ac) IS USED FOR PAYMENT – LBS.

D. SPECIAL REQUIREMENTS:

1. The Contractor shall increase the Seeding Plan rates (LBS. PLS / Acre) as shown by 1.5 times for hydraulic and broadcast methods at no additional cost to the Department.
2. Soil amendments, seedbed preparation, and permanent stabilization mulching shall be accomplished within four working days of placing the topsoil on the de-compacted civil subgrades. If placed topsoil is not mulched with permanent stabilization mulch within four working days, the Contractor shall complete interim stabilization methods in accordance with subsection 208.04(e) at no additional cost to the Department.
3. Permanent stabilization mulching shall be accomplished within 24 hours of hydraulic application of native seed.
4. The Contractor shall submit a proposed Permanent Stabilization Phasing Plan to the Engineer for approval showing how the SWMP Permanent Stabilization Plans will be implemented to minimize damage to seeded areas.

COLORADO LICENSED
MICHAEL E. BUTTERS
32595
3/7/25
PROFESSIONAL ENGINEER

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EL PASO COUNTY
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BEACON LITE ROAD IMPROVEMENTS
STORMWATER MANAGEMENT PLANS
NOTES

Designer: RBR
Detailer: RBR
Sheet Subset: SWMP NOTES
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Project No./Code
128558

Sheet Number 100

E. SOIL AMENDMENT REQUIREMENTS: Minimum amendment material requirements for all disturbances to receive seeding (native).

Total Acres of Seeding (Native) Drill

Seeding (Native)Drill Pay Item 212-00706	Pay Item	Description	Amount/Acre	Units	Total For This Method
	212-00700	Organic Fertilizer	300	Pounds	3,219
	212-00701	Compost (Mechanically Applied)	65	CY	698
	212-00703	Humate	200	Pounds	2,146

R-2

F. SOIL RETENTION COVERING: On slopes and ditches requiring a blanket or turf reinforcement mat (trm), the blanket/trm shall be placed in lieu of mulch and mulch tackifier and placed after seeding (native). See SWMP Site Map for blanket/trm locations, if applicable.

G. Permanent Stabilization Application Under Structures: Under structures shade patterns should be considered and the use of Median Cover Material (Stone) or other stabilized options with an approved Project Special Provision should be used. See SWMP Site Map for locations.

H. RESEEDING OPERATIONS/CORRECTIVE STABILIZATION:
Prior to partial acceptance.

1. All seeded areas shall be reviewed during the 7 day inspections by the SWMP Administrator for Construction and or Erosion Control Inspector for bare soils caused by surface or wind erosion. Bare areas caused by surface or gully erosion, blown away mulch, etc. shall be re-graded, seeded, and have the designated mulching applied as necessary, at no additional cost to the project.
2. The Contractor shall maintain seeding/mulch/tackifier/blanket/TRM, mow to control weeds or apply herbicide to control weeds in the seeded areas until Partial Acceptance of the stormwater construction work.

10. PRIOR TO PROJECT FINAL ACCEPTANCE

A. Partial Acceptance shall be in accordance with subsections 107.25 (d), 208.10 and 214.04. At the Partial Acceptance of the project, it shall be determined by the SWMP Administrator for Construction and the Engineer which temporary control measures shall remain until 70% revegetation is established or which shall be removed. When directed by the Engineer, removal and disposal of temporary control measures shall be included in the cost of work.
B. At the end of the project, all temporary ditch checks shall be removed once vegetation is achieved. Permanent riprap to remain.
C. All storm drains shall be cleaned prior to the Final Acceptance of the project. Work shall be included in 202 Clean Culvert.

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MICHAEL E. BUTTERS
32595
3/7/25
PROFESSIONAL ENGINEER

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EL PASO COUNTY
COLORADO

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STORMWATER MANAGEMENT PLANS
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Sheet Number 101

11. NARRATIVES

Control Measure Matrixes During Construction:

1. Control measure narratives have been included along with standard CM narratives. If a Non-Standard Control Measure not included in the SWMP is proposed and approved by the Engineer the SWMP Administrator for Construction shall do the following: Place an "X" in the column for non-standard and complete a Non-Standard Control Measure Specification and Narrative covering the what, when, where and why the control measure is being used shall be add to the SWMP. The appropriate "X" shall also be added to the implementation phase(s).
2. The SWMP Administrator for Construction shall place an "X" in the column In Use On Site when the control measure has been installed.
3. A "B" in the Initial Activities Column indicates that the control measure shall be installed **before** construction activity starts. Locations and quantities will be discussed during the Environmental Pre-Construction Conference with the Regional Water Pollution Control Manager.

STRUCTURAL Control Measures that may be potentially used on the project for erosion and sediment control; practices may include, but are not limited to:

APPLICATION, CONTROL MEASURE	NARRATIVE	M- 208 STANDARD or "X" for NON-STANDARD	IN USE ON SITE	CONTROL MEASURE IMPLEMENTATION PHASE		
				INITIAL ACTIVITIES	INTERIM ACTIVITIES	PERMANENT STABILIZATION
PROTECTION OF EXISTING WETLANDS *Fence (plastic) and erosion logs*	Fence (plastic) shall be placed in combination with erosion logs to prevent encroachment of construction traffic and sediment into state waters prior to start of construction disturbances. Fence (plastic) shall be placed adjacent to the wetlands; erosion logs shall be placed between the plastic fence and disturbance area. Logs shall be placed to direct flows away from or filter water running into wetlands from disturbance areas.					
PROTECTION OF EXISTING TREES/LANDSCAPING *Fence (plastic)*	Fence (plastic) shall be used in areas indicated in the plans to prevent encroachment of construction traffic and sediment for the protection of mature trees and/or existing landscaping prior to start of construction disturbances.			X		
CHECK DAM/DITCH CHECK *Erosion log, silt berm, silt dike, rock check dam*	Placed in ditches immediately upon completion of ditch grading to reduce velocity of runoff in ditch. For existing ditches, place prior to start of construction disturbances.	M-208			X	
Storm Drain Inlet Protection In Paved Roadways (Type 1, 2 and 3 as shown on M-208-1, sheet 5 of 11)	Manufactured storm drain inlet protection placed prior to construction disturbances as detailed in M-208-1, to protect existing inlets or immediately upon completion of new inlets to prevent sediment from entering the inlet throughout construction.	M-208			X	
Storm Drain Inlet Protection In Native Seed Areas (M-604 Standard Inlets Type C and D)	Erosion logs or aggregate bags placed around inlet grate to prevent sediment from entering inlet. Place prior to construction disturbances to protect existing inlets or immediately upon completion of new inlets.	M-208		X	X	
CULVERT INLET/OUTLET PROTECTION *Erosion logs, aggregate bags*	Placed at mouth of culvert inlets and over top of culvert at inlet and outlet where disturbance may be occurring adjacent to pipe to prevent sediment laden water from entering pipe or drainage. Place prior to start of construction disturbances.	M-208		X	X	
TYPE C, TYPE D AND TYPE 13 PROTECTION *Erosion logs, aggregate bags, erosion bales*	Placed around inlet grate or slope and ditch paving to prevent sediment from entering inlet. Place prior to start of construction disturbances.	M-208		X	X	
STOCKPILE PROTECTION *Temporary berm, erosion logs, aggregate bags**	Placed within specified distance, in accordance with subsection 208.06, from toe to contain sediment around stockpile. *Aggregate bags are easily moved and replaced for access during the work day. Place prior to start of stockpile, increase control as stockpile increases size.	M-208			X	
TOE OF FILL PROTECTION *Erosion logs, temporary berm, silt fence, topsoil windrow**	Place prior to slope/embankment work to capture sediment and protect and delineate undisturbed areas. *Can be used to stockpile topsoil for salvage.	M-208			X	
PERIMETER CONTROL *Erosion logs, silt fence, temporary berm, topsoil windrow**	Placed prior to construction commencing to address potential run-on water from off site, and to divert around disturbed area. *Can be used to stockpile topsoil for salvage.	M-208		X	X	
SEDIMENT CONTROL/SLOPE CONTROL *Silt fence, erosion logs*	Placed on the contour of a slope to contain and slow down construction runoff. Place prior to start of construction disturbances.	M-208		X	X	
TEMPORARY SEDIMENT TRAP	Used to capture sediment laden runoff from disturbed areas < 5 acres during construction. Place prior to start of construction disturbances. Outlets that withdraw water from or near the surface may be installed when discharging from basins and impoundments.	M-208		X	X	
EMBANKMENT PROTECTION OR TEMPORARY SLOPE DRAIN	Placed as a conduit or chute to drain runoff down slope and to prevent erosion of slope.	M-208				
OUTLET PROTECTION Riprap, or approved other	Material placed as energy dissipater to prevent erosion at outlet structure.	M-601-12				X
CONCRETE WASHOUT *In-ground or fabricated*	Construction control, used for waste management of concrete and concrete equipment cleaning. Place prior to start of concrete activities.	M-208		X	X	
VEHICLE TRACKING PAD	Source control, placed to prevent tracking of sediment from disturbed area to offsite surface. Place prior to start of construction disturbances.	M-208		X	X	
Engineered SEDIMENT BASIN	Constructed early in project, prior to storm sewer/ditches and in accordance with 208.05(p) to capture storm flow. Outlet structure and/or outfall shall be modified for temporary sediment control using an approved non-standard detail. Outlets that withdraw water from or near the surface shall be installed when discharging from basins and impoundments, unless infeasible					
DEWATERING *(Contractor is responsible for obtaining a permit from Colorado Department of Health and Environment.)*	Shall be done in such a manner to prevent potential pollutants from entering state waters.					
TEMPORARY STREAM CROSSING	Constructed over stream or drainage to prevent discharge of pollutants from construction equipment into water.					
CLEAN WATER DIVERSION	Placed to divert clean surface or ground water around disturbance area to prevent it from mixing with construction runoff.					

R-2

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R-1	12/06/24	GEOMETRY CHANGE	MEB
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EL PASO COUNTY
COLORADO

PPRTA PIKES PEAK RURAL TRANSPORTATION AUTHORITY

BEACON LITE ROAD IMPROVEMENTS
STORMWATER MANAGEMENT PLANS
NOTES

Designer: RBR
Detailer: RBR
Sheet Subset: SWMP NOTES
Structure Numbers
Subset Sheets: 5 OF 9

Project No./Code
128558

Sheet Number 102

NON-STRUCTURAL Control Measures that may be potentially used on the project for erosion and sediment control; practices may include, but are not limited to:
Erosion control devices are used to limit the amount of soil loss on site. Sediment control devices are designed to capture sediment on the project site. Construction controls are control measures related to construction access and staging. Control Measure locations are indicated on the SWMP Site Map.

APPLICATION, CONTROL MEASURE	NARRATIVE	M-STANDARD or "For NON-STANDARD	IN USE ON SITE	CONTROL MEASURE IMPLEMENTATION PHASE		
				INITIAL ACTIVITY	INTERIM ACTIVITIES	PERMANENT STABILIZATION
** VEGETATIVE BUFFER STRIP Fence (plastic)*	Finishing component for filtering sediment-laden runoff from disturbance area. Area within CDOT ROW or temporary easement to be identified on SWMP prior to construction starting.					
GRADING APPLICATIONS (LANDFORM)	Existing or created landforms may be used as a control measure if they prevent sediment from entering or leaving the disturbance area. If a landform directs flow of water to a concentrated outfall point, the outfall point shall be protected to prevent erosion. Area to be identified on SWMP prior to construction starting.	M-208				
TOPSOIL MANAGEMENT STOCKPILE/SALVAGE Windrow or stockpile	Prior to any site disturbance work commencing, existing topsoil shall be scraped to a depth four inches or as specified, and placed in stockpiles or windrows. Upon completion of final grading, topsoil shall be evenly distributed over embankment to a depth of four inches or as specified.	M-208		X	X	
SURFACE ROUGHENING / GRADING TECHNIQUES	Temporary stabilization of disturbance and to minimize wind and erosion.				X	
SEEDING (TEMPORARY)	Temporary stabilization used for over wintering of disturbance or used to control erosion for areas scheduled for future construction.				X	
BONDED FIBER MATRIX or MULCHING (HYDRAULIC)	Not to be used in areas of concentrated flows, i.e. ditch lines. To be for either Interim or Permanent Stabilization placed as a surface cover for erosion control. May be used as surface cover when work is temporarily halted and as approved by the Engineer for stockpiles.					
Straw or Hay MULCH/MULCH TACKIFIER	Interim or Permanent Stabilization placed as a surface cover for erosion control and or seeding establishment. To be installed as Interim Stabilization as a surface cover when work is temporarily halted and as approved by the Engineer					X
SPRAY-ON MULCH BLANKET (Not to be used in areas of concentrated flows, i.e. ditch lines.)	Interim or Permanent Stabilization placed as a surface cover for erosion control and or seeding establishment. To be installed as temporary surface cover when work is temporarily halted and as approved by the Engineer					X
SEEDING PERMANENT (NATIVE)	Permanent Stabilization of disturbance and to reduce runoff and control erosion on disturbed areas.					X
SOIL RETENTION BLANKET (SRB)	Permanent Stabilization of disturbance and to reduce runoff and control erosion on disturbed areas.	M-216			X	X
TURF REINFORCEMENT MAT (TRM)	Permanent Stabilization of disturbance and to reduce runoff and control erosion on disturbed areas. Placed in channels or on slopes for erosion control, channel liner and seeding establishment.	M-216				
Sweeping	Source control, used to remove sediment tracked onto paved surfaces and to prevent sediment from entering drainage system. Sweep daily and at the end of the construction shift as needed. Kick brooms shall not be permitted.			X	X	X
OTHER						

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BEACON LITE ROAD IMPROVEMENTS
STORMWATER MANAGEMENT PLANS
NOTES

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Subset Sheets: 6 OF 9

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Sheet Number 103

12. TABULATION OF STORMWATER QUANTITIES

A. Control Measure sediment removal and disposal shall be paid for as: 208 Removal and Disposal of Sediment (Equipment) and 208 Removal and Disposal of Sediment (Labor). All other control measure maintenance shall be included in the cost of the control measure.

PSP Spec.	Pay Item	Description	Pay Unit	Initial Const.	Interim Const.	Permanent Stabilization	*Total Quantity	
	203-01500	Blading	Hour		20		20	
	203-01550	Dozing	Hour		20		20	
	203-01594	Combination Loader	Hour		20		20	
	203-02330	Laborer	Hour		40		40	
	207-00205	Topsoil	CY			5,713	5,713	
	207-00210	Stockpile Topsoil	CY		5,713		5,713	
	208-00002	Erosion Log Type 1 (12 inch)	LF	680	2,810		3,490	
	208-00020	Silt Fence	LF	10,004	10,004		10,004	R-2
	208-00035	Aggregate Bag	LF		91		91	
	208-00045	Concrete Washout Structure	Each		1		1	
	208-00070	Vehicle Tracking Pad	Each		3		3	
	208-00106	Sweeping (Sediment Removal)	Hour		20		20	
	208-00207	Erosion Control Management (ECM)	Day	10	60	20	90	
	212-00006	Seeding (Native)	Acre			10.73	10.73	
	212-00032	Soil Conditioning	Acre			10.73	10.73	
	212-00700	Organic Fertilizer	LB			3,219	3,219	
	212-00701	Compost (Mechanically Applied)	CY			698	698	
	212-00703	Humate	LB			2,146	2,146	
	213-00004	Mulching (Weed Free Straw)	Acre			10.73	10.73	
	213-00061	Mulch Tackifier	LB			2,146	2,146	R-2
	216-00039	Soil Retention Blanket (Straw)	SY			1,860	1,860	
	217-00020	Herbicide Treatment	Hour		20		20	
X	700-70380	F/A Erosion Control	FA		1		1	
X	700-70381	F/A Post-Construction Erosion Control	FA		1		1	

*It is anticipated that additional control measures and control measure quantities not shown on the SWMP Site Maps shall be required on the project for unforeseen conditions and replacement of items that are beyond their useful service life, see subsections 208.03 and 208.04. **Quantities for all control measures shown above are estimated, and have been increased for unforeseen conditions and normal control measure life expectancy.** Quantities shall be adjusted according to the conditions encountered in the field as directed and approved by the Engineer. Payment shall be for the actual work completed and material used.

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EL PASO COUNTY
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BEACON LITE ROAD IMPROVEMENTS
STORMWATER MANAGEMENT PLANS
NOTES

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Structure Numbers
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128558

Sheet Number 104

13. BIOLOGIC IMPACTS and DEWATERING

A. ENVIRONMENTAL IMPACTS:

1. Wetland Impacts: NO
2. Stream Impacts: NO
3. Threatened and Endangered Species: NO

B. DEWATERING (Not Covered Under the CDPHE Low Risk Discharge Guidance Document of Uncontaminated Groundwater to Land):

1. Dewatering: Refer to other environmental permits in accordance with subsection 107.02 and the permits contained in Tab 16 of the SWMP.

14. NOTES

1. No dedicated asphalt/concrete batch plant will be utilized onsite.
2. No springs, streams, wetlands, or any other surface waters are within 50 of the site.
3. This project does not rely on any control measures owned or operated by another entity.

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STORMWATER MANAGEMENT PLANS
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Sheet Number 105

15. POTENTIAL POLLUTANT SOURCES

Potential Pollutant	Project Potential	Associated Activities	Control Measures
1. All disturbed and stored soils	Yes	Land development activities, Stockpile management, Final Stabilization	Perimeter BMP's, silt fence, erosion control logs, inlet protections, training all workers and street sweeping. NOTE: BMP's must be implemented downgradient of disturbed and stored soils prior to disturbance.
2. Vehicle tracking of sediments	Yes	Point of Ingress and Egress	Practices must be implemented for all areas of potential vehicle tracking, and can include minimizing site access, street sweeping or scraping, tracking pads, graveled parking areas, requiring that vehicles stay on paved areas on site, wash racks, and contractor education. Tracking measures will be maintained and monitored regularly for effectiveness. Street sweeping as needed.
3. Management of contaminated soils	Low	No known contaminated soils exist on this site	If contaminated soils are encountered, work relating to the contamination must stop and the SWMP Administrator will be notified. Soils should be properly stored in a 55-gallon drum and disposed of. Refer to the spill prevention and response plan. CMS should also be notified to determine if activities can continue or if further analysis is required.
4. Loading and unloading operations	Yes	Delivery of materials	It is recommended that when material delivery of loading/unloading occurs that equipment tires do not come in contact with the soil or when the soil is dry utilize access point and do not track soil onto streets. Otherwise access through stabilized construction entrance, parking area or other control measure as conditions require. If access does occur while wet and mud is tracked onto the roadway, it must be cleaned up immediately.
5. Outdoor storage of erodible building materials, fertilizers, chemicals, etc.	Yes	Delivery of materials, staging	Storage area. Implement perimeter controls and good housekeeping. Also see Nos. 14-16 below.
6. Vehicle and equipment maintenance and fueling	Yes	Off-site fueling shall be conducted whenever it practical. Some equipment may be fueled onsite	Fueling operations shall be conducted by qualified personnel who are trained in fueling procedures, including the use of drip pans and proper spill cleanup and reporting procedures.
7. Significant dust or particulate generating processes	Yes	Soil moving activities	Moisture condition soil and/or cease soil disturbing operations during high winds. During land development, another option is to slow down scraper or construction traffic speeds to reduce dust generation.
8. Routine maintenance activities involving fertilizers, pesticides, detergents, fuels, solvents, oils, etc.	Yes	Vehicle use and storage, final stabilization	All activities will be conducted by personnel trained in good housekeeping, use of onsite BMP's, perimeter BMP's, and spill response and prevention.
9. Onsite waste management practices (waste piles, liquid wastes, dumpsters, etc.)	Yes	Land development and final stabilization	Trash shall be emptied prior to overflow and all liquid wastes will either be hauled off site and properly disposed of, or if materials are onsite, then while onsite they must be stored in a manner where a release of those waste to stormwater is not likely to occur.
10. Concrete truck /equipment washing, including washing of the concrete truck chute and associated fixtures and equipment. Mortar, or portable mortar mixers	Yes	Curb and Gutter, Inlet construction, Infrastructure improvements	Concrete washout area, secondary containment (i.e. earth berm) for mortar mixers.
11. Dedicated asphalt and concrete batch plants	No	Not anticipated for this project	Not applicable for this site at the time of the SWMP. If such activities are added, then the SWMP shall be amended.
12. Non-industrial waste sources such as worker trash and portable toilets. Sanitary waste	Yes	All activities	Dumpsters will be provided onsite. A licensed company will be contracted to empty the dumpsters as needed.
13. Other areas or procedures where potential spills can occur	No	None identified at this time	Not applicable for this site at the time of the SWMP. If such activities are added, the SWMP shall be amended.
14. Fertilizers, pesticides, herbicides, soil amendments, and related landscape materials	Yes	Final Stabilization	These materials will typically be in use onsite and stored offsite. If stored onsite, they will be either covered or have secondary containment provided. Trades will remove and properly dispose of all unused products and wastes offsite.
15. Glues, adhesives, caulks, and related products	Yes	Utility installation, final stabilization	These materials will typically be in use onsite and stored offsite. If stored onsite, they will be either covered or have secondary containment provided. Trades will remove and properly dispose of all unused products and wastes offsite.
16. Paints, stains, solvents, and related products	Yes	Utility/road installation, final stabilization	These materials will typically be in use onsite and stored offsite. If stored onsite, they will be either covered or have secondary containment provided. Trades will remove and properly dispose of all unused products and wastes offsite.
17. Petroleum products-fuels, oils, grease and form oil (other hydrocarbons)	Yes	During all construction activities onsite	These products must be stored with individual trade vehicles and use of these products are to be used by only those individuals who are trained in spill response and or are certified mechanics. Any waste or by products shall be hauled offsite and properly disposed of.
18. Stockpile management	Yes	During land development	Stockpiles must be behind adequate BMP's to prevent materials from migrating offsite and into the storm sewer system. For temporary stockpiles on the interior portion of a construction site, where other downgradient controls (including perimeter controls) are in place, stockpile perimeter controls may not be required.

For specific locations, see Site Map for most current data.

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BEACON LITE ROAD IMPROVEMENTS
STORMWATER MANAGEMENT PLANS
NOTES

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Project No./Code
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Sheet Number 106

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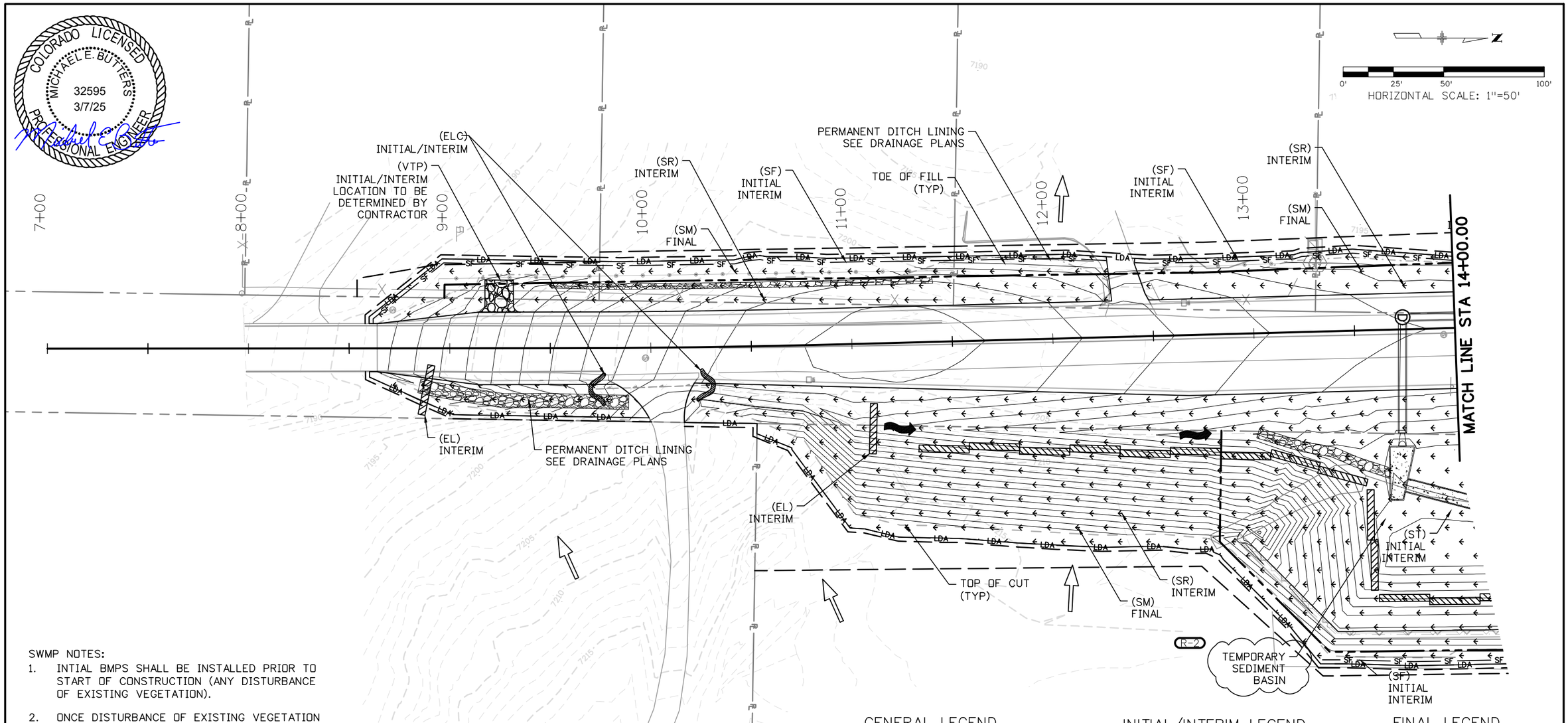

SWMP NOTES:

1. INTIAL BMPS SHALL BE INSTALLED PRIOR TO START OF CONSTRUCTION (ANY DISTURBANCE OF EXISTING VEGETATION).
2. ONCE DISTURBANCE OF EXISTING VEGETATION STARTS, THE SWMP ADMINISTRATOR FOR CONSTRUCTION SHALL OUTLINE THE AREA WITH THE AREA OF DISTURBANCE LINE AND INSTALL THE INTERIM BMPS.
3. INTERIM BMPS SHALL BE INSTALLED AFTER GRADING ACTIVITIES START.
4. INITIAL OR INTERIM BMPS MIGHT REMAIN BASED ON REVIEW WITH THE CDOT REGIONAL WATER POLLUTION CONTROL MANAGER AND THE ENGINEER.
5. BMPS ARE NOT DRAWN TO SCALE AND LOCATIONS ARE APPROXIMATE.

GENERAL LEGEND

- FLOW DIRECTION
- FLOW DIRECTION (CONCENTRATED)
- LIMITS OF CONSTRUCTION
- LDA — LIMITS OF DISTURBANCE
- ℄ — PROPERTY LINE
- EXISTING ROW
- PROPOSED ROW
- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- TOE OF FILL
- TOP OF CUT

INITIAL/INTERIM LEGEND

- SF — (SF) SILT FENCE
- (EL) EROSION LOG
- (ELC) EROSION LOG (CULVERT)
- (ELDI) EROSION LOG (DROP INLET)
- (AG) AGGREGATE BAG
- (CWA) CONCRETE WASHOUT AREA
- (VTP) VEHICLE TRACKING PAD
- (ST) SEDIMENT TRAP

FINAL LEGEND

- (RCD) ROCK CHECK DAM
- (SRB) SOIL RETENTION BLANKET
- (SM) SEEDING / MULCHING
- (SR) SURFACE ROUGHENING

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EL PASO COUNTY
COLORADO

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BEACON LITE ROAD IMPROVEMENTS
STORMWATER MANAGEMENT PLANS

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Sheet Number 107

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0' 25' 50' 100'
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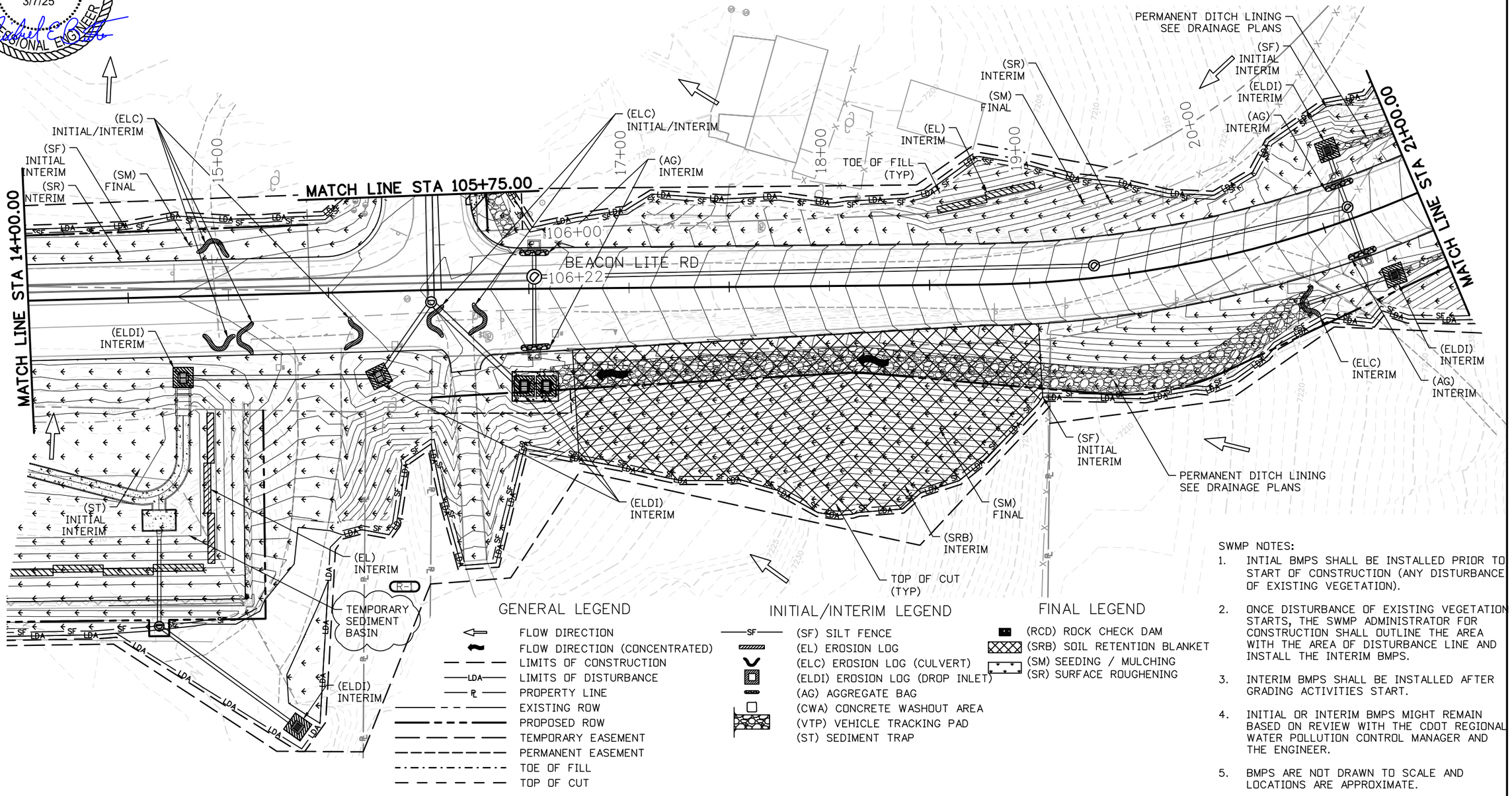

GENERAL LEGEND

- FLOW DIRECTION
- FLOW DIRECTION (CONCENTRATED)
- LIMITS OF CONSTRUCTION
- LIMITS OF DISTURBANCE
- PROPERTY LINE
- EXISTING ROW
- PROPOSED ROW
- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- TOE OF FILL
- TOP OF CUT

INITIAL/INTERIM LEGEND

- (SF) SILT FENCE
- (EL) EROSION LOG
- (ELC) EROSION LOG (CULVERT)
- (ELDI) EROSION LOG (DROP INLET)
- (AG) AGGREGATE BAG
- (CWA) CONCRETE WASHOUT AREA
- (VTP) VEHICLE TRACKING PAD
- (ST) SEDIMENT TRAP

FINAL LEGEND

- (RCD) ROCK CHECK DAM
- (SRB) SOIL RETENTION BLANKET
- (SM) SEEDING / MULCHING
- (SR) SURFACE ROUGHENING

SWMP NOTES:

1. INTIAL BMPS SHALL BE INSTALLED PRIOR TO START OF CONSTRUCTION (ANY DISTURBANCE OF EXISTING VEGETATION).
2. ONCE DISTURBANCE OF EXISTING VEGETATION STARTS, THE SWMP ADMINISTRATOR FOR CONSTRUCTION SHALL OUTLINE THE AREA WITH THE AREA OF DISTURBANCE LINE AND INSTALL THE INTERIM BMPS.
3. INTERIM BMPS SHALL BE INSTALLED AFTER GRADING ACTIVITIES START.
4. INITIAL OR INTERIM BMPS MIGHT REMAIN BASED ON REVIEW WITH THE CDOT REGIONAL WATER POLLUTION CONTROL MANAGER AND THE ENGINEER.
5. BMPS ARE NOT DRAWN TO SCALE AND LOCATIONS ARE APPROXIMATE.

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Structure Numbers:
Subset Sheets: 2 OF 8

Sheet Number 108

SWMP NOTES:

1. INTIAL BMPS SHALL BE INSTALLED PRIOR TO START OF CONSTRUCTION (ANY DISTURBANCE OF EXISTING VEGETATION).
2. ONCE DISTURBANCE OF EXISTING VEGETATION STARTS, THE SWMP ADMINISTRATOR FOR CONSTRUCTION SHALL OUTLINE THE AREA WITH THE AREA OF DISTURBANCE LINE AND INSTALL THE INTERIM BMPS.
3. INTERIM BMPS SHALL BE INSTALLED AFTER GRADING ACTIVITIES START.
4. INITIAL OR INTERIM BMPS MIGHT REMAIN BASED ON REVIEW WITH THE CDOT REGIONAL WATER POLLUTION CONTROL MANAGER AND THE ENGINEER.
5. BMPS ARE NOT DRAWN TO SCALE AND LOCATIONS ARE APPROXIMATE.

GENERAL LEGEND

- FLOW DIRECTION
- FLOW DIRECTION (CONCENTRATED)
- LIMITS OF CONSTRUCTION
- LDA — LIMITS OF DISTURBANCE
- PROPERTY LINE
- EXISTING ROW
- PROPOSED ROW
- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- TOE OF FILL
- TOP OF CUT

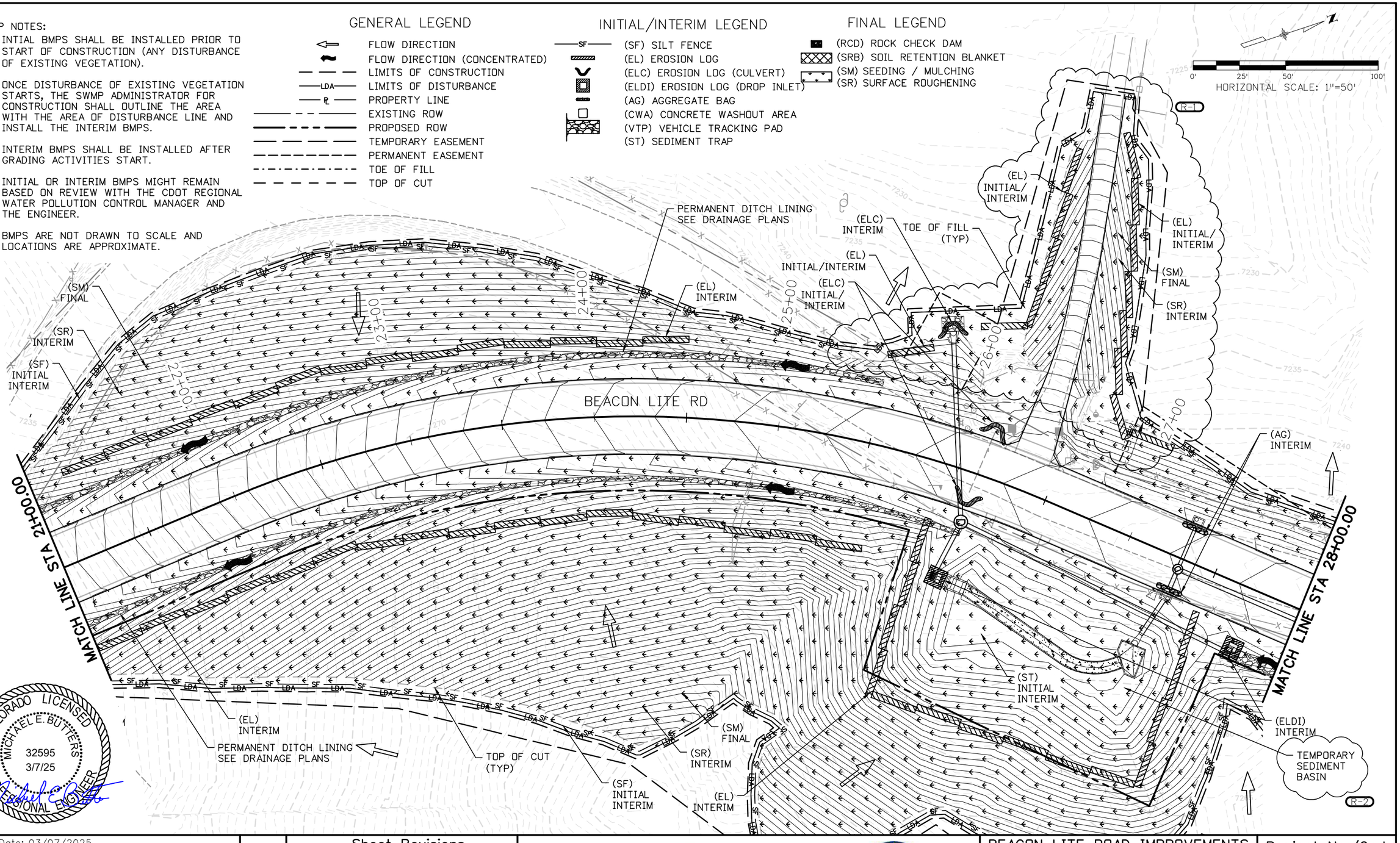
INITIAL/INTERIM LEGEND

- SF — (SF) SILT FENCE
- (EL) EROSION LOG
- (ELC) EROSION LOG (CULVERT)
- (ELDI) EROSION LOG (DROP INLET)
- (AG) AGGREGATE BAG
- (CWA) CONCRETE WASHOUT AREA
- (VTP) VEHICLE TRACKING PAD
- (ST) SEDIMENT TRAP

FINAL LEGEND

- (RCD) ROCK CHECK DAM
- (SRB) SOIL RETENTION BLANKET
- (SM) SEEDING / MULCHING
- (SR) SURFACE ROUGHENING

HORIZONTAL SCALE: 1"=50'



COLORADO LICENSED
MICHAEL E. BUTTERS
32595
3/7/25
PROFESSIONAL ENGINEER

Print Date:	03/07/2025
File Name:	175644_SWMP_Plan.dwg
Horiz. Scale:	1" = 50'
Vert. Scale:	N/A
Unit Information	Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1
R-2

Sheet Revisions

Date:	Comments	Init.
06/01/23	RFC	LTE
08/31/23	DRIVEWAY 9 GRADING	LTE
03/07/25	ADDED SED BASIN TEXT	PDM

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
STORMWATER MANAGEMENT PLANS

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	SWMP MAPS	Subset Sheets:	3 OF 8

Project No./Code: 128558

Sheet Number: 109

SWMP NOTES:

1. INTIAL BMPS SHALL BE INSTALLED PRIOR TO START OF CONSTRUCTION (ANY DISTURBANCE OF EXISTING VEGETATION).
2. ONCE DISTURBANCE OF EXISTING VEGETATION STARTS, THE SWMP ADMINISTRATOR FOR CONSTRUCTION SHALL OUTLINE THE AREA WITH THE AREA OF DISTURBANCE LINE AND INSTALL THE INTERIM BMPS.
3. INTERIM BMPS SHALL BE INSTALLED AFTER GRADING ACTIVITIES START.
4. INITIAL OR INTERIM BMPS MIGHT REMAIN BASED ON REVIEW WITH THE CDOT REGIONAL WATER POLLUTION CONTROL MANAGER AND THE ENGINEER.
5. BMPS ARE NOT DRAWN TO SCALE AND LOCATIONS ARE APPROXIMATE.

0' 25' 50' 100'
HORIZONTAL SCALE: 1"=50'

MATCH LINE STA 28+00.00

BEACON LITE RD

29+00

30+00

31+00

32+00

33+00

34+00

(SR) INTERIM

(SM) FINAL

(SF) INITIAL INTERIM

(AG) INTERIM

TOE OF FILL (TYP)

(EL) INTERIM

(SR) INTERIM

(SM) FINAL

(SF) INITIAL INTERIM

TOP OF CUT (TYP)

PERMANENT DITCH LINING SEE DRAINAGE PLANS

MATCH LINE STA 35+00.00

COLORADO LICENSED
LUCY T. EAST
51734
6/1/2023
PROFESSIONAL ENGINEER

GENERAL LEGEND

- FLOW DIRECTION
- FLOW DIRECTION (CONCENTRATED)
- LIMITS OF CONSTRUCTION
- LDA — LIMITS OF DISTURBANCE
- PROPERTY LINE
- EXISTING ROW
- PROPOSED ROW
- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- TOE OF FILL
- TOP OF CUT

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FINAL LEGEND

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- (SRB) SOIL RETENTION BLANKET
- (SM) SEEDING / MULCHING
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Print Date: 04/29/2022
File Name: 175644_SWMP_Plan.dwg
Horiz. Scale: 1" = 50' Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions

Date:	Comments	Init.

EL PASO COUNTY COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
STORMWATER MANAGEMENT PLANS

Project No./Code: 128558

Designer: KRS
Detailer: RBR
Sheet Subset: SWMP MAPS
Structure Numbers:
Subset Sheets: 4 OF 8

Sheet Number 110

GENERAL LEGEND

- FLOW DIRECTION
- FLOW DIRECTION (CONCENTRATED)
- LIMITS OF CONSTRUCTION
- LDA — LIMITS OF DISTURBANCE
- PL — PROPERTY LINE
- EXISTING ROW
- PROPOSED ROW
- TEMPORARY EASEMENT
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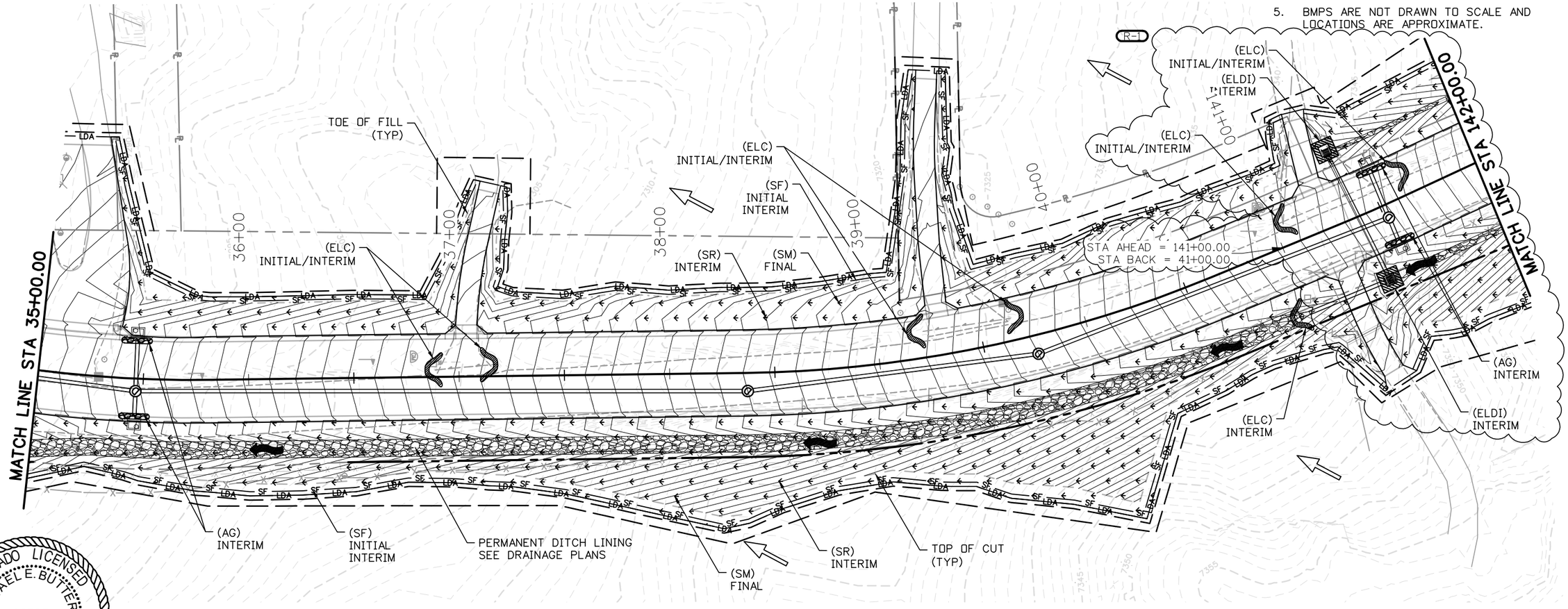

COLORADO LICENSED
MICHAEL E. BUTTERS
32595
9/10/24
PROFESSIONAL ENGINEER

0' 25' 50' 100'
HORIZONTAL SCALE: 1"=50'

Print Date: 09/09/2024			
File Name: 175644_SWMP_Plan.dwg			
Horiz. Scale: 1" = 50' Vert. Scale: N/A			
Unit Information Unit Leader Initials			
Michael Baker INTERNATIONAL — MICHAEL BAKER INTERNATIONAL, INC. 165 S. UNION BLVD., STE. 1000 LAKEWOOD, CO 80228 720.514.1100			

R-1

Sheet Revisions

Date:	Comments	Init.
06/01/23	RFC	LTE
09/09/24	GEOMETRY CHANGE	MEB

EL PASO COUNTY COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
STORMWATER MANAGEMENT PLANS

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	SWMP MAPS	Subset Sheets:	5 OF 8

Project No./Code: 128558

Sheet Number 111

SWMP NOTES:

1. INTIAL BMPS SHALL BE INSTALLED PRIOR TO START OF CONSTRUCTION (ANY DISTURBANCE OF EXISTING VEGETATION).
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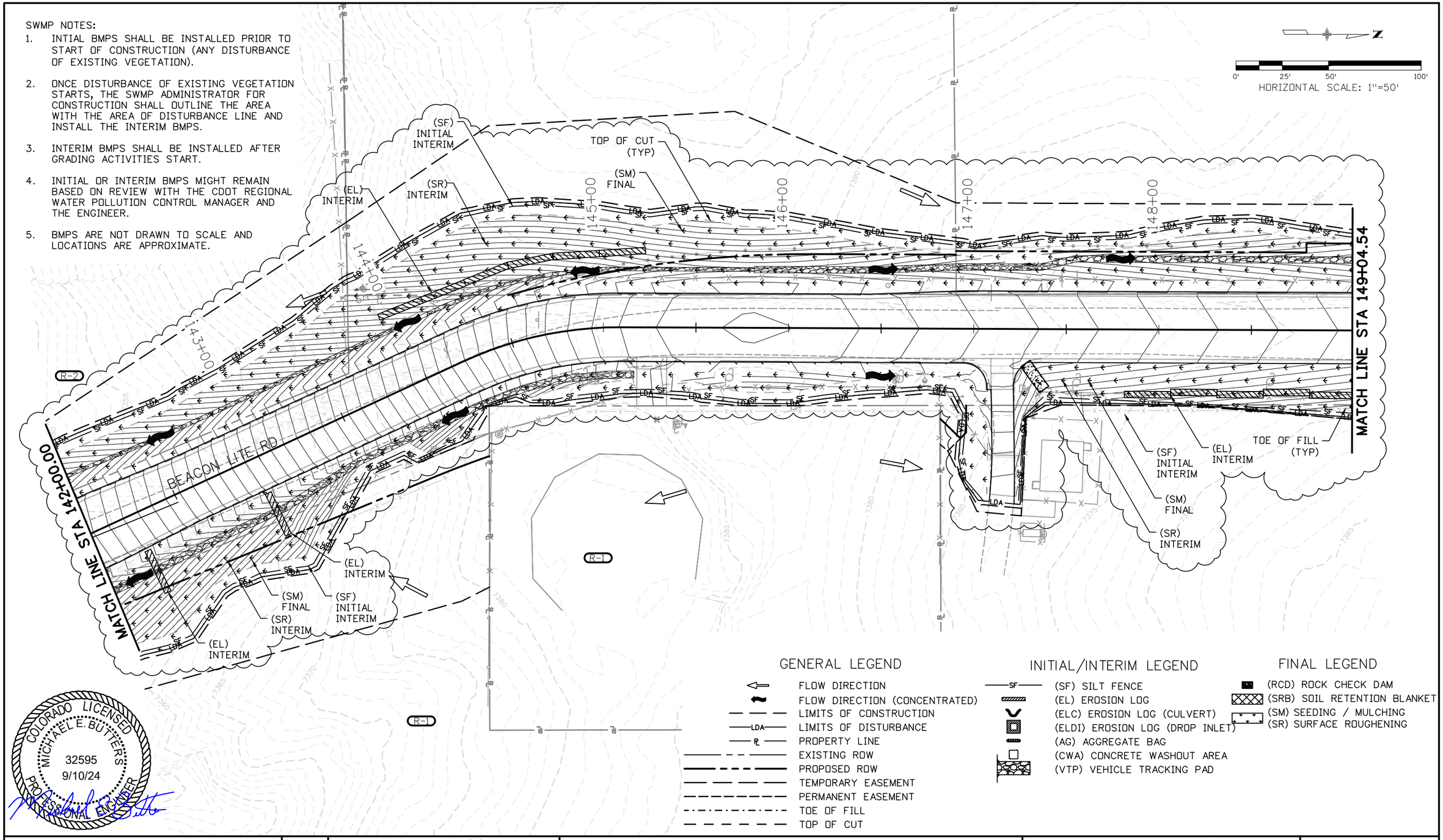

GENERAL LEGEND

- FLOW DIRECTION
- FLOW DIRECTION (CONCENTRATED)
- LIMITS OF CONSTRUCTION
- LDA — LIMITS OF DISTURBANCE
- PROPERTY LINE
- EXISTING ROW
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- TOE OF FILL
- TOP OF CUT

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FINAL LEGEND

- (RCD) ROCK CHECK DAM
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- (SM) SEEDING / MULCHING
- (SR) SURFACE ROUGHENING

COLORADO LICENSED
MICHAEL E. BUTTERS
32595
9/10/24
PROFESSIONAL ENGINEER

Print Date: 09/09/2024
File Name: 175644_SWMP_Plan.dwg
Horiz. Scale: 1" = 50' Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
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720.514.1100

Sheet Revisions

	Date:	Comments	Init.
R-1	06/01/23	RFC	LTE
R-2	08/31/23	ADDING TANK WALL	LTE
	09/09/24	GEOMETRY CHANGE	MEB

EL PASO COUNTY
COLORADO

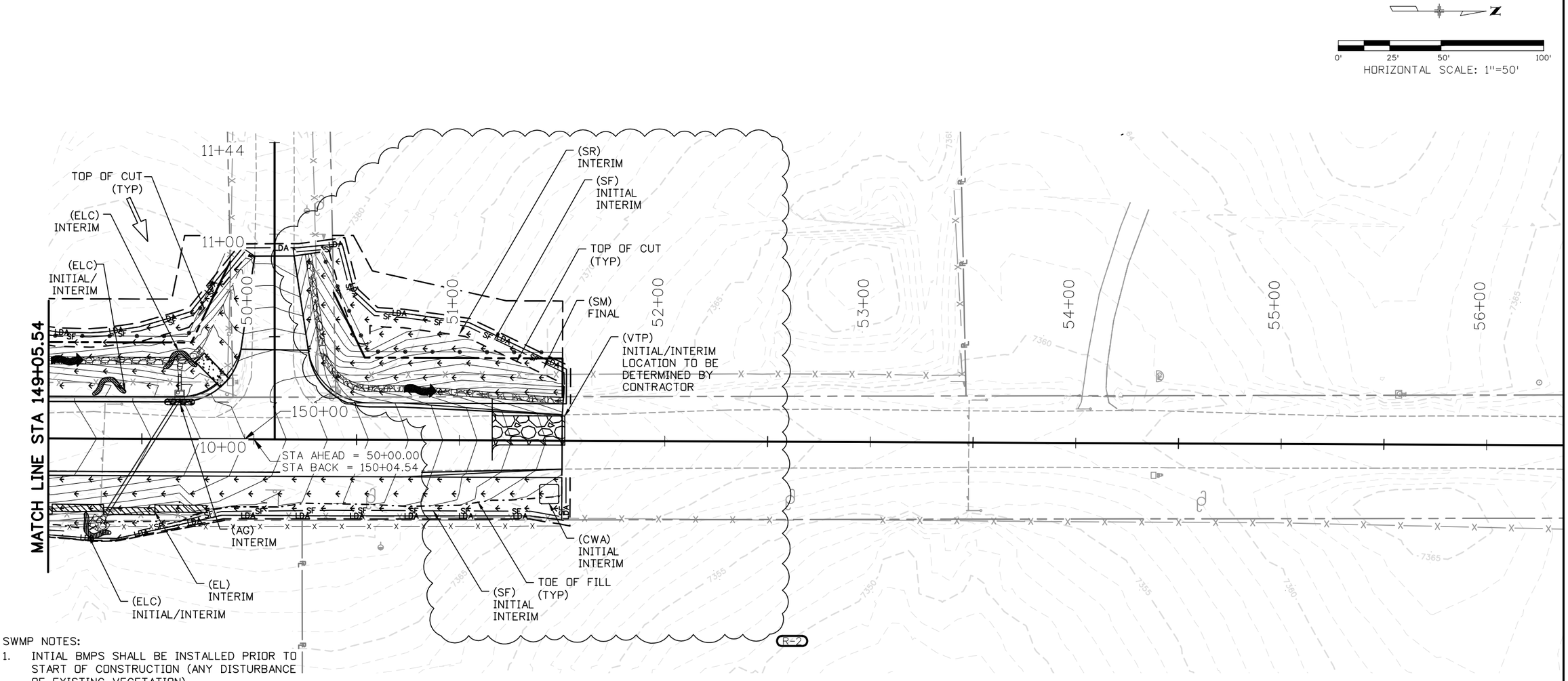
PPRTA

BEACON LITE ROAD IMPROVEMENTS
STORMWATER MANAGEMENT PLANS

Project No./Code: 128558

Designer: KRS
Detailer: RBR
Sheet Subset: SWMP MAPS
Structure Numbers:
Subset Sheets: 6 OF 8

Sheet Number 112



SWMP NOTES:

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COLORADO LICENSED
MICHAEL E. BUTTERS
32595
4/11/25
PROFESSIONAL ENGINEER

GENERAL LEGEND

- FLOW DIRECTION
- FLOW DIRECTION (CONCENTRATED)
- LIMITS OF CONSTRUCTION
- LDA — LIMITS OF DISTURBANCE
- PL — PROPERTY LINE
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Print Date: 04/11/2025
File Name: 175644_SWMP_Plan.dwg
Horiz. Scale: 1" = 50' Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1
R-2

Sheet Revisions

Date:	Comments	Init.
06/01/23	RFC	LTE
09/09/24	GEOMETRY CHANGE	MEB
03/07/25	PROJ. LIMITS CHANGE	MEB

EL PASO COUNTY
COLORADO

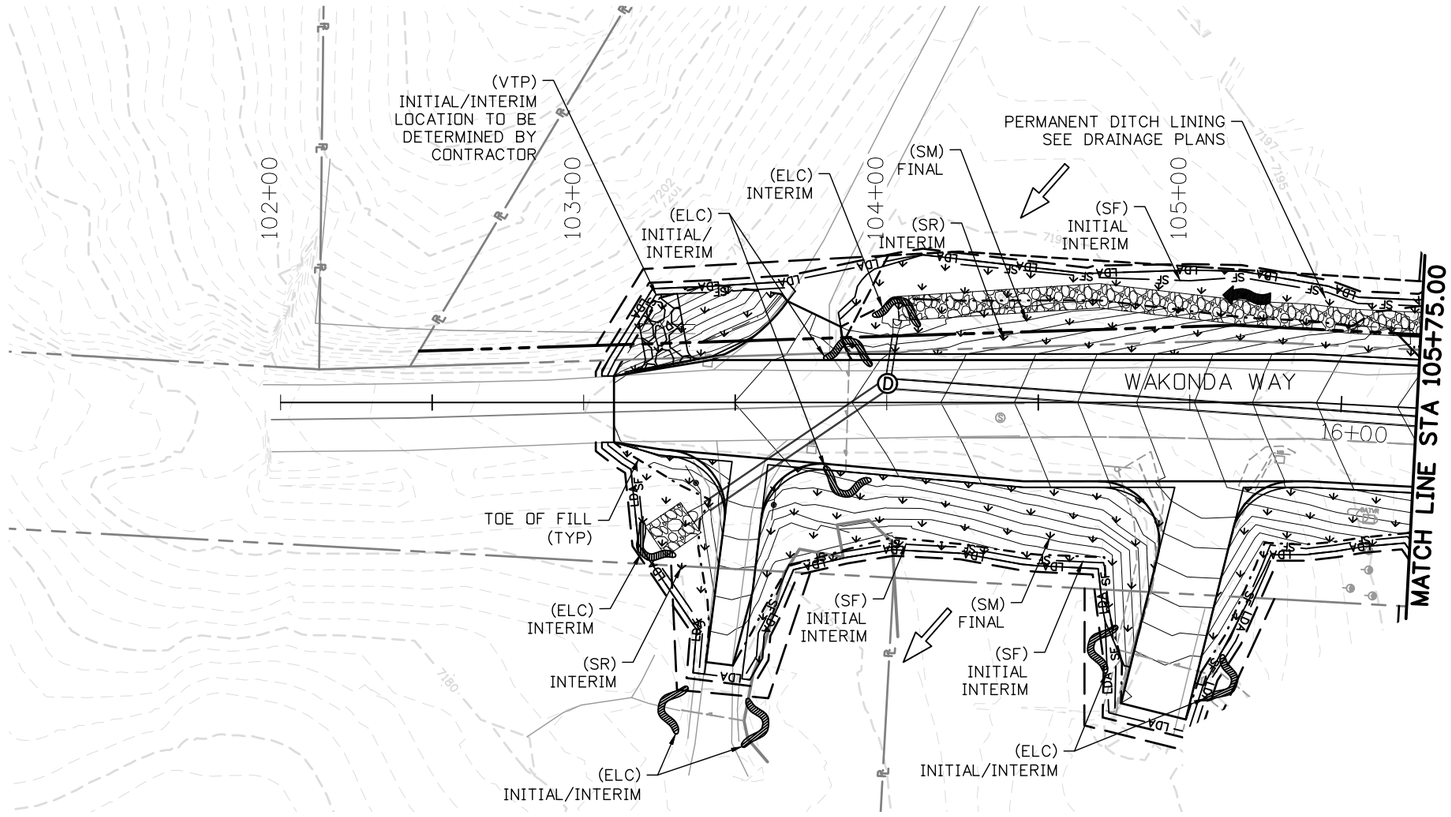
PPRTA

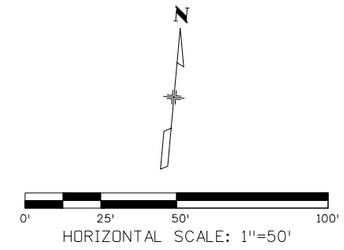
BEACON LITE ROAD IMPROVEMENTS
STORMWATER MANAGEMENT PLANS

Project No./Code 128558

Designer: NCS
Detailer: RBR
Sheet Subset: SWMP MAPS
Structure Numbers
Subset Sheets: 7 OF 8

Sheet Number 113





GENERAL LEGEND

- FLOW DIRECTION
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- LIMITS OF CONSTRUCTION
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5. BMPS ARE NOT DRAWN TO SCALE AND LOCATIONS ARE APPROXIMATE.

Print Date: 04/29/2022
File Name: 175644_SWMP_Plan.dwg
Horiz. Scale: 1" = 50' Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions

Date:	Comments	Init.

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
STORMWATER MANAGEMENT PLANS
WAKONDA WAY

Project No./Code: 128558

Designer: KRS
Detailer: RBR
Sheet Subset: SWMP MAPS
Structure Numbers:
Subset Sheets: 8 OF 8

Sheet Number 114

GENERAL NOTES

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) 2022 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. R1

EXPANSION JOINT MATERIAL SHALL MEET AASHTO SPECIFICATION M-213.

ALL EXPOSED CONCRETE SURFACES SHALL RECEIVE A CLASS 1 FINAL FINISH PER SECTION 601.14 TO ONE FOOT BELOW THE GROUND LINE, WITH COATING, TEXTURE, AND COLOR AS SHOWN IN THE PLANS.

MINIMUM GRADE 60 REINFORCING STEEL IS REQUIRED.

ALL REINFORCING STEEL SHALL BE EPOXY COATED UNLESS OTHERWISE NOTED.

(N) DENOTES NON-COATED REINFORCING STEEL.

THE MINIMUM LAP SPLICE LENGTH FOR EPOXY COATED REINFORCING BARS PLACED IN ACCORDANCE WITH SUBSECTION 602.06 SHALL BE DETERMINED BY THE WALL DESIGNER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE EXCAVATIONS, SLOPES, AND PROTECTING EXISTING STRUCTURES DURING CONSTRUCTION. ALL TEMPORARY EXCAVATION SUPPORT SHALL BE CONSIDERED INCIDENTAL TO THE WORK AND INCLUDED IN OTHER WORK ITEMS.

ALL LONGITUDINAL AND TRANSVERSE DIMENSIONS ARE MEASURED HORIZONTALLY AND INCLUDE NO CORRECTION FOR GRADE.

THE INFORMATION SHOWN ON THESE PLANS CONCERNING THE TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO AT 811 (1-800-922-1987) AT LEAST 3 DAYS (2 DAYS NOT INCLUDING THE DAY OF NOTIFICATION) PRIOR TO ANY EXCAVATION OR OTHER EARTHWORK.

GROUNDWATER, COBBLES, BOULDERS, AND BEDROCK MAY BE ENCOUNTERED AT ANY DEPTH IN THE EXCAVATION OR DURING DRILLING.

WALL DESIGN PARAMETERS

IT IS THE CONTRACTOR'S RESPONSIBILITY TO DESIGN THE WALL IN ACCORDANCE WITH THE PROCEDURES CONTAINED IN THE FOLLOWING:

AASHTO LRFD BRIDGE DESIGN SPECIFICATION, 9TH EDITION, WITH CURRENT INTERIMS
CDOT BRIDGE DESIGN MANUAL, APRIL 2021 EDITION

THE WALL TYPE HAS NOT BEEN PROPOSED FOR THIS LOCATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE A WALL TYPE THAT IS BEST SUITED FOR THE FIELD CONDITIONS AND THAT MEETS THE DESIGN REQUIREMENTS AS STATED ABOVE. THE CONTRACTOR, OR THEIR DESIGNATED WALL DESIGNER, SHALL PROVIDE CONSTRUCTION PLANS INCLUDING THE PROPOSED TYPE AND LIMITS OF THE WALL AND FOUNDATION UNIT(S), ANY STRUCTURAL COMPONENTS REQUIRING REINFORCED CONCRETE OR STEEL, AND DESIGN CALCULATIONS FOR THE INTERNAL AND EXTERNAL STABILITY OF THE WALL ARE WITHIN THE FACTORS OF SAFETY AS DETERMINED BY THE GEOTECHNICAL PARAMETERS TO THE EL PASO COUNTY ENGINEER, OR THEIR DESIGNATED REPRESENTATIVE, FOR REVIEW AND APPROVAL. BOTH CONSTRUCTION PLANS AND DESIGN CALCULATIONS SHALL BE PREPARED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF COLORADO.

THE CONTRACTOR'S CONSTRUCTION OF A SYSTEM THAT REQUIRES INCREASED OR DECREASED QUANTITIES OF ANY OF THE COMPONENTS TO COMPLETE THE WALL TO THE DIMENSIONS SHOWN WILL NOT RESULT IN A CHANGE IN PAY QUANTITIES. EXCEPTIONS WILL BE MADE WHEN FIELD CHANGES ARE ORDERD OR WHEN IT IS DETERMINED THAT THERE ARE DISCREPANCIES ON THE PLANS IN AN AMOUNT OF AT LEAST PLUS OR MINUS FIVE PERCENT OF THE PLAN QUANTITY.

ALL WORK FOR THE DESIGN AND CONSTRUCTION OF THE WALL SHALL BE INCLUDED IN THE COST FOR ITEM 504 RETAINING WALL (DESIGN BUILD), INCLUDING BUT NOT LIMITED TO: THE DESIGN OF THE WALL, WALL DRAINAGE ITEMS, FABRICATION OF NEEDED MATERIALS, CLEARING AND GRUBBING, EXCAVATION, TEMPORARY CONSTRUCTION WORKS, CONSTRUCTION OF THE WALL AND DRAINAGE SYSTEM, REQUIRED BACKFILL CONFORMING TO CDOT SPECIFICATIONS, WALL FORMLINER FINISH AND STRUCTURAL CONCRETE COATINGS..

SUMMARY OF APPROXIMATE QUANTITIES (FOR INFORMATION ONLY)

ITEM NO.	DESCRIPTION	UNIT	TOTAL
420-00112	GEOTEXTILE (DRAINAGE)(CLASS 1)	SY	260
504-03500	RETAINING WALL (DESIGN BUILD)	SF	4400
506-00206	RIPRAP (6 INCH)	CY	25
607-53137	FENCE CHAIN LINK (SPECIAL)(36 INCH)	LF	334

GEOTECHNICAL PARAMETERS

THERE IS CURRENTLY NO SOIL BORING INFORMATION WITHIN THE LIMITS OF THE PROPOSED WALL. AS PART OF THIS WORK SOIL BORINGS SHALL BE COMPLETED PRIOR TO FINALIZING THE WALL DESIGN TO DETERMINE THE GEOTECHNICAL PARAMETERS TO BE USED IN DESIGN. A GEOTECHNICAL DESIGN REPORT WITH THE SOIL BORINGS, DESIGN PARAMETERS, AND ANY REQUIRED ANALYSES SHALL BE PROVIDED TO THE ENGINEER PRIOR TO CONSTRUCTION FOR REVIEW AND APPROVAL.

ALL WORK REQUIRED TO COMPLETE THIS WORK SHALL BE INCLUDED IN THE COST FOR ITEM 504 RETAINING WALL (DESIGN BUILD).

INDEX OF DRAWINGS (R1)

WB1	WALL GENERAL INFORMATION
WB2	WALL GENERAL LAYOUT
WB3	WALL DETAILS
WB4	FENCE CHAIN LINK (SPECIAL)(36 INCH) DETAILS

811 Know what's below. Call before you dig.

COLORADO LICENSED
LUKE ALLEN BASS
55607
08/31/2023
PROFESSIONAL ENGINEER

Print Date: 08/31/2023
File Name: 175644_Wall_Sheets.dwg
Horiz. Scale: NA Vert. Scale: NA
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions

	Date:	Comments	Init.
R1	08/2023	UPDATED WALL NUMBER	LAP

EL PASO COUNTY COLORADO

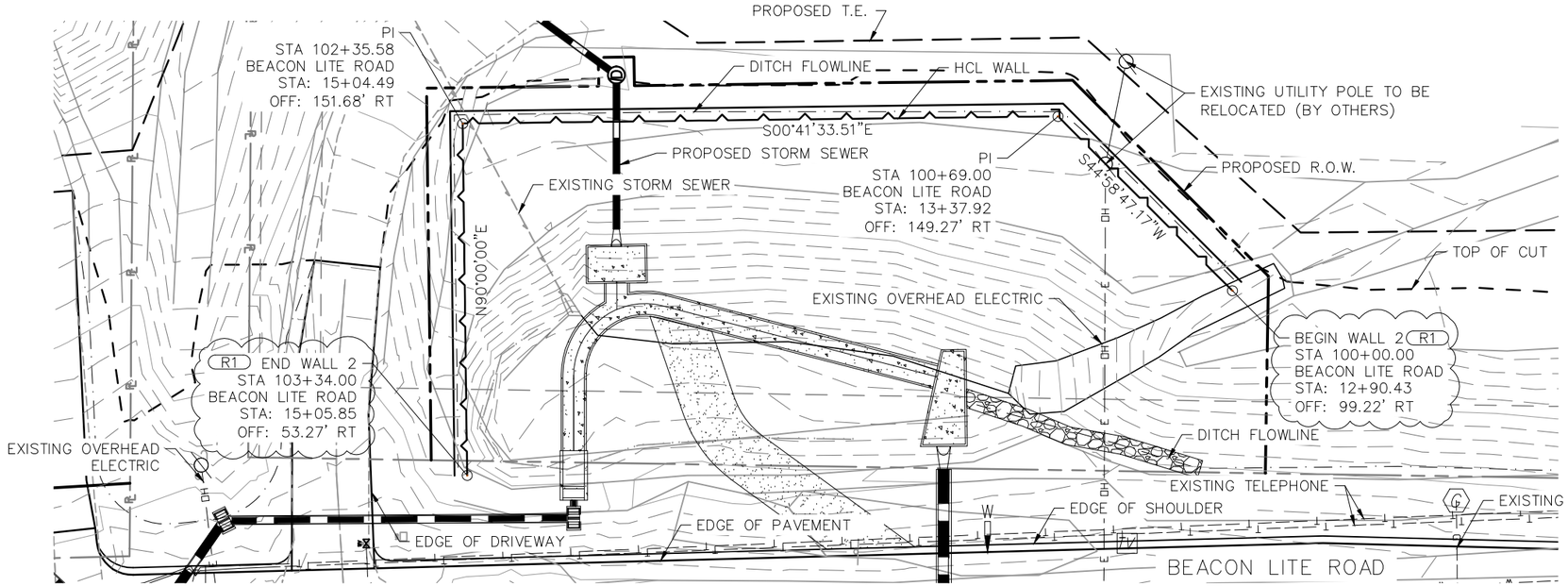
PPRTA

BEACON LITE ROAD IMPROVEMENTS
WALL 2 GENERAL INFORMATION (R1)

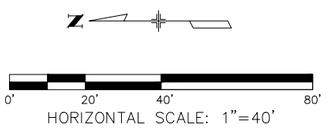
Project No./Code: 128558

Designer: LAP
Detailer: JS
Sheet Subset: WALL 2
Structure Numbers:
Subset Sheets: WB1 OF WB4

Sheet Number 115



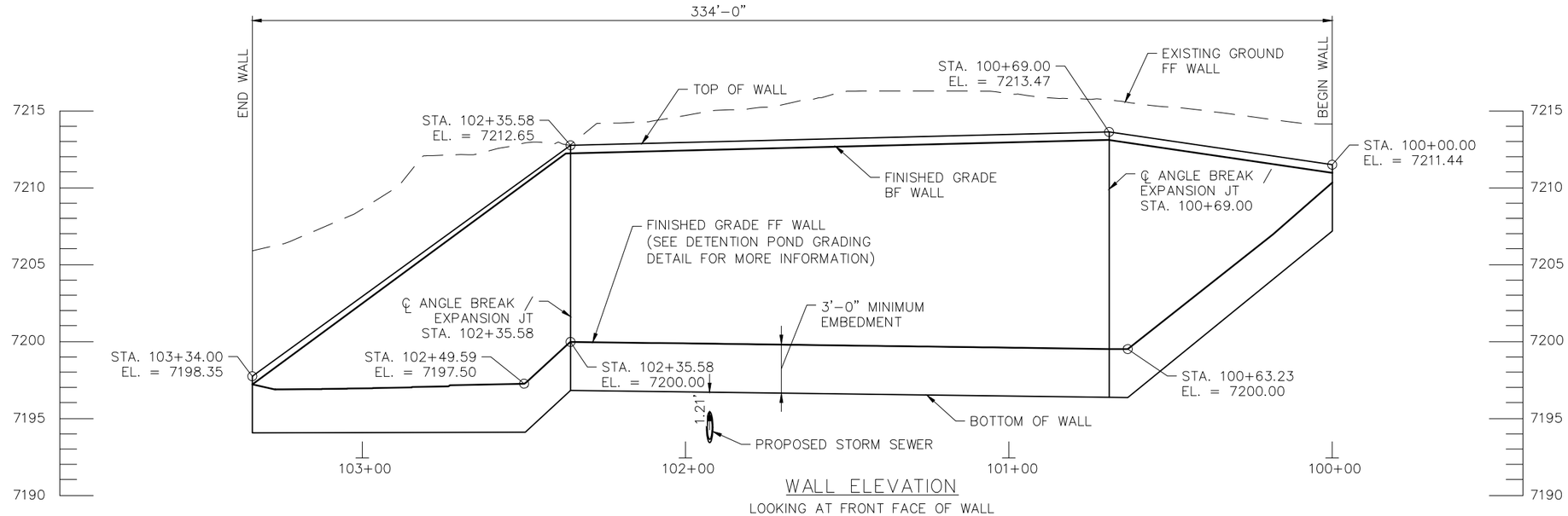
WALL PLAN



HORIZONTAL SCALE: 1"=40'

NOTES:

1. WALL HCL SHOWN IS AT THE FF AND BOTT OF THE WALL.
2. CHAIN LINK FENCE REQUIRED AT TOP OF WALL FULL LENGTH. FENCING NOT SHOWN FOR CLARITY. SEE SHEET W6 FOR INFORMATION.
3. THE CONTRACTOR SHALL COORDINATE WITH UTILITIES AND PROTECT UTILITIES IN PLACE DURING CONSTRUCTION.
4. FOR UTILITY REMOVALS AND RELOCATIONS SEE UTILITY PLANS.
5. THE WALL DESIGNER IS RESPONSIBLE FOR DETERMINING THE LOCATION OF ADDITIONAL EXPANSION JOINTS AND WEAKENED PLANES IN THE WALL AS RECOMMENDED BY CDOT.



WALL ELEVATION

LOOKING AT FRONT FACE OF WALL

COLORADO LICENSED
LUKE LEN PORTER ASST.
53607
08/31/2023
PROFESSIONAL ENGINEER

Print Date: 08/31/2023	R1	Sheet Revisions	
File Name: 175644_Wall_Sheets.dwg		Date: 08/2023	Comments: UPDATED WALL NUMBER	Init.: LAP
Horiz. Scale: 1"=40' Vert. Scale: AS NOTED			
Unit Information Unit Leader Initials			
Michael Baker INTERNATIONAL — MICHAEL BAKER INTERNATIONAL, INC. 165 S. UNION BLVD., STE. 1000 LAKEWOOD, CO 80228 720.514.1100			

EL PASO COUNTY COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
WALL 2 GENERAL LAYOUT R1

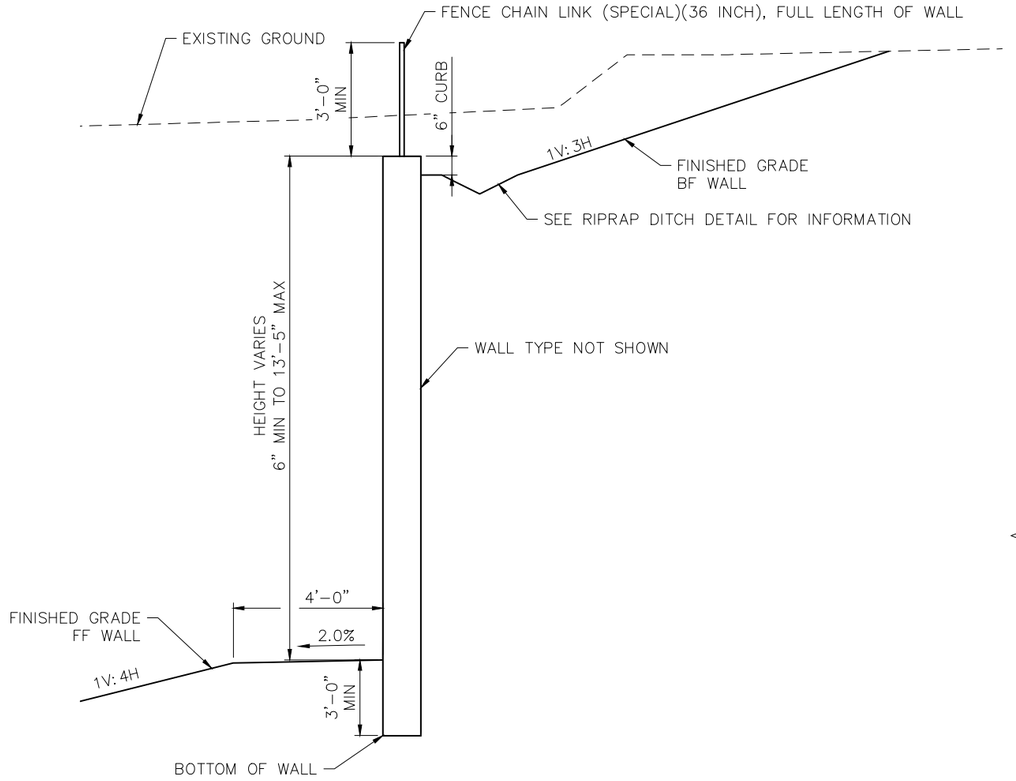
Designer:	LAP	Structure Numbers	
Detailer:	JS		
Sheet Subset:	WALL 2	Subset Sheets:	WB2 OF WB4

Project No./Code: 128558

Sheet Number 116

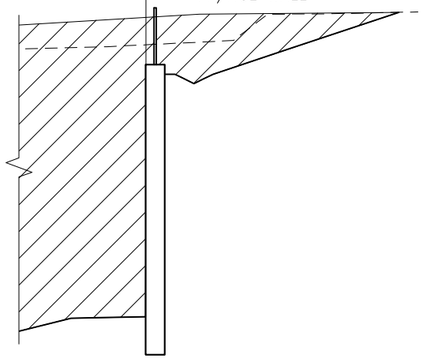
NOTES

1. THE FRONT FACE OF THE WALL SHALL RECEIVE A FORMLINER FINISH AS APPROVED BY THE OWNER. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER ON AVAILABLE FINISHES AND SUBMIT THE PREFERRED FINISH TO BE APPROVED BY THE ENGINEER.
2. FENCE CHAIN LINK (SPECIAL)(36 INCH) DETAILS ARE SHOWN ON SHEET W4.
3. STRUCTURAL CONCRETE COATING AND STRUCTURAL CONCRETE COATING (ANTI-GRAFFITI) SHALL BE PLACED ON THE ENTIRE FRONT FACE OF THE WALL AND EXTENDING 1'-0" BELOW FINISHED GRADE ON THE BACK FACE OF THE WALL.

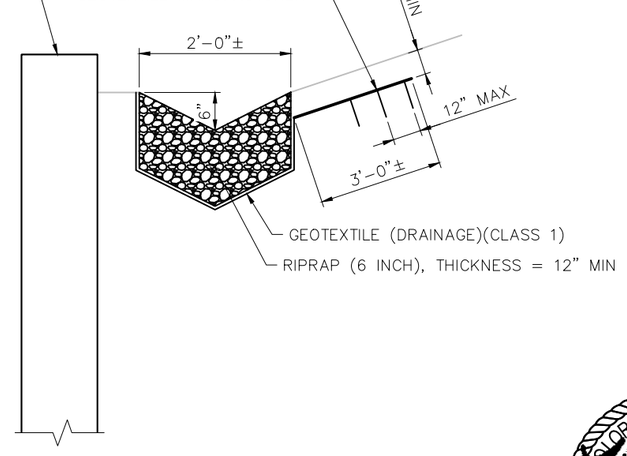


WALL TYPICAL SECTION

– EXCAVATION INCLUDED IN ROADWAY QUANTITIES



EXCAVATION LIMITS



RIPRAP DITCH DETAIL

COLORADO LICENSED
LUKE LEN POLAND ASST.
53607
08/31/2023
PROFESSIONAL ENGINEER

Print Date: 08/31/2023			
File Name: 175644_Wall_Sheets.dwg			
Horiz. Scale: NTS	Vert. Scale: NTS		
Unit Information	Unit Leader Initials		

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R1

Sheet Revisions

Date:	Comments	Init.
08/2023	UPDATED WALL NUMBER	LAP

EL PASO COUNTY
COLORADO

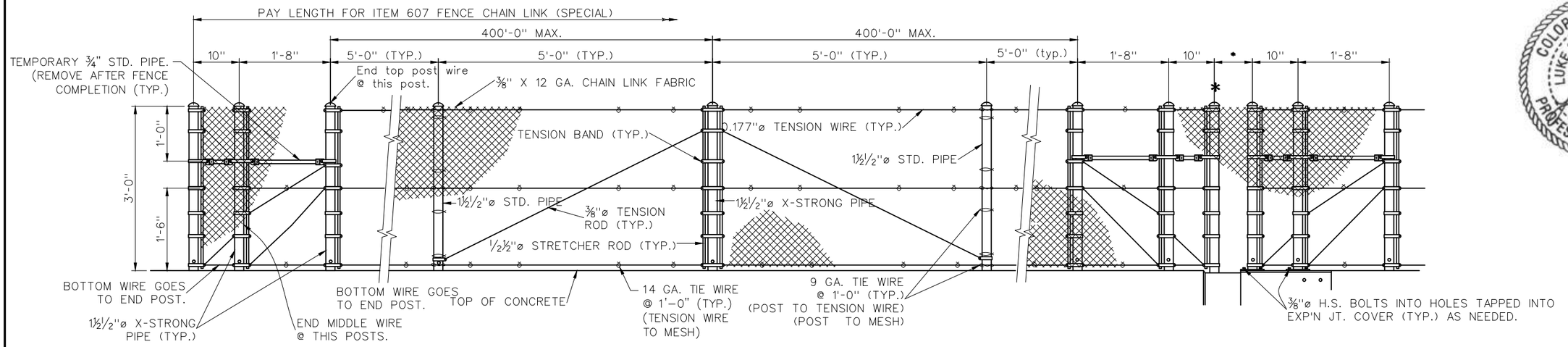
PPRTA

BEACON LITE ROAD IMPROVEMENTS
WALL 2 DETAILS (R1)

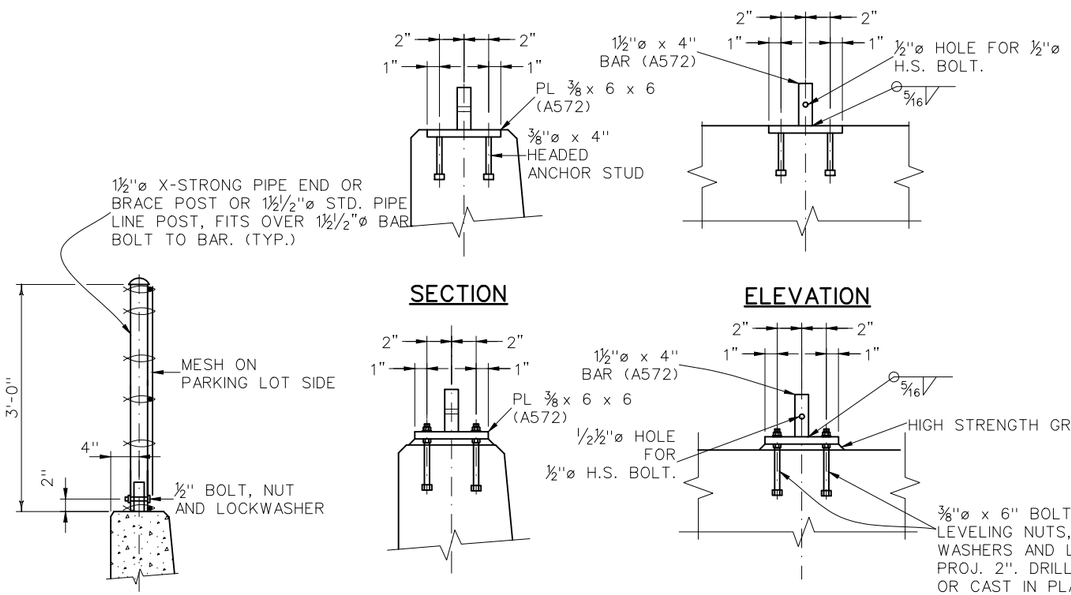
Designer:	LAP	Structure Numbers	
Detailer:	JS		
Sheet Subset:	WALL 2	Subset Sheets:	WB3 OF WB4

Project No./Code: 128558

Sheet Number 117



END POSTS | LINE POST | BRACE POST (SPA. @ 400' MAX.) | LINE POST | END POSTS AT EXPANSION DEVICE

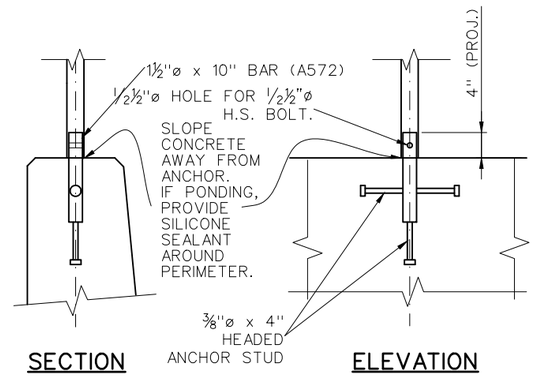


ALTERNATE ANCHORAGE DETAILS

* FOR STEEL BRIDGES:
USE ½ OF RATED JOINT MOTION +6", 8" MIN. IF NOT KNOWN, RATED MOTION MAY BE ASSUMED TO BE 1," PER 100' CONTRIBUTING TO MOTION.

* FOR CONCRETE BRIDGES:
USE ,OF RATED JOINT MOTION +6", 8" MIN. IF NOT KNOWN, RATED MOTION MAY BE ASSUMED TO BE 1," PER 100' CONTRIBUTING TO MOTION.

IF * EXCEEDS 10" RUN MESH OVER GAP WITH ENOUGH SLACK FOR ½ OF RATED EXPANSION MOTION.



ANCHORAGE DETAIL

NOTES

ANCHORAGE ASSEMBLY SHALL BE GALVANIZED AFTER FABRICATION. IF VINYL COATING IS SPECIFIED, THE FENCE ASSEMBLY SHALL BE GALVANIZED AND VINYL COATED AFTER FABRICATION. ANCHORAGES SHALL ONLY BE GALVANIZED AFTER FABRICATION.

TENSION RODS AND WIRES SHALL HAVE TURNBUCKLES.

POST SHALL BE VERTICAL.

PIPE SHALL CONFORM TO ASTM A53 TYPE E OR S, GRADE B.

DESIGN DATA

TEST TENSION = 5400 LBS
TEST WITH: MAX MIDBAY DEFLECTION = 1," FOR LATERAL LOAD OF 160 LBS. ON 1 FT . 1'-6" UP @ CENTER OF BAY.

LIVE LOAD: WIND LOAD = 32 PSF
OR SNOW IMPACT LOAD = 96 PLF @ 1'-6" UP

STRUCTURAL STEEL:
PIPE F_Y = 35,000 PSI
ASTM A572 (GR 50) F_Y = 50,000 PSI

*VINYL COATING COLOR TO BE COORDINATED WITH THE ENGINEER PRIOR TO ORDERING AND FABRICATION.

*	Standard Color Vinyl Coatings over Galvanized Wire	Munsell Color System No. (as per ASTM)
	Galvanized Only	None
	Brown	7YR 2.4/1.75
	Green	8.8G 2.63/5.8
	Black	1.8PB 1.26/0.5

Special Color Vinyl Coatings over Galvanized Wire	☐Federal Color No. ☐Munsell Color System No.

COLORADO LICENSED — LUKE ALLEN POTTHAST — 06/01/2023 — 0053607 — PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_Wall_Sheets.dwg
Horiz. Scale: 1/4"=1'-0" Vert. Scale: 1/4"=1'-0"
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY COLORADO

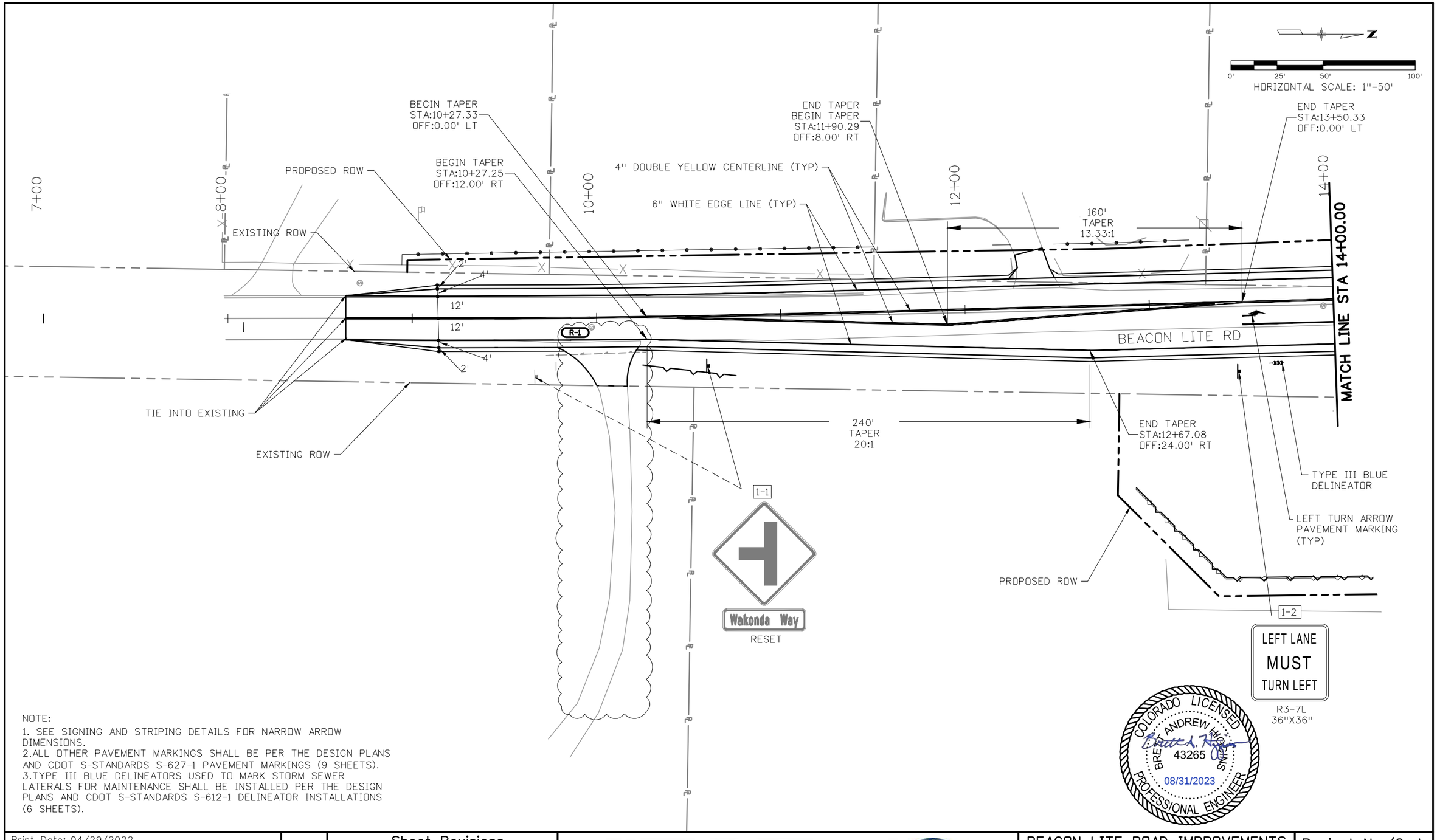
PPRTA PIKES PEAK RURAL TRANSPORTATION AUTHORITY

BEACON LITE ROAD IMPROVEMENTS
FENCE CHAIN LINK (SPECIAL) (36 INCH) DETAILS

Designer: LAP
Detailer: JS
Sheet Subset: WALL
Structure Numbers
Subset Sheets: WB4 OF WB4

Project No./Code: 128558

Sheet Number 118



NOTE:

1. SEE SIGNING AND STRIPING DETAILS FOR NARROW ARROW DIMENSIONS.
2. ALL OTHER PAVEMENT MARKINGS SHALL BE PER THE DESIGN PLANS AND CDOT S-STANDARDS S-627-1 PAVEMENT MARKINGS (9 SHEETS).
3. TYPE III BLUE DELINEATORS USED TO MARK STORM SEWER LATERALS FOR MAINTENANCE SHALL BE INSTALLED PER THE DESIGN PLANS AND CDOT S-STANDARDS S-612-1 DELINEATOR INSTALLATIONS (6 SHEETS).

COLORADO LICENSED
BRETT ANDREW HIGGINS
43265
08/31/2023
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_TRF_S&S.dwg
Horiz. Scale: **1" = 50'** Vert. Scale: **N/A**
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions

Date:	Comments	Init.
6/01/23	RFC	BAH
8/31/23	UPDATED DRIVE 1 LINEWORK	BAH

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS SIGNING AND STRIPING PLAN

Project No./Code: 128558

Designer:	BAH	Structure Numbers	
Detailer:	AJS		
Sheet Subset:	TRAFFIC	Subset Sheets:	1 OF 7

Sheet Number 119

NOTE:
1. SEE SIGNING AND STRIPING DETAILS FOR NARROW ARROW DIMENSIONS.
2.ALL OTHER PAVEMENT MARKINGS SHALL BE PER THE DESIGN PLANS AND CDOT S-STANDARDS S-627-1 PAVEMENT MARKINGS (9 SHEETS).
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N

0' 25' 50' 100'
HORIZONTAL SCALE: 1"=50'

BEGIN TAPER
STA:103+10.01
OFF:13.09' RT

TYPE III BLUE DELINEATOR

135' TAPER 10:1

2-2
Wakonda Way
Beacon Lite Rd

STOP
RESET

END TAPER
STA:104+45.20
OFF:24.00' RT

2-1
SPEED LIMIT 35
RESET

EXISTING ROW

50'

2'
4'
12'

BEACON LITE RD

TYPE III BLUE DELINEATOR

EXISTING ROW

PROPOSED ROW

MATCH LINE STA 14+00.00

103+00

2-3
ONLY | ONLY
SPECIAL 30"X24"

TYPE III BLUE DELINEATOR

RIGHT TURN ARROW PAVEMENT MARKING (TYP)

104+00

LEFT TURN ARROW PAVEMENT MARKING (TYP)

2-4
WARNING THIS IS A CRIME WATCH COMMUNITY
RESET

105+00

EXISTING ROW

PROPOSED ROW

24" WHITE STOP BAR

WAKONDA WAY

16+00

50'

TYPE III BLUE DELINEATOR

106+00

106+22

R 60'

2-5
20 MPH
REMOVE

TYPE III BLUE DELINEATOR

2-6
W1-4
30"x30"

2-7
RESET TO SHEET 3 OF 9
(STA. 21+42.0, 24.3' LT)

4" DOUBLE YELLOW CENTERLINE (TYP)

6" WHITE EDGE LINE (TYP)

18+00

240' TAPER 20:1

TYPE III BLUE DELINEATOR

STA:16+71.59
OFF:9.50' RT

2.5'
6'
12'
9.5'

END TAPER
STA:18+75.02
OFF:0.00' T

EXISTING ROW

PROPOSED ROW

EXISTING ROW

TYPE III BLUE DELINEATOR

20+00

2.5'
6'
12'

MATCH LINE STA 21+00.00

2-8
REMOVE

COLORADO LICENSED
BRET A. ANDREW HIGGINS
43265
06/01/2023
PROFESSIONAL ENGINEER

Print Date: 04/29/2022			
File Name: 175644_TRF_S&S.dwg			
Horiz. Scale: 1" = 50'	Vert. Scale: N/A		
Unit Information	Unit Leader Initials		

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

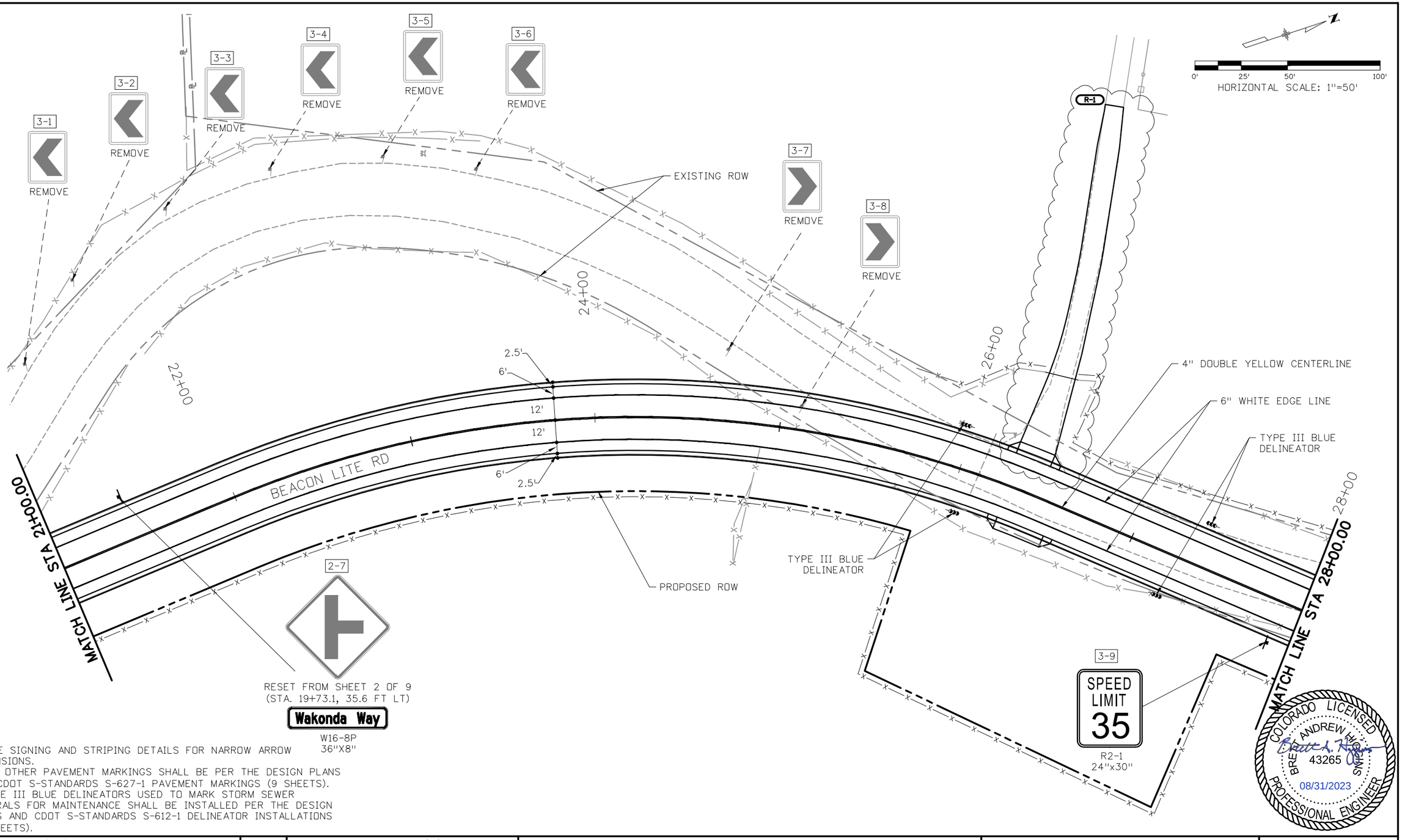
PPRTA PIKES PEAK RURAL TRANSPORTATION AUTHORITY

BEACON LITE ROAD IMPROVEMENTS
SIGNING AND STRIPING PLAN

Designer:	BAH	Structure Numbers	
Detailer:	AJS		
Sheet Subset:	TRAFFIC	Subset Sheets:	2 OF 7

Project No./Code
128558

Sheet Number 120



NOTE:
1. SEE SIGNING AND STRIPING DETAILS FOR NARROW ARROW DIMENSIONS.
2.ALL OTHER PAVEMENT MARKINGS SHALL BE PER THE DESIGN PLANS AND CDOT S-STANDARDS S-627-1 PAVEMENT MARKINGS (9 SHEETS).
3.TYPE III BLUE DELINEATORS USED TO MARK STORM SEWER LATERALS FOR MAINTENANCE SHALL BE INSTALLED PER THE DESIGN PLANS AND CDOT S-STANDARDS S-612-1 DELINEATOR INSTALLATIONS (6 SHEETS).

COLORADO LICENSED
BRET ANDREW SWAN
43265
08/31/2023
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_TRF_S&S.dwg
Horiz. Scale: 1" = 50' Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions		
Date:	Comments	Init.
6/01/23	RFC	BAH
8/31/23	UPDATED DRIVE 9 LINEWORK	BAH

EL PASO COUNTY
COLORADO

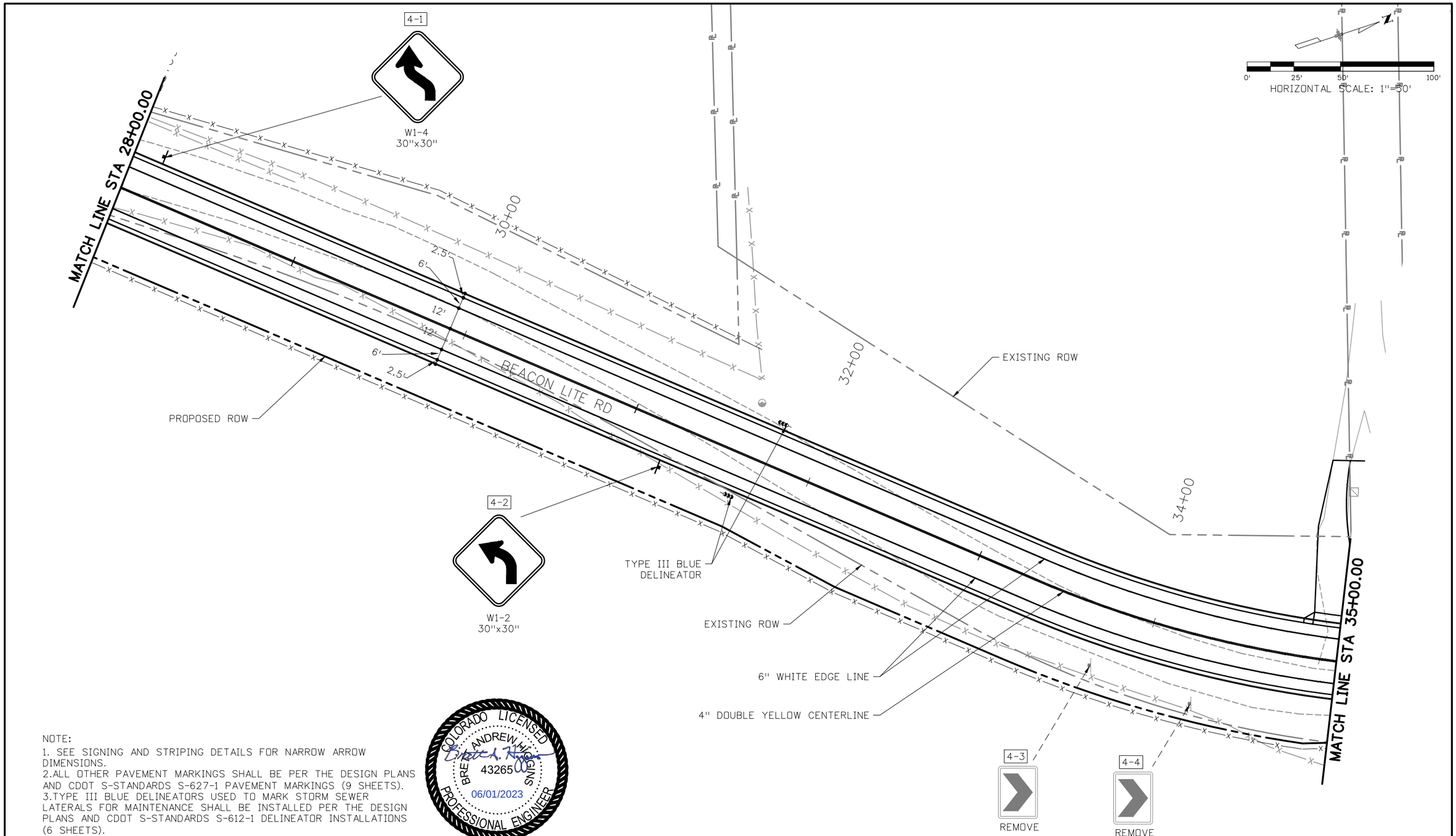
PPRTA

BEACON LITE ROAD IMPROVEMENTS
SIGNING AND STRIPING PLAN

Project No./Code
128558

Designer: BAH
Detailer: AJS
Sheet Subset: TRAFFIC
Structure Numbers
Subset Sheets: 3 OF 7

Sheet Number 121



NOTE:
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COLORADO LICENSED
BRENT ANDREW HIGGINS
43265
06/01/2023
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_TRF_S&S.dwg
Horiz. Scale: **1" = 50'** Vert. Scale: **N/A**
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

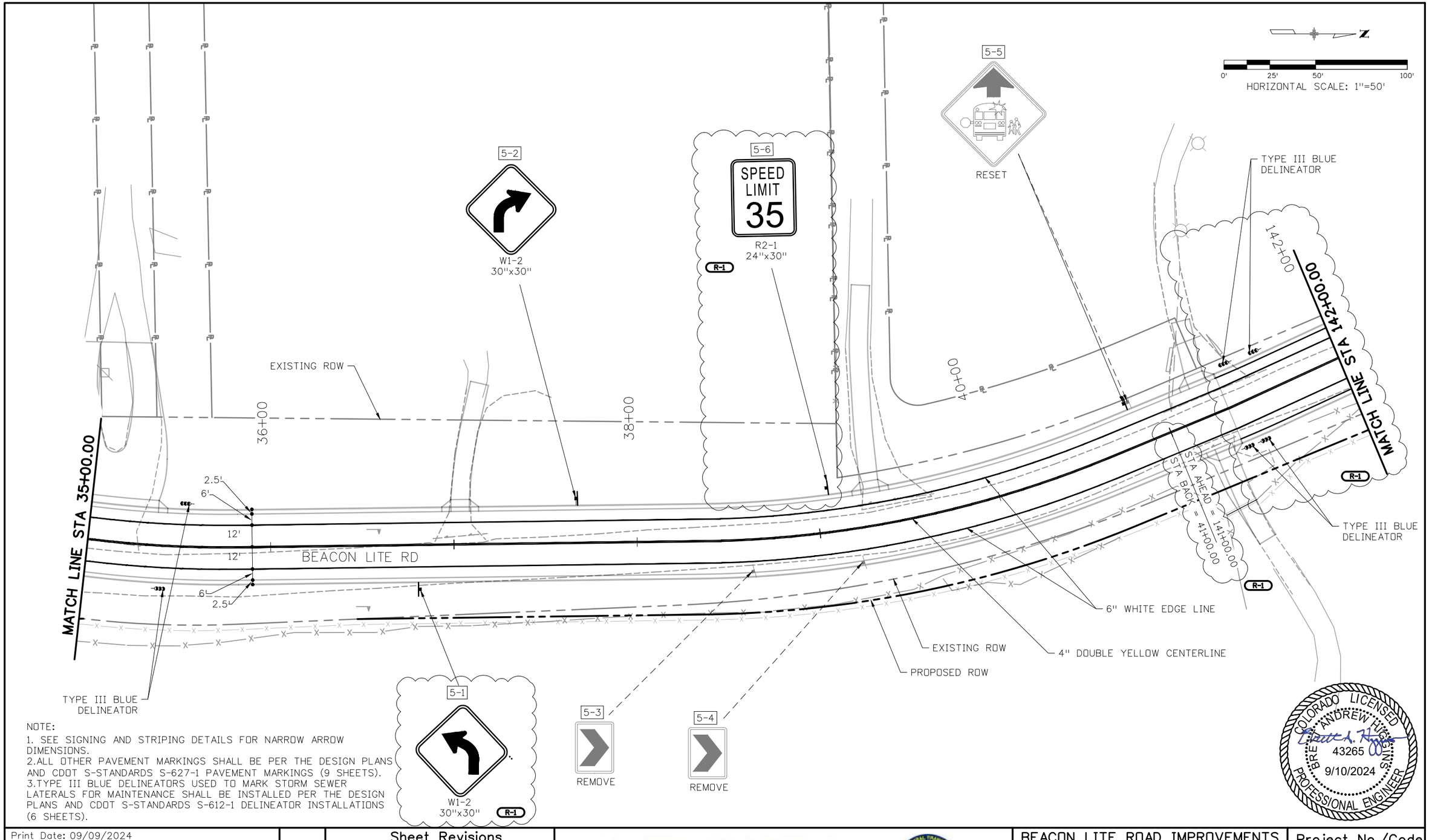
PPRTA

BEACON LITE ROAD IMPROVEMENTS SIGNING AND STRIPING PLAN

Project No./Code: 128558

Designer: **BAH**
Detailer: **AJS**
Sheet Subset: **TRAFFIC**
Structure Numbers:
Subset Sheets: 4 OF 7

Sheet Number 122



NOTE:

1. SEE SIGNING AND STRIPING DETAILS FOR NARROW ARROW DIMENSIONS.
2. ALL OTHER PAVEMENT MARKINGS SHALL BE PER THE DESIGN PLANS AND CDOT S-STANDARDS S-627-1 PAVEMENT MARKINGS (9 SHEETS).
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COLORADO LICENSED
ANDREW HIGGINS
43265
9/10/2024
PROFESSIONAL ENGINEER

Print Date: 09/09/2024
File Name: 175644_TRF_S&S.dwg
Horiz. Scale: **1" = 50'** Vert. Scale: **N/A**
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions

Date:	Comments	Init.
6/01/23	RFC	BAH
9/09/24	GEOMETRY CHANGE	BAH

EL PASO COUNTY
COLORADO

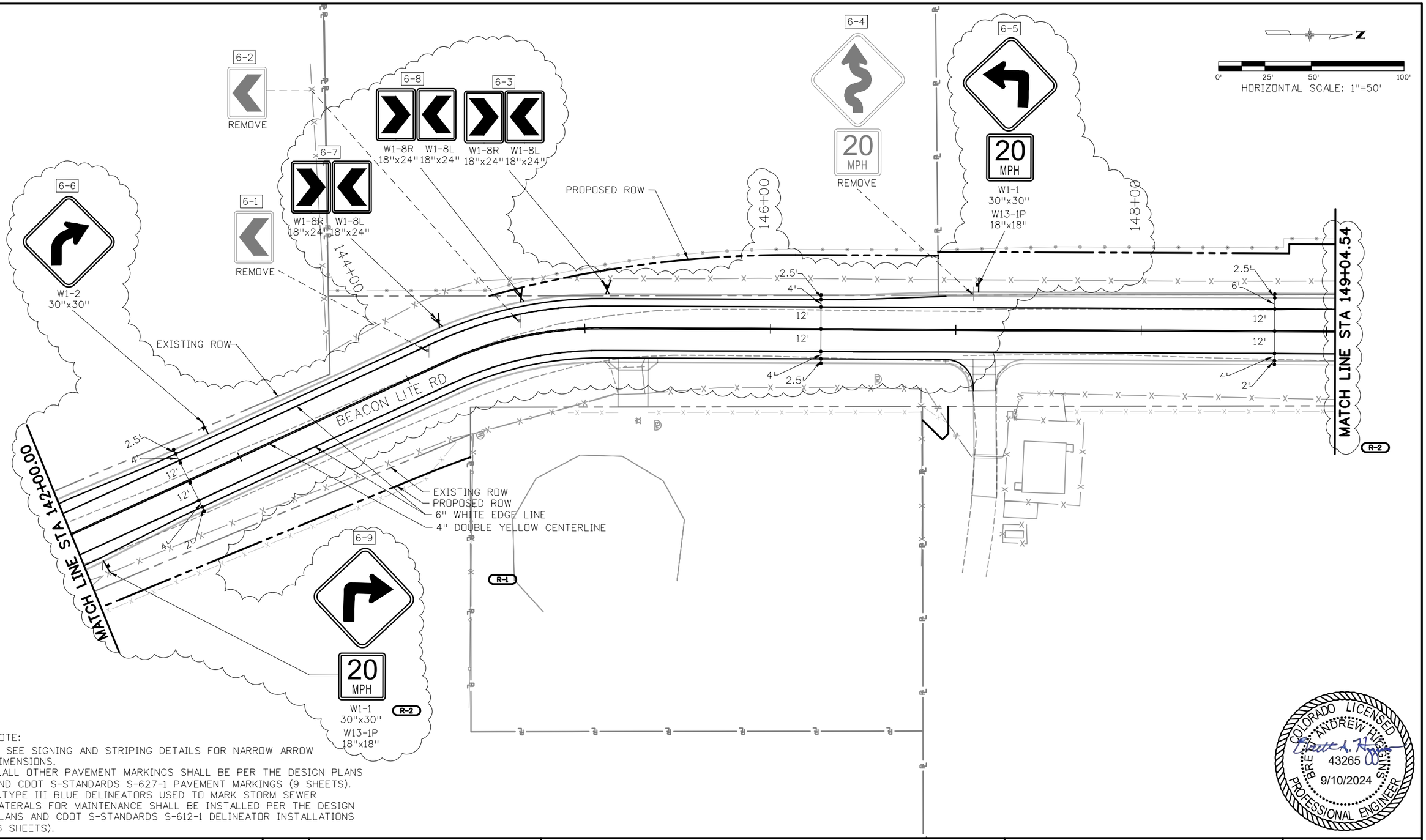
PPRTA

BEACON LITE ROAD IMPROVEMENTS SIGNING AND STRIPING PLAN

Project No./Code: 128558

Designer: **BAH**
Detailer: **AJS**
Sheet Subset: **TRAFFIC**
Structure Numbers:
Subset Sheets: 5 OF 7

Sheet Number **123**



NOTE:
1. SEE SIGNING AND STRIPING DETAILS FOR NARROW ARROW DIMENSIONS.
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COLORADO LICENSED
BRETT ANDREW HYDEN
43265
9/10/2024
PROFESSIONAL ENGINEER

Print Date: 09/09/2024
File Name: 175644_TRF_S&S.dwg
Horiz. Scale: **1" = 50'** Vert. Scale: **N/A**
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions		
Date:	Comments	Init.
6/01/23	RFC	BAH
8/31/23	ADDED WALL LINEWORK	BAH
9/09/24	GEOMETRY CHANGE	BAH

EL PASO COUNTY
COLORADO

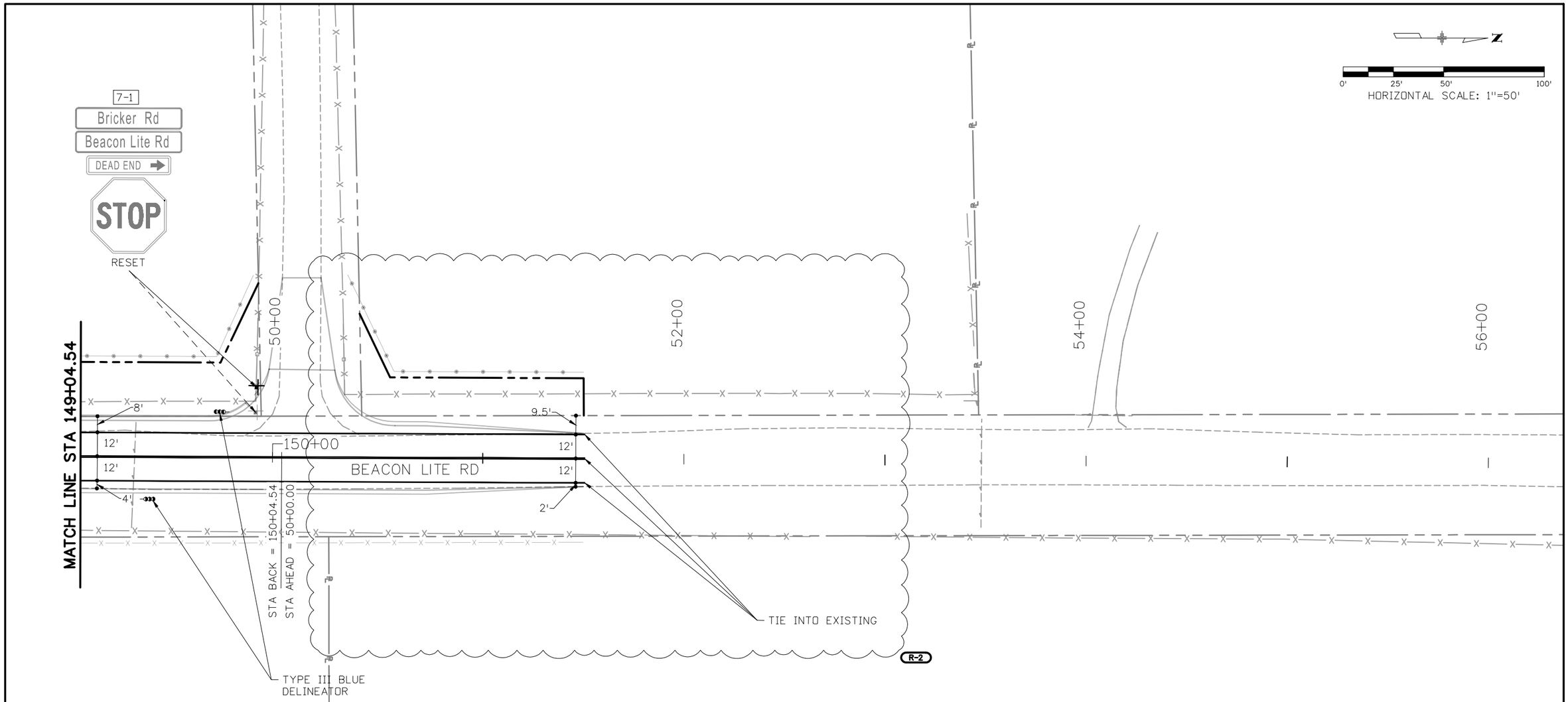
PPRTA

BEACON LITE ROAD IMPROVEMENTS SIGNING AND STRIPING PLAN

Project No./Code: 128558

Designer: BAH
Detailer: AJS
Sheet Subset: TRAFFIC
Structure Numbers:
Subset Sheets: 6 OF 7

Sheet Number 124



NOTE:
1. SEE SIGNING AND STRIPING DETAILS FOR NARROW ARROW DIMENSIONS.
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COLORADO LICENSED
BRETT ANDREW HIGGINS
43265
3/7/25
PROFESSIONAL ENGINEER

Print Date: 03/07/2025
File Name: 175644_TRF_S&S.dwg
Horiz. Scale: **1" = 50'** Vert. Scale: **N/A**
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions

	Date:	Comments	Init.
R-1	6/01/23	RFC	BAH
R-2	9/09/24	GEOMETRY CHANGE	BAH
	3/07/25	PROJ. LIMITS CHANGE	BAH

EL PASO COUNTY
COLORADO

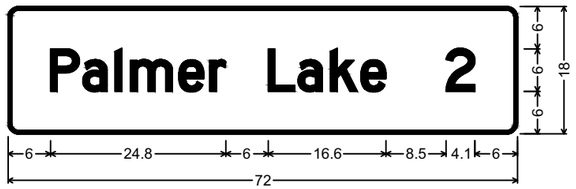
PPRTA

BEACON LITE ROAD IMPROVEMENTS SIGNING AND STRIPING PLAN

Project No./Code: 128558

Designer: **BAH**
Detailer: **AJS**
Sheet Subset: **TRAFFIC**
Structure Numbers:
Subset Sheets: **7** OF **7**
Sheet Number **125**

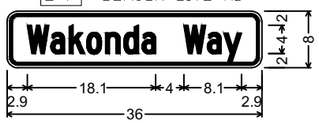
2-13 COUNTY LINE RD



D2-1_72"x18";
1.5" Radius, 0.5" Border, White on Green;
"Palmer Lake", D 2K; "2", D 2K;
Table of letter and object lefts

P	a	l	m	e	r	L	a	k	e	2
6.0	10.6	15.1	17.3	24.1	28.5	36.8	41.0	45.5	49.9	61.9

2-7 BEACON LITE RD



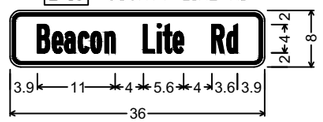
W16-8_VARx8;
1.5" Radius, 0.4" Border, 0.4" Indent, Black on Yellow;
"Wakonda Way", C 2K;
Table of letter and object lefts

W	a	k	o	n	d	a
2.9	6.2	8.8	11.3	13.9	16.5	19.1

W	a	y
25.0	28.3	30.6

R-1

1-2 COUNTY LINE RD
2-10 COUNTY LINE RD



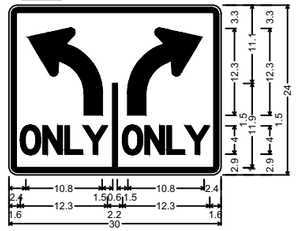
W16-8P_36"x8";
1.5" Radius, 0.4" Border, 0.4" Indent, Black on Yellow;
"Beacon Lite Rd", B 2K;
Table of letter and object lefts

B	e	a	c	o	n
3.9	6.0	7.7	9.7	11.4	13.4

L	i	t	e
18.9	20.8	21.7	23.1

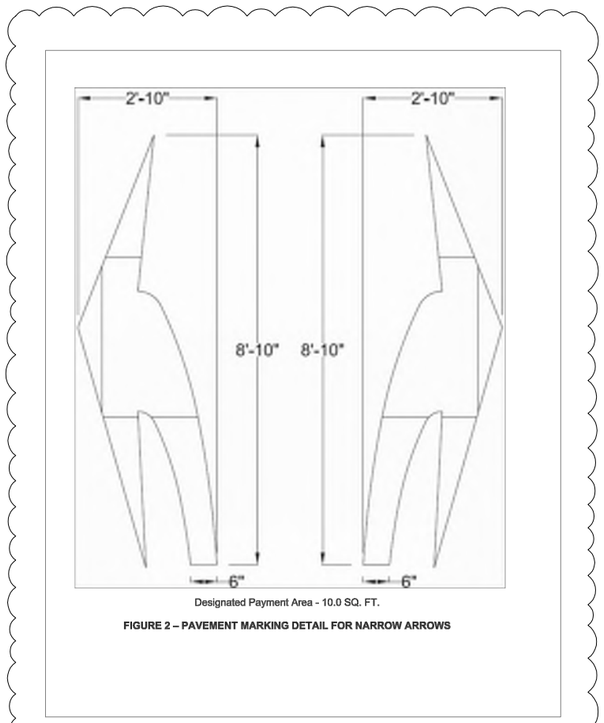
R	d
28.5	30.7

2-3 BEACON LITE RD
3-4 COUNTY LINE RD



SPECIAL_30"x24";
1.3" Radius, 0.6" Border, 0.4" Indent, Black on, White;
R3-8a left turn arrow ir=5.813, s=2.5;
"ONLY", D 2K specified length;
R3-8a right turn arrow ir=5.813, s=2.5;
"ONLY", D 2K specified length;
Table of letter and object lefts

		l										
2.4	14.7	16.8										
O	N	L	Y	O	N	L	Y					
1.6	4.8	7.9	10.5	16.1	19.2	22.4	24.9					



Designated Payment Area - 10.0 SQ. FT.

FIGURE 2 – PAVEMENT MARKING DETAIL FOR NARROW ARROWS

PAVEMENT MARKING DETAIL
FOR NARROW ARROWS

R-1

COLORADO LICENSED
ANDREW R. HUGGINS
43265
9/10/2024
PROFESSIONAL ENGINEER

R-1

Print Date: 09/09/2024
File Name: 175644_TRAF_S&S.dwg
Horiz. Scale: N/A Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions

Date:	Comments	Init.
9/09/24	GEOMETRY CHANGE	BAH

EL PASO COUNTY
COLORADO

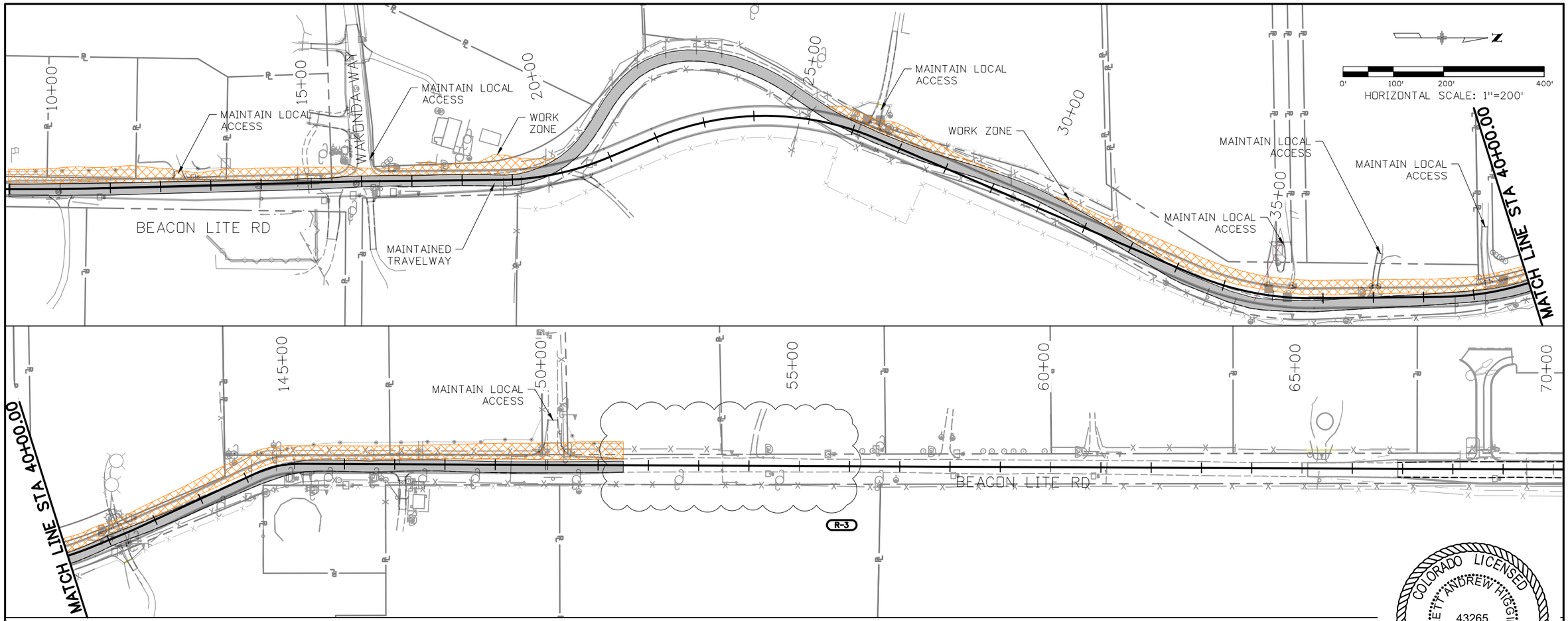
PPRTA

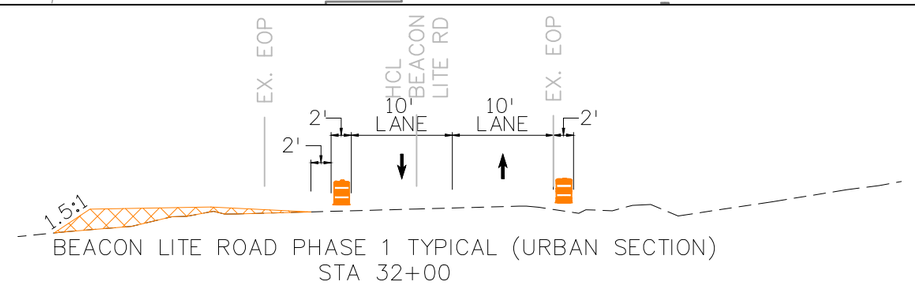
COUNTY LINE ROAD IMPROVEMENTS
SIGNING AND STRIPING DETAILS
BEACON LITE ROAD

Project No./Code
128558

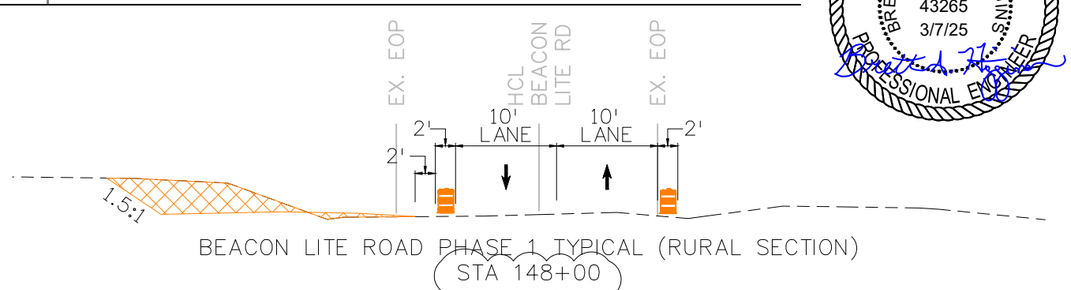
Designer: KRS
Detailer: RBR
Sheet Subset: TRAFFIC
Structure Numbers
Subset Sheets: 1 OF 1

Sheet Number 126





BEACON LITE ROAD PHASE 1 TYPICAL (URBAN SECTION)
STA 32+00



BEACON LITE ROAD PHASE 1 TYPICAL (RURAL SECTION)
STA 148+00
R-3

COLORADO LICENSED
BRETT ANDREW HIGGINS
43265
3/7/25
PROFESSIONAL ENGINEER

BEACON LITE RD PHASE 1 - EXAMPLE CONSTRUCTION SEQUENCE:

WORK ACTIVITIES:
1. CONSTRUCT TEMPORARY GRAVEL ROAD WEST OF EXISTING BEACON LITE ROAD TO ACCOMMODATE 2-10 FT LANES FOR THE TRAFFIC SHIFT IN PHASE 2.
2. THE MAXIMUM ALLOWABLE TEMPORARY SLOPE BETWEEN TRAFFIC AND THE WORK ZONE SHALL BE 1.5:1.

TRAFFIC CONTROL:
1. SHIFT EXISTING TRAVEL LANES TO THE EAST OF THE EXISTING GRAVEL ROAD.
2. MAINTAIN A MINIMUM 2-10 FT LANES FOR TRAFFIC TO ACCOMMODATE CONSTRUCTION OF THE TEMPORARY GRAVEL ROAD TO THE WEST.
3. UTILIZE CHANNELIZATION DRUMS BETWEEN EDGE OF TRAVEL LANES AND WORK ZONE.
4. MAINTAIN LOCAL ACCESS.

Print Date: 03/07/2025
File Name: 175644_TRF_Phasing.dwg
Horiz. Scale: **1" = 200'** Vert. Scale: **N/A**
Unit Information — Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
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Sheet Revisions

	Date:	Comments	Init.
R-1	8/31/23	UPDATED LINEWORK	BAH
R-2	9/09/24	GEOMETRY CHANGE	BAH
R-3	3/07/25	PROJ. LIMITS CHANGE	BAH

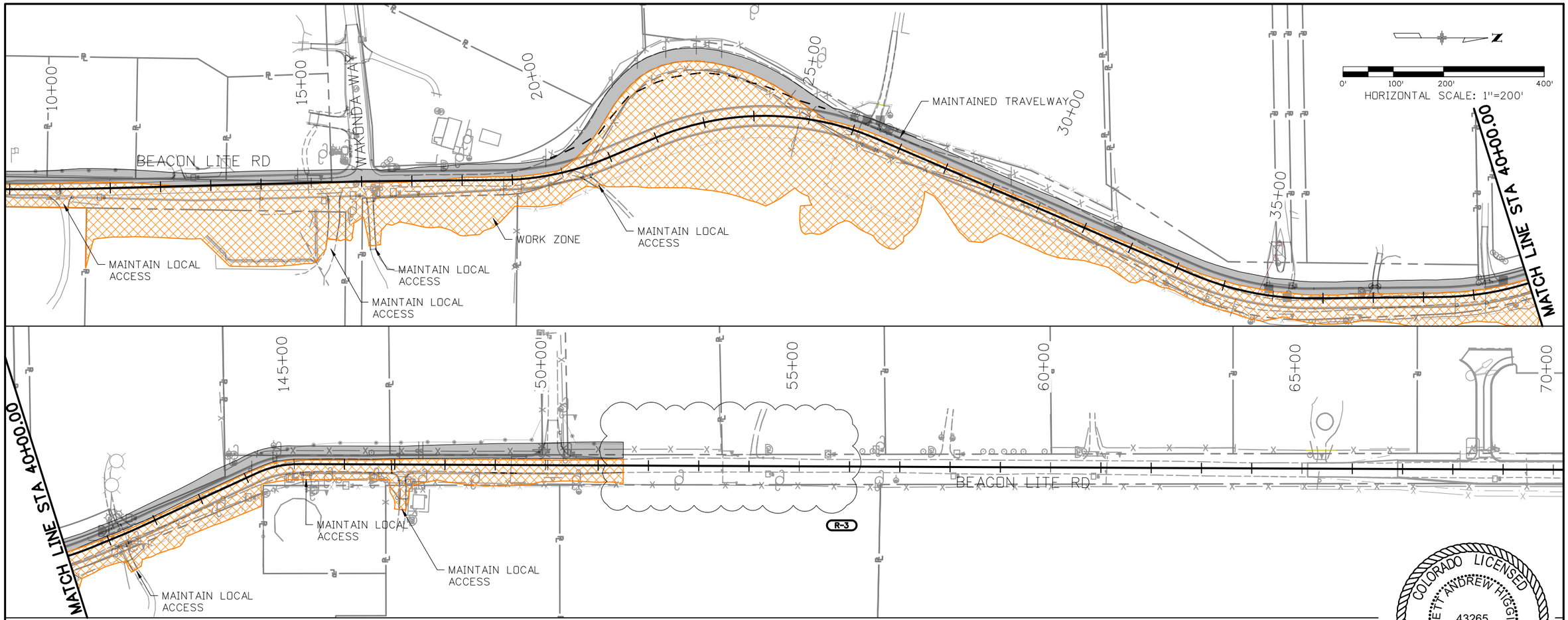
EL PASO COUNTY COLORADO

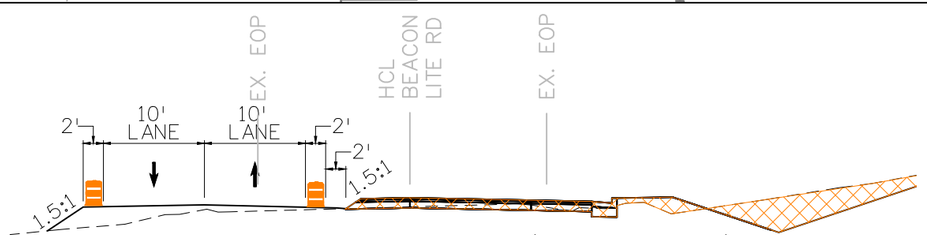
PPRTA PIKES PEAK RURAL TRANSPORTATION AUTHORITY

BEACON LITE ROAD IMPROVEMENTS TRAFFIC CONTROL PLAN PHASE 1

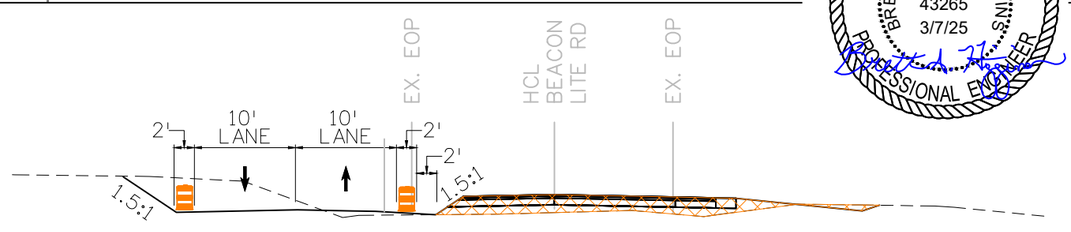
Project No./Code: 128558

Designer: BAH
Detailer: AJS
Sheet Subset: TCP
Structure Numbers:
Subset Sheets: 1 OF 3
Sheet Number 127





BEACON LITE ROAD PHASE 2 TYPICAL (URBAN SECTION)
STA 32+00



BEACON LITE ROAD PHASE 2 TYPICAL (RURAL SECTION)
STA 148+00
R-3

BEACON LITE RD PHASE 2 - EXAMPLE CONSTRUCTION SEQUENCE:

WORK ACTIVITIES:

1. CONSTRUCT THE EAST HALF OF BEACON LITE ROAD A MINIMUM WIDTH OF 26 FT TO ACCOMMODATE TRAFFIC IN PHASE 3.
2. 2. THE MAXIMUM ALLOWABLE TEMPORARY SLOPE BETWEEN TRAFFIC AND THE WORK ZONE SHALL BE 1.5:1.

TRAFFIC CONTROL:

1. SHIFT TRAFFIC TO THE WEST ON TO THE TEMPORARY GRAVEL ROAD CONSTRUCTED IN PHASE 1.
2. MAINTAIN A MINIMUM 2-10 FT LANES FOR TRAFFIC.
3. UTILIZE CHANNELIZATION DRUMS BETWEEN EDGE OF TRAVEL LANES AND WORK ZONE.
4. MAINTAIN LOCAL ACCESS.

COLORADO LICENSED
BRETT ANDREW HIGGINS
43265
3/7/25
PROFESSIONAL ENGINEER

Print Date: 03/07/2025
File Name: 175644_TRF_Phasing.dwg
Horiz. Scale: **1" = 200'** Vert. Scale: **N/A**
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
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720.514.1100

Sheet Revisions

	Date:	Comments	Init.
R-1	8/31/23	UPDATED SHAPE AND LINES	BAH
R-2	9/09/24	GEOMETRY CHANGE	BAH
R-3	3/07/25	PROJ. LIMITS CHANGE	BAH

EL PASO COUNTY
COLORADO

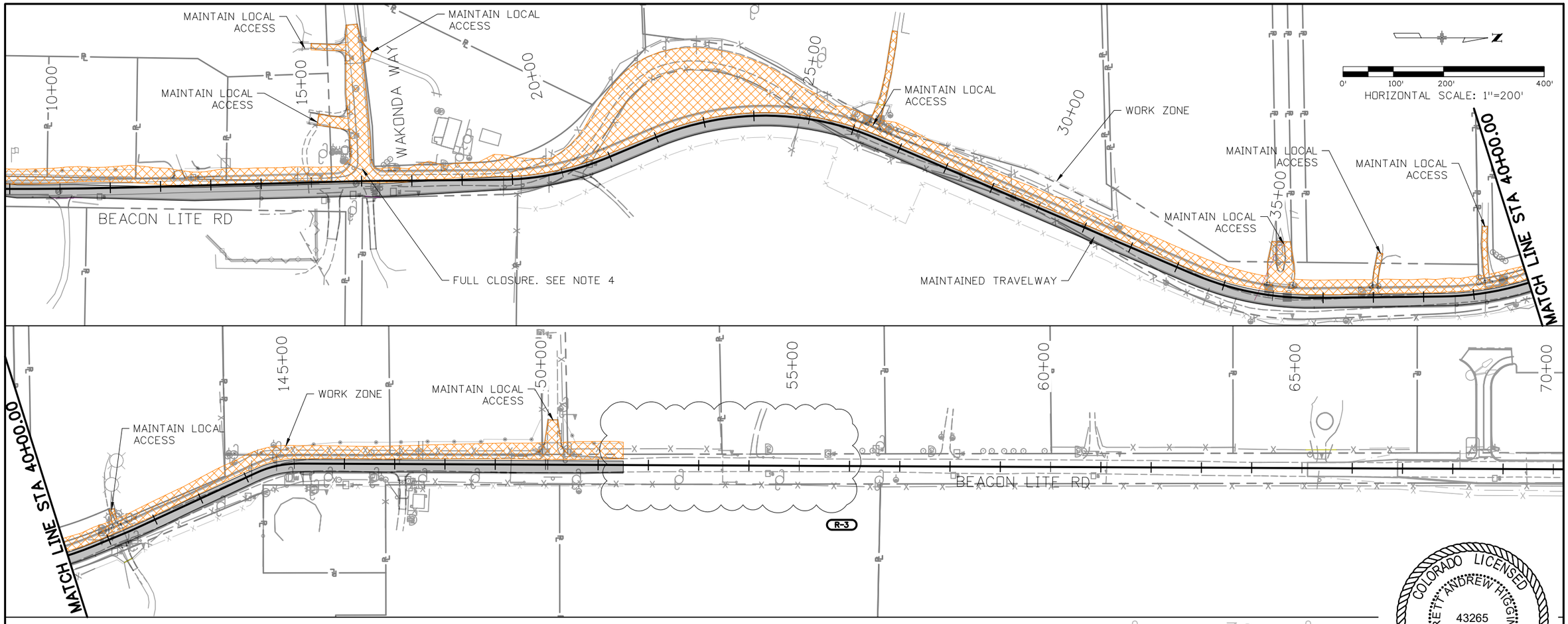
PPRTA FIVE YEAR RURAL TRANSPORTATION AUTHORITY

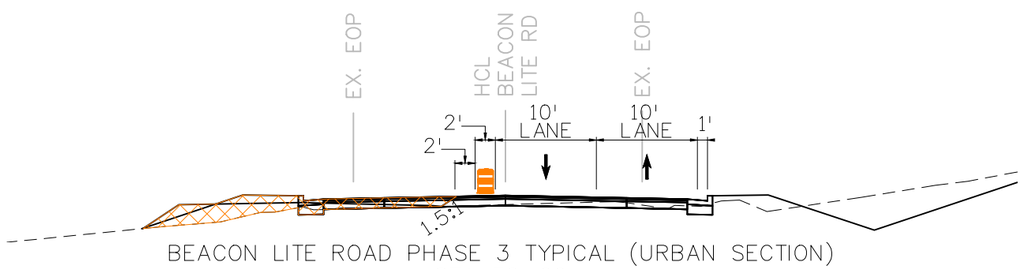
BEACON LITE ROAD IMPROVEMENTS TRAFFIC CONTROL PLAN PHASE 2

Project No./Code: 128558

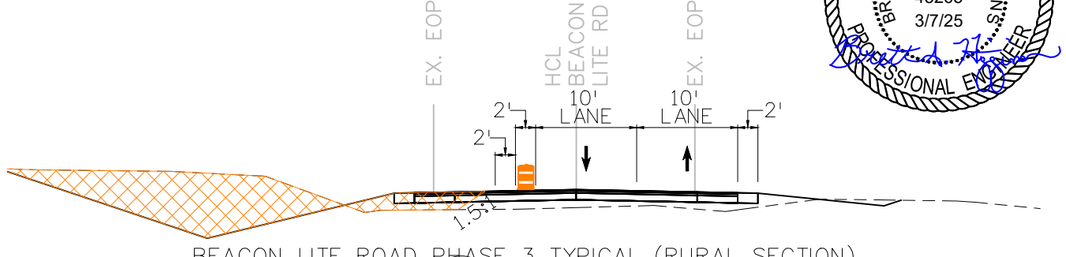
Designer: BAH
Detailer: AJS
Sheet Subset: TCP
Structure Numbers:
Subset Sheets: 2 OF 3

Sheet Number 128





BEACON LITE ROAD PHASE 3 TYPICAL (URBAN SECTION)
STA 32+00



BEACON LITE ROAD PHASE 3 TYPICAL (RURAL SECTION)
STA 148+00
R-3

BEACON LITE RD PHASE 3 - EXAMPLE CONSTRUCTION SEQUENCE:

WORK ACTIVITIES:
1. CONSTRUCT THE WEST HALF OF BEACON LITE ROAD.
2. CONSTRUCT WAKONDA WAY.

TRAFFIC CONTROL:
1. SHIFT TRAFFIC TO THE EAST SIDE OF BEACON LITE ROAD ON TO THE NEWLY CONSTRUCTED PAVEMENT FROM PHASE 2.
2. MAINTAIN A MINIMUM 2-10 FT LANES FOR TRAFFIC.
3. UTILIZE CHANNELIZATION DRUMS BETWEEN EDGE OF TRAVEL LANES AND WORK ZONE.
4. FULL CLOSURE OF WAKONDA WAY FOR FULL DEPTH CONSTRUCTION. PROVIDE LOCAL DETOUR VIA SOUTHERN-MOST WANKONDA WAY ACCESS.
5. MAINTAIN LOCAL ACCESS.

COLORADO LICENSED
BRETT ANDREW HIGGINS
43265
3/7/25
PROFESSIONAL ENGINEER

Print Date: 03/07/2025
File Name: 175644_TRF_Phasing.dwg
Horiz. Scale: **1" = 200'** Vert. Scale: **N/A**
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
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720.514.1100

Sheet Revisions

	Date:	Comments	Init.
R-1	8/31/23	UPDATED SHAPE AND LINES	BAH
R-2	9/09/24	GEOMETRY CHANGE	BAH
R-3	3/07/25	PROJ. LIMITS CHANGE	BAH

EL PASO COUNTY
COLORADO

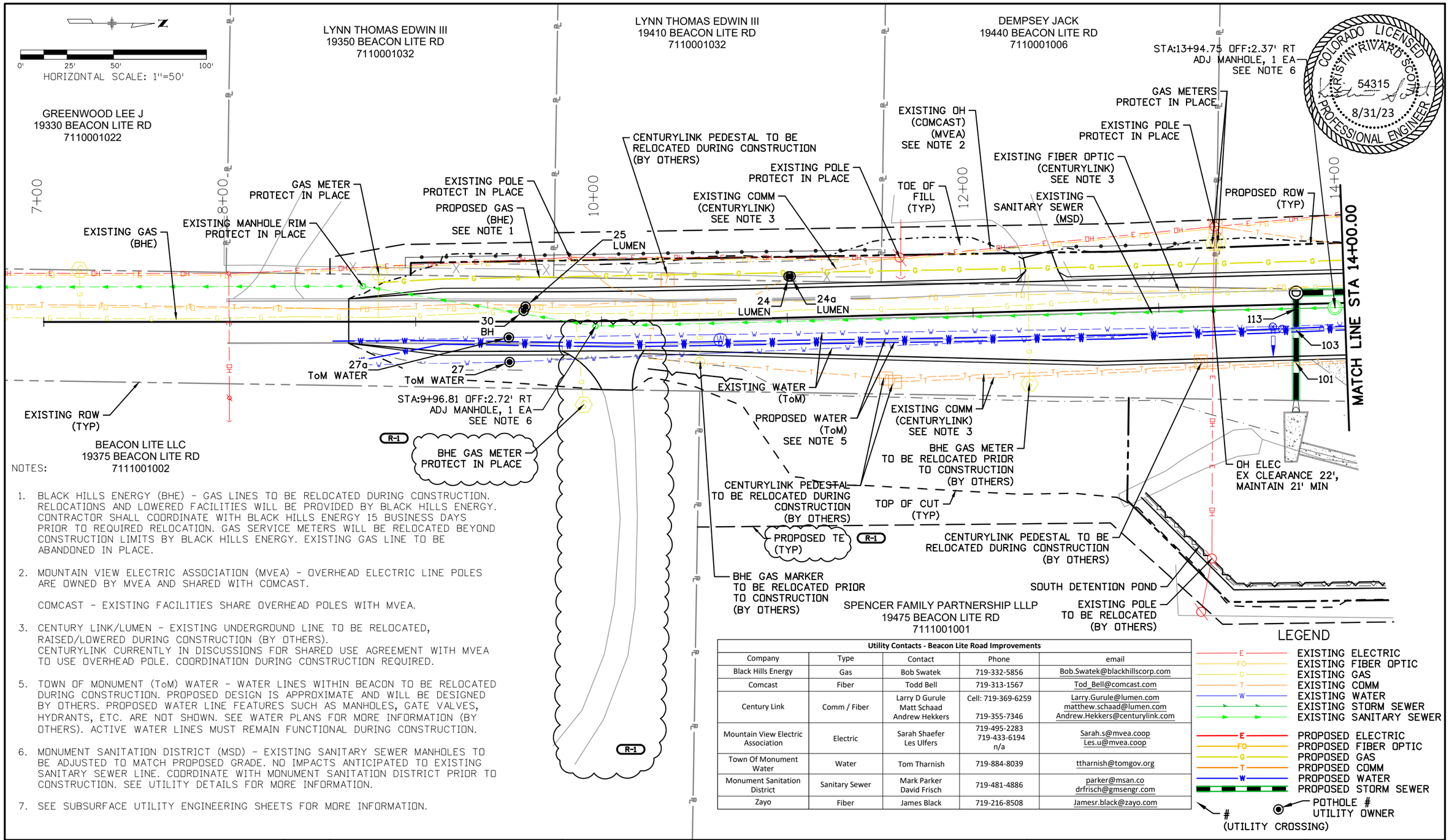
PPRTA

BEACON LITE ROAD IMPROVEMENTS TRAFFIC CONTROL PLAN PHASE 3

Project No./Code: 128558

Designer: BAH
Detailer: AJS
Sheet Subset: TCP
Structure Numbers:
Subset Sheets: 3 OF 3

Sheet Number 129



COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
8/31/23
PROFESSIONAL ENGINEER

NOTES:

1. BLACK HILLS ENERGY (BHE) - GAS LINES TO BE RELOCATED DURING CONSTRUCTION. RELOCATIONS AND LOWERED FACILITIES WILL BE PROVIDED BY BLACK HILLS ENERGY. CONTRACTOR SHALL COORDINATE WITH BLACK HILLS ENERGY 15 BUSINESS DAYS PRIOR TO REQUIRED RELOCATION. GAS SERVICE METERS WILL BE RELOCATED BEYOND CONSTRUCTION LIMITS BY BLACK HILLS ENERGY. EXISTING GAS LINE TO BE ABANDONED IN PLACE.
2. MOUNTAIN VIEW ELECTRIC ASSOCIATION (MVEA) - OVERHEAD ELECTRIC LINE POLES ARE OWNED BY MVEA AND SHARED WITH COMCAST.

   COMCAST - EXISTING FACILITIES SHARE OVERHEAD POLES WITH MVEA.
3. CENTURY LINK/LUMEN - EXISTING UNDERGROUND LINE TO BE RELOCATED, RAISED/LOWERED DURING CONSTRUCTION (BY OTHERS). CENTURYLINK CURRENTLY IN DISCUSSIONS FOR SHARED USE AGREEMENT WITH MVEA TO USE OVERHEAD POLE. COORDINATION DURING CONSTRUCTION REQUIRED.
5. TOWN OF MONUMENT (ToM) WATER - WATER LINES WITHIN BEACON TO BE RELOCATED DURING CONSTRUCTION. PROPOSED DESIGN IS APPROXIMATE AND WILL BE DESIGNED BY OTHERS. PROPOSED WATER LINE FEATURES SUCH AS MANHOLES, GATE VALVES, HYDRANTS, ETC. ARE NOT SHOWN. SEE WATER PLANS FOR MORE INFORMATION (BY OTHERS). ACTIVE WATER LINES MUST REMAIN FUNCTIONAL DURING CONSTRUCTION.
6. MONUMENT SANITATION DISTRICT (MSD) - EXISTING SANITARY SEWER MANHOLES TO BE ADJUSTED TO MATCH PROPOSED GRADE. NO IMPACTS ANTICIPATED TO EXISTING SANITARY SEWER LINE. COORDINATE WITH MONUMENT SANITATION DISTRICT PRIOR TO CONSTRUCTION. SEE UTILITY DETAILS FOR MORE INFORMATION.
7. SEE SUBSURFACE UTILITY ENGINEERING SHEETS FOR MORE INFORMATION.

Utility Contacts - Beacon Lite Road Improvements

Company	Type	Contact	Phone	email
Black Hills Energy	Gas	Bob Swatek	719-332-5856	Bob.Swatek@blackhillscorp.com
Comcast	Fiber	Todd Bell	719-313-1567	Tod_Bell@comcast.com
Century Link	Comm / Fiber	Larry D Gurule Matt Schaad Andrew Hekkers	Cell: 719-369-6259 719-355-7346	Larry.Gurule@lumen.com matthew.schaad@lumen.com Andrew.Hekkers@centurylink.com
Mountain View Electric Association	Electric	Sarah Shaefer Les Ulfers	719-495-2283 719-433-6194 n/a	Sarah.s@mvea.coop Les.u@mvea.coop
Town Of Monument Water	Water	Tom Tharnish	719-884-8039	ttharnish@tomgov.org
Monument Sanitation District	Sanitary Sewer	Mark Parker David Frisch	719-481-4886	parker@msan.co drfrisch@gmsengr.com
Zayo	Fiber	James Black	719-216-8508	Jamesr.black@zayo.com

Print Date:	04/29/2022
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Vert. Scale:	N/A
Unit Information	Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions

Date:	Comments	Init.
6/01/23	RFC	EMK
8/31/23	UPDATED DRIVE 1	KRS

EL PASO COUNTY COLORADO

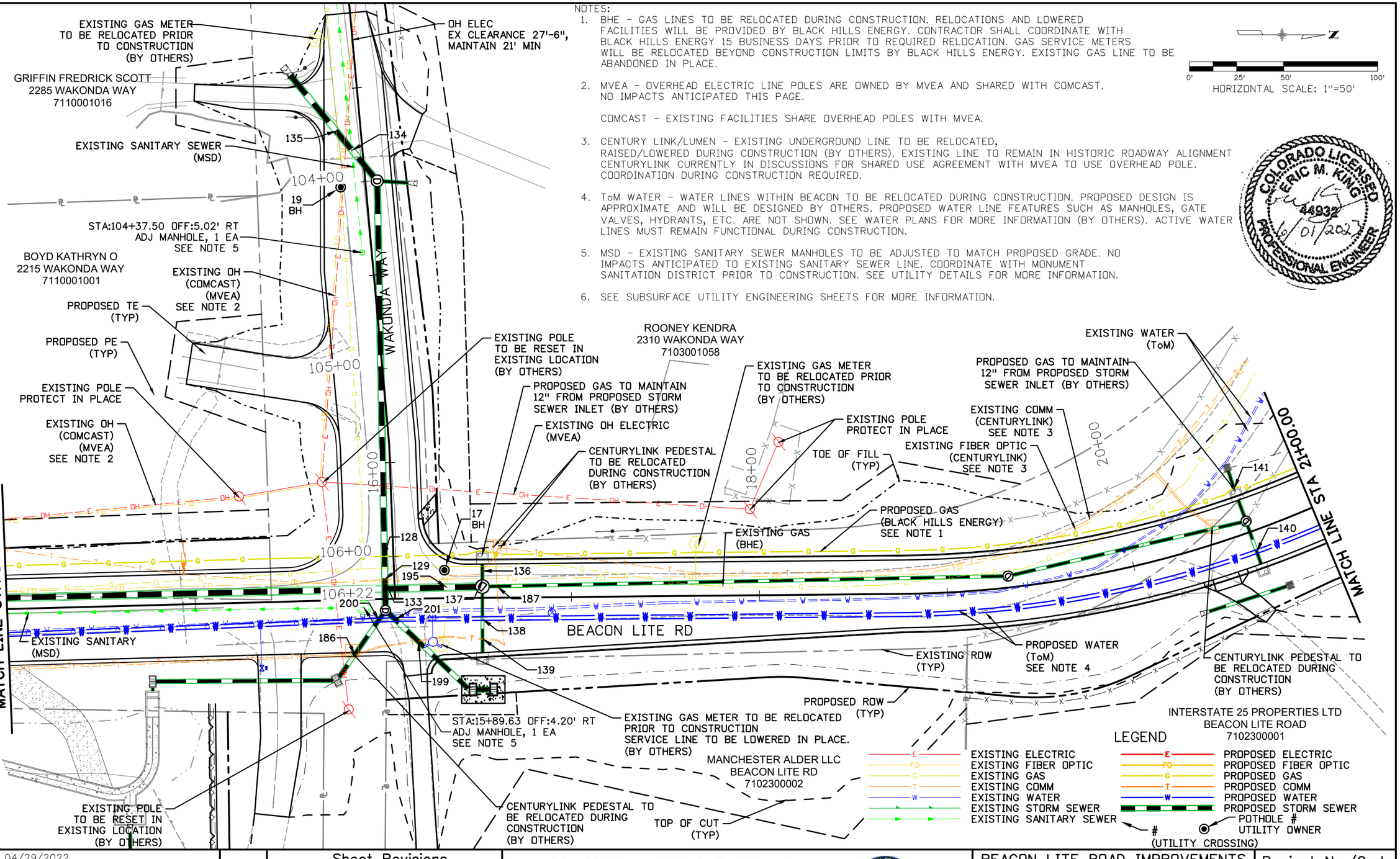
PPRTA

BEACON LITE ROAD IMPROVEMENTS
UTILITY PLANS

Project No./Code: 128558

Designer:	KRS
Detailer:	RBR
Sheet Subset:	UTILITY
Structure Numbers	
Subset Sheets:	1 OF 7

Sheet Number 130



NOTES:

1. BHE - GAS LINES TO BE RELOCATED DURING CONSTRUCTION. RELOCATIONS AND LOWERED FACILITIES WILL BE PROVIDED BY BLACK HILLS ENERGY. CONTRACTOR SHALL COORDINATE WITH BLACK HILLS ENERGY 15 BUSINESS DAYS PRIOR TO REQUIRED RELOCATION. GAS SERVICE METERS WILL BE RELOCATED BEYOND CONSTRUCTION LIMITS BY BLACK HILLS ENERGY. EXISTING GAS LINE TO BE ABANDONED IN PLACE.
2. MVEA - OVERHEAD ELECTRIC LINE POLES ARE OWNED BY MVEA AND SHARED WITH COMCAST. NO IMPACTS ANTICIPATED THIS PAGE.

   COMCAST - EXISTING FACILITIES SHARE OVERHEAD POLES WITH MVEA.
3. CENTURY LINK/LUMEN - EXISTING UNDERGROUND LINE TO BE RELOCATED, RAISED/LOWERED DURING CONSTRUCTION (BY OTHERS). EXISTING LINE TO REMAIN IN HISTORIC ROADWAY ALIGNMENT CENTURYLINK CURRENTLY IN DISCUSSIONS FOR SHARED USE AGREEMENT WITH MVEA TO USE OVERHEAD POLE. COORDINATION DURING CONSTRUCTION REQUIRED.
4. ToM WATER - WATER LINES WITHIN BEACON TO BE RELOCATED DURING CONSTRUCTION. PROPOSED DESIGN IS APPROXIMATE AND WILL BE DESIGNED BY OTHERS. PROPOSED WATER LINE FEATURES SUCH AS MANHOLES, GATE VALVES, HYDRANTS, ETC. ARE NOT SHOWN. SEE WATER PLANS FOR MORE INFORMATION (BY OTHERS). ACTIVE WATER LINES MUST REMAIN FUNCTIONAL DURING CONSTRUCTION.
5. MSD - EXISTING SANITARY SEWER MANHOLES TO BE ADJUSTED TO MATCH PROPOSED GRADE. NO IMPACTS ANTICIPATED TO EXISTING SANITARY SEWER LINE. COORDINATE WITH MONUMENT SANITATION DISTRICT PRIOR TO CONSTRUCTION. SEE UTILITY DETAILS FOR MORE INFORMATION.
6. SEE SUBSURFACE UTILITY ENGINEERING SHEETS FOR MORE INFORMATION.

0' 25' 50' 100'
HORIZONTAL SCALE: 1"=50'

COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_UTI_Plan.dwg
Horiz. Scale: 1" = 50' Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

0000

Sheet Revisions

Date:	Comments	Init.

EL PASO COUNTY
COLORADO

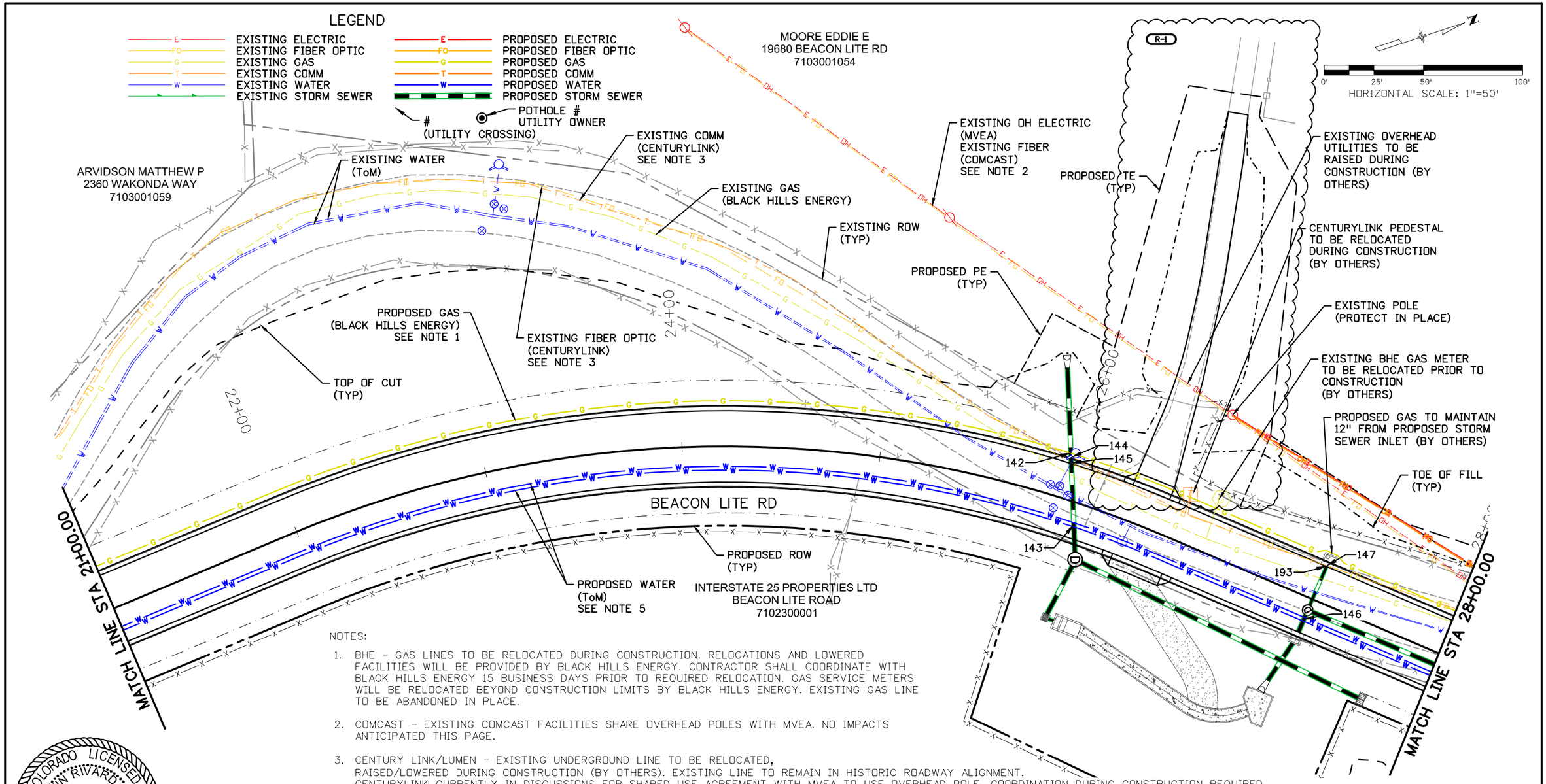
PPRTA

BEACON LITE ROAD IMPROVEMENTS
UTILITY PLANS

Project No./Code 128558

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	UTILITY	Subset Sheets:	2 OF 7

Sheet Number 131



NOTES:

1. BHE - GAS LINES TO BE RELOCATED DURING CONSTRUCTION. RELOCATIONS AND LOWERED FACILITIES WILL BE PROVIDED BY BLACK HILLS ENERGY. CONTRACTOR SHALL COORDINATE WITH BLACK HILLS ENERGY 15 BUSINESS DAYS PRIOR TO REQUIRED RELOCATION. GAS SERVICE METERS WILL BE RELOCATED BEYOND CONSTRUCTION LIMITS BY BLACK HILLS ENERGY. EXISTING GAS LINE TO BE ABANDONED IN PLACE.
2. COMCAST - EXISTING COMCAST FACILITIES SHARE OVERHEAD POLES WITH MVEA. NO IMPACTS ANTICIPATED THIS PAGE.
3. CENTURY LINK/LUMEN - EXISTING UNDERGROUND LINE TO BE RELOCATED, RAISED/LOWERED DURING CONSTRUCTION (BY OTHERS). EXISTING LINE TO REMAIN IN HISTORIC ROADWAY ALIGNMENT. CENTURYLINK CURRENTLY IN DISCUSSIONS FOR SHARED USE AGREEMENT WITH MVEA TO USE OVERHEAD POLE. COORDINATION DURING CONSTRUCTION REQUIRED.
4. MVEA - OVERHEAD ELECTRIC LINE POLES ARE OWNED BY MVEA AND SHARED WITH COMCAST. NO IMPACTS ANTICIPATED THIS PAGE.
5. ToM WATER - WATER LINES WITHIN BEACON TO BE RELOCATED DURING CONSTRUCTION. PROPOSED DESIGN IS APPROXIMATE AND WILL BE DESIGNED BY OTHERS. PROPOSED WATER LINE FEATURES SUCH AS MANHOLES, GATE VALVES, HYDRANTS, ETC. ARE NOT SHOWN. SEE WATER PLANS FOR MORE INFORMATION (BY OTHERS). ACTIVE WATER LINES MUST REMAIN FUNCTIONAL DURING CONSTRUCTION.
6. SEE SUBSURFACE UTILITY ENGINEERING SHEETS FOR MORE INFORMATION.

COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
8/31/23
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_UTI_Plan.dwg
Horiz. Scale: 1" = 50' Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
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720.514.1100

R-1

Sheet Revisions

Date:	Comments	Init.
6/01/23	RFC	EMK
8/31/23	UPDATED DRIVE 9	KRS

EL PASO COUNTY
COLORADO

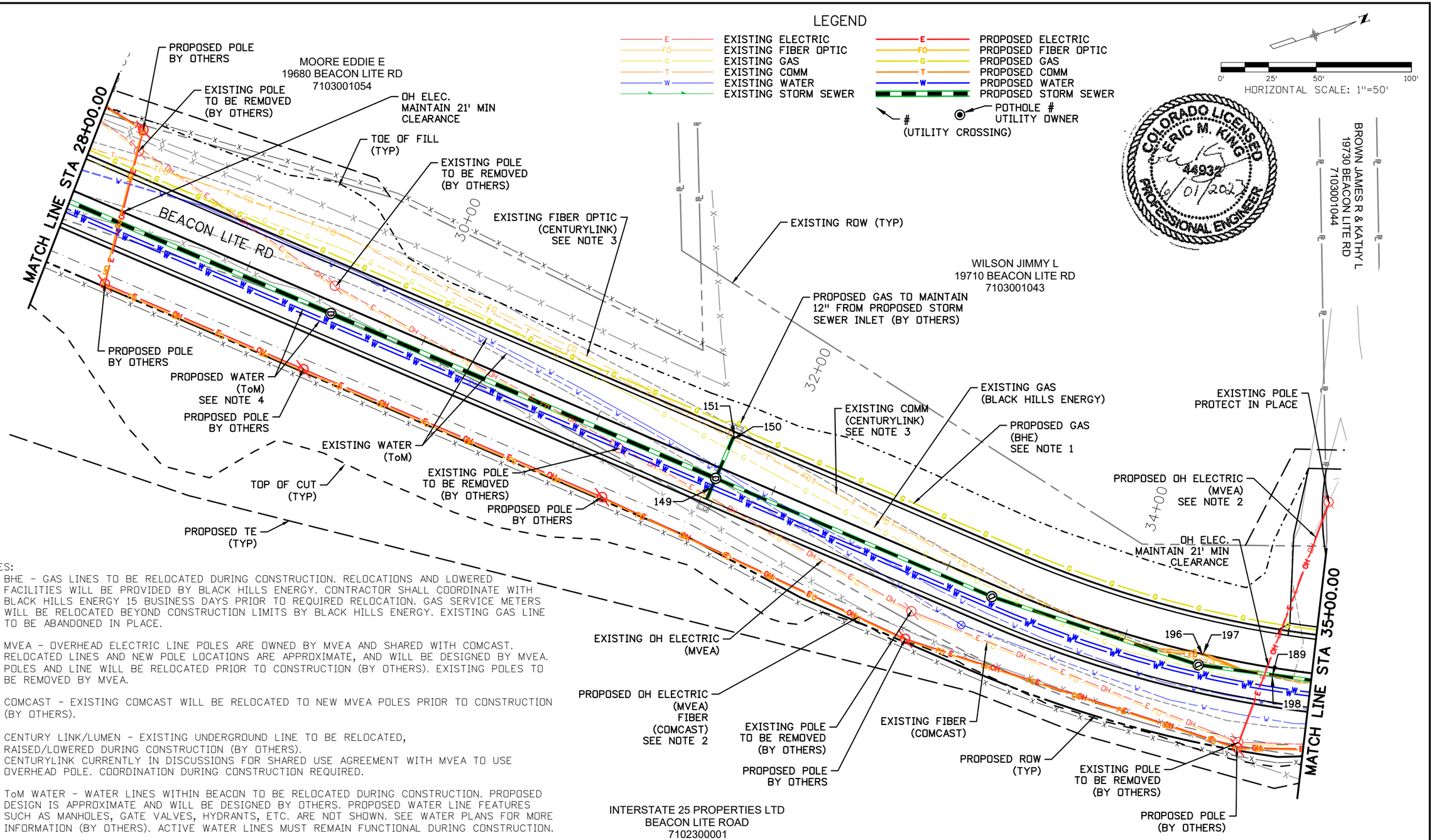
PPRTA

BEACON LITE ROAD IMPROVEMENTS
UTILITY PLANS

Project No./Code: 128558

Designer: KRS
Detailer: RBR
Sheet Subset: UTILITY
Structure Numbers:
Subset Sheets: 3 OF 7

Sheet Number 132



NOTES:

1. BHE - GAS LINES TO BE RELOCATED DURING CONSTRUCTION. RELOCATIONS AND LOWERED FACILITIES WILL BE PROVIDED BY BLACK HILLS ENERGY. CONTRACTOR SHALL COORDINATE WITH BLACK HILLS ENERGY 15 BUSINESS DAYS PRIOR TO REQUIRED RELOCATION. GAS SERVICE METERS WILL BE RELOCATED BEYOND CONSTRUCTION LIMITS BY BLACK HILLS ENERGY. EXISTING GAS LINE TO BE ABANDONED IN PLACE.

2. MVEA - OVERHEAD ELECTRIC LINE POLES ARE OWNED BY MVEA AND SHARED WITH COMCAST. RELOCATED LINES AND NEW POLE LOCATIONS ARE APPROXIMATE, AND WILL BE DESIGNED BY MVEA. POLES AND LINE WILL BE RELOCATED PRIOR TO CONSTRUCTION (BY OTHERS). EXISTING POLES TO BE REMOVED BY MVEA.

   COMCAST - EXISTING COMCAST WILL BE RELOCATED TO NEW MVEA POLES PRIOR TO CONSTRUCTION (BY OTHERS).

3. CENTURY LINK/LUMEN - EXISTING UNDERGROUND LINE TO BE RELOCATED, RAISED/LOWERED DURING CONSTRUCTION (BY OTHERS). CENTURYLINK CURRENTLY IN DISCUSSIONS FOR SHARED USE AGREEMENT WITH MVEA TO USE OVERHEAD POLE. COORDINATION DURING CONSTRUCTION REQUIRED.

4. ToM WATER - WATER LINES WITHIN BEACON TO BE RELOCATED DURING CONSTRUCTION. PROPOSED DESIGN IS APPROXIMATE AND WILL BE DESIGNED BY OTHERS. PROPOSED WATER LINE FEATURES SUCH AS MANHOLES, GATE VALVES, HYDRANTS, ETC. ARE NOT SHOWN. SEE WATER PLANS FOR MORE INFORMATION (BY OTHERS). ACTIVE WATER LINES MUST REMAIN FUNCTIONAL DURING CONSTRUCTION.

5. SEE SUBSURFACE UTILITY ENGINEERING SHEETS FOR MORE INFORMATION.

Print Date: 04/29/2022		Sheet Revisions		
File Name: 175644_UTI_Plan.dwg		Date:	Comments	Init.
Horiz. Scale: 1" = 50' Vert. Scale: N/A				
Unit Information Unit Leader Initials				
Michael Baker INTERNATIONAL — MICHAEL BAKER INTERNATIONAL, INC. 165 S. UNION BLVD., STE. 1000 LAKEWOOD, CO 80228 720.514.1100				

EL PASO COUNTY COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
UTILITY PLANS

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	UTILITY	Subset Sheets:	4 OF 7

Project No./Code 128558

Sheet Number 133

NOTES:

1. BHE – GAS LINES TO BE RELOCATED DURING CONSTRUCTION. RELOCATIONS AND LOWERED FACILITIES WILL BE PROVIDED BY BLACK HILLS ENERGY. CONTRACTOR SHALL COORDINATE WITH BLACK HILLS ENERGY 15 BUSINESS DAYS PRIOR TO REQUIRED RELOCATION. GAS SERVICE METERS WILL BE RELOCATED BEYOND CONSTRUCTION LIMITS BY BLACK HILLS ENERGY. EXISTING GAS LINE TO BE ABANDONED IN PLACE.

2. MVEA – OVERHEAD ELECTRIC LINE POLES ARE OWNED BY MVEA AND SHARED WITH COMCAST. RELOCATED LINES AND NEW POLE LOCATIONS ARE APPROXIMATE, AND WILL BE DESIGNED BY MVEA. POLES AND LINE WILL BE RELOCATED PRIOR TO CONSTRUCTION (BY OTHERS). EXISTING POLES TO BE REMOVED BY MVEA.

   COMCAST – EXISTING COMCAST WILL BE RELOCATED TO NEW MVEA POLES PRIOR TO CONSTRUCTION (BY OTHERS).

3. CENTURY LINK/LUMEN – EXISTING UNDERGROUND LINE TO BE RELOCATED, RAISED/LOWERED DURING CONSTRUCTION (BY OTHERS).

   CENTURYLINK CURRENTLY IN DISCUSSIONS FOR SHARED USE AGREEMENT WITH MVEA TO USE OVERHEAD POLE. COORDINATION DURING CONSTRUCTION REQUIRED.

4. ToM WATER – WATER LINES WITHIN BEACON TO BE RELOCATED DURING CONSTRUCTION. PROPOSED DESIGN IS APPROXIMATE AND WILL BE DESIGNED BY OTHERS. PROPOSED WATER LINE FEATURES SUCH AS MANHOLES, GATE VALVES, HYDRANTS, ETC. ARE NOT SHOWN. SEE WATER PLANS FOR MORE INFORMATION (BY OTHERS). ACTIVE WATER LINES MUST REMAIN FUNCTIONAL DURING CONSTRUCTION.

5. SEE SUBSURFACE UTILITY ENGINEERING SHEETS FOR MORE INFORMATION.

BROWN JAMES R & KATHY L
19730 BEACON LITE RD
7103001044

NORDBY MARK J & TRICIA A
19790 BEACON LITE RD
7103001041

BESHEAR DENNIS C
19850 BEACON LITE RD
7103001042

NANCE BOB E &
19870 BEACON LITE RD
7103001052

ORTIONA CHRISTOPHER J
19890 BEACON LITE RD
7103001053

HORIZONTAL SCALE: 1"=50'

BEACON LITE RD

MATCH LINE STA 35+00.00

MATCH LINE STA 142+00.00

PROPOSED GAS TO MAINTAIN 12" FROM PROPOSED STORM SEWER INLET (BY OTHERS)

PROPOSED TE (TYP)

CENTURYLINK PEDESTAL TO BE RELOCATED DURING CONSTRUCTION (BY OTHERS)

EXISTING BHE GAS METER TO BE RELOCATED PRIOR TO CONSTRUCTION (BY OTHERS)

PROPOSED GAS (BLACK HILLS ENERGY) SEE NOTE 1

EXISTING FIBER OPTIC (CENTURYLINK) SEE NOTE 3

EXISTING COMM (CENTURYLINK)

TOE OF FILL (TYP)

EXISTING GAS (BLACK HILLS ENERGY)

PROPOSED UNDERGROUND ELEC (MVEA)

EXISTING WATER (ToM)

EXISTING OH FIBER (COMCAST)

EXISTING OH ELECTRIC (MVEA)

PROPOSED ROW (TYP)

PROPOSED COMM (CENTURYLINK) SEE NOTE 3

PROPOSED OH ELECTRIC (MVEA) FIBER (COMCAST) SEE NOTE 2

PROPOSED POLE (BY OTHERS)

PROPOSED WATER (ToM) SEE NOTE 4

PROPOSED FIBER (COMCAST) SEE NOTE 2

EXISTING POLE TO BE REMOVED (BY OTHERS)

TEMPORARY BHE GAS LINE TO BE PLACED WITHIN TEMPORARY EASEMENT DURING ROADWAY EXCAVATION. PROTECT IN PLACE (BY OTHERS)

CENTURYLINK PEDESTAL TO BE RELOCATED DURING CONSTRUCTION (BY OTHERS)

PROPOSED GAS TO MAINTAIN 12" FROM PROPOSED STORM SEWER INLET (BY OTHERS)

EXISTING GAS METER TO BE RELOCATED PRIOR TO CONSTRUCTION (BY OTHERS)

EXISTING ROW (TYP)

STA AHEAD = 141+00.00
STA BACK = 41+00.00

CENTURYLINK PEDESTAL TO BE RELOCATED DURING CONSTRUCTION (BY OTHERS)

EXISTING POLE TO BE REMOVED (BY OTHERS)

PROPOSED POLE (BY OTHERS)

TOP OF CUT (TYP)

INTERSTATE 25 PROPERTIES LTD
BEACON LITE ROAD
7102300001

LEGEND

EXISTING ELECTRIC	PROPOSED ELECTRIC
EXISTING FIBER OPTIC	PROPOSED FIBER OPTIC
EXISTING GAS	PROPOSED GAS
EXISTING COMM	PROPOSED COMM
EXISTING WATER	PROPOSED WATER
EXISTING STORM SEWER	PROPOSED STORM SEWER
# (UTILITY CROSSING)	POTHOLE # UTILITY OWNER

COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
9/10/24
PROFESSIONAL ENGINEER

Print Date:	09/09/2024
File Name:	175644_UTI_Plan.dwg
Horiz. Scale:	1" = 50'
Vert. Scale:	N/A
Unit Information	Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions

Date:	Comments	Init.
6/01/23	RFC	EMK
9/09/24	GEOMETRY CHANGE	KRS

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
UTILITY PLANS

Project No./Code: 128558

Designer:	KRS	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	UTILITY	Subset Sheets:	5 OF 7

Sheet Number 134

COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
9/10/24
PROFESSIONAL ENGINEER

ORTIONA CHRISTOPHER J
19890 BEACON LITE RD
7103001053

FARRAR FAMILY REVOCABLE TRUST
2325 BRICKER RD
7103001051

HORIZONTAL SCALE: 1"=50'

TOP OF CUT (TYP)
PROPOSED TE (TYP)
PROPOSED ROW (TYP)
TEMPORARY BHE GAS LINE TO BE PLACED WITHIN TEMPORARY EASEMENT DURING ROADWAY EXCAVATION. PROTECT IN PLACE (BY OTHERS)
EXISTING GAS (BLACK HILLS ENERGY)
PROPOSED GAS (BHE) SEE NOTE 1
EXISTING POLE TO BE REMOVED (BY OTHERS)
PROPOSED POLE (BY OTHERS)
PROPOSED OH ELECTRIC (MVEA) SEE NOTE 2
EXISTING POLE TO BE REMOVED (BY OTHERS)
EXISTING COMM (CENTURYLINK)
PROPOSED POLE (BY OTHERS)
EXISTING FIBER OPTIC (CENTURYLINK) SEE NOTE 4
EXISTING OH ELECTRIC (MVEA)
OH ELEC. MAINTAIN 21' MIN CLEARANCE
EXISTING ROW (TYP)
EXISTING WATER (ToM)
15 ToM WATER
16 ToM WATER
PROPOSED FUTURE WATER LINE SEE NOTE 6
14 LUMEN
32 ZAYO
EXISTING FIBER (ZAYO)
TOE OF FILL (TYP)
PROPOSED FIBER (COMCAST) SEE NOTE 3
MATCH LINE STA 149+04.54
MATCH LINE STA 142+00.00
BEACON LITE RD
PROPOSED POLE (BY OTHERS)
EXISTING POLE AND SERVICE METER TO BE REMOVED (BY OTHERS)
PROPOSED POLE (BY OTHERS)
EXISTING POLE TO BE REMOVED (BY OTHERS)
PROPOSED WATER (TOWN OF MONUMENT) SEE NOTE 5
CENTURYLINK PEDESTAL TO BE RELOCATED DURING CONSTRUCTION (BY OTHERS)
PROPOSED FIBER (COMCAST) SEE NOTE 2
MONUMENT TOWN OF BEACON LITE RD 7102200004
EXISTING WATER TANK PROTECT IN PLACE
EXISTING POLE AND SERVICE METER TO BE RELOCATED (BY OTHERS)
EXISTING RADIO TOWER TO BE REMOVED (BY OTHERS)
FUTURE WATER TANK AND LINE (BY OTHERS)
CENTURYLINK PEDESTAL TO BE RELOCATED DURING CONSTRUCTION (BY OTHERS)
EXISTING POLE AND SERVICE METER TO BE REMOVED (BY OTHERS)
EXISTING ZAYO HANDHOLE SEE NOTE 7
CABLE HOLDCO EXCHANGE I LLC
BEACON LITE RD
7102200003

LEGEND

E	EXISTING ELECTRIC	E	PROPOSED ELECTRIC
FO	EXISTING FIBER OPTIC	FO	PROPOSED FIBER OPTIC
G	EXISTING GAS	G	PROPOSED GAS
T	EXISTING COMM	T	PROPOSED COMM
W	EXISTING WATER	W	PROPOSED WATER
	EXISTING STORM SEWER		PROPOSED STORM SEWER
#	(UTILITY CROSSING)	#	POTHOLE # UTILITY OWNER

NOTES:

1. BHE - GAS LINES TO BE RELOCATED DURING CONSTRUCTION. RELOCATIONS AND LOWERED FACILITIES WILL BE PROVIDED BY BLACK HILLS ENERGY. CONTRACTOR SHALL COORDINATE WITH BLACK HILLS ENERGY 15 BUSINESS DAYS PRIOR TO REQUIRED RELOCATION. GAS SERVICE METERS WILL BE RELOCATED BEYOND CONSTRUCTION LIMITS BY BLACK HILLS ENERGY. EXISTING GAS LINE TO BE ABANDONED IN PLACE.
2. MVEA - OVERHEAD ELECTRIC LINE POLES ARE OWNED BY MVEA AND SHARED WITH COMCAST. RELOCATED LINES AND NEW POLE LOCATIONS ARE APPROXIMATE, AND WILL BE DESIGNED BY MVEA. POLES AND LINE WILL BE RELOCATED PRIOR TO CONSTRUCTION (BY OTHERS). EXISTING POLES TO BE REMOVED BY MVEA.

   COMCAST OH - EXISTING COMCAST WILL BE RELOCATED TO NEW MVEA POLES PRIOR TO CONSTRUCTION (BY OTHERS).
3. COMCAST UNDERGROUND - EXISTING COMCAST WILL BE RELOCATED TO OUTSIDE NB SHOULDER DURING CONSTRUCTION (BY OTHERS).
4. CENTURY LINK/LUMEN - EXISTING UNDERGROUND LINE TO BE RELOCATED, RAISED/LOWERED DURING CONSTRUCTION (BY OTHERS). CENTURYLINK CURRENTLY IN DISCUSSIONS FOR SHARED USE AGREEMENT WITH MVEA TO USE OVERHEAD POLE. COORDINATION DURING CONSTRUCTION REQUIRED.
5. ToM WATER - WATER LINES WITHIN BEACON TO BE RELOCATED DURING CONSTRUCTION. PROPOSED DESIGN IS APPROXIMATE AND WILL BE DESIGNED BY OTHERS. PROPOSED WATER LINE FEATURES SUCH AS MANHOLES, GATE VALVES, HYDRANTS, ETC. ARE NOT SHOWN. SEE WATER PLANS FOR MORE INFORMATION (BY OTHERS). ACTIVE WATER LINES MUST REMAIN FUNCTIONAL DURING CONSTRUCTION.
6. ToM WATER FUTURE LINE - WATER LINE SHOWN NORTH OF WATER TANK TO BE CONSTRUCTED AT AN UNKNOWN LATER DATE. CONTRACTOR COORDINATION REQUIRED.
7. ZAYO - EXISTING FIBER HANDHOLE TO BE RELOCATED OUT OF DITCH AND ADJUSTED TO FINISHED GRADE. (BY OTHERS). COORDINATION DURING CONSTRUCTION REQUIRED
8. SEE SUBSURFACE UTILITY ENGINEERING SHEETS FOR MORE INFORMATION.

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Unit Information Unit Leader Initials

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R-1	6/01/23	RFC	EMK
R-2	8/31/23	ADDED WALL	KRS
	9/09/24	GEOMETRY CHANGE	KRS

EL PASO COUNTY COLORADO

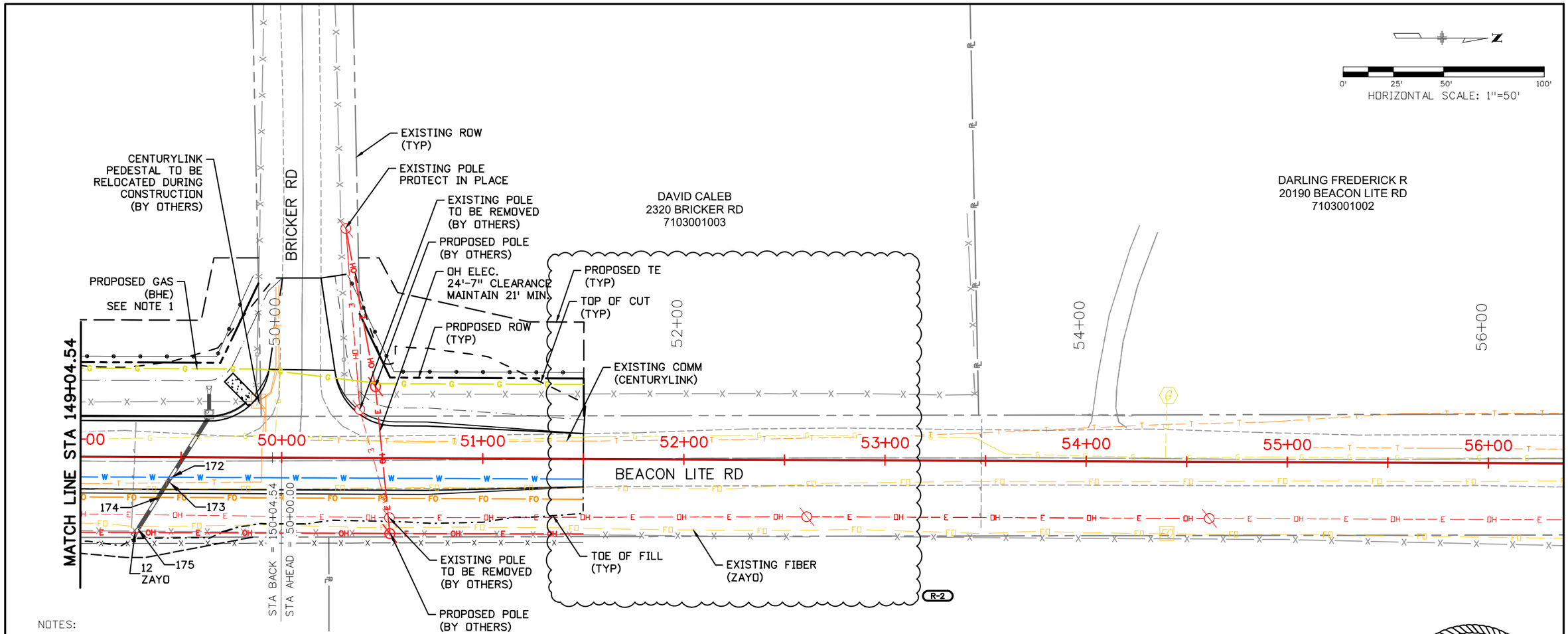
PPRTA FIVE YEAR RURAL TRANSPORTATION AUTHORITY

BEACON LITE ROAD IMPROVEMENTS
UTILITY PLANS

Project No./Code 128558

Designer: KRS
Detailer: RBR
Sheet Subset: UTILITY
Structure Numbers
Subset Sheets: 6 OF 7

Sheet Number 135



NOTES:

1. BHE - GAS LINES TO BE RELOCATED DURING CONSTRUCTION. RELOCATIONS AND LOWERED FACILITIES WILL BE PROVIDED BY BLACK HILLS ENERGY. CONTRACTOR SHALL COORDINATE WITH BLACK HILLS ENERGY 15 BUSINESS DAYS PRIOR TO REQUIRED RELOCATION. GAS SERVICE METERS WILL BE RELOCATED BEYOND CONSTRUCTION LIMITS BY BLACK HILLS ENERGY. EXISTING GAS LINE TO BE ABANDONED IN PLACE.
2. COMCAST - EXISTING COMCAST WILL BE RELOCATED TO OUTSIDE NB SHOULDER DURING TO CONSTRUCTION (BY OTHERS).
3. CENTURY LINK/LUMEN - EXISTING UNDERGROUND LINE TO BE RELOCATED, RAISED/LOWERED DURING CONSTRUCTION (BY OTHERS). CENTURYLINK CURRENTLY IN DISCUSSIONS FOR SHARED USE AGREEMENT WITH MVEA TO USE OVERHEAD POLE. COORDINATION DURING CONSTRUCTION REQUIRED.
4. MVEA - OVERHEAD ELECTRIC LINE POLES ARE OWNED BY MVEA. RELOCATIONS SHALL BE COORDINATED WITH UTILITY OWNERS DURING CONSTRUCTION. RELOCATIONS WILL BE PERFORMED BY OTHERS.
5. ZAYO - EXISTING FIBER HANDHOLE TO BE ADJUSTED TO FINISHED GRADE. (BY OTHERS). COORDINATION DURING CONSTRUCTION REQUIRED
6. ToM WATER FUTURE LINE - WATER LINE SHOWN NORTH OF WATER TANK TO BE CONSTRUCTED AT AN UNKNOWN LATER DATE. CONTRACTOR COORDINATION REQUIRED.
7. SEE SUBSURFACE UTILITY ENGINEERING SHEETS FOR MORE INFORMATION.

INTERSTATE 25 PROPERTIES LTD
BEACON LITE ROAD
7102300001

LEGEND

EXISTING ELECTRIC	PROPOSED ELECTRIC
EXISTING FIBER OPTIC	PROPOSED FIBER OPTIC
EXISTING GAS	PROPOSED GAS
EXISTING COMM	PROPOSED COMM
EXISTING WATER	PROPOSED WATER
EXISTING STORM SEWER	PROPOSED STORM SEWER
# (UTILITY CROSSING)	POTHOLE # UTILITY OWNER

COLORADO LICENSED
PAUL DONALD MOREAU
32557
3/7/25
PROFESSIONAL ENGINEER

Print Date: 03/07/2025
File Name: 175644_UTI_Plan.dwg
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Unit Information Unit Leader Initials

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Sheet Revisions

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R-2	9/09/24	GEOMETRY CHANGE	KRS
	3/07/25	PROJ. LIMITS CHANGE	PDM

EL PASO COUNTY
COLORADO

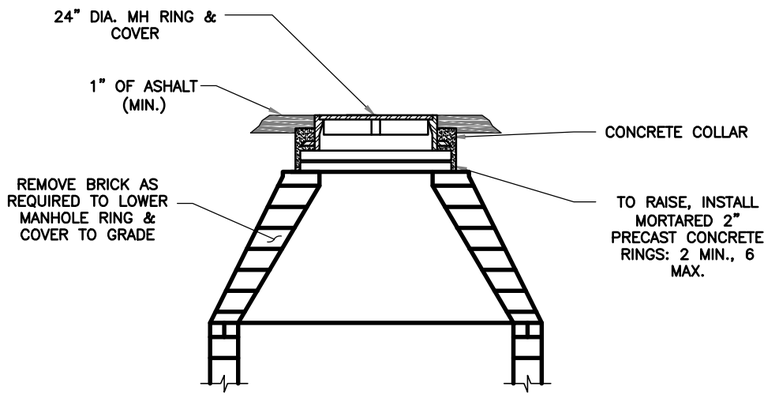
PPRTA

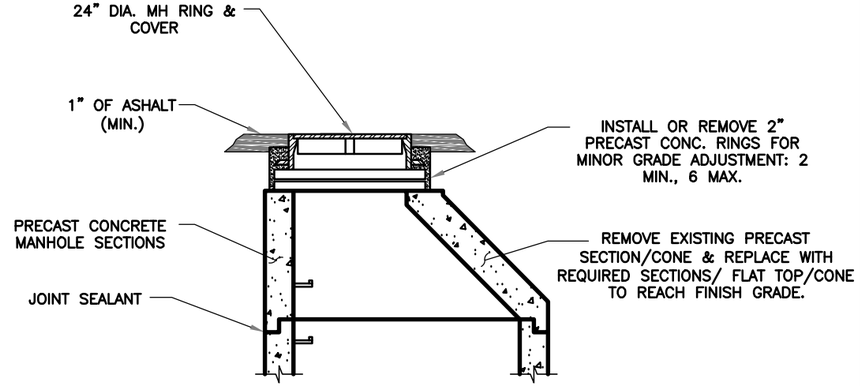
BEACON LITE ROAD IMPROVEMENTS
UTILITY PLANS

Project No./Code 128558

Designer: KRS
Detailer: RBR
Sheet Subset: UTILITY
Structure Numbers
Subset Sheets: 7 OF 7

Sheet Number 136





MONUMENT SANITATION DISTRICT

MANHOLE ADJUSTMENT DETAIL

DRAWN: SDS	REVISED: 01/12/12 UPDATED	
DATE: JAN. 2000	REVISED:	
SCALE: NONE	REVISED:	

Print Date: 04/29/2022
File Name: 175644_UTIL_DET.dwg
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Sheet Revisions

Date:	Comments	Init.

EL PASO COUNTY COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
UTILITY DETAILS

Project No./Code 128558

Designer: KRS
Detailer: RBR
Sheet Subset: UTIL DET
Structure Numbers
Subset Sheets: 1 OF 1

Sheet Number 137

POINT #	ACTION	UTILITY	OWNER	STATION	OFFSET	NORTHING	EASTING
100	PR STORM UNDER EX COMM	COMM	CENTURYLINK	40+85.83	4.834'	98,933.37	99,144.88
101	PR STORM UNDER EX COMM	COMM	CENTURYLINK	13+72.94	31.494'	96,314.77	99,001.93
102	PR STORM UNDER EX FIBER	FIBER	CENTURYLINK	40+87.93	4.191'	98,935.06	99,143.49
103	PR STORM OVER PR WATER	WATER	ToM WATER	13+73.53	13.962'	96,314.89	98,984.39
105	PR STORM UNDER PR GAS	GAS	BHE	141+37.21	-23.001'	98,970.19	99,099.65
113	PR STORM OVER EX SANITARY	SANITARY	MSD	13+73.48	2.649'	96,314.54	98,973.08
128	PR STORM UNDER PR GAS	GAS	BHE	16+00.92	-22.520'	96,541.23	98,941.89
129	PR STORM UNDER EX COMM	COMM	CENTURYLINK	16+00.94	-10.236'	96,541.58	98,954.17
133	PR STORM UNDER EX FIBER	FIBER	CENTURYLINK	16+01.02	-9.567'	96,541.67	98,954.83
134	PR STORM OVER EX SANITARY	SANITARY	MSD	103+82.96	5.682'	96,524.20	98,726.01
135	PR STORM UNDER EX GAS	GAS	BHE	103+71.85	12.767'	96,516.14	98,715.59
136	PR STORM UNDER EX COMM	COMM	CENTURYLINK	16+52.57	-14.314'	96,593.34	98,949.47
137	PR STORM UNDER EX FIBER	FIBER	CENTURYLINK	16+53.08	-10.161'	96,593.89	98,953.62
138	PR STORM OVER PR WATER	WATER	ToM WATER	16+52.59	11.193'	96,593.60	98,974.98
139	PR STORM UNDER EX COMM	COMM	CENTURYLINK	16+52.74	21.878'	96,593.85	98,985.66
140	PR STORM OVER PR WATER	WATER	ToM WATER	20+64.24	10.964'	97,005.05	98,939.18
141	PR STORM UNDER PR GAS	GAS	BHE	20+64.38	-24.580'	96,993.23	98,905.66
142	PR STORM UNDER PR GAS	GAS	BHE	25+91.82	-22.998'	97,517.29	98,837.45
143	PR STORM UNDER PR WATER	WATER	ToM WATER	26+04.24	10.982'	97,518.83	98,873.64
144	PR STORM UNDER EX COMM	COMM	CENTURYLINK	25+92.88	-21.175'	97,517.80	98,839.52
145	PR STORM UNDER EX FIBER	FIBER	CENTURYLINK	25+93.52	-18.210'	97,517.55	98,842.54
146	PR STORM OVER PR WATER	WATER	ToM WATER	27+30.66	10.876'	97,634.93	98,921.24
147	PR STORM UNDER EX COMM	COMM	CENTURYLINK	27+30.66	-18.461'	97,646.48	98,894.27
149	PR STORM OVER PR WATER	WATER	ToM WATER	31+69.64	11.142'	98,038.31	99,094.40
150	PR STORM UNDER EX COMM	COMM	CENTURYLINK	31+69.84	-16.498'	98,049.38	99,069.08
151	PR STORM UNDER EX FIBER	FIBER	CENTURYLINK	31+69.65	-18.246'	98,049.89	99,067.39
158	PR STORM OVER PR WATER	WATER	ToM WATER	35+46.36	11.326'	98,399.12	99,207.46
163	PR STORM UNDER EX COMM	COMM	CENTURYLINK	141+18.80	4.992'	98,963.93	99,132.49
164	PR STORM UNDER EX COMM	COMM	CENTURYLINK	141+38.89	2.013'	98,981.39	99,122.08
165	PR STORM UNDER EX COMM	COMM	CENTURYLINK	141+38.65	-5.232'	98,978.36	99,115.49
167	PR STORM OVER PR WATER	WATER	ToM WATER	141+39.59	11.125'	98,985.58	99,130.19
168	PR STORM OVER PR WATER	WATER	ToM WATER	141+51.92	11.328'	98,997.19	99,125.36
169	PR STORM UNDER EX COMM	COMM	CENTURYLINK	141+51.87	2.512'	98,993.53	99,117.34
170	ADJUST COMM HORIZONTALLY AROUND INLET	COMM	CENTURYLINK	141+53.01	-22.297'	98,984.38	99,094.25
171	PR STORM UNDER EX COMM	COMM	CENTURYLINK	141+08.18	33.598'	98,964.97	99,162.99
172	PR STORM OVER FUTURE PR WATER	WATER	ToM WATER	149+50.06	9.855'	99,763.11	98,995.30

POINT #	ACTION	UTILITY	OWNER	STATION	OFFSET	NORTHING	EASTING
173	PR STORM OVER EX COMM	COMM	CENTURYLINK	149+49.15	12.699'	99,762.19	98,998.14
174	PR STORM OVER PR FIBER	FIBER	COMCAST	149+43.88	20.016'	99,756.89	99,005.44
~~175~~	~~PR STORM OVER EX FIBER~~	~~FIBER~~	~~ZAYO~~	~~149+33.37~~	~~35.841'~~	~~99,746.31~~	~~99,021.21~~
~~186~~	~~PR STORM UNDER EX COMM~~	~~COMM~~	~~CENTURYLINK~~	~~15+84.15~~	~~29.237'~~	~~98,525.77~~	~~98,994.08~~
187	PR STORM UNDER EX COMM	COMM	CENTURYLINK	16+60.65	-5.870'	96,601.50	98,957.84
188	PR STORM OVER EX COMM, ADJUST COMM HORIZONTALLY AROUND MANHOLE	COMM	CENTURYLINK	35+46.62	1.454'	98,399.86	99,197.61
189	PR STORM OVER EX FIBER	FIBER	CENTURYLINK	34+79.70	3.945'	98,332.78	99,193.12
190	PR STORM OVER EX ELEC	ELECTRIC	MVEA	36+53.02	6.085'	98,506.38	99,202.12
191	PR STORM OVER EX WATER	FIBER	CENTURYLINK	141+39.40	9.109'	98,984.61	99,128.42
192	PR STORM UNDER EX FIBER	FIBER	CENTURYLINK	141+52.01	9.494'	98,996.53	99,123.65
193	PR STORM UNDER EX FIBER	FIBER	CENTURYLINK	27+30.62	-18.172'	97,646.33	98,894.52
194	PR STORM OVER EX FIBER, ADJUST COMM HORIZONTALLY AROUND MANHOLE	FIBER	CENTURYLINK	35+46.60	2.067'	98,399.81	99,198.22
195	PR STORM UNDER EX GAS	GAS	BHE	16+33.71	-5.788'	96,574.56	98,958.18
196	ADJUST FIBER HORIZONTALLY AROUND MANHOLE	FIBER	CENTURYLINK	34+41.68	0.509'	98,295.98	99,182.49
197	ADJUST COMM HORIZONTALLY AROUND MANHOLE	COMM	CENTURYLINK	34+42.00	-0.593'	98,296.53	99,181.48
198	PR STORM OVER EX COMM	COMM	CENTURYLINK	34+79.68	4.652'	98,332.65	99,193.81
199	PR STORM UNDER EX COMM	COMM	CENTURYLINK	16+18.48	22.692'	96,559.60	98,986.87
200	PR STORM UNDER PR WATER	WATER	ToM WATER	15+97.38	11.264'	96,538.59	98,975.75
201	PR STORM OVER PR WATER	WATER	ToM WATER	16+06.09	11.153'	96,547.29	98,975.41

R-2

COLORADO LICENSED
PAUL DONALD MOREAU
32557
3/7/25
PROFESSIONAL ENGINEER

Print Date: 03/07/2025
File Name: 175644_UTI_Plan.dwg
Horiz. Scale: N/A Vert. Scale: N/A
Unit Information Unit Leader Initials

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LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions

	Date:	Comments	Init.
	6/01/23	RFC	EMK
R-1	9/09/24	GEOMETRY CHANGE	KRS
R-2	3/07/25	PROJ. LIMITS CHANGE	MEB

EL PASO COUNTY
COLORADO

PPRTA
PIKES PEAK RURAL TRANSPORTATION AUTHORITY

BEACON LITE ROAD IMPROVEMENTS
UTILITY CROSSING MATRIX

Project No./Code: 128558

Designer: KRS
Detailer: RBR
Sheet Subset: UTILITY
Structure Numbers:
Subset Sheets: 1 OF 1

Sheet Number 138

R-1

BEACON LITE ROAD POTHOLES

Pothole	Northing	Easting	Elev	Depth	T.O.P.	Utility Owner	Type	Material	Size	Note
POTHOLE 1	101380.630	98982.027	7371.804		7371.804	LUMEN	FO	NA	NA	DUG TRENCH BETWEEN POINTS 1 AND 1A -
POTHOLE 1A	101380.670	98986.663	7371.942		7371.942			NA	NA	DOWN TO 10.7 FEET AND FOUND NOTHING
POTHOLE 2	101267.266	98963.658	7366.891	2.97	7363.921	BH	GAS	PVC	2"	
POTHOLE 4	101065.482	98963.561	7354.252	2.95	7351.302	BH	GAS	PVC	2"	
POTHOLE 5	100914.249	99025.045	7344.095	6.27	7337.825	ZAYO	FO	PVC	2x 1.5"	
POTHOLE 6	100924.125	98982.263	7350.700	0.74	7349.96	BH	GAS	PVC	2"	
POTHOLE 7	100810.429	98948.516	7357.753	1	7356.753	COMCAST	FO	PVC	0.5"	
POTHOLE 8	100636.414	98957.610	7358.685	1.05	7357.635	LUMEN	FO	PVC	0.5"	
POTHOLE 9	100369.910	99024.624	7359.770	6.3	7353.47	ZAYO	FO	PVC	2x 1.5"	
POTHOLE 10	100166.823	99023.453	7348.712	6	7342.712	ZAYO	FO	PVC	2x 1.5"	
POTHOLE 11	100168.889	98977.507	7354.243	4.8	7349.443	BH	GAS	PVC	2"	
POTHOLE 12	99745.105	99020.016	7365.078	6.15	7358.928	ZAYO	FO	PVC	2x 1.5"	
POTHOLE 14	99567.605	98994.366	7375.074	4.57	7370.504	LUMEN	FO	PVC	1"	
POTHOLE 15	99314.940	98994.532	7376.176	9.14	7367.036	MONUMENT WATER	W	DIP	12"	
POTHOLE 16	99316.136	99006.523	7379.899	6.4	7373.499	MONUMENT WATER	W	PVC	8"	
POTHOLE 17	96573.414	98949.063	7198.859	3.47	7195.389	BH	GAS	PVC	2"	
POTHOLE 19	96518.291	98745.518	7187.402	3.46	7183.942	BH	GAS	PVC	2"	
POTHOLE 24	96041.812	98955.418	7203.88	0	7203.88	LUMEN	FO			PHONE HUB
POTHOLE 24A	96042.8912	98955.418	7202.72	0	7202.72	LUMEN	FO			PHONE CONDUIT
POTHOLE 25	95900.283	98971.755	7194.883	3.71	7191.173	LUMEN	FO	PC	1"	
POTHOLE 27	95891.672	99001.523	7191.334	5	7186.334	MONUMENT WATER	W	PVC	8	
POTHOLE 27A	95891.279	98988.308	7192.133	5.91	7186.223	MONUMENT WATER	W	DIP	12	
POTHOLE 30	95899.284	98973.954	7194.908	3.68	7191.228	BH	GAS	PVC	2"	
POTHOLE 31	100813.417	98982.697	7353.068	2.18	7350.888	COMCAST	FO	PVC	0.75"	
POTHOLE 32	99590.898	99018.069	7369.203	7.25	7361.953	ZAYO	FO	PVC	2x 1.5"	

COLORADO LICENSED
PAUL DONALD MOREAU
32557
3/7/25
PROFESSIONAL ENGINEER

Print Date: 03/07/2025
File Name: 175644_UTI_Plan.dwg
Horiz. Scale: 1" = 50' Vert. Scale: N/A
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
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R-1

Sheet Revisions

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3/07/25	PROJ. LIMITS CHANGE	MEB

EL PASO COUNTY
COLORADO

PPRTA
PIKES PEAK RURAL TRANSPORTATION AUTHORITY

BEACON LITE ROAD IMPROVEMENTS
POTHOLE LOG

Project No./Code
128558

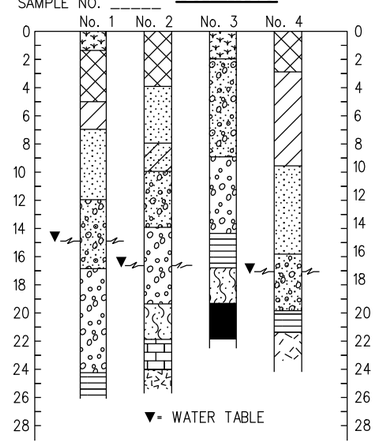
Designer: KRS
Detailer: RBR
Sheet Subset: UTILITY
Structure Numbers
Subset Sheets: 1 OF 1

Sheet Number 139

LEGEND

- TOPSOIL
- OVERBURDEN
- CLAY
- SILT
- SAND
- GRAVEL
- SHALE
- LIMESTONE
- SANDSTONE
- SOLID ROCK (IGNEOUS)
- SOLID ROCK (METAMORPHIC)
- COAL

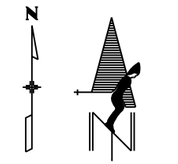
TEST HOLES



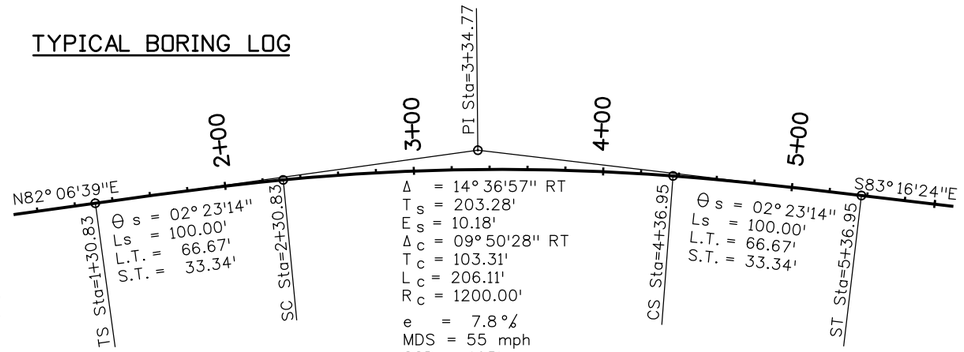
COMPOSITE MATERIALS ARE REPRESENTED BY COMBINATIONS OF THE ABOVE SYMBOLS, SUCH AS:

- SANDY CLAY

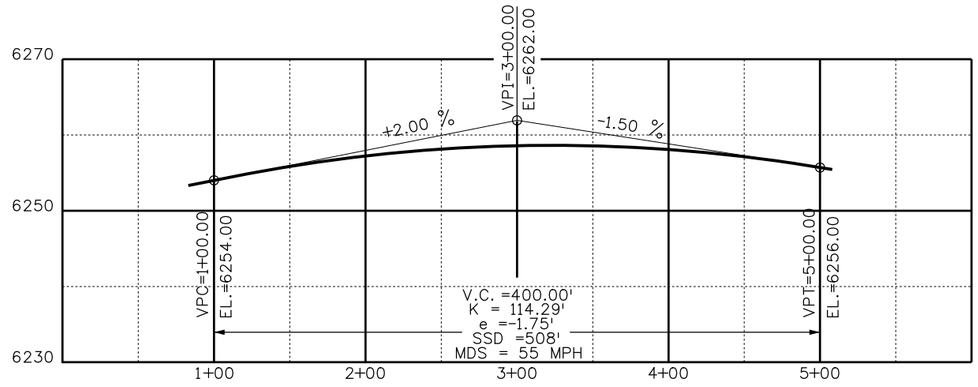
TYPICAL BORING LOG



NORTH ARROW



TYPICAL HORIZONTAL CURVE



TYPICAL VERTICAL CURVE

TERRAIN

- TERRAIN SINGLE SHOTS
- TOP OF CUT
- TOE OF FILL

ROADWAY

- GRAVEL ROAD OR DRIVEWAY
- INTERNATIONAL SYMBOL OF ACCESS
- SIDEWALK WITH RAMP
- EDGE OF PAVEMENT
- CENTERLINE OF DIRT ROAD

SURVEY/ROW

- SECTION CORNER
- QUARTER, SIXTEENTH, AND SECTION CORNERS
- PROTECT EXISTING MARKER
- SET EASEMENT MONUMENT
- TEMPORARY EASEMENT POINT
- RIGHT OF WAY MARKER
- BLM MARKER
- PP PROPERTY PIN
- NOAA MARKER
- QUARTER, SIXTEENTH, AND SECTION CORNERS
- FED FEDERAL MONUMENT
- WC WITNESS CORNER
- BM BENCH MARK
- USGS MARKER
- LOCAL OR PLSS MONUMENT
- SECONDARY CONTROL MONUMENT
- ROW RIGHT OF WAY MARKER
- N 9.88 E 3.81 EL 0.00 — PROJECT CONTROL MONUMENT
- N 10.13 E 3.81 EL 0.00 — DENSIFICATION CONTROL MONUMENT
- N 10.38 E 3.81 EL 0.00 — HIGH ACCURACY REFERENCE NETWORK CONTROL MONUMENT
- PERMANENT, PROPERTY, SLOPE, & UTILITY EASEMENT LINE
- TEMPORARY EASEMENT LINE (EXISTING)
- PROPERTY BOUNDARY LINE (EXISTING AND PROPOSED)
- ACCESS CONTROL LINE
- BARRIER ACCESS CONTROL LINE
- RIGHT OF WAY LINE
- VIRGIN RIGHT OF WAY LINE (PROPOSED)
- CITY LIMIT LINE (EXISTING)
- COUNTY LINE (EXISTING)
- QUARTER SECTION LINE
- SECTION LINE
- SIXTEENTH SECTION LINE
- STATE LINE (EXISTING)
- TOWNSHIP LINE (EXISTING)

GENERAL NOTES

1. EXISTING FEATURES SHOWN AS SCREENED WEIGHT (LIGHT GRAY SCALE), EXCEPT AS NOTED WITH THE WORD (EXISTING). PROPOSED OR NEW FEATURES SHOWN AS FULL WEIGHT WITHOUT SCREENING, EXCEPT AS NOTED WITH THE WORD (PROPOSED).
2. THESE SYMBOLS ARE INTENDED TO EXPLAIN THE VARIOUS TOPOGRAPHIC FEATURES INVOLVED ON THE DESIGN PLAN SHEETS WHICH ARE PREPARED AT VARIOUS SCALES. NOTES ARE ADDED WHERE NECESSARY TO CLARIFY THE SYMBOL. A LEGEND IS PROVIDED IN THE PLANS FOR SYMBOLS NOT SHOWN ON THE STANDARD SYMBOLS SHEETS.
3. GUARDRAIL, CURB AND GUTTER, ETC., ARE REPRESENTED BY A SYMBOL WITH TYPE GIVEN BY NOTE.

CURB AND GUTTER

- BACK OF CURB
- TOP OF CURB
- FLOW LINE (FL)
- EDGE OF PAVEMENT
- CURB AND GUTTER
- CURB AND GUTTER-TYPE 2, 4 OR 6
- GUTTER
- CURB CUT
- CURB, GUTTER OR OTHER

GUARDRAIL

- GUARDRAIL END ANCHOR
- GUARD POST
- GUARDRAIL-TYPE 3 OR 6
- GUARDRAIL-TYPE 4 OR 7
- GUARDRAIL-TYPE 5 OR HANDRAIL
- GUARDRAIL-TYPE 3A DOUBLE OR TYPE 6 DOUBLE
- CABLE BARRIER

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ROCK, MASONRY OR MECHANICALLY STABILIZED WALL (FACE)

BRIDGE CURB

BRIDGE RAIL

BRIDGE RAIL-TYPE 3A

FLOW LINE CBC

STRUCTURES MISCELLANEOUS

STRUCTURE

MISCELLANEOUS BUILDING STRUCTURE (PRIMARY)

MISCELLANEOUS STRUCTURE (SECONDARY)

FOUNDATION OR PAD (CONCRETE OR BLOCK)

BUILDING STRUCTURES

RR TELEGRAPH POLE

RR SWITCH

RR GUY POLE

RR SIGNALS WITH OR WITHOUT GATE

RR CROSS BUCK SIGN

RR SIGNAL CONTROLLER CABINET

RR MISCELLANEOUS SYMBOL

RR TRACK CENTERLINE

RAILROAD

BOULDER UNDER 6FT

GEOLOGY MISC SYMBOL

MINESHAFT SYMBOL

ROCK OUTCROP

BOULDER FIELD OR ROCK OVERHANG

GEOLOGY

COMBINATION WIRE FENCE WITH GATE

CHAIN LINK FENCE WITH GATE

BARBED WIRE FENCE WITH GATE

SOUND OR BARRIER FENCE WITH GATE

DEER FENCE WITH GATE

WOOD FENCE WITH GATE

SNOW FENCE WITH GATE

PF PF PF PF PF PF PF

PLASTIC FENCE

SF SF SF SF SF SF SF

SILT FENCE

DEBRIS FENCE

FENCE

MISCELLANEOUS TREES

DECIDUOUS TREE

DECIDUOUS SHRUB

TEETER TOTTER SYMBOL

SWING SET SYMBOL

CONIFEROUS TREE

CONIFEROUS SHRUB

BENCH

SPRINKLER HEAD

TREES GROVE

HEDGE OR SHRUB GROVE

EDGE OF WETLANDS

LANDSCAPING

HAZARD WASTE MONITORING WELL

ENVIRONMENTAL CONCERN SITE

EROSION LOG

ROCK CHECK DAM

CONCRETE WASHOUT STRUCTURE

DROP INLET EROSION PROTECTION

TEMPORARY BERM

SOIL RETENTION BLANKET

PIPE INLET EROSION PROTECTION

RIGID INLET PROTECTION

STORM DRAIN INLET PROTECTION

EROSION CHECK

EROSION LOG DITCH CHECK

SILT DIKE

SEDIMENT TRAP/ DEWATERING STRUCTURE

EXISTING WETLAND PATTERN

TEMPORARY SLOPE DRAIN

STABILIZED CONSTRUCTION ENTRANCE

LDA LDA LDA LDA LDA LDA

LIMITS OF DISTRUBED AREA

ENVIRONMENTAL CONCERN

HAZARDOUS WASTE SITE

NW NW NW NW

NOXIOUS WEED

FLOW ARROW

ENVIRONMENTAL

SA SA

SANITARY SEWER MANHOLE

SANITARY SEWER MISCELLANEOUS SYMBOL

SIZE, MATERIAL, OWNER

SANITARY SEWER PIPE

SANITARY SEWER PIPE MISCELLANEOUS

SANITARY SEWER

METAL CONCRETE

PIPE WITH END SECTION

HEADWALL

PIPE MISCELLANEOUS

PIPES

CHECK DAM UNDER 4 FT

HEADGATE 1

DIVERSION BOX SYMBOL

SPRING SYMBOL

FLOW GAUGE

MISCELLANEOUS WATERWAYS

DITCH WITH FLOW

EDGE OF WATER, CANALS, PONDS, STREAM OR RIVER

DITCHES AND WATERWAY

INLET TYPE 13

INLET TYPE C

INLET TYPE D

INLET VANE GRATE

INLET TYPE R XX FT LENGTH

ST ST

STORM SEWER MANHOLE

G

MANHOLE EXISTING

ST

STORM SEWER MISCELLANEOUS

STORM SEWER PIPE

STORM SEWER PIPE MISCELLANEOUS

STORM SEWER

W

WATER SPIGOT

WATER VALVE

W W

WATER MANHOLE

FIRE HYDRANT

WATER METER

W

WATER WELL SYMBOL

SIZE, MATERIAL, OWNER

W

WATER LINE

W?

WATER MISCELLANEOUS LINE

WATER

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PROPANE TANK

GAS JUNCTION BOX

GAS VAULT

GAS LINE MARKER OR AIR VENT

GAS METER LOW PRESSURE

GAS METER HIGH PRESSURE

G GAS MISCELLANEOUS

GAS LIGHT

GAS VALVE HIGH OR LOW PRESSURE

SIZE
— G — G — G — G — G — G — G —
GAS LINE LOW PRESSURE

SIZE
— G — HP — G — HP — G — HP — G
GAS LINE HIGH PRESSURE

— PG — PG — PG — PG — PG — PG — PG —
PROPANE GAS LINE

— G? — G? — G? — G? — G? — G? — G? —
GAS LINES MISCELLANEOUS

GAS

OIL METER HIGH AND LOW PRESSURE

OIL VALVE HIGH AND LOW PRESSURE

O OIL MISCELLANEOUS

— O — O — O — O — O — O — O —
OIL LINE LOW OR HIGH PRESSURE

— O? — O? — O? — O? — O? — O? — O? —
OIL MISCELLANEOUS LINE

OIL

GRAVE HEADSTONE SYMBOL

MAIL DROP BOX

FLAG POLE

TRASH BARREL POST

GRAVE SYMBOL

RADIO STATION ANTENNA

– –?– – –?– – –?– – –?– – –?– – –?– – –?– – –?– – –?– – –?– – –?
MISCELLANEOUS TOPOGRAPHY

MISCELLANEOUS TOPOGRAPHY

CAMPSITE MARKER

–E– TRAILER ELECTRIC HOOKUP

TRAILER DUMP STATION

CAMPFIRE RING

–S– TRAILER SEWER INLET

–W– TRAILER WATER HOOKUP

CAMPSITE GRILL

CAMPSITE TABLE

CAMPING

LIGHT STANDARD

HIGH MAST LIGHT STANDARD

SPOT OR FLOOD LIGHT

LIGHTING

ELECTRICAL PEDESTAL OR PULL BOX

TRANSMISSION TOWER

WIND POWERED GENERATOR

RELOCATED LIGHT STANDARD

DECORATIVE LIGHT STANDARD

CATENARY POLE FOUNDATION

E ELECTRICAL MANHOLE

POWER POLE

TRANSFORMER ON POLE

–E– ELECTRICAL OUTLET

E ELECTRICAL MISCELLANEOUS

GUY WIRE

ELECTRICAL VAULT OR TRANSFORMER

GUY POST

FIRE ALARM BOX

— E — E — E — E — E — E — E —
ELECTRICAL UNDERGROUND LINE

— E — OH — E — OH — E — OH — E —
ELECTRICAL OVERHEAD LINE

ELECTRICAL MISCELLANEOUS LINE

ELECTRICAL

CABLE TV POLE

CABLE TV RISER

COMBINATION POLE-POWER,TELEPHONE

TV ANTENNA

TV MISCELLANEOUS

TV TV MANHOLE

— TV — TV — TV — TV — TV — TV — TV —
TV UNDERGROUND CABLE

— TV — OH — TV — OH — TV — OH — TV —
TV OVERHEAD CABLE

— TV? — TV? — TV? — TV? — TV? — TV? — TV? —
TV MISCELLANEOUS CABLE

TELEVISION

TELEPHONE GUY POLE

FIBER OPTIC CABLE MARKER

T TELEPHONE MANHOLE

COMBINATION POLE-POWER

T TELEPHONE MISCELLANEOUS

COMBINATION GUY POLE-POWER

— T — T — T — T — T — T — T —
TELEPHONE UNDERGROUND CONDUIT OR CABLE

— FO — FO — FO — FO — FO — FO — FO —
FIBER OPTICS UNDERGROUND CABLE

— T — OH — T — OH — T — OH — T —
TELEPHONE OVERHEAD LINE

— T? — T? — T? — T? — T? — T? — T? —
TELEPHONE MISCELLANEOUS LINE

TELEPHONE

FIBER MARKER DOME

FIBER MARKER SLATE

RWIS - REMOTE WEATHER SENSOR

VMS-BUTTERFLY

VMS-GROUND

VMS-CANTILEVER

VMS-SIGN BRIDGE

– ITS — ITS — ITS — ITS — ITS — ITS — ITS —
ITS CONDUIT

INTELLIGENT TRANSPORTATION SYSTEM

CENTER YELLOW SOLID DOUBLE

CENTER YELLOW SOLID BROKEN (NO PASS)

4 INCH WIDE
8 INCH WIDE
LANE LINE BROKEN

LANE DROP

CHANNELIZING OR EDGE LINE

4 INCH WIDE
8 INCH WIDE
DOTTED BROKEN

STOP LINE

– INTERNATIONAL SYMBOL OF ACCESS

R R – RAILROAD CROSSING

– BICYCLE PED ACCESS

TRAFFIC STRIPING

TRAVEL DIRECTION

BARRIER LIGHT

FLAGGER

G B CRY R Y
DELINEATOR-TYPE I

SEQUENCING ARROW PANEL

FLASHING BEACON

CRY-R BK2BK Y-R BK2BK Y-Y BK2BK Y-Y BK2BK
CRY-CRY CRY-CRY BK2BK
DELINEATOR-TYPE II

CRY-CRY-R BK2BK Y-Y-R BK2BK Y-Y-Y BK2BK
DELINEATOR-TYPE III

BUTTERFLY SIGN

HALF BUTTERFLY SIGN

IMPACT ATTENUATOR

SIGN ASSEMBLY

SINGLE POST SIGN

DOUBLE POST SIGN

SIGN-WITH FLASHING BEACON

ROAD CLOSURE GATE BEACON SYMBOL

ROAD CLOSURE GATE SYMBOL

DEER REFLECTORS

– –?– – –?– – –?– – –?– – –?– – –?– – –?– – –?–
TRAFFIC CONTROL MISCELLANEOUS DEVICE

TRAFFIC CONTROL DEVICE

TRAFFIC CONTROL

SIGNAL SPAN WIRE POLE

DOUBLE MAST ARM POLE

LUMINAIRE

SIGNAL FACE

SIGNAL POLE WITH MAST ARM

SIGNAL FACE WITH BACKPLATE

SIGNAL CONTROLLER AND CABINET (4 FT)

TELEMETRY ANTENNA

PULL BOX

MICRODETECTOR

VIDEO DETECTION CAMERA

FIRE PREEMPTION UNIT AND TIMER

PEDESTRIAN SIGNAL FACE

PEDESTRIAN PUSH BUTTON

PEDESTAL POLE

PULL BOX SPECIAL

— TR — TR — TR — TR — TR — TR — TR —
TRAFFIC CONDUIT

TRAFFIC SIGNAL

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STANDARD SYMBOLS

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Project Sheet Number: 142

A

AAC	Aluminum Arch Culvert
AADT	Annual Average Daily Traffic
ABC	Aggregate Base Course
Abut	Abutment
ACM	Abestos Containing Materials
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
AE	Architect-Engineer, Architecture, Engineering
AEC	Architecture, Engineering and Construction
AGA	American Gas Association
Alt	Alternate
API	American Petroleum Institute
APL	Approved Products List
Approx	Approximate
APWA	American Public Works Association
AQCC	Air Quality Control Commission
ARE	Additional Requested Element (Design/Build Terminology)
AREMA	American Railway Engineering & Maintenance-of-Way Association
AHSTA	Ahead Station
ARA	Asphalt Rejuvenating Agent
ASBI	American Segmental Bridge Institute
ASD	Allowable Stress Design
ASOP	American Society of Photogrammetry
ASR	Alkali Silica Reactivity
ASSE	American Society of Sanitary Engineering, American Society of Safety Engineers
Asst	Assistant
ATB	Asphalt Treated Base
ATM	Active Traffic Management
AUTS	Actual Ultimate Tensile Strength

B

Bk to Bk	Back to Back
BEI	By Equal Increments
BM	Bench mark
BPF	Blows Per Foot
BAFO	Best and Final Offer
Bbl	Barrels
BC	Bolt Circle
Beg	Begin
Bk	Back
Bldg	Building
BLM	Bureau of Land Management
Blvd	Boulevard
BMP	Best Management Practice
BNSF	Burlington Northern & Santa Fe Railroad
Bott	Bottom
BP	Bearing Pressure
Brg	Bearing
Bk Sta	Back Station
BT	Beginning of Transition
Btwn	Between

C

℄	Centerline
C&G	Curb and Gutter
CA	Concrete Arch
CAC	Concrete Arch Culvert
CAD	Computer Aided Design, Computer Aided Drafting
CADD	Computer Aided Design and Drafting
CBC	Concrete Box Culvert
CBG	Concrete Box Girder
CBGC	Concrete Box Girder Continuous
CBGCP	Concrete Box Girder Continuous Prestressed
CBGP	Concrete Box Girder Prestressed
CBGS	Concrete Box Girder Segmented
CBR	California Bearing Ratio
CCR	Code of Colorado Regulations, as amended
CDTPG	Concrete Double-Tee Prestressed Girder
CE	Construction Engineering
CF	Cubic Feet
CFS	Cubic Feet per Second
CG	Center of Gravity
CHP	Colorado Highway Patrol
CI	Cast Iron or Concrete on Rolled I-Beam
CIC	Concrete on Rolled I-Beam Continuous
CICK	Concrete on Rolled I-Beam Continuous & Composite
CICKP	Concrete on Rolled I-Beam Continuous & Composite Prestressed
CIK	Concrete on Rolled I-Beam Composite
CIKP	Concrete on Rolled I-Beam Composite Prestressed
CIP	Cast-in-Place or Cost in Place
CIR	Cold In-Place Recycling
Clr	Clear
cm	Centimeters
CM	Corrugated Metal
CMAQ	Congestion Mitigation Air Quality
CMP	Corrugated Metal Pipe
CMU	Concrete Masonry Unit
COC	Certificate of Compliance
Col	Column
Comp	Composite
Conc	Concrete
Conn	Connection
Const	Construction
Const Jt	Construction Joint
Cont	Continuous
Corr	Corrugated
CPE	Corrugated Polyethylene Pipe
CPG	Concrete Prestressed Girder (Precast)
CPGC	Concrete Prestressed Girder Continuous (Precast)
CPT	Corrugated Polyethylene Tubing
CR	County Road
CRF	Concrete Rigid Frame
CS	Curve to Spiral, Commercial Standard, Concrete Slab
CSC	Concrete Slab Continuous
CSG	Concrete Slab & Girder (Poured in Place)
CSGC	Concrete Slab & Girder Continuous (Poured in Place)
CSGCP	Concrete Slab & Girder Continuous Prestressed (Poured in Place)
CSGP	Concrete Slab & Girder Prestressed (Poured in Place)
Csk	Countersunk
CSL	Cross Hole Sonic Logging
CSP	Corrugated Steel Pipe or Concrete Slab Prestressed
CSPC	Concrete Slab Prestressed Continuous
CTB	Cement Treated Base
CTR	Certified Test Reports
Ctr	Center
CY	Cubic Yards
CZ	Clear Zone

D

D	Degree of Curvature, or Density
DB	Design Build
DAS	Deformed Anchor Stud
dB	decibels
DBA	Deformed Bar Anchor
Dbl	Double

GENERAL NOTES

1. ABBREVIATIONS SHOULD BE UPPER AND LOWER CASE LETTERS EXCEPT WHERE ALL UPPER CASE LETTERS ARE REQUIRED.
   Const Jt = Construction Joint
2. ACRONYMS SHALL BE ALL UPPER CASE LETTERS.
   CBC = Concrete Box Culvert
3. ABBREVIATIONS SHALL BE USED ONLY WHEN THE WORDS CANNOT BE COMPLETELY SPELLED OUT DUE TO MULTIPLE FACTORS, SUCH AS A LACK OF SPACE ON THE SHEET.

Deg, °F, °C,	Degrees (Thermal) - Degrees Fahrenheit, Degrees Celsius
Dgn	Design or Microstation Drawing
DH	Design Height or Avg height for qty calculations
DHV	Design Hour Volume
DHW	Design High Water
DI	Ductile Iron
Dia	Diameter
DNR	Department of Natural Resources
DOW	Division of Wildlife (Colorado)
DRCOG	Denver Regional Council of Governments
DTD	Division of Transportation Development (CDOT)
DTM	Digital Terrain Model
Dwg	AutoCAD Drawing

E

e.g.	Exempli Gratia (For Example)
EA	Environmental Assessment
EATB	Emulsified Asphalt Treated Base
EB	Eastbound
EF	Each Face
Elev	Elevation
Engr	Engineer
EPA	Environmental Protection Agency
EPDM	Ethylene Propylene Diene Monomer-class rubber
Eq	Equal
ESAL	Equivalent Single Axle Load
Est	Estimate
ET	Ending of Transition
EVT	Event Point (InRoads Terminology)
EW	Each Way
E	Expansion Bearing
Exc	Excavation
Exp Jt	Expansion Joint
Ext	Exterior

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ACRONYMS AND ABBREVIATIONS

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STANDARD PLAN NO.
M-100-2
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Project Sheet Number: 143

F

F	Fixed Bearing
FL	Flow Line
FAA	Federal Aviation Administration
FASB	Foamed Asphalt Stabilized Base
FCM	Fracture Critical Member
FDR	Full Depth Reclamation
Fed	Federal
FEMA	Federal Emergency Management Agency
FES	Flared End Section
FF	Far Face or Front Face
Fig	Figure
Fin	Finished
Fl	Floor
Flg	Flange
FM	Factory Mutual
FMM	Field Materials Manual
FPM	Feet Per Minute
FPS	Feet Per Second
FRA	Federal Railroad Administration
Freq	Frequency
FRP	Fiber Reinforced Polymer
FS	Planned Finish Surface
Ft	Feet
Ft Kip	Foot Kips
Ft Lb	Foot Pounds
FTA	Federal Transit Administration
Ftg	Footing
FWD	Falling Weight Deflectometer

G

Ga	Gage or Gauge
Gal	Gallons
Galv	Galvanized
Gd	Guided expansion bearing
Gir, G	Girder
GIS	Geographical Information System
GL	Girt Line
GPM	Gallons Per Minute
GPS	Global Positioning System
GRI	Geosynthetic Research Institute
GRS	Geosynthetic Reinforced Soil
GSI	Geosynthetic Institute

H

HAS	Headed Anchor Stud
HAZMAT	Hazardous Materials
HC	Horizontal Clearance
HCL	Horizontal Control Line
HCM	Highway Capacity Manual
Hd	Head
HDPE	High Density Polyethylene
HDPP	High Density Polypropylene
Hex Hd	Hexagonal Head
HID	High Intensity Discharge (Lamps)
HIR	Hot In-Place Recycling
HLMR	Highload Multi-Rotational
HMA	Hot Mix Asphalt
Horiz	Horizontal
HOV	High-Occupancy Vehicle
HP	Horsepower
HPC	High Performance Concrete
HS	High Strength
Ht	Height
HW	High Water
Hwy	Highway
Hyd	Hydraulic

I

ICEA	Insulated Cable Engineers Association
ID	Inside Diameter
IMP	Incident Management Plan
In. Kips	Inch Kips
In. Lb.	Inch Pounds
In.	Inches
Incl	Included
Int	Interior
Inv	Invert
IRI	International Roughness Index
ISO	International Organization for Standards
ITAA	Information Technology Association of America
ITS	Intelligent Transportation System
IVHS	Intelligent Vehicle Highway System

J

JB	Junction Box
JPCP	Jointed Plain Concrete Pavement
Jt	Joint

K

Kip	Thousand Pounds
KSF	kips per square foot
KSI	Kips per square inch
KW	Kilowatt

L

L	Length, Angle(steel)
Lb	Pounds
Lb/Ft	pound per foot
Lb/SY	Pounds per square yard
Lb-Ft	pound foot
LCCA	Life Cycle Cost Analysis
LED	Light Emitting Diode
LEED	Leadership in Energy and Environmental Design
LF	Linear Feet
LFD	Load Factor Design
LL	Liquid Limit
LLDPE	Linear Low-Density Polyethylene
LRFD	Load and Resistance Factor Design
LS	Lump Sum or Length of Spiral
Lt	Left
LTB	Lime Treated Base
LTDS	Required Long Term Design Strength
Lum	Luminaire

M

m	Meters
MA	Mobile Attenuator
Maint	Maintenance
MARV	Minimum Average Roll Value
Matl	Material
Max	Maximum
MBTA	Migratory Bird Treaty Act
MFBM	Thousand Foot Board Measure
Mfg	Manufactured or Manufacturer
MHT	Method of Handling Traffic
Mi	Mile
Min	Minimum
Misc	Miscellaneous
mm	Millimeters
MP	Milepost
MPH	Miles Per Hour
M_R	Resilient Modulus
MR	Modulus of Rupture

N

NAD	North American Datum
NAVD	North American Vertical Datum
NB	Northbound, Total Number of Blocks
N_{DES}	Recommended SuperPave™ Gyratory Design Revolution
NDT	Nondestructive Testing
NECA	National Electrical Contractors Association
NEPA	National Environmental Policy Act
NESC	National Electric Safety Code
NF	Near Face
NFPA	National Fire Protection Association
NGS	National Geodetic Survey
NGVD	National Geodetic Vertical Datum of 1929
NHS	National Highway System
NICET	National Institute for Certification of Engineering Technologies
NIP	Nail in Place
NMAS	Nominal Maximum Aggregate Size
No	Number
Nom	Nominal
NPDES	National Pollutant Discharge Elimination System
NPT	National Pipe Thread
NS	Near Side
NTCIP	National Transportation Communications for ITS Protocol
NTP	Notice to Proceed
NTS	Not to Scale

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ACRONYMS AND ABBREVIATIONS

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STANDARD PLAN NO.
M-100-2
Standard Sheet No. 2 of 4
Project Sheet Number: 144

O

OC	On Center
OD	Outside Diameter
OGFC	Open Grade Friction Course
OJT	On-the-Job Trainee or On-the-Job Training
Opp Hand	Opposite Hand
oz	Ounces

P

PC	Point of Curve
PCA	Portland Cement Association
PCBC	Concrete Box Culvert Precast
PCC	Point of Compound Curve
PCCP	Portland Cement Concrete Pavement
PDA	Pile Driving Analyzer
PE	Preliminary Engineering, or Professional Engineer or Permanent Easement
Ped	Pedestrian
PG	Profile Grade or Performance Grade
PGL	Profile Grade Line
PI	Point of Intersection
PL, Pl	Plate
PLS	Professional Land Surveyor
PM	Project Manager
PMBB	Plant Mix Bituminous Base
PMBP	Plant Mix Bituminous Pavement
PMSC	Plant Mix Seal Coat
POC	Point on Curve
POSS	Point of Slope Selection
POT	Point on Tangent
PPE	Personal Protective Equipment
PRC	Point of Reverse Curve
Proj	Project or Projection
psf	Pounds per square foot
psi	Pounds per square inch
PT	Point of Tangent
PTFE	Polytetrafluoroethylene
PTI	Post-Tensioning Institute
PUC	Public Utilities Commission
PVC	Poly Vinyl Chloride (pipe), Point of Vertical Curve
PVI	Point of Vertical Intersection
Pvmt	Pavement
PVT	Point of Vertical Tangency

Q

Q	Peak Discharge or Flow Volume
QA	Quality Assurance
QC	Quality Control
QMP	Quality Management Plan
QML	Qualified Manufacturers List

R

R	Radius
RA	Rubble Arch
RAC	Rubble Arch Culvert
rad	radians
RAP	Reclaimed Asphalt Pavement
RAS	Reclaimed Asphalt Shingles
RC	Reverse Crown
RCC	Roller Compacted Concrete
RCP	Reinforced Concrete Pipe
RCPC	Reinforced Concrete Pipe Culvert
Rdwy	Roadway
RE	Resident Engineer or Railroad Easement
Ref	Reference
Reinf	Reinforcing
Rem	Remove or Removal
Repl	Replace
Req	Required
Rev	Revised, Revision
RG	Riveted Plate Girder
RGC	Riveted Plate Girder Continuous
RL	Reinforcement Length
RME	Region Materials Engineer
rpm	Revolutions Per Minute
RSC	Rigid Steel Conduit
RSS	Reinforced Soil Slope
Rt	Right
RTD	Region Transportation Director or Regional Transportation District
RWIS	Road Weather Information System

S

SA	Steel Arch
SAC	Steel Arch Culvert
San	Sanitary
SB	Southbound
SBA	Small Business Administration
SBG	Steel Box Girder
SBGC	Steel Box Girder Continuous
SC	Spiral to Curve
Sch	Schedule
SCS	Spiral Curve Spiral
SDG	Steel Deck Girder
SDGC	Steel Deck Girder with Floor Beam System
SDGCK	Steel Deck Girder Continuous & Composite
SDI	Steel Decks Institute
SDT	Steel Deck Truss
Sdwk	Sidewalk
Sect	Section
SF	Square Feet
SH	State Highway
Shldr	Shoulder
SHPO	State Historic Preservation Office
SHRP	Strategic Highway Research Program
Sht	Sheet
SIGN	Overhead Sign
SIGNB	Overhead Sign-Butterfly
SIGNC	Overhead Sign-Cantilever
SIGND	Overhead Sign + Cantilever
Sim	Similar
SIP	Stay in Place
SJI	Steel Joists Institute
SLT	Steel Low Truss
SMA	Stone Matrix Asphalt
SN	Structural Number
Spa	Spaces or Spaced
Specs	Specifications
SpG	Specific Gravity
Spl	Splice
Sq In	Square Inches
Sq Mi	Square Miles
Sq	Square
SRW	Segmental Retaining Walls
SSE	Steel Stringer-Earth Filled
SSM	Steel Stringer-Metal Plank Deck
SSMC	Steel Stringer-Metal Plank Deck Continuous
SSPC	Society for Protective Coatings
SSS	Steel Stringer-Timber Deck
SSSC	Steel Stringer-Timber Deck Continuous
ST	Spiral to Tangent
St	Straight or Street
Sta	Station
Std	Standard
STG	Steel Thru Girder
Str	Structure, Structural
STT	Steel Thru Truss
SUSP	Suspension Bridge
SY	Square Yards
Sym	Symmetrical

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ACRONYMS AND ABBREVIATIONS

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STANDARD PLAN NO.
M-100-2
Standard Sheet No. 3 of 4
Project Sheet Number: 145

T

T&B	Top and Bottom
T&E	Threatened & Endangered Species
T	Tons
TAS	Threaded Anchor Stud
TBC	Timber Box Culvert
TC	Tangent to Curve
TCD	Traffic Control Devices
TCP	Traffic Control Plan
TD	Timber Stringer (Untreated) Concrete Deck
TDH	Total Dynamic Head
Temp	Temporary or Temperature
Thd	Thread
THHN	Thermoplastic High Heat-resistant Nylon coated (Insulation designation for wire)
THWN	Thermoplastic High Water-resistant Nylon coated (Insulation designation for wire)
TIG	Tungsten Inert Gas (Welding)
TLA	Timber Laminated Arch (Gluelam)
TLS	Timber Laminated Stringer(Gluelam)
TLT	Timber Low Truss
TM	Timber Stringer (Untreated) Metal Deck
TMP	Transportation Management Plan
Tot	Total
TPI	Threads per Inch
TS	Tangent to Spiral, Timber Stringer (Untreated) Timber Deck
TSLAB	Timber Slab
TTC	Timber Culvert
TTD	Timber Stringer-Concrete Deck
TTM	Timber Stringer- Metal Deck
TTS	Timber Stringer- Timber Deck
TTT	Timber Thru Truss
TUNC	Tunnel-Concrete Lined
TUNR	Tunnel-Thru Rock-No Lining
Typ	Typical

U

UG	Underground
UNC	Uniform National Coarse (screw thread)
UNCC	Utility Notification Center of Colorado
UNF	Uniform National Fine (screw thread)
UNO	Unless Noted Otherwise
UPRR	Union Pacific Railroad
UPS	Uninterruptible Power Supply
USACE	United States Army Corp of Engineers
USCS	Unified Soil Classification System
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGS	US Geological Survey
Util	Utility or Utilities
UV	Ultraviolet

V

VC	Vertical Curve
VCP	Vitrified Clay Pipe
Veh	Vehicle
Vert	Vertical
VFA	Voids Filled With Asphalt
VMA	Voids in the Mineral Aggregate
VMS	Variable Message Sign
Vol	Volume
VPC	Vertical Point of Curvature
VPI	Vertical Point of Intersection
VPT	Vertical Point of Tengency

W

W/C	Water-Cement Ratio
WALL	Retaining Wall
WB	Westbound
WBS	Work Breakdown Structure
WF	Wide Flange (Steel section)
WG	Welded Girder
WGC	Welded Girder Continuous
WGCK	Welded Girder Continuous & Composite
WGCKP	Welded Girder Continuous, Composite Prestressed
WGK	Welded Girder Composite
WGKP	Welded Girder Composite Prestressed
WIMS	Weigh-In-Motion Station
WP	Work Point
WQCD	Water Quality Control Division (Colorado Department of Public Health and Environment)
WRI	Wire Reinforcement Institute
WS	Water Surface
WSN	Weighted Structural Number
Wt	Weight
WWF	Welded Wire Fabric, typically referred to very light gauge wire for crack control
WWR	Welded Wire Reinforcement

Y

Yd	Yard

SYMBOLS

400	#4 REBAR BENDING SHAPE
500	#5 REBAR BENDING SHAPE
600	#6 REBAR BENDING SHAPE
@	at
&	and
ϕ ⌀	Diameter
°, ', ''	Degrees, Minutes, Seconds
', ''	Feet, inches
#	Number or Pound
Ⓔ	Epoxy Coated Rebar
Ⓝ	Non-Epoxy Coated Rebar
XX	Girder Label
°F	Fahrenheit
°C	Celsius
≈	Approximate
	Interstate Highway
#	US Highway
	State Highway

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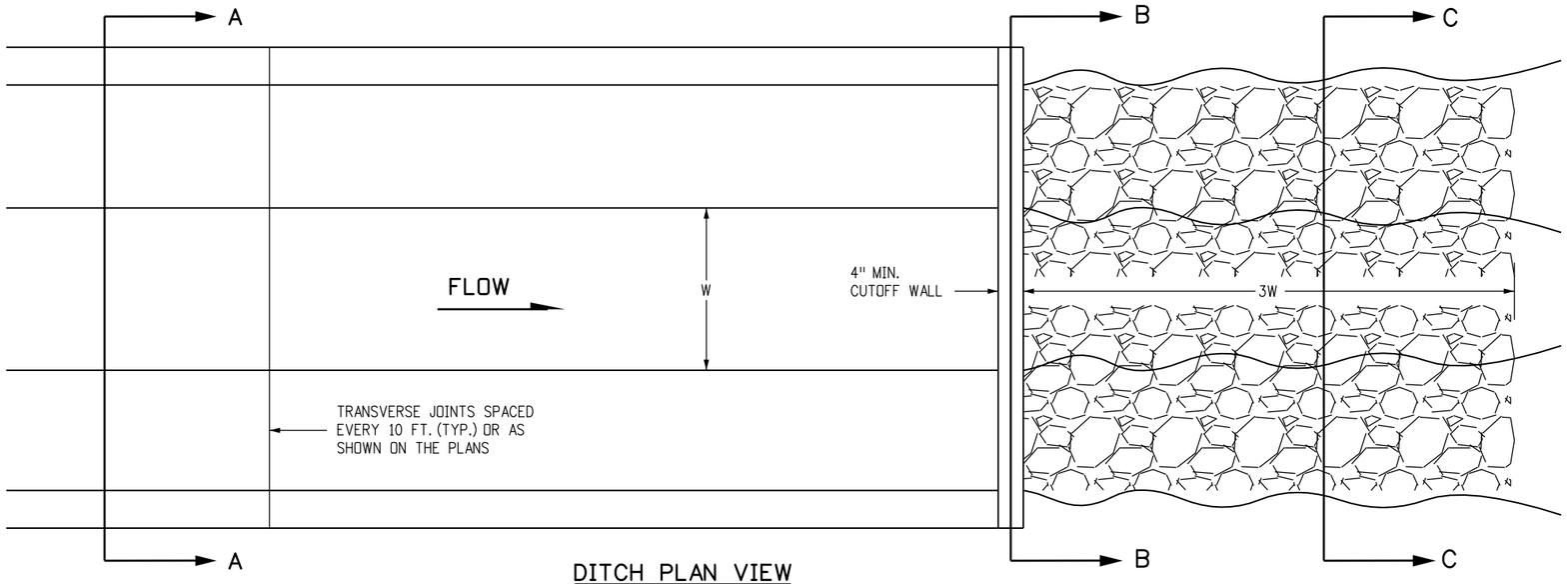
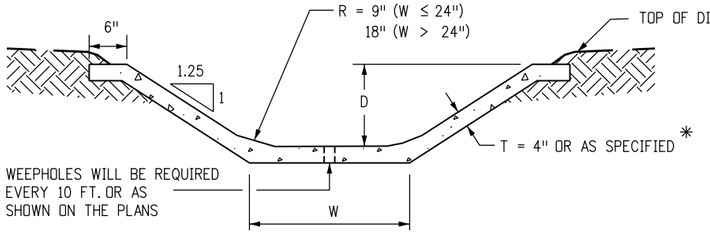


DITCH PLAN VIEW

GENERAL NOTES

1. ALL DITCHES SHALL BE CONSTRUCTED TO THE LINES AND GRADES AS SHOWN ON THE PLANS, USING THE DITCH SECTION AS SHOWN ON THE PLANS, OR AS SPECIFIED BY THE ENGINEER.
2. CONCRETE LINING WILL BE PAID FOR AS CONCRETE SLOPE AND DITCH PAVING.
3. PROVIDE A CUTOFF WALL AND RIPRAP AT THE END OF CONCRETE-LINED DITCH.

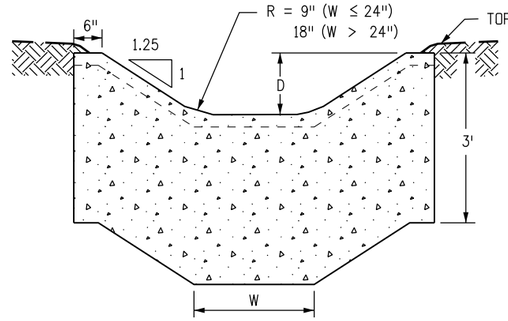


SECTION A-A
CONCRETE-LINED DITCH

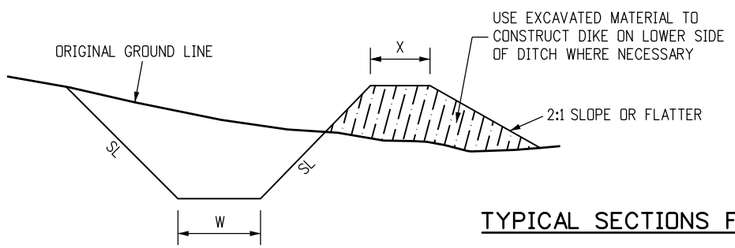
* FOR SECTIONS WHERE W ≤ 18"
AND D ≤ 18" USE T = 3"

D	CU. YDS. PER 100 LIN. FT.				
	W (INCHES)				
(INCHES)	12	18	24	36	48
18	6.3 *	6.7 *	9.6	10.8	12.0
24	9.9	10.5	11.6	12.8	14.0
30	12.3	12.9	13.5	14.8	16.0
36	14.3	14.9	15.5	16.7	18.0
48			19.4	20.7	21.9

CONCRETE-LINED DITCH
QUANTITIES



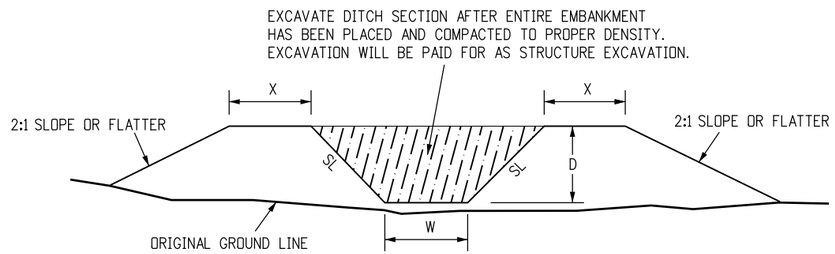
SECTION B-B
CUTOFF WALL



CUT SECTIONS

SECTION C-C
RIPRAP-LINED DITCH

RIPRAP GRADATION SHALL BE AS SPECIFIED IN THE CONTRACT.



EMBANKMENT SECTIONS

TYPICAL SECTIONS FOR DITCHES

NOTE: SEE STRUCTURE NOTES ON THE PLANS FOR DIMENSIONS W, D, AND SL.
DIMENSION X = W/2 WITH MINIMUM OF 2 FT. UNLESS OTHERWISE
SHOWN ON THE PLANS, W = 1 FT., SL = 2:1 OR FLATTER.

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DITCH TYPES

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M-203-2
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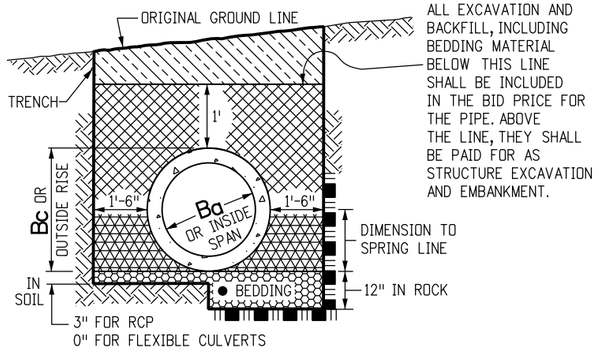
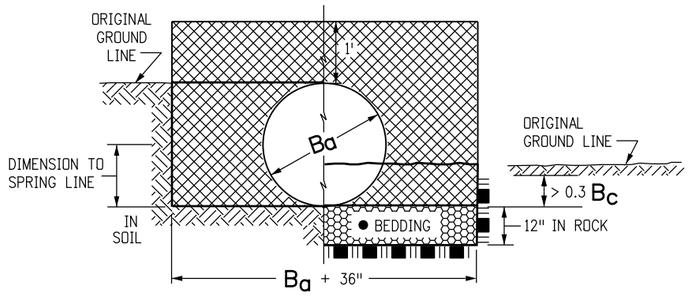
Project Sheet Number: 147



PIPE IN TRENCH

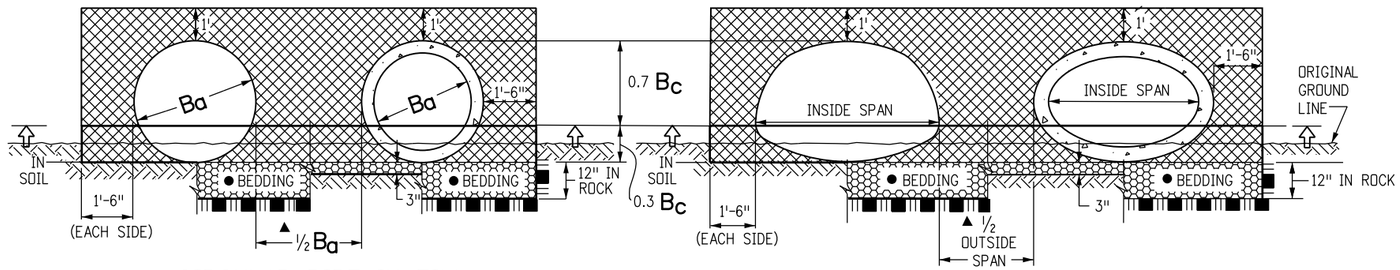


CIRCULAR PIPE

(WHERE ORIGINAL GROUND LINE IS BETWEEN 0.3 B_C AND B_C + 1 FT. ABOVE FLOWLINE)

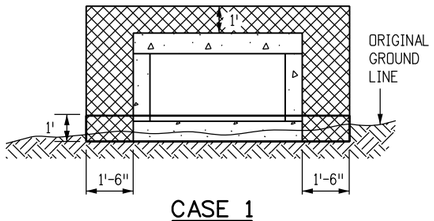
● THE BEDDING MATERIAL FOR RIGID PIPE IN SOIL SHALL BE 3 IN. OF LOOSE STRUCTURE BACKFILL (CLASS 1 OR 2). BEDDING IS NOT REQUIRED FOR FLEXIBLE PIPE IN SOIL. BEDDING MATERIAL FOR RIGID OR FLEXIBLE PIPE IN ROCK SHALL BE 12 IN. OF LOOSE STRUCTURE BACKFILL, CLASS 1.

▲ WHEN TWO OR MORE CONDUITS ARE LAID SIDE-BY-SIDE, THEY SHALL BE PLACED SO THAT THEY ARE ½ OUTSIDE DIAMETER, OR ½ OUTSIDE SPAN, OR 3 FT. APART, WHICHEVER IS LESS. HOWEVER, IF END SECTIONS ARE USED, THE MINIMUM SPACING SHALL BE 1 FT. BETWEEN END SECTIONS.



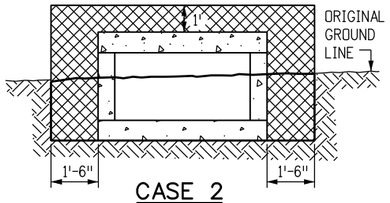
CIRCULAR PIPE IN FILL

ARCH OR ELLIPTICAL PIPE IN FILL



CASE 1

APPLIES WHEN THE ORIGINAL GROUND LINE IS LESS THEN 1 FT. ABOVE THE BOTTOM OF THE BOX CULVERT. THE EMBANKMENT SHALL BE BUILT UP TO 1 FT. ABOVE THE BOTTOM OF THE BOX CULVERT AND THEN EXCAVATED TO THE BOTTOM OF THE BOX CULVERT. THIS EMBANKMENT AND EXCAVATION WILL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE WORK.

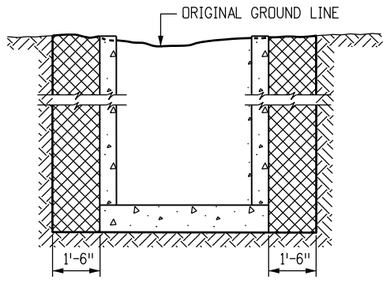


CASE 2

APPLIES WHEN THE ORIGINAL GROUND LINE IS MORE THAN 1 FT. ABOVE THE BOTTOM OF THE BOX CULVERT.

CONCRETE BOX CULVERT

IN BOTH CASES, THE TRENCH (OUTLINED BY THE THICK SOLID LINE) SHALL THEN BE EXCAVATED TO ACCOMMODATE CONSTRUCTION OF THE BOX CULVERT.



DROP INLETS AND DIVISION BOXES

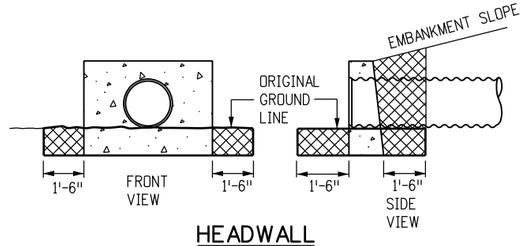
GENERAL NOTES

1. EXCAVATION AND BACKFILL PATTERNS DIFFERENT FROM THOSE INDICATED ON THESE SHEETS WILL BE SHOWN ELSEWHERE ON THE PLANS.
2. EXCAVATION FOR CHANNEL CHANGE OR CHANNEL IMPROVEMENT WILL BE EITHER UNCLASSIFIED EXCAVATION OR MUCK EXCAVATION AND WILL BE NOTED ON THE PLANS. EXCAVATION FROM THE CHANNEL FLOWLINE TO THE DEPTH REQUIRED FOR THE NEW STRUCTURE AND INCIDENTAL CHANNEL EXCAVATION WILL BE PAID FOR AS STRUCTURE EXCAVATION.
3. STRUCTURE FOOTINGS WHICH ARE LOCATED IN ROCK SHALL BE POURED OUT TO UNDISTURBED ROCK WITHOUT FORMING IN CONFORMANCE WITH SUBSECTION 601.09(b).
4. STRUCTURAL PLATE CULVERTS SHALL BE CONSTRUCTED AS SHOWN ON THE PLANS.
5. B_a EQUALS THE INSIDE DIAMETER OF A PIPE AND B_c EQUALS THE OUTSIDE DIAMETER OF A PIPE. FOR THIN WALLED PIPES, IT IS ASSUMED THAT $B_a = B_c$.
6. APPROXIMATE STRUCTURE EXCAVATION AND BACKFILL QUANTITIES, UP TO 1 FT. OVER THE PIPE WILL BE SHOWN ON THE PLANS, FOR INFORMATION ONLY.

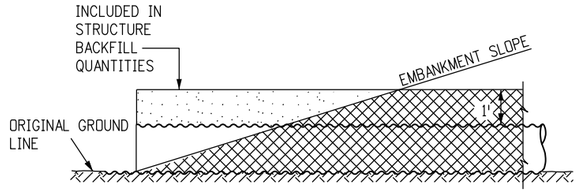
LEGEND

- STRUCTURE EXCAVATION LIMITS
- STRUCTURE BACKFILL, CLASS 1 OR 2, AS SHOWN ON PLANS
- STRUCTURE BACKFILL, CLASS 1
- EMBANKMENT MATERIAL
- EARTH
- ROCK
- BEDDING
- CONCRETE
- = WHEN FLOW LINE OF CULVERT IS LESS THAN 0.3 B_c BELOW THE ORIGINAL GROUND LINE, EMBANKMENT SHALL BE BUILT UP TO 0.3 B_c ABOVE THE FLOW LINE AND TRENCH EXCAVATED TO THE BOTTOM OF PIPE OR AS SHOWN.

CONDUIT WITH END SECTIONS



HEADWALL



END OF PIPE

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EXCAVATION AND BACKFILL FOR STRUCTURES

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M-206-1
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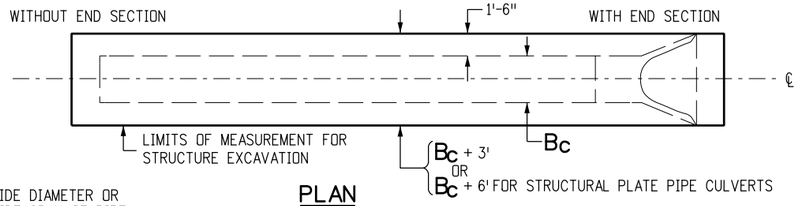
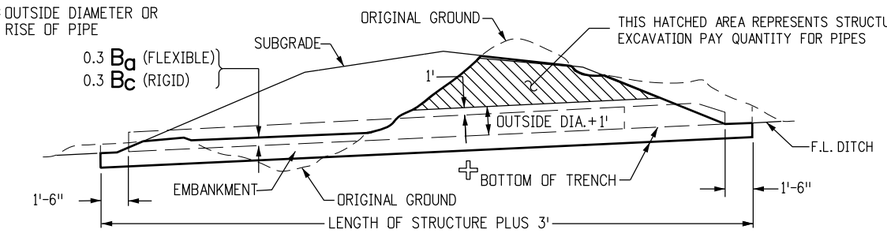
Project Sheet Number: 148



PLAN

B_a = INSIDE DIAMETER OR INSIDE SPAN OF PIPE

B_c = OUTSIDE DIAMETER OR RISE OF PIPE

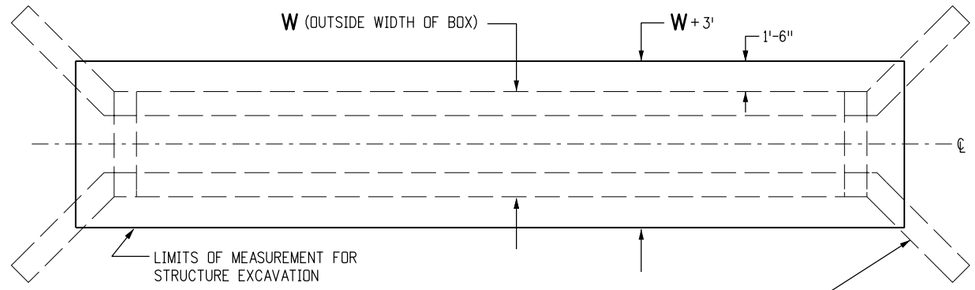


PROFILE

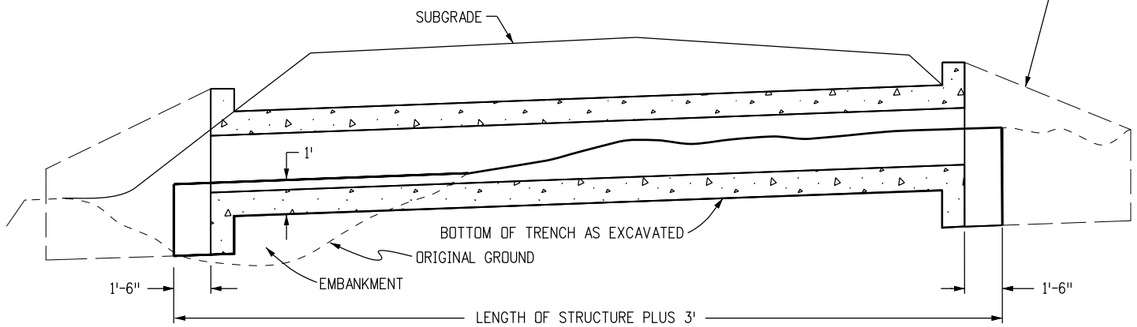
℄ FOR APPLICABLE LIMITS OF STRUCTURE EXCAVATION, SEE BEDDING DETAILS ON SHEET 1 OF THESE DETAILS.

STRUCTURE EXCAVATION UP TO 1 FT. ABOVE THE TOP OF THE PIPE SHALL BE INCLUDED IN THE BID PRICE OF THE PIPE.

STRUCTURE EXCAVATION MEASUREMENT FOR PIPE CULVERTS

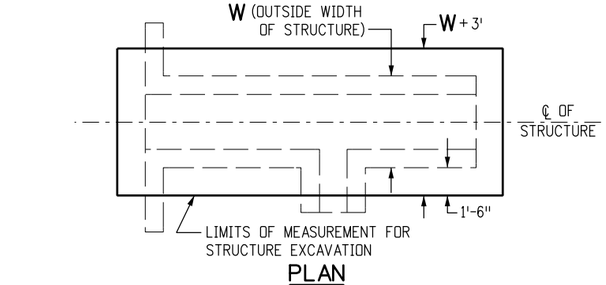


PLAN

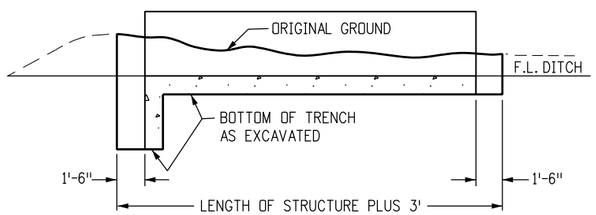


PROFILE

STRUCTURE EXCAVATION MEASUREMENT FOR CONCRETE BOX CULVERTS

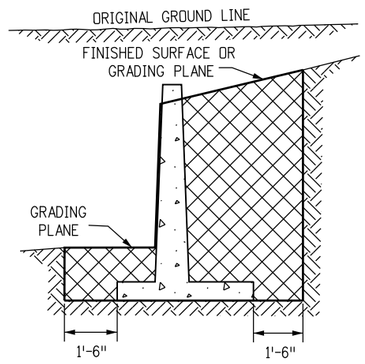


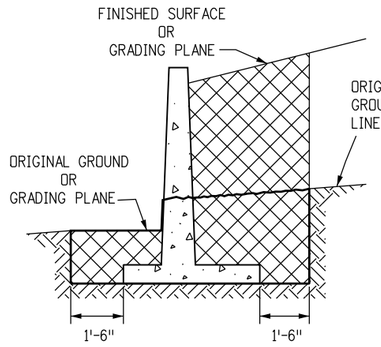
PLAN

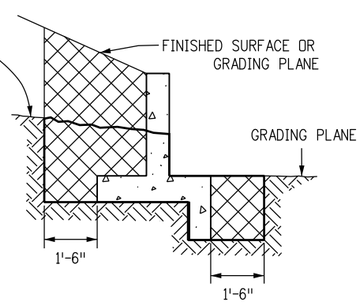


PROFILE

STRUCTURE EXCAVATION MEASUREMENT FOR DIVISION BOXES







WINGWALL

RETAINING WALL IN CUT & IN PARTIAL CUT

ANY ADDITIONAL EXCAVATION BEHIND THE LIMITS SHOWN SHALL BE FILLED WITH CLASS I BACKFILL MATERIAL. THE ADDITIONAL EXCAVATION AND BACKFILL WILL NOT BE MEASURED AND PAID FOR.

LEGEND

- STRUCTURE EXCAVATION LIMITS
- STRUCTURE BACKFILL, CLASS 1 OR 2, AS SHOWN ON PLANS
- CONCRETE

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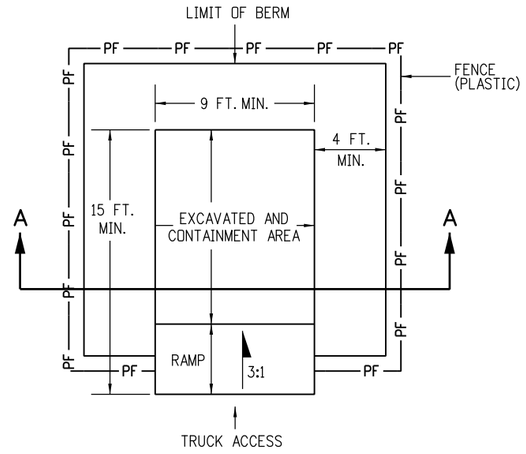
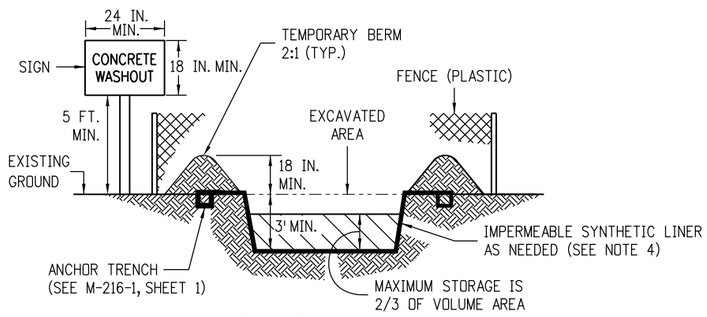
EXCAVATION AND BACKFILL FOR STRUCTURES

Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.
M-206-1
Standard Sheet No. 2 of 2
Project Sheet Number: 149



PLAN VIEW

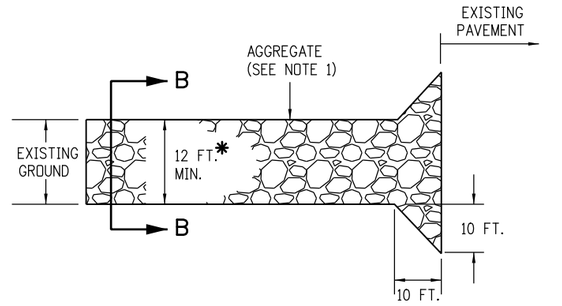


SECTION A-A

NOTES:

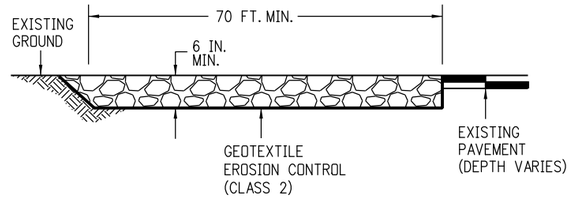
1. A FENCE (PLASTIC) CONFORMING TO SECTION 607 SHALL BE INSTALLED AROUND THE CONCRETE WASHOUT AREA, EXCEPT AT THE OPENING.
2. THE CONCRETE WASHOUT SIGN SHALL HAVE LETTERS AT LEAST 3 INCHES HIGH AND CONFORM TO SUBSECTION 630.02.
3. ALL MATERIALS AND LABOR TO COMPLETE THE CONCRETE WASHOUT STRUCTURE SHALL BE INCLUDED IN THE COST OF WORK AND NOT PAID FOR SEPARATELY.
4. THE BOTTOM OF EXCAVATION SHALL BE A MINIMUM OF FIVE FEET ABOVE GROUND WATER. IF NOT, THE BOTTOM OF EXCAVATION SHALL BE IN ACCORDANCE WITH 208.02 (j).
5. THE PAY ITEM NUMBER FOR CONCRETE WASHOUT STRUCTURE (EACH) IS 208-00045.

CONCRETE WASHOUT STRUCTURE

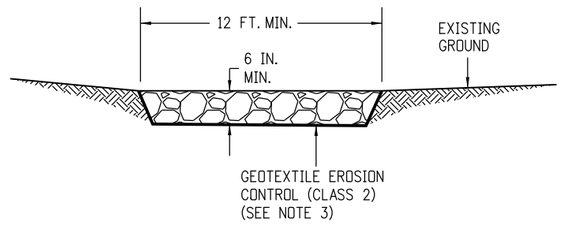


PLAN VIEW

* SHALL EXTEND FULL WIDTH OF INGRESS AND EGRESS OPERATION.



ELEVATION SECTION



SECTION B-B

NOTES:

1. AGGREGATE SHALL CONFORM TO SUBSECTION 208.02 (I).
2. THE CONTRACTOR SHALL PROTECT CURB AND GUTTER THAT CROSSES THE ENTRANCE FROM DAMAGE, WHILE NOT BLOCKING FLOW OF WATER THRU STRUCTURE. PROTECTION OF THE CURB AND GUTTER SHALL BE INCLUDED IN THE COST OF WORK AND NOT PAID FOR SEPARATELY.
3. GEOTEXTILE SHALL CONFORM TO SUBSECTION 712.08.
4. ALL MATERIALS AND LABOR TO COMPLETE THE VEHICLE TRACKING PAD SHALL BE INCLUDED IN THE COST OF WORK AND NOT PAID FOR SEPARATELY.
5. THE PAY ITEM NUMBER FOR VEHICLE TRACKING PAD (EACH) IS 208-00070.

VEHICLE TRACKING PAD

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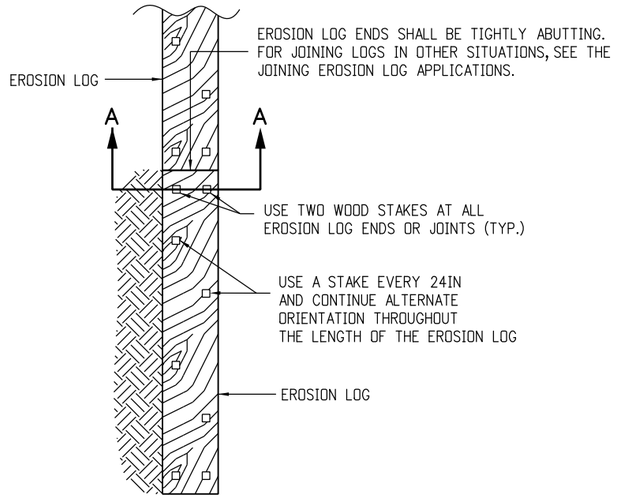
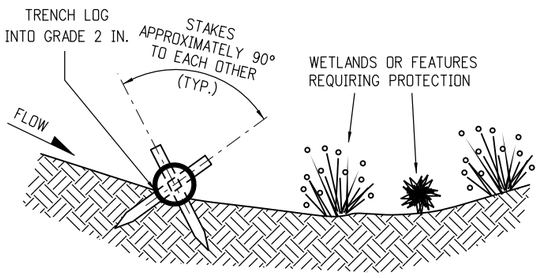
TEMPORARY EROSION CONTROL

Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.
M-208-1
Standard Sheet No. 1 of 11
Project Sheet Number: 150



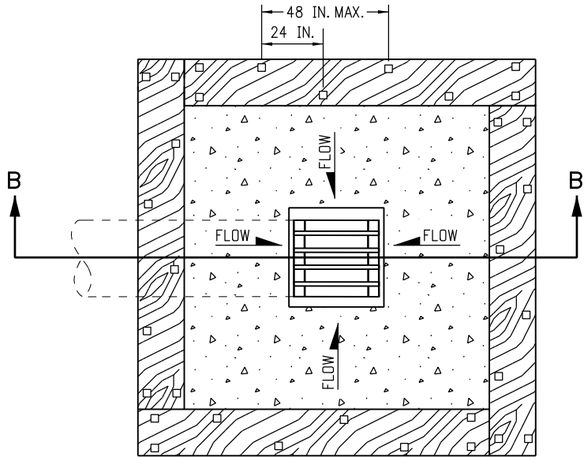
PLAN VIEW



SECTION A-A

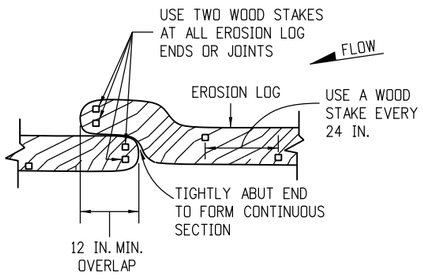
TYPICAL STAKE INSTALLATION

EROSION LOGS PAY ITEMS	
NUMBER	DESCRIPTION
208-00012	TYPE 1 (9 IN.)
208-00002	TYPE 1 (12 IN.)
208-00013	TYPE 1 (20 IN.)
208-00007	TYPE 2 (8 IN.)
208-00008	TYPE 2 (12 IN.)
208-00009	TYPE 2 (18 IN.)
208-00022	TYPE 3 (9 IN.)
208-00023	TYPE 3 (12 IN.)
208-00024	TYPE 3 (20 IN.)

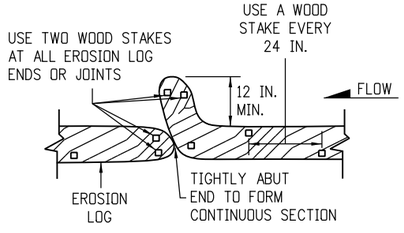


PLAN VIEW

NOTE: THE TOPS OF ALL STAKES SHALL NOT EXTEND MORE THAN 2 INCHES ABOVE THE TOPS OF EROSION LOGS.

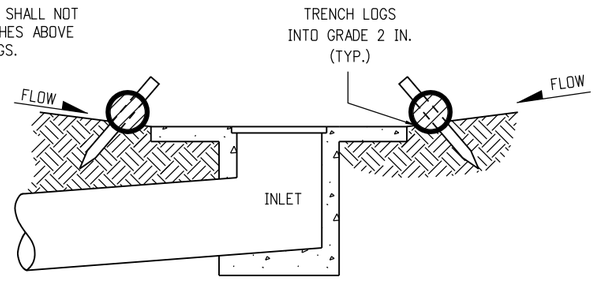


OVERLAP JOINING DETAIL



J-HOOK JOINING DETAIL

JOINING EROSION LOG APPLICATIONS



SECTION B-B

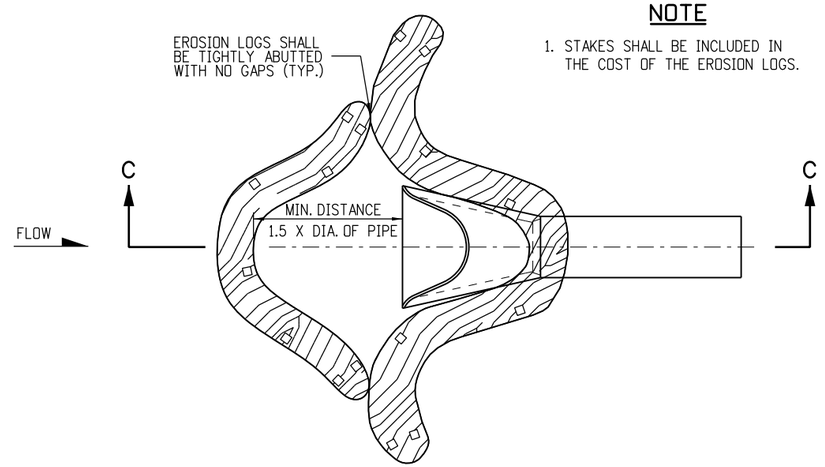
NOTE: LOCATE EROSION LOGS AT THE OUTSIDE EDGE OF THE CONCRETE APRON.

EROSION LOG FILTER AT DROP INLET

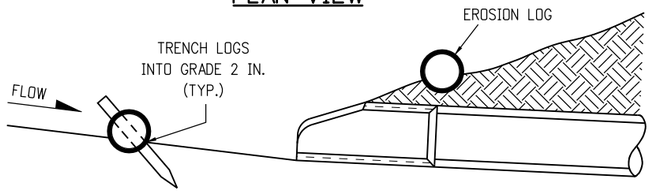
EROSION LOG APPLICATIONS

NOTE

1. STAKES SHALL BE INCLUDED IN THE COST OF THE EROSION LOGS.



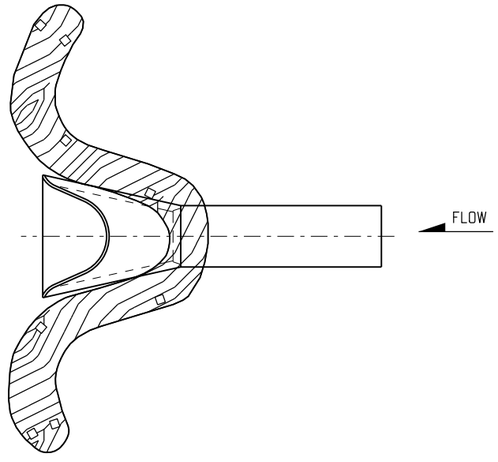
PLAN VIEW



SECTION C-C
(NOT ALL LOGS SHOWN)

NOTE: TOP OF STAKE SHALL NOT EXTEND PAST TOP OF EROSION LOG MORE THAN 2 IN.

EROSION LOG CULVERT INLET PROTECTION



EROSION LOG CULVERT OUTLET PROTECTION

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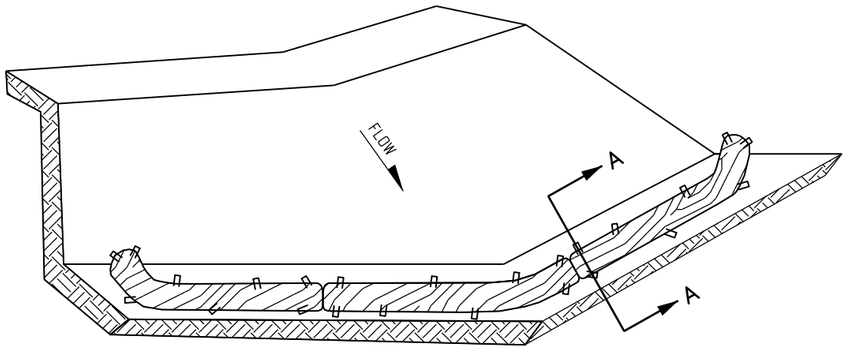
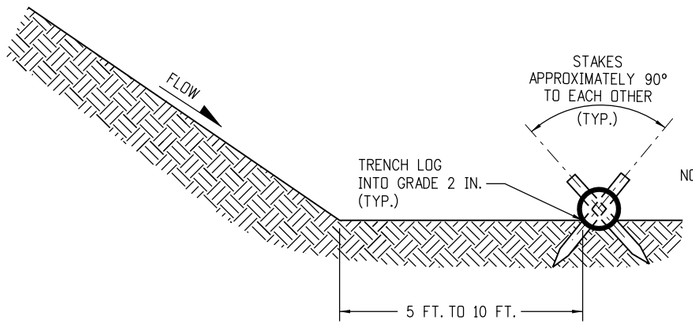
TEMPORARY EROSION CONTROL

Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.
M-208-1
Standard Sheet No. 2 of 11
Project Sheet Number: 151



ISOMETRIC VIEW



NOTE: THE TOPS OF ALL STAKES SHALL NOT EXTEND MORE THAN 2 INCHES ABOVE THE TOPS OF EROSION LOGS.

SECTION A-A

NOTES:

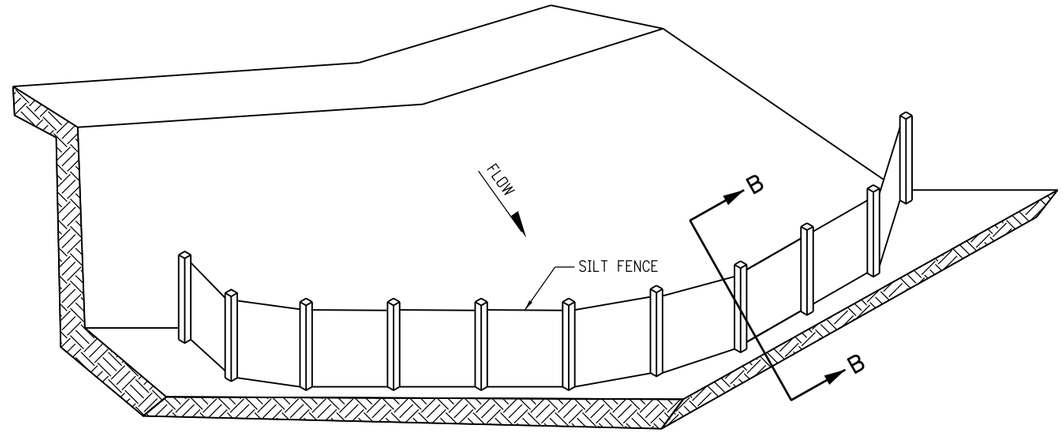
1. EROSION LOGS USED AT TOE OF SLOPE SHALL BE PLACED 5 TO 10 FEET BEYOND TOE OF SLOPE TO PROVIDE STORAGE CAPACITY.
2. EROSION LOGS SHALL BE PLACED ON THE CONTOUR WITH ENDS FLARED UP SLOPE.
3. SEE SHEET 2 OF 11 FOR JOINING LOGS DETAIL.

EROSION LOGS PAY ITEMS	
NUMBER	DESCRIPTION
208-00012	TYPE 1 (9 IN.)
208-00002	TYPE 1 (12 IN.)
208-00013	TYPE 1 (20 IN.)
208-00007	TYPE 2 (8 IN.)
208-00008	TYPE 2 (12 IN.)
208-00009	TYPE 2 (18 IN.)
208-00022	TYPE 3 (9 IN.)
208-00023	TYPE 3 (12 IN.)
208-00024	TYPE 3 (20 IN.)

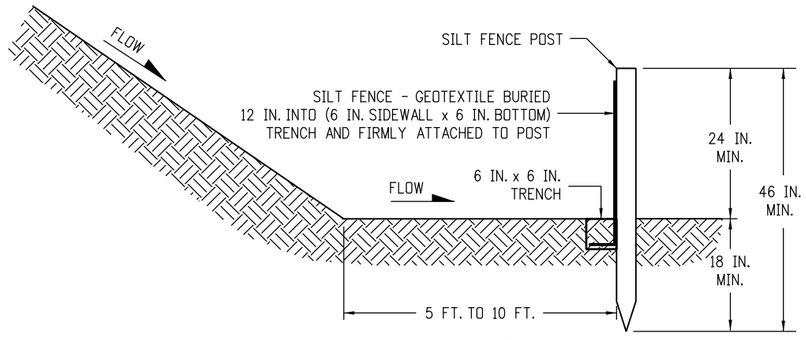
EROSION LOG TOE OF SLOPE PROTECTION

NOTES

1. SILT FENCE SHALL HAVE A MAXIMUM DRAINAGE AREA OF ONE-QUARTER ACRE PER 100 FEET OF SILT FENCE LENGTH; MAXIMUM SLOPE LENGTH BEHIND BARRIER IS 100 FEET.
2. SILT FENCE USED AT TOE OF SLOPE SHALL BE PLACED 5 TO 10 FEET BEYOND TOE OF SLOPE TO PROVIDE STORAGE CAPACITY.
3. SILT FENCE SHALL BE PLACED PARALLEL TO THE CONTOUR WITH ENDS FLARED UP SLOPE.
4. THE MAXIMUM LENGTH OF EROSION LOGS OR SILT FENCES WITHOUT A FLARED END TURNING UPSLOPE IS 150 FEET.



ISOMETRIC VIEW



SECTION B-B

SILT FENCE TOE OF SLOPE PROTECTION

NOTE: THE PAY ITEM NUMBER FOR SILT FENCE (LF) IS 208-00020.

TOE OF SLOPE PROTECTION APPLICATIONS

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TEMPORARY EROSION CONTROL

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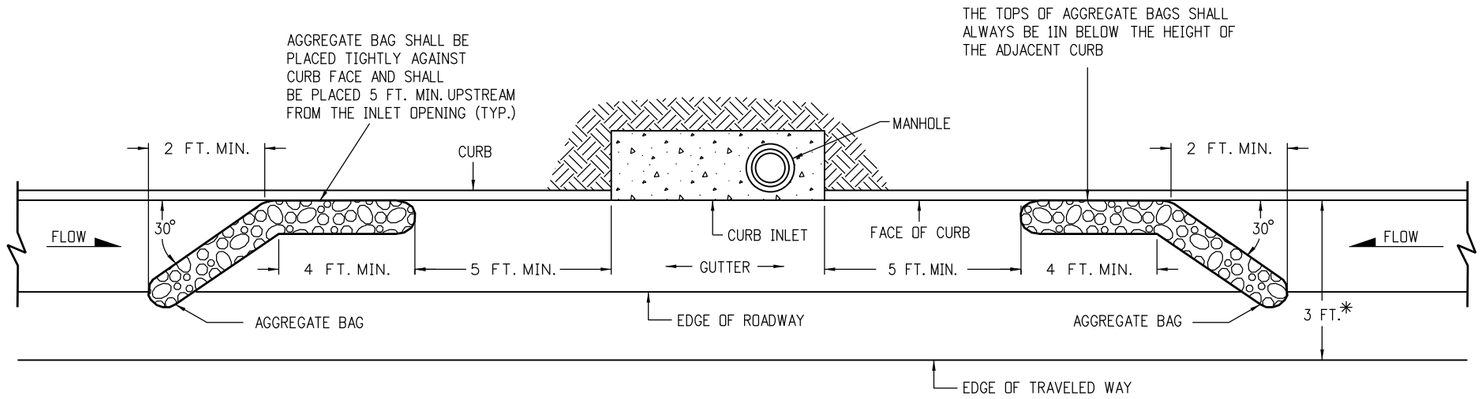
STANDARD PLAN NO.
M-208-1
Standard Sheet No. 3 of 11
Project Sheet Number: 152

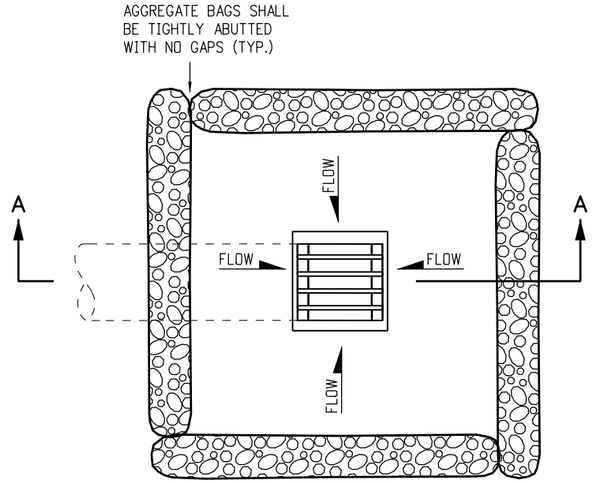


PLAN VIEW

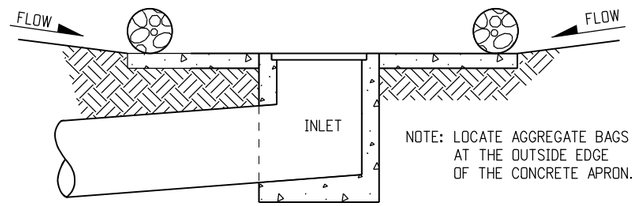
* NOTE: USE AGGREGATE BAGS ONLY WHEN THERE IS A MINIMUM CLEARANCE OF 3 FEET FROM THE EDGE OF THE TRAVELED WAY (INCLUDING CONDITIONS DURING DETOURS) TO THE FACE OF CURB.

LENGTH (L) OF INLET FT.	NUMBER OF AGGREGATE BAGS UPSTREAM OF INLET
0 - 5	1
6 - 10	2
L > 10	3

AGGREGATE BAGS AT STORM DRAIN INLET (TYPE I)



PLAN VIEW



SECTION A-A

AGGREGATE BAGS AT DROP INLET

AGGREGATE BAG APPLICATIONS

NOTE: THE PAY ITEM NUMBER FOR AGGREGATE BAG (LF) IS 208-00035

Computer File Information		Sheet Revisions	
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TEMPORARY EROSION CONTROL

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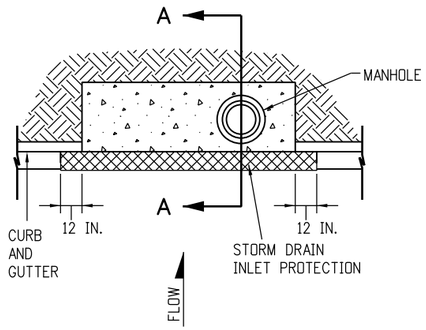
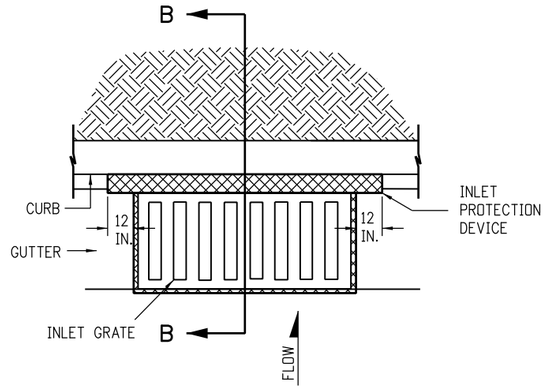
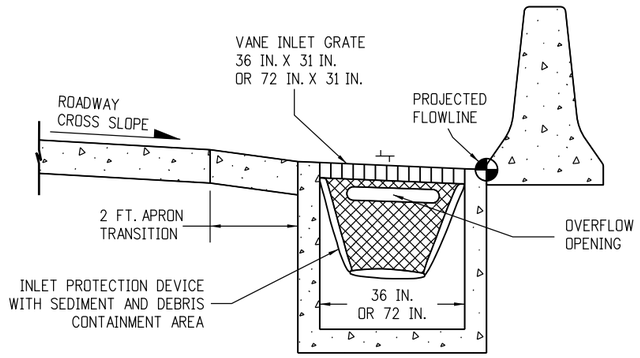
STANDARD PLAN NO.
M-208-1
Standard Sheet No. 4 of 11
Project Sheet Number: 153



PLAN VIEW

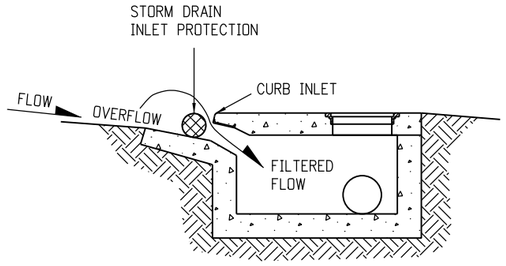


PLAN VIEW



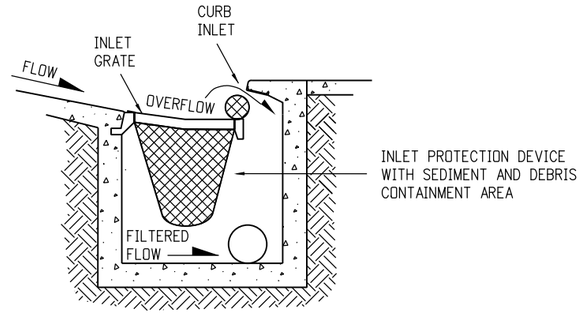
OPTION A

STORM DRAIN INLET PROTECTION (TYPE III)



SECTION A-A

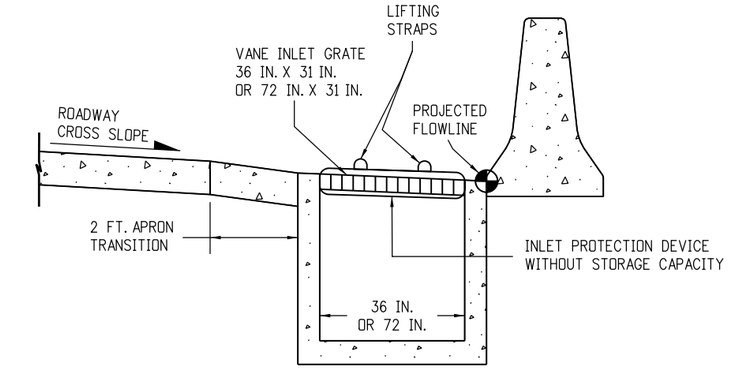
STORM DRAIN INLET PROTECTION (TYPE I)



SECTION B-B

OPTION A

STORM DRAIN INLET PROTECTION (TYPE II)



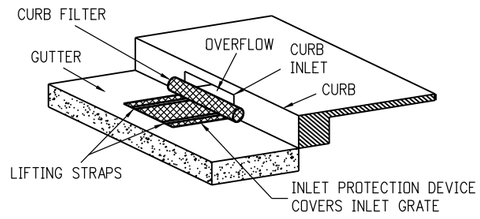
OPTION B

STORM DRAIN INLET PROTECTION (TYPE III)

NOTE: THE PAY ITEM NUMBER FOR STORM DRAIN INLET PROTECTION (TYPE III) (EACH) IS 208-00056.

NOTES:

1. INLET PROTECTION DEVICE SHALL EXTEND 12 INCHES PAST EACH END OF THE INLET.
2. THE PAY ITEM NUMBERS FOR STORM DRAIN INLET PROTECTION (TYPE I) ARE 208-00051 (LF), 208-00053 84 INCHES (EACH), 208-00057 144 INCHES (EACH), AND 208-00058 204 INCHES (EACH).
3. FOR STORM DRAIN INLET TYPES I AND II, IF THERE IS A MINIMUM CLEARANCE OF 3 FEET FROM THE EDGE OF THE TRAVELED WAY TO THE FACE OF CURB, USE THE AGGREGATE BAGS AT STORM DRAIN INLET (TYPE I) DETAIL ON SHEET 4 INSTEAD.



ISOMETRIC VIEW

OPTION B

STORM DRAIN INLET PROTECTION (TYPE II)

NOTE: THE PAY ITEM NUMBERS FOR STORM DRAIN INLET PROTECTION (TYPE II) ARE 208-00054 (EACH).

STORM DRAIN INLET PROTECTION TYPES

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Detailer Initials: LTA	(R-X)		
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TEMPORARY EROSION CONTROL

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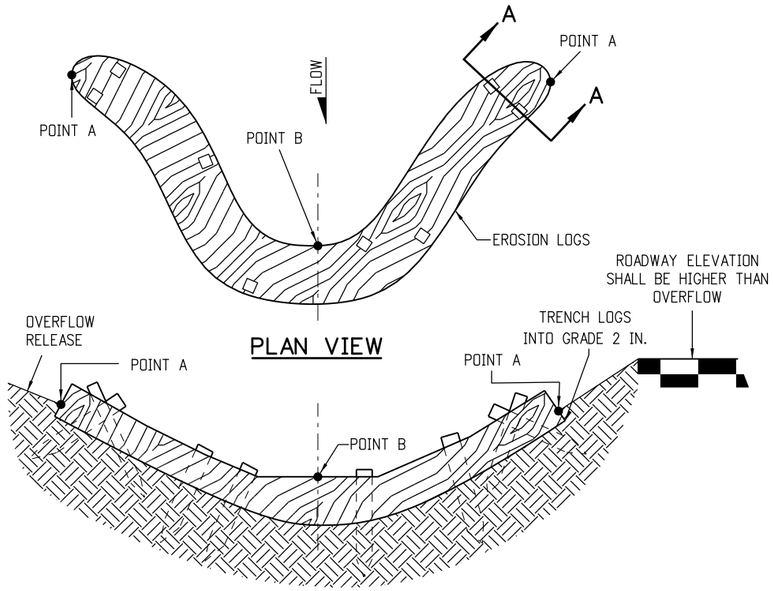
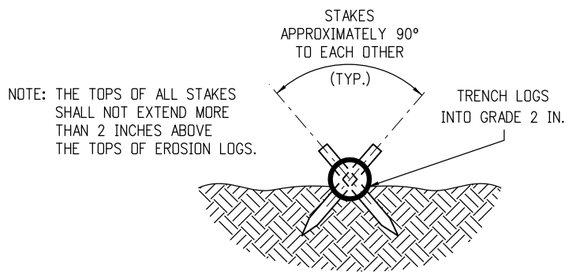
STANDARD PLAN NO.
M-208-1
Standard Sheet No. 5 of 11
Project Sheet Number: 154



PLAN VIEW

NOTE: POINTS "A" SHALL BE A MINIMUM 4 IN. HIGHER THAN POINT "B".

ELEVATION

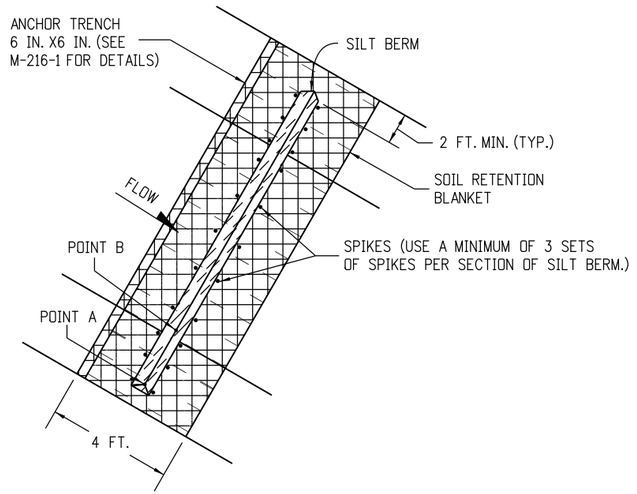


SECTION A-A

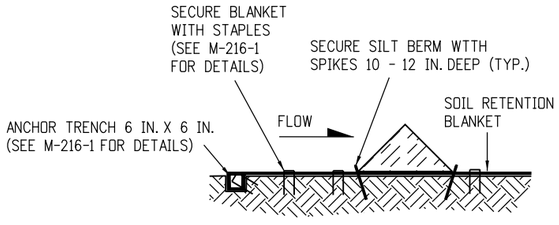
NOTES:

1. EROSION LOGS SHALL BE EMBEDDED 2 INCHES INTO THE SOIL.
2. EROSION LOGS SHALL BE TIGHTLY ABUTTED WITH NO GAPS.
3. V-SHAPED TEMPORARY DITCHES SHALL NOT BE USED. DITCHES SHAL BE GRADED IN A PARABOLIC OR TRAPEZOIDAL SHAPE.

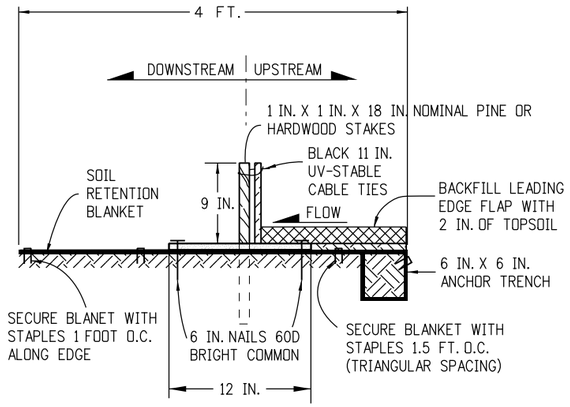
EROSION LOG INSTALLATION



PLAN VIEW



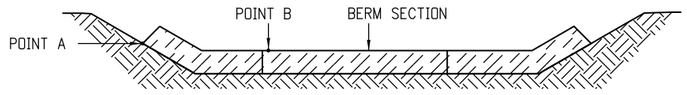
SILT BERM (1) SECTION VIEW



NOTES:

1. MINIMUM 4 NAILS PER SEGMENT (UPSTREAM).
2. MINIMUM 2 NAILS PER SEGMENT (DOWNSTREAM).
3. MINIMUM 2 WOOD STAKES PER SEGMENT.

SILT BERM (2) SECTION VIEW



POINT "A" SHALL BE HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE BERM AND NOT AROUND THE ENDS.

FRONT VIEW

NOTES

1. ANCHOR SOIL RETENTION BLANKET INTO TRENCH WITH 8 INCHES MIN. STAPLES PLACED AT 1 FOOT INTERVALS ALONG EDGE.
2. FILL AND COMPACT TRENCH.
3. SECTIONS OF THE SILT BERM SHALL BE OVERLAPPED WITH NO GAPS.
4. FOR SLOPE AND CHANNEL SPACING SEE THE "SECTION VIEW ALONG DITCH FLOWLINE" DETAIL ON SHEET 11 OF 11.
5. SOIL RETENTION BLANKET SHALL ALWAYS BE REQUIRED.
6. THE PAY ITEM NUMBER FOR SILT BERM (LF) IS 208-00004.

SILT BERM INSTALLATION

DRAINAGE DITCH APPLICATIONS

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		Date:	Comments
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Detailer Initials: LTA	(R-X)		
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TEMPORARY EROSION CONTROL

Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.
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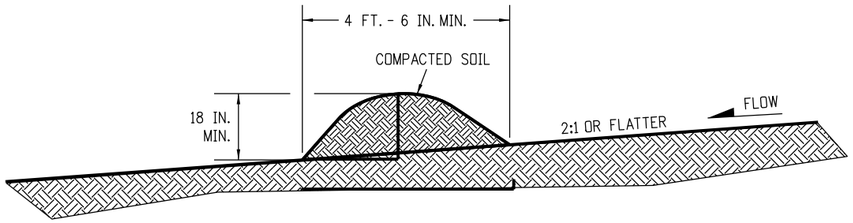
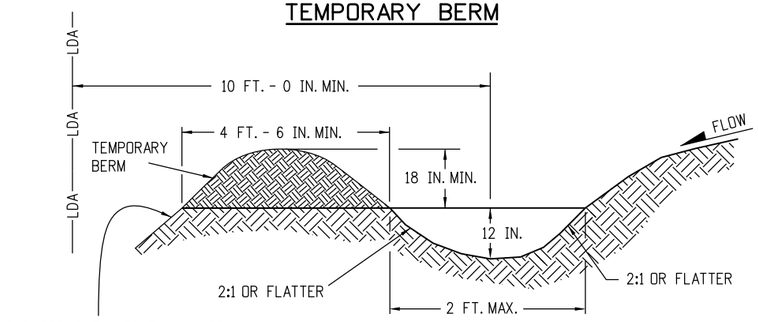
Standard Sheet No. 6 of 11
Project Sheet Number: 155



NOTES:

1. BERMS SHALL HAVE A HEIGHT OF 18 INCHES, SIDE SLOPES OF 2:1 OR FLATTER AND A MINIMUM BASE WIDTH OF 4 FT. -6 IN.
2. BERMS SHALL BE USED TO INTERCEPT AND DIVERT DRAINAGE TO A DESIGNATED OUTLET.
3. BERMS SHALL NOT BE USED WHERE DRAINAGE AREA EXCEEDS 10 ACRES.
4. BERMS SHALL BE CONSTRUCTED OUT OF ACCEPTABLE MATERIAL THAT CAN BE COMPACTED AND RECEIVE AT A MINIMUM HEAVY EQUIPMENT WHEEL ROLLED COMPACTION.
5. TEMPORARY BERMS SHALL BE CONSTRUCTED OUT OF EMBANKMENT (SUBSOIL) AND IN NO CIRCUMSTANCE CONSTRUCTED OUT OF SALVAGED TOPSOIL.
6. THE PAY ITEM NUMBER FOR TEMPORARY BERM (LF) IS 208-00300.

TEMPORARY BERM

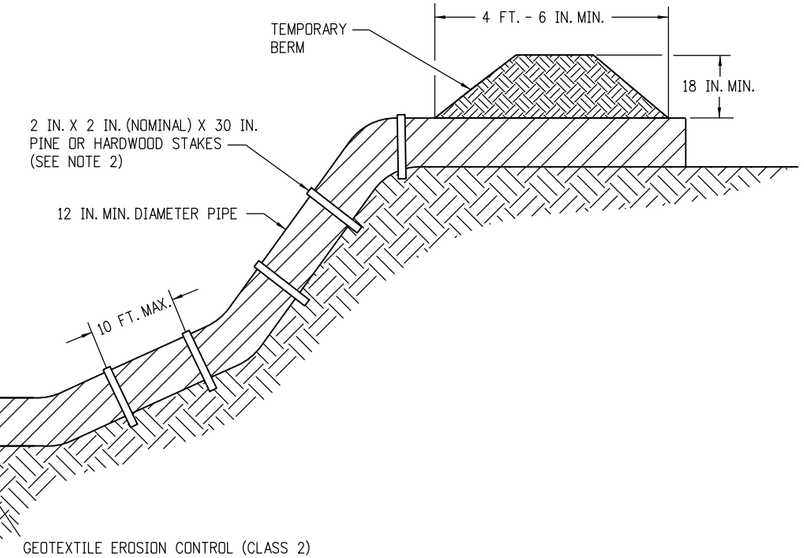


FOR BERMS TALLER THAN 2 FT.,
INSTALL TOE OF SLOPE CONTOL MEASURES.
SEE SHEET 3 OF 11 FOR DETAILS.

NOTES:

1. TEMPORARY DIVERSION DITCHES SHALL BE CONSTRUCTED ACROSS THE SLOPE TO INTERCEPT RUNOFF AND DIRECT IT TO A STABLE OUTLET OR SEDIMENT TRAP.
2. USE THE TEMPORARY DIVERSION DITCH IMMEDIATELY ABOVE A NEW CUT, FILL SLOPE, OR AROUND THE PERIMETER OF A DISTURBED AREA.
3. THE GRADIENT ALONG THE FLOW PATH SHALL HAVE A POSITIVE GRADE TO ASSURE DRAINAGE, BUT SHALL NOT BE SO STEEP AS TO RESULT IN EROSION DUE TO HIGH VELOCITY.
4. THE DIVERSION FLOWLINE SHALL ALWAYS BE LOCATED A MINIMUM 10 FEET FROM THE OUTSIDE LIMITS OF DISTURBED AREA BOUNDARY.
6. DIVERSION BERMS SHALL BE CONSTRUCTED OUT OF EMBANKMENT (SUBSOIL) AND IN NO CIRCUMSTANCE CONSTRUCTED OUT OF SALVAGED TOPSOIL.
5. THE PAY ITEM NUMBER FOR TEMPORARY DIVERSION (LF) IS 208-00301.

TEMPORARY DIVERSION



NOTES:

1. ANCHOR SIZE VARIES ACCORDING TO PIPE SIZE
2. TO SECURE THE PIPE, DRIVE STAKES INTO GROUND, THEN TIE A 12 GUAGE WIRE BETWEEN THEM ABOVE AND ACROSS THE PIPE'S WIDTH.
3. THE OUTLET SHALL BE ALIGNED WITH THE FLOW DIRECTION OF THE EXISTING GRADE. PERPENDICULAR DISCHARGE TO A CHANNEL SHALL NOT BE ACCEPTABLE.
4. THE GRADE AROUND THE INLET TO THE PIPE SHALL BE COMPACTED.
5. THE PAY ITEM NUMBER FOR TEMPORARY SLOPE DRAINS (LF) IS 208-00060.

TEMPORARY SLOPE DRAINS

GRADING APPLICATIONS

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TEMPORARY EROSION CONTROL

Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.
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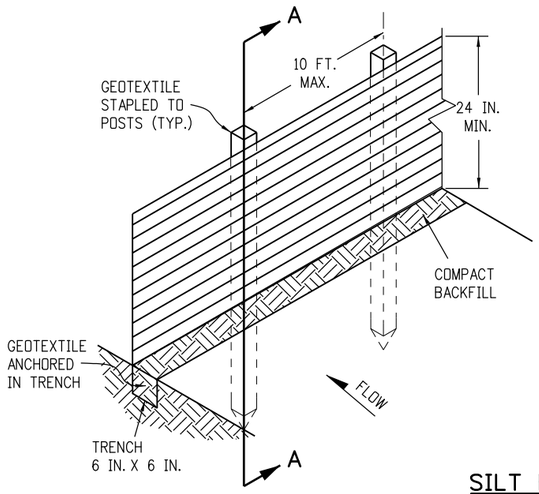
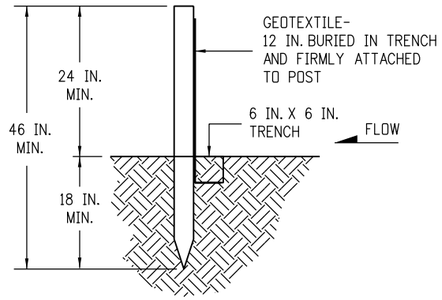
Standard Sheet No. 7 of 11
Project Sheet Number: 156



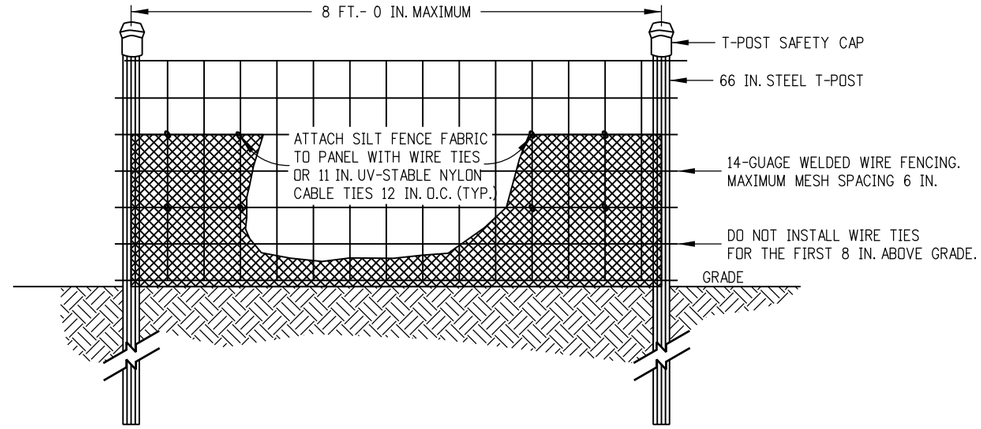


SECTION A-A

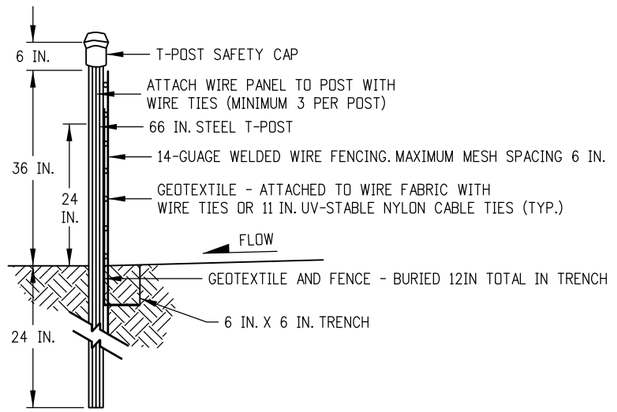
SILT FENCE

NOTES:

1. GEOTEXTILE SHALL BE ATTACHED TO WOOD POSTS WITH THREE OR MORE STAPLES PER POST. STAPLES SHALL BE HEAVY DUTY WIRE AND AT LEAST 1 INCH LONG.
2. WOOD POST SHALL BE 1 IN. X 1 IN. NOMINAL.
3. THE PAY ITEM NUMBER FOR SILT FENCE (LF) IS 208-00020.
4. THE SILT FENCE SHALL BE PLACED ON THE CONTOUR (AT THE SAME ELEVATION ±6 IN.). THE ENDS SHALL BE FLARED UP SLOPE (MINIMUM ELEVATION GAIN OF 18 IN.).



ELEVATION VIEW

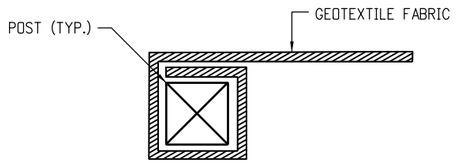


SIDE VIEW

NOTES:

1. THE ENDS OF THE SILT FENCE FABRIC SHALL BE JOINED TOGETHER BY WRAPPING APPROX. 6 INCHES OF EACH END AROUND A STEEL T-POST, THEN SECURED ALONG THE POST WITH WIRE TIES (MINIMUM 3 PER POST).
2. POSTS SHALL BE TIGHTLY ABUTTED WITH NO GAPS TO PREVENT POTENTIAL FLOW-THROUGH OF SEDIMENT AT JOINT.
3. SILT FENCES SHALL NOT BE USED FOR CHECK DAMS.
4. THE PAY ITEM NUMBER FOR SILT FENCE (REINFORCED) (LF) IS 208-00021.

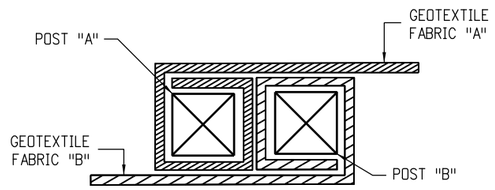
SILT FENCE (REINFORCED)



END SECTION DETAIL (PLAN VIEW)

NOTE:

1. THE END OF THE SILT FENCE FABRIC SHALL BE WRAPPED APPROX. 6 INCHES AROUND A WOODEN POST ONE FULL TURN, THEN SECURED ALONG THE POST WITH 6 HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH LONG.



JOINING SECTION DETAIL (PLAN VIEW)

NOTES:

1. THE ENDS OF THE SILT FENCE FABRIC SHALL BE JOINED TOGETHER BY WRAPPING APPROX. 6 INCHES OF EACH END AROUND A WOODEN POST ONE FULL TURN, THEN SECURED ALONG THE POST WITH 6 HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH LONG.
2. POSTS SHALL BE TIGHTLY ABUTTED WITH NO GAPS TO PREVENT POTENTIAL FLOW-THROUGH OF SEDIMENT AT JOINT.

SILT FENCE APPLICATIONS

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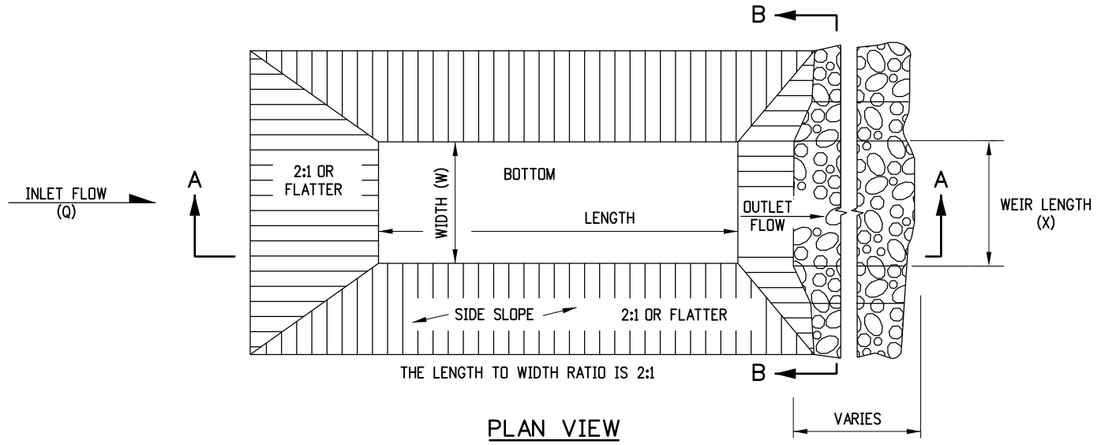
TEMPORARY EROSION CONTROL

Issued by the Project Development Branch: July 31, 2019

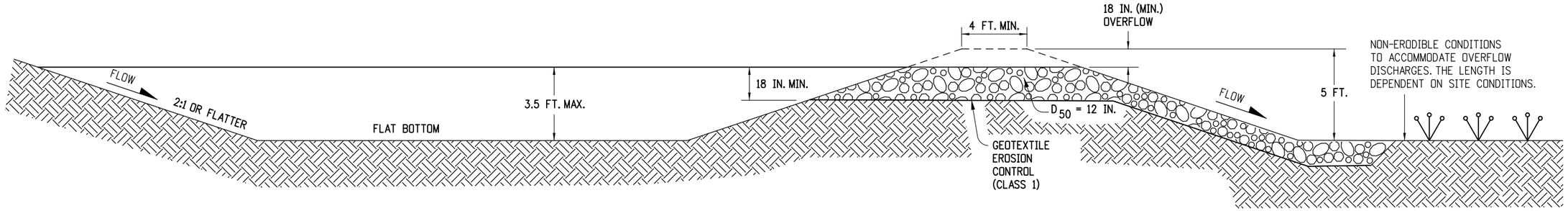
STANDARD PLAN NO.
M-208-1
Standard Sheet No. 8 of 11
Project Sheet Number: 157



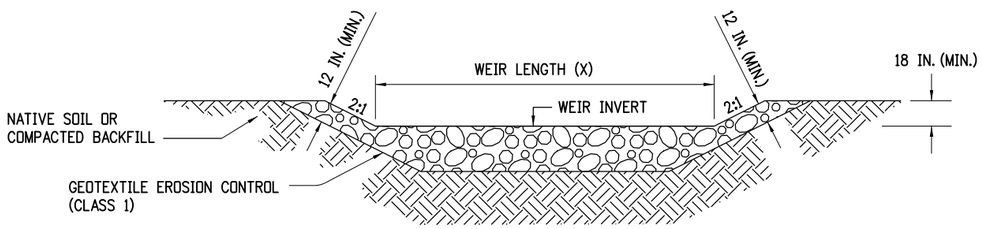
PLAN VIEW

NOTES

1. THE MAXIMUM DRAINAGE AREA IS 5 ACRES.
2. THE MAXIMUM STRUCTURE LIFE IS 2 YEARS.
3. THE STORAGE AREA IS 1800 CUBIC FEET PER ACRE.
4. THE MAXIMUM EMBANKMENT HEIGHT SHALL BE 5 FT. MEASURED ON THE DOWNSTREAM SIDE.
5. THE LENGTH/WIDTH RATIO MAY BE ADJUSTED TO MEET SITE CONDITIONS WHEN APPROVED BY THE ENGINEER.
6. WIDTH (W) OF SEDIMENT TRAP IS APPROXIMATELY EQUAL TO THE WEIR LENGTH (X).
7. SEDIMENT TRAP DESIGN SHALL BE APPROVED BY THE ENGINEER.
8. THE DOWN GRADE FROM WEIR SHALL BE STABLE AND NON-ERODIABLE.
9. THE PAY ITEM NUMBER FOR SEDIMENT TRAP (LF) IS 208-00033.



SECTION A-A



SECTION B-B

DRAINAGE AREA (ACRES)	WEIR LENGTH (FEET)
1	4
2	6
3	8
4	10
5	12

WEIR LENGTH TABLE

SEDIMENT TRAP

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TEMPORARY EROSION CONTROL

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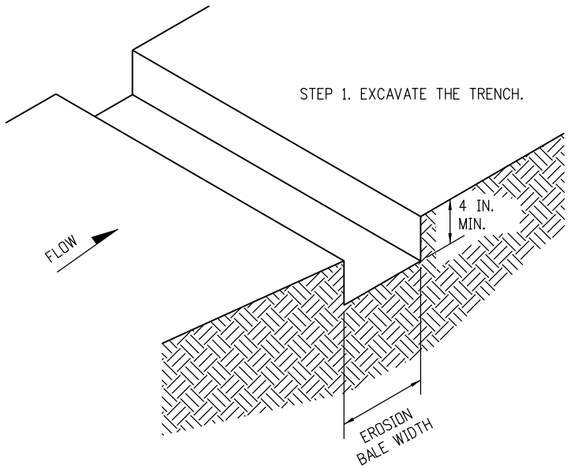
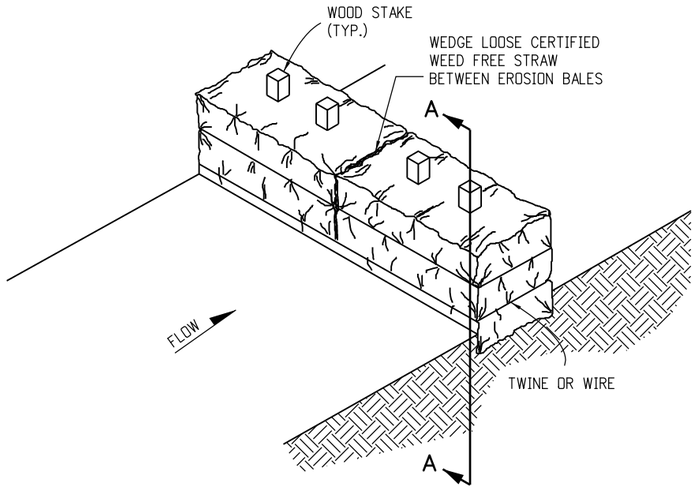
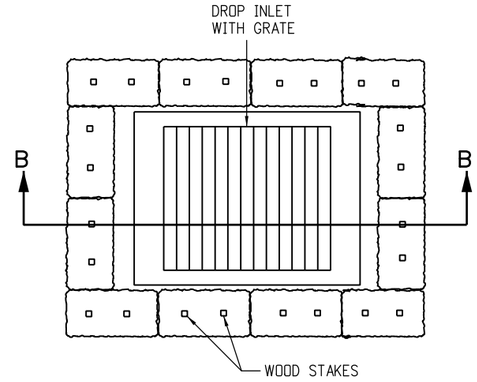
STANDARD PLAN NO.
M-208-1
Standard Sheet No. 9 of 11
Project Sheet Number: 158



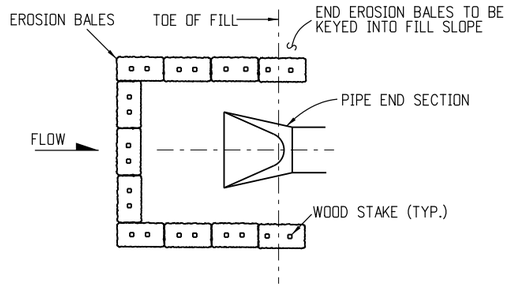


NOTES

1. STAKES SHALL BE WOOD AND SHALL BE 2 IN. X 2 IN. X 30 IN. NOMINAL.
2. EROSION BALES SHALL BE 18 IN. X 18 IN. X 36 IN.
3. EROSION BALES SHALL BE ENTRENCHED 4 IN. MINIMUM INTO THE SOIL, THIGHTLY ABUTTED WITH NO GAPS, STAKED, AND BACKFILLED AROUND THE ENTIRE OUTSIDE PERIMETER.
4. EROSION BALES CANNOT BE USED FOR CHECK DAMS.
5. EROSION BALE FILTER SHALL BE LOWER THAN BERM ELEVATION OR USED IN A SUMP CONDITION.
6. THE PAY ITEM NUMBER FOR EROSION BALES (WEED FREE) (EA) IS 208-00011.

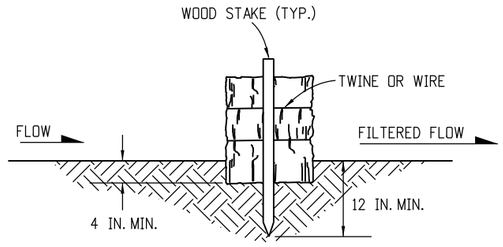


PLAN VIEW



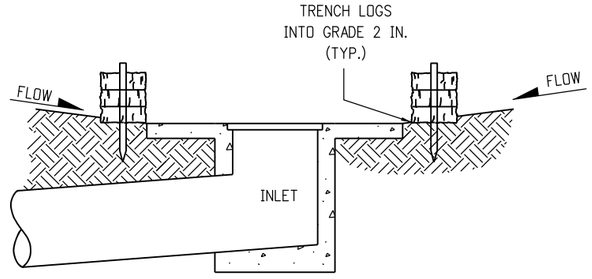
PLAN VIEW

EROSION BALE CULVERT INLET PROTECTION



SECTION A-A

EROSION BALE TRENCHING AND STAKING



SECTION B-B

NOTE: LOCATE EROSION BALES AT THE OUTSIDE EDGE OF THE CONCRETE APRON.

EROSION LOG FILTER AT DROP INLET

EROSION BALE APPLICATIONS

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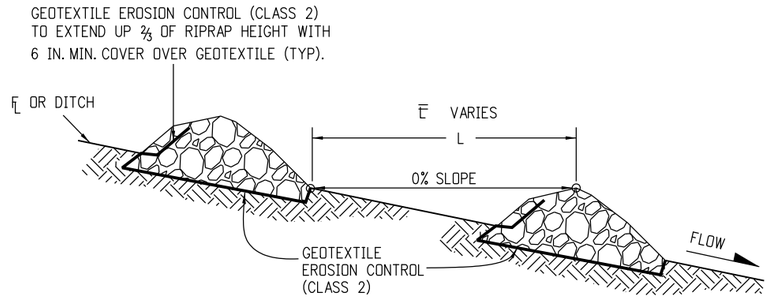
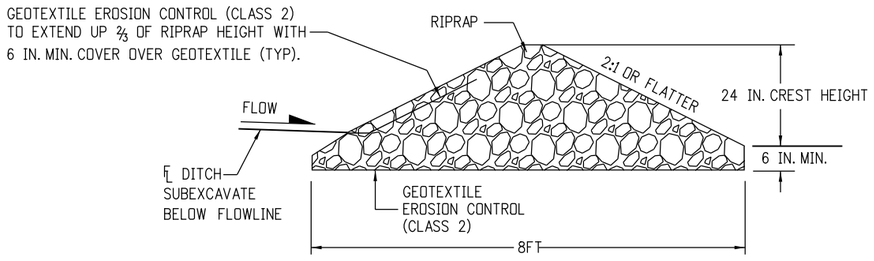
STANDARD PLAN NO.
M-208-1
Standard Sheet No. 10 of 11
Project Sheet Number: 159



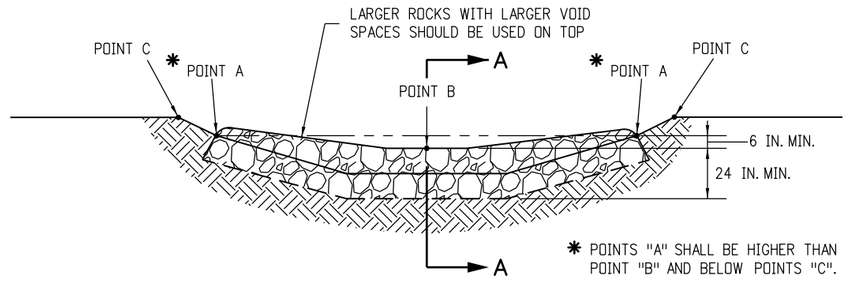
SECTION VIEW ALONG DITCH FLOWLINE



SECTION A-A

NOTES:

1. RIPRAP SIZE D_{50} = 6IN OR AS SHOWN ON THE PLANS.
2. THE GEOTEXTILE EROSION CONTROL SHALL BE CLASS 2 AND CONFORM TO THE REQUIREMENTS OF SUBSECTION 712.08.
3. THE ENDS OF RIPRAP CHECK DAM SHALL BE A MINIMUM OF 6 IN. HIGHER THAN CENTER OF CHECK DAM.
4. FOR USE AS TEMPORARY CHECK DAMS ONLY AND NOT FOR PERMANENT INSTALLATIONS.
5. THE PAY ITEM NUMBER FOR ROCK CHECK DAM (EA) IS 208-00041.



TYPICAL SECTION VIEW

NOTE: ALL MATERIALS AND LABOR TO COMPLETE THE ROCK CHECK DAM SHALL BE INCLUDED IN THE COST OF WORK.

ROCK CHECK DAM

Computer File Information		Sheet Revisions	
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Detailer Initials: LTA	(R-X)		
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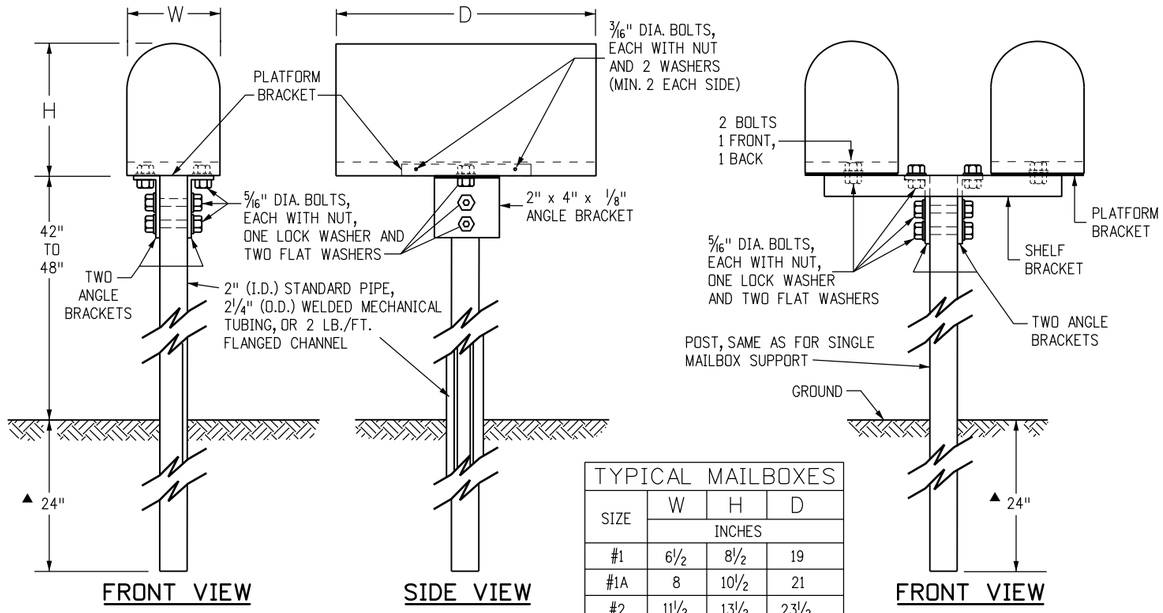
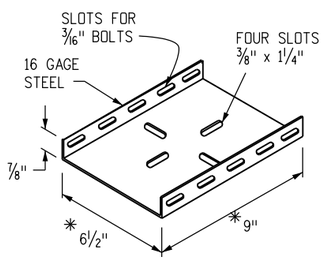
Project Sheet Number: 160



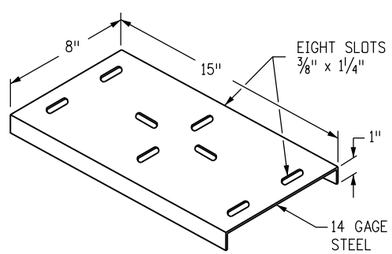
TYPICAL MAILBOXES			
SIZE	W	H	D
	INCHES		
#1	6½	8½	19
#1A	8	10½	21
#2	11½	13½	23½

▲ 30 IN. WITH POST MOUNTING SOCKET MAY BE USED, SEE DETAIL ON SHEET 2 OF 2.

SINGLE (TYPE 1) AND DOUBLE (TYPE 2) MAILBOX SUPPORTS



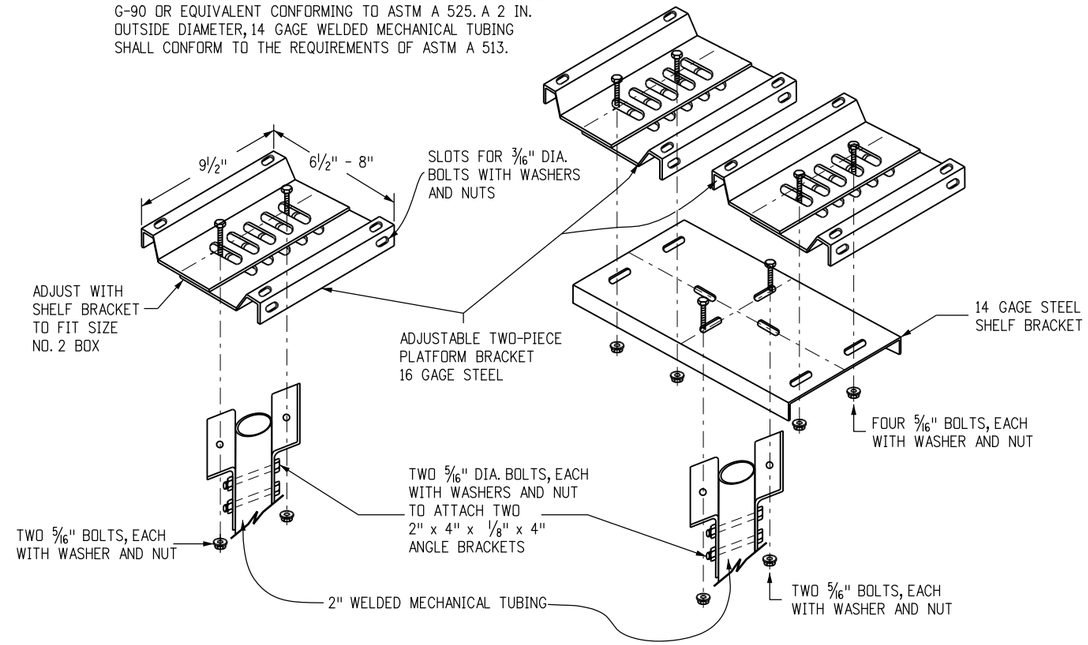
PLATFORM BRACKET



SHELF BRACKET

GENERAL NOTES

1. WHEN A MAILBOX TURNOUT IS REQUIRED, THE NECESSARY PAY QUANTITIES WILL BE SHOWN ON THE PLANS.
2. A SINGLE MAILBOX SHALL BE RESET AT THE FINAL DESIGNATED LOCATION ON A NEW TYPE 1 SUPPORT. TWO MAILBOXES RESET AT THE SAME LOCATION SHALL BE RESET ON ONE DOUBLE (TYPE 2) SUPPORT OR ON TWO SINGLE (TYPE 1) SUPPORTS AS DESIGNATED. THREE, FOUR, OR FIVE MAILBOXES SHALL BE RESET ON A MULTIPLE (TYPE 3) SUPPORT. AN EXISTING MAILBOX THAT IS MOUNTED ON A CANTILEVER SUPPORT SHALL BE RESET ON A CANTILEVER (TYPE 4) SUPPORT. ALL WORK AND MATERIALS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR "RESET MAILBOX STRUCTURE (TYPE _)".
3. WHEN THE ENGINEER DETERMINES THAT THE EXISTING MAILBOX CAN NOT BE REUSED, A NEW METAL MAILBOX OF SIMILAR SIZE SHALL BE SUPPLIED AND ERECTED BY THE CONTRACTOR. A NEW PLASTIC MAILBOX CONFORMING TO POSTAL SERVICE SPECIFICATIONS MAY BE USED AS AN ALTERNATIVE WHEN APPROVED BY THE ENGINEER. AN EXISTING MAILBOX LARGER THAN A SIZE NO. 2 SHALL BE REPLACED WITH A NEW SIZE NO. 2 MAILBOX. THE COST OF SUPPLYING THE NEW MAILBOX WILL BE PAID FOR IN ACCORDANCE WITH SUBSECTION 109.04(b). EXCEPTION: A CUSTOM BUILT, RURAL-TYPE MAILBOX MAY BE RESET IF THE MAILBOX OWNER OBTAINS PRIOR WRITTEN APPROVAL FROM THE POSTMASTER.
4. THE ADDRESS INFORMATION THAT APPEARED ON THE ORIGINAL MAILBOX SHALL BE PLACED ON THE APPROACH SIDE OF THE REPLACEMENT MAILBOX. SIZE AND STYLE OF LETTERING AND MATERIALS ARE SUBJECT TO THE ENGINEER'S APPROVAL.
6. POSTS, BRACKETS, AND ALL MOUNTING HARDWARE SHALL BE GALVANIZED IN CONFORMANCE WITH AASHTO M 232 AND M 111, EXCEPT THE WELDED MECHANICAL TUBING COATING SHALL BE G-90 OR EQUIVALENT CONFORMING TO ASTM A 525. A 2 IN. OUTSIDE DIAMETER, 14 GAGE WELDED MECHANICAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 513.
6. EXACT DIMENSIONS OF ANGLES, PLATFORM AND SHELF BRACKETS, BOLT HOLES, SLOTS AND MULTIPLE MAILBOX SUPPORT COMPONENTS MAY VARY FROM THOSE SHOWN OR IMPLIED HEREIN SO THAT ALL COMPONENTS WILL FIT TOGETHER PROPERLY.
7. PLASTIC NEWSPAPER RECEPTACLES MAY BE REMOUNTED BELOW THE MAILBOX ON THE SUPPORT. PLASTIC NEWSPAPER RECEPTACLES SHALL BE MOUNTED IN THEIR INTENDED ORIENTATION USING A GALVANIZED U-BOLT AND HARDWARE OR OTHER MOUNTING SYSTEM APPROVED BY THE ENGINEER. ASSOCIATED COSTS WILL NOT BE PAID FOR SEPARATELY BUT WILL BE INCLUDED IN THE WORK.
8. ON ROADS WITH CURB AND GUTTER, THE MAILBOX SUPPORT SHALL BE LOCATED IN THE GROUND SO THE FRONT OF THE MAILBOX SHALL BE 8 IN. TO 12 IN. BACK FROM THE CURB FACE. THE HEIGHT SHALL BE 42 IN. TO 48 IN. MEASURED FROM THE GUTTER FLOW LINE TO THE BOTTOM OF THE MAILBOX.
9. ON ROADS WITH SIDEWALK ATTACHED TO CURB AND GUTTER, THE MAILBOX SUPPORT SHALL BE LOCATED IN THE GROUND BEHIND THE SIDEWALK. THE FRONT OF THE MAILBOX SHALL BE IN LINE WITH OR SLIGHTLY BEHIND THE EDGE OF THE SIDEWALK. THE MOUNTING HEIGHT SHALL BE 42 IN. TO 48 IN. ABOVE THE SIDEWALK.
10. THE GROUND SURROUNDING THE MAILBOX SUPPORTS SHALL BE FIRM, UNDISTURBED GROUND, OR WELL COMPACTED REGRADED SOIL. THE SUPPORTS ARE NORMALLY DRIVEN, BUT THEY MAY BE PLACED IN A DUG HOLE WITH WELL COMPACTED BACKFILL.
11. PROPRIETARY MAILBOX SUPPORT SYSTEMS LISTED ON THE CDOT APPROVED PRODUCTS LIST WILL BE ACCEPTED AS EQUIVALENT ALTERNATIVES.



SINGLE AND DOUBLE MAILBOX SUPPORTS ALTERNATIVE

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MAILBOX SUPPORTS

Issued by the Project Development Branch: July 31, 2019

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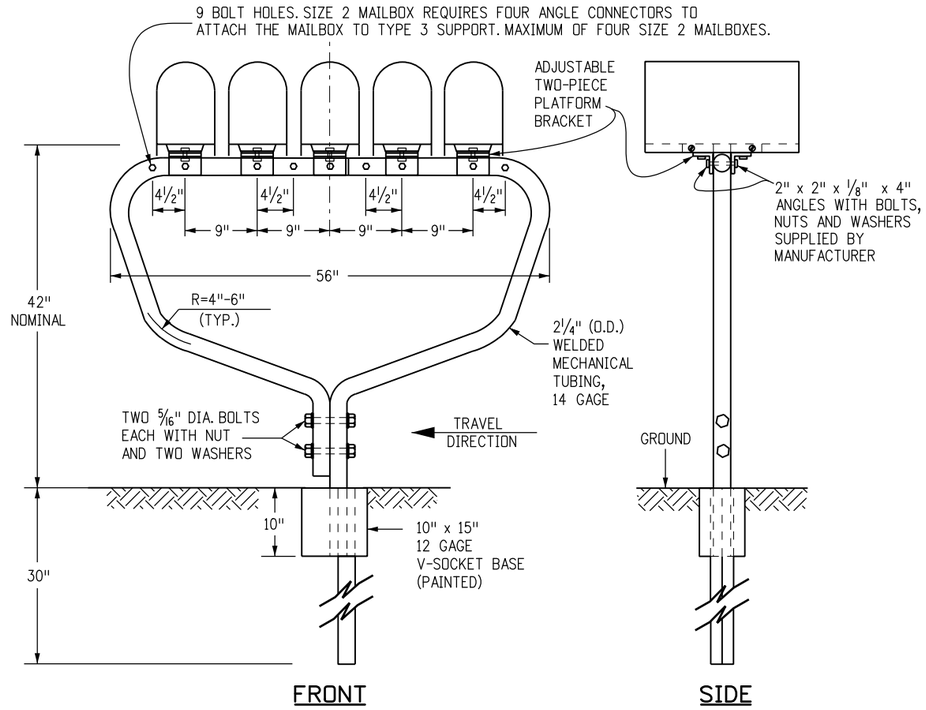
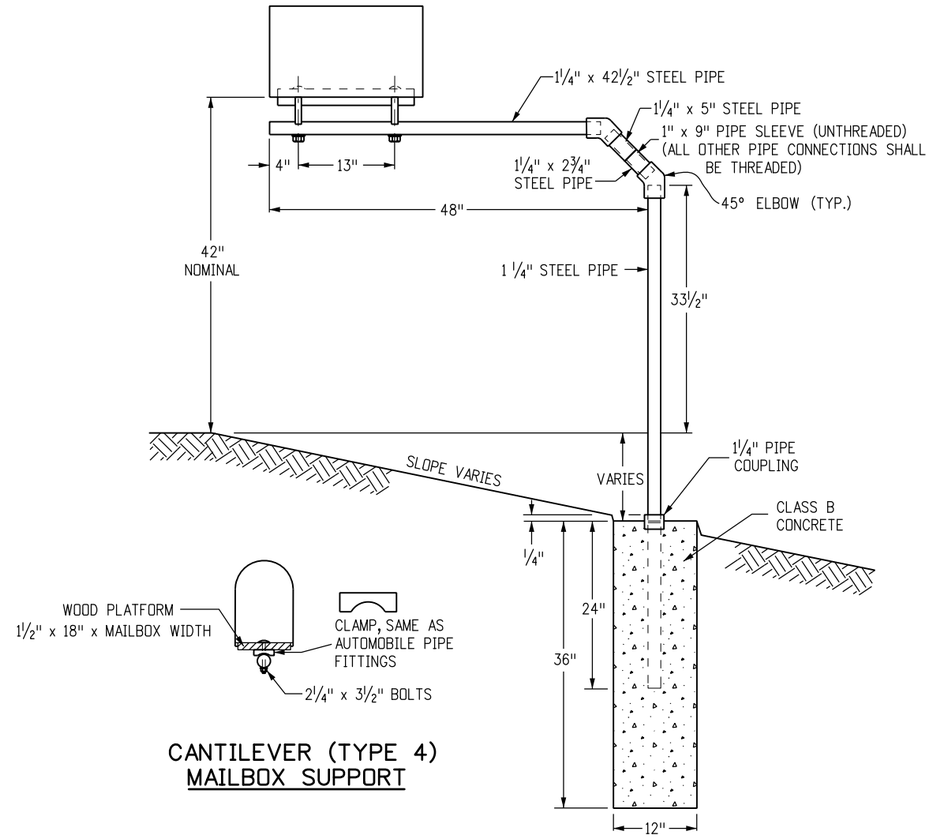
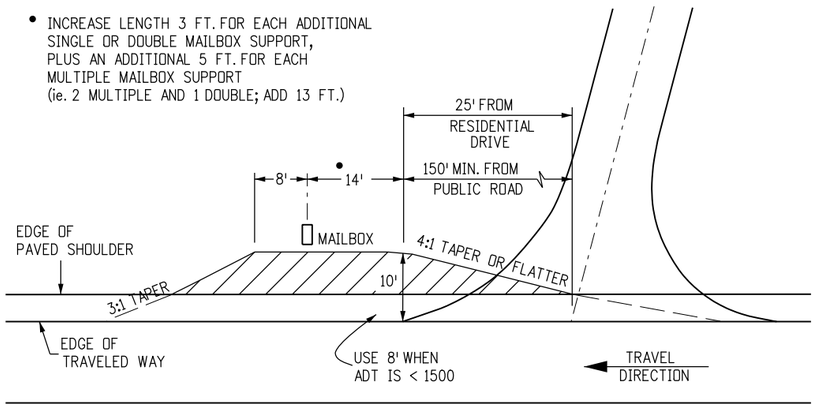


MULTIPLE (TYPE 3) MAILBOX SUPPORT
FOR 3, 4, OR 5 MAILBOXES OR APPROVED EQUAL

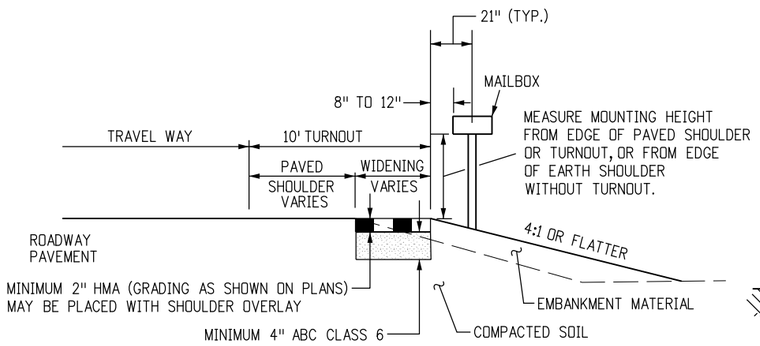
FIVE SIZE 1 MAILBOXES SHOWN



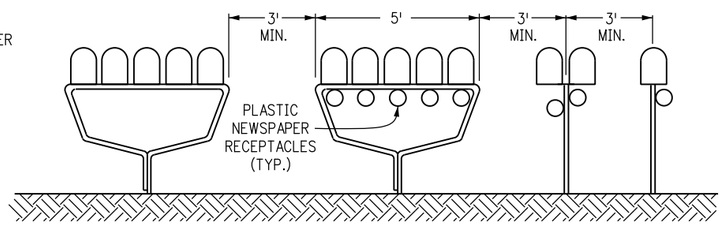
CANTILEVER (TYPE 4) MAILBOX SUPPORT



MAILBOX TURNOUT



TURNOUT TYPICAL SECTION



SUPPORT SPACING

NOTE: SEE SHEET 1, GENERAL NOTE 7, FOR MOUNTING PLASTIC NEWSPAPER RECEPTACLES.

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MAILBOX SUPPORTS

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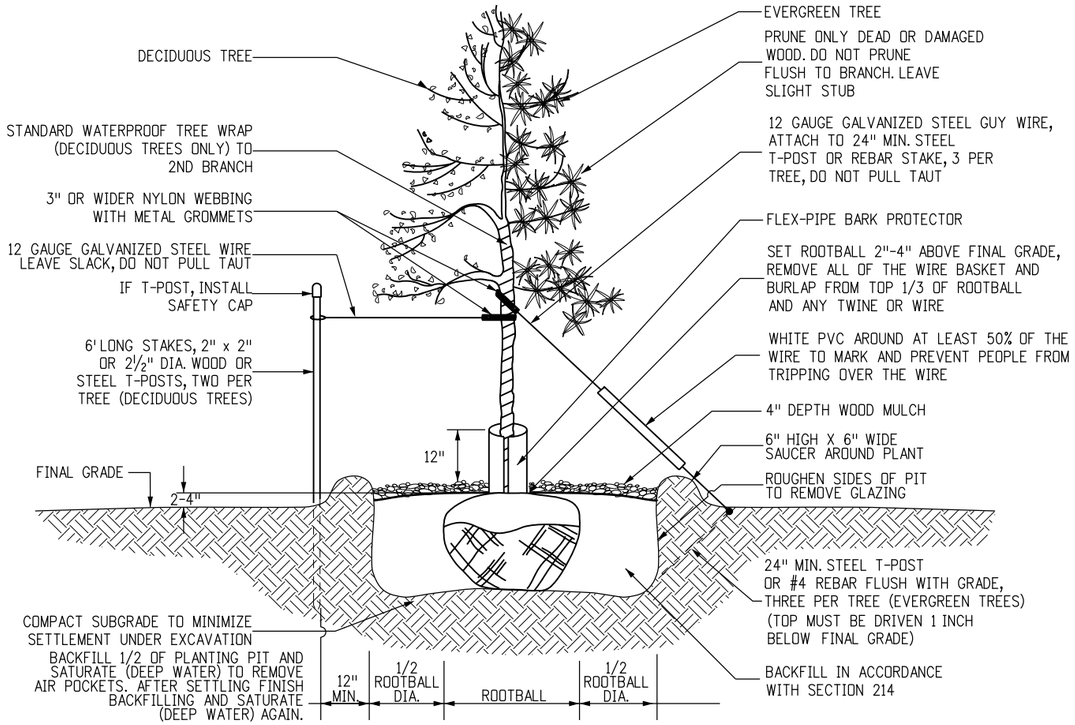
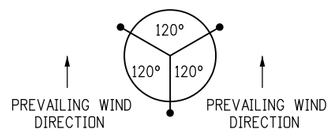


DECIDUOUS AND EVERGREEN BALLED AND BURLAPPED TREE PLANTING AND GUYING DETAIL

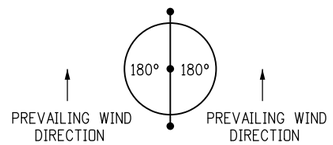
(GUY AND STAKE DECIDUOUS TREES 2" AND LARGER CALIPER AND EVERGREEN TREES OVER 4' HEIGHT.)

NOT TO SCALE

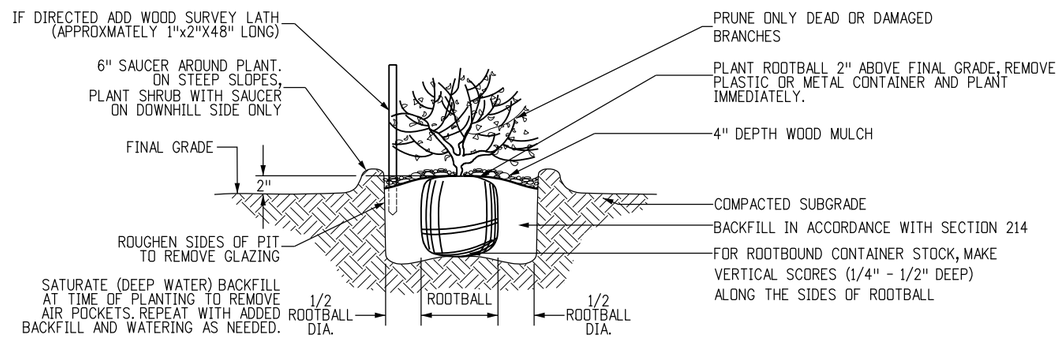


NOTE: FOR TREES ON 4:1 OR STEEPER SLOPES, PLACE TWO GUYS UPSLOPE AND ONE DOWN SLOPE. OTHERWISE, PLACE FOR PREVAILING WIND.

GUYING PATTERN FOR EVERGREEN TREE BALLED AND BURLAPPED TREE PLANTINGS

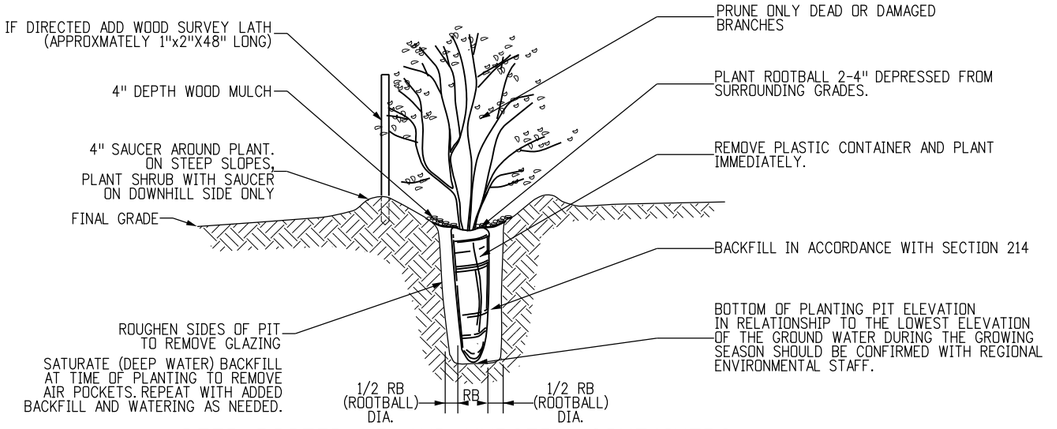


GUYING PATTERN FOR DECIDUOUS TREE BALLED AND BURLAPPED TREE PLANTINGS



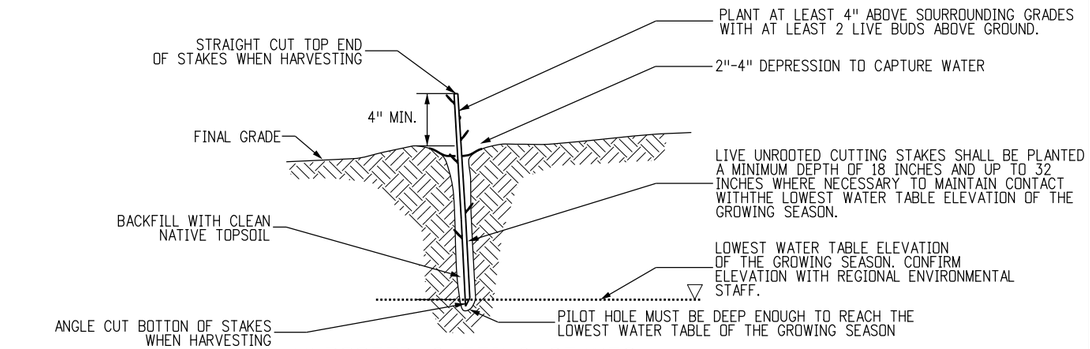
STANDARD NURSERY STOCK CONTAINERS (#5, #10 AND #20) PLANTING DETAIL

NOT TO SCALE



DEEP ROOTED UPLAND NURSERY CONTAINERS (DRC #10, #40, #60 AND #180) PLANTING DETAIL

NOT TO SCALE



UNROOTED CUTTING STAKES PLANTING DETAIL

NOT TO SCALE

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NUSERY STOCK DETAILS

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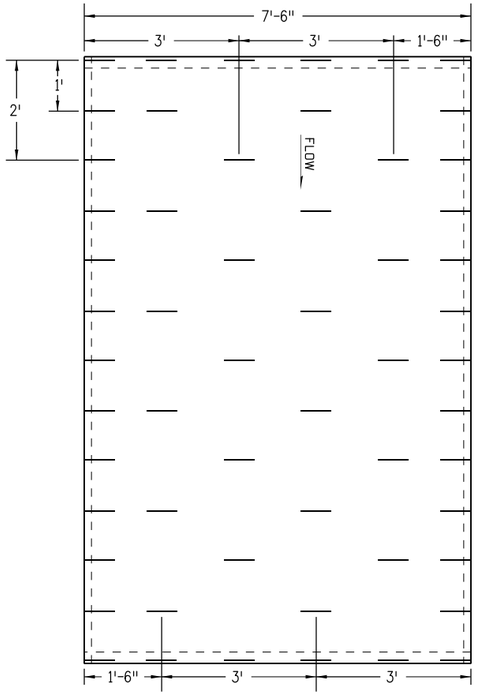
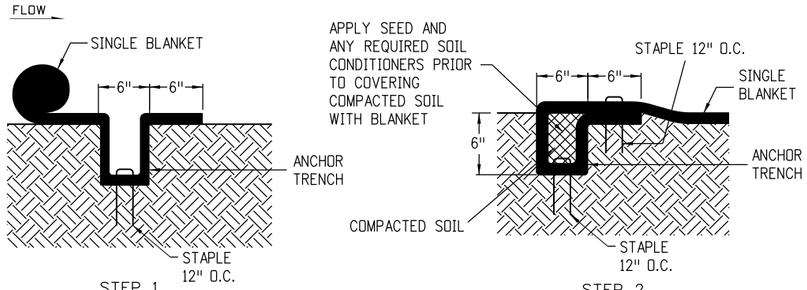


TYPICAL STAPLE PATTERN FOR CHANNEL APPLICATION

SEE SUBSECTION 216.05.

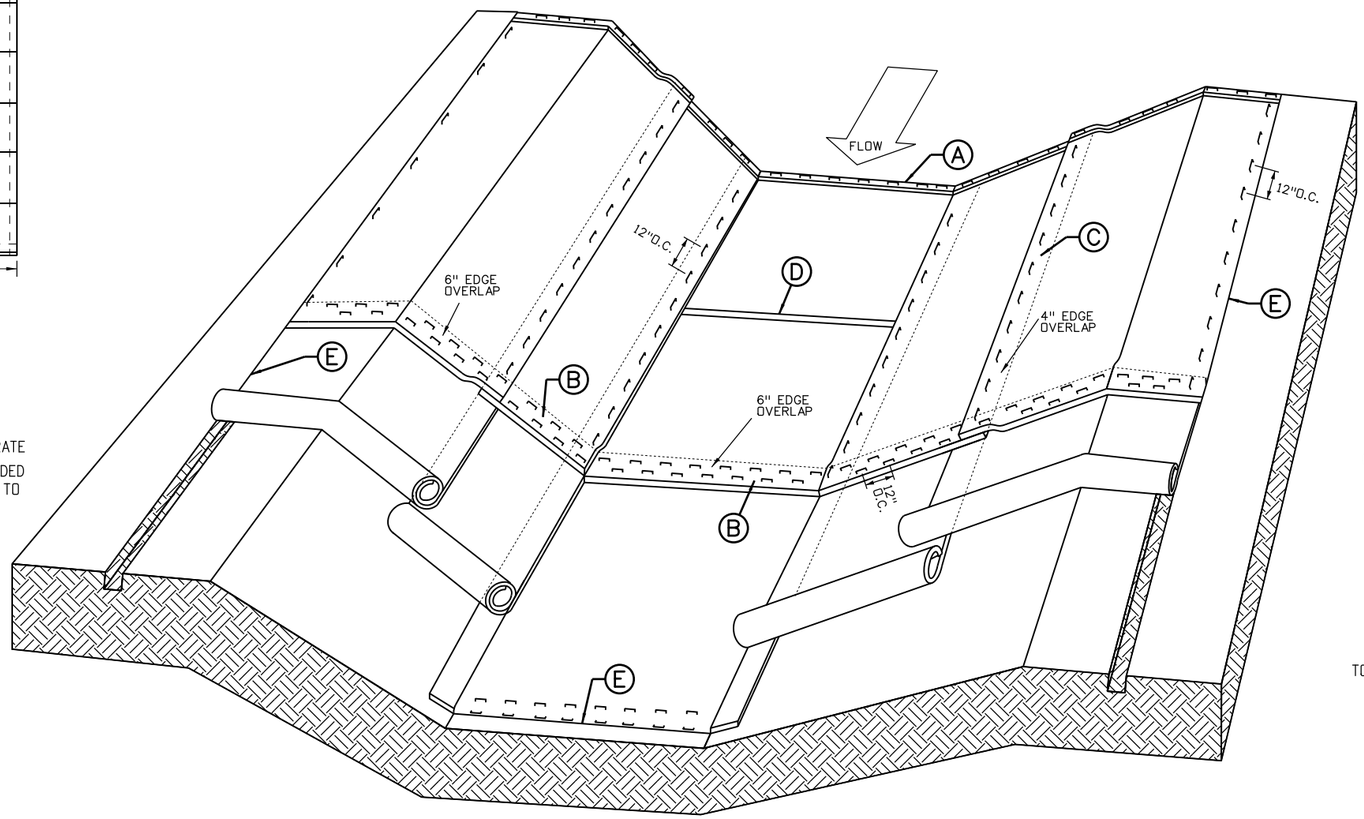
SOIL FILLED TRM APPLICATION

1. PLACE 3" TOPSOIL OR SOIL AMENDED WITH SOIL CONDITIONING.
2. APPLY HALF OF THE SPECIFIED SEED AT THE BROADCAST RATE AND RAKE IT INTO THE SOIL.
3. INSTALL TRM.
4. PLACE 1" TOPSOIL OR SOIL AMENDED WITH SOIL CONDITIONING INTO THE MATRIX TO COVER THE PRODUCT'S THICKNESS.
5. APPLY THE REMAINING HALF OF THE SPECIFIED SEED AT THE BROADCAST RATE AND RAKE IT INTO THE SOIL.
6. INSTALL SOIL RETENTION BLANKET (CLASS 1).



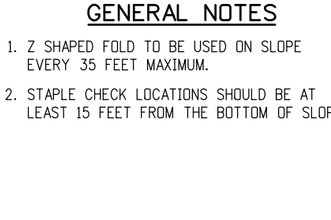
ANCHOR TRENCH (A)

TO BE USED AT THE BEGINNING AND END OF THE CHANNEL ACROSS IT'S ENTIRE WIDTH.



SOIL RETENTION BLANKETS/TURF REINFORCEMENT MATS (TRM) CHANNEL APPLICATION

IN ACCORDANCE WITH SECTION 216.

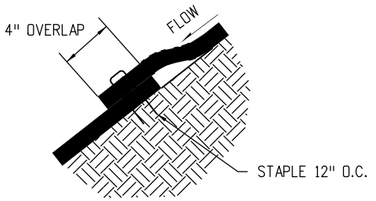


CONSECUTIVE ROLL OVERLAP (B)

TO BE USED WHEREVER ONE ROLL OF BLANKET ENDS AND ANOTHER BEGINS WITH UPSTREAM BLANKET PLACED ON TOP OF THE BLANKET ON THE DOWNSTREAM SIDE.

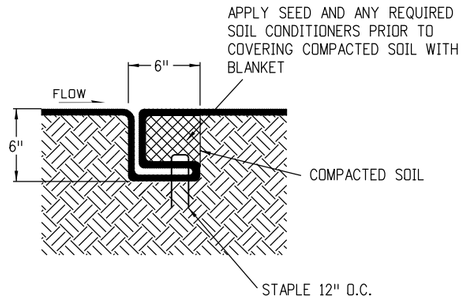
GENERAL NOTES

1. Z SHAPED FOLD TO BE USED ON SLOPE EVERY 35 FEET MAXIMUM.
2. STAPLE CHECK LOCATIONS SHOULD BE AT LEAST 15 FEET FROM THE BOTTOM OF SLOPE.



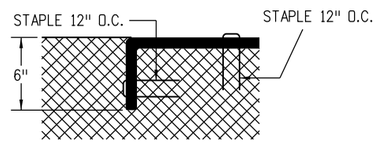
SIDE SEAM OVERLAP (C)

TO BE USED FOR OVERLAP WHEN 2 WIDTHS OF BLANKET ARE APPLIED SIDE BY SIDE WITH THE UPHILL BLANKET PLACED ON TOP OF THE BLANKET ON THE DOWNHILL SIDE.



CHANNEL CHECK SLOT (D)

TO BE USED AT 30' INTERVALS IN CHANNEL FLOWLINE.



TERMINATION OF CHANNEL (E)

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SOIL RETENTION COVERING

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M-216-1
Standard Sheet No. 1 of 2
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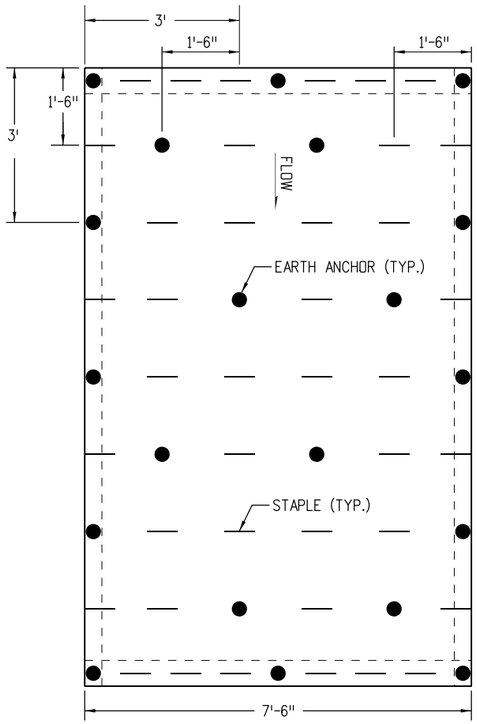
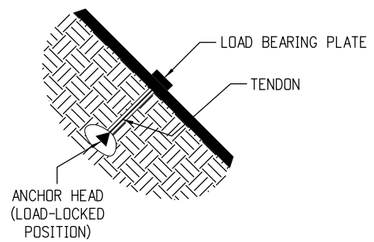


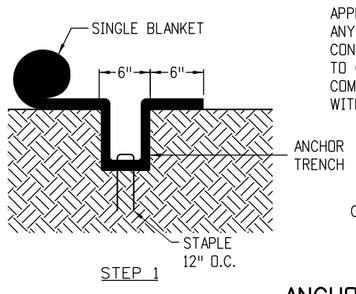
TYPICAL STAPLE OR EARTH ANCHOR PATTERN FOR SLOPE APPLICATION

IF EARTH ANCHORS ARE NOT SPECIFIED ON THE PLANS, ONLY STAPLES SHALL BE USED. SEE SUBSECTION 216.04



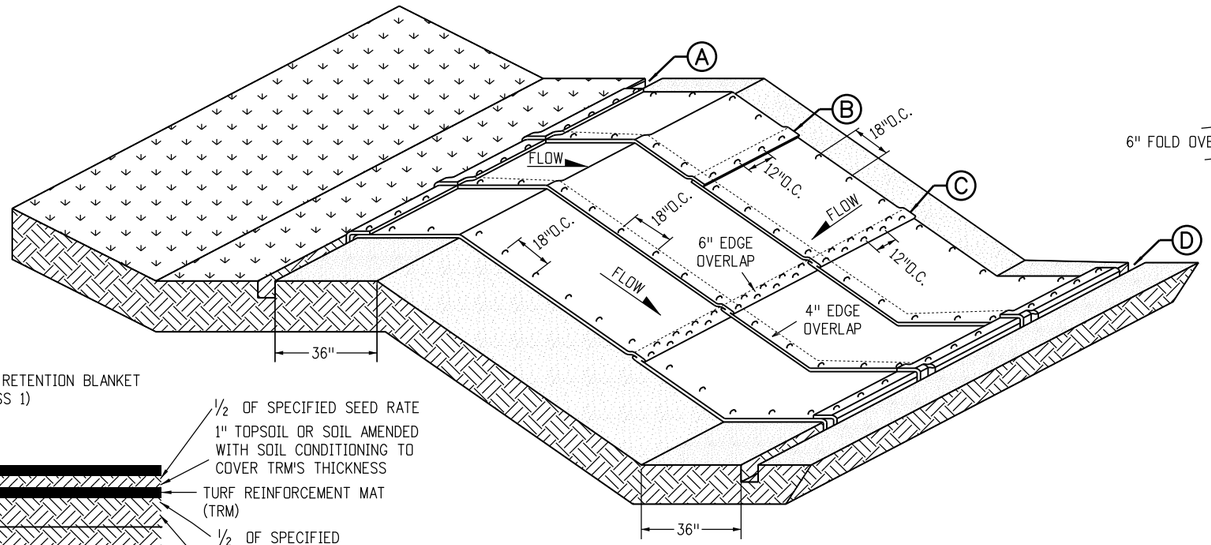
EARTH ANCHOR

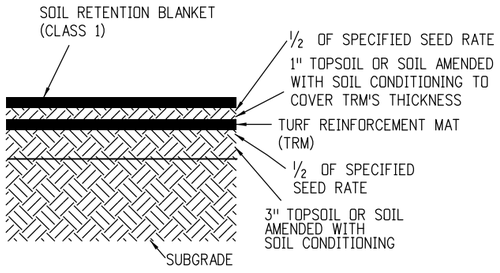
NOTES:
1. EARTH ANCHORS WILL BE USED INSTEAD OF STAPLES WHEN SPECIFIED IN THE PLANS.
2. EARTH ANCHORS SHALL BE PAID FOR SEPERATLY AS SPECIFIED IN SECTION 216.



ANCHOR TRENCH (A)

TO BE USED AT THE UPSLOPE AND DOWNSLOPE ENDS OF BLANKET ACROSS THE ENTIRE WIDTH OF SLOPE UNLESS SLOPE RUNS INTO RECEIVING WATER. (SEE DOWNSLOPE END STAPLE CHECK).



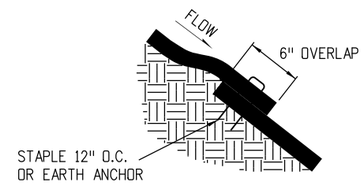


SOIL FILLED TRM APPLICATION

1. PLACE 3" TOPSOIL OR SOIL AMENDED WITH SOIL CONDITIONING.
2. APPLY HALF OF THE SPECIFIED SEED AT THE BROADCAST RATE AND RAKE IT INTO THE SOIL.
3. INSTALL TRM.
4. PLACE 1" TOPSOIL OR SOIL AMENDED WITH SOIL CONDITIONING INTO THE MATRIX TO COVER THE PRODUCT'S THICKNESS.
5. APPLY THE REMAINING HALF OF THE SPECIFIED SEED AT THE BROADCAST RATE AND RAKE IT INTO THE SOIL.
6. INSTALL SOIL RETENTION BLANKET (CLASS 1).

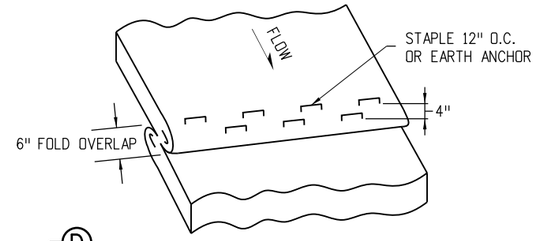
SOIL RETENTION BLANKETS/TURF REINFORCEMENT MATS (TRM) SLOPE APPLICATION

IN ACCORDANCE WITH SECTION 216.

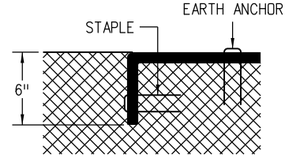


CONSECUTIVE ROLL OVERLAP (B)

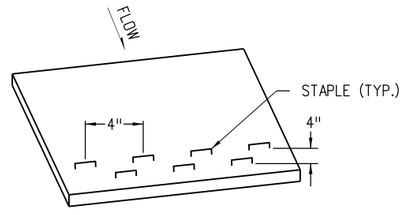
TO BE USED WHEREVER ONE ROLL OF BLANKET ENDS AND ANOTHER BEGINS WITH THE UPHILL BLANKET PLACED ON TOP OF THE BLANKET ON THE DOWNHILL SIDE.



STAPLE CHECK (C)



TERMINATION OF CHANNEL (D)



DOWNSLOPE END STAPLE CHECK

TO BE USED WHEN SLOPE RUNS INTO A RECEIVING WATER AND CANNOT BE EXTENDED 3 FEET BEYOND SLOPE.

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SOIL RETENTION COVERING

Issued by the Project Development Branch: July 31, 2019

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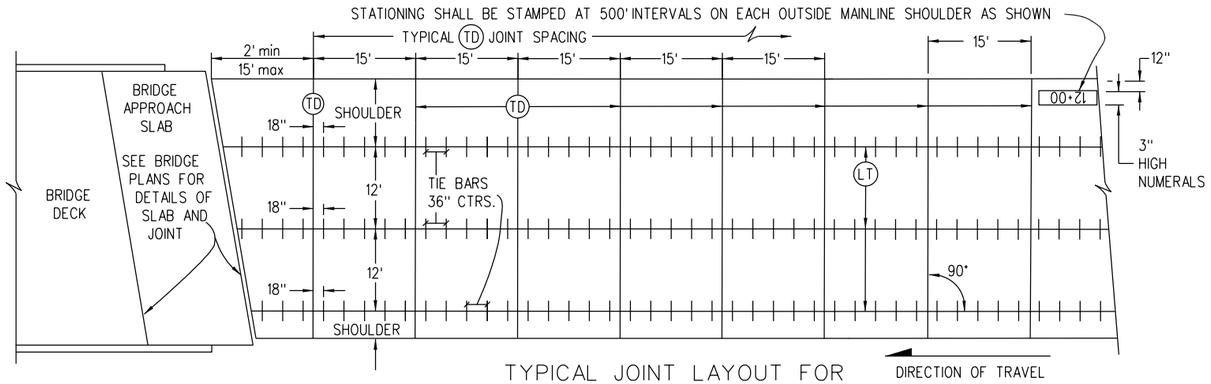
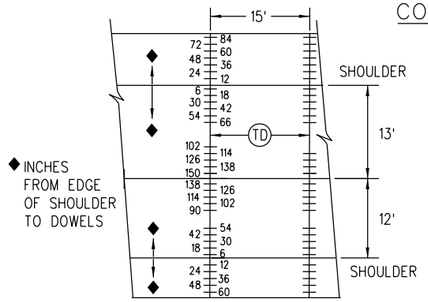
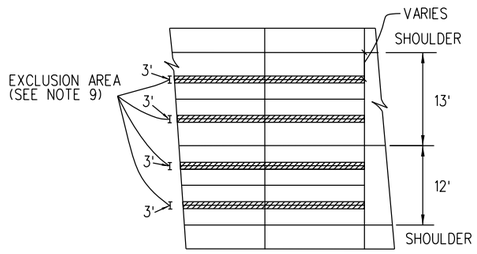
Standard Sheet No. 2 of 2
Project Sheet Number: 165



TYPICAL JOINT LAYOUT FOR
CONCRETE ROADWAY WITH CONCRETE SHOULDERS



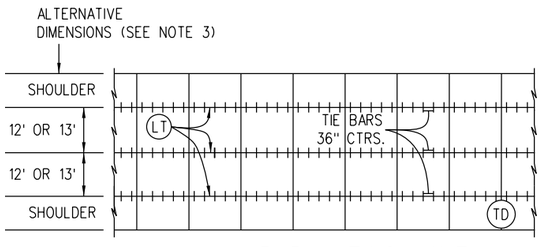
DOWEL BAR DETAIL FOR
(TD) JOINT WITH 13 FT. AND 12 FT. WIDE SLABS



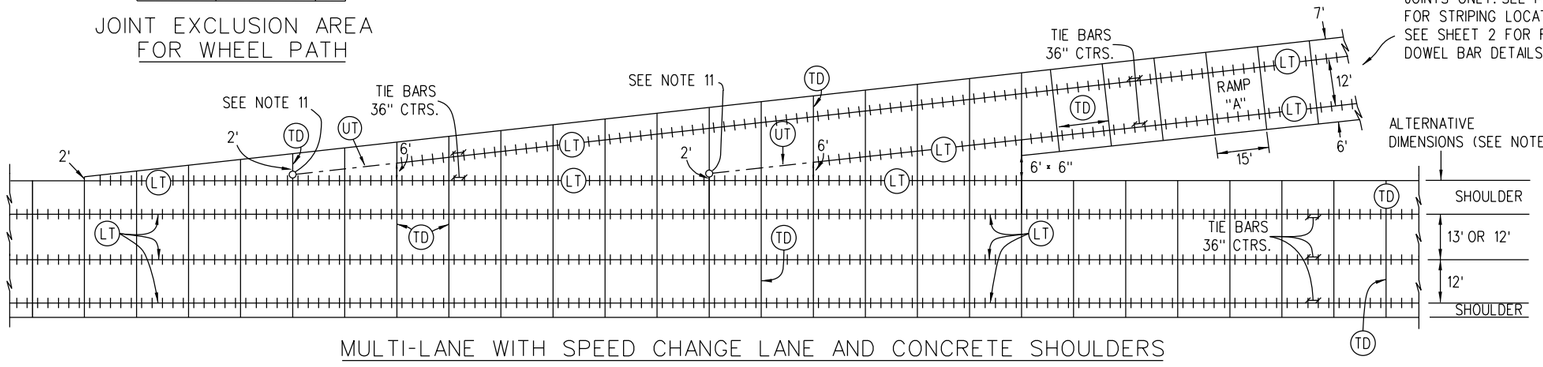
JOINT EXCLUSION AREA
FOR WHEEL PATH

GENERAL NOTES

1. THIS STANDARD PLAN DOES NOT APPLY TO THIN CONCRETE OVERLAYS (WHITETOPPING).
2. LONGITUDINAL JOINT SHALL BE PLACED ADJACENT TO LANE MARKINGS WHEN POSSIBLE AND HAVE A MAXIMUM SPACING OF 13 FT.
3. THIS JOINT LAYOUT SHALL BE USED AS A STANDARD OF THE JOINT LAYOUT FOR THE PROJECT. IF THE CONTRACTOR PROPOSES VARIATIONS FROM THIS STANDARD OR THE PROJECT HAS UNUSUAL OR IRREGULAR CONDITIONS NOT COVERED HEREIN, THE CONTRACTOR SHALL PREPARE A PAVEMENT JOINT LAYOUT FOR APPROVAL BY THE ENGINEER. SLABS 13 FEET IN WIDTH SHALL BE CONSTRUCTED ONLY WHERE DESIGNATED ON THE PLANS.
4. ON MULTILANE DIVIDED HIGHWAYS, THE MULTILANE DIRECTIONAL PAVEMENT AND BOTH SHOULDERS SHALL BE PLACED WITH (LT) LONGITUDINAL CONTRACTION JOINTS.
5. ON MULTILANE DIVIDED HIGHWAYS SEPARATED BY A CONCRETE BARRIER, A (UT) JOINT SHALL BE CONSTRUCTED AT ONE OF THE BARRIER FACES.
6. (UT) JOINTS SHALL BE CONSTRUCTED BETWEEN THE TWO OPPOSING DIRECTIONS OF TRAVEL ON A MULTILANE UNDIVIDED HIGHWAY WHEN ALL OF THE FOLLOWING APPLY:
   A. PAVEMENT IS CONTINUOUS ACROSS BOTH DIRECTIONS OF TRAVEL.
   B. THERE IS NO MEDIAN BARRIER.
   C. THE WIDTH OF THE PAVEMENT IN ONE DIRECTION IS GREATER THAN 80 FEET.
7. ON VARIABLE WIDTH SLABS, THE 2 FEET OR 4 FEET END OF SLAB WIDTH DIMENSION MAY VARY ±6 INCHES.
8. ON GORE PANEL WIDTHS LESS THAN 6 FEET TIE BARS SHALL BE ELIMINATED ON THE SIDE ADJACENT TO THE RAMP.
9. NO JOINTS SHALL BE PLACED WITHIN 1.5 FEET OF EITHER SIDE OF THE CENTER OF THE WHEEL PATH. WHEELPATH IS DEFINED PER SUBSECTION 101.02.
10. THE TICK MARKS FOR TIE BAR LINE TYPE ARE FOR ILLUSTRATIVE PURPOSES ONLY AND DO NOT REPRESENT ACTUAL TIE BAR LOCATIONS. SEE M-412-1 SHEET 5 OF 9 FOR TIE BAR PLACEMENT LOCATIONS.
11. IF A JONT IS NOT CONTINUOUS INTO AN ADJACENT SLAB, A JOINT TERMINATION CORE (SEE SHEET 5) SHALL BE CONSTRUCTED USING 4 INCH PVC PIPE FILLED WITH AN APPROVED NON-SHRINK GROUT OR BOND BREAKER FILLED WITH AN APPROVED NON-SHRINK GROUT.

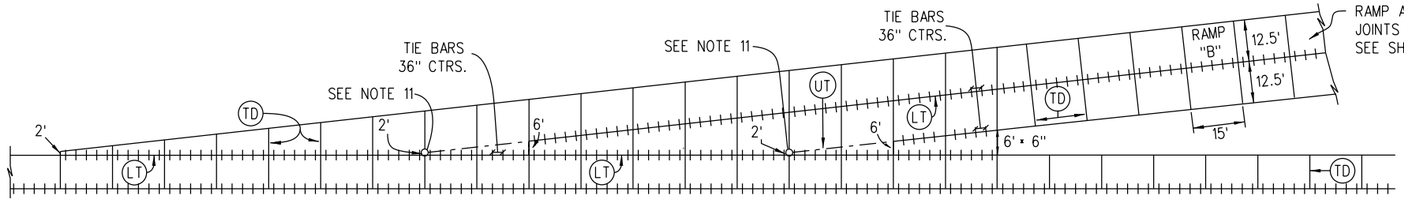


RURAL TWO-LANE



MULTI-LANE WITH SPEED CHANGE LANE AND CONCRETE SHOULDERS

RAMP AND SPEED CHANGE LANE DIMENSIONING FOR JOINTS ONLY. SEE PLANS FOR STRIPING LOCATIONS. SEE SHEET 2 FOR RAMP DOWEL BAR DETAILS.



OPTIONAL LONGITUDINAL JOINT IN CENTER FOR SINGLE LANE SPEED CHANGE LANE

RAMP AND SPEED CHANGE LANE DIMENSIONING FOR JOINTS ONLY. SEE PLANS FOR STRIPING LOCATIONS. SEE SHEET 2 FOR RAMP DOWEL BAR DETAILS.

JOINT LEGEND
(SEE SHEET 5 FOR JOINT DETAILS)

- (TD) TRANSVERSE DOWELED
- (UT) UNTIED
- (LT) LONGITUDINAL TIED

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CONCRETE PAVEMENT JOINTS

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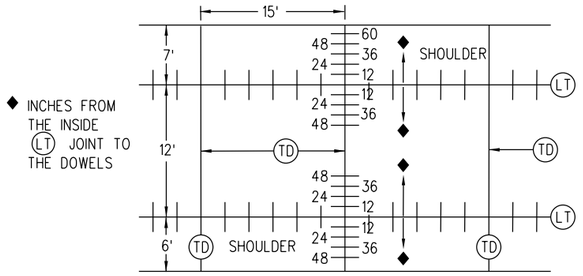
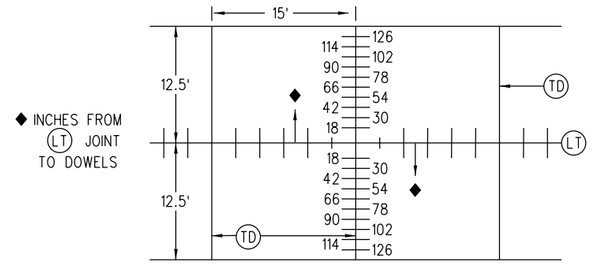


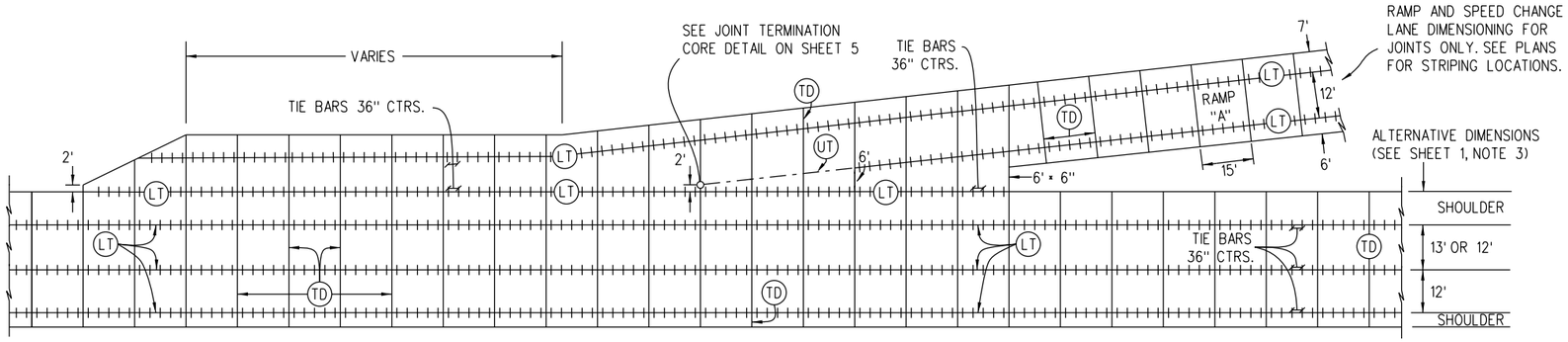
RAMP "A" DOWEL BAR DETAIL
FOR (TD) JOINT WITH A 12 FT. LANE



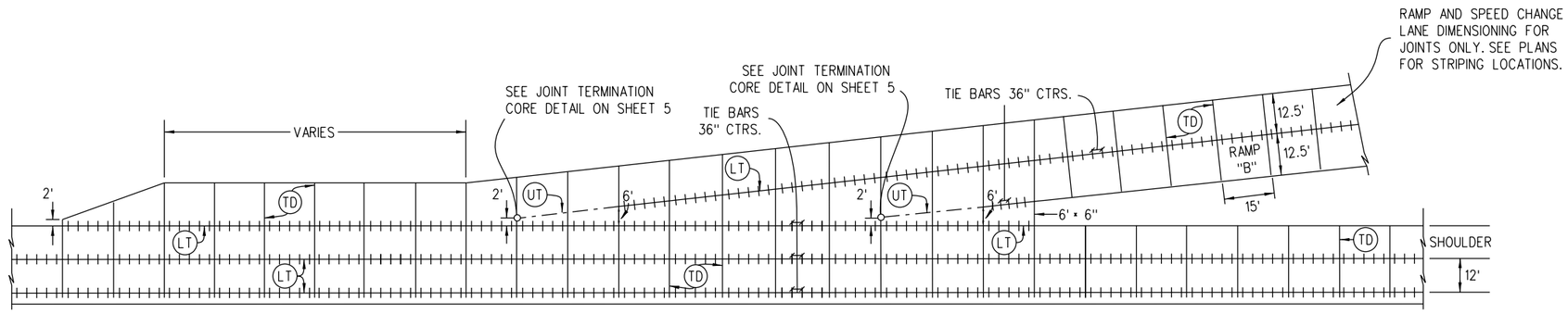
RAMP "B" DOWEL BAR DETAIL FOR (TD) JOINT
WITH CENTER LONGITUDINAL SPLIT LANE

JOINT LEGEND
(SEE SHEET 5 FOR JOINT DETAILS)

- (TD) TRANSVERSE DOWELED
- (UT) UNTIED
- (LT) LONGITUDINAL TIED



MULTI-LANE WITH ACCELERATION AND DECELERATION LANES AND CONCRETE SHOULDERS



OPTIONAL LONGITUDINAL JOINT IN CENTER FOR SINGLE LANE ACCELERATION AND DECELERATION LANE

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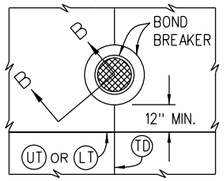
DETAIL (1)



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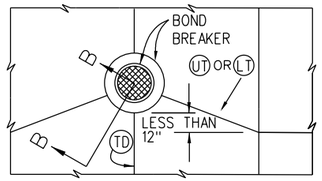

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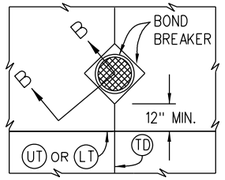
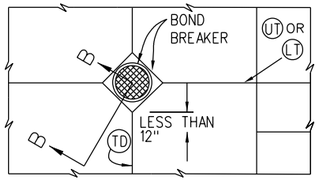
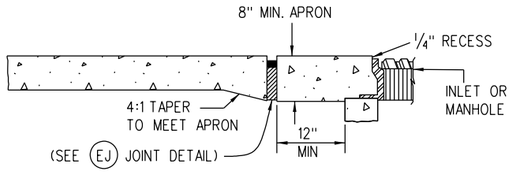


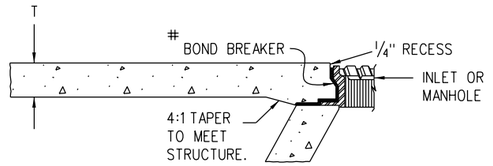
DETAIL (4)



INLET OR MANHOLE CAST IN PAVEMENT

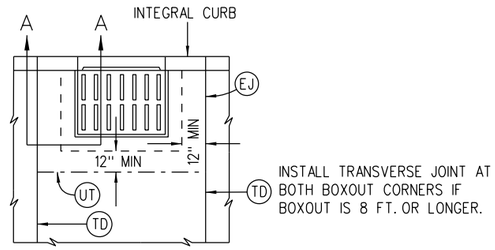


SECTION A-A



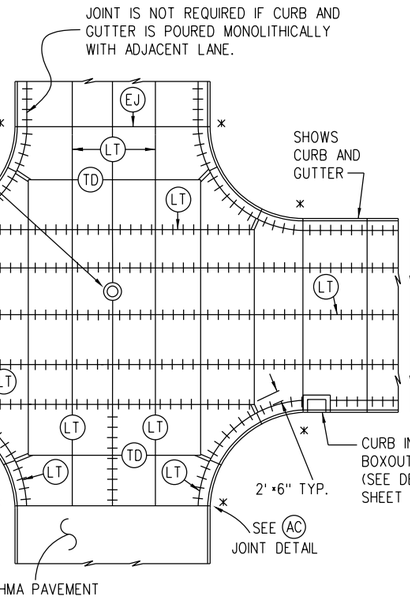
BOND BREAKER SHALL BE COMPOSED OF PLASTIC SHEET, BUILDING PAPER OR OTHER APPROVED MATERIAL THAT PREVENTS BONDING.

SECTION B-B



INSTALL TRANSVERSE JOINT AT BOTH BOXOUT CORNERS IF BOXOUT IS 8 FT. OR LONGER.

CURB INLET BOXOUT

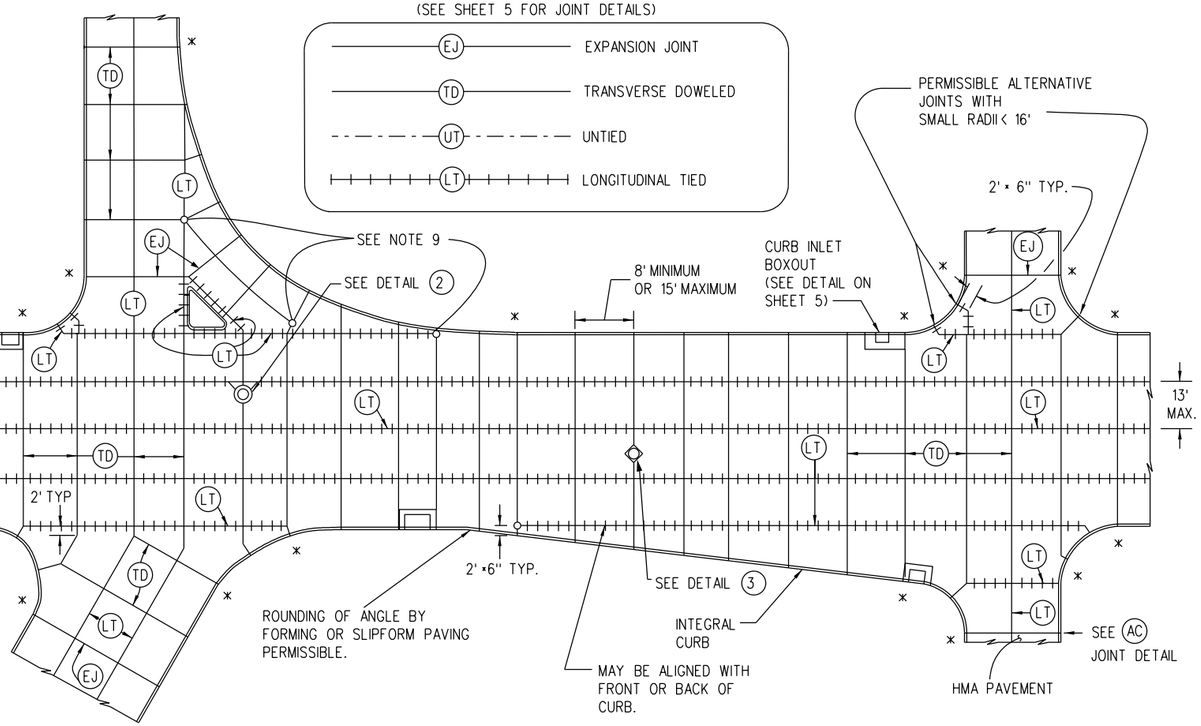


NOTES

1. LONGITUDINAL JOINTS SHALL BE PLACED ADJACENT TO LANE MARKINGS WHEN POSSIBLE AND HAVE A MAXIMUM SPACING OF 13 FEET (15 FEET IS PERMITTED WITH MONOLITHIC CURB AND GUTTER).
2. CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE CENTERLINE OF PAVEMENT AND EXTEND THROUGH THE CURB OR CURB AND GUTTER.
* 3. PLACE 1/2 INCH MINIMUM EXPANSION JOINT FILLER IN FULL DEPTH CURB JOINT AT INTERSECTION RETURN RADIUS POINTS.
4. THE CONTRACTOR SHALL, UNLESS OTHERWISE SHOWN ON THE PLANS, SELECT AND USE A BOND BREAKER AT INLETS, MANHOLES AND SIMILAR SIZE STRUCTURES. SMALLER STRUCTURES SUCH AS VALVE AND MONUMENT BOXES SHALL NOT REQUIRE A BOND BREAKER.
5. WHERE A LONGITUDINAL JOINT PASSES LESS THAN 1 FOOT FROM A CAST-IN-PAVEMENT MANHOLE OR SIMILAR SIZE STRUCTURE, INSTALL JOINT AS SHOWN IN DETAILS 1 THROUGH 4.
6. TRANSVERSE JOINTS SHALL EITHER INTERSECT THE CENTER OF CIRCULAR MANHOLES AND INLETS OR BE AT LEAST 4 FEET AWAY FROM THE EDGE OF CIRCULAR MANHOLES. SEE CURB INLET BOXOUT DETAIL.
7. WHEN THE SHORT RUN OF THE TRANSVERSE JOINT IS LESS THAN THREE FEET WIDE, ELIMINATE DOWELS.
8. THE TICK MARKS FOR TIE BAR LINE TYPE ARE FOR ILLUSTRATIVE PURPOSES ONLY AND DO NOT REPRESENT ACTUAL TIE BAR LOCATIONS. SEE M-412-1 SHEET 5 OF 9 FOR TIE BAR PLACEMENT LOCATIONS.
9. IF A JONT IS NOT CONTINUOUS INTO AN ADJACENT SLAB, A JOINT TERMINATION CORE (SEE SHEET 5) SHALL BE CONSTRUCTED USING 4" PVC PIPE FILLED WITH AN APPROVED NON-SHRINK GROUT OR BOND BREAKER FILLED WITH AN APPROVED NON-SHRINK GROUT.

JOINT LEGEND

(SEE SHEET 5 FOR JOINT DETAILS)



TYPICAL CURBED PAVEMENT JOINT LAYOUT

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CONCRETE PAVEMENT JOINTS

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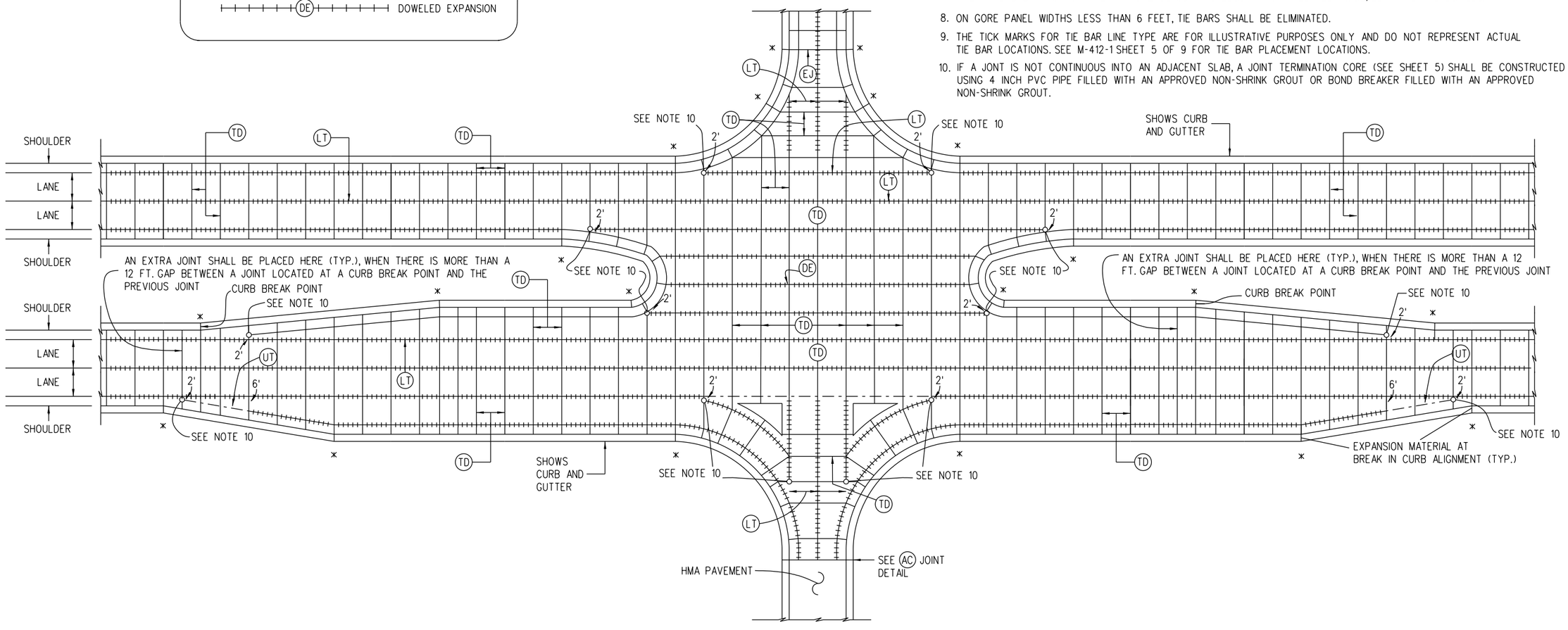
JOINT LEGEND

(SEE SHEET 5 FOR JOINT DETAILS)

- (EJ) EXPANSION JOINT
- (TD) TRANSVERSE DOWELED
- (UT) UNTIED
- (LT) LONGITUDINAL TIED
- (DE) DOWELED EXPANSION

NOTES

1. LONGITUDINAL JOINTS SHALL BE PLACED ADJACENT TO LANE MARKINGS WHEN POSSIBLE AND HAVE A MAXIMUM SPACING OF 13 FEET (15 FEET IS PERMITTED WITH MONOLITHIC CURB AND GUTTER).
2. CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE CENTERLINE OF PAVEMENT AND EXTEND THROUGH THE CURB OR CURB AND GUTTER.
3. * PLACE ½ INCH MINIMUM EXPANSION JOINT FILLER IN FULL DEPTH OF CURB JOINT AT INTERSECTION RETURN RADIUS POINTS.
4. THE CONTRACTOR SHALL, UNLESS OTHERWISE SHOWN ON THE PLANS, SELECT AND USE A BOND BREAKER AT INLETS, MANHOLES, AND SIMILAR SIZE STRUCTURES. SMALLER STRUCTURES SUCH AS VALVE AND MONUMENT BOXES DO NOT REQUIRE A BOND BREAKER.
5. WHERE A LONGITUDINAL JOINT WOULD PASS LESS THAN 1 FOOT FROM A CAST-IN-PAVEMENT MANHOLE OR SIMILAR SIZE STRUCTURE, CONSTRUCT JOINT AS SHOWN IN DETAILS 1 AND 2 ON PAGE 3.
6. TRANSVERSE JOINTS SHALL EITHER INTERSECT THE CENTER OF CIRCULAR MANHOLES AND INLETS OR BE AT LEAST 4 FEET AWAY FROM THE EDGE OF CIRCULAR MANHOLES. SEE CURB INLET BOXOUT DETAIL ON SHEET 3.
7. WHEN THE SHORT RUN OF THE TRANSVERSE JOINT IS LESS THAN THREE FEET WIDE, ELIMINATE THE DOWELS.
8. ON GORE PANEL WIDTHS LESS THAN 6 FEET, TIE BARS SHALL BE ELIMINATED.
9. THE TICK MARKS FOR TIE BAR LINE TYPE ARE FOR ILLUSTRATIVE PURPOSES ONLY AND DO NOT REPRESENT ACTUAL TIE BAR LOCATIONS. SEE M-412-1 SHEET 5 OF 9 FOR TIE BAR PLACEMENT LOCATIONS.
10. IF A JONT IS NOT CONTINUOUS INTO AN ADJACENT SLAB, A JOINT TERMINATION CORE (SEE SHEET 5) SHALL BE CONSTRUCTED USING 4 INCH PVC PIPE FILLED WITH AN APPROVED NON-SHRINK GROUT OR BOND BREAKER FILLED WITH AN APPROVED NON-SHRINK GROUT.



MULTI-LANE INTERSECTION WITH SPEED CHANGE LANE AND CONCRETE SHOULDERS

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STANDARD PLAN NO.
M-412-1
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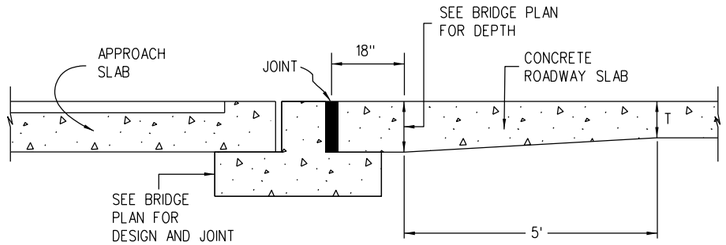
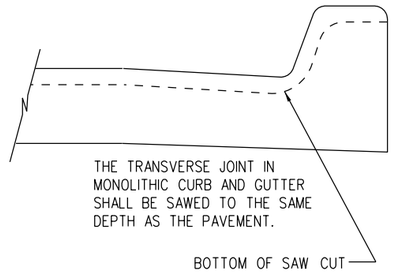


BRIDGE APPROACH



NOTE

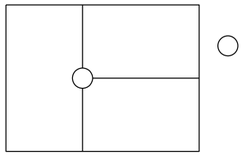
1. PAVEMENT THICKNESS (T), SHALL BE AS SHOWN ON THE PLANS.

REINFORCING SIZE TABLE

TIE BAR SIZE IS NO. 5 WHEN PAVEMENT IS PLACED ON UNBOUND BASES.

TIE BAR IS NO. 6 WHEN PAVEMENT IS PLACED ON LIME TREATED SOIL, ASPHALT OR CEMENT TREATED, MILLED ASPHALT, OR RECYCLED ASPHALT BASES.

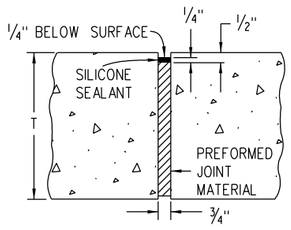
PAVEMENT THICKNESS (T)	DOWEL BAR DIAMETER
7 IN. ≤ T < 8 IN.	1 IN.
8 IN. ≤ T ≤ 10 IN.	1.25 IN.
10 IN. < T ≤ 15 IN.	1.50 IN.



(JTC)

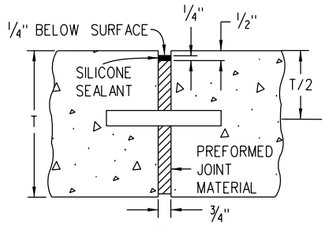
JOINT TERMINATION CORE

4" PVC PIPE FILLED WITH APPROVED NON-SHRINK GROUND OR BOND BREAKER FILLED WITH APPROVED NON-SHRINK GROUT



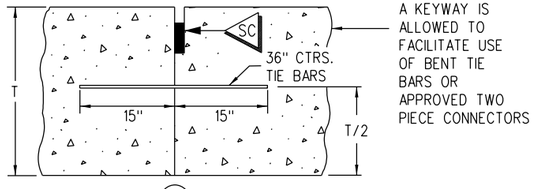
(EJ)

EXPANSION JOINT



(DE)

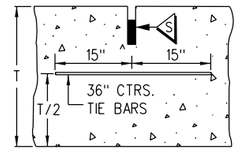
DOWELED EXPANSION JOINT



A KEYWAY IS ALLOWED TO FACILITATE USE OF BENT TIE BARS OR APPROVED TWO PIECE CONNECTORS

(LT)

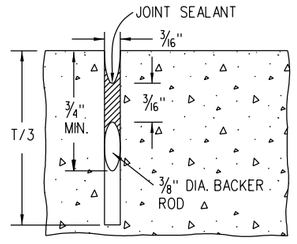
LONGITUDINAL TIED JOINT



(LT)

SAWED LONGITUDINAL JOINT

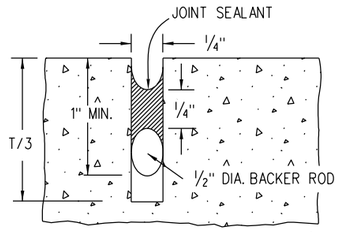
(LONGITUDINAL WEAKENED PLANE JOINT)



SAWED JOINT

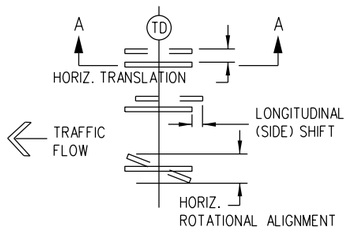
S

*** USE T/4 WHEN T < 8 IN.



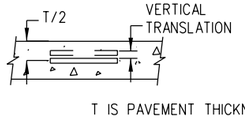
SEAL AT CONSTRUCTION JOINT

SC



PLAN VIEW

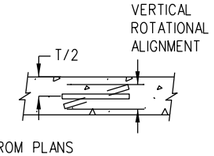
SHOWING HORIZ. TRANSLATION, LONGITUDINAL (SIDE) SHIFT AND HORIZ. ROTATIONAL ALIGNMENT



T IS PAVEMENT THICKNESS FROM PLANS

SECTION A-A

SHOWING VERTICAL TRANSLATION TOLERANCE

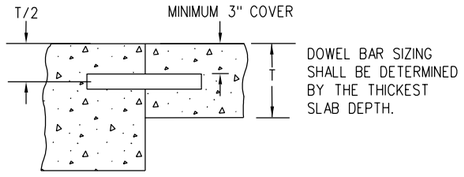


SECTION A-A

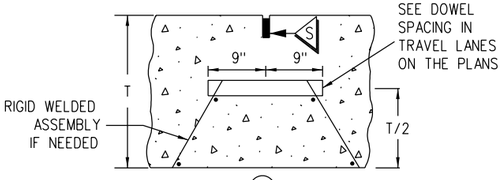
SHOWING VERTICAL ROTATIONAL ALIGNMENT

DETAILS ILLUSTRATING DOWEL PLACEMENT TOLERANCES

SEE SUBSECTION 412.13(b)2 FOR ALLOWED TOLERANCE VALUES.



DOWEL AND TIE BAR PLACEMENT FOR VARYING PAVEMENT THICKNESSES



(TD)

DOWELED TRANSVERSE CONSTRUCTION OR CONTRACTION JOINT

(TRANSVERSE WEAKENED PLANE JOINT)

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CONCRETE PAVEMENT JOINTS

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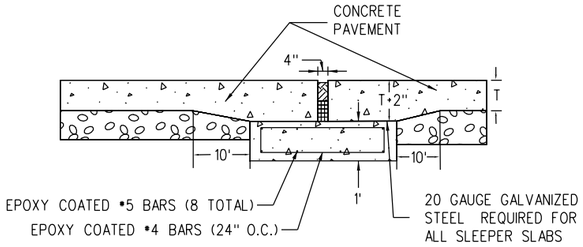
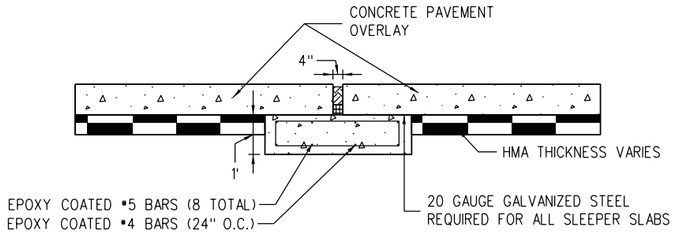
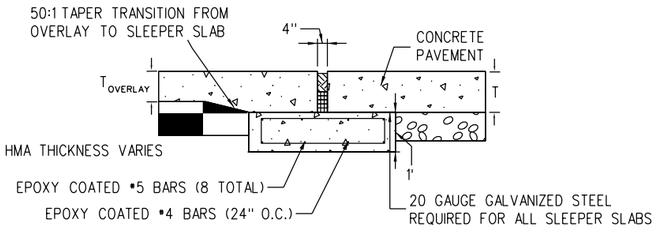


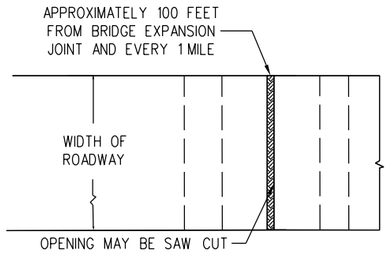
PCCP EXPANSION JOINT



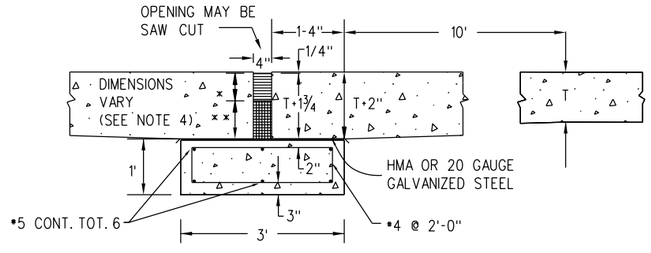
PCCP OVERLAY EXPANSION JOINT



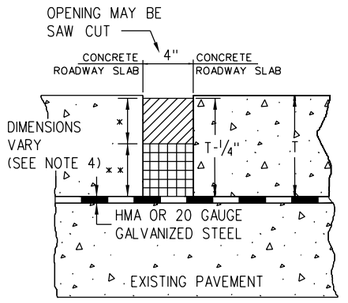
PCCP OVERLAY TO EXISTING PCCP TRANSITION WITH EXPANSION JOINT



SLEEPER SLAB
PLAN VIEW

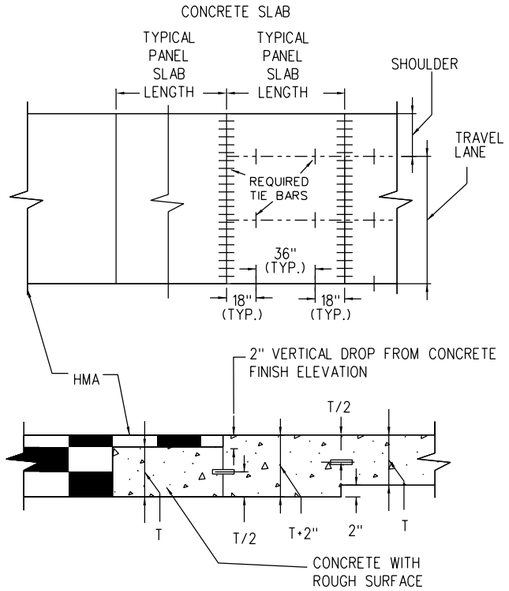


SLEEPER SLAB
PROFILE VIEW



EXPANSION JOINT DETAIL

NOT TO SCALE



(AC)

ASPHALT TO CONCRETE TRANSITION

NOT TO SCALE

NOTES

1. CONCRETE EXPANSION JOINTS SHALL BE REQUIRED AT THE LOCATIONS SHOWN. SLEEPER SLABS FOR THE CONCRETE EXPANSIONS SHALL BE CLASS D OR P CONCRETE. REINFORCING STEEL SHALL BE GRADE 60 EPOXY COATED. THE COST OF THE CONCRETE, REINFORCING STEEL, AND GALVANIZED STEEL SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF ITEM 412 CONCRETE PAVEMENT BID ITEM.
2. AT EACH OF THE RECONSTRUCTION EXPANSION JOINTS A PIPE EDGE DRAIN SHALL BE INSTALLED PER M-605-1 OF THE M&S STANDARD PLANS. THE EDGE DRAIN SHALL CONTINUE 2 FEET BEYOND BOTH SIDES OF THE EXPANSION JOINT AND INCLUDE A TRANSVERSE UNDERDRAIN AT EACH END ON THE EDGE DRAIN. IF THE UNDERDRAIN PIPE CANNOT DRAIN OUTSIDE OF THE ROADWAY PRISM, THE PIPE EDGE DRAIN SHALL NOT BE INSTALLED. THIS WORK SHALL NOT BE PAID FOR SEPERATELY, BUT SHALL BE INCLUDED IN THE PRICE OF ITEM 412 CONCRETE PAVEMENT.
3. *4 INCH WIDE PRECOMPRESSED CHEMICALLY RESISTANT FOAM TOPPED WITH A TRAFFIC-GRADE SILICONE SEALANT SUCH AS WILLSEAL 250, WABO HSEAL, EMSEAL BEJS SYSTEM, OR AN ALTERNATIVE AS APPROVED BY THE ENGINEER AND REGION MATERIALS ENGINEER. EXPANSION JOINTS SHALL BE PLACED AT APPROXIMATELY ONE MILE INCREMENTS AS DIRECTED BY THE ENGINEER. THE COST SHALL BE INCLUDED IN ITEM 412 - PLACE CONCRETE PAVEMENT. DEPTH OF SEALANT SHALL BE BASED ON THE TABLE BELOW.

PAVEMENT THICKNESS (T)	SEALANT DEPTH (INCHES)
* 11 IN.	4
> 11 IN.	6

4. **STYROFOAM OR OTHER MATERIAL AS APPROVED BY THE ENGINEER AND REGION MATERIALS ENGINEER.

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CONCRETE PAVEMENT JOINTS

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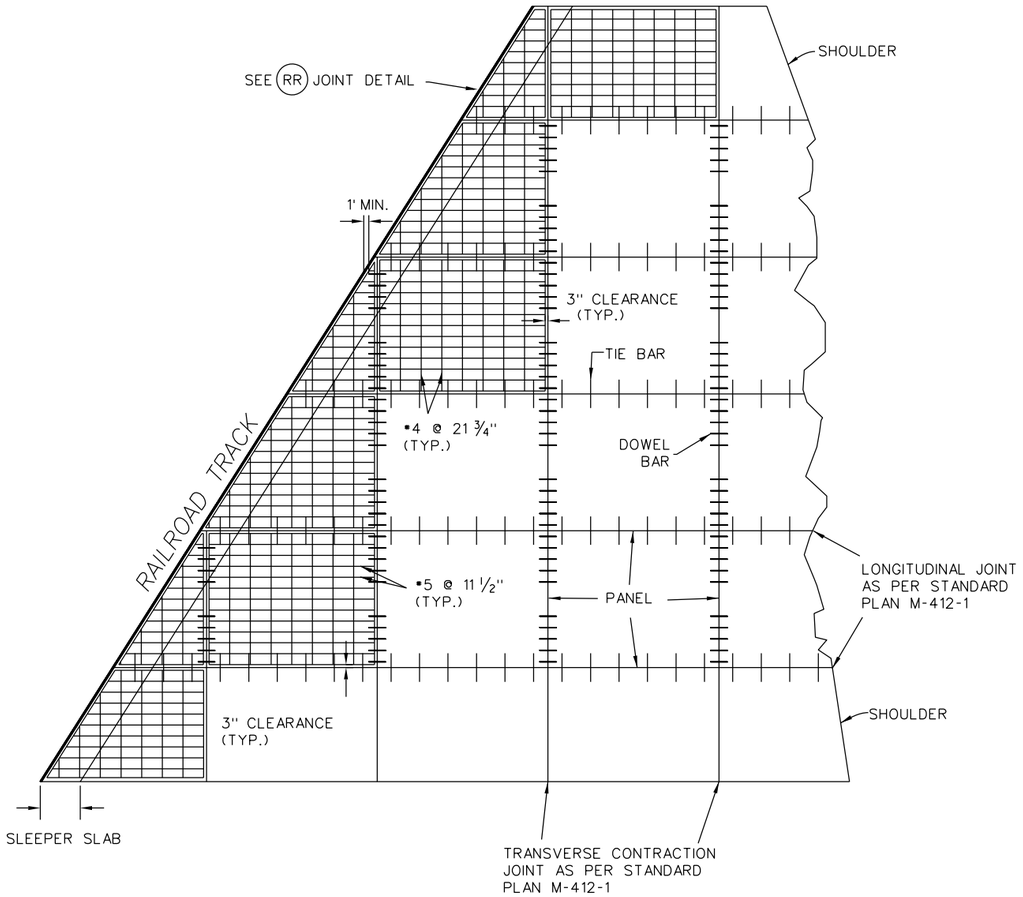


SKEWED RAILROAD
PLAN VIEW

NOTE ON SKEWED RAILROAD DETAILS:

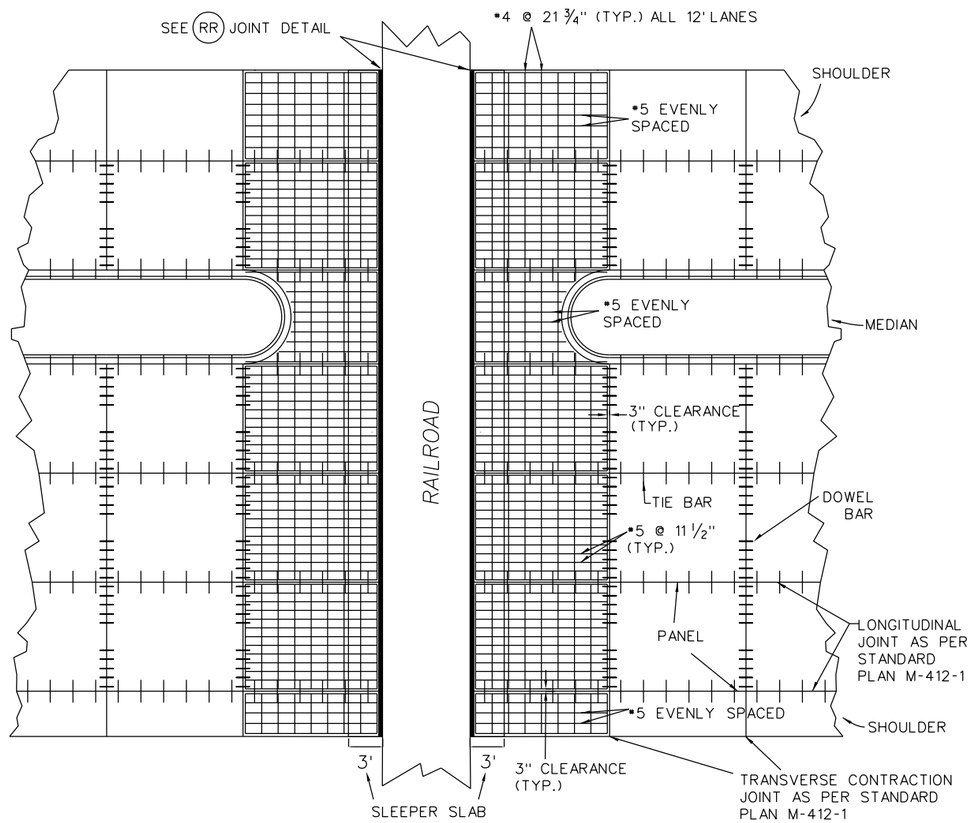
1. IF THE FIRST PANEL ADJACENT TO THE RAIL ROAD CROSSING IS LESS THAN ONE HALF THE AREA OF A NORMAL FULL PANEL, THEN THE FIRST PARTIAL PANEL AND THE NEXT FULL PANEL SHALL BE LONGITUDINALLY AND TRANSVERSLY REINFORCED AS SHOWN IN THE DETAILS. IF THE AREA OF THE FIRST PANEL ADJACENT TO THE RAIL ROAD CROSSING IS GREATER THAN ONE HALF THE AREA OF A NORMAL FULL PANEL, THEN JUST THE FIRST PARTIAL PANEL SHALL BE REINFORCED.

NOTES ON ALL RAILROAD DETAILS:

1. CONCRETE CLASS P OR CLASS D SHALL BE USED FOR THE SLEEPER SLAB.
2. GRADE 60 EPOXY COATED REINFORCING STEEL IS REQUIRED, OTHER THAN TIE AND DOWEL BARS.
3. ALL COST ASSOCIATED WITH THE REQUIREMENTS OF THESE DETAILS SHALL BE INCLUDED IN THE COST OF ITEM 412 - CONCRETE PAVEMENT (_ INCH).
4. THE CONTRACTOR SHALL PROVIDE, FOR APPROVAL, TO THE ENGINEER A DETAILED PLAN SHOWING THE JOINT CONFIGURATION A MINIMUM OF TWO WEEKS PRIOR TO THE START OF REINFORCING STEEL FABRICATION.
5. THESE DETAILS SHALL APPLY TO BOTH SIDES OF THE RAIL ROAD CROSSING, IF CONCRETE PAVEMENT IS REQUIRED.

NOTE ON PERPENDICULAR RAILROAD DETAILS:

1. THE LENGTH OF THE FIRST PANEL ADJACENT TO THE RAIL ROAD SHALL BE BETWEEN 12 AND 15 FEET.



PERPENDICULAR RAILROAD PLAN VIEW

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CONCRETE PAVEMENT JOINTS

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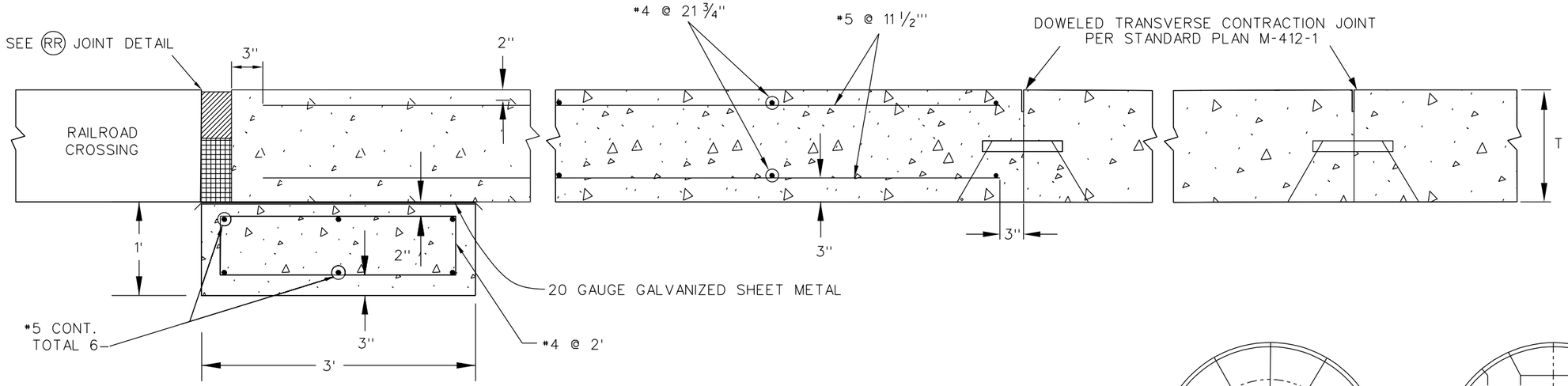
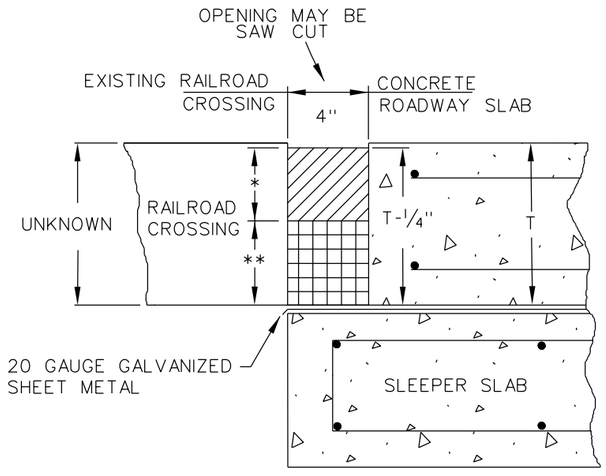


RAILROAD PROFILE VIEW



(RR)

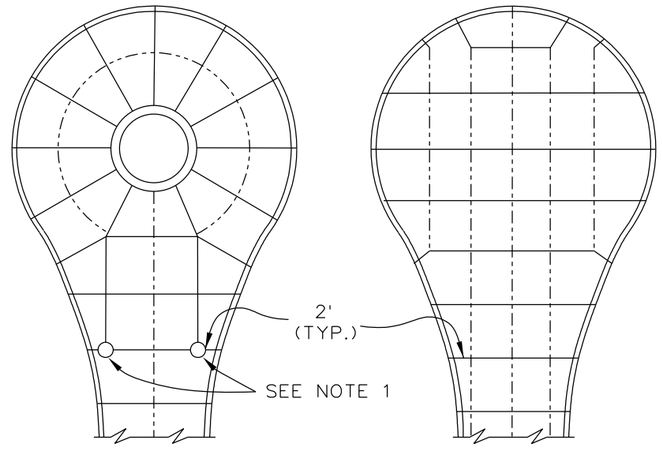
RAILROAD JOINT DETAILS

NOTES ON RAILROAD JOINTS:

1. * FOR SKEWED RAILROADS: 2" WIDE X 3" DEEP CHEMICALLY RESISTANT NEOPRENE JOINT SEAL.

   FOR PERPENDICULAR RAILROADS: PREFORMED COMPRESSION SEALS MEETING THE REQUIREMENTS OF SECTION 412 FOR THE OPENING SHOWN.

2. ** PREFORMED EXPANSION JOINT FILLER AS APPROVED BY THE ENGINEER.



OPEN CENTER CLOSED CENTER

CUL-DE-SAC

NOTE ON CUL-DE-SACS:

1. IF A JOINT IS NOT CONTINUOUS INTO AN ADJACENT SLAB, A JOINT TERMINATION CORE (SEE SHEET 5) SHALL BE CONSTRUCTED USING 4" PVC PIPE FILLED WITH AN APPROVED NON-SHRINK GROUT OR BOND BREAKER FILLED WITH AN APPROVED NON-SHRINK GROUT.

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CONCRETE PAVEMENT JOINTS

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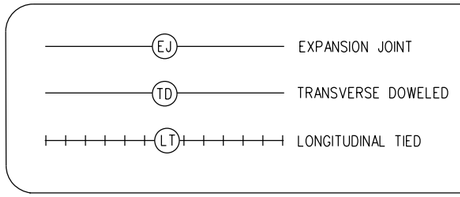
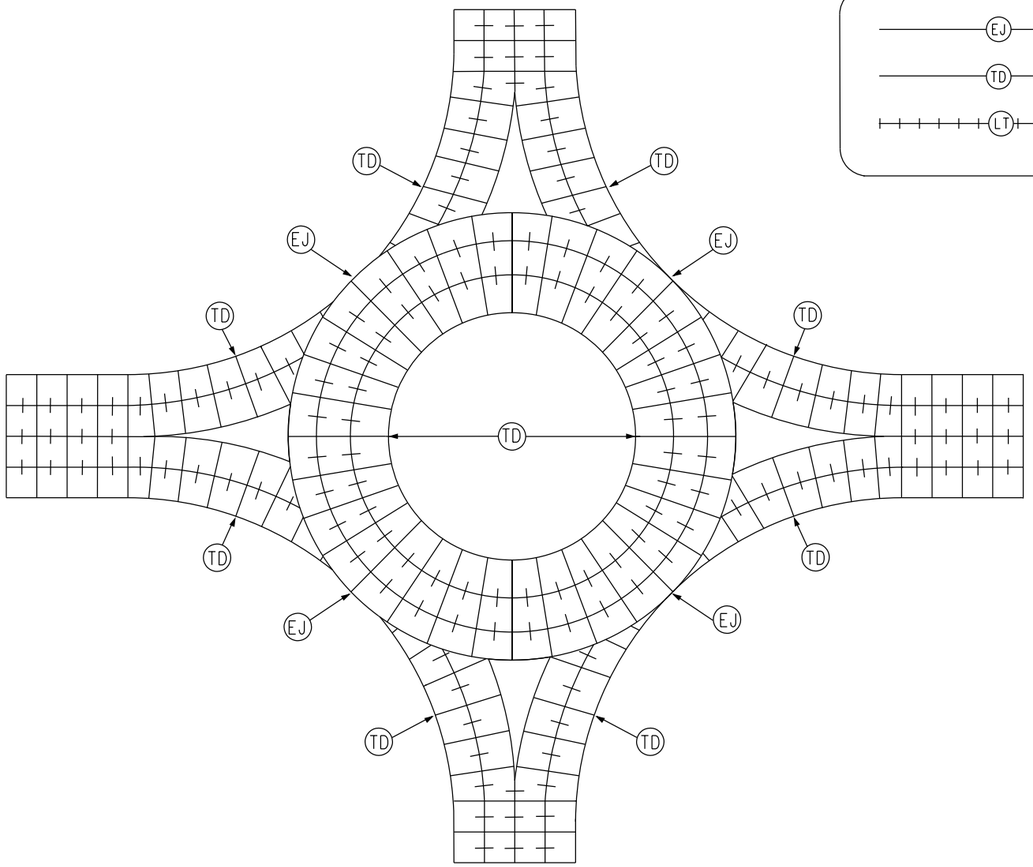
NOTES

1. ALL RADIAL AND TRANSVERSE JOINTS SHALL BE (TD) JOINTS.
2. (EJ) JOINTS SHALL BE CONSTRUCTED WITH PREFORMED EXPANSION JOINT FILLER AS APPROVED BY THE ENGINEER.
3. THE TICK MARKS FOR TIE BAR LINE TYPE ARE FOR ILLUSTRATIVE PURPOSES ONLY AND DO NOT REPRESENT ACTUAL TIE BAR LOCATIONS. SEE M-412-1 SHEET 5 OF 9 FOR TIE BAR PLACEMENT LOCATIONS.
4. EXPANSION JOINTS SHALL BE INSTALLED BETWEEN CONCRETE CURB AND ANY FIXED STRUCTURE OR BRIDGE. EXPANSION JOINT MATERIAL SHALL EXTEND THE FULL DEPTH OF THE CONTACT SURFACE.
5. JOINT CONFIGURATIONS SHOWN ARE FOR SIMPLE ROUNDABOUTS AND DO NOT REPRESENT ALL ROUNDABOUT DESIGNS. THE CONTRACTOR SHALL SUBMIT A JOINT LAYOUT FOR APPROVAL BY THE ENGINEER PRIOR TO CONSTRUCTION. THE PAVEMENT JOINT LAYOUT SHALL CONSIDER, AT A MINIMUM, CONSTRUCTION STAGING AND LANE DELINEATION.

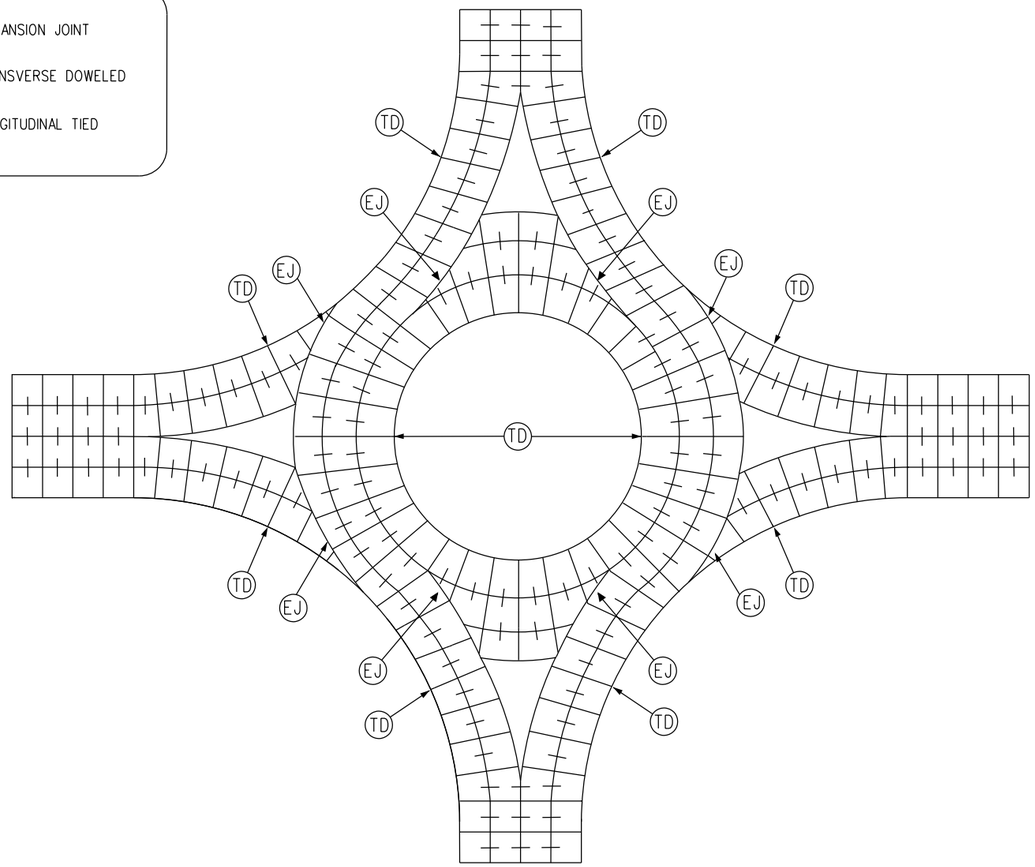
JOINT LEGEND

(SEE SHEET 5 FOR JOINT DETAILS)





ISOLATED CIRCLE ROUNDABOUT



PAVE-THROUGH ROUNDABOUT

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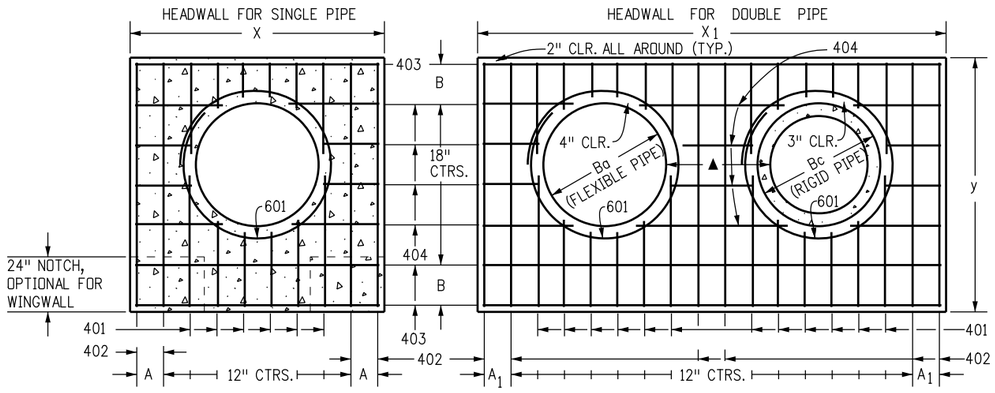
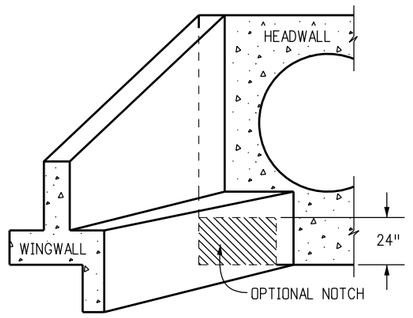
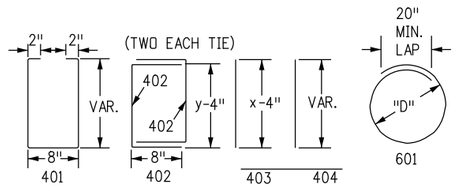


TYPICAL BAR LAYOUT FOR CONCRETE HEADWALLS

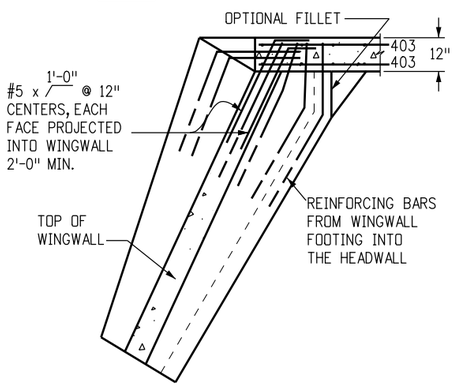


FRONT VIEW



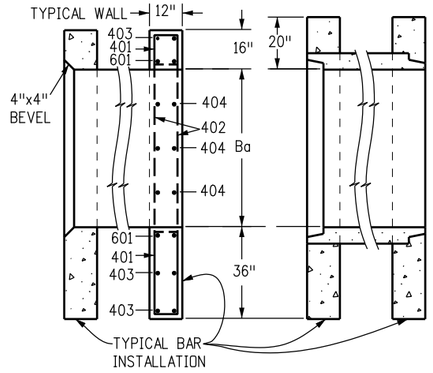
"D" = RIGID PIPE = Bc + 6"
FLEXIBLE PIPE = Ba + 8"
FLEXIBLE ARCH = SPAN + 8"
STRUCTURAL PLATE ARCH = RISE + 8"

BAR BENDING



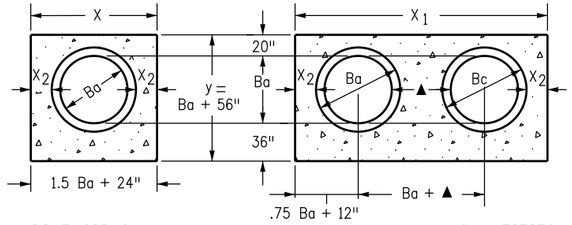
TOP VIEW

WINGWALL CONNECTION



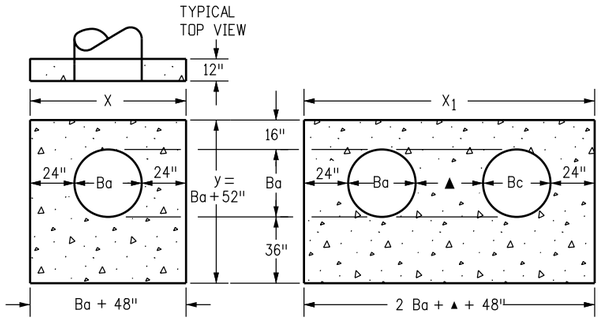
INLET OUTLET
ENDS OF FLEXIBLE PIPE

INLET OUTLET
ENDS OF RIGID PIPE



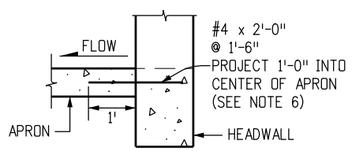
DIMENSIONS									QUANTITIES			
									CONCRETE		STEEL ■	
Ba IN.	Bc IN.	X FT.-IN.	A IN.	X_1 FT.-IN.	A_1 IN.	y FT.-IN.	B IN.	X_2 IN.	SGL CU.YD.	DBL CU.YD.	SGL LBS.	DBL LBS.
54	65	8-9	8½	15-6	7	9-2	17	20	2.12	3.55	209	364
60	72	9-6	7	17-0	10	9-8	11	21	2.35	3.99	236	414
66	79	10-3	11½	18-6	7	10-2	14	22	2.60	4.44	249	453
72	86	11-0	10	20-0	10	10-8	17	23	2.85	4.91	270	476
78	93	11-9	8½	21-3	11	11-2	11	24	3.11	5.29	306	527
84	100	12-6	7	22-6	7	11-8	14	25	3.38	5.68	333	572
90	107	13-3	11½	23-9	8½	12-2	17	26	3.66	6.08	335	593
96	114	14-0	10	25-0	10	12-8	11	27	3.94	6.48	379	649
102	121	14-9	8½	26-3	11½	13-2	14	28	4.24	6.89	400	664
108	128	15-6	7	27-6	7	13-8	17	29	4.54	7.30	424	707

HEADWALL FOR RIGID ROUND PIPE



DIMENSIONS							QUANTITIES			
							CONCRETE		STEEL ■	
Ba IN.	X FT.-IN.	A IN.	X_1 FT.-IN.	A_1 IN.	y FT.-IN.	B IN.	SGL CU. YD.	DBL CU. YD.	SGL LBS.	DBL LBS.
54	8-6	7	15-3	11½	8-10	15	2.19	3.81	211	358
60	9-0	10	16-6	7	9-4	18	2.38	4.25	217	396
66	9-6	7	17-9	8½	9-10	12	2.58	4.70	252	454
72	10-0	10	19-0	10	10-4	15	2.78	5.17	255	472
78	10-6	7	20-0	10	10-10	18	2.98	5.56	276	499
84	11-0	10	21-0	10	11-4	12	3.19	5.95	297	553
90	11-6	7	22-0	10	11-10	15	3.40	6.36	317	517
96	12-0	10	23-0	10	12-4	18	3.62	6.79	321	597
102	12-6	7	24-0	10	12-10	12	3.84	7.21	364	663
108	13-0	10	25-0	10	13-4	15	4.06	7.63	362	678

HEADWALL FOR FLEXIBLE ROUND PIPE



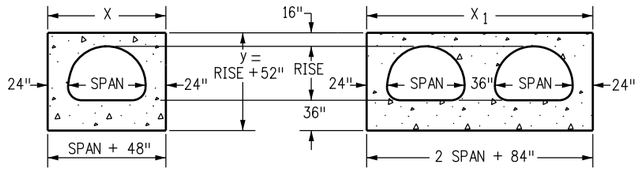
WHEN APRON IS REQUIRED

GENERAL NOTES

1. CONCRETE SHALL BE CLASS B.
2. HEADWALL SHALL BE PERPENDICULAR TO THE PIPE ℄ UNLESS OTHERWISE SHOWN ON THE PLANS. TABULATED DIMENSIONS AND QUANTITIES MUST BE ADJUSTED FOR SKEWED INSTALLATIONS.
3. FOR WINGWALL DETAILS, SEE STANDARD PLAN M-601-20.
4. VOLUME OCCUPIED BY PIPE HAS BEEN DEDUCTED FROM STEEL AND CONCRETE QUANTITIES.
5. EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED ¾ IN.
6. ALL REINFORCING BARS SHALL HAVE A 2 IN. MINIMUM CLEARANCE.

▲ WHEN TWO OR MORE PIPES ARE LAID SIDE BY SIDE, THEY SHALL BE PLACED SO THAT THE ADJACENT PIPES WILL BE ½ INSIDE DIAMETER APART, OR ½ INSIDE SPAN APART, OR 3 FT. APART (INCLUDING WALL THICKNESS), WHICHEVER IS LESS.

■ ADD 0.89 x (X OR X_1) (LB.) WHEN APRON IS REQUIRED.



DIMENSIONS									QUANTITIES			
									CONCRETE		STEEL ■	
EQUIV. Ba IN.	SPAN IN.	RISE IN.	X FT.-IN.	A IN.	X_1 FT.-IN.	A_1 IN.	y FT.-IN.	B IN.	SGL CU. YD.	DBL CU. YD.	SGL LBS.	DBL LBS.
72	81	59	10-9	8½	20-6	7	9-3	17½	2.72	5.10	250	467
78	87	63	11-3	11½	21-6	7	9-7	10½	2.85	5.34	275	531
84	95	67	11-9	8½	22-10	9	9-11	12½	3.08	5.79	290	547
90	103	71	12-7	7½	24-2	11	10-3	15	3.30	6.21	321	591
96	112	75	13-4	12	25-8	8	10-7	16½	3.52	6.65	314	606
102	117	79	13-9	8½	26-6	7	10-11	9½	3.63	6.86	356	672
108	128	83	14-8	8	28-4	12	11-3	11½	3.96	7.51	376	699

HEADWALL FOR FLEXIBLE PIPE ARCH

DIMENSIONS									QUANTITIES			
									CONCRETE		STEEL ■	
EQUIV. Ba IN.	SPAN FT.-IN.	RISE FT.-IN.	X FT.-IN.	A IN.	X_1 FT.-IN.	A_1 IN.	y FT.-IN.	B IN.	SGL CU. YD.	DBL CU. YD.	SGL LBS.	DBL LBS.
66	6-1	4-7	10-1	10½	19-2	11	8-11	15½	2.52	4.70	232	424
75	7-0	5-1	11-0	10	21-0	10	9-5	9½	2.80	5.25	282	509
84	7-11	5-7	11-11	9½	22-10	9	9-11	12½	3.08	5.79	291	540
93	8-10	6-1	12-10	9	24-8	8	10-5	15½	3.36	6.33	309	622
102	9-9	6-7	13-9	8½	26-6	7	10-11	9½	3.63	6.86	379	673
111	10-11	7-1	14-11	9½	28-10	9	11-5	12½	4.05	7.67	377	711
120	11-10	7-7	15-10	9	30-8	8	11-11	15½	4.36	8.28	395	731
132	12-10	8-4	16-10	9	32-8	8	12-8	11	4.75	9.03	441	839
141	14-1	8-9	18-1	10½	35-2	11	13-1	13½	5.17	9.86	448	931
150	15-4	9-3	19-4	12	37-8	8	13-7	16½	5.69	10.88	490	953
159	15-10	9-10	19-10	9	38-8	8	14-2	11	5.89	11.25	534	1019

HEADWALL FOR STRUCTURAL PLATE ARCH

SKEW ANGLE A°	90	85	80	75	70	65	60	55	50	45	40	35	30
FACTOR (cosecA°)	1.000	1.004	1.015	1.035	1.064	1.103	1.155	1.221	1.305	1.414	1.556	1.743	2.000

SKEW FACTOR TABLE

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HEADWALL FOR PIPES

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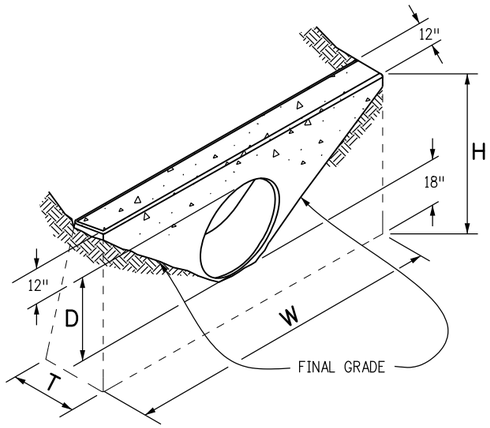
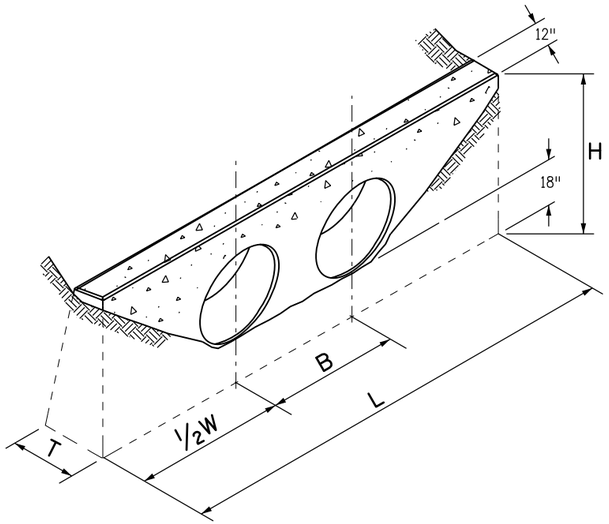
STANDARD PLAN NO.
M-601-10
Standard Sheet No. 1 of 1
Project Sheet Number: 175



SINGLE PIPE



DOUBLE PIPE

CONCRETE HEADWALL INSTALLATIONS

SEE STANDARD PLAN M-601-10 FOR REINFORCING DETAILS.

PIPE		PIPE DIAMETER (AND EQUIVALENT DIAMETER) (IN.)											
		18		24		30		36		42		48	
TYPE	MATERIAL	SINGLE	DOUBLE	SINGLE	DOUBLE	SINGLE	DOUBLE	SINGLE	DOUBLE	SINGLE	DOUBLE	SINGLE	DOUBLE
CIRCULAR	RIGID	1.0	1.3	1.5	2.0	2.0	2.7	2.8	3.6	3.6	4.6	4.6	6.0
	FLEXIBLE	1.1	1.4	1.6	2.1	2.2	3.0	3.0	4.0	3.9	5.3	5.0	6.8
ELLIPTICAL	RIGID	23 x 14		30 x 19		38 x 24		45 x 29		53 x 34		60 x 38	
		0.9	1.2	1.3	1.6	1.7	2.2	2.3	2.9	2.9	3.7	3.5	4.4
ARCH	METAL	22 x 13		29 x 18		36 x 22		43 x 27		50 x 31		58 x 36	
		0.9	1.3	1.4	1.9	1.8	2.4	2.4	3.4	3.2	4.4	3.4	5.0

CONCRETE QUANTITIES FOR ONE CONCRETE HEADWALL (CUBIC YARDS)

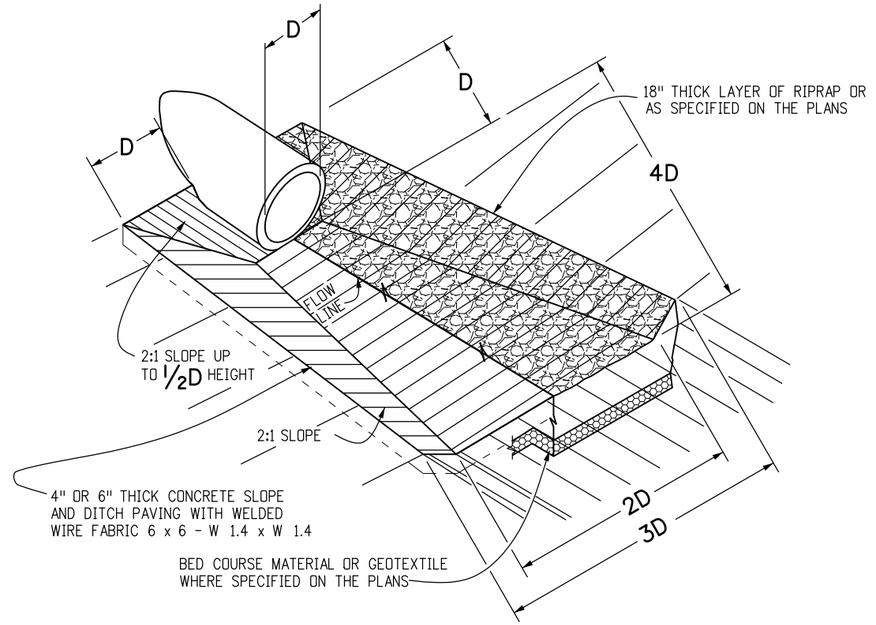
THICKNESS	MATERIAL	PIPE DIAMETER (IN.)					
		18	24	30	36	42	48
4"	CONCRETE	0.4	0.8	1.2			
6"	CONCRETE				2.6	3.6	4.7
18"	RIPRAP	2.0	3.5	5.4	7.8	10.7	13.9

PIPE OUTLET PAVING (CUBIC YARDS)

NOTE: VOLUME OCCUPIED BY PIPE HAS BEEN DEDUCTED.

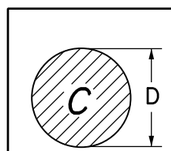
GENERAL NOTES

1. FOR SIZE AND LOCATION OF PIPES, SEE THE PLANS.
2. ALL CONCRETE SHALL BE CLASS B.
3. FOOTINGS IN ROCK SHALL BE POURED OUT TO ROCK AND NOT FORMED IN ACCORDANCE WITH SUBSECTION 601.09(b).
4. EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED $\frac{3}{4}$ IN.
5. HEADWALL SHALL HAVE REINFORCING STEEL INSTALLED IN A PATTERN SIMILAR TO STANDARD PLAN M-601-10.
6. THE COST OF REINFORCING STEEL SHALL BE INCLUDED IN THE WORK UNLESS THE STEEL QUANTITIES ARE LISTED IN THE PLANS AND ARE PAID FOR SEPARATELY.



PIPE OUTLET PAVING

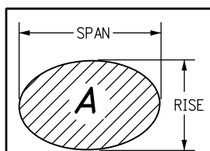
MAY BE USED WITH MULTIPLE PIPES.



CIRCULAR

D = PIPE DIAMETER (INSIDE)
H = D + 30"
W = 3D + 18"
T = 0.4 H (NEAREST IN.)
B = 1.5 D (30" MINIMUM)
L = W + B

TYPE OF PIPE — HEADWALL DIMENSIONS



ARCH OR ELLIPTICAL

D = EQUIVALENT CIRCULAR DIAMETER (INSIDE)
H = RISE + 30"
W = 3D + 18"
T = 0.4 H (NEAREST IN.)
B = 1.5 D (30" MINIMUM)
L = W + B

TYPE OF PIPE — HEADWALL DIMENSIONS

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HEADWALLS AND PIPE OUTLET PAVING

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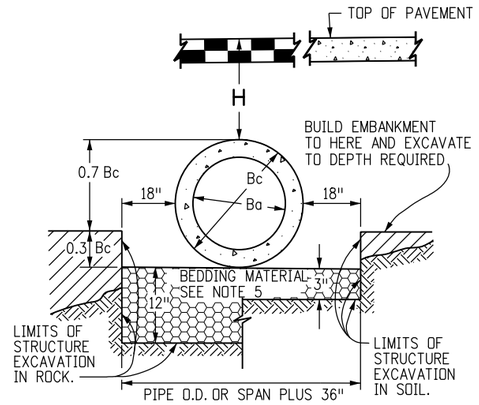
STANDARD PLAN NO.
M-601-12
Standard Sheet No. 1 of 1
Project Sheet Number: 176



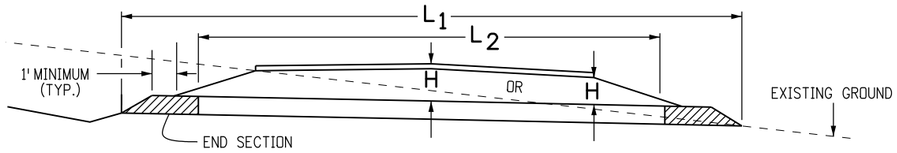
NOTE: Bc IS THE OUTSIDE DIMENSION FOR DIAMETER, SPAN OR RISE.

PIPE INSTALLATION
(WITH 0.7 PROJECTION RATIO)

CIRCULAR (CIR)			VERTICAL ELLIPTICAL (VE)				HORIZONTAL ELLIPTICAL (HE)			
△ PIPE SIZE= *Ba* (INSIDE DIA)	WALL THICKNESS	0.3 *Bc* (OUTSIDE DIA)	SPAN	RISE	WALL THICKNESS	0.3 OUTSIDE RISE	SPAN	RISE	WALL THICKNESS	0.3 OUTSIDE RISE
IN.		FT.	IN.			FT.	IN.			FT.
12	2	0.40								
15	2-1/4	0.49								
18	2-1/2	0.58					23	14	2-3/4	0.49
21	2-3/4	0.66								
24	3	0.75					30	19	3-1/4	0.66
27	3-1/4	0.84					34	22	3-1/2	0.73
30	3-1/2	0.92					38	24	3-3/4	0.79
33	3-3/4	1.01								
36	4	1.10	29	45	4-1/2	1.35	45	29	4-1/2	0.95
42	4-1/2	1.28	34	53	5	1.58	53	34	5	1.10
48	5	1.45	38	60	5-1/2	1.78	60	38	5-1/2	1.23
54	5-1/2	1.62	43	68	6	2.00	68	43	6	1.38
60	6	1.80	48	76	6-1/2	2.23	76	48	6-1/2	1.53
66	6-1/2	1.97	53	83	7	2.43	83	53	7	1.68
72	7	2.15	58	91	7-1/2	2.65	91	58	7-1/2	1.83
78	7-1/2	2.32	63	98	8	2.85	98	63	8	1.98
84	8	2.50	68	106	8-1/2	3.08	106	68	8-1/2	2.13
90	8-1/2	2.68	72	113	9	3.28	113	72	9	2.25
96	9	2.85	77	121	9-1/2	3.50	121	77	9-1/2	2.40
102	9-1/2	3.02	82	128	9-3/4	3.69	128	82	9-3/4	2.54
108	10	3.20	87	136	10	3.90	136	87	10	2.68

△ ALSO EQUIVALENT ROUND DIMENSION FOR ELLIPTICAL PIPE.

DIMENSIONS FOR REINFORCED CONCRETE PIPE
(FOR INFORMATION ONLY)



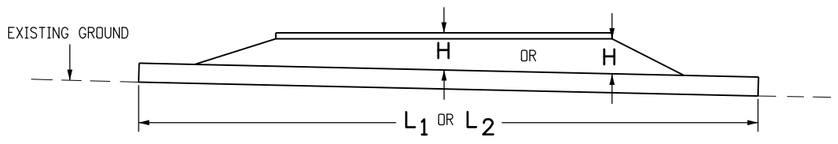
CONCRETE PIPE WITH END SECTIONS

NOTE: USE THE H THAT IS GREATER FOR MAXIMUM ALLOWABLE FILL HEIGHT.

H = HEIGHT OF FILL OVER TOP OF PIPE, INCLUDING PAVEMENT THICKNESS.

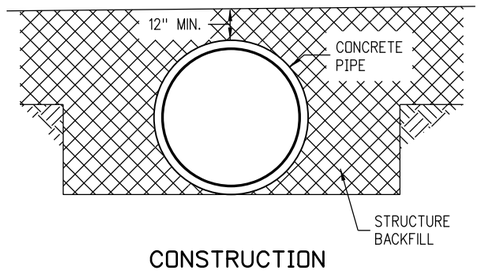
L_1 = LENGTH OF PIPE TO BE MEASURED WHEN PLACED IN ACCORDANCE WITH SECTION 624.

L_2 = LENGTH OF PIPE TO BE MEASURED WHEN PLACED IN ACCORDANCE WITH SECTION 603.



CONCRETE PIPE WITHOUT END SECTIONS

NOTE: USE THE H THAT IS GREATER FOR MAXIMUM ALLOWABLE FILL HEIGHT.



CONSTRUCTION
MINIMUM COVER FOR RIGID PIPE

GENERAL NOTES

REINFORCED CONCRETE PIPE

1. FILL HEIGHTS GREATER THAN MAXIMUM ALLOWED IN THE HEIGHTS OF FILL TABLE ON THIS SHEET REQUIRE SPECIAL DESIGN OF STRUCTURE.
2. PIPE DESIGN IS BASED ON SAFETY FACTOR OF 1.33 ON ULTIMATE STRENGTH.
3. THE HEIGHTS OF FILL OVER TOP OF PIPE ARE BASED ON UNIT WEIGHT OF SOIL AT 135 LBS. PER CUBIC FT.
4. PIPE CLASS IS DETERMINED FROM 0.01 IN. CRACK D-LOAD.
5. BEDDING IS CLASS B (MODIFIED) (FROM CONCRETE PIPE DESIGN MANUAL-AMERICAN CONCRETE PIPE ASSOCIATION) WITH SETTLEMENT RATIO $R = 0.0_{sd}$ (YIELDING BED). BEDDING MATERIAL FOR RIGID PIPE IN SOIL SHALL BE 3 IN. LOOSE THICKNESS STRUCTURE BACKFILL CLASS 2. BEDDING MATERIAL FOR RIGID PIPE IN ROCK SHALL BE 12 IN. LOOSE THICKNESS STRUCTURE BACKFILL CLASS 1.
6. CHANGES IN DESIGN FACTORS REQUIRE COMPENSATING CHANGES IN PIPE DESIGN.
7. MINIMUM WALL THICKNESS DIMENSIONS ARE BASED ON AASHTO M 170 (WALL B) FOR CIRCULAR PIPE, AND AASHTO M 207 FOR ELLIPTICAL PIPE.
8. SPACING FOR MULTIPLE PIPE INSTALLATIONS SHALL CONFORM TO THE DETAILS SHOWN ON STANDARD PLAN M-206-1.
9. WHEN A PIPE IS TO BE EXTENDED, THE SAME PIPE MATERIAL AND SIZE AS IN THE ORIGINAL PIPE INSTALLATION SHALL BE USED.

NONREINFORCED CONCRETE PIPE

1. AT THE OPTION OF THE CONTRACTOR, NONREINFORCED CONCRETE PIPE CONFORMING TO AASHTO M 86 MAY BE USED IN LIEU OF REINFORCED CONCRETE PIPE FOR ALL SIZES 36 INCHES IN DIAMETER AND SMALLER. THE NONREINFORCED CONCRETE PIPE SHALL MEET THE SAME D-LOAD TO PRODUCE THE ULTIMATE LOAD UNDER THE THREE-EDGE BEARING METHOD AS SPECIFIED FOR REINFORCED CONCRETE PIPE IN CONFORMANCE WITH AASHTO M 170. THE CONTRACTOR SHALL PROVIDE WRITTEN CERTIFICATION OF CONFORMACE. THE WALL THICKNESS OF THE NONREINFORCED PIPE MAY BE INCREASED AS REQUIRED TO MEET D-LOAD REQUIREMENT.
2. ALL REQUIREMENTS FOR REINFORCED CONCRETE PIPE, EXCEPT THOSE REFERRING TO REINFORCEMENT, SHALL APPLY TO NONREINFORCED CONCRETE PIPE.

TYPE OF PIPE	HEIGHT OF FILL OVER TOP OF PIPE, H (FEET)				
	CLASS OF PIPE (0.01 IN. CRACK D-LOAD)				
	CLASS CIR II CLASS VE II CLASS HE II 1000 D	CLASS CIR III CLASS VE III CLASS HE III 1350 D	CLASS CIR IV CLASS VE IV CLASS HE IV 2000 D	CLASS CIR V CLASS VE V 3000 D	CLASS VE VI 4000 D
CIRCULAR (CIR)	1 TO 18	1 TO 25	± 25 TO 37	± 37 TO 45	
VERTICAL ELLIPTICAL (VE)	1 TO 18	1 TO 25	± 25 TO 37	± 37 TO 45	± 45 TO 62
HORIZONTAL ELLIPTICAL (HE)	1 TO 18	1 TO 25	± 25 TO 37		

ALLOWABLE RANGE OF HEIGHTS FOR FILL OVER REINFORCED CONCRETE PIPE
(ALL SIZES)

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REINFORCED CONCRETE PIPE

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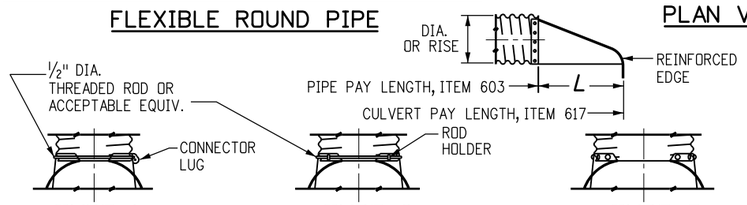
M-603-2
Standard Sheet No. 1 of 1
Project Sheet Number: 177

PIPE DIA.	THICKNESS	DIMENSIONS					
		A	B	H	L	W	T
		IN.					
12	0.064	6	6	6	21	24	34
18	0.064	8	10	6	31	36	46
21	0.064	9	12	6	36	42	52
24	0.064	10	13	6	41	48	58
30	0.079	12	16	8	51	60	70
36	0.079	14	19	9	60	72	94
42	0.109	16	22	11	69	84	106
48	0.109	18	27	12	78	90	112
54	0.109	18	30	12	84	102	124
60	0.109	18	33	12	87	114	136
66	0.109	18	36	12	87	120	142
72	0.109	18	39	12	87	126	148
78	0.109	18	42	12	87	132	154
84	0.109	18	45	12	87	138	160

FLEXIBLE ROUND PIPE



TYPE 1

FOR 18 IN. THRU 24 IN. ROUND PIPE WITH ANNULAR CORRUGATIONS. NOT TO BE USED ON HELICALLY-FORMED PIPE UNLESS RECORRUGATED.

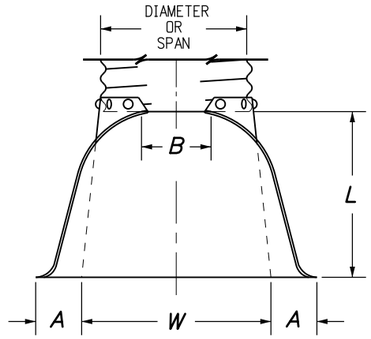
TYPE 2

FOR 30 IN. THRU 36 IN. ROUND PIPE WITH ANNULAR CORRUGATIONS. NOT TO BE USED ON HELICALLY-FORMED PIPE UNLESS RECORRUGATED.

TYPE 3

FOR 42 IN. THRU 84 IN. ROUND PIPE WITH ANNULAR CORRUGATIONS AND ALL SIZES WITH HELICAL CORRUGATIONS AND FOR ALL METAL PIPE ARCH CULVERTS. SHOP ATTACH A 24 IN. MIN. LENGTH OF ANNULAR PIPE WITH GALV. RIVETS OR BOLTS, SPOT WELDS, OR 2 IN. LONG SKIP WELDS ON 8 IN. CTRS. REPAIR BURNT GALVANIZING IN ACCORDANCE WITH SUBSECTION 707.09.

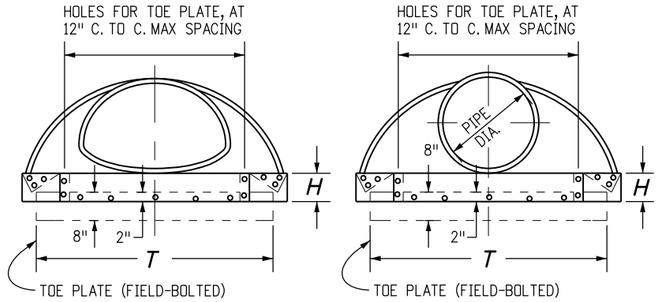
TYPICAL CONNECTIONS



PLAN VIEW

PIPE ARCH SPAN x RISE	THICK-NESS	DIMENSIONS					
		A (±1")	B (MAX.)	H (±1")	L (±1.5")	W (±2")	T
		IN.					
21 x 15	0.064	7	10	6	23	36	46
24 x 18	0.064	8	12	6	28	42	52
28 x 20	0.064	9	14	6	32	48	58
35 x 24	0.079	10	16	6	39	60	70
42 x 29	0.079	12	18	8	46	75	85
49 x 33	0.109	13	21	9	53	85	103
57 x 38	0.109	18	26	12	63	90	108
64 x 43	0.109	18	30	12	70	102	120
71 x 47	0.109	18	33	12	77	114	132

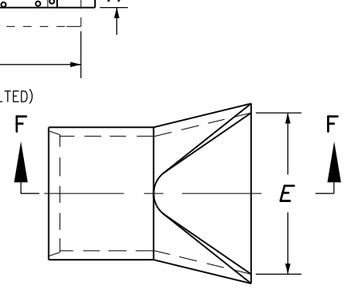
FLEXIBLE PIPE ARCH

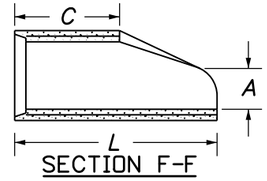


ELEVATIONS

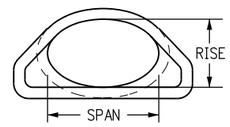
GENERAL NOTES

1. DIMENSIONS OF END SECTIONS MAY VARY SLIGHTLY FROM THOSE SHOWN ON THE TABLES DUE TO DIFFERENT MANUFACTURERS' CONFIGURATIONS.
2. CONCRETE END SECTIONS SHALL BE FURNISHED WITH TONGUE OR GROOVE AS REQUIRED.
3. DESIGN LENGTH OF PIPE OR SIDE DRAIN IS BASED ON LENGTH OF END SECTION SHOWN IN TABLE. ANY ADDITIONAL PIPE REQUIRED TO PROVIDE THE DESIGN LENGTH SHALL BE FURNISHED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT.
4. THE INSIDE CONFIGURATION AND THE JOINT OF CONCRETE END SECTION AND PIPE SHALL MATCH.
5. END SECTIONS FOR CMP ARCH PIPE SHALL MATCH THE DIMENSIONS OF THE PIPE SHOWN ON THE PLANS.
6. GALVANIZED TOE PLATE AS SHOWN IS REQUIRED ON END SECTIONS FOR CORRUGATED STEEL PIPE AND SHALL BE THE SAME THICKNESS AS END SECTIONS. TOE PLATE SHALL BE FIELD-BOLTED TO END SECTION WITH ⅜ IN. GALVANIZED BOLTS, NUTS AND WASHERS.
7. GALVANIZED STEEL SHALL CONFORM TO AASHTO M 111, M 218 OR M 232.
8. CONCRETE PIPE JOINT FASTENERS, WHERE SHOWN ON PLANS, SHALL BE INSTALLED SO THAT A MINIMUM OF 15 LINEAR FEET OF THE OUTLET END OF THE PIPE ARE MECHANICALLY LOCKED TOGETHER. END SECTION LENGTHS WHEN USED, SHALL BE INCLUDED IN THE 15 LF REQUIREMENT.
9. CONNECTIONS OF METAL END SECTIONS TO PLASTIC PIPE SHALL BE APPROVED BY THE ENGINEER. PLASTIC END SECTIONS SHALL NOT BE USED.
10. THE END SECTION STYLE, EITHER REGULAR OR SAFETY, SHALL BE AS SHOWN ON THE PLANS.
11. AT THE OPTION OF THE CONTRACTOR AND APPROVAL OF THE CDOT PROJECT ENGINNER, REINFORCED CONCRETE END SECTIONS MAY BE MADE WITH SYNTHETIC FIBERS INSTEAD OF STEEL FOR PIPES 36 INCHES IN DIAMETER AND SMALLER, AND CONFORM TO AASHTO M 86 AND SUBSECTION 601.03.





SECTION F-F

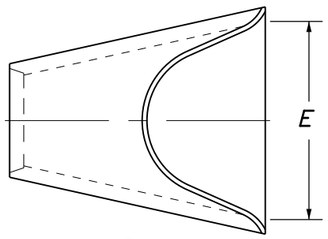


END VIEW

EQUIVALENT CIRCULAR DIA.	DIMENSIONS					
	NOMINAL SPAN x RISE	A	C	L	E
	IN.					
24	30 x 19	9	33	72	48
30	38 x 24	10	18	72	60
36	45 x 29	12	24	84	72
42	53 x 34	16	36	96	78
48	60 x 38	21	36	96	84
54	68 x 43	26	36	96	90
60	76 x 48	30	36	96	96

END SECTION FOR REINFORCED CONCRETE ELLIPTICAL PIPE

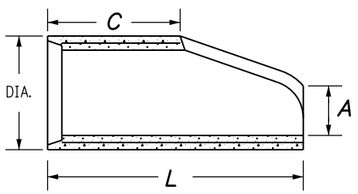
END SECTION AND CONNECTION DETAILS FOR ROUND AND ARCH METAL PIPES



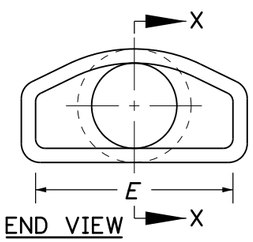
PLAN

PIPE I.D.	DIMENSIONS			
	A	C	L	E
	IN.			
18	10	48	78	36
24	10	48	78	48
30	14	36	96	60
36	18	36	96	72
42	24	36	96	78
48	28	24	96	84
54	30	36	96	90
60	36	36	96	96
72	34	20	96	108

REINFORCED CONCRETE CIRCULAR PIPE

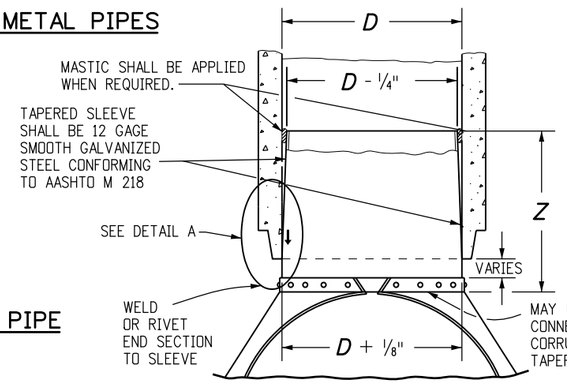


SECTION X-X



END VIEW

END SECTION FOR REINFORCED CONCRETE CIRCULAR PIPE

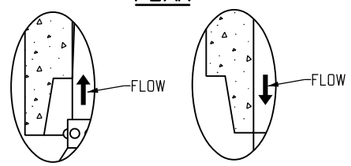


D	Z (MIN.)
IN.	
18 - 24	12
30 AND 36	16
42 AND LARGER	24

NOTE: METAL END SECTION SHALL BE FIRMLY WEDGED INTO PIPE END BEFORE BACKFILLING.

STEEL END SECTION FOR CONCRETE CIRCULAR PIPE

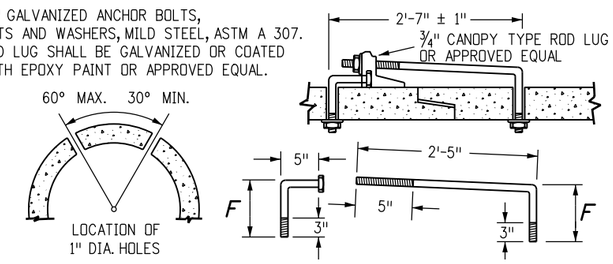
(ALTERNATIVE FOR CONCRETE END SECTION)



DETAIL A

PIPE DIAMETER	F
IN.	
18 - 30	5
36 - 42	6
48 - 60	7
72 - 84	9

¾" GALVANIZED ANCHOR BOLTS, NUTS AND WASHERS, MILD STEEL, ASTM A 307. ROD LUG SHALL BE GALVANIZED OR COATED WITH EPOXY PAINT OR APPROVED EQUAL.



CONCRETE JOINT FASTENER (TWO PER JOINT)

Computer File Information		Sheet Revisions	
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Designer Initials: JBK	(R-X)		
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CONCRETE AND METAL END SECTIONS

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STANDARD PLAN NO.
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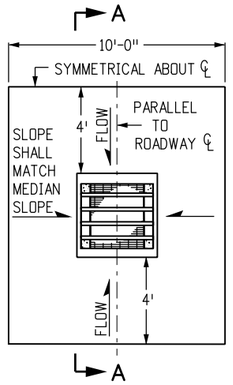
Standard Sheet No. 1 of 1
Project Sheet Number: 178

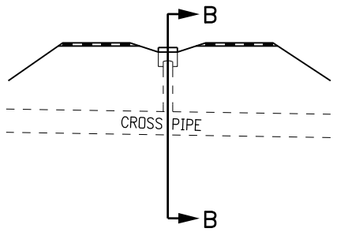


INLET WITH DITCH PAVING

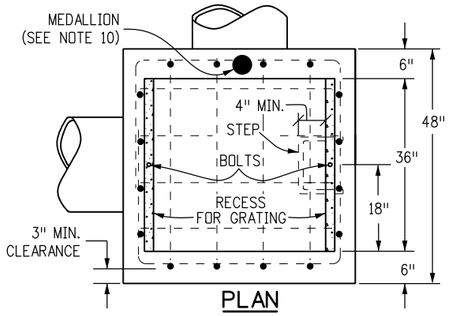
STEEL GRATE QUANTITIES

NO. PIECES	DESCRIPTION	LENGTH	LBS PER FT.	WEIGHT (LBS.)
4	S4 x 7.7 BEAM	41"	7.90	106
2	3½" x ¼" FLAT	26⅝"	2.98	13
2	3" x ¼" FLAT	26⅝"	2.55	12

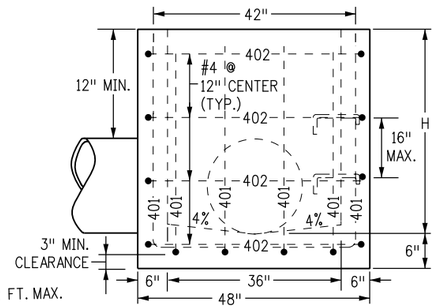
TOTAL LBS. - 131



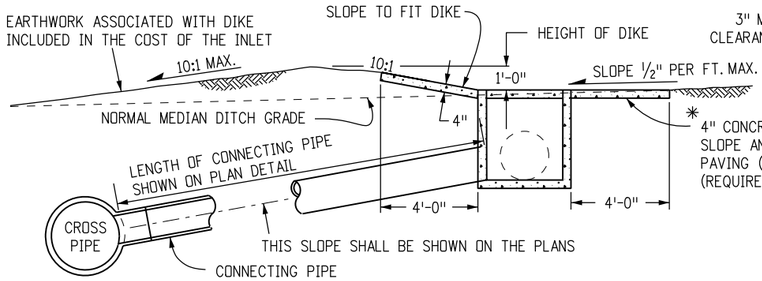
SECTION VIEW



PLAN



ELEVATION CONCRETE INLET

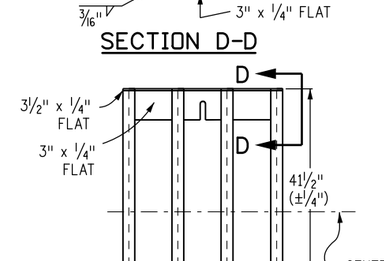


SECTION B-B

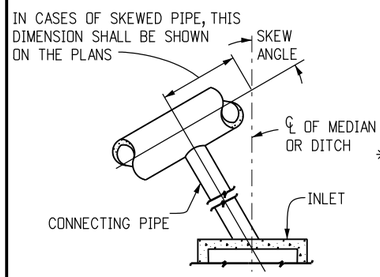
INLET CONNECTED TO A CROSS PIPE

SECTION A-A

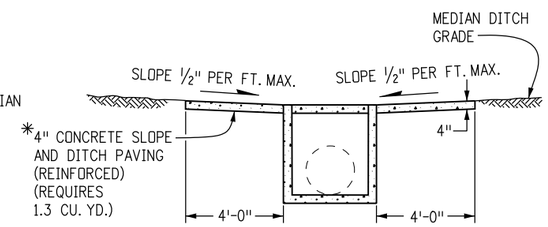
INLET ON GRADE (FLOW FROM ONE DIRECTION)



SECTION D-D



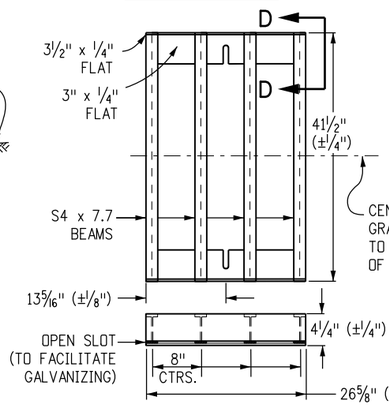
INLET CONNECTED TO A SKEWED CROSS PIPE



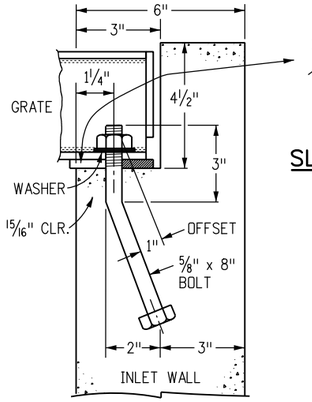
SECTION A-A

*CONCRETE SLOPE AND DITCH PAVING WILL BE REQUIRED WHEN SHOWN ON THE PLANS.

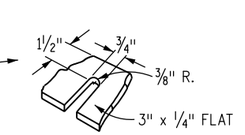
INLET AT BOTTOM OF VERTICAL CURVE (FLOW FROM TWO DIRECTIONS)



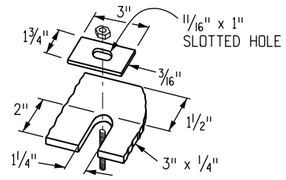
STANDARD INLET GRATE



GRATE INSTALLATION DETAIL



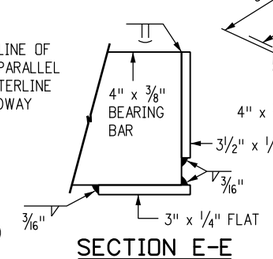
SLOT DETAIL



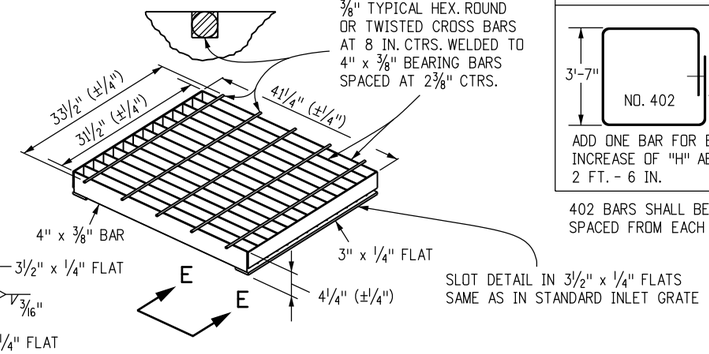
ALTERNATE SLOT AND HOLD DOWN PLATE DETAIL

GENERAL NOTES

1. INLET TYPE C IS NOT HS-20 RATED AND SHALL NOT BE PLACED IN PAVED ROADWAYS. THIS INLET SHALL BE USED ONLY OUTSIDE PAVED ROADWAYS.
2. CONCRETE SHALL BE CLASS B. INLET MAY BE CAST-IN-PLACE OR PRECAST.
3. REINFORCING BARS SHALL BE GRADE 60, EPOXY COATED, AND DEFORMED #4, AND SHALL HAVE A MIN. 2 INCH CLEARANCE. CUT OR BEND AROUND PIPES AS REQUIRED.
4. CONCRETE SLOPE AND DITCH PAVING SHALL BE IN ACCORDANCE WITH SECTION 507. REINFORCEMENT FOR CONCRETE SLOPE PAVING SHALL BE 6 X 6 - W1.4 X W1.4 OR 6 X 6 - W2.1 X W2.1.
5. STRUCTURAL STEEL FOR GRATES AND GRATE INSTALLATION HARDWARE SHALL BE GALVANIZED, AND SHALL BE IN ACCORDANCE WITH SUBSECTION 712.06.
6. THE STANDARD INLET GRATES SHALL BE USED ON ALL TYPE C INLETS UNLESS CLOSE MESH INLET GRATES ARE SPECIFIED ON THE PLANS.
7. CLOSE MESH GRATES ARE RECOMMENDED WHERE FOOT TRAFFIC OR BICYCLE ROUTES ARE IN CLOSE PROXIMITY TO GRATE. THIS GRATE IS NOT ADA COMPLIANT OR BICYCLE FRIENDLY AND SHALL NOT BE PLACED DIRECTLY IN SIDEWALKS, CROSSWALKS OR BIKE PATHS.
8. STEPS SHALL BE PROVIDED WHEN INLET DIMENSION "H" IS EQUAL TO OR GREATER THAN 3 FEET - 6 INCHES AND SHALL CONFORM TO AASHTO M 199.
9. SEE STANDARD PLAN M-604-11, FOR REINFORCEMENT AROUND THE PIPE OPENING.
10. ALL INLETS SHALL HAVE A 4 INCH DIA. METAL MEDALLION WITH A "NO DUMPING DRAINS TO STREAM" MESSAGE ON IT. THE MEDALLION SHALL HAVE A FISH SYMBOL WITH A BLUE BACKGROUND. IT SHALL BE FIRMLY ATTACHED TO THE TOP OF THE INLET WITH A PERMANENT FASTENER.



SECTION E-E



CLOSE MESH INLET GRATE

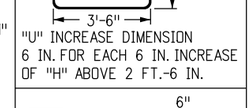
QUANTITIES FOR ONE INLET

H	CONCRETE (CU. YDS.) ▼	STEEL (LBS.) ▼	NO. STEPS REQ'D.
2'-6"	1.0	76	0
3'-0"	1.1	81	0
3'-6"	1.2	97	0
4'-0"	1.3	102	1
4'-6"	1.5	117	2
5'-0"	1.6	123	2
5'-6"	1.7	138	2
6'-0"	1.9	143	3
6'-6"	2.0	159	3
7'-0"	2.1	164	3
7'-6"	2.2	180	4
8'-0"	2.4	185	4
8'-6"	2.5	200	4
9'-0"	2.6	206	5
9'-6"	2.8	221	5
10'-0"	2.9	236	6
11'-6"	3.3	252	6

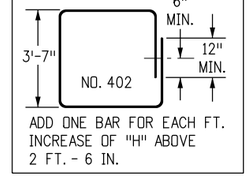
▼ PIPE INSIDE DIAMETER SHALL BE 30 IN. OR LESS. CONCRETE AND STEEL QUANTITIES ARE FOR ONE ENTIRE INLET BEFORE DEDUCTION FOR VOLUME OCCUPIED BY PIPE. WEIGHT OF STEEL INCLUDES A RING FOR THE MAXIMUM PIPE DIAMETER.

BAR LIST FOR H = 2 FT.-6 IN. AND BENDING DIAGRAM

MARK	NO. REQ'D.	HEIGHT	LENGTH
401	2	2'-2½"	8'-0"
401	6	2'-7"	8'-8"
402	4	"U"	15'-4"



"U" INCREASE DIMENSION 6 IN. FOR EACH 6 IN. INCREASE OF "H" ABOVE 2 FT.-6 IN.



ADD ONE BAR FOR EACH FT. INCREASE OF "H" ABOVE 2 FT. - 6 IN.

402 BARS SHALL BE EQUALLY SPACED FROM EACH OTHER.

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INLET, TYPE C

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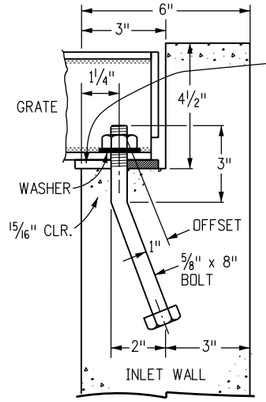
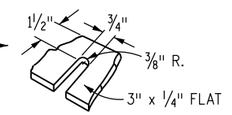
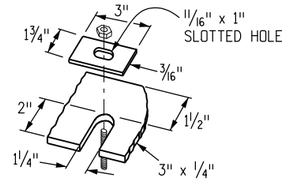
STANDARD PLAN NO.
M-604-10
Standard Sheet No. 1 of 1
Project Sheet Number: 179



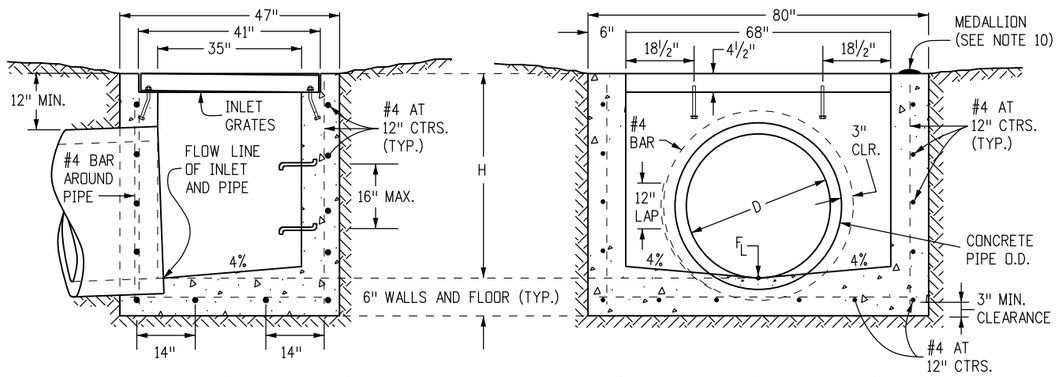


SLOT DETAIL



ALTERNATE SLOT AND HOLD DOWN PLATE DETAIL

GRATE INSTALLATION DETAIL



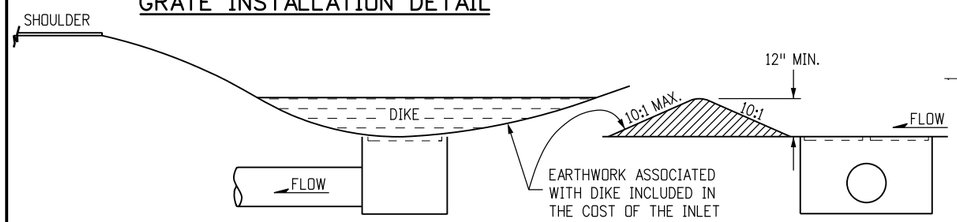
TRANSVERSE CROSS SECTION

LONGITUDINAL CROSS SECTION

LEVEL GRATE INSTALLATION

GENERAL NOTES

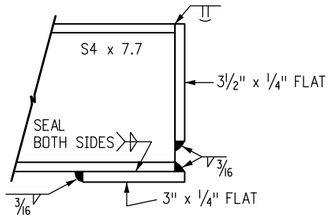
1. INLET TYPE D IS NOT HS-20 RATED AND SHALL NOT BE PLACED IN PAVED ROADWAYS. THIS INLET SHALL BE USED ONLY OUTSIDE PAVED ROADWAYS.
2. CONCRETE SHALL BE CLASS B. INLET MAY BE CAST-IN-PLACE OR PRECAST.
3. SEE PLANS FOR SIZE AND LOCATION OF PIPE.
4. STRUCTURAL STEEL FOR GRATES AND GRATE INSTALLATION HARDWARE SHALL BE GALVANIZED AND SHALL BE IN ACCORDANCE WITH SUBSECTION 712.06.
5. STANDARD INLET GRATES SHALL BE USED ON ALL TYPE D INLETS UNLESS CLOSE MESH GRATES ARE SPECIFIED ON THE PLANS.
6. CLOSE MESH GRATES ARE RECOMMENDED WHERE FOOT TRAFFIC OR BICYCLE ROUTES ARE IN CLOSE PROXIMITY TO GRATE. THIS GRATE IS NOT ADA COMPLIANT OR BICYCLE FRIENDLY AND SHALL NOT BE PLACED DIRECTLY IN SIDEWALKS, CROSSWALKS OR BIKE PATHS.
7. STEPS SHALL BE PROVIDED WHEN INLET DIMENSION "H" IS EQUAL TO OR GREATER THAN 3 FEET-6 INCHES AND SHALL CONFORM WITH AASHTO M 199.
8. REINFORCING BARS SHALL BE GRADE 60, EPOXY COATED, AND DEFORMED #4, AND SHALL HAVE A 2 INCH MIN. CLEARANCE. CUT OR BEND BARS AROUND PIPE AS REQUIRED.
9. ALL INLETS SHALL HAVE A 4 INCH DIA. METAL MEDALLION WITH A "NO DUMPING DRAINS TO STREAM" MESSAGE ON IT. THE MEDALLION SHALL HAVE A FISH SYMBOL WITH A BLUE BACKGROUND. IT SHALL BE FIRMLY ATTACHED TO THE INLET'S SURFACE WITH A PERMANENT FASTENER.



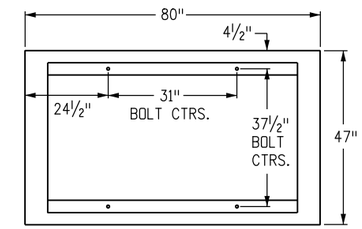
TRANSVERSE VIEW

LONGITUDINAL VIEW

DIKE

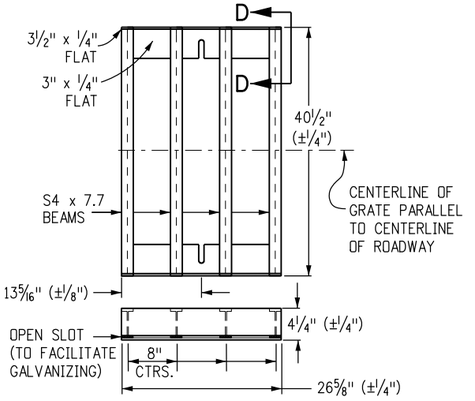


SECTION D-D



PLAN VIEW

(SHOWING ANCHOR BOLT LAYOUT)

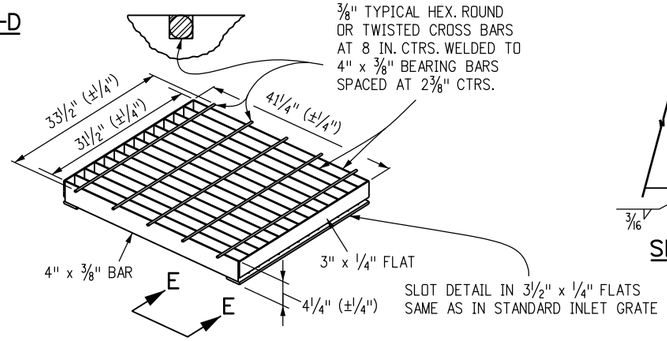


STANDARD INLET GRATE

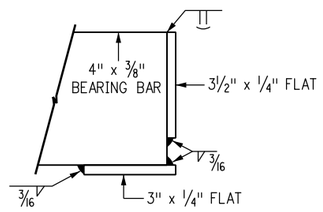
TWO STEEL GRATE PER INLET QUANTITIES

NO. PIECES	DESCRIPTION	LENGTH	LBS PER FT.	WEIGHT (LBS.)
8	S4 x 7.7 BEAM	40"	7.70	206
4	3½" x ¼" FLAT	26⅝"	2.98	26
4	3" x ¼" FLAT	26⅝"	2.55	24

TOTAL LBS. - 256



CLOSE MESH GRATE



SECTION E-E

OUTLET PIPE INSIDE DIA. FT. - "D"	MIN. "H" FT.
1.5	3.0
2.0	3.5
2.5	4.0
3.0	4.5
3.5	5.0

SLOPING GRATE INSTALLATION

"H" FT.	CONCRETE CU. YDS.	STEEL LBS.	CIRCULAR PIPE RANGE INSIDE DIA., IN. - "D"
3.0	1.5	127	18
3.5	1.7	149	18-24
4.0	1.9	157	18-30
4.5	2.0	179	18-36
5.0	2.2	187	18-42
5.5	2.4	208	18-42
6.0	2.6	215	18-42
6.5	2.8	236	18-42
7.0	2.9	243	18-42
7.5	3.1	264	18-42
8.0	3.3	271	18-42
8.5	3.5	292	18-42
9.0	3.6	299	18-42
9.5	3.8	320	18-42
10.0	4.0	327	18-42

▼ CONCRETE AND STEEL QUANTITIES ARE FOR ONE ENTIRE INLET BEFORE DEDUCTION FOR VOLUME OCCUPIED BY PIPE. WEIGHT OF STEEL INCLUDES A RING FOR THE MAXIMUM PIPE DIAMETER.

QUANTITIES FOR ONE INLET

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Project Development Branch JBK

INLET, TYPE D

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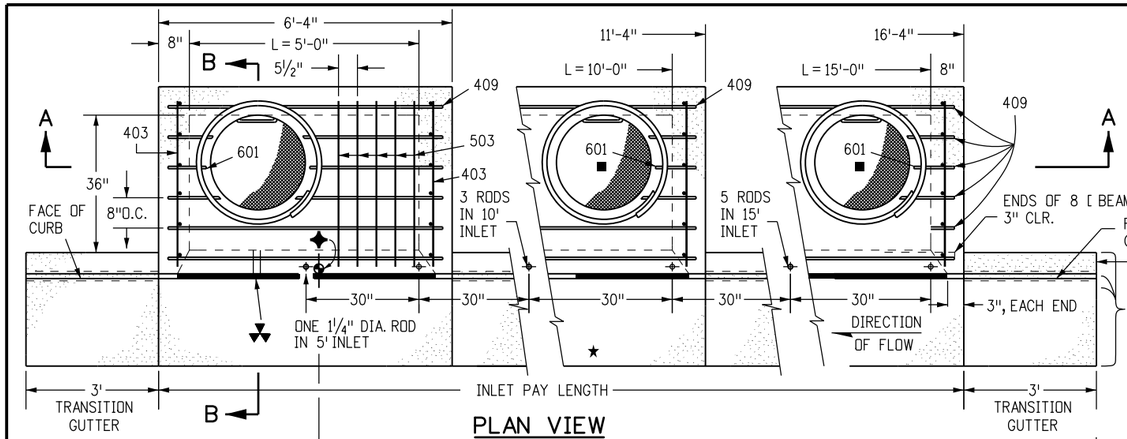
Standard Sheet No. 1 of 1
Project Sheet Number: 180

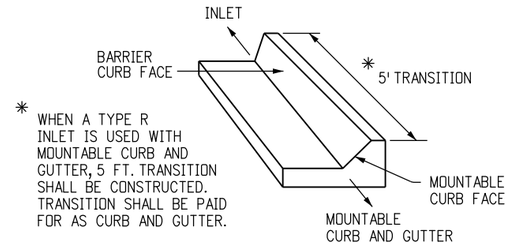


PLAN VIEW

★ FOR LENGTH (L) 10 FT. OR MORE, PROVIDE MAINTENANCE ACCESS AT BOTH ENDS WITH AN ADDITIONAL MANHOLE RING AND COVER. CUT REINFORCEMENT BAR ACCORDINGLY.

✦ STATION POINT AT MIDPOINT OF INLET ALONG FLOWLINE

✳ MEET SHAPE OF NORMAL BARRIER CURB AND GUTTER HERE.

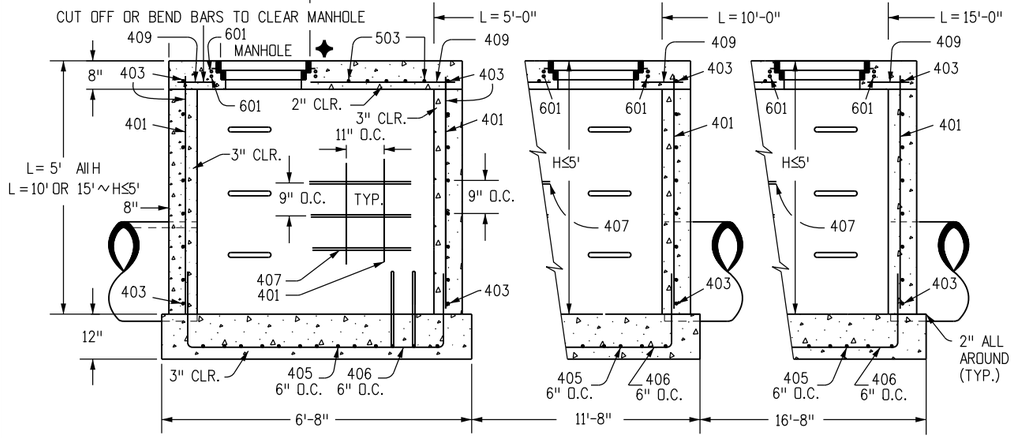


✳ WHEN A TYPE R INLET IS USED WITH MOUNTABLE CURB AND GUTTER, 5 FT. TRANSITION SHALL BE CONSTRUCTED. TRANSITION SHALL BE PAID FOR AS CURB AND GUTTER.

TRANSITION CURB

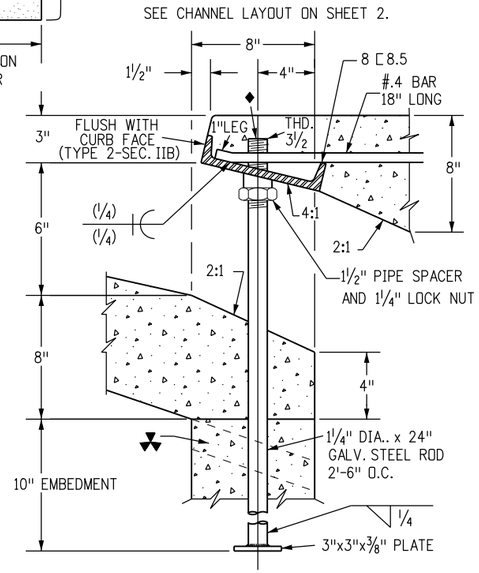
GENERAL NOTES:

SEE SHEET 2.



SECTION A-A REGULAR INLET

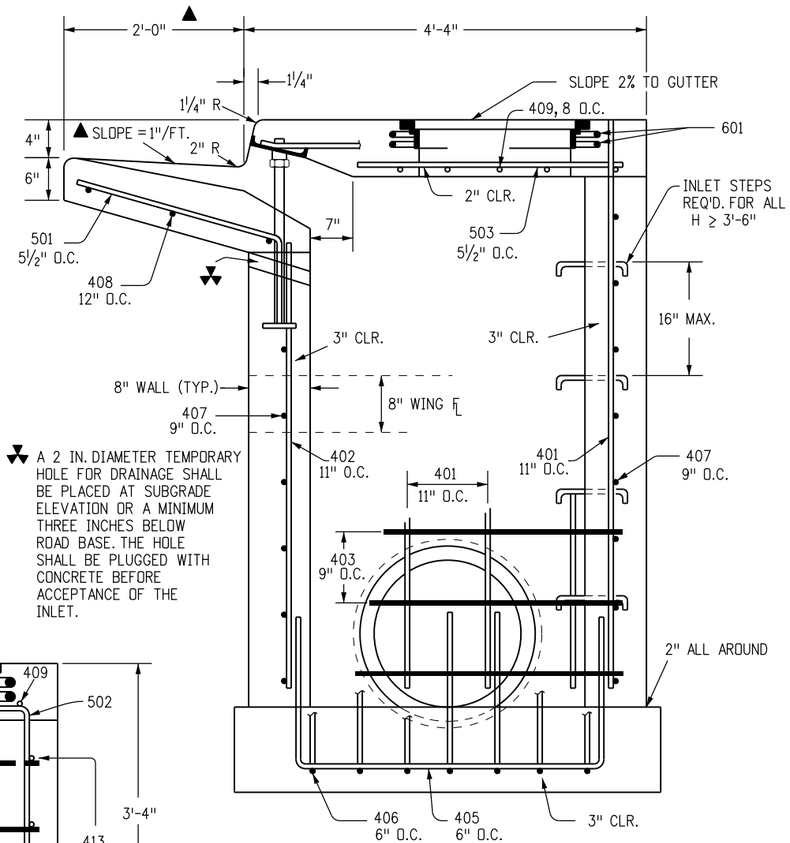
SEE CHANNEL LAYOUT ON SHEET 2.



CURB FACE ASSEMBLY

◆ PLACE ENTIRE ASSEMBLY BEFORE POURING CONCRETE.

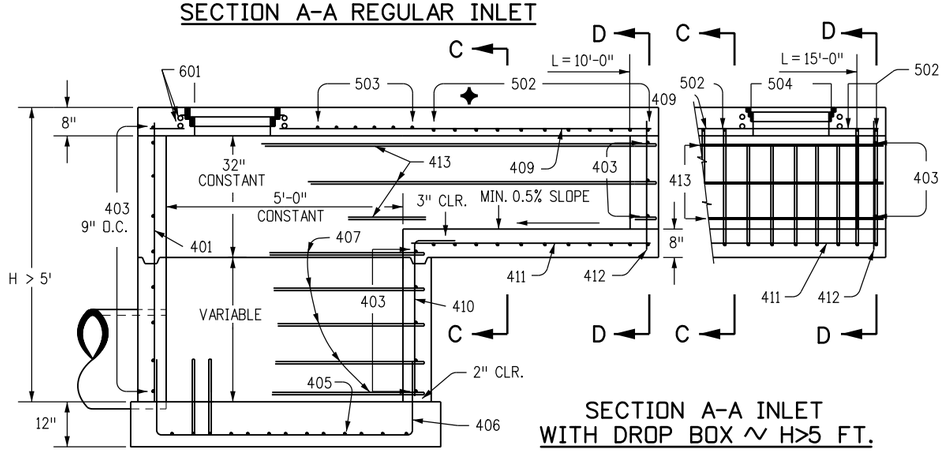
▲ - FOR A 1'-0" PAN SLOPE 2" PER FT.



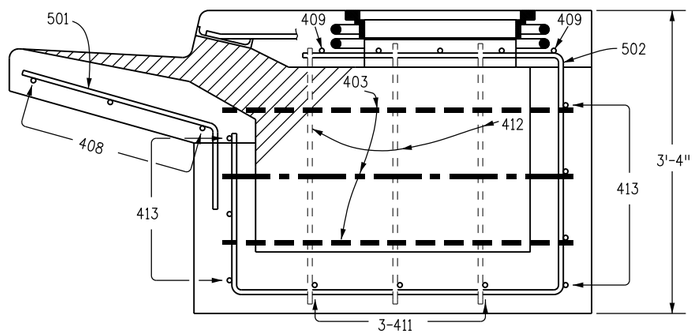
SECTION B-B END VIEW

✳✳ A 2 IN. DIAMETER TEMPORARY HOLE FOR DRAINAGE SHALL BE PLACED AT SUBGRADE ELEVATION OR A MINIMUM THREE INCHES BELOW ROAD BASE. THE HOLE SHALL BE PLUGGED WITH CONCRETE BEFORE ACCEPTANCE OF THE INLET.

NOTE: MANHOLE RING AND COVER, STATION POINT AND OUTFLOW PIPE SHALL BE LOCATED AT THE SAME END OF THE INLET.



SECTION A-A INLET WITH DROP BOX ~ H>5 FT.



SECTIONS C-C & D-D (DOTTED BARS ARE IN SECTION D-D)

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CURB INLET TYPE R

Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.
M-604-12
Standard Sheet No. 1 of 2
Project Sheet Number: 181

MARK	BAR # OR SIZE	O.C. SPACING	TYPE	ALL INLETS L = 5 FT.		INLETS: H ≤ 5 FT. L = 10 FT.		INLETS: H ≤ 5 FT. L = 15 FT.		INLETS: H > 5 FT. L = 10 FT.		INLETS: H > 5 FT. L = 15 FT.	
				NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH
401	4	11"	II	15	*	21	*	26	*	11	*	11	*
402	4	11"	II	7	*	13	*	18	*	7	*	7	*
403	4	9"	II	*	4'-0"	*	4'-0"	*	4'-0"	*	4'-0"	*	4'-0"
405	4	6"	VI	11	6'-10"	21	6'-10"	31	6'-10"	11	6'-10"	11	6'-10"
406	4	6"	VIII	7	8'-10"	7	13'-10"	7	18'-10"	7	8'-10"	7	8'-10"
407	4	9"	II	*	5'-10"	*	10'-10"	*	15'-10"	*	5'-10"	*	5'-10"
408	4	12"	II	3	6'-10"	3	11'-10"	3	16'-0"	3	11'-10"	3	16'-0"
409	4	8"	II	6	5'-10"	6	10'-10"	6	15'-10"	6	10'-10"	6	15'-10"
410	4	11"	VII							3		3	*
411	4	11"	II							3	5'-2"	3	10-2"
412	4	11"	II							3	2'-9"	3	2'-9"
413	4	9"	II							7	10'-10"	7	15'-10"
501	5	5½"	IV	11	3'-4"	22	3'-4"	33	3'-4"	22	3'-4"	33	3'-4"
502	5	5½"	III							11	11'-5"	17	11'-5"
503	5	5½"	II	5	3'-6"	16	3'-6"	27	3'-6"	6	3'-6"	6	3'-6"
504	5	5½"	IX									5	8'-4"
601	6	2½"	V	2	8'-10"	2	8'-10"	2	8'-10"	2	8'-10"	4	8'-10"
■8[8.5				1	5'-10"	1	10'-10"	1	15'-10"	1	10'-10"	1	15'-10"
				2 BARS, 1 RODS	——	4 BARS, 3 RODS	——	8 BARS, 5 RODS	——	4 BARS, 3 RODS	——	8 BARS, 5 RODS	——

* VARIABLE REFER TO TABLE TWO.

■ INCLUDE #4, 18 IN. BARS (SEE CHANNEL LAYOUT).

REGULAR INLETS

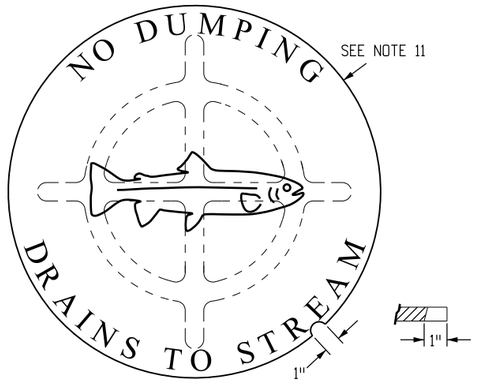
DROP BOX INLETS

TABLE ONE ~ BAR LIST FOR CURB INLETS, TYPE "R"

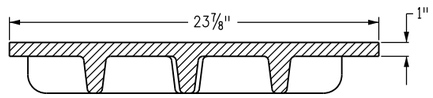
"H"	LENGTH 401	LENGTH 402	LENGTH 410	NO. REQ'D. REGULAR 403	NO. REQ'D. REGULAR 407	NO. REQ'D. DROP BOX 403	NO. REQ'D. DROP BOX 407	L = 5 FT. CONC. CU. YDS.	L = 5 FT. STEEL LBS.	L = 10 FT. CONC. CU. YDS.	L = 10 FT. STEEL LBS.	L = 15 FT. CONC. CU. YDS.	L = 15 FT. STEEL LBS.
3'-0"	2'-8"	1'-8"		10	7			3.2	285	5.3	497	7.4	706
3'-6"	3'-2"	2'-2"		10	7			3.4	305	5.7	528	7.9	747
4'-0"	3'-8"	2'-8"		12	9			3.7	326	6.0	559	8.4	786
4'-6"	4'-2"	3'-2"		12	9			3.9	334	6.4	571	8.8	803
5'-0"	4'-8"	3'-8"		14	11			4.1	354	6.7	602	9.3	844
5'-6"	5'-2"	4'-2"	3'-5"	16	13	15	6	4.4	375	6.0	607	7.4	850
6'-0"	5'-8"	4'-8"	3'-11"	16	13	16	6	4.6	382	6.2	616	7.6	860
6'-6"	6'-2"	5'-2"	4'-5"	18	15	18	8	4.8	402	6.4	637	7.8	880
7'-0"	6'-8"	5'-8"	4'-11"	20	17	19	10	5.0	423	6.6	654	8.0	897
7'-6"	7'-2"	6-2"	5'-5"	20	17	20	10	5.3	430	6.9	664	8.3	907
8'-0"	7'-8"	6'-8"	5'-11"	22	19	22	12	5.5	451	7.1	684	8.5	927
8'-6"	8'-2"	7'-2"	6'-5"	24	21	23	14	5.7	471	7.3	702	8.7	944
9'-0"	8'-8"	7'-8"	6'-11"	24	21	24	14	6.0	479	7.6	711	9.0	954
9'-6"	9'-2"	8'-2"	7'-5"	26	23	26	16	6.2	499	7.8	732	9.2	974
10'-0"	9'-8"	8'-8"	7'-11"	28	25	27	18	6.4	520	8.0	749	9.4	992
10'-6"	10'-2"	9'-2"	8'-5"	28	25	28	18	6.7	527	8.3	759	9.7	1001
11'-0"	10'-8"	9'-8"	8'-11"	30	27	30	20	6.9	547	8.5	779	9.9	1022

NOTES: FOR L = 5 FT., L = 10 FT., AND L = 15 FT.
REGULAR INLETS: TOTAL QUANTITIES NEEDED ARE OUTSIDE THE HEAVY BLACK LINE.
DROP BOX INLETS: TOTAL QUANTITIES NEEDED ARE INSIDE THE HEAVY BLACK LINE.
STEEL WEIGHTS DO NOT INCLUDE STRUCTURAL STEEL CHANNEL.

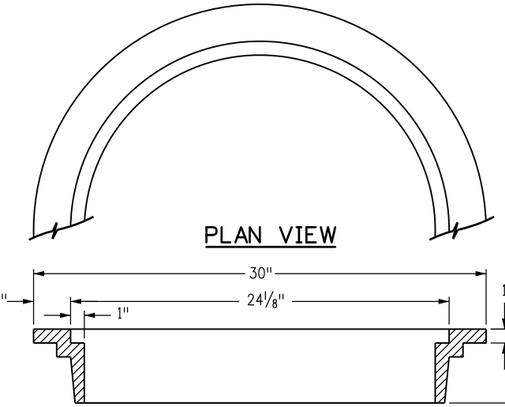
TABLE TWO ~ BARS AND QUANTITIES VARIABLE WITH "H"



PLAN VIEW



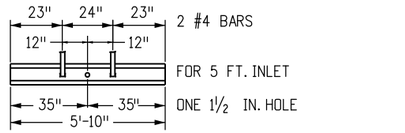
ELEVATION VIEW
MANHOLE COVER (TYP.)

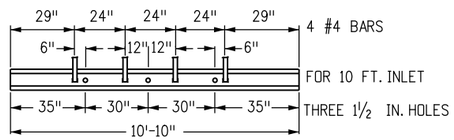


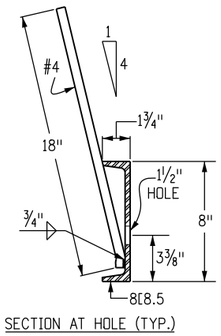
PLAN VIEW

ELEVATION VIEW
MANHOLE RING (TYP.)

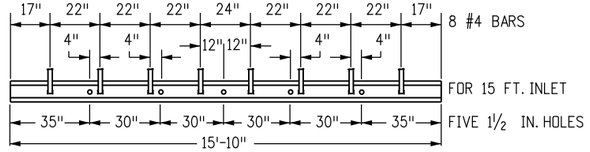
WEIGHTS: COVER = 125 LBS.
+ RING = 135 LBS.
TOTAL = 260 LBS.





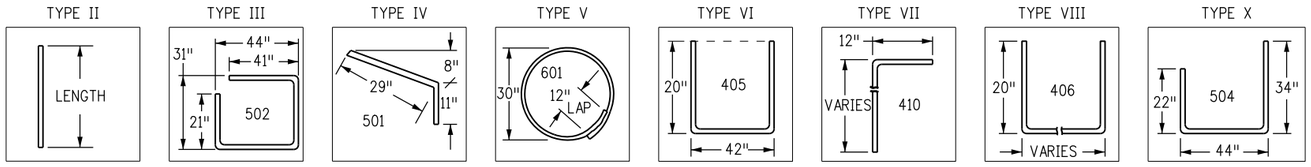


SECTION AT HOLE (TYP.)



CHANNEL LAYOUT DETAILS

SEE CURB FACE ASSEMBLY ON SHEET 1.



BAR BENDING DIAGRAMS ~ (DIMENSIONS ARE OUT-TO-OUT OF BAR)

GENERAL NOTES

1. CONCRETE SHALL BE CLASS B. INLET MAY BE CAST-IN-PLACE OR PRECAST.
2. CONCRETE WALLS SHALL BE FORMED ON BOTH SIDES AND SHALL BE 8 INCHES THICK.
3. INLET STEPS SHALL BE IN CONFORMANCE WITH AASHTO M 199.
4. CURB FACE ASSEMBLY SHALL BE GALVANIZED AFTER WELDING.
5. EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED ¾ OF A INCH. CURB AND GUTTER CORNERS SHALL BE FINISHED TO MATCH THE EXISTING CURB AND GUTTER BEYOND THE TRANSITION GUTTER.
6. REINFORCING BARS SHALL BE DEFORMED AND SHALL HAVE A 2 INCH MINIMUM CLEARANCE. ALL REINFORCING BARS SHALL BE GRADE 60 AND EPOXY COATED.
7. DIMENSIONS AND WEIGHTS OF TYPICAL MANHOLE RING AND COVER ARE NOMINAL.
8. MATERIAL FOR MANHOLE RINGS AND COVERS SHALL BE GRAY OR DUCTILE CAST IRON IN ACCORDANCE WITH SUBSECTION 712.06.
9. SINCE PIPE ENTRIES INTO THE INLET ARE VARIABLE, THE DIMENSIONS SHOWN ARE TYPICAL. ACTUAL DIMENSIONS AND QUANTITIES FOR CONCRETE AND REINFORCEMENT SHALL BE AS REQUIRED IN THE WORK. QUANTITIES INCLUDE VOLUMES OCCUPIED BY PIPES.
10. STRUCTURAL STEEL SHALL BE GALVANIZED AND SHALL BE IN ACCORDANCE WITH SUBSECTION 712.06.
11. ALL MANHOLE COVERS SHALL BE CAST WITH A "NO DUMPING DRAINS TO STREAM" MESSAGE AND A FISH SYMBOL. THE SURFACE OF THE MANHOLE COVER SHALL HAVE A NON-SLIP PATTERN.

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CURB INLET TYPE R

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STANDARD PLAN NO.
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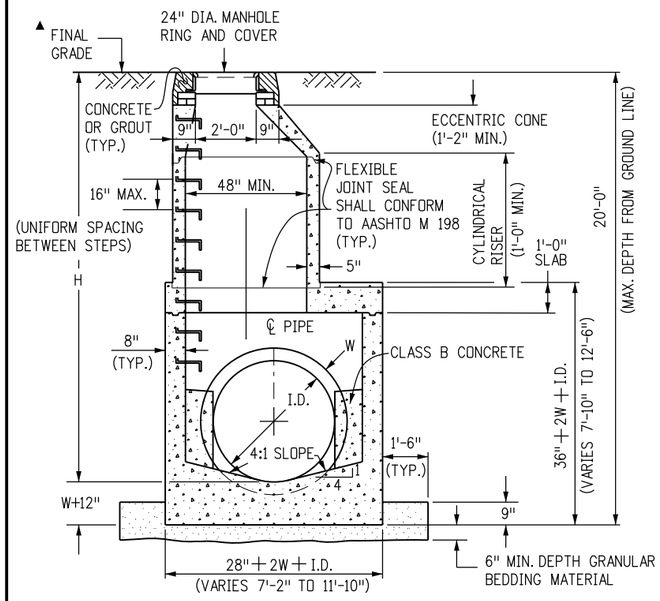
Project Sheet Number: 182



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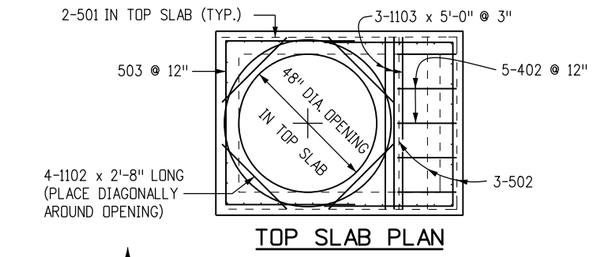
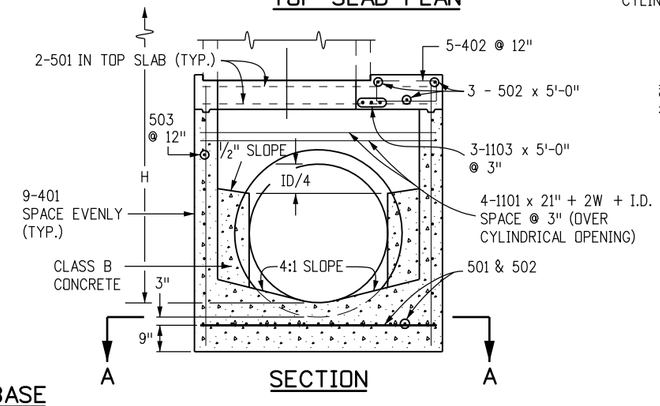


TOP SLAB PLAN



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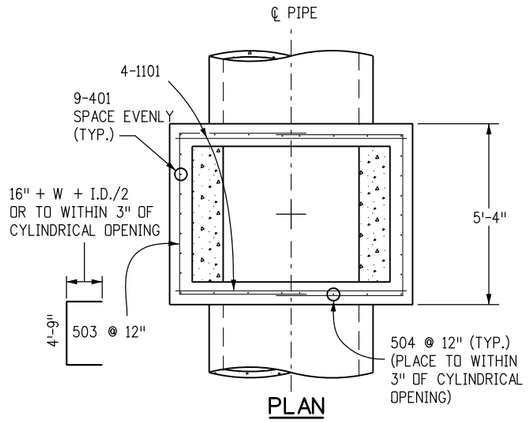
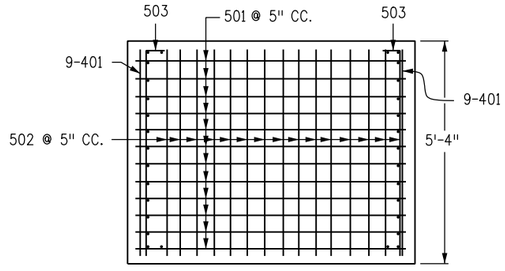


PLAN



SECTION A-A
(STEEL IN BOTTOM OF BASE)

GENERAL NOTES

1. SINCE ALL PIPE ENTRIES INTO THE BASE ARE VARIABLE, THE DIMENSIONS SHOWN ARE TYPICAL. ACTUAL DIMENSIONS AND QUANTITIES FOR CONCRETE AND REINFORCEMENT SHALL BE AS REQUIRED IN THE WORK.
2. THE PRECAST FLAT TOP MAY BE USED ON ANY MANHOLE. THE ECCENTRIC CONE MAY BE USED WHEN THE MANHOLE "H" HEIGHT IS AT LEAST 8 FT.
3. THE MANHOLE RING FRAME SHALL BE SET IN A BED OF GROUT. THE FRAME SHALL BE SURROUNDED WITH A CEMENT GROUT IN UNPAVED AREA, OR A CONCRETE COLLAR IN PAVED AREA. SEE DETAILS ON SHEETS 2 AND 3.
4. DESIGN OF BOX BASE IS BASED ON STRAIGHT RUNS OF PIPE OR CHANGE IN DIRECTION OF LESS THAN 45°. SPECIAL DESIGN IS REQUIRED FOR 45° OR GREATER.
5. PRECAST MANHOLES AND REINFORCEMENT SHALL CONFORM TO AASHTO M 199 (ASTM C 478).
6. CAST-IN-PLACE MANHOLES SHALL BE CLASS B CONCRETE.
7. STEPS SHALL BE REQUIRED WHEN THE MANHOLE DEPTH EXCEEDS 3 FT.-6 IN. AND SHALL CONFORM TO AASHTO M 199.
8. ALL REINFORCING STEEL SHALL BE GRADE 60 AND EPOXY COATED. VERTICAL STEEL SHALL BE PLACED AT CENTERLINE OF WALL. ALL BARS SHALL HAVE A 2 IN. MINIMUM CLEARANCE.
9. ALL PIPE ENTRIES INTO THE BASE OF MANHOLE SHALL BE CONNECTED BY OPEN CHANNELIZATION ADJUSTED FOR PIPE SIZE, SHAPE, SLOPE, AND DIRECTION OF FLOW. DETAILS SHOWN ARE TYPICAL FOR INSTALLATIONS WITH ALL INVERTS OF SAME RELATIVE ELEVATION. FOR EXCESSIVE ELEVATION DIFFERENCE BETWEEN INVERTS, SPECIAL BASE/CHANNEL DETAILS WILL BE SHOWN ON THE PLANS.
10. FLOW CHANNELS AND INVERTS SHALL BE FORMED BY SHAPING WITH CLASS B CONCRETE OR APPROVED GROUT.
11. STUB-OUTS SHALL EXTEND 2 FT. MINIMUM BEYOND OUTSIDE WALL SURFACE OF MANHOLE AND BE SATISFACTORILY PLUGGED.
12. THE SLOPE OF THE MANHOLE COVER SHALL MATCH THE ROADWAY PROFILE AND CROSS SLOPE.

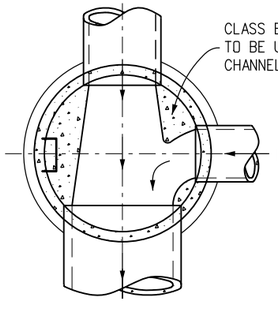
▲ WHEN FINAL GRADE IS PAVEMENT SURFACE, RECESS MANHOLE RING AND COVER 1/4" MIN. TO 1/2" MAX.

MAHHOLE BOX BASE

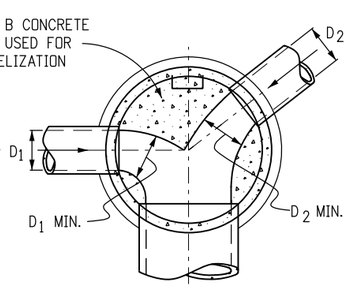
MARK	SIZE	TYPE	WT. #/FT.	BARS	I.D. 54"	60"	66"	72"	84"	96"	FORMULAS
401	4	I	0.668	NO. REQ'D.	18	18	18	18	18	18	401
				LENGTH	8'-1"	8'-8"	9'-3"	9'-10"	11'-0"	12'-2"	BAR LENGTH = 32" + 2W + I.D.
				WEIGHT *	97.2	104.2	111.2	118.2	132.3	146.3	
402	4	III	0.668	NO. REQ'D.	5	5	5	5	5	5	402
				LENGTH	5'-5"	6'-0"	6'-7"	7'-2"	8'-4"	9'-6"	BAR LENGTH = I.D. + 2W
				WEIGHT *	18.1	20.0	22.0	23.9	27.8	31.7	
501	5	I	1.043	NO. REQ'D.	17	17	17	17	17	17	501
				LENGTH	7'-5"	8'-0"	8'-7"	9'-2"	10'-4"	11'-6"	BAR LENGTH = 24" + I.D. + 2W
				WEIGHT *	131.5	141.8	152.2	162.5	183.2	203.9	
502	5	I	1.043	NO. REQ'D.	22	23	25	26	29	32	502
				LENGTH	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	NUMBER BARS REQ'D. = 3 + $\left(\frac{24+I.D.+2W}{@\ 5"}+1\right)$
				WEIGHT *	114.7	119.9	130.4	135.6	151.2	166.9	
503	5	II	1.043	NO. REQ'D.	16	16	18	18	20	24	503
				LENGTH	12'-10"	13'-5"	14'-0"	14'-7"	15'-9"	16'-11"	NUMBER BARS REQ'D. = $2\left(\frac{13+I.D.+2W}{@\ 12"}+1\right)$
				WEIGHT *	214.2	223.9	262.8	273.8	328.5	423.5	BAR LENGTH = 4'-9"+2(16+W+I.D./2)
504	5	I	1.043	NO. REQ'D.	12	14	14	16	18	20	504
				LENGTH	8'-1"	8'-8"	9'-3"	9'-10"	11'-0"	12'-2"	NUMBER BARS REQ'D. = $2\left(\frac{2W+I.D.-4}{@\ 12"}+1\right)$
				WEIGHT *	101.2	126.6	135.1	164.1	206.5	253.8	BAR LENGTH = 32"+2W+I.D.
1101	11	I	5.313	NO. REQ'D.	4	4	4	4	4	4	1101
				LENGTH	7'-2"	7'-9"	8'-4"	8'-11"	10'-1"	11'-3"	BAR LENGTH = 21" + I.D. + 2W
				WEIGHT *	152.3	164.7	177.1	189.5	214.3	239.1	
1102	11	I	5.313	NO. REQ'D.	4	4	4	4	4	4	BENDING
				LENGTH	2'-8"	2'-8"	2'-8"	2'-8"	2'-8"	2'-8"	TYPE I STRAIGHT
				WEIGHT *	56.7	56.7	56.7	56.7	56.7	56.7	
1103	11	I	5.313	NO. REQ'D.	3	3	3	3	3	3	TYPE II 4'-9", 16"+W+I.D./2
				LENGTH	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	
				WEIGHT *	79.7	79.7	79.7	79.7	79.7	79.7	TYPE III 12", 12", 7", I.D.+2W-38"
* REINFORCING STEEL TOTAL					965.6	1,037.5	1,127.2	1,204.0	1,380.2	1,601.6	
CONCRETE - CUBIC YARDS - TOTAL					6.0	6.6	7.3	8.0	9.5	11.1	

NOTE: QUANTITIES ARE BASED ON SAME SIZE PIPE ENTRANCE TO AND EXIT FROM, BASE AND A 4 FT. MANHOLE ENTRANCE INTO TOP SLAB OF BASE.

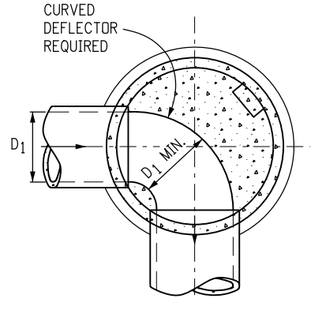
QUANTITIES FOR CONCRETE MANHOLE BOX BASE



THROUGH PIPE ONE LATERAL



ANGLED LATERALS



SHARP ANGLE

TYPICAL CHANNELIZATION DETAILS

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MANHOLES

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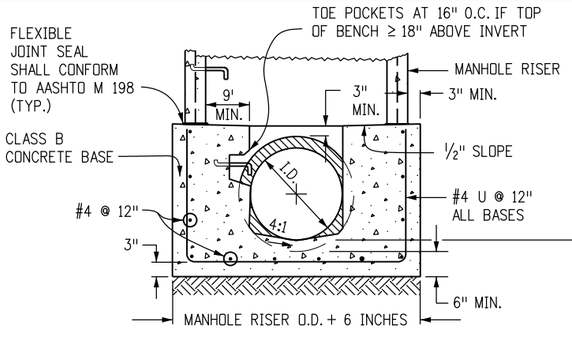
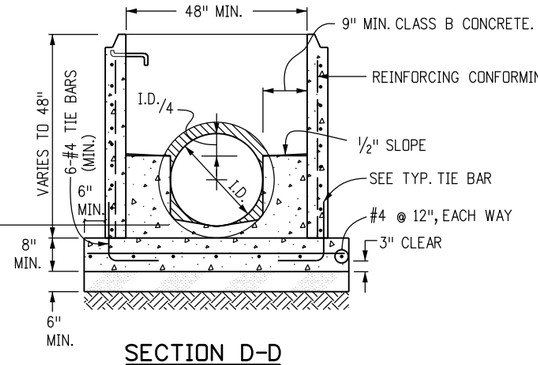


SECTION B-B



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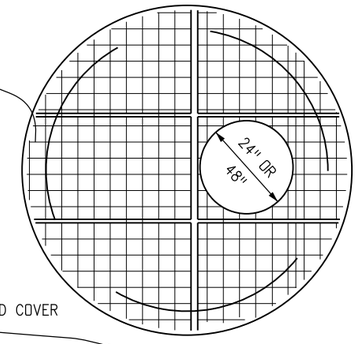
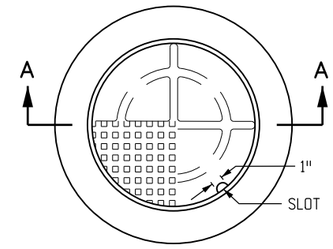
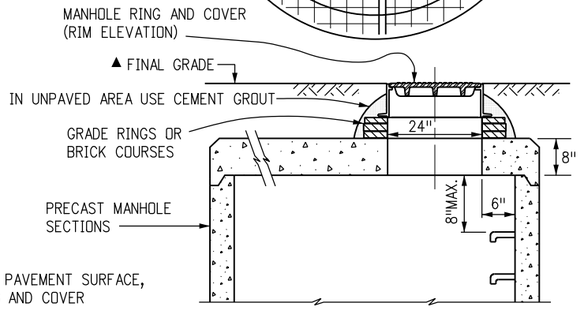
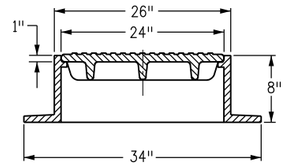






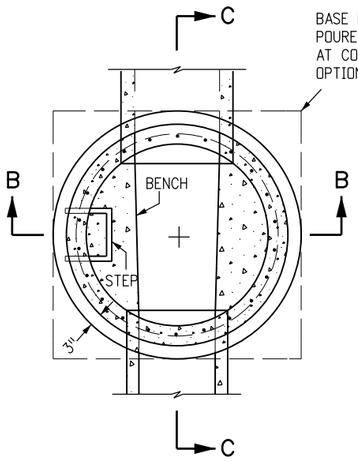
▲ WHEN FINAL GRADE IS PAVEMENT SURFACE, RECESS MANHOLE RING AND COVER ¼" MIN. TO ½" MAX.

FLAT TOP SECTION DETAIL

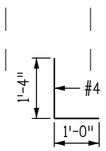


TOTAL WEIGHT: APPROXIMATELY 400 LBS. SHALL BE GRAY OR DUCTILE CAST IRON IN ACCORDANCE WITH SUBSECTION 712.06.

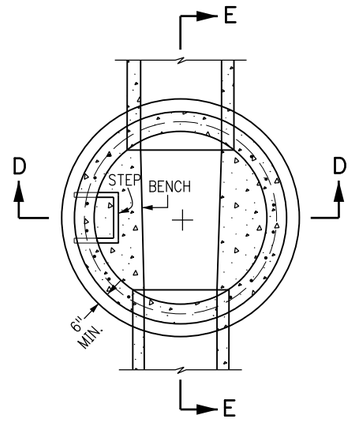
SECTION A-A
MANHOLE RING AND COVER



PLAN



TYPICAL TIE BAR



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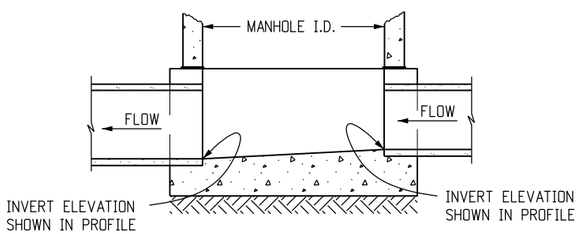
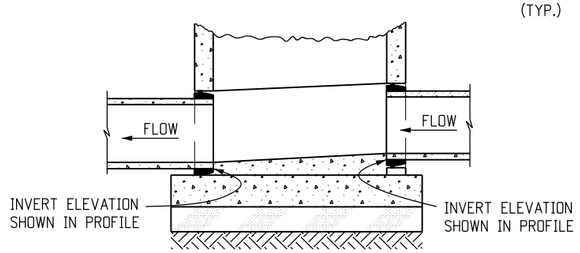
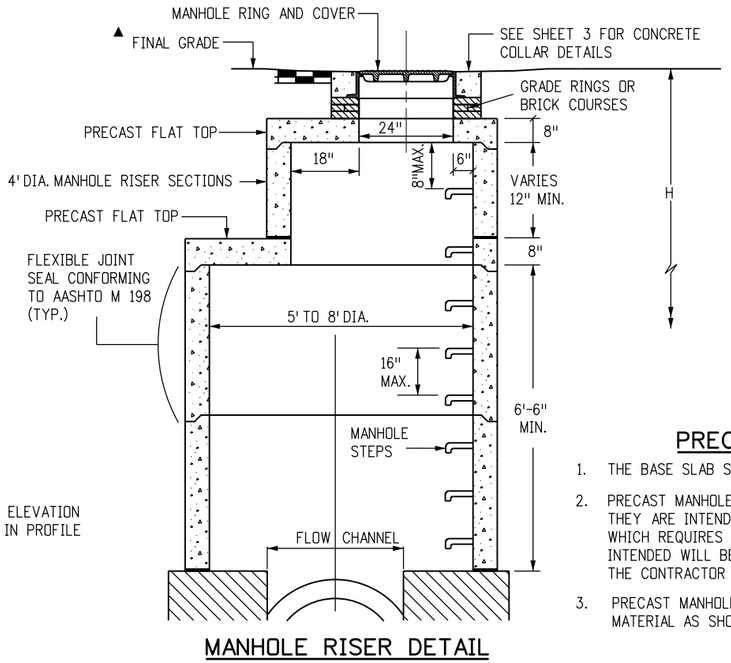


SECTION C-C
CAST-IN-PLACE SLAB BASE



SECTION E-E
PRECAST SLAB BASE



MANHOLE RISER DETAIL

LEGEND

- SUITABLE SUBGRADE
- GRANULAR BEDDING MATERIAL
- CONCRETE

PRECAST MANHOLE BASES NOTES:

1. THE BASE SLAB SHALL BE POURED MONOLITHICALLY WITH BOTTOM RISER SECTION.
2. PRECAST MANHOLE BASES SHALL FIT THE CONDITIONS AND LOCATIONS FOR WHICH THEY ARE INTENDED WITHOUT ANY FIELD MODIFICATIONS. ANY MANHOLE BASE WHICH REQUIRES FIELD CUTTING OR MODIFICATION IN ORDER TO FIT THE LOCATIONS INTENDED WILL BE REJECTED BY THE ENGINEER AND REMOVED AND REPLACED BY THE CONTRACTOR AT NO COST TO THE DEPARTMENT.
3. PRECAST MANHOLE BASES SHALL BE BEDDED ON AN APPROVED GRANULAR BEDDING MATERIAL AS SHOWN ABOVE.

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MANHOLES

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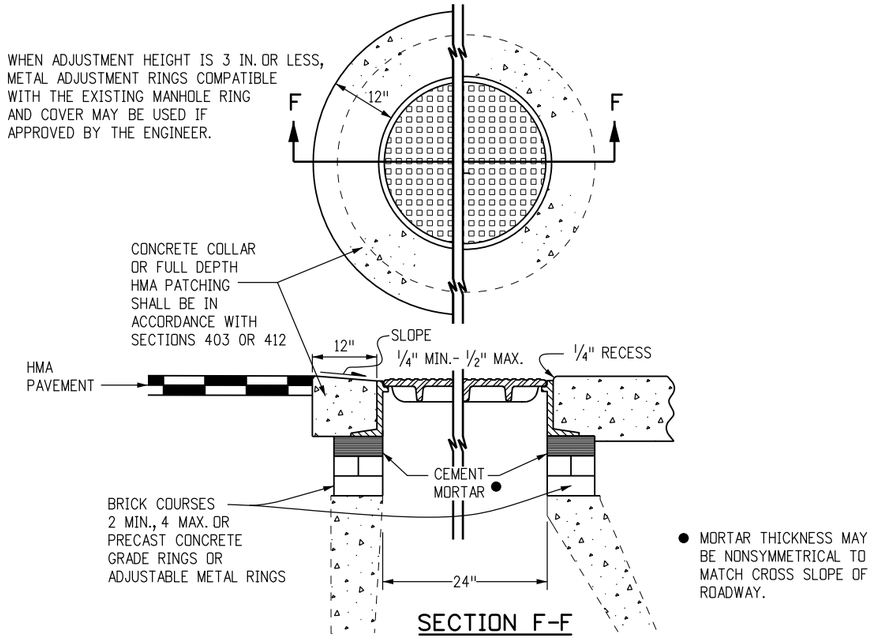
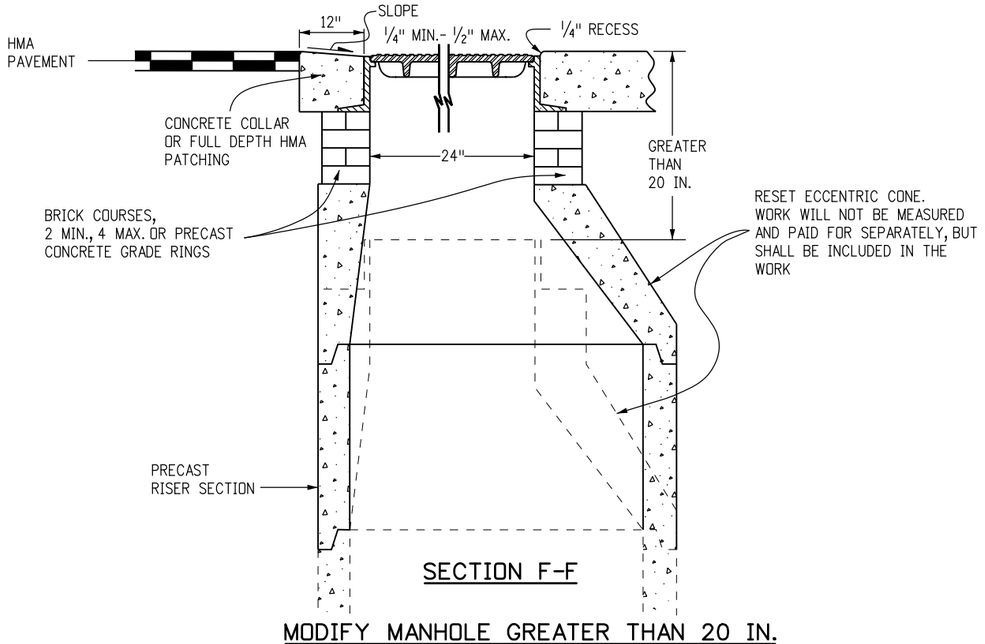
Project Sheet Number: 184



SECTION F-F

ADJUST MANHOLE 20 IN. OR LESS

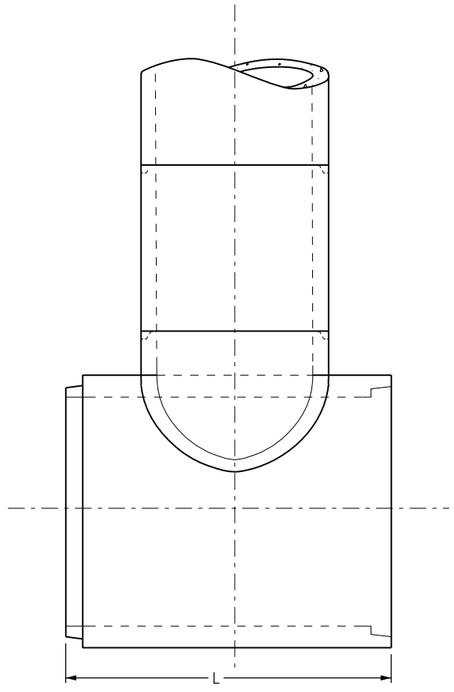


SECTION F-F

MODIFY MANHOLE GREATER THAN 20 IN.

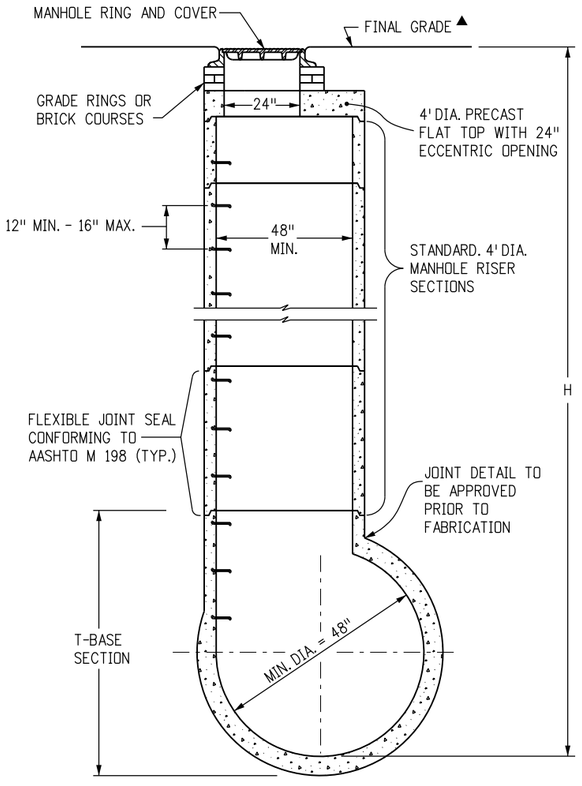
T-BASE MANHOLES NOTES

1. THE T-BASE SECTION SHALL BE SHOP-FABRICATED FOR DELIVERY TO THE CONSTRUCTION SITE AS A COMPLETE UNIT.
2. THESE DETAILS SHOW ONLY THE CONCEPTUAL AND STANDARD DIMENSIONAL REQUIREMENTS FOR TYPE T-BASE MANHOLES. THE CONTRACTOR SHALL FURNISH DETAILED SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION. THE DETAILS SHOWN HEREIN APPLY ONLY TO 48 IN. AND GREATER DIAMETER PIPES.
3. EXCEPT FOR CLASS OF PIPE, SPECIFICATIONS FOR THE MANHOLE SHALL BE THE SAME AS THOSE REQUIRED FOR THE ADJOINING PIPE.
4. THE T-BASE SECTION SHALL MAINTAIN ITS INTERNAL SHAPE AND FLOW AREA. GROUTING OR FILLING SHALL BE APPLIED SO AS TO NOT DISTURB THE NORMAL FLOW OR REDUCE THE AREA.



CIRCULAR RIGID PIPE (LONGITUDINAL SECTION)

▲ WHEN FINAL GRADE IS PAVEMENT SURFACE, RECESS MANHOLE RING AND COVER 1/4" MIN. TO 1/2" MAX.



CIRCULAR RIGID PIPE (TRANSVERSE SECTION)

MANHOLE T-BASE

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MANHOLES

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GENERAL NOTES

1. ALL MATERIAL DIMENSIONS AND WEIGHTS ON THIS STANDARD ARE NOMINAL UNLESS OTHERWISE INDICATED.

2. AT EACH LOCATION WHERE AN ELECTRIC TRANSMISSION, DISTRIBUTION OR SECONDARY LINE CROSSES A WOOD POST FENCE, THE CONTRACTOR SHALL FURNISH AND INSTALL A GROUND CONFORMING TO ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE. THE GROUND ROD SHALL BE A MINIMUM DIAMETER OF 1/2 IN. AND 8 FT. IN LENGTH, AND DRIVEN AT LEAST 7 1/2 FT. INTO THE GROUND. THE ROD SHALL BE CONNECTED TO EACH WIRE WITH A MINIMUM AWG NO. 8 STRANDED COPPER WIRE. GROUNDING WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.

   A METAL LINE POST SHALL BE INSTALLED A MAXIMUM OF EVERY 500 FT. ALONG A WOOD POST FENCE. THE METAL POST SHALL BE WITHIN 1 FT. OF THE NEAREST WOOD POST, AND SHALL BE TIED TO EACH STRAND WITH A WIRE CLAMP.

3. DIMENSIONS SHOWN FOR "STANDARD" AND "ALTERNATIVE" APPLY FOR BOTH WOOD AND METAL POST FENCE.

4. FENCE WIRE SHALL BE ENDED, DOUBLE WRAPPED AND TIED OFF AT END POSTS, ANGLE POSTS AND LINE BRACE POSTS. FENCE TO BE CONTINUED SHALL THEN BE RESTARTED IN THE SAME MANNER.

5. FENCE WIRE SHALL BE PLACED ON EITHER ROAD OR FIELD SIDE OF POSTS, DEPENDING ON LOCAL CONDITIONS, i.e. ON CURVES, THE WIRE SHALL BE PLACED ON THE SIDE OF THE POST WHICH WILL RESULT IN THE LEAST TENSION ON FENCE TIES. THIS WILL ALSO APPLY WHERE WIND DRIFT, TUMBLE WEEDS OR OTHER CONDITIONS WOULD EXERT UNUSUAL PRESSURE AGAINST THE WIRE. WHERE POSSIBLE, WIRE SHOULD BE PLACED ON THE LIVESTOCK SIDE OF THE POSTS.

6. WHERE STEEL POSTS ARE SPECIFIED, EVERY FIFTH POST SHALL BE WOOD, WHEN SPECIFIED ON THE PLANS.

7. RIGHT OF WAY FENCES SHALL BE CONSTRUCTED APPROXIMATELY 6 IN. INSIDE THE BOUNDARY OF THE RIGHT OF WAY AS SHOWN ON THE PLANS, OR AS STAKED.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RE-ESTABLISHING DISTURBED OR DESTROYED SURVEY MONUMENTS TO THE APPROPRIATE ACCURACY IN ACCORDANCE WITH SUBSECTION 625.08 OF THE STANDARD SPECIFICATIONS.

WOOD POSTS:

ALL LINE POSTS SHALL HAVE A MINIMUM DIAMETER OF 4 IN. AND BE A MINIMUM OF 6 FT.-0 IN. LONG.

ALL END, CORNER, INTERSECTION AND BRACE POSTS SHALL HAVE A MINIMUM DIAMETER OF 5 IN. AND BE 7 FT. IN LENGTH.

WOOD POSTS HAVING NONUNIFORM CROSS SECTION SHALL BE SET WITH THE LARGER DIAMETER END IN THE GROUND.

FENCE WIRE SHALL BE STAPLED TO WOOD POSTS OR TIED TO METAL POSTS AS SHOWN MARKED ✚ ON BARBED WIRE OR COMBINATION WIRE FENCE DETAILS. STAPLES SHALL BE NO. 9 WIRE MINIMUM, AND AT LEAST 1 1/2 IN. LONG.

METAL POSTS:

ALL POSTS AND BRACES SHALL BE THE TYPES AND WEIGHTS SHOWN OR ACCEPTABLE EQUIVALENTS, AND SHALL BE IN ACCORDANCE WITH AASHTO M 281. HOLES SHALL BE PROVIDED IN END, CORNER, AND GATE POSTS AS DETAILED.

CORNER AND LINE BRACE POSTS:

TYPE: 2 1/2 IN. x 2 1/2 IN. x 1/4 IN. STRUCTURAL STEEL ANGLES
WEIGHT: 4.10 LBS./LIN. FT.
LENGTH: 6 FT.-6 IN. MIN.
NUMBER OF BRACES: TWO

LINE POSTS:

TYPE: "STUDDED TEE" OR "U"
WEIGHT: 1.33 LBS./LIN. FT. (WITHOUT ANCHOR)
LENGTH: 6 FT.-0 IN. MINIMUM
ANCHOR: SECURELY FASTENED, WITH BEARING SURFACE SUFFICIENT TO RESIST MOVEMENT OF POST. WEIGHT: 0.67 LB.

METAL END POSTS AND GATE POSTS:

TYPE: 2 1/2 IN. x 2 1/2 IN. x 1/4 IN. STRUCTURAL STEEL ANGLES
WEIGHT: 4.10 LBS./LIN. FT.
NUMBER OF BRACES: ONE
LENGTH: END, 6 FT.-6 IN. MINIMUM. PANEL GATE, 7 FT.-0 IN. MINIMUM.

BRACES: (FOR CORNER, END OR LINE BRACE POSTS)

TYPE: 2 IN. x 2 IN. x 1/4 IN. STRUCTURAL STEEL ANGLES
WEIGHT: 3.19 LBS./LIN. FT.
LENGTH: SAME AS CORNER AND END POSTS USED.

FOOTINGS OR BASES:

CONCRETE SHALL BE CLASS B.
CONCRETE WITH LIGHTWEIGHT AGGREGATES CONFORMING TO AASHTO M 195 (ASTM C 330) WILL BE PERMITTED.

ALTERNATIVES: (CONTRACTOR'S OPTION)

END, CORNER AND LINE BRACE POSTS

TYPE	I.D.	O.D.	WEIGHT	WALL THICKNESS
	INCHES	INCHES	LB/FT.	INCHES
1. STD. GALV. PIPE	2 1/2	2 7/8	5.79 ± 5%	0.203
2. H.S. COLD ROLLED PIPE	2 1/2	2 7/8 ± 0.16	4.64 ± 5%	0.160 ± 5%

LENGTHS SHALL BE 6 FT.-6 IN. MINIMUM

BRACES:

TYPE: 1 3/8 IN. O.D. TUBULAR STEEL WITH 2 1/2 IN. BRACE BAND, HINGE BOLT AND 1 3/8 IN. I.D. RAIL END; ALL GALVANIZED.
WEIGHT: 16 LBS/LIN. FT. ± 5%
LENGTH: 6 FT.-6 IN. MINIMUM.

BARBED WIRE:

ZINC-COATED STEEL BARBED WIRE SHALL CONFORM TO AASHTO M 280, (ASTM A 121), 12-1/2 GAGE WITH CLASS 1 COATING, OR ALUMINUM-COATED STEEL BARBED WIRE CONFORMING TO ASTM A 585 TYPE 1.

WOVEN WIRE MESH:

WOVEN WIRE USED IN COMBINATION WIRE FENCE SHALL BE GALVANIZED AND CONFORM TO AASHTO M 279, (ASTM A 116) COATING CLASS 1, AND THE FOLLOWING:

STANDARD WOVEN WIRE FIELD FENCE, STYLE OR DESIGN NO.	ALTERNATIVE 4 IN. X 4 IN. WIRE "V" MESH
832-6-11* 32 IN. WIDTH 0.65 LBS/LIN.FT.	34 IN. WIDTH - 0.75 LBS/LIN.FT.
726-6-11* 26 IN. WIDTH 0.55 LBS/LIN.FT.	26 IN. WIDTH - 0.54 LBS/LIN.FT.
	CROSS WIRES-1 STRAND-14-1/2 GAGE MIN. HORIZONTAL-2 STRAND-12-1/2 GAGE

* 12-1/2 GAGE WOVEN WIRE FENCE FABRIC (832-6-12-1/2 OR 726-6-12-1/2) MAY BE USED WHEN SPECIFIED IN THE CONTRACT.

ALL FENCE WIRE TIES, CLIPS, CLAMPS, STAPLES AND OTHER WIRE APPURTENANCES SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 232.

DRIVEWAY GATES (SINGLE):

HEIGHT: 42 IN.
WEIGHT: NOT LESS THAN 90 LBS. COMPLETE WITH LATCH AND HINGES.
WIDTH OF GATE OPENING: 16 FT.-0 IN. MINIMUM TO 20 FT.-0 IN. MAXIMUM.
GATE FRAME: 1 IN. I.D. STANDARD GALVANIZED PIPE OR ACCEPTABLE EQUIVALENT AND SHALL BE OF ALL WELDED CONSTRUCTION.

WOVEN WIRE SHALL ENCLOSE THE GATE FRAME AS SHOWN AND SHALL BE THE SAME WOVEN WIRE DESIGN AS THE FENCE, OR AS APPROVED BY THE ENGINEER.

ALTERNATIVE DRIVEWAY GATES (SINGLE PANEL):

WEIGHT: GALVANIZED STEEL, 75 LBS.
HEIGHT: APPROXIMATELY 42 IN. (5 PANELS),
WIDTH OF GATE OPENING: 16 FT.-0 IN. MINIMUM TO 20 FT.-0 IN. MAXIMUM.

GATES SHALL BE OF RIVETED CONSTRUCTION AS FOLLOWS:
MINIMUM FOUR NO. 10 RIVETS AT EACH RIGHT ANGLE CONNECTION AND WHERE DIAGONAL BRACES CONNECT TO HORIZONTAL PANELS.

MINIMUM THREE NO. 10 RIVETS WHERE DIAGONAL BRACES CONNECT TO TOP AND BOTTOM PANELS.

WALK GATES:

HEIGHT: APPROXIMATELY 42 IN. (5 PANELS)
WEIGHT: GALVANIZED STEEL, 16 LBS.; TEMPERED ALUMINUM, 10 LBS.
WIDTH OF GATE OPENING: 3 FT.-0 IN. MINIMUM.

ALTERNATIVE WALK GATES:

HEIGHT: 42 IN.
WEIGHT: NOT LESS THAN 18 LBS. COMPLETE WITH LATCH AND HINGES.
WIDTH OF GATE OPENING: 3 FT.-0 IN. MINIMUM.
GATE FRAME: 3/4 IN. I.D. STANDARD GALVANIZED PIPE OR ACCEPTABLE EQUIVALENT AND SHALL BE OF ALL-WELDED CONSTRUCTION.

WOVEN WIRE SHALL BE OF THE SAME CONSTRUCTION DESIGNATED FOR DRIVEWAY GATE.

ALTERNATIVE EQUIVALENT STANDARD METAL GATES OTHER THAN SHOWN WILL BE ACCEPTABLE SUBJECT TO THE ENGINEER'S APPROVAL.

IN LIEU OF GALVANIZED FINISH ON GATE FRAMES, CADMIUM-PLATED PIPE OR ALUMINUM PAINTING WILL BE ACCEPTED.

LATCHES AND HINGES:

GALVANIZED STEEL OR ALUMINUM OF STANDARD MANUFACTURE. HINGES SHALL BE PLACED AS SHOWN TO PREVENT THEFT.

IN LIEU OF STANDARD MAKE LATCHES, THE CONTRACTOR MAY USE AN ELECTRO-GALVANIZED CHAIN, EYEBOLT AND SNAPHOOK TYPE LATCH.

EYEBOLT, CHAIN AND SNAPHOOK ASSEMBLY SHALL BE SECURED TO LATCH SIDE OF GATE. GATE CLOSURE MAY BE ACCOMPLISHED BY WRAPPING CHAIN AROUND END POST AND SNAPPING HOOK INTO CHAIN.

WOOD STAYS:

WOOD STAYS SHALL BE UNTREATED NATIVE TIMBER. STAY DIMENSIONS SHALL BE 2 IN. x 2 IN. NOMINAL MINIMUM (1 1/2 IN. x 1 1/2 IN.).
WOOD STAYS MAY BE STAPLED, OR DRILLED AND TIED WITH WIRE.
METAL STAYS MAY BE TIED TO THE BOTTOM WIRE.

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WIRE FENCES AND GATES

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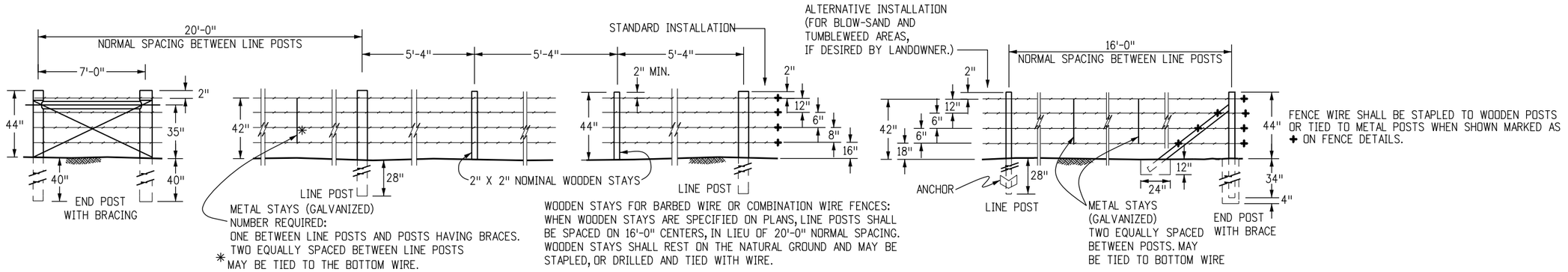
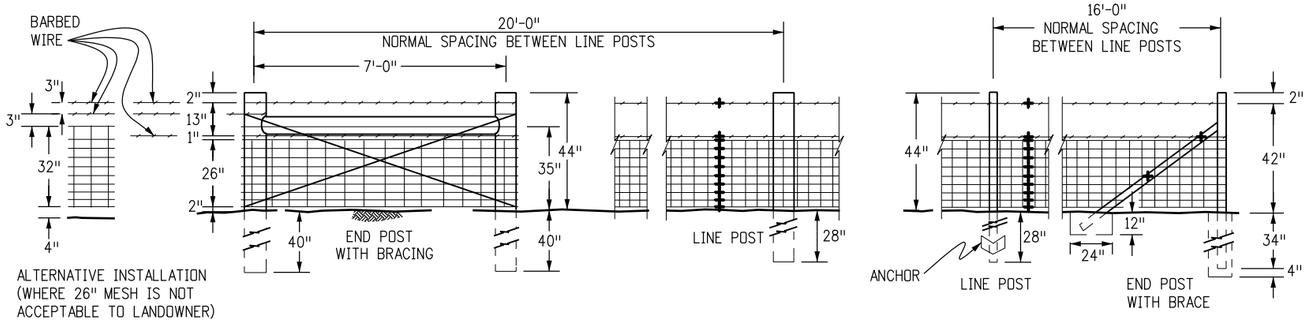


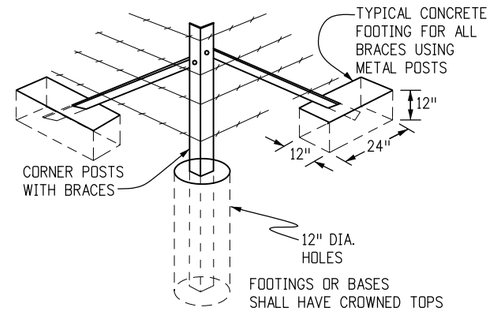
BARBED WIRE FENCE WITH WOODEN POSTS

BARBED WIRE FENCE WITH METAL POSTS

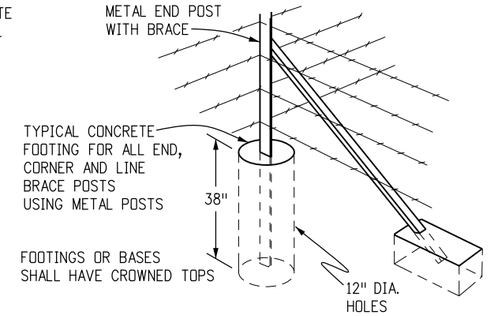


COMBINATION WIRE FENCE WITH WOODEN POSTS

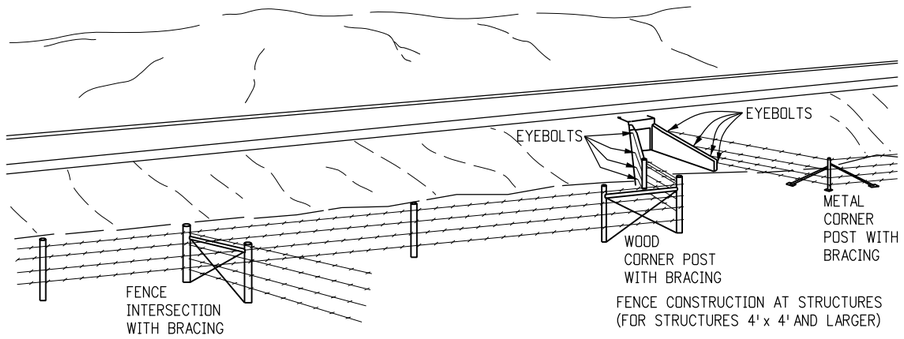
COMBINATION WIRE FENCE WITH METAL POSTS



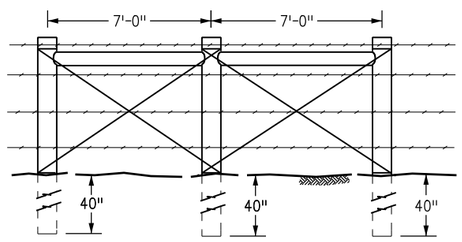
TYPICAL CORNER POST INSTALLATION

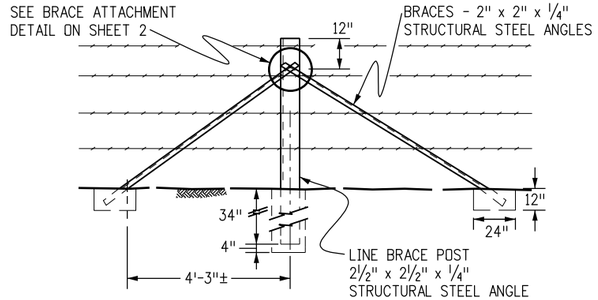


TYPICAL INSTALLATION AT FENCE INTERSECTIONS



FENCE CONSTRUCTION AT STRUCTURES
(FOR STRUCTURES 4' x 4' AND LARGER)





NOTES

1. AT ALL STRUCTURES OF 4 FT. x 4 FT. AND LARGER, THE FENCE SHALL END AT THE EYEBOLTS IN THE WINGS OF THE STRUCTURE. WHERE THE TYPE OF STRUCTURE PROHIBITS THE USE OF EYEBOLTS, AN END POST WITH BRACE SHALL BE USED.
2. EYEBOLTS SHALL BE MADE OF ½ IN. ROUND BARS WITH A MINIMUM OF 6 IN. OF BODY LENGTH EMBEDDED (HOOKED OR BENT) IN FRESH CONCRETE.
3. FOR EYEBOLTS IN EXISTING CONCRETE, THE ½ IN. ROUND BARS SHALL BE DEFORMED AND GROUTED INTO DRILLED HOLES.
4. EYEBOLTS SHALL HAVE A MINIMUM OF 1 IN. INSIDE EYE DIAMETER.
5. EYEBOLTS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. EYEBOLTS WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.

LINE BRACES

WHEN GATES, ANGLES, CORNERS OR INTERSECTING FENCES ARE NOT REQUIRED, LINE BRACES SHALL BE SPACED AS FOLLOWS:
METAL POSTS - 800 FT. INTERVALS
WOOD POSTS - 1,400 FT. INTERVALS

Computer File Information		Sheet Revisions	
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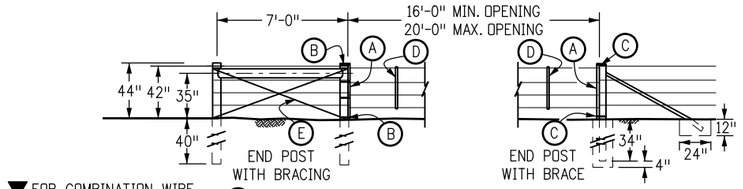
WIRE FENCES AND GATES

Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.
M-607-1
Standard Sheet No. 2 of 3
Project Sheet Number: 187

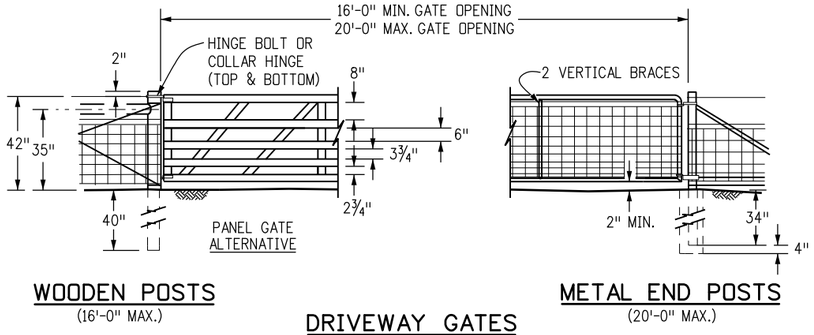


▼ FOR COMBINATION WIRE GATE, USE 34" MESH AND ONE STRAND OF BARBED WIRE. EXTEND WOODEN STAYS TO GROUND.

(A) 2 IN. x 4 IN. x 4 FT. WOODEN STAYS
(B) FOUR NO. 12-1/2 GA. WIRE LOOPS TO ACT AS HINGES
(C) NO. 12-1/2 GA. WIRE LOOPS
(D) TWO 2 IN. x 2 IN. NOMINAL WOODEN STAYS EQUALLY SPACED
(E) NO. 12-1/2 GA. BRACE WIRE, DOUBLE STRAND

WOODEN POSTS — METAL END POSTS

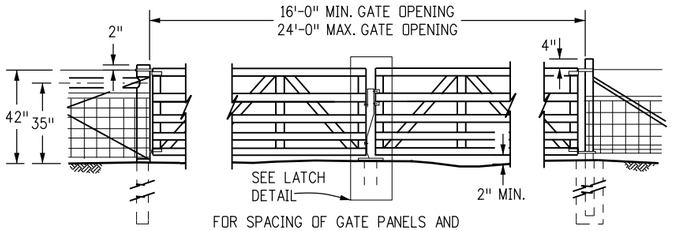
▼ BARBED WIRE GATE



WOODEN POSTS (16'-0" MAX.) — METAL END POSTS (20'-0" MAX.)

DRIVEWAY GATES

(METAL AND WOOD END POSTS SHALL BE BRACED SAME AS FOR BARBED WIRE GATES)

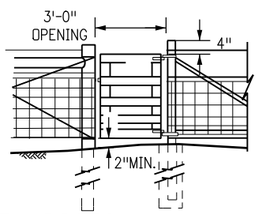


WOODEN POSTS — PANEL GATE POSTS

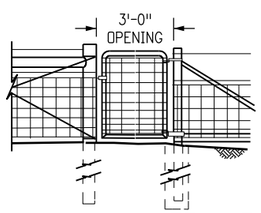
TWIN DRIVEWAY GATES

(METAL AND WOOD END POSTS SHALL BE BRACED SAME AS FOR BARBED WIRE GATES)

FOR SPACING OF GATE PANELS AND LENGTH OF POSTS, SEE DETAIL ABOVE.



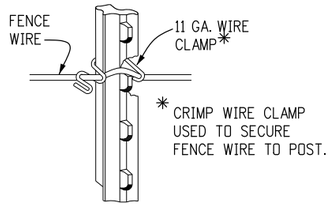
FOR LENGTH OF POSTS AND SPACING OF WIRE AND GATE PANELS, SEE DRIVEWAY GATE DETAIL ABOVE.



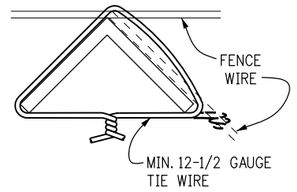
WOODEN POSTS PANEL GATE POSTS
WALK GATE

WOODEN POSTS METAL END POSTS
ALTERNATIVE WALK GATE

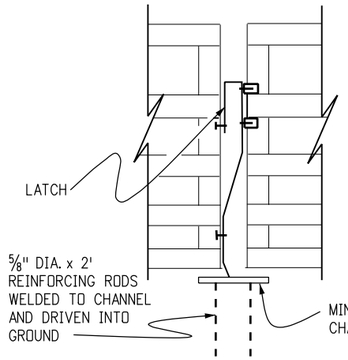
(METAL AND WOOD END POSTS SHALL BE BRACED SAME AS FOR BARBED WIRE GATES)



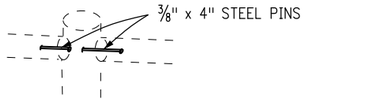
TIES FOR "STUDDED TEE" OR "U" POSTS



TIES FOR ANGLE POSTS FENCE WIRE TIES

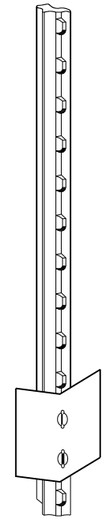


LATCH DETAIL

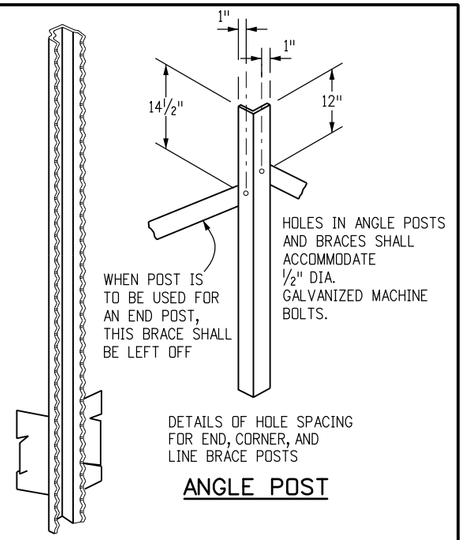


BORE A ⅜" x 2" HOLE IN EACH POST AND BRACE TO RECEIVE THE PINS. WRAP THE ENDS OF THE BRACES TIGHTLY WITH SEVERAL TURNS OF 12-½ GA. SMOOTH GALV. WIRE TO PREVENT SPLITTING OR NOTCH POST AND NAIL WITH 40d COMMON NAILS.

CROSS BRACE DOWELING DETAIL



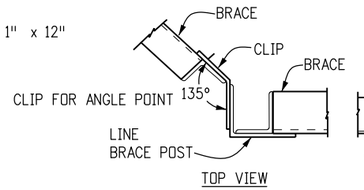
STUDDED "TEE" LINE POST

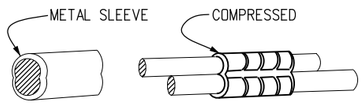


"U" LINE POST

ANGLE POST

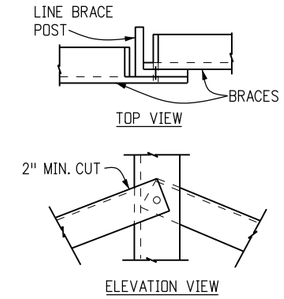
TYPICAL METAL POSTS



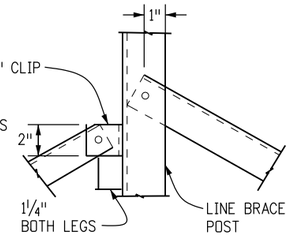


SPLICING SLEEVE SHALL BE APPROVED BY THE ENGINEER

WIRE SPLICE



∅ BRACE ATTACHMENT DETAIL

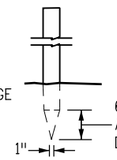


HOLES IN POSTS, BRACES AND CLIPS SHALL ACCOMMODATE ½" DIA. GALVANIZED MACHINE BOLTS.

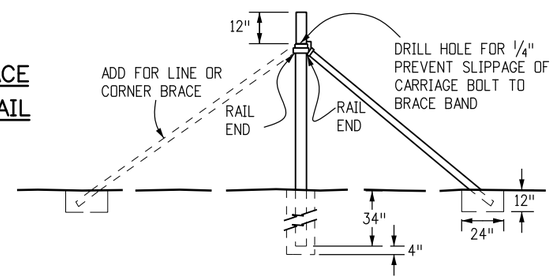
∅ ALTERNATIVE BRACE ATTACHMENT DETAIL

∅ ALTERNATIVE ATTACHMENT METHODS, ACCEPTABLE TO THE ENGINEER, MAY BE USED.

WOODEN POSTS MAY BE DRIVEN IN LIEU OF SETTING AND TAMPING, AT THE OPTION OF THE CONTRACTOR. DRIVING METHODS SHALL NOT DAMAGE POST.



POST POINTING



ALTERNATIVE POST

(FOR END, CORNER OR LINE BRACE POSTS)

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WIRE FENCES AND GATES

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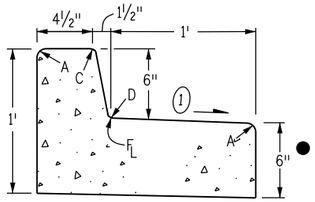
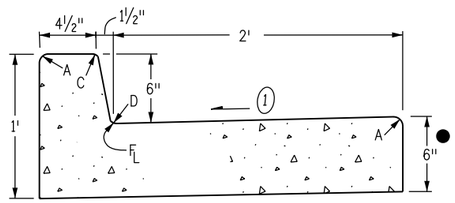
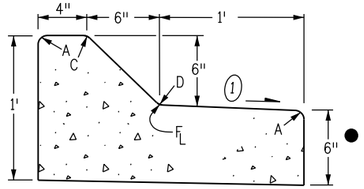
STANDARD PLAN NO.
M-607-1
Standard Sheet No. 3 of 3
Project Sheet Number: 188



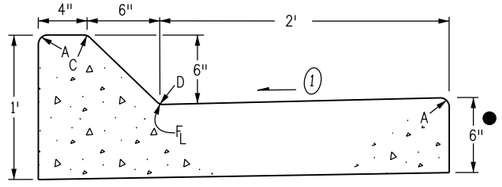
CURB AND GUTTER TYPE 2
(SECTION IB)
(6 IN. BARRIER - 1 FT. GUTTER)



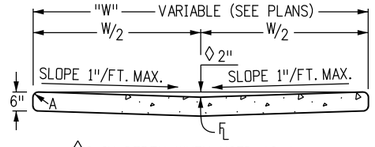
CURB AND GUTTER TYPE 2
(SECTION IIB)
(6 IN. BARRIER - 2 FT. GUTTER)



CURB AND GUTTER TYPE 2
(SECTION IM)
(6 IN. MOUNTABLE - 1 FT. GUTTER)

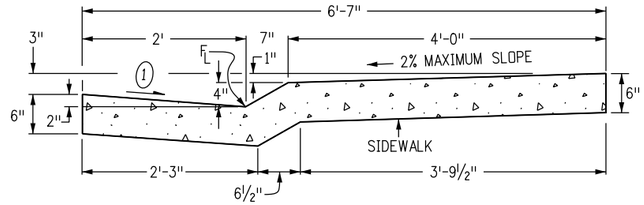


CURB AND GUTTER TYPE 2
(SECTION IIM)
(6 IN. MOUNTABLE - 2 FT. GUTTER)



◊ 2 IN. DEPTH WHEN USED AS A CROSSPAN IN AN INTERSECTION

GUTTER TYPE 2



CURB AND GUTTER TYPE 2
(SECTION MS)
(4 IN. MOUNTABLE WITH SIDEWALK)

GENERAL NOTES

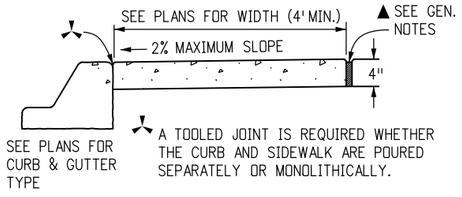
1. ON ROADWAY CURVES WITH A RADIUS OF 1,900 FT. OR LESS, CURBS AND GUTTERS ARE TO BE PLACED ON THE ARC OF THE CURVE, UNLESS OTHERWISE NOTED ON THE PLANS. A MAXIMUM CHORD LENGTH OF 10 FT. MAY BE USED WHEN THE CURVE RADIUS IS GREATER THAN 1,900 FT.
2. CONCRETE SHALL BE CLASS B.
3. PROFILE GRADE OF CURBS AND GUTTERS SHALL BE LOCATED AT THE FLOW LINE.
4. CURB TYPE 4 (KEY-WAY) MAY BE USED IN LIEU OF CURB AND GUTTER TYPE 2 (SECTIONS IB AND IM) UNLESS OTHERWISE SPECIFIED ON THE PLANS.
5. GUTTER CROSS SLOPES MAY BE ADJUSTED TO FACILITATE DRAINAGE FOR PROFILE GRADES AS SHOWN ON THE PLANS.
6. THICKNESS OF CURB AND GUTTER SECTION SHALL MATCH CONCRETE PAVEMENT THICKNESS IF SHOWN ON THE PLANS. CURB AND GUTTER SHALL BE CLASS P CONCRETE IF PLACED MONOLITHICALLY WITH CONCRETE PAVEMENT.
7. INCREASE SIDEWALK THICKNESS TO 6 IN. AT LOCATIONS SHOWN ON THE PLANS.
8. MINIMUM SIDEWALK WIDTH IS 4 FT.

▲ EXPANSION JOINTS SHALL BE INSTALLED WHEN ABUTTING EXISTING CONCRETE OR FIXED STRUCTURE. EXPANSION JOINT MATERIAL SHALL BE ½ IN. THICK AND SHALL EXTEND THE FULL DEPTH OF CONTACT SURFACE.

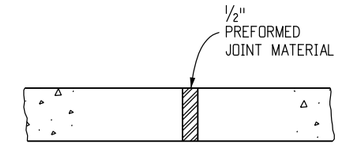
(1) GUTTER CROSS SLOPES SHALL BE ½ IN./FT. WHEN DRAINING AWAY FROM CURB AND 1 IN./FT. WHEN DRAINING TOWARD CURB (WITH EXCEPTION TO IMMEDIATELY ADJACENT TO CURB RAMPS - SEE STANDARD PLAN M-608-1 FOR SLOPE REQUIREMENTS).

● WHEN TIE BARS ARE REQUIRED, THE GUTTER THICKNESS SHALL BE INCREASED TO THE PAVEMENT THICKNESS (T). BARS SHALL BE EPOXY-COATED #4 CONFORMING TO AASHTO M 284 AND SPACED AT 3 FT. INTERVALS. THEY SHALL BE INSERTED T/2 AND 1#2 LENGTH INTO THE GUTTER.

LEGEND FOR RADII
A = 1/8" TO 1/4"
B = 1"
C = 1½"
D = 1½" TO 2"



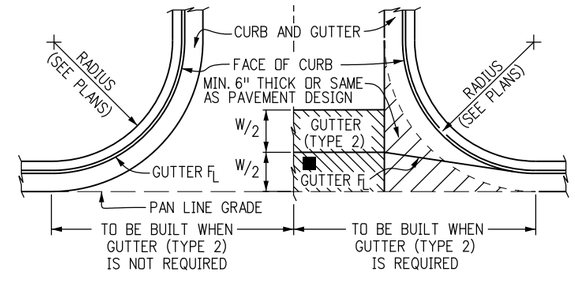
CONCRETE SIDEWALK



NOTES: 1. EXPANSION JOINTS SHALL BE PLACED IN THE SIDEWALK AT INTERVALS OF NOT MORE THAN 500 FT.

2. EXPANSION JOINTS MAY BE SEALED WHEN SPECIFIED ON THE PLANS.

SIDEWALK EXPANSION JOINT



▨ THIS AREA SHALL BE POURED MONOLITHICALLY WITH CURB AND GUTTER AND PAID FOR AS "CONCRETE PAVEMENT".

■ FLOW LINE LOCATION WILL BE ESTABLISHED BY W/2 SHOWN ON PLANS.

CONSTRUCTION OF CONCRETE GUTTERS AT INTERSECTION

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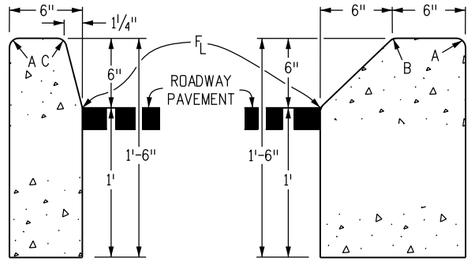
CURB, GUTTERS, AND SIDEWALKS

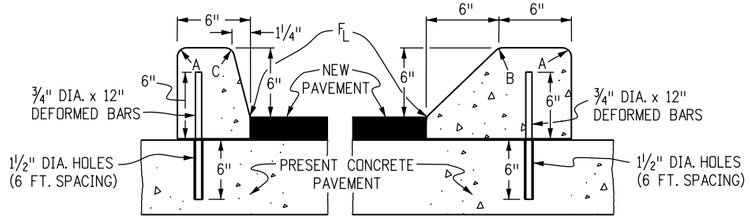
Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.
M-609-1
Standard Sheet No. 1 of 4
Project Sheet Number: 189



CURB TYPE 2
(SECTION B)
6 IN. BARRIER

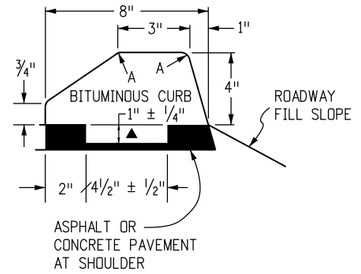
CURB TYPE 2
(SECTION M)
6 IN. MOUNTABLE

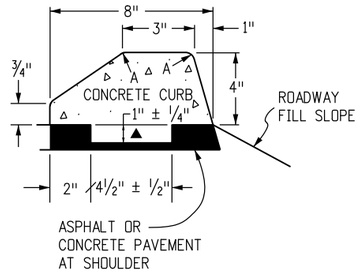


¾" DIA. x 12" DEFORMED REINFORCING BARS AT 6 FT. SPACING SHALL BE GROUTED IN 1¼" DIA. HOLES IN EXISTING CONCRETE. GROUT SHALL CONSIST OF 2 PARTS CLEAN SAND AND 1 PART CEMENT. COST OF INSTALLATION SHALL BE INCLUDED IN THE PRICE BID FOR CURB.

CURB TYPE 4
(SECTION B)
6 IN. BARRIER

CURB TYPE 4
(SECTION M)
6 IN. MOUNTABLE



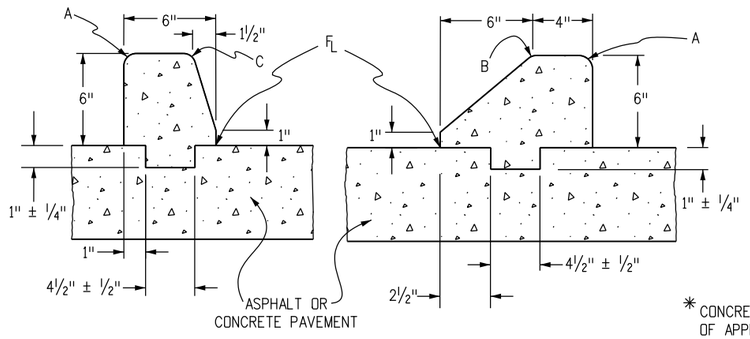


CURB TYPE 6
(SECTION M)
4 IN. MOUNTABLE

NOTE: BITUMINOUS OR CONCRETE * UNLESS OTHWISE SPECIFIED ON THE PLANS.

▲ KEY-WAY MAY BE OMITTED WHEN PLACED UNDER GUARDRAIL.

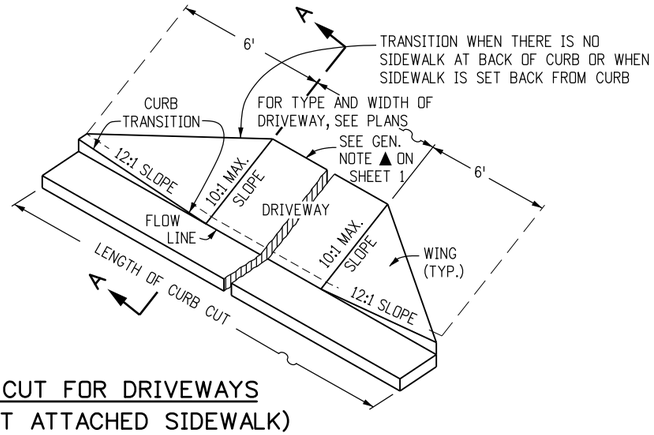
LEGEND FOR RADII
A = 1/8 TO 1/4"
B = 1"
C = 1½"
D = 1½" TO 2"



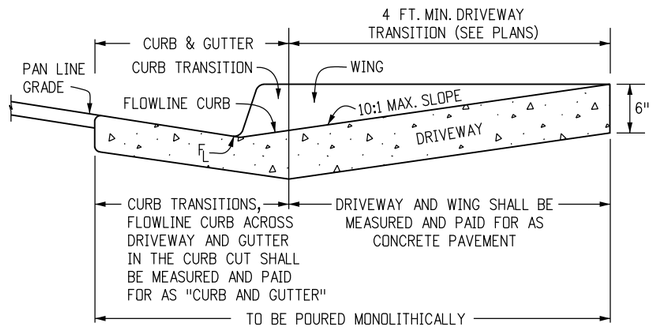
(SECTION B) (SECTION M)

CURB TYPE 4 (KEY-WAY) *

* CONCRETE CLASS B SHALL CONTAIN 1.5 POUNDS PER CUBIC YARD OF APPROVED POLYPROPYLENE FIBERS AND MAY HAVE A NOMINAL AGGREGATE SIZE OF ⅜ IN.

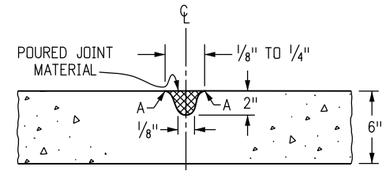


CURB CUT FOR DRIVEWAYS
(WITHOUT ATTACHED SIDEWALK)



SECTION A-A

CONCRETE PAVEMENT (DRIVEWAYS)



NOTE: RECOMMENED JOINT SPACING IS EVERY 8 FOOT ALONG THE WIDTH AND LENGTH OF DRIVEWAY. FOR DRIVEWAYS WIDER THAN 12 FEET, JOINTS ARE REQUIRED.

TRANSVERSE CONTRACTION JOINT
FOR CONCRETE PAVEMENT (DRIVEWAYS)

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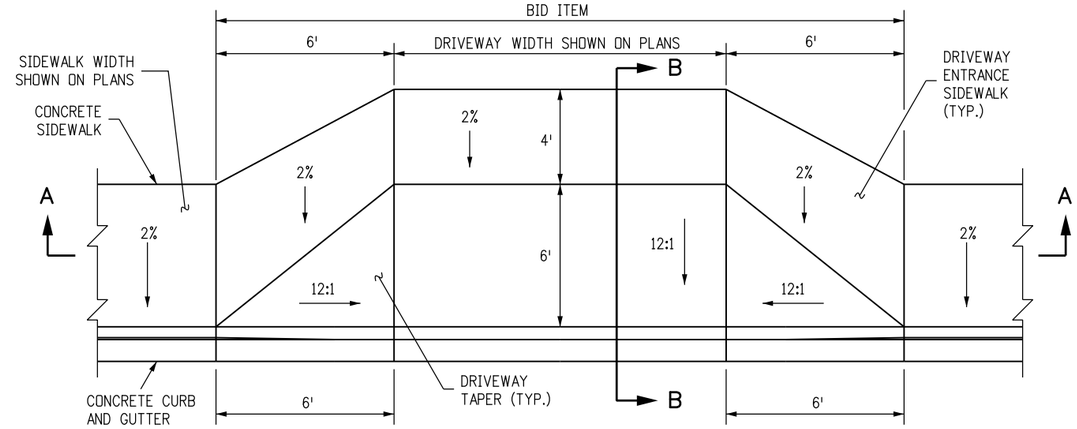
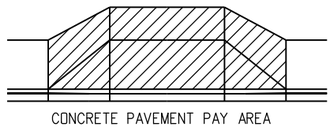
CURB, GUTTERS, AND SIDEWALKS

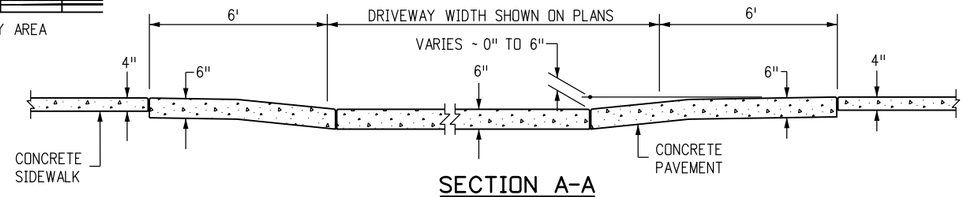
Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.
M-609-1
Standard Sheet No. 2 of 4
Project Sheet Number: 190

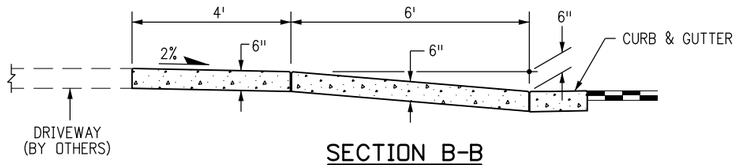


CONCRETE DRIVEWAY ENTRANCE TYPE 1

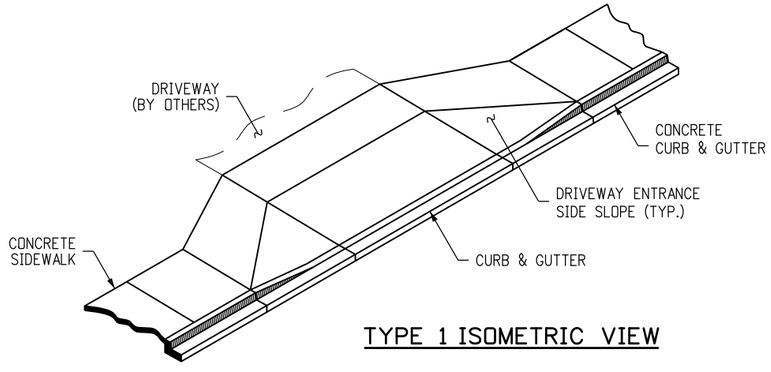




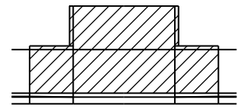
SECTION A-A

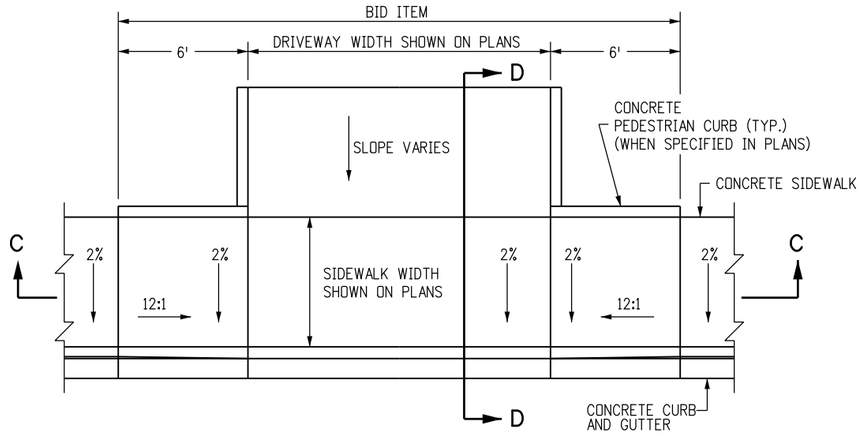


SECTION B-B

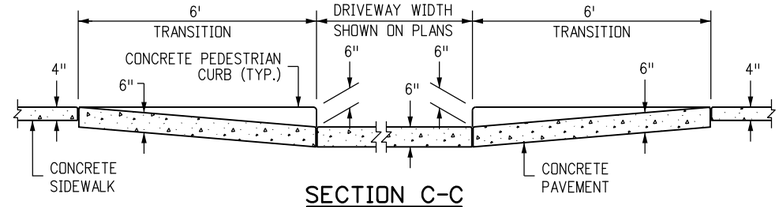


TYPE 1 ISOMETRIC VIEW

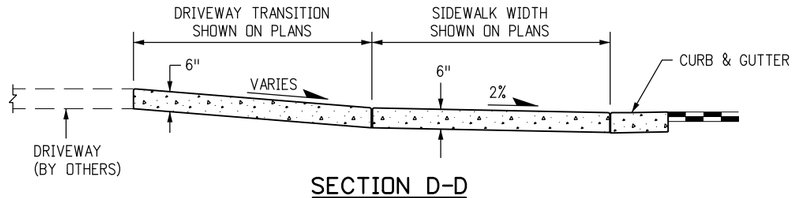




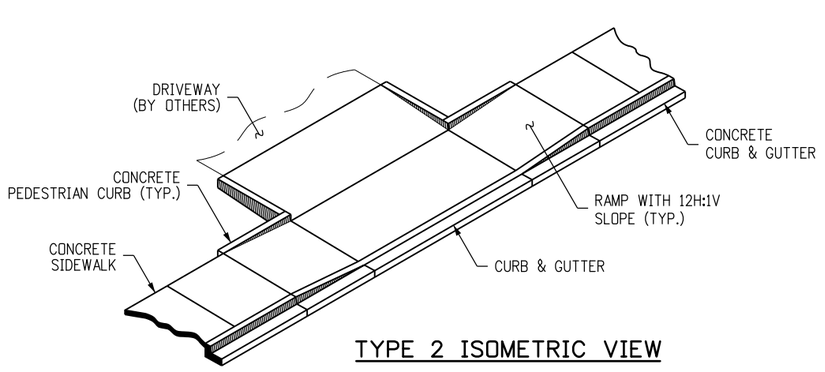
CONCRETE DRIVEWAY ENTRANCE TYPE 2



SECTION C-C



SECTION D-D



TYPE 2 ISOMETRIC VIEW

NOTES

1. DRAINAGE STRUCTURES, TRAFFIC SIGNAL EQUIPMENT, JUNCTION BOXES, AND OTHER OBSTRUCTIONS SHOULD NOT BE PLACED IN FRONT OF THE DRIVEWAY RAMP ACCESS AREAS.
2. FOR THE CURB AND GUTTER SHOWN, SEE PLANS FOR CURB TYPE.
3. RAMP SLOPES SHALL BE 12:1 OR FLATTER.
4. CONSTRUCTION OF THE CONCRETE PEDESTRIAN CURB SHALL BE INCLUDED IN THE BID PRICE OF THE CONCRETE PAVEMENT.

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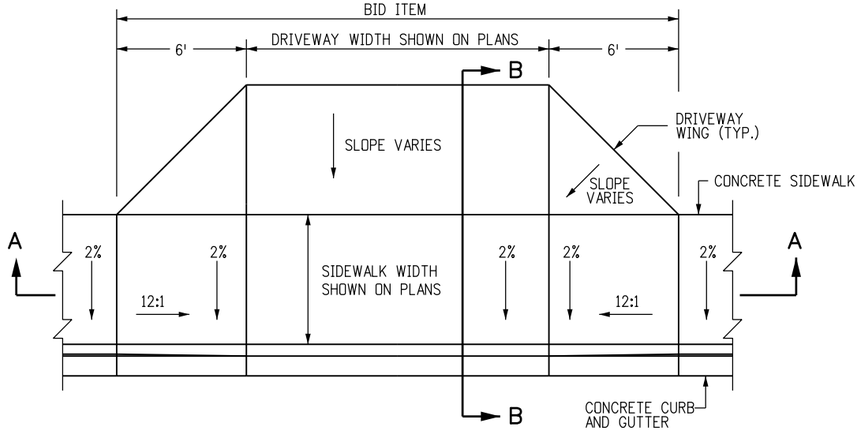
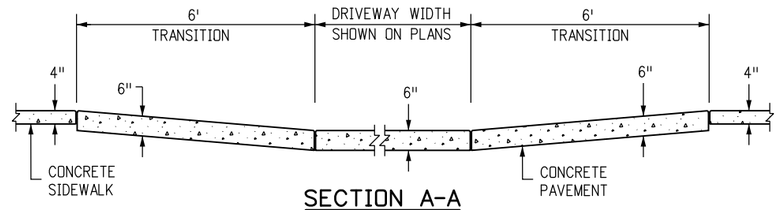
CURB, GUTTERS, AND SIDEWALKS

Issued by the Project Development Branch: July 31, 2019

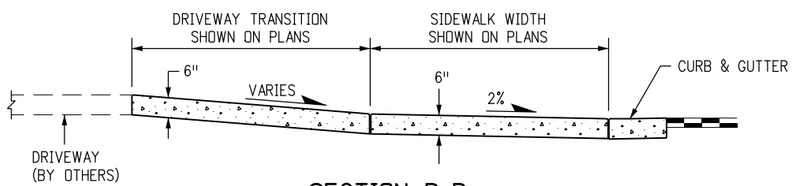
STANDARD PLAN NO.
M-609-1
Standard Sheet No. 3 of 4
Project Sheet Number: 191



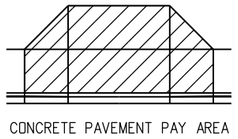
CONCRETE DRIVEWAY ENTRANCE TYPE 3



SECTION A-A



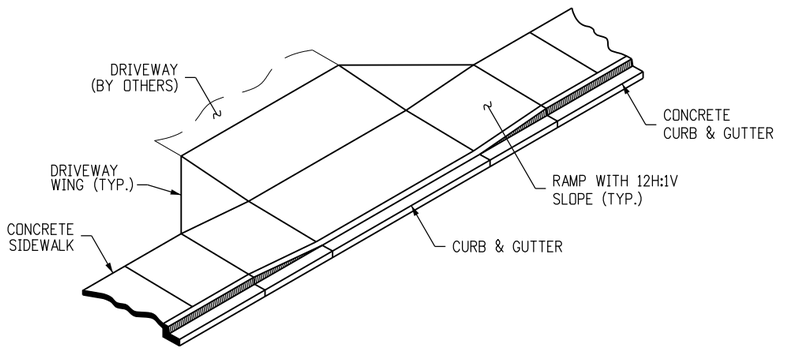
SECTION B-B



CONCRETE PAVEMENT PAY AREA

NOTES

1. DRAINAGE STRUCTURES, TRAFFIC SIGNAL EQUIPMENT, JUNCTION BOXES, AND OTHER OBSTRUCTIONS SHOULD NOT BE PLACED IN FRONT OF THE DRIVEWAY RAMP ACCESS AREAS.
2. FOR THE CURB AND GUTTER SHOWN, SEE PLANS FOR CURB TYPE.
3. RAMP SLOPES SHALL BE 12:1 OR FLATTER.



TYPE 3 ISOMETRIC VIEW

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		Date:	Comments
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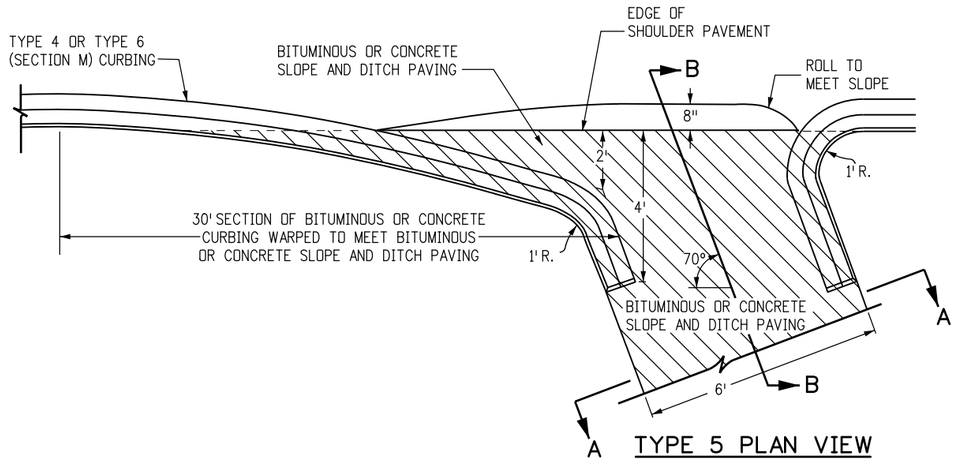
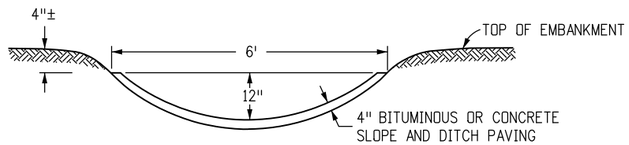
CURB, GUTTERS, AND SIDEWALKS

Issued by the Project Development Branch: July 31, 2019

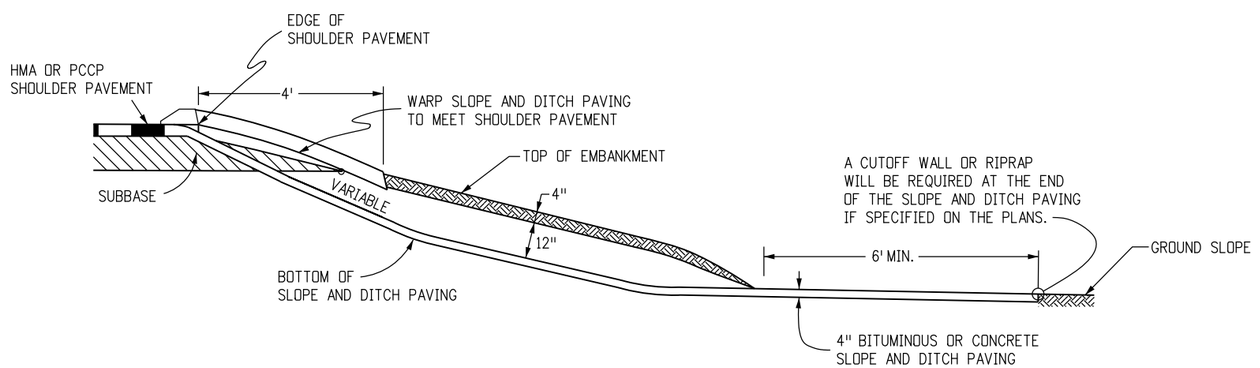
STANDARD PLAN NO.
M-609-1
Standard Sheet No. 4 of 4
Project Sheet Number: 192



TYPE 5 PLAN VIEW



SECTION A-A



SECTION B-B

(WITH 4 IN. BITUMINOUS OR CONCRETE SLOPE AND DITCH PAVING)

GENERAL NOTES

1. IF THE EMBANKMENT PROTECTOR IS LOCATED IN THE BOTTOM OF A SAG VERTICAL CURVE, FLARE THE CURB ON EACH SIDE OF THE INLET TO ALLOW FOR FLOW FROM BOTH DIRECTIONS.
2. DETAILS OF CURBING ARE SHOWN IN STANDARD PLAN M-609-1.
3. STRUCTURE BACKFILL MATERIAL SHALL NOT BE USED IN THIS WORK. EMBANKMENT MATERIAL SHALL BE USED WITH CONSTRUCTION REQUIREMENTS IN ACCORDANCE WITH SECTION 203. EMBANKMENT MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE PAY ITEM FOR EMBANKMENT PROTECTOR (TYPE 5).
4. PAYMENT FOR THE QUANTITIES SHOWN ON THE PLANS FOR THIS WORK SHALL BE AS FOLLOWS:

   507 - BITUMINOUS SLOPE AND DITCH PAVING (ASPHALT) . . . . . TON

   507 - CONCRETE SLOPE AND DITCH PAVING . . . . . CU. YD.

   609 - CURB, TYPE 4 OR TYPE 6 (SECTION M) . . . . . LINEAR FT.

   615 - EMBANKMENT PROTECTOR (TYPE 5) . . . . . EACH
   NOTE: THIS PAYMENT INCLUDES THE STRUCTURE EXCAVATION, ANY OTHER EARTHWORK, AND ANY EXTRA WORK REQUIRED TO MODIFY OTHER PAY ITEMS.

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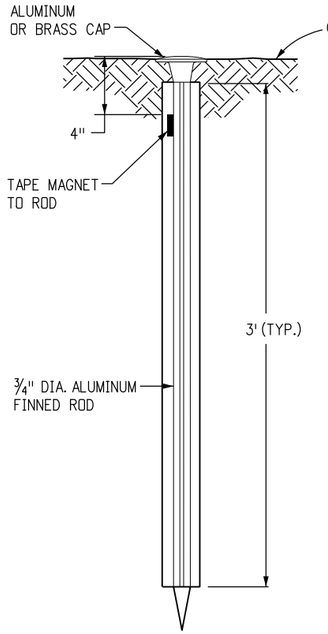
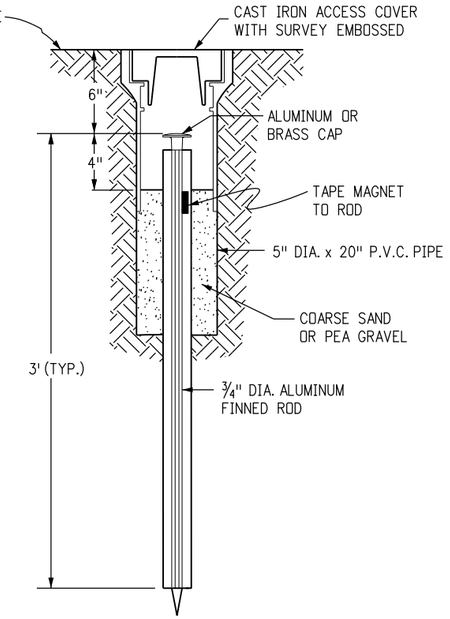
EMBANKMENT PROTECTOR TYPE 5

Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.
M-615-2
Standard Sheet No. 1 of 1
Project Sheet Number: 193

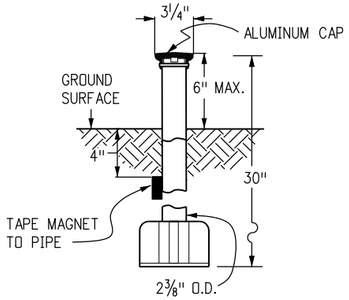


TYPE 1 MONUMENT

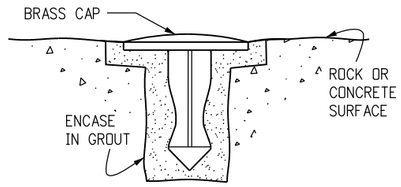


TYPE 1A MONUMENT

INCLUDES MONUMENT BOX

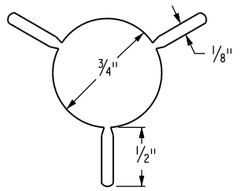


TYPE 3 MONUMENT

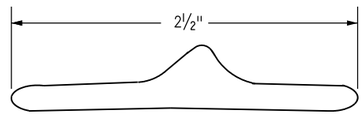


TYPE 5 MONUMENT

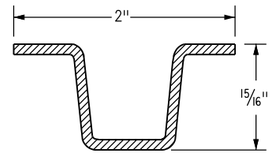
ALUMINUM CAP AND TYPE 5(S)
DETAILS SHOWN ON SHEET 2



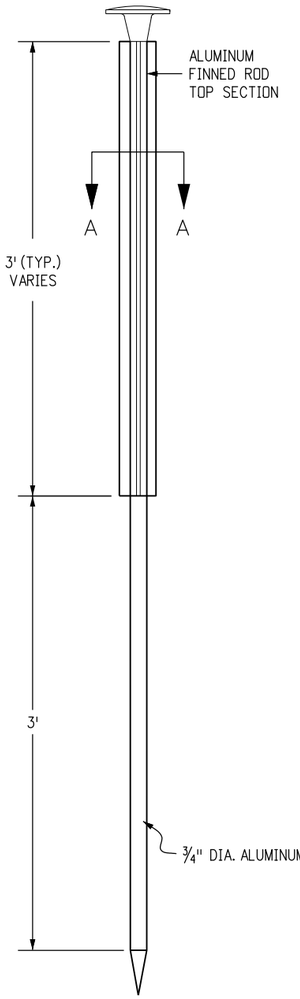
SECTION A-A

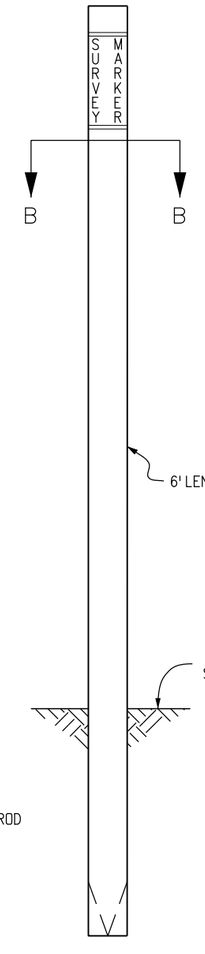


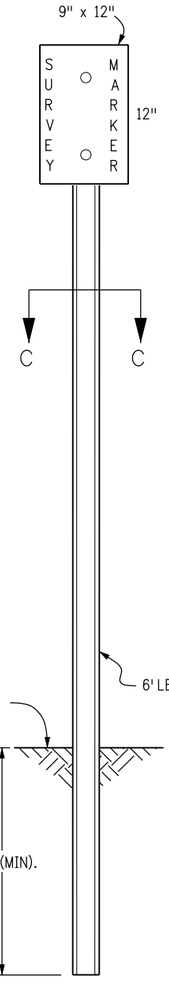
SECTION B-B



DELINEATOR POST
SECTION C-C



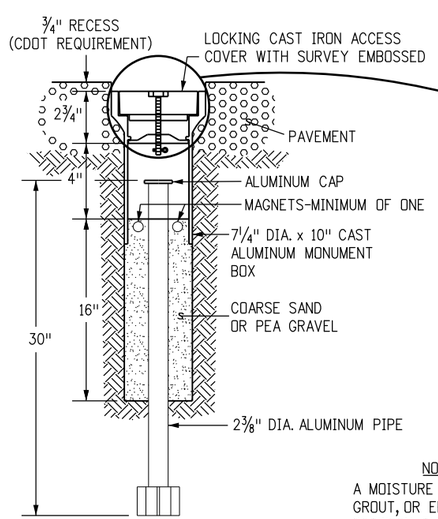




TYPE 2 MONUMENT

TYPE 2A INCLUDES MONUMENT BOX

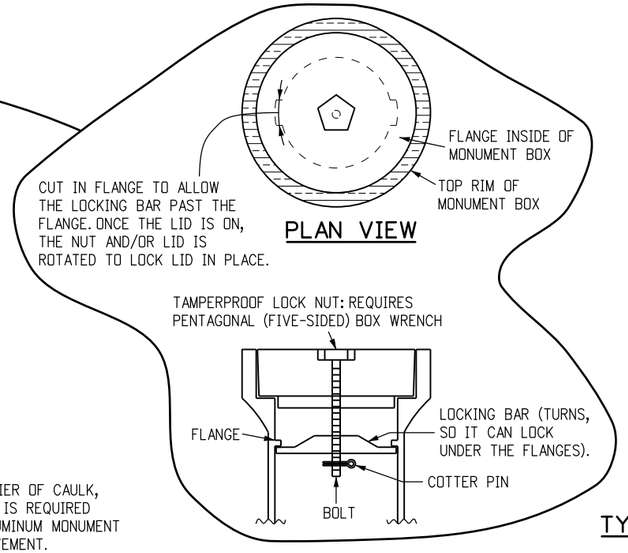
WITNESS POSTS



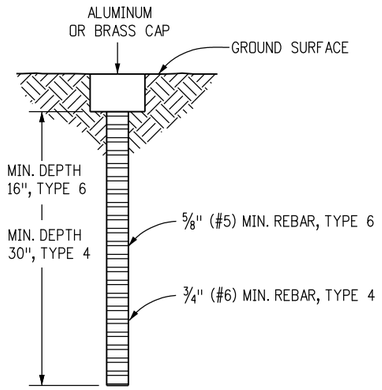
TYPE 3A MONUMENT

ROADWAY INSTALLATION
INCLUDES MONUMENT BOX

NOTE:
A MOISTURE BARRIER OF CAULK, GROUT, OR EPOXY IS REQUIRED BETWEEN THE ALUMINUM MONUMENT BOX AND THE PAVEMENT.



LOCKING CAST IRON ACCESS COVER



TYPE 4 AND TYPE 6 MONUMENT

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SURVEY MONUMENTS

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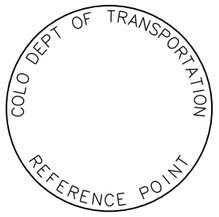
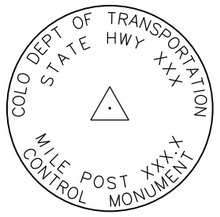
STANDARD PLAN NO.
M-629-1
Standard Sheet No. 1 of 2
Project Sheet Number: 194

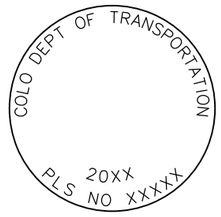


REFERENCE
MONUMENT CAP

ROW
MONUMENT CAP



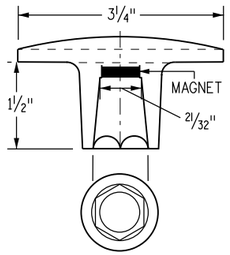
CONTROL
MONUMENT CAP



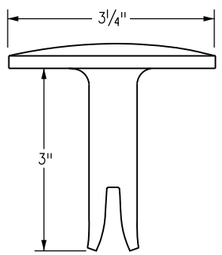
ALIQUOT CORNER
MONUMENT CAP

ALUMINUM CAP

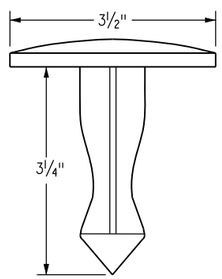
NOTE: A BLANK CAP MAY BE SUBSTITUTED IF THE APPROPRIATE CAP SHOWN ABOVE IS NOT AVAILABLE. IF A BLANK CAP IS USED, ALL INFORMATION NORMALLY INCLUDED ON THE APPROPRIATE STANDARD CAP, SHALL BE STAMPED ON THE BLANK CAP ALONG WITH SPECIFIC PROJECT INFORMATION SUCH AS PROJECT NO., DATE, POINT NO., ETC..



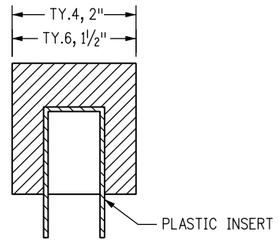
ALUMINUM CAP
USED WITH ALUMINUM ROD



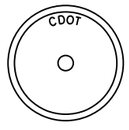
ALUMINUM CAP
TYPE 5
FOR PLACING IN EXISTING
CONCRETE OR ROCK

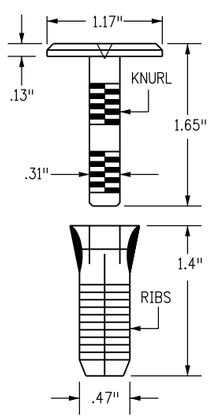


BRASS CAP
TYPE 5
FOR PLACING IN EXISTING
CONCRETE OR ROCK



ALUMINUM CAP





COPPER ALLOY CAP
TYPE 5(S)
FOR PLACING IN EXISTING
SIDEWALK, CURB, OR GUTTER

MONUMENT APPLICATION

CAP TYPE	MONUMENT TYPE									
	1	1A	2	2A	3	3A	4	5	5(S)	6
REFERENCE	X	X						X	X	X
ROW	X	X						X	X	
CONTROL			X	X				X	X	
ALIQUOT CORNER	X	X			X	X	X	X		
PERMANENT EASEMENT								X	X	X
PROJECT POINTS								X	X	X
WITNESS POST* (REQUIRED)	X		X	X	X			X		

ALL MONUMENTATION MATERIALS WILL BE FURNISHED BY CDOT

THE MONUMENT TYPE SHALL MEET THE MINIMUM STANDARDS AS DETERMINED BY THE COLORADO STATE BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS RULES (STATE BOARD RULES).
THE CDOT SURVEY COORDINATOR SHALL APPROVE ALL EXCEPTIONS FOR STAMPING MONUMENTS DIFFERING FROM THE STANDARDS.

TYPE 1 AND TYPE 1A ALUMINUM FINNED ROD MONUMENTS

THIS MONUMENT SHALL BE USED FOR ROW OR REFERENCE MONUMENTS OR MAY BE USED FOR AN ALIQUOT CORNER MONUMENT. WHEN USED AS AN ALIQUOT CORNER MONUMENT, INSTALLATION AND RECORD FILING REQUIREMENTS SHALL BE AS STATED FOR TYPE 3 AND TYPE 3A MONUMENTS.
MONUMENTS SHALL BE INSTALLED BY ATTACHING THE PROPER SIZE TIP TO ONE END OF A SECTION OF FINNED ROD, AND A 3 IN. LONG X ¾ IN. DIA. STAINLESS STEEL ADAPTER TO THE OTHER END. THE DRIVER IS THEN PLACED OVER THE STAINLESS STEEL ADAPTER FOR THE HAMMER TO CONTACT. TYPE 1 MONUMENTS SHALL USE A MINIMUM 3 FT. SECTION OF FINNED ROD. WHEN SUBSURFACE ROCK OR CONCRETE IS ENCOUNTERED LESS THAN 3 FT. BELOW THE GROUND SURFACE, THE ROD SHALL BE EMBEDDED IN THE ROCK OR IN CONCRETE AT LEAST 6 IN. AND GROUTED IN PLACE. THE ROD MAY BE SHORTENED TO ACCOMMODATE THE CONDITIONS.
WHEN UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, ADDITIONAL SECTIONS OF ROD SHALL BE ADDED TO ACHIEVE STABILITY. HORIZONTAL AND VERTICAL STABILITY ARE REQUIRED.
TYPE 1A MONUMENT INCLUDES MONUMENT BOX. A LOCKING CAST IRON ACCESS COVER SHALL BE INSTALLED WHEN THE MONUMENT IS LOCATED IN THE ROADWAY PAVEMENT.

TYPE 2 AND TYPE 2A ALUMINUM FINNED ROD MONUMENTS

THIS MONUMENT SHALL BE USED FOR HORIZONTAL AND VERTICAL CONTROL MONUMENTS. WHEN UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, ADDITIONAL SECTIONS OF ROD SHALL BE ADDED TO ACHIEVE STABILITY. HORIZONTAL AND VERTICAL STABILITY ARE REQUIRED. IN MOST SOIL CONDITIONS THE TYPE 2 MONUMENT IS EMBEDDED 6 FT. INTO THE GROUND.
THE MONUMENT SHALL BE INSTALLED BY FIRST ATTACHING THE PROPER SIZE TIP TO A 3 FT. LONG X ¾ IN. DIA. ROD, THEN DRIVING THE ROD AT LEAST 30 IN. INTO THE GROUND. ADDITIONAL 3 FT. LONG X ¾ IN. FINNED ROD SECTIONS SHALL BE ADDED AND DRIVEN FLUSH WITH THE GROUND UNTIL THE MONUMENT IS IN A STABLE POSITION. THE FINS ARE BENT OVER USING PLIERS TO ACCOMMODATE INSTALLING THE CAP. THE CAP IS FIRMLY SEATED ONTO THE LAST FINNED SECTION OF ROD USING A DEAD BLOW SLEDGE HAMMER.
TYPE 2A MONUMENT INCLUDES MONUMENT BOX. A LOCKING CAST IRON ACCESS COVER SHALL BE INSTALLED WHEN THE MONUMENT IS LOCATED IN THE ROADWAY PAVEMENT.

TYPE 3 AND TYPE 3A ALUMINUM PIPE MONUMENTS

THIS MONUMENT SHALL BE USED FOR AN ALIQUOT CORNER MONUMENT. THE INSTALLATION OF THIS MONUMENT AND RECORD FILING SHALL BE DONE IN ACCORDANCE WITH THE STATE BOARD RULES. ALSO REFER TO THE CDOT SURVEY MANUAL AND THE BUREAU OF LAND MANAGEMENT REQUIREMENTS FOR MONUMENT INSTALLATION. THE LAND SURVEYOR'S LICENSE NUMBER AND THE YEAR SHALL BE STAMPED ON THE CAP.
TYPE 3A MONUMENT INCLUDES MONUMENT BOX. A LOCKING CAST IRON ACCESS COVER SHALL BE INSTALLED WHEN THE MONUMENT IS LOCATED IN THE ROADWAY PAVEMENT.

TYPE 4 ALUMINUM MONUMENT

THIS MONUMENT MAY BE INSTALLED IN LIEU OF REPLACING THE ENTIRE MONUMENT WHEN REBAR IS IN PLACE AT AN ALIQUOT CORNER LOCATION. REFER TO THE STATE BOARD RULES. A MINIMUM 2 IN. DIA. CAP SHALL BE USED ON ¾ IN. (#6) REBAR.

TYPE 5 BRASS/ALUMINUM CAP MONUMENT

THIS MONUMENT MAY BE INSTALLED IN LIEU OF ALL OTHER CDOT MONUMENTS, WHEN THE POSITION IS LOCATED IN CONCRETE OR STABLE ROCK FORMATION.

TYPE 5(S) COPPER ALLOY CAP MONUMENT - SMALL

THIS MONUMENT MAY BE INSTALLED IN LIEU OF A TYPE 5 MONUMENT, WHEN THE POSITION IS LOCATED IN A CONCRETE SIDEWALK, CURB OR GUTTER, OR WHEN SETTING A TYPE 5 WOULD COMPROMISE THE INTEGRITY OF THE RECEIVING STRUCTURE.

STAMPING REQUIREMENTS:

- "RP", WHEN THE APPLICATION IS A REFERENCE POINT.
- "ROW", POINT NUMBER, "LS", AND REGISTRATION NUMBER WHEN THE APPLICATION IS A ROW POINT.
- "CP" AND A UNIQUE IDENTIFIER PROVIDED BY THE REGION SURVEY COORDINATOR, WHEN THE APPLICATION IS A CONTROL POINT.
- "PE", POINT NUMBER, "LS", AND REGISTRATION NUMBER, WHEN THE APPLICATION IS A PERMANENT EASEMENT POINT.
- "PP" AND POINT NUMBER, WHEN THE APPLICATION IS A PROJECT POINT.

TYPE 6 ALUMINUM MONUMENT

THIS MONUMENT SHALL BE USED FOR PERMANENT EASEMENTS, PROJECT BENCH MARKS, PROJECT POINTS, AND REFERENCES. AN ALUMINUM CAP WITH A MINIMUM DIAMETER OF 1 ½ IN., SHALL BE USED ON ⅝ IN. (#5) MINIMUM REBAR.

* WITNESS POSTS

THE WITNESS POST WILL BE SUPPLIED BY CDOT AND INSTALLATION SHALL BE INCLUDED IN THE WORK. IT SHALL BE DRIVEN WITHIN 1 FT. OF THE MONUMENT WHEN POSSIBLE. A DELINEATOR POST WITH A 9 IN. X 12 IN. METAL SIGN PANEL MAY BE USED IN LIEU OF THE PLASTIC POST. THIS POST SHALL CONFORM TO STANDARD PLAN S-612-1. A REQUIRED WITNESS POST MAY BE OMITTED WITH THE APPROVAL OF THE ENGINEER IF THE WITNESS POST LOCATION IS WITHIN A TRAVELED WAY, DRIVEWAY, OR ACCESS OPENING.

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SURVEY MONUMENTS

STANDARD PLAN NO.
M-629-1
Standard Sheet No. 2 of 2

Issued by the Project Development Branch: July 31, 2019

Project Sheet Number: 195

SPACING FOR DELINEATOR POSTS ON HORIZONTAL CURVES

'R' RADIUS (FEET)	'D' DEGREE OF CURVE	✳ - ● SPACING ON CURVE (FEET)	✳ SPACING IN ADVANCE OF AND BEYOND CURVE (FEET)		
			FIRST SPACE	SECOND SPACE	THIRD SPACE
20000	0° 17'	300	300	300	300
17000	0° 20'	300	300	300	300
14000	0° 25'	300	300	300	300
12000	0° 29'	300	300	300	300
10000	0° 34'	299	300	300	300
8000	0° 43'	267	300	300	300
6000	0° 57'	231	300	300	300
5000	1° 09'	211	300	300	300
4000	1° 26'	189	300	300	300
3500	1° 38'	176	300	300	300
3000	1° 55'	163	300	300	300
2500	2° 18'	148	297	300	300
2000	2° 52'	132	265	300	300
1800	3° 11'	125	251	300	300
1600	3° 35'	118	236	300	300
1400	4° 06'	110	220	300	300
1200	4° 47'	102	203	300	300
1000	5° 44'	92	185	277	300
900	6° 22'	87	175	262	300
800	7° 10'	82	164	246	300
700	8° 11'	76	153	229	300
600	9° 33'	70	141	211	300
500	11° 28'	64	127	191	300
450	12° 44'	60	120	180	300
400	14° 20'	56	112	168	300
350	16° 22'	52	104	156	300
300	19° 06'	47	95	142	285
250	22° 55'	42	85	127	255
200	28° 39'	37	73	110	220
150	38° 12'	30	60	90	180
100	57° 18'	21	42	64	127
75	76° 24'	20	30	45	90

✳ ON CONVENTIONAL ROADWAYS OMIT THE "THIRD SPACE" AND DOUBLE THE SPACING "ON THE CURVE" AND "IN ADVANCE OF AND BEYOND THE CURVE" (300' MAX.)

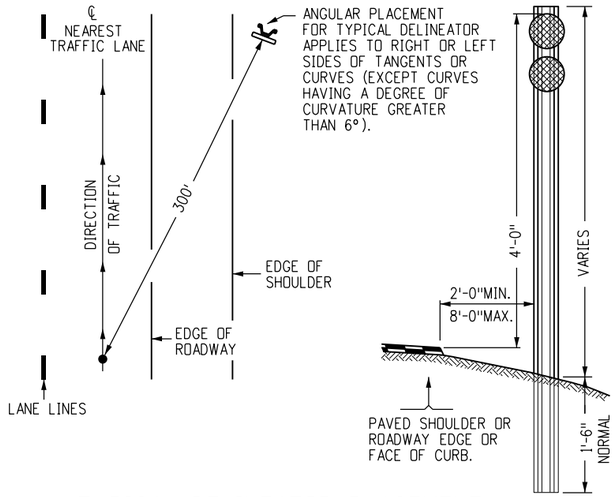
● SPACING FOR CURVES NOT SHOWN MAY BE COMPUTED FROM THE FORMULA: $S = 3\sqrt{R-50}$

SPACING IN ADVANCE OF AND BEYOND THE CURVE IS: FIRST SPACE = 2S, SECOND SPACE = 3S AND THIRD SPACE = 6S. SPACES SHOULD NOT BE LESS THAN 20 FT. OR GREATER THAN 300 FT.

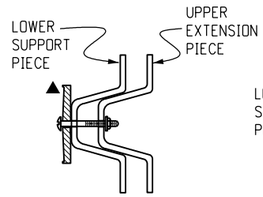
RESIDUAL SPACE AFTER "ON CURVE" SPACING IS APPLIED, SHALL BE DIVIDED EQUALLY AMONG ALL OF THE "ON CURVE" SPACES SO THAT THE LAST DELINEATOR FALLS AT THE P.T. OR C.S. OF THE CURVE.

GENERAL NOTES

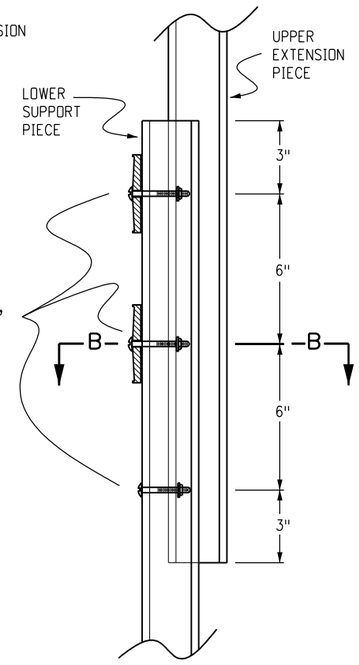
1. SEE THE TABULATION OF QUANTITIES INCLUDED IN THE PLANS FOR THE NUMBERS AND LOCATIONS OF DELINEATORS REQUIRED.
2. THE COLOR OF DELINEATOR REFLECTORS SHALL, IN ALL CASES, CONFORM TO THE COLOR OF EDGE LINES, EXCEPT:
   A. RED, GREEN AND BLUE DELINEATORS
   B. TYPE III DELINEATORS (3 YELLOW)
3. THE COLOR OF DELINEATOR POSTS AND ALL SPECIAL MOUNTING BRACKETS SHALL BE INTERSTATE GREEN.
4. DELINEATORS ARE MANDATORY ON ALL ROADWAYS ON THE STATE HIGHWAY SYSTEM. THEY ARE OPTIONAL WHERE FIXED SOURCE LIGHTING IS IN OPERATION; HOWEVER, ALL CONCRETE BARRIER AND TYPE 3 GUARDRAIL SHALL HAVE REFLECTORS OR SUPPLEMENTAL TABS.
5. TYPE I (YELLOW) DELINEATORS ARE MANDATORY ON THE LEFT SIDE OF EXPRESSWAY ROADWAYS (MEDIAN).
6. RED DELINEATORS MAY BE INSTALLED ON THE REVERSE SIDE OF ANY DELINEATOR AND/OR A SEPARATE POST ON ONE-WAY ROADWAYS OR RAMPS WHERE INVESTIGATION SHOWS A NEED FOR WRONG-WAY MOVEMENT PROTECTION.
7. TYPE III (3-YELLOW) DELINEATORS ARE TO BE INSTALLED TO WARN OF THE EXISTENCE OF OBJECTS NOT ACTUALLY IN THE ROADWAY BUT THAT MAY BE SO CLOSE TO THE EDGE OF THE ROADWAY THAT THEY NEED A MARKER. THESE INCLUDE UNDERPASS PIERS, BRIDGE ABUTMENTS, HANDRAILS, AND CULVERTS HEADS. THE INSIDE EDGE OF THE MARKER SHALL BE IN LINE WITH THE INNER EDGE OF THE OBSTRUCTION.
8. INTERCHANGE RAMPS SHALL BE DELINEATED ON THE RIGHT SIDE, THE LEFT SIDE, OR BOTH SIDES WITH TYPE I DELINEATORS OF THE APPROPRIATE COLOR (CRYSTAL OR YELLOW) AS ILLUSTRATED ON SHEET NUMBER 3.
9. FRONTAGE ROAD DELINEATORS ARE NOT TO BE INSTALLED WHERE THEY MIGHT BE MISLEADING TO MAINLINE TRAFFIC.
10. SPACING OF DELINEATORS FOR TUNNELS AND SNOW SHEDS SHALL BE AS SHOWN ON THE PLANS.
11. WHERE PRACTICABLE, THE APPROACH ENDS OF ISLANDS AND MEDIANS SHOULD BE DELINEATED.
12. TYPICAL INSTALLATION LOCATIONS FOR ALL TYPE I DELINEATORS ON TANGENT SECTIONS SHALL BE ON 1/10TH MILE INTERVALS IN RELATION TO THE HIGHWAY MILE MARKERS. A 200 FOOT MINIMUM WILL APPLY TO THE "LAST SPACE" EXITTING A HORIZONTAL CURVE AND THE FOLLOWING DELINEATOR SHALL BE INSTALLED ON THE NEXT 1/10TH MILE LOCATION (MAXIMUM SPACING IS ALSO 528 FEET). AT ALL OTHER LOCATIONS, SUCH AS A & D LANES, RAMPS, WIDTH TRANSITIONS, AND TURN LANES, A "LAST SPACE" SHOULD NOT BE LESS THAN 50% OF HTE SPACING SHOWN FOR THAT LOCATION.
13. TYPE II DELINEATORS SHALL BE INSTALLED AT 100 FOOT SPACING ON ALL ACCELERATION LANES AND TAPERS, DECELERATION LANES AND TAPERS, AND LANE TRANSITIONS INVOLVING PAVEMENT WIDTH REDUCTIONS IN THE DIRECTION OF TRAFFIC. TYPE II DELINEATORS ARE NOT REQUIRED FOR REDIRECT TAPERS, FOR TRAFFIC MOVING IN THE DIRECTION OF WIDER PAVEMENT OR ON THE SIDE OF THE ROADWAY WHERE THE ALIGNMENT IS NOT AFFECTED BY THE LANE REDUCTION. TYPE II (YELLOW) DELINEATORS SHALL ONLY BE USED WHEN A RAISED OR DEPRESSED MEDIAN IS PRESENT. FOR WIDTH TRANSITIONS WHERE TRAFFIC MOVES IN THE DIRECTION OF WIDER PAVEMENT, THE NORMAL SPACING SHALL BE ADJUSTED SO THERE IS A DELINEATOR AT EACH OF THE ANGLE POINTS OF THE WIDTH TRANSITION.
14. TYPE I DELINEATORS SHALL BE INSTALLED AT 100 FOOT SPACING ON INTERCHANGE RAMP TANGENT SECTION AND BY THE SPACING TABLE ON RAMP CURVES. SPACING "IN ADVANCE OF AND BEYOND CURVE" DOES NOT APPLY TO RAMP CURVES.
15. FOR SPACING ON A CURVE THAT FOLLOWS A TANGENT SECTION WITH SPACES SHORTER THAN THOSE SHOWN IN THE CURVE SPACING TABLE: MODIFY THE TABLE SO THAT THE CURVE SPACING IS NO GREATER THAN THE TANGENT SPACING.
16. WHERE GUARDRAIL INTRUDES INTO THE SPACE BETWEEN THE PAVEMENT EDGE AND THE LINE OF DELINEATORS, PLACE THE DELINEATORS IMMEDIATELY ABOVE OR BEHIND THE RAIL FACE, AND DELINEATOR SPACING SHALL BE THE SAME BEHIND THE RAIL FACE.
17. WHEN NORMAL SPACING FALLS ON AN INTERSECTING ROADWAY, DRIVEWAY, ETC. THE DELINEATOR MAY BE MOVED EITHER DIRECTION A DISTANCE NOT EXCEEDING ONE-QUARTER OF THE NORMAL SPACING.
18. THE ANGULAR PLACEMENT FOR ALL DELINEATORS SHOULD BE BY THE "TRAFFIC ORIENTING" METHOD: AIM THE FACE OF THE DELINEATOR AT THE CENTERLINE OF THE NEAREST LANE OF APPROACHING TRAFFIC AT A POINT 300 FEET AWAY (OR AS DIRECTED BY THE ENGINEER FOR SPECIAL OR LOCATIONS AND CURVES HAVING A DEGREE OF CURVATURE GREATER THAN 6 DEGREES).
19. TYPE III (YELLOW-BLUE-YELLLOW) DELINEATORS ARE TO BE INSTALLED TO WARN OF THE EXISTENCE OF AN ASPHALT CURB INSTALLED BELOW GUARDRAIL. THE DELINEATOR SHALL BE PLACED IN LINE WITH THE ASPHALT CURB.
20. IF FARMING OR OTHER OVERSIZE LOADS ACTIVELY UTILIZE SECTIONS OF ANY TWO-LANE STATE HIGHWAY, THE DELINEATOR POSTS SHALL BE STAGGERED NO LESS THAN EVERY ONE-TENTH OF A MILE. FLEXIBLE DELINEATORS OR OTHER ENGINEERING SOLUTIONS SHALL BE CONSIDERED UNDER THE DISCRETION OF THE ENGINEER. DELINEATOR POSTS SHALL NOT BE STAGGERED WHERE IT IS DEEMED UNSAFE BY THE ENGINEER. (i.e., CURVES)



TYPICAL DELINEATOR PLACEMENT

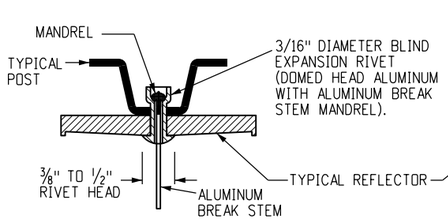


SECTION B-B

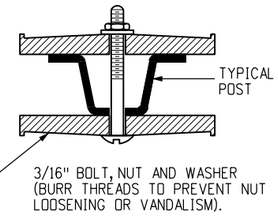


TYPICAL DOUBLE HEIGHT INSTALLATION

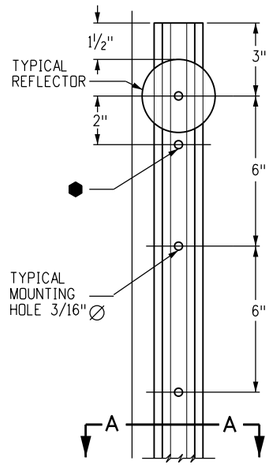
TYPICAL INSTALLATION SINGLE DIRECTION

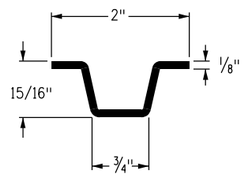


TYPICAL INSTALLATION BACK - TO - BACK



TYPICAL DELINEATOR FABRICATION DETAILS





SECTION A-A

ALLOWABLE TOLERANCE DIMENSION:

1" AND UP	± 1/8"
½" TO 1"	± 1/16"
½" AND BELOW	± 1/32"

WEIGHT:

MINUS 3½% OF THE WEIGHT OF ANY ONE POST.

TYPICAL 1.12# DELINEATOR POST

POST NOTES

1. POSTS SHALL BE A UNIFORM FLANGED CHANNEL SECTION (U-SHAPE) MADE FROM HOT ROLLED STRUCTURAL STEEL, RE-ROLLED RAIL STEEL, OR NEW BILLET STEEL, HAVING A MINIMUM YIELD STRENGTH OF 30,000 PSI AND A MINIMUM TENSILE STRENGTH OF 50,000 PSI.
2. POSTS SHALL BE SET IN DRILLED OR EXCAVATED HOLES, PLACED PLUMB AND FIRMLY TAMPED IN PLACE; OR MAY BE DRIVEN PLUMB.
3. A MINIMUM OF 3 HOLES OF 3/16" DIAMETER, SPACED AS SHOWN, ARE REQUIRED FOR ALL DELINEATOR POSTS.

⬢ AN ADDITIONAL HOLE IS REQUIRED WHEN THE ADJUSTABLE REFLECTOR BRACKET IS USED.

DOUBLE HEIGHT POSTS

4. THE LOWER SECTION OF THE 2-POST COMBINATION SHALL BE INSTALLED ACCORDING TO THE SAME PLACEMENT SPECIFICATIONS AS A TYPICAL SINGLE POST INSTALLATION.

▲ 5. REFLECTORS SHALL BE MOUNTED AT THE CONNECTION OF THE POSTS AND AT THE TOP OF THE UPPER POST IN ACCORDANCE WITH THE APPROPRIATE CONFIGURATION FOR THE APPLICATION.

6. THE LENGTH OF THE UPPER EXTENSION PIECE SHALL NOT EXCEED 7 FEET.

Computer File Information		Sheet Revisions	
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DELINEATOR INSTALLATIONS

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STANDARD PLAN NO.
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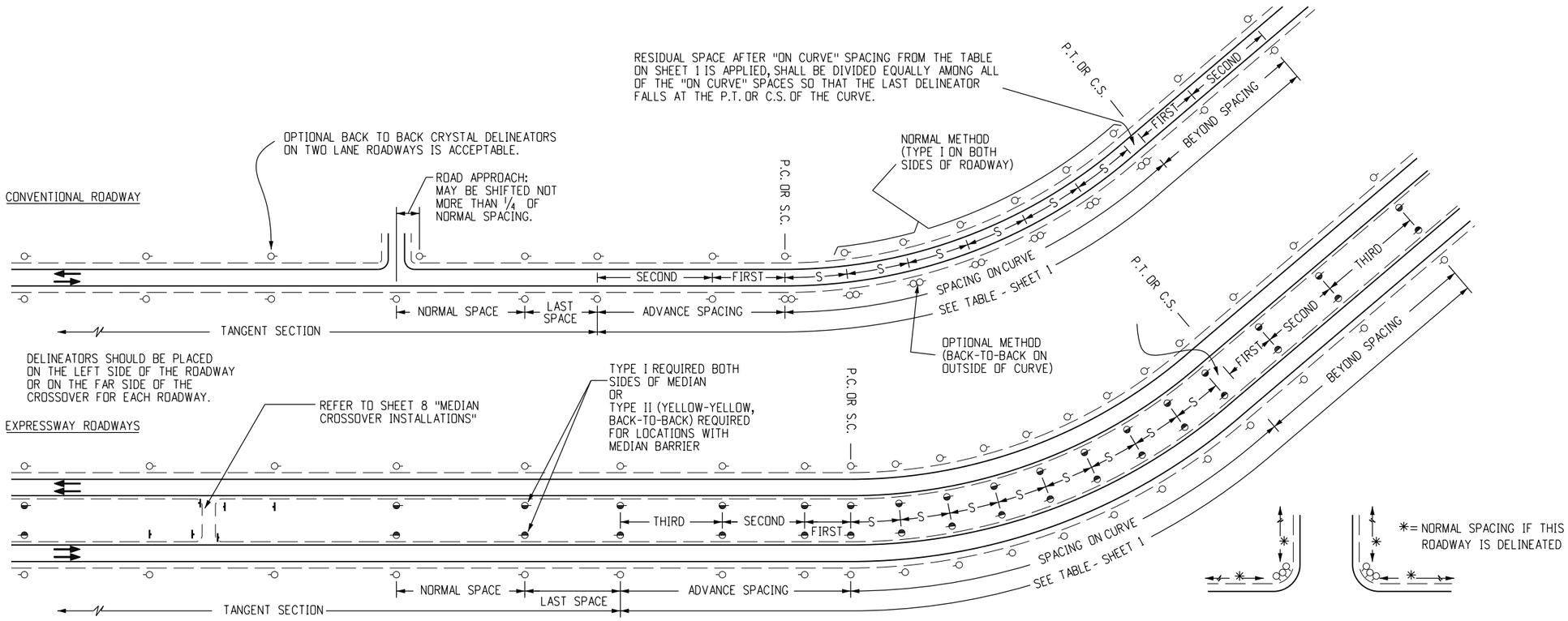
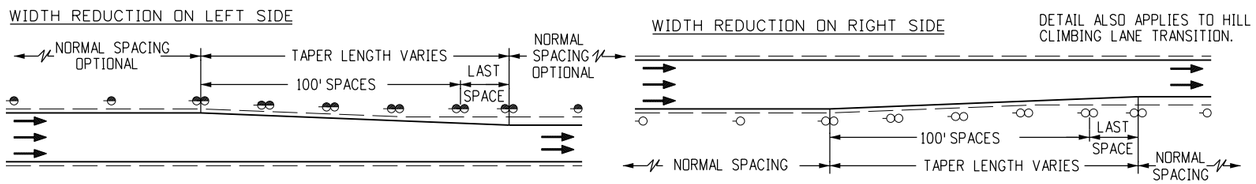
Project Sheet Number: 196

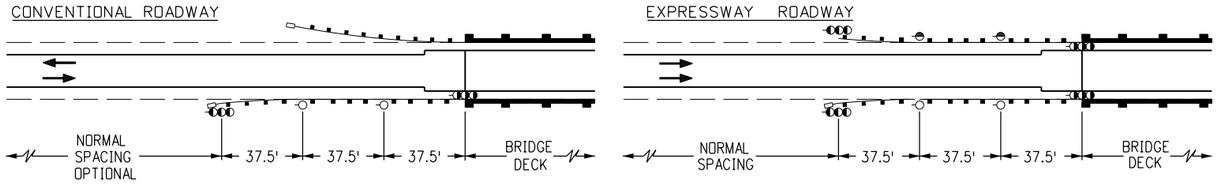


TYPICAL INSTALLATION FOR TANGENT SECTION AND CURVES

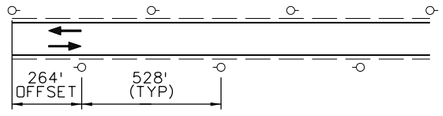
TYPICAL INSTALLATION FOR MINOR INTERSECTION



TYPICAL INSTALLATION FOR LANE TRANSITION



TYPICAL INSTALLATION FOR BRIDGE APPROACHES



TYPICAL INSTALLATION STAGGERED DELINEATORS, 2-LANE STATE HIGHWAY

DELINEATOR SYMBOLS AND TYPICAL CONFIGURATION

- TYPE I (CRYSTAL)
- TYPE I (YELLOW)
- TYPE I (RED)
- TYPE I (GREEN) (MAINTENANCE MARKER)
- TYPE I (BLUE) (MAINTENANCE MARKER)
- TYPE II (2 CRYSTAL)
- TYPE II (2 YELLOW)
- TYPE II (CRYSTAL-CRYSTAL BACK-TO-BACK)
- TYPE II (YELLOW-YELLOW, BACK-TO-BACK)
- TYPE II (CRYSTAL-RED, BACK-TO-BACK)
- TYPE II (YELLOW-RED, BACK-TO-BACK)
- TYPE III (3 YELLOW)
- TYPE III (2 CRYSTAL-RED, BACK-TO-BACK)
- TYPE III (2 YELLOW-RED, BACK-TO-BACK)
- TYPE III (GREEN) (MAINTENANCE MARKER)
- TYPE III (BLUE) (MAINTENANCE MARKER)
- MEDIAN CROSSOVER DELINEATOR
- TYPE III (YELLOW-BLUE-YELLOW)
- BRIDGE JOINT MARKER (OM1-U, OM1-D)

BRIDGE APPROACH NOTES

1. WHERE CURB TO CURB WIDTH OF BRIDGE IS EQUAL TO OR GREATER THAN ROADWAY WIDTH PLUS USABLE SHOULDER WIDTH, USE TYPE III DELINEATORS ONLY AND OMIT TYPE I DELINEATORS.
2. FOR GUARD RAIL INSTALLATIONS WHERE APPROACH END IS NOT FLARED, PLACE A TYPE III DELINEATOR (3 GREEN) IMMEDIATELY IN ADVANCE OF APPROACH END.
3. ALL TYPE I DELINEATORS ARE TO BE MOUNTED ABOVE OR IMMEDIATELY BEHIND GUARD RAIL AND ARE NOT A CONSTANT DISTANCE FROM THE ROADWAY.

Computer File Information		Sheet Revisions	
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Last Modification Date: 04/30/24	R-1	11/07/23	ADDED STAGGERED DELINEATORS
Last Modified By: NRIVERA			
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DELINEATOR INSTALLATIONS

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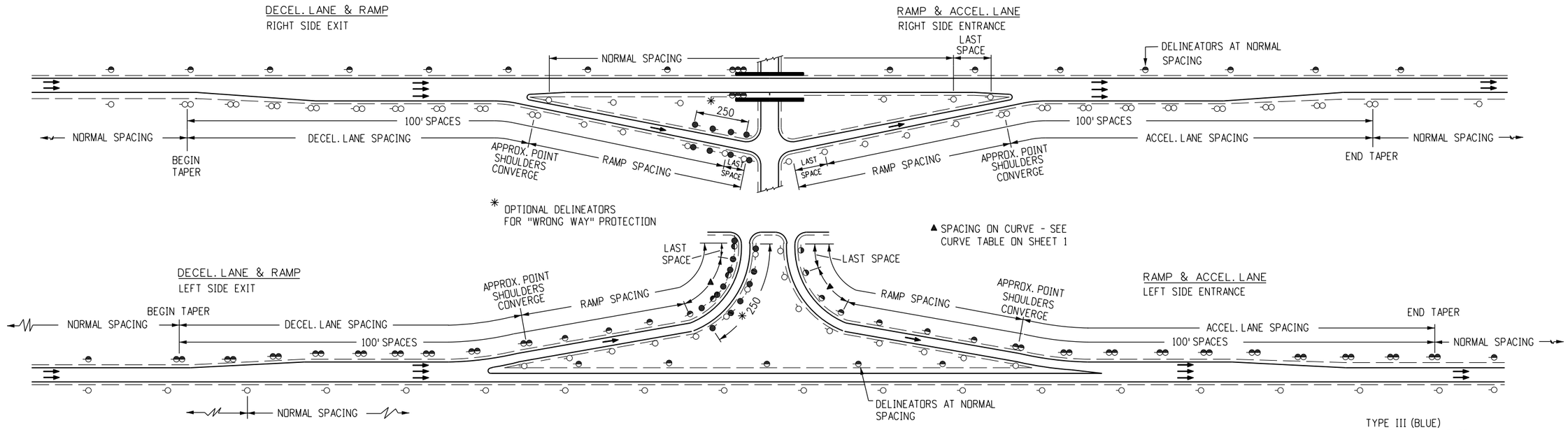
STANDARD PLAN NO. S-612-1

Standard Sheet No. 2 of 8

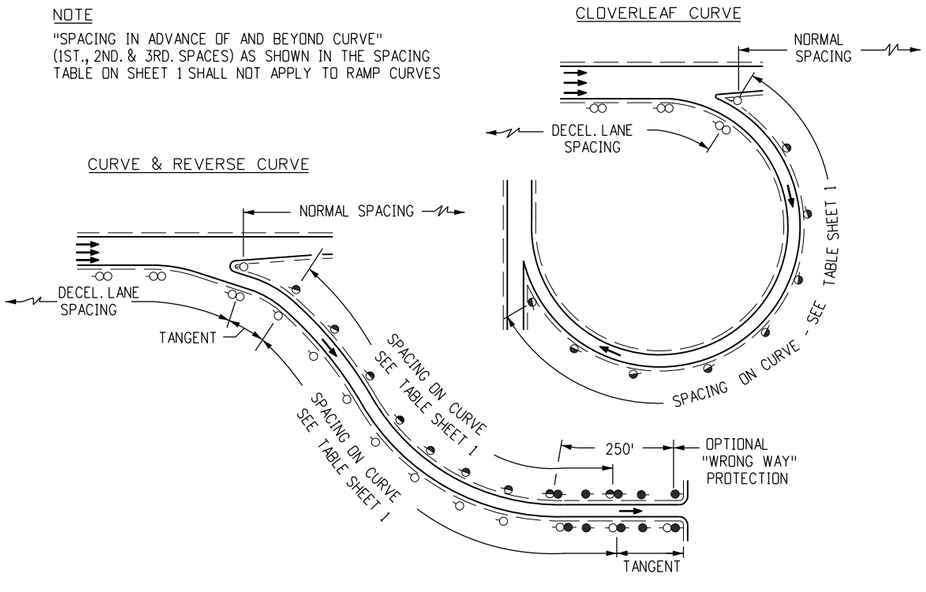
Project Sheet Number: 197



TYPICAL INSTALLATION FOR INTERCHANGES

NOTE

"SPACING IN ADVANCE OF AND BEYOND CURVE" (1ST., 2ND. & 3RD. SPACES) AS SHOWN IN THE SPACING TABLE ON SHEET 1 SHALL NOT APPLY TO RAMP CURVES



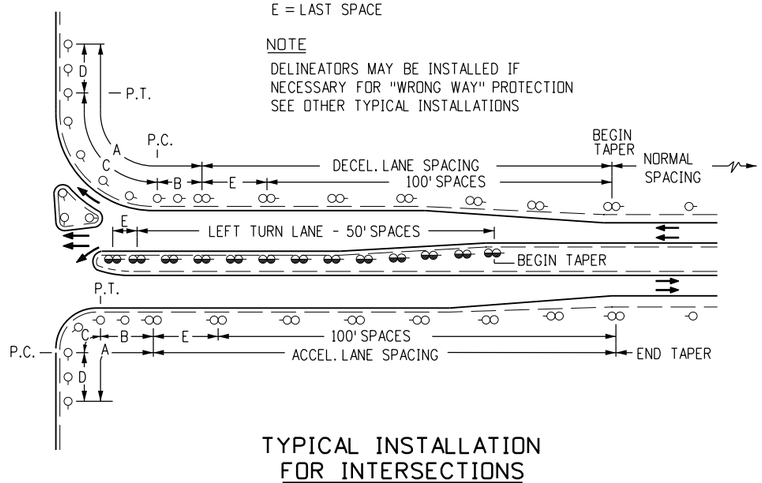
TYPICAL INSTALLATION FOR RAMP CURVES

LEGEND

A = SEE CURVE SPACING TABLE
B = ADVANCE SPACES (FIRST & SECOND)
C = SPACING ON CURVE
D = BEYOND SPACES (FIRST & SECOND)
E = LAST SPACE

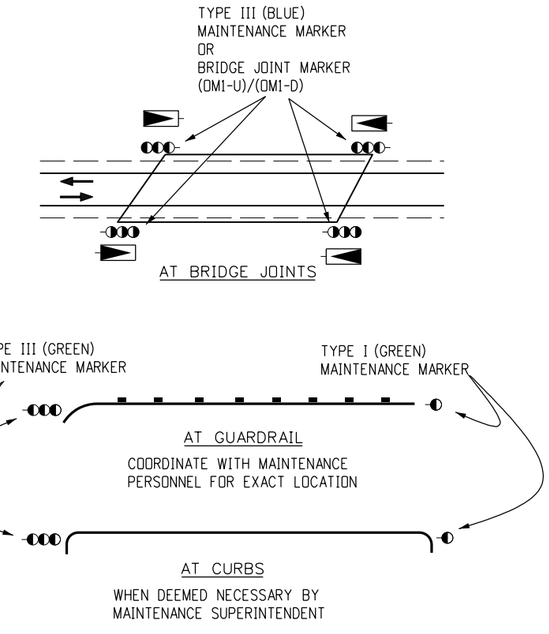
NOTE

DELINEATORS MAY BE INSTALLED IF NECESSARY FOR "WRONG WAY" PROTECTION SEE OTHER TYPICAL INSTALLATIONS



TYPICAL INSTALLATION FOR INTERSECTIONS

WITH ACCEL. & DECEL. LANES



MAINTENANCE MARKER LOCATIONS FOR OBSTRUCTIONS

Computer File Information		Sheet Revisions	
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DELINEATOR INSTALLATIONS

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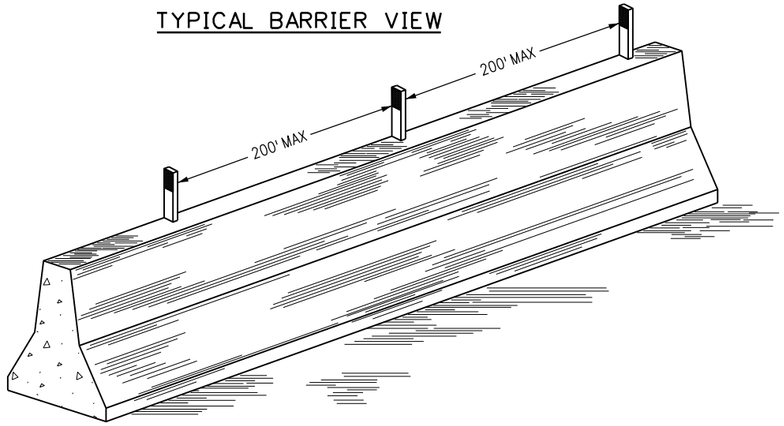
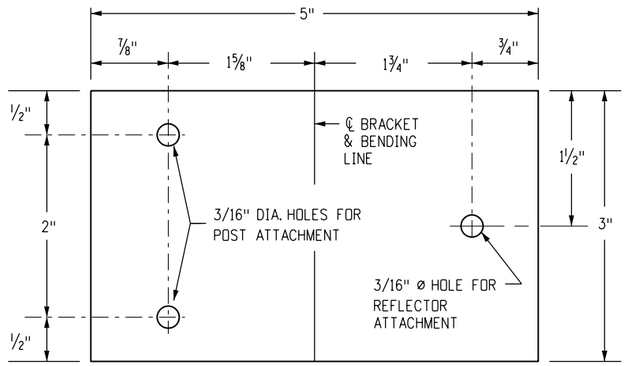
TYPICAL BARRIER VIEW

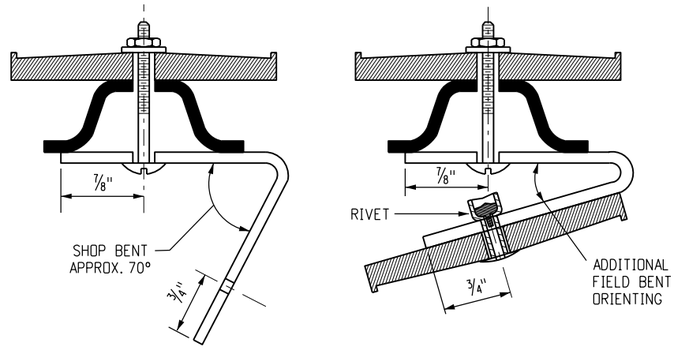


TYPICAL REFLECTOR DETAILS FOR CONCRETE BARRIER

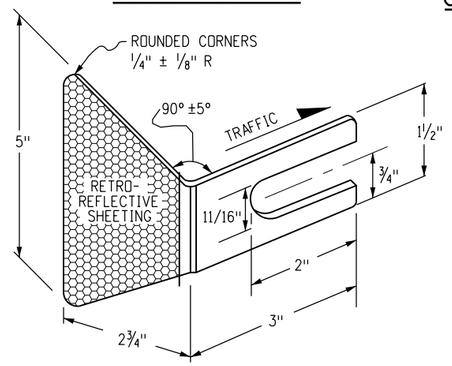
PLAN VIEW



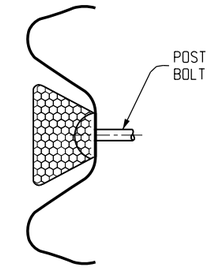
TYPICAL ADJUSTABLE REFLECTOR BRACKET



REFLECTOR TAB



MOUNTING POSITION ON GUARD RAIL TYPE 3

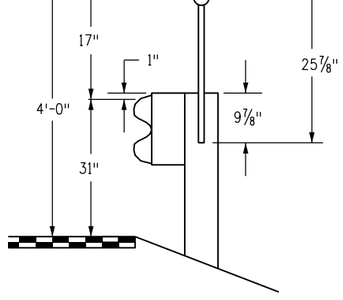


TYPICAL GUARDRAIL REFLECTOR TAB

SEE THE M-606-1 STANDARD PLAN FOR REFLECTOR TAB FABRICATION AND PLACEMENT DETAILS. RETROREFLECTIVE SHEETING SHALL CONFORM TO ASTM D4956 TYPE IV.

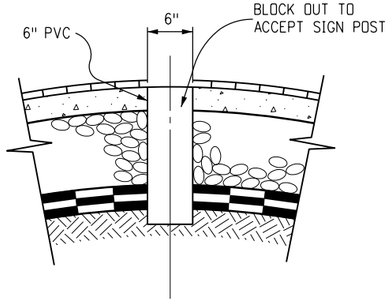
BARRIER REFLECTOR NOTES

1. BARRIER REFLECTORS, REGARDLESS OF TYPE, SHALL MEET THE RETROREFLECTIVE QUALTITIES SPECIFIED IN SECTION 713 OF THE STANDARD SPECIFICATIONS FOR DELINEATOR REFLECTORS, AND BE PAID FOR AS DELINEATOR (TYPE _) (BARRIER) (EACH). USE OF THESE REFLECTORS IS MANDATORY.
2. THE COLOR OF REFLECTIVE SURFACE SHALL MATCH THE COLOR OF THE ADJACENT EDGE LINE.
3. CONCRETE SURFACE PREPARATION, ADHESIVE, AND METHOD OF APPLICATION SHALL BE AS RECOMMENDED BY THE REFLECTOR MANUFACTURER.
4. UNLESS OTHERWISE NOTED IN THE PLANS OR DIRECTED BY THE ENGINEER, A 200 FOOT MAXIMUM TANGENT AND CURVE SPACING APPLIES TO BARRIER REFLECTORS.
5. TOP MOUNT REFLECTORS ARE STANDARD. SIDEMOUNT BARRIER REFLECTORS OR 6 INCH WIDE REFLECTOR STRIPS MAY BE REQUIRED IF SPECIFIED IN THE PLANS.
6. MEDIAN BARRIER REFLECTORS SHALL BE TYPE II (YELLOW-YELLOW, BACK-TO-BACK).
7. FOR A TWO-WAY ROADWAY BARRIER, REFLECTORS SHALL BE TYPE II (CRYSTAL-CRYSTAL, BACK-TO-BACK).
8. FOR TEMPORARY CONCRETE BARRIER, RELFECTORS SHALL BE INSTALLED THAT MEET THE MINIMUM REQUIREMENTS OF STANDARD TYPICAL DELINEATOR INSTALLATIONS, EXCEPT THE MAXIMUM SPACING SHALL BE 50 FEET, AND THEY WILL NOT BE PAID FOR, BUT ARE INCLUDED IN THE WORK.



TYPICAL GUARDRAIL POST MOUNT DELINEATORS

POST MOUNT DELINEATORS SHALL BE ATTACHED BY A METHOD APPROVED BY THE ENGINEER OR A METHOD REQUIRED BY THE DEVICE MANUFACTURER.



TYPICAL SLEEVE INSTALLATION FOR MEDIAN DELINEATOR POSTS

TYPICAL BRACKET FABRICATION DETAILS

BRACKET NOTES

1. THE ADJUSTABLE REFLECTOR BRACKET IS TO BE USED TO "TRAFFIC ORIENT" BACK-TO-BACK DELINEATORS USED ON CURVES.
2. REFLECTOR BRACKETS SHALL BE FABRICATED FROM EITHER GALVANIZED STEEL NOT LESS THAN 16 GAGE, OR ALUMINUM NOT LESS THAN 0.100 INCH THICKNESS.
3. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED OR CADMIUM PLATED.
4. ALL BRACKET HOLES ARE 3/16 INCH DIAMETER AND DELINEATOR POSTS REQUIRE AN ADDITIONAL HOLE 2 INCH BELOW THE TOP HOLE PROVIDED IN THE POST.
5. SHOP BEND THE BRACKET APPROX. 70 DEGREES AS SHOWN, ATTACH TO THE DELINEATOR POST WITH 3/16 INCH BOLTS AND FIELD BEND AS NECESSARY TO TRAFFIC ORIENT. THEN THE BRACKET REFLECTOR CAN BE ATTACHED WITH A 3/16 INCH BLIND EXPANSION RIVET OR A BOLT.
6. BURR THE THREADS OF ALL BOLTS TO PREVENT NUT LOOSENING OR VANDALISM.

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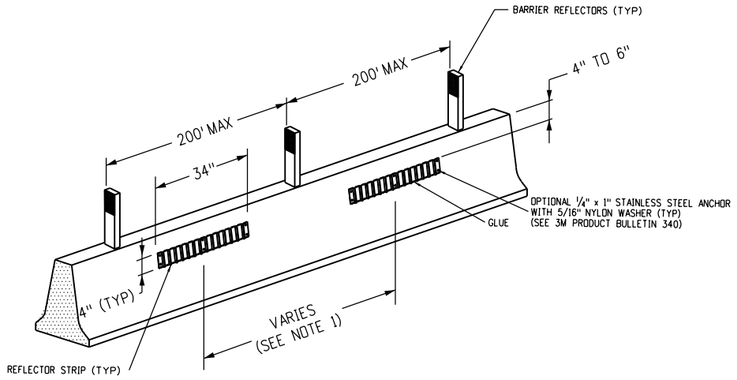
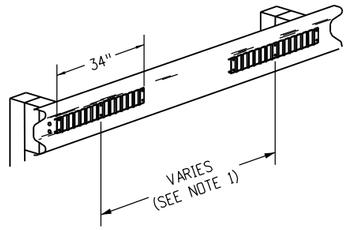
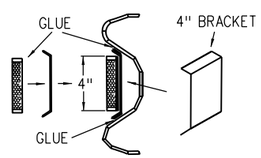
TYPICAL INSTALLATION DETAIL FOR CONTINUOUS CONCRETE BARRIER



TYPICAL INSTALLATION DETAIL FOR GUARDRAIL TYPE 3





ATTACHMENT DETAILS

TYPICAL REFLECTOR STRIP INSTALLATION

1. REFLECTOR STRIPS SHALL BE SPACED AT INTERVALS OF 20 FEET OFF-CENTER FOR TANGENT SECTIONS OF BARRIER AND 10 FEET OFF-CENTER FOR CURVED SECTIONS OF BARRIER.
2. THIS DEVICE SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. IT IS THE RESPONSIBILITY OF THE INSTALLER TO CONTACT THE MANUFACTURER REPRESENTATIVE WHENEVER THERE IS A QUESTION REGARDING APPLICATION PROCEDURES OR SUBSTRATE CONDITIONS.
3. THE COLOR OF THE RELECTIVE SURFACE SHALL MATCH THE COLOR OF THE ADJACENT ROADWAY EDGE LINE.
4. AT THE TIME OF INSTALLATION, THE CONTACTING SURFACE SHALL BE DRY AND MOISTURE-FREE.
5. AFTER REFLECTOR STRIP INSTALLATION, SURFACES SHOULD STAY DRY WITHOUT RAIN IN THE FORECAST FOR AT LEAST 8 HOURS.
6. SURFACE PREPARATION, BRACKETS, BOLTS, AND GLUE (OR EQUIVALENT) SHALL BE INCLUDED IN THE COST OF EACH DELINEATOR STRIP.

CONCRETE BARRIER NOTES

1. CONCRETE SURFACE PREPARATION, ADHESIVE, AND METHOD OF APPLICATION SHALL BE AS RECOMMENDED BY THE REFLECTOR MANUFACTURER.
2. TO ASSUME A STRAIGHT, LEVEL APPLICATION, SNAP A CHALK LINE ACROSS THE BARRIER.
3. FOR MOUNTING THE REFLECTOR STRIP TO CONCRETE BARRIER, INCLUDING THE BRACKETS, THE USE OF 3M WINDO-WELD SUPER FAST URETHANE GLUE OR EQUIVALENT APPLIED AT 60 DEGREES FAHRENHEIT IN DRY WEATHER IS RECOMMENDED. THIS PRODUCT IS AVAILABLE IN A STANDARD CAULKING TUBE AND SHOULD BE APPLIED TO THE BRACKETS AND PANELS WITH A CONSTRUCTION STYLE CAULKING GUN, AND/OR USE 1/4" x 1" STAINLESS STEEL ANCHOR WITH 5/16 INCH NYLON WASHER, AS SPECIFIED IN 3M PRODUCT BULLETIN 340.
4. UNLESS OTHERWISE NOTED IN THE PLANS OR DIRECTED BY THE ENGINEER, A 200-FOOT MAXIMUM TANGENT AND CURVE SPACING APPLIES TO BARRIER REFLECTORS ALONG THE TOP OF THE BARRIER.

GUARDRAIL TYPE 3 NOTES

1. THE USE OF REFLECTOR STRIPS ON GUARDRAIL TYPE 3 IS SUPPLEMENTAL TO THE REFLECTOR TAB.
2. TWO DIFFERENT STYLES OF MOUNTING BRACKETS ARE AVAILABLE. THERE IS ONE TYPE FOR THE 4-INCH REFLECTOR STRIP AND ANOTHER FOR THE 6-INCH REFLECTOR STRIP. THE BRACKETS MUST BE MATCHED TO FIT THE EXACT 4-INCH OR 6-INCH REFLECTOR STRIP PANEL. THE 4-INCH REFLECTOR STRIP SIZE IS TYPICAL, HOWEVER, 1.5-INCH OR 6-INCH REFLECTOR STRIPS MAY BE INSTALLED AS SPECIFIED IN THE PLANS.
3. METAL GUARDRAIL SHALL BE WIRE BRUSHED/SANDED, THEN CLEANED WITH ISOPROPYL ALCOHOL WHERE THE BRACKETS WILL ADHERE TO THE GUARDRAIL.
4. FOR MOUNTING THE REFLECTOR STRIP TO GUARDRAIL, INCLUDING THE BRACKETS, THE USE OF 3M WINDO-WELD SUPER FAST URETHANE GLUE OR EQUIVALENT APPLIED AT 60 DEGREES FAHRENHEIT IN DRY WEATHER IS RECOMMENDED. THIS PRODUCT IS AVAILABLE IN A STANDARD CAULKING TUBE AND SHOULD BE APPLIED TO THE BRACKETS AND PANELS WITH A CONSTRUCTION STYLE CAULKING GUN, AND/OR USE 1/4 INCH x 1 INCH STAINLESS STEEL ANCHOR WITH 5/16 INCH NYLON WASHER, AS SPECIFIED IN 3M PRODUCT BULLETIN 340.
5. INSTALLATION REQUIRES THE USE OF THREE BRACKETS (MINIMUM) PER REFLECTOR STRIP CORRESPONDING TO THE PRE-DRILL REFLECTOR STRIP HOLES.

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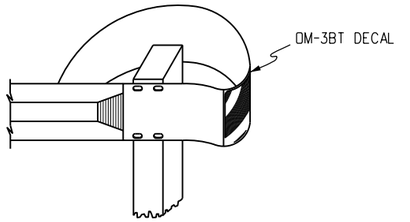
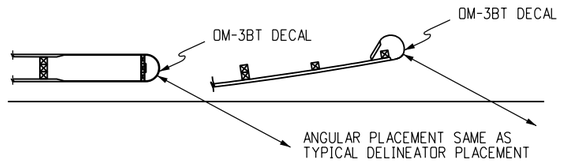
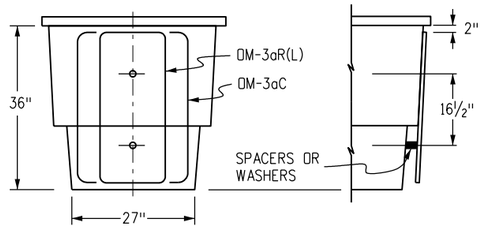


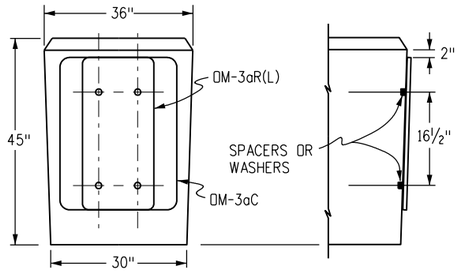
SIDE VIEW



TOP VIEWS

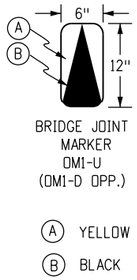
BUFFER TERMINALS (BT)





FRONT VIEWS SIDE VIEWS

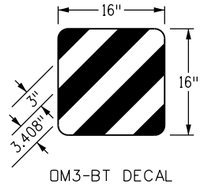
IMPACT ATTENUATOR (SAND FILLED)



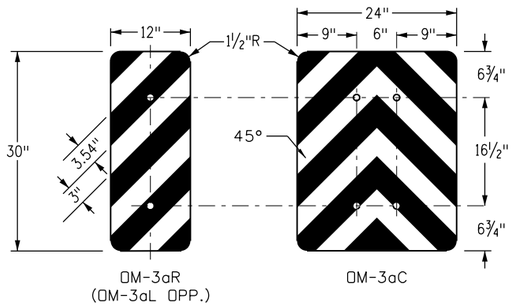
BRIDGE JOINT
MARKER
OM1-U
(OM1-D OPP.)

(A) YELLOW

(B) BLACK



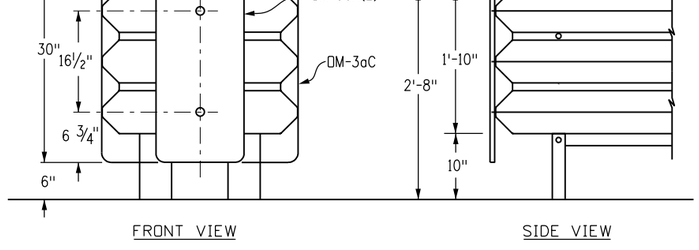
OM3-BT DECAL
(OPTIONAL)



OM-3aR
(OM-3aL OPP.)

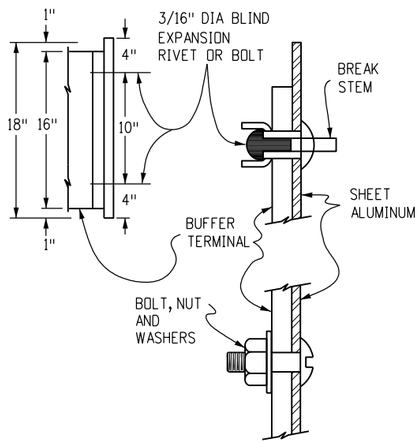
OM-3aC

SUPPLEMENTAL DELINEATION DETAILS

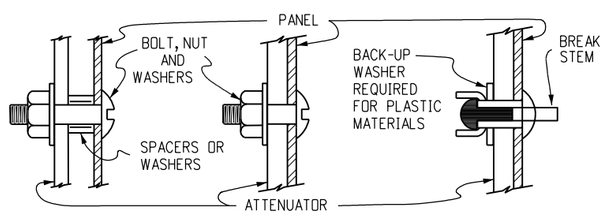


FRONT VIEW SIDE VIEW

IMPACT ATTENUATOR (MODULAR)



BUFFER PANEL ATTACHMENT DETAILS



ATTENUATOR PANEL ATTACHMENT DETAILS

SUPPLEMENTAL PANEL NOTES

1. ALL SUPPLEMENTAL DELINEATION PANELS SHALL BE SINGLE SHEET ALUMINUM, 0.080" MINIMUM THICKNESS.
2. A) PANELS SHALL BE FASTENED DIRECTLY TO THE IMPACT ATTENUATOR WITH 2 OR 4-3/16 INCH DIAMETER BLIND EXPANSION RIVETS, OR 2 OR 4-3/16 INCH BOLTS, NUTS AND WASHERS.

   B) EXPANSION RIVETS SHALL BE DOMED HEAD ALUMINUM WITH ALUMINUM BREAK STEM MANDREL, AND SHALL HAVE A BACK-UP WASHER WHEN USED WITH PLASTIC MATERIALS.

   C) BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED OR CADMIUM PLATED.

   D) SPACERS, OR SPACING WASHERS SHALL BE USED AS NECESSARY FOR SAND FILLED ATTENUATORS.
3. OM-3BT DECAL (BUFFER TERMINAL OBJECT MARKER) SHALL BE PRESSURE SENSITIVE REFLECTIVE SHEETING AND SHALL BE APPLIED DIRECTLY TO THE GUARDRAIL END TREATMENT (FLARED OR NON-FLARED).
4. RETROREFLECTIVE SHEETING SHALL CONFORM TO ASTM D4956, TYPE IV. THE SHEETING SHALL BE YELLOW FOR PERMANENT INSTALLATIONS.
   OM-3BT DECAL AND OM-3aR(L)(C) PANELS SHALL HAVE YELLOW SHEETING BACKGROUND WITH STENCIL BLACK STRIPES.
   THE SHEETING FOR TEMPORARY (CONSTRUCTION ZONE) INSTALLATIONS SHALL BE AS FOLLOWS:
   OM-3BT DECAL AND OM-3aR(L)(C) PANELS SHALL HAVE ALTERNATING ORANGE AND WHITE REFLECTORIZED STRIPES.
5. SUPPLEMENTAL DELINEATION PANELS OR PRESSURE SENSITIVE RETROREFLECTIVE SHEETING DECALS SHALL BE INCLUDED IN THE COST OF THE GUARDRAIL END ANCHOR OR THE IMPACT ATTENUATOR ITEM.
6. REFERENCE SHEET S-612-1 SHEET 7 OF 8 FOR BASE DETAIL

SUPPLEMENTAL DELINEATION FOR GUARD RAIL
BUFFER TERMINALS AND IMPACT ATTENUATORS

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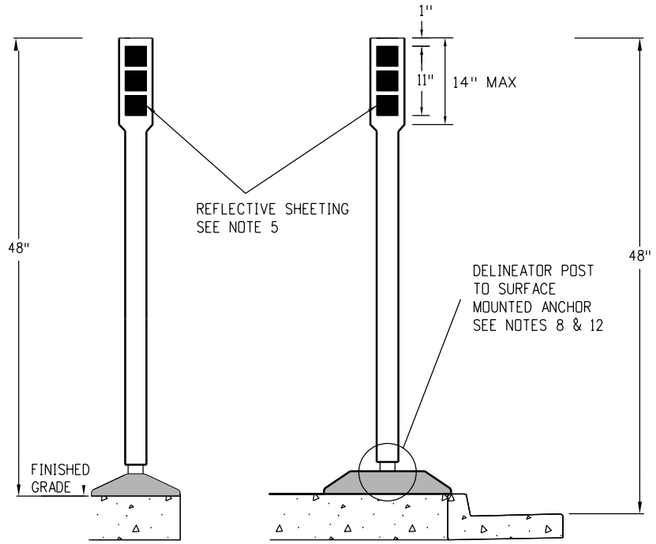
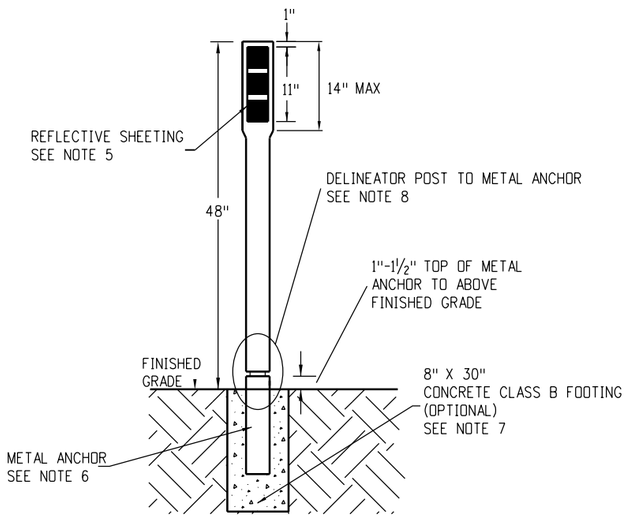
FLEXIBLE DELINEATOR NOTES

1. FLEXIBLE DELINEATOR POSTS SHALL FOLLOW THE REQUIREMENTS AS OUTLINED IN CDOT'S MOST RECENT VERSION OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION". FLEXIBLE DELINEATOR POSTS SHALL BE LISTED ON CDOT'S "APPROVED PRODUCTS LIST" PRIOR TO INSTALLATION.
2. THE LENGTH OF THE FLEXIBLE DELINEATOR POST SHALL BE INSTALLED AS TO PROVIDE A HEIGHT OF 48 INCHES ABOVE THE EDGE OF PAVEMENT.
3. FLEXIBLE DELINEATOR POSTS SHALL BE INSTALLED SO THAT THE REFLECTIVE ELEMENTS FACE ONCOMING TRAFFIC.
4. REFLECTIVE ELEMENTS SHALL BE PRE-INSTALLED AT THE MANUFACTURER'S FACILITY.
5. REFLECTIVE ELEMENTS (SHEETING) SHALL BE TYPE IV OR TYPE V. REFLECTIVE SHEETS SHALL BE 3 INCH SQUARED. REFLECTIVE SHEETS SHALL BE PLACED IN A STRAIGHT VERTICAL COLUMN STARTING 1 INCH FROM THE TOP EDGE AND SEPARATED BY 1 INCH VERTICALLY IN THE COLUMN. SHEETING QUANTITY AND COLOR ARE DEPENDENT ON THE LOCATION OF THE DELINEATOR. SEE SHEET 2 OF S-612-01 FOR TYPICAL CONFIGURATIONS.
6. THE METAL ANCHOR SHALL BE 2 INCH GALVANIZED STEEL PERFORATED SQUARE TUBING MEASURING 24 INCHES IN LENGTH AND SHALL HAVE AN ANCHORING DEPTH OF 22 1/2 TO 23 INCHES.
7. WHEN A CONCRETE BASE IS REQUIRED OR AS DIRECTED BY THE ENGINEER, THE METAL ANCHOR SHALL BE ENCASED IN AN 8 INCH DIAMETER BY 30 INCH DEPTH CONCRETE CLASS B FOOTING. CONCRETE SHALL BE INCLUDED IN THE COST OF THE PAY ITEM.
8. THE CONNECTION BETWEEN THE FLEXIBLE DELINEATOR POST AND THE METAL ANCHOR IS PRODUCT SPECIFIC. ALL FLEXIBLE DELINEATOR POSTS SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS.
9. CONCRETE MEDIAN INSTALLATIONS SHALL INCLUDE A 4 INCH DIAMETER SCHEDULE 80, PVC TUBE. THE TUBE LENGTH SHALL MATCH THE THICKNESS OF THE CONCRETE MEDIAN MATERIAL, BE CUT FLUSH WITH THE CONCRETE, AND BE BACKFILLED WITH SOIL.
10. "DRIVABLE METHOD" IS THE PREFERRED INSTALLATION METHOD FOR GROUND INSTALLATIONS.
11. "SURFACE MOUNTED" INSTALLATION SHALL ONLY BE INSTALLED DURING RETROFIT APPLICATIONS OR AS DIRECTED BY THE ENGINEER.
12. SURFACE MOUNTED DELINEATORS SHOULD ONLY BE UTILIZED FOR TEMPORARY CONFIGURATIONS DURING CONSTRUCTION. SURFACE MOUNTED DELINEATORS MAY BE UTILIZED FOR CURB AND GUTTER APPLICATIONS; HOWEVER, THE DRIVABLE METHOD IS PREFERRED. SURFACE MOUNTED BASES SHALL BE ATTACHED TO THE SURFACE VIA EITHER BOLT DOWN OR GLUE DOWN METHODS.



SURFACE MOUNTED



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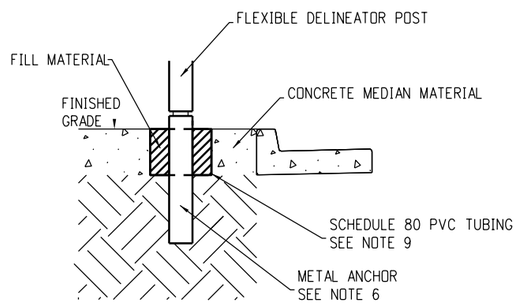
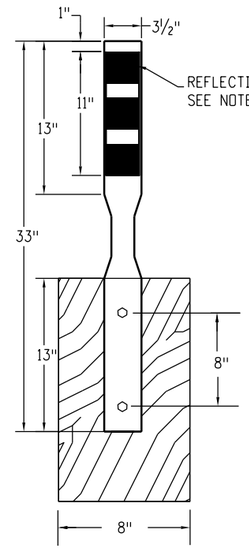


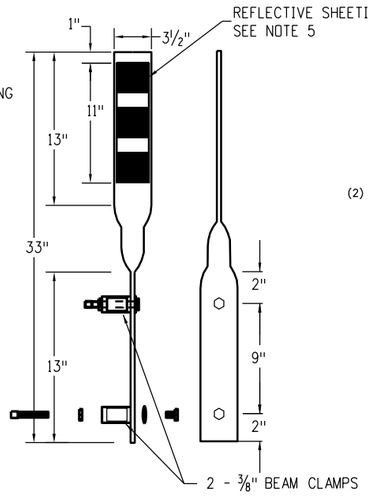
CONCRETE MEDIAN MATERIAL

DRIVEABLE METHOD



POST MOUNTED

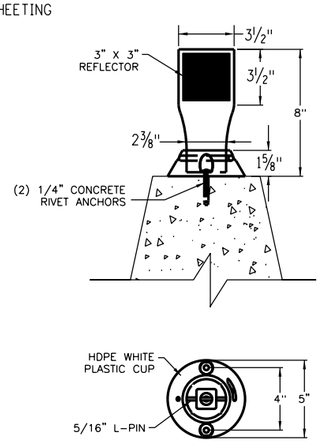
GUARDRAIL



FRONT AND SIDE VIEW

CLAMP MOUNTED

CABLE RAIL



FRONT AND TOP VIEW

CUP MOUNTED

CONCRETE BARRIER

FLEXIBLE DELINEATOR INSTALLATIONS

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12		Date:	Comments
Created By: RPR	R-2	11/07/23	GENERAL NOTES REPLACED WITH FLEXIBLE DELINEATOR NOTES
Last Modification Date: 11/07/23			
Last Modified By: NRIVERA	R-1	01/19/23	UPDATED PAGE LAYOUT AND GENERAL NOTES UPDATED TYPICAL DRAWINGS ADDED CONCRETE MEDIAN MATERIAL
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English			

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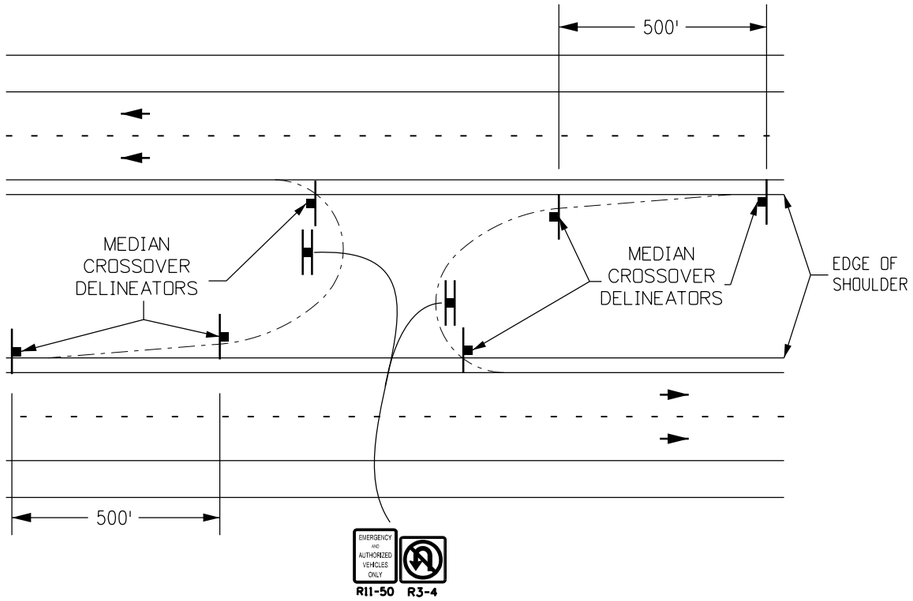
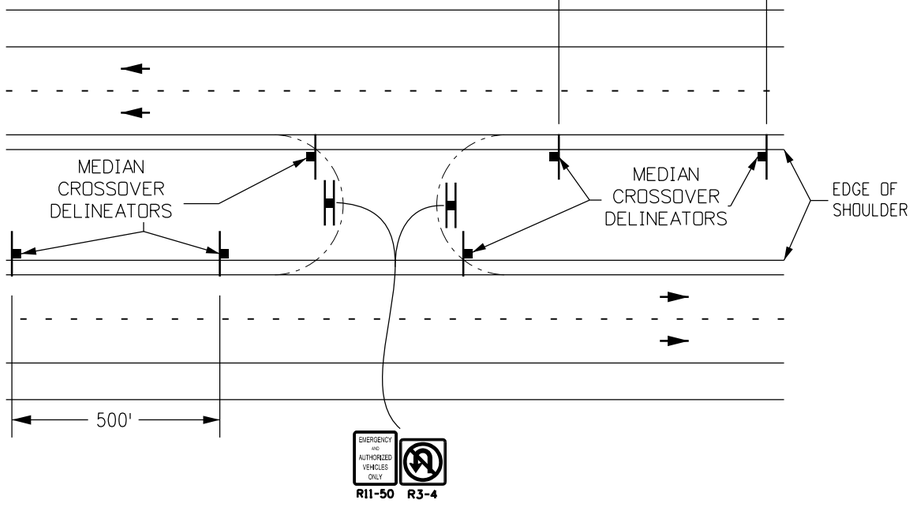
DELINEATOR INSTALLATIONS

Issued By: Traffic Safety & Engineering Branch July 31, 2019

STANDARD PLAN NO.
S-612-1
Standard Sheet No. 7 of 8
Project Sheet Number: 202



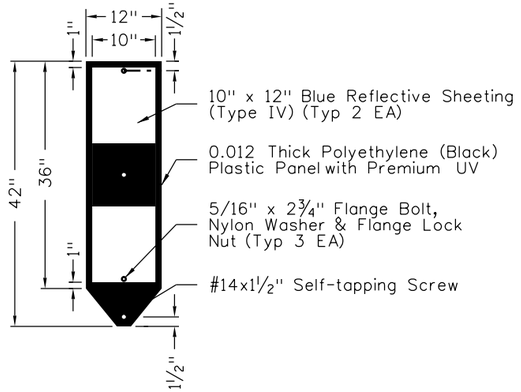
MEDIAN WIDTH GREATER THAN 50 FT.

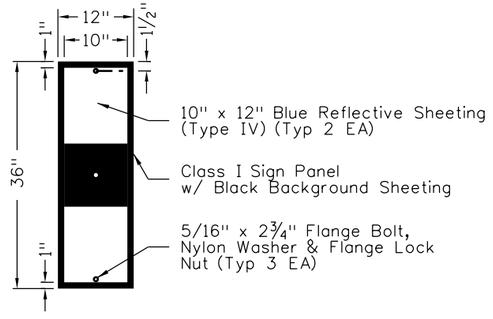


MEDIAN WIDTH LESS THAN 50 FT.

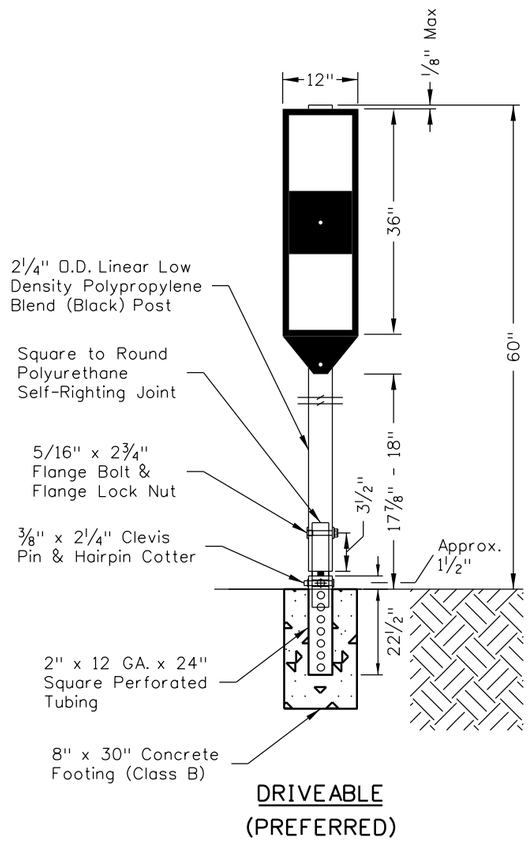
MEDIAN CROSSOVER NOTES

1. MOUNTING HEIGHT TO BOTTOM OF R11-50, "EMERGENCY AND AUTHORIZED VEHICLES ONLY" SIGN, SHALL BE 7 FEET FROM ORIGINAL GROUND.
2. SEE TUBULAR STEEL SIGN SUPPORT DETAILS (S-614-8) FOR CONCRETE FOOTING INFORMATION FOR SOCKET SYSTEM INSTALLATIONS AND ADDITIONAL POST INSTALLATION REQUIREMENTS.
3. PLACE SIX (6) MEDIAN CROSSOVER DELINEATORS, ONE 500 FEET IN ADVANCE OF MEDIAN CROSSOVER AND ONE ON EACH SIDE OF CROSSOVER AS SHOWN ON DETAIL.
4. FOR VISUALLY CONSTRAINED MEDIAN CROSSOVERS, MULTIPLE SIGN PANELS (R3-4 AND R11-50) MAY NEED TO BE PLACED WITHIN THE CROSSOVER ON SEPARATE POSTS, AS DIRECTED BY THE ENGINEER.
5. THE POLYETHRYLENE PLASTIC PANEL MAY BE USED ON EITHER POLYPROPLENE BLEND POST AND/OR P-POST INSTALLATIONS. IN CONTRAST, THE CLASS I SIGN PANEL SHALL ONLY BE USED ON P-POST INSTALLATIONS.

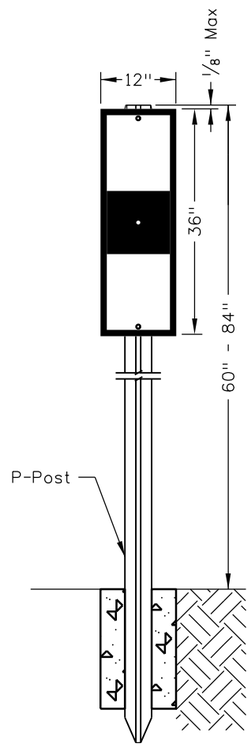




MEDIAN CROSSOVER DELINEATORS



DRIVEABLE
(PREFERRED)



SOCKET SYSTEM
(ALTERNATE)

MEDIAN CROSSOVER INSTALLATIONS

Computer File Information		Sheet Revisions	
Creation Date: 04/12/18		Date:	Comments
Created By: DiNARDO	R-2	04/30/24	FORMATTING
Last Modification Date: 04/30/24	R-1	11/07/23	RENAMED CROSSOVER MARKERS TO MEDIAN CROSSOVER DELINEATORS
Last Modified By: NRIVERA			
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English			

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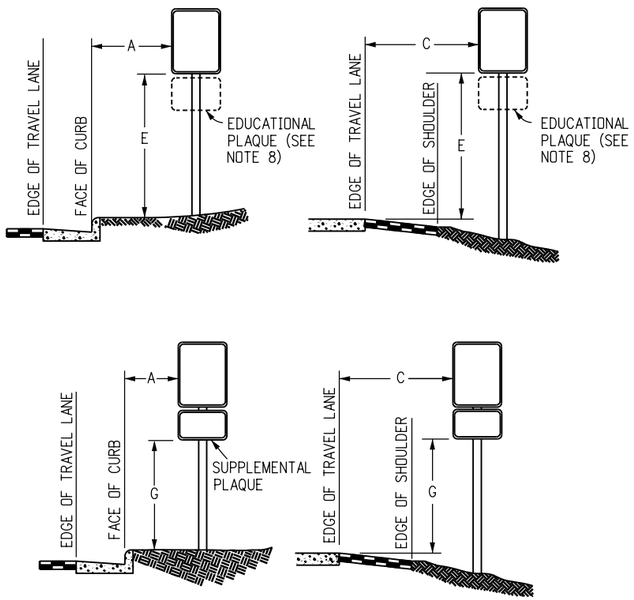
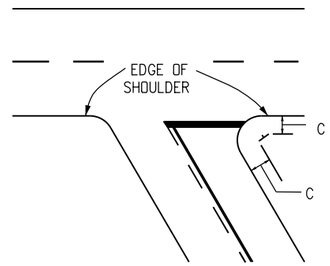
DELINEATOR INSTALLATIONS

Issued By: Traffic Safety & Engineering Branch July 31, 2019

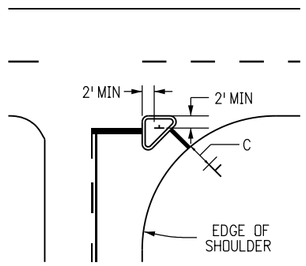
STANDARD PLAN NO.
S-612-1
Standard Sheet No. 8 of 8
Project Sheet Number: 203



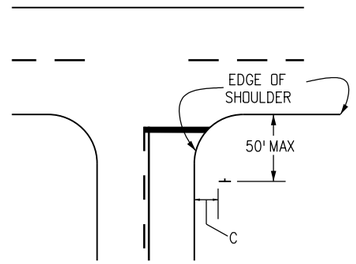
REGULATORY, RECREATIONAL AND CULTURAL INFORMATION SIGN PLACEMENT



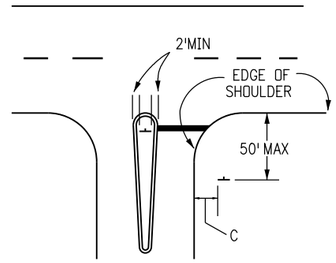
ACUTE ANGLE INTERSECTION



CHANNELIZED INTERSECTION



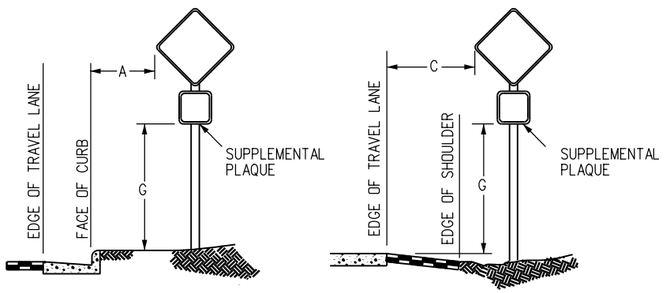
WIDE THROAT INTERSECTION



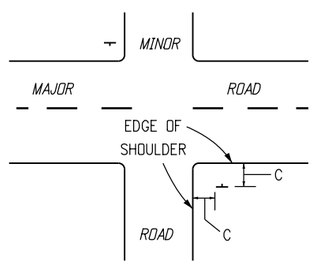
DIVISIONAL ISLAND

GENERAL NOTES

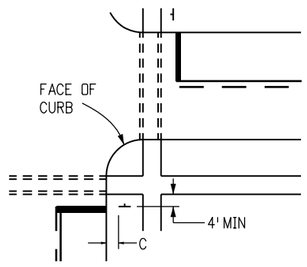
1. THE ENGINEER WILL ESTABLISH GRADES AND LOCATIONS FOR ALL SIGN POSTS IN ACCORDANCE WITH DETAILS SHOWN ON THE PLANS.
2. SPECIAL CARE SHALL BE TAKEN IN SIGN LOCATION TO ENSURE AN UNOBSTRUCTED VIEW OF EACH SIGN.
3. MINIMUM POST EMBEDMENT SHALL BE 3 FEET FOR U-2 POSTS AND 4-INCH X 4-INCH TIMBER POSTS, AND 5 FEET FOR 6-INCH X 6-INCH TIMBER POSTS. SEE S-614-6 AND S-614-8 FOR FOOTING DEPTH. 6-INCH BY 6-INCH TIMBER POSTS SHALL BE PROVIDED WITH TWO 2-INCH DIAMETER HOLES THROUGH THE NEUTRAL AXIS AT RIGHT ANGLES TO THE ROADWAY FOR INDUCED BREAKAWAY FUNCTION, ONE DRILLED AT 4 INCHES AND ONE AT 18 INCHES ABOVE THE GROUND LEVEL.
4. IF A SHOULDER IS WIDER THAN 6 FEET, THE MINIMUM LATERAL OFFSET DISTANCE SHOULD BE 6 FEET FROM THE EDGE OF SHOULDER, EXCEPT FOR MILE MARKER SIGNS. SEE FIGURE 2A-2(B) OF THE 2009 MUTCD.
5. NORMAL LATERAL PLACEMENT IS MEASURED FROM THE EDGE OF THE TRAVEL LANE.
6. IN URBAN AREAS, A LATERAL CLEARANCE OF 1 FOOT FROM THE CURB FACE IS PERMISSIBLE WHERE SIDEWALK WIDTH IS LIMITED OR WHERE EXISTING POLES ARE CLOSE TO THE CURB.
7. TYPICAL POST MOUNTING HEIGHTS FROM GROUND TO BOTTOM OF SIGN PANEL ARE 7 OR 8 FEET. OTHER HEIGHTS MAY BE REQUIRED WHEN SIGNS ARE MOUNTED ON STEEPER FILL OR CUT SLOPES.
8. "EDUCATIONAL PLAQUES" ACCOMPANYING SYMBOL SIGNS WILL NOT BE CONSIDERED WHEN DETERMINING THE VERTICAL PLACEMENT OF SYMBOL SIGNS. FOR INFORMATION OF EDUCATIONAL PLAQUES, SEE PAGE 3 OF THE 2021 CDOT GUIDE SIGNING POLICIES & PROCEDURES, AND SECTION 2M.06 OF THE 2009 MUTCD.
9. WHEN LATERAL PLACEMENT IS 30 FEET OR MORE FOR SIGNS WITHOUT A SUPPLEMENTAL PLAQUE, VERTICAL PLACEMENT D MAY BE REDUCED TO 5 FT WHEN LATERAL PLACEMENT IS 30 FEET OR MORE FOR SIGNS WITH A SUPPLEMENTAL PANEL, VERTICAL PLACEMENT F DOES NOT DOES NOT APPLY - USE ONLY VERTICAL PLACEMENT H.
10. NORMAL ANGULAR PLACEMENT IS 0 DEGREES. SIGNS CLOSER THAN 30 FEET SHOULD BE TURNED SLIGHTLY AWAY TO MINIMIZE SPECULAR REFLECTION. SIGNS PLACED 30 FEET OR MORE SHOULD GENERALLY BE TURNED TOWARD THE ROAD.
11. THE EXIT PANEL IS MOUNTED ON THE RIGHT HAND SIDE FOR RIGHT HAND EXITS AND THE LEFT HAND SIDE FOR LEFT HAND EXITS.
12. POST SHALL BE INSTALLED PLUMB, VERTICAL DEVIATION SHALL NOT EXCEED $\frac{1}{2}$-INCH IN 10 FT.
13. ON ALL TWO-LANE, UNDIVIDED HIGHWAYS, THE MILE MARKER AND POST SHALL BE INSTALLED ON THE RIGHT SHOULDER IN THE ASCENDING DIRECTION WITH THE MILE MARKER PANELS DISPLAYED ON THE FRONT AND BACK SIDE OF THE POST.
14. ON ALL UNDIVIDED MULTI-LANE AND DIVIDED HIGHWAYS, AND INTERSTATES, THE MILE MARKER AND POST SHALL BE INSTALLED ON THE OUTSIDE SHOULDER (OR SIDEWALK IF APPLICABLE) IN BOTH DIRECTIONS OF TRAVEL.
15. VERTICAL SPACING BETWEEN SIGN PANELS SHALL BE 1 TO 1$\frac{1}{2}$ INCH, TYPICAL.



WARNING SIGN PLACEMENT



MINOR CROSSROAD



URBAN INTERSECTION

TYPICAL LOCATIONS-STOP SIGNS AND YIELD SIGNS

PLACEMENT TABLES

LATERAL PLACEMENT		
KEY	ALL CLASSES OF STREETS AND HIGHWAYS	
	MINIMUM	NORMAL
A	2'-0"	15'-0" PLUS CURB
B	2'-0"	30'-0" OR MORE INCLUDES CURB
C	2'-0"	6'-0" PLUS EDGE OF 6' + WIDE SHOULDER. IF NONE, 15'-0" FROM EDGE OF TRAVEL LANE.

VERTICAL PLACEMENT						
KEY	FREEWAYS AND EXPRESSWAYS		COVENTIONAL STREETS AND HIGHWAYS			
	MIN.	MAX.	URBAN		RURAL	
			MIN.	MAX.	MIN.	MAX.
D	7'-0" OR NOTE NO. 9	12'-0"	7'-0"	8'-0"	5'-0"	8'-0"
E	7'-0"	8'-0"	7'-0"	8'-0"	5'-0"	8'-0"
F	8'-0" OR NOTE NO. 9	12'-0"	8'-0"	9'-0"	5'-0"	9'-0"
G	6'-0"	7'-0"	6'-0"	7'-0"	4'-0"	7'-0"
H	5'-0"	10'-0"	6'-0"	7'-0"	4'-0"	7'-0"

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R-1

Sheet Revisions	
Date:	Comments
03/01/24	Revised notes 3 and 8.

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GROUND SIGN PLACEMENT

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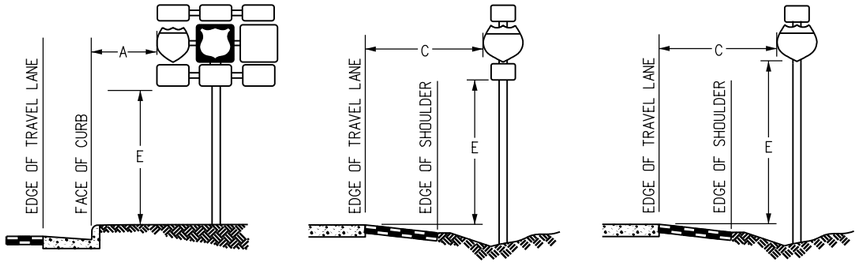
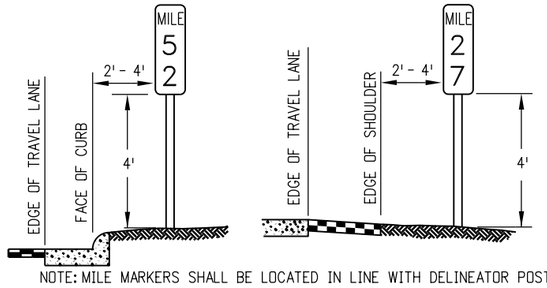
STANDARD PLAN NO.
S-614-1
Standard Sheet No. 1 of 2
Project Sheet Number: 204

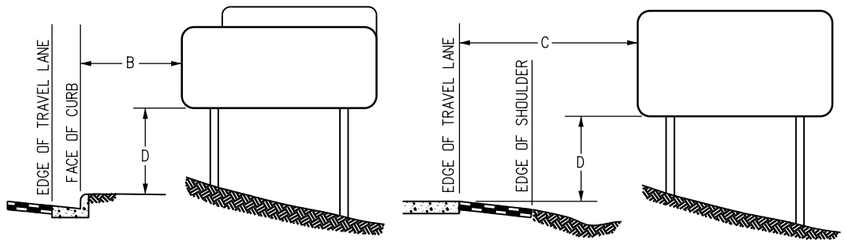


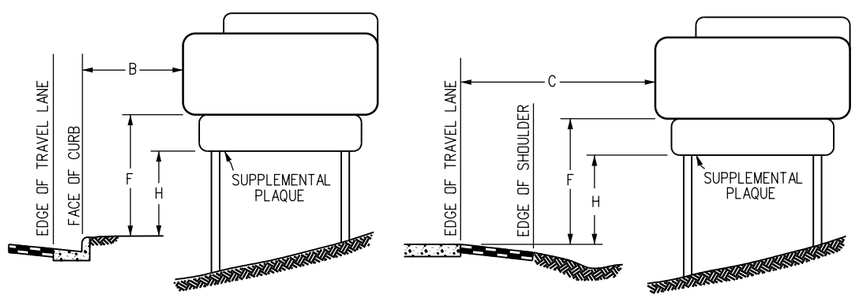
ROUTE MARKER ASSEMBLY PLACEMENT



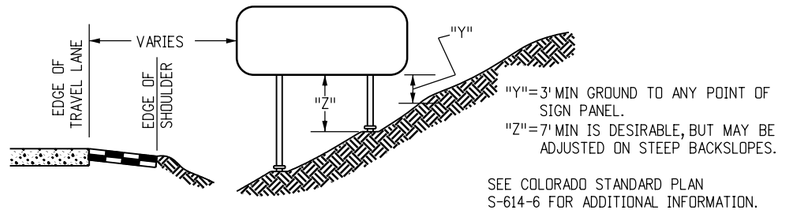
NOTE: MILE MARKERS SHALL BE LOCATED IN LINE WITH DELINEATOR POSTS.

MILE MARKER PLACEMENT





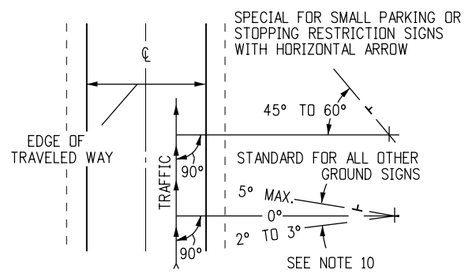
CLASS III SIGN PLACEMENT



"Y"=3' MIN GROUND TO ANY POINT OF SIGN PANEL.
"Z"=7' MIN IS DESIRABLE, BUT MAY BE ADJUSTED ON STEEP BACKSLOPES.

SEE COLORADO STANDARD PLAN S-614-6 FOR ADDITIONAL INFORMATION.

CLASS III SIGNS, PANEL GROUND CLEARANCE



ANGULAR PLACEMENT

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12		Date:	Comments
Created By: KCM	R-1	03/01/24	Revised standard reference note for "Class III Signs, Panel Ground Clearance" detail.
Last Modification Date: 03/01/24			
Last Modified By: YSaucedo			
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English			

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GROUND SIGN PLACEMENT

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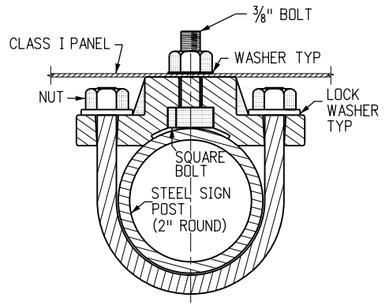
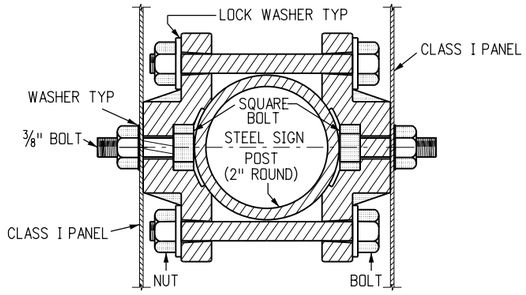
STANDARD PLAN NO.
S-614-1
Standard Sheet No. 2 of 2
Project Sheet Number: 205

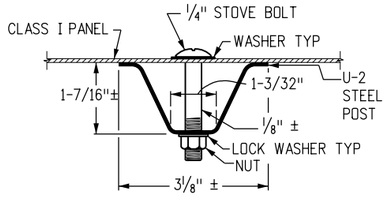
TYPICAL SINGLE BRACKET



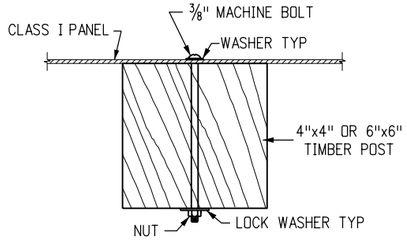
TYPICAL BACK TO BACK



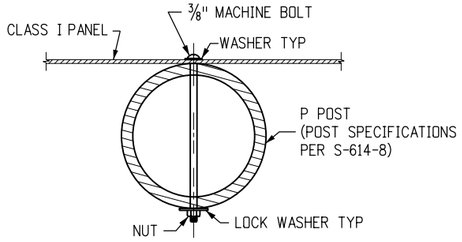
TYPICAL ROUND STEEL POLE SECTION



TYPICAL U-2 POST SECTION



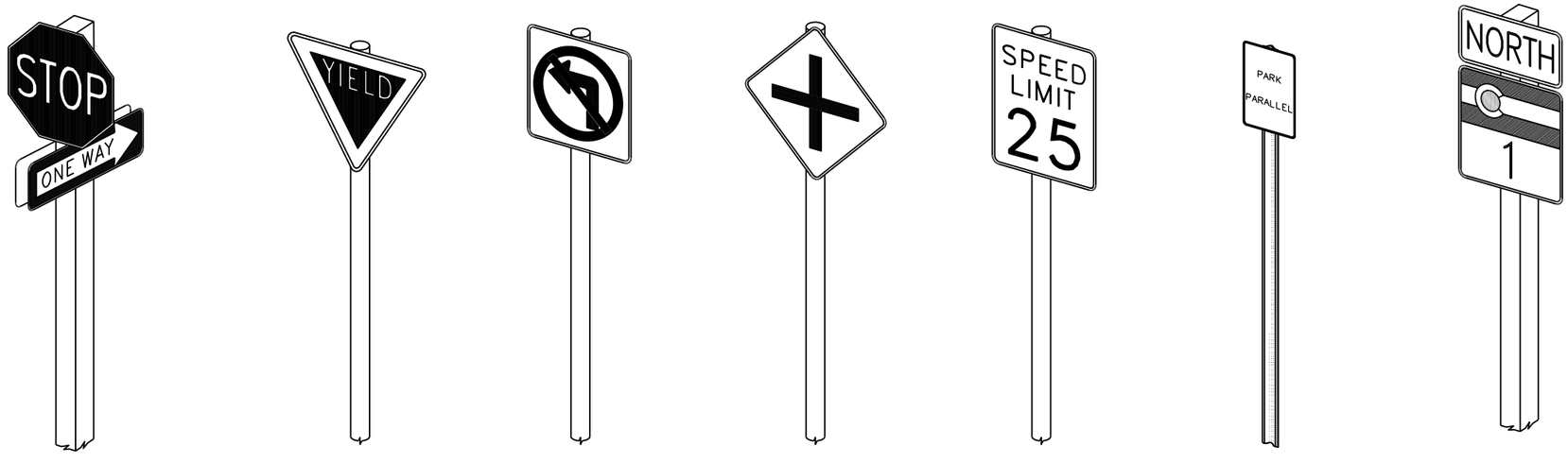
TYPICAL TIMBER POST SECTION



TYPICAL P POST SECTION

GENERAL NOTES

1. TIMBER SIGN POSTS MAY ONLY BE USED FOR TEMPORARY SIGNAGE DURING CONSTRCTION. TUBULAR STEEL SHALL BE USED FOR PERMANENT INSTALLATIONS.
2. CLASS I SIGN PANELS ARE THOSE THAT DO NOT REQUIRE BACKING ZEES. SIGN PANELS UP TO 60 INCHES IN WIDTH MAY BE ATTACHED DIRECTLY TO T BRACKETS. SIGN PANELS UP TO 48 INCHES IN WIDTH MAY BE ATTACHED DIRECTLY TO U BRACKETS. CLASS I SIGN PANELS SHALL BE 0.10 INCHES MINIMUM THICKNESS SINGLE SHEET ALUMINUM.
3. CLASS I SIGN PANELS SHALL BE FASTENED TO THE U-2 POST WITH 1/4 INCH DIAMETER STOVE BOLTS AND TO TIMBER POSTS AND P POST WITH 3/8 INCH DIAMETER MACHINE BOLTS. SEE STANDARD PLANS S-614-20 AND S-614-22 FOR EXCEPTIONS.
4. A WASHER WITH A DIAMETER OF 1.25 INCHES SHALL BE PLACED BETWEEN THE BOLT HEAD AND THE FACE OF THE SIGN PANEL. THE WASHER SHALL NOT COVER ANY LETTERING ON THE SIGN PANEL THAT COULD CONFUSE THE TRAVELING PUBLIC. A 1 INCH DIAMETER WASHER SHALL BE PLACED BETWEEN THE NUT AND TIMBER POST.
5. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED OR CADMIUM PLATED.
6. THE RETREOFLECTIVE SHEETING SHALL BE ON THE DEPARTMENT'S APPROVED PRODUCT LIST.
7. FOR SIGN PLACEMENT SEE STANDARD PLAN S-614-1.
8. U-2 POSTS MAY ONLY BE USED FOR DELINEATORS, MILE MARKERS AND STRUCTURE NUMBER PLAQUES. "U" SHAPE STEEL POSTS SHALL BE A UNIFORM FLANGED CHANNEL SECTION MADE FROM HOT ROLLED STRUCTURAL STEEL, RE-ROLLED RAIL STEEL, OR NEW BILLET STEEL HAVING A MINIMUM YIELD STRENGTH OF AT LEAST 30,000 PSI, AND A MINIMUM TENSILE STRENGTH OF AT LEAST 50,000 PSI. U" SHAPE POSTS SHALL WEIGH 2 LBS/FT, EXCEPT THAT A MILL TOLERANCE OF MINUS 3% OF THE WEIGHT OF ANY ONE POST WILL BE ALLOWED. "U" SHAPE POSTS SHALL HAVE INCH HOLES DRILLED OR PUNCHED ON 1 INCH OR 2 INCH CENTERS FOR THE TOP 4 FEET OF THE POST AS A MINIMUM, WITH THE FIRST HOLE 1 INCH FROM THE TOP OF THE POST. COLOR OF POSTS SHALL BE INTERSTATE GREEN.
9. VERTICAL SPACING BETWEEN PANELS ON THE SAME POST SHALL BE 1 INCH TO 1 1/2 INCH.



TYPICAL CLASS I GROUND SIGNS

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CLASS I SIGNS

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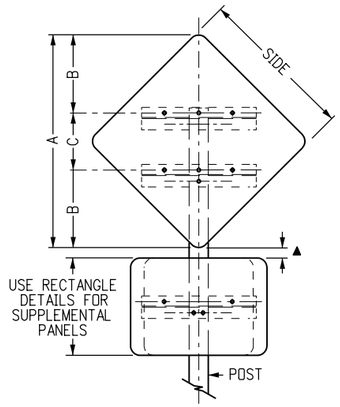
STANDARD PLAN NO.
S-614-2
Standard Sheet No. 1 of 1
Project Sheet Number: 206

DIAMOND



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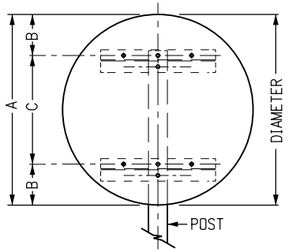

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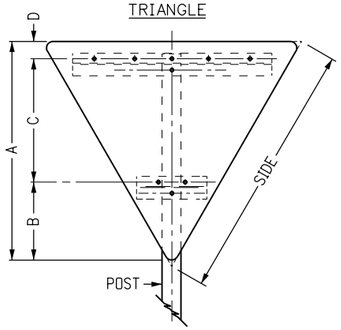
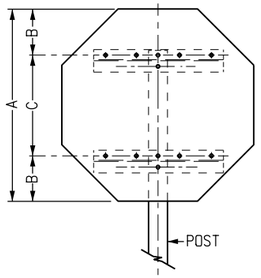
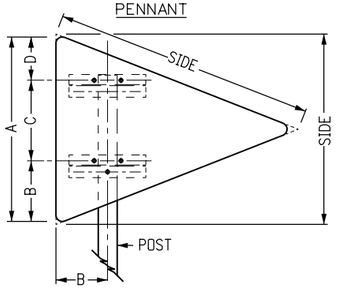


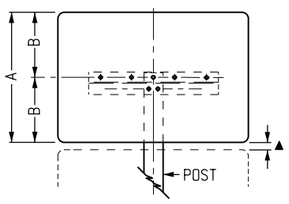
OCTAGON



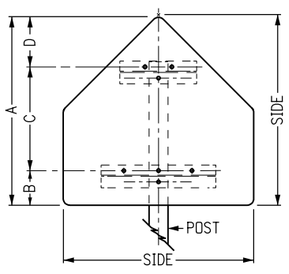
PENNANT



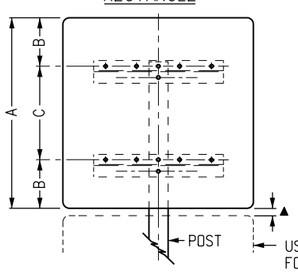
(ONE ZEE)



PENTAGON



(MULTI-ZEE)
RECTANGLE



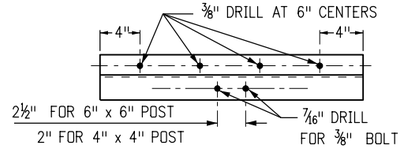
TYPICAL PANEL DETAILS

CLASS II PANEL MOUNTING DATA (* TIMBER POSTS)

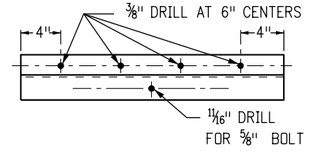
SIGN TYPE		A	B	C	D	POST SIZE
DIAMOND, 36" SIDES		49 1/16"	14 1/32"	21"	--	6" x 6"
48" SIDES		65 3/8"	20 3/16"	25"	--	6" x 6"
60" SIDES		81 1/2"	25 3/4"	30"	--	6" x 6"
TRIANGLE. 36" SIDES		29 3/16"	14 3/16"	9"	6"	4" x 4"
48" SIDES		38 9/16"	14 9/16"	18	6"	4" x 4"
60" SIDES		48"	20"	22"	6"	6" x 6"
OCTAGON, 36" x 36"		36"	9"	18"	--	6" x 6"
48" x 48"		48"	12"	24"	--	6" x 6"
CIRCLE, 36" DIAMETER		36"	8"	20"	--	6" x 6"
PENNANT, 48" x 36" SIDES		34"	10 3/4"	15"	8 1/4"	4" x 4"
64" x 48" SIDES		45"	12 1/2"	21 1/2"	11"	6" x 6"
PENTAGON, 36" SIDES		35"	6"	20"	9"	4" x 4"
48" SIDES		46 3/4"	9"	25 3/4"	12"	6" x 6"
RECTANGLE						
WIDTH	HEIGHT					
36"	24"	24"	12"	--	--	4" x 4"
48"	24"	24"	12"	--	--	6" x 6"
36" to 60"	30"	30"	9"	12"	--	6" x 6"
36" to 60"	36"	36"	9"	18"	--	6" x 6"
36" to 60"	42"	42"	9"	24"	--	6" x 6"
36" to 60"	48"	48"	12"	24"	--	6" x 6"
48"	54"	54"	12"	30"	--	6" x 6"
48" to 60"	60"	60"	12"	36"	--	6" x 6"
SUPPLEMENTAL PANELS						
RECTANGLE, 24" x 18"		18"	9"	--	--	4"x4"or 6"x6"
48" x 18"		18"	9"	--	--	6" x 6"
24" x 24"		24"	12"	--	--	6" x 6"
36" x 24"		24"	12"	--	--	6" x 6"
48" x 36"		36"	9"	18"	--	6" x 6"

*FOR ADDITIONAL CLASS II SIZES THAT UTILIZE STEEL POSTS, SEE STANDARD PLAN S-614-8.

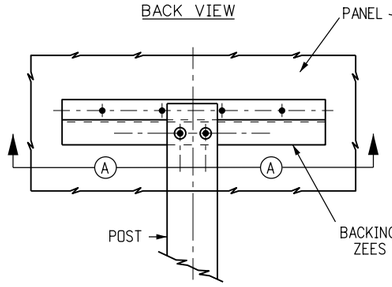
ONE POST - ONE ZEE



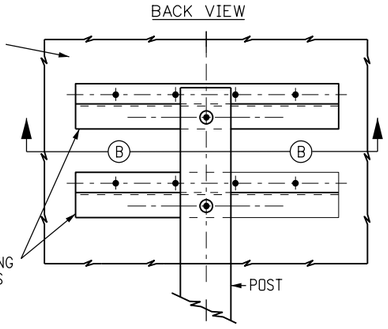
ONE POST - TWO ZEES



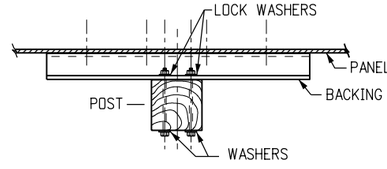
BACK VIEW



BACK VIEW



SECTION A-A



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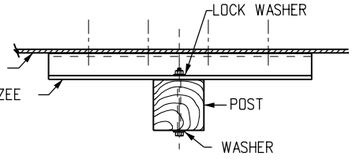
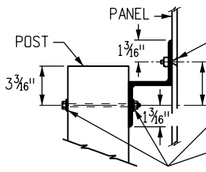


END VIEW



SIGNS ARE FASTENED TO BACKING ZEES WITH 3/8 IN DIA (NO. 4 THRU NO. 10, AS REQUIRED) 90 DEG COUNTERSUNK ALUMINUM LOCKBOLT FASTENERS.

FOR SINGLE POST SIGNS WITH ONE BACKING ZEE, USE TWO 3/8 IN DIA MACHINE BOLTS WITH WASHERS, AND HEX NUTS WITH LOCK WASHERS AT THE ZEE.

FOR SINGLE POST SIGNS WITH TWO BACKING ZEES, USE ONE 5/8 IN DIA MACHINE BOLT WITH WASHER, AND HEX NUT WITH LOCK WASHER AT EACH ZEE.

TYPICAL BACKING ZEES

GENERAL NOTES

1. TIMBER SIGN POSTS MAY ONLY BE USED FOR TEMPORARY SIGNAGE DURING CONSTRUCTION. TUBULAR STEEL SIGN POSTS SHALL BE USED FOR PERMANENT INSTALLATIONS.
2. CLASS II SIGN PANELS ARE THOSE THAT REQUIRE ONE TO TWO BACKING ZEES AND ARE LESS THAN 72 INCHES IN HEIGHT. CLASS II SIGN PANELS MAY USE MORE THAN TWO BACKING ZEES WHEN ATTACHED TO A CLASS III ASSEMBLY. CLASS II SIGN PANELS SHALL BE 0.10 INCH MINIMUM THICKNESS SINGLE SHEET ALUMINUM.
3. Z-BAR LENGTH SHALL BE 3 INCHES (± ½ INCH) SHORT OF THE EDGE OF THE SIGN ON BOTH SIDES.
4. FOR TUBULAR STEEL POST INFORMATION, SEE STANDARD PLAN S-614-08.
5. BACKING ZEES ARE 3 INCH x 2 11/16 INCH x 2.33, 6061-TB ALUMINUM ALLOY WEIGHING 2.33 POUNDS PER FOOT.
6. FOR SIGN PLACEMENT, SEE STANDARD PLAN S-614-1.
7. ALL SIGNS SHALL BE FABRICATED USING RETRO-REFLECTIVE SHEETING CONFORMING TO ASTM D4956. THE TYPE SHALL BE AS DIRECTED IN THE STANDARD SPECIFICATIONS, SECTION 713 AND/OR AS SHOWN ON THE PLANS.
8. BOLTS, NUTS, AND METAL WASHERS SHALL BE GALVANIZED OR CADMIUM PLATED.
9. ▲ VERTICAL SPACING BETWEEN PANELS SHALL BE 1 INCH TO 1½ INCHES.
10. WASHERS ON TIMBER POSTS SHALL BE 1½ INCHES DIAMETER.

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Creation Date: 07/04/12		Date:	Comments
Created By: Lee	R-1	03/01/24	Revised note 2.
Last Modification Date: 03/01/24			
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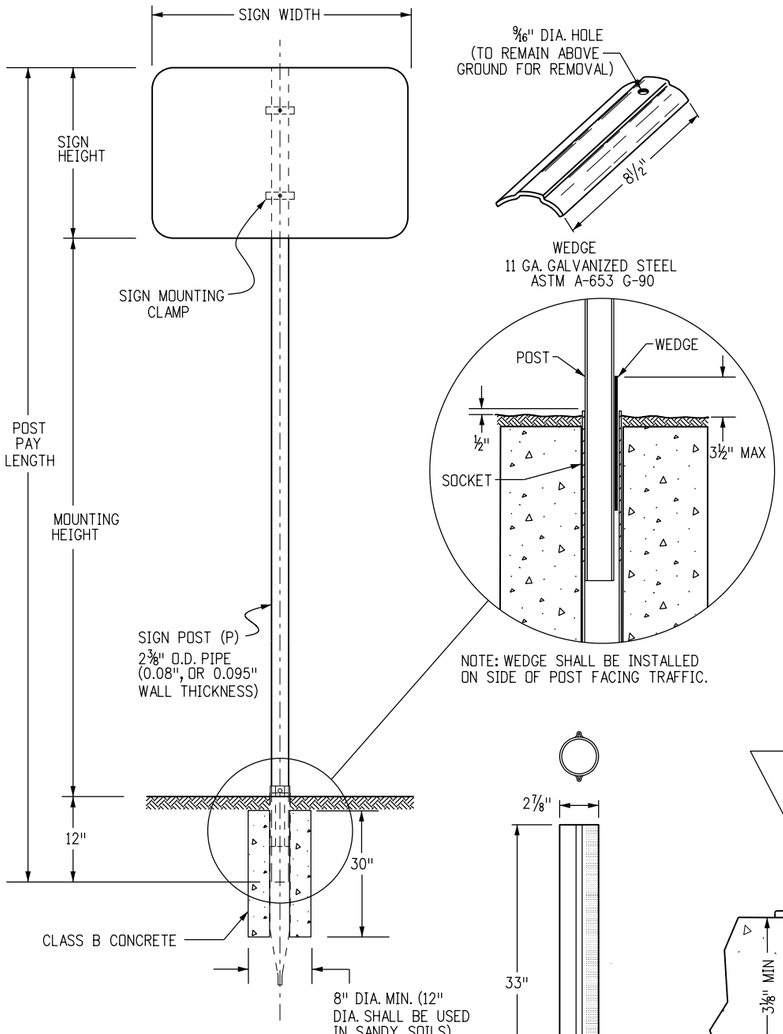
CLASS II SIGNS

STANDARD PLAN NO.
S-614-3
Standard Sheet No. 1 of 1

Issued By: Traffic & Safety Engineering Branch July 31, 2019

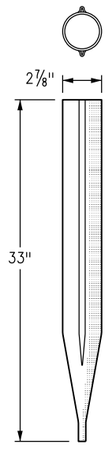
Project Sheet Number: 207

TUBULAR STEEL POSTS
(SOCKET SYSTEM) (FOR USE WITH ALL P-POST INSTALLATIONS)
(SEE SHEET 2 FOR P1 AND P2 POST INSTALLATIONS)



WEDGE
11 GA. GALVANIZED STEEL
ASTM A-653 G-90

NOTE: WEDGE SHALL BE INSTALLED ON SIDE OF POST FACING TRAFFIC.

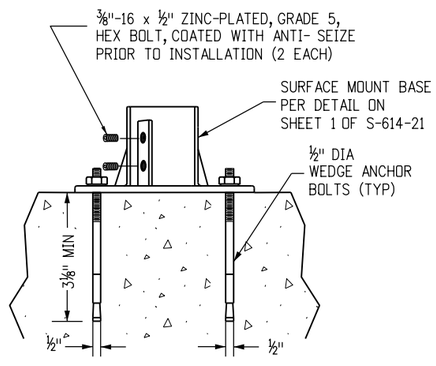


TUBULAR CONCRETE FOOTING
12 GA. GALVANIZED
STEEL ASTM - 787

POST NOTES

THE POST MAY BE PRE-PUNCHED WITH ⅜" DIA. HOLES AND THE SIGN MOUNTED DIRECTLY TO THE POST, OR AN APPROVED MOUNTING CLAMP MAY BE USED TO MOUNT THE SIGN TO THE POST. IF THE POST IS PRE-PUNCHED, THE HOLES SHALL BE SPACED THE FOLLOWING DISTANCES FROM THE TOP:

1", 3", 10", 16", 21", 23", 24", 27", 33", 37", 39", AND 45"



SIDE VIEW

SURFACE MOUNT DETAIL (P POST ONLY)

THE POST MAY BE SURFACE MOUNTED WHEN APPROVED BY THE ENGINEER

SIGNPOST SELECTION GUIDE (90 MPH WIND LOAD DESIGN)
(FOR SOCKET SYSTEM AND SLIPBASE INSTALLATIONS USING P, P1 OR P2 POSTS)

7' MOUNTING HEIGHT

SIGN HEIGHT (FT) \ SIGN WIDTH (FT)	1	2	2.5	3	4	5	6	7	8	9	10	11	12+
1	P	P	P	P	P	P1	SIZES NOT USED						
2	P	P	P	P	P	P1							
2.5	P	P	P	P	P1	P1							
3	P	P	P	P1	P1	P1							
4	P	P1	P1	P1	P1	P1	TWO P1'S				TWO P2'S		
5	SIZES NOT USED		P1	P1	P1	P1							
6			P1	P1	P1	▼P2					TWO P2'S	THREE P2'S	
7			P1	P1	▼P2						TWO P2'S		SEE CHART NOTE 5.

▼SEE CHART NOTE 4.

8' MOUNTING HEIGHT

SIGN HEIGHT (FT) \ SIGN WIDTH (FT)	1	2	2.5	3	4	5	6	7	8	9
1	P	P	P	P	P	P1	SIZES NOT USED			
2	P	P	P	P	P1	P1				
2.5	P	P	P	P1	P1	P1				
3	P	P	P1	P1	P1	P1	TWO P1'S			
4	P	P1	P1	P1	P1	P1				
5	SIZES NOT USED		P1	P1	P1	▼P2				
6			P1	P1	P1	▼P2				TWO P2'S
7			P1	P1	TWO P1'S	TWO P1'S		TWO P2'S		SIZES NOT USED

9' MOUNTING HEIGHT

SIGN HEIGHT (FT) \ SIGN WIDTH (FT)	1	2	2.5	3	4	5	6	7	8	9
1	P	P	P	P	P	P1	SIZES NOT USED			
2	P	P	P	P	P1	P1				
2.5	P	P	P	P1	P1	P1				
3	P	P	P1	P1	P1	P1	TWO P1'S			
4	P	P1	P1	P1	P1	P1				
5	SIZES NOT USED		P1	P1	P1	▼P2				TWO P2'S
6			P1	P1	▼P2	TWO P1'S			TWO P2'S	
7			P1	P2	TWO P1'S	TWO P1'S		TWO P2'S		SIZES NOT USED

CHART NOTES

1. TYPICAL POST MOUNTING HEIGHTS FROM GROUND TO BOTTOM OF SIGN PANEL ARE 7, 8 OR 9 FEET. OTHER HEIGHTS MAY BE REQUIRED WHEN SIGNS ARE MOUNTED ON STEEPER FILL OR CUT SLOPES.
2. FOR SIGNS MOUNTED ON TWO POSTS, THE MINIMUM DISTANCE BETWEEN POSTS SHALL BE 2 FEET AND THE MAXIMUM DISTANCE SHALL BE 8 FEET. DISTANCE FROM POST TO EDGE OF SIGN PANEL(S) SHALL BE 0 TO 4 INCHES. WHEN BACKING ZEES ARE USED, POSTS SHALL BE INSTALLED WITH A MINIMUM OF 2 INCHES TO THE EDGE OF THE BACKING ZEE.
3. ALL SIGN PANELS GREATER THAN 60 INCHES IN WIDTH MUST BE MOUNTED ON TWO POSTS TO PREVENT TURNING.
4. THE POST SIZES SHOWN ARE THE MINIMUM SIZES REQUIRED. TWO P1 POSTS MAY BE SUBSTITUTED WHERE ONE P2 POST IS INDICATED. P2 POSTS MAY SUBSTITUTED FOR P1 POSTS WHEN DIRECTED BY THE ENGINEER. W-SHAPE BEAM MAY BE SUBSTITUTED FOR P2 POSTS WHEN DIRECTED BY THE ENGINEER.
5. USE W-SHAPE BEAMS ONLY FOR SIGN POSTS.

GENERAL NOTES

1. SIGN PANELS LESS THAN 60 INCHES IN WIDTH MAY BE ATTACHED DIRECTLY TO T BRACKETS WITHOUT ZEES AND SIGN PANELS LESS THAN 48 INCHES IN WIDTH MAY BE ATTACHED DIRECTLY TO U BRACKETS WITHOUT ZEES. WIDTH OF A DIAMOND CONFIGURED SIGN PANEL IS MEASURED ACROSS OPPOSITE CORNERS.
2. U-BRACKETS MAY BE USED FOR MULTIPLE SIGN INSTALLATIONS.
3. FOR BACKING ZEE REQUIREMENTS AND DETAILS, SEE STANDARD PLANS S-614-3 AND S-614-4.
4. THE CONTRACTOR SHALL INSTALL THE POSTS PER THE MANUFACTURER'S RECOMMENDATIONS WITHOUT ADDITIONAL COMPENSATION.

POST SPECIFICATIONS

POST SIZE	OUTSIDE DIAMETER	WALL THICKNESS	MATERIAL	**COATING	MAX ALLOW MOMENT	PAID FOR AS:
P	2.375"	.080"	ASTM-513	ASTM A-653 G-210 WITH 3.0 MIL POLYMER COATING PER ASTM A123 CLEAR COATING	1.47 KIP FT	STEEL SIGN SUPPORT (2 INCH ROUND)
P1	2.875"	.160"	ASTM-513		4.02 KIP FT	STEEL SIGN SUPPORT (2½ INCH ROUND NP-40)
P2	2.875"	.276"	ASTM-500	GC HOT DIPPED PER ASTM-123	5.13 KIP FT	STEEL SIGN SUPPORT (2½ INCH ROUND SCH 80)

** COLOR POWDER COATING MAY BE ADDED ACCORDING TO MANUFACTURER SPECIFICATIONS FOR SPECIAL LOCATIONS WHEN SHOWN ON THE PLANS.

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	Date:	Comments
R-1	03/01/24	Update general note 1, updated ASTM reference for galvanized steel, added surface mount detail and updated charts.

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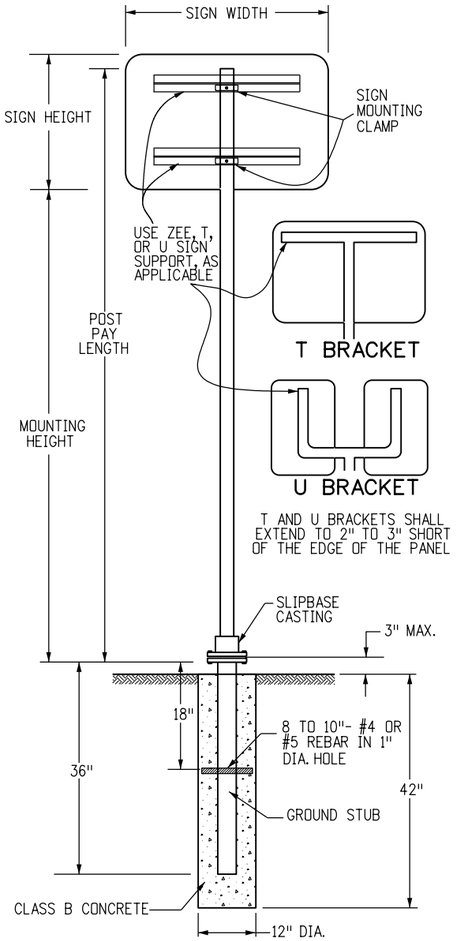
TUBULAR STEEL SIGN SUPPORT DETAILS

Issued By: Traffic & Safety Engineering Branch July 31, 2019

STANDARD PLAN NO.
S-614-8
Standard Sheet No. 1 of 7
Project Sheet Number: 208

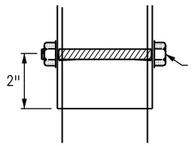


TUBULAR STEEL POST
(WITH SLIPBASE)
(FOR USE WITH ALL P1 AND P2 POST INSTALLATIONS)
(SEE SHEET 1 FOR P-POST INSTALLATIONS)

DIMENSIONS FOR MOUNTING CLAMP (ALL DIMENSION ARE IN INCHES)

STANDARD PIPE SIZE	A	B	C	D	E	F	G	K	L	R_1	R_2
2	3¾	2¾	1½	1⅛	½	3/16	1	2 11/16	1 7/32	1¼	1 3/16
2½	4¼	3¼	2	1¼	½	¼	1	3 3/16	1 15/32	1½	1 7/16

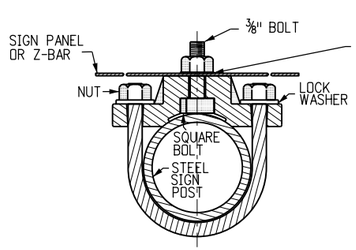
T AND U BRACKET ATTACHMENT



½" x 4½" INCH LONG ZINC-PLATED OR GALVANIZED, GRADE 5 HEX BOLT. 2 FLAT AND 1 LOCK WASHER REQUIRED.

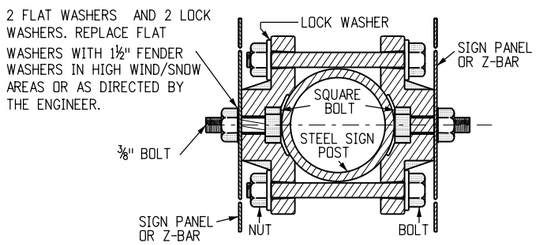
REPLACE FLAT WASHERS WITH 1½" FENDER WASHER IN HIGH WIND/SNOW AREAS OR AS DIRECTED BY THE ENGINEER.

TYPICAL SINGLE BRACKET



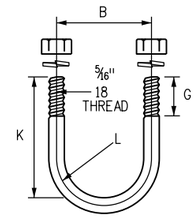
FLAT WASHER. REPLACE FLAT WASHER WITH 1½" FENDER WASHER IN HIGH WIND/SNOW AREAS OR AS DIRECTED BY THE ENGINEER.

TYPICAL BACK TO BACK

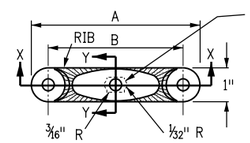


PIPE CLAMP CASTING

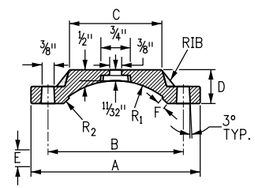
PIPE CLAMP CASTING SHALL BE ASTM B26 OR B108 ALUMINUM ALLOY A444.0-T4 OR 356.0-F. ALL SIGN MOUNTING CLAMP PARTS NOT MADE FROM ALUMINUM SHALL BE GALVANIZED STEEL IN CONFORMANCE WITH ASTM A153 OR STAINLESS STEEL.



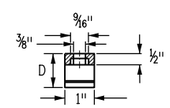
U-BOLT TO BE MADE IN ACCORDANCE WITH STANDARD MANUFACTURING PROCEDURE. ¼" OR 5/18" DIAMETER STOCK IS PERMISSIBLE. AMERICAN STANDARD REGULAR SEMI-FINISHED HEX NUTS AND SPRING LOCKWASHERS.



SLOT TO HOLD HEAD OF ⅜" HEX HEAD BOLT. THE BOLT SHALL BE 1¼" LONG, WITH FULL THREADS, A MEDIUM WASHER, AND GALVANIZED STEEL OR ALUMINUM SELF-LOCKING HEX HEAD NUT. THE BOLT HEAD MUST NOT TURN IN THE SLOT.



SECTION X-X



SECTION Y-Y

DETAILS FOR SIGN PANEL ATTACHMENT

MOUNTING CLAMP FOR SOCKET OR SLIPBASE

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12		Date:	Comments
Created By: SCL	R-1	12/29/20	BOLT LENGTH IN 'T AND U BRACKET ATTACHMENT' WASHER REQUIREMENTS IN SIGN PANEL ATTACHMENT
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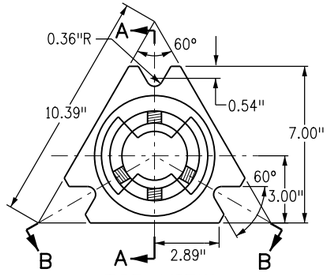
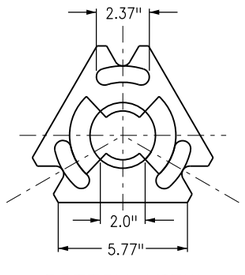
TUBULAR STEEL SIGN SUPPORT DETAILS

Issued By: Traffic & Safety Engineering Branch July 31, 2019

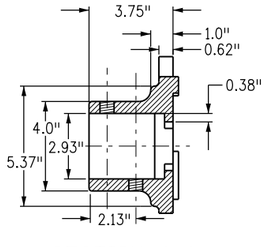
STANDARD PLAN NO.
S-614-8
Standard Sheet No. 2 of 7
Project Sheet Number: 209



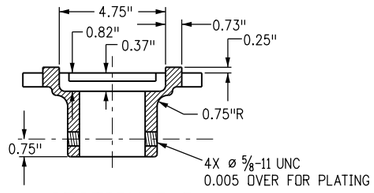
TOP VIEW



BOTTOM VIEW



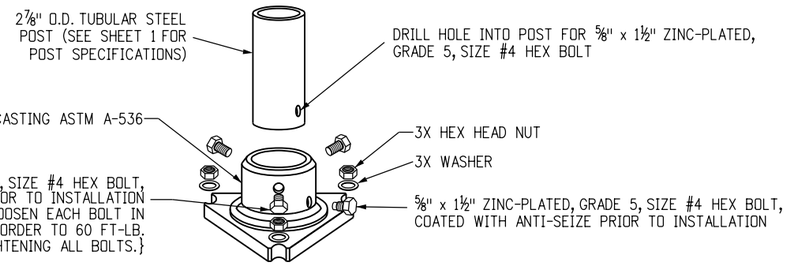
SECTION A-A



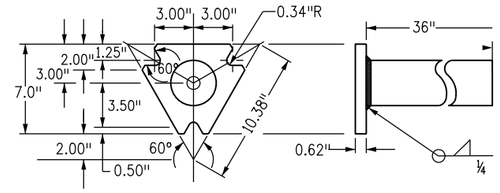
SECTION B-B

SLIPBASE CASTING 1

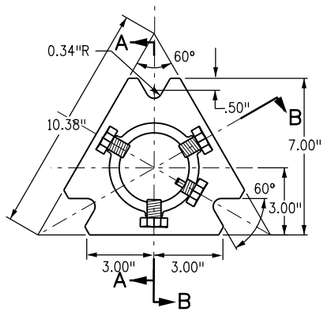
DIRECTION OF TRAVEL



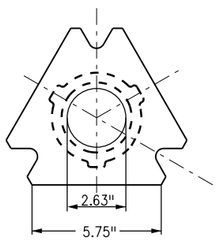
TYPICAL ASSEMBLY



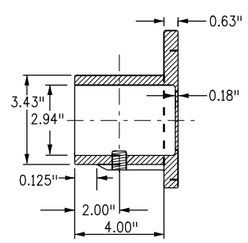
SLIPBASE STUB BASE



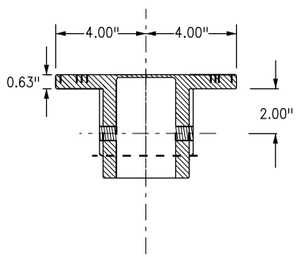
TOP VIEW



BOTTOM VIEW



SECTION A-A



SECTION B-B

SLIPBASE CASTING 2

DIRECTION OF TRAVEL

SLIPBASE CASTING REQUIREMENTS

FOR 2-7/8 INCH POSTS (P1 OR P2 POSTS)
GALVANIZED STEEL SLIPBASE CASTING ASTM-536

MOUNTING HARDWARE

- 3 - EACH ⅝ x 2½ INCH LONG HEX BOLT
- 3 - EACH ⅝ x 1 INCH LONG ZINC-PLATED, GRADE 5 SIZE #4 HEX BOLT
- 1 - EACH ⅝ x 1½ INCH LONG ZINC-PLATED, GRADE 5 SIZE #4 HEX BOLT
- 1 - EACH 30 GAUGE STEEL BOLT RETAINING PLATE ASTM A-563, G-90 COATING

ALL HARDWARE WILL BE GALVANIZED OR ZINC PLATED.

INSTALLATION REQUIREMENTS

ALL HEX BOLTS SHALL BE COATED WITH ANTI-SEIZE PRIOR TO INSTALLATION

TUBULAR STEEL SIGN SUPPORT SLIPBASE NOTES

1. REFER TO SIGNING PLANS FOR SIGN LOCATIONS AND HEIGHT
2. MINUMUM ALLOWABLE TENSION CAPACITY FOR WEDGE ANCHORS = 3000 LBS.
3. MAXIMUM ALLOWABLE MOMENT FOR SIGN BASE = 5.13 kip-ft.
4. PAY ITEM "STEEL SIGN SUPPORT(X-INCH ROUND)(SLIPBASE)" SHALL INCLUDE STUB BASE, CASTING AND NECESSARY HARDWARE (SLIPBASE CASTING MOUNTING HARDWARE AS SHOWN ON THIS SHEET)
5. PAY ITEM "STEEL SIGN SUPPORT CASTING" SHALL INCLUDE CASTING AND NECESSARY MOUNTING HARDWARE (SLIPBASE CASTING MOUNTING HARDWARE AS SHOWN ON THIS SHEET)
6. PAY ITEM "STEEL SIGN GROUND STUB BASE (36 INCH)" SHALL INCLUDE SLIPBASE STUB BASE

CAST-IN-PLACE SLIPBASE FOR NEW INSTALLATIONS

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12		Date:	Comments
Created By: KEN	R-2	03/01/24	Updated typical assembly to include a drilled hole into the post for the Hex Bolt and added an optional third washer between retaining plate and slipbase.
Last Modification Date: 03/01/24			
Last Modified By: YSaucedo	R-1	12/29/20	⅝" x 2½" HEX BOLTS FROM GRADE 5, SIZE #4 TO GRADE A325 IN 'TYPICAL ASSEMBLY'
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English			

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STANDARD PLAN NO.
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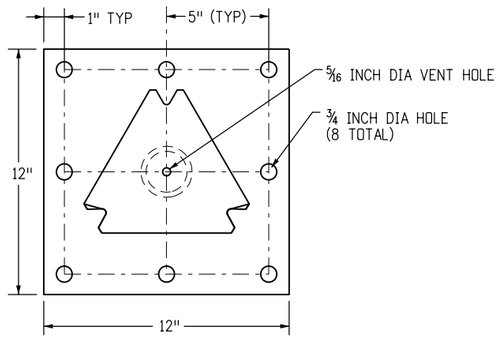

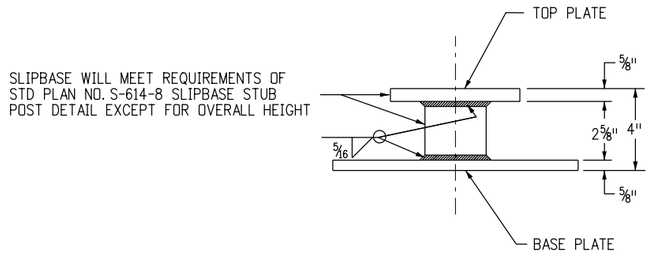

SURFACE MOUNT SLIPBASE BASE PLATE

SURFACE MOUNT SLIPBASE BASE PLATE FABRICATION REQUIREMENTS

BASE PLATE - 3/4 INCH ASTM A 36 PLATE STEEL
PIPE STUB - 3 INCH NOMINAL SCHEDULE 80, ASTM A-500 GRADE B
TOP PLATE - MEET REQUIREMENTS OF SHEET 3

MEET ASTM A-123 GALVANIZING AFTER FABRICATION IS COMPLETE

SURFACE MOUNT SLIPBASE TUBULAR STEEL SIGN BASE REQUIREMENTS

FOR 2-7/8 INCH POSTS (P1 OR P2 POSTS)
FOR CONCRETE SURFACES GREATER THAN 7 INCHES THICK
FOR CONCRETE SURFACES GREATER THAN 12 INCHES IN WIDTH

MOUNTING HARDWARE

- 8 - EACH 5/8 x 5 1/2 INCH LONG "HILTI KWIK HUS-EZ SCREW ANCHORS
- 16 - EACH 5/8 INCH FLAT WASHERS
- 8 - EACH 5/8 INCH LOCK WASHERS
- 8 - EACH 5/8 INCH NUTS

ALL HARDWARE WILL BE GALVANIZED OR ZINC PLATED.

INSTALLATION REQUIREMENTS:

DRILL: (8) - 5/8 INCH HOLES 6 INCH DEEP, CLEAN HOLE PRIOR TO INSTALLING ANCHORS

USE ADDITIONAL WASHERS FOR SHIMMING TO LEVEL BASE PLATE.

TUBULAR STEEL SIGN SUPPORT SURFACE MOUNT SLIPBASE NOTES

1. REFER TO SIGNING PLANS FOR SIGN LOCATIONS AND HEIGHT
2. REFER TO SHEET 3 FOR SLIPBASE CASTING INFORMATION
3. MINUMUM ALLOWABLE TENSION CAPACITY FOR WEDGE ANCHORS = 3000 LBS.
4. MAXIMUM ALLOWABLE MOMENT FOR SIGN BASE = 5.13 kip-ft.
5. PAY ITEM "STEEL SIGN SURFACE MOUNT BASE PLATE (SLIPBASE)" SHALL INCLUDE BASE PLATE, CASTING AND ALL NECESSARY HARDWARE (SLIPBASE CASTING MOUNTING HARDWARE AS SHOWN ON SHEET 3 AND SURFACE MOUNT SLIPBASE MOUNTING HARDWARE AS SHOWN ON THIS SHEET)
6. PAY ITEM "STEEL SIGN SURFACE MOUNT BASE PLATE" SHALL INCLUDE BASE PLATE AND NECESSARY HARDWARE (SURFACE MOUNT SLIPBASE MOUNTING HARDWARE AS SHOWN ON THIS SHEET)

SURFACE MOUNT SLIPBASE FOR RETROFIT INSTALLATIONS

Computer File Information		Sheet Revisions	
Creation Date: 04/12/18		Date:	Comments
Created By: DiNardo	R-1	03/01/24	Revised note 2, 5 and 6.
Last Modification Date: 03/01/24			
Last Modified By: YSaucedo			
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English			

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TUBULAR STEEL SIGN SUPPORT DETAILS

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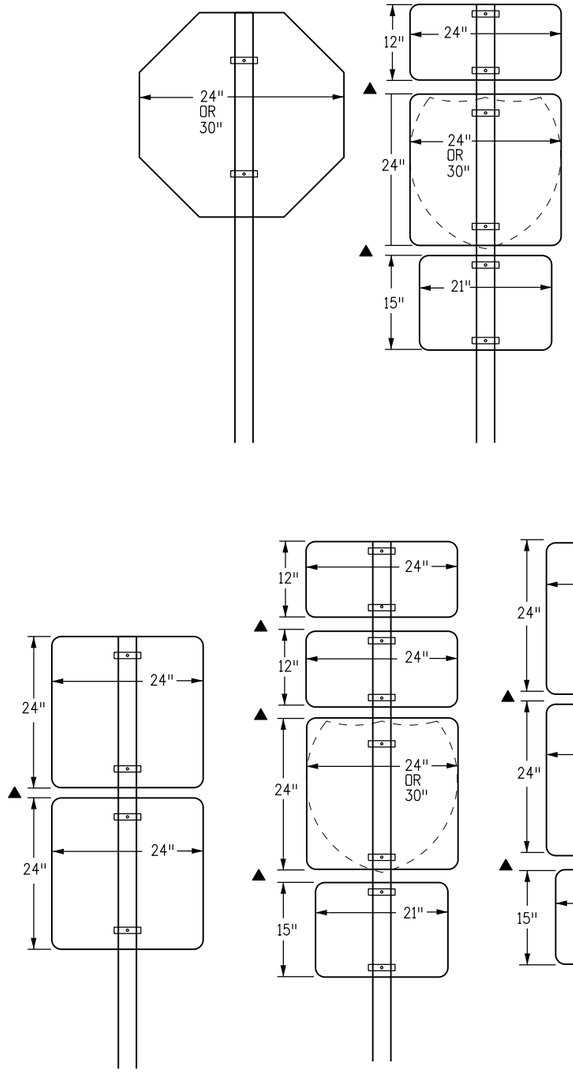
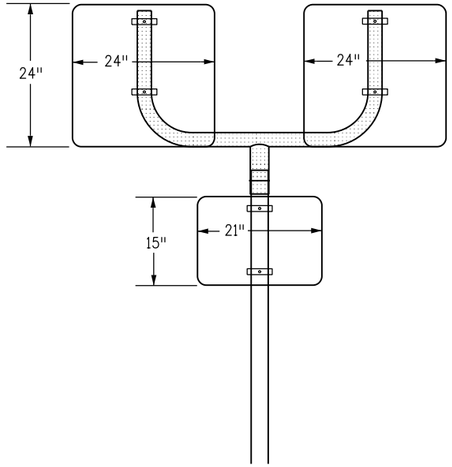
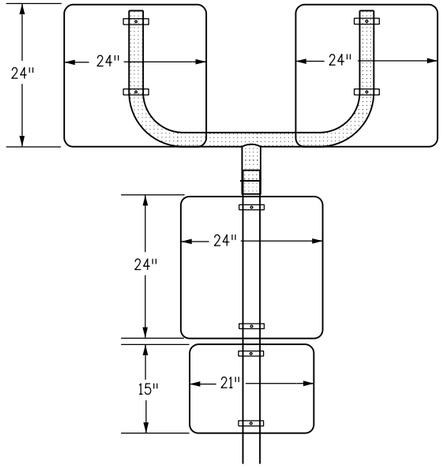
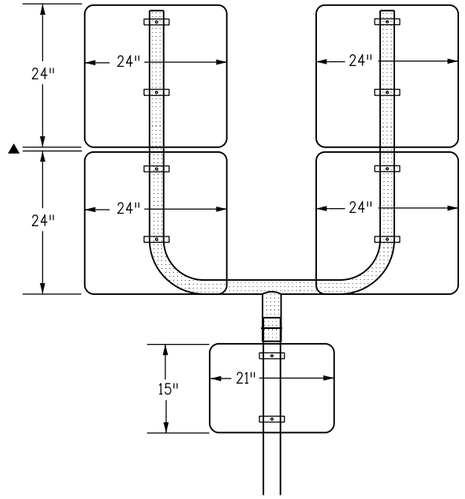
STANDARD PLAN NO.
S-614-8
Standard Sheet No. 4 of 7
Project Sheet Number: 211

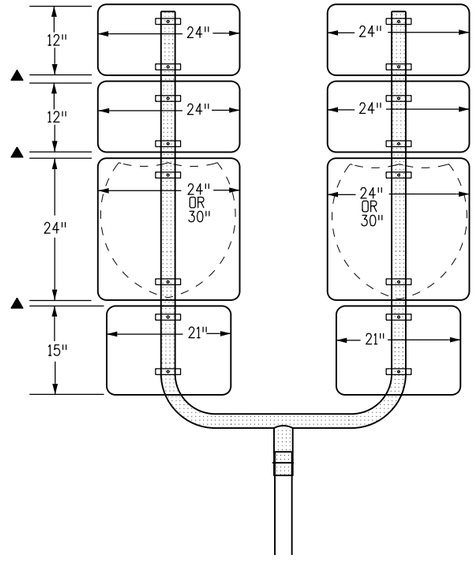








CLASS I SIGN COMBINATIONS (DIRECT ATTACHMENT)



CLASS I SIGN COMBINATIONS USING U-BRACKETS

▲ SEE NOTE 6 ON SHEET 6

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12		Date:	Comments
Created By: KEN	R-1	03/01/24	Revised reference note for vertical spacing.
Last Modification Date: 03/01/24			
Last Modified By: YSaucedo			
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English			

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TUBULAR STEEL SIGN SUPPORT DETAILS

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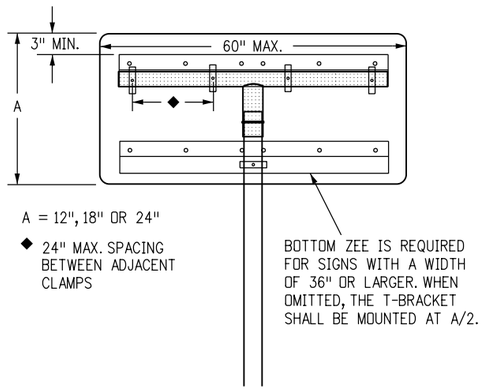
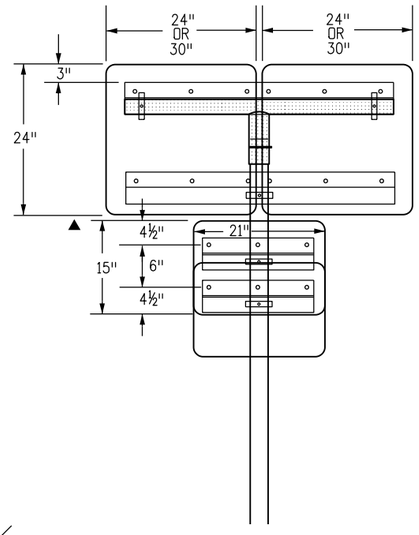
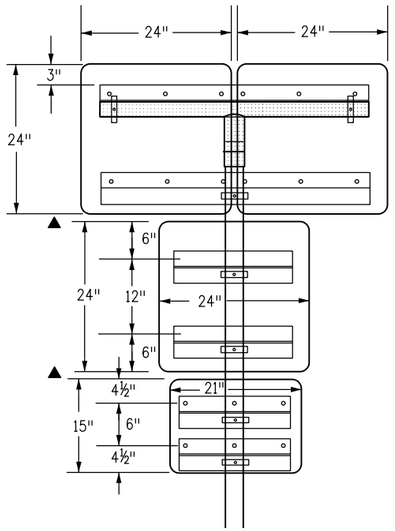
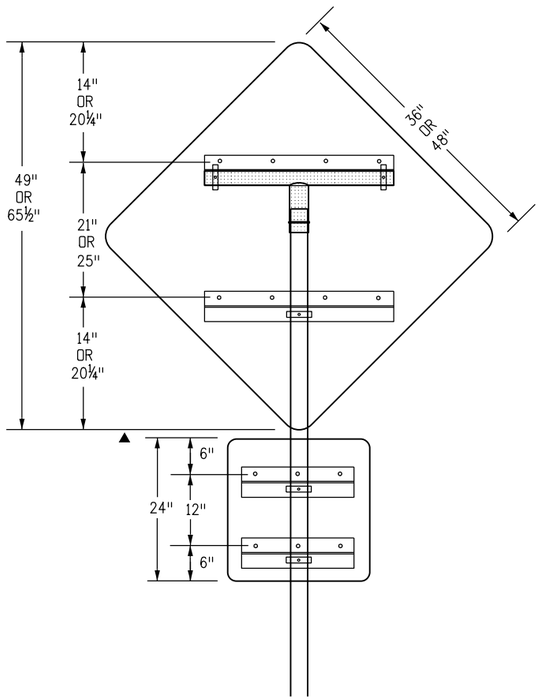
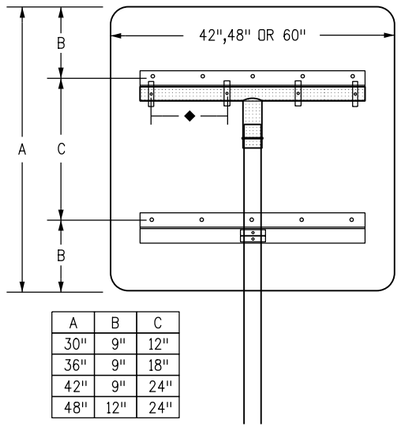
STANDARD PLAN NO.
S-614-8
Standard Sheet No. 5 of 7
Project Sheet Number: 212











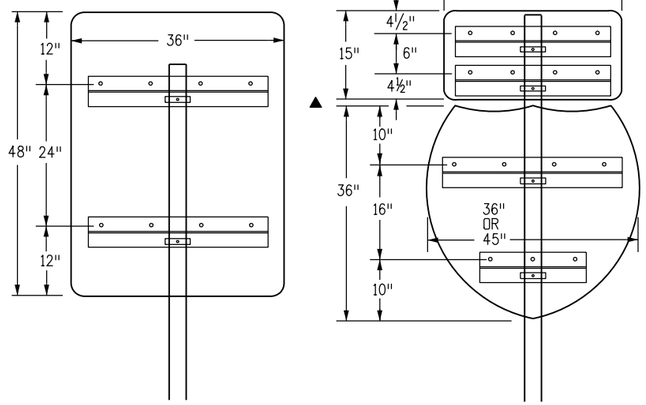
A	B	C
30"	9"	12"
36"	9"	18"
42"	9"	24"
48"	12"	24"

CLASS II SIGN COMBINATIONS USING T-BRACKETS WITH Z-BAR

PANEL WIDTHS	ZEE LENGTH
21"	15"
24"	18"
30"	24"
36"	30"
42"	36"
45"	39"
48"	42"
54"	48"
60"	54"
36" DIAMOND	22"
48" DIAMOND	36"
24" & 24"	43"
24" & 30"	49"
30" & 30"	55"
36" & 36"	67"
45" & 36"	76"
24" & 24" & 24"	68"
24" & 24" & 30"	74"
24" & 30" & 24"	74"
30" & 24" & 30"	80"
24" & 30" & 30"	80"
30" & 30" & 30"	86"

NOTES

1. Z-BAR LENGTH SHALL BE 3 INCH (± ½ INCH) SHORT OF THE EDGE OF THE SIGN OR ROW OF SIGNS ON BOTH SIDES. THE ACCOMPANYING TABLE GIVES THE Z-BAR LENGTH FOR MOST TYPICAL PANEL COMBINATIONS.
2. FIRST AND LAST HOLES SHALL BE 2 INCH FROM EDGE OF Z-BAR. THE HOLES IN BETWEEN SHALL BE 6 INCH TO 8 INCH APART.
3. T AND U BRACKETS SHALL TERMINATE 2 INCHES TO 3 INCHES FROM EDGE OF SIGN PANEL. WHEN A ZEE IS CONNECTED TO A T-BRACKET, THEY SHALL BE THE SAME LENGTH EXCEPT WHEN THE ZEE MUST EXTEND BEYOND THE MAXIMUM LENGTH OF A T-BRACKET.
4. TWO MOUNTING CLAMPS ARE REQUIRED ON ZEES WHERE THERE IS ONLY ONE ZEE FOR THE PANEL AND THE ZEE IS ATTACHED TO ONLY ONE POST.
5. ZEES SHALL BE ATTACHED TO T-BRACKETS AND U-BRACKETS WITH U-BOLTS OR MOUNTING CLAMPS.
6. ▲ VERTICAL SPACING BETWEEN SIGN PANELS SHALL BE 1 INCH TO 1½ INCH TYPICAL.
7. IN SPECIAL CASES U-BRACKETS MAY BE USED TO MOUNT SIGNS THAT FACE DIFFERENT DIRECTIONS. THE ENGINEER SHALL DETERMINE THE ORIENTATION OF THE SIGN PANELS AND VERIFY THAT THE MAXIMUM ALLOWABLE WIND LOADS FOR THE POST ARE NOT EXCEEDED.



SINGLE POST CLASS II SIGNS USING Z-BAR

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12		Date:	Comments
Created By: KEN	R-1	03/01/24	Revised note 6.
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CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English			

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TUBULAR STEEL SIGN SUPPORT DETAILS

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STANDARD PLAN NO.
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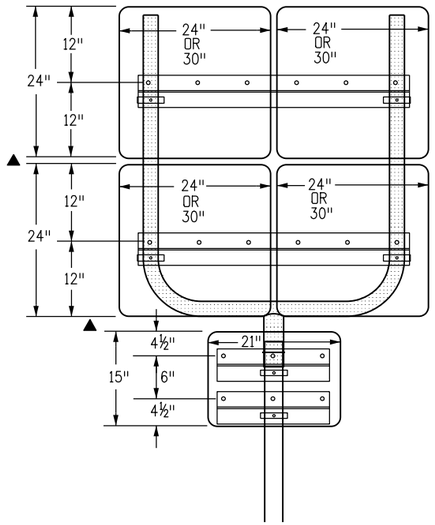
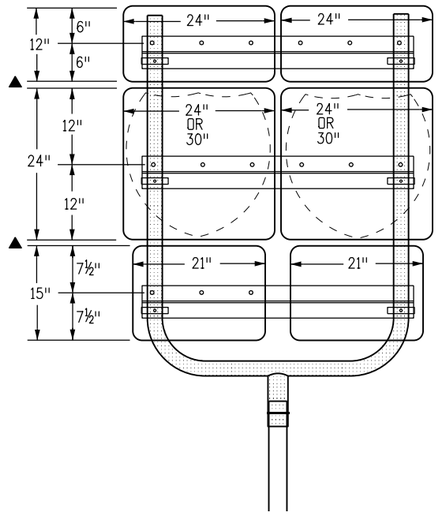
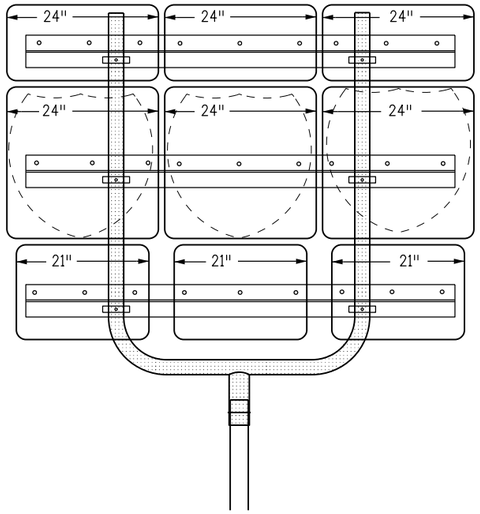
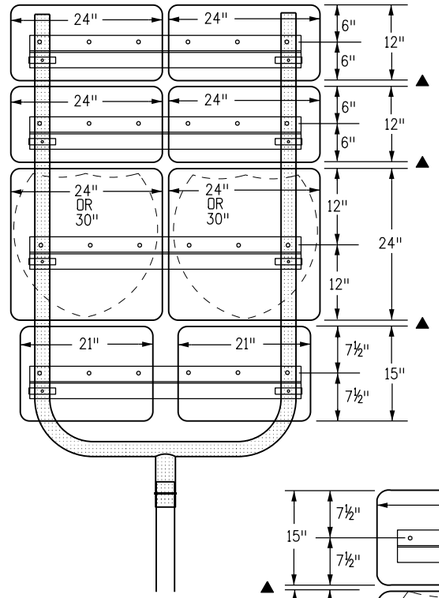
Standard Sheet No. 6 of 7
Project Sheet Number: 213

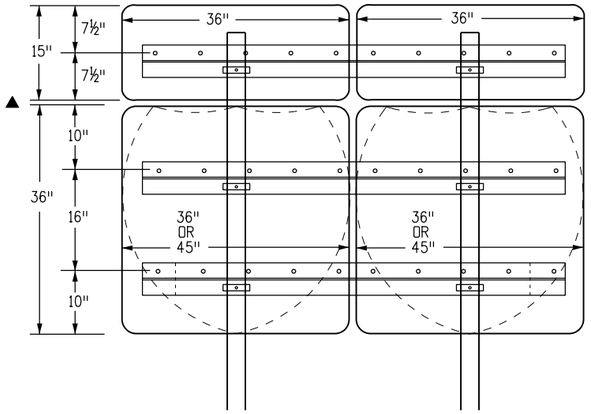




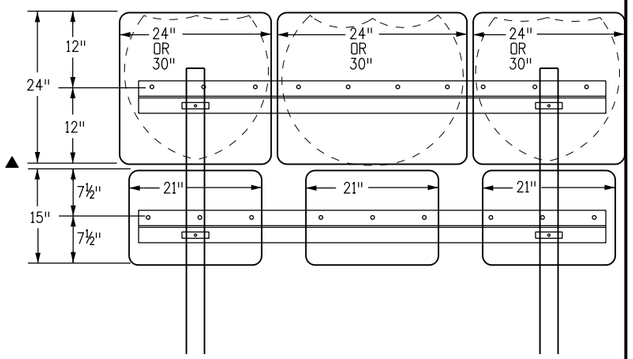




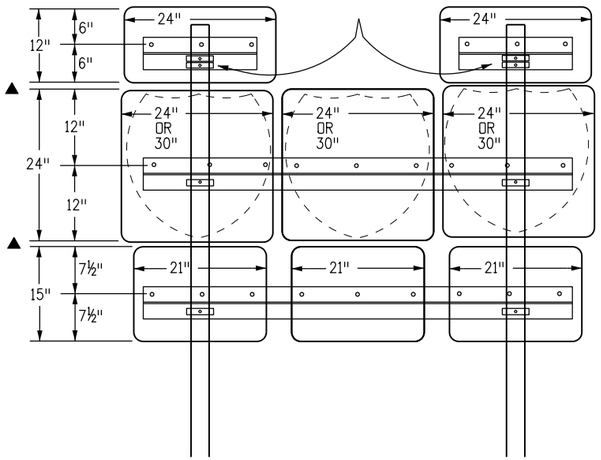
CLASS II SIGN COMBINATIONS USING U-BRACKETS

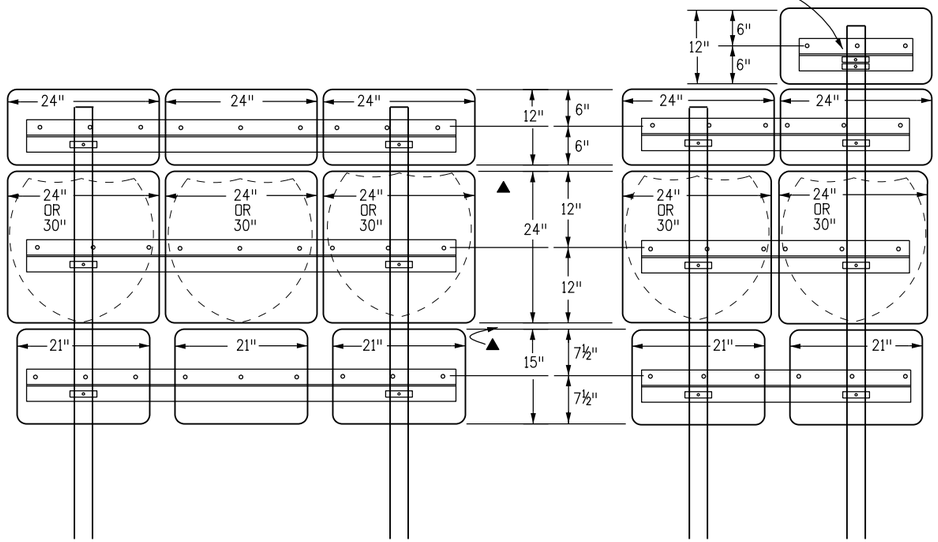


NOTE: THIS CONFIGURATION IS PREFERABLE TO USING TWO SEPARATE SIGNS.



SEE NOTE 4 ON SHEET 6





▲ SEE NOTE 6 ON SHEET 6

CLASS II SIGN COMBINATIONS USING TWO POSTS

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12		Date:	Comments
Created By: KEN	R-1	03/01/24	Revised reference note for vertical spacing.
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Last Modified By: YSaucedo			
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English			

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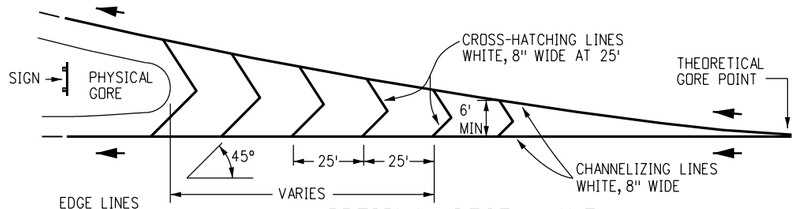
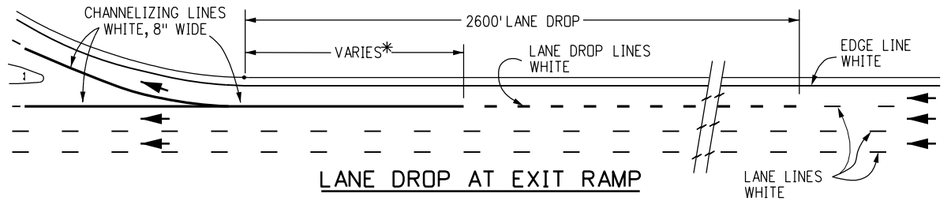
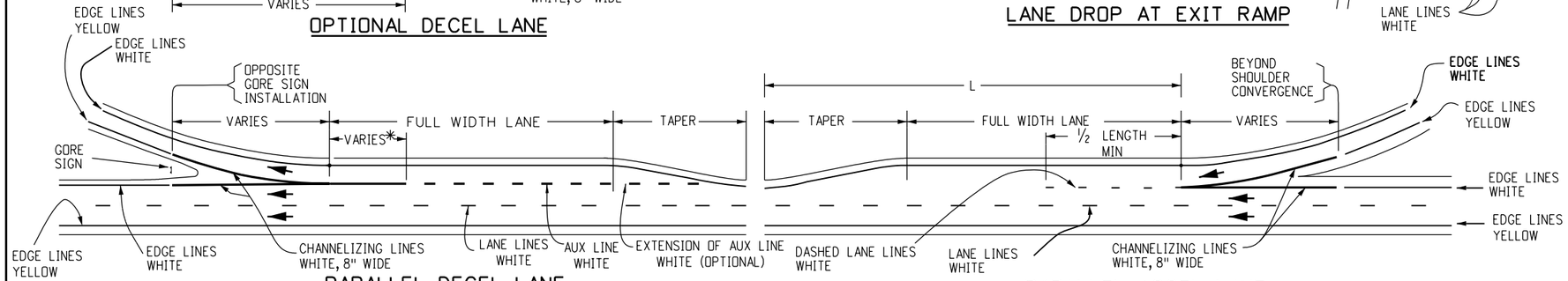
STANDARD PLAN NO.
S-614-8
Standard Sheet No. 7 of 7
Project Sheet Number: 214



OPTIONAL DECEL LANE

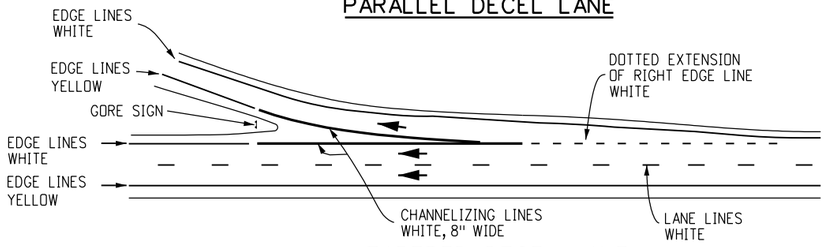


LANE DROP AT EXIT RAMP

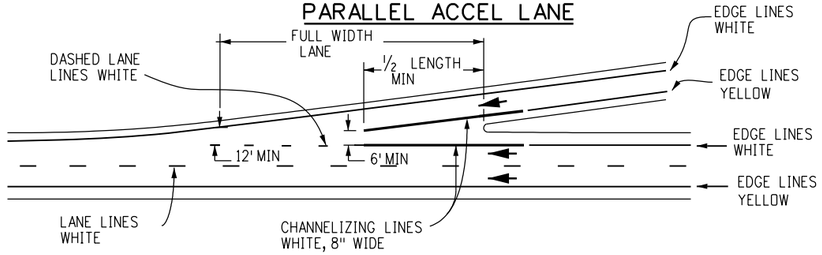


PARALLEL DECEL LANE

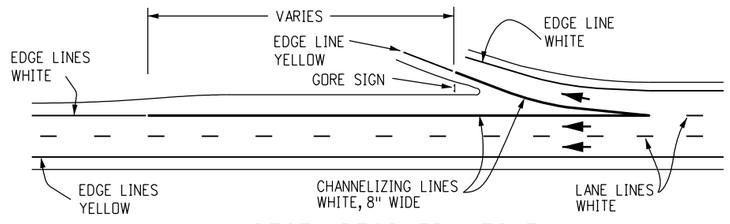
PARALLEL ACCEL LANE



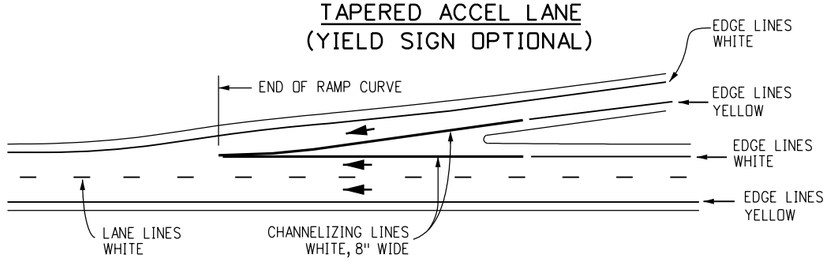
TAPERED DECEL LANE



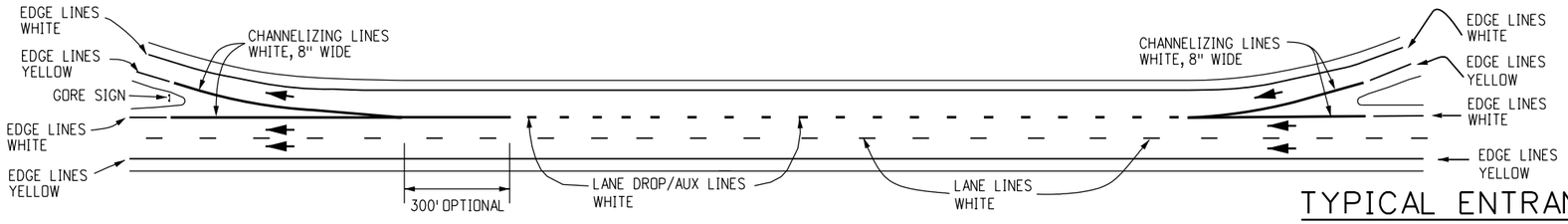
TAPERED ACCEL LANE
(YIELD SIGN OPTIONAL)



DECEL RECOVERY ZONE



NO ACCEL LANE
(REQUIRES YIELD SIGN)



COMBINATION ACCEL-DECEL LANE

TYPICAL ENTRANCE AND EXIT RAMP MARKINGS

GENERAL NOTES

1. MINIMUM LONGITUDINAL PAVEMENT MARKING WIDTH

Facility Type	Speed	Edge Lines	Lane Lines	Center Lines[1]	Dotted Lane Lines	Lane Drop/ Aux Lines
2-Lane Facilities	All	6"	n/a	4"	n/a	n/a
3- Lane Facilities	All	6"	6"	4"	6"	8"
Multi-Lane Facilities	≥ 50 MPH	6"	6"	4"	6"	8"
Multi-Lane Facilities	≤ 45 MPH	4"	4"	4"	4"	8"

[1]Applies to facility types with double yellow lines, painted median, or undivided highway.

2. TEMPORARY PAVEMENT MARKING
   4 INCHES WIDE MARKING CAN BE USED INSTEAD OF 6 INCHES WIDE MARKING FOR TEMPORARY MARKING UNLESS OTHERWISE DIRECTED BY THE REGION TRAFFIC ENGINEER.

3. CENTER LINES
   a. BROKEN YELLOW, 4 INCHES WIDE-10 FEET SEGMENTS WITH 30 FEET GAPS.
   b. SOLID YELLOW, 4 INCHES WIDE. THESE LINES SEPARATE ADJACENT-OPPOSITE DIRECTION TRAFFIC LANES. DOUBLE LINES SHALL BE SPACED 4 INCHES APART.

4. LANE LINES
   a. BROKEN WHITE, 4 OR 6 INCHES WIDE-10 FEET SEGMENTS WITH 30 FEET GAPS.
   b. SOLID WHITE, 4 OR 6 INCHES WIDE. THESE LINES SEPARATE ADJACENT-SAME DIRECTION TRAFFIC LANES. A SOLID LINE MAY BE USED TO DISCOURAGE LANE CHANGING, WHILE TWO PARALLEL SOLID WHITE LINES ARE REQUIRED TO PROHIBIT LANE CHANGING.

5. EDGE LINES
   a. SOLID WHITE OR YELLOW EDGE LINES SHALL BE 4 OR 6 INCHES WIDE.YELLOW EDGE LINES SHALL BE USED ONLY FOR LEFT EDGE, IN THE DIRECTION OF TRAVEL OF DIVIDED STREETS AND HIGHWAYS (SEPARATED BY OTHER THAN A PAINTED MEDIAN) AND ONE-WAY ROADWAYS (INCLUDING RAMPS).
   b. EDGE LINES ARE NOT CONTINUED THROUGH INTERSECTIONS AND ARE NOT BROKEN FOR DRIVEWAYS. CARE MUST BE TAKEN TO AVOID EDGE LINE APPEARING AS LANE LINE ALONG ROADWAYS WITH WIDE SHOULDERS AND/OR CLOSELY SPACED DRIVEWAYS.

6. DOTTED EXTENSION LINES
   BROKEN WHITE, WIDTH MATCHING THE LINE BEING EXTENDED-2 FEET SEGMENTS WITH 4 FEET GAPS. THESE LINES ARE USED TO DELINEATE THE EXTENSION OF A LINE THROUGH AN INTERSECTION OR INTERCHANGE AREA.

7. LANE DROP / AUX LINES
   BROKEN WHITE, 8 INCHES WIDE-3 FEET SEGMENTS WITH 12 FEET GAPS. THESE LINES SHOULD BEGIN 2600 FEET IN ADVANCE OF THE THEORETICAL GOREPOINT TO DISTINGUISH THE LANE DROP FROM A CONTINUOUS LANE.

8. DASHED LANE LINES
   BROKEN WHITE, 4 OR 6 INCHES WIDE-3 FEET SEGMENTS WITH 12 FEET GAPS. LINE WIDTH SHALL MATCH THE ADJACENT LANE LINE.

9. CHANNELIZING LINES
   SOLID WHITE, 8 INCHES WIDE. THESE LINES ARE USED WITH ACCELERATION-DECELERATION LANES, PAVEMENT WIDTH TRANSITIONS, AND LEFT-RIGHT TURN SLOTS OR ISLANDS.

   * THE CHANNELIZING LINE MAY BE EXTENDED 300 FEET (TYPICAL) UPSTREAM FROM THE THEORETICAL GORE. FINAL LENGTH DEPENDS ON SITE CONDITIONS.

(CONTINUED ON SHEET NO. 2)

Computer File Information	
Creation Date: 07/04/12	
Created By: SCL	
Last Modification Date: 12/20/24	
Last Modified By: NRIVERA	
CAD Ver.: MicroStation V8 Scale:Not to Scale Units: English	

	Sheet Revisions	
	Date:	Comments
R-6	12/20/24	DASHED LANE LINE UPDATE
R-5	04/30/24	FORMATTING
R-4	04/14/23	UPDATED NUMBER OF SHEETS
R-3	07/22/22	PARALLEL DECEL LANE AND NOTES UPDATE

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PAVEMENT MARKINGS

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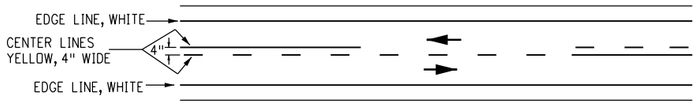
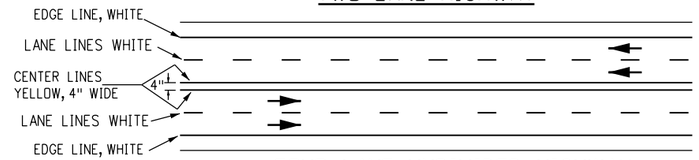
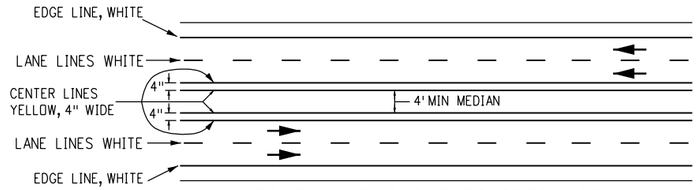


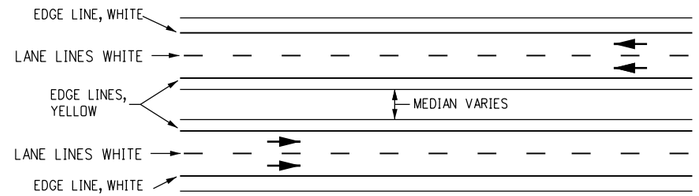
TWO LANE HIGHWAY



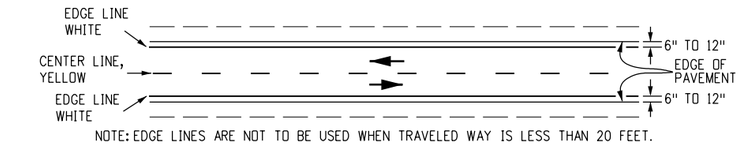
FOUR LANE UNDIVIDED HIGHWAY



FOUR LANE PAINT DIVIDED HIGHWAY

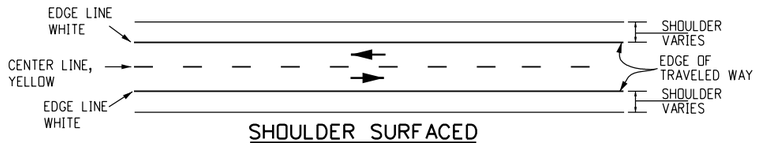


FOUR LANE DIVIDED HIGHWAY

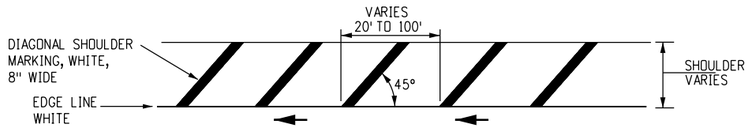


NOTE: EDGE LINES ARE NOT TO BE USED WHEN TRAVELED WAY IS LESS THAN 20 FEET.

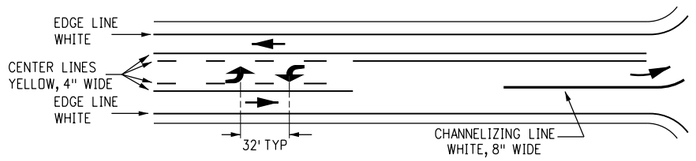
NO SHOULDER OR UNSURFACED SHOULDER



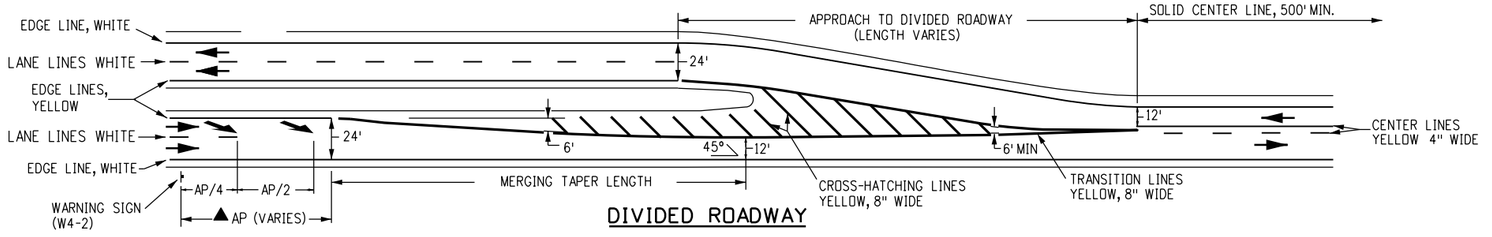
SHOULDER SURFACED



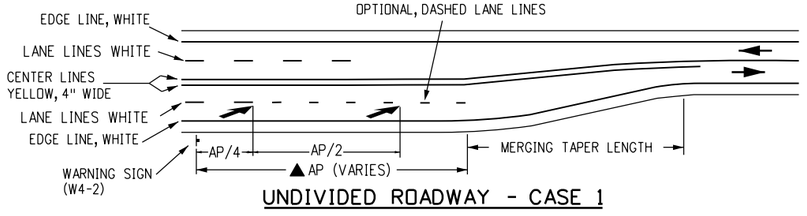
EDGE LINE WITH OPTIONAL DIAGONAL SHOULDER MARKING



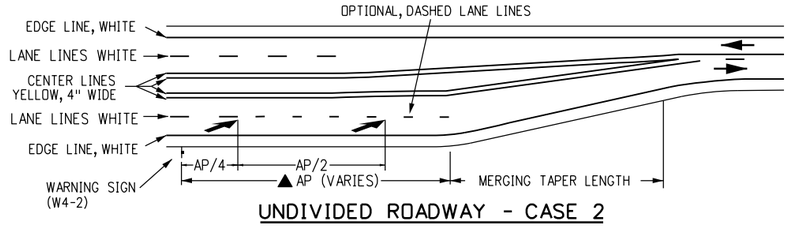
TYPICAL TWO WAY LEFT TURN LANE



DIVIDED ROADWAY



UNDIVIDED ROADWAY - CASE 1



UNDIVIDED ROADWAY - CASE 2

TYPICAL PAVEMENT WIDTH TRANSITION MARKINGS

GENERAL NOTES

(CONTINUED FROM SHEET NO. 1)

10. CROSS-HATCHING LINES
    a. SOLID WHITE OR YELLOW, 8 INCHES WIDE-45 DEGREE DIAGONAL, SPACED AT 25 FEET INTERVALS. THESE LINES ARE OPTIONAL AND MAY BE PLACED AT LOCATIONS INDICATED ON THE PLANS OR DETERMINED BY THE ENGINEER. YELLOW SHALL BE USED FOR PAINTED MEDIANS OR PAVEMENT WIDTH TRANSITIONS ONLY.

    b. OPTIONAL DIAGONAL SHOULDER MARKINGS SHALL BE SOLID WHITE, 8 INCHES WIDE, SPACED AT INTERVALS OF 20 FEET MINIMUM TO 100 FEET MAXIMUM.

11. PARKING LINES
    SOLID WHITE, 3 INCHES WIDE-DIAGONAL OR PARALLEL AS SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER.

12. STOP LINES
    SOLID WHITE, 24 INCHES WIDE-EXTEND PARALLEL TO INTERSECTED ROADWAY ACROSS ALL APPROACH LANES OR AS INDICATED AT LOCATIONS ON THE PLANS. LOCATE AT THE DESIRED STOPPING POINT, NOT MORE THAN 30 FEET, NOR LESS THAN 4 FEET FROM THE NEAREST EDGE OF THE INTERSECTED TRAFFIC LANE.

13. YIELD LINES
    a. SOLID WHITE, THE INDIVIDUAL TRIANGLES COMPRISING YIELD LINES SHALL HAVE A BASE OF 12 TO 24 INCHES WIDE AND A HEIGHT EQUAL TO 1.5 TIMES THE BASE AND SHALL BE PARALLEL TO THE INTERSECTED ROADWAY ACROSS ALL APPROACH LANES OR AS INDICATED AT LOCATIONS ON THE PLANS.

    b. THE SPACE BETWEEN EACH TRIANGLE SHALL BE 3 TO 12 INCHES.

14. CROSSWALK LINES
    a. SOLID WHITE, 12 INCHES WIDE FOR TRANSVERSE LINE TYPE EXTEND ACROSS ENTIRE WIDTH OF PAVEMENT. IF NO ADVANCE STOP LINE IS PROVIDED, INCREASE THE WIDTH OF THE CROSSWALK LINES TO 24 INCHES. THE DISTANCE BETWEEN THE LINES IS USUALLY DETERMINED BY THE WIDTH OF THE SIDEWALKS CONNECTED, IN ANY CASE THIS SHALL NOT BE LESS THAN 6 FEET.

    b. COMPLICATED AND/OR CHANNELIZED INTERSECTIONS AND MID-BLOCK CROSSWALKS SHALL BE SOLID WHITE, 12 INCHES TO 24 INCHES WIDE AND 8 TO 10 FEET LONG FOR LONGITUDINAL LINE TYPE AS DETAILED IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

15. WORD, ARROW AND SYMBOL MARKINGS
    ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH "THE STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" ADOPTED BY THE FEDERAL HIGHWAY ADMINISTRATION.

16. MERGING TAPER LENGTH
    L = MINIMUM LENGTH OF TAPER.
    S = DESIGN SPEED FOR NEW CONSTRUCTION OR NUMERICAL VALUE OF THE POSTED SPEED LIMIT OF THE 85TH PERCENTILE SPEED OF EXISTING TRAFFIC.
    W = WIDTH TRANSITIONED.

    FORMULA: FOR SPEED 45 MPH OR MORE, $L = S \times W$

    FOR SPEED 40 MPH OR LESS, $L = \frac{WS^2}{60}$

17 TRANSITION LINES
    SOLID YELLOW, 8 INCHES WIDE. THESE LINES ARE USED WHERE ADDITIONAL EMPHASIS OR VISIBILITY IS DESIRABLE AT PAVEMENT WIDTH TRANSITIONS. PLACE AT LOCATIONS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

18. SPEED MEASURING MARKING
    SOLID WHITE, 24 INCHES EXTEND 4 FEET FROM OUTSIDE OF EDGE LINES ON SHOULDERS.

19. ALL SPACING IS DETERMINED CENTER ON CENTER EXCEPT FOR DOUBLE LINES.

▲ NOTE:

AP = ADVANCE PLACEMENT DISTANCE FROM THE LANE ENDS SIGN (W4-2) TO THE BEGINNING OF THE MERGING TAPER. SEE SECTION 2C OF THE MUTCD FOR ADVANCE PLACEMENT DISTANCES.

LEGEND

→ Direction of Travel

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12		Date:	Comments
Created By: KEN	R-6	12/20/24	UPDATE DASHED LANE LINES
Last Modification Date: 12/20/24	R-5	04/30/24	LANE REDUCTION ARROWS ADDED UPDATED UNDIVIDED AND DIVIDED ROADWAY
Last Modified By: NRIVERA	R-4	04/14/23	ADD GENERAL NOTE 13 & UPDATE NUMBER OF SHEETS
CAD Ver.:MicroStation V8 Scale:Not to Scale Units: English	R-3	07/22/22	GENERAL NOTES UPDATE

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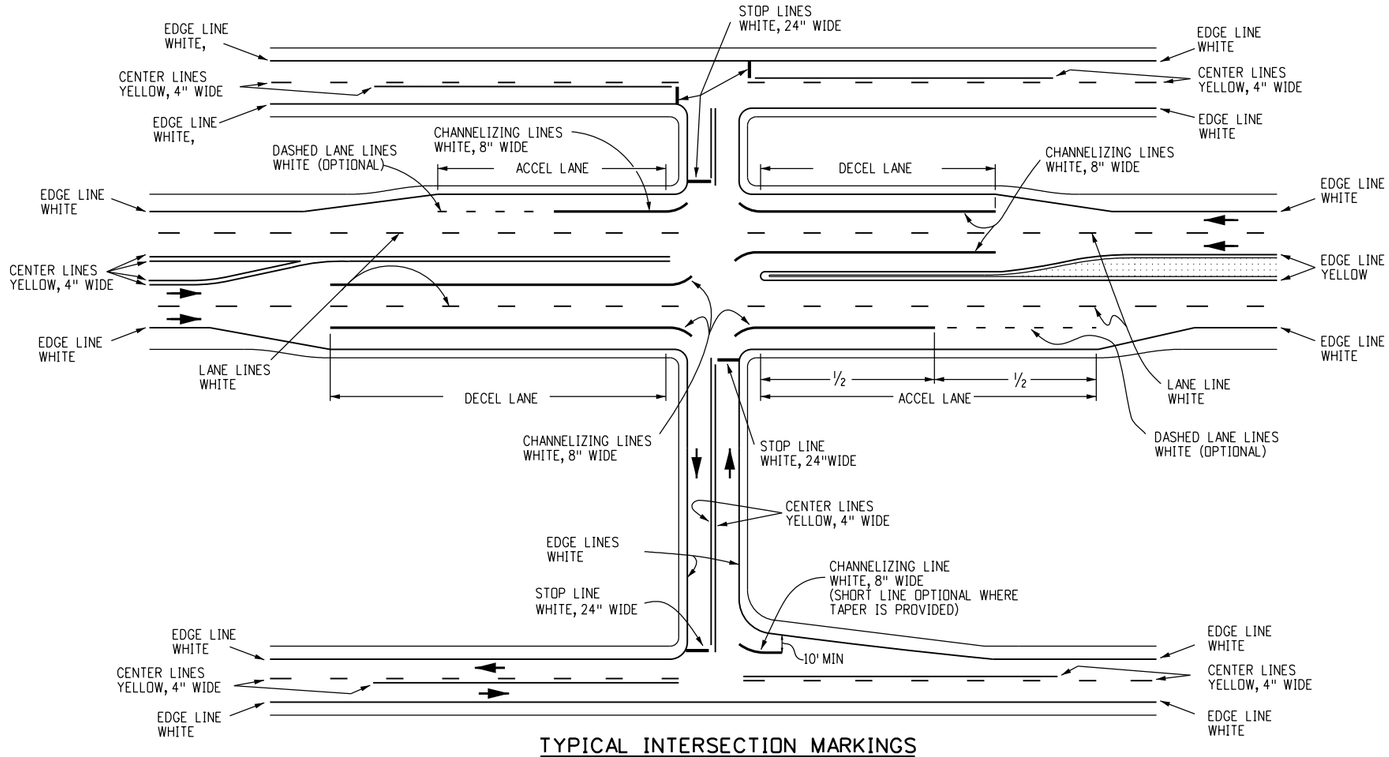
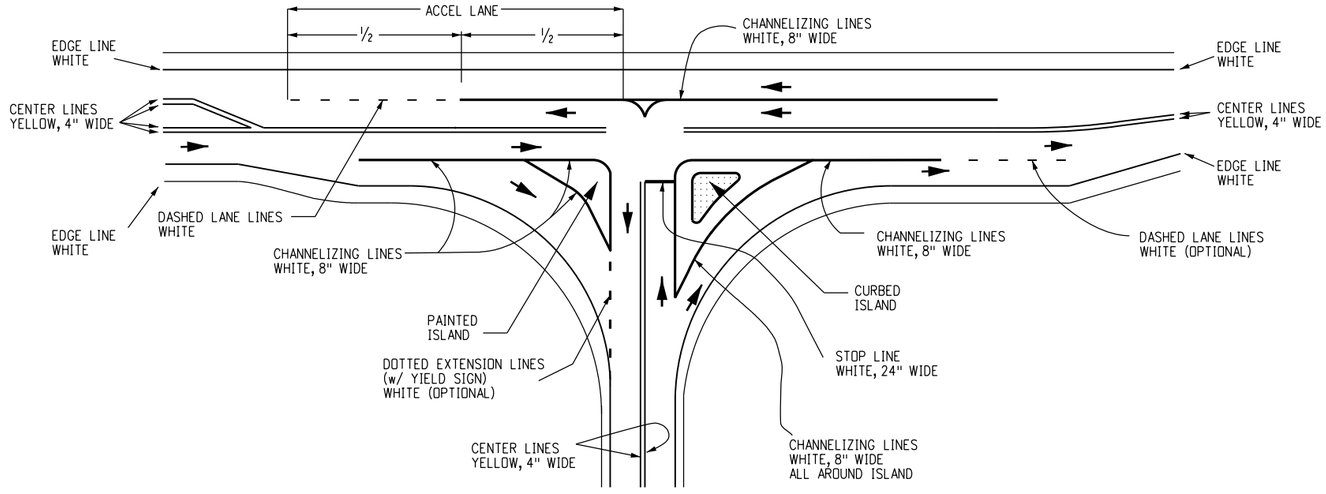
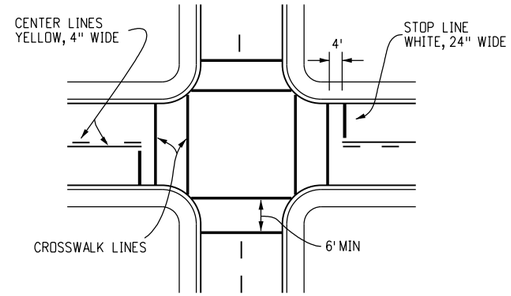


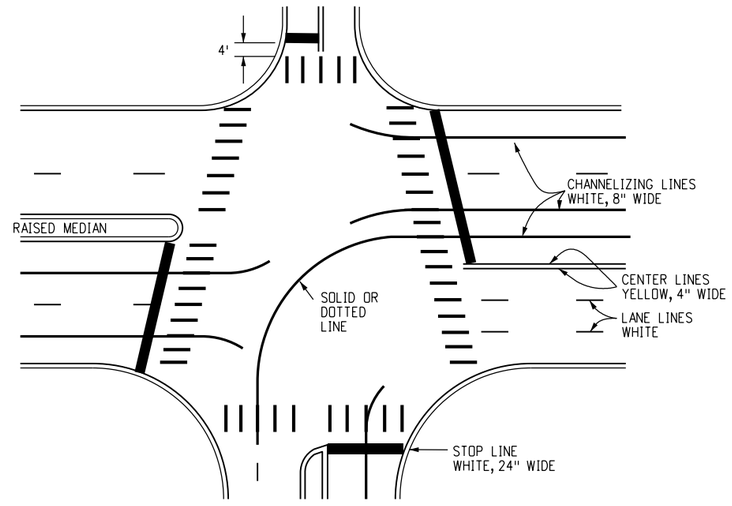
TYPICAL INTERSECTION MARKINGS



TYPICAL ISLAND MARKINGS

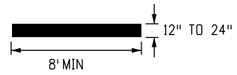


TYPICAL TRANSVERSE LINE CROSSWALK MARKINGS



TYPICAL CONTINENTAL CROSSWALK MARKINGS

CROSSWALK LINE DETAIL



LEGEND

→ Direction of Travel

CONTINENTAL CROSSWALK NOTES

1. CENTER CROSSWALKS ON CURB RAMPS. IF SUCH RAMPS ARE NOT PROVIDED, CENTER ON SIGNAL POLES WHEREVER PRACTICAL.
2. CENTER CROSSWALKS ON EDGE LINES, LANE LINES AND CHANNELIZING LINES.
3. CENTER CROSSWALKS BETWEEN ADJACENT LINES.
4. MARKINGS SHALL NOT BE WITHIN WHEEL PATH OF VEHICLES.
5. CENTER ON EXTENDED FLOW LINE.
6. LINES AND SPACES TO APPROXIMATE ADJACENT PATTERN.

INTERSECTIONS, ISLANDS AND CROSSWALKS

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12		Date:	Comments
Created By: JSW	R-5	12/20/24	UPDATED DASHED LANE LINES
Last Modification Date: 12/20/24	R-4	04/14/23	UPDATED NUMBER OF SHEETS
Last Modified By: NRIVERA	R-3	07/22/22	Changed AccelLane Lines To Dotted Lane Lines
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	R-2	02/16/21	ADDED DEC TAPER TO TYPICAL ISLAND MARKINGS

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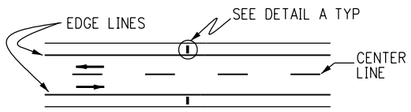
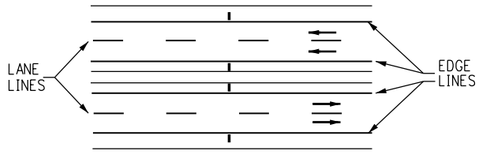
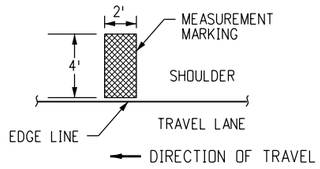


TWO - WAY ROADWAY

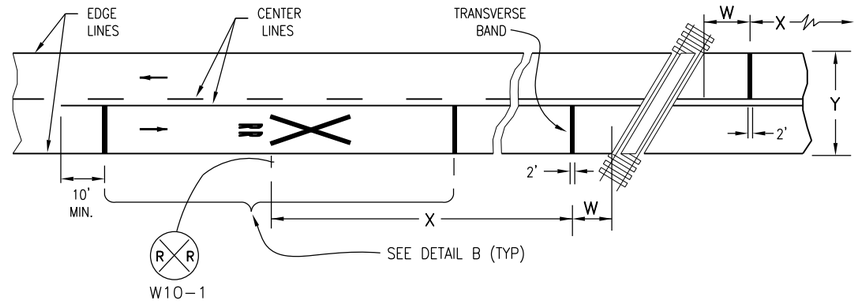


MULTI - LANE DIVIDED HIGHWAY

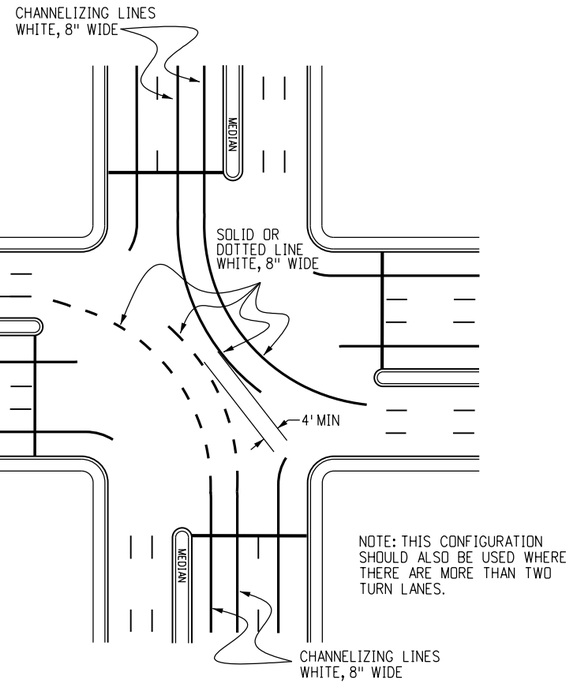


DETAIL A

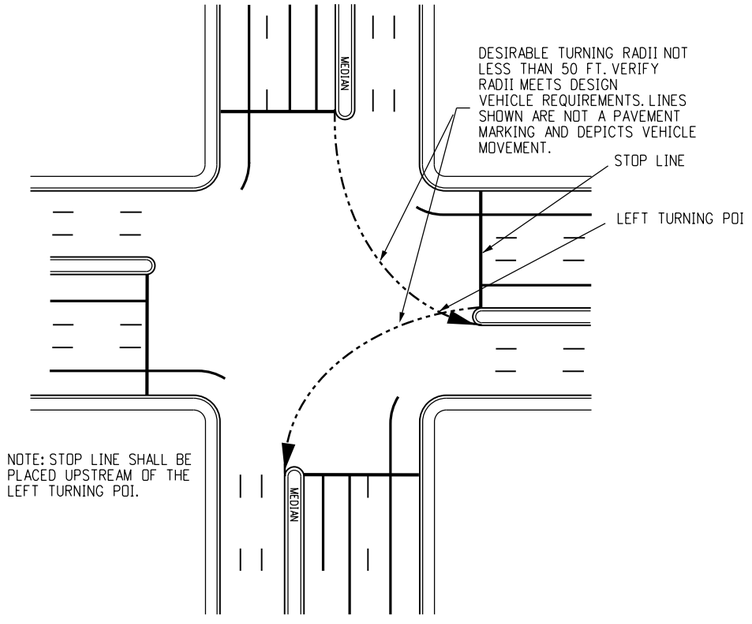
TYPICAL SPEED MEASUREMENT MARKING



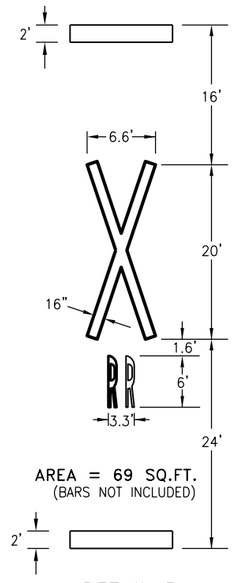
TYPICAL PAVEMENT MARKING AT RAILROAD CROSSING



TYPICAL DOUBLE LEFT TURN MARKINGS



TYPICAL STOP LINE PLACEMENT



DETAIL B

W= APPROXIMATELY 15 FT. (STOP LINE SHOULD BE 8' IN ADVANCE OF ACTIVE TRAFFIC CONTROL SYSTEMS; I.E., AUTOMATIC GATES AND/OR FLASHING SIGNALS).

X= THE DISTANCE FROM THE RAILROAD CROSSING MARKING TO THE NEAREST TRACK WILL VARY ACCORDING TO THE APPROACH SPEED AND THE SIGHT DISTANCE OF THE VEHICULAR TRAFFIC APPROACHING, BUT NOT LESS THAN 100 FT. (REFERENCE NOTE 1).

Y= ON MULTI-LANE ROADS THE TRANSVERSE BANDS SHOULD EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUAL RR SYMBOLS SHOULD BE USED IN EACH APPROACH LANE.

NOTES

1. THE WARNING SIGN SHALL BE PLACED ACCORDING TO THE WARNING SIGN PLACEMENT TABLE IN THE MUTCD (CHAPTER 2C, TABLE 2C-4). IF CONDITIONS DO NOT ALLOW PLACEMENT ACCORDING TO THE TABLE, IT SHALL BE AS APPROVED BY THE ENGINEER.

2. FOR RR SYMBOL DETAILS, REFER TO "THE STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS", ADOPTED BY THE FEDERAL HIGHWAY ADMINISTRATION.

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Creation Date: 07/04/12		Date:	Comments
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Last Modification Date: 04/14/23			
Last Modified By: AVu			
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English			

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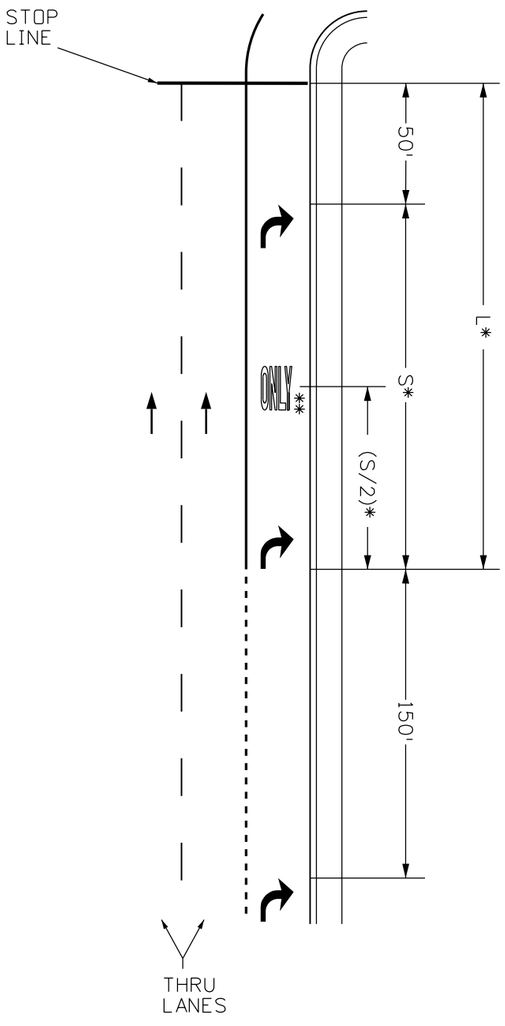
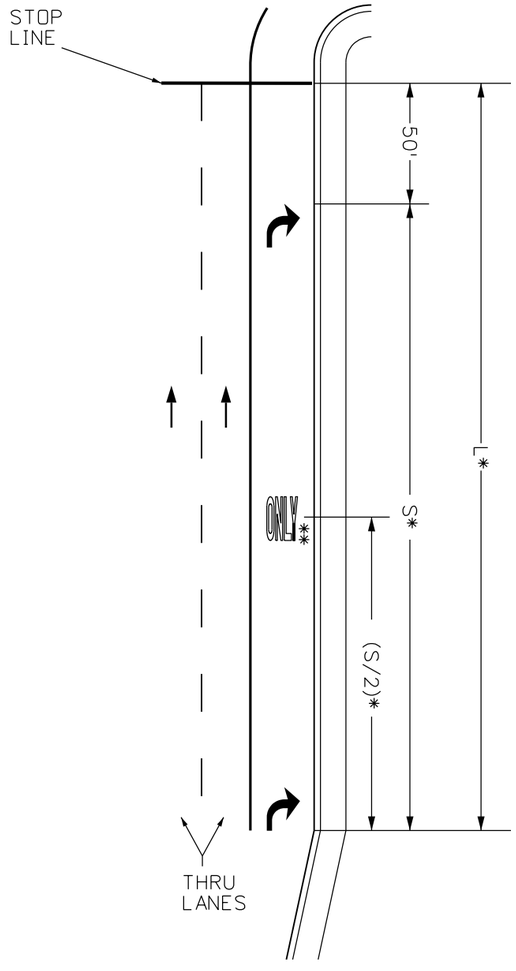
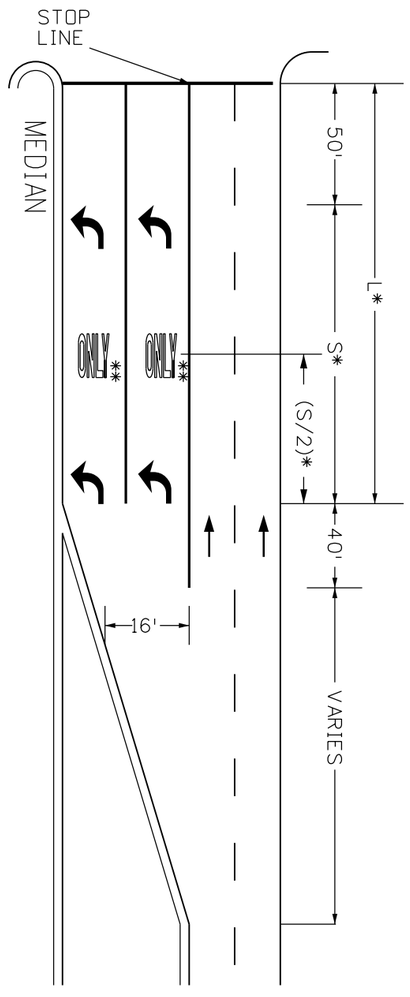


LANE DROP



POCKET LANE



DOUBLE TURNING

GENERAL NOTES

1. THE SPACING, IN THE TABLE APPLIES TO LEFT & RIGHT TURN LANES.
2. ** 'ONLY' MARKING IS OPTIONAL. CONTACT REGION TRAFFIC ENGINEER FOR DIRECTION.
3. WHEN ONE (1) ARROW IS USED, IT SHALL BE PLACED AT THE BEGINNING OF THE FULL WIDTH TURN LANE, OTHERWISE USE THE TABLE BELOW FOR ARROW PLACEMENT.

LENGTH (L)	LEFT AND RIGHT TURN ARROW		NO. OF 'ONLY' PER LANE
	NO. OF ARROWS PER LANE	SPACING (S)	
L < 200'	1	NA	NA
200' - 350'	2	EVENLY SPACED BETWEEN 150'-300'	1
350' - 650'	3		2
650' - 950'	4		3
950' ≤	≥5		≥4

*L (LENGTH) AND *S (SPACING) PROVIDED IN THE TABLE ABOVE WILL HELP DETERMINE THE NUMBER OF ARROWS AND ONLY MARKINGS NEEDED PER LANE.

LEGEND

→ Direction of Travel

ARROW PLACEMENTS AT INTERSECTIONS

Computer File Information	
Creation Date: 02/08/17	
Created By: MBhat	R-4
Last Modification Date: 04/14/23	
Last Modified By: AVu	
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	

Sheet Revisions	
Date:	Comments
04/14/23	UPDATED NUMBER OF SHEETS

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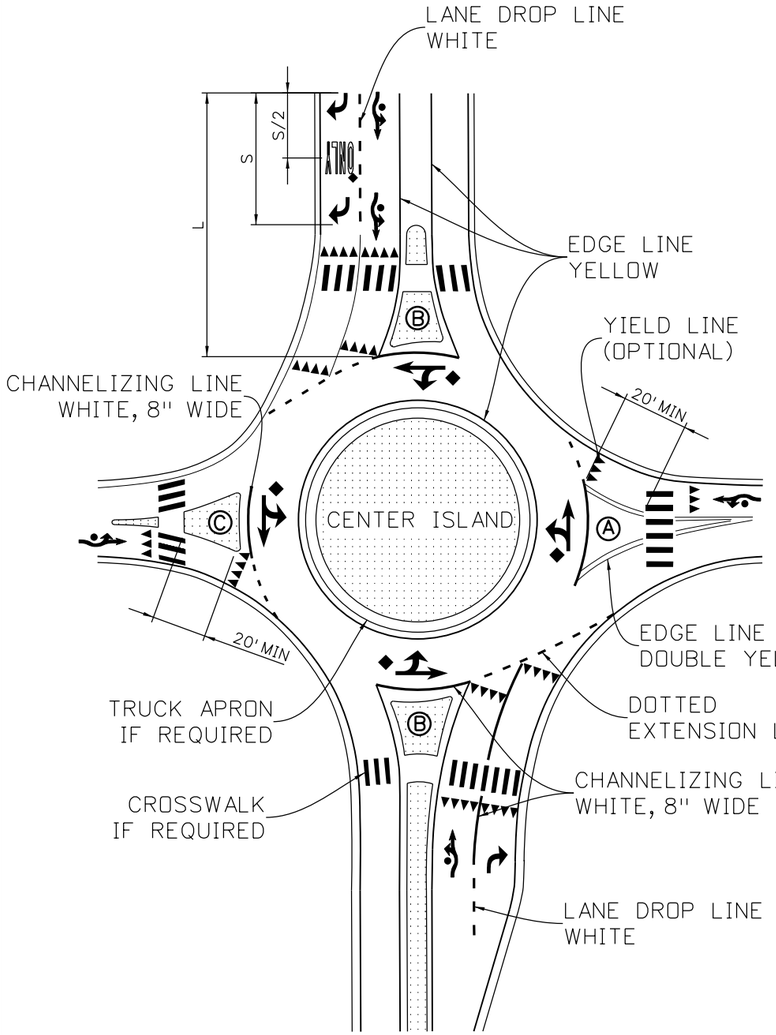
PAVEMENT MARKINGS

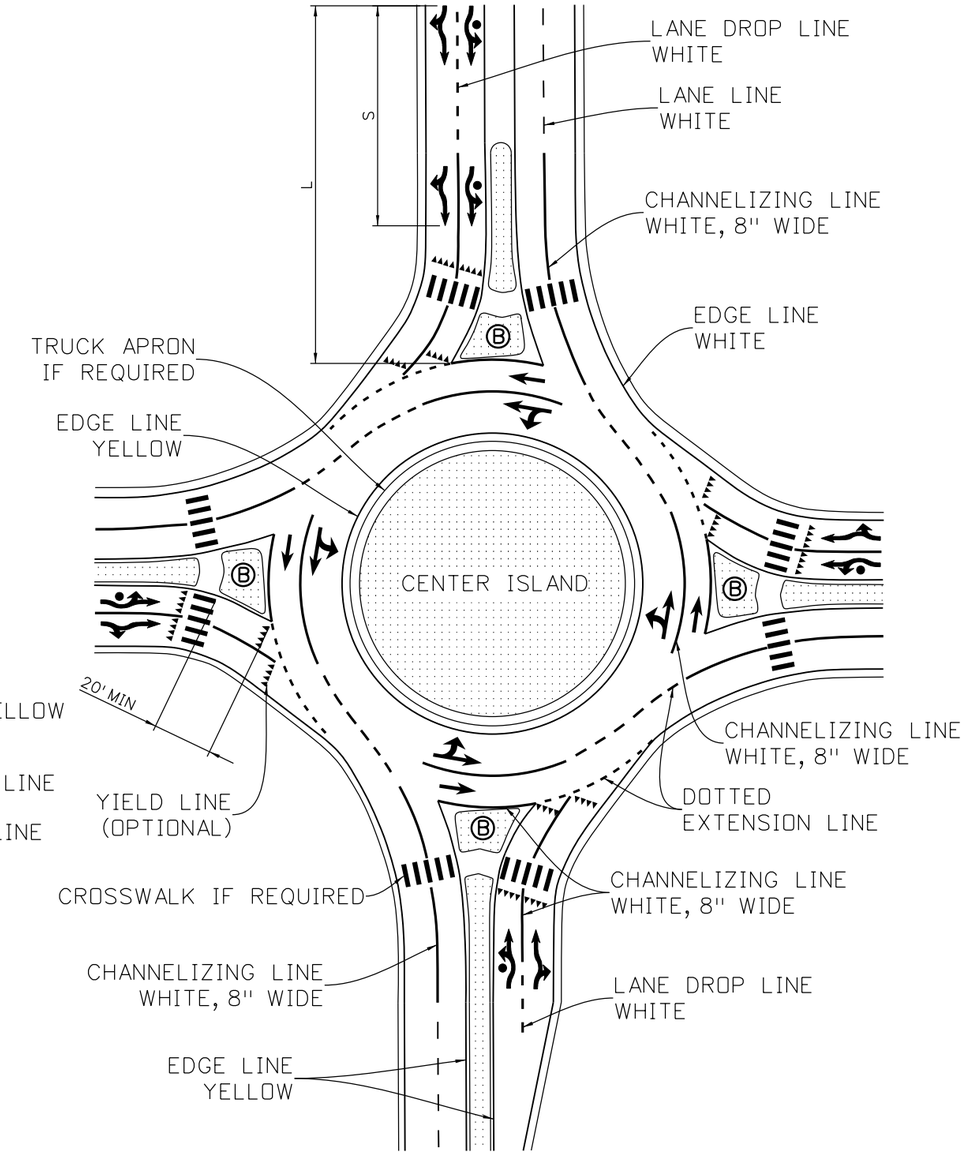
Issued By: Traffic Safety & Engineering Branch July 31, 2019

STANDARD PLAN NO.
S-627-1
Standard Sheet No. 5 of 11
Project Sheet Number: 219



SINGLE LANE ROUNDABOUT (TYPICAL)

NOTE: SPLITTER ISLAND MAY BE FORMED BY TWO YELLOW LINES, RAISED NON-MOUNTABLE, OR RAISED MOUNTABLE.



TWO LANE ROUNDABOUT (TYPICAL)

NOTES

1. UNLESS SHOWN IN THIS STANDARD, THE WIDTHS OF PAVEMENT MARKINGS SHALL MATCH THE LARGEST LINE WIDTH OF THE ADJACENT FACILITIES.
2. PAVEMENT MARKING LINES ALONG NON-MOUNTABLE SPLITTER ISLANDS ARE OPTIONAL.
3. NORMAL LANE-USE ARROWS SHALL BE USED IN THE ROUNDABOUT.
4. NORMAL OR FISH-HOOK LANE-USE ARROWS MAY BE USED ON THE APPROACH. ADVANCED SIGNING SHALL MATCH THE PAVEMENT MARKING USED.

   A. WHEN ONE (1) ARROW IS USED ON THE APPROACH, IT SHALL BE PLACED AT THE BEGINNING OF THE CHANNELIZING LINE. OTHERWISE, USE TABLE BELOW.

LENGTH (L)	LEFT AND RIGHT TURN ARROW		NO. OF 'ONLY' PER LANE
	NO. OF ARROWS PER LANE	SPACING (S)	
L < 200'	1	NA	NA
200' - 350'	2	EVENLY SPACED BETWEEN 150'-300'	1
350' - 650'	3		2
650' - 950'	4		3
950' ≤	≥5		≥4

5. THE INSCRIBED OVAL IS OPTIONAL AND MAY BE COMBINED WITH THE LANE-USE ARROW IN THE LEFT-MOST LANE.
6. SEE SHEET 10 FOR LANE-USE ARROW DIMENSIONS.
7. YIELD LINES UTILIZED AT CROSSWALK SHALL BE PLACED 20 TO 50 FEET IN ADVANCED OF THE CROSSWALK.

LEGEND

- (A) SPLITTER ISLAND FORMED BY TWO YELLOW LINES
- (B) RAISED NON-MOUNTABLE SPLITTER ISLAND
- (C) MOUNTABLE SPLITTER ISLAND
- ◆ OPTIONAL

ROUNDABOUT PAVEMENT MARKINGS

Computer File Information		Sheet Revisions	
Creation Date: 04/14/23		Date:	Comments
Created By: AVu	R-1	12/20/24	UPDATE DOTTED EXTENSION LINES
Last Modification Date: 12/20/24			
Last Modified By: NRIVERA			
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English			

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PAVEMENT MARKINGS

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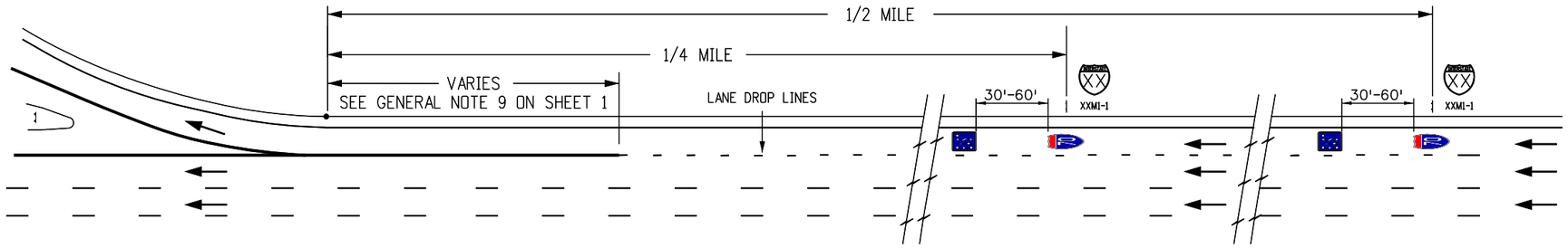
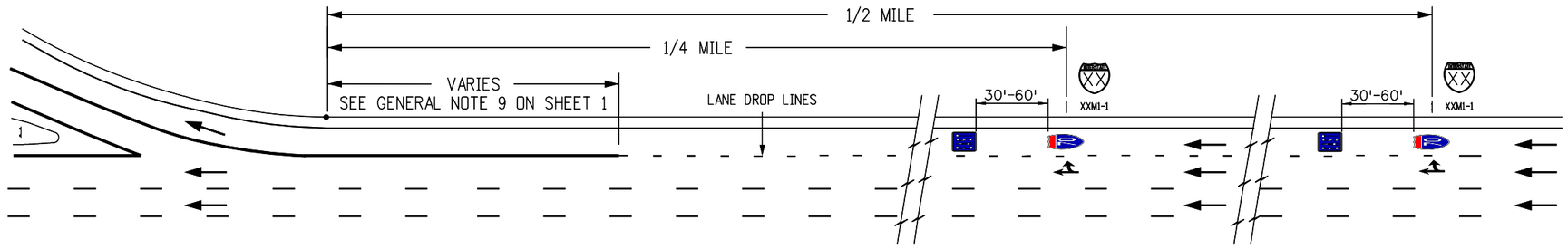
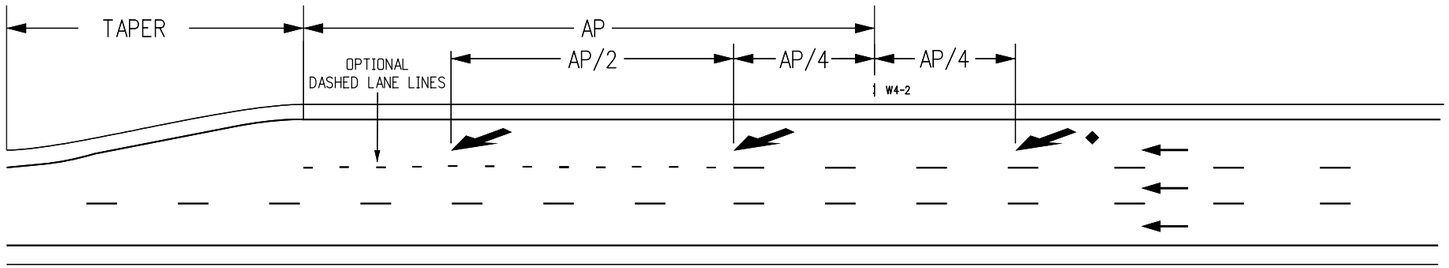
STANDARD PLAN NO.
S-627-1
Standard Sheet No. 6 of 11
Project Sheet Number: 220



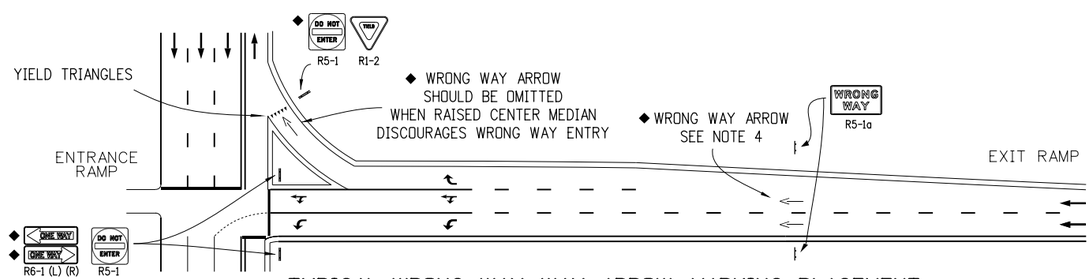
TYPICAL SHIELD PLACEMENT



TYPICAL SHIELD & OPTION ARROW PAVEMENT MARKING PLACEMENT

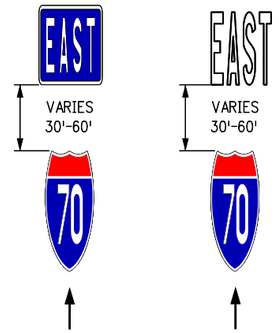


LANE REDUCTION MARKINGS



TYPICAL WRONG WAY WAY ARROW MARKING PLACEMENT

SHIELD LAYOUT DETAIL



NOTES

1. SHIELD AND CARDINAL DIRECTION PAVEMENT MARKINGS ARE OPTIONAL AND SHALL BE INSTALLED AS SHOWN IN THE PLANS.
2. LANE-REDUCTION ARROW MARKINGS ARE NOT REQUIRED FOR ACCELERATION LANES. LANE-REDUCTION ARROW MARKINGS MAY BE INSTALLED IN LONG ACCELERATION LANES AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.
3. LANE-REDUCTION ARROW MARKINGS ARE OPTIONAL FOR SPEEDS LESS THAN 45 MPH.
4. WRONG WAY ARROW MARKINGS MAY BE INSTALLED AS DIRECTED BY THE ENGINEER. IF USED, WRONG WAY ARROW MARKINGS SHALL BE THE LAST ARROW MARKING IN SEQUENCE FROM THE INTERSECTION TO THE BEGINNING OF THE EXIT RAMP.
5. REFER TO SHEET 5 FOR LANE USE ARROW PLACEMENT AT INTERSECTIONS. SEE ARROW DETAILS ON SHEETS 9 AND 10.
6. SEE NOTE 2 "CARDINAL DIRECTIONS" ON SHEET 11

LEGEND

← DIRECTION OF TRAVEL

AP = ADVANCE PLACEMENT DISTANCE FROM THE LANE ENDS SIGN (W4-2) TO THE BEGINNING OF THE MERGING TAPER. SEE SECTION 2C OF THE MUTCD FOR ADVANCE PLACEMENT DISTANCES.

◆ OPTIONAL

TYPICAL ARROW AND SHIELD PAVEMENT MARKINGS

Computer File Information		Sheet Revisions	
		Date:	Comments
Creation Date: 02/08/17			
Created By: MBhat	R-4	12/20/24	ADDED TYPICAL WRONG WAY ARROW DETAIL
Last Modification Date: 12/20/24	R-3	04/30/24	NOTES,LEGEND, AND ALL DETAILS UPDATED
Last Modified By: NRIVERA	R-2	04/14/23	UPDATED SHEET NUMBER
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	R-1	07/22/22	Lane Drop to Thru Lane Reduction Markings

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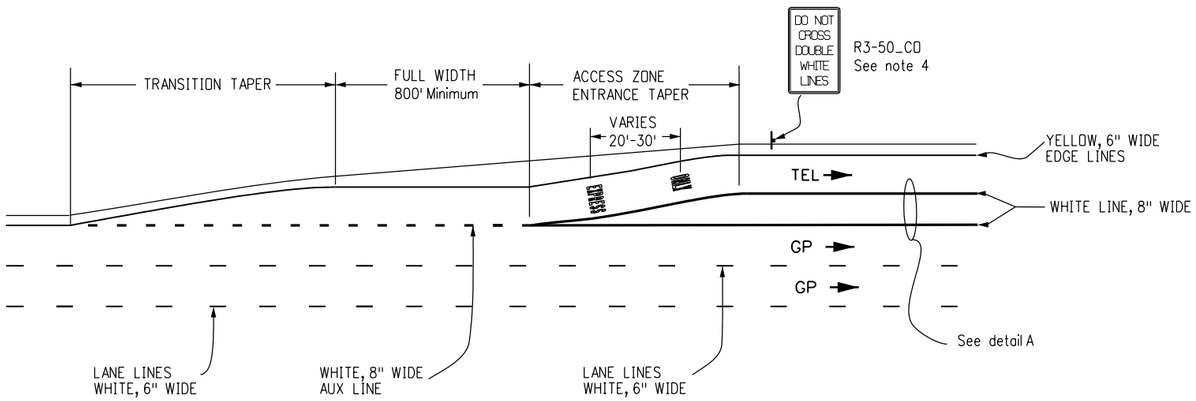
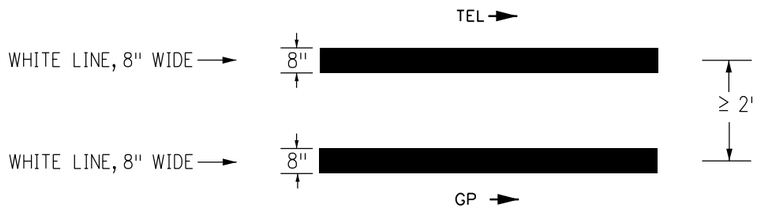
PAVEMENT MARKINGS

Issued By: Traffic Safety & Engineering Branch July 31, 2019

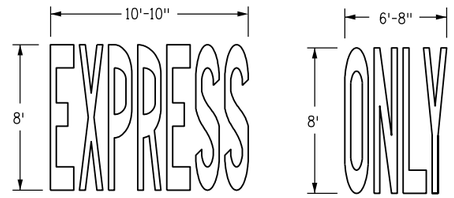
STANDARD PLAN NO.
S-627-1
Standard Sheet No. 7 of 11
Project Sheet Number: 221



TYPICAL ENTRANCE MARKING FOR BUFFER WIDTH ≥2' AND WHERE BUFFER CROSSING IS PROHIBITED



Detail A



GENERAL NOTES

1. For transition taper use 25:1 ratio.

2. For access zone entrance taper length use:

   L = S x W

   L = MINIMUM LENGTH OF TAPER

   S = DESIGN SPEED FOR NEW CONSTRUCTION OR NUMERICAL VALUE OF THE POSTED SPEED LIMIT

   W = WIDTH TRANSITIONED

3. If buffer space is wider than 4 feet, chevron markings are required (See MUCTD Section 3B.24 and figure 3D.2(A)).

4. For each section prohibiting entering and exiting movements, the R3-50_CO sign shall be installed within 300 feet of the start of the express lane. Additional R3-50_CO signing shall be installed as shown in the plans.

5. For each section prohibiting entering and exiting movements, an EXPRESS ONLY marking should be placed within 50 feet of the start of the express lane.

6. EXPRESS ONLY markings should supplement the signs.

LEGEND

TEL - TOLL/EXPRESS LANE

GP - GENERAL PURPOSE LANE

TOLL EXPRESS LANE PAVEMENT MARKINGS

Computer File Information		Sheet Revisions	
Creation Date: 07/31/19		**Date:**	**Comments**
Created By: EButta	R-3	12/20/24	REVISED LANE LINE TYPES
Last Modification Date: 12/20/24	R-2	04/14/23	ADD LEGEND & UPDATED SHEET NUMBER
Last Modified By: NRIVERA	R-1	04/17/20	STRIPING LAYOUT & GENERAL NOTE UPDATE
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English			

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PAVEMENT MARKINGS

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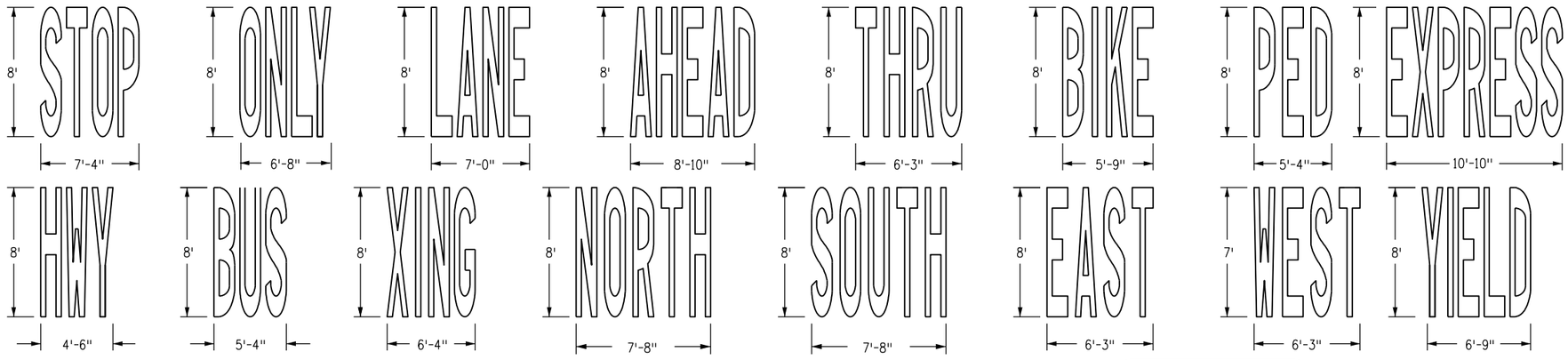
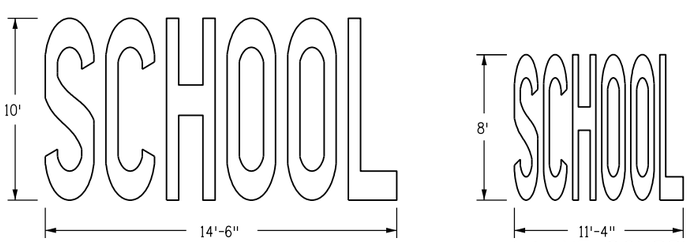
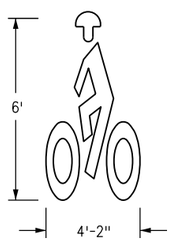
STANDARD PLAN NO.
S-627-1
Standard Sheet No. 8 of 11
Project Sheet Number: 222

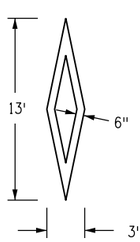




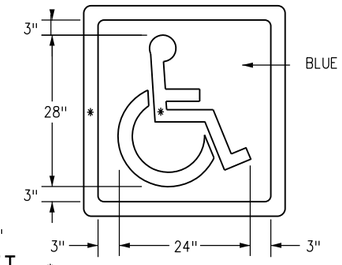
STROKE = 8"
2-LANE SCHOOL

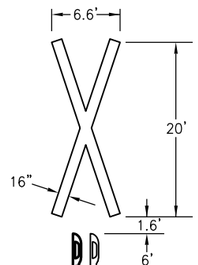
1-LANE SCHOOL

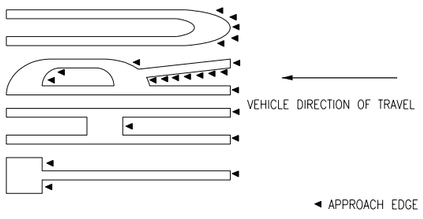




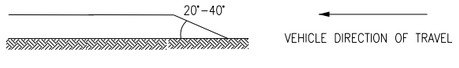
AREA = 11.9 SQ.FT. AREA = 10 SQ.FT.



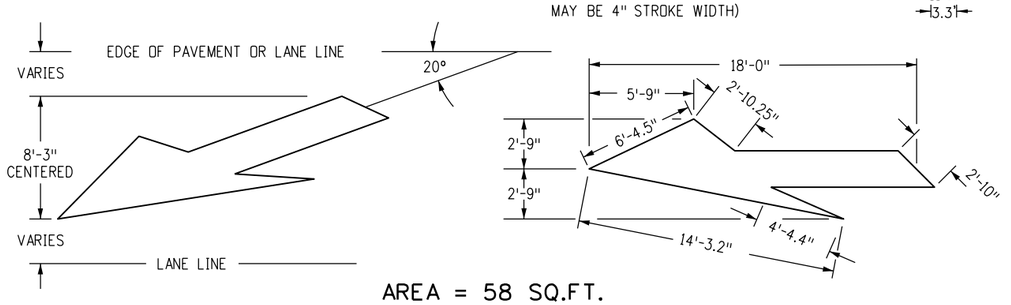




TYPICAL APPROACH EDGE TAPERING VIEW



TYPICAL APPROACH EDGE TAPERING PROFILE VIEW



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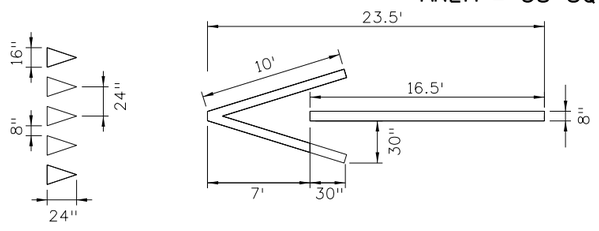


TYPICAL YIELD TRIANGLES AND WRONG WAY ARROW

WORD AND SYMBOL NOTES

1. IF HEIGHT IS INCREASED OR DECREASED THEN ALL MEASUREMENTS CHANGE PROPORTIONATELY. EXAMPLE: "H" MEASUREMENT FOR STOP IS REDUCED TO 4 FT. FROM 8 FT. THEN SQUARE FEET 5.75 ($^1/_4$ OF 23.0 SQ. FT.).
2. PAVEMENT WORD AND SYMBOL MARKINGS, TRANSVERSE AND LONGITUDINAL (CONTINENTAL) CROSSWALK LINES, AND STOP LINES WILL BE PAID FOR IN SQUARE FEET USING THEIR SPECIFIC BID ITEMS.
3. LETTER SPACING SHALL BE 8 IN. EXCEPT FOR THE LETTER "A" WHICH IS 6 IN..
4. USE THE MARKING WORD "BIKE" IF 6 FT. TO 8 FT. BIKE LANES ARE INSTALLED.

TAPERING NOTES

1. ALL PAVEMENT MARKING APPROACH EDGES FROM THE VEHICLE DIRECTION OF TRAVEL SHALL BE TAPERED USING A PUTTY KNIFE OR SIMILAR TOOL.

DESIGNATED PAYMENT AREAS

FOR THE FOLLOWING H, W, AND S DIMENSIONS PAY:

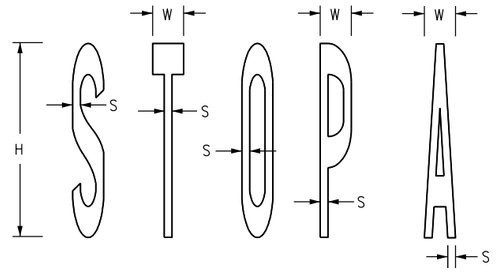
H = 4' WORDS

BIKE - 5.5 SQ.FT.	LANE - 6.0 SQ.FT.
ONLY - 6.0 SQ.FT.	XING - 5.0 SQ.FT.

H = 8' WORDS

STOP - 23.0 SQ.FT.	XING - 20.0 SQ.FT.
ONLY - 22.5 SQ.FT.	LANE - 22.5 SQ.FT.
AHEAD - 29.0 SQ.FT.	BIKE - 21.0 SQ.FT.
BUS - 18.5 SQ.FT.	HWY - 16.5 SQ.FT.
SCHOOL(1L) - 33.0 SQ.FT.	THRU - 22.0 SQ.FT.
SCHOOL(2L) - 85.0 SQ.FT.	PED - 17.5 SQ.FT.
NORTH - 30.6 SQ.FT.	SOUTH - 28.5 SQ.FT.
EAST - 22.1 SQ.FT.	WEST - 23.7 SQ.FT.
X with RR - 69 SQ.FT.	EXPRESS - 41 SQ.FT.
YIELD - 23 SQ.FT.	

TYPICAL LETTER MEASUREMENTS



H = HEIGHT H = 8' H = 4'
W = WIDTH W = 1'-3.4" TO 1'-4" W = XX TO XX

PAVEMENT MARKING WORDS AND SYMBOLS (PAGE 1)

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12		Date:	Comments
Created By: SCL	R-2	12/20/24	YIELD TRIANGLES AND WRONG WAY ARROW
Last Modification Date: 12/20/24	R-1	04/14/23	MOVED ARROWS DIMENSIONS TO SHEET 10
Last Modified By: NRIVERA			UPDATED SHEET NUMBER
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English			

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PAVEMENT MARKINGS

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STANDARD PLAN NO.
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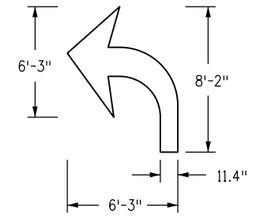
Standard Sheet No. 9 of 11
Project Sheet Number: 223



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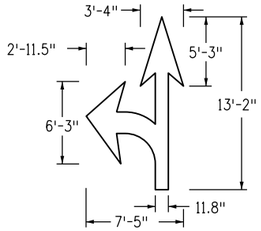

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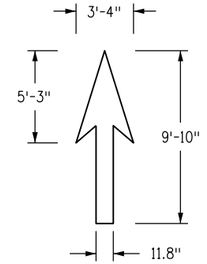

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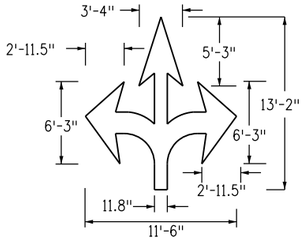

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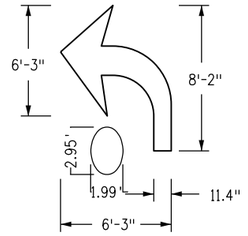

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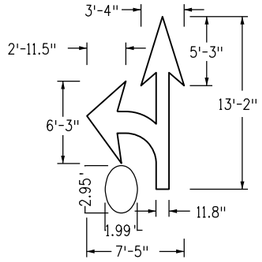

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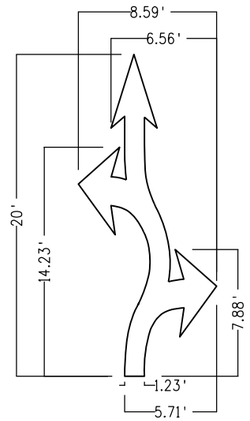
WORD AND SYMBOL NOTES

1. IF HEIGHT IS INCREASED OR DECREASED THEN ALL MEASUREMENTS CHANGE PROPORTIONATELY. EXAMPLE: "H" MEASUREMENT FOR STOP IS REDUCED TO 4 FT. FROM 8 FT. THEN SQUARE FEET 5.75 (1/4 OF 23.0 SQ. FT.).
2. PAVEMENT WORD AND SYMBOL MARKINGS, TRANSVERSE AND LONGITUDINAL (CONTINENTAL) CROSSWALK LINES, AND STOP LINES WILL BE PAID FOR IN. SQUARE FEET USING THEIR SPECIFIC BID ITEMS.



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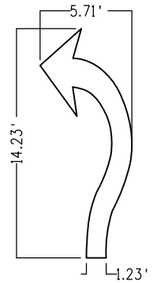

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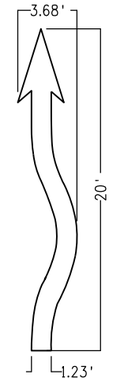

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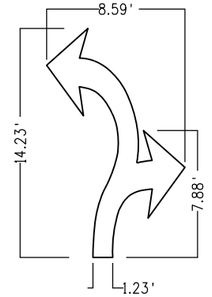

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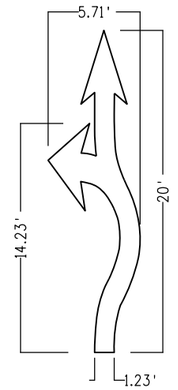

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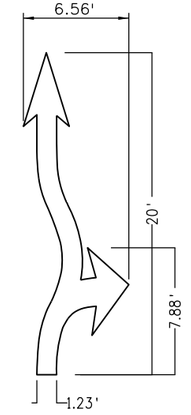

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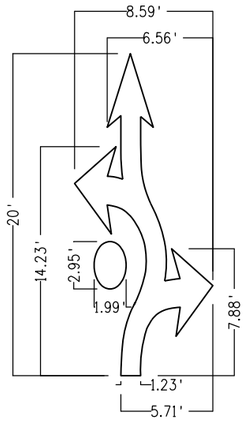

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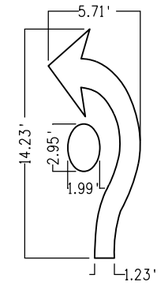

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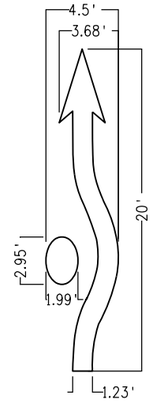

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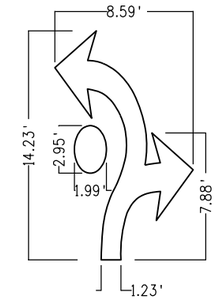

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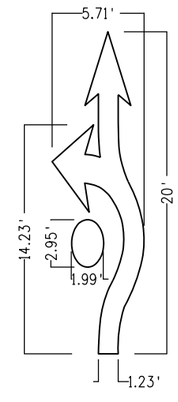

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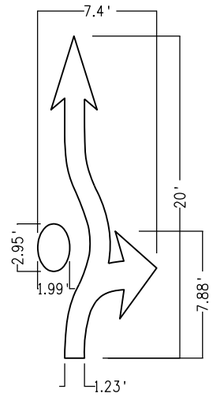

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PAVEMENT MARKING WORDS AND SYMBOLS (PAGE 2)

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PAVEMENT MARKINGS

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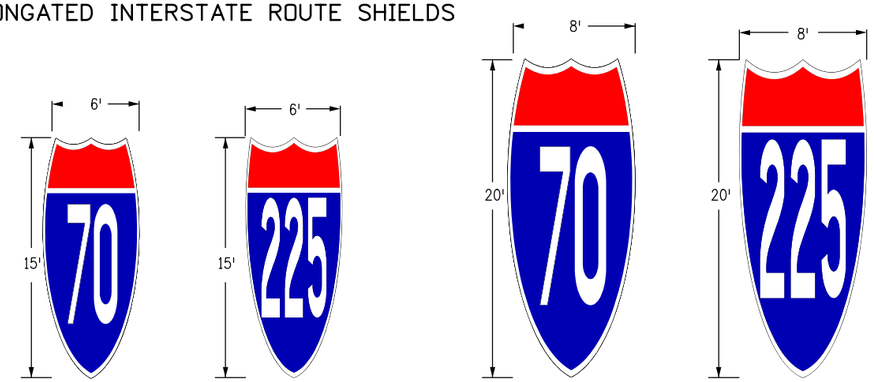
STANDARD PLAN NO.
S-627-1
Standard Sheet No. 10 of 11
Project Sheet Number: 224

ELONGATED INTERSTATE ROUTE SHIELDS



DESIGNATED PAYMENT AREAS

FOR THE FOLLOWING ROUTE SHIELDS
& CARDINAL DIRECTIONS DIMENSIONS PAY:

INTERSTATE

6' X 15' - 75 SQ.FT. **8' X 20' - 128 SQ.FT.**

COLORADO STATE

6' X 15' - 90 SQ.FT. 8' X 20' - 160 SQ.FT.

US HIGHWAYS

7' X 16' - 112 SQ.FT. 9' X 21' - 189 SQ.FT.

CARDINAL

8' X 10' - 80 SQ.FT. 9' X 10' - 90 SQ.FT.

NOTES

1. DIMENSIONS

   ELONGATED ROUTE SHIELDS SHALL BE AT LEAST 8'x20' WHEN USED ON HIGH SPEED ROADWAYS (55 MPH OR MORE).

   PER FIGURE 3B-25 OF THE 2009 MUTCD ELONGATED ROUTE SHIELD COLORS SHALL CONFORM WITH THE STANDARD HIGHWAY SIGNS AND MARKINGS BOOK.

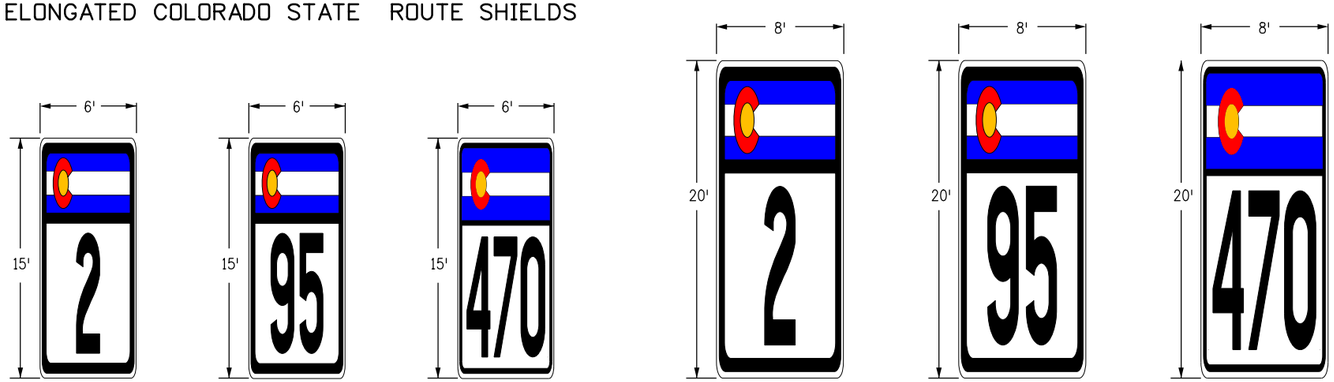
2. CARDINAL DIRECTIONS

   USE CARDINAL DIRECTIONS WITH WHITE ON BLUE WHEN USING INTERSTATE ROUTE SHIELDS

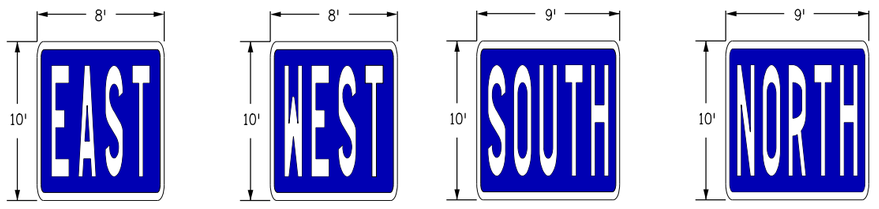
   USE CARDINAL DIRECTIONS WITH BLACK ON WHITE WHEN USING EITHER COLORADO STATE OR US HIGHWAY ROUTE SHIELDS.

   CARDINAL DIRECTION MARKING WORD SYMBOL FROM SHEET 9 OF 11 MAY BE USED INSTEAD OF PLAQUE.

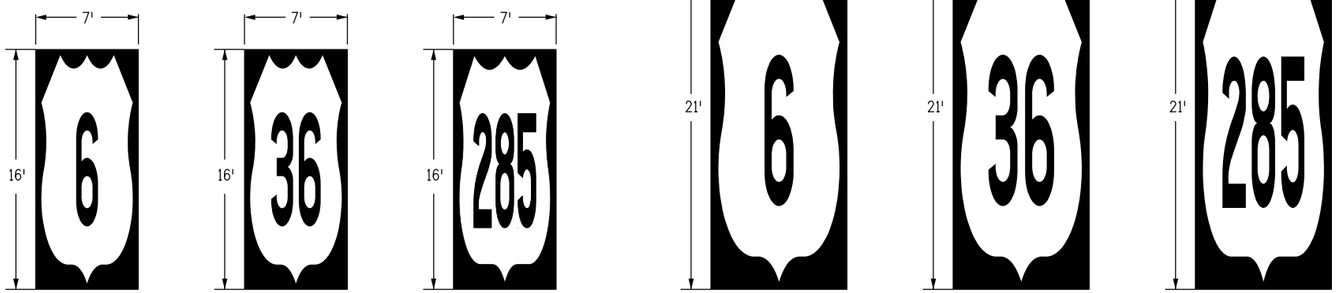
ELONGATED COLORADO STATE ROUTE SHIELDS



CARDINAL DIRECTIONS
(WHITE LETTERING ON BLUE BACKGROUND)



ELONGATED US HIGHWAY ROUTE SHIELDS



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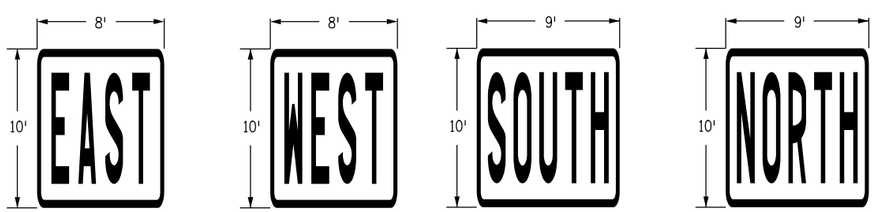

ELONGATED ROUTE SHIELDS & CARDINAL DIRECTION MARKINGS

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R-1	02/16/21	GENERAL NOTE UPDATE
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PAVEMENT MARKINGS

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STANDARD PLAN NO.
S-627-1
Standard Sheet No. 11 of 11
Project Sheet Number: 225

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TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

Issued By: Traffic Safety & Engineering Branch January 20, 2023

STANDARD PLAN NO.
S-630-1
Standard Sheet No. 1 of 26
Project Sheet Number: 226

GENERAL NOTES

1. ALL CONSTRUCTION ZONE TRAFFIC CONTROL DEVICES, INCLUDING BUT NOT LIMITED TO BARRICADES, SIGNS, ARROW PANELS, FLASHING BEACON (PORTABLE), AND CHANNELIZING DEVICES, SHALL BE FURNISHED, INSTALLED, MAINTAINED (INCLUDING WASHING), REPLACED IF DAMAGED, REMOVED WHEN TEMPORARILY NOT IN USE AND RETURNED WHEN REQUIRED, RESET AS NECESSARY DURING THE PROGRESS OF CONSTRUCTION, AND REMOVED ENTIRELY WHEN THE PROJECT IS COMPLETED. ALL DEVICES SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF THE ATSSA "QUALITY GUIDELINES FOR TEMPORARY TRAFFIC CONTROL DEVICES & FEATURES".

2. WORK ON THE PROJECT SHALL NOT BE STARTED UNTIL ALL REQUIRED TRAFFIC CONTROL DEVICES ARE IN PLACE, AND APPROVED BY THE ENGINEER.

3. WHEN SPEED LIMIT REDUCTION IS REQUIRED, SUCH REDUCTION SHALL BE IN ACCORDANCE WITH CDOT FORM 568, "CDOT TEMPORARY SPEED LIMIT REDUCTION."

   WHEN A CHANGE IN AN EXISTING SPEED LIMIT IS REQUIRED, THE R2-1 SIGNS, SHOWN ON THE SCHEDULE OF CONSTRUCTION TRAFFIC CONTROL DEVICES, SHOULD BE INSTALLED AT THE LOCATIONS SHOWN ON THE TYPICAL CASES BY R2-1 (OPTIONAL) SIGNS.

   AN ADVISORY SPEED PLATE (W13-1P) MAY BE USED WITH A WARNING SIGN WHEN THE MAXIMUM RECOMMENDED SPEED FOR CONDITION NAMED IS LOWER THAN THE POSTED SPEED LIMIT.

   THE REGULATORY OR ADVISORY SPEED REDUCTION DISPLAYED SHALL NOT EXCEED 15 MPH PER SIGN INSTALLATION.

4. WORK ZONE (G20-5P) AND FINES DOUBLE (R2-6P) SIGNS SHALL BE PROVIDED EVERY 2640' BETWEEN R2-10 AND R2-11 SIGNS. THE SPACING OF THESE SIGNS MAY BE CHANGED AS DIRECTED BY THE ENGINEER.

5. ANY TRAFFIC CONTROL DEVICE THAT IS DAMAGED, WEATHERED, WORN, OR OTHERWISE DEEMED UNACCEPTABLE BY THE ENGINEER, SHALL BE REPLACED.

6. CONTRACTOR AND PERSONAL VEHICLE PARKING IS PROHIBITED WITHIN THE RIGHT-OF-WAY UNLESS DESIGNATED ON THE PLANS, OR APPROVED BY THE ENGINEER.

7. CONSTRUCTION TRAFFIC SIGNS SHALL BE MEASURED BY THE FOLLOWING SIZES AND DESCRIPTIONS:

PANEL SIZE A	0.01 TO 9.00 SQ. FT. (INCLUDING TYPE 1 AND TYPE 2 BARRICADES).
PANEL SIZE B	9.01 TO 16.00 SQ. FT.
PANEL SIZE C	GREATER THAN 16 SQ. FT.

   CONSTRUCTION TRAFFIC SIGN (SPECIAL), SQ. FT., MAY BE USED FOR SOME PROJECT SPECIFIC INFORMATION SIGNS.

   FOR DETAILED DIMENSIONS OF SIGNS WITH SIGN CODE NUMBERS, SEE "STANDARD HIGHWAY SIGNS" AND THE "COLORADO SUPPLEMENT" THERETO. SIGN LAYOUTS FOR OTHER SIGNS WILL BE FURNISHED IN THE PLANS, TRANSMITTED TO THE ENGINEER AFTER AWARD, OR MAY BE AVAILABLE UPON REQUEST.

   W20-5 WARNING SIGNS SHALL BE FURNISHED WITH EXCHANGEABLE PLAQUES READING "RIGHT", "LEFT", "CENTER", "RIGHT 2", ETC. AT NO ADDITIONAL COST.

8. ALL WARNING AND REGULATORY SIGNS SHALL BE POSTED ON BOTH SIDES OF THE ROADWAY ON DIVIDED HIGHWAYS, MULTI-LANE RAMPS, ONE-WAY STREETS, AND AS DIRECTED BY THE ENGINEER, EXCEPT WHERE ONLY ONE SHOULDER IS CLOSED (EX: CASE 11 ON SHEET 7).

9. ADDITIONAL TRAFFIC CONTROL DEVICES ADDRESSING FLAGGING, SPEED REDUCTION, ETC. WILL BE NECESSARY FOR SET-UP AND TAKE-DOWN OF MOST CASE APPLICATIONS; DAILY WORK SITE ACCESS; AND PAVEMENT MARKING REMOVAL AND INSTALLATION OPERATIONS.

10. BASED ON SIGHT DISTANCE AND OTHER CONSIDERATIONS, THE FINAL LOCATIONS OF SIGNS ARE SUBJECT TO APPROVAL OF THE ENGINEER.

11. IF CONSTRUCTION RELATED TRAFFIC CONGESTION BACKS UP BEYOND THE INSTALLED ADVANCE SIGN SEQUENCE, ADDITIONAL ADVANCE SIGNING SHALL BE PLACED BEYOND THE CONGESTION.

12. ALL SIGN MATERIAL SHALL BE SOUND AND DURABLE TO THE DEGREE NECESSARY FOR MAINTAINING EFFECTIVE AND NEAT APPEARING TRAFFIC CONTROLS, AND:

    a. SIGN PANELS MAY BE FABRICATED FROM PLYWOOD, STEEL, ALUMINUM, OR OTHER SUITABLE MATERIAL.
    b. REFLECTIVE SHEETING SHALL CONFORM TO ASTM D4956. THE TYPE SHALL BE AS DESCRIBED IN THE STANDARD SPECIFICATIONS AND/OR AS SHOWN ON THE PLANS.
    c. SYMBOLS AND LEGEND SHALL BE OF GOOD WORKMANSHIP (UNEVEN OR HAND LETTERING WILL NOT BE ACCEPTED).
    d. PORTABLE OR TEMPORARY MOUNTING SHALL NOT BE CONSTRUCTED OR WEIGHTED BY ANY METHOD OR MATERIAL THAT MAKES THEM HAZARDOUS TO TRAFFIC.
    e. CERTAIN POST SIZES AND SHAPES REQUIRE A "BREAK-AWAY" DEVICE. SEE THE APPLICABLE STANDARD PLAN. OTHER POST DESIGNS OR SYSTEMS REQUIRE THE SUBMITTAL OF AN FHWA LETTER OF ACCEPTANCE TO THE ENGINEER, AND MUST BE APPROVED BY THE ENGINEER PRIOR TO THEIR USE.

13. ALL CONSTRUCTION SIGN PLACEMENT SHALL BE IN ACCORDANCE WITH STANDARD PLAN "TYPICAL GROUND SIGN PLACEMENT" UNLESS OTHERWISE APPROVED.

    SIGNS APPROVED TO BE MOUNTED ON PORTABLE SUPPORTS, OR APPROPRIATE SIGNS MOUNTED ON BARRICADES, MAY BE AT LOWER HEIGHTS, BUT THE BOTTOM OF THE SIGNS SHALL NOT BE LESS THAN ONE FOOT ABOVE THE PAVEMENT ELEVATION.

14. SIGNS MOUNTED ON THE MEDIAN OF DIVIDED HIGHWAYS WHERE MEDIAN BARRIER IS IN PLACE MAY BE MOUNTED ON THE BARRIER WITH A SADDLE TYPE BRACKET. IF THE BRACKET ALLOWS THE SIGN PANEL TO BE TURNED PARALLEL TO THE ROADWAY, THE SIGN MAY REMAIN IN PLACE WHEN NOT APPLICABLE, BUT LAYING THE SIGN PANEL DOWN IN A HORIZONTAL POSITION IS NOT PERMITTED.

15. TRAFFIC CONES SHALL BE AT LEAST 28 INCHES IN HEIGHT. HOWEVER, THE MINIMUM SIZE SHALL BE 36 INCHES WHEN THEY ARE USED ON FREEWAYS AND EXPRESSWAYS, OR DURING NIGHT TIME WORKING HOURS. THEY SHOULD ALSO BE 36 INCHES WHEN USED ON OTHER HIGH SPEED ROADWAYS (45 MPH OR MORE) WITH AN ADT OF 6,000 OR MORE.

16. TYPE 1 BARRICADES SHALL NOT BE USED ON FREEWAYS, EXPRESSWAYS, OR OTHER HIGH SPEED ROADWAYS (55 MPH OR MORE).

17. WHEN TWO-WAY TRAFFIC IS PLACED ON ONE ROADWAY OF A NORMALLY DIVIDED HIGHWAY, OPPOSING TRAFFIC SHALL BE SEPARATED EITHER WITH CONCRETE BARRIER (TEMPORARY), OR WITH CHANNELIZING DEVICES APPROVED FOR THIS APPLICATION, THROUGHOUT THE LENGTH OF TWO-WAY OPERATION. THE TRANSITION ZONES SHALL HAVE CONCRETE BARRIER (TEMPORARY). THE BARRIER SHALL BE TIED TO AN EXISTING STRUCTURE OR GUARD RAIL, FLARED OR EXTENDED, TO MEET CLEAR ZONE REQUIREMENTS, OR FITTED WITH AN IMPACT ATTENUATION DEVICE.

18. CHANNELIZING DEVICE SPACING, IN FEET, SHALL BE AS FOLLOWS:
    a. FOR TAPERS AND TRANSITIONS, SPACING EQUALS THE NUMERICAL VALUE OF THE SPEED LIMIT. (e.g. 45 MPH = 45 FEET)
    b. FOR TANGENTS ALONG THE BUFFER SPACE OR WORK AREA, SPACING MAY NOT BE GREATER THAN TWO TIMES THE SPEED LIMIT. (e.g. 50 MPH = 50 FEET TO 100 FEET MAXIMUM)

19. FOR DETAILS ON BARRICADES, CONCRETE BARRIER (TEMPORARY), VERTICAL PANELS, AND FLASHING BEACON (PORTABLE), SEE THE APPLICABLE STANDARD PLANS.

20. FLAGGER STATION SHALL COMPRISE OF EITHER A FLAGGER OR AN AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD). SEE THE MOST RECENT CDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION FOR ADDITIONAL GUIDANCE REGARDING AFAD.

21. FLOOD LIGHTS SHALL BE USED TO ILLUMINATE FLAGGER STATIONS DURING THE HOURS OF DARKNESS UNLESS OTHERWISE APPROVED. A TYPICAL LIGHT SHOULD PROVIDE THE FOLLOWING: A FULLY DIRECTIONAL SWIVEL MOUNT QUARTZ LIGHT SOURCE (500 WATT MINIMUM), SELF-SUPPORTING STAND WITH VARIABLE LIGHT HEIGHT FROM A MINIMUM OF EIGHT FEET ABOVE THE ROADWAY, AND A POWER SOURCE. IT SHALL ILLUMINATE THE STATION AREA AND A FLAGGER ESCAPE PATH, BUT SHALL NOT PRESENT ANY GLARE TO TRAFFIC.

22. FOR TEMPORARY PAVEMENT MARKINGS AND CONTROL POINTS FOR INSTALLING THOSE PAVEMENT MARKINGS FOR UNDIVIDED ROADWAYS THAT ARE BEING CONSTRUCTED UNDER TRAFFIC, FULL COMPLIANCE CENTER LINE, LANE LINE, AND EDGE LINE TEMPORARY MARKINGS SHALL BE IN PLACE AT THE END OF EACH WORK DAY IN ACCORDANCE WITH THE MOST RECENT CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

    FOR ADDITIONAL PAVEMENT MARKING DETAILS, SEE STANDARD PLAN S-627-1 "PAVEMENT MARKINGS".

23. BUFFER SPACE IS OPTIONAL. NEED MUST BE DETERMINED ON A PROJECT OR SITE SPECIFIC BASIS AS DIRECTED BY THE ENGINEER. WHEN A BUFFER SPACE IS USED, DIMENSIONS AND/OR DEVICES USED ARE TO BE INCORPORATED IN THE TRAFFIC CONTROL PLAN (TCP) OR THE CONTRACTOR'S METHOD OF HANDLING TRAFFIC (MHT).

24. ADDITIONAL VMS SIGNAGE SHOULD BE CONSIDERED AT LEAST A MILE IN ADVANCE OF THE SIGNING SHOWN IN THE DETAIL FOR ANY LANE CLOSURES ON INTERSTATE AND OTHER HIGH SPEED FACILITIES ESPECIALLY WHEN THE LEVEL OF SERVICE IS SIGNIFICANTLY REDUCED AS A RESULT OF CONSTRUCTION. THE LEGENDS SHOULD BE CHANGED TO ADVISE MOTORISTS OF UPCOMING TRAFFIC CONDITIONS AND TO ALERT THEM OF UPCOMING LANE USAGE.

    ADDITIONAL ADVANCE WARNING SIGNAGE IS ENCOURAGED IN ALL CASES WHERE TRAFFIC VOLUMES AND SPEEDS ARE HIGH AND/OR WHERE THERE ARE INFREQUENT EXITS. ADDITIONAL SIGNAGE IS ALSO ENCOURAGED IN LOCATIONS WHERE DRIVERS' LINE OF SIGHT TO ADVANCE WARNING SIGNS IS OBSTRUCTED.

25. WHEN ARROW BOARDS ARE USED TO CLOSE MULTIPLE LANES, A SEPARATE ARROW BOARD SHALL BE USED FOR EACH CLOSED LANE.

    IF ARROW BOARDS ARE USED FOR SHOULDER WORK, BLOCKING THE SHOULDER, FOR ROADSIDE WORK NEAR THE SHOULDER, OR FOR TEMPORARILY CLOSING ONE LANE ON A TWO-LANE, TWO-WAY ROADWAY, USE THE ARROW BOARDS ONLY IN THE CAUTION MODE.

26. RAISED PAVEMENT MARKERS MAY BE USED TO SUPPLEMENT TEMPORARY STRIPING DURING NON-SNOW PERIODS. THEIR USE IS ENCOURAGED ON HIGHER SPEED FACILITIES WHEN TRAFFIC IS BEING DIVERTED FROM ITS USUAL COURSE.

27. THE TYPICAL CASES DEPICTED IN THIS STANDARD REFLECT THE MINIMUM REQUIREMENTS, UNLESS AS OTHERWISE DIRECTED BY THE PROJECT PLANS AND SPECIFICATIONS, AND/OR THE PROJECT ENGINEER.

28. A SIGNIFICANT PROJECT IS DEFINED AS ONE THAT, ALONE OR IN COMBINATION WITH OTHER CONCURRENT PROJECTS NEARBY, IS ANTICIPATED TO CAUSE SUSTAINED WORK ZONE IMPACTS AT A LOCATION FOR THREE OR MORE CONSECUTIVE DAYS WITH EITHER INTERMITTENT OR CONTINUOUS LANE CLOSURES.

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TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

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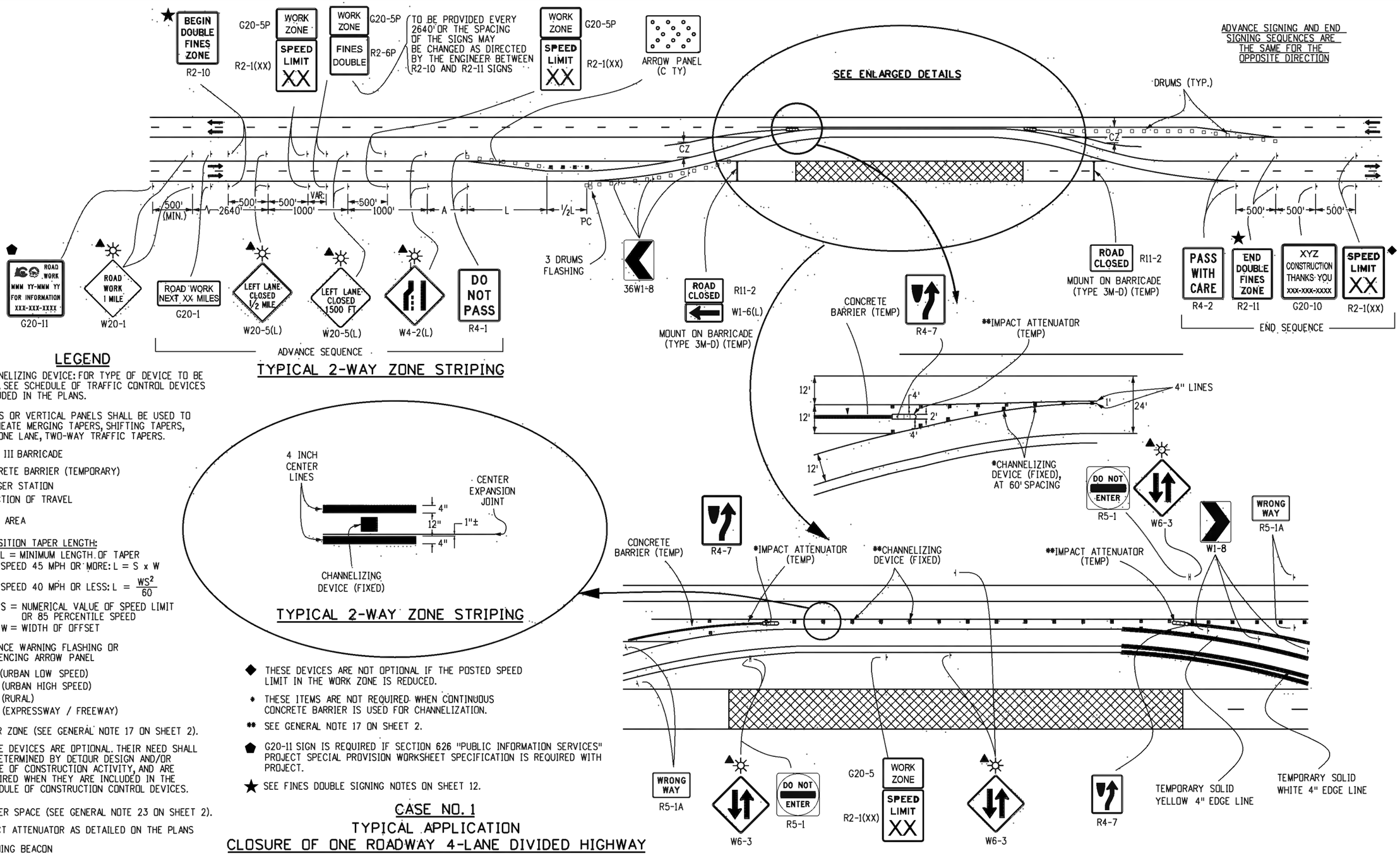

LEGEND

- ▪ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS.
- ▫ DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE MERGING TAPERS, SHIFTING TAPERS, AND ONE LANE, TWO-WAY TRAFFIC TAPERS.
- TYPE III BARRICADE
- CONCRETE BARRIER (TEMPORARY)
- FLAGGER STATION
- DIRECTION OF TRAVEL
- WORK AREA
- L TRANSITION TAPER LENGTH:
  - L = MINIMUM LENGTH OF TAPER
  - SPEED 45 MPH OR MORE: $L = S \times W$
  - SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$
  - S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
  - W = WIDTH OF OFFSET
- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL
- A = 100' (URBAN LOW SPEED)
  350' (URBAN HIGH SPEED)
  500' (RURAL)
  1,000' (EXPRESSWAY / FREEWAY)
- CZ CLEAR ZONE (SEE GENERAL NOTE 17 ON SHEET 2).
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- VAR. BUFFER SPACE (SEE GENERAL NOTE 23 ON SHEET 2).
- IMPACT ATTENUATOR AS DETAILED ON THE PLANS
- FLASHING BEACON

◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.

* THESE ITEMS ARE NOT REQUIRED WHEN CONTINUOUS CONCRETE BARRIER IS USED FOR CHANNELIZATION.

** SEE GENERAL NOTE 17 ON SHEET 2.

⬟ G20-11 SIGN IS REQUIRED IF SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.

★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

CASE NO. 1
TYPICAL APPLICATION
CLOSURE OF ONE ROADWAY 4-LANE DIVIDED HIGHWAY

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12	R-1	Date:	Comments
Created By: Roybal		01/20/23	Replaced R52-a(b) with R2-10(11) Updated G20-11 Added Drum/Vertical Panel Symbol
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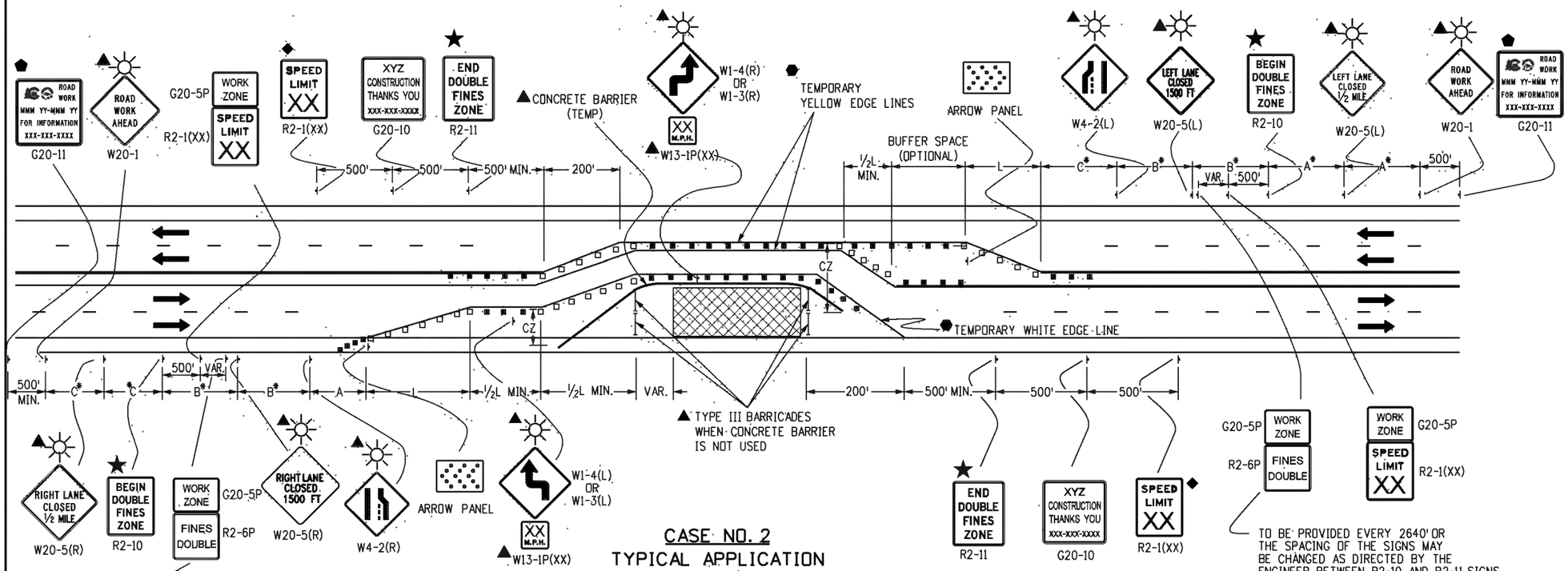
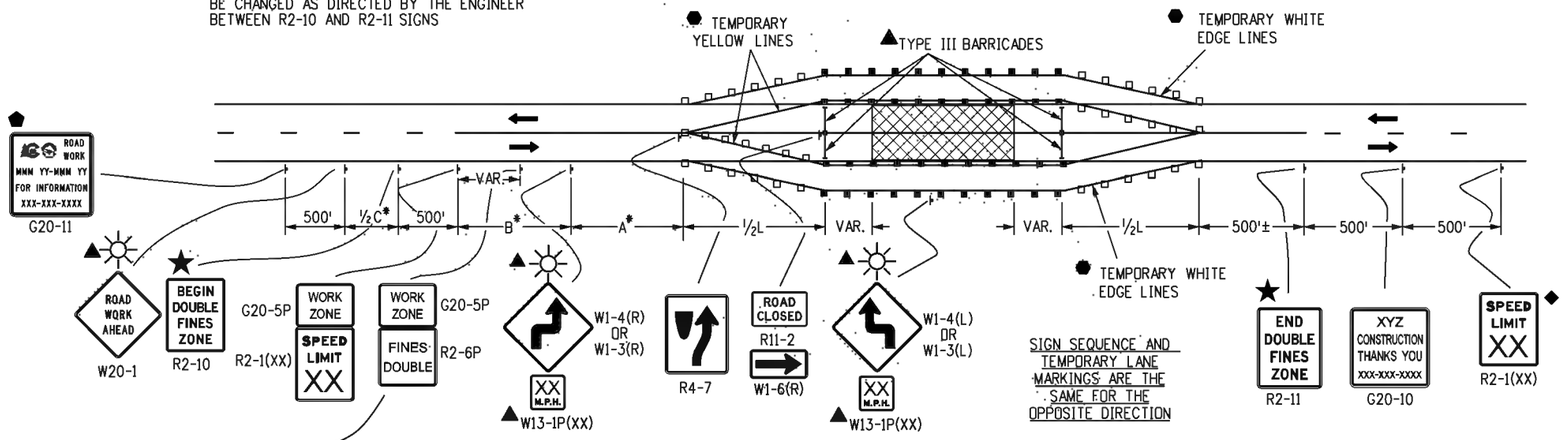
TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

Issued By: Traffic Safety & Engineering Branch January 20, 2023

STANDARD PLAN NO.
S-630-1
Standard Sheet No. 3 of 26
Project Sheet Number: 228



CASE NO. 2
TYPICAL APPLICATION
CLOSURE OF HALF OF 4-LANE UNDIVIDED HIGHWAY



SIGN SEQUENCE AND TEMPORARY LANE MARKINGS ARE THE SAME FOR THE OPPOSITE DIRECTION

CASE NO. 3
TYPICAL APPLICATION
ROAD CLOSURE, USE OF ADJACENT SHOULDERS

LEGEND

- ■ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS.
- □ DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE MERGING TAPERS, SHIFTING TAPERS, AND ONE WAY, TWO-WAY TRAFFIC TAPERS.
- TYPE III BARRICADE
- FLAGGER STATION
- DIRECTION OF TRAVEL
- WORK AREA

L TRANSITION TAPER LENGTH:

L = MINIMUM LENGTH OF TAPER

SPEED 45 MPH OR MORE: $L = S \times W$

SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$

S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED

W = WIDTH OF OFFSET

SHOULDER TAPER = 1/3 L

ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL.

A = 100' (URBAN LOW SPEED)
350' (URBAN HIGH SPEED)
500' (RURAL)
1,000' (EXPRESSWAY / FREEWAY)

CZ CLEAR ZONE (SEE GENERAL NOTE 17 ON SHEET 2).

▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.

◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.

VAR. BUFFER SPACE (SEE GENERAL NOTE 23 ON SHEET 2).

● REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.

⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.

☼ FLASHING BEACON

★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

* KEY TO ADVANCE SIGNING DISTANCES

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (<=40 MPH)	100	100	100
URBAN (>=45 MPH)	350	350	350
RURAL	500	500	500
EXPRESSWAY/FREEWAY	1000	1500	2640

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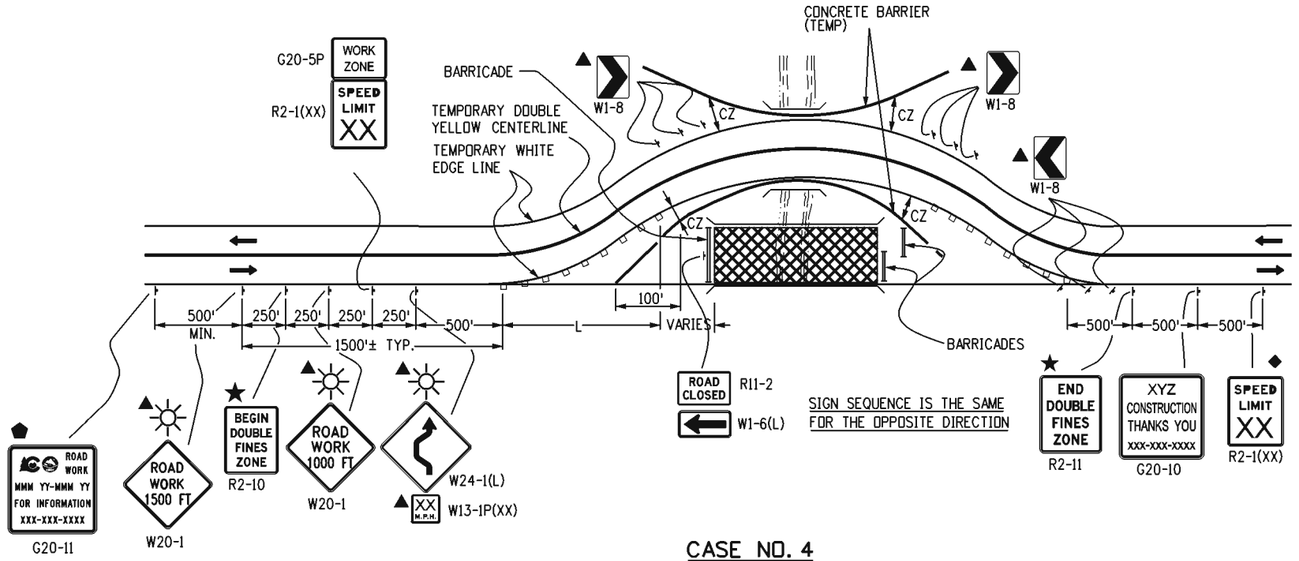
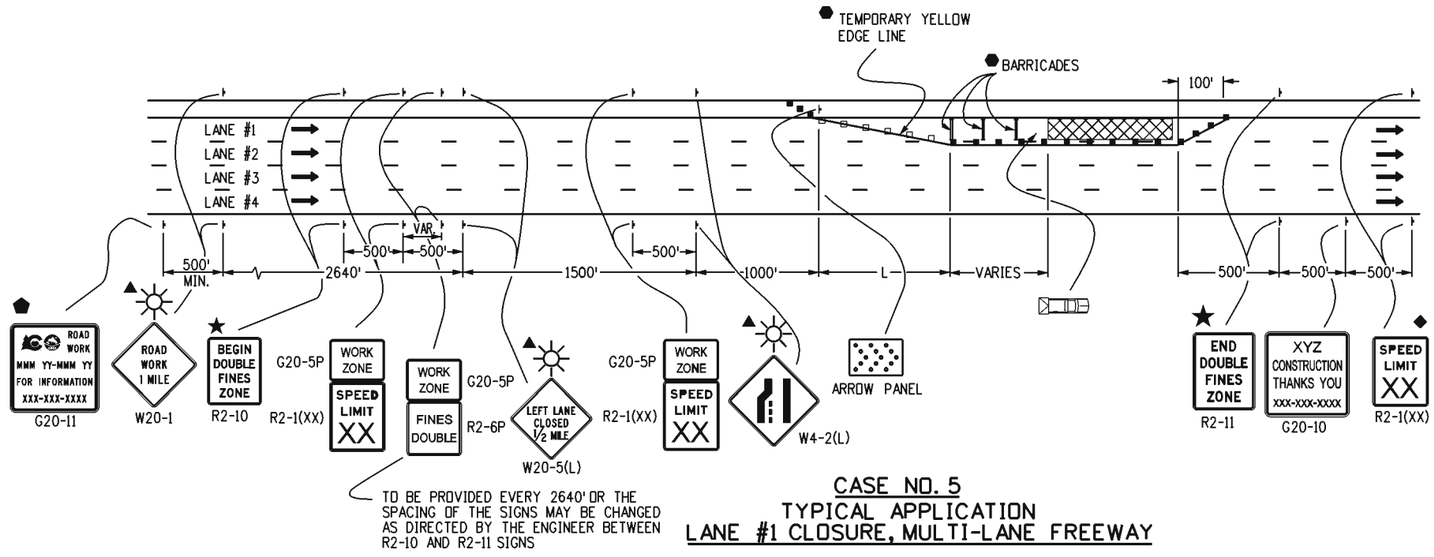
STANDARD PLAN NO.
S-630-1
Standard Sheet No. 4 of 26
Project Sheet Number: 229



CASE NO. 4
TYPICAL APPLICATION
ROAD CLOSURE, BYPASS DETOUR PROVIDED



TO BE PROVIDED EVERY 2640' OR THE SPACING OF THE SIGNS MAY BE CHANGED AS DIRECTED BY THE ENGINEER BETWEEN R2-10 AND R2-11 SIGNS

CASE NO. 5
TYPICAL APPLICATION
LANE #1 CLOSURE, MULTI-LANE FREEWAY

LEGEND

- ■ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS.
- ▫ DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE MERGING TAPERS, SHIFTING TAPERS, AND ONE LANE, TWO-WAY TRAFFIC TAPERS.
- TYPE III BARRICADE
- CONCRETE BARRIER (TEMPORARY)
- FLAGGER STATION
- DIRECTION OF TRAVEL
- WORK AREA
- L — TRANSITION TAPER LENGTH:
  - L = MINIMUM LENGTH OF TAPER
  - SPEED 45 MPH OR MORE: $L = S \times W$
  - SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$
  - S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
  - W = WIDTH OF OFFSET
  - SHOULDER TAPER = 1/3 L
- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL
- CZ — CLEAR ZONE (SEE GENERAL NOTE 17 ON SHEET 2).
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- VARIES — BUFFER SPACE (SEE GENERAL NOTE 23 ON SHEET 2).
- ⬢ REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- MOBILE ATTENUATOR
- FLASHING BEACON
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

Computer File Information		Sheet Revisions	
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Created By: Nakao		01/20/23	Replaced R52-a(b) with R2-10(11) Updated G20-11 Added Drum/Vertical Panel Symbol
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Last Modified By: NRIVERA			
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TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

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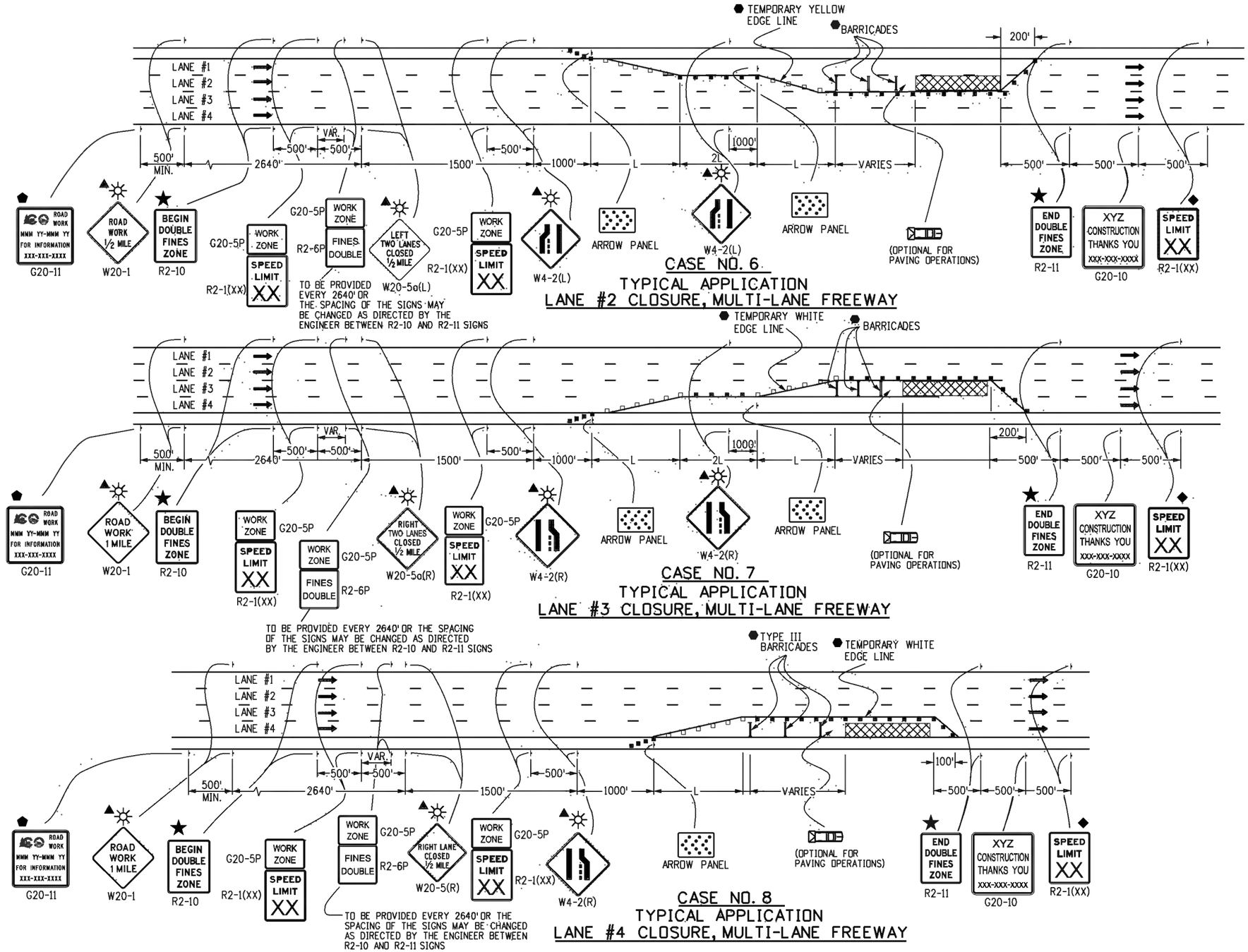
STANDARD PLAN NO.
S-630-1
Standard Sheet No. 5 of 26
Project Sheet Number: 230



LEGEND

- ■ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS.
- □ DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE MERGING TAPERS, SHIFTING TAPERS, AND ONE LANE, TWO-WAY TRAFFIC TAPERS.
- TYPE III BARRICADE
- CONCRETE BARRIER (TEMPORARY)
- FLAGGER STATION
- DIRECTION OF TRAVEL
- WORK AREA
- L TRANSITION TAPER LENGTH:
  - L = MINIMUM LENGTH OF TAPER
  - SPEED 45 MPH OR MORE: $L = S \times W$
  - SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$
  - S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
  - W = WIDTH OF OFFSET
  - SHOULDER TAPER = 1/3 L
- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL
- CZ CLEAR ZONE (SEE GENERAL NOTE 17 ON SHEET 2).
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- VARIES BUFFER SPACE (SEE GENERAL NOTE 23 ON SHEET 2).
- ● REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- MOBILE ATTENUATOR
- FLASHING BEACON
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

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Creation Date: 07/04/12		Date:	Comments
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Last Modified By: NRIVERA			
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English			

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TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

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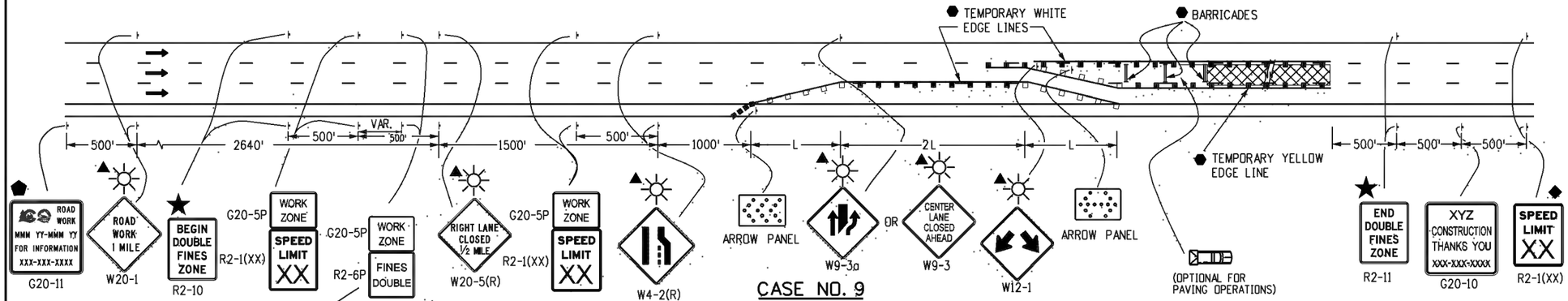
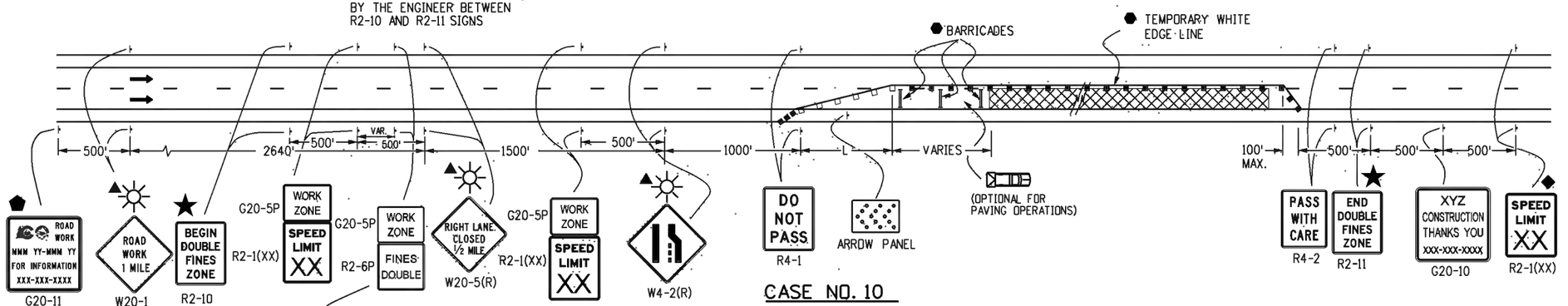
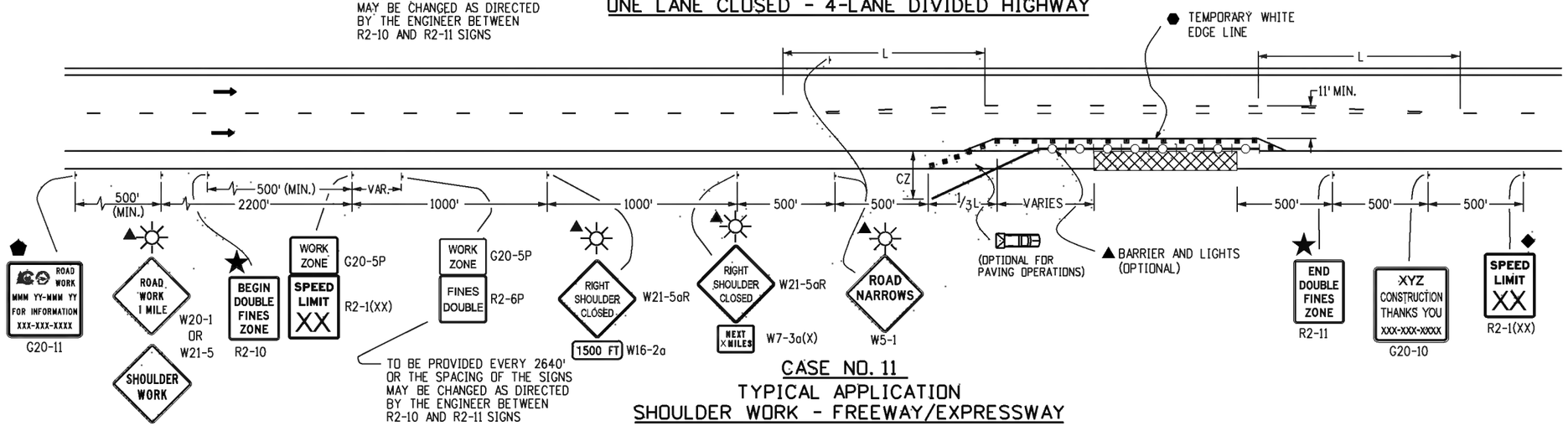
STANDARD PLAN NO.
S-630-1
Standard Sheet No. 6 of 26
Project Sheet Number: 231



CASE NO. 9
TYPICAL APPLICATION
CENTER LANE CLOSURE - MULTI-LANE FREEWAY



CASE NO. 10
TYPICAL APPLICATION
ONE LANE CLOSED - 4-LANE DIVIDED HIGHWAY



CASE NO. 11
TYPICAL APPLICATION
SHOULDER WORK - FREEWAY/EXPRESSWAY

LEGEND

- ■ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS.
- □ DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE MERGING TAPERS, SHIFTING TAPERS, AND ONE LANE, TWO-WAY TRAFFIC TAPERS.
- TYPE III BARRICADE
- CONCRETE BARRIER (TEMPORARY)
- FLAGGER STATION
- DIRECTION OF TRAVEL
- WORK AREA

L TRANSITION TAPER LENGTH:

L = MINIMUM LENGTH OF TAPER

SPEED 45 MPH OR MORE: $L = S \times W$

SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$

S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED

W = WIDTH OF OFFSET

SHOULDER TAPER = 1/3 L

- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL
- CZ CLEAR ZONE (SEE GENERAL NOTE 17 ON SHEET 2).
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- FLASHING BEACON
- VARIES BUFFER SPACE (SEE GENERAL NOTE 23 ON SHEET 2).
- ⬢ REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- MOBILE ATTENUATOR
- CONCRETE BARRIER (TEMPORARY) WITH LIGHTS
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

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TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

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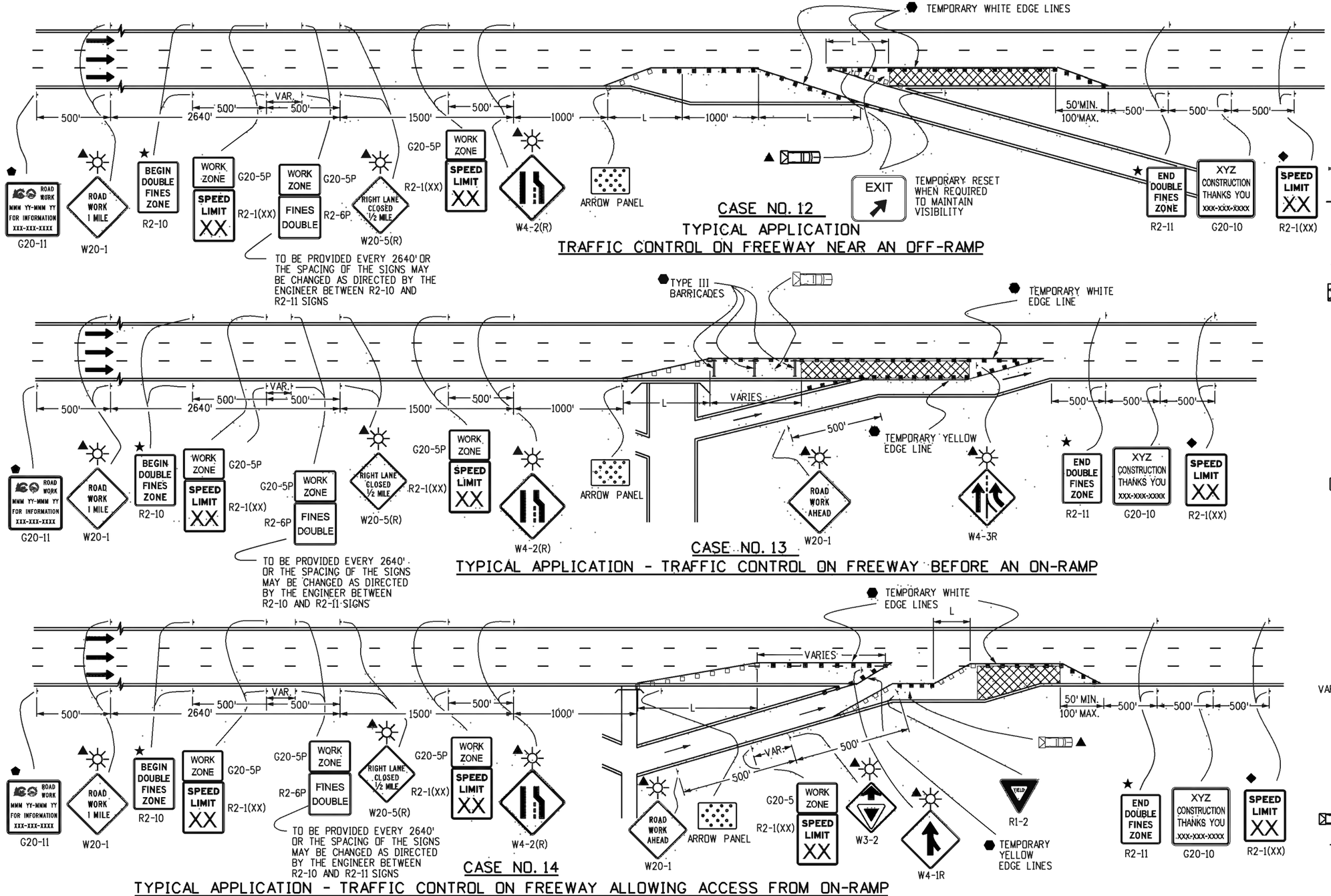
STANDARD PLAN NO.
S-630-1
Standard Sheet No. 7 of 26
Project Sheet Number: 232



LEGEND

- ■ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS.
- □ DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE MERGING TAPERS, SHIFTING TAPERS, AND ONE LANE, TWO-WAY TRAFFIC TAPERS.
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- FLAGGER STATION
- DIRECTION OF TRAVEL
- WORK AREA

L TRANSITION TAPER LENGTH:

L = MINIMUM LENGTH OF TAPER

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SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$

S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED

W = WIDTH OF OFFSET

SHOULDER TAPER = 1/3 L

- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL
- CZ CLEAR ZONE (SEE GENERAL NOTE 17 ON SHEET 2).
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- VARIES BUFFER SPACE (SEE GENERAL NOTE 23).
- ● REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- MOBILE ATTENUATOR
- FLASHING BEACON
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12	R-1	Date:	Comments
Created By: Nakao		01/20/23	Replaced R52-a(b) with R2-10(11) Updated G20-11 Added Drum/Vertical Panel Symbol
Last Modification Date: 01/20/23			
Last Modified By: NRIVERA			
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English			

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TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

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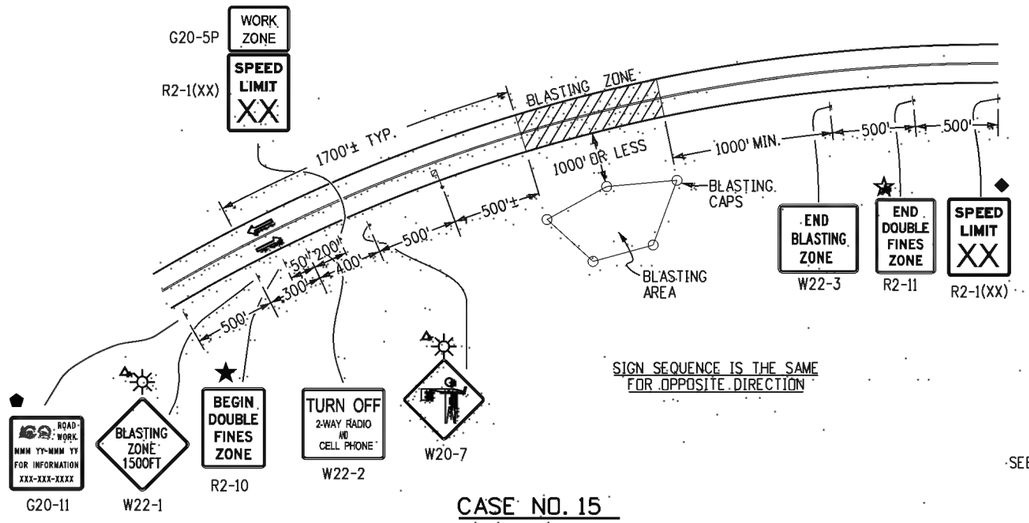
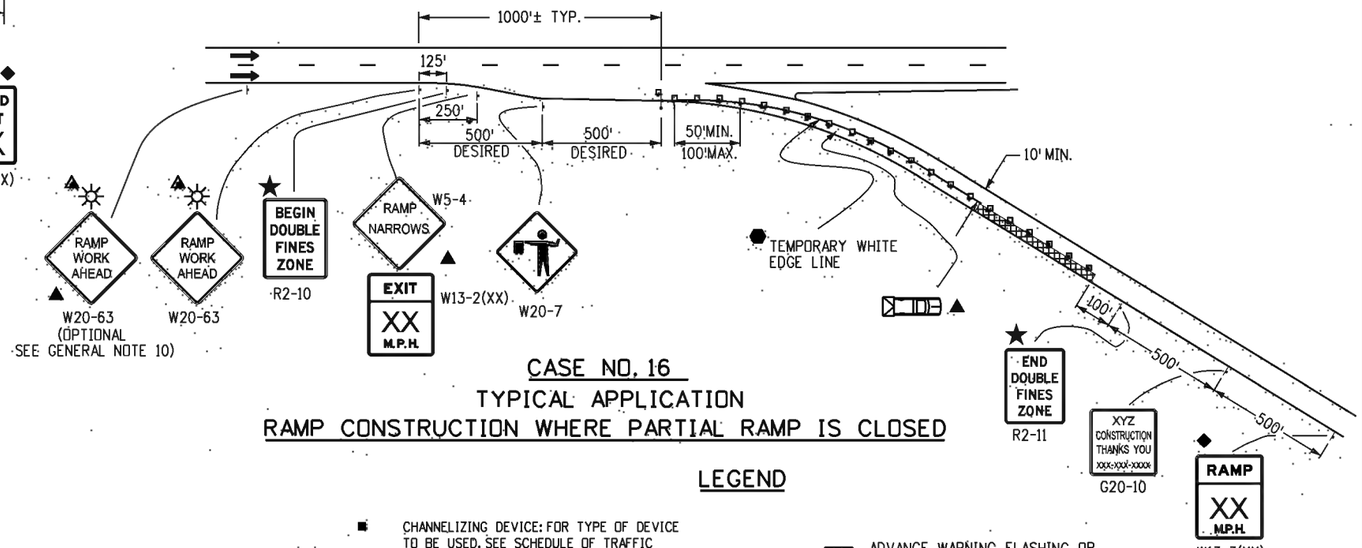
STANDARD PLAN NO.
S-630-1
Standard Sheet No. 8 of 26
Project Sheet Number: 233

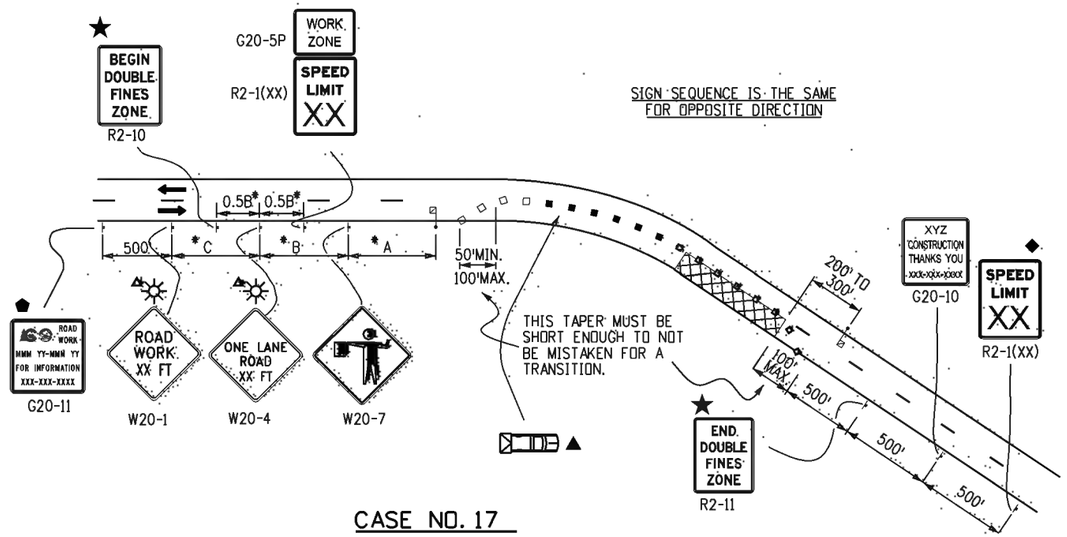


SIGN SEQUENCE IS THE SAME FOR OPPOSITE DIRECTION

CASE NO. 15
TYPICAL APPLICATION
BLASTING ZONE



CASE NO. 16
TYPICAL APPLICATION
RAMP CONSTRUCTION WHERE PARTIAL RAMP IS CLOSED



SIGN SEQUENCE IS THE SAME FOR OPPOSITE DIRECTION

CASE NO. 17
TYPICAL APPLICATION
LANE CLOSURE, 2-LANE HIGHWAY, AT CURVE

LEGEND

- CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS.
- DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE MERGING TAPERS, SHIFTING TAPERS, AND ONE LANE, TWO-WAY TRAFFIC TAPERS.
- TYPE III BARRICADE
- CONCRETE BARRIER (TEMPORARY)
- FLAGGER STATION
- DIRECTION OF TRAVEL
- WORK AREA
- L — TRANSITION TAPER LENGTH:
  - L = MINIMUM LENGTH OF TAPER
  - SPEED 45 MPH OR MORE: $L = S \times W$
  - SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$
  - S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
  - W = WIDTH OF OFFSET
  - SHOULDER TAPER = 1/3 L
- MOBILE ATTENUATOR
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.
- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL
- CZ CLEAR ZONE (SEE GENERAL NOTE 17 ON SHEET 2).
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- FLASHING BEACON
- ● REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.

*KEY TO ADVANCE SIGNING DISTANCES

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (<=40 MPH)	100'	100	100
URBAN (>=45 MPH)	350	350'	350
RURAL	500	500	500
EXPRESSWAY/FREEWAY	1000	1500	2640

Computer File Information	
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Last Modification Date: 01/20/23	
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S-630-1
Standard Sheet No. 9 of 26
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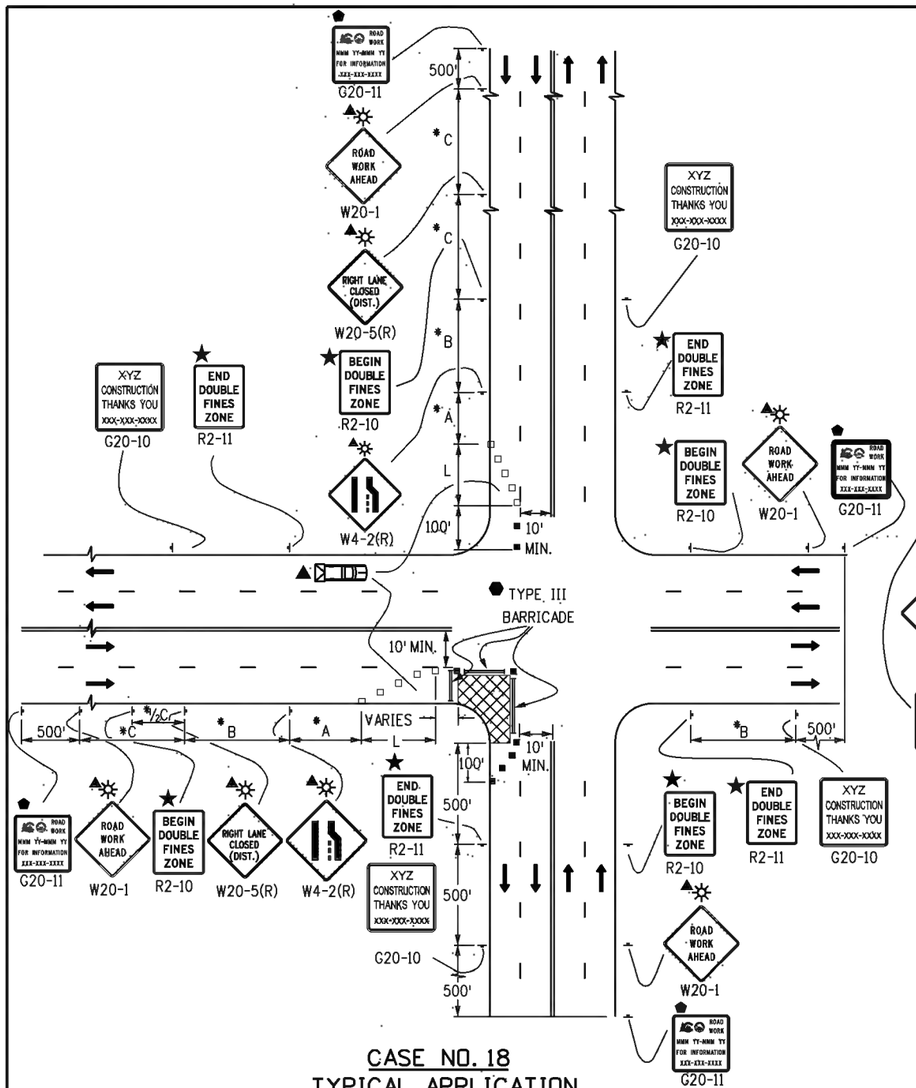
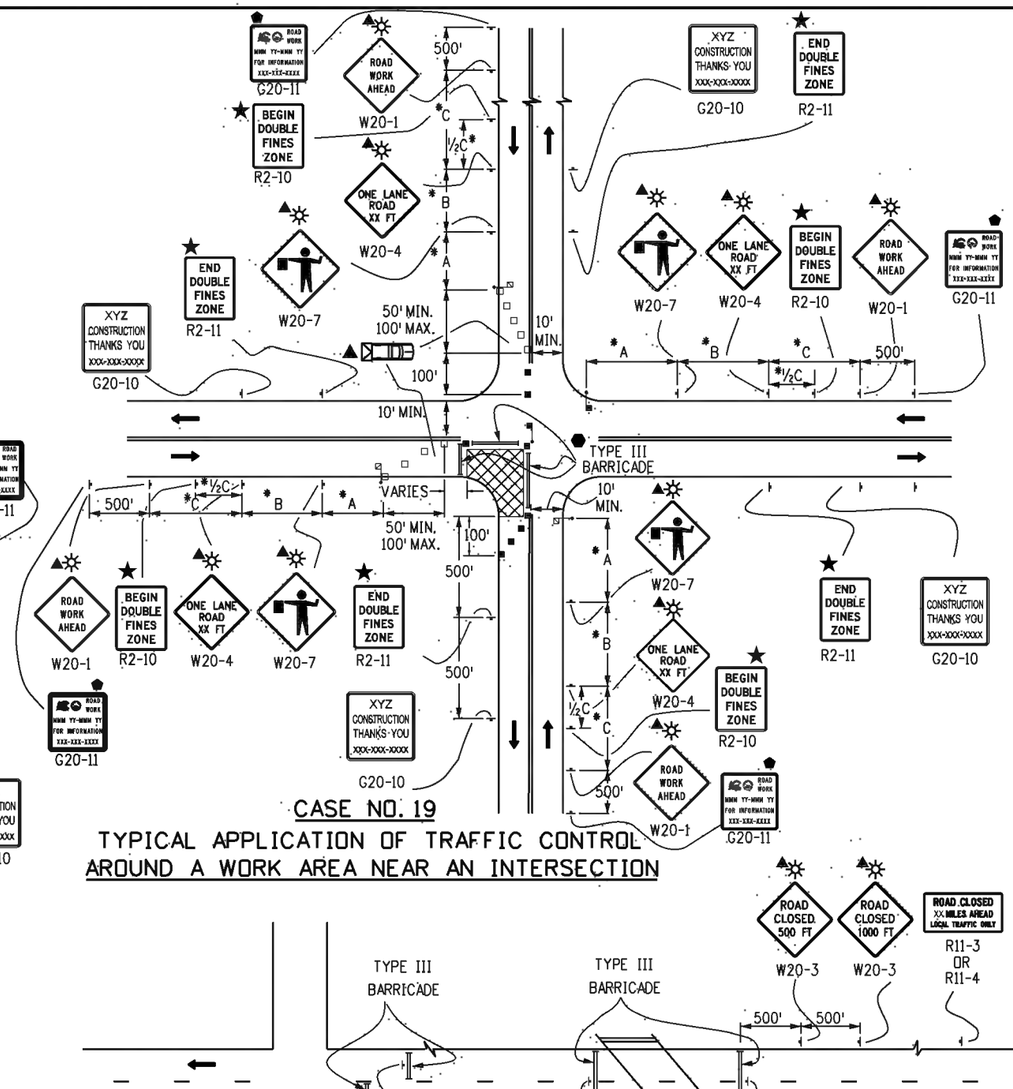
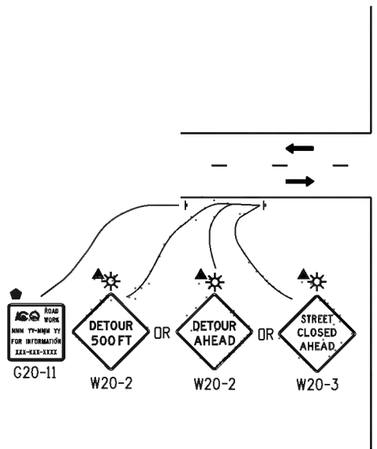
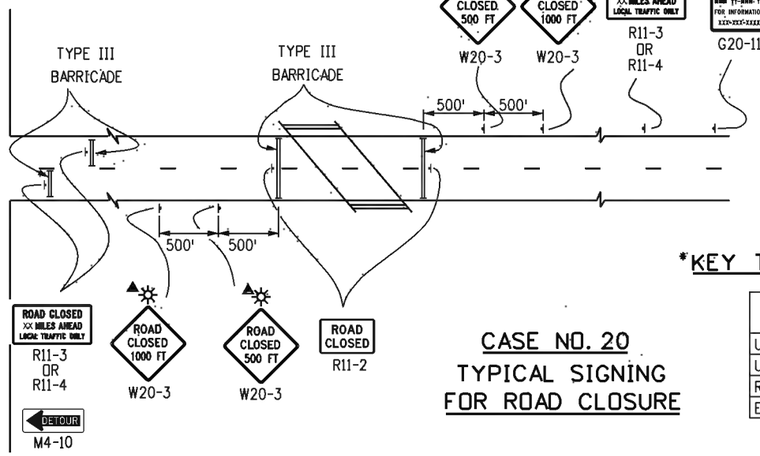


CASE NO. 18
TYPICAL APPLICATION
TRAFFIC CONTROL AROUND A WORK AREA
NEAR AN INTERSECTION, ONE LANE CLOSED



CASE NO. 19
TYPICAL APPLICATION OF TRAFFIC CONTROL
AROUND A WORK AREA NEAR AN INTERSECTION





CASE NO. 20
TYPICAL SIGNING
FOR ROAD CLOSURE

NOTES:

1. SIGN PLACEMENT SHOWN ON CASES 18 AND 19 TYPIFIES RURAL APPLICATIONS. URBAN APPLICATIONS REQUIRE THE SIGNS TO BE PLACED WITHIN ONE, OR PERHAPS TWO, BLOCKS.
2. TRUCK-MOUNTED ATTENUATORS (TMA) OPTIONAL FOR ALL CASES AS DETERMINED BY THE ENGINEER.

LEGEND

- CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS.
- DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE MERGING TAPERS, SHIFTING TAPERS, AND ONE LANE, TWO-WAY TRAFFIC TAPERS.
- TYPE III BARRICADE
- CONCRETE BARRIER (TEMPORARY)
- FLAGGER STATION
- DIRECTION OF TRAVEL
- WORK AREA

L TRANSITION TAPER LENGTH:

L = MINIMUM LENGTH OF TAPER

SPEED 45 MPH OR MORE: $L = S \times W$

SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$

S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED

W = WIDTH OF OFFSET

SHOULDER TAPER = 1/3 L

- MOBILE ATTENUATOR
- CZ CLEAR ZONE (SEE GENERAL NOTE 17 ON SHEET 2).
- FLASHING BEACON
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- VARIES BUFFER SPACE (SEE GENERAL NOTE 23 ON SHEET 2).
- ● REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.

*KEY TO ADVANCE SIGNING DISTANCES

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (<= 40 MPH)	100	100	100
URBAN (>= 45 MPH)	350	350	350
RURAL	500	500	500
EXPRESSWAY/FREEWAY	1000	1500	2640

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R-1

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TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

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STANDARD PLAN NO.
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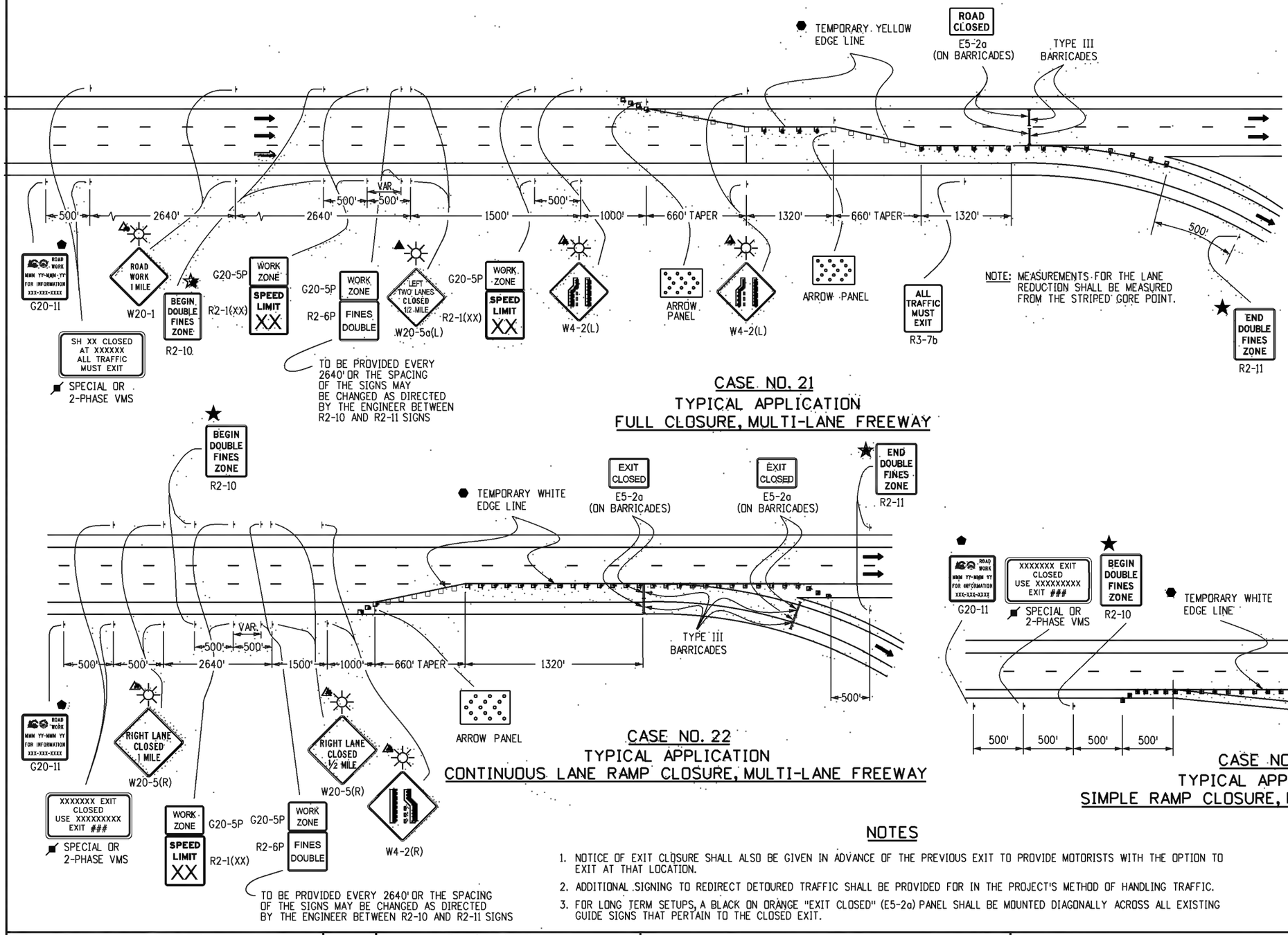
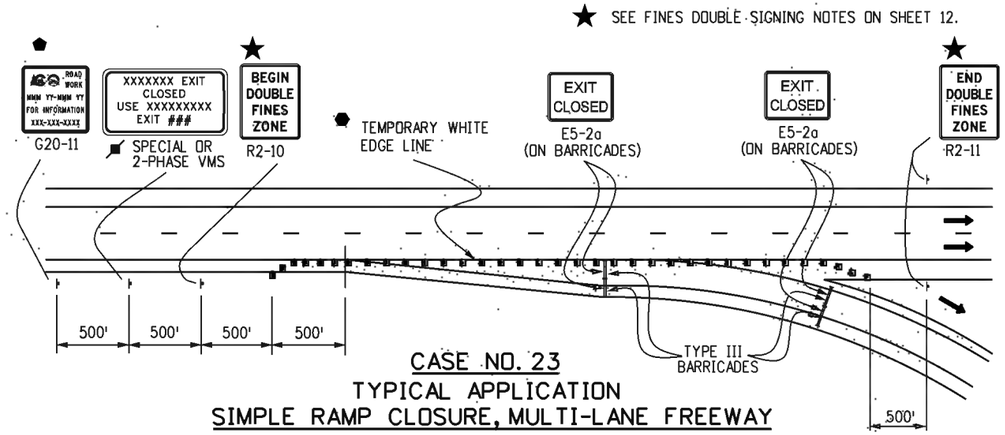
Standard Sheet No. 10 of 26
Project Sheet Number: 235



CASE NO. 21
TYPICAL APPLICATION
FULL CLOSURE, MULTI-LANE FREEWAY

CASE NO. 22
TYPICAL APPLICATION
CONTINUOUS LANE RAMP CLOSURE, MULTI-LANE FREEWAY



CASE NO. 23
TYPICAL APPLICATION
SIMPLE RAMP CLOSURE, MULTI-LANE FREEWAY

LEGEND

- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED WILL BE DETERMINED BY THE DESIGNER BASED ON DETOUR DESIGN AND/OR SCOPE OF THE CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE PLANS.
- ⬢ REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS.
- □ DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE MERGING TAPERS, SHIFTING TAPERS, AND ONE LANE, TWO-WAY TRAFFIC TAPERS.
- TYPE III BARRICADE
- DIRECTION OF TRAVEL
- L TRANSITION TAPER LENGTH:
  - L = MINIMUM LENGTH OF TAPER
  - SPEED 45 MPH OR MORE: $L = S \times W$
  - SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$
  - S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
  - W = WIDTH OF OFFSET
  - SHOULDER TAPER = 1/3 L
- CLOSURE AND EXIT MESSAGES ON SIGN LEGEND(S) SHOULD BE MODIFIED TO FIT THE SITUATION.
- FLASHING BEACON
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

NOTES

1. NOTICE OF EXIT CLOSURE SHALL ALSO BE GIVEN IN ADVANCE OF THE PREVIOUS EXIT TO PROVIDE MOTORISTS WITH THE OPTION TO EXIT AT THAT LOCATION.
2. ADDITIONAL SIGNING TO REDIRECT DETOURED TRAFFIC SHALL BE PROVIDED FOR IN THE PROJECT'S METHOD OF HANDLING TRAFFIC.
3. FOR LONG TERM SETUPS, A BLACK ON ORANGE "EXIT CLOSED" (E5-2a) PANEL SHALL BE MOUNTED DIAGONALLY ACROSS ALL EXISTING GUIDE SIGNS THAT PERTAIN TO THE CLOSED EXIT.

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STANDARD PLAN NO.
S-630-1
Standard Sheet No. 11 of 26
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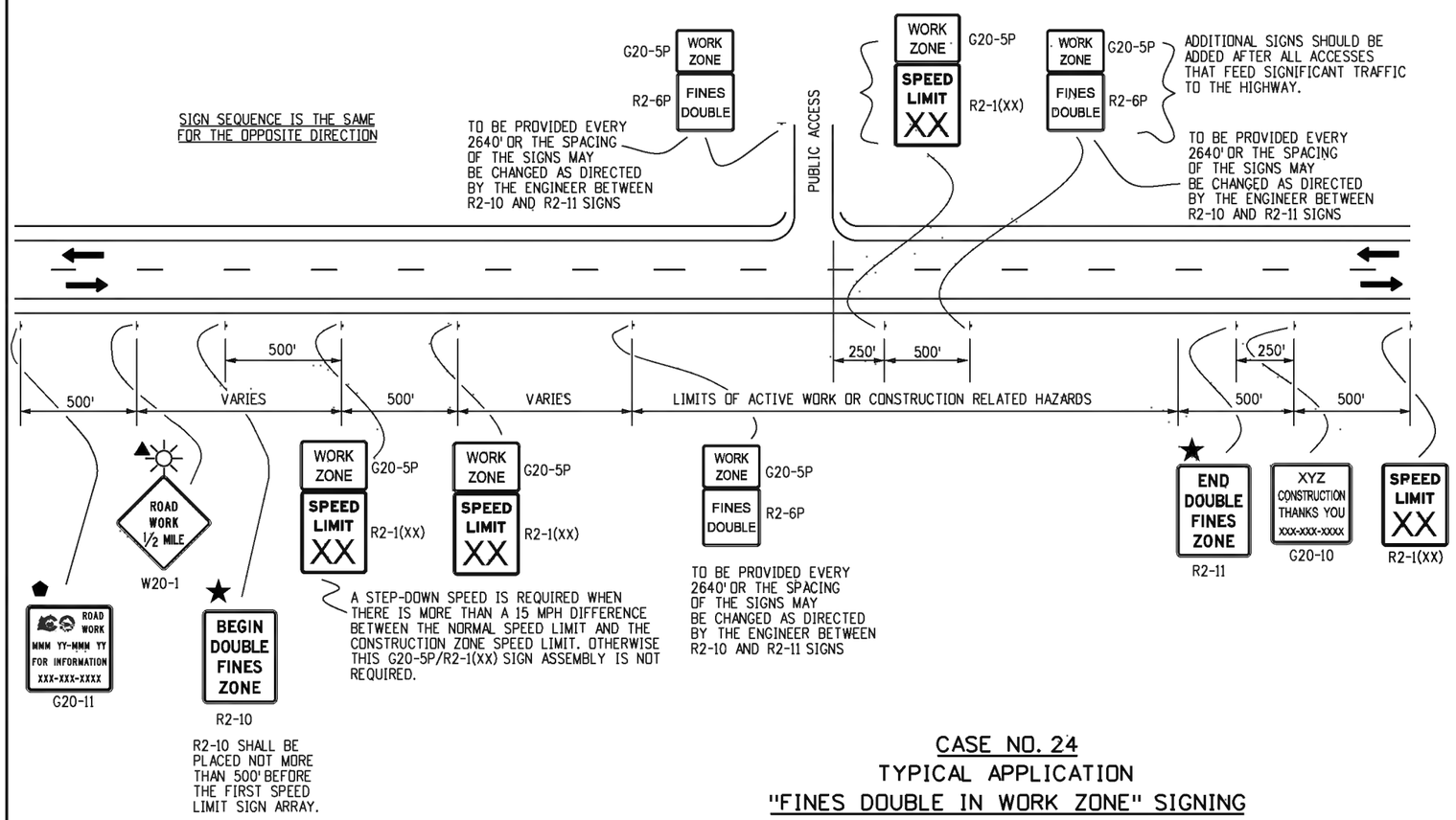

CASE NO. 24
TYPICAL APPLICATION
"FINES DOUBLE IN WORK ZONE" SIGNING
(WITH SPEED REDUCTION)

LEGEND

- DIRECTION OF TRAVEL
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED WILL BE DETERMINED BY THE DESIGNER BASED ON DETOUR DESIGN AND/OR SCOPE OF THE CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE PLANS.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- FLASHING BEACON
- ★ FINES DOUBLE SIGNING NOTES, SEE BELOW

FINES DOUBLE SIGNING NOTES:

1. SIGNS SHALL NOT BE PLACED SOONER THAN FOUR HOURS BEFORE WORK IS TO BEGIN AND SHALL BE REMOVED AS SOON AS WORK ACTIVITIES ARE CONCLUDED, UNLESS POTENTIAL HAZARDS INTRODUCED AS A RESULT OF THE WORK ARE STILL PRESENT AT THE END OF THE WORK DAY. IF SIGNS ARE LEFT IN PLACE AFTER WORK ACTIVITIES, THE TRAFFIC CONTROL SUPERVISOR SHALL MAKE AN ENTRY IN THEIR DAILY DIARY THAT JUSTIFIES THEIR USE.

   "HAZARDS" INCLUDE BUT ARE NOT LIMITED TO:
   - EDGE DROP OFFS
   - EQUIPMENT, WORKERS OR NON-SHIELDED OBJECTS IN THE CLEAR ZONE
   - ROUGH PAVEMENT
   - MAJOR CHANGE IN ALIGNMENT
   - REDUCED SHOULDER WIDTH
   - TEMPORARY GUARD RAIL OR BARRIER
   - LANE CLOSURE

2. SIGNS SHALL ONLY BE PLACED WHERE WORKERS ARE PRESENT IN THE ROADWAY OR CLEAR ZONE OR ARE AT RISK, OR WHERE THERE ARE HAZARDS IN THE TRAVELWAY, SHOULDERS OR CLEAR ZONE.

3. SIGNS SHOULD BE PLACED SO THAT MOTORISTS IMMEDIATELY ASSOCIATE THE SIGNS WITH PRESENT WORK ACTIVITIES. IF THE ZONE OF WORK ACTIVITY MOVES, THE SIGNS SHOULD BE MOVED ACCORDINGLY.

4. SIGNING SHOWN IS REQUIRED TO ENFORCE DOUBLE FINES IN A WORK ZONE. ADDITIONAL SIGNING SHALL BE IN ACCORDANCE WITH THAT NORMALLY REQUIRED FOR THE PARTICULAR WORK ZONE. PLACEMENT OF "FINES DOUBLE" SIGNING MAY BE ADJUSTED AS NEEDED TO PROVIDE A MINIMUM 250' SPACING BETWEEN OTHER SIGNING REQUIRED FOR THE SPECIFIC WORK ZONE SETUP.

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TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

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STANDARD PLAN NO.
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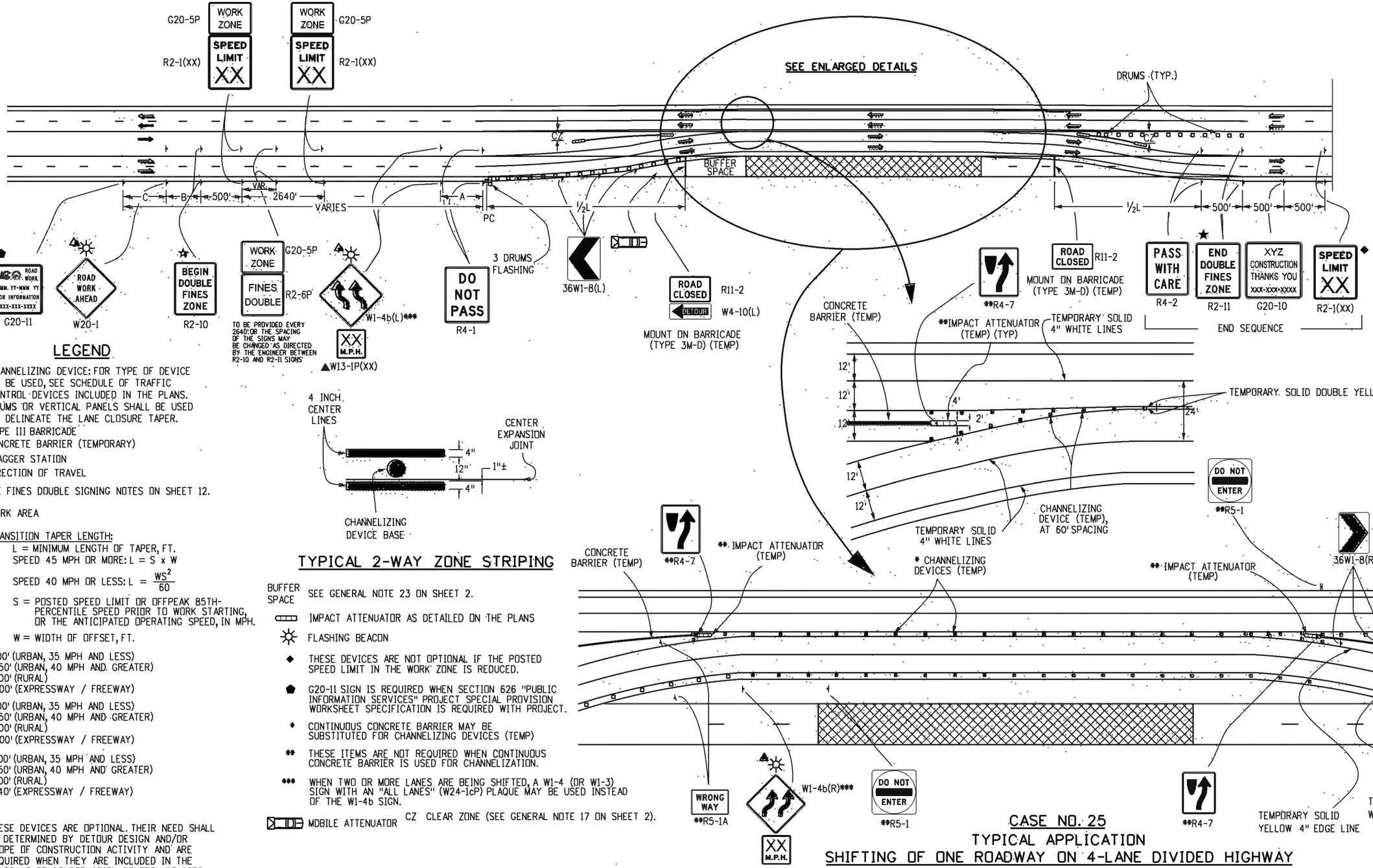
Standard Sheet No. 12 of 26
Project Sheet Number: 237



LEGEND

- ▪ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE THE LANE CLOSURE TAPER.
- ⊢ TYPE III BARRICADE
- CONCRETE BARRIER (TEMPORARY)
- ■→ FLAGGER STATION
- ← DIRECTION OF TRAVEL
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.
- ▨ WORK AREA
- L TRANSITION TAPER LENGTH:
  - L = MINIMUM LENGTH OF TAPER, FT.
  - SPEED 45 MPH OR MORE: $L = S \times W$
  - SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$
  - S = POSTED SPEED LIMIT OR OFFPEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED, IN MPH.
  - W = WIDTH OF OFFSET, FT.

A = 100' (URBAN, 35 MPH AND LESS)
350' (URBAN, 40 MPH AND GREATER)
500' (RURAL)
1,000' (EXPRESSWAY / FREEWAY)

B = 100' (URBAN, 35 MPH AND LESS)
350' (URBAN, 40 MPH AND GREATER)
500' (RURAL)
1,500' (EXPRESSWAY / FREEWAY)

C = 100' (URBAN, 35 MPH AND LESS)
350' (URBAN, 40 MPH AND GREATER)
500' (RURAL)
2,640' (EXPRESSWAY / FREEWAY)

▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.

TYPICAL 2-WAY ZONE STRIPING

BUFFER SPACE — SEE GENERAL NOTE 23 ON SHEET 2.

- IMPACT ATTENUATOR AS DETAILED ON THE PLANS
- FLASHING BEACON
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- * CONTINUOUS CONCRETE BARRIER MAY BE SUBSTITUTED FOR CHANNELIZING DEVICES (TEMP)
- ** THESE ITEMS ARE NOT REQUIRED WHEN CONTINUOUS CONCRETE BARRIER IS USED FOR CHANNELIZATION.
- *** WHEN TWO OR MORE LANES ARE BEING SHIFTED, A W1-4 (OR W1-3) SIGN WITH AN "ALL LANES" (W24-1cP) PLAQUE MAY BE USED INSTEAD OF THE W1-4b SIGN.
- MOBILE ATTENUATOR
- CZ CLEAR ZONE (SEE GENERAL NOTE 17 ON SHEET 2).

CASE NO. 25
TYPICAL APPLICATION
SHIFTING OF ONE ROADWAY ON 4-LANE DIVIDED HIGHWAY

Computer File Information		Sheet Revisions		Colorado Department of Transportation	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	STANDARD PLAN NO.
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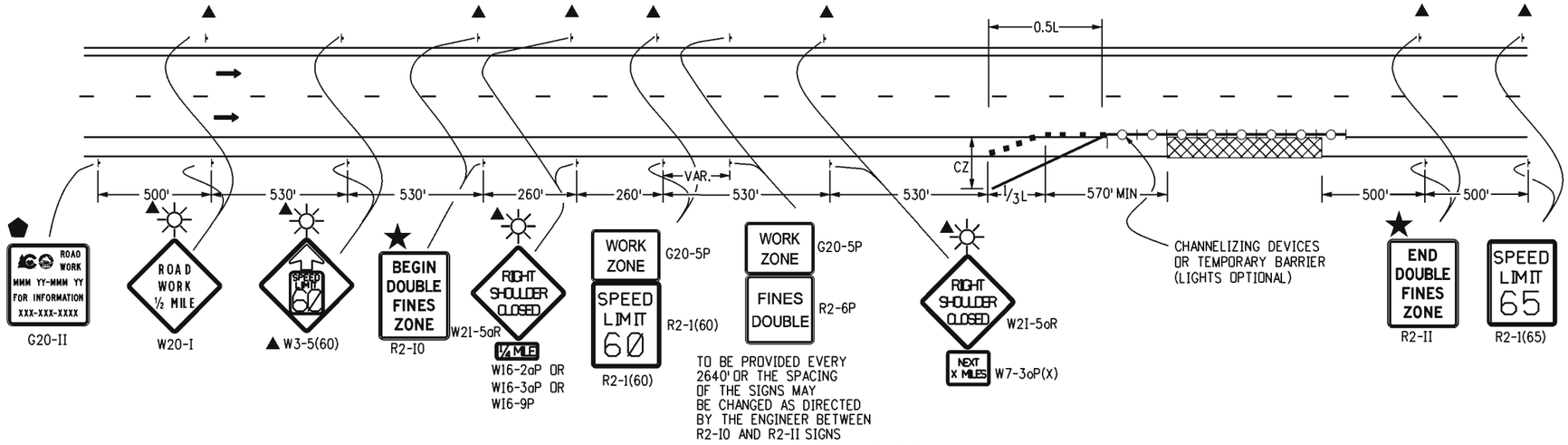
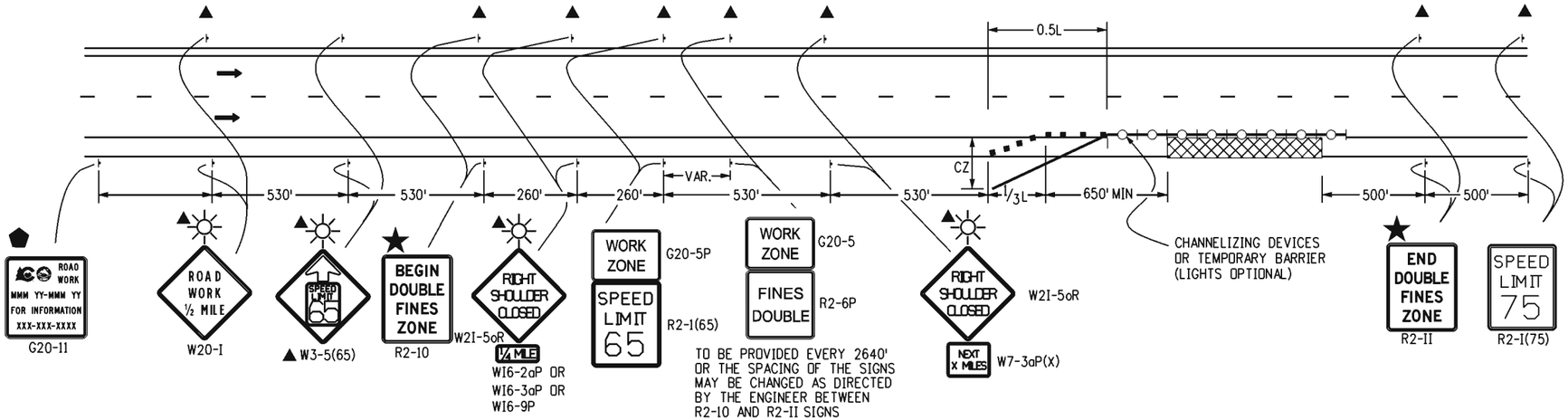


CASE NO. 26
TYPICAL APPLICATION
SHOULDER WORK - FREEWAY/EXPRESSWAY w/ 65 MPH SPEED LIMIT

WHEN HAZARDS (WORKERS, EQUIPMENT, OR TEMPORARY BARRIER) ARE WITHIN 8 FT OF TRAVEL WAY



CASE NO. 27
TYPICAL APPLICATION
SHOULDER WORK - FREEWAY/EXPRESSWAY w/ 75 MPH SPEED LIMIT

WHEN HAZARDS (WORKERS, EQUIPMENT, OR TEMPORARY BARRIER) ARE WITHIN 10 FT OF TRAVEL WAY

LEGEND

- ■ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE THE LANE CLOSURE TAPER.
- TYPE III BARRICADE
- CONCRETE BARRIER (TEMPORARY)
- FLAGGER STATION
- DIRECTION OF TRAVEL
- WORK AREA
- L TRANSITION TAPER LENGTH:
  - L = MINIMUM LENGTH OF TAPER
  - SPEED 45 MPH OR MORE: L = S x W
  - S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
  - W = WIDTH OF OFFSET
  - SHOULDER TAPER = I/3 L
- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL
- CZ CLEAR ZONE (SEE GENERAL NOTE I7 ON SHEET 2).
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY TRAFFIC VOLUMES AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ⬟ G20-II SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- ⬟ REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- MOBILE ATTENUATOR
- FLASHING BEACON
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET I2.

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TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

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STANDARD PLAN NO.
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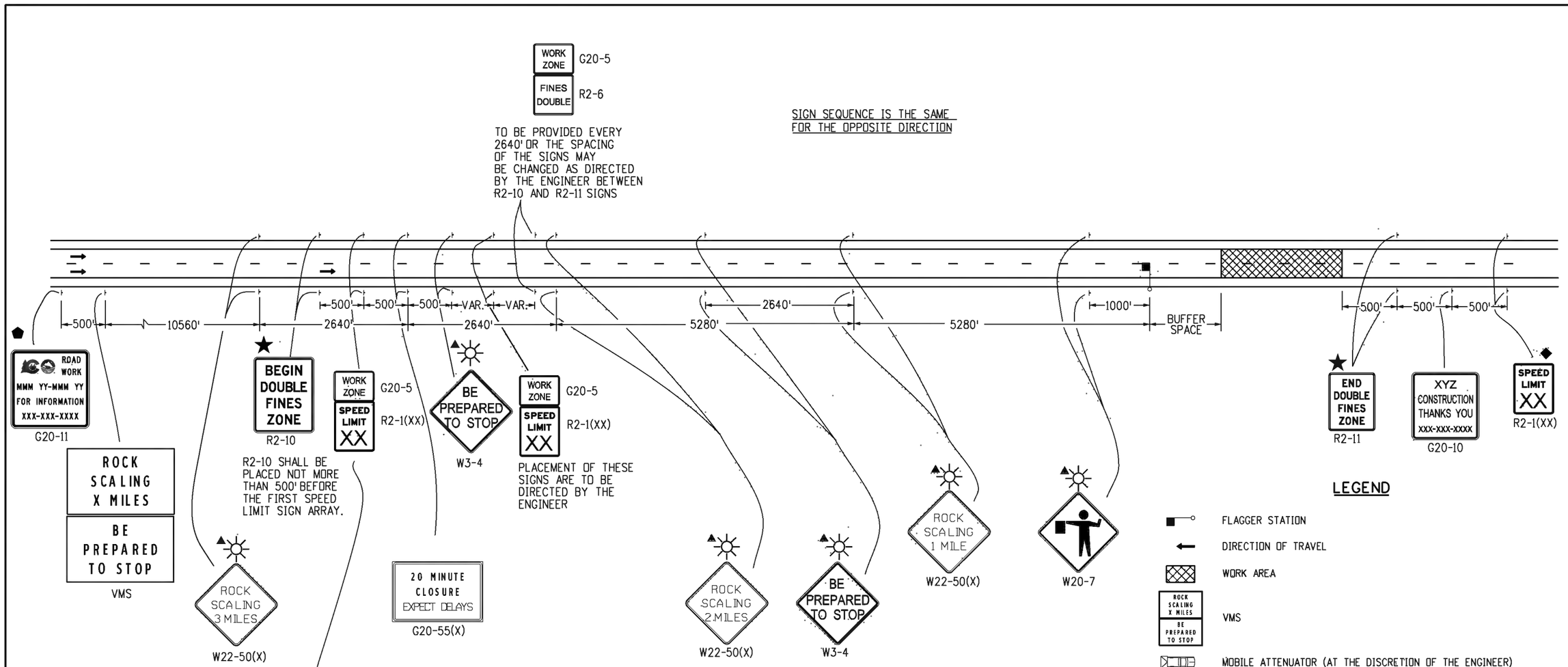
Standard Sheet No. 14 of 26
Project Sheet Number: 239



CASE NO: 28

TYPICAL APPLICATION

ROCK SCALING - ROAD CLOSURE, 4-LANE DIVIDED HIGHWAY

LEGEND

- FLAGGER STATION
- DIRECTION OF TRAVEL
- WORK AREA
- ROCK SCALING X MILES / BE PREPARED TO STOP — VMS
- MOBILE ATTENUATOR (AT THE DISCRETION OF THE ENGINEER)
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- BUFFER SPACE — SEE GENERAL NOTE 23 ON SHEET 2.
- FLASHING BEACON
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

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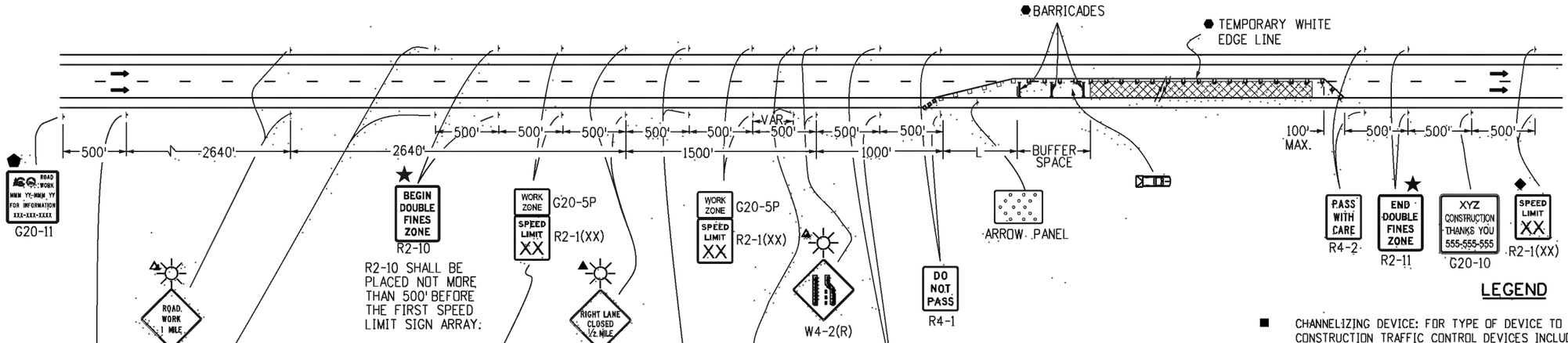

R2-10 SHALL BE PLACED NOT MORE THAN 500' BEFORE THE FIRST SPEED LIMIT SIGN ARRAY.

A STEP-DOWN SPEED LIMIT IS REQUIRED WHEN THERE IS MORE THAN A 15 MPH DIFFERENCE BETWEEN THE NORMAL SPEED LIMIT AND THE CONSTRUCTION ZONE SPEED LIMIT. OTHERWISE THIS G20-5P/R2-1(XX) SIGN ASSEMBLY IS NOT REQUIRED.

TO BE PROVIDED EVERY 2640' OR THE SPACING OF THE SIGNS MAY BE CHANGED AS DIRECTED BY THE ENGINEER BETWEEN R2-10 AND R2-11 SIGNS

CASE NO. 29
TYPICAL APPLICATION
LATE MERGING - ONE LANE CLOSED, 4-LANE DIVIDED HIGHWAY

LEGEND

- ■ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE THE SCHEDULE OF CONSTRUCTION TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. IF PROJECT IS DESIGNATED AS A "SIGNIFICANT PROJECT" (SEE GENERAL NOTE 28), CONCRETE BARRIER SHALL BE USED FOR CHANNELIZATION DEVICES (TEMP) AS DETERMINED BY THE ENGINEER.
- □ DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE MERGING TAPERS, SHIFTING TAPERS, AND ONE LANE, TWO-WAY TRAFFIC TAPERS.
- TYPE III BARRICADE
- DIRECTION OF TRAVEL
- WORK AREA
- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL.
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- FLASHING BEACON
- ⬢ REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.
- MOBILE ATTENUATOR
- BUFFER SPACE — SEE GENERAL NOTE 23 ON SHEET 2.

L TRANSITION TAPER LENGTH:

L = MINIMUM LENGTH OF TAPER

SPEED 45 MPH OR MORE: $L = S \times W$

SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$

S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED

W = WIDTH OF OFFSET

SHOULDER TAPER = 1/3 L

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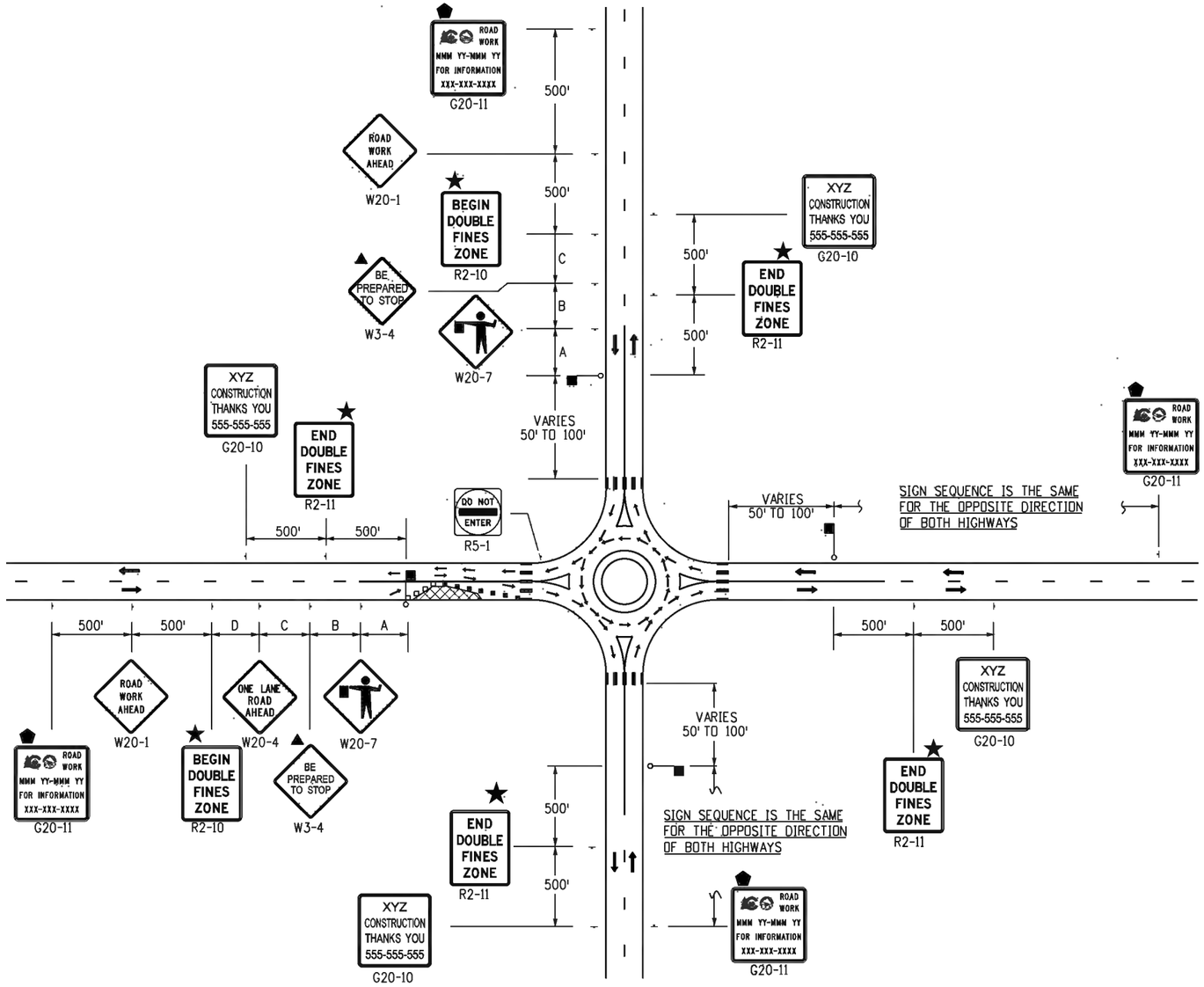

LEGEND

- ■ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE THE SCHEDULE OF CONSTRUCTION TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. IF PROJECT IS DESIGNATED AS A "SIGNIFICANT PROJECT" (SEE GENERAL NOTE 28), CONCRETE BARRIER SHALL BE USED FOR CHANNELIZATION DEVICES (TEMP) AS DETERMINED BY THE ENGINEER.
- □ DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE MERGING TAPERS, SHIFTING TAPERS, AND ONE LANE, TWO-WAY TRAFFIC TAPERS.
- TYPE III BARRICADE
- DIRECTION OF TRAVEL
- WORK AREA
- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL.
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- FLASHING BEACON
- ● REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.
- MOBILE ATTENUATOR
- L TRANSITION TAPER LENGTH:

  L = MINIMUM LENGTH OF TAPER

  SPEED 45 MPH OR MORE: $L = S \times W$

  SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$

  S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED

  W = WIDTH OF OFFSET

  SHOULDER TAPER = 1/3 L
- BUFFER SPACE SEE GENERAL NOTE 23 ON SHEET 2.
- FLAGGER STATION

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (<=40 MPH)	100	100	100
URBAN (>=45 MPH)	350	350	350
RURAL	500	500	500
EXPRESSWAY/FREEWAY	1000	1500	2640

CASE NO. 30
TYPICAL APPLICATION
ROUNDABOUT - PARTIAL CLOSURE NEAR ONE-LANE ROUNDABOUT

Computer File Information		Sheet Revisions	
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Created By: Nakao		01/20/23	Replaced R52-a(b) with R2-10(11) Updated G20-11 Added Drum/Vertical Panel Symbol
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TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

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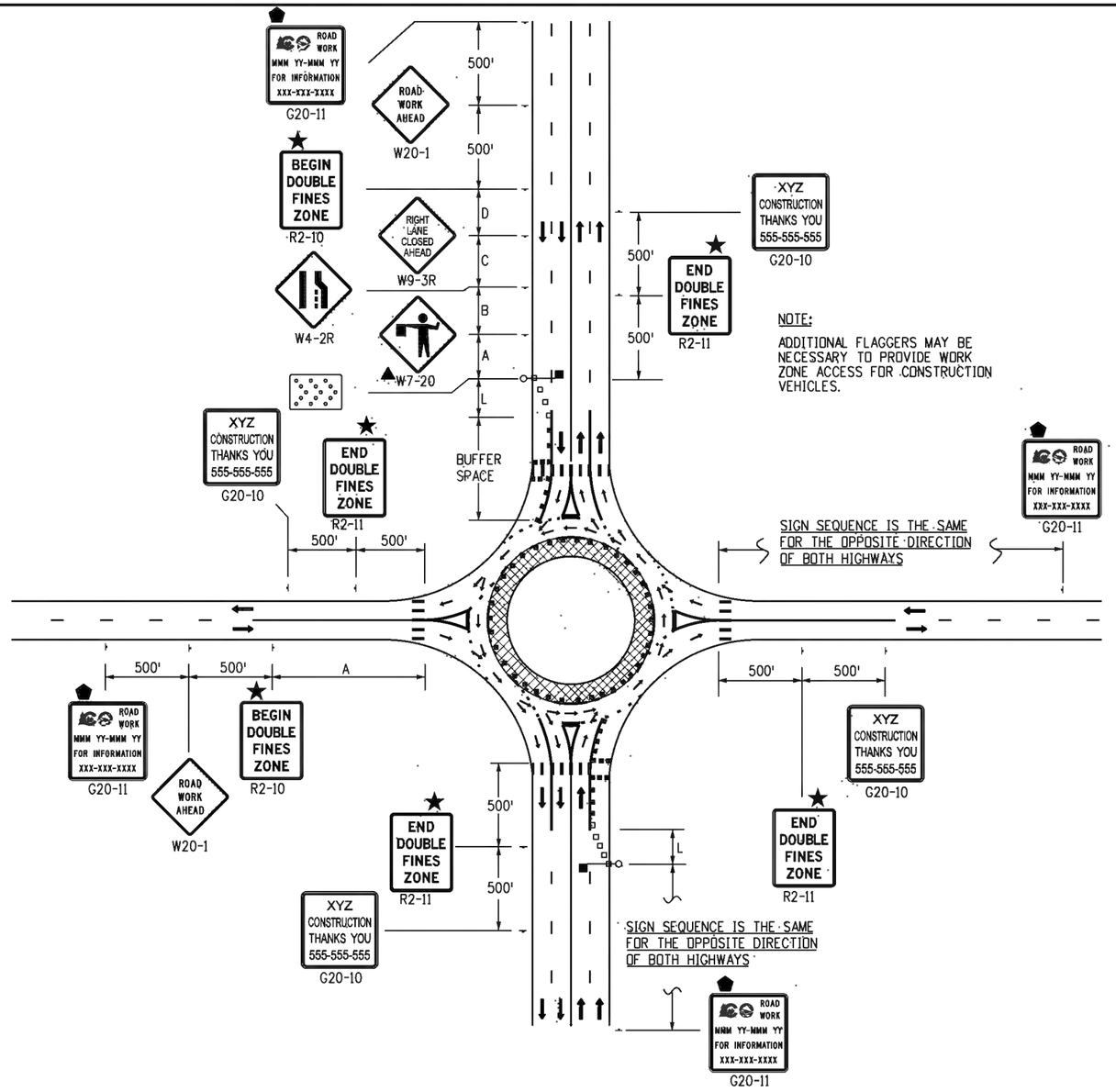
Project Sheet Number: 242



CASE NO. 31

TYPICAL APPLICATION *

ROUNDABOUT - INSIDE LANE CLOSURE FOR TWO-LANE ROUNDABOUT

LEGEND

- ✳ A TRUCK DETOUR ROUTE MAY BE NECESSARY TO DIVERT TRUCKS AWAY FROM THE ROUNDABOUT CIRCLE. ALSO NECESSARY IS A STREET NAME AND/OR ROUTE NUMBER SIGN, INFORMING MOTORISTS WHERE THEY NEED TO EXIT THE ROUNDABOUT CIRCLE TO ENTER THE DESIRED STREET AND/OR ROUTE NUMBER.
- ■ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE THE SCHEDULE DF CONSTRUCTION TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. IF PROJECT IS DESIGNATED AS A "SIGNIFICANT PROJECT" (SEE GENERAL NOTE 28), CONCRETE BARRIER SHALL BE USED FOR CHANNELIZATION DEVICES (TEMP) AS DETERMINED BY THE ENGINEER.
- □ DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE MERGING TAPERS, SHIFTING TAPERS, AND ONE LANE, TWO-WAY TRAFFIC TAPERS.
- TYPE III BARRICADE
- DIRECTION OF TRAVEL
- WORK AREA
- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL.
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- FLASHING BEACON
- ⬢ REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.
- MOBILE ATTENUATOR
- L TRANSITION TAPER LENGTH:

  L = MINIMUM LENGTH OF TAPER

  SPEED 45 MPH OR MORE: $L = S \times W$

  SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$

  S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED

  W = WIDTH OF OFFSET

  SHOULDER TAPER = 1/3 L
- BUFFER SPACE SEE GENERAL NOTE 23 ON SHEET 2.
- FLAGGER STATION

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (<=40 MPH)	100	100	100
URBAN (>=45 MPH)	350	350	350
RURAL	500	500	500
EXPRESSWAY/FREEWAY	1000	1500	2640

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STANDARD PLAN NO. S-630-1

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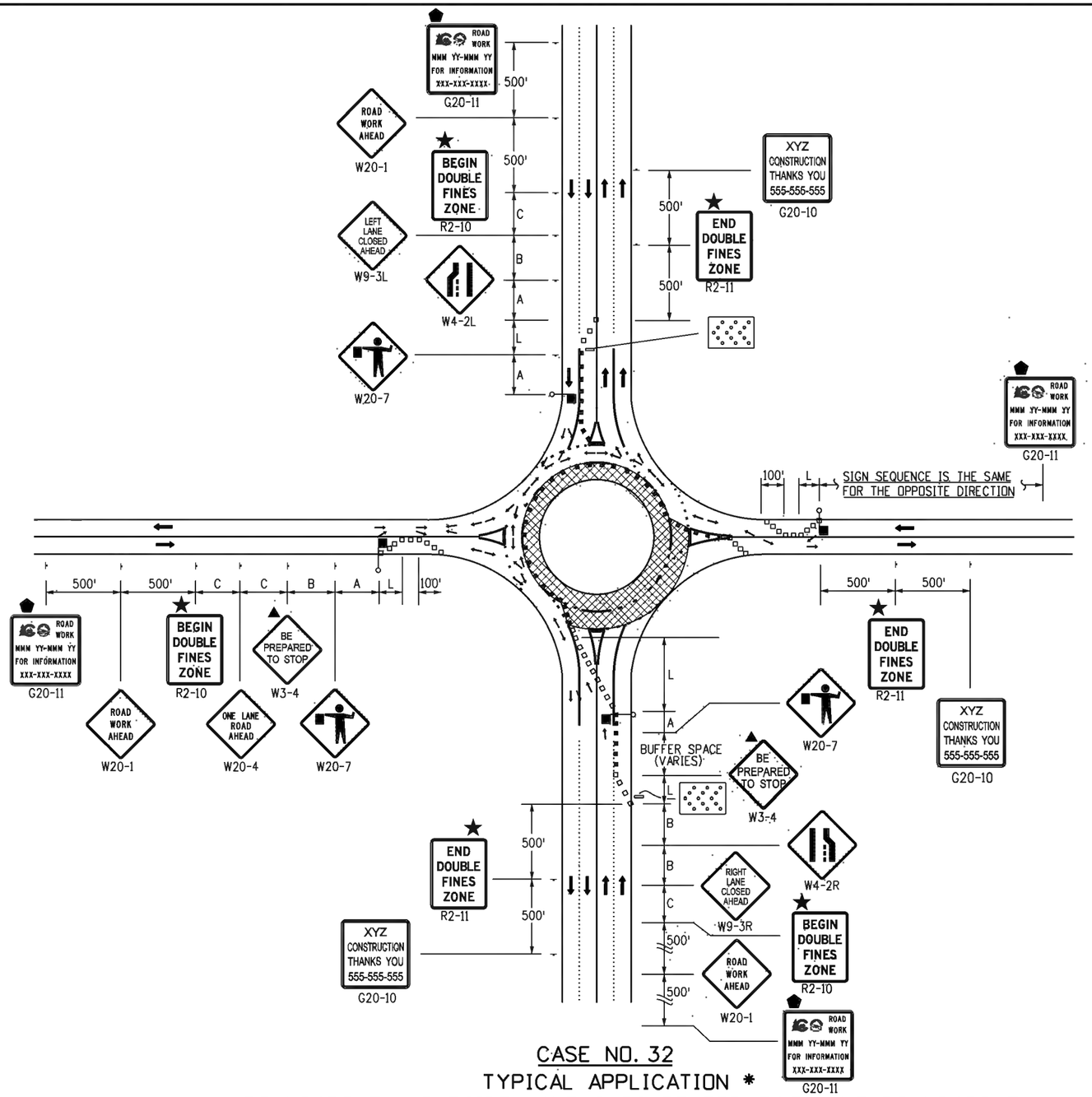

CASE NO. 32

TYPICAL APPLICATION *

ROUNDABOUT - OUTSIDE LANE CLOSURE FOR TWO-LANE ROUNDABOUT

LEGEND

- ✳ A TRUCK DETOUR ROUTE MAY BE NECESSARY TO DIVERT TRUCKS AWAY FROM THE ROUNDABOUT CIRCLE. ALSO NECESSARY IS A STREET NAME AND/OR ROUTE NUMBER SIGN, INFORMING MOTORISTS WHERE THEY NEED TO EXIT THE ROUNDABOUT CIRCLE TO ENTER THE DESIRED STREET AND/OR ROUTE NUMBER.
- ■ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE THE SCHEDULE OF CONSTRUCTION TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. IF PROJECT IS DESIGNATED AS A "SIGNIFICANT PROJECT" (SEE GENERAL NOTE 28), CONCRETE BARRIER SHALL BE USED FOR CHANNELIZATION DEVICES (TEMP) AS DETERMINED BY THE ENGINEER.
- □ DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE MERGING TAPERS, SHIFTING TAPERS, AND ONE LANE, TWO-WAY TRAFFIC TAPERS.
- TYPE III BARRICADE
- DIRECTION OF TRAVEL
- WORK AREA
- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL.
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- FLASHING BEACON
- ● REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.
- MOBILE ATTENUATOR
- L TRANSITION TAPER LENGTH:

  L = MINIMUM LENGTH OF TAPER

  SPEED 45 MPH OR MORE: $L = S \times W$

  SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$

  S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED

  W = WIDTH OF OFFSET

  SHOULDER TAPER = 1/3 L
- BUFFER SPACE — SEE GENERAL NOTE 23 ON SHEET 2.
- FLAGGER STATION

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (<= 40 MPH)	100	100	100
URBAN (>= 45 MPH)	350	350	350
RURAL	500	500	500
EXPRESSWAY/FREEWAY	1000	1500	2640

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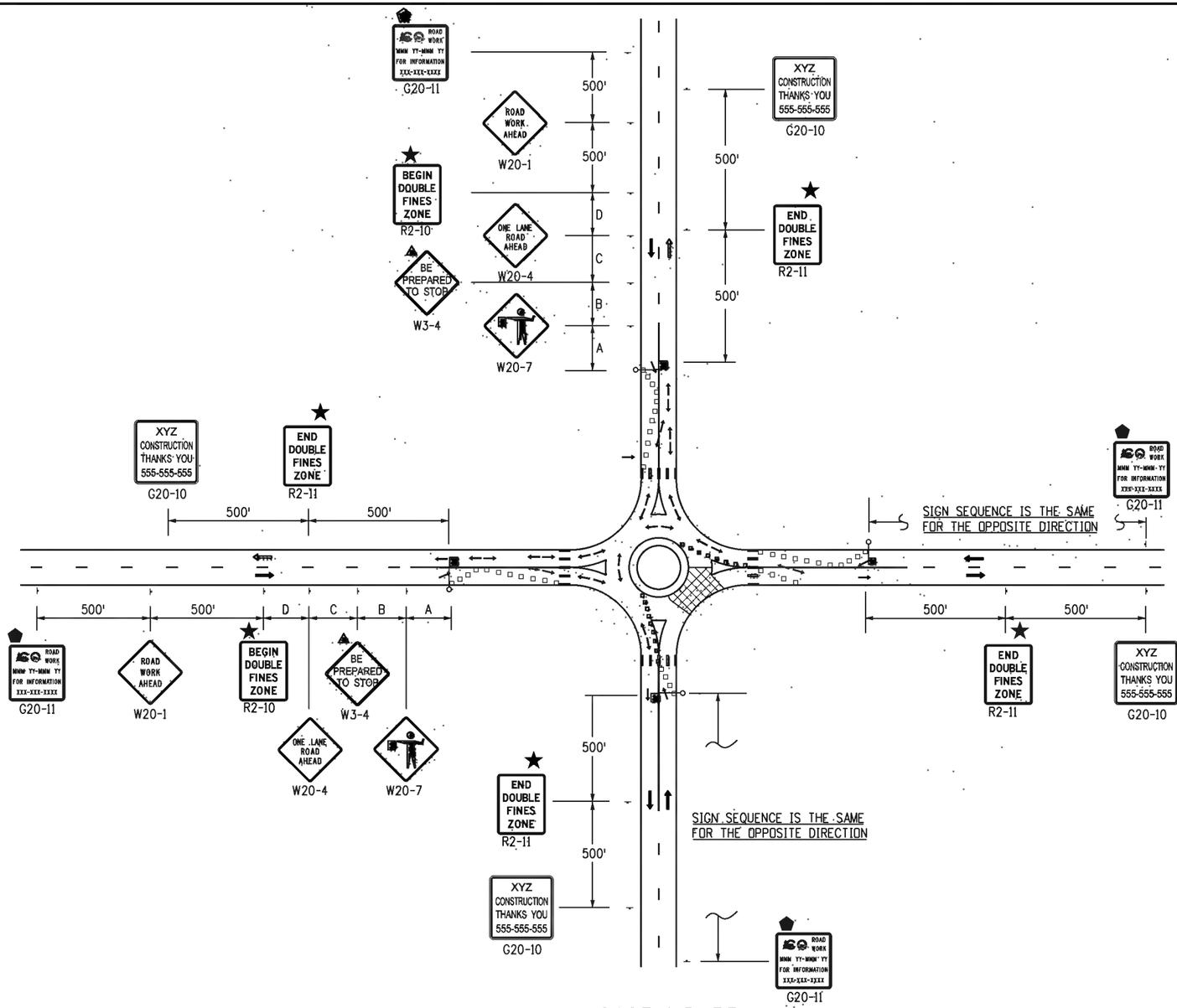

CASE NO. 33

TYPICAL APPLICATION *

ROUNDABOUT - PARTIAL CLOSURE FOR ONE-LANE ROUNDABOUT

LEGEND

- ✳ A TRUCK DETOUR ROUTE MAY BE NECESSARY TO DIVERT TRUCKS AWAY FROM THE ROUNDABOUT CIRCLE. ALSO NECESSARY IS A STREET NAME AND/OR ROUTE NUMBER SIGN, INFORMING MOTORISTS WHERE THEY NEED TO EXIT THE ROUNDABOUT CIRCLE TO ENTER THE DESIRED STREET AND/OR ROUTE NUMBER.
- ■ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE THE SCHEDULE OF CONSTRUCTION TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. IF PROJECT IS DESIGNATED AS A "SIGNIFICANT PROJECT" (SEE GENERAL NOTE 28), CONCRETE BARRIER SHALL BE USED FOR CHANNELIZATION DEVICES (TEMP) AS DETERMINED BY THE ENGINEER.
- □ DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE MERGING TAPERS, SHIFTING TAPERS, AND ONE LANE, TWO-WAY TRAFFIC TAPERS.
- TYPE III BARRICADE
- DIRECTION OF TRAVEL
- WORK AREA
- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL.
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- FLASHING BEACON
- ⬟ REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.
- MOBILE ATTENUATOR
- L TRANSITION TAPER LENGTH:

  L = MINIMUM LENGTH OF TAPER

  SPEED 45 MPH OR MORE: $L = S \times W$

  SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$

  S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED

  W = WIDTH OF OFFSET

  SHOULDER TAPER = 1/3 L
- BUFFER SPACE SEE GENERAL NOTE 23 ON SHEET 2.
- FLAGGER STATION

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (<=40 MPH)	100	100	100
URBAN (>=45 MPH)	350	350	350
RURAL	500	500	500
EXPRESSWAY/FREEWAY	1000	1500	2640

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LEGEND

MOBILE ATTENUATOR VEHICLE, TWO 360-DEGREE YELLOW FLASHING BEACONS, AND YELLOW FLASHING VEHICLE LIGHTS OR STROBES.

VMS — VARIABLE MESSAGE SIGN (VMS).

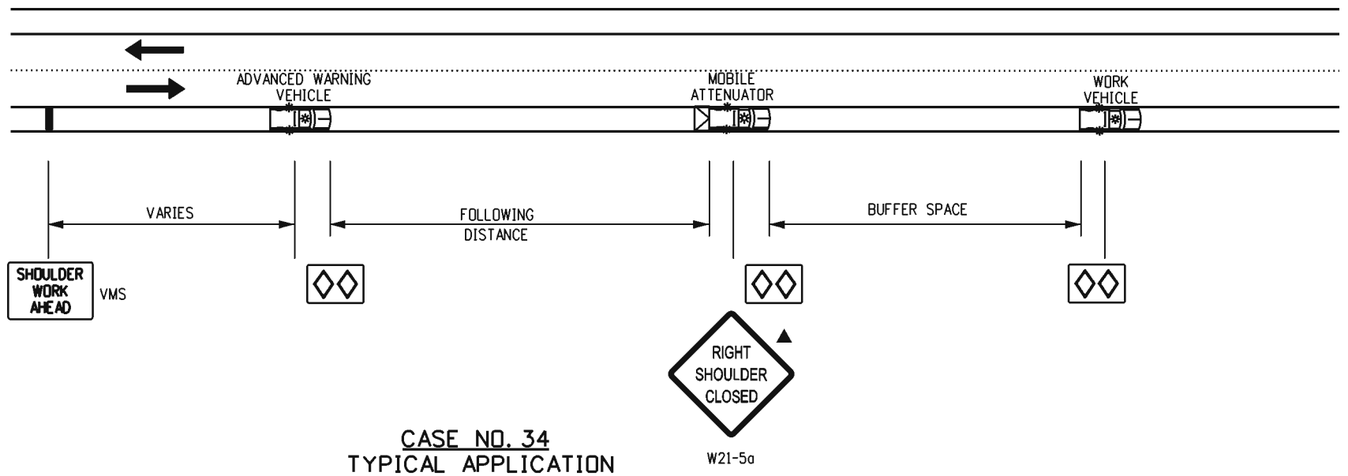
ARROW BOARD

▲ WHEN VMS IS USED, THE "RIGHT SHOULDER CLOSED" (W21-5a) SIGN BECOMES OPTIONAL.

● IF TRACKING OF THE WET PAINT IS ANTICIPATED, THE USE OF CONES OR STATIONARY "WET PAINT" SIGNS SHALL BE POSTED.

⬢ THE VARIABLE SEPARATION DISTANCE BETWEEN THE "CONE PLACEMENT VEHICLE" AND "CONE PICKUP VEHICLE" SHALL BE DETERMINED BY THE TRACK DRYING TIME OF THE PAVEMENT MARKING MATERIAL.

⬭ OPTIONAL

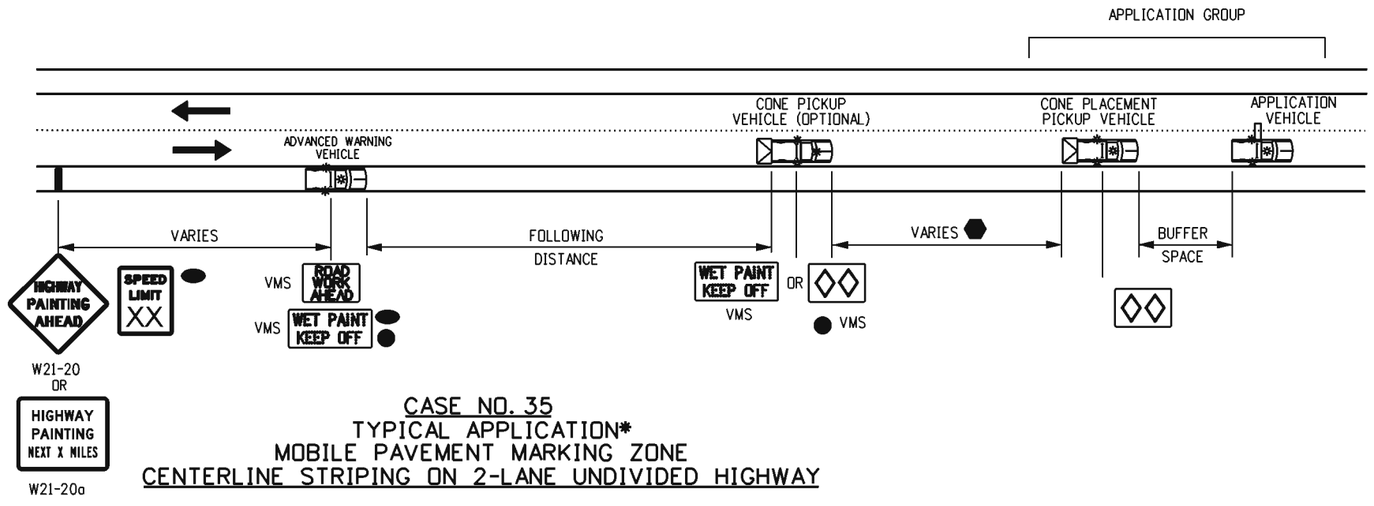


CASE NO. 34
TYPICAL APPLICATION
MOBILE WORK ZONE
MOBILE SHOULDER CLOSURE ON 2-LANE UNDIVIDED HIGHWAY

* USE CASE 35 IF SHOULDER IN CASE 34 IS TOO NARROW FOR GROUP VEHICLE USE.

FOLLOWING DISTANCE CHART FOR WARNING AND MOBILE ATTENUATOR (OR CONE PICKUP) VEHICLE

POSTED WZ SPEED LIMIT (MPH)	FOLLOWING DISTANCE (FEET)	BUFFER SPACE (FEET)
0 - 30	250 - 550	100 - 120
35 - 40	325 - 700	100 - 120
45 - 50	600 - 900	120 - 140
55	750 - 1200	120 - 140
60	1000 - 1400	180 - 200



CASE NO. 35
TYPICAL APPLICATION*
MOBILE PAVEMENT MARKING ZONE
CENTERLINE STRIPING ON 2-LANE UNDIVIDED HIGHWAY

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12		Date:	Comments
Created By: Nakao	R-2	01/20/23	UPDATED LEGEND DELETED NOTE UPDATED FOLLOWING DISTANCE CHART MOVED NOTE UNDER CASE 34
Last Modification Date: 01/20/23			
Last Modified By: NRIVERA	R-1	06/03/21	UPDATED FOR BUFFER SPACE.
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English			

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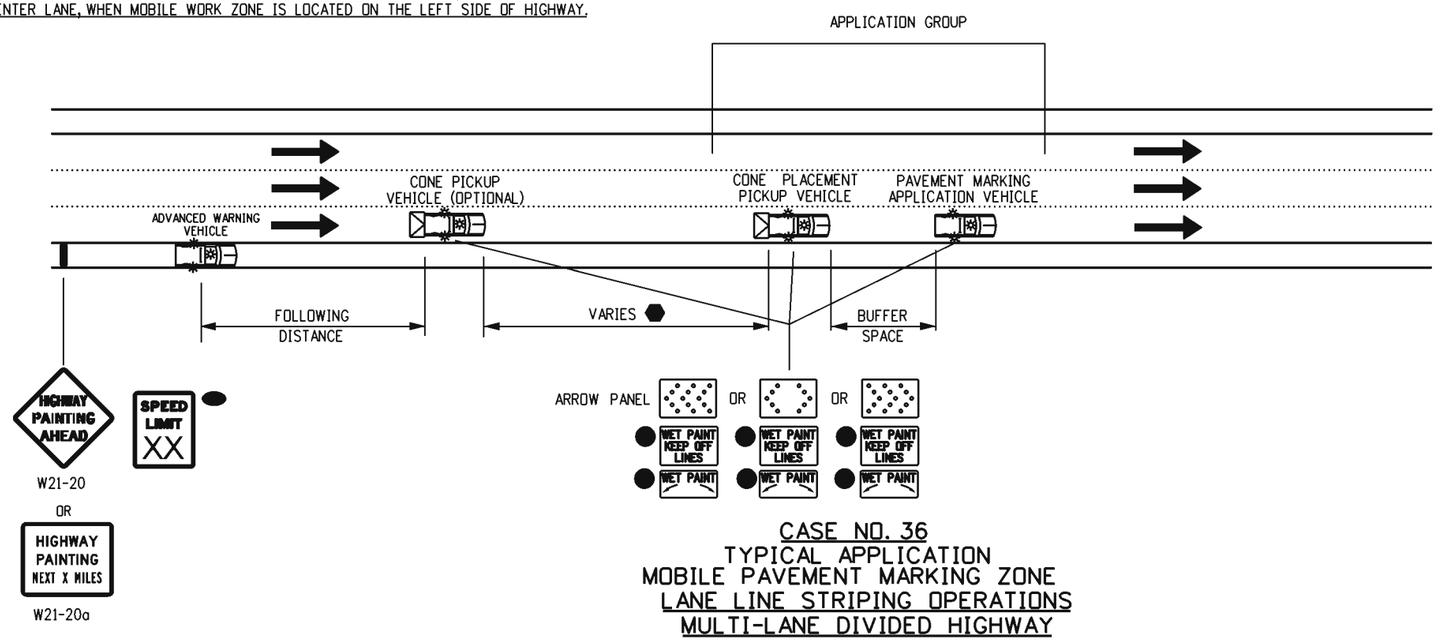
FOR CASE #36, VEHICLE/SIGN SEQUENCE IS THE SAME FOR THE LEFT SIDE OF HIGHWAY, WHILE TAPER IS MIRRORED ABOUT THE CENTER LANE, WHEN MOBILE WORK ZONE IS LOCATED ON THE LEFT SIDE OF HIGHWAY.

LEGEND

- MOBILE ATTENUATOR VEHICLE, TWO 360-DEGREE YELLOW FLASHING BEACONS, AND YELLOW FLASHING VEHICLE LIGHTS OR STROBES.
- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL.
- VMS — VARIABLE MESSAGE SIGN (VMS).
- ARROW BOARD
- ▲ WHEN THE VMS IS USED, THE "SHOULDER CLOSED" W21-5a(R/L) AND "RAMP CLOSED AHEAD" W5-40 SIGNS BECOME OPTIONAL.
- ● IF TRACKING OF THE WET PAINT IS ANTICIPATED, THE USE OF CONES OR STATIONARY "WET PAINT" SIGNS SHALL BE POSTED.
- ⬢ THE VARIABLE SEPARATION DISTANCE BETWEEN THE "CONE PLACEMENT VEHICLE" AND "CONE PICKUP VEHICLE" SHALL BE DETERMINED BY THE TRACK DRYING TIME OF THE PAVEMENT MARKING MATERIAL.
- ⬬ OPTIONAL



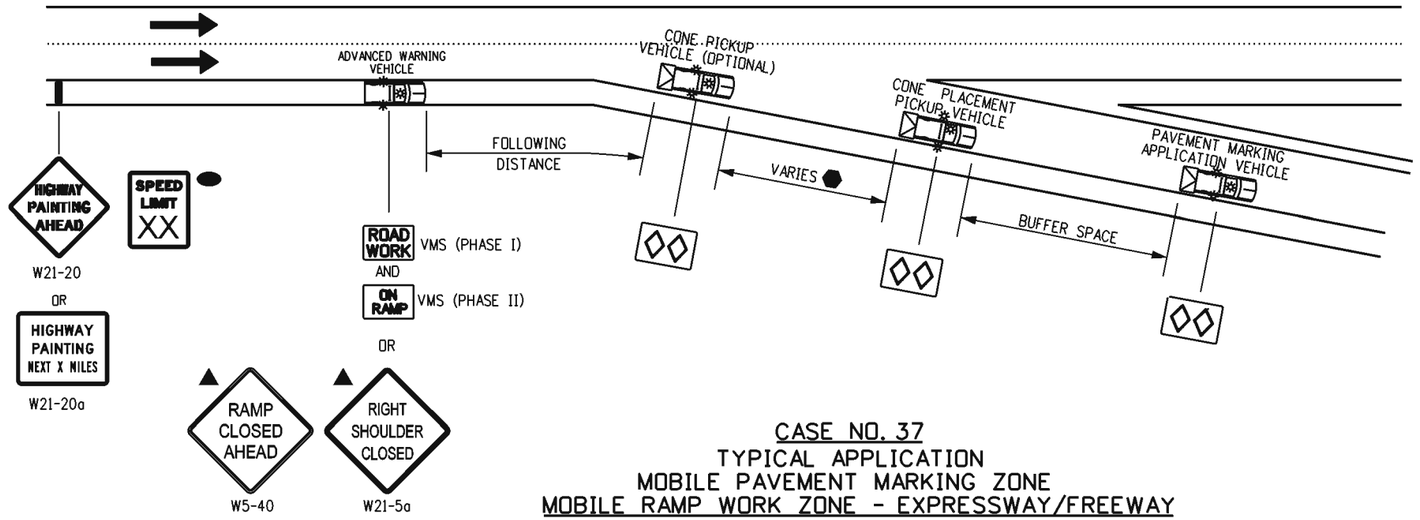
CASE NO. 36
TYPICAL APPLICATION
MOBILE PAVEMENT MARKING ZONE
LANE LINE STRIPING OPERATIONS
MULTI-LANE DIVIDED HIGHWAY

NOTES

1. THE SIGNING VEHICLES MAY ENCROACH INTO THE TRAFFIC LANE WHEN THE SHOULDER IS TOO NARROW TO DRIVE ON.
2. IF THE RAMP CANNOT BE REOPENED WITHIN 15 MINUTES, USE CASE NO. 22 OF THE S-630-1 STANDARD PLAN.

FOLLOWING DISTANCE CHART FOR WARNING VEHICLE AND CONE PICKUP VEHICLES

POSTED WZ SPEED LIMIT (MPH)	FOLLOWING DISTANCE (FEET)	BUFFER SPACE (FEET)
0 - 30	250 - 550	100 - 120
35 - 40	325 - 700	100 - 120
45 - 50	600 - 900	120 - 140
55	750 - 1200	120 - 140
60	1000 - 1400	180 - 200



CASE NO. 37
TYPICAL APPLICATION
MOBILE PAVEMENT MARKING ZONE
MOBILE RAMP WORK ZONE - EXPRESSWAY/FREEWAY

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Creation Date: 07/04/12		Date:	Comments
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Last Modified By: NRIVERA			
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LEGEND

MOBILE ATTENUATOR TRUCK, TWO 360-DEGREE YELLOW FLASHING BEACONS, AND YELLOW FLASHING VEHICLE LIGHTS OR STROBES.

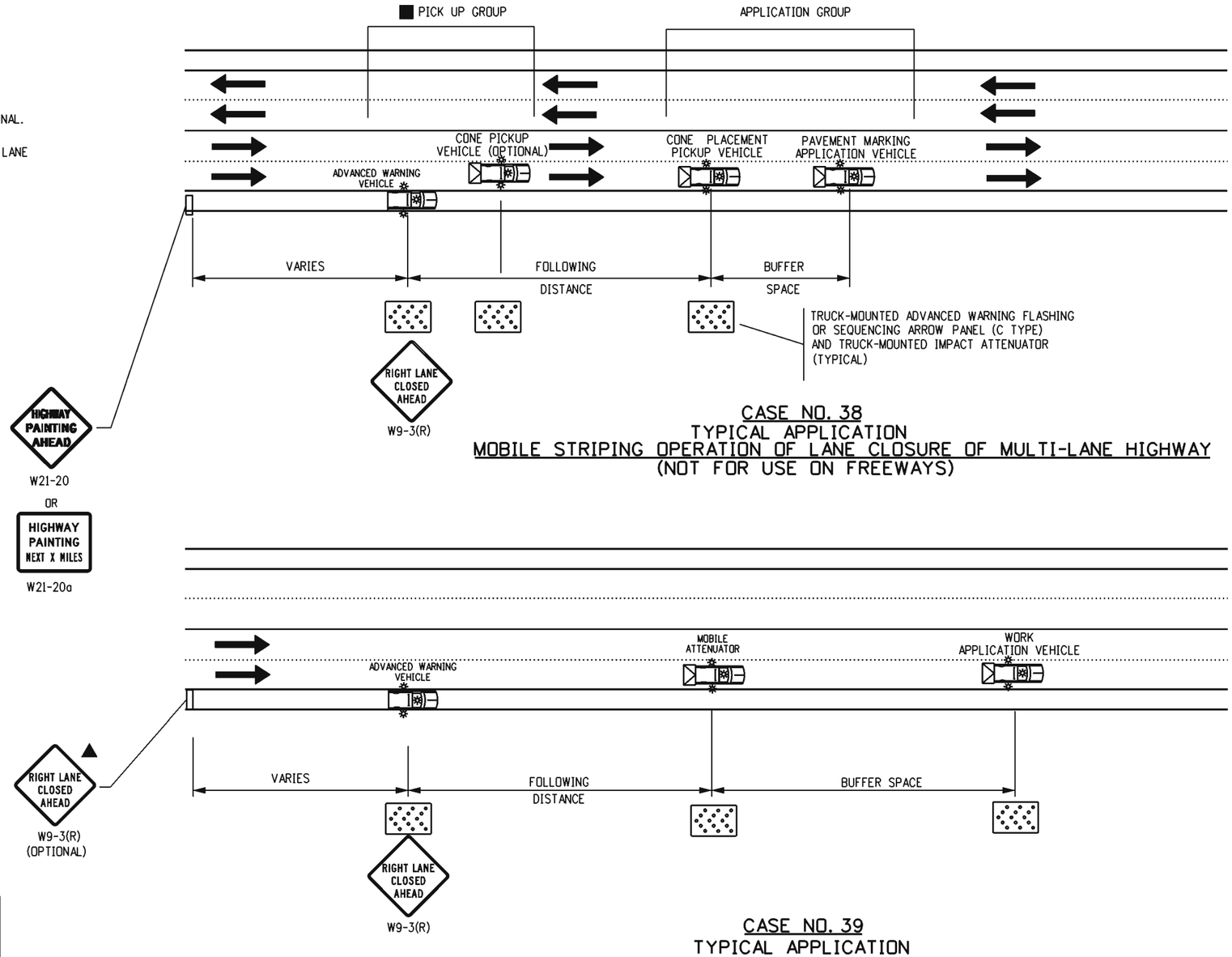
ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL.

▲ WHEN THE VMS IS USED, THE "RIGHT LANE CLSED AHEAD" W9-3(R/L) SIGN BECOMES OPTIONAL.

■ THE "CONE PICK UP VEHICLE" OR "WARNING VEHICLE" MAY ENCROACH INTO THE TRAFFIC LANE WHEN THE SHOULDER IS TOO NARROW TO DRIVE ON.

NOTES

1. IN ROADWAY WHERE THE AADT IS 2,000 OR LESS, A SINGLE WORK VEHICLE WITH APPROPRIATE WARNING DEVICES ON THE VEHICLE MAY BE USED.
2. RADIO COMMUNICATIONS BETWEEN THE WORKCREW AND THE MOVING BLOCKADE ARE REQUIRED TO ADJUST THE BLOCKADE TO INCREASE OR DECREASE THE CLOSURE TIME. RELEASE TRAFFIC ONLY AFTER CONFIRMATION THAT ALL WORKERS AND THEIR VEHICLES ARE CLEAR OF THE ROADWAY.
3. IF APPLICABLE, ALL RAMPS AND ACCESS BETWEEN THE MOVING BLOCKADE AND WORK OPERATION AREA SHALL BE TEMPORARILY CLOSED USING TRAFFIC CONTROL EQUIPMENT AND PERSONNEL. EACH RAMP MUST REMAIN CLOSED UNTIL THE CREW DOING THE WORK GIVES THE "ALL CLEAR" SIGNAL OR UNTIL THE FRONT OF THE MOVING BLOCKADE PASSES THE CLOSED RAMP(S).



CASE NO. 38
TYPICAL APPLICATION
MOBILE STRIPING OPERATION OF LANE CLOSURE OF MULTI-LANE HIGHWAY
(NOT FOR USE ON FREEWAYS)

CASE NO. 39
TYPICAL APPLICATION
MOBILE OPERATION OF LANE CLOSURE OF MULTI-LANE HIGHWAY

FOLLOWING DISTANCE CHART FOR WARNING VEHICLE AND SIGNING VEHICLES

POSTED WZ SPEED LIMIT (MPH)	FOLLOWING DISTANCE (FEET)	BUFFER SPACE (FEET)
0 - 30	250 - 550	100 - 120
35 - 40	325 - 700	100 - 120
45 - 50	600 - 900	120 - 140
55	750 - 1200	120 - 140
60	1000 - 1400	180 - 200

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Last Modified By: NRIVERA			
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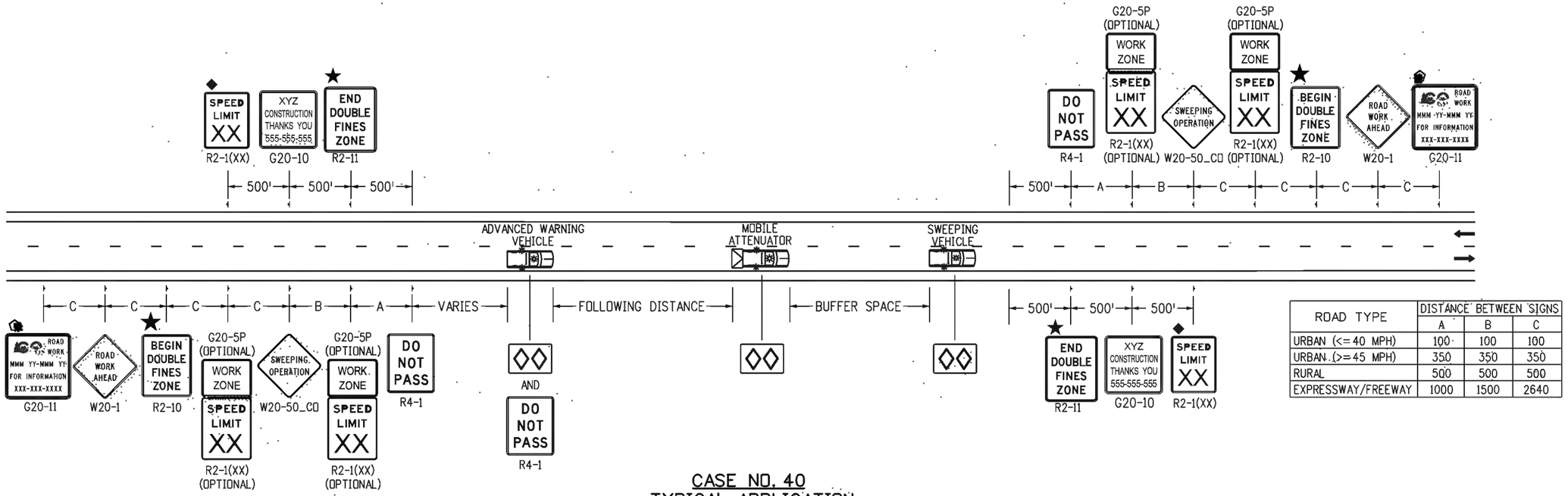

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (<= 40 MPH)	100	100	100
URBAN (>= 45 MPH)	350	350	350
RURAL	500	500	500
EXPRESSWAY/FREEWAY	1000	1500	2640

CASE NO. 40
TYPICAL APPLICATION
MOBILE SWEEPING OPERATION 1 MILE OR LESS

FOLLOWING DISTANCE CHART FOR WARNING AND MOBILE ATTENUATOR (OR SWEEPING) VEHICLE

POSTED WZ SPEED LIMIT (MPH)	FOLLOWING DISTANCE (FEET)	BUFFER SPACE (FEET)
0 - 30	250 - 550	100 - 120
35 - 40	325 - 700	100 - 120
45 - 50	600 - 900	120 - 140
55	750 - 1200	120 - 140
60	1000 - 1400	180 - 200

SPEED REDUCTION CHART (SEE GENERAL NOTE 3)			
EXISTING POSTED SPEED	FIRST WORK ZONE SPEED	SECOND WORK ZONE SPEED	SPEED AFTER WORK ZONE
75 MPH	60 MPH	45 MPH	75 MPH
70 MPH	55 MPH	40 MPH	70 MPH
65 MPH	50 MPH	40 MPH	65 MPH
60 MPH	45 MPH	40 MPH	60 MPH
55 MPH	40 MPH	N/A	55 MPH
50 MPH	40 MPH	N/A	50 MPH
45 MPH	40 MPH	N/A	45 MPH

LEGEND

- MOBILE ATTENUATOR VEHICLE, TWO 360-DEGREE YELLOW FLASHING BEACONS, AND YELLOW FLASHING VEHICLE LIGHTS OR STROBES.
- ARROW BOARD
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

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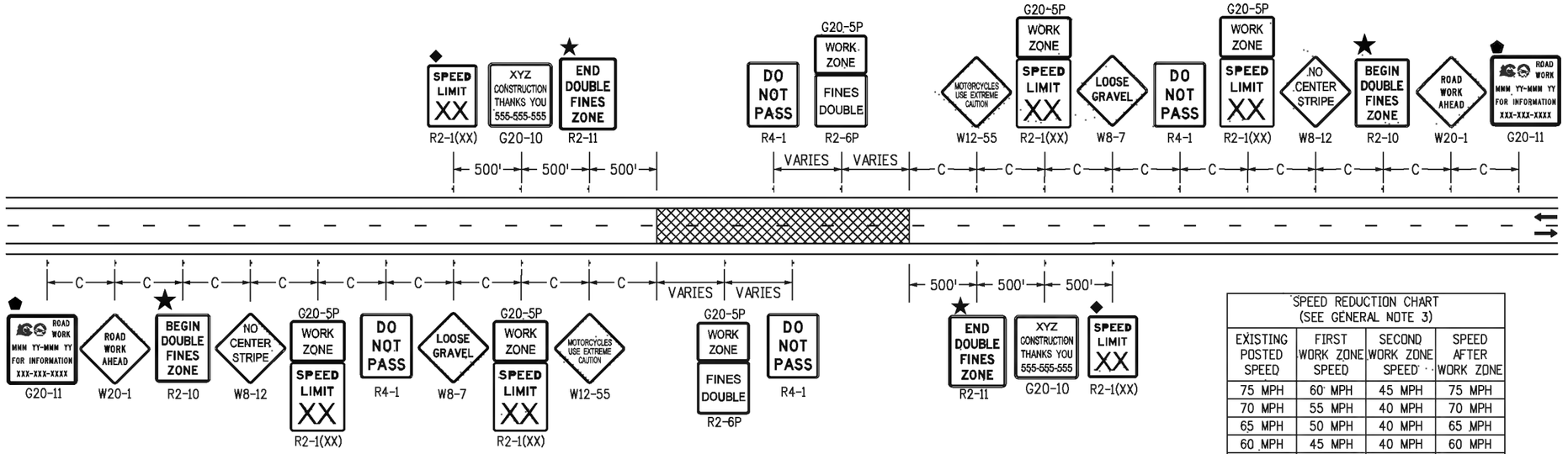
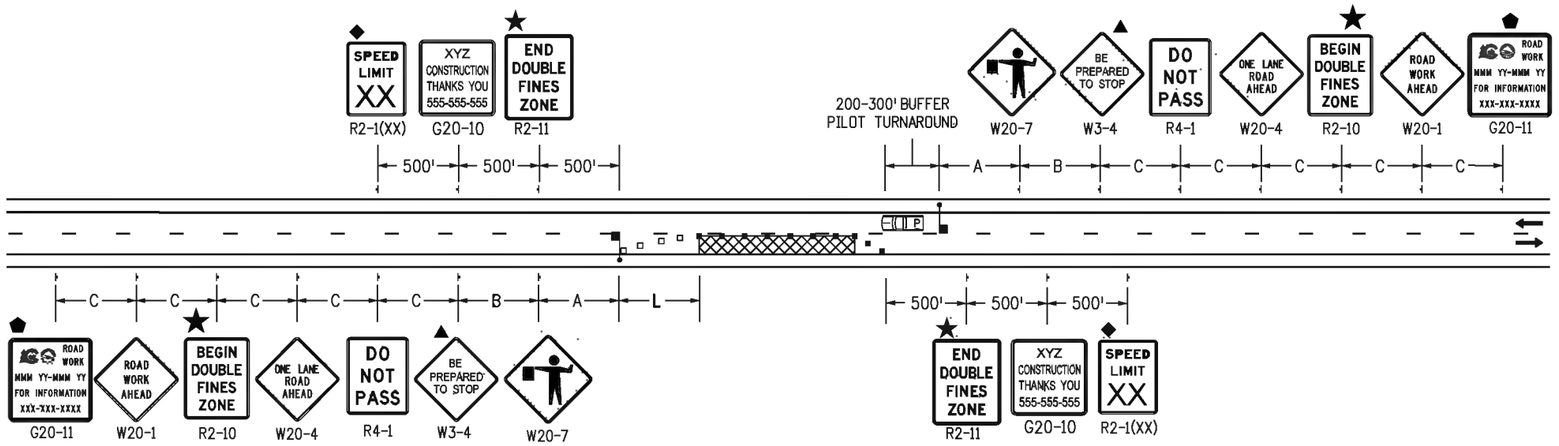
S-630-1
Standard Sheet No. 24 of 26
Project Sheet Number: 249



CASE NO. 41
TYPICAL APPLICATION
CHIP SEALS - 2-LANE UNDIVIDED HIGHWAY

NOTE: FOLLOW APPLICABLE STANDARDS AS SHOWN IN CASE NO. 17 ON SHEET 9, CASE NO. 19 ON SHEET 10, AND CHAPTER 6H OF THE 2009 MUTCD FOR LANE CLOSURE.

SPEED REDUCTION CHART (SEE GENERAL NOTE 3)			
EXISTING POSTED SPEED	FIRST WORK ZONE SPEED	SECOND WORK ZONE SPEED	SPEED AFTER WORK ZONE
75 MPH	60 MPH	45 MPH	75 MPH
70 MPH	55 MPH	40 MPH	70 MPH
65 MPH	50 MPH	40 MPH	65 MPH
60 MPH	45 MPH	40 MPH	60 MPH
55 MPH	40 MPH	N/A	55 MPH
50 MPH	40 MPH	N/A	50 MPH
45 MPH	40 MPH	N/A	45 MPH



CASE NO. 42
TYPICAL APPLICATION
PILOT CAR - LANE CLOSURE, 2-LANE UNDIVIDED HIGHWAY

NOTES

1. ALL NIGHT HAZARDS WILL BE MARKED AND DELINEATED.
2. ALL SPEED LIMIT SIGNS CONFLICTING WITH WORK ZONE SPEED SHALL BE COVERED DURING SPEED REDUCTION.

LEGEND

- ■ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS.
- ▫ DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE MERGING TAPERS, SHIFTING TAPERS, AND ONE LANE, TWO-WAY TRAFFIC TAPERS.
- FLAGGER STATION
- DIRECTION OF TRAVEL
- WORK AREA
- L TRANSITION TAPER LENGTH:
  - L = MINIMUM LENGTH OF TAPER
  - SPEED 45 MPH OR MORE: $L = S \times W$
  - SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$
  - S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
  - W = WIDTH OF OFFSET
  - SHOULDER TAPER = 1/3 L
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- VARIES BUFFER SPACE (SEE GENERAL NOTE 23 ON SHEET 2).
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- PILOT CAR
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

KEY TO ADVANCE SIGNING DISTANCES

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (<= 40 MPH)	100	100	100
URBAN (>= 45 MPH)	350	350	350
RURAL	500	500	500
EXPRESSWAY/FREEWAY	1000	1500	2640

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TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

Issued By: Traffic Safety & Engineering Branch January 20, 2023

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TYPICAL CONSTRUCTION ZONE SIGNS

THESE SIGNING NOTES ARE INTENDED AS A QUICK REFERENCE FOR TYPICAL SIGN USE AND PLACEMENT IN CONSTRUCTION ZONES.

G20-1 "ROAD/WORK/NEXT XX MILES" - THIS SIGN SHALL BE ERECTED AT THE LIMITS OF ANY ROAD CONSTRUCTION OR MAINTENANCE PROJECT OF MORE THAN TWO (2) MILES IN LENGTH WHERE TRAFFIC IS MAINTAINED THROUGH THE PROJECT.

G20-4 "PILOT CAR/FOLLOW ME" - THIS SIGN SHALL BE MOUNTED IN A CONSPICUOUS POSITION ON THE REAR OF A VEHICLE USED FOR GUIDING ONE-WAY TRAFFIC THROUGH OR AROUND THE PROJECT.

G20-5P "WORK ZONE" - THIS PLAQUE SHALL BE MOUNTED JUST ABOVE THE WORK ZONE SPEED LIMIT SIGNS PRIOR TO THE WORK ZONE AREA.

G20-10 THANK YOU SIGN - THIS SIGN SHOULD BE ERECTED APPROXIMATELY 500 FEET BEYOND THE END OF THE PROJECT.

G20-11 CONSTRUCTION PROJECT INFORMATION SIGN - THIS SIGN SHOULD BE ERECTED AS DESCRIBED IN THE SECTION 626 STANDARD SPECIFICATION.

G20-55(X) "X MINUTE CLOSURE. EXPECT DELAYS" - THIS SIGN IS INTENDED FOR USE 500 FEET PAST THE "WORK ZONE"/SPEED LIMIT SIGN.

M4-9( ) "DETOUR/<<<<" - THIS SIGN IS USED FOR UNNUMBERED ROUTES; FOR USE IN EMERGENCY SITUATIONS; FOR PERIODS OF SHORT DURATION; OR WHERE, OVER RELATIVELY SHORT DISTANCES. IT IS NOT NECESSARY TO SHOW ROUTE MARKERS TO GUIDE TRAFFIC ALONG THE DETOUR AND BACK TO ITS AUTHORIZED ROUTE.

M4-10( ) "DETOUR ARROW" - THIS SIGN SHOULD BE MOUNTED JUST BELOW THE ROAD CLOSED SIGN AT THE POINT WHERE THE DETOUR ROADWAY OR ROUTE HAS BEEN ESTABLISHED DUE TO THE CLOSURE OF THE STREET OR HIGHWAY TO THROUGH TRAFFIC.

R2-1( ) "SPEED/LIMIT/XX" - THESE SIGNS ARE INTENDED TO REDUCE TRAFFIC SPEED IN ADVANCE OF THE DAILY WORK AREA WITHIN THE OVERALL PROJECT LIMITS.

R2-1(XX) "SPEED/LIMIT/XX" - THIS SIGN IS INTENDED FOR USE 500 FEET PAST THE "THANK YOU" SIGN TO BRING TRAFFIC BACK TO ORIGINAL POSTED SPEED.

R2-6P "FINES DOUBLE" - THIS SIGN IS INTENDED FOR USE WITHIN WORK ZONES TO PROVIDE NOTICE OF INCREASED FINES FOR TRAFFIC VIOLATIONS WITHIN WORK ZONES.

R4-1 "DO NOT PASS" - THIS SIGN SHOULD BE PLACED AT TRANSITION TAPER POINT.

R4-2 "PASS WITH CARE" - THIS SIGN SHOULD BE PLACED AT TRANSITION TAPER POINT.

R2-10 "BEGIN DOUBLE FINES ZONE" SIGN IS PLACED AT THE BEGINNING OF THE ADVANCED WARNING AREA OF THE TRAFFIC CONTROL ZONE.

R2-11 "END DOUBLE FINES ZONE" SIGN IS PLACED AFTER WORK ZONE AREA, PAST DOWNSTREAM TAPER SECTION.

R11-2 "ROAD/CLOSED" - THIS SIGN IS TO BE MOUNTED ON THE BARRICADE THAT IS PLACED BEFORE THE WORK ZONE ENTRANCE TO PROHIBIT TRAFFIC FROM ENTERING THE WORK ZONE.

R11-3 "ROAD CLOSED/X MILES AHEAD/L.T.D." - THIS SIGN SHOULD BE PLACED WHERE THROUGH TRAFFIC MUST DETOUR TO AVOID THE CLOSURE OF THE ROAD SOME DISTANCE BEYOND, BUT WHERE THE ROAD IS OPEN TO LOCAL TRAFFIC UP TO THE POINT OF CLOSURE.

R11-4 "ROAD CLOSED/TO/THRU TRAFFIC" FOR URBAN USE - THIS SIGN SHOULD BE PLACED WHERE THROUGH TRAFFIC MUST DETOUR TO AVOID THE CLOSURE OF THE ROAD SOME DISTANCE BEYOND, BUT WHERE THE RDAD IS OPEN TO LOCAL TRAFFIC UP TO THE POINT OF CLOSURE.

W1-1( ) "TURN ARROW" - THIS SIGN IS INTENDED FOR USE WHERE ENGINEERING INVESTIGATIONS OF ROADWAY CONDITIONS SHOW THE RECOMMENDED SPEED ON THE TURN TO BE 30 MPH OR LESS.*

W1-2( ) "CURVE ARROW" - THIS SIGN IS INTENDED FOR USE WHERE ENGINEERING INVESTIGATIONS OF ROADWAY CONDITIONS SHOW THE RECOMMENDED SPEED ON THE CURVE TO BE IN THE RANGE BETWEEN 30 AND 60 MILES PER HOUR.*

W1-3( ) "REVERSE TURN ARROW" - THIS SIGN IS INTENDED FOR USE WHERE TWO TURNS OR THE CURVE AND A TURN IN OPPOSITE DIRECTIONS ARE SEPARATED BY A TANGENT OF LESS THAN 600 FEET.*

W1-4( ) "REVERSE CURVE ARROW" - THIS SIGN IS INTENDED FOR USE WHERE TWO CURVES IN OPPOSITE DIRECTIONS ARE SEPARATED BY A TANGENT OF LESS THAN 600 FEET.*

W1-6( ) "ARROW" - THIS SIGN SHOULD BE MOUNTED JUST BELOW THE ROAD CLOSED SIGN AT THE POINT WHERE THE DIVERSION HAS BEEN ESTABLISHED DUE TO THE LANE CLOSURE.

W3-2 "YIELD AHEAD" - THIS SIGN IS INTENDED FOR USE AT THE APPROACH TO THE YIELD SIGN THAT IS NOT VISIBLE FOR A SUFFICIENT DISTANCE TO PERMIT THE DRIVER TO BRING HIS VEHICLE TO A STOP AT THE YIELD SIGN.*

W3-4 "BE PREPARED TO STOP" - THIS SIGN TO BE PLACED IN ADVANCE OF A FLAGGER.

W4-2(X) "LEFT (RIGHT) LANE TRANSITION SYMBOL" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE REDUCTION IN THE NUMBER OF TRAFFIC LANES IN THE DIRECTION OF TRAVEL ON THE MULTILANE HIGHWAY.*

W4-50 "USE BOTH LANES DURING CONGESTION" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE "ROAD WORK X MILE" ADVANCED WARNING SIGN.

W4-51 "USE BOTH LANES TO MERGE POINT" - THIS SIGN IS INTENDED TO DIRECT MOTORISTS TO USE BOTH TRAVEL LANES UNTIL THE LANES ARE REDUCED TO ONE LANE.

W4-52 "TAKE TURNS MERGE HERE" - THIS SIGN IS INTENDED TO WARN MOTORISTS IN ADVANCED TO MOVE FROM THE CLOSED TRAVEL LANE TO THE OPEN TRAVEL LANE, USUALLY 500 FEET IN ADVANCED OF THE START OF THE TRANSITION TAPER .

W5-1 "ROAD NARROWS" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE TRANSITION ON THE ROAD WHERE THE PAVEMENT WIDTH IS REDUCED ABRUPTLY TO A WIDTH SUCH THAT TWO CARS CANNOT PASS WITHOUT REDUCING SPEED.*

W5-2a "NARROW BRIDGE SYMBOL" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF A BRIDGE OR CULVERT HAVING A CLEAR TWO-WAY ROADWAY WIDTH OF 16 TO 18 FEET OR ANY BRIDGE OR CULVERT HAVING A ROADWAY CLEARANCE LESS THAN THE WIDTH OF THE APPROACH PAVEMENT.*

W5-3 "ONE LANE/BRIDGE" - THIS SIGN SHOULD BE PLACED ON TWO-WAY ROADWAYS IN ADVANCE OF THE BRIDGES OR CULVERTS WHERE THE ROADWAY WIDTH IS LESS THAN 16 FEET (18 FEET FOR COMMERCIAL VEHICLES) OR WHEN THE ALIGNMENT IS POOR ON THE APPROACH TO THE STRUCTURE HAVING A CLEAR ROADWAY WIDTH OF 18 FEET OR LESS.*

W6-1 "DIVIDED HIGHWAY SYMBOL" - THIS SIGN SHOULD BE PLACED ON THE APPROACHES TO THE SECTION OF HIGHWAY WHERE OPPOSING FLOWS OF TRAFFIC ARE SEPARATED BY A PHYSICAL MEDIAN.

W6-2 "DIVIDED HIGHWAY ENDS SYMBOL" - THIS SIGN SHOULD BE PLACED AT THE END OF THE SECTION OF PHYSICALLY DIVIDED HIGHWAY AS A WARNING OF TWO-WAY TRAFFIC AHEAD.

W6-3 "TWO-WAY TRAFFIC SYMBOL" - THIS SIGN IS INTENDED FOR USE TO GIVE WARNING OF TRANSITION FROM A SEPARATED ONE-WAY ROADWAY TO A TWO-WAY ROADWAY.*

W7-1 "HILL SYMBOL" - THIS SIGN SHOULD BE PLACED AT A POINT IN ADVANCE OF THE DOWNGRADE WHERE THE LENGTH, PERCENT OF GRADE, HORIZONTAL CURVATURE, OR OTHER PHYSICAL FEATURES REQUIRE SPECIAL CONSIDERATION ON THE PART OF DRIVERS.*

W8-1,W8-2 "BUMP"/"DIP" - THESE SIGNS ARE INTENDED FOR USE TO GIVE WARNING OF A SHARP RISE OR DEPRESSION IN THE PROFILE OF THE ROAD THAT IS SUFFICIENTLY ABRUPT TO AFFECT VEHICLE OPERATION OR CAUSE CONSIDERABLE DISCOMFORT TO PASSENGERS.*

W8-3o "PAVEMENT ENDS SYMBOL" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF A POINT WHERE THE PAVEMENT SURFACE CHANGES FROM A HARD-SURFACED PAVEMENT TO THE LOW-TYPE SURFACE OR EARTH ROAD.*

W8-4 "SOFT SHOULDER" - THIS SIGN IS INTENDED FOR USE TO WARN OF A SOFT SHOULDER CONDITION THAT COULD PRESENT A PROBLEM TO VEHICLES THAT MAY GET OFF THE PAVEMENT.*

W8-5 "SLIPPERY WHEN WET SYMBOL" - THIS SIGN SHOULD BE PLACED IN ADVANCE OF THE CONDITION WHERE THE HIGHWAY SURFACE IS SLIPPERY BEYOND WHAT IS ORDINARY WHEN WET.*

W8-9o "SHOULDER DROP-OFF" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF A SHOULDER DROP-OFF THAT EXCEEDS THREE INCHES IN HEIGHT.*

W8-11 "UNEVEN LANES" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF AN UNEVEN ADJACENT LANE SITUATION THAT EXCEEDS ONE INCH IN HEIGHT.*

W9-1( ) "LEFT (RIGHT) LANE ENDS" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE PAVEMENT WIDTH TRANSITION SIGN (W4-2).

W9-2( ) "LANE ENDS/MERGE LEFT (RIGHT)" - THIS SIGN IS INTENDED FOR USE AS A SUPPLEMENT TO THE PAVEMENT WIDTH TRANSITION SIGN (W4-2).

W9-3 OR W9-3a( ) "CENTER LANE CLOSED AHEAD" - THIS SIGN SHOULD BE USED IN ADVANCE OF THE POINT WHERE WORK OCCUPIES THE CENTER LANE AND TRAFFIC IS DIRECTED TO THE RIGHT OR LEFT OF THE WORK ZONE.*

W12-1 "DOUBLE ARROW SYMBOL" - THIS SIGN SHOULD BE PLACED AT THE POINT OF THE OBSTRUCTION IN THE ROADWAY, WHERE TRAFFIC IS PERMITTED TO PASS ON EITHER SIDE OF THE OBSTRUCTION.

W12-2 "LOW CLEARANCE SYMBOL" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF AN OBSTRUCTION TO WARN VEHICLE OPERATORS OF CLEARANCES LESS THAN THE MAXIMUM VEHICLE HEIGHT PERMITTED PLUS 12 INCHES.*

W13-1P( ) "ADVISORY SPEED PLAQUE" - THIS PLAQUE IS INTENDED TO SUPPLEMENT WARNING SIGNS ONLY AND SHALL NOT BE MOUNTED ALONE. IT IS USED TO INDICATE THE MAXIMUM RECOMMENDED SPEED FOR THE INDICATED CONDITION.

W13-3 "ADVISORY RAMP SPEED" - THIS SIGN IS TO BE POSTED TO INFORM MOTORISTS WHAT THE SUGGESTED SPEED LIMIT IS ON A RAMP.

W20-1 "ROAD/WORK/AHEAD" - THIS SIGN IS TO BE LOCATED IN ADVANCE OF THE INITIAL ACTIVITY OR DETOUR A DRIVER MAY ENCOUNTER, AND IS INTENDED TO BE USED AS A WARNING OF OBSTRUCTIONS OR RESTRICTIONS.

W20-2 "DETOUR/(DIST.)" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE POINT AT WHICH TRAFFIC IS DIVERTED OVER A TEMPORARY ROADWAY OR ROUTE.

W20-3 "ROAD/CLOSED/(DIST.)" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF A POINT AT WHICH A ROADWAY IS CLOSED TO ALL TRAFFIC OR TO ALL BUT LOCAL TRAFFIC.

W20-4 "ONE LANE/ROAD/(DIST.)" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF A POINT WHERE TRAFFIC IN BOTH DIRECTIONS MUST USE A SINGLE LANE.

W20-5( ) "XXX LANE/CLOSED/(DIST.)" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF A POINT WHERE ONE LANE OF A MULTIPLE-LANE ROADWAY IS CLOSED. IT SHOULD BE PROVIDED WITH INTERCHANGEABLE PLAQUES READING "RIGHT", "LEFT", AND "CENTER" AT NO ADDITIONAL COST TO THE PROJECT.

W20-7 "FLAGGER SYMBOL" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF ANY POINT AT WHICH A FLAGGER HAS BEEN STATIONED TO CONTROL TRAFFIC THROUGH OR AROUND THE PROJECT.*

W20-52 "GROOVED/PAVEMENT/AHEAD" - THIS SIGN IS INTENDED TO BE USED IN ADVANCE OF A ROADWAY THAT HAS BEEN GROOVED AND/OR ROTO MILLED.

W21-1a "WORKER SYMBOL" - THIS SIGN IS INTENDED FOR USE IN CONJUNCTION WITH MINOR MAINTENANCE AND PUBLIC UTILITY OPERATIONS FOR THE PROTECTION OF MEN WORKING IN OR NEAR THE ROADWAY.

W21-2 "FRESH/OIL" - THIS SIGN IS INTENDED FOR USE WHERE RE-SURFACING OPERATIONS HAVE RENDERED THE SURFACE OF THE PAVEMENT TEMPORARILY WET, AND OBJECTIONABLE SPLASHING ON VEHICLES MAY OCCUR.*

W21-3 "ROAD/MACHINERY/AHEAD" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE AREAS WHERE HEAVY EQUIPMENT IS OPERATING IN OR ADJACENT TO THE ROADWAY.*

W21-4 "ROAD/WORK/(DIST.)" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF MAINTENANCE FOR MINOR RECONSTRUCTION OPERATIONS IN THE ROADWAY.

W21-5 "SHOULDER/WORK" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE PROJECT INVOLVING THE SHOULDER, WHERE THE TRAVELED WAY REMAINS UNOBSTRUCTED.

W21-6 "SURVEY/CREW" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF A POINT WHERE A SURVEYING CREW IS WORKING IN OR ADJACENT TO THE ROADWAY.*

W21-20 "HIGHWAY PAINTING AHEAD" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF A POINT WHERE A PAINT CREW IS WORKING IN OR ADJACENT TO THE ROADWAY.

W21-20a "HIGHWAY PAINTING NEXT X MILES" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF PAINT CREW WORKING IN OR ADJACENT TO THE ROADWAY.

W22-1 "BLASTING/ZONE/(DIST.)" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF ANY POINT OR WORK SITE WHERE THERE ARE EXPLOSIVES BEING USED. THE W22-2 AND W22-3 SIGNS MUST BE USED IN SEQUENCE WITH THIS SIGN.

W22-2 "TURN OFF/2-WAY RADIOS/AND/CELLULAR/PHONES" - THIS SIGN IS TO BE USED IN SEQUENCE WITH THE W22-1 AND W22-3 SIGNS AND PLACED AT LEAST 1000 FEET FROM THE BEGINNING OF THE BLASTING ZONE.

W22-3 "END/BLASTING/ZONE" - THIS SIGN IS TO BE USED TO DENOTE THE END OF THE RADIO INFLUENCE AREA AND SHALL BE PLACED A MINIMUM OF 1000 FEET FROM THE BLASTING ZONE, EITHER WITH OR PRECEDING THE END CONSTRUCTION SIGN.

W22-50(X) "ROCK SCALING X MILE(S)" - THIS SIGN IS INTENDED TO BE USED IN ADVANCE OF A FLAGGER IN ADVANCED OF THE WORK ZONE AREA.

ADVANCE PLACEMENT OF WARNING SIGNS

POSTED OR 85TH PERCENTILE SPEED	ADVANCE PLACEMENT DISTANCE (FEET)								
	+ CONDITION A	++ CONDITION B: DECLARATION TO THE LISTED ADVISORY SPEED (MPH) FOR THE CONDITION							
		MPH							
		0	10	20	30	40	50	60	70
20	225	●	●	--	--	--	--	--	--
25	325	●	●	●	--	--	--	--	--
30	450	●	●	●	--	--	--	--	--
35	550	●	●	●	●	--	--	--	--
40	650	125	●	●	●	--	--	--	--
45	750	175	125	●	●	●	--	--	--
50	850	250	200	150	100	●	--	--	--
55	950	325	275	225	175	100	●	--	--
60	1100	400	350	300	250	175	●	--	--
65	1200	475	425	400	350	275	175	●	--
70	1250	550	525	500	425	350	280	150	--
75	1350	650	625	600	525	450	350	250	100

+ CONDITION A: SPEED REDUCTION AND LANE CHANGING IN HEAVY TRAFFIC. TYPICAL SIGNS ARE "MERGE" AND "RIGHT LANE ENDS".

++ CONDITION B: TYPICAL CONDITIONS ARE THE WARNING OF A POTENTIAL STOP SITUATION AND LOCATIONS WHERE THE ROAD USER MUST DECREASE SPEED TO MANEUVER THROUGH THE WARNED CONDITION. TYPICAL SIGNS ARE "STOP AHEAD", "SIGNAL AHEAD", "YIELD AHEAD", "CURVE", "REVERSE CURVE", "TURN".

● NO SUGGESTED DISTANCES ARE PROVIDED AT THESE SPEEDS, AS THE PLACEMENT IS DEPENDENT ON SITE CONDITIONS AND OTHER SIGNING.

A SUPPLEMENTAL PLAQUE MAY BE USED WITH WARNING SIGNS SPECIFYING THE DISTANCE TO THE CONDITION IF THERE IS AN IN-BETWEEN INTERSECTION THAT MIGHT CONFUSE THE MOTORIST.

* PLACEMENT SHOULD BE IN ACCORDANCE WITH WARNING SIGN PLACEMENT TABLE.

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TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

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STANDARD PLAN NO.
S-630-1
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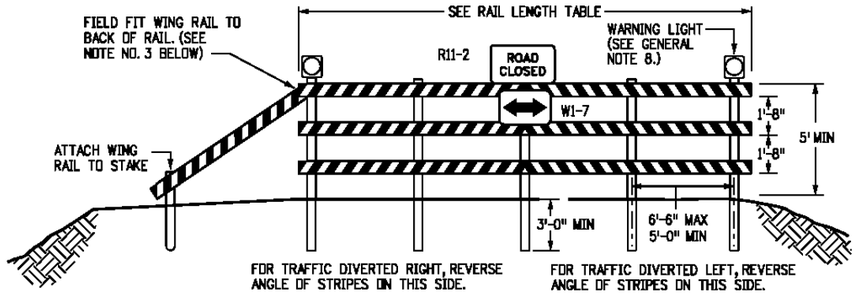
Project Sheet Number: 251



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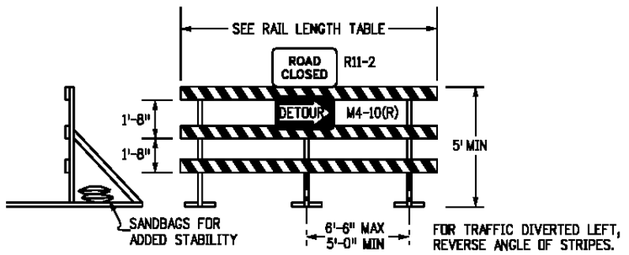
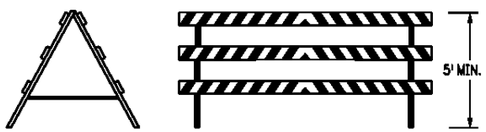


MOVABLE-SKIDS



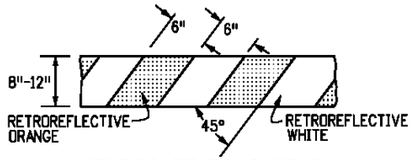
MOVABLE-HINGED

TYPICAL TYPE 3 BARRICADES

1. TYPE 3 BARRICADES HAVE 3 REFLECTORIZED RAIL FACES IF FACING TRAFFIC IN ONE DIRECTION AND 6 IF FACING TRAFFIC IN TWO DIRECTIONS.
2. THE PORTION OF THE POST ABOVE THE GROUND LINE SHALL BE PAINTED IN ACCORDANCE WITH THE APPROPRIATE GENERAL NOTE.
3. DETACHABLE EXTENSION WING RAILS FOR BYPASSING OF CONSTRUCTION EQUIPMENT ARE PERMITTED, WHEN NECESSARY, ON FIXED OR MOVABLE TYPE 3 BARRICADES. THE LENGTH SHALL BE ADEQUATE TO CLOSE THE BORROW PIT AND/OR SHOULDER AS REQUIRED.

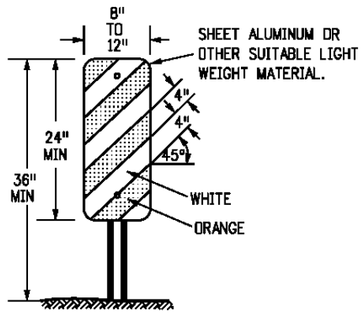
RAIL LENGTH TABLE

TYPE 3 BARRICADE		LENGTH
FIXED	MOVABLE	
F - A	M - A	8'- 14'
F - B	M - B	15'- 24'
F - C	M - C	25'- 35'
F - D	M - D	> 35'



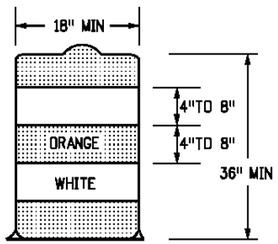
FOR RAILS LESS THAN 3' LONG, 4" WIDE STRIPES SHALL BE USED.

RAIL STRIPING DETAIL



TYPICAL VERTICAL PANEL

1. IF SPECIAL PANELS 3' OR GREATER IN HEIGHT ARE REQUIRED, THEN 6" STRIPES SHALL BE USED.
2. IF FIXED PLACEMENT IS REQUIRED, MOUNT ON DELINEATOR POST. SEE COLORADO STANDARD PLAN S-612-1.



TYPICAL DRUM

1. THE 18" MINIMUM DIMENSION SHALL APPLY TO THE SMALLEST MEASUREMENT OF OBLONG, RECTANGULAR, OR FLATTENED SIDE DRUMS.
2. THERE SHALL BE AT LEAST TWO ORANGE AND TWO WHITE HORIZONTAL, CIRCUMFERENTIAL, RETRODREFLECTIVE STRIPES ON EACH DRUM.

GENERAL NOTES

1. THE VARIOUS TYPES, COMBINATIONS AND APPLICATIONS OF SIGNS AND WARNING LIGHTS FOR BARRICADES REQUIRED FOR EACH PROJECT SHALL BE:
   A. AS SPECIFIED OR DETAILED IN THE PLANS.
   B. AS SHOWN IN APPLICABLE TYPICAL ILLUSTRATIONS.
   C. AS CALLED FOR AND SUBJECT TO APPROVAL BY THE ENGINEER.
2. TEMPORARY AND PERMANENT TYPE 3 BARRICADES SHALL BE FABRICATED FROM APPROVED CRASH TESTED MATERIALS. SEE SECTION 614 AND 630 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION FOR ADDITIONAL REQUIREMENTS.
3. ALL PAINTING SHALL CONFORM WITH THE FOLLOWING:
   A. THE APPLICABLE SECTION OF 508 OF THE STANDARD SPECIFICATIONS.
   B. ALL SKIDS, BRACES AND POSTS SHALL BE PAINTED WITH 2 COATS OF EXTERIOR WHITE PAINT.
   C. THE BACKSIDES OF RAILS AND VERTICAL PANEL CHANNELIZING DEVICES FACING ONE DIRECTION OF TRAFFIC ONLY SHALL BE PAINTED WITH EXTERIOR WHITE PAINT.
   D. ALUMINUM OR GALVANIZED STEEL SKIDS, BRACES AND POSTS SHALL NOT BE PAINTED.
4. ALL STRIPED SURFACES SHALL CONFORM WITH THE FOLLOWING:
   A. THE ENTIRE AREA OF ORANGE AND WHITE STRIPES SHALL BE FABRICATED AS ONE PIECE.
   B. HORIZONTAL RAILS, WING RAILS AND VERTICAL PANEL CHANNELIZING DEVICES SHALL HAVE ORANGE AND WHITE STRIPES ON THE FACE SIDE(S) SLANTING DOWNWARD AT A 45° ANGLE TOWARD THE SIDE(S) TO WHICH TRAFFIC IS TO PASS OR TURN.
   C. PERMANENT BARRICADES SHALL HAVE RETROREFLECTIVE RED AND WHITE STRIPES. THEY MAY BE USED AT LOCATIONS TO MARK THE END OF A ROAD, STREET OR HIGHWAY THAT ENDS AT A "T" INTERSECTION, OR WHERE THERE IS NO CROSSROAD OR OUTLET.
   D. ALL RETROREFLECTIVE SHEETING SHALL CONFORM TO ASTM D4956:
      1. ORANGE AND WHITE SHALL BE TYPE IV MINIMUM.
      2. RED AND WHITE SHALL BE TYPE IV MINIMUM.
5. FOR ALL WOODEN BARRICADE COMPONENTS NOMINAL LUMBER DIMENSIONS ARE SATISFACTORY.
6. ALL SCREWS, BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED OR CADMIUM PLATED.
7. STABILITY OF BARRICADES AND CHANNELIZING DEVICES SHALL CONFORM WITH THE FOLLOWING:
   A. SKIDS (BASES) OF MOVABLE BARRICADES SHALL BE WEIGHTED WITH SANDBAGS ONLY WHERE NECESSARY TO PROVIDE STABILITY
   B. NO MOVABLE OR PORTABLE DEVICE SHALL BE WEIGHTED BY ANY METHOD OR WITH ANY MATERIAL THAT WOULD MAKE THEM HAZARDOUS TO MOTORISTS.
8. WARNING LIGHTS USED WITH BARRICADES, DRUMS AND VERTICAL PANELS SHALL CONFORM WITH THE FOLLOWING:
   A. USE FLASHING WARNING LIGHTS WHEN DEVICES ARE USED SINGLY, AND STEADY BURN LIGHTS WHEN THEY ARE USED IN A SERIES FOR CHANNELIZATION.
   B. THEY SHALL BE POSITIONED ABOVE THE TOP RAIL OF BARRICADES OR ON TOP OF DRUMS AND VERTICAL PANELS.
9. CONCRETE BARRIER (TEMPORARY) SHALL CONFORM WITH:
   A. PRECAST CONCRETE BARRIER AS SHOWN ON COLORADO STANDARD PLAN M-606-14.
   B. BARRIER REFLECTORS SHALL BE INSTALLED THAT MEET THE REQUIREMENTS OF STANDARD TYPICAL DELINEATOR INSTALLATIONS, EXCEPT THE MAXIMUM SPACING SHALL BE 50', AND THEY WILL NOT BE PAID FOR BUT ARE INCLUDED IN THE COST OF THE BARRIER.
   C. CONCRETE BARRIER END TREATMENT SHALL BE IN ACCORDANCE WITH CLEAR ZONE CRITERIA, AND PLACED AS SHOWN ON THE PLANS.
10. SIGN PANELS MOUNTED ON BARRICADES WILL BE PAID FOR SEPARATELY.

Computer File Information	
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Created By: JSW	
Last Modification Date: 07/31/19	
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Sheet Revisions	
Date:	Comments

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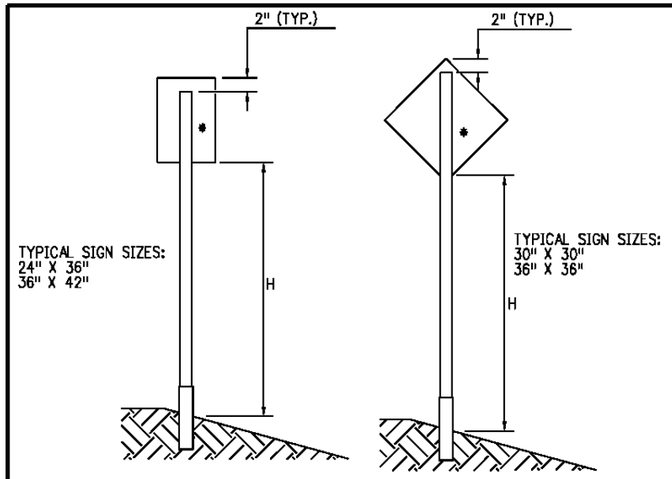
BARRICADES, DRUMS, CONCRETE BARRIERS (TEMP) & VERTICAL PANELS

Issued By: Traffic & Safety Engineering Branch July 31, 2019

STANDARD PLAN NO.
S-630-2
Standard Sheet No. 1 of 1
Project Sheet Number: 252



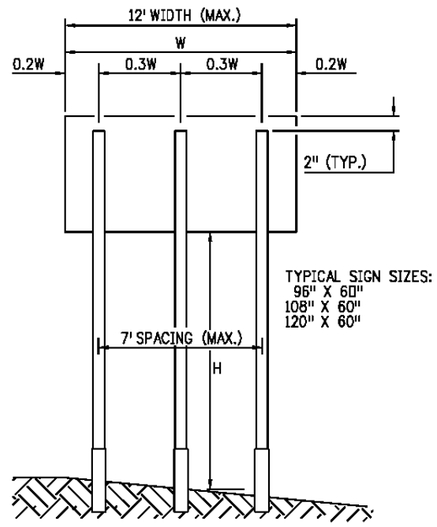
● **SIGN POST REQUIREMENTS**

POST TYPE	POST SIZE	MAX. CLEAR HEIGHT, H (FT.)	MAX. SIGN AREA (SF)
SQUARE TUBING	2.25" X 2.25" (12 GA.)	10	10.5
SQUARE TUBING	1.75" X 1.75" (12 GA.)	9	5
SQUARE TUBING	2.00" X 2.00" (12 GA.)	9	8
SQUARE TUBING	2.25" X 2.25" (12 GA.)	9	10.5
SQUARE TUBING	1.75" X 1.75" (12 GA.)	8	6
SQUARE TUBING	2.00" X 2.00" (12 GA.)	8	9
SQUARE TUBING	1.75" X 1.75" (12 GA.)	7	7
SQUARE TUBING	2.00" X 2.00" (12 GA.)	7	10

* SINGLE POST SHALL BE PLACE IN THE CENTER OF THE SIGN

SINGLE POST INSTALLATION

(TOTAL SIGN AREA NOT TO EXCEED 10.5 SF)



● **SIGN POST REQUIREMENTS**

POST TYPE	POST SIZE	MAX. CLEAR HEIGHT, H (FT.)	MAX. SIGN AREA (SF)
△U-CHANNEL	3 LB./FT.	11	36
△SQUARE TUBING	2.50" X 2.50" (10 GA.)	9	45
△SQUARE TUBING	2.50" X 2.50" (10 GA.)	7	50
○SQUARE TUBING	2.50" X 2.50" (10 GA.)	11	36
○SQUARE TUBING	2.50" X 2.50" (10 GA.)	9	45

TRIPLE POST INSTALLATION

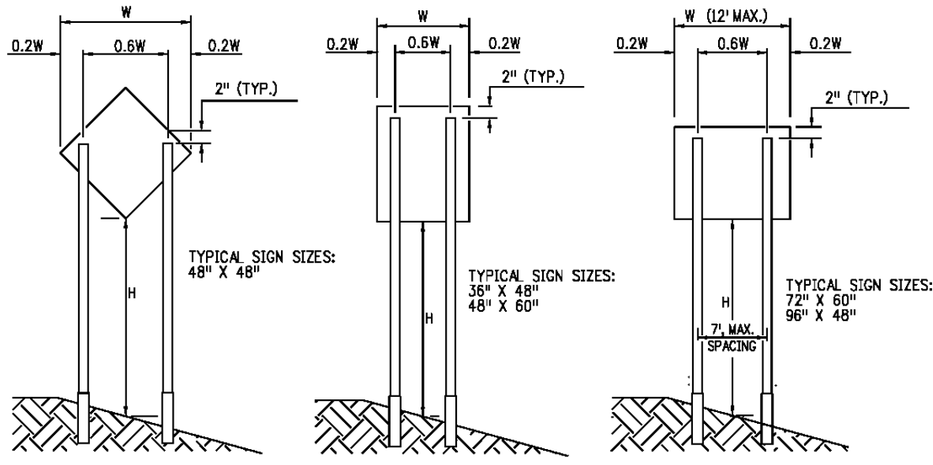
(TOTAL SIGN AREA NOT TO EXCEED 50 SF)

GENERAL NOTES

1. ALL SQUARE TUBING SIGN POST REQUIREMENTS ARE BASED ON A 10 OR 12-GAUGE THICKNESS, ASTM A570 GRADE 50 STEEL, A MINIMUM YIELD STRENGTH OF 60,000 PSI AND A 70 MPH WIND LOAD. ALL U-CHANNEL SIGN POSTS REQUIREMENTS ARE BASED ON A MINIMUM YIELD STRENGTH OF 80,000 PSI AND 85 MPH WIND LOAD.
2. STEEL POSTS, BASE POSTS, AND SLIP BASES FOR ALUMINUM PANEL SIGNS SHALL BE SELECTED FROM THE CDOT APPROVED PRODUCT LIST.
3. BASE POSTS SHALL NOT EXTEND MORE THAN 4" ABOVE GROUND LEVEL AND SHALL BE OF THE SAME WEIGHT/GAUGE AND TYPE AS THE SIGN POST.
4. INTERMIXING OF U-CHANNEL AND SQUARE TUBING POSTS, POSTS OF DIFFERENT WEIGHTS/GAUGES OR PRODUCT BRANDS IS PROHIBITED.
5. SUPPLEMENTAL SIGNS SHALL NOT BE ATTACHED DIRECTLY TO PRIMARY PANELS.
6. SPACING BETWEEN SUPPLEMENTAL PANELS AND PRIMARY PANELS SHALL NOT EXCEED 6".
7. SIGN PANELS PLACED PARALLEL TO TRAFFIC SHALL BE MOUNTED ON A MULTI-DIRECTIONAL BREAKAWAY SYSTEM. (SEE STANDARD PLAN S-630-4, SHEET 2)
8. AN APPROVED SLIP BASE IS REQUIRED WITH THE DOUBLE POST AND TRIPLE POST INSTALLATION. (SEE STANDARD PLAN S-630-4, SHEET 2).
9. SEE MANUFACTURER'S DRAWINGS FOR SPECIFIC ASSEMBLY INFORMATION (POST-TO-BASE POST OVERLAP), INCLUDING TYPES OF NUTS, BOLTS, WASHERS, AND OTHER PARTS REQUIRED FOR PRODUCT USE.
10. LAP-SPLICE OR MULTI-DIRECTIONAL SLIP BASE MAY BE USED. SEE STANDARD PLAN S-630-4, SHEET 2.

LEGEND

- ● SEE GENERAL NOTE 1.
- ▲ SEE GENERAL NOTE 4.
- △ SEE GENERAL NOTE 8.
- ● SEE GENERAL NOTE 9.
- ○ SEE GENERAL NOTE 10.

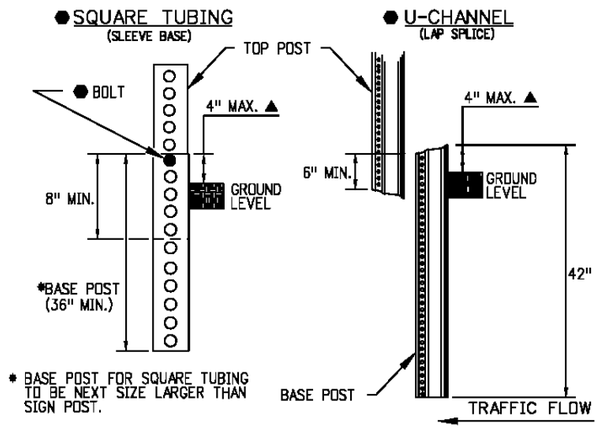


● **SIGN POST REQUIREMENTS**

POST TYPE	POST SIZE	MAX. CLEAR HEIGHT, H (FT.)	MAX. SIGN AREA (SF)
SQUARE TUBING	2.25" X 2.25" (12 GA.)	11	13
SQUARE TUBING	2.25" X 2.25" (12 GA.)	9	15
SQUARE TUBING	2.25" X 2.25" (12 GA.)	8	16
SQUARE TUBING	2.25" X 2.25" (12 GA.)	7	20
△U-CHANNEL	3 LB./FT.	11	25
△U-CHANNEL	3 LB./FT.	9	30
△SQUARE TUBING	2.50" X 2.50" (10 GA.)	7	36

DOUBLE POST INSTALLATION

(TOTAL SIGN AREA NOT TO EXCEED 30 SF)



BASE POST INSTALLATION DETAILS

FOR SQUARE TUBING AND U-CHANNEL SYSTEMS

(SEE STANDARD PLAN S-630-4, SHEET 2 FOR MULTI-DIRECTIONAL SLIP BASE SYSTEMS)

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12		Date:	Comments
Created By: KEN			
Last Modification Date:			
Lost Modified By:			
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English			

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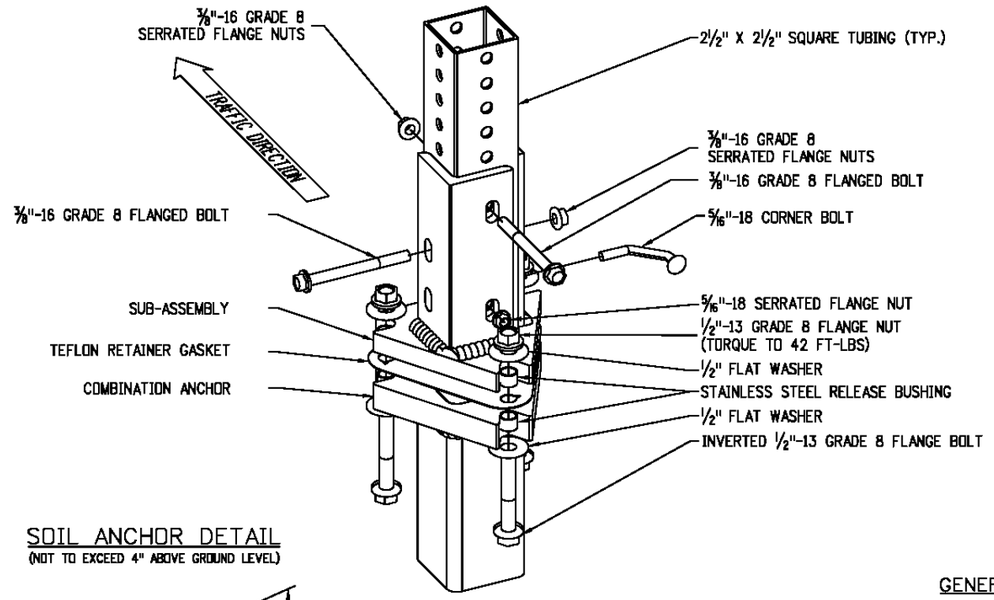
Troffic & Safety Engineering MKB

STEEL SIGN SUPPORT (TEMPORARY) INSTALLATION DETAILS

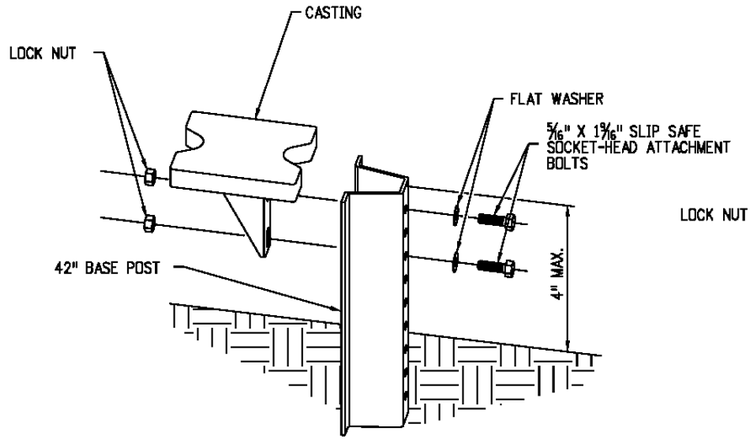
Issued By: Traffic & Safety Engineering Branch July 31, 2019

STANDARD PLAN NO.
S-630-4
Standard Sheet No. 1 of 2
Project Sheet Number: 253

SQUARE TUBING SLIP BASE

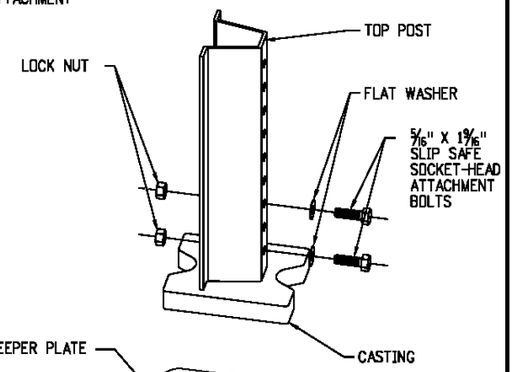


U-CHANNEL SLIP BASE



NOTE: BOLTS SHOULD BE TIGHTEN ½ TO ¾ TURN AFTER SNUG.

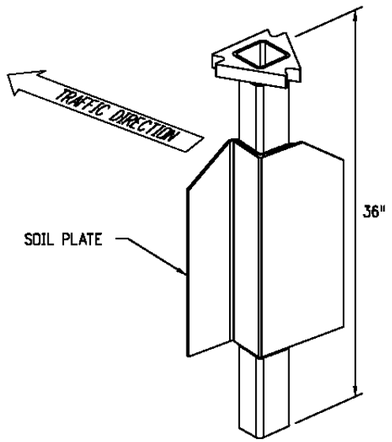
STEP 1

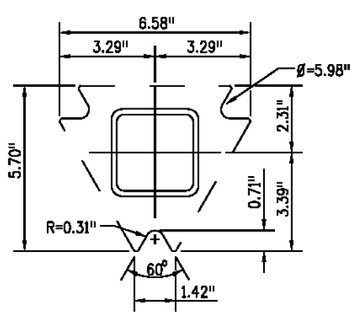


STEP 2

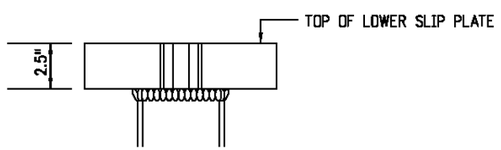
SOIL ANCHOR DETAIL

(NOT TO EXCEED 4" ABOVE GROUND LEVEL)





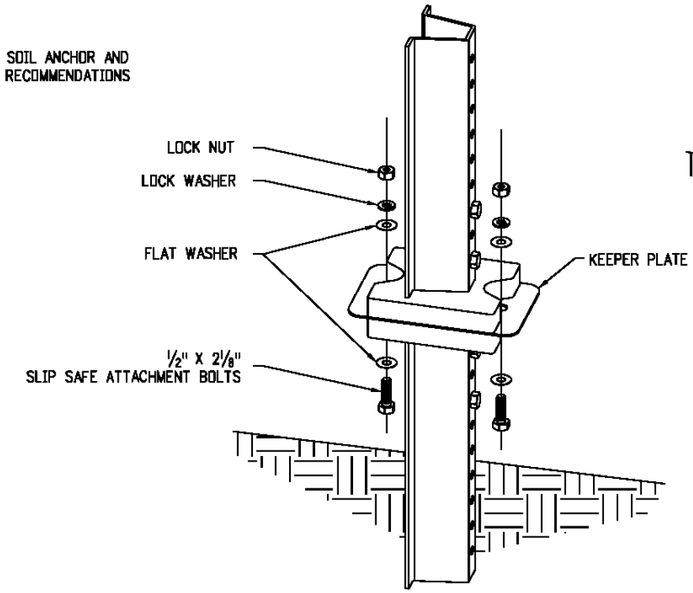
ANCHOR TOP VIEW



ANCHOR FRONT VIEW

GENERAL NOTE:

THE CONTRACTOR SHALL INSTALL THE SOIL ANCHOR AND SLIP BASE PER THE MANUFACTURER'S RECOMMENDATIONS WITHOUT ADDITIONAL COMPENSATION.



NOTE: TIGHTEN NUT ¼ TO ½TURN AFTER SNUG.

STEP 3

MULTI-DIRECTIONAL SLIP BASE POST DETAILS

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12		Date:	Comments
Created By: KEN			
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STEEL SIGN SUPPORT (TEMPORARY) INSTALLATION DETAILS

Issued By: Traffic & Safety Engineering Branch July 31, 2019

STANDARD PLAN NO.
S-630-4
Standard Sheet No. 2 of 2
Project Sheet Number: 254

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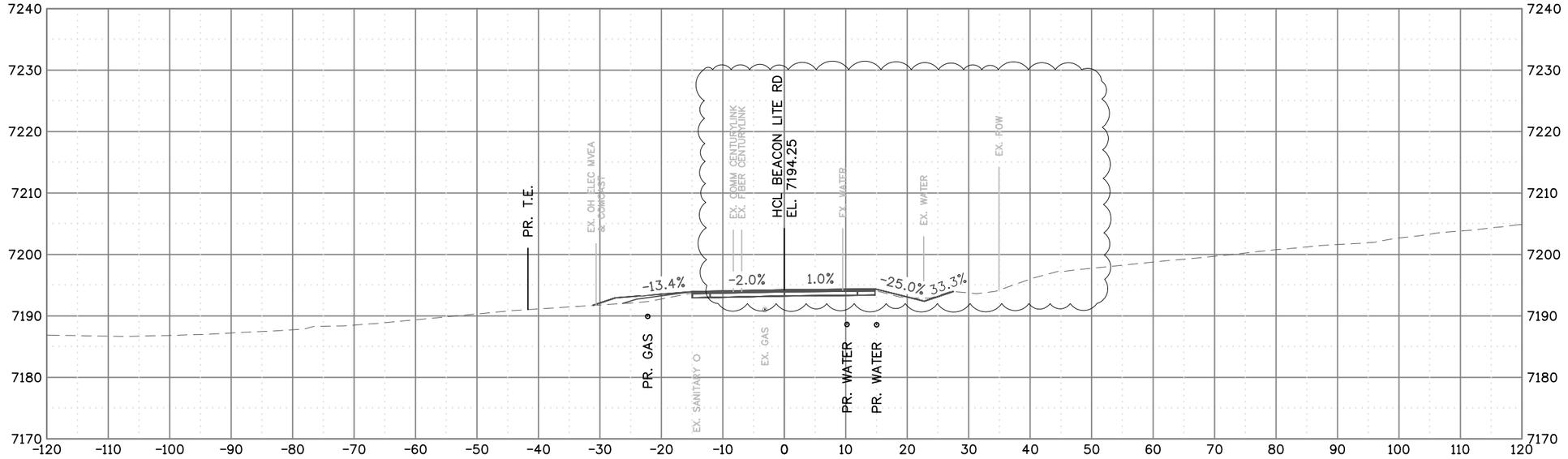

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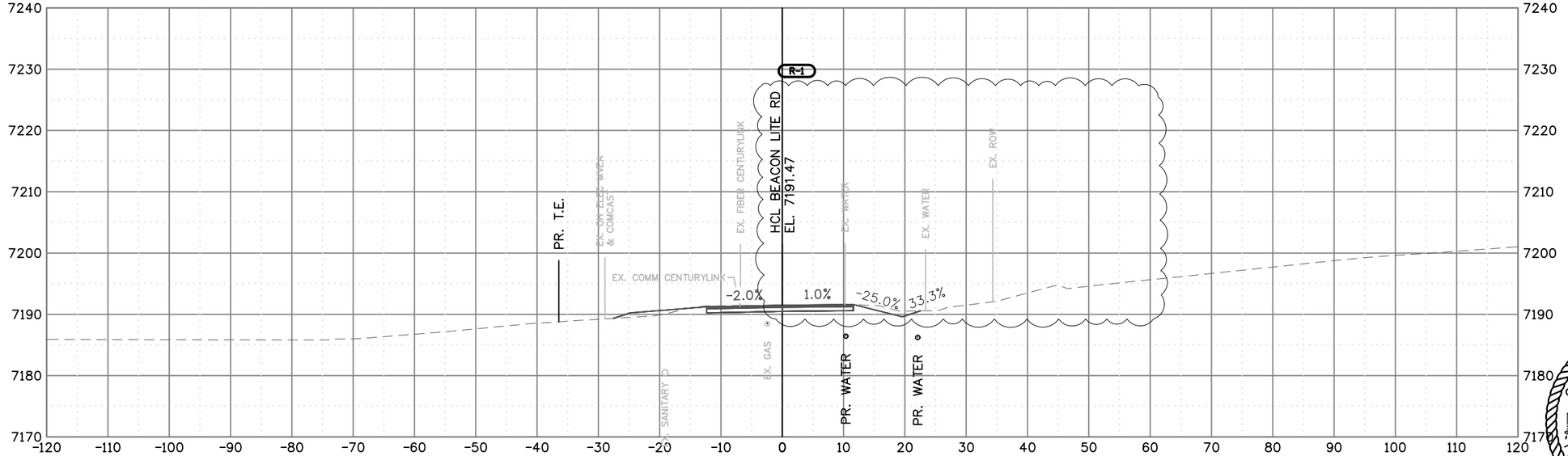


COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
8/31/23
PROFESSIONAL ENGINEER

Print Date: 08/31/2023
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions		
Date:	Comments	Init.
6/01/23	RFC	EMK
8/31/23	UPDATED DRIVEWAY 1	KRS

EL PASO COUNTY
COLORADO

PPRTA

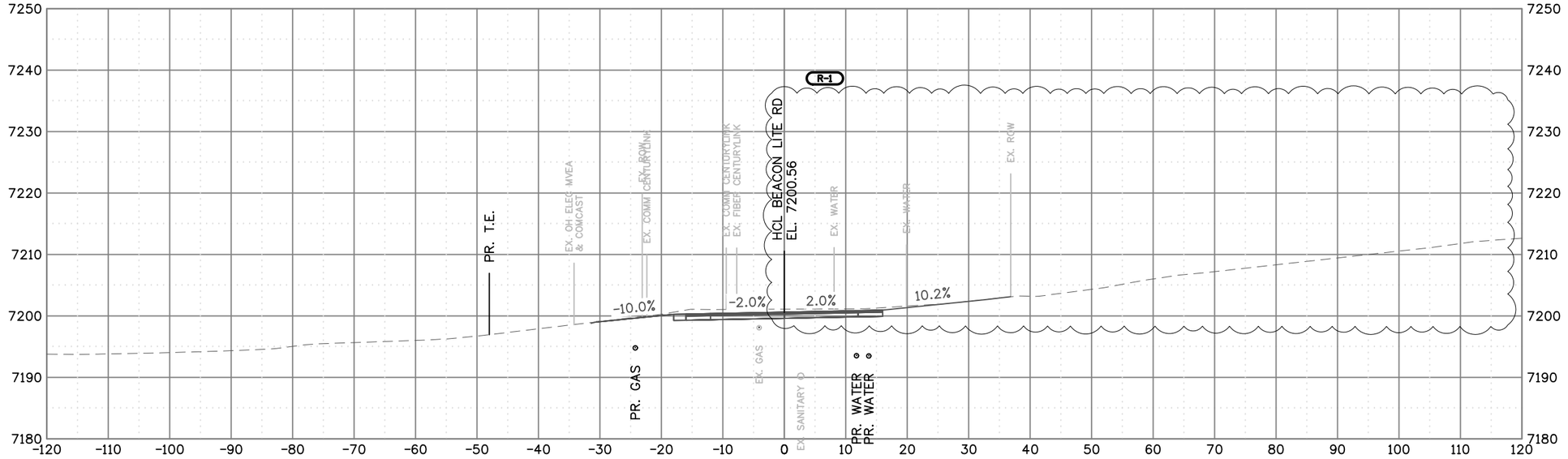
BEACON LITE ROAD IMPROVEMENTS
CROSS SECTIONS

Project No./Code
128558

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	1 OF 44

Sheet Number 255

10+00.00



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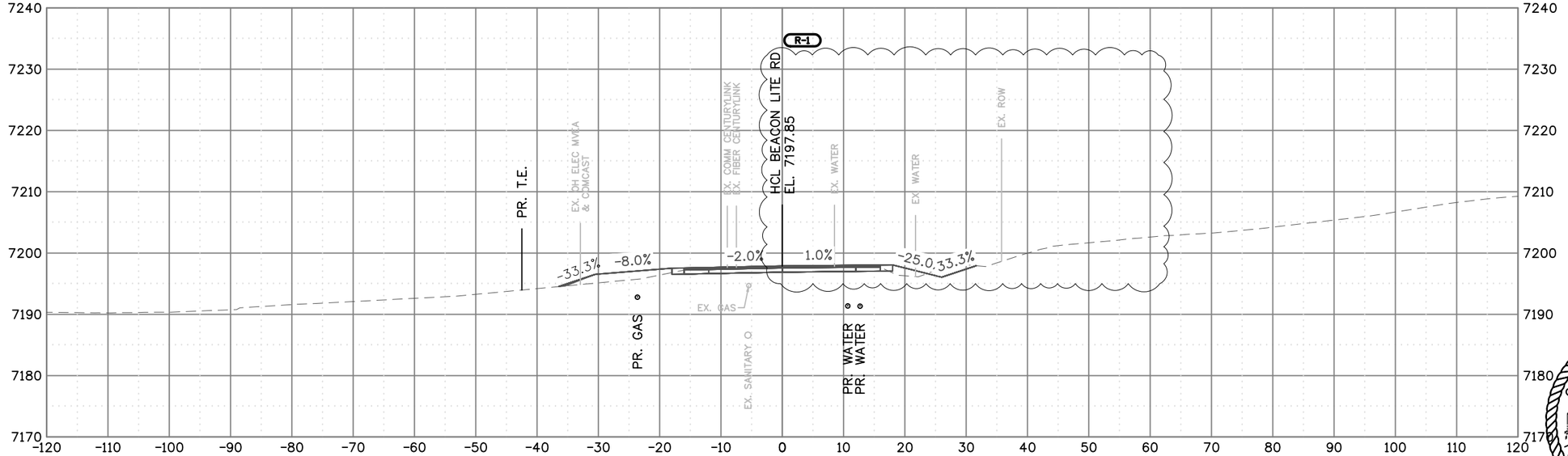

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Print Date: 08/31/2023
File Name: 175644_XS.dwg
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Sheet Revisions

Date:	Comments	Init.
6/01/23	RFC	EMK
8/31/23	UPDATED DRIVEWAY 1	KRS

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BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Designer: EMK
Detailer: RBR
Sheet Subset: ROADWAY
Structure Numbers:
Subset Sheets: 2 OF 44

Project No./Code
128558

Sheet Number 256

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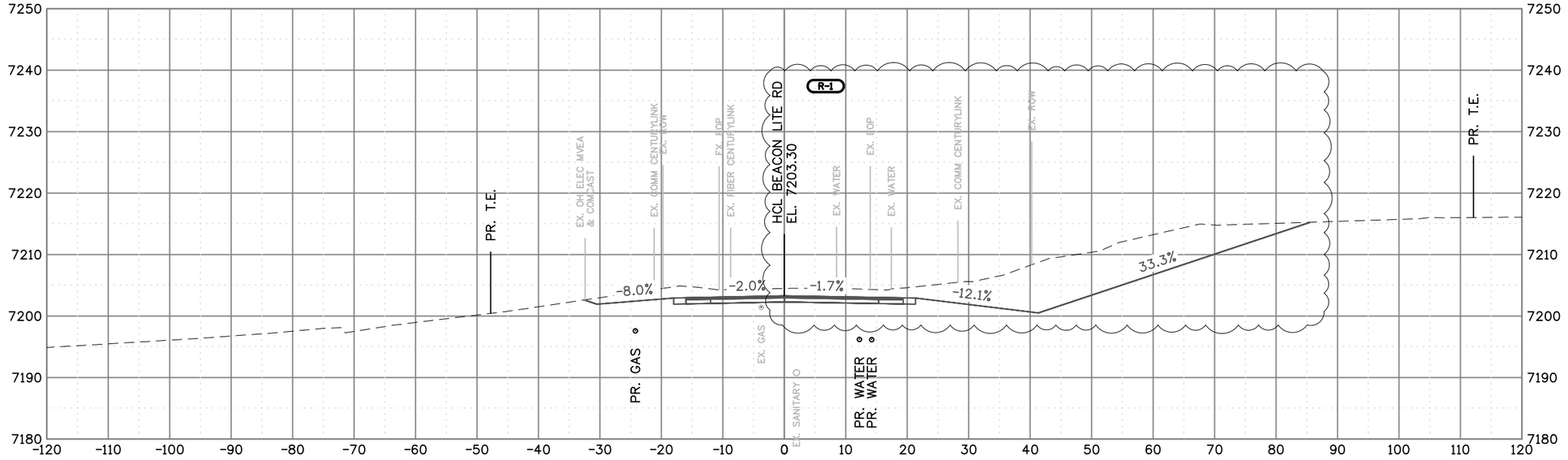

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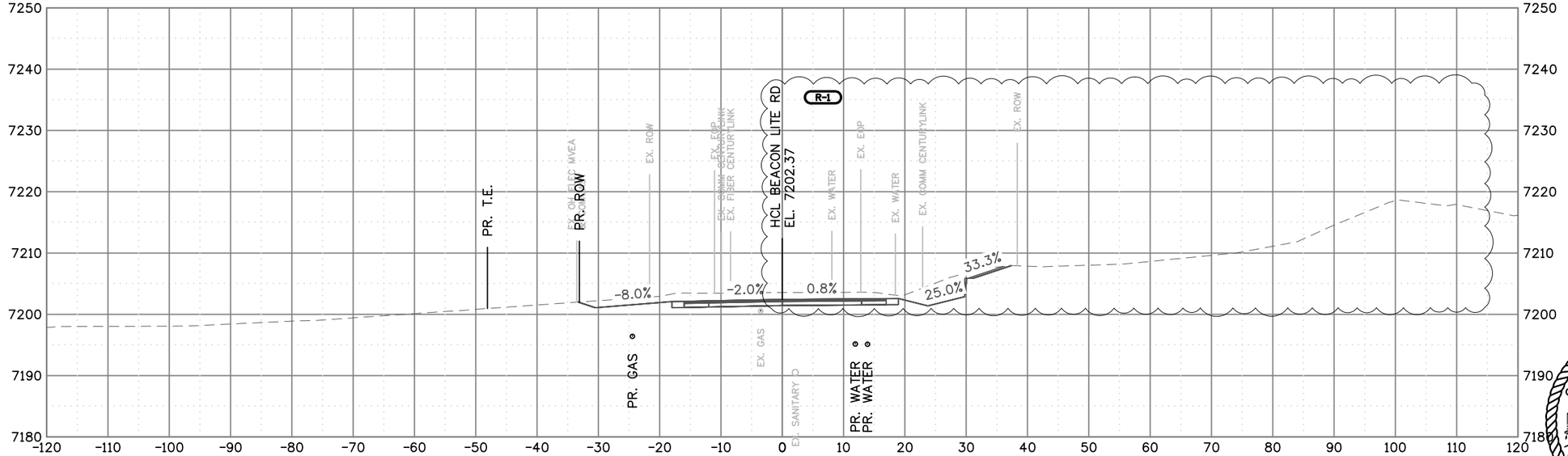

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Print Date:	08/31/2023
File Name:	175644_XS.dwg
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Sheet Revisions

Date:	Comments	Init.
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BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	3 OF 44

Project No./Code
128558

Sheet Number 257

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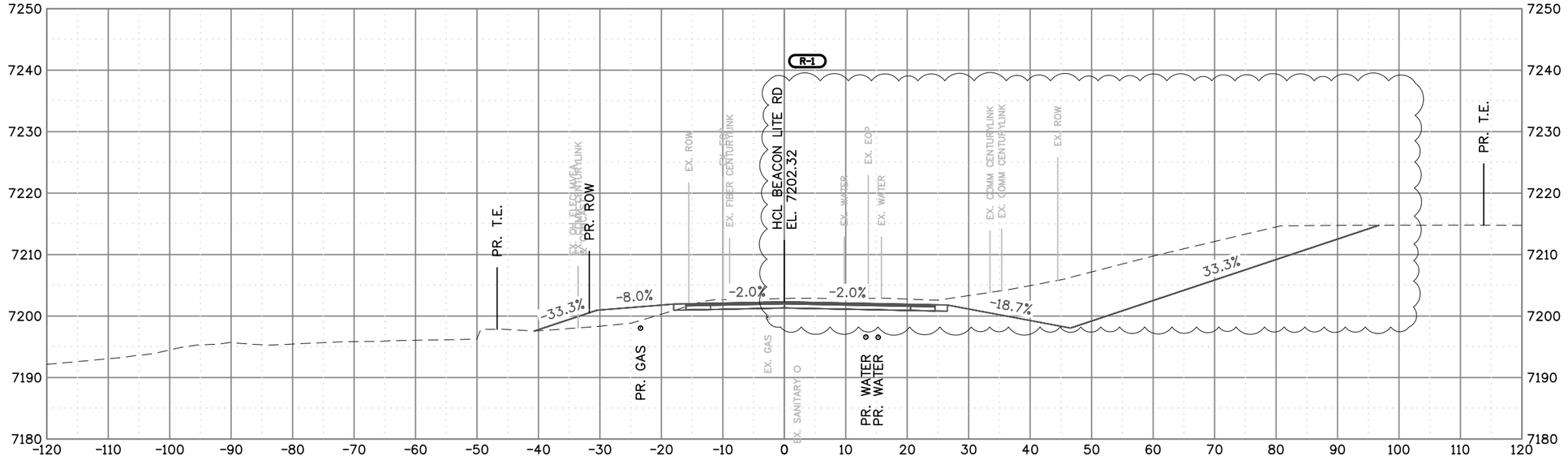

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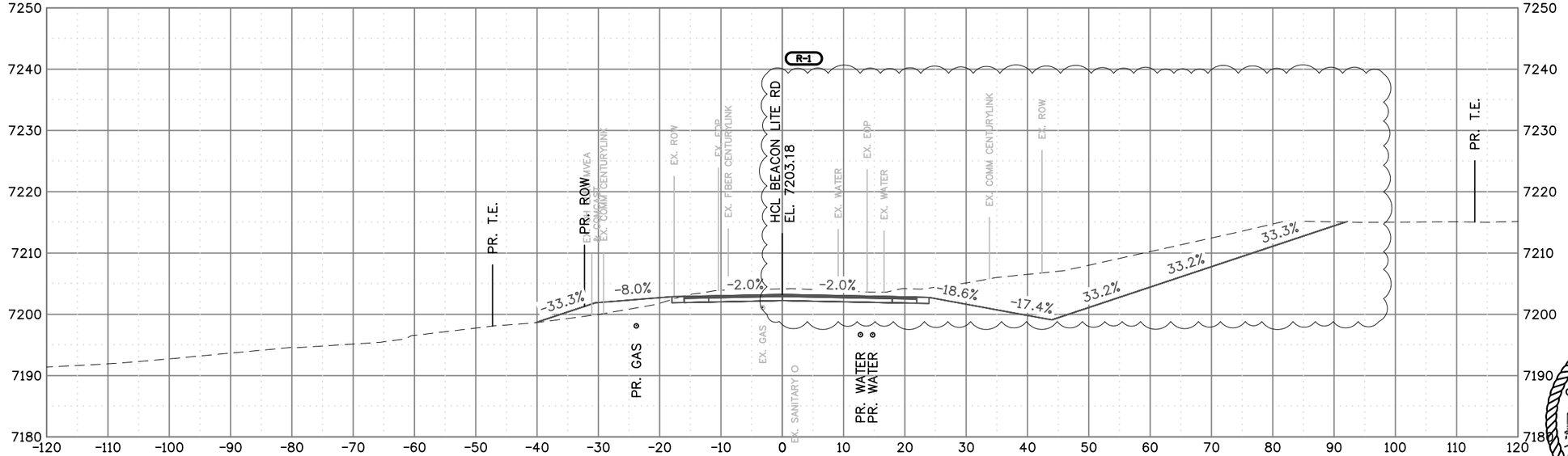

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File Name: 175644_XS.dwg
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Sheet Revisions

Date:	Comments	Init.
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BEACON LITE ROAD IMPROVEMENTS
CROSS SECTIONS

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	4 OF 44

Project No./Code
128558

Sheet Number 258

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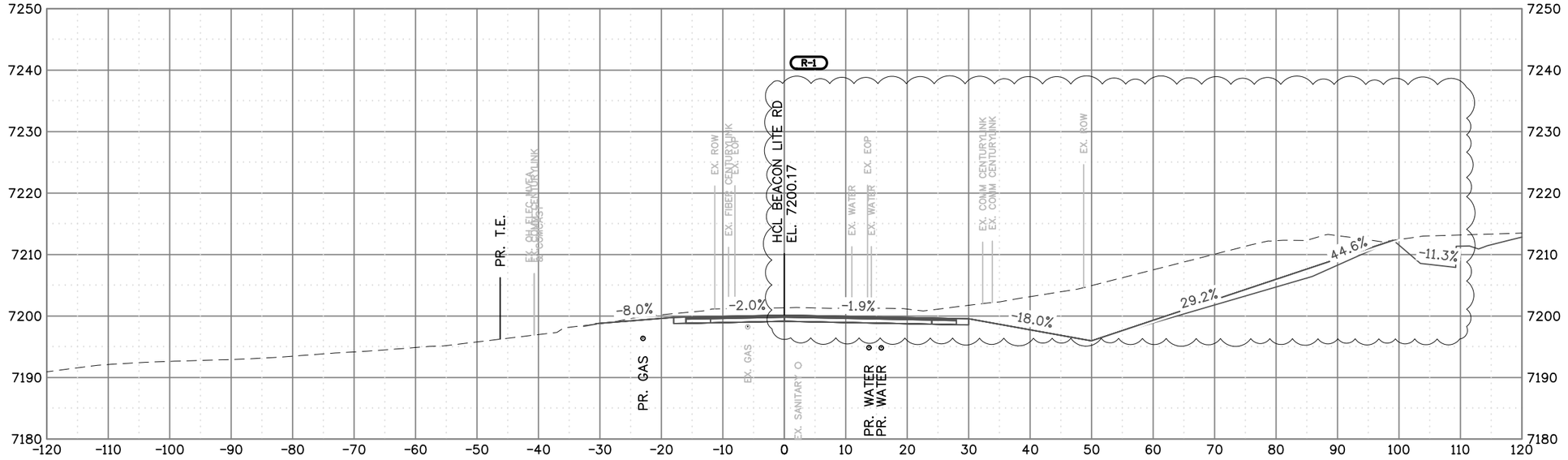

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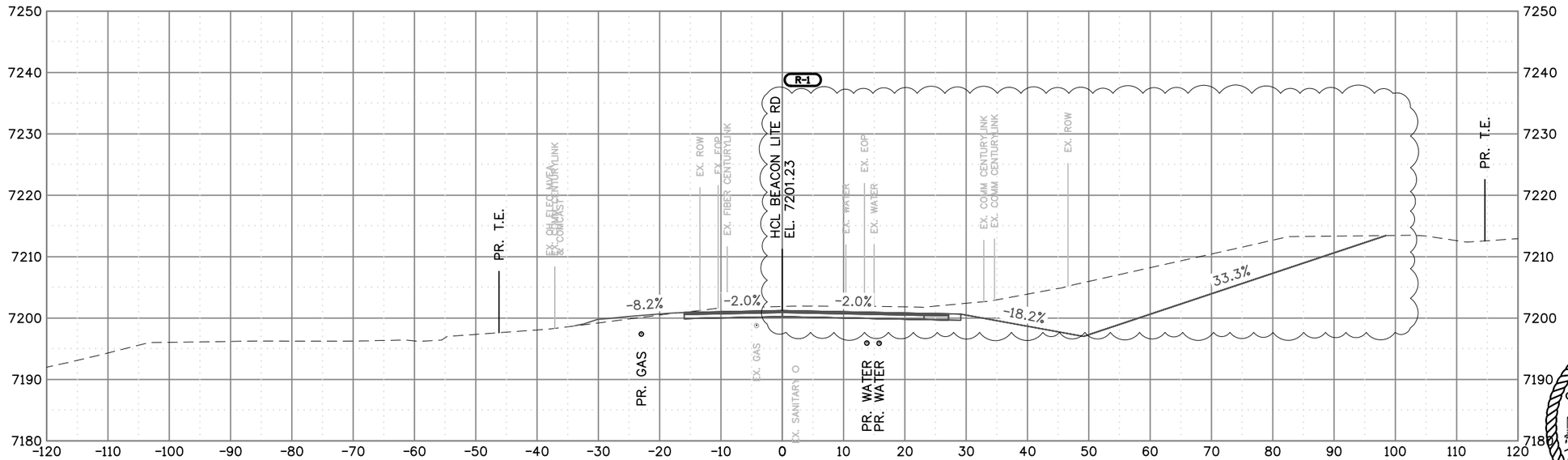

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Date:	Comments	Init.
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8/31/23	UPDATED DRIVEWAY 1	KRS

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BEACON LITE ROAD IMPROVEMENTS
CROSS SECTIONS

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	5 OF 44

Project No./Code
128558

Sheet Number 259

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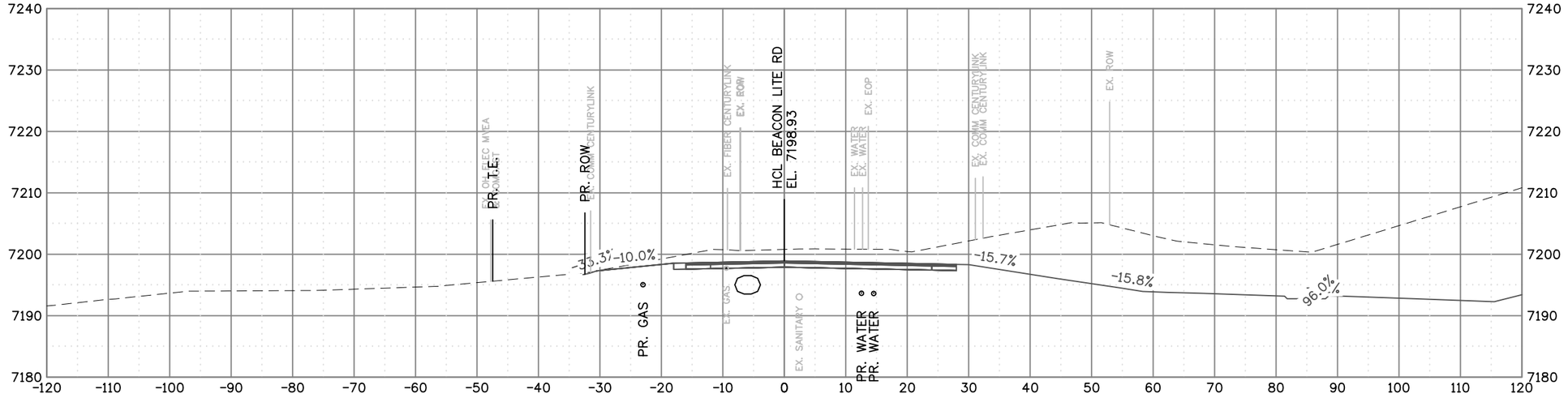

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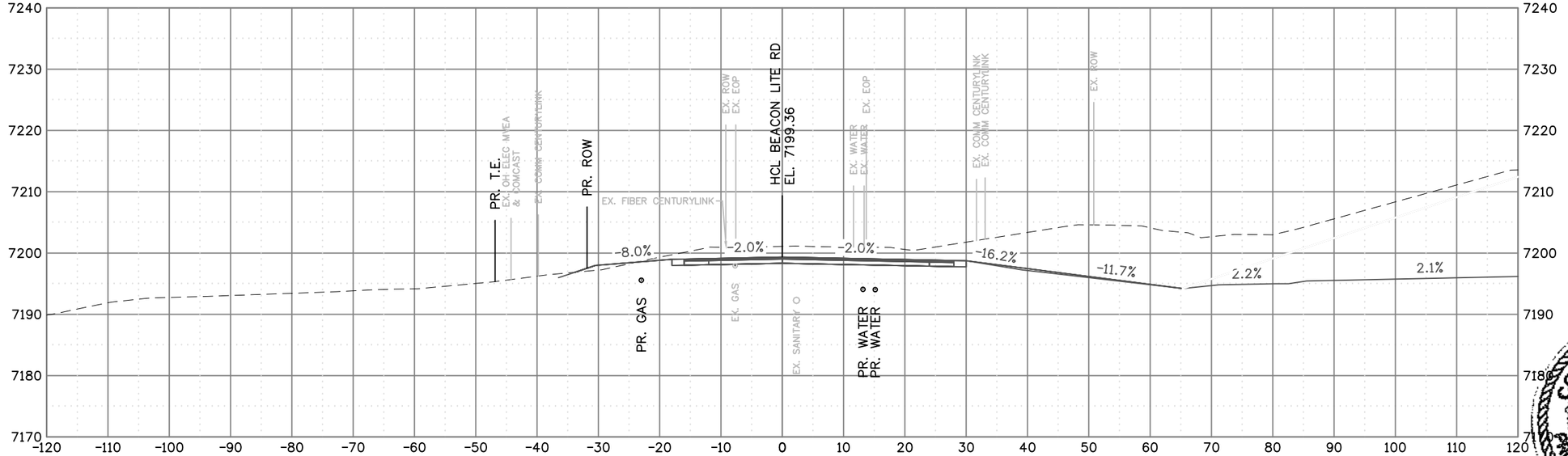

COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022			
File Name: 175644_XS.dwg			
Horiz. Scale: 1"=20'	Vert. Scale: 1"=20'		
Unit Information	Unit Leader Initials		

Michael Baker INTERNATIONAL
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Sheet Revisions

Date:	Comments	Init.

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COLORADO

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BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	6 OF 44

Project No./Code
128558

Sheet Number 260

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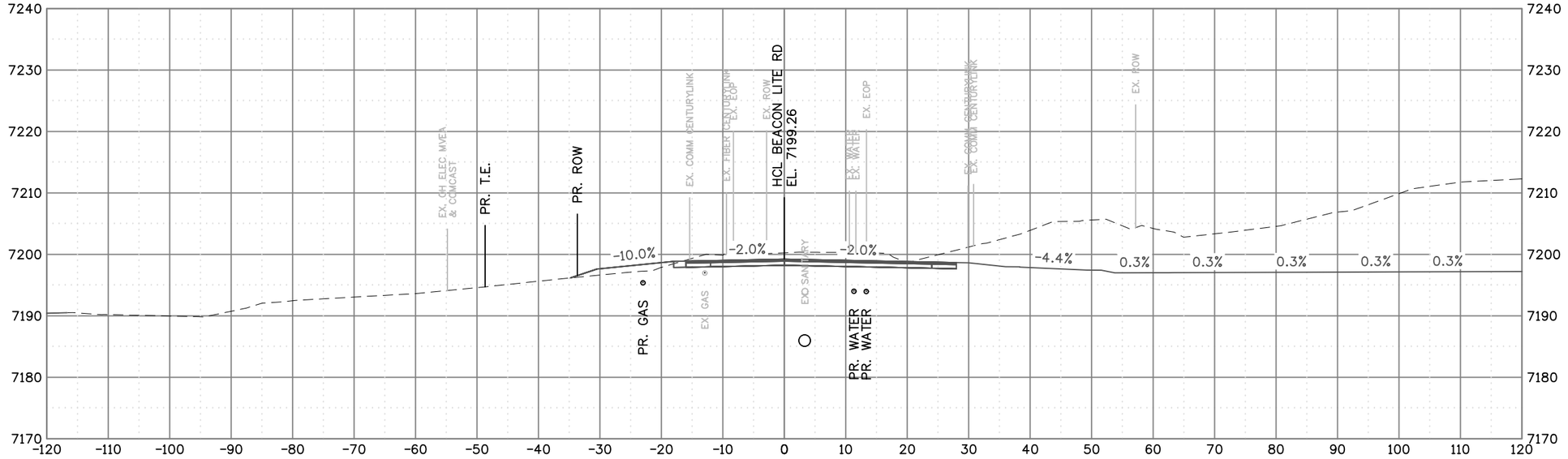

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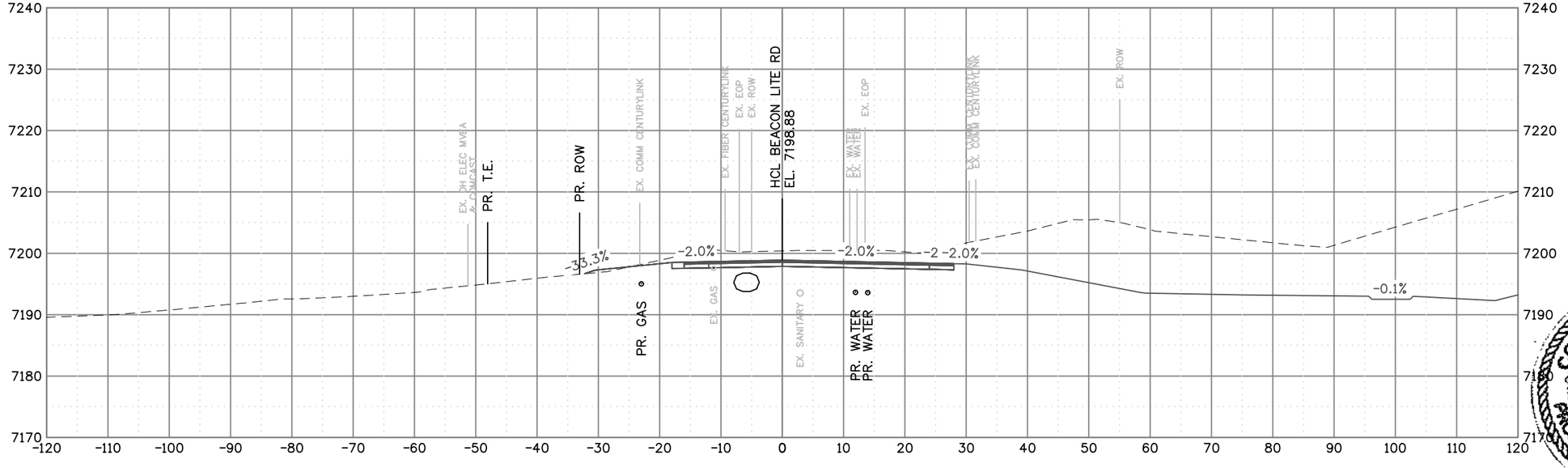

COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

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Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
CROSS SECTIONS

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	7 OF 44

Project No./Code
128558

Sheet Number 261

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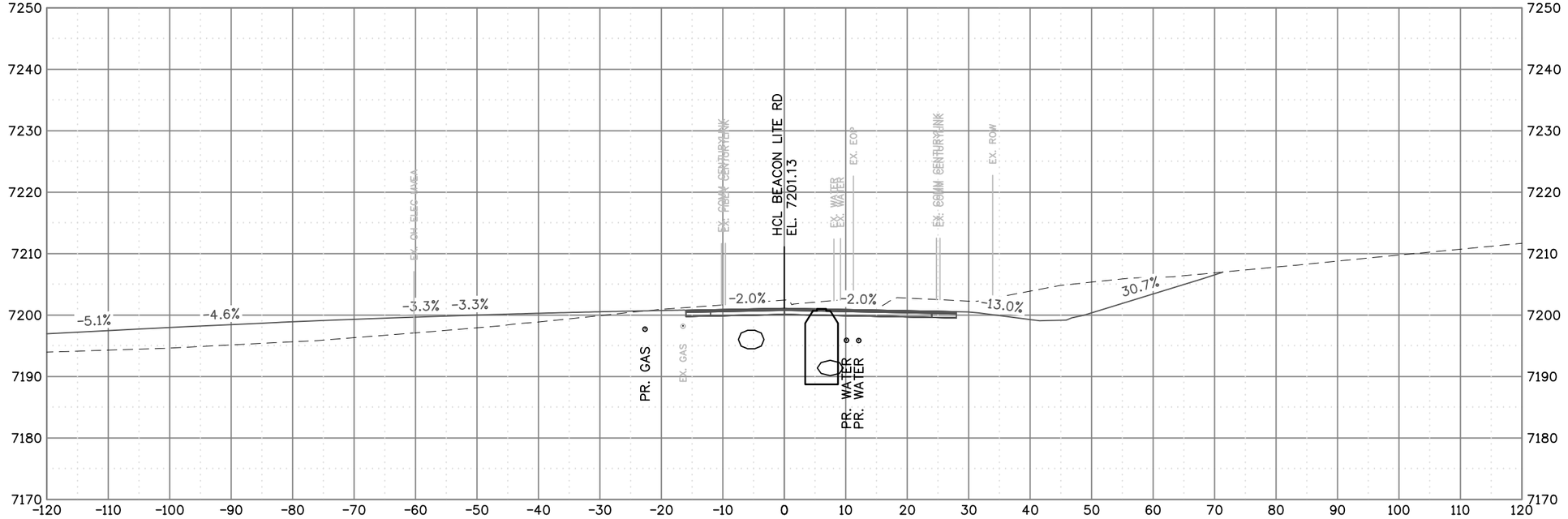

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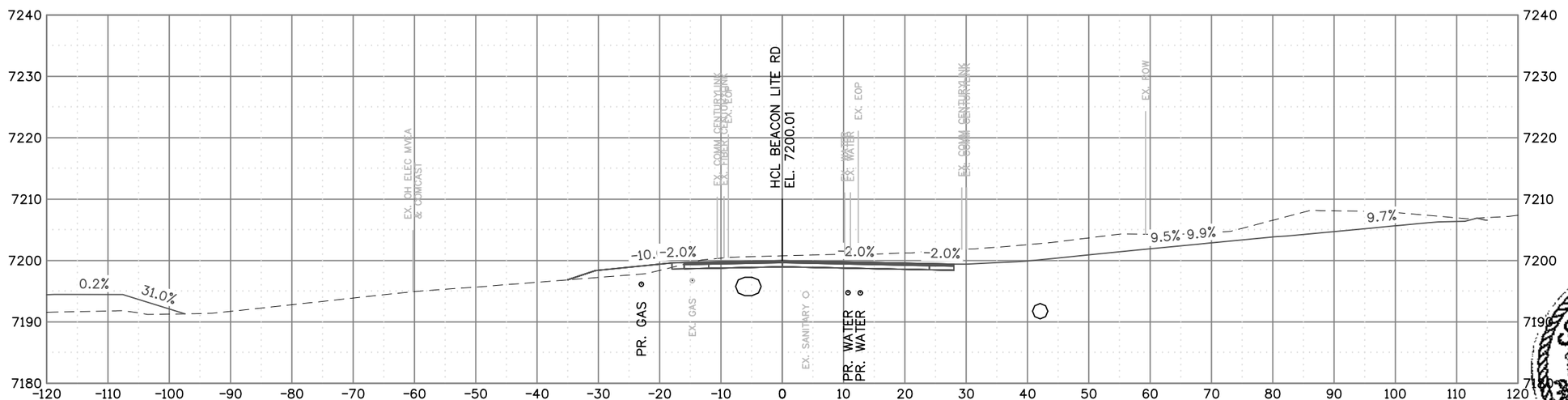

COLORADO LICENSED
ERIC M. KING
44932
4/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022		Sheet Revisions	
File Name: 175644_XS.dwg		Date:	Comments / Init.
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'			
Unit Information Unit Leader Initials			

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
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BEACON LITE ROAD IMPROVEMENTS
CROSS SECTIONS

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	8 OF 44

Project No./Code
128558

Sheet Number 262

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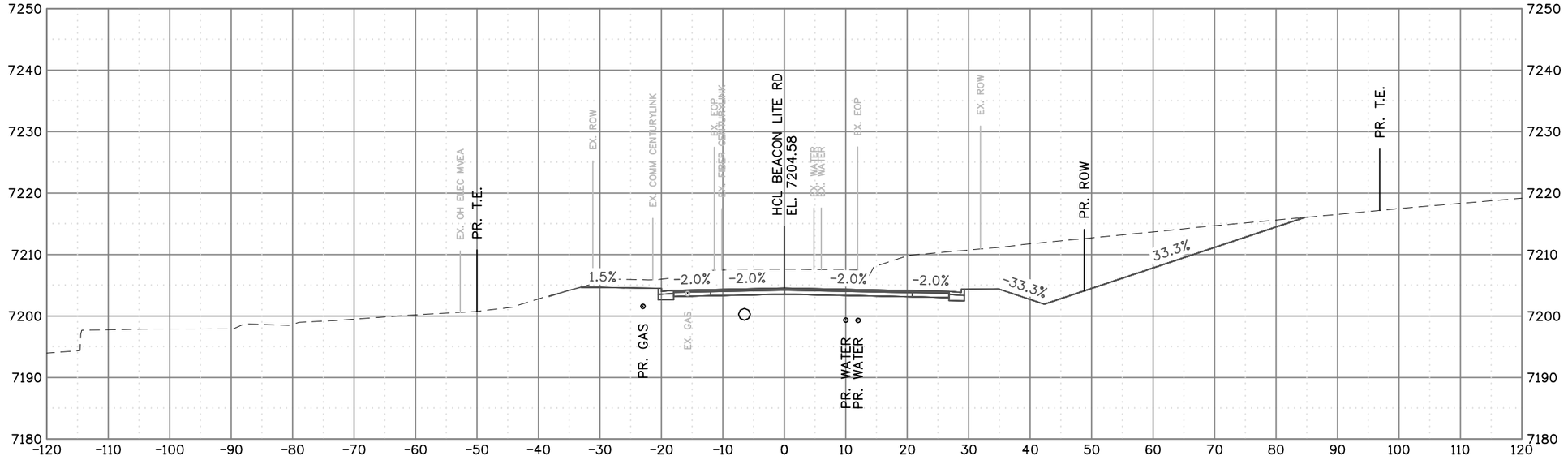

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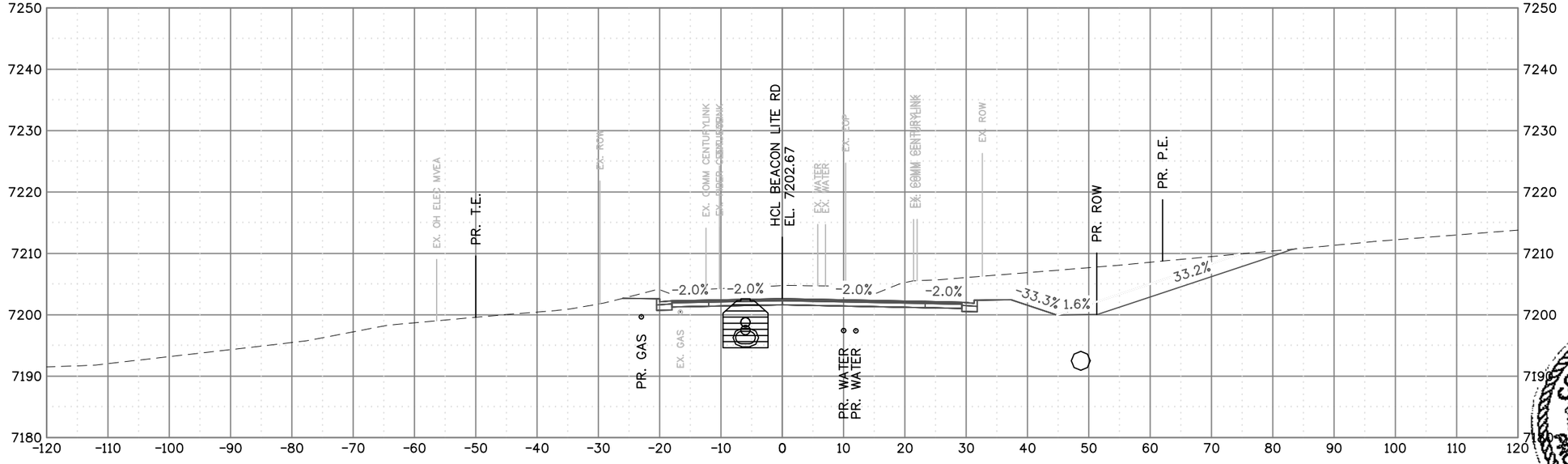

COLORADO LICENSED
ERIC M. KING
44937
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

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Date:	Comments	Init.

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BEACON LITE ROAD IMPROVEMENTS
CROSS SECTIONS

Project No./Code
128558

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	9 OF 44

Sheet Number 263

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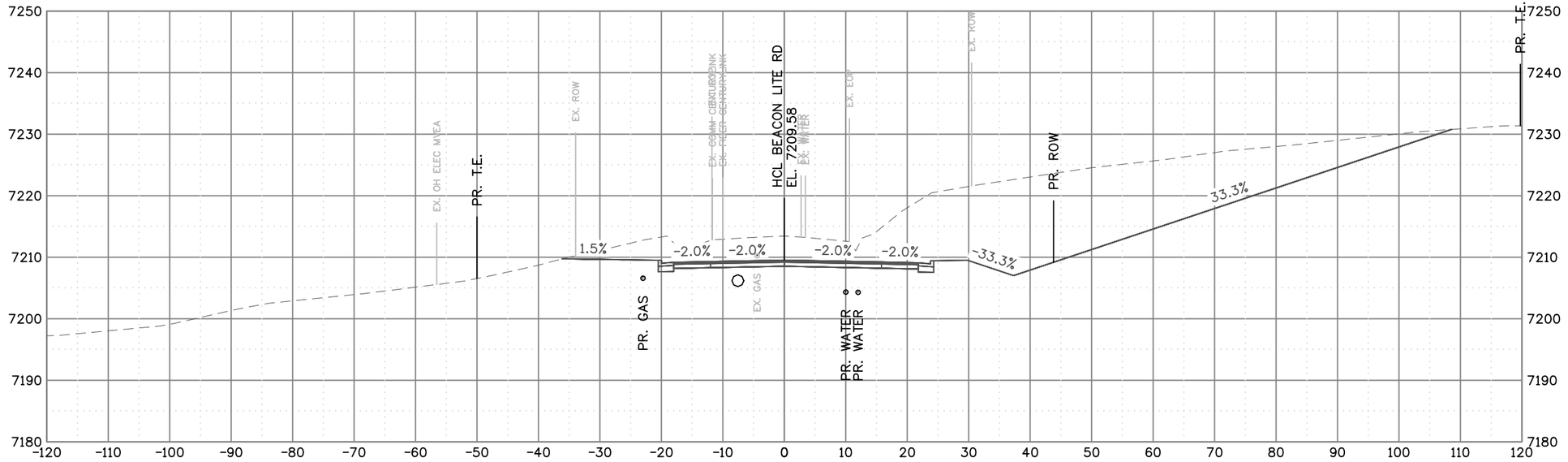

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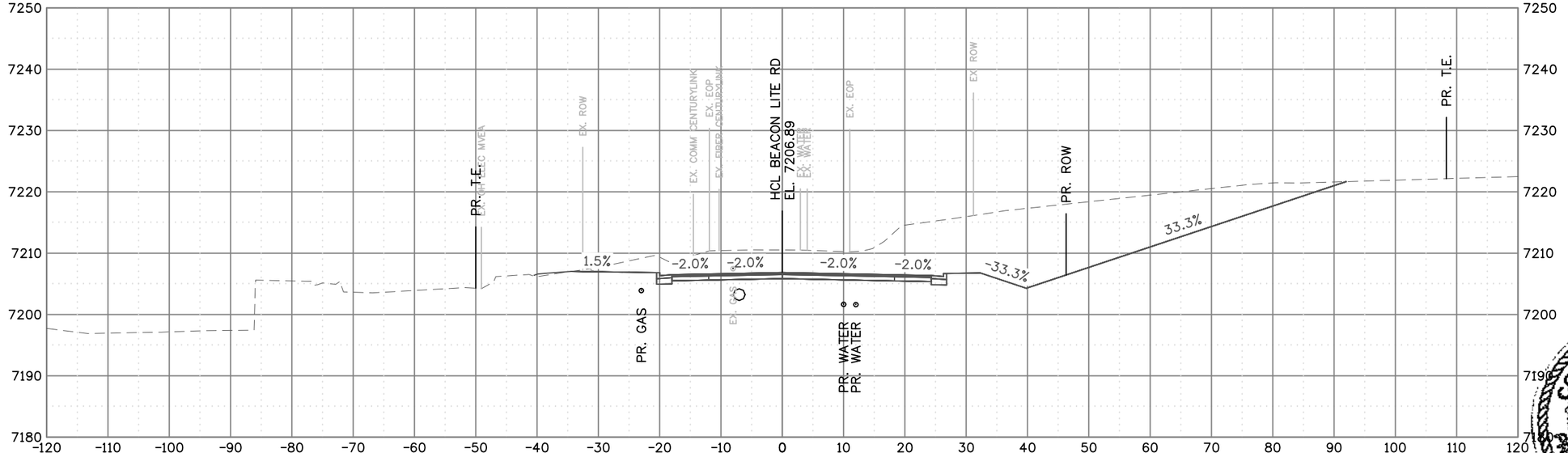

COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

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Date:	Comments	Init.

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BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	10 OF 44

Project No./Code
128558

Sheet Number 264

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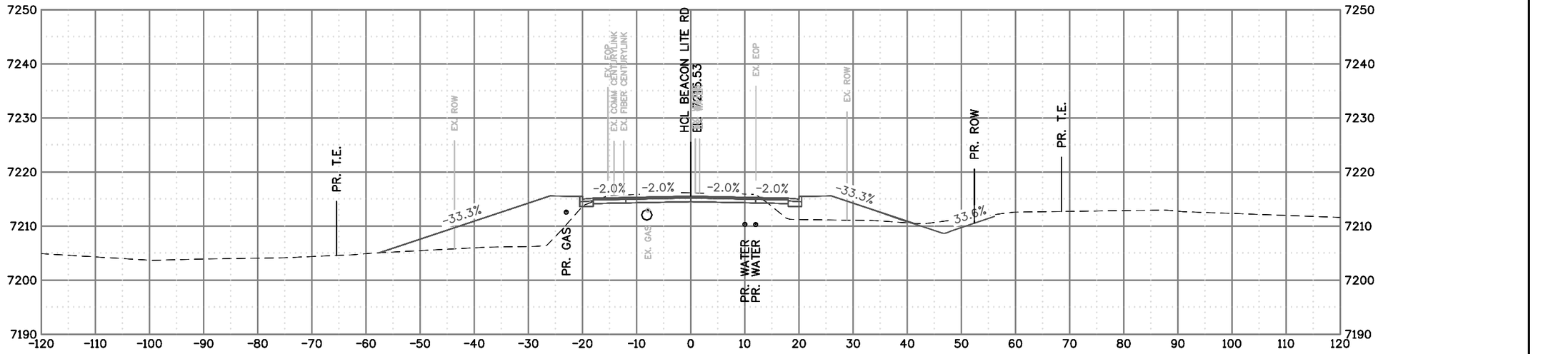

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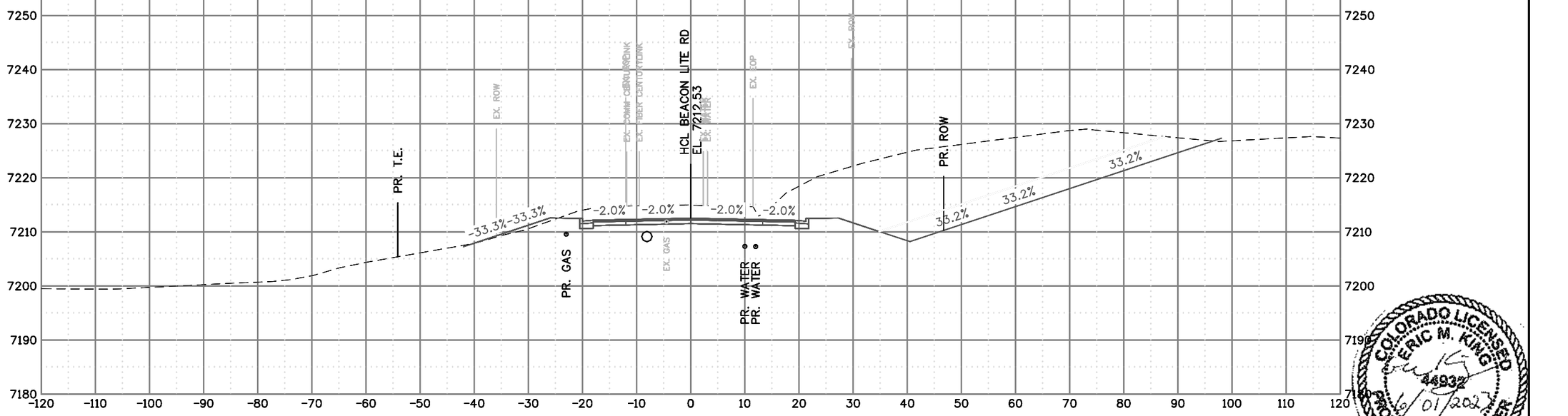

COLORADO LICENSED
ERIC M. KING
44932
04/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
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Sheet Revisions

Date:	Comments	Init.

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BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Project No./Code 128558

Designer: EMK
Detailer: RBR
Sheet Subset: ROADWAY
Structure Numbers
Subset Sheets: 11 OF 44

Sheet Number 265

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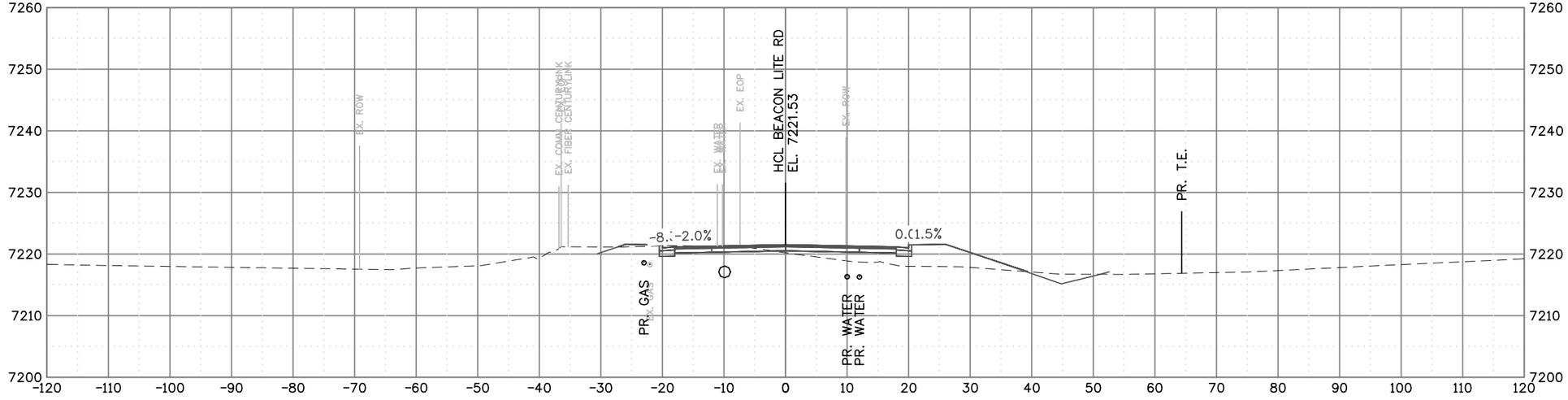

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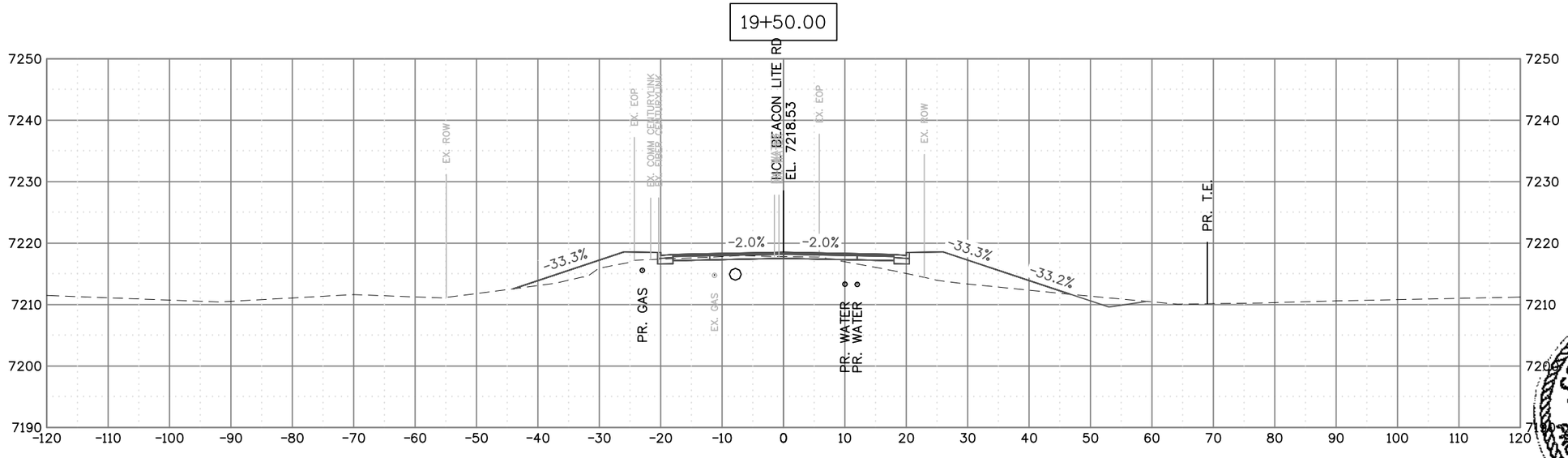

COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

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MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
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720.514.1100

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Sheet Revisions

Date:	Comments	Init.

EL PASO COUNTY
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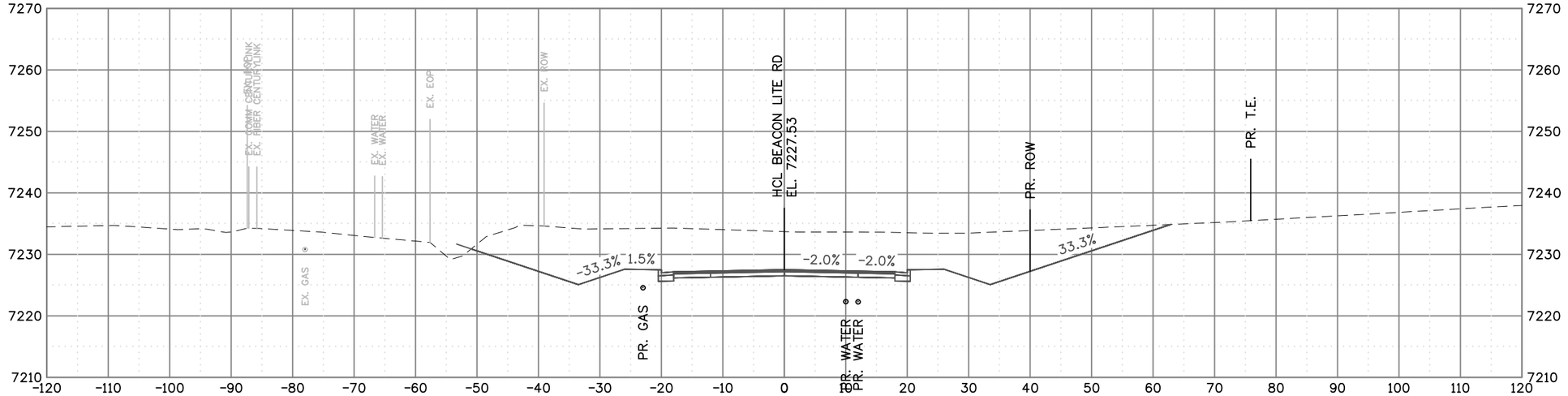
BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Project No./Code: 128558

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	12 OF 44

Sheet Number 266

21+00.00



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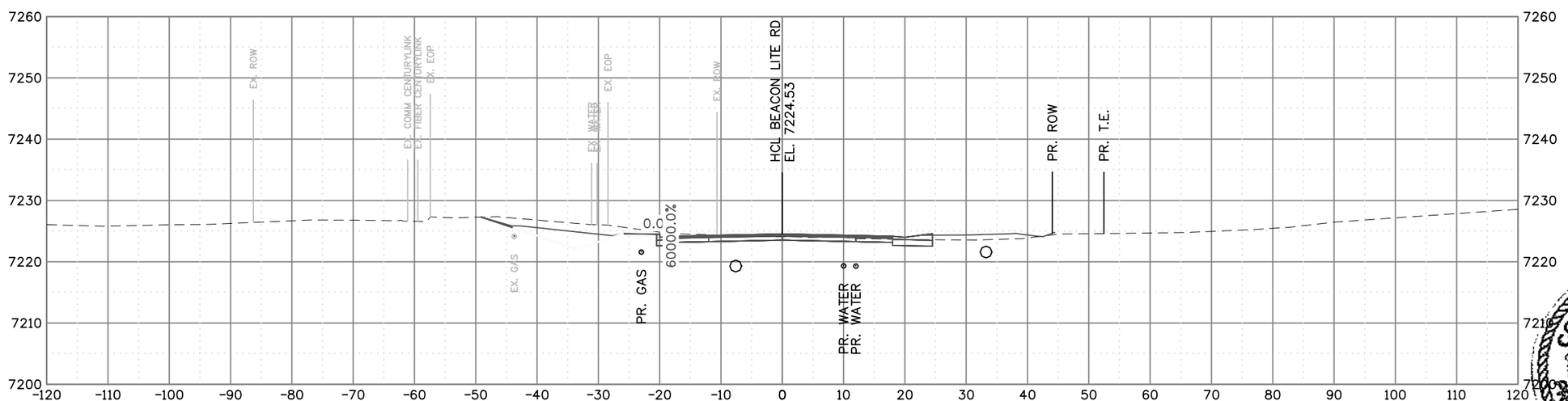

COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

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Sheet Revisions

Date:	Comments	Init.

EL PASO COUNTY
COLORADO

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BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Project No./Code 128558

Designer: EMK
Detailer: RBR
Sheet Subset: ROADWAY
Structure Numbers
Subset Sheets: 13 OF 44

Sheet Number 267

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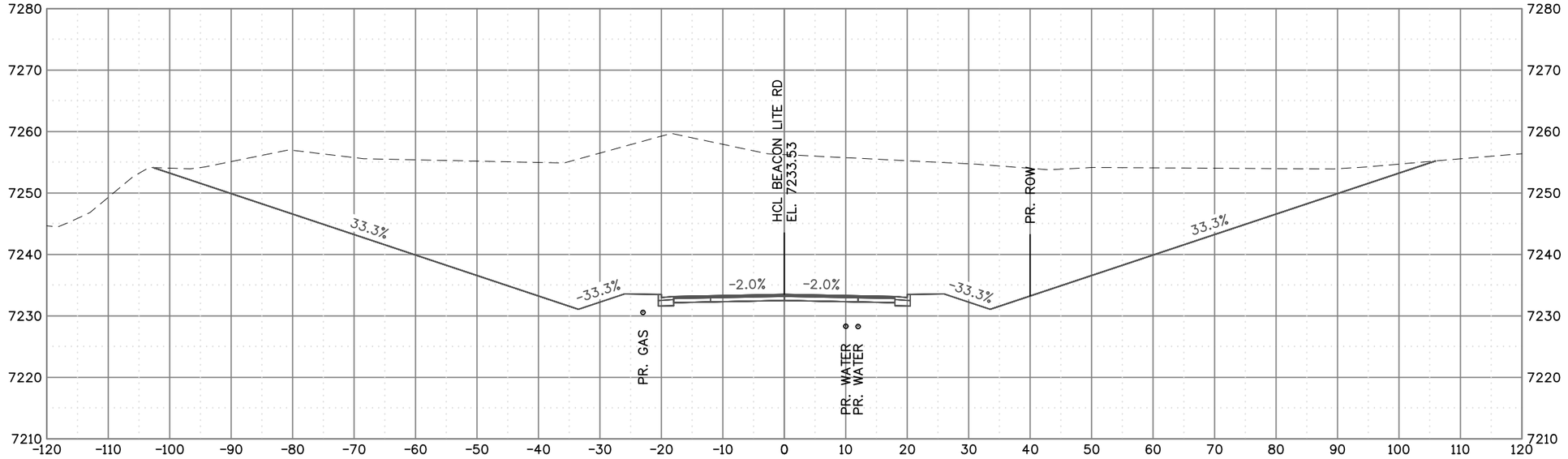

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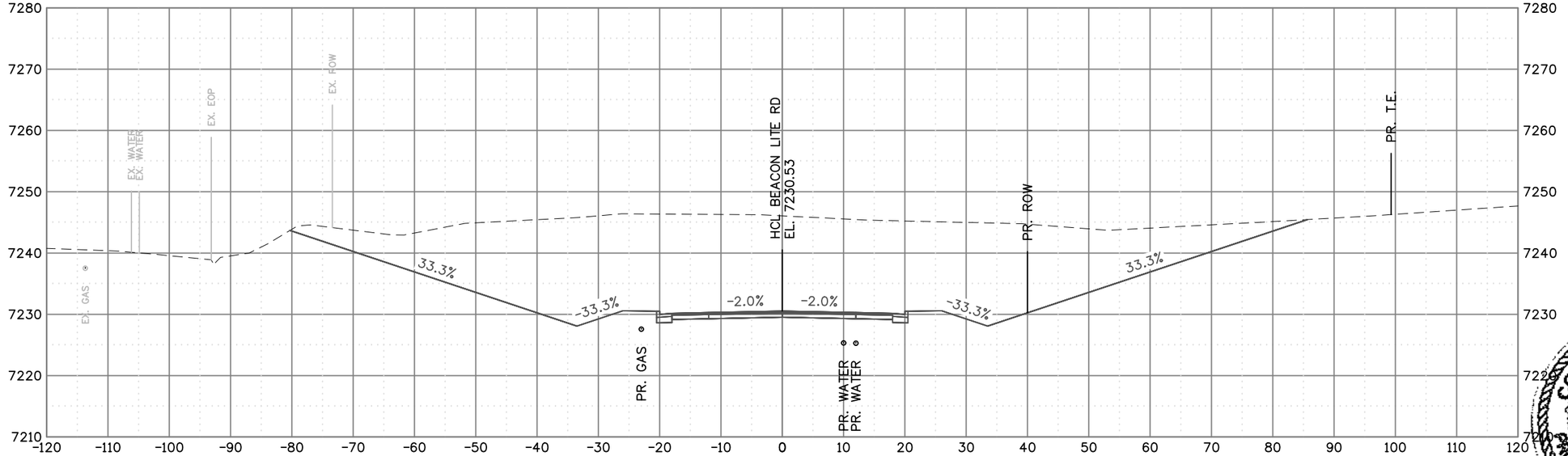

COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

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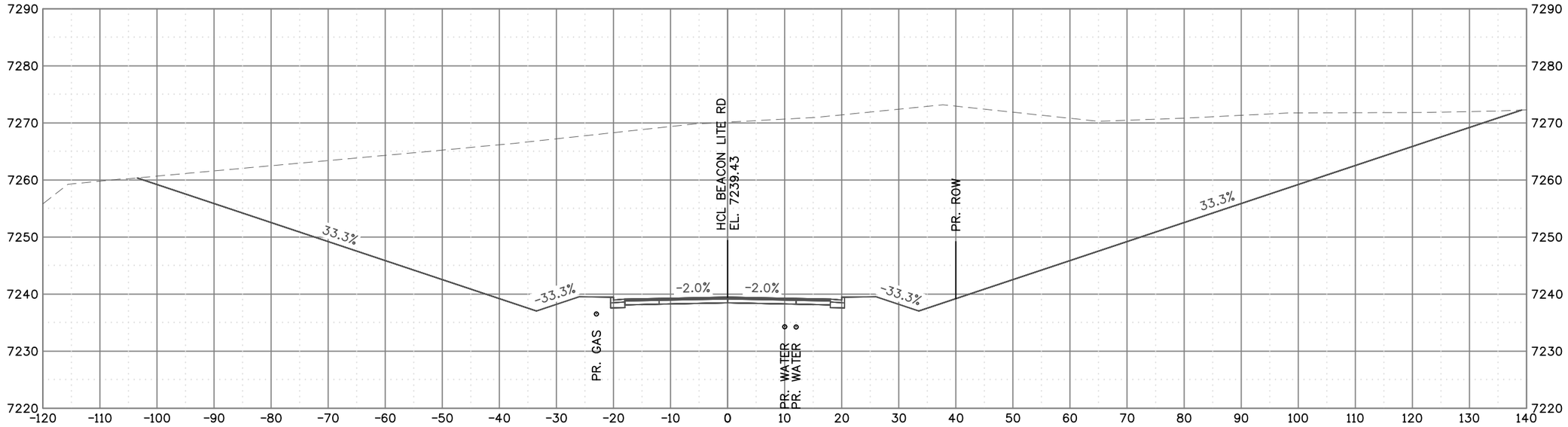
BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Designer: EMK
Detailer: RBR
Sheet Subset: ROADWAY
Structure Numbers:
Subset Sheets: 14 OF 44

Project No./Code
128558

Sheet Number 268

23+00.00



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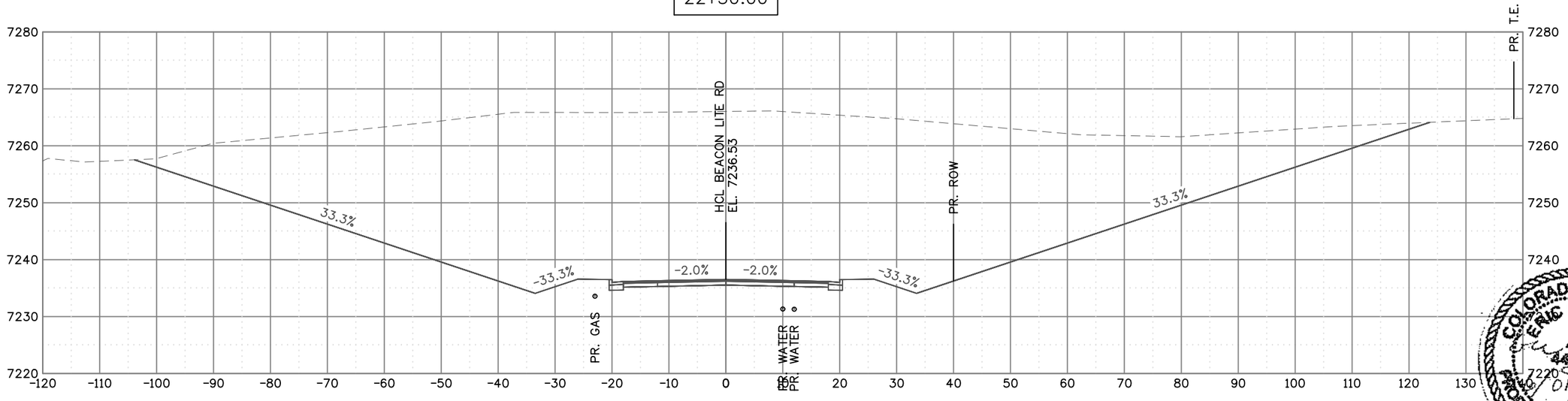

COLORADO LICENSED
ERIC M. KING
44937
01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

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Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

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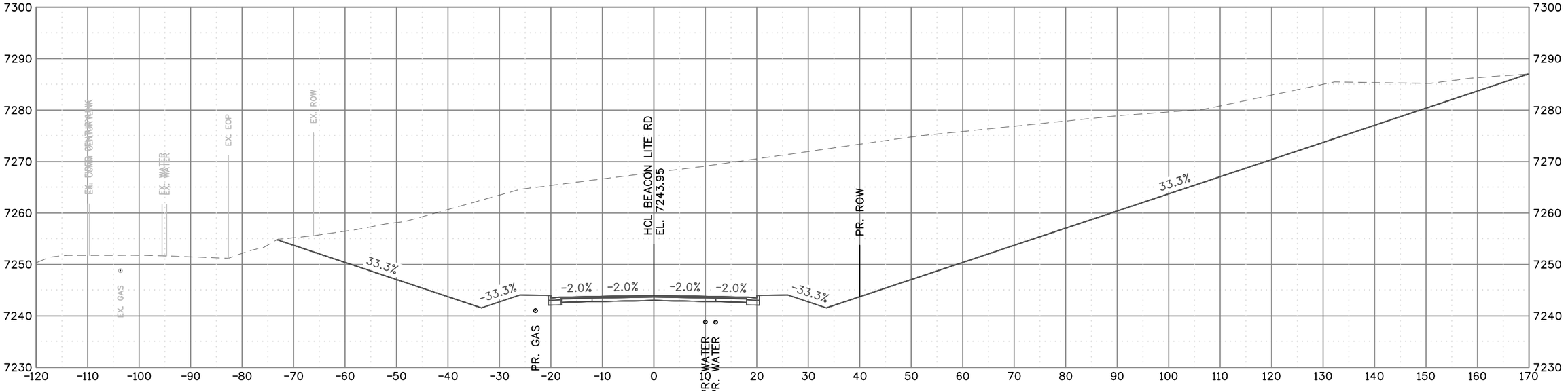
BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	15 OF 44

Project No./Code
128558

Sheet Number 269

24+00.00



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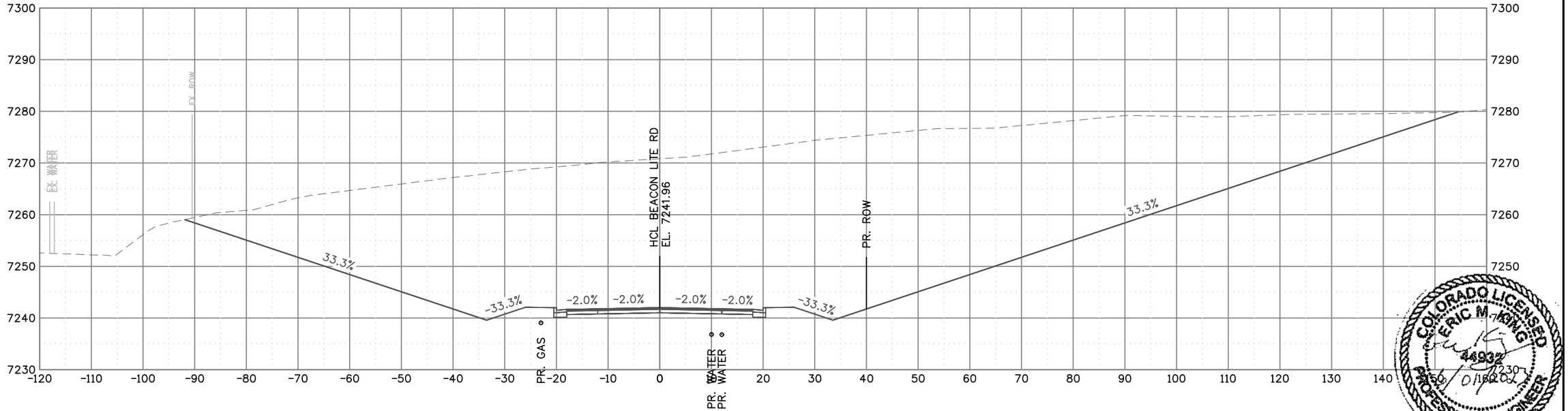

COLORADO LICENSED
ERIC M. KING
44934
01/26/22
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

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Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

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BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	16 OF 44

Project No./Code
128558

Sheet Number 270

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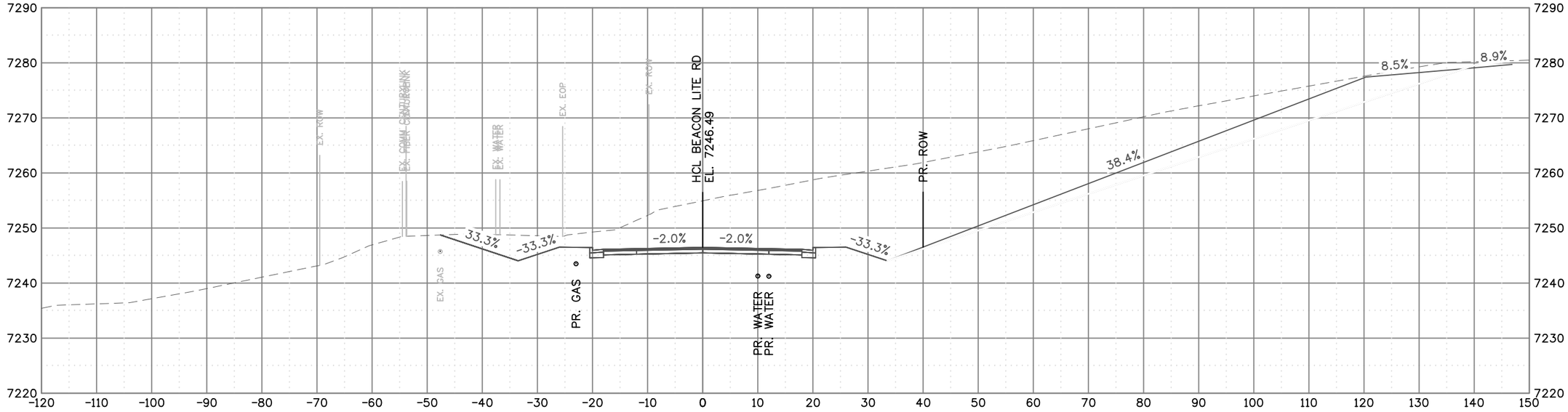

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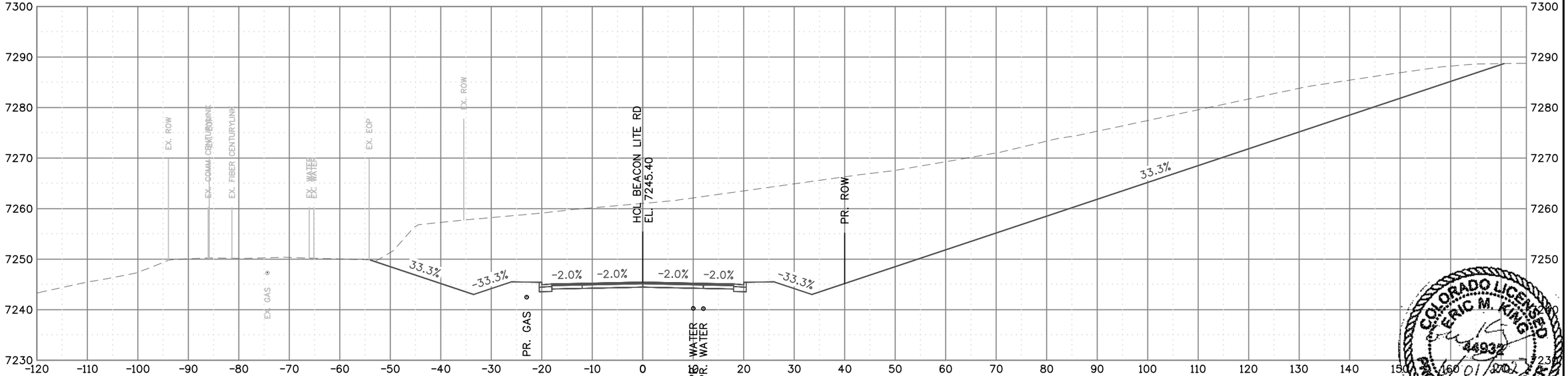

COLORADO LICENSED
ERIC M. KING
44934
11/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022			
File Name: 175644_XS.dwg			
Horiz. Scale: 1"=20'	Vert. Scale: 1"=20'		
Unit Information	Unit Leader Initials		

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
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Sheet Revisions

Date:	Comments	Init.

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	17 OF 44

Project No./Code: 128558

Sheet Number 271

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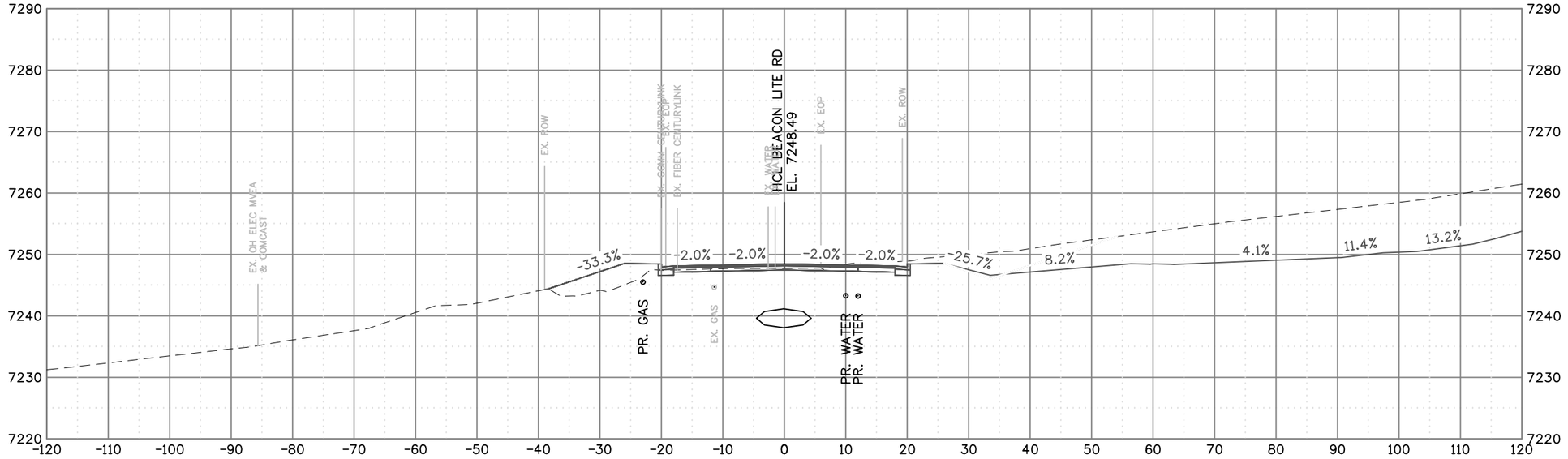

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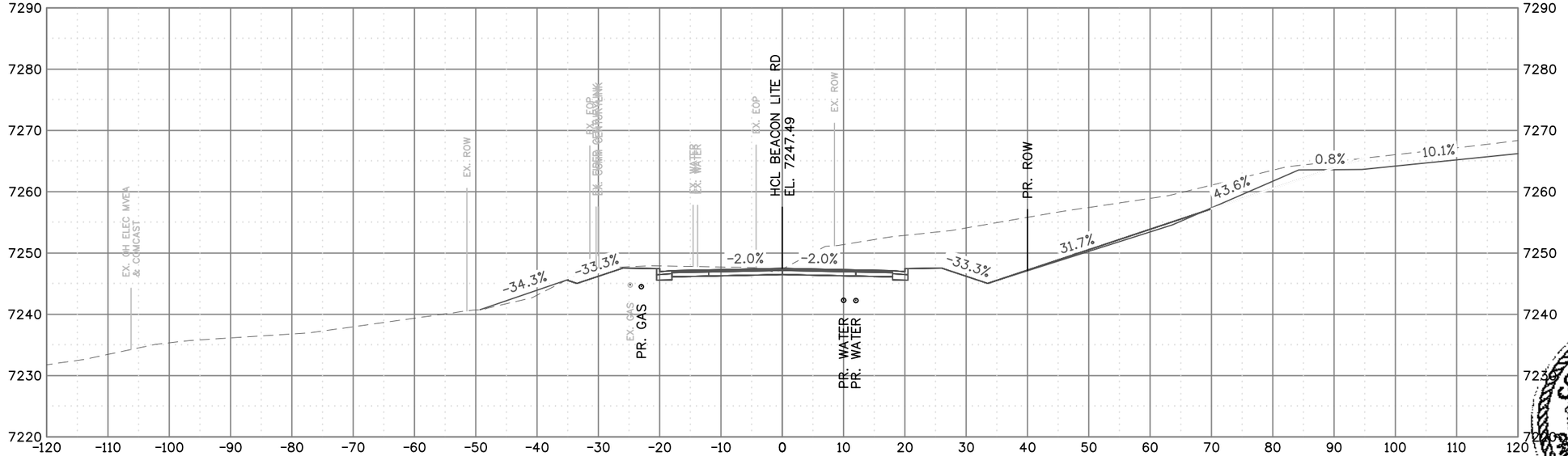

COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
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Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
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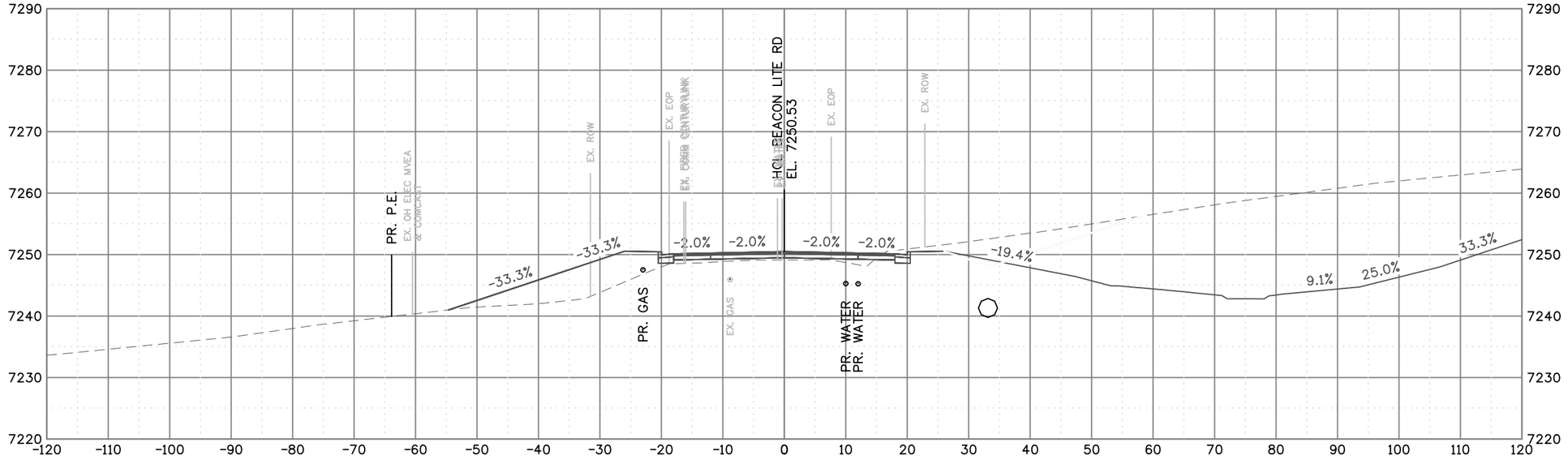
BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	18 OF 44

Project No./Code
128558

Sheet Number 272

27+00.00



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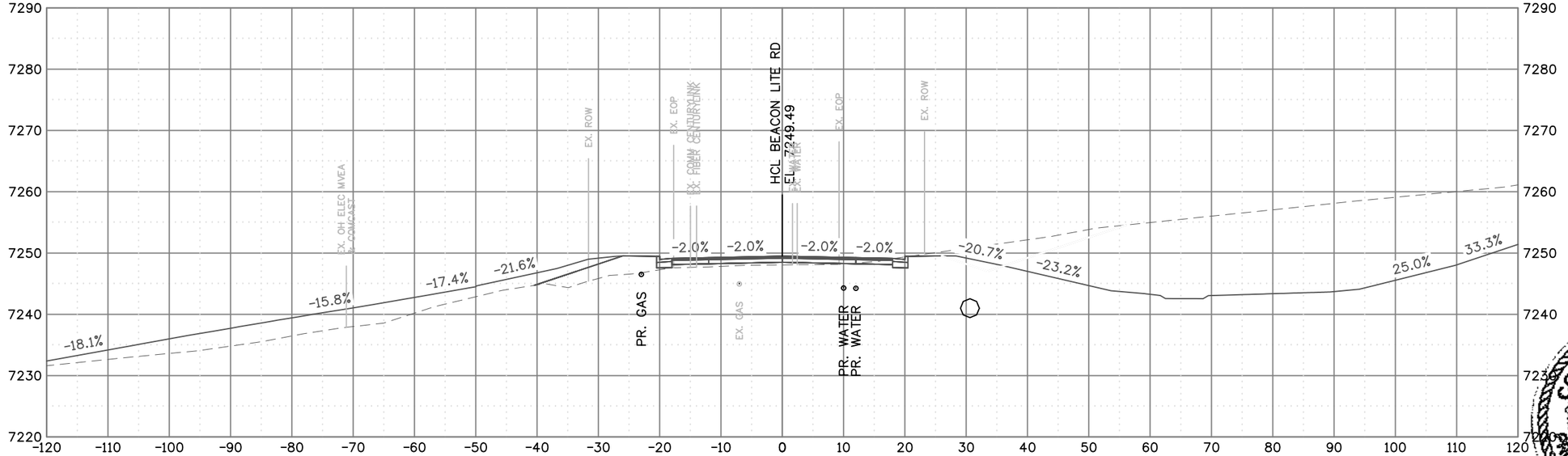

COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

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MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
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Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

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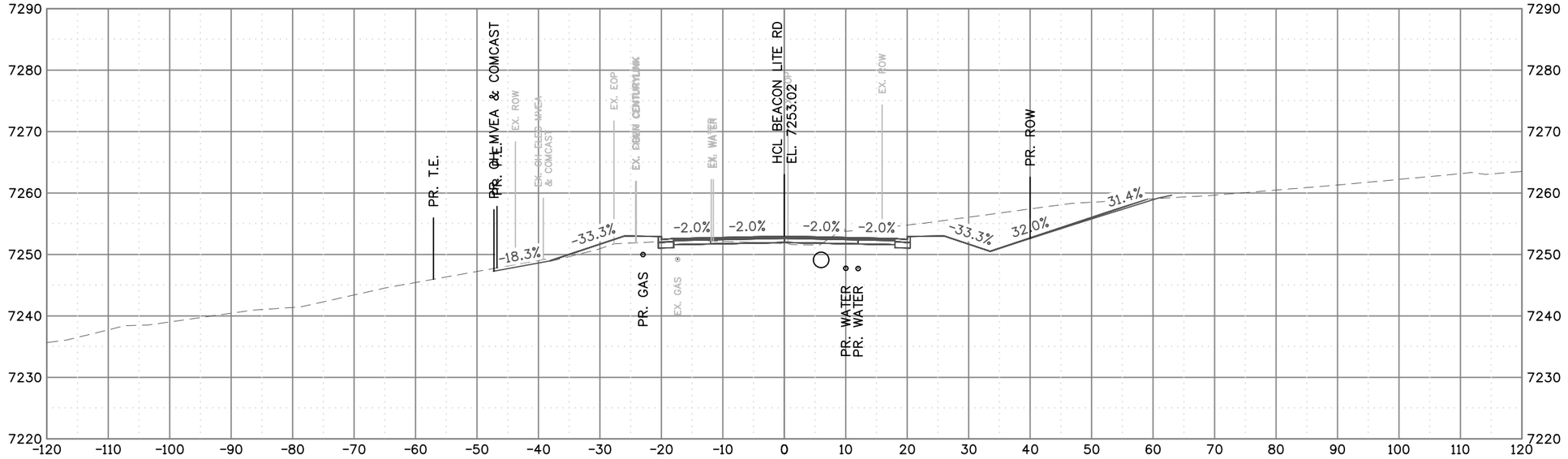
BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Project No./Code: 128558

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	19 OF 44

Sheet Number 273

28+00.00



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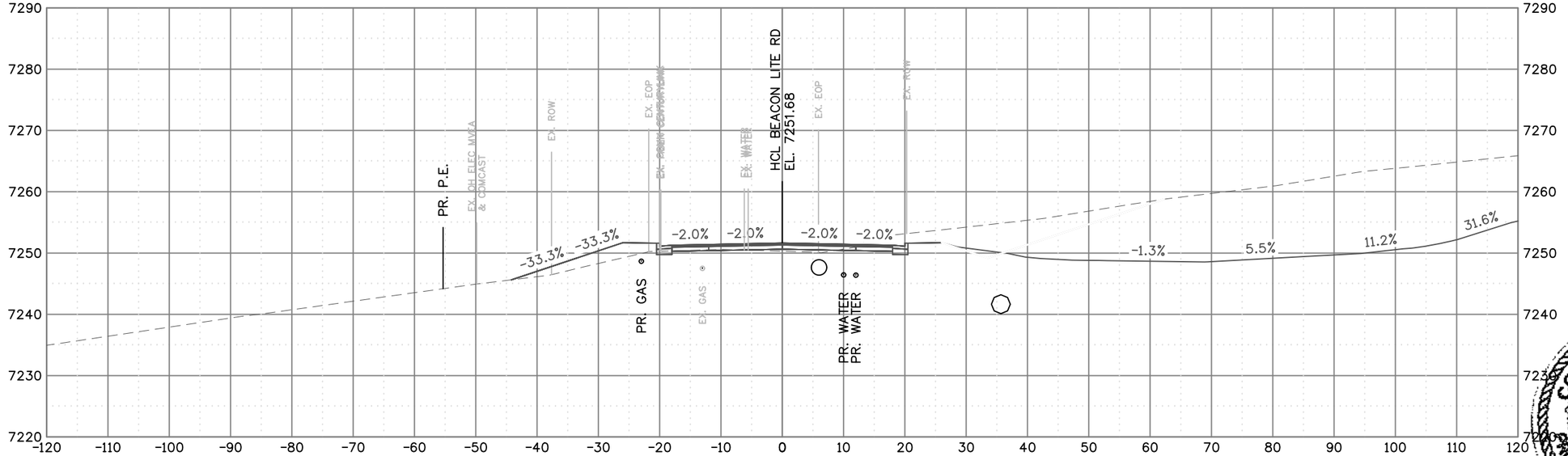

COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
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MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
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Date:	Comments	Init.

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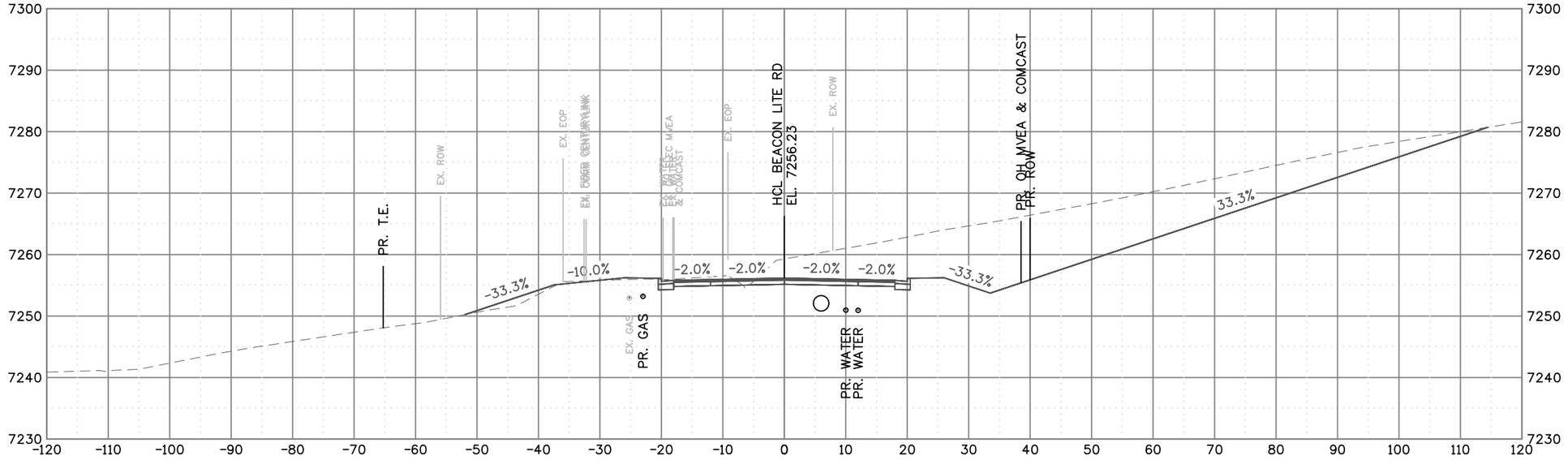
BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Project No./Code: 128558

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	20 OF 44

Sheet Number 274

29+00.00



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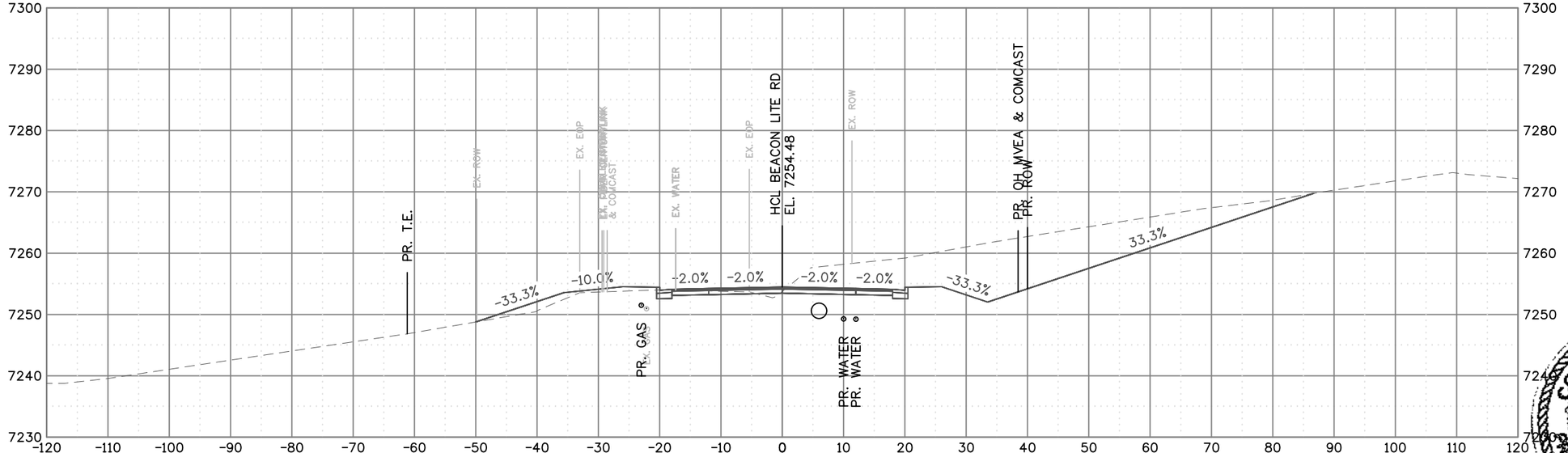

COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
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Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
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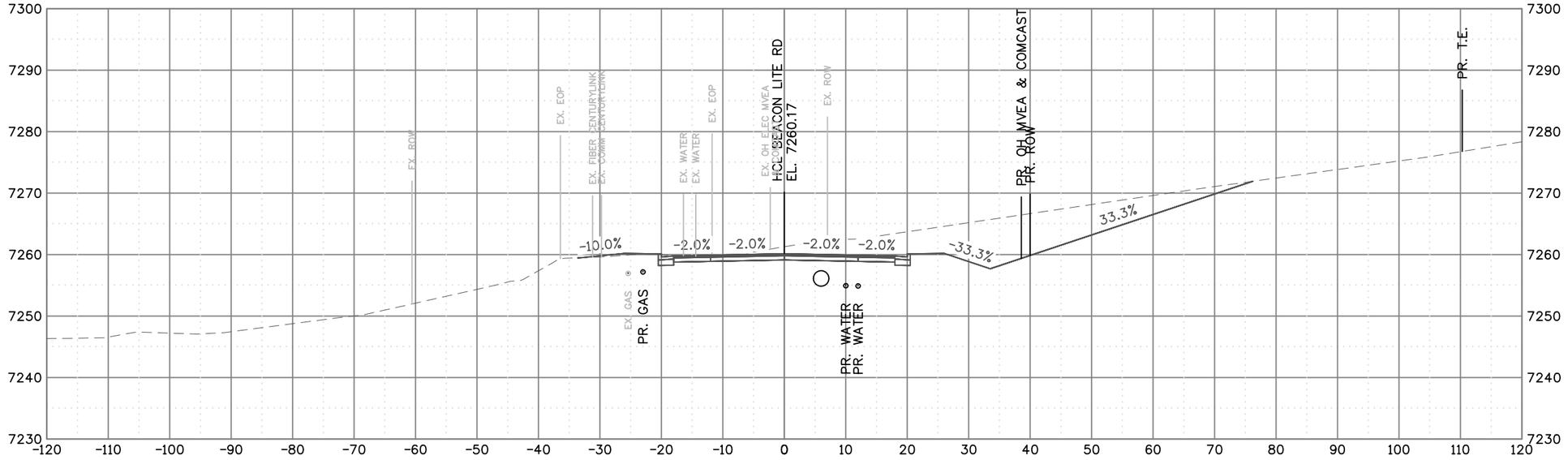
BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	21 OF 44

Project No./Code
128558

Sheet Number 275

30+00.00



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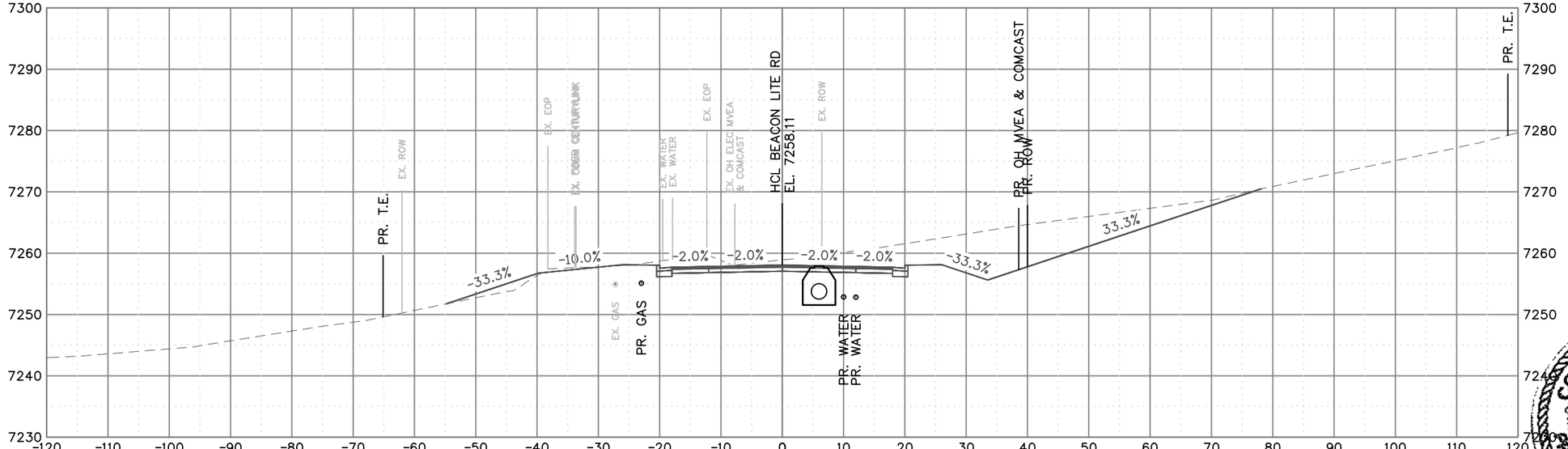

COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022			
File Name: 175644_XS.dwg			
Horiz. Scale: 1"=20'	Vert. Scale: 1"=20'		
Unit Information	Unit Leader Initials		

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

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Sheet Revisions

Date:	Comments	Init.

EL PASO COUNTY
COLORADO

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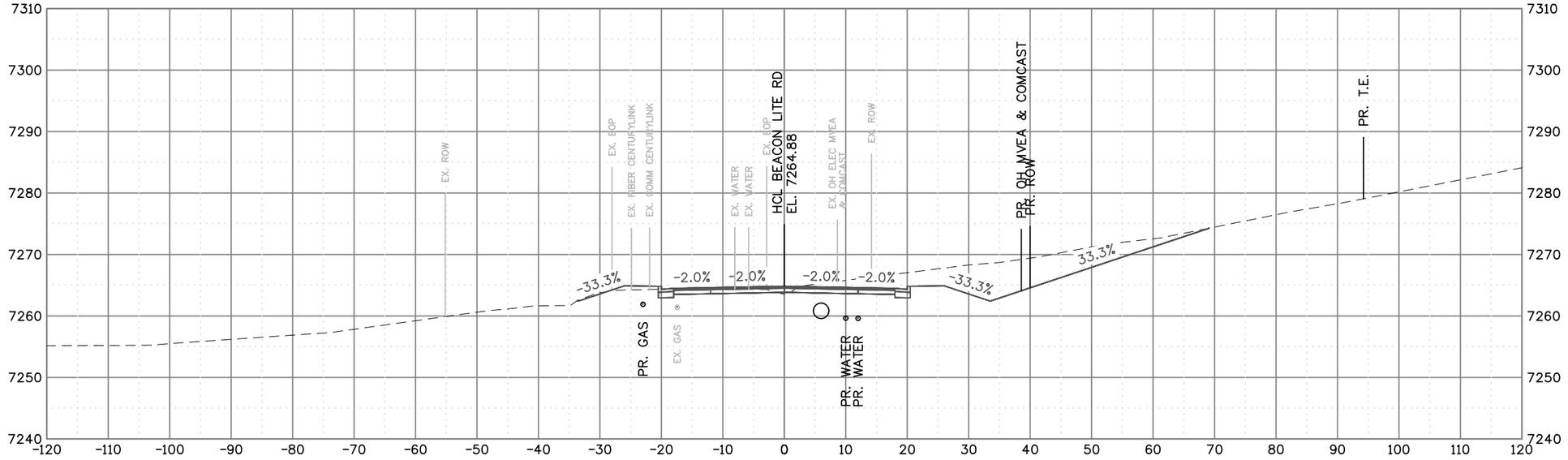
BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	22 OF 44

Project No./Code
128558

Sheet Number 276

31+00.00



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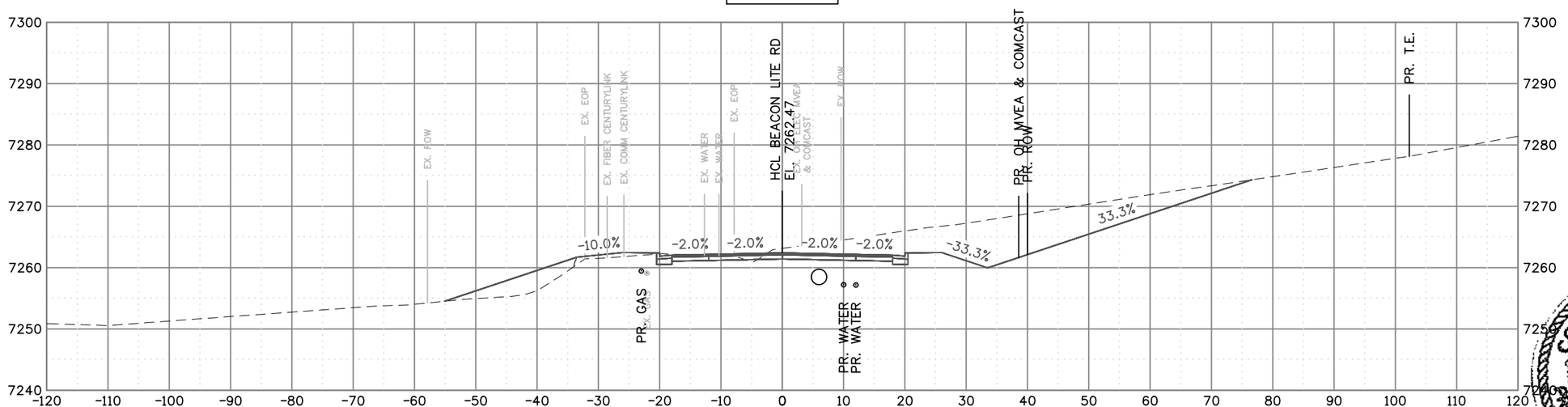

COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022		Sheet Revisions	
File Name: 175644_XS.dwg		Date:	Comments / Init.
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'			
Unit Information Unit Leader Initials			

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

EL PASO COUNTY
COLORADO

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BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	23 OF 44

Project No./Code: 128558

Sheet Number 277

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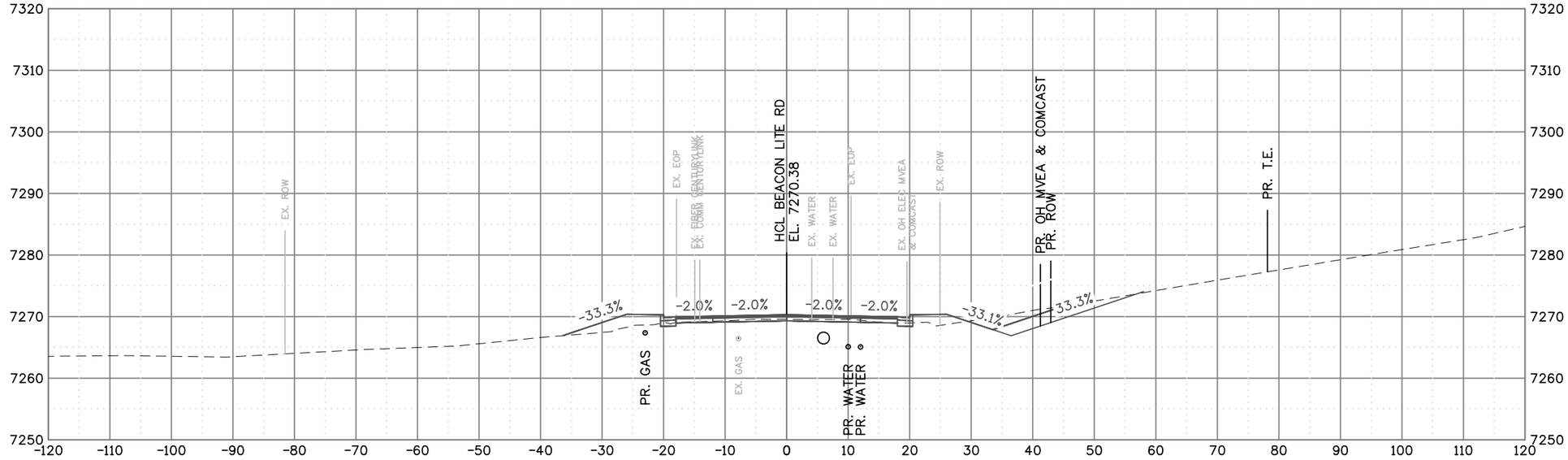

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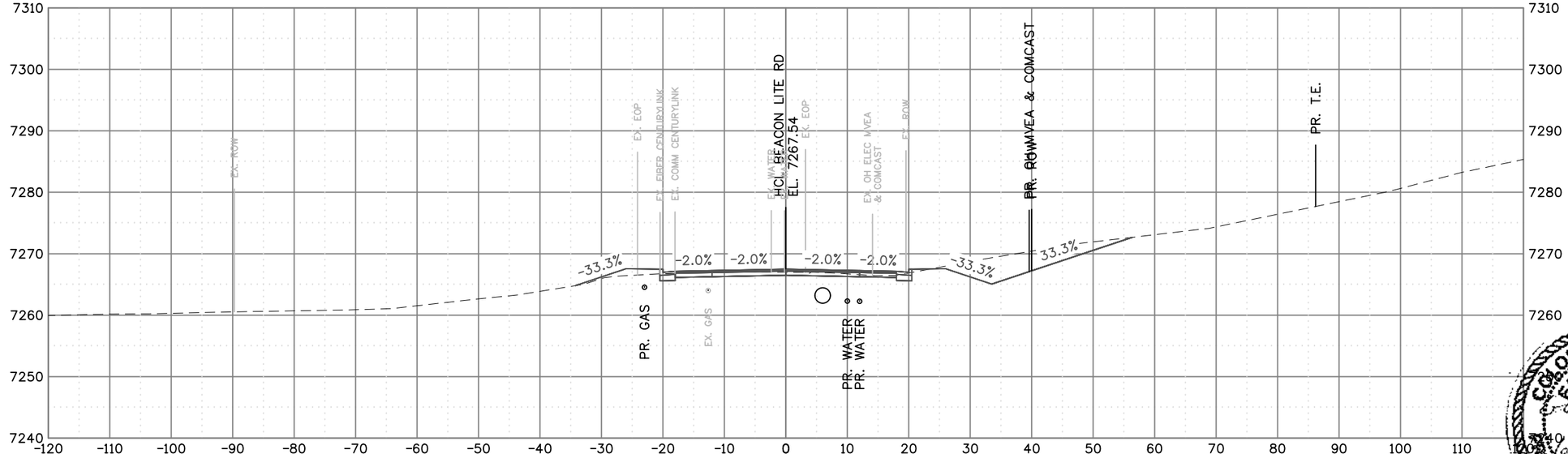

COLORADO LICENSED
ERIC M. KING
44937
04/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
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Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

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BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	24 OF 44

Project No./Code
128558

Sheet Number 278

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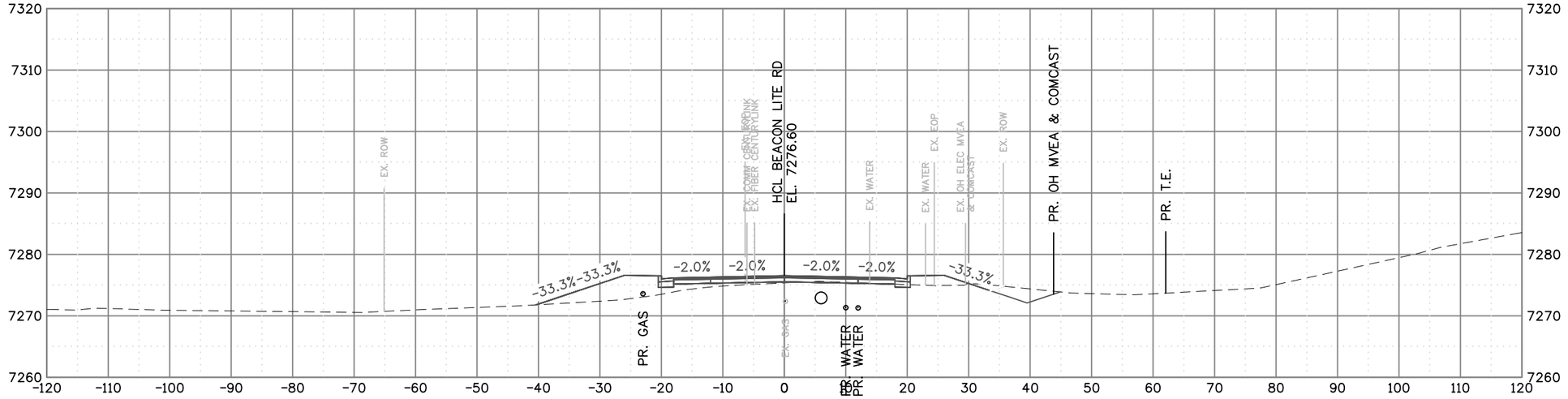

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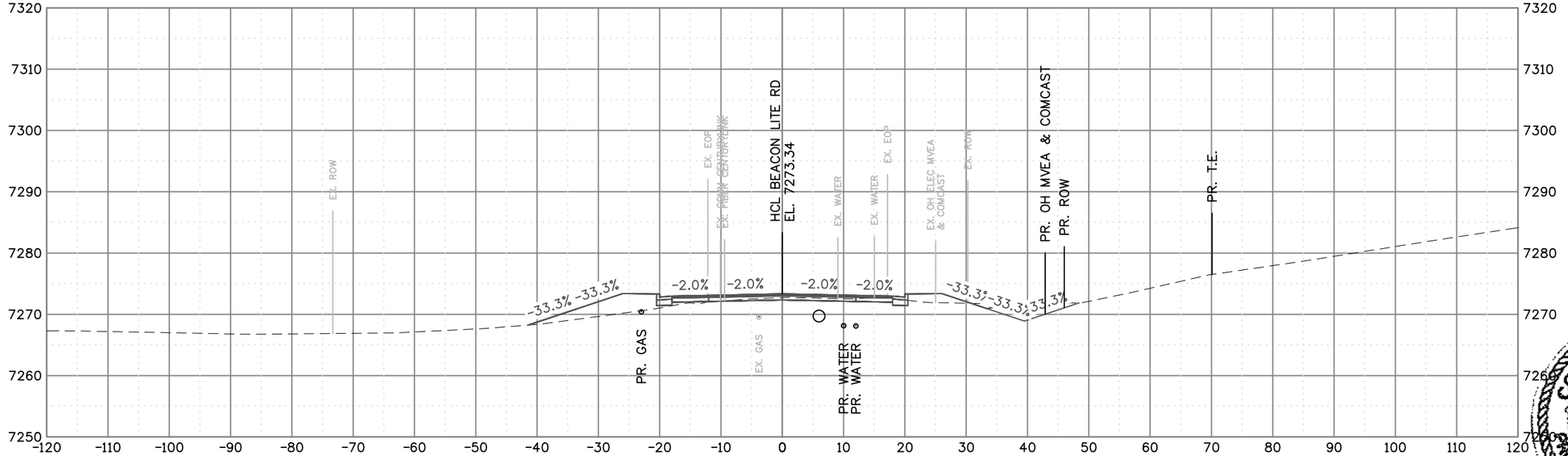

COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
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Date:	Comments	Init.

EL PASO COUNTY
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BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Project No./Code: 128558

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	25 OF 44

Sheet Number 279

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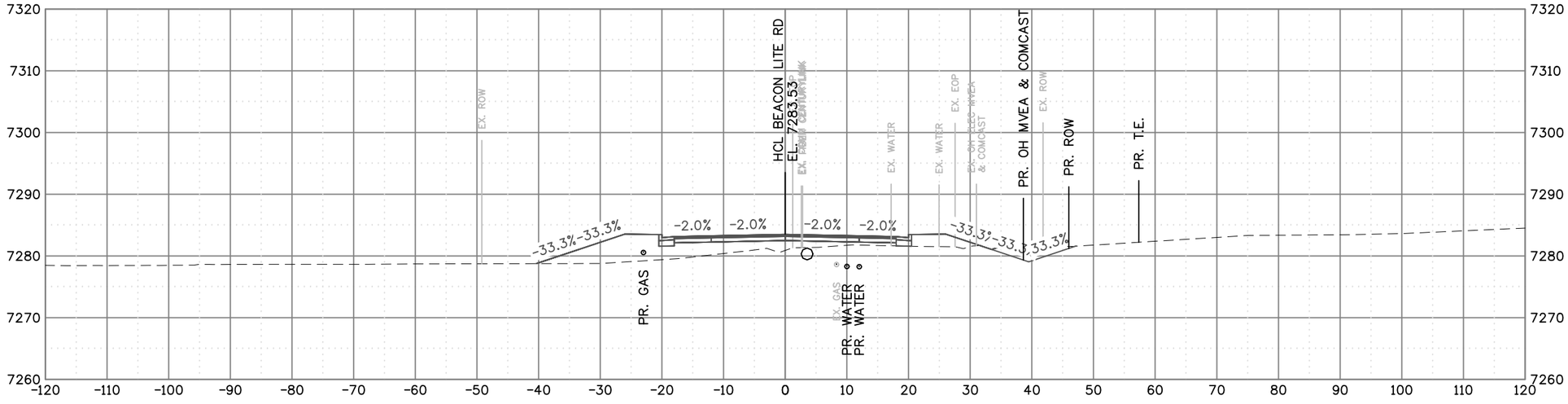

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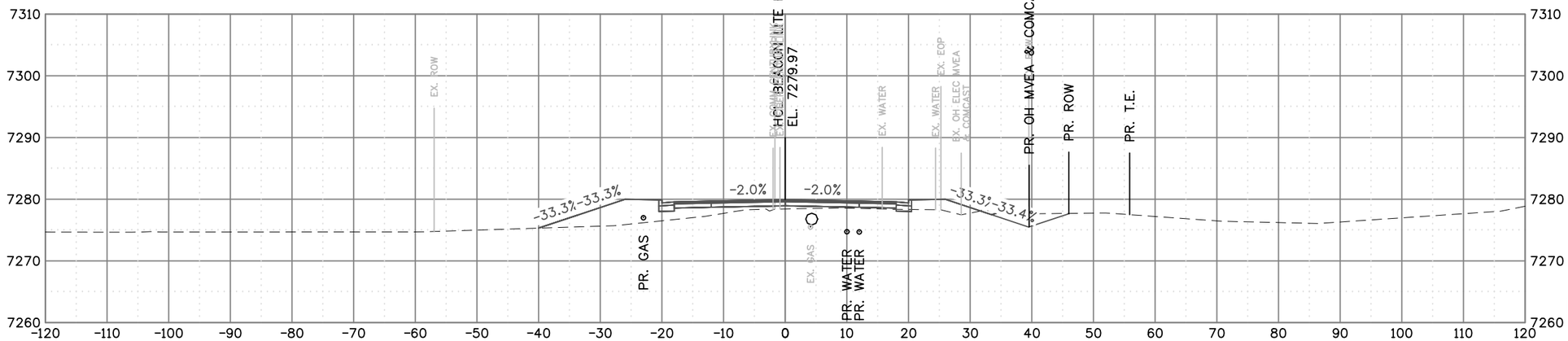

COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
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165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
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Date:	Comments	Init.

EL PASO COUNTY
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BEACON LITE ROAD IMPROVEMENTS
CROSS SECTIONS

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	26 OF 44

Project No./Code
128558

Sheet Number 280

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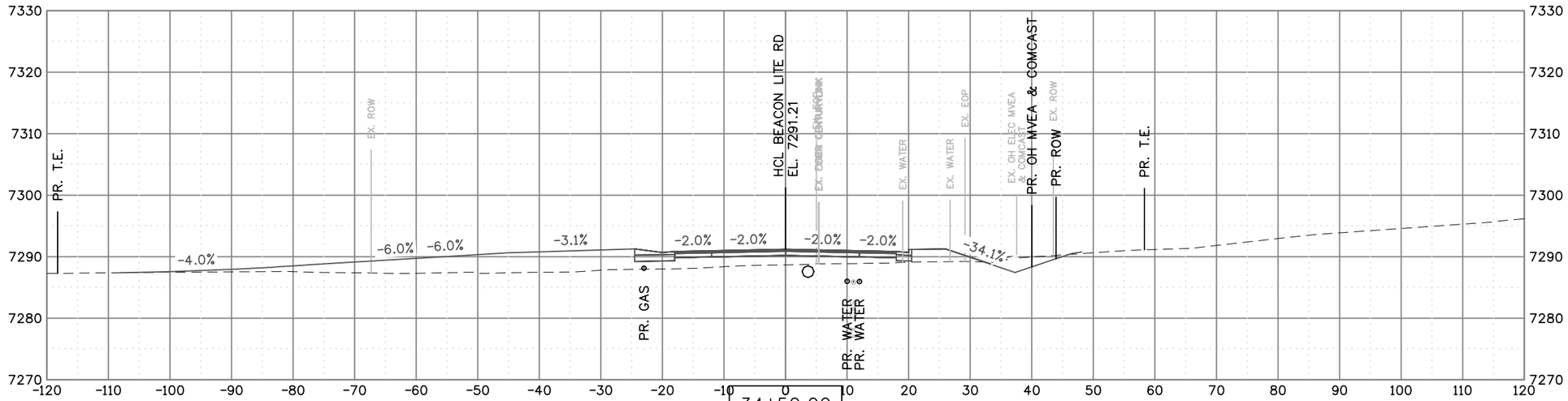

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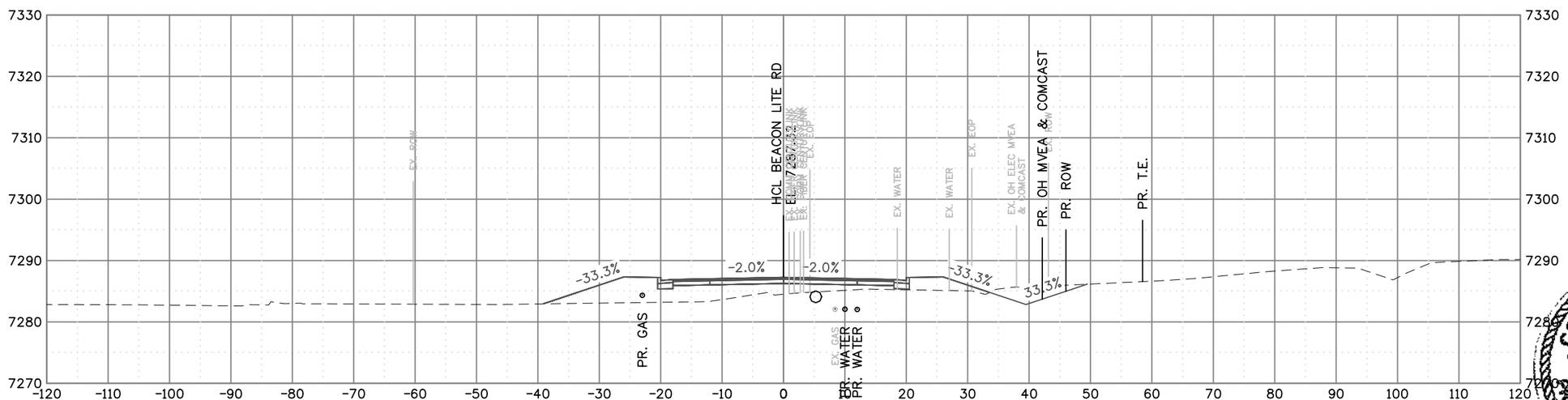

COLORADO LICENSED
ERIC M. KING
44932
4/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022		Sheet Revisions	
File Name: 175644_XS.dwg		Date:	Comments / Init.
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'			
Unit Information Unit Leader Initials			

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LAKEWOOD, CO 80228
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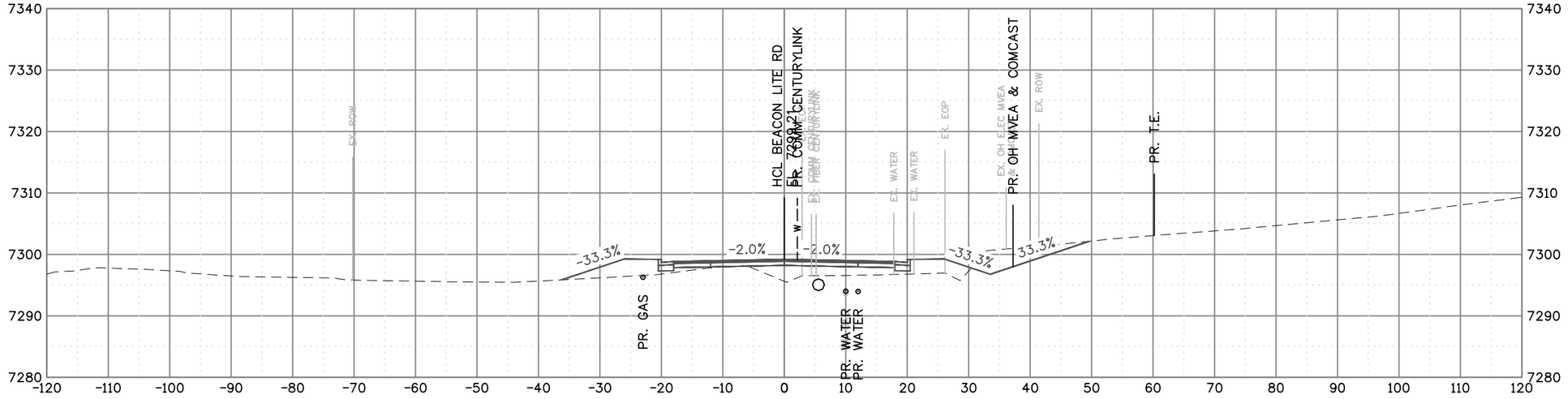
BEACON LITE ROAD IMPROVEMENTS
CROSS SECTIONS

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	27 OF 44

Project No./Code
128558

Sheet Number 281

36+00.00



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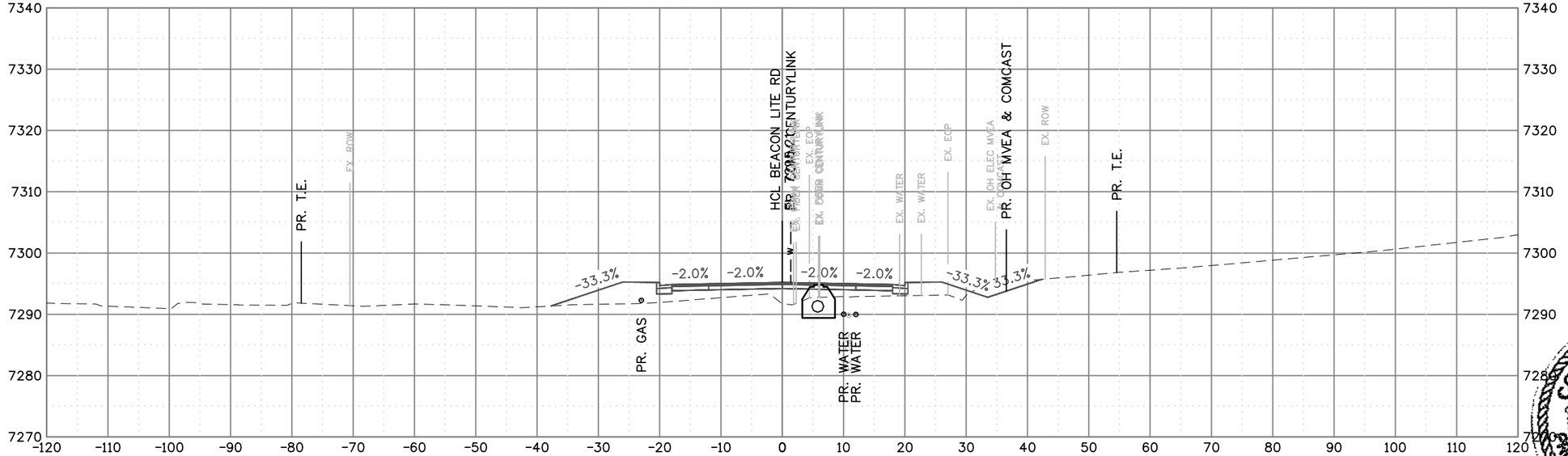

COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

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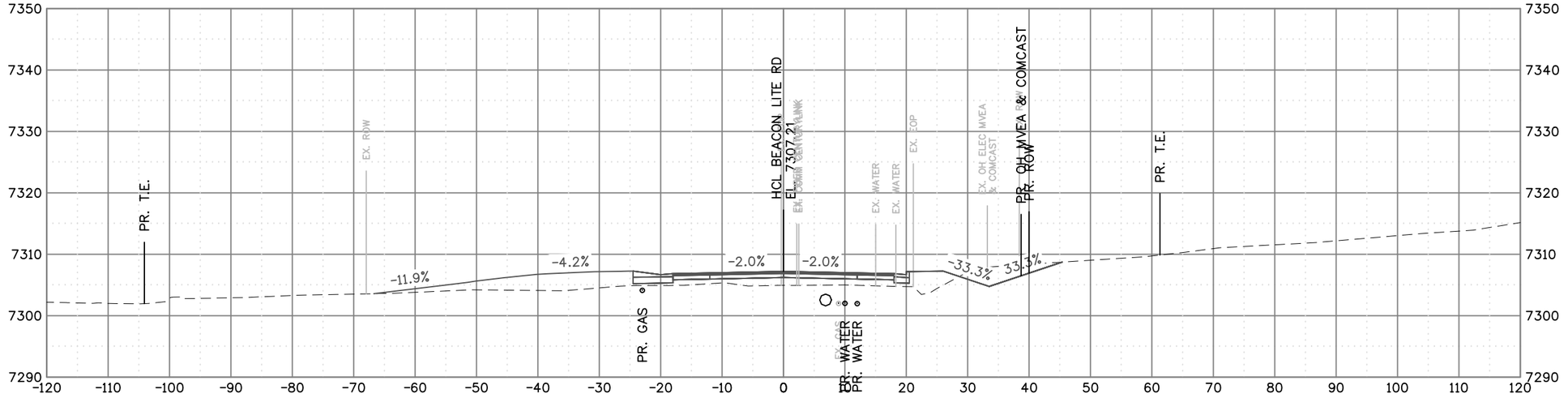
BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Project No./Code: 128558

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	28 OF 44

Sheet Number 282

37+00.00



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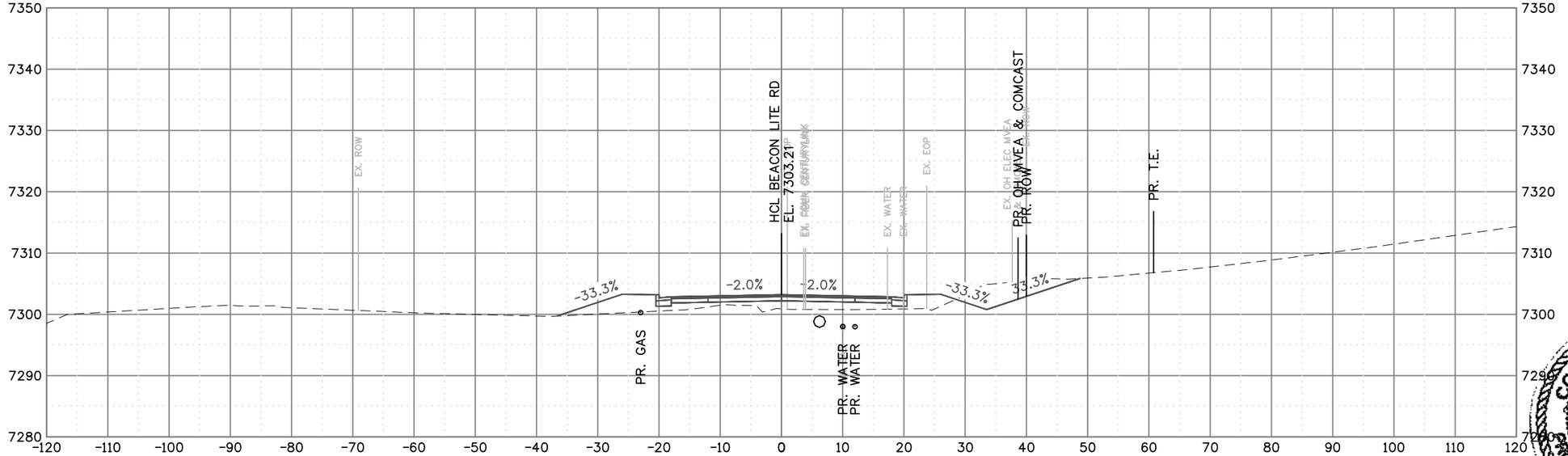

COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

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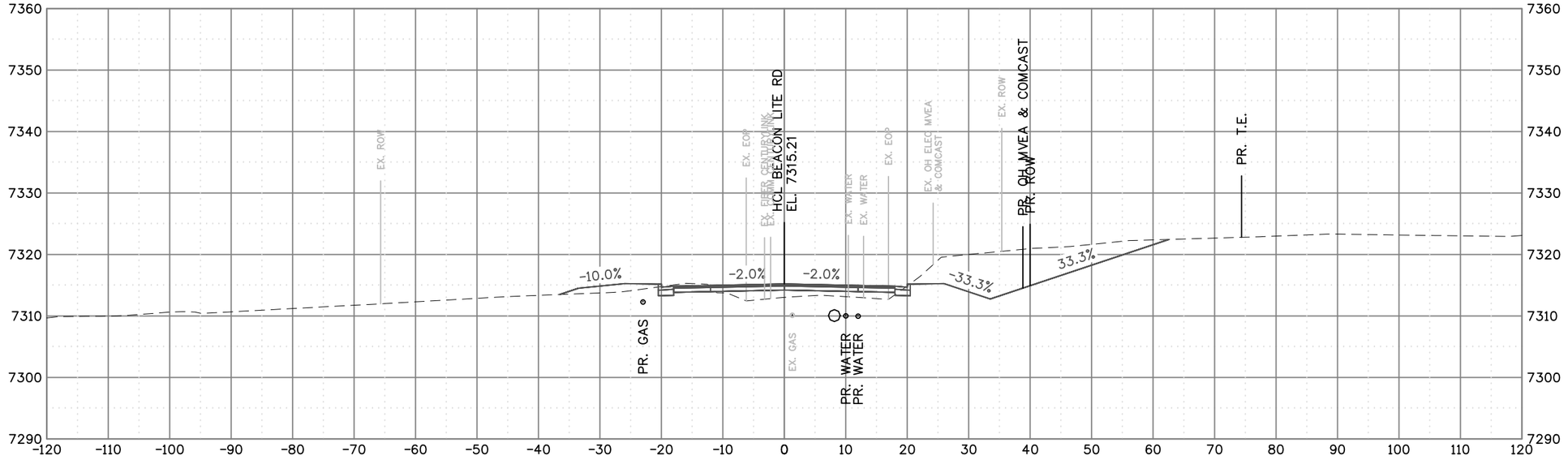
BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Project No./Code: 128558

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	29 OF 44

Sheet Number 283

38+00.00



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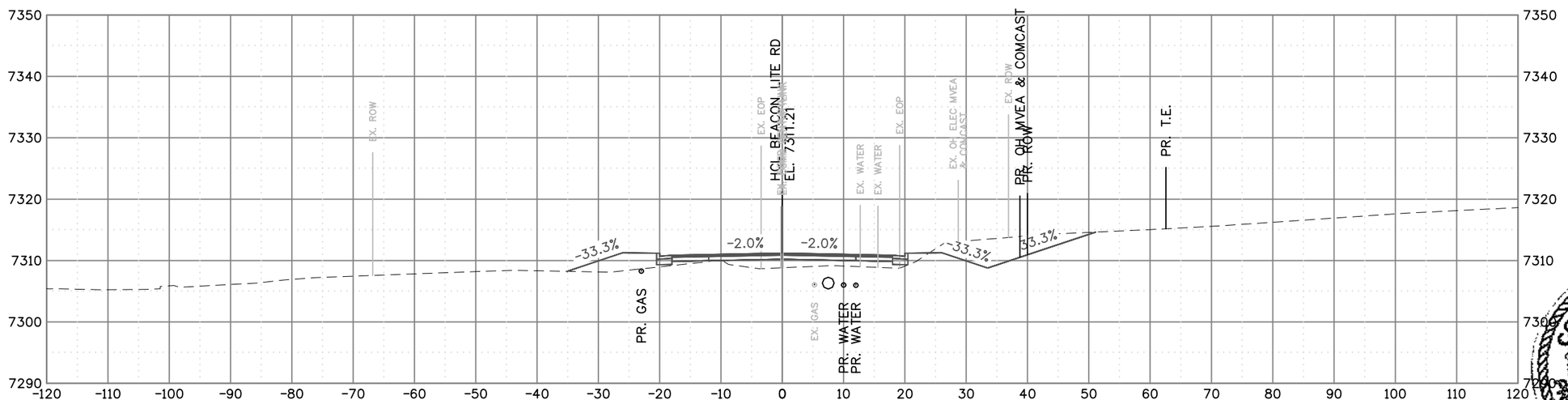

COLORADO LICENSED
ERIC M. KING
44932
4/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022		Sheet Revisions	
File Name: 175644_XS.dwg		Date:	Comments / Init.
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'			
Unit Information Unit Leader Initials			

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
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EL PASO COUNTY
COLORADO

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BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	30 OF 44

Project No./Code: 128558

Sheet Number: 284

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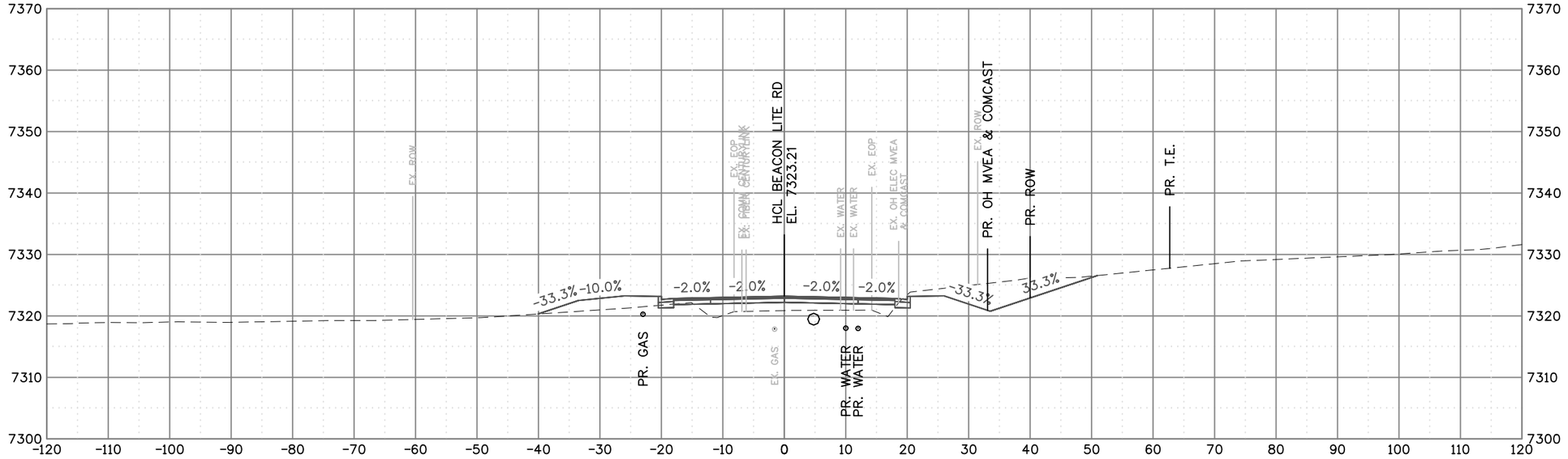

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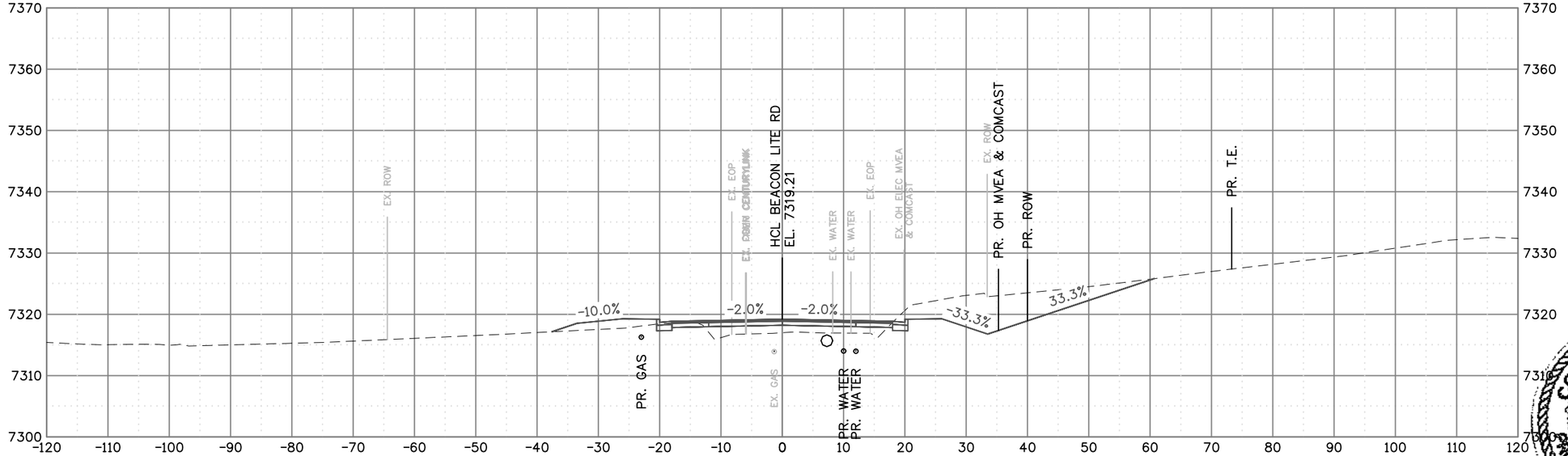

COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Project No./Code: 128558

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	31 OF 44

Sheet Number 285

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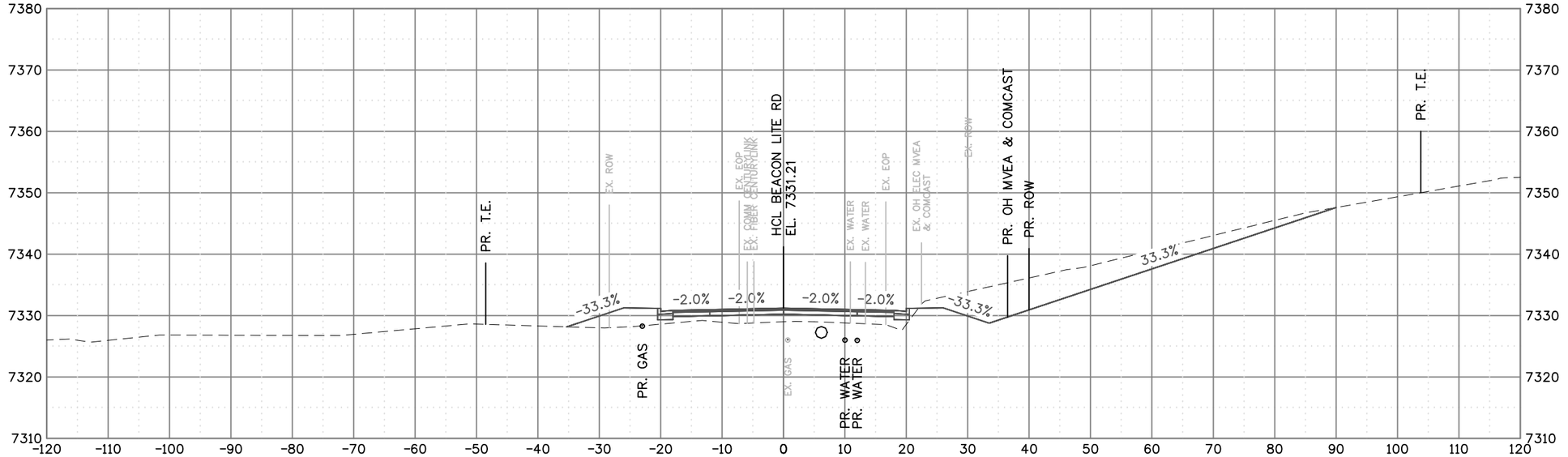

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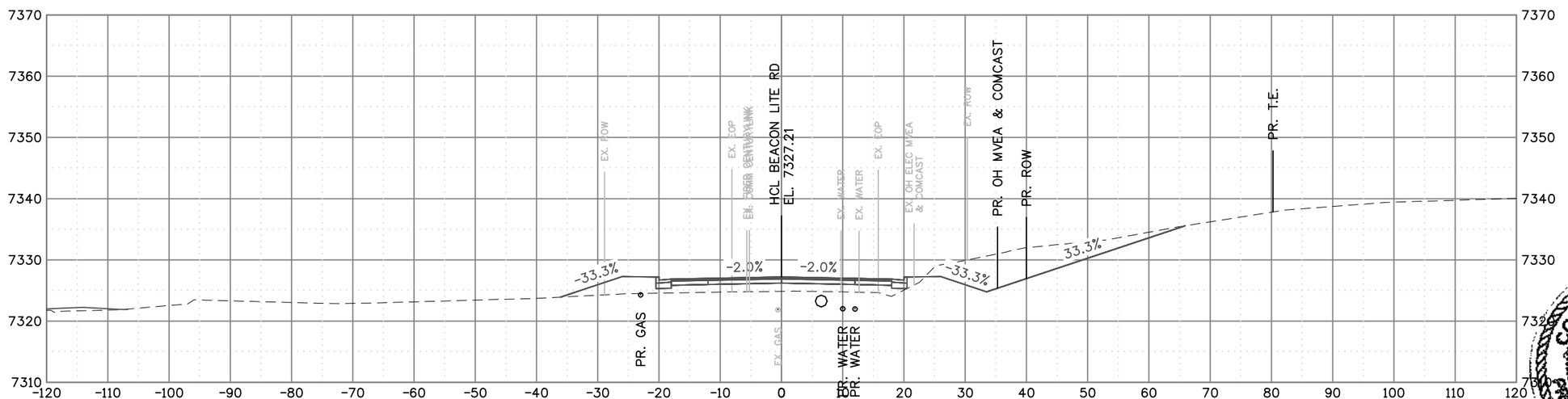

COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022		Sheet Revisions	
File Name: 175644_XS.dwg		Date:	Comments / Init.
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'			
Unit Information Unit Leader Initials			

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

EL PASO COUNTY
COLORADO

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BEACON LITE ROAD IMPROVEMENTS
CROSS SECTIONS

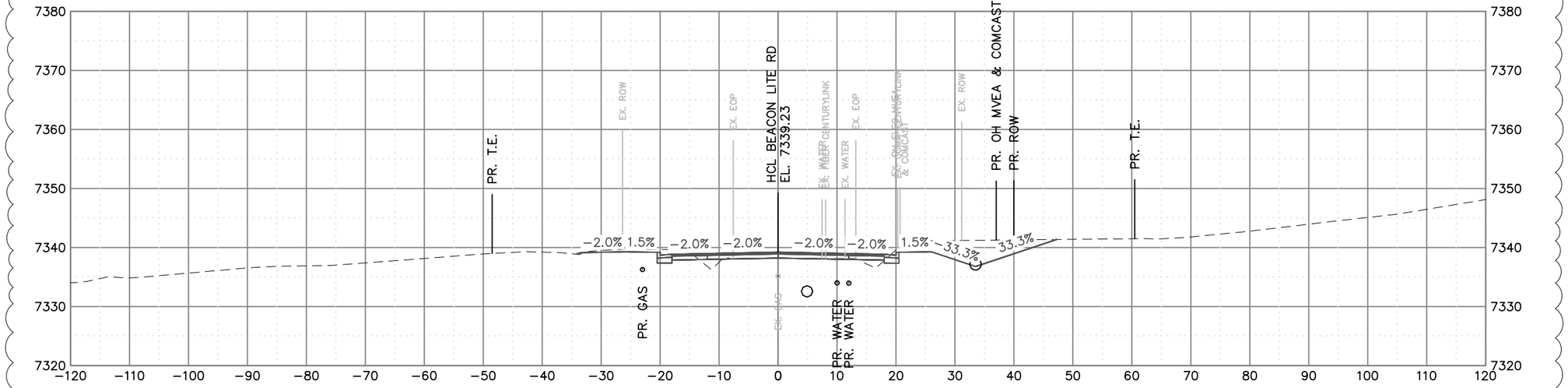
Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	32 OF 44

Project No./Code
128558

Sheet Number 286

R-1

141+00.00



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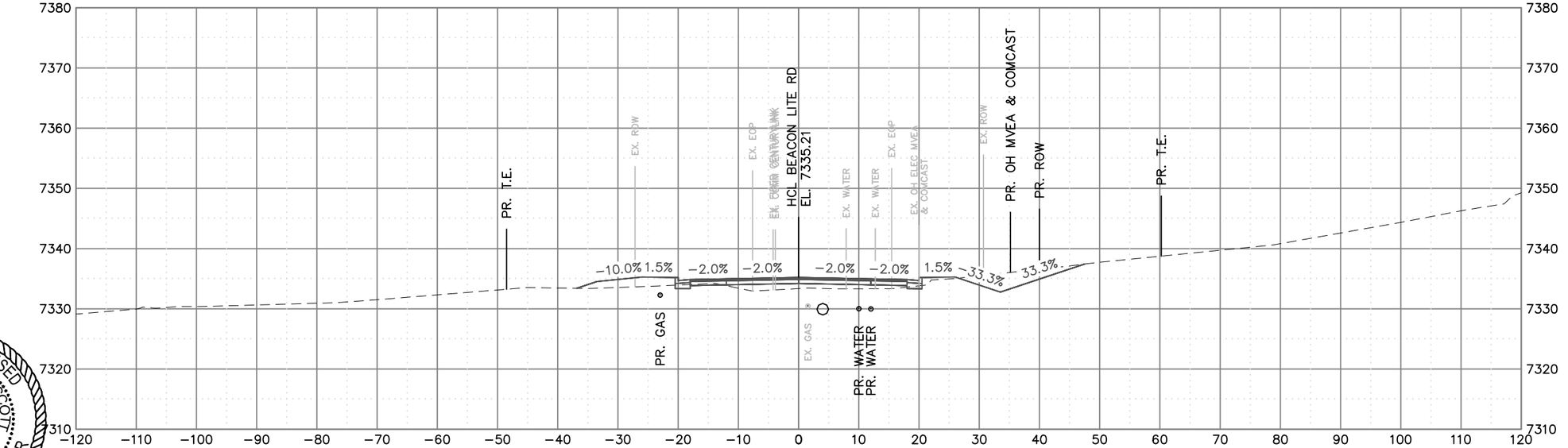


COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
9/10/24
PROFESSIONAL ENGINEER

Print Date: 09/09/2024			
File Name: 175644_XS.dwg			
Horiz. Scale: 1"=20'	Vert. Scale: 1"=20'		
Unit Information	Unit Leader Initials		

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions

Date:	Comments	Init.
6/01/23	RFC	EMK
9/09/24	GEOMETRY CHANGE	KRS

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

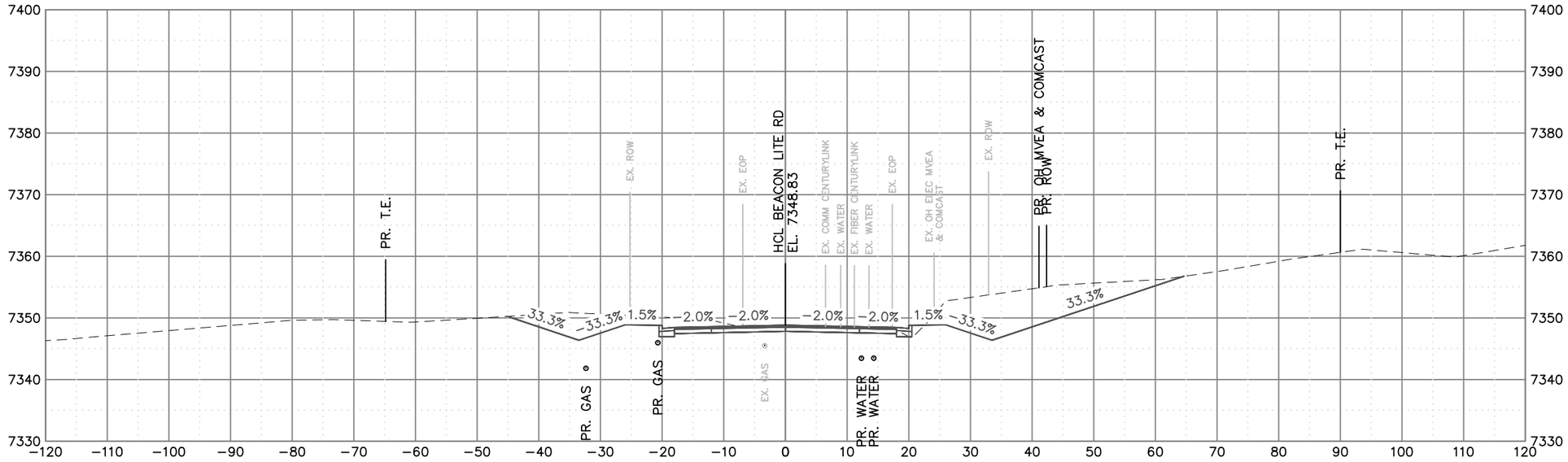
Designer:	KRS	Structure Numbers	
Detailer:	KRS		
Sheet Subset:	ROADWAY	Subset Sheets:	33 OF 44

Project No./Code
128558

Sheet Number 287

R-1

142+00.00



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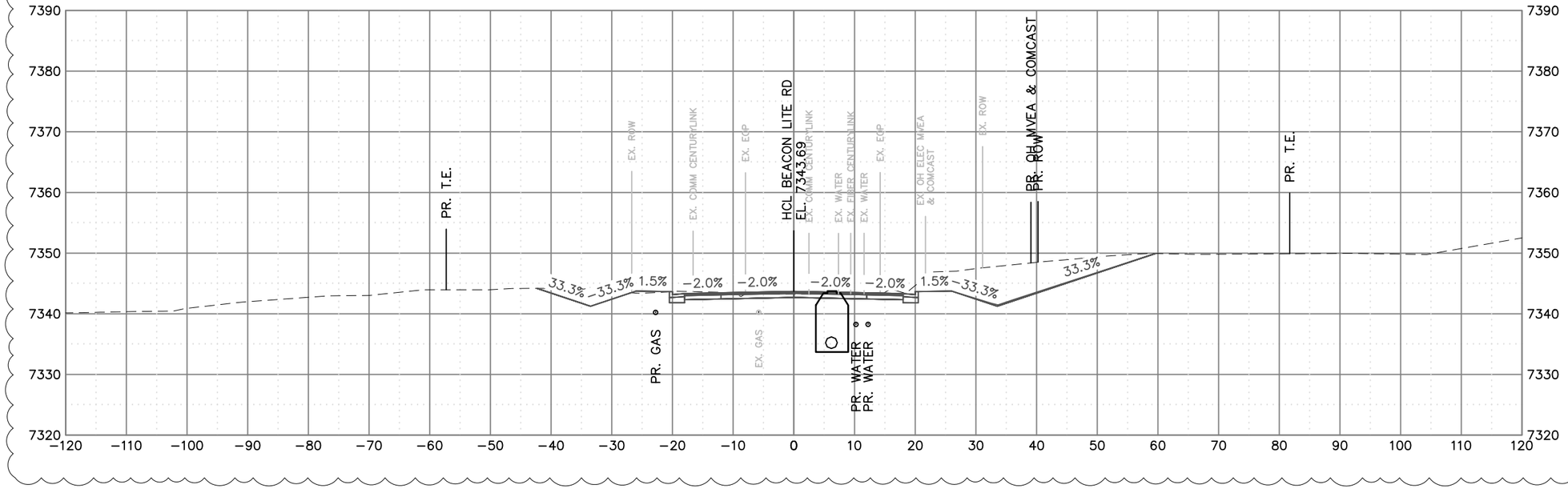


COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
9/10/24
PROFESSIONAL ENGINEER

Print Date: 09/09/2024
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions

Date:	Comments	Init.
6/01/23	RFC	EMK
9/09/24	GEOMETRY CHANGE	KRS

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
CROSS SECTIONS

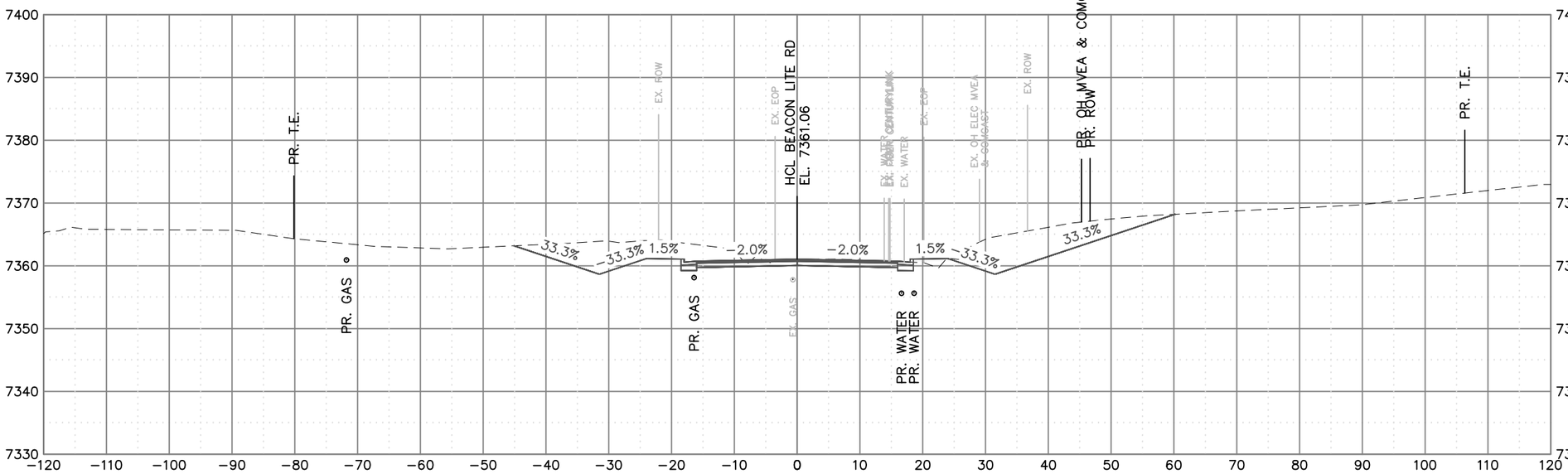
Project No./Code
128558

Designer:	KRS	Structure Numbers	
Detailer:	KRS		
Sheet Subset:	ROADWAY	Subset Sheets:	34 OF 44

Sheet Number 288

R-1

143+00.00



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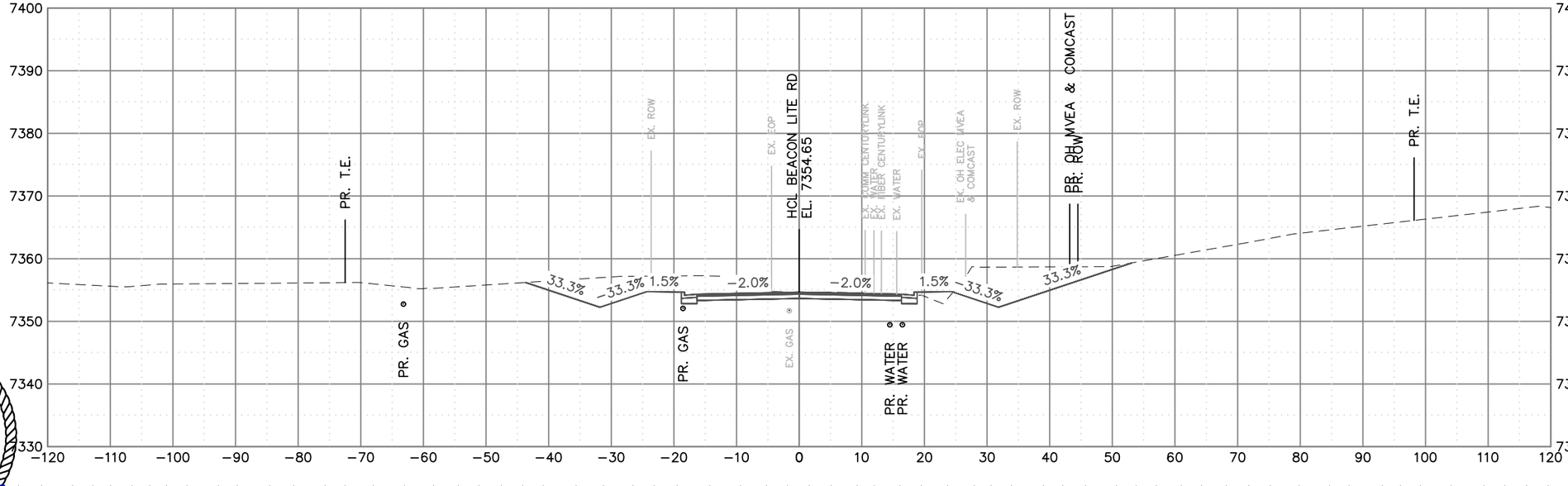

COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
9/10/24
PROFESSIONAL ENGINEER

Print Date: 09/09/2024			
File Name: 175644_XS.dwg			
Horiz. Scale: 1"=20'	Vert. Scale: 1"=20'		
Unit Information	Unit Leader Initials		

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions

Date:	Comments	Init.
6/01/23	RFC	EMK
9/09/24	GEOMETRY CHANGE	KRS

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Designer:	KRS	Structure Numbers	
Detailer:	KRS		
Sheet Subset:	ROADWAY	Subset Sheets:	35 OF 44

Project No./Code
128558

Sheet Number 289

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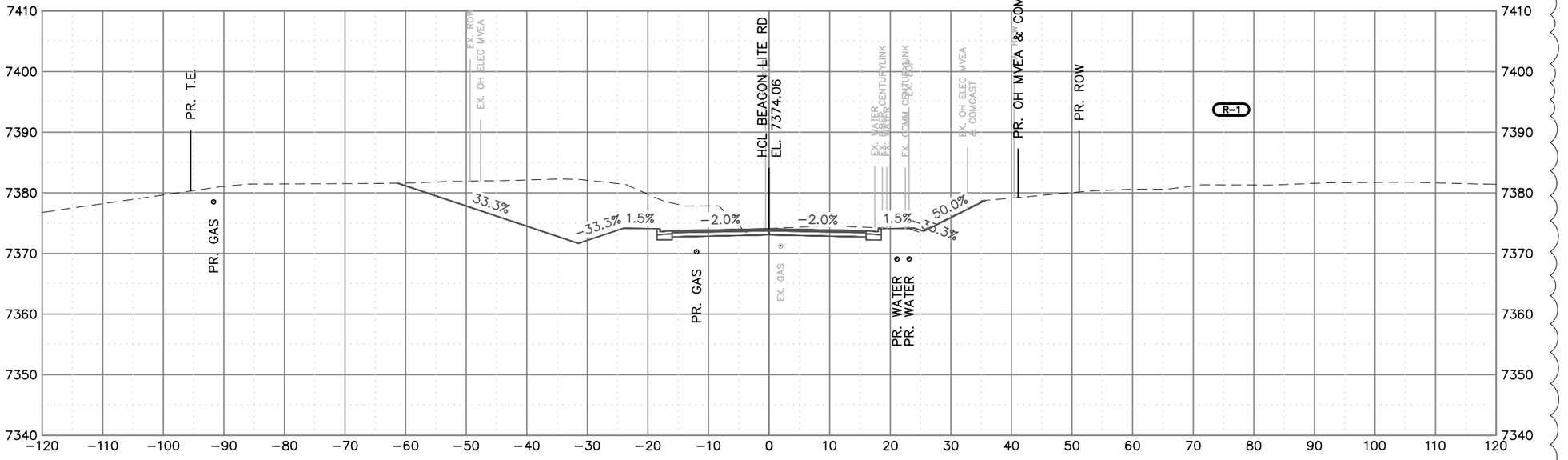

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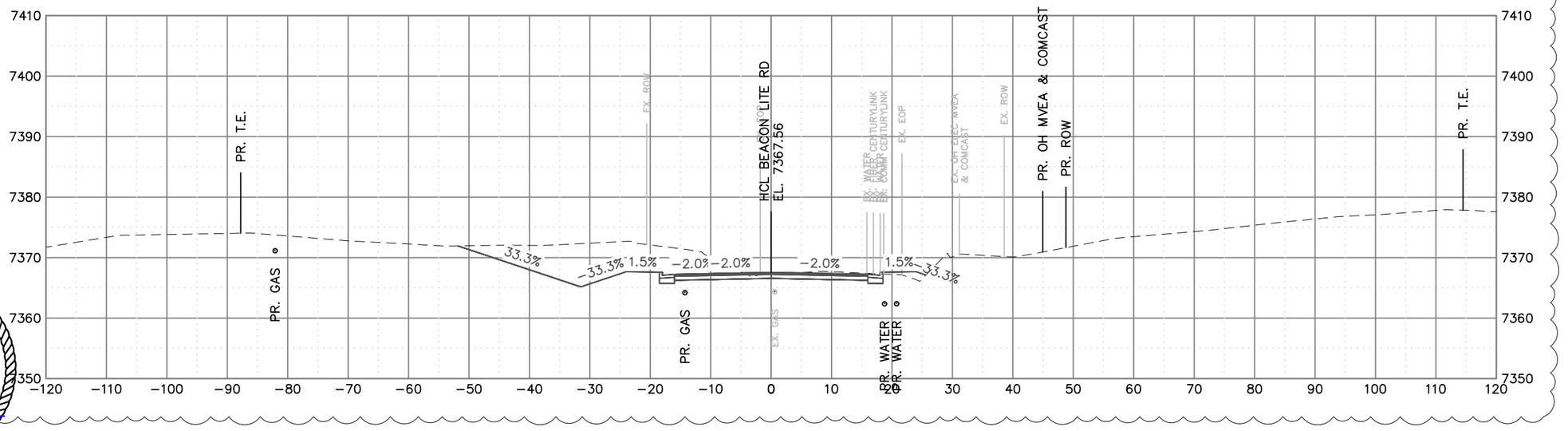

COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
9/10/24
PROFESSIONAL ENGINEER

Print Date: 09/09/2024
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1
R-2

Sheet Revisions

Date:	Comments	Init.
6/01/23	RFC	EMK
8/31/23	ADDED WALL	KRS
9/09/24	GEOMETRY CHANGE	KRS

EL PASO COUNTY
COLORADO

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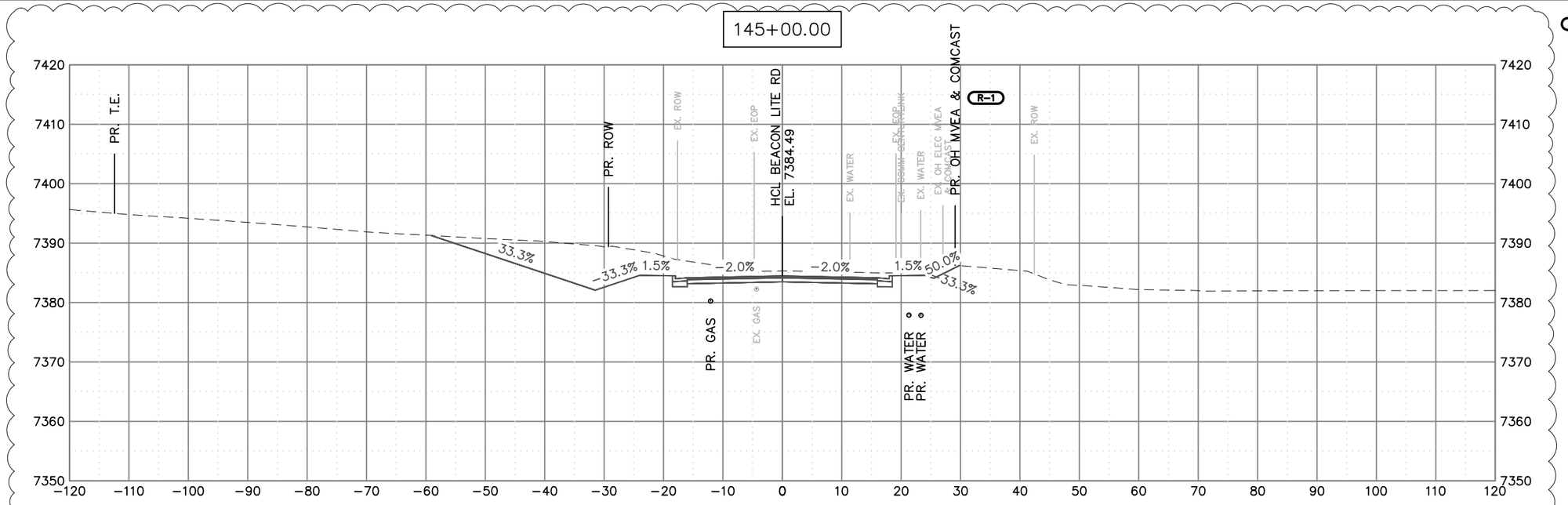
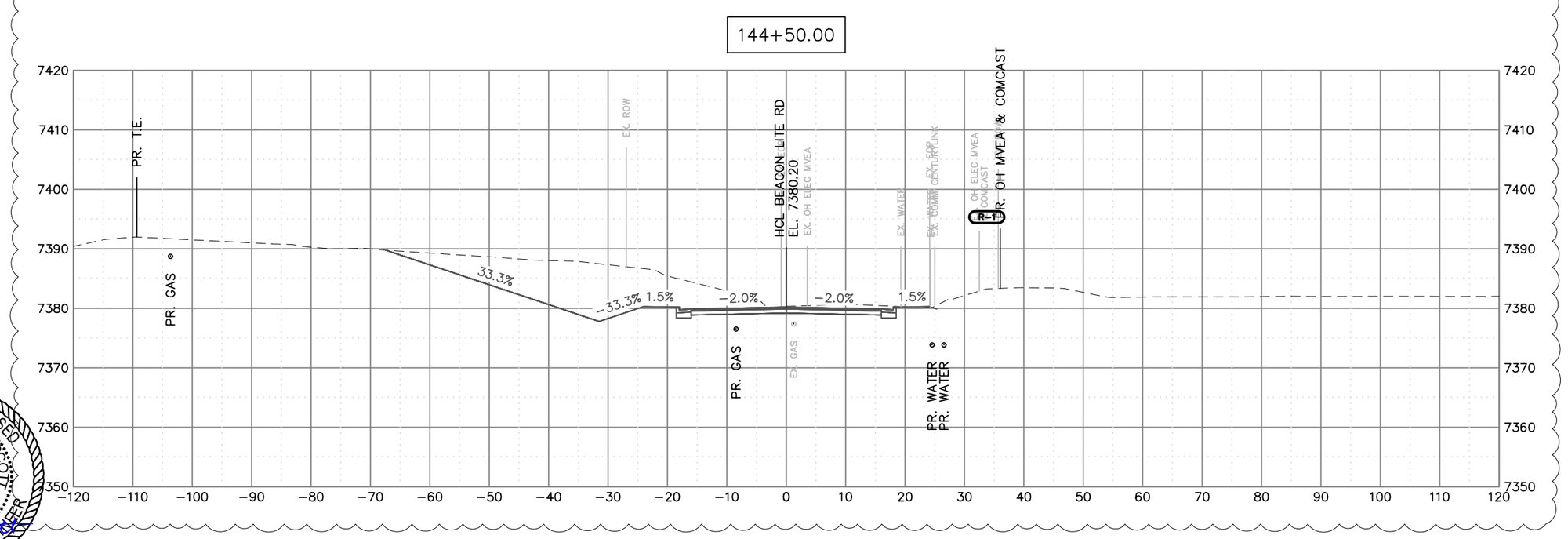
BEACON LITE ROAD IMPROVEMENTS
CROSS SECTIONS

Project No./Code
128558

Designer: KRS
Detailer: KRS
Sheet Subset: ROADWAY
Structure Numbers
Subset Sheets: 36 OF 44

Sheet Number 290





COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
9/10/24
PROFESSIONAL ENGINEER

Print Date:	09/09/2024
File Name:	175644_XS.dwg
Horiz. Scale:	1"=20'
Vert. Scale:	1"=20'
Unit Information	Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions

	Date:	Comments	Init.
	6/01/23	RFC	EMK
R-1	8/31/23	ADDED WALL	KRS
R-2	9/09/24	GEOMETRY CHANGE	KRS

EL PASO COUNTY
COLORADO

PPRTA

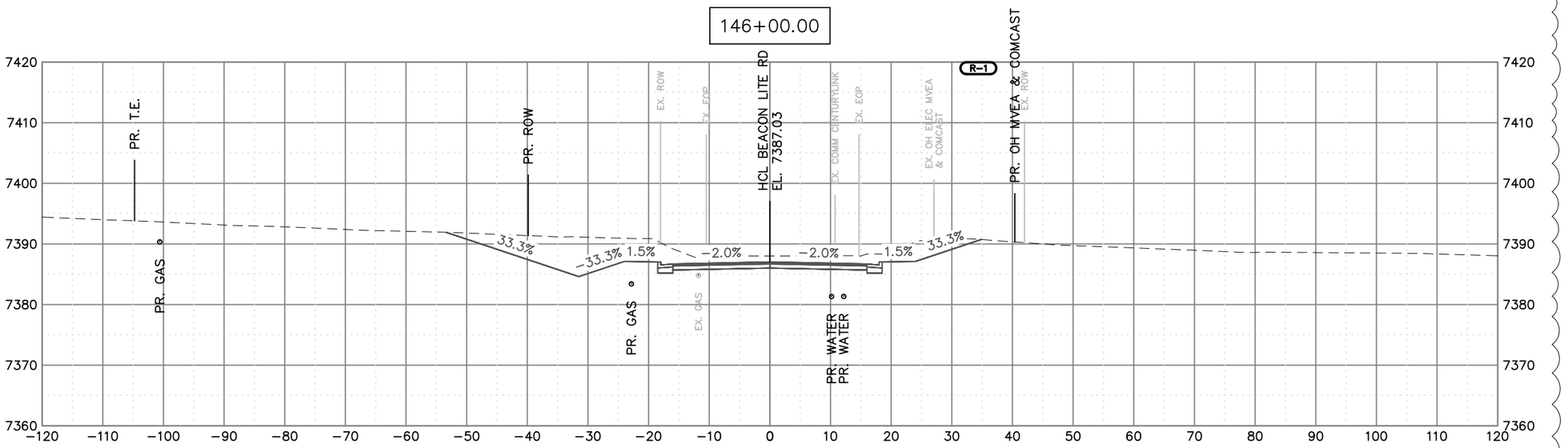
BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

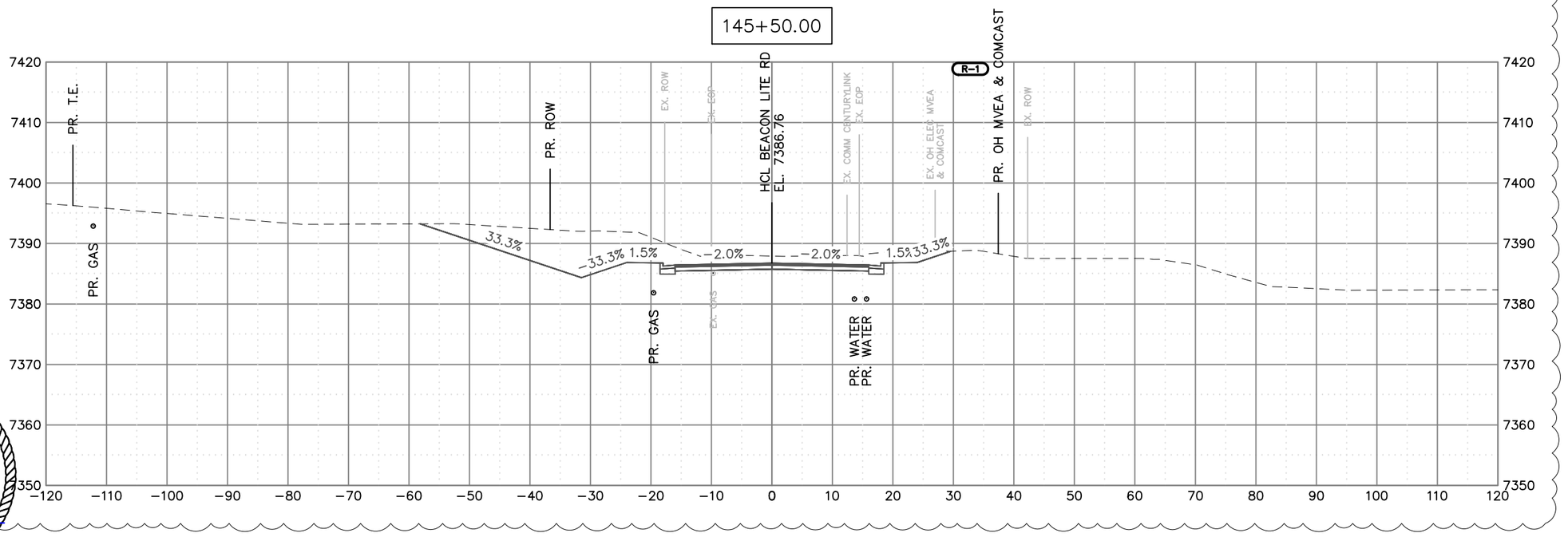
Designer:	KRS	Structure Numbers	
Detailer:	KRS		
Sheet Subset:	ROADWAY	Subset Sheets:	37 OF 44

Project No./Code
128558

Sheet Number 291

R-2





COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
9/10/24
PROFESSIONAL ENGINEER

Print Date: 09/09/2024
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

	Sheet Revisions		
	Date:	Comments	Init.
R-1	6/01/23	RFC	EMK
R-2	8/31/23	ADDED WALL	KRS
	9/09/24	GEOMETRY CHANGE	KRS

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
CROSS SECTIONS

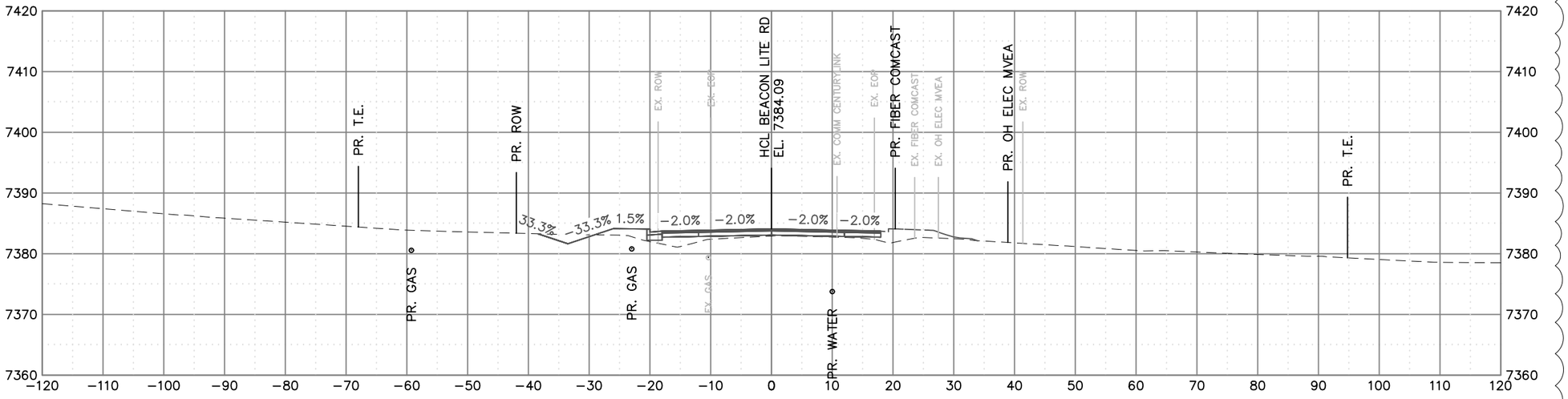
Project No./Code
128558

Designer:	KRS	Structure Numbers	
Detailer:	KRS		
Sheet Subset:	ROADWAY	Subset Sheets:	38 OF 44

Sheet Number 292

R-2

147+00.00



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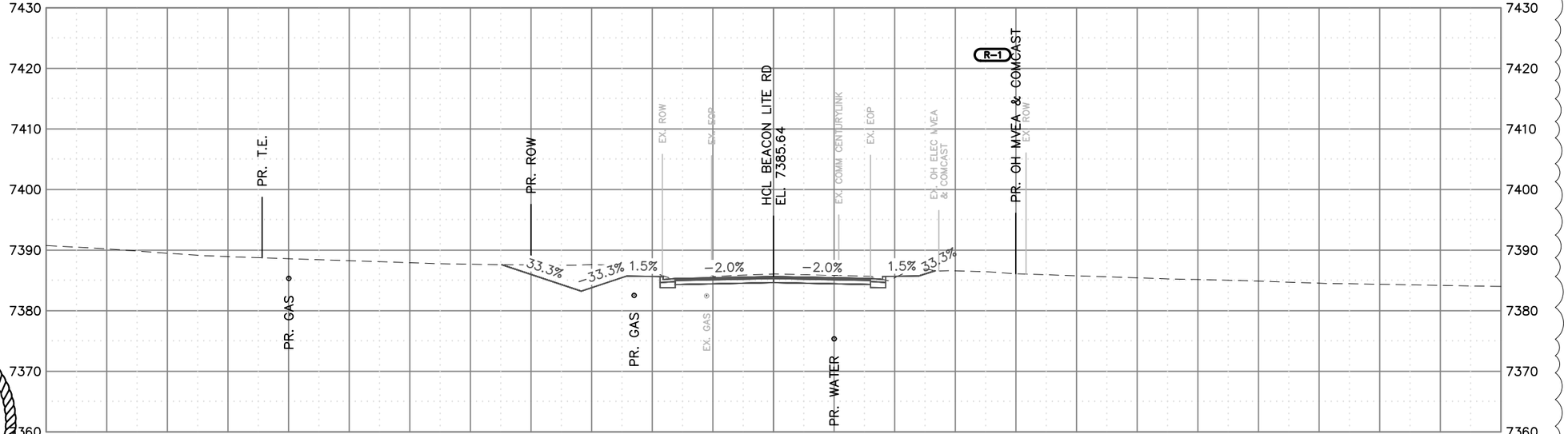


COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
9/10/24
PROFESSIONAL ENGINEER

Print Date: 09/09/2024
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions

	Date:	Comments	Init.
	6/01/23	RFC	EMK
R-1	8/31/23	ADDED WALL	KRS
R-2	9/09/24	GEOMETRY CHANGE	KRS

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
CROSS SECTIONS

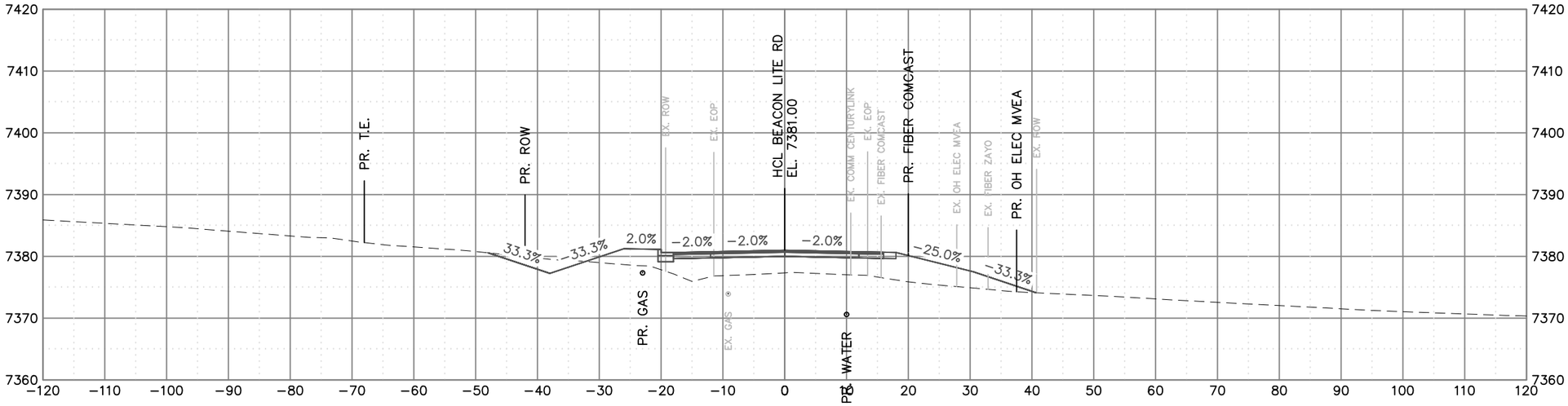
Project No./Code
128558

Designer:	KRS	Structure Numbers	
Detailer:	KRS		
Sheet Subset:	ROADWAY	Subset Sheets:	39 OF 44

Sheet Number 293

R-1

148+00.00



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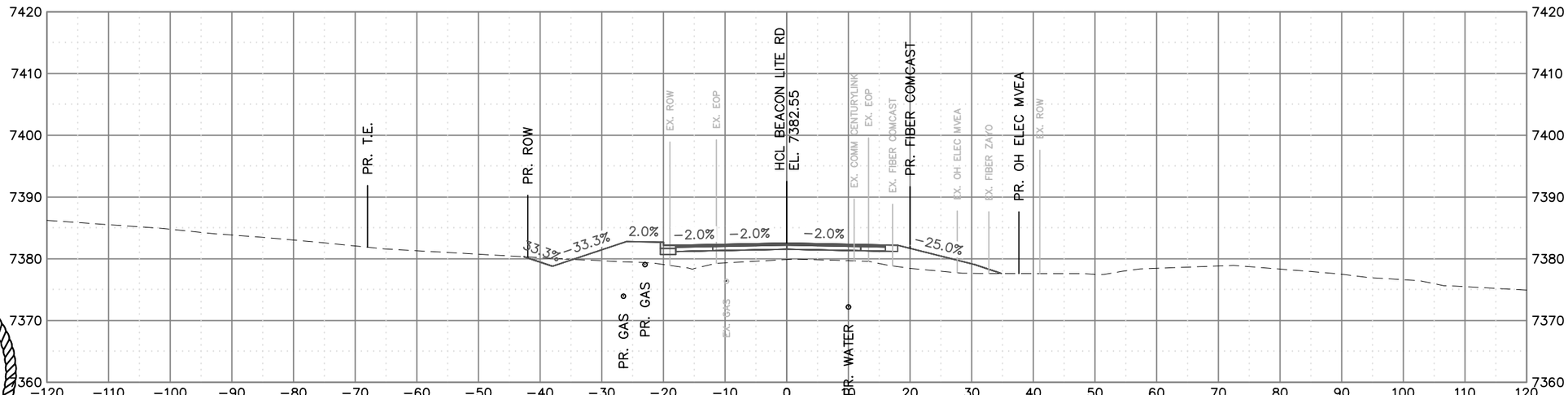


COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
9/10/24
PROFESSIONAL ENGINEER

Print Date: 09/09/2024
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions		
Date:	Comments	Init.
6/01/23	RFC	EMK
9/09/24	GEOMETRY CHANGE	KRS

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
CROSS SECTIONS

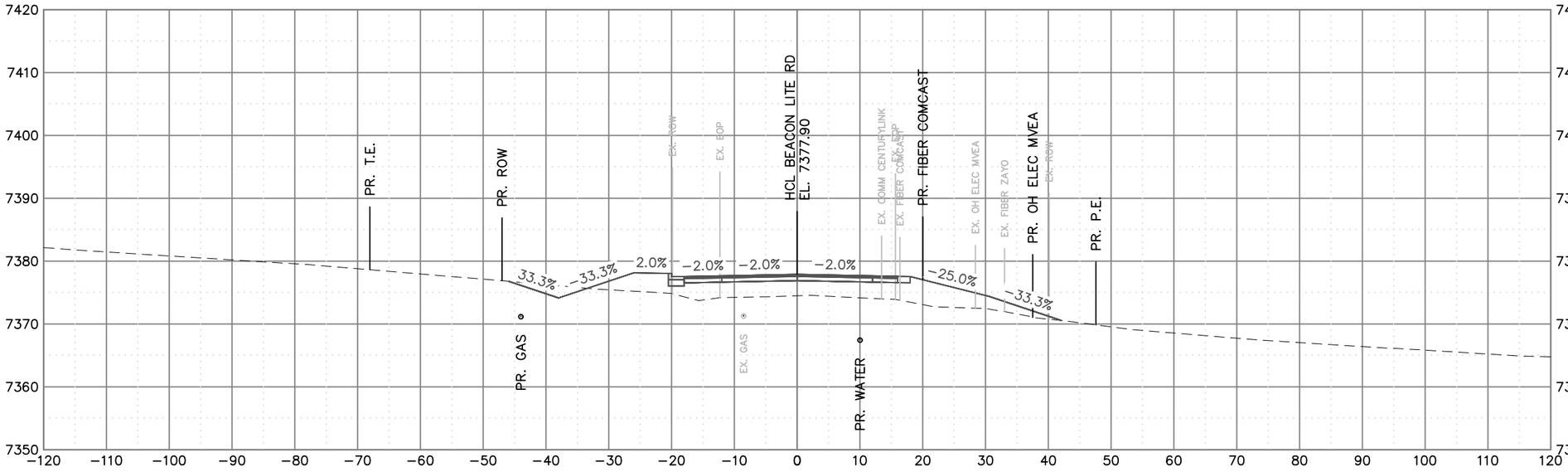
Project No./Code
128558

Designer:	KRS	Structure Numbers	
Detailer:	KRS		
Sheet Subset:	ROADWAY	Subset Sheets:	40 OF 44

Sheet Number 294

R-1

149+00.00



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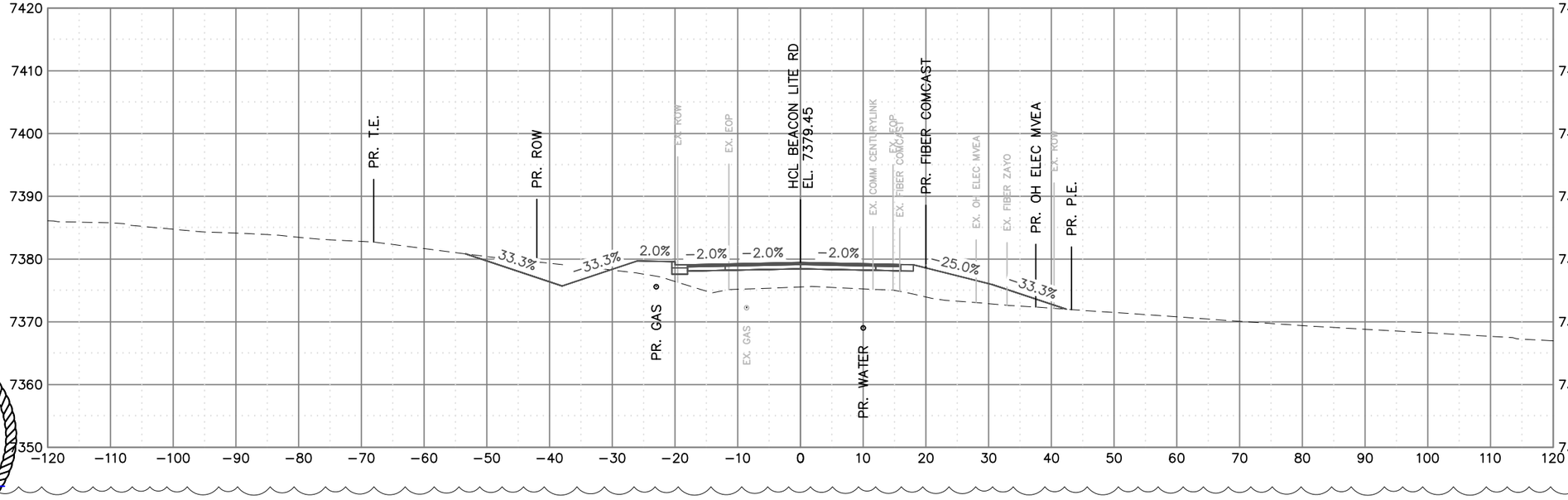


COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
9/10/24
PROFESSIONAL ENGINEER

Print Date:	09/09/2024
File Name:	175644_XS.dwg
Horiz. Scale:	1"=20'
Vert. Scale:	1"=20'
Unit Information	Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions

Date:	Comments	Init.
6/01/23	RFC	EMK
9/09/24	GEOMETRY CHANGE	KRS

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
CROSS SECTIONS

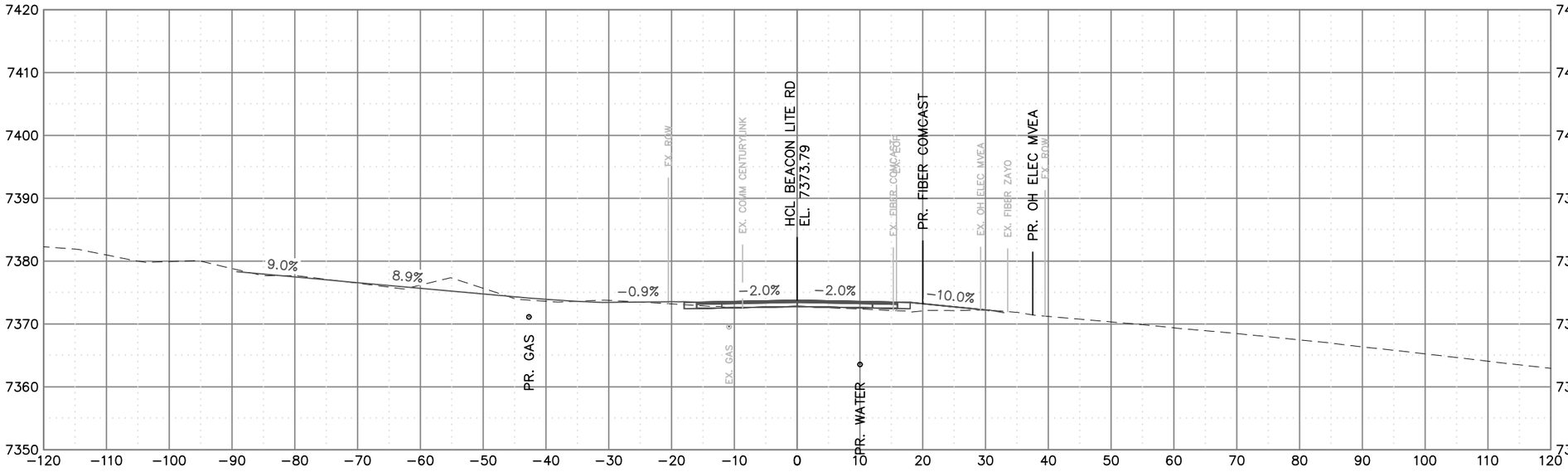
Project No./Code
128558

Designer:	KRS	Structure Numbers	
Detailer:	KRS		
Sheet Subset:	ROADWAY	Subset Sheets:	41 OF 44

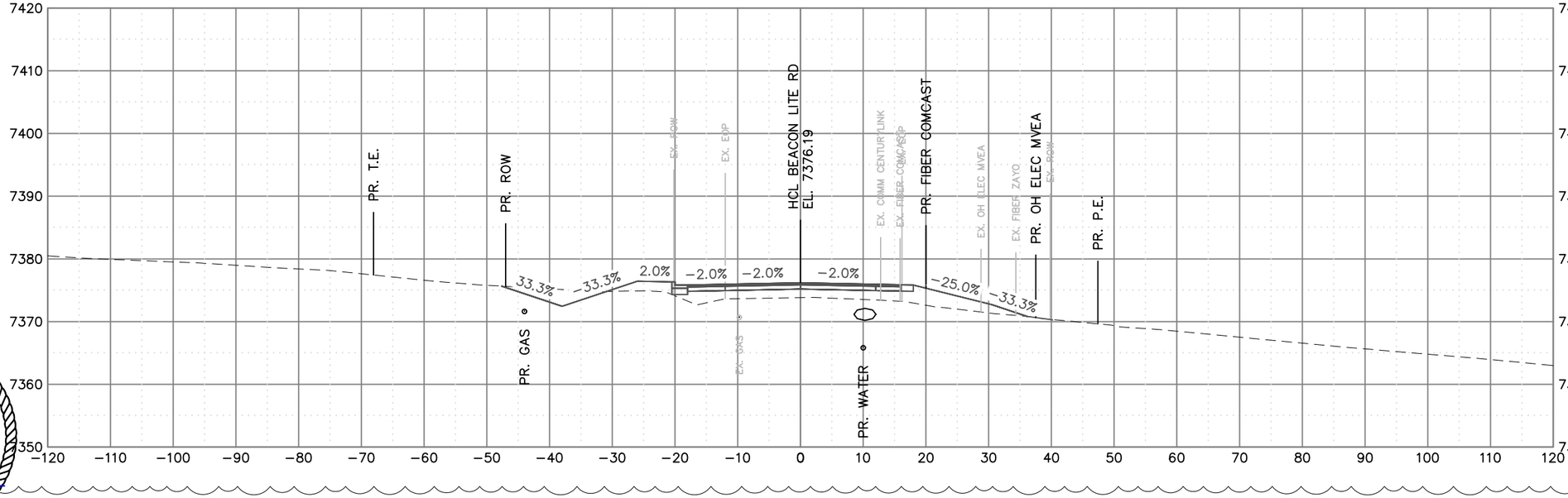
Sheet Number 295

R-1

50+00.00



149+50.00



COLORADO LICENSED
KRISTIN RIVARD SCOTT
54315
9/10/24
PROFESSIONAL ENGINEER

Print Date:	09/09/2024
File Name:	175644_XS.dwg
Horiz. Scale:	1"=20'
Vert. Scale:	1"=20'
Unit Information	Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

R-1

Sheet Revisions

Date:	Comments	Init.
6/01/23	RFC	EMK
9/09/24	GEOMETRY CHANGE	KRS

EL PASO COUNTY
COLORADO

PPRTA

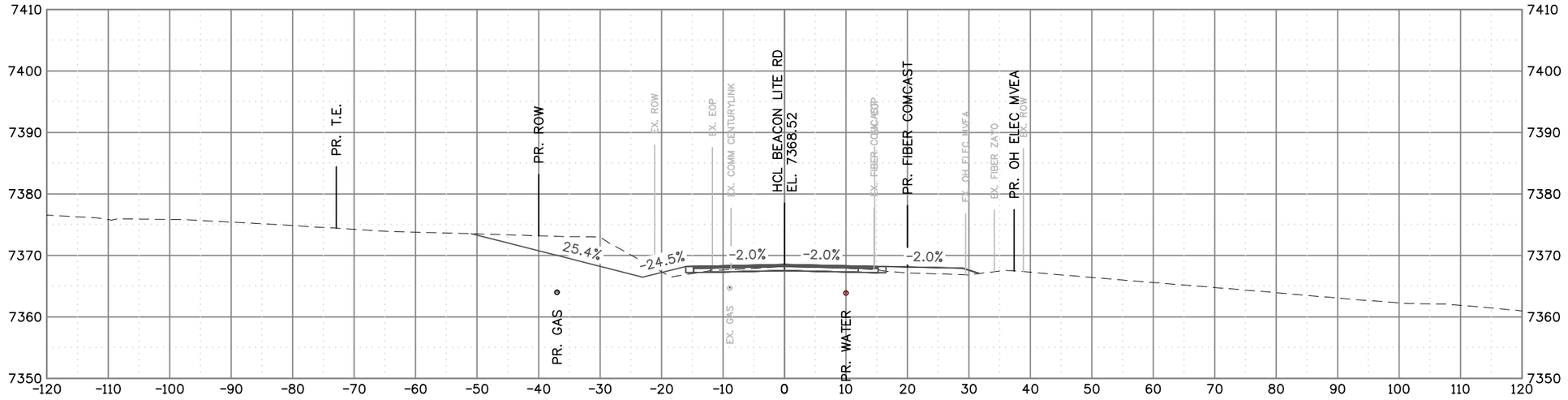
BEACON LITE ROAD IMPROVEMENTS
CROSS SECTIONS

Project No./Code
128558

Designer:	KRS	Structure Numbers	
Detailer:	KRS		
Sheet Subset:	ROADWAY	Subset Sheets:	42 OF 44

Sheet Number 296

51+00.00



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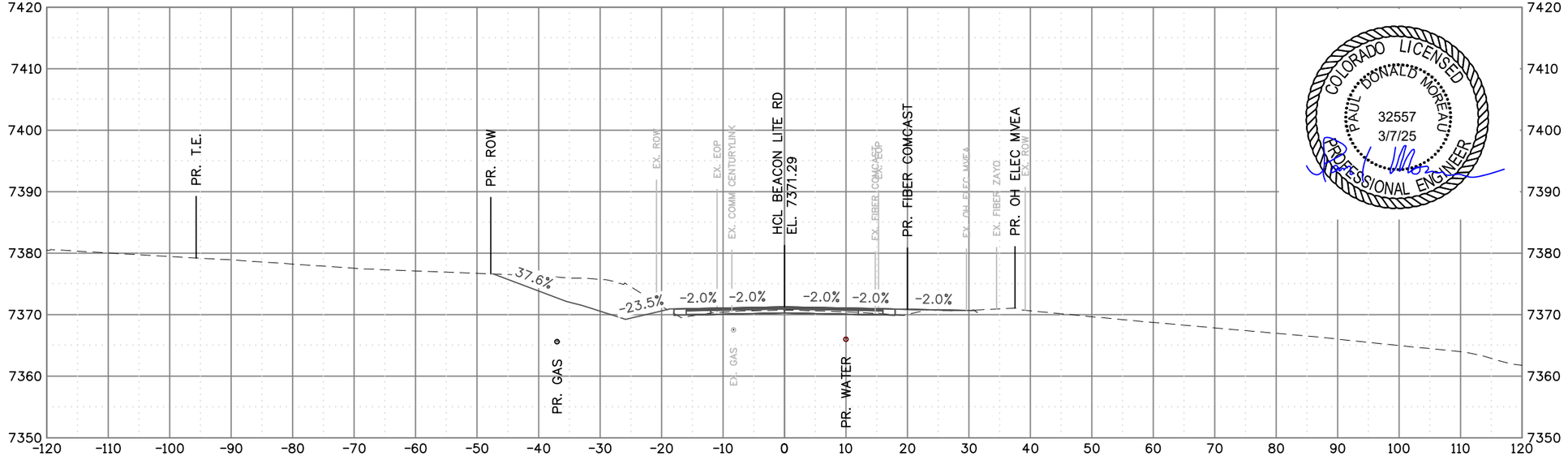


COLORADO LICENSED
PAUL DONALD MOREAU
32557
3/7/25
PROFESSIONAL ENGINEER

Print Date: 03/07/2025
File Name: 175644_RDW_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

0000

Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

PPRTA
PIKES PEAK RURAL TRANSPORTATION AUTHORITY

BEACON LITE ROAD IMPROVEMENTS
CROSS SECTIONS

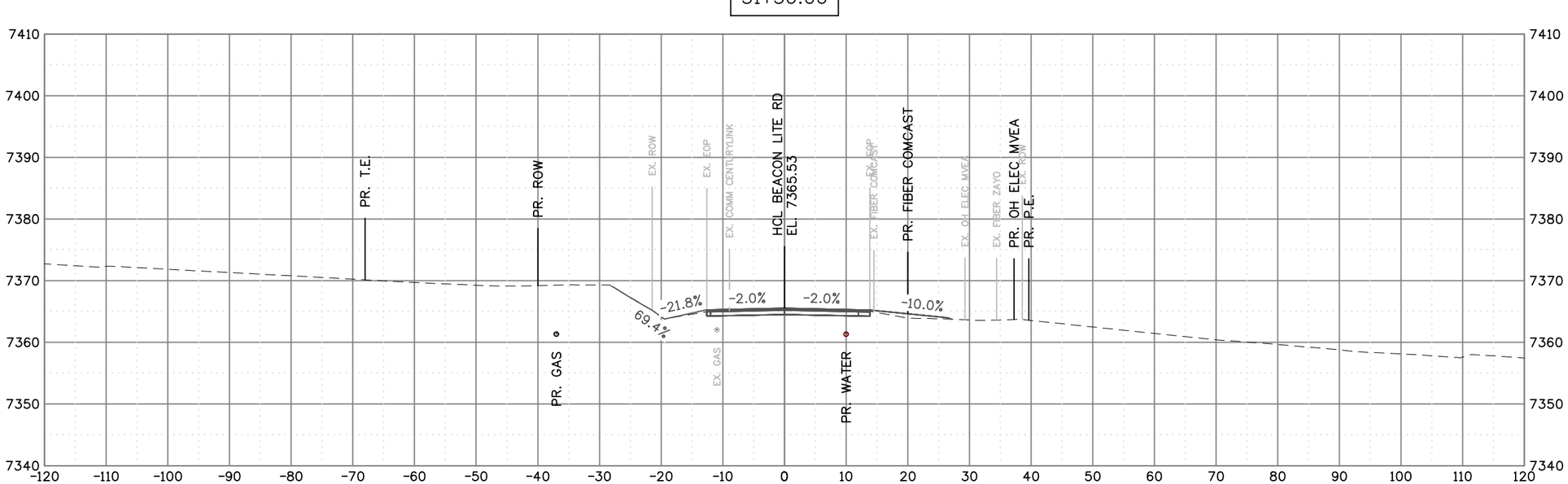
Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	43 OF 44

Project No./Code
128558

Sheet Number 297

COLORADO LICENSED
PAUL DONALD MOREAU
32557
3/7/25
PROFESSIONAL ENGINEER

51+50.00



Print Date: 03/07/2025			
File Name: 175644_RDW_XS.dwg			
Horiz. Scale: 1"=20'	Vert. Scale: 1"=20'		
Unit Information	Unit Leader Initials		

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

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Sheet Revisions

Date:	Comments	Init.

EL PASO COUNTY
COLORADO

PPRTA
PIKES PEAK RURAL TRANSPORTATION AUTHORITY

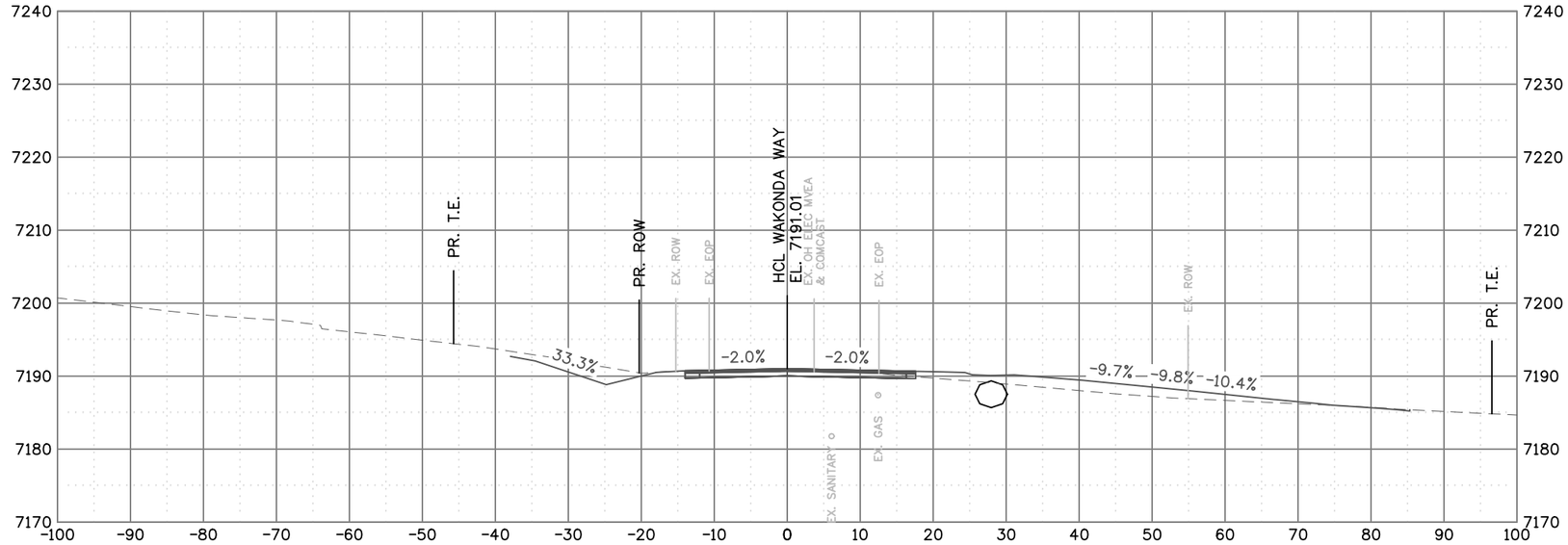
BEACON LITE ROAD IMPROVEMENTS CROSS SECTIONS

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	44 OF 44

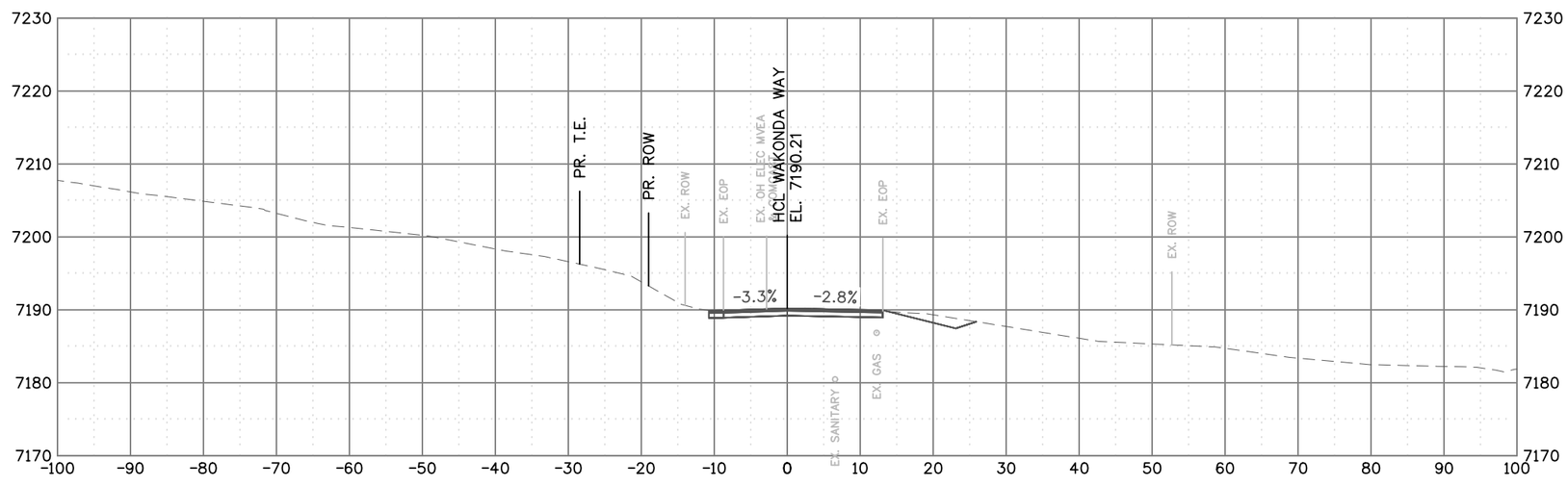
Project No./Code
128558

Sheet Number 298

103+50.00



103+10.01



COLORADO LICENSED
ERIC M. KING
44932
10/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions		
Date:	Comments	Init.

EL PASO COUNTY
COLORADO

PPRTA

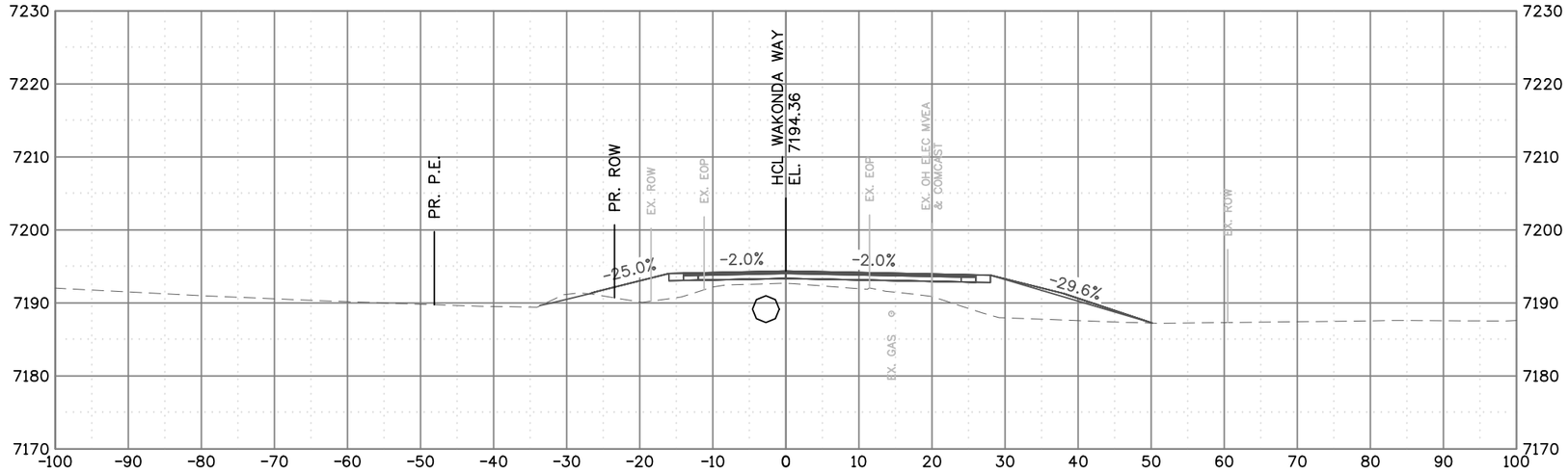
BEACON LITE ROAD IMPROVEMENTS
CROSS SECTIONS
WAKONDA WAY

Designer: EMK
Detailer: RBR
Sheet Subset: ROADWAY
Structure Numbers
Subset Sheets: 1 OF 4

Project No./Code
128558

Sheet Number 299

104+50.00



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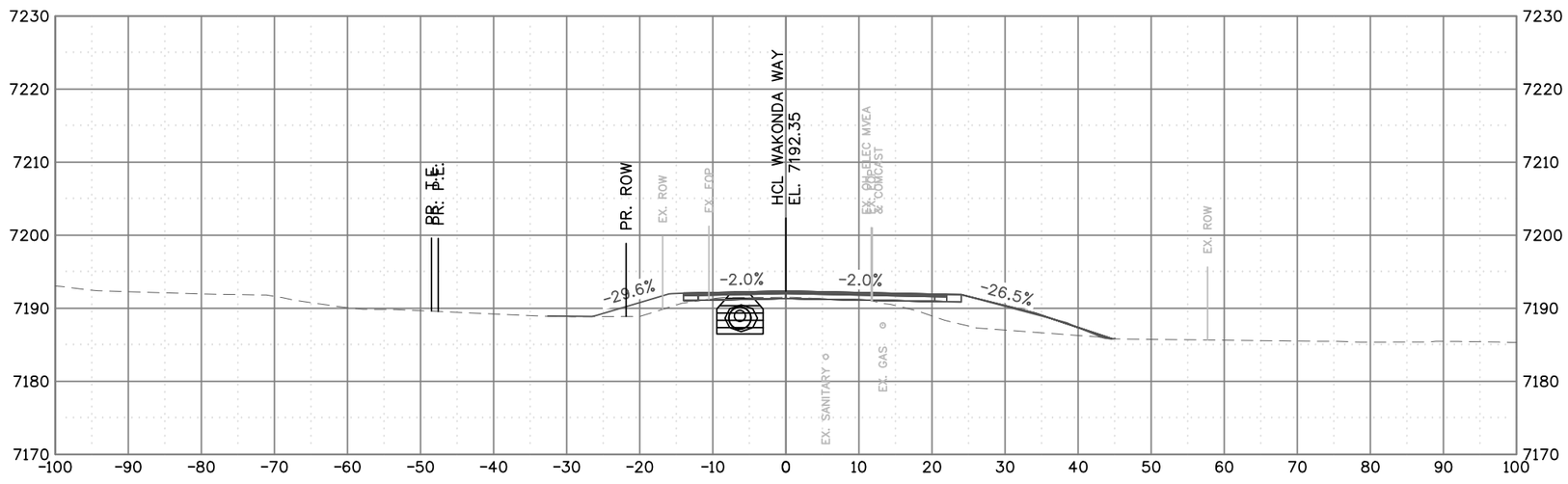


COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

0000

Sheet Revisions

Date:	Comments	Init.

EL PASO COUNTY
COLORADO

PPRTA

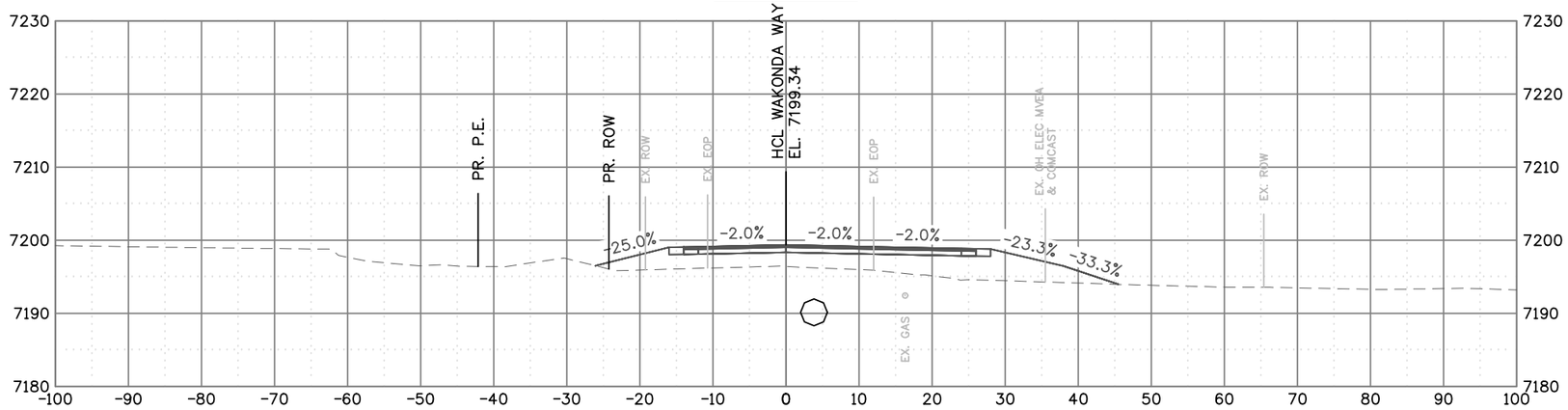
BEACON LITE ROAD IMPROVEMENTS
CROSS SECTIONS
WAKONDA WAY

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	2 OF 4

Project No./Code
128558

Sheet Number 300

105+50.00



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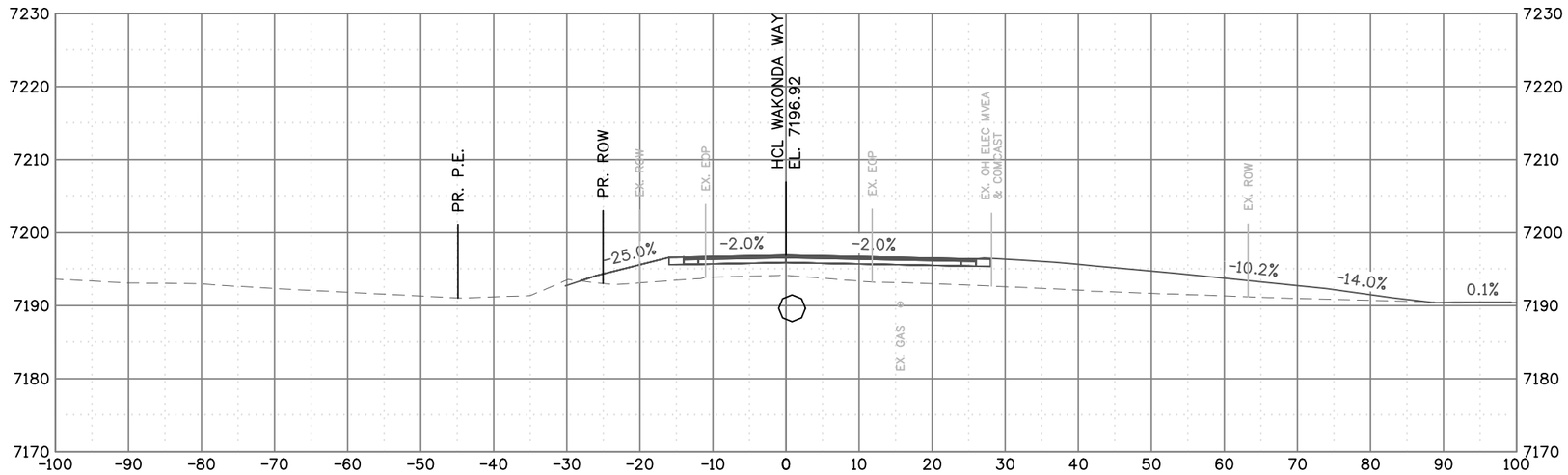


COLORADO LICENSED
ERIC M. KING
44932
6/01/2022
PROFESSIONAL ENGINEER

Print Date: 04/29/2022
File Name: 175644_XS.dwg
Horiz. Scale: 1"=20' Vert. Scale: 1"=20'
Unit Information Unit Leader Initials

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions

Date:	Comments	Init.

EL PASO COUNTY
COLORADO

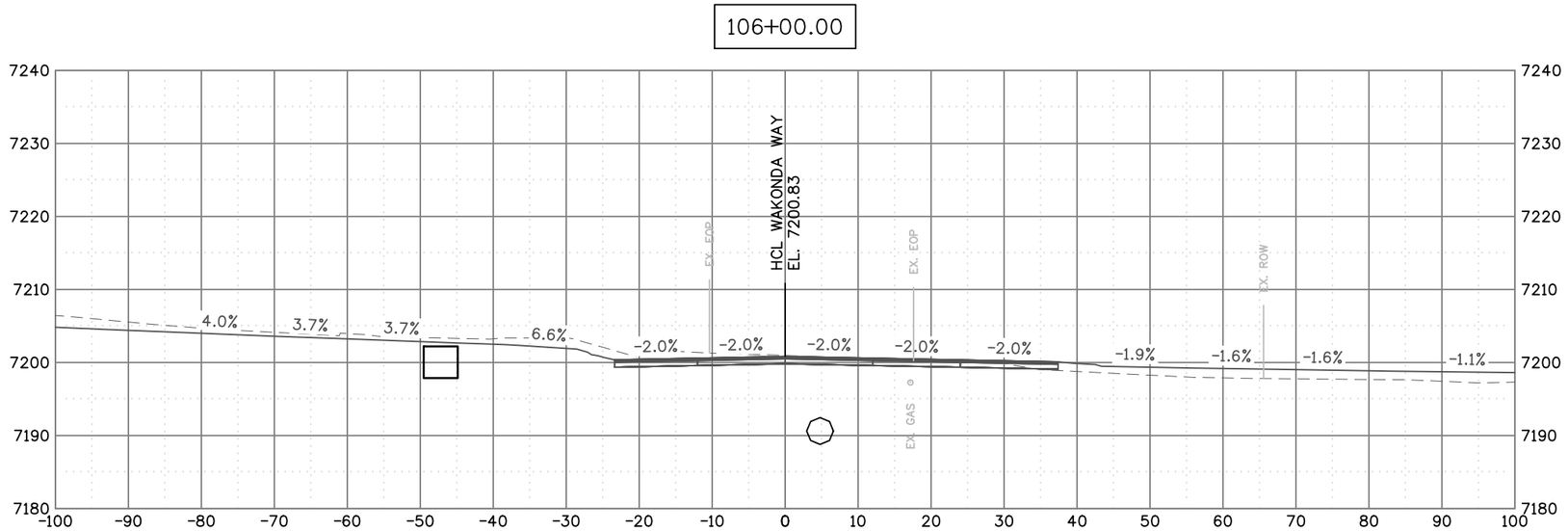
PPRTA

BEACON LITE ROAD IMPROVEMENTS
CROSS SECTIONS
WAKONDA WAY

Project No./Code 128558

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	3 OF 4

Sheet Number 301



COLORADO LICENSED
ERIC M. KING
44937
10/01/2021
PROFESSIONAL ENGINEER

Print Date: 04/29/2022			
File Name: 175644_XS.dwg			
Horiz. Scale: 1"=20'	Vert. Scale: 1"=20'		
Unit Information	Unit Leader Initials		

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL, INC.
165 S. UNION BLVD., STE. 1000
LAKEWOOD, CO 80228
720.514.1100

Sheet Revisions

Date:	Comments	Init.

EL PASO COUNTY
COLORADO

PPRTA

BEACON LITE ROAD IMPROVEMENTS
CROSS SECTIONS
WAKONDA WAY

Designer:	EMK	Structure Numbers	
Detailer:	RBR		
Sheet Subset:	ROADWAY	Subset Sheets:	4 OF 4

Project No./Code
128558

Sheet Number 302