

ElLundberg 3:36:02 PM pw:\\wile-pw.bentley.com\\wile-pw\\Documents\\B100-TRN\\El Paso County, CO\\21-100-040-00\\04000\\Traffic\\ITS\\Drawings\\04001TRAF_TitleSht.dgn

EL PASO COUNTY
MESA RIDGE PKWY AT MARKSHEFFEL RD
TRAFFIC SIGNAL
CONSTRUCTION PLANS
EL PASO COUNTY
Project #17-067-78A
Bid # -



SHEET NO.	INDEX OF SHEETS
1	TITLE SHEET
2	STANDARD PLANS
3-5	GENERAL NOTES
6	SUMMARY OF APPROXIMATE QUANTITIES
7	TABULATIONS
8	SIGNAL PLAN
9	SIGNING & STRIPING PLAN
10	SIGN DETAIL
11	UTILITY CONFLICT PLAN
	SUE PLANS
	CDOT STANDARD PLANS



Print Date: 8/25/2022		<div>0000</div>	Sheet Revisions			<div><div><div>WILSON & COMPANY</div><div>5755 Mark Dabbling Blvd. Suite 220 Colorado Springs, CO 80919 Phone: 719-520-5800 FAX: 719-520-0108</div></div></div>	AS-CONSTRUCTED		Contract Information		Project No./Code	
File Name: 04001TRAF_TitleSht.dgn			Date:	Comments	Init.		No Revisions:	Contractor:		Project #17-067-78A		
Horiz. Scale: 1:1			Vert. Scale: As Noted				Revised:	County Engineer:		Bid #_ _ _ _		
Unit Information			Unit Leader Initials				Void:	PROJECT STARTED: ACCEPTED:		Sheet Number		
								Comments:		1		

E:\Lundberg 3:21:34 PM pwt:\wils-pw.bentley.com\wils-pw\Documents\8100-TRN\El Paso County, CD\21-100-040-00\040001\Traffic\ITS\Drawings\04001TRAF_STND_01.dgn

PLAN NUMBER	M STANDARD TITLE	PAGE NUMBER
<input checked="" type="checkbox"/> M-100-1	STANDARD SYMBOLS (3 SHEETS)	1-3
<input type="checkbox"/> M-100-2	ACRONYMS AND ABBREVIATIONS (4 SHEETS)	4-7
<input type="checkbox"/> M-203-1	APPROACH ROADS	8
<input type="checkbox"/> M-203-2	DITCH TYPES	9
<input type="checkbox"/> M-203-11	SUPERELEVATION CROWNED AND DIVIDED HIGHWAYS (3 SHEETS)	10-12
<input type="checkbox"/> M-203-12	SUPERELEVATION STREETS (2 SHEETS)	13-14
<input type="checkbox"/> M-206-1	EXCAVATION AND BACKFILL FOR STRUCTURES (2 SHEETS)	15-16
<input type="checkbox"/> M-206-2	EXCAVATION AND BACKFILL FOR BRIDGES (2 SHEETS)	17-18
<input checked="" type="checkbox"/> M-208-1	TEMPORARY EROSION CONTROL (11 SHEETS)	19-29
<input type="checkbox"/> M-210-1	MAILBOX SUPPORTS (2 SHEETS)	30-31
<input type="checkbox"/> M-214-1	NURSERY STOCK DETAILS	32
<input type="checkbox"/> M-216-1	SOIL RETENTION COVERING (2 SHEETS)	33-34
<input type="checkbox"/> M-412-1	CONCRETE PAVEMENT JOINTS (9 SHEETS) (REVISED ON JANUARY 31, 2022)	35-39
<input type="checkbox"/> M-412-2	CONCRETE PAVEMENT CRACK REPAIR (4 SHEETS) (NEW, ISSUED ON OCTOBER 7, 2019)	
<input type="checkbox"/> M-510-1	STRUCTURAL PLATE PIPE H-20 LOADING	40
<input type="checkbox"/> M-601-1	SINGLE CONCRETE BOX CULVERT (CAST-IN-PLACE) (2 SHEETS)	41-42
<input type="checkbox"/> M-601-2	DOUBLE CONCRETE BOX CULVERT (CAST-IN-PLACE) (2 SHEETS)	43-44
<input type="checkbox"/> M-601-3	TRIPLE CONCRETE BOX CULVERT (CAST-IN-PLACE) (2 SHEETS)	45-46
<input type="checkbox"/> M-601-10	HEADWALL FOR PIPES	47
<input type="checkbox"/> M-601-11	TYPE "S" SADDLE HEADWALLS FOR PIPE	48
<input type="checkbox"/> M-601-12	HEADWALLS AND PIPE OUTLET PAVING	49
<input type="checkbox"/> M-601-20	WINGWALLS FOR PIPE OR BOX CULVERTS (2 SHEETS)	50-51
<input type="checkbox"/> M-603-1	METAL PIPE (4 SHEETS)	52-55
<input type="checkbox"/> M-603-2	REINFORCED CONCRETE PIPE	56
<input type="checkbox"/> M-603-3	PRECAST CONCRETE BOX CULVERT (REVISED ON SEPTEMBER 10, 2020)	57
<input type="checkbox"/> M-603-4	CORRUGATED POLYETHYLENE PIPE (AASHTO M294) AND CORRUGATED POLYPROPYLENE PIPE (AASHTO M330) (2 sheets) (REVISED ON MARCH 7, 2022)	58
<input type="checkbox"/> M-603-5	POLYVINYL CHLORIDE (PVC) PIPE (AASHTO M304)	59
<input type="checkbox"/> M-603-6	STEEL REINFORCED POLYETHYLENE RIBBED PIPE (AASHTO MP 20)	60
<input type="checkbox"/> M-603-10	CONCRETE AND METAL END SECTIONS	61
<input type="checkbox"/> M-603-12	TRAVERSABLE END SECTIONS AND SAFETY GRATES (3 SHEETS)	62-64
<input type="checkbox"/> M-604-10	INLET, TYPE C	65
<input type="checkbox"/> M-604-11	INLET, TYPE D	66
<input type="checkbox"/> M-604-12	CURB INLET TYPE R (2 SHEETS)	67-68
<input type="checkbox"/> M-604-13	CONCRETE INLET TYPE 13	69
<input type="checkbox"/> M-604-20	MANHOLES (3 SHEETS)	70-72
<input type="checkbox"/> M-604-25	VANE GRATE INLET (5 SHEETS)	73-77
<input type="checkbox"/> M-605-1	SUBSURFACE DRAINS	78



PLAN NUMBER	M STANDARD TITLE	PAGE NUMBER
<input type="checkbox"/> M-606-1	MIDWEST GUARDRAIL SYSTEM TYPE 3 W-BEAM 31 INCHES (19 SHEETS) (REVISED ON MARCH 5, 2020)	79-97
<input type="checkbox"/> M-606-13	GUARDRAIL TYPE 7 F-SHAPE BARRIER (4 SHEETS)	98-101
<input type="checkbox"/> M-606-14	PRECAST TYPE 7 CONCRETE BARRIER (4 SHEETS) (REVISED ON AUGUST 21, 2020)	102-104
<input type="checkbox"/> M-606-15	GUARDRAIL TYPE 9 SINGLE SLOPE BARRIER (11 SHEETS) (REVISED ON MARCH 5, 2020)	105-115
<input type="checkbox"/> M-607-1	WIRE FENCES AND GATES (3 SHEETS)	116-118
<input type="checkbox"/> M-607-2	CHAIN LINK FENCE (3 SHEETS)	119-121
<input type="checkbox"/> M-607-3	BARRIER FENCE	122
<input type="checkbox"/> M-607-4	DEER FENCE, GATES, AND GAME RAMPS (7 SHEETS) (REVISED ON JULY 13, 2020)	123-127
<input type="checkbox"/> M-607-10	PICKET SNOW FENCE	128
<input type="checkbox"/> M-607-15	ROAD CLOSURE GATE (9 SHEETS)	129-137
<input type="checkbox"/> M-608-1	CURB RAMPS (10 SHEETS)	138-147
<input type="checkbox"/> M-609-1	CURBS, GUTTERS, AND SIDEWALKS (4 SHEETS)	148-151
<input type="checkbox"/> M-611-1	CATTLE GUARD (2 SHEETS)	152-153
<input type="checkbox"/> M-611-2	DEER GUARD (2 SHEETS)	154-155
<input type="checkbox"/> M-614-1	RUMBLE STRIPS (3 SHEETS)	156-158
<input type="checkbox"/> M-614-2	SAND BARREL ARRAYS (2 SHEETS)	159-160
<input type="checkbox"/> M-615-1	EMBANKMENT PROTECTOR TYPE 3	161
<input type="checkbox"/> M-615-2	EMBANKMENT PROTECTOR TYPE 5	162
<input type="checkbox"/> M-616-1	INVERTED SIPHON	163
<input type="checkbox"/> M-620-1	FIELD LABORATORY CLASS 1	164
<input type="checkbox"/> M-620-2	FIELD LABORATORY CLASS 2 (2 SHEETS)	165-166
<input type="checkbox"/> M-620-11	FIELD OFFICE CLASS 1	167
<input type="checkbox"/> M-620-12	FIELD OFFICE CLASS 2	168
<input checked="" type="checkbox"/> M-629-1	SURVEY MONUMENTS (2 SHEETS)	169-170

COLORADO
DEPARTMENT OF TRANSPORTATION
M&S STANDARDS PLANS LIST
July 31, 2019

Revised on July 22, 2022

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.

PLAN NUMBER	S STANDARD TITLE	PAGE NUMBER
<input type="checkbox"/> S-612-1	DELINEATOR INSTALLATIONS (8 SHEETS)	171-178
<input checked="" type="checkbox"/> S-613-1	ROADWAY LIGHTING (6 SHEETS) (REVISED ON SEPTEMBER 30, 2020)	179-186
<input type="checkbox"/> S-613-2	ALTERNATIVE ROADWAY LIGHTING (4 SHEETS) (NEW, ISSUED ON SEPTEMBER 30, 2020)	
<input type="checkbox"/> S-614-1	GROUND SIGN PLACEMENT (2 SHEETS)	187-188
<input type="checkbox"/> S-614-2	CLASS I SIGNS	189
<input type="checkbox"/> S-614-3	CLASS II SIGNS	190
<input type="checkbox"/> S-614-4	CLASS III SIGNS (3 SHEETS)	191-193
<input type="checkbox"/> S-614-5	BREAK-AWAY SIGN SUPPORT DETAILS FOR CLASS III SIGNS (2 SHEETS)	194-195
<input type="checkbox"/> S-614-6	CONCRETE FOOTINGS AND SIGN ISLANDS FOR CLASS III SIGNS (2 SHEETS)	196-197
<input type="checkbox"/> S-614-8	TUBULAR STEEL SIGN SUPPORT DETAILS (7 SHEETS) (REVISED ON DECEMBER 31, 2020)	198-204
<input type="checkbox"/> S-614-9	PEDESTRIAN PUSH BUTTON POST ASSEMBLY (2 SHEETS) 205-206 (SUPERSEDED ON JANUARY 23, 2020 BY S-614-45)	
<input type="checkbox"/> S-614-10	MARKER ASSEMBLY INSTALLATIONS	207
<input type="checkbox"/> S-614-11	MILEPOST SIGN DETAIL FOR HIGH SNOW AREAS	208
<input type="checkbox"/> S-614-12	STRUCTURE NUMBER INSTALLATION (2 SHEETS)	209-210
<input type="checkbox"/> S-614-14	FLASHING BEACON AND SIGN INSTALLATIONS (4 SHEETS)	211-214
<input checked="" type="checkbox"/> S-614-20	TYPICAL POLE MOUNT SIGN INSTALLATIONS	215
<input type="checkbox"/> S-614-21	CONCRETE BARRIER SIGN POST INSTALLATIONS (2 SHEETS) (REVISED ON SEPTEMBER 21, 2020)	216-217
<input type="checkbox"/> S-614-22	TYPICAL MULTI-SIGN INSTALLATIONS	218
<input checked="" type="checkbox"/> S-614-40	TYPICAL TRAFFIC SIGNAL 30'-75' DOUBLE MAST ARMS 65'-75' SINGLE MAST ARMS (5 SHEETS) (REVISED ON JULY 22, 2022)	219-223
<input type="checkbox"/> S-614-40A	ALTERNATIVE TRAFFIC SIGNAL 25'-55' SINGLE MAST ARMS (4 SHEETS) (REVISED ON JULY 22, 2022)	224-227
<input type="checkbox"/> S-614-41	TEMPORARY SPAN WIRE SIGNALS (13 SHEETS)	228-240
<input checked="" type="checkbox"/> S-614-42	CABINET FOUNDATION DETAIL (4 SHEETS)	241-244
<input checked="" type="checkbox"/> S-614-43	TRAFFIC LOOP AND MISCELLANEOUS SIGNAL DETAILS (8 SHEETS)	245-252
<input type="checkbox"/> S-614-44	PEDESTAL POLE SIGNALS (2 SHEETS)	253-254
<input type="checkbox"/> S-614-45	PEDESTRIAN PUSH BUTTON POST ASSEMBLY DETAILS (6 SHEETS) (REVISED ON DECEMBER 3, 2020)	255-266
<input type="checkbox"/> S-614-50	STATIC SIGN MONOTUBE STRUCTURES (12 SHEETS)	267-280
<input type="checkbox"/> S-614-60	DYNAMIC SIGN MONOTUBE STRUCTURES (14 SHEETS)	281-289
<input checked="" type="checkbox"/> S-627-1	PAVEMENT MARKINGS (9 SHEETS) (REVISED ON JULY 22, 2022)	290-313
<input checked="" type="checkbox"/> S-630-1	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION (24 SHEETS)	314
<input checked="" type="checkbox"/> S-630-2	BARRICADES, DRUMS, CONCRETE BARRIERS (TEMP) AND VERTICAL PANELS	315
<input type="checkbox"/> S-630-3	FLASHING BEACON (PORTABLE) DETAILS	316-317
<input type="checkbox"/> S-630-4	STEEL SIGN SUPPORT (TEMPORARY) INSTALLATION DETAILS (2 SHEETS)	318-319
<input type="checkbox"/> S-630-5	PORTABLE RUMBLE STRIPS (TEMPORARY) (2 SHEETS)	320
<input type="checkbox"/> S-630-6	EMERGENCY PULL-OFF AREA (TEMPORARY)	321-323
<input type="checkbox"/> S-630-7	ROLLING ROADBLOCKS FOR TRAFFIC CONTROL (3 SHEETS)	

Print Date: 8/25/2022

File Name: 04001TRAF_STND_01.dgn

Horiz. Scale: 1:1

Vert. Scale:

Unit Information

Unit Leader

Sheet Revisions

Date:	Comments	Init.



WILSON & COMPANY

5755 Mark Dabbling Blvd.
Suite 220
Colorado Springs, CO 80919
Phone: 719-520-5800
FAX: 719-520-0108

No Revisions:

Revised:

Void:

MRP AT MARKSHEFFEL ROAD
STANDARD PLANS

Designer:

Detailer:

Sheet Subset:

Structure

Numbers

Subset Sheets: 1 of 1

Project No./Code

Project #17-067-78A

Bid #_ _ _ _

Sheet Number

2

ELundberg 3:22:52 PM pw:\wils-pw.bentley.com\wils-pw\Documents\B100-TRN\El Paso County, CO\21-100-040-00\040000\Traffic\ITS Drawings\04001TRAF_GenNote_01.dgn

GENERAL NOTES

1. THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE "COLORADO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (2021)", THE "COLORADO DEPARTMENT OF TRANSPORTATION – M&S STANDARD PLANS", THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (LATEST EDITION), THE LATEST EDITION OF THE "NATIONAL ELECTRIC CODE", AND ALL LOCAL ORDINANCES AND REGULATIONS THAT APPLY, EXCEPT WHERE OTHERWISE NOTED IN THE PROJECT PLANS AND THE PROJECT SPECIAL PROVISIONS.
2. THE CONTRACTOR SHALL HAVE A COPY OF ALL APPLICABLE STANDARDS ON SITE FOR THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A SITE-SPECIFIC STAGING PLAN FOR ACCESS TO THE WORK AREAS AND FIELD FACILITIES TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO BEGINNING CONSTRUCTION. ALL COSTS ASSOCIATED WITH THE CONSTRUCTION OF TEMPORARY INGRESS/EGRESS WILL NOT BE PAID FOR SEPARATELY. EARTHWORK, DRAINAGE, AND OTHER ITEMS RELATED TO THE ACCESS SHALL BE SUBSIDIARY TO THE WORK INCLUDING EROSION CONTROL MEASURE FOR RESTORATION OF THE SITE TO ORIGINAL CONDITIONS.
3. THE CONTRACTOR SHALL ACQUIRE ALL PERMITS AND INSPECTIONS NECESSARY TO COMPLETE THE WORK PRESENTED HEREIN.
4. THE ENGINEER SHALL BE NOTIFIED 48 HOURS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION.
5. PROJECT SUPERINTENDENT SHALL BE AVAILABLE 24 HOURS/DAY AND CREW WILL RESPOND WITHIN 4 HOURS OF CONTACT.
6. THE CONTRACTOR WILL RETAIN QUALIFIED PERSONNEL CAPABLE OF INSTALLING, PROGRAMMING, AND MAINTAINING THE TRAFFIC SIGNAL AND VIDEO DETECTION SYSTEMS UNTIL THE PROJECT IS ACCEPTED. THE PERSONNEL MUST BE COMPETENT IN THE CONSTRUCTION AND WIRING TECHNIQUES REQUIRED FOR TRAFFIC SIGNAL AND VIDEO DETECTION INSTALLATION AND HAVE KNOWLEDGE OF AND EXPERIENCE IN THE OPERATION OF TRAFFIC SIGNAL CONTROLLERS AND VIDEO DETECTION EQUIPMENT. AN IMSA LEVEL II TRAFFIC SIGNALS ELECTRICIAN OR TECHNICIAN IS REQUIRED FOR ANY WORK INTERNAL TO THE TRAFFIC SIGNAL CABINET AND REQUIRED TO BE ON-JOB-SITE AT ALL TIMES TO SUPERVISE CONSTRUCTION. FOR ALL WORK EXTERNAL TO THE SIGNAL CABINET, A LICENSED JOURNEYMAN WITH MINIMUM IMSA LEVEL I IS REQUIRED. A MAXIMUM RATIO OF FOUR LICENSED JOURNEYMAN IMSA LEVEL I TO ONE MASTER ELECTRICIAN IMSA LEVEL II WILL BE ALLOWED FOR WORK EXTERNAL TO THE SIGNAL CABINET. CURRENT CERTIFICATES SHOWING QUALIFICATIONS SHALL BE SUBMITTED AT THE PRE-CONSTRUCTION MEETING.

PROJECT ACTIVITY NOTES

7. ALL QUANTITIES ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK NECESSARY TO COMPLETE THE CONSTRUCTION SHOWN IN THESE PLANS.
8. ALL MATERIAL AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE ENGINEER AND EL PASO COUNTY BEFORE ACCEPTANCE.
9. LIMITS OF REMOVAL ITEMS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO THEIR REMOVAL. IF DISCREPANCIES ARISE BETWEEN THE DEMOLITION AND THE NEW WORK, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO DISTURBANCE.
10. ALL EXCESS MATERIAL REMOVED FROM THE PROJECT NOT DESIGNATED IN THE CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF PROPERLY.

SURVEY NOTES

11. THE CONTRACTOR SHALL CAREFULLY PRESERVE ALL MONUMENTS, BENCHMARKS, RANGE TIES, PROPERTY MARKERS, REFERENCE POINTS AND STAKES. IN CASE OF HIS DESTRUCTION OF THESE, THE CONTRACTOR WILL BE RESPONSIBLE FOR RESETTING SAME, AT NO COST TO THE OWNER, AND SHALL BE RESPONSIBLE FOR ANY LOSS OF TIME THAT MAY BE CAUSED.
12. ALL SURVEYING NECESSARY TO COMPLETE THE PROJECT WILL BE PAID FOR UNDER 1 LS CONSTRUCTION SURVEYING ITEM 625.

TRAFFIC CONTROL NOTES

13. ALL SIGNAGE AND STRIPING SHALL FOLLOW THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES – 2009 EDITION" (MUTCD), AND ALL APPLICABLE CDOT M&S STANDARDS. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT A METHOD OF HANDLING TRAFFIC (MHT) TO THE ENGINEER FOR APPROVAL FOR EACH SET-UP OF WORK.
14. THE CONTRACTOR SHALL MAINTAIN FULL COMPLIANCE PAVEMENT MARKINGS ON OPEN ROADWAYS AT ALL TIMES.
15. THE CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN TEMPORARY TRAFFIC CONTROL DEVICES THROUGHOUT THE DURATION OF CONSTRUCTION IN CONFORMANCE WITH APPROVED MHT'S.
16. TEMPORARY OR PERMANENT STRIPING THAT DOES NOT MEET THE CONTRACT REQUIREMENTS OR PLACED WITH OVER SPRAY SHALL BE REMOVED AND REPLACED BY SANDBLASTING OR WATER BLASTING AT NO COST TO THE PROJECT. PAYMENT WILL NOT BE MADE FOR INFERIOR OR OVER-SPRAYED STRIPING.
17. THE TRAFFIC CONTROL SUPERVISOR SHALL COORDINATE CONSTRUCTION ZONE TRAFFIC CONTROL ACTIVITIES WITH ALL APPROPRIATE OFFICIALS, INCLUDING BUT NOT LIMITED TO THE ENGINEER, EMERGENCY SERVICES, POSTMASTER, ETC.
18. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES IN THE PROJECT AREA AT ALL TIMES DURING CONSTRUCTION. WHEN TEMPORARY ACCESS RESTRICTIONS ARE EXPECTED, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER AND AFFECTED PROPERTY OWNERS PRIOR TO CLOSING THE ACCESS.

SIGNING NOTES:

19. THE CONTRACTOR SHALL INVENTORY ALL EXISTING SIGNS PRIOR TO CONSTRUCTION AND PROVIDE A LIST TO THE ENGINEER.
20. SIGN LOCATIONS ARE TO BE APPROVED BY THE ENGINEER BEFORE BEING PLACED.
21. THE CONTRACTOR SHALL REPAIR OR REPLACE AT THEIR EXPENSE ANY EXISTING SIGN THAT IS DAMAGED DURING CONSTRUCTION ACTIVITIES NOT SCHEDULED TO BE REMOVED.



Print Date: 8/25/2022		0000	Sheet Revisions				WILSON & COMPANY 5755 Mark Dabbling Blvd. Suite 220 Colorado Springs, CO 80919 Phone: 719-520-5800 FAX: 719-520-0108	MRP AT MARKSHEFFEL ROAD GENERAL NOTES				Project No./Code	
File Name: 04001TRAF_GenNote_01.dgn			Date:	Comments	Init.			No Revisions:		Designer: EJM Detailer: TAH		Project #17-067-78A	
Horiz. Scale: 1:1 Vert. Scale:												Bid # _ _ _ _	
Unit Information Unit Leader												Sheet Number 3	

E:\Lundberg 3:23:50 PM pw:\wils-pw.bentley.com\wils-pw\Documents\B100-TRN\ElPaso County, CO\21-100-040-00\040000\Traffic_ITS\Drawings\04001TRAF_GenNote_02.dgn

UTILITY NOTES

22. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO AT 811 THREE BUSINESS DAYS IN ADVANCE OF ANY EXCAVATING OR GRADING.
23. UTILITY FACILITIES EXIST WITHIN THE LIMITS OF PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL COOPERATE AND COORDINATE WITH THE UTILITY OWNERS IN THEIR REMOVAL AND RELOCATION OPERATIONS AND DURING CONSTRUCTION SO THAT PROGRESS IS EXPEDITED.
24. IT IS ESTIMATED THAT 40 HOURS WILL BE REQUIRED FOR POTHOLING PAID AS ITEM 203. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING AND COORDINATING WITH THE APPROPRIATE UTILITY REPRESENTATIVES TO BE ONSITE DURING POTHOLING AND SHALL LIKEWISE BE RESPONSIBLE FOR DETERMINING THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL REFER TO THE UTILITY SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
25. THE LOCATIONS OF EXISTING STRUCTURES, PIPELINES, UTILITIES, ETC., SHOWN ON THE DRAWINGS HAVE BEEN DERIVED FROM THE BEST AVAILABLE INFORMATION. THERE MAY BE OTHER STRUCTURES, PIPELINES, UTILITIES, ETC., NOT SHOWN ON THE DRAWINGS THAT PRESENTLY EXIST IN THE AREA OF CONSTRUCTION. THE ENGINEER AND/OR OWNER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE CONTRACTOR WILL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL IMPACTED EXISTING STRUCTURES, PIPELINES, UTILITIES, ETC., IN THE PROJECT SITE, AND SHALL BE RESPONSIBLE FOR ANY DAMAGES THERETO.
26. THE CONTRACTOR SHALL PROTECT AND MAINTAIN ALL UTILITIES AFFECTED BY THE WORK AND ANY DAMAGE SHALL BE REPAIRED AND RESTORED TO THE SATISFACTION OF THE ENGINEER OR APPLICABLE ENTITY AT THE CONTRACTOR'S EXPENSE.
27. THE CONTRACTOR SHALL NOTIFY THE ENGINEER WHERE UTILITIES CONFLICT WITH THE NEW WORK IN CONFORMANCE WITH THE SPECIFICATIONS. CONFLICT IS DEFINED WHERE THE NEW WORK CANNOT BE COMPLETED WITHOUT PROPER CLEARANCES AROUND THE UTILITY. WHERE FIELD VERIFICATION IS NOTED ON THE PLANS, THIS SHALL REQUIRE THE CONTRACTOR TO DETERMINE THE LOCATION OF THE FACILITY IN QUESTION PRIOR TO THE NEW CONSTRUCTION. A DETERMINATION SHALL BE MADE BY THE CONTRACTOR IF THE CURRENT DESIGN WILL MATCH THE EXISTING FACILITY AND NOTIFY THE ENGINEER IN WRITING IF IT DOES NOT.

ENVIRONMENTAL NOTES

28. RESTORATION OF THE PROJECT AREA WILL INCLUDE REMOVAL OF ALL DEBRIS, LITTER, EXCAVATION SPOILS, AND WASTE MATERIALS GENERATED BY CONSTRUCTION.
29. IN ORDER TO AVOID VIOLATING THE MIGRATORY BIRD TREATY ACT OF 1918, IF ANY TREES OR SHRUBS ARE TO BE REMOVED OR WORK ON/UNDER BRIDGES IS TO BE COMPLETED BETWEEN APRIL 1 AND AUGUST 31, A SURVEY MUST BE COMPLETED FOR ACTIVE NESTS. IF AN ACTIVE NEST(S) IS FOUND NO WORK MAY BE DONE WITHIN 50 FEET OF THE NEST(S) UNTIL THE NEST(S) BECOMES INACTIVE. TO AVOID THE SURVEY REQUIREMENT, IT IS RECOMMENDED THAT ALL VEGETATION THAT NEEDS TO BE REMOVED, BE REMOVED AFTER AUGUST 31 AND BEFORE APRIL 1. SEE SPEC 240 FOR DETAILS.
30. THE CONTRACTOR SHALL REMOVE ON A DAILY BASIS ALL SEDIMENT AND CONSTRUCTION DEBRIS FROM THE FLOW LINES TO AVOID POLLUTANTS FROM DISCHARGING INTO WATERWAYS. THE COST OF REMOVAL SHALL BE INCLUDED IN THE WORK.
31. FUELING AND ROUTINE MAINTENANCE OF CONSTRUCTION EQUIPMENT SHALL ONLY OCCUR AT DESIGNATED AREAS, AT LEAST 75 FEET FROM WETLAND AND AQUATIC HABITATS AND AWAY FROM DRAINAGE OR DITCHES TO PRECLUDE ADVERSE WATER QUALITY IMPACTS TO EXISTING DRAINAGES AND WETLAND HABITATS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PREVENT ADVERSE IMPACTS TO WATER QUALITY. MAJOR REPAIRS TO EQUIPMENT WILL BE MADE OFFSITE.
32. CONSTRUCTION EQUIPMENT SHALL BE CHECKED FREQUENTLY FOR LEAKS. ANY LEAKS OR SPILLS SHALL BE CLEANED UP IMMEDIATELY TO PREVENT THE CONTAMINATION OF SOLID OR RESIDUE ON PAVED SURFACES. SPILL AREAS SHALL NOT BE "HOSED DOWN", DRY CLEANUP METHODS SHALL BE USED.

33. PUMPING AND DISCHARGE OF WATER FROM DEWATERING OPERATIONS MAY REQUIRE A DISCHARGE PERMIT FROM THE CDPHE WATER QUALITY CONTROL DIVISION. DISCHARGE PERMITS OR ALTERNATE ARRANGEMENTS FOR WATER MANAGEMENT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR (SEE STANDARD SPECIFICATION 107.25(B) 6). APPLICABLE CONDITIONS FOR THE DISCHARGE INCLUDING MONITORING AND REPORTING SHALL BE INCLUDED IN THE COST OF THE WORK AND SHALL NOT BE COMPENSATED SEPARATELY.
34. THE CONTRACTOR SHALL SAVE, PROTECT, AND MAINTAIN ALL EXISTING VEGETATION IN THE PROJECT, EXCEPT FOR THE VEGETATION THAT MUST BE REMOVED TO ACCOMMODATE CONSTRUCTION OF THE PROJECT.
35. THE CONTRACTOR SHALL FLAG TREES ADJACENT TO THE BOUNDARY THAT ARE TO REMAIN IN PLACE. THE CONTRACTOR SHALL USE ALL APPROPRIATE CARE TO AVOID DAMAGE OR REMOVAL OF THE FLAGGED TREES. FLAGGED TREES THAT ARE DAMAGED SHALL BE REPLACED IN-KIND AT THE CONTRACTORS EXPENSE. TREES THAT ARE DAMAGED AND ASSESSED AS SALVAGEABLE SHALL BE PROMPTLY REPAIRED, PRUNED, WRAPPED, AND PROTECTED FROM FURTHER DAMAGE AT THE CONTRACTOR'S EXPENSE. ALL REPLACEMENT TREES AND SHRUBS SHALL BE NATIVE SPECIES.
36. THE CONTRACTOR SHALL REPAIR OR REPLACE IN-KIND ALL LANDSCAPE MATERIAL AND VEGETATION THAT IS DISTURBED BY THE WORK. REPLACED MATERIALS SHALL BE EQUAL OR BETTER THAN THE EXISTING MATERIALS IN SIZE, TYPE, AND CONDITION.



Print Date: 8/25/2022		<div>0000</div>	Sheet Revisions			<div><div>WILSON & COMPANY 5755 Mark Dabbling Blvd. Suite 220 Colorado Springs, CO 80919 Phone: 719-520-5800 FAX: 719-520-0108</div></div>	MRP AT MARKSHEFFEL ROAD GENERAL NOTES				Project No./Code	
File Name: 04001TRAF_GenNote_02.dgn			Date:	Comments	Init.		No Revisions:		Project #17-067-78A			
Horiz. Scale: 1:1			Vert. Scale:				Revised:		Designer: E.J.L	Structure	Bid # _ _ _ _	
Unit Information			Unit Leader				Void:		Detailer: T.A.H	Numbers		
									Sheet Subset: NOTE	Subset Sheets: 2 of 3	Sheet Number 4	

E:\Lundberg 3:25:40 PM pw:\wils-pw\berkeley.com\wils-pw\Documents\8100-TRNF\ElPaso County, CO\21-100-040-00\04000\Traffic_IT\Drawings\04001TRAF_GenNote_03.dgn

TRAFFIC SIGNAL NOTES

37. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR APPROVAL BY THE PROJECT ENGINEER PRIOR TO COMMENCEMENT OF WORK. THIS IS OUTLINED IN THE STANDARD SPECIFICATIONS.
38. PRIOR TO ORDERING THE SIGNAL POLES AND MAST ARMS, THE CONTRACTOR SHALL POTHOLE THE EXISTING UTILITIES BY THE USE OF NON-INVASIVE VACUUM EXTRACTION METHODS TO VERIFY THE EXACT LOCATION AND DEPTH OF THESE FACILITIES AND THAT THE SIGNAL POLE FOUNDATIONS CAN BE INSTALLED WITHOUT DAMAGE TO THE EXISTING UTILITIES OR RELOCATIONS OF THESE FACILITIES.
39. CONTRACTOR SHALL DELIVER THE 65-FOOT AND 75-FOOT MAST ARMS FOR THE SIGNAL POLES ON THE NORTHWEST AND SOUTHEAST CORNERS OF MESA RIDGE PKWY/MARKSHEFFEL RD TO THE EL PASO COUNTY SIGNAL SHOP AT 3275 AKERS DRIVE, COLORADO SPRINGS, CO 80922 FOR FUTURE INSTALLATION (BY OTHERS). DELIVERY OF THE MAST ARMS TO THE SIGNAL SHOP WILL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE SIGNAL POLES/MAST ARMS.
40. CONTRACTOR AND ELECTRICIAN SHALL BE RESPONSIBLE FOR COORDINATING WITH MOUNTAIN VIEW ELECTRIC ASSOCIATION TO PROVIDE THE PROPER SIZED SERVICE OF POWER (METERED ELECTRIC SERVICE) TO THE SIGNAL SYSTEM AND ALL LOAD CALCULATIONS NEEDED FOR SIGNAL, LUMINAIRE, ETC (50 AMP, 120-VOLT FEEDER CIRCUIT AND SEPARATE 20-AMP CIRCUIT FOR LUMINAIRES).
41. TEMPORARY PULL BOXES MAY BE INSTALLED TO FACILITATE THE CONSTRUCTION OF THE TRAFFIC SIGNAL AND SHALL BE REMOVED AT NO COST TO THE PROJECT.
42. CONDUIT, POLE, PULL BOXES, PUSH BUTTONS, CABINET, AND CAMERA LOCATIONS ARE APPROXIMATE. EXACT PLACEMENT TO BE DETERMINED IN THE FIELD AND APPROVED BY THE ENGINEER. PULL BOXES SHALL BE INSTALLED IN ACCORDANCE WITH CDOT STANDARD DETAIL S-614-43, SHEET 6 OF 8, AND SHALL NOT BE LOCATED IN CURB RAMPS, PAVEMENT AREAS, SIDEWALKS, OR LANDSCAPE FEATURES OR IN LOCATIONS WHERE THESE FEATURES COULD POSSIBLY BE CONSTRUCTED IN THE FUTURE. ALL PULL BOXES SHALL BE FLUSH WITH FINISHED GROUND SURFACE.
43. ALL VEHICLE SIGNAL HEADS SHALL HAVE APPROVED 12-INCH LED INDICATIONS AND SHALL BE ALUMINUM WITH POWDER-COATED GLOSS BLACK FINISH AND SHALL CONTAIN 12-INCH ALUMINUM TUNNEL VISORS WITH THE OUTSIDE POWDER-COATED GLOSS BLACK. ALL MAST ARM-MOUNTED HEADS SHALL HAVE BLACK LOUVERED ALUMINUM BACK PLATES WITH 1.5" YELLOW RETROREFLECTIVE BORDERS.
44. TRAFFIC SIGNAL HEADS MOUNTED ON THE SIDE OF POLES SHALL USE 3/4" BANDING.
45. SIGNAL HEADS THAT HAVE NOT BEEN PLACED IN SERVICE SHALL BE BAGGED WITH A PREFABRICATED WEATHER RESISTANT NYLON FORM-FITTED SIGNAL FACE COVER MATERIAL. BAGGING SHALL COVER ANY BACKPLATE BORDER AND SHALL BE YELLOW. THE SIGNAL HEAD SHALL REMAIN COMPLETELY COVERED UNTIL THE SIGNAL HEAD IS PLACED IN SERVICE AND IS FULLY FUNCTIONAL AND OPERATIONAL. BAGGING WILL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.
46. WIRING (LS) PAY ITEM SHALL INCLUDE ALL WIRING AT THE TRAFFIC SIGNAL, TRAFFIC SIGNAL CONTROLLER CABINET, AND ALL OTHER WIRING REQUIRED TO PROVIDE A FULLY FUNCTIONAL TRAFFIC SIGNAL AT COMPLETION OF THE PROJECT.
47. ALL SIGNAL CABLE SHALL BE CONTINUOUS FROM CONNECTIONS MADE IN THE HANDHOLE COMPARTMENT OF THE SIGNAL POLE TO THE TERMINAL COMPARTMENT IN THE CONTROLLER CABINET. SPLICING SHALL NOT BE PERMITTED, UNLESS SPECIFICALLY APPROVED BY THE ENGINEER.
48. SHOULD THE CONTRACTOR ENCOUNTER WATER IN THE CAISSON HOLE, ANY DEWATERING METHODS AND NECESSARY PERMITS SHALL BE INCLUDED IN THE COST OF THE CAISSON AND SHALL NOT BE MEASURED AND PAID FOR SEPARATELY.
49. CONCRETE USED IN CAISSONS SHALL BE CLASS BZ POURED AGAINST VIRGIN (UNDISTURBED) SOIL. ALL BASES SHALL BE VIBRATED TO ELIMINATE AIR POCKETS.
50. THE TOP OF THE POLE FOUNDATION SHALL BE LEVEL WITH THE FINISHED GRADE, OR EXTEND NO MORE THAN 4 INCHES ABOVE SURROUNDING GRADE.

51. SIGNAL FOUNDATIONS SHALL BE TROWEL FINISHED WITH STUBOUT DIRECTIONS SCRIBED AT EDGE.
52. TRAFFIC SIGNAL POLES, MAST ARMS, AND LUMINAIRE ARMS SHALL BE GALVANIZED. THE CONTROLLER CABINET AND BACKS OF THE MAST ARM-MOUNTED SIGN PANELS SHALL BE NATURAL ALUMINUM.
53. UNDERGROUND FEEDER (UF) CABLE WILL NOT BE ALLOWED FOR LUMINAIRE INSTALLATION. ONLY THHN WILL BE ACCEPTABLE FOR UNDERGROUND LUMINAIRE WIRING. THE CONTRACTOR SHALL FOLLOW S-613-1 STANDARD, TYPICAL CONCRETE LIGHT STANDARD FOUNDATION FOR LUMINAIRE WIRING UP THE POLE.
54. ALL SIGNAL POLE-MOUNTED LUMINAIRES SHALL BE LED LAMPS INSTALLED ON 15-FOOT EXTENSION ARM SHAFTS AT A NOMINAL HEIGHT OF 40 FEET. LUMINAIRE ARM SHAFT PLACEMENT AND ORIENTATION SHALL BE IN ACCORDANCE WITH THE PROJECT PLANS.
55. FINAL DETECTION ZONE PLACEMENT AND DIMENSIONS SHALL BE COMPLETED IN THE FIELD AND THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR COORDINATING AND SCHEDULING THIS WORK. CONTRACTOR SHALL BE CERTIFIED BY THE MANUFACTURER FOR THE SETUP OF DETECTION SYSTEMS OR HAVE A MANUFACTURER REPRESENTATIVE PRESENT FOR THE WORK.
56. EL PASO COUNTY (HOWARD SCHWARTZ 719-520-6803) MUST BE NOTIFIED AT LEAST TWO WEEKS PRIOR TO THE SIGNAL BEING PLACED IN FLASH MODE AND 48 HOURS PRIOR TO SIGNAL BEING TURNED ON FOR FULL INSPECTION. THE SIGNAL MAY NOT BE PUT IN FLASH MODE OR MADE FULLY OPERATIONAL UNTIL THE ENGINEER AND THE COUNTY HAS INSPECTED AND APPROVED INSTALLATION AND ALL REGULATORY SIGNING AND PAVEMENT MARKINGS ARE IN PLACE.
57. THE CONTRACTOR SHALL COORDINATE THE SCHEDULES OF THE CONTRACTED PROFESSIONAL ENGINEERING CONSULTANT AND THE EPC DEPARTMENT OF PUBLIC WORKS, HIGHWAY DIVISION TRAFFIC SIGNAL STAFF FOR SCHEDULING THE ON-SITE, IN-FIELD IMPLEMENTATION OF ALL TRAFFIC SIGNAL TIMING AND OPERATIONAL PROGRAMMING, VEHICLE DETECTION ZONE PLACEMENT, AND DETECTION EQUIPMENT POSITIONING. THIS WORK SHALL BE SCHEDULED NEAR THE END OF THE PROJECT, PRIOR TO PROJECT ACCEPTANCE, AND ONLY AFTER ALL FINAL PAVEMENT MARKINGS, SIGNING, AND TRAFFIC SIGNAL WORK HAS BEEN COMPLETED.
58. ACCEPTABLE TIMES FOR MAKING THE SIGNAL OPERATIONAL ARE BETWEEN 9:00 AM MONDAYS THROUGH 12:00 PM THURSDAYS.
59. THE CONTRACTOR SHALL HAVE 1 HOUR TO RESPOND FOR TRAFFIC SIGNAL MAINTENANCE PRIOR TO FINAL ACCEPTANCE.
60. ONCE CONSTRUCTION OF THE TRAFFIC SIGNAL HAS BEEN SATISFACTORILY COMPLETED, THE SIGNALS ARE "CONDITIONALLY ACCEPTED". AT THIS TIME, THE SIGNAL IS TURNED ON AND THE "BURN-IN" PERIOD BEGINS. THE BURN-IN PERIOD WILL LAST 15 DAYS. DURING THE BURN-IN PERIOD, THE SIGNAL SYSTEM IS ALLOWED TO OPERATE UNDER REAL WORLD CONDITIONS. ANY MALFUNCTION OCCURRING DURING THIS PERIOD SHALL REQUIRE A REPAIR OR REPLACEMENT AND THE ENGINEER WILL DETERMINE IF THE REPAIR MERITS A RESTART OF THE BURN-IN PERIOD.
61. PULL TAPE AND TRACER WIRE SHALL BE INSTALLED IN ALL NEW CONDUIT.
62. FOR POTENTIAL ADVERSE GEOTECHNICAL CONDITIONS THAT MAY CAUSE CAVING OF WALLS AT CAISSON LOCATIONS, CONTRACTOR SHALL BE PREPARED TO USE CASING OR OTHER METHODS APPROVED BY THE ENGINEER.
63. THE CONTRACTOR SHALL COMPLETE ALL WORK NECESSARY FOR OPERATION OF THE SYSTEM, AND SHALL CONTACT EL PASO COUNTY (HOWARD SCHWARTZ 719-520-6803) TO SCHEDULE A COMPLIANCE INSPECTION.



Print Date: 8/25/2022		<div>0000</div>	Sheet Revisions			<div><div>WILSON & COMPANY 5755 Mark Dabbling Blvd. Suite 220 Colorado Springs, CO 80919 Phone: 719-520-5800 FAX: 719-520-0108</div></div>	MRP AT MARKSHEFFEL ROAD GENERAL NOTES				Project No./Code				
File Name: 04001TRAF_GenNote_03.dgn			Date:	Comments	Init.		No Revisions:				Project #17-067-78A				
Horiz. Scale: 1:1			Vert. Scale:				Revised:		Designer:	EJL	Structure				
Unit Information			Unit Leader				Void:		Detailer:	TAH	Numbers	Bid #_ _ _ _			
							Sheet Subset:		NOTE	Subset Sheets:	3	of	3	Sheet Number	5

E:\Lundberg 2:54:51 PM pwt\wils-pw.bentley.com\wils-pw\Documents\8100-TRN\El Paso County, CO\21-100-040-00\04000\Traffic\ITS\Drawings\04001TRAF_SDAQ_01.dgn

SUMMARY OF APPROXIMATE QUANTITIES			
ITEM NO.	CONTRACT ITEM DESCRIPTION	UNIT	PLAN QUANTITY
201-00000	Clearing and Grubbing	LS	1
202-00250	Removal of Pavement Marking	SF	134
202-00810	Removal of Ground Sign	EACH	1
203-01597	Potholing	HOUR	40
208-00201	Erosion Control	LS	1
503-00036	Drilled Shaft (36 Inch)	LF	15
503-00048	Drilled Shaft (48 Inch)	LF	21
503-00054	Drilled Shaft (54 Inch)	LF	42
613-00206	2 Inch Electrical Conduit (Bored)	LF	525
613-00306	3 Inch Electrical Conduit (Bored)	LF	785
613-07003	Type Three Pull Box	EACH	4
613-07004	Type Four Pull Box	EACH	1
613-10000	Wiring	LS	1
613-13000	Luminaire (LED)	EACH	4
613-50150	Secondary Service Pedestal	EACH	1
614-00012	Sign Panel (Class II)	SF	92
614-70336	Traffic Signal Face (12-12-12)	EACH	10
614-70448	Traffic Signal Face (12-12-12-12)	EACH	2
614-72836	Conflict Monitor	EACH	1
614-72855	Traffic Signal Controller Cabinet	EACH	1
614-72887	Microwave Vehicle Radar Detector	EACH	4
614-81140	Traffic Signal-Light Pole Steel (1-40 Foot Mast Arm)	EACH	1
614-81160	Traffic Signal-Light Pole Steel (1-60 Foot Mast Arm)	EACH	1
614-81175	Traffic Signal-Light Pole Steel (1-75 Foot Mast Arm)	EACH	2
614-86000	Traffic Signal Controller (Master)	EACH	1
614-86800	Uninterrupted Power Supply	EACH	1
614-87690	Ethernet Switch	EACH	1
614-87708	Cellular Modem (CDMA)	EACH	1
620-00020	Sanitary Facility	EACH	1
625-00000	Construction Surveying	LS	1
626-00000	Mobilization	LS	1
627-30410	Preformed Thermoplastic Pavement Marking (Xwalk-Stop Line)	SF	108
630-00000	Flagging	HOUR	240
630-00007	Traffic Control Inspection	DAY	24
630-00012	Traffic Control Management	DAY	60
630-00016	Traffic Control (Special) LS	LS	1
630-80355	Portable Message Sign Panel	EACH	3
700-70010	F/A Minor Contract Revisions	FA	1
700-70082	F/A Furnish & Install Electrical Service	FA	1
700-70380	F/A Erosion Control	FA	1
700-73351	F/A Uniformed Traffic Control	FA	1



Print Date: 8/25/2022		0000	Sheet Revisions				 5755 Mark Dabbling Blvd. Suite 220 Colorado Springs, CO 80919 Phone: 719-520-5800 FAX: 719-520-0108	MRP AT MARKSHEFFEL ROAD				Project No./Code		
File Name: 04001TRAF_SDAQ_01.dgn			Date:	Comments	Init.			SUMMARY OF APPROXIMATE QUANTITIES				Project #17-067-78A		
Horiz. Scale: 1:1	Vert. Scale:							No Revisions:		Designer:	EJL	Structure		Bid #_ _ _ _
Unit Information			Unit Leader					Revised:		Detailer:	TAH	Numbers		
								Void:		Sheet Subset:	SDAQ	Subset Sheets: 1	of 1	Sheet Number 6

E:\Lundberg 2:50:26 PM pwr:\wils-pw.bentley.com\wils-pw\Documents\8100-TRN\El Paso County, CO\21-100-040-00\040000\Traffic\ITS\Drawings\04001TRAF_Tab_01.dgn



TABULATION OF TRAFFIC SIGNAL ITEMS				
ITEM NO.	ITEM DESCRIPTION	UNIT	PLAN	FINAL
503-00036	Drilled Shaft (36 Inch)	LF	15	
503-00048	Drilled Shaft (48 Inch)	LF	21	
503-00054	Drilled Shaft (54 Inch)	LF	42	
613-00206	2 Inch Electrical Conduit (Bored)	LF	525	
613-00306	3 Inch Electrical Conduit (Bored)	LF	785	
613-07003	Type Three Pull Box	EACH	4	
613-07004	Type Four Pull Box	EACH	1	
613-10000	Wiring	LS	1	
613-13000	Luminaire (LED)	EACH	4	
613-50150	Secondary Service Pedestal	EACH	1	
614-70336	Traffic Signal Face (12-12-12)	EACH	10	
614-70448	Traffic Signal Face (12-12-12-12)	EACH	2	
614-72836	Conflict Monitor	EACH	1	
614-72855	Traffic Signal Controller Cabinet	EACH	1	
614-72887	Microwave Vehicle Radar Detector	EACH	4	
614-81140	Traffic Signal-Light Pole Steel (1-40 Foot Mast Arm)	EACH	1	
614-81160	Traffic Signal-Light Pole Steel (1-60 Foot Mast Arm)	EACH	1	
614-81175	Traffic Signal-Light Pole Steel (1-75 Foot Mast Arm)	EACH	2	
614-86000	Traffic Signal Controller (Master)	EACH	1	
614-86800	Uninterrupted Power Supply	EACH	1	
614-87690	Ethernet Switch	EACH	1	
614-87708	Cellular Modem (CDMA)	EACH	1	

TABULATION OF TEMPORARY TRAFFIC CONTROL ITEMS				
ITEM NO.	ITEM DESCRIPTION	UNIT	PLAN	FINAL
630-00000	Flagging	HOUR	240	
630-00007	Traffic Control Inspection	DAY	24	
630-00012	Traffic Control Management	DAY	60	
630-00016	Traffic Control (Special) (LS)	LS	1	
630-80355	Portable Message Sign Panel	EACH	3	

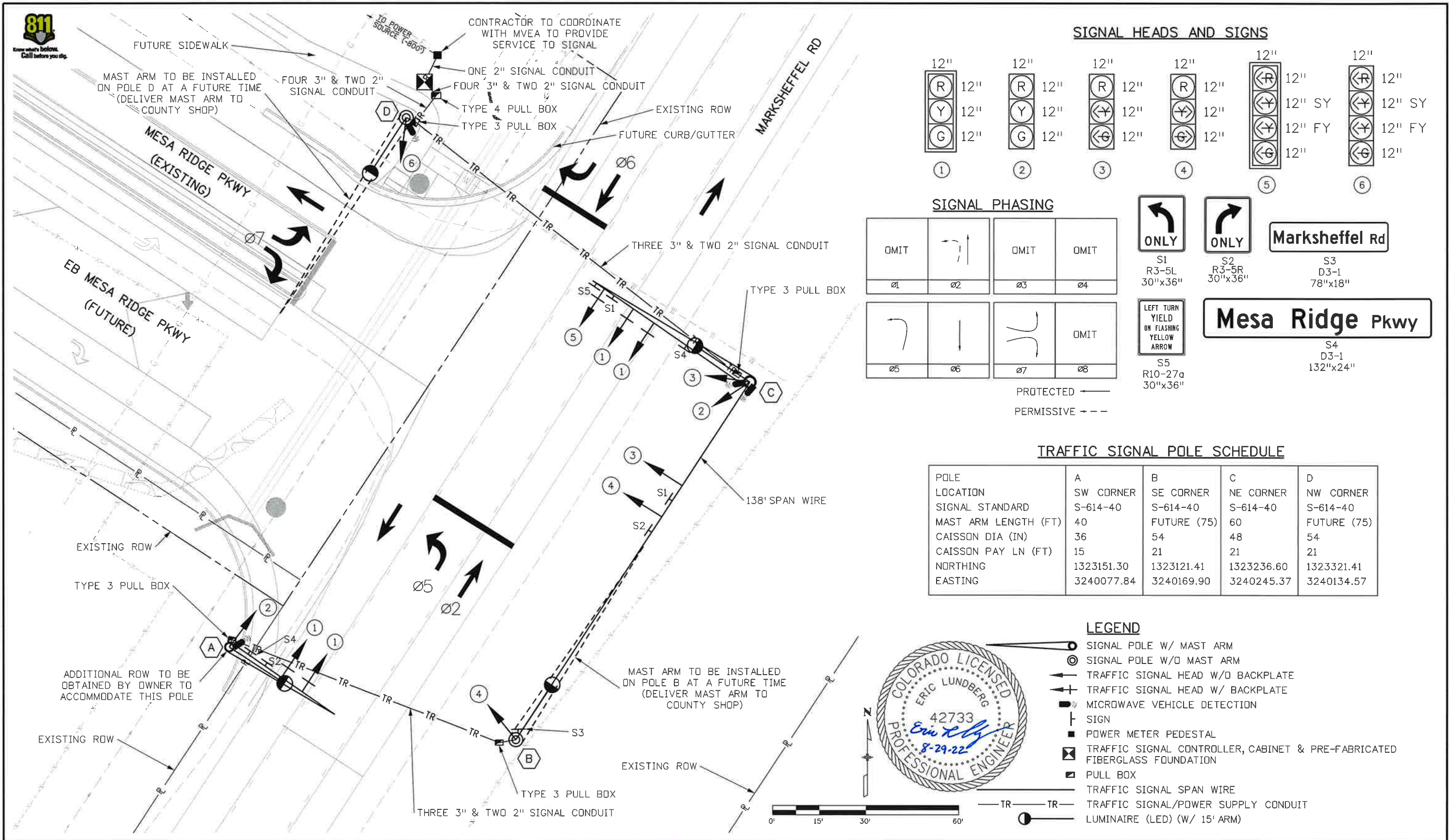
TABULATION OF MISCELLANEOUS ITEMS				
ITEM NO.	ITEM DESCRIPTION	UNIT	PLAN	FINAL
201-00000	Clearing and Grubbing	LS	1	
203-01597	Potholing	HOUR	40	
208-00201	Erosion Control	LS	1	
620-00020	Sanitary Facility	EACH	1	
625-00000	Construction Surveying	LS	1	
626-00000	Mobilization	LS	1	

TABULATION OF SIGNING-STRIPING ITEMS				
ITEM NO.	ITEM DESCRIPTION	UNIT	PLAN	FINAL
202-00250	Removal of Pavement Marking	SF	134	
202-00810	Removal of Ground Sign	EACH	1	
614-00012	Sign Panel (Class II)	SF	92	
627-30410	Preformed Thermoplastic Pavement Marking (Xwalk-Stop Line)	SF	108	

SURVEY CONTROL POINTS				
POINT NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
107	1324108.81	3235348.01	5774.00	No. 4 rebar, w/1" red plastic cap, PLS 25968", flush
109	1323889.69	3235769.52	5757.67	No. 4 rebar, w/1" red plastic cap, PLS 25968", 0.3' below
115	1323775.59	3237521.10	5674.98	60D nail, 0.5' below
142	1324289.26	3233357.34	5757.59	3-1/4"aluminum cap, "CDOT, PLS 24941" flush w/ grade
310	1323786.40	3236118.86	5738.91	60D nail, flush
311	1323758.07	3236229.67	5730.36	No. 4 rebar, w/1" red plastic cap, PLS 25968", 0.3' below
314	1323771.78	3237200.96	5677.42	No. 4 rebar, w/1" red plastic cap, PLS 25968", 0.3' below
356	1323874.26	3237419.64	5681.62	60D nail, 0.3' below
NOTES:				
1)	CONTROL IS BASED ON SURVEY FOR MESA RIDGE PKWY WIDENING PROJECT BY CLARK LAND SURVEYING, INC.			
2)	COORDINATE DATUM: PROJECT COORDINATES ARE MODIFIED COLORADO STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE (0502) WITH A SCALE FACTOR OF 1.000311235 APPLIED FROM THE SITE BENCHMARK.			

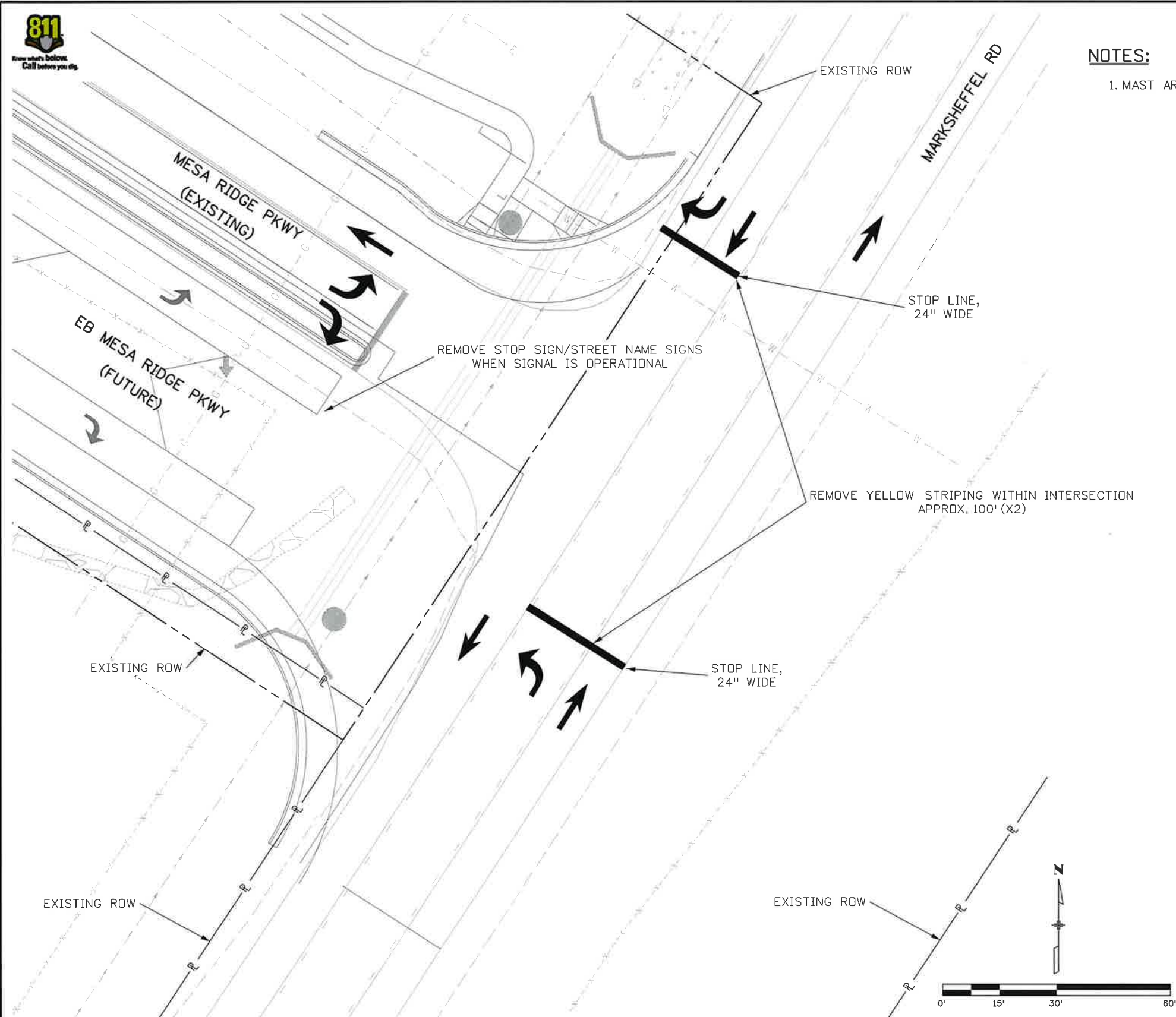
Print Date: 8/25/2022		<div>0000</div>	Sheet Revisions				 5755 Mark Dabbling Blvd. Suite 220 Colorado Springs, CO 80919 Phone: 719-520-5800 FAX: 719-520-0108	MRP AT MARKSHEFFEL ROAD TABULATIONS				Project No./Code			
File Name: 04001TRAF_Tab_01.dgn			Date:	Comments	Init.							Project #17-067-78A			
Horiz. Scale: 1:1			Vert. Scale:									Bid #_ _ _ _			
Unit Information			Unit Leader									Sheet Number 7			
									No Revisions:						
									Revised:		Designer: EJL	Structure			
									Void:		Detailer: TAH	Numbers			
													Sheet Subset: TAB	Subset Sheets: 1 of 1	

E:\Lundberg 4:15:46 PM pw:\wils-pw.bentley.com\wils-pw\Documents\B100-TRN\El Paso County, CO\21-100-040-00\04000\Traffic\ITS\Drawings\04001TRAF_SIG-Plan_01.dgn



Print Date: 8/25/2022		<div>0000</div>	Sheet Revisions				WILSON & COMPANY 5755 Mark Dabbling Blvd. Suite 220 Colorado Springs, CO 80919 Phone: 719-520-5800 FAX: 719-520-0108	MRP AT MARKSHEFFEL ROAD SIGNAL PLAN				Project No./Code	
File Name: 04001TRAF_SIG-Plan_01.dgn			Date:	Comments	Init.			No Revisions:				Project #17-067-78A	
Horiz. Scale: 1:30	Vert. Scale:							Revised:	Designer: EJL	Structure		Bid # _ _ _ _	
Unit Information	Unit Leader							Void:	Detailer: TAH	Numbers		Sheet Number 8	
									Sheet Subset: PLAN	Subset Sheets: 1	of 1		

E:\Lundberg 4:18:16 PM p:\wils-pw\wils-pw\Documents\8100-TRN\El Paso County, CO\21-100-040-00\04000\Traffic\ITS\Drawings\04001TRAF_SS-Plan_01.dgn



NOTES:

- 1. MAST ARM-MOUNTED SIGNS SHOWN ON TRAFFIC SIGNAL PLAN.



Print Date: 8/25/2022		<div>0000</div>	Sheet Revisions			<div><div><div>WILSON & COMPANY</div><div>5755 Mark Dabing Blvd. Suite 220 Colorado Springs, CO 80919 Phone: 719-520-5800 FAX: 719-520-0108</div></div></div>	MRP AT MARKSHEFFEL ROAD SIGNING & STRIPING PLAN				Project No./Code	
File Name: 04001TRAF_SS-Plan_01.dgn			Date:	Comments	Init.		No Revisions:		Project #17-067-78A			
Horiz. Scale: 1:30			Vert. Scale:				Revised:		Designer: EJL			
Unit Information			Unit Leader				Void:		Detailer: TAH			
									Structure Numbers			
							Sheet Subset: SS		Subset Sheets: 1 of 1			
									Sheet Number 9			

E:\Lundberg 3:37:51 PM pwr:\wils-pw.bentley.com\wils-pw\Documents\8100-TRN\El Paso County, CO\21-100-040-00\040000\Traffic\ITS\Drawings\04001TRAF_SIGN_Detail_01



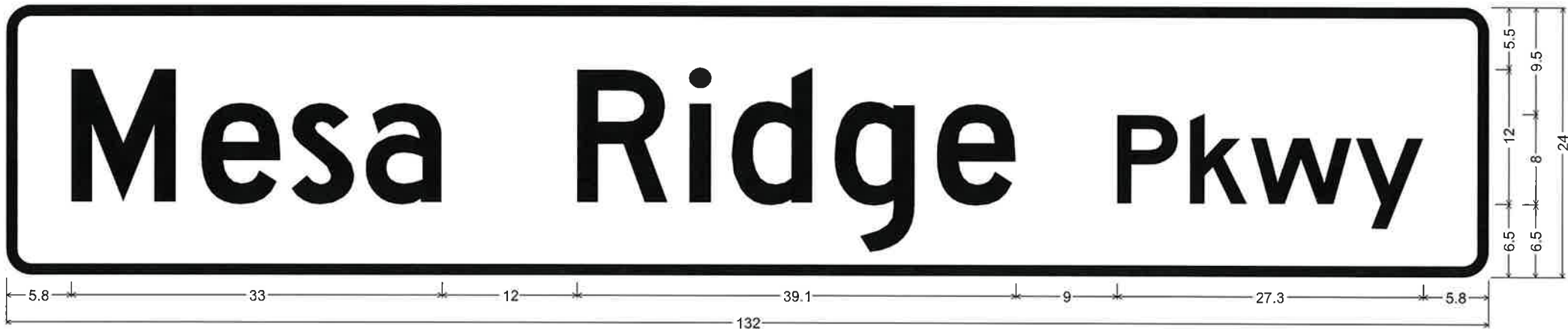
SIGNAL POLE SIGN



D3-1;
2.0" Radius, 0.8" Border, White on, Green;
"Marksheffel Rd", D 2K;
Table of letter and object lefts

M	a	r	k	s	h	e	f	f	e	l	R	d
6.0	13.6	19.6	23.6	29.2	34.0	40.0	45.3	48.7	52.2	58.0	64.6	68.9

MAST ARM SIGN



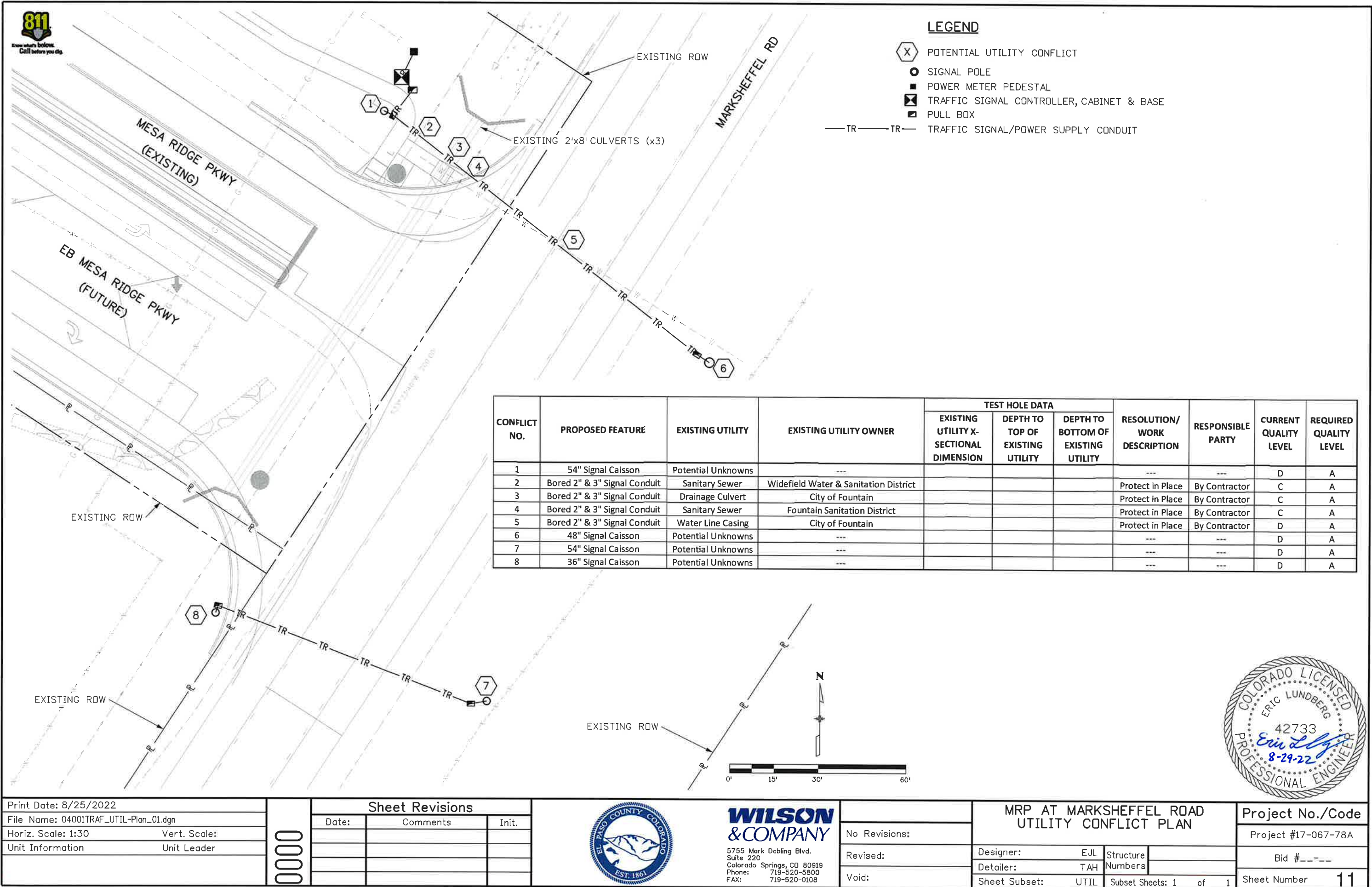
D3-1;
2.3" Radius, 1.0" Border, White on, Green;
"Mesa Ridge Pkwy", D 2K;
Table of letter and object lefts

M	e	s	a	R	i	d	g	e	P	k	w	y
5.8	17.3	25.4	32.0	50.8	60.8	64.6	73.7	82.8	98.9	105.4	110.8	120.2



Print Date: 8/25/2022		<div>0000</div>			Sheet Revisions				WILSON & COMPANY 5755 Mark Dabling Blvd. Suite 220 Colorado Springs, CO 80919 Phone: 719-520-5800 FAX: 719-520-0108	MRP AT MARKSHEFFEL ROAD SIGN DETAIL		Project No./Code	
File Name: 04001TRAF_SIGN_Detail_01					Date:	Comments	Init.			No Revisions:		Project #17-067-78A	
Horiz. Scale: 1:30										Revised:		Designer: EJJ	
Unit Information										Void:		Detailer: TAH	
Unit Leader							Sheet Subset: DETAIL		Subset Sheets: 1 of 1		Bid # ---		
											Sheet Number 10		

E:\lundberg 2:38:38 PM pwc\wils-pw.bentley.com\wils-pw\Documents\8100-TRN\El Paso County, CO\21-100-040-00\04000\Traffic\ITS\Drawings\04001TRAF_UTIL-Plan_01.dgn



Print Date: 8/25/2022

File Name: 04001TRAF_UTIL-Plan_01.dgn

Horiz. Scale: 1:30 Vert. Scale:

Unit Information Unit Leader

0000

Sheet Revisions

Date:	Comments	Init.



WILSON & COMPANY
5755 Mark Dabbling Blvd.
Suite 220
Colorado Springs, CO 80919
Phone: 719-520-5800
FAX: 719-520-0108

No Revisions:

Revised:

Void:

**MRP AT MARKSHEFFEL ROAD
UTILITY CONFLICT PLAN**

Designer: EJJ

Detailer: TAH

Sheet Subset: UTIL

Structure Numbers

Subset Sheets: 1 of 1

Project No./Code

Project #17-067-78A

Bid # ---

Sheet Number **11**



ENGINEER’S NOTES:

1. This is a utility map. It is not a Land Survey Plat or Improvement Survey Plat. No research of easements, encumbrances or title of record was performed Clark Land Surveying Inc.
2. Any underground utilities shown have been located from field survey information. The surveyor makes no guarantee that the underground utilities shown comprise all such utilities in the area, either in service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated although he does certify that they are located as accurately as possible from the information available. Public utility locate request was made under Ticket No. B119401350-00B dated July 13, 2021. This site was located by standard RF methods.
3. All surveyed utilities are depicted as ASCE 38-02 "Quality Level B" unless noted otherwise.
4. All services are modeled using RTK GPS surveyed locations from site markings as located by Clark Land Surveying.
5. This plan has been prepared for design only, All services must be located/potholed by the contractor prior to excavation or construction.
6. All levels noted, refer to existing ground level where survey was taken. Depth indicators noted down to service, represent approximate, depth to top of service, as marked up on site.
7. Boundaries have been shown in an approximate way only, information obtained from overlays and/or images may be used as a guide only.
8. This subsurface utility engineering plan must be accompanied with the "Report for Subsurface Utility Engineering," dated August 16, 2021, as Job No. 210266, to uphold the integrity of the plan.
9. Quality level definitions as per ASCE 38-02
 - QL-D involves utility records research and interviews with knowledgeable utility personnel.
 - QL-C involves surface survey and identifying and recording aboveground features of subsurface utilities, such as manholes, valves, and hydrants.
 - QL-B involves application of "surface geophysical methods," such as EM-based locating instruments, CPR, radar tomography, metal detectors, and optical instruments, to gather and record approximate horizontal (and, in some cases, vertical) positional data.
 - QL-A involves physical exposure via "soft-digging" (vacuum excavation or hand-digging) and provides precise horizontal and vertical positional data.

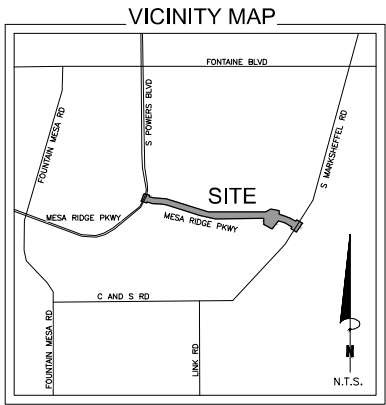
ENGINEER’S STATEMENT:

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Colorado.

Steven R. Anselmo, P.E.
Colorado License No. 39279
For and on behalf of Clark Land Surveying, Inc.

A pragmatic effort has been made to systematically designate and depict buried utilities within the corridor to the extent practical for the authorized project budget. Final utility plans are for design purposes only and reflect subsurface utility conditions at the time surveyed. Existing utility locations depicted on the plans do not supersede 811 demarcations of buried utilities, or relieve the contractor from the legal requirement to call 811 three working days prior to construction. The project design engineer should be notified of any discrepancies between the utility designating / locating survey and 811 markings, and the contractor shall use caution until discrepancies are resolved.

Utility alignments shown are diagrammatic in nature and not intended for construction. Contractor is responsible to verify all field conditions at time of bid and for any associated costs associated to provide a 100% complete, operational project.



SURVEYOR’S NOTES:

1. This is a topographic map. This is not a boundary survey and is only intended to depict those topographic features or improvements shown. The property lines shown are record lines only and are shown for graphical reference only.
2. FEDERAL EMERGENCY MANAGEMENT AGENCY, FEMA Flood Insurance Rate Map Number 08041C0956G, effective date December 18, 2018, indicates this parcel of land is located in Zone AE (Regulatory Floodway), Zone AE (Base Flood Elevation of 5650'), Zone X (0.2% chance annual flood) and Zone X (Area of minimal flood hazard).
3. This survey does not constitute a title search by Clark Land Surveying, Inc. to determine ownership or easements of record. For all information regarding easements, rights of way and title of record, Clark Land Surveying, Inc. relied upon publicly available information.
4. Elevations are based on NAVD 88 datum.
5. SITE BENCHMARK: Set anchor nail in concrete, as shown. Elevation = 5620.03' (NAVD 1988).
6. Field work for this survey was completed on July 30, 2021.
7. The owner names and tax parcel data shown hereon are based upon the public records available at the original date of this survey. Current ownership and tax parcel data should be verified for accuracy.
8. Survey is relative to modified Colorado State Plane Coordinate System, Central Zone (0502) with a scale factor of 1.000311235 applied from the Site Benchmark, Point #100.
9. TOP RIM ELEVATION: 5601.02'. Invert: -13.40' DOWN FROM RIM TO STEEL PLATE AT BOTTOM OF MANHOLE.

AREAS OF CONCERN:

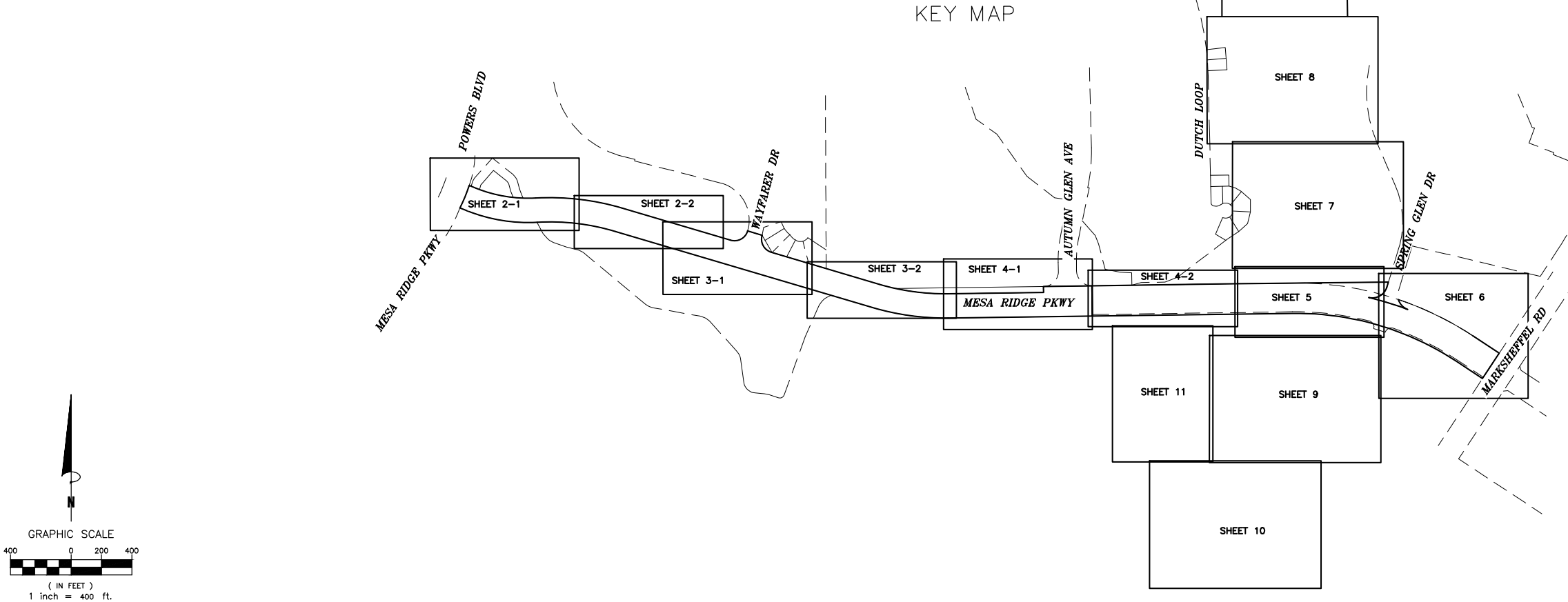
No apparent areas of concern.

SURVEYOR’S STATEMENT:

On the basis of my knowledge, information and belief, I hereby state and declare that this drawing was prepared under my direct supervision to the standard of care of surveyors practicing in the State of Colorado and that the information shown hereon is true and correct to the best of my knowledge and belief.

This statement is neither a warranty nor a guarantee, either expressed or implied.

Stewart L. Mapes, Jr.
Colorado Professional Land Surveyor No. 38245
For and on behalf of Clark Land Surveying, Inc.



Revisions

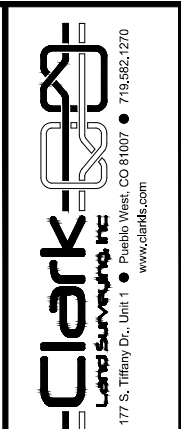
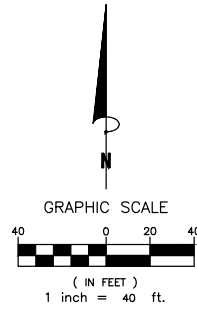
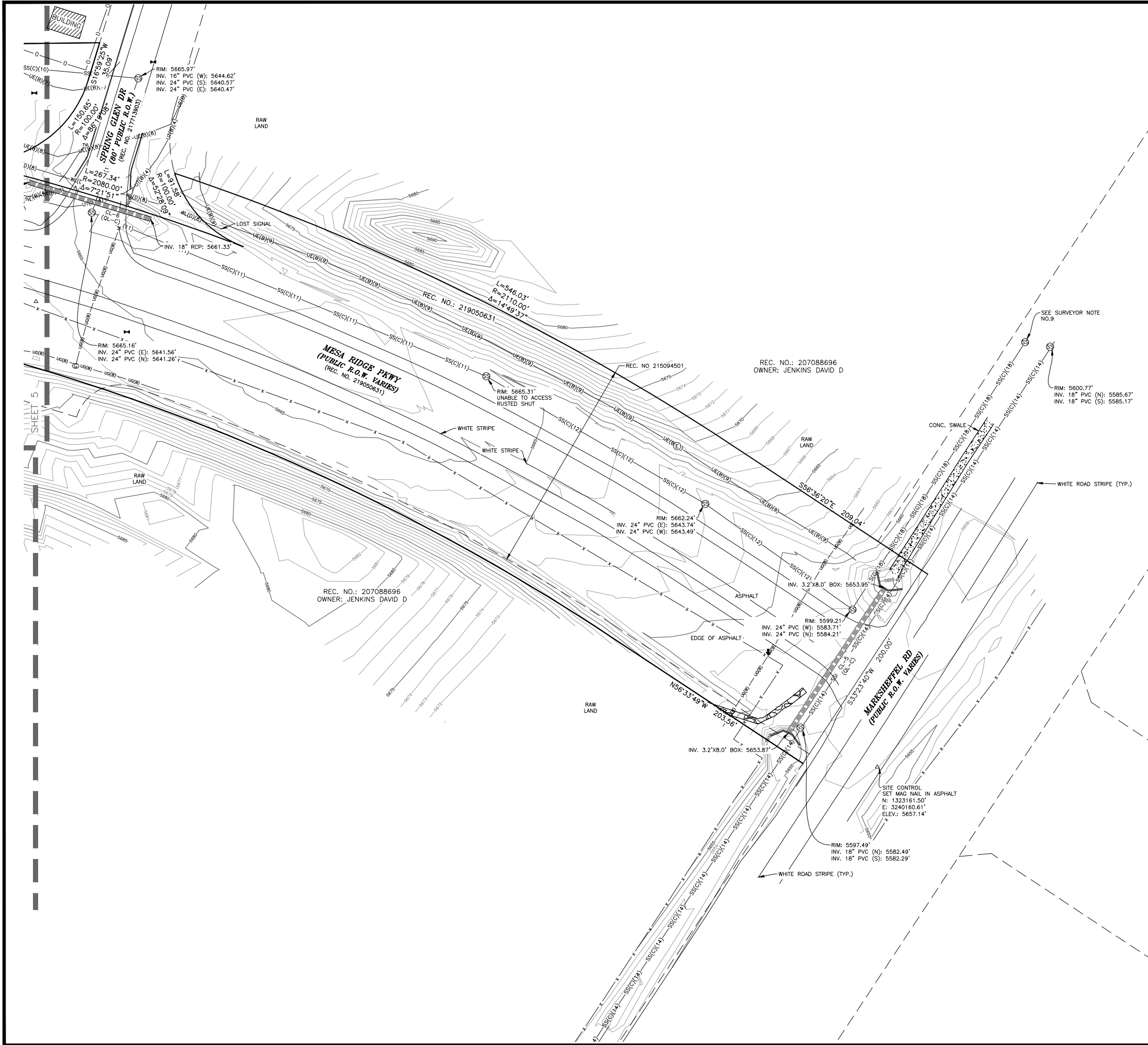
No.	Description	By	Date
5	Added Manhole 1	TDA	5/24/2022
4	Additional Topographic Survey	DJB	5/27/2022
3	Address Client Comments	EJC	3/11/2022
2	Additional Topographic Survey	EJC	2/21/2022
1	Address Client Comments	EJC	10/28/2021

Notice: According to Colorado law you must commence any legal action based upon any defect in this survey within the time period specified in this survey or 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.

SUBSURFACE UTILITY ENGINEERING PLAN

A PORTION OF THE NW1/4 OF SEC. 27 AND N1/2 OF SEC. 28, TOWNSHIP 15 SOUTH, RANGE 65 WEST OF THE SIXTH P.M., CITY OF FOUNTAIN, EL PASO COUNTY, STATE OF COLORADO.

Project No. 210266
Drawn By: EJC
Checked By: SRA/SLM
Date: 8/11/2021
Sheet 1 of 13



Revisions		
No.	Description	By Date
5	Added Manhole 1	TDA 5/24/2022
4	Additional Topographic Survey	DJB 5/27/2022
3	Address Client Comments	EJC 3/11/2022
2	Additional Topographic Survey	EJC 2/21/2022
6	Added Additional Utilities	JSK 10/28/2021

Notice: According to Colorado law you must commence any legal action based upon any defect in this survey within the time period 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.

SUBSURFACE UTILITY ENGINEERING PLAN

A PORTION OF THE NW1/4 OF SEC. 27 AND N1/2 OF SEC. 28, TOWNSHIP 15 SOUTH, RANGE 65 WEST OF THE SIXTH P.M., CITY OF FOUNTAIN, EL PASO COUNTY, STATE OF COLORADO.

Project No. 210266

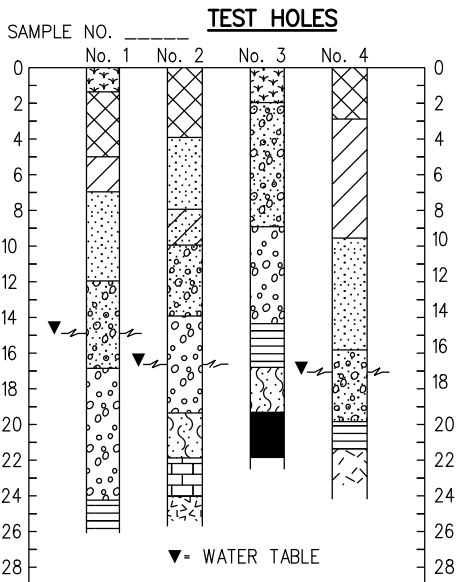
Drawn By: EJC
Checked By: SRA/SLM

Date: 6/30/2022

Sheet 6 of 13

LEGEND

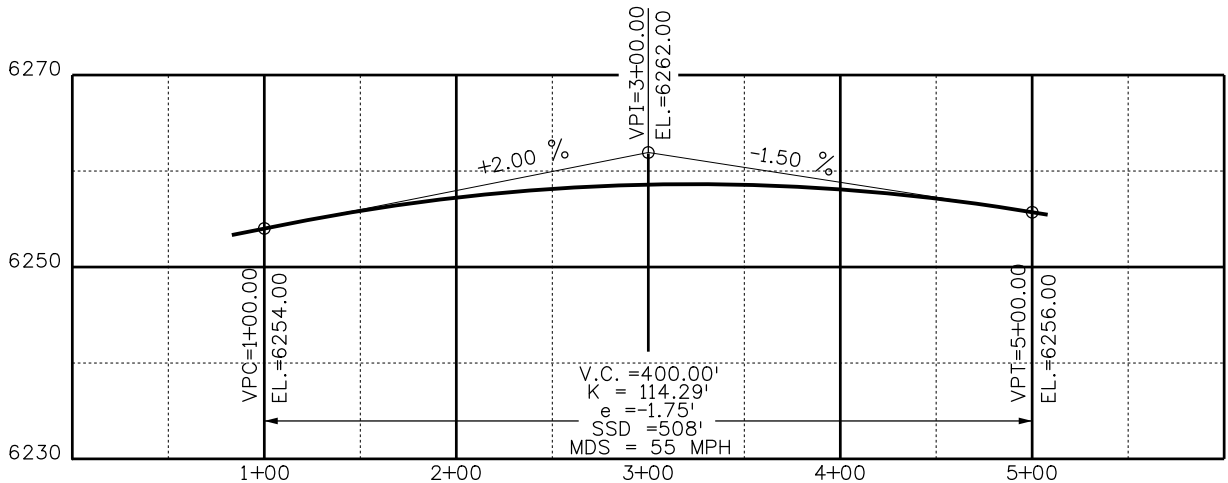
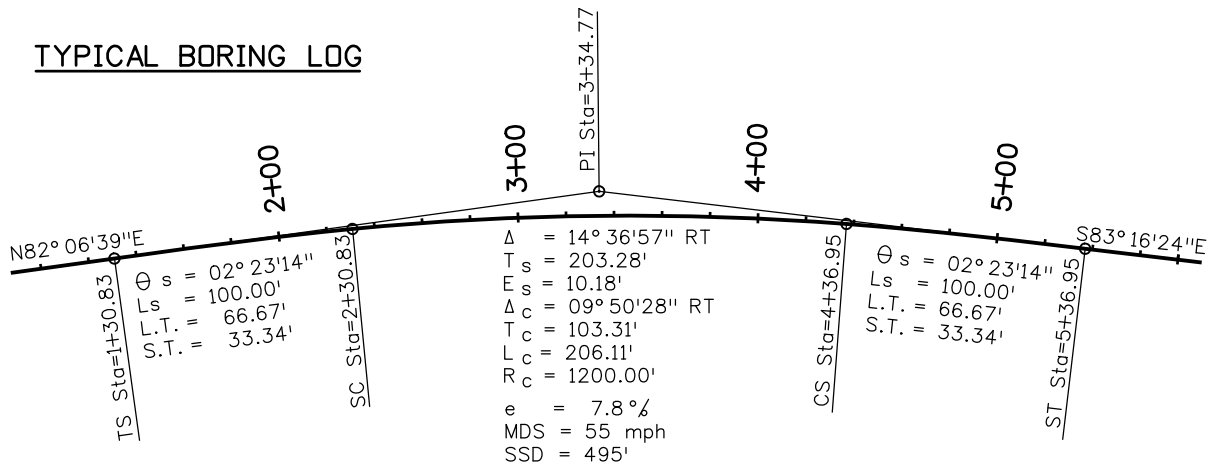
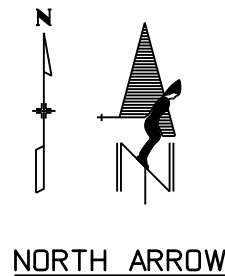
- TOPSOIL
OVERBURDEN
CLAY
SILT
SAND
GRAVEL
SHALE
LIMESTONE
SANDSTONE
SOLID ROCK (IGNEOUS)
SOLID ROCK (METAMORPHIC)
COAL
SANDY CLAY



COMPOSITE MATERIALS ARE REPRESENTED BY COMBINATIONS OF THE ABOVE SYMBOLS, SUCH AS:

SANDY CLAY

TYPICAL BORING LOG



TERRAIN SINGLE SHOTS

TOP OF CUT

TOE OF FILL

TERRAIN

GRAVEL ROAD OR DRIVEWAY
INTERNATIONAL SYMBOL OF ACCESS
SIDEWALK WITH RAMP
EDGE OF PAVEMENT
CENTERLINE OF DIRT ROAD

ROADWAY

- SECTION CORNER
QUARTER, SIXTEENTH, AND SECTION CORNERS
PROTECT EXISTING MARKER
SET EASEMENT MONUMENT
TEMPORARY EASEMENT POINT
RIGHT OF WAY MARKER
BLM MARKER
PROPERTY PIN
NOAA MARKER
QUARTER, SIXTEENTH, AND SECTION CORNERS
FEDERAL MONUMENT
WITNESS CORNER
BENCH MARK
USGS MARKER
LOCAL OR PLSS MONUMENT
SECONDARY CONTROL MONUMENT
RIGHT OF WAY MARKER
PROJECT CONTROL MONUMENT
DENSIFICATION CONTROL MONUMENT
HIGH ACCURACY REFERENCE NETWORK CONTROL MONUMENT
- BLM
PP
NOAA
FED
WC
WC
BM
USGS
N 9.88 E 3.81 EL 0.00
N 10.13 E 3.81 EL 0.00
N 10.38 E 3.81 EL 0.00

- 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)

SURVEY/ROW

GENERAL NOTES

- 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).
- 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.
- GUARDRAIL, CURB AND GUTTER, ETC., ARE REPRESENTED BY A SYMBOL WITH TYPE GIVEN BY NOTE.

- BACK OF CURB
TOP OF CURB
FLOW LINE (R)
EDGE OF PAVEMENT
CURB AND GUTTER
CURB AND GUTTER-TYPE 2, 4 OR 6
GUTTER
CURB CUT
CURB, GUTTER OR OTHER

CURB AND GUTTER

- 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

GUARDRAIL

Computer File Information

Creation Date: 07/31/19
Designer Initials: JBK
Last Modification Date: 07/31/19
Detailer Initials: LTA
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English

Sheet Revisions

Date:	Comments
(R-X)	
(R-X)	
(R-X)	
(R-X)	

Colorado Department of Transportation



2829 West Howard Place
CDOT HQ, 3rd Floor
Denver, CO 80204
Phone: 303-757-9021 FAX: 303-757-9868

Project Development Branch

JBK

STANDARD SYMBOLS


Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.


M-100-1

Standard Sheet No. 1 of 3

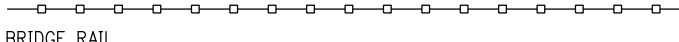
Project Sheet Number:



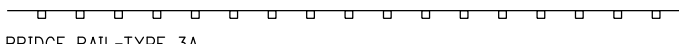
ROCK, MASONRY OR MECHANICALLY STABILIZED WALL (FACE)



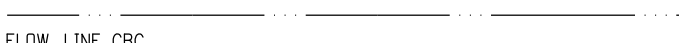
BRIDGE CURB



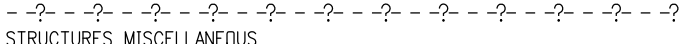
BRIDGE RAIL



BRIDGE RAIL-TYPE 3A




FLOW LINE CBC

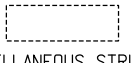


STRUCTURES MISCELLANEOUS


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



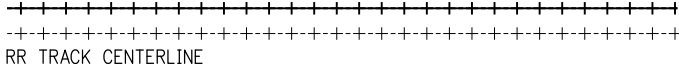
RR CROSS BUCK SIGN



RR SIGNAL CONTROLLER CABINET




RR MISCELLANEOUS SYMBOL




RR TRACK CENTERLINE


RAILROAD




BOULDER UNDER 6FT



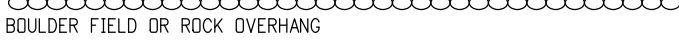
GEOLOGY MISC SYMBOL



MINESHAFT SYMBOL

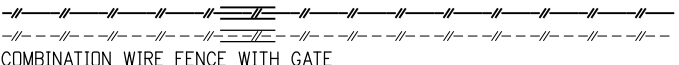


ROCK OUTCROP

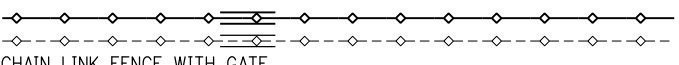


BOULDER FIELD OR ROCK OVERHANG

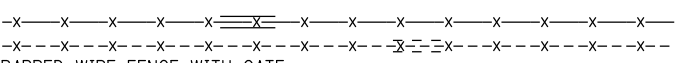
GEOLOGY



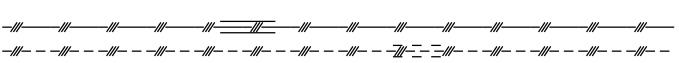
COMBINATION WIRE FENCE WITH GATE



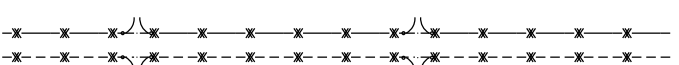
CHAIN LINK FENCE WITH GATE




BARBED WIRE FENCE WITH GATE



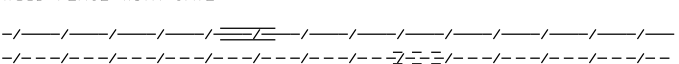
SOUND OR BARRIER FENCE WITH GATE



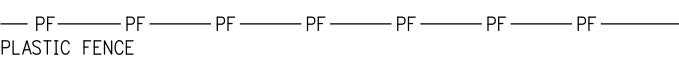
DEER FENCE WITH GATE



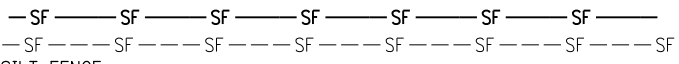
WOOD FENCE WITH GATE




SNOW FENCE WITH GATE



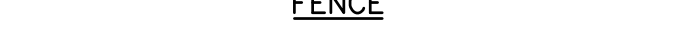
PF PF PF PF PF PF PF PF



SF SF SF SF SF SF SF SF




SF SF SF SF SF SF SF SF




DEBRIS FENCE


FENCE




MISCELLANEOUS TREES




DECIDUOUS TREE




DECIDUOUS SHRUB




TEETER TOTTER SYMBOL




SWING SET SYMBOL



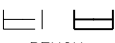
CONIFEROUS TREE




CONIFEROUS SHRUB




SPRINKLER HEAD




BENCH



TREES GROVE




HEDGE OR SHRUB GROVE




EDGE OF WETLANDS


LANDSCAPING




HAZARD WASTE
MONITORING WELL




ENVIRONMENTAL
CONCERN SITE




EROSION LOG



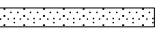
ROCK CHECK
DAM




CONCRETE WASHOUT
STRUCTURE




DROP INLET
EROSION PROTECTION




TEMPORARY
BERM




SOIL RETENTION
BLANKET




PIPE INLET
EROSION PROTECTION



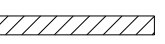
RIGID INLET
PROTECTION



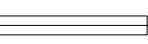
STORM DRAIN
INLET PROTECTION




EROSION CHECK



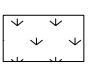
EROSION LOG
DITCH CHECK




SILT DIKE




SEDIMENT TRAP/
DEWATERING STRUCTURE



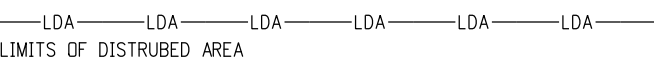
EXISTING WETLAND
PATTERN



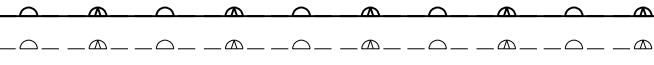
TEMPORARY
SLOPE DRAIN




STABILIZED CONSTRUCTION
ENTRANCE



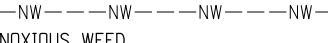
LDA LDA LDA LDA LDA LDA




ENVIRONMENTAL CONCERN



HAZARDOUS WASTE SITE




NW NW NW NW




FLOW ARROW

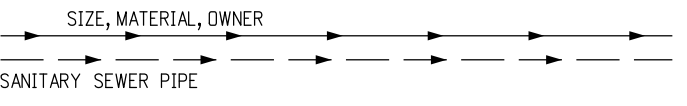
ENVIRONMENTAL



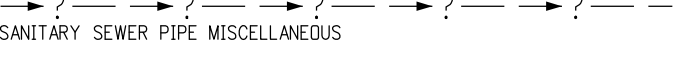
SANITARY SEWER MANHOLE



SANITARY SEWER
MISCELLANEOUS SYMBOL




SIZE, MATERIAL, OWNER
SANITARY SEWER PIPE




SANITARY SEWER PIPE MISCELLANEOUS


SANITARY SEWER




WATER SPIGOT




WATER VALVE




WATER MANHOLE




FIRE HYDRANT



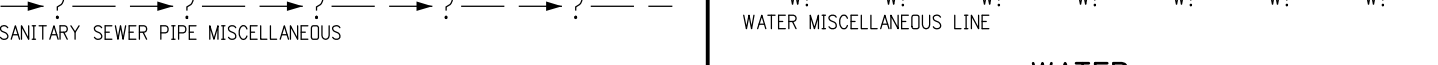
WATER METER



WATER WELL SYMBOL



SIZE, MATERIAL, OWNER
W W W W W W W W



W W W W W W W W

WATER

Computer File Information

Creation Date: 07/31/19

Designer Initials: JBK

Last Modification Date: 07/31/19

Detailer Initials: LTA

CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English

(R-X)

(R-X)

(R-X)


(R-X)

Sheet Revisions

Date:

Comments

Colorado Department of Transportation



2829 West Howard Place
CDOT HQ, 3rd Floor
Denver, CO 80204
Phone: 303-757-9021 FAX: 303-757-9868

Project Development Branch

JBK

STANDARD SYMBOLS

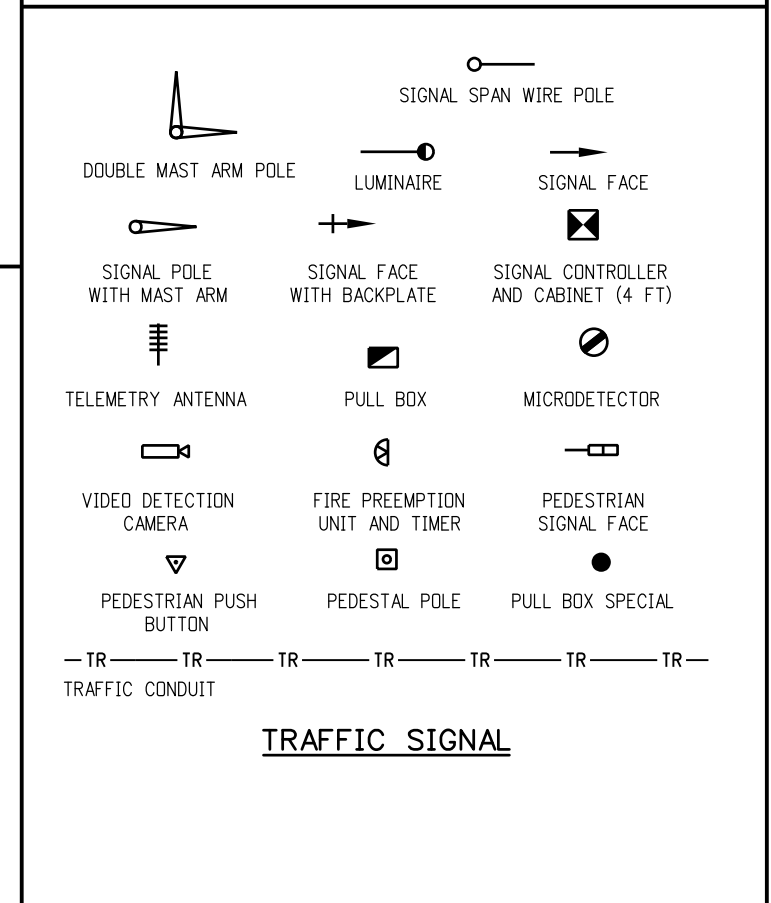
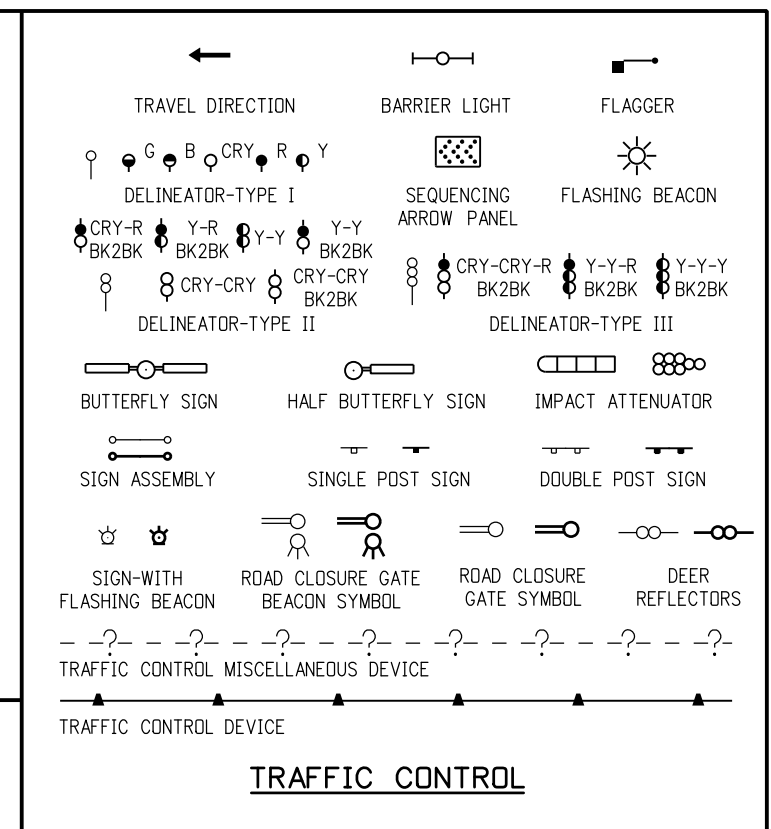
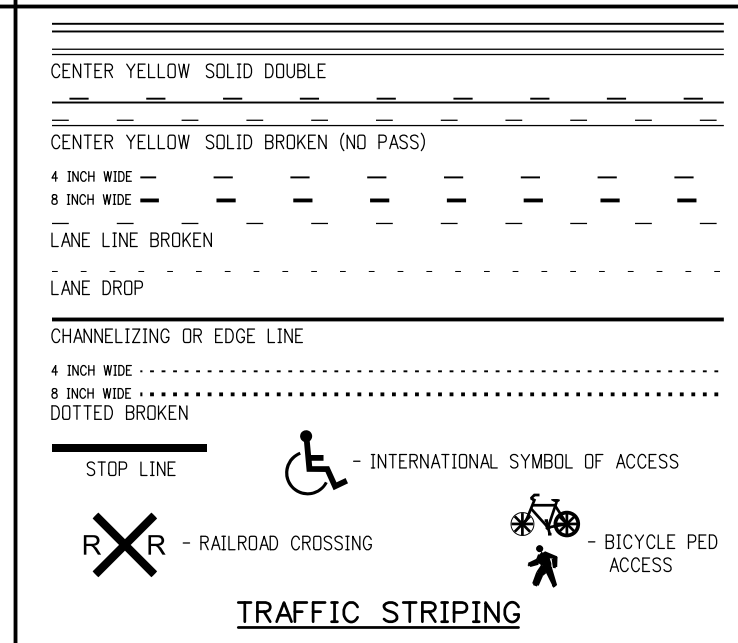
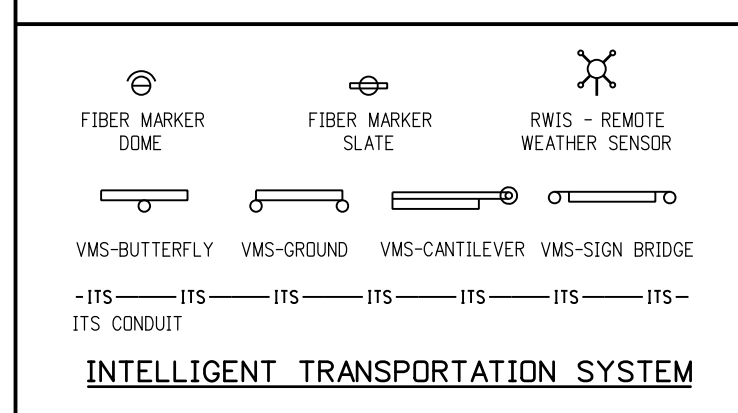
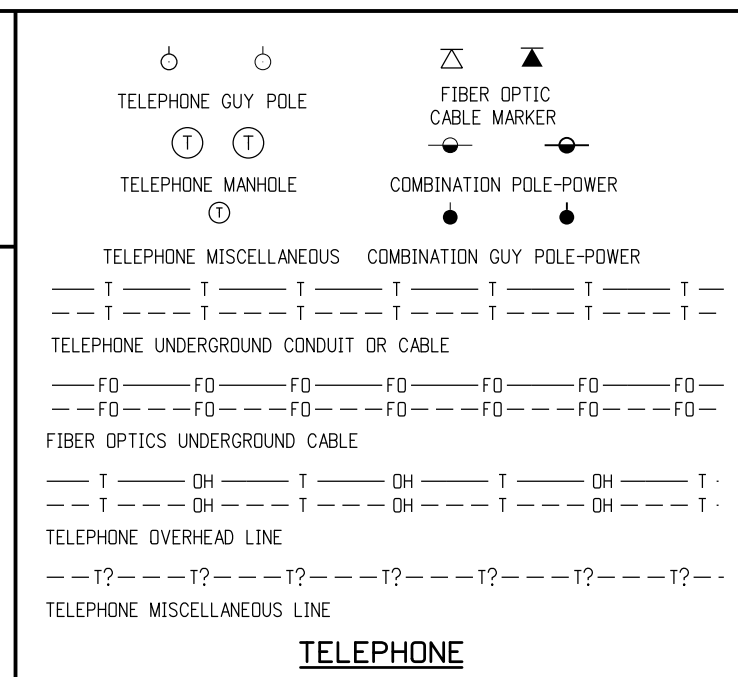
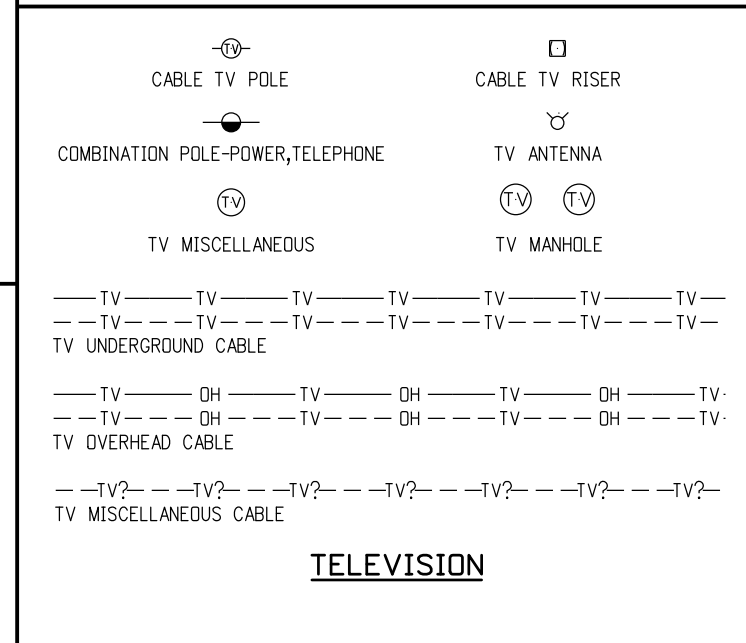
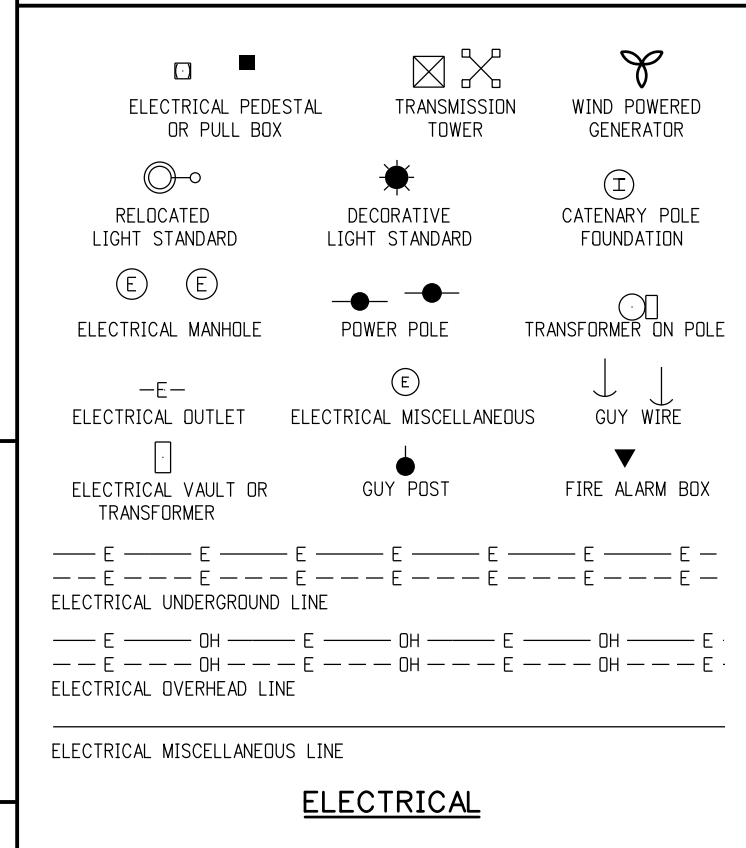
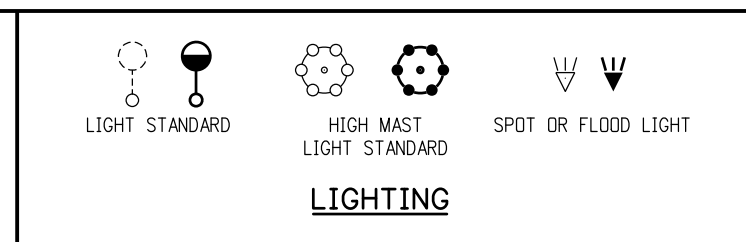
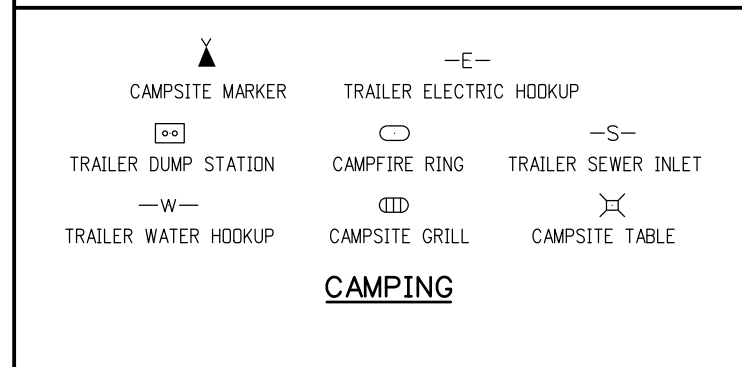
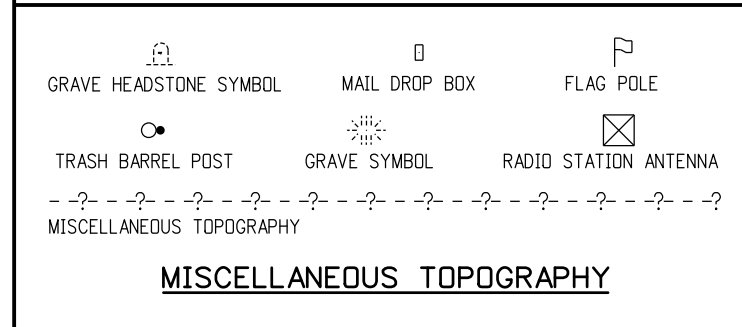
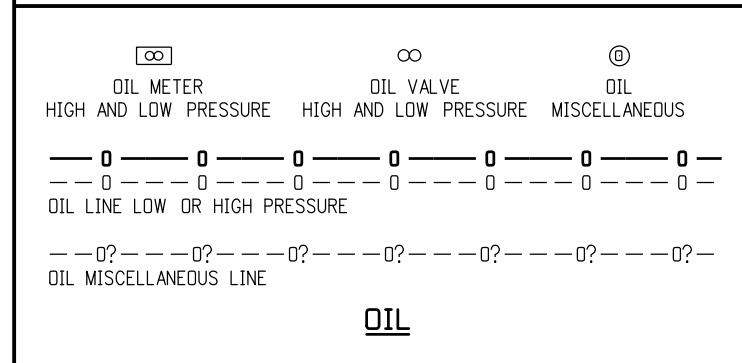
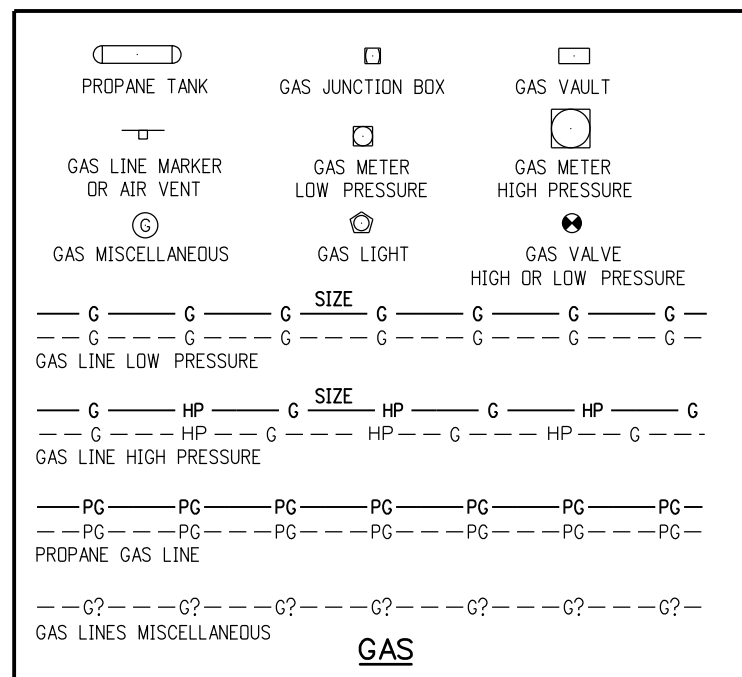
Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.

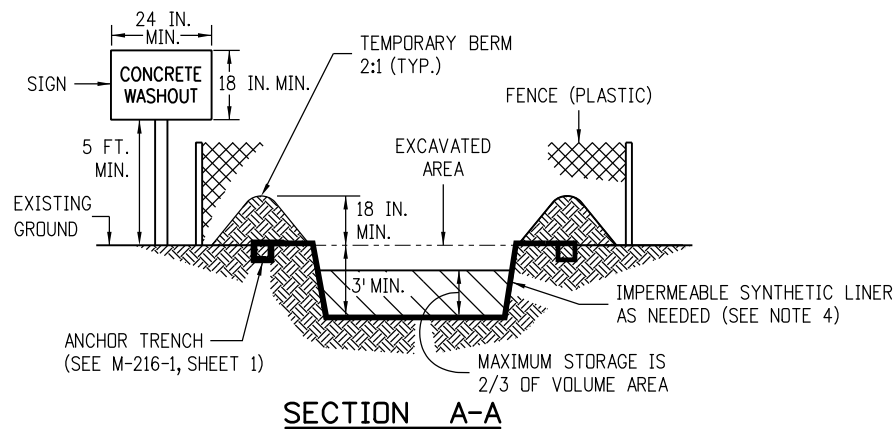
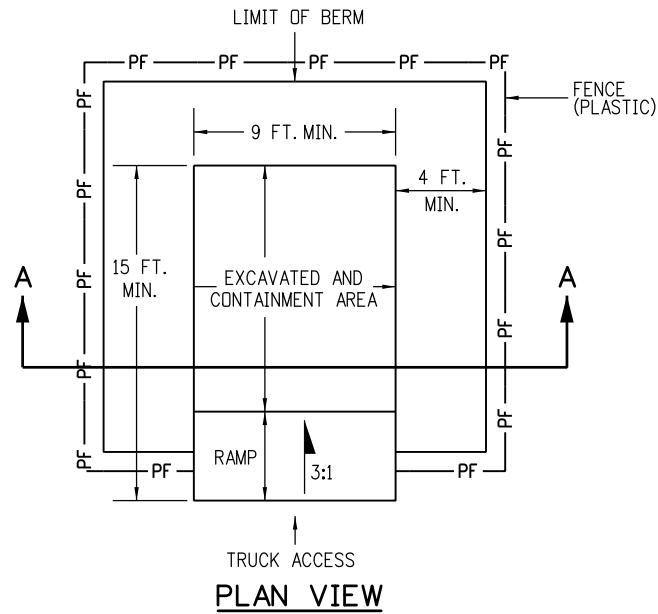
M-100-1

Standard Sheet No. 2 of 3

Project Sheet Number:



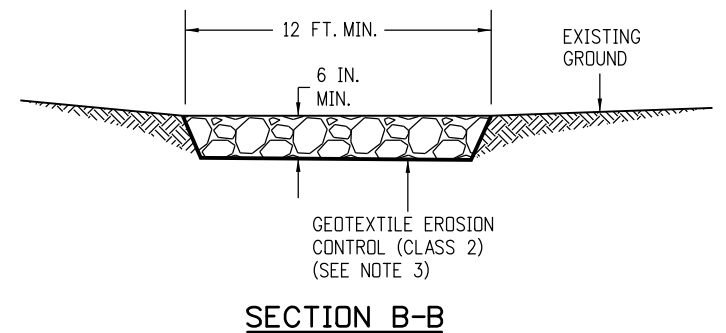
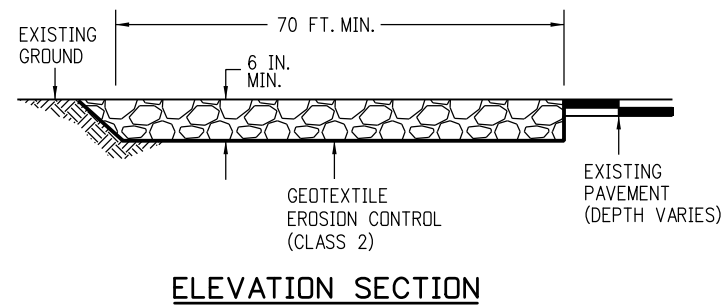
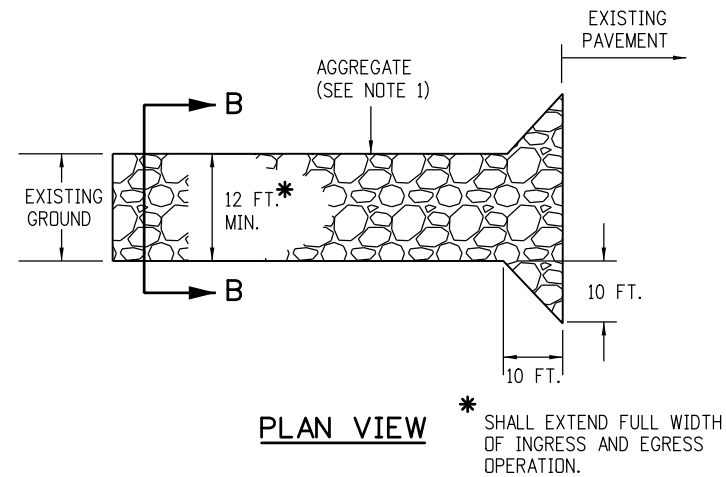
Computer File Information		<div><div>R-X</div><div>R-X</div><div>R-X</div><div>R-X</div></div>	Sheet Revisions		<div><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div>Colorado Department of Transportation</div><div>2829 West Howard Place CDOT HQ, 3rd Floor Denver, CO 80204 Phone: 303-757-9021 FAX: 303-757-9868</div></div><div><div>Project Development Branch</div><div>JBK</div></div></div></div>		STANDARD SYMBOLS		STANDARD PLAN NO.	
Date:	Comments		M-100-1							
			Standard Sheet No. 3 of 3							
Creation Date: 07/31/19					<div><div>Issued by the Project Development Branch: July 31, 2019</div><div>Project Sheet Number:</div></div>					
Designer Initials: JBK										
Last Modification Date: 07/31/19										
Detailer Initials: LTA										
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English										



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

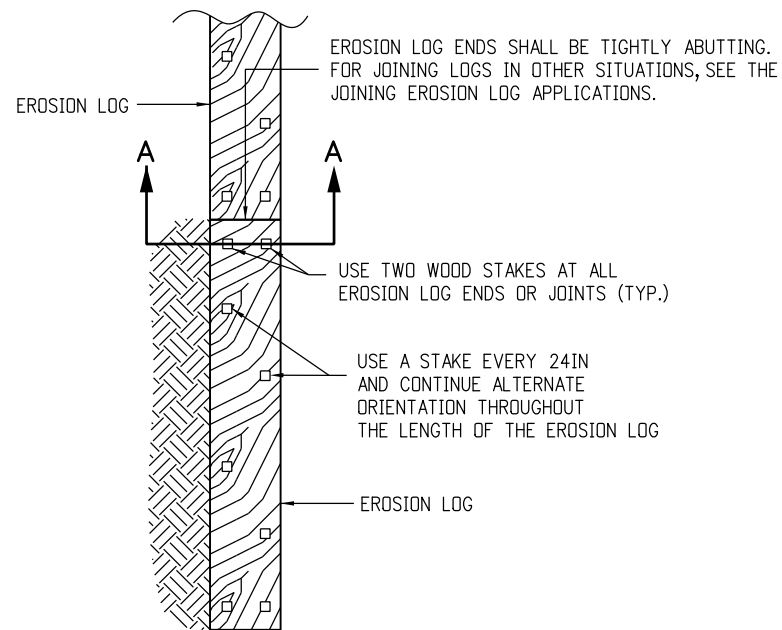


NOTES:

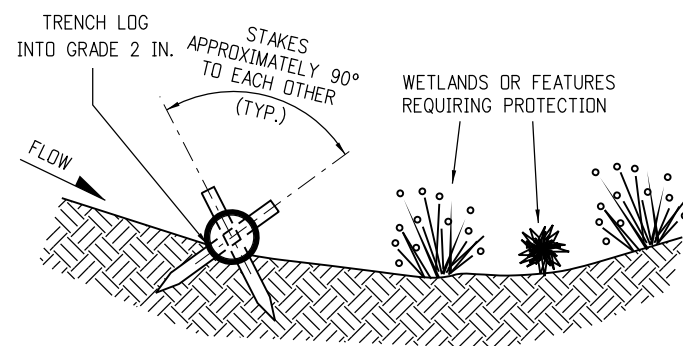
1. AGGREGATE SHALL CONFORM TO SUBSECTION 208.02 (i).
2. THE CONTRACTOR SHALL PROTECT CURB AND GUTTER THAT CROSSES THE ENTRANCE FROM DAMAGE, WHILE NOT BLOCKING FLOW OF WATER THRU STRUCTURE. PROTECTION OF THE CURB AND GUTTER SHALL BE INCLUDED IN THE COST OF WORK AND NOT PAID FOR SEPARATELY.
3. GEOTEXTILE 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

Computer File Information		Sheet Revisions		<div> <div>Colorado Department of Transportation</div> <div>  <div> 2829 West Howard Place CDOT HQ, 3rd Floor Denver, CO 80204 Phone: 303-757-9021 FAX: 303-757-9868 </div> </div> <div>Project Development Branch</div> <div>JBK</div> </div>	<div>TEMPORARY EROSION CONTROL</div> <div>Issued by the Project Development Branch: July 31, 2019</div>		STANDARD PLAN NO.
Creation Date: 07/31/19	(R-X)	Date:	Comments				M-208-1
Designer Initials: JBK	(R-X)						Standard Sheet No. 1 of 11
Last Modification Date: 07/31/19	(R-X)						Project Sheet Number:
Detailer Initials: LTA	(R-X)						
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)						

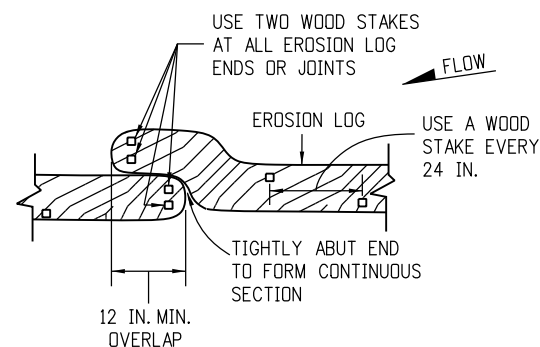


PLAN VIEW

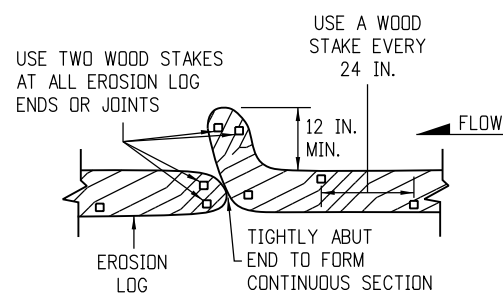


SECTION A-A

TYPICAL STAKE INSTALLATION



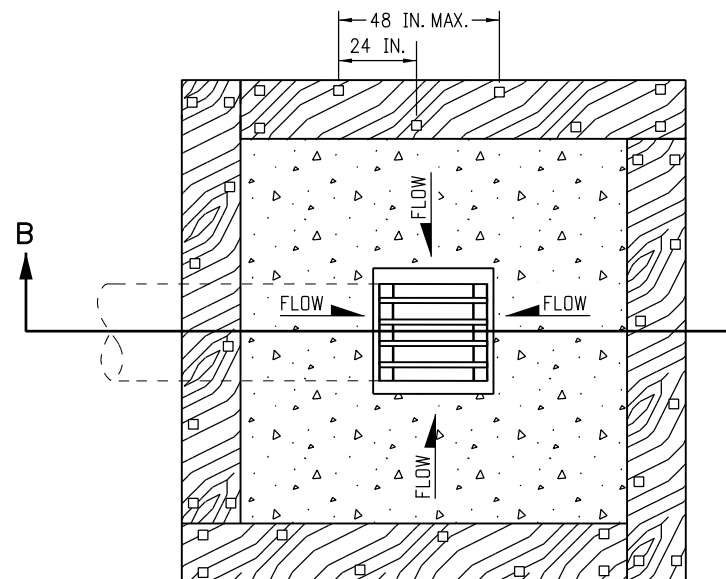
OVERLAP JOINING DETAIL



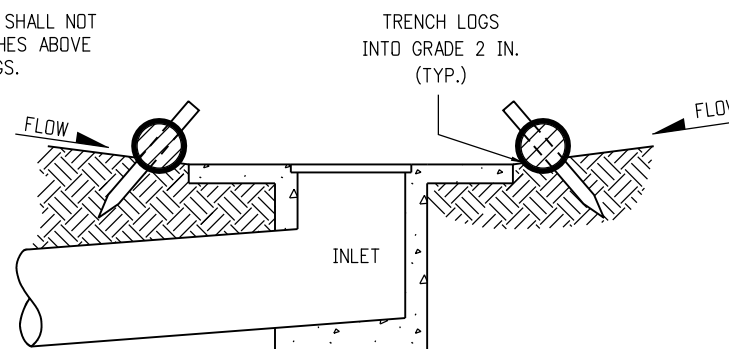
J-HOOK JOINING DETAIL

JOINING EROSION LOG APPLICATIONS

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.)



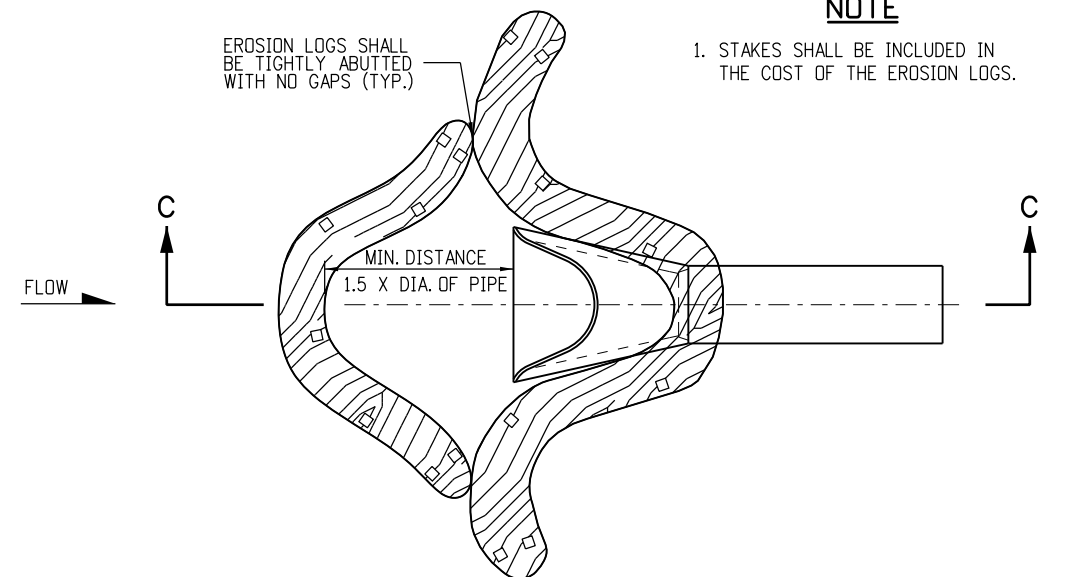
PLAN VIEW



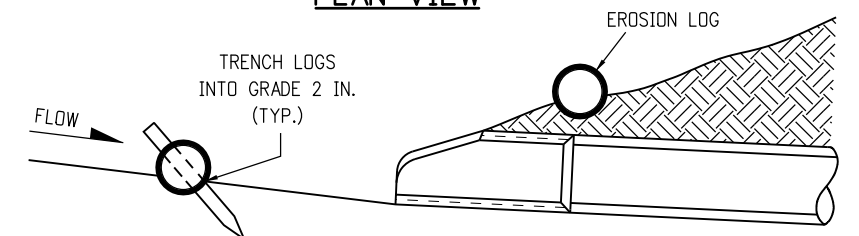
SECTION B-B

NOTE: LOCATE EROSION LOGS AT THE OUTSIDE EDGE OF THE CONCRETE APRON.

EROSION LOG FILTER AT DROP INLET

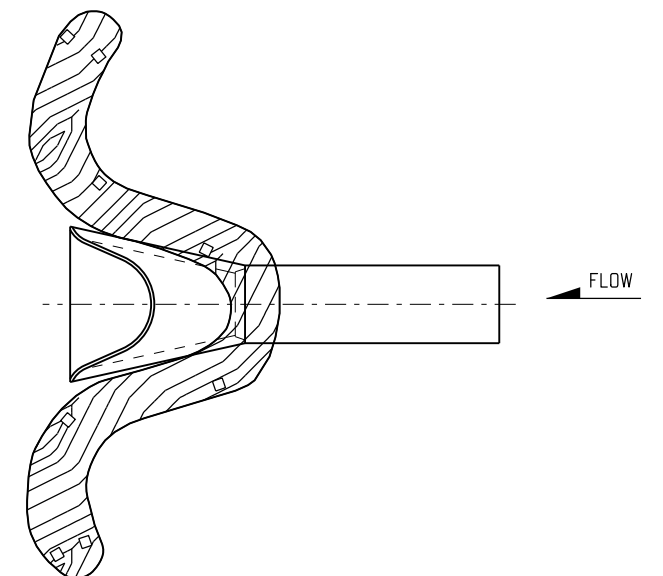


PLAN VIEW



SECTION C-C
(NOT ALL LOGS SHOWN)

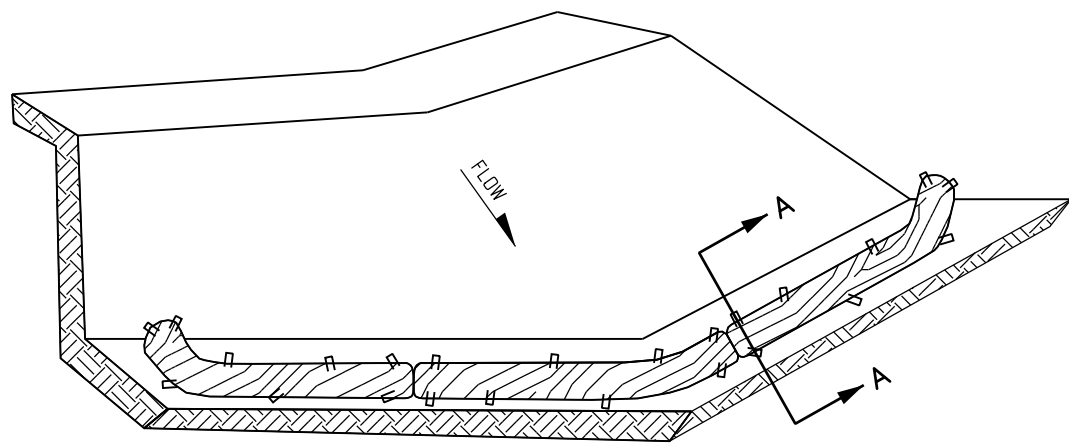
EROSION LOG CULVERT INLET PROTECTION



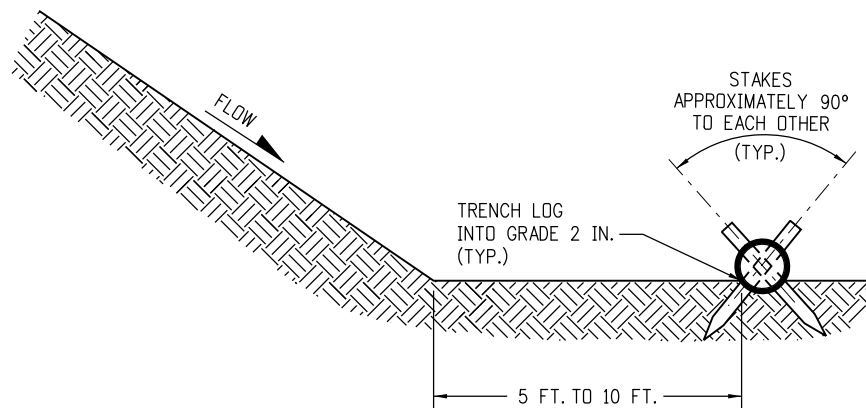
EROSION LOG CULVERT OUTLET PROTECTION

EROSION LOG APPLICATIONS

Computer File Information		Sheet Revisions		<div>Colorado Department of Transportation</div> <div><div>2829 West Howard Place CDOT HQ, 3rd Floor Denver, CO 80204 Phone: 303-757-9021 FAX: 303-757-9868</div></div> <div>Project Development Branch</div> <div>JBK</div>	TEMPORARY EROSION CONTROL		STANDARD PLAN NO.	
Creation Date: 07/31/19	<div>(R-X)</div> <div>(R-X)</div> <div>(R-X)</div> <div>(R-X)</div>	Date:	Comments		M-208-1		Standard Sheet No. 2 of 11	
Designer Initials: JBK								
Last Modification Date: 07/31/19								
Detailer Initials: LTA								
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English				Issued by the Project Development Branch: July 31, 2019		Project Sheet Number:		



ISOMETRIC VIEW



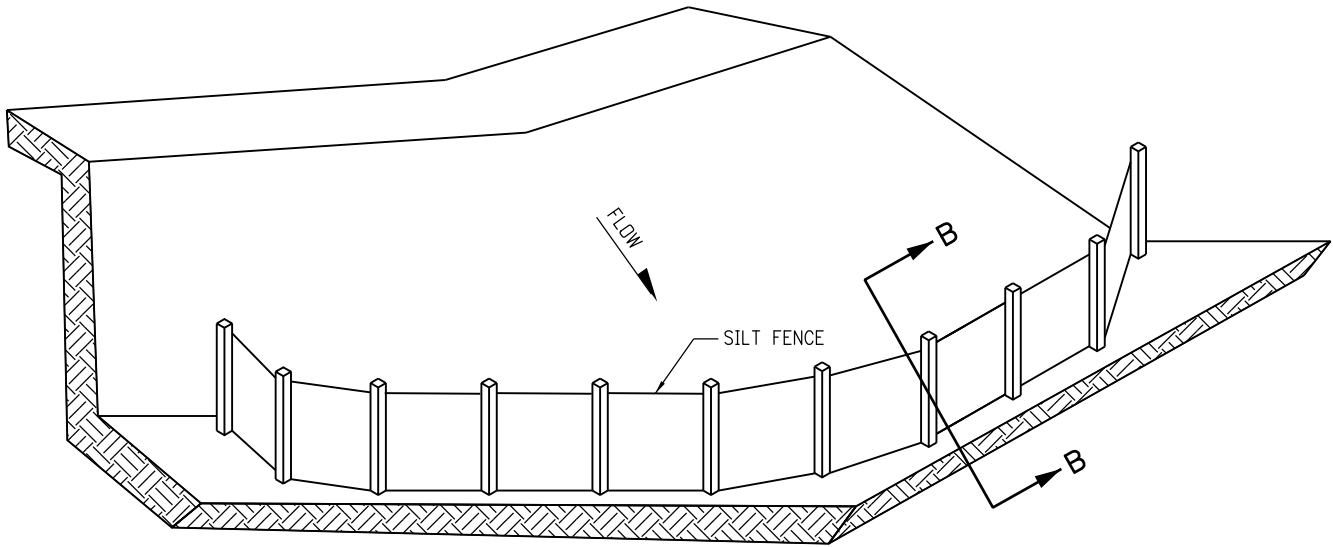
SECTION A-A

NOTE: THE TOPS OF ALL STAKES SHALL NOT EXTEND MORE THAN 2 INCHES ABOVE THE TOPS OF EROSION LOGS.

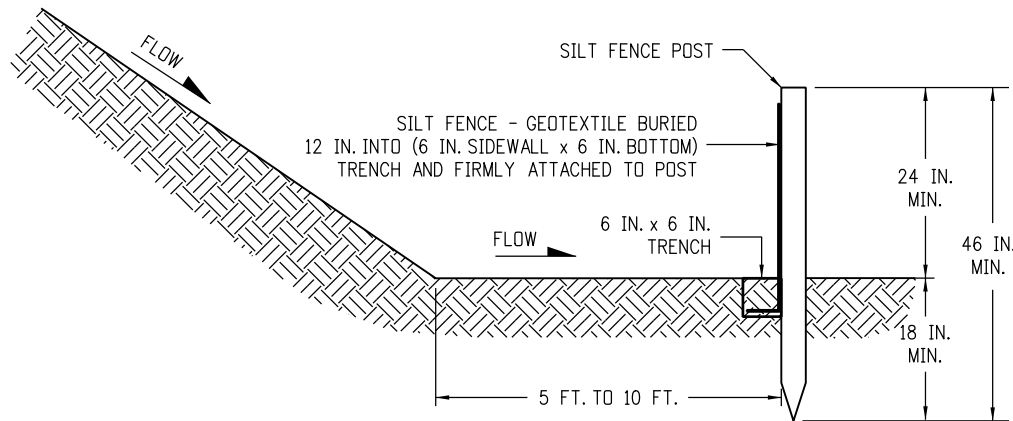
EROSION LOGS PAY ITEMS	
NUMBER	DESCRIPTION
208-00012	TYPE 1 (9 IN.)
208-00002	TYPE 1 (12 IN.)
208-00013	TYPE 1 (20 IN.)
208-00007	TYPE 2 (8 IN.)
208-00008	TYPE 2 (12 IN.)
208-00009	TYPE 2 (18 IN.)
208-00022	TYPE 3 (9 IN.)
208-00023	TYPE 3 (12 IN.)
208-00024	TYPE 3 (20 IN.)

- 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 LOG TOE OF SLOPE PROTECTION



ISOMETRIC VIEW



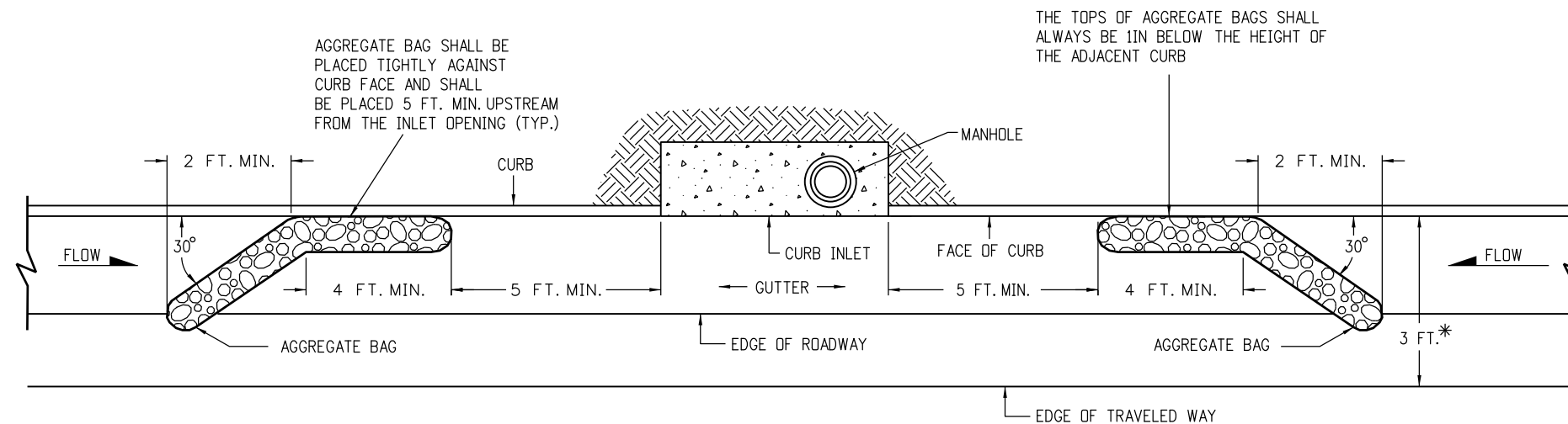
SECTION B-B

SILT FENCE TOE OF SLOPE PROTECTION

NOTE: THE PAY ITEM NUMBER FOR SILT FENCE (LF) IS 208-00020.

TOE OF SLOPE PROTECTION APPLICATIONS

Computer File Information		<div><div><div></div><div></div></div><div>Colorado Department of Transportation</div><div>2829 West Howard Place CDOT HQ, 3rd Floor Denver, CO 80204 Phone: 303-757-9021 FAX: 303-757-9868</div><div>Project Development BranchJBK</div></div>	Sheet Revisions		<div>TEMPORARY EROSION CONTROL</div> <div>Issued by the Project Development Branch: July 31, 2019</div>	STANDARD PLAN NO.	
Creation Date: 07/31/19			Date:	Comments		M-208-1	
Designer Initials: JBK	(R-X)					Standard Sheet No. 3 of 11	
Last Modification Date: 07/31/19	(R-X)						
Detailer Initials: LTA	(R-X)						
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)						

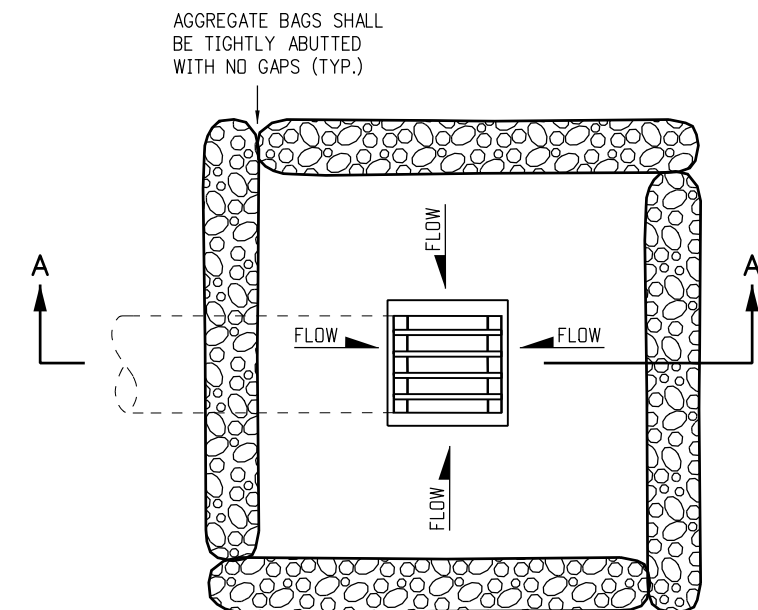


PLAN VIEW

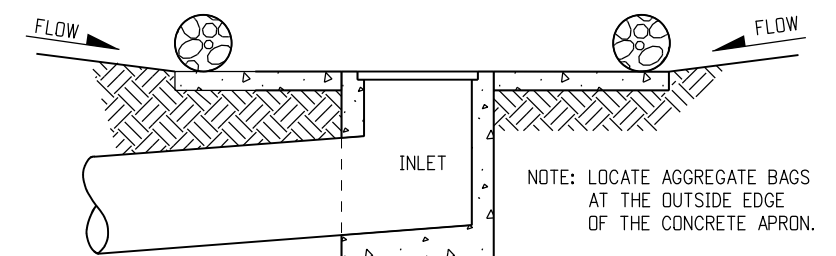
* NOTE: USE AGGREGATE BAGS ONLY WHEN THERE IS A MINIMUM CLEARANCE OF 3 FEET FROM THE EDGE OF THE TRAVELED WAY (INCLUDING CONDITIONS DURING DETOURS) TO THE FACE OF CURB.

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



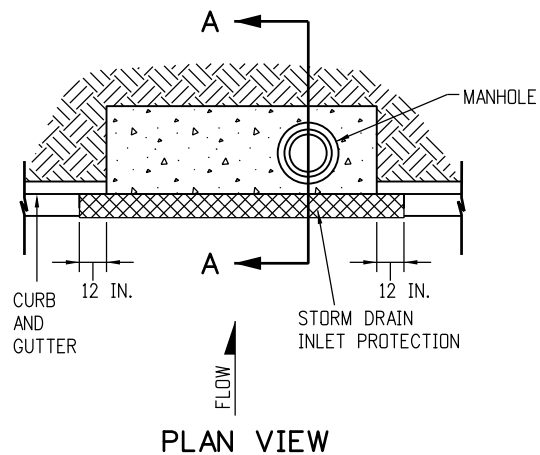
SECTION A-A

AGGREGATE BAGS AT DROP INLET

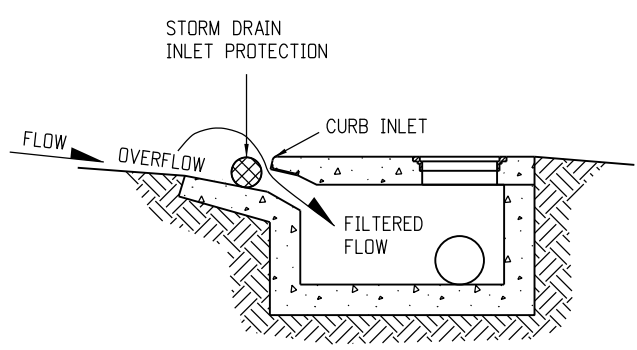
AGGREGATE BAG APPLICATIONS

NOTE: THE PAY ITEM NUMBER FOR AGGREGATE BAG (LF) IS 208-00035

Computer File Information		<div><div>(R-X)</div><div>(R-X)</div><div>(R-X)</div><div>(R-X)</div></div>	Sheet Revisions		<div><div><div><div><div><div></div></div></div><div><div></div></div></div><div><div>Colorado Department of Transportation</div><div>2829 West Howard Place</div><div>CDOT HQ, 3rd Floor</div><div>Denver, CO 80204</div><div>Phone: 303-757-9021 FAX: 303-757-9868</div></div><div><div>Project Development Branch</div><div>JBK</div></div></div></div>	TEMPORARY EROSION CONTROL		STANDARD PLAN NO.	
Creation Date: 07/31/19			Date:	Comments		M-208-1			
Designer Initials: JBK						Standard Sheet No. 4 of 11			
Last Modification Date: 07/31/19									
Detailer Initials: LTA									
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English								Project Sheet Number:	
				Issued by the Project Development Branch: July 31, 2019					



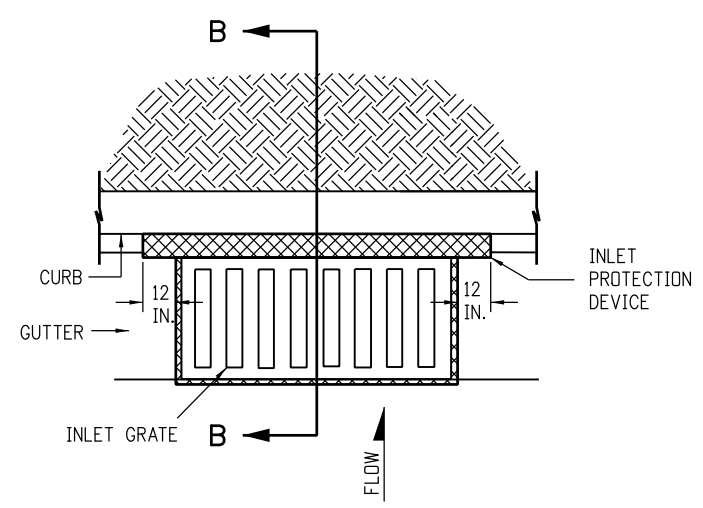
PLAN VIEW



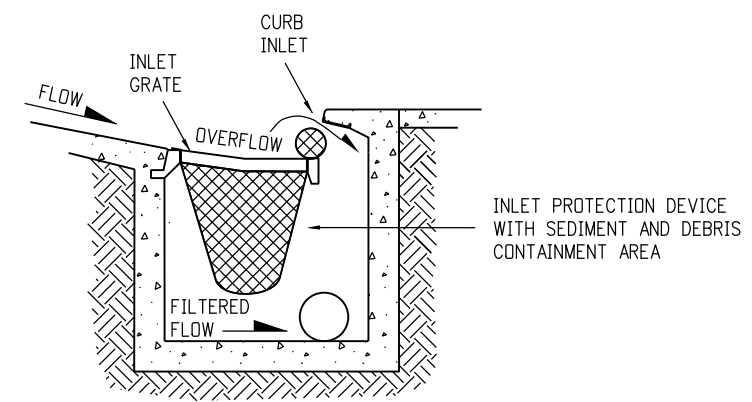
SECTION A-A

STORM DRAIN INLET PROTECTION (TYPE I)

- 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.



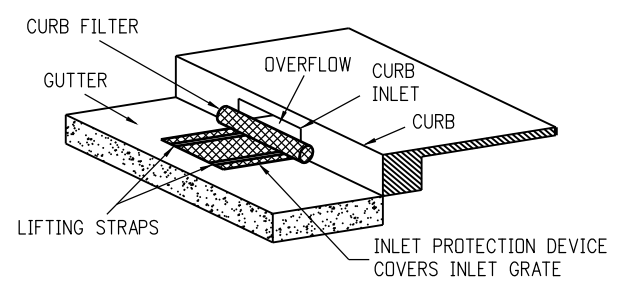
PLAN VIEW



SECTION B-B

OPTION A

STORM DRAIN INLET PROTECTION (TYPE II)

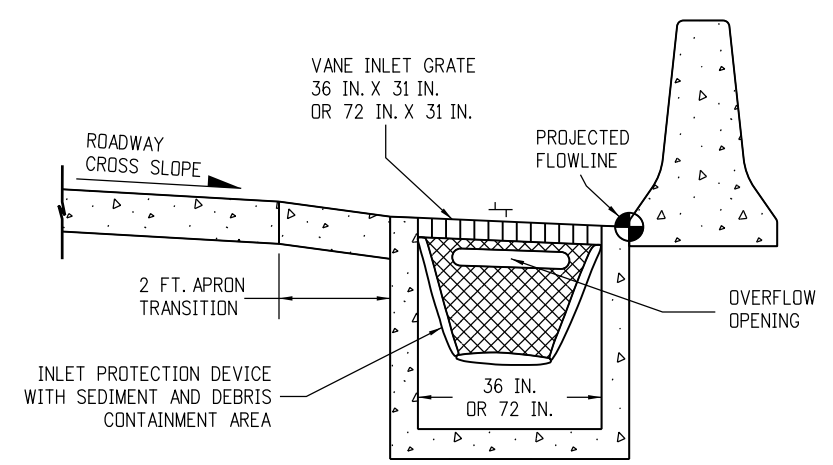


ISOMETRIC VIEW

OPTION B

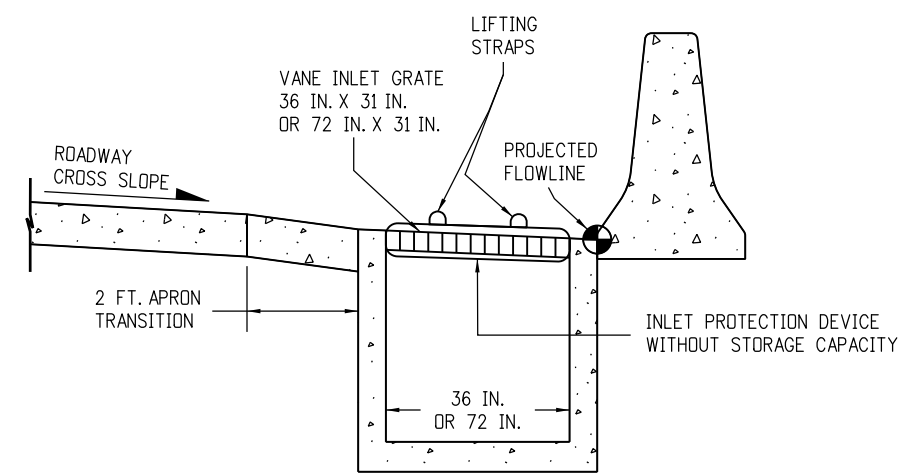
STORM DRAIN INLET PROTECTION (TYPE II)

NOTE: THE PAY ITEM NUMBERS FOR STORM DRAIN INLET PROTECTION (TYPE II) ARE 208-00054 (EACH).



OPTION A

STORM DRAIN INLET PROTECTION (TYPE III)



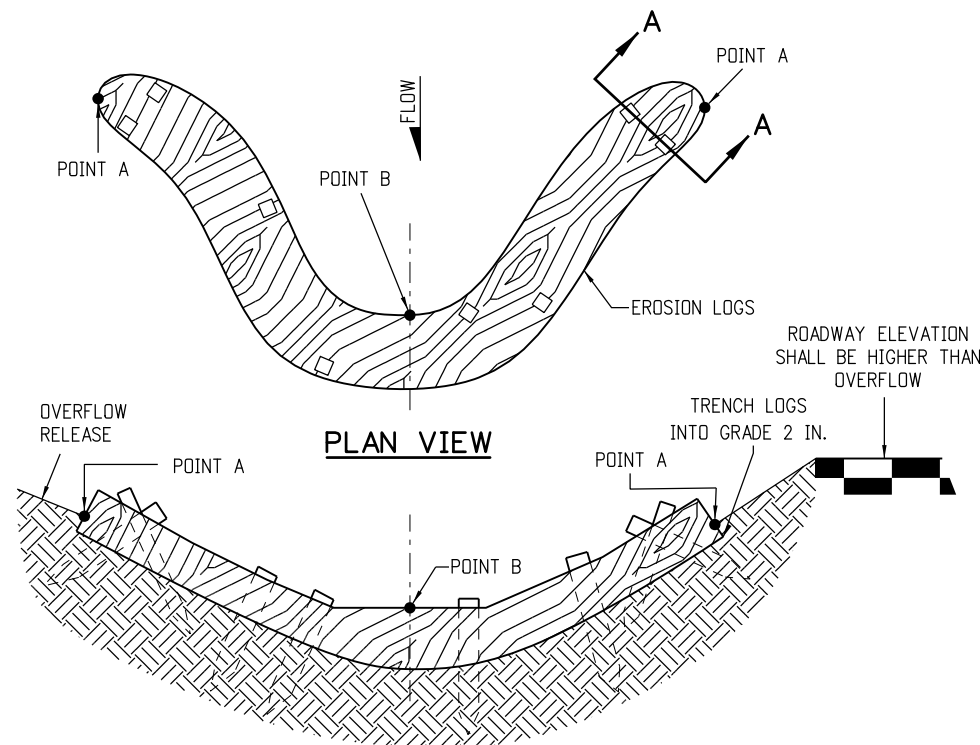
OPTION B

STORM DRAIN INLET PROTECTION (TYPE III)

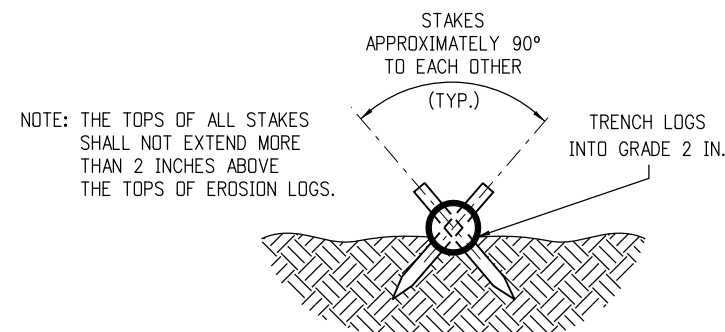
NOTE: THE PAY ITEM NUMBER FOR STORM DRAIN INLET PROTECTION (TYPE III) (EACH) IS 208-00056.

STORM DRAIN INLET PROTECTION TYPES

Computer File Information		Sheet Revisions		Colorado Department of Transportation  2829 West Howard Place CDOT HQ, 3rd Floor Denver, CO 80204 Phone: 303-757-9021 FAX: 303-757-9868 Project Development Branch	TEMPORARY EROSION CONTROL	STANDARD PLAN NO.	
Creation Date: 07/31/19	(R-X)	Date:	Comments			M-208-1	
Designer Initials: JBK	(R-X)					Standard Sheet No. 5 of 11	
Last Modification Date: 07/31/19	(R-X)					Project Sheet Number:	
Detailer Initials: LTA	(R-X)						
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English				JBK	Issued by the Project Development Branch: July 31, 2019		



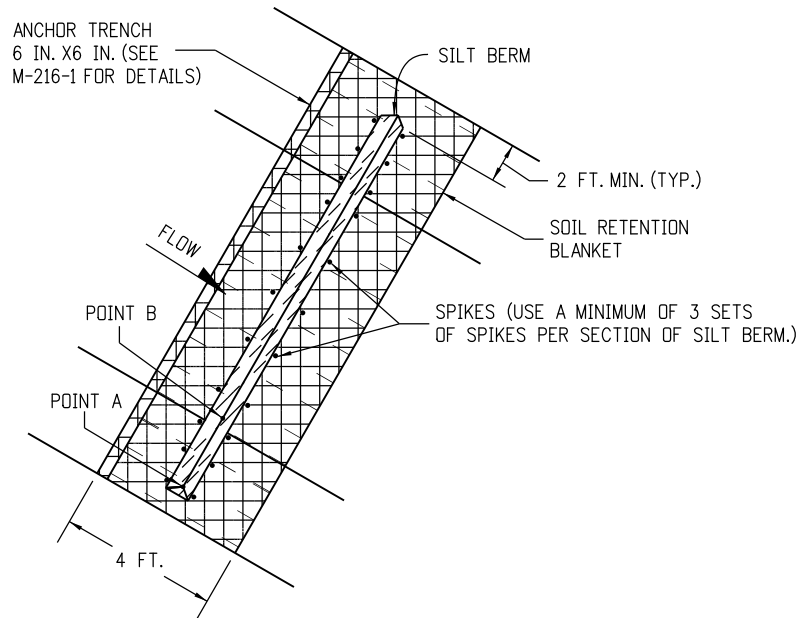
ELEVATION



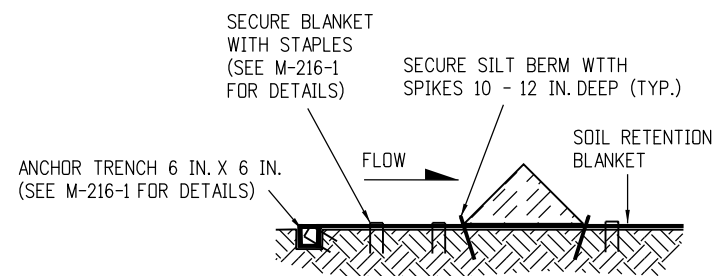
SECTION A-A

- 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 SHALL BE GRADED IN A PARABOLIC OR TRAPEZOIDAL SHAPE.

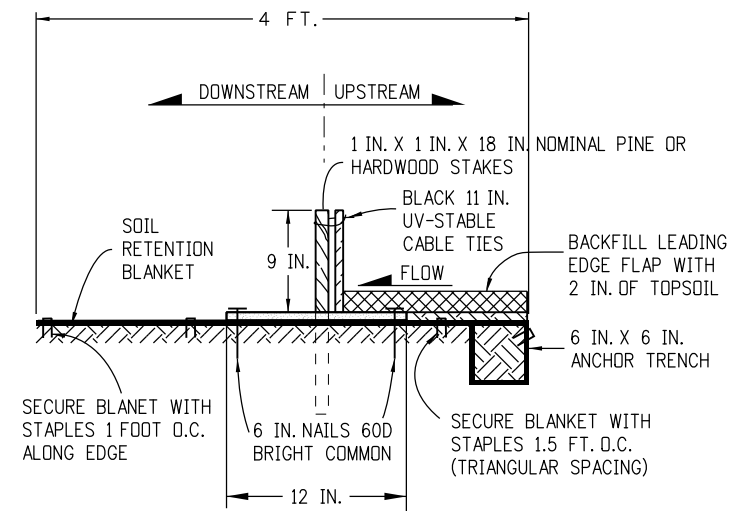
EROSION LOG INSTALLATION



PLAN VIEW

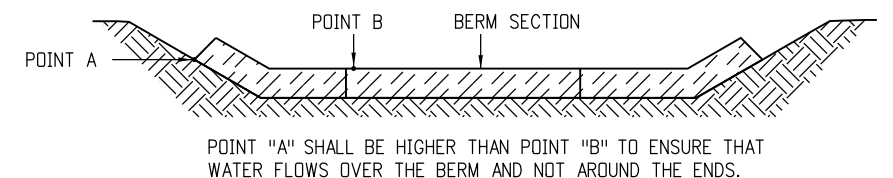


SILT BERM (1) SECTION VIEW



- 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



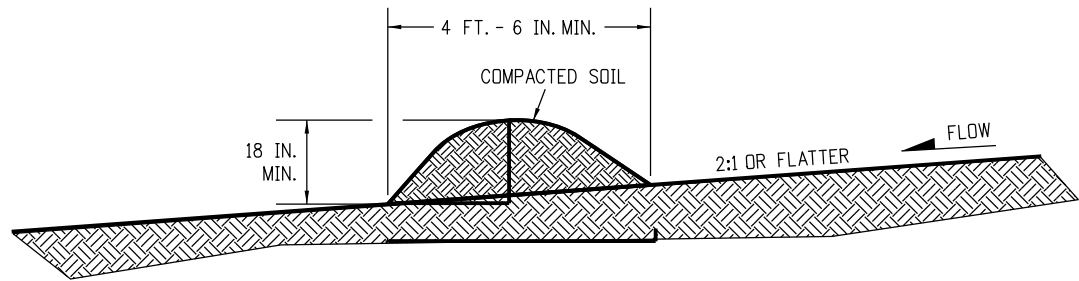
FRONT VIEW

- 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

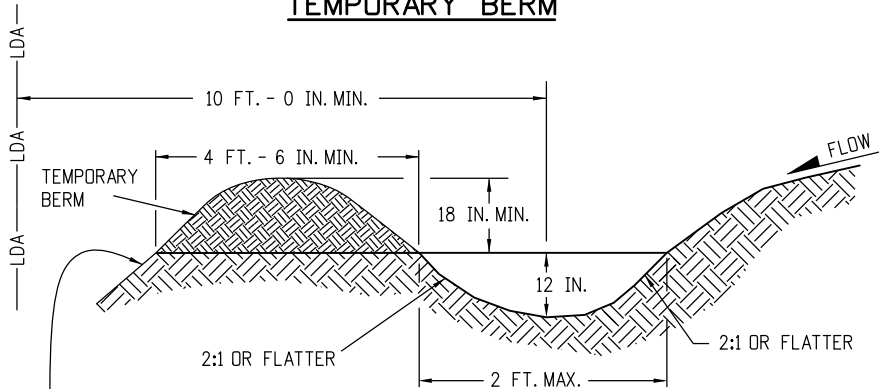
Computer File Information		Sheet Revisions		Colorado Department of Transportation 2829 West Howard Place CDOT HQ, 3rd Floor Denver, CO 80204 Phone: 303-757-9021 FAX: 303-757-9868 Project Development Branch JBK	TEMPORARY EROSION CONTROL	STANDARD PLAN NO.	
Creation Date: 07/31/19	(R-X)	Date:	Comments			M-208-1	
Designer Initials: JBK	(R-X)					Standard Sheet No. 6 of 11	
Last Modification Date: 07/31/19	(R-X)					Project Sheet Number:	
Detailer Initials: LTA	(R-X)						
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)				Issued by the Project Development Branch: July 31, 2019		



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

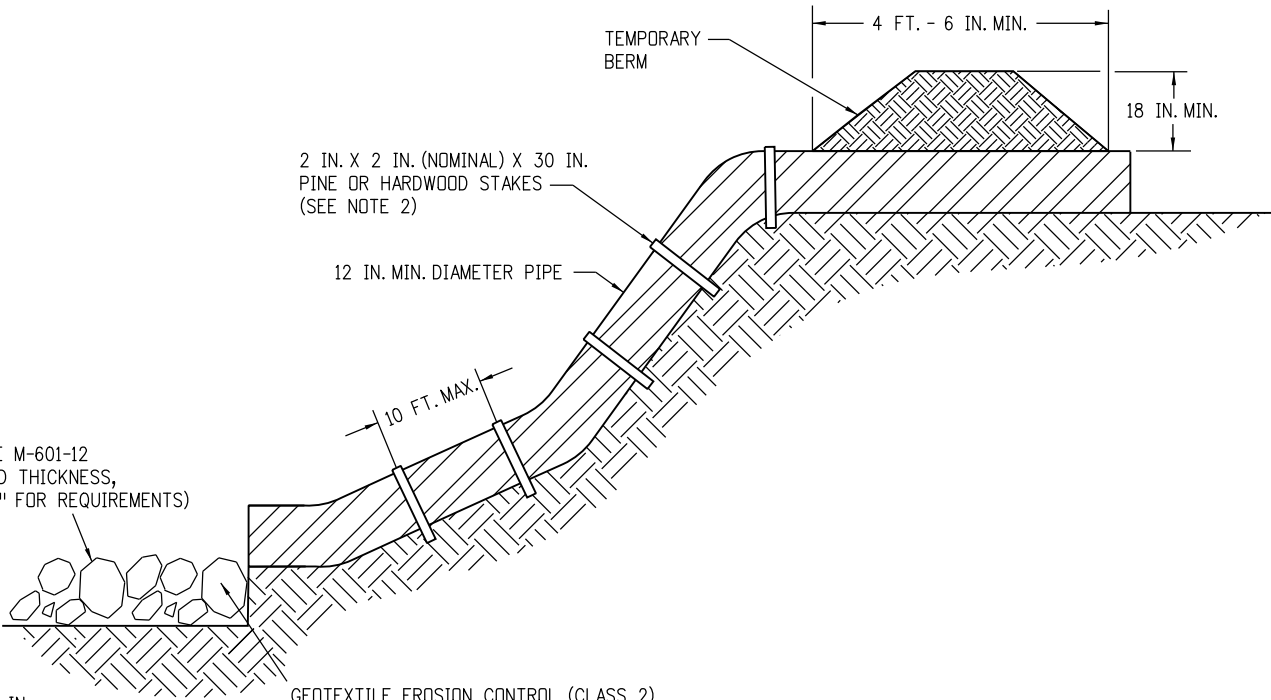


FOR BERMS TALLER THAN 2 FT.,
INSTALL TOE OF SLOPE CONTROL MEASURES.
SEE SHEET 3 OF 11 FOR DETAILS.

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



* RIPRAP OUTLET PROTECTION (SEE M-601-12
FOR MIN. HORIZONTAL LAYOUT AND THICKNESS,
AND SPECIFICATION 506 "RIPRAP" FOR REQUIREMENTS)

* RIPRAP SIZE $D_{50} = 6$ IN.
OR AS SHOWN ON THE PLANS.

GEOTEXTILE EROSION CONTROL (CLASS 2)
SHALL ALWAYS BE REQUIRED

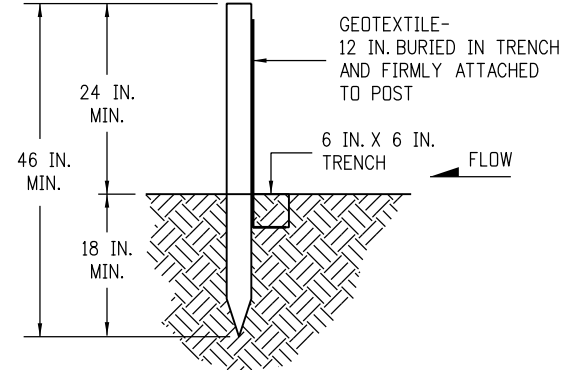
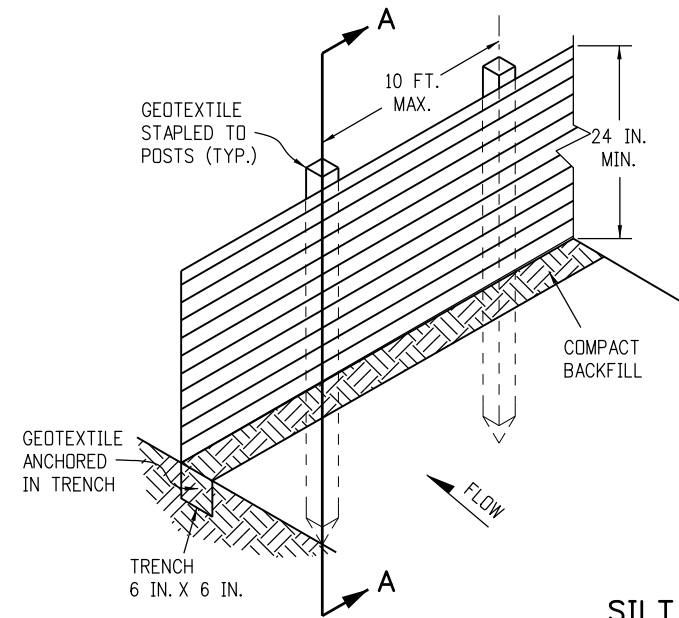
NOTES:

1. ANCHOR SIZE VARIES ACCORDING TO PIPE SIZE
2. TO SECURE THE PIPE, DRIVE STAKES INTO GROUND, THEN TIE A 12 GAUGE 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

Computer File Information		<div><div>(R-X)</div><div>(R-X)</div><div>(R-X)</div><div>(R-X)</div></div>	Sheet Revisions		<div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div>Colorado Department of Transportation</div><div>2829 West Howard Place</div><div>CDOT HQ, 3rd Floor</div><div>Denver, CO 80204</div><div>Phone: 303-757-9021 FAX: 303-757-9868</div><div>Project Development Branch</div><div>JBK</div></div>	<div>TEMPORARY</div> <div>EROSION CONTROL</div>		STANDARD PLAN NO.	
Creation Date: 07/31/19			Date:	Comments				M-208-1	
Designer Initials: JBK								Standard Sheet No. 7 of 11	
Last Modification Date: 07/31/19								Issued by the Project Development Branch: July 31, 2019	
Detailer Initials: LTA									
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English									

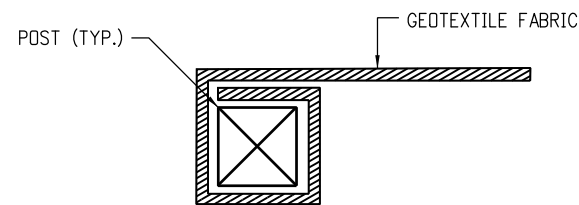


SECTION A-A

SILT FENCE

NOTES:

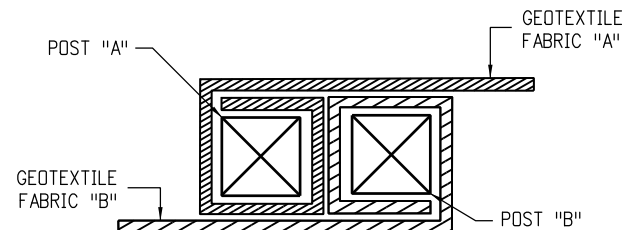
1. GEOTEXTILE SHALL BE ATTACHED TO WOOD POSTS WITH THREE OR MORE STAPLES PER POST. STAPLES SHALL BE HEAVY DUTY WIRE AND AT LEAST 1 INCH LONG.
2. WOOD POST SHALL BE 1 IN. X 1 IN. NOMINAL.
3. THE PAY ITEM NUMBER FOR SILT FENCE (LF) IS 208-00020.
4. THE SILT FENCE SHALL BE PLACED ON THE CONTOUR (AT THE SAME ELEVATION ± 6 IN.). THE ENDS SHALL BE FLARED UP SLOPE (MINIMUM ELEVATION GAIN OF 18 IN.).



END SECTION DETAIL (PLAN VIEW)

NOTE:

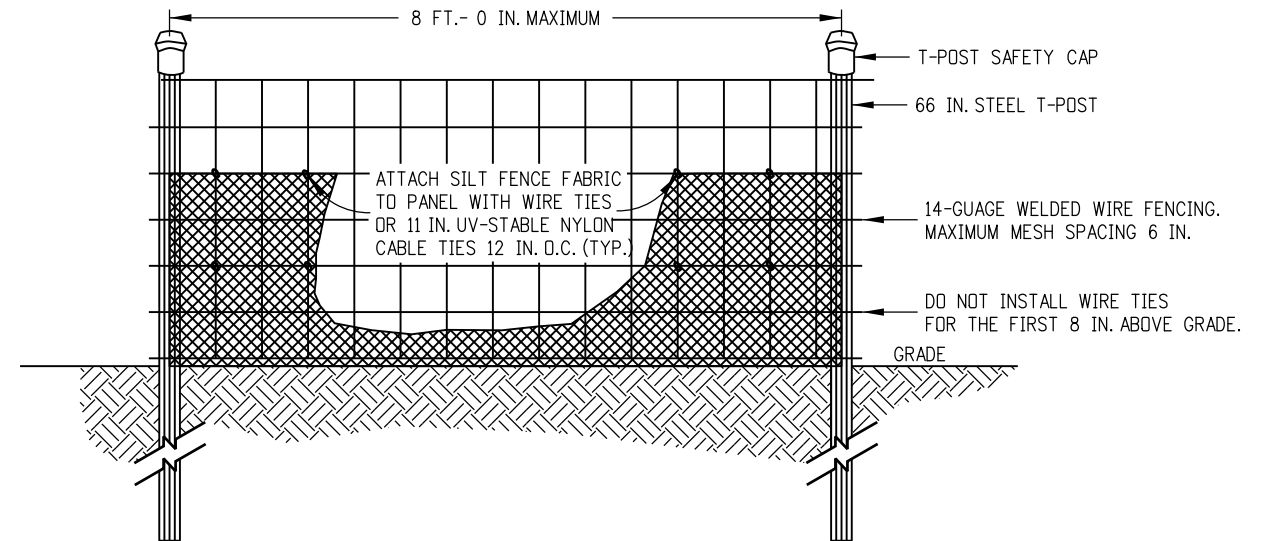
1. THE END OF THE SILT FENCE FABRIC SHALL BE WRAPPED APPROX. 6 INCHES AROUND A WOODEN POST ONE FULL TURN, THEN SECURED ALONG THE POST WITH 6 HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH LONG.



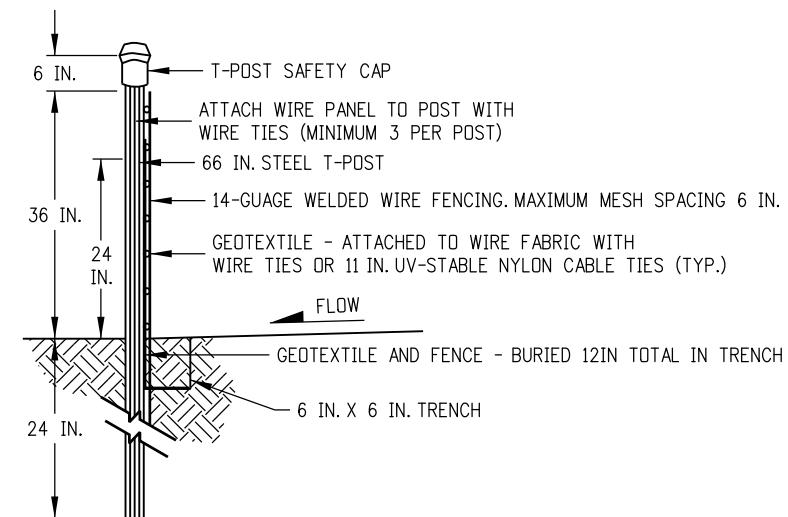
JOINING SECTION DETAIL (PLAN VIEW)

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.



ELEVATION VIEW



SIDE VIEW

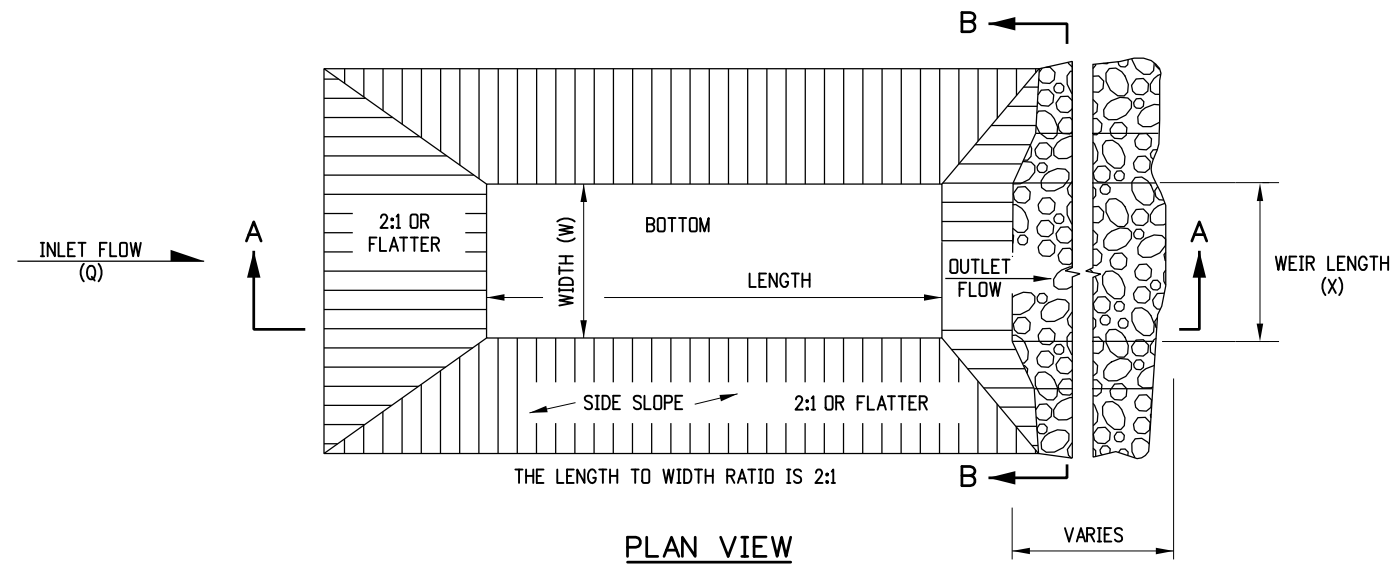
NOTES:

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.

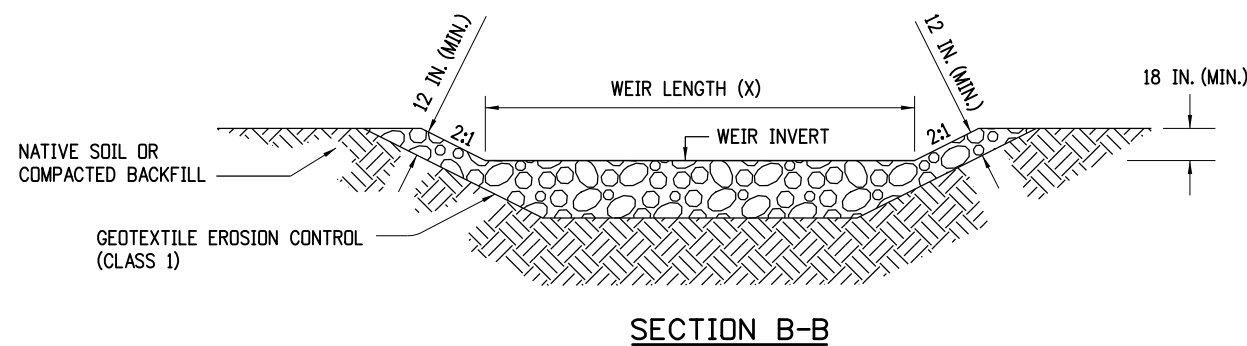
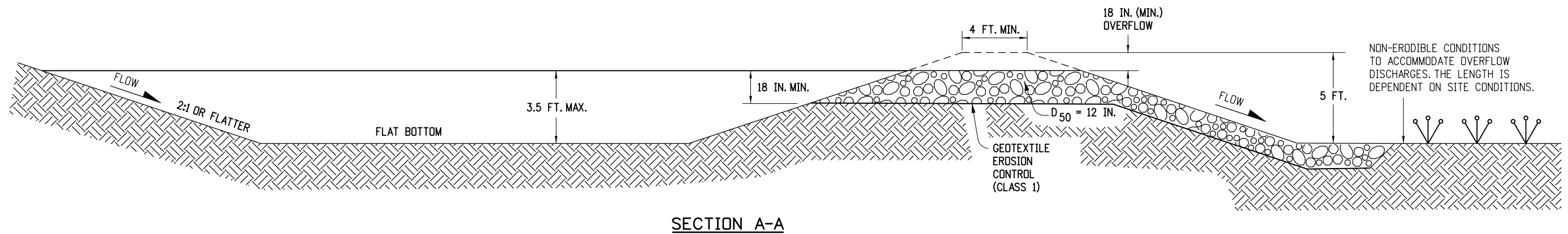
SILT FENCE (REINFORCED)

SILT FENCE APPLICATIONS

Computer File Information		<div>(R-X)</div> <div>(R-X)</div> <div>(R-X)</div> <div>(R-X)</div>	Sheet Revisions		<div>Colorado Department of Transportation</div> <div> 2829 West Howard Place CDOT HQ, 3rd Floor Denver, CO 80204 Phone: 303-757-9021 FAX: 303-757-9868</div> <div>Project Development Branch</div> <div>JBK</div>	TEMPORARY EROSION CONTROL		STANDARD PLAN NO.	
Creation Date: 07/31/19	Date:		Comments	M-208-1					
Designer Initials: JBK				Standard Sheet No. 8 of 11					
Last Modification Date: 07/31/19									
Detailer Initials: LTA									
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English				Issued by the Project Development Branch: July 31, 2019		Project Sheet Number:			



- 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-ERODIBLE.
 9. THE PAY ITEM NUMBER FOR SEDIMENT TRAP (LF) IS 208-00033.

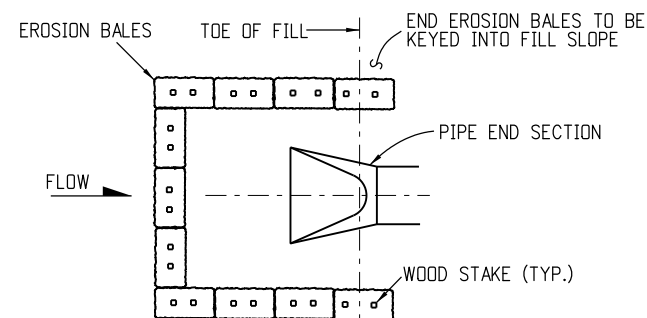
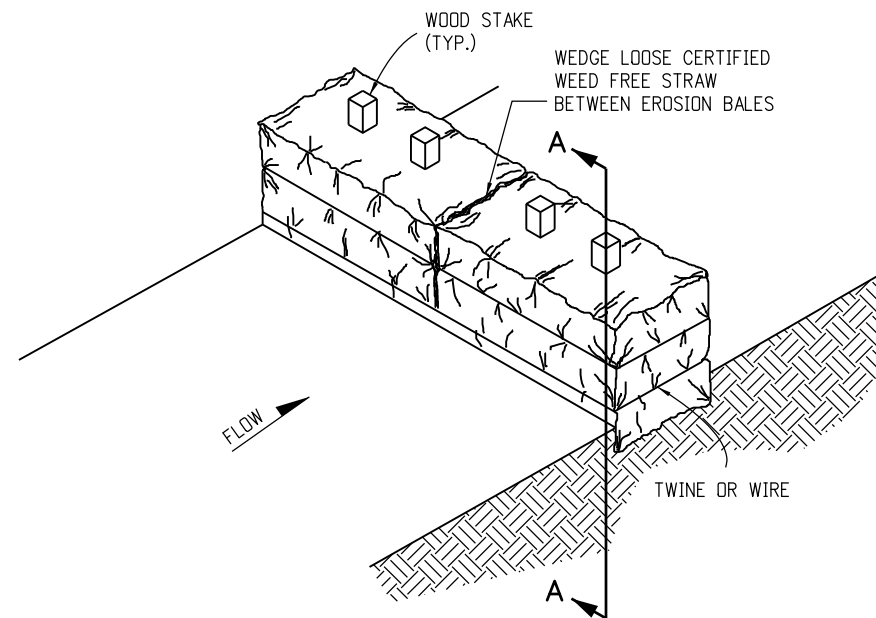
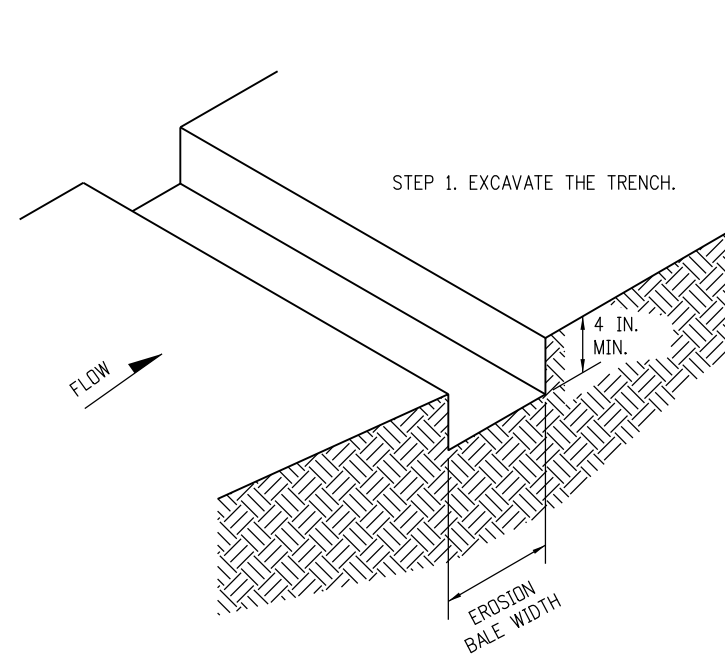


DRAINAGE AREA (ACRES)	WEIR LENGTH (FEET)
1	4
2	6
3	8
4	10
5	12

WEIR LENGTH TABLE

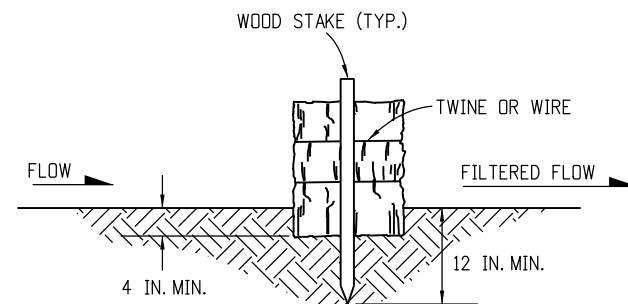
SEDIMENT TRAP

Computer File Information		Sheet Revisions		<div> <div>Colorado Department of Transportation</div> <div>  <div> 2829 West Howard Place CDOT HQ, 3rd Floor Denver, CO 80204 Phone: 303-757-9021 FAX: 303-757-9868 </div> </div> <div>Project Development Branch</div> <div>JBK</div> </div>	<div>TEMPORARY EROSION CONTROL</div> <div>Issued by the Project Development Branch: July 31, 2019</div>	STANDARD PLAN NO.	
Creation Date: 07/31/19	(R-X)	Date:	Comments			M-208-1	
Designer Initials: JBK	(R-X)					Standard Sheet No. 9 of 11	
Last Modification Date: 07/31/19	(R-X)					Project Sheet Number:	
Detailer Initials: LTA	(R-X)						
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English							



PLAN VIEW

EROSION BALE CULVERT INLET PROTECTION

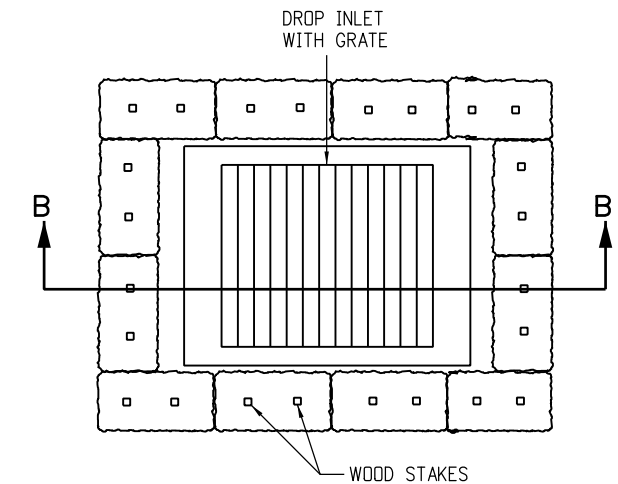


SECTION A-A

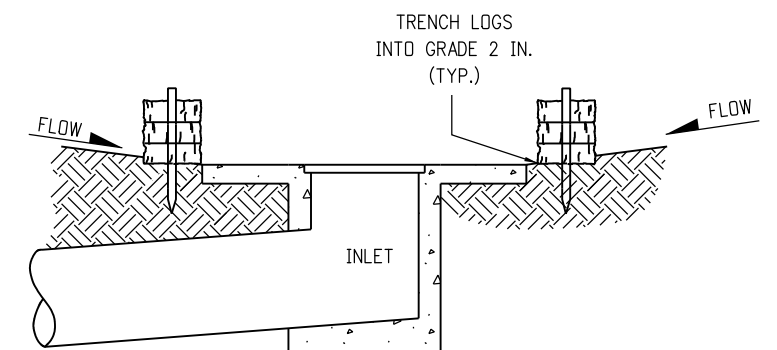
EROSION BALE TRENCHING AND STAKING

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



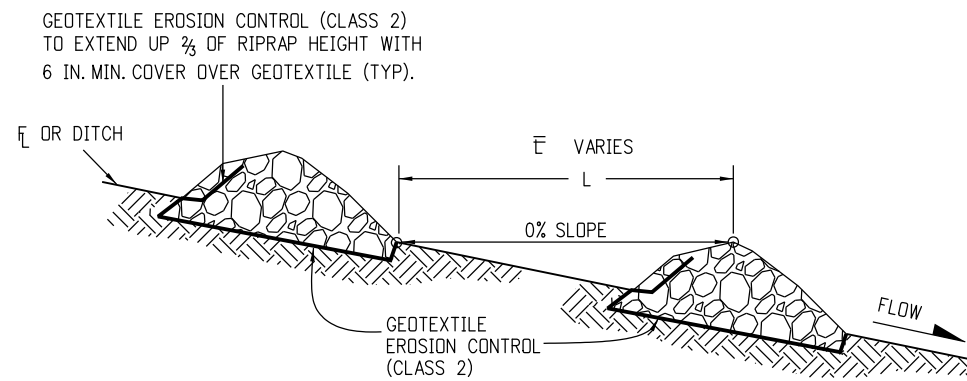
SECTION B-B

NOTE: LOCATE EROSION BALES AT THE OUTSIDE EDGE OF THE CONCRETE APRON.

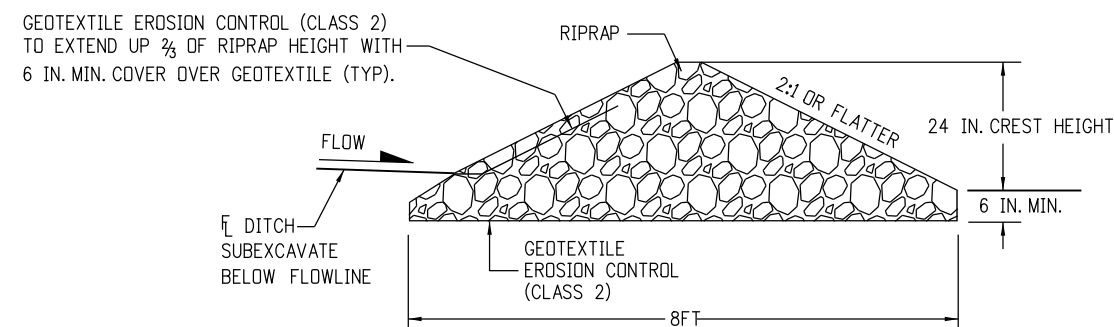
EROSION LOG FILTER AT DROP INLET

EROSION BALE APPLICATIONS

Computer File Information		Sheet Revisions		<div><div></div><div>Colorado Department of Transportation 2829 West Howard Place CDOT HQ, 3rd Floor Denver, CO 80204 Phone: 303-757-9021 FAX: 303-757-9868 Project Development Branch JBK</div></div>	TEMPORARY EROSION CONTROL		STANDARD PLAN NO.	
Creation Date: 07/31/19	<div>(R-X)</div> <div>(R-X)</div> <div>(R-X)</div> <div>(R-X)</div>	Date:	Comments		M-208-1		Standard Sheet No. 10 of 11	
Designer Initials: JBK								
Last Modification Date: 07/31/19								
Detailer Initials: LTA								
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English					Issued by the Project Development Branch: July 31, 2019	Project Sheet Number:		



SECTION VIEW ALONG DITCH FLOWLINE



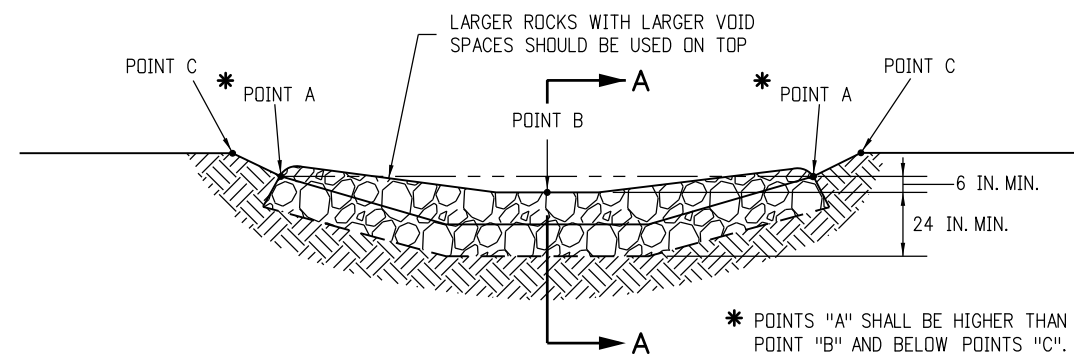
SECTION A-A

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.

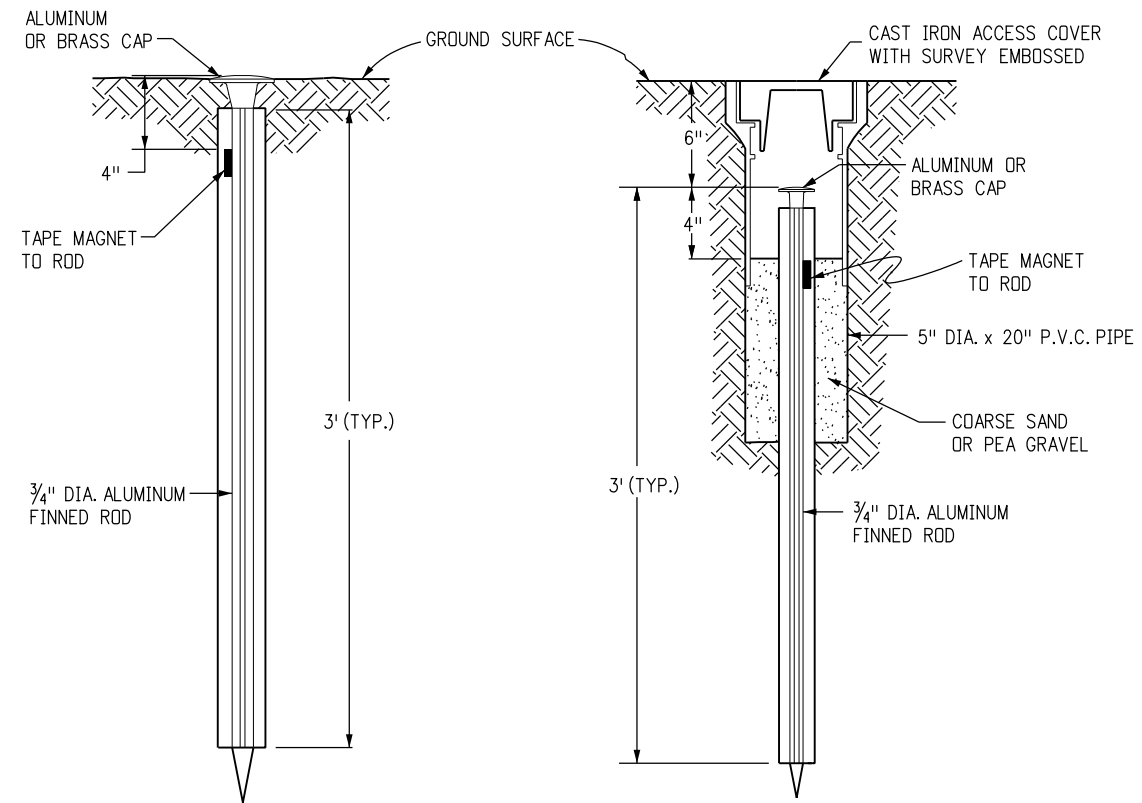
NOTE: ALL MATERIALS AND LABOR TO COMPLETE THE ROCK CHECK DAM SHALL BE INCLUDED IN THE COST OF WORK.

ROCK CHECK DAM



TYPICAL SECTION VIEW

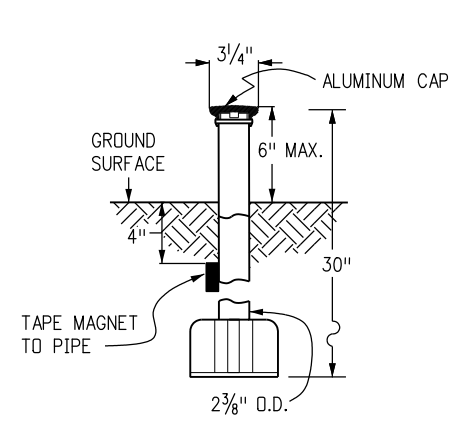
Computer File Information		<div><div><div></div><div></div></div><div><div></div><div></div></div></div>	Sheet Revisions		<div><div><div>Colorado Department of Transportation</div><div><div><div><div></div><div></div></div><div>2829 West Howard Place</div><div>CDOT HQ, 3rd Floor</div><div>Denver, CO 80204</div><div>Phone: 303-757-9021 FAX: 303-757-9868</div></div><div>Project Development Branch</div><div>JBK</div></div></div></div>	TEMPORARY EROSION CONTROL		STANDARD PLAN NO.	
Creation Date: 07/31/19	(R-X)		Date:	Comments		M-208-1		Standard Sheet No. 11 of 11	
Designer Initials: JBK	(R-X)								
Last Modification Date: 07/31/19	(R-X)								
Detailer Initials: LTA	(R-X)								
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)							Issued by the Project Development Branch: July 31, 2019	



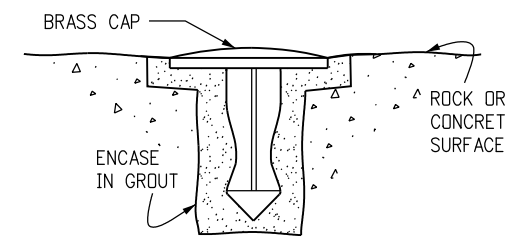
TYPE 1 MONUMENT

TYPE 1A MONUMENT

INCLUDES MONUMENT BOX

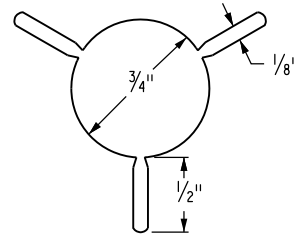


TYPE 3 MONUMENT

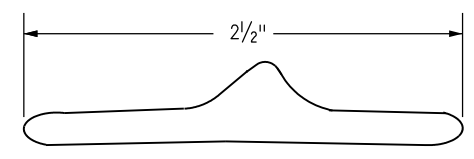


TYPE 5 MONUMENT

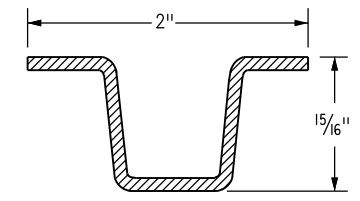
ALUMINUM CAP AND TYPE 5(S) DETAILS SHOWN ON SHEET 2



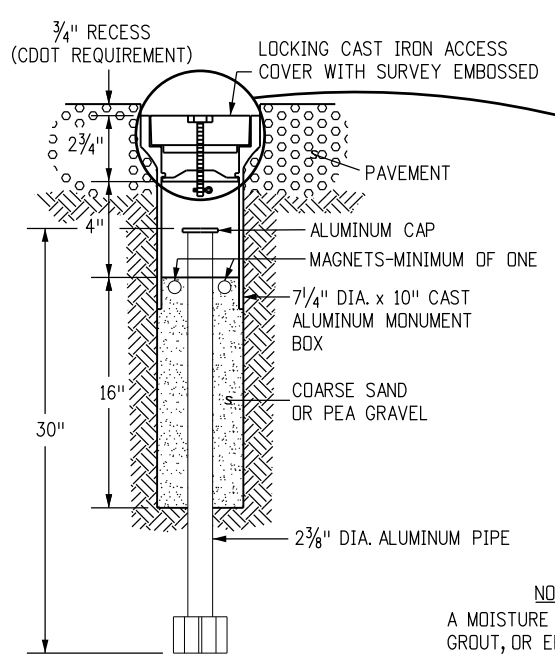
SECTION A-A



SECTION B-B

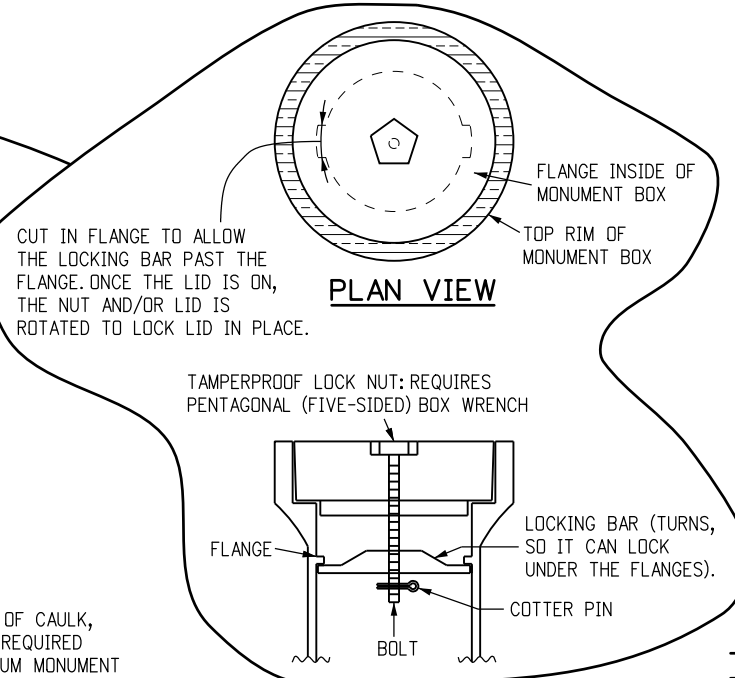


DELINEATOR POST SECTION C-C



TYPE 3A MONUMENT

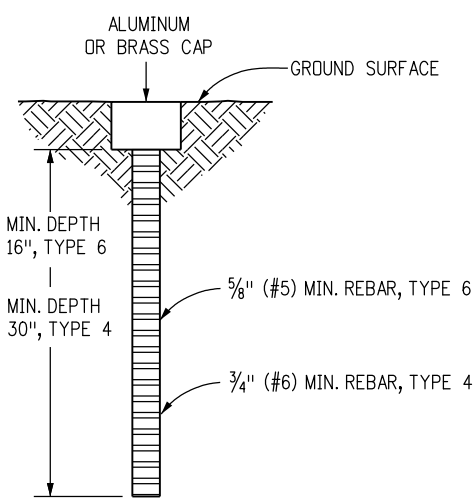
ROADWAY INSTALLATION INCLUDES MONUMENT BOX



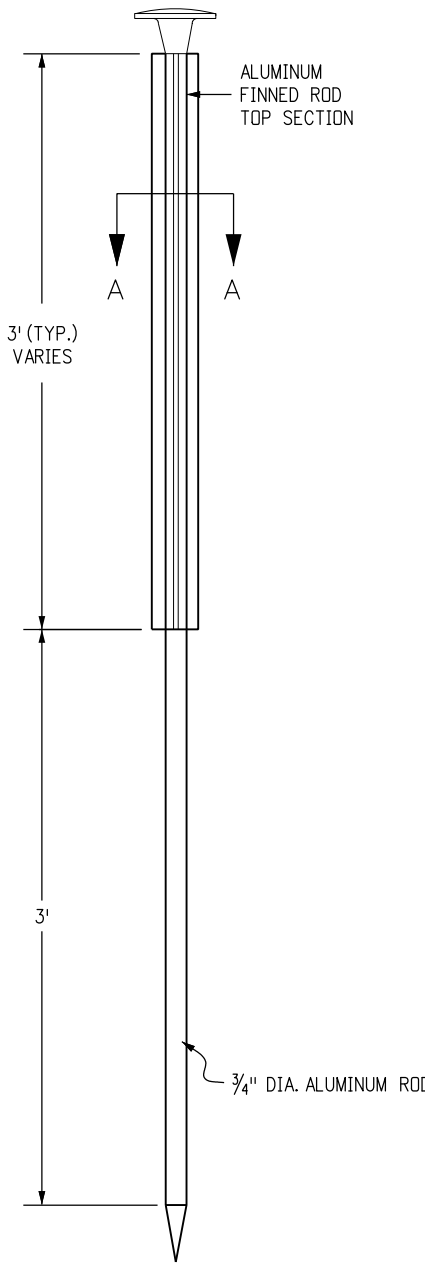
PLAN VIEW

LOCKING CAST IRON ACCESS COVER

NOTE:
A MOISTURE BARRIER OF CAULK, GROUT, OR EPOXY IS REQUIRED BETWEEN THE ALUMINUM MONUMENT BOX AND THE PAVEMENT.

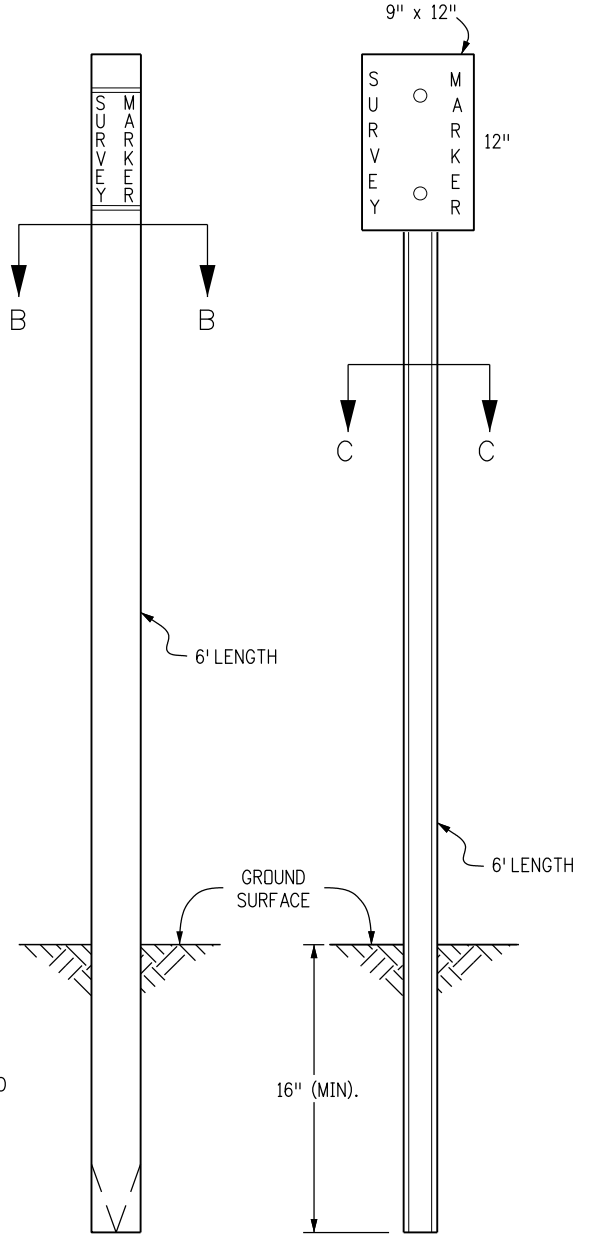


TYPE 4 AND TYPE 6 MONUMENT



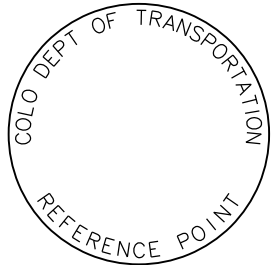
TYPE 2 MONUMENT

TYPE 2A INCLUDES MONUMENT BOX

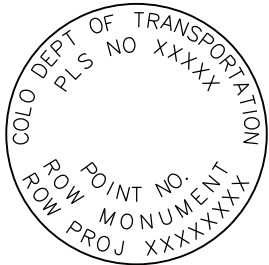


WITNESS POSTS

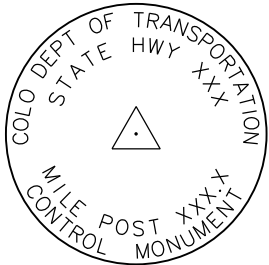
Computer File Information		<div>(R-X)</div> <div>(R-X)</div> <div>(R-X)</div> <div>(R-X)</div>	Sheet Revisions		Colorado Department of Transportation		SURVEY MONUMENTS		STANDARD PLAN NO.	
Creation Date: 07/31/19			Date:	Comments	<div><div></div><div>2829 West Howard Place CDOT HQ, 3rd Floor Denver, CO 80204 Phone: 303-757-9021 FAX: 303-757-9868</div></div> <div>Project Development BranchJBK</div>		Issued by the Project Development Branch: July 31, 2019		M-629-1	
Designer Initials: JBK			Standard Sheet No. 1 of 2							
Last Modification Date: 07/31/19										
Detailer Initials: LTA										
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English										



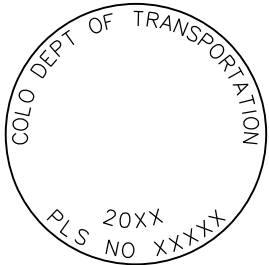
REFERENCE
MONUMENT CAP



ROW
MONUMENT CAP



CONTROL
MONUMENT CAP

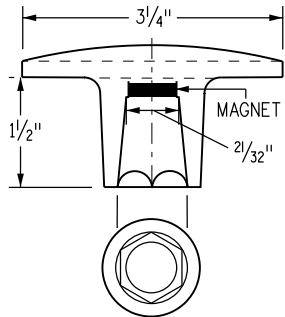


ALIQUOT CORNER
MONUMENT CAP

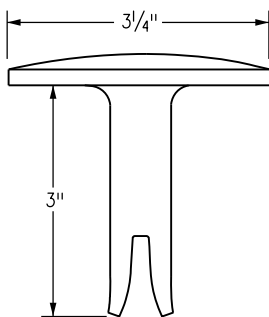


ALUMINUM CAP

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..

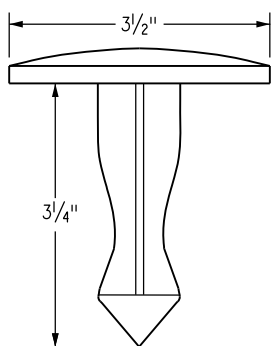


ALUMINUM CAP
USED WITH ALUMINUM ROD



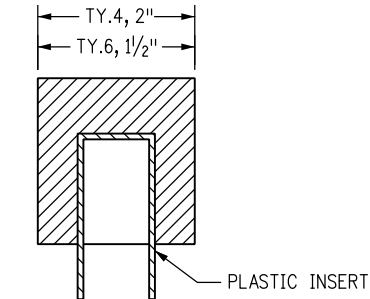
ALUMINUM CAP
TYPE 5

FOR PLACING IN EXISTING
CONCRETE OR ROCK

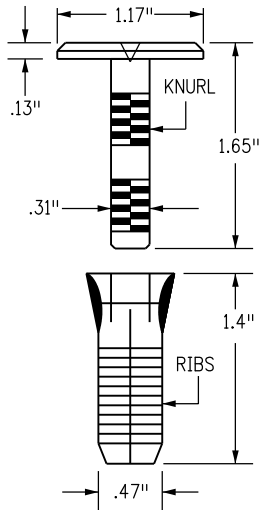
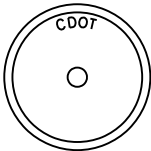


BRASS CAP
TYPE 5

FOR PLACING IN EXISTING
CONCRETE OR ROCK



ALUMINUM CAP



COPPER ALLOY CAP

TYPE 5(S)

FOR PLACING IN EXISTING
SIDEWALK, CURB, OR GUTTER

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 3/4 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 3/4 IN. DIA. ROD, THEN DRIVING THE ROD AT LEAST 30 IN. INTO THE GROUND. ADDITIONAL 3 FT. LONG X 3/4 IN. FINNED ROD SECTIONS SHALL BE ADDED AND DRIVEN FLUSH WITH THE GROUND UNTIL THE MONUMENT IS IN A STABLE POSITION. THE FINNS 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 3/4 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 1/2 IN., SHALL BE USED ON 5/8 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.

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		

Computer File Information

Creation Date: 07/31/19

Designer Initials: JBK

Last Modification Date: 07/31/19

Detailer Initials: LTA

CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English

Sheet Revisions

Date:

Comments

(R-X)

(R-X)

(R-X)

(R-X)

Colorado Department of Transportation



2829 West Howard Place
CDOT HQ, 3rd Floor
Denver, CO 80204
Phone: 303-757-9021 FAX: 303-757-9868

Project Development Branch

JBK

SURVEY MONUMENTS

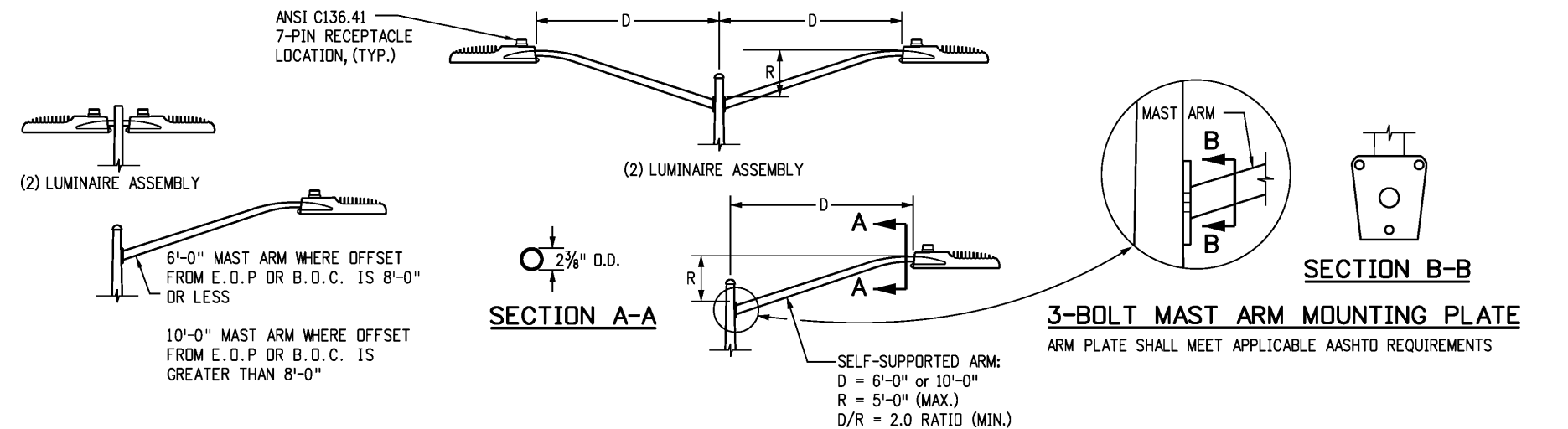
Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.

M-629-1

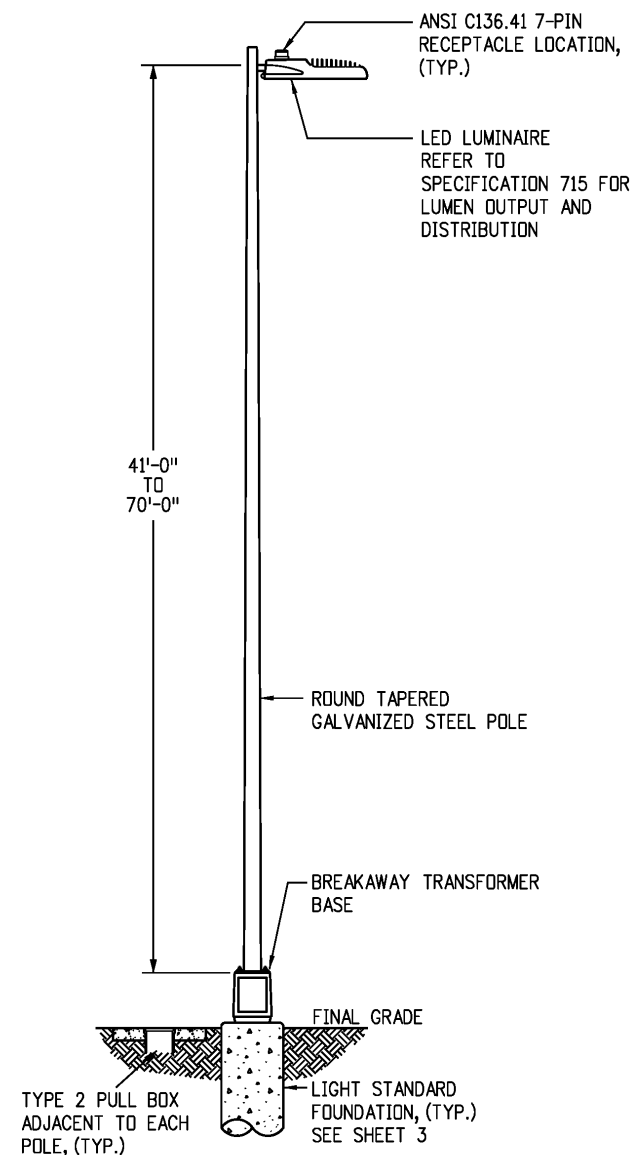
Standard Sheet No. 2 of 2

Project Sheet Number:

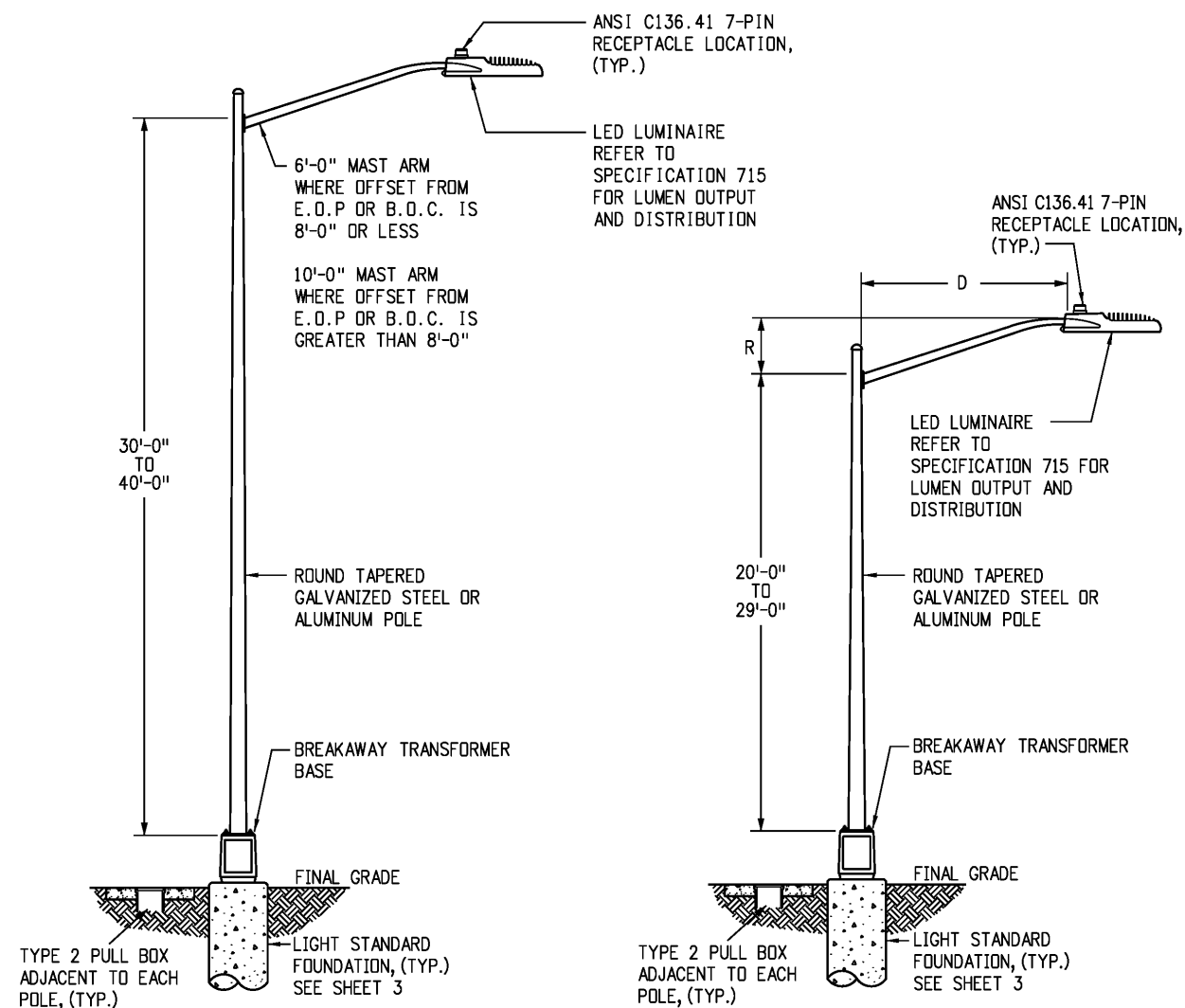


LUMINAIRE AND LIGHT STANDARD NOTES:

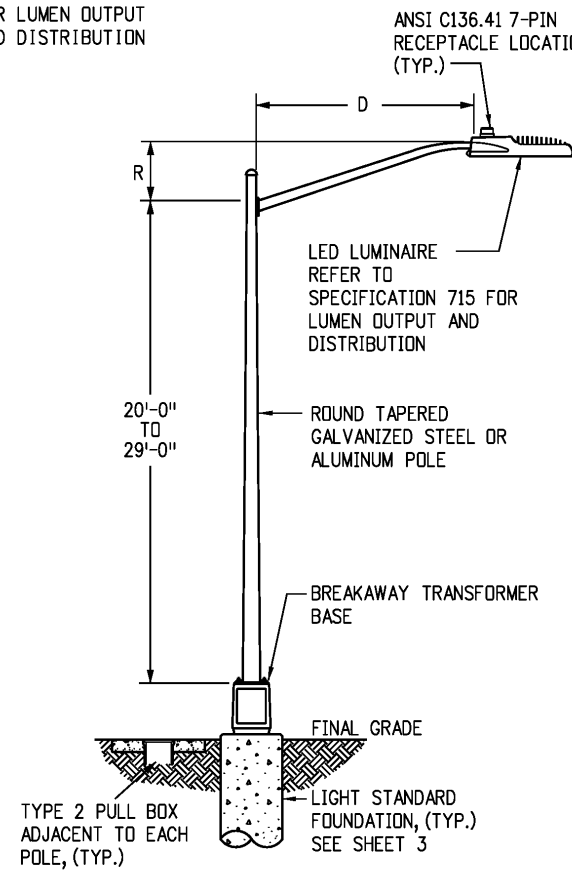
- LUMINAIRES WITH LIGHT SOURCES RATED MORE THAN 3200 LUMENS SHALL HAVE NO UPLIGHT (UO RATING) PER IES TM-15-11 AND MOUNTED LEVEL AND PLUMB.
- ALL LUMINAIRES SHALL BE EQUIPPED WITH AN ANSI C136.41 7-PIN RECEPTACLE AND SHORTING CAP FOR WIRELESS CONTROL NODE.
- ALL LED LUMINAIRES SHALL BE 3000K NOMINAL OR LESS, PER ANSI C78.377-2011 STANDARD AND EQUIPPED WITH A SURGE SUPPRESSION DEVICE WITH AN IMMUNITY LEVEL OF 10kV (MINIMUM). ALL LED LUMINAIRES SHALL BE EQUIPPED WITH A 0-10V OR DALI DIMMING DRIVER.
- LIGHT STANDARDS SHALL NOT BE PLACED IN DITCHES OR OTHER LOW AREAS UNLESS AN ALTERNATIVE LOCATION IS NOT POSSIBLE.
- BACKFILL SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 203.
- POLE CAPS AND BASE PLATE COVERS ARE REQUIRED.
- ALL ELECTRICAL COMPONENTS SHALL BE UL LISTED PER THE APPROPRIATE UL REQUIREMENTS, INCLUDING BUT NOT LIMITED TO 508A INDUSTRIAL CONTROL PANELS.
- ELECTRICAL SPLICES MAY BE MADE WITHIN THE POLE BASE OR TRANSFORMER BASE AT EACH REGION'S DISCRETION. THE CDOT PROJECT MANAGER SHALL CONFIRM WHETHER SPLICE BOXES SHALL BE INSTALLED FOR THE PROJECT OR WHETHER SPLICES SHALL BE MADE IN THE POLE.
- POLE ASSEMBLY SHALL BE SUPPLIED IN SUFFICIENT LENGTH TO ACCOMMODATE LUMINAIRE MOUNTING HEIGHT.
- FINAL LOCATION OF THE LUMINAIRES SHALL BE APPROVED BY THE ENGINEER.
- WHERE FOUNDATION IS LOCATED IN SIDEWALK, PAVERS OR OTHER HARDSCAPE, THE TOP OF FOUNDATION SHALL BE FLUSH WITH THE TOP OF THE SIDEWALK CONFORMING TO ADA REQUIREMENTS.



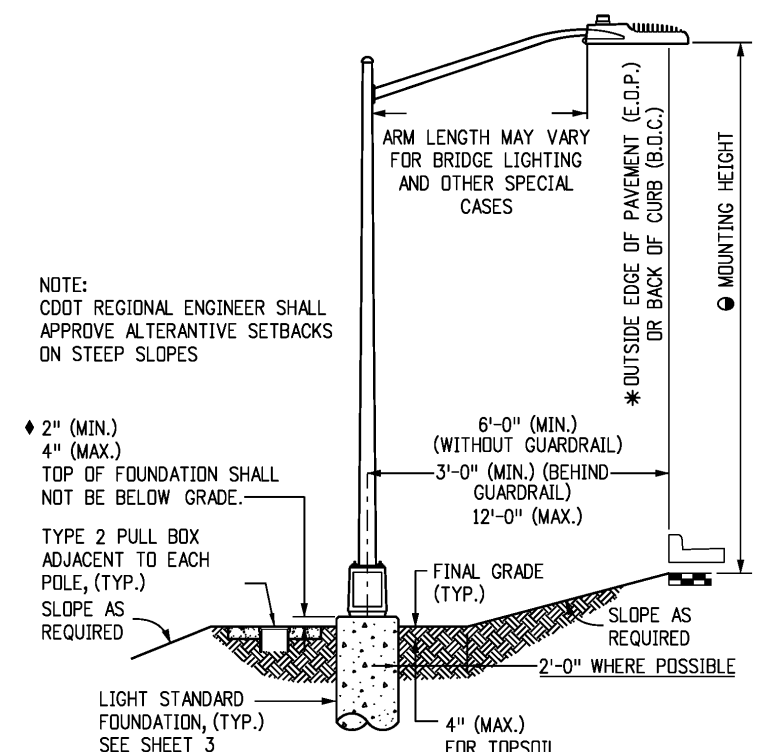
41 FT. TO 70 FT. STANDARD



30 FT. TO 40 FT. STANDARD



20 FT. TO 29 FT. STANDARD



LIGHT STANDARD LOCATION

Computer File Information

Creation Date: 07/31/19
Created By: Clanton
Last Modification Date: 05/01/2020
Last Modified By: CLANTON AND ASSOCIATES, INC.
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English

Sheet Revisions

Date:	Comments
11/22/2019	3-BOLT MAST ARM
05/01/2020	DETAIL UPDATES

Colorado Department of Transportation



2829 W. Howard Pl.
Denver, CO 80204
Phone: 303-757-9654
FAX: 303-757-9219

Traffic & Safety Engineering

MKB

ROADWAY LIGHTING

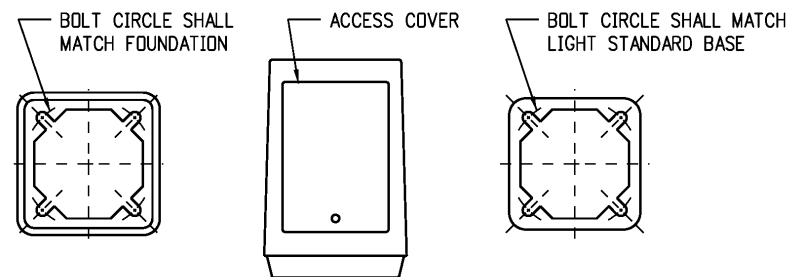
Issued By: Traffic & Safety Engineering Branch July 31, 2019

STANDARD PLAN NO.

S-613-1

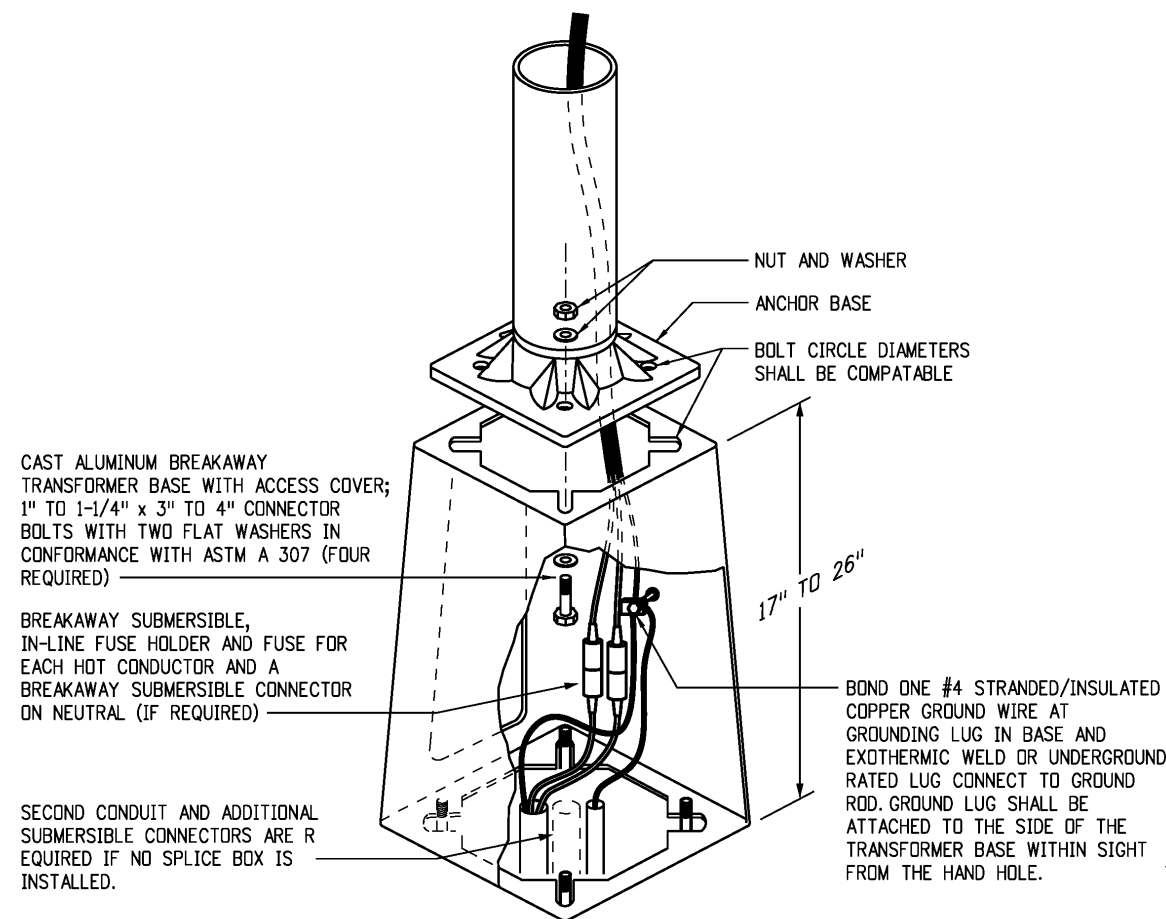
Sheet No. 1 of 6

Project Sheet Number:



BOTTOM PLATE FRONT VIEW TOP PLATE

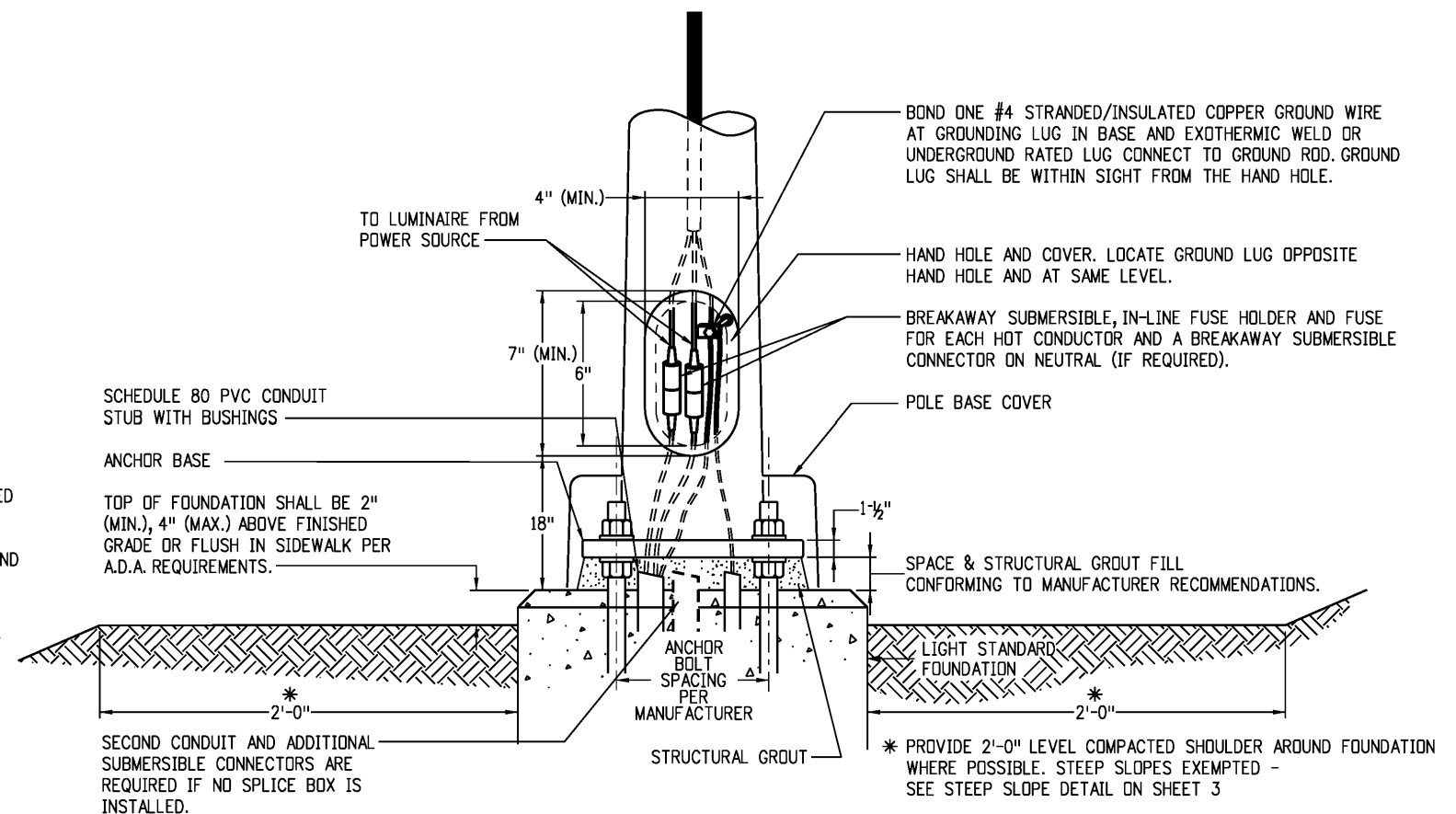
NOTE: MATCH EXISTING BREAKAWAY TRANSFORMER BASE AS CLOSELY AS POSSIBLE.







TYPICAL BREAKAWAY TYPE TRANSFORMER BASE DETAIL

DETAIL NOTES:

1. ALL BREAKAWAY TRANSFORMER BASES SHALL CONFORM TO AASHTO "LRFD SPECIFICATIONA FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS".
2. ANCHOR BOLT SPACING, HARDWARE AND TORQUE CONFORMING TO MANUFACTURER RECOMMENDATIONS.
3. BREAKAWAY BASES OF ANY TYPE ARE FOR USE INSIDE CLEAR ZONES. BREAKAWAY BASES SHOULD NOT BE USED WHEN THE LIGHT STANDARD IS LOCATED AT LEAST ONE AND A HALF TIMES (1.5X) MOUNTING HEIGHT AWAY FROM PEDESTRIAN OCCUPIED AREAS. REFER TO CURRENT UTILITY ACCOMMODATION CODE SECTION 3.3.3 FOR CLEAR ZONE REQUIREMENTS.
4. BREAKAWAY TRANSFORMER BASES MAY BE OMITTED AND THE POLES MOUNTED DIRECTLY ON THE LIGHT STANDARD FOUNDATION AS APPROVED BY THE ENGINEER OR AS SHOWN ON THE PLAN. POLES WITHOUT BREAKAWAY TRANSFORMER BASES MUST HAVE HAND HOLE.
5. ALL CONDUCTORS SHALL BE SIZED IN CONFORMANCE WITH N.E.C. REQUIREMENTS S.O.D.W. 12/3 STRANDED COPPER CONDUCTOR OR #12 AWG MINIMUM COLOR CODE BLACK, WHITE, GREEN.
6. LIGHT STANDARDS SHALL BE GROUNDED IN ACCORDANCE WITH N.E.C. ARTICLE 250 "GROUNDING AND BONDING".



TYPICAL NON-BREAKAWAY BASE DETAIL

Computer File Information		Sheet Revisions		Colorado Department of Transportation  2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9654 FAX: 303-757-9219 Traffic & Safety Engineering MKB	ROADWAY LIGHTING	STANDARD PLAN NO.	
Creation Date: 07/31/19		Date:	Comments			S-613-1	
Created By: Clanton		11/22/2019	DETAIL NOTES UPDATED			Sheet No. 2 of 6	
Last Modification Date: 05/01/2020		05/01/2020	DETAIL UPDATES			Project Sheet Number:	
Last Modified By: CLANTON AND ASSOCIATES, INC.							
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English					Issued By: Traffic & Safety Engineering Branch July 31, 2019		



1. DIMENSIONS FOR THE TRANSFORMER BASE, ANCHOR BASE AND ANCHOR BOLTS ARE VARIABLE FOR THE HEIGHT OF THE LIGHT STANDARD AND THE MAST ARM CONFIGURATION. ALL COMPONENTS SHALL FIT AND ACCOMMODATE THE REQUIREMENTS OF THE LIGHT STANDARD SUPPLIED.
- ♦ 2. CONCRETE SHALL BE AIR ENTRAINED CLASS BZ AND SHALL CONFORM TO SECTION 601 FOR CONCRETE AND SECTION 602 FOR REINFORCING STEEL.
- * 3. WHERE LIGHT STANDARD FOUNDATION OCCUR IN HARDSCAPE AREAS, WHERE AN EXPOSED FOUNDATION COULD CREATE A TRIPPING HAZARD, THE TOP OF FOUNDATION SHALL BE FLUSH TO THE FINISHED SURFACE TO MEET A.D.A. REQUIREMENTS. WHERE EXPOSED LIGHT STANDARD FOUNDATION COMPLIES WITH A.D.A. REQUIREMENTS, FOUNDATION SHALL BE INSTALLED 2 INCHES ABOVE HARDSCAPE WITH CDOT APPROVAL.
4. BOND (1) #4 STRANDED/INSULATED COPPER TO GROUND ROD IN PULL BOX / SPLICE BOX AND GROUNDING LUG IN POLE BASE HOLE.
5. PROVIDE 4-TERMINAL SUBMERSIBLE UNDERGROUND RATED LUG CONNECTIONS TO FIT #12 AWG - #350 AWG COPPER WIRE. ELECTRICAL SPLICES MAY BE MADE WITHIN THE POLE BASE OR TRANSFORMER BASE AT EACH REGION'S DISCRETION. SUBMERSIBLE UNDERGROUND RATED LUG CONNECTIONS ARE NOT REQUIRED WHEN SPLICES ARE MADE IN THE POLE.
6. ALL PVC CONDUIT ENDS SHALL HAVE END BELLS OR MALE ADAPTOR, THREADED TERMINAL ENDS WITH SCREW ON BUSHING.
7. FOUNDATION DIMENSIONS PER FOUNDATION SCHEDULE BELOW AND AS NOTED. LIGHT STANDARDS HIGHER THAN 50 FEET OR WITH BANNERS, PRECAST FOUNDATION, VARYING SOIL, OR WIND CONDITIONS SHALL BE DESIGNED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF COLORADO. FOR DESIGN WIND SPEEDS GREATER THAN V=155MPH ADD AN ADDITIONAL 1'-0" TO THE FOUNDATION DEPTH SHOWN IN THE FOUNDATION SCHEDULE BELOW.


POLE HEIGHT	FOUNDATION DEPTH	FOUNDATION DIAMETER
< 20'	8'-0"	24"
20' - < 30'	9'-0"	24"
30' - 50'	12'-0"	24"
> 50'	P.S.E.	P.S.E.

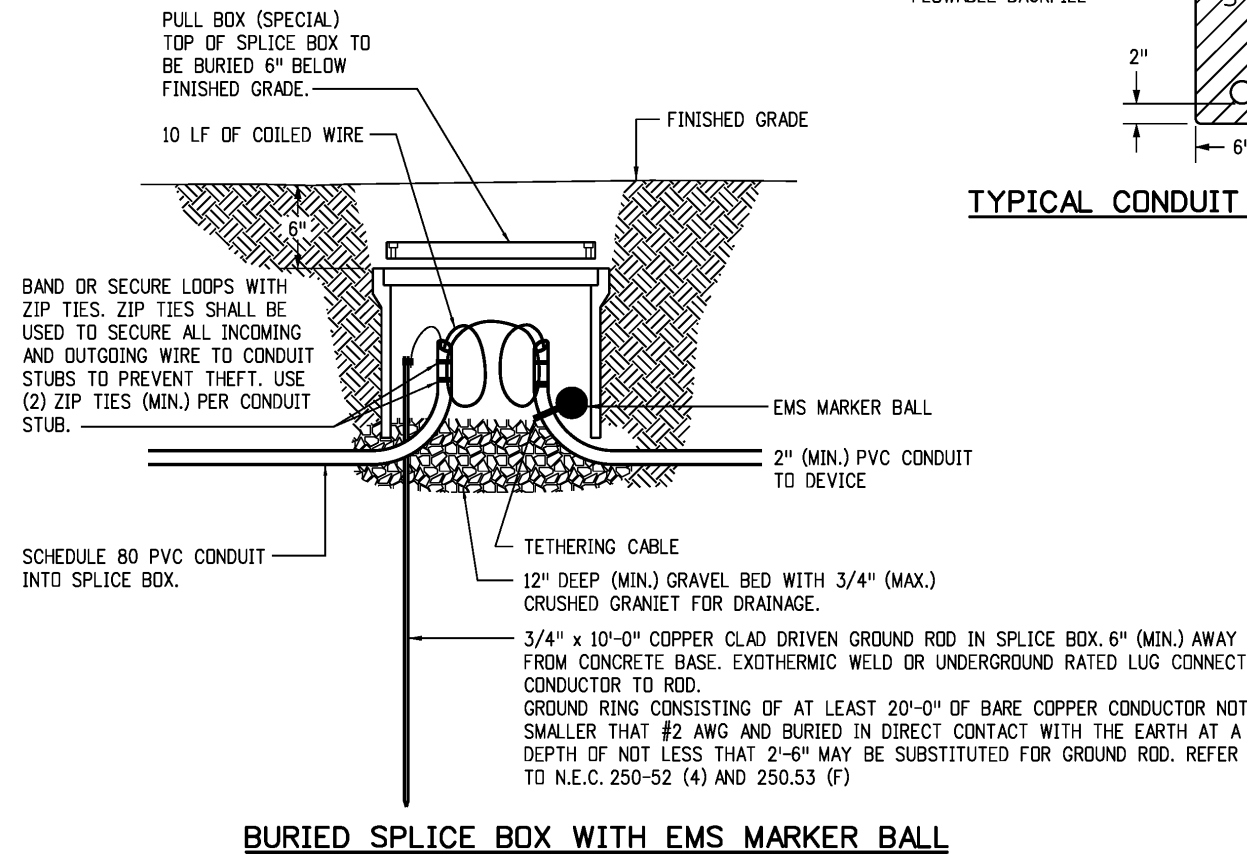
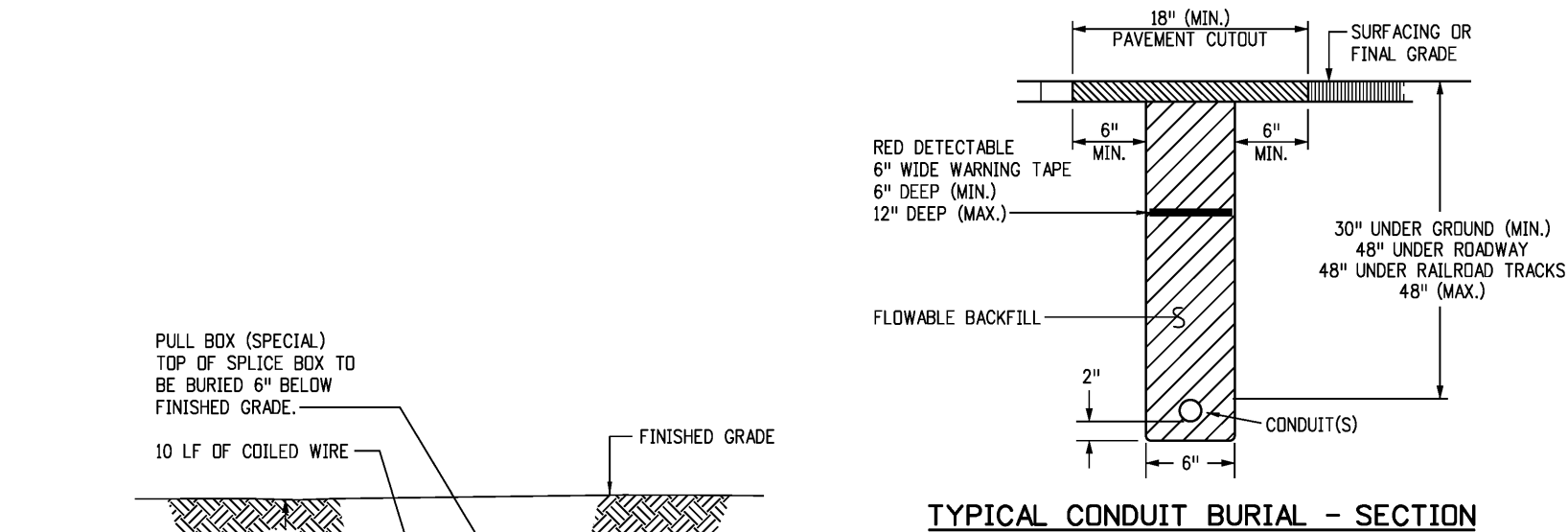
RESISTANCE FACTOR = 0.4 FOR FLEXURE.



The diagram shows a cross-section of a road with a horizontal line representing the curb line. Above the curb line, an arrow points to the right, labeled "TRAFFIC FLOW". A streetlight is positioned on the right side of the road. Below the curb line, three splice boxes are shown, each labeled with an "S" inside a square. The splice box closest to the curb line is labeled "INCORRECT SPLICE BOX LOCATION". The splice box furthest from the curb line is labeled "PREFERRED SPLICE BOX LOCATION". The splice box in the middle is labeled "SECOND PREFERRED SPLICE BOX LOCATION".

TYPICAL STREET LIGHT SPLICE BOX PLACEMENT

Computer File Information		Sheet Revisions		Colorado Department of Transportation		STANDARD PLAN NO.	
Creation Date: 07/31/19		Date:	Comments	 2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9654 FAX: 303-757-9219		S-613-1	
Created By: Clanton		11/22/2019	FOUNDATION SOIL			Sheet No. 3 of 6	
Last Modification Date: 05/01/2020		05/01/2020	DETAIL UPDATES			Project Sheet Number:	
Last Modified By: CLANTON AND ASSOCIA INC.				Traffic & Safety Engineering MKB		Issued By: Traffic & Safety Engineering Branch July 31, 2019	
CAD Ver.: MicroStation V8 Scale: Not to Scale Units:							

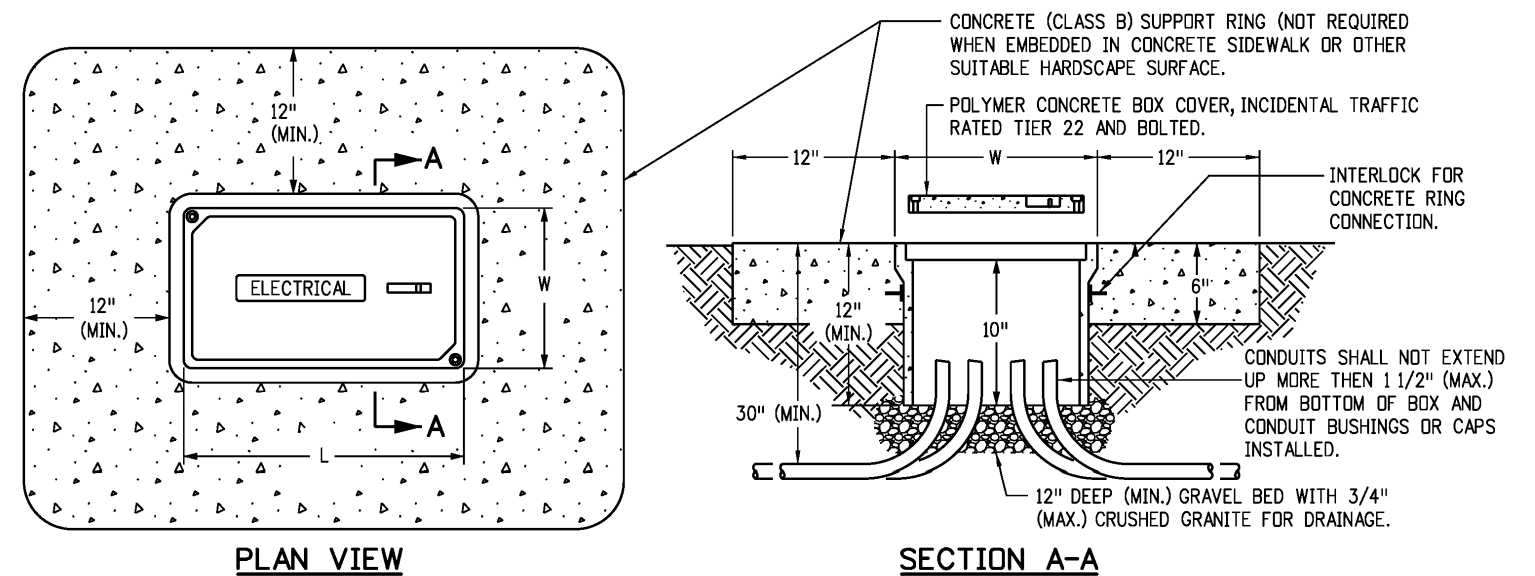


BURIED SPLICE BOX NOTES

1. ALL PULL BOXES SHALL BE INCIDENTAL TRAFFIC RATED 22,500 PSI LOAD TEST (MINIMUM) WITH HEAVY DUTY TIER 22 RATED COVERS.
2. ALL PULL BOXES SHALL BE TYPE 2.13 INCHES x 24 INCHES x 12 INCHES DEEP (MINIMUM) UNLESS NOTED OTHERWISE ON PLANS. REFER TO N.E.C. SECTION 314.28A FOR BOX SIZE REQUIREMENTS. REFER TO CDDT STANDARD PLAN NO. S-613-3 FOR TYPICAL PULL BOX SIZES.
3. ALL PULL BOXES SHALL BE BURIED 6 INCHES BELOW FINAL GRADE AND COVERED WITH EMBANKMENT AND TOPSOIL. BURIED PULL BOXES SHALL NOT BE COVERED WITH CONCRETE, ASPHALT, ROCK OR ANY OTHER HARDSCAPING. CONCRETE SUPPORT RING IS NOT REQUIRED FOR THESE SPECIAL BURIED ANTI-THEFT PULL BOXES.
4. CONNECT COPPER GROUND WIRE TO HELICAL FOUNDATION.
5. BURIED SPLICE BOXES SHALL ONLY BE USED WHERE APPROVED BY CDDT ENGINEER.
6. THE WIRE TERMINATIONS IN PULL BOXES SHALL BE MADE USING URG, SUBMERSIBLE INSULATED PEDESTAL LUG CONNECTIONS. PROVIDE ONE MULTI-LUG CONNECTOR FOR EACH PHASE, NEUTRAL AND GROUND CONDUCTOR TO BE SPLICED IN THE IN-GRADE PULL BOX.


CONDUIT BURIAL NOTES

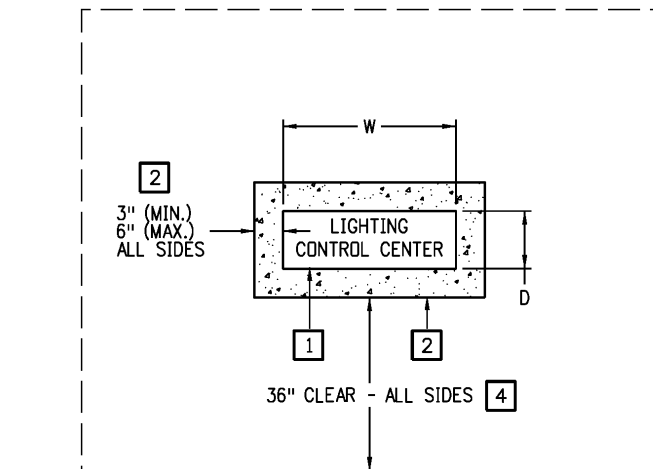
1. CONTRACTOR SHALL COORDINATE TRENCHING WITH OTHER UNDERGROUND UTILITIES, RAMP METERING AND IRRIGATION. CONTRACTOR SHALL USE COMMON TRENCHES AT ALL ROAD CROSSINGS WHERE POSSIBLE.
2. ONE CONDUIT PER BUNDLE SHALL HAVE ONE #12 AWG LOCATE WIRE AND A NYLON OR POLYESTER PULL TAPE WITH 1,250 LBS TEST STRENGTH AND FOOTAGE MARKINGS IN ALL EMPTY CONDUITS. LOCATE WIRES SHALL NOT BE INSTALLED IN FIBER OPTIC CONDUITS.
3. ELECTRICAL CONDUIT (BORED) SHALL BE UL LISTED HDPE AND INSTALLED USING TRENCHLESS TECHNOLOGY OR EITHER JACKED CONDUIT OR DIRECTIONAL BORING. IF TRENCHED CONDUIT IS SPECIFIED ON PLANS, BORED CONDUIT OF EQUAL OR GREATER SIZE MAY BE SUBSTITUTED FOR TRENCHED CONDUIT IF PAID FOR UNDER THE ORIGINALLY DESIGNED TRENCHED CONDUIT PAY ITEM AND AT NO ADDITIONAL COST TO THE PROJECT. ELECTRICAL CONDUIT (BORED) SHALL CONFORM TO THE SAME MINIMUM DEPTH REQUIREMENTS.
4. INSTALLING CONDUIT IN ANY METHOD OTHER THAN TRENCHING OR DIRECTIONAL BORE, THAT MAY CAUSE DAMAGE TO THE EMBANKMENT OR HIGHWAY AREA, OR BE HAZARDOUS TO THE TRAVELING PUBLIC WILL NOT BE PERMITTED. WHEN JACKING IS SPECIFIED, DISRUPTION OF HIGHWAY TRAFFIC WILL NOT BE PERMITTED.
5. FOR ALL SCHEDULE 80 PVC CONDUIT, PROVIDE SLIP FIT EXPANSION FITTINGS AT 100 FOOT INTERVALS AND 6 FEET (MAXIMUM) FROM EACH ELBOW. EXPANSION FITTINGS WILL BE INSTALLED PER N.E.C. REQUIREMENTS FOR 65 DEGREE FAHRENHEIT TEMPERATURE CHANGE.
6. FOR ALL TRENCHED CONDUIT, ELBOWS SHALL BE WIDE SWEEPS (36-INCHES MINIMUM) WITH PVC COATED GRC ON THE OUTSIDE AND THREADED COUPLINGS.
7. ALL PVC CONDUIT ENDS IN PULL BOXES SHALL HAVE END BELLS OR MALE ADAPTOR, THREADED TERMINAL ENDS WITH SCREW ON BUSHING.



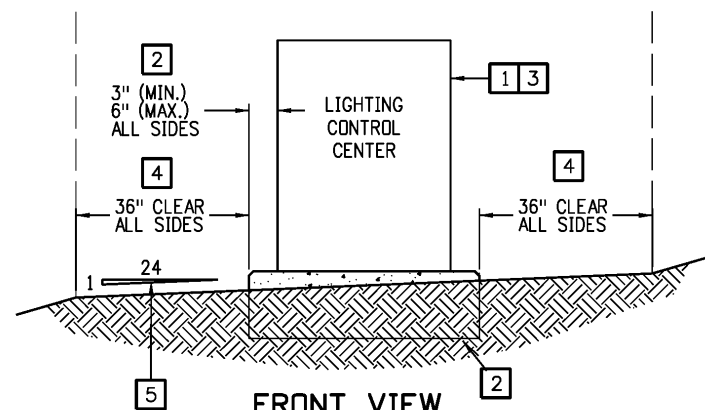
SPLICE BOX NOTES

1. BOX COVERS MUST BE POLYMER CONCRETE WITH FIBERGLASS REINFORCEMENT, INCIDENTAL TRAFFIC RATED TO TIER 22 AND BOLTED WITH AN HS LOAD RATING OF 22,500 PSI (MINIMUM).
2. BOX COVERS SHALL BE LABELED AS FOLLOWS:
"ELECTRIC" OR "STREET LIGHTING" ON ALL PULL BOXES CONTAINING CDDT OWNED ELECTRICAL SERVICE.
"UTILITY ELECTRIC" ON ALL PULL BOXES CONTAINING UTILITY OWNED ELECTRICAL SERVICE.
LABELING MUST BE CAST INTO THE COVER AND NOT AS A SEPARATE INDEPENDENT TAG.
3. REFER TO CDDT STANDARD PLAN NO. S-613-3 FOR TYPICAL PULL BOX SIZES.
4. REFER TO N.E.C. ARTICLE 314 "PULL AND JUNCTION BOXES AND CONDUIT BODIES MINIMUM SIZE" FOR BOX SIZE REQUIREMENTS. REFER TO CDDT SPECIFICATION 601 FOR CAST-IN-PLACE CONCRETE SPECIFICATION.
5. THE WIRE TERMINATIONS IN PULL BOXES SHALL BE MADE USING URG, SUBMERSIBLE INSULATED PEDESTAL LUG CONNECTIONS. PROVIDE ONE MULTI-LUG CONNECTOR FOR EACH PHASE, NEUTRAL AND GROUND CONDUCTOR TO BE SPLICED IN THE IN-GRADE PULL BOX.

Computer File Information		Sheet Revisions		Colorado Department of Transportation  2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9654 FAX: 303-757-9219 Traffic & Safety Engineering	ROADWAY LIGHTING	STANDARD PLAN NO.	
Creation Date: 07/31/19		Date:	Comments			S-613-1	
Created By: Clanton	(R-1)	11/22/2019	UNDER ROADWAY DEPTH			Sheet No. 4 of 6	
Last Modification Date: 05/01/2020	(R-2)	05/01/2020	DETAIL UPDATES			Project Sheet Number:	
Last Modified By: CLANTON AND ASSOCIATES, INC.							
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English				MKB	Issued By: Traffic & Safety Engineering Branch July 31, 2019		



PLAN VIEW

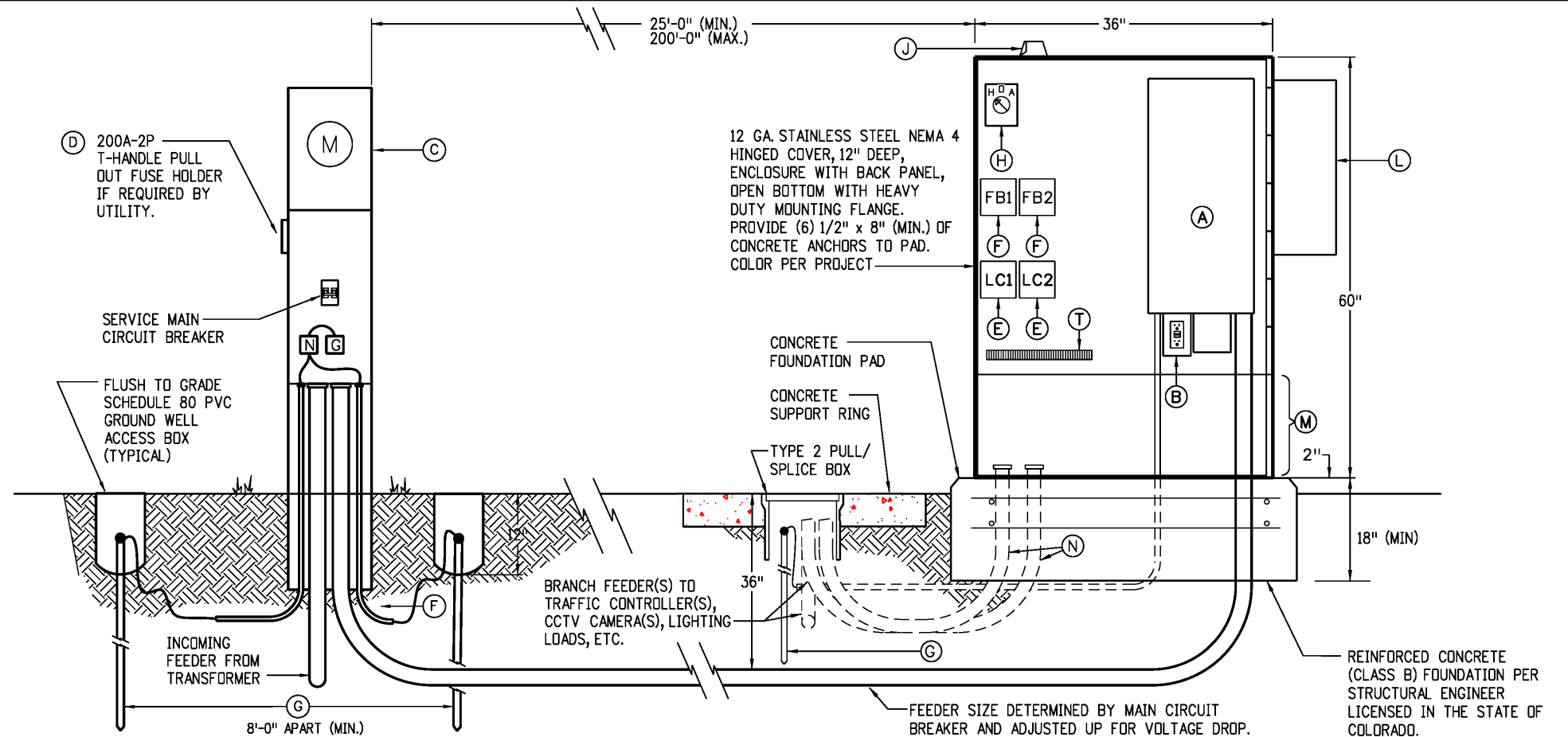


FRONT VIEW

LIGHTING CONTROL CENTER PLACEMENT

DETAIL NOTES


- 1 PREBUILT NEMA 3R LIGHTING CONTROL CENTER CABINET (LCC). REFER TO LIGHTING CONTROL CENTER DETAILS FOR MORE INFORMATION.
- 2 REINFORCED CONCRETE (CLASS B) FOUNDATION PAD, PER STRUCTURAL ENGINEER LICENSED IN THE STATE OF COLORADO, WITH 1 INCH CHAMFER ON ALL EXPOSED EDGES. EDGE OF CONCRETE TO EXTEND 3 INCHES (MINIMUM) OR 6 INCHES (MAXIMUM) BEYOND EDGE OF CABINET.
- 3 THE LCC SHALL NOT BE LOCATED IN ANY INTERSECTION SIGHT TRIANGLES. PLACEMENT SHALL CONFORM TO ALLOWABLE ENCROACHMENTS IN THE PUBLIC ROW.
- 4 36 INCH CLEAR ZONE (MINIMUM) ON ALL SIDES OF CONCRETE PAD WHEN LOCATED IN SOFTSCAPE. 48 INCHES OF CLEAR ZONE (MINIMUM) ON ALL SIDES OF CONCRETE PAD WHEN LOCATED WITHIN THE SIDEWALK.
- 5 1:24 SLOPE (MAXIMUM) IN CLEAR ZONE AREA.

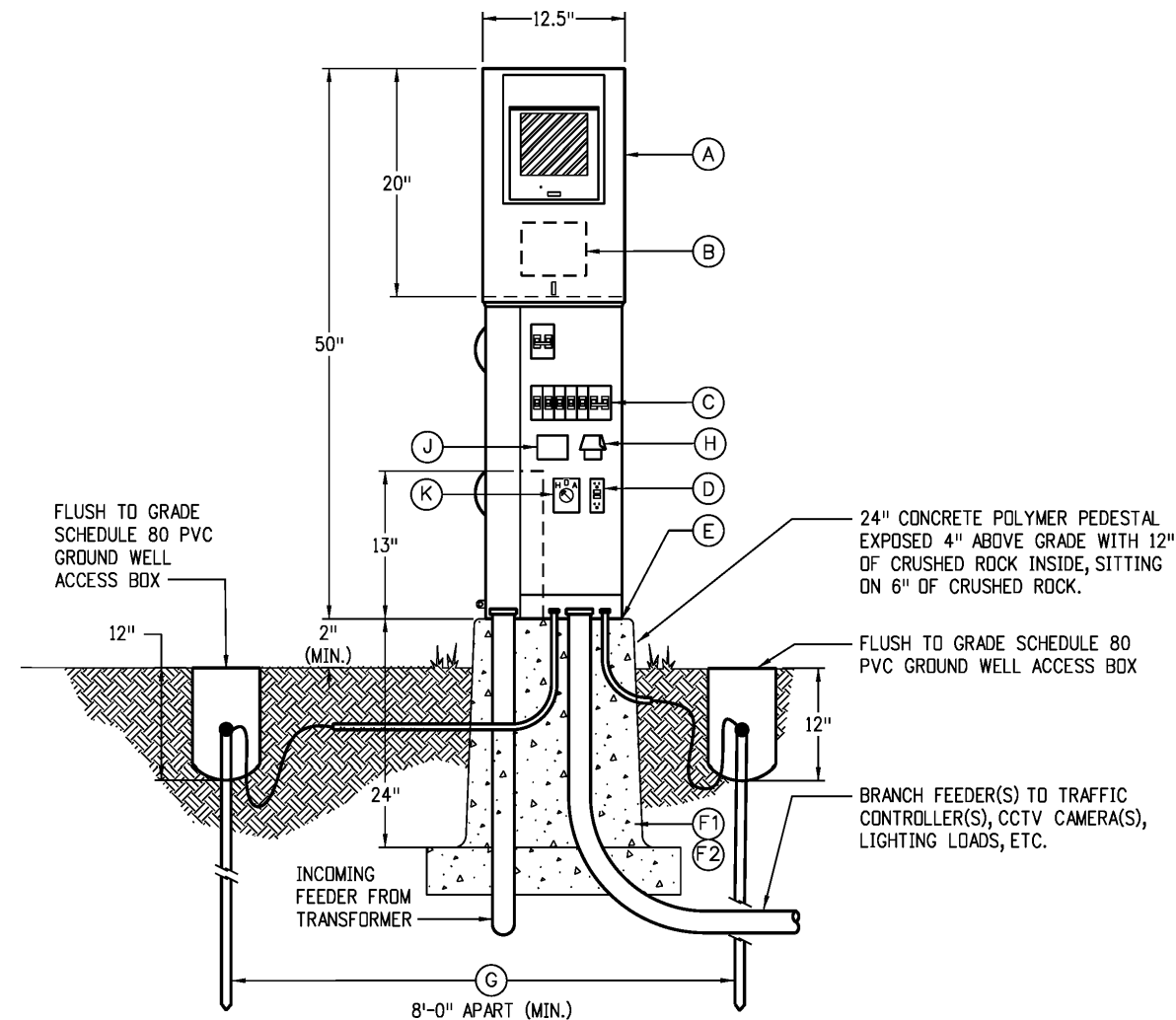


COMPONENT LIST

- (A) NEMA 1, SERVICE ENTRANCE RATED, SINGLE PHASE LOAD CENTERS. (SEE PANEL SCHEDULE FOR QUANTITY AND SIZE OF MAIN AND BRANCH BREAKERS). MOUNTED INSIDE NEMA 4 ENCLOSURE.
 - (B) GFCI MAINTENANCE RECEPTACLE IN A 1-GANG BACK BOX WITH COVER.
 - (C) 200A, 1 PH., NEMA 3R, DIRECT BURY METER PEDESTAL SERVICE ENTRANCE RATED WITH LEVER BYPASS TO UTILITY COMPANY SPECIFICATIONS. PROVIDE SERVICE MCB SIZE AS INDICATED ON ONE-LINE DIAGRAM WITH NEUTRAL & GROUND BARS.
 - (D) 200A, 2 POLE, 250V, HEAVY DUTY, NEMA 3R, T-HANDLE PULL-OUT METER DISCONNECT, UL LISTED FOR SERVICE EQUIPMENT AND TYPE AND SIZE FUSES AS SHOWN ON ONE-LINE DIAGRAM. MAY BE OMITTED BY UTILITY COMPANY SPECIFICATIONS NOT SEQUENCE REQUIREMENTS.
 - * (E) 4 POLE, 30A, 250V ELECTRICALLY HELD LIGHTING CONTACTORS WITH 120V COILS. TWO (2) REQUIRED.
 - * (F) 4 POLE, 30A, FUSE BLOCKS WITH 30A, FRNR FUSES TO THE LIGHTING CONTACTORS AS REQUIRED BY UL 508A (2001 STANDARD FOR INDUSTRIAL CONTROL PANELS). TWO (2) REQUIRED.
 - (G) 3/4 INCH x 10 FEET LONG, COPPER-CLAD DRIVEN GROUND ROD WITH GROUND CONDUCTOR EXOTHERMIC WELD OR UNDERGROUND RATED LUG CONNECT GROUND CONDUCTOR TO GROUND ROD. PROVIDE SCHEDULE 80 PVC GROUND WELLS.
 - * (H) H.O.A. SWITCH - HAND-OFF-AUTO WITH 15A 120V CONTACTS, BACK BOX, COVER, KNOB & LEGEND AND THE PHOTOCELL CONTROL WIRED IN THE AUTO POSITION.
 - * (J) NEMA 3R 120V PHOTOELECTRIC CONTROL WITH 3-PRONG TWIST-LOCK RECEPTACLE BASE WIRED THROUGH THE H.O.A. SWITCH. THE PHOTOELECTRIC CONTROL SHALL BE MOUNTED ON THE NORTH SIDE ON ENCLOSURE OR WINDOW FACING NORTH OR DOWN TO MINIMIZE THE SUN'S INTERFERENCE.
 - (L) OPTIONAL CABINET HVAC PER ENGINEERING REQUEST. PAINT TO MATCH NEMA 4 ENCLOSURE.
 - (M) OPTIONAL 18 INCH HIGH SKIRT PER ENGINEER REQUEST.
 - (N) BRANCH RACEWAYS - PROVIDE BRANCH CIRCUIT RACEWAY TO ALL LIGHTING FED FROM THIS LCC. SEE PLAN AND FEEDER SCHEDULE FOR SIZE AND QUANTITY.
 - (T) TERMINAL STRIP - 600V RATED, LUGS TO ACCEPT #1 - 10 AWG COPPER WITH ALL MARKING STRIP, END CAPS AND MOUNTING HARDWARE. PROVIDE THE NUMBER OF TERMINAL POINTS AS REQUIRED, MINIMUM OF 36 POINTS.
- NOTE: ALL COMPONENTS LISTED SHALL BE INCLUDED IN THE LIGHTING CONTROL CENTER PAY ITEM. ALL ELECTRICAL COMPONENTS SHALL BE UL LISTED PER THE APPROPRIATE UL REQUIREMENTS. INCLUDING BUT NOT LIMITED TO 508A INDUSTRIAL CONTROL PANELS.
- * ONLY REQUIRED FOR LOADS NOT CONTROLLED BY LOCAL NODES.

RECOMMENDED CABINET TYPE LIGHTING CONTROL CENTER DETAIL

Computer File Information		<div><div>R-1</div><div>R-2</div><div></div><div></div><div></div></div>	Sheet Revisions		<div>Colorado Department of Transportation</div> <div><div></div><div>2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9654 FAX: 303-757-9219</div></div> <div>Traffic & Safety Engineering</div> <div>MKB</div>	STANDARD PLAN NO.	
Creation Date: 07/31/19			Date: 11/22/2019	Comments: COMPONENTS CLARIFIED		S-613-1	
Created By: Clanton			Date: 05/01/2020	Comments: DETAIL UPDATES		Sheet No. 5 of 6	
Last Modification Date: 05/01/2020						Project Sheet Number:	
Last Modified By: CLANTON AND ASSOCIATES, INC.							
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English							




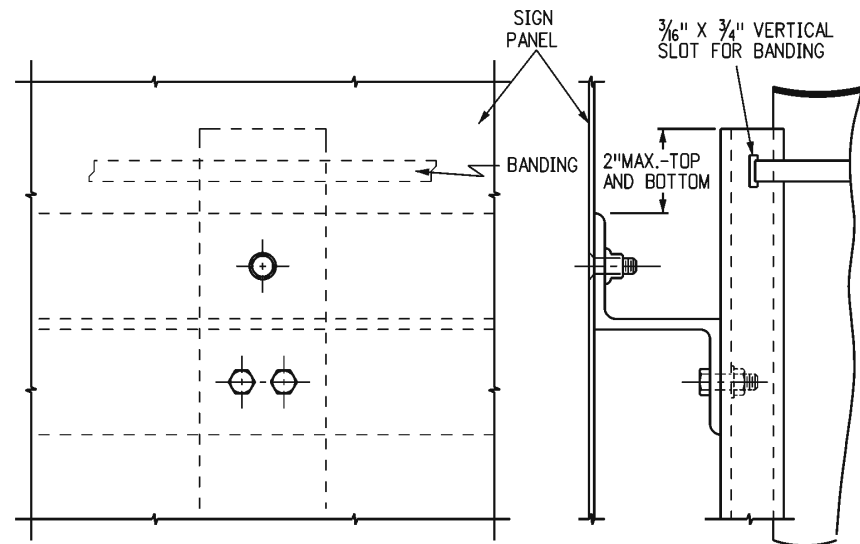
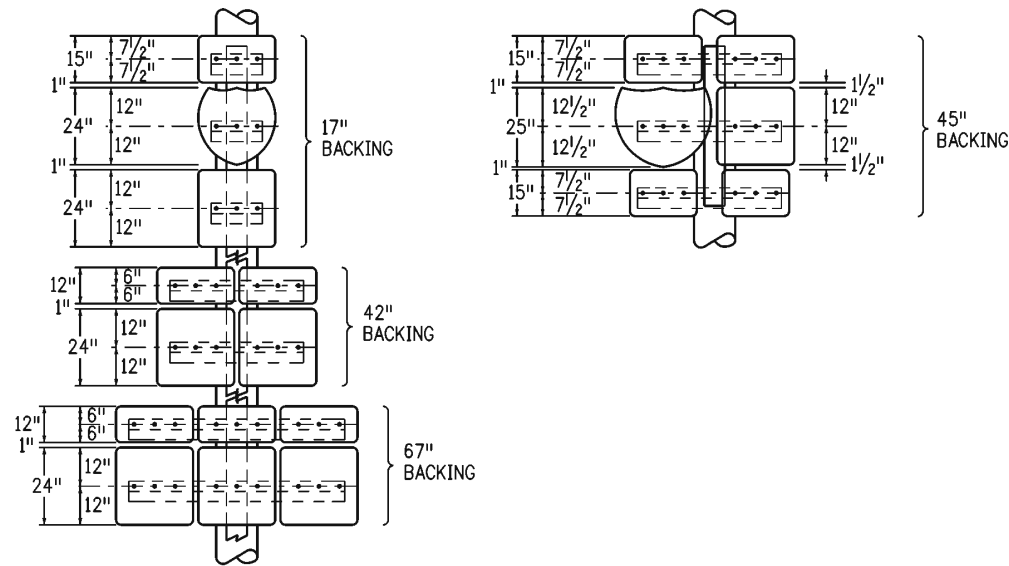
LIGHTING CONTROL CENTER (PEDESTAL ONLY) DETAIL

COMPONENT LIST

- (A) STAINLESS STEEL, 200A, 120/240V, NEMA 3R COMBINATION, SERVICE ENTRANCE RATED, COLD SEQUENCE, METER/POWER PEDESTAL WITH LEVER BYPASS, LOAD CENTER, MCB AND FUSED TEE-HANDLE PULL OUT DISCONNECT AHEAD OF METER TO LOCAL UTILITY SPECIFICATIONS. SEE PANEL SCHEDULE FOR SIZE OF MAIN AND NUMBER AND SIZE OF BRANCH BREAKERS REQUIRED. SET ENCLOSURE ON CONCRETE PAD PLUMB AND LEVEL.
- (B) T-HANDLE, PULL-OUT FUSE TYPE METER, DISCONNECT FLUSH MOUNTED INTO THE BACK SIDE OF THE ENCLOSURE FOR METER PROTECTION PER UTILITY SPECIFICATION, COLD SEQUENCE METER WITH WEATHERPROOF COVER AND TAB FOR SEAL. THIS ITEM MAY BE OMITTED BY UTILITY COMPANY SPECIFICATIONS HOT SEQUENCE REQUIREMENTS.
- (C) SERVICE ENTRANCE PANEL BREAKER SECTION, FOR CUSTOMER LOADS. SEE PANEL SCHEDULES FOR SIZE OF BREAKERS AND NUMBER OF POLES REQUIRED.
- (D) OPTIONAL BUILT-IN GFCI NEMA 5-20R, DUPLEX, GFCI MAINTENANCE RECEPTACLE FLUSH MOUNTED IN PANEL DEAD-FRONT.
- (E) PROVIDE RECESSED CONCRETE PAD MOUNTING PLATE WITH L-BOLTS TO MATCH THE ENCLOSURE BASE BOLT PATTERN.
- (F1) OPTION 1: POLYMER CONCRETE PEDESTAL FOUNDATION WITH FIBERGLASS REINFORCEMENT. THE PAD SHALL BE CONTINUOUS CLOTH REINFORCEMENT ON THE INSIDE AND OUTSIDE PERIMETER. WEIGHT OF THE FOUNDATIONS SHALL BE STENCILED ON THE SIDEWALL OF THE FOUNDATION.
- (F2) OPTION 2: PROVIDE 4500 PSI, RE-BAR REINFORCED, CONCRETE WITH A DIRECT EARTH BURY DEPTH OF 18 INCHES (MINIMUM), 2 INCHES OVERLAP OF THE ENCLOSURE ON ALL SIDES FRONT AND BACK AND 2 INCHES EXPOSURE ABOVE GRADE. PROVIDE 3/4 INCH CHAMFERED EDGES. PROVIDE STRUCTURAL ENGINEERING STAMPED DRAWING FOR PAD.
- (G) 3/4 INCH x 10 FEET LONG, COPPER-CLAD DRIVEN GROUND RODS. EXOTHERMIC WELD OR UNDERGROUND LUG CONNECT CONDUCTOR TO ROD. TWO (2) GROUND RODS REQUIRED. GROUND ROD TO BE LOCATED IN SCHEDULE 80 PVC GROUND WELL ACCESS WITH BOLT DOWN COVER AND "GROUND" CAST INTO LID.
- (H) OPTIONAL PHOTOCELL - NEMA 3R 120V PHOTOELECTRIC CONTROL WITH 3-PRONG TWIST-LOCK RECEPTACLE BASE. THE PHOTOCELL SHALL BE MOUNTED INSIDE THE ENCLOSURE WITH A GLASS LENS COVERED HOLE IN THE EXTERIOR OF THE ENCLOSURE TO ALLOW THE PHOTOCELL TO RECEIVE DAYLIGHT.
- (J) OPTIONAL LIGHTING CONTACTOR - CONTROLLED BY OPTIONAL PHOTOCELL ITEM 'H' ABOVE WHEN MORE THAN ONE CIRCUIT IS TO BE CONTROLLED BY THE PHOTOCELL.
- (K) OPTIONAL HAND-OFF-AUTO SWITCH WHEN ITEMS 'H' AND 'J' ABOVE ARE USED. PROVIDE THIS HOA SWITCH WITH THE PHOTOCELL CONTROL WIRED IN THE AUTO POSITION.

NOTE: ALL COMPONENTS LISTED SHALL BE INCLUDED IN THE LIGHTING CONTROL CENTER PAY ITEM. ALL ELECTRICAL COMPONENTS SHALL BE UL LISTED PER THE APPROPRIATE UL REQUIREMENTS. INCLUDING BUT NOT LIMITED TO 508A INDUSTRIAL CONTROL CENTER.

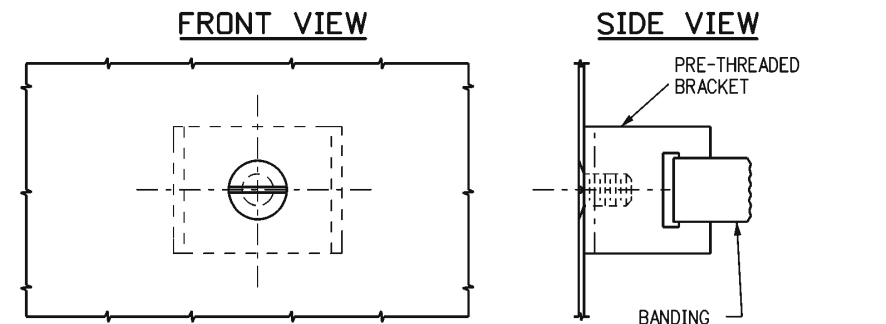
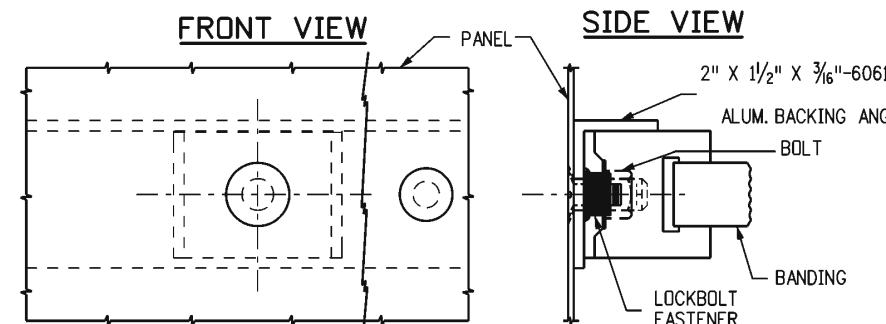
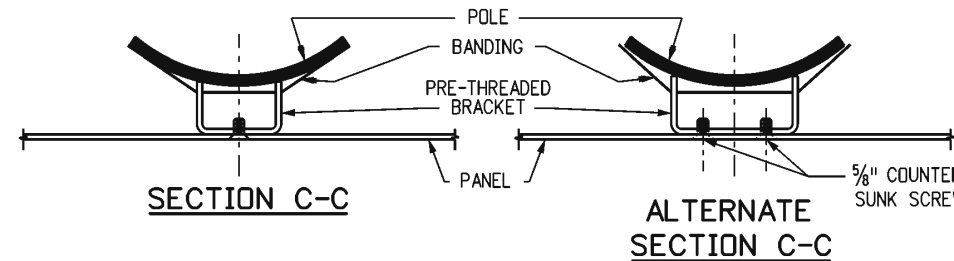
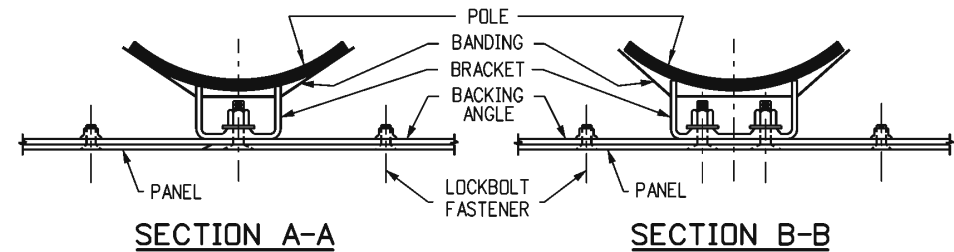
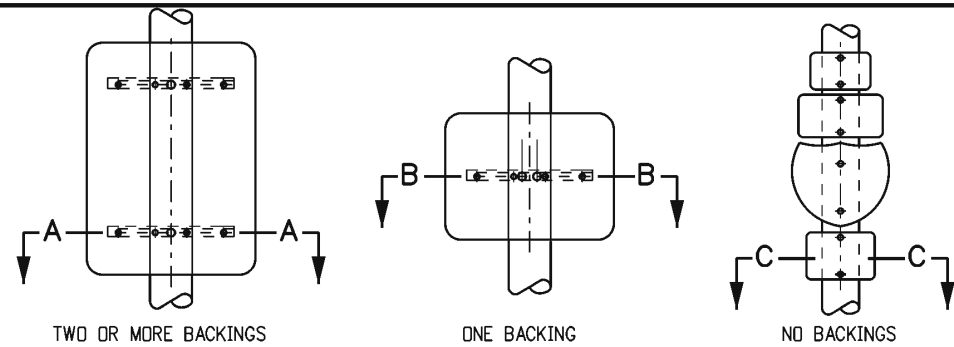
Computer File Information		Sheet Revisions		<div> <div> <div>Colorado Department of Transportation</div> <div> <div>  </div> <div> 2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9654 FAX: 303-757-9219 </div> </div> <div> Traffic & Safety Engineering </div> <div> MKB </div> </div> </div>	STANDARD PLAN NO.
Creation Date: 07/31/19		Date:	Comments		S-613-1
Created By: Clanton	(R-1)	11/22/2019	COMPONENT B METER PROTECTION		Sheet No. 6 of 6
Last Modification Date: 05/01/2020	(R-2)	05/01/2020	COMPONENT J LIGHTING CONTACTOR		
Last Modified By: CLANTON AND ASSOCIATES, INC.				Issued By: Traffic & Safety Engineering Branch July 31, 2019	Project Sheet Number:
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English					



CLASS II MARKER ASSEMBLY FABRICATION NOTES

- HORIZONTAL AND VERTICAL MEMBERS TO BE THE SAME MATERIAL AS THE SIGN PANEL.
- VERTICAL MEMBER TO BE 3 IN. X 1.420 LBS. 6061-T6 ALUMINUM CHANNEL BONDED TO THE POLE WITH A MINIMUM OF TWO BANDS.
- HORIZONTAL MEMBERS TO BE 3 IN. X 2 IN. 2.33 IN. BACKING ZEES, FASTENED TO VERTICAL MEMBER WITH $\frac{3}{8}$ IN. MACHINE BOLTS WITH HEX NUT.
- SIGN PANELS TO BE FASTENED TO HORIZONTAL MEMBERS WITH $\frac{3}{8}$ IN. - 90 COUNTERSUNK LOCKBOLT FASTENERS.
- VERTICAL SPACING BETWEEN GROUPS OF PANELS IN ONE MARKER ASSEMBLY SHALL BE 4 IN.

TYPICAL POLE MOUNT INSTALLATION FOR CLASS II MARKER ASSEMBLY



TYPICAL POLE MOUNT INSTALLATION FOR CLASS I AND II SIGN PANELS

GENERAL NOTES

- SIGNS SHALL BE LOCATED IN ACCORDANCE WITH THE DETAILS SHOWN ON THE PLANS. SPECIAL CARE SHALL BE TAKEN TO ENSURE AN UNOBSTRUCTED VIEW OF EACH SIGN.
- BRAND-NAME ATTACHMENT HARDWARE AND BANDING MATERIAL TO BE APPROVED BY THE ENGINEER.
- FOR SIGN PANEL FABRICATION, MOUNTING HEIGHT AND HOLE SPACING FOR BACKING ZEES, SEE APPLICABLE STANDARDS.
- ALL BOLTS, NUTS AND METAL WASHERS, UNLESS MADE OF STAINLESS STEEL, SHALL BE GALVANIZED OR CADMIUM PLATED.
- ALL HOLES SHALL BE DRILLED OR PUNCHED.
- BANDING SHALL BE IN X .025 IN. MINIMUM STAINLESS STEEL, ROUND-EDGE STRAP WITH AN ULTIMATE BREAKING STRENGTH OF 1500 LBS. MINIMUM. THERE SHALL BE A MINIMUM OF TWO BANDS PER PANEL OR ASSEMBLY EXCEPT WHERE A SINGLE BACKING ANGLE IS USED.
- PANELS OF 36 IN. OR GREATER WIDTH MUST HAVE BACKING MEMBERS IN ADDITION TO BRACKETS. CLASS II PANELS OF LESS THAN 36 IN. WIDTH AND CLASS I PANELS OF GREATER THAN 24 IN. WIDTH SHOULD USE PRE-THREADED BRACKETS SIMILAR TO ALTERNATE SECTION C-C (2 SCREWS).

CLASS I AND II SIGN ASSEMBLY FABRICATION NOTES

- SHAPES OTHER THAN THE BRACKETS OR BACKING ANGLE SHOWN MAY BE USED.
- MAXIMUM SPACING BETWEEN PANELS IN ONE ASSEMBLY SHALL BE 1 IN.
- PANELS MAY BE INSTALLED BACK-TO-BACK ON THE SAME BANDS.
- IN NO CASE SHALL BOLTS OF LESS THAN $\frac{5}{16}$ IN. DIA. BE USED FOR ANY PORTION OF THE ASSEMBLY.
- ONLY FIBER WASHERS MAY BE USED ON THE FACE OF THE SIGN PANEL.

Computer File Information

Creation Date: 07/04/12
Created By: KEN
Last Modification Date: 07/31/19
Last Modified By: EButta
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English

Sheet Revisions

Date:	Comments

Colorado Department of Transportation



Traffic & Safety Engineering

2829 W. Howard Pl.
Denver, CO 80204
Phone: 303-757-9436
FAX: 303-757-9219

MKB

TYPICAL POLE MOUNT SIGN INSTALLATION

Issued By: Traffic & Safety Engineering Branch July 31, 2019

STANDARD PLAN NO.

S-614-20

Standard Sheet No. 1 of 1

Project Sheet Number:

GENERAL NOTES

1.

REFER TO ROADWAY PLANS FOR THE ACTUAL CONFIGURATION AND LOCATION OF TRAFFIC SIGNAL HEADS AND SIGNS MARKED WITH A ■.
2.

ALL POLES AND ARMS SHALL BE FABRICATED WITH ASTM A572 GRADE 65 STEEL. LUMINAIRE ARMS MAY BE FABRICATED WITH ASTM A595 GRADE A STEEL WITH A MINIMUM YIELD POINT OF 55 KSI.
3.

ALL POLES AND ARMS SHALL COMPLY WITH THE DIMENSIONAL TOLERANCES SPECIFIED IN ASTM A500, A501, OR A595.
4.

ALL POLES AND ARMS SHALL BE ROUND OR DODECAGONAL (12 SIDED) TUBES WITH A 0.14 IN/FT TAPER.
5.

HARDENED WASHERS SHALL CONFORM TO ASTM F436.
6.

ALL POLES AND ARMS SHALL BE GALVANIZED INSIDE AND OUTSIDE AFTER FABRICATION IN ACCORDANCE WITH ASTM A123, UNLESS PAINTING IS CALLED FOR ON THE PLANS. PAINTING SHALL CONFORM TO SECTION 522, DUPLEX COATING SYSTEM.
7.

POLE AND MAST ARM SPLICES SHALL BE MECHANICALLY FORCED TOGETHER FOR A SNUG FIT.
8.

BLIND BOLTS SHALL BE A307 GRADE A STEEL AND ARE NOT REQUIRED FOR MULTISIDED POLES. MECHANICAL ALTERNATIVES TO BLIND BOLTS UTILIZING FRICTION KEYS, INTERLOCKING TEETH OR A COMBINATION THEREOF TO PREVENT THE BUILT-UP BOX FROM TWISTING ON THE POLE MAY BE USED AS APPROVED BY CDDT STAFF BRIDGE.
9.

ALL MAST ARMS MORE THAN 40 FT IN LENGTH SHALL BE TWO PIECE CONSTRUCTION TO LIMIT ARM WEIGHTS.
10.

GALVANIZED ASTM A325 H.S. BOLTS SHALL BE USED FOR ATTACHING LUMINAIRE AND MAST ARMS. A LUBRICATED TIGHTENING TORQUE OF 178 FT-LBS FOR ¾" DIAMETER BOLTS, 395 FT-LBS FOR 1" DIAMETER BOLTS AND 1300 FT-LBS FOR 1½" DIAMETER BOLTS SHALL BE USED TO TIGHTEN ALL H.S. BOLTS. MAST ARMS SHALL BE TEMPORARILY SUPPORTED TO TAKE LOAD OFF OF FIELD CONNECTIONS WHILE BOLTS ARE TIGHTENED IN ORDER TO FIRMLY SEAT THE FLANGE PLATE. BOLTS SHALL BE SEQUENTIALLY TIGHTENED. ASSUMING 12 BOLTS AND A CLOCK FACE, THE TIGHTENING SEQUENCE WOULD BE 12, 6, 1, 7, ETC. THIS PROCESS SHALL BE CONTINUED UNTIL NO LOOSE BOLTS ARE FOUND AFTER ALL BOLTS HAVE BEEN INITIALLY TIGHTENED.
11.

CAST POLE END CAP TO BE SECURED IN PLACE WITH 3 SET SCREWS.
12.

ALL SIGNAL HEADS, SIGNS, AND HARDWARE SHALL BE FIELD POSITIONED.
13.

ACCESSORIES TO BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A153.
14.

ALL PLATES AND STIFFENERS SHALL BE FABRICATED WITH AASHTO M270 (ASTM A709) GRADE 36 STEEL AND SHALL COMPLY WITH THE DIMENSIONAL TOLERANCES SPECIFIED IN ASTM A6. ALL HANDHOLES SHALL BE FABRICATED WITH ASTM A572 GRADE 42 STEEL.
15.

LEVELING CONCRETE SHALL BE 3000 PSI AIR ENTRAINED CONCRETE VIBRATED IN PLACE BELOW THE POLE BASE PLATE.
16.

THE DESIGNS HEREIN ASSUME THAT SIGNALS ARE INSTALLED WITHIN THE ROADWAY EARTHWORK PRISM WITH THE FOLLOWING SOIL PARAMETERS:
SOIL DENSITY ρ = 110 LB./CU.FT.
SOIL COHESION = 750 LB./SQ.FT. FOR MEDIUM STIFF COHESIVE SOIL
SOIL ϕ ANGLE = 30° FOR MEDIUM DENSE COHESIONLESS SOIL
SF = 1.5 FOR TORSIONAL RESISTANCE AND 3.0 FOR FLEXURAL RESISTANCE
17.

CONTACT THE ENGINEER IF ANY OF THE FOLLOWING SOIL CONDITIONS ARE ENCOUNTERED DURING DRILLING:
(A) SIGNALS WILL NOT BE INSTALLED WITHIN THE ROADWAY EARTHWORK PRISM.
(B) THE SOIL HAS A HIGH ORGANIC CONTENT OR CONSISTS OF SATURATED SILT AND CLAY.
(C) THE SITE WON'T SUPPORT THE WEIGHT OF THE DRILLING RIG.
(D) THE FOUNDATION SOILS ARE NOT HOMOGENOUS.
(E) FIRM BEDROCK IS ENCOUNTERED.
18.

CAISSONS SHALL BE PLACED AGAINST UNDISTURBED EARTH. WET OR CAVING HOLES SHALL BE BACKFILLED WITH FLOW-FILL AND REDRILLED AFTER A THREE DAY CURING PERIOD WITHOUT THE USE OF A CASING.
19.

CAISSONS SHALL BE CONSTRUCTED WITH AIR ENTRAINED CLASS BZ CONCRETE IN ACCORDANCE WITH SECTION 503 OF THE STANDARD SPECIFICATIONS. REINFORCING STEEL SHALL BE GRADE 60.
20.

CAISSON CONCRETE MUST HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,700 PSI BEFORE INSTALLING THE SIGNAL STRUCTURE; VERIFY CONCRETE STRENGTH WITH MATURITY METER.
21.

U-BOLTS AND ANCHOR BOLTS SHALL BE FABRICATED WITH AASHTO M314-90 GRADE 55 STEEL.
22.

ANCHOR BOLTS SHALL BE FABRICATED WITH HEAVY HEX NUTS AND FLAT WASHERS, AND EXTENDED A MINIMUM OF ¾" ABOVE THE NUT AFTER COMPLETING THE TIGHTENING PROCESS. THREAD UPPER 12 INCHES AND GALVANIZE UPPER 13 INCHES OF THE ANCHOR BOLTS. FIELD WELDING OF ANCHOR BOLTS TO REBAR DURING ERECTION WILL NOT BE ALLOWED. ANCHOR BOLTS SHALL BE SET WITH A STEEL TEMPLATE UNTIL THE CONCRETE HAS CURED AT LEAST TWO DAYS. THE ANCHOR BOLTS SHALL BE TIGHTENED USING THE TURN-OF-NUT METHOD. THE BOLTS SHALL FIRST BE TIGHTENED TO SNUG TIGHT, WHICH IS DEFINED AS THE TIGHTNESS THAT EXISTS WHEN THE UPPER AND LOWER NUTS ARE IN FIRM CONTACT WITH THE BASE PLATE. WITH MAST ARMS FREE TO DEFLECT, THE UPPER AND LOWER NUTS SHALL THEN EACH BE ROTATED AN ADDITIONAL ½ TURN (30° ± °5) WITH A SLUGGING, HYDRAULIC OR AIR IMPACT WRENCH.
23.

WELDING OF STEEL SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AWS D1.1. ALL AREAS TO BE WELDED SHALL BE GROUND TO BRIGHT METAL. ALL WELDING AND REQUIRED TESTING SHALL BE COMPLETE BEFORE ANY MATERIAL IS GALVANIZED. ALL CIRCUMFERENTIAL AND STIFFENER WELDS SHALL BE NON-DESTRUCTIVELY TESTED USING THE ENHANCED MAGNETIC PARTICLE METHOD IN ACCORDANCE WITH SUBSECTION 509.18 (d) OF THE STANDARD SPECIFICATIONS. THE ACCEPTANCE CRITERIA IS STATED IN TABLE 6.1 OF ANSI/AWS D1.1. ALL LONGITUDINAL WELDS WITHIN 6 INCHES OF FULL PENETRATION CIRCUMFERENTIAL GROOVE WELDS AND FULL PENETRATION GROOVE WELDS SHALL BE INSPECTED AS SPECIFIED ABOVE. MAXIMUM WELD UNDERCUT SHALL BE 0.01 INCHES.

24. ALL ELECTRICAL CONNECTIONS TO THE SIGNALS SHALL BE GROUNDED IN ACORDANCE WITH APPLICABLE ELECTRICAL CODES.
25. TRAFFIC SIGNAL STRUCTURES HAVE BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, FOURTH EDITION, 2001.
26. A DESIGN WIND VELOCITY OF 100 MPH AND ONE 12' LANE WITH A 65 MPH TRUCK INDUCED GUST LOADING HAVE BEEN USED FOR THE DESIGNS HEREIN.
27. CERTIFIED MILL TEST REPORTS INCLUDING CHARPY V-NOTCH TEST RESULTS, WELD INSPECTION REPORTS AND ENHANCED MAGNETIC PARTICLE TEST REPORTS SHALL BE SUBMITTED TO CDDT STAFF BRIDGE, 2829 W. HOWARD PLACE, DENVER COLORADO, 80204 AS SOON AS THEY BECOME AVAILABLE. CVN TEST RESULTS FOR ASTM A572 GRADES 42 AND 65 STEEL SHALL HAVE A MINIMUM VALUE OF 15 FT-LBS AT 40°F AS PER THE H FREQUENCY TEST REQUIREMENTS IN AASHTO T243 (ASTM A673).
28. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW IN ACCORDANCE WITH SUBSECTION 105.02 OF THE STANDARD SPECIFICATIONS.
29. DEFINITIONS: U.O.N. = UNLESS OTHERWISE NOTED
W.P. = WORK POINT
30. TRAFFIC SIGNALS MOUNTED ON MAST ARMS SHALL BE FURNISHED WITH ASTRO TYPE MOUNTING BRACKETS.
31. END SECTION DIAMETERS MUST BE INCREASED TO ACCOMMODATE OUT-OF-ROUNDNESS, GALVANIZING THICKNESS AND SEAM WELD PROFILES TO PROVIDE THE MINIMUM REQUIRED ARM SLIP SPLICE LENGTHS AND POLE MEMBER OVERLAPS.
32. USE 35' OF ¾" HIGH STRENGTH CHAIN (SAFE WORKING LOAD OF 5,000 LB.), TWO "S" SHAPED HOOKS PROPERLY FORGED FROM 1" SQUARE BAR STOCK AND TWO 4,000 LB. CAPACITY COME-ALONGS TO SEAT THE POLE END SECTION ON ITS BASE SECTION BY ATTACHING THE COME-ALONGS TO OPPOSING ACCESS HOLES IN THE BUILT-UP BOX WITH THE "S" SHAPED HOOKS AND PULLING AGAINST THE CHAIN WHICH IS STRUNG UNDERNEATH THE POLE BASE PLATE. APPLY ENOUGH FORCE TO ALIGN THE WIRE ACCESS HOLES AND TO SEAT THE SLIP SPLICE WITHIN 4" OF THE SPECIFIED LENGTH.
33. SECURE ARM FLANGE PLATE, POLE BASE PLATE, AND CONNECTION FACEPLATE DURING WELDING TO PREVENT DISTORTION.
34. ONE DRILLED HOLE WITH A MAXIMUM DIAMETER OF ¾" IS ALLOWED AT LOCATIONS MARKED WITH A ▲ TO ACCOMMODATE ELECTRICAL WIRING.
35. SEE S-614-42 AND S-614-43 FOR "CABINET FOUNDATION DETAILS" AND "TRAFFIC LOOP AND MISC. SIGNAL DETAILS" RESPECTIVELY.

DESIGN DATA

1. DRAWING SHOWN HAS 5 SIGNAL HEADS, SHORTER ARM LENGTHS MAY HAVE FEWER HEADS. THIS CONFIGURATION IS INTENDED TO REPRESENT A WORST CASE LOADING CONDITION.
- 70', (75')

5 SIGNAL HEADS

55', 60', (65')

5 SIGNAL HEADS

45', (50')

4 SIGNAL HEADS

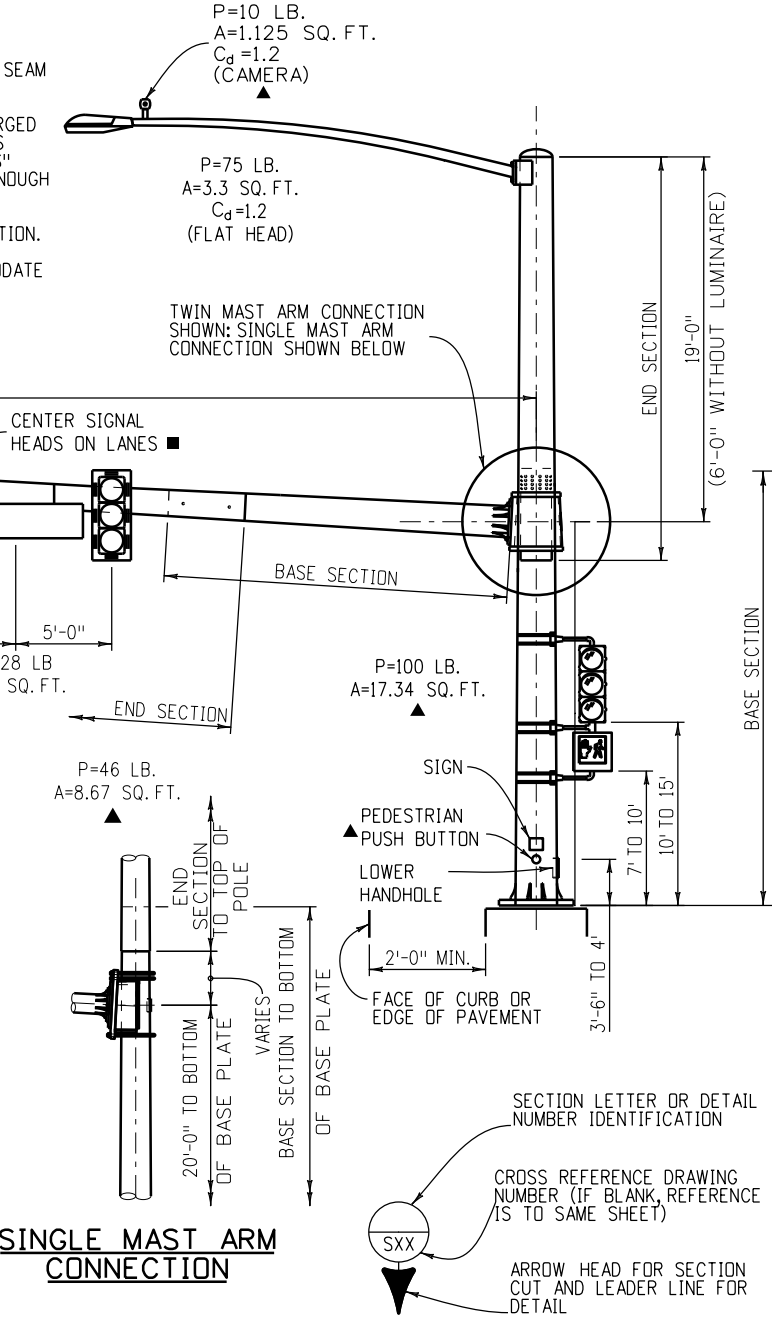
35', (40')

3 SIGNAL HEADS

25', (30')

2 SIGNAL HEADS
- THE DESIGN LENGTH "L" FOR EACH SERIES IS SHOWN IN PARENTHESIS.

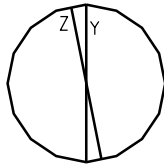
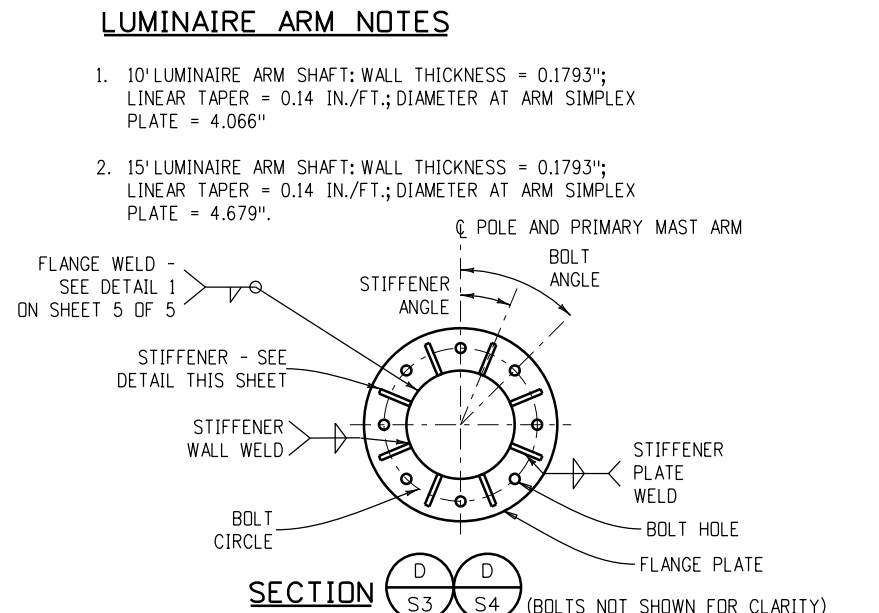
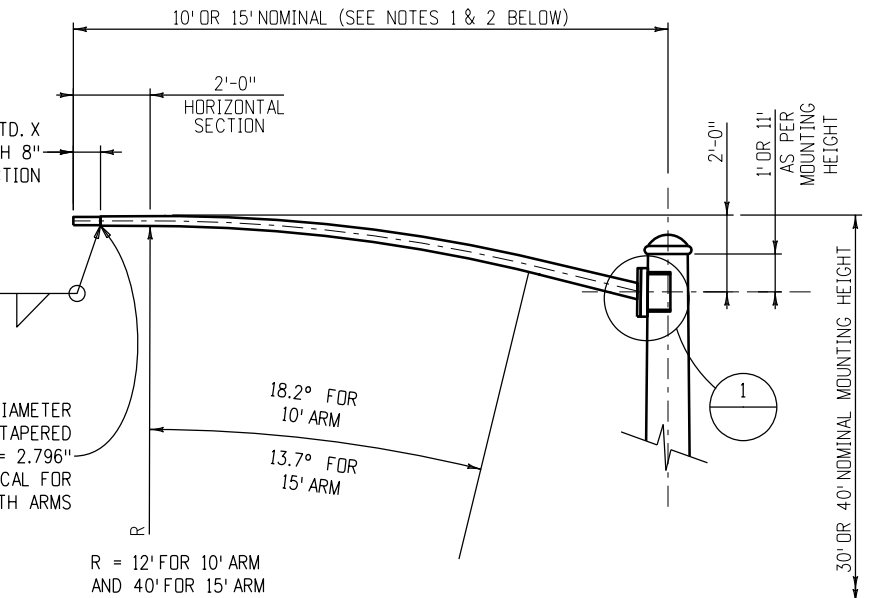
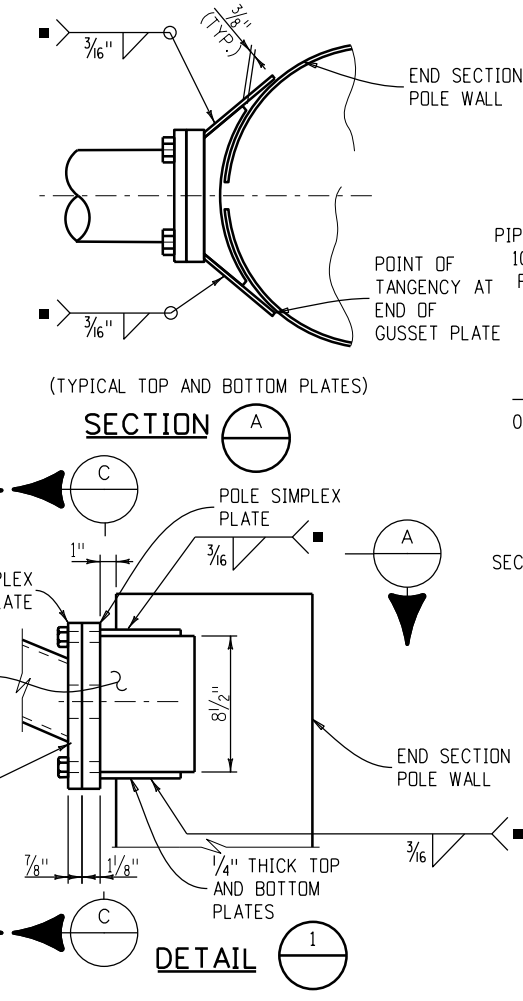
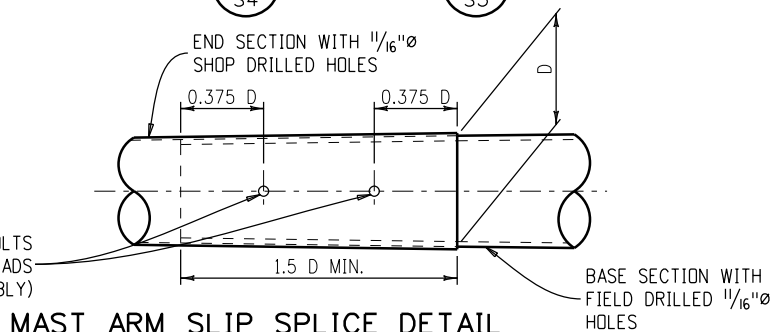
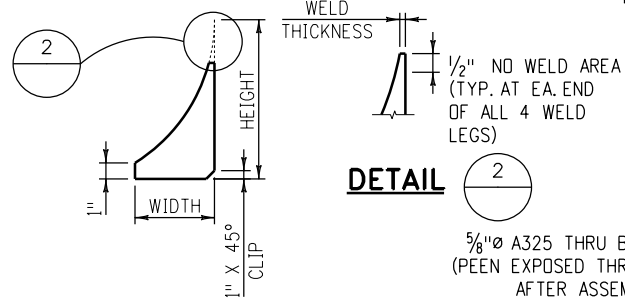
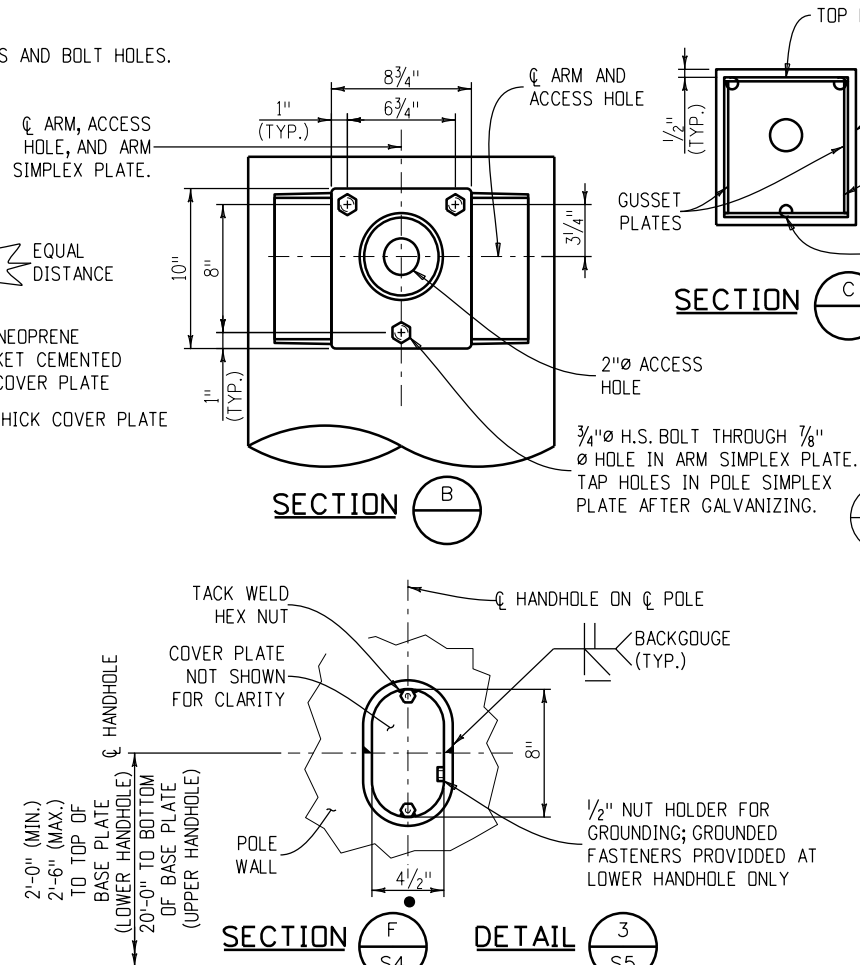
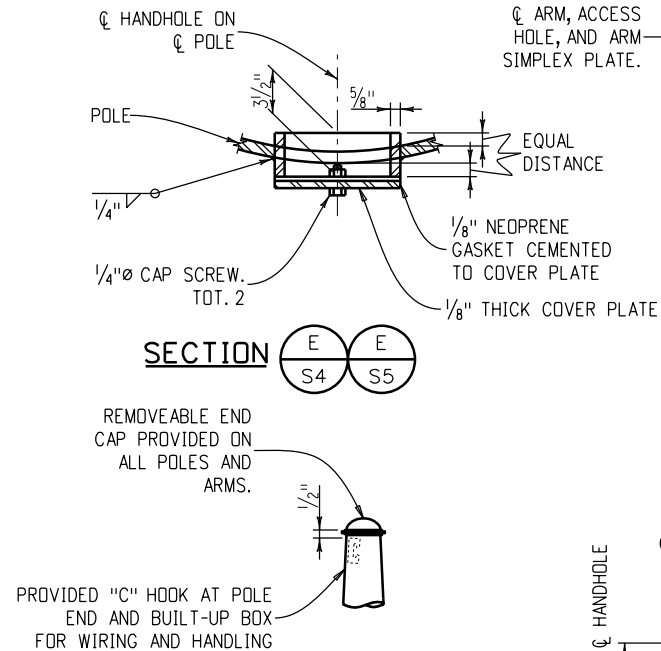
2. FOR THE TWIN MAST ARM CONNECTION, THE SECOND ARM IS ASSUMED TO BE WITHIN 60° TO 120° OF THE PRIMARY ARM AND IS ASSUMED TO BE LOADED WITH THE SAME LOADS AS SHOWN ABOVE. THE SECONDARY ARM MAY BE THE SAME LENGTH AS OR SHORTER THAN THE PRIMARY ARM.



Computer File Information		<div><div>R-1</div><div></div><div></div><div></div><div></div></div>	Sheet Revisions		<div><div><div><div></div></div><div><div></div></div></div><div>Colorado Department of Transportation</div><div>Traffic & Safety Engineering</div><div>EB</div></div>	<div><div><div><div></div></div><div><div></div></div></div><div>2829 W. Howard Pl. Denver, CO 80204 Phone: 303-512-5102 FAX: 303-757-9219</div></div>	TYPICAL TRAFFIC SIGNAL 15' - 75' DOUBLE MAST ARMS 60' - 75' SINGLE MAST ARM	STANDARD PLAN NO.			
Creation Date: 07/04/12	Date:		Comments	S-614-40							
Created By: SCL	07/22/22		Modified Sheet Title								
Last Modification Date: 07/22/22										Issued By: Traffic & Safety Engineering Branch July 31, 2019	Sheet No. 1 of 5
Last Modified By: EButta											
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English											

MAST ARM LENGTH (L) (FT.)	MAST ARM DATA								MAST ARM CONNECTION DATA															
	BASE SECTION *				END SECTION ♦				STIFFENER								FLANGE			BOLT				
	LENGTH (FT.)	TIP Ø (IN.)	TRUNK Ø (IN.)	THK. (IN.)	LENGTH (FT.)	TIP Ø (IN.)	TRUNK Ø (IN.)	THK. (IN.)	NO. OF	THK. (IN.)	WIDTH (IN.)	HEIGHT (IN.)	RADIUS (IN.)	ANGLE	WALL WELD (IN.)	PLATE WELD (IN.)	DIA. (IN.)	THK. (IN.)	SOCKET WELD (IN.)	NO. OF	DIA. (IN.)	CIRCLE DIA. (IN.)	HOLE DIA. (IN.)	ANGLE
30	29.25	6.50	10.59	0.1793	N.A.	N.A.	N.A.	N.A.	6	0.50	3.5	7	6.89	30.0°	0.179	0.375	20	1.00	0.179	6	1.0	16	1.125	60.0°
40	39.11	6.50	11.98	0.2391	N.A.	N.A.	N.A.	N.A.	8	0.50	4.0	8	8.12	22.5°	0.239	0.375	23	1.25	0.239	8	1.5	17	1.625	45.0°
50	25.15	9.47	12.99	0.3125	25	6.50	10.00	0.1793	8	0.75	4.0	8	8.12	22.5°	0.250	0.625	24	1.50	0.250	8	1.5	18	1.625	45.0°
65	25.35	12.52	16.07	0.3125	40	7.50	13.10	0.1793	8	0.75	5.0	10	10.60	22.5°	0.250	0.625	29	1.75	0.250	8	1.5	23	1.625	45.0°
75	35.23	12.52	17.45	0.3125	40	7.50	13.10	0.1793	10	0.75	5.5	11	11.84	18.0°	0.250	0.625	31	1.75	0.250	10	1.5	25	1.625	36.0°

- * BASE SECTION LENGTH INCLUDES THE SPLICE LENGTH AS PER THE "MAST ARM SLIP SPLICE DETAIL" BELOW.
 ♦ SEE GENERAL NOTE 31 ON SHEET 1 OF 5.
 ■ STOP ALL WELDS 1/2" SHORT OF PLATE EDGES AND BOLT HOLES.
 ● 3 3/4" FOR 30' ARM UPPER HANDHOLE.

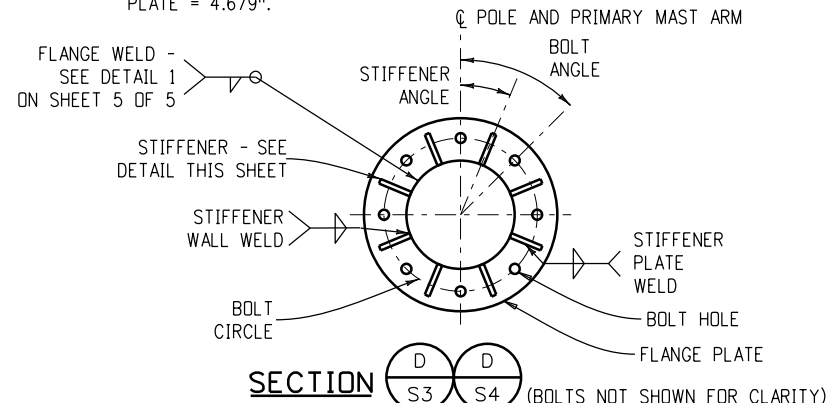


Y = DIAMETER OF A ROUND TUBE.
 Z = PERPENDICULAR DISTANCE BETWEEN FLATS.
 Y AND Z ARE OUTSIDE DIAMETER DIMENSIONS.
 Z/Y RATIO MUST BE .98 MINIMUM.

OPTIONAL MULTI-SIDED POLE OR MAST ARM

LUMINAIRE ARM NOTES

- 10' LUMINAIRE ARM SHAFT: WALL THICKNESS = 0.1793"; LINEAR TAPER = 0.14 IN./FT.; DIAMETER AT ARM SIMPLEX PLATE = 4.066"
- 15' LUMINAIRE ARM SHAFT: WALL THICKNESS = 0.1793"; LINEAR TAPER = 0.14 IN./FT.; DIAMETER AT ARM SIMPLEX PLATE = 4.679"



Computer File Information

Creation Date: 07/04/12
Created By: SCL
Last Modification Date: 07/22/22
Last Modified By: EButta
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English

Sheet Revisions

Date:	Comments
07/22/22	Modified Sheet Title

Colorado Department of Transportation



Traffic & Safety Engineering

EB

TYPICAL TRAFFIC SIGNAL 15' - 75' DOUBLE MAST ARMS 60' - 75' SINGLE MAST ARM

Issued By: Traffic & Safety Engineering Branch July 31, 2019

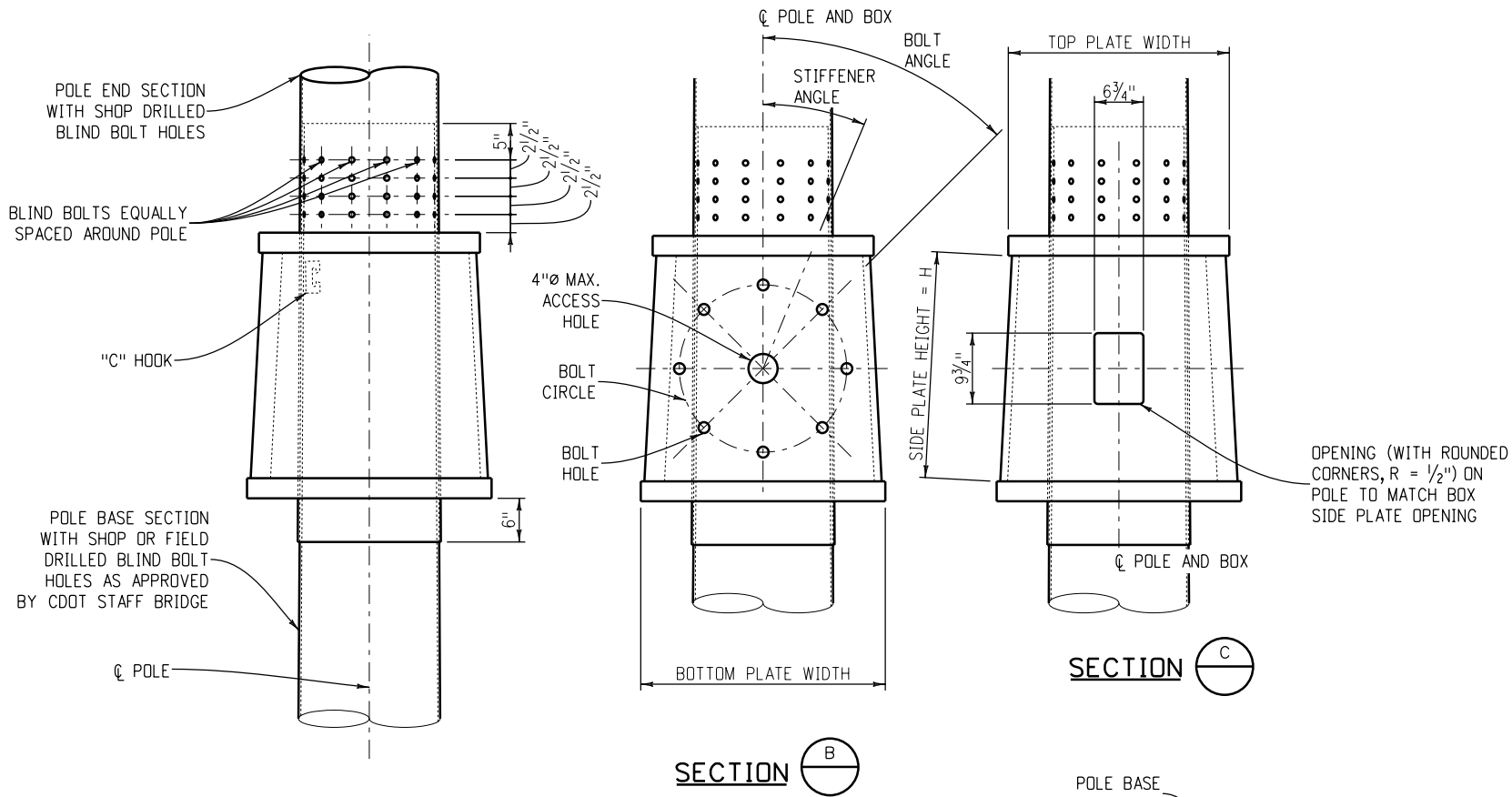
STANDARD PLAN NO.

S-614-40

Sheet No. 2 of 5

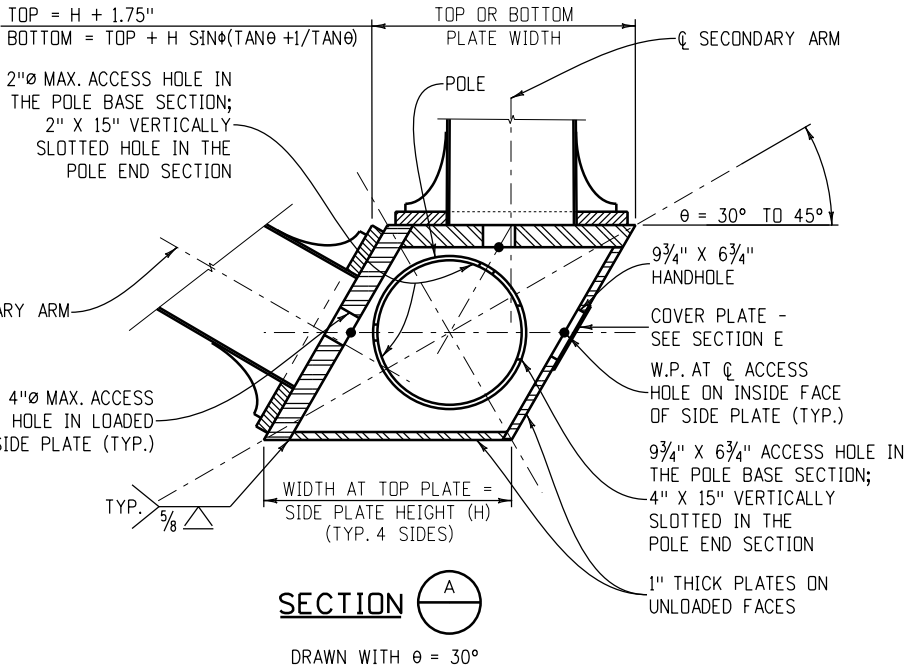
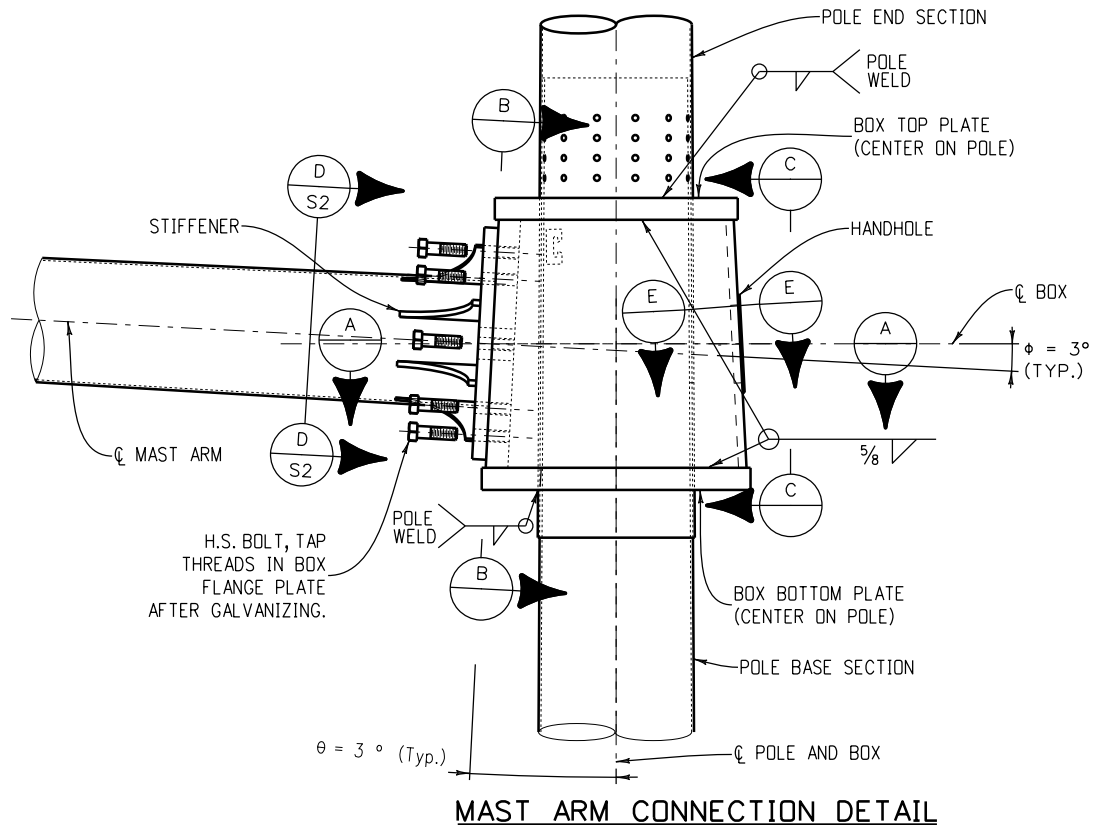
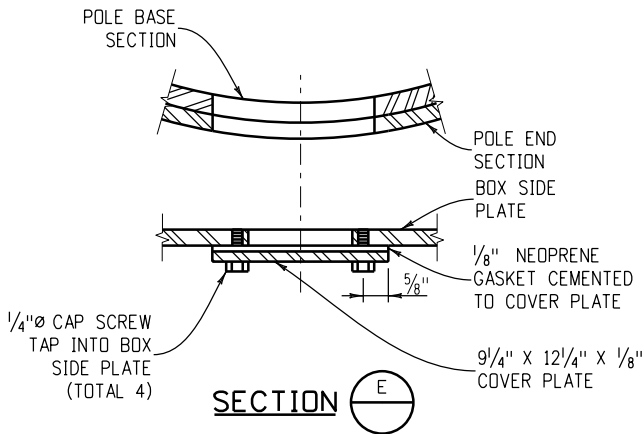
MAST ARM LENGTH (FT.)	BLIND BOLT DATA				BUILT-UP BOX DATA *					POLE DATA							
	NO. OF	DIA. (IN.)	BOLTS PER ROW	NO. OF ROWS	THICKNESS OF BOX PLATES U.O.N. (IN.)	POLE WELD (IN.)	SIDE PLATE	TOP PLATE	BOTTOM PLATE	BASE SECTION				END SECTION ♦ WITH LUMINAIRE			
							H (IN.)	WIDTH FOR $\theta = 45^\circ$ (IN.)	WIDTH FOR $\theta = 45^\circ$ (IN.)	LENGTH (FT.)	TOP ϕ (IN.)	BOTTOM ϕ (IN.)	THK. (IN.)	LENGTH (FT.)	TOP ϕ (IN.)	BOTTOM ϕ (IN.)	THK. (IN.)
30	24	0.75	6	4	1.50	0.1875	22	23.75	26.053	22.29	9.11	12.23	0.3125	20.54	7.25	10.13	0.2391
40	30	0.75	6	5	2.00	0.1875	25	26.75	29.367	22.67	11.81	14.98	0.3125	20.71	10.00	12.90	0.2391
50	36	0.75	12	3	2.50	0.1875	26	27.75	30.471	22.33	14.86	17.98	0.3125	20.79	13.00	15.91	0.2391
65	48	0.75	12	4	2.75	0.1875	31	32.75	35.995	22.77	18.54	21.73	0.3125	21.02	16.75	19.69	0.2391
75	60	0.75	12	5	3.00	0.1875	33	34.75	38.204	23.08	20.75	23.98	0.3125	21.12	19.00	21.96	0.2391

* USE LARGER ARM IN A DOUBLE ARM SIGNAL TO DETERMINE PLATE THICKNESS AND DIMENSIONS.
♦ SEE GENERAL NOTE 31 ON SHEET 1 OF 5



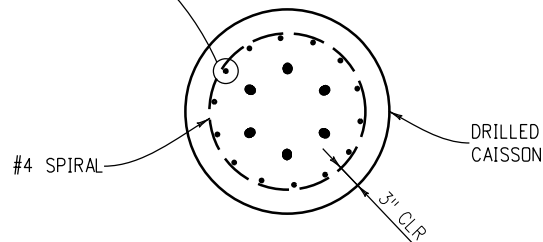
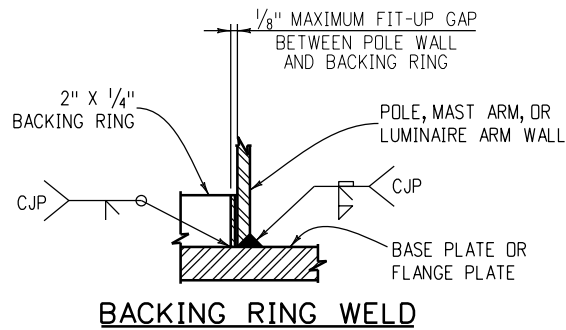
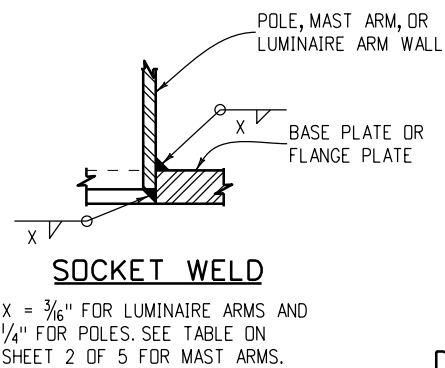
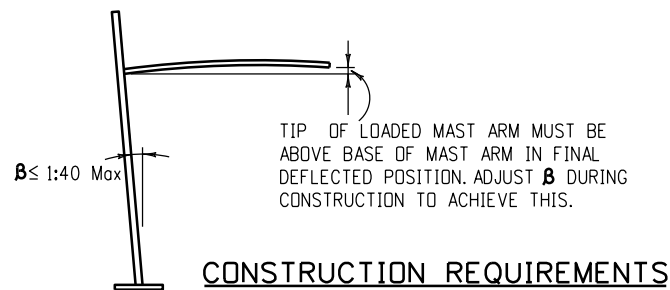
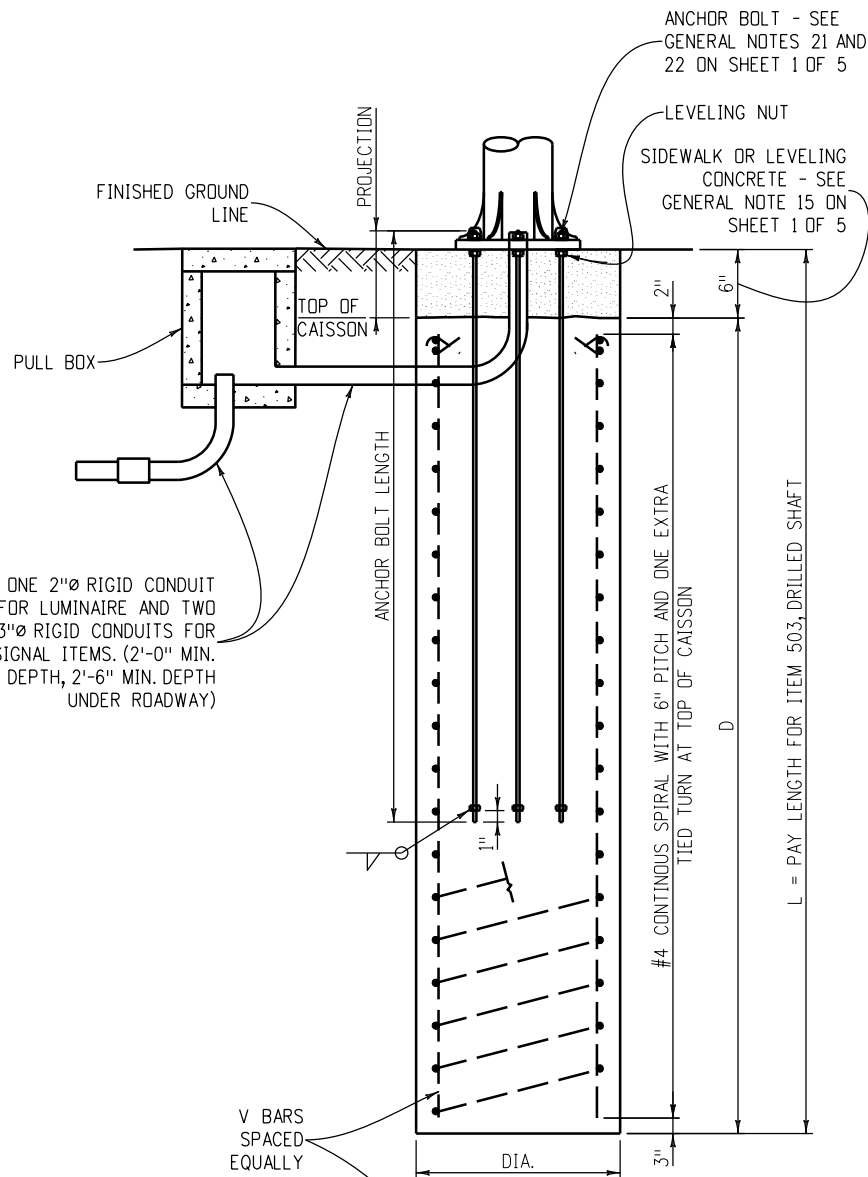
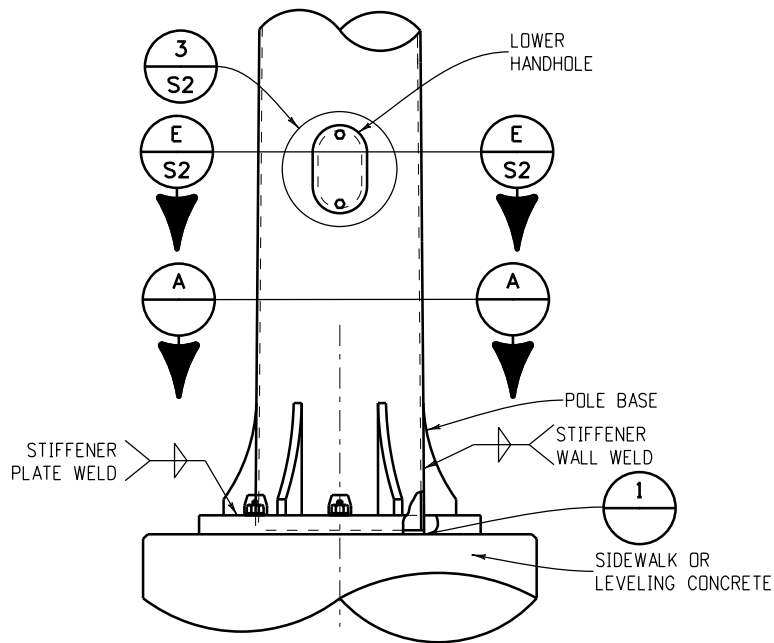
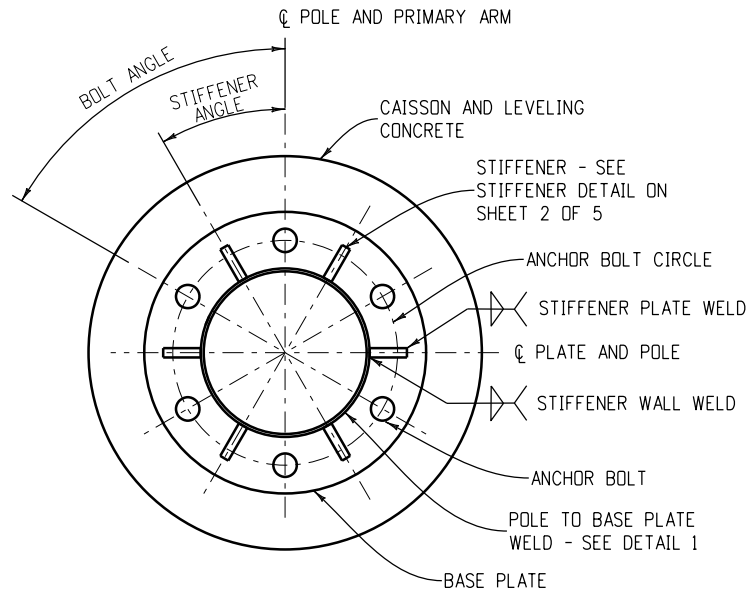
**POLE END SECTION
SLIP CONNECTION DETAIL**
(SEE GENERAL NOTE 8 ON SHEET 1
OF 5 REGARDING THE NEED FOR
BLIND BOLTS)


FOR 8 BOLTS AND $\theta < 45^\circ$, ROTATE
FLANGE FOR SECONDARY ARM 22.5°
TO AVOID BOLT INTERFERENCE PROBLEMS.



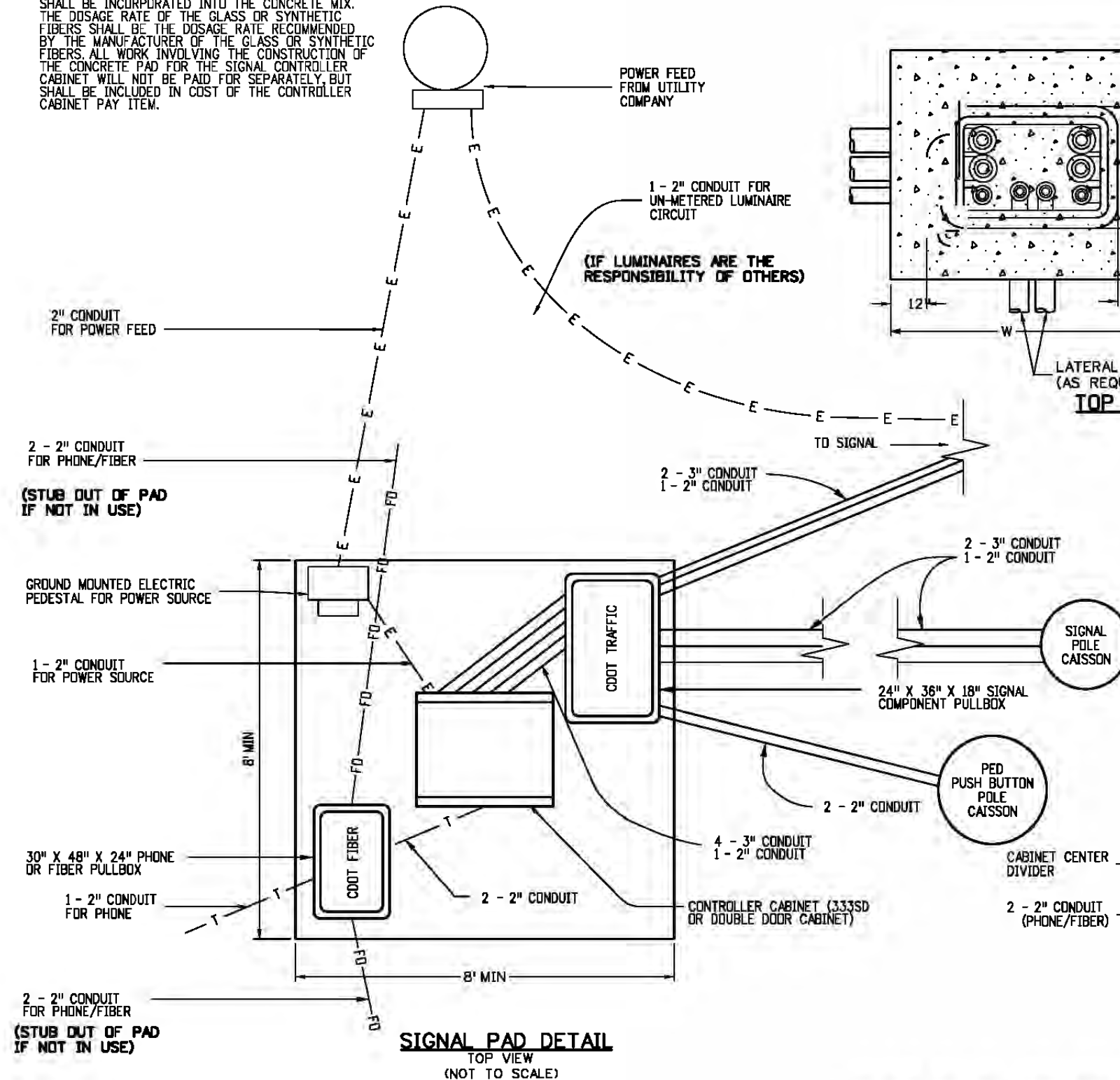
Computer File Information			Sheet Revisions		Colorado Department of Transportation	TYPICAL TRAFFIC SIGNAL 15' - 75' DOUBLE MAST ARMS 60' - 75' SINGLE MAST ARM	STANDARD PLAN NO. S-614-40
Creation Date: 07/04/12	Created By: SCL	Last Modification Date: 07/22/22	Date: 07/22/22	Comments: Modified Sheet Title			
Last Modified By: EButta	CAD Ver.: MicroStation V8	Scale: Not to Scale	Units: English		Traffic & Safety Engineering	Issued By: Traffic & Safety Engineering Branch July 31, 2019	Sheet No. 3 of 5

MAST ARM LENGTH (FT.)	POLE BASE CONNECTION DATA																	CAISSON DATA				
	STIFFENER								BASE PLATE		ANCHOR BOLT							(FOR SINGLE AND DOUBLE ARM INSTALLATIONS)				
	NO. OF	THK. (IN.)	WIDTH (IN.)	HEIGHT (IN.)	RADIUS (IN.)	ANGLE	WALL WELD (IN.)	PLATE WELD (IN.)	DIA. (IN.)	THK. (IN.)	NO. OF	DIA. (IN.)	LENGTH (IN.)	CIRCLE DIA. (IN.)	HOLE DIA. (IN.)	ANGLE	PROJECTION (IN.)	DIA. (IN.)	DEPTH (D) (FT.)	PAY LENGTH (FT.) (L)	V BARS	
																					SIZE	TOTAL
30	6	0.75	5.0	10	10.600	30.0°	0.25	0.625	24	2.25	6	2.0	63	17.75	2.25	60.0°	11.25	36	12.5	13	#9	11
40	6	0.75	5.5	11	11.841	30.0°	0.25	0.625	27	2.50	6	2.0	63	21.00	2.25	60.0°	11.50	36	14.5	15	#9	11
50	6	0.75	6.5	13	14.327	30.0°	0.25	0.625	32	2.75	6	2.0	63	25.00	2.25	60.0°	11.75	42	16.5	17	#9	14
65	6	0.75	8.0	16	18.063	30.0°	0.25	0.625	39	3.00	6	2.5	63	30.25	2.75	60.0°	12.50	48	20.5	21	#9	18
75	6	0.75	8.5	17	19.309	30.0°	0.25	0.625	42	3.25	6	2.5	63	33.00	2.75	60.0°	12.75	54	20.5	21	#9	23

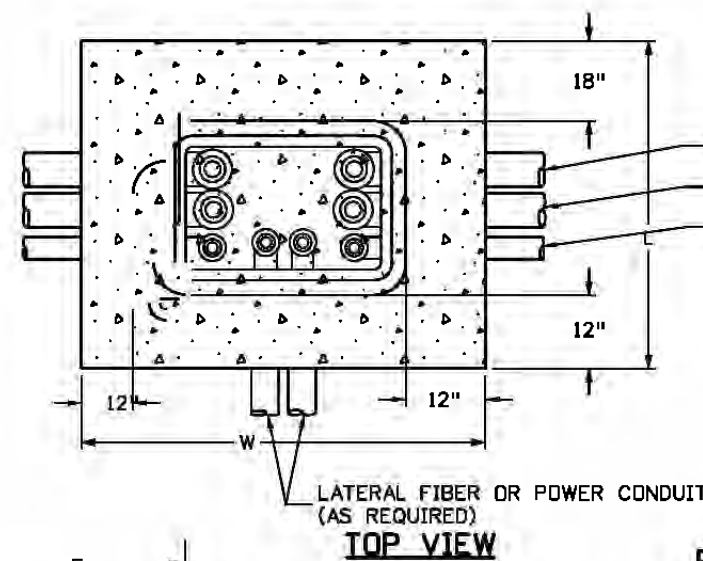


Computer File Information		<div><div>R-1</div><div></div><div></div><div></div><div></div></div>	Sheet Revisions		<div>Colorado Department of Transportation</div> <div><div><div></div><div>2829 W. Howard Pl. Denver, CO 80204 Phone: 303-512-5102 FAX: 303-757-9219</div></div></div> <div>Traffic & Safety Engineering</div> <div>EB</div>	TYPICAL TRAFFIC SIGNAL		STANDARD PLAN NO.
Creation Date: 07/04/12			Date:	Comments		15' - 75' DOUBLE MAST ARMS	S-614-40	
Created By: SCL			07/22/22	Modified Sheet Title		60' - 75' SINGLE MAST ARM		
Last Modification Date: 07/22/22							Sheet No. 5 of 5	
Last Modified By: EButta								
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English								
							Issued By: Traffic & Safety Engineering Branch July 31, 2019	

THE CONCRETE PAD SURROUNDING THE CABINET BASE SHALL BE CLASS B MIX. GLASS OR SYNTHETIC FIBERS SHALL BE INCORPORATED INTO THE CONCRETE MIX. THE DOSAGE RATE OF THE GLASS OR SYNTHETIC FIBERS SHALL BE THE DOSAGE RATE RECOMMENDED BY THE MANUFACTURER OF THE GLASS OR SYNTHETIC FIBERS. ALL WORK INVOLVING THE CONSTRUCTION OF THE CONCRETE PAD FOR THE SIGNAL CONTROLLER CABINET WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN COST OF THE CONTROLLER CABINET PAY ITEM.



SIGNAL PAD DETAIL
TOP VIEW
(NOT TO SCALE)

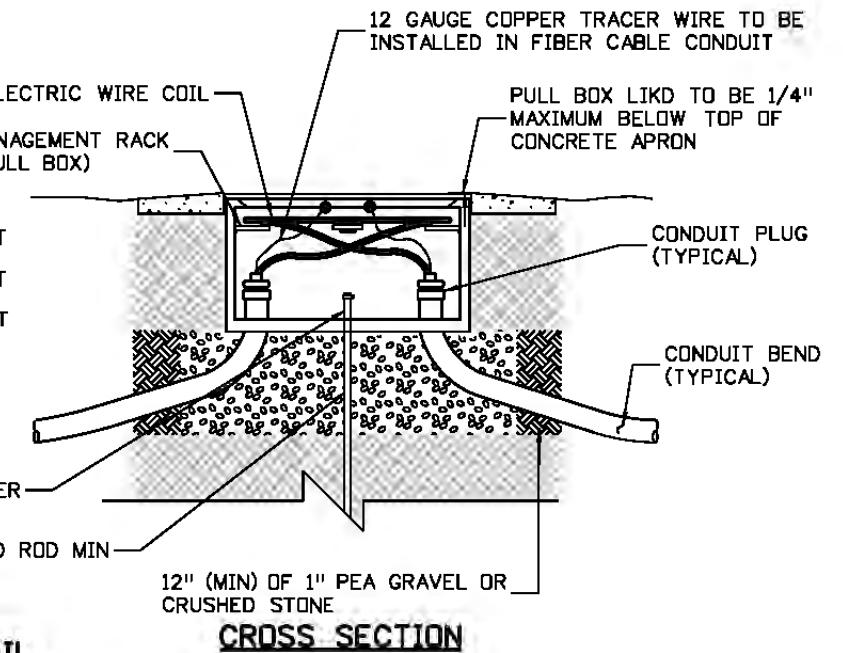


PULL BOX DETAIL
TOP VIEW
(NOT TO SCALE)

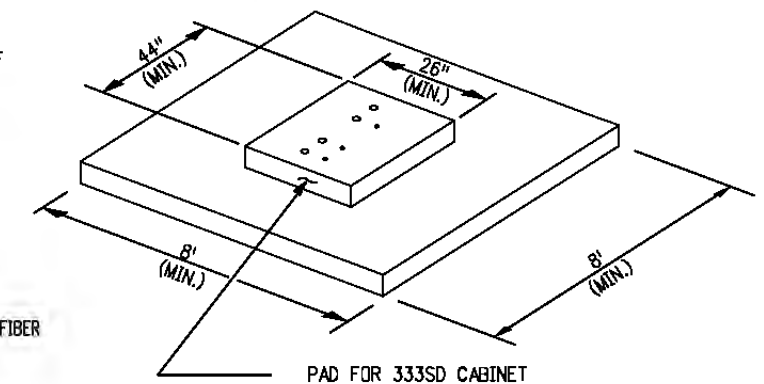
PULL BOX DETAIL
(NOT TO SCALE)

PULL BOX NOTES

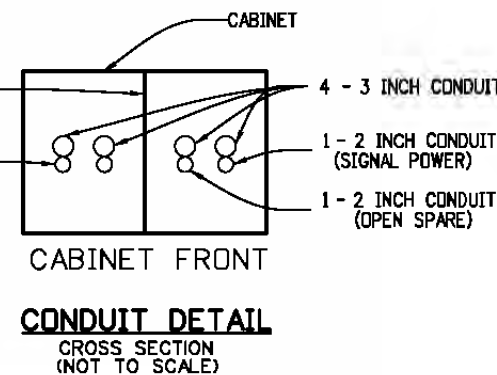
1. CONDUIT CENTERLINE SHALL BE ALIGNED TO TOP EDGE OF PULL BOX TO FACILITATE CABLE PULLING.
2. BED OF PEA GRAVEL OR CRUSHED STONE SHALL BE INCIDENTAL TO THE PULL BOX.
3. ALL PULL BOXES SHALL HAVE 12-INCH WIDE BY 6-INCH DEEP CONCRETE APRONS SLOPED AWAY FROM THE PULL BOX. THE COST OF APRON IS INCIDENTAL TO THE COST OF THE PULL BOX.
4. THE PULL BOX SHALL HAVE A DETACHABLE COVER WITH "CDOT TRAFFIC", "CDOT FIBER", OR "CDOT COMM" PHYSICALLY IMPRESSED ON ITS TOP.
5. CONDUIT BEND NOTES:
A. RADIUS MUST NOT BE LESS THAN 48" FOR CONDUIT CONTAINING FIBER
B. SWEEP MUST NOT BE GREATER THAN 45 DEGREES



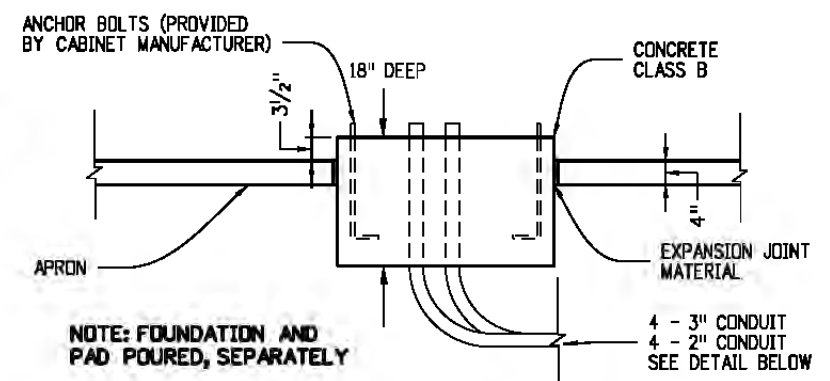
PULL BOX DETAIL
CROSS SECTION
(NOT TO SCALE)



PAD FOR 333SD CABINET



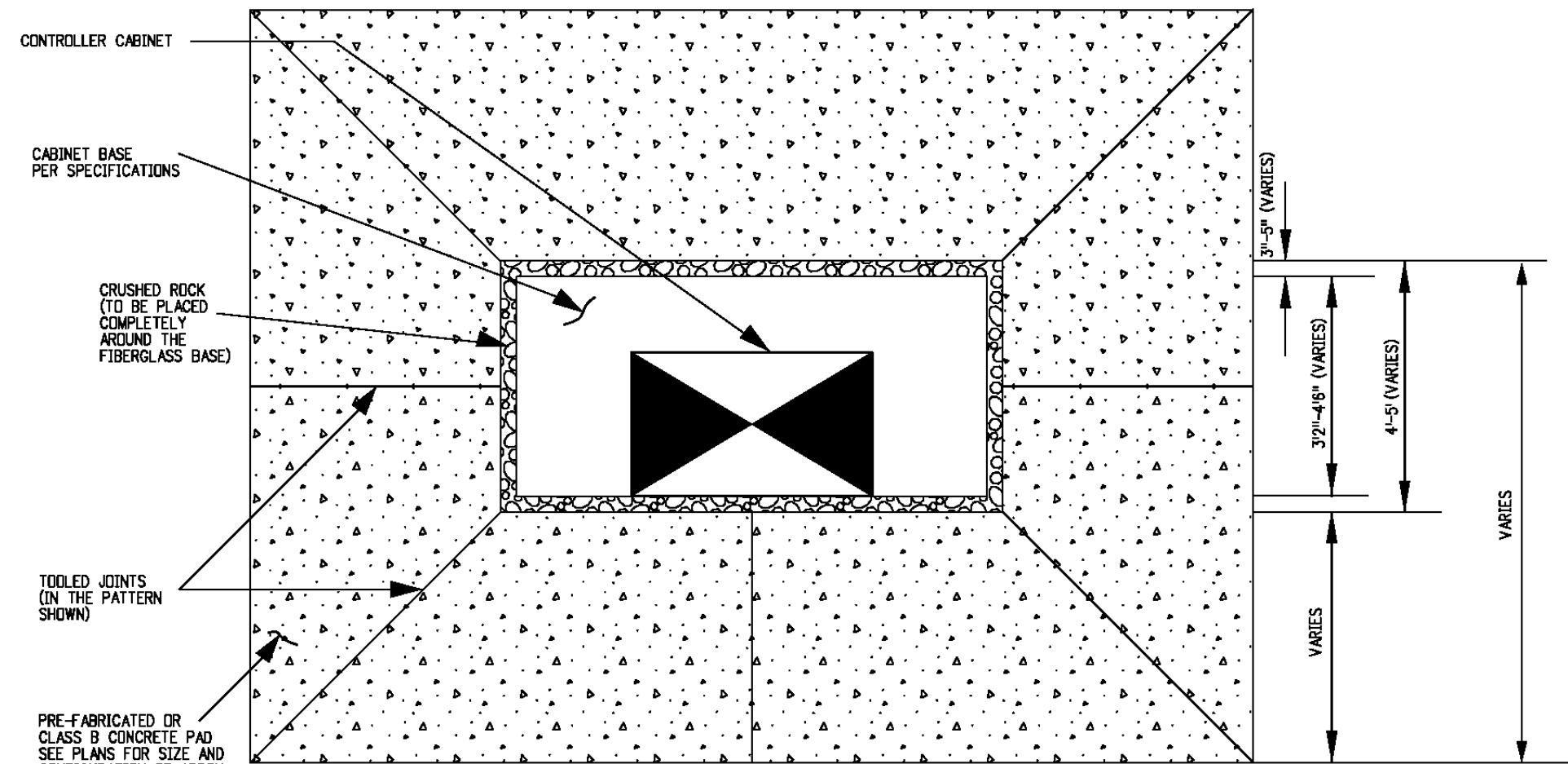
CABINET DETAIL
CROSS SECTION
(NOT TO SCALE)



FOUNDATION CROSS SECTION
(NOT TO SCALE)

CAST-IN-PLACE FOUNDATION

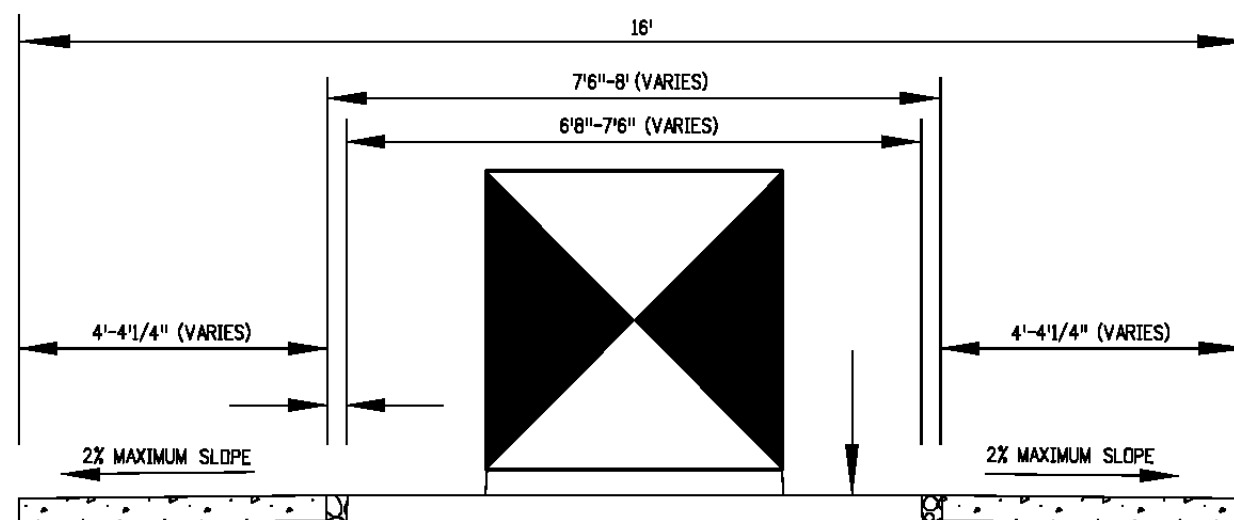
Computer File Information		0000	Sheet Revisions		Colorodo Department of Transportotion  2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219 Troffic & Sosity Engineering MKB	CABINET FOUNDATION DETAIL	STANDARD PLAN NO.	
Creation Date: 07/04/12			Date:	Comments			S-614-42	
Created By: KEN							Standard Sheet No. 1 of 4	
Last Modification Date: 07/31/19						Issued By: Traffic & Safety Engineering Branch July 31, 2019		
Lost Modified By: AVU								
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English								



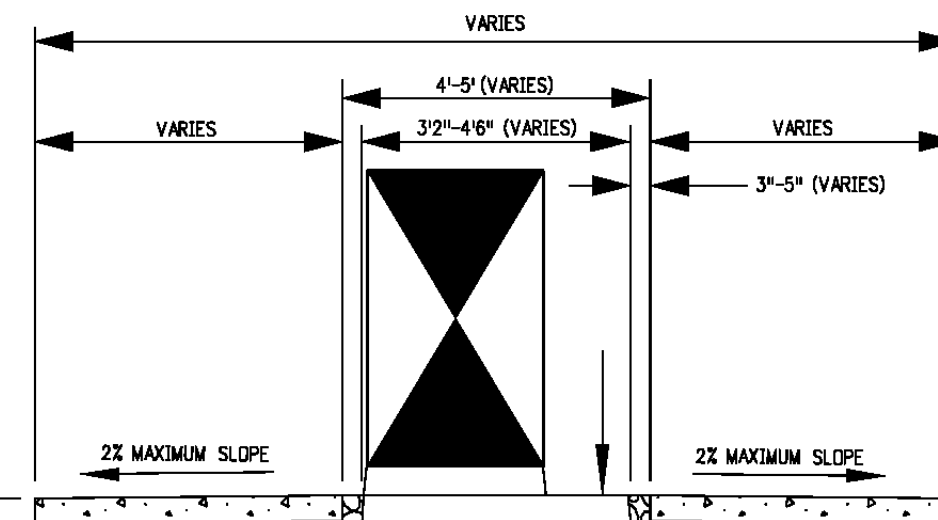
CONCRETE PAD NOTES

1. CONTRACTOR SHALL INSTALL PRE-FABRICATED OR CAST-IN-PLACE FIBERGLASS CONCRETE PAD. SEE SPECIFICATION FOR MORE INFORMATION ON THE CONCRETE MATERIAL.
2. CONTRACTOR SHALL PLACE A 4-INCH THICK CONCRETE PAD (CAST-IN-PLACE OR PRE-FABRICATED), AS INDICATED IN THE PLANS, OR AS DIRECTED BY THE ENGINEER. THE CONCRETE PAD SHALL SLOPE AWAY FROM THE FIBERGLASS BASE AT A MAXIMUM 2% SLOPE.
3. THE CONCRETE PAD SURROUNDING THE CABINET BASE SHALL BE CLASS B MIX. GLASS OR SYNTHETIC FIBERS SHALL BE INCORPORATED INTO THE CONCRETE MIX. THE DOSAGE RATE OF THE GLASS OR SYNTHETIC FIBERS SHALL BE THE DOSAGE RATE RECOMMENDED BY THE MANUFACTURER OF THE GLASS OR SYNTHETIC FIBERS. ALL WORK INVOLVING THE CONSTRUCTION OF THE CONCRETE PAD FOR THE SIGNAL CONTROLLER CABINET WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE CONTROLLER CABINET PAY ITEM.
4. PRE-FABRICATED CONCRETE BASE DIMENSIONS SHOWN VARY PER MANUFACTURER'S SPECIFICATIONS.
5. PRE-FABRICATED CONCRETE BASE MANUFACTURER SHALL PROVIDE CONNECTION POINTS IN THE BASE FOR THE SPECIFIC CONTROLLER CABINET SPECIFIED IN THE PLANS.

TOP VIEW




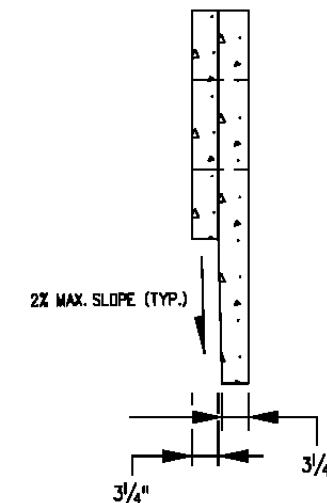
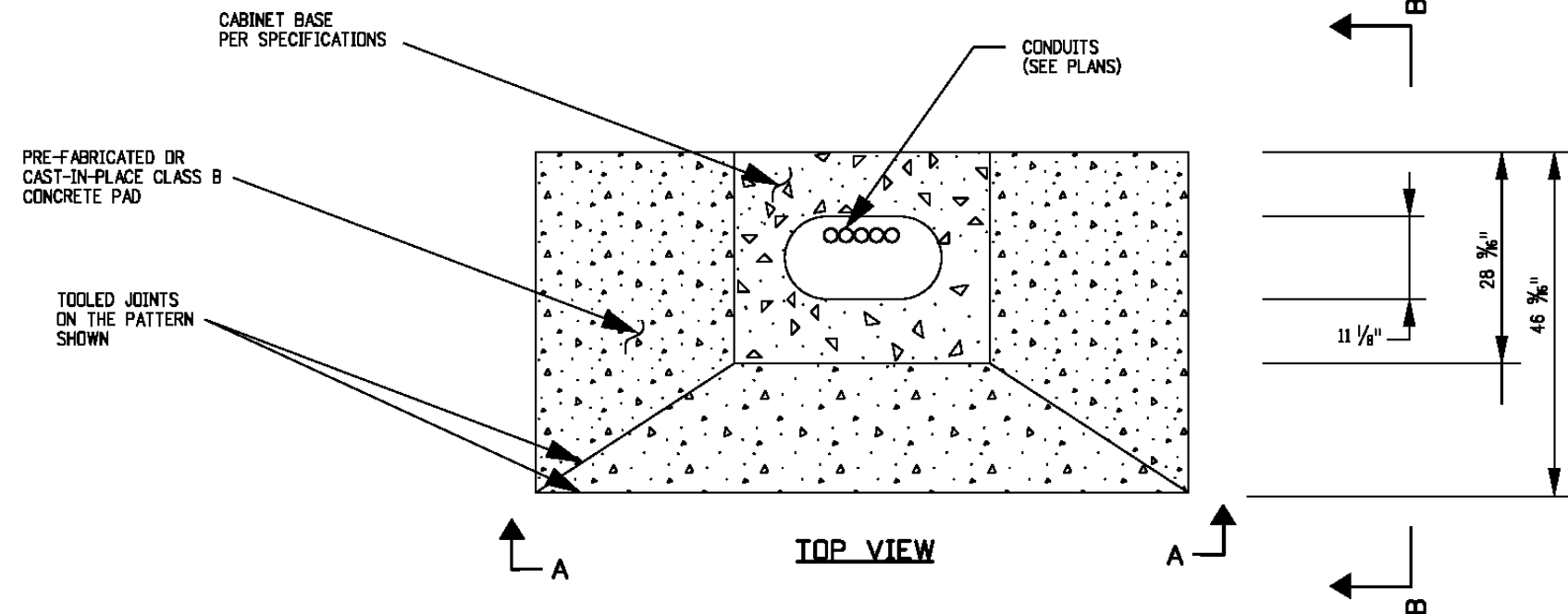
FRONT VIEW



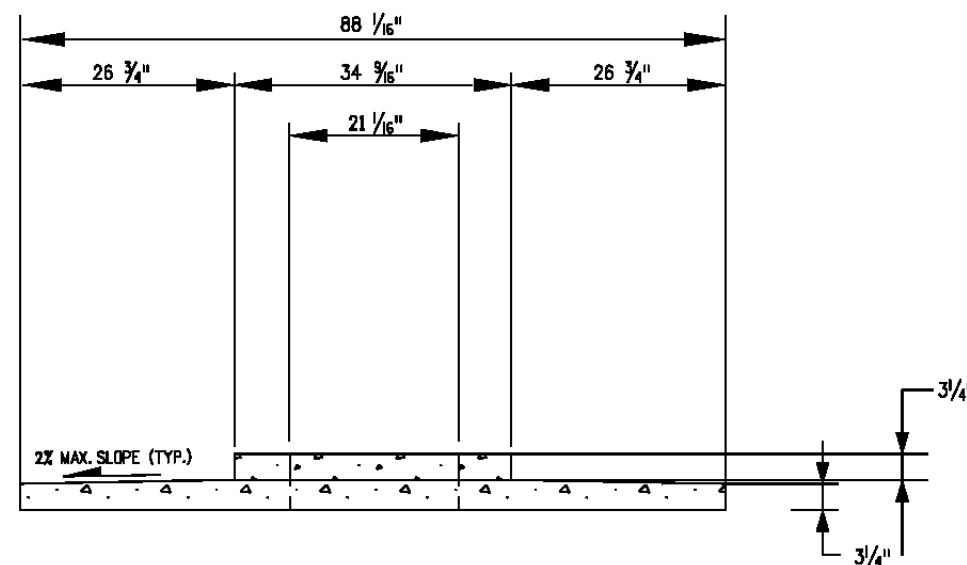
SIDE VIEW

PRE-FABRICATED FIBERGLASS FOUNDATION

Computer File Information		0000	Sheet Revisions		<div>Colorado Department of Transportation</div> <div><div>2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219</div></div> <div>Troffic & Sosity Engineering</div> <div>MKB</div>	CABINET FOUNDATION DETAIL		STANDARD PLAN NO.	
Creation Date: 07/04/12			Date:	Comments		S-614-42			
Created By: KEN						Standard Sheet No. 2 of 4			
Last Modification Date: 07/31/19						Project Sheet Number:			
Lost Modified By: AVU						Issued By: Traffic & Safety Engineering Branch July 31, 2019			
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English									



SECTION B-B




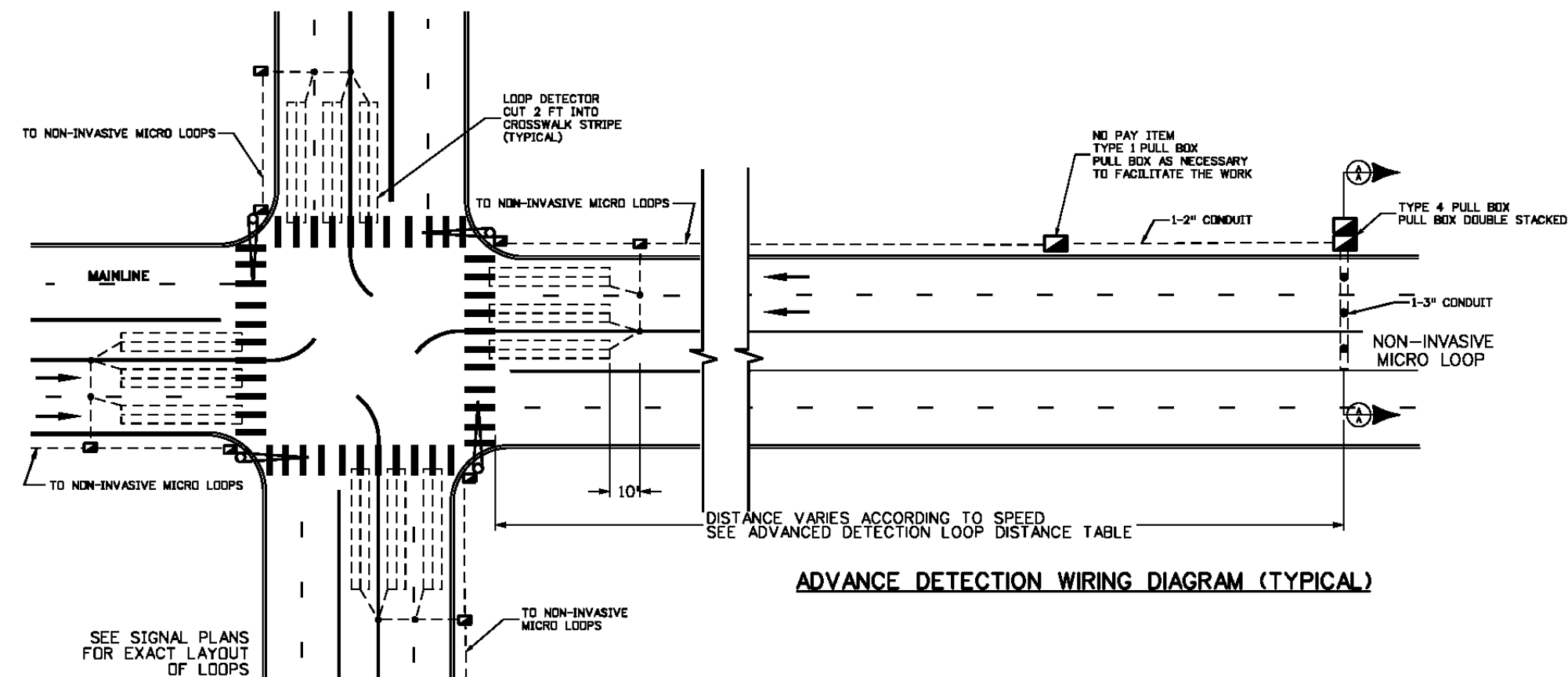
SECTION A-A

CONCRETE PAD NOTES

1. CONTRACTOR SHALL INSTALL PRE-FABRICATED OR CAST-IN-PLACE CONCRETE PAD. SEE SPECIFICATION FOR MORE INFORMATION ON THE CONCRETE MATERIAL.
2. CONTRACTOR SHALL PLACE A 3/4-INCH THICK CONCRETE PAD (CAST-IN-PLACE OR PRE-FABRICATED), AS INDICATED IN THE DETAILS, OR AS DIRECTED BY THE ENGINEER. THE CONCRETE PAD SHALL SLOPE AWAY FROM THE FIBERGLASS BASE AT A MAXIMUM 2% SLOPE.
3. THE CONCRETE PAD SURROUNDING THE PRE-FABRICATED OR CAST-IN-PLACE BASE SHALL BE CLASS B MIX. GLASS OR SYNTHETIC FIBERS SHALL BE INCORPORATED INTO THE CONCRETE MIX. THE DOSAGE RATE OF THE GLASS OR SYNTHETIC FIBERS SHALL BE THE DOSAGE RATE RECOMMENDED BY THE MANUFACTURER OF THE GLASS OR SYNTHETIC FIBERS. ALL WORK INVOLVING THE CONSTRUCTION OF THE CONCRETE PAD FOR THE SIGNAL CONTROLLER CABINET WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE CONTROLLER CABINET PAY ITEM.
4. FOUNDATIONS SHALL BE LOCATED TO PROVIDE 34-INCH MINIMUM CLEARANCE BETWEEN FACE-OF-CURB AND ANY PORTION OF THE CONTROLLER CABINET.
5. IN UNPAVED AREAS, THE TOP FOUNDATION FOR MODELS 332 - 334 CONTROLLER CABINETS SHALL BE THREE (3) INCHES ABOVE SURROUNDING GRADE.
6. FIBERGLASS BASE DIMENSIONS SHOWN VARY PER MANUFACTURER'S SPECIFICATIONS.

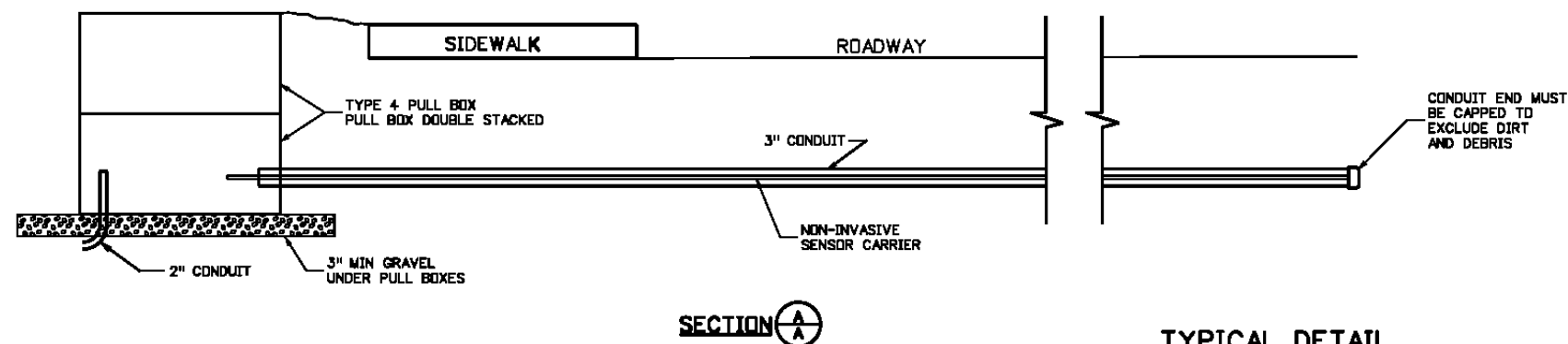
FOUNDATION DETAILS
FOR MODEL 332 THROUGH 334 CONTROLLER CABINETS

Computer File Information		0000	Sheet Revisions		Colorodo Department of Transportotion		CABINET FOUNDATION DETAIL		STANDARD PLAN NO.	
Creation Date: 07/04/12			Date:	Comments	 <div>2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219</div> <div>Troffic & Sosity Engineering</div> <div>MKB</div>		S-614-42		Standard Sheet No. 3 of 4	
Created By: KEN							Project Sheet Number:			
Last Modification Date:							Issued By: Troffic & Sosity Engineering Branch July 31, 2019			
Lost Modified By:										
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English										



ADVANCE DETECTION WIRING DIAGRAM (TYPICAL)

INTERSECTION DETECTOR WIRING DIAGRAM (TYPICAL)



TYPICAL DETAIL
NON-INVASIVE MICRODETECTOR
(DILEMMA ZONE)

ADVANCED DETECTION LOOP
DISTANCE TABLE

APPROACH SPEED		DISTANCE FROM INTERSECTION
MPH	KM/HR	FEET
35	56	254
40	64	284
45	72	327
50	80	353
55	88	386

LEGEND

- CONTROLLER AND CABINET.....☒
- ELECTRICAL CONDUIT AND PULL BOX... ---☐---
- LOOP DETECTOR.....[-----]
- PULLBOX (SPECIAL).....●
- MICRO DETECTOR.....⊙

NOTES

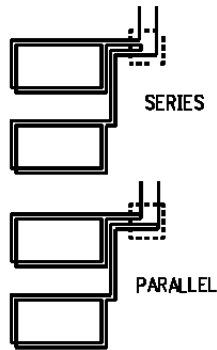
1. ALL PULL BOXES ARE NOT TO BE PAID FOR SEPERATELY, BUT SHALL BE INCLUDED IN THE COST OF THE CONDUIT. EXCEPT FOR WHERE CALLED OUT IN THE PLANS.
2. ALL PULL BOXES PLACED FOR THE "ADVANCED DETECTIN WIRING" SHALL BE PLACED APPROXIMATELY EVERY 100 FT AND SHALL BE INCLUDED IN THE COST OF THE CONDUIT.
3. FOR LAYOUT OF LOOP DETECTORS AND CONDUIT, THE CONTRACTOR SHALL NOTIFY CDOT REGION 6 TRAFFIC SIGNAL SHOP JEFF LANCASTER, (303) 757-9511, TWO WORKING DAYS IN ADVANCE.
4. SEE PLANS FOR ACTUAL LANE CONFIGURATIONS

Computer File Information		Sheet Revisions		<div> <div>Colorado Department of Transportation</div> <div> </div> <div>2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219</div> </div>	<div> <div>TRAFFIC LOOP AND MISCELLANEOUS SIGNAL DETAILS</div> <div>Issued By: Traffic & Safety Engineering Branch July 31, 2019</div> </div>	STANDARD PLAN NO.
Creation Date: 07/31/19		Date:	Comments			S-614-43
Created By: AVU						Standard Sheet No. 1 of 8
Last Modification Date:						Project Sheet Number:
Last Modified By:				Troffic & Safety Engineering	MKB	
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English						

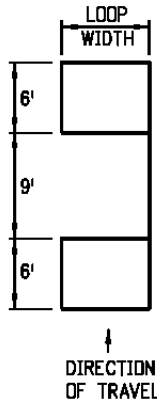
LOOP INSTALLATION PROCEDURE

- 1. CUT SLOTS IN PAVEMENT TO 3 IN MINIMUM DEPTH.
- 2. CLEAN AND DRY SLOTS WITH OIL-FREE COMPRESSED AIR.
- 3. ONE CONTINUOUS LENGTH OF 14/IC, RHW, USE, XLPE, RHWN OR THWN WIRE SHALL BE USED FOR EACH LOOP FROM SIGNAL BASE OR PULL BOX AROUND THE LOOP WITH THE NUMBER OF TURNS SPECIFIED AND BACK TO THE SIGNAL BASE OR PULL BOX. LOOP WIRE SHALL BE DUCT TYPE.
- 4. SPLICE LEAD-IN IN FIRST PULL BOX ON THE SIDE OF THE ROADWAY.
- 5. USE A BLUNT, NON-METALLIC INSTRUMENT TO PUSH WIRE INTO SLOT. DO NOT COIL LEADS.
- 6. CONNECT DETECTOR AND TEST LOOP.
- 7. INSTALL LOOPS BEFORE FINAL LIF OF ASPHALT ON MILL AND FILL PROJECTS.
- 8. SEAL SLOTS AS SPECIFIED.

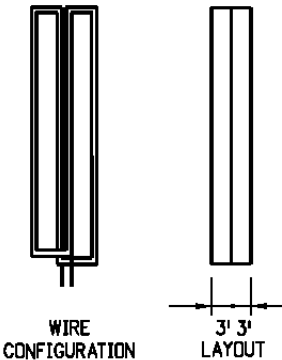
WIRE CONFIGURATION



LAYOUT



STANDARD LOOP

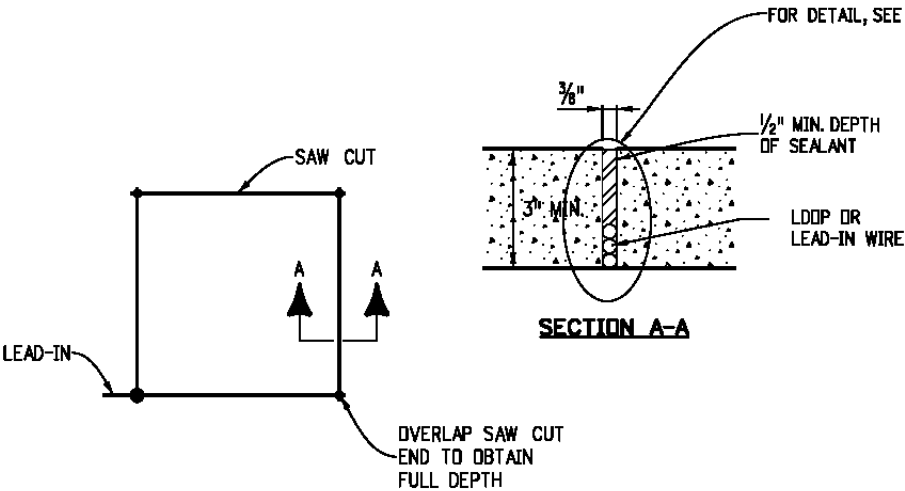


DUAL LOOP

STANDARD LOOP - WIRING AND CONNECTION TABLE

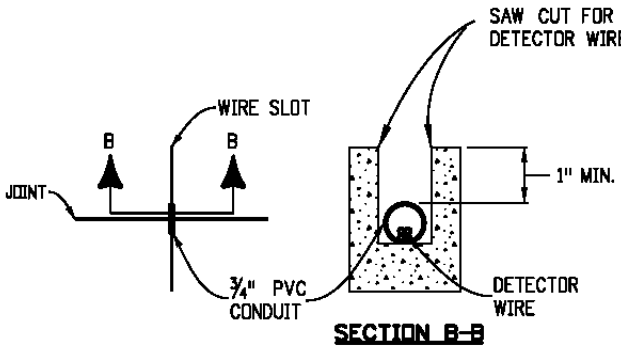
NO. OF LOOPS	WIDTH OF LOOP (FEET)									
	6	8	10	12	14	16	18	20	24-36	40+
1	4	3	3	3	3	3	3	3	2	2
2	3S	3S	3S	3P	2S	2S	2S	2S	2S	2P
3	3S	3S	2S	2S	3SP	3SP	3SP	3SP	2SP	2P
4	3SP	3SP	3SP	2SP	3SP	3SP	3SP	2SP	2SP	2SP

Turns per loop and type connection
(S = SERIES, P = PARALLEL)



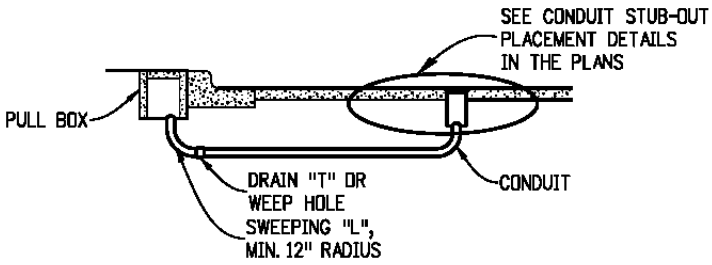
VEHICLE DETECTOR LOOP
SAW CUT DETAILS

(FOR USE WITH VINYL TUBING ENCASED
LOOP DETECTOR WIRE)



DETECTOR WIRE ACROSS
BRIDGE JOINTS

DUAL LOOPS SHALL BE OF THE SIZE SHOWN
UNLESS OTHERWISE ON THE PLANS.



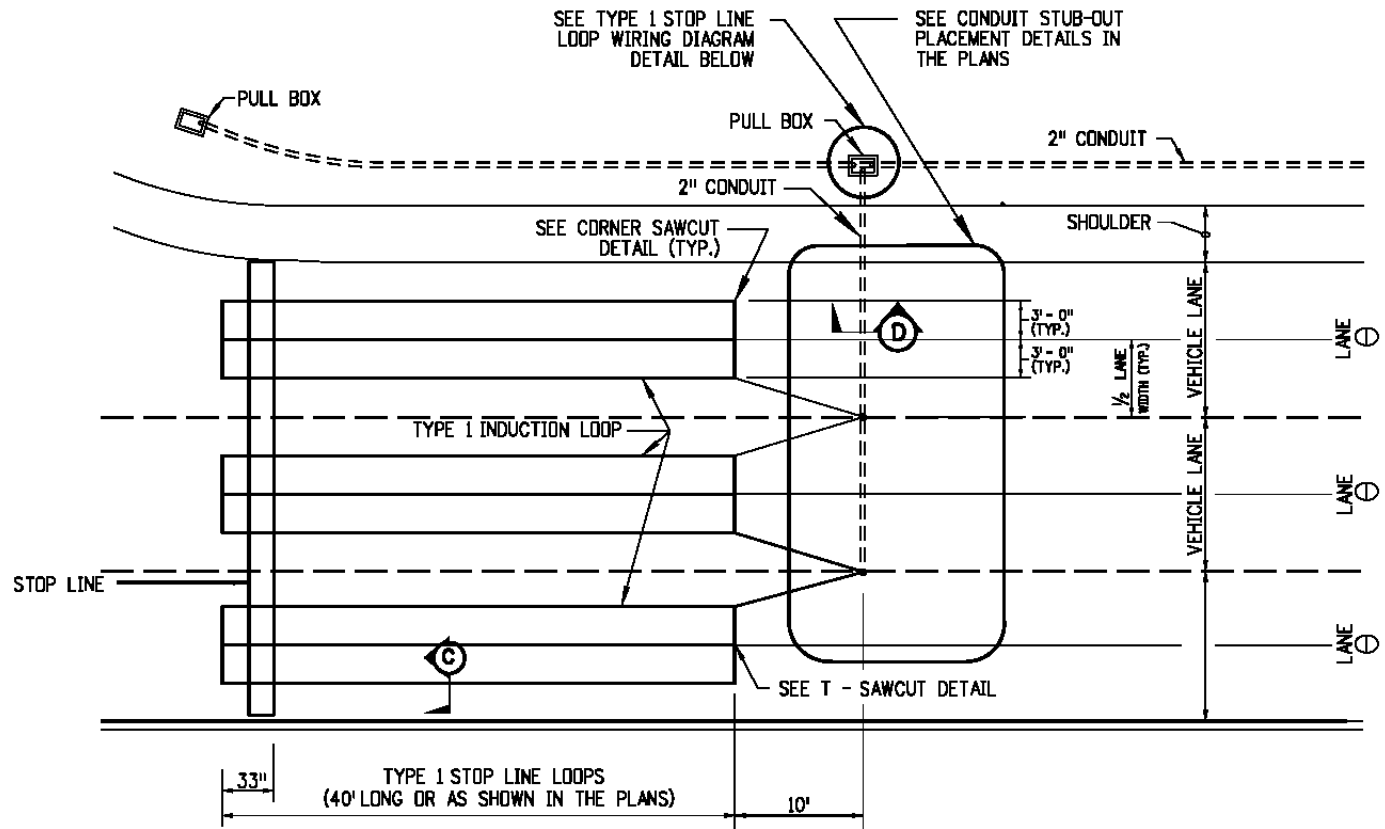
LOOP DETECTOR LEAD-IN

Computer File Information		Sheet Revisions		Colorado Department of Transportation		TRAFFIC LOOP AND MISCELLANEOUS SIGNAL DETAILS		STANDARD PLAN NO.	
Creation Date: 07/14/12		Date:	Comments		2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219	Issued By: Traffic & Safety Engineering Branch July 31, 2019	MKB	S-614-43	
Created By: KEN								Standard Sheet No. 2 of 8	
Last Modification Date: 07/31/19								Project Sheet Number:	
Last Modified By: AVU									
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English									

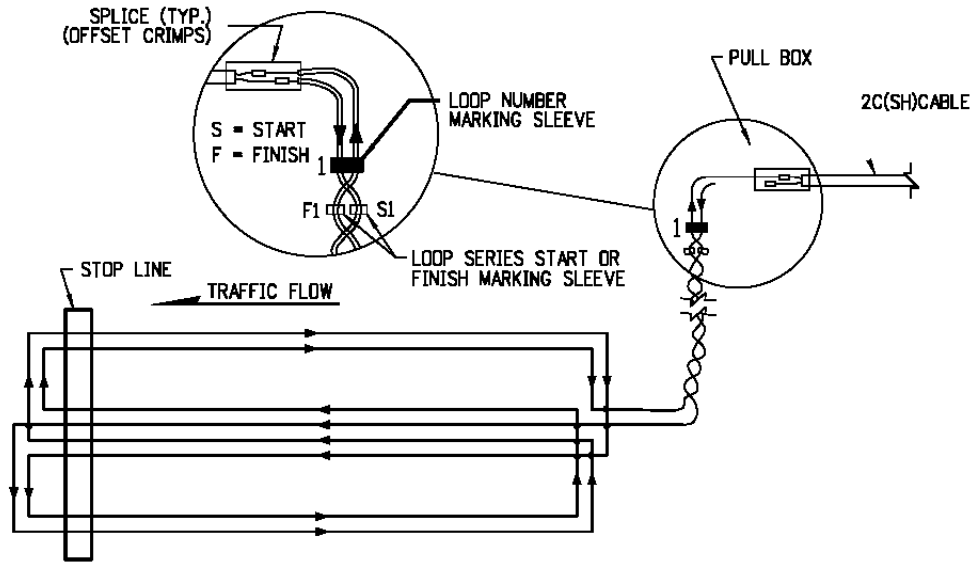
TYPE 1 INDUCTION LOOP

NOTES

- 1. TWIST LEAD-IN CABLES ALL THE WAY TO PULL BOX.
- 2. SPLICE LEAD-IN IN FIRST PULL BOX ON SIDE OF THE ROADWAY.



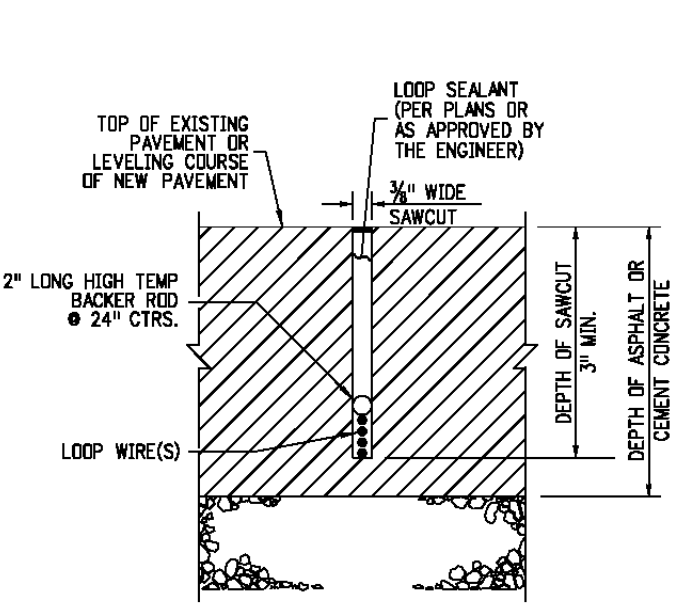
TYPE 1 STOP LINE LOOPS - PLAN VIEW



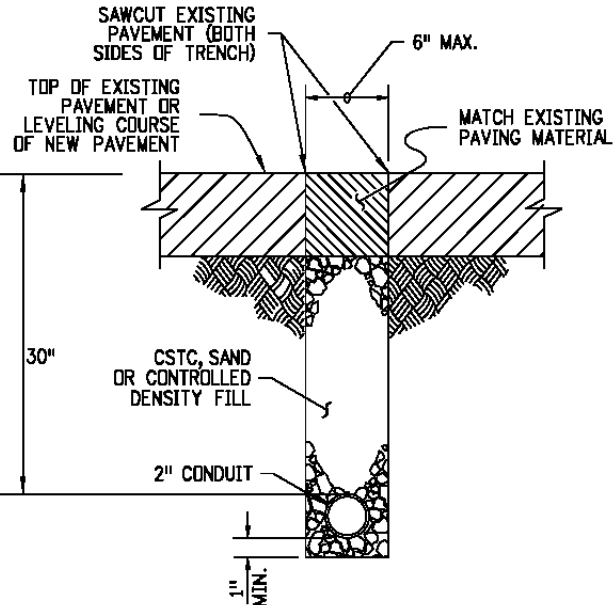
TYPE 1 STOP LINE LOOP WIRING DIAGRAM



LOOP NUMBER MARKING DETAIL

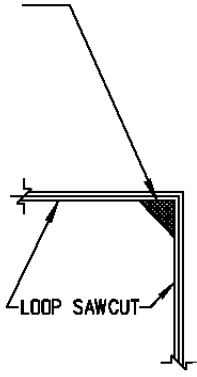


SECTION C-C



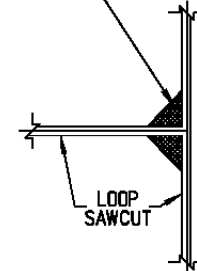
SECTION D-D

CHISEL OUT 1/8\"/>

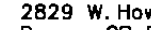


CORNER SAWCUT DETAIL

CHISEL OUT 1/8\"/>

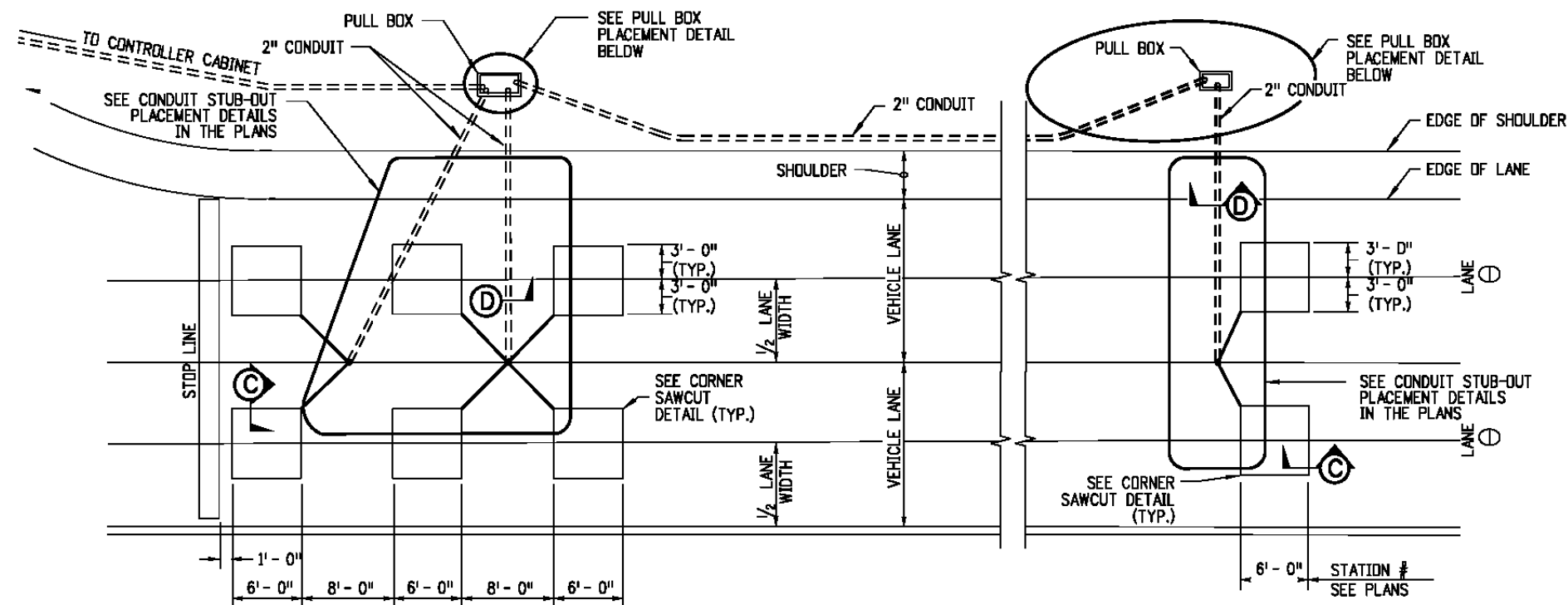


T - SAWCUT DETAIL

Computer File Information			<div><div></div><div></div><div></div><div></div><div></div></div>	Sheet Revisions		<div><div><div>Colorado Department of Transportation</div><div><div></div><div><div>2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219</div></div></div><div><div>Traffic & Safety Engineering</div><div>MKB</div></div></div></div>	TRAFFIC LOOP AND MISCELLANEOUS SIGNAL DETAILS		STANDARD PLAN NO.	
Creation Date: 07/14/12		Date:		Comments	S-614-43					
Created By: KEN					Standard Sheet No. 3 of 8					
Last Modification Date: 07/31/19					Project Sheet Number:					
Last Modified By: AVU										
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English					Issued By: Traffic & Safety Engineering Branch July 31, 2019					

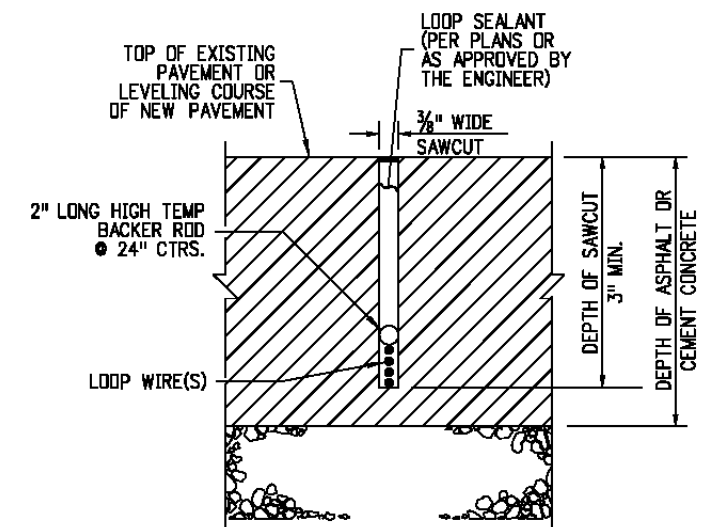
NOTES

1. ALL OF THE LOOP LEAD-IN WIRES SHALL RETURN TO THE PULL BOX.

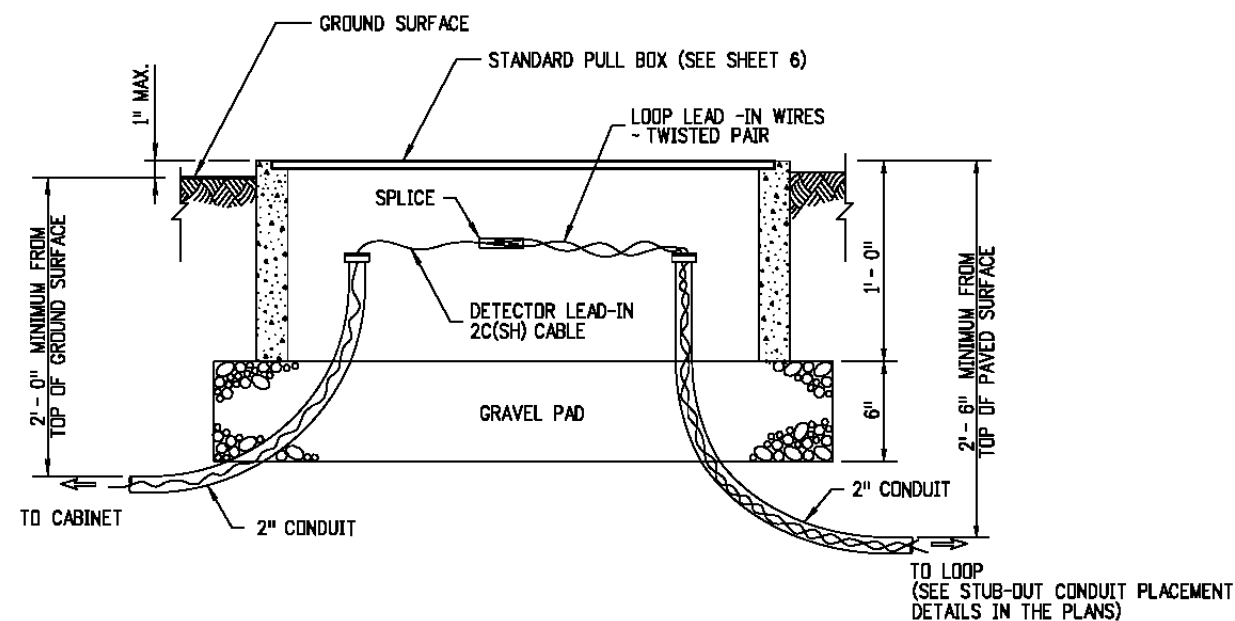


TYPE 2 STOP LINE LOOPS

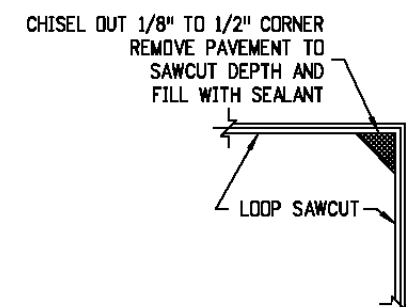
TYPE 2 ADVANCE LOOPS



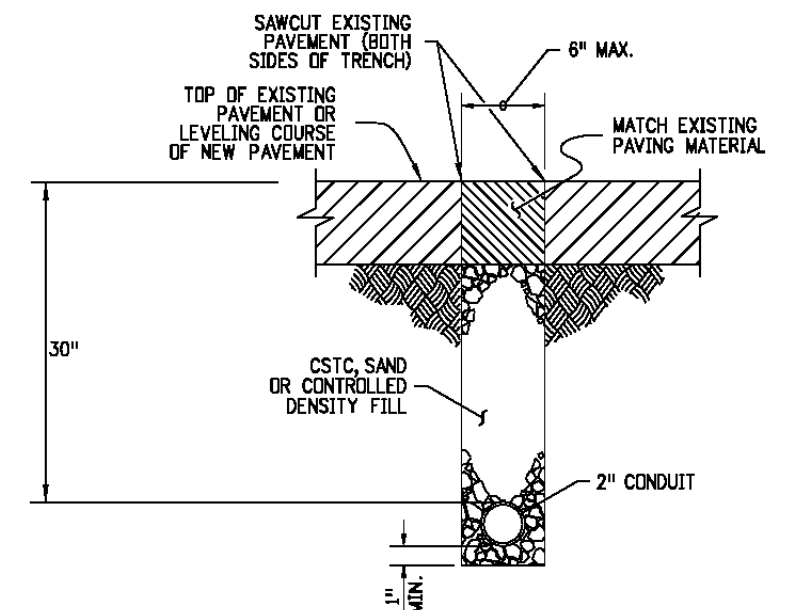
SECTION C-C



PULL BOX PLACEMENT DETAIL




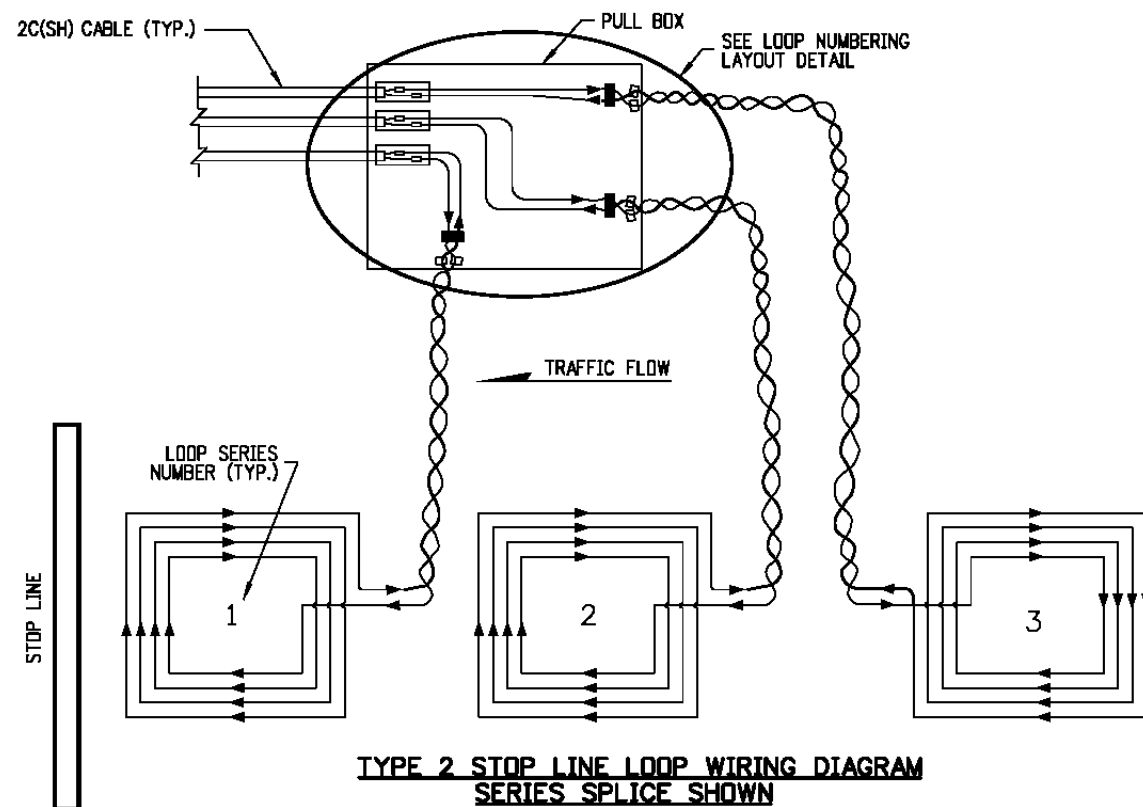
CORNER SAWCUT DETAIL



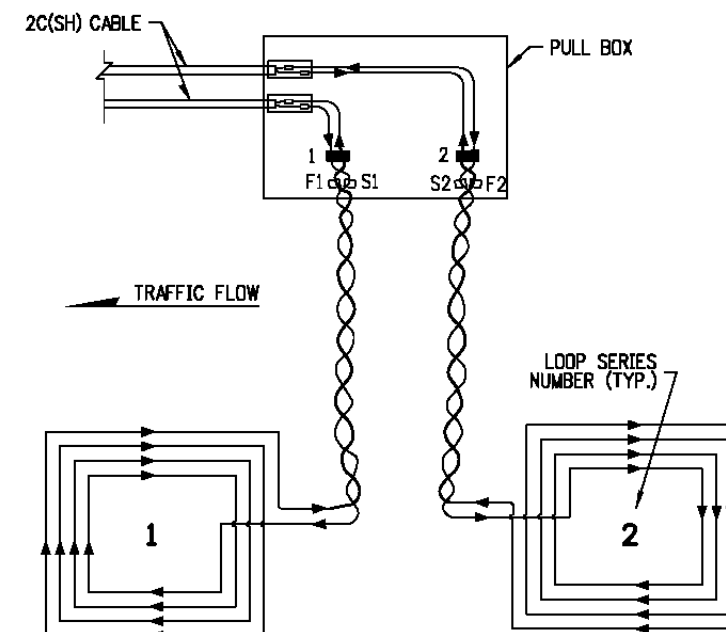
SECTION D-D

TYPE 2 INDUCTION LOOPS (FOR CONVENTIONAL HIGHWAYS)

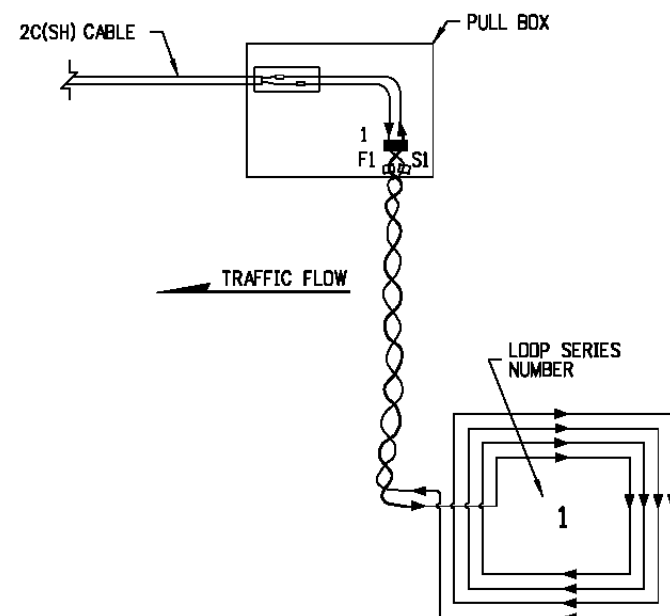
Computer File Information		0000	Sheet Revisions		Colorado Department of Transportation  2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219 Traffic & Safety Engineering MKB	TRAFFIC LOOP AND MISCELLANEOUS SIGNAL DETAILS		STANDARD PLAN NO.	
Creation Date: 07/14/12			Date:	Comments				S-614-43	
Created By: KEN								Standard Sheet No. 4 of 8	
Last Modification Date:									
Last Modified By:									
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English									
				Issued By: Traffic & Safety Engineering Branch July 31, 2019		Project Sheet Number:			



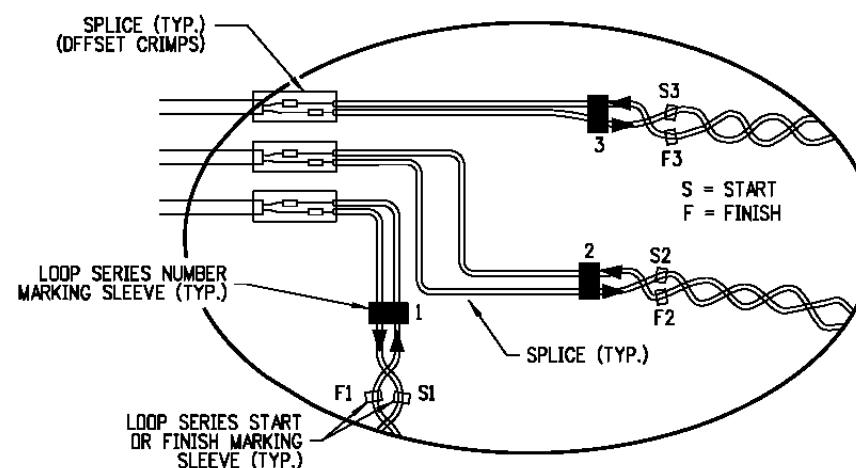
TYPE 2 STOP LINE LOOP WIRING DIAGRAM
SERIES SPLICE SHOWN



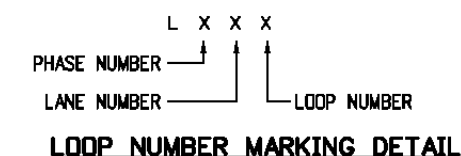
TYPE 2 SAMPLING LOOP WIRING DIAGRAM
SERIES SPLICE SHOWN



TYPE 2 ADVANCE LOOP WIRING DIAGRAM



LOOP NUMBERING LAYOUT DETAIL

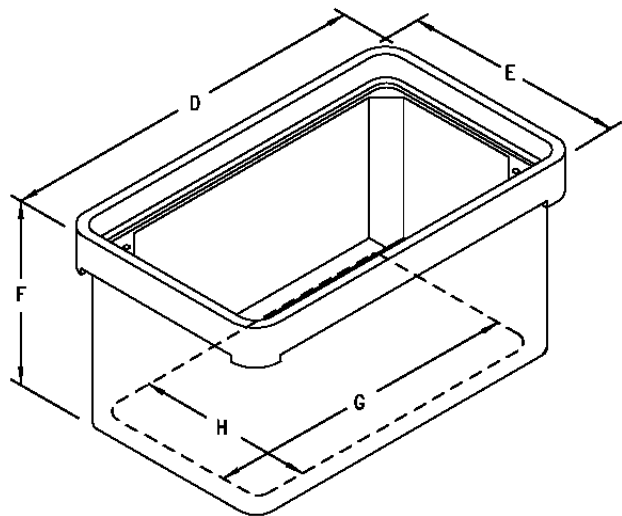
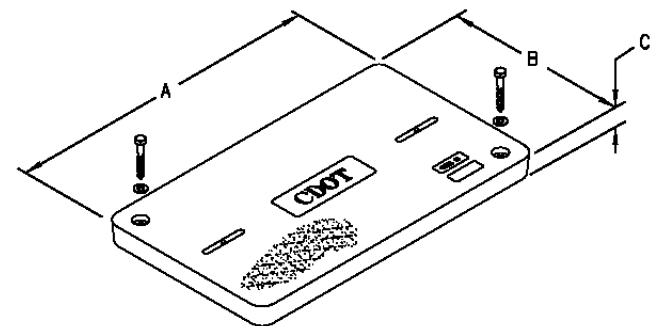


NOTES

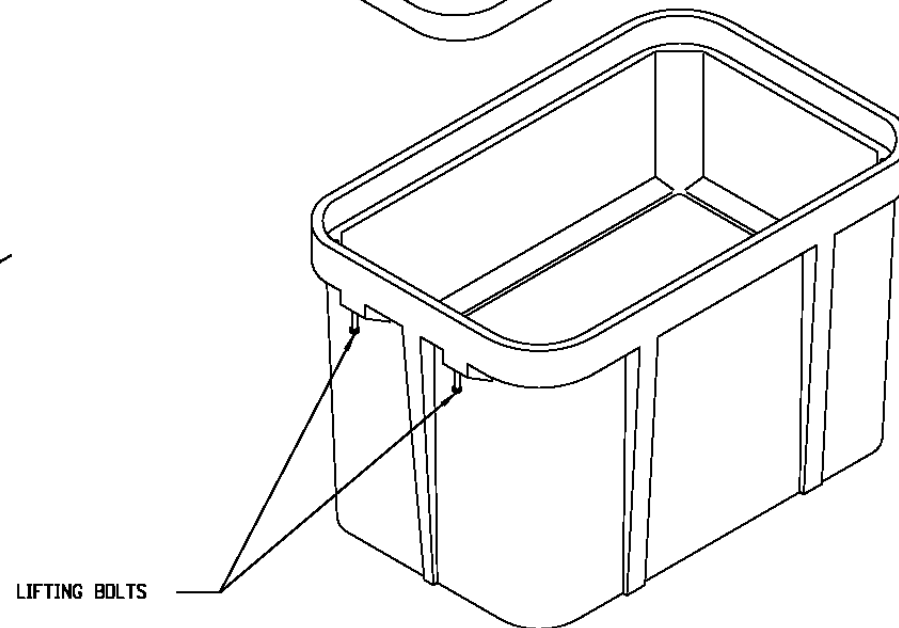
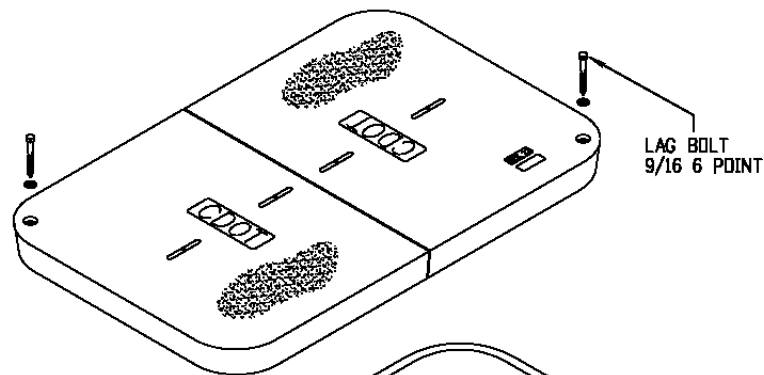
1. FOR WIRING AND CONDUIT LAYOUT, SEE CONDUIT STUB-OUT PLACEMENT DETAIL IN PLANS.
2. SPLICE LEAD-IN IN FIRST PULL BOX ON THE SIDE OF THE ROADWAY.

TYPE 2 INDUCTION LOOP

Computer File Information		000000	Sheet Revisions		<div>Colorado Department of Transportation</div> <div><div>2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219</div></div> <div>Troffic & Safety Engineering</div> <div>MKB</div>	TRAFFIC LOOP AND MISCELLANEOUS SIGNAL DETAILS		STANDARD PLAN NO.	
Creation Date: 07/14/12			Date:	Comments		S-614-43		Standard Sheet No. 5 of 8	
Created By: KEN									
Last Modification Date: 07/31/19									
Lost Modified By: AVU									
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English								Issued By: Traffic & Safety Engineering Branch July 31, 2019	



TYPE 1, 2, and 3



TYPES 4 AND 5


NOTES

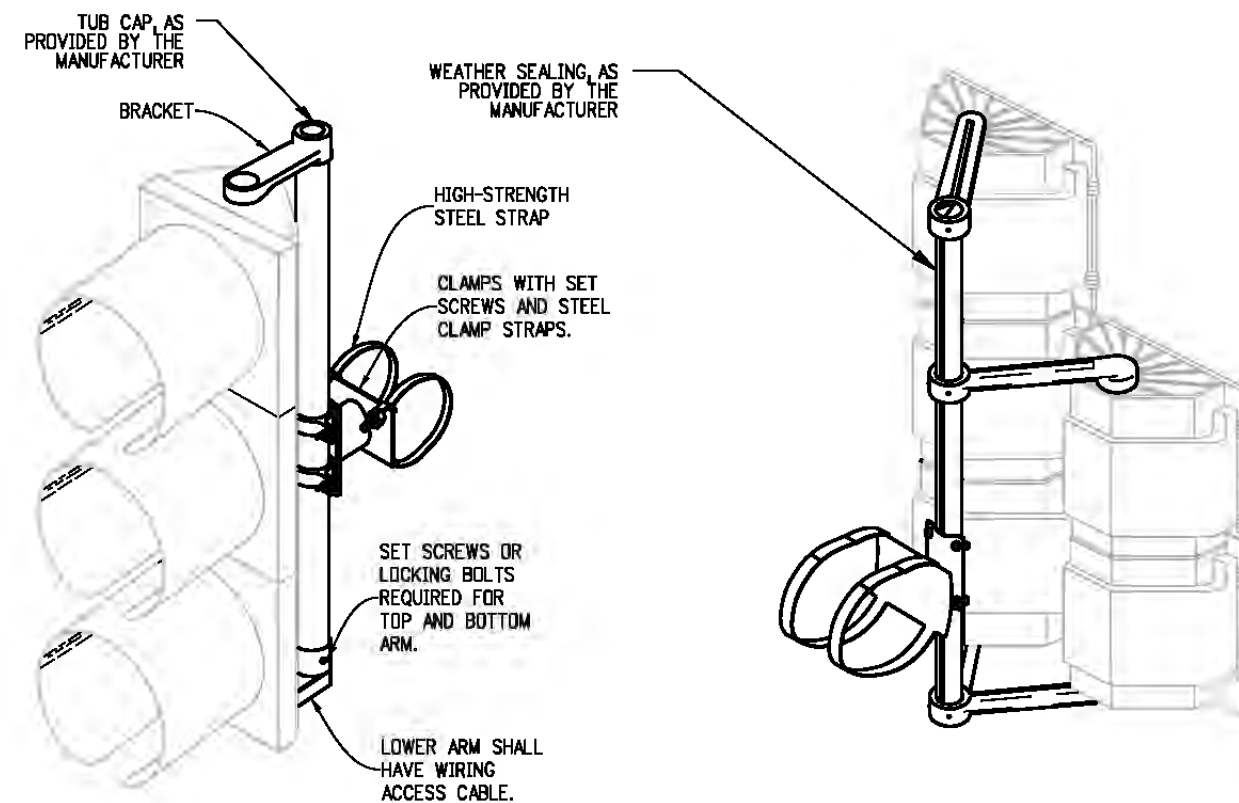
1. PULL BOXES, PULL BOX COVERS AND EXTENSIONS SHALL BE MADE OF FIBERGLASS REINFORCED POLYMER CONCRETE. PULL BOXES SHALL BE VERIFIED BY A 3RD PARTY NATIONALLY-RECOGNIZED INDEPENDENT TESTING LABORATORY AS MEETING ALL TEST PROVISIONS OF THE LATEST ANSI/SCTE 77 SPECIFICATION FOR UNDERGROUND ENCLOSURE INTEGRITY, TIER 22 RATING. CERTIFICATION DOCUMENTS SHALL BE SUBMITTED WITH MATERIAL SUBMITTALS. THE PULL BOX SHALL HAVE A DETACHABLE COVER WITH A SKID-RESISTANT SURFACE AND HAVE THE WORDS "CDOT TRAFFIC" OR "CDOT COMM" CAST INTO THE SURFACE. PAINTING THE WORDS SHALL NOT BE ACCEPTED. MARKINGS SHOWING THE TIER 22 RATING MUST BE LABELED OR STENCILED ON THE INSIDE AND OUTSIDE OF THE BOX AND ON THE UNDER SIDE OF THE COVER. THE COVER SHALL BE ATTACHED TO THE PULL BOX BODY BY MEANS OF A MINIMUM $\frac{3}{8}$ - 7 UNIFIED NATIONAL COURSE (UNC) STAINLESS STEEL PENTA HEAD BOLTS AND SHALL HAVE TWO LIFT SLOTS TO AID IN THE REMOVAL OF THE LID.
2. PULL SLOTS SHALL BE RATED FOR A MINIMUM PULL OUT OF 3,000 POUNDS.
3. TYPE 4 AND 5 PULL BOX COVERS SHALL BE A TWO-PIECE COVER.
4. MAGNESIUM CHLORIDE TESTS SHOULD BE PERFORMED IN ACCORDANCE WITH THE LATEST ANSI/SCTE 77 SPECIFICATION FOR UNDERGROUND ENCLOSURE INTEGRITY, TIER 22 RATING.
5. PULL BOXES SHALL HAVE A CONCRETE APRON SLOPED AWAY FROM PULL BOX OPENING. THE COST OF THE CONCRETE APRON SHALL BE PAID FOR AS PART OF THE PULL BOX ITEM.

TABLE OF DIMENSIONS (MINIMUMS)

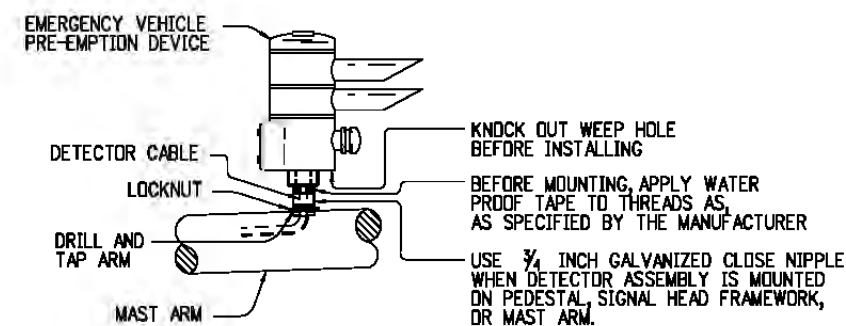
TYPE	DESCRIPTION	DIMENSIONS (IN.)							
		A	B	C	D	E	F	G	H
1	PULL BOX - (11" X 18" X 12")	18 $\frac{1}{8}$	11 $\frac{1}{4}$	1 $\frac{3}{4}$	20 $\frac{1}{4}$	13 $\frac{3}{8}$	12	15 $\frac{3}{4}$	8 $\frac{1}{8}$
2	PULL BOX - (13" X 24" X 12")	23 $\frac{1}{4}$	13 $\frac{3}{4}$	2	25	15 $\frac{1}{2}$	12	19 $\frac{1}{4}$	9 $\frac{3}{4}$
3	PULL BOX - (17" X 30" X 12")	30 $\frac{1}{2}$	17 $\frac{1}{2}$	2	32 $\frac{1}{4}$	19 $\frac{1}{4}$	12	26 $\frac{1}{2}$	13 $\frac{1}{2}$
4	PULL BOX - (24" X 36" X 24")	35 $\frac{5}{8}$	24	3	37 $\frac{5}{8}$	26	24	30 $\frac{1}{8}$	18 $\frac{1}{2}$
5	PULL BOX - (30" X 48" X 24")	47 $\frac{5}{8}$	30	3	49 $\frac{5}{8}$	32 $\frac{1}{8}$	24	45 $\frac{5}{8}$	28 $\frac{1}{8}$

STANDARD PULL BOXES

Computer File Information		Sheet Revisions			Colorado Department of Transportation 2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219	Traffic & Safety Engineering	MKB	TRAFFIC LOOP AND MISCELLANEOUS SIGNAL DETAILS		STANDARD PLAN NO.	
Creation Date: 07/14/12		Date:	Comments							S-614-43	
Created By: KEN										Standard Sheet No. 6 of 8	
Last Modification Date: 07/31/19											
Last Modified By: AVU											
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English								Issued By: Traffic & Safety Engineering Branch July 31, 2019		Project Sheet Number:	



ASTRO-TYPE MOUNTING BRACKET




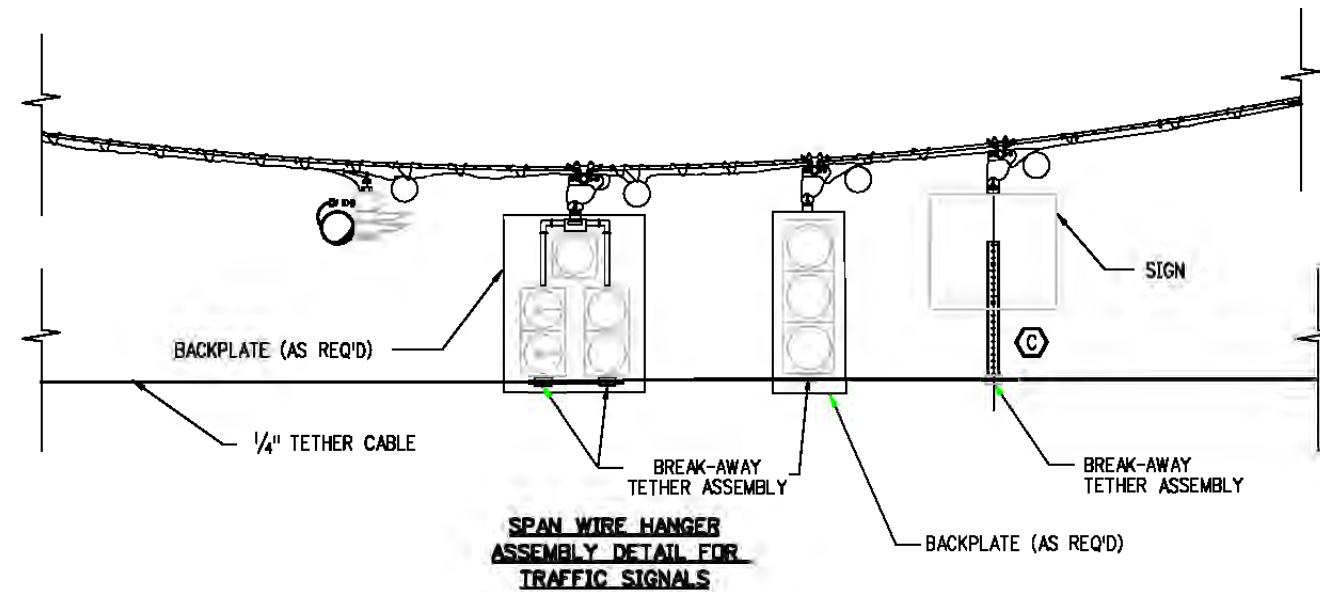
**EMERGENCY VEHICLE PRE-EMPTION DEVICE
MOUNTING DETAIL**

NOTES

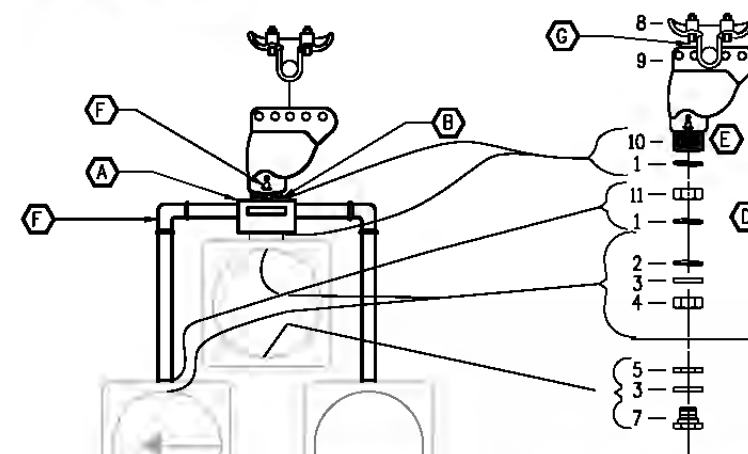
1. SIGNAL HEAD CONFIGURATIONS SHALL BE AS SHOWN ON PLANS.
2. INSTALL MOUNTING BRACKETS ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
3. USE ASTRO-TYPE MOUNTING BRACKETS FOR MOUNTING EXCEPT FOR LIGHTED SIGNS, ON MAST ARMS, SEE STANDARD PLAN 5-614-20, USING 3/4 INCH WIDE BANDING.
4. LIGHTED STREET NAME SIGNS SHALL UTILIZE ASTRO-TYPE DESIGNED FOR THE REQUIRED DESIGN LOADING AND BE FREE-SWINGING TO REDUCE WIND LOADING EFFECT.
5. THE GASKET INSIDE THE TOP HEAD MOUNT SHOULD BE INSIDE THE HEAD.
6. THE INSIDE OF THE VISOR IS TO BE POWDER COATED BLACK MOUNTING BRACKETS OVERHEAD SIGNS.
7. CABLE SUPPORT BRACKET AND SAFETY CABLE FROM MAST ARM TO HEAD SHALL BE PROVIDED.

MAST-ARM MOUNTING BRACKETS

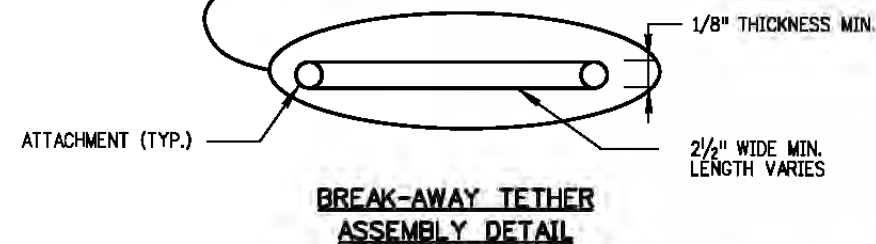
Computer File Information		0000	Sheet Revisions		Colorodo Department of Transportotion		TRAFFIC LOOP AND MISCELLANEOUS SIGNAL DETAILS		STANDARD PLAN NO.	
Creation Date: 07/14/12			Date:	Comments	<div><div></div><div>2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219</div></div> <div>Troffic & Sosity Engineering</div> <div>MKB</div>		S-614-43			
Created By: KEN							Standard Sheet No. 7 of 8			
Last Modification Date: 07/31/19										
Last Modified By: AVU										
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English							Issued By: Traffic & Safety Engineering Branch July 31, 2019		Project Sheet Number:	



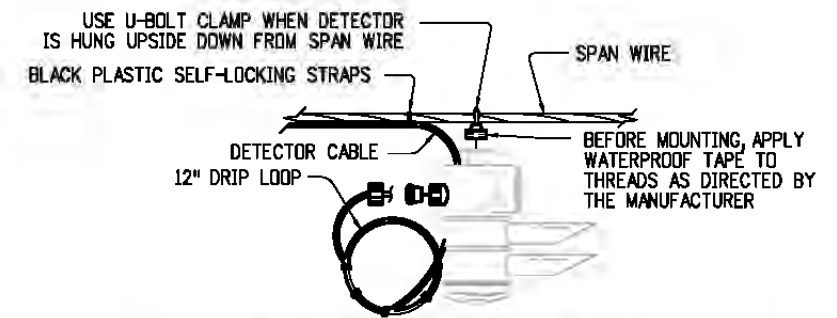
**SPAN WIRE HANGER
ASSEMBLY DETAIL FOR
TRAFFIC SIGNALS**



DIRECT ASSEMBLY DETAIL



**BREAK-AWAY TETHER
ASSEMBLY DETAIL**



**SPAN WIRE MOUNTING DETAIL
FOR EMERGENCY VEHICLE PRE-EMPTION DEVICE**


LEGEND

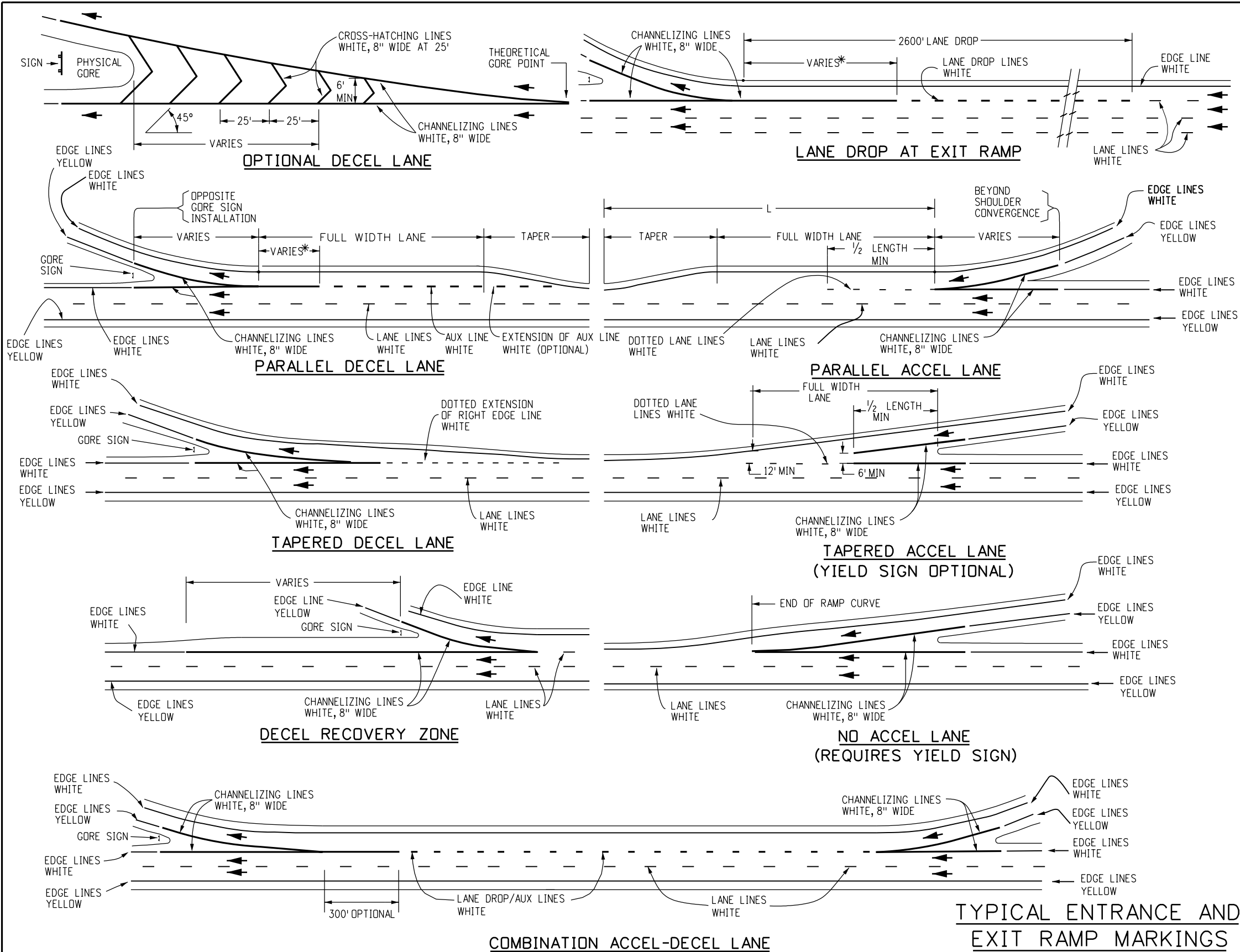
- (A) TOP BRACKET CENTER HUB SHALL BE MINIMUM 3.5 INCH SQUARE AND 3 INCHES DEEP OR EQUAL VOLUME. SERRATION CAST IN HUB, TABBED OR SERRATED LOCKRING, OPENINGS SHALL BE THREADED.
- (B) NIPPLE LENGTH DEPENDS ON SPAN HEIGHT.
- (C) SIGN SUPPORT BRACKET ASSEMBLY SHALL UTILIZE SPAN WIRE CLAMP ADJUSTMENT AND BE ADJUSTABLE TO ACCOMMODATE VARYING SPAN HEIGHT. TETHER SUPPORT BAR SHALL BE ATTACHED TO THE SIGN USING A MINIMUM OF TWO (2), 5/16 INCH BOLTS, SPACED A MINIMUM OF 6 INCHES APART.
- (D) APPLY SILICONE CAULK BETWEEN OR AROUND SERRATED LOCKRING AND HOUSING.
- (E) ALL THREAD
- (F) SETSCREW (SQUARE OR ALLEN) ON ALL FITTINGS.
- (G) INSTALL STAINLESS STEEL WASHER ON THE INSIDE OF THE COTTER PIN. COTTER PIN AND WASHER SHALL BE ON THE SIDE OF THE HANGER AWAY FROM THE SIGNAL CABLES.

ITEM DESCRIPTION FOR ASSEMBLY DETAIL

- 1 - SERRATED TABBED LOCKRING, ALUMINUM (TAB MUST BE FULL WIDTH OF RING)
- 2 - GASKET, NEOPRENE
- 3 - WASHER, STEEL
- 4 - HEX NUT, STEEL
- 5 - CONDUIT LOCKNUT, STEEL
- 6 - BUSHING PLASTIC (ONLY IN JUNCTION BOX OR NIPPLED DOWN TRAFFIC SIGNAL)
- 7 - OCTAGONAL CAP, ALUMINUM
- 8 - SPAN WIRE CLAMP
- 9 - WIRE OUTLET BODY, STEEL, FEMALE ONLY
- 10 - NIPPLE, STEEL
- 11 - HEX NUT, STEEL, NOTCHED WITH SETSCREWS

SPAN WIRE MOUNTING BRACKET DETAILS

Computer File Information		000000	Sheet Revisions		Colorado Department of Transportation  2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219 Traffic & Safety Engineering MKB	TRAFFIC LOOP AND MISCELLANEOUS SIGNAL DETAILS		STANDARD PLAN NO.	
Creation Date: 07/14/12			Date:	Comments		S-614-43		Standard Sheet No. 8 of 8	
Created By: KEN									
Last Modification Date:									
Last Modified By:									
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English								Issued By: Traffic & Safety Engineering Branch July 31, 2019	



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. THESE LINES SEPARATE ADJACENT-SAME DIRECTION TRAFFIC LANES.
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. DOTTED LANE LINES
BROKEN WHITE, 4 OR 6 INCHES WIDE-3 FEET SEGMENTS WITH 12 FEET GAPS. LINE WIDTH SHALL MATCH THE ADJACENT LANE LINE. THE WIDTH SHOULD MATCH THAT OF THE LINE IT IS EXTENDING.
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)

TYPICAL ENTRANCE AND EXIT RAMP MARKINGS

Computer File Information		Sheet Revisions		Colorado Department of Transportation <div><div>2829 W. Howard Pl. Denver, CO 80204 Phone: 303-512-5102 FAX: 303-757-9219</div></div> Traffic & Safety Engineering EB	PAVEMENT MARKINGS	STANDARD PLAN NO.	
Creation Date: 07/04/12		Date:	Comments			S-627-1	
Created By: SCL	<div>R-3</div>	07/22/22	PARALLEL DECEL LANE AND NOTES UPDATE			Standard Sheet No. 1 of 9	
Last Modification Date: 07/22/22	<div>R-2</div>	02/16/21	LINE TYPE UPDATE FOR PARALLEL DECEL LANE ADDED NOTE TEMPORARY PAVEMENT MARKING			Project Sheet Number:	
Last Modified By: EButta	<div></div>				Issued By: Traffic & Safety Engineering Branch July 31, 2019		
CAD Ver.: MicroStation V8	Scale: Not to Scale	Units: English	<div>R-1</div>	04/17/20	LINE WIDTH UPDATE		

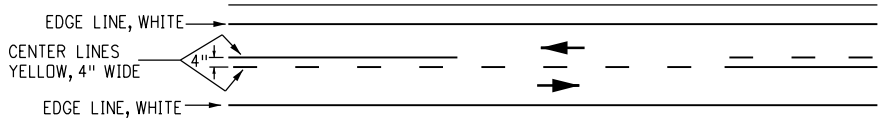
GENERAL NOTES

(CONTINUED FROM SHEET NO. 1)

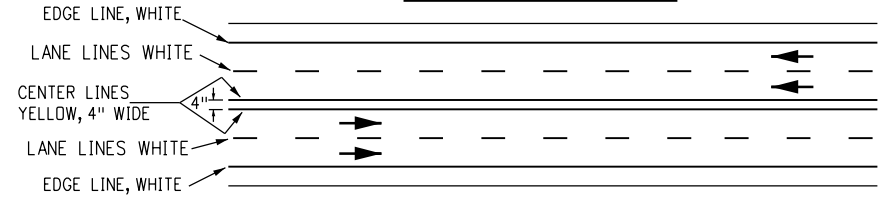
10. CROSS-HATCHING LINES
- a. SOLID WHITE OR YELLOW, 8 INCHES WIDE-45 DEGREE DIAGONAL, SPACED AT 25 FEET INTERVALS. THESE LINES ARE OPTIONAL AND MAY BE PLACED AT LOCATIONS INDICATED ON THE PLANS OR DETERMINED BY THE ENGINEER. YELLOW SHALL BE USED FOR PAINTED MEDIANS OR PAVEMENT WIDTH TRANSITIONS ONLY.
- 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. 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.
14. 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.
15. 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, $L= \frac{WS^2}{60}$
16. 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.
17. SPEED MEASURING MARKING
- SOLID WHITE, 24 INCHES EXTEND 4 FEET FROM OUTSIDE OF EDGE LINES ON SHOULDERS.
18. ALL SPACING IS DETERMINED CENTER ON CENTER EXCEPT FOR DOUBLE LINES.
- NOTE:**
D = THE DISTANCE FROM THE LANE ENDS SIGN (W4-2) TO THE BEGINNING OF THE MERGING TAPER. FOR MORE INFORMATION ON THE "D" VALUE REGARDING SIGN AND PAVEMENT MARKING PLACEMENT, SEE THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", TABLE 2C-4, CONDITION A: SPEED REDUCTION AND LANE CHANGING IN HEAVY TRAFFIC AND FOOTNOTE 2 REGARDING TYPICAL CONDITIONS.

LEGEND

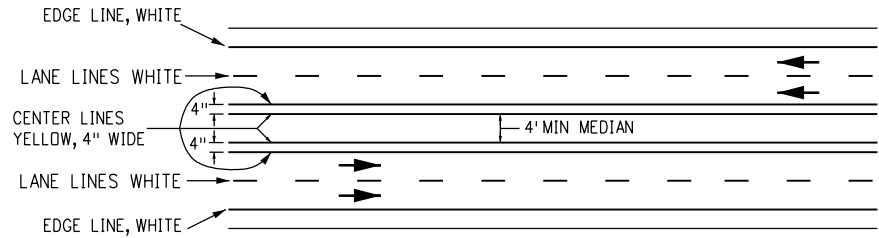
→ Direction of Travel



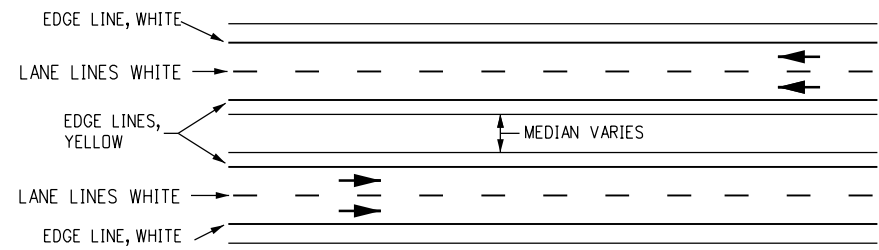
TWO LANE HIGHWAY



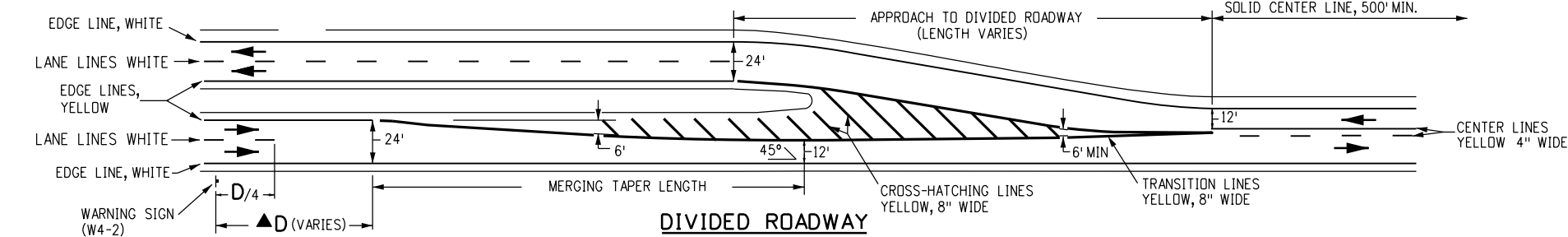
FOUR LANE UNDIVIDED HIGHWAY



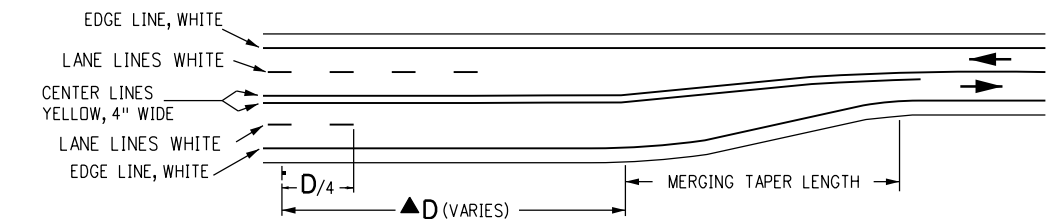
FOUR LANE PAINT DIVIDED HIGHWAY



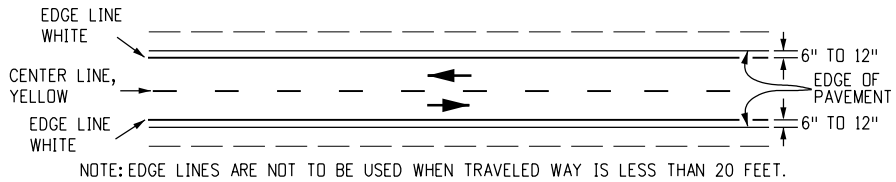
FOUR LANE DIVIDED HIGHWAY



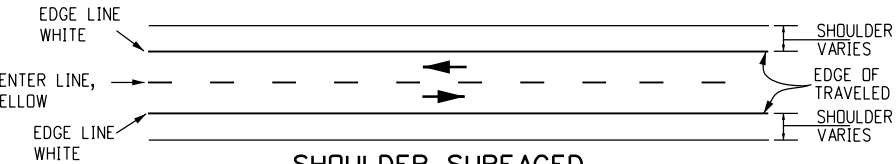
DIVIDED ROADWAY



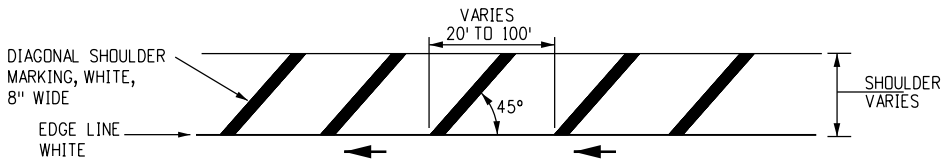
UNDIVIDED ROADWAY - CASE 1



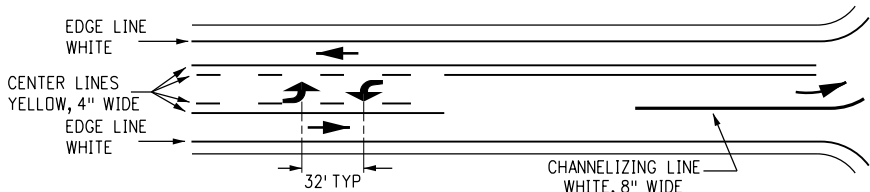
NO SHOULDER OR UNSURFACED SHOULDER



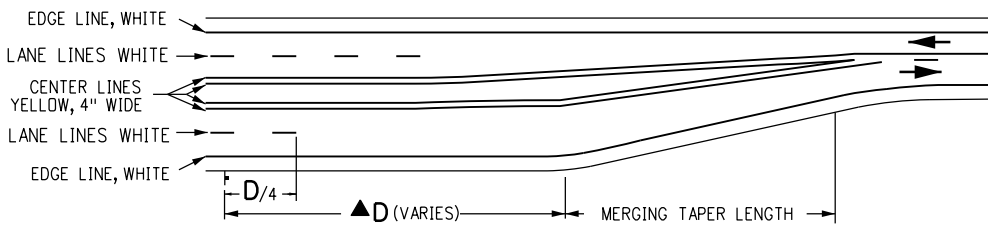
SHOULDER SURFACED



EDGE LINE WITH OPTIONAL DIAGONAL SHOULDER MARKING



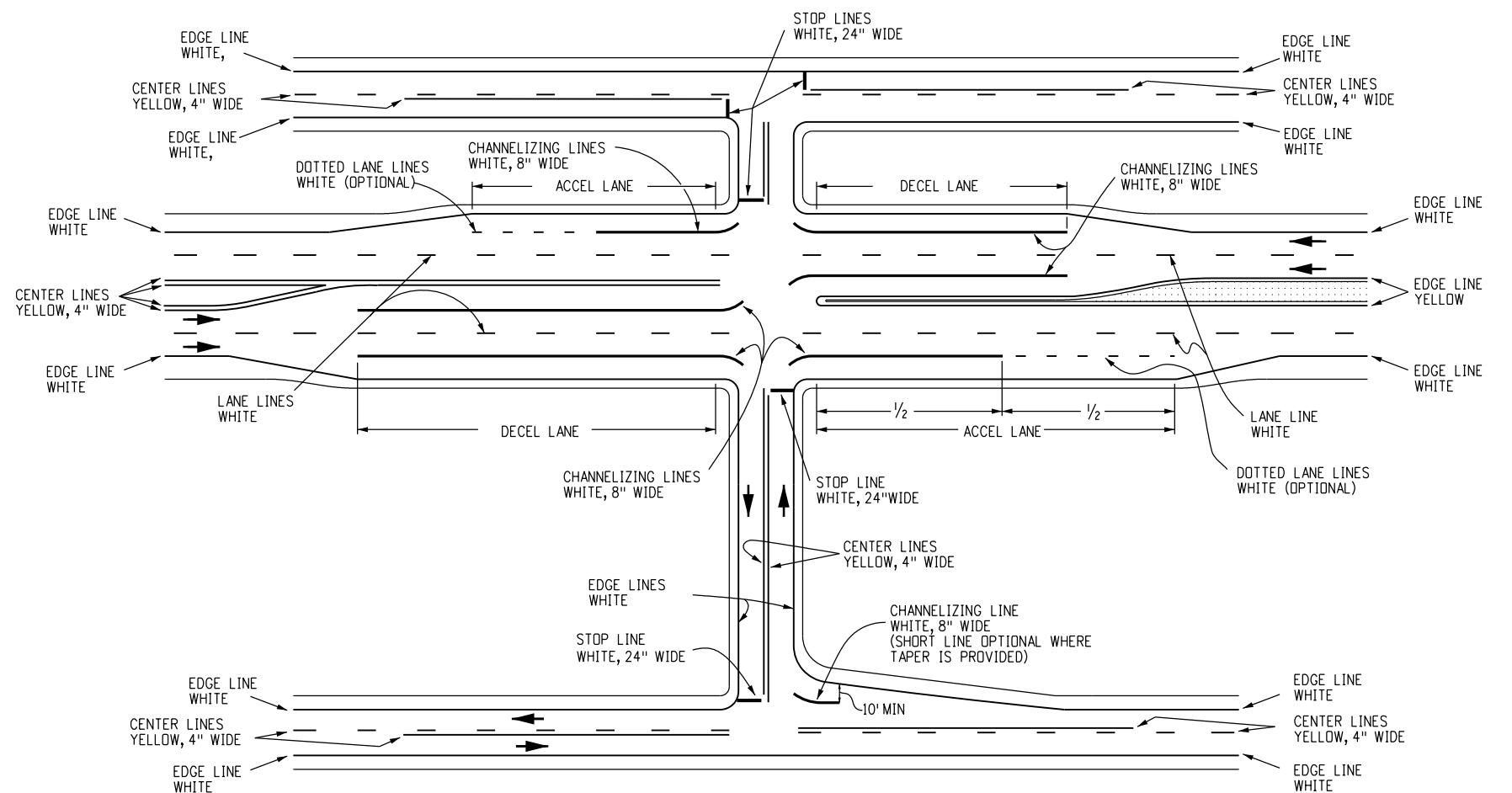
TYPICAL TWO WAY LEFT TURN LANE



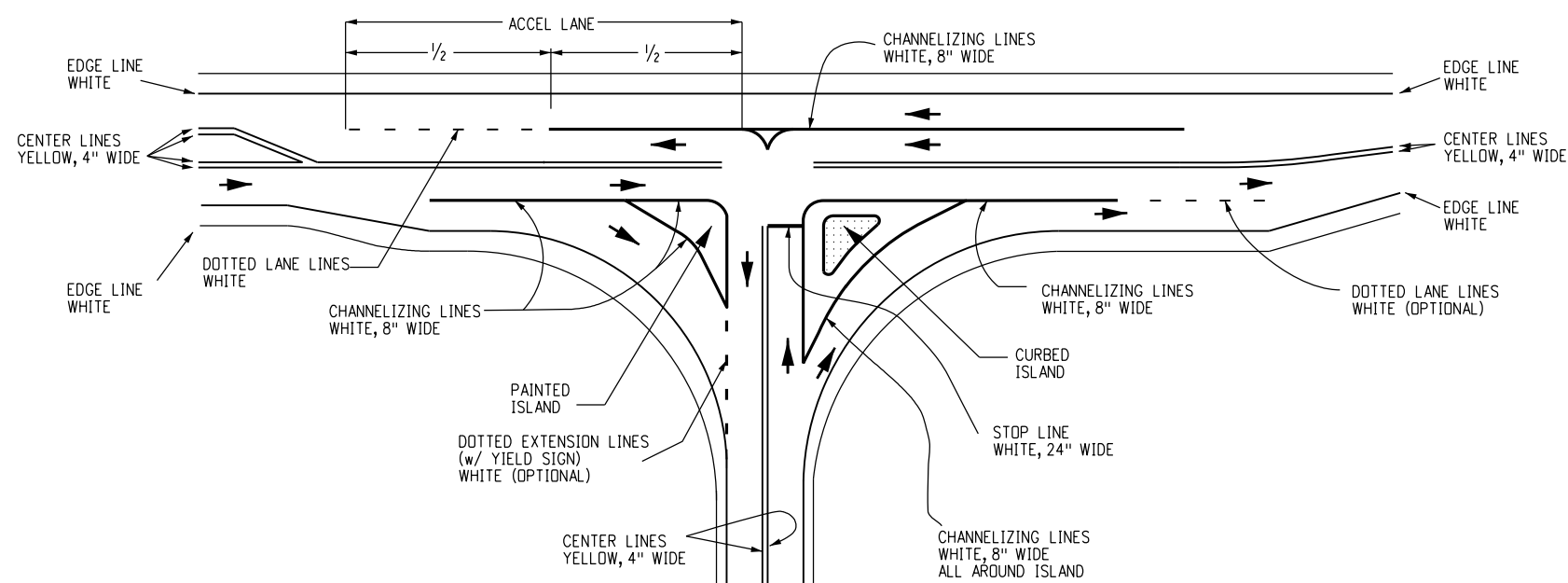
UNDIVIDED ROADWAY - CASE 2

TYPICAL PAVEMENT WIDTH TRANSITION MARKINGS

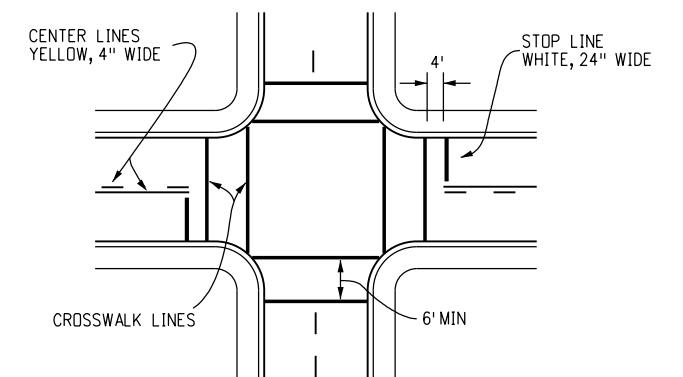
Computer File Information		<div><div></div><div></div><div></div><div></div><div></div></div>	Sheet Revisions		<div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div>Colorado Department of Transportation</div><div>2829 W. Howard Pl. Denver, CO 80204 Phone: 303-512-5102 FAX: 303-757-9219</div><div>Traffic & Safety Engineering</div><div>EB</div></div>	PAVEMENT MARKINGS	STANDARD PLAN NO.
Creation Date: 07/04/12			Date:	Comments			S-627-1
Created By: KEN	(R-2)		07/22/22	GENERAL NOTES UPDATE			Standard Sheet No. 2 of 9
Last Modification Date: 07/22/22	(R-2)		02/16/21	UPDATE GENERAL NOTE NUMBER		Issued By: Traffic & Safety Engineering Branch July 31, 2019	
Last Modified By: EButta	(R-1)		04/17/20	LINE WIDTH UPDATE.			Project Sheet Number:
CAD Ver.:MicroStation V8 Scale:Not to Scale Units: English							



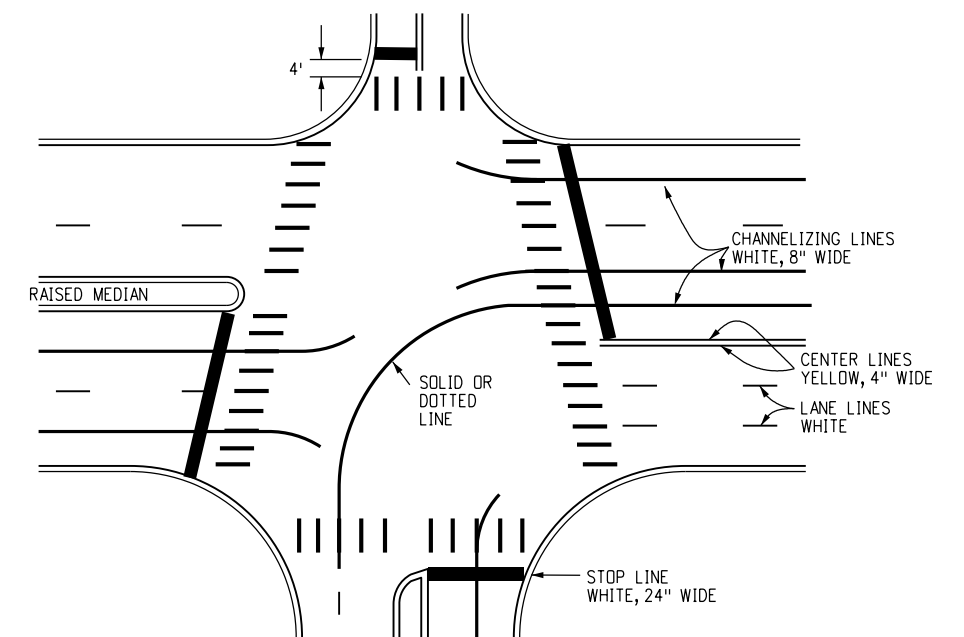
TYPICAL INTERSECTION MARKINGS



TYPICAL ISLAND MARKINGS

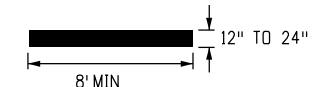


TYPICAL TRANSVERSE LINE CROSSWALK MARKINGS



TYPICAL CONTINENTAL CROSSWALK MARKINGS

CROSSWALK LINE DETAIL



LEGEND

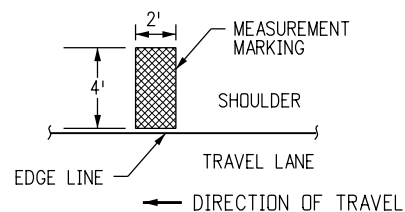
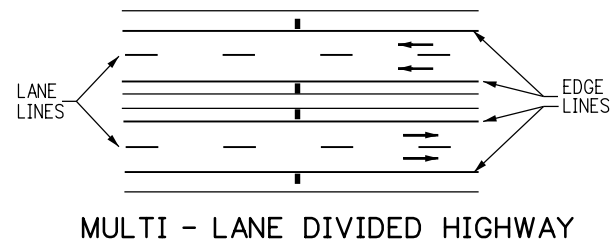
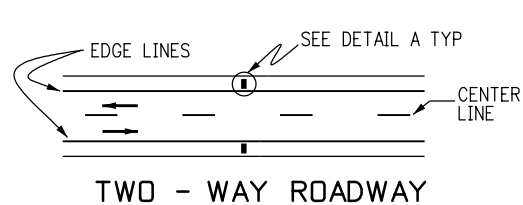
→ Direction of Travel

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.

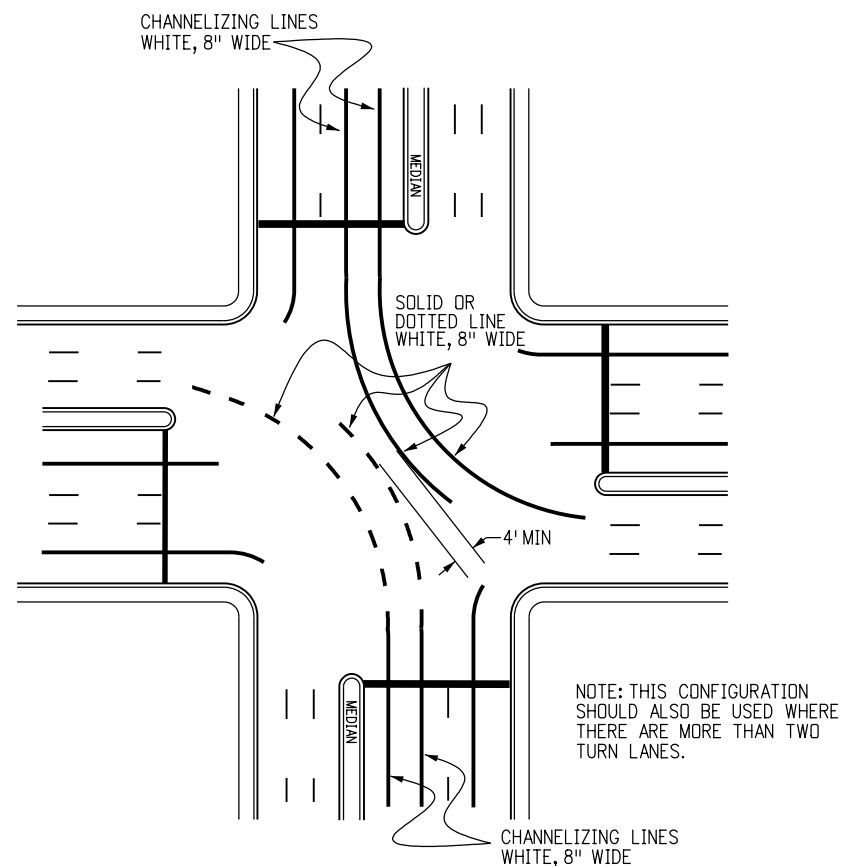
INTERSECTIONS, ISLANDS AND CROSSWALKS

Computer File Information		Sheet Revisions		<div> <div>Colorado Department of Transportation</div> <div> </div> <div> 2829 W. Howard Pl. Denver, CO 80204 Phone: 303-512-5102 FAX: 303-757-9219 </div> </div>	<div> <div>PAVEMENT MARKINGS</div> </div>	STANDARD PLAN NO.
Creation Date: 07/04/12		Date:	Comments			S-627-1
Created By: JSW	(R-3)	07/22/22	Changed Accel Lane Lines To Dotted Lane Lines	<div> <div>Traffic & Safety Engineering</div> <div>EB</div> </div>	<div> Issued By: Traffic & Safety Engineering Branch July 31, 2019 </div>	<div> Standard Sheet No. 3 of 9 </div>
Last Modification Date: 07/22/22	(R-2)	02/16/21	ADDED DEC TAPER TO TYPICAL ISLAND MARKINGS			
Last Modified By: EButta	(R-1)	04/17/20	LINE WIDTH & CROSSWALK NOTES UPDATE			
CAD Ver.: MicroStation V8						Project Sheet Number:

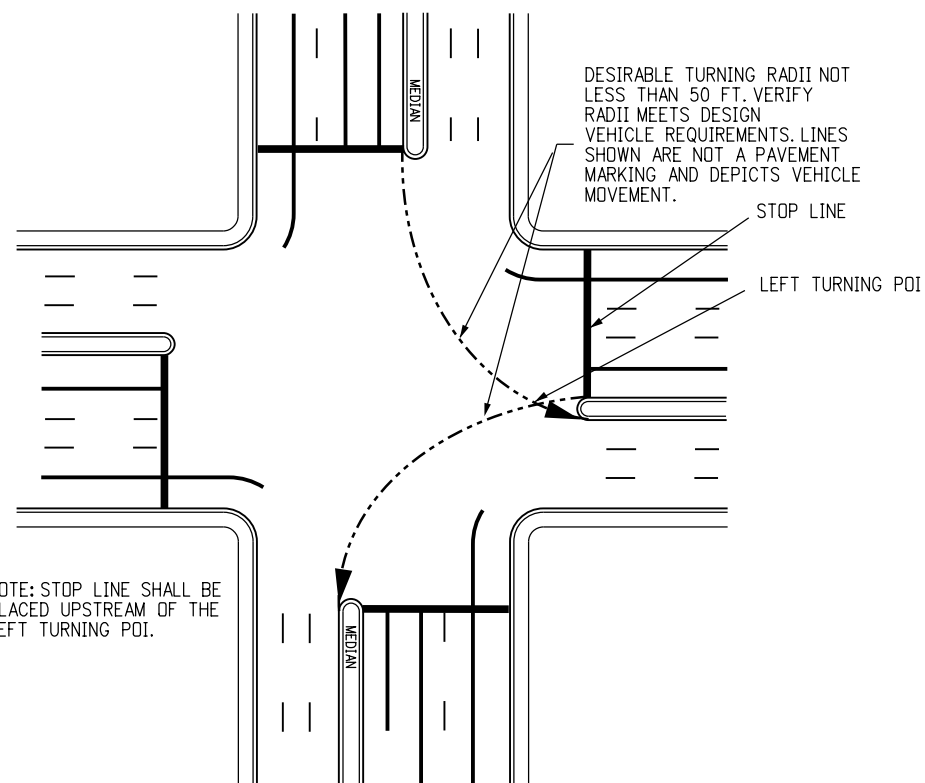


DETAIL A

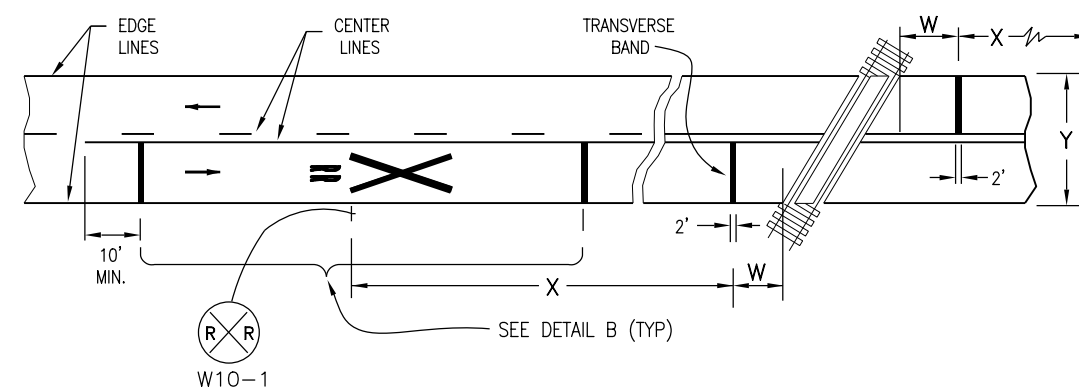
TYPICAL SPEED MEASUREMENT MARKING



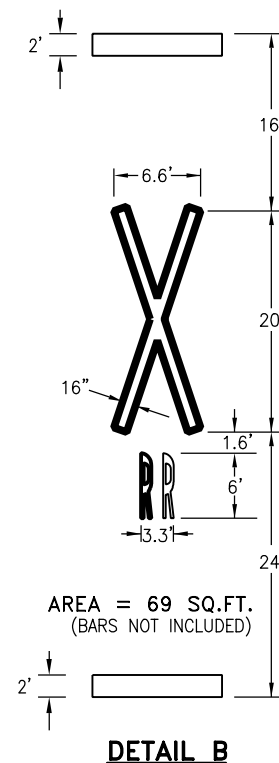
TYPICAL DOUBLE LEFT TURN MARKINGS



TYPICAL STOP LINE PLACEMENT



TYPICAL PAVEMENT MARKING AT RAILROAD CROSSING



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.

Computer File Information

Creation Date: 07/04/12
Created By: SCL
Last Modification Date: 07/24/19
Last Modified By: EButta
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English

Sheet Revisions

Date:	Comments

Colorado Department of Transportation



2829 W. Howard Pl.
Denver, CO 80204
Phone: 303-757-9436
FAX: 303-757-9219

Traffic & Safety Engineering

MKB

PAVEMENT MARKINGS

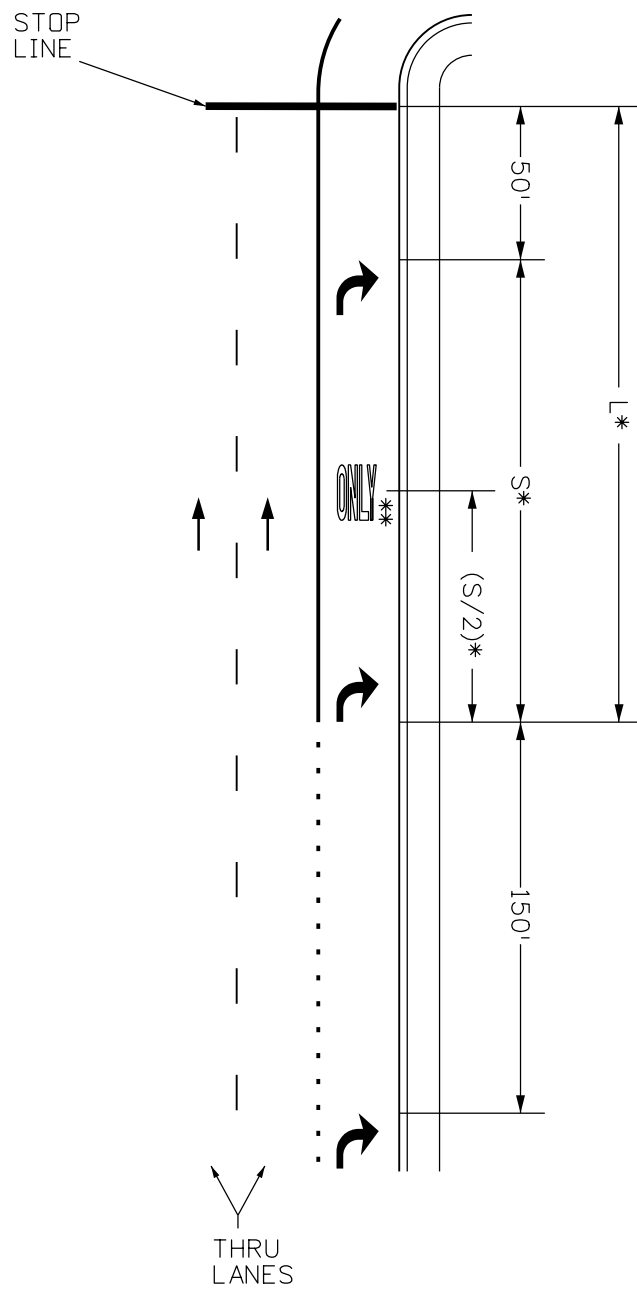
Issued By: Traffic & Safety Engineering Branch July 31, 2019

STANDARD PLAN NO.

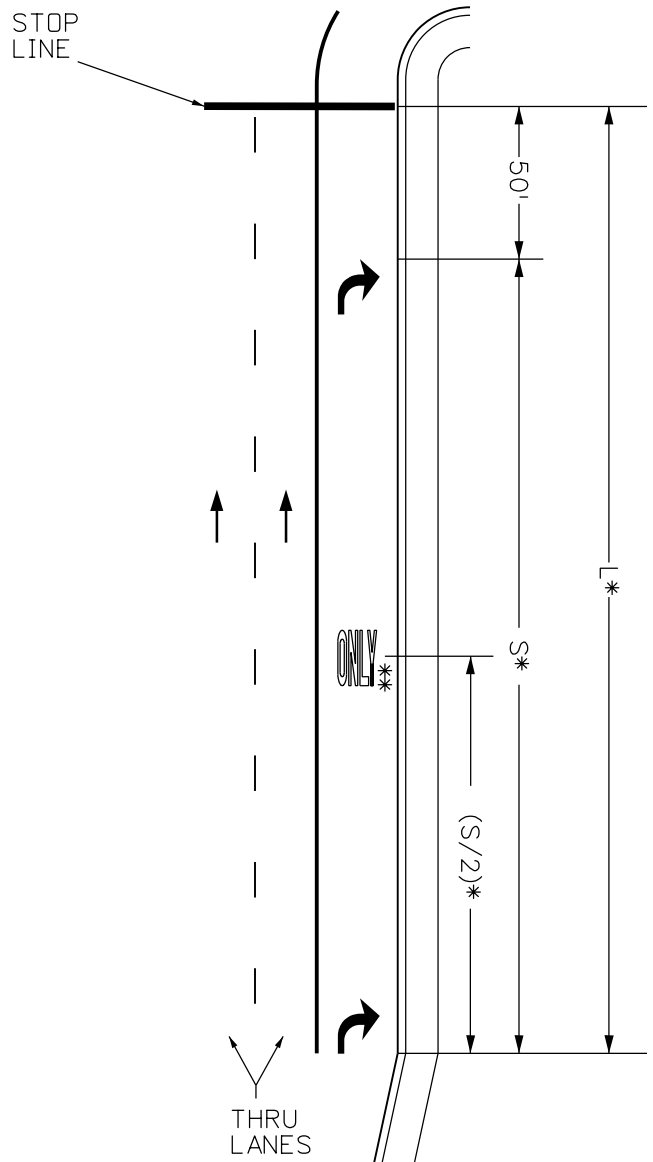
S-627-1

Standard Sheet No. 4 of 9

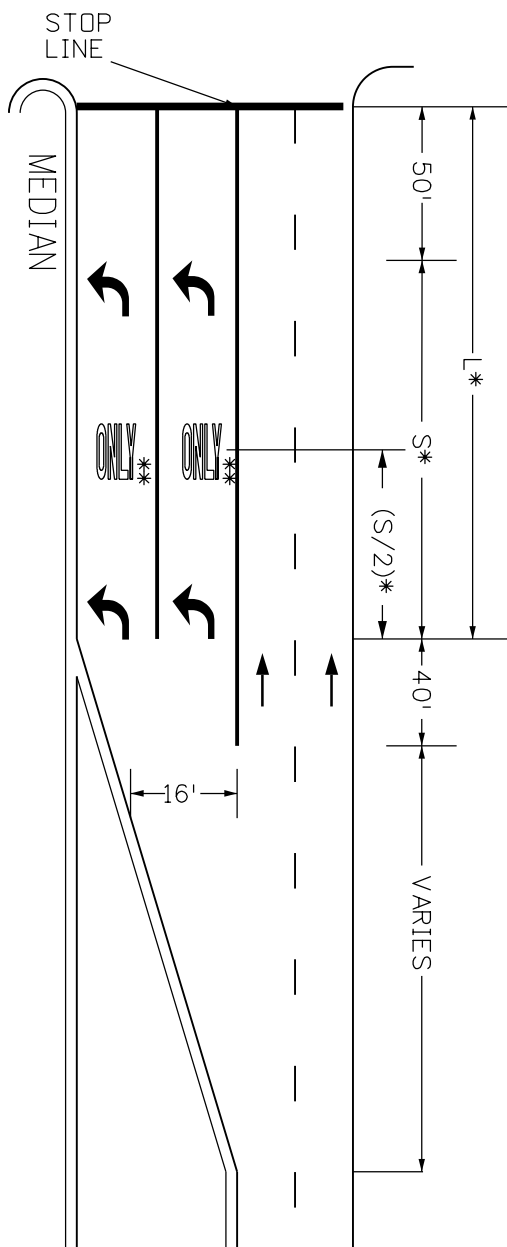
Project Sheet Number:



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

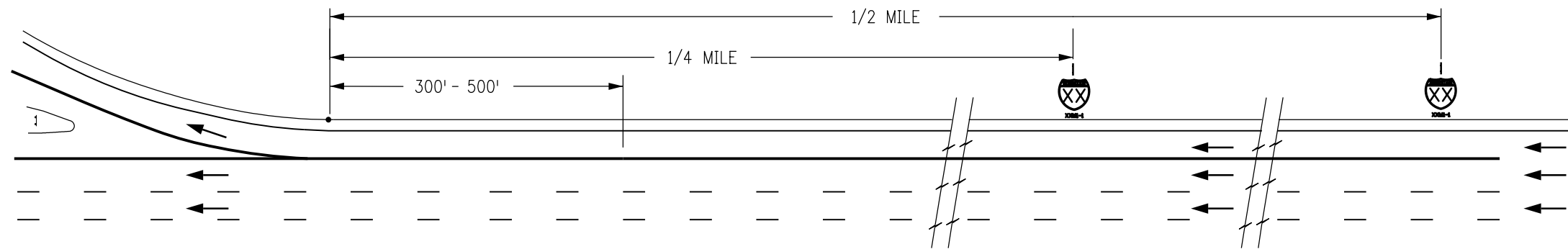
*L (LENGTH) AND *S (SPACING) PROVIDED IN THE TABLE ABOVE WILL HELP DETERMINE THE NUMBER OF ARROWS AND ONLY MARKINGS NEEDED PER LANE.

LEGEND

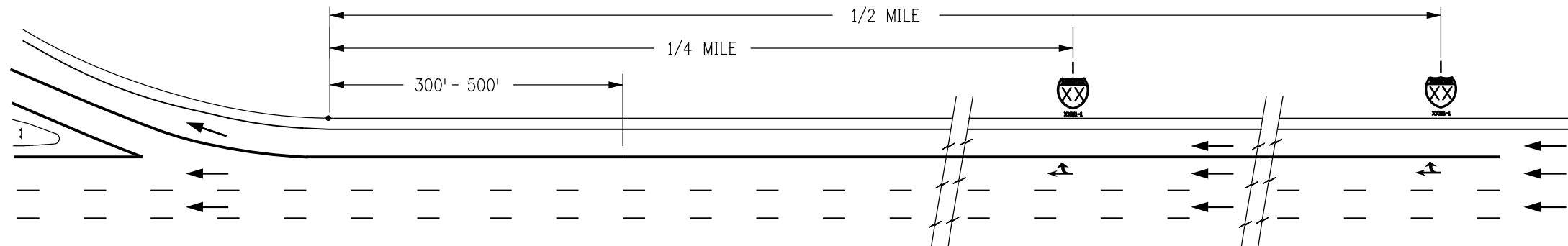
→ Direction of Travel

ARROW PLACEMENTS AT INTERSECTIONS

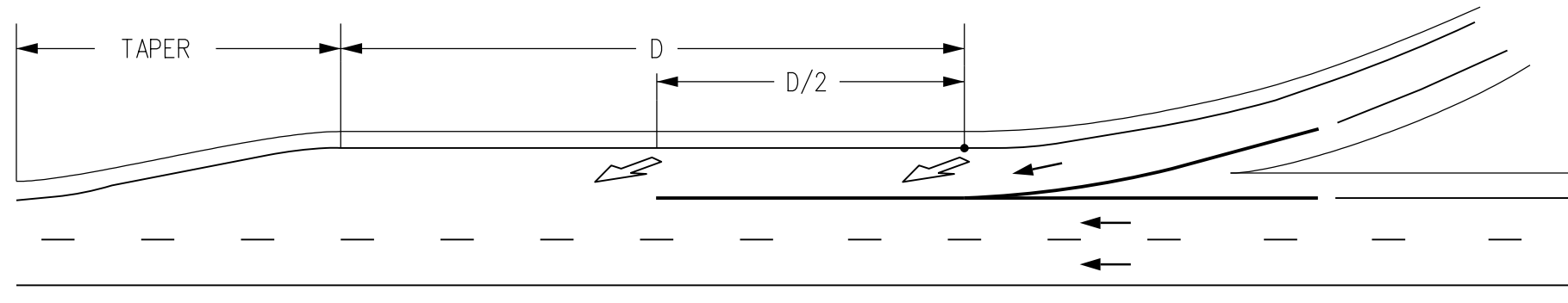
Computer File Information		Sheet Revisions		 Colorado Department of Transportation 2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219 Traffic & Safety Engineering MKB	PAVEMENT MARKINGS	STANDARD PLAN NO.	
Creation Date: 02/08/17	0000	Date:	Comments			S-627-1	
Created By: MBhat						Standard Sheet No. 5 of 9	
Last Modification Date: 05/14/19						Project Sheet Number:	
Last Modified By: EButta							
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English					Issued By: Traffic & Safety Engineering Branch July 31, 2019		



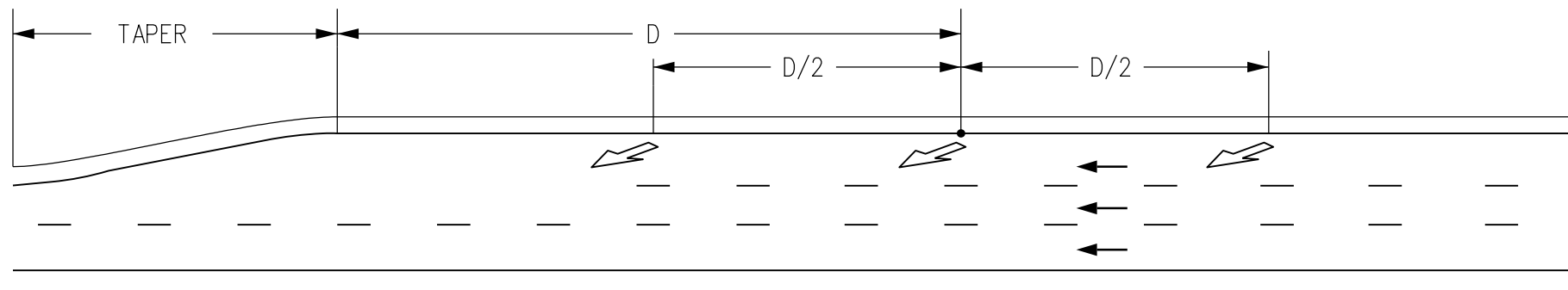
TYPICAL SHIELD PLACEMENT



TYPICAL SHIELD & OPTION ARROW PAVEMENT MARKING PLACEMENT



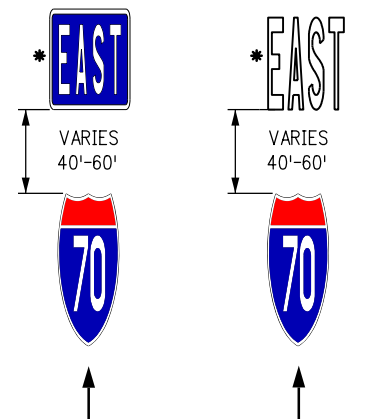
TRANSITION LANE MARKINGS



THRU LANE REDUCTION MARKINGS

LANE REDUCTION TRANSITION MARKINGS

SHIELD LAYOUT DETAIL



NOTES

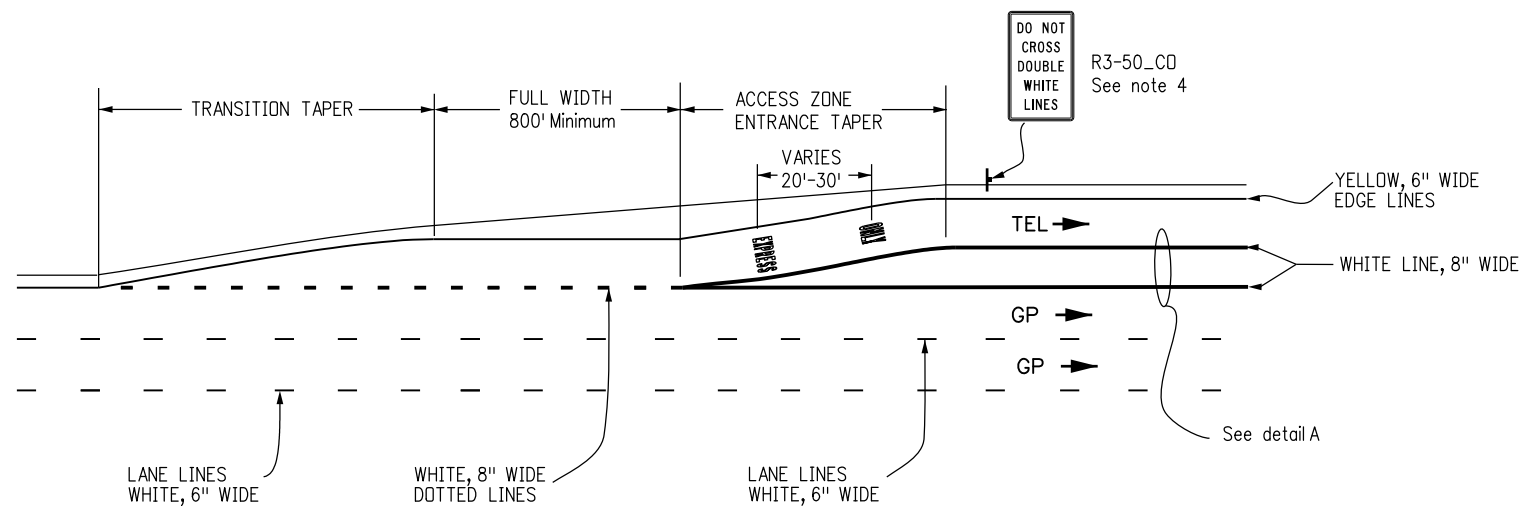
D = THE DISTANCE FROM THE PAVEMENT WIDTH TRANSITION SIGN (W4-2) TO THE BEGINNING OF THE TRANSITION TAPER.

* SEE GENERAL NOTE 2 ON SHEET 9.

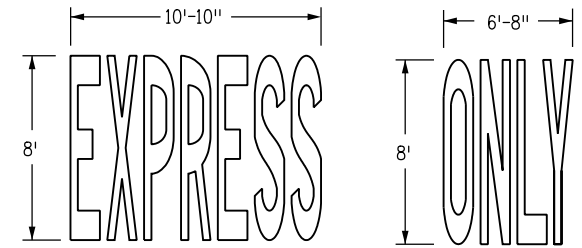
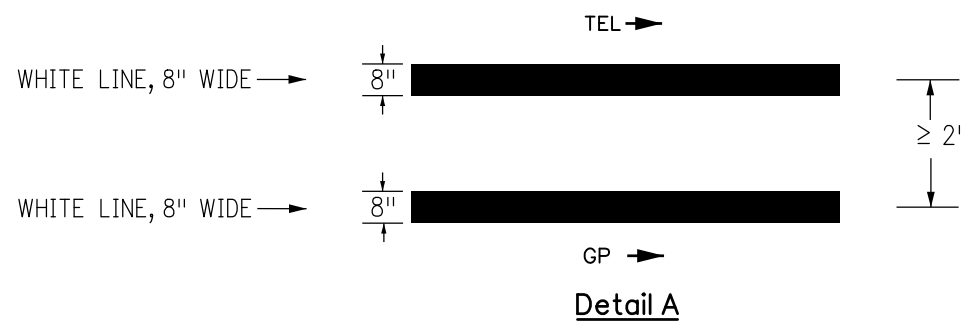
LEGEND

← Direction of Travel

Computer File Information		<div><div>R-1</div><div>0000</div></div>	Sheet Revisions		Colorado Department of Transportation		PAVEMENT MARKINGS		STANDARD PLAN NO.	
Creation Date: 02/08/17			Date:	Comments	<div><div></div><div>2829 W. Howard Pl. Denver, CO 80204 Phone: 303-512-5102 FAX: 303-757-9219</div></div> <div>Traffic & Safety Engineering</div> <div>EB</div>			S-627-1		
Created By: MBhat			07/22/22	Lane Drop to Thru Lane Reduction Markings				Standard Sheet No. 6 of 9		
Last Modification Date: 07/22/22										
Last Modified By: EButta										
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English								Issued By: Traffic & Safety Engineering Branch July 31, 2019		
					Project Sheet Number:					




TYPICAL ENTRANCE MARKING FOR BUFFER
WIDTH ≥2' AND WHERE BUFFER CROSSING IS PROHIBITED

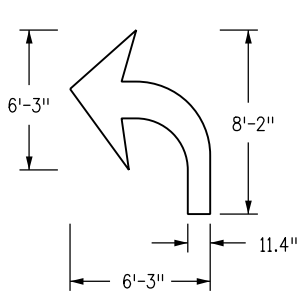


GENERAL NOTES

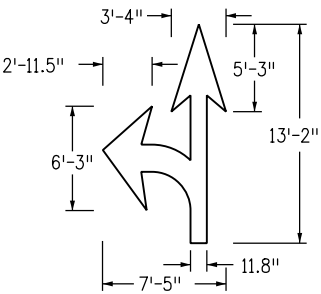
- For transition taper use 25:1 ratio.
- For access zone entrance taper length use:
 $L = S \times W$
 L = MINIMUM LENGTH OF TAPER
 S = DESIGN SPEED FOR NEW CONSTRUCTION OR NUMERICAL VALUE OF THE POSTED SPEED LIMIT
 W = WIDTH TRANSITIONED
- If buffer space is wider than 4 feet, chevron markings are required (See MUCTD Section 3B.24 and figure 3D.2(A)).
- For each section prohibiting entering and exiting movements, the R3-50_CD sign shall be installed within 300 feet of the start of the express lane. Additional R3-50_CD signing shall be installed as shown in the plans.
- 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.
- EXPRESS ONLY markings should supplement the signs.

TOLL EXPRESS LANE PAVEMENT MARKINGS

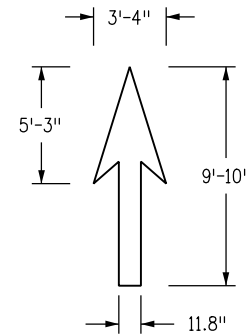
Computer File Information		<div>(R-1)</div> <div></div> <div></div> <div></div>	Sheet Revisions		<div>Colorado Department of Transportation</div> <div><div></div><div>2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219</div><div>Traffic & Safety Engineering</div><div>MKB</div></div>	PAVEMENT MARKINGS	STANDARD PLAN NO.	
Creation Date: 07/31/19	Date:		Comments	S-627-1				
Created By: EButta	04/17/20		STRIPING LAYOUT & GENERAL NOTE UPDATE	Standard Sheet No. 7 of 9				
Last Modification Date: 04/17/20				Project Sheet Number:				
Last Modified By: EButta				Issued By: Traffic & Safety Engineering Branch July 31, 2019				
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English								



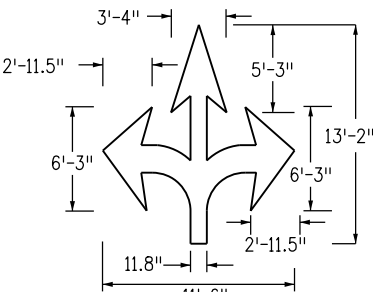
AREA = 16.1 SQ.FT.



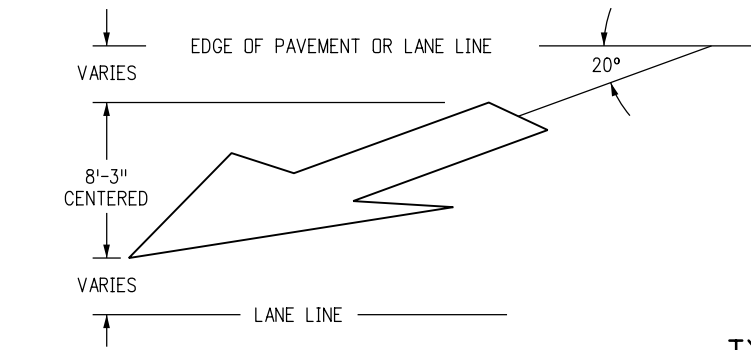
AREA = 27.5 SQ.FT.



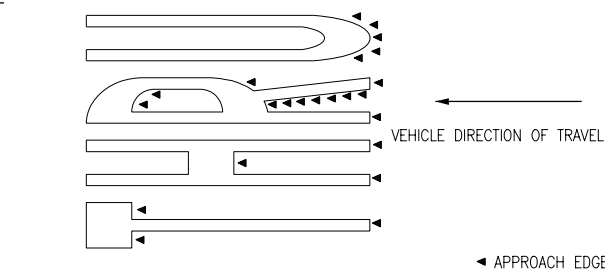
AREA = 12.1 SQ.FT.



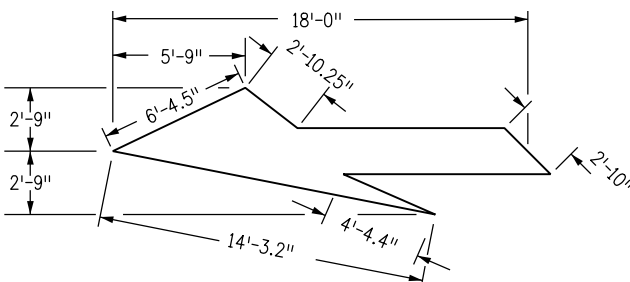
AREA = 39.8 SQ.FT.



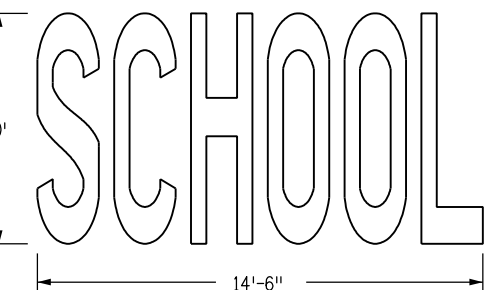
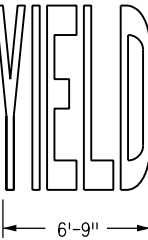
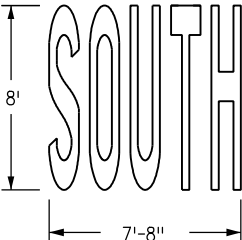
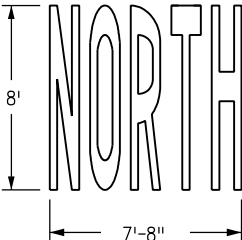
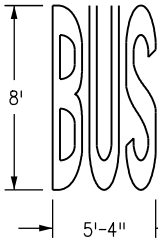
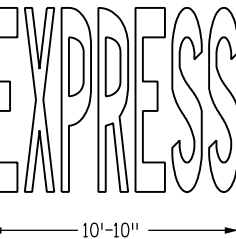
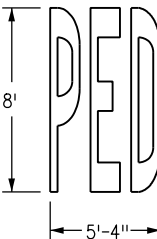
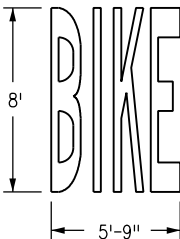
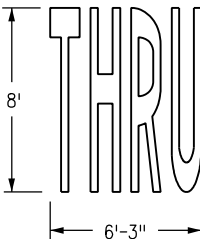
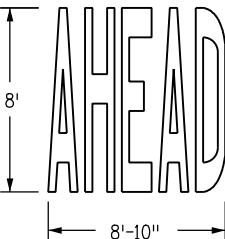
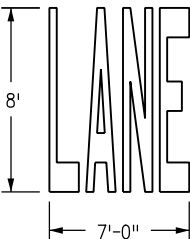
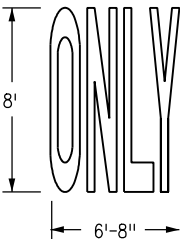
TYPICAL APPROACH EDGE TAPERING VIEW



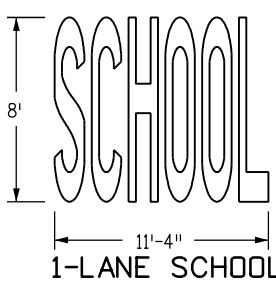
TYPICAL APPROACH EDGE TAPERING PROFILE VIEW



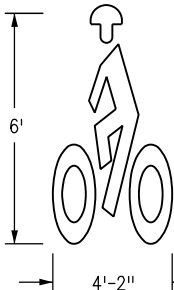
AREA = 58 SQ.FT.



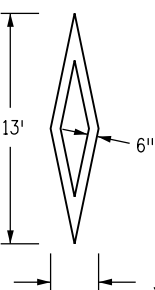
STROKE = 8"
2-LANE SCHOOL



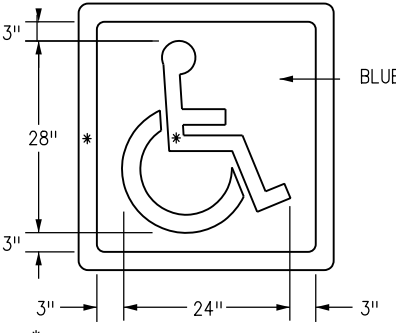
1-LANE SCHOOL



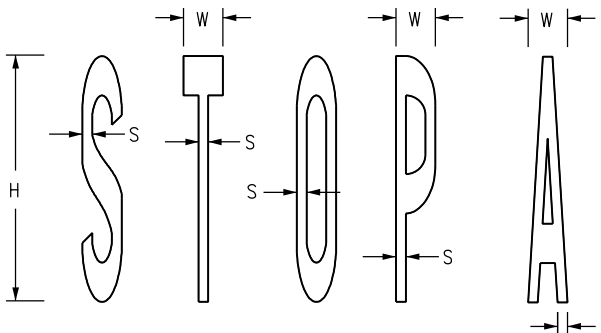
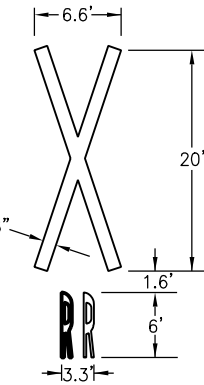
AREA = 11.9 SQ.FT.



AREA = 10 SQ.FT.



* WHITE 3" STROKE WIDTH (BORDER MAY BE 4" STROKE WIDTH)



H = HEIGHT
W = WIDTH

H = 8'
W = 1'-3.4" TO 1'-4"

H = 4'
W = XX TO XX

TYPICAL LETTER MEASUREMENTS

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.

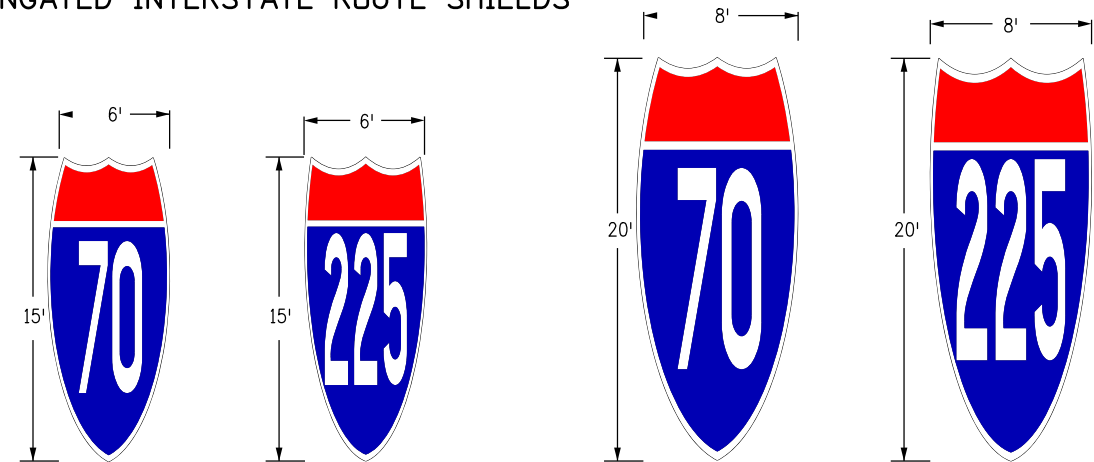
H = 8' WORDS

- 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.

PAVEMENT MARKING WORDS AND SYMBOLS

Computer File Information		<div>0000</div>	Sheet Revisions		<div>Colorado Department of Transportation</div> <div><div></div><div>2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219</div></div> <div>Traffic & Safety Engineering</div> <div>MKB</div>	<div>PAVEMENT MARKINGS</div>	STANDARD PLAN NO.	
Creation Date: 07/04/12	Date:		Comments	S-627-1				
Created By: SCL				Standard Sheet No. 8 of 9				
Last Modification Date: 07/31/19				Project Sheet Number:				
Last Modified By: EButta								
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English								

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.

GENERAL 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.

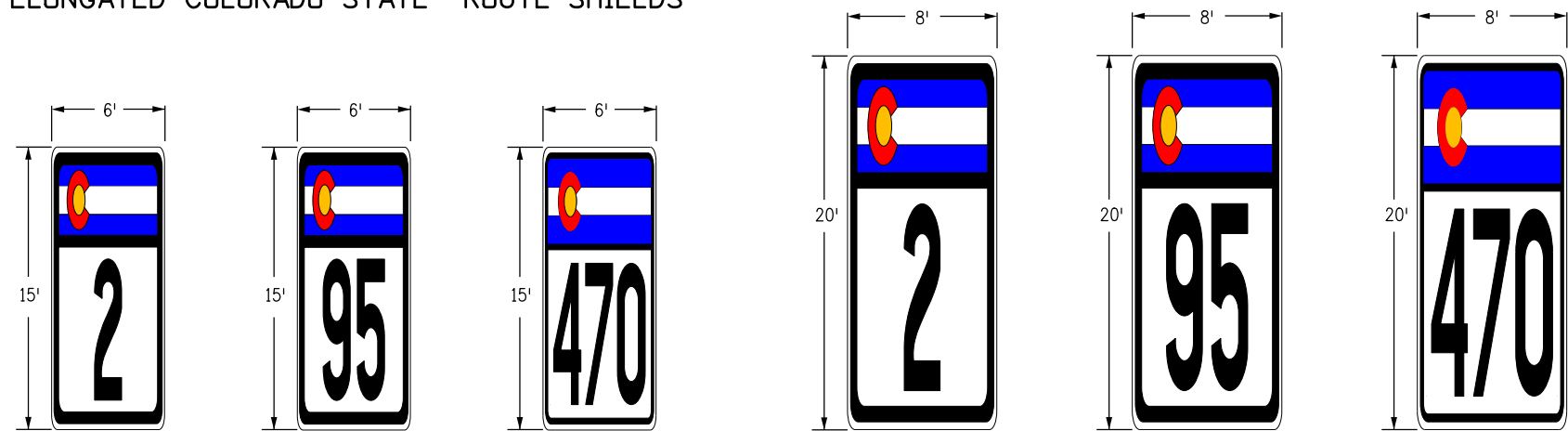
2. CARDINAL DIRECTIONS

USE CARDINAL DIRECTIONS WITH WHITE ON
BLUE WHEN USING INTERSTATE ROUTE SHIELDS

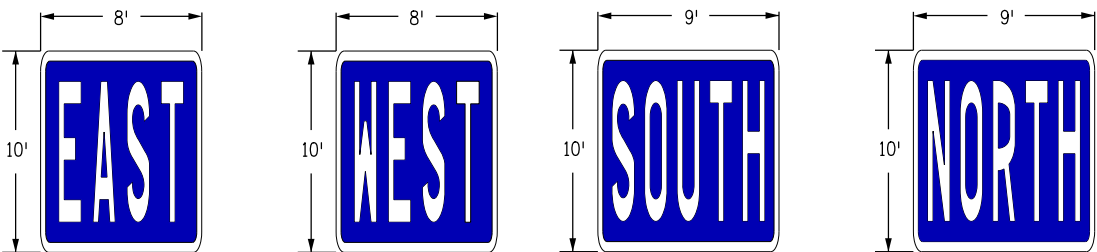
USE CARDINAL DIRECTIONS WITH BLACK ON
WHITE WHEN USING EITHER COLORADO
STATE OR US HIGHWAY ROUTE SHIELDS.

CARDINAL DIRECTION MARKING WORD SYMBOL
FROM PAGE 8 OF 9 MAY BE USED INSTEAD OF
PLAQUE.

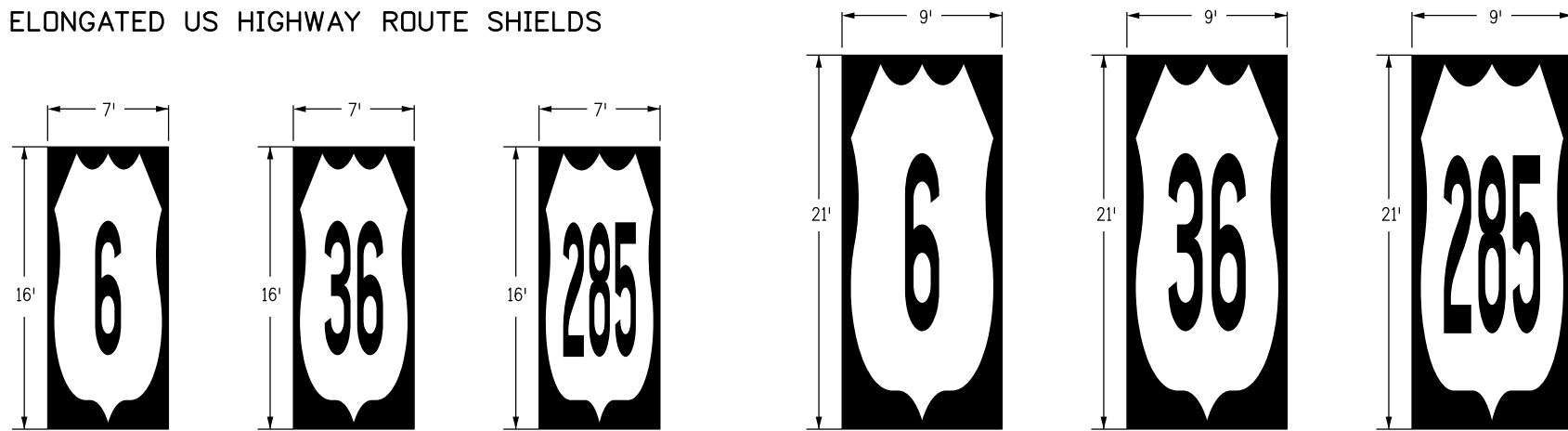
ELONGATED COLORADO STATE ROUTE SHIELDS



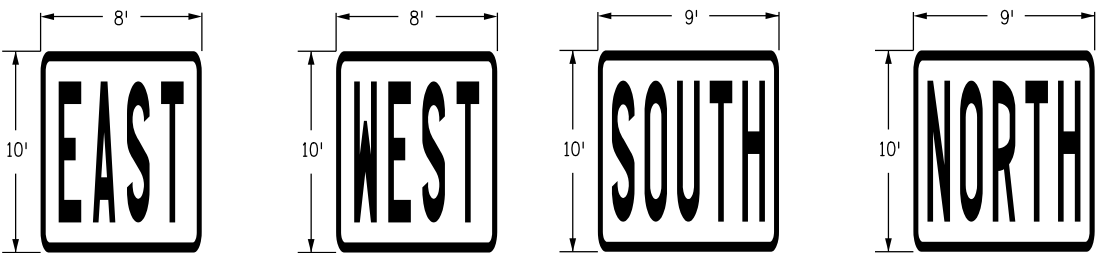
CARDINAL DIRECTIONS
(WHITE LETTERING ON BLUE BACKGROUND)



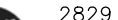
ELONGATED US HIGHWAY ROUTE SHIELDS



CARDINAL DIRECTIONS
(BLACK LETTERING ON WHITE BACKGROUND WITH BLACK BORDER)



ELONGATED ROUTE SHIELDS & CARDINAL DIRECTION MARKINGS

Computer File Information		<div><div>R=1</div><div></div><div></div><div></div><div></div></div>	Sheet Revisions		<div>Colorado Department of Transportation</div> <div><div></div><div>2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219</div></div> <div>Safety & Traffic Engineering</div> <div>MKB</div>	<div>PAVEMENT MARKINGS</div>	STANDARD PLAN NO.
Creation Date: 02/08/17	Date:		Comments	S-627-1			
Created By: MBhat	02/16/21		GENERAL NOTE UPDATE	Standard Sheet No. 9 of 9			
Last Modification Date: 02/16/21						Issued By: Traffic & Safety Engineering Branch July 31, 2019	Project Sheet Number:
Last Modified By:EButta							
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English							

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, "AUTHORIZATION AND DECLARATION OF TEMPORARY SPEED LIMITS."

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.

ANY TRAFFIC CONTROL DEVICE THAT IS DAMAGED, WEATHERED, WORN, OR OTHERWISE DEEMED UNACCEPTABLE BY THE ENGINEER, SHALL BE REPLACED.
5.

CONTRACTOR AND PERSONAL VEHICLE PARKING IS PROHIBITED WITHIN THE RIGHT-OF-WAY UNLESS DESIGNATED ON THE PLANS, OR APPROVED BY THE ENGINEER.
6.

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.
7.

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).
8.

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.

9.

BASED ON SIGHT DISTANCE AND OTHER CONSIDERATIONS, THE FINAL LOCATIONS OF SIGNS ARE SUBJECT TO APPROVAL OF THE ENGINEER.
10.

IF CONSTRUCTION RELATED TRAFFIC CONGESTION BACKS UP BEYOND THE INSTALLED ADVANCE SIGN SEQUENCE, ADDITIONAL ADVANCE SIGNING SHALL BE PLACED BEYOND THE CONGESTION.
11.

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.

12.

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.

13.

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.

14.

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.

15.

TYPE 1 BARRICADES SHALL NOT BE USED ON FREEWAYS, EXPRESSWAYS, OR OTHER HIGH SPEED ROADWAYS (55 MPH OR MORE).

16.

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.

17.

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)

18.

FOR DETAILS ON BARRICADES, CONCRETE BARRIER (TEMPORARY), VERTICAL PANELS, AND FLASHING BEACON (PORTABLE), SEE THE APPLICABLE STANDARD PLANS.
19.

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.
20.

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 SECTION 627.03(d)2.

FOR ADDITIONAL PAVEMENT MARKING DETAILS, SEE STANDARD PLAN "TYPICAL PAVEMENT MARKINGS".
21.

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).
22.

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.
23.

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.
24.

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.
25.

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.
26.

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.

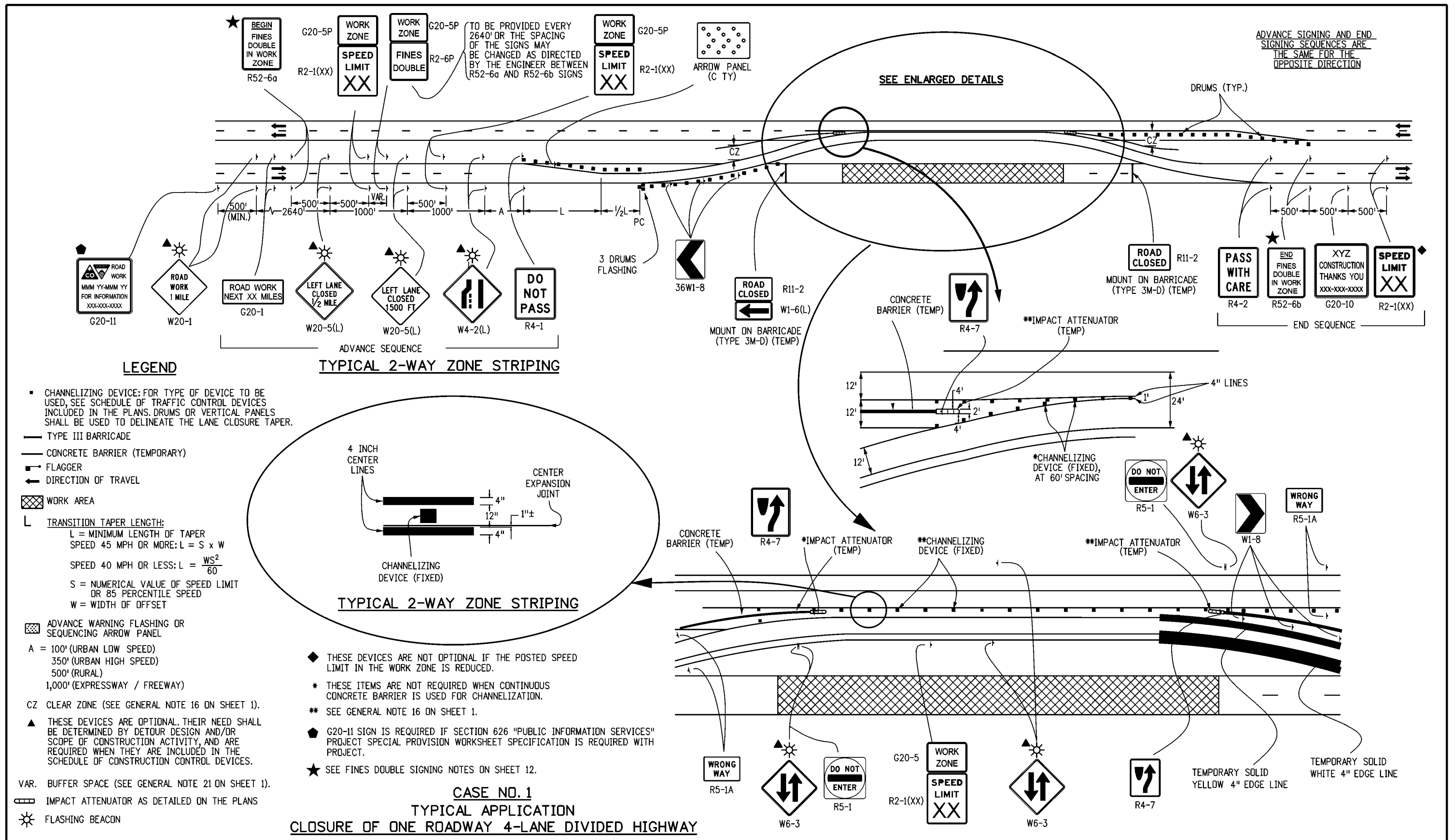
Computer File Information		Sheet Revisions		<div>Colorado Department of Transportation</div> <div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div>2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219</div><div>Traffic & Safety Engineering</div><div>MKB</div></div>	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	STANDARD PLAN NO.
Creation Date: 07/04/12	<div><div></div><div></div><div></div><div></div><div></div></div>	Date:	Comments	S-630-1		
Created By: Nakao				Standard Sheet No. 1 of 24		
Last Modification Date: 12/08/14				Project Sheet Number:		
Last Modified By: Nakao						
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English						


INDEX TO TYPICAL WORK ZONE CASES

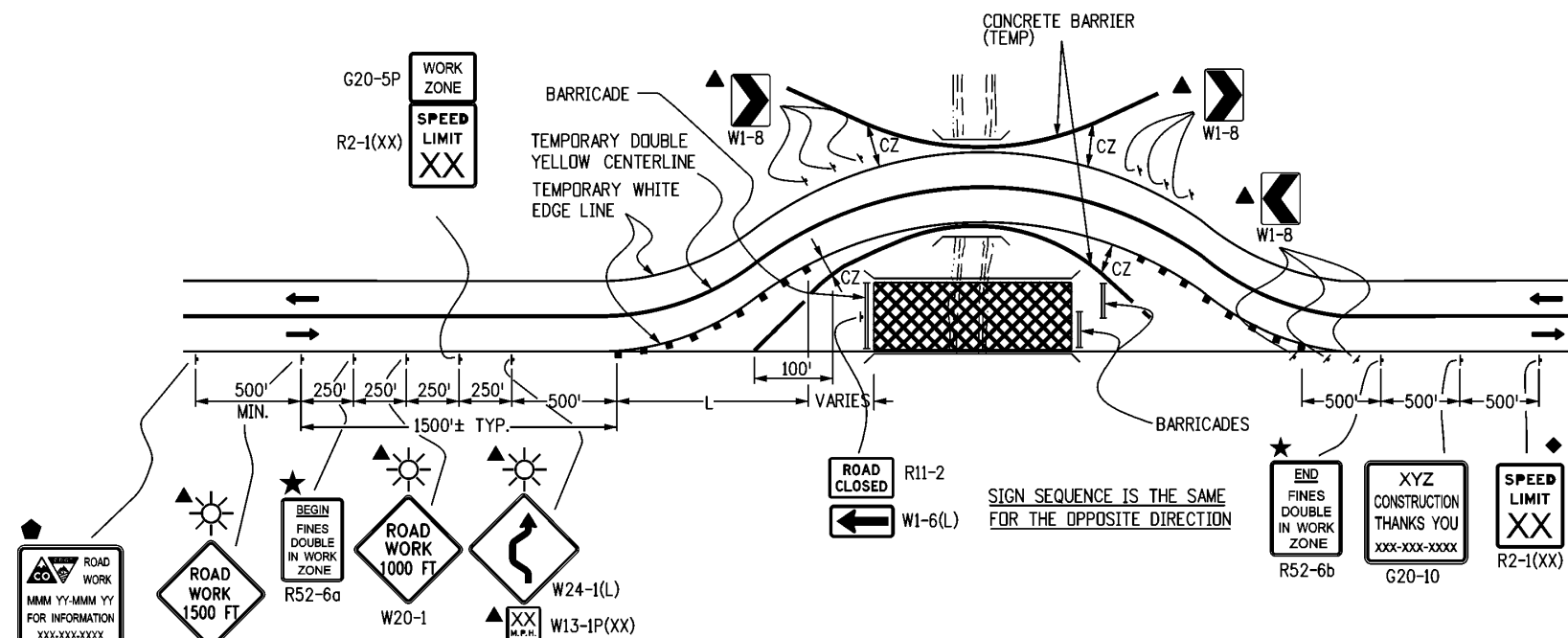
TYPICAL CASE DESCRIPTION	CASE NO.	SHEET NO.
CLOSURE OF ONE ROADWAY, 4-LANE HIGHWAY	1	3
CLOSURE OF HALF OF 4-LANE UNDIVIDED HIGHWAY	2	4
ROAD CLOSURE, USE OF ADJACENT SHOULDERS	3	
ROAD CLOSURE, BYPASS DETOUR PROVIDED	4	5
LANE #1 CLOSURE, MULTI-LANE FREEWAY	5	
LANE #2 CLOSURE, MULTI-LANE FREEWAY	6	6
LANE #3 CLOSURE, MULTI-LANE FREEWAY	7	
LANE #4 CLOSURE, MULTI-LANE FREEWAY	8	
CENTER LANE CLOSURE - MULTI-LANE FREEWAY	9	7
ONE LANE CLOSE - 4-LANE DIVIDED HIGHWAY	10	
SHOULDER WORK - FREEWAY/EXPRESSWAY	11	
TRAFFIC CONTROL ON FREEWAY NEAR AN OFF-RAMP	12	8
TRAFFIC CONTROL ON FREEWAY BEFORE AN ON-RAMP	13	
TRAFFIC CONTROL ON FREEWAY ALLOWING ACCESS FROM ON-RAMP	14	
BLASTING ZONE	15	9
RAMP CONSTRUCTION WHERE PARTIAL RAMP IS CLOSED	16	
LANE CLOSURE, 2-LANE HIGHWAY, AT CURVE	17	
TRAFFIC CONTROL AROUND A WORK AREA NEAR AN INTERSECTION, ONE LANE CLOSED	18	10
TRAFFIC CONTROL AROUND A WORK AREA NEAR AN INTERSECTION	19	
TYPICAL SIGNING FOR ROAD CLOSURE	20	
FULL CLOSURE, MULTI-LANE FREEWAY	21	11
CONTINUOUS LANE RAMP CLOSURE, MULTI-LANE FREEWAY	22	
SIMPLE RAMP CLOSURE, MULTI-LANE FREEWAY	23	
"FINES DOUBLE IN WORK ZONE" SIGNING (WITH SPEED REDUCTION)	24	12
SHIFTING OF ONE ROADWAY ON 4-LANE DIVIDED HIGHWAY	25	13
SHOULDER WORK - FREEWAY/EXPRESSWAY w/ 65 MPH SPEED LIMIT	26	14
SHOULDER WORK - FREEWAY/EXPRESSWAY w/ 75 MPH SPEED LIMIT	27	
ROCK SCALING - ROAD CLOSURE, 4-LANE DIVIDED HIGHWAY	28	15

TYPICAL CASE DESCRIPTION	CASE NO.	SHEET NO.
LATE MERGING - ONE LANE CLOSED, 4-LANE DIVIDED HIGHWAY	29	16
ROUNDABOUT - PARTIAL CLOSURE NEAR ONE-LANE ROUNDABOUT	30	17
ROUNDABOUT - INSIDE LANE CLOSURE FOR TWO-LANE ROUNDABOUT	31	18
ROUNDABOUT - OUTSIDE LANE CLOSURE FOR TWO-LANE ROUNDABOUT	32	19
ROUNDABOUT - PARTIAL CLOSURE FOR ONE-LANE ROUNDABOUT	33	20
MOBILE PAVEMENT MARKING ZONE, MOBILE SHOULDER CLOSURE ON 2-LANE UNDIVIDED HIGHWAY	34	21
MOBILE PAVEMENT MARKING ZONE, CENTERLINE STRIPING ON 2-LANE UNDIVIDED HIGHWAY	35	
MOBILE PAVEMENT MARKING ZONE, LANE LINE STRIPING - CENTER LANE OPERATIONS ON MULTI-LANE DIVIDED HIGHWAY	36	22
MOBILE PAVEMENT MARKING ZONE, MOBILE RAMP CLOSURE - EXPRESSWAY/FREEWAY	37	
MOBILE OPERATION OF LANE CLOSURE OF MULTI-LANE HIGHWAY (NOT FOR USE ON FREEWAYS)	38	23
MOBILE OPERATION OF LANE CLOSURE OF MULTI-LANE HIGHWAY	39	

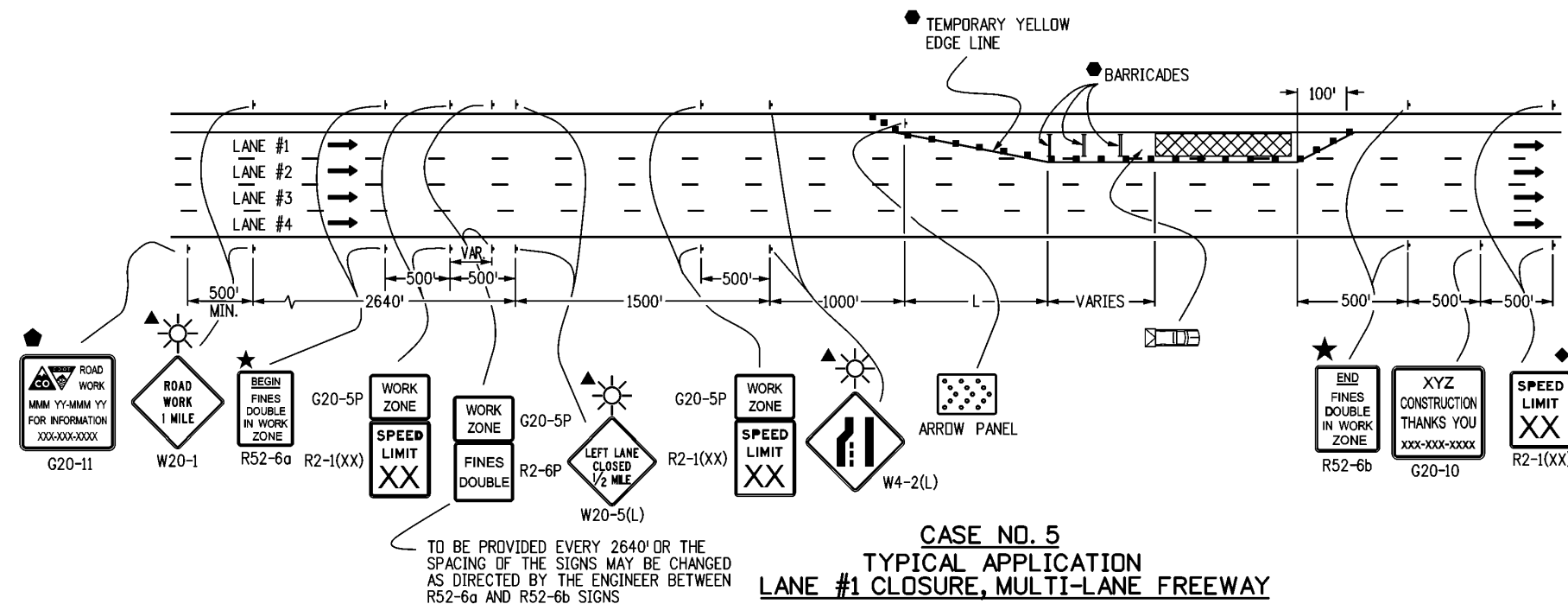
Computer File Information		Sheet Revisions		<div>Colorado Department of Transportation</div> <div>2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219</div> <div>Traffic & Safety Engineering</div> <div>MKB</div>	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	STANDARD PLAN NO.
Creation Date: 07/04/12	<div>00</div> <div>00</div> <div>00</div> <div>00</div>	Date:	Comments			S-630-1
Created By: Nakao						Standard Sheet No. 2 of 24
Last Modification Date: 05/19/16						Project Sheet Number:
Last Modified By: MBhat					Issued By: Traffic & Safety Engineering Branch July 31, 2019	
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English						



Computer File Information		<div>0000</div>	Sheet Revisions		<div>Colorado Department of Transportation</div> <div><div></div><div>2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219</div><div>Traffic & Safety Engineering</div><div>MKB</div></div>	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	STANDARD PLAN NO.	
Creation Date: 07/04/12			Date:	Comments			S-630-1	
Created By: Roybal							Standard Sheet No. 3 of 24	
Last Modification Date:								
Last Modified By:								
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English								Issued By: Traffic & Safety Engineering Branch July 31, 2019



CASE NO. 4
TYPICAL APPLICATION
ROAD CLOSURE, BYPASS DETOUR PROVIDED



CASE NO. 5
TYPICAL APPLICATION
LANE #1 CLOSURE, MULTI-LANE FREEWAY

LEGEND

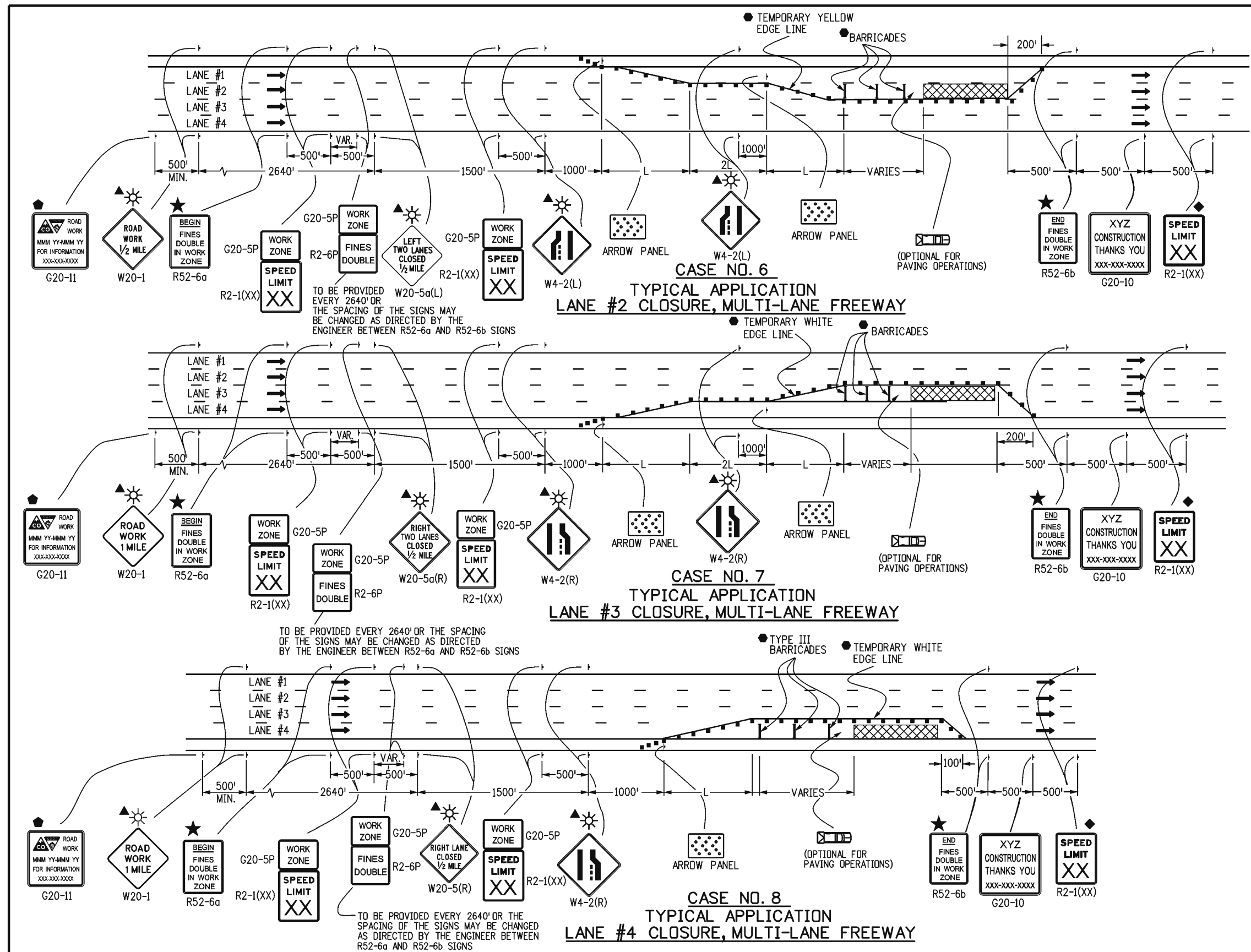
- CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE THE LANE CLOSURE TAPER.

- TYPE III BARRICADE
- CONCRETE BARRIER (TEMPORARY)
- FLAGGER
- DIRECTION OF TRAVEL
- WORK AREA

- 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 = $\frac{1}{3} L$

- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL
- CZ CLEAR ZONE (SEE GENERAL NOTE 16 ON SHEET 1).
- 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.
- BUFFER SPACE (SEE GENERAL NOTE 21 ON SHEET 1).
- 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		0000	Sheet Revisions		Colorado Department of Transportation  2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219 Traffic & Safety Engineering MKB	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		STANDARD PLAN NO.	
Creation Date: 07/04/12			Date:	Comments		S-630-1		Standard Sheet No. 5 of 24	
Created By: Nakao									
Last Modification Date:									
Last Modified By:									
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English						Issued By: Traffic & Safety Engineering Branch July 31, 2019		Project Sheet Number:	



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

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 16 ON SHEET 1).

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 21 ON SHEET 1).

REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.

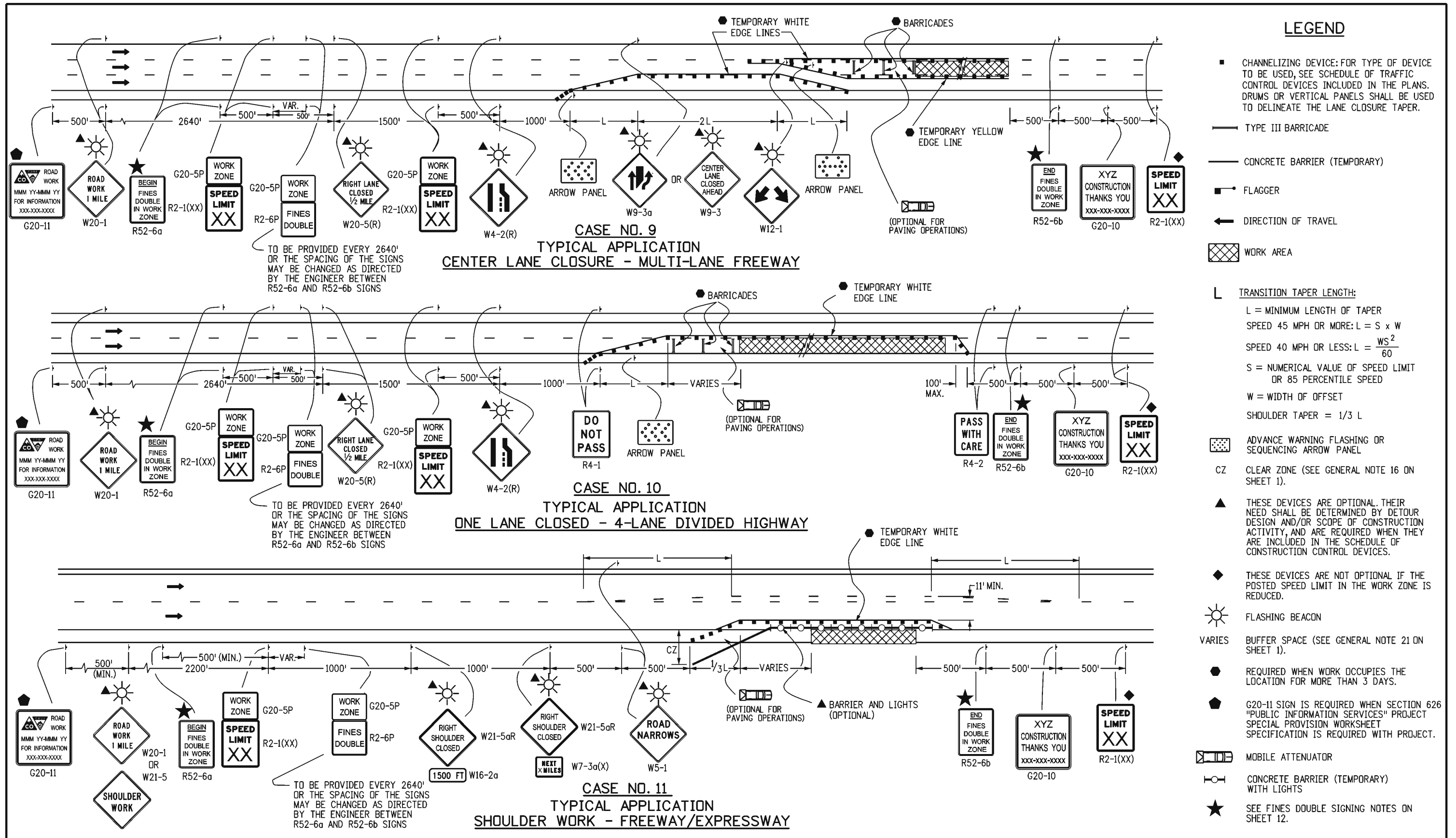
G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.


MOBILE ATTENUATOR

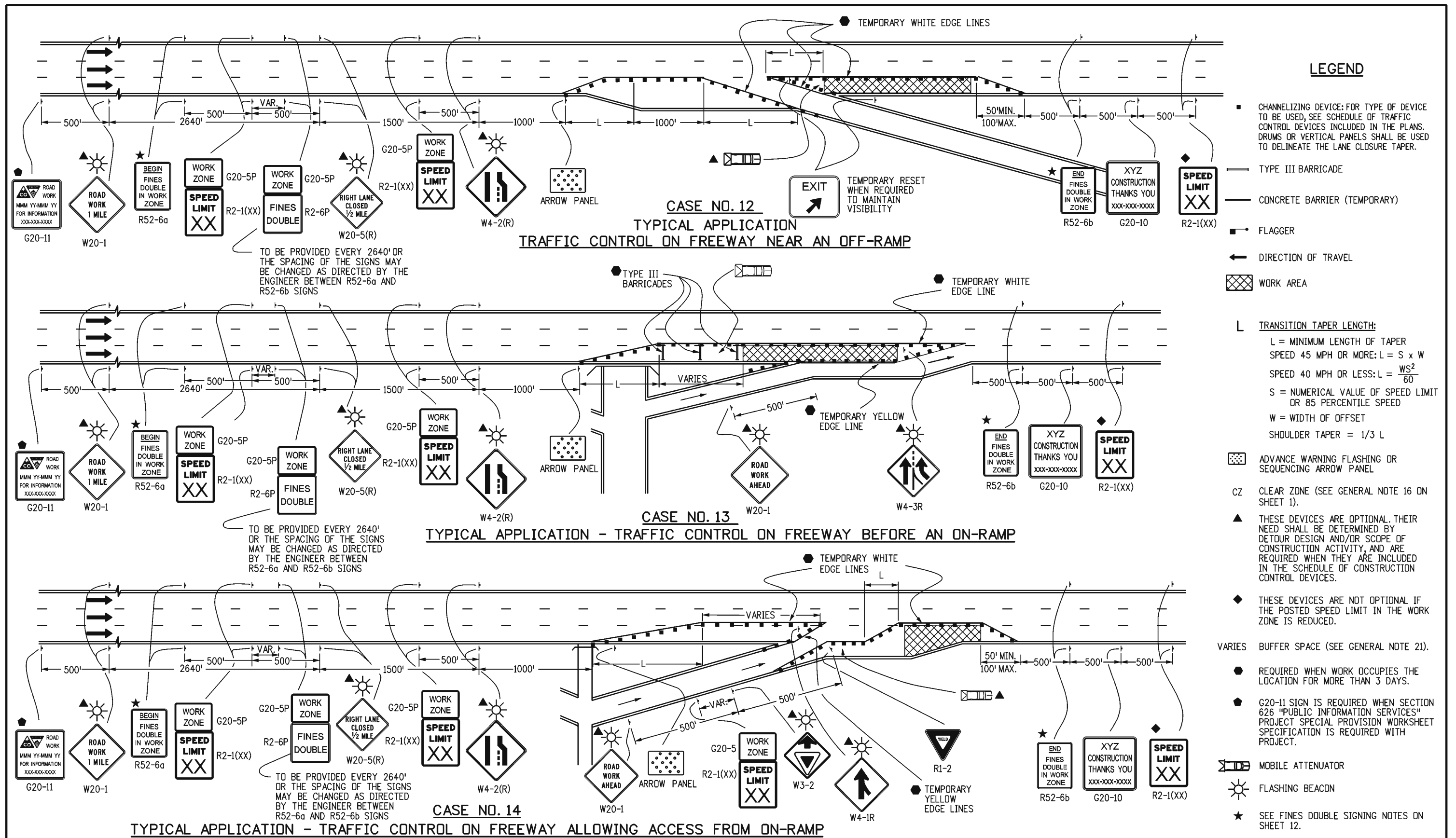
FLASHING BEACON

SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

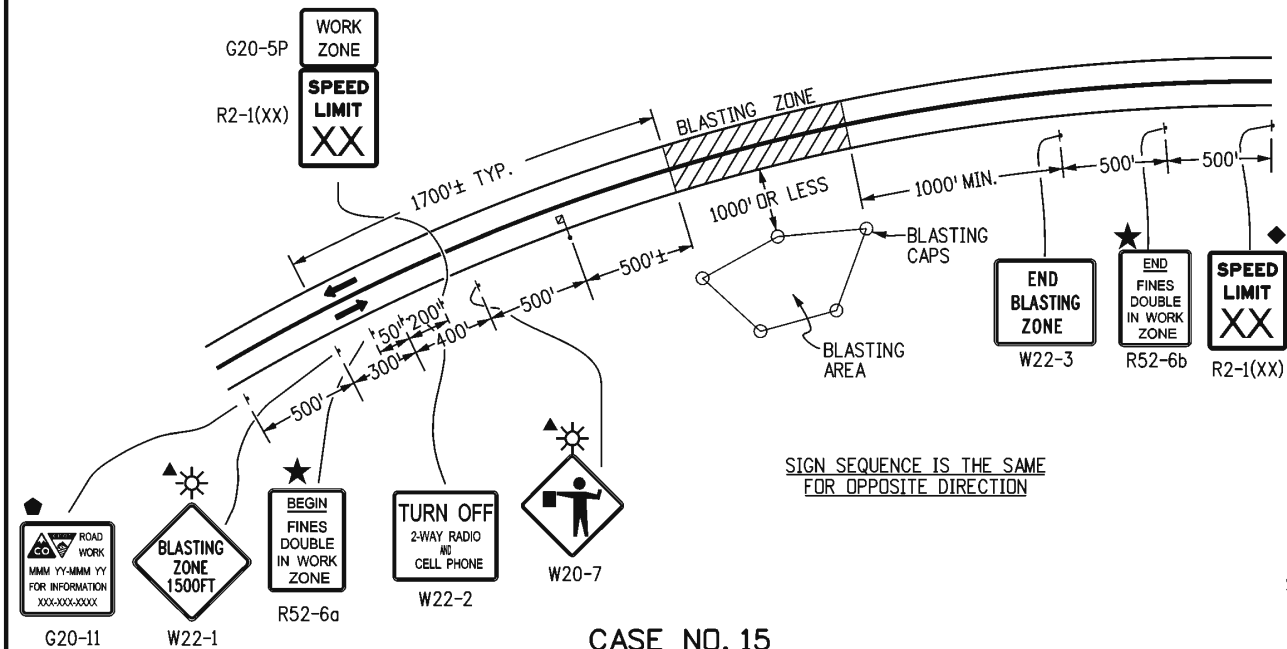
Computer File Information		<div><div></div><div></div><div></div><div></div><div></div></div>	Sheet Revisions		<div>Colorado Department of Transportation</div> <div><div><div><div></div></div><div></div></div><div><div>2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219</div></div><div>Traffic & Safety Engineering</div><div>MKB</div></div>	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		STANDARD PLAN NO.	
Creation Date: 07/04/12			Date:	Comments		S-630-1		Standard Sheet No. 6 of 24	
Created By: Roybal									
Last Modification Date: 05/19/16									
Last Modified By: MBhat						Issued By: Traffic & Safety Engineering Branch July 31, 2019		Project Sheet Number:	
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English									



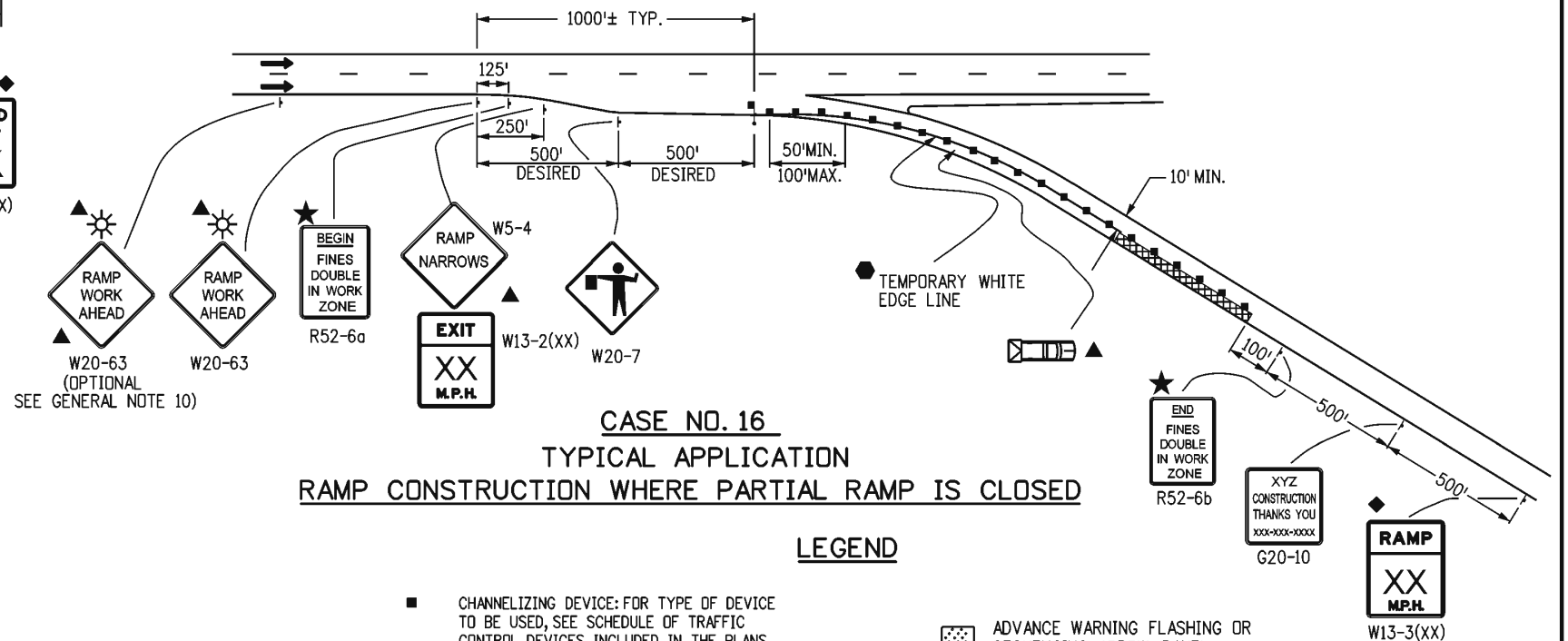
Computer File Information		Sheet Revisions		Colorado Department of Transportation  2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219 Traffic & Safety Engineering MKB	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION Issued By: Traffic & Safety Engineering Branch July 31, 2019	STANDARD PLAN NO.	
Creation Date: 07/04/12		Date:	Comments			S-630-1	
Created By: Roybal						Standard Sheet No. 7 of 24	
Last Modification Date: 05/19/16						Project Sheet Number:	
Last Modified By: MBhat							
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English							



Computer File Information		Sheet Revisions		Colorado Department of Transportation	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	STANDARD PLAN NO.	
Creation Date: 07/04/12		Date:	Comments			S-630-1	
Created By: Nakao				2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219	MKB	Standard Sheet No. 8 of 24	
Last Modification Date:						Project Sheet Number:	
Last Modified By:							
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English				Issued By: Traffic & Safety Engineering Branch July 31, 2019			



CASE NO. 15
TYPICAL APPLICATION
BLASTING ZONE



CASE NO. 16
TYPICAL APPLICATION
RAMP CONSTRUCTION WHERE PARTIAL RAMP IS CLOSED

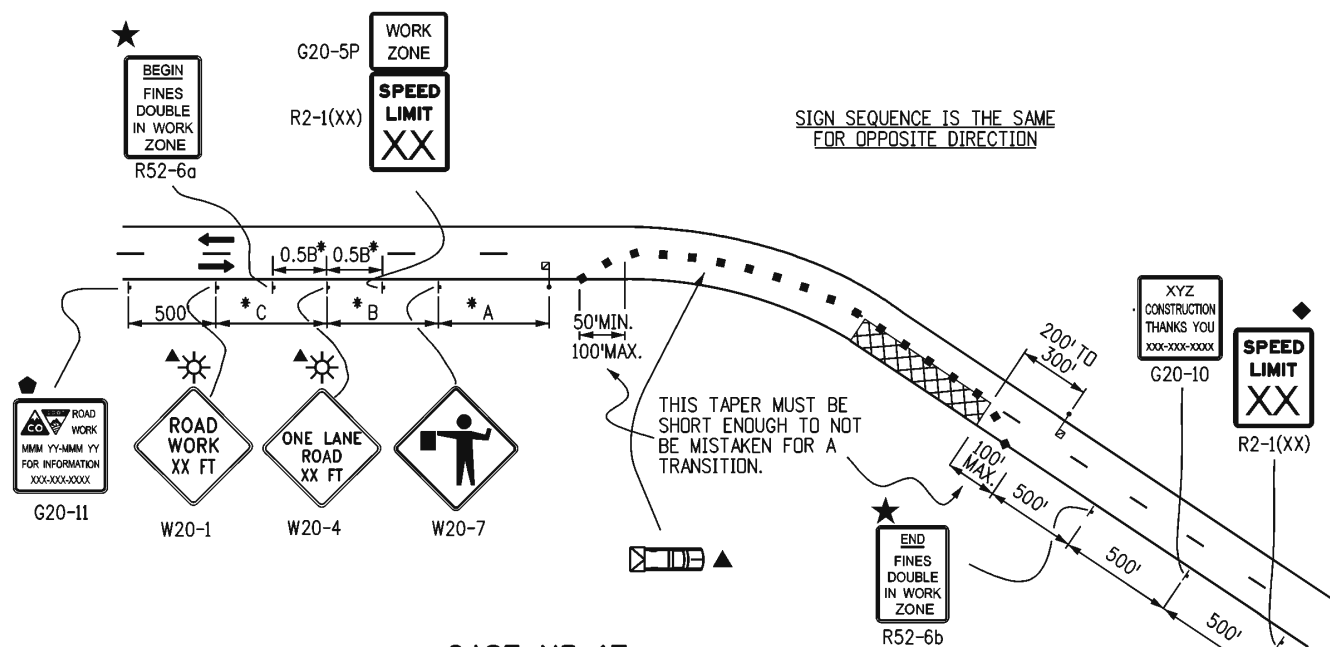
LEGEND

- 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
- ← 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 16 ON SHEET 1).
- ▲ 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

★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12



CASE NO. 17
TYPICAL APPLICATION
LANE CLOSURE, 2-LANE HIGHWAY, AT CURVE

Computer File Information	
Creation Date: 07/04/12	
Created By: Roybal	
Last Modification Date: 07/26/13	
Last Modified By: Nakao	
CAD Ver.: MicroStation V8	Scale: Not to Scale Units: English

Sheet Revisions	
Date:	Comments

Colorado Department of Transportation

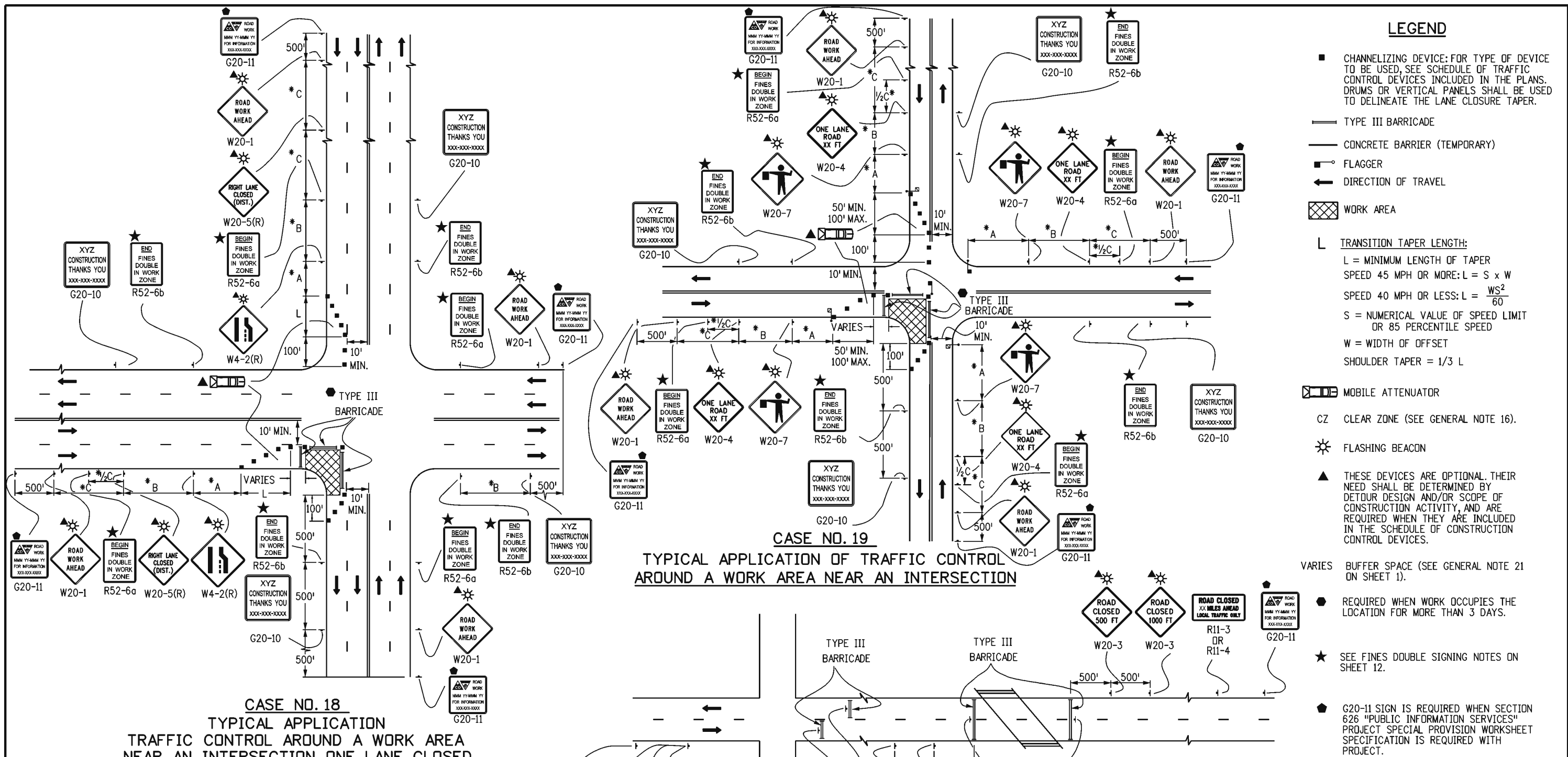
2829 W. Howard Pl.
Denver, CO 80204
Phone: 303-757-9436
FAX: 303-757-9219

Traffic & Safety Engineering MKB

**TRAFFIC CONTROLS
FOR HIGHWAY
CONSTRUCTION**

Issued By: Traffic & Safety Engineering Branch July 31, 2019

STANDARD PLAN NO.
S-630-1
Standard Sheet No. 9 of 24
Project Sheet Number:



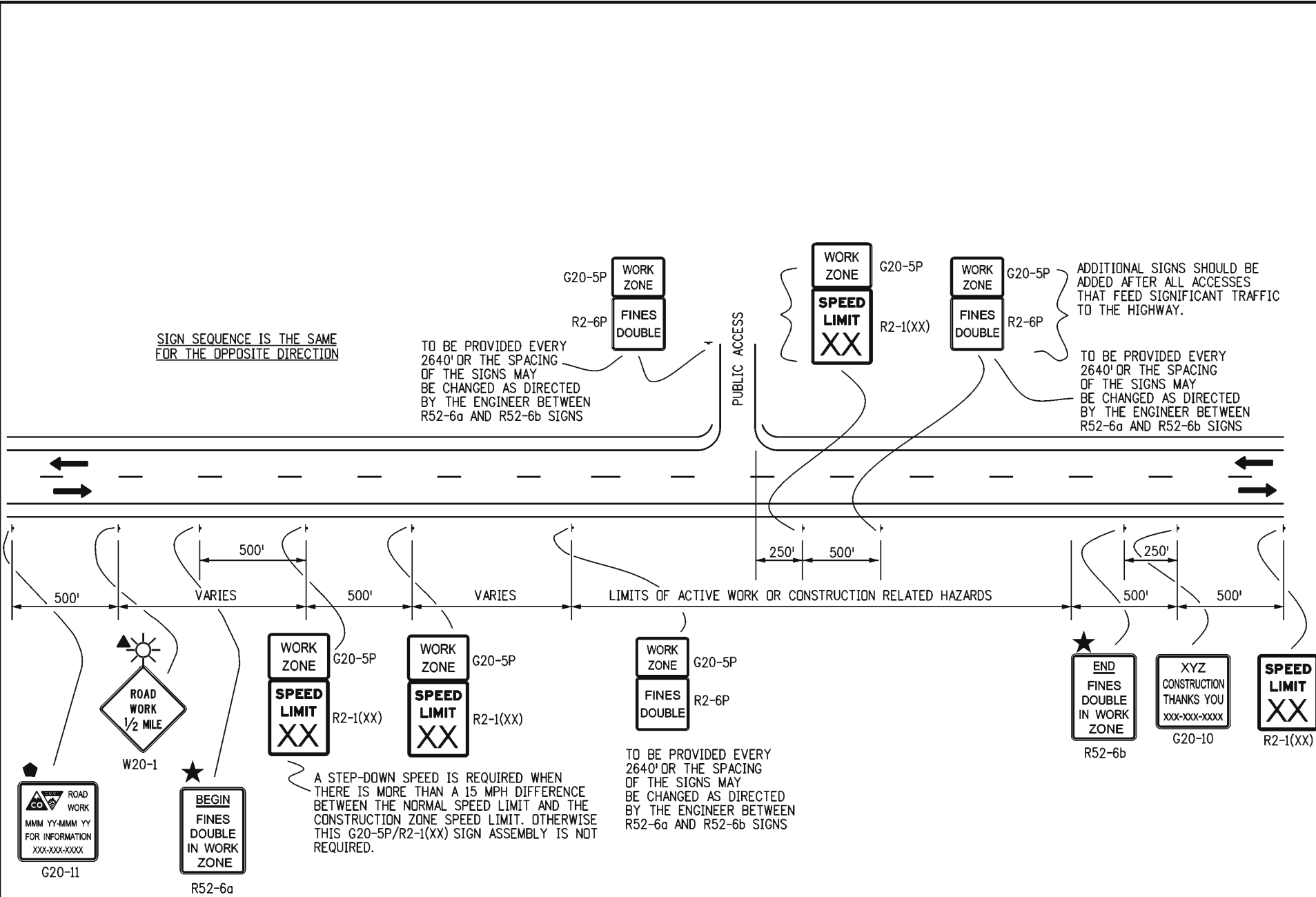
NOTES:

- 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.
- TRUCK-MOUNTED ATTENUATORS (TMA) OPTIONAL FOR ALL CASES AS DETERMINED BY THE ENGINEER.

*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		0000	Sheet Revisions		Colorado Department of Transportation		TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		STANDARD PLAN NO.	
Creation Date: 07/04/12			Date:	Comments	 2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219		S-630-1		Standard Sheet No. 10 of 24	
Created By: Roybal										
Last Modification Date: 04/02/15					Traffic & Safety Engineering		MKB		Project Sheet Number:	
Last Modified By: DiNardo										
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English					Issued By: Traffic & Safety Engineering Branch July 31, 2019					



LEGEND

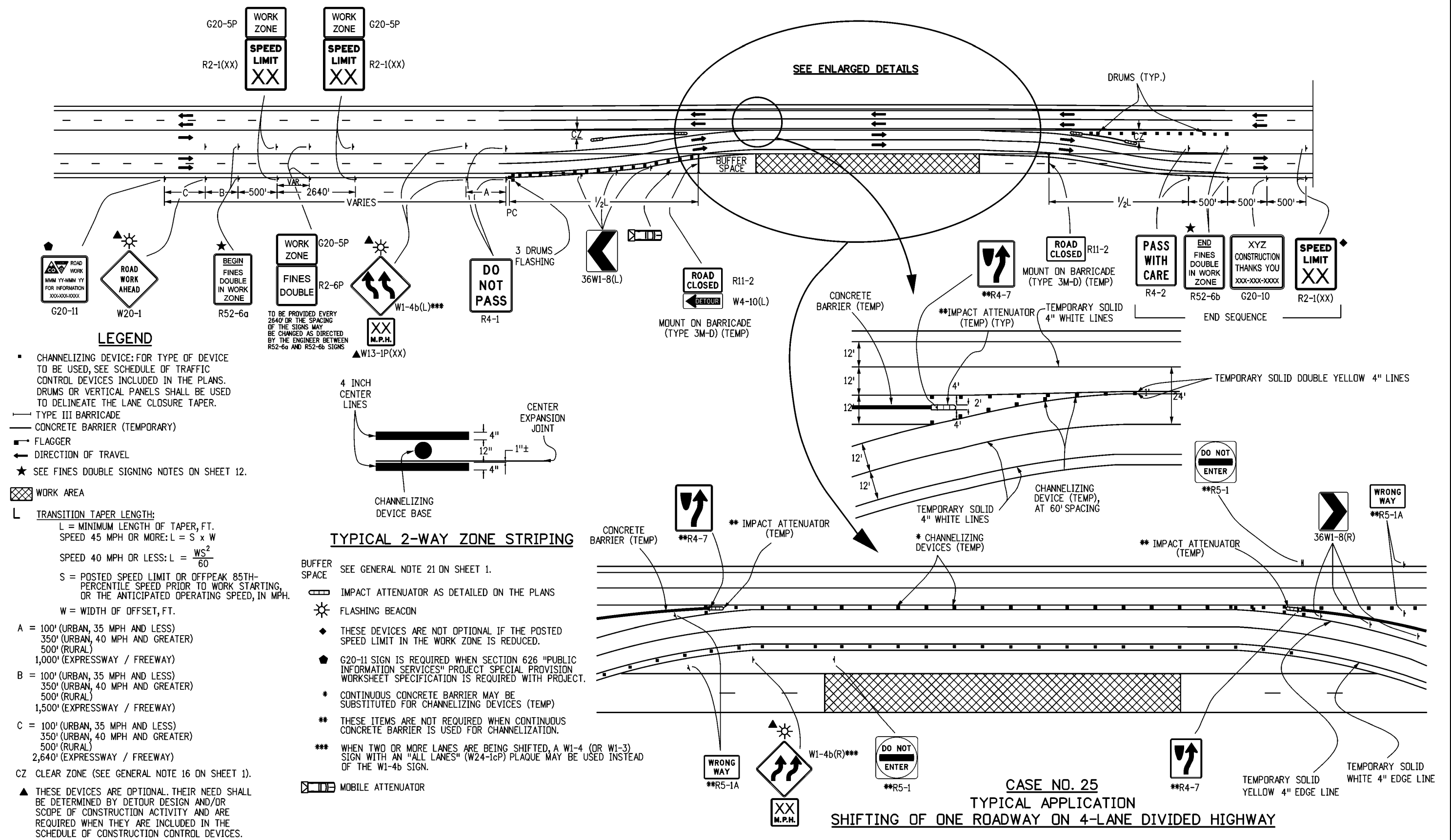
- ← DIRECTION OF TRAVEL
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED WILL BE DETERMINED BY THE DESIGNER BASED ON DETOUR DESIGN AND/OR SCOPE OF THE CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE PLANS.
- ◆ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- ☀ FLASHING BEACON
- ★ FINES DOUBLE SIGNING NOTES, SEE BELOW

FINES DOUBLE SIGNING NOTES:

- 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
- 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.
- 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.
- 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.

CASE NO. 24
TYPICAL APPLICATION
"FINES DOUBLE IN WORK ZONE" SIGNING
(WITH SPEED REDUCTION)

Computer File Information			<div><div></div><div></div><div></div><div></div><div></div></div>	Sheet Revisions		<div>Colorado Department of Transportation</div> <div><div></div><div>2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219</div></div> <div>Traffic & Safety Engineering</div> <div>MKB</div>	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	STANDARD PLAN NO.	
Creation Date: 07/04/12		Date:		Comments	S-630-1				
Created By: Roybal					Standard Sheet No. 12 of 24				
Last Modification Date:					Project Sheet Number:				
Last Modified By:					Issued By: Traffic & Safety Engineering Branch July 31, 2019				
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English									



Computer File Information		Sheet Revisions		Colorado Department of Transportation	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	STANDARD PLAN NO.	
Creation Date: 07/04/12		Date:	Comments			S-630-1	
Created By: Roybal				2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219	Issued By: Traffic & Safety Engineering Branch July 31, 2019	Standard Sheet No. 13 of 24	
Last Modification Date: 02/06/13							
Last Modified By: Nakao							
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English				Traffic & Safety Engineering MKB		Project Sheet Number:	

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
DIRECTION OF TRAVEL

WORK AREA

TRANSITION TAPER LENGTH:
 L = MINIMUM LENGTH OF TAPER
SPEED 45 MPH OR MORE: $L = S \times W$
 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 16 ON SHEET 1).

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.

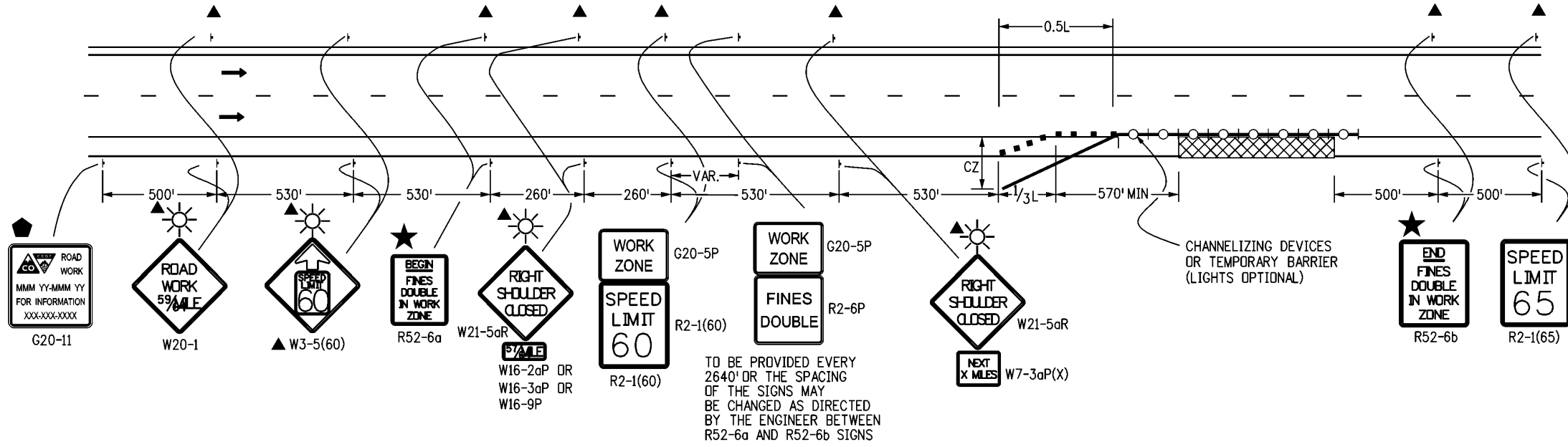
G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.

REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.

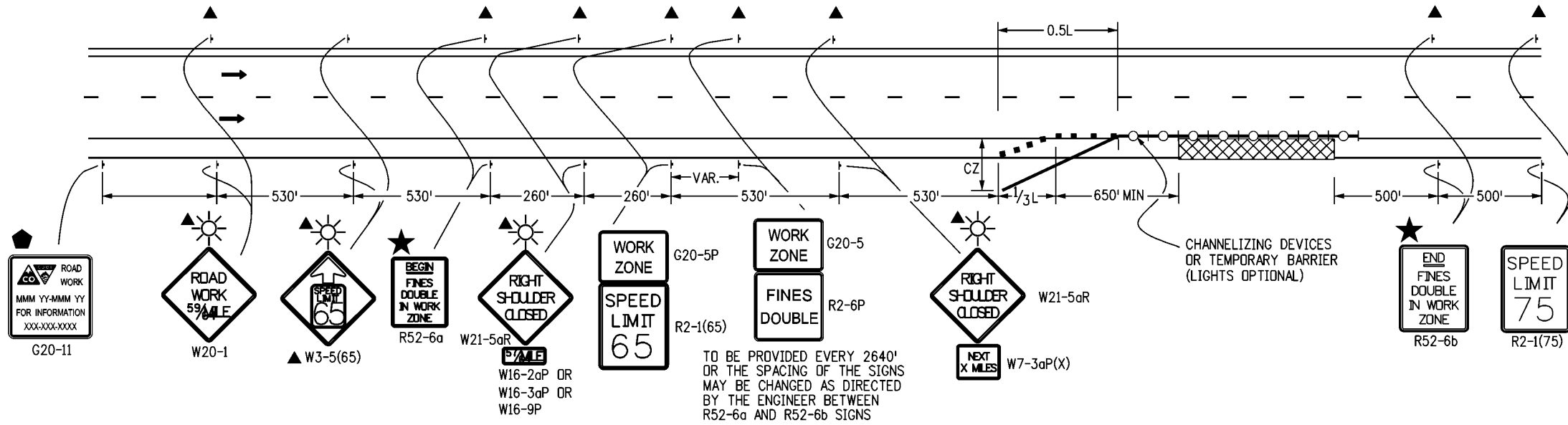
MOBILE ATTENUATOR

FLASHING BEACON


SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.



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

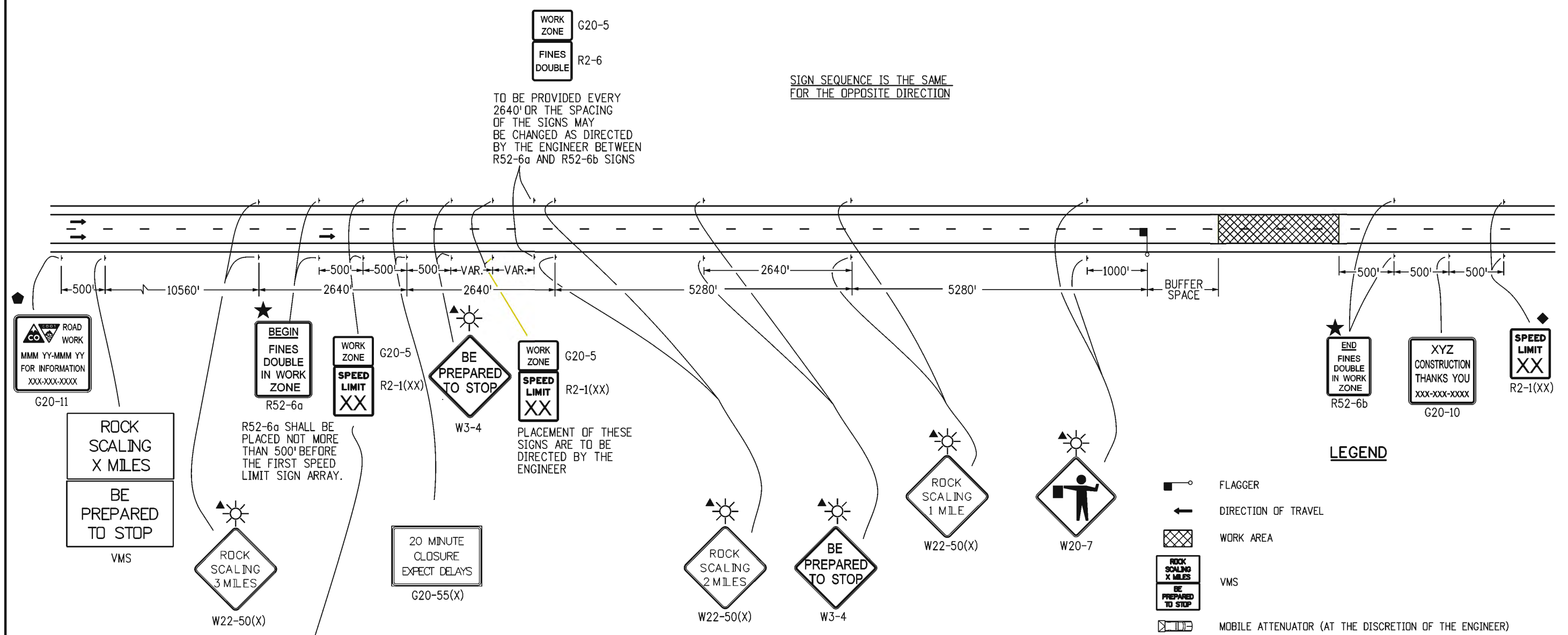


CASE NO. 27
TYPICAL APPLICATION
SHOULDER WORK - FREEWAY/EXPRESSWAY w/ 75 MPH SPEED LIMIT
WHEN HAZARDS (WORKERS, EQUIPMENT, OR TEMPORARY BARRIER) ARE WITHIN 10 FT OF TRAVEL WAY

Computer File Information		Sheet Revisions		Colorado Department of Transportation  2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219 Traffic & Safety Engineering MKB	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION Issued By: Traffic & Safety Engineering Branch July 31, 2019	STANDARD PLAN NO.	
Creation Date: 07/04/12		Date:	Comments			S-630-1	
Created By: Roybal						Standard Sheet No. 14 of 24	
Last Modification Date:						Project Sheet Number:	
Last Modified By:							
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English							

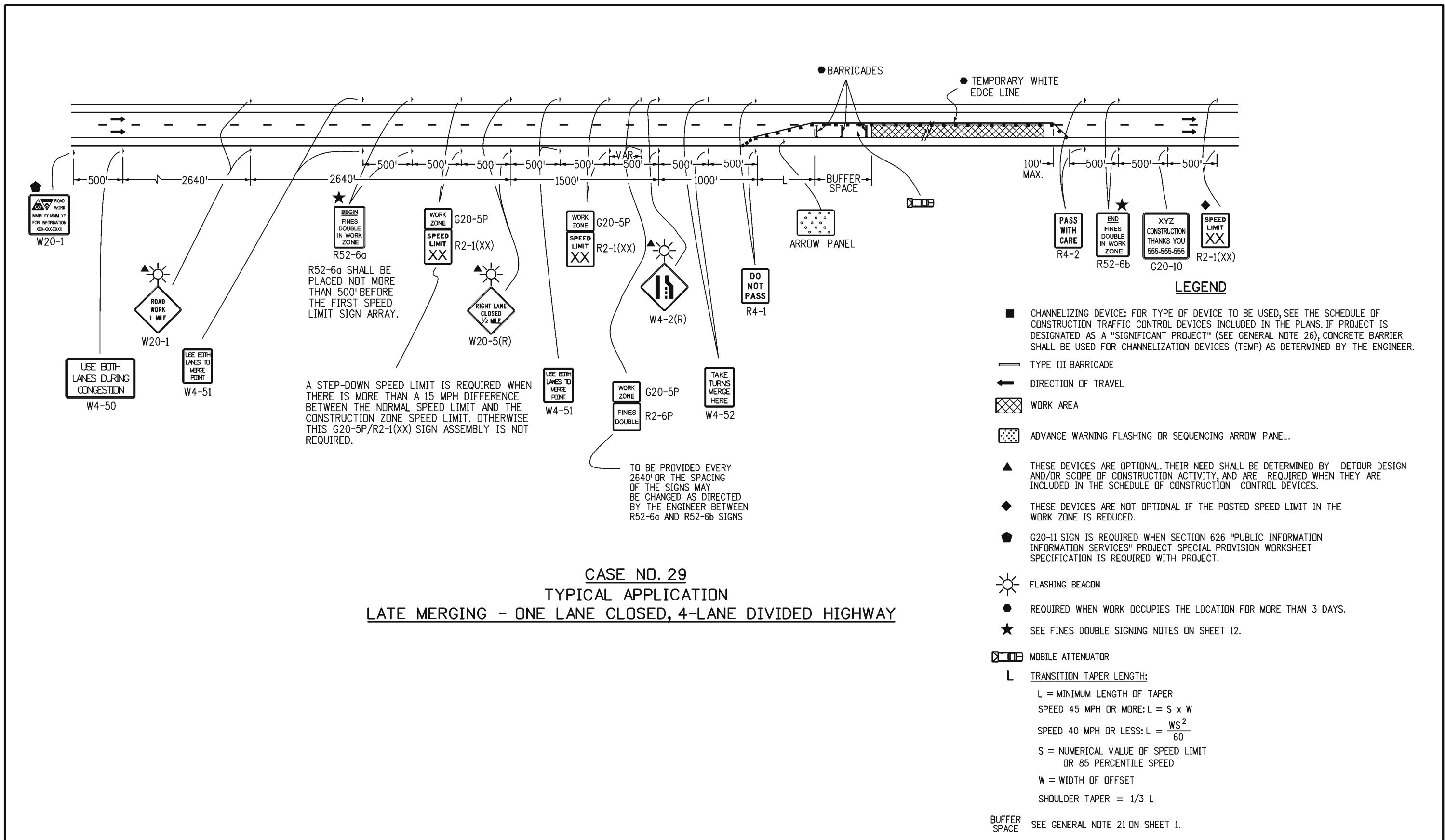
SIGN SEQUENCE IS THE SAME
FOR THE OPPOSITE DIRECTION

TO BE PROVIDED EVERY
2640' OR THE SPACING
OF THE SIGNS MAY
BE CHANGED AS DIRECTED
BY THE ENGINEER BETWEEN
R52-6a AND R52-6b SIGNS



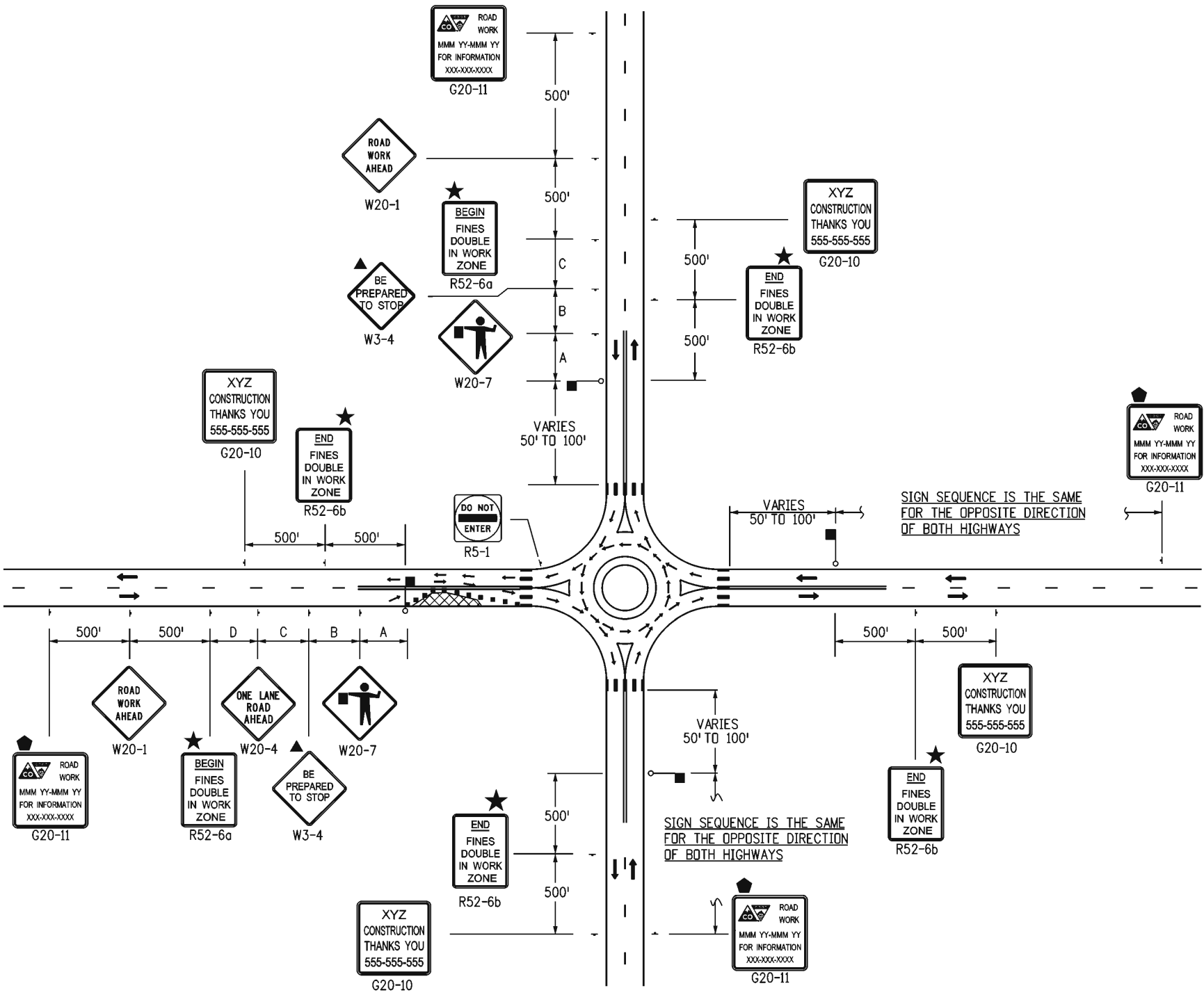
CASE NO. 28
TYPICAL APPLICATION
ROCK SCALING - ROAD CLOSURE, 4-LANE DIVIDED HIGHWAY

Computer File Information		<div>0000</div>	Sheet Revisions		Colorado Department of Transportation <div></div> 2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219 Traffic & Safety EngineeringMKB	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	STANDARD PLAN NO.	
Creation Date: 07/04/12			Date:	Comments			S-630-1	
Created By: Roybal							Standard Sheet No. 15 of 24	
Last Modification Date: 07/26/13						Project Sheet Number:		
Last Modified By: Nakao								
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English								



CASE NO. 29
TYPICAL APPLICATION
LATE MERGING - ONE LANE CLOSED, 4-LANE DIVIDED HIGHWAY

Computer File Information		Sheet Revisions		Colorado Department of Transportation  2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219 Traffic & Safety Engineering MKB	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	STANDARD PLAN NO.	
Creation Date: 07/04/12		Date:	Comments			S-630-1	
Created By: Roybal						Standard Sheet No. 16 of 24	
Last Modification Date: 06/23/16						Project Sheet Number:	
Last Modified By: MBhat							
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English					Issued By: Traffic & Safety Engineering Branch July 31, 2019		



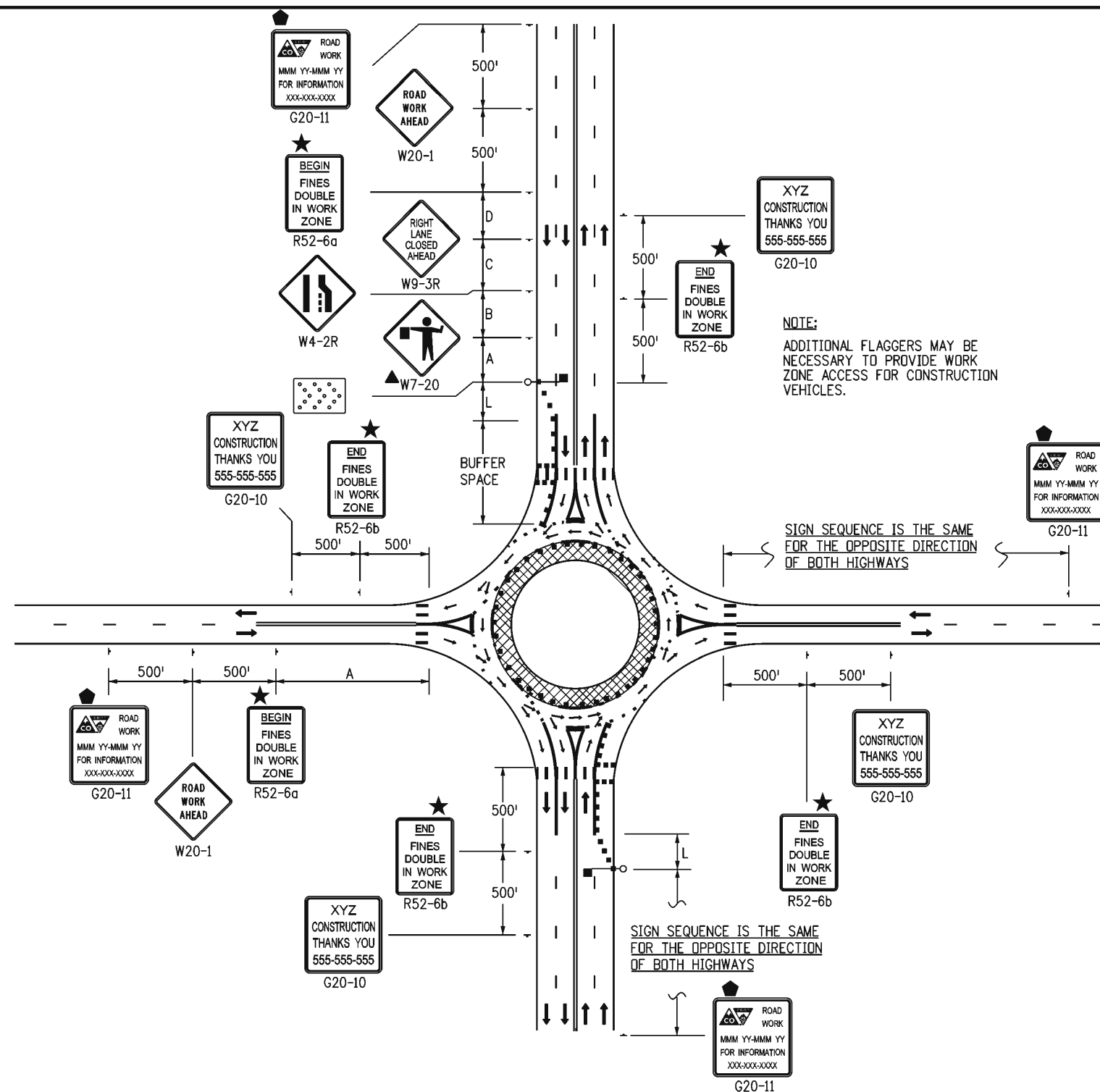
LEGEND

- 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 26), CONCRETE BARRIER SHALL BE USED FOR CHANNELIZATION DEVICES (TEMP) AS DETERMINED BY THE ENGINEER.
- 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
- TRANSITION TAPER LENGTH:
 $L = \text{MINIMUM LENGTH OF TAPER}$
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 21 ON SHEET 1.
- FLAGGER

CASE NO. 30
TYPICAL APPLICATION
ROUNDBOUT - PARTIAL CLOSURE NEAR ONE-LANE ROUNDBOUT

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		Sheet Revisions		Colorado Department of Transportation 2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219 Traffic & Safety Engineering MKB	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	STANDARD PLAN NO.	
Creation Date: 07/04/12		Date:	Comments			S-630-1	
Created By: Nakao						Standard Sheet No. 17 of 24	
Last Modification Date: 06/23/16						Project Sheet Number:	
Last Modified By: MBhat							
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English				Issued By: Traffic & Safety Engineering Branch July 31, 2019			



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 26), CONCRETE BARRIER SHALL BE USED FOR CHANNELIZATION DEVICES (TEMP) AS DETERMINED BY THE ENGINEER.
- 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 W_{S2}
SPEED 45 MPH OR MORE: L = $S_{60} W$

SPEED 40 MPH OR LESS: L = ———
S = NUMERICAL VALUE OF SPEED LIMIT
OR 85 PERCENTILE SPEED

W = WIDTH OF OFFSET




SHOULDER TAPER = $1/3 L$

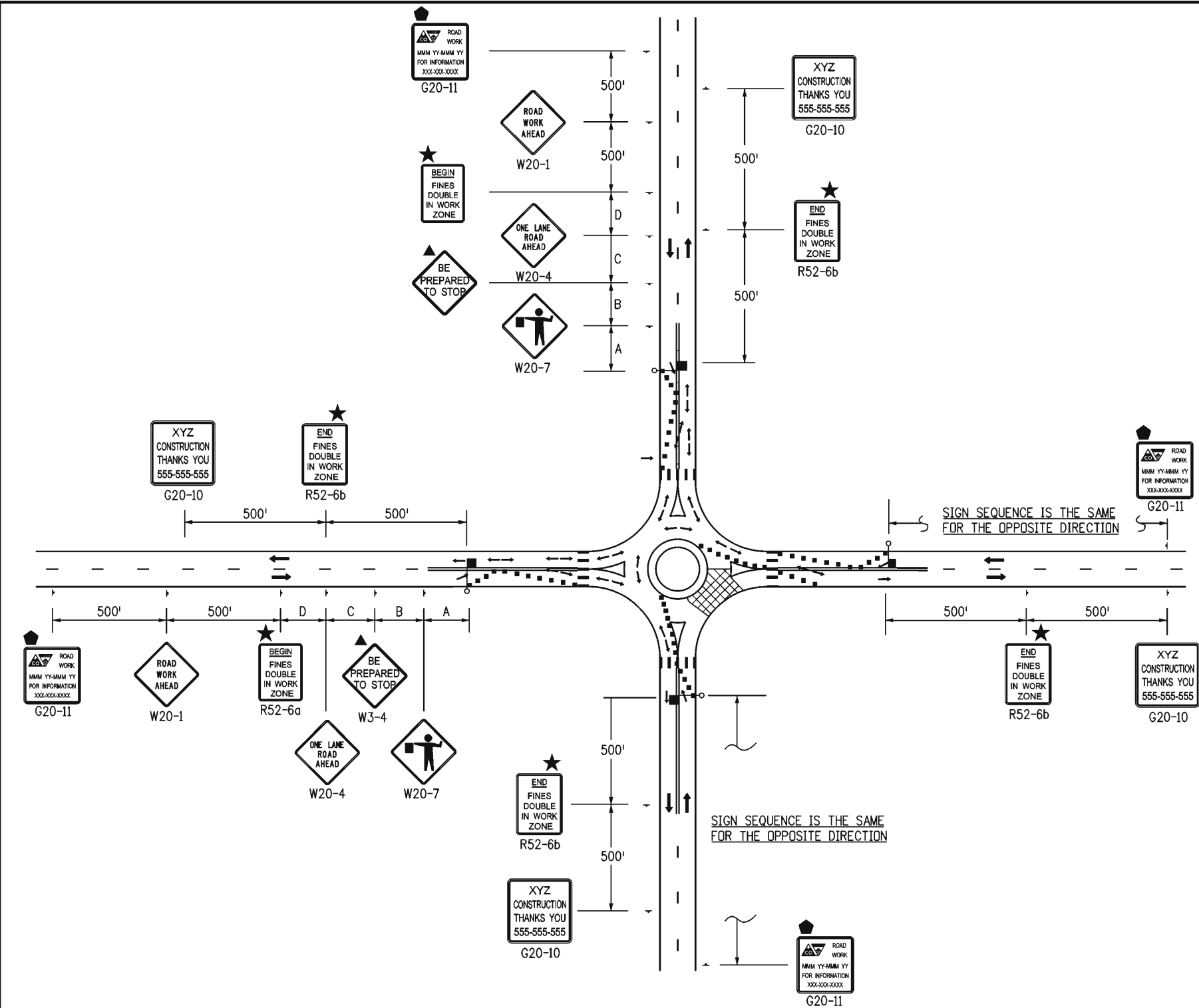
SEE GENERAL NOTE 21 ON SHEET 1.

 FLAGGER

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. 31
TYPICAL APPLICATION *
ROUNDBOUT - INSIDE LANE CLOSURE FOR TWO-LANE ROUNDBOUT

Computer File Information			Sheet Revisions		 Colorado Department of Transportation 2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219 Traffic & Safety Engineering	 MKB	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		STANDARD PLAN NO.	
Creation Date: 07/04/12			Date:	Comments					S-630-1	
Created By: Nakao										
Last Modification Date: 06/23/16										
Last Modified By: MBhat										
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English							Issued By: Traffic & Safety Engineering Branch July 31, 2019		Project Sheet Number:	



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 26), CONCRETE BARRIER SHALL BE USED FOR CHANNELIZATION DEVICES (TEMP) AS DETERMINED BY THE ENGINEER.
 - 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
 - TRANSITION TAPER LENGTH: $L = \text{MINIMUM LENGTH OF TAPER}$
SPEED 45 MPH OR MORE: $L = \frac{WS^2}{60}$
SPEED 40 MPH OR LESS: L
S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
W = WIDTH OF OFFSET
SHOULDER TAPER = 1/3 L
 - SEE GENERAL NOTE 21 ON SHEET 1.
 - FLAGGER

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	
Creation Date: 07/04/12	
Created By: Nakao	
Last Modification Date: 06/23/16	
Last Modified By: MBhat	
CAD Ver.: MicroStation V8	Scale: Not to Scale Units: English

Sheet Revisions	
Date:	Comments

Colorado Department of Transportation



2829 W. Howard Pl.
Denver, CO 80204
Phone: 303-757-9436
FAX: 303-757-9219

Traffic & Safety Engineering

MKB

TRAFFIC CONTROLS
FOR HIGHWAY
CONSTRUCTION

Issued By: Traffic & Safety Engineering Branch July 31, 2019

STANDARD PLAN NO.

S-630-1

Standard Sheet No. 20 of 24

Project Sheet Number:

LEGEND



MOBILE ATTENUATOR VEHICLE, TWO 360-DEGREE YELLOW FLASHING BEACONS,
AND YELLOW FLASHING VEHICLE LIGHTS OR STROBES.



VARIABLE MESSAGE SIGN (VMS).



WHEN VMS IS USED, THE "SHOULDER CLOSED" SIGN BECOMES OPTIONAL.



THE "PICK-UP VEHICLES" OR "WARNING VEHICLE" MAY ENCRDACH INTO THE TRAFFIC LANE WHEN THE SHOULDER IS TOO NARROW TO DRIVE ON.



IF TRACKING OF THE WET PAINT IS ANTICIPATED, THE USE OF CONES OR STATIONARY "WET PAINT" SIGNS SHALL BE POSTED.



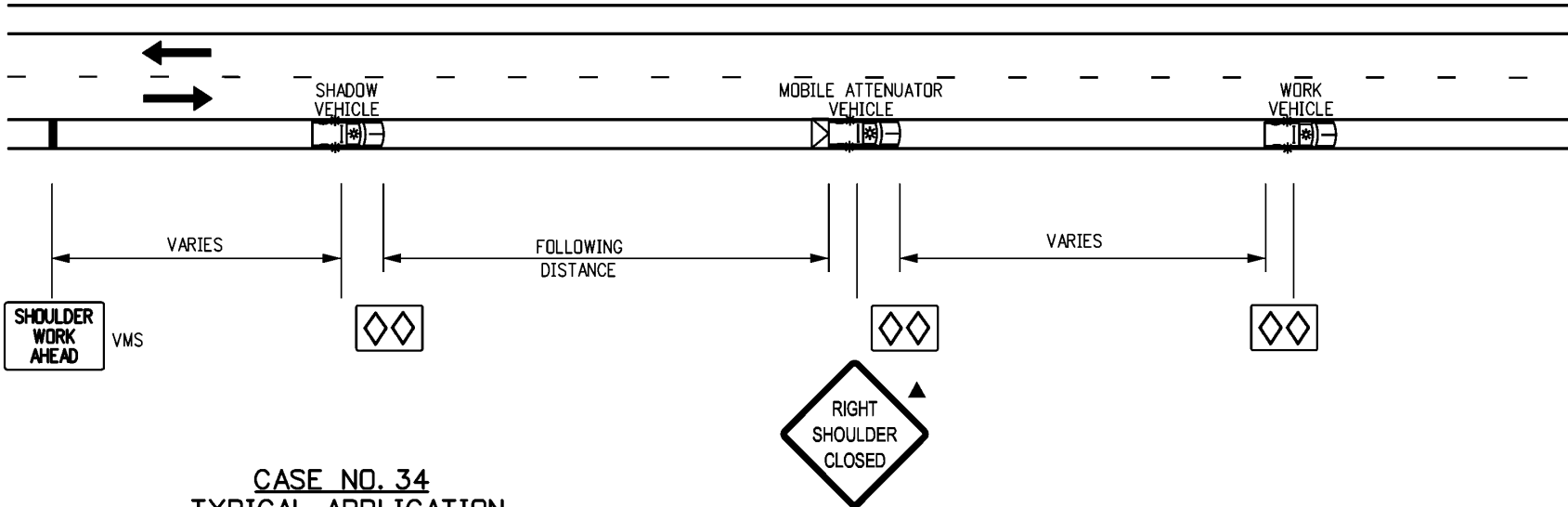
THE VARIABLE SEPARATION DISTANCE BETWEEN THE "CONE PLACEMENT VEHICLE" AND "CONE PICKUP VEHICLE" SHALL BE DETERMINED BY THE TRACK DRYING TIME OF THE PAVEMENT MARKING MATERIAL.



OPTIONAL

FOLLOWING DISTANCE CHART FOR WARNING
AND MOBILE ATTENUATOR (OR CONE PICKUP) VEHICLE

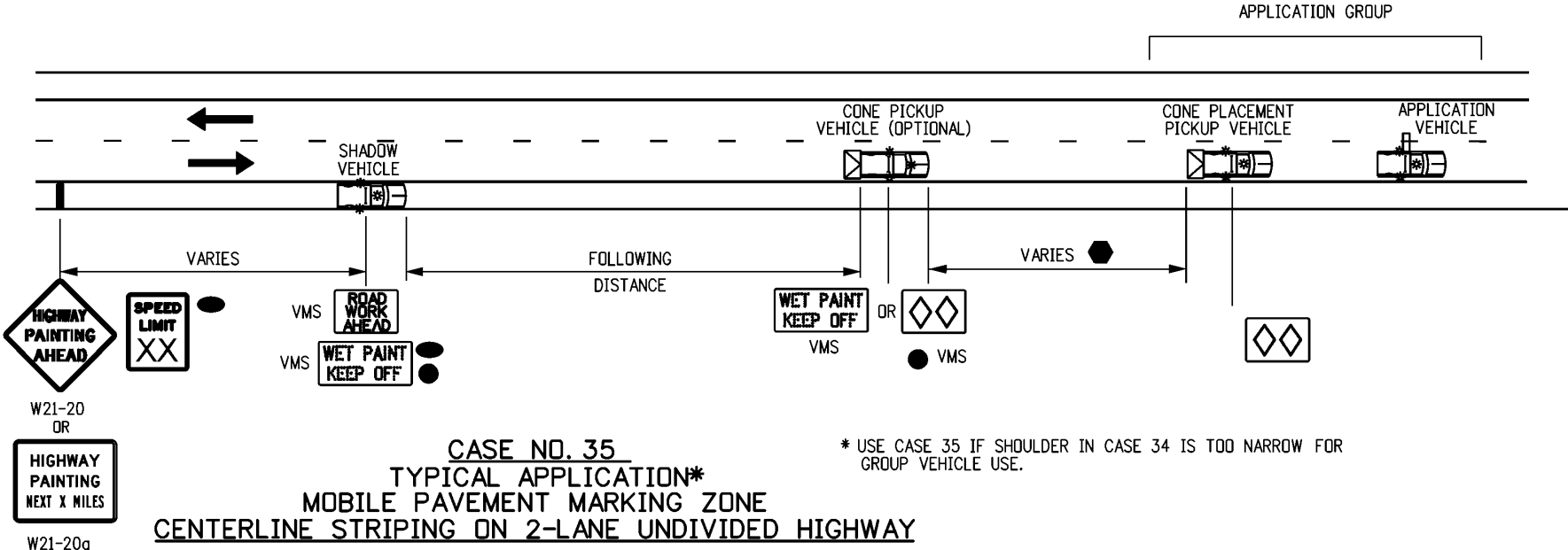
POSTED WZ SPEED LIMIT (MPH)	FOLLOWING DISTANCE (FEET)
0 - 30	250 - 550
35 - 40	325 - 700
45 - 50	600 - 900
55	750 - 1200
60 - 65	1000 - 1400
70 - 75	1200 - 1600



CASE NO. 34
TYPICAL APPLICATION
MOBILE WORK ZONE
MOBILE SHOULDER CLOSURE ON 2-LANE UNDIVIDED HIGHWAY

NOTE

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.





* USE CASE 35 IF SHOULDER IN CASE 34 IS TOO NARROW FOR GROUP VEHICLE USE.


Computer File Information		<div><div></div><div></div><div></div><div></div><div></div><div></div></div>	Sheet Revisions		<div><div><div>Colorado Department of Transportation</div><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div>2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219</div></div><div><div>Traffic & Safety Engineering</div><div>MKB</div></div></div></div></div>	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		STANDARD PLAN NO.	
Creation Date: 07/04/12			Date:	Comments		S-630-1		Standard Sheet No. 21 of 24	
Created By: Nakao									
Last Modification Date: 03/16/16									
Last Modified By: Crayton									
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English								Project Sheet Number:	

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.
- 


AHEAD




LANE CLOSED

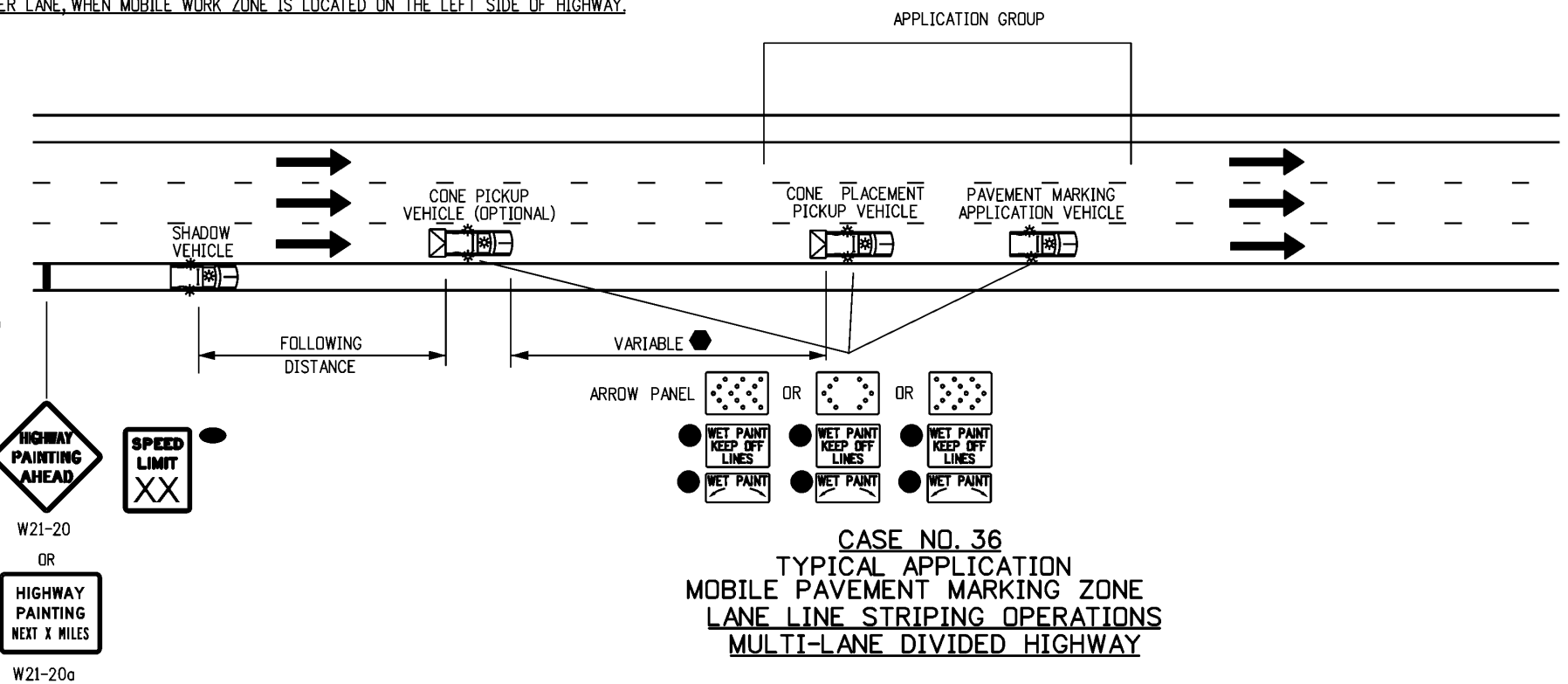
PORTABLE VARIABLE MESSAGE SIGN (VMS).
- 

WHEN THE VMS IS USED, THE "SHOULDER CLOSED" (W21-5aX) OR W21-5bX), AND "RAMP CLOSED AHEAD" 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

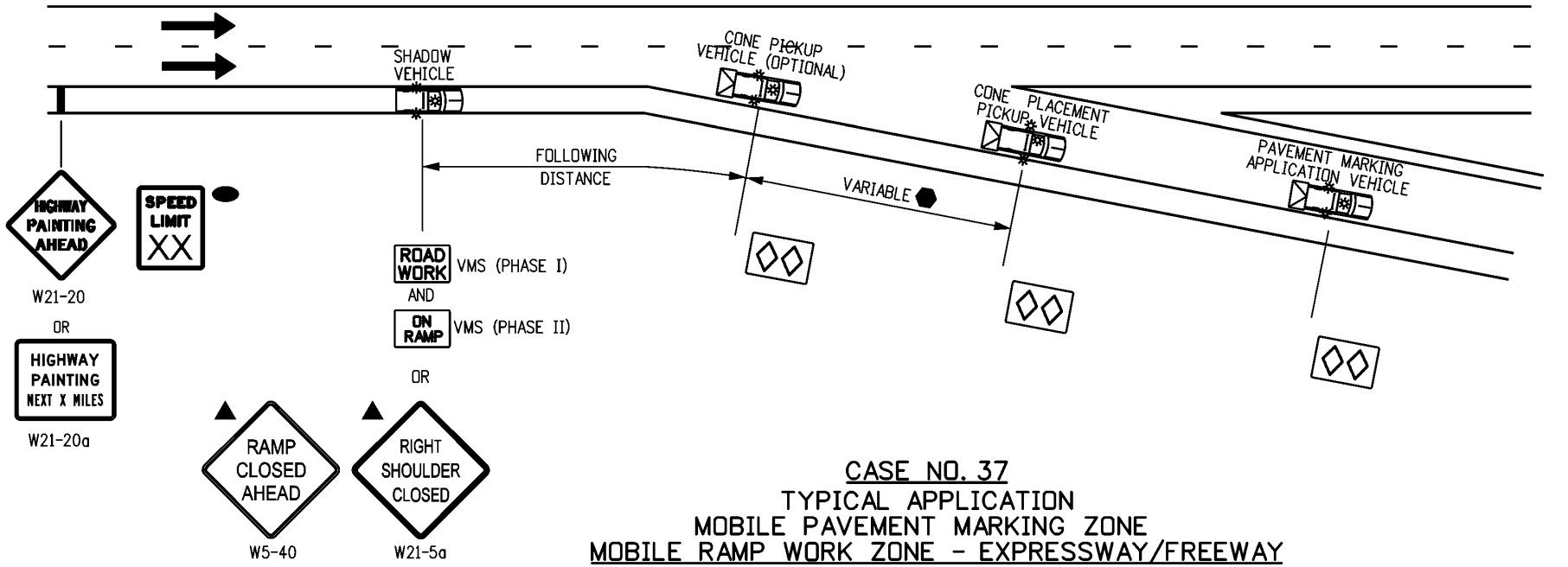


FOLLOWING DISTANCE CHART FOR WARNING VEHICLE AND CONE PICKUP VEHICLES

POSTED WZ SPEED LIMIT (MPH)	FOLLOWING DISTANCE (FEET)
0 - 30	250 - 550
35 - 40	325 - 700
45 - 50	600 - 900
55	750 - 1200
60 - 65	1000 - 1400
70 - 75	1200 - 1600






NOTES

- THE SIGNING VEHICLES MAY ENCRDACH INTO THE TRAFFIC LANE WHEN THE SHOULDER IS TOO NARROW TO DRIVE ON.
- IF THE RAMP CANNOT BE REOPENED WITHIN 15 MINUTES, USE CASE NO. 22 OF THE S-630-1 STANDARD PLAN.



Computer File Information		<div><div></div><div></div><div></div><div></div><div></div></div>	Sheet Revisions		<div>Colorado Department of Transportation</div> <div><div><div></div><div></div></div><div>2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219</div></div> <div>Traffic & Safety Engineering</div> <div>MKB</div>	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	STANDARD PLAN NO.	
Creation Date: 07/04/12	Date:		Comments	S-630-1				
Created By: Nakao				Standard Sheet No. 22 of 24				
Last Modification Date: 03/16/16				Issued By: Traffic & Safety Engineering Branch July 31, 2019				
Last Modified By: Crayton								
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English								

LEGEND

- MOBILE ATTENUATOR TRUCK, TWO 360-DEGREE YELLOW FLASHING BEACONS, AND YELLOW FLASHING VEHICLE LIGHTS OR STROBES.
- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL.
- PORTABLE VARIABLE MESSAGE SIGN (VMS).
- WHEN THE VMS IS USED, THE "RIGHT LANE CLSD AHEAD" (W9-3X) SIGN BECOMES OPTIONAL.
- THE "CONE PICK-UP VEHICLE" OR "WARNING VEHICLE" MAY ENCRDACH INTO THE TRAFFIC LANE WHEN THE SHOULDER IS TOO NARROW TO DRIVE ON.

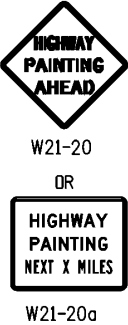
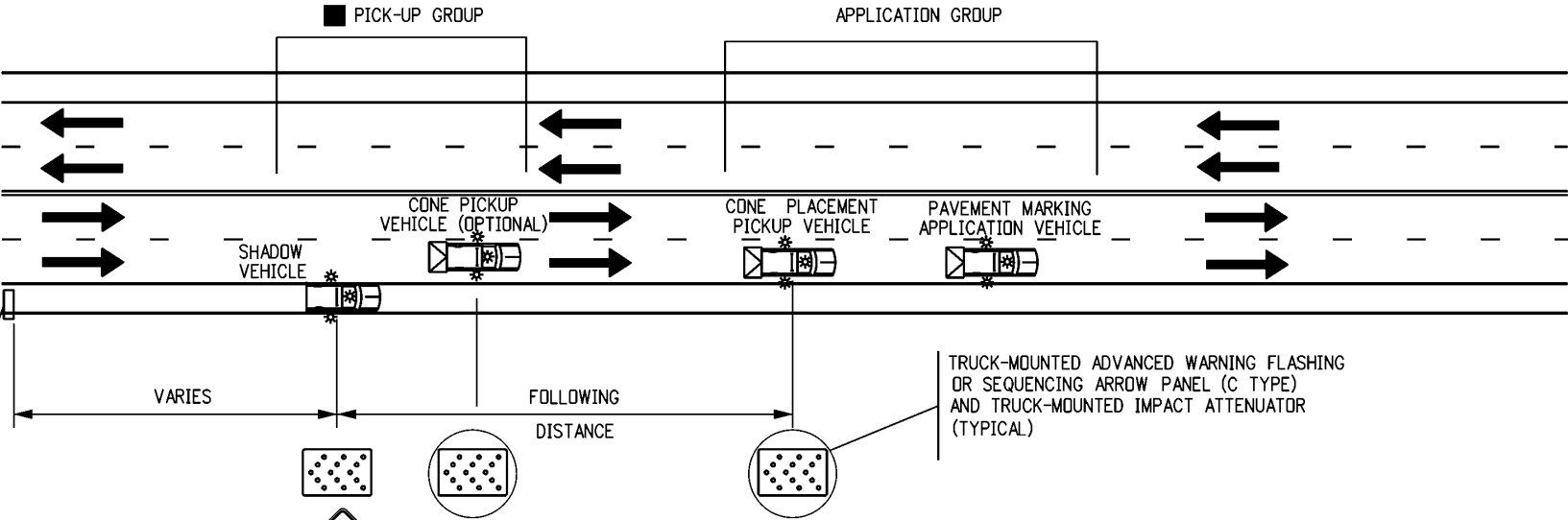
NOTES

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).

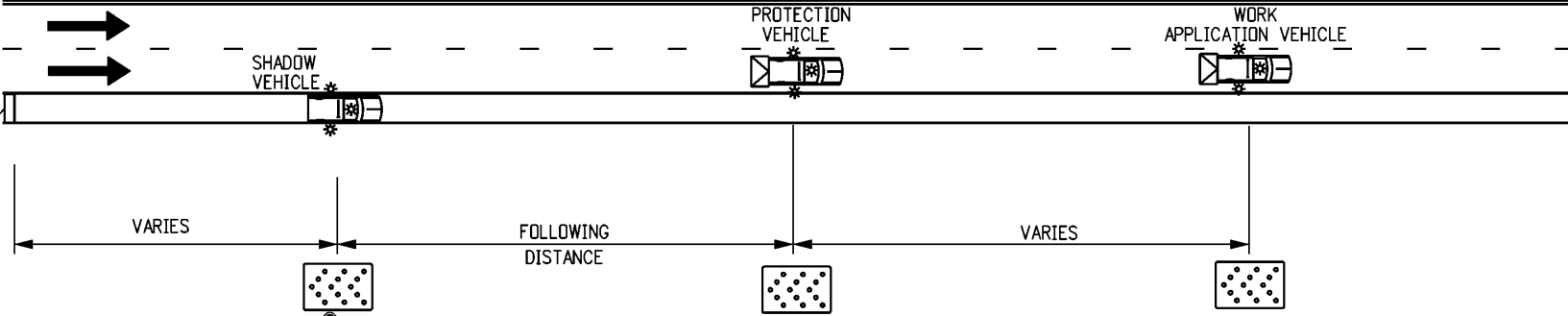
FOLLOWING DISTANCE CHART FOR WARNING VEHICLE AND SIGNING VEHICLES

POSTED WZ SPEED LIMIT (MPH)	FOLLOWING DISTANCE (FEET)
0 - 30	250 - 550
35 - 40	325 - 700
45 - 50	600 - 900
55	750 - 1200
60 - 65	1000 - 1400
70 - 75	1200 - 1600

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



Computer File Information	
Creation Date: 07/04/12	
Created By: Nakao	
Last Modification Date: 05/17/16	
Last Modified By: Crayton	
CAD Ver.: MicroStation V8	Scale: Not to Scale Units: English

Sheet Revisions	
Date:	Comments

Colorado Department of Transportation



2829 W. Howard Pl.
Denver, CO 80204
Phone: 303-757-9436
FAX: 303-757-9219

Traffic & Safety Engineering

MKB

TRAFFIC CONTROLS
FOR HIGHWAY
CONSTRUCTION

Issued By: Traffic & Safety Engineering Branch July 31, 2019

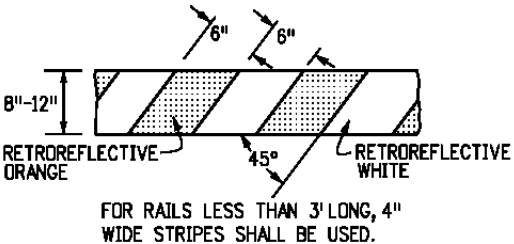
STANDARD PLAN NO.
S-630-1
Standard Sheet No. 23 of 24
Project Sheet Number:

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.	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.*	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.*																																																																																																																																																																																																																																													
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.	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.*	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.*																																																																																																																																																																																																																																													
G20-5P	"WORK ZONE" - THIS PLAQUE SHALL BE MOUNTED JUST ABOVE THE WORK ZONE SPEED LIMIT SIGNS PRIOR TO THE WORK ZONE AREA.			W21-4	"ROAD/WORK/(DIST.)" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF MAINTENANCE FOR MINOR RECONSTRUCTION OPERATIONS IN THE ROADWAY.																																																																																																																																																																																																																																													
G20-10	THANK YOU SIGN - THIS SIGN SHOULD BE ERECTED APPROXIMATELY 500 FEET BEYOND THE END OF THE PROJECT.	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.	W21-5	"SHOULDER/WORK" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE PROJECT INVOLVING THE SHOULDER, WHERE THE TRAVELED WAY REMAINS UNOBSTRUCTED.																																																																																																																																																																																																																																													
G20-11	CONSTRUCTION PROJECT INFORMATION SIGN - THIS SIGN SHOULD BE ERECTED AS DESCRIBED IN THE SECTION 626 STANDARD SPECIFICATION.	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.	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.*																																																																																																																																																																																																																																													
G20-55(X)	"X MINUTE CLOSURE, EXPECT DELAYS" - THIS SIGN IS INTENDED FOR USE 500 FEET PAST THE "WORK ZONE"/SPEED LIMIT SIGN.	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.*	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.																																																																																																																																																																																																																																													
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.	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.*	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.																																																																																																																																																																																																																																													
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.	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.*	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.																																																																																																																																																																																																																																													
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.	W8-3a	"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.*	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.																																																																																																																																																																																																																																													
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.	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.*	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.																																																																																																																																																																																																																																													
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.	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.*	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.																																																																																																																																																																																																																																													
R4-1	"DO NOT PASS" - THIS SIGN SHOULD BE PLACED AT TRANSITION TAPER POINT.	W8-9a	"SHOULDER DROP-OFF" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF A SHOULDER DROP-OFF THAT EXCEEDS THREE INCHES IN HEIGHT.*	ADVANCE PLACEMENT OF WARNING SIGNS																																																																																																																																																																																																																																														
R4-2	"PASS WITH CARE" - THIS SIGN SHOULD BE PLACED AT TRANSITION TAPER POINT.	W8-11	"UNEVEN LANES" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF AN UNEVEN ADJACENT LANE SITUATION THAT EXCEEDS ONE INCH IN HEIGHT.*	<table><tr><th rowspan="4">POSTED OR 85TH PERCENTILE SPEED</th><th colspan="9">ADVANCE PLACEMENT DISTANCE (FEET)</th></tr><tr><th rowspan="3">+ CONDITION A</th><th colspan="8">++ CONDITION B: DECLARATION TO THE LISTED ADVISORY SPEED (MPH) FOR THE CONDITION</th></tr><tr><th colspan="8">MPH</th></tr><tr><th>0</th><th>10</th><th>20</th><th>30</th><th>40</th><th>50</th><th>60</th><th>70</th></tr><tr><td>R11-2</td><td>"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.</td><td>20</td><td>225</td><td>●</td><td>●</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td></tr><tr><td>R11-3</td><td>"ROAD CLOSED/X MILES AHEAD/L.T.O. - 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.</td><td>25</td><td>325</td><td>●</td><td>●</td><td>●</td><td>—</td><td>—</td><td>—</td><td>—</td></tr><tr><td>R11-4</td><td>"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 ROAD IS OPEN TO LOCAL TRAFFIC UP TO THE POINT OF CLOSURE.</td><td>30</td><td>450</td><td>●</td><td>●</td><td>●</td><td>—</td><td>—</td><td>—</td><td>—</td></tr><tr><td>R52-6a</td><td>"BEGIN FINES DOUBLE IN WORK ZONE" SIGN IS PLACED AT THE BEGINNING OF THE ADVANCED WARNING AREA OF THE TRAFFIC CONTROL ZONE.</td><td>35</td><td>550</td><td>●</td><td>●</td><td>●</td><td>—</td><td>—</td><td>—</td><td>—</td></tr><tr><td>R52-6b</td><td>"END FINES DOUBLE IN WORK ZONE" SIGN IS PLACED AFTER WORK ZONE AREA, PAST DOWNSTREAM TAPER SECTION.</td><td>40</td><td>650</td><td>125</td><td>●</td><td>●</td><td>●</td><td>—</td><td>—</td><td>—</td></tr><tr><td>W1-1()</td><td>"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.*</td><td>45</td><td>750</td><td>175</td><td>125</td><td>●</td><td>●</td><td>●</td><td>—</td><td>—</td></tr><tr><td>W1-2()</td><td>"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.*</td><td>50</td><td>850</td><td>250</td><td>200</td><td>150</td><td>100</td><td>●</td><td>—</td><td>—</td></tr><tr><td>W1-3()</td><td>"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.*</td><td>55</td><td>950</td><td>325</td><td>275</td><td>225</td><td>175</td><td>100</td><td>●</td><td>—</td></tr><tr><td>W1-4()</td><td>"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.*</td><td>60</td><td>1100</td><td>400</td><td>350</td><td>300</td><td>250</td><td>175</td><td>●</td><td>—</td></tr><tr><td>W1-6()</td><td>"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.</td><td>65</td><td>1200</td><td>475</td><td>425</td><td>400</td><td>350</td><td>275</td><td>175</td><td>●</td></tr><tr><td>W3-2</td><td>"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.*</td><td>70</td><td>1250</td><td>550</td><td>525</td><td>500</td><td>425</td><td>350</td><td>250</td><td>150</td></tr><tr><td>W3-4</td><td>"BE PREPARED TO STOP" - THIS SIGN TO BE PLACED 1.5 MILES IN ADVANCED OF A FLAGGER.</td><td>75</td><td>1350</td><td>650</td><td>625</td><td>600</td><td>525</td><td>450</td><td>350</td><td>250</td></tr><tr><td>W4-2(X)</td><td>"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.*</td><td colspan="10">+ CONDITION A: SPEED REDUCTION AND LANE CHANGING IN HEAVY TRAFFIC. TYPICAL SIGNS ARE "MERGE" AND "RIGHT LANE ENDS".</td></tr><tr><td>W4-50</td><td>"USE BOTH LANES DURING CONGESTION" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE "ROAD WORK X MILE" ADVANCED WARNING SIGN.</td><td colspan="10">++ 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".</td></tr><tr><td>W4-51</td><td>"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.</td><td colspan="10">● NO SUGGESTED DISTANCES ARE PROVIDED AT THESE SPEEDS, AS THE PLACEMENT IS DEPENDENT ON SITE CONDITIONS AND OTHER SIGNING.</td></tr><tr><td>W4-52</td><td>"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 .</td><td colspan="10">* PLACEMENT SHOULD BE IN ACCORDANCE WITH WARNING SIGN PLACEMENT TABLE.</td></tr><tr><td>W5-1</td><td>"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.*</td><td colspan="10">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.</td></tr><tr><td></td><td></td><td>W21-1a</td><td>"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.</td><td colspan="6"></td></tr></table>		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	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.	20	225	●	●	—	—	—	—	—	R11-3	"ROAD CLOSED/X MILES AHEAD/L.T.O. - 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.	25	325	●	●	●	—	—	—	—	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 ROAD IS OPEN TO LOCAL TRAFFIC UP TO THE POINT OF CLOSURE.	30	450	●	●	●	—	—	—	—	R52-6a	"BEGIN FINES DOUBLE IN WORK ZONE" SIGN IS PLACED AT THE BEGINNING OF THE ADVANCED WARNING AREA OF THE TRAFFIC CONTROL ZONE.	35	550	●	●	●	—	—	—	—	R52-6b	"END FINES DOUBLE IN WORK ZONE" SIGN IS PLACED AFTER WORK ZONE AREA, PAST DOWNSTREAM TAPER SECTION.	40	650	125	●	●	●	—	—	—	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.*	45	750	175	125	●	●	●	—	—	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.*	50	850	250	200	150	100	●	—	—	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.*	55	950	325	275	225	175	100	●	—	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.*	60	1100	400	350	300	250	175	●	—	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.	65	1200	475	425	400	350	275	175	●	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.*	70	1250	550	525	500	425	350	250	150	W3-4	"BE PREPARED TO STOP" - THIS SIGN TO BE PLACED 1.5 MILES IN ADVANCED OF A FLAGGER.	75	1350	650	625	600	525	450	350	250	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.*	+ CONDITION A: SPEED REDUCTION AND LANE CHANGING IN HEAVY TRAFFIC. TYPICAL SIGNS ARE "MERGE" AND "RIGHT LANE ENDS".										W4-50	"USE BOTH LANES DURING CONGESTION" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE "ROAD WORK X MILE" ADVANCED WARNING SIGN.	++ 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".										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.	● NO SUGGESTED DISTANCES ARE PROVIDED AT THESE SPEEDS, AS THE PLACEMENT IS DEPENDENT ON SITE CONDITIONS AND OTHER SIGNING.										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 .	* PLACEMENT SHOULD BE IN ACCORDANCE WITH WARNING SIGN PLACEMENT TABLE.										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.*	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.												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.						
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																																																																																																																																																																																																																																									
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.	20	225	●	●	—	—	—	—	—																																																																																																																																																																																																																																								
R11-3	"ROAD CLOSED/X MILES AHEAD/L.T.O. - 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.	25	325	●	●	●	—	—	—	—																																																																																																																																																																																																																																								
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 ROAD IS OPEN TO LOCAL TRAFFIC UP TO THE POINT OF CLOSURE.	30	450	●	●	●	—	—	—	—																																																																																																																																																																																																																																								
R52-6a	"BEGIN FINES DOUBLE IN WORK ZONE" SIGN IS PLACED AT THE BEGINNING OF THE ADVANCED WARNING AREA OF THE TRAFFIC CONTROL ZONE.	35	550	●	●	●	—	—	—	—																																																																																																																																																																																																																																								
R52-6b	"END FINES DOUBLE IN WORK ZONE" SIGN IS PLACED AFTER WORK ZONE AREA, PAST DOWNSTREAM TAPER SECTION.	40	650	125	●	●	●	—	—	—																																																																																																																																																																																																																																								
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.*	45	750	175	125	●	●	●	—	—																																																																																																																																																																																																																																								
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.*	50	850	250	200	150	100	●	—	—																																																																																																																																																																																																																																								
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.*	55	950	325	275	225	175	100	●	—																																																																																																																																																																																																																																								
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.*	60	1100	400	350	300	250	175	●	—																																																																																																																																																																																																																																								
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.	65	1200	475	425	400	350	275	175	●																																																																																																																																																																																																																																								
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.*	70	1250	550	525	500	425	350	250	150																																																																																																																																																																																																																																								
W3-4	"BE PREPARED TO STOP" - THIS SIGN TO BE PLACED 1.5 MILES IN ADVANCED OF A FLAGGER.	75	1350	650	625	600	525	450	350	250																																																																																																																																																																																																																																								
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.*	+ CONDITION A: SPEED REDUCTION AND LANE CHANGING IN HEAVY TRAFFIC. TYPICAL SIGNS ARE "MERGE" AND "RIGHT LANE ENDS".																																																																																																																																																																																																																																																
W4-50	"USE BOTH LANES DURING CONGESTION" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE "ROAD WORK X MILE" ADVANCED WARNING SIGN.	++ 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".																																																																																																																																																																																																																																																
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.	● NO SUGGESTED DISTANCES ARE PROVIDED AT THESE SPEEDS, AS THE PLACEMENT IS DEPENDENT ON SITE CONDITIONS AND OTHER SIGNING.																																																																																																																																																																																																																																																
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 .	* PLACEMENT SHOULD BE IN ACCORDANCE WITH WARNING SIGN PLACEMENT TABLE.																																																																																																																																																																																																																																																
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.*	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.																																																																																																																																																																																																																																																
		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.																																																																																																																																																																																																																																															

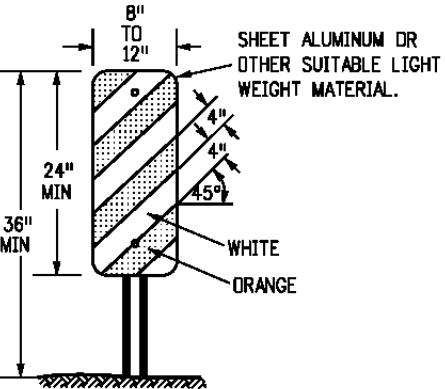
Computer File Information			<div><div></div><div></div><div></div><div></div></div>	Sheet Revisions		<div><div></div><div>Colorado Department of Transportation</div><div>2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219</div><div>Traffic & Safety Engineering</div><div>MKB</div></div>	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		STANDARD PLAN NO.	
Creation Date: 07/04/12		Date:		Comments	S-630-1					
Created By: Nakao					Standard Sheet No. 24 of 24					
Last Modification Date: 05/19/16										
Last Modified By: Crayton										
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English					Issued By: Traffic & Safety Engineering Branch July 31, 2019					
						Project Sheet Number:				

GENERAL NOTES

- THE VARIOUS TYPES, COMBINATIONS AND APPLICATIONS OF SIGNS AND WARNING LIGHTS FOR BARRICADES REQUIRED FOR EACH PROJECT SHALL BE:
 - AS SPECIFIED OR DETAILED IN THE PLANS.
 - AS SHOWN IN APPLICABLE TYPICAL ILLUSTRATIONS.
 - AS CALLED FOR AND SUBJECT TO APPROVAL BY THE ENGINEER.
- 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.
- ALL PAINTING SHALL CONFORM WITH THE FOLLOWING:
 - THE APPLICABLE SECTION OF 508 OF THE STANDARD SPECIFICATIONS.
 - ALL SKIDS, BRACES AND POSTS SHALL BE PAINTED WITH 2 COATS OF EXTERIOR WHITE PAINT.
 - THE BACKSIDES OF RAILS AND VERTICAL PANEL CHANNELIZING DEVICES FACING ONE DIRECTION OF TRAFFIC ONLY SHALL BE PAINTED WITH EXTERIOR WHITE PAINT.
 - ALUMINUM OR GALVANIZED STEEL SKIDS, BRACES AND POSTS SHALL NOT BE PAINTED.
- ALL STRIPED SURFACES SHALL CONFORM WITH THE FOLLOWING:
 - THE ENTIRE AREA OF ORANGE AND WHITE STRIPES SHALL BE FABRICATED AS ONE PIECE.
 - 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.
 - 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.
 - ALL RETROREFLECTIVE SHEETING SHALL CONFORM TO ASTM D4956:
 - ORANGE AND WHITE SHALL BE TYPE IV MINIMUM.
 - RED AND WHITE SHALL BE TYPE IV MINIMUM.
- FOR ALL WOODEN BARRICADE COMPONENTS NOMINAL LUMBER DIMENSIONS ARE SATISFACTORY.
- ALL SCREWS, BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED OR CADMIUM PLATED.
- STABILITY OF BARRICADES AND CHANNELIZING DEVICES SHALL CONFORM WITH THE FOLLOWING:
 - SKIDS (BASES) OF MOVABLE BARRICADES SHALL BE WEIGHTED WITH SANDBAGS ONLY WHERE NECESSARY TO PROVIDE STABILITY.
 - NO MOVABLE OR PORTABLE DEVICE SHALL BE WEIGHTED BY ANY METHOD OR WITH ANY MATERIAL THAT WOULD MAKE THEM HAZARDOUS TO MOTORISTS.
- WARNING LIGHTS USED WITH BARRICADES, DRUMS AND VERTICAL PANELS SHALL CONFORM WITH THE FOLLOWING:
 - USE FLASHING WARNING LIGHTS WHEN DEVICES ARE USED SINGLY, AND STEADY BURN LIGHTS WHEN THEY ARE USED IN A SERIES FOR CHANNELIZATION.
 - THEY SHALL BE POSITIONED ABOVE THE TOP RAIL OF BARRICADES OR ON TOP OF DRUMS AND VERTICAL PANELS.
- CONCRETE BARRIER (TEMPORARY) SHALL CONFORM WITH:
 - PRECAST CONCRETE BARRIER AS SHOWN ON COLORADO STANDARD PLAN M-606-14.
 - 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.
 - CONCRETE BARRIER END TREATMENT SHALL BE IN ACCORDANCE WITH CLEAR ZONE CRITERIA, AND PLACED AS SHOWN ON THE PLANS.
- SIGN PANELS MOUNTED ON BARRICADES WILL BE PAID FOR SEPARATELY.

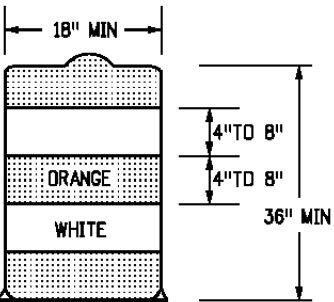


RAIL STRIPING DETAIL



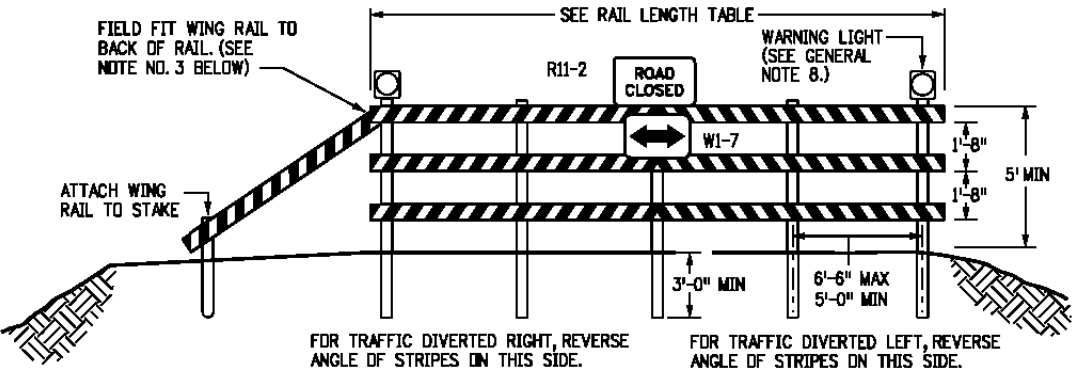
TYPICAL VERTICAL PANEL

- IF SPECIAL PANELS 3' OR GREATER IN HEIGHT ARE REQUIRED, THEN 6" STRIPES SHALL BE USED.
- IF FIXED PLACEMENT IS REQUIRED, MOUNT ON DELINEATOR POST. SEE COLORADO STANDARD PLAN S-612-1.

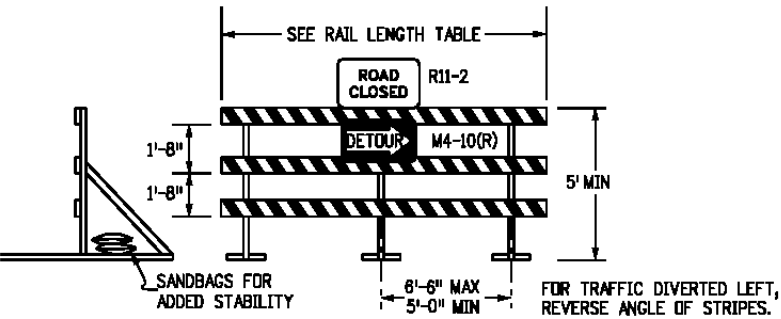


TYPICAL DRUM

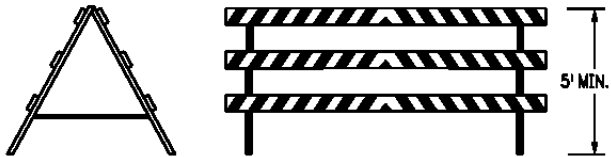
- THE 18" MINIMUM DIMENSION SHALL APPLY TO THE SMALLEST MEASUREMENT OF OBLONG, RECTANGULAR, OR FLATTENED SIDE DRUMS.
- THERE SHALL BE AT LEAST TWO ORANGE AND TWO WHITE HORIZONTAL, CIRCUMFERENTIAL, RETROREFLECTIVE STRIPES ON EACH DRUM.



FIXED



MOVABLE-SKIDS



MOVABLE-HINGED

TYPICAL TYPE 3 BARRICADES

- TYPE 3 BARRICADES HAVE 3 REFLECTORIZED RAIL FACES IF FACING TRAFFIC IN ONE DIRECTION AND 6 IF FACING TRAFFIC IN TWO DIRECTIONS.
- THE PORTION OF THE POST ABOVE THE GROUND LINE SHALL BE PAINTED IN ACCORDANCE WITH THE APPROPRIATE GENERAL NOTE.
- 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'

Computer File Information

Creation Date: 07/04/12
Created By: JSW
Last Modification Date: 07/31/19
Last Modified By: AVU
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English

Sheet Revisions

Date:	Comments

Colorado Department of Transportation



Troffic & Sfty Engineering

2829 W. Howard Pl.
Denver, CO 80204
Phone: 303-757-9436
FAX: 303-757-9219

MKB

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: