

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	A-01

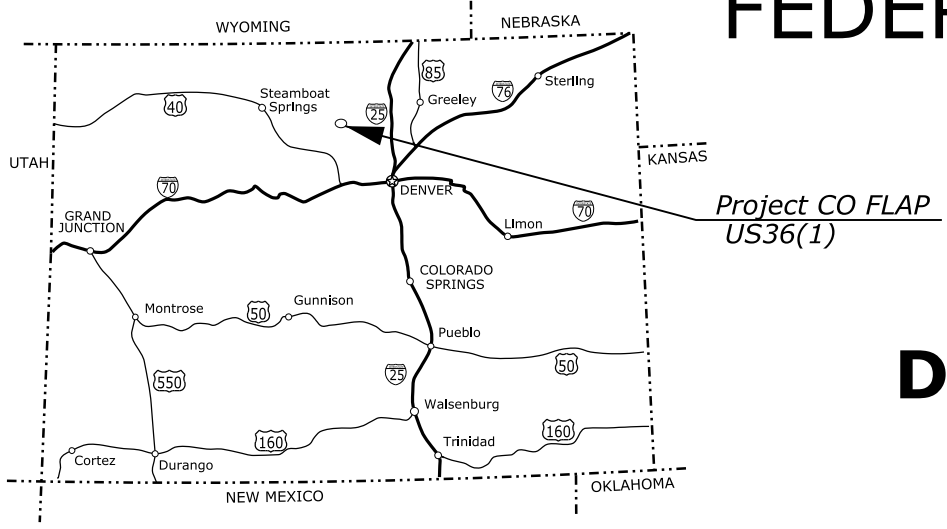
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

PLANS FOR PROPOSED

CO FLAP US36(1)

DOWNTOWN ESTES PARK LOOP

LARIMER COUNTY
SCHEDULE A LENGTH = 1.10 miles
OPTION X LENGTH = 1.30 miles



TYPE OF CONSTRUCTION:
Bridge and roadway reconstruction

DESIGN DESIGNATIONS:

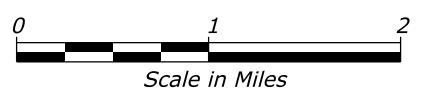
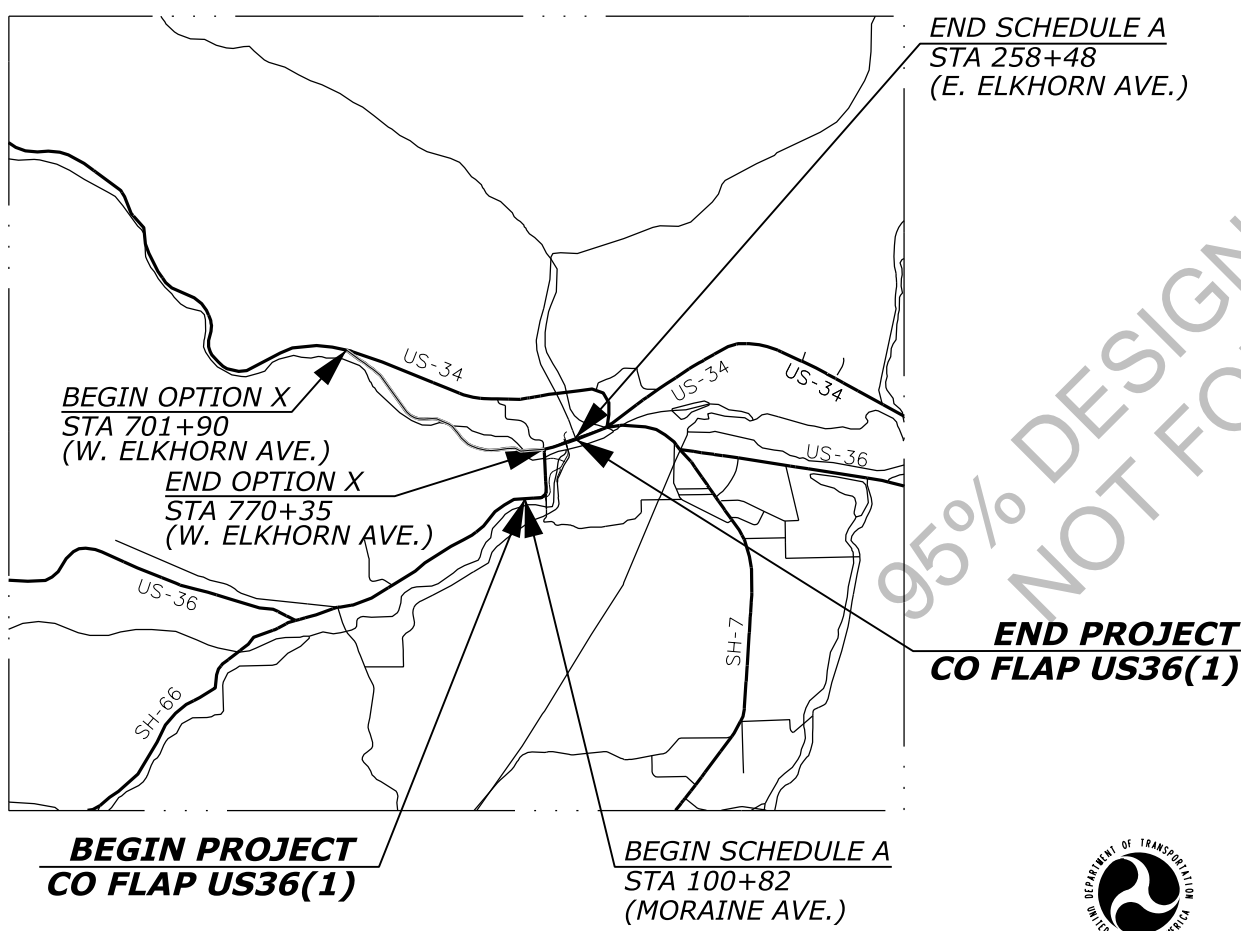
	Elkhorn	Moraine	Riverside
ADT (2021) -----	14,700	11,500	10,200
ADT (2041) -----	19,900	15,000	13,300
DHV -----	2,145	1,390	1,425
T -----	3%	3%	3%
V (Roundabout Approach) -	20 mph	20 mph	20 mph
V -----	25 mph	25 mph	25 mph
e(max) -----	4%	4%	4%

U.S. CUSTOMARY DIMENSIONS:
Slopes are expressed as RISE:RUN

SPECIFICATIONS:
"STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL HIGHWAY PROJECTS, FP-14"



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PLANS PREPARED BY



FOR

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION
DENVER, COLORADO

APPROVED:

CHIEF OF ENGINEERING
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

DATE: _____

User: isabel.butler... 8:05:41 PM... 1/27/2022

PROJECT MANAGER	LEAD DESIGNER
JOHN KNOWLES	AECOM

11:56:01 AM pw:\aecom-na-pw.bentley.com\AECOM_DS01_NA\Documents\60332740-Estes Park\1900-Work\1910_CAD\02-SHEETS\A-Gen_sht\A02_SHEET_INDEX_01.dgn User: isabel.butler

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B-14	CURB AND GUTTER SUMMARY
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B-16	PAVEMENT SUMMARY
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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	A-02

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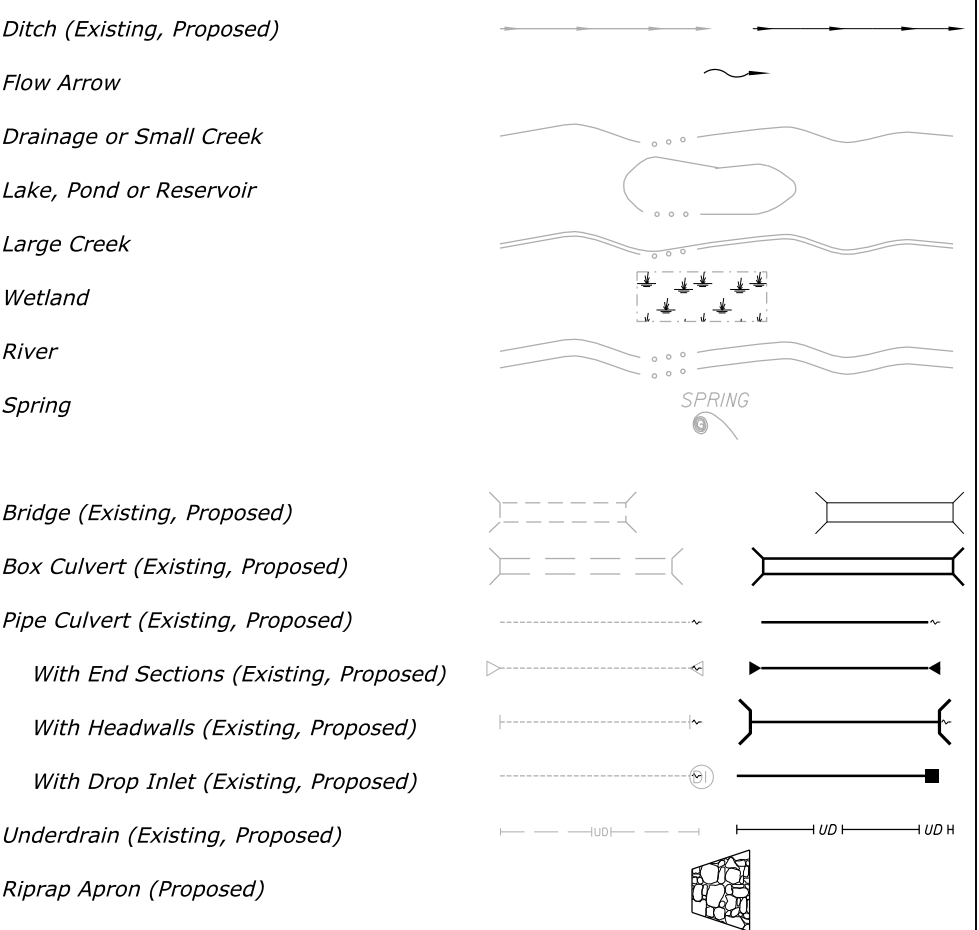
SHEET INDEX

ABBREVIATIONS

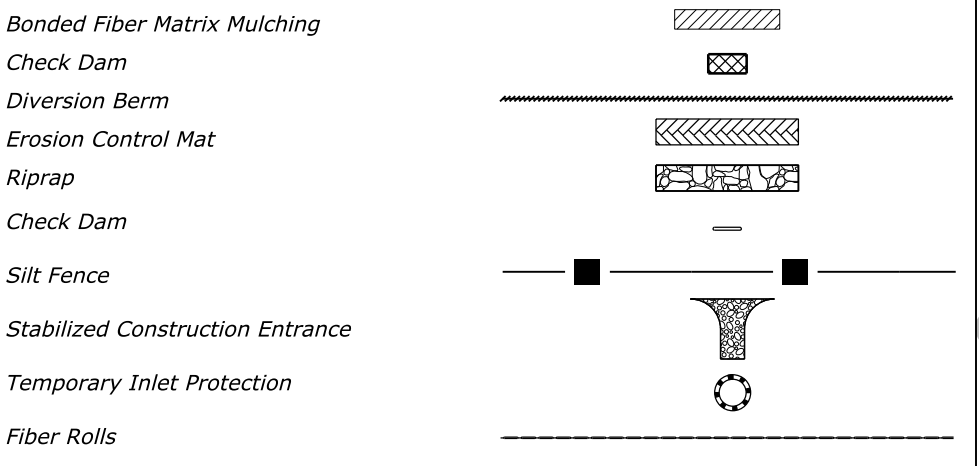
∅	centerline
Δ	curve delta
A abut.	abutment
ADT	average daily traffic
aggr.	aggregate
AH	ahead
alt.	alternate
appr.	approach
asph.	asphalt
B b.f.	both faces
beg.	beginning, begin
BK	back
BM	bench mark
BP	balance point
br.	bridge
brg.	bearing
C CBC	concrete box culvert
c-c	center to center
clr.	clear
CMP	corrugated metal pipe
Co.	county
col.	column
conc.	concrete
constr.	construction
constr. jt.	construction joint
cont.	continuous
corr.	corrugated
cr.	creek
CS	point of curve to spiral
ctrs.	centers
CTSM	contingent sum
culv.	culvert
D decr.	decrement
DHV	design hour volume
DI	drop inlet
dia. or D	diameter
diag.	diagonal
diaph.	diaphragm
dist.	distance
Dist.	district
DLC	donation land claim
dwg(s).	drawing(s)
E E	east
e	superelevation rate
El. 94.066	elevation with number
elev.	elevation
emb.	embankment
engr(s).	Engineer(s)
EOP	edge of pavement
EQ or eq.	equation
ER	edge of road
et al	and others
et ux	and wife
EW	edge of water
exc.	excavation
exp. jt.	expansion joint
ext.	exterior
F f.f.	fill face
Fed.	federal
FES	flared end section
fin.	finish
ftg.	footing
G ga.	gage (gauge)
galv.	galvanized
gdr.	girder
H hdwl.	headwall
HES	homestead entry survey
hex.	hexagon
horiz.	horizontal
HW	high water
hwy.	highway
I ID	inside diameter
incl.	inclusive, including
incr.	increment
int.	interior
J jt.	joint

L L	length of curve
lam.	lamination
lat.	latitude
long.	longitudinal
LPSM	lump sum
Lt. or LT	left
LW	low water
M mag.	magnetic
maint.	maintenance
matl.	material
max.	maximum
min.	minimum
mon.	monument
mtn(s).	mountain(s)
N N	north
NC	normal crown
neg.	negative
no. or #	number
O o.c.	on centers
o.f.	other face
OD	outside diameter
P PC	point of curve
PCC	point of compound curve
perf.	perforate
PI	point of intersection
pl.	plate
POC	point on curve
POS	point on spiral
POT	point on tangent
proj.	project
psi	pounds per square inch
PT	point of tangent
pvmt.	pavement
Q quant., Qty	quantities
R R	radius
R.	range
R/W	right-of-way
rd.	road
rdwy.	roadway
reconst.	reconstruction
reinf.	reinforcement
reqd.	required
res.	reservoir
Res.	Reservation
ret. wall	retaining wall
RH	reference hub
Rt. or RT	right
rte.	route
S S	south
SADT	seasonal average daily traffic
SC	point of spiral to curve
sec.	section
shldr.	shoulder
spa.	spacing, Spaces or Spaced
spec.	specification
st.	street
ST	point of spiral to tangent
sta.	station
std.	standard
stiff.	stiffener
str.	straight
struc.	structural
sym.	symmetrical
T T	tangent length
T.	township
tan.	tangent
TBM	temporary bench mark
TCE	temporary construction easement
transv.	transverse
TS	point of tangent to spiral
typ.	typical
V V	design speed
vert.	vertical
vph	vehicles per hour
VPI	vertical point of intersection
W W	west

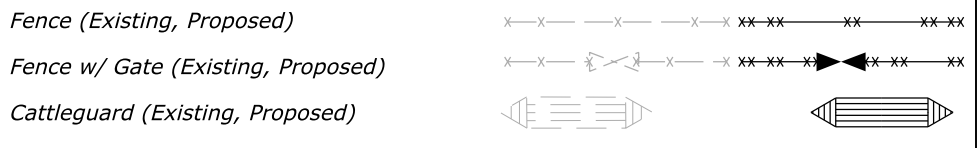
DRAINAGE SYMBOLS



EROSION & SEDIMENT CONTROL SYMBOLS



FENCE & CATTLEGUARD SYMBOLS



GEOLOGIC SYMBOLS



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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	A-04

LANDSCAPING & VEGETATION SYMBOLS

Tree

Treeline

MAPPING SYMBOLS

Building (Existing, Proposed)

Coordinate Grid Tick

North Arrow

Railroad

Single Track

Double Track

Spot Elevation

Trail

Survey Control Point

RIGHT-OF-WAY SYMBOLS

Boundaries

National

State

County

City

Township or Range Line

Section

1/4 Section

1/16 Section

Bureau of Indian Affairs

Bureau of Land Management

National Forest

National Park

National Wildlife Refuge

Easements

Permanent (Existing)

Permanent (Proposed)

Temporary (Proposed)

Monument (As described)

Parcel Number

Property Line

Right-of-Way Line (Existing)

Right-of-Way Line (Proposed)

Section Corner (Found, Projected)

1/4 Section Corner (Found, Projected)

1/16 Section Corner (Found)

GUARDRAIL, BARRIER & WALL SYMBOLS

Guardrail (Existing, Proposed)

Guardwall (Existing, Proposed)

Median & Side Barrier (Existing, Proposed)

Retaining Wall (Existing, Proposed)

ROADWAY SYMBOLS

Clearing/Construction Limits

Slope Stake Limits

Top of Cut

Transition

Toe of Fill

Edge of Roadway

Existing

Proposed

Roadway Centerline (With Station ticks)

Roadway Obliteration

SIGN SYMBOLS

Signs

Commercial (Existing, Proposed)

Delineator (Existing, Proposed)

Portable (Proposed)

Post Mounted (Existing, Proposed)

UTILITY SYMBOLS

Irrigation Ditch

Underground (Existing, Proposed)

Surface (Existing, Proposed)

Support Pole (Existing, Proposed)

Support Pole Anchor (Existing, Proposed)

Street Light (Existing, Proposed)

Telephone Booth (Existing, Proposed)

Telephone Pedestal (Existing, Proposed)

Underground Utility (Existing, Proposed)

CATV

Fiber Optic

Gas

Oil

Power

Sanitary Sewer

Telephone

Water

Overhead Utility Line (Existing, Proposed)

CATV

Fiber Optic

Power

Telephone

MISCELLANEOUS SYMBOLS

See Note 4

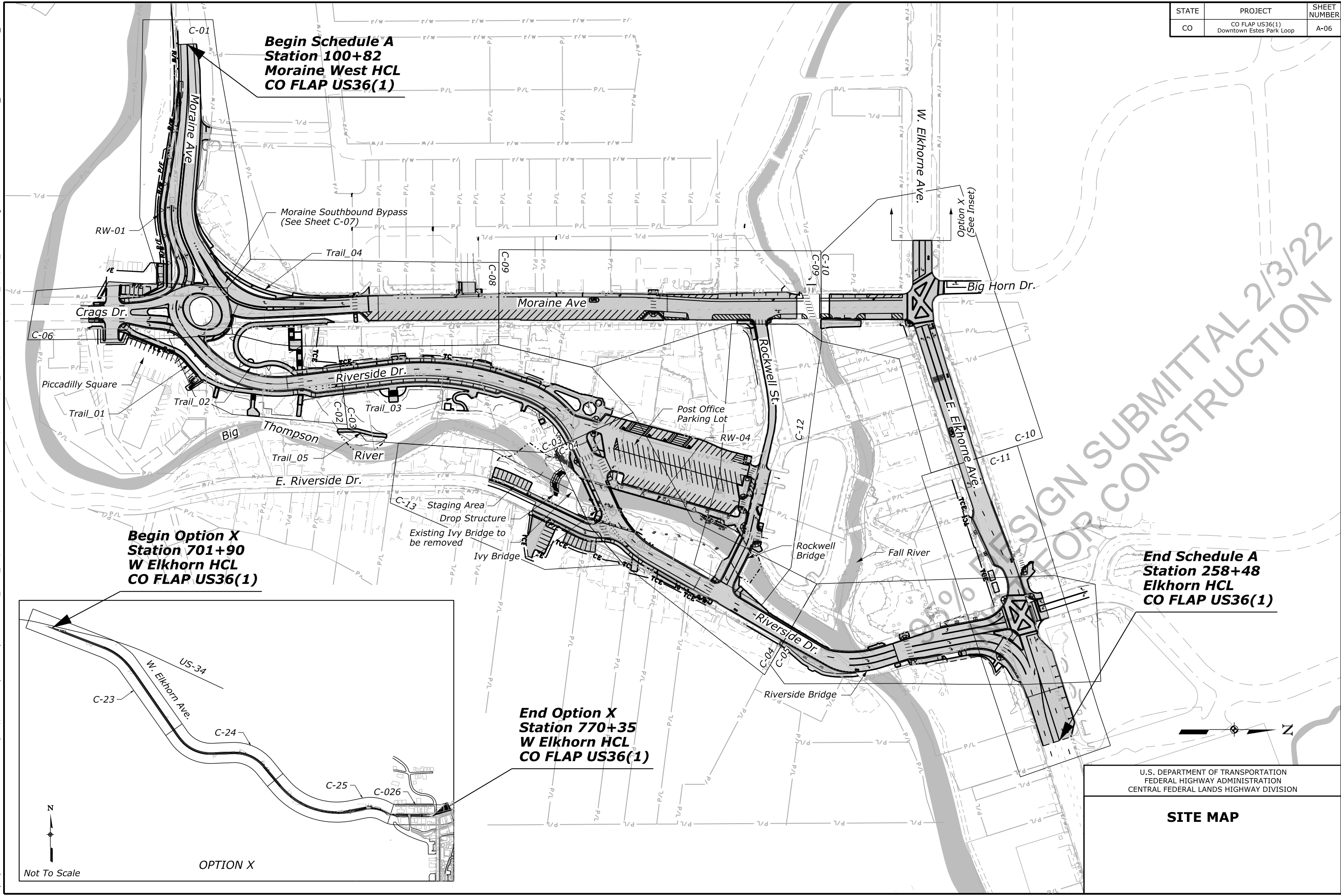
REOP	Right Edge of Pavement
LEOP	Left Edge of Pavement
MP	Mile Post
HCL	Horizontal Control Line
PGL	Profile Grade Line
RW	Retaining Wall
Curb T2 - B	Curb and Gutter Type 2 (Section B)
Curb T2 - IB	Curb and Gutter Type 2 (Section IB)
Curb T2 - IIB	Curb and Gutter Type 2 (Section IIB)
Curb T2 - M	Curb and Gutter Type 2 (Section M)
Curb T2 - IM	Curb and Gutter Type 2 (Section IM)
Curb T2 - IIM	Curb and Gutter Type 2 (Section IIM)
Curb T6 - M	Curb Type 6 (Section M)
	Proposed Pavement
R-01	Ramp 01
D-01	Driveway 01
CR-01	Curb Return 01

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	A-06

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 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

SITE MAP

PROJECT : CO FLAP 36(1) - DOWNTOWN ESTES PARK LOOP
 DATE OF FIELD WORK : JANUARY 2015
 DATE OF FINAL ADJUSTMENT : UNKNOWN (PERFORMED BY OTHERS)
 TIED TO CDOT CONTROL FOR PROJECTS FSA0341-076 AND MTCE0361-096
 PROJECT UNITS : FEETUS; DMS
 COORDINATE SYSTEM : NAD83; CO NORTH ZONE 0501 (SCALED TO THE GROUND)
 EPOCH DATE : UNKNOWN
 SCALED TO THE GROUND AROUND (0,0) USING A COMBINED GRID TO GROUND
 SCALE FACTOR OF 1.0003866601, THEN TRUNCATED BY 400,000M IN THE NORTHING AND 900,000M IN THE EASTING.
 VERTICAL DATUM : NAVD 88, GEOID 12A

POINT NUMBER	PROJECT COORDINATES			GEO COORDINATES			MAPPING ANGLE	COMBINED FACTOR	HCL	STATION	OFFSET	DESCRIPTION
	NORTH	EAST	ELEVATION	LATITUDE	LONGITUDE	ELLIPSOID HEIGHT						
2000	70601.54	37034.39	7699.68	40°22'59.10027"N	105°32'26.94640"W	7659.15	-0°01'35"	0.99998065	N/A	N/A	N/A	CP 2000 2" WCI ALUM CAP
6127	67689.32	41859.59	7545.65	40°22'30.34977"N	105°31'24.60592"W	7504.67	-0°00'55"	0.99998771	Riverside Dr	507+70.18	322.96	CP 6127 2" ALUM CAP
6128	68031.03	41857.92	7536.23	40°22'33.72527"N	105°31'24.62876"W	7495.25	-0°00'55"	0.99998820	Riverside Dr	516+82.65	593.7	CP 6128 HINGE NAIL
6130	68079.38	41992.87	7533.89	40°22'34.20328"N	105°31'22.88581"W	7492.90	-0°00'54"	0.99998831	Riverside Dr	517+05.21	452.1	CP 6130 HINGE NAIL
6257	69180.51	43668.06	7535.56	40°22'45.08427"N	105°31'01.25118"W	7494.46	-0°00'40"	0.99998836	N/A	N/A	N/A	CM 6257 CDOT Type 5 Monument
6265	68846.56	43689.03	7517.97	40°22'41.78543"N	105°31'00.97951"W	7476.86	-0°00'39"	0.99998916	N/A	N/A	N/A	CM 6265 CDOT Type 5 Monument

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NOT FOR CONSTRUCTION

NOTE:
 TO PRECISELY CHECK DISTANCES BETWEEN POINTS AS MEASURED ON THE GROUND : INVERSE THE STATE PLANE COORDINATES AND DIVIDE THE COMPUTED DISTANCE BY A MEAN COMBINED FACTOR OF THE TWO POINTS.

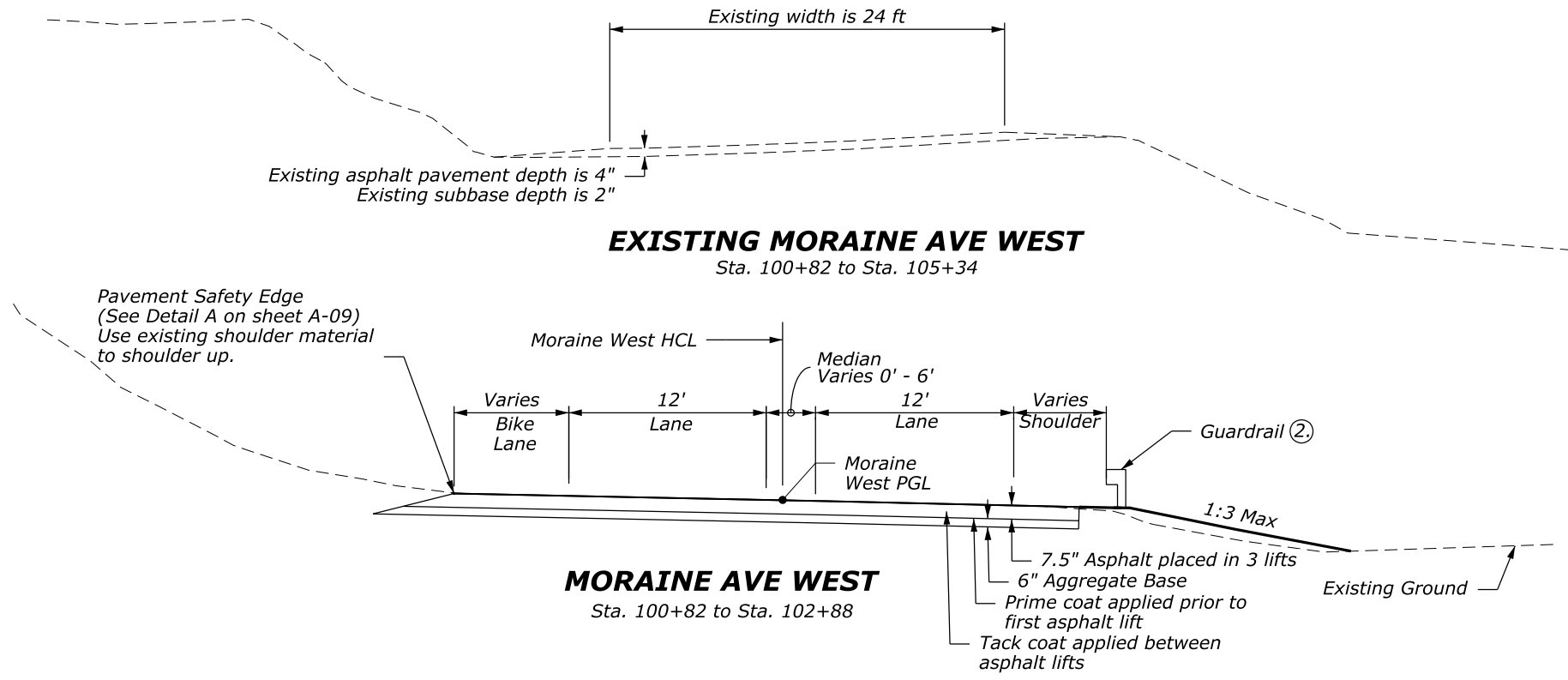
 TO COMPUTE GEODETIC AZIMUTHS USE THE FOLLOWING FORMULA :
 GEODETIC AZIMUTH = GRID AZIMUTH + MAPPING ANGLE

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

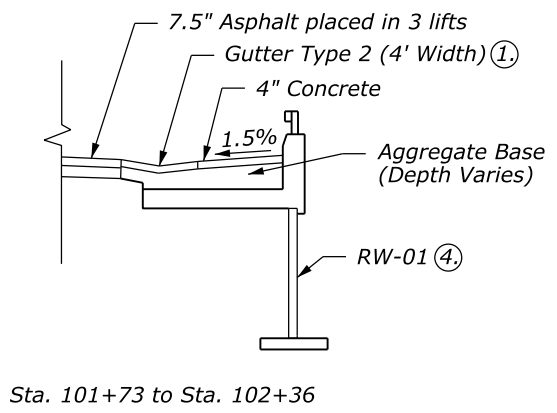
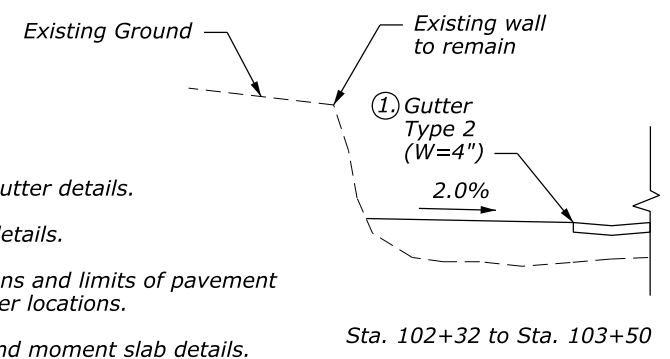
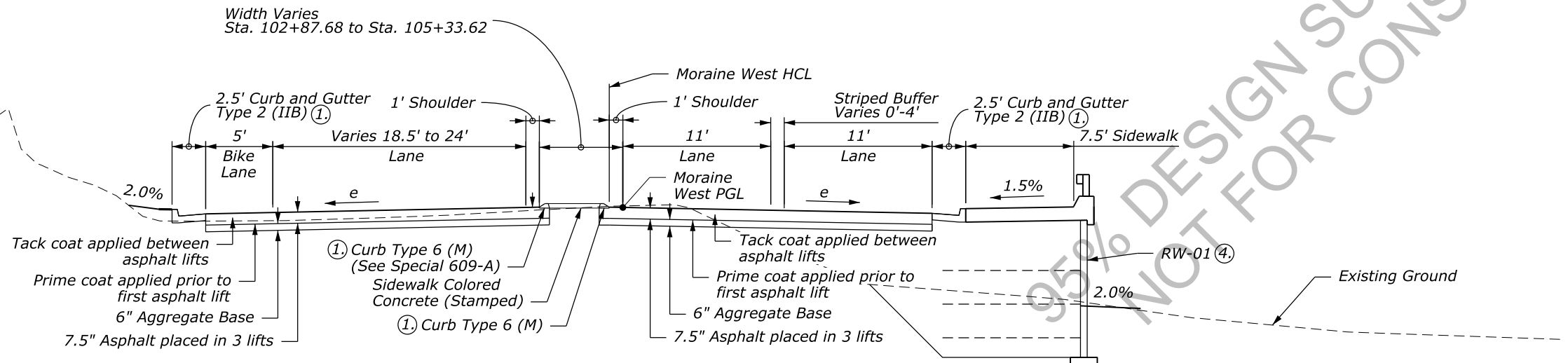
SURVEY CONTROL SHEET

NO.	DESCRIPTION REVISIONS (OR CHANGE NOTICES)	DATE	INIT.
1	Created	12/07/15	OIN

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LENGTH OF PROJECT						
Schedule	Station	to	Station	Roadway (ft)	Bridge (ft)	Remarks
A	500+21.37	-	509+05.00	883.63		Riverside Dr
A	509+05.00	-	510+03.00		98.00	Ivy Bridge
A	510+03.00	-	517+95.83	792.83		Riverside Dr
A	401+00.00	-	402+47.91	147.91		Crags Rd
A	100+82.00	-	105+34.25	452.25		Moraine West
A	1+32.24	-	3+74.01	241.77		Moraine SB Bypass
A	199+90.69	-	212+51.69	1261.00		Moraine North
A	770+34.58	-	771+86.06	151.48		W Elkhorn Ave
A	250+31.87	-	258+48.43	816.56		E Elkhorn Ave
A	600+42.21	-	605+48.38	506.17		Rockwell St
A	301+41.28	-	303+83.32	242.04		E. Riverside Dr
A	0+00.00	-	2+19.19	219.19		Roundabout
X	701+90.00	-	770+35.00	6845.00		Option X
A	TOTALS (ft)			5714.83	98.00	
A	TOTAL (mi)			1.10		
X	TOTALS (ft)			6845.00	0	
X	TOTAL (mi)			1.30		

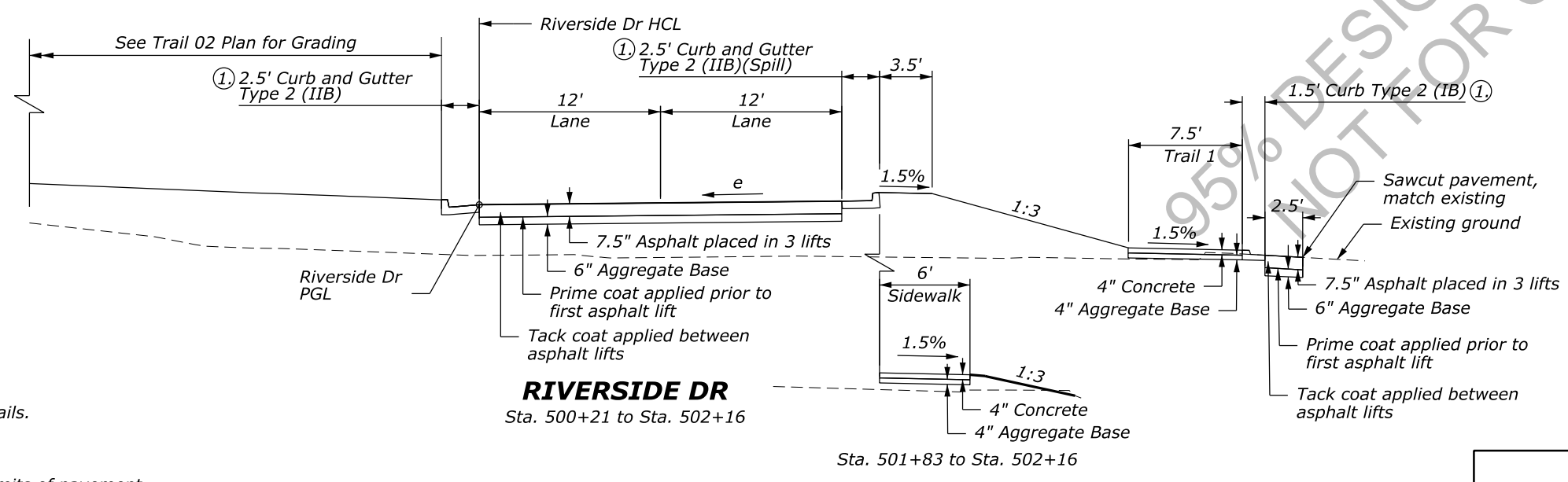
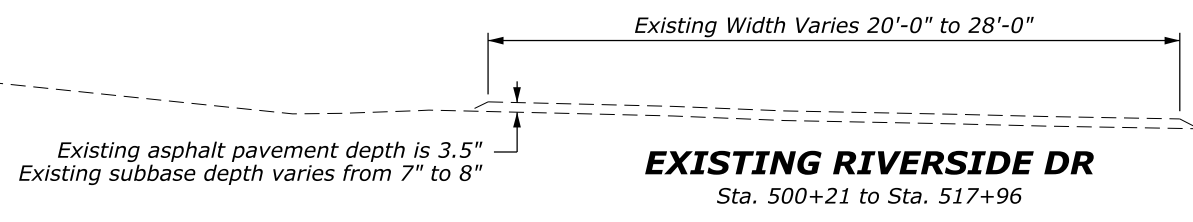
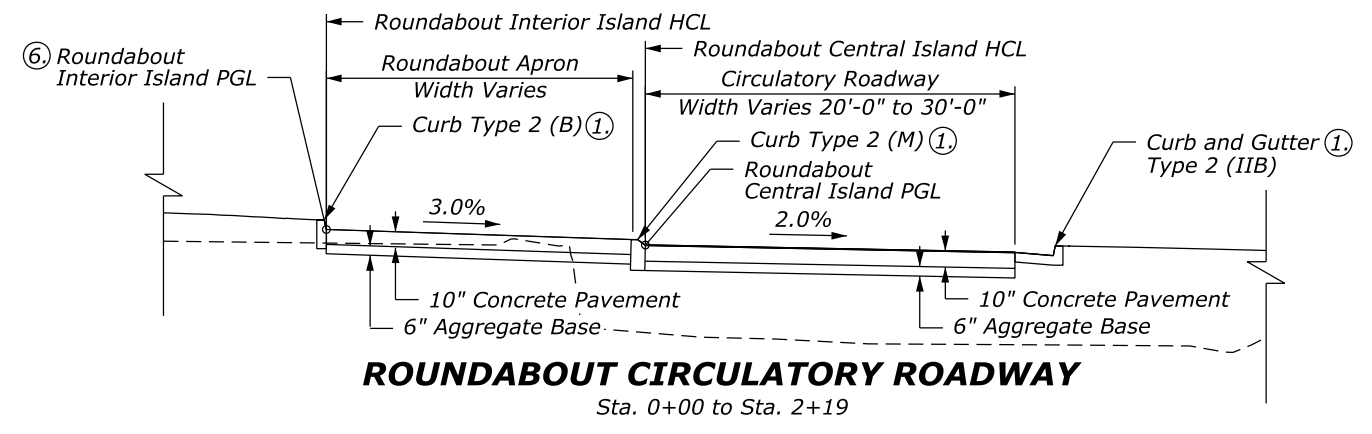


- Notes:
- ① See Special 609-A for curb and gutter details.
 - ② See Special 617-A for guardrail details.
 - ③ See K sheets for structural sections and limits of pavement section usage, and curb and gutter locations.
 - ④ See G sheets for retaining wall and moment slab details.
 5. See Landscape Plans in the T sheets for all seeding and planting information outside hardscape limits.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

TYPICAL SECTIONS

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	A-08



- Notes:
- See Special 609-A for curb and gutter details.
 - See Special 617-A for guardrail details.
 - See K sheets for structural sections and limits of pavement section usage, and curb and gutter locations.
 - See G sheets for retaining wall and moment slab details.
 - See Landscape Plans in the T sheets for all seeding and planting information outside hardscape limits.
 - Roundabout Interior Island PGL provided using spot elevations. See table on Roundabout Detail sheet.

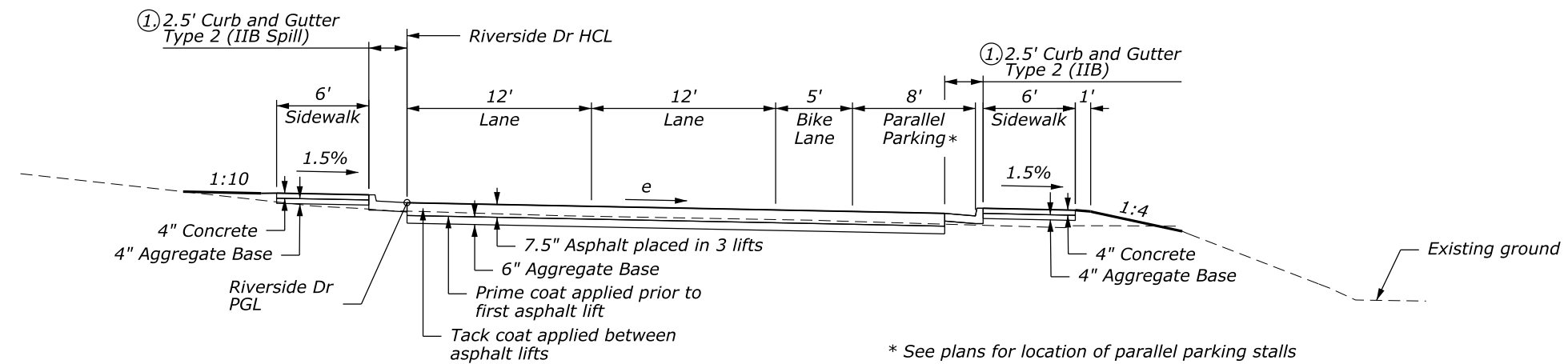
U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

TYPICAL SECTIONS

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95% DESIGN SUBMITTAL 2/3/22 NOT FOR CONSTRUCTION

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	A-09



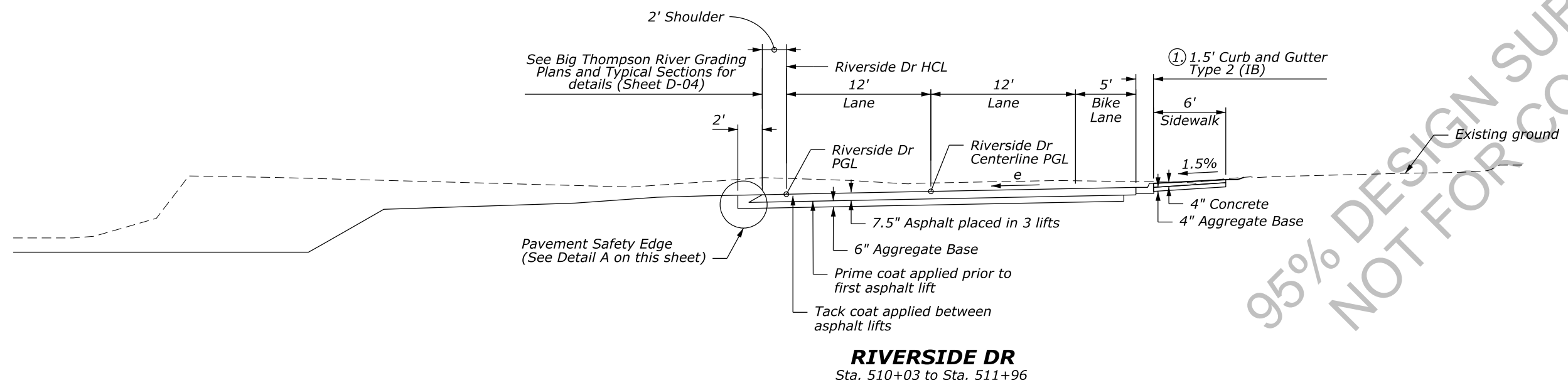
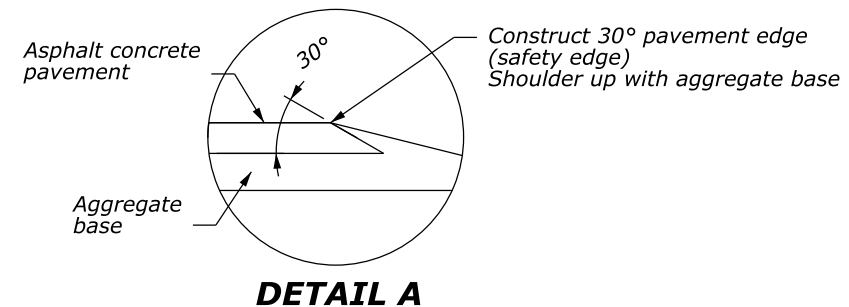
* See plans for location of parallel parking stalls

RIVERSIDE DR

Sta. 502+16 to Sta. 509+05

IVY STREET BRIDGE

Sta. 509+05 to Sta. 510+03
See Structures Plans



RIVERSIDE DR

Sta. 510+03 to Sta. 511+96

95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

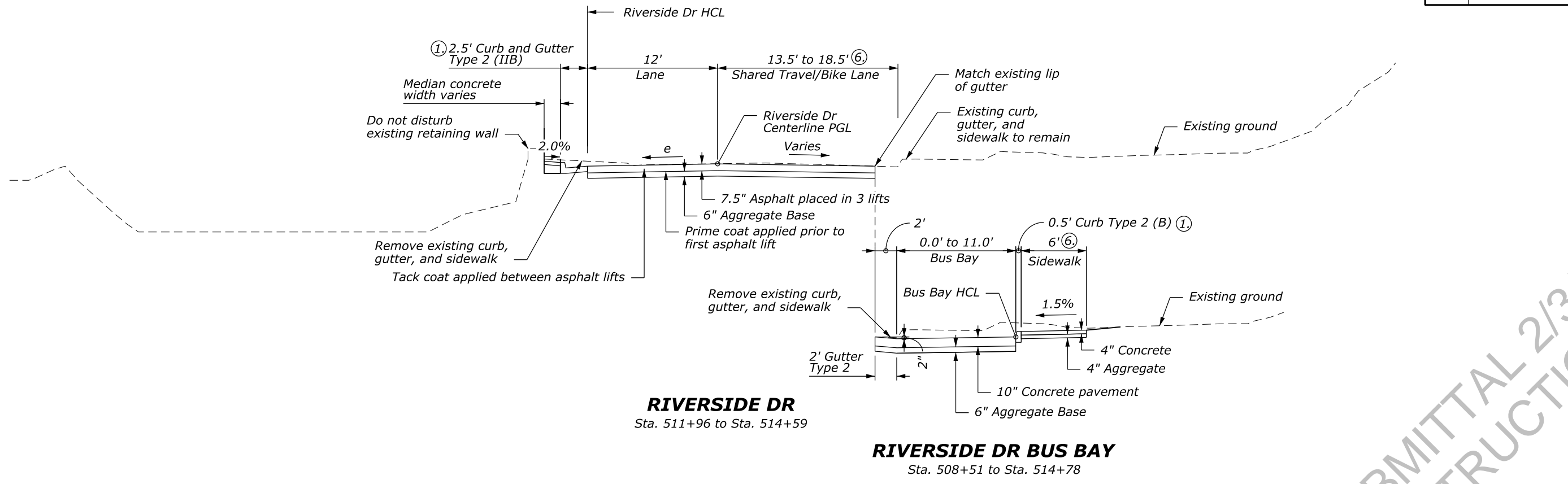
- Notes:
- See Special 609-A for curb and gutter details.
 - See Special 617-A for guardrail details.
 - See K sheets for structural sections and limits of pavement section usage, and curb and gutter locations.
 - See G sheets for retaining wall and moment slab details.
 - See Landscape Plans in the T sheets for all seeding and planting information outside hardscape limits.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

TYPICAL SECTIONS

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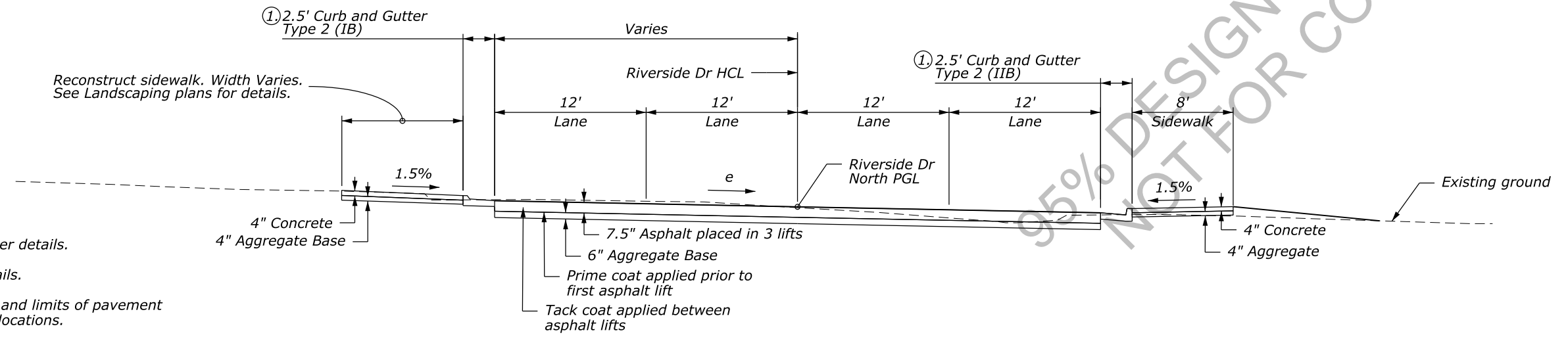
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	A-10



RIVERSIDE DR
Sta. 511+96 to Sta. 514+59

RIVERSIDE DR BUS BAY
Sta. 508+51 to Sta. 514+78

RIVERSIDE BRIDGE
Sta. 514+33 to Sta. 515+12
See Structures Plans



RIVERSIDE DR
HCL Sta. 515+12 to Sta. 517+50

- Notes:
- ① See Special 609-A for curb and gutter details.
 2. See Special 617-A for guardrail details.
 3. See K sheets for structural sections and limits of pavement section usage, and curb and gutter locations.
 4. See G sheets for retaining wall and moment slab details.
 5. See Landscape Plans in the T sheets for all seeding and planting information outside hardscape limits.
 - ⑥ Sidewalk width varies at bench area. See Bus Stop Detail in D sheets for details.

Sta. 511+76 to Sta. 513+43
Lane width varies 18' to 16' to match existing

Sta. 513+43 to 514+21
Lane width tapers 16.5' to 13.5'

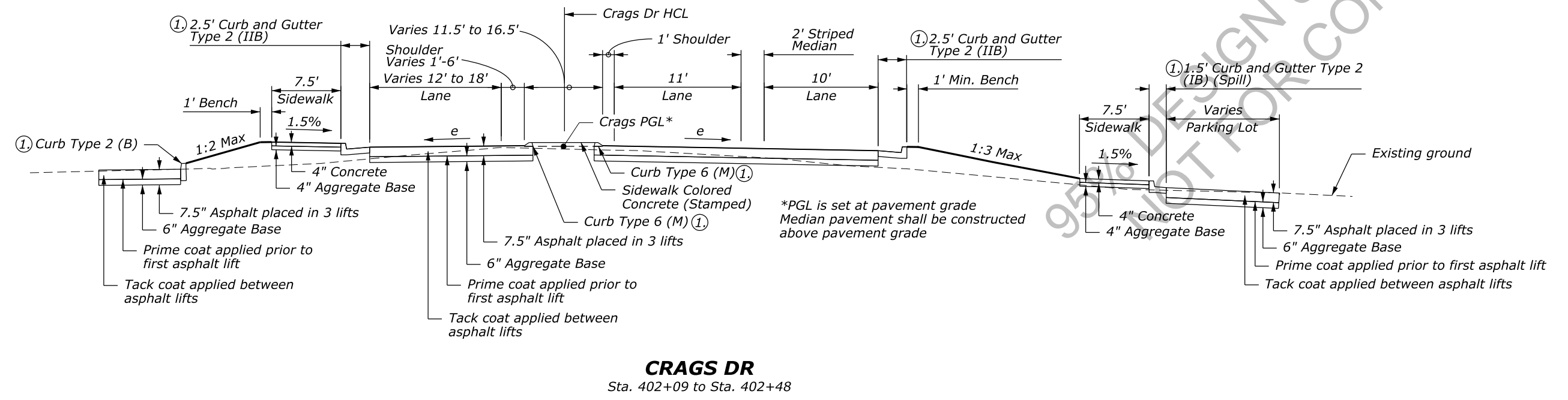
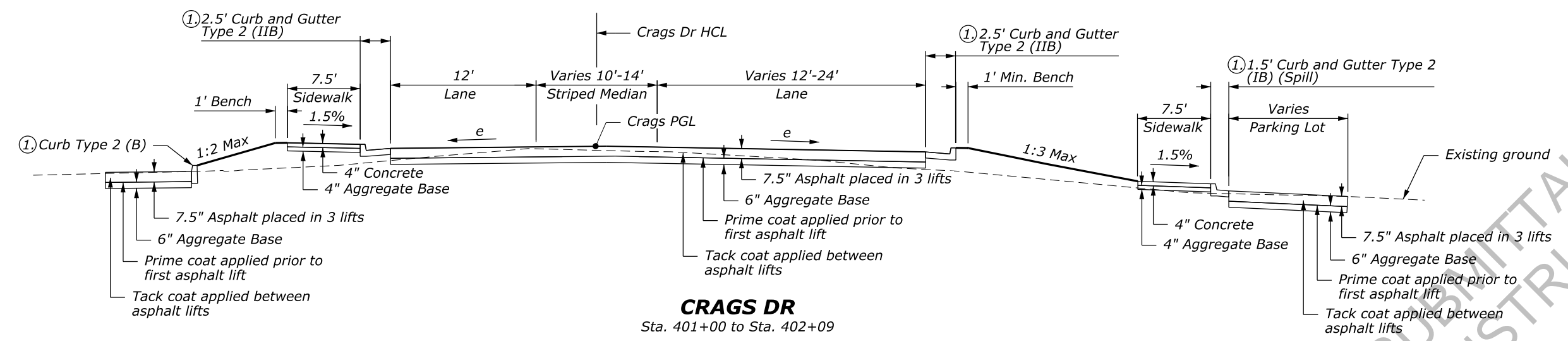
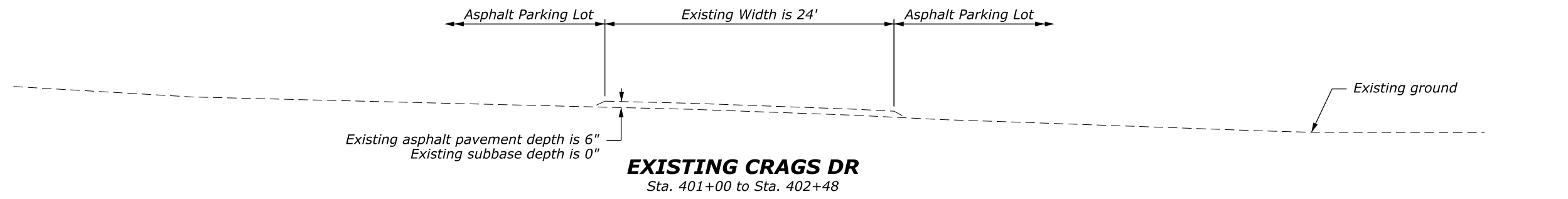
Sta. 514+21 to Sta. 514+85
Lane width transitions 13.5' to 18.5' to
add shared travel/bike lane at Riverside Bridge

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FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

TYPICAL SECTIONS

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	A-11



- Notes:
1. See Special 609-A for curb and gutter details.
 2. See Special 617-A for guardrail details.
 3. See K sheets for structural sections and limits of pavement section usage, and curb and gutter locations.
 4. See G sheets for retaining wall and moment slab details.
 5. See Landscape Plans in the T sheets for all seeding and planting information outside hardscape limits.

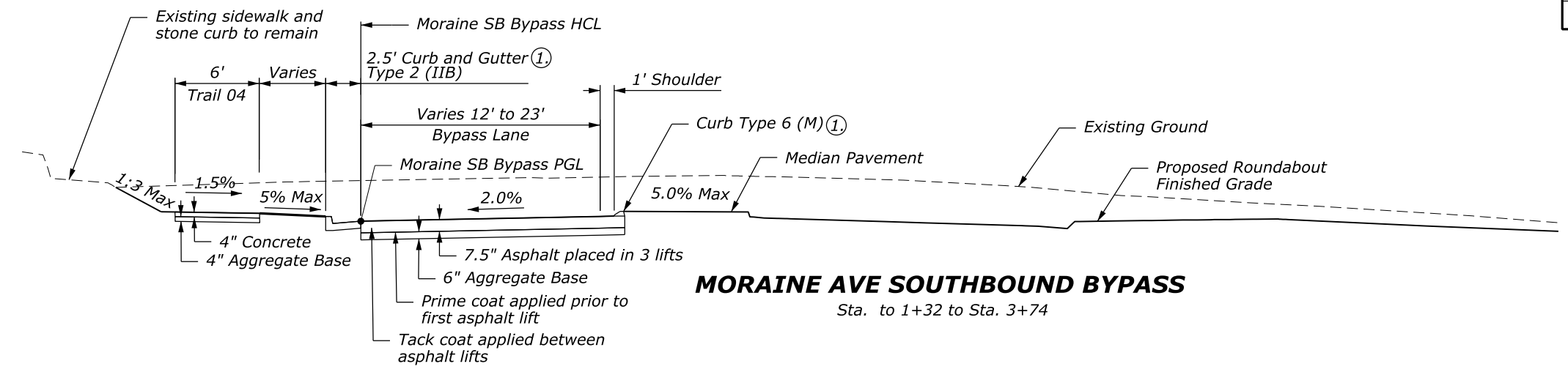
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

TYPICAL SECTIONS

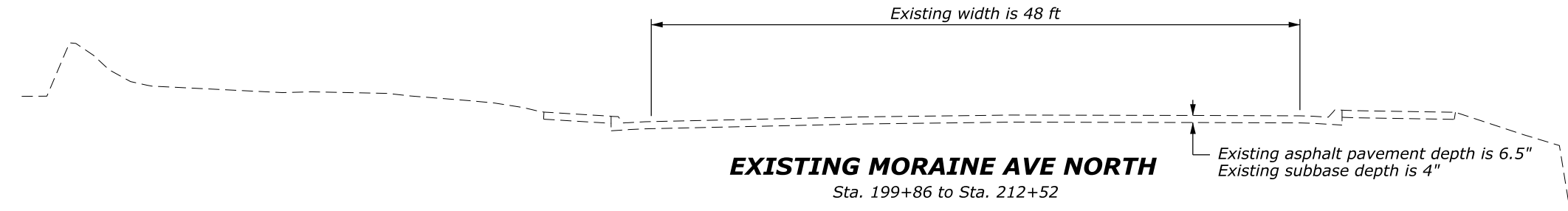
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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	A-12

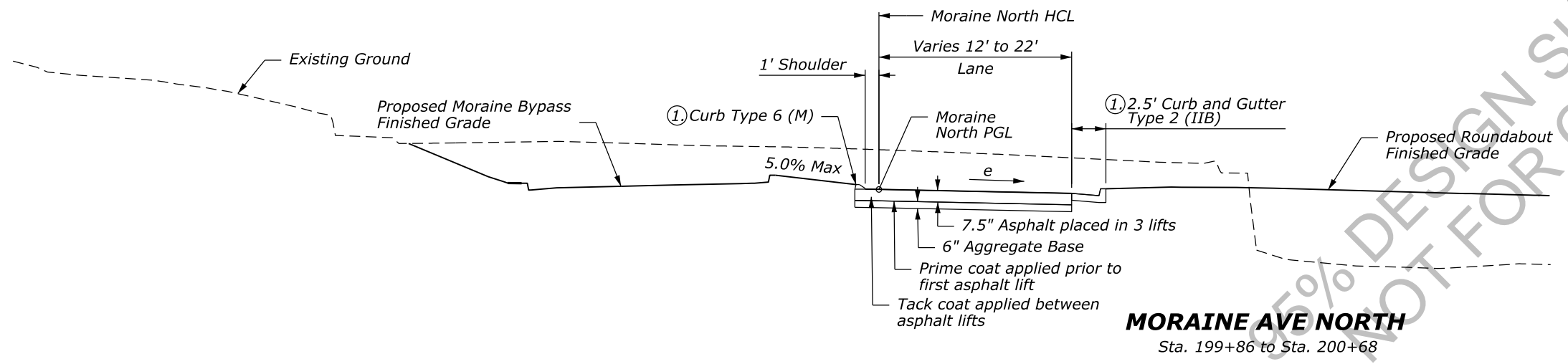
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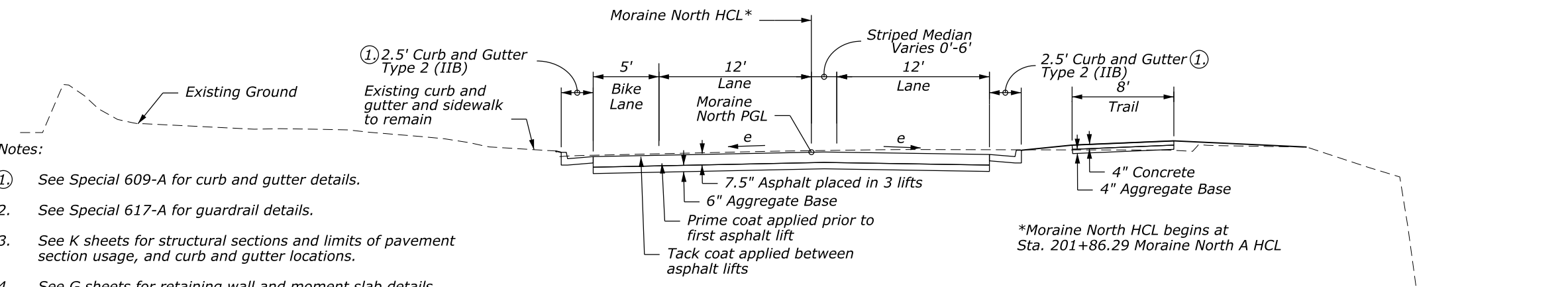
MORAINE AVE SOUTHBOUND BYPASS
Sta. 1+32 to Sta. 3+74



EXISTING MORAINE AVE NORTH
Sta. 199+86 to Sta. 212+52



MORAINE AVE NORTH
Sta. 199+86 to Sta. 200+68



MORAINE AVE NORTH
Sta. 200+68 to Sta. 202+76

- Notes:
- See Special 609-A for curb and gutter details.
 - See Special 617-A for guardrail details.
 - See K sheets for structural sections and limits of pavement section usage, and curb and gutter locations.
 - See G sheets for retaining wall and moment slab details.
 - See Landscape Plans in the T sheets for all seeding and planting information outside hardscape limits.

*Moraine North HCL begins at Sta. 201+86.29 Moraine North A HCL

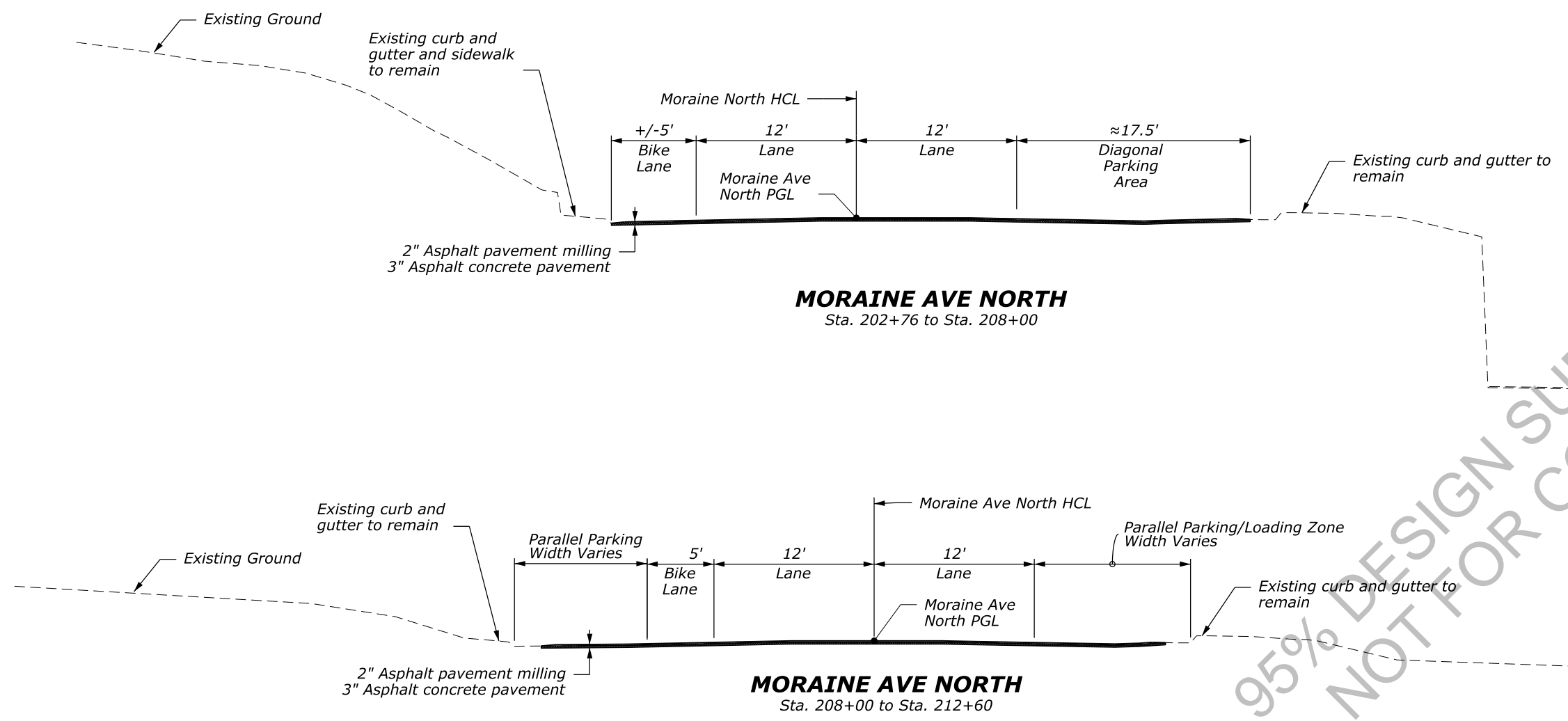
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

TYPICAL SECTIONS

50% DESIGN SUBMITTAL 2/3/22
 NOT FOR CONSTRUCTION

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	A-13

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95% DESIGN SUBMITTAL 2/3/22
 NOT FOR CONSTRUCTION

- Notes:
1. See Special 609-A for curb and gutter details.
 2. See Special 617-A for guardrail details.
 3. See K sheets for structural sections and limits of pavement section usage, and curb and gutter locations.
 4. See G sheets for retaining wall and moment slab details.
 5. See Landscape Plans in the T sheets for all seeding and planting information outside hardscape limits.

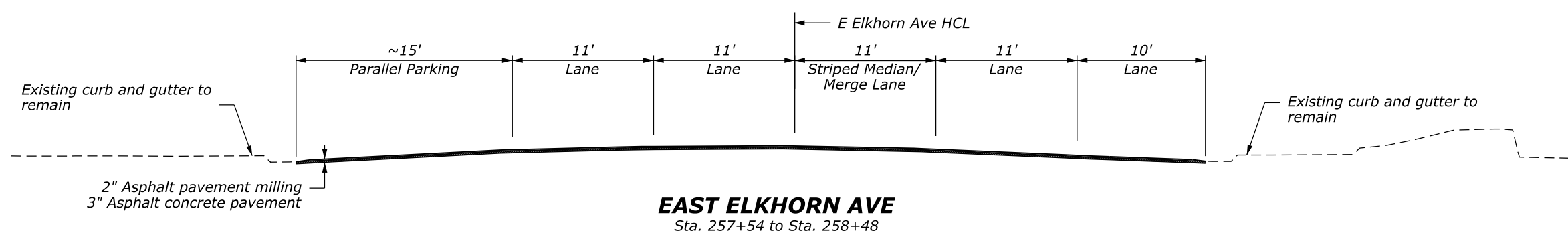
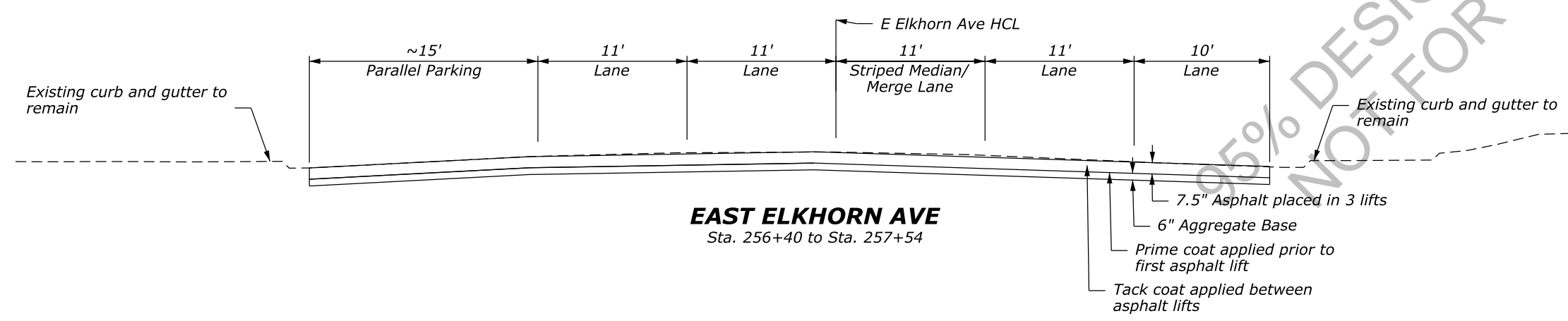
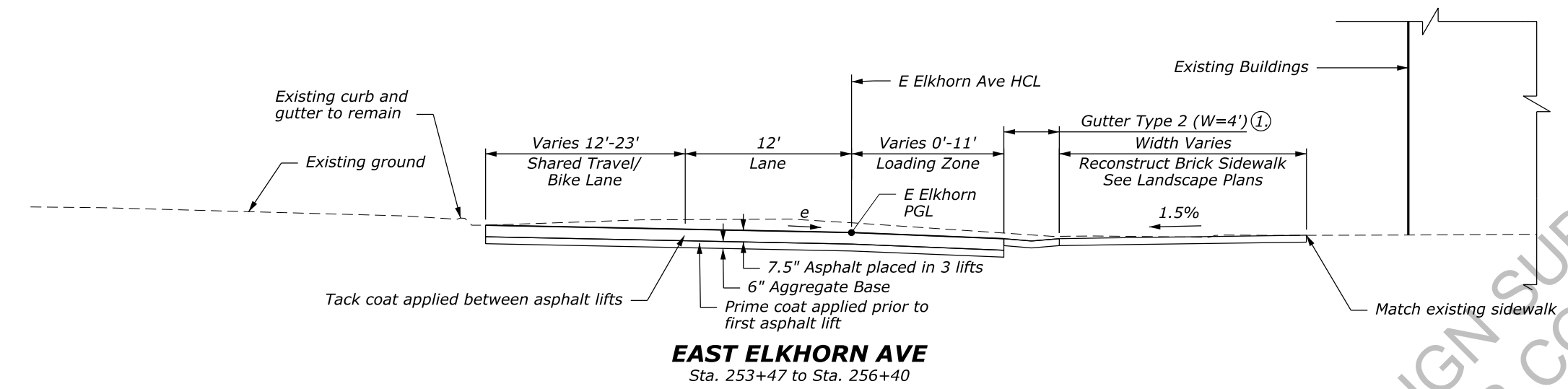
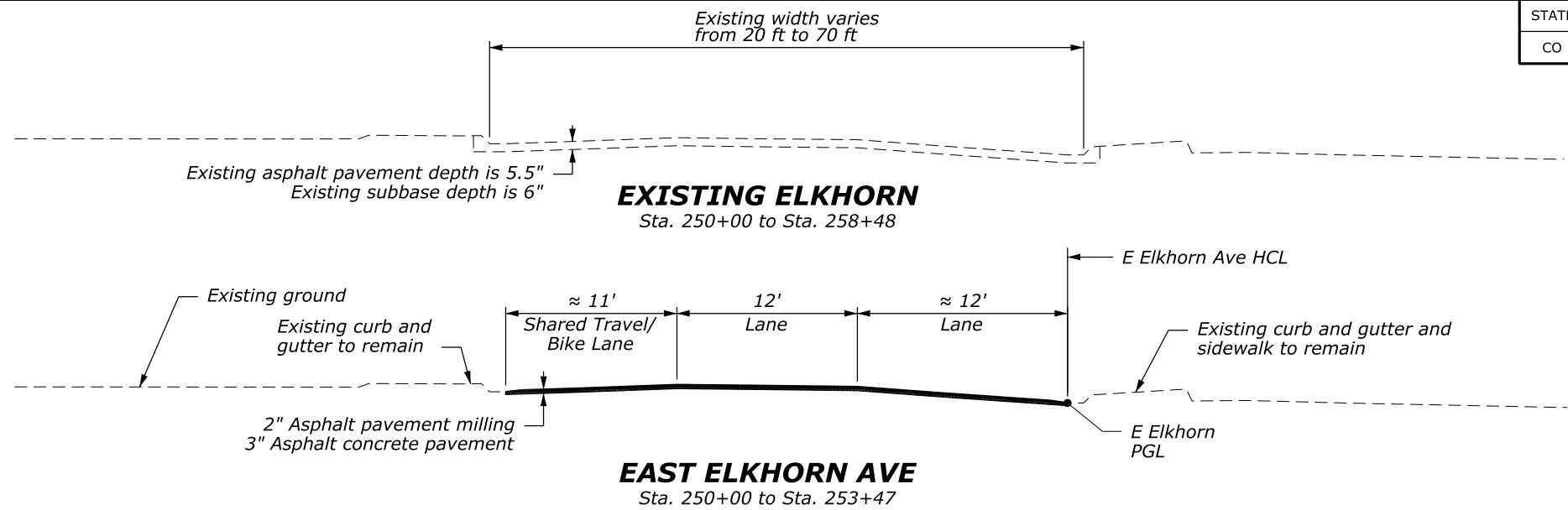
U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

TYPICAL SECTIONS

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	A-14

Notes:

- ① See Special 609-A for curb and gutter details.
2. See Special 617-A for guardrail details.
3. See K sheets for structural sections and limits of pavement section usage, and curb and gutter locations.
4. See G sheets for retaining wall and moment slab details.
5. See Landscape Plans in the T sheets for all seeding and planting information outside hardscape limits.



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CENTRAL FEDERAL LANDS HIGHWAY DIVISION

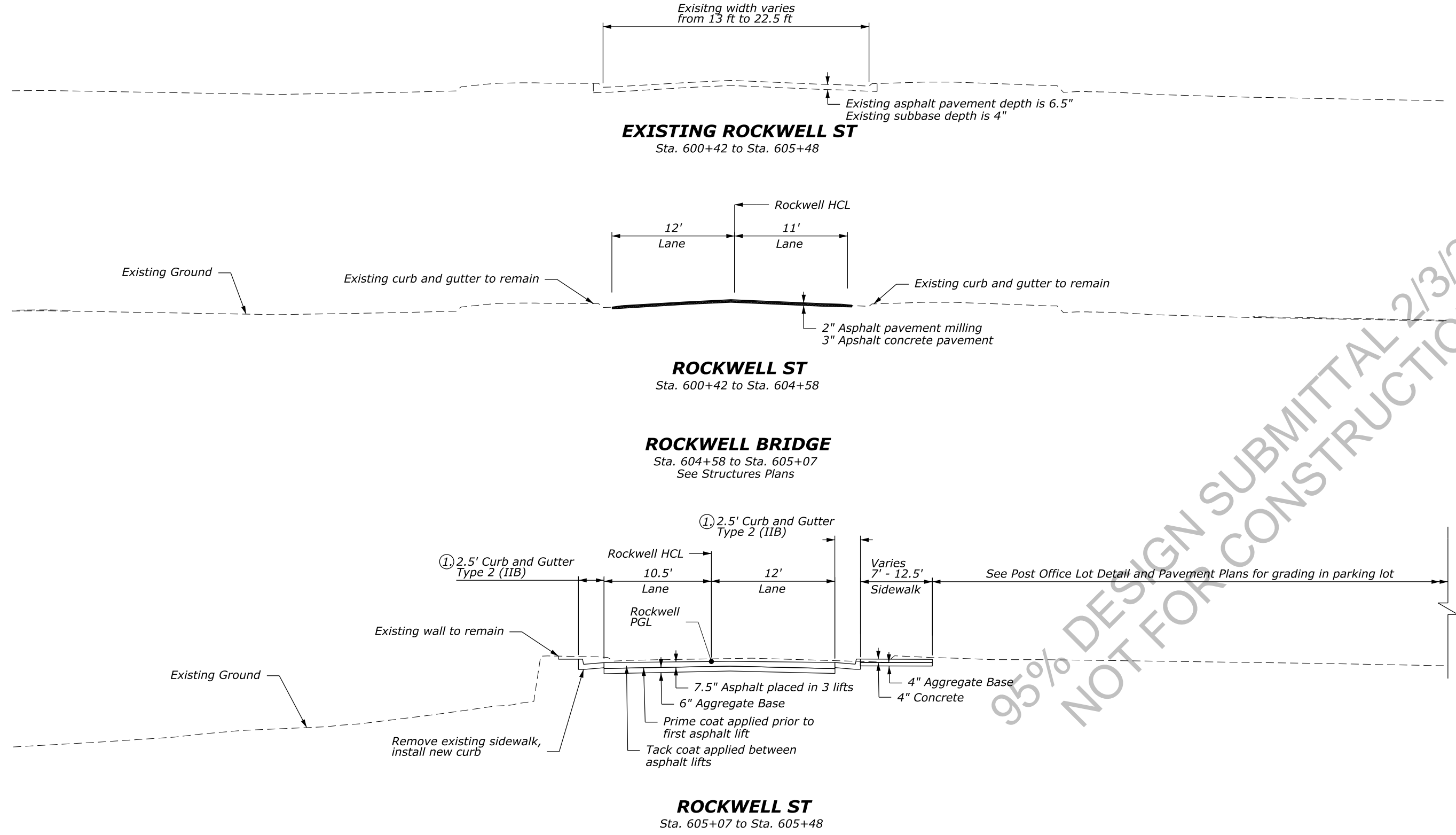
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95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	A-15

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95% DESIGN SUBMITTAL 2/3/22
 NOT FOR CONSTRUCTION

- Notes:
- ① See Special 609-A for curb and gutter details.
 - 2. See Special 617-A for guardrail details.
 - 3. See K sheets for structural sections and limits of pavement section usage, and curb and gutter locations.
 - 4. See G sheets for retaining wall and moment slab details.
 - 5. See Landscape Plans in the T sheets for all seeding and planting information outside hardscape limits.

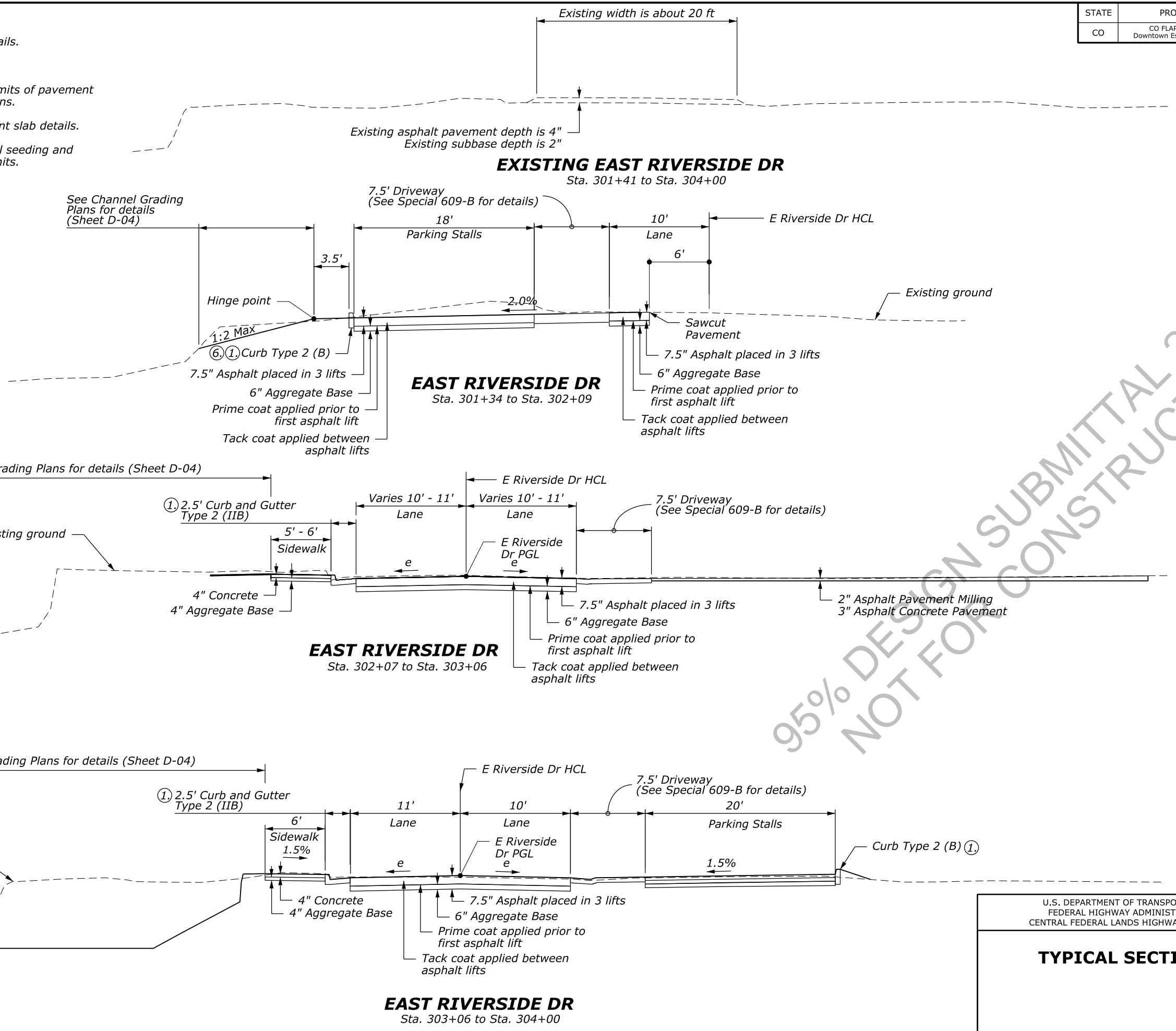
U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

TYPICAL SECTIONS

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	A-16

Notes:

- ① See Special 609-A for curb and gutter details.
2. See Special 617-A for guardrail details.
3. See K sheets for structural sections and limits of pavement section usage, and curb and gutter locations.
4. See G sheets for retaining wall and moment slab details.
5. See Landscape Plans in the T sheets for all seeding and planting information outside hardscape limits.
- ⑥ Provide curb cuts as needed for drainage.



95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

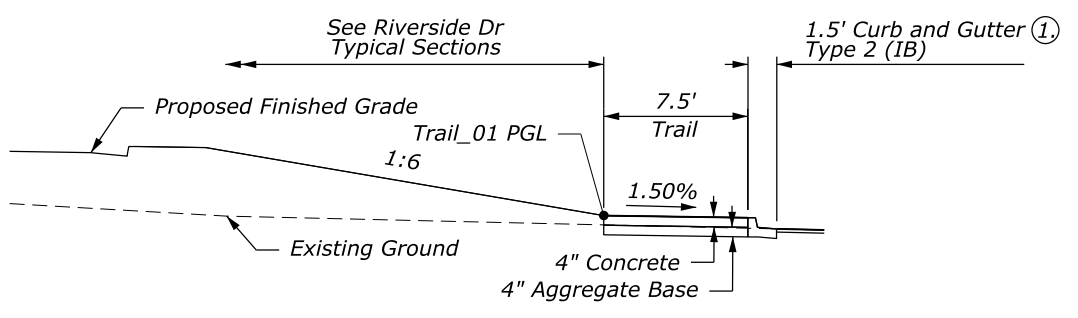
U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

TYPICAL SECTIONS

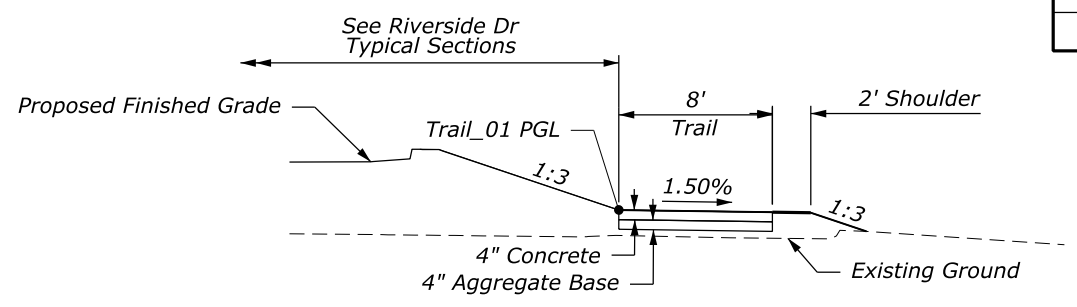
EAST RIVERSIDE DR
 Sta. 303+06 to Sta. 304+00

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 1/27/2022
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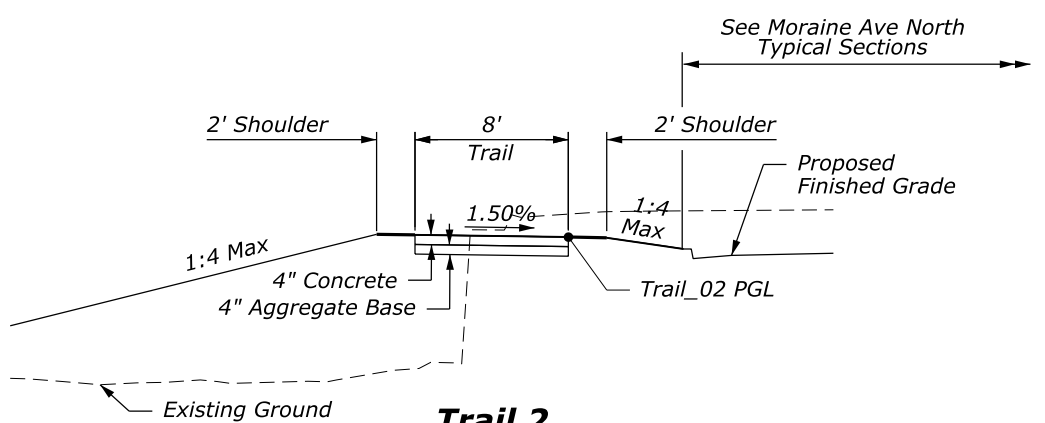
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	A-17



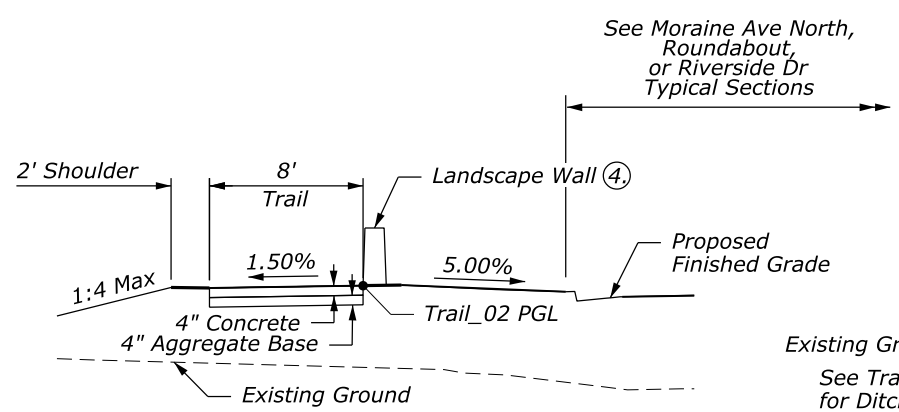
Trail 1
Sta. 10+14 to Sta. 11+95



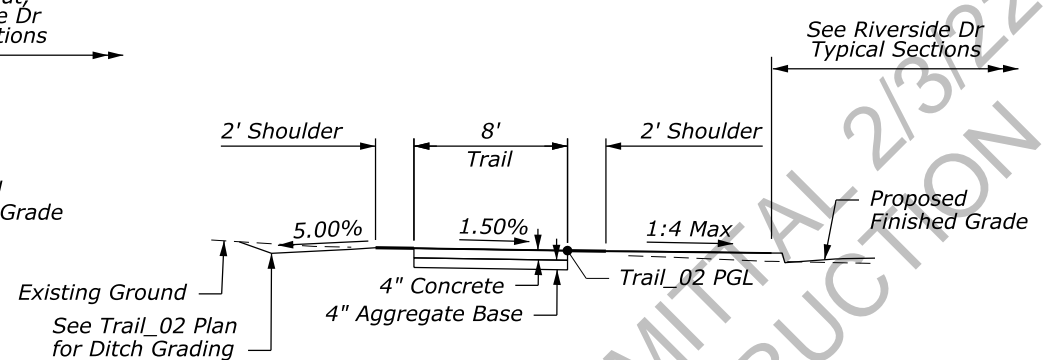
Trail 1
Sta. 11+95 to Sta. 12+87



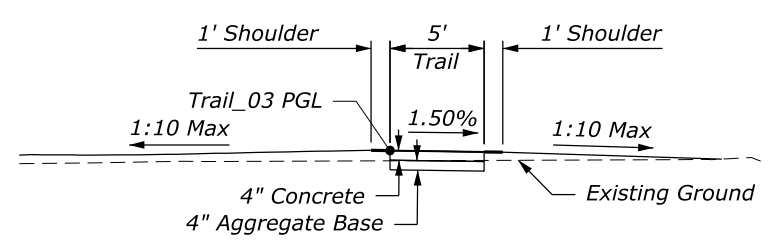
Trail 2
Sta. 10+26 to Sta. 11+68



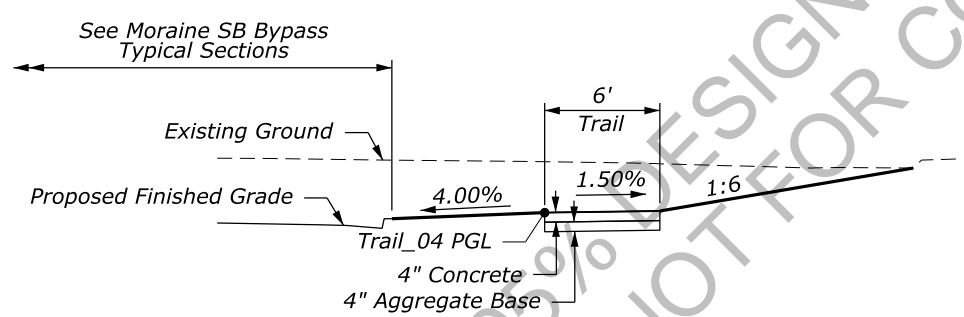
Trail 2
Sta. 11+68 to Sta. 13+45



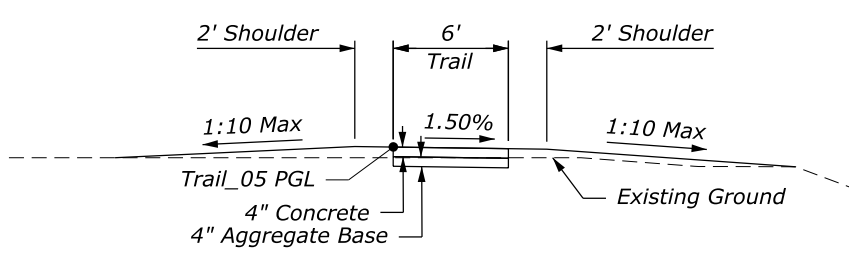
Trail 2
Sta. 13+45 to Sta. 13+63



Trail 3
Sta. 0+00 to Sta. 0+62



Trail 4
Sta. 0+00 to Sta. 1+34



Trail 5
Sta. 10+00 to Sta. 10+91

- Notes:
- ① See Special 609-A for curb and gutter details.
 2. See Special 617-A for guardrail details.
 3. See K sheets for structural sections and limits of pavement section usage, and curb and gutter locations.
 - ④ See G sheets for retaining wall and moment slab details.
 5. See Landscape Plans in the T sheets for all seeding and planting information outside hardscape limits.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

TYPICAL SECTIONS

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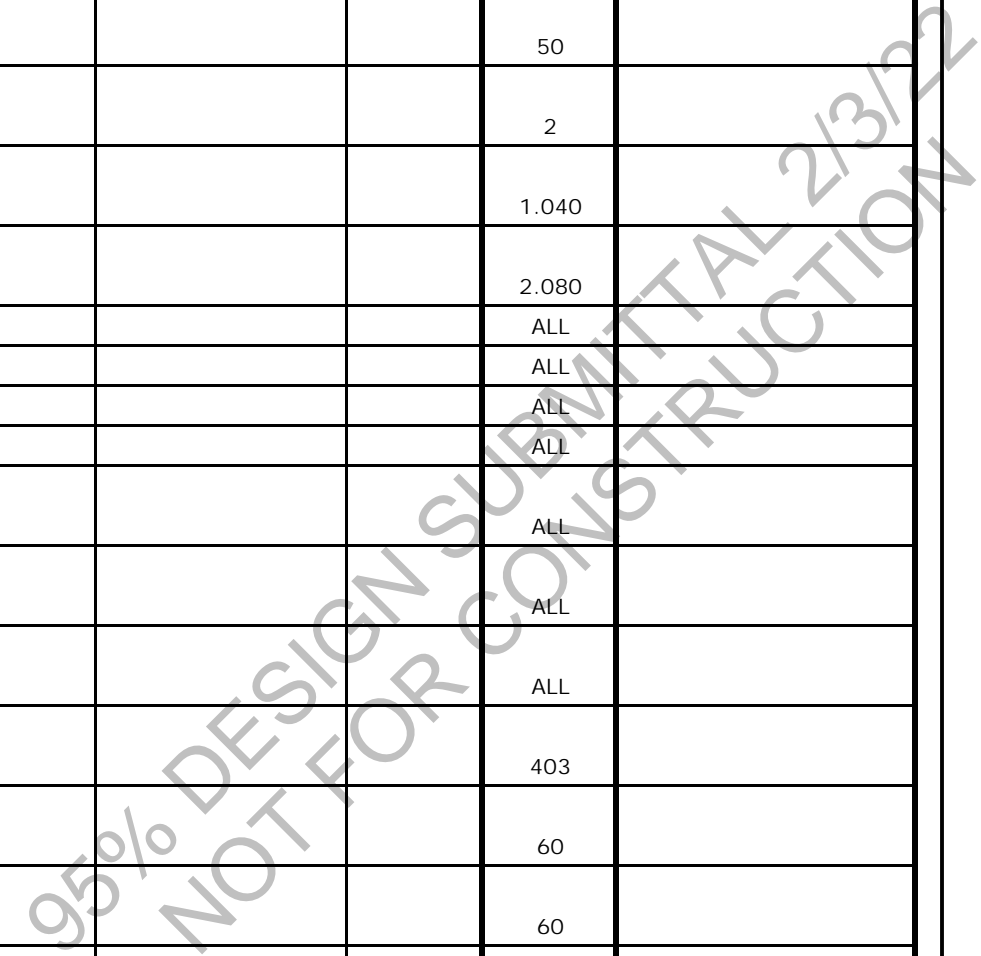
SUMMARY OF QUANTITIES - Schedule A

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP 36(1)	B-1

A M E N D	Line Item No.	Pay Item Number	Pay Item Description	Unit	Sheet and Description										Estimated Quantities	Remarks and/or Determination of Estimated Quantity	
					B-11 to B-12	B-13 to B-17	B-17	B-18 to B-23	B-24	B-25 to B-28	B-29	S-03 & S-38 to S-39	Allowances	Bid Schedule			
					Drainage Summary	Roadway Summary	Channel Summary	Permanent Traffic Summary	Temporary Traffic Summary	Landscaping Summary	Utility Summary	Structures Summary	Allowances	Bid Schedule			
	A0001	15101-0000	MOBILIZATION	LPSM												ALL	
	A0002	15210-4000	CENTERLINE, ESTABLISHMENT	MILE		0.360										0.360	
	A0003	15214-2000	SURVEY AND STAKING, RETAINING WALL	LPSM		All										ALL	
	A0004	15215-3000	SURVEY AND STAKING, DRAINAGE STRUCTURE	EACH	50											50	
	A0005	15215-8000	SURVEY AND STAKING, INTERSECTION	EACH		2										2	
	A0006	15225-0000	SLOPE, REFERENCE, AND CLEARING AND GRUBBING CONTROL	MILE		1.040										1.040	
	A0007	15236-2000	SURVEY CONTROL, GRADE FINISHING	MILE		2.080										2.080	
	A0008	15301-0000	CONTRACTOR QUALITY CONTROL	LPSM												ALL	
	A0009	15401-0000	CONTRACTOR TESTING	LPSM												ALL	
	A0010	15501-0000	CONSTRUCTION SCHEDULE	LPSM												ALL	
	A0011	15701-0000	SOIL EROSION CONTROL	LPSM	All											ALL	
	A0012	15702-2000	SOIL EROSION CONTROL, TURBIDITY MONITORING	LPSM			All									ALL	
	A0013	15702-3000	SOIL EROSION CONTROL, SUPERVISOR	LPSM	All											ALL	
	A0014	15702-6000	SOIL EROSION CONTROL, TEMPORARY STREAM DIVERSION	LPSM			All									ALL	
	A0015	15705-1400	SOIL EROSION CONTROL, FIBER ROLL	LNFT			403									403	
	A0016	15705-1600	SOIL EROSION CONTROL, ABSORBENT BOOM	LNFT			60									60	
	A0017	15705-2000	SOIL EROSION CONTROL, FLOATING TURBIDITY CURTAIN	LNFT			60									60	
	A0018	15706-1600	SOIL EROSION CONTROL, STABILIZED CONSTRUCTION EXIT	EACH			2									2	
	A0019	15706-2300	SOIL EROSION CONTROL, ON-SITE CONCRETE WASHOUT STRUCTURE	EACH			2									2	
	A0020	15802-0000	WATERING FOR DUST CONTROL	LPSM												ALL	
	A0021	20101-0000	CLEARING AND GRUBBING	ACRE		0.9								0.1		1.0	
	A0022	20301-0100	REMOVAL OF BOLLARD	EACH		4										4	
	A0023	20301-0400	REMOVAL OF BRIDGE	EACH								1				1	
	A0024	20301-1400	REMOVAL OF INLET	EACH	9									1		10	
	A0025	20301-1700	REMOVAL OF MANHOLE	EACH	1											1	
	A0026	20301-2400	REMOVAL OF SIGN	EACH				65						5		70	

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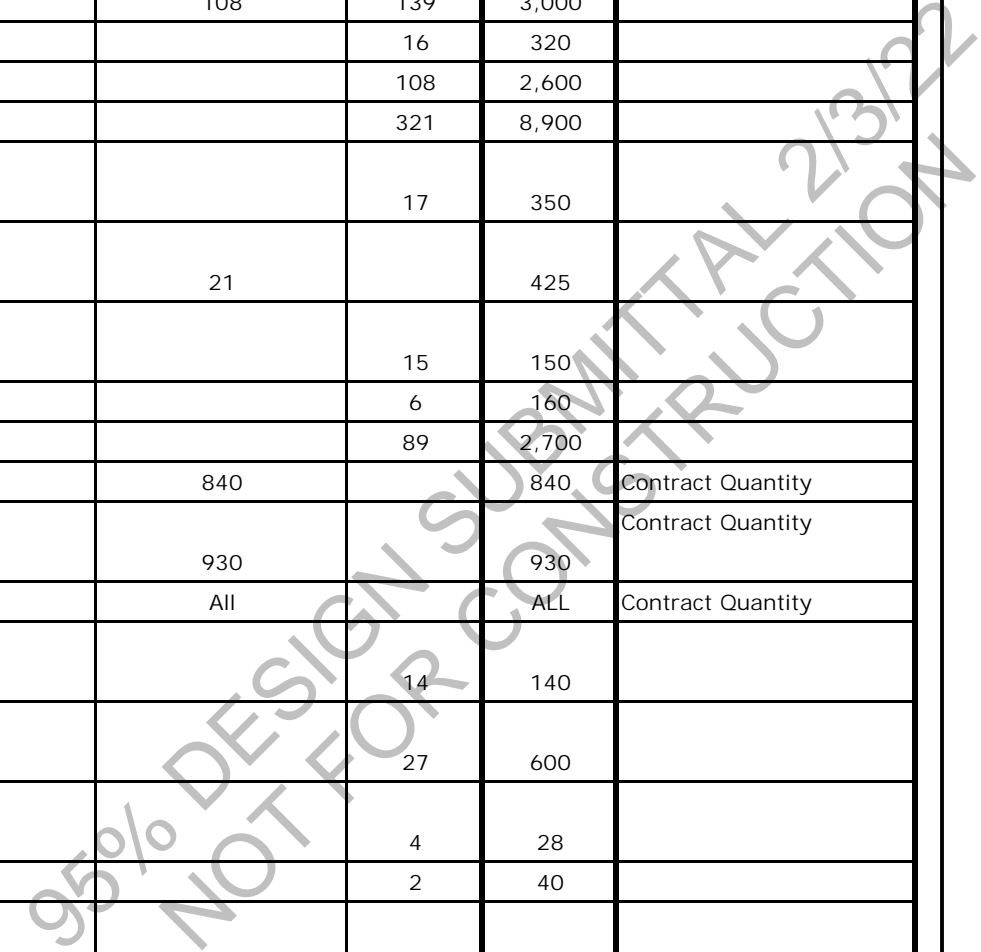
SUMMARY OF QUANTITIES - Schedule A

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP 36(1)	B-2

A M E N D	Line Item No.	Pay Item Number	Pay Item Description	Unit	Sheet and Description										Estimated Quantities		Remarks and/or Determination of Estimated Quantity
					B-11 to B-12	B-13 to B-17	B-17	B-18 to B-23	B-24	B-25 to B-28	B-29	S-03 & S-38 to S-39	Allowances	Bid Schedule			
					Drainage Summary	Roadway Summary	Channel Summary	Permanent Traffic Summary	Temporary Traffic Summary	Landscaping Summary	Utility Summary	Structures Summary	Allowances	Bid Schedule			
	A0027	20302-0300	REMOVAL OF CURB AND GUTTER, CONCRETE	LNFT		4,208								42	4,250		
	A0028	20302-2100	REMOVAL OF PIPE CULVERT	LNFT	597									33	630		
	A0029	20302-2300	REMOVAL OF WATERLINE (SERVICE)	LNFT							200			10	210		
	A0030	20303-3200	REMOVAL OF SIDEWALK, CONCRETE	SQYD		2,753						108		139	3,000		
	A0031	20303-3600	REMOVAL OF WALL	SQYD		304								16	320		
	A0032	20401-0000	ROADWAY EXCAVATION (CHANNEL)	CUYD			2,492							108	2,600		
	A0033	20401-0000	ROADWAY EXCAVATION	CUYD		8,579								321	8,900		
	A0034	20435-1000	BACKFILL, SELECT GRANULAR (RESORTED ALLUVIUM, 10-INCH)	CUYD			333							17	350		
	A0035	20435-1000	BACKFILL, SELECT GRANULAR (RESORTED ALLUVIUM, 8-INCH)	CUYD			404					21		425			
	A0036	20435-1000	BACKFILL, SELECT GRANULAR (RESORTED ALLUVIUM, 3-INCH)	CUYD			135							15	150		
	A0037	20435-1000	BACKFILL, SELECT GRANULAR	CUYD			154							6	160		
	A0038	20441-0000	WASTE	CUYD		2,611								89	2,700		
	A0039	20801-0000	STRUCTURE EXCAVATION	CUYD								840		840	840	Contract Quantity	
	A0040	20803-0000	STRUCTURAL BACKFILL (MECHANICALLY STABILIZED)	CUYD								930		930	930	Contract Quantity	
	A0041	20810-0000	SHORING AND BRACING	LPSM								All		ALL	ALL	Contract Quantity	
	A0042	25101-0500	PLACED RIPRAP, METHOD A, CLASS 5 (18-INCH)	CUYD			126							14	140		
	A0043	25101-0700	PLACED RIPRAP, METHOD A, CLASS 7 (24-INCH)	CUYD			573							27	600		
	A0044	25102-0300	PLACED RIPRAP, METHOD A, CLASS 3	TON	24									4	28		
	A0045	25125-0000	BOULDER (BANK BOULDER, 4-FOOT)	EACH			38							2	40		
	A0046	25125-0000	BOULDER (RIVER - 4'LX2'WX2'H ROUGH CUT SANDSTONE)	EACH						15				15	15		
	A0047	25125-0000	BOULDER (SEATING - 4'LX2'WX2'H ROUGH CUT SANDSTONE)	EACH						5				5	5		
	A0048	25125-0000	BOULDER (24-INCH DIA.)	EACH						34				34	34		
	A0049	25125-0000	BOULDER (36-INCH DIA.)	EACH						35				35	35		
	A0050	25126-0000	REMOVE AND RESET BOULDER	EACH						100				100	100		
	A0051	25210-0000	ROCKERY (SANDSTONE RIVER ACCESS)	SQFT						480				20	500		
	A0052	25210-0000	ROCKERY (DRY STACKED, SLOPED BOULDER WALL)	SQFT						488				12	500		

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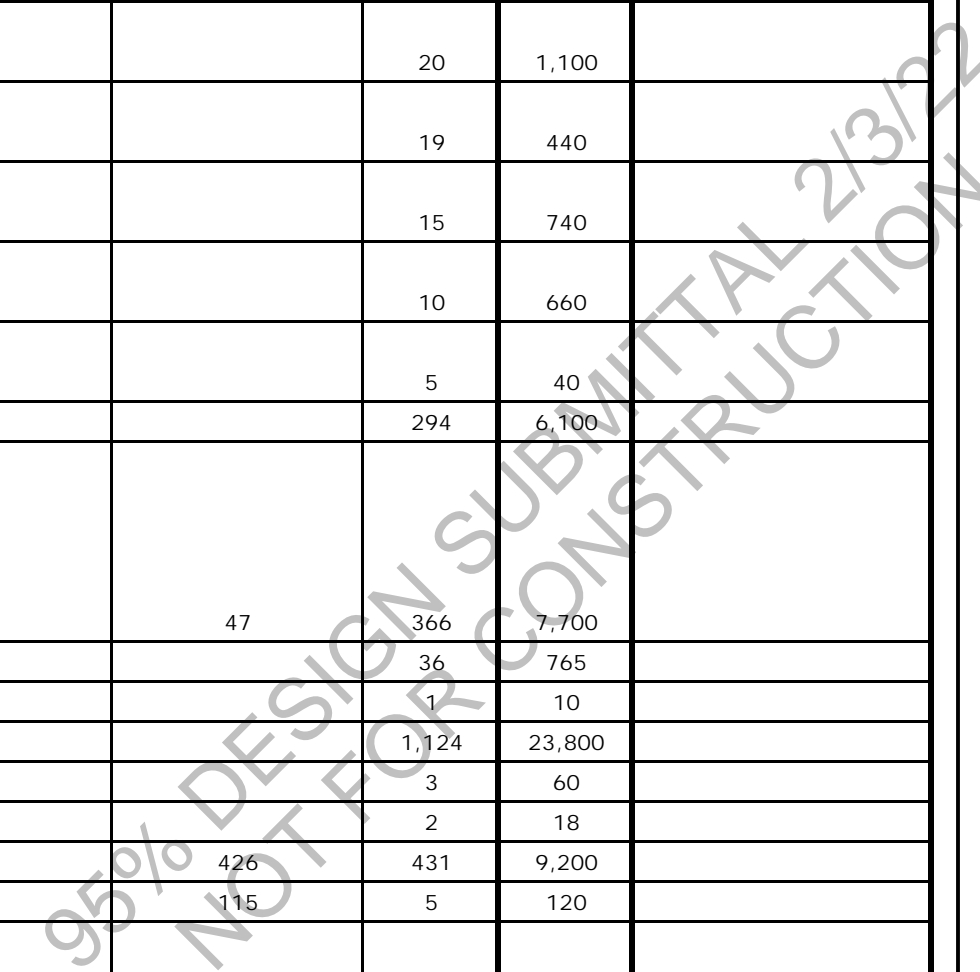
SUMMARY OF QUANTITIES - Schedule A

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP 36(1)	B-3

A M E N D	Line Item No.	Pay Item Number	Pay Item Description	Unit	Sheet and Description										Estimated Quantities	Remarks and/or Determination of Estimated Quantity
					B-11 to B-12	B-13 to B-17	B-17	B-18 to B-23	B-24	B-25 to B-28	B-29	S-03 & S-38 to S-39	Allowances	Bid Schedule		
					Drainage Summary	Roadway Summary	Channel Summary	Permanent Traffic Summary	Temporary Traffic Summary	Landscaping Summary	Utility Summary	Structures Summary	Allowances	Bid Schedule		
	A0053	25501-1000	MECHANICALLY STABILIZED EARTH WALL, WELDED WIRE FACE	SQFT									3,190	160	3,350	
	A0054	25801-0000	REINFORCED CONCRETE RETAINING WALL	SQFT									1,787	93	1,880	Contract Quantity
	A0055	25801-0000	REINFORCED CONCRETE RETAINING WALL (STONE CAP - TYPE 2)	SQFT						1,080				20	1,100	
	A0056	25801-0000	REINFORCED CONCRETE RETAINING WALL (BRICK COPING)	SQFT						421				19	440	
	A0057	25801-0000	REINFORCED CONCRETE RETAINING WALL (STONE CAP - TYPE 1A)	SQFT						725				15	740	
	A0058	25801-0000	REINFORCED CONCRETE RETAINING WALL (STONE CAPE - TYPE 3)	SQFT						650				10	660	
	A0059	25801-0000	REINFORCED CONCRETE RETAINING WALL (STONE CAP - TYPE 1B)	SQFT						35				5	40	
	A0060	30101-0000	AGGREGATE BASE	TON		5,806								294	6,100	
	A0061	40101-0600	ASPHALT CONCRETE PAVEMENT, GYRATORY MIX, 1/2-INCH NOMINAL MAXIMUM SIZE AGGREGATE, 0.3 TO <3 MILLION ESAL	TON		7,287						47	366	7,700		
	A0062	40105-3000	ANTISTRIP ADDITIVE, TYPE 3	TON		729							36	765		
	A0063	40601-0000	FOG SEAL	TON		9							1	10		
	A0064	41102-1000	PRIME COAT, METHOD 1	SQYD		22,676							1,124	23,800		
	A0065	41105-0000	BLOTTER	TON		57							3	60		
	A0066	41201-0000	TACK COAT	TON		16							2	18		
	A0067	41301-0000	ASPHALT PAVEMENT MILLING	SQYD		8,343					426	431	9,200			
	A0068	41410-0000	JOINT SEALANT AND CRACK FILLER	LB							115	5	120			
	A0069	50101-1000	MINOR CONCRETE PAVEMENT, REINFORCED, 10-INCH DEPTH (COLORED)	SQYD		193							7	200		
	A0070	50101-1000	MINOR CONCRETE PAVEMENT, REINFORCED, 10-INCH DEPTH	SQYD		4,113							87	4,200		
	A0071	55201-0200	STRUCTURAL CONCRETE, CLASS A (AE)	CUYD								405	405	405	Contract Quantity	
	A0072	55302-3500	PRECAST, PRESTRESSED CONCRETE SLAB (GIRDER)	LNFT								607	607	607	Contract Quantity	
	A0073	55401-2000	REINFORCING STEEL, EPOXY COATED	LB								56,358	56,358	56,358	Contract Quantity	
	A0074	55601-1200	BRIDGE RAILING, STEEL, THREE RAIL (TYPE 10MASH, SPECIAL)	LNFT								581	581	581	Contract Quantity	

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SUMMARY OF QUANTITIES - Schedule A

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP 36(1)	B-4

A M E N D	Line Item No.	Pay Item Number	Pay Item Description	Unit	Sheet and Description										Estimated Quantities	Remarks and/or Determination of Estimated Quantity
					B-11 to B-12	B-13 to B-17	B-17	B-18 to B-23	B-24	B-25 to B-28	B-29	S-03 & S-38 to S-39	Allowances	Bid Schedule		
					Drainage Summary	Roadway Summary	Channel Summary	Permanent Traffic Summary	Temporary Traffic Summary	Landscaping Summary	Utility Summary	Structures Summary	Allowances	Bid Schedule		
	A0075	56302-1000	PAINTING, CONCRETE STRUCTURE	SQFT									860		860	Contract Quantity
	A0076	56401-3000	BEARING DEVICE, SLIDING	EACH									32		32	
	A0077	56501-0200	DRILLED SHAFT, 24-INCH DIAMETER	LNFT									227	13	240	
	A0078	56501-0300	DRILLED SHAFT, 30-INCH DIAMETER	LNFT									65	5	70	
	A0079	56901-0000	CONCRETE OVERLAY	SQYD									371		371	Contract Quantity
	A0080	60101-0000	CONCRETE	CUYD									11		11	Contract Quantity
	A0081	60102-0000	CONCRETE (MINOR STRUCTURES, STAIRS)	SQYD							56			4	60	
	A0082	60102-0000	CONCRETE (MINOR STRUCTURES, ADA RAMP)	SQYD							32			3	35	
	A0083	60103-0100	CONCRETE, HEADWALL FOR 18-INCH PIPE CULVERT	EACH	3										3	
	A0084	60103-2040	CONCRETE, HEADWALL FOR 60-INCH EQUIVALENT DIAMETER PIPE CULVERT	EACH	1										1	
	A0085	60201-0500	15-INCH PIPE CULVERT	LNFT	53										60	
	A0086	60201-0600	18-INCH PIPE CULVERT	LNFT	1,157									43	1,200	
	A0087	60201-0800	24-INCH PIPE CULVERT	LNFT	43									7	50	
	A0088	60201-0900	30-INCH PIPE CULVERT	LNFT	154									16	170	
	A0089	60201-1200	48-INCH PIPE CULVERT	LNFT	53									7	60	
	A0090	60202-0200	18-INCH EQUIVALENT DIAMETER ARCH OR ELLIPTICAL PIPE CULVERT	LNFT	82									8	90	
	A0091	60202-1000	60-INCH EQUIVALENT DIAMETER ARCH OR ELLIPTICAL PIPE CULVERT	LNFT	457									23	480	
	A0092	60401-0000	MANHOLE	EACH	4										4	
	A0093	60401-0000	MANHOLE (BOX BASE)	EACH	5										5	
	A0094	60403-0000	INLET (TYPE 13, 5-FOOT)	EACH	1										1	
	A0095	60403-0000	INLET (TYPE D, 10-FOOT)	EACH	3										3	
	A0096	60403-0000	INLET (TYPE R L 5, 10-FOOT)	EACH	1										1	
	A0097	60403-0000	INLET (TYPE R L 10, 10-FOOT)	EACH	2										2	
	A0098	60403-0000	INLET (TYPE 16, DOUBLE, 5-FOOT)	EACH	5										5	
	A0099	60403-0000	INLET (TYPE 16, 10-FOOT)	EACH	1										1	
	A0100	60403-0000	INLET (TYPE 16, TRIPLE, 5-FOOT)	EACH	1										1	
	A0101	60403-0000	INLET (TYPE R L 15, 5-FOOT)	EACH	1										1	

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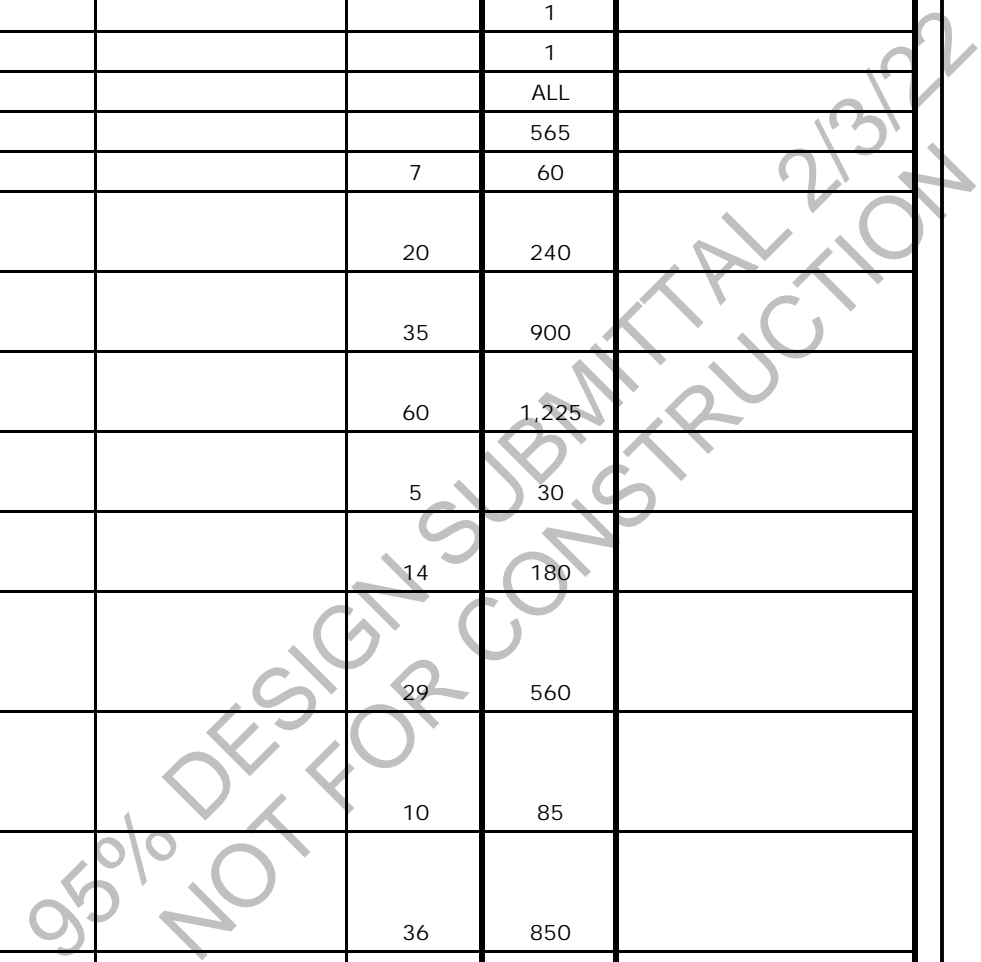
SUMMARY OF QUANTITIES - Schedule A

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP 36(1)	B-5

A M E N D	Line Item No.	Pay Item Number	Pay Item Description	Unit	Sheet and Description										Estimated Quantities	Remarks and/or Determination of Estimated Quantity
					B-11 to B-12	B-13 to B-17	B-17	B-18 to B-23	B-24	B-25 to B-28	B-29	S-03 & S-38 to S-39	Allowances	Bid Schedule		
					Drainage Summary	Roadway Summary	Channel Summary	Permanent Traffic Summary	Temporary Traffic Summary	Landscaping Summary	Utility Summary	Structures Summary	Allowances	Bid Schedule		
	A0102	60403-0000	INLET (TYPE 16, 5-FOOT)	EACH	7										7	
	A0103	60403-0000	INLET (TYPE C, 5-FOOT)	EACH	4										4	
	A0104	60403-0000	INLET (TYPE R L 5, 5-FOOT)	EACH	11										11	
	A0105	60405-0000	MANHOLE ADJUSTMENT	EACH							22		2	24		
	A0106	60407-0000	CAPPING INLETS AND MANHOLES	EACH	1										1	
	A0107	60411-0000	INLET MODIFICATION	EACH	1										1	
	A0108	60418-0000	STORM WATER DETENTION VAULT	LPSM	All										ALL	
	A0109	60501-0000	STANDARD UNDERDRAIN SYSTEM	LNFT						565					565	
	A0110	60526-0000	DRAINAGE CHASE	LNFT	53								7	60		
	A0111	60901-0000	CURB, CONCRETE (TYPE 2, SECTION M)	LNFT		220							20	240		
	A0112	60901-0000	CURB, CONCRETE (TYPE 6, SECTION M)	LNFT		865							35	900		
	A0113	60901-0000	CURB, CONCRETE (TYPE 2, SECTION B)	LNFT		1,165							60	1,225		
	A0114	60901-0000	CURB, CONCRETE (REINFORCED, 24-INCH DEPTH)	LNFT						25			5	30		
	A0115	60901-1700	CURB, CONCRETE, 18-INCH DEPTH (CONCRETE PLANTING BED CURB)	LNFT						166			14	180		
	A0116	60901-4200	CURB, STONE, TYPE 1, 18-INCH DEPTH (SANDSTONE LANDSCAPE PLANTING BED CURB)	LNFT						531			29	560		
	A0117	60902-1000	CURB AND GUTTER, CONCRETE, 12-INCH DEPTH (TYPE 2, SECTION IIM)	LNFT		75							10	85		
	A0118	60902-1000	CURB AND GUTTER, CONCRETE, 12-INCH DEPTH (TYPE 2, SECTION IB)	LNFT		814							36	850		
	A0119	60902-1000	CURB AND GUTTER, CONCRETE, 12-INCH DEPTH (TYPE 2, SECTION IIB)	LNFT		4,456							244	4,700		
	A0120	60905-1000	GUTTER, CONCRETE (TYPE 2)	LNFT		465							25	490		
	A0121	60910-0000	RESET CURB	LNFT		40								40		
	A0122	61101-0000	WATER SYSTEM	LPSM							All			ALL		
	A0123	61102-2750	4-INCH WATERLINE, DUCTILE IRON (REMOVE AND RELOCATE)	LNFT	110								10	120		
	A0124	61102-3000	6-INCH WATERLINE, DUCTILE IRON (REMOVE AND RELOCATE)	LNFT							15		5	20		
	A0125	61102-3250	8-INCH WATERLINE, DUCTILE IRON (REMOVE AND RELOCATE)	LNFT							50		5	55		

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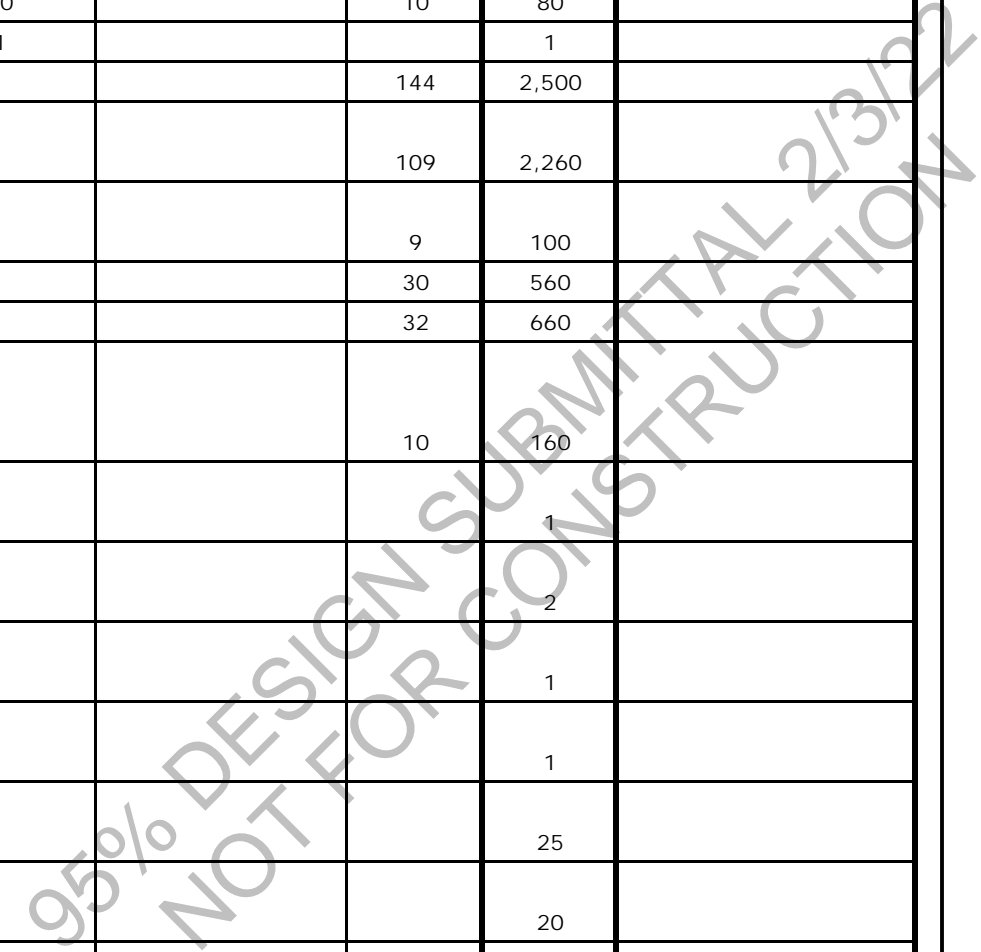
SUMMARY OF QUANTITIES - Schedule A

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP 36(1)	B-6

A M E N D	Line Item No.	Pay Item Number	Pay Item Description	Unit	Sheet and Description									Estimated Quantities	Remarks and/or Determination of Estimated Quantity
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					Drainage Summary	Roadway Summary	Channel Summary	Permanent Traffic Summary	Temporary Traffic Summary	Landscaping Summary	Utility Summary	Structures Summary	Allowances	Bid Schedule	
	A0126	61107-0000	WATER METER (1 1/2 INCH)	EACH								2		2	
	A0127	61108-4000	ADJUST VALVE BOX	EACH								32		35	
	A0128	61109-4000	RELOCATE FIRE HYDRANT	EACH								1		1	
	A0129	61110-1000	IRRIGATION SYSTEM	LPSM						All				ALL	
	A0130	61202-1000	10-INCH SEWER LINE, PLASTIC	LNFT								70	10	80	
	A0131	61206-0000	RELOCATE SANITARY SERVICE	EACH								1		1	
	A0132	61501-0100	SIDEWALK, CONCRETE	SQYD						2,356			144	2,500	
	A0133	61501-0200	SIDEWALK, COLORED CONCRETE (STAMPED)	SQYD						2,151			109	2,260	
	A0134	61501-0900	SIDEWALK, STONE (SALVAGED SANDSTONE PAVER)	SQYD						91			9	100	
	A0135	61502-1000	DRIVE PAD, CONCRETE	SQYD		530							30	560	
	A0136	61504-1000	ACCESSIBILITY RAMP, CONCRETE	SQYD		628							32	660	
	A0137	61701-4500	GUARDRAIL SYSTEM MGS, TYPE 2, CLASS A STEEL POSTS (7-FOOT POSTS)	LNFT		150							10	160	
	A0138	61702-0000	TERMINAL SECTION (QUADGUARD M10 TL-2)	EACH		1								1	
	A0139	61702-1200	TERMINAL SECTION, TYPE LST (TYPE 3D)	EACH		2								2	
	A0140	61702-1200	TERMINAL SECTION, TYPE LST (TYPE 3K)	EACH		1								1	
	A0141	61702-1500	TERMINAL SECTION, TYPE MGS TANGENT (TL-3)	EACH		1								1	
	A0142	61707-4000	STRUCTURE TRANSITION RAILING, MGS SYSTEM (TYPE 3G)	LNFT		25								25	
	A0143	61707-4000	STRUCTURE TRANSITION RAILING, MGS SYSTEM (TYPE 3H)	LNFT		20								20	
	A0144	61708-1000	REMOVE AND RESET, GUARDRAIL	LNFT		13								13	
	A0145	61901-0000	FENCE (TREE PROTECTION)	LNFT						1,062			53	1,115	
	A0146	61901-0000	FENCE (ELK TREE PROTECION)	LNFT						2,525			125	2,650	
	A0147	61901-2250	FENCE, RAIL	LNFT		90							10	100	
	A0148	61904-0000	BOLLARD POST	EACH						4				4	
	A0149	62201-0250	DUMP TRUCK, 10 CUBIC YARD MINIMUM CAPACITY	HOUR										80	
	A0150	62201-0900	WHEEL LOADER, 2 CUBIC YARD MINIMUM RATED CAPACITY	HOUR										80	
	A0151	62201-2050	ROLLER	HOUR										80	
	A0152	62201-2850	MOTOR GRADER, 12 FOOT MINIMUM BLADE	HOUR										20	

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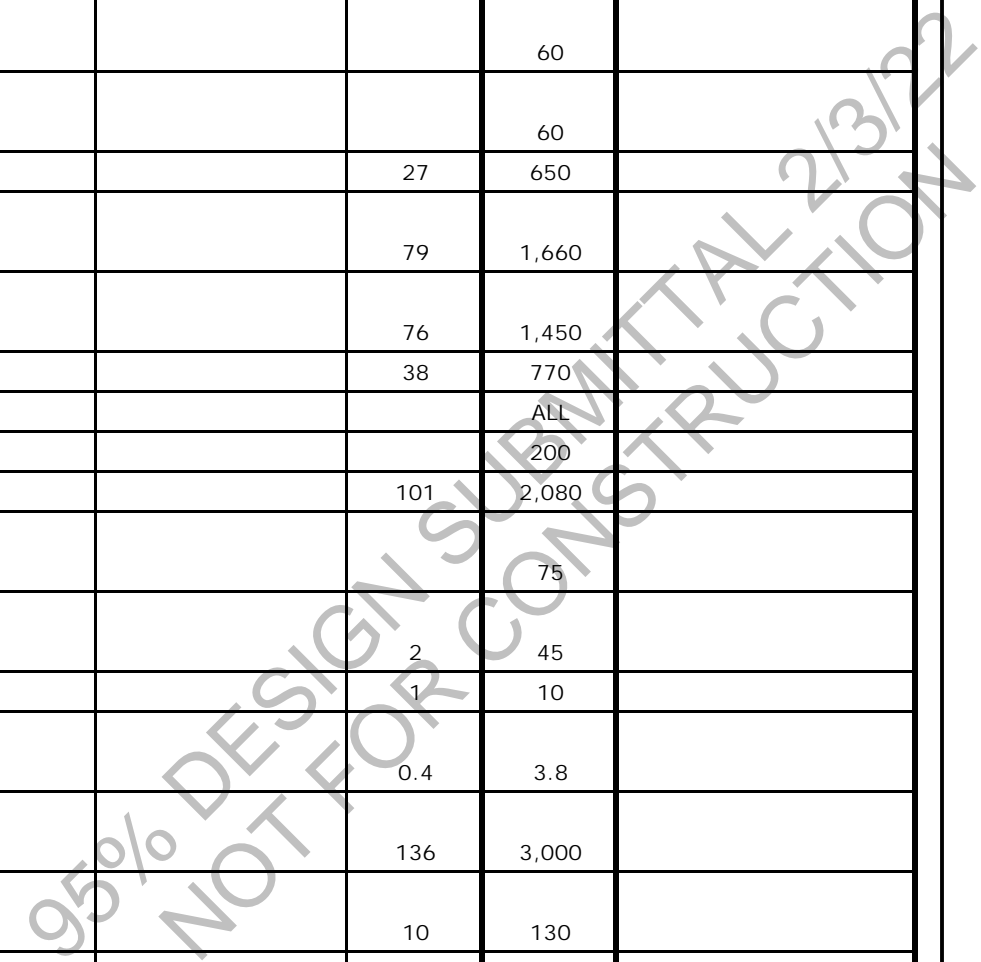
SUMMARY OF QUANTITIES - Schedule A

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP 36(1)	B-7

A M E N D	Line Item No.	Pay Item Number	Pay Item Description	Unit	Sheet and Description										Estimated Quantities	Remarks and/or Determination of Estimated Quantity	
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					Drainage Summary	Roadway Summary	Channel Summary	Permanent Traffic Summary	Temporary Traffic Summary	Landscaping Summary	Utility Summary	Structures Summary	Allowances	Bid Schedule			
	A0153	62201-3200	HYDRAULIC EXCAVATOR, CRAWLER MOUNTED, 1.5 CUBIC YARD MINIMUM CAPACITY	HOUR												80	
	A0154	62301-0000	GENERAL LABOR	HOUR												120	
	A0155	62302-1000	SPECIAL LABOR, HIRED TECHNICAL SERVICES	HOUR												60	
	A0156	62302-1100	SPECIAL LABOR, HIRED SURVEY SERVICES	HOUR												60	
	A0157	62403-0000	FURNISHING AND PLACING TOPSOIL	CUYD						623				27		650	
	A0158	62511-1000	SEEDING, DRY METHOD (LOW GROW NATIVE GRASS SEEDING)	SQYD						1,581				79		1,660	
	A0159	62511-1000	SEEDING, DRY METHOD (NATIVE SEEDING)	SQYD						1,374				76		1,450	
	A0160	62516-4000	MULCHING, HAND METHOD	SQYD						732				38		770	
	A0161	62632-0000	PLANTINGS	LPSM						All						All	
	A0162	62635-3000	CUTTINGS, WILLOW POLE	EACH			200									200	
	A0163	62701-0000	SOD	SQYD						1,979				101		2,080	
	A0164	63301-0000	SIGN SYSTEM (P1, 2 1/2-INCH ROUND NP-40, POST & SLIPBASE)	EACH				71								75	
	A0165	63301-0000	SIGN SYSTEM (P, 2-INCH ROUND, POST & SOCKET)	EACH				43						2		45	
	A0166	63316-1000	REMOVE AND RESET SIGN	EACH				9						1		10	
	A0167	63402-0700	PAVEMENT MARKINGS, TYPE D, SOLID	MILE				3.4						0.4		3.8	
	A0168	63403-0800	PAVEMENT MARKINGS, TYPE H (STOP BAR - XWALK - SHIELD)	SQFT				2,864						136		3,000	
	A0169	63403-1300	PAVEMENT MARKINGS, TYPE BIKE LANE SURFACE	SQFT				120						10		130	
	A0170	63405-2890	PAVEMENT MARKINGS, TYPE H (WORD-SYMBOLS)	EACH				144						16		160	
	A0171	63411-1500	RECESSED PAVEMENT MARKINGS, TYPE H, SOLID	LNFT				1,348						52		1,400	
	A0172	63501-3000	TEMPORARY TRAFFIC CONTROL, TRANSPORTATION MANAGEMENT PLA	LPSM						All						All	
	A0173	63501-3500	TEMPORARY TRAFFIC CONTROL, PUBLIC INFORMATION PROGRAM	LPSM						All						All	
	A0174	63502-0600	TEMPORARY TRAFFIC CONTROL, BARRICADE TYPE 3	EACH					10					2		12	
	A0175	63502-0700	TEMPORARY TRAFFIC CONTROL, CONE	EACH					100					10		110	

MileStone: Final
Date Completed: In Progress
Report Date: 02/03/22

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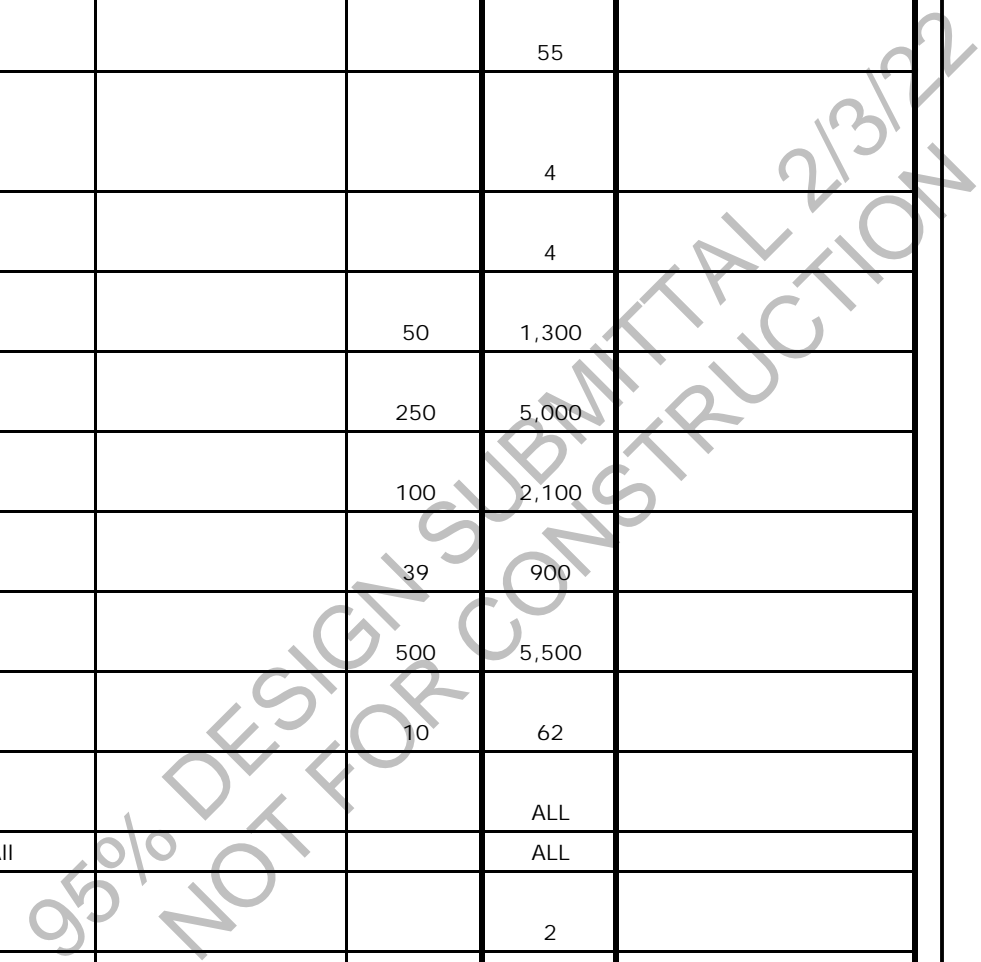
SUMMARY OF QUANTITIES - Schedule A

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP 36(1)	B-8

A M E N D	Line Item No.	Pay Item Number	Pay Item Description	Unit	Sheet and Description										Estimated Quantities		Remarks and/or Determination of Estimated Quantity
					B-11 to B-12	B-13 to B-17	B-17	B-18 to B-23	B-24	B-25 to B-28	B-29	S-03 & S-38 to S-39	Allowances	Bid Schedule			
					Drainage Summary	Roadway Summary	Channel Summary	Permanent Traffic Summary	Temporary Traffic Summary	Landscaping Summary	Utility Summary	Structures Summary					
	A0176	63502-1300	TEMPORARY TRAFFIC CONTROL, DRUM	EACH						50					5	55	
	A0177	63502-1400	TEMPORARY TRAFFIC CONTROL, VERTICAL PANEL	EACH						100					10	110	
	A0178	63502-1500	TEMPORARY TRAFFIC CONTROL, WARNING LIGHT TYPE A	EACH						50						55	
	A0179	63502-2000	TEMPORARY TRAFFIC CONTROL, PORTABLE CHANGEABLE MESSAGE SIGN	EACH						4						4	
	A0180	63502-2100	TEMPORARY TRAFFIC CONTROL, CRASH CUSHION	EACH						4						4	
	A0181	63503-0400	TEMPORARY TRAFFIC CONTROL, CONCRETE BARRIER	LNFT						1,250					50	1,300	
	A0182	63503-0700	TEMPORARY TRAFFIC CONTROL, PAVEMENT MARKINGS	LNFT						4,750					250	5,000	
	A0183	63503-1000	TEMPORARY TRAFFIC CONTROL, PLASTIC FENCE	LNFT						2,000					100	2,100	
	A0184	63504-1000	TEMPORARY TRAFFIC CONTROL, CONSTRUCTION SIGN	SQFT						861					39	900	
	A0185	63506-0500	TEMPORARY TRAFFIC CONTROL, FLAGGER	HOUR						5,000					500	5,500	
	A0186	63510-0100	TEMPORARY TRAFFIC CONTROL, TRAFFIC CONTROL SUPERVISOR	WEEK						52					10	62	
	A0187	63601-1000	SYSTEM INSTALLATION, TRAFFIC SIGNAL	LPSM				All								All	
	A0188	63601-2000	SYSTEM INSTALLATION, LIGHTING	LPSM								All				All	
	A0189	63602-1000	SYSTEM INSTALLATION, TRAFFIC SIGNAL (RRFB SYSTEM)	EACH				2								2	
	A0190	63640-0200	RELOCATE SIGNAL SYSTEM (REMOVE)	LPSM				All								All	
	A0191	63640-0700	RELOCATE ELECTRICAL LINE	LPSM								All				All	
	A0192	63641-0200	RELOCATE SIGNAL SYSTEM (RRFB POST)	EACH				1								1	
	A0193	64603-0000	FIXTURE (TREE GRATE, TYPE 1)	EACH							6					6	
	A0194	64603-0000	FIXTURE (TREE GRATE, TYPE 2)	EACH							4					4	
	A0195	64603-0100	FIXTURE, TRASH RECEPTACLE (TYPE 1, OFCI)	EACH							2					2	
	A0196	64603-0300	FIXTURE, BENCH (6-FOOT, BACKLESS)	EACH							2					2	

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SUMMARY OF QUANTITIES - Schedule A

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP 36(1)	B-9

A M E N D	Line Item No.	Pay Item Number	Pay Item Description	Unit	Sheet and Description									Estimated Quantities	Remarks and/or Determination of Estimated Quantity
					B-11 to B-12	B-13 to B-17	B-17	B-18 to B-23	B-24	B-25 to B-28	B-29	S-03 & S-38 to S-39	Allowances	Bid Schedule	
					Drainage Summary	Roadway Summary	Channel Summary	Permanent Traffic Summary	Temporary Traffic Summary	Landscaping Summary	Utility Summary	Structures Summary	Allowances	Bid Schedule	
	A0197	64603-0300	FIXTURE, BENCH (6-FOOT, WITH BACK)	EACH						6			6		
	A0198	64603-0700	FIXTURE, PICNIC TABLE	EACH						2			2		
	A0199	64604-1000	FIXTURE, HANDRAIL (STAINLESS STEEL)	LNFT						202		13	215		
	A0200	64604-3000	FIXTURE, PEDESTRIAN RAILING	LNFT							252		252	Contract Quantity	
	A0201	64620-0300	REMOVE AND RESET BENCH	EACH						2			2		
	A0202	64620-0600	REMOVE AND RESET TRASH RECEPTACLE (TYPE 2)	EACH						3			3		
	A0203	64620-0600	REMOVE AND RESET TRASH RECEPTACLE (TYPE 1)	EACH						3			3		
	A0204	64704-2000	MITIGATION, ROCK WEIR	CUYD			111					9	120		

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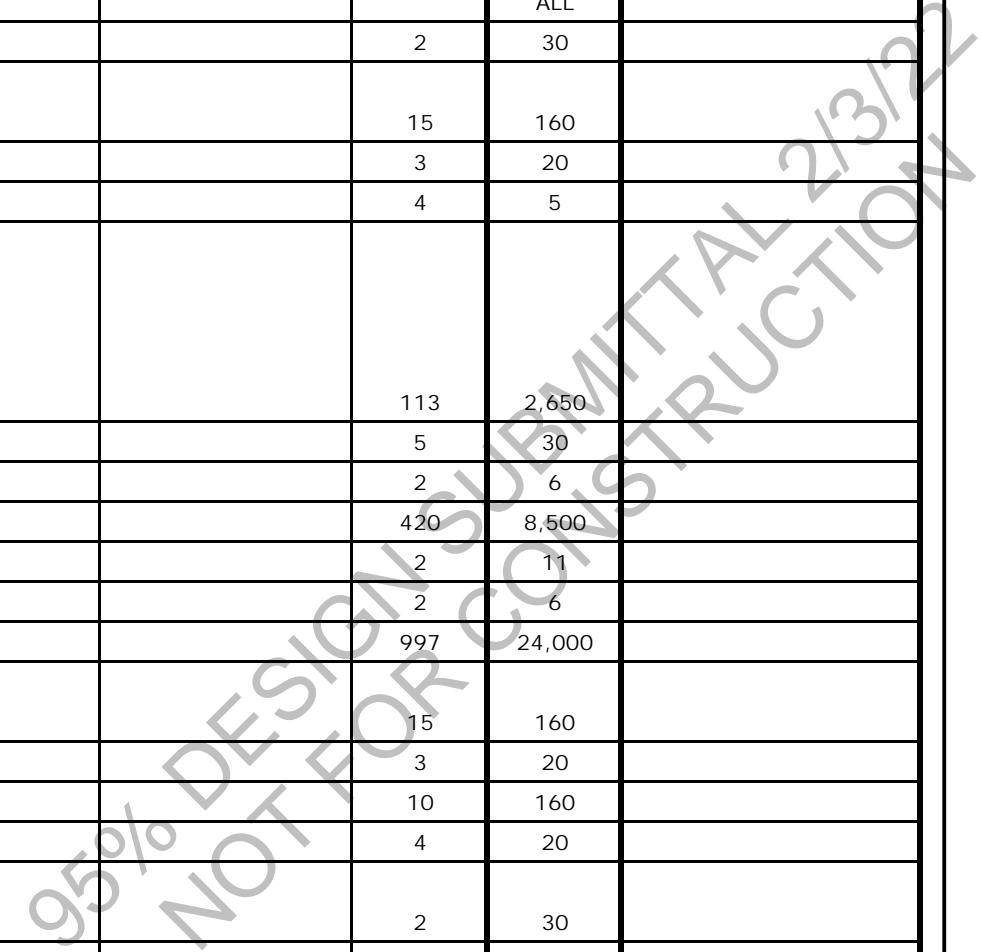
SUMMARY OF QUANTITIES - Option X

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP 36(1)	B-10

https://aecom-my.sharepoint.com/personal/isabel_butler_aecom_com/Documents/Desktop/Projects/Estes Park/Quantities/summary_2 (2).xlsm|Sheet (10)

A M E N D	Line Item No.	Pay Item Number	Pay Item Description	Unit	Sheet and Description								Estimated Quantities	Remarks and/or Determination of Estimated Quantity	
					B-11 to B-12	B-13 to B-17	B-17	B-18 to B-23	B-24	B-25 to B-28	B-29	S-03 & S-38 to S-39	Allowances		Bid Schedule
					Drainage Summary	Roadway Summary	Channel Summary	Permanent Traffic Summary	Temporary Traffic Summary	Landscaping Summary	Utility Summary	Structures Summary	Allowances		Bid Schedule
	X0001	15101-0000	MOBILIZATION	LPSM										ALL	
	X0002	15210-4000	CENTERLINE, ESTABLISHMENT	MILE		1.330								1.330	
	X0003	15301-0000	CONTRACTOR QUALITY CONTROL	LPSM										ALL	
	X0004	15401-0000	CONTRACTOR TESTING	LPSM										ALL	
	X0005	15501-0000	CONSTRUCTION SCHEDULE	LPSM				All						ALL	
	X0006	20301-2400	REMOVAL OF SIGN	EACH				28					2	30	
	X0007	20302-0300	REMOVAL OF CURB AND GUTTER, CONCRETE	LNFT		145							15	160	
	X0008	20303-3200	REMOVAL OF SIDEWALK, CONCRETE	SQYD		17							3	20	
	X0009	30101-0000	AGGREGATE BASE	TON		1							4	5	
	X0010	40101-0600	ASPHALT CONCRETE PAVEMENT, GYRATORY MIX, 1/2-INCH NOMINAL MAXIMUM SIZE AGGREGATE, 0.3 TO <3 MILLION ESAL	TON		2,537							113	2,650	
	X0011	40105-3000	ANTISTRIP ADDITIVE, TYPE 3	TON		25							5	30	
	X0012	40601-0000	FOG SEAL	TON		4							2	6	
	X0013	41102-1000	PRIME COAT, METHOD 1	SQYD		8,080							420	8,500	
	X0014	41105-0000	BLOTTER	TON		9							2	11	
	X0015	41201-0000	TACK COAT	TON		4							2	6	
	X0016	41301-0000	ASPHALT PAVEMENT MILLING	SQYD		23,003							997	24,000	
	X0017	60902-1000	CURB AND GUTTER, CONCRETE, 12-INCH DEPTH	LNFT		145							15	160	
	X0018	61501-0100	SIDEWALK, CONCRETE	SQYD		17							3	20	
	X0019	61504-1000	ACCESSIBILITY RAMP, CONCRETE	SQYD		150							10	160	
	X0020	61509-0000	DETECTABLE WARNING PANELS	SQYD		16							4	20	
	X0021	63301-0000	SIGN SYSTEM (P - 2IN ROUND, POST & SOCKET)	EACH				28					2	30	
	X0022	63316-1000	REMOVE AND RESET SIGN	EACH				17					3	20	
	X0023	63402-0700	PAVEMENT MARKINGS, TYPE D, SOLID	MILE				6.3					0.4	6.7	
	X0024	63403-0800	PAVEMENT MARKINGS, TYPE H (STOP BAR - XWALK)	SQFT				746					54	800	
	X0025	63405-2890	PAVEMENT MARKINGS, TYPE H (WORD SYMBOLS)	EACH				28					5	33	
	X0026	63501-3000	TEMPORARY TRAFFIC CONTROL, TRANSPORTATION MANAGEMENT PLAN	LPSM					All					ALL	
	X0027	63506-0500	TEMPORARY TRAFFIC CONTROL, FLAGGER	HOUR					500				50	550	

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Date Completed: In Progress
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CONCRETE RAMPS/DRIVEWAY SUMMARY				
Item Number		61502-1000	61504-1000	
Station	Side	DRIVE PAD, CONCRETE	ACCESSIBILITY RAMP, CONCRETE	
		SQYD	SQYD	
CRAGS	401+25.43	Lt	0	13
	401+23.56	Rt	0	11
	401+61.27	Lt	0	19
	401+66.28	Rt	0	24
	500+58.00	Rt	0	11
	502+24.39	Lt	0	32
	502+23.74	Rt	0	48
	503+00.15	Lt	69	0
	504+09.87	Lt	45	0
	504+32.76	Lt	28	0
RIVERSIDE	505+62.31	Lt	59	0
	506+63.33	Lt	45	0
	507+86.81	Lt	0	13
	508+04.09	Lt	0	13
	508+41.80	Lt	0	22
	508+39.14	Rt	0	15
	508+89.74	Lt	0	18
	509+54.96	Rt	0	34
	509+85.33	Rt	0	21
	510+38.69	Rt	46	0
	511+00.32	Rt	72	0
	511+58.24	Rt	29	0
	511+79.10	Lt	0	12
	511+80.79	Rt	0	11
	515+75.57	Lt	0	12
	515+81.98	Rt	0	14
	516+39.77	Rt	0	14
	516+55.65	Rt	26	0
	516+71.96	Rt	0	16
	517+43.36	Rt	0	15
MORAIN E N	202+32.20	Lt	0	13
	202+32.09	Rt	0	8
	204+27.00	Lt	0	8
	204+59.72	Rt	0	9
	207+86.10	Lt	0	16
ELKHORN	207+88.45	Rt	0	13
	212+63.73	Rt	0	13
	255+28.69	Lt	0	16
ROCKWELL	255+68.47	Rt	0	15
	255+77.82	Lt	0	14
	256+36.82	Rt	0	23
	600+34.56	Rt	0	6
	600+36.05	Lt	0	6
	603+33.58	Rt	0	7
	603+72.90	Rt	0	10
	603+93.98	Rt	0	15
E RIVERSIDE	604+26.31	Rt	0	13
	604+22.98	Lt	0	7
	604+48.98	Lt	0	14
	301+71.45	Lt	40	0
302+06.83	Lt	0	6	
302+47.35	Rt	22	0	
302+65.54	Rt	0	9	
303+33.71	Rt	47	0	
TOTALS		530	628	

REMOVAL SUMMARY										
Item Number		20101-0000	20301-0100	20302-0300	20303-3200	20303-3600				
Station to Station	Side	CLEARING AND GRUBBING	REMOVAL OF BOLLARD	REMOVAL OF CURB AND GUTTER, CONCRETE	REMOVAL OF SIDEWALK, CONCRETE	REMOVAL OF WALL				
		ACRE	EACH	LNFT	SQYD	SQYD				
CRAGS	401+00.00	-	401+11.84	Rt	0.02		10	5		
	401+08.69	-	401+22.85	Lt	0.02		13	6		
	500+00.00	-	509+00.00	Rt	0.38					
	500+00.00	-	502+50.00	Lt	0.26				29	
	502+50.00	-	509+00.00	Lt	0.02					
	510+00.00	-	512+00.00	Lt	0.11					
	500+88.26	-	500+95.97	Rt				12		
	500+93.04	-	501+42.01	Rt				46		
	501+41.28	-	501+57.90	Rt		62				
	501+48.05	-	504+94.70	Rt		406				
RIVERSIDE	502+79.97	-	503+70.72	Rt				59		
	504+02.78	-	504+12.51	Rt				12		
	505+67.20	-	508+62.48	Rt		314		414		
	507+02.88	-	507+90.83	Lt		123		178		
	508+04.96	-	508+41.96	-		105		39		
	508+92.45	-	511+96.00	Rt		370		172		
	509+05.25	-	511+85.83	Rt		364		219		
	512+09.45	-	514+39.40	-		254		232		
	515+47.89	-	517+79.57	Rt		314		244		
	515+67.04	-	515+84.85	Lt		18		19		
	MORAIN E W	104+00.00	-	105+60.00	Rt					141
		201+18.07	-	202+59.51	Lt		144			
	MORAIN E N	202+24.42	-	202+41.23	Lt				9	
		201+50.50	-	201+79.53	Rt				14	
		201+58.27	-	202+57.49	Rt		99			52
204+21.78		-	204+32.06	Lt		30		12		
207+75.89		-	207+98.31	Lt		32		24		
207+68.15		-	208+08.34	Rt		45		12		
209+43.34		-	209+80.22	Rt		56		40		
209+98.58		-	210+09.35	Rt		19		2		
210+99.12		-	211+73.93	Rt		78		64		
212+56.24		-	212+71.94	Rt		19		9		
ELKHORN	253+88.80	-	255+88.95	Rt		311		257		
	254+22.88	-	254+88.36	Rt	4					
	255+22.18	-	256+47.98	Lt		153		111		
ROCKWELL	256+16.09	-	256+49.41	Rt		107		48		
	603+81.67	-	603+99.29	Lt		18				
E RIVERSIDE	604+12.21	-	604+26.87	Lt		21		10		
	604+45.39	-	604+68.31	Lt		32		28		
	302+34.23	-	302+73.92	Lt		59		24		
POST OFFICE LOT	301+33.00	-	303+50.00	Lt	0.06					
	303+50.00	-	304+00.00	Rt	0.04					
	9+92.97	-	13+06.30	Rt		558		385	82	
	12+35.38	-	12+49.74	Lt		73		7		
	12+71.24	-	12+96.43	Lt				41		
TOTALS					0.91	4	4208	2753	304	

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GUARDRAIL SUMMARY											
Item Number		61701-4500	61702-0000	61702-1200	61702-1200	61702-1500	61707-4000	61707-4000	61708-1000		
Station to Station		GUARDRAIL SYSTEM MGS, TYPE 2, CLASS A STEEL POSTS (7' POSTS)	TERMINAL SECTION (QUADGUARD M10 TL-2)	TERMINAL SECTION (TYPE 3D)	TERMINAL SECTION, TYPE LST (TYPE 3K)	TERMINAL SECTION, TYPE MGS TANGENT (TL-3)	STRUCTURE TRANSITION RAILING, MGS SYSTEM (TYPE 3G)	STRUCTURE TRANSITION RAILING, MGS SYSTEM (TYPE 3H)	REMOVE AND RESET, GUARDRAIL		
		LNFT	EACH	EACH	EACH	EACH	LNFT	LNFT	LNFT		
HCL	Moraine West	100+50.00 to 101+50.00	Rt	25			25				
	Riverside Dr HCL	500+00.00 to 501+00.00	Rt	113	1	1					
	Riverside Dr HCL	508+95.00 to 509+10.00	Lt		1						
	Riverside Dr HCL	510+00.00 to 510+50.00	Lt	12	1			20			
	Moraine North	205+26.00 to 205+26.12	Lt							13	
TOTALS				150	1	2	1	1	25	20	13

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

CURB RAMP, DRIVEWAY,
REMOVAL & GUARDRAIL
SUMMARY

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CURB AND GUTTER SUMMARY										
Item Number	Station to Station	Side	Description	60901-0000	60901-0000	60901-0000	60902-1000	60902-1000	60902-1000	60905-1000
				CURB, CONCRETE (TYPE 2 SECTION B)	CURB, CONCRETE (TYPE 2 SECTION M)	CURB, CONCRETE (TYPE 6 SECTION M)	CURB AND GUTTER, CONCRETE, 12-INCH DEPTH (TYPE 2 SECTION IB)	CURB AND GUTTER, CONCRETE, 12-INCH DEPTH (TYPE 2 SECTION IIB)	CURB AND GUTTER, CONCRETE, 12-INCH DEPTH (TYPE 2 SECTION IIM)	GUTTER, CONCRETE (TYPE 2)
				LNFT	LNFT	LNFT	LNFT	LNFT	LNFT	LNFT
MORaine WEST	102+16 - 103+51	LT	@ Davis	35		512				136
	102+87 - 105+35	M	Median 03							
	101+72 - 105+23	RT						296		63
	103+51 - 104+95	LT						128		
ROUNDABOUT CENTRAL	+00 - 2+20			157	220					
	1+03 - 1+47	RT						87		
	500+12 - 502+08	RT						234		
	500+33 - 502+13	LT						180		
	502+37 - 507+50	LT						512		
	502+49 - 508+30	RT						544		
	507+99 - 508+42	LT	Median 04	45			72			
	508+52 - 508+77	RT					25			
	509+93 - 511+78	RT					197			
	512+33 - 514+33	LT						201		
	515+07 - 515+36	LT						28		
	515+47 - 515+73	RT						26		
	515+91 - 516+29	RT						38		
	516+44 - 517+69	LT						130		
	516+82 - 517+39	RT						60		
	517+52 - 517+80	RT						85		
	517+40 - 517+89	M		37			122			
	516+73 - 517+59	RT		183						
	401+08 - 401+11	LT						2		
	401+00 - 401+11	RT						11		
	401+75 - 402+65	LT						104		
	401+76 - 402+78	RT						109		
	402+09 - 402+49	M	Median 01			100				
MORaine SB BYPASS	1+17 - 3+03	RT						187		
	1+63 - 2+70	LT	Median 02			253				
	200+15 - 202+29	RT						222		
	201+18 - 202+22	LT						104		
	202+35 - 202+58	RT						29		
	202+41 - 202+60	LT								19
	204+22 - 204+69	LT	@ Davis	12				16		47
	207+63 - 207+79	RT						22		
	207+98 - 208+13	RT						19		
	209+42 - 209+68	RT						26		
	209+57 - 209+68	RT								11
	210+99 - 211+74	RT							75	
	253+87 - 255+06	LT						119		
	253+88 - 255+63	RT						78		103
	255+25 - 255+87	LT						111		
	255+61 - 256+48	LT								86
	600+39 - 600+66	RT						26		
	603+80 - 604+00	LT					30			
	603+98 - 604+17	RT						20		
	604+35 - 604+49	RT						13		
	604+57 - 604+65	LT						9		
	604+99 - 605+43	RT						45		
	605+14 - 605+52	LT						48		
	301+34 - 302+09	LT	Parking area	111				77		
	302+13 - 303+38	LT						123		
	302+28 - 302+69	RT	Misty Mountain Parking Lot	150			41			
	302+75 - 303+55	RT					84			
	303+06 - 303+55	RT	Misty Mountain on-street parking	104						
	9+37 - 9+78	LT						44		
	9+96 - 10+11	LT						25		
	10+44 - 12+86	RT		14				257		
	12+72 - 12+96	LT					60	40		
FUN CITY PARKING LOT				214						
PICADILLY SQUARE PARKING LOT				103			183	21		
TOTALS				1165	220	865	814	4456	75	465

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U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

CURB AND GUTTER SUMMARY

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PAVEMENT SUMMARY												
Item Number	30101-0000	40101-0600	40105-3000	40601-0000	41102-1000	41105-0000	41201-0000	41301-0000	50101-1000	50101-1000	Notes	
Station to Station	AGGREGATE BASE	ASPHALT CONCRETE PAVEMENT, GYRATORY MIX, 1/2-INCH NOMINAL MAXIMUM SIZE AGGREGATE, 0.3 TO <3 MILLION ESAL	ANTISTRIP ADDITIVE, TYPE 3	FOG SEAL	PRIME COAT, METHOD 1	BLOTTER	TACK COAT	ASPHALT PAVEMENT MILLING	MINOR CONCRETE PAVEMENT, REINFORCED, 10-INCH DEPTH	MINOR CONCRETE PAVEMENT, REINFORCED, 10-INCH DEPTH (COLORED)		
	TON	TON	TON	TON	SQYD	TON	TON	SQYD	SQYD	SQYD		
MORaine WEST	100+81.99 - 103+66.97	409	540	54	0.54	1306	3	1				
	102+26.35 - 102+59.40	14	19	2	0.02	46	0	0				
	ROUNDAABOUT	1156							3502	193	Quantity Includes concrete approaches on Moraine West, Moraine North, Crags, Riverside, Moraine SB Bypass, and Roundabout Apron	
CRAGS	400+96.52 - 401+52.51	220	291	29	0.29	705	2	1			Quantity Includes Fun City and Picadilly parking lots	
	500+59.65 - 509+03.44	922	1218	122	1.22	2947	7	3				
RIVERSIDE DR	509+56.52 - 514+77.20	545	720	72	0.72	1743	4	1				
	515+07.47 - 517+70.74	395	522	52	0.52	1262	3	1				
	513+40.52 - 514+73.83	34							109			
	516+45.47 - 517+45.24	19	25	2	0.03	60	0	0				
MORaine NORTH	202+41.38 - 202+56.40	5							17			
	202+75.74 - 210+54.20	0	673	67	1.69	4071	10	2		4071		
	204+21.78 - 204+68.87	24	32	3	0.03	77	0	0				
	207+62.95 - 208+13.31	11	14	1	0.01	34	0	0				
	209+43.33 - 210+09.32	6	8	1	0.01	20	0	0				
	210+99.05 - 211+73.87	5	7	1	0.01	17	0	0				
	211+15.41 - 212+51.74	0	114	11	0.29	689	2	0		689		
	- 253+46.82	0	330	33	0.83	1997	5	1		1997		
ELKHORN AVE	250+11.89 - 250+27.18	1	2	0	0.00	4	0	0			Quantity Includes Virginia Dr approach	
	253+46.82 - 257+53.65	670	886	89	0.89	2144	5	2				
	255+61.84 - 256+48.01	10							33			
	257+53.65 - 258+48.45	0	117	12	0.29	709	2	0		709		
ROCKWELL ST	600+42.25 - 604+57.98	0	130	13	0.33	785	2	0		709		
	603+03.56 - 604+50.40	10	13	1	0.01	32	0	0				
	603+78.67 - 604+65.45	7	9	1	0.01	23	0	0				
	605+07.59 - 605+32.25	19	26	3	0.03	62	0	0				
EAST RIVERSIDE	301+33.66 - 303+50.00	100	133	13	0.13	321	1	0				
	301+37.45 - 302+06.83	46	61	6	0.06	147	0	0				
	302+37.06 - 302+66.17	0	28	3	0.07	168	0	0		168		
	302+61.36 - 302+82.87	36	47	5	0.05	114	0	0				
	303+05.75 - 303+55.01	42	55	5	0.06	133	0	0				
POST OFFICE LOT	9+90.37 - 12+86.35	957	1266	127	1.27	3061	8	3				
	10+33.92 - 11+70.54	95							305			
	12+73.06 - 13+07.47	46							147			
TOTALS		5806	7287	729	9	22676	57	16	8343	4113	193	

Values used for estimating purposes:
 Aggregate base....139 lb/ft'
 Asphalt concrete pavement....147 lb/ft'
 Antistrip....1% weight of mix
 Fog seal....0.1 gal/yd' (240.7 gal/ton)
 Blotter....5 lb/yd' of prime coat
 Tack coat....0.1 gal/yd' (233 gal/ton)

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SURVEY AND STAKING SUMMARY						
Station to Station	Item Number		15210-4000	15225-0000	15236-2000	15215-8000
			CENTERLINE, ESTABLISHMENT	SLOPE, REFERENCE, AND CLEARING AND GRUBBING CONTROL	SURVEY CONTROL, GRADE FINISHING	SURVEY AND STAKING, INTERSECTION
			MILE	MILE	MILE	EACH
TRAIL 1	10+14	-	12+87	0.05	0.10	
TRAIL 2	10+26	-	13+63	0.06	0.13	
TRAIL 3	0+00	-	0+62	0.01	0.02	
TRAIL 4	0+00	-	1+34	0.03	0.05	
TRAIL 5	0+00	-	10+91	0.21	0.41	
CRAGS	401+00	-	402+48	0.03	0.06	
RIVERSIDE DR.	500+21	-	509+05	0.17	0.33	
	510+03	-	514+33	0.08	0.16	
	515+12	-	517+95	0.05	0.11	
W MORaine	100+82	-	105+34	0.09	0.17	
MORaine SB BYPASS	1+32	-	3+74	0.05	0.09	
N MORaine	202+76	-	210+54	0.15		
	211+15		212+52	0.03		
ELKHORN	770+35		771+97	0.03		
	250+34		253+47	0.06		
	253+47	-	257+54	0.08	0.15	
ROCKWELL	600+42		604+58	0.08		
	605+08	-	605+48	0.01	0.02	
E RIVERSIDE	301+33	-	303+83	0.05	0.09	
ROUNDAABOUT	0+00		2+20			1
MORaine & ELKHORN INTERSECTION	0+00		2+20			1
TOTALS				0.36	0.95	1.91

CHANNEL SUMMARY			
Item Number		Unit	Quantity
PERMANENT CHANNEL CONSTRUCTION			
15705-1400	SOIL EROSION CONTROL, FIBER ROLL (COIR LOG)	LNFT	403
20401-0000	ROADWAY EXCAVATION (CHANNEL)	CUYD	2492
20435-1000	BACKFILL, SELECT GRANULAR	CUYD	154
20435-1000	BACKFILL, SELECT GRANULAR (RESORTED ALLUVIUM, 10-INCH) (2)	CUYD	333
20435-1000	BACKFILL, SELECT GRANULAR (RESORTED ALLUVIUM, 8-INCH) (2)	CUYD	404
20435-1000	BACKFILL, SELECT GRANULAR (RESORTED ALLUVIUM, 3-INCH) (2)	CUYD	135
25101-0500	PLACED RIPRAP, METHOD A, CLASS 5 (18-INCH)	CUYD	126
25101-0700	PLACED RIPRAP, METHOD A, CLASS 7 (24-INCH)	CUYD	573
25125-0000	BOULDER (BANK BOULDER, 4-FOOT)	EACH	38
62635-3000	CUTTINGS, WILLOW POLE (1)	EACH	200
64704-2000	MITIGATION, ROCK WEIR (DROP BOULDER, 4-FOOT)	CUYD	111
TEMPORARY CHANNEL CONSTRUCTION			
15702-2000	SOIL EROSION CONTROL, TURBIDITY MONITORING	LPSM	1
15702-6000	SOIL EROSION CONTROL, TEMPORARY STREAM DIVERSION	LPSM	1
15705-1600	SOIL EROSION CONTROL, ABSORBENT BOOM	LNFT	60
15705-2000	SOIL EROSION CONTROL, FLOATING TURBIDITY CURTAIN	LNFT	60
15706-1600	SOIL EROSION CONTROL, STABILIZED CONSTRUCTION EXIT (RIVER ACCESS POINTS)	EACH	2
15706-2300	SOIL EROSION CONTROL, ON-SITE CONCRETE WASHOUT STRUCTURE	EACH	2

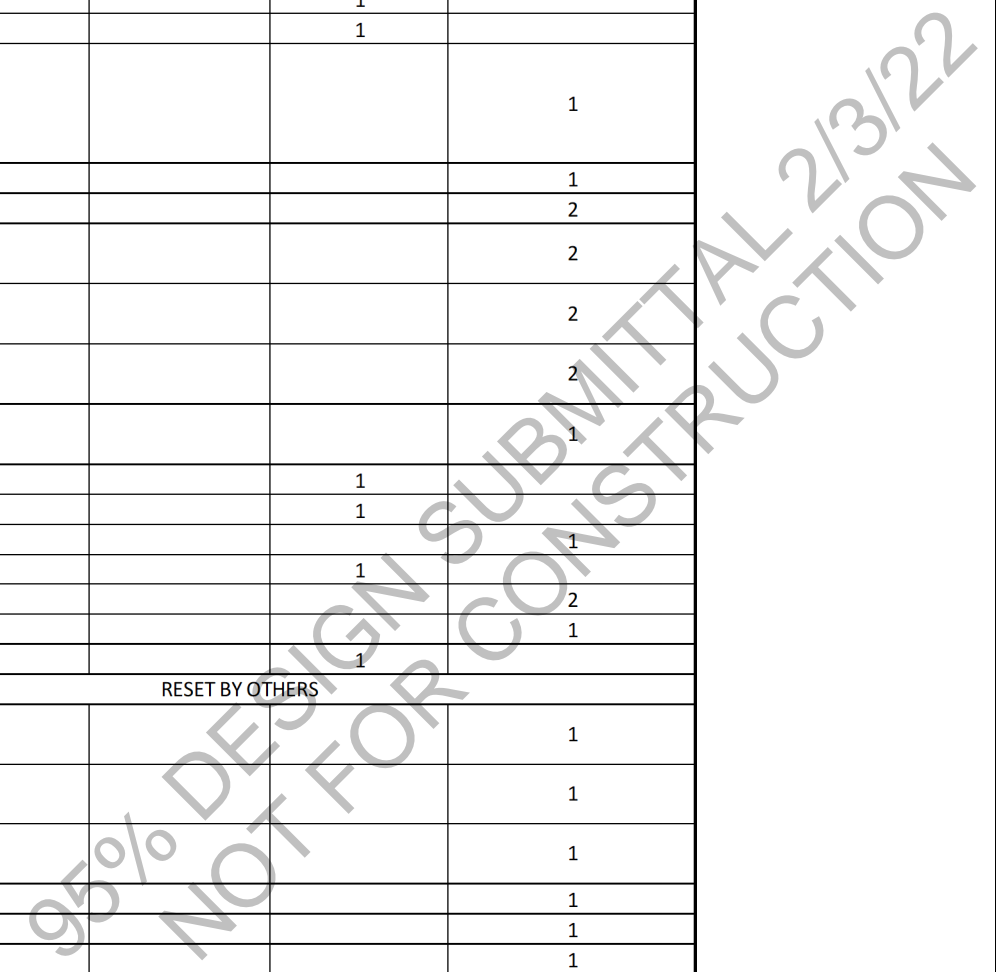
Notes:

- 4x4 wood stakes included in the cost of the willow cuttings.
- Resorted on-site materials that meet the specifications may be used for select granular backfill material.

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PERMANENT SIGN SUMMARY

SIGN ASSEMBLY NO.	LOCATION	STATION	DIRECTION	SIGN CODE	SIGN PANEL SIZE			PRIMARY BACKGROUND COLOR	LEGEND	REMOVE AND RESET GROUND SIGN (63316-1000)	RELOCATE SIGNAL SYSTEM, RECTANGULAR RAPID-FLASHING BEACON (RRFB) POST (63641-0200)	SIGNAL INSTALLATION, TRAFFIC SIGNAL (RECTANGULAR RAPID-FLASHING BEACON ASSEMBLY) (63602-1000)	SIGN SYSTEM (63301-0000)	
					W"	x	H"						SIGN STEEL POST	
													P (2 IN ROUND) (POST & SOCKET)	P1 (2 1/2 IN ROUND NP-40) (POST & SLIPBASE)
EA	EA	EA	EA	EA										
1-1	Moraine West	100+00	WB	R4-50_CO	30	x	42	White	STATE LAW MOTORISTS MUST GIVE BICYCLES 3 FT CLEARANCE					1
1-2	Moraine West	100+18	EB	D1-2	90	x	30	Green	US36 E RIVERSIDE DR CRAGS DR					2
1-3	Moraine West	101+68	EB	R3-16A	24	x	18	White	BIKE LANE ENDS				1	
2-1	Moraine West	101+80	WB	R3-16A	24	x	18	White	BIKE LANE ENDS				1	
2-2	Moraine West	102+28	SB	D3-1	54	x	9	Green	MORaine AVE					1
			EB	D3-1	36	x	9	Green	DAVIS ST					
			WB	D3-1	36	x	9	Green	DAVIS ST					
			SB	R1-1	30	x	30	Red	STOP					
2-3	Moraine SB Bypass	3+61	WB	W4-2R	36	x	36	Yellow	RIGHT LANE ENDS					1
2-4	Moraine West	105+30	WB	SPECIAL	84	x	18	Green	US36 MORaine AVE					2
2-5	Moraine West	105+70	SB	R6-1R	54	x	18	White	ONE WAY (RIGHT)					2
			SB	R6-4A	48	x	24	White	ROUNDAABOUT DIRECTIONAL (3 CHEVRONS)					
2-6	Crags Dr	403+00	NB	R6-1R	54	x	18	White	ONE WAY (RIGHT)					2
			NB	R6-4A	48	x	24	White	ROUNDAABOUT DIRECTIONAL (3 CHEVRONS)					
2-7	Moraine Ave North	199+86	EB	R6-1R	54	x	18	White	ONE WAY (RIGHT)					2
			EB	R6-4A	48	x	24	White	ROUNDAABOUT DIRECTIONAL (3 CHEVRONS)					
2-8	Moraine Ave North	200+67	SB	W12-1	36	x	36	Yellow	DOUBLE ARROW					1
			SB	OM3-C	36	x	12	Yellow	OBJECT MARKER (CHEVRONS)					
2-9	Moraine SB Bypass	1+04	SB	R3-5R	30	x	36	White	RIGHT TURN MANDATORY MOVEMENT				1	
2-10	Moraine SB Bypass	1+19	SB	R3-16A	24	x	18	White	BIKE LANE ENDS				1	
2-11	Moraine Ave North	200+16	SB	R1-2	36	x	36	Red	YIELD					1
2-12	Riverside Dr	501+38	NB	R7-1	12	x	18	White	NO PARKING ANY TIME				1	
2-13	Riverside Dr	500+34	NB	SPECIAL	96	x	18	Green	US36 W RIVERSIDE DR					2
2-14	Crags Dr	402+58	NB	R1-2	36	x	36	Red	YIELD					1
2-15	Crags Dr	402+05	NB	R3-8	36	x	30	White	ADVANCED INTERSECTION LANE CONTROL (LEFT-RIGHT)				1	
2-16	Crags Dr	401+60	NB	EXISTING					PICCADILLY SQUARE					RESET BY OTHERS
2-17	Crags Dr	401+70	SB	W11-2	30	x	30	Yellow	PEDESTRIAN					1
			SB	W16-7PL	24	x	12	Yellow	DOWNWARD DIAGONAL ARROW (PLAQUE)(LEFT)					
2-18	Crags Dr	401+60	NB	W11-2	30	x	30	Yellow	PEDESTRIAN					1
			NB	W16-7PL	24	x	12	Yellow	DOWNWARD DIAGONAL ARROW (PLAQUE)(LEFT)					
2-19	Crags Dr	402+12	NB	R4-7	24	x	30	White	KEEP RIGHT					1
			NB	OM3-L	12	x	36	Yellow	OBJECT MARKER (LEFT)					
2-20	Crags Dr	402+46	NB	R1-2	36	x	36	Red	YIELD					1
2-21	Crags Dr	402+45	SB	SPECIAL	60	x	18	Green	CRAGS DR					1
2-22	Moraine Ave North	105+40	EB	R1-2	36	x	36	Red	YIELD					1
2-23	Moraine Ave North	105+31	EB	R1-2	36	x	36	Red	YIELD					1
2-24	Moraine Ave North	103+41	EB	D9-2	24	x	24	Blue	HOSPITAL					1
			EB	M6-1R	21	x	15	Blue	DIRECTIONAL ARROW (RIGHT)					
2-25	Moraine Ave North	102+90	EB	R4-7	24	x	30	White	KEEP RIGHT					1
			EB	OM3-L	12	x	36	Yellow	OBJECT MARKER (LEFT)					
2-26	Moraine Ave North	102+90	EB	R3-8	42	x	30	White	ADVANCED INTERSECTION LANE CONTROL (LEFT-THRU/ THRU-RIGHT)					1
2-27	Moraine Ave North	102+27	EB	EXISTING					FUN CITY FAMILY FUN CENTER					RESET BY OTHERS
									SHEET TOTALS				6	28



U.S. DEPARTMENT OF TRANSPORTATION
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PERMANENT SIGNING SUMMARY
SHEET 1 OF 5

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PERMANENT SIGN SUMMARY

SIGN ASSEMBLY NO.	LOCATION	STATION	DIRECTION	SIGN CODE	SIGN PANEL SIZE			PRIMARY BACKGROUND COLOR	LEGEND	REMOVE AND RESET GROUND SIGN (63316-1000)	RELOCATE SIGNAL SYSTEM, RECTANGULAR RAPID-FLASHING BEACON (RRFB) POST (63641-0200)	SIGNAL INSTALLATION, TRAFFIC SIGNAL (RECTANGULAR RAPID-FLASHING BEACON ASSEMBLY) (63602-1000)	SIGN SYSTEM (63301-0000)	
					W"	x	H"						SIGN STEEL POST	
													P (2 IN ROUND) (POST & SOCKET)	P1 (2 1/2 IN ROUND NP-40) (POST & SLIPBASE)
EA	EA	EA	EA	EA										
2-28	Moraine Ave North	102+68	EB	W3-2	30	x	30	Yellow	YIELD AHEAD					1
			EB	SPECIAL	24	x	12	Yellow	YIELD AT ROUNDABOUT					
2-29	Riverside Dr	501+40	WB	R9-3	18	x	18	White	NO PEDESTRIANS				1	
			WB	R9-3bP	18	x	12	White	USE CROSSWALK (LEFT ARROW)					
2-30	Riverside Dr	500+91	NB	R2-1	30	x	36	White	SPEED LIMIT (25)				1	
2-31	Riverside Dr	500+91	NB	R2-1	30	x	36	White	SPEED LIMIT (25)				1	
2-32	Crags Dr	401+27	EB	R1-1	36	x	36	Red	STOP				1	
2-33	Crags Dr	401+58	WB	R1-1	36	x	36	Red	STOP				1	
4-1	Crags Dr	400+27	NB	W3-2	30	x	30	Yellow	YIELD AHEAD					1
			NB	SPECIAL	24	x	12	Yellow	YIELD AT ROUNDABOUT					
4-2	Crags Dr	398+77	EB	D1-2	114	x	30	Green	US36 W RIVERSIDE DR US36 ROCKY MT NTL PARK					2
5-1	Riverside Dr	501+98	NB	R1-5R	36	x	36	White	YIELD HERE TO PEDS (RIGHT ARROW)					1
5-2	Riverside Dr	504+54	NB	R7-1	12	x	18	White	NO PARKING ANY TIME				1	
5-3	Riverside Dr	506+30	NB	R7-1	12	x	18	White	NO PARKING ANY TIME				1	
5-4	Riverside Dr	501+96	NB	R1-5L	36	x	36	White	YIELD HERE TO PEDS (LEFT ARROW)					1
5-5	Riverside Dr	502+44	NB	R3-17	24	x	18	White	BIKE LANE				1	
5-6	Riverside Dr	502+60	NB	SPECIAL	12	x	18	White	THREE HOUR PARKING 9AM-7PM (LEFT ARROW) MAY THRU SEPT				1	
5-7	Riverside Dr	502+85	NB	EXISTING					DOG WASTE BAG	1				
5-8	Riverside Dr	504+36	NB	SPECIAL	12	x	18	White	THREE HOUR PARKING 9AM-5PM (DOUBLE ARROW) MAY THRU SEPT				1	
5-9	Riverside Dr	506+00	NB	SPECIAL	12	x	18	White	THREE HOUR PARKING 9AM-7PM (RIGHT ARROW) MAY THRU SEPT				1	
6-1	Riverside Dr	507+54	NEB	D4-1	30	x	24	Green	PARKING AREA (LEFT ARROW)				1	
6-2	Riverside Dr	508+15	NEB	R1-5R	36	x	36	White	YIELD HERE TO PEDS (RIGHT ARROW)					1
			SWB	R5-1	36	x	36	Red	DO NOT ENTER					
6-3	Riverside Dr	508+14	NEB	R1-5L	36	x	36	White	YIELD HERE TO PEDS (LEFT ARROW)					1
			SWB	R5-1	36	x	36	Red	DO NOT ENTER					
6-4	Riverside Dr	508+39	WB	R5-1	36	x	36	Red	DO NOT ENTER					1
			WB	R5-1	36	x	36	Red	DO NOT ENTER					
6-5	Riverside Dr	508+86	EB	D3-1	54	x	9	Green	RIVERSIDE DR					1
			EB	R1-1	30	x	30	Red	STOP					
			EB	R3-5L	30	x	36	White	LEFT TURN MANDATORY MOVEMENT					
6-6	Riverside Dr	508+59	EB	R6-1L	54	x	18	White	ONE WAY (LEFT)					1
			EB	R3-1	36	x	36	White	NO RIGHT TURNS					
6-7	Riverside Dr	509+99	WB	R6-1R	54	x	18	White	ONE WAY (RIGHT)				1	
			WB	R3-2	36	x	36	White	NO LEFT TURNS					
6-8	Riverside Dr	511+06	NEB	SPECIAL	60	x	12	Brown	POST OFFICE					1
			NEB	D4-1	30	x	24	Green	PARKING AREA (LEFT ARROW)					
6-9	Riverside Dr	511+54	NEB	R1-5R	36	x	36	White	YIELD HERE TO PEDS (RIGHT ARROW)					1
			SWB	R5-1	36	x	36	Red	DO NOT ENTER					
6-10	Riverside Dr	511+54	NEB	R1-5L	36	x	36	White	YIELD HERE TO PEDS (LEFT ARROW)					1
			SWB	R5-1	36	x	36	Red	DO NOT ENTER					
SHEET TOTALS										1			13	14

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PERMANENT SIGNING SUMMARY
SHEET 2 OF 5

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PERMANENT SIGN SUMMARY

SIGN ASSEMBLY NO.	LOCATION	STATION	DIRECTION	SIGN CODE	SIGN PANEL SIZE			PRIMARY BACKGROUND COLOR	LEGEND	REMOVE AND RESET GROUND SIGN (63316-1000)	RELOCATE SIGNAL SYSTEM, RECTANGULAR RAPID-FLASHING BEACON (RRFB) POST (63641-0200)	SIGNAL INSTALLATION, TRAFFIC SIGNAL (RECTANGULAR RAPID-FLASHING BEACON ASSEMBLY) (63602-1000)	SIGN SYSTEM (63301-0000)	
					W"	x	H"						SIGN STEEL POST	
													P (2 IN ROUND) (POST & SOCKET)	P1 (2 1/2 IN ROUND NP-40) (POST & SLIPBASE)
EA	EA	EA	EA	EA										
6-11	Rockwell St	511+87	NEB	D3-1	54	x	12	Green	ROCKWELL ST					
			EB	D3-1	54	x	12	Green	RIVERSIDE DR					1
			EB	R1-1	30	x	30	Red	STOP					
			EB	R3-5L	30	x	36	White	LEFT TURN MANDATORY MOVEMENT					
6-12	Riverside Dr	512+00	EB	R6-1L	54	x	18	White	ONE WAY (LEFT)					1
			EB	R3-1	36	x	36	White	NO RIGHT TURNS					
6-13	E Riverside Dr	301+55	WB	SPECIAL	12	x	18	White	THREE HOUR PARKING 9AM-5PM (DOUBLE ARROW) MAY THRU SEPT				1	
6-14	E Riverside Dr	301+87	WB	SPECIAL	12	x	18	White	THREE HOUR PARKING 9AM-5PM (DOUBLE ARROW) MAY THRU SEPT				1	
6-15	E Riverside Dr	302+85	NB	SPECIAL	12	x	18	White	THREE HOUR PARKING 9AM-5PM (DOUBLE ARROW) MAY THRU SEPT				1	
6-16	E Riverside Dr	302+96	SB	R2-1	30	x	36	White	SPEED LIMIT (20 MPH)				1	
6-17	E Riverside Dr	303+04	NB	EXISTING					MISTY MOUNTAIN LODGE	1				
6-18	E Riverside Dr	303+35	EB	SPECIAL	12	x	18	White	THREE HOUR PARKING 9AM-5PM (DOUBLE ARROW) MAY THRU SEPT				1	
6-19	E Riverside Dr	303+65	NEB	D3-1	54	x	9	Green	E RIVERSIDE DR					
			NB	D3-1	54	x	9	Green	RIVERSIDE DR					1
			NB	R1-1	30	x	30	Red	STOP					
			NB	R3-5R	30	x	36	White	RIGHT TURN MANDATORY MOVEMENT					
6-20	Riverside Dr	510+28	NEB	R2-1	30	x	36	White	SPEED LIMIT (25 MPH)				1	
6-21	Riverside Dr	510+83	NEB	R3-17	24	x	18	White	BIKE LANE				1	
			NEB	R3-17bP	24	x	8	White	ENDS					
6-22	Riverside Dr	512+25	NEB	R4-50_CO	30	x	42	White	STATE LAW MOTORISTS MUST GIVE BICYCLES 3 FT CLEARANCE					1
7-1	Riverside Dr	512+80	NEB	D1-1	66	x	18	Brown	DOWNTOWN					2
7-2	Riverside Dr	513+35	NEB	M3-4	24	x	12	White	WEST					
			NEB	M1-4	24	x	24	White	US 36 SHIELD					
			NEB	M6-1L	21	x	15	White	DIRECTIONAL ARROW (LEFT)					1
			NEB	M3-2	24	x	12	White	EAST					
			NEB	M1-4	24	x	24	White	US 36 SHIELD					
7-3	Riverside Dr	514+70	NB	R3-8	48	x	30	White	ADVANCED INTERSECTION LANE CONTROL (L-THRU/R ONLY/R ONLY)					1
7-4	Riverside Dr	515+06	NB	R3-8	48	x	30	White	ADVANCED INTERSECTION LANE CONTROL (L-THRU/R ONLY/R ONLY)					1
7-5	Riverside Dr	516+47	NB	R3-8	36	x	30	White	ADVANCED INTERSECTION LANE CONTROL (LT ONLY/THRU ONLY)				1	
8-1	E Elkhorn	253+85	WB	R3-8	54	x	30	White	ADVANCED INTERSECTION LANE CONTROL (LT ONLY/LT ONLY/ THRU-RT)					1
8-2	E Elkhorn	253+92	WB	R3-8	54	x	30	White	ADVANCED INTERSECTION LANE CONTROL (LT ONLY/LT ONLY/ THRU-RT)					1
8-3	E Elkhorn	255+10	WB	M3-4	24	x	12	White	WEST					
			WB	M1-4	24	x	24	White	US 36 SHIELD					
			WB	M6-1L	21	x	15	White	DIRECTIONAL ARROW (LEFT)					1
			WB	M1-4	24	x	24	White	US 34 SHIELD					
			WB	M6-3	21	x	15	White	DIRECTIONAL ARROW (STRAIGHT)					
8-4	Park Ln	701+20	SB	R3-8	36	x	30	White	ADVANCED INTERSECTION LANE CONTROL (LT ONLY/ RT ONLY)				1	
8-5	E Elkhorn	254+50	WB	R7-6	12	x	18	White	NO PARKING LOADING ZONE 6AM - 6PM	1				
8-6	E Elkhorn	254+94	WB	R7-6	12	x	18	White	NO PARKING LOADING ZONE 6AM - 6PM	1				
SHEET TOTALS									3			9	12	

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FEDERAL HIGHWAY ADMINISTRATION
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PERMANENT SIGNING SUMMARY

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PERMANENT SIGN SUMMARY

SIGN ASSEMBLY NO.	LOCATION	STATION	DIRECTION	SIGN CODE	SIGN PANEL SIZE			PRIMARY BACKGROUND COLOR	LEGEND	REMOVE AND RESET GROUND SIGN (63316-1000)	RELOCATE SIGNAL SYSTEM, RECTANGULAR RAPID-FLASHING BEACON (RRFB) POST (63641-0200)	SIGNAL INSTALLATION, TRAFFIC SIGNAL (RECTANGULAR RAPID-FLASHING BEACON ASSEMBLY) (63602-1000)	SIGN SYSTEM (63301-0000)	
					W"	x	H"						SIGN STEEL POST	
													P (2 IN ROUND) (POST & SOCKET)	P1 (2 1/2 IN ROUND NP-40) (POST & SLIPBASE)
EA	EA	EA	EA	EA										
8-7	Riverside Dr	517+62	WB	R6-1R	54	x	18	White	ONE WAY (RIGHT)					
			SB	R5-1	36	x	36	Red	DO NOT ENTER					1
8-8	Riverside Dr	517+47	NB	EXISTING				White	RESTROOM SYMBOL (RIGHT ARROW)	1				
8-9	Riverside Dr	517+49	NB	OM3-C	12	x	36	Yellow	OBJECT MARKER (CHEVRON)				1	
8-10	E Elkhorn	257+83	NB	R4-5R	30	x	36	White	MANDATORY MOVEMENT LANE CONTROL (RIGHT ONLY)					1
			NB	R3-2	24	x	24	White	MOVEMENT PROHIBITION (NO LEFT TURNS)					
8-11	Riverside Dr	516+82	NB	R3-5R	30	x	36	White	MANDATORY MOVEMENT LANE CONTROL (RIGHT ONLY)	1				
8-12	Riverside Dr			EXISTING					PARKING PAY STATION	1				
9-1	Moraine North	202+31	SB	W11-2	36	x	36	Yellow	PEDESTRIAN			1		
			SB	W16-7PL	24	x	12	Yellow	DOWNWARD DIAGONAL ARROW (PLAQUE) (LEFT)					
9-2	Moraine North	203+20	SB	EXISTING				Brown	ROCKY MTN NAT'L PARK	1				
9-3	Moraine North	203+58	SB	D1-3	102	x	42	Green	US 36 MORaine AVE CRAGS DR US 36 W RIVERSIDE DR					2
9-4	Moraine North	203+88	SB	W3-2	30	x	30	Yellow	YIELD AHEAD					1
			SB	SPECIAL	24	x	12	Yellow	YIELD AT ROUNDABOUT					
9-5	Moraine North	204+26	EB	R3-5R	30	x	36	White	MANDATORY MOVEMENT LANE CONTROL (RIGHT ONLY)					1
9-6	Moraine North	204+25	EB	D3-1	54	x	9	Green	MORaine AVE					
			SB	D3-1	36	x	9	Green	DAVIS ST					1
			EB	R1-1	36	x	36	Red	STOP					
			EB	R3-2	24	x	24	White	MOVEMENT PROHIBITION (NO LEFT TURNS)					
9-7	Moraine North	201+91	SB	W3-2	30	x	30	Yellow	YIELD AHEAD					1
			SB	SPECIAL	24	x	12	Yellow	YIELD AT ROUNDABOUT					
9-8	Moraine North	202+37	SB	W11-2	36	x	36	Yellow	PEDESTRIAN			1		
			SB	W16-7PR	24	x	12	Yellow	DOWNWARD DIAGONAL ARROW (PLAQUE) (LEFT)					
9-9	Moraine North	202+48	SB	SPECIAL	12	x	18	White	THREE HOUR PARKING 9AM-5PM (LEFT ARROW) MAY THRU SEPT					1
9-10	Moraine North	204+04	SB	SPECIAL	12	x	18	White	THREE HOUR PARKING 9AM-5PM (DOUBLE ARROW) MAY THRU SEPT					1
9-11	Moraine North	205+81	SB	SPECIAL	12	x	18	White	THREE HOUR PARKING 9AM-5PM (DOUBLE ARROW) MAY THRU SEPT					1
10-1	Moraine North	207+71	SB	D4-1	30	x	24	Green	PARKING AREA (RIGHT ARROW)					1
10-2	Moraine North	207+71	SB	EXISTING					RESTROOM SIGN	1				
10-3	Moraine North	207+82	SB	W11-2	36	x	36	Yellow	PEDESTRIAN					
			SB	W16-7PL	24	x	12	Yellow	DOWNWARD DIAGONAL ARROW (PLAQUE) (LEFT)		1			
10-4	Moraine North	209+84	SB	SPECIAL	12	x	18	White	THREE HOUR PARKING 9AM-5PM (DOUBLE ARROW) MAY THRU SEPT					1
10-5	Moraine North	206+66	SB	SPECIAL	12	x	18	White	THREE HOUR PARKING 9AM-5PM (DOUBLE ARROW) MAY THRU SEPT					1
10-6	Moraine North	207+52	SB	SPECIAL	12	x	18	White	THREE HOUR PARKING 9AM-5PM (RIGHT ARROW) MAY THRU SEPT					1
10-7	Moraine North	207+85	SB	W11-2	36	x	36	Yellow	PEDESTRIAN					
			SB	W16-7PL	24	x	12	Yellow	DOWNWARD DIAGONAL ARROW (PLAQUE) (LEFT)				EXISTING RRFB POLE	
10-8	Moraine North	209+65	SB	D3-1	54	x	9	Green	ROCKWELL ST					
			SB	R6-1L	54	x	18	White	ONE WAY (LEFT)					2
			SB	SPECIAL	78	x	36	Brown	POST OFFICE PUBLIC PARKING RESTROOMS					
11-1	Big Horn Dr		SB	R3-6R	30	x	36	White	OPTIONAL MOVEMENT LANE CONTROL (THRU-RIGHT ARROW)					1
11-2	Big Horn Dr		SB	M1-4	24	x	24	White	US 36 SHIELD					
			SB	M6-3	21	x	15	White	DIRECTIONAL ARROW					1
SHEET TOTALS										5	1	2	9	11

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CENTRAL FEDERAL LANDS HIGHWAY DIVISION

PERMANENT SIGNING SUMMARY

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	B-22

PERMANENT SIGN SUMMARY

SIGN ASSEMBLY NO.	LOCATION	STATION	DIRECTION	SIGN CODE	SIGN PANEL SIZE			PRIMARY BACKGROUND COLOR	LEGEND	REMOVE AND RESET GROUND SIGN (63316-1000)	RELOCATE SIGNAL SYSTEM, RECTANGULAR RAPID-FLASHING BEACON (RRFB) POST (63641-0200)	SIGNAL INSTALLATION, TRAFFIC SIGNAL (RECTANGULAR RAPID-FLASHING BEACON ASSEMBLY) (63602-1000)	SIGN SYSTEM (63301-0000)	
					W"	x	H"						SIGN STEEL POST	
													P (2 IN ROUND) (POST & SOCKET)	P1 (2 1/2 IN ROUND NP-40) (POST & SLIPBASE)
EA	EA	EA	EA	EA										
11-3	E Elkhorn	250+31	EB	R5-1	36	x	36	Red	DO NOT ENTER					1
			WB	R10-11a	36	x	30	White	NO TURN ON RED					
11-4	E Elkhorn	250+42	WB	R10-6A	24	x	30	White	STOP HERE ON RED					1
			WB	R3-7BP	24	x	12	White	EXCEPT BICYCLES					
11-5	West Elkhorn Ave		EB	R3-8	36	x	30	White	ADVANCED INTERSECTION LANE CONTROL (LT ONLY/RT ONLY)				1	
11-6	West Elkhorn Ave		EB	M1-4	24	x	24	White	US 36 SHIELD					1
			EB	M6-1R	21	x	15	White	DIRECTIONAL ARROW					
11-7	Moraine North	212+27	SB	R3-17	24	x	18	White	BIKE LANE				1	
11-8	Moraine North	212+17	NB	SPECIAL	12	x	18	White	NO PARKING LOADING ZONE 6AM-6PM				1	
12-1	Rockwell St	603+35	NB	R6-1R	54	x	18	White	ONE WAY (RIGHT)					1
			NB	R1-1	30	x	30	Red	STOP					
12-2	Rockwell St	602+99	EB	R6-1L	54	x	18	White	ONE WAY (LEFT)					1
			WB	R5-1	36	x	36	Red	DO NOT ENTER					
12-3	Rockwell St	603+95	WB	R3-5	30	x	36	White	MANDATORY MOVEMENT LANE CONTROL (LEFT ONLY)				1	
			WB	OM1-1	18	x	18	Yellow	OBJECT MARKER (DIAMOND)					
12-4	Rockwell St	604+24	EB	R6-1R	54	x	18	White	ONE WAY (RIGHT)					1
			WB	R6-1L	54	x	18	White	ONE WAY (LEFT)					
			SB	R1-1	30	x	30	Red	STOP					
12-5	Rockwell St	603+67	WB	R5-1	36	x	36	Red	DO NOT ENTER				1	
12-6	Rockwell St	603+67	WB	R5-1	36	x	36	Red	DO NOT ENTER				1	
SHEET TOTALS													6	6
PROJECT BID TOTALS										9	1	2	43	71

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TEMPORARY TRAFFIC CONTROL SIGN SUMMARY				
MUTCD REFERENCE	SIGN MESSAGE	PANEL SIZE (INCHES)	NUMBER OF SIGNS	63504-1000
				TEMPORARY TRAFFIC CONTROL, CONSTRUCTION SIGN SQFT
G20-1	ROAD WORK NEXT XX MILES	36 x 18	3	13.5
G20-2	END ROAD WORK	36 x 18	7	31.5
R1-1	STOP	30 x 30	10	62.5
R4-1	DO NOT PASS	24 x 30	4	20.0
R9-1	SIDEWALK CLOSED	24 x 30	12	60.0
R11-2	ROAD CLOSED	60 X 30	3	37.5
R-11-3A	ROAD CLOSED - LOCAL TRAFFIC ONLY	60 x 30	3	37.5
R5-1	DO NOT ENTER	36 x 36	6	54.0
M4-8	DETOUR	24 x 12	8	16.0
M4-8a	DETOUR ENDS	24 x 18	4	12.0
M4-9	DETOUR W/ARROW	30 x 24	12	60.0
M4-10	ONE WAY DETOUR	48 x 18	6	36.0
W5-1	ROAD NARROWS	36 x 36	2	18.0
W8-1	BUMP	36 x 36	2	18.0
W8-11	UNEVEN LANES	36 x 36	2	18.0
W8-12	NO CENTER LINE	36 x 36	12	108.0
W13-1P	XX MPH	24 x 24	4	16.0
W16-2	XXX FEET	24 x 24	2	8.0
W20-1	ROAD WORK 500FT	36 x 36	3	27.0
W20-1	ROAD WORK 1000FT	36 x 36	3	27.0
W20-1	ROAD WORK AHEAD	36 x 36	8	72.0
W20-4	ONE LANE ROAD AHEAD	36 x 36	4	36.0
W20-7	FLAGGER SYMBOL	36 x 36	6	54.0
W21-15	SHOULDER WORK	36 x 36	2	18.0
TOTAL				860.5

TEMPORARY TRAFFIC CONTROL SUMMARY			
ITEM NUMBER	ITEM	UNIT	TOTAL
63501-3000	TEMPORARY TRAFFIC CONTROL, TRANSPORTATION MANAGEMENT PLAN	LPSM	1
63501-3500	TEMPORARY TRAFFIC CONTROL, PUBLIC INFORMATION PROGRAM	LPSM	1
63502-0600	TEMPORARY TRAFFIC CONTROL, BARRICADE TYPE 3	EACH	10
63502-0700	TEMPORARY TRAFFIC CONTROL, CONE	EACH	100
63502-1300	TEMPORARY TRAFFIC CONTROL, DRUM	EACH	50
63502-1400	TEMPORARY TRAFFIC CONTROL, VERTICAL PANEL	EACH	100
63502-1500	TEMPORARY TRAFFIC CONTROL, WARNING LIGHT TYPE A	EACH	50
63502-2000	TEMPORARY TRAFFIC CONTROL, PORTABLE CHANGEABLE MESSAGE SIGN	EACH	4
63502-2100	TEMPORARY TRAFFIC CONTROL, CRASH CUSHION	EACH	4
63503-0400	TEMPORARY TRAFFIC CONTROL, CONCRETE BARRIER	LNFT	1250
63503-0700	TEMPORARY TRAFFIC CONTROL, PAVEMENT MARKINGS	LNFT	4750
63503-1000	TEMPORARY TRAFFIC CONTROL, PLASTIC FENCE	LNFT	2000
63504-1000	TEMPORARY TRAFFIC CONTROL, CONSTRUCTION SIGN	SQFT	860.5
63506-0500	TEMPORARY TRAFFIC CONTROL, FLAGGER	HOUR	5000
63510-0100	TEMPORARY TRAFFIC CONTROL, TRAFFIC CONTROL SUPERVISOR	WEEK	52

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FEDERAL HIGHWAY ADMINISTRATION
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TEMPORARY TRAFFIC SUMMARY

PEDESTRIAN PAVEMENT SUMMARY

Station to Station	Side	Item Number	60102-0000	60102-0000	60901-0000	60901-1700	60901-4200	61501-0100	61501-0200	61501-0900
			MINOR CONCRETE STRUCTURES (STAIRS)	MINOR CONCRETE STRUCTURES (ADA RAMP)	CURB, CONCRETE, (REINFORCED, 24-INCH DEPTH)	CURB, CONCRETE, 18 INCH DEPTH (CONCRETE PLANTING BED CURB)	CURB, STONE, TYPE 1, 18 INCH DEPTH (SANDSTONE LANDSCAPE PLANTING BED CURB)	SIDEWALK, CONCRETE	SIDEWALK, COLORED CONCRETE (STAMPED)	SIDEWALK, STONE (SALVAGED SANDSTONE PAVER)
		SQ YD	SQ YD	LNFT	LNFT	LNFT	SQYD	SQYD	SQYD	
MORaine AVE. (W)		101+50								
		101+50						281	137	62
MORaine AVE. (N)		200+13.50							68	
		200+13.50	12					225	111	
MORaine SB BYPASS		2+00						108	82	
CRAGS		401+00						94	25	
		401+00						112	25	
RIVERSIDE AVE.		499+67			25		145	342	878	33
		499+67		32		166		965	269	58
E. RIVERSIDE AVE.		301+00						69		
		301+00						16		
ROCKWELL ST		600+00						39		
		600+00						103		
ELKHORN AVE		253+87							87	
		253+87					386		407	
TOTALS			56	32	25	166	531	2356	2151	91

BOULDERS & ROCKERY

Station to Station	Side	Item Number	25126-0000	25125-0000	25125-0000	25125-0000	25125-0000	25210-0000	25210-0000
			REMOVE AND RESET BOULDER	BOULDER (24-INCH DIA.)	BOULDER (36-INCH DIA.)	BOULDER (SEATING - 4'LX2'WX2'H ROUGH CUT SANDSTONE)	BOULDER (RIVER - 4'LX2'WX2'H ROUGH CUT SANDSTONE)	ROCKERY (DRY STACKED, SLOPED BOULDER WALL)	ROCKERY (SANDSTONE RIVER ACCESS)
		EACH	EACH	EACH	EACH	EACH	SQFT	SQFT	
MORaine AVE. (W)		101+50						140	
		101+50						120	
MORaine AVE. (N)		200+13.50							
		200+13.50		2	2				
MORaine SB BYPASS		2+00							
CRAGS		401+00							
		401+00							
RIVERSIDE AVE.		499+67		8	15	5	15	122.5	480
		499+67	100	24	18			105	
E. RIVERSIDE AVE.		301+00							
		301+00							
ROCKWELL ST		600+00							
		600+00							
ELKHORN AVE		253+87							
		253+87							
TOTALS			100	34	35	5	15	488	480

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SIDEWALK & ROCKERY SUMMARY

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LANDSCAPE WALLS							
Item Number		25801-0000	25801-0000	25801-0000	25801-0000	25801-0000	60501-0000
Station to Station	Side	REINFORCED CONCRETE RETAINING WALL (STONE CAP - TYPE 1A)	REINFORCED CONCRETE RETAINING WALL (STONE CAP - TYPE 1B)	REINFORCED CONCRETE RETAINING WALL (STONE CAP - TYPE 2)	REINFORCED CONCRETE RETAINING WALL (STONE CAP - TYPE 3)	REINFORCED CONCRETE RETAINING WALL (BRICK COPING)	STANDARD UNDERDRAIN SYSTEM
		SQFT	SQFT	SQFT	SQFT	SQFT	LNFT
MORAINA AVE. (W)	101+50	105+88	LT				
	101+50	105+88	RT				
MORAINA AVE. (N)	200+13.50	211+80	LT				
	200+13.50	211+80	RT	50	35	580	150
MORAINA SB BYPASS	2+00	3+00	LT				
CRAGS	401+00	403+08.91	LT				
	401+00	403+08.91	RT				
RIVERSIDE AVE.	499+67	518+00	LT	513		350	173
	499+67	518+00	RT	163	500	150	248
E. RIVERSIDE AVE.	301+00	302+88	LT				
	301+00	302+89	RT				
ROCKWELL ST	600+00	605+64	LT				
	600+00	605+64	RT				
ELKHORN AVE	253+87	257+00	LT				
	253+87	257+00	RT				
TOTALS				725	35	1080	650
						421	565

- Notes:
- RW-01 quantity tabulation is located on sheet G-04.
 - RW-04 and RW-05 quantity tabulations are located on sheet G-08.

SITE FURNISHINGS SUMMARY												
Item Number		61904-0000	64603-0000	64603-0000	64603-0100	64603-0300	64603-0300	64603-0700	64604-1000	64620-0300	64620-0600	64620-0600
Station to Station	Side	BOLLARD POST	FIXTURE (TREE GRATE TYPE 1)	FIXTURE (TREE GRATE TYPE 2)	FIXTURE, TRASH RECEPTACLE (TYPE 1, OFCI)	FIXTURE, BENCH (6-FOOT WITH BACK)	FIXTURE, BENCH (6-FOOT, BACKLESS)	FIXTURE (PICNIC TABLE)	FIXTURE, HANDRAIL (STAINLESS STEEL)	REMOVE AND RESET BENCH	REMOVE AND RESET TRASH RECEPTACLE (TYPE 1)	REMOVE AND RESET TRASH RECEPTACLE (TYPE 2)
		EACH	EACH	EACH	EACH	EACH	EACH	EACH	LNFT	EACH	EACH	EACH
MORAINA AVE. (W)	101+50	104+79.22	LT									
	101+50	104+79.22	RT									
MORAINA AVE. (N)	200+13.50	211+80	LT									
	200+13.50	211+80	RT			1	1		32			1
MORAINA SB BYPASS	2+00	3+00	LT									
CRAGS	401+00	403+08.91	LT									
	401+00	403+08.91	RT									
RIVERSIDE AVE.	499+67	518+00	LT		6	2	1		42		1	
	499+67	518+00	RT					2	128		2	
E. RIVERSIDE AVE.	301+00	303+50	LT									
	301+00	303+50	RT									
ROCKWELL ST	603+00	605+64	LT									
	603+00	605+64	RT									
ELKHORN AVE	253+87	257+00	LT									
	253+87	257+00	RT	4		2				2		2
TOTALS				4	6	4	2	6	2	2	202	2
											3	3

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FEDERAL HIGHWAY ADMINISTRATION
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**PEDESTRIAN PAVEMENT,
WALLS, & SITE FURNISHINGS
SUMMARY**

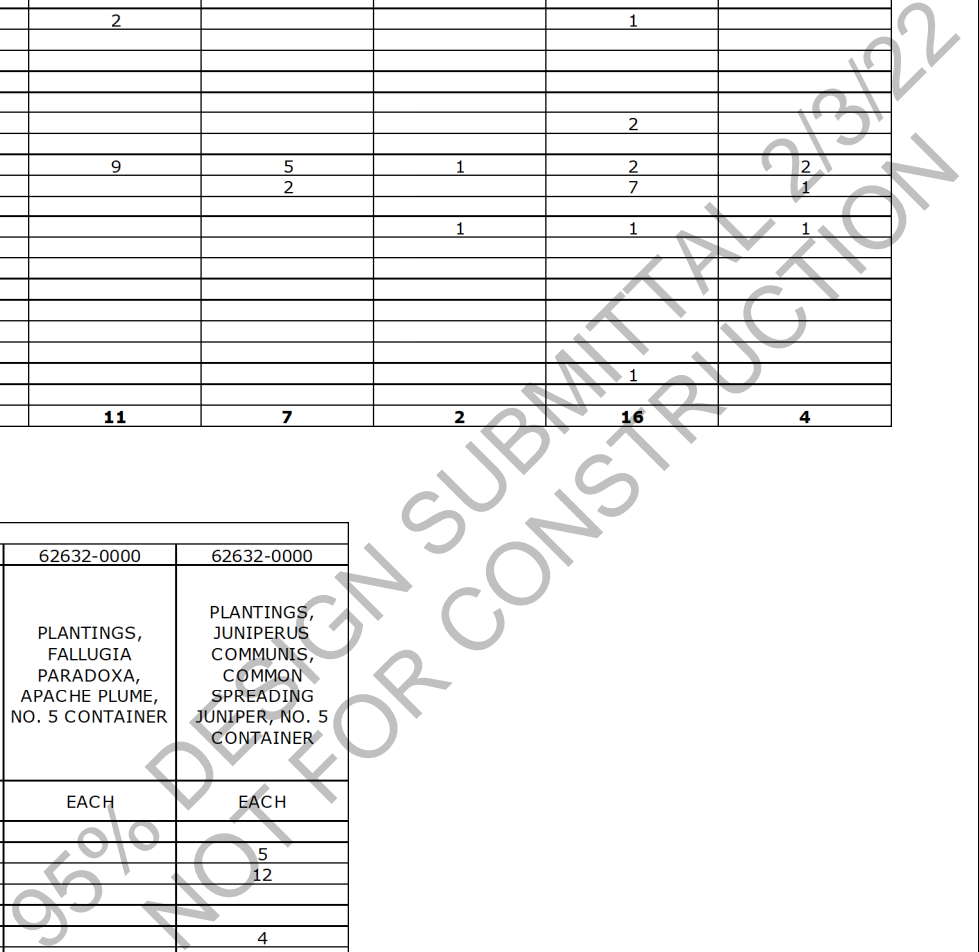
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Item Number		LANDSCAPE SUMMARY																	
Station to Station	Side	61110-1000	61901-0000	61901-0000	62403-0000	62511-1000	62511-1000	62516-4000	62701-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000			
		IRRIGATION SYSTEM	FENCE (TREE PROTECTION)	FENCE (ELK TREE PROTECTION)	FURNISHING AND PLACING TOPSOIL	SEEDING, DRY METHOD (NATIVE SEEDING)	SEEDING, DRY METHOD (LOW GROW NATIVE GRASS SEEDING)	MULCHING, HAND METHOD	SOD	PLANTINGS, ABIES CONCOLOR, WHITE FIR, 6 FT. HT., B&B	PLANTINGS, ACER GLABRUM, ROCKY MOUNTAIN MAPLE, 1 INCH CALIPER, B&B	PLANTINGS, TREES, BALLED AND BURLAPPED, ACER NEGUNDO 'SENSATION', SENSATION MAPLE, 1 INCH CALIPER, B&B	PLANTINGS, TREES, BALLED AND BURLAPPED, ACER X FREEMANII 'AUTUMN BLAZE', AUTUMN BLAZE MAPLE, 1 INCH CALIPER, B&B	PLANTINGS, TREES, BALLED AND BURLAPPED, BETULA FONTINALIS, ROCKY MOUNTAIN BIRCH, 6 FT. HT., B&B	PLANTINGS, TREES, BALLED AND BURLAPPED, CELTIS OCCIDENTALIS, HACKBERRY, 1 INCH CALIPER, B&B	PLANTINGS, TREES, BALLED AND BURLAPPED, PICEA PUNGENS 'BABY BLUE EYES', BABY BLUE EYES SPRUCE, 6 FT. HT., B&B	PLANTINGS, TREES, BALLED AND BURLAPPED, PINUS FLEXILIS, LIMBER PINE, 6 FT. HT., B&B		
		LPSM	LNFT	LNFT	CUYD	SQYD	SQYD	SQYD	SQYD	EACH	EACH	EACH	EACH	EACH	EACH	EACH			
ALL		1																	
MORaine AVE. (W)	101+50 101+50	105+88 105+88	LT RT		2.1 26.7		222	18.9 20.6								1 1			
MORaine AVE. (N)	200+13.50 200+13.50	211+80 211+80	LT RT		0.5 93.4	103		4.4 92.8	653			2	2			1			
MORaine SB BYPASS	2+00	3+00	LT		150	25.1		215	13.3										
CRAGS	401+00 401+00	403+08.91 403+08.91	LT RT		8.4 22.0			77 200								2			
RIVERSIDE AVE.	499+67 499+67	518+00 518+00	LT RT		925 850	171.2 219.5	651 449	166 477	248.1 233.3	491 836	1 1	3	2	9	5	1 2	2 7		
E. RIVERSIDE AVE.	301+00 301+00	303+50 303+50	LT RT		55	18.7 22.8	170				1	1				1 1	1 1		
ROCKWELL ST	600+00 600+00	605+64 605+64	LT RT			5.3			17	31.1									
ELKHORN AVE	253+87 253+87	257+00 257+00	LT RT		175	7.6			69.4				2			1			
TOTALS				1	1062	2525	623.3	1374	1581	731.9	1979	3	4	6	11	7	2	16	4

Item Number		LANDSCAPE SUMMARY											
Station to Station	Side	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	
		PLANTINGS, TREES, BALLED AND BURLAPPED, POPULUS TREMULOIDES, QUAKING ASPEN, 1 INCH CALIPER, B&B	PLANTINGS, TREES, BALLED AND BURLAPPED,, POPULUS X ACUMINATE, LANCELEAF COTTONLESS COTTONWOOD, 1 INCH CALIPER, B&B	PLANTINGS, TREES, BALLED AND BURLAPPED, ULMUS AMERICANA 'PRINCETON', PRINCETON ELM, 1 INCH CALIPER, B&B	PLANTINGS, ALNUS TENUIFOLIA, THINLEAF ALDER, 6 FT. HT., NO. 5 CONTAINER	PLANTINGS, AMELANCIER ALNIFOLIA, SASKATOON SERVICEBERRY, 6 FT. HT., B&B	PLANTINGS, MALUS 'PRAIRIE FIRE', PRAIRIE FIRE CRABAPPLE, 6 FT. HT., B&B	PLANTINGS, PRUNUS X VIRGINIANA 'P002s', SUCKER PUNCH CANADA RED CHOKEBERRY, 1 INCH CALIPER, B&B	PLANTINGS, ARTEMISIA CANA, SILVER SAGE, NO. 5 CONTAINER	PLANTINGS, CHRYSOTHAMNUS NAUSEOSUS VAR. NAUSEOSUS, DWARF BLUE RABBITBRUSH, NO. 5 CONTAINER	PLANTINGS, FALLUGIA PARADOXA, APACHE PLUME, NO. 5 CONTAINER	PLANTINGS, JUNIPERUS COMMUNIS, COMMON SPREADING JUNIPER, NO. 5 CONTAINER	
		EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	
ALL													
MORaine AVE. (W)	101+50 101+50	105+88 105+88	LT RT									5 12	
MORaine AVE. (N)	200+13.50 200+13.50	211+80 211+80	LT RT	2	1		1	3				16	4
MORaine SB BYPASS	2+00	3+00	LT	4									
CRAGS	401+00 401+00	403+08.91 403+08.91	LT RT										
RIVERSIDE AVE.	499+67 499+67	518+00 518+00	LT RT	11 17	3 4		3 2	1 4	1 1	2 5	12 8	5 3	21 11
E. RIVERSIDE AVE.	301+00 301+00	303+50 303+50	LT RT	1 2	1		1				5		
ROCKWELL ST	600+00 600+00	605+64 605+64	LT RT										
ELKHORN AVE	253+87 253+87	257+00 257+00	LT RT	1		2						3	3
TOTALS				46	9	2	7	8	2	7	28	22	56

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

LANDSCAPE SUMMARY



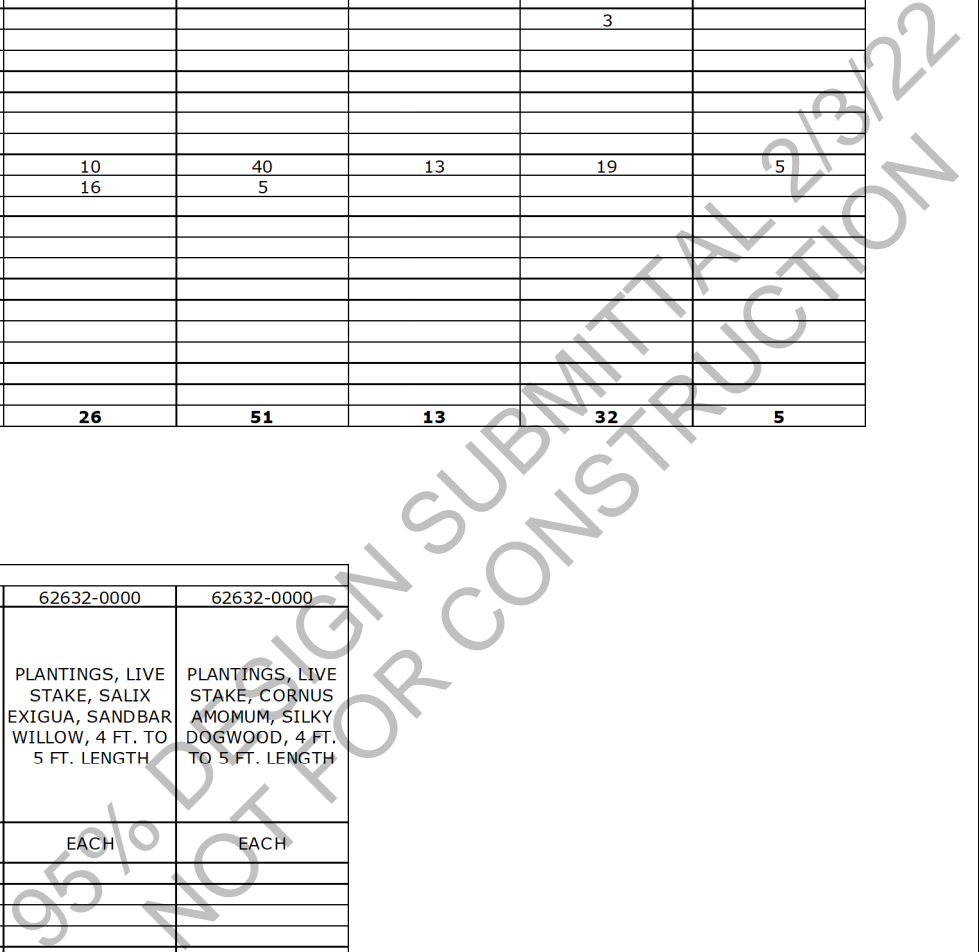
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LANDSCAPE SUMMARY																	
Item Number	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000			
Station to Station	Side	PLANTINGS, PHYSOCARPUS MONOGYNUS, ROCKY MOUNTAIN NINEBARK, NO. 5 CONTAINER	PLANTINGS, POTENTILLA FRUTICOS 'KATHERINE DYKES', KATHERINE DYKES POTENTILLA, NO. 5 CONTAINER	PLANTINGS, POTENTILLA FRUTICOS 'MCKAY'S WHITE', MCKAY'S WHITE POTENTILLA, NO. 5 CONTAINER	PLANTINGS, PRUNUS BESSEYI PAWNEE BUTTES, PAWNEE BUTTES SAND CHERRY, NO. 5 CONTAINER	PLANTINGS, RHUS TRILOBATA 'GRO-LOW', GRO-LOW THREE LEAF SUMAC, NO. 5 CONTAINER	PLANTINGS, RIBES AUREUM, GOLDEN CURRANT, NO. 5 CONTAINER	PLANTINGS, SALIX EXIGUA, SANDBAR WILLOW, NO. 5 CONTAINER	PLANTINGS, SYMPHORICARPOS OREOPHILUS, ROCKY MOUNTAIN SNOWBERRY, NO. 5 CONTAINER	PLANTINGS, AQUILEGIA CAERULEA, ROCKY MOUNTAIN COLUMBINE, NO. 2 CONTAINER	PLANTINGS, ARTEMISIA FRIGIDA, FRINDGED SAGE, NO. 2 CONTAINER	PLANTINGS, GAILLARDIA ARISTATA, BLANKET FLOWER, NO. 2 CONTAINER	PLANTINGS, HELIOMERIS MULTIFLORA, SHOWY GOLDENEYE, NO. 2 CONTAINER	PLANTINGS, LIATRIS PUNCTATA, DOTTED BLAZING STAR, NO. 2 CONTAINER	PLANTINGS, LUPINUS ARGENTEUS, SILVER LUPINE, NO. 2 CONTAINER		
		EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH			
ALL																	
MORaine AVE. (W)	101+50 101+50	105+88 105+88	LT RT									6		10			
MORaine AVE. (N)	200+13.50 200+13.50	211+80 211+80	LT RT		3			5						3			
MORaine SB BYPASS	2+00	3+00	LT														
CRAGS	401+00 401+00	403+08.91 403+08.91	LT RT														
RIVERSIDE AVE.	499+67 499+67	518+00 518+00	LT RT	16 5	12	4	19	12 7	8	6 6	9 11	3 10	10 16	40 5	13 19	5	
E. RIVERSIDE AVE.	301+00 301+00	303+50 303+50	LT RT		6				8								
ROCKWELL ST	600+00 600+00	605+64 605+64	LT RT														
ELKHORN AVE	253+87 253+87	257+00 257+00	LT RT														
TOTALS				21	18	7	19	19	13	20	20	13	26	51	13	32	5

LANDSCAPE SUMMARY														
Item Number	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000	62632-0000		
Station to Station	Side	PLANTINGS, NEPETA X FAASSENII 'WALKER'S LOW', WALKERS LOW CATMINT, NO. 2 CONTAINER	PLANTINGS, RATIBIDA COLUMNIFERA FORMA PULCHERRIMA, MEXICAN HAT CONEFLOWER, NO. 2 CONTAINER	PLANTINGS, RUDBECKIA HIRTA, BLACK-EYED SUSAN, NO. 2 CONTAINER	PLANTINGS, SALVIA PRATENSIS, MEADOW SAGE, NO. 2 CONTAINER	PLANTINGS, BOUTELOUA GRACILIS 'BLONDE AMBITION', BLONDE AMBITION GRAMA GRASS, NO. 2 CONTAINER	PLANTINGS, CALAMAGROSTIS ACUTIFLORA 'KARL FOERSTER', KARL FOERSTER FEATHER REED GRASS, NO. 2 CONTAINER	PLANTINGS, PANICUM VIRGATUM 'HEAVY METAL', HEAVY METAL SWITCH GRASS, NO. 2 CONTAINER	PLANTINGS, SCHIZACHYRIUM SCOPARIUM 'PRAIRIE BLUES', PRAIRIE BLUES LITTLE BLUESTEM GRASS, NO. 2 CONTAINER	PLANTINGS, LIVE STAKE, SALIX MONTICOLA, ROCKY MOUNTAIN WILLOW, 4 FT. TO 5 FT. LENGTH	PLANTINGS, LIVE STAKE, SALIX EXIGUA, SANDBAR WILLOW, 4 FT. TO 5 FT. LENGTH	PLANTINGS, LIVE STAKE, CORNUS AMOMUM, SILKY DOGWOOD, 4 FT. TO 5 FT. LENGTH		
		EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH		
ALL														
MORaine AVE. (W)	101+50 101+50	105+88 105+88	LT RT		15	12			7 2					
MORaine AVE. (N)	200+13.50 200+13.50	211+80 211+80	LT RT	33	5		10	9						
MORaine SB BYPASS	2+00	3+00	LT											
CRAGS	401+00 401+00	403+08.91 403+08.91	LT RT											
RIVERSIDE AVE.	499+67 499+67	518+00 518+00	LT RT	10 38	15 13	36 8	10	12 37	13 27	9 9	9 16	42 24	42 24	42 24
E. RIVERSIDE AVE.	301+00 301+00	303+50 303+50	LT RT								66	66	66	
ROCKWELL ST	600+00 600+00	605+64 605+64	LT RT											
ELKHORN AVE	253+87 253+87	257+00 257+00	LT RT		5	5								
TOTALS				91	53	61	10	59	58	18	25	132	132	132

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

LANDSCAPE SUMMARY



TABULATION OF UTILITY ADJUSTMENTS AND RELOCATIONS

SHEET	STATION	20302-2300	60405-0000	61108-4000	61109-4000	61102-3000	61102-3250	61206-0000	61202-1000	61107-0000	63640-0700
		REMOVE WATER LINE (SERVICE) (1) LIN. FT.	ADJUST MANHOLE EACH	ADJUST VALVE BOX EACH	RELOCATE FIRE HYDRANT EACH	RELOCATE 6 INCH WATERLINE (2) LIN. FT.	RELOCATE 8 INCH WATERLINE (2) LIN. FT.	RELOCATE SANITARY SEWER SERVICE (3) EACH	10 INCH SANITARY SEWER LIN. FT.	1 1/2 INCH WATER METER (4) EACH	RELOCATE ELECTRICAL LINE (5) LPSM
E. RIVERSIDE	302+00 RT	25									
	302+39 RT			1							
	302+73 RT			1							
	303+00 RT					15					
RIVERSIDE DR.	501+04 RT		1						70		
	501+36 RT									1	
	503+24 LT			1							
	503+49 RT				1						
	504+50 RT		1								
	505+83 RT		1								
	507+34 RT		1								
	507+93 RT									1	
	509+90 RT	30									
	510+28 RT	25									
	510+52 RT		1								
	511+10 RT	20		1							
	511+56 RT	20									
	511+70 RT		1								
	512+51 RT		1								
	513+78 RT	40									
	514+14 RT						15				
	514+34 LT			1							
	514+63 RT	40									
	514+72 RT		2								
	515+54 RT		1								
	515+66 RT			1							
	517+76 LT		1								
	517+79 LT		1								
	517+84 LT		1								
N. MORAINA AVE.	204+18 LT			1							
	204+32 LT			1							
	204+34 RT			1							
	204+49 LT		1								
	204+50 RT			1							
	204+54 LT			1							
	205+13 RT			1							
	205+64 RT			1							
	206+04 RT			1							
	206+74 RT			1							
	207+17 RT			2							
	209+79 LT			1							
	209+81 LT		1								
	212+64 LT		1								
	212+74 RT		1								
W. ELKHORN AVE.	771+27 LT			1							
	771+31 LT		1	1							
	771+58 LT			4							
	252+85 LT		1								
	252+95 LT		1								
	254+52 LT			1							
	254+79 RT		1								
	254+83 RT		1								
	255+21 RT			1							
	255+24 LT						20				
	255+24 LT					15					
	255+34 LT			1							
	255+93 LT			1							
	255+98.65			1							
ROCKWELL	600+53 LT			1							
	601+56 LT			1							
	603+09 RT			1							
CRAG'S RD.	402+40							1			1
TOTALS		200	22	32	1	15	50	1	70	2	1

- NOTES:
1. REMOVAL OF ABANDONED WATER SERVICE CONNECTIONS TO FORMER PROPERTIES.
 2. RELOCATION OF EXISTING TOWN OF ESTES PARK WATERLINE. PAY ITEM IS COMPLETE IN PLACE AND INCLUDES ALL EXCAVATION, BEDDING, MATERIALS, NECESSARY TO COMPLETE THE RELOCATION.
 3. RELOCATION OF EXISTING SANITARY SEWER SERVICE TO FCEP PROPERTIES. BID ITEM IS COMPLETE IN PLACE AND INCLUDES ALL EXCAVATION, BEDDING, MATERIALS, NECESSARY TO COMPLETE THE RELOCATION.
 4. INSTALLATION OF 1 1/2 INCH WATER METER. BID ITEM IS COMPLETE IN PLACE AND INCLUDES ALL EXCAVATION, BEDDING, AND MATERIALS NECESSARY TO COMPLETE THE INSTALLATION.
 5. RELOCATE ELECTRIC LINE. INSTALLATION OF UNDERGROUND ELECTRIC. BID ITEM IS COMPLETE IN PLACE AND INCLUDES ALL EXCAVATION, BEDDING, AND MATERIALS NECESSARY TO INCLUDE THE RELOCATION.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**UTILITY
SUMMARY**

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PERMANENT SIGN SUMMARY

SIGN ASSEMBLY NO.	LOCATION	STATION	DIRECTION	SIGN CODE	SIGN PANEL SIZE			PRIMARY BACKGROUND COLOR	LEGEND	REMOVE AND RESET SIGN (63316-1000)	SIGN SYSTEM (63301-0000)	
					W"	x	H"				SIGN STEEL POST	
											P (2 IN ROUND) (POST & SOCKET)	
									EA	EA		
OP-01	Elkhorn Ave	703+45	EB	D9-2	24	x	24	Blue	HOSPITAL		1	
			EB	M6-3	21	x	15	Blue	DIRECTIONAL ARROW (STRAIGHT)			
OP-02	Elkhorn Ave	703+60	WB	OM3-L	12	x	36	Yellow	OBJECT MARKER		1	
OP-03	Elkhorn Ave	703+70	WB	OM3-L	12	x	36	Yellow	OBJECT MARKER		1	
OP-04	Elkhorn Ave	704+10	NB/SB	SPECIAL	60	x	18	Green	WONDERVIEW AVE	1	1	
			WB/EB	SPECIAL	54	x	18	Green	ELKHORN AVE	1		
			WB	R1-1	30	x	30	Red	STOP			
OP-05	Elkhorn Ave	705+20	WB	R1-1	30	x	30	Red	STOP		1	
OP-06	Elkhorn Ave	706+30	EB	W11-2	30	x	30	Yellow	PEDESTRIAN		1	
			EB	W16-9P	24	x	12	Yellow	AHEAD (PLAQUE)			
OP-07	Elkhorn Ave	707+00	EB	M4-3	24	x	12	White	BUSINESS		1	
			EB	M1-4	24	x	24	White	US 36 SHIELD			
OP-08	Elkhorn Ave	707+00	WB	W3-1	30	x	30	Yellow	STOP AHEAD		1	
OP-09	Elkhorn Ave	713+05	WB	W11-2	30	x	30	Yellow	PEDESTRIAN		1	
			WB	W16-9P	24	x	12	Yellow	AHEAD (PLAQUE)			
OP-10	Elkhorn Ave	717+20	WB/EB	SPECIAL	54	x	18	Green	FALL RIVER LN	1	1	
			NB/SB	SPECIAL	54	x	18	Green	ELKHORN AVE	1		
			NB	R1-1	30	x	30	Red	STOP			
OP-11	Elkhorn Ave	719+45	WB/EB	SPECIAL	48	x	18	Green	VALLEY RD	1	1	
			NB/SB	SPECIAL	54	x	18	Green	ELKHORN AVE	1		
			NB	R1-1	30	x	30	Red	STOP			
OP-12	Elkhorn Ave	727+55	WB	R2-1	24	x	30	White	SPEED LIMIT 40 MPH		1	
OP-13	Elkhorn Ave	735+75	WB/EB	SPECIAL	60	x	18	Green	OLD RANGER DR	1	1	
			NB/SB	SPECIAL	54	x	18	Green	ELKHORN AVE	1		
			NB	R1-1	30	x	30	Red	STOP			
OP-14	Elkhorn Ave	738+60	WB/EB	SPECIAL	48	x	18	Green	JAMES ST	1	1	
			NB/SB	SPECIAL	54	x	18	Green	ELKHORN AVE	1		
			SB	R1-1	30	x	30	Red	STOP			
OP-15	Elkhorn Ave	741+50	EB	R2-1	24	x	30	White	SPEED LIMIT 35 MPH		1	
OP-16	Elkhorn Ave	742+05	WB/EB	SPECIAL	54	x	18	Green	FAR VIEW DR	1	1	
			NB/SB	SPECIAL	54	x	18	Green	ELKHORN AVE	1		
			SB	R1-1	30	x	30	Red	STOP			
OP-17	Elkhorn Ave	746+40	WB	W1-3L	30	x	30	Yellow	REVERSE TURN		1	
OP-18	Elkhorn Ave	748+00	WB/EB	SPECIAL	48	x	18	Green	FILBEY CT	1	1	
			NB/SB	SPECIAL	54	x	18	Green	ELKHORN AVE	1		
			SB	R1-1	30	x	30	Red	STOP			
OP-19	Elkhorn Ave	750+90	NB/SB	SPECIAL	54	x	18	Green	ELKHORN AVE	1	1	
			NB	R1-1	30	x	30	Red	STOP			
OP-20	Elkhorn Ave	755+25	EB	R2-1	24	x	30	White	SPEED LIMIT 20 MPH			
OP-21	Elkhorn Ave	756+20	EB	W11-2	30	x	30	Yellow	PEDESTRIAN		1	
			EB	W16-9P	24	x	12	Yellow	AHEAD (PLAQUE)			
OP-22	Elkhorn Ave	760+00	WB	W11-2	30	x	30	Yellow	PEDESTRIAN		1	
			WB	W16-9P	24	x	12	Yellow	AHEAD (PLAQUE)			
									SHEET TOTALS	15	21	

95% DESIGN SUBMITTAL 2/13/22
NOT FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**ROADWAY PLANS
TABULATIONS**

OPTION X

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PERMANENT SIGN SUMMARY

SIGN ASSEMBLY NO.	LOCATION	STATION	DIRECTION	SIGN CODE	SIGN PANEL SIZE			PRIMARY BACKGROUND COLOR	LEGEND	REMOVE AND RESET SIGN (63316-1000)	SIGN SYSTEM (63301-0000)	
					W"	x	H"				SIGN STEEL POST	
											P (2 IN ROUND) (POST & SOCKET)	
									EA	EA		
OP-23	Elkhorn Ave	760+95	WB/EB	SPECIAL	48	x	18	Green	SPRUCE DR	1	1	
			NB/SB	SPECIAL	54	x	18	Green	ELKHORN AVE	1		
OP-24	Elkhorn Ave	762+50	SB	R1-1	30	x	30	Red	STOP			
			EB	W3-3	30	x	30	Yellow	SIGNAL		1	
OP-25	Elkhorn Ave	763+10	EB	W16-9P	24	x	12	Yellow	AHEAD (PLAQUE)			
			EB	W11-2	30	x	30	Yellow	PEDESTRIAN		1	
OP-26	Elkhorn Ave	764+95	EB	W16-9P	24	x	12	Yellow	AHEAD (PLAQUE)			
			EB	W11-2	30	x	30	Yellow	PEDESTRIAN		1	
OP-27	Elkhorn Ave	767+00	EB	W16-7pL	24	x	12	Yellow	DOWNWARD DIAGONAL ARROW (PLAQUE)			
			EB	W11-2	30	x	30	Yellow	PEDESTRIAN		1	
OP-28	Elkhorn Ave	765+05	WB	W16-7pL	24	x	12	Yellow	DOWNWARD DIAGONAL ARROW (PLAQUE)			
			WB	W11-2	30	x	30	Yellow	PEDESTRIAN		1	
OP-29	Elkhorn Ave	767+10	WB	W16-7pL	24	x	12	Yellow	DOWNWARD DIAGONAL ARROW (PLAQUE)			
			WB	W11-2	30	x	30	Yellow	PEDESTRIAN		1	
SHEET TOTALS									2	7		
PROJECT TOTALS									17	28		

PAVEMENT MARKING TABULATIONS

PERMANENT PAVEMENT MARKING SUMMARY												ITEM NUMBER	63402-0700	63403-0800	63405-2890					
Alignment	Station to Station	STRIPING				WORDS AND SYMBOLS						PAVEMENT MARKING, TYPE D	PAVEMENT MARKINGS, TYPE H (STOP BAR-XWALK)	PAVEMENT MARKINGS, TYPE H (WORD-SYMBOLS)						
		Parking Solid	Centerline Double Solid	Edge Solid	Channelizing Line Solid	Stop Bar (24")	Crosswalk Bar (12" x 10')	Arrow	Bike Sharrow	Message (ONLY)	Message (XING)									
		White 3" LNFT	Yellow 4" LNFT	White 6" LNFT	White 8" LNFT	White	White	White	White	White	White									
												SQFT	SQFT	EACH	EACH	EACH	EACH	MILE	SQFT	EA
West Elkhorne Avenue	700+00 - 770+35	160	14,980	17,655	400	106	640	6	19	2	1	6.3	746	28						
BID TOTALS													6.3	746	28					

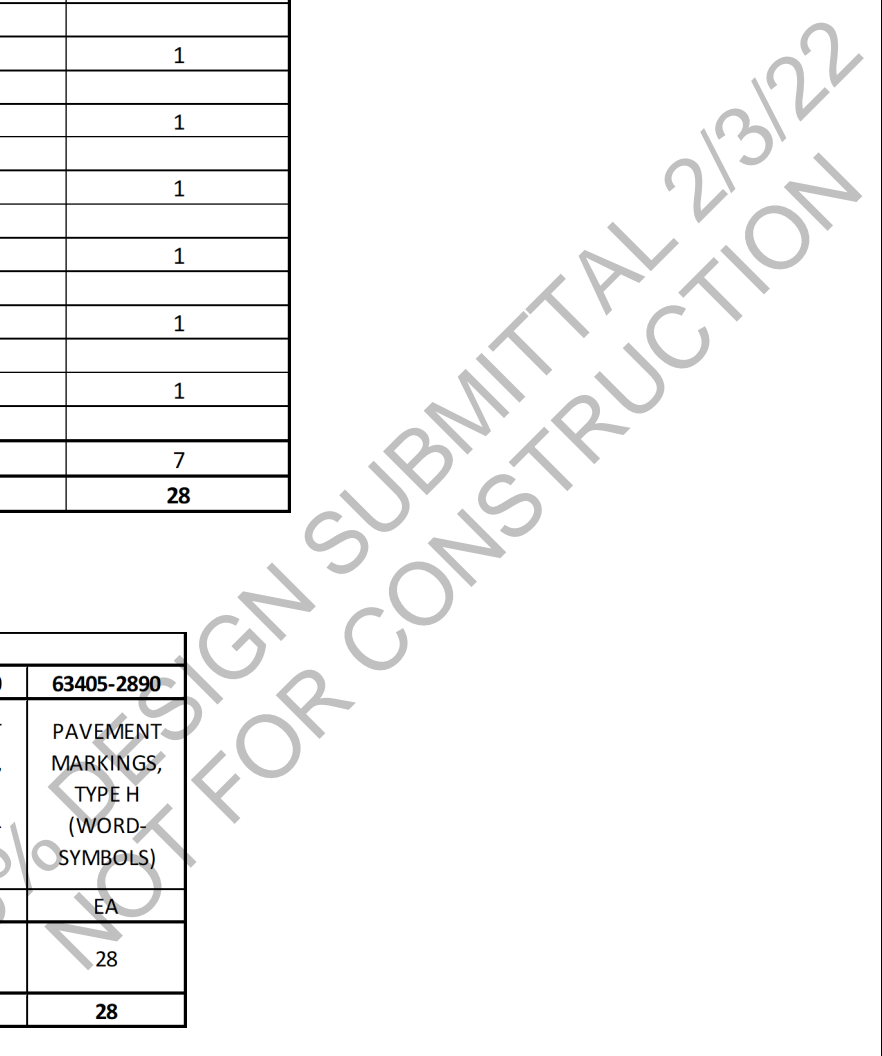
SURVEY AND STAKING SUMMARY OPTION X				
Item Number		15210-4000		
Station to Station		CENTERLINE, ESTABLISHMENT		
		MILE		
WEST ELKHORN	701+90	-	770+35	1.33
TOTALS				1.33

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

ROADWAY PLANS TABULATIONS

OPTION X

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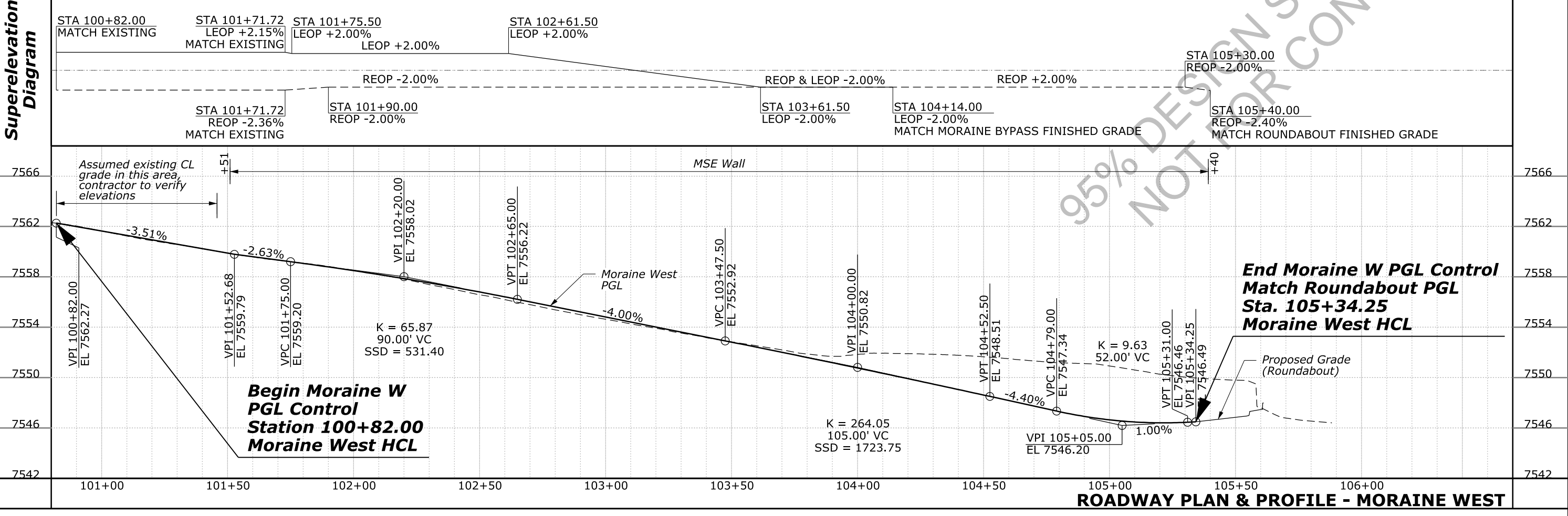
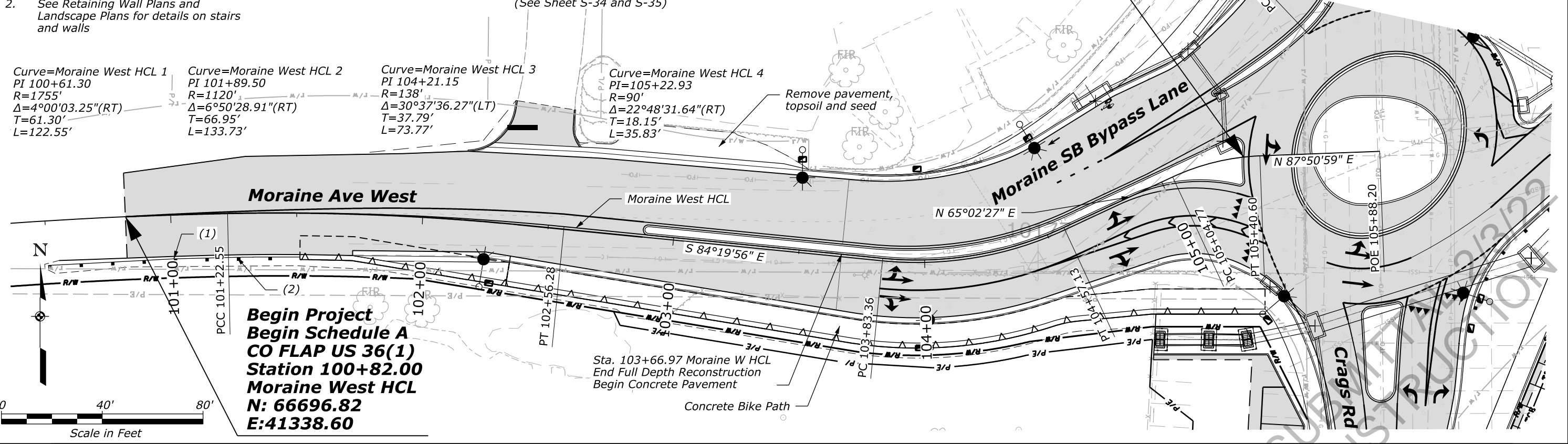


STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	C-01

- Notes:
- See Pavement Plans for details on all curb returns, curb ramp, edge of pavement, and driveways.
 - See Retaining Wall Plans and Landscape Plans for details on stairs and walls
- (1) Begin MGS Guardrail (7' posts) Req'd Terminal Section, Type MGS Tangent (See Special 617-A) 100+00.68, 17.44' Rt Moraine West HCL
- (2) End MGS Guardrail (7' posts) Begin Structure Transition Railing (See Special 617-A) (Type 3G) 101+27.31, 17.48' Rt Moraine West HCL Connect to Bridge Railing, Type 10 MASH (See Sheet S-34 and S-35)

- Curve=Moraine West HCL 1
PI 100+61.30
R=1755'
 $\Delta=4^{\circ}00'03.25''$ (RT)
T=61.30'
L=122.55'
- Curve=Moraine West HCL 2
PI 101+89.50
R=1120'
 $\Delta=6^{\circ}50'28.91''$ (RT)
T=66.95'
L=133.73'
- Curve=Moraine West HCL 3
PI 104+21.15
R=138'
 $\Delta=30^{\circ}37'36.27''$ (LT)
T=37.79'
L=73.77'
- Curve=Moraine West HCL 4
PI=105+22.93
R=90'
 $\Delta=22^{\circ}48'31.64''$ (RT)
T=18.15'
L=35.83'

**End Moraine W PGL Control
Match Roundabout Grade
Sta. 105+34.25 Moraine West HCL**



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Curve=Riverside Dr HCL 3
 PI 505+04.41
 R=500'
 $\Delta=25^{\circ}26'38.03''(RT)$
 T=112.88'
 L=220.04'

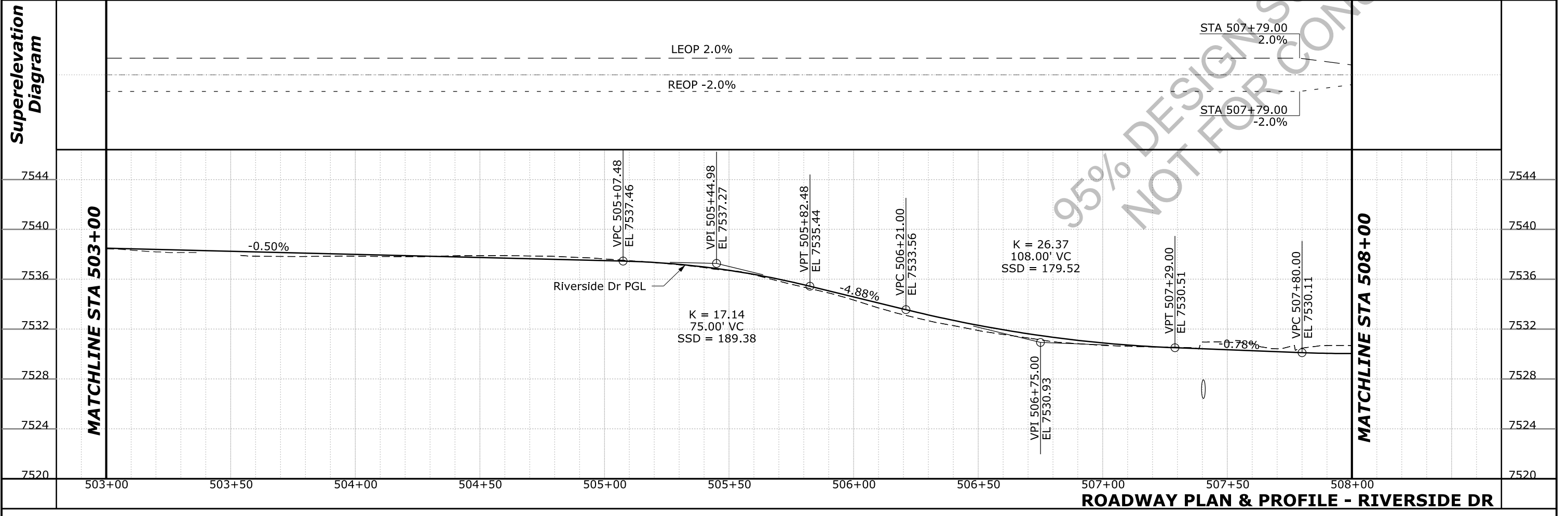
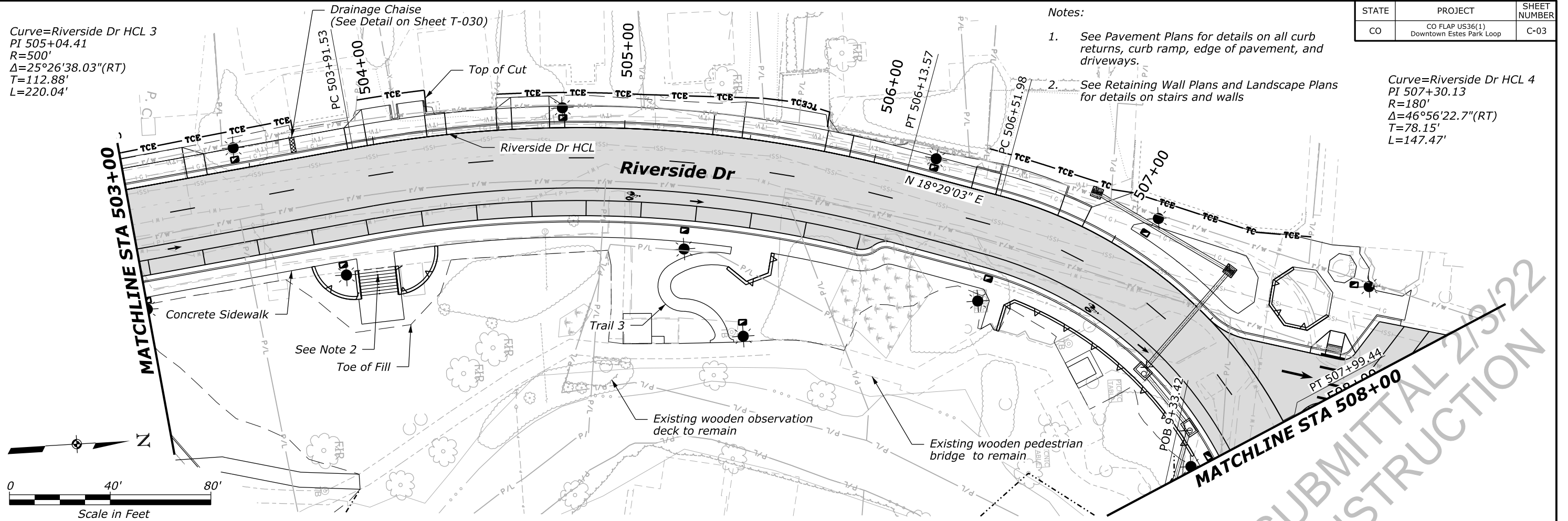
Drainage Chaise
 (See Detail on Sheet T-030)

Notes:

1. See Pavement Plans for details on all curb returns, curb ramp, edge of pavement, and driveways.
2. See Retaining Wall Plans and Landscape Plans for details on stairs and walls

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	C-03

Curve=Riverside Dr HCL 4
 PI 507+30.13
 R=180'
 $\Delta=46^{\circ}56'22.7''(RT)$
 T=78.15'
 L=147.47'



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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	C-04

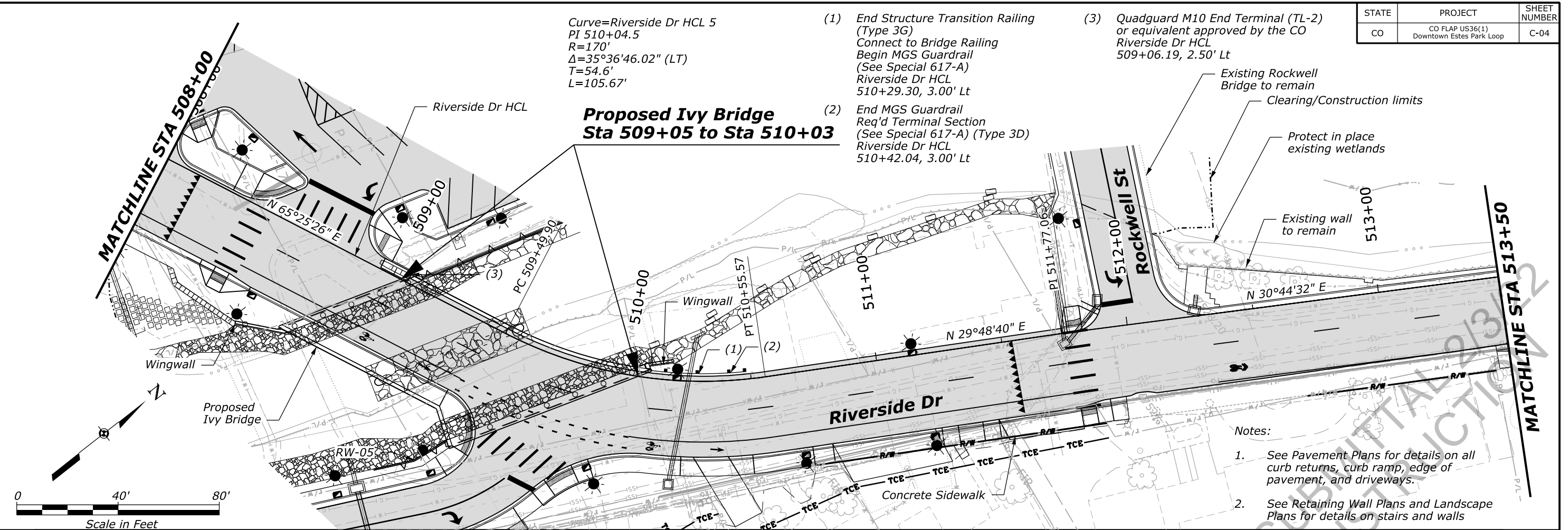
Curve=Riverside Dr HCL 5
 PI 510+04.5
 R=170'
 $\Delta=35^{\circ}36'46.02"$ (LT)
 T=54.6'
 L=105.67'

(1) End Structure Transition Railing
 (Type 3G)
 Connect to Bridge Railing
 Begin MGS Guardrail
 (See Special 617-A)
 Riverside Dr HCL
 510+29.30, 3.00' Lt

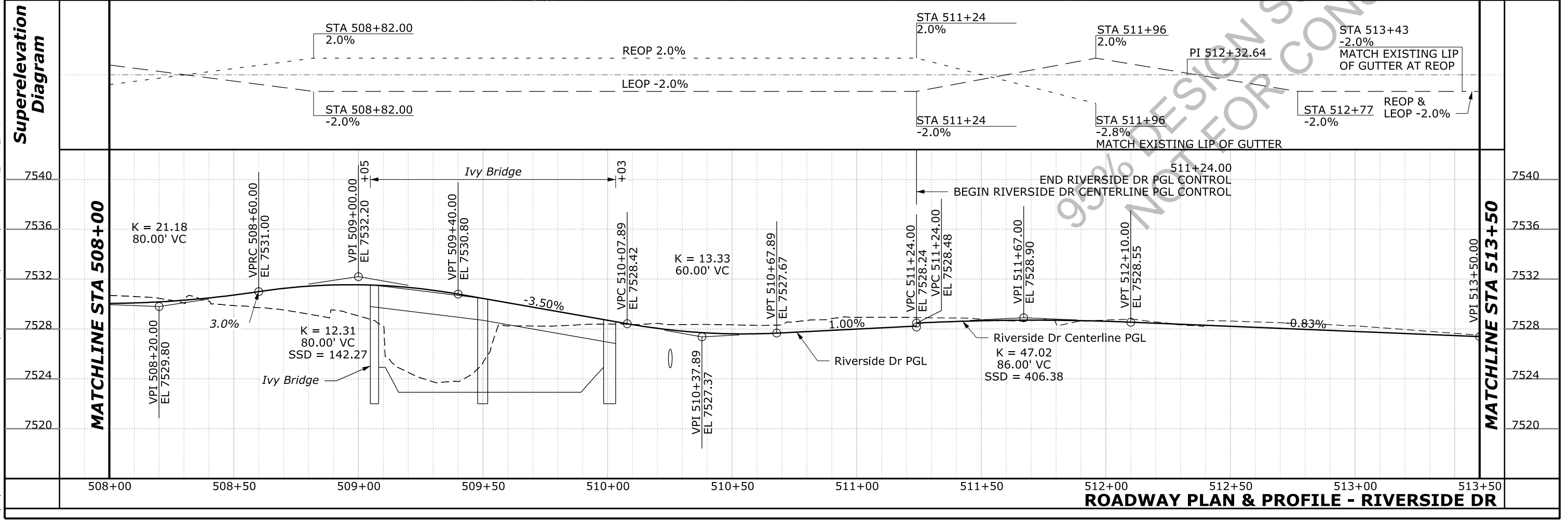
(2) End MGS Guardrail
 Req'd Terminal Section
 (See Special 617-A) (Type 3D)
 Riverside Dr HCL
 510+42.04, 3.00' Lt

(3) Quadguard M10 End Terminal (TL-2)
 or equivalent approved by the CO
 Riverside Dr HCL
 509+06.19, 2.50' Lt

**Proposed Ivy Bridge
 Sta 509+05 to Sta 510+03**



- Notes:
- See Pavement Plans for details on all curb returns, curb ramp, edge of pavement, and driveways.
 - See Retaining Wall Plans and Landscape Plans for details on stairs and walls



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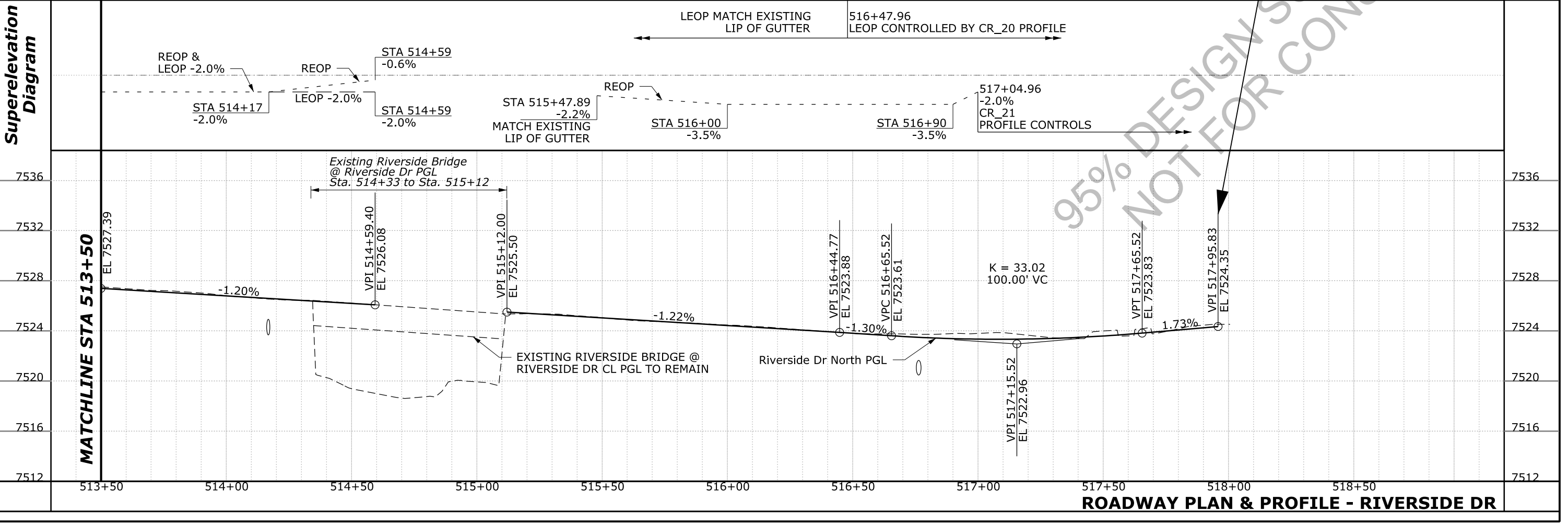
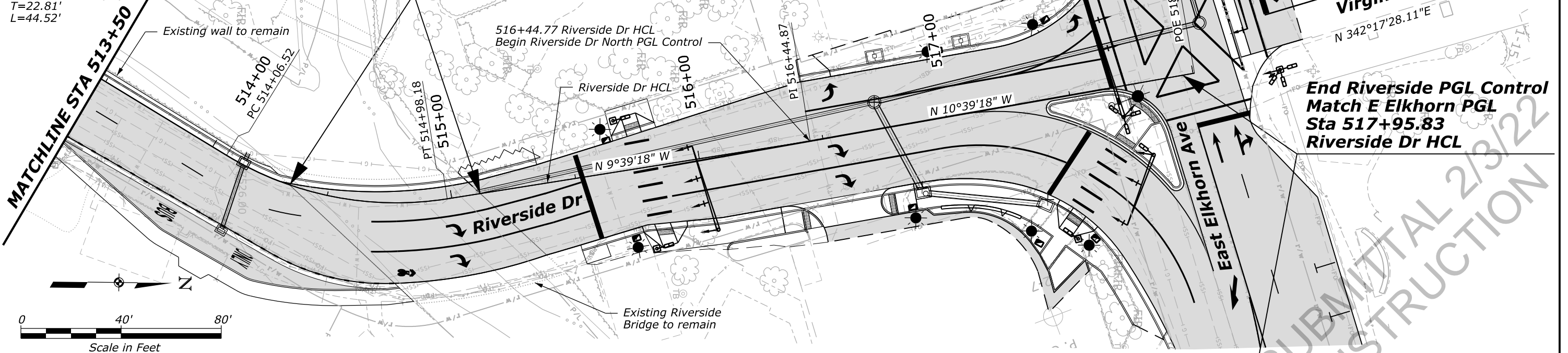
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	C-05

- Notes:
- See Pavement Plans for details on all curb returns, curb ramp, edge of pavement, and driveways.
 - See Retaining Wall Plans and Landscape Plans for details on stairs and walls

Curve=Riverside Dr HCL 6
 PI 514+54.35
 R=130'
 $\Delta=40^{\circ}23'50.24''$ (LT)
 T=47.83'
 L=91.66'

Curve=Riverside Dr CL 1
 PI 514+48.50
 R=83'
 $\Delta=30^{\circ}44'04.13''$ (LT)
 T=22.81'
 L=44.52'

**Existing Riverside Bridge To Remain
 Riverside Dr HCL
 Sta 514+33 to Sta 515+12**



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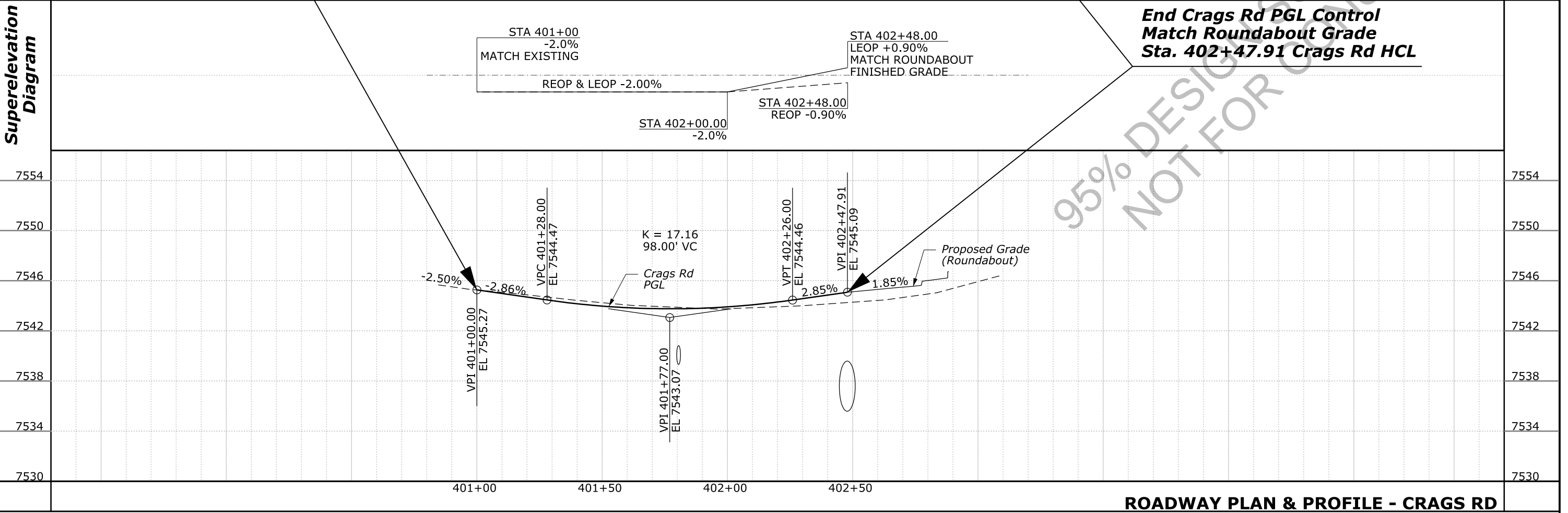
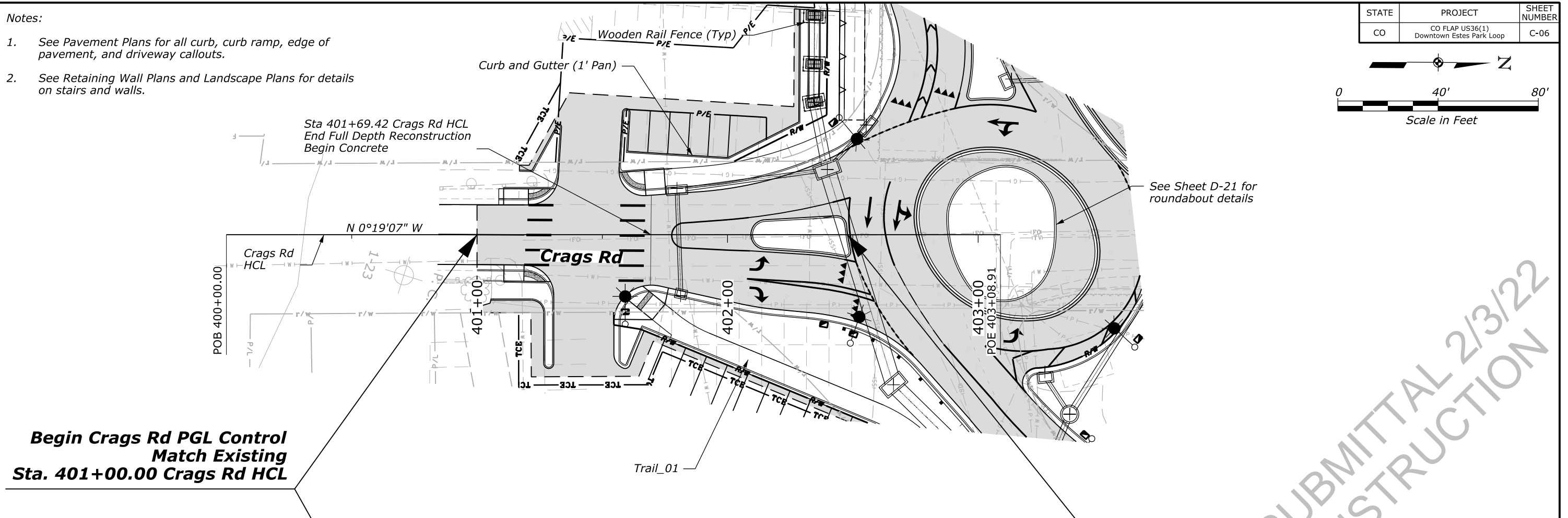
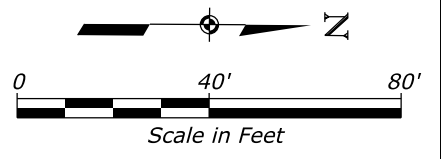
95% DESIGN SUBMITTAL 2/3/22 NOT FOR CONSTRUCTION

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Notes:

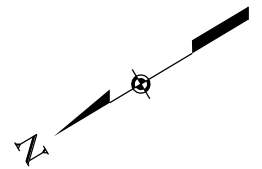
1. See Pavement Plans for all curb, curb ramp, edge of pavement, and driveway callouts.
2. See Retaining Wall Plans and Landscape Plans for details on stairs and walls.

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	C-06



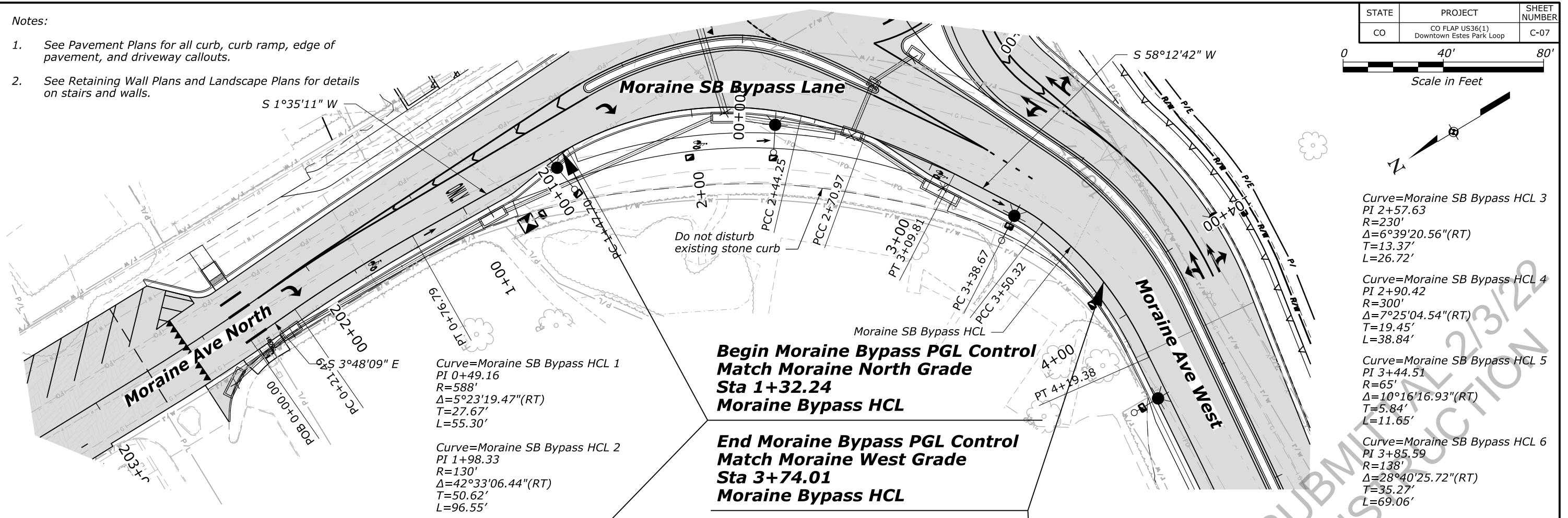
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NOT FOR CONSTRUCTION

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	C-07

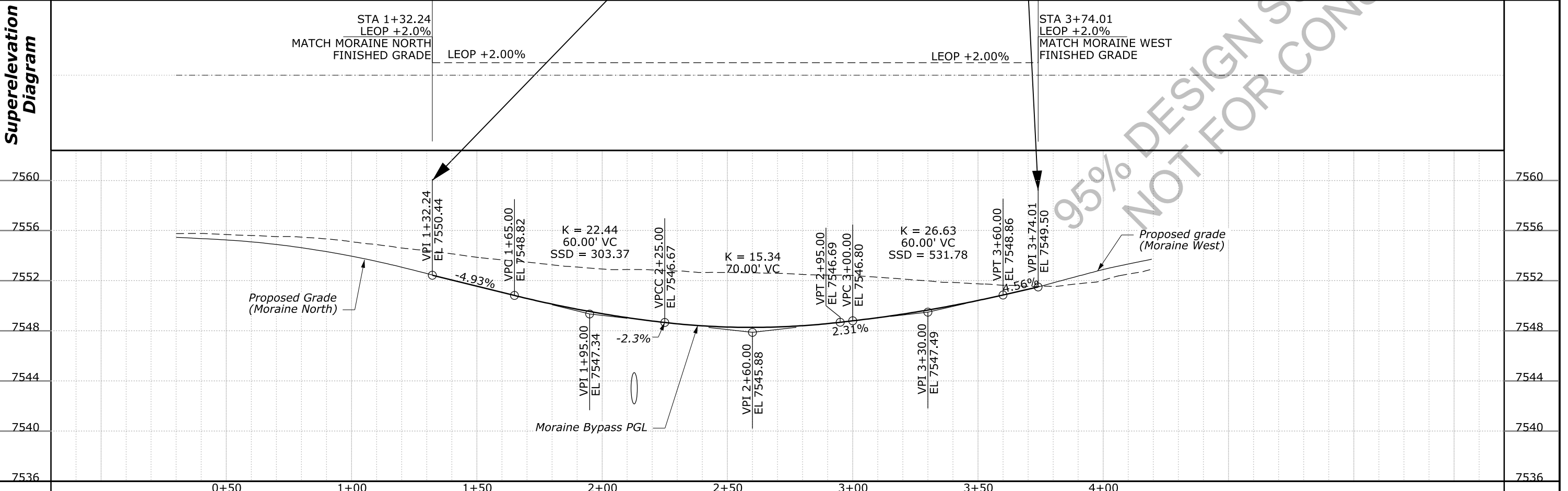


Notes:

1. See Pavement Plans for all curb, curb ramp, edge of pavement, and driveway callouts.
2. See Retaining Wall Plans and Landscape Plans for details on stairs and walls.



Superelevation Diagram

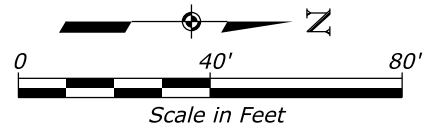
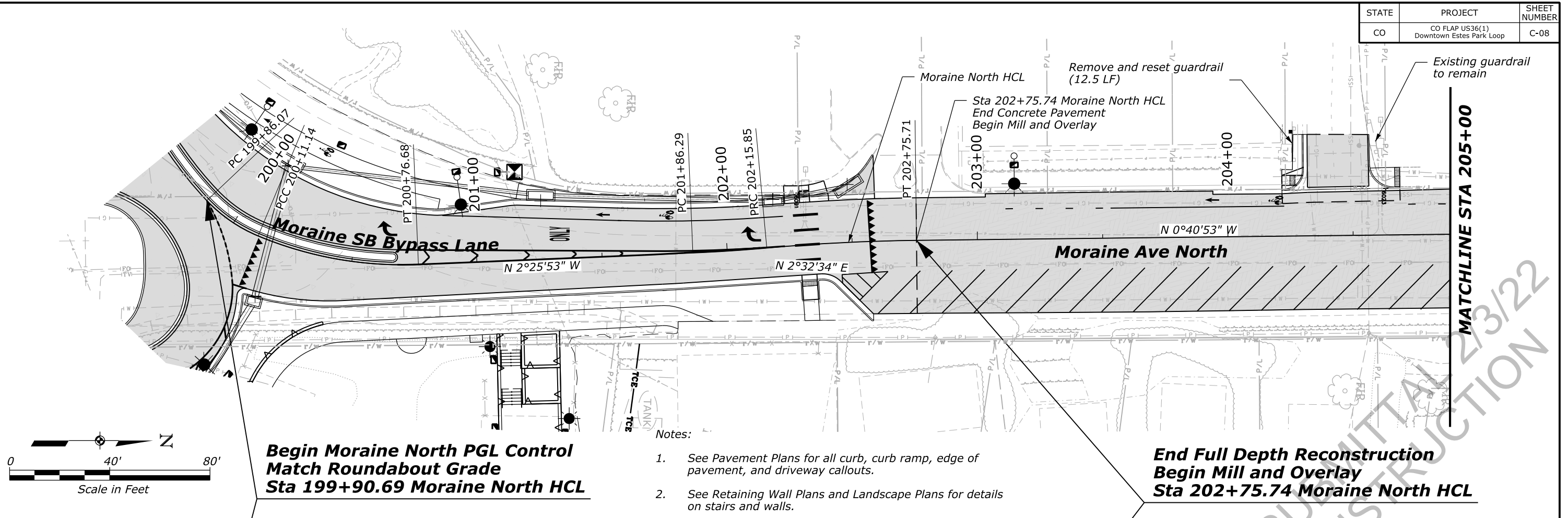


ROADWAY PLAN & PROFILE - MORAIN SB BYPASS

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	C-08

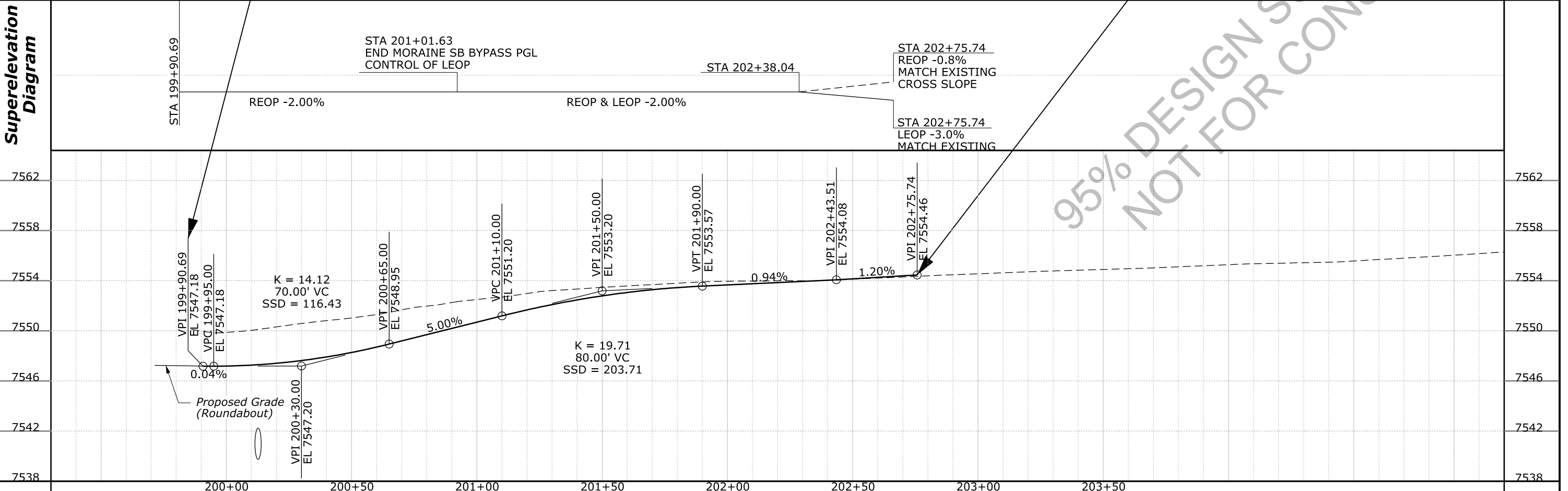
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Begin Moraine North PGL Control
Match Roundabout Grade
Sta 199+90.69 Moraine North HCL

- Notes:
1. See Pavement Plans for all curb, curb ramp, edge of pavement, and driveway callouts.
 2. See Retaining Wall Plans and Landscape Plans for details on stairs and walls.

End Full Depth Reconstruction
Begin Mill and Overlay
Sta 202+75.74 Moraine North HCL



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ROADWAY PLAN & PROFILE - MORaine NORTH

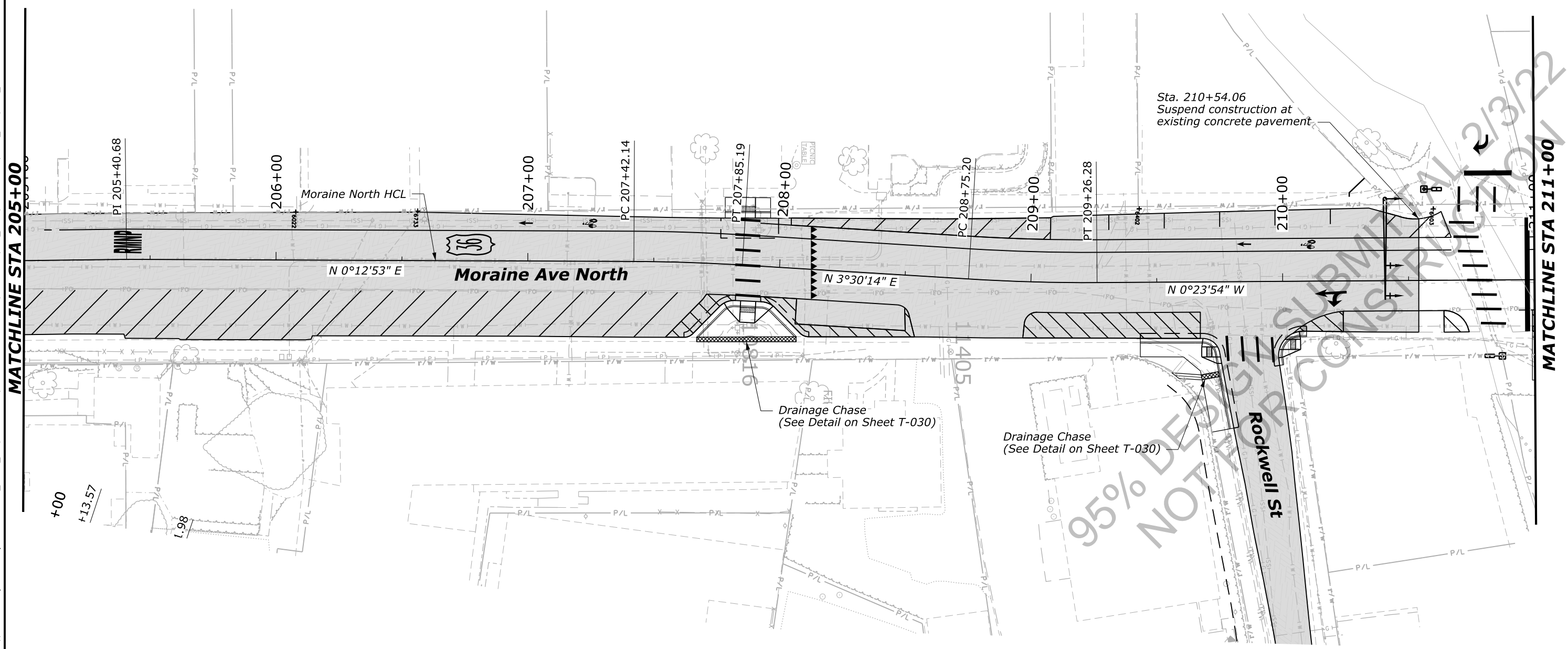
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	C-09

Notes:

1. See Pavement Plans for all curb, curb ramp, edge of pavement, and driveway callouts.
2. See Retaining Wall Plans and Landscape Plans for details on stairs and walls.

Curve=Moraine North HCL 5
 PI 207+63.67
 R=750'
 $\Delta=3^{\circ}17'20.45''$ (RT)
 T=21.53'
 L=43.05'

Curve=Moraine North HCL 6
 PI 209+00.75
 R=750'
 $\Delta=3^{\circ}54'07.50''$ (LT)
 T=25.55'
 L=51.08'



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 1/31/2022

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

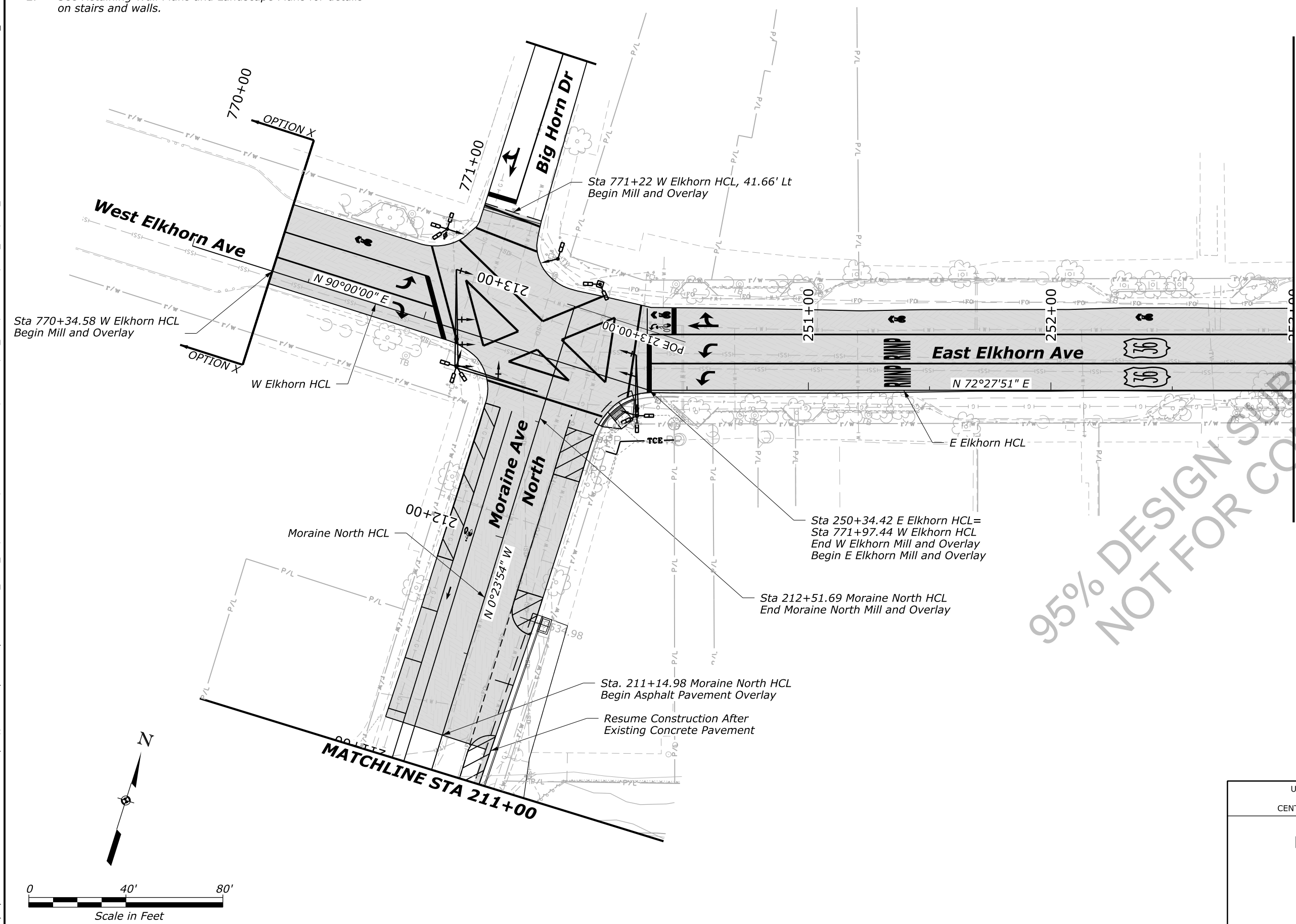
**ROADWAY PLANS
 MORaine NORTH**

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	C-10

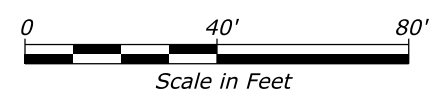
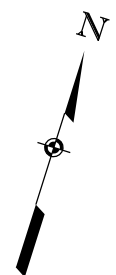
Notes:

1. See Pavement Plans for all curb, curb ramp, edge of pavement, and driveway callouts.
2. See Retaining Wall Plans and Landscape Plans for details on stairs and walls.

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 NOT FOR CONSTRUCTION



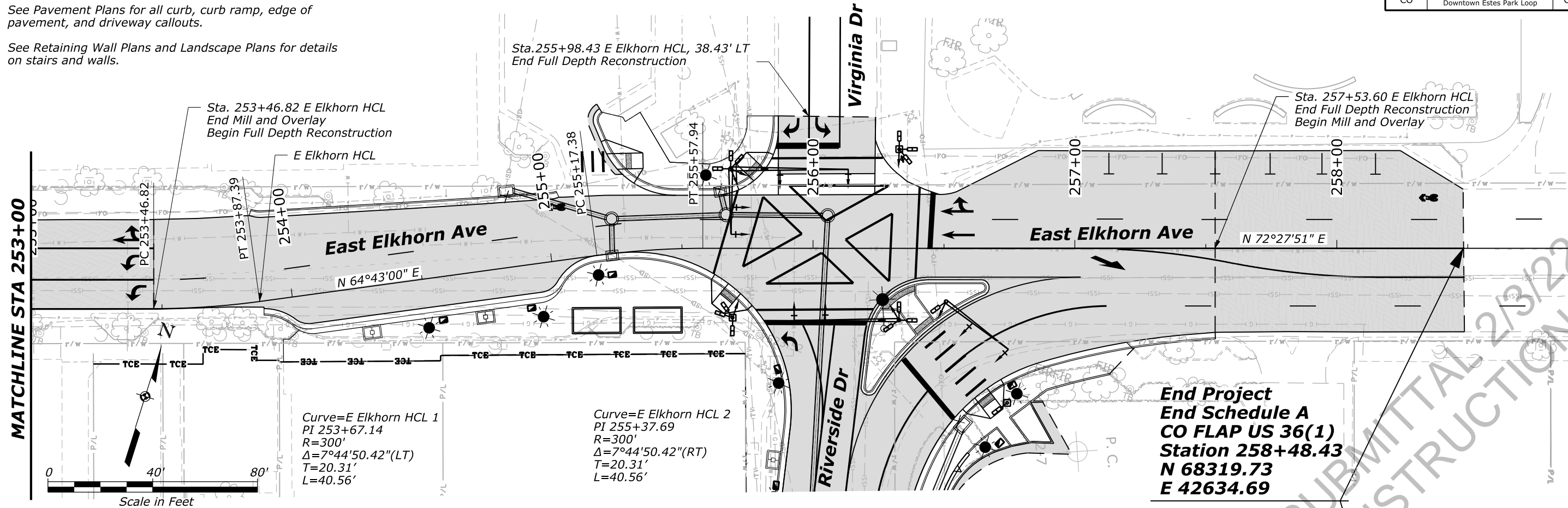
U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

ROADWAY PLANS
 MORaine NORTH
 & ELKHORN AVE

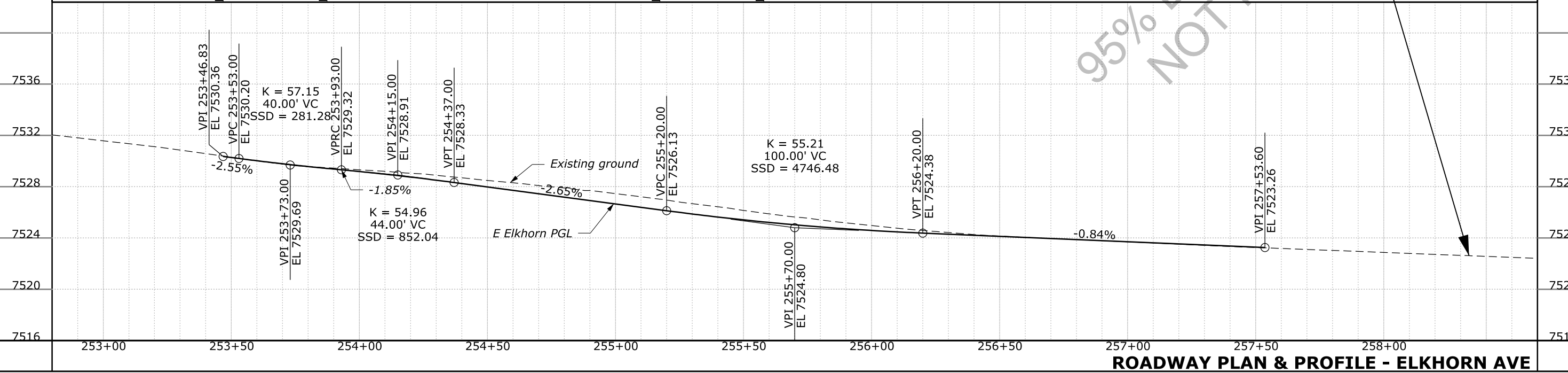
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	C-11

Notes:

1. See Pavement Plans for all curb, curb ramp, edge of pavement, and driveway callouts.
2. See Retaining Wall Plans and Landscape Plans for details on stairs and walls.



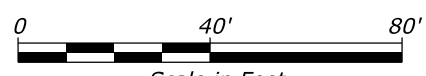
Superelevation Diagram



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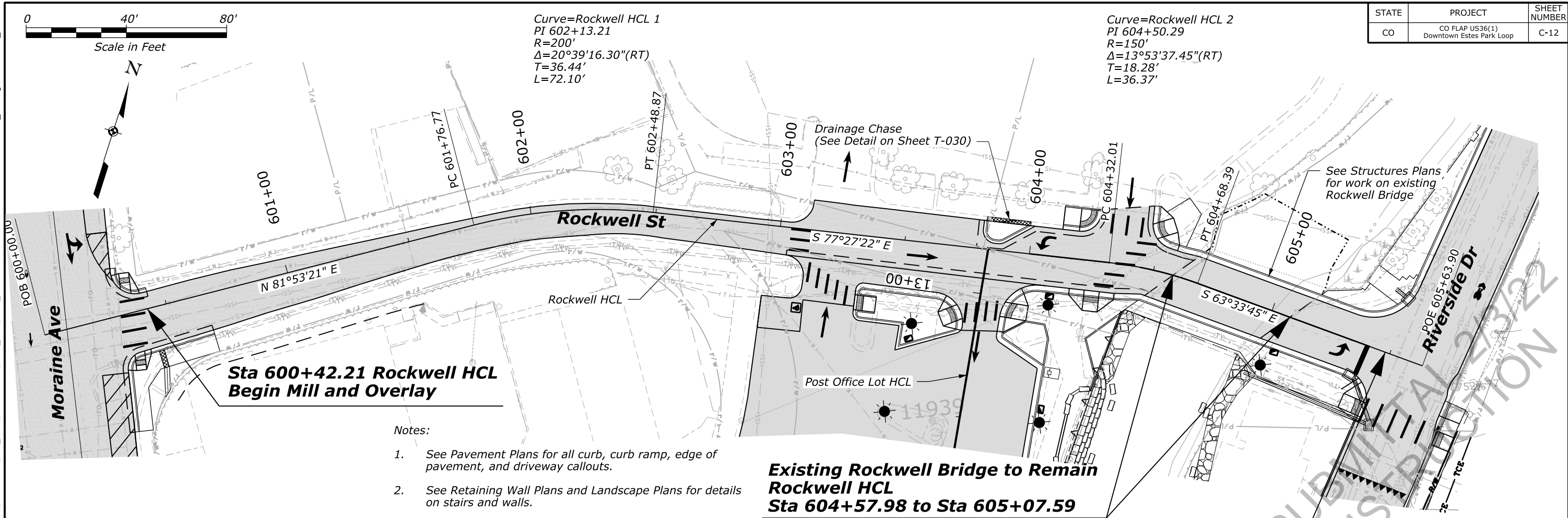
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 NOT FOR CONSTRUCTION

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	C-12



Curve=Rockwell HCL 1
 PI 602+13.21
 R=200'
 $\Delta=20^{\circ}39'16.30''(RT)$
 T=36.44'
 L=72.10'

Curve=Rockwell HCL 2
 PI 604+50.29
 R=150'
 $\Delta=13^{\circ}53'37.45''(RT)$
 T=18.28'
 L=36.37'

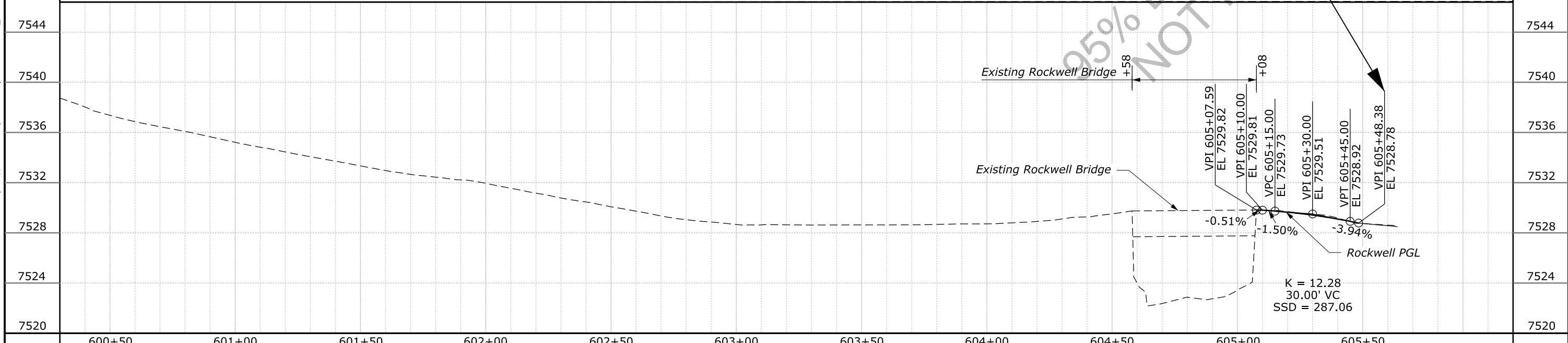


Sta 600+42.21 Rockwell HCL Begin Mill and Overlay

- Notes:
1. See Pavement Plans for all curb, curb ramp, edge of pavement, and driveway callouts.
 2. See Retaining Wall Plans and Landscape Plans for details on stairs and walls.

Superelevation Diagram

- Notes:
1. Cross-slope controlled by CR-10 and CR-11 PGLS.



Sta 605+48.38 Rockwell HCL End Rockwell PGL Control Match Riverside Dr Grade

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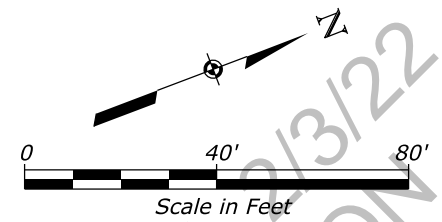
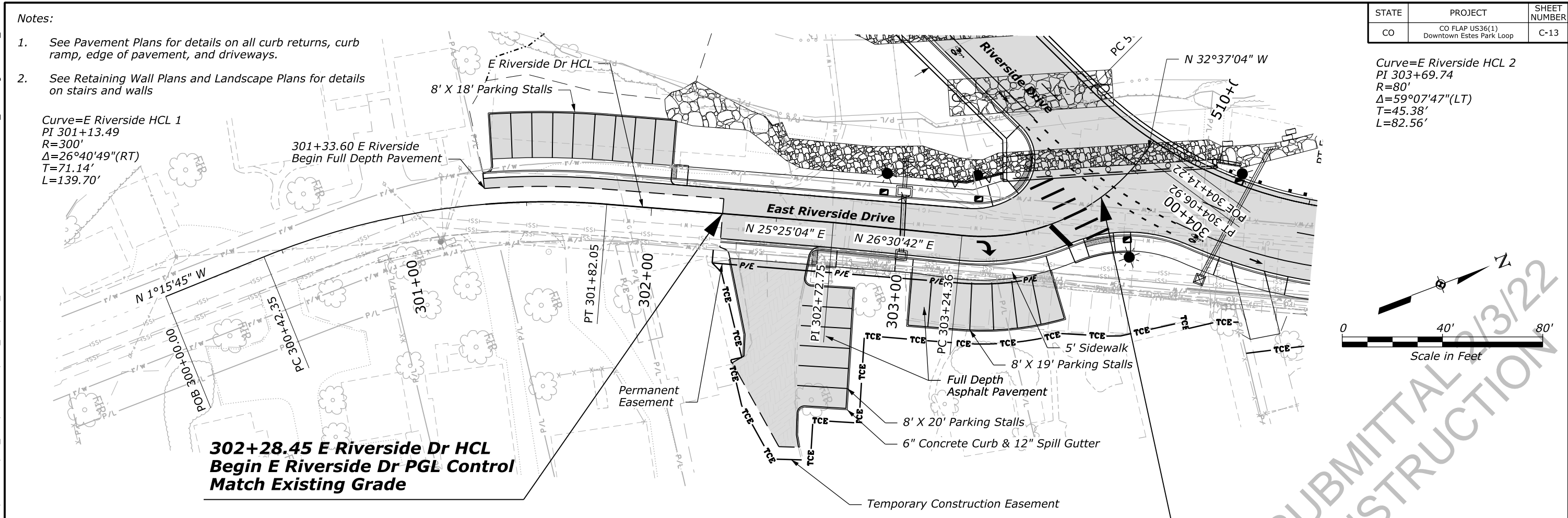
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	C-13

Notes:

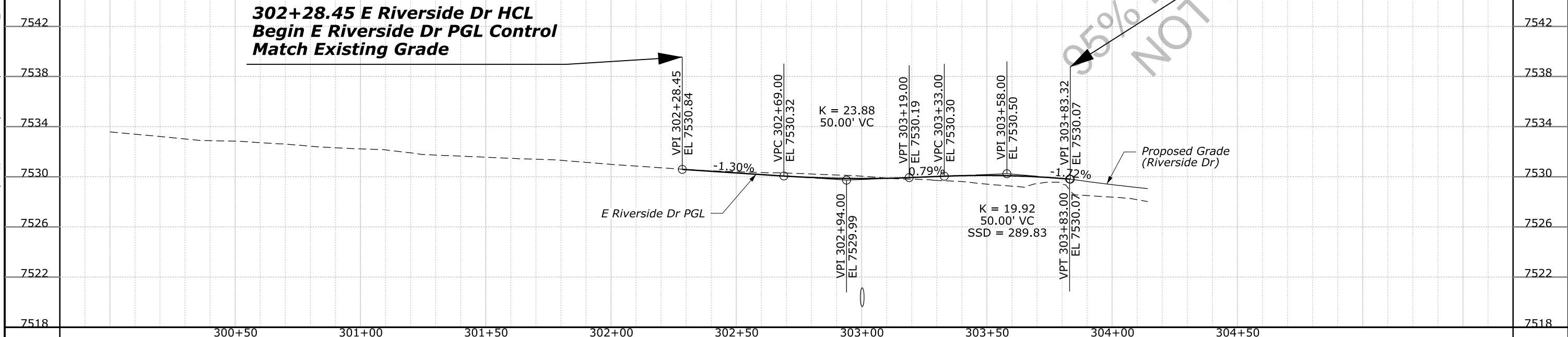
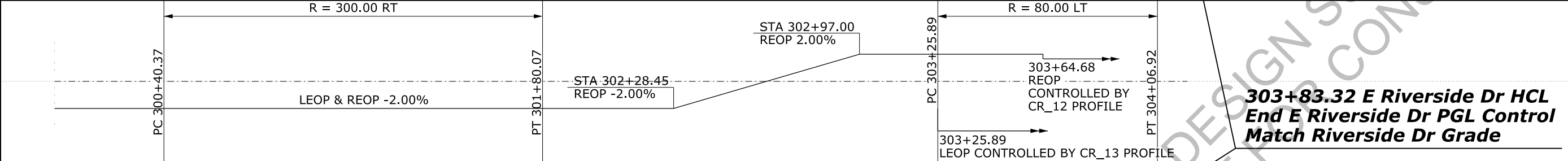
- See Pavement Plans for details on all curb returns, curb ramp, edge of pavement, and driveways.
- See Retaining Wall Plans and Landscape Plans for details on stairs and walls

Curve=E Riverside HCL 1
 PI 301+13.49
 R=300'
 $\Delta=26^\circ40'49''$ (RT)
 T=71.14'
 L=139.70'

Curve=E Riverside HCL 2
 PI 303+69.74
 R=80'
 $\Delta=59^\circ07'47''$ (LT)
 T=45.38'
 L=82.56'



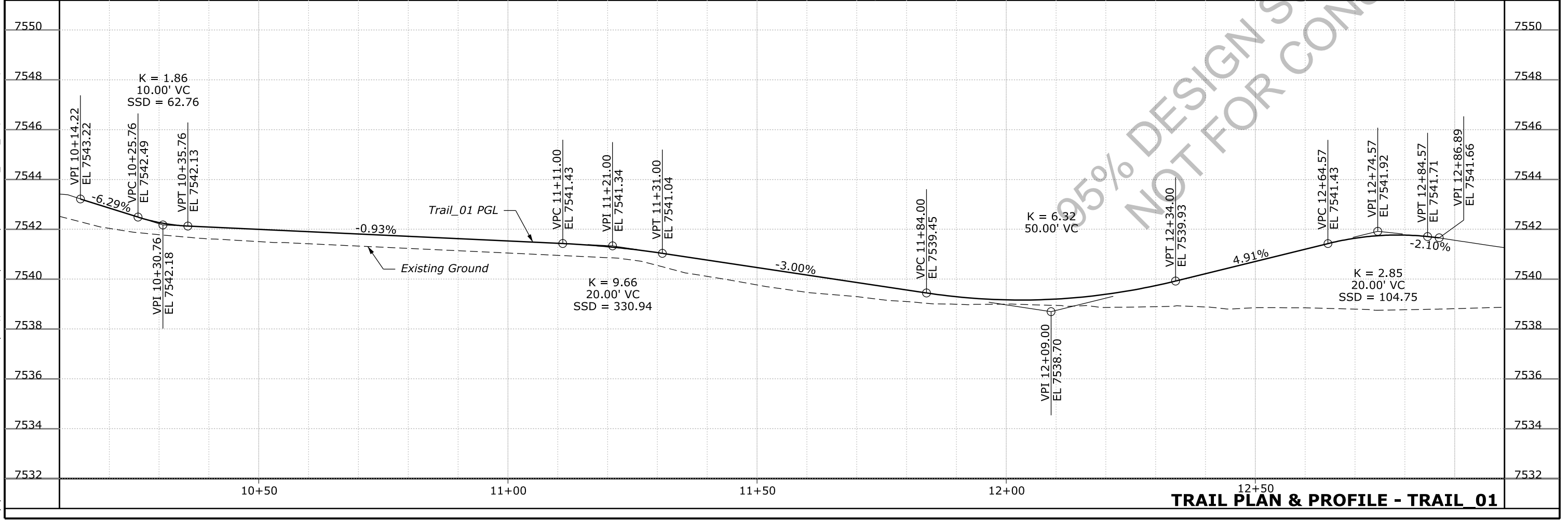
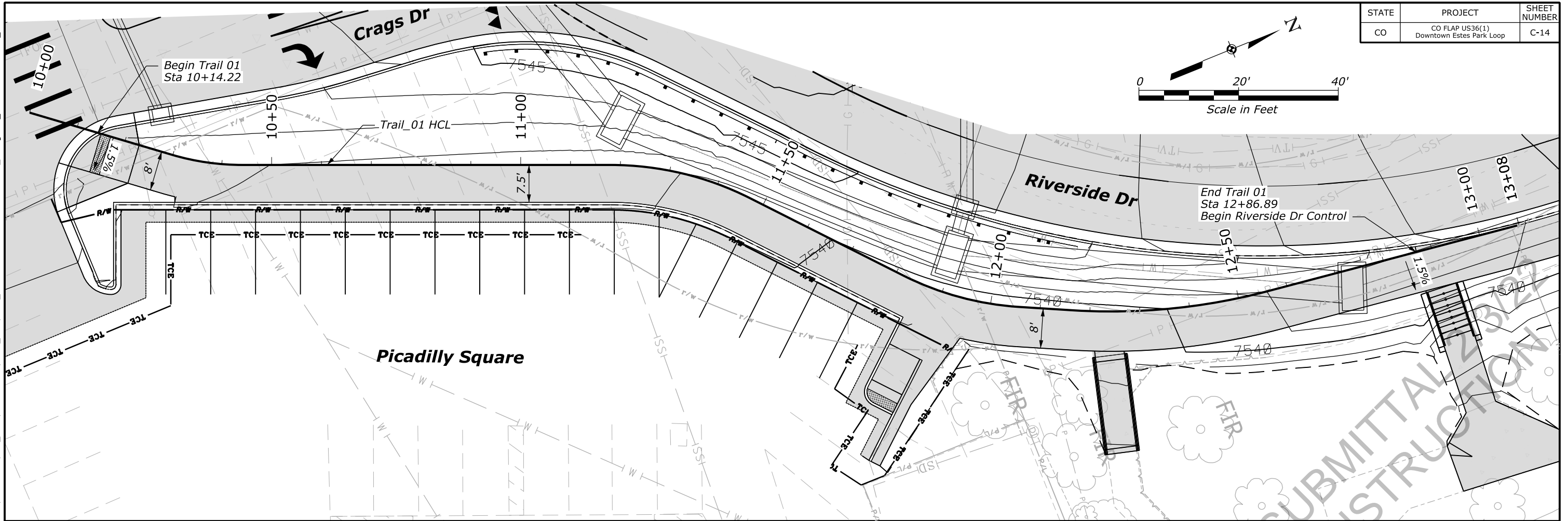
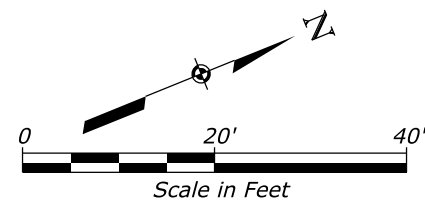
Superelevation Diagram



ROADWAY PLAN & PROFILE - E RIVERSIDE DR

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	C-14



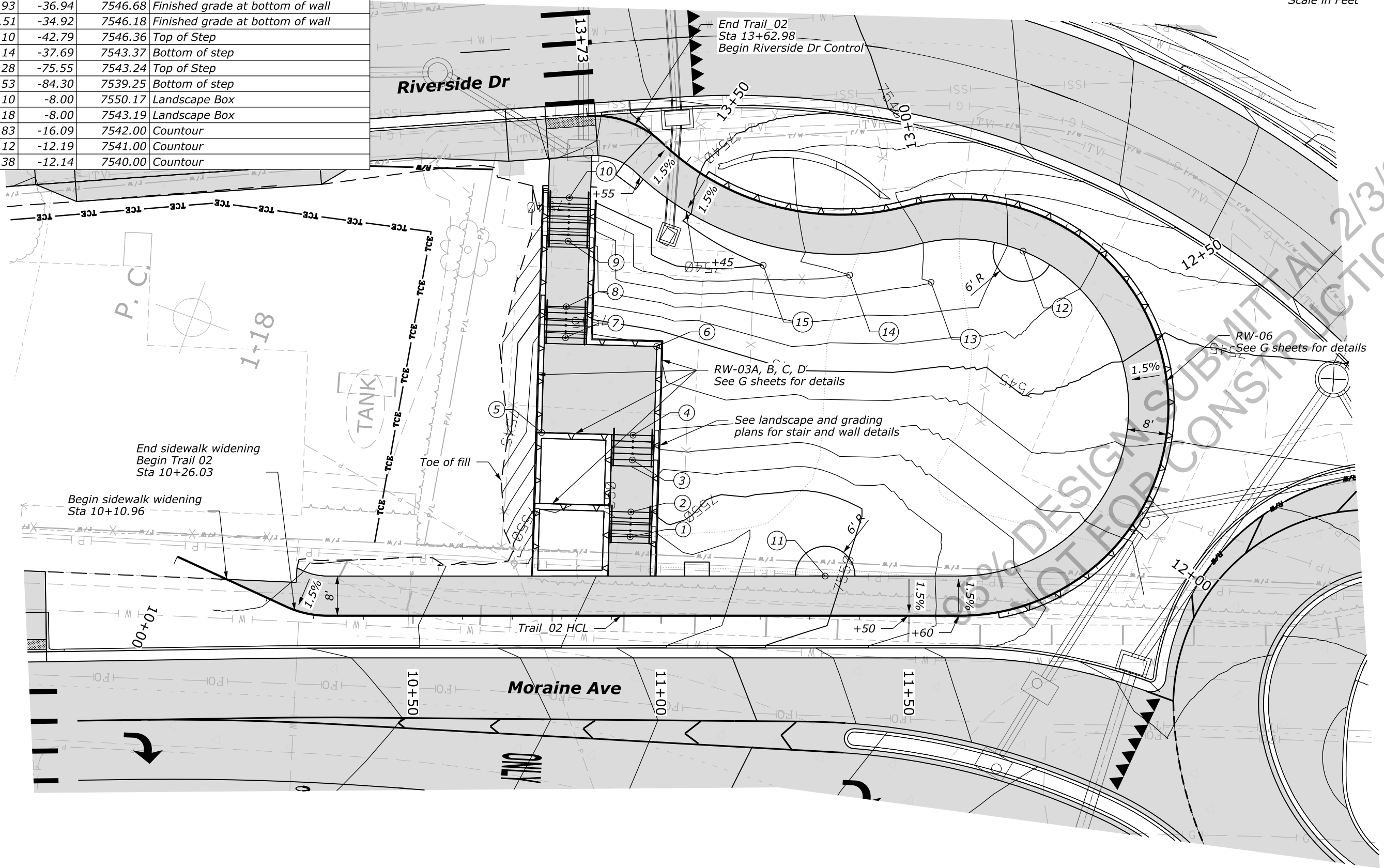
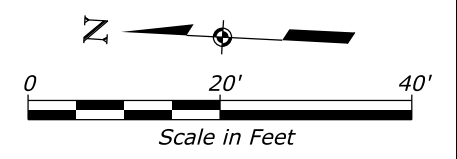
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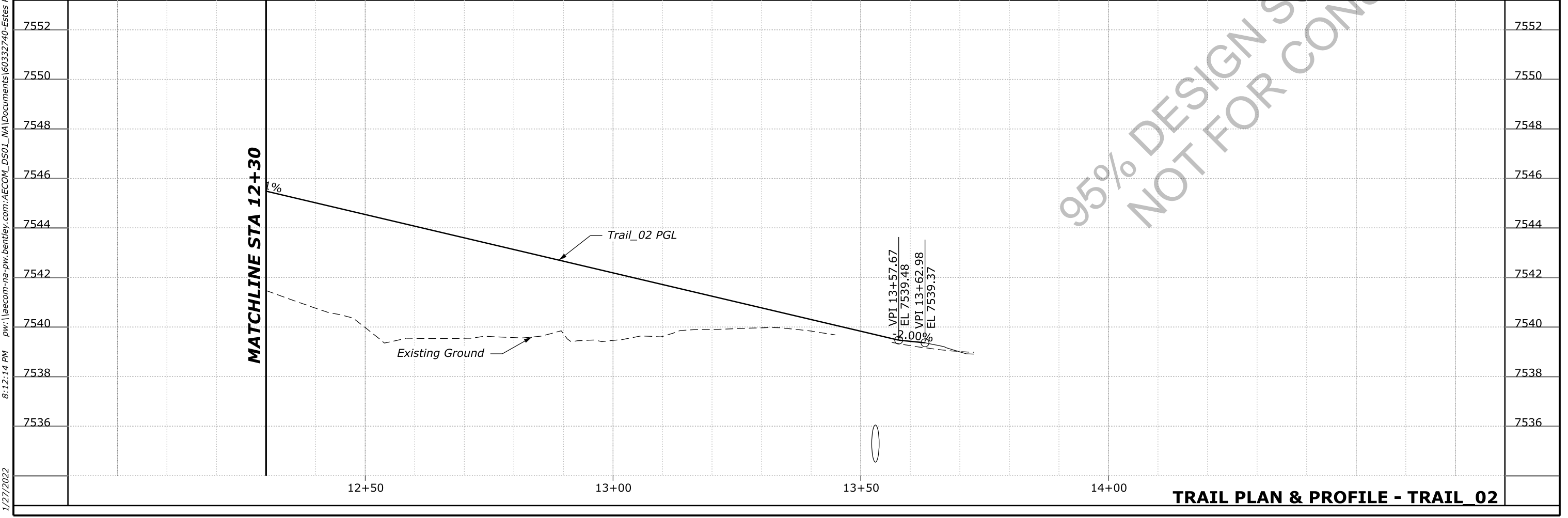
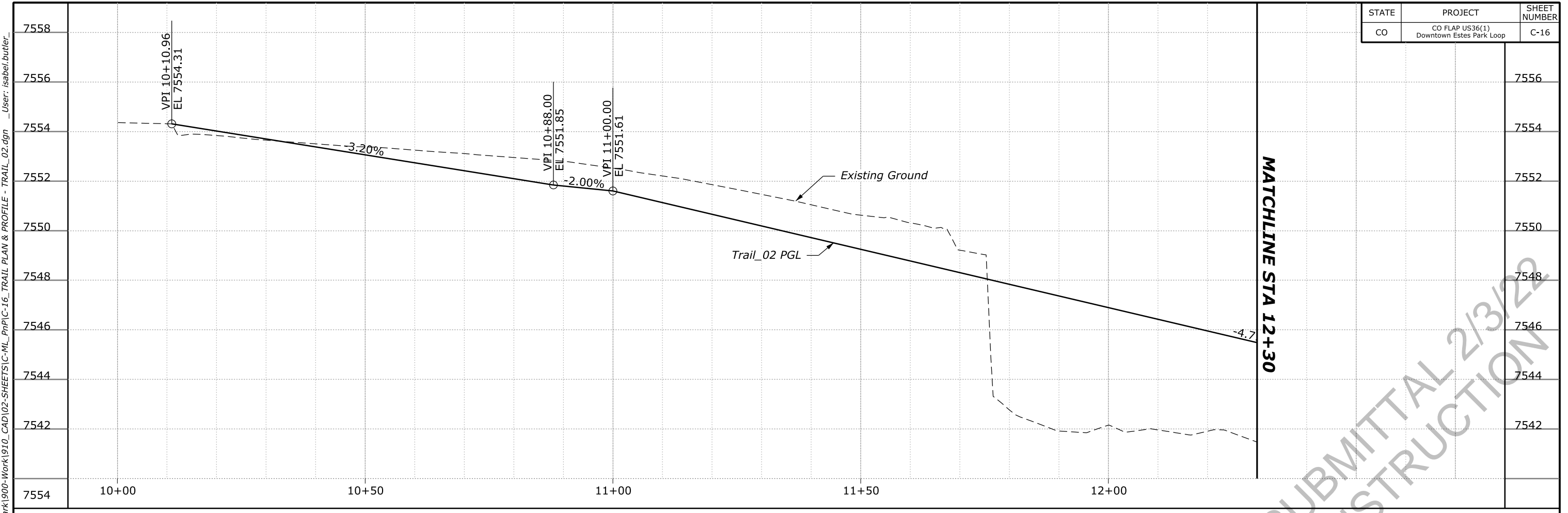
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POINT	STA	OFFSET	ELEVATION	POINT DESCRIPTION
1	10+93.78	-15.93	7551.66	Top of Step
2	10+93.93	-20.92	7549.16	Bottom of step
3	10+94.22	-31.42	7548.97	Top of Step
4	10+94.37	-36.42	7546.56	Bottom of step
5	10+75.93	-36.94	7546.68	Finished grade at bottom of wall
6	13+39.51	-34.92	7546.18	Finished grade at bottom of wall
7	13+49.10	-42.79	7546.36	Top of Step
8	13+51.14	-37.69	7543.37	Bottom of step
9	10+81.28	-75.55	7543.24	Top of Step
10	10+81.53	-84.30	7539.25	Bottom of step
11	11+33.10	-8.00	7550.17	Landscape Box
12	12+76.18	-8.00	7543.19	Landscape Box
13	13+01.83	-16.09	7542.00	Countour
14	13+15.12	-12.19	7541.00	Countour
15	13+29.38	-12.14	7540.00	Countour

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	C-15



TRAIL PLAN & PROFILE - TRAIL_02

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	C-16

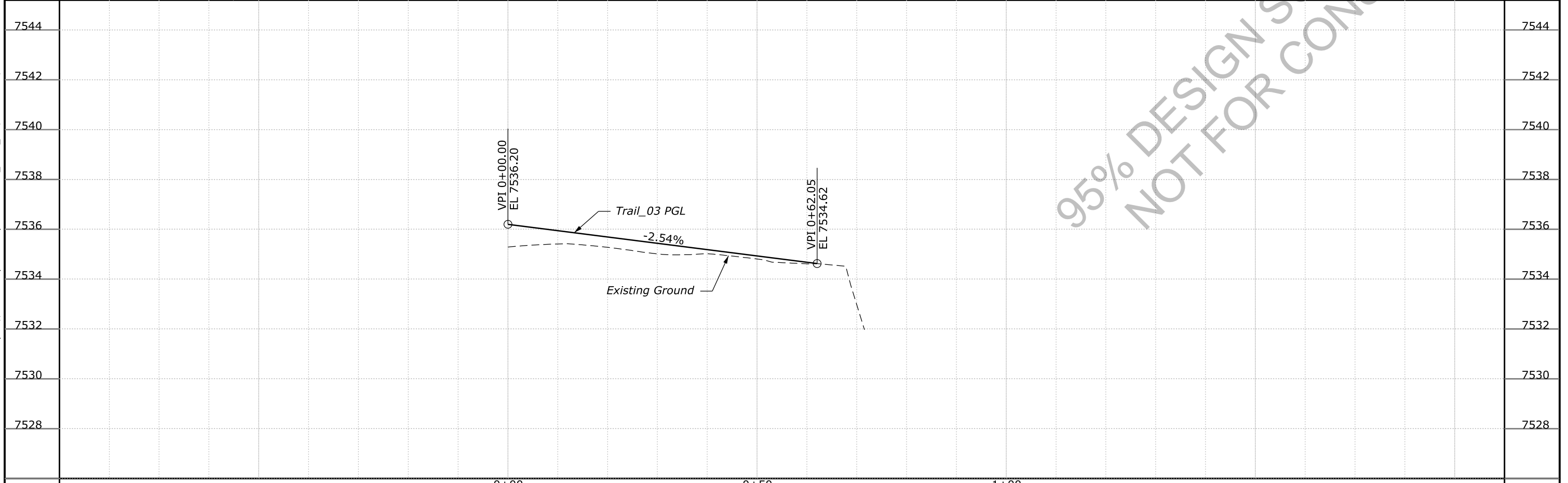
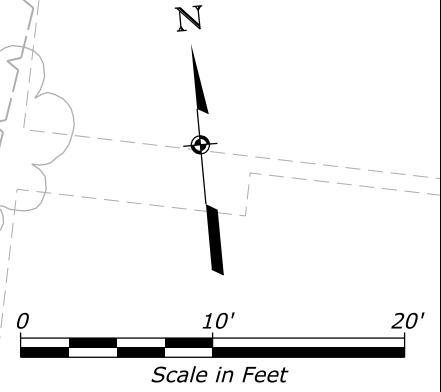
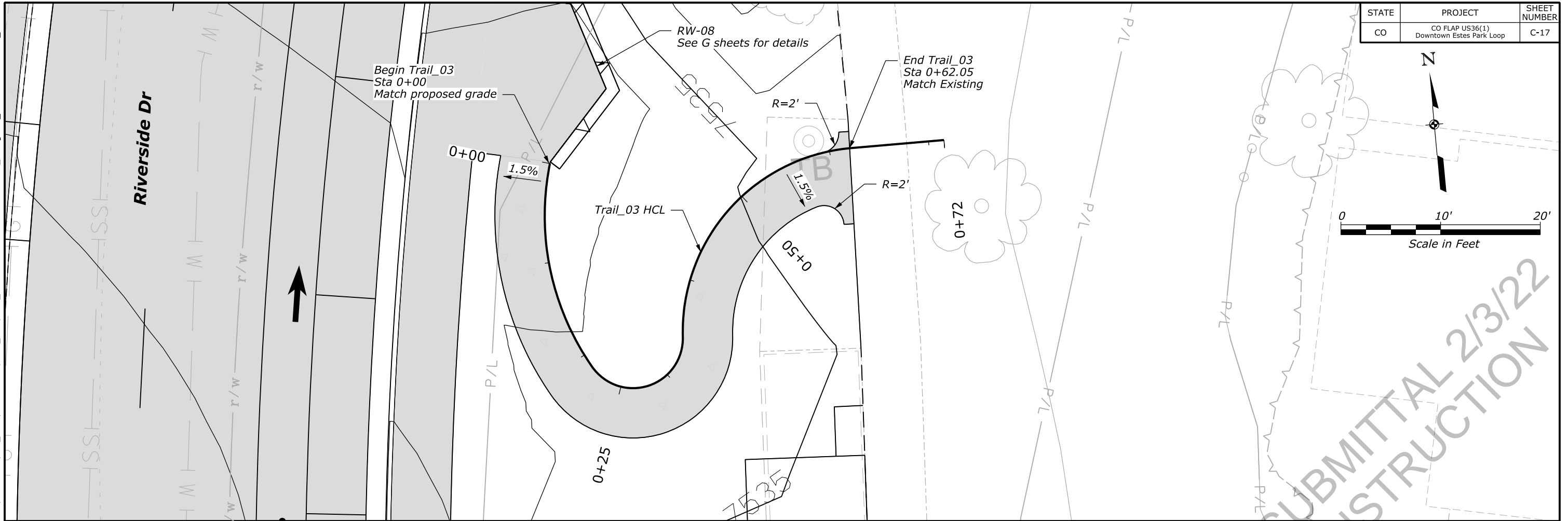


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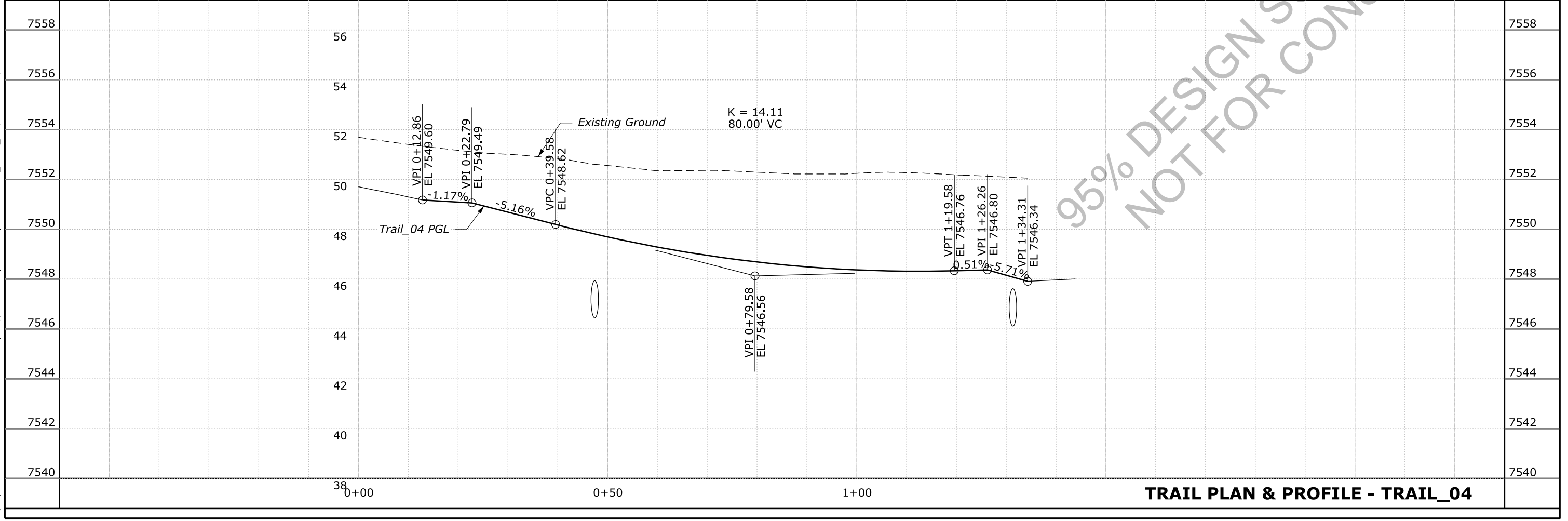
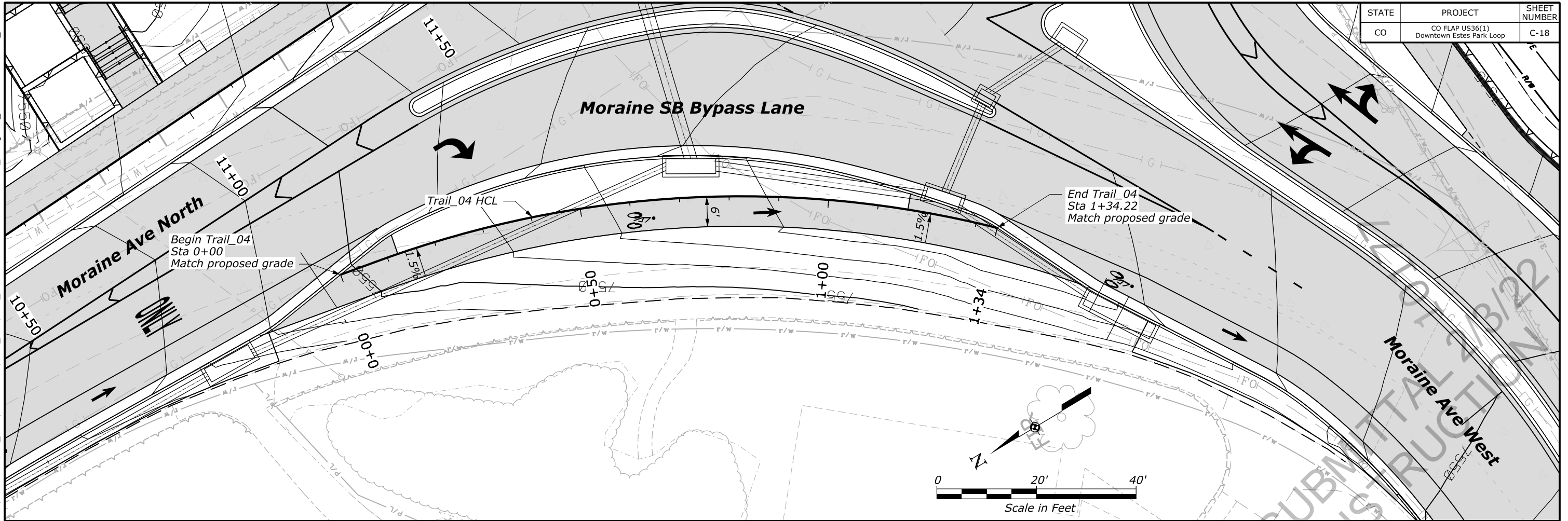
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	C-17



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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	C-18

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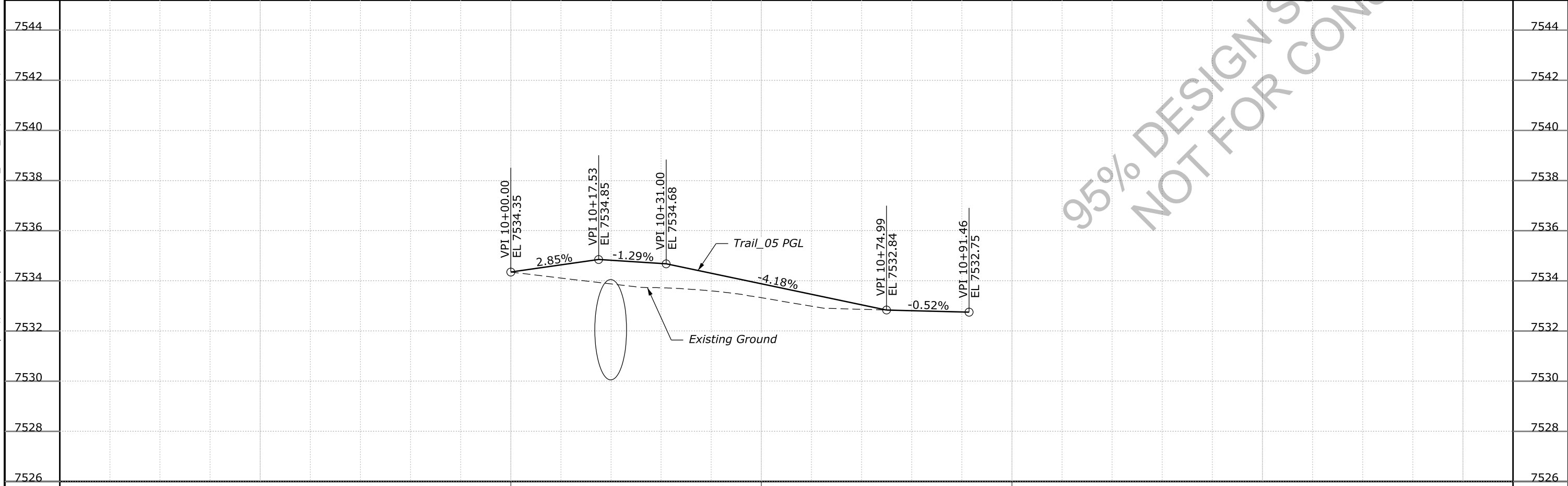
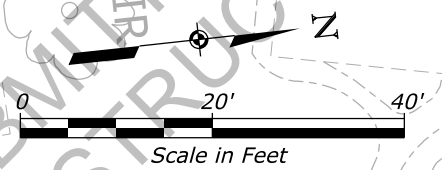
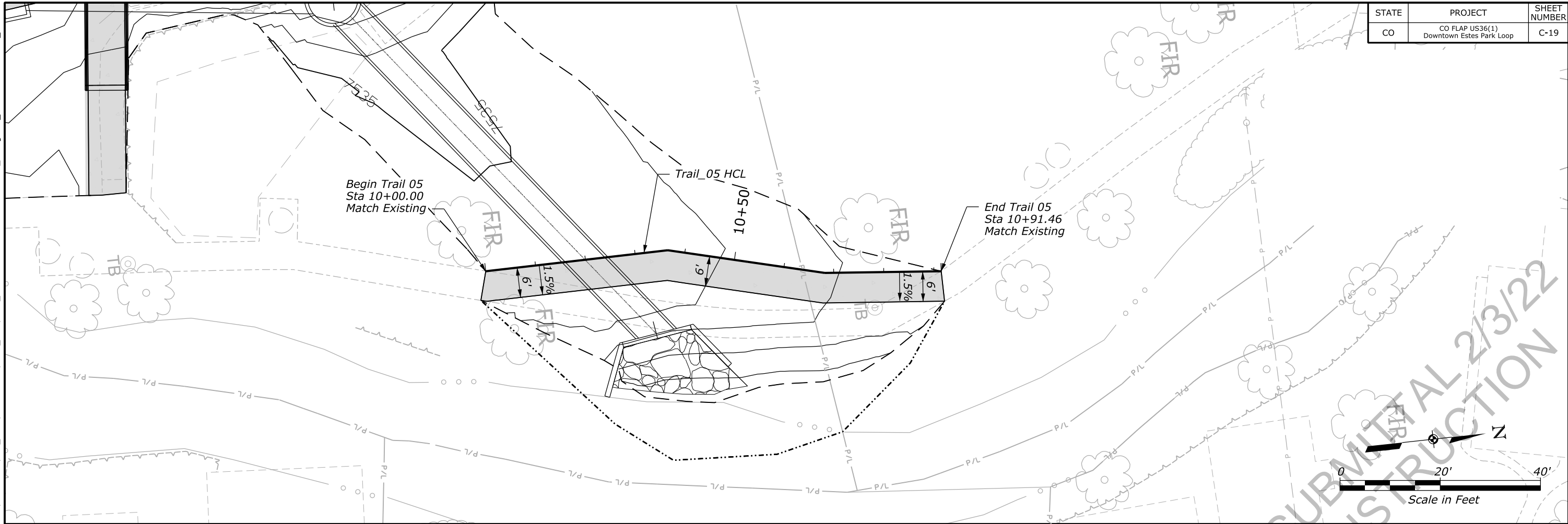


TRAIL PLAN & PROFILE - TRAIL_04

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	C-19

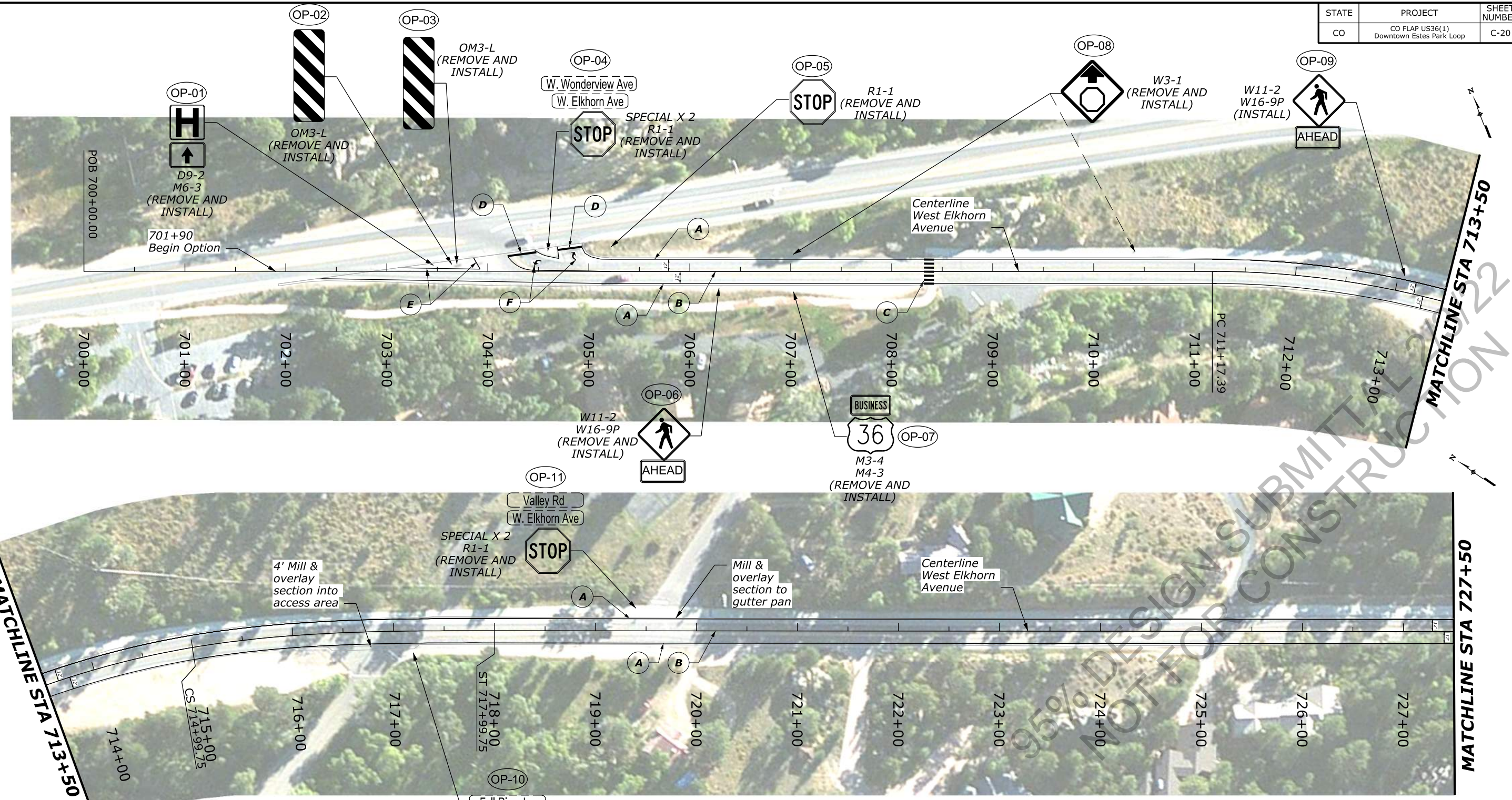
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 NOT FOR CONSTRUCTION

TRAIL PLAN & PROFILE - TRAIL 05

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	C-20



- STRIPING LEGEND:
- (A) Edge Line White, Solid, 6" Wide
 - (B) Center Lines Double Yellow, Solid, 4" Wide
 - (C) Crosswalk Bar White, Solid, 1' x 10'
 - (D) Stop Line White, 24" Wide
 - (E) Channelizing Line White, 8" Wide
 - (F) Arrow Pavement Marking
 - (G) Sharrow Bike Pavement Marking
- Scale in Feet
-

Notes:

- Proposed striping is shown for illustration only and should match existing conditions except for the additions of pedestrian crossing and "sharrow" pavement marking additions.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

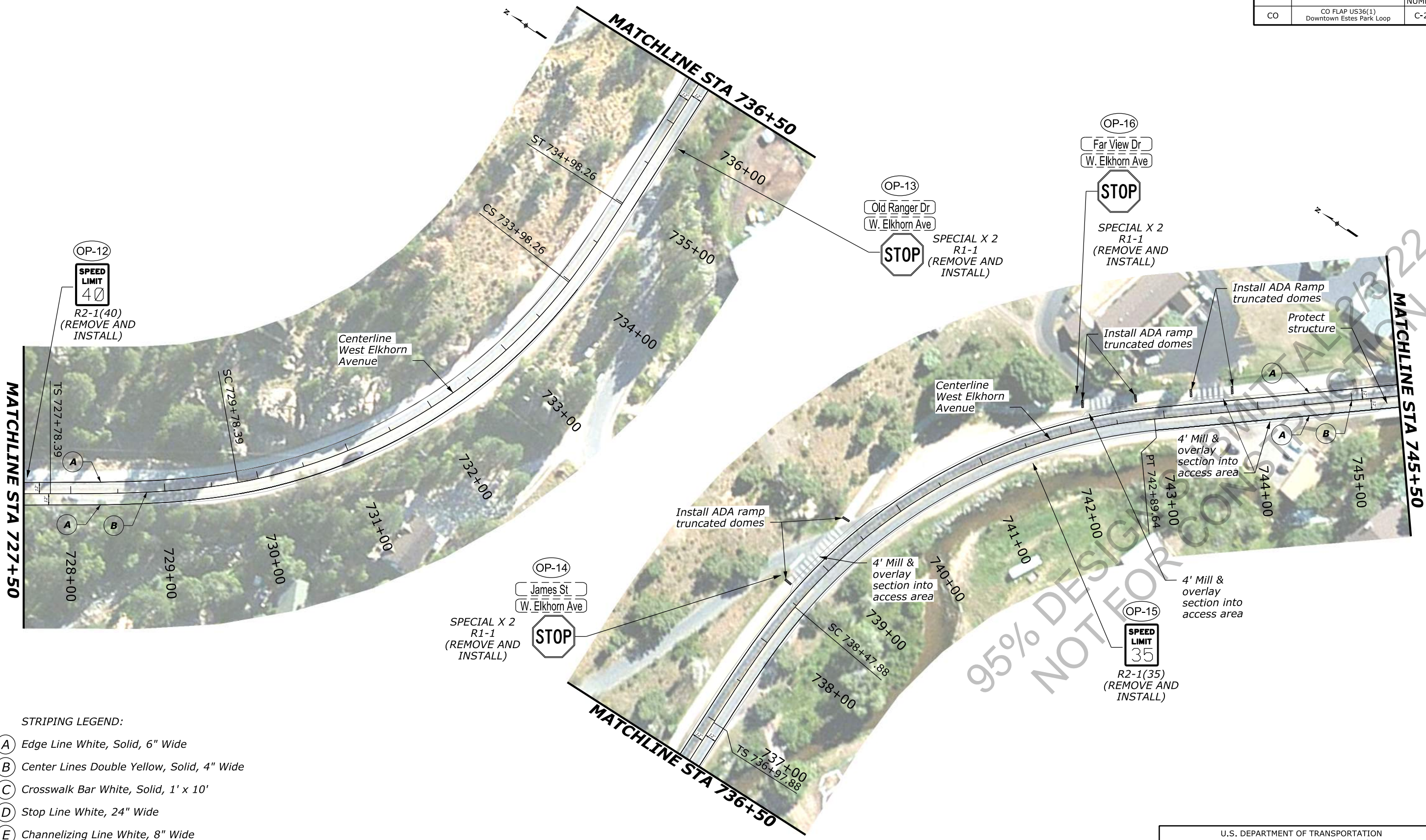
**ROADWAY PLANS
WEST ELKHORN AVENUE**

OPTION X

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2/1/2022

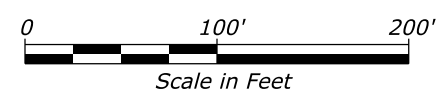
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	C-21



- STRIPING LEGEND:**
- (A) Edge Line White, Solid, 6" Wide
 - (B) Center Lines Double Yellow, Solid, 4" Wide
 - (C) Crosswalk Bar White, Solid, 1' x 10'
 - (D) Stop Line White, 24" Wide
 - (E) Channelizing Line White, 8" Wide
 - (F) Arrow Pavement Marking
 - (G) Sharrow Bike Pavement Marking

Notes:

1. Proposed striping is shown for illustration only and should match existing conditions except for the additions of pedestrian crossing and "sharrow" pavement marking additions.



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

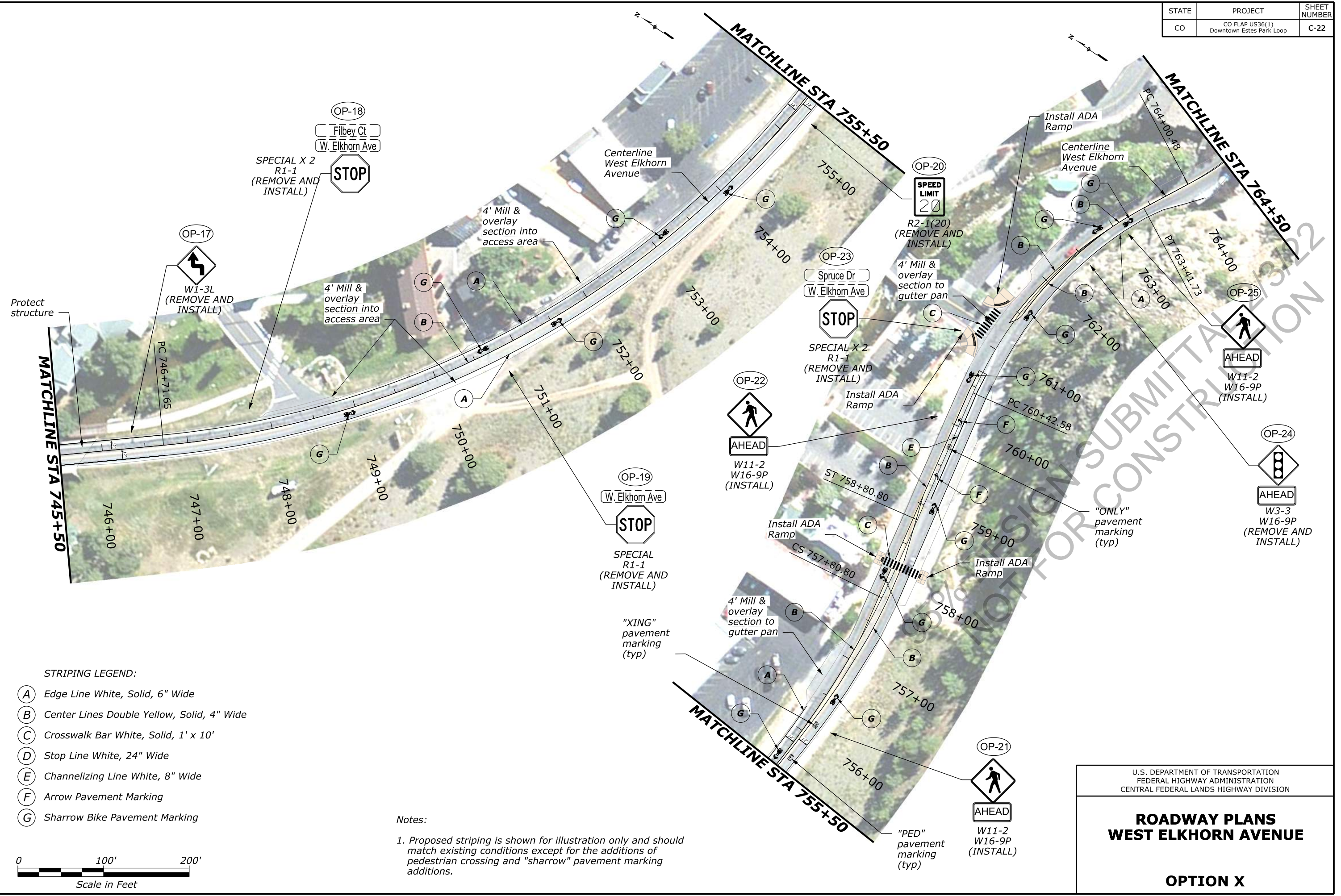
**ROADWAY PLANS
WEST ELKHORN AVENUE**

OPTION X

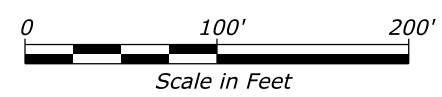
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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	C-22

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- STRIPING LEGEND:**
- (A) Edge Line White, Solid, 6" Wide
 - (B) Center Lines Double Yellow, Solid, 4" Wide
 - (C) Crosswalk Bar White, Solid, 1' x 10'
 - (D) Stop Line White, 24" Wide
 - (E) Channelizing Line White, 8" Wide
 - (F) Arrow Pavement Marking
 - (G) Sharrow Bike Pavement Marking



Notes:

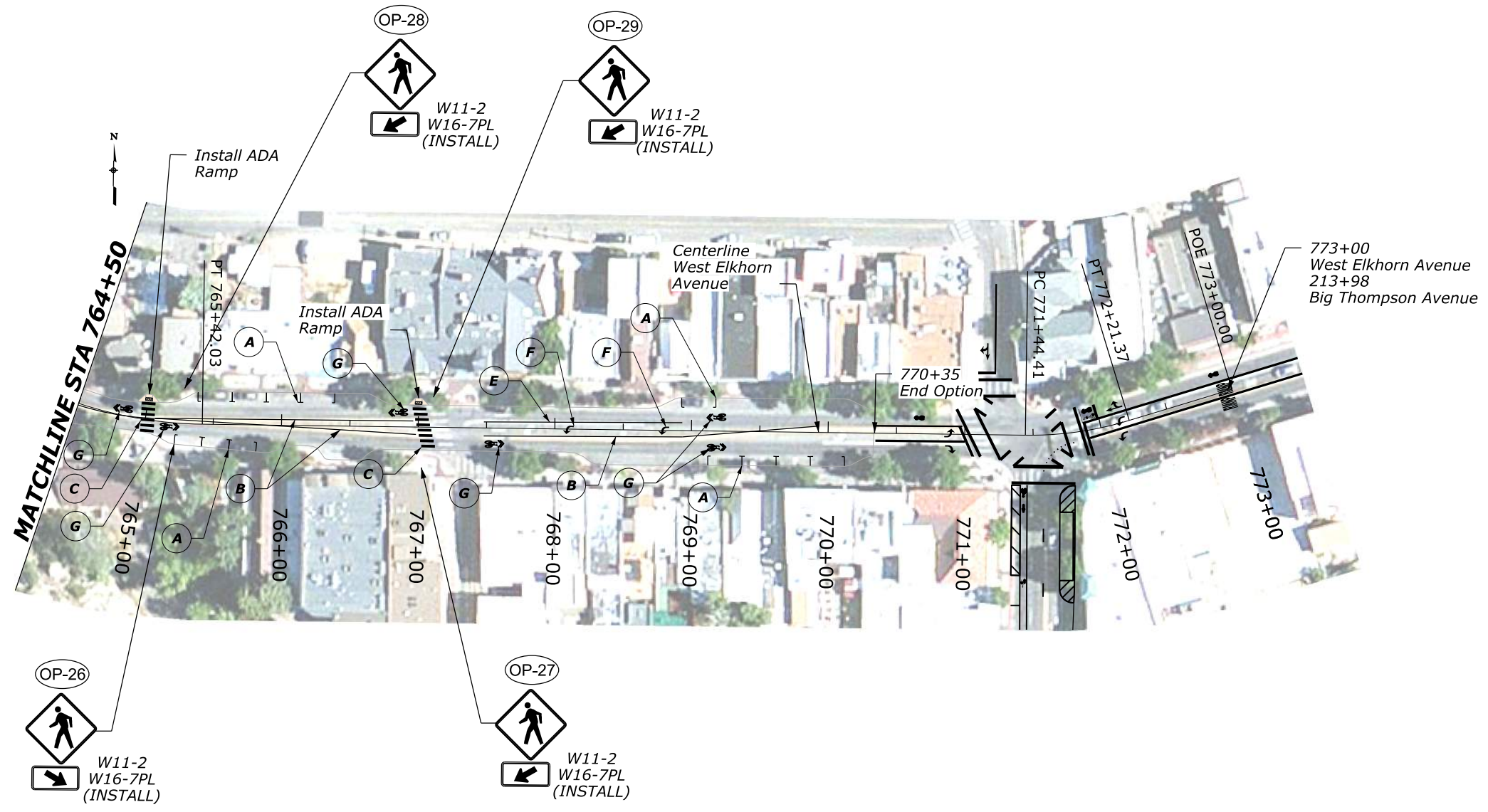
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U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**ROADWAY PLANS
WEST ELKHORN AVENUE**

OPTION X

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	C-23



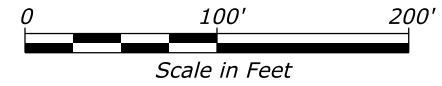
95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

STRIPING LEGEND:

- (A) Edge Line White, Solid, 6" Wide
- (B) Center Lines Double Yellow, Solid, 4" Wide
- (C) Crosswalk Bar White, Solid, 1' x 10'
- (D) Stop Line White, 24" Wide
- (E) Channelizing Line White, 8" Wide
- (F) Arrow Pavement Marking
- (G) Sharrow Bike Pavement Marking

Notes:

1. Proposed striping is shown for illustration only and should match existing conditions except for the additions of pedestrian crossing and "sharrow" pavement marking additions.



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

ROADWAY PLANS
WEST ELKHORN AVENUE

OPTION X

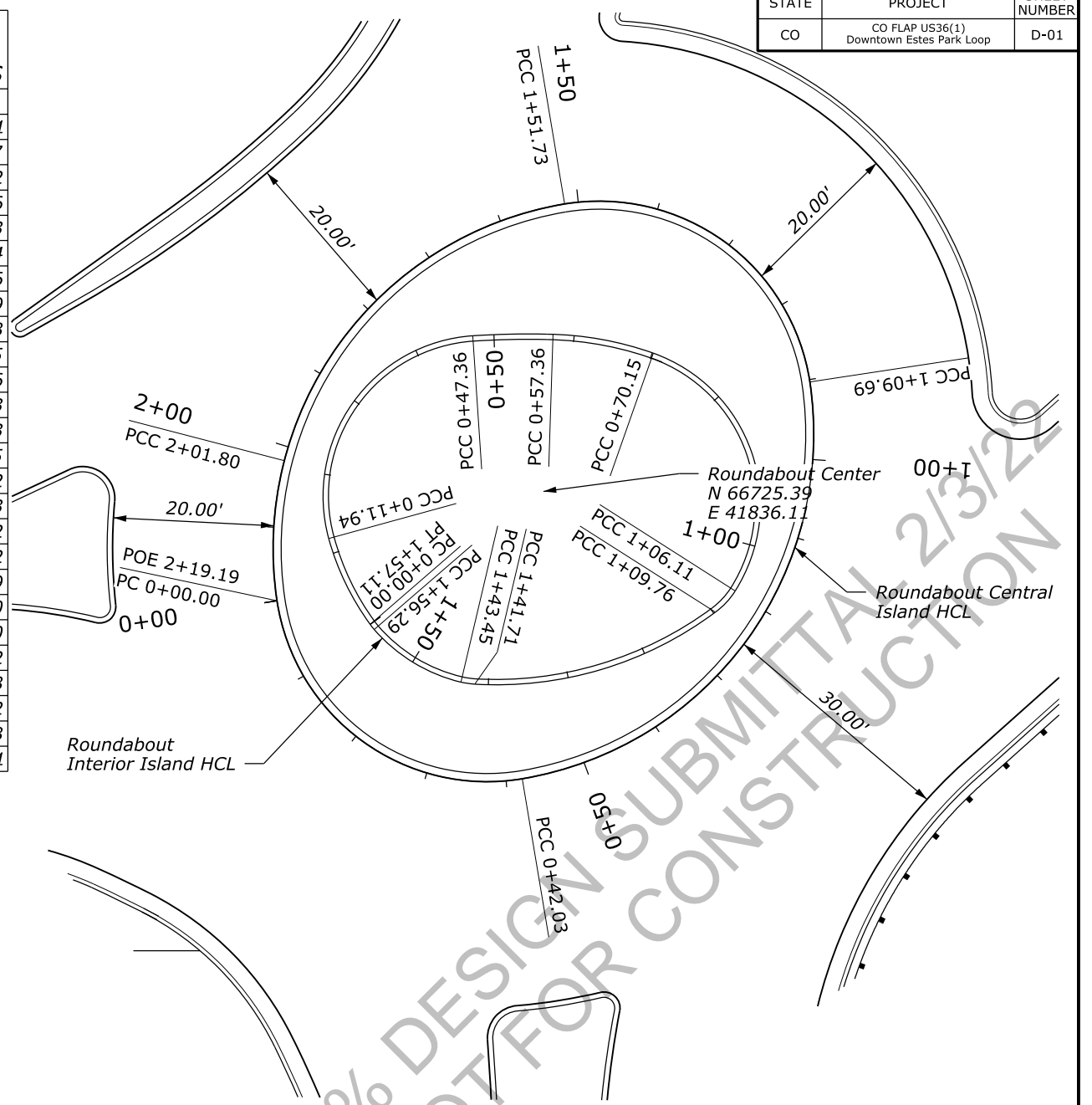
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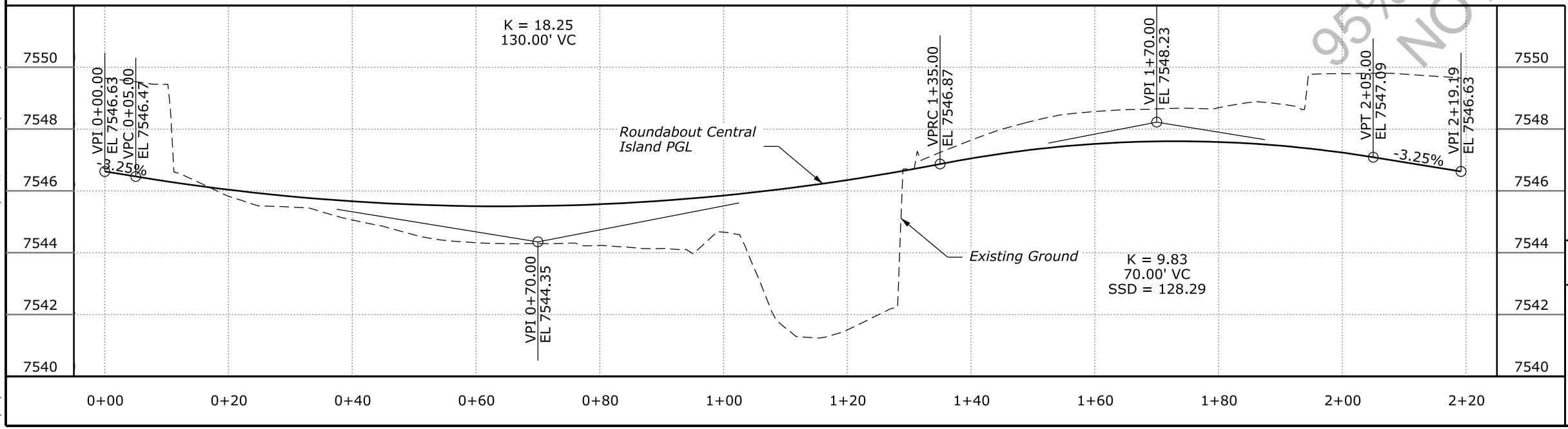
ROUNDABOUT CENTRAL ISLAND HCL								
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00")		
						(STRAIGHT)	(R=STARTING ANGLE) (R=END ANGLE)	
PC	0+00.00	66711.76	41802.91					
				R = -26.50	42.03		S 8°37'14" E N 80°29'59" E	
PCC	0+42.03	66689.6	41833.48					
				R = -43.50	67.66		N 80°29'59" E N 8°37'14" W	
PCC	1+09.69	66739.02	41869.31					
				R = -26.50	42.03		N 8°37'14" W S 80°29'59" W	
PCC	1+51.73	66761.18	41838.73					
				R = -43.50	50.07		S 80°29'59" W S 14°32'59" W	
PCC	2+01.80	66729.01	41803.76					
				R = -43.50	17.39		S 14°16'57" W S 8°37'14" E	
PT	2+19.19	66711.76	41802.91					

ROUNDABOUT INTERIOR ISLAND HCL								
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00")		
						(STRAIGHT)	(R=STARTING ANGLE) (R=END ANGLE)	
PC	0+00.00	66708.83	41814.51					
				R = +33.00	11.94		N 36°03'44" W N 15°20'23" W	
PCC	0+11.94	66719.53	41809.36					
				R = +20.00	35.42		N 15°20'23" W N 86°08'22" E	
PCC	0+47.36	66744.77	41827.3					
				R = +100.88	10		N 86°08'22" E S 88°10'56" E	
PCC	0+57.36	66744.95	41837.29					
				R = +41.49	12.79		S 88°10'56" E S 70°31'04" E	
PCC	0+70.15	66742.6	41849.82					
				R = +20.00	35.96		S 70°31'04" E S 32°30'05" W	
PCC	1+06.11	66713	41860.01					
				R = +10.00	3.65		S 32°30'05" W S 53°24'00" W	
PCC	1+09.76	66710.34	41857.54					
				R = +45.83	31.96		S 53°24'00" W N 86°39'06" W	
PCC	1+41.71	66701.38	41827.54					
				R = +10.00	1.74		N 86°39'06" W N 76°41'54" W	
PCC	1+43.45	66701.63	41825.82					
				R = +20.50	12.84		N 76°41'54" W N 40°48'54" W	
PCC	1+56.29	66708.18	41815.02					
				R = +10.00	0.83		N 40°48'54" W N 36°03'44" W	
PT	1+57.11	66708.83	41814.51					

ROUNDABOUT - INTERIOR ISLAND PROPOSED ELEVATIONS	
STATION	ELEVATION
0+00.00	7547.01
0+10.00	7547.37
0+11.94	7547.42
0+20.00	7547.66
0+30.00	7547.93
0+40.00	7548.14
0+47.36	7548.26
0+50.00	7548.29
0+57.36	7548.28
0+60.00	7548.25
0+70.00	7547.46
0+70.15	7547.43
0+80.00	7546.73
0+90.00	7546.35
1+00.00	7546.12
1+06.11	7546.03
1+09.76	7546.02
1+10.00	7546.02
1+20.00	7546.09
1+30.00	7546.20
1+40.00	7546.40
1+41.71	7546.42
1+43.45	7546.48
1+50.00	7546.72
1+56.29	7546.98
1+57.11	7547.01



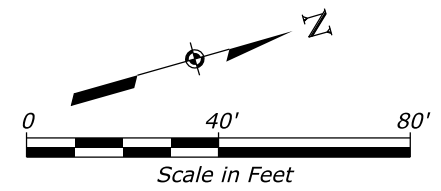
Roundabout Central Island



- Notes:
- See sheet K-01 for plan view.
 - See Roundabout Circulatory Roadway Typical Section on sheet A-08 for additional design information.

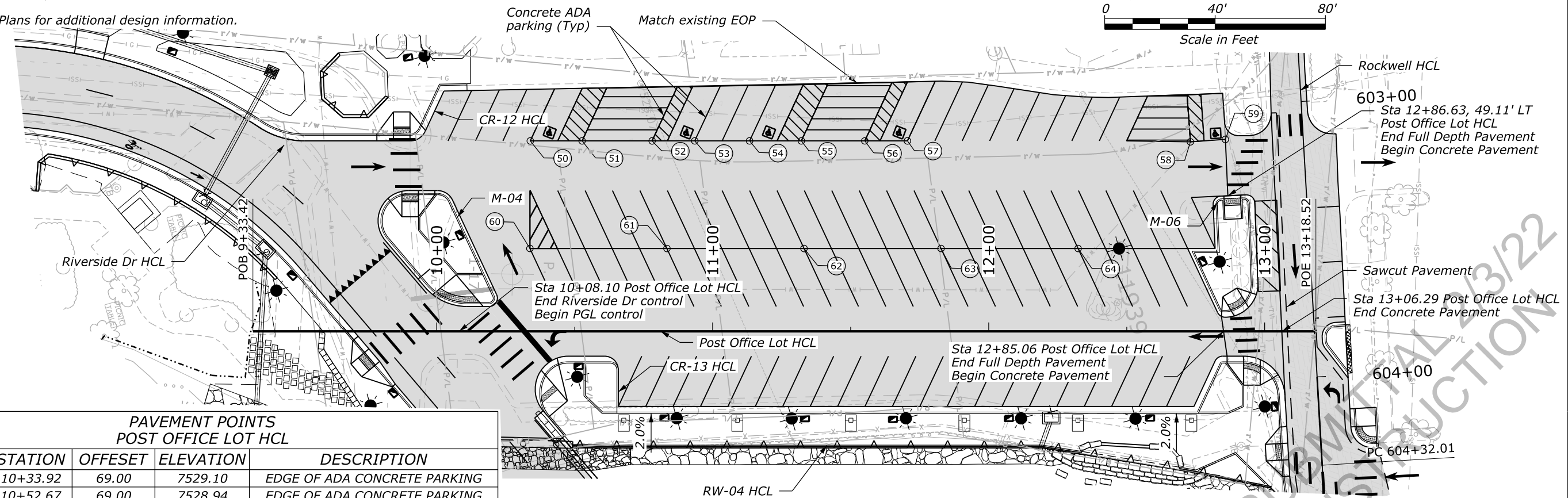
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

ROUNDABOUT CENTRAL ISLAND LAYOUT



Notes:

1. Pavement edge and grading in the parking lot is controlled by Post Office Lot HCL, CR-12 HCL, CR-13 HCL, RW-04 HCL, M-04 HCL, and M-06 HCL.
2. See Pavement Plans for additional design information.



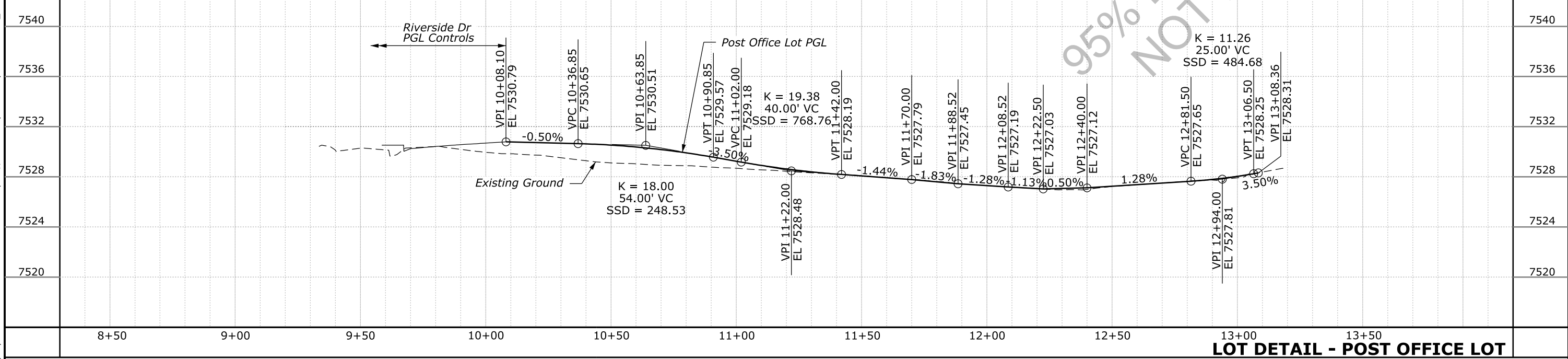
**PAVEMENT POINTS
POST OFFICE LOT HCL**

POINT #	STATION	OFFSEET	ELEVATION	DESCRIPTION
50	10+33.92	69.00	7529.10	EDGE OF ADA CONCRETE PARKING
51	10+52.67	69.00	7528.94	EDGE OF ADA CONCRETE PARKING
52	10+78.05	69.00	7528.77	EDGE OF ADA CONCRETE PARKING
53	10+93.50	69.00	7528.96	EDGE OF ADA CONCRETE PARKING
54	11+13.36	69.00	7528.80	EDGE OF ADA CONCRETE PARKING
55	11+32.12	69.00	7528.74	EDGE OF ADA CONCRETE PARKING
56	11+55.11	69.00	7528.52	EDGE OF ADA CONCRETE PARKING
57	1+70.54	69.00	7528.35	EDGE OF ADA CONCRETE PARKING
58	12+73.06	68.65	7528.14	EDGE OF ADA CONCRETE PARKING
59	12+85.74	69.54	7528.39	EDGE OF ADA CONCRETE PARKING END FULL DEPTH RECONSTRUCTION BEGIN CONCRETE RECONSTRUCTION

**PAVEMENT POINTS
POST OFFICE LOT HCL**

POINT #	STATION	OFFSEET	ELEVATION	DESCRIPTION
60	10+33.78	30.00	7529.69	
61	10+83.43	30.00	7529.50	
62	11+33.08	30.00	7528.68	
63	11+82.73	30.00	7527.85	
64	12+32.39	30.00	7527.34	

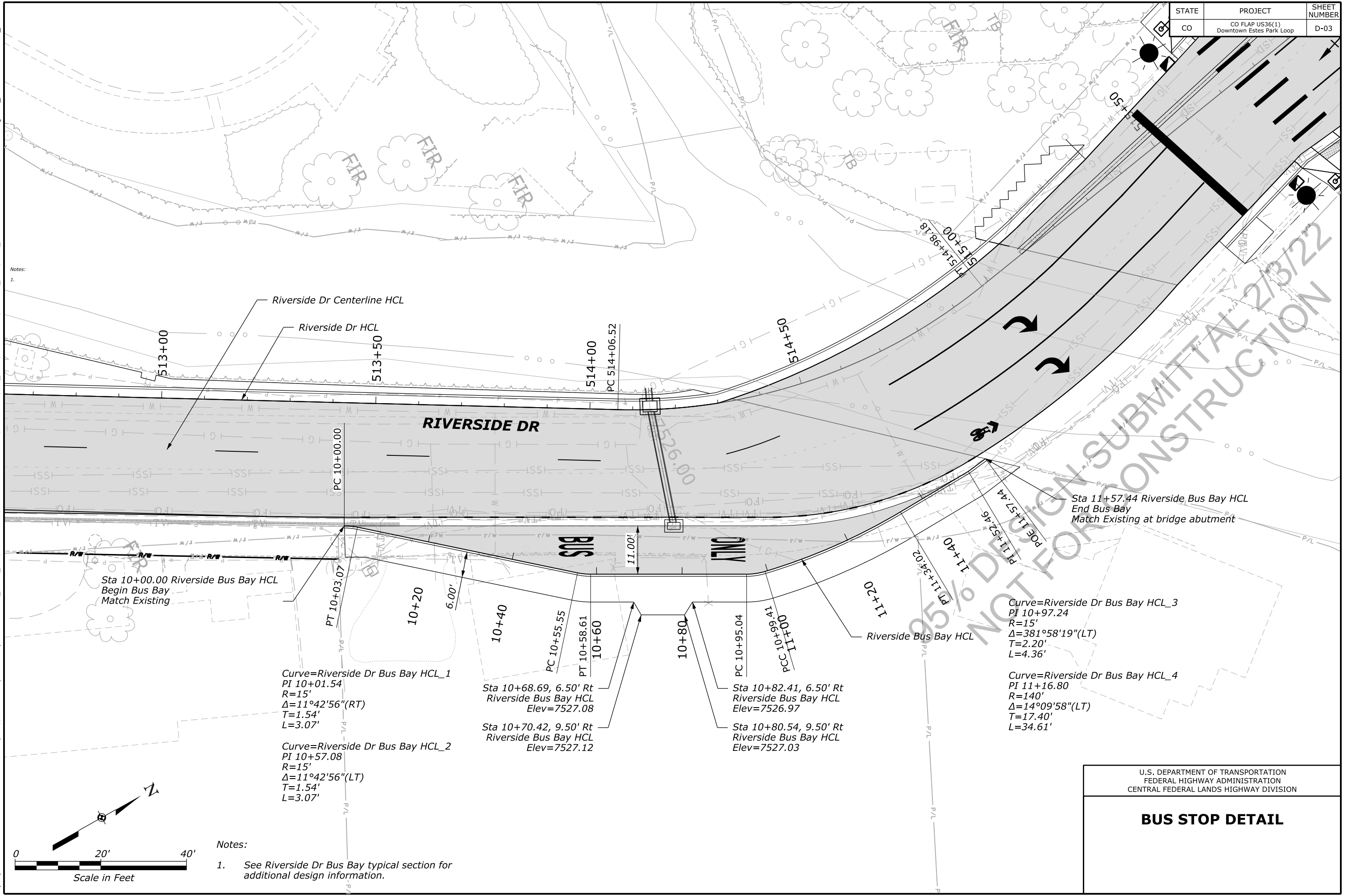
**Superelevation
Diagram**



LOT DETAIL - POST OFFICE LOT

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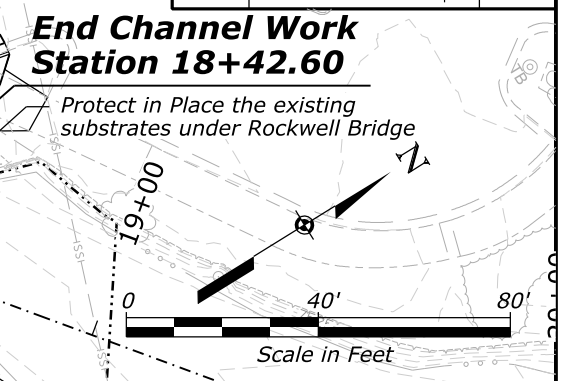
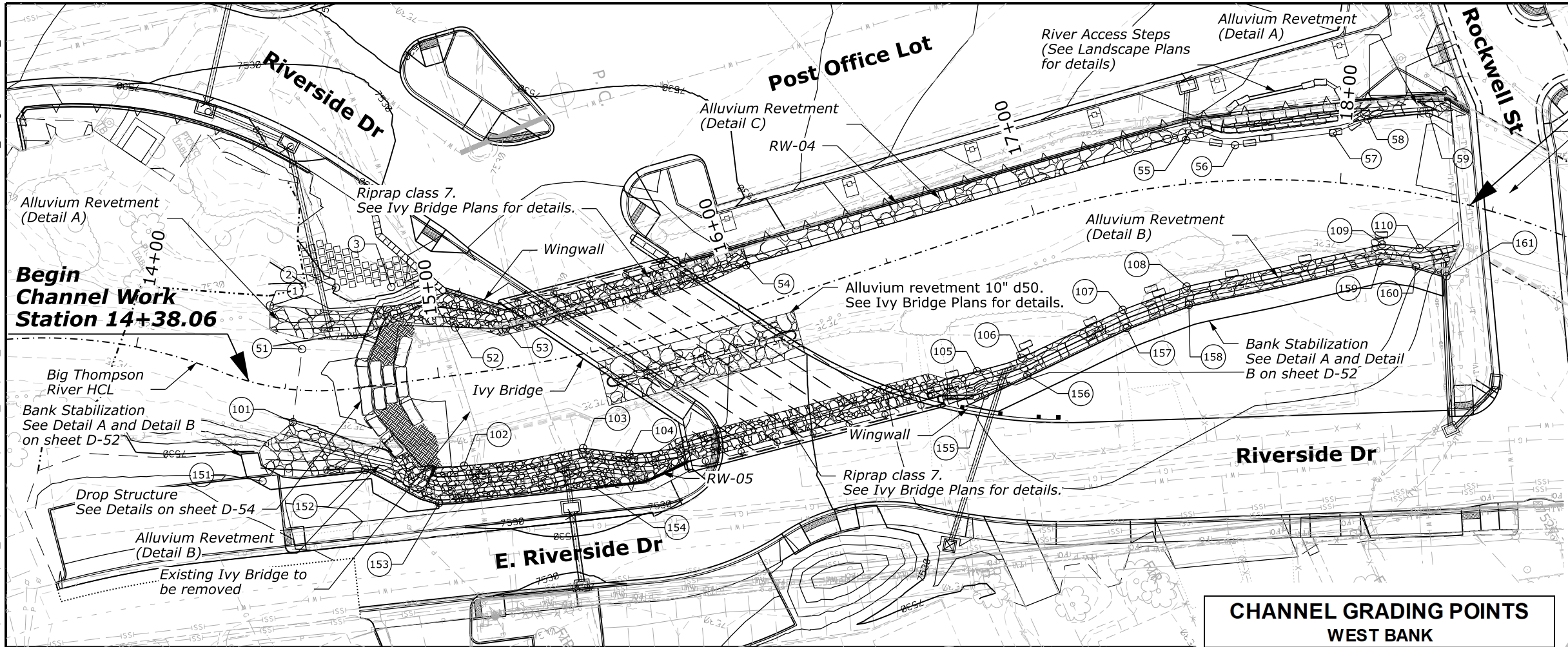
Notes:

1. See Riverside Dr Bus Bay typical section for additional design information.

U.S. DEPARTMENT OF TRANSPORTATION
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 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

BUS STOP DETAIL

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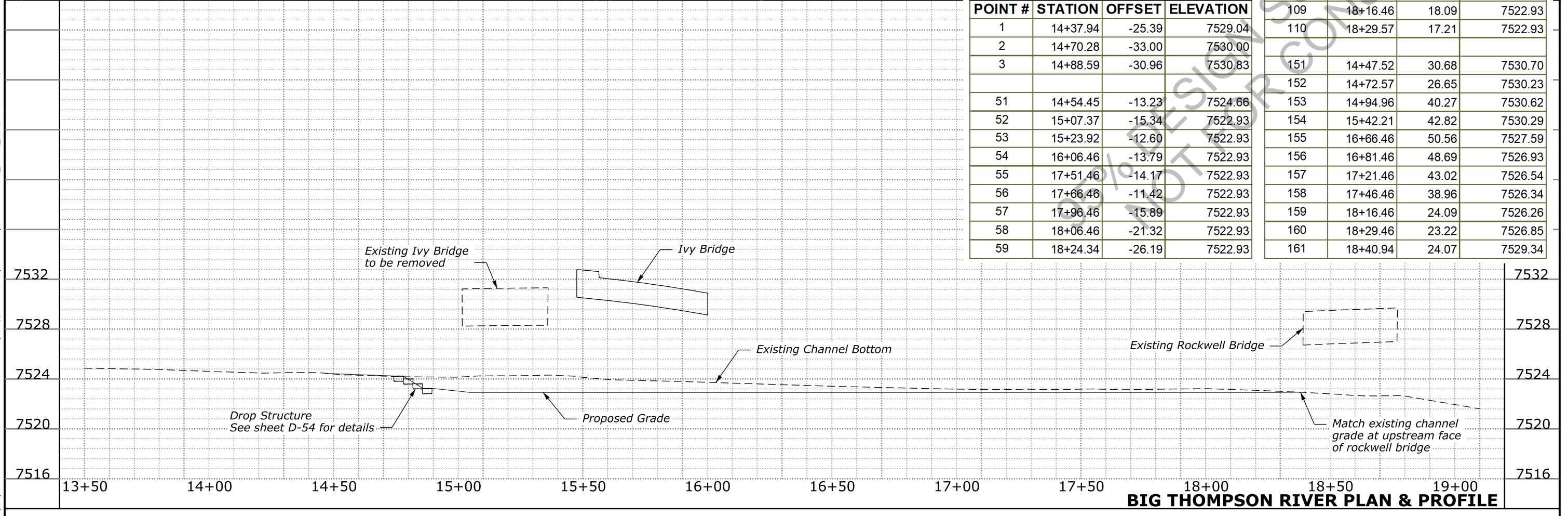


CHANNEL GRADING POINTS WEST BANK

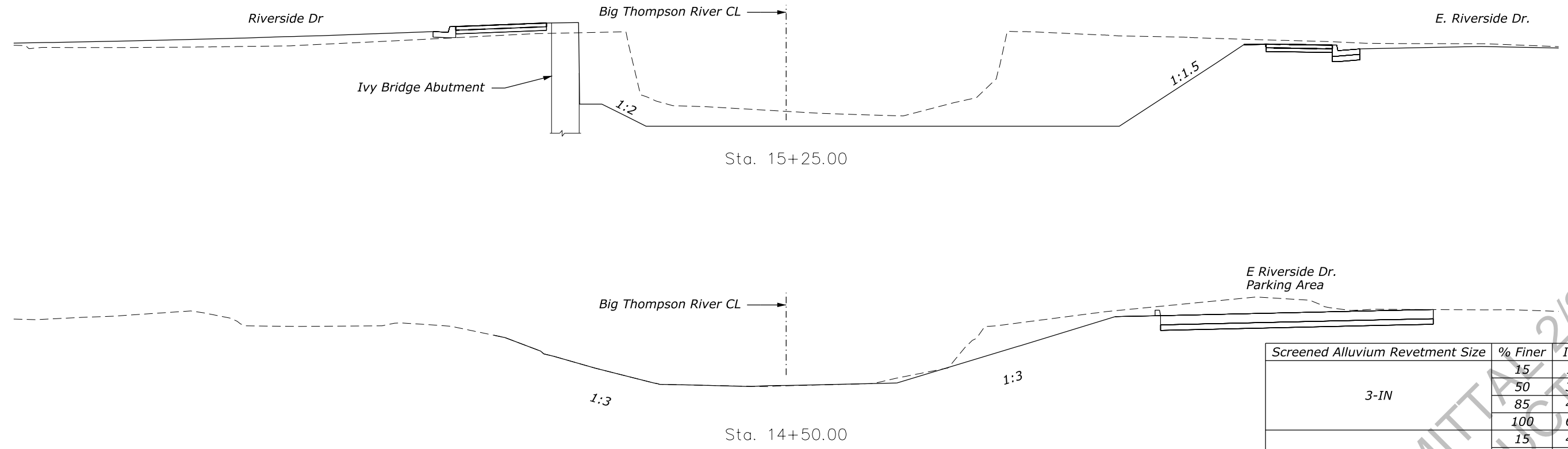
POINT #	STATION	OFFSET	ELEVATION
1	14+37.94	-25.39	7529.04
2	14+70.28	-33.00	7530.00
3	14+88.59	-30.96	7530.83
51	14+54.45	-13.23	7524.66
52	15+07.37	-15.34	7522.93
53	15+23.92	-12.60	7522.93
54	16+06.46	-13.79	7522.93
55	17+51.46	-14.17	7522.93
56	17+66.46	-11.42	7522.93
57	17+96.46	-15.89	7522.93
58	18+06.46	-21.32	7522.93
59	18+24.34	-26.19	7522.93

CHANNEL GRADING POINTS EAST BANK

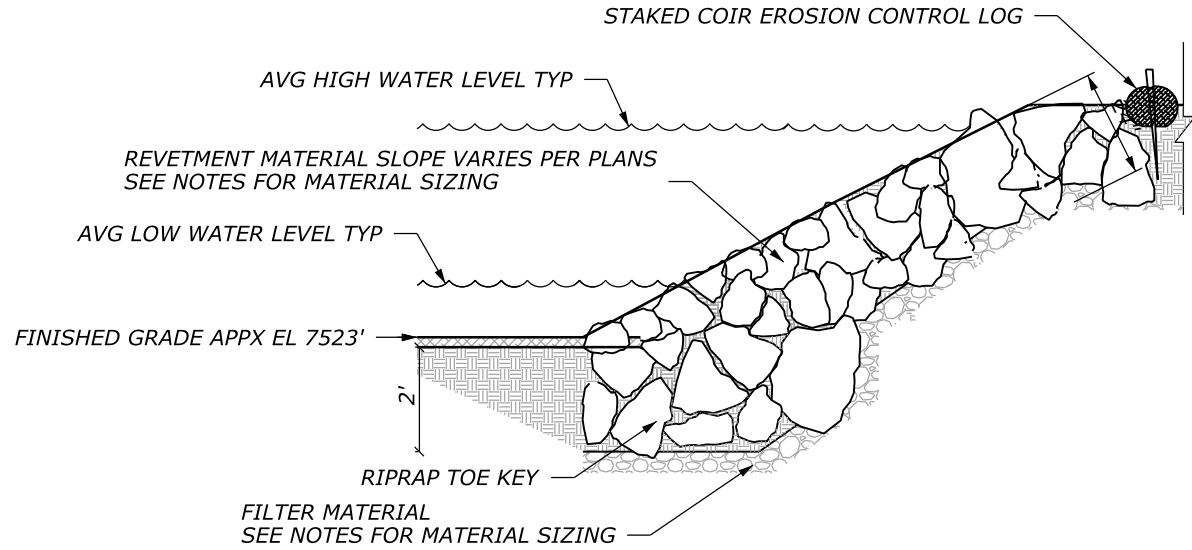
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102	15+04.47	29.34	7522.93
103	15+41.34	29.81	7522.93
104	15+54.76	34.74	7522.93
105	16+66.46	42.30	7522.93
106	16+81.46	42.69	7522.93
107	17+21.46	37.02	7522.93
108	17+46.46	32.96	7522.93
109	18+16.46	18.09	7522.93
110	18+29.57	17.21	7522.93
151	14+47.52	30.68	7530.70
152	14+72.57	26.65	7530.23
153	14+94.96	40.27	7530.62
154	15+42.21	42.82	7530.29
155	16+66.46	50.56	7527.59
156	16+81.46	48.69	7526.93
157	17+21.46	43.02	7526.54
158	17+46.46	38.96	7526.34
159	18+16.46	24.09	7526.26
160	18+29.46	23.22	7526.85
161	18+40.94	24.07	7529.34



BIG THOMPSON RIVER PLAN & PROFILE

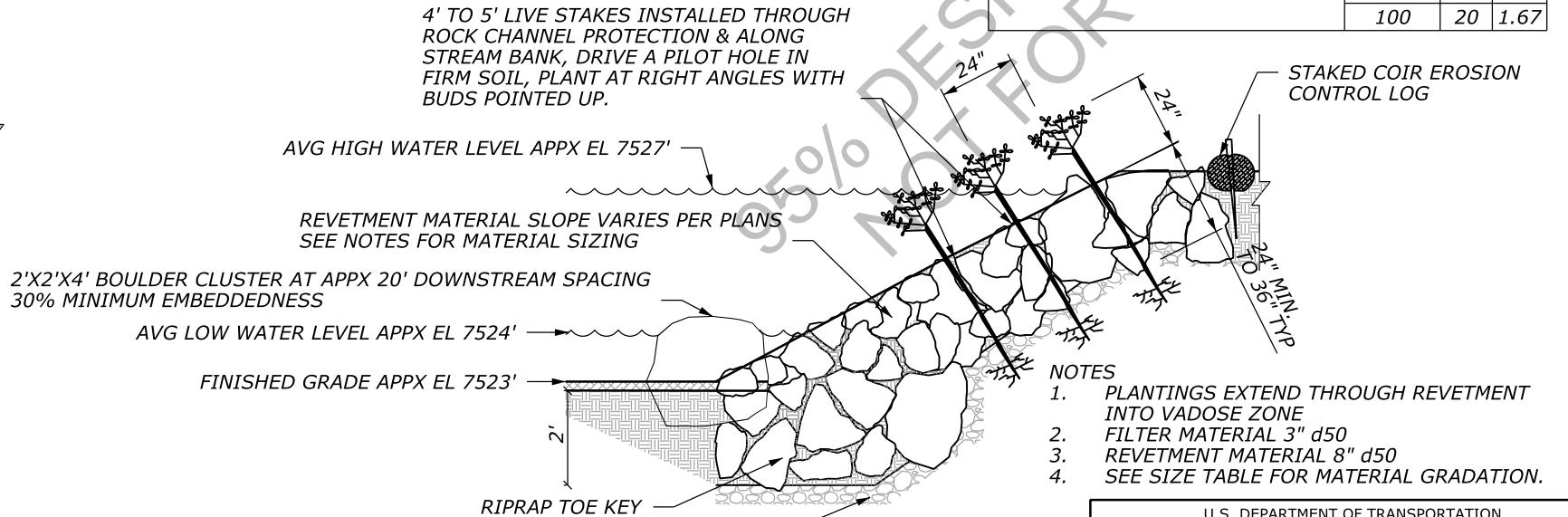


Screened Alluvium Revetment Size	% Finer	In	Ft
3-IN	15	1	0.08
	50	3	0.25
	85	4	0.33
	100	6	0.50
6-IN	15	4	0.33
	50	6	0.50
	85	9	0.75
8-IN	15	5	0.42
	50	8	0.67
	85	12	1.00
10-IN	100	16	1.33
	15	6	0.50
	50	10	0.83
	85	15	1.25
	100	20	1.67



- NOTES
1. FILTER MATERIAL 3" d50
 2. REVETMENT MATERIAL 8" d50
 3. SEE SIZE TABLE FOR MATERIAL GRADATION.

DETAIL A
ALLUVIUM REVETMENT
N.T.S.



- NOTES
1. PLANTINGS EXTEND THROUGH REVETMENT INTO VADOSE ZONE
 2. FILTER MATERIAL 3" d50
 3. REVETMENT MATERIAL 8" d50
 4. SEE SIZE TABLE FOR MATERIAL GRADATION.

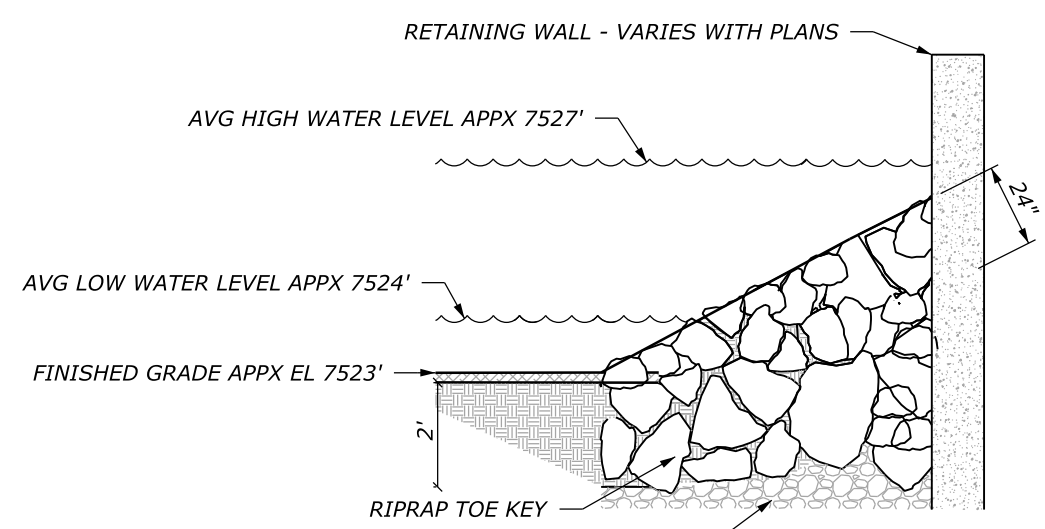
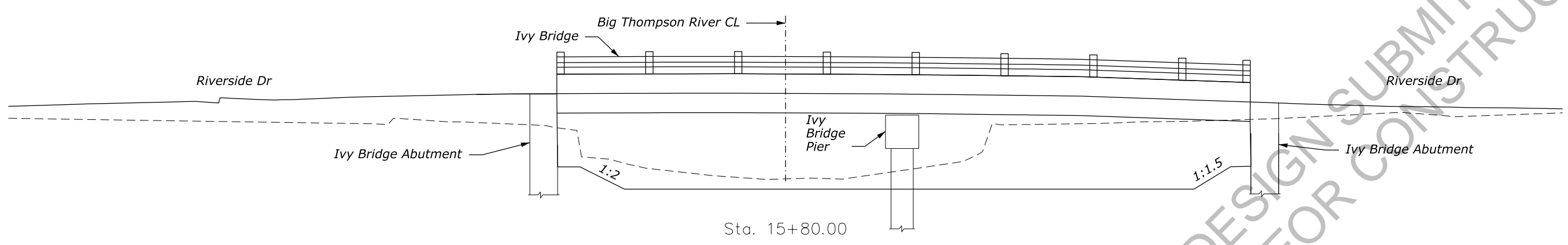
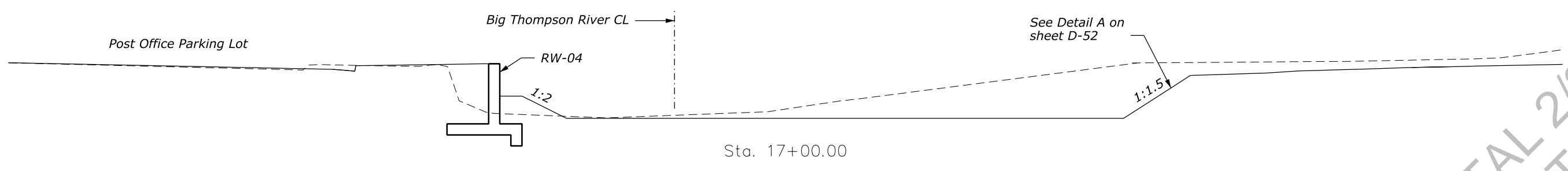
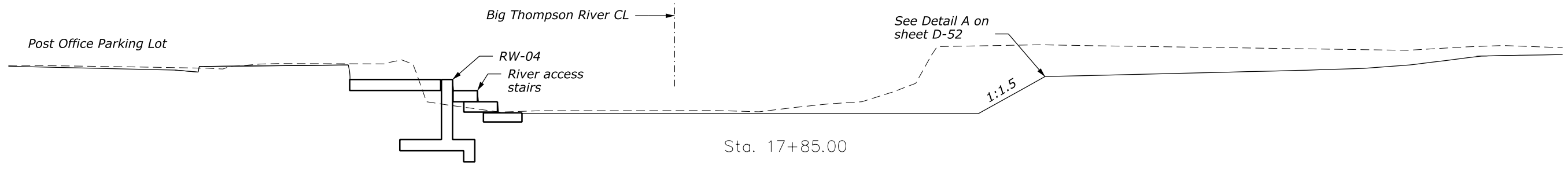
DETAIL B
ALLUVIUM REVETMENT WITH POLE PLANTINGS
N.T.S.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**BIG THOMPSON RIVER
TYPICAL SECTIONS**

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	D-06



- NOTES**
1. RETAINING WALL VARIES PER PLANS
 2. FILTER MATERIAL 3" d50
 3. REVETMENT MATERIAL 8" d50
 4. CLASS 5 AND CLASS 7 RIPRAP GRADATION BY CFL STANDARD SPEC

DETAIL C
ALLUVIUM REVETMENT WALL INTERFACE
N.T.S.

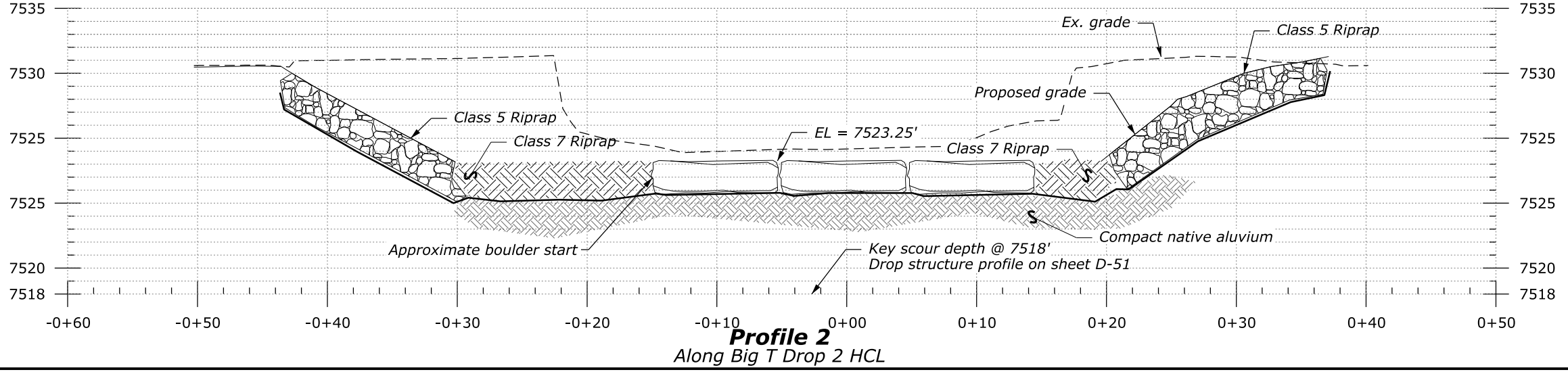
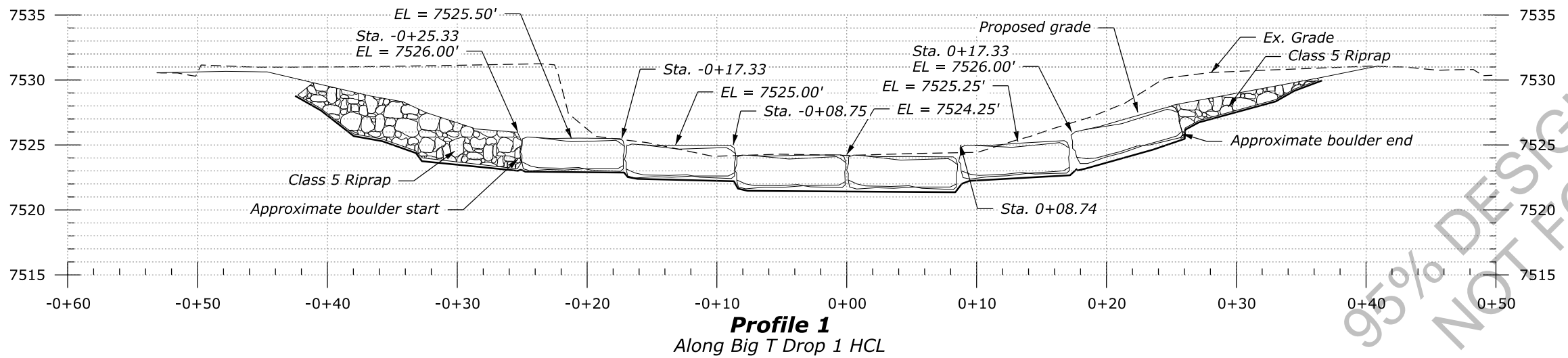
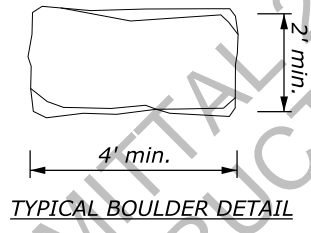
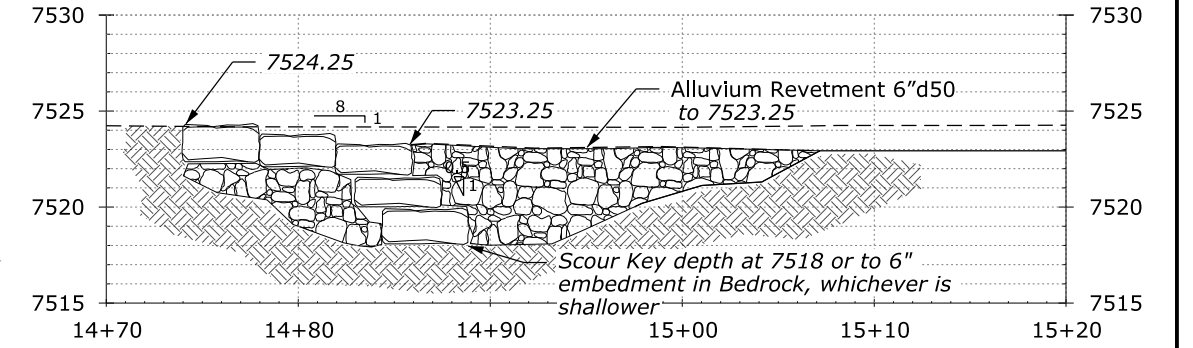
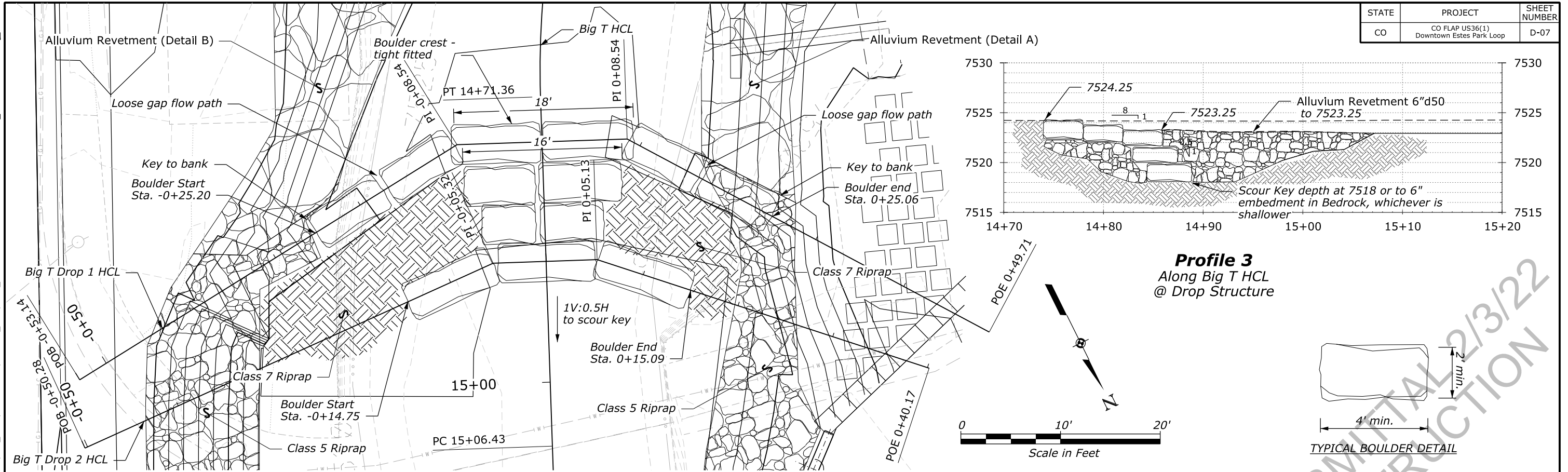
95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**BIG THOMPSON RIVER
TYPICAL SECTIONS**

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	D-07



- Notes:
1. Boulders placed with tight-fitting contact.
 2. Elevations set at 0.0' tolerance at boulder crest.
 3. Installation field check by engineer req'd.
 4. Class 5 and class 7 Riprap gradation by CFL standard spec.
 5. 4' Min. boulder on Intermediate axis - angular granite.

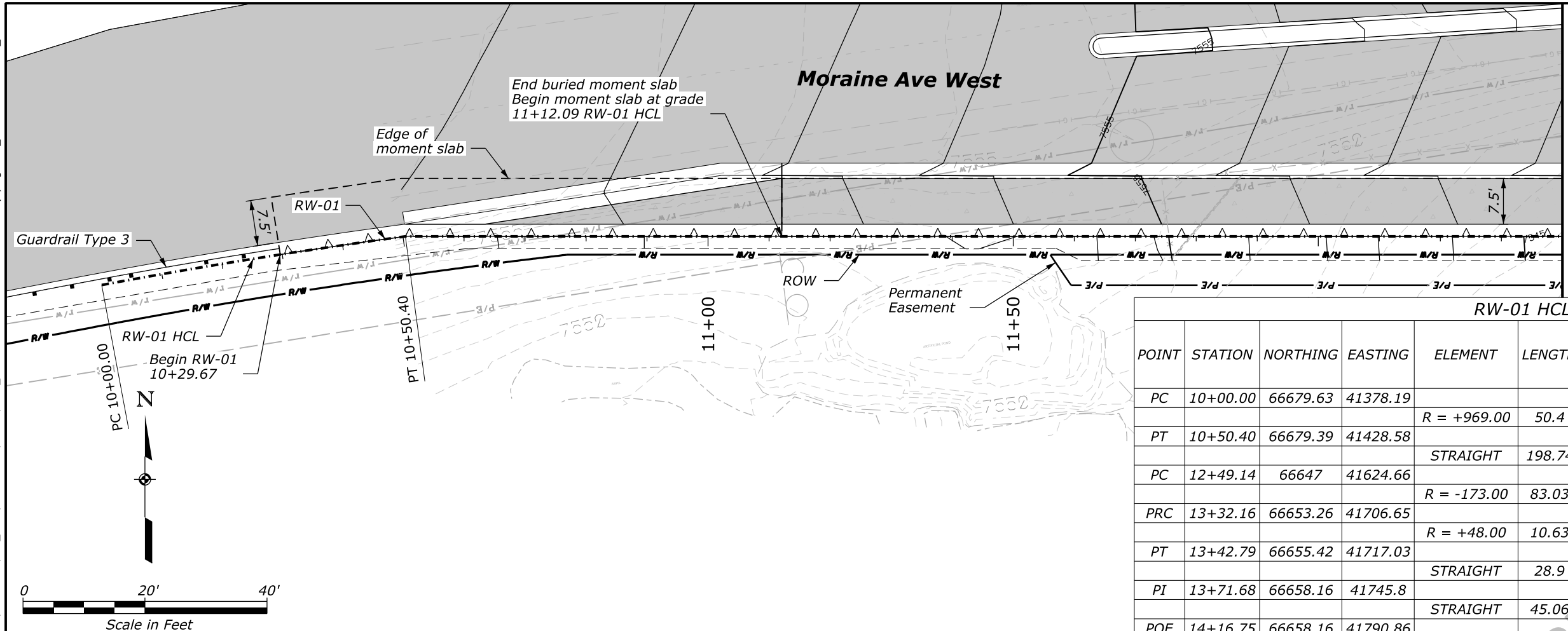
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**BIG THOMPSON RIVER
DROP STRUCTURE
PLAN AND PROFILE**

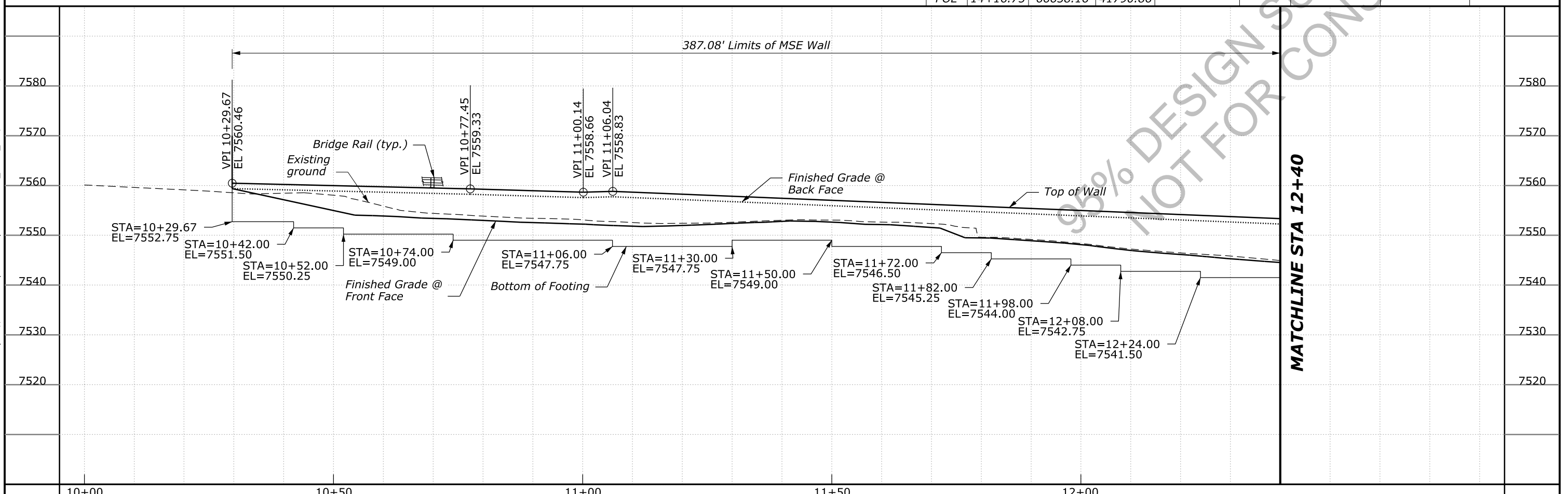
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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	G-01

- Notes:
- Contractor shall verify all utility locations prior to wall construction.
 - See Moment Slab Details in G sheets for design information.



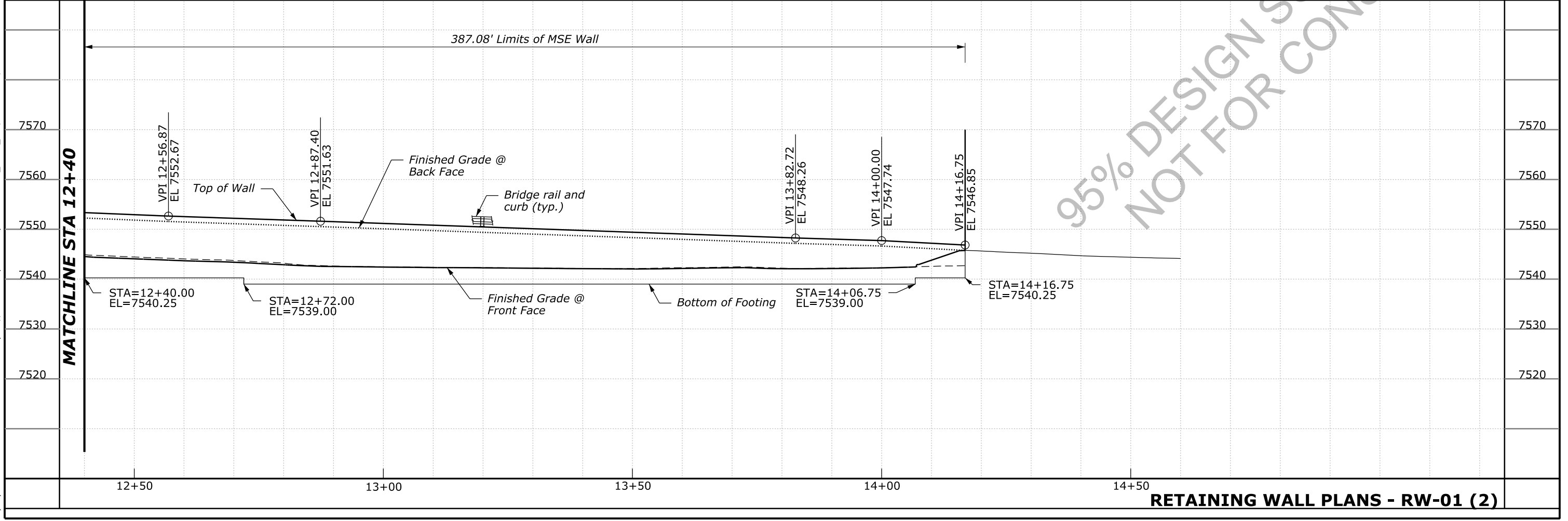
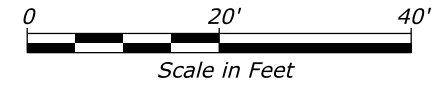
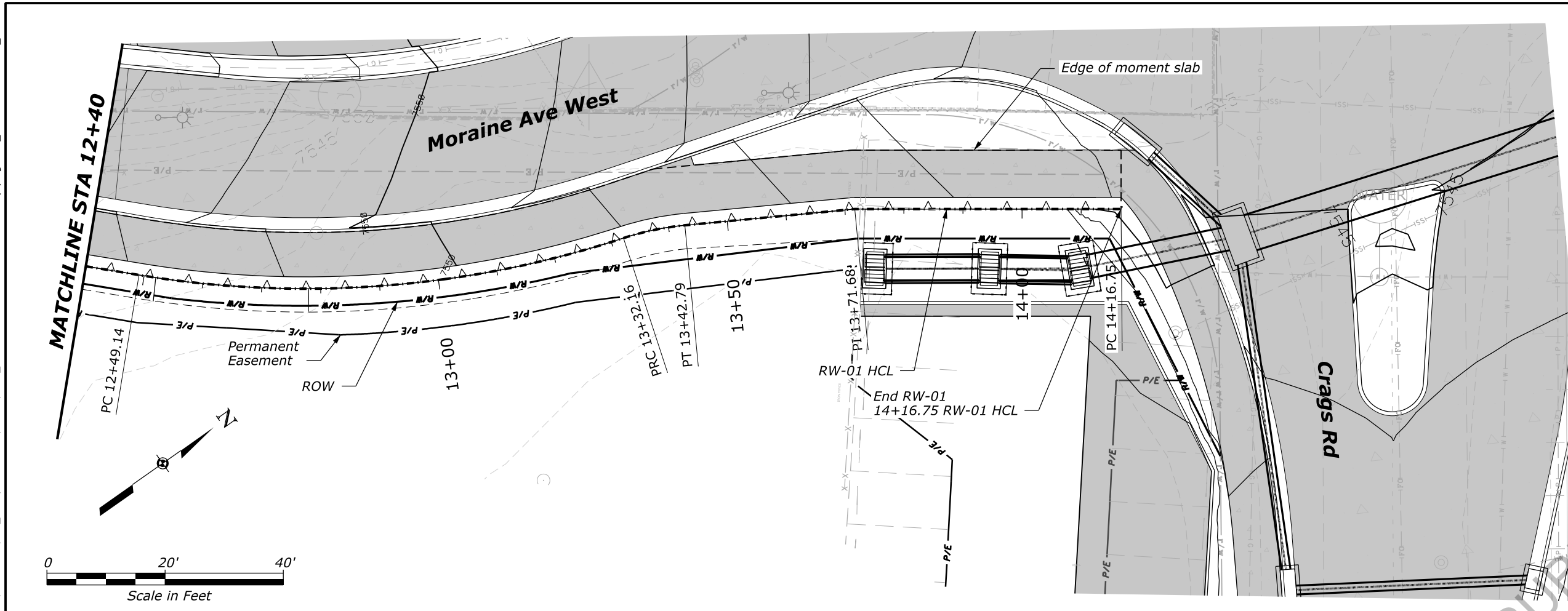
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						(R=STARTING ANGLE)	(R=END ANGLE)
PC	10+00.00	66679.63	41378.19				
PT	10+50.40	66679.39	41428.58	R = +969.00	50.4	N 88°47'00" E	S 88°14'12" E
PC	12+49.14	66647	41624.66	STRAIGHT	198.74	S 80°37'05" E	
PRC	13+32.16	66653.26	41706.65	R = -173.00	83.03	S 80°37'05" E	N 71°53'04" E
PT	13+42.79	66655.42	41717.03	R = +48.00	10.63	N 71°53'04" E	N 84°34'06" E
PI	13+71.68	66658.16	41745.8	STRAIGHT	28.9	N 84°34'06" E	
POE	14+16.75	66658.16	41790.86	STRAIGHT	45.06	S 90°00'00" E	



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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	G-02

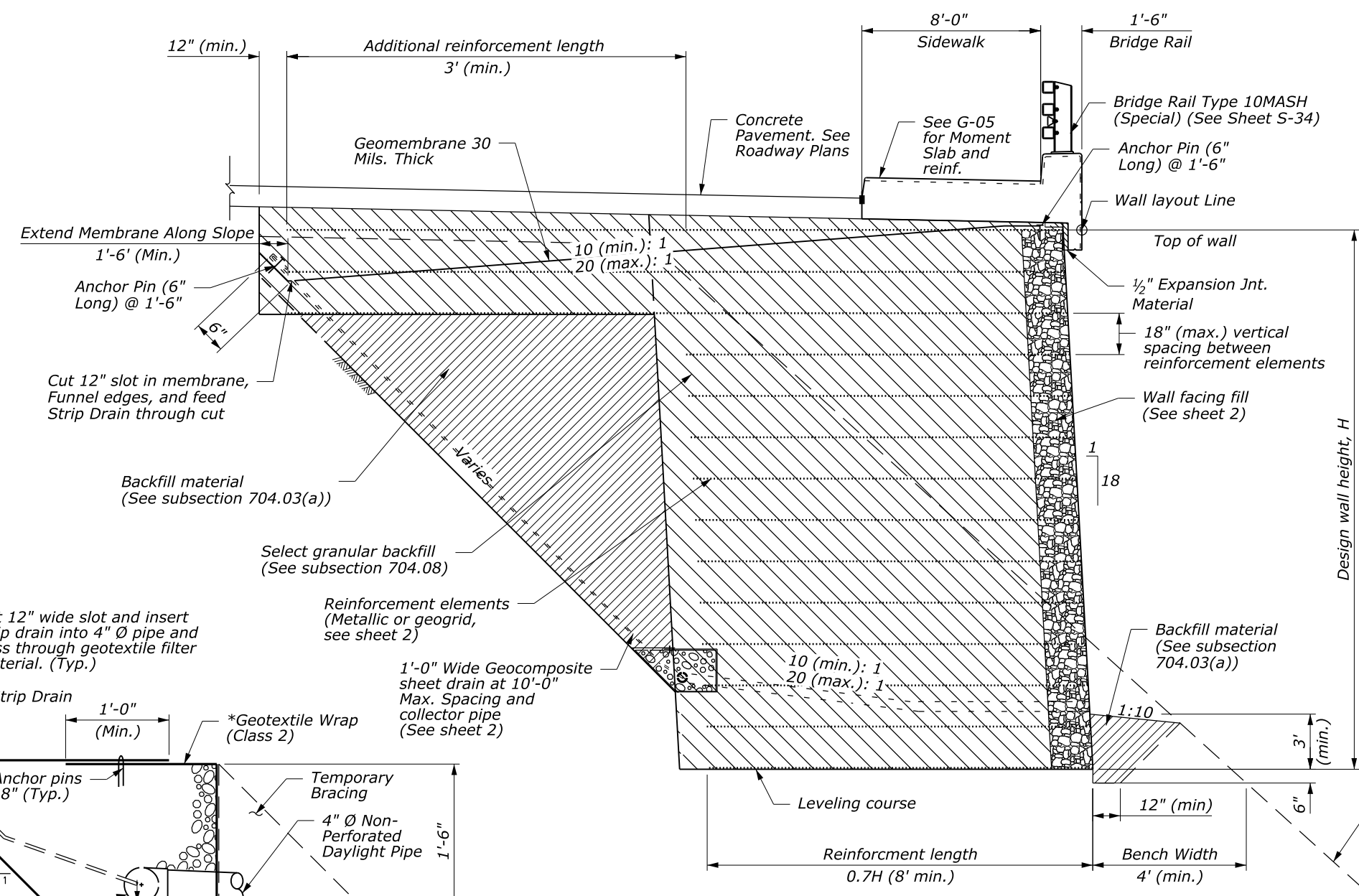
- Notes:
- Contractor shall verify all utility locations prior to wall construction.
 - See Moment Slab Details in the G sheets for design information.



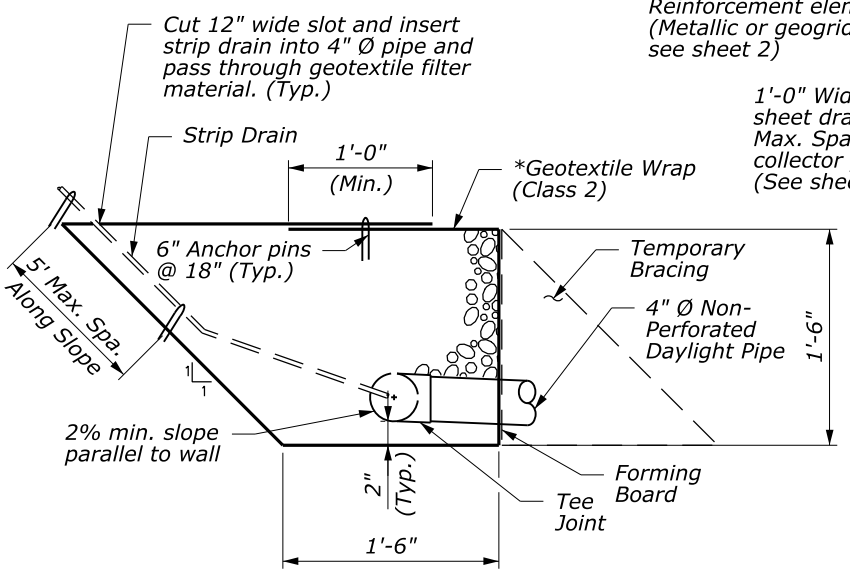
95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

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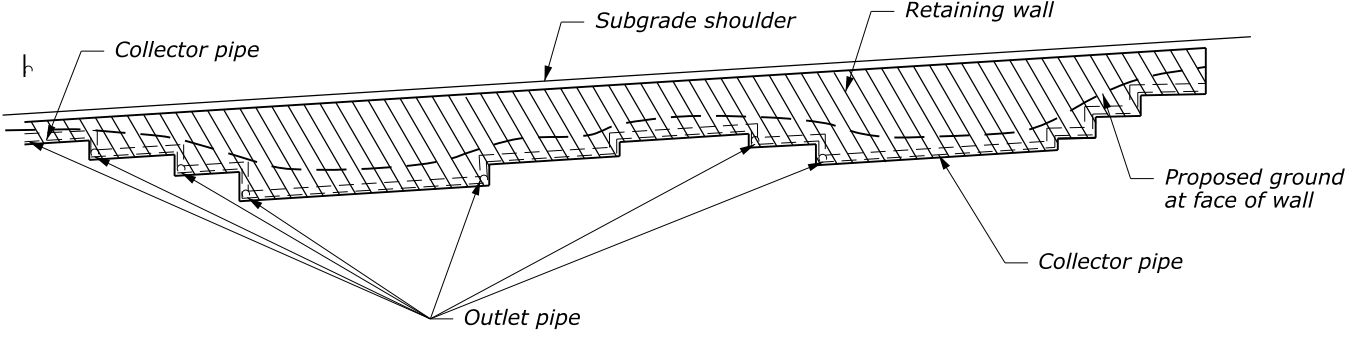


TYPICAL SECTION

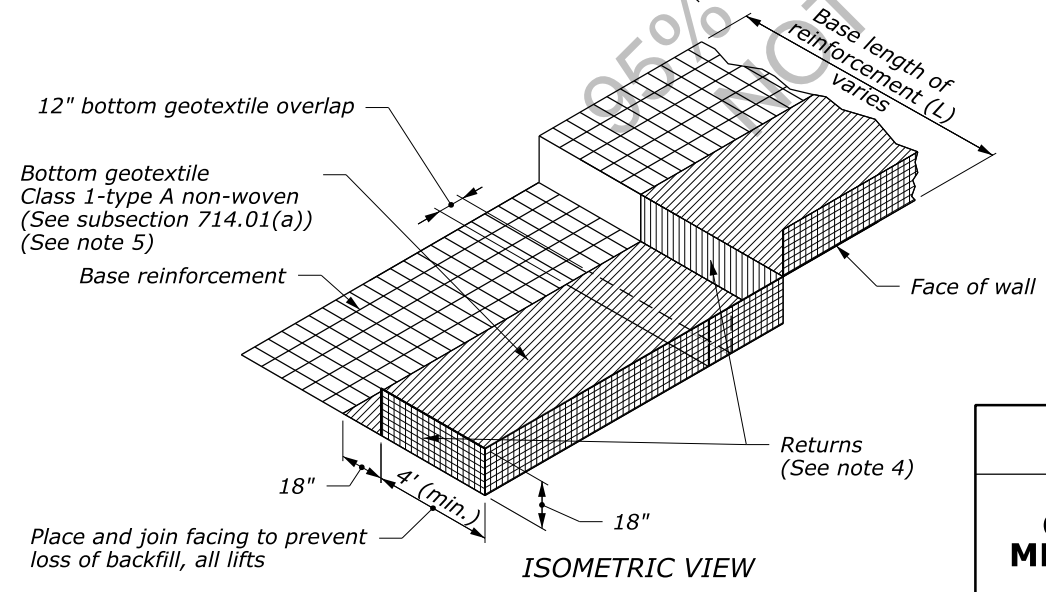


DRAIN DETAIL

* Geotextile fabric flow rate = 140 gpm/sq ft (min.) and core flow rate of 21 gpm/ft (min.)



TYPICAL ELEVATION



MSE WELDED WIRE FACED RETURN MAT

- NOTE:**
- Design welded wire face MSE walls according to Section 257 and AASHTO LRFD Bridge Design Specifications.
 - Top of wall will be as shown on wall layout drawings. No steps will be allowed.
 - Install guardrail posts according to subsection 617.04.
 - Terminate wire-face wall at the beginning and end of each lift with a return of the wall facing material a minimum of 4' into the backfill. Returns will not be measured for payment.
 - Bottom geotextile to cover the base reinforcement and extend 18" up the wall face on all walls.
 - Sample and test materials or products according to table 255-2.
 - Slope or shore excavation according to Section 208.

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL
**CONTRACTOR DESIGNED
MECHANICALLY STABILIZED
EARTH (MSE) WALL**
Sheet 1 of 3

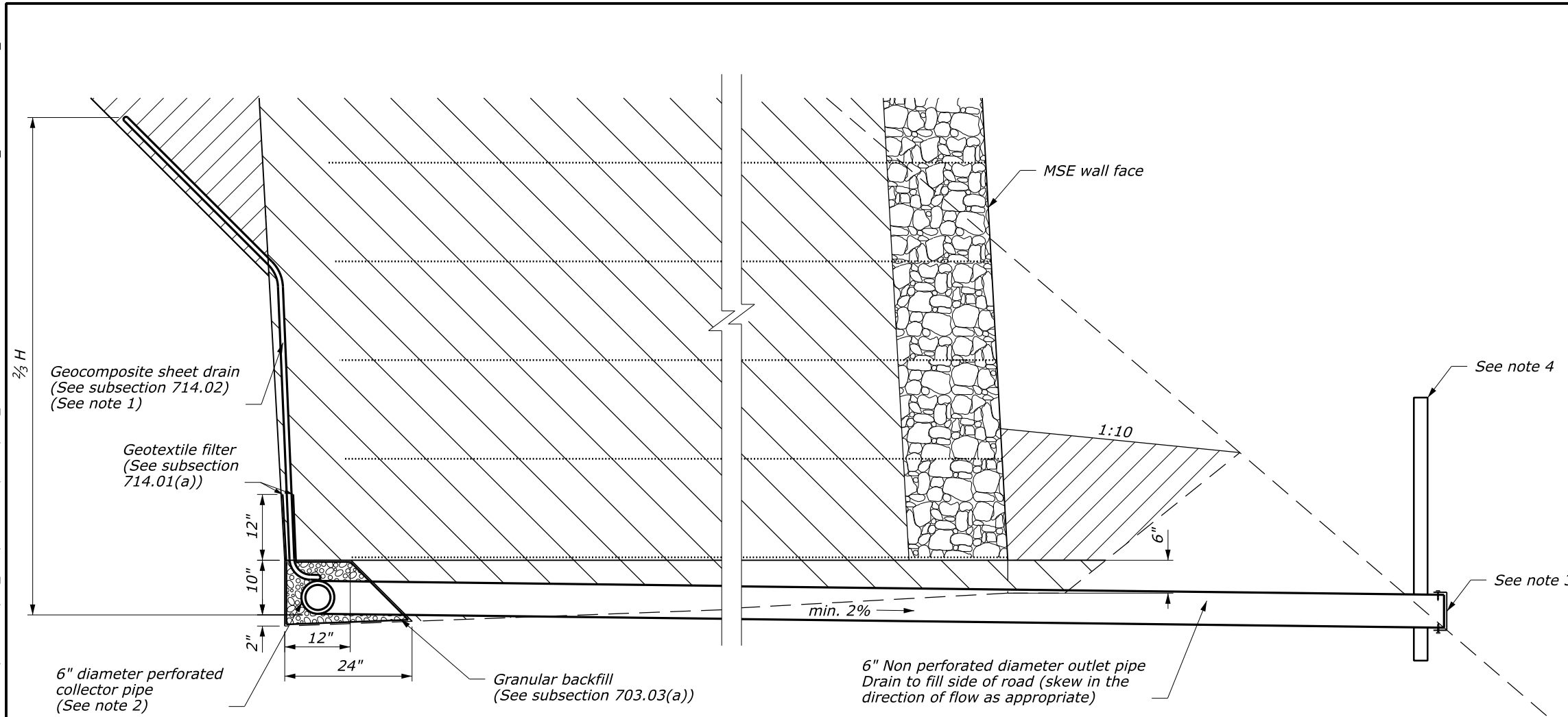
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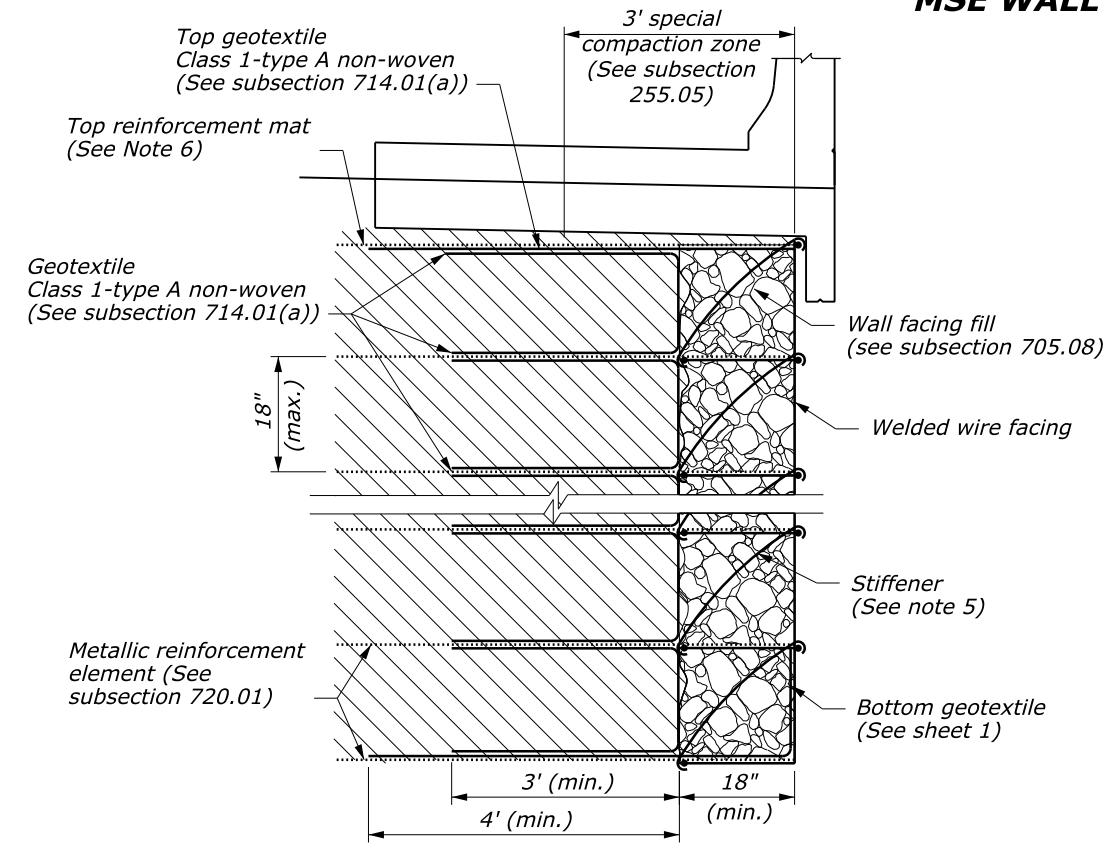
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CO	CO FLAP US36(1) Downtown Estes Park Loop	G-05

NOTE:

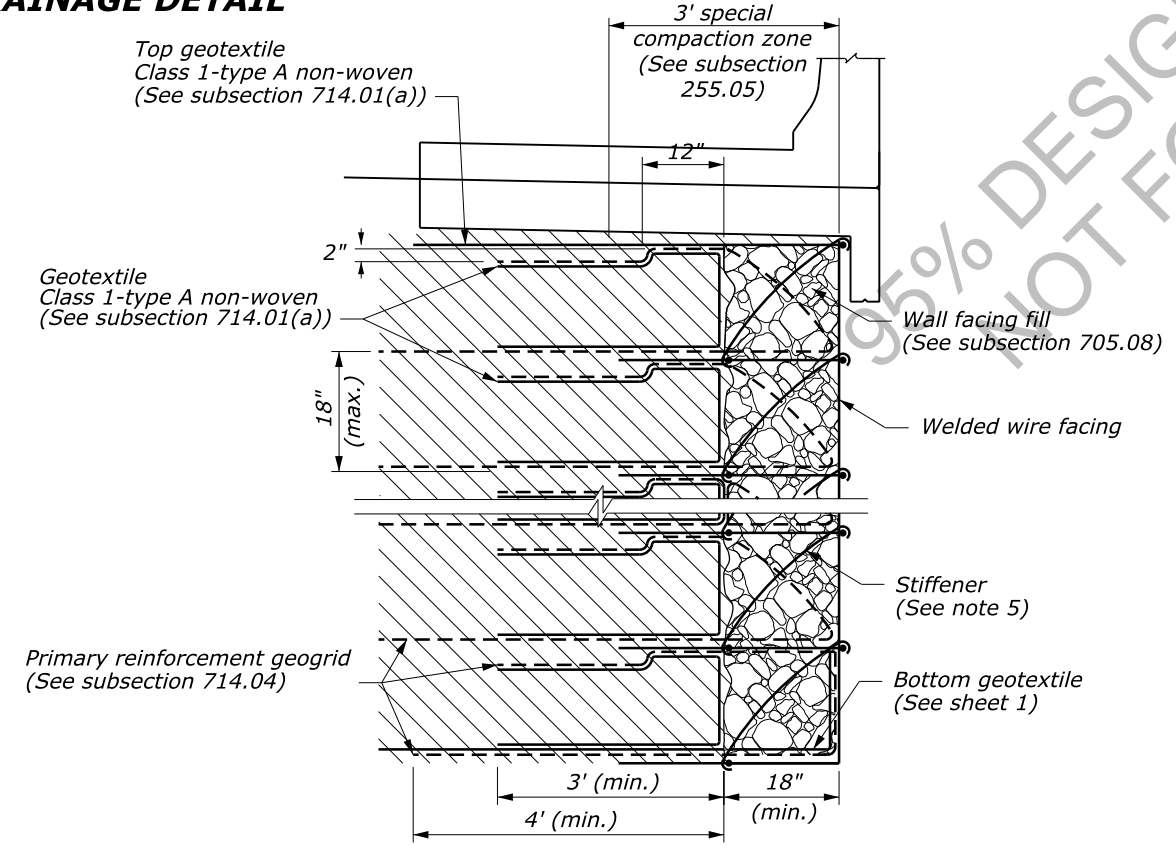
1. Place geocomposite sheet drains in 3' (min.) wide strips with a spacing to achieve 30% ±5% coverage area on excavation backslope to 2/3H.
2. Connect collector pipes to outlet pipes using a t-connector and outlet at low points of wall and at 50' (max.) spacing. Furnish collector pipe, outlet pipe, and fittings meeting the requirements of subsection 708.04.
3. Cover the end of the outlet pipe with screen according to subsection 605.03. Hold the screen securely in place with standard coupling bands or by other approved means with securing screws.
4. Mark the outlet of the outlet pipe with a 4' long post or other suitable marker. Place post within 12" of the end of the pipe.
5. Spacing and use of stiffener to be determined by the manufacturer.
6. Welded wire reinforcement systems require a top reinforcement mat unless the wall facing uses stiffeners to adequately reinforce the wall face.



MSE WALL DRAINAGE DETAIL



METALLIC REINFORCED MSE WALL DETAIL



GEOGRID REINFORCED MSE WALL DETAIL

NO SCALE

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FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL
**CONTRACTOR DESIGNED
MECHANICALLY STABILIZED
EARTH (MSE) WALL**
Sheet 2 of 3

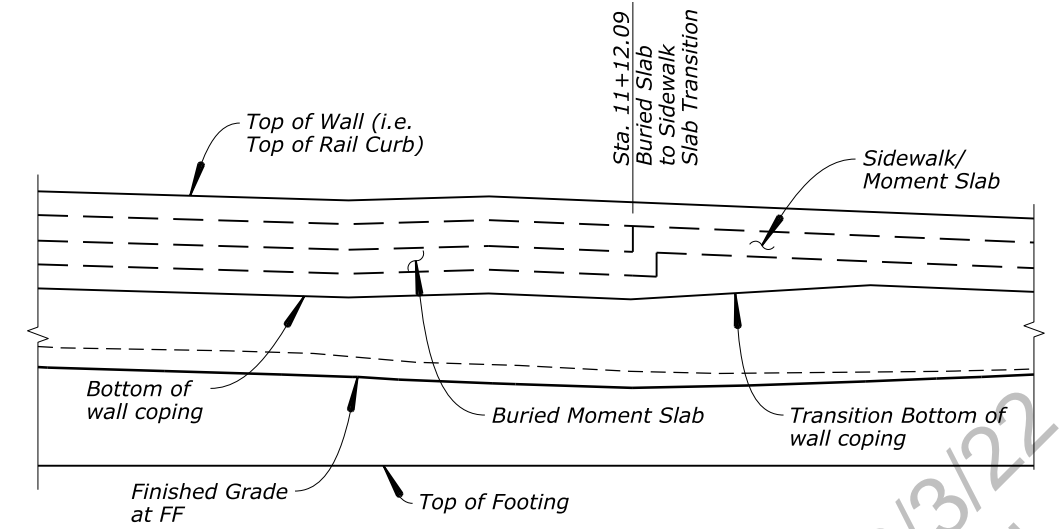
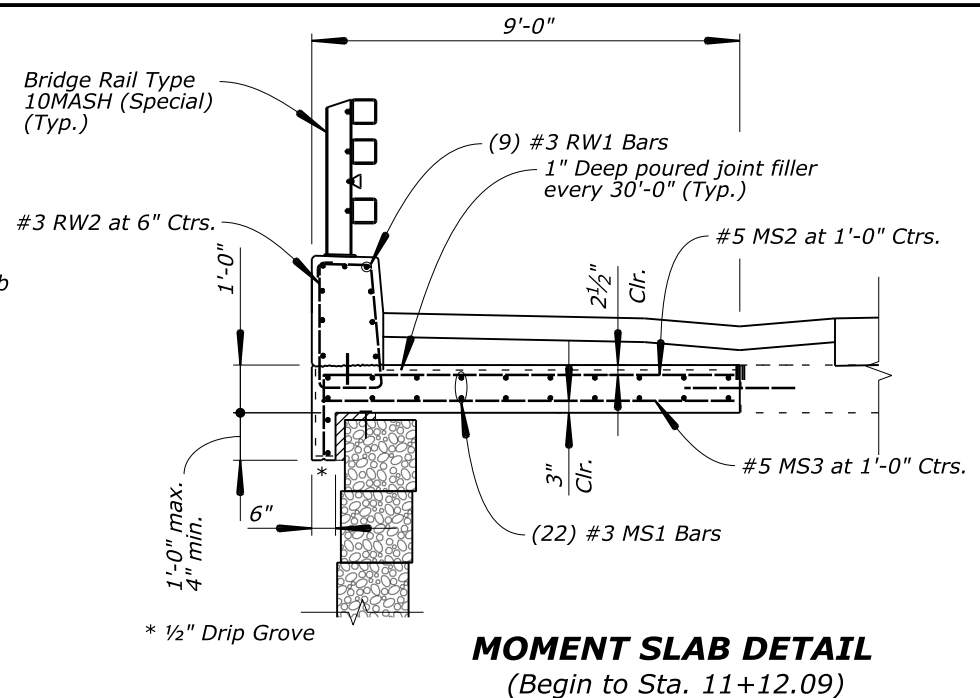
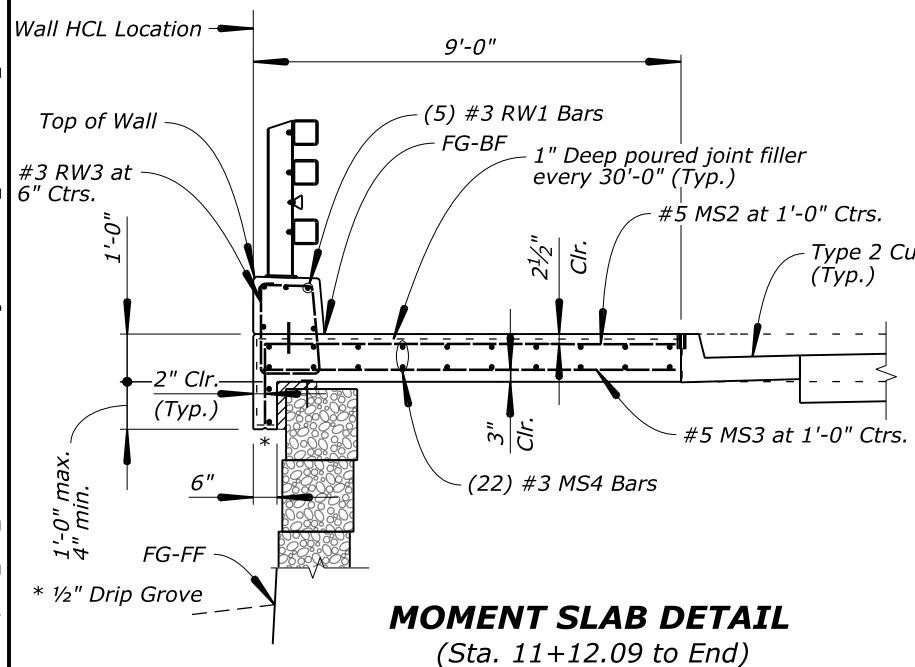
DETAIL APPROVED FOR USE

REVISOR: SPECIAL
DRAFT: 04/2015 C257-50A

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95% DESIGN SUBMITTAL NOT FOR CONSTRUCTION 2/13/22

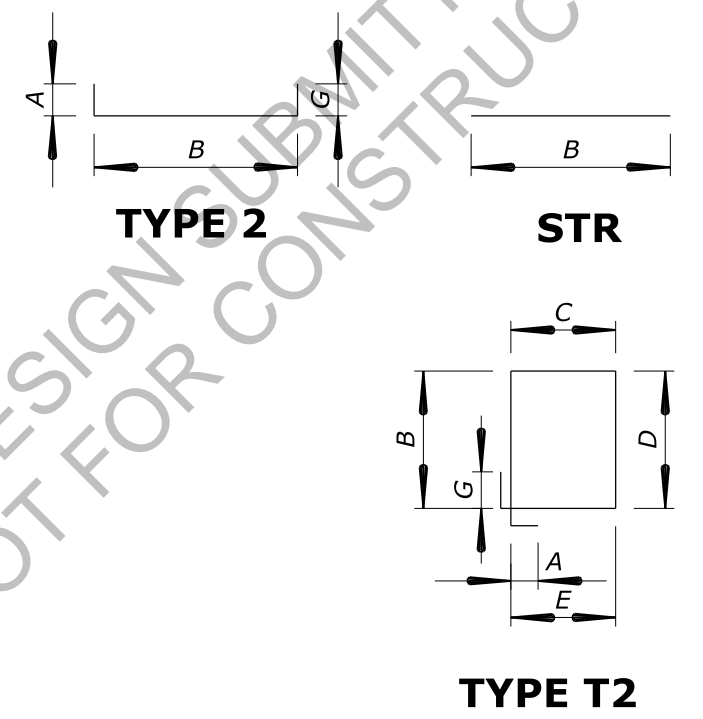
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	G-05



Item No	Description	Unit	RW01	Notes
25501-1000	Mechanically Stabilized Earth Wall, Welded Wire Face	SQFT	3,385	
55201-0200	Concrete Class A (AE)	CY	165	
55401-2000	Reinforcing Steel (Epoxy Coated)	LB	6,866	
55601-1200	Bridge Railing, Steel, Three Rail (Type 10MASH) (Special)	LF	388	(1)

NOTES:

- Includes cost of all posts, anchors, base plates, backing plates, anchor bolts, miscellaneous bolts, nuts, washers, tubes, tube expansion devices, tube splices, and end plates. Includes cost of furnishing and installing all bridge railing, end block and curb elements.
- See G Sheets for RW01 layouts and additional information.



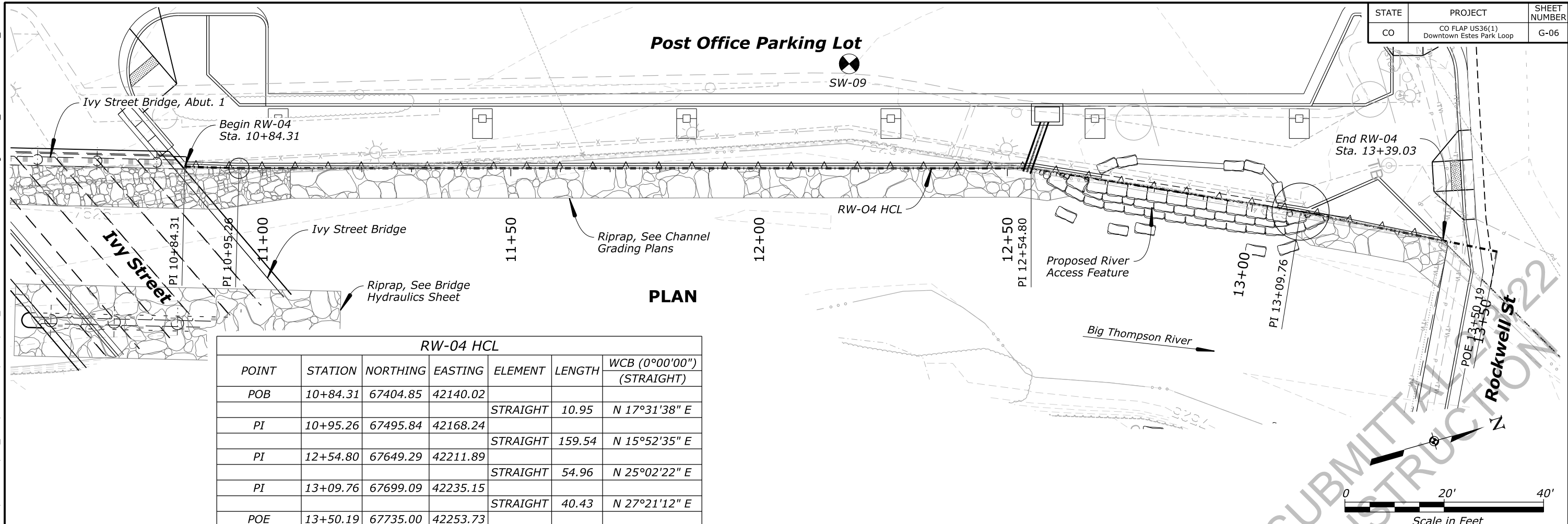
Reinforcing Steel Schedule					Dimension Table								
Bar Mark	Quantity	Bar Size	Length	Weight	Location	Bar Mark	Type	A	B	C	D	E	G
Moment Slab													
Begin to Sta 11+12.09													
MS1	21	#5	1801	1878	Long. Top & Bottom	MS1	Str		85.75				
MS2	123	#5	1128	1176	Trans. Top	MS2	Type 2	0.67	8.5				
MS3	123	#5	1046	1090	Trans. Bottom	MS3	Str		8.5				
Total Weight for Release				4145									
Sta 11+12.09 to End													
MS2	457	#5	4191	4371	Trans. Top	MS2	Type 2	0.67	8.5				
MS3	457	#5	3885	4052	Trans. Bottom	MS3	Str		8.5				
MS4	21	#5	6748	7038	Long. Top & Bottom	MS4	Str		321.33				
Total Weight for Release				8422									
Rail Curb													
RW1	7	#3	2944	3070	Long. Bridge Rail Curb	RW1	Str		420.5				
RW2	610	#3	3639	3796	Trans. Bridge Rail Curb	RW2	Type 2	0.333	1.5	1.22	1.5	1.08	0.33
RW3	165	#3	1300	1355	Trans. Bridge Rail Curb	RW3	Type 2	0.333	2.42	1.29	2.42	1.08	0.33
Total Weight for Release				6866									

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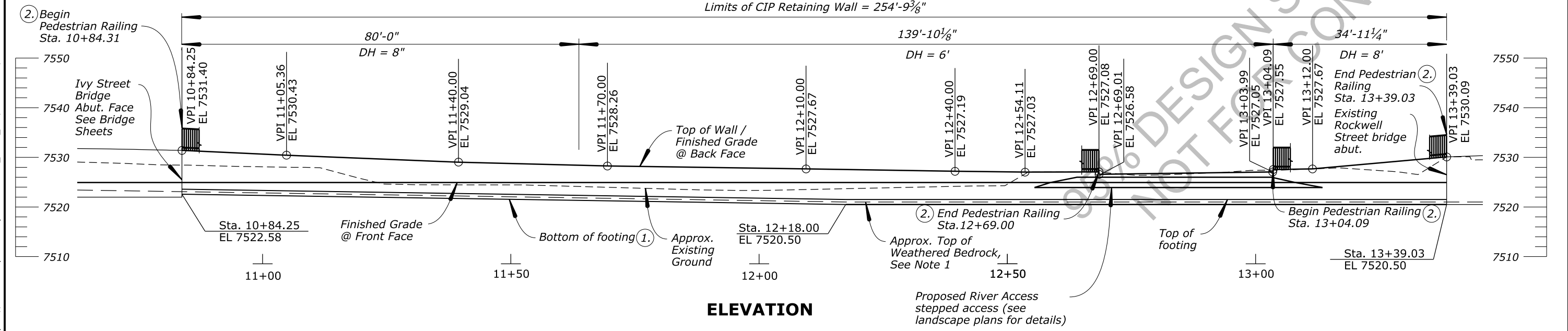
RW-01 MOMENT SLAB DETAILS

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Post Office Parking Lot



RW-04 HCL						
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00") (STRAIGHT)
POB	10+84.31	67404.85	42140.02			
				STRAIGHT	10.95	N 17°31'38" E
PI	10+95.26	67495.84	42168.24			
				STRAIGHT	159.54	N 15°52'35" E
PI	12+54.80	67649.29	42211.89			
				STRAIGHT	54.96	N 25°02'22" E
PI	13+09.76	67699.09	42235.15			
				STRAIGHT	40.43	N 27°21'12" E
POE	13+50.19	67735.00	42253.73			



Notes:

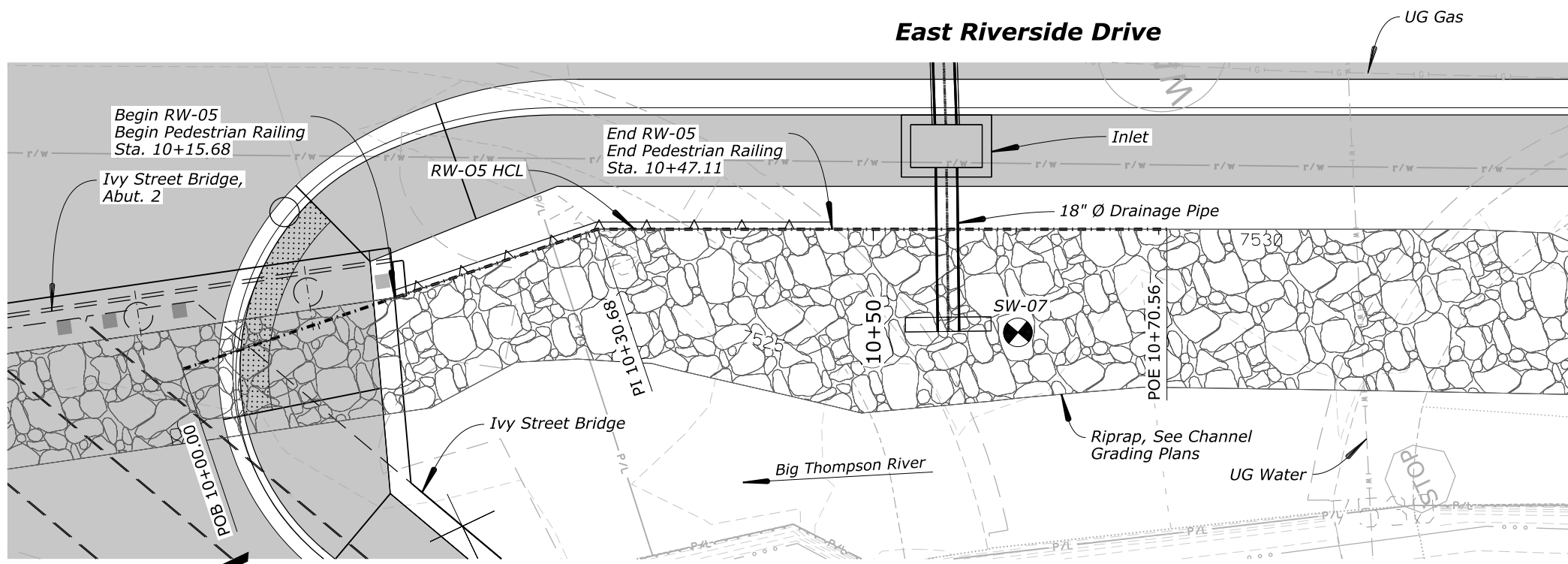
- Bottom of footing, shall be embedded 6" (min.) into weathered bedrock, as directed by the CO. Elevations shown are based on approximate location of weathered bedrock. See Engineering Geology Sheet.
- See Pedestrian Rail Details on sheet G-09.

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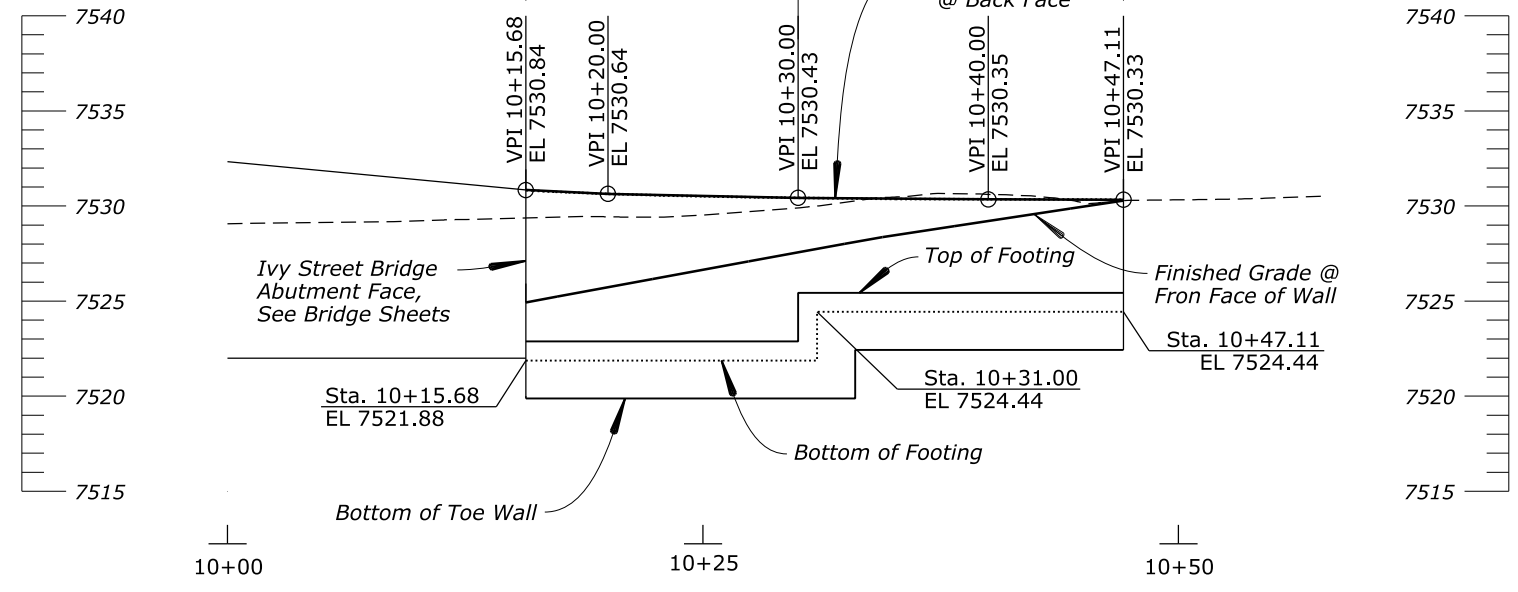
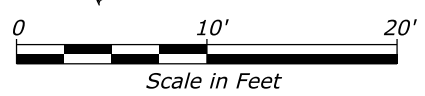
RETAINING WALL PLANS - RW-04

1"=20'

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PLAN



ELEVATION

RW-05 HCL						
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00") (STRAIGHT)
POB	10+00.00	67469.25	42222.68			
				STRAIGHT	30.68	S 6°46'42" W
PI	10+30.68	67438.78	42219.06			
				STRAIGHT	39.88	S 25°25'04" W
POE	10+70.56	67402.76	42201.94			

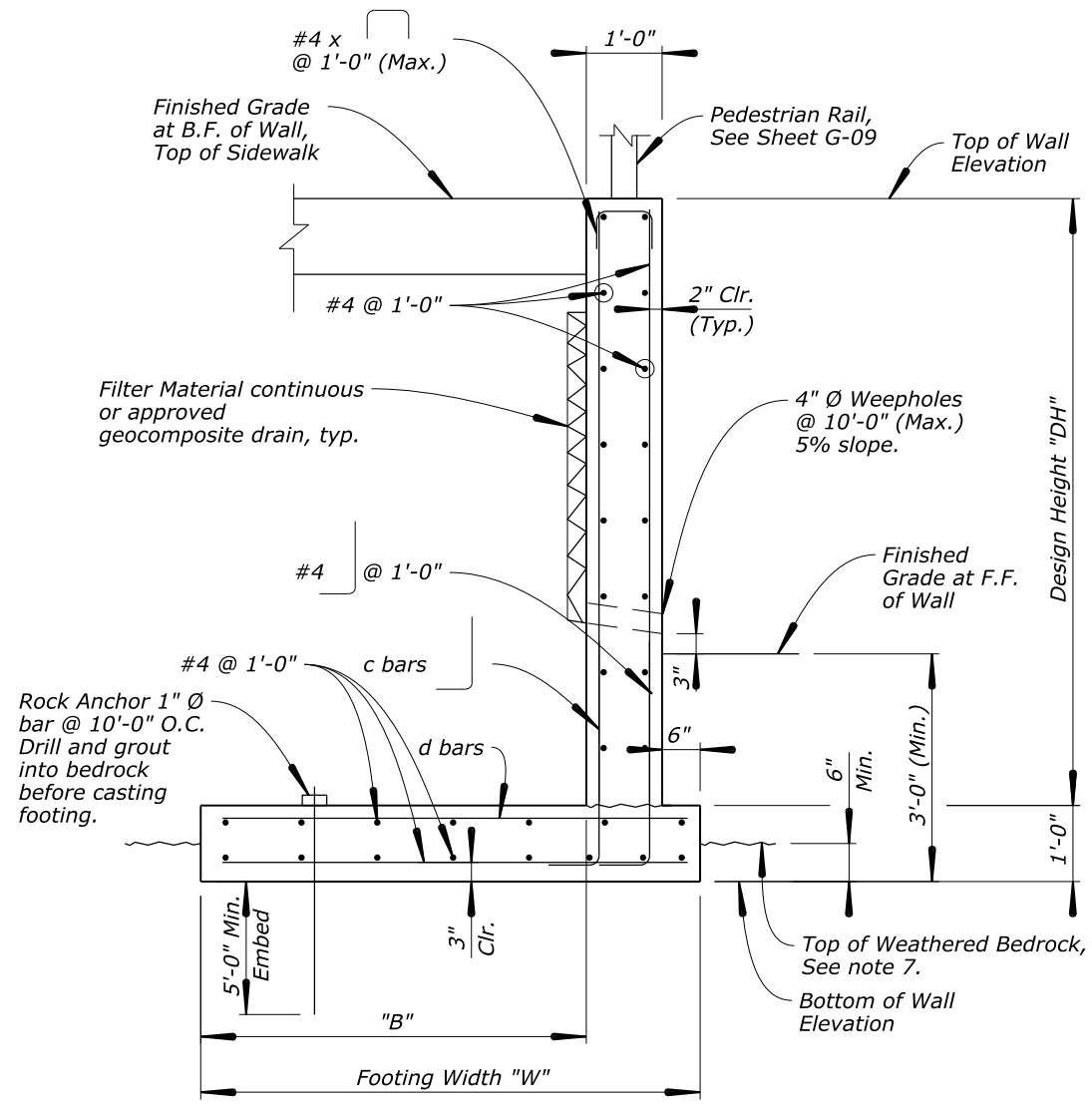
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**RETAINING WALL
PLANS - RW-05**

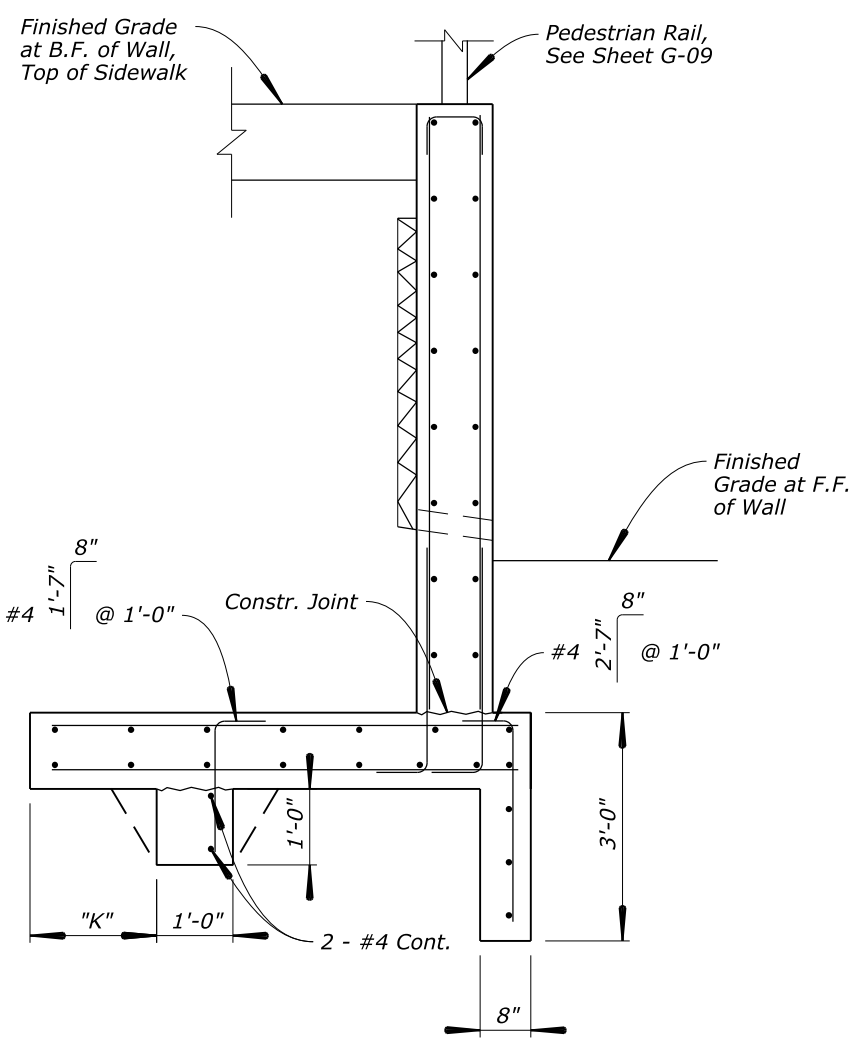
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95% DESIGN SUBMITTAL 2/3/22 NOT FOR CONSTRUCTION

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WALL SECTION
On Weathered Bedrock



WALL SECTION
On Soil
(Similar to Bedrock Section unless noted)

NOTES:

- All concrete shall be Class A(AE) (Wall).
- All reinforcing shall be grade 60 epoxy coated.
- Wall shall not be backfilled until concrete has achieved 70% of compressive strength.
- Contractor shall be responsible for the stability of the structure during construction.
- Refer to Wall Layout drawings for locations and limits of Pedestrian Rail on retaining walls.
- Weep holes shall be spaced a minimum of 2 feet from expansion joints.
- For portions of wall founded on weathered bedrock excavate minimum of 6" of bedrock to ensure level surface.
- Filter Material and Geotextile will not be paid for separately but shall be included in the work.
- Reinforced Concrete Retaining Wall shall be measured and paid under Item 25801-0000.
- Rock and Structure Excavation, Structure Backfill, Ground Anchor, Concrete Class A(AE) and Reinforcing Steel (Epoxy Coated) will not be paid for separately but shall be included in the work.

DESIGN CRITERIA:

Unit Weight:	115 pcf
Nom. Gross Brg. (Soil):	8 ksf
Sliding Coef.:	0.4
Nom. Gross Brg. (Rock):	30 ksf

TABLE OF DIMENSIONS AND DATA

DH=	6'-0"	8'-0"
B=	4'-0"	5'-3"
W=	5'-6"	6'-9"
K=	1'-0"	1'-0"
c bars	#4 @ 6"	#4 @ 6"
d bars	#4 @ 6"	#5 @ 6"

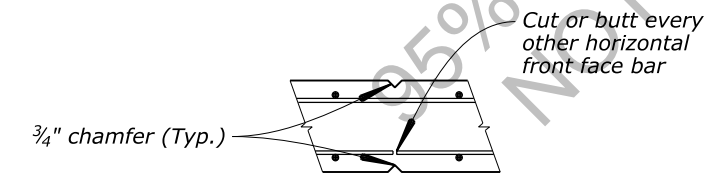
Item No	Description	Unit	RW04	RW05	Total	Notes
25801-0000	Reinforced Concrete Retaining Wall	SQFT	1592	195	1787	
64604-3000	Fixture, Pedestrian Railing	LNFT	220	31	251	

(For Information Only)

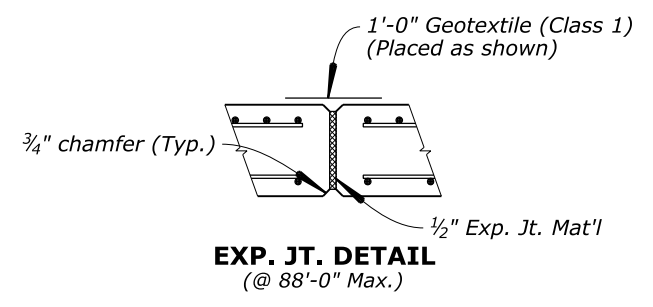
Item No	Description	Unit	RW04	RW05	Total	Notes
20421-0000	Rock Excavation	CY	29	0	29	(2)
20801-0000	Structure Excavation	CY	436	104	540	
20803-0000	Structure Backfill	CY	667	88	755	
25602-0000	Ground Anchor	LF	174	0	174	(2)
55201-0200	Concrete Class A (AE)	CY	117	18	135	(1) (2)
55401-2000	Reinforcing Steel (Epoxy Coated)	LB	12700	1757	14457	
64604-3000	Fixture, Pedestrian Railing	LF	255	32	287	

QUANTITY NOTES

- Includes cost furnishing and installing all joints and joint fillers.
- Quantities assume 50% of the wall will be founded on bedrock and utilize rock anchors.



WEAKENED PLANE
(@ 22'-0" Max.)



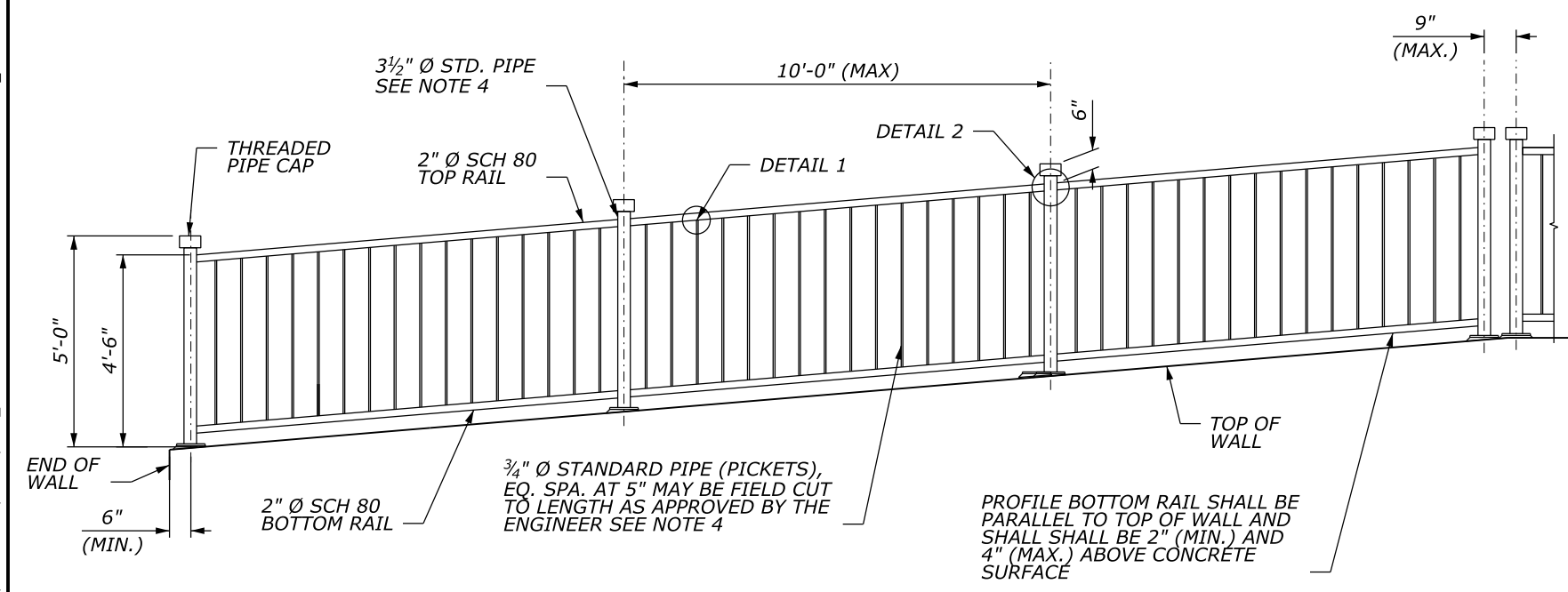
EXP. JT. DETAIL
(@ 88'-0" Max.)

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CENTRAL FEDERAL LANDS HIGHWAY DIVISION

CIP WALL DETAILS

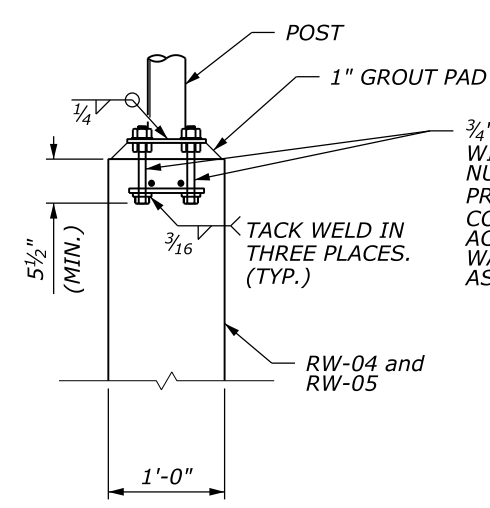
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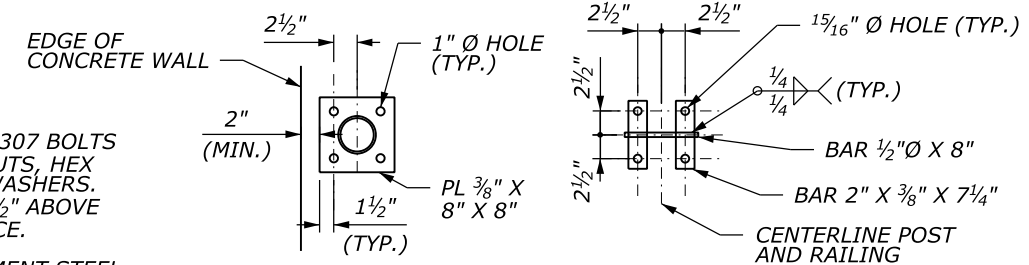


RAILING ELEVATION

- NOTES:
1. CONTRACTOR SHALL BE RESPONSIBLE TO CONFIRM RAILING ALIGNS WITH WALL SLOPE.
 2. ALL RAILING PANELS SHALL BE SHOP FABRICATED.
 3. THE CONTRACTOR SHALL VERIFY ALL DEPENDENT GEOMETRY AND ELEVATIONS IN THE FIELD BEFORE ORDERING OR FABRICATING ANY MATERIAL. CONTRACTOR MUST SUBMIT SHOP DRAWINGS TO CONFIRM WITH WALL CONSTRUCTION CONDITIONS AND ANCHORAGE PLACEMENT. THE CONTRACTOR SHALL FIELD-MEASURE BASE PLATE LOCATION PRIOR TO FABRICATION OF PIPE RAILING TO VERIFY DIMENSIONS REQUIREMENTS.
 4. ALL PIPE SHALL MEET THE REQUIREMENTS IN ASTM A53 FOR GRADE B STEEL AND ALL PLATES AND BARS SHALL MEET THE REQUIREMENTS IN AASHTO M270 FOR GRADE 36 STEEL.
 5. POSTS SHALL BE INSTALLED IN A PROPERLY REINFORCED WALL.
 6. HOLES IN RAILS, FOR PICKETS, AND HOLES IN POSTS, FOR PINS, SHALL BE DRILLED.
 7. RAILING COMPONENTS AND ANCHORAGE ASSEMBLY (PLATES, BOLTS & NUTS) SHALL BE POWDER COATED FINISH BLACK, COLOR AMS-STD 17038 PER THE SPECIFICATIONS.
 8. RAILING MATERIALS AND INSTALLATION SHALL BE INCLUDED IN THE COST OF THE WALL. RAILING WILL BE PAID FOR, BY THE LINEAR FOOT, AS ITEM 64604-3000, FIXTURE, PEDESTRIAN RAIL.
 9. RAILING ACCOMMODATES PEDESTRIANS AND BICYCLES IN ACCORDANCE WITH THE 8TH EDITION OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
 10. RAILING SHALL NOT BE CONTINUOUS AT KINKED WALL LOCATIONS.

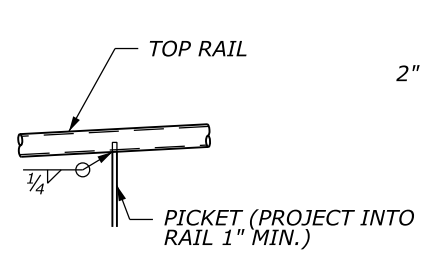


ELEVATION

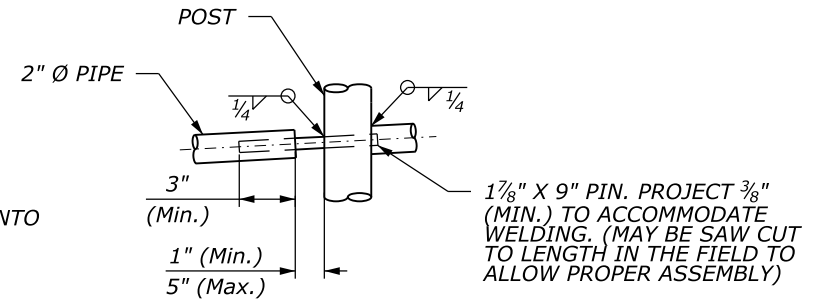


PLAN ANCHORAGE DETAIL

BOLTED CONNECTION



DETAIL 1
(SEE NOTE 6)



DETAIL 2
(SEE NOTE 6)

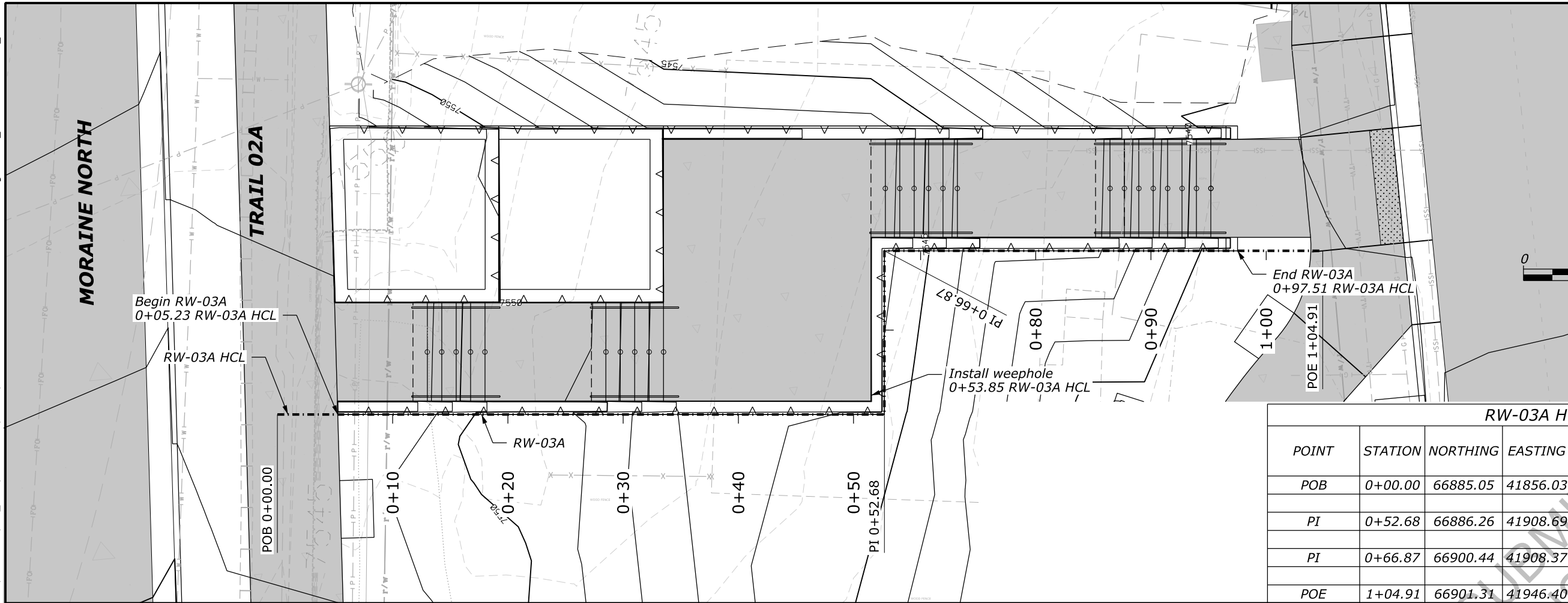
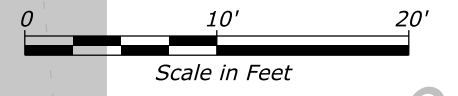
95% DESIGN SUBMITTED FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

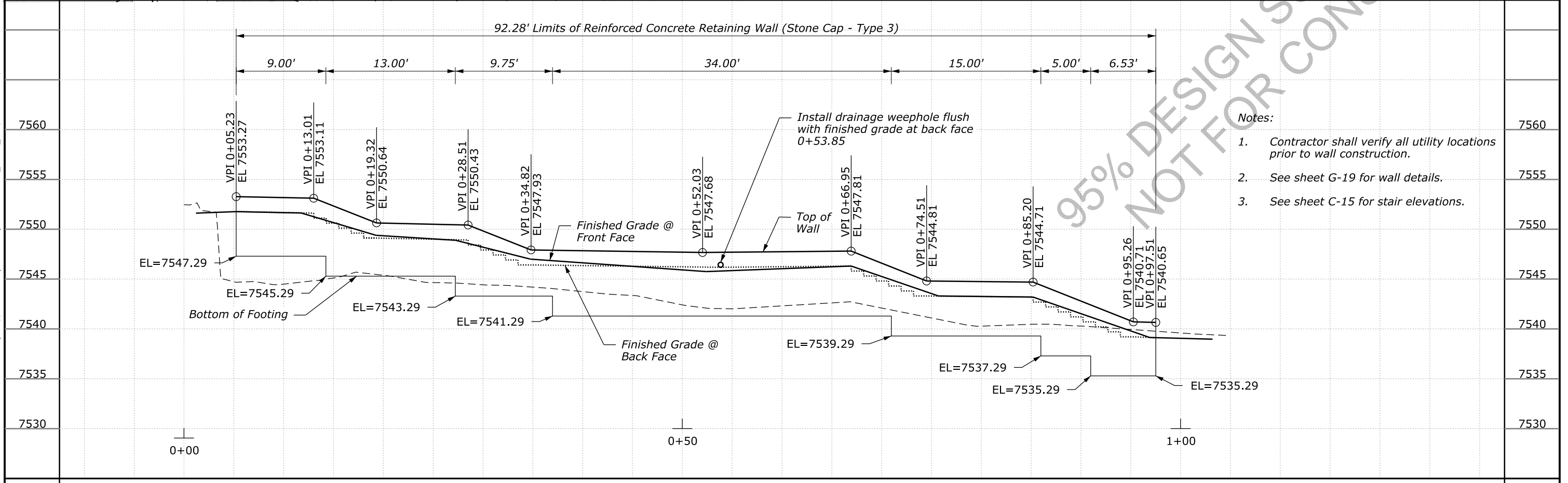
PEDESTRIAN RAIL DETAILS

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STATE	PROJECT	SHEET NUMBER
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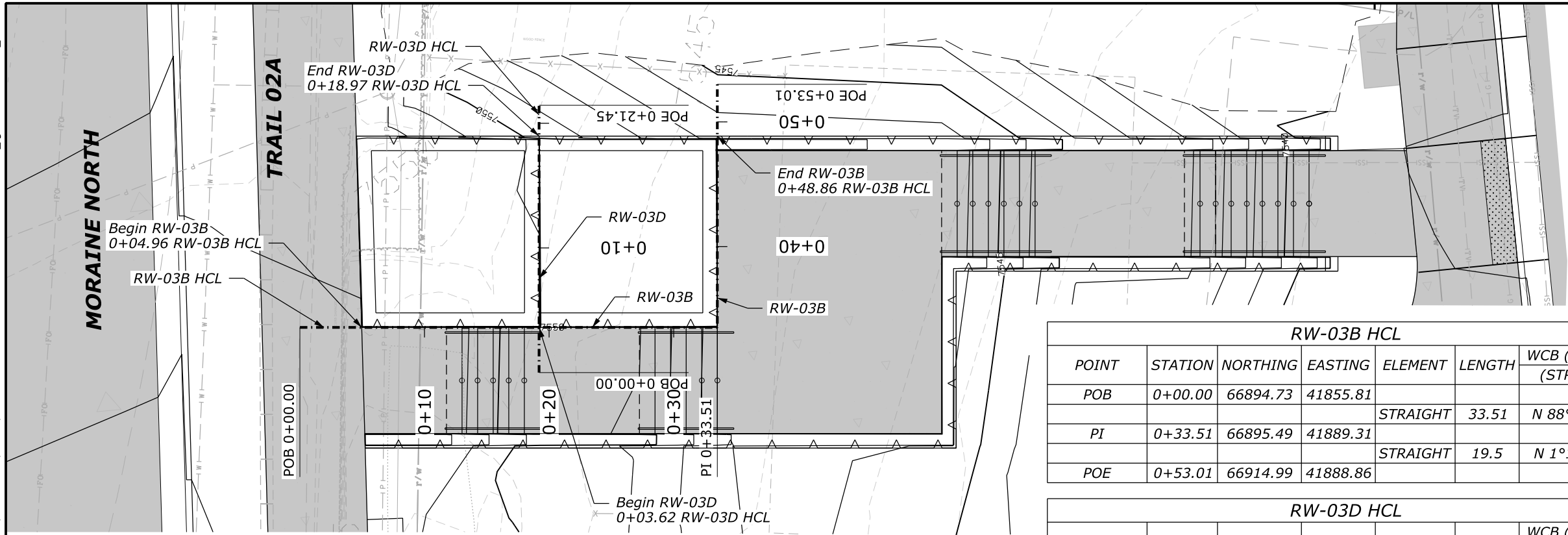
RW-03A HCL						
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00") (STRAIGHT)
POB	0+00.00	66885.05	41856.03			
				STRAIGHT	52.68	N 88°41'15" E
PI	0+52.68	66886.26	41908.69			
				STRAIGHT	14.19	N 1°18'45" W
PI	0+66.87	66900.44	41908.37			
				STRAIGHT	38.04	N 88°41'15" E
POE	1+04.91	66901.31	41946.40			



- Notes:
- Contractor shall verify all utility locations prior to wall construction.
 - See sheet G-19 for wall details.
 - See sheet C-15 for stair elevations.

RETAINING WALL PLANS - RW-03A

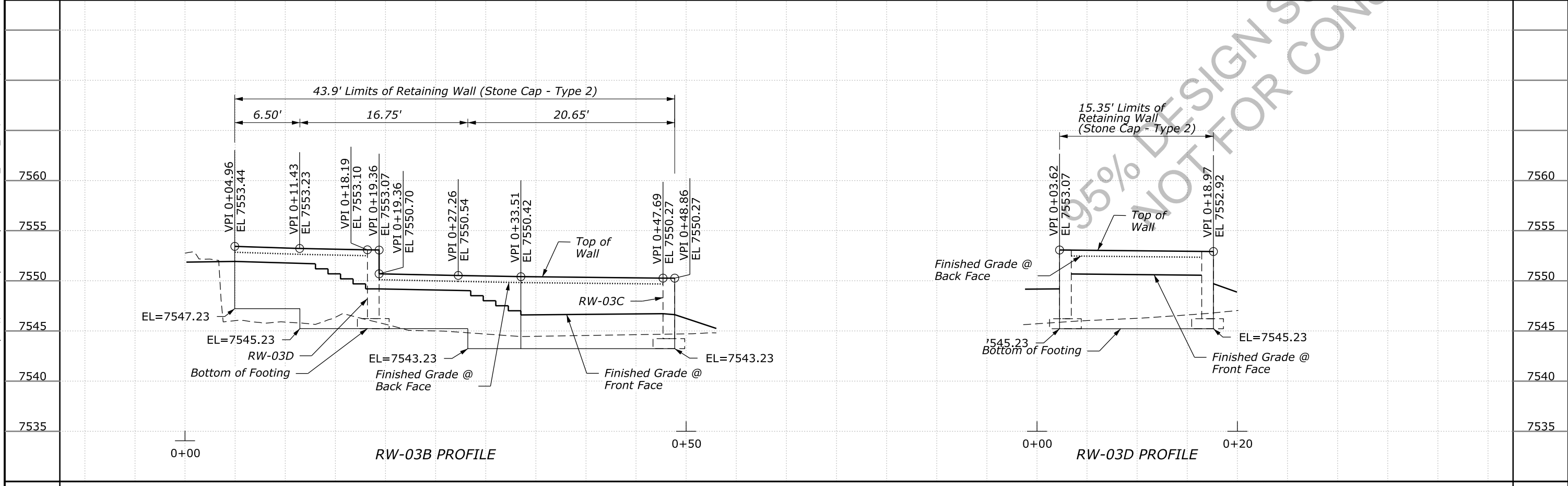
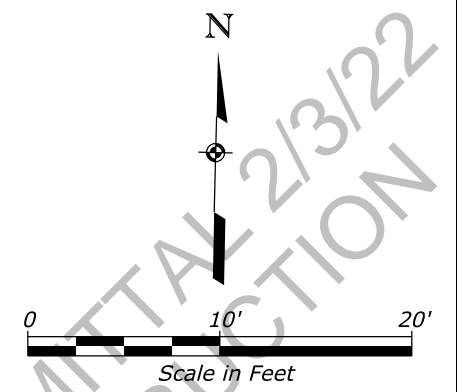
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- Notes:
- Contractor shall verify all utility locations prior to wall construction.
 - See sheet G-19 for wall details.
 - See sheet C-15 for stair elevations.

POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00") (STRAIGHT)
POB	0+00.00	66894.73	41855.81			
				STRAIGHT	33.51	N 88°41'15" E
PI	0+33.51	66895.49	41889.31			
				STRAIGHT	19.5	N 1°18'45" W
POE	0+53.01	66914.99	41888.86			

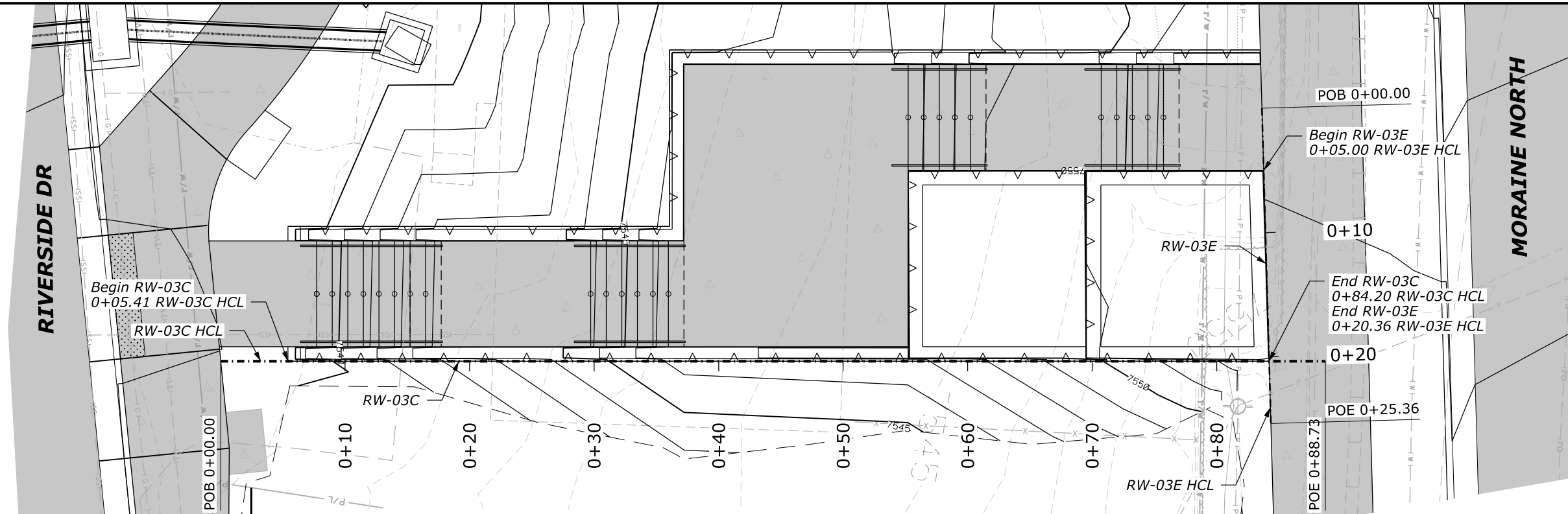
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00") (STRAIGHT)
POB	0+00.00	66891.54	41875.08			
				STRAIGHT	21.45	N 1°18'45" W
POE	0+21.45	66912.99	41874.59			



RETAINING WALL PLANS - RW-03B & RW-03D

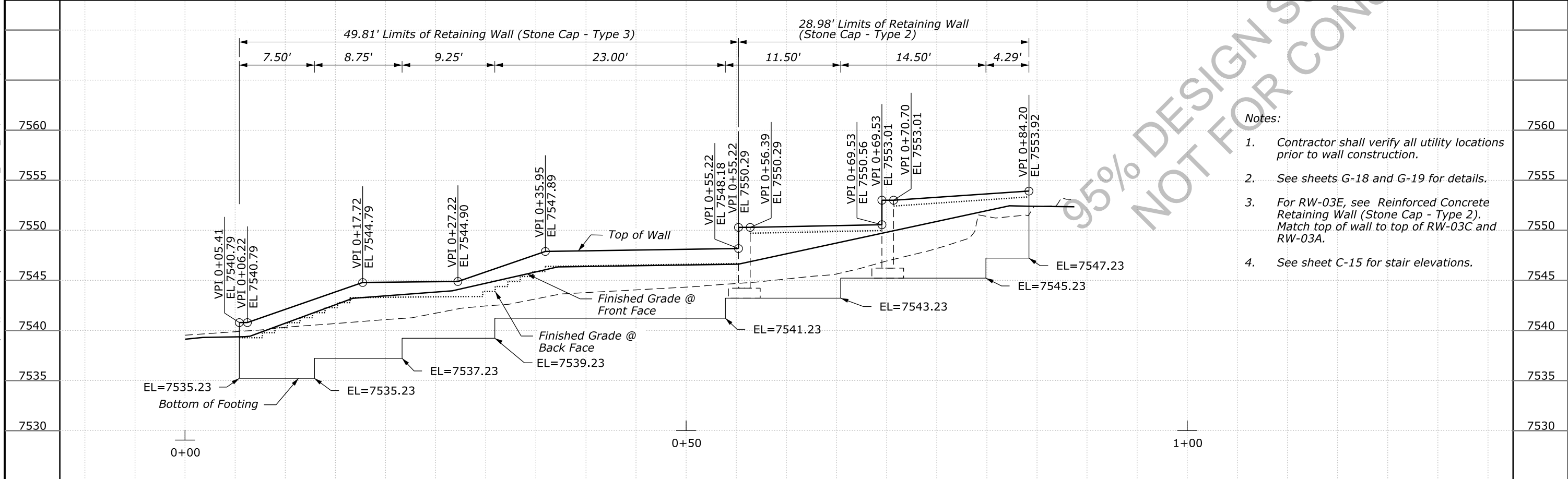
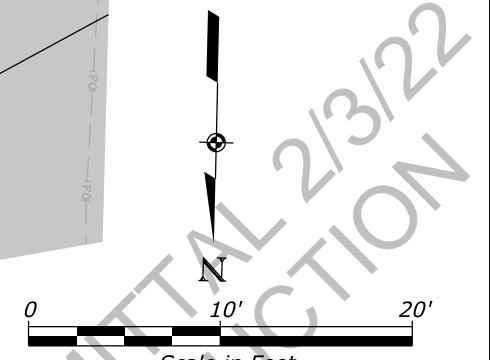
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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	G-12



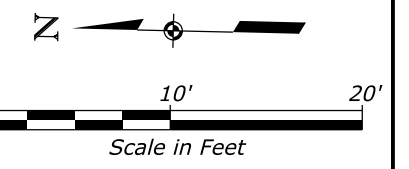
RW-03C HCL						
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00") (STRAIGHT)
POB	0+00.00	66912.11	41944.16			
				STRAIGHT	88.73	S 88°41'15" W
POE	0+88.73	66910.07	41855.46			

RW-03E HCL						
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00") (STRAIGHT)
POB	0+00.00	66889.85	41861.02			
				STRAIGHT	25.36	N 2°56'23" W
POE	0+25.36	66915.17	41859.72			

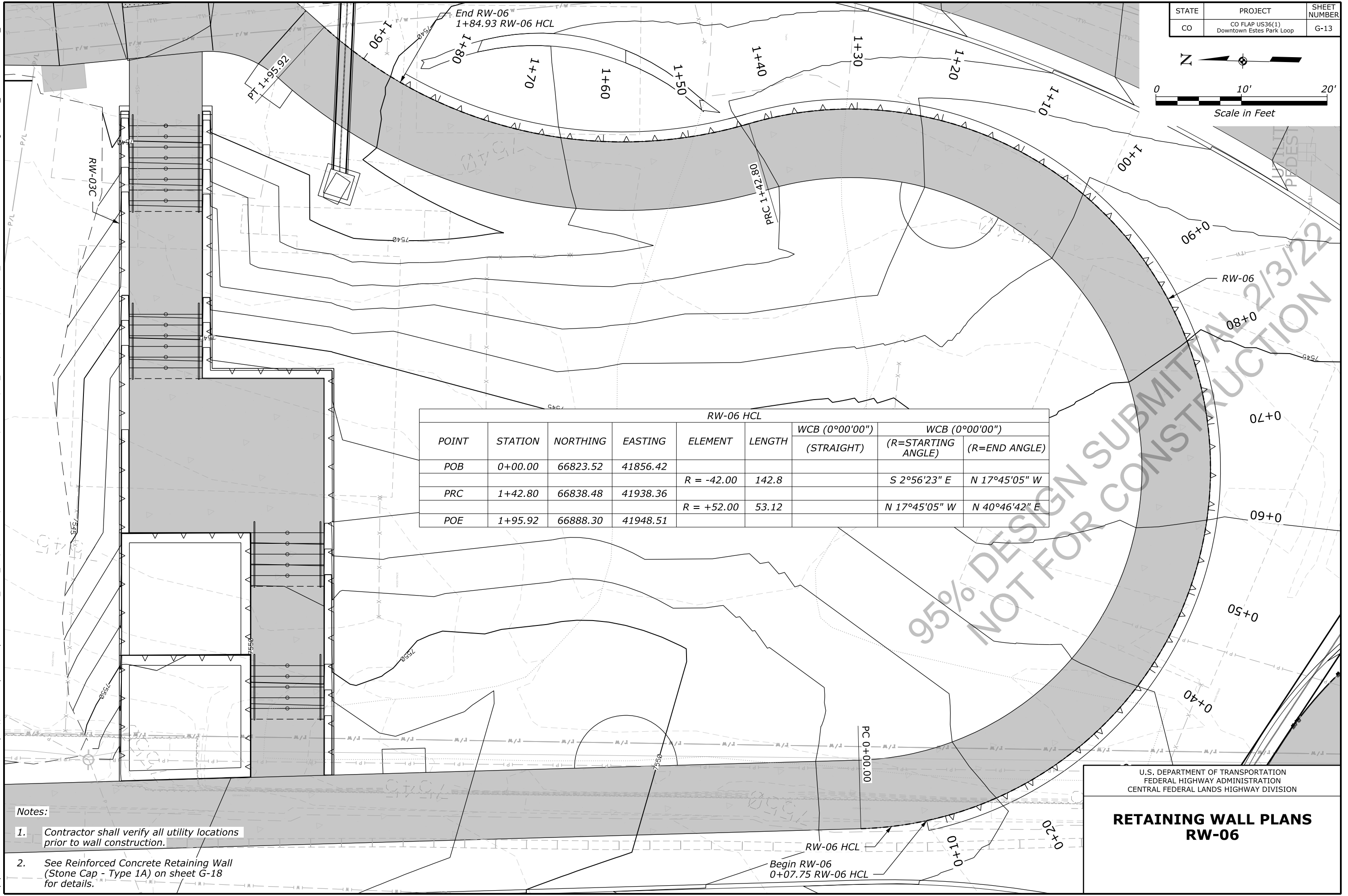


- Notes:
- Contractor shall verify all utility locations prior to wall construction.
 - See sheets G-18 and G-19 for details.
 - For RW-03E, see Reinforced Concrete Retaining Wall (Stone Cap - Type 2). Match top of wall to top of RW-03C and RW-03A.
 - See sheet C-15 for stair elevations.

RETAINING WALL PLANS - RW-03C



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 2/2/2022



RW-06 HCL								
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00")		
						(STRAIGHT)	(R=STARTING ANGLE)	(R=END ANGLE)
POB	0+00.00	66823.52	41856.42					
				R = -42.00	142.8		S 2°56'23" E	N 17°45'05" W
PRC	1+42.80	66838.48	41938.36					
				R = +52.00	53.12		N 17°45'05" W	N 40°46'42" E
POE	1+95.92	66888.30	41948.51					

- Notes:**
- Contractor shall verify all utility locations prior to wall construction.
 - See Reinforced Concrete Retaining Wall (Stone Cap - Type 1A) on sheet G-18 for details.

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

RETAINING WALL PLANS
 RW-06

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 2/2/2022

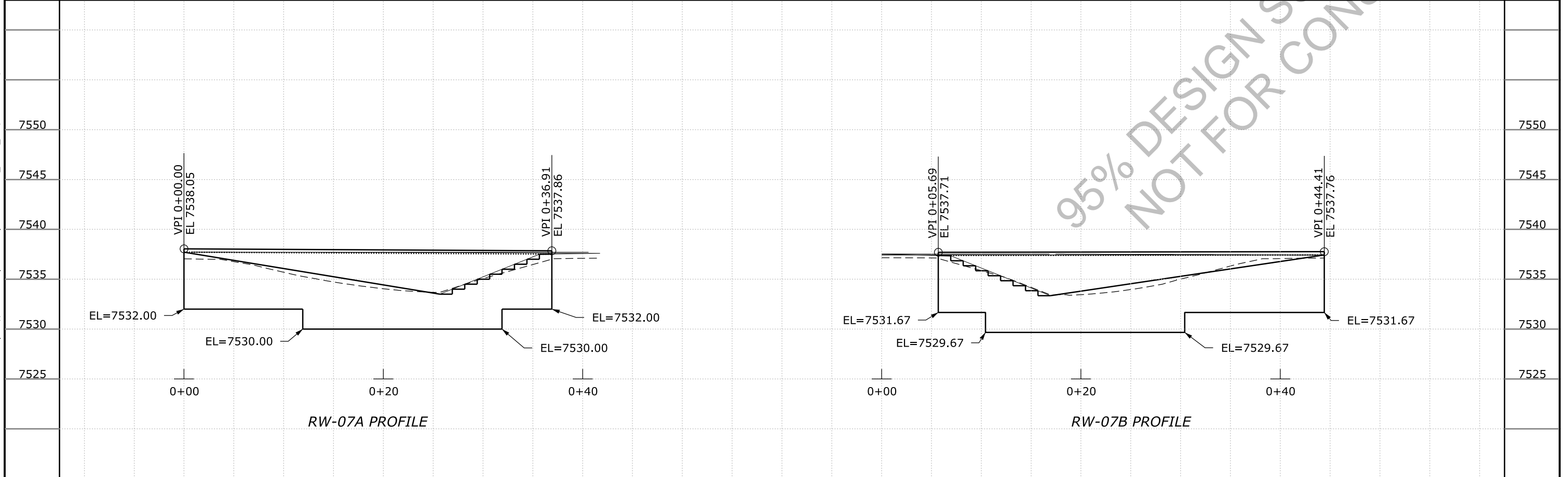
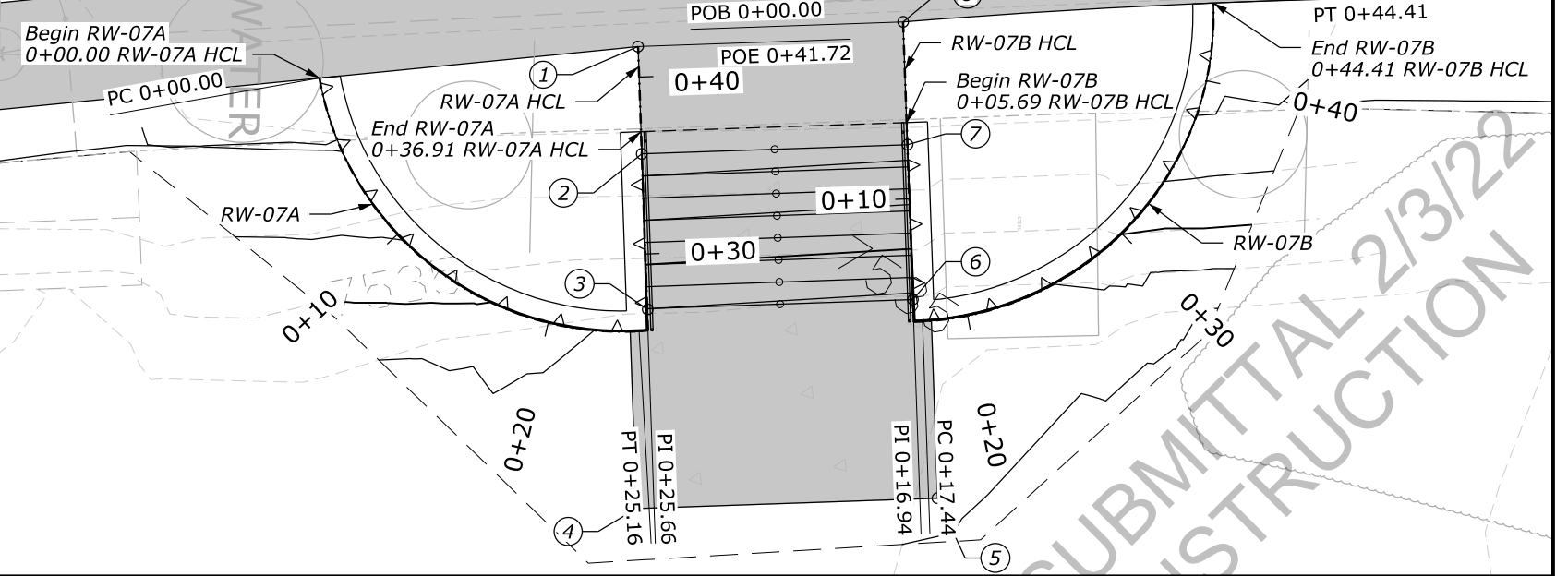
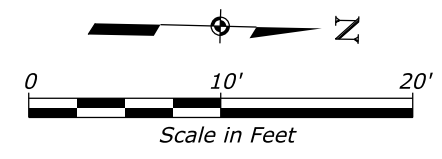
RW-07A HCL								
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00")		
						(STRAIGHT)	(R=STARTING ANGLE)	(R=END ANGLE)
POB	0+00.00	67054.32	41981.18					
				R = -17.32	25.16		N 78°42'58" E	N 4°32'46" W
PT	0+25.16	67072.67	41995.05					
				STRAIGHT	0.5		N 3°17'51" W	
PI	0+25.66	67073.17	41995.03					
				STRAIGHT	16.06		S 86°41'16" W	
POE	0+41.7	67072.24	41978.99					

RW-07B HCL								
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00")		
						(STRAIGHT)	(R=STARTING ANGLE)	(R=END ANGLE)
POB	0+00.00	67087.16	41977.25					
				STRAIGHT	16.94		N 86°41'16" E	
PI	0+16.94	67088.14	41994.16					
				STRAIGHT	0.5		N 3°17'51" W	
PC	0+17.44	67088.64	41994.13					
				R = -17.34	26.98		N 4°19'58" W	S 86°31'18" W
POE	0+44.41	67104.64	41975.79					

PAVEMENT POINTS RIVERSIDE DR HCL				
POINT #	STATION	OFFSET	EL	DESCRIPTION
1	503+85.11	43.50		EDGE OF SIDEWALK
2	503+84.73	49.55	7537.50	TOP OF STAIRS
3	503+84.17	58.28	7533.86	BOTTOM OF STAIRS
4	503+82.45	69.44		EDGE OF SIDEWALK MATCH EXISTING
5	504+00.71	70.46		EDGE OF SIDEWALK MATCH EXISTING
6	504+00.16	59.17	7533.73	BOTTOM OF STAIRS
7	504+00.61	50.43	7537.35	TOP OF STAIRS
8	504+00.95	43.50	7537.66	EDGE OF SIDEWALK

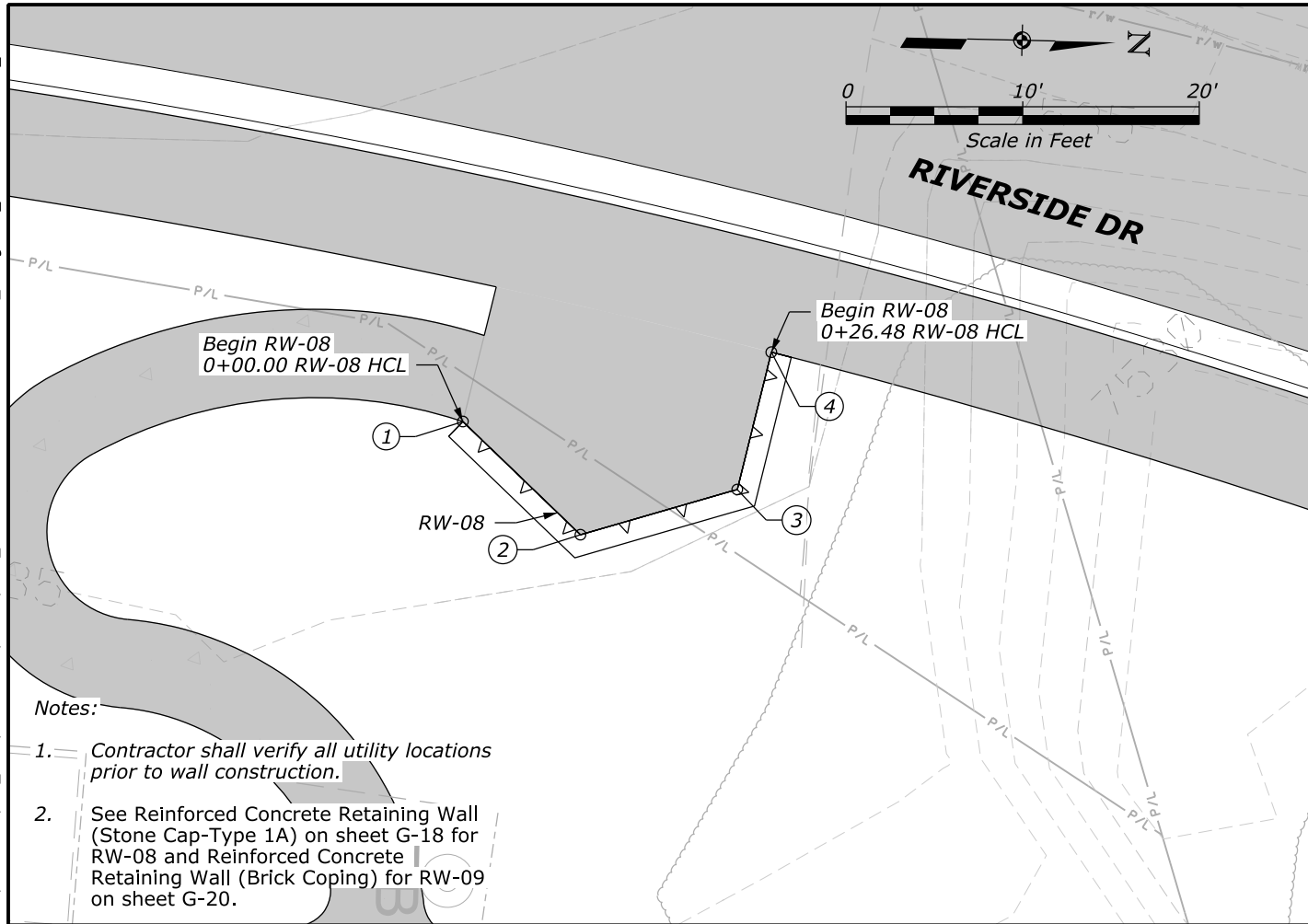
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	G-14

- Notes:
- Contractor shall verify all utility locations prior to wall construction.
 - See Reinforced Concrete Retaining Wall (Stone Cape - Type 2) on sheet G-18 for details.

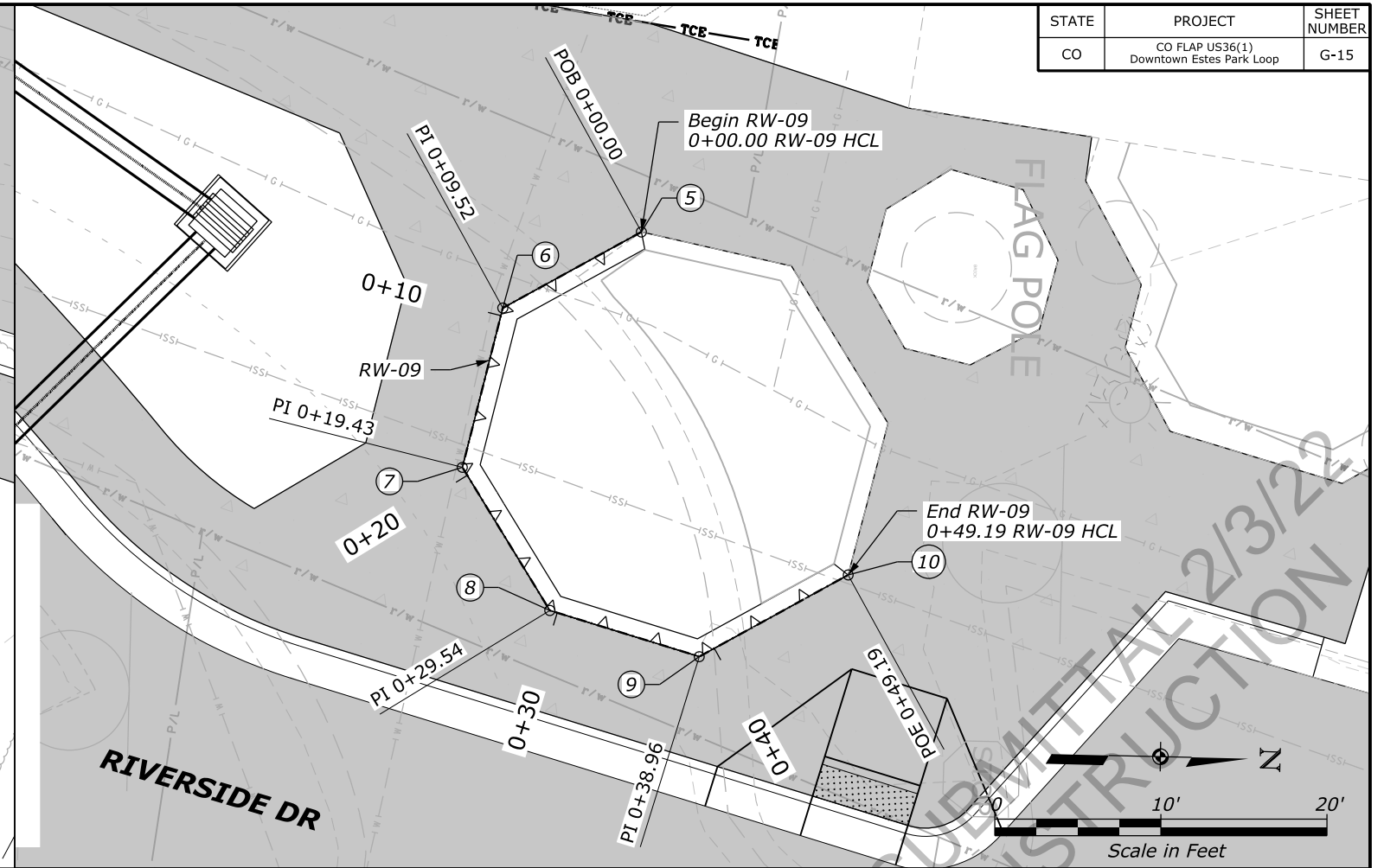


RETAINING WALL PLANS - RW-07A & RW-07B

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- Notes:
- Contractor shall verify all utility locations prior to wall construction.
 - See Reinforced Concrete Retaining Wall (Stone Cap-Type 1A) on sheet G-18 for RW-08 and Reinforced Concrete Retaining Wall (Brick Coping) for RW-09 on sheet G-20.



RW-08 HCL						
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00") (STRAIGHT)
POB	0+00.00	67219.42	41990.92			
				STRAIGHT	9.24	N 42°35'54" E
PI	0+09.24	67226.22	41997.17			
				STRAIGHT	9.24	N 17°24'06" W
PI	0+18.48	67235.03	41994.41			
				STRAIGHT	8.01	N 77°24'06" W
POE	0+26.48	67236.78	41986.59			

RW-09 HCL						
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00") (STRAIGHT)
POB	0+00.00	67443.20	42004.42			
				STRAIGHT	9.52	S 30°04'12" E
PI	0+09.52	67434.96	42009.19			
				STRAIGHT	9.91	S 77°04'01" E
PI	0+19.43	67432.75	42018.85			
				STRAIGHT	10.11	N 57°15'21" E
PI	0+29.54	67438.21	42027.35			
				STRAIGHT	9.42	N 15°52'35" E
PI	0+38.96	67447.27	42029.93			
				STRAIGHT	10.23	N 30°04'12" W
POE	0+49.19	67456.13	42024.80			

PAVEMENT POINTS RIVERSIDE DR HCL				
POINT #	STATION	OFFSET	EL	DESCRIPTION
1	505+48.12	51.34	7536.39	EDGE OF SIDEWALK
2	505+56.98	56.12	7535.98	EDGE OF SIDEWALK
3	505+65.96	51.51	7535.66	EDGE OF SIDEWALK
4	505+65.89	43.50	7535.71	EDGE OF SIDEWALK

PAVEMENT POINTS RIVERSIDE DR HCL				
POINT #	STATION	OFFSET	EL	DESCRIPTION
5	507+56.16	38.56	7530.55	EDGE OF SIDEWALK
6	507+54.98	29.14	7530.45	EDGE OF SIDEWALK
7	507+60.47	21.46	7530.52	EDGE OF SIDEWALK
8	507+69.51	20.97	7530.30	EDGE OF SIDEWALK
9	507+75.78	27.15	7530.16	EDGE OF SIDEWALK
10	507+76.08	37.38	7530.22	EDGE OF SIDEWALK

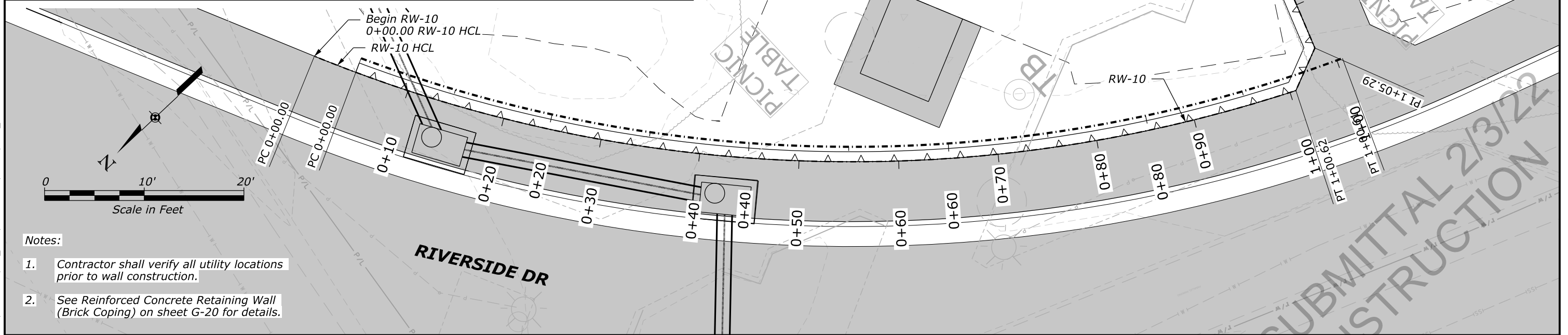
U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

RETAINING WALL PLANS
 RW-08 & RW-09

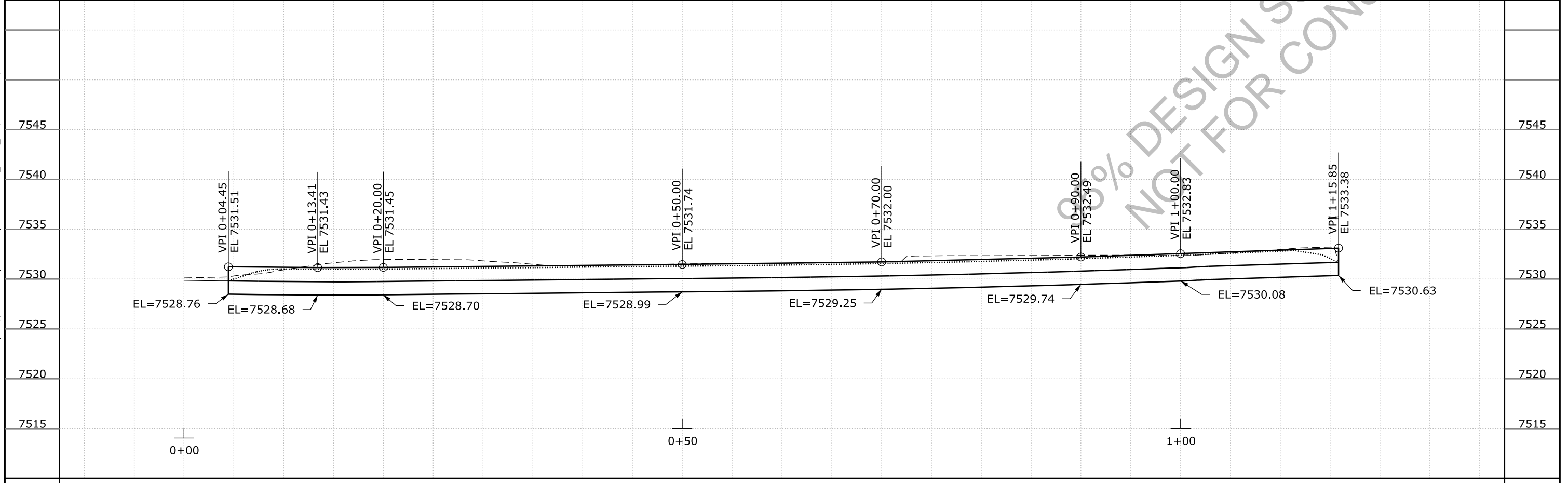
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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	G-16

RW-10 HCL								
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00")		
						(STRAIGHT)	(R=STARTING ANGLE)	(R=END ANGLE)
POB	0+00.00	67401.40	42080.77					
				R=-142.50	100.62		S 65°25'26" W	S 24°57'54" W
PT	1+00.62	67331.95	42010.85	STRAIGHT	4.67	S 22°52'22" E		
PI	1+05.29	67327.65	42012.67	STRAIGHT	10.56	S 69°46'22" E		
POE	1+15.85	67324.00	42022.57					



- Notes:
- Contractor shall verify all utility locations prior to wall construction.
 - See Reinforced Concrete Retaining Wall (Brick Coping) on sheet G-20 for details.

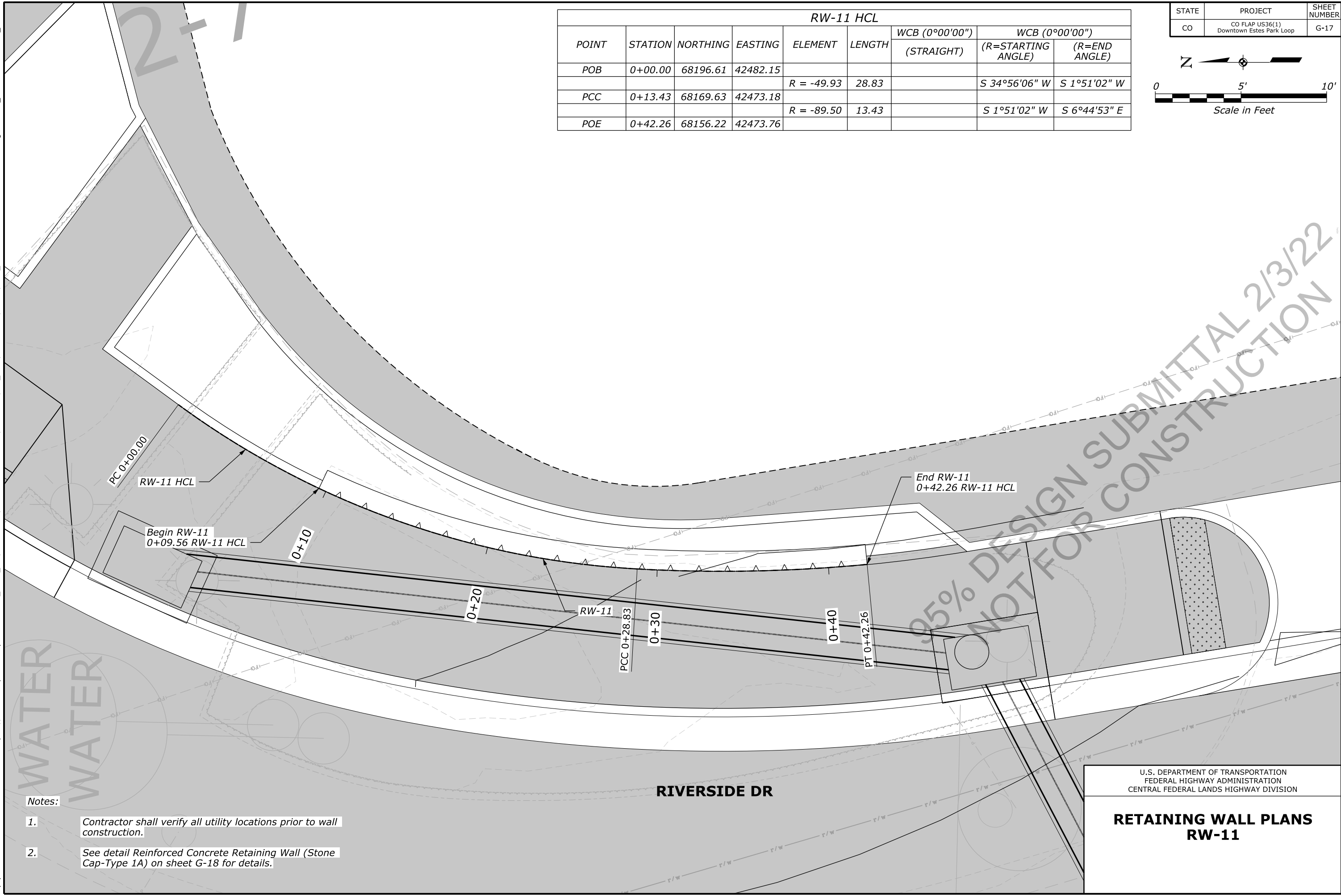
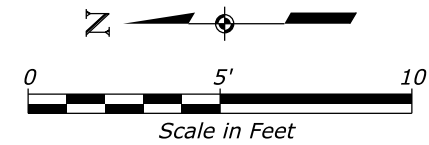


RETAINING WALL PLANS - RW-10

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RW-11 HCL								
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00")		
						(STRAIGHT)	(R=STARTING ANGLE)	(R=END ANGLE)
POB	0+00.00	68196.61	42482.15					
				R = -49.93	28.83		S 34°56'06" W	S 1°51'02" W
PCC	0+13.43	68169.63	42473.18					
				R = -89.50	13.43		S 1°51'02" W	S 6°44'53" E
POE	0+42.26	68156.22	42473.76					

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	G-17

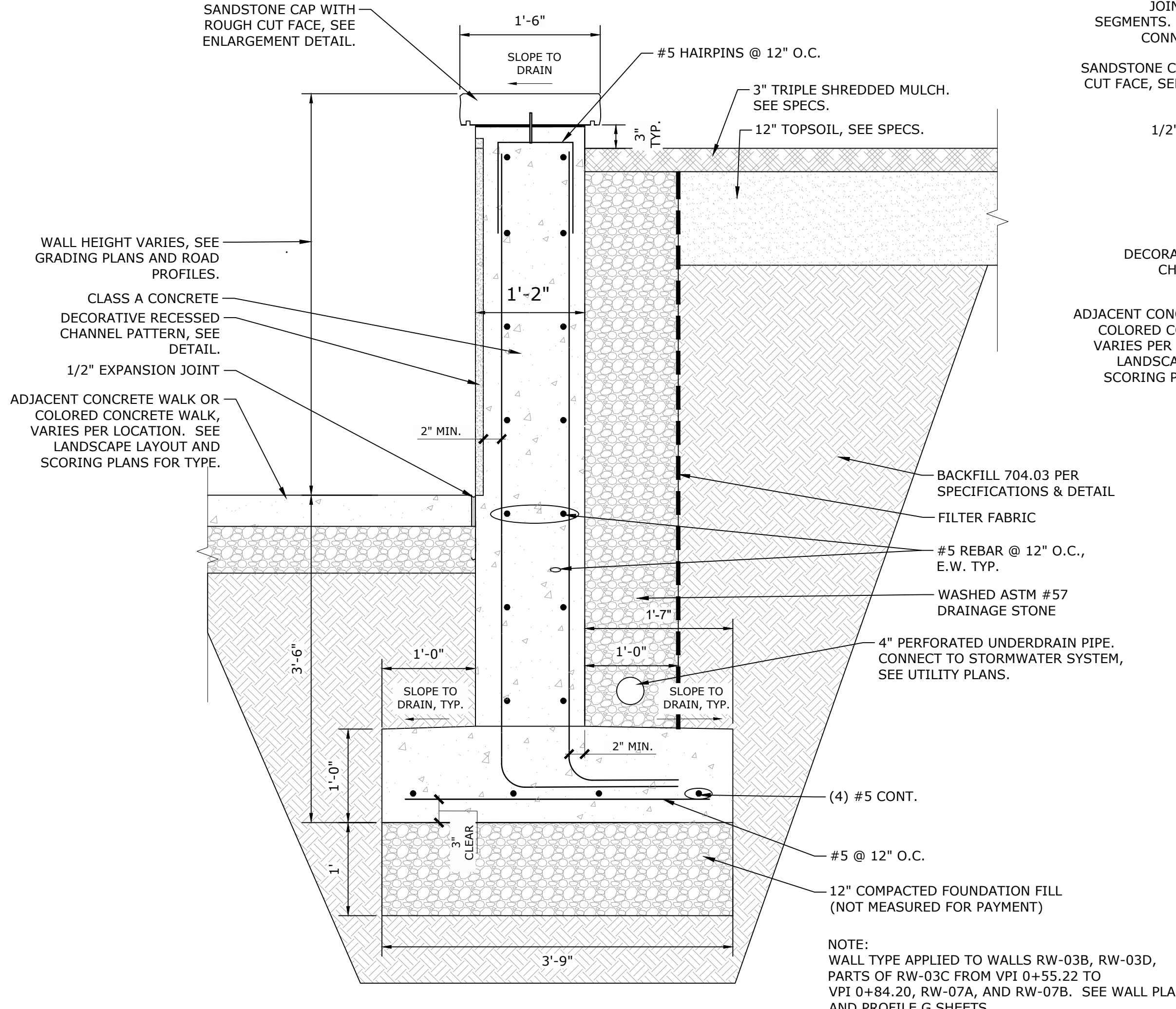


Notes:

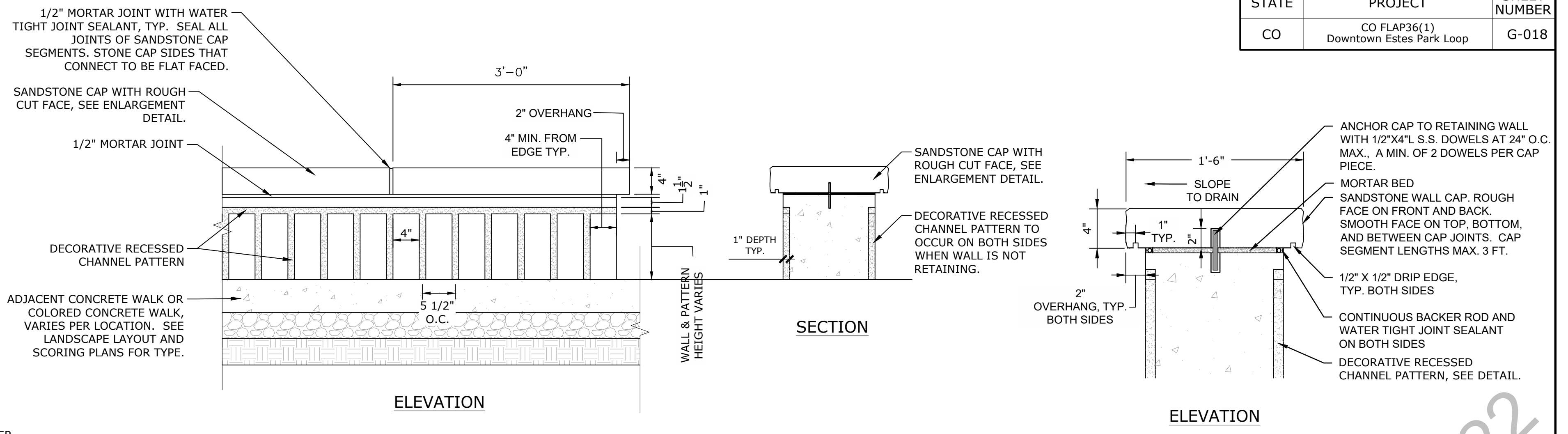
1. Contractor shall verify all utility locations prior to wall construction.
2. See detail Reinforced Concrete Retaining Wall (Stone Cap-Type 1A) on sheet G-18 for details.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**RETAINING WALL PLANS
RW-11**

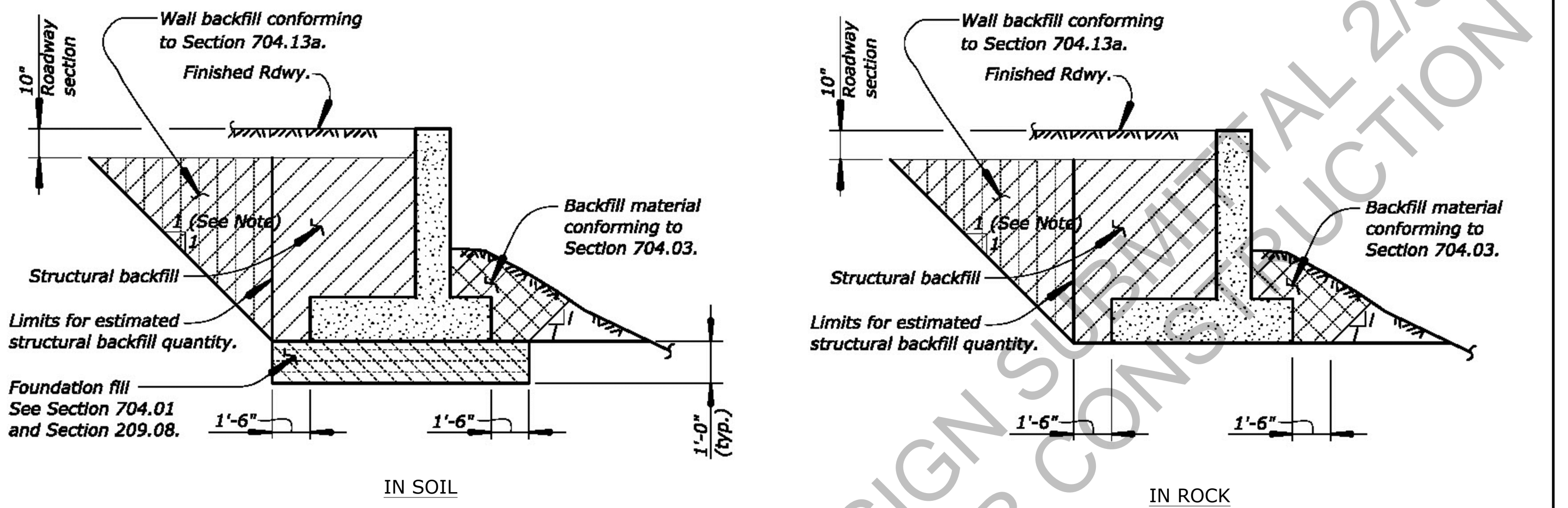


1 REINFORCED CONCRETE RETAINING WALL (STONE CAP - TYPE 2)
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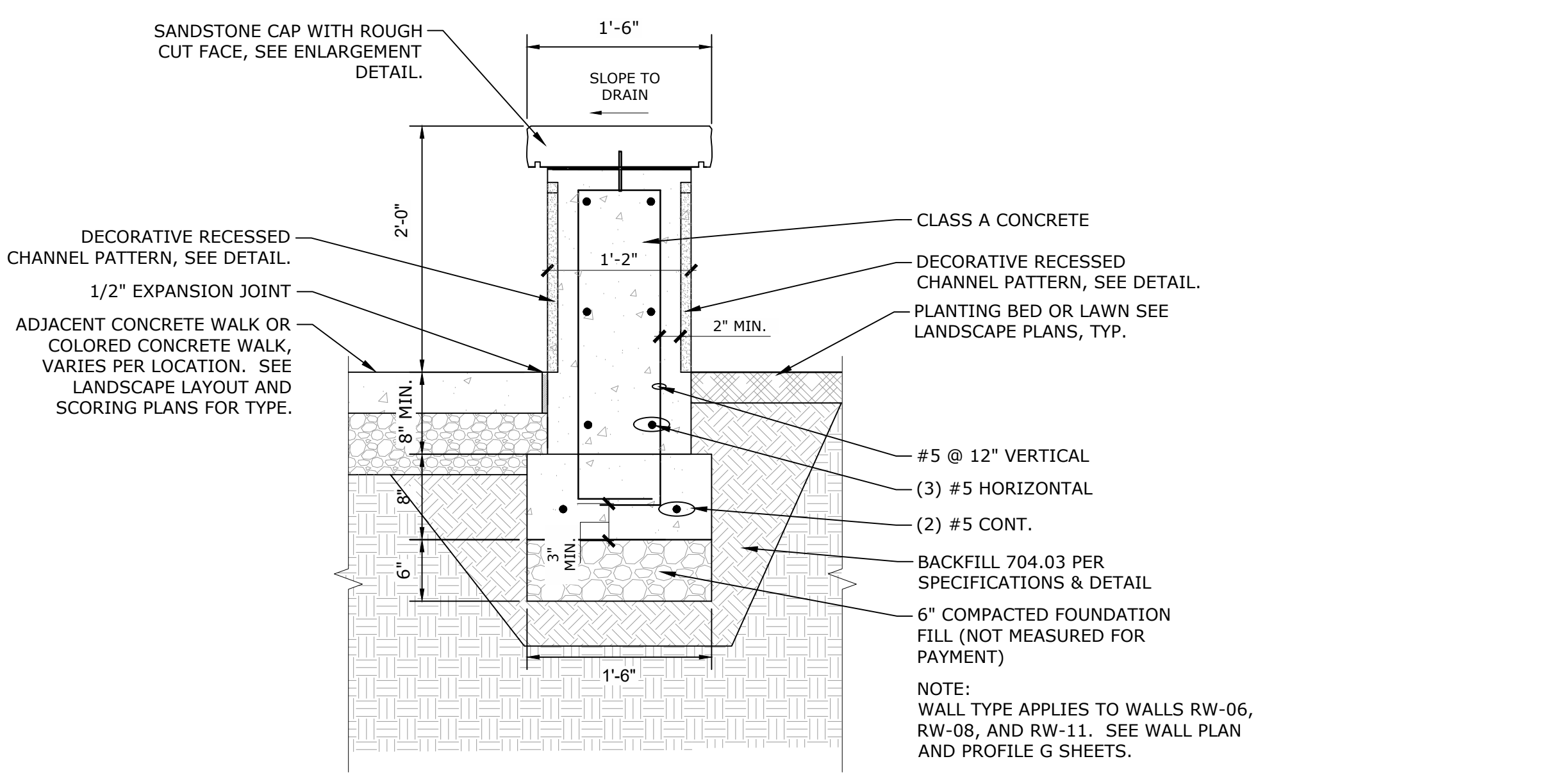


2 TYPICAL DECORATIVE RECESSED PATTERN
SCALE: 1"=1'-0"

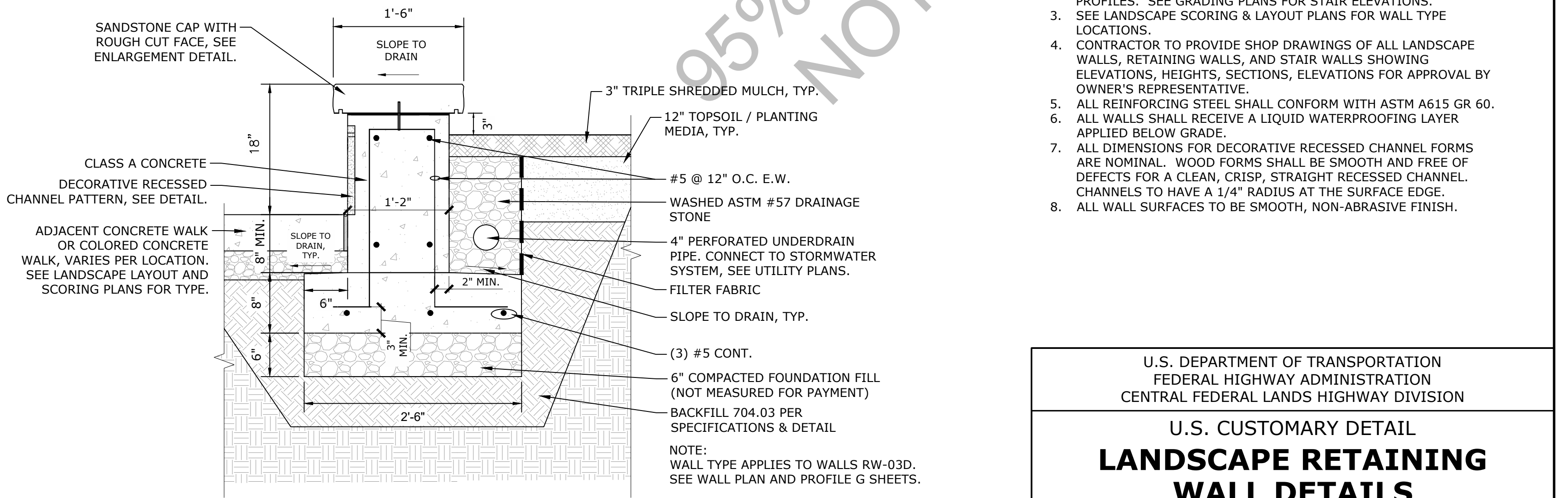
3 SANDSTONE CAP DETAIL
SCALE: 1 1/2"=1'-0"



4 RETAINING WALL BACKFILL DETAILS
SCALE: N.T.S.



5 REINFORCED CONCRETE RETAINING WALL (STONE CAP - TYPE 1A)
SCALE: 1"=1'-0"

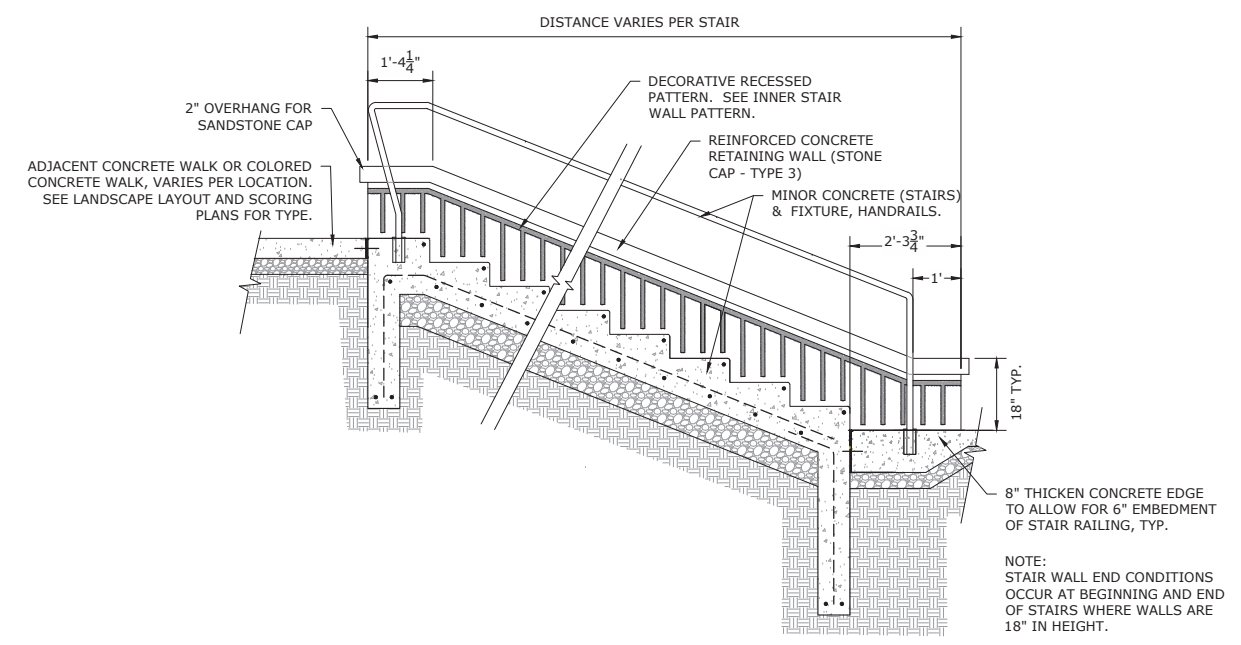


6 REINFORCED CONCRETE RETAINING WALL (STONE CAP - TYPE 1B)
SCALE: 1"=1'-0"

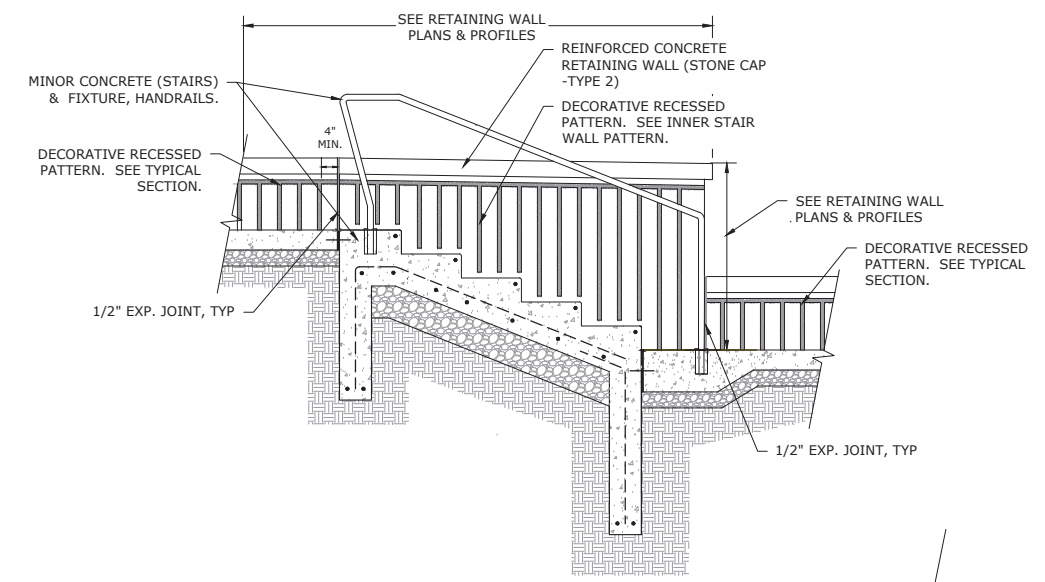
- GENERAL NOTES FOR CONCRETE RETAINING WALLS:
- SEE SPECIFICATIONS FOR MORTAR, JOINTS, WALL SANDSTONE CAP TYPE & COLOR, AND ADDITIONAL REQUIREMENTS.
 - SEE GRADING PLANS FOR WALL SLOPES, ELEVATIONS, AND PROFILES. SEE GRADING PLANS FOR STAIR ELEVATIONS.
 - SEE LANDSCAPE SCORING & LAYOUT PLANS FOR WALL TYPE LOCATIONS.
 - CONTRACTOR TO PROVIDE SHOP DRAWINGS OF ALL LANDSCAPE WALLS, RETAINING WALLS, AND STAIR WALLS SHOWING ELEVATIONS, HEIGHTS, SECTIONS, ELEVATIONS FOR APPROVAL BY OWNER'S REPRESENTATIVE.
 - ALL REINFORCING STEEL SHALL CONFORM WITH ASTM A615 GR 60.
 - ALL WALLS SHALL RECEIVE A LIQUID WATERPROOFING LAYER APPLIED BELOW GRADE.
 - ALL DIMENSIONS FOR DECORATIVE RECESSED CHANNEL FORMS ARE NOMINAL. WOOD FORMS SHALL BE SMOOTH AND FREE OF DEFECTS FOR A CLEAN, CRISP, STRAIGHT RECESSED CHANNEL. CHANNELS TO HAVE A 1/4" RADIUS AT THE SURFACE EDGE.
 - ALL WALL SURFACES TO BE SMOOTH, NON-ABRASIVE FINISH.

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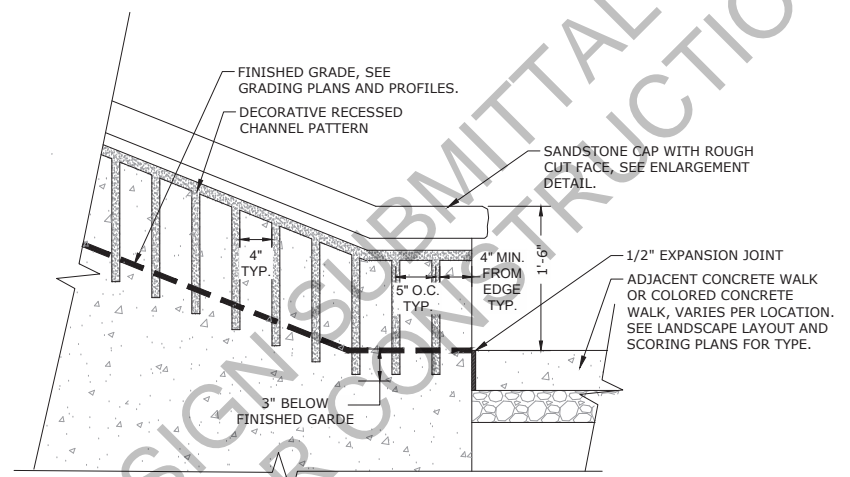
- GENERAL NOTES FOR CONCRETE RETAINING WALLS:
1. SEE SPECIFICATIONS FOR MORTAR, JOINTS, WALL SANDSTONE CAP TYPE & COLOR, AND ADDITIONAL REQUIREMENTS.
 2. SEE GRADING PLANS FOR WALL SLOPES, ELEVATIONS, AND PROFILES. SEE GRADING PLANS FOR STAIR ELEVATIONS.
 3. SEE LANDSCAPE SCORING & LAYOUT PLANS FOR WALL TYPE LOCATIONS.
 4. CONTRACTOR TO PROVIDE SHOP DRAWINGS OF ALL LANDSCAPE WALLS, RETAINING WALLS, AND STAIR WALLS SHOWING ELEVATIONS, HEIGHTS, SECTIONS, ELEVATIONS FOR APPROVAL BY OWNER'S REPRESENTATIVE.
 5. ALL REINFORCING STEEL SHALL CONFORM WITH ASTM A615 GR 60.
 6. ALL WALLS SHALL RECEIVE A LIQUID WATERPROOFING LAYER APPLIED BELOW GRADE.
 7. ALL DIMENSIONS FOR DECORATIVE RECESSED CHANNEL FORMS ARE NOMINAL. WOOD FORMS SHALL BE SMOOTH AND FREE OF DEFECTS FOR A CLEAN, CRISP, STRAIGHT RECESSED CHANNEL CHANNELS TO HAVE A 1/4" RADIUS AT THE SURFACE EDGE.
 8. ALL WALL SURFACES TO BE SMOOTH, NON-ABRASIVE FINISH.



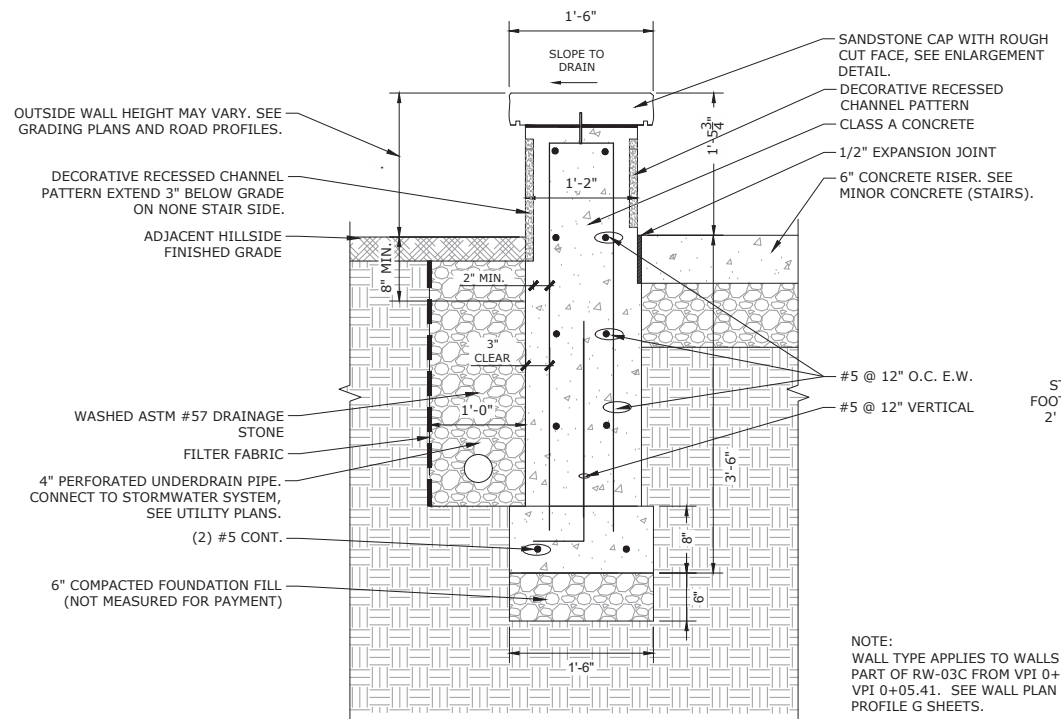
18" HT. STAIR WALL ENDS
SCALE: 1/2"=1'-0"



TALL STAIR WALL
SCALE: 1/2"=1'-0"

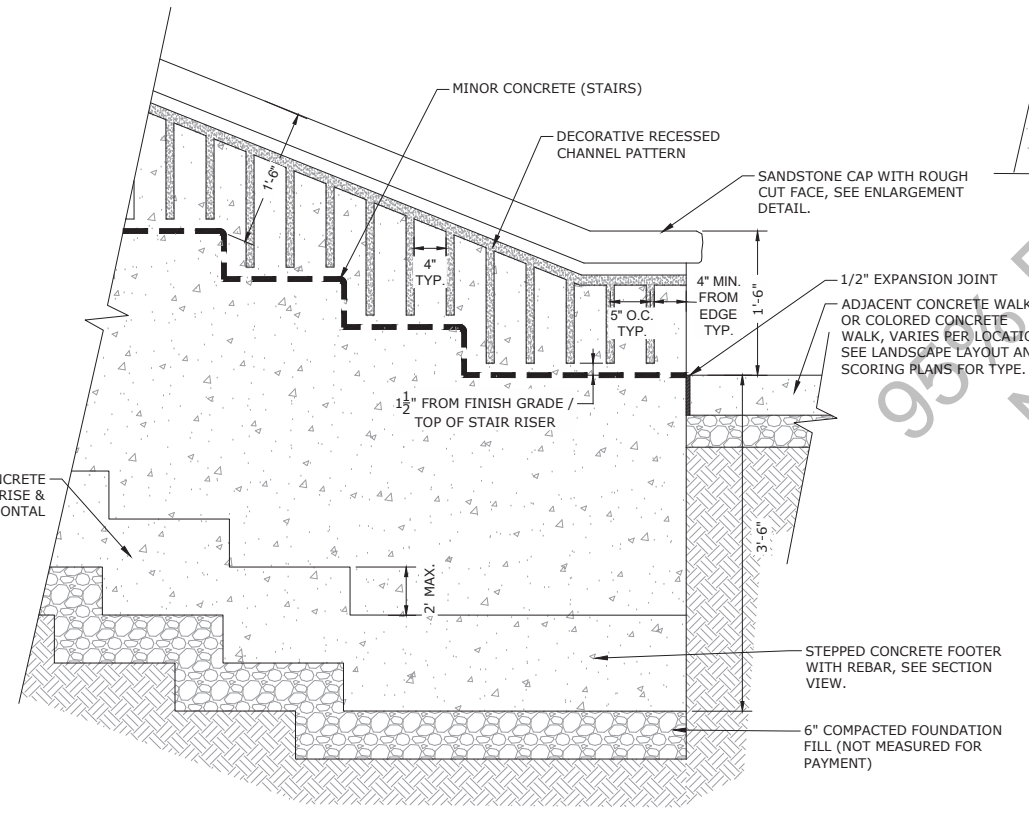


OUTER STAIR WALL ELEVATION SECTION
SCALE: 1"=1'-0"



SECTION
SCALE: 1"=1'-0"

NOTE:
WALL TYPE APPLIES TO WALLS RW-03A,
PART OF RW-03C FROM VPI 0+55.22 TO
VPI 0+05.41. SEE WALL PLAN AND
PROFILE G SHEETS.



INNER STAIR WALL ELEVATION SECTION
SCALE: 1"=1'-0"

1 REINFORCED CONCRETE RETAINING WALL (STONE CAP - TYPE 3)
SCALE: AS NOTED

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

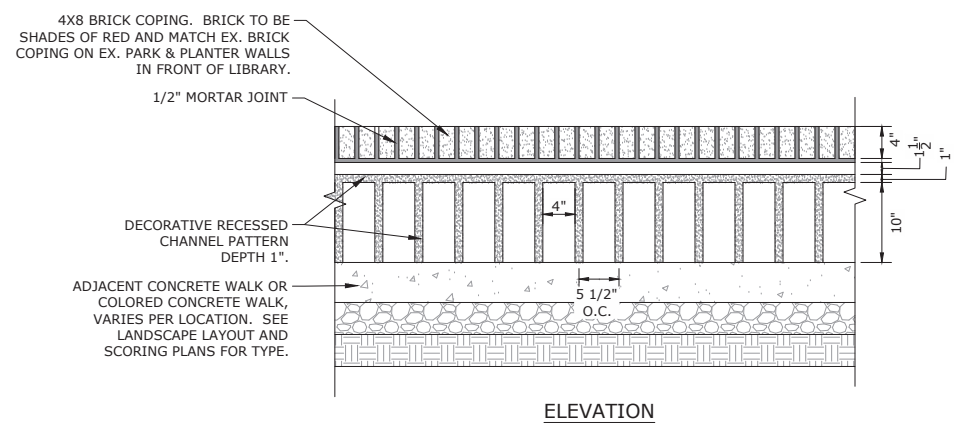
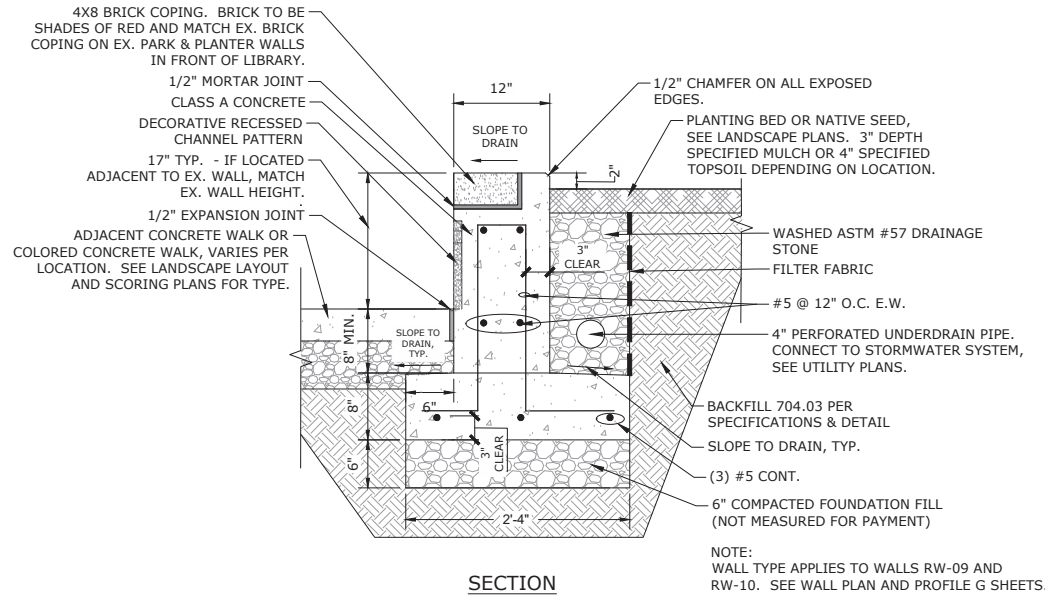
U.S. CUSTOMARY DETAIL
LANDSCAPE RETAINING WALL DETAILS

SHEET 2 OF 3

SPECIAL
258

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP36(1) Downtown Estes Park Loop	G-020

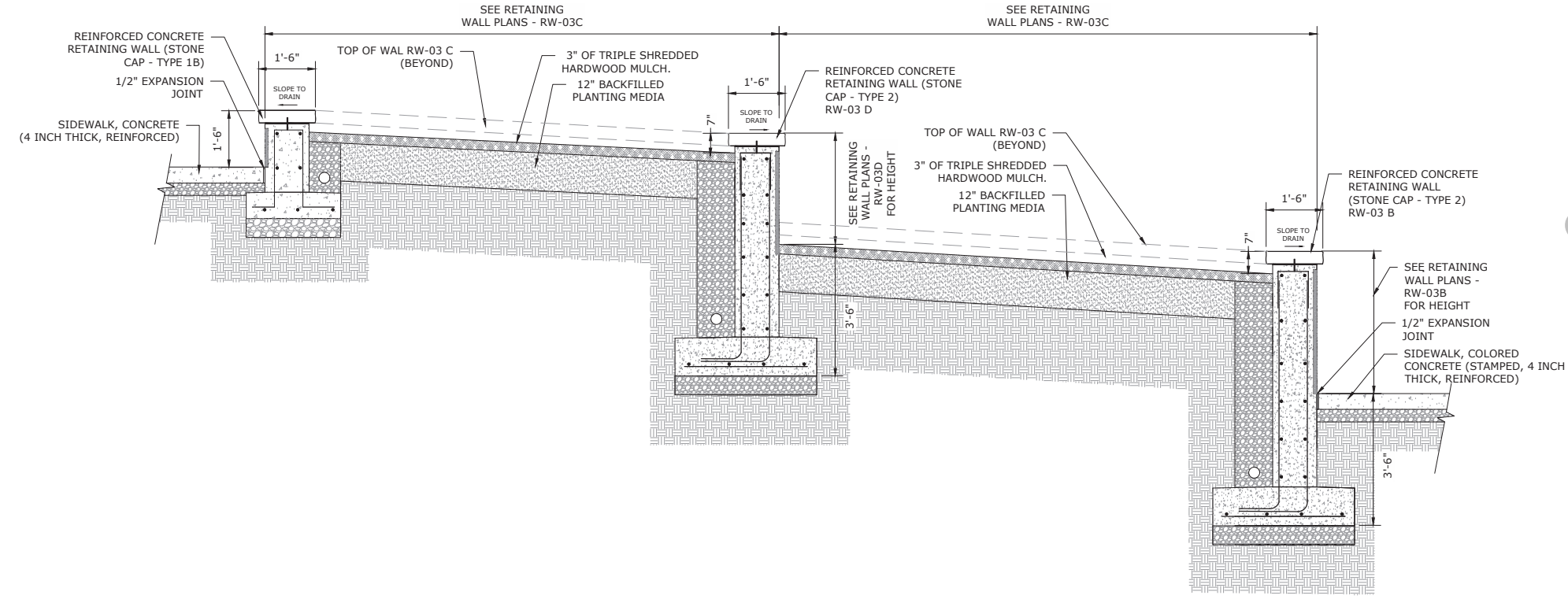


- GENERAL NOTES FOR CONCRETE RETAINING WALLS:
1. SEE SPECIFICATIONS FOR MORTAR, JOINTS, WALL SANDSTONE CAP TYPE & COLOR, AND ADDITIONAL REQUIREMENTS.
 2. SEE GRADING PLANS FOR WALL SLOPES, ELEVATIONS, AND PROFILES. SEE GRADING PLANS FOR STAIR ELEVATIONS.
 3. SEE LANDSCAPE SCORING & LAYOUT PLANS FOR WALL TYPE LOCATIONS.
 4. CONTRACTOR TO PROVIDE SHOP DRAWINGS OF ALL LANDSCAPE WALLS, RETAINING WALLS, AND STAIR WALLS SHOWING ELEVATIONS, HEIGHTS, SECTIONS, ELEVATIONS FOR APPROVAL BY OWNER'S REPRESENTATIVE.
 5. ALL REINFORCING STEEL SHALL CONFORM WITH ASTM A615 GR 60.
 6. ALL WALLS SHALL RECEIVE A LIQUID WATERPROOFING LAYER APPLIED BELOW GRADE.
 7. ALL DIMENSIONS FOR DECORATIVE RECESSED CHANNEL FORMS ARE NOMINAL. WOOD FORMS SHALL BE SMOOTH AND FREE OF DEFECTS FOR A CLEAN, CRISP, STRAIGHT RECESSED CHANNEL. CHANNELS TO HAVE A 1/4" RADIUS AT THE SURFACE EDGE.
 8. ALL WALL SURFACES TO BE SMOOTH, NON-ABRASIVE FINISH.

SECTION

ELEVATION

1 REINFORCED CONCRETE RETAINING WALL (BRICK COPING)
SCALE: 1"=1'-0"

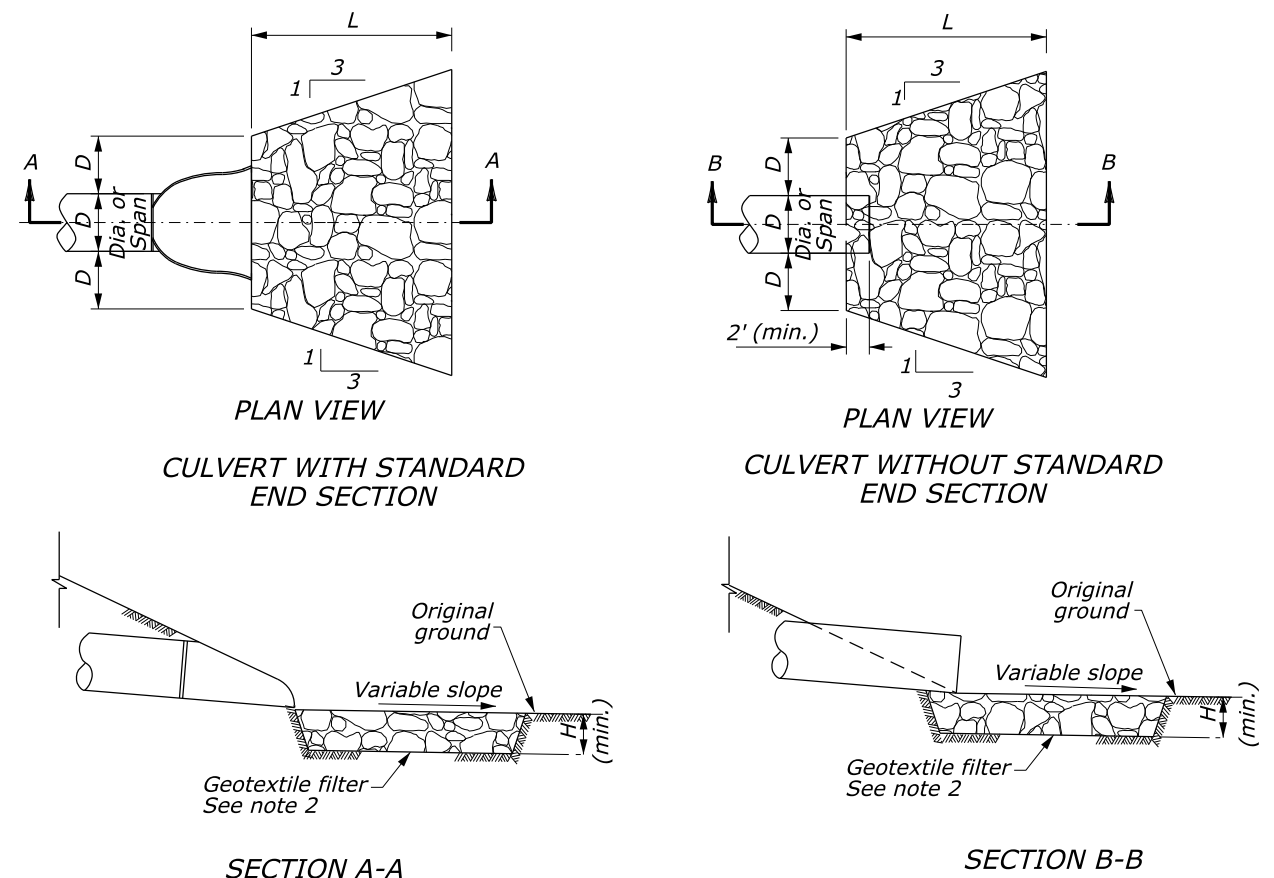


2 REINFORCED CONCRETE RETAINING WALL - STONE VENEER PLANTER RETAINING WALL SECTION
SCALE: 1/2"=1'-0"

95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

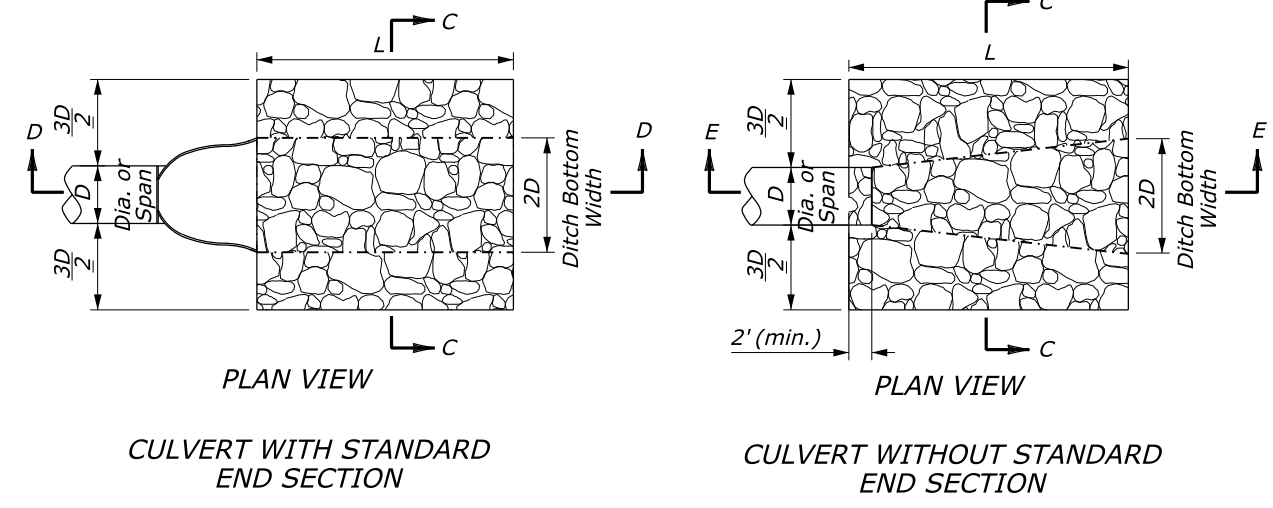
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY DETAIL LANDSCAPE RETAINING WALL DETAILS	
SHEET 3 OF 3	
	SPECIAL 258

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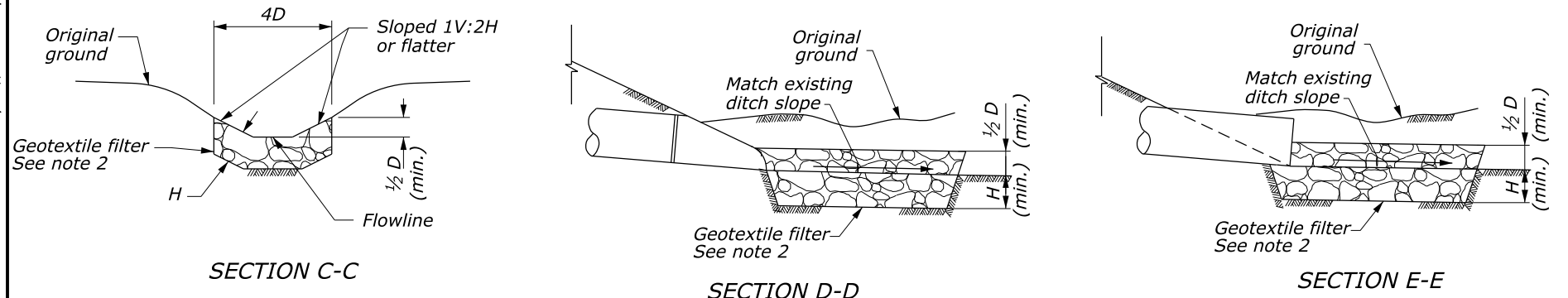


SECTION A-A SECTION B-B

PROTECTIVE APRON AT CULVERT OUTLET WITHOUT DITCH



PLAN VIEW PLAN VIEW



SECTION C-C SECTION D-D SECTION E-E

PROTECTIVE APRON AT CULVERT OUTLET WITH DITCH

OUTLET WITHOUT DITCH PROTECTIVE APRON DIMENSIONS AND ESTIMATED QUANTITIES

	CULVERT SIZE D (inches)	RIPRAP CLASS	LENGTH OF APRON L (feet)	DEPTH OF APRON H (feet)	ESTIMATED RIPRAP QUANTITY (CY)	ESTIMATED GEOTEXTILE QUANTITY (SY)
WITH END SECTION	12	2	4	1.5	1	5
	18	2	6	1.5	2.2	9
	24	2	8	1.5	3.9	14
	30	3	12.5	2	10.9	28
	36	3	16	2	15.6	37
	42	4	21	2.5	34.1	63
WITHOUT END SECTION	12	2	6	1.5	1.7	8
	18	2	8	1.5	3.2	12
	24	2	10	1.5	5.2	17
	30	3	14.5	2	13.3	33
	36	3	17	2	18.5	43
	42	4	23	2.5	38.7	70
48	4	26	2.5	49.8	87	

OUTLET WITH DITCH PROTECTIVE APRON DIMENSIONS AND ESTIMATED QUANTITIES

	CULVERT SIZE D (inches)	RIPRAP CLASS	LENGTH OF APRON L (feet)	DEPTH OF APRON H (feet)	ESTIMATED RIPRAP QUANTITY (CY)	ESTIMATED GEOTEXTILE QUANTITY (SY)
WITH END SECTION	12	2	4	1.5	0.9	5
	18	2	6	1.5	2	8
	24	2	8	1.5	3.6	13
	30	3	12.5	2	9.3	24
	36	3	15	2	13.4	32
	42	4	21	2.5	27.3	53
WITHOUT END SECTION	12	2	6	1.5	1.4	6
	18	2	8	1.5	2.7	10
	24	2	10	1.5	4.5	15
	30	3	14.5	2	10.8	27
	36	3	17	2	15.2	36
	42	4	23	2.5	29.9	57
48	4	26	2.5	38.6	70	

- NOTE:**
1. Use for aprons serving culverts with slopes of less than 10%.
 2. Furnish geotextile filter conforming to subsection 714.01(a). See summary tables for class and type.
 3. Excavation for placement of riprap will not be measured for payment.

NO SCALE

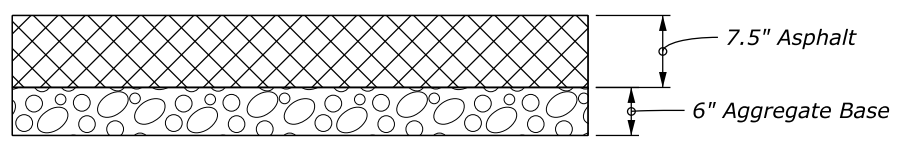
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY OFFICE

U.S. CUSTOMARY STANDARD
PLACED RIPRAP
AT CULVERT OUTLETS

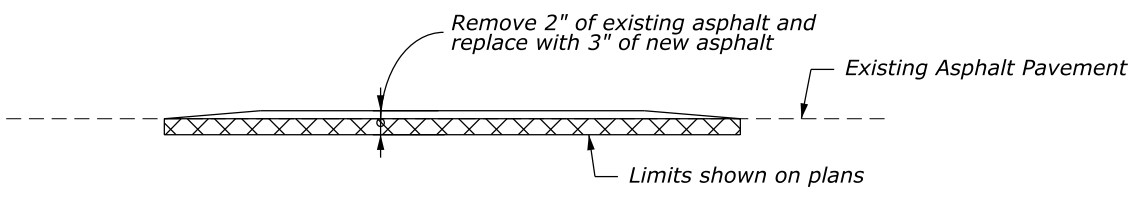
STANDARD
251-50

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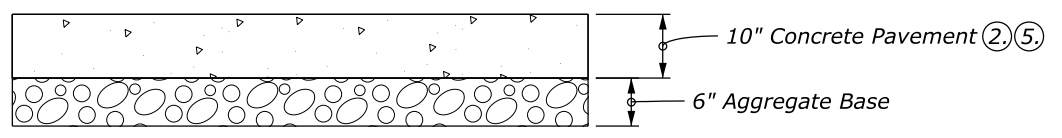
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	K-00



**ASPHALT PAVEMENT
(FULL DEPTH)**



**ASPHALT PAVEMENT
(OVERLAY)**



CONCRETE PAVEMENT

ROADWAY PLAN PAVEMENT LEGEND

- ASPHALT PAVEMENT (FULL DEPTH)
- ASPHALT PAVEMENT (OVERLAY)
- CONCRETE PAVEMENT

Notes:

1. See Pavement Plans in the K sheets for locations of all pavement types.
- ② See Jointing Plans in the K sheets for joint locations and details for Concrete Pavement.
- ③ See Scoring Plans in the T sheets for scoring patterns for all Median Concrete.
4. See Landscaping Plans for sidewalk pavement details and Scoring Plans for sidewalk for sidewalk scoring patterns in the T sheets.
- ⑤ Colored concrete to be used for Roundabout Apron.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

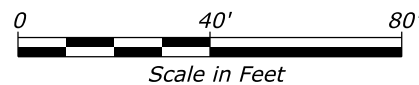
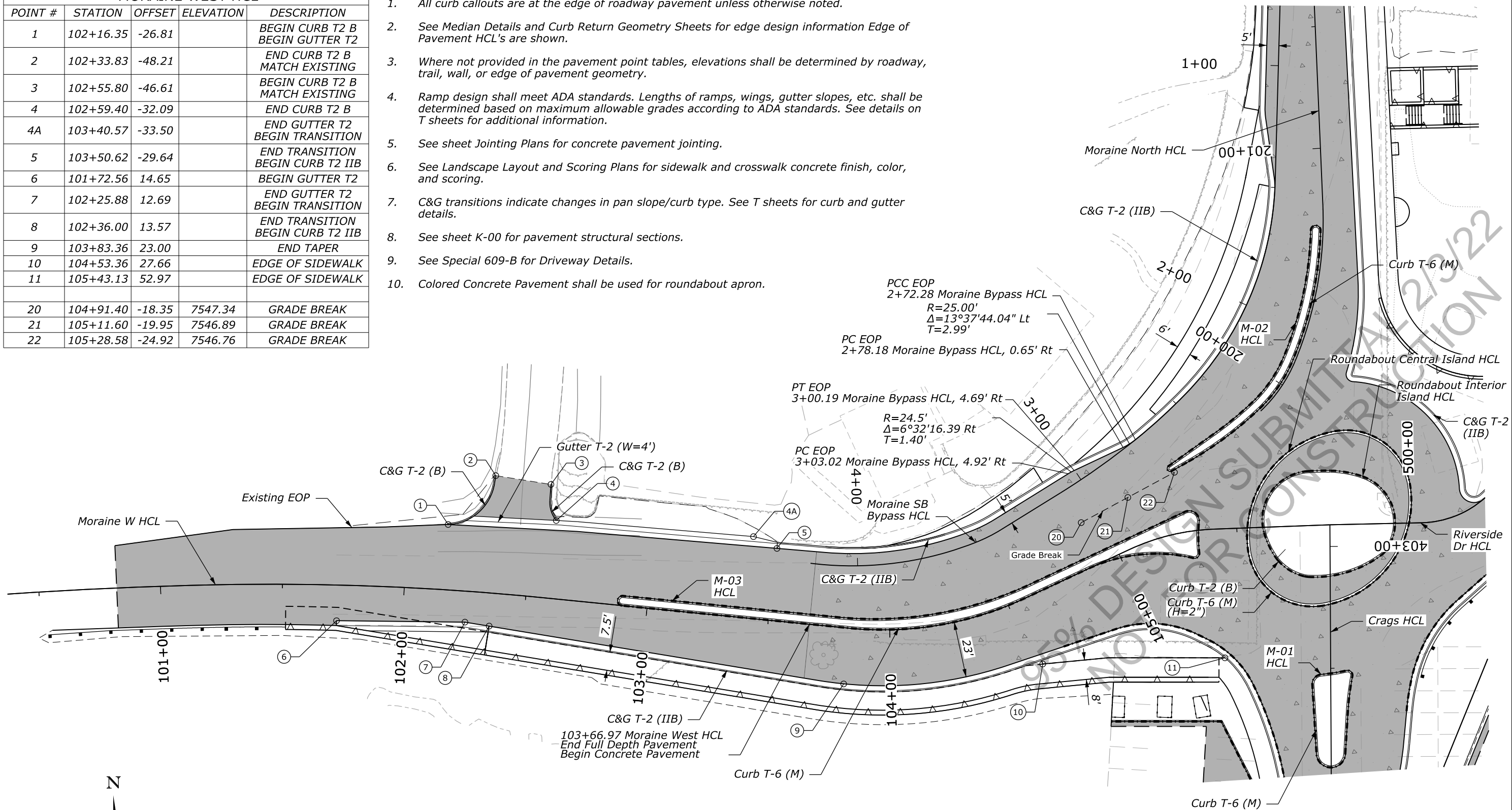
PAVEMENT SECTIONS

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95% DESIGN SUBMITTAL 2/3/22
 NOT FOR CONSTRUCTION

PAVEMENT POINTS MORaine WEST HCL				
POINT #	STATION	OFFSET	ELEVATION	DESCRIPTION
1	102+16.35	-26.81		BEGIN CURB T2 B BEGIN GUTTER T2
2	102+33.83	-48.21		END CURB T2 B MATCH EXISTING
3	102+55.80	-46.61		BEGIN CURB T2 B MATCH EXISTING
4	102+59.40	-32.09		END CURB T2 B
4A	103+40.57	-33.50		END GUTTER T2 BEGIN TRANSITION
5	103+50.62	-29.64		END TRANSITION BEGIN CURB T2 IIB
6	101+72.56	14.65		BEGIN GUTTER T2
7	102+25.88	12.69		END GUTTER T2 BEGIN TRANSITION
8	102+36.00	13.57		END TRANSITION BEGIN CURB T2 IIB
9	103+83.36	23.00		END TAPER
10	104+53.36	27.66		EDGE OF SIDEWALK
11	105+43.13	52.97		EDGE OF SIDEWALK
20	104+91.40	-18.35	7547.34	GRADE BREAK
21	105+11.60	-19.95	7546.89	GRADE BREAK
22	105+28.58	-24.92	7546.76	GRADE BREAK

- Notes:
- All curb callouts are at the edge of roadway pavement unless otherwise noted.
 - See Median Details and Curb Return Geometry Sheets for edge design information Edge of Pavement HCL's are shown.
 - Where not provided in the pavement point tables, elevations shall be determined by roadway, trail, wall, or edge of pavement geometry.
 - Ramp design shall meet ADA standards. Lengths of ramps, wings, gutter slopes, etc. shall be determined based on maximum allowable grades according to ADA standards. See details on T sheets for additional information.
 - See sheet Jointing Plans for concrete pavement jointing.
 - See Landscape Layout and Scoring Plans for sidewalk and crosswalk concrete finish, color, and scoring.
 - C&G transitions indicate changes in pan slope/curb type. See T sheets for curb and gutter details.
 - See sheet K-00 for pavement structural sections.
 - See Special 609-B for Driveway Details.
 - Colored Concrete Pavement shall be used for roundabout apron.



CURB & GUTTER LEGEND

- - Curb Face (Flowline)
- - - - - Curb Face (Transition)
- · - · - Curb Face (Spill Curb)
- · - · - Edge of Pavement HCL
- - - - - Sawcut Line

PAVEMENT LEGEND

- Asphalt Pavement (Full Depth)
- Asphalt Pavement (Overlay)
- Concrete Pavement

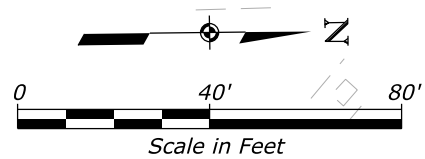
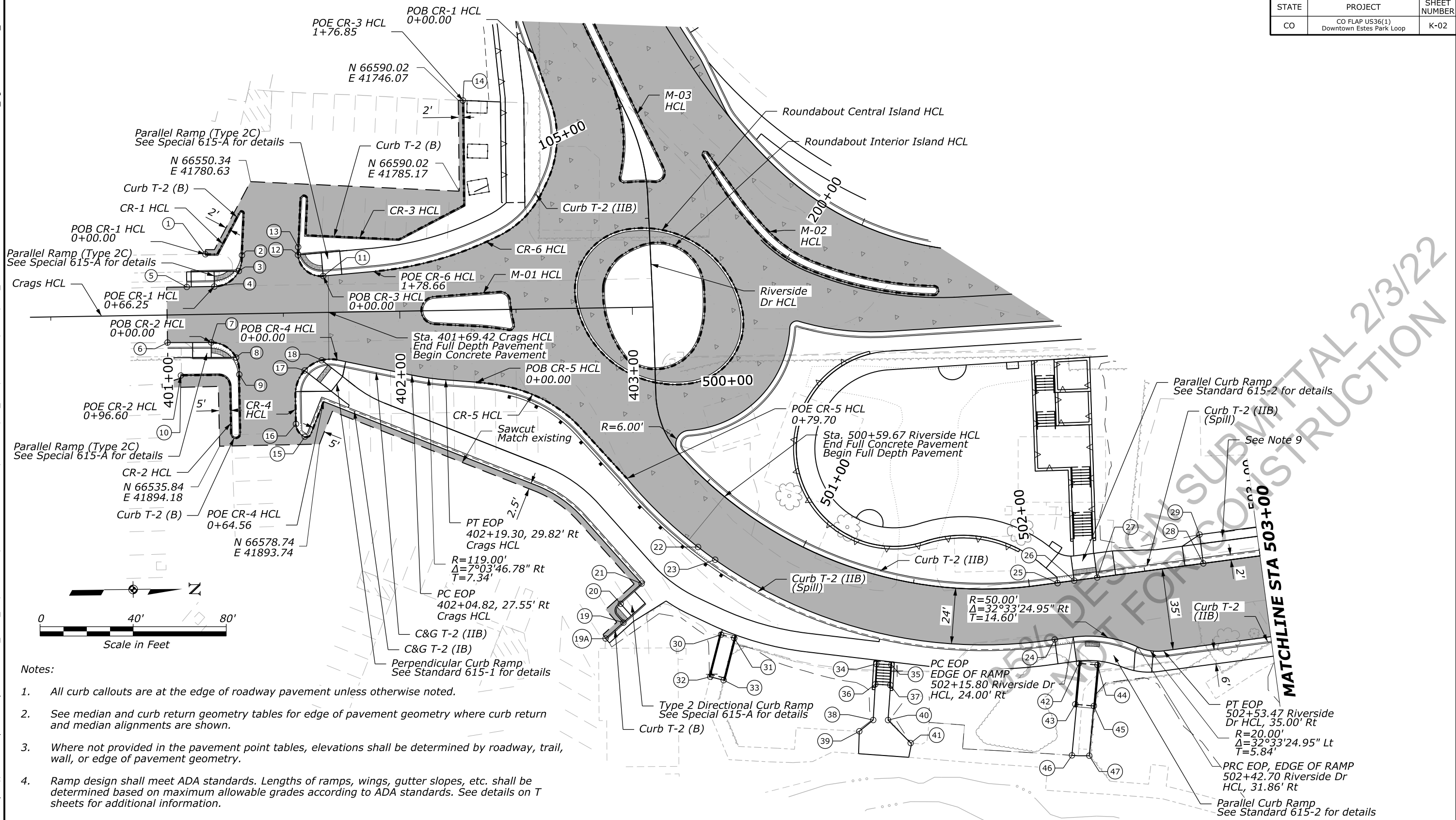
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**PAVEMENT PLANS
MORaine WEST**

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	K-02

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 2/2/2022



Notes:

1. All curb callouts are at the edge of roadway pavement unless otherwise noted.
2. See median and curb return geometry tables for edge of pavement geometry where curb return and median alignments are shown.
3. Where not provided in the pavement point tables, elevations shall be determined by roadway, trail, wall, or edge of pavement geometry.
4. Ramp design shall meet ADA standards. Lengths of ramps, wings, gutter slopes, etc. shall be determined based on maximum allowable grades according to ADA standards. See details on T sheets for additional information.
5. See sheet Jointing Plans for concrete pavement jointing.
6. See Landscape Layout and Scoring Plans for sidewalk and crosswalk concrete finish, color, and scoring.
7. C&G transitions indicate changes in pan slope/curb type. See T sheets for curb and gutter details.
8. See sheet K-00 for pavement structural sections.
9. See Special 609-B for Driveway Details.
10. Colored Concrete Pavement shall be used for roundabout apron.

CURB & GUTTER LEGEND

- Curb Face (Flowline)
- - - Curb Face (Transition)
- · - · Curb Face (Spill Curb)
- · - · Edge of Pavement HCL
- - - Sawcut Line

PAVEMENT LEGEND

- Asphalt Pavement (Full Depth)
- Asphalt Pavement (Overlay)
- Concrete Pavement

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

PAVEMENT PLANS
 CRAGS RD & RIVERSIDE DR

PAVEMENT POINTS CRAGS HCL				
POINT #	STATION	OFFSET	EL	DESCRIPTION
1	401+16.90	-25.82		BEGIN CURB T2 B
2	401+32.61	-25.15		END CURB T2 B, BEGIN TRANSITION
3	401+31.17	-18.40		EDGE OF RAMP
4	401+20.51	-11.89		EDGE OF RAMP END TRANSITION BEGIN CURB T2 IIB
5	401+08.69	-11.89		END CURB T2 IIB, MATCH EXIST
6	401+00.00	11.86		BEGIN CURB T2 IIB
7	401+18.78	12.12		END CURB T2 IIB EDGE OF RAMP BEGIN TRANSITION
8	401+29.36	18.77		EDGE OF RAMP
9	401+30.62	26.11		END TRANSITION BEGIN CURB T2 B
10	401+05.51	26.12		END CURB T2 B
11	401+67.39	-15.64		EDGE OF RAMP BEGIN TRANSITION
12	401+56.70	-24.89		EDGE OF RAMP
13	401+56.82	-28.25		END TRANSITION, BEGIN CURB T2 B
14	402+28.66	-90.10		END CURB T2 B
15	401+58.34	53.28		END CURB T2 IB, BEGIN TRANSITION
16	401+54.63	47.73		END TRANSITION, BEGIN CURB T2 IIB
17	401+58.73	24.83		EDGE OF RAMP
18	401+66.16	20.55		EDGE OF RAMP

PAVEMENT POINTS RIVERSIDE DR HCL				
POINT #	STATION	OFFSET	EL	DESCRIPTION
19A	500+59.01	79.52		BEGIN CURB T2 B
19	500+60.14	69.40		EDGE OF RAMP
20	500+55.73	63.94		EDGE OF RAMP
21	500+56.65	51.49		END CURB T2 B, BEGIN CURB T2 IB
22	500+64.02	24.00		END CURB T2 IIB, BEGIN TRANSITION
23	500+72.07	24.00		END TRANSITION BEGIN CURB T2 IIB (SPILL PAN)
24	502+07.80	24.00		END CURB T2 IIB (SPILL PAN), BEGIN TRANSITION
25	502+12.25	0.00		END CURB T2 IIB, BEGIN TRANSITION
26	502+19.39	0.00		END TRANSITION BEGIN CURB T2 IIB (SPILL PAN) EDGE OF RAMP
27	502+29.39	0.00		EDGE OF RAMP
28	502+75.43	0.00		EDGE OF DRIVEWAY
29	502+75.43	-12.50	7538.93	BACK OF DRIVEWAY
30	500+88.19	49.82	7539.28	EDGE OF SIDEWALK
31	500+92.64	48.32	7539.44	EDGE OF SIDEWALK
32	500+91.65	66.87	7537.92	SIDEWALK END MATCH EXISTING
33	500+95.80	65.46	7537.99	SIDEWALK END MATCH EXISTING
34	501+41.94	37.22	7541.50	TOP OF STAIRS
35	501+47.26	36.27	7541.31	TOP OF STAIRS
36	501+43.06	45.86	7537.50	BOTTOM OF STAIRS
37	501+48.18	44.95	7537.31	BOTTOM OF STAIRS
38	501+44.83	61.08	7535.23	EDGE OF SIDEWALK
39	501+41.28	67.05	7534.97	EDGE OF SIDEWALK MATCH EXISTING
40	501+49.48	59.87	7535.09	EDGE OF SIDEWALK
41	501+57.63	68.19	7535.07	EDGE OF SIDEWALK MATCH EXISTING
42	502+17.90	39.44	7538.90	EDGE OF SIDEWALK
43	502+14.32	52.87	7537.52	EDGE OF SIDEWALK
44	502+24.61	37.27	7538.78	EDGE OF SIDEWALK
45	502+20.70	54.51	7537.41	EDGE OF SIDEWALK
46	502+08.58	74.32	7537.09	EDGE OF SIDEWALK MATCH EXISTING
47	502+15.94	75.46	7537.15	EDGE OF SIDEWALK MATCH EXISTING

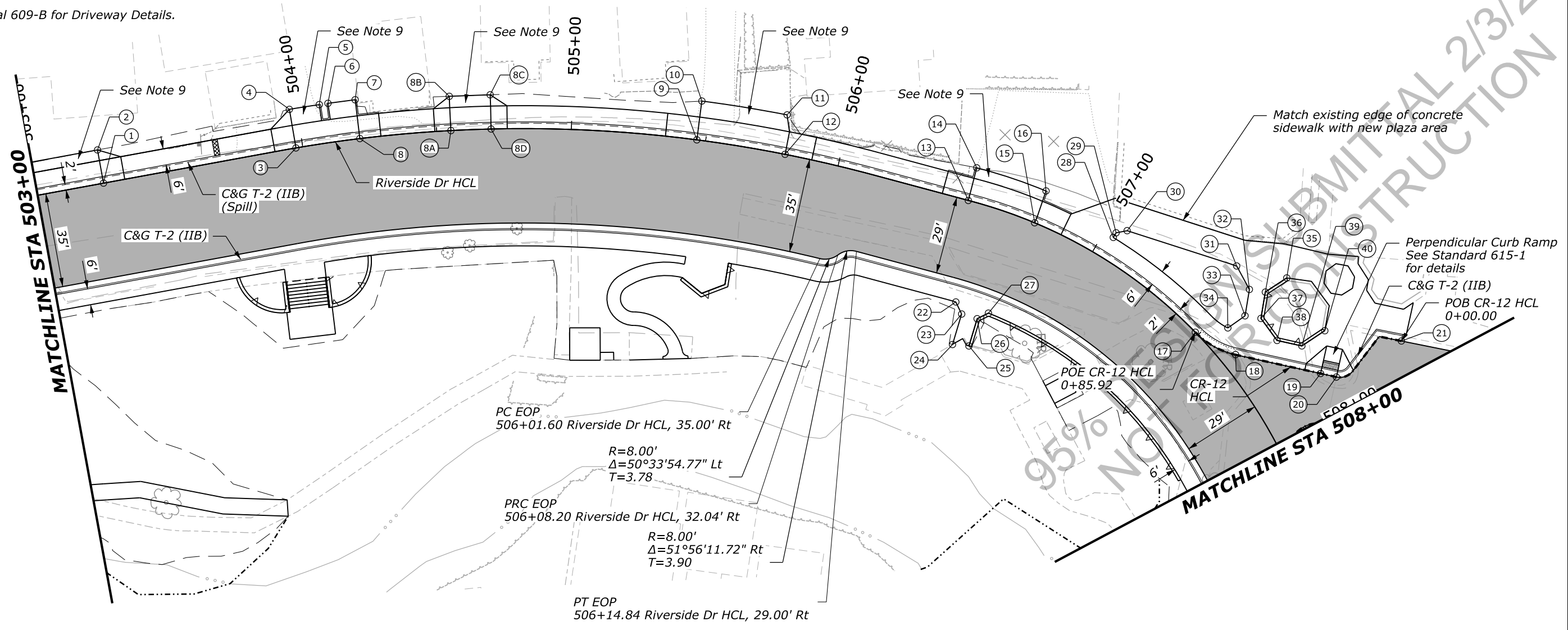
SUBMITTAL 2/3/22
FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**PAVEMENT PLANS
CRAGS RD
& RIVERSIDE DR**

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	K-03

- Notes:
- All curb callouts are at the edge of roadway pavement unless otherwise noted.
 - See median and curb return geometry tables for edge of pavement geometry where curb return and median alignments are shown.
 - Where not provided in the pavement point tables, elevations shall be determined by roadway, trail, wall, or edge of pavement geometry.
 - Ramp design shall meet ADA standards. Lengths of ramps, wings, gutter slopes, etc. shall be determined based on maximum allowable grades according to ADA standards. See details on T sheets for additional information.
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 - See Landscape Layout and Scoring Plans for sidewalk and crosswalk concrete finish, color, and scoring.
 - C&G transitions indicate changes in pan slope/curb type. See T sheets for curb and gutter details.
 - See sheet K-00 for pavement structural sections.
 - See Special 609-B for Driveway Details.

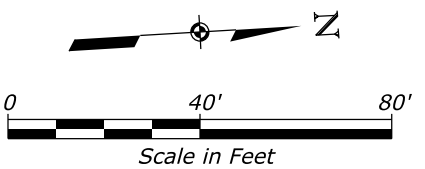


CURB & GUTTER LEGEND

- Curb Face (Flowline)
- - - Curb Face (Transition)
- · - · Curb Face (Spill Curb)
- · - · - Edge of Pavement HCL
- - - Sawcut Line

PAVEMENT LEGEND

- Asphalt Pavement (Full Depth)
- Asphalt Pavement (Overlay)
- Concrete Pavement



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**PAVEMENT PLANS
RIVERSIDE DR**

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PAVEMENT POINTS RIVERSIDE DR HCL				
POINT #	STATION	OFFSET	EL	DESCRIPTION
1	503+24.88	0.00		EDGE OF DRIVEWAY
2	503+24.88	-12.50		BACK OF DRIVEWAY
3	503+97.43	0.00		EDGE OF DRIVEWAY
4	503+97.43	-14.50		BACK OF DRIVEWAY
5	504+08.35	-14.50		BACK OF DRIVEWAY
6	504+11.52	-14.50		BACK OF DRIVEWAY
7	504+21.40	-14.50		BACK OF DRIVEWAY
8	504+21.40	0.00		EDGE OF DRIVEWAY
8A	504+55.30	0.00		EDGE OF DRIVEWAY
8B	504+55.37	-12.72		BACK OF DRIVEWAY
8C	504+70.17	-12.70		BACK OF DRIVEWAY
8D	504+70.23	0.00		EDGE OF DRIVEWAY
9	505+46.72	0.00		EDGE OF DRIVEWAY
10	505+46.72	-14.50		BACK OF DRIVEWAY
11	505+77.86	-14.50		BACK OF DRIVEWAY
12	505+79.90	0.00		EDGE OF DRIVEWAY
13	506+50.00	0.00		EDGE OF DRIVEWAY
14	506+49.86	-12.50		BACK OF DRIVEWAY
15	506+76.00	0.00		EDGE OF DRIVEWAY
16	506+75.35	-12.50		BACK OF DRIVEWAY
17	507+48.57	0.00		END CURB T2 IIB (SPILL PAN) BEGIN TRANSITION
18	507+64.58	-5.68		END TRANSITION BEGIN CURB T2 IIB
19	507+86.53	-27.23		EDGE OF RAMP
20	507+90.12	-31.55		EDGE OF RAMP
21	507+90.83	-59.11		END CURB T2 IIB MATCH EXISTING
22	506+56.19	37.50		EDGE OF SIDEWALK
23	506+60.52	41.15	7531.83	EDGE OF SIDEWALK
24	506+60.80	52.97		EDGE OF SIDEWALK MATCH EXISTING
25	506+69.17	51.46		EDGE OF SIDEWALK MATCH EXISTING
26	506+68.28	40.92	7531.58	EDGE OF SIDEWALK
27	506+72.34	37.50		EDGE OF SIDEWALK
28	507+03.78	-8.50		EDGE OF SIDEWALK
29	507+03.78	-10.50	7531.20	EDGE OF SIDEWALK
30	507+06.64	-13.35	7530.83	EDGE OF SIDEWALK
31	507+42.57	-28.24	7530.38	EDGE OF SIDEWALK
32	507+50.86	-25.47	7530.38	EDGE OF SIDEWALK
33	507+56.29	-17.65	7530.46	EDGE OF SIDEWALK
34	507+55.46	-9.90		EDGE OF SIDEWALK
35	507+56.16	-38.56	7530.55	EDGE OF SIDEWALK
36	507+54.98	-29.14	7530.44	EDGE OF SIDEWALK
37	507+60.47	-21.46	7530.75	EDGE OF SIDEWALK
38	507+69.51	-20.97	7530.53	EDGE OF SIDEWALK
39	507+75.78	-27.15	7530.39	EDGE OF SIDEWALK
40	507+76.08	-37.38	7530.40	EDGE OF SIDEWALK

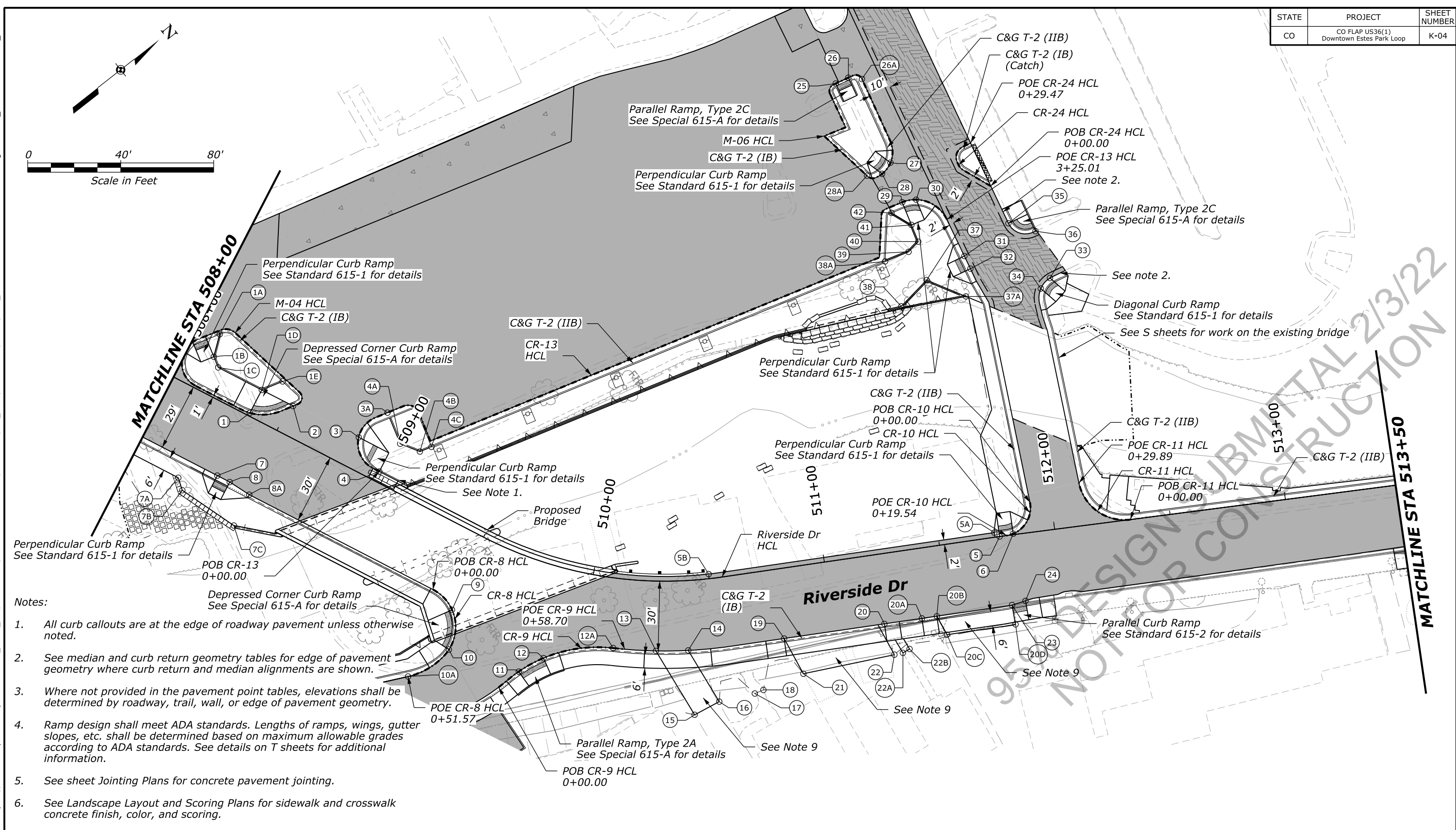
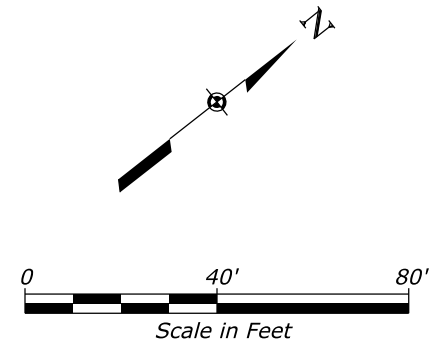
95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**PAVEMENT PLANS
RIVERSIDE DR**

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	K-04

User: isabel.butler
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 1/27/2022
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- Notes:**
- All curb callouts are at the edge of roadway pavement unless otherwise noted.
 - See median and curb return geometry tables for edge of pavement geometry where curb return and median alignments are shown.
 - Where not provided in the pavement point tables, elevations shall be determined by roadway, trail, wall, or edge of pavement geometry.
 - Ramp design shall meet ADA standards. Lengths of ramps, wings, gutter slopes, etc. shall be determined based on maximum allowable grades according to ADA standards. See details on T sheets for additional information.
 - See sheet Jointing Plans for concrete pavement jointing.
 - See Landscape Layout and Scoring Plans for sidewalk and crosswalk concrete finish, color, and scoring.
 - C&G transitions indicate changes in pan slope/curb type. See T sheets for curb and gutter details.
 - See sheet K-00 for pavement structural sections.
 - See Special 609-B for Driveway Details.
 - Construct Quadguard leveling pad flush with roadway grade. Adjacent curb and sidewalk to be built flush with quadguard pad grade. See manufacturer's details for leveling pad design information.
 - Match existing edge of pavement where noted

CURB & GUTTER LEGEND

- Curb Face (Flowline)
- - - Curb Face (Transition)
- - - Curb Face (Spill Curb)
- · - · Edge of Pavement HCL
- - - Sawcut Line

PAVEMENT LEGEND

- Asphalt Pavement (Full Depth)
- Asphalt Pavement (Overlay)
- Concrete Pavement

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**PAVEMENT PLANS
 RIVERSIDE DR**

NOT FOR CONSTRUCTION
 SUBMITTAL 2/13/22

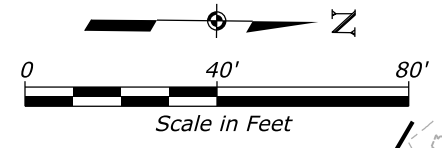
PAVEMENT POINTS RIVERSIDE DR HCL			
POINT #	STATION	OFFSET	DESCRIPTION
1	508+36.22	1.39	EDGE OF RAMP
1A	508+09.17	25.47	EDGE OF SIDEWALK
1B	508+11.36	15.71	EDGE OF SIDEWALK
1C	508+15.13	12.50	EDGE OF SIDEWALK
1D	508+36.22	12.50	EDGE OF SIDEWALK
1E	508+42.48	19.84	EDGE OF SIDEWALK
2	508+51.34	12.50	EDGE OF RAMP
3	508+82.55	13.50	EDGE OF RAMP
3A	508+88.72	28.60	EDGE OF SIDEWALK
4	508+97.19	4.50	EDGE OF RAMP
4A	508+99.70	19.24	EDGE OF SIDEWALK
4B	509+08.76	20.12	EDGE OF SIDEWALK
4C	509+12.26	24.22	EDGE OF SIDEWALK
5A	511+74.07	2.00	BEGIN CURB T2 IIB
5B	510+50.00	2.00	BEGIN SAFETY EDGE
5	511+76.14	0.00	END SAFETY EDGE EDGE OF RAMP
6	511+82.13	0.46	EDGE OF RAMP
7	508+36.14	29.00	EDGE OF RAMP
7A	508+21.66	37.50	EDGE OF SIDEWALK
7B	508+25.66	41.50	EDGE OF SIDEWALK
7C	508+52.31	44.81	EDGE OF SIDEWALK
8	508+42.14	29.00	EDGE OF RAMP END CURB T2 IIB BEGIN TRANSITION
8A	508+52.09	30.00	END TRANSITION BEGIN CURB T2 IB
9	509+51.86	33.98	EDGE OF RAMP
10	509+56.86	49.95	EDGE OF RAMP END CURB T2 IB BEGIN TRANSITION
10A	509+48.61	68.12	END TRANSITION BEGIN CURB T2 IIB
11	509+81.27	48.14	EDGE OF RAMP
12	509+88.18	39.68	EDGE OF RAMP BEGIN TRANSITION
12A	510+11.99	30.00	END TRANSITION BEGIN CURB T2 IB
13	510+27.65	30.00	EDGE OF DRIVEWAY
14	510+39.46	30.00	EDGE OF DRIVEWAY
15	510+40.46	57.79	BACK OF DRIVEWAY MATCH EXISTING
16	510+48.78	53.01	BACK OF DRIVEWAY MATCH EXISTING
17	510+62.33	51.57	BACK OF SIDEWALK MATCH EXISTING

PAVEMENT POINTS RIVERSIDE DR HCL			
POINT #	STATION	OFFSET	DESCRIPTION
18	510+66.16	50.59	BACK OF SIDEWALK MATCH EXISTING
19	510+78.17	30.00	EDGE OF DRIVEWAY
20	511+21.73	30.00	EDGE OF DRIVEWAY
20A	511+38.02	30.00	END CURB T2 IB BEGIN TRANSITION
20B	511+44.52	30.00	END TRANSITION BEGIN CURB T2 IB (1' CATCH PAN)
20C	511+47.68	38.50	BACK OF DRIVEWAY MATCH EXISTING
20D	511+78.08	38.34	BACK OF DRIVEWAY MATCH EXISTING
21	510+84.19	46.19	BACK OF DRIVEWAY MATCH EXISTING
22	511+24.04	43.73	BACK OF DRIVEWAY MATCH EXISTING
22A	511+27.79	43.50	BACK OF SIDEWALK MATCH EXISTING
22B	511+30.86	42.24	BACK OF SIDEWALK MATCH EXISTING
23	511+77.68	29.93	EDGE OF RAMP
24	511+83.63	28.86	EDGE OF RAMP
25	511+34.55	202.85	EDGE OF RAMP
26	511+40.30	204.56	EDGE OF RAMP END CURB T2 IB BEGIN TRANSITION
26A	511+46.01	203.12	END TRANSITION BEGIN CURB T2 IIB
27	511+52.92	165.80	EDGE OF RAMP
28	511+48.68	161.56	EDGE OF RAMP END CURB T2 IIB BEGIN TRANSITION
28A	511+42.16	161.72	END TRANSITION BEGIN CURB T2 IB
29	511+55.45	148.23	EDGE OF RAMP
30	511+61.58	148.46	EDGE OF RAMP
31	511+76.73	121.60	EDGE OF RAMP
32	511+78.46	115.79	EDGE OF RAMP
33	512+11.86	107.42	EDGE OF RAMP
34	512+07.38	103.43	EDGE OF RAMP
35	511+97.18	133.02	EDGE OF RAMP
36	512+08.27	128.18	EDGE OF RAMP
37	511+61.00	113.62	EDGE OF SIDEWALK
37A	511+76.70	104.22	EDGE OF SIDEWALK
38	511+48.62	104.02	EDGE OF SIDEWALK
38A	511+44.51	124.13	EDGE OF SIDEWALK
39	511+55.10	126.76	EDGE OF SIDEWALK
40	511+59.86	130.45	EDGE OF SIDEWALK
41	511+57.99	138.00	EDGE OF RAMP
42	511+50.23	144.36	EDGE OF RAMP

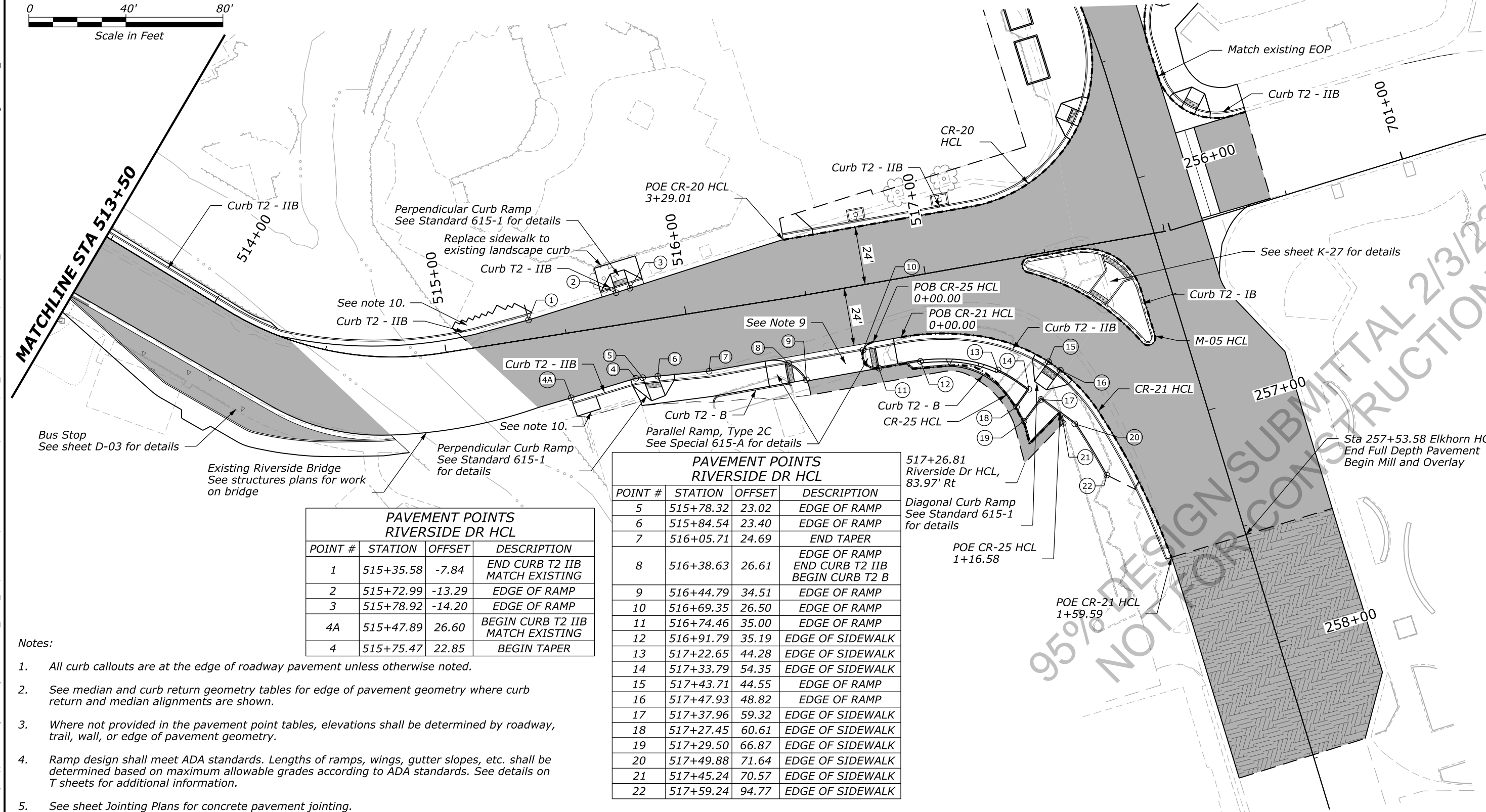
DESIGN SUBMITTAL 2/3/22
FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**PAVEMENT PLANS
RIVERSIDE DR**



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POINT #	STATION	OFFSET	DESCRIPTION
1	515+35.58	-7.84	END CURB T2 IIB MATCH EXISTING
2	515+72.99	-13.29	EDGE OF RAMP
3	515+78.92	-14.20	EDGE OF RAMP
4A	515+47.89	26.60	BEGIN CURB T2 IIB MATCH EXISTING
4	515+75.47	22.85	BEGIN TAPER

POINT #	STATION	OFFSET	DESCRIPTION
5	515+78.32	23.02	EDGE OF RAMP
6	515+84.54	23.40	EDGE OF RAMP
7	516+05.71	24.69	END TAPER
8	516+38.63	26.61	EDGE OF RAMP END CURB T2 IIB BEGIN CURB T2 B
9	516+44.79	34.51	EDGE OF RAMP
10	516+69.35	26.50	EDGE OF RAMP
11	516+74.46	35.00	EDGE OF RAMP
12	516+91.79	35.19	EDGE OF SIDEWALK
13	517+22.65	44.28	EDGE OF SIDEWALK
14	517+33.79	54.35	EDGE OF SIDEWALK
15	517+43.71	44.55	EDGE OF RAMP
16	517+47.93	48.82	EDGE OF RAMP
17	517+37.96	59.32	EDGE OF SIDEWALK
18	517+27.45	60.61	EDGE OF SIDEWALK
19	517+29.50	66.87	EDGE OF SIDEWALK
20	517+49.88	71.64	EDGE OF SIDEWALK
21	517+45.24	70.57	EDGE OF SIDEWALK
22	517+59.24	94.77	EDGE OF SIDEWALK

- Notes:
- All curb callouts are at the edge of roadway pavement unless otherwise noted.
 - See median and curb return geometry tables for edge of pavement geometry where curb return and median alignments are shown.
 - Where not provided in the pavement point tables, elevations shall be determined by roadway, trail, wall, or edge of pavement geometry.
 - Ramp design shall meet ADA standards. Lengths of ramps, wings, gutter slopes, etc. shall be determined based on maximum allowable grades according to ADA standards. See details on T sheets for additional information.
 - See sheet Jointing Plans for concrete pavement jointing.
 - See Landscape Layout and Scoring Plans for sidewalk and crosswalk concrete finish, color, and scoring.
 - C&G transitions indicate changes in pan slope/curb type. See T sheets for curb and gutter details.
 - See sheet K-00 for pavement structural sections.
 - See Special 609-B for Driveway Details.
 - Remove existing curb ramp and replace curb and sidewalk pavers.

CURB & GUTTER LEGEND

- Curb Face (Flowline)
- - - Curb Face (Transition)
- · - · Curb Face (Spill Curb)
- · - · - Edge of Pavement HCL
- - - Sawcut Line

PAVEMENT LEGEND

- Asphalt Pavement (Full Depth)
- Asphalt Pavement (Overlay)
- Concrete Pavement

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

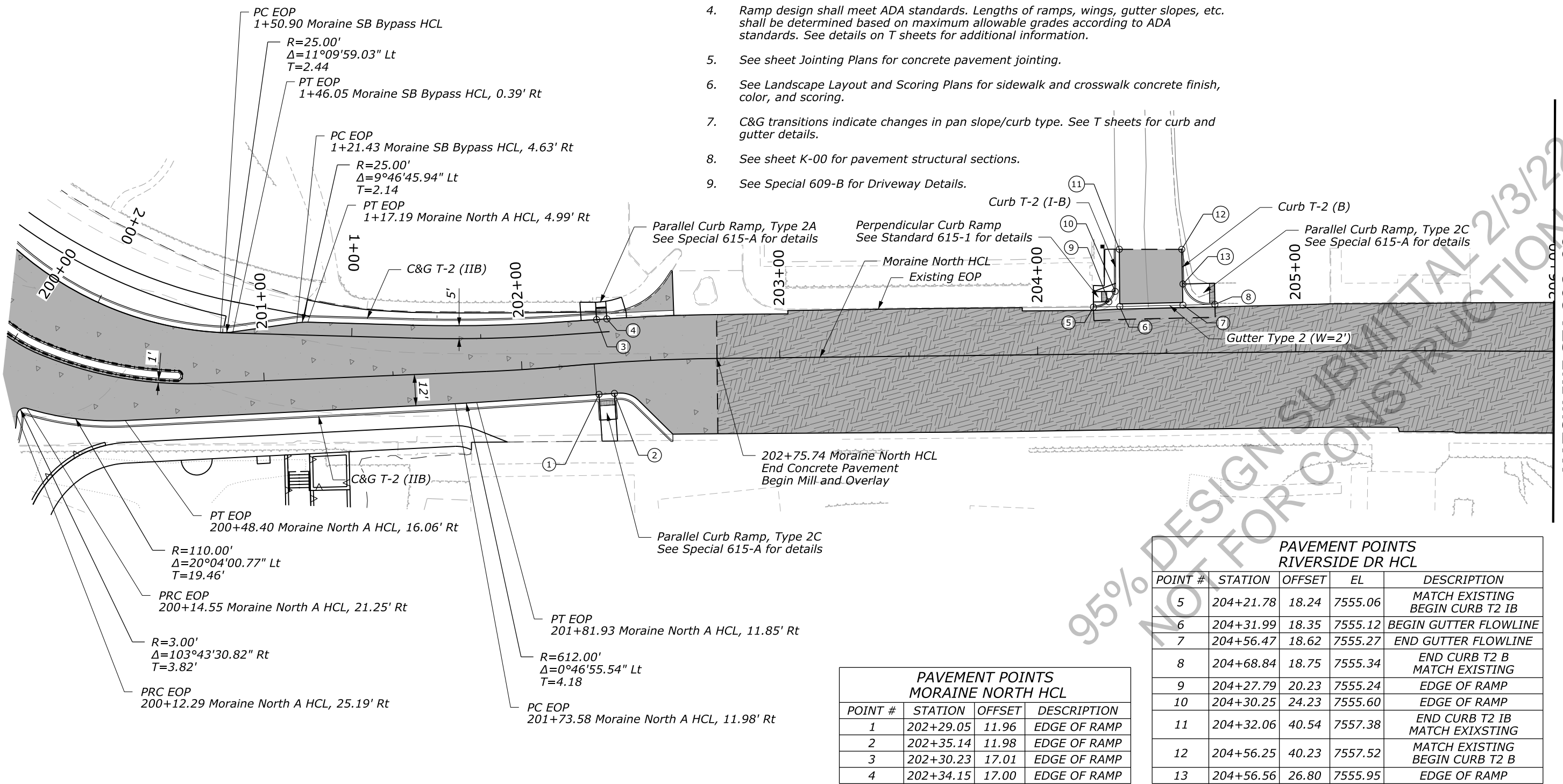
**PAVEMENT PLANS
RIVERSIDE DR**

95% DESIGN SUBMITTAL 2/13/22
 NOT FOR CONSTRUCTION

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	K-06

Notes:

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- See Landscape Layout and Scoring Plans for sidewalk and crosswalk concrete finish, color, and scoring.
- C&G transitions indicate changes in pan slope/curb type. See T sheets for curb and gutter details.
- See sheet K-00 for pavement structural sections.
- See Special 609-B for Driveway Details.



PAVEMENT POINTS MORAINE NORTH HCL

POINT #	STATION	OFFSET	DESCRIPTION
1	202+29.05	11.96	EDGE OF RAMP
2	202+35.14	11.98	EDGE OF RAMP
3	202+30.23	17.01	EDGE OF RAMP
4	202+34.15	17.00	EDGE OF RAMP

PAVEMENT POINTS RIVERSIDE DR HCL

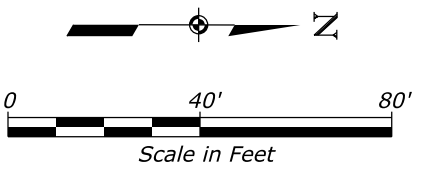
POINT #	STATION	OFFSET	EL	DESCRIPTION
5	204+21.78	18.24	7555.06	MATCH EXISTING BEGIN CURB T2 IB
6	204+31.99	18.35	7555.12	BEGIN GUTTER FLOWLINE
7	204+56.47	18.62	7555.27	END GUTTER FLOWLINE
8	204+68.84	18.75	7555.34	END CURB T2 B MATCH EXISTING
9	204+27.79	20.23	7555.24	EDGE OF RAMP
10	204+30.25	24.23	7555.60	EDGE OF RAMP
11	204+32.06	40.54	7557.38	END CURB T2 IB MATCH EXISTING
12	204+56.25	40.23	7557.52	MATCH EXISTING BEGIN CURB T2 B
13	204+56.56	26.80	7555.95	EDGE OF RAMP

CURB & GUTTER LEGEND

- Curb Face (Flowline)
- - - Curb Face (Transition)
- · - · Curb Face (Spill Curb)
- · - · - Edge of Pavement HCL
- - - Sawcut Line

PAVEMENT LEGEND

- Asphalt Pavement (Full Depth)
- Asphalt Pavement (Overlay)
- Concrete Pavement



U.S. DEPARTMENT OF TRANSPORTATION
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PAVEMENT PLANS MORAINE NORTH

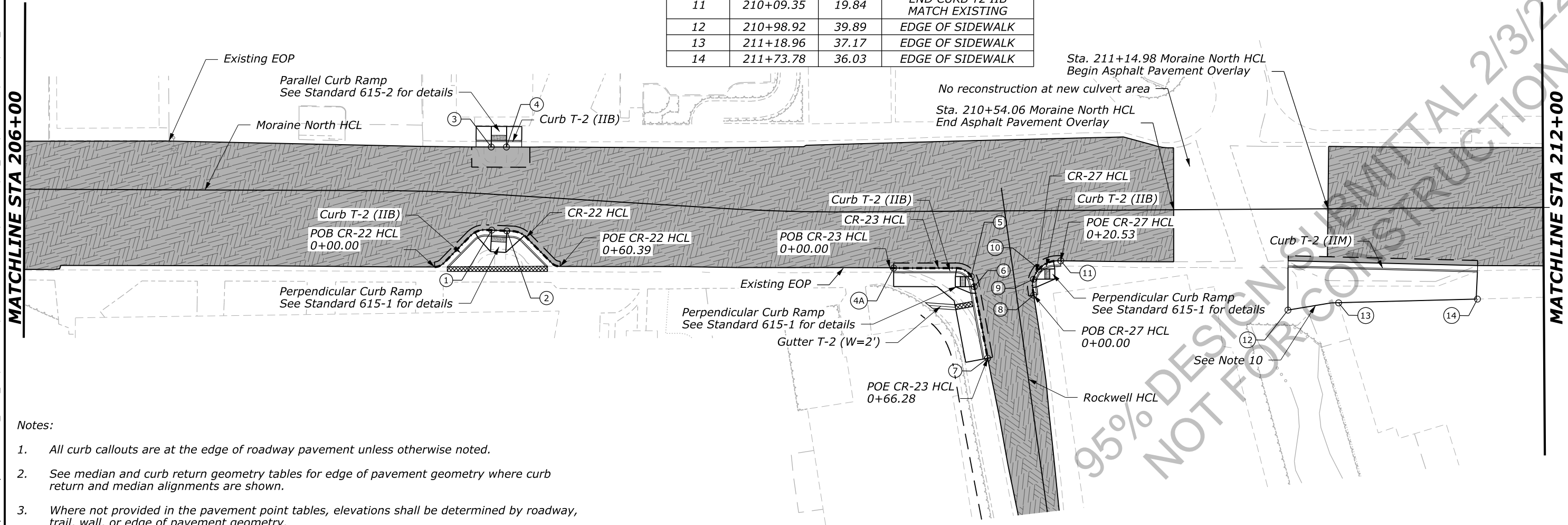
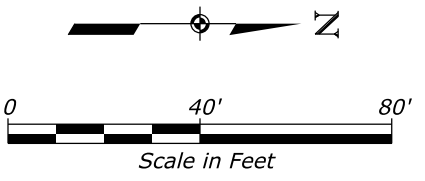
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MATCHLINE STA 206+00

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	K-07

PAVEMENT POINTS MORaine NORTH HCL			
POINT #	STATION	OFFSET	DESCRIPTION
1	207+85.43	14.17	
2	207+91.43	14.11	
3	207+83.29	18.57	
4	207+89.24	18.93	
4A	209+43.34	22.28	BEGIN CURB T2 IIB* MATCH EXISTING
5	209+73.96	25.82	EDGE OF RAMP
6	209+75.11	29.83	EDGE OF RAMP
7	209+80.22	58.09	END CURB T2 IIB* MATCH EXISTING
8	209+98.58	33.34	BEGIN CURB T2 IIB MATCH EXISTING
9	209+98.50	27.07	EDGE OF RAMP
10	210+00.69	23.07	EDGE OF RAMP
11	210+09.35	19.84	END CURB T2 IIB MATCH EXISTING
12	210+98.92	39.89	EDGE OF SIDEWALK
13	211+18.96	37.17	EDGE OF SIDEWALK
14	211+73.78	36.03	EDGE OF SIDEWALK

*W = 1'-4"
(See Special 609-A for details)



- Notes:
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 - Ramp design shall meet ADA standards. Lengths of ramps, wings, gutter slopes, etc. shall be determined based on maximum allowable grades according to ADA standards. See details on T sheets for additional information.
 - See sheet Jointing Plans for concrete pavement jointing.
 - See Landscape Layout and Scoring Plans for sidewalk and crosswalk concrete finish, color, and scoring.
 - C&G transitions indicate changes in pan slope/curb type. See T sheets for curb and gutter details.
 - See sheet K-00 for pavement structural sections.
 - See Special 609-B for Driveway Details.
 - Refer to Landscape plans for limits of sidewalk reconstruction at this location. CO to confirm limits.

CURB & GUTTER LEGEND

- Curb Face (Flowline)
- - - Curb Face (Transition)
- · - · Curb Face (Spill Curb)
- · - · - Edge of Pavement HCL
- - - Sawcut Line

PAVEMENT LEGEND

- Asphalt Pavement (Full Depth)
- Asphalt Pavement (Overlay)
- Concrete Pavement

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**PAVEMENT PLANS
MORaine NORTH**

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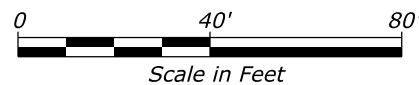
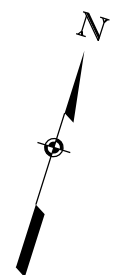
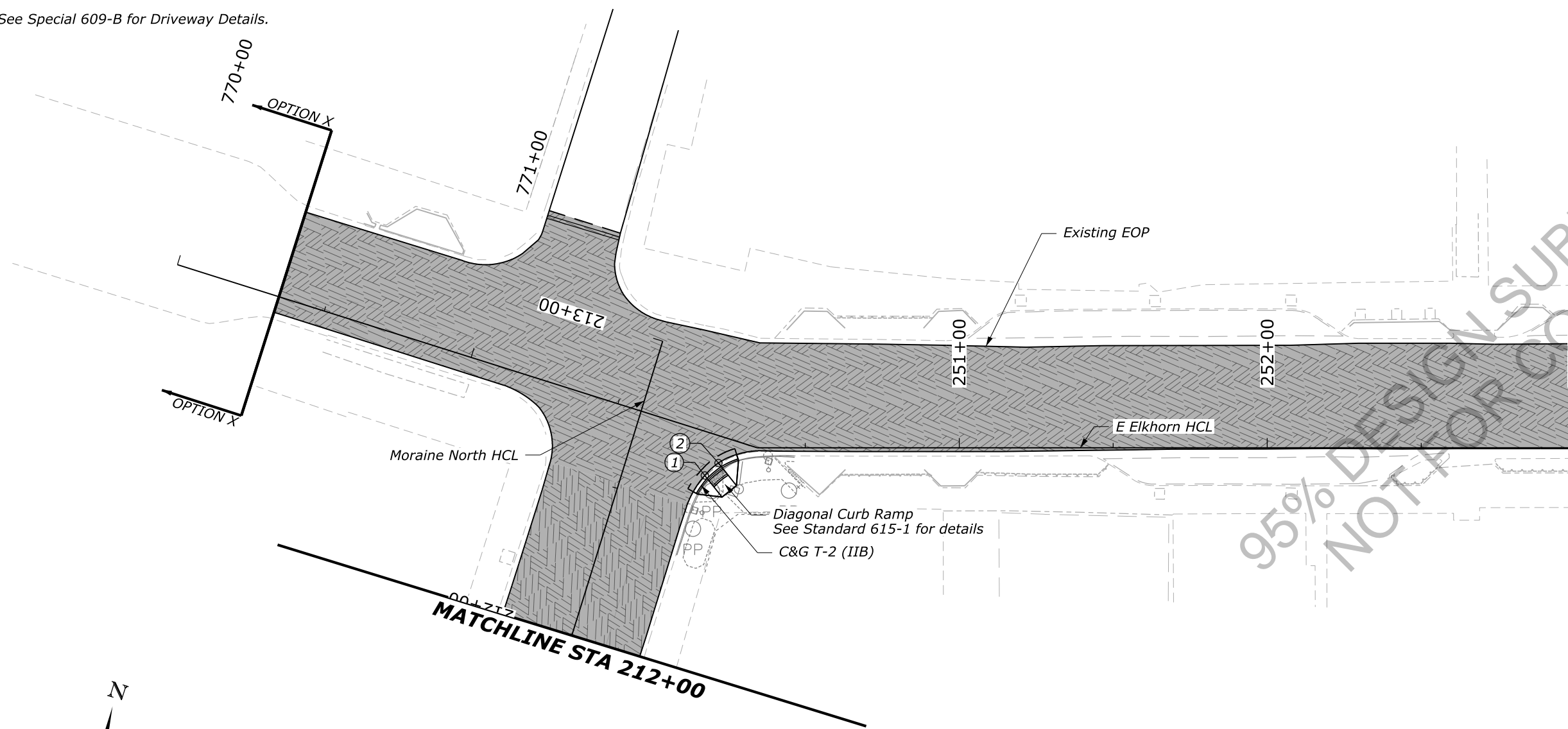
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Notes:

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3. Where not provided in the pavement point tables, elevations shall be determined by roadway, trail, wall, or edge of pavement geometry.
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6. See Landscape Layout and Scoring Plans for sidewalk and crosswalk concrete finish, color, and scoring.
7. C&G transitions indicate changes in pan slope/curb type. See T sheets for curb and gutter details.
8. See sheet K-00 for pavement structural sections.
9. See Special 609-B for Driveway Details.

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	K-08

PAVEMENT POINTS MORaine NORTH HCL			
POINT #	STATION	OFFSET	DESCRIPTION
1	212+62.38	25.93	EDGE OF RAMP
2	212+67.56	28.99	EDGE OF RAMP



CURB & GUTTER LEGEND

- - Curb Face (Flowline)
- - Curb Face (Transition)
- - - - - Curb Face (Spill Curb)
- · - · - Edge of Pavement HCL
- · — · - Sawcut Line

PAVEMENT LEGEND

- Asphalt Pavement (Full Depth)
- Asphalt Pavement (Overlay)
- Concrete Pavement

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

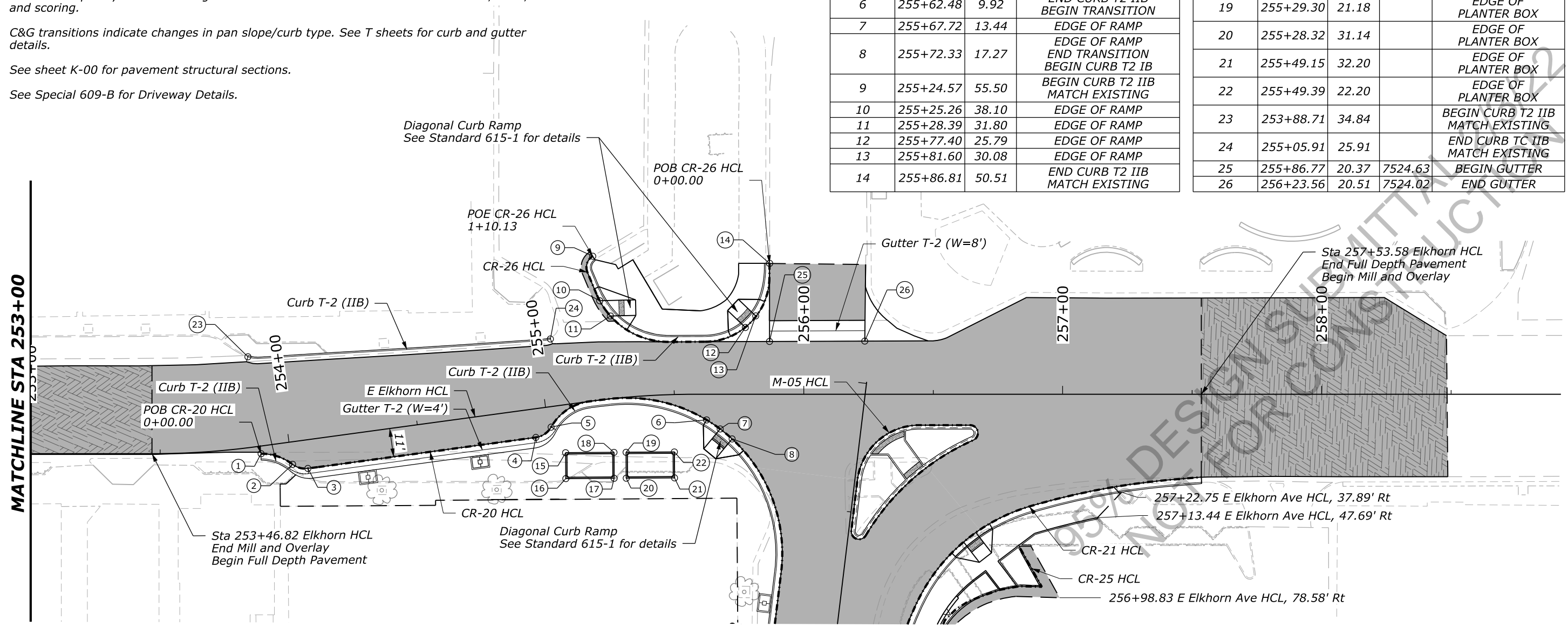
**PAVEMENT PLANS
MORaine NORTH
& ELKHORN AVE**

Notes:

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- See Special 609-B for Driveway Details.

PAVEMENT POINTS E ELKHORN AVE HCL			
POINT #	STATION	OFFSET	DESCRIPTION
1	253+88.72	2.94	BEGIN CURB T2 IIB MATCH EXISTING
2	254+00.19	8.65	END CURB T2 IIB BEGIN TRANSITION
3	254+05.86	11.00	END TRANSITION BEGIN GUTTER T2 (W=4')
4	254+94.72	11.00	END GUTTER T2 (W=4') BEGIN TRANSITION
5	255+01.08	7.86	END TRANSITION BEGIN CURB T2 IIB
6	255+62.48	9.92	END CURB T2 IIB BEGIN TRANSITION
7	255+67.72	13.44	EDGE OF RAMP
8	255+72.33	17.27	EDGE OF RAMP END TRANSITION BEGIN CURB T2 IB
9	255+24.57	55.50	BEGIN CURB T2 IIB MATCH EXISTING
10	255+25.26	38.10	EDGE OF RAMP
11	255+28.39	31.80	EDGE OF RAMP
12	255+77.40	25.79	EDGE OF RAMP
13	255+81.60	30.08	EDGE OF RAMP
14	255+86.81	50.51	END CURB T2 IIB MATCH EXISTING

PAVEMENT POINTS E ELKHORN AVE HCL				
POINT #	STATION	OFFSET	EL	DESCRIPTION
15	255+05.31	18.41		EDGE OF PLANTER BOX
16	255+04.03	28.33		EDGE OF PLANTER BOX
17	255.23.13	30.67		EDGE OF PLANTER BOX
18	255+24.30	20.72		EDGE OF PLANTER BOX
19	255+29.30	21.18		EDGE OF PLANTER BOX
20	255+28.32	31.14		EDGE OF PLANTER BOX
21	255+49.15	32.20		EDGE OF PLANTER BOX
22	255+49.39	22.20		EDGE OF PLANTER BOX
23	253+88.71	34.84		BEGIN CURB T2 IIB MATCH EXISTING
24	255+05.91	25.91		END CURB TC IIB MATCH EXISTING
25	255+86.77	20.37	7524.63	BEGIN GUTTER
26	256+23.56	20.51	7524.02	END GUTTER



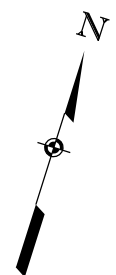
MATCHLINE STA 253+00

CURB & GUTTER LEGEND

- Curb Face (Flowline)
- - - Curb Face (Transition)
- · - · Curb Face (Spill Curb)
- · - · - Edge of Pavement HCL
- - - Sawcut Line

PAVEMENT LEGEND

- Asphalt Pavement (Full Depth)
- Asphalt Pavement (Overlay)
- Concrete Pavement



U.S. DEPARTMENT OF TRANSPORTATION
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**PAVEMENT PLANS
ELKHORN AVE**

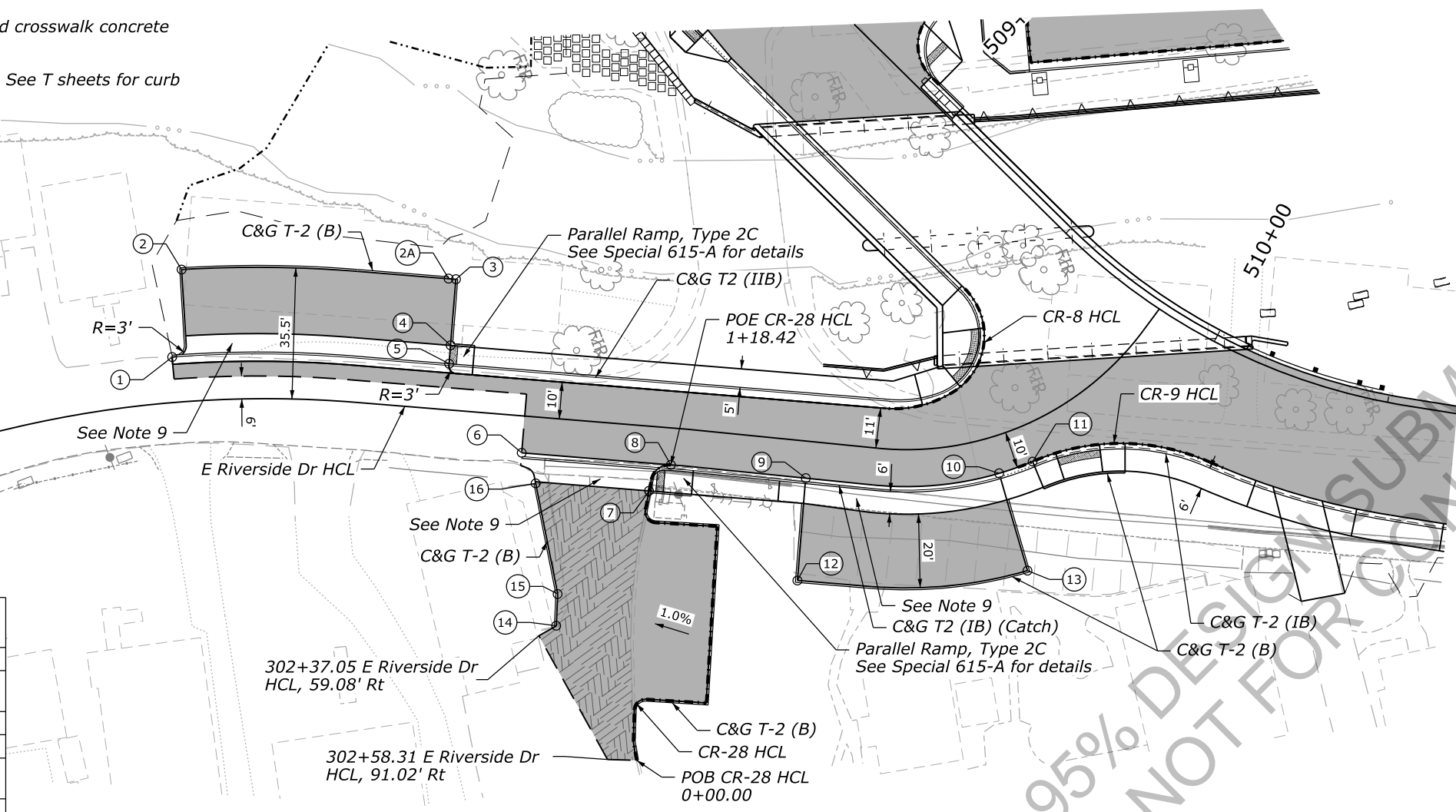
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- See Special 609-B for Driveway Details.

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PAVEMENT POINTS E RIVERSIDE HCL			
POINT #	STATION	OFFSET	DESCRIPTION
1	301+33.60	12.33	BEGIN CURB T2 B MATCH EXISTING
2	301+37.56	35.80	EDGE OF PAVEMENT
2A	302+04.83	35.50	END CURB T2 B
3	302+06.83	35.80	EDGE OF PAVEMENT BEGIN CURB T2 B
4	302+06.83	17.50	EDGE OF RAMP END CURB T2 B
5	302+06.83	12.50	EDGE OF RAMP BEGIN CURB T2 IIB
6	302+28.41	10.00	BEGIN GUTTER T2 (W=8') MATCH EXISTING
7	302+63.67	17.50	EDGE OF RAMP
8	302+68.99	10.00	EDGE OF RAMP BEGIN CURB T2 IIB
9	303+05.93	10.00	EDGE OF DRIVEWAY
10	303+55.01	10.00	EDGE OF DRIVEWAY END C&G T2 IB (CATCH) BEGIN TRANSITION
11	303+63.57	10.00	END TRANSITION BEGIN CURB T2 IB
12	303+06.47	37.86	EDGE OF PAVEMENT
13	303+55.01	37.50	EDGE OF PAVEMENT
14	302+41.51	56.03	EDGE OF PAVEMENT BEGIN CURB T2 B
15	302+41.21	47.41	EDGE OF PAVEMENT
16	302+32.85	17.96	END CURB T2 B

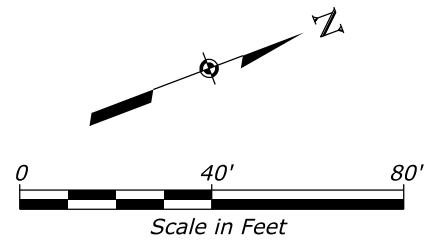


CURB & GUTTER LEGEND

- Curb Face (Flowline)
- - - Curb Face (Transition)
- · - · Curb Face (Spill Curb)
- · - · - Edge of Pavement HCL
- - - Sawcut Line

PAVEMENT LEGEND

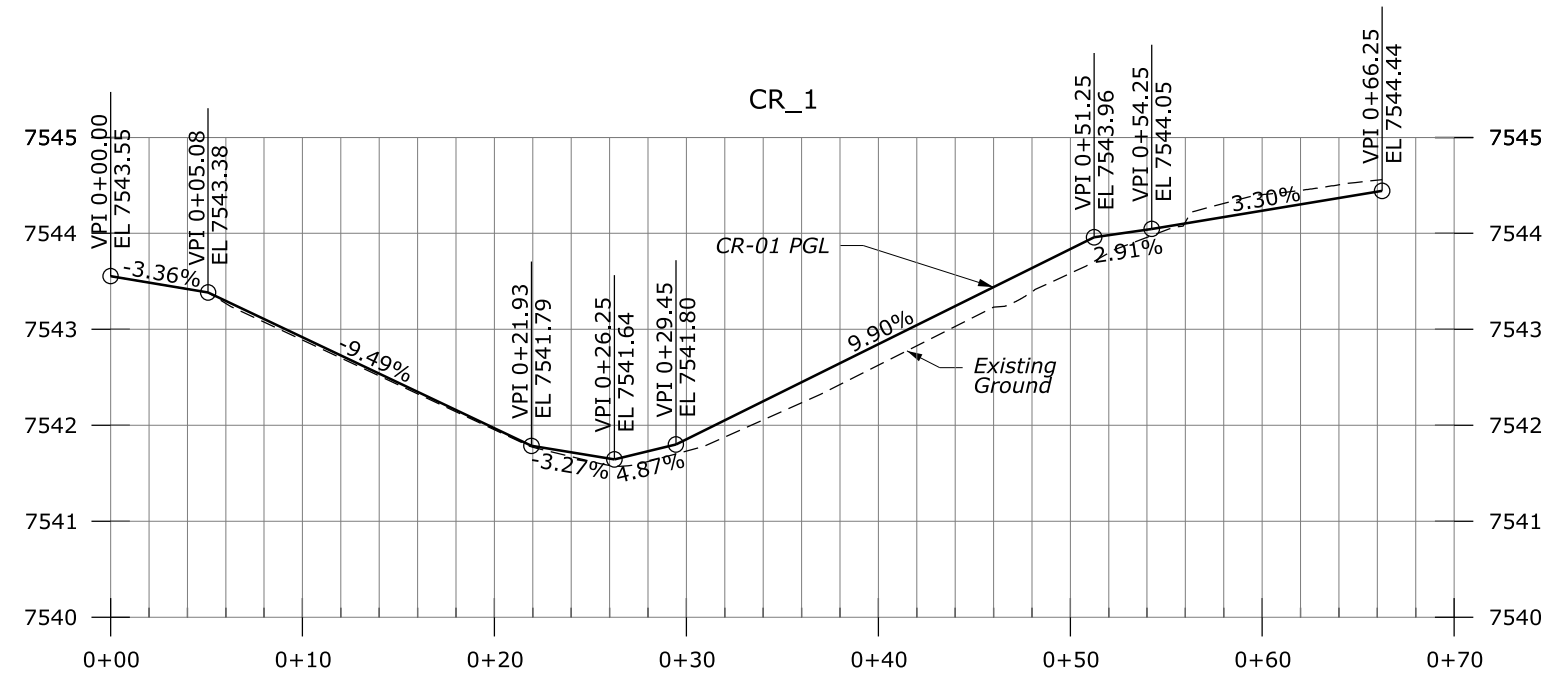
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- Asphalt Pavement (Overlay)
- Concrete Pavement



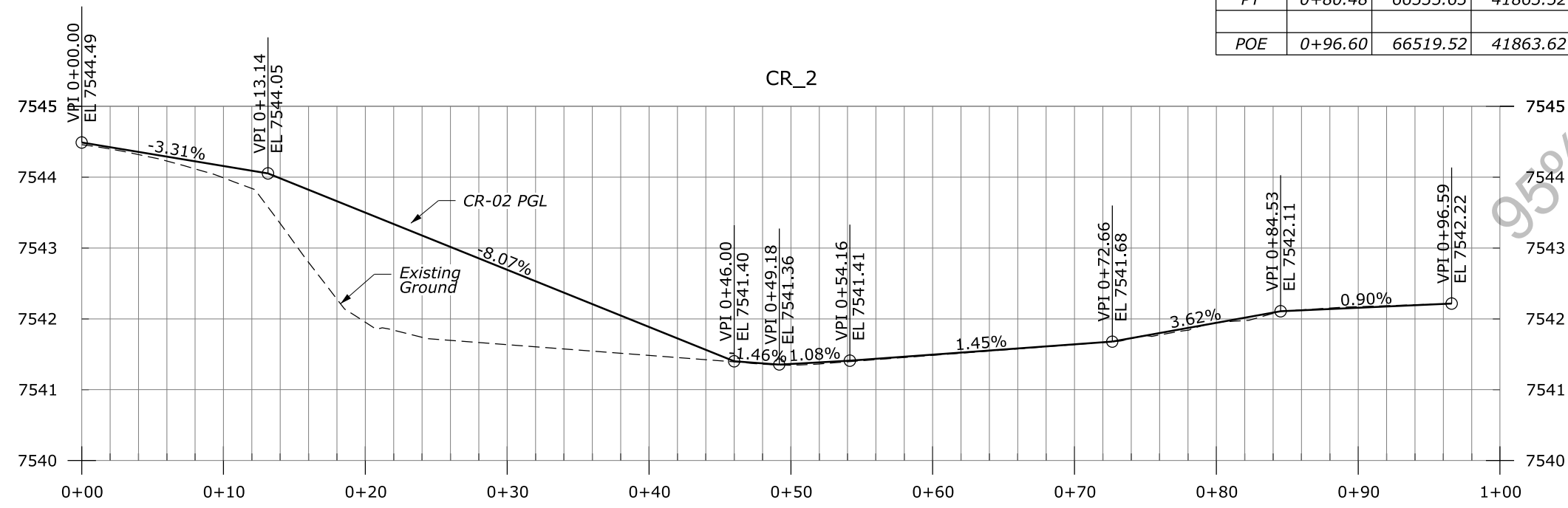
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**PAVEMENT PLANS
E RIVERSIDE DR**

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POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00")	
						(STRAIGHT)	(R=STARTING ANGLE) (R=END ANGLE)
PC	0+00.00	66534.31	41825.53				
PT	0+18.10	66546.22	41814.21	R = -12.00	18.1		N 0°21'01" W N 86°45'51" W
PC	0+38.04	66547.35	41794.3	STRAIGHT	19.94	N 86°45'51" W	
PT	0+40.74	66545.47	41793.76	R = -1.00	2.7		N 86°45'51" W S 61°26'41" E
PI	0+61.16	66535.7	41811.71	STRAIGHT	20.43	S 61°26'41" E	
POE	0+66.25	66530.62	41811.63	STRAIGHT	5.08	S 0°54'19" W	

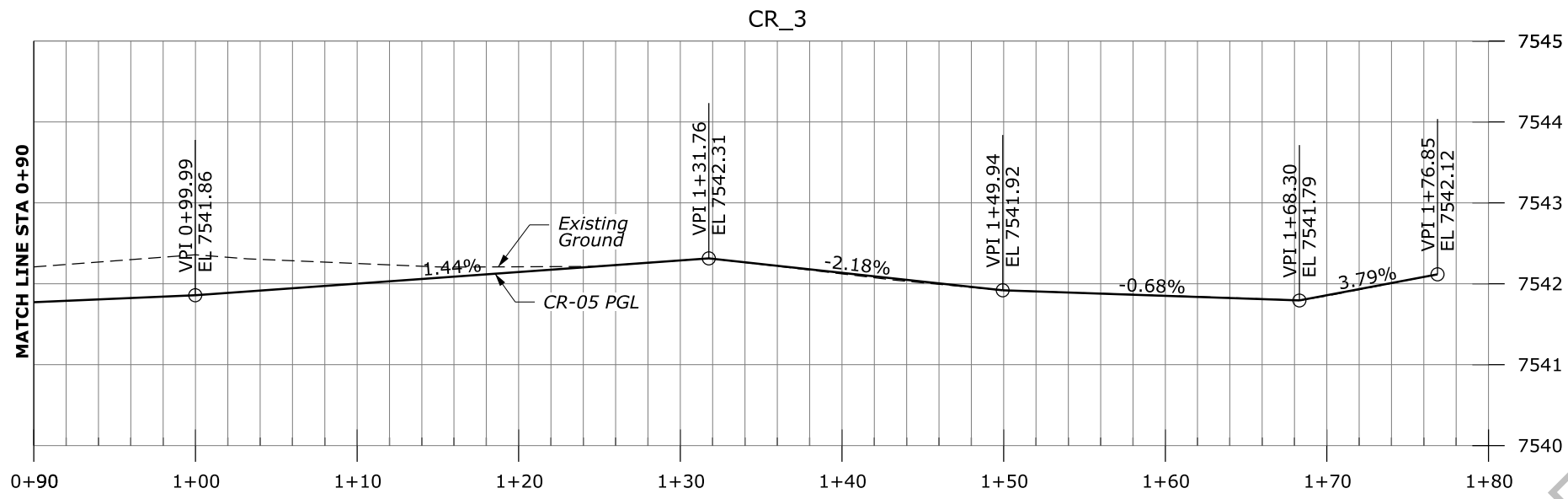
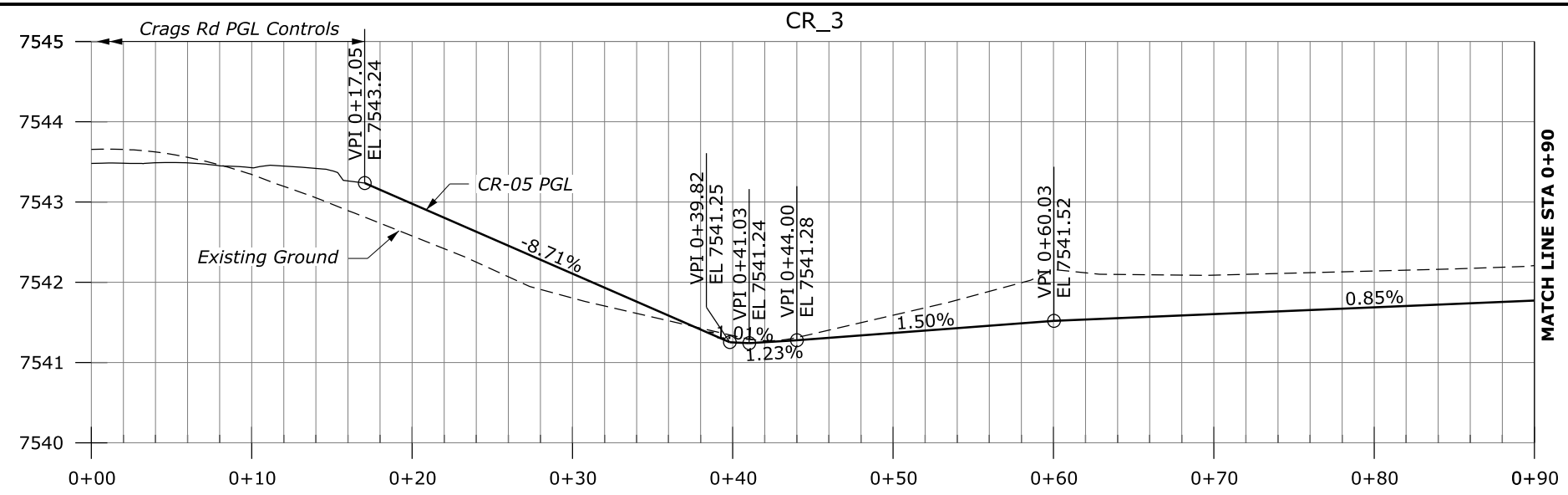


POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00")	
						(STRAIGHT)	(R=STARTING ANGLE) (R=END ANGLE)
PC	0+00.00	66532.72	41849.55				
PT	0+18.68	66544.62	41861.48	R = +12.00	18.68		N 0°28'44" E N 89°39'08" E
PC	0+46.01	66544.78	41888.81	STRAIGHT	27.33	N 89°39'08" E	
PT	0+52.29	66540.78	41888.83	R = +2.00	6.28		N 89°39'08" E S 89°38'59" W
PC	0+72.63	66540.66	41868.49	STRAIGHT	20.34	S 89°38'59" W	
PT	0+80.48	66535.63	41863.52	R = -5.00	7.85		S 89°38'59" W S 0°21'01" E
POE	0+96.60	66519.52	41863.62	STRAIGHT	16.11	S 0°21'01" E	

- Notes:
- See sheet K-02 for CR-1 and CR-2 plan view.
 - See Special 609-A for curb detail and PGL location.

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

CURB RETURN
 GEOMETRY



CR_3 HCL								
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB	WCB (0°00'00")	
						(0°00'00")	(R=STARTING ANGLE)	(R=END ANGLE)
PC	0+00.00	66581.17	41821.52					
PT	0+17.05	66570.41	41810.98	R = +10.00	17.05		S 4°28'03" E	N 86°45'51" W
				STRAIGHT	22.77	N 86°45'51" W		
PC	0+39.82	66571.69	41788.25	R = +1.50	4.71		N 86°45'51" W	S 86°45'51" E
PT	0+44.53	66574.69	41788.42					
				STRAIGHT	15.5	S 86°45'51" E		
PI	0+60.03	66573.82	41803.9					
				STRAIGHT	40	N 3°14'09" E		
PI	1+00.03	66613.75	41806.15					
				STRAIGHT	32.89	N 24°04'04" W		
PI	1+32.93	66643.78	41792.74					
				STRAIGHT	18.53	N 39°08'26" W		
PI	1+51.46	66658.16	41781.04					
				STRAIGHT	33.48	S 90°00'00" W		
POE	1+84.94	66658.16	41747.56					

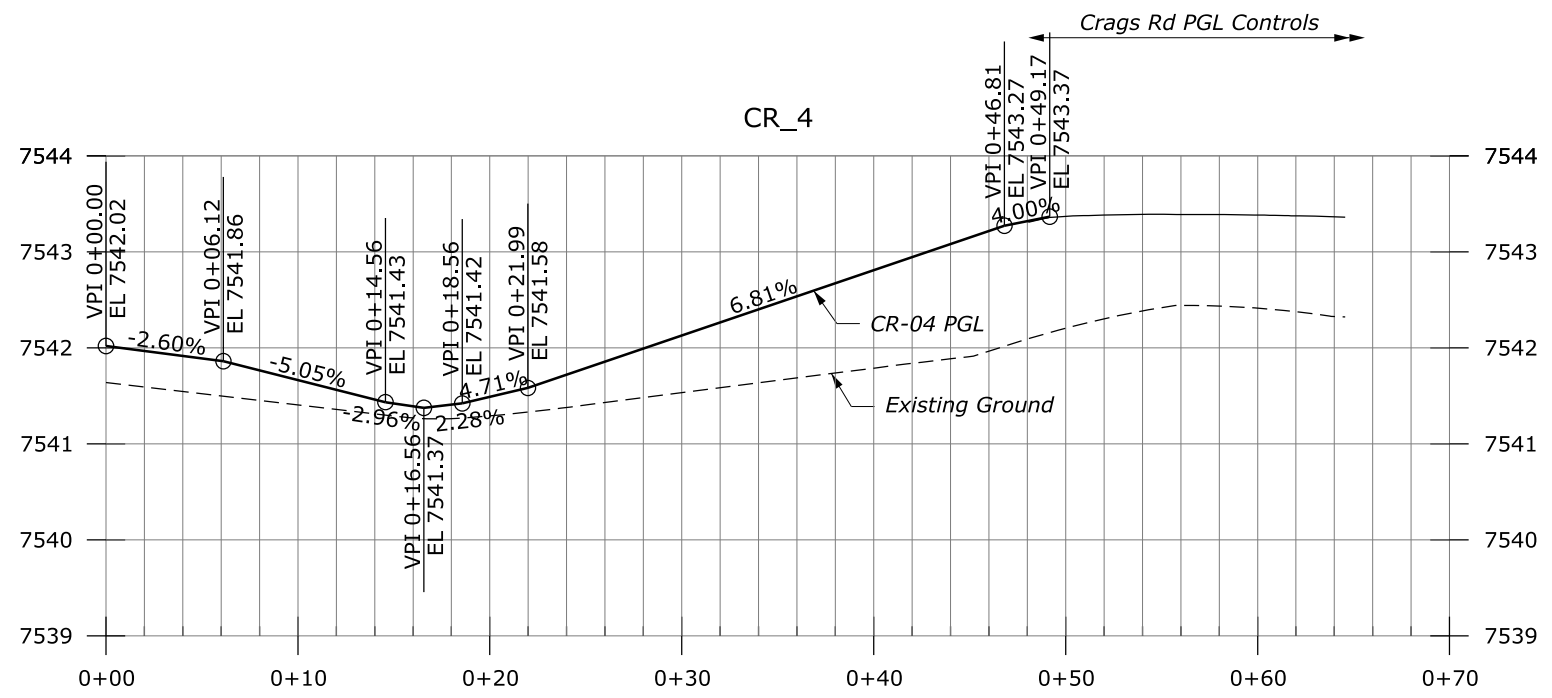
- Notes:
- See sheet K-02 for CR-3 plan view.
 - See Special 609-A for curb detail and PGL location.

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 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

CURB RETURN GEOMETRY

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POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00")	WCB (0°00'00")	
						(STRAIGHT)	(R=STARTING ANGLE)	(R=END ANGLE)
PC	0+00.00	66586.77	41857.61					
				R = -15.00	26.77		S 11°53'31" W	N 89°38'59" E
PT	0+26.77	66568.68	41872.38					
				STRAIGHT	12.58	N 89°38'59" E		
PC	0+39.35	66568.76	41884.96					
				R = -6.00	7.07		N 89°38'59" E	N 22°06'58" E
PCC	0+46.42	66572.5	41890.49					
				R = -2.00	3.14		N 22°06'58" E	N 67°53'02" W
PT	0+49.56	66575.11	41889.39					
				STRAIGHT	15	N 67°53'02" W		
POE	0+64.56	66580.75	41875.49					

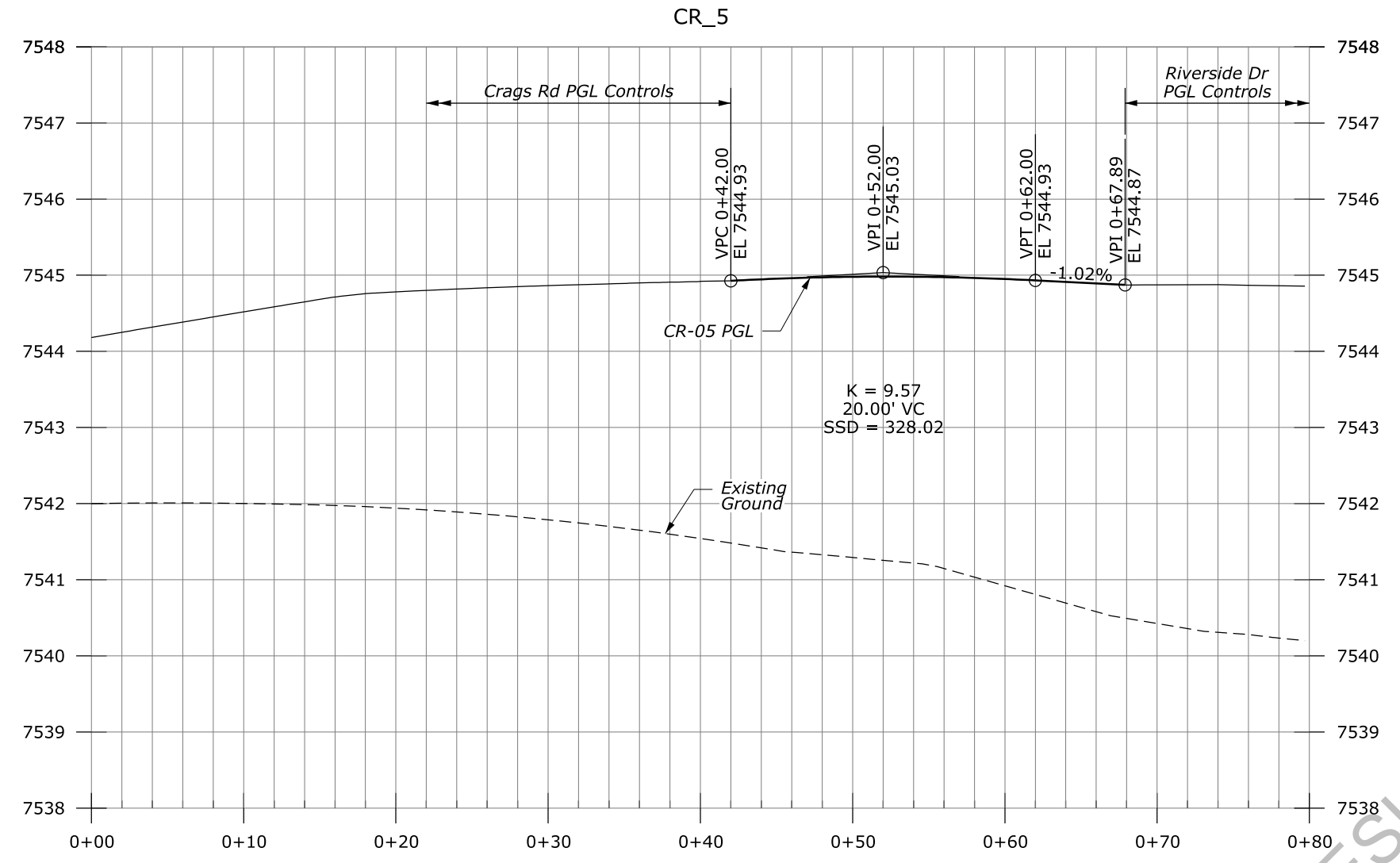
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- Notes:
- See sheet K-02 for CR-4 plan view.
 - See Special 609-A for curb detail and PGL location.

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CENTRAL FEDERAL LANDS HIGHWAY DIVISION

CURB RETURN
GEOMETRY



POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00")	
						(STRAIGHT)	(R=STARTING ANGLE) (R=END ANGLE)
PC	0+00.00	66646.3	41867.85				
				R = +99.00	14.78		N 4°53'07" E N 13°26'15" E
PCC	0+14.78	66660.88	41870.2	R = +60.00	36.4		N 13°26'15" E N 48°11'50" E
PT	0+51.18	66691.66	41888.56	STRAIGHT	28.53	N 48°11'50" E	
POE	0+79.70	66710.68	41909.83				

95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

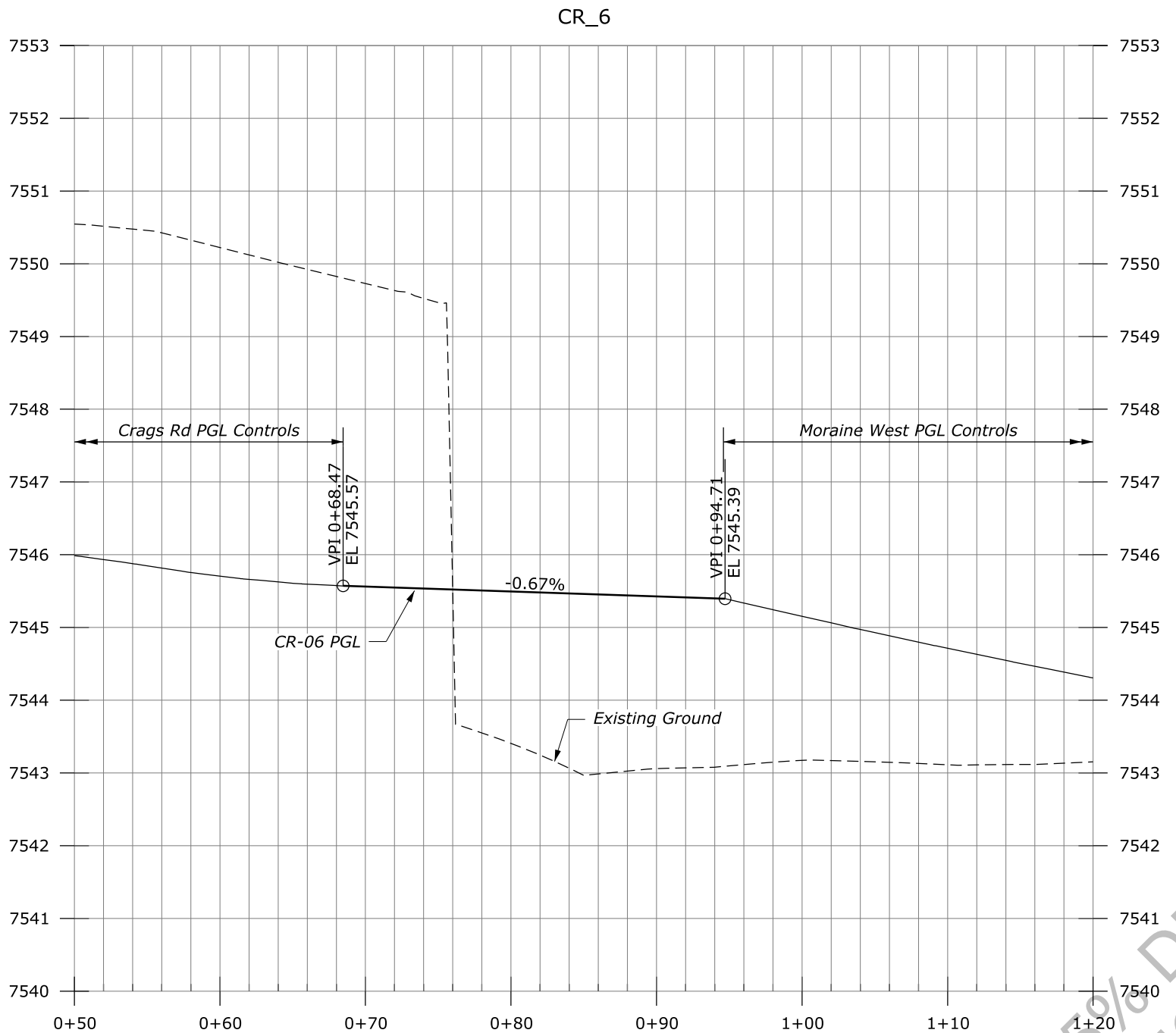
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**CURB RETURN
GEOMETRY**

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- Notes:
- See sheet K-02 for CR-5 plan view.
 - See Special 609-A for curb detail and PGL location.

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	K-15



CR_6 HCL

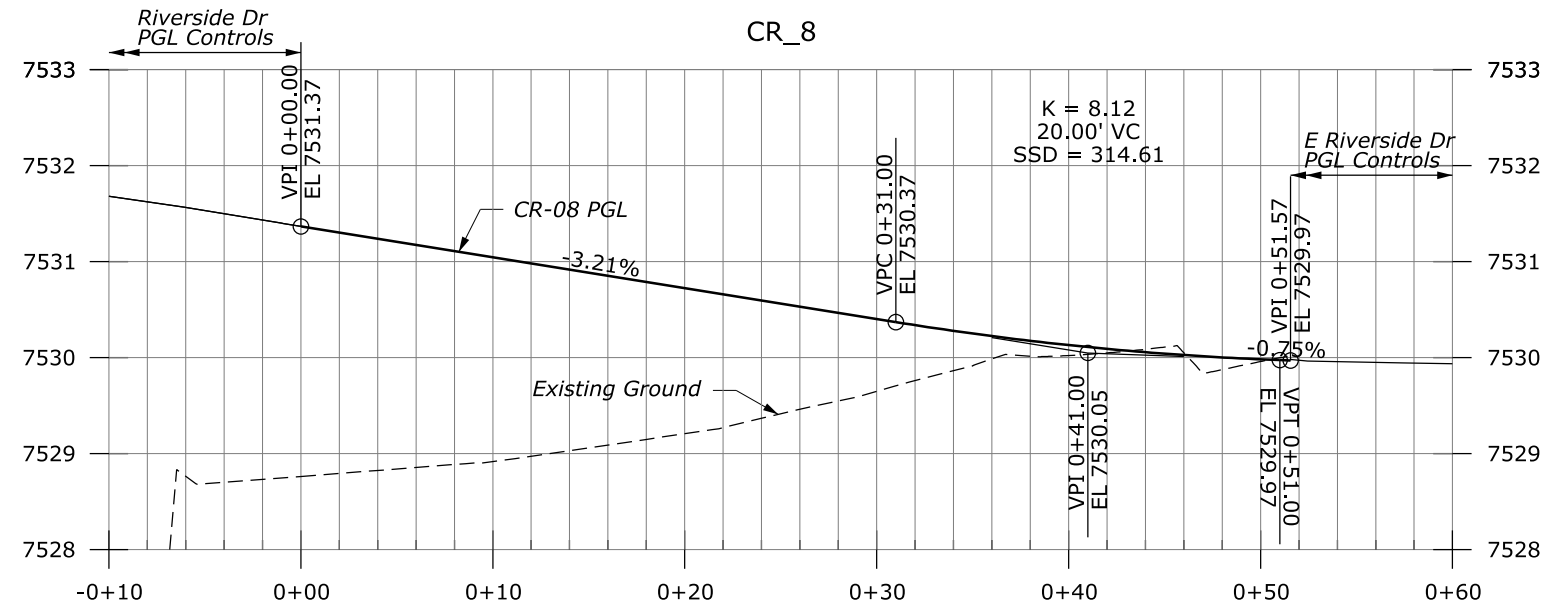
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						(STRAIGHT)	(R=STARTING ANGLE)	(R=END ANGLE)
POB	0+00.00	66667.72	41717.06					
				STRAIGHT	11.28	N 63°23'15" E		
PI	0+11.28	66672.77	41727.14					
				STRAIGHT	22.76	N 71°28'56" E		
PC	0+34.04	66680	41748.72					
				R = +44.00	32.9		N 71°33'57" E	S 65°35'12" E
PCC	0+66.95	66678.32	41780.82					
				R = +150.00	7.09		S 65°35'12" E	S 62°52'40" E
PCC	0+74.04	66675.24	41787.21					
				R = +40.00	25.59		S 62°52'40" E	S 26°12'58" E
PCC	0+99.63	66657.31	41804.86					
				R = +150.00	56.94		S 26°12'58" E	S 4°28'03" E
PT	1+56.57	66602.73	41819.83					
				STRAIGHT	22.09	S 4°28'03" E		
POE	1+78.66	66580.71	41821.55					

- Notes:
- See sheet K-02 for CR-6 plan view.
 - See Special 609-A for curb detail and PGL location.

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**CURB RETURN
GEOMETRY**

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CR_8 HCL								
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00")		
						(STRAIGHT)	(R=STARTING ANGLE)	(R=END ANGLE)
PC	0+00.00	67435.59	42229.17					
				R = -30.00	18.97		N 25°25'04" E	N 10°48'26" W
PCC	0+18.97	67454.09	42231.54					
				R = -18.00	32.6		N 10°48'26" W	S 65°25'26" W
PT	0+51.57	67467.09	42206.37					

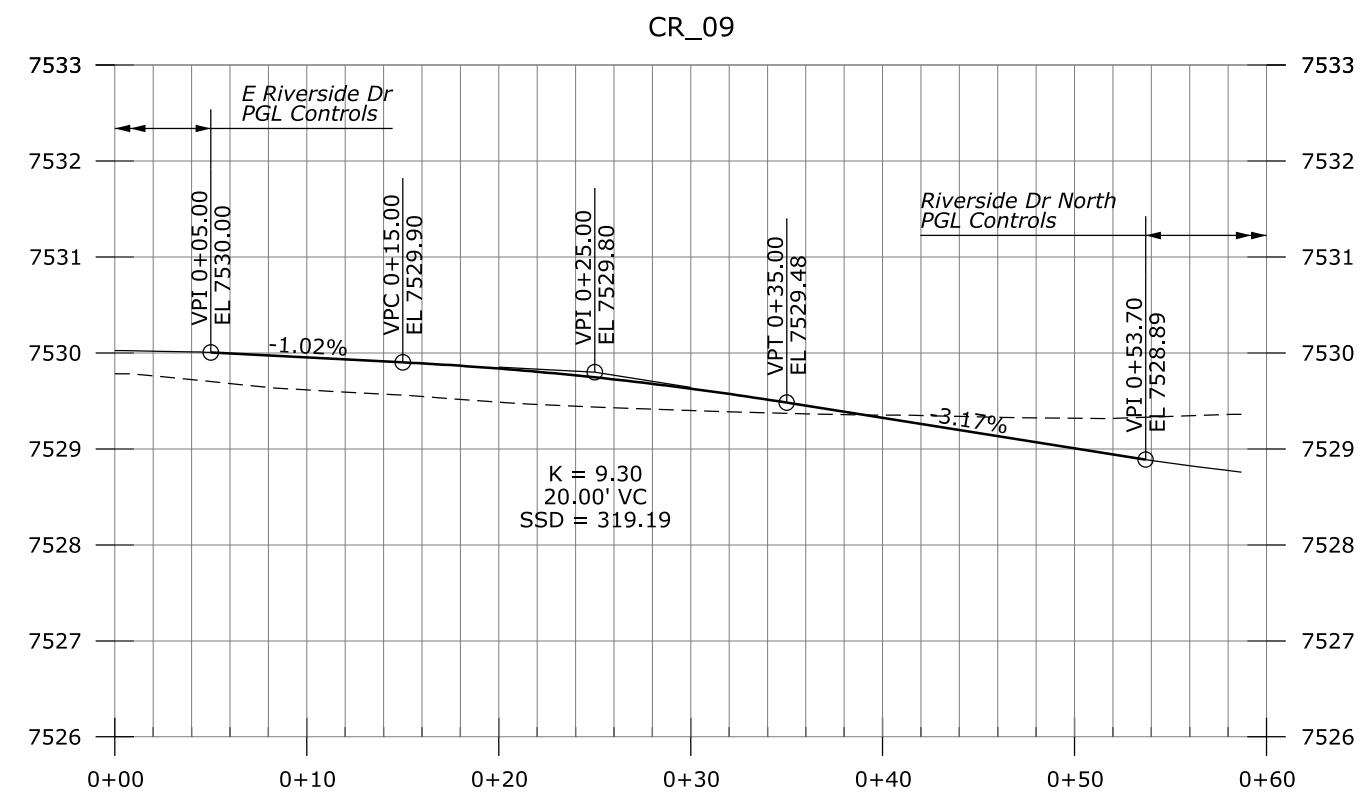
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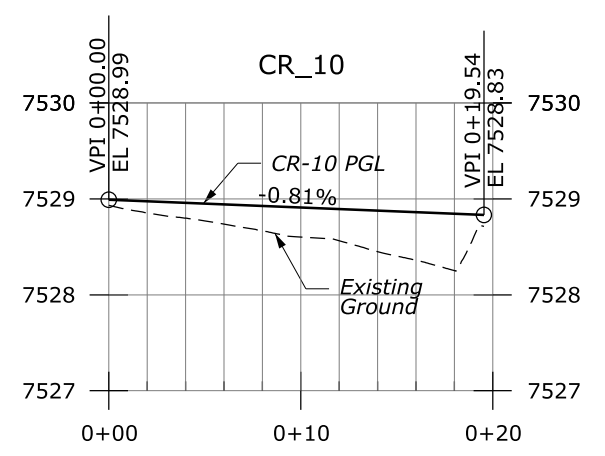
CURB RETURN
GEOMETRY

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- Notes:
- See sheet K-04 for CR-8 plan view.
 - See Special 609-A for curb detail and PGL location.



CR_9 HCL								
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00")	WCB (0°00'00")	
						(STRAIGHT)	(R=STARTING ANGLE)	(R=END ANGLE)
PC	0+00.00	67468.96	42257.77					
				R = +60.00	48.76		N 2°21'50" W	N 44°11'38" E
PT	0+48.76	67513.26	42274.7					



CR_10 HCL								
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00")	WCB (0°00'00")	
						(STRAIGHT)	(R=STARTING ANGLE)	(R=END ANGLE)
PC	0+00.00	67675.41	42340.25					
				R = -12.00	19.54		N 29°48'40" E	N 63°30'16" W
PT	0+19.54	67692.12	42335.2					

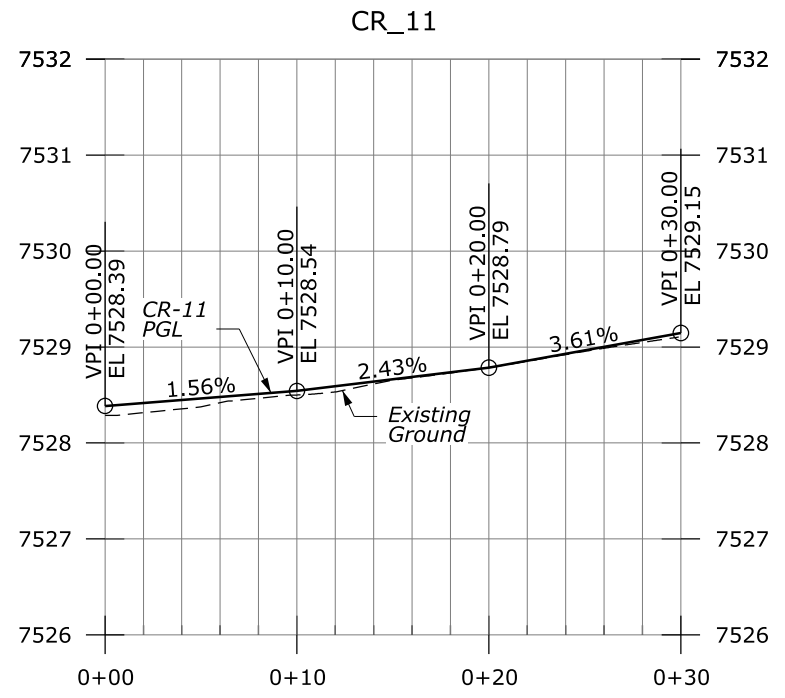
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CURB RETURN
GEOMETRY

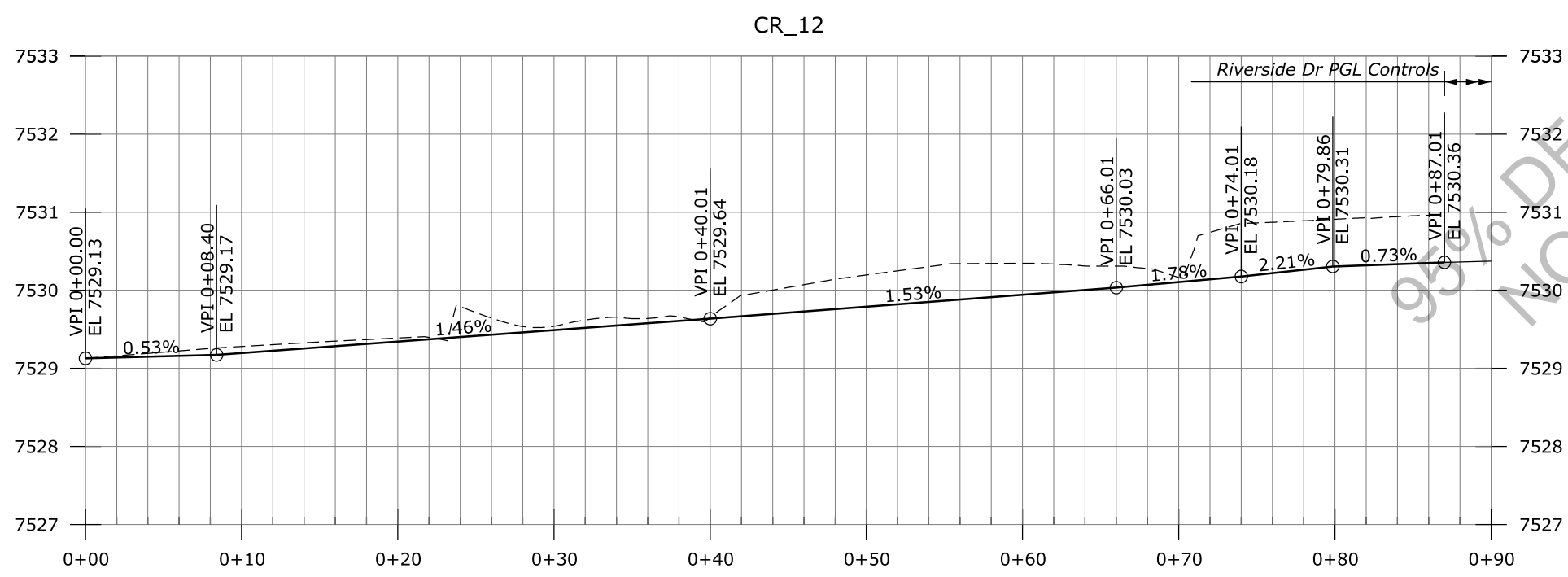
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- Notes:
- See sheet K-04 for CR-9 and CR-10 plan view.
 - See Special 609-A for curb detail and PGL location.



POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00")	
						(STRAIGHT)	(R=STARTING ANGLE) (R=END ANGLE)
PC	0+00.00	67721.52	42367.72				
				R = +20.00	29.89		S 30°44'32" W N 63°37'12" W
PT	0+29.89	67713.82	42341.64				

POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00")	
						(STRAIGHT)	(R=STARTING ANGLE) (R=END ANGLE)
PC	0+00.00	67408.89	42021.84				
				R = -29.00	16.88		N 49°13'51" E N 15°52'35" E
PT	0+16.88	67422.92	42030.8				
				STRAIGHT	38.21	N 15°52'35" E	
PC	0+55.09	67459.67	42041.25				
				R = -5.00	5.67		N 15°52'35" E N 49°07'25" W
PT	0+60.77	67464.82	42039.72				
				STRAIGHT	15.64	N 49°07'25" W	
PI	0+76.41	67475.06	42027.89				
				STRAIGHT	9.51	N 14°45'20" E	
POE	0+85.92	67484.26	42030.31				



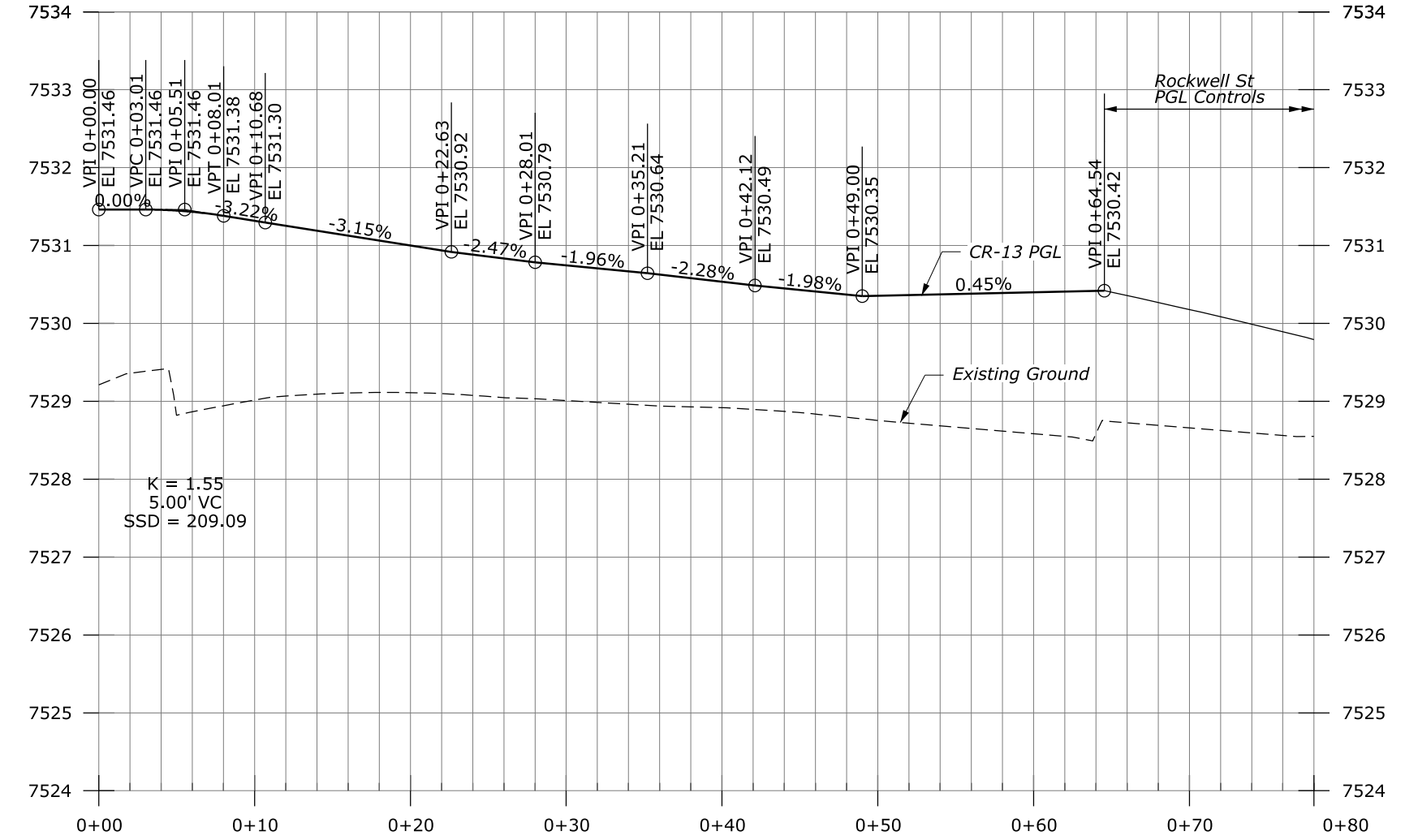
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- Notes:
- See sheet K-04 for CR-11 plan view.
See sheet K-03 for CR-12 plan view.
 - See Special 609-A for curb detail and PGL location.

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

CURB RETURN
 GEOMETRY

CR_13



K = 1.55
5.00' VC
SSD = 209.09

CR_13 HCL								
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB	WCB (0°00'00")	
						(0°00'00") (STRAIGHT)	(R=STARTING ANGLE)	(R=END ANGLE)
POB	0+00.00	67480.25	42152.2					
PC	0+03.02	67478.99	42149.45	STRAIGHT	3.02	S 65°25'26" W		
				R = +12.00	27.32		S 65°25'26" W	N 15°52'35" E
PT	0+30.34	67493.19	42132.92	STRAIGHT	13.11	N 15°52'35" E		
PC	0+43.45	67505.8	42136.51					
				R = +5.00	7.85		N 15°52'35" E	S 74°07'25" E
PT	0+51.31	67509.24	42142.68	STRAIGHT	13.25	S 74°07'25" E		
PI	0+64.56	67505.62	42155.43	STRAIGHT	208.54	N 15°52'35" E		
PI	2+73.09	67706.2	42212.48	STRAIGHT	18.23	N 49°07'25" W		
PC	2+91.32	67718.13	42198.7					
				R = +3.00	3.4		N 49°07'25" W	N 15°52'35" E
PT	2+94.72	67721.22	42197.77	STRAIGHT	7.59	N 15°52'35" E		
PC	3+02.32	67728.52	42199.85					
				R = +15.00	22.69		N 15°52'35" E	S 77°27'22" E
PT	3+25.01	67739.06	42217.54					

- Notes:
- See sheet K-04 for CR-13 plan view.
 - See sheet Special 609-A for curb detail and PGL location.

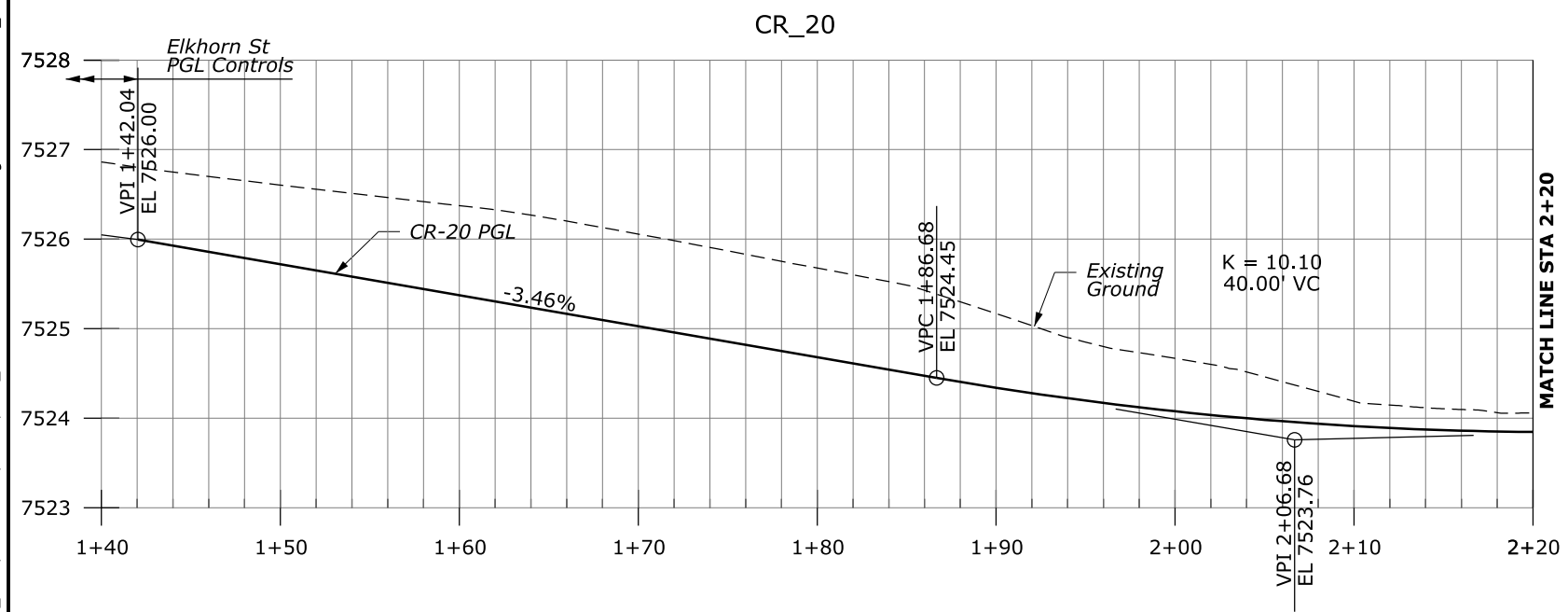
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CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**CURB RETURN
GEOMETRY**

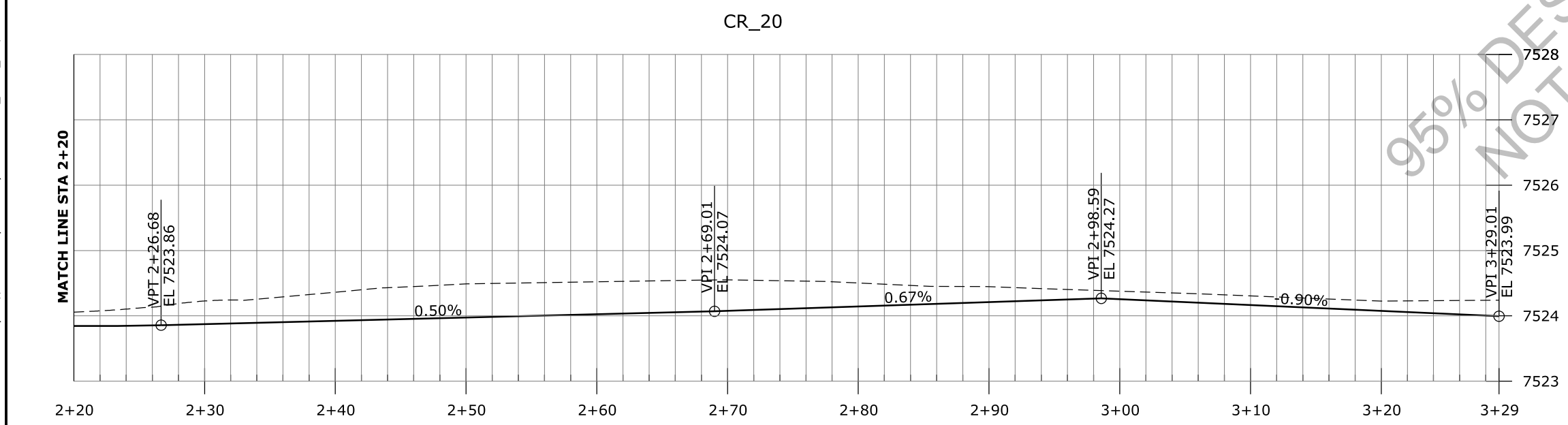
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POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00")	
						(STRAIGHT)	(R=STARTING ANGLE) (R=END ANGLE)
POB	0+00.00	68099.22	42424.74				
				STRAIGHT	78.95	N 10°39'18" W	
PC	0+78.95	68176.81	42410.14				
				R = -60.00	108.02		N 10°39'18" W S 66°11'22" W
PCC	1+86.97	68220.61	42326.96				
				R = -300.00	7.71		S 66°11'22" W S 64°43'00" W
PCC	1+94.68	68217.41	42319.94				
				R = -20.00	18.78		S 65°53'17" W S 12°05'21" W
PRC	2+13.46	68203.34	42308.56				
				R = +8.00	7.35		S 12°05'21" W S 64°43'00" W
PT	2+20.81	68197.78	42304.15				
				STRAIGHT	88.86	S 64°43'00" W	
PC	3+09.67	68159.83	42223.8				
				R = +8.00	6.3		S 64°43'00" W N 70°10'34" W
PRC	3+15.97	68159.54	42217.67				
				R = -20.00	13.04		N 70°10'34" W S 72°27'51" W
PT	3+29.01	68159.79	42204.86				

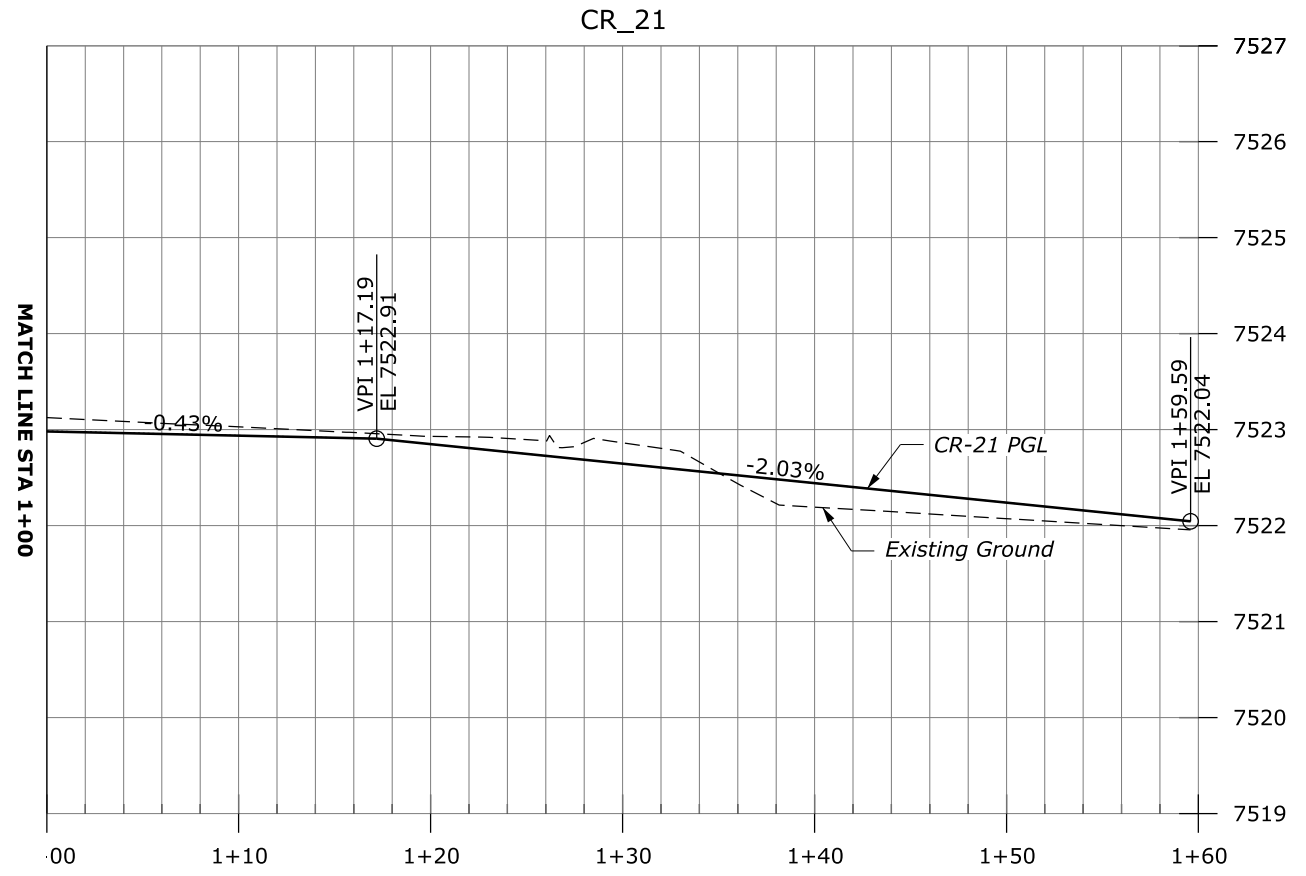
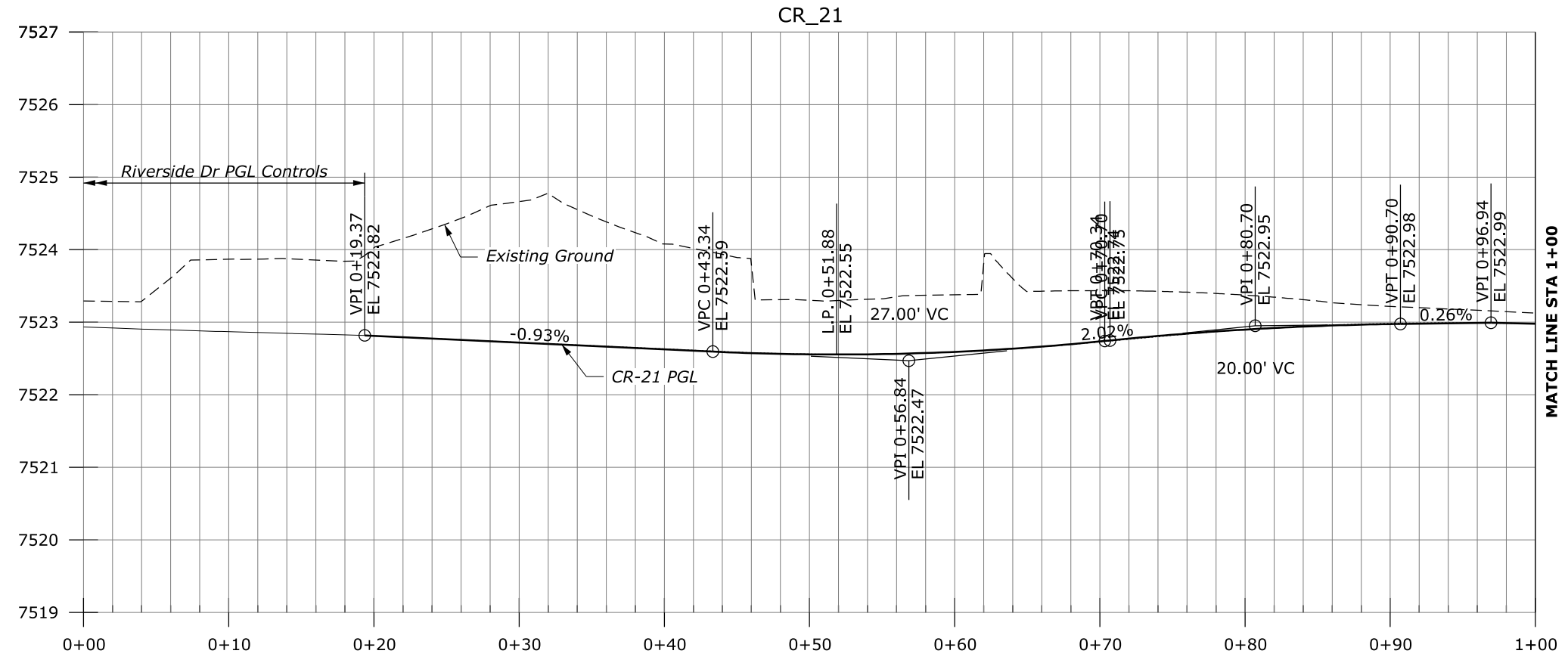


95% DESIGN SUBMITTAL NOT FOR CONSTRUCTION

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 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

CURB RETURN
 GEOMETRY

- Notes:
- See sheet K-05 for CR-20 plan view.
 - See Special 609-A for curb detail and PGL location.



CR_21 HCL

POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00")	
						(STRAIGHT)	(R=STARTING ANGLE) (R=END ANGLE)
POB	0+00.00	68260.59	42553.88	STRAIGHT	9.86	S 67°49'25" W	
PC	0+09.86	68256.86	42544.75		R = -280.00	57.72	S 67°49'25" W
PCC	0+67.58	68229.74	42493.92	R = -70.00	56.8	S 56°00'45" W	S 9°31'18" W
PCC	1+24.38	68183.28	42464.01	R = -100.00	35.21	S 9°31'18" W	S 10°39'18" E
PT	1+59.59	68148.25	42464.36				

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CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**CURB RETURN
GEOMETRY**

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- Notes:
- See sheet K-04 for CR-21 plan view.
 - See Special 609-A for curb detail and PGL location.

CR_22 HCL								
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB	WCB (0°00'00")	
						(0°00'00")	(R=STARTING ANGLE)	(R=END ANGLE)
PC	0+00.00	67538.97	41851.44					
				R = -5.00	3.97		N 0°04'40" E	N 45°26'20" W
PT	0+03.97	67542.54	41849.95					
				STRAIGHT	15.1	N 45°26'20" W		
PC	0+19.07	67553.14	41839.19					
				R = +8.00	6.75		N 45°26'20" W	N 2°54'34" E
PT	0+25.82	67559.24	41836.81					
				STRAIGHT	10.61	N 2°54'34" E		
PC	0+36.43	67569.83	41837.35					
				R = +8.00	5.94		N 2°54'34" E	N 45°26'20" E
PT	0+42.37	67575.13	41839.72					
				STRAIGHT	14.06	N 45°26'20" E		
PC	0+56.43	67584.99	41849.74					
				R = -5.00	3.96		N 45°26'20" E	N 0°02'39" E
PT	0+60.39	67588.55	41851.23					

CR_23 HCL								
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB	WCB (0°00'00")	
						(0°00'00")	(R=STARTING ANGLE)	(R=END ANGLE)
POB	0+00.00	67718.7	41851.8					
				STRAIGHT	26.3	N 0°00'00" E		
PC	0+26.30	67745.01	41851.8					
				R = +6.83	9.46		N 0°00'00" W	N 79°22'09" E
PT	0+35.77	67751.72	41857.37					
				STRAIGHT	30.51	N 79°22'09" E		
POE	0+66.28	67757.35	41887.36					

CR_24 HCL								
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB	WCB (0°00'00")	
						(0°00'00")	(R=STARTING ANGLE)	(R=END ANGLE)
POB	0+00.00	67762.79	42217.87					
				STRAIGHT	13.68	S 68°13'34" W		
PC	0+13.68	67757.72	42205.16					
				R = +5.00	3.07		S 68°13'34" W	N 76°32'42" W
PT	0+16.76	67757.5	42202.14					
				STRAIGHT	1.27	N 76°32'42" W		
PC	0+18.02	67757.79	42200.91					
				R = +5.00	7.77		N 76°32'42" W	N 12°30'10" E
PT	0+25.80	67763.74	42197.2					
				STRAIGHT	3.68	N 12°30'10" E		
POE	0+29.47	67767.33	42197.99					

CR_25 HCL								
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB	WCB (0°00'00")	
						(0°00'00")	(R=STARTING ANGLE)	(R=END ANGLE)
PC	0+00.00	68136.69	42466.53					
				R = -5.50	17.28		S 10°39'18" E	N 10°39'18" W
PT	0+17.28	68138.73	42477.34					
				STRAIGHT	11.76	N 10°39'18" W		
PI	0+29.04	68150.28	42475.17					
				STRAIGHT	3.71	N 36°56'12" E		
PI	0+32.75	68153.25	42477.4					
				STRAIGHT	18.68	N 5°43'17" W		
PI	0+51.43	68171.83	42475.54					
				STRAIGHT	6.28	N 4°47'48" E		
PI	0+57.71	68178.09	42476.06					
				STRAIGHT	5.38	N 27°27'31" E		
PI	0+63.09	68182.87	42478.55					
				STRAIGHT	6.23	N 39°09'36" E		
PI	0+69.32	68187.7	42482.48					
				STRAIGHT	6.75	N 51°12'46" E		
PI	0+76.08	68191.93	42487.75					
				STRAIGHT	6.3	N 53°35'23" E		
PI	0+82.38	68195.67	42492.82					
				STRAIGHT	7.66	N 61°47'40" E		
PI	0+90.04	68199.29	42499.57					
				STRAIGHT	8.59	N 74°07'29" E		
PI	0+98.63	68201.64	42507.83					
				STRAIGHT	17.95	N 46°41'21" W		
POE	1+16.58	68213.96	42494.77					

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- Notes:
- See sheet K-03 for CR-24 plan view.
See sheet K-04 for CR-25 plan view.
See sheet K-07 for CR-22 and CR-23 plan view.
 - See Special 609-A for curb detail and PGL location.

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

CURB RETURN
 GEOMETRY

CR_26 HCL								
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB	WCB (0°00'00")	
						(0°00'00")	(R=STARTING ANGLE)	(R=END ANGLE)
POB	0+00.00	68289.06	42369.98					
				STRAIGHT	5.54	S 16°51'13" E		
PC	0+05.54	68283.76	42371.59					
				R = +25.00	38.87		S 16°51'13" E	S 72°14'11" W
PT	0+44.41	68252.71	42355.29					
				STRAIGHT	14.08	S 72°14'11" W		
PC	0+58.48	68248.41	42341.88					
				R = +30.00	35.34		S 72°14'11" W	N 40°16'06" W
PT	0+93.82	68257.59	42309.84					
				STRAIGHT	9.16	N 40°16'06" W		
PC	1+02.99	68264.58	42303.92					
				R = +5.00	7.14		N 40°16'06" W	N 41°32'31" E
PT	1+10.13	68271.13	42303.99					

CR_27 HCL								
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB	WCB (0°00'00")	
						(0°00'00")	(R=STARTING ANGLE)	(R=END ANGLE)
POB	0+00.00	67775.54	41862.48					
				STRAIGHT	2.26	S 81°16'21" W		
PC	0+02.26	67775.19	41860.25					
				R = +9.86	17.11		S 81°16'21" W	N 0°39'41" E
PT	0+19.37	67785.06	41848.89					
				STRAIGHT	1.16	N 0°39'41" E		
POE	0+20.53	67786.22	41848.91					

CR_28 HCL								
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB	WCB (0°00'00")	
						(0°00'00")	(R=STARTING ANGLE)	(R=END ANGLE)
POB	0+00.00	67338.47	42294.42					
				STRAIGHT	5.09	N 79°01'13" W		
PI	0+05.09	67339.44	42289.42					
				STRAIGHT	8.61	N 67°24'49" W		
PC	0+13.70	67342.74	42281.47					
				R = +3.00	4.8		N 67°24'49" W	N 24°17'32" E
PT	0+18.50	67346.75	42279.89					
				STRAIGHT	16.4	N 24°17'32" E		
PI	0+34.90	67361.69	42286.63					
				STRAIGHT	48	N 65°42'28" W		
PI	0+82.90	67381.44	42242.88					
				STRAIGHT	16.75	S 24°17'32" W		
PC	0+99.65	67366.17	42236					
				R = +3.00	5.12		S 24°17'32" W	N 57°57'05" W
PT	1+04.77	67364.87	42231.67					
				STRAIGHT	5.56	N 57°57'05" W		
PC	1+10.32	67367.81	42226.96					
				R = +3.50	5.09		N 57°57'05" W	N 25°25'04" E
PT	1+15.42	67372.28	42225.66					

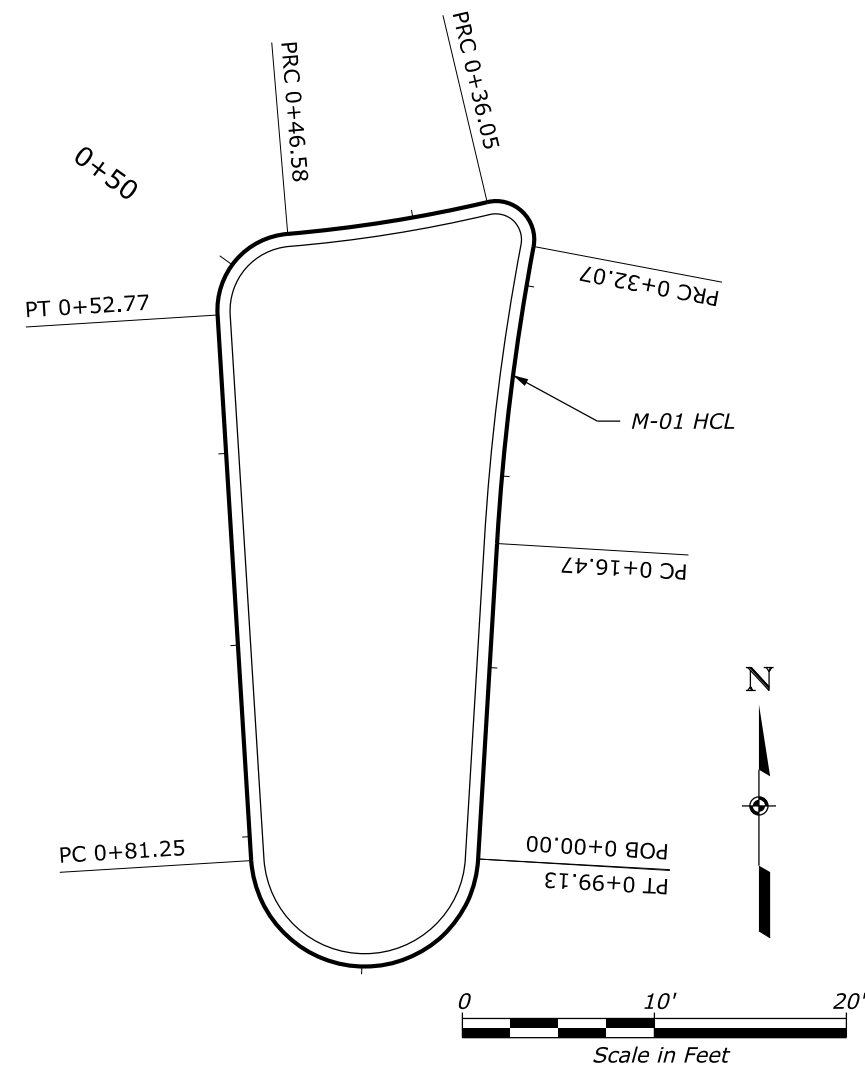
95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

- Notes:
- See sheet K-07 for CR-27 plan view.
See sheet K-09 for CR-26 plan view.
See sheet K-10 for CR-28 plan view.
 - See sheet Special 609-A for curb detail and PGL location.

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION
CURB RETURN GEOMETRY

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	K-24

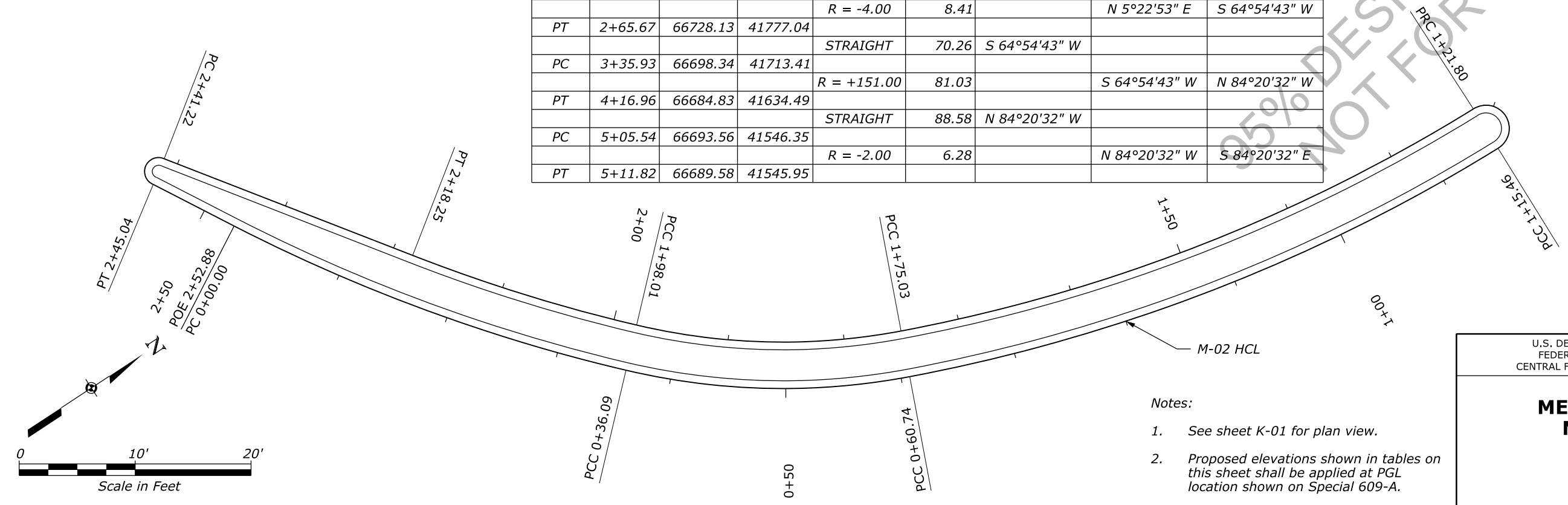


M-01 HCL								
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00")		
						(STRAIGHT)	(R=STARTING ANGLE)	(R=END ANGLE)
POB	0+00.00	66628.75	41842.73					
				STRAIGHT	16.47	N 3°24'36" E		
PC	0+16.47	66645.19	41843.71					
				R = +123.00	15.61	N 3°24'36" E	N 10°40'45" E	
PRC	0+32.07	66660.66	41845.62					
				R = -2.00	3.98	N 10°40'45" E	S 76°42'54" W	
PRC	0+36.05	66662.98	41843.19					
				R = +71.00	10.53	S 76°42'54" W	S 85°12'42" W	
PRC	0+46.58	66661.33	41832.8					
				R = -4.00	6.2	S 85°12'42" W	S 3°33'05" E	
PT	0+52.77	66657.1	41829.15					
				STRAIGHT	28.47	S 3°33'05" E		
PC	0+81.25	66628.68	41830.91					
				R = -5.92	17.88	S 3°50'45" E	N 3°06'57" E	
PT	0+99.13	66628.75	41842.73					

M-02 HCL								
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00")		
						(STRAIGHT)	(R=STARTING ANGLE)	(R=END ANGLE)
POB	0+00.00	66689.58	41545.95					
				STRAIGHT	91.67	S 84°19'56" E		
PC	0+91.67	66680.53	41637.18					
				R = -152.34	51.39	S 84°20'08" E	N 76°20'06" E	
PCC	1+43.06	66684.1	41688.2					
				R = -153.00	24.55	N 74°14'05" E	N 65°02'27" E	
PT	1+67.61	66692.63	41711.19					
				STRAIGHT	28.62	N 65°02'27" E		
PC	1+96.23	66704.7	41737.14					
				R = +66.00	44.27	N 65°02'27" E	S 76°31'54" E	
PRC	2+40.50	66709.05	41780.36					
				R = -2.00	3.83	S 76°31'54" E	N 6°15'57" W	
PRC	2+44.33	66711.22	41782.81					
				R = +63.65	12.94	N 6°15'57" W	N 5°22'53" E	
PRC	2+57.26	66724.13	41782.71					
				R = -4.00	8.41	N 5°22'53" E	S 64°54'43" W	
PT	2+65.67	66728.13	41777.04					
				STRAIGHT	70.26	S 64°54'43" W		
PC	3+35.93	66698.34	41713.41					
				R = +151.00	81.03	S 64°54'43" W	N 84°20'32" W	
PT	4+16.96	66684.83	41634.49					
				STRAIGHT	88.58	N 84°20'32" W		
PC	5+05.54	66693.56	41546.35					
				R = -2.00	6.28	N 84°20'32" W	S 84°20'32" E	
PT	5+11.82	66689.58	41545.95					

M-01 PROPOSED ELEVATIONS		
STATION	ELEVATION	
0+00.00	7544.07	
0+10.00	7544.33	
0+16.47	7544.51	
0+20.00	7544.61	
0+30.00	7544.89	
0+32.07	7544.95	
0+36.05	7545.03	
0+40.00	7545.07	
0+46.58	7545.11	
0+50.00	7545.05	
0+52.77	7544.96	
0+60.00	7544.74	
0+70.00	7544.43	
0+80.00	7544.15	
0+81.25	7544.13	
0+90.00	7544.04	
0+99.13	7544.07	

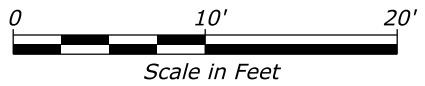
M-02 PROPOSED ELEVATIONS		
STATION	ELEVATION	
0+00.00	7546.79	
0+10.00	7546.86	
0+20.00	7547.07	
0+30.00	7547.18	
0+36.09	7547.18	
0+40.00	7547.17	
0+50.00	7547.20	
0+60.00	7547.31	
0+60.74	7547.32	
0+70.00	7547.47	
0+80.00	7547.70	
0+90.00	7547.99	
1+00.00	7548.34	
1+10.00	7548.78	
1+15.46	7549.02	
1+20.00	7549.11	
1+21.80	7549.06	
1+30.00	7548.76	
1+40.00	7548.40	
1+50.00	7548.08	
1+60.00	7547.80	
1+70.00	7547.56	
1+75.03	7547.44	
1+80.00	7547.34	
1+90.00	7547.15	
1+98.01	7547.00	
2+00.00	7546.96	
2+10.00	7546.80	
2+18.25	7546.71	
2+20.00	7546.69	
2+30.00	7546.75	
2+40.00	7546.70	
2+41.22	7546.69	
2+45.04	7546.73	
2+50.00	7546.77	
2+52.88	7546.79	



- Notes:
- See sheet K-01 for plan view.
 - Proposed elevations shown in tables on this sheet shall be applied at PGL location shown on Special 609-A.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**MEDIAN DETAILS
M-01 & M-02**



M-03 PROPOSED ELEVATIONS

STATION	ELEVATION
0+00.00	7555.23
0+06.28	7555.24
0+10.00	7555.09
0+20.00	7554.68
0+30.00	7554.27
0+40.00	7553.85
0+50.00	7553.44
0+60.00	7553.03
0+70.00	7552.61
0+80.00	7552.20
0+90.00	7551.79
0+94.86	7551.59
1+00.00	7551.38
1+10.00	7550.98
1+20.00	7550.58
1+30.00	7550.11
1+40.00	7549.67
1+50.00	7549.33
1+60.00	7549.00
1+70.00	7548.69
1+75.89	7548.51
1+80.00	7548.39
1+90.00	7548.09
2+00.00	7547.82
2+10.00	7547.62
2+20.00	7547.42
2+30.00	7547.22
2+40.00	7546.96
2+46.11	7546.78
2+50.00	7546.66
2+54.52	7546.57
2+60.00	7546.45
2+67.44	7546.29
2+70.00	7546.24
2+71.28	7546.24
2+80.00	7546.30
2+90.00	7546.41
3+00.00	7546.59
3+10.00	7546.87
3+15.54	7547.06
3+20.00	7547.25
3+30.00	7547.68
3+40.00	7548.12
3+44.35	7548.31
3+50.00	7548.55
3+60.00	7548.99
3+70.00	7549.42
3+80.00	7549.85
3+90.00	7550.28
4+00.00	7550.70

MATCHLINE SEE BELOW

PT 0+96.28
POB 0+00.00

M-03 PROPOSED ELEVATIONS

STATION	ELEVATION
4+10.00	7551.12
4+18.12	7551.45
4+20.00	7551.53
4+30.00	7551.93
4+40.00	7552.33
4+50.00	7552.74
4+60.00	7553.14
4+70.00	7553.54
4+80.00	7553.95
4+90.00	7554.35
5+00.00	7554.75
5+10.00	7555.16
5+11.77	7555.23

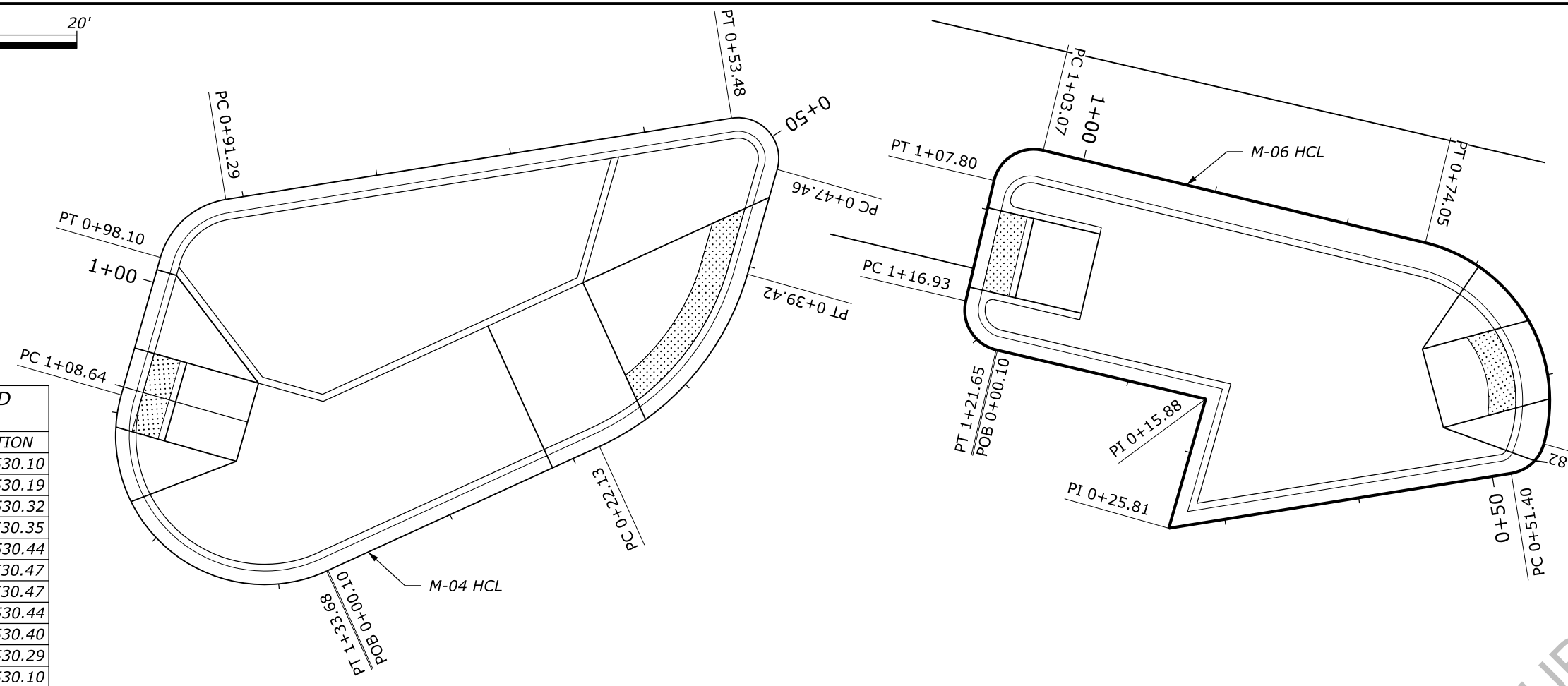
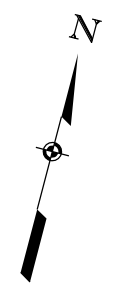
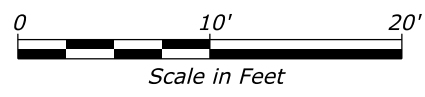
M-03 HCL								
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB	WCB (0°00'00")	
						(0°00'00") (STRAIGHT)	(R=STARTING ANGLE)	(R=END ANGLE)
POB	0+00.00	66689.58	41545.95					
				R = +2.00	6.28		N 84°19'56" W	S 84°20'32" E
PT	0+06.28	66693.56	41546.35					
				STRAIGHT	88.58	S 84°20'32" E		
PC	0+94.86	66684.83	41634.49					
				R = -151.00	81.03		S 84°20'32" E	N 64°54'43" E
PT	1+75.89	66698.34	41713.41					
				STRAIGHT	70.22	N 64°54'43" E		
PC	2+46.11	66728.11	41777					
				R = +4.00	8.4		N 64°54'43" E	S 5°16'44" W
PRC	2+54.52	66724.12	41782.68					
				R = -63.50	12.93		S 5°16'44" W	S 6°23'01" E
PRC	2+67.44	66711.22	41782.81					
				R = +2.00	3.83		S 6°23'01" E	N 76°32'10" W
PRC	2+71.28	66709.05	41780.35					
				R = -66.00	44.26		N 76°32'10" W	S 65°02'27" W
PT	3+15.54	66704.7	41737.14					
				STRAIGHT	28.82	S 65°02'27" W		
PC	3+44.35	66692.54	41711.01					
				R = +138.00	73.77		S 65°02'27" W	N 84°19'56" W
PT	4+18.12	66680.33	41639.15					
				STRAIGHT	93.66	N 84°19'56" W		
POE	5+11.77	66689.58	41545.95					

Notes:

- See sheet K-01 for plan view.
- Proposed elevations shown in tables on this sheet shall be applied at PGL location shown on Special 609-A.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**MEDIAN DETAILS
M-03**



M-04 PROPOSED ELEVATIONS

STATION	ELEVATION
0+00.10	7530.10
0+10.00	7530.19
0+20.00	7530.32
0+22.13	7530.35
0+30.00	7530.44
0+39.42	7530.47
0+40.00	7530.47
0+47.46	7530.44
0+50.00	7530.40
0+53.48	7530.29
0+60.00	7530.10
0+70.00	7529.93
0+80.00	7529.83
0+90.00	7529.75
0+91.29	7529.73
0+98.10	7529.71
1+00.00	7529.72
1+08.64	7529.77
1+10.00	7529.78
1+20.00	7529.93
1+30.00	7530.07
1+33.68	7530.10

M-06 PROPOSED ELEVATIONS

STATION	ELEVATION
0+00.10	7528.01
0+10.00	7527.94
0+15.88	7527.90
0+20.00	7527.81
0+25.81	7527.69
0+30.00	7527.70
0+40.00	7527.72
0+50.00	7527.73
0+51.40	7527.73
0+54.82	7527.76
0+60.00	7527.86
0+70.00	7528.06
0+74.05	7528.10
0+80.00	7528.13
0+90.00	7528.20
1+00.00	7528.26
1+03.07	7528.28
1+07.80	7528.28
1+10.00	7528.25
1+16.93	7528.11
1+20.00	7528.03
1+21.65	7528.01

M-04 HCL								
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00")		
						(STRAIGHT)	(R=STARTING ANGLE)	(R=END ANGLE)
POB	0+00.00	67440.87	42074.52					
				STRAIGHT	22.13	N 65°25'26" E		
PC	0+22.13	67450.08	42094.64					
				R = -20.00	17.3		N 65°25'26" E	N 15°52'35" E
PT	0+39.42	67462.79	42105.56					
				STRAIGHT	8.03	N 15°52'35" E		
PC	0+47.46	67470.52	42107.76					
				R = -3.00	6.02		N 15°52'35" E	S 80°52'35" W
PT	0+53.48	67474.3	42104.4					
				STRAIGHT	37.81	S 80°52'35" W		
PC	0+91.29	67468.31	42067.07					
				R = -6.00	6.81		S 80°52'35" W	S 15°52'35" W
PT	0+98.10	67464.03	42062.25					
				STRAIGHT	10.54	S 15°52'35" W		
PC	1+08.64	67453.89	42059.36					
				R = -11.00	25.05		S 15°52'35" W	N 65°25'26" E
PT	1+33.68	67440.87	42074.52					

M-06 HCL								
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00")		
						(STRAIGHT)	(R=STARTING ANGLE)	(R=END ANGLE)
POB	0+00.00	67732.89	42144.06					
				STRAIGHT	15.88	S 76°48'07" E		
PI	0+15.88	67729.27	42159.52					
				STRAIGHT	9.93	S 15°52'35" W		
PI	0+25.81	67719.72	42156.8					
				STRAIGHT	25.59	N 80°52'35" E		
PC	0+51.40	67723.78	42182.07					
				R = -3.00	3.43		N 80°52'35" E	N 15°25'34" E
PCC	0+54.82	67725.94	42184.48					
				R = -12.00	19.23		N 15°25'34" E	N 76°23'45" W
PT	0+74.05	67740.79	42175.74					
				STRAIGHT	29.02	N 76°23'45" W		
PC	1+03.07	67747.62	42147.53					
				R = -3.00	4.73		N 76°23'45" W	S 13°11'53" W
PT	1+07.80	67745.39	42143.91					
				STRAIGHT	9.13	S 13°11'53" W		
PC	1+16.93	67736.5	42141.82					
				R = -3.00	4.71		S 13°11'53" W	S 76°48'07" E
PT	1+21.65	67732.89	42144.06					

Notes:

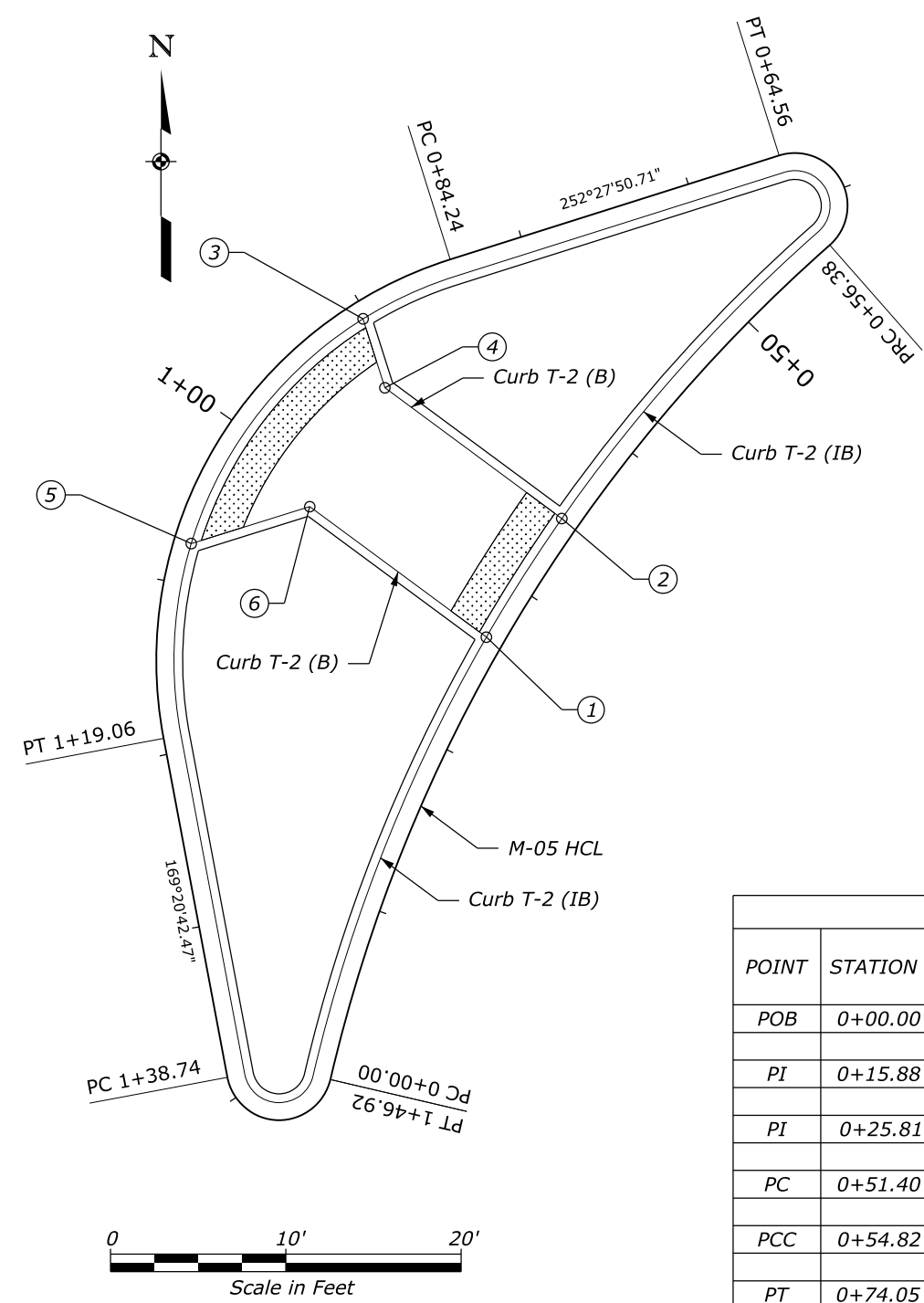
- See sheet K-04 for plan view.
- Proposed elevations shown in tables on this sheet shall be applied at PGL location shown on Special 609-A.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**MEDIAN DETAILS
M-04 & M-06**

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STATION	ELEVATION
0+00.00	7523.20
0+10.00	7523.19
0+20.00	7523.22
0+30.00	7523.29
0+40.00	7523.40
0+50.00	7523.51
0+56.38	7523.57
0+60.00	7523.63
0+64.56	7523.72
0+70.00	7523.75
0+80.00	7523.81
0+84.24	7523.84
0+90.00	7523.86
1+00.00	7523.89
1+10.00	7523.85
1+19.06	7523.75
1+20.00	7523.73
1+30.00	7523.58
1+38.74	7523.47
1+40.00	7523.44
1+46.92	7523.20

POINT #	STATION	OFFSET	ELEVATION
1	256+40.05	33.17	7523.30
2	256+46.19	28.02	7523.36
3	256+38.81	13.73	7523.85
4	256+38.81	17.86	7523.74
5	256+25.60	23.01	7523.84
6	256+32.68	23.04	7523.71

POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00")	
						(STRAIGHT)	(R=STARTING ANGLE) (R=END ANGLE)
POB	0+00.00	67732.89	42144.06				
PI	0+15.88	67729.27	42159.52	STRAIGHT	15.88	S 76°48'07" E	
PI	0+25.81	67719.72	42156.8	STRAIGHT	9.93	S 15°52'35" W	
PC	0+51.40	67723.78	42182.07	STRAIGHT	25.59	N 80°52'35" E	
PCC	0+54.82	67725.94	42184.48	R = -3.00	3.43	N 80°52'35" E	N 15°25'34" E
PT	0+74.05	67740.79	42175.74	R = -12.00	19.23	N 15°25'34" E	N 76°23'45" W
PC	1+03.07	67747.62	42147.53	STRAIGHT	29.02	N 76°23'45" W	
PT	1+07.80	67745.39	42143.91	R = -3.00	4.73	N 76°23'45" W	S 13°11'53" W
PC	1+16.93	67736.5	42141.82	STRAIGHT	9.13	S 13°11'53" W	
PT	1+21.65	67732.89	42144.06	R = -3.00	4.71	S 13°11'53" W	S 76°48'07" E

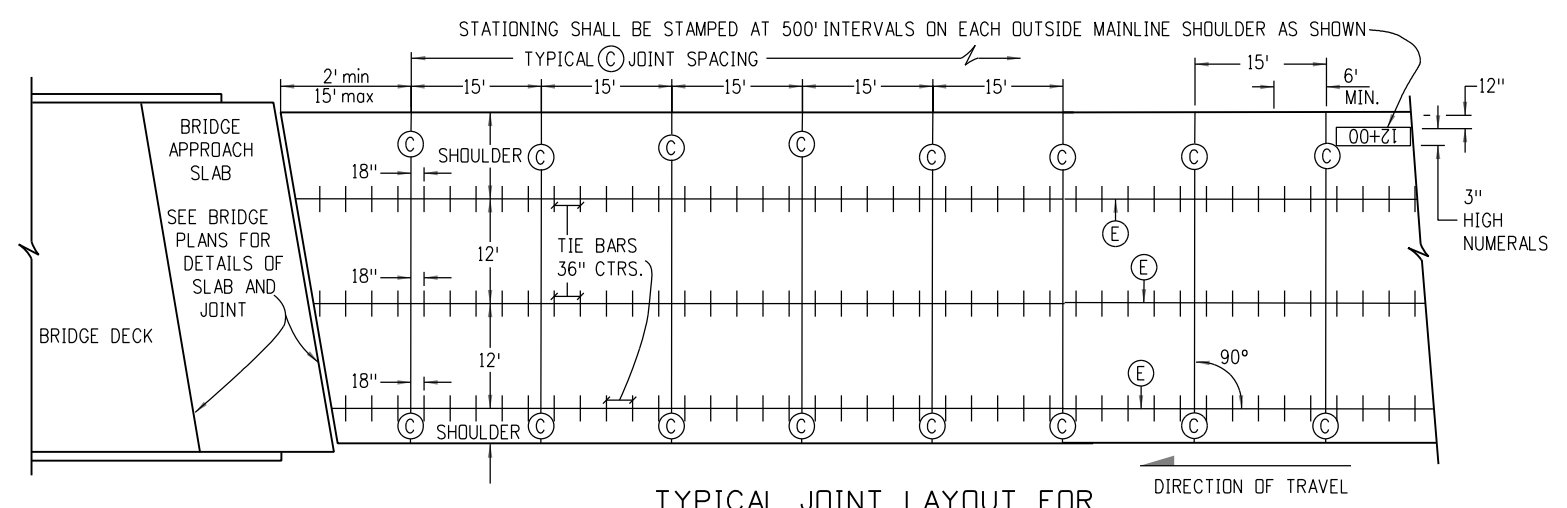
95% DESIGN SUBMITTAL 2/3/22
 NOT FOR CONSTRUCTION

- Notes:
- See sheet K-05 for plan view.
 - Proposed elevations shown in tables on this sheet shall be applied at PGL location shown on Special 609-A.

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

MEDIAN DETAILS
 M-05

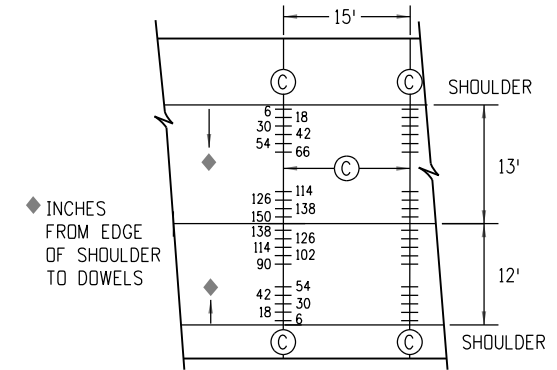
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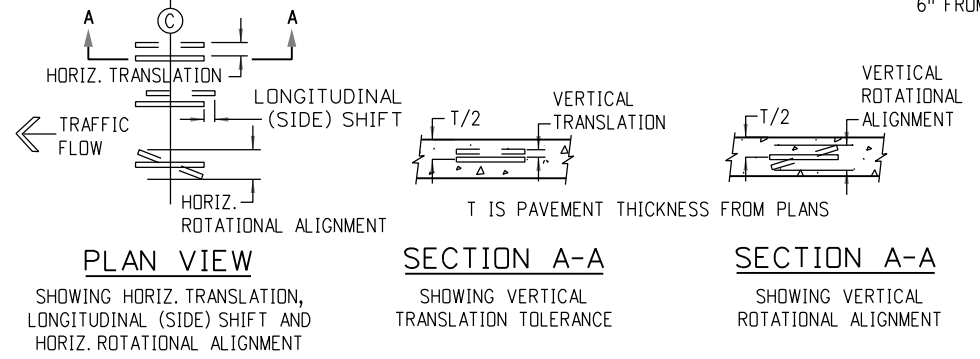
TYPICAL JOINT LAYOUT FOR CONCRETE ROADWAY WITH CONCRETE SHOULDERS

GENERAL NOTES

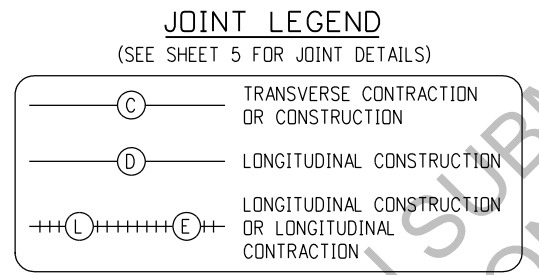
1. THIS STANDARD PLAN DOES NOT APPLY TO THIN CONCRETE OVERLAYS (WHITETOPPING).
2. TRANSVERSE CONSTRUCTION JOINTS SHALL BE LOCATED AT A (C) JOINT.
3. THIS JOINT LAYOUT SHALL BE USED AS A STANDARD OF THE JOINT LAYOUT FOR THE PROJECT. IF THE CONTRACTOR PROPOSES VARIATIONS FROM THIS STANDARD OR THE PROJECT HAS UNUSUAL OR IRREGULAR CONDITIONS NOT COVERED HEREIN, THE CONTRACTOR SHALL PREPARE A PAVEMENT JOINT LAYOUT FOR APPROVAL BY THE ENGINEER. SLABS 13 FT. IN WIDTH SHALL BE CONSTRUCTED ONLY WHERE DESIGNATED ON THE PLANS.
4. ON MULTILANE DIVIDED HIGHWAYS, THE MULTILANE DIRECTIONAL PAVEMENT AND BOTH SHOULDERS SHALL BE PLACED WITH (E) LONGITUDINAL SAWED CONTRACTION JOINTS.
5. ON MULTILANE DIVIDED HIGHWAYS SEPARATED BY A CONCRETE BARRIER, A (D) JOINT SHALL BE CONSTRUCTED AT ONE OF THE BARRIER FACES.
6. (D) JOINTS SHALL BE CONSTRUCTED BETWEEN THE TWO OPPOSING DIRECTIONS OF TRAVEL ON A MULTILANE UNDIVIDED HIGHWAY WHEN ALL OF THE FOLLOWING APPLY:
 - A. PAVEMENT IS CONTINUOUS ACROSS BOTH DIRECTIONS OF TRAVEL.
 - B. THERE IS NO MEDIAN BARRIER.
 - C. THE WIDTH OF THE PAVEMENT IN ONE DIRECTION IS GREATER THAN 80 FEET.
7. ON VARIABLE WIDTH SLABS, THE 2 FT. OR 4 FT. END OF SLAB WIDTH DIMENSION MAY VARY ±6 INCHES.
8. (L) JOINTS ARE TO BE USED WHEN A TRAFFIC LANE IS ADDED SEPARATELY, OR FOR TAPERS, OR FOR SPEED CHANGE LANES. ALTERNATIVE LONGITUDINAL JOINT LOCATIONS AT SPEED CHANGE LANES MAY BE USED IF APPROVED.
9. WHERE (C) JOINTS ARE SHOWN IN THE SHOULDER, THE DOWEL BARS WILL BE PLACED ON 12" CENTERS STARTING 6" FROM THE ROADWAY (E) JOINT.



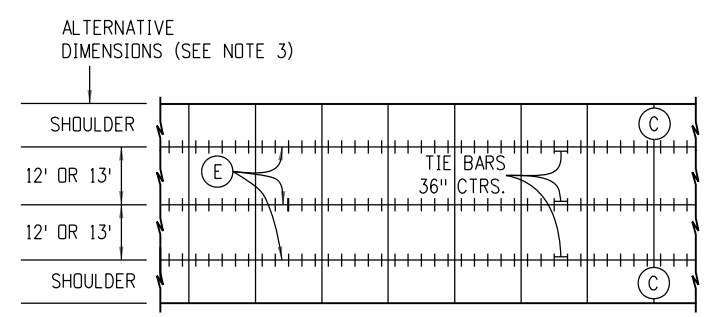
DOWEL BAR DETAIL FOR (C) JOINT WITH 13 FT. AND 12 FT. WIDE SLABS



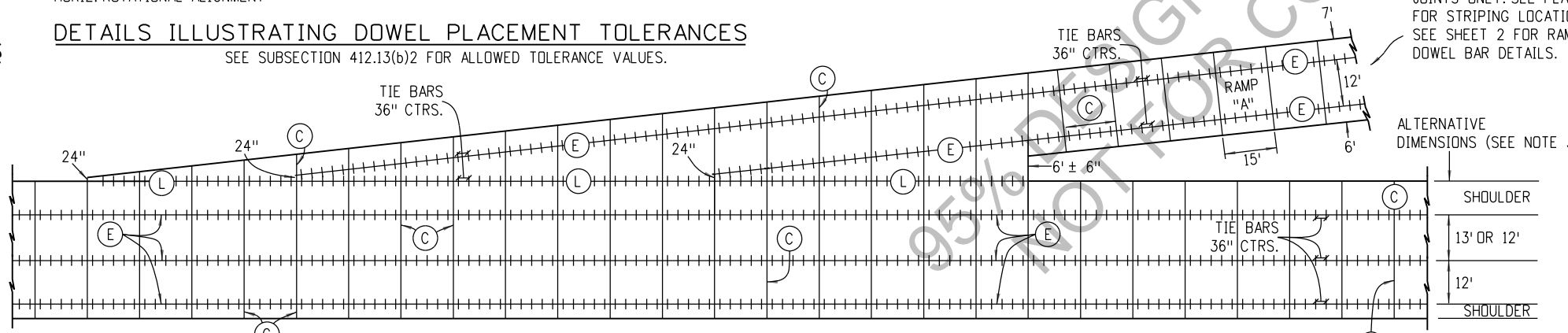
DETAILS ILLUSTRATING DOWEL PLACEMENT TOLERANCES
SEE SUBSECTION 412.13(b)2 FOR ALLOWED TOLERANCE VALUES.



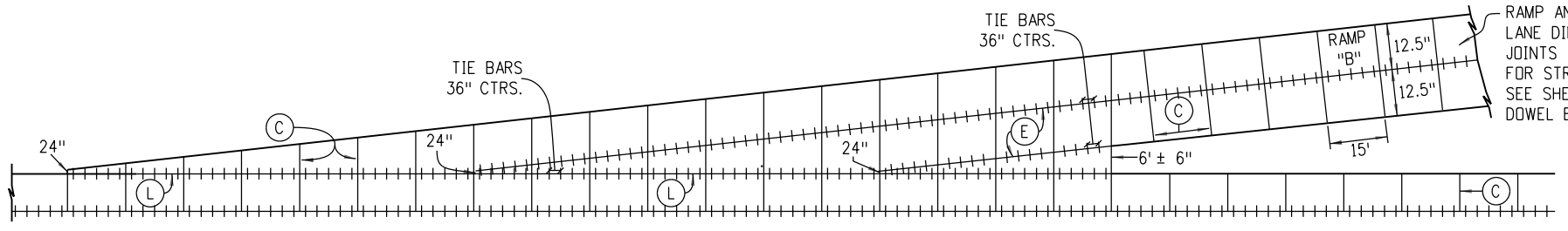
RAMP AND SPEED CHANGE LANE DIMENSIONING FOR JOINTS ONLY. SEE PLANS FOR STRIPING LOCATIONS. SEE SHEET 2 FOR RAMP DOWEL BAR DETAILS.



RURAL TWO-LANE



MULTI-LANE WITH SPEED CHANGE LANE AND CONCRETE SHOULDERS



OPTIONAL LONGITUDINAL JOINT IN CENTER FOR SINGLE LANE SPEED CHANGE LANE

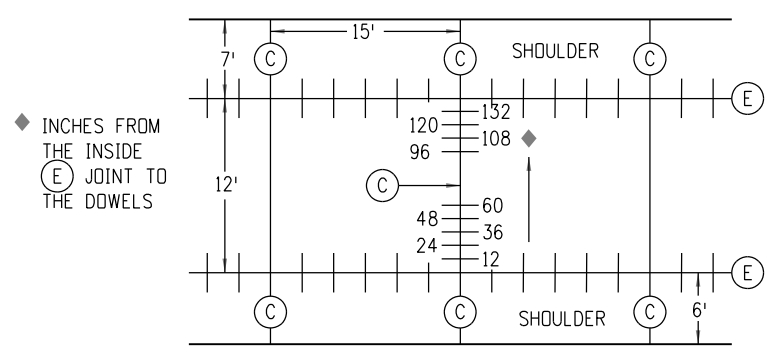
(Adapted from CDOT M-412-1)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

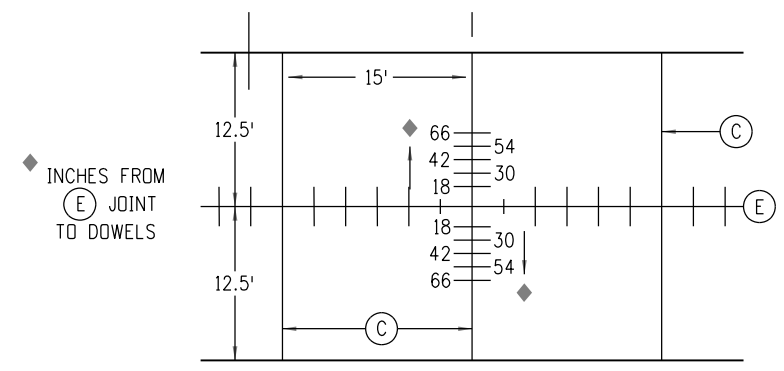
U.S. CUSTOMARY SPECIAL
**CONCRETE PAVEMENT
JOINTS STANDARDS**

SPECIAL
501-A

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	K-13



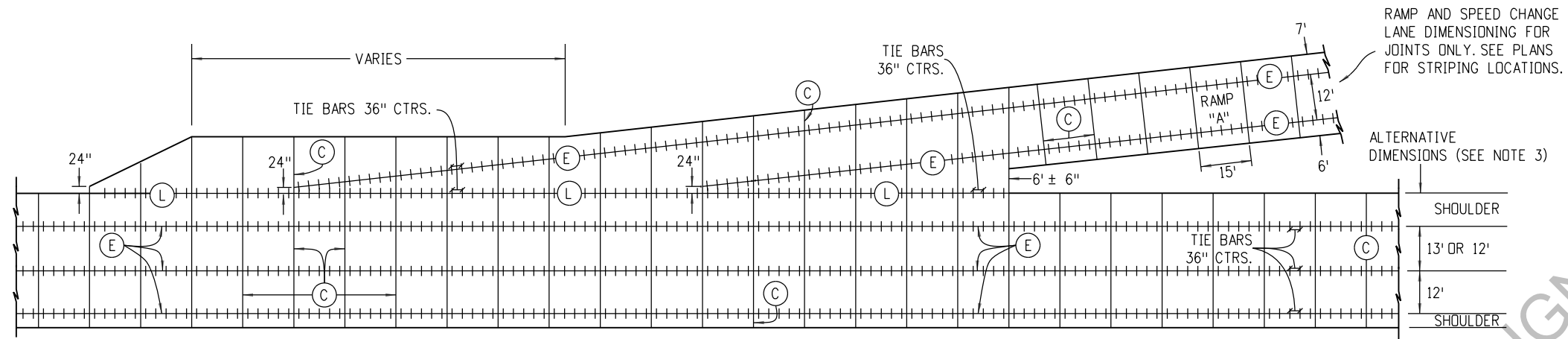
RAMP "A" DOWEL BAR DETAIL FOR C JOINT WITH A 12 FT. LANE



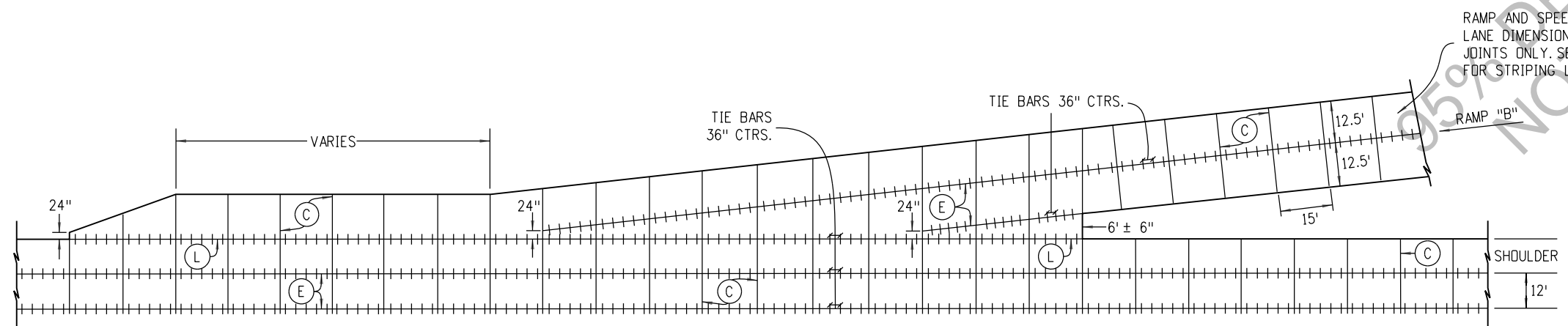
RAMP "B" DOWEL BAR DETAIL FOR C JOINT WITH CENTER LONGITUDINAL SPLIT LANE

JOINT LEGEND
(SEE SHEET 5 FOR JOINT DETAILS)

- (C)— TRANSVERSE CONTRACTION OR CONSTRUCTION
- (D)— LONGITUDINAL CONSTRUCTION
- (L)---(E)--- LONGITUDINAL CONSTRUCTION OR LONGITUDINAL CONTRACTION



MULTI-LANE WITH ACCELERATION AND DECELERATION LANES AND CONCRETE SHOULDERS



OPTIONAL LONGITUDINAL JOINT IN CENTER FOR SINGLE LANE ACCELERATION AND DECELERATION LANE

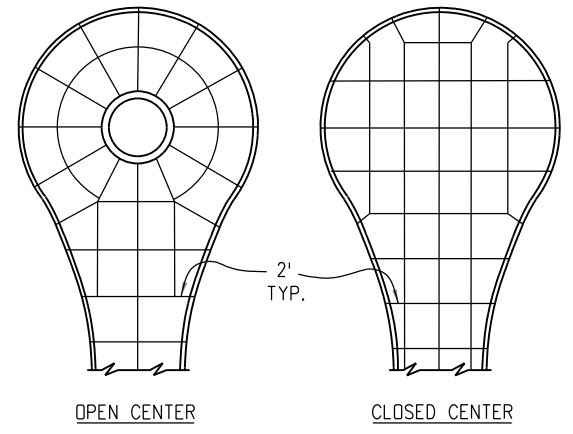
(Adapted from CDOT M-412-1)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL
CONCRETE PAVEMENT JOINTS STANDARDS

SPECIAL
501-A

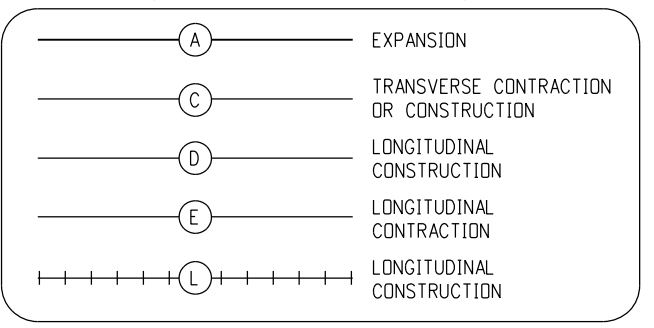
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CUL-DE-SAC

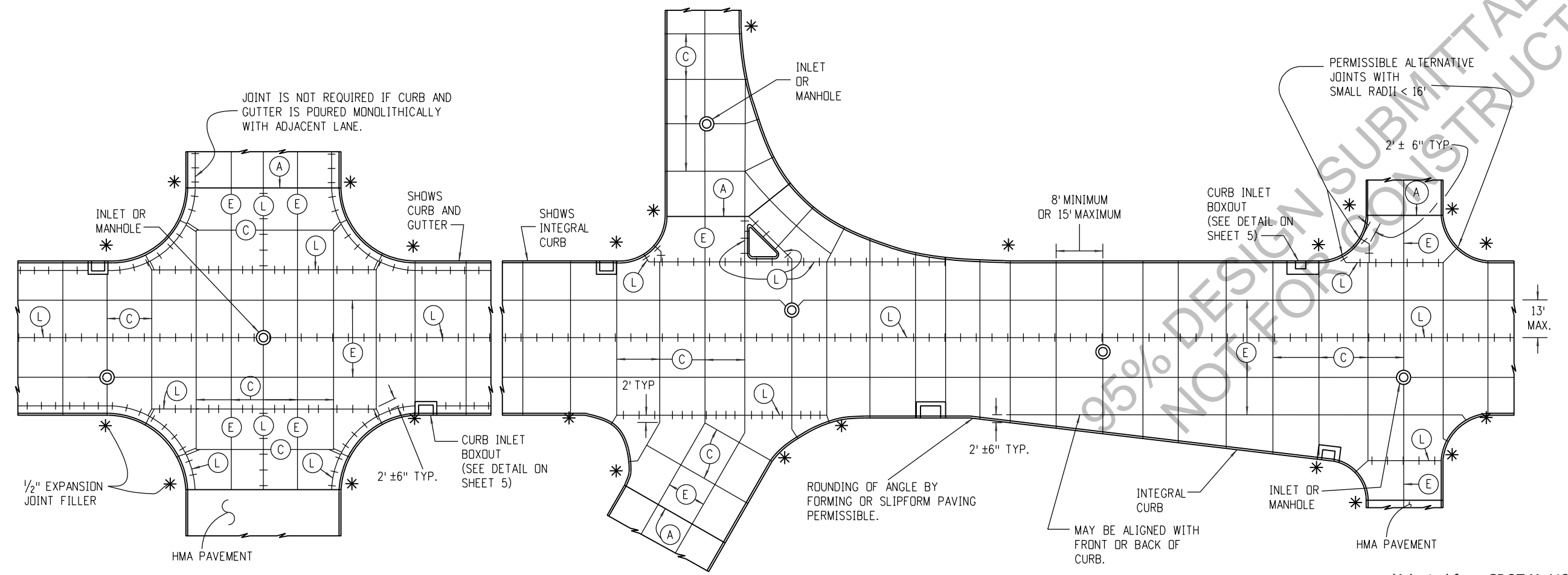
JOINT LEGEND

(SEE SHEET 5 FOR JOINT DETAILS)



NOTES

- LONGITUDINAL JOINTS SHALL BE PLACED ADJACENT TO LANE MARKINGS WHEN POSSIBLE, AND HAVE A MAXIMUM SPACING OF 13 FT. (15 FT. IS PERMITTED WITH MONOLITHIC CURB AND GUTTER).
- CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE CENTERLINE OF PAVEMENT AND EXTEND THROUGH THE CURB OR CURB AND GUTTER.
- PLACE 1/2 IN. MIN. EXPANSION JOINT FILLER IN TOP 6 IN. OF CURB JOINT AT INTERSECTION RETURN RADIUS POINTS.
- THE CONTRACTOR SHALL, UNLESS OTHERWISE SHOWN ON THE PLANS, SELECT AND USE A BOND BREAKER AT INLETS, MANHOLES AND SIMILAR SIZE STRUCTURES. SMALLER STRUCTURES SUCH AS VALVE AND MONUMENT BOXES SHALL NOT REQUIRE A BOND BREAKER.
- WHERE A LONGITUDINAL JOINT PASSES LESS THAN 1 FT. FROM A CAST-IN-PAVEMENT MANHOLE OR SIMILAR SIZE STRUCTURE, A TYPICAL 2 FT. RADIAL JOINT, AS SHOWN IN THE DETAILS, SHALL BE USED.
- TRANSVERSE JOINTS SHALL EITHER INTERSECT THE CENTER OF CIRCULAR MANHOLES AND INLETS OR BE AT LEAST 4 FT. AWAY FROM THE EDGE OF CIRCULAR MANHOLES. SEE CURB INLET BOXOUT DETAIL ON SHEET 5.
- TRANSVERSE CONSTRUCTION JOINTS SHALL BE LOCATED AT A (C) JOINT.
- THE ENGINEERS SHALL HAVE AN OPTION TO USE INDIVIDUAL DOWELS IN THE (C) JOINT ON SHORT RUN (2' ± 6") TO CURB RADIUS RETURNS.



TYPICAL CURBED PAVEMENT JOINT LAYOUT

(Adapted from CDOT M-412-1)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

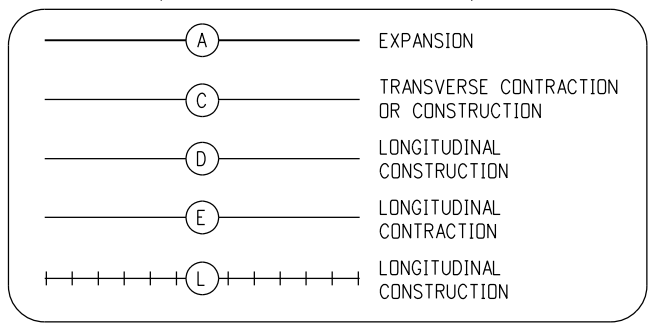
U.S. CUSTOMARY SPECIAL
CONCRETE PAVEMENT JOINTS STANDARDS

SPECIAL
501-A

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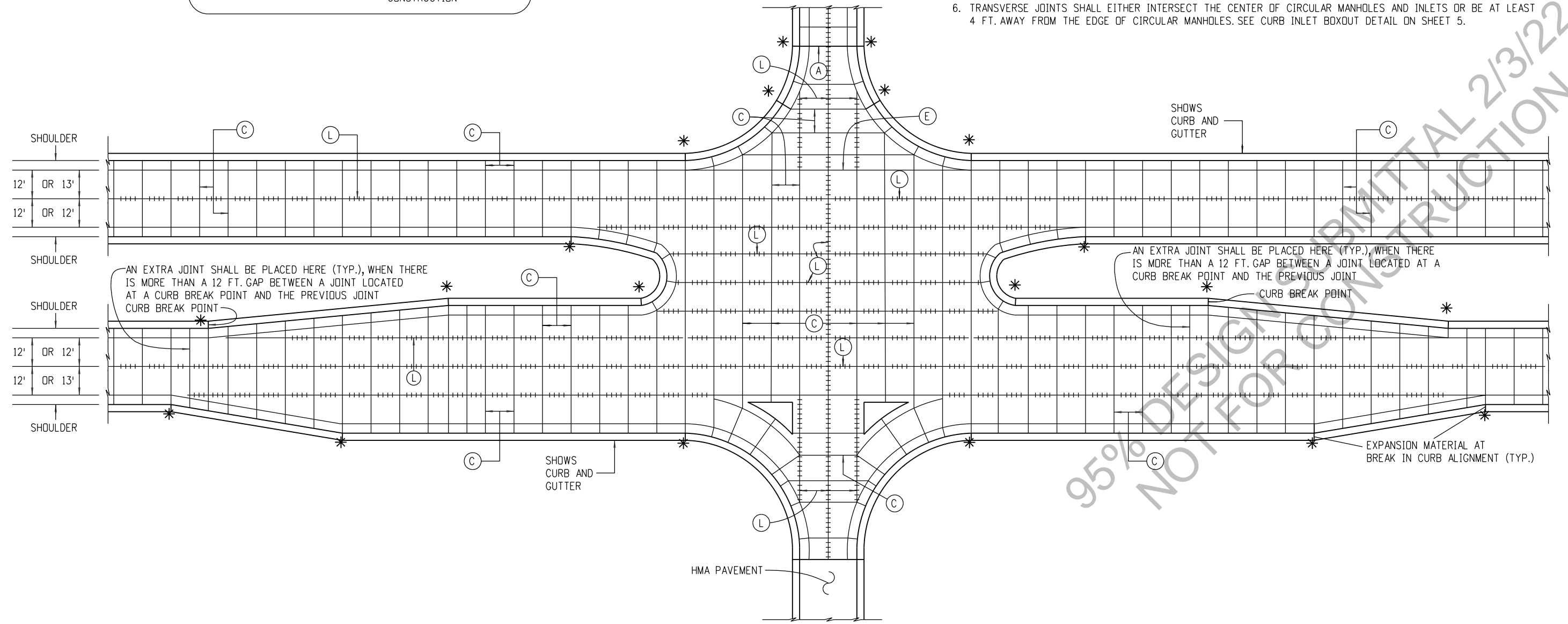
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	K-15

JOINT LEGEND
(SEE SHEET 5 FOR JOINT DETAILS)



NOTES

- LONGITUDINAL JOINTS SHALL BE PLACED ADJACENT TO LANE MARKINGS WHEN POSSIBLE, AND HAVE A MAXIMUM SPACING OF 13 FT. (15 FT. IS PERMITTED WITH MONOLITHIC CURB AND GUTTER).
- CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE CENTERLINE OF PAVEMENT AND EXTEND THROUGH THE CURB OR CURB AND GUTTER.
- PLACE 1/2 IN. MIN. EXPANSION JOINT FILLER IN TOP 6 IN. OF CURB JOINT AT INTERSECTION RETURN RADIUS POINTS.
- THE CONTRACTOR SHALL, UNLESS OTHERWISE SHOWN ON THE PLANS, SELECT AND USE A BOND BREAKER AT INLETS, MANHOLES AND SIMILAR SIZE STRUCTURES. SMALLER STRUCTURES SUCH AS VALVE AND MONUMENT BOXES DO NOT REQUIRE A BOND BREAKER.
- WHERE A LONGITUDINAL JOINT WOULD PASS LESS THAN 1 FT. FROM A CAST-IN-PAVEMENT MANHOLE OR SIMILAR SIZE STRUCTURE, A TYPICAL 2 FT. RADIAL JOINT, AS SHOWN IN THE DETAILS, SHALL BE USED.
- TRANSVERSE JOINTS SHALL EITHER INTERSECT THE CENTER OF CIRCULAR MANHOLES AND INLETS OR BE AT LEAST 4 FT. AWAY FROM THE EDGE OF CIRCULAR MANHOLES. SEE CURB INLET BOXOUT DETAIL ON SHEET 5.



MULTI-LANE INTERSECTION WITH SPEED CHANGE LANE AND CONCRETE SHOULDERS

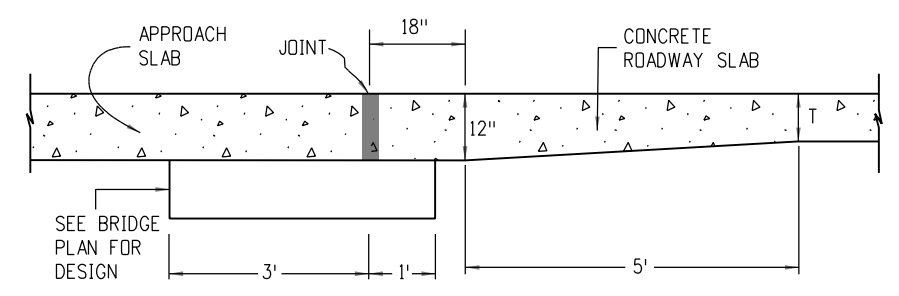
(Adapted from CDOT M-412-1)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

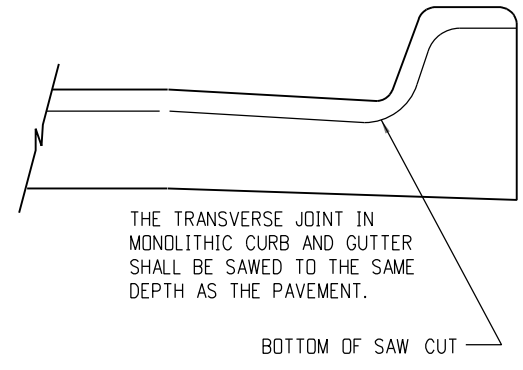
U.S. CUSTOMARY SPECIAL
CONCRETE PAVEMENT JOINTS STANDARDS

SPECIAL
501-A

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BRIDGE APPROACH



THE TRANSVERSE JOINT IN MONOLITHIC CURB AND GUTTER SHALL BE SAWED TO THE SAME DEPTH AS THE PAVEMENT.

BOTTOM OF SAW CUT

NOTE

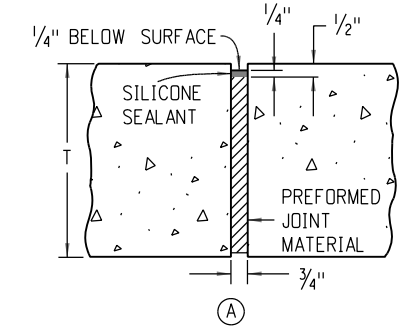
PAVEMENT THICKNESS (T), SHALL BE AS SHOWN ON THE PLANS.

PAVEMENT THICKNESS (T)	TIE BAR SIZE	DOWEL BAR DIAMETER
7 IN. ≤ T < 8 IN.	NO. 4	1 IN.
8 IN. ≤ T ≤ 10 IN.	NO. 5	1.25 IN.
10 IN. < T ≤ 15 IN.	NO. 6	1.50 IN.

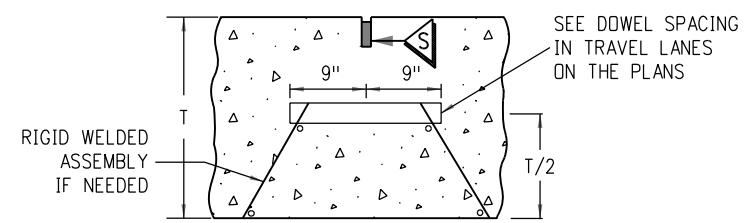
REINFORCING SIZE TABLE

TIE BAR SIZE IS NO. 5 WHEN PAVEMENT IS PLACED ON UNBOUND BASES.

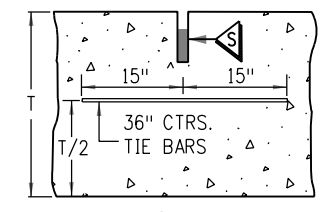
TIE BAR IS NO. 6 WHEN PAVEMENT IS PLACED ON LIME TREATED SOIL, ASPHALT OR CEMENT TREATED, MILLED ASPHALT, OR RECYCLED ASPHALT BASES.



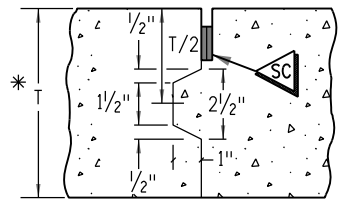
EXPANSION JOINT



DOWELED TRANSVERSE CONSTRUCTION OR CONTRACTION JOINT
(TRANSVERSE WEAKENED PLANE JOINT)

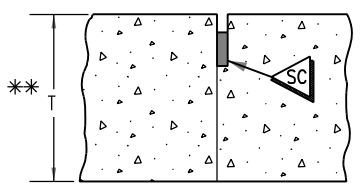


LONGITUDINAL CONTRACTION JOINT
(LONGITUDINAL WEAKENED PLANE JOINT)



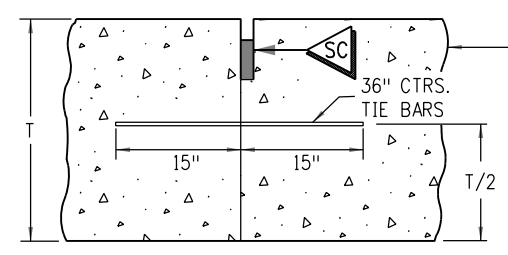
LONGITUDINAL CONSTRUCTION JOINT

* USE ONLY IF T ≥ 8 IN. FORM ONLY FEMALE KEYWAY



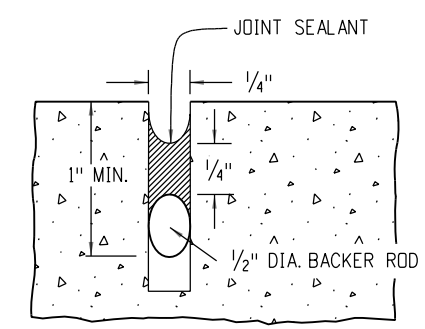
LONGITUDINAL CONSTRUCTION JOINT

** USE ONLY IF T < 8 IN.

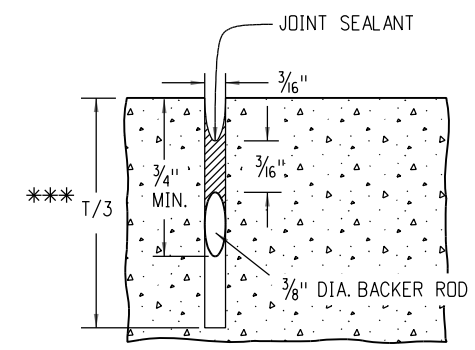


LONGITUDINAL CONSTRUCTION JOINT

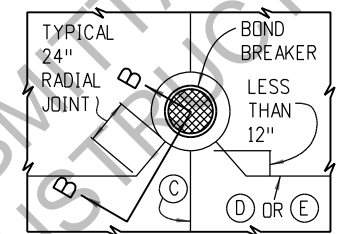
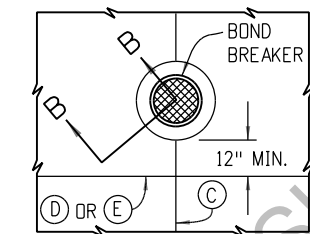
A KEYWAY IS ALLOWED TO FACILITATE USE OF BENT TIE BARS OR APPROVED TWO PIECE CONNECTORS



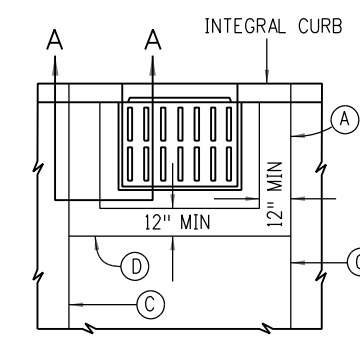
SEAL AT CONSTRUCTION JOINT



SAWED JOINT
*** USE T/4 WHEN T < 8 IN.

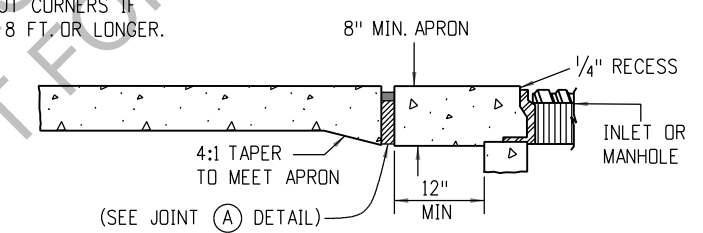


INLET OR MANHOLE CAST IN PAVEMENT

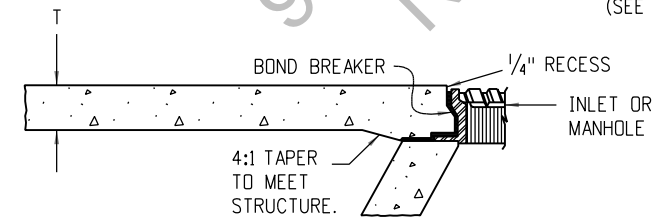


CURB INLET BOXOUT

INSTALL TRANSVERSE JOINT AT BOTH BOXOUT CORNERS IF BOXOUT IS 8 FT. OR LONGER.



SECTION A-A



SECTION B-B

BOND BREAKER SHALL BE COMPOSED OF PLASTIC SHEET, BUILDING PAPER OR OTHER APPROVED MATERIAL THAT PREVENTS BONDING.

(Adapted from CDOT M-412-1)

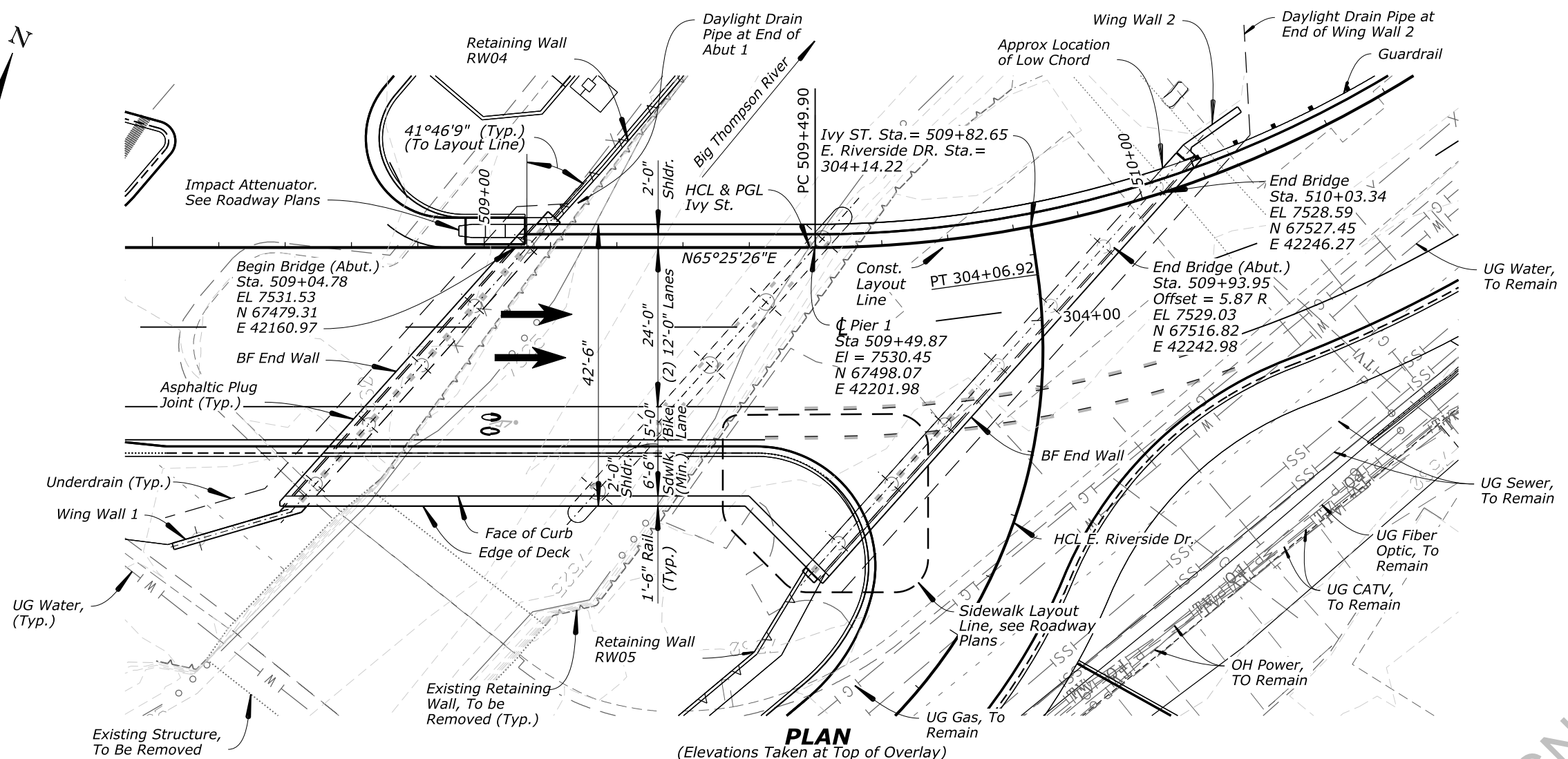
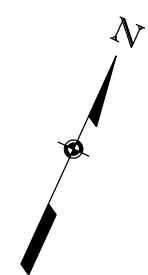
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL
CONCRETE PAVEMENT JOINTS STANDARDS

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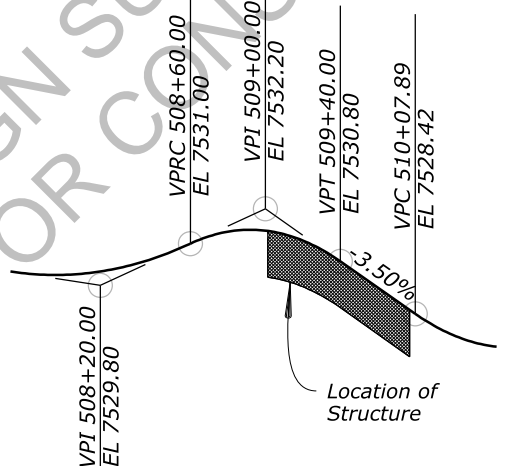
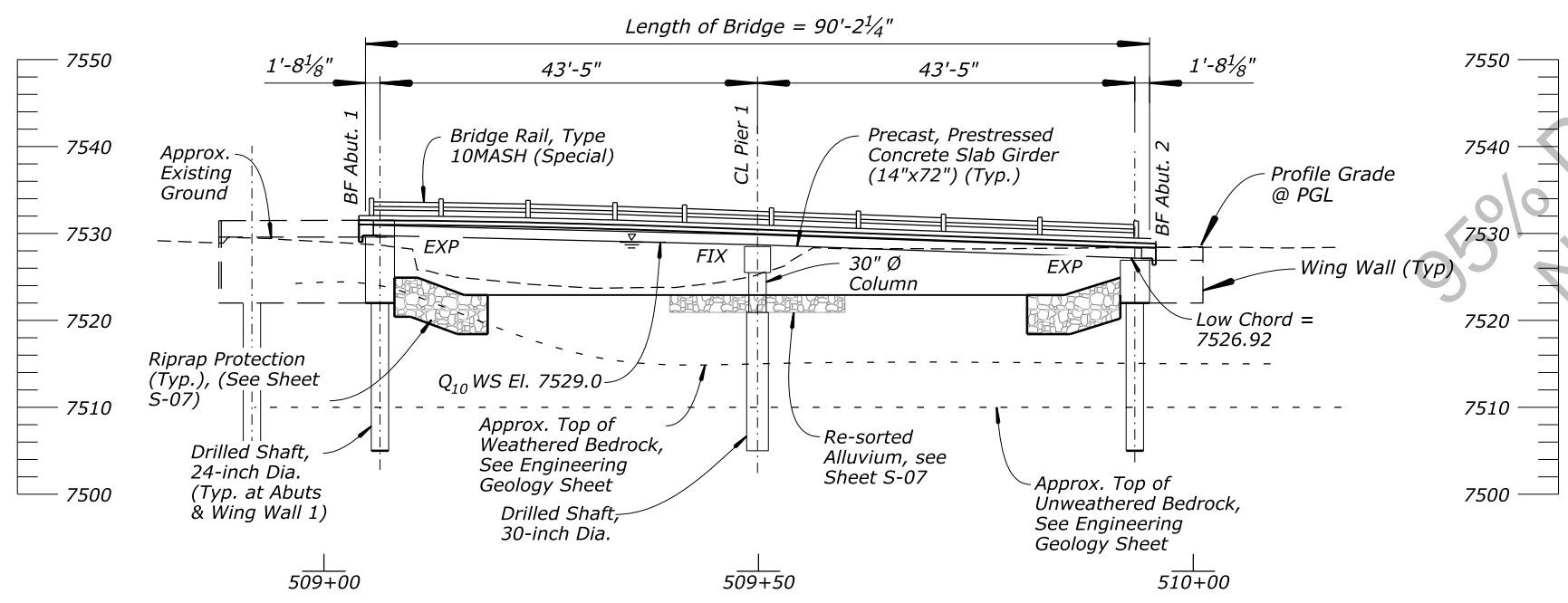
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP36(1) Downtown Estes Park Loop	S-01

1/18/2022 4:00:31 PM pw:\laecom-na-pw.bentley.com\AECOM_DS01_NA\Documents\60332740-Estes Park\1900-Work\1910_CAD\02-SHEETS\S-550\COFLAP34_36 STR_Ivy_GLI.dgn



IVY STREET HORIZONTAL CURVE DATA

PT = 507+99.44
PC = 509+49.90
PI = 510+04.50
PT = 510+55.57
Delta = 35° 36' 46" Left
Radius = 170.0'
Tangent = 54.60'
Length = 105.67'



PROFILE GRADE DIAGRAM
(Taken @ HCL Roadway)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

IVY STREET (US34) BRIDGE
OVER BIG THOMPSON RIVER
CITY OF ESTES PARK
LARIMER COUNTY, COLORADO

GENERAL LAYOUT

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Steve Haynes	Oscar Avila	Gary Maji	1"=20'	Steve McQuilkin	1 of 41	June 2021	RG3121-A

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP36(1) Downtown Estes Park Loop	S-02

GENERAL NOTES:

SPECIFICATIONS:

Design:
AASHTO LRFD Bridge Design Specifications, 9th Ed., 2020 (No interims).

Construction:
Federal Highway Administration Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-14 U.S. customary units.

DESIGN LOADS:

Dead Loads:
 Cast in place concrete: 150 pcf
 Precast Concrete: 163 pcf
 Soil Backfill: 125 pcf
 Unclassified borrow: 125 pcf
 Wearing Surface: 11 psf
 Future utilities: 0 psf
 Lateral Earth Pressure for Walls:
 Active Equiv. Fluid Density: 38 pcf
 At-Rest Equiv. Fluid Density: 59 pcf

Live Load:
 HL-93. Max. Dynamic Load Allowance, IM =33%
 Pedestrian Live Load, PL = 75 psf
 Live Load Surcharge:
 Equivalent height of soil for Walls = 2 ft
 Equivalent height of soil for Bridge = 0 ft

Seismic Design:
 Site Class D
 Peak Ground Acceleration (PGA) = 0.067
 S_{D1} = 0.226
 S_{D5} = 0.086
 Seismic Zone A

DESIGN CRITERIA:

Drilled Shafts:
 Vertical capacity nominal resistance is based on side friction and end bearing.
 End Bearing Resistance Factor: 0.50
 Side Friction Resistance Factor:
 Downward: 0.55
 Uplift: 0.45

MATERIALS:

Concrete:
 All cast in place concrete, except drilled shafts, shall be structural concrete Class A(AE) (Air entrained) with a minimum 28-day compressive strength f'c = 4,500 psi.
 Air entrainment shall be per Table 552-2.
 Type II low alkali cement shall be used for all cast in place concrete.
 Chamfer exposed edges of all concrete 3/4" unless noted otherwise on the plans.

Concrete Finish: The finish for the sidewalk shall be as defined in Section 552 Sidewalk Finish. The remaining concrete finishes shall be Class 1 or Class 2 as defined in Section 552.

Concrete for Drilled Shafts shall be per Section 565.08 and Section 552 of the Standard Specifications, Class C or Class Seal as required. Class Seal shall have a minimum 28 day compressive strength, f'c = 4,000 psi.

Expansion Joint material shall meet the requirements of AASHTO M213.

Reinforcing Steel:
 All reinforcing steel shall conform to AASHTO M31 or M322, Grade 60, deformed.
 Concrete cover to the face of any bar shall be 1" min., unless shown otherwise in the plans.
 Minimum lap splice length for all bars and bar sizes shall be as shown on the plans.
 Bar splices, other than those shown on the plans, will not be paid for separately.
 All reinforcing steel shall be epoxy coated, except as noted on the plans.
 Non-coated reinforcing steel is noted in the plans by the following symbol: (N)

Prestressing Steel: Prestressing steel shall be Grade 270, 0.6" Ø, seven-wire, uncoated, low-relaxation prestressing strand conforming to AASHTO M203.

MATERIALS CONT...:

Prestressed Concrete Girders:
 Prestressed concrete girders shall be manufactured as detailed in the plans.
 Concrete in precast prestressed concrete girders shall be Class P (AE) with a release strength as noted in the plans.

Leveling pads are unlaminated bearings. They shall be cut or molded from AASHTO elastomer grade 3, 4, or 5 as described in Section 717.10 with a durometer (Shore "A") hardness of 60.

Bridge Rail: All steel components shall be galvanized per AASHTO M 111 and powder coated "brown" as described in ASTM D7803 to match the structural concrete coating listed below. Submit sample for approval.

A colored structural concrete coating will be required, as shown in the plans. The color shall be AMS-STD-595 30145, Canyon. Submit sample for approval.

MISCELLANEOUS CONSTRUCTION REQUIREMENTS:

Structure Backfill:
 Structure excavation and Structure Backfill (Mechanically-Stabilized) behind abutments shall be in accordance with the requirements for Mechanically-Stabilized Backfill as shown in the plans.

Structure excavation and backfill shall be as shown on the plans, except shoring may be required for excavation adjacent to the existing roadway. Temporary excavation support shall be paid for by Item 208 Shoring.

Bridge Rail Type 10MASH (Special):
 Structural steel and components shall be as specified on the Bridge Rail Type 10MASH (Special) Details, Sheets S-34 and S-35.

The Contractor shall be responsible for the stability of the structure during construction.

The existing bridge has not been evaluated for construction loads. The contractor may utilize the existing bridge, but shall verify that the bridge is structurally adequate for the loads due to all anticipated construction activities. See existing bridge as-built plans and information as well as the Bridge Inspection Report for EP-IVY-THOM for information.

All longitudinal and transverse dimensions are measured horizontally and include no correction for grade.

For additional geotechnical information refer to Geotechnical Report, Estes Park Downtown Loop Reconfiguration, Dated May 29, 2018.

The information shown on these plans concerning the type and location of underground utilities is not guaranteed to be accurate or all inclusive. The Contractor is responsible for making his own determination as to the type and location of underground utilities as may be necessary to avoid damage thereto. The Contractor shall contact the Utility Notification Center of Colorado at 811 (1-800-922-1987) at least 3 days (2 days not including the day of notification) prior to any excavation or other earthwork.

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S-06	RG3121-F	Engineering Geology (2)
S-07	RG3121-G	Bridge Hydraulics
S-08	RG3121-H	Construction Sequence
S-09	RG3121-I	Foundation Layout
S-10	RG3121-J	Shaft Details
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S-12	RG3121-L	Abutment 1 Details (1 of 2)
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S-15	RG3121-O	Abutment 2 Plan & Elevation (1 of 2)
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S-20	RG3121-T	Excavation & Backfill
S-21	RG3121-U	Pier 1 Plan & Elevation
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S-23	RG3121-W	Pier 1 Details (2 of 2)
S-24	RG3121-X	Construction Layout
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S-29	RG3121-CC	Superstructure Details (3 of 5)
S-30	RG3121-DD	Superstructure Details (4 of 5)
S-31	RG3121-EE	Superstructure Details (5 of 5)
S-32	RG3121-FF	Sidewalk Details
S-33	RG3121-GG	Bearing Device and Joint Details
S-34	RG3121-HH	Bridge Rail Type 10MASH & 10MASH (Special) (1 of 2)
S-35	RG3121-II	Bridge Rail Type 10MASH & 10MASH (Special) (2 of 2)
S-36	RG3121-JJ	Bar List 1
S-37	RG3121-KK	Bar List 2

BRIDGE DESCRIPTION:

2 - SPAN BRIDGE (43'-5", 43'-5") (Along Construction Layout Line)
 Prestressed Concrete Slab Girders (14"x72")
 Located on Ivy Street over Big Thompson River
 Roadway Varies, 33'-0" (Min.) Curb to Curb

U.S. DEPARTMENT OF TRANSPORTATION
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**IVY STREET (US34) BRIDGE
 OVER BIG THOMPSON RIVER
 CITY OF ESTES PARK
 LARIMER COUNTY, COLORADO**

GENERAL NOTES

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NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Steve Haynes	Oscar Avila	Gary Maji	NA	Steve McQuilkin	2 of 41	June 2021	RG3121- B

SUMMARY OF QUANTITIES

FP-14 Item No.	Item Description	Unit	Quantity	Notes
20301-0400	Removal of Bridge	EACH	1	
20801-0000	Structure Excavation	CY	840	(8)
20803-0000	Structural Backfill (Mechanically Stabilized)	CY	930	(1) (2) (8)
20810-0000	Shoring and Bracing	LPSM	1	(6)
55201-0200	Structural Concrete Class A (AE)	CY	240	(9) (8)
55302-3500	Precast, Prestressed Concrete Slab (Girder)	LNFT	607	(3) (8)
55401-2000	Reinforcing Steel (Epoxy Coated)	LB	48,400	(8)
55601-1200	Bridge railing, steel, three rail (Type 10MASH)(Special)	LNFT	193	(5) (8)
56302-1000	Painting Concrete Structure	SQ FT	860	(8)
56401-3000	Bearing Device, Sliding	EACH	32	(7) (8)
56501-0200	Drilled Shaft, 24-Inch Diameter	LNFT	227	(4)
56501-0300	Drilled Shaft, 30-Inch Diameter	LNFT	65	(4)
56901-0000	Concrete Overlay	SQ YD	371	(10) (8)

ESTIMATE NOTES:

- (1) Includes cost of furnishing and installing all joint fillers.
- (2) Includes cost of furnishing and installing geotextile fabric, granular backfill, perforated pipe drains and drain outlets.
- (3) Includes cost of concrete, reinforcing steel, prestressing steel, inserts, elastomeric leveling pads, lifting devices and other materials required for the construction of girders.
- (4) Includes cost of concrete, reinforcing steel, ties, backfill material, temporary casing, integrity testing, drilling devices and other materials required for the manufacture or construction of drilled shafts.
- (5) Includes cost of all posts, anchors, base plates, backing plates, anchor bolts, miscellaneous bolts, nuts, washers, tubes, tube expansion devices, tube splices, and end plates. Includes cost of furnishing and installing all bridge railing, terminus and curb attachment elements.
- (6) Includes temporary shoring and bracing required for construction of abutments and walls.
- (7) Includes costs for each bearing device, including the girder stop bearing devices, fully assembled including all steel, elastomer and sliding surface materials.
- (8) Contract Quantity.
- (9) Deck panels are not permitted.
- (10) Includes cost of surface preparation and placement of Concrete Overlay (Polyester Concrete) to the limits shown in the plans and per Section 569
- (11) Quantities shown on this sheet do not include quantities for moment slabs or retaining walls RW01, RW04 or RW05.

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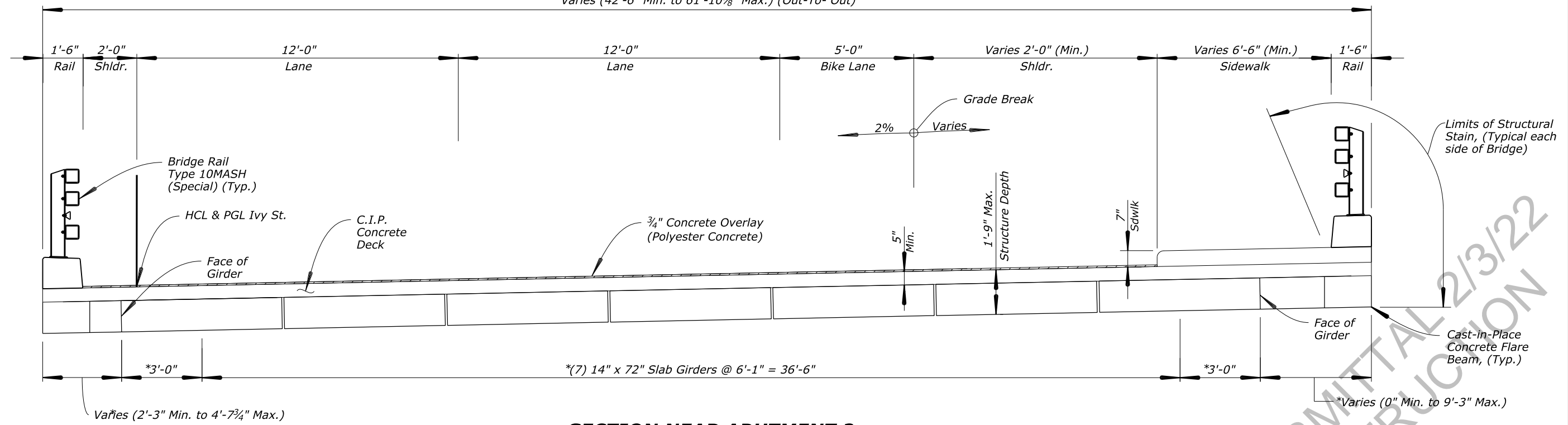
IVY STREET (US34) BRIDGE
OVER BIG THOMPSON RIVER
CITY OF ESTES PARK
LARIMER COUNTY, COLORADO

SUMMARY OF QUANTITIES

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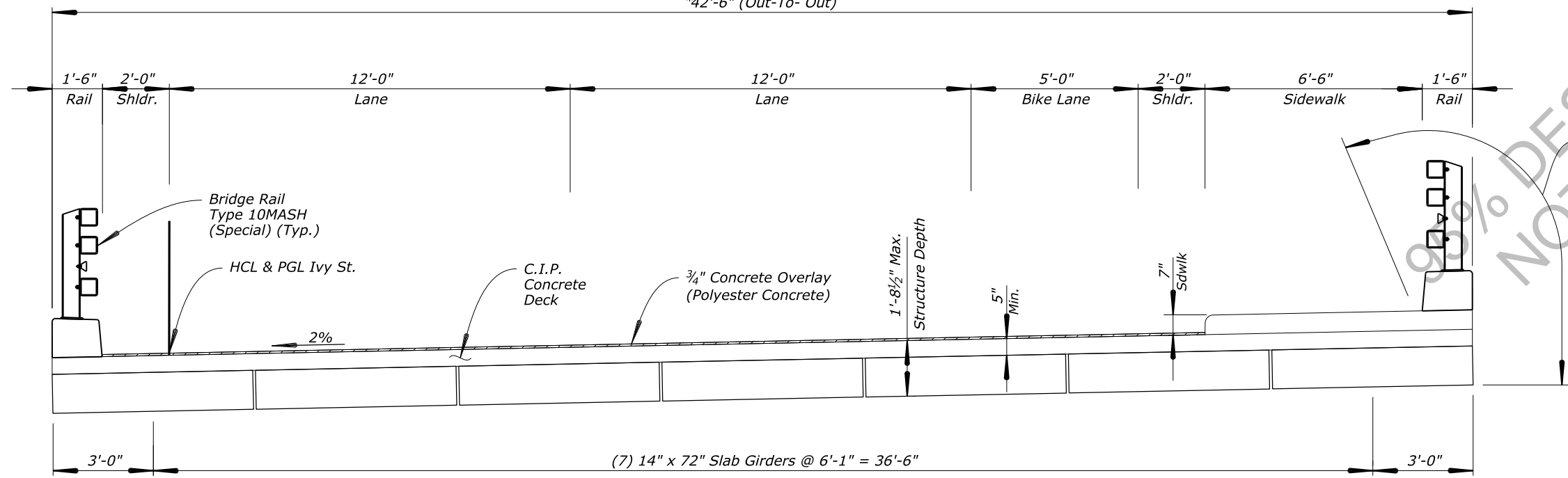
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								Steve Haynes	Oscar Avila	Gary Maji	NA	Steve McQuilkin	3 of 41	June 2021	RG3121-C

*Varies (42'-6" Min. to 61'-10³/₈" Max.) (Out-To-Out)



SECTION NEAR ABUTMENT 2
(Looking Ahead Station)

*42'-6" (Out-To-Out)



SECTION
(Looking Ahead Station)

* Dimensions taken normal to Layout Line
All other dimensions are normal to HCL

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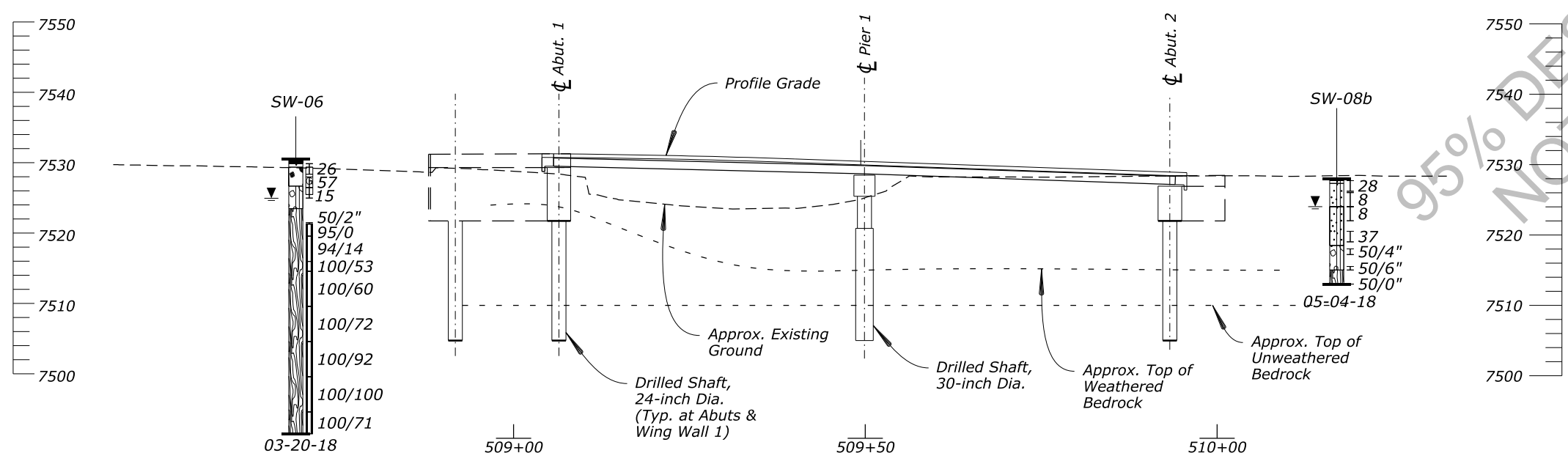
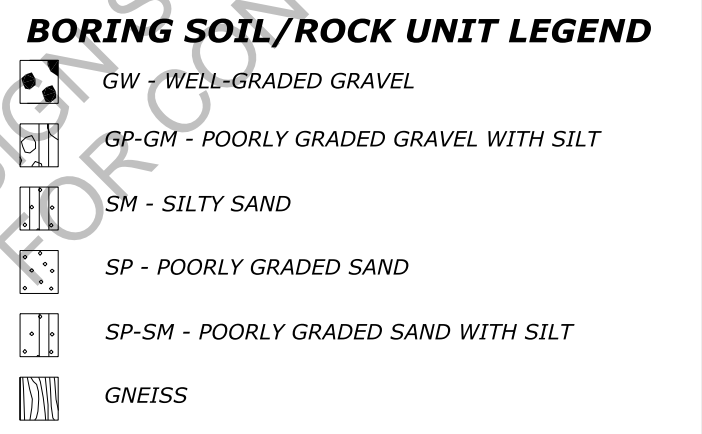
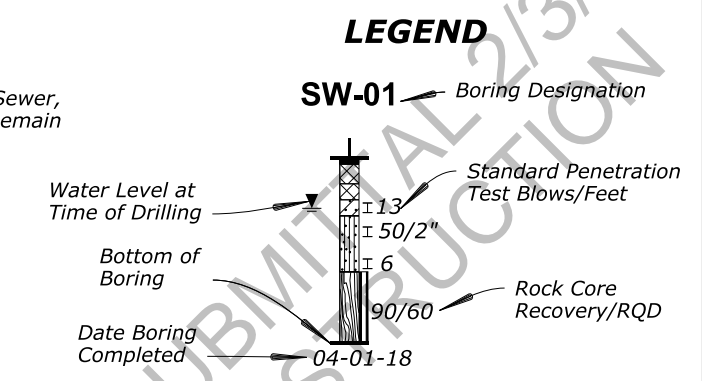
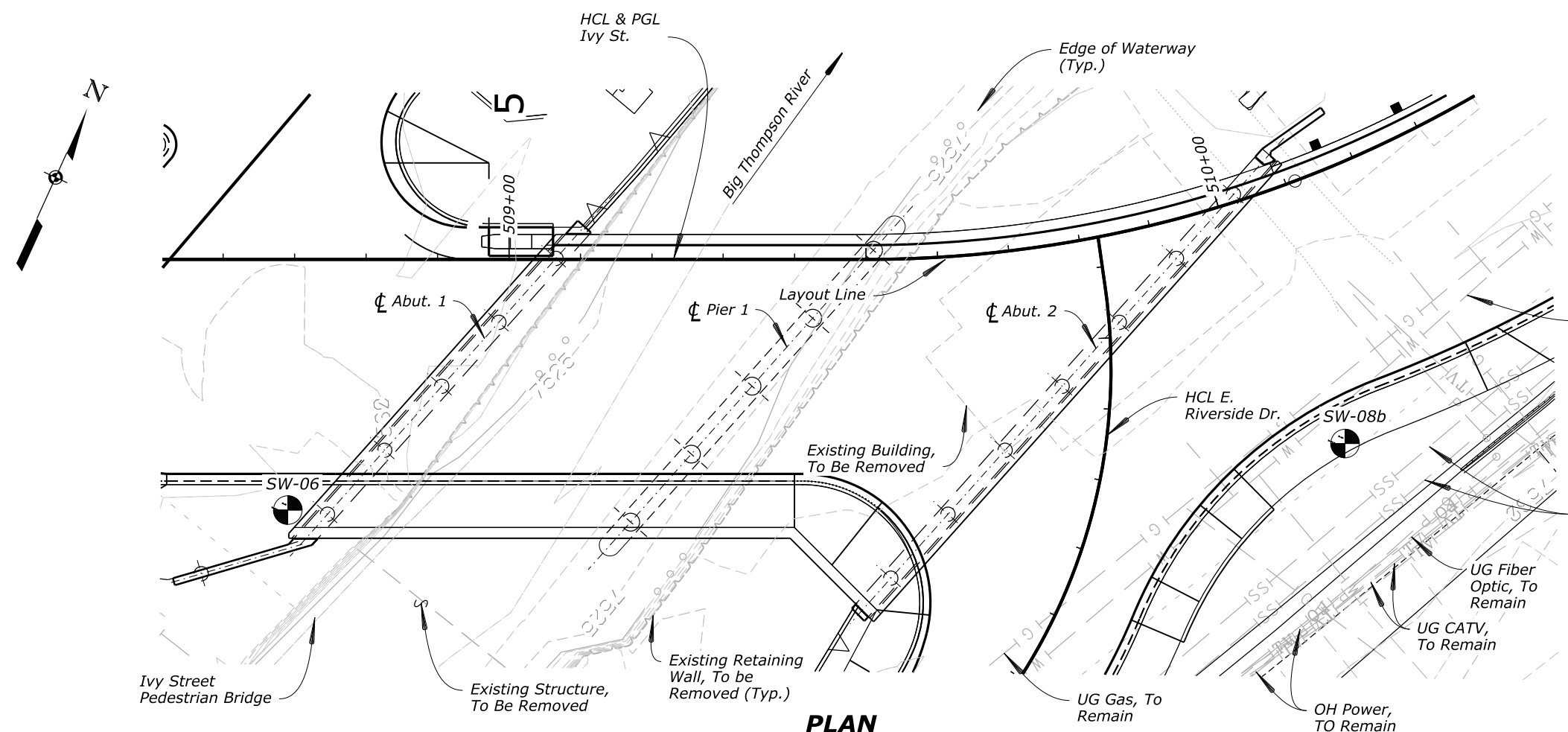
IVY STREET (US34) BRIDGE
OVER BIG THOMPSON RIVER
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TYPICAL SECTION

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								Steve Haynes	Oscar Avila	Gary Maji	1"=4'	Steve McQuilkin	4 of 41	June 2021	RG3121-D

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP36(1) Downtown Estes Park Loop	S-05



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IVY STREET (US34) BRIDGE
OVER BIG THOMPSON RIVER
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**ENGINEERING GEOLOGY
(1 OF 2)**

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NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Dave Asunkis	Oscar Avila	Gary Maji	1"=20'	Steve McQuilkin	5 of 41	June 2021	RG3121-E

SUMMARY OF LABORATORY TEST RESULTS

SAMPLE DATA				USCS Symbol	AASHTO Classification	Natural Water Content (%)	Moist Unit Weight (pcf)	GRAIN-SIZE ANALYSES			ATTEBERG LIMITS			CORROSION			UNCONFINED COMPRESSIVE STRENGTH (psi)	
Boring	Sample	Depth (feet)						Gravel (%)	Sand (%)	Fines (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	pH	Resistivity (ohm-cm)	Sulfates (%)		Chlorides (%)
		Top	Bottom															
SW-06	S-1B	1.1	2.1			5.6												
	S-2	2.5	4.0	GW	A-1-a (0)	4.8		57	38	5	NV	NP	NP	8.3	5,200	0.02	0.006	
	S-3	4.0	5.5			11.5												
	S-4	9.0	9.2			6.3												
	R-4	17.1	17.6				171.8											900
SW-07	S-1A	0.5	1.1	SP-SM	A-1-b (0)	7.8				11	NV	NP	NP					
	S-2	2.5	4.0	SM	A-1-b (0)	6.6		19	66	15	NV	NP	NP					
	S-3	4.0	5.5	SM	A-1-b (0)	13.3		24	61	15								
	S-4	9.0	10.5			9.0								8.2	14,000	0.03	0.007	
	R-3	22.8	23.2				166.6											24,500

Notes: 1. Gravel defined as particles larger than the No. 4 sieve size, Sand as particles between the No. 4 and No. 200 sieve sizes, and Fines as particles passing the No. 200 sieve.
2. NV= No Value; NP = Non-plastic
3. The unconfined compressive strength of intact rock core specimens was determined by ASTM D7012-14, Method C.
4. Additional laboratory data, geotechnical information, and analytical testing for boring SW-08b is provided in Shannon & Wilson, Inc. DRAFT Geotechnical Report dated May 29, 2018.

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IVY STREET (US34) BRIDGE
OVER BIG THOMPSON RIVER
CITY OF ESTES PARK
LARIMER COUNTY, COLORADO

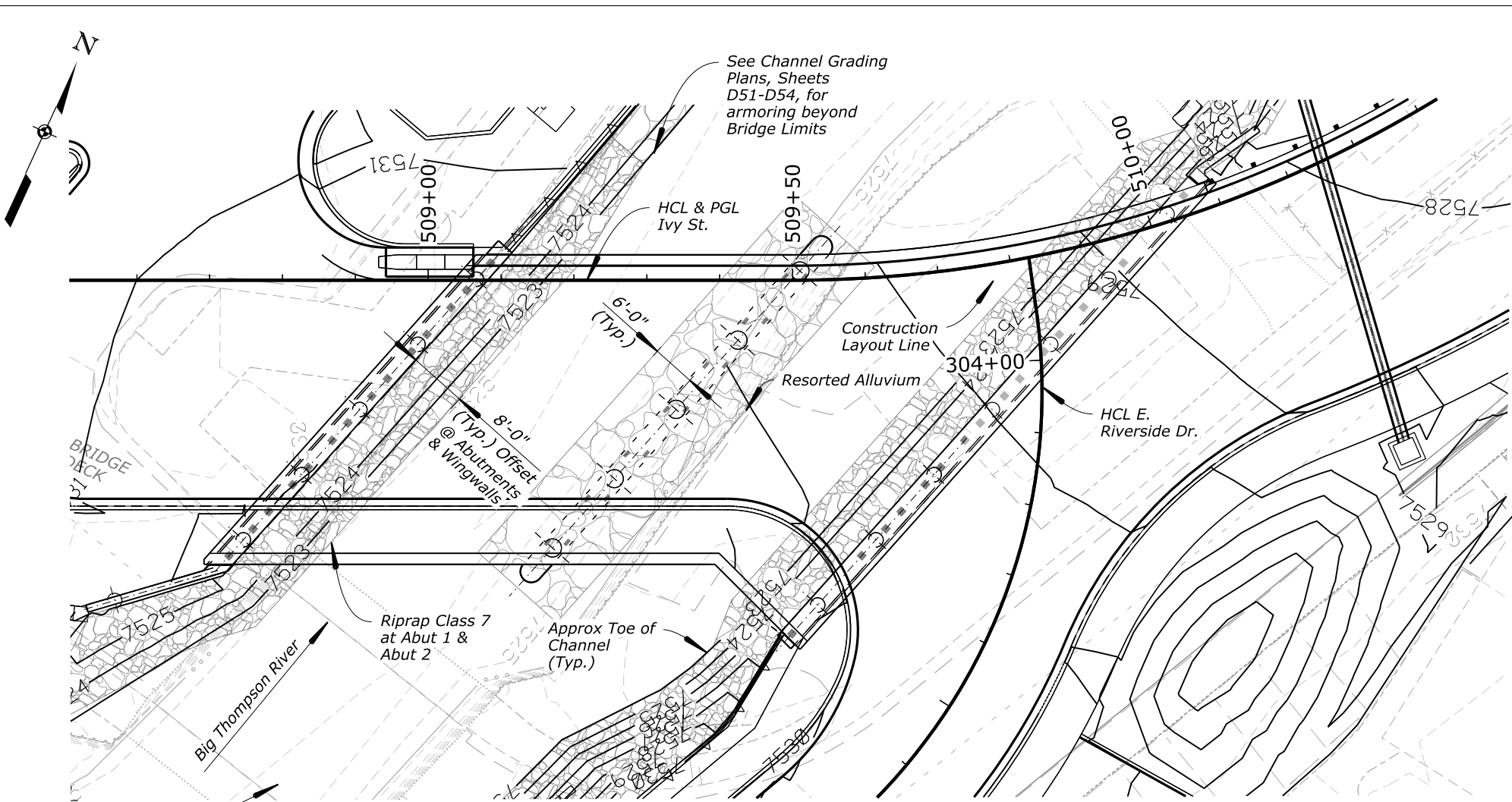
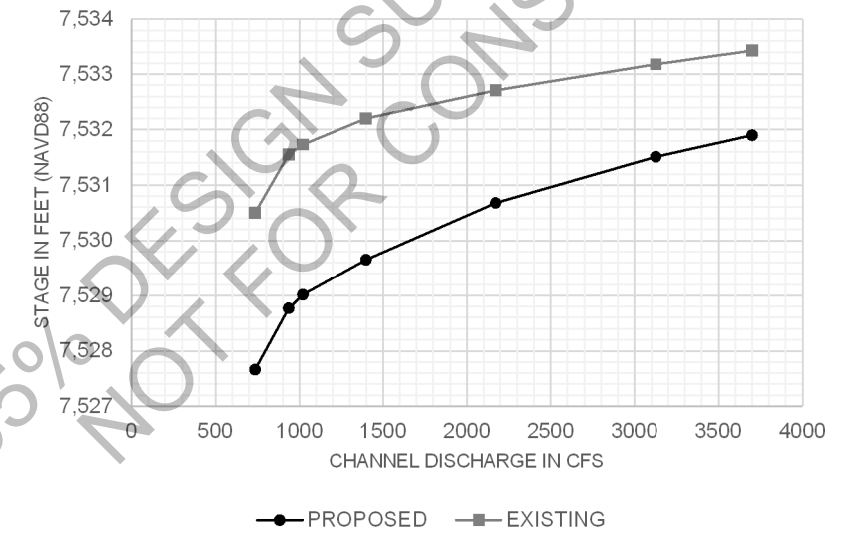
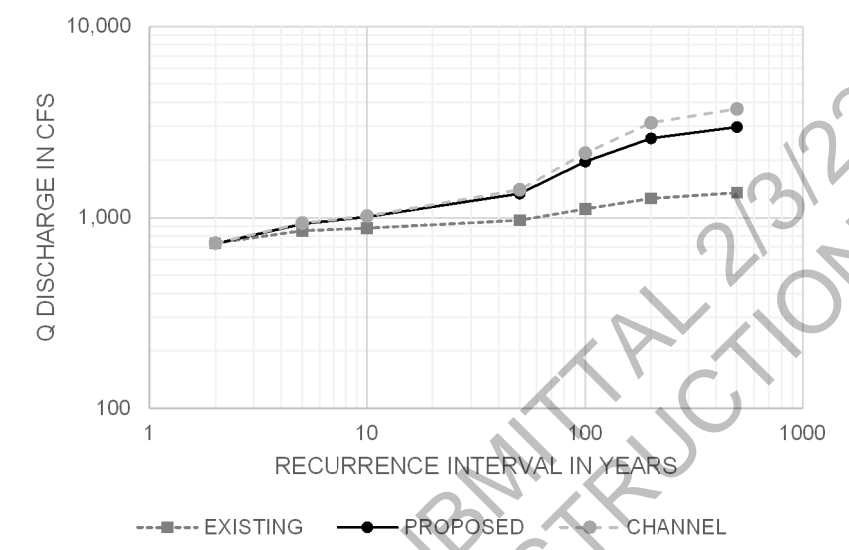
**ENGINEERING GEOLOGY
(2 OF 2)**

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NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Dave Asunkis	Oscar Avila	Gary Maji	NA	Steve McQuilkin	6 of 41	June 2021	RG3121-F

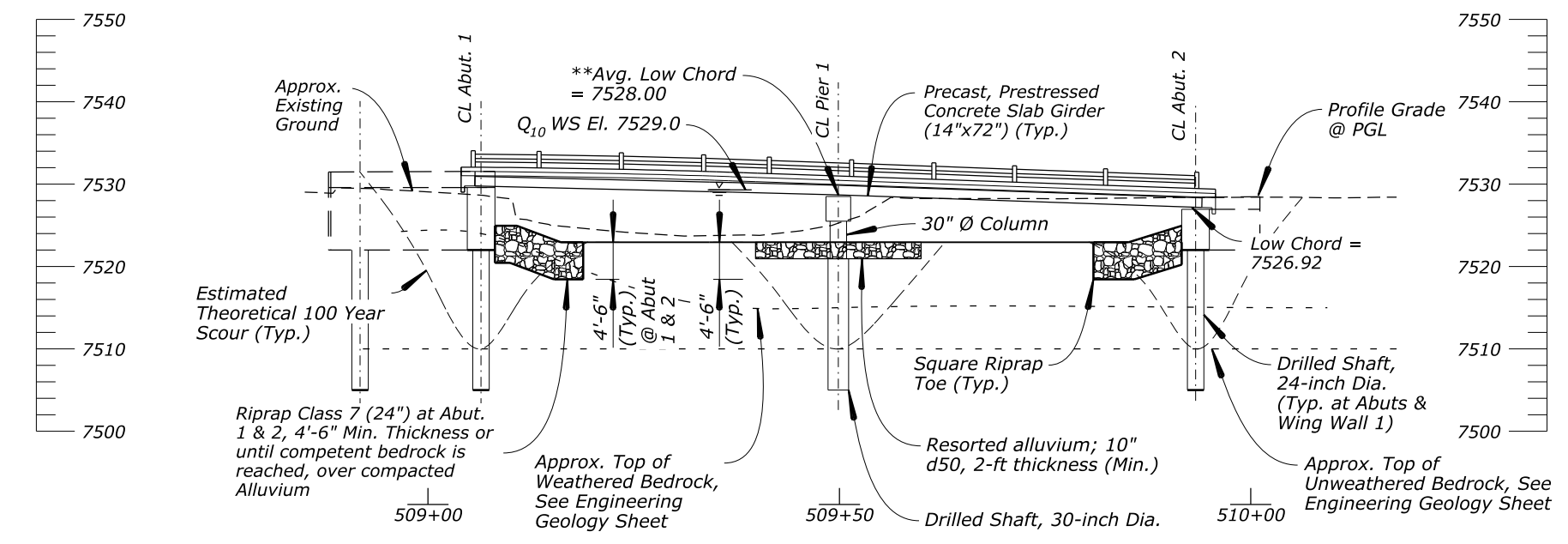
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP36(1) Downtown Estes Park Loop	S-07

Reach:
 Drainage Area: 87.1 Sq. Mi.
 Channel Bottom Material:
 Cohesive Non-Cohesive
 Bottom Material Size: Clay Silt Sand
 Gravel Cobbles Other
 Stream Form: Straight Meandering Braided
 Mannings "n" for Design:
 Channel = 0.06 Overbank = 0.016-0.28
 Debris: Brush Trees/Logs Ice Other



PLAN

Existing Structure, To Be Removed



ELEVATION

(Taken Along Construction Layout Line Ivy St. Bridge)
 **Average Low Chord Used in Drainage Models

HYDRAULIC DATA

	Q ft ³ /sec	V ft/sec	WS Elev.
Q ₂	729	3.8	7527.7
Q ₁₀	1,008	4.1	7529.0
Q ₅₀	1,333	6.1	7529.7
Q ₁₀₀	1,961	8.5	7530.7

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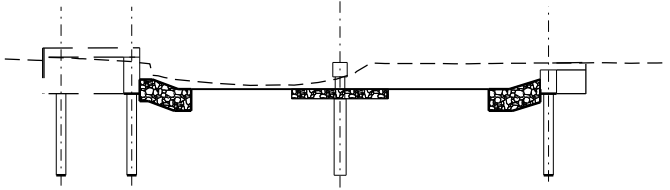
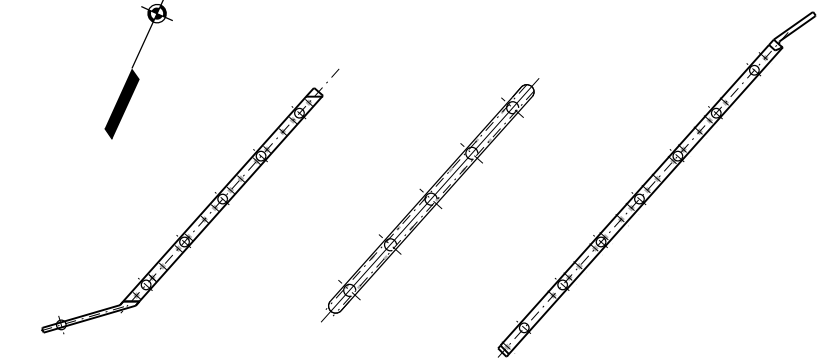
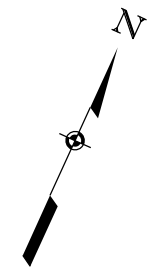
**IVY STREET (US34) BRIDGE
 OVER BIG THOMPSON RIVER
 CITY OF ESTES PARK
 LARIMER COUNTY, COLORADO**

BRIDGE HYDRAULICS

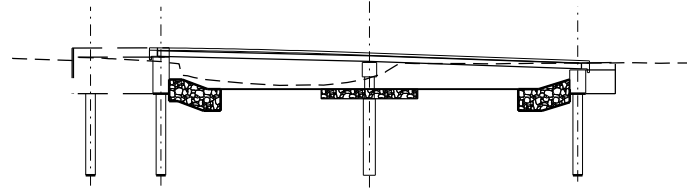
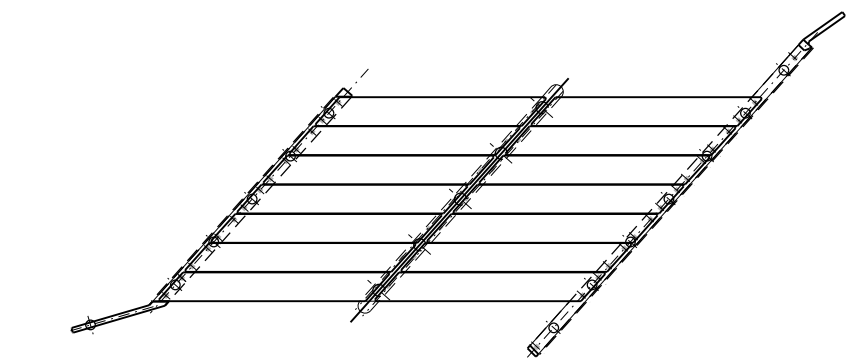
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								Michael Scurlock	Oscar Avila	Gary Maji	1"=20'	Steve McQuilkin	7 of 41	June 2021	RG3121-G

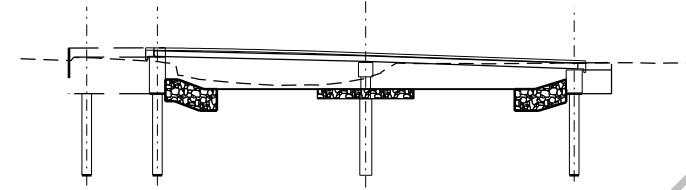
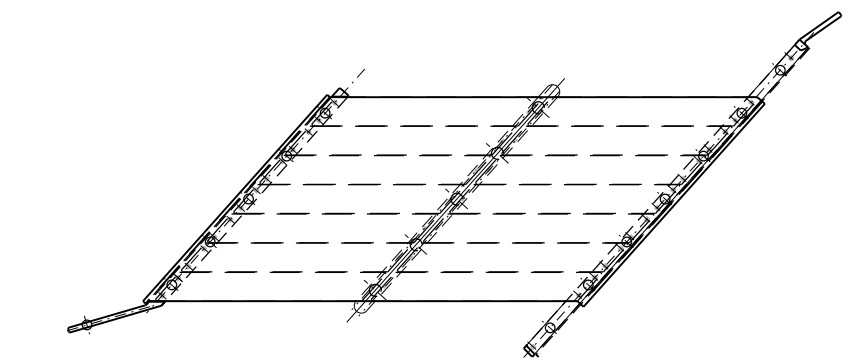
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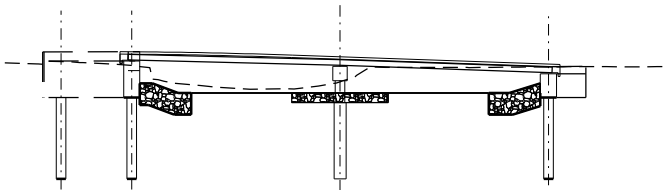
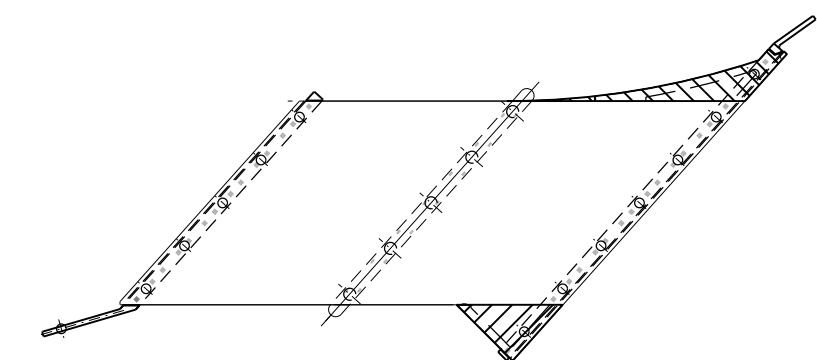
Construction Stage 1
Place substructure elements as shown in the plans. (Completing stream channel grading optional)



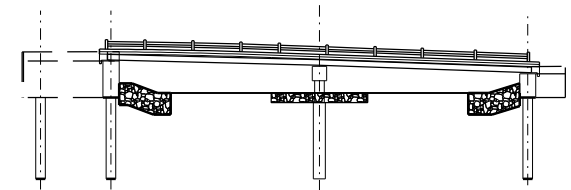
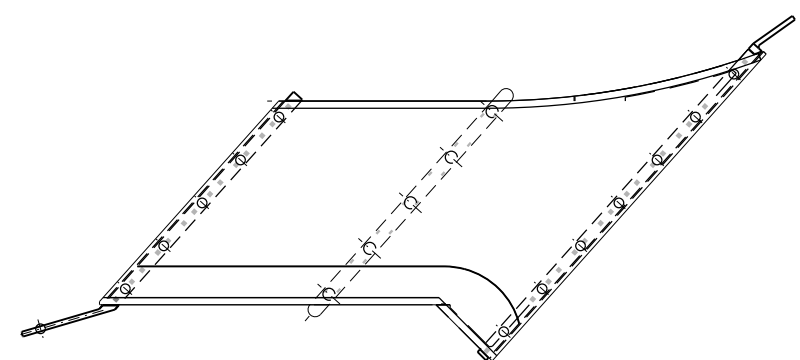
Construction Stage 2
Set Girders on bearings.



Construction Stage 3
Place Bridge Deck, End Walls and Pier Closure within limits of Girders.



Construction Stage 4
Place Flare Beams and remaining End Walls and Deck with Flare Beams on shoring.



Construction Stage 5
Place Curbs, Bridge Rails and Sidewalks to complete the bridge.

NOTES:

1. This Suggested Construction Sequence is the basis of the design of the Bridge. The stages shown are schematic and do not represent all of the elements or construction requirements for completion of the bridge. The Contractor is required to submit a complete Construction Staging Plan to the CO for approval.
2. The Flare Beams shall be supported on falsework or shoring and not released until all of the cast-in-place concrete has achieved 85% of the concrete's required compressive design strength.
3. Changes to this construction sequence that affect the flare beam design may require PE stamped design calculations. See specifications.

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NOT FOR CONSTRUCTION

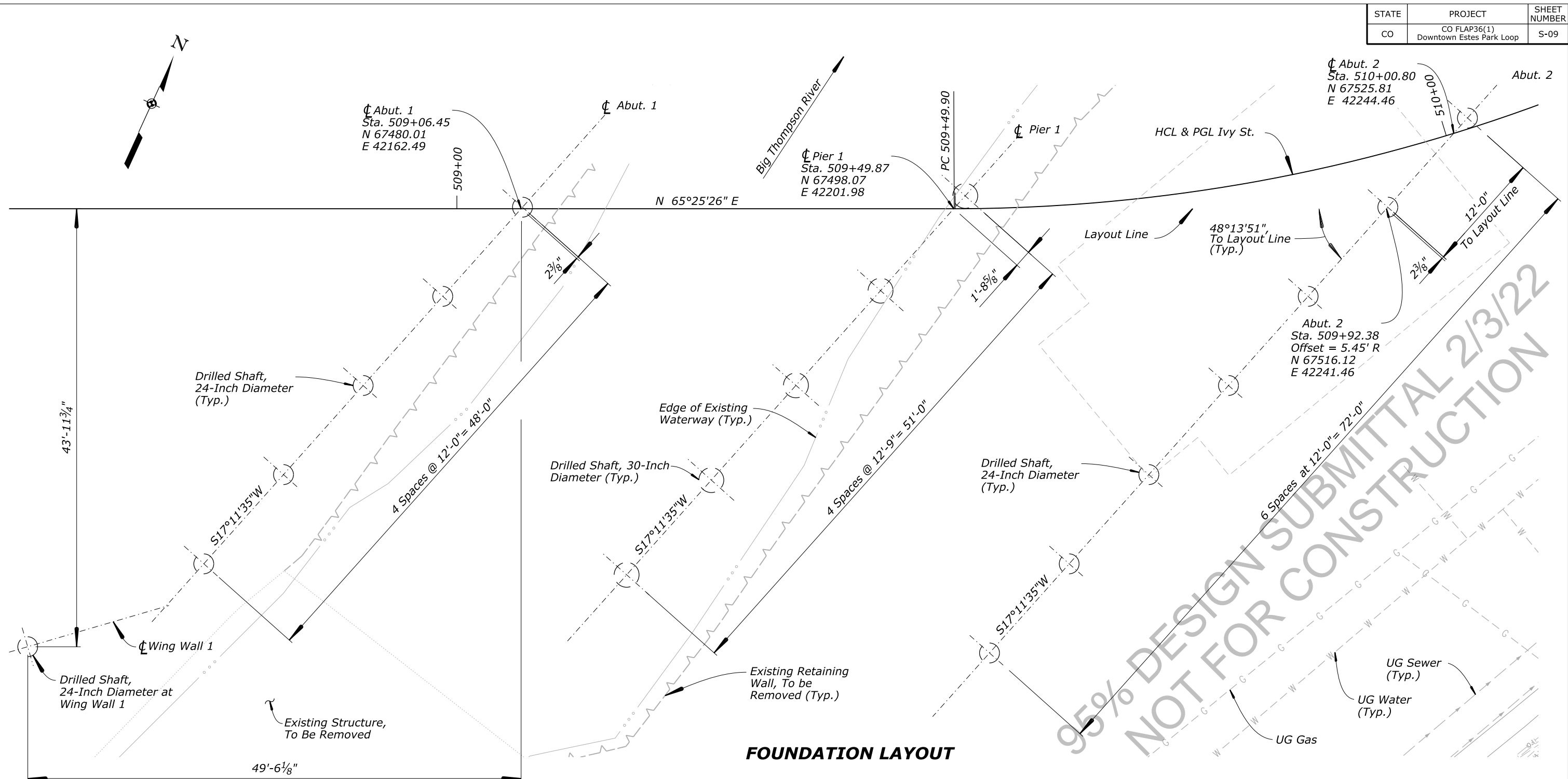
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IVY STREET (US34) BRIDGE
OVER BIG THOMPSON RIVER
CITY OF ESTES PARK
LARIMER COUNTY, COLORADO

CONSTRUCTION SEQUENCE

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Steve Haynes	Oscar Avila	Gary Maji		Steve McQuilkin	8 of 41	June 2021	RG3121-H

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FOUNDATION LAYOUT

NOTES:

1. All dimensions are horizontal.
2. All horizontal Drilled Shaft location dimensions are shown at the top of the Drilled Shaft.
3. Temporary casing may be required for the Drilled Shaft construction and shall be removed after completion. The price of temporary casing will not be paid for separately but shall be included in the cost for the work for Drilled Shaft, 24-inch Diameter or Drilled Shaft, 30 inch Diameter.
4. The contractor shall be prepared for difficult conditions for placement of the Drilled Shafts. Hard layers exist and underwater concrete placement may be required. The means and methods required for Drilled Shaft installation shall be included in Item 55601.
5. All Drilled Shafts shall be vertical.
6. See Drilled Shaft Details on S-10 for more information.

DRILLED SHAFT SCHEDULE

Location	Elevations				Drilled Shaft Diameter (In.)	Max Axial Factored Load (Kips)
	Top of Drilled Shaft	Estimated Top of Weak Bedrock	Estimated Top of Strong Bedrock	Min. Tip Elevation		
Abut. 1	7,523	7,524	7,510	7,505	24	273
Wing Wall 1	7,523	7,524	7,510	7,505	24	27
Pier 1	7,518	7,515	7,510	7,505	30	424
Abut. 2	7,522	7,515	7,510	7,505	24	273

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

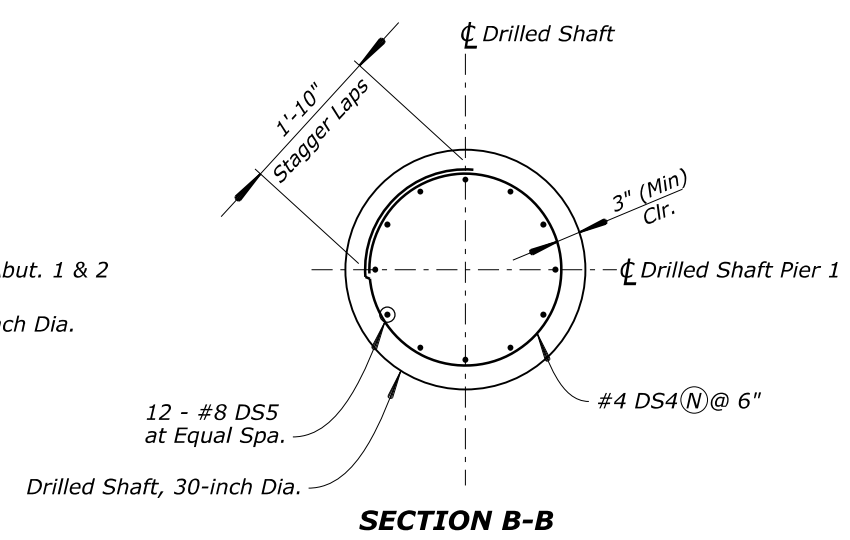
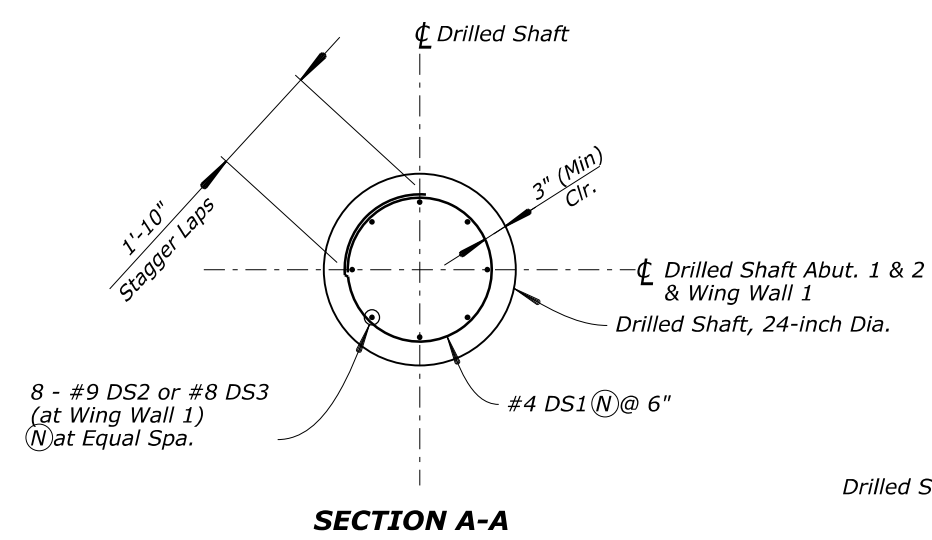
**IVY STREET (US34) BRIDGE
 OVER BIG THOMPSON RIVER
 CITY OF ESTES PARK
 LARIMER COUNTY, COLORADO**

FOUNDATION LAYOUT

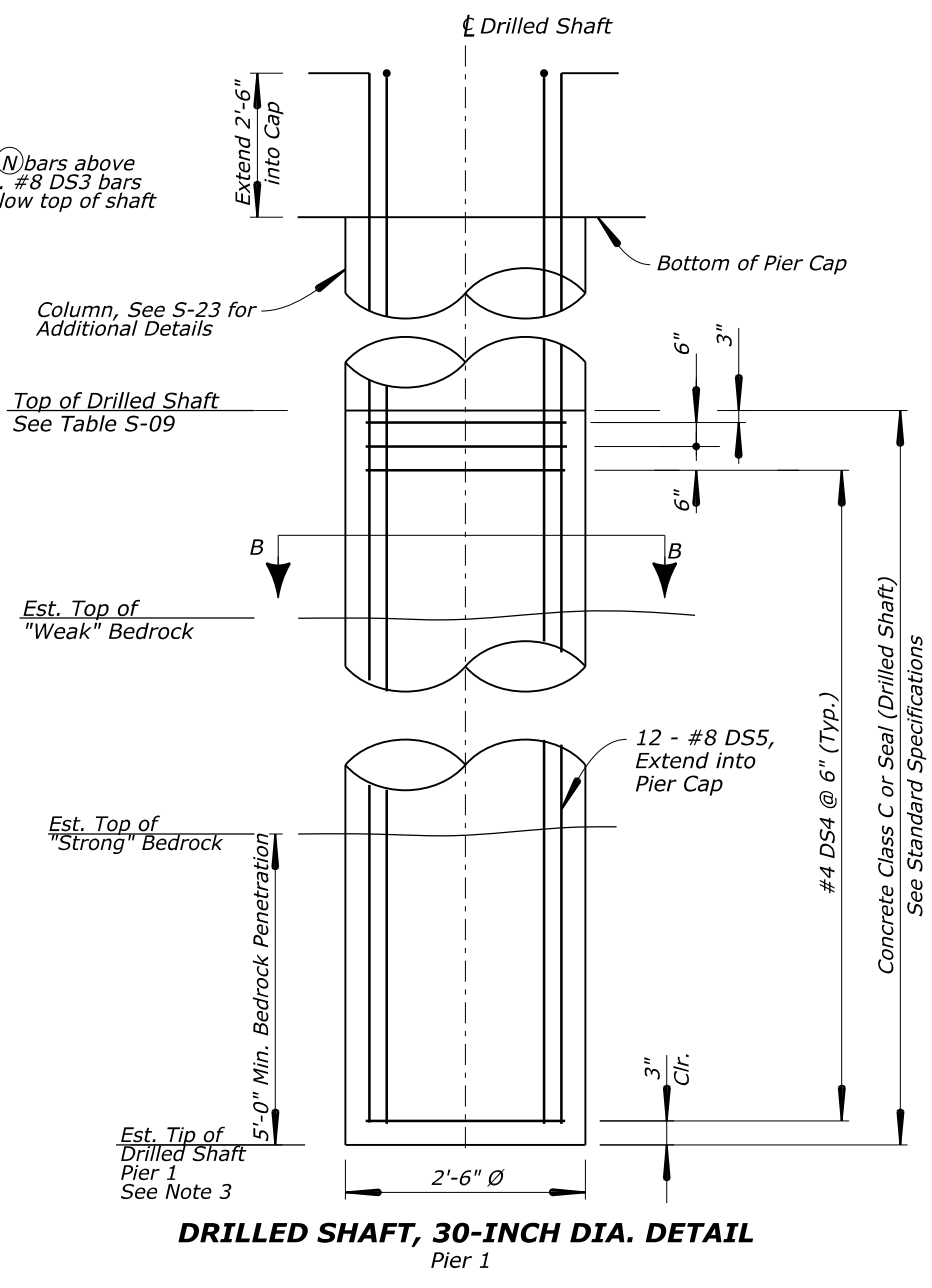
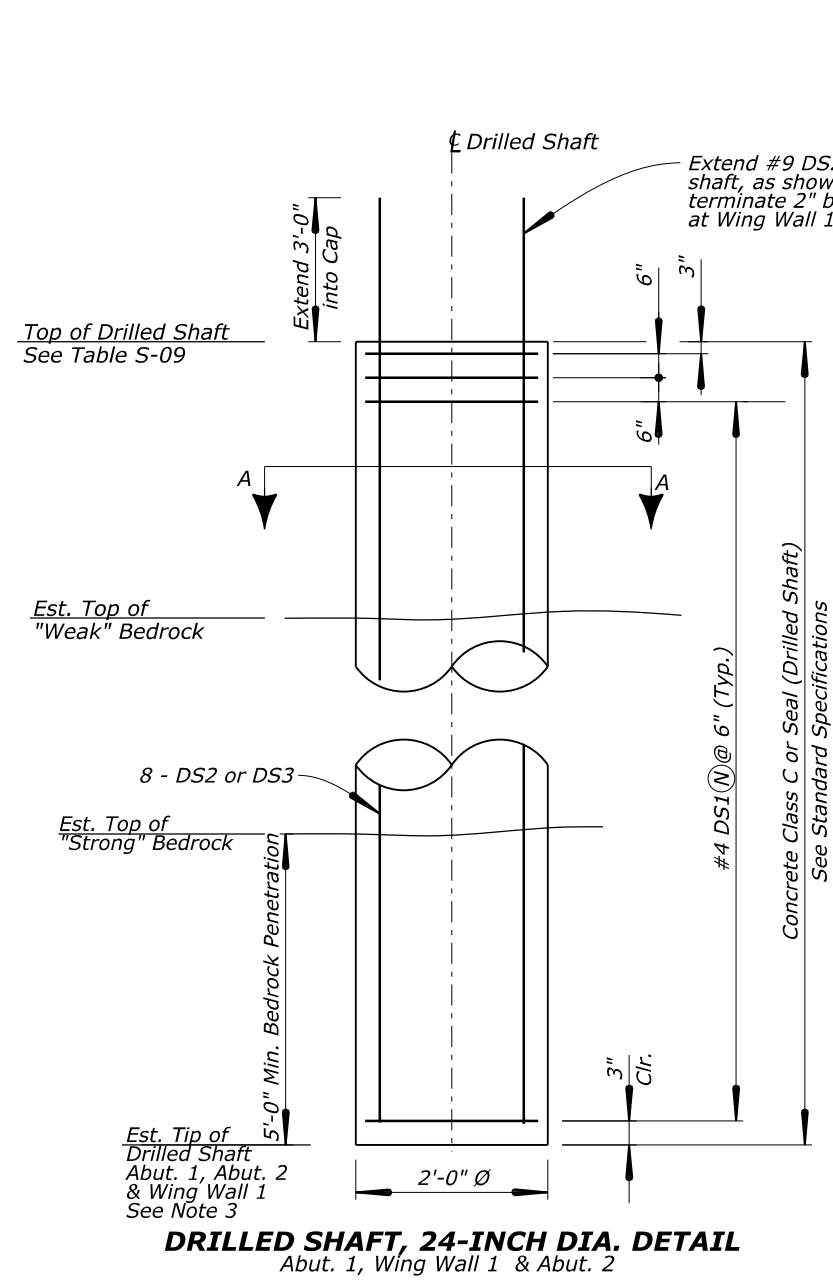
BRIDGE DRAWING	DATE	DRAWING NO.
9 of 41	June 2021	RG3121-I

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Steve Haynes	Oscar Avila	Gary Maji	1"=10'	Steve McQuilkin	9 of 41	June 2021	RG3121-I

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- NOTE:**
- Top of bedrock elevation shall be verified at the time of construction by the CO.
 - Drilled shaft shall extend at least to the estimated tip elevations shown on the plans. Drilled shaft shall be further advanced into the bedrock if necessary to obtain the specified minimum embedment.
 - "Strong" rock layer, as outlined in the Geotechnical report, is anticipated to be hard drilling conditions. Contractor will need to select suitable methods for the conditions, including casing if necessary.
 - Bars designated with (N) are non-epoxy coated. Bars #4 DS4 are non-epoxy coated below Finish Grade.



95% DESIGN SUBMITTED FOR CONSTRUCTION

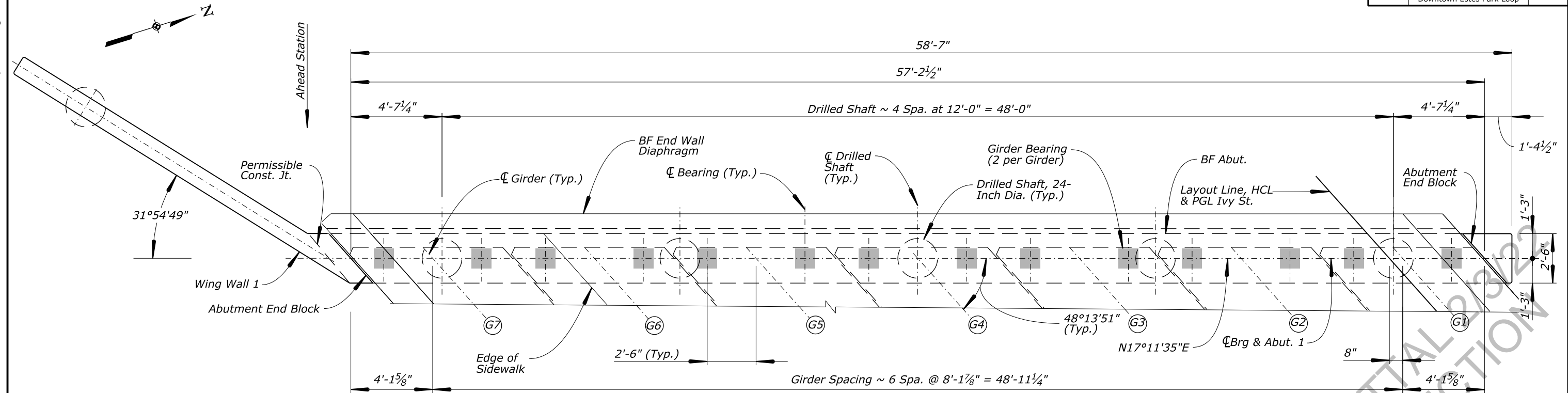
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

IVY STREET (US34) BRIDGE
OVER BIG THOMPSON RIVER
CITY OF ESTES PARK
LARIMER COUNTY, COLORADO

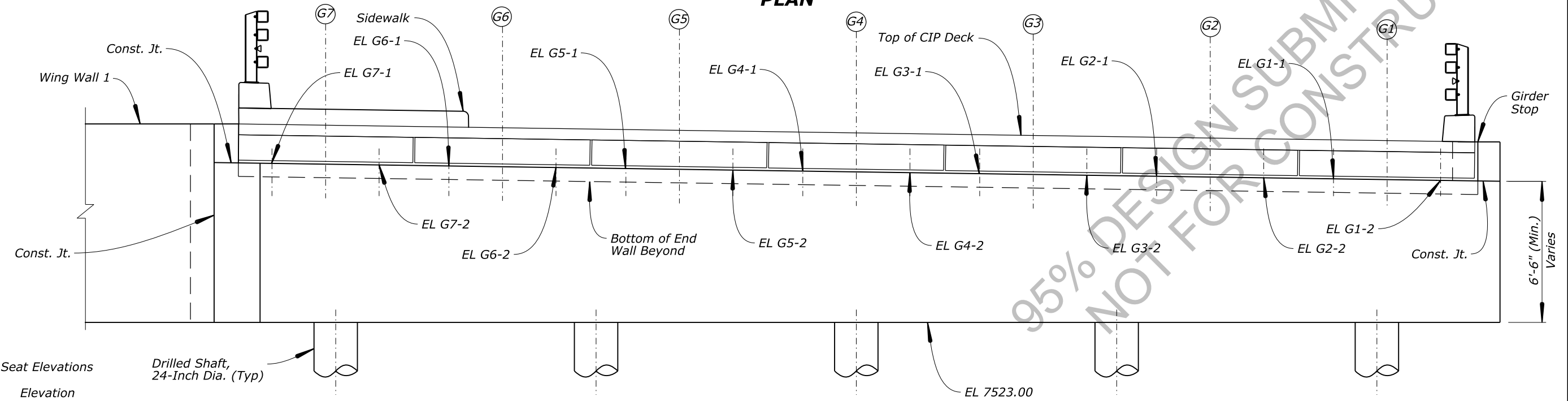
DRILLED SHAFT DETAILS

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Steve Haynes	Oscar Avila	Gary Maji	1"=2'	Steve McQuilkin	10 of 41	June 2021	RG3121-J

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PLAN



ELEVATION

Bearing Seat Elevations

Bearing	Elevation
G7-1	7530.238
G7-2	7530.225
G6-1	7530.212
G6-2	7530.184
G5-1	7530.161
G5-2	7530.119
G4-1	7530.087
G4-2	7530.030
G3-1	7529.988
G3-2	7529.917
G2-1	7529.866
G2-2	7529.780
G1-1	7529.719
G1-2	7529.619

- Notes:**
- Bearing elevations shown are taken at top of concrete at ϕ Bearing.
 - See sheet S-33 for bearing device and girder stop details.

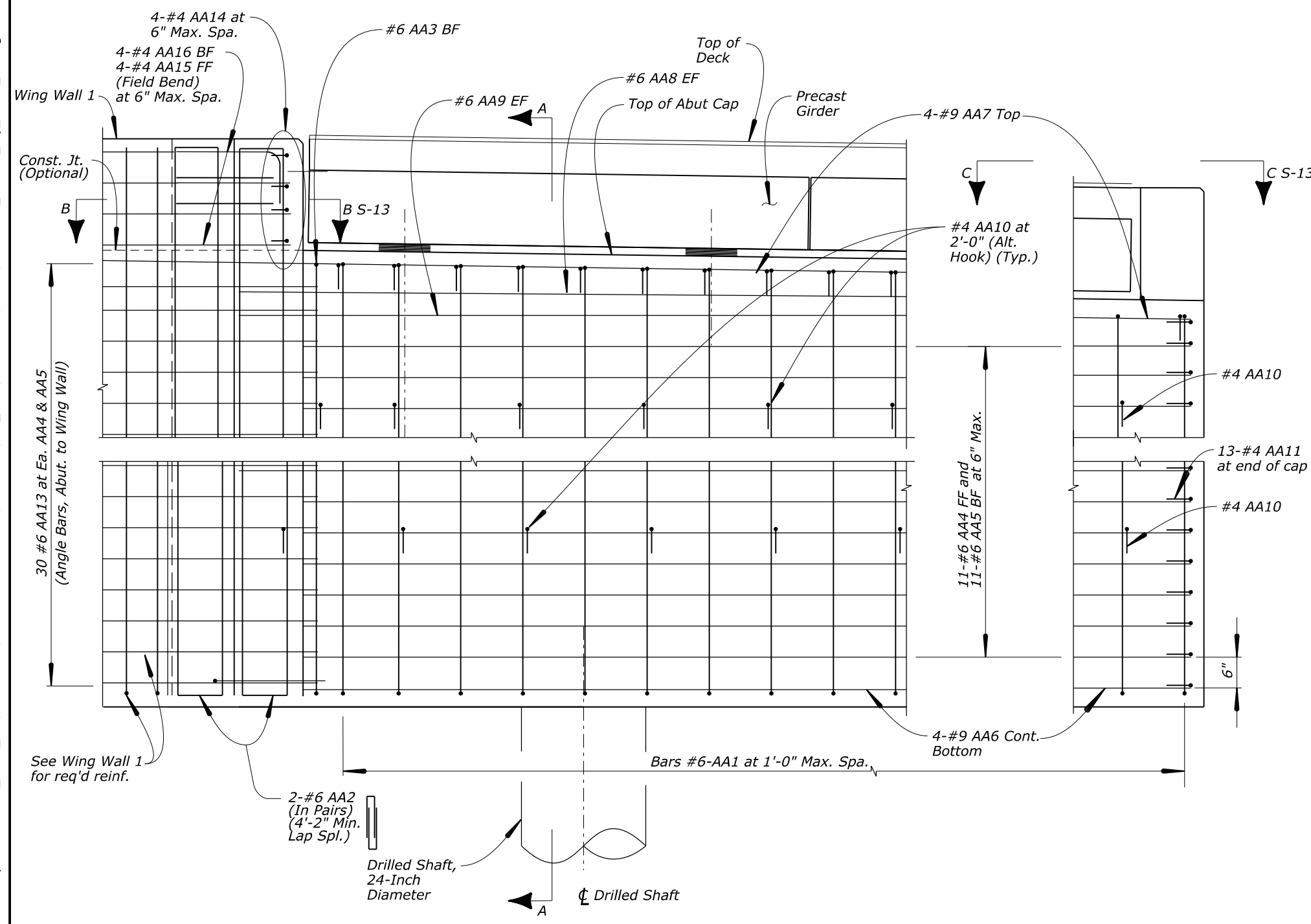
U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

 IVY STREET (US34) BRIDGE
 OVER BIG THOMPSON RIVER
 CITY OF ESTES PARK
 LARIMER COUNTY, COLORADO

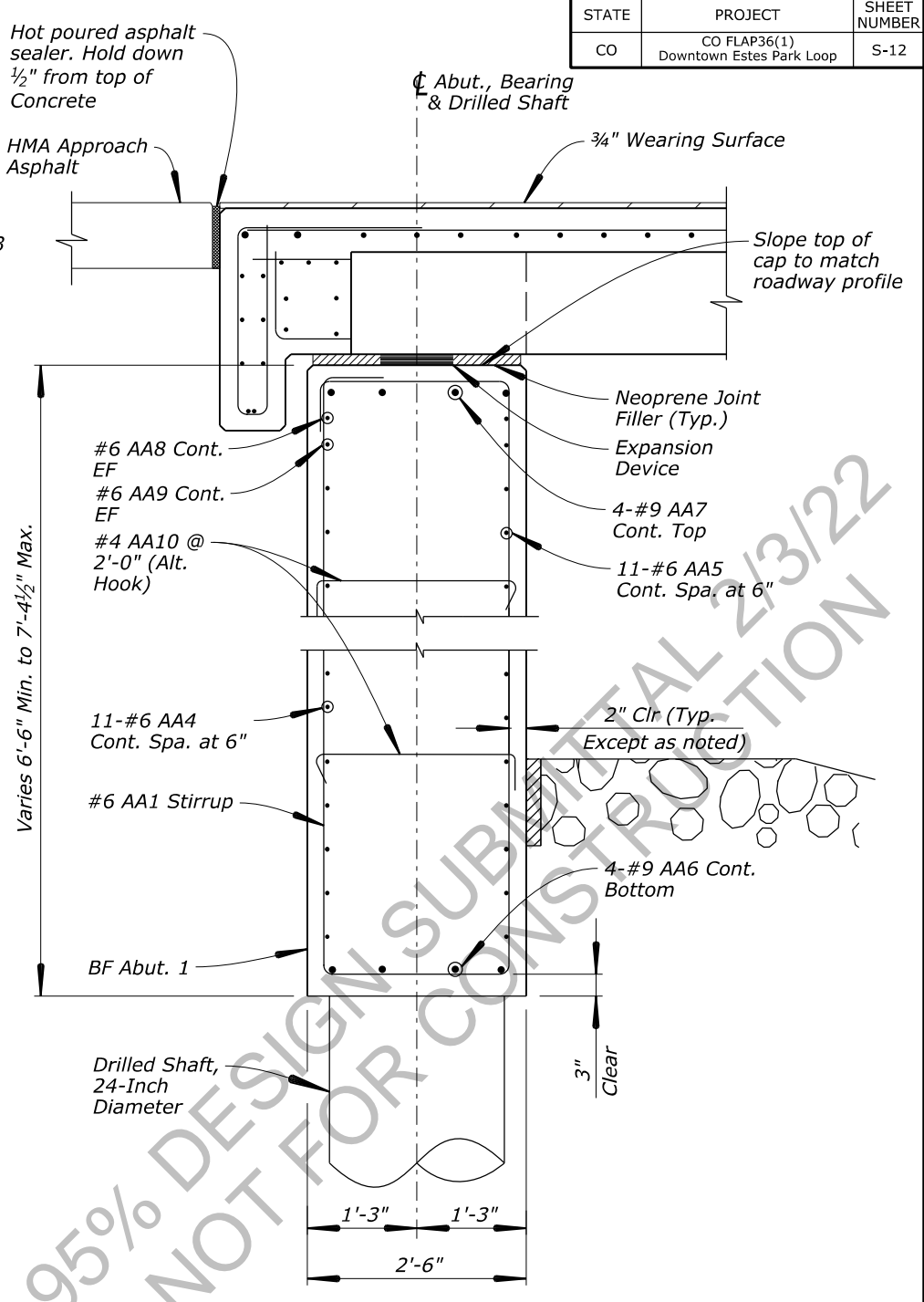
ABUTMENT 1
PLAN AND ELEVATION

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Steve Haynes	Oscar Avila	Gary Maji	1"=5'	Steve McQuilkin	11 of 41	June 2021	RG3121-K

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PARTIAL ELEVATION



SECTION A-A

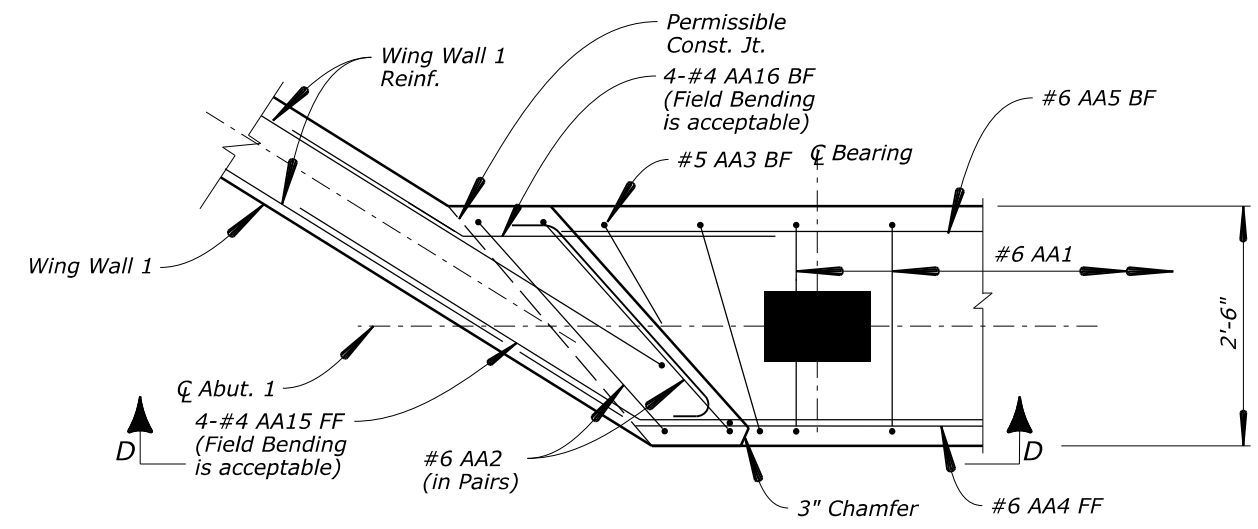
NOTES:

1. See Bearing Device Detail Sheet for bearing pad information.
2. Backfill behind abutments shall be mechanically stabilized as shown on sheet S-20.

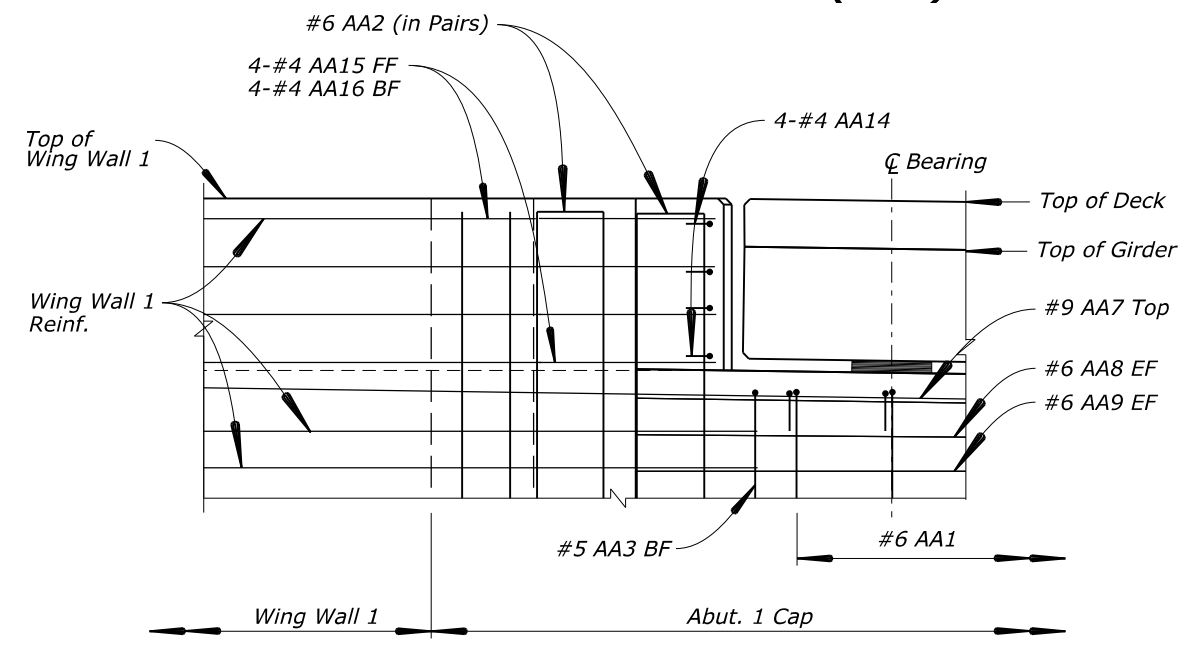
U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

 IVY STREET (US34) BRIDGE
 OVER BIG THOMPSON RIVER
 CITY OF ESTES PARK
 LARIMER COUNTY, COLORADO
ABUTMENT 1 DETAILS
(1 OF 2)

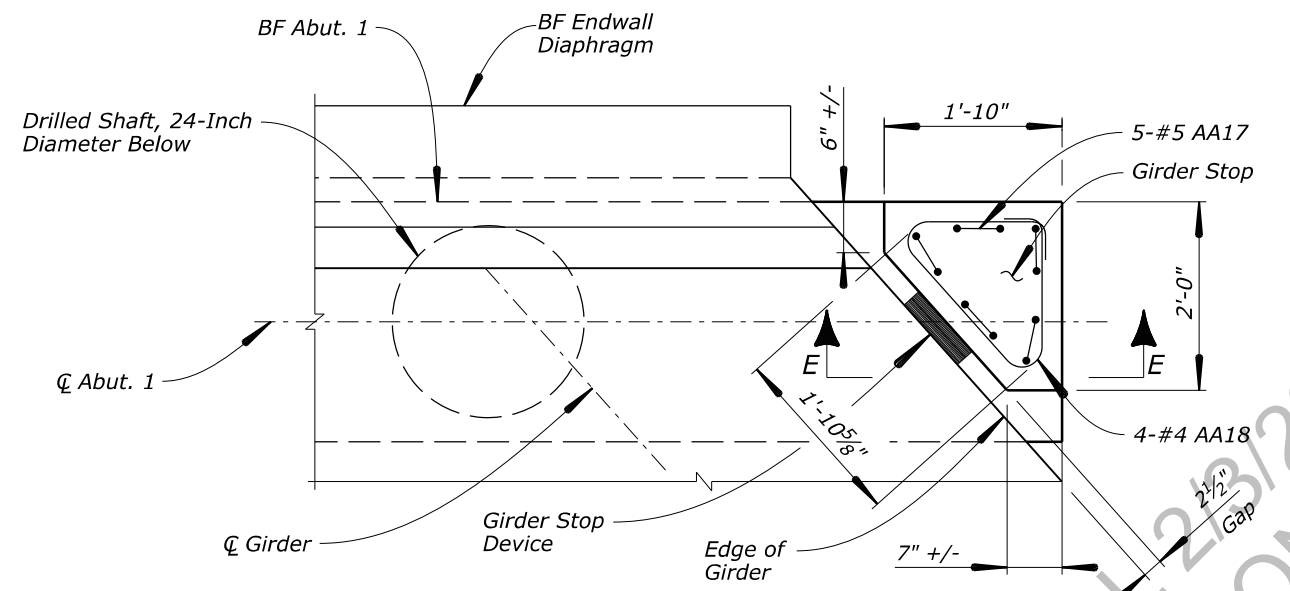
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								Steve Haynes	Oscar Avila	Gary Maji	Not To Scale	Steve McQuilkin	12 of 41	June 2021	RG3121-L



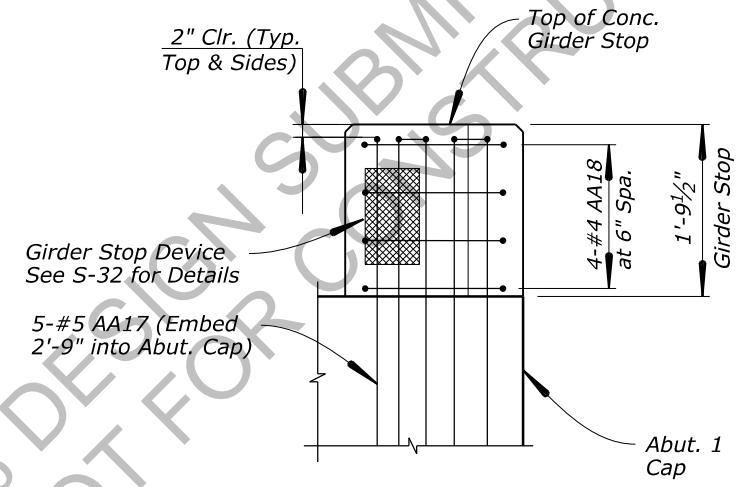
SECTION B-B (S-12)



SECTION D-D



SECTION C-C (S-12)



SECTION E-E

NOTES:

1. See Bearing Device Detail Sheet for bearing pad information.
2. Backfill behind abutments shall be mechanically stabilized as shown on Sheet S-20.

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 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

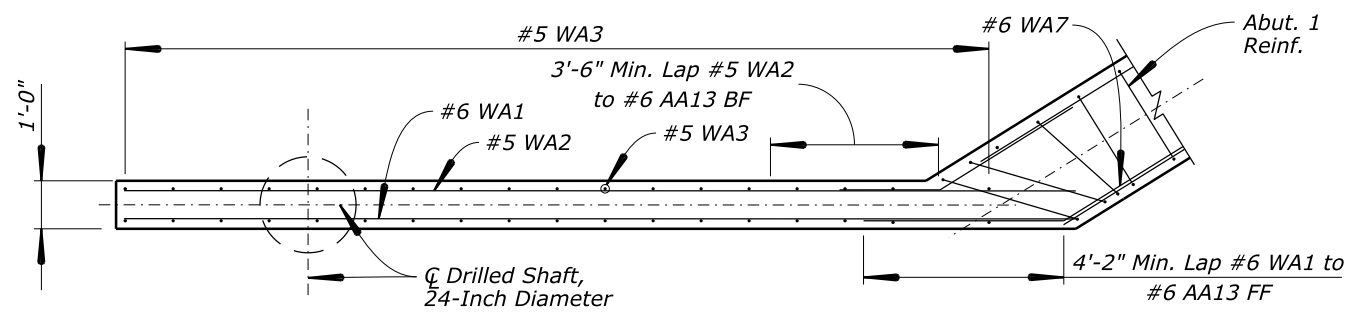
IVY STREET (US34) BRIDGE
 OVER BIG THOMPSON RIVER
 CITY OF ESTES PARK
 LARIMER COUNTY, COLORADO

**ABUTMENT 1 DETAILS
 (2 OF 2)**

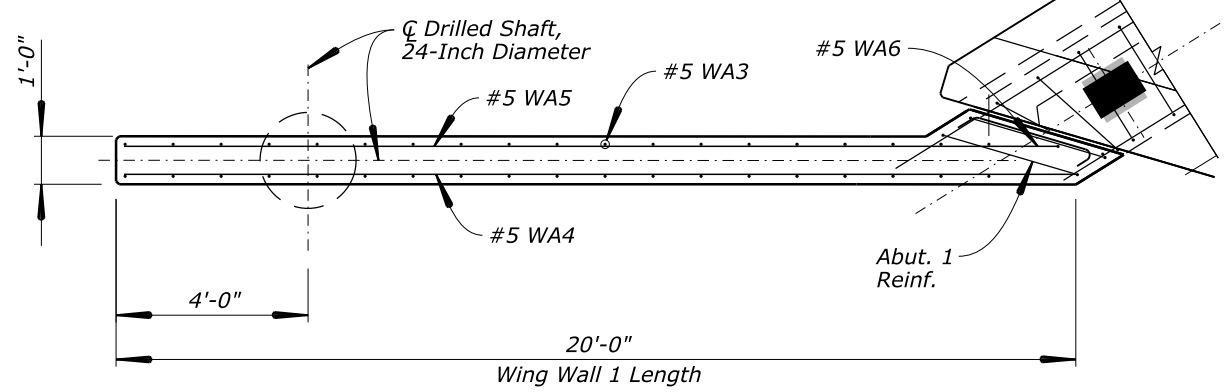
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NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Steve Haynes	Oscar Avila	Gary Maji	Not To Scale	Steve McQuilkin	13 of 41	June 2021	RG3121-M

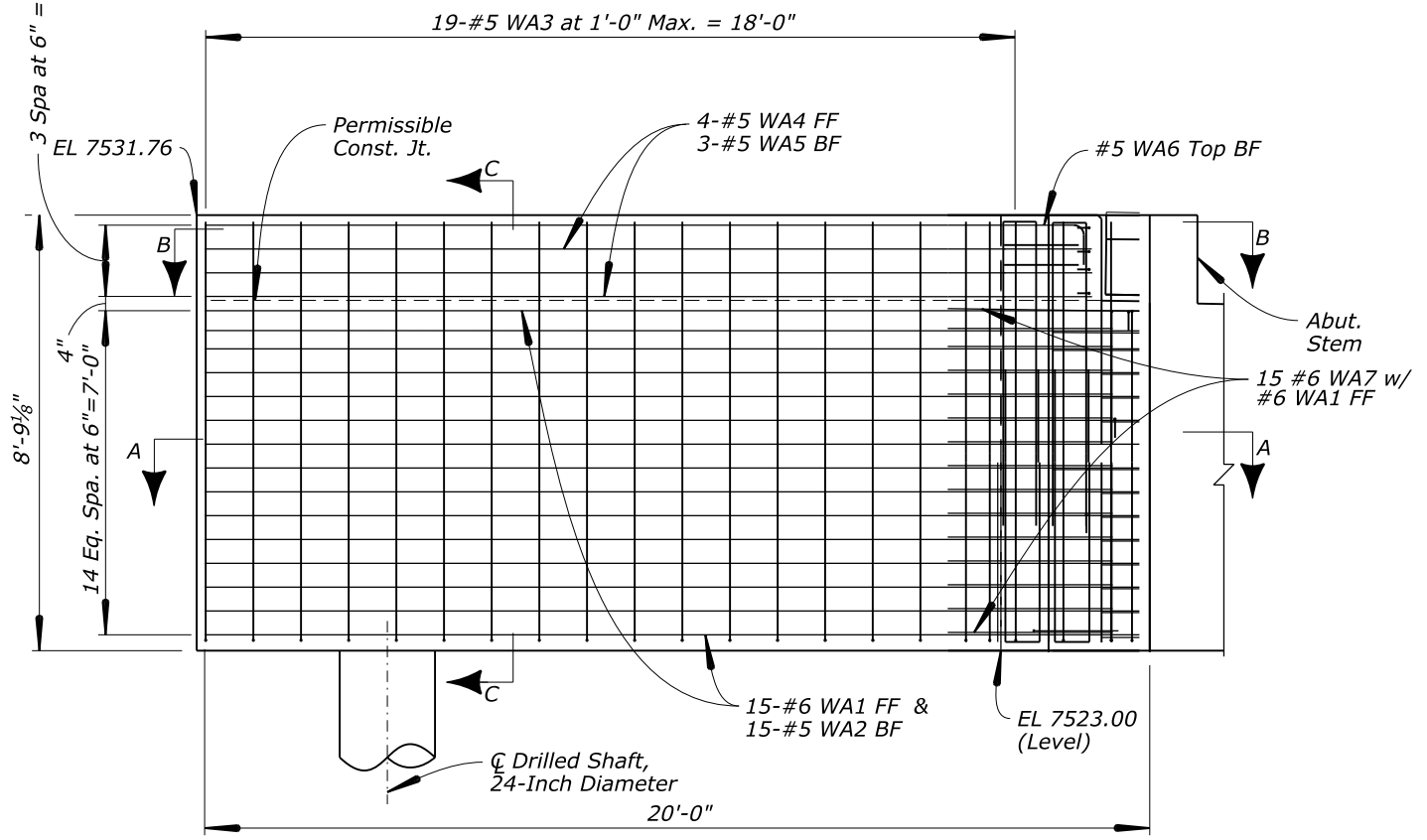
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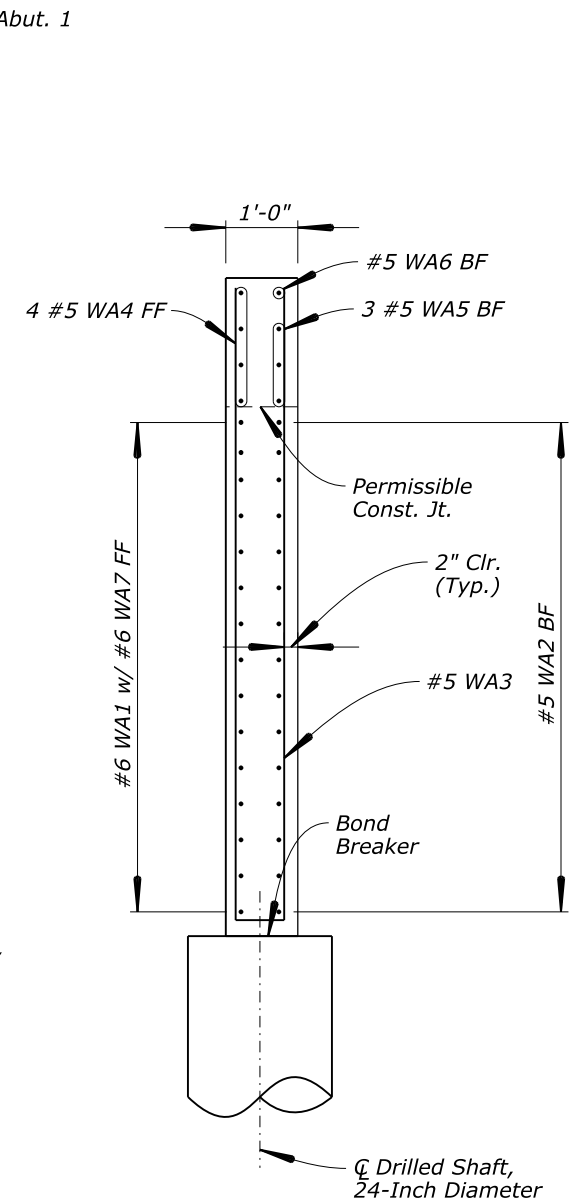
SECTION A-A
See Section B-B for information not shown



SECTION B-B



WING WALL 1 ELEVATION



SECTION C-C

95% DESIGN SUBMITTAL 2/3/22
 NOT FOR CONSTRUCTION

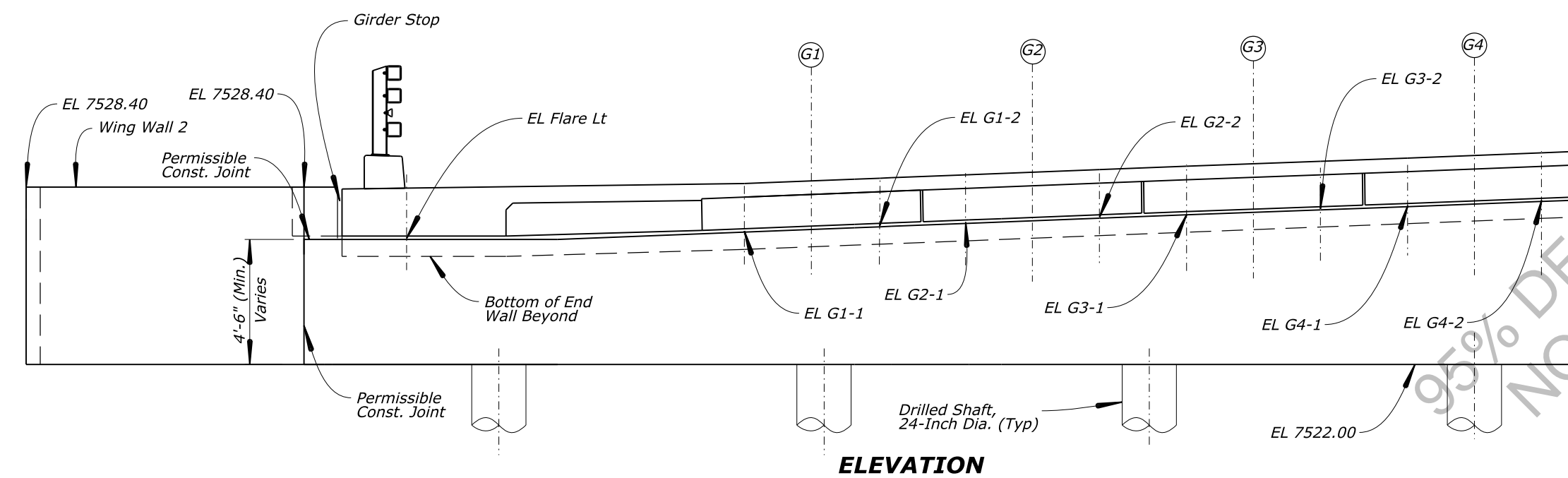
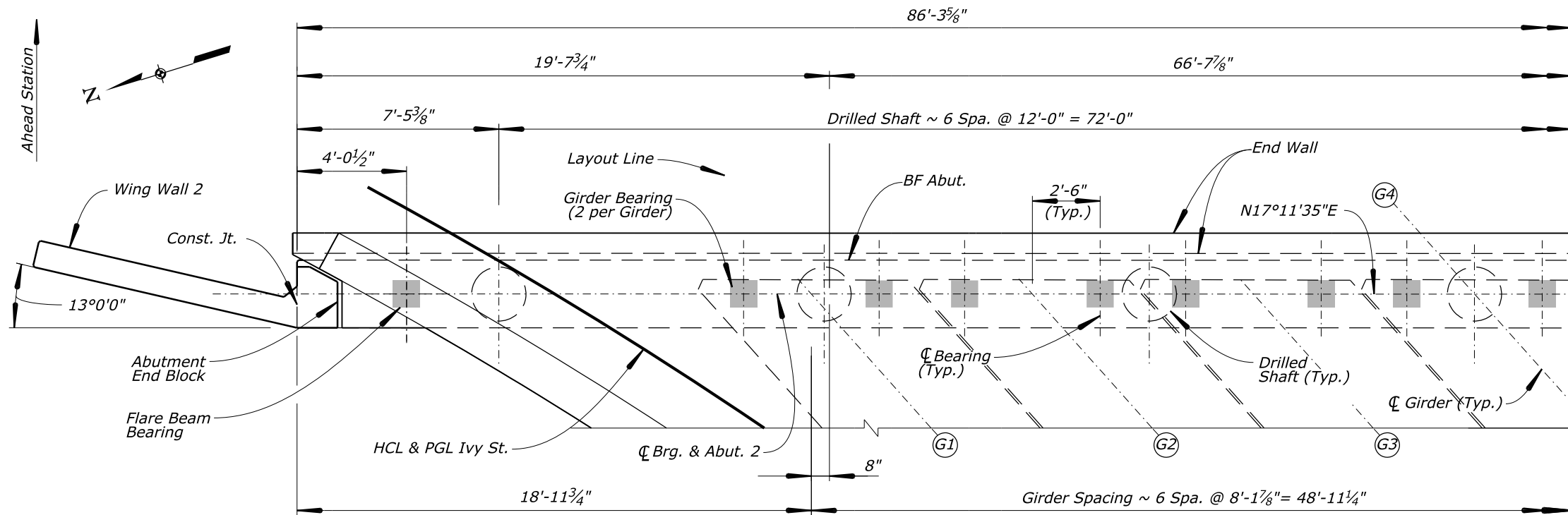
U.S. DEPARTMENT OF TRANSPORTATION
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 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

 IVY STREET (US34) BRIDGE
 OVER BIG THOMPSON RIVER
 CITY OF ESTES PARK
 LARIMER COUNTY, COLORADO

WING WALL 1 DETAILS

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Steve Haynes	Oscar Avila	Gary Maji	1"=4'	Steve McQuilkin	14 of 41	June 2021	RG3121-N

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Bearing Seat Elevations

Bearing	Elevation
Flare Lt	7526.617
G1-1	7527.117
G1-2	7527.314
G2-1	7527.437
G2-2	7527.630
G3-1	7527.750
G3-2	7527.939
G4-1	7528.056
G4-2	7528.241
G5-1	7528.376
G5-2	7528.536
G6-1	7528.649
G6-2	7528.825
G7-1	7528.936
G7-2	7529.108
Flare Rt	7529.591

Notes:

- Bearing elevations shown are taken at ϕ Bearing at top of concrete.
- See sheet S-33 for bearing device and girder stop details.

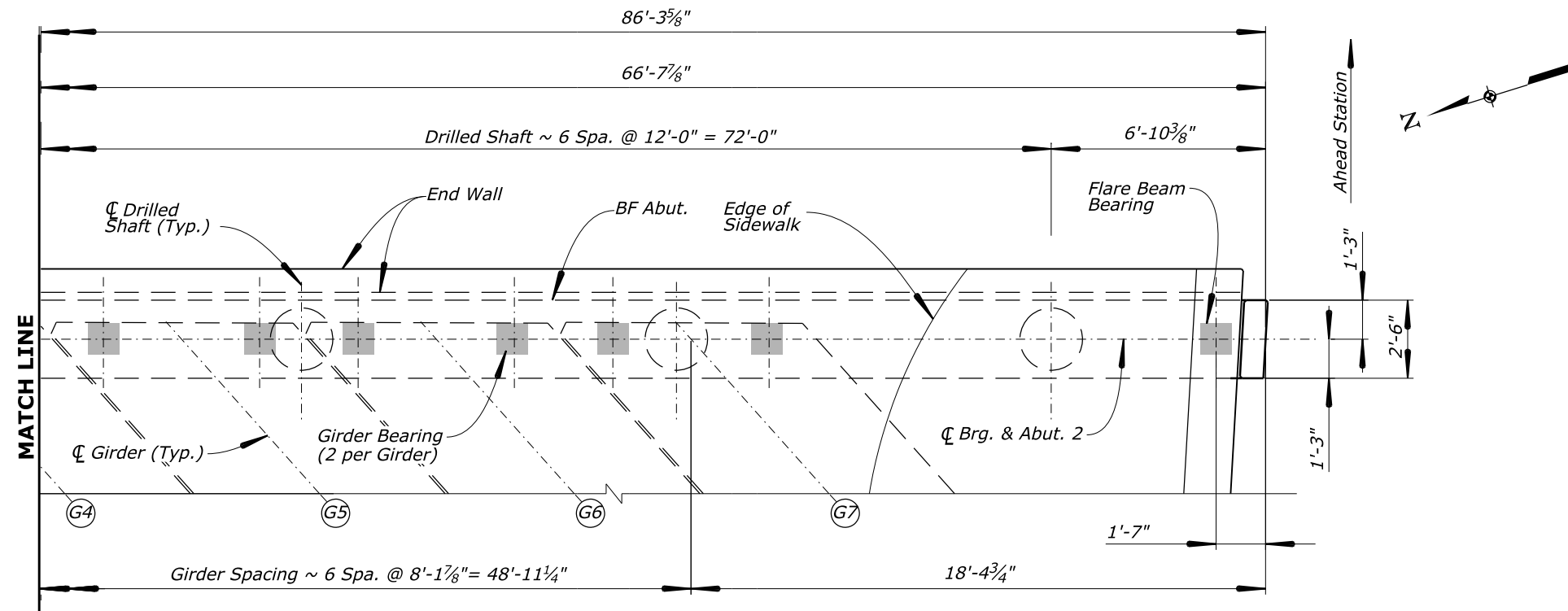
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 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

 IVY STREET (US34) BRIDGE
 OVER BIG THOMPSON RIVER
 CITY OF ESTES PARK
 LARIMER COUNTY, COLORADO

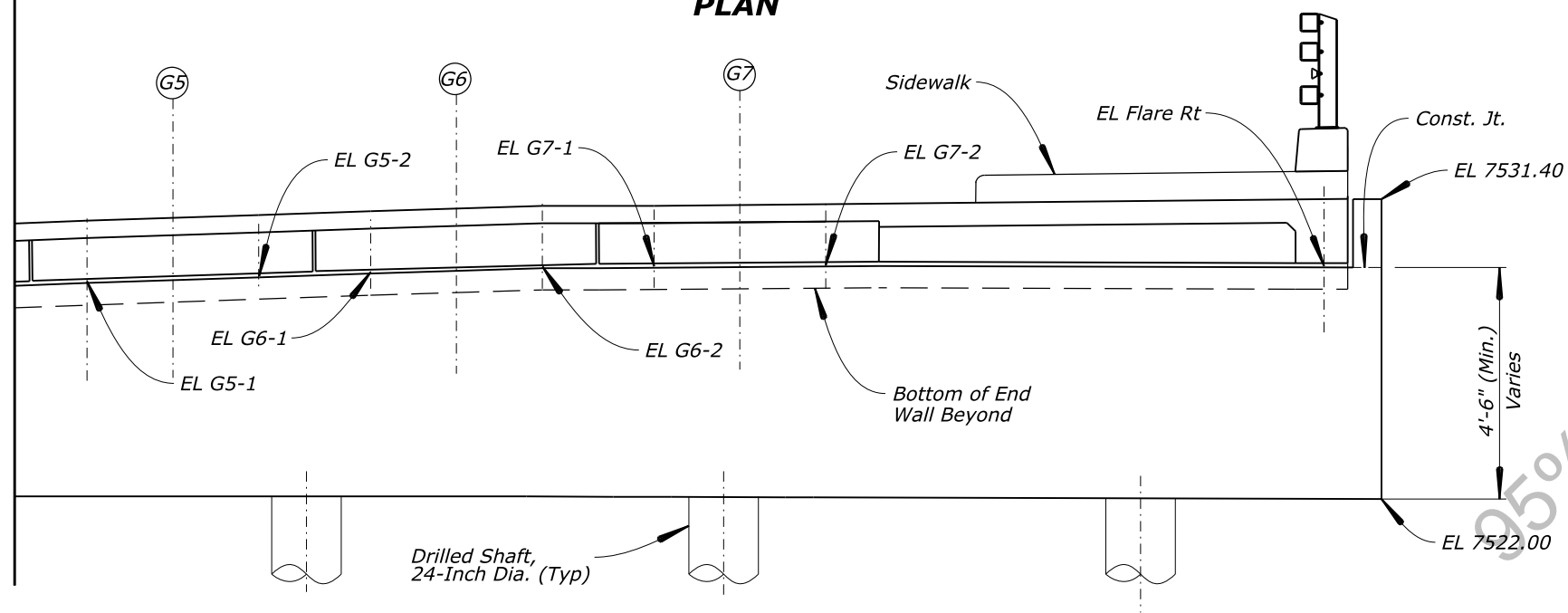
ABUTMENT 2
PLAN & ELEVATION (1 OF 2)

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Steve Haynes	Oscar Avila	Gary Maji	1"=5'	Steve McQuilkin	15 of 41	June 2021	RG3121-O

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP36(1) Downtown Estes Park Loop	S-16



PLAN



ELEVATION

95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

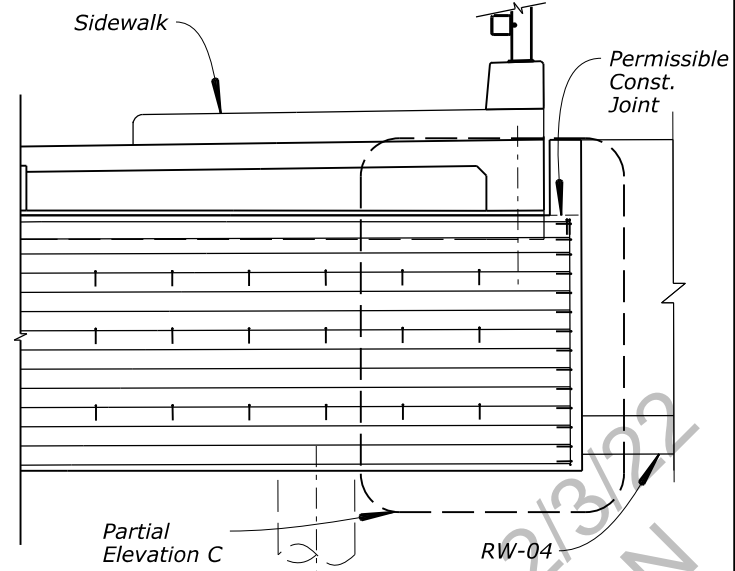
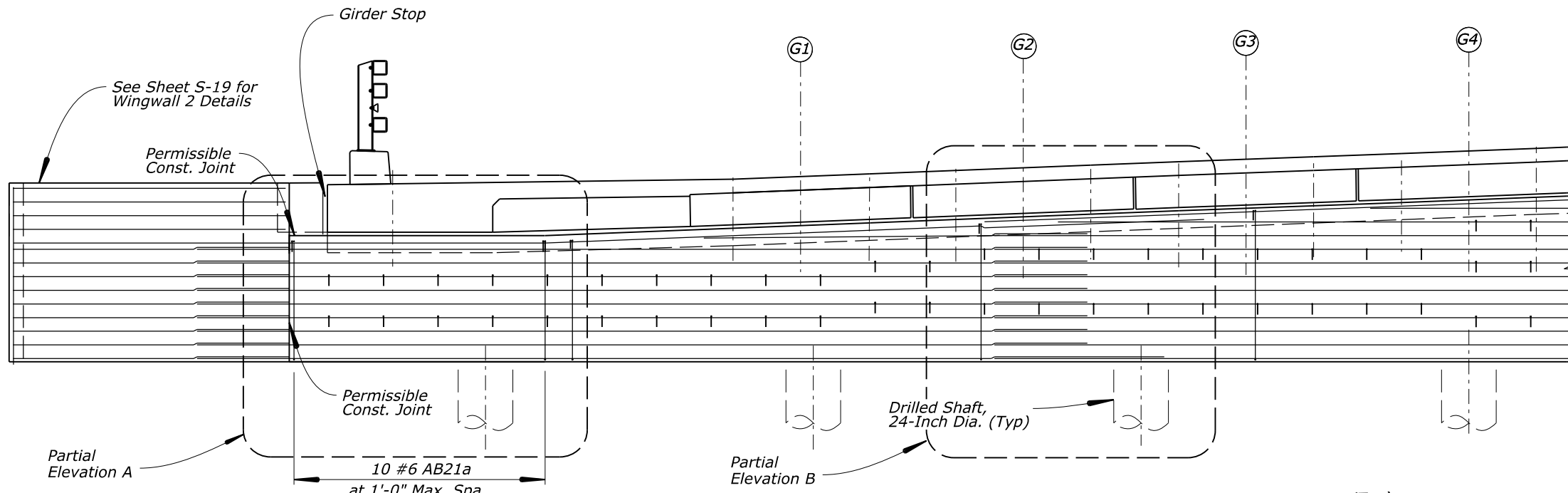
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

IVY STREET (US34) BRIDGE
OVER BIG THOMPSON RIVER
CITY OF ESTES PARK
LARIMER COUNTY, COLORADO

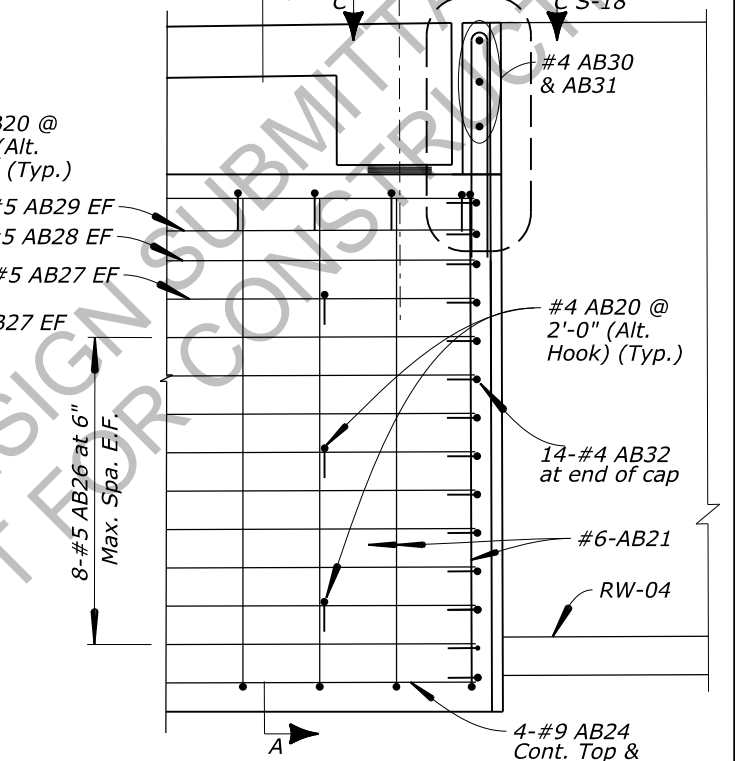
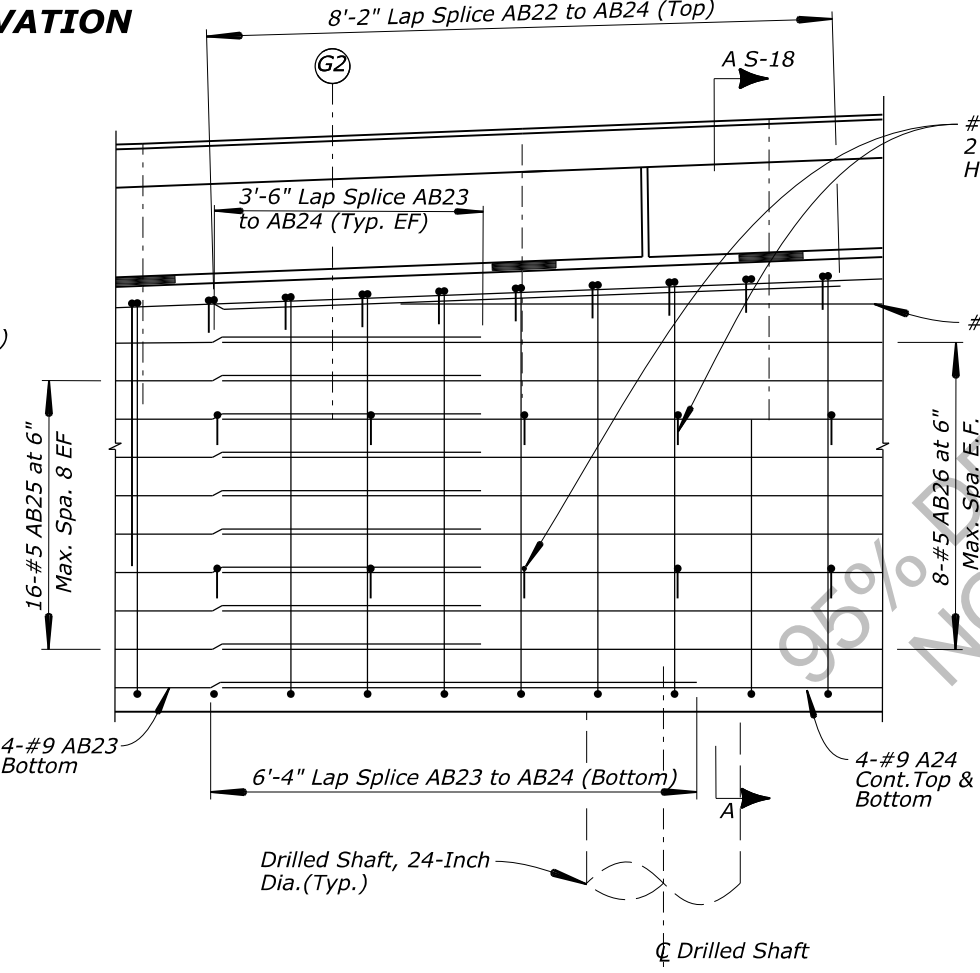
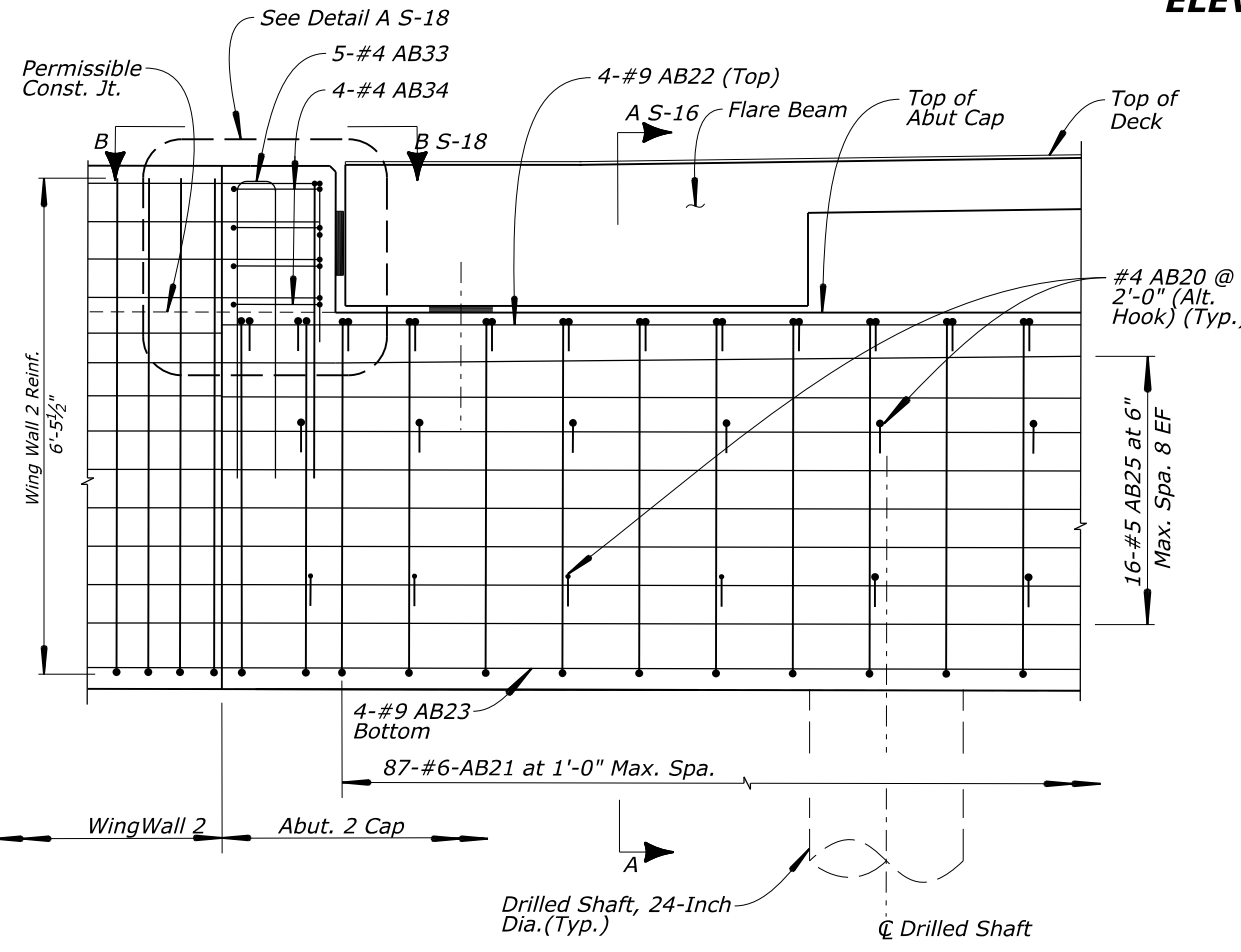
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PLAN & ELEVATION (2 OF 2)

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								Steve Haynes	Oscar Avila	Gary Maji	1"=5'	Steve McQuilkin	16 of 41	June 2021	RG3121-P



ELEVATION



PARTIAL ELEVATION A

PARTIAL ELEVATION B

PARTIAL ELEVATION C

Notes:
1. See sheet S-38 for RW-04 details.

U.S. DEPARTMENT OF TRANSPORTATION
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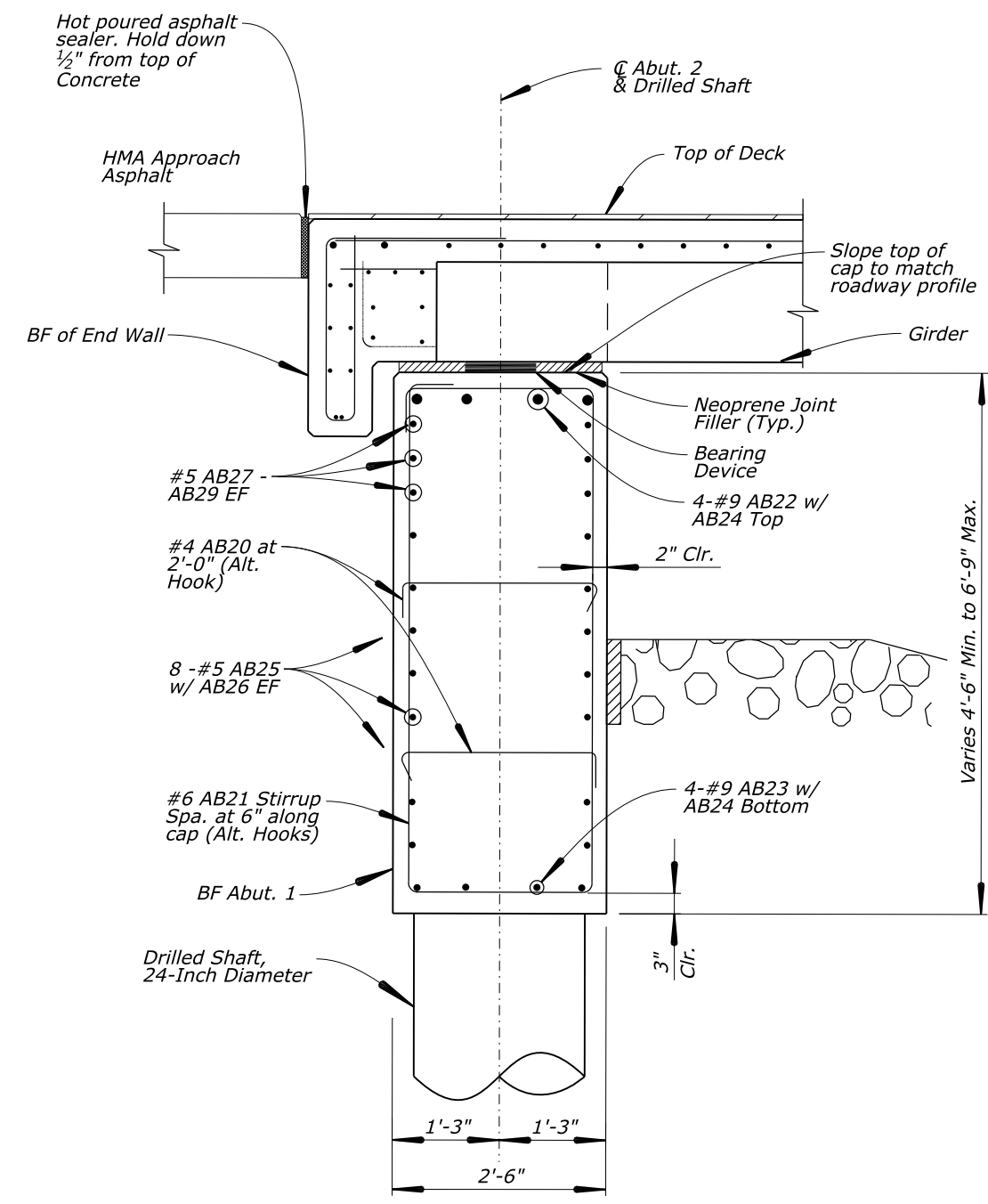
IVY STREET (US34) BRIDGE
OVER BIG THOMPSON RIVER
CITY OF ESTES PARK
LARIMER COUNTY, COLORADO

**ABUTMENT 2
DETAILS (1 OF 2)**

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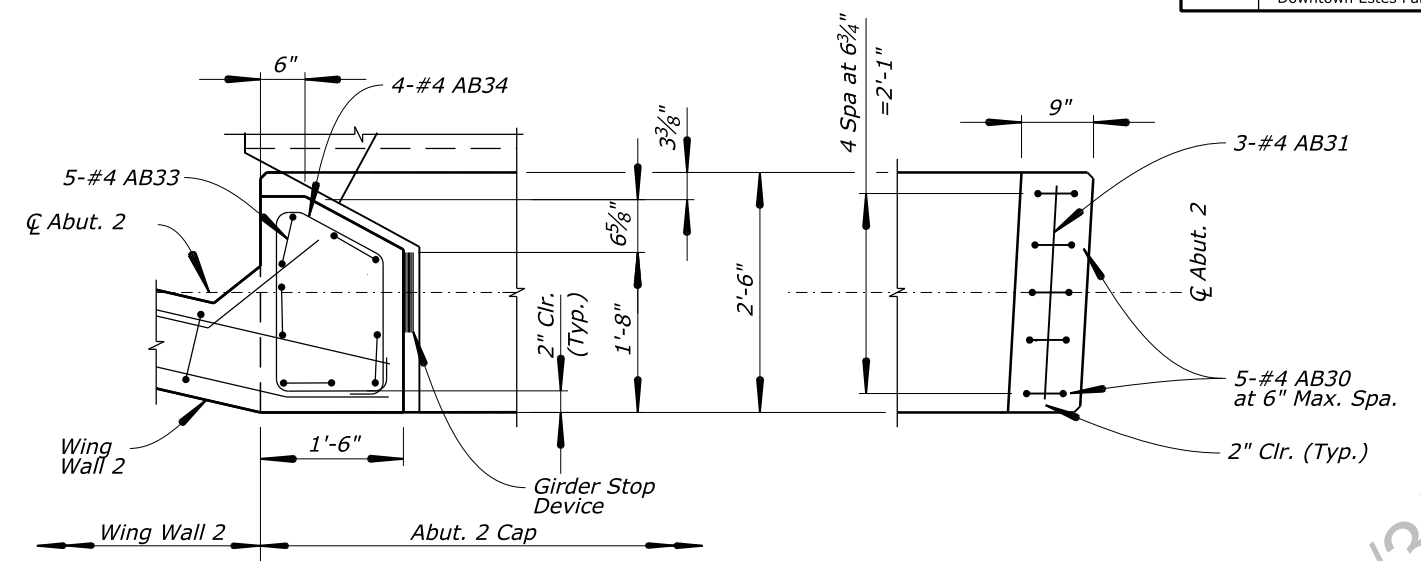
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SECTION A-A (S-17)

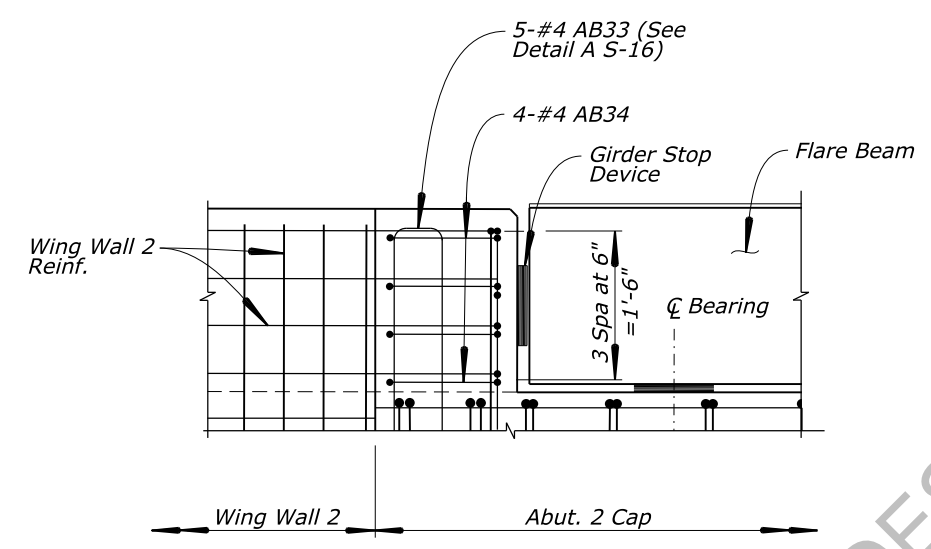
NOTES:

1. Apply 3/4" Chamfer or tooled edge at all corners where indicated.

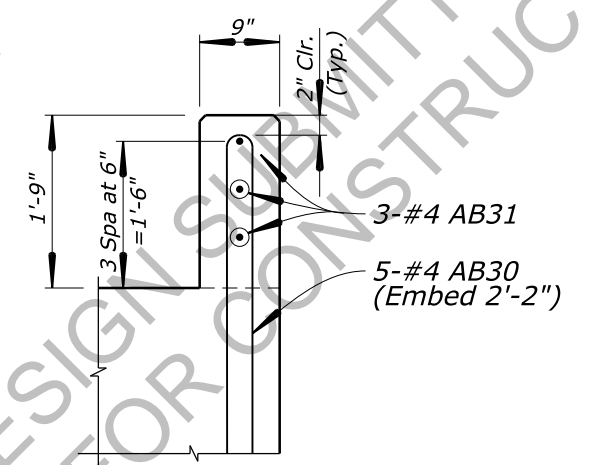


SECTION B-B (S-17)

SECTION C-C (S-17)



DETAIL A (S-17)



DETAIL B (S-17)
(Flare Beam Not Shown)

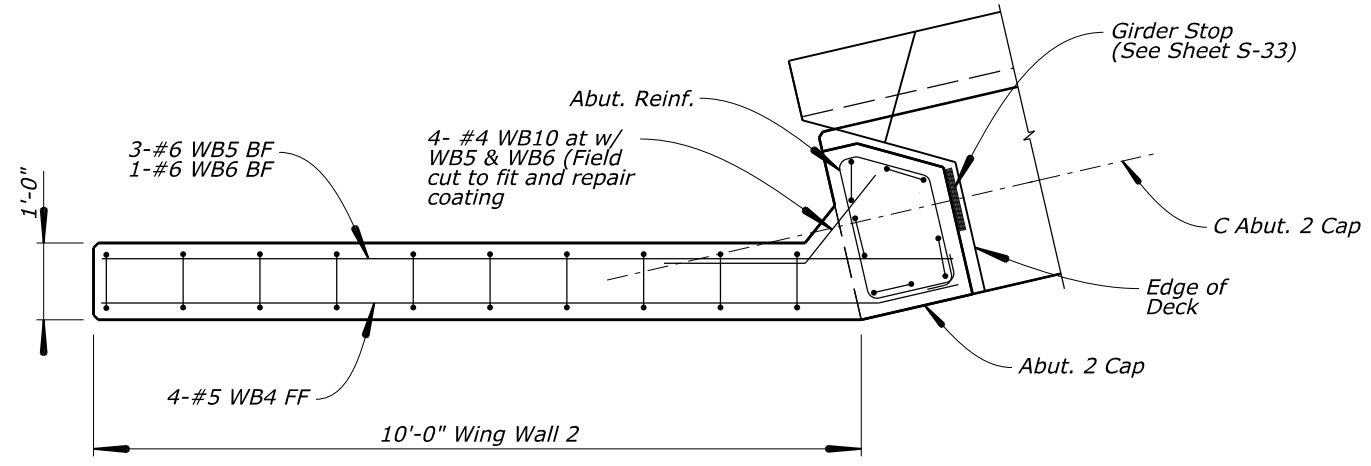
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 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

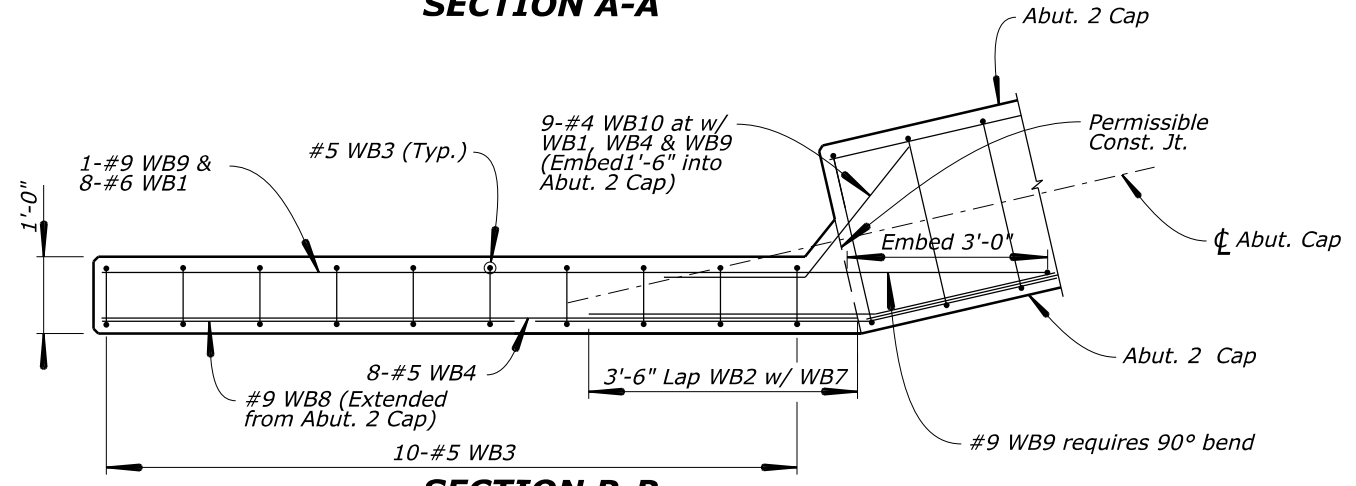
 IVY STREET (US34) BRIDGE
 OVER BIG THOMPSON RIVER
 CITY OF ESTES PARK
 LARIMER COUNTY, COLORADO

**ABUTMENT 2
 DETAILS (2 OF 2)**

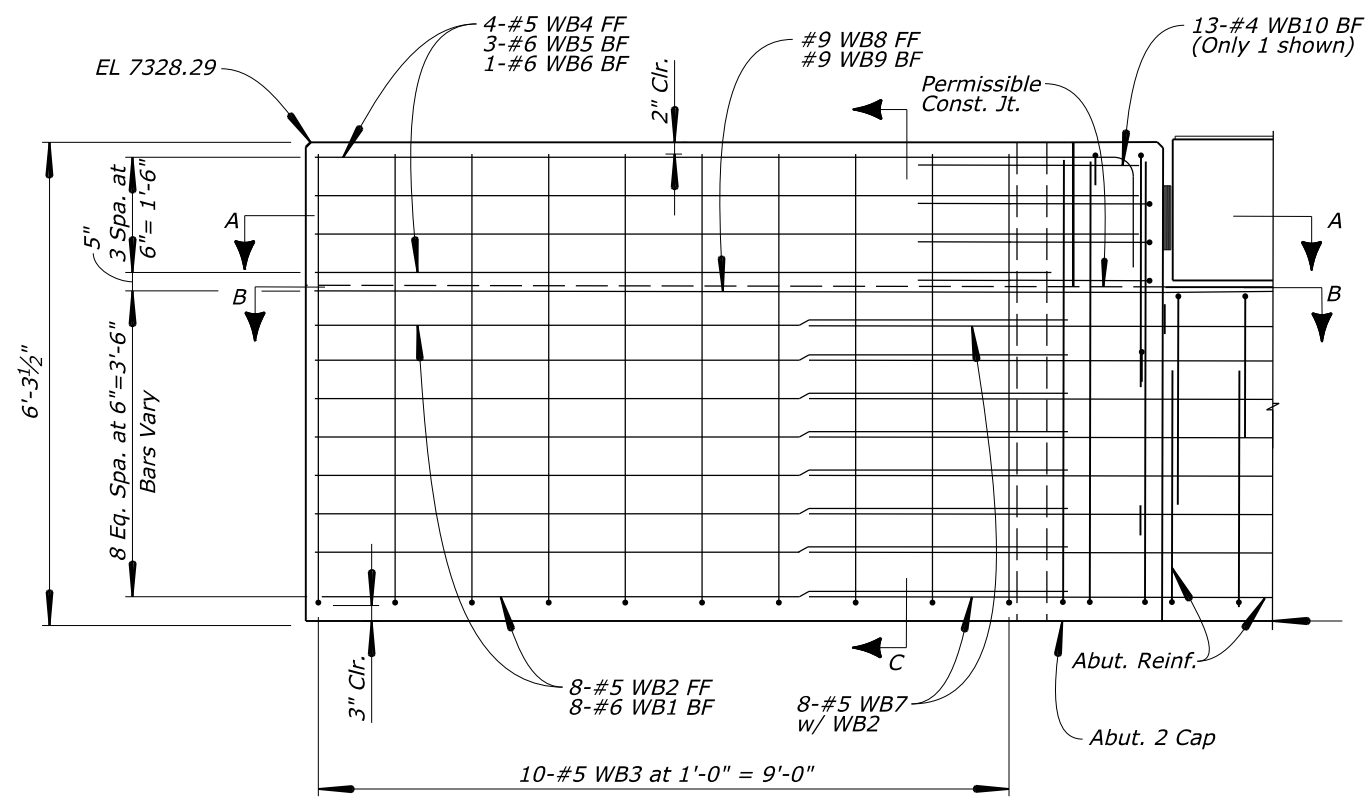
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								Steve Haynes	Oscar Avila	Gary Maji	Not to Scale	Steve McQuilkin	18 of 41	June 2021	RG3121-R



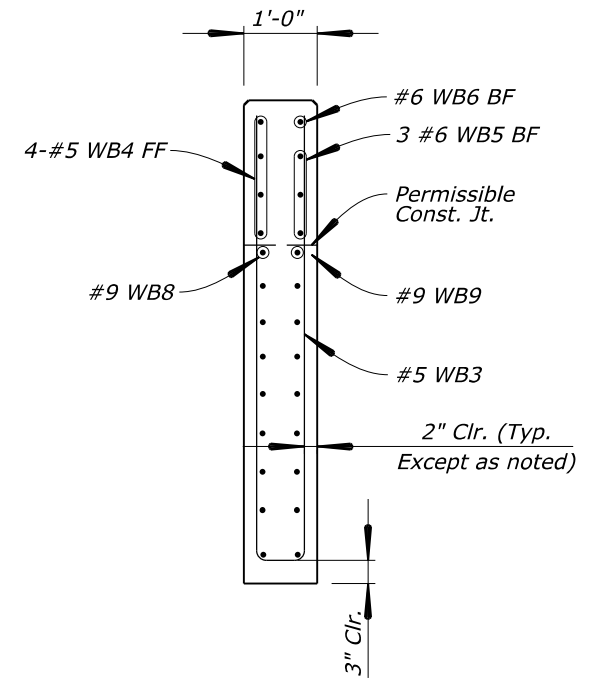
SECTION A-A



SECTION B-B



WING WALL 2 ELEVATION



SECTION C-C

NOTES:

1. Apply 3/4" Chamfer or tooled joint at all corners where indicated.

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NOT FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

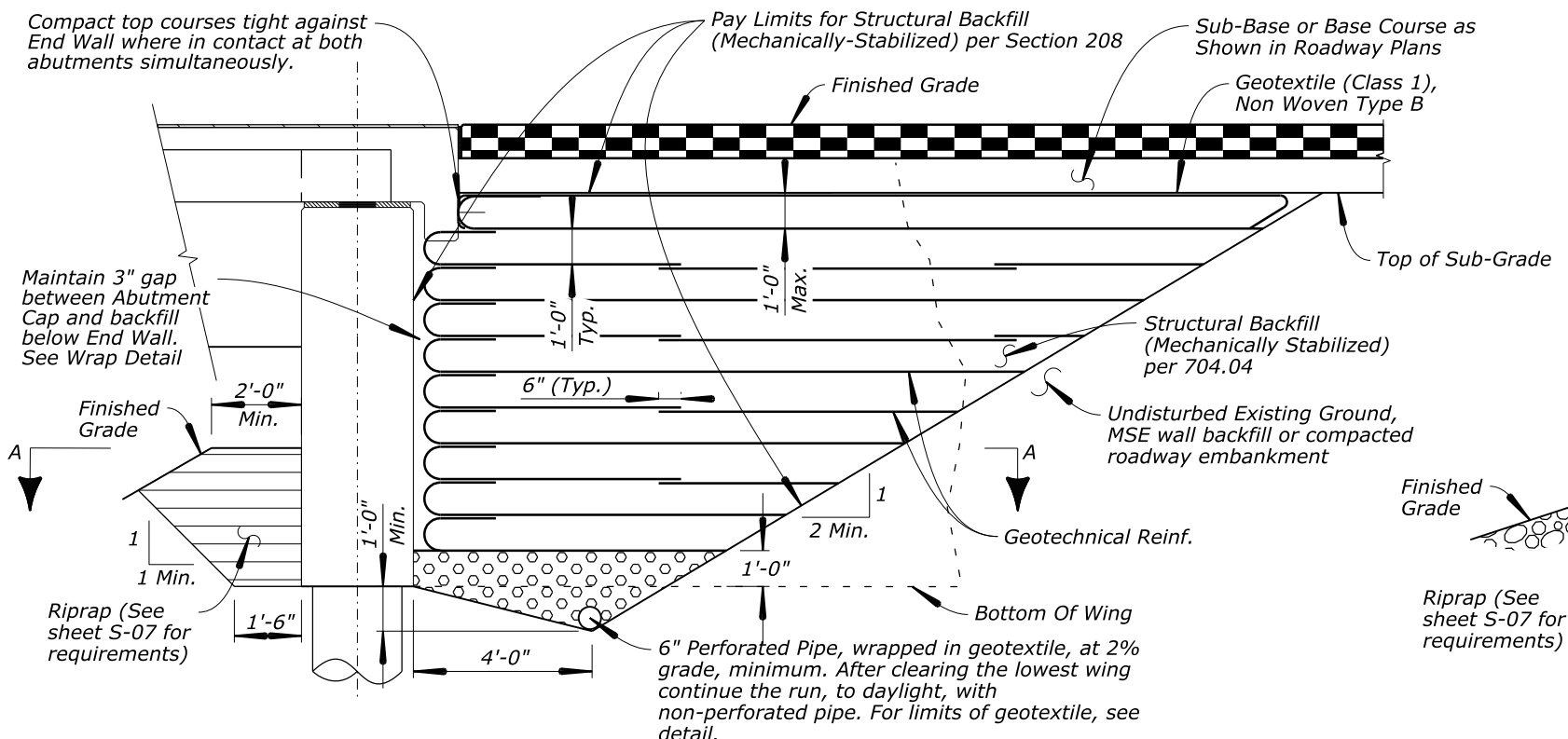
IVY STREET (US34) BRIDGE
OVER BIG THOMPSON RIVER
CITY OF ESTES PARK
LARIMER COUNTY, COLORADO

**WING WALL 2
DETAILS**

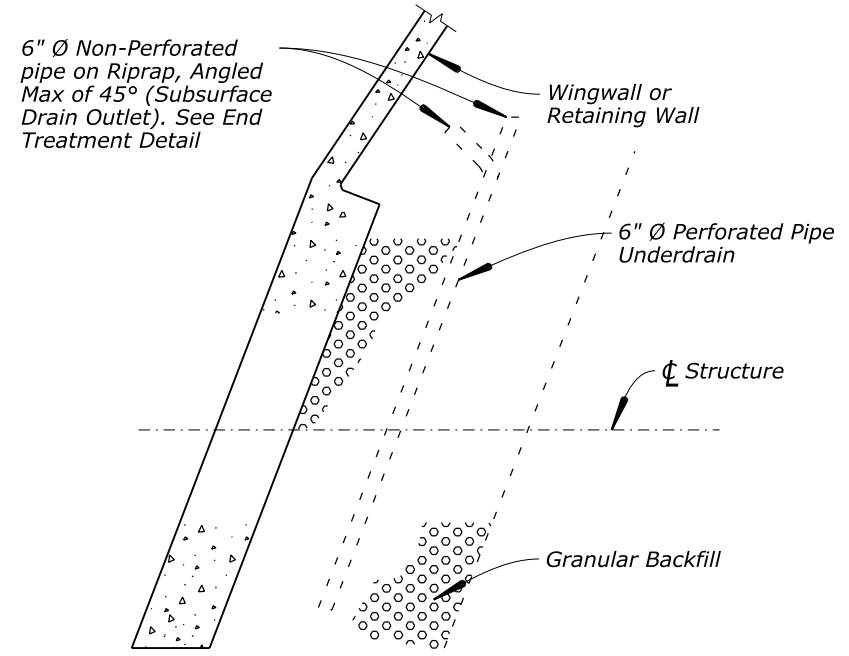
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NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Steve Haynes	Oscar Avila	Gary Maji		Steve McQuilkin	19 of 41	June 2021	RG3121-S

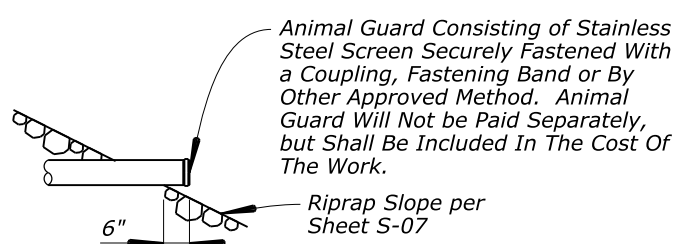
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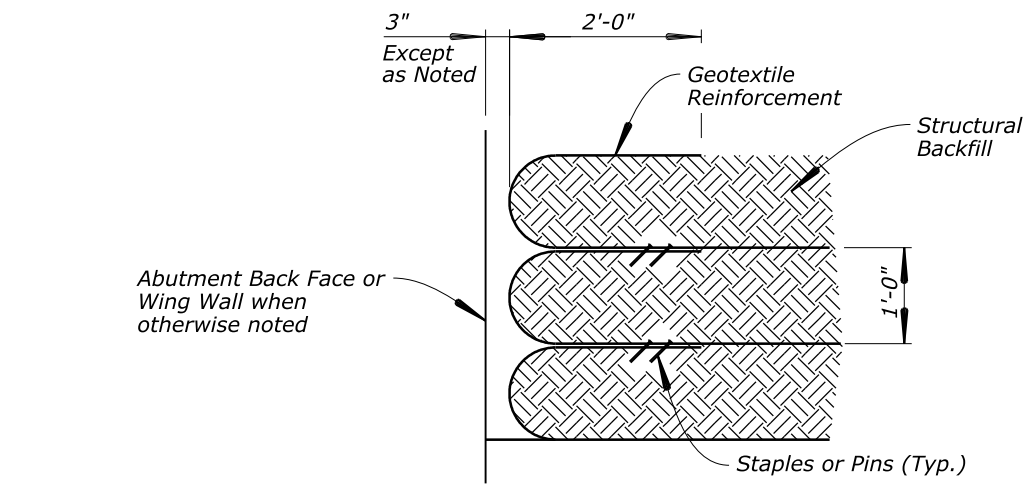
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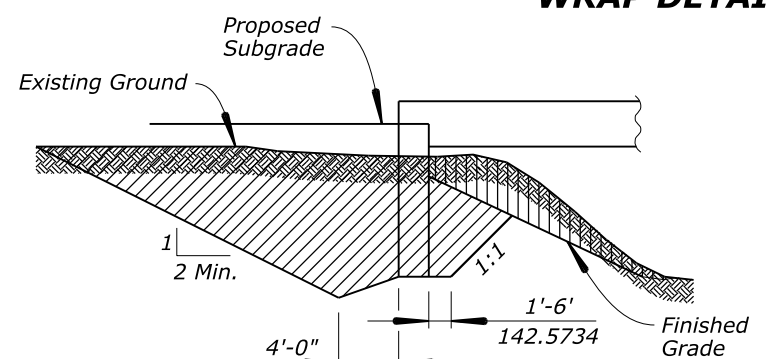
SECTION A



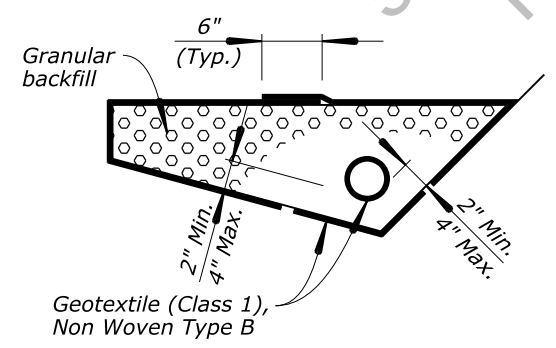
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WRAP DETAIL

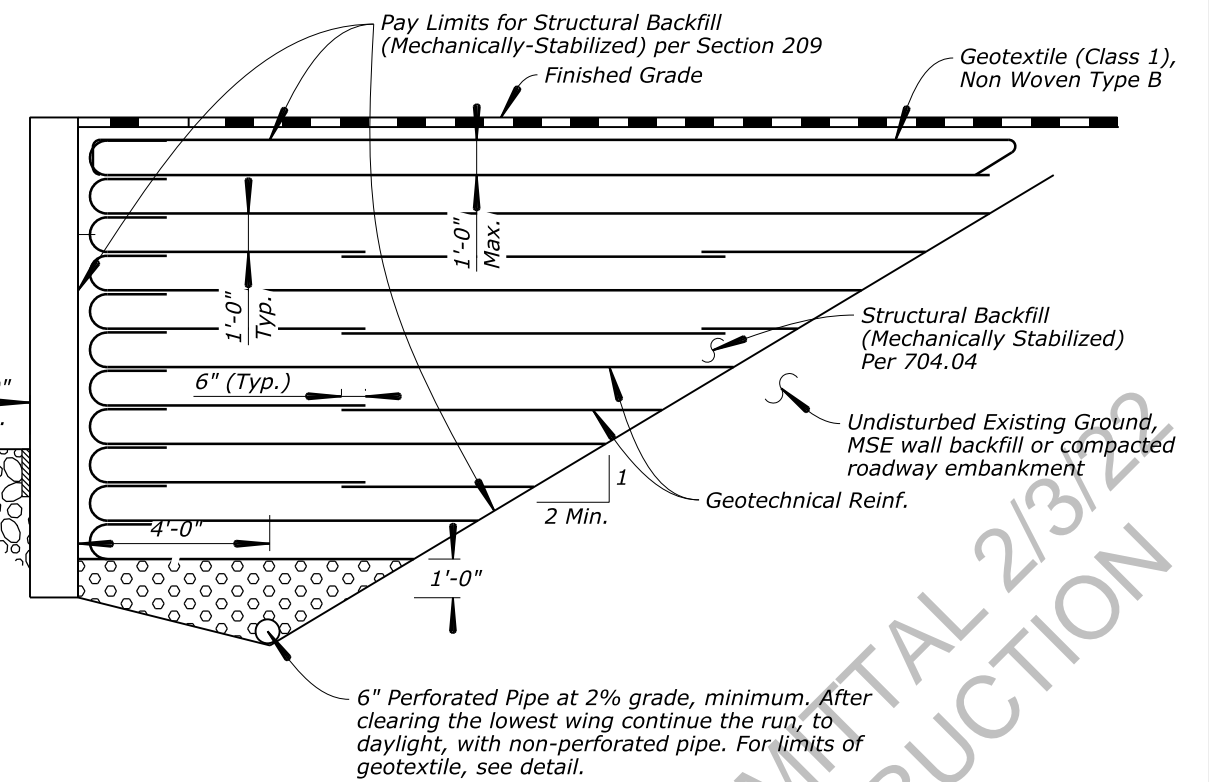


EXCAVATION DETAIL



6 INCH PERFORATED DRAIN PIPE UNDERDRAIN DETAIL

6 Inch Perforated Pipe Underdrain includes all Filter Material (Class B) and Geotextile (Drainage) (Class 1) surrounding the Filter Material (Class B) and 6 Inch Perforated Drain Pipe.



SECTION PERPENDICULAR TO WING WALL

- NOTES:**
- Geotextile Reinforcement shall be woven fabric with a Minimum Average Roll Value of 2400 lb/ft based on ASTM D4595.
 - Geotextile Reinforcement shall be placed by alternating Machine Direction (MD) with Cross Machine Direction (XD) from layer to layer.
 - The Geotextile Reinforcement wrap at Back Face of Abutment shall be pulled back slack free with its end anchored to soil underneath with staples or pins.
 - Minimum splice of all Geofabric shall consist of 6" of overlap.
 - Payment for all work items shown will be made under item 208 Mechanical Reinforcement of Soil (CY) and item 208 Structure Backfill (CY) and shall include the cost for 6 Inch Perforated Pipe Underdrain and Subsurface Drain Outlet (6" diameter Non-Perforated Pipe).
 - Installation of Pipe Underdrain and Subsurface Drain Outlet shall conform to the Construction requirements of the project specifications.

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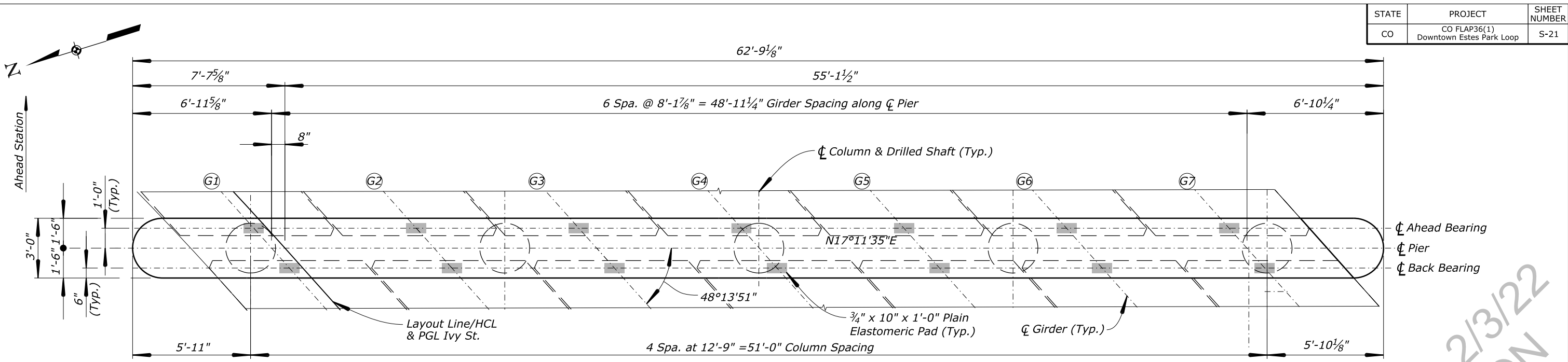
**IVY STREET (US34) BRIDGE
 OVER BIG THOMPSON RIVER
 CITY OF ESTES PARK
 LARIMER COUNTY, COLORADO**

EXCAVATION AND BACKFILL

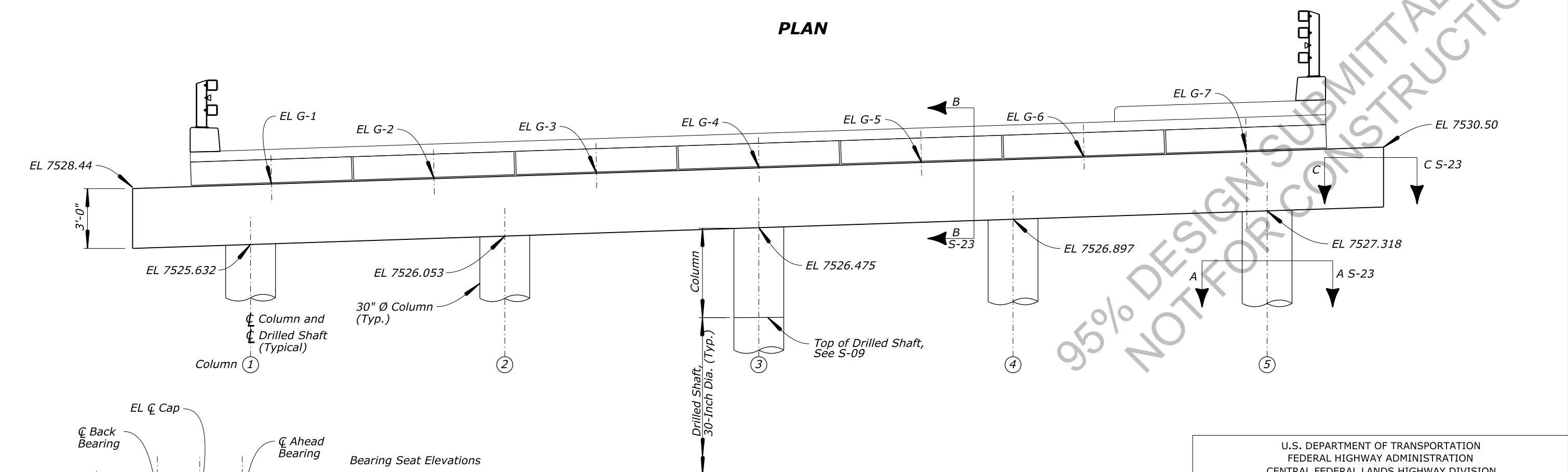
BRIDGE DRAWING	DATE	DRAWING NO.
20 of 41	June 2021	RG3121- T

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Steve Haynes	Oscar Avila	Gary Maji	Not To Scale	Steve McQuilkin	20 of 41	June 2021	RG3121- T

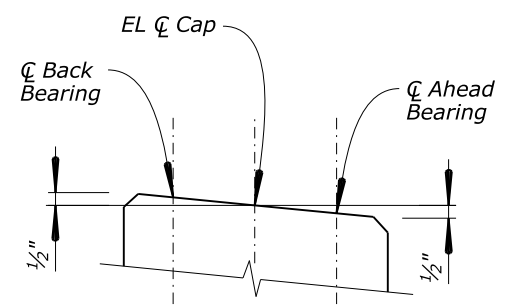
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PLAN



ELEVATION



Bearing Seat Elevations

Location	EL \bar{C} Cap
G-1	7528.679
G-2	7528.991
G-3	7529.303
G-4	7529.600
G-5	7529.873
G-6	7530.123
G-7	7530.358

PIER CAP BEARING SEATS
 \bar{C} of Back Bearing and Ahead Bearing are based on a line parallel to \bar{C} Girder

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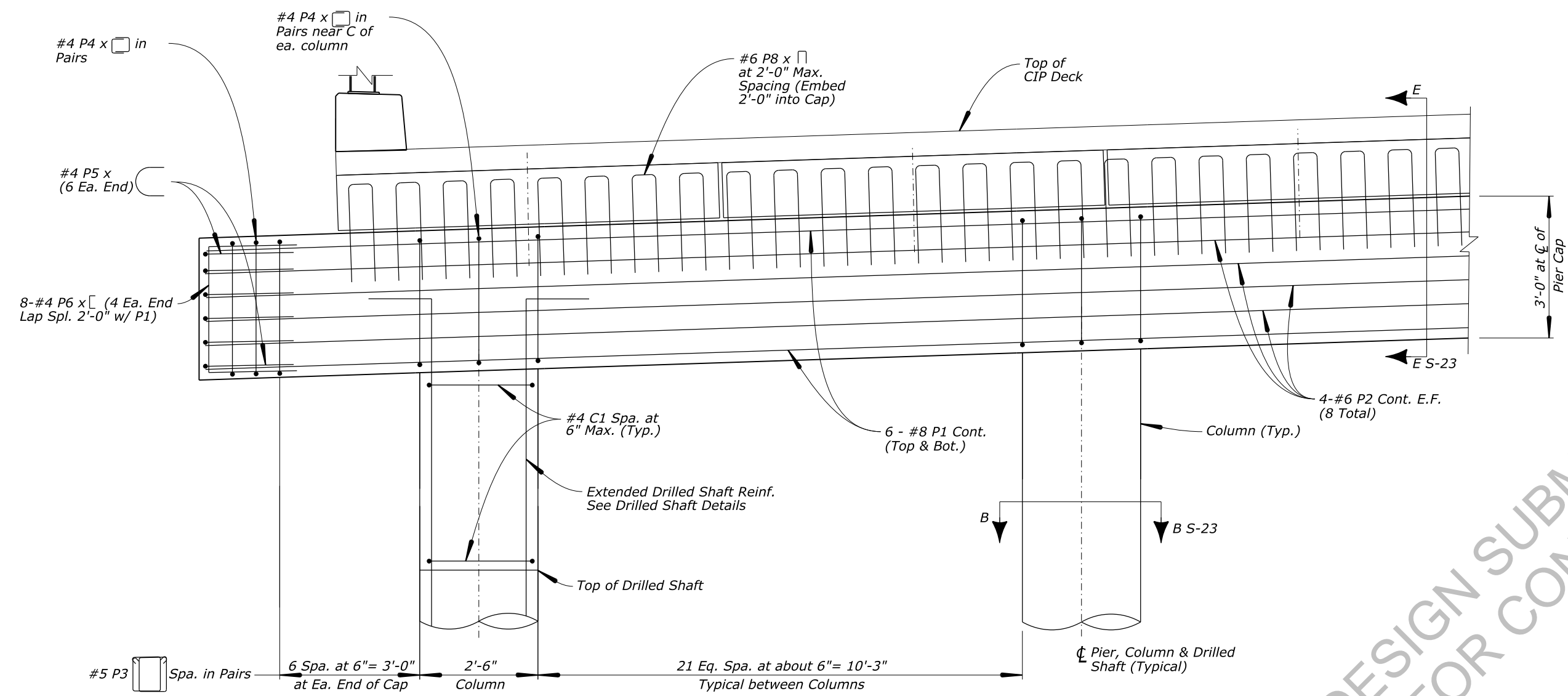
 IVY STREET (US34) BRIDGE
 OVER BIG THOMPSON RIVER
 CITY OF ESTES PARK
 LARIMER COUNTY, COLORADO

PIER 1 PLAN & ELEVATION

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Steve Haynes	Oscar Avila	Gary Maji	1"=5'	Steve McQuilkin	21 of 41	June 2021	RG3121-U

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP36(1) Downtown Estes Park Loop	S-22

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PARTIAL ELEVATION

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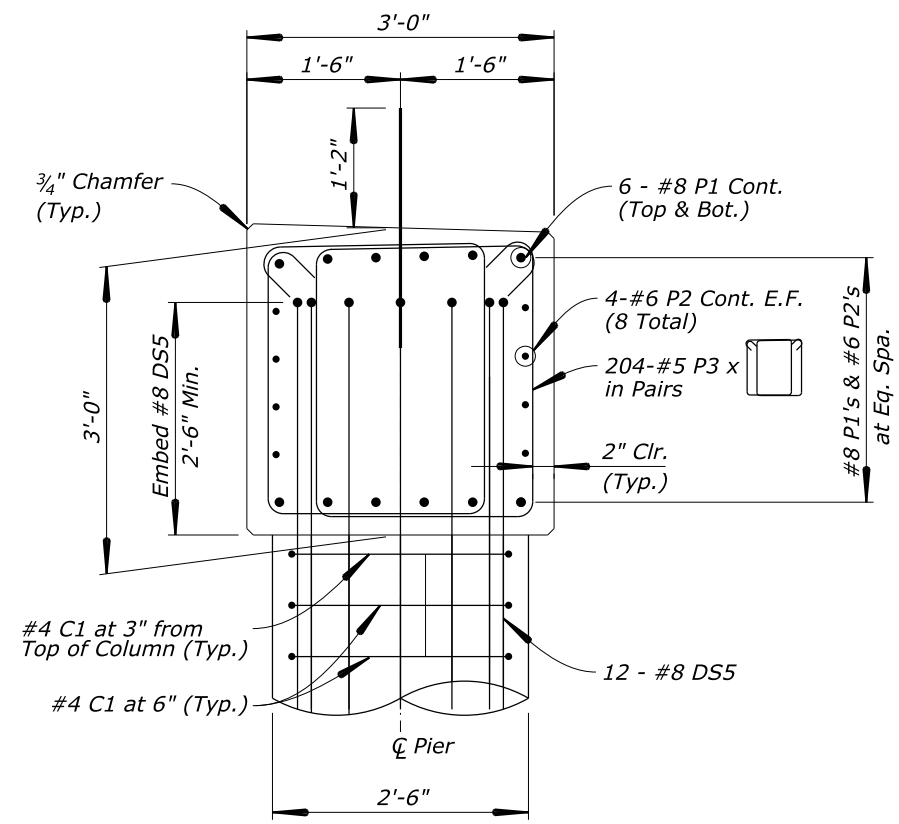
U.S. DEPARTMENT OF TRANSPORTATION
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IVY STREET (US34) BRIDGE
OVER BIG THOMPSON RIVER
CITY OF ESTES PARK
LARIMER COUNTY, COLORADO

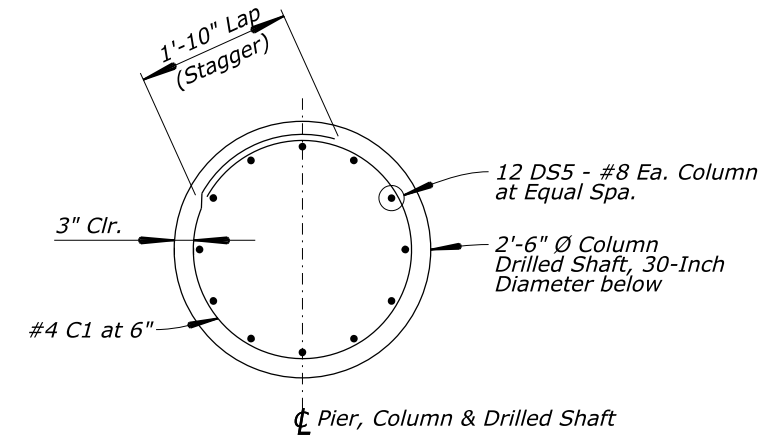
**PIER 1 DETAILS
(1 OF 2)**

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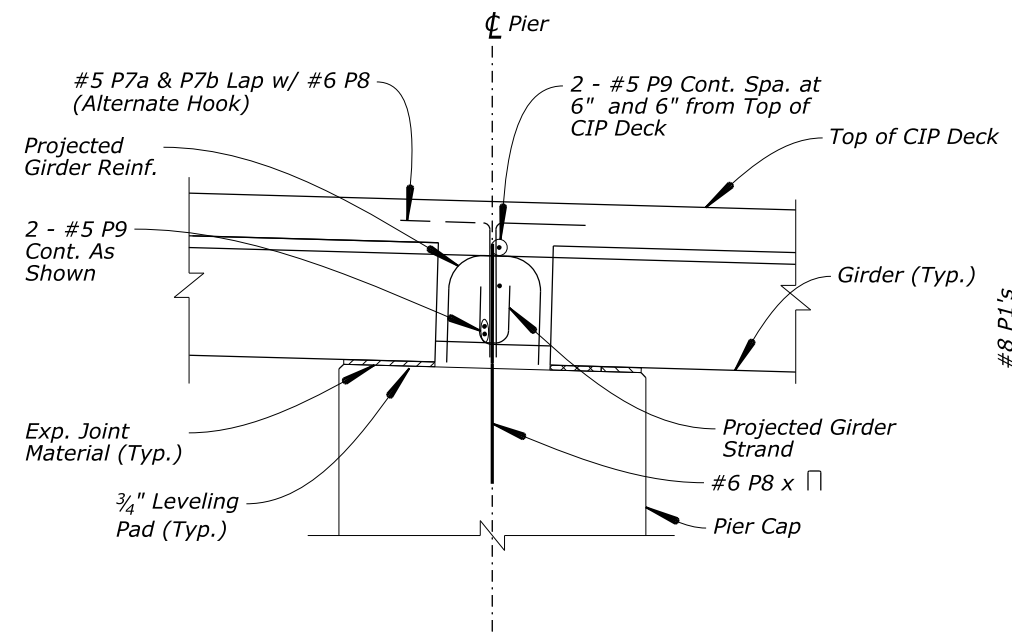
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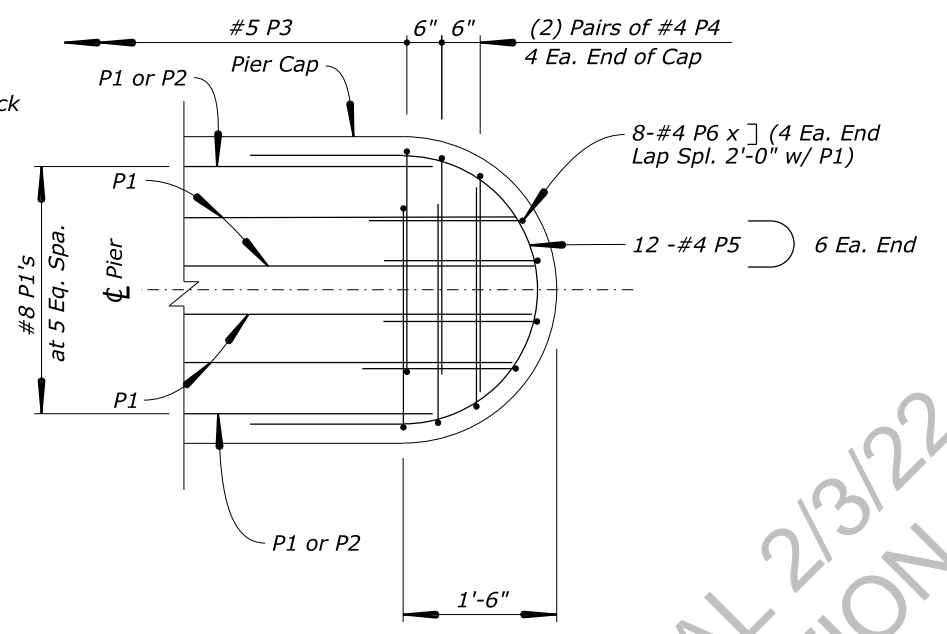
SECTION A-A (S-21)



SECTION B-B (S-21)



SECTION E-E (S-22)



SECTION C-C (S-21)

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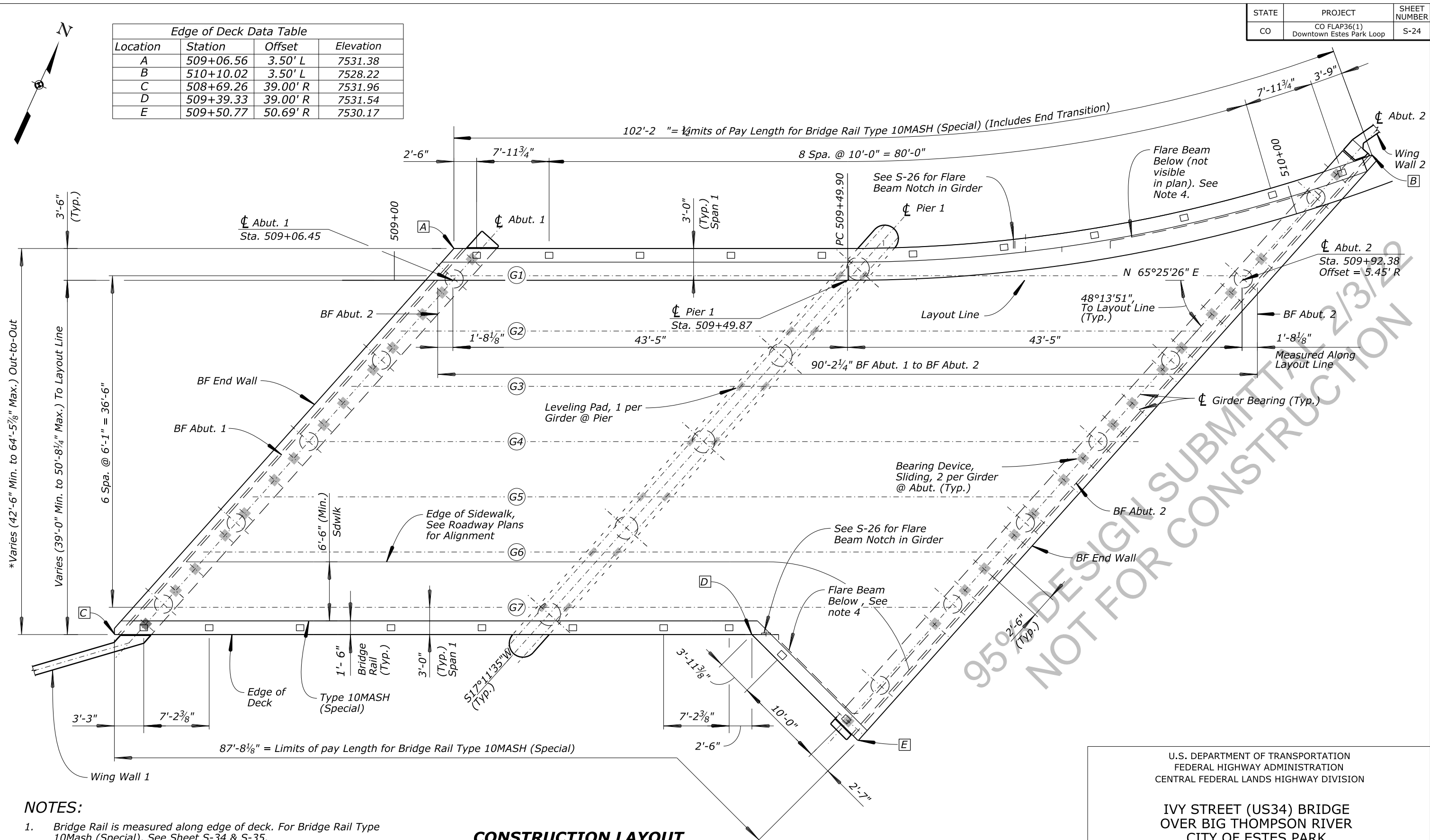
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 IVY STREET (US34) BRIDGE
 OVER BIG THOMPSON RIVER
 CITY OF ESTES PARK
 LARIMER COUNTY, COLORADO

PIER 1 DETAILS
(2 OF 2)

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Steve Haynes	Oscar Avila	Gary Maji	Not To Scale	Steve McQuilkin	23 of 41	June 2021	RG3121-W

Location	Station	Offset	Elevation
A	509+06.56	3.50' L	7531.38
B	510+10.02	3.50' L	7528.22
C	508+69.26	39.00' R	7531.96
D	509+39.33	39.00' R	7531.54
E	509+50.77	50.69' R	7530.17



- NOTES:**
1. Bridge Rail is measured along edge of deck. For Bridge Rail Type 10Mash (Special), See Sheet S-34 & S-35.
 2. Layout Line is defined by a tangent from PC Station 507+99.44.
 3. For wingwall details see sheet S-19.
 4. See Superstructure Detail sheets.

CONSTRUCTION LAYOUT
* Normal to Layout Line

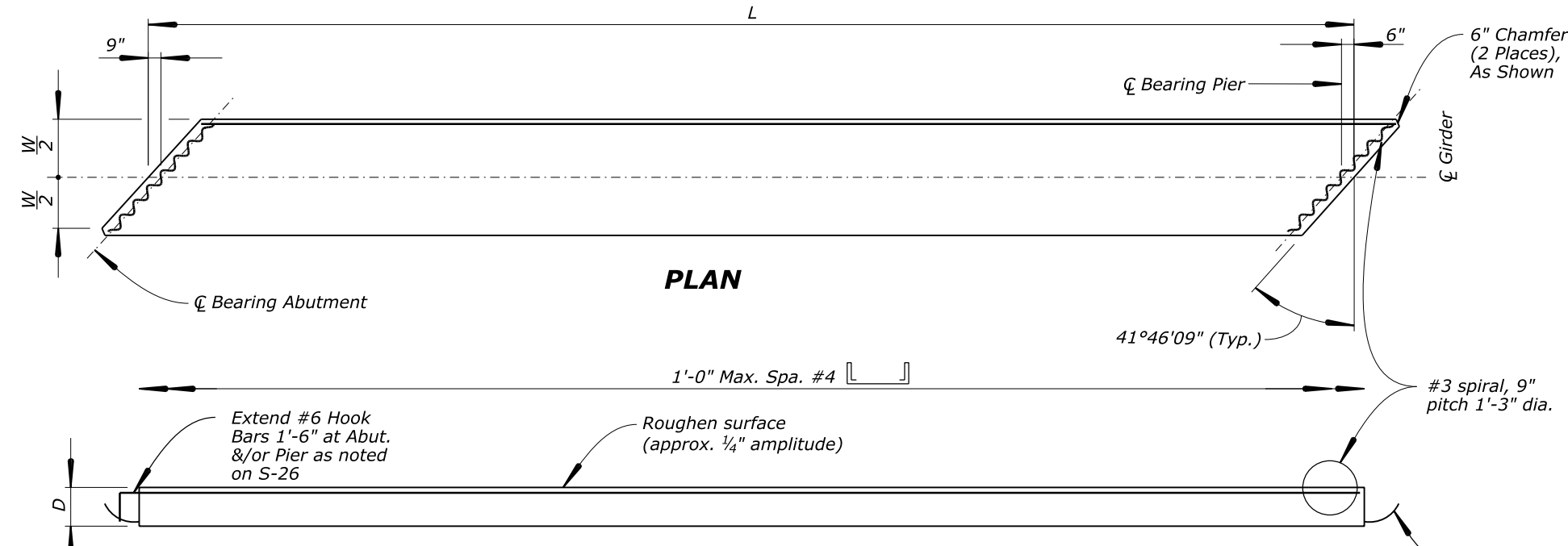
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IVY STREET (US34) BRIDGE
OVER BIG THOMPSON RIVER
CITY OF ESTES PARK
LARIMER COUNTY, COLORADO

CONSTRUCTION LAYOUT

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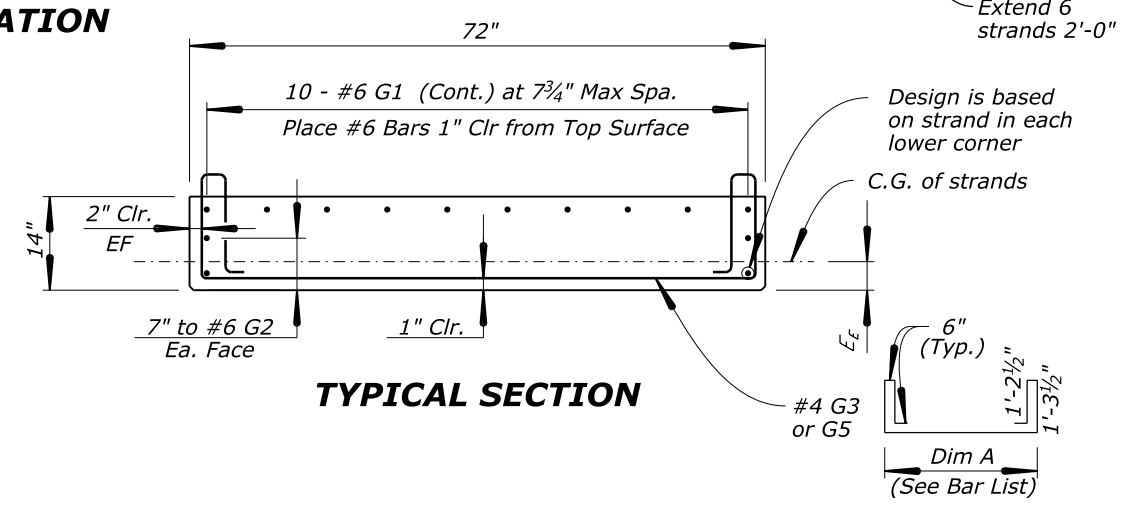


NOTES:
 All work necessary to fabricate and install the integral parts of the girder (including the leveling pads), as shown on the plans, shall be included in the bid price for Item No. 55302, Precast, Prestressed Concrete Slab, with a pay unit of LNFT.
 When approved by the Engineer a minimum of tack welding will be permitted on ASTM A706 uncoated reinforcing steel.

Reinforcing projecting from the top of the girder and reinforcing within eight feet of an expansion device in the bridge deck shall be epoxy coated. Damaged coating on girder reinforcing need not be repaired. The minimum cover for reinforcing steel is 1".
 Welded wire fabric may be used with D20 wires in lieu of the #4 bars shown.
 At girder ends embedded in concrete diaphragms, cut strands to project 3", except as shown. Do not make cosmetic repairs (damage less than 1 1/2" deep) to the parts of the girders embedded in concrete.

Use low relaxation strands meeting the requirements of ASTM A416 Grade 270. The minimum clear distance between groups or individual strands shall be 2.3(d_s) but not less than 1 1/4". The minimum cover for prestressing steel is 1 1/2".

- A_s* = minimum area of the prestressing steel.
- d_s = nominal strand diameter.
- f_s = ultimate strength of prestressing steel.
- F_j = jacking force per girder.
- F_f = final force per girder after all losses.
- f_{ci} = required concrete strength at release of prestress force.
- f_c = required concrete strength at 28 days of age.
- L = length of girder along the grade of the girder.
- Δ = deflection at centerline of span due to cast-in-place slab, overlay, curbs, rails, and walks.



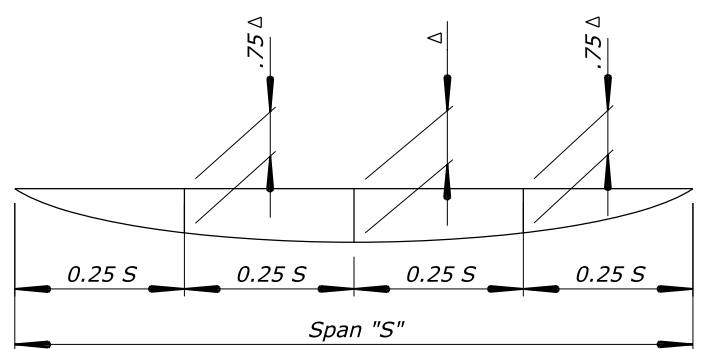
Concrete shall be Class P (AE).
 Use 1/2" chamfer on all corners, except as noted.

Predicted camber is the camber for the girder alone at 90 days. The Contractor shall limit the camber growth to a value not to exceed the predicted camber plus 1" prior to the deck pour by weighting, scheduling fabrication, post tensioning, or other means and must report to the Engineer values of camber which exceed the predicted camber plus 1". Remedial measures, as approved by the Engineer, shall be taken if the predicted camber plus 1" is exceeded. The approved remedial measures shall be free of any adverse impact. The costs associated with all remedial measures shall be borne by the Contractor.

Prior to placing deck reinforcing, the Contractor shall adjust this differential to within this limit by sorting the girders to minimize differentials, or by pulling the high boxes down and low boxes up.
 The depth (D) tolerance shall be +1/2", -1/4"

The Contractor is responsible for determining necessary bracing requirements, and for providing adequate bracing for the specific wind and weather conditions to be encountered for each specific project. adjacent girders shall not differ by more than 1" before the deck pour.

Span No.	Girder No.	L (Ft)	A _s * (Sq. In.)	E _E (In.)	F _j (Kips)	F _f (Kips)	Concrete Strength		Δ (In.)	Predicted Release Camber (In.)	Predicted Camber (In.)
							f _{ci} (psi)	f _c (psi)			
1	All	43.33	7.378	4.60	1494	1325	7.50	9.00	0.33	0.24	0.40
2	All	43.33	7.378	4.60	1494	1325	7.50	9.00	0.35	0.24	0.40



DEAD LOAD DEFLECTION DIAGRAM

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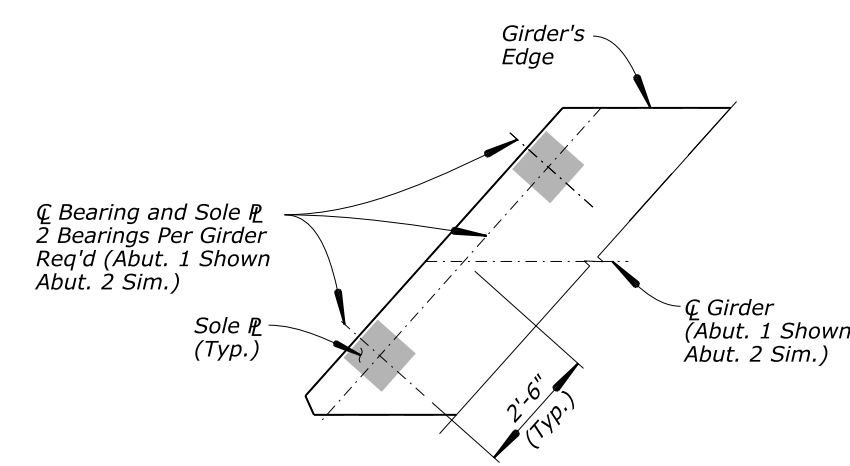
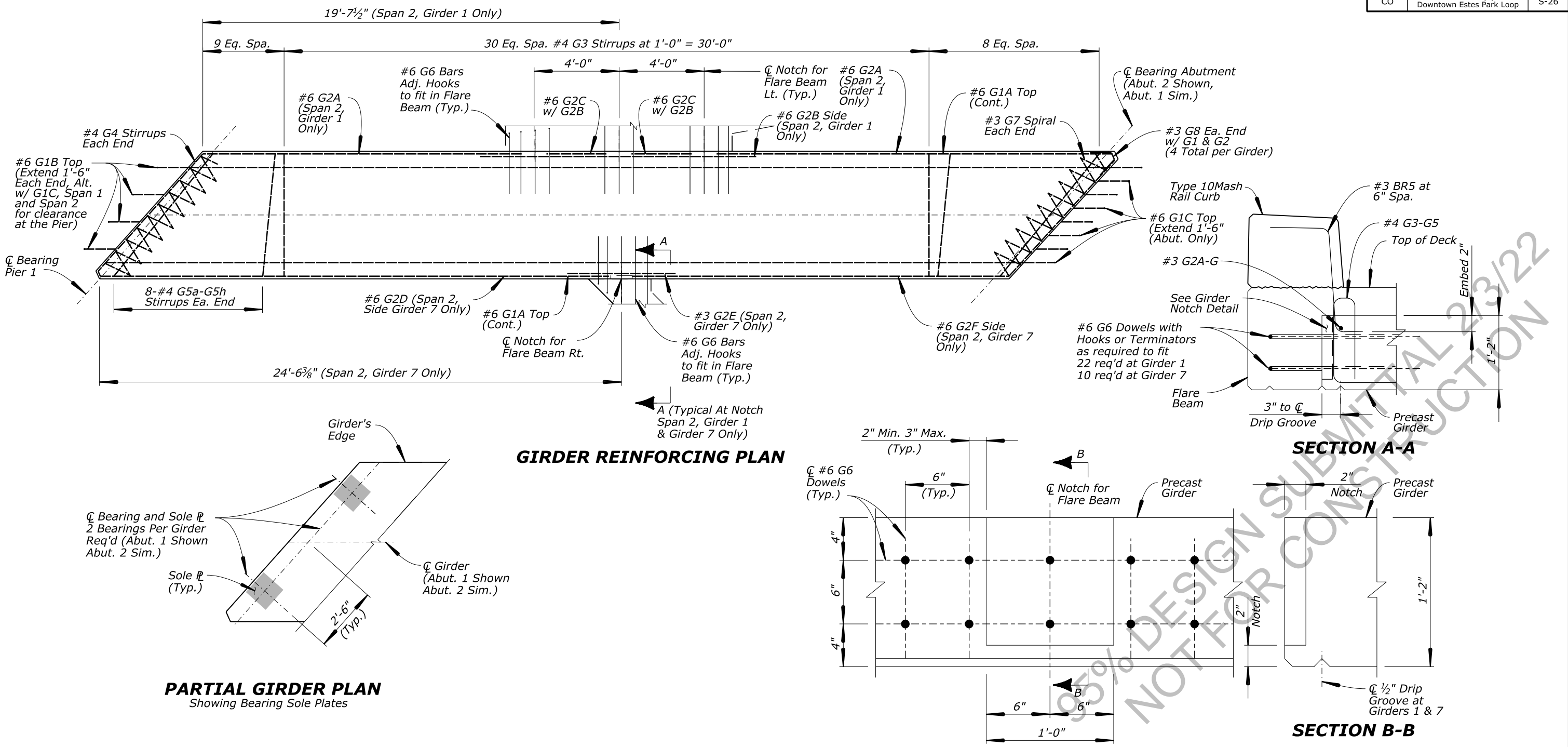
IVY STREET (US34) BRIDGE
 OVER BIG THOMPSON RIVER
 CITY OF ESTES PARK
 LARIMER COUNTY, COLORADO

**PRESTRESSED CONCRETE SLAB
 GIRDER 14"x72"
 (1 OF 2)**

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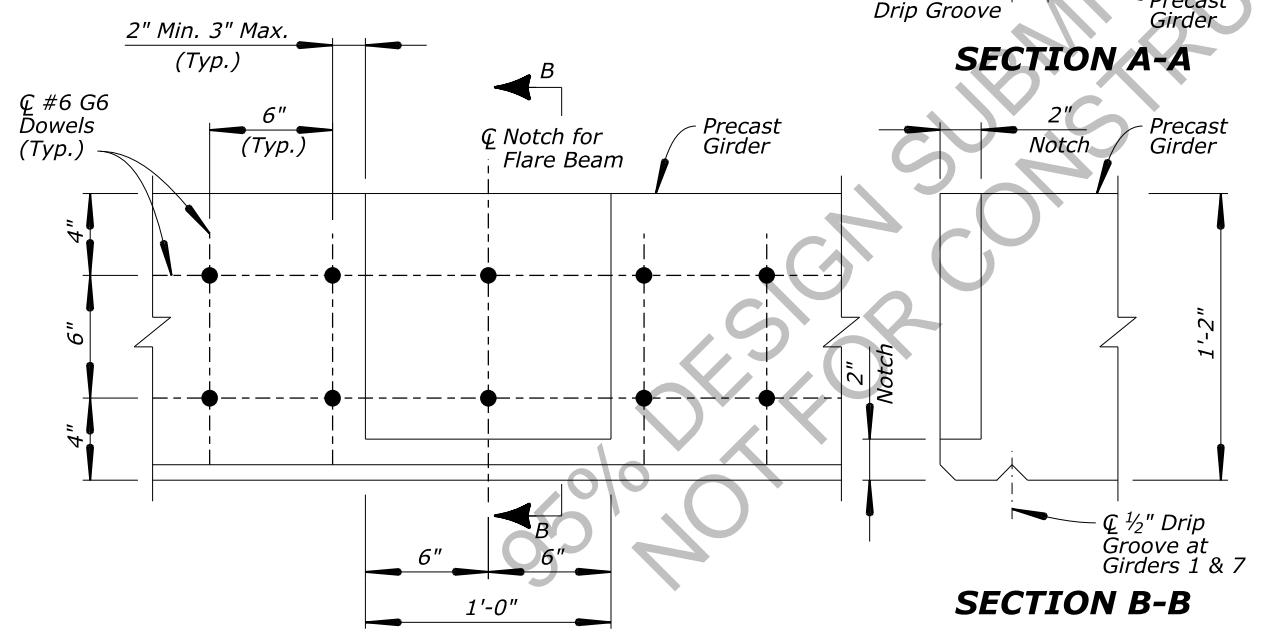
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								Steve Haynes	Oscar Avila	Gary Maji	NA	Steve McQuilkin	25 of 41	June 2021	RG3121-Y

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PARTIAL GIRDER PLAN
Showing Bearing Sole Plates

GIRDER REINFORCING PLAN



GIRDER NOTCH DETAIL
Span 2, Girders 1 & 7 Only

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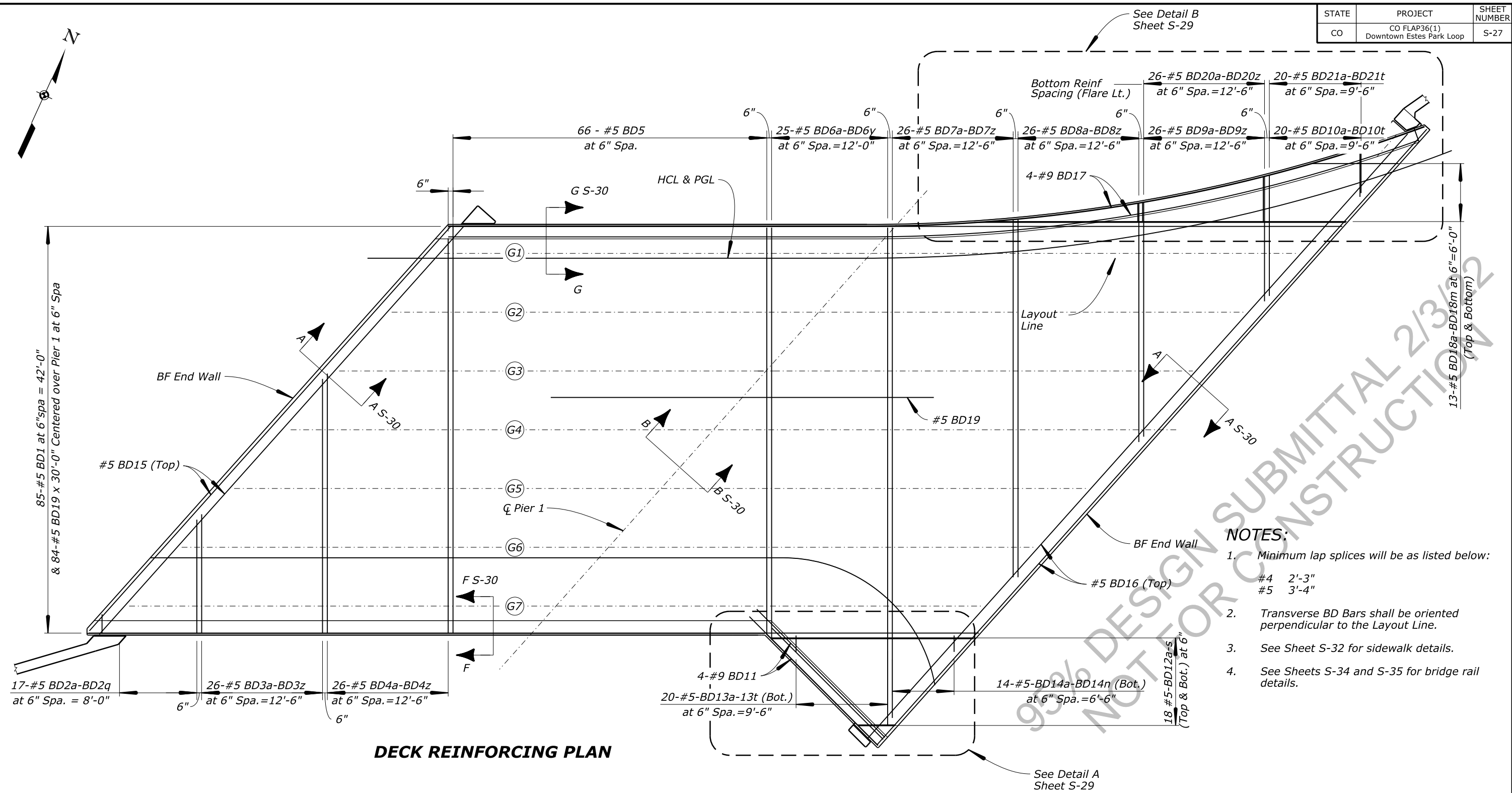
 IVY STREET (US34) BRIDGE
 OVER BIG THOMPSON RIVER
 CITY OF ESTES PARK
 LARIMER COUNTY, COLORADO

**PRESTRESSED CONCRETE SLAB
 GIRDER 14"x72" (2 OF 2)**

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Steve Haynes	Oscar Avila	Gary Maji	Not To Scale	Steve McQuilkin	26 of 41	June 2021	RG3121-Z

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP36(1) Downtown Estes Park Loop	S-27

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DECK REINFORCING PLAN

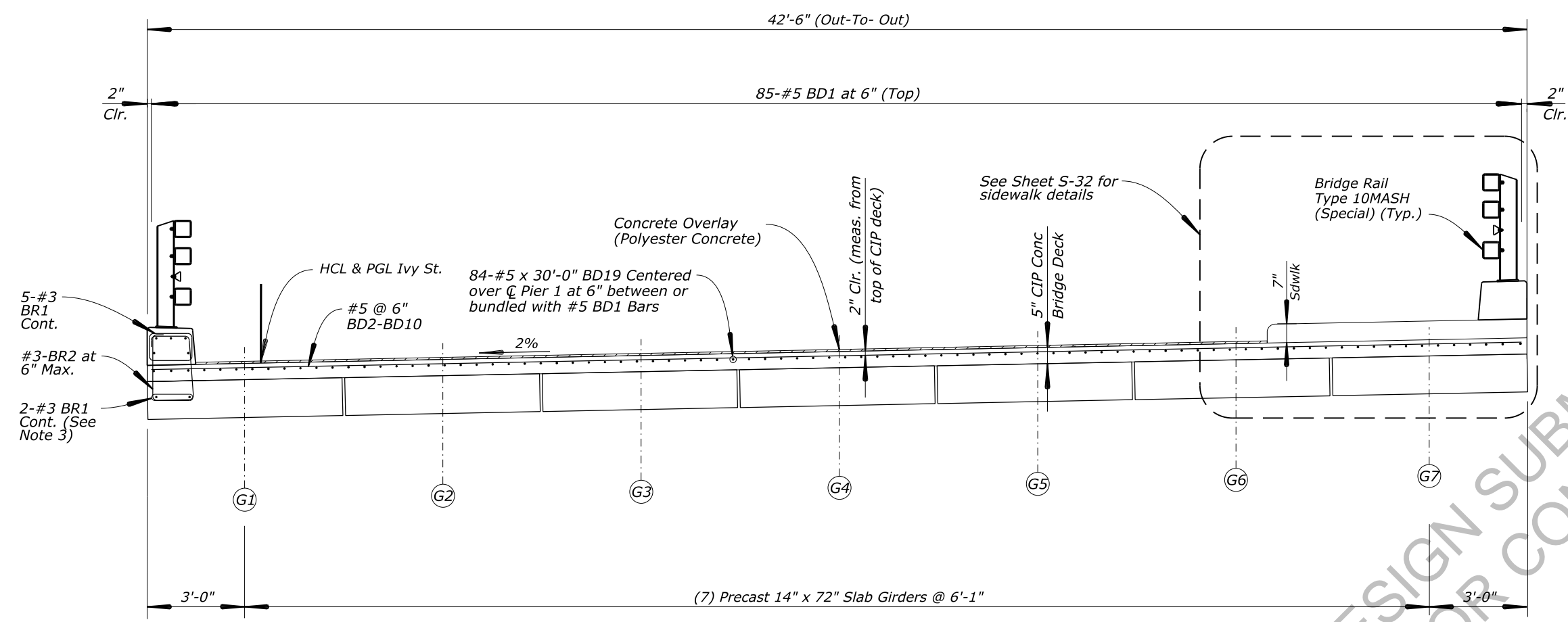
- NOTES:**
- Minimum lap splices will be as listed below:
 #4 2'-3"
 #5 3'-4"
 - Transverse BD Bars shall be oriented perpendicular to the Layout Line.
 - See Sheet S-32 for sidewalk details.
 - See Sheets S-34 and S-35 for bridge rail details.

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IVY STREET (US34) BRIDGE
 OVER BIG THOMPSON RIVER
 CITY OF ESTES PARK
 LARIMER COUNTY, COLORADO

**SUPERSTRUCTURE DETAILS
 (1 OF 5)**

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Steve Haynes	Oscar Avila	Gary Maji	1"=10'	Steve McQuilkin	27 of 41	June 2021	RG3121-AA



TYPICAL SECTION BRIDGE DECK REINFORCEMENT
 (Span 1 Shown, Looking Ahead Station. Span 2 Similar except at Flares)

NOTES:

1. Minimum lap splices will be as listed below:

Bar	Lap Splice
#3	2'-0"
#4	2'-3"
#5	3'-4"
2. See Sheets S-34 & S-35 for Bridge Rail Type 10MASH (Special) details and curb reinforcement.
3. 2-#3 BR1 Bars are required to be cast in the precast girders and project to permit placement of the #3 BR2 Bars.

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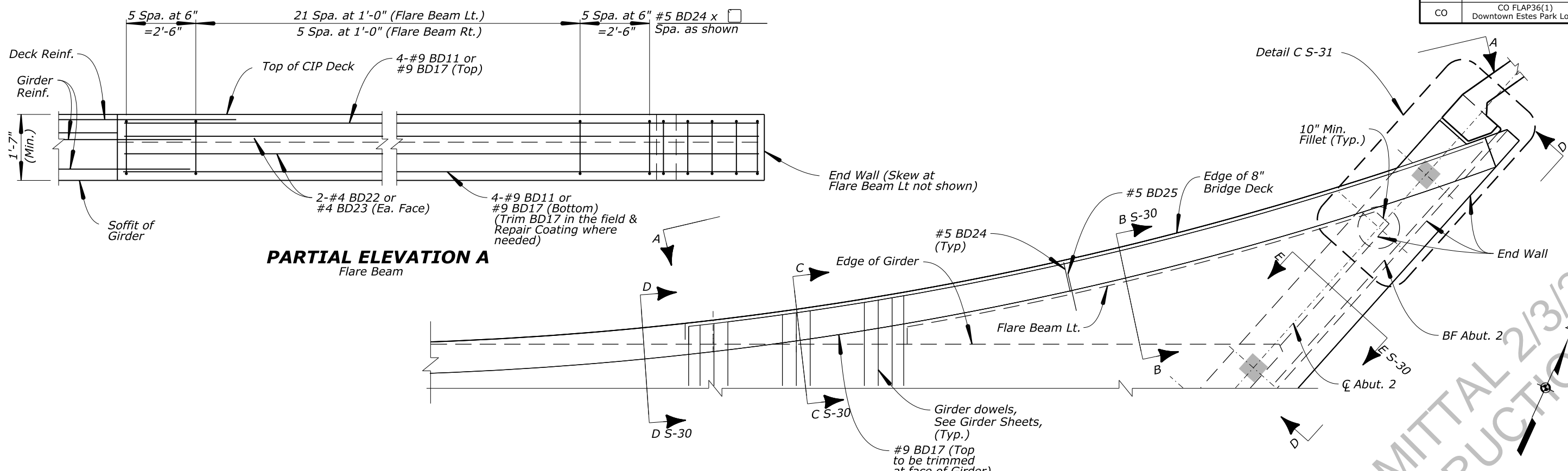
IVY STREET (US34) BRIDGE
 OVER BIG THOMPSON RIVER
 CITY OF ESTES PARK
 LARIMER COUNTY, COLORADO

**SUPERSTRUCTURE DETAILS
 (2 OF 5)**

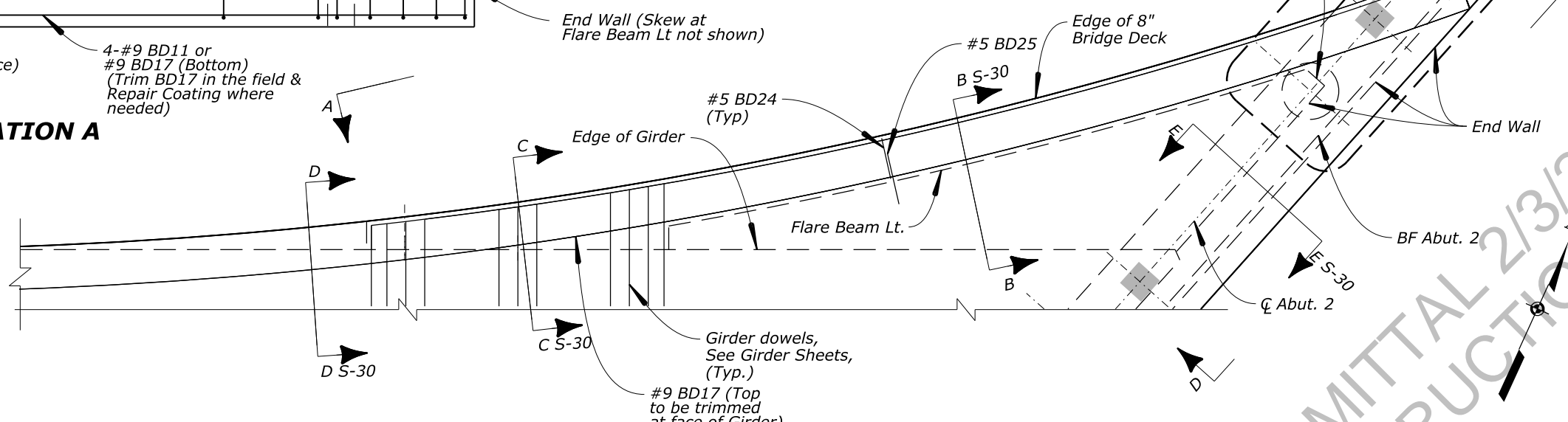
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NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
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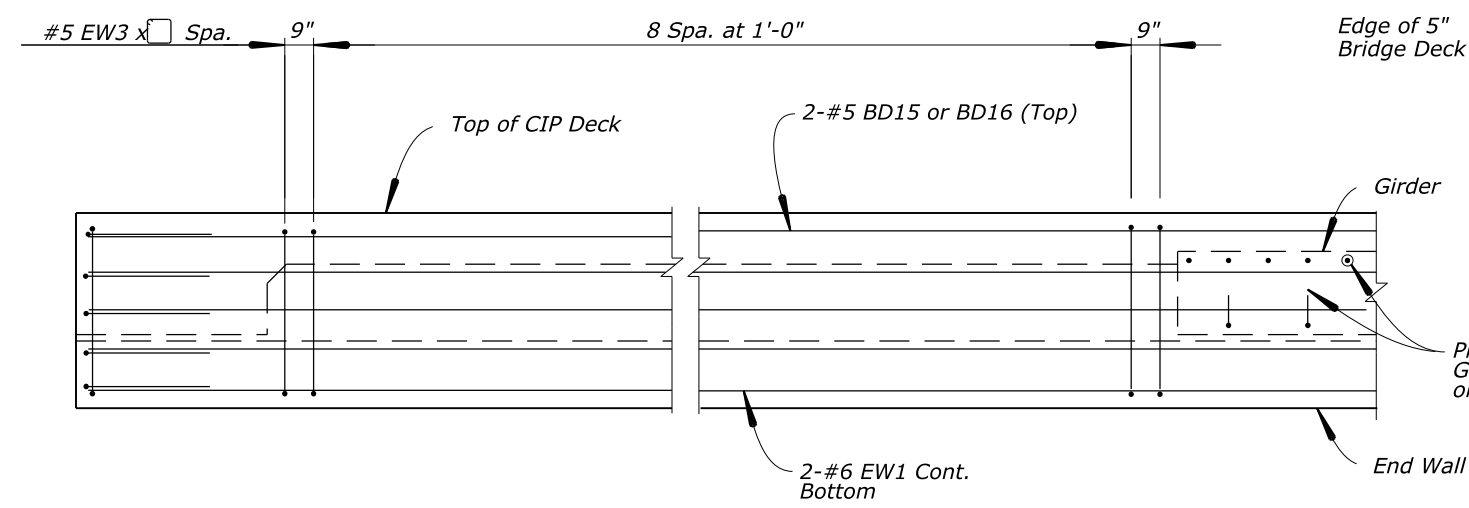
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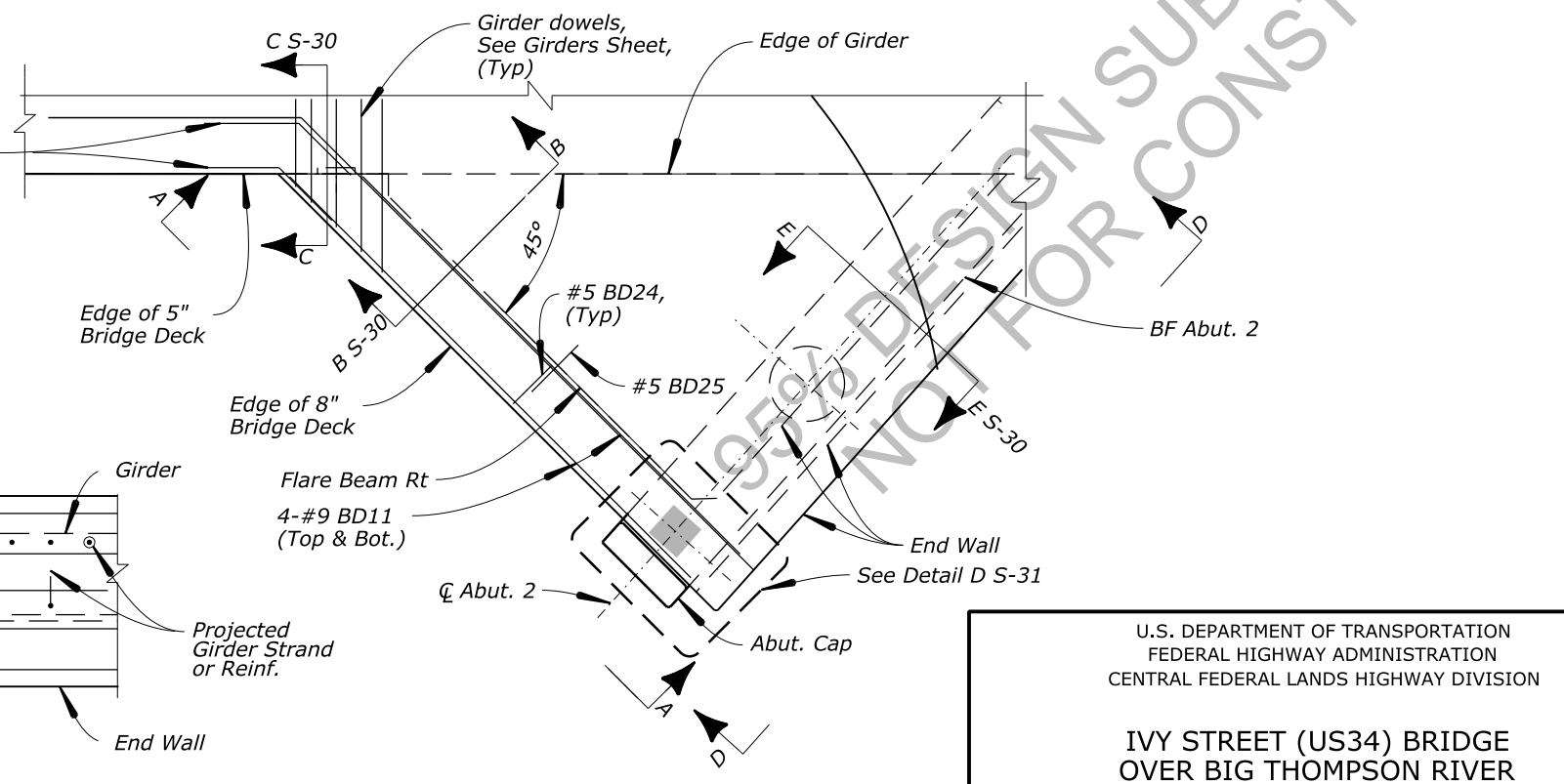
PARTIAL ELEVATION A
Flare Beam



DETAIL B



PARTIAL ELEVATION D
Abutment End Wall



DETAIL A

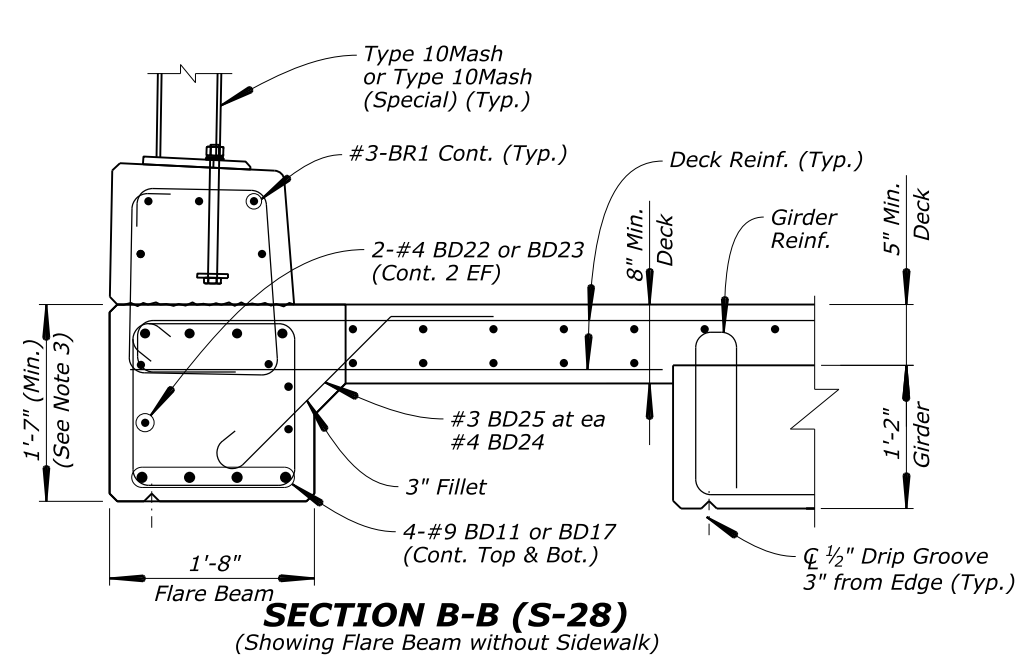
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 IVY STREET (US34) BRIDGE
 OVER BIG THOMPSON RIVER
 CITY OF ESTES PARK
 LARIMER COUNTY, COLORADO

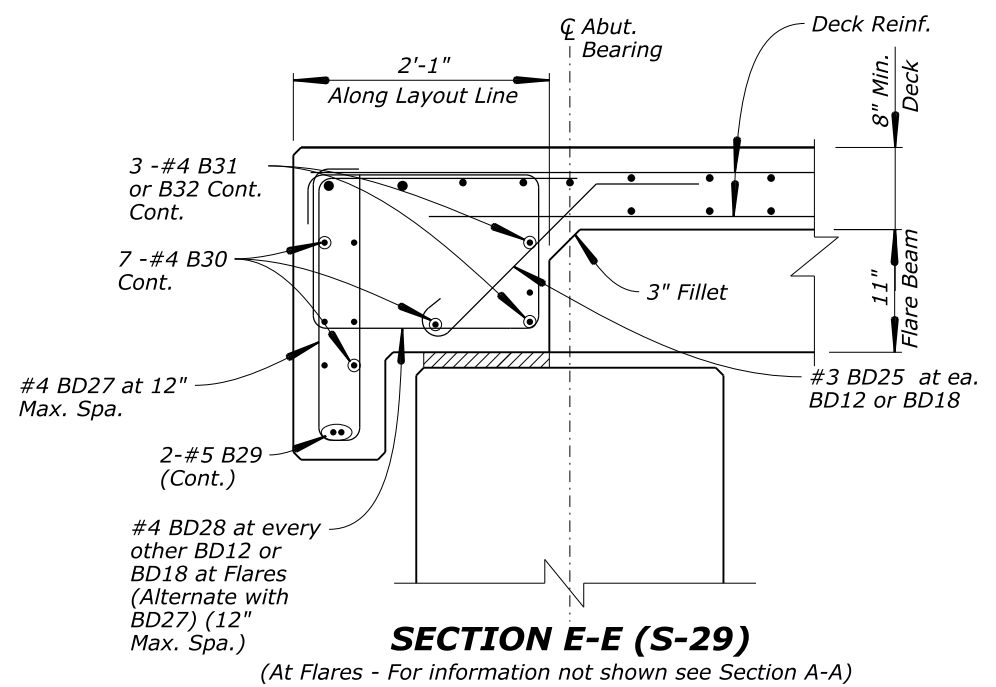
SUPERSTRUCTURE DETAILS
(3 OF 5)

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								Steve Haynes	Oscar Avila	Gary Maji	Not To Scale	Steve McQuilkin	29 of 41	June 2021	RG3121-CC

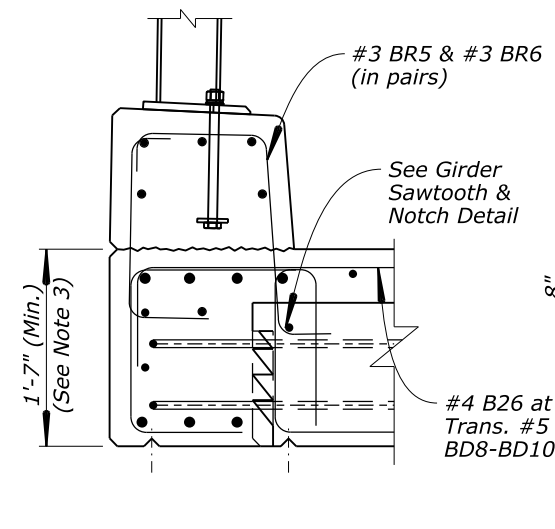
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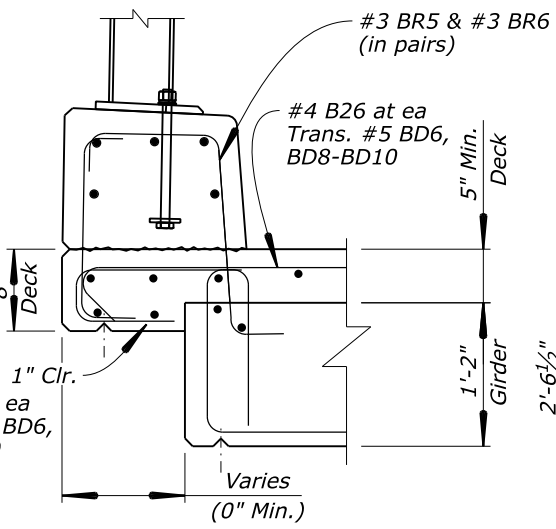
SECTION B-B (S-28)
(Showing Flare Beam without Sidewalk)



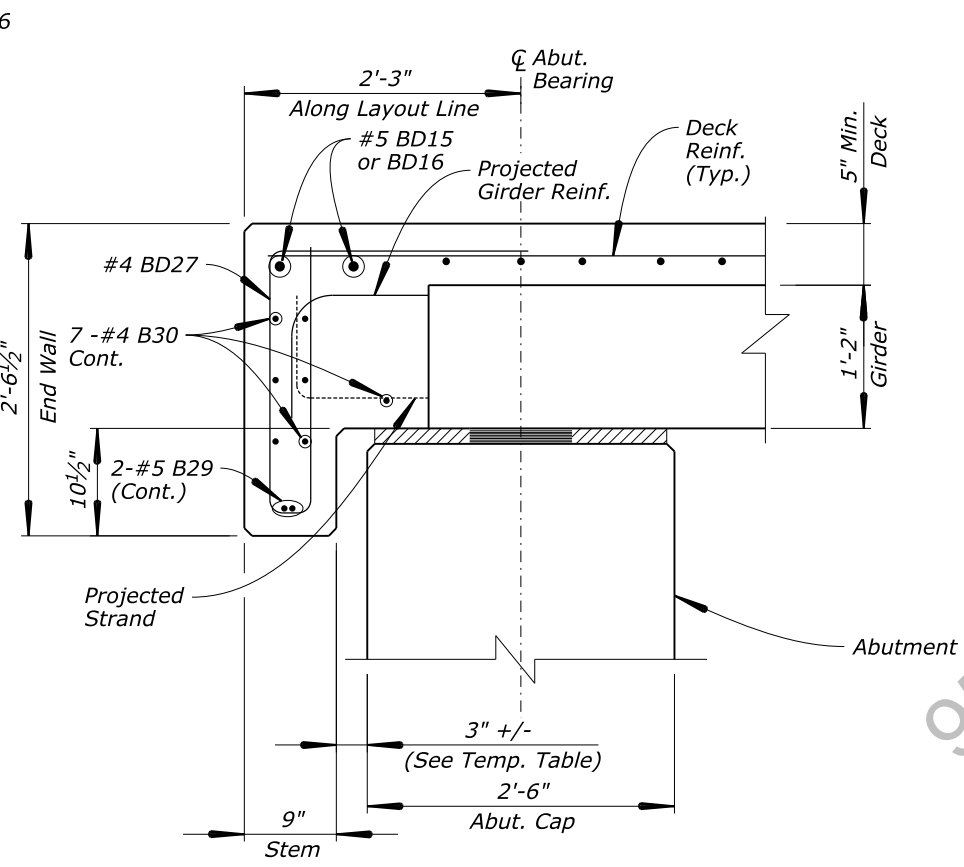
SECTION E-E (S-29)
(At Flares - For information not shown see Section A-A)



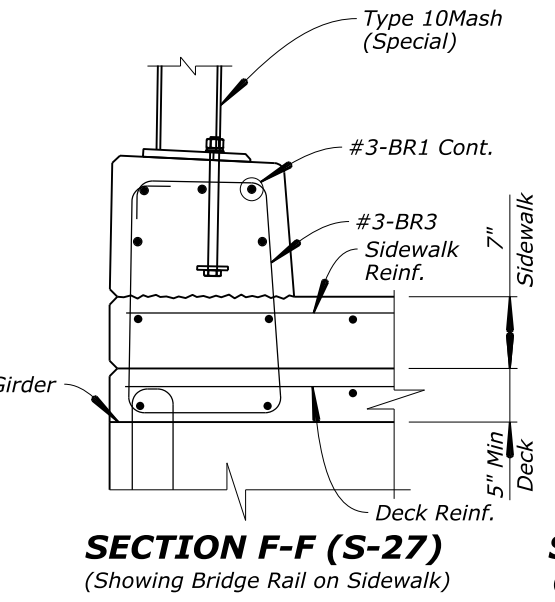
SECTION C-C (S-29)
(Showing Flare Beam Girder Interface)



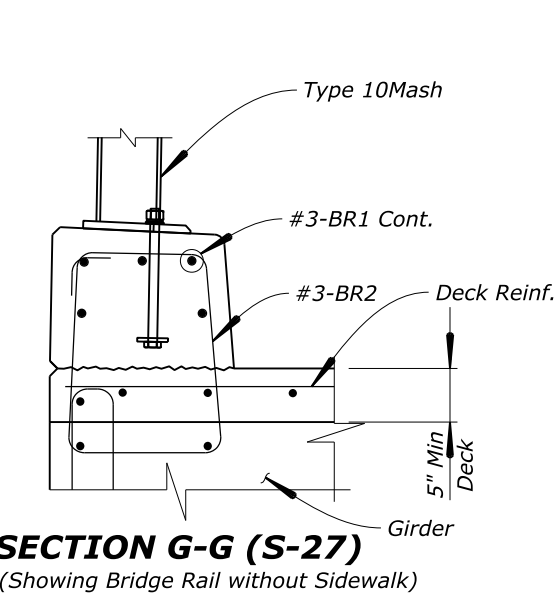
SECTION D-D (S-29)
(Showing Deck Overhang at Flare Beam Lt.)



SECTION A-A (S-27)
(At Girders)



SECTION F-F (S-27)
(Showing Bridge Rail on Sidewalk)



SECTION G-G (S-27)
(Showing Bridge Rail without Sidewalk)

- NOTES:**
- Minimum lap splice requirements are as follows:

Bar	Lap Splice
#3	2'-0"
#4	2'-3"
#5	3'-3"
 - Chamfer corners 3/4" (Tooled edge acceptable).
 - Set soffit of Flare Beam even with Soffit of Girder.

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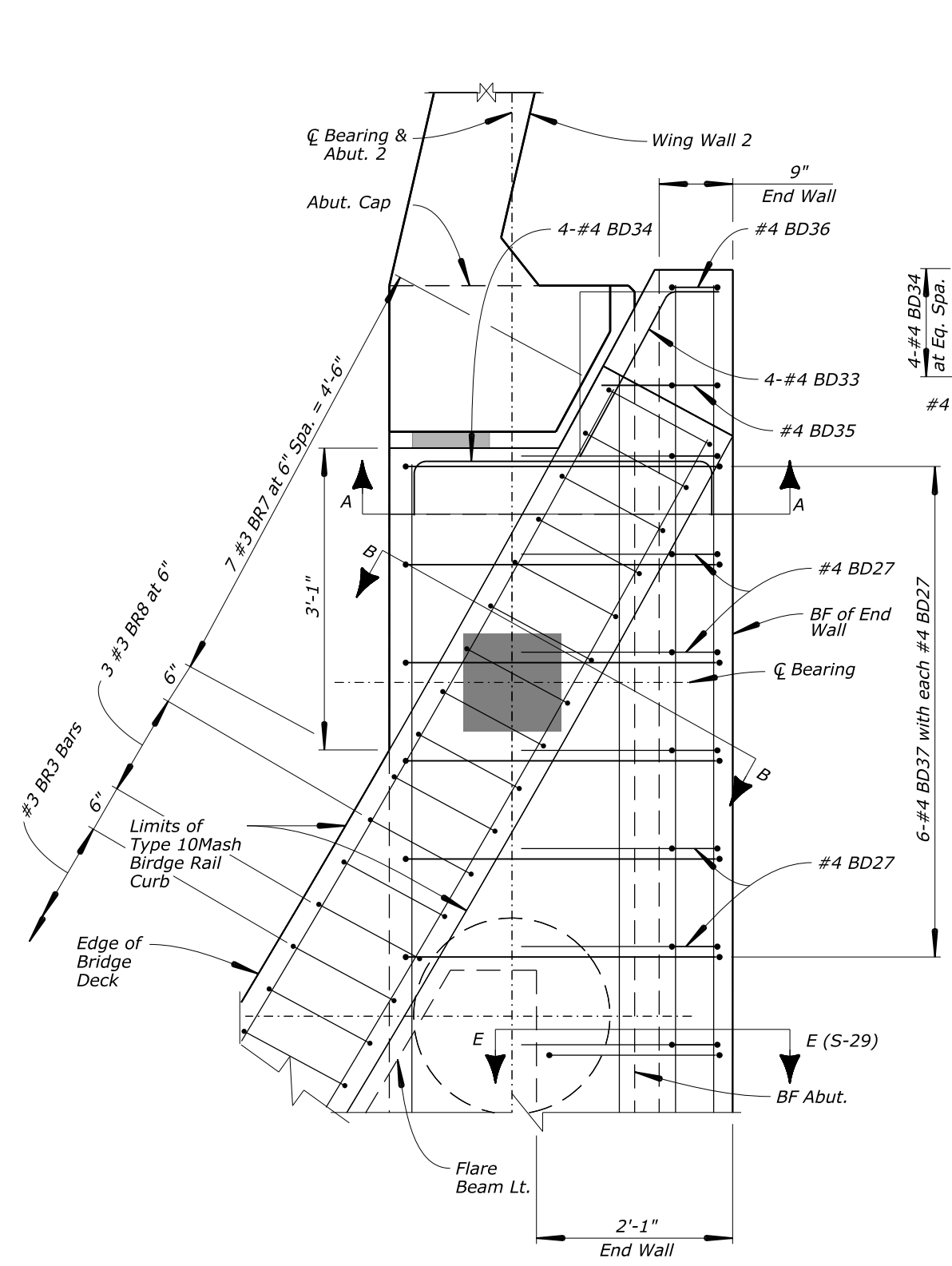
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IVY STREET (US34) BRIDGE
OVER BIG THOMPSON RIVER
CITY OF ESTES PARK
LARIMER COUNTY, COLORADO

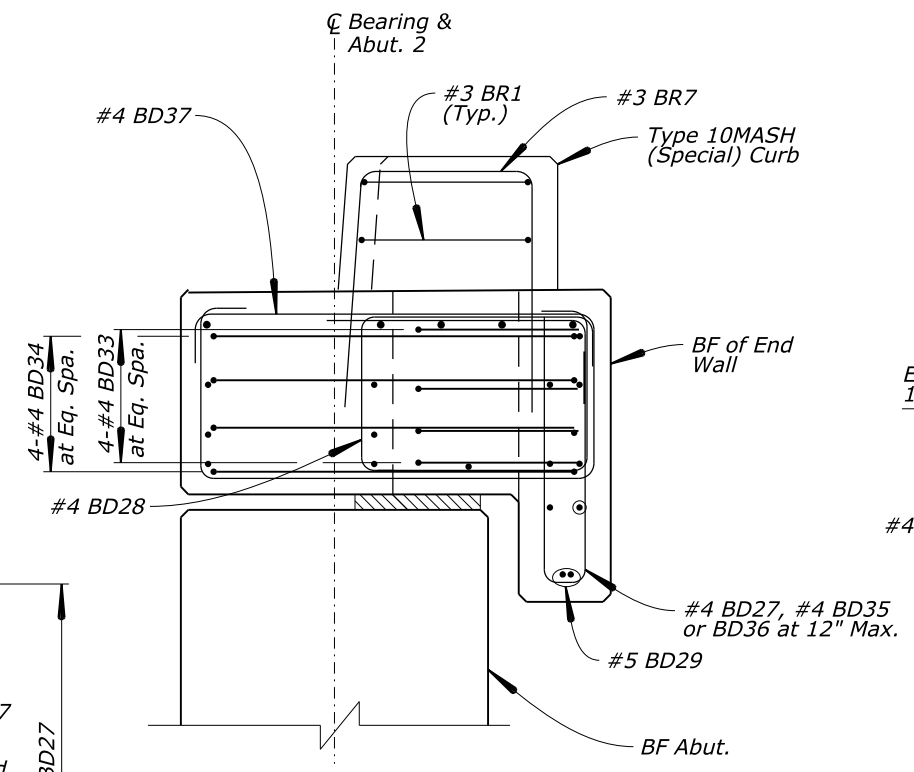
SUPERSTRUCTURE DETAILS
(4 OF 5)

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Steve Haynes	Oscar Avila	Gary Maji	Not To Scale	Steve McQuilkin	30 of 41	June 2021	RG3121-DD

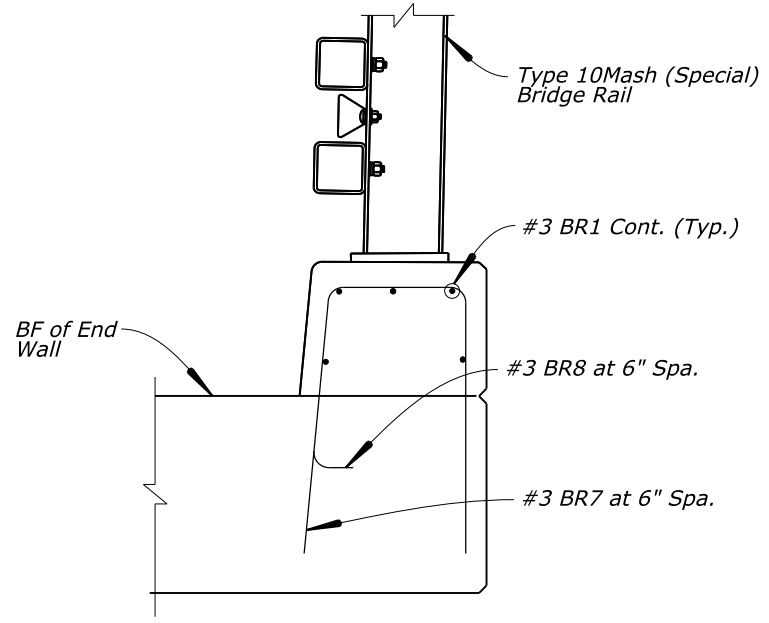
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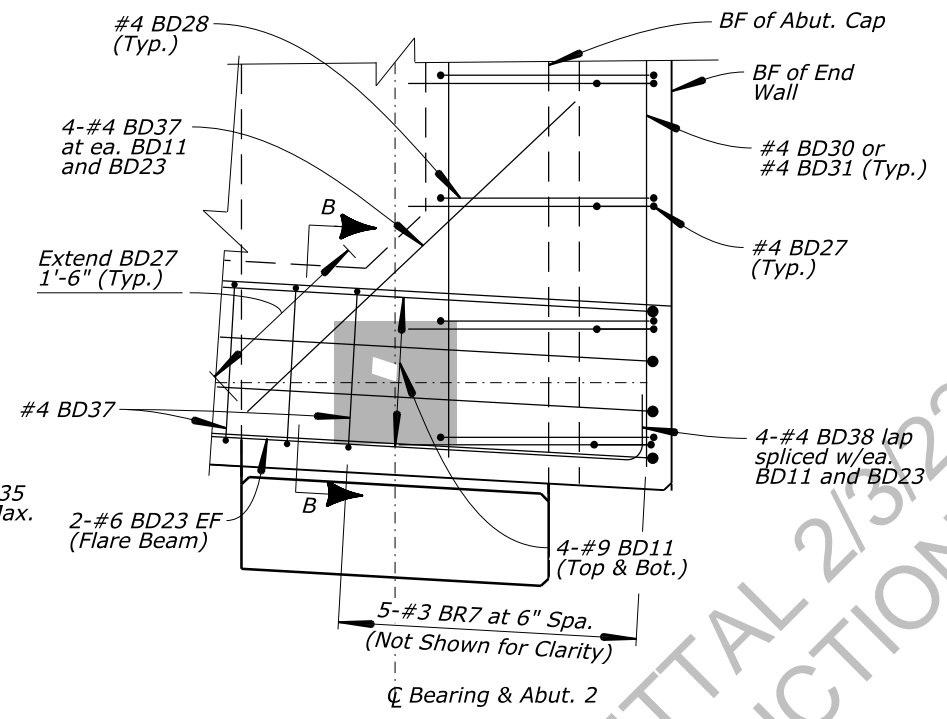
DETAIL C (S-29)
Note: See Sheet S-29 for Reinforcing not shown



SECTION A-A



SECTION B-B
Note: See Sheet S-30 for Reinforcing not shown



DETAIL D (S-29)
Note: See Sheet S-26 for Reinforcing not shown

95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

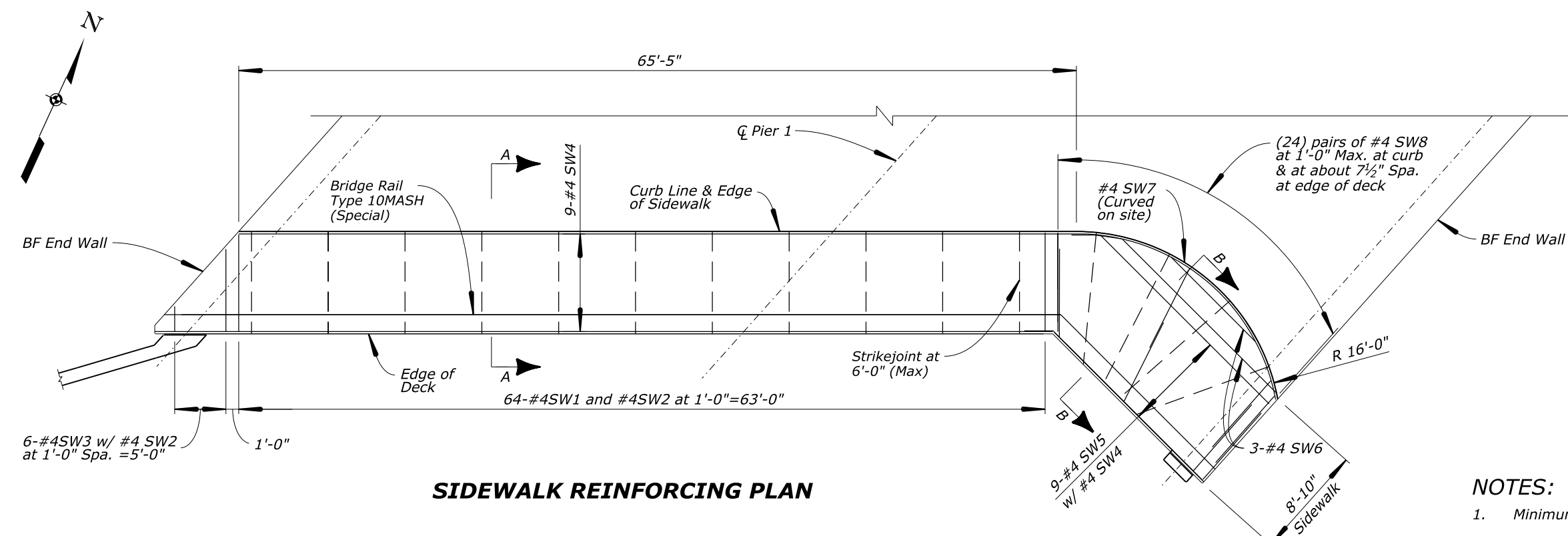
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

IVY STREET (US34) BRIDGE
OVER BIG THOMPSON RIVER
CITY OF ESTES PARK
LARIMER COUNTY, COLORADO

**SUPERSTRUCTURE DETAILS
(5 OF 5)**

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Steve Haynes	Oscar Avila	Gary Maji	Not To Scale	Steve McQuilkin	31 of 41	June 2021	RG3121-EE

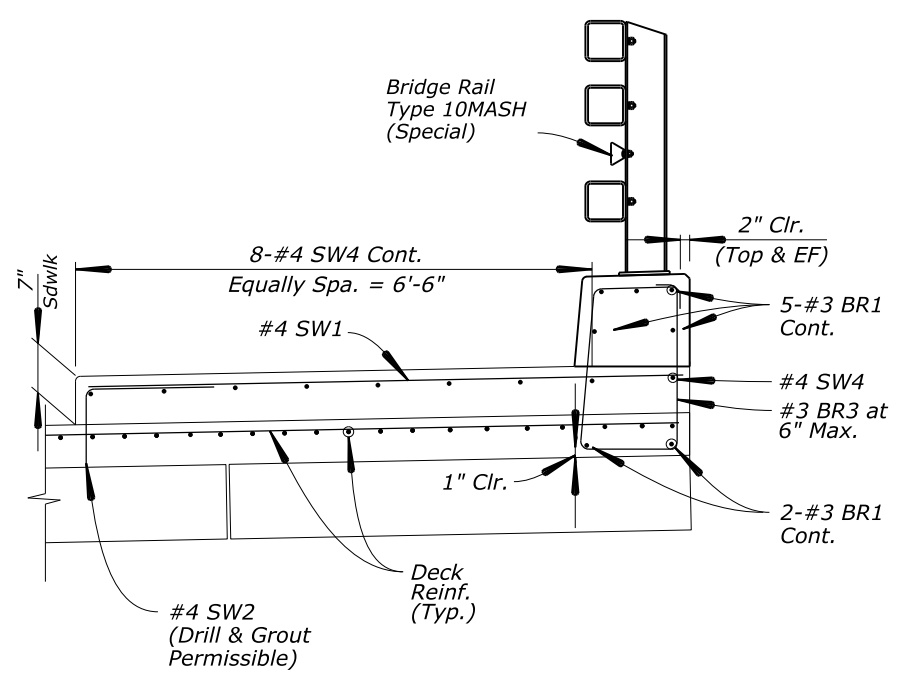
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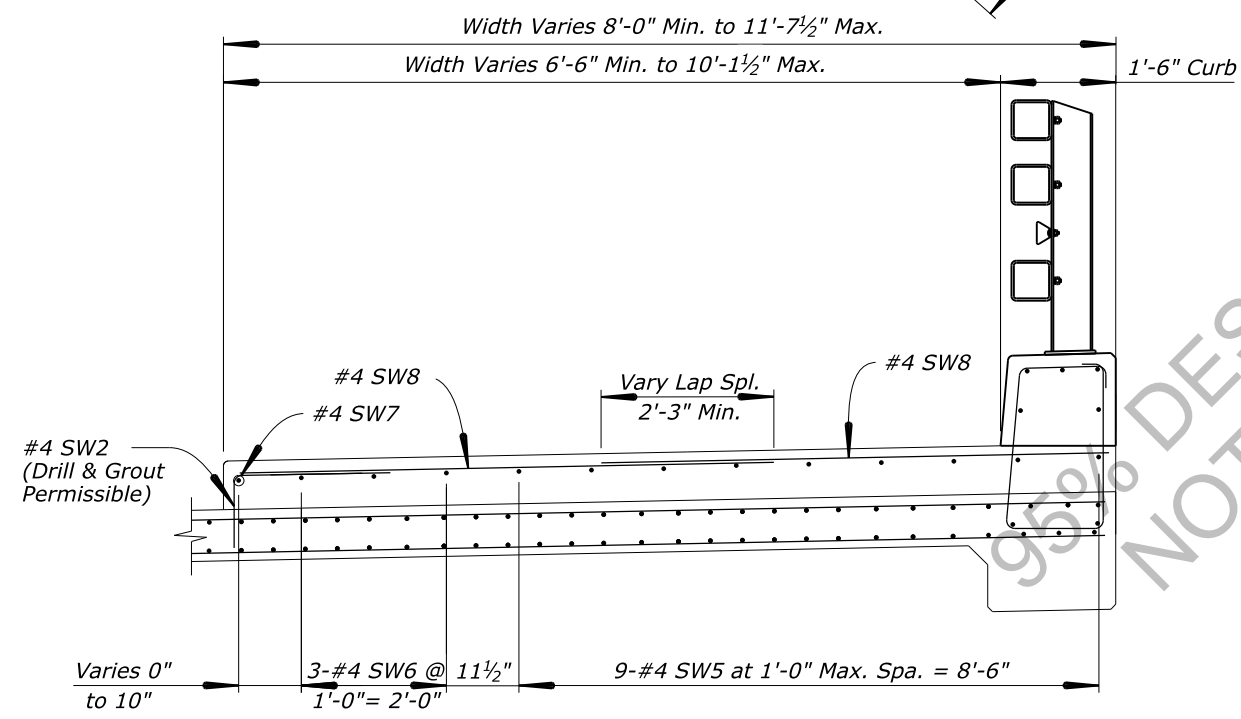
SIDEWALK REINFORCING PLAN

NOTES:

- Minimum lap splices will be as listed below:
 #3 2'-0"
 #4 2'-3"
 #5 3'-4"
- Orientation of SW bars vary as shown in the plans.



SECTION A-A



SECTION B-B

For information not shown see Section A-A

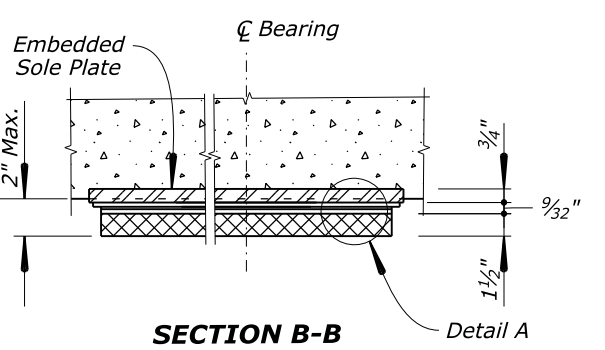
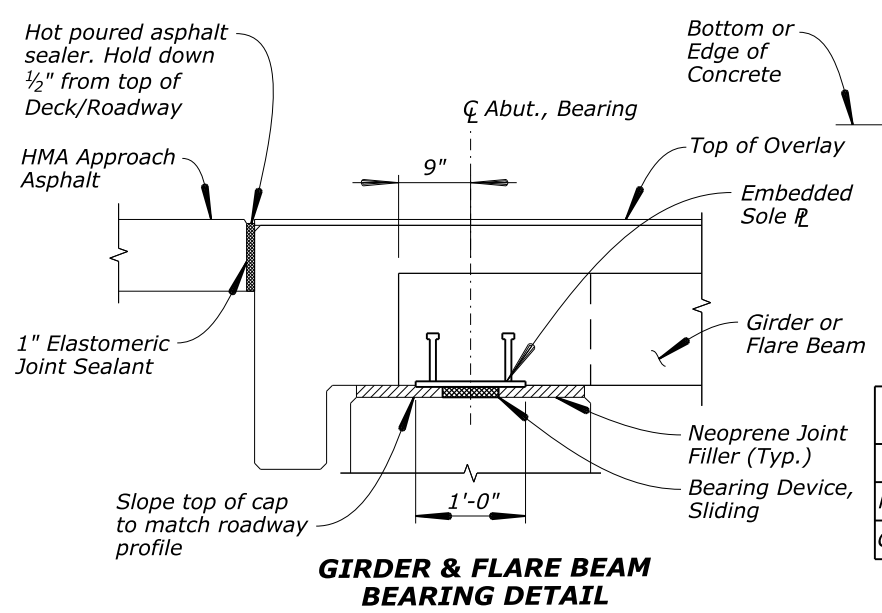
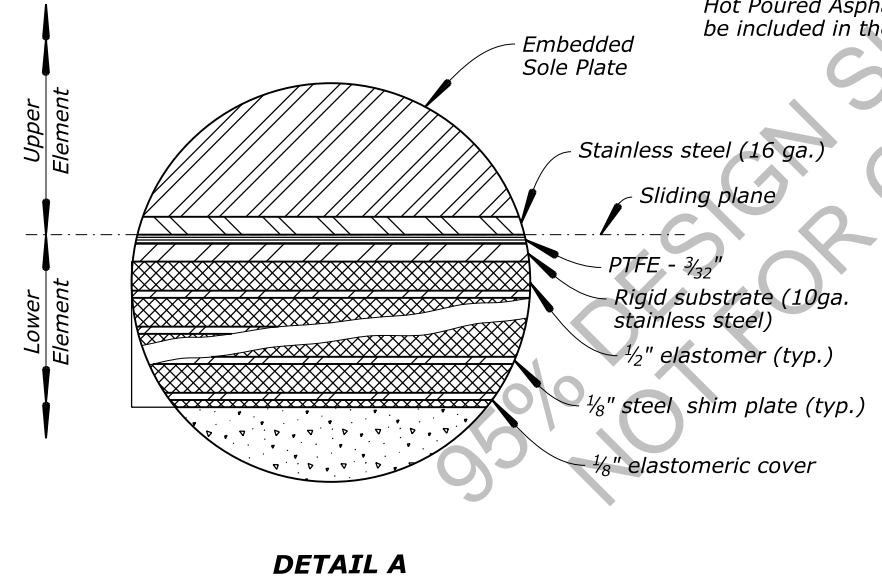
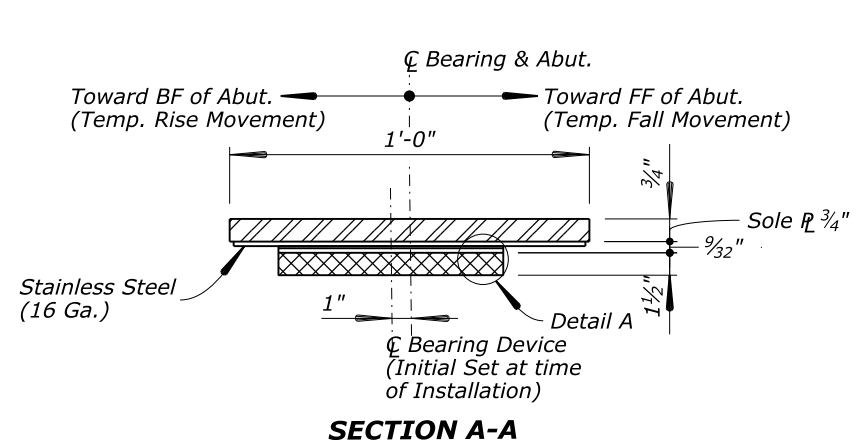
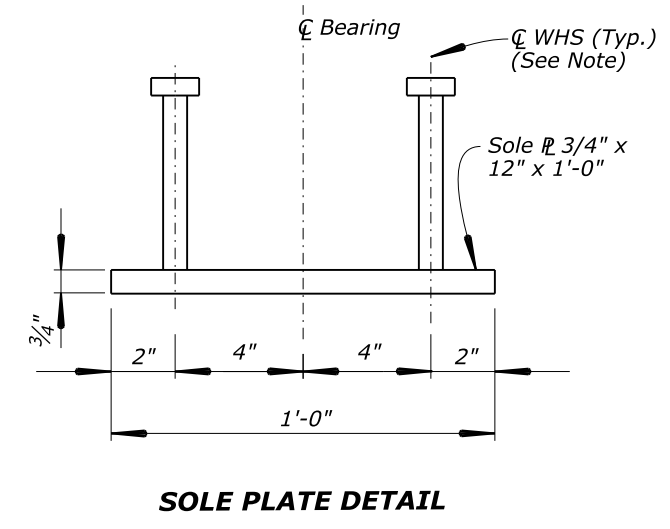
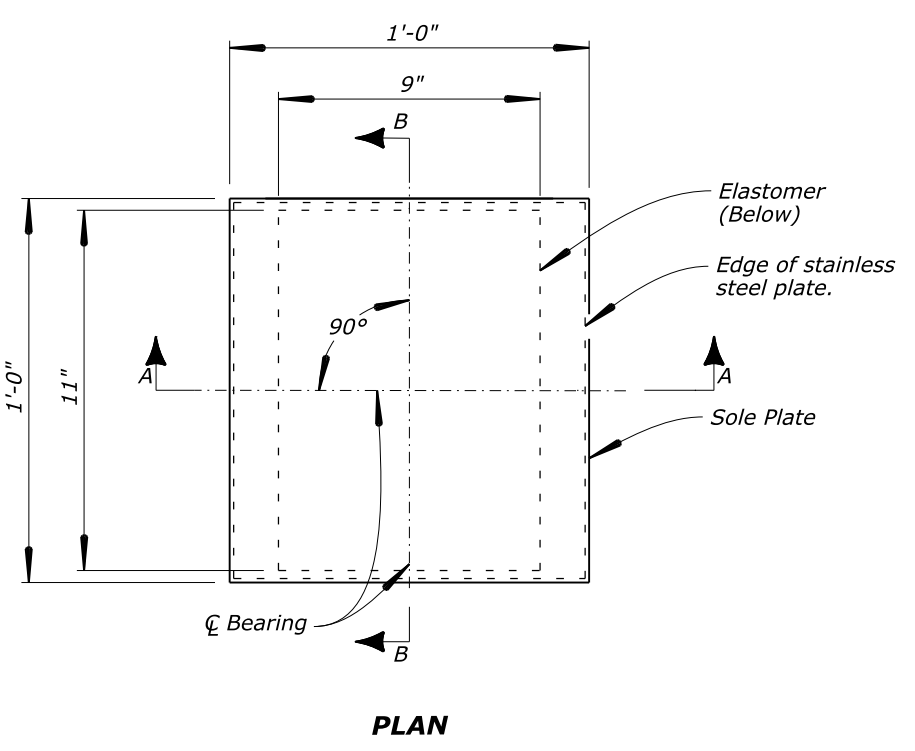
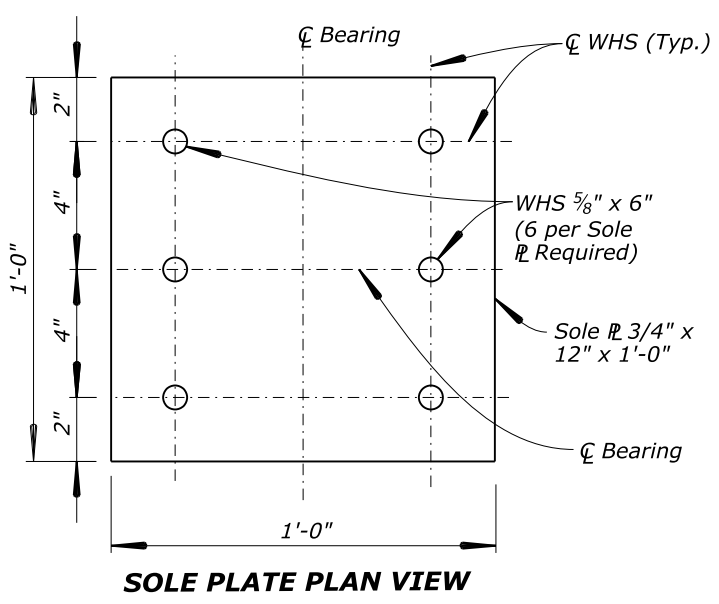
U.S. DEPARTMENT OF TRANSPORTATION
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 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

 IVY STREET (US34) BRIDGE
 OVER BIG THOMPSON RIVER
 CITY OF ESTES PARK
 LARIMER COUNTY, COLORADO

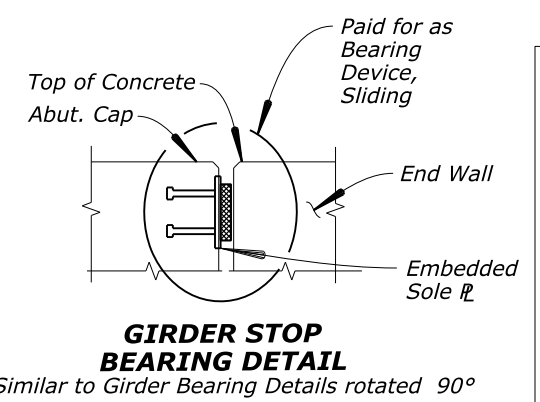
SIDEWALK DETAILS

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Steve Haynes	Oscar Avila	Gary Maji	1"=10'	Steve McQuilkin	32 of 41	June 2021	RG3121-FF

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Location	No. Req'd	Vertical Load Per Brg. (Str. Limit State) (kips)	Longitudinal Movement (Inches) (Based on 70°F at Installation)		
			10°Temp Increment	Max. Temp. Fall Movement	Max. Temp. Rise Movement
All Girders	14	107 k	0.03"	0.6"	0.1"
Flare Beams	2	48 k	0.03"	0.6"	0.1"
Girder Stops	2	130 k	0.03"	0.6"	0.1"



NOTES:

The centerlines of the upper and lower elements of the expansion bearings shall be aligned as shown in Section B at a mid-point temperature of 40°. The upper element only, shall be adjusted, in relation to the fixed bearing, for each 10° temperature change. Adjust away from the fixed bearing one 10° temperature increment for each 10° change above 40° and toward the fixed bearing for each 10° change below 40°.

Sole plates, stainless steel plates, anchor bolts, PTFE, and elastomeric pads shall be included in the bid price for Item No. 56401, Bearing Device, Sliding.

Stainless steel in contact with PTFE shall be polished to a brightness finish of less than 10 micro-inches root mean square.

Seal weld stainless steel to the sole plate.

PTFE and substrate to be vulcanized to the elastomeric pad.

Grade 3 elastomer shall be used.

Higher grade elastomer may be substituted for Grade 3.

Min/Max shear modulus G = 85/175 psi at 73°F.

Hardness = 70 Duro (Shore A).

AASHTO design Method A has been used.

PTFE = Polytetrafluoroethylene

WHS = Welded Headed Stud - Location of Stud may be adjusted to accommodate prestressing strand layout.

Hot Poured Asphalt will not be paid for separately, but shall be included in the work.

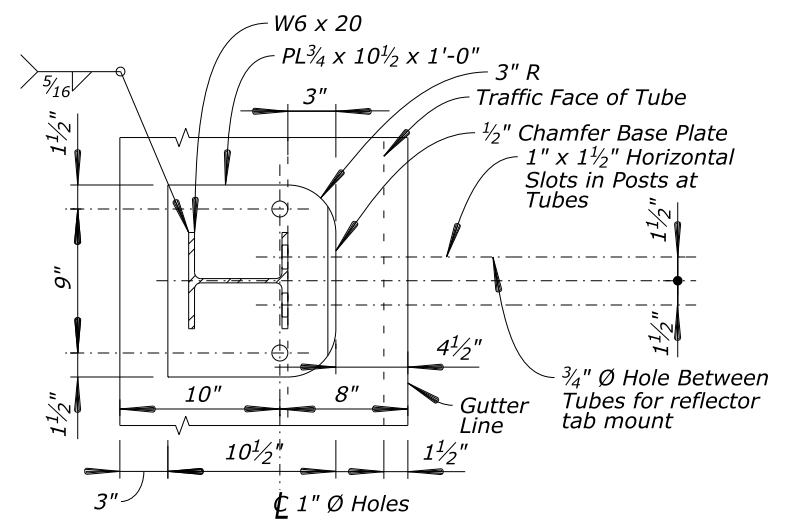
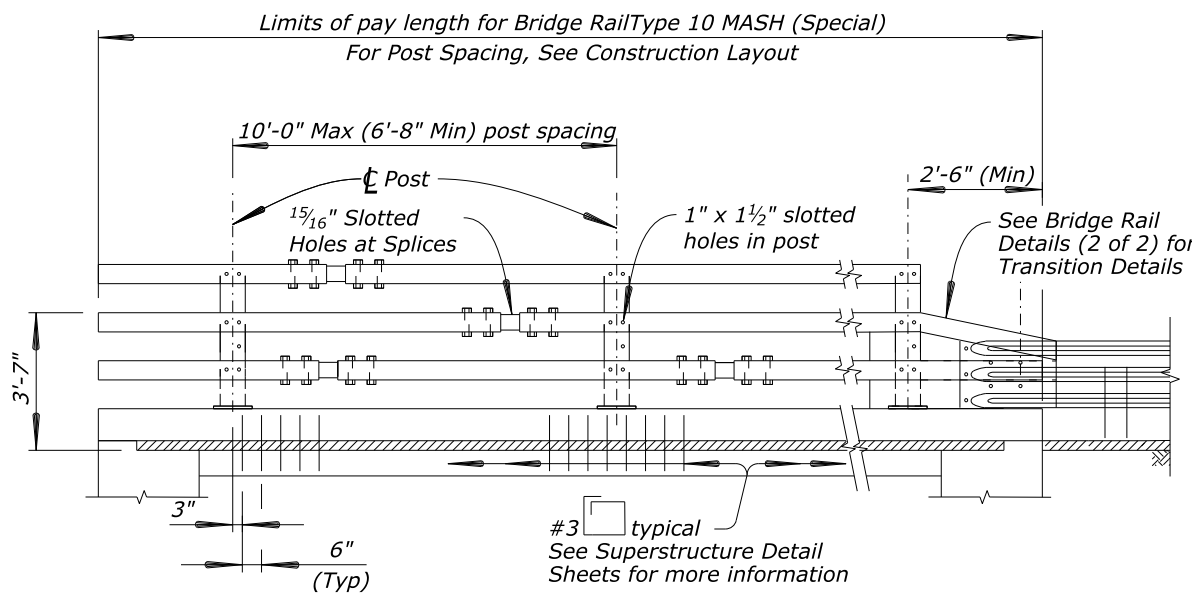
U.S. DEPARTMENT OF TRANSPORTATION
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CENTRAL FEDERAL LANDS HIGHWAY DIVISION

IVY STREET (US34) BRIDGE
OVER BIG THOMPSON RIVER
CITY OF ESTES PARK
LARIMER COUNTY, COLORADO

BEARING DEVICE AND JOINT DETAILS

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Steve Haynes	Oscar Avila	Gary Maji	Not To Scale	Steve McQuilkin	33 of 41	June 2021	RG3121-GG

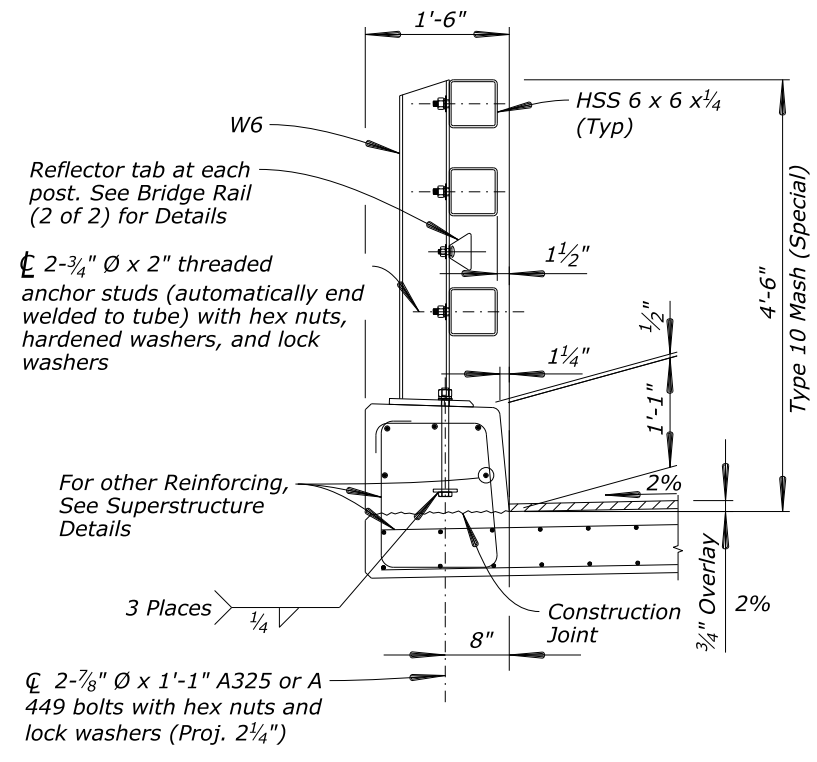
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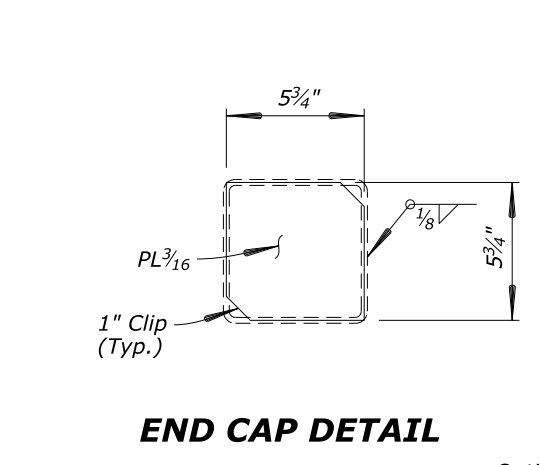
PLAN - POST DETAIL

- NOTES:**
- All tubes shall be ASTM A-1085. All posts, base plates, and splice tubes fabricated by welding shall be ASTM A-572 Grade 50. Post anchor, encased in concrete, shall be Grade 36 steel and need not be galvanized. All other steel shall be Grade 36 unless otherwise noted.
 - The above material and all anchor bolts and miscellaneous bolts, nuts, and washers shall be galvanized after fabrication in accordance with Section 555. Concrete, reinforcing steel, and structural steel elements shall conform to the requirements of Sections 552, 554 and 555, respectively unless otherwise noted. Concrete sealer shall conform to Section 563.
 - The tubes shall be shop bent or fabricated to fit horizontal curve when radius is less than 1,800 feet.
 - Tubes shall be continuous over not less than two posts, preferably 4 posts except at end joint. No welded butt splices will be allowed in the tube sections.
 - The centerline of the tube splice shall be 1'-8" minimum and 2'-6" maximum from the centerline of the posts.
 - All bolts that have lock washers shall be tightened to snug only.
 - Posts shall be perpendicular to the longitudinal roadway grade.
 - One or more 10'-0" post spaces may be reduced (6'-8" Min) in order to maintain dimensions from the end of the rail and expansion joints or concrete buttresses.
 - All faces of the rail curb shall receive a coating of Item 563, Concrete Sealer, either a silane/siloxane or a type compatible with the concrete coating or sealer/stain shown in the plans.
 - Payment will be made under item 55601, Bridge Rail Type 10 MASH & Bridge Rail Type 10 MASH (Special), for all posts, post anchors, base plates, backing plates, anchor bolts, miscellaneous bolts, nuts, washers, tubes, tube expansion devices, tube splices, end plates, and reflector tabs.
 - Prior to fabrication of this item, an electronic pdf which complies with the requirements of Section 104, shall be submitted to the Engineer for information only.

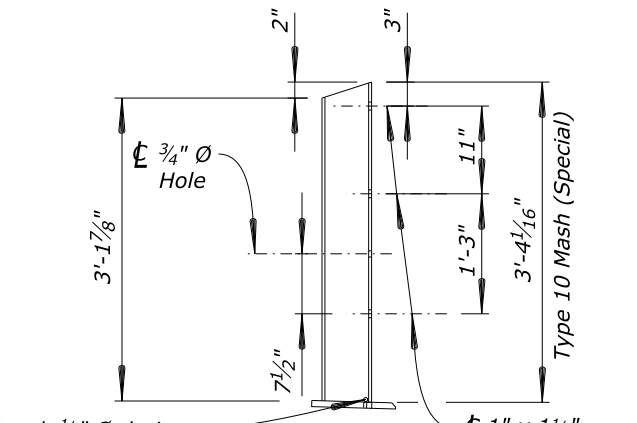
RAIL PANEL AT TERMINAL SECTION
(See Roadway plans for ends not attached to Guard Rail.)



RAIL PANEL AT TRANSITION SECTION
(See roadway plans for ends requiring attachment to guard rail.)



END CAP DETAIL



POST ELEVATION

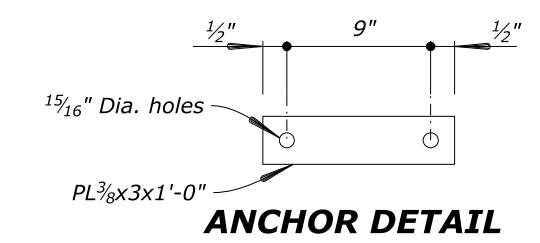
DESIGN DATA:

Design: AASHTO MASH 2016 TL-5 for overlay thickness up to 1" (by calculation), AASHTO MASH 2016 TL-4 for overlay thickness over 1" and resulting in a height of the top of rail over pavement of 36" Min (by Professional Evaluation and Crash Testing). Any changes to the bridge rail details must be approved by Staff Bridge.

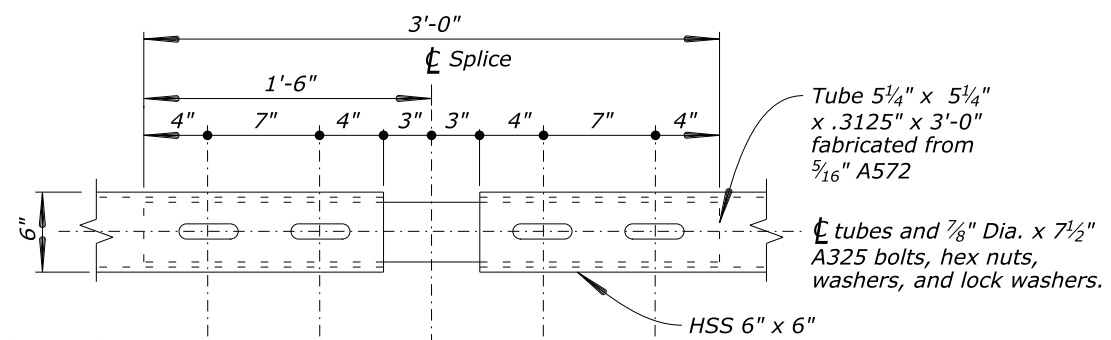
Structural Steel:
 AASHTO M270 Gr 36 (ASTM A709 Gr 36) $f_y = 36$ ksi
 AASHTO M270 Gr 50 (ASTM A992/A572 Gr 50) $f_y = 50$ ksi
 ASTM A1085 $f_y = 50$ ksi

Concrete: Class A (AE), $f'_c = 4.5$ ksi

SECTION TYPE 10MASH (SPECIAL)
Looking Ahead on Station, Left Edge of Deck (Right Edge of Deck similar except for Sidewalk and Direction of Super Elevation)



ANCHOR DETAIL



15/16" x 1 1/8" slots at tube splice, and 1" x 4" slots at bridge Exp device. Slot both inner and outer tubes. Stagger top and bottom splices into different post spacings except at expansion joint, place at opposite ends of same post space except as shown in transitions. (Range of motion = 1'-0" at bridge expansion device.)

PLAN - TUBE SPLICE

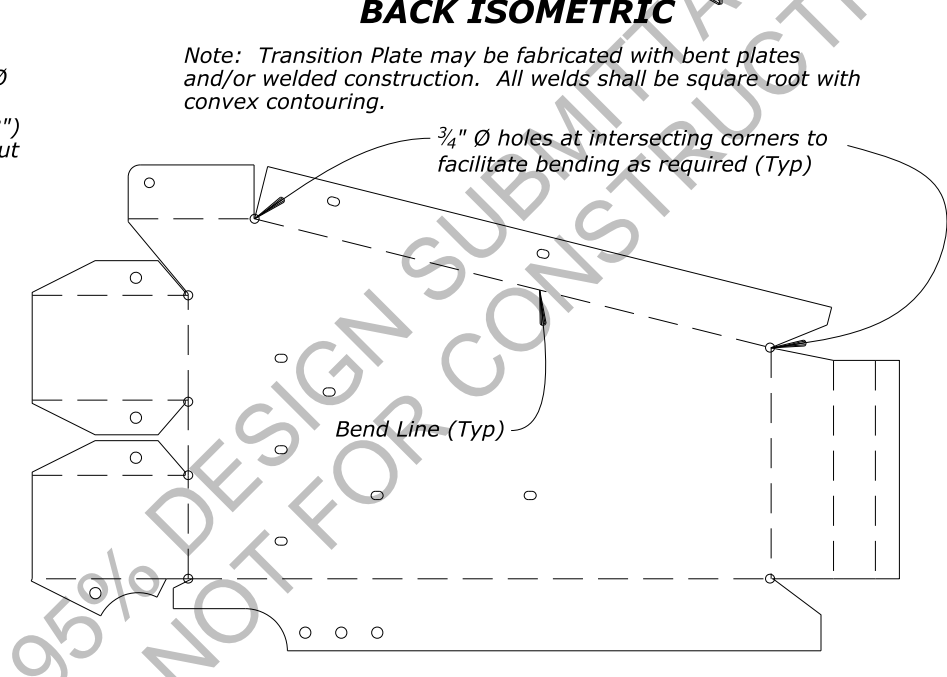
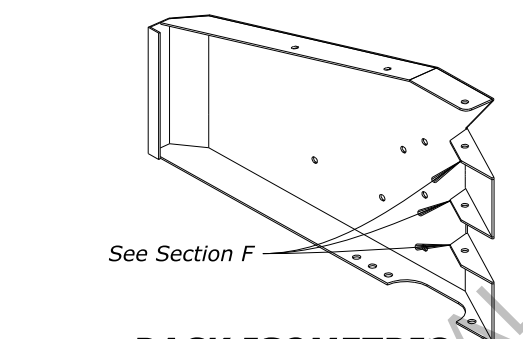
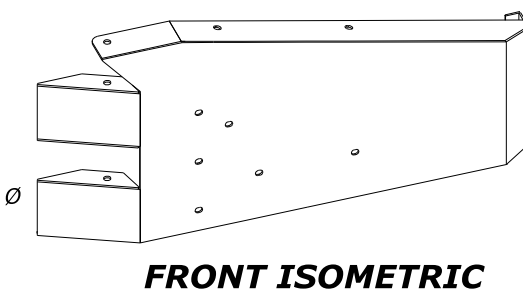
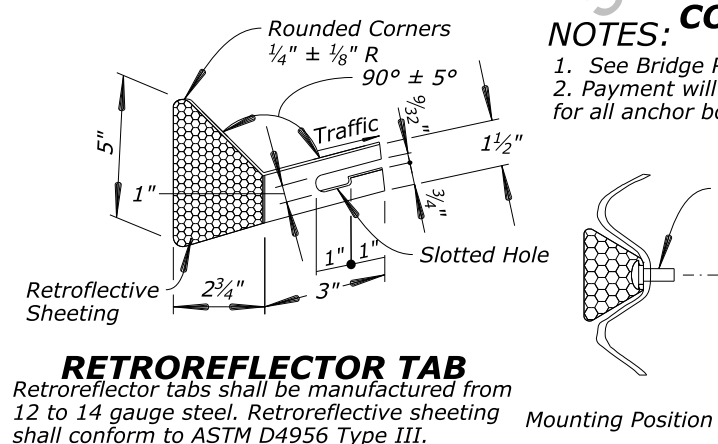
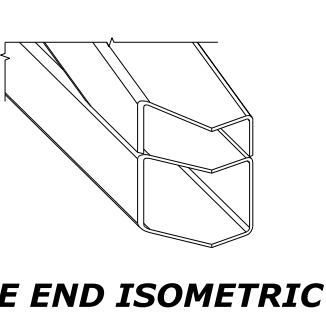
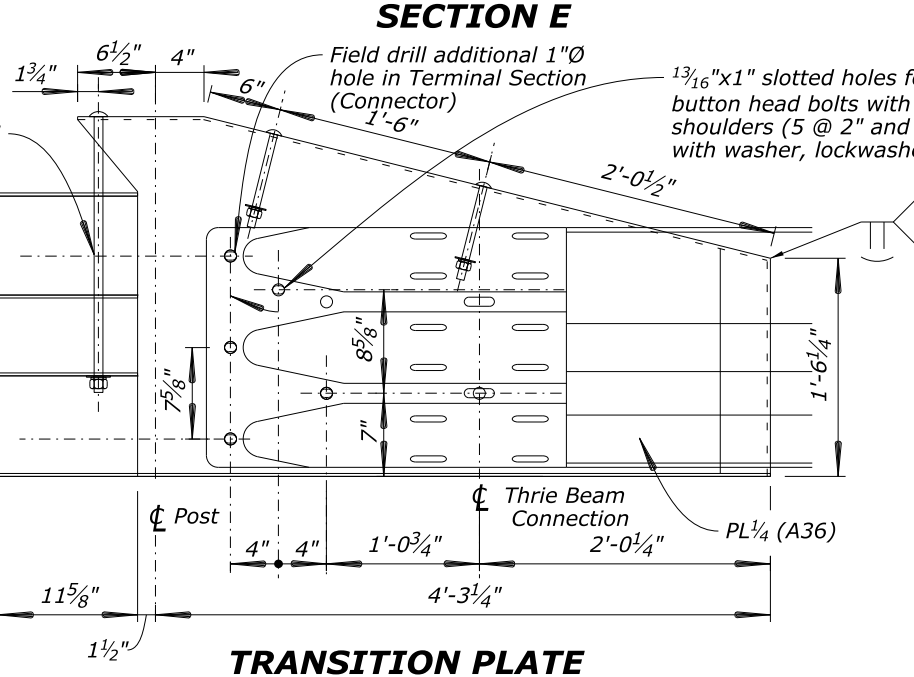
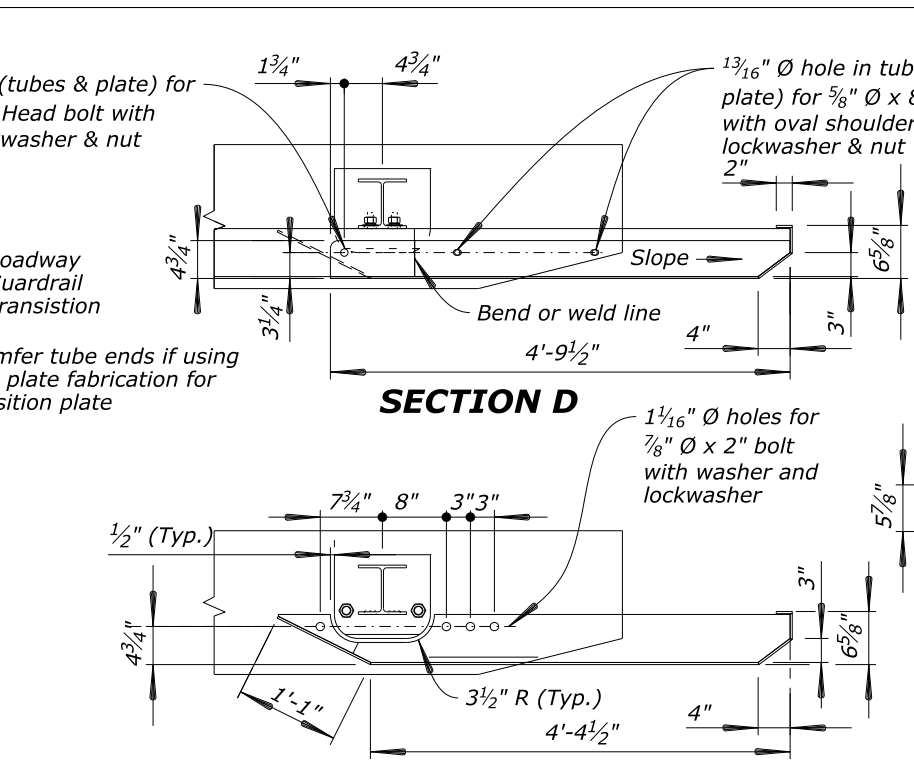
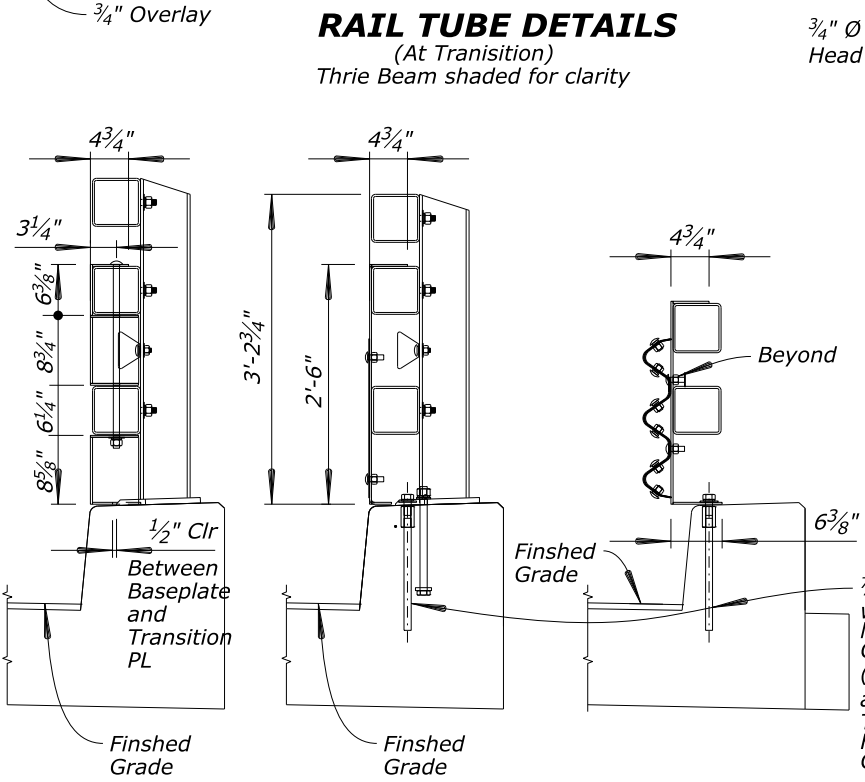
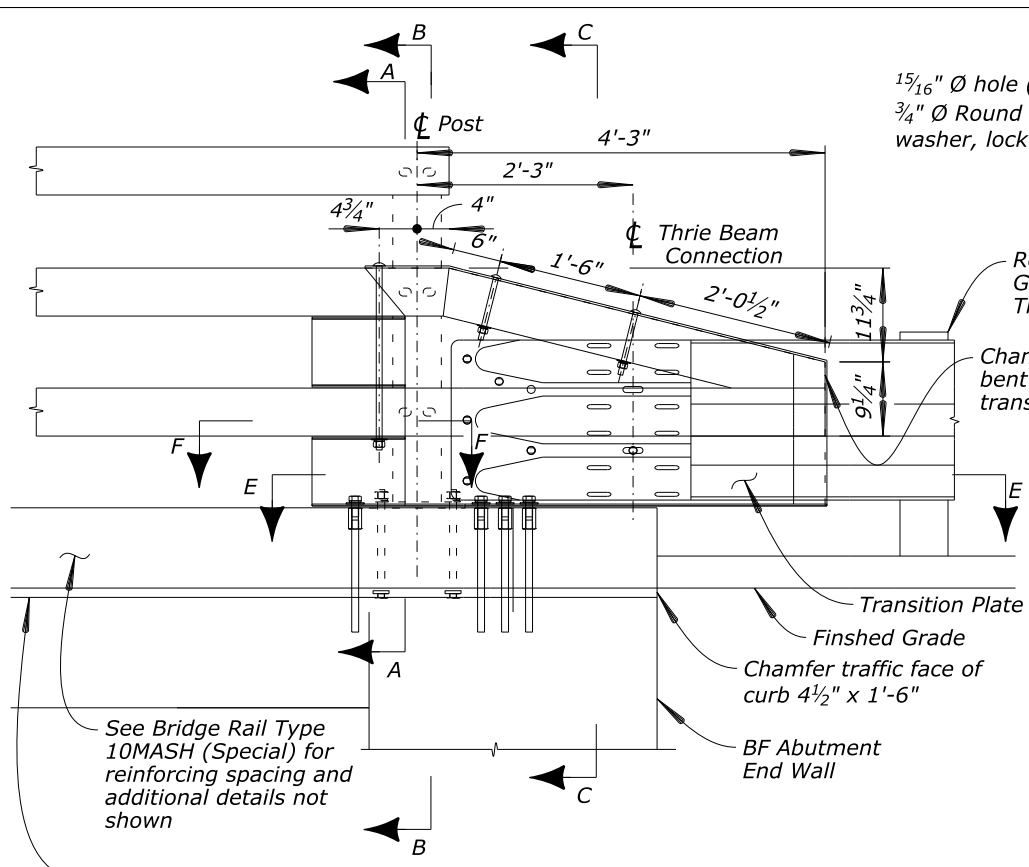
U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

IVY STREET (US34) BRIDGE
 OVER BIG THOMPSON RIVER
 CITY OF ESTES PARK
 LARIMER COUNTY, COLORADO

BRIDGE RAIL TYPE 10MASH (SPECIAL) (1 OF 2)

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Steve Haynes	Oscar Avila	Gary Maji	Not To Scale	Steve McQuilkin	34 of 41	June 2021	RG3121-HH

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NOTES:

- See Bridge Rail Type 10MASH for notes and design data.
- Payment will be made under item 55601, Bridge Railing, Steel Two Rail (Type 10MASH), for all anchor bolts, miscellaneous bolts, nuts, washers, and tubes.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
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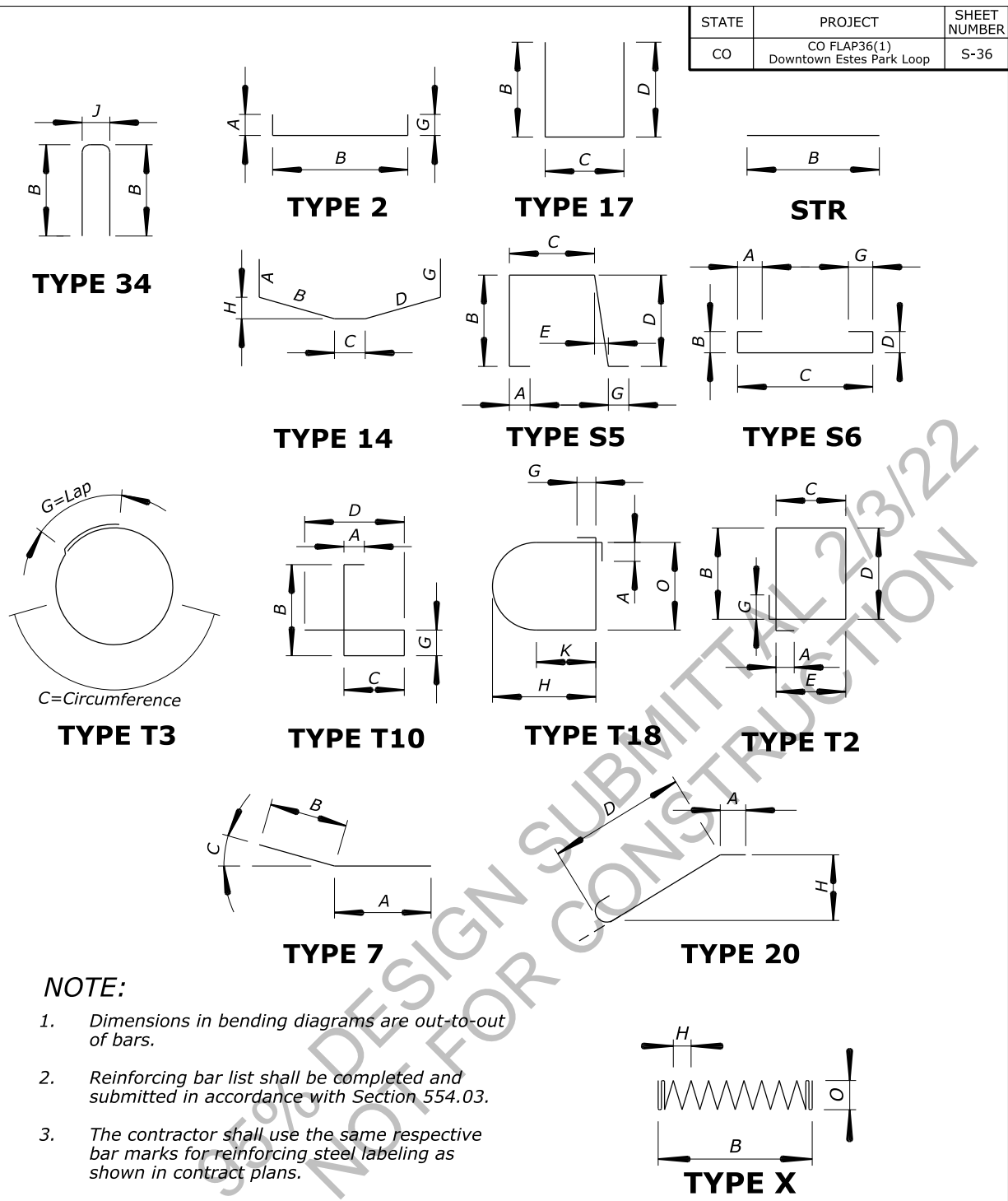
IVY STREET (US34) BRIDGE
OVER BIG THOMPSON RIVER
CITY OF ESTES PARK
LARIMER COUNTY, COLORADO

**BRIDGE RAIL TYPE 10MASH
(SPECIAL) (2 OF 2)**

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Steve Haynes	Oscar Avila	Gary Maji	Not To Scale	Steve McQuilkin	35 of 41	June 2021	RG3121-II

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Reinforcing Steel Schedule					Dimension Table												
Bar Mark	Quantity	Bar Size	Length	Weight	Location	Bar Mark	Type	A	B	C	D	E	G	H	J	K	O
Bridge Deck & End Walls																	
BD1	85	#5	8146	8496	Long. (Top)	BD1	Str		95.83								
BD2a	17	#5	124	130	Trans. (Top)	BD2a	Str		2.83								
BD2q	Through					BD2q	Str		11.79								
BD3a	26	#5	503	524	Trans. (Top)	BD3a	Str		12.34								
BD3z	Through					BD3z	Str		26.34								
BD4a	26	#5	881	919	Trans. (Top)	BD4a	Str		26.90								
BD4z	Through					BD4z	Str		40.90								
BD5	66	#5	2783	2903	Trans. (Top)	BD5	Str		42.17								
BD6a	25	#5	1177	1228	Trans. (Top)	BD6a	Str		42.65								
BD6y	Through					BD6y	Str		51.52								
BD7a	26	#5	1141	1190	Trans. (Top)	BD7a	Str		50.74								
BD7z	Through					BD7z	Str		37.04								
BD8a	26	#5	804	838	Trans. (Top)	BD8a	Str		37.08								
BD4z	Through					BD4z	Str		24.75								
BD9a	26	#5	484	505	Trans. (Top)	BD9a	Str		24.27								
BD9z	Through					BD9z	Str		12.96								
BD10a	20	#5	173	180	Trans. (Top)	BD10a	Str		12.52								
BD10t	Through					BD10t	Str		4.75								
BD11a	8	#9	118	401	Long. (Top & Bot. Flare Rt)	BD11a	Str		14.25								
BD11b	Through					BD11b	Str		15.25								
BD12a	36	#5	449	469	Long. (Top & Bot. Flare Rt)	BD12a	Str		3.96								
BD12s	Through					BD12s	Str		21.00								
BD13a	20	#5	111	116	Trans. (Bot.)	BD13a	Str		1.75								
BD13t	Through					BD13t	Str		9.35								
BD14a	14	#5	125	131	Trans. (Bot.)	BD14a	Str		8.56								
BD14n	Through					BD14n	Str		9.35								
BD15	2	#5	105	110	Trans. (Top Abut. 1)	BD15	Str		52.50								
BD16	2	#5	178	185	Trans. (Top Abut. 2)	BD16	Str		85.54								
BD17	8	#9	341	1158	Long. (Top & Bot. Flare Lt)	BD17	Str		39.25								
BD18a	13	#5	115	120	Long. (Top & Bot. Flare Lt)	BD18a	Str		8.88								
BD18m	Through					BD18m	Str		37.25								
BD19	84	#5	2520	2628	Long. (Top over Pier 1)	BD19	Str		30.00								
BD20a	26	#5	87	90	Trans. (Bot. Flare Lt)	BD20a	Str		2.00								
BD20z	Through					BD20z	Str		4.67								
BD21a	20	#5	100	104	Trans. (Bot. Flare Lt)	BD21a	Str		5.00								
BD21t	Through					BD21t	Str		6.83								
BD22a	4	#4	143	95	Long. (Top & Bot. Flare Lt)	BD22a	Str		35.67								
BD23	4	#4	61	41	Long. (Top & Bot. Flare Rt)	BD23	Str		15.25								
BD24	48	#5	258	269	Trans. (Flare Beams Lt and Rt)	BD24	T2	0.50	1.02	1.17	1.02	1.17	0.50				
BD25	45	#3	157	59	Trans. (Flare Beams Lt and Rt)	BD25	T20	0.83			1.83	0.33	0.50	1.23			
BD26	106	#4	495	330	Trans. (Deck Hook Bar at Flares)	BD26	Type S6	0.33	4.00	0.33			0.67				
BD27	110	#4	614	410	Long. (End Wall Ties)	BD27	T10	0.33	2.21	0.42	2.21		0.42				
BD28	26	#4	227	152	Long. (End Wall Ties at Flares)	BD28	T2	0.33	2.21	1.83	2.21	1.83	0.33				
BD29	2	#5	105	110	Trans. (Bottom End Wall Abut. 1)	BD29	Str		52.50								
BD29	2	#5	178	185	Trans. (Bottom End Wall Abut. 2)	BD29	Str		85.54								
BD30	7	#4	368	245	Trans. (End Wall Ext. Vert. Face)	BD30	Str		52.50								
BD30	7	#4	599	400	Trans. (End Wall Ext. Vert. Face)	BD30	Str		85.54								
BD31	3	#4	33	22	Trans. (End Wall Int. Vert. Face)	BD31	Str		11.00								
BD32	3	#4	38	25	Trans. (End Wall Int. Vert. Face)	BD32	Str		12.50								
BD33	4	#4	14	9	Long. (End Wall Flare Lt End.)	BD33	Type 2	0.50	2.00					1.00			
BD34	4	#4	16	11	Long. (End Wall Flare Lt End.)	BD34	Type 2	0.50	3.00				0.50				
BD35	1	#4	6	4	Long. (End Wall Ties Flare Lt)	BD35	T10	1.20	2.21	0.42	2.21						
BD36	1	#4	8	5	Long. (End Wall Ties Flare Lt)	BD36	T2	0.33	2.21	2.21	0.42	2.21	0.42	0.33			
BD37	4	#4	15	10	Long. (Flare Beam to End Wall R)	BD37	Str		3.67								
BD38	4	#4	11	8	Long. (Flare Beam to End Wall R)	BD38	T2	0.33	2.50								
Total Weight for Release				24818													
Bridge Rail																	
BR1	7	#3	724	272	Long. Curb Lt.	BR1	Str		103.42								
BR1	5	#3	434	163	Long. Curb Rt	BR1	Str		86.75								
BR2	208	#3	1456	547	Transv. Curb Lt.	BR2	T2	0.33	1.97	1.17	1.97	1.23	0.33			0.50	
BR3	175	#3	1309	492	Transv. Curb Rt.	BR3	T2	0.33	2.20	1.17	2.20	1.25	0.33			0.50	
BR4	7	#3	37	14	Long Curb Rt. (Splice Bar at Bend)	BR4	T14	2.00		2.00							
BR5	20	#3	82	31	Long Curb Rt. (Splice Bar at Bend)	BR5	S5		0.33	1.17	2.17	0.12	0.33				
BR6	20	#3	43	16	Long Curb Rt. (Splice Bar at Bend)	BR6	Type 2	0.33	1.50								
Total Weight for Release				1536													
Sidewalk																	
SW1	64	#4	491	328	Trans.	SW1	Str		7.67								
SW2	94	#4	298	199	Trans. L bar (Embedded)	SW2	Type 2	0.83	2.33								
SW3a	6	#4	25	17	Long. Bar	SW3a	Str		2.00								
SW3f	Through					SW3f	Str		6.46								
SW4a	9	#4	634	423	Long. Bar (2'-3" Lap Spl)	SW4a	Str		72.38								
SW4f	Through					SW4f	Str		68.50								
SW5a	9	#4	181	121	Long. Bar (Flare)	SW5a	Type 7	16.50	2.50	45°							
SW5f	Through					SW5f	Str	18.67	2.50	45°							
SW6a	3	#4	38	25	Long. Bar (Flare)	SW6a	Str		17.13								
SW6c	Through					SW6c	Str		8.00								
SW7	1	#4	24	16	Long. Bar (Curved on Site)	SW7	Str		22.00								
SW8	48	#4	666	445	Trans. Flare (Vary Lap Spl.)	SW8	Str		13.88								
Total Weight for Release				1574													



NOTE:

- Dimensions in bending diagrams are out-to-out of bars.
- Reinforcing bar list shall be completed and submitted in accordance with Section 554.03.
- The contractor shall use the same respective bar marks for reinforcing steel labeling as shown in contract plans.
- All reinforcement shall be epoxy coated unless otherwise noted on plans.

Abbreviations:

FF = Front Face
 BF = Back Face
 B/W = Between
 OH = Overhang

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP36(1) Downtown Estes Park Loop	S-36

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

IVY STREET (US34) BRIDGE
 OVER BIG THOMPSON RIVER
 CITY OF ESTES PARK
 LARIMER COUNTY, COLORADO

BAR LIST (1 OF 2)

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Steve Haynes	Steve Haynes	Gary Maji	NA	Steve McQuilkin	36 of 41	June 2021	RG3121-JJ

1/18/2022 4:06:09 PM pw:\laecom-na-pw.bentley.com\AECOM_DS01_NA\Documents\60332740-Estes Park\900-Work\910_CAD\02-SHEETS\S-550\COFLAP34_36 STR Ivy_BL02.dgn

Reinforcing Steel Schedule table with columns: Bar Mark, Quantity, Bar Size, Length, Weight, Location, Bar Mark, Type, A, B, C, D, E, G, H, J, K, O. Includes sections for Abutment 1, Abutment 2, Piers (Each), Wing Wall 1, and Wing Wall 2.

Reinforcing Steel Schedule table with columns: Bar Mark, Quantity, Bar Size, Length, Weight, Location, Bar Mark, Type, A, B, C, D, E, G, H, O. Includes sections for Drilled Shaft (Total), Pier 1 (5 Shafts), Pier 2 (7 Shafts), Prestressed Concrete Slab Girders, and Span 1 (All) Span 2 (Girders 2-6).

STATE: CO PROJECT: CO FLAP36(1) Downtown Estes Park Loop SHEET NUMBER: S-37

NOTES: 1. See Bar List (1 of 2) for additional information.

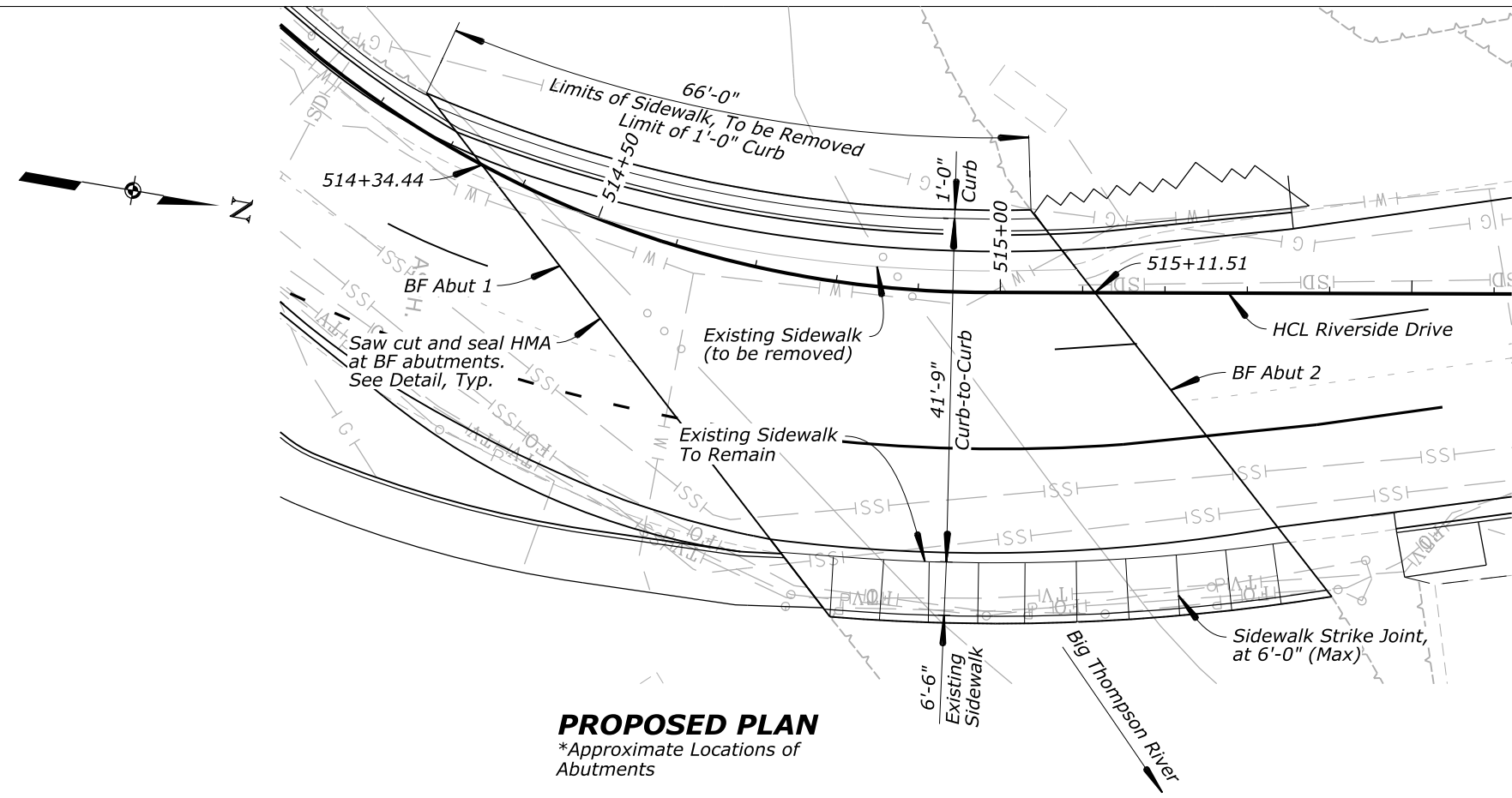
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION IVY STREET (US34) BRIDGE OVER BIG THOMPSON RIVER CITY OF ESTES PARK LARIMER COUNTY, COLORADO BAR LIST (2 OF 2)

Revision table with columns: NO., DATE, BY, REVISIONS, DESIGNED BY, DRAWN BY, CHECKED BY, SCALE, PROJECT TEAM LEADER, BRIDGE DRAWING, DATE, DRAWING NO.

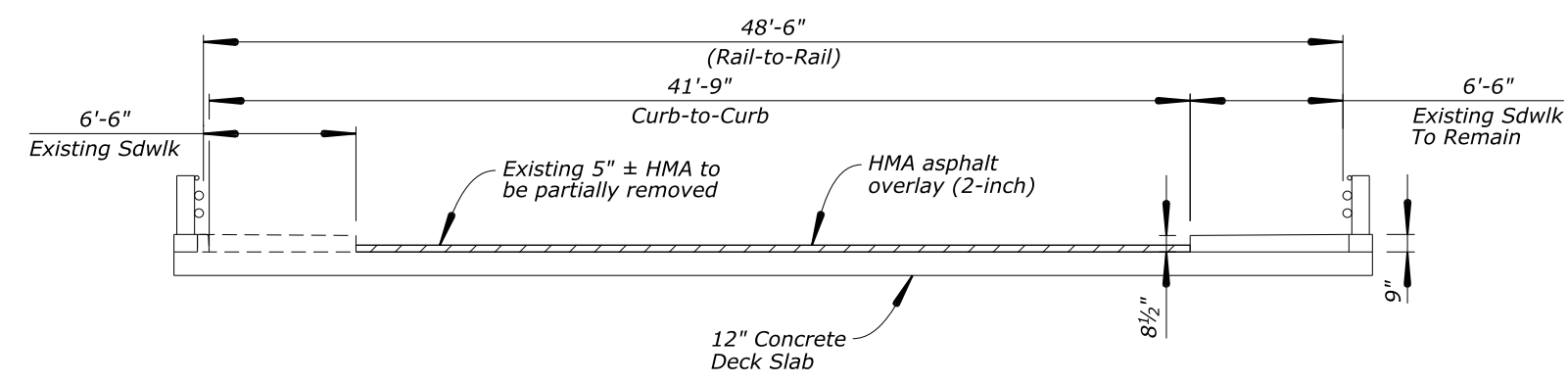
NOTES:

- Riverside Bridge reconstruction includes: west sidewalk removal and curb reconstruction, bridge barrier reconstruction, and partial depth resurfacing of the asphalt deck.
- Drill and secure with epoxy-based high strength anchoring adhesive conforming to ICC-ES Acceptance Criteria AC308 Option for reinforcing Bar Evaluation. Bars shall be embedded in accordance with manufacturer's recommendations.
- All concrete shall be Concrete Class A (AE) and have a minimum 28-day compressive strength of $f'c=4500$ psi.
- All reinforcing steel shall conform to AASHTO M31 or M32, Grade 60, deformed. All reinforcing steel shall be epoxy coated.
- Concrete and reinforcing steel shall conform to the requirements of Sections 601 and 554, respectively.
- Concrete finish shall be Class 1 or Class 2 as defined in Section 552.
- Contractor is responsible for the stability of the existing parapets during construction.
- Chamfer all exposed edges of concrete $\frac{3}{4}$ " unless otherwise noted.
- Protect existing bridge drains in place. Provide cap at time of construction.
- For removals outside limits of the bridge, see Roadway Plans.
- All dimensions are approximate and based on bridge inspection drawing dated 8/23/11. Contractor shall field verify all dimensions.
- Burn back any exposed rebar 2" below surface. Patch or cover with Proposed curb.
- Contractor to remove existing asphalt to 1" above bridge deck. Contractor is responsible for confirming thickness of HMA layer.

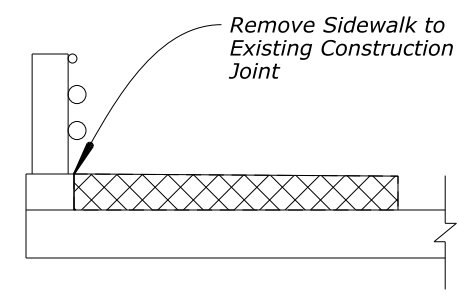
Item Number	Item Description	Unit	Quantity
41301-0000	Asphalt Pavement Milling	SY	262
20303-3200	Removal of Concrete Sidewalk	SY	51
40101-0600	Asphalt concrete pavement, gyratory mix, 1/2 Inch nominal maximum size aggregate, 0.3 to <3 Million ESAL	Ton	29
41410-0000	Joint Sealer & Crack Filler	LB	70
55401-2000	Reinforcing Steel (Epoxy Coated)	LB	224
60101-0000	Concrete	CY	3



PROPOSED PLAN
*Approximate Locations of Abutments



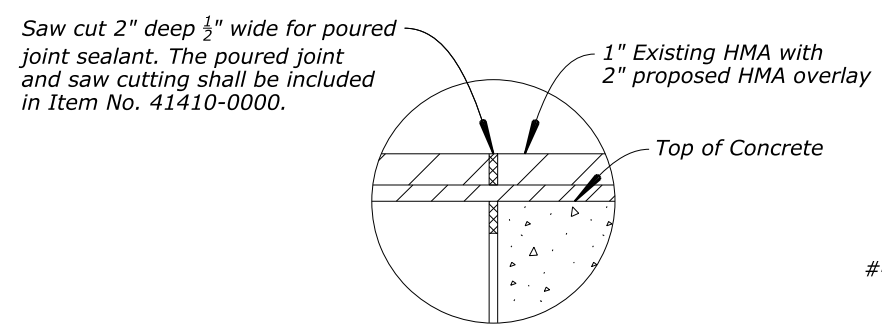
TYPICAL SECTION



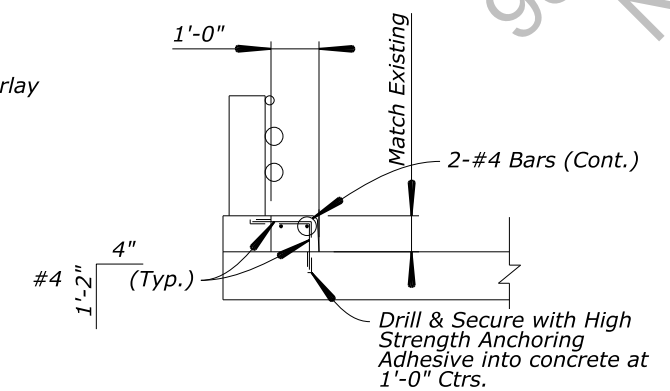
WEST REMOVAL DETAIL



Remove the full depth of existing sidewalk.



BRIDGE SAW CUT AND JOINT SEALANT DETAIL
Typical as noted on plans



WEST REINFORCEMENT DETAIL

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

RIVERSIDE DRIVE BRIDGE
OVER BIG THOMPSON RIVER
CITY OF ESTES PARK
LARIMER COUNTY, COLORADO

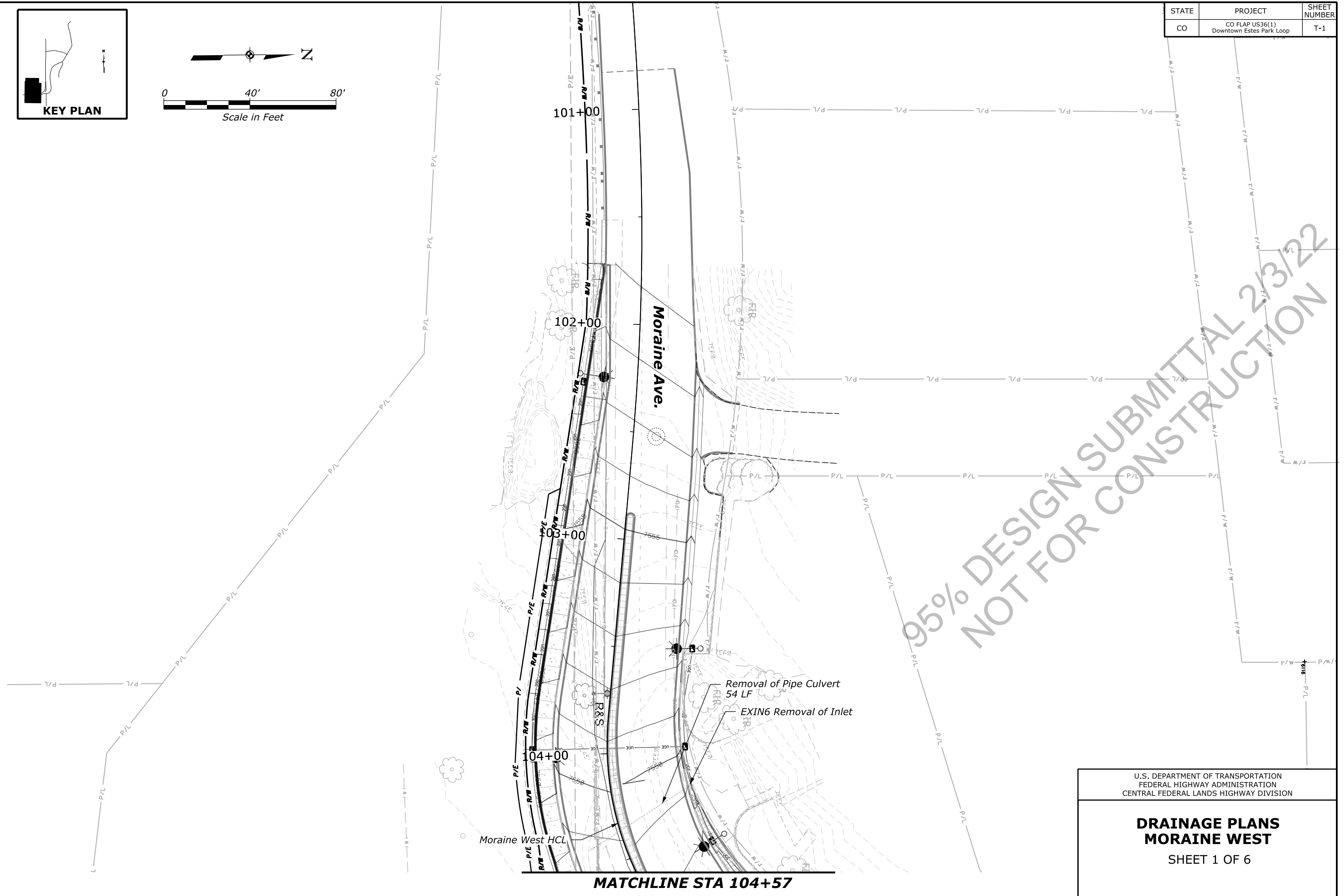
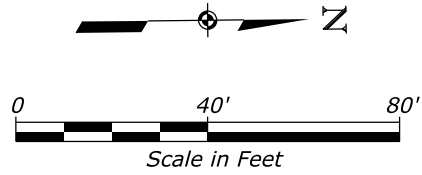
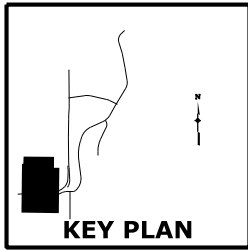
**RIVERSIDE
REMOVAL DETAIL**

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								Gary Maji	Oscar Avila	Steve Haynes	Not To Scale	Steve McQuilkin	1 of 1	June 2021	RG3135-A

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-1

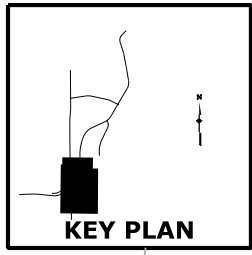


95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

DRAINAGE PLANS
MORaine WEST
SHEET 1 OF 6

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-2

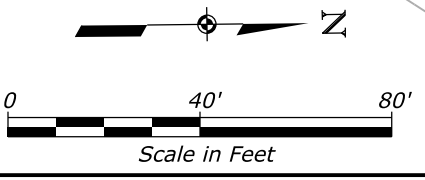
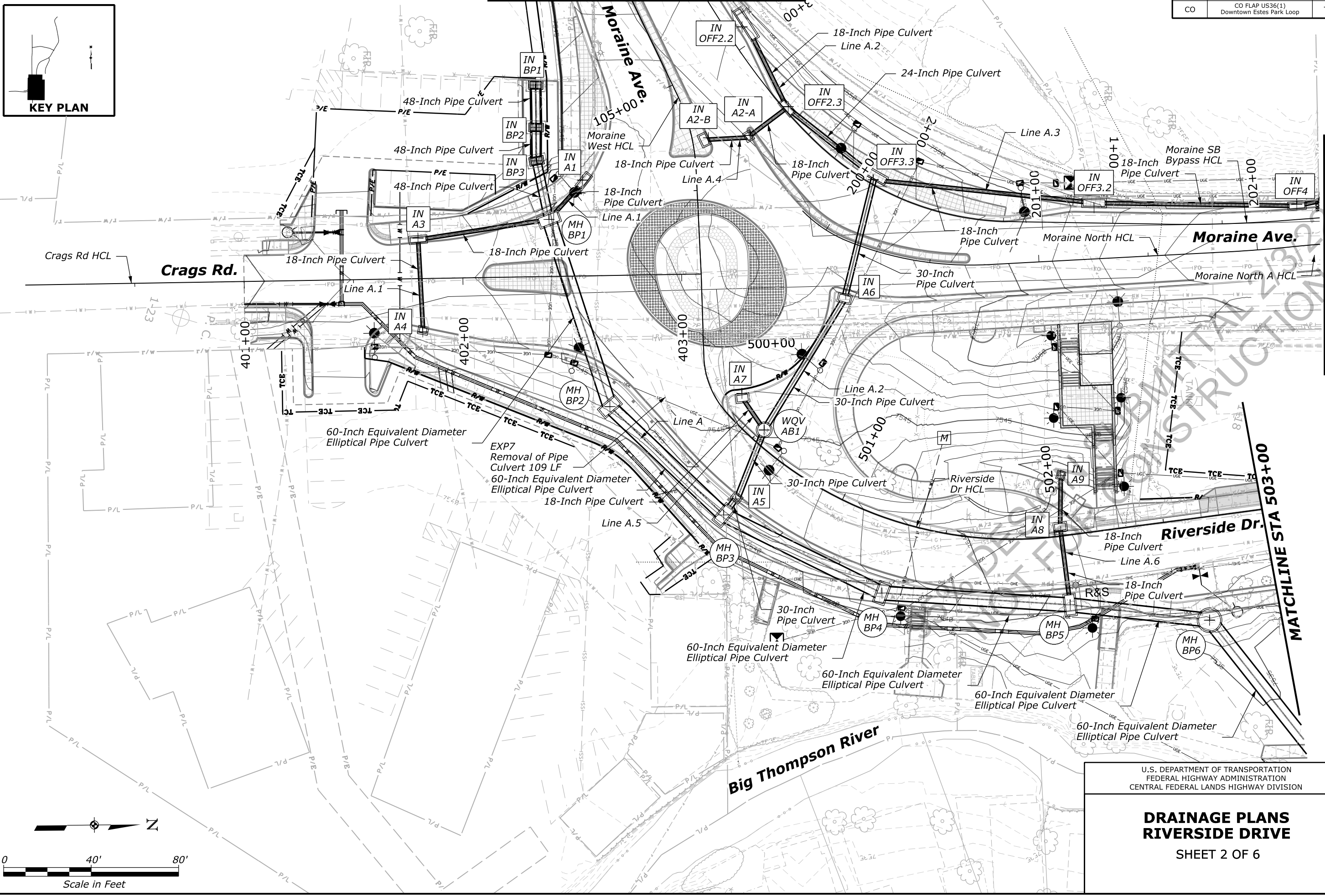


MATCHLINE STA 104+57

MATCHLINE STA 202+50

MATCHLINE STA 503+00

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U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

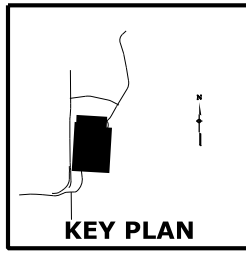
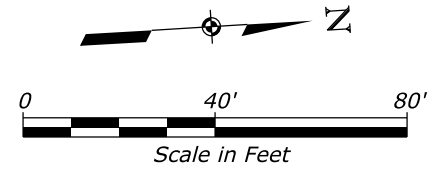
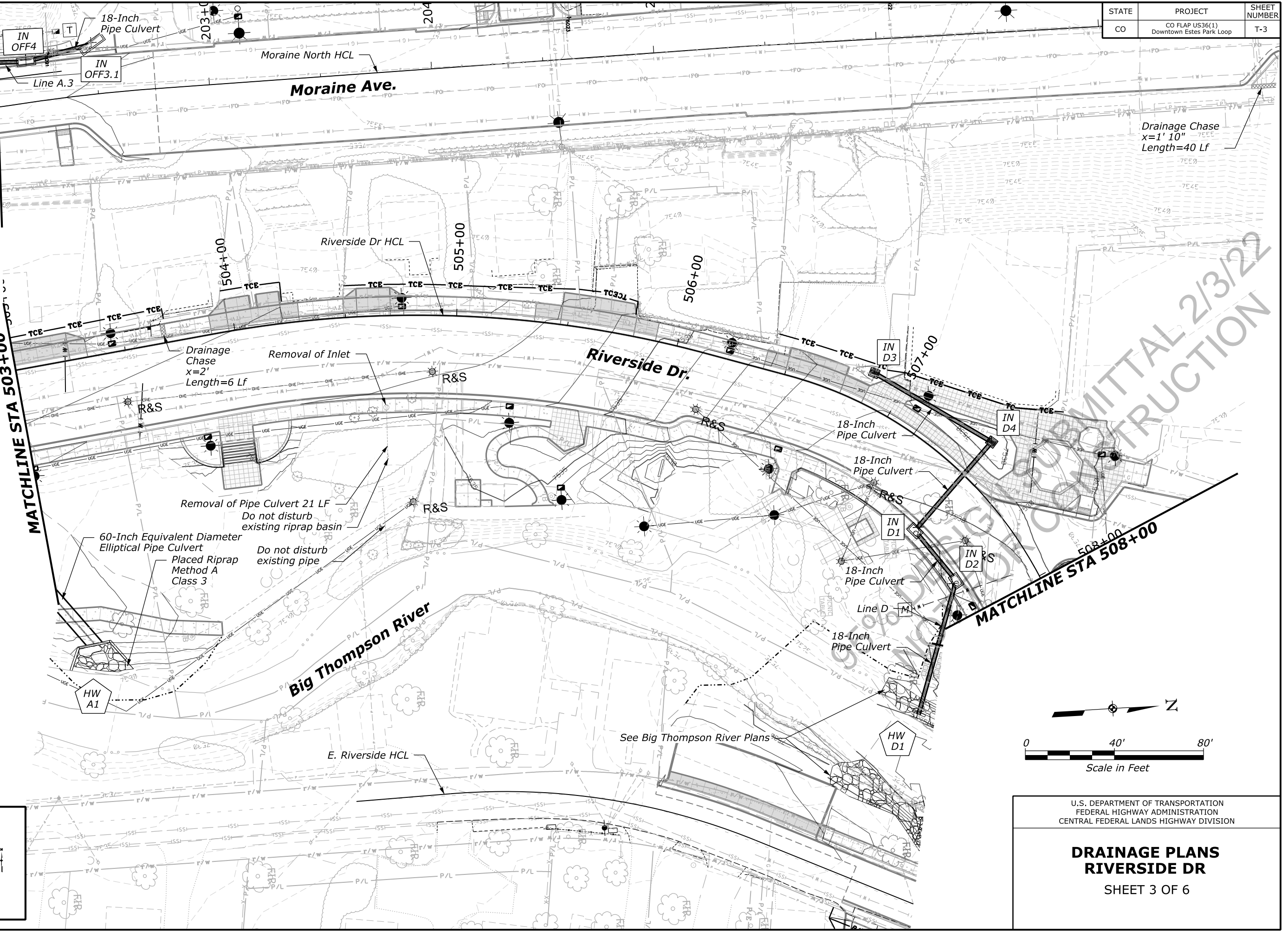
**DRAINAGE PLANS
RIVERSIDE DRIVE**
SHEET 2 OF 6

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-3

MATCHLINE STA 202+50

MATCHLINE STA 503+00

MATCHLINE STA 508+00



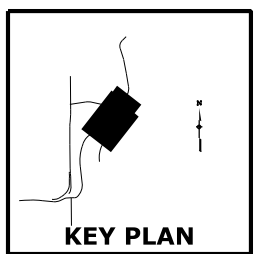
U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**DRAINAGE PLANS
 RIVERSIDE DR**

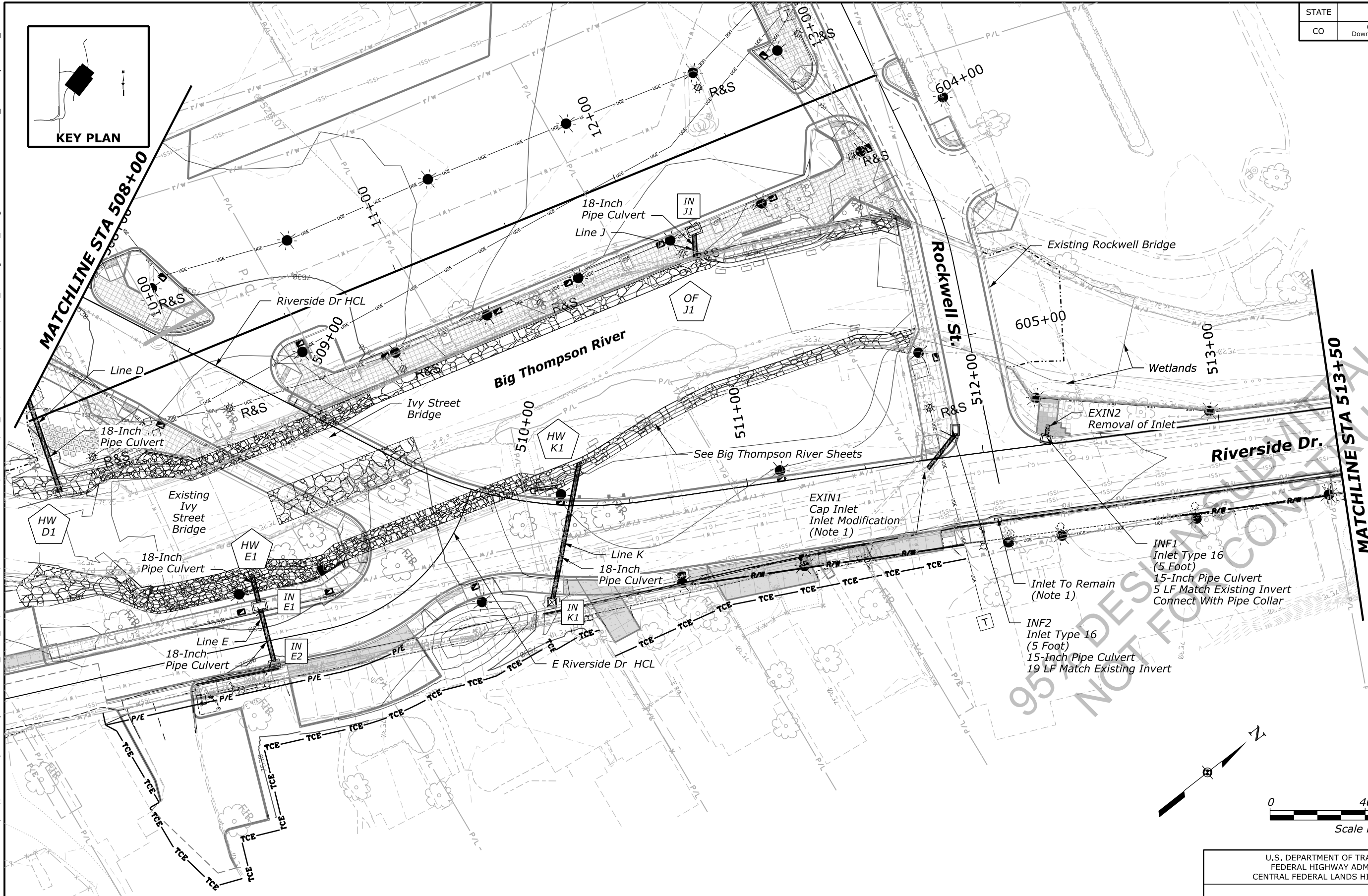
SHEET 3 OF 6

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-4



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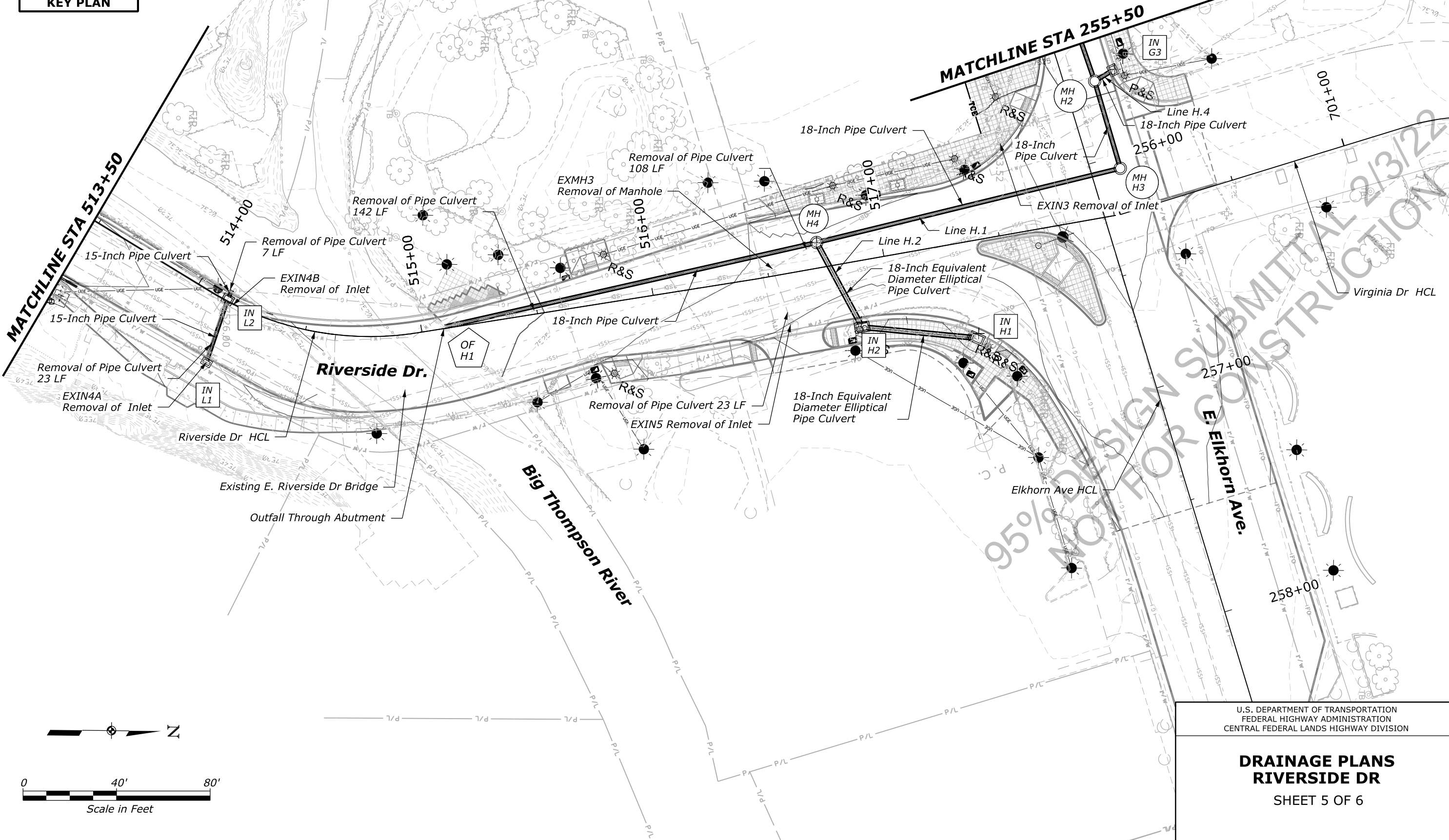
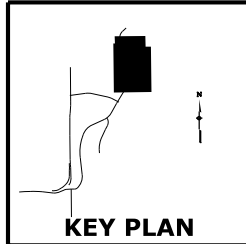
NOTE:
1. Confirm connections prior to any storm sewer removals.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**DRAINAGE PLANS
RIVERSIDE DR**

SHEET 4 OF 6

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-5

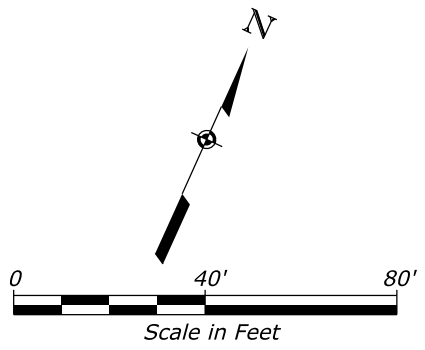
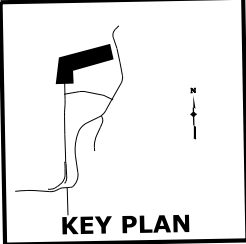


U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**DRAINAGE PLANS
RIVERSIDE DR**
SHEET 5 OF 6

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-6



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MATCHLINE STA 255+50

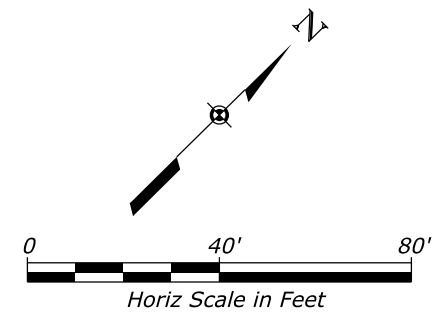
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

DRAINAGE PLANS
RIVERSIDE DR
SHEET 6 OF 6

95% DESIGN NOT FOR CONSTRUCTION 2/13/22

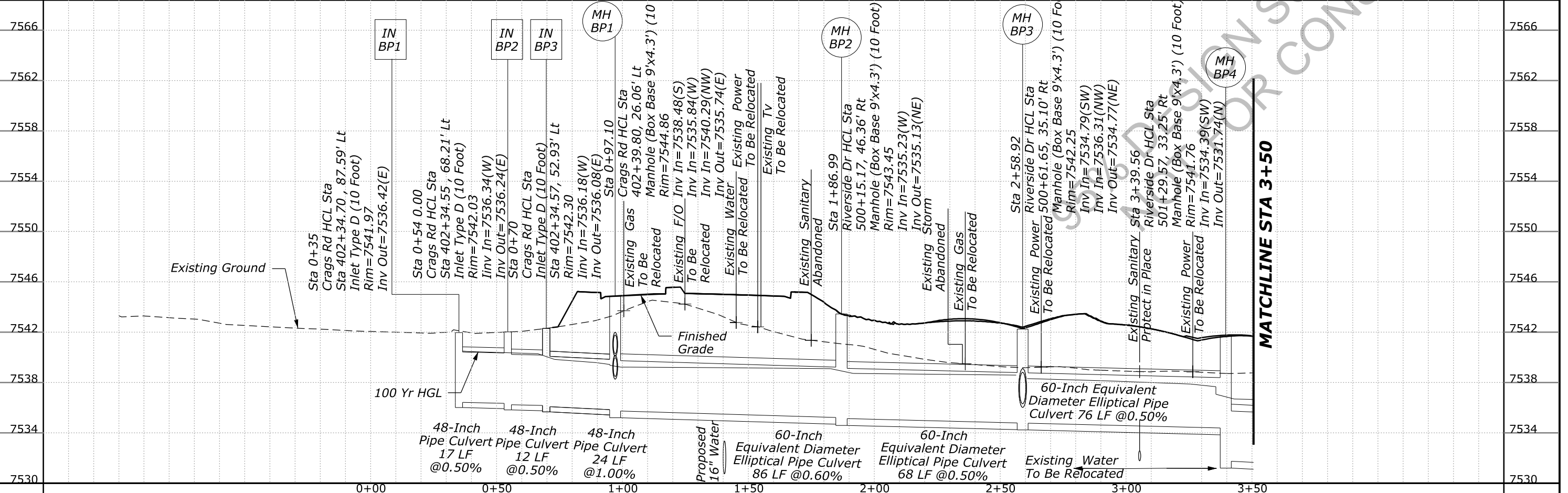
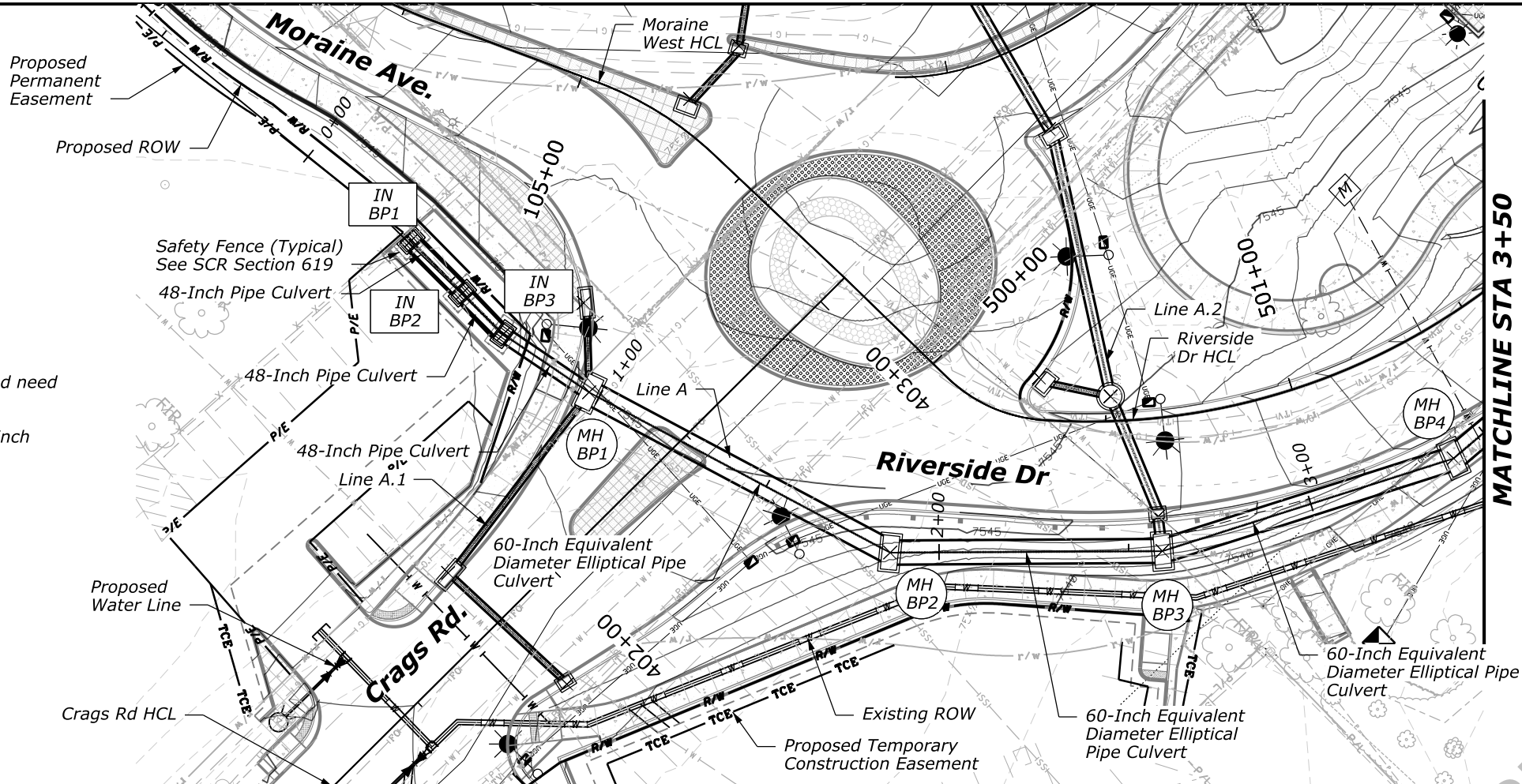
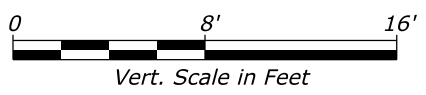
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-7

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NOTES:

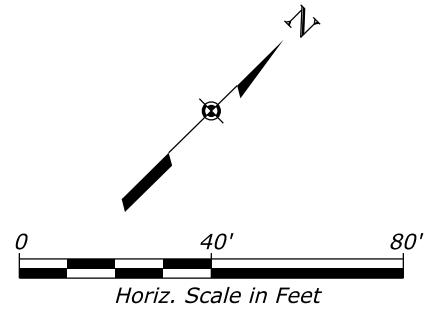
- Vertical location of utilities are unknown and need to be verified prior to construction.
- 60-Inch equivalent shall be 76-inch by 48-inch horizontal elliptical pipe culvert.



BYPASS CULVERT PLAN AND PROFILE - LINE A

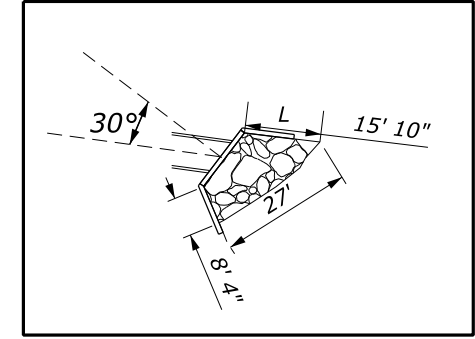
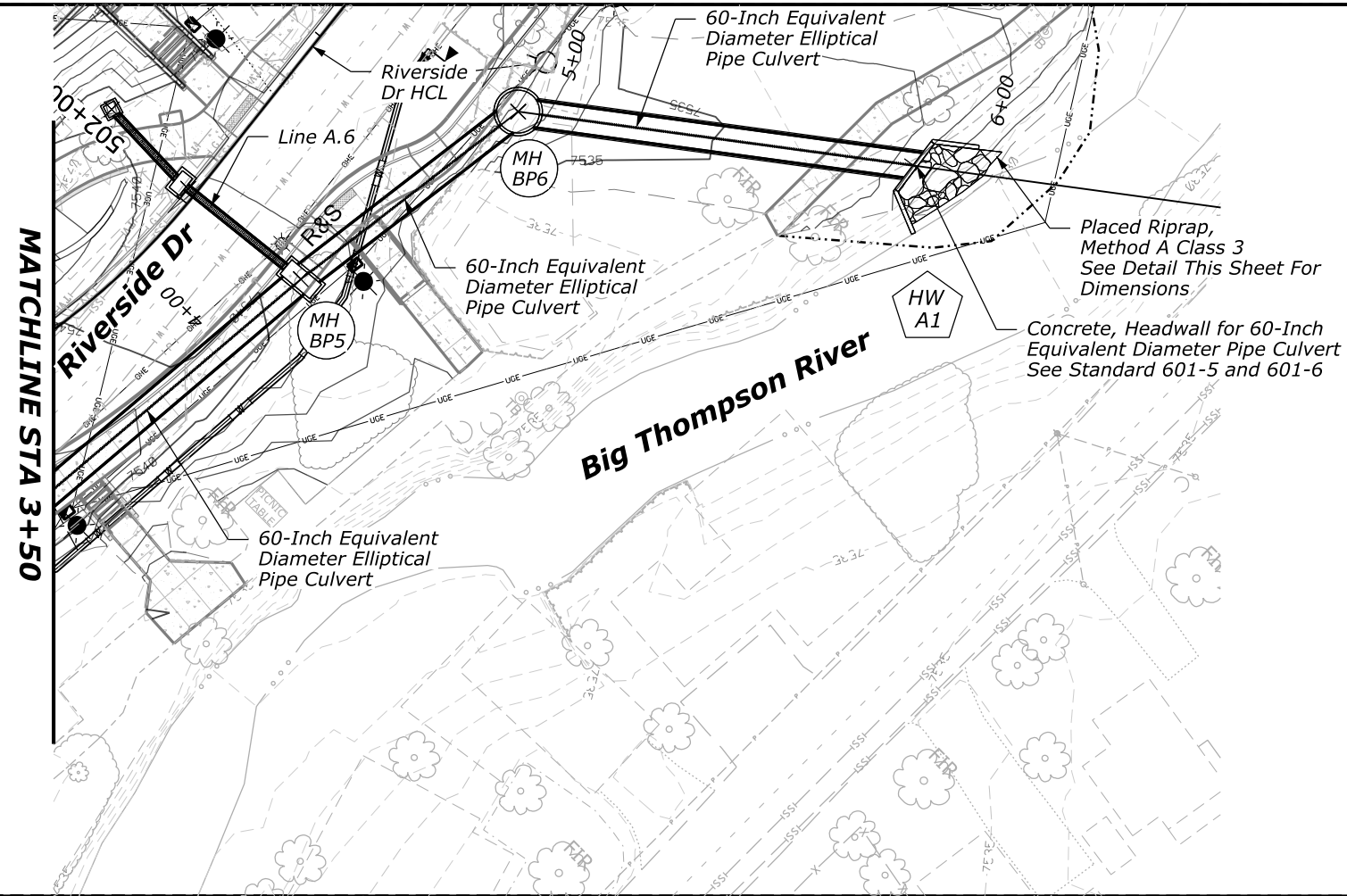
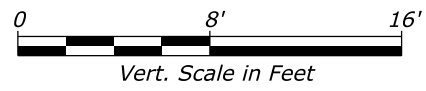
DESIGN SUBMITTAL 2/3/22 FOR CONSTRUCTION

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-8



NOTES:

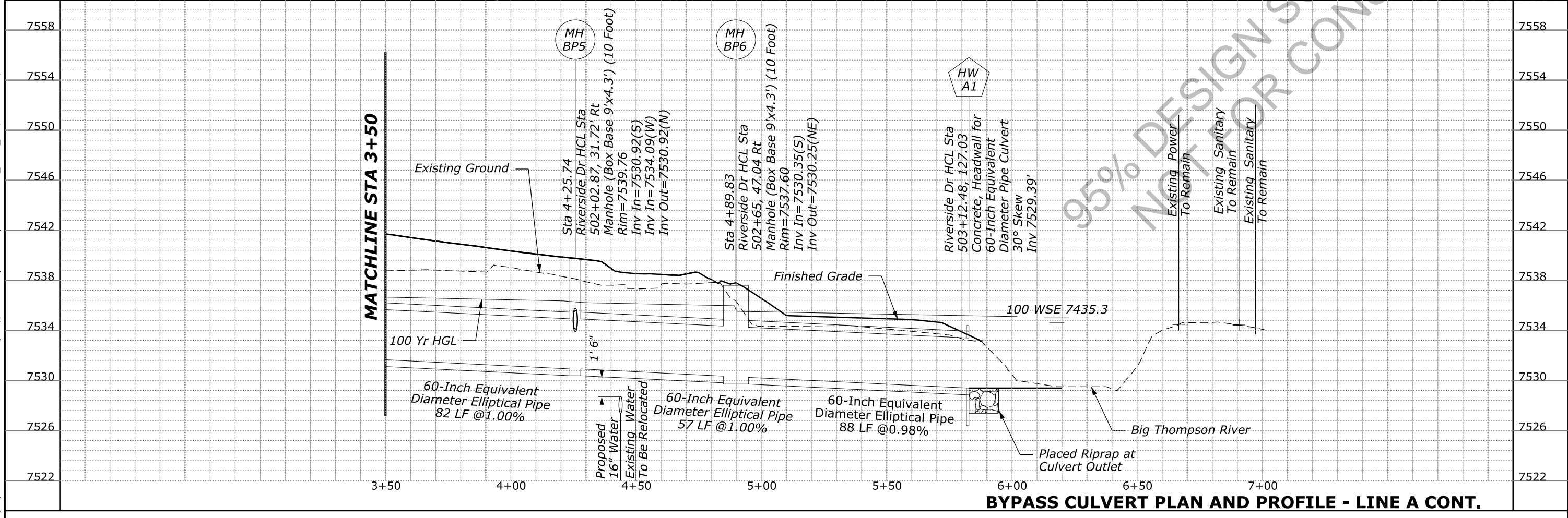
1. Vertical location of utilities are unknown and need to be verified prior to construction.
2. 60-Inch equivalent shall be 76-inch by 48-inch horizontal elliptical pipe culvert.



Placed Riprap Detail

See 251-50
L = Apron Length
Thickness = 2'

95% DESIGN SUBMITTAL 2/3/22 NOT FOR CONSTRUCTION

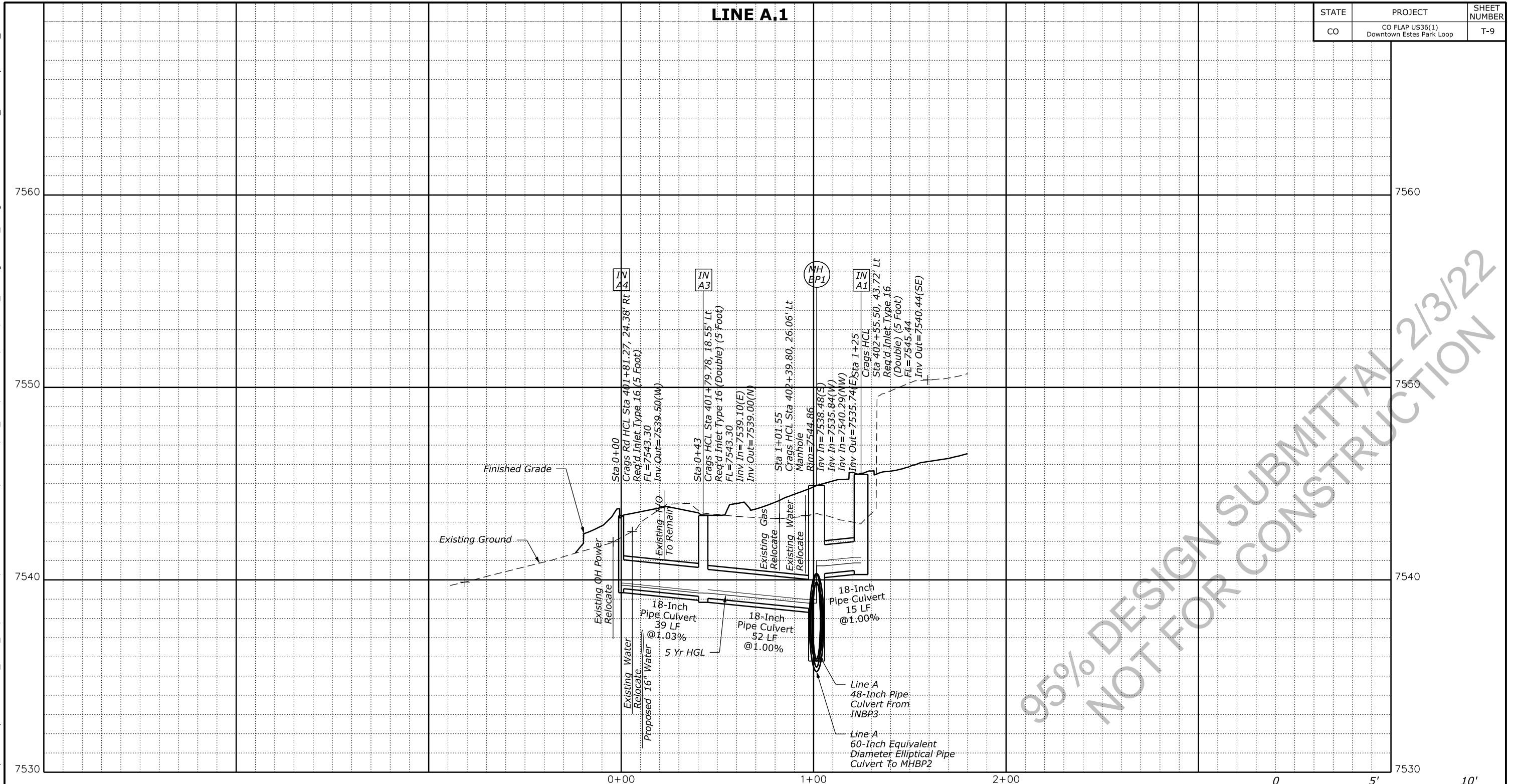


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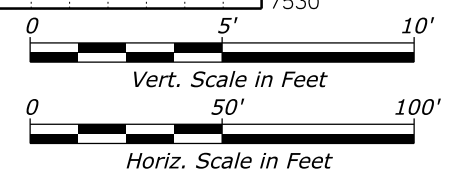
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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-9

LINE A.1



95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

DRAINAGE PROFILES

SHEET 1 OF 9

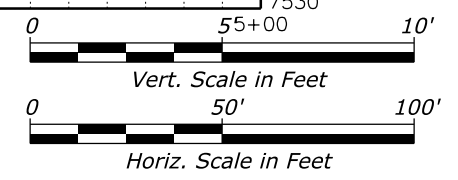
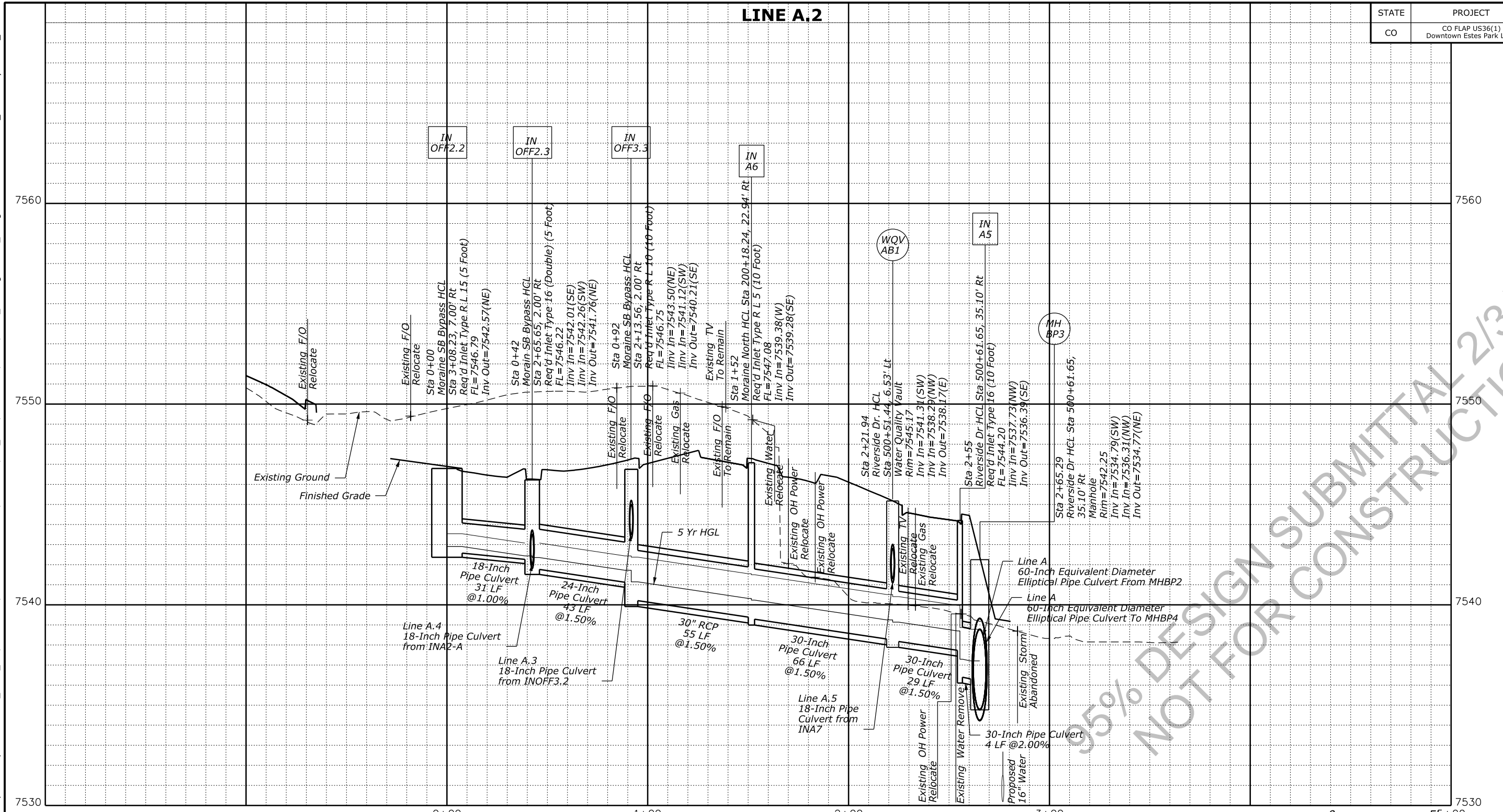
NOTE:

1. Vertical location of utilities are unknown and need to be verified prior to construction.

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-10

LINE A.2



NOTES:

- Vertical location of utilities are unknown and need to be verified prior to construction.
- See waterline plans for final design.

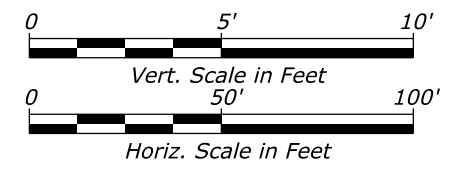
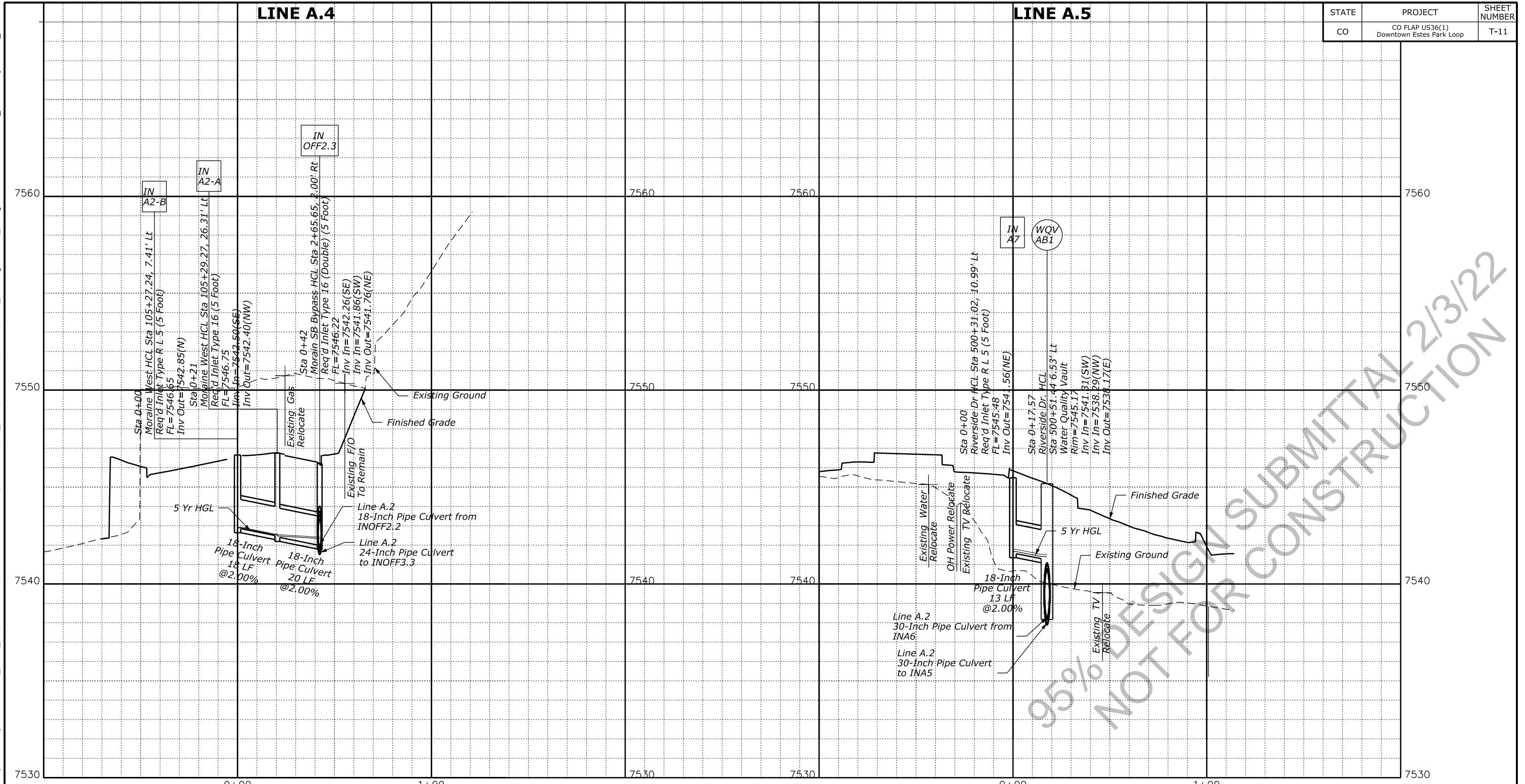
U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

DRAINAGE PROFILES

SHEET 2 OF 9

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-11



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

DRAINAGE PROFILES

SHEET 3 OF 9

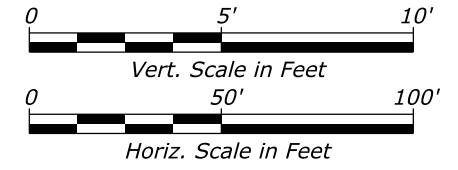
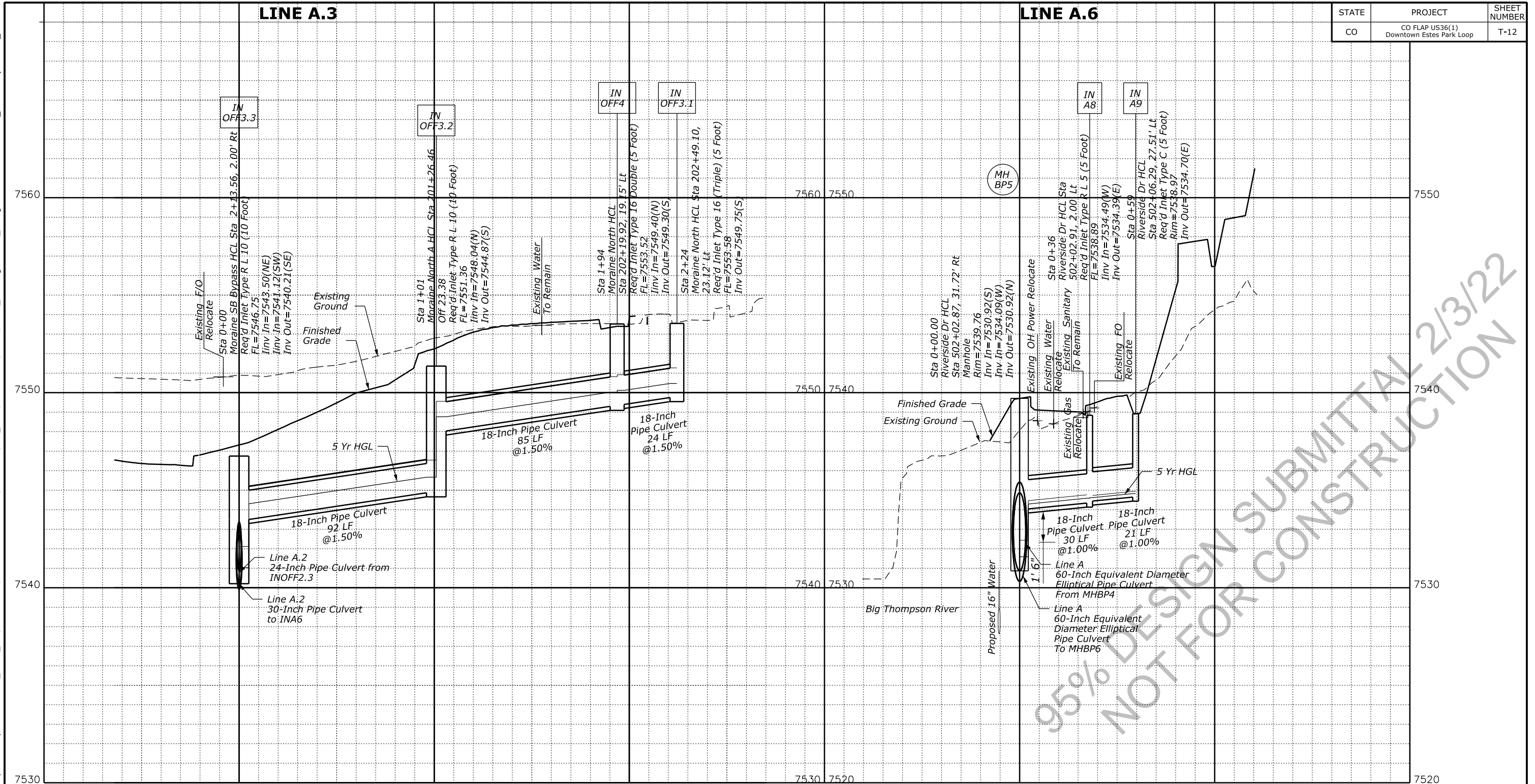
NOTE:

- Vertical location of utilities are unknown and need to be verified prior to construction.

95% DESIGN SUBMITTAL 2/13/22
NOT FOR CONSTRUCTION

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-12



NOTE:
1. Vertical location of utilities are unknown and need to be verified prior to construction.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

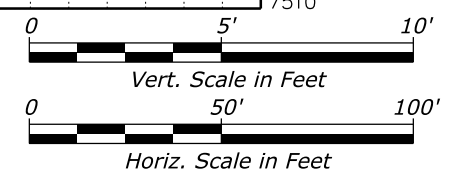
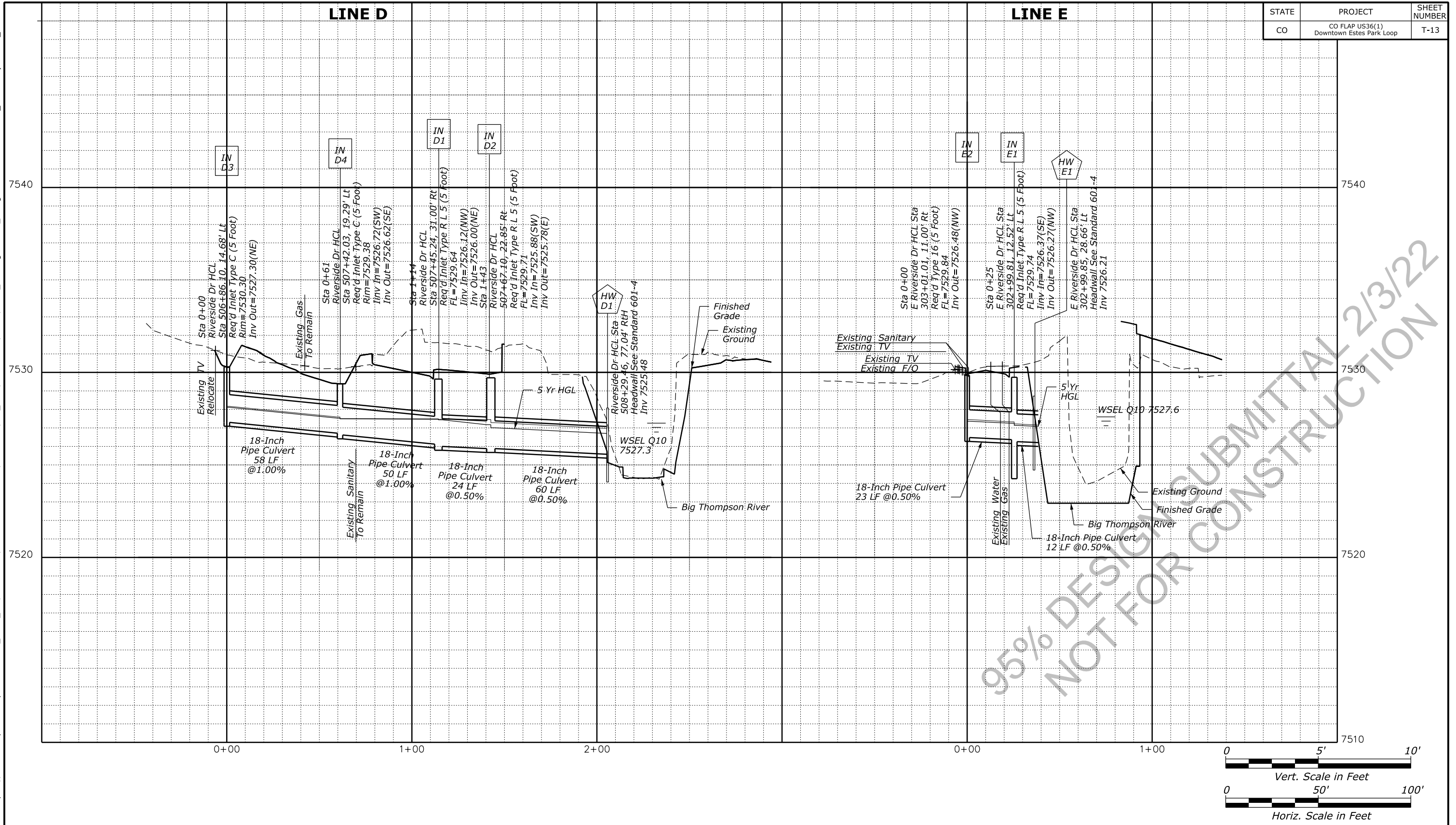
DRAINAGE PROFILES

SHEET 4 OF 9

95% DESIGN SUBMITTAL 2/13/22
NOT FOR CONSTRUCTION

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-13



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

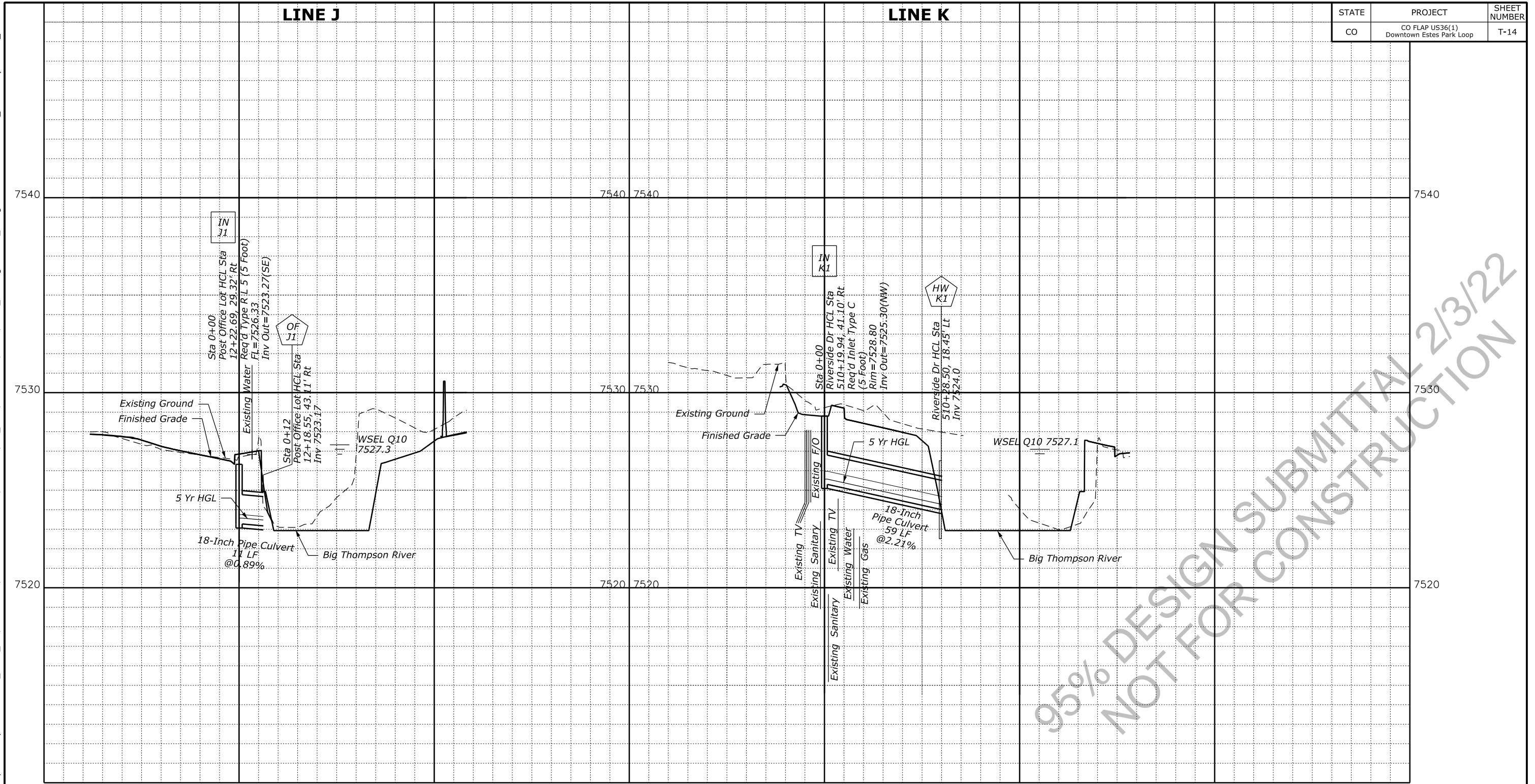
DRAINAGE PROFILES

NOTE:

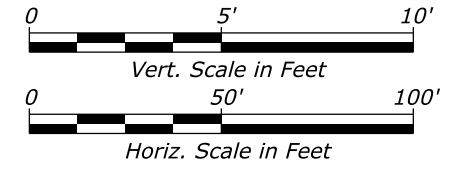
1. Vertical location of utilities are unknown and need to be verified prior to construction.

1/26/2022 3:57:46 PM p:\aecom-na-pw\entley.com\AECOM_DS01_NA\Documents\60332740-Estes Park\1900-Work\1910_CAD\02-SHEETS\T-600\T-014_Drainage Profile_06.dgn _User: amy.finseth

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-14



95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

DRAINAGE PROFILES

SHEET 6 OF 9

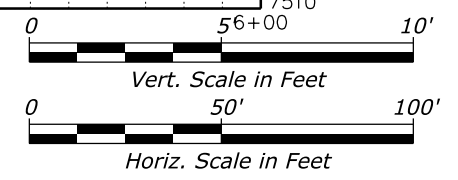
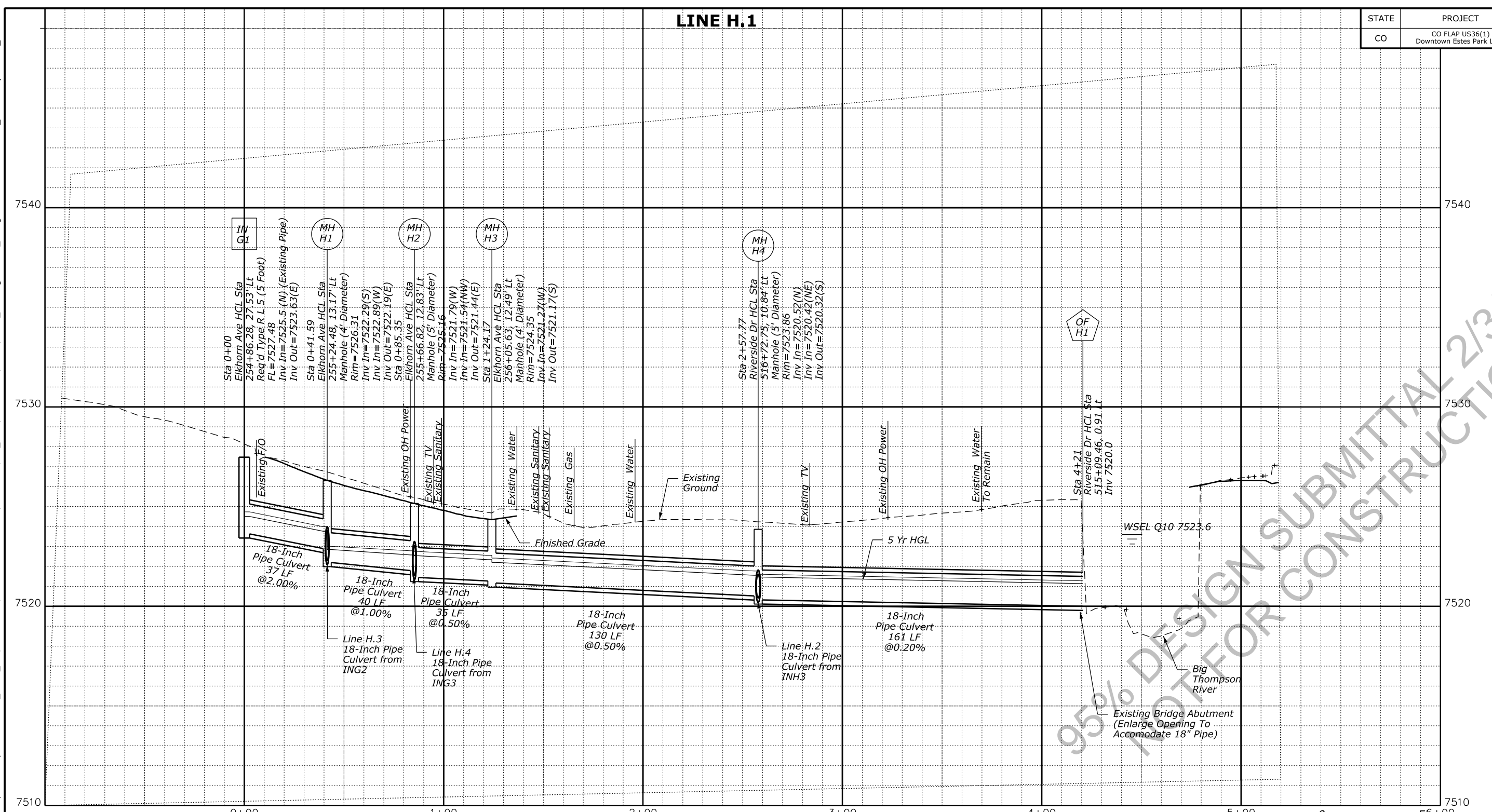
NOTE:

1. Vertical location of utilities are unknown and need to be verified prior to construction.

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-15

LINE H.1



NOTE:
Vertical location of utilities are unknown and need to be verified prior to construction.

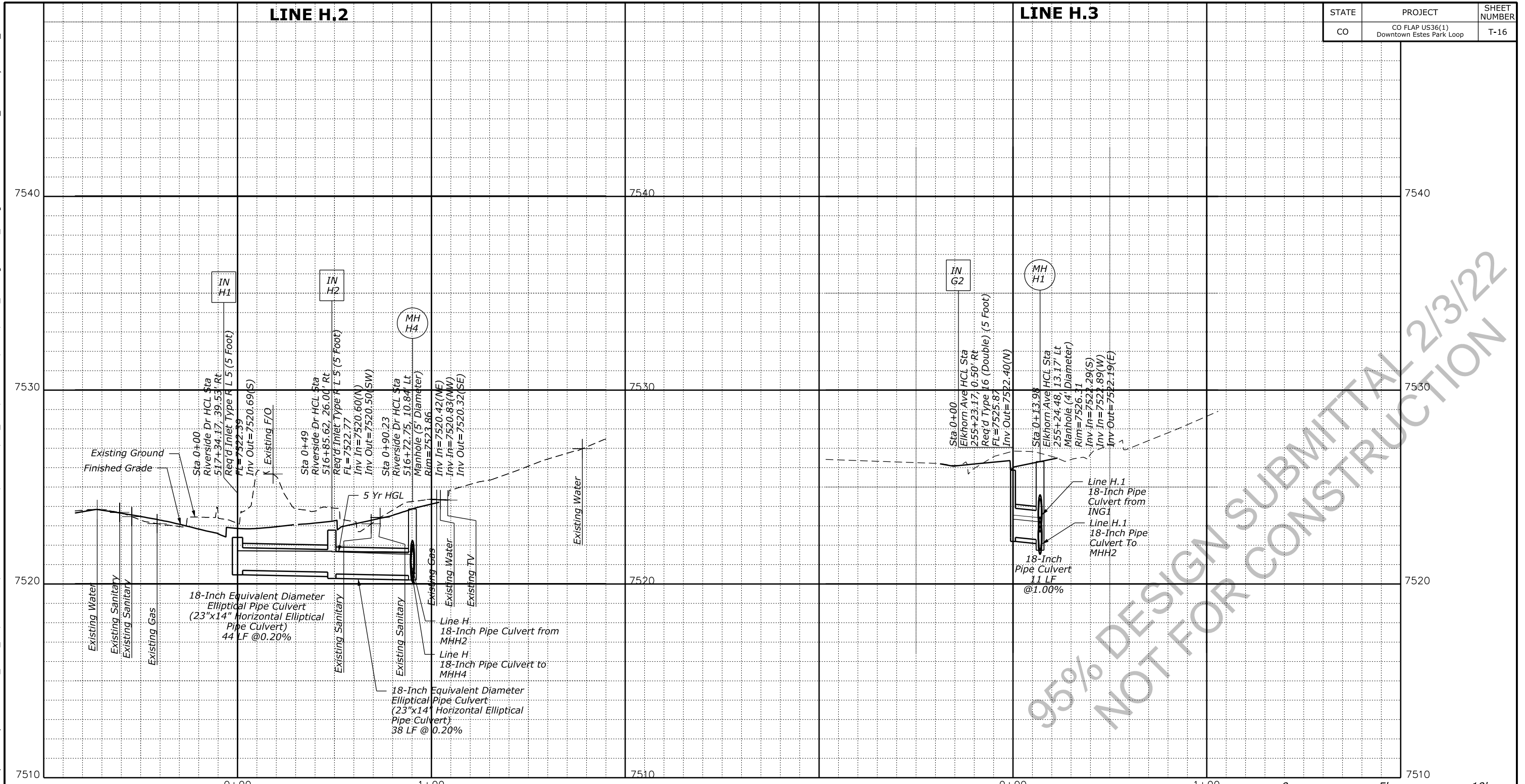
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

DRAINAGE PROFILES

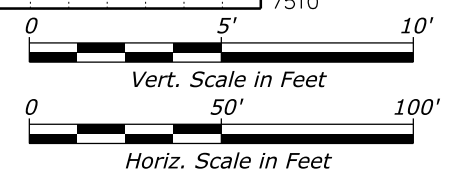
SHEET 7 OF 9

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-16



95% DESIGN SUBMITTAL 2/13/22
NOT FOR CONSTRUCTION



NOTES:

- Vertical location of utilities are unknown and need to be verified prior to construction.
- 18-Inch equivalent shall be 23-inch by 14-inch horizontal elliptical pipe culvert.

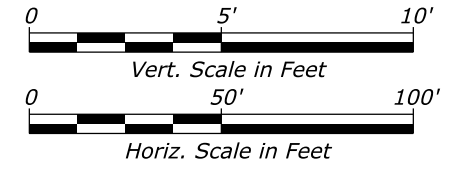
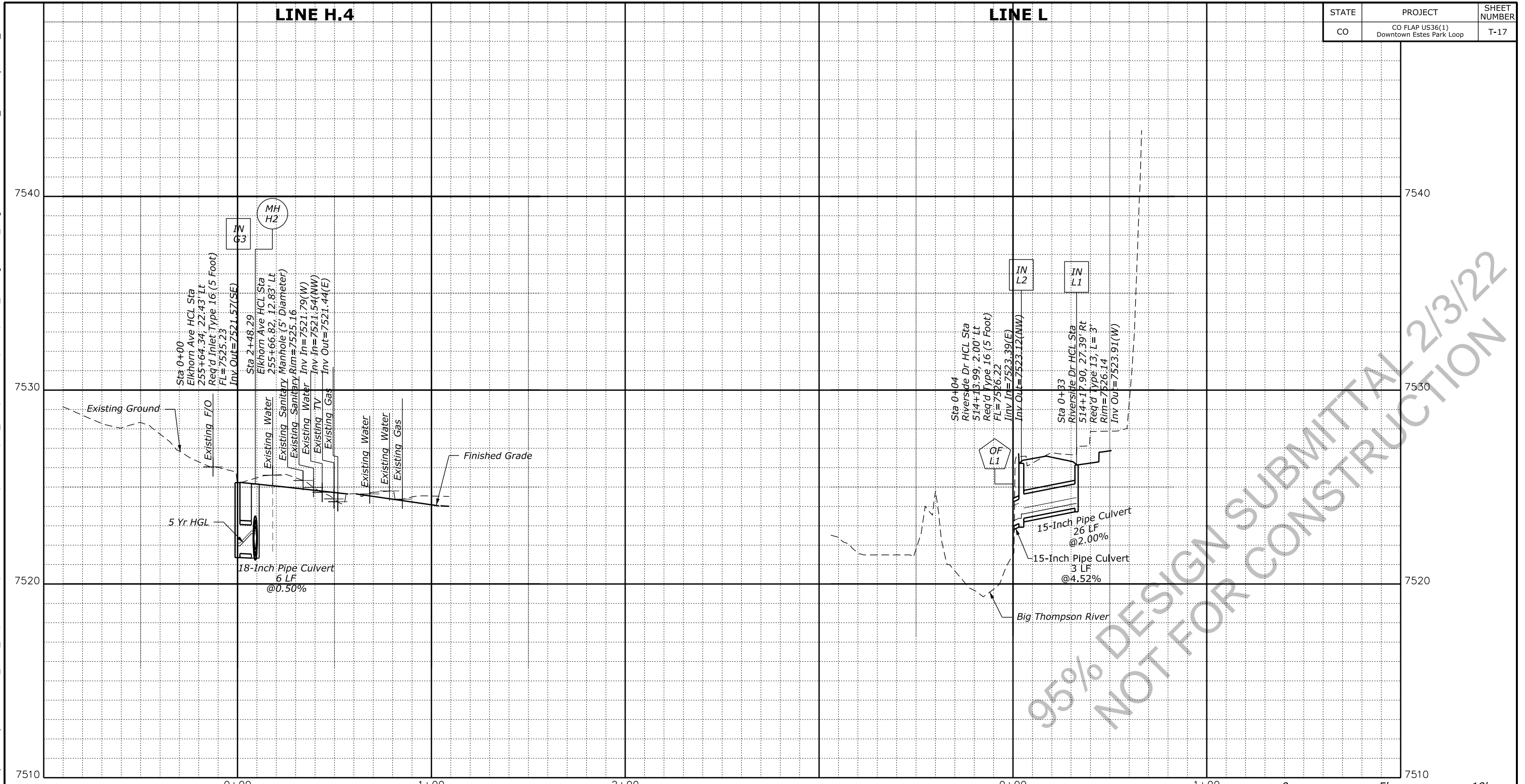
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

DRAINAGE PROFILES

SHEET 8 OF 9

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-17



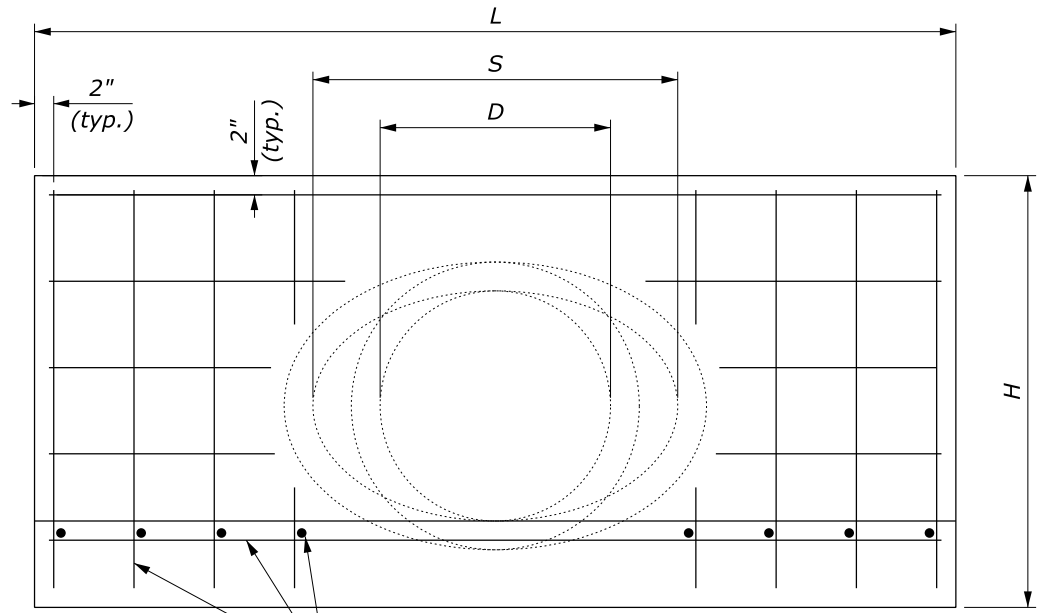
NOTE:

1. Vertical location of utilities are unknown and need to be verified prior to construction.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

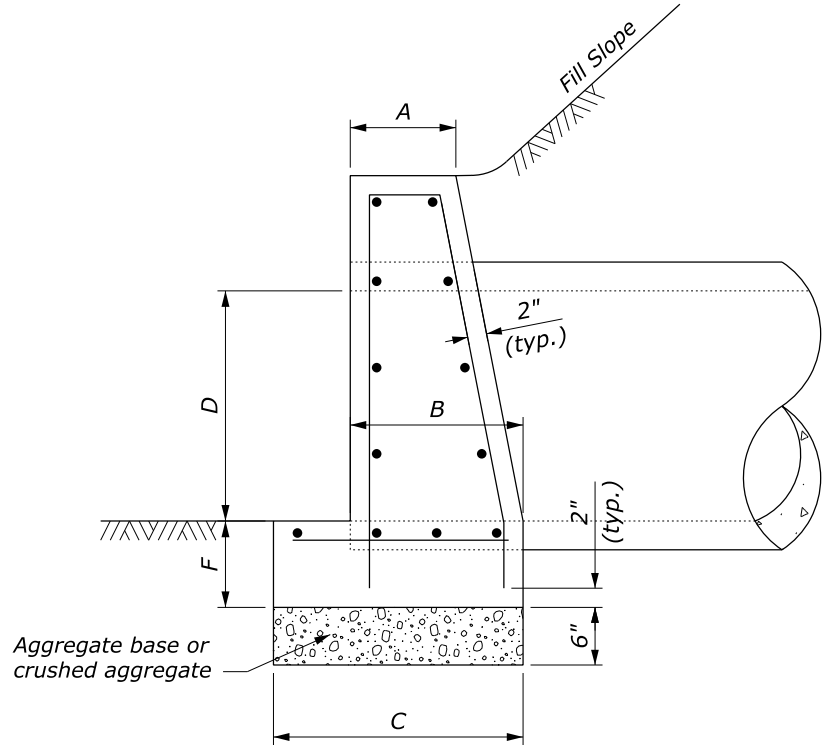
DRAINAGE PROFILES

SHEET 9 OF 9



#4 Bars at 9" max. spacing (all ways)

FRONT ELEVATION



SIDE ELEVATION

NOTE:

1. Orient all headwalls parallel to the roadway centerline unless otherwise indicated in the plans or by the CO.
2. When pipes are on a skew, adapt and lengthen headwalls as directed.
3. Chamfer all exposed corners not rounded to 3/4".
4. Quantities shown are for one headwall with pipe at right angles.
5. Construct headwalls using dimensions shown under values for 1V:1.5H slope, unless otherwise designated by the CO.

HEADWALL FOR CIRCULAR PIPE						
DIAMETER OF PIPE CULVERT						
	6"	15"	18"	21" or 24"	27" or 30"	33" or 36"
A	0'-6"	0'-8"	0'-9"	0'-11"	1'-0"	1'-0"
B	0'-9"	1'-1"	1'-3"	1'-6"	1'-9"	2'-0"
C	1'-2"	1'-7"	1'-9"	2'-2"	2'-6"	2'-9"
D	1'-0"	1'-3"	1'-6"	2'-0"	2'-6"	3'-0"
F	0'-6"	0'-8"	0'-8"	0'-9"	0'-9"	0'-9"
H	2'-0"	2'-11"	3'-2"	3'-9"	4'-3"	4'-9"
L	3'-8"	5'-0"	6'-0"	8'-0"	10'-0"	12'-0"
CUBIC YARDS OF CONCRETE						
Conc. Pipe	0.241	0.492	0.697	1.319	2.067	2.947
C.M. Pipe	0.257	0.521	0.739	1.398	2.198	3.145

HEADWALL FOR ELLIPTICAL PIPE										
SIZE OF ELLIPTICAL PIPE CULVERT (SPAN x RISE)										
	23" x 14"	30" x 19"	34" x 22"	38" x 24"	42" x 27"	45" x 29"	49" x 32"	53" x 34"	60" x 38"	68" x 43"
A	0'-8"	0'-9"	0'-10"	0'-10"	0'-11"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"
B	1'-2"	1'-5"	1'-6"	1'-8"	1'-9"	1'-10"	1'-11"	1'-11"	1'-11"	2'-0"
C	1'-8"	1'-11"	2'-1"	2'-4"	2'-5"	2'-7"	2'-8"	2'-9"	3'-3"	3'-6"
D	1'-2"	1'-7"	1'-10"	2'-0"	2'-3"	2'-5"	2'-8"	2'-10"	3'-2"	3'-7"
F	0'-8"	0'-8"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"
H	2'-10"	3'-3"	3'-7"	3'-9"	4'-0"	4'-2"	4'-5"	4'-7"	4'-11"	5'-4"
L	5'-5"	7'-2"	8'-6"	9'-2"	10'-2"	10'-11"	12'-1"	12'-11"	13'-0"	13'-0"
S	1'-11"	2'-6"	2'-10"	3'-2"	3'-6"	3'-9"	4'-1"	4'-5"	5'-0"	5'-8"
CUBIC YARDS OF CONCRETE										
Conc. Pipe	0.502	0.855	1.236	1.500	1.811	2.101	2.512	2.801	2.969	2.904

NO SCALE

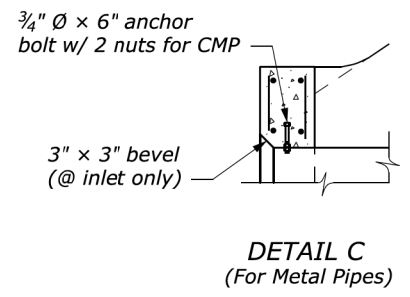
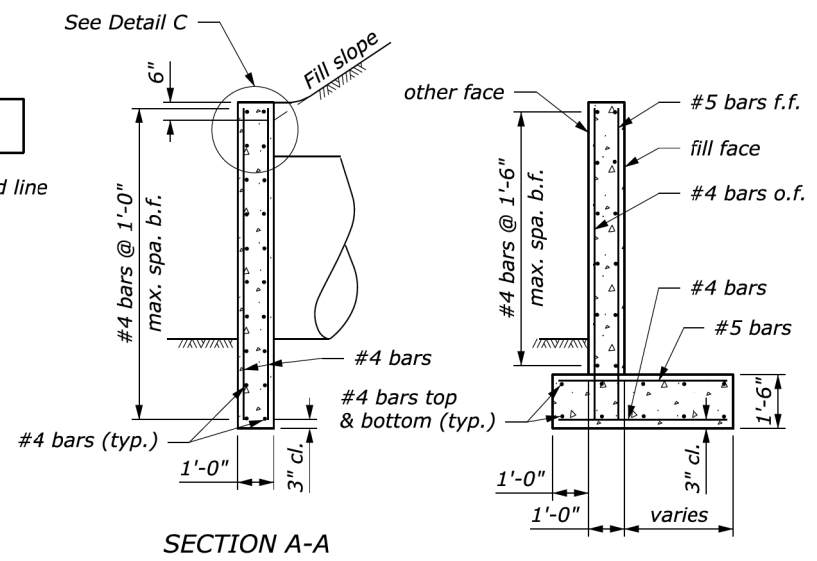
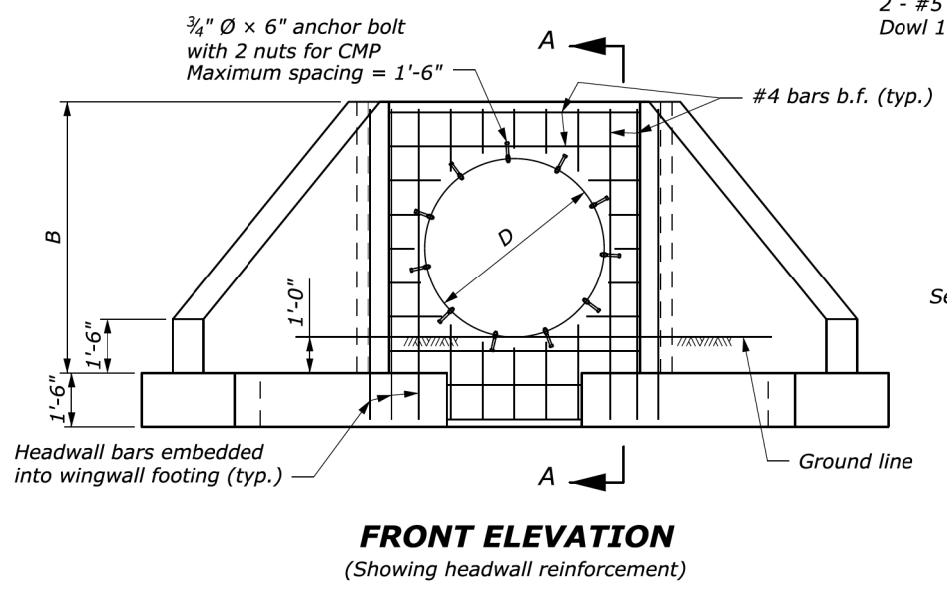
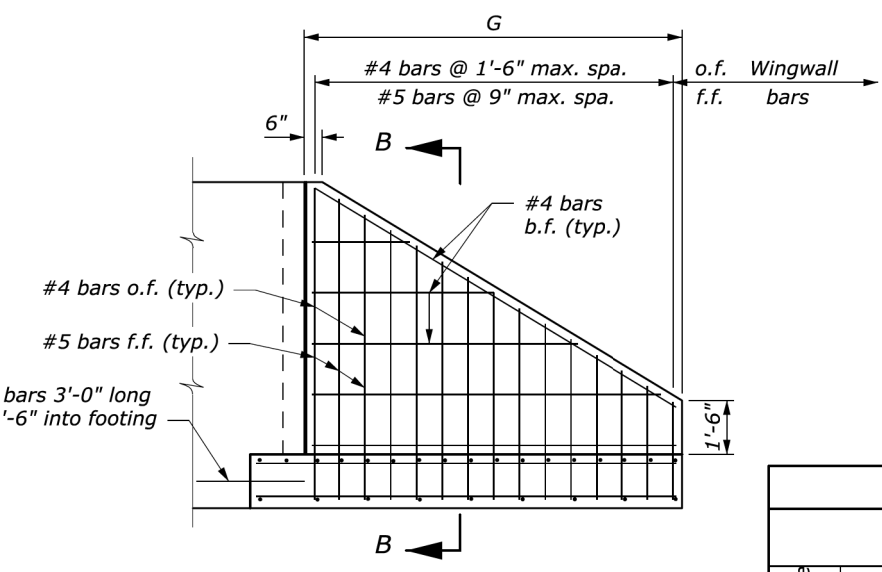
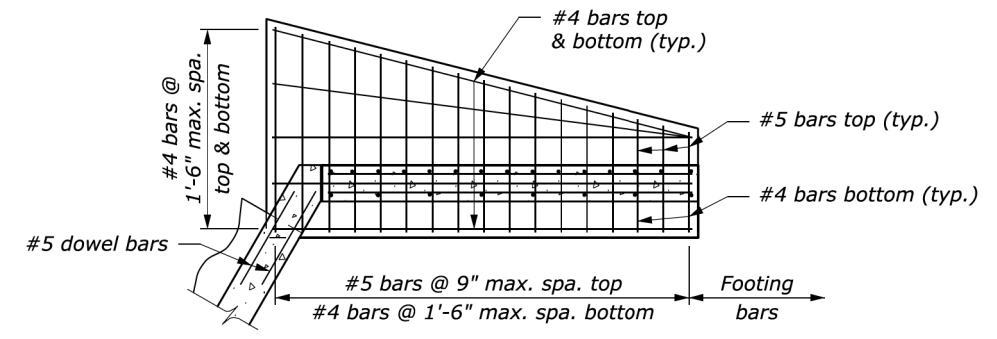
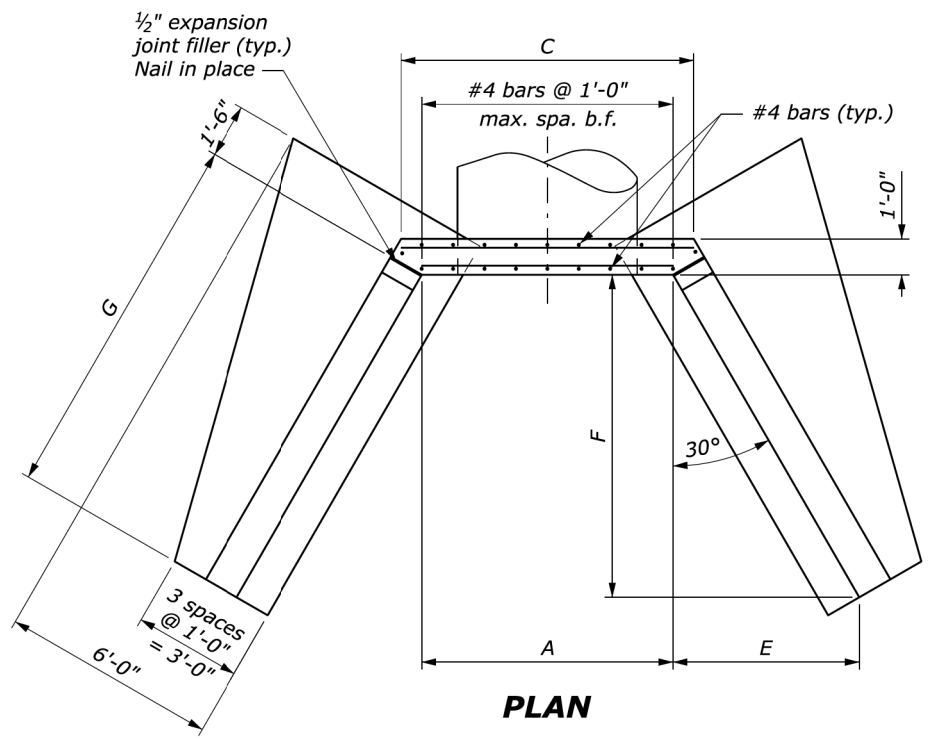
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY OFFICE

U.S. CUSTOMARY STANDARD
**CONCRETE HEADWALL FOR
SMALL PIPE CULVERT**

STANDARD
601-4

3:58:08 PM p:\na-pw.bentley.com\AECOM_DSO1_NA\Documents\60332740-Estes Park\1900-Work\1910_CAD\02-SHEETS\T-600\T-018 Concrete Headwall for Small Pipe Culvert Standard.dwg: amy.finseth 1/26/2022

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NOTE:

- This detail applies for normal crossings and skews up to 15°.
- On shallow fill where headwall is 2-feet or less below shoulder line, construct the headwall parallel to line and grade of the shoulder.
- Do not allow top of wingwall to project above fill slope, ditch slope or shoulder.
- Concrete shall conform to Section 601. Chamfer all exposed edges 3/4" and finish all exposed surfaces with a Class 1 ordinary surface finish. Joint filler shall conform to AASHTO M213 and shall be subsidiary to concrete quantity.
- Bell end of concrete pipe may replace bevel at inlet headwall.
- Quantities shown in table are for one headwall and two wingwalls and are based on CMP. Concrete and steel quantities shown will be used as basis for final payment for headwall/wingwalls constructed according to this standard.
- Reinforcing steel clearance is 2 inches unless shown otherwise.
- Anchor bolts shall conform to ASTM A307. Galvanize bolts and nuts to conform to ASTM A153. Anchor bolts shall be subsidiary to reinforcing steel quantity.

		D (Diameter of pipe culvert)							
		42"	48"	54"	60"	66"	72"	78"	84"
1V:1.5H fill slope	A	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"
	B	5'-11 1/2"	6'-5 1/2"	6'-11 1/2"	7'-5 1/2"	7'-11 1/2"	8'-5 1/2"	8'-11 1/2"	9'-5 1/2"
	C	6'-7 3/4"	7'-1 3/4"	7'-7 3/4"	8'-1 3/4"	8'-7 3/4"	9'-1 3/4"	9'-7 3/4"	10'-1 3/4"
	E	3'-10 1/2"	4'-3 3/4"	4'-9"	5'-2 1/4"	5'-7 1/4"	6'-0 3/4"	6'-5 3/4"	6'-11"
	F	6'-8 3/4"	7'-5 3/4"	8'-2 1/2"	8'-11 3/4"	9'-8 3/4"	10'-5 3/4"	11'-2 3/4"	12'-0"
	G	7'-9"	8'-7 1/2"	9'-6"	10'-4 1/2"	11'-2 3/4"	12'-1 1/4"	12'-11 1/2"	13'-10 1/4"
	Conc. (CUYD)	8.0	9.0	10.1	11.1	12.2	13.4	14.5	15.8
Steel (LB)	651	738	818	878	977	1040	1152	1249	
1V:2H fill slope	A	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"
	B	5'-11 1/2"	6'-5 1/2"	6'-11 1/2"	7'-5 1/2"	7'-11 1/2"	8'-5 1/2"	8'-11 1/2"	9'-5 1/2"
	C	6'-7 3/4"	7'-1 3/4"	7'-7 3/4"	8'-1 3/4"	8'-7 3/4"	9'-1 3/4"	9'-7 3/4"	10'-1 3/4"
	E	5'-2"	5'-9"	6'-3 3/4"	6'-11"	7'-5 3/4"	8'-0 3/4"	8'-7 3/4"	9'-2 3/4"
	F	8'-11 1/2"	9'-11 3/4"	10'-11 1/2"	11'-11 3/4"	12'-11 1/2"	13'-11 3/4"	14'-11 1/2"	15'-11 3/4"
	G	10'-4"	11'-6 1/4"	12'-7 3/4"	13'-10"	14'-11 1/2"	16'-1 3/4"	17'-3 3/4"	18'-5 1/2"
	Conc. (CUYD)	10.0	11.3	12.6	14.0	15.4	16.9	18.3	19.9
Steel (LB)	798	911	1001	1104	1206	1315	1417	1554	

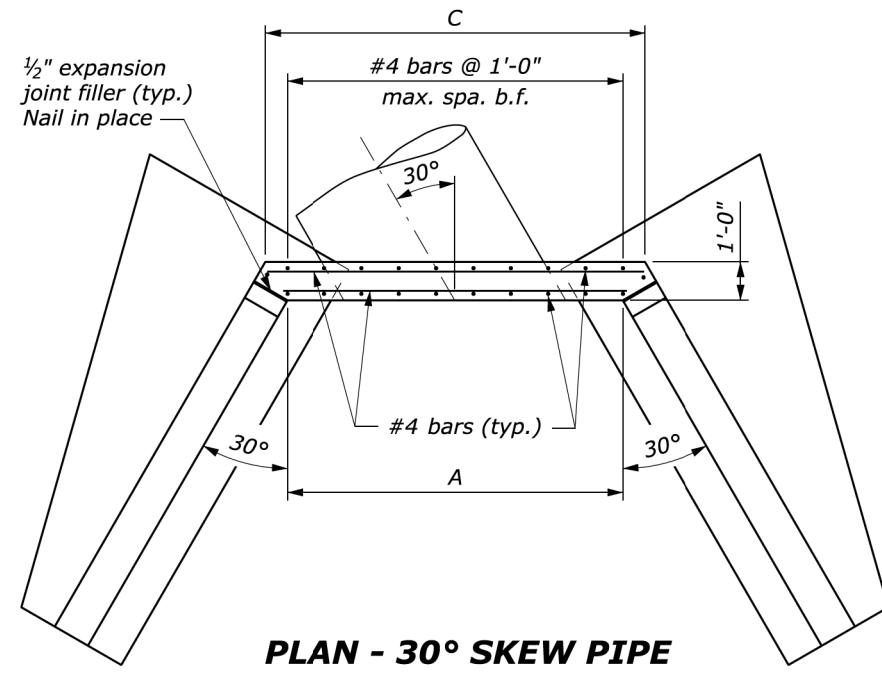
Abbreviations:
 f.f. = Fill face
 o.f. = Other face
 b.f. = Both faces

NO SCALE

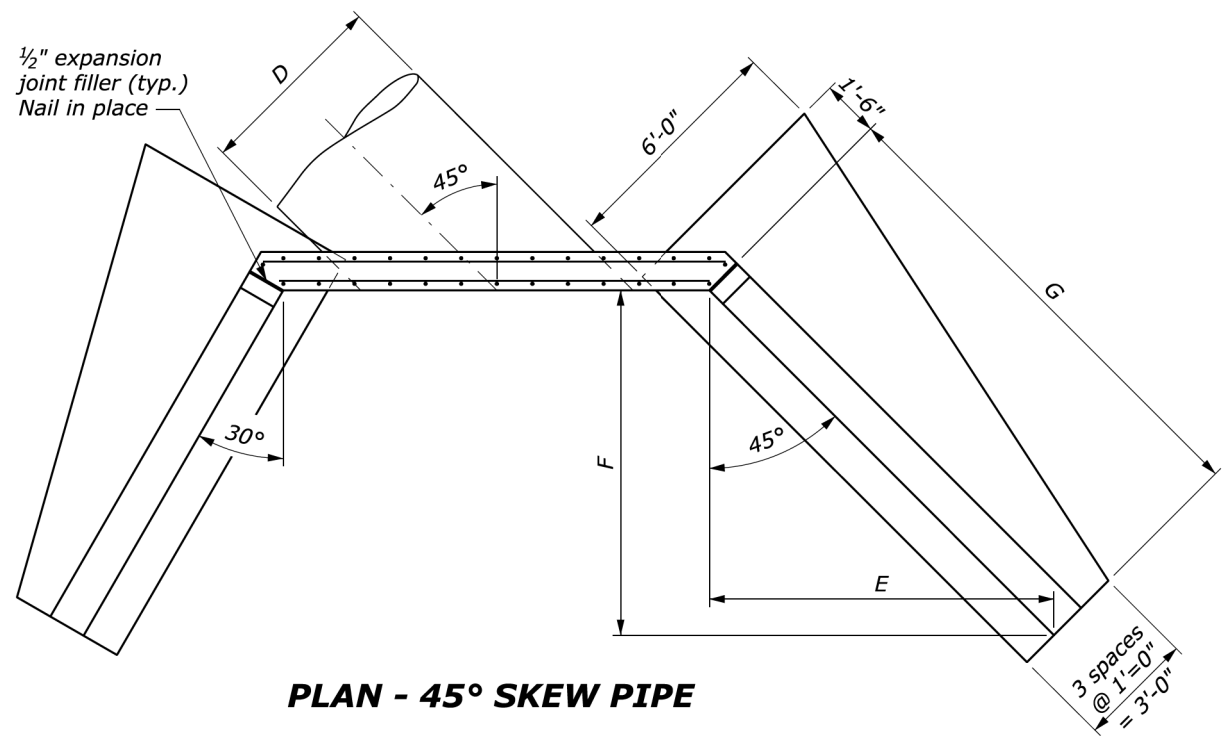
U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 FEDERAL LANDS HIGHWAY OFFICE

U.S. CUSTOMARY STANDARD
**CONCRETE HEADWALL/
 WINGWALL**
**FOR SINGLE NORMAL
 42" TO 84" PIPE CULVERT**

STANDARD
 601-5

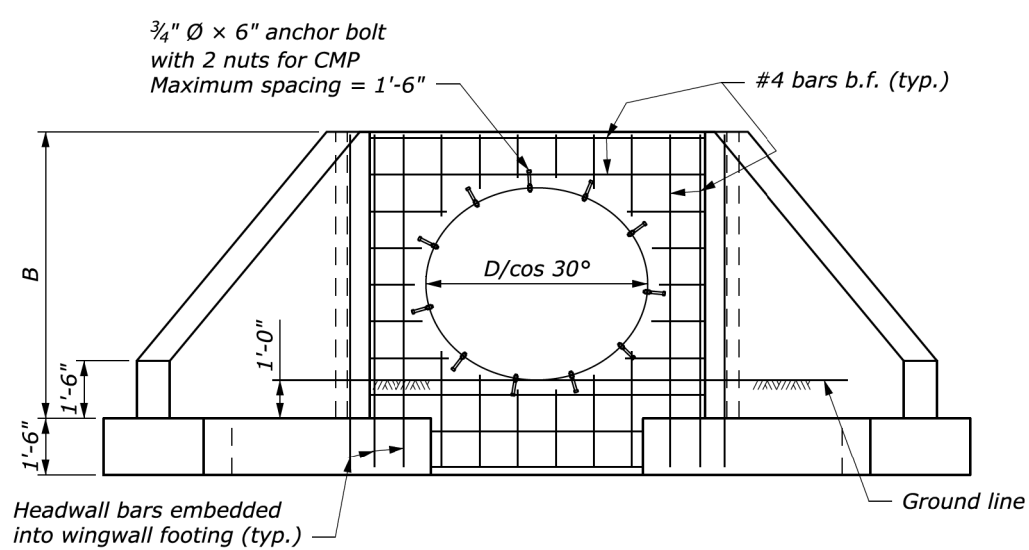


PLAN - 30° SKEW PIPE

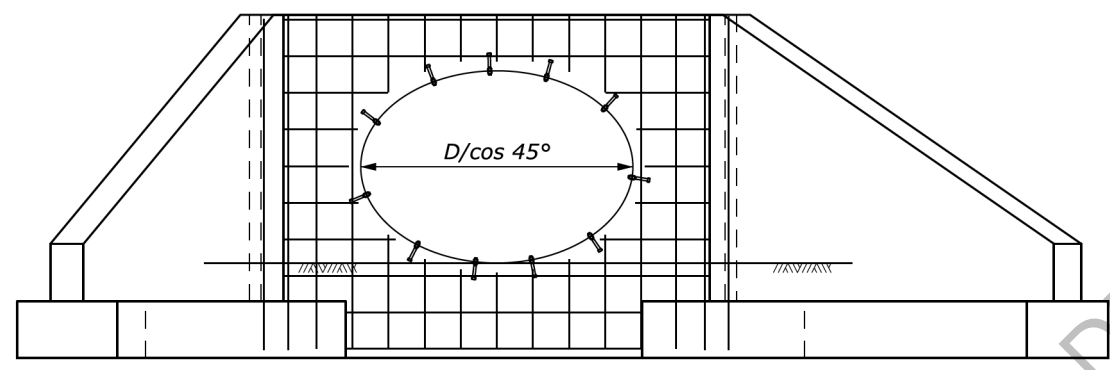


PLAN - 45° SKEW PIPE

- NOTE:**
1. Use the 30° Skew Detail for skews greater than 15° to 37°30'. Use the 45° Skew Detail for skews greater than 37°30' to 45°.
 2. Quantities shown in table are for one headwall and two wingwalls and are based on CMP. Concrete and steel quantities shown will be used as basis for final payment for headwall/wingwalls constructed according to this standard.
 3. For dimensions and reinforcing details not shown, and additional notes see Standard 601-5.



FRONT ELEVATION - 30° SKEW PIPE
(Showing headwall reinforcement)



FRONT ELEVATION - 45° SKEW PIPE
(Showing headwall reinforcement)

DIMENSIONS AND QUANTITIES FOR 30° SKEW PIPE									
		D (Diameter of pipe culvert)							
		42"	48"	54"	60"	66"	72"	78"	84"
1V:1.5H fill slope	Conc. (CUYD)	8.4	9.4	10.5	11.6	12.7	13.9	15.1	16.4
	Steel (LB)	682	764	853	908	1016	1080	1196	1294
1V:2H fill slope	Conc. (CUYD)	10.4	11.7	13.0	14.5	15.9	17.4	18.9	20.5
	Steel (LB)	829	938	1036	1135	1245	1355	1461	1598

DIMENSIONS AND QUANTITIES FOR 45° SKEW PIPE									
		D (Diameter of pipe culvert)							
		42"	48"	54"	60"	66"	72"	78"	84"
1V:1.5H fill slope	A	8'-11 1/4"	9'-8"	10'-4 1/4"	11'-0 3/4"	11'-9 1/4"	12'-6"	13'-2 1/4"	13'-11"
	C	9'-11 1/4"	10'-8"	11'-4 1/4"	12'-1"	12'-9 1/4"	13'-6"	14'-2 1/4"	14'-11"
	E	6'-8 3/4"	7'-5 3/4"	8'-2 1/2"	8'-11 3/4"	9'-8 1/2"	10'-5 3/4"	11'-2 3/4"	12'-0"
	F	6'-8 3/4"	7'-5 3/4"	8'-2 1/2"	8'-11 3/4"	9'-8 1/2"	10'-5 3/4"	11'-2 3/4"	12'-0"
	G	9'-6"	10'-7"	11'-7 1/2"	12'-8 1/4"	13'-9"	14'-10"	15'-10 1/4"	16'-11 1/4"
	Conc. (CUYD)	9.5	10.6	11.8	13.1	14.4	15.7	17.1	18.5
	Steel (LB)	787	868	977	1051	1177	1249	1370	1490
1V:2H fill slope	E	8'-11 1/2"	9'-11 3/4"	10'-11 1/2"	11'-11 3/4"	12'-11 1/2"	13'-11 3/4"	14'-11 1/2"	15'-11 3/4"
	F	8'-11 1/2"	9'-11 3/4"	10'-11 1/2"	11'-11 3/4"	12'-11 1/2"	13'-11 3/4"	14'-11 1/2"	15'-11 3/4"
	G	12'-8"	14'-1 1/4"	15'-6"	16'-11 1/4"	18'-4"	19'-9 1/4"	21'-2"	22'-7"
	Conc. (CUYD)	11.7	13.2	14.7	16.3	17.9	19.6	21.3	23.1
Steel (LB)	951	1070	1190	1303	1440	1559	1695	1846	

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY OFFICE

U.S. CUSTOMARY STANDARD

**CONCRETE HEADWALL/
WINGWALL FOR SINGLE SKEW
42" TO 84" PIPE CULVERT**

STANDARD
601-6

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 1/26/2022

POLYETHYLENE (PE) PLASTIC ROUND PIPE CULVERT

FILL HEIGHT TABLE AND MINIMUM CELL CLASSIFICATION NUMBER PER ASTM D 3350

SMOOTH WALL (SOLID WALL)								CORRUGATED			RIBBED			
PIPE SIZE DIAMETER INCHES	MINIMUM COVER INCHES	CELL CLASSIFICATION NUMBER 335434C						PIPE SIZE DIAMETER INCHES	MINIMUM COVER INCHES	CELL CLASS. NO. 435400C	PIPE SIZE DIAMETER INCHES	MINIMUM COVER INCHES	CELL CLASS. NO. 334433C	CELL CLASS. NO. 335434C
		MINIMUM WALL THICKNESS (INCHES)												
		0.607	0.857	0.923	1.154	1.385	1.292						1.477	MAXIMUM FILL HEIGHT (FEET)
12	12	57						12	12	10	18	12	18	24
18	12		52					15	12	10	24	12	22	28
24	12			38				18	12	10	30	12	22	28
30	12				38			24	12	10	36	12	25	31
36	12					38		30	12	10	42	12	21	27
42	12						27	36	12	10	48	12	21	26
48	12						27							

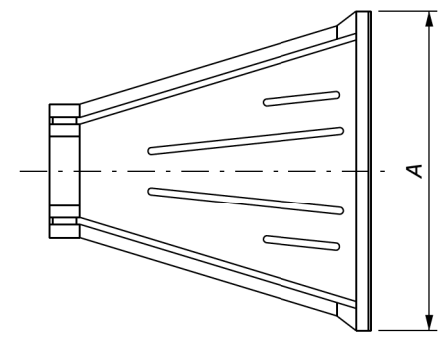
NOTE:

- When directed, camber pipe culverts upward from a chord through the inlet and outlet inverts an ordinate amount equal to 1% of the pipe length. Develop camber on a parabolic curve. If the midpoint elevation on the parabolic curve as designed exceeds the elevation of the inlet invert, reduce the amount of camber or increase the pipe culvert gradient.
- Measure minimum cover from the top of the pipe culvert to the subgrade for flexible pavements, and to the top of the pavement for rigid pavements. Measure maximum fill height from the top of the pipe to the top of the pavement for both flexible and rigid pavement.

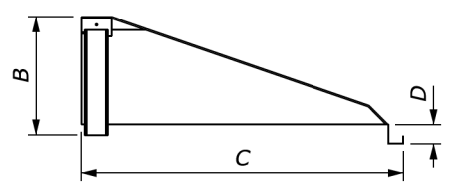
POLYVINYL CHLORIDE (PVC) PLASTIC ROUND PIPE CULVERT

FILL HEIGHT TABLE AND MINIMUM CELL CLASSIFICATION NUMBER PER ASTM D 1784

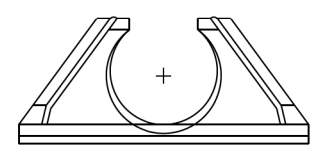
SMOOTH WALL (SOLID WALL)						RIBBED			
PIPE SIZE DIAMETER INCHES	MINIMUM COVER INCHES	CELL CLASS. NO. 12454		CELL CLASS. NO. 12364		PIPE SIZE DIAMETER INCHES	MINIMUM COVER INCHES	CELL CLASS. NO. 12454C	CELL CLASS. NO. 12364C
		MINIMUM WALL THICKNESS (INCHES)							
		0.358	0.438	0.358	0.438			MAXIMUM FILL HEIGHT (FEET)	
12	12	65		69		12	12	37	26
15	12		62		66	15	12	32	22
						18	12	33	23
						24	12	29	21
						30	12	28	20
						36	12	27	19
						42	12	26	18
						48	12	24	17



TOP



SIDE



FRONT

END SECTION DIMENSIONS

PIPE SIZE DIAMETER INCHES	DIMENSIONS INCHES			
	A	B	C	D
12	42	14.5	33	6
15	46	24.5	45.5	6
18	54	29	55	6
24	64	37	65	6
30	88	36	63.5	6
36	88	43	66.5	6

PLASTIC PIPE END SECTION

95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY OFFICE

U.S. CUSTOMARY STANDARD

PLASTIC PIPE CULVERT





NO SCALE

STANDARD
602-5

CONCRETE ROUND PIPE CULVERT

PIPE SIZE DIAMETER INCHES	FILL HEIGHT AND PIPE CLASS TABLE								
	EMBANKMENT				TRENCH				
	MINIMUM COVER INCHES	CLASS II	CLASS III	CLASS IV	CLASS V	CLASS II	CLASS III	CLASS IV	CLASS V
	MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE IN FEET								
12	12	10	10	15	23	18	18	26	13
18	12	10	10	25	39	13	13	31	45
24	12	10	10	15	30	15	15	22	40
30	12	9	13	15	35	13	16	20	46
36	12	9	9	20	41	10	13	26	56
48	12	12	13	26	44	15	16	30	49
60	12	15	17	28	44	15	20	32	49
72	12	13	17	30	41	15	20	35	49
84	12	13	19	30		15	23	37	
96	12	13	20			15	24		
108	14	15	20			18	26		

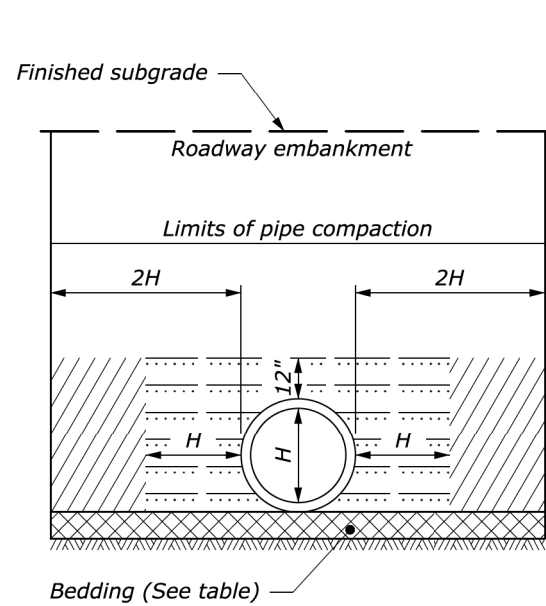
LEGEND:

-  Bedding material (uncompacted).
-  Embankment material placed in layers not exceeding 6" compacted depth.
-  Compacted backfill material placed in layers not exceeding 6" compacted depth, or lean concrete backfill in accordance with Section 614
-  Impermeable backfill material.

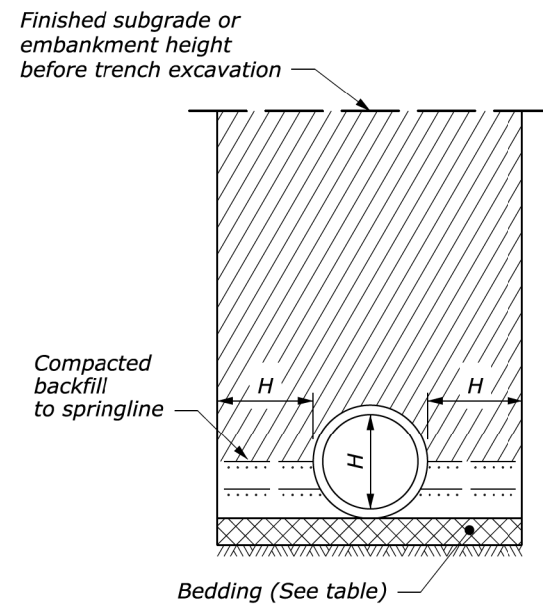
NOTE:

- When directed, camber pipe culverts upwards from a chord through the inlet and outlet inverts an ordinate amount equal to 1% of the pipe length. Develop camber on a parabolic curve. If the midpoint elevation on the parabolic curve as designed exceeds the elevation of the inlet invert, reduce the amount of camber or increase the pipe culvert gradient.
- Measure minimum cover from the top of the pipe culvert to the subgrade for flexible pavements, and to the top of the pavement for rigid pavements. Measure maximum fill height from the top of the pipe to the top of the pavement for both flexible and rigid pavements.
- Pipe compaction limits shown are for pipe installation in an embankment. For pipe installation in a trench, the compaction limits shall be the walls of the trench.
- Where unyielding or unstable material is encountered, install the pipe culvert according to the limits of pipe compaction shown on Standard 602-3.
- Maximum fill heights for pipe culvert installations may be increased on approval of site-specific structural pipe designs meeting the criteria of AASHTO Standard Specifications for Highway Bridges.
- Use Supplemental Concrete Pipe Tie when specified in the contract documents.

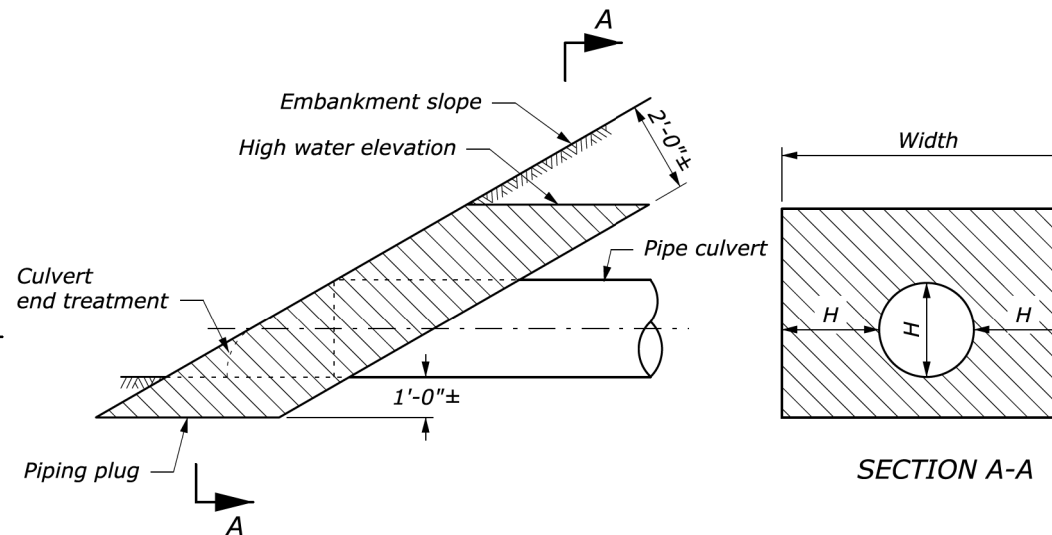
BEDDING DEPTH	
PIPE SIZE (H)	DEPTH
12" TO 54"	4"
> 54"	6"



EMBANKMENT INSTALLATION

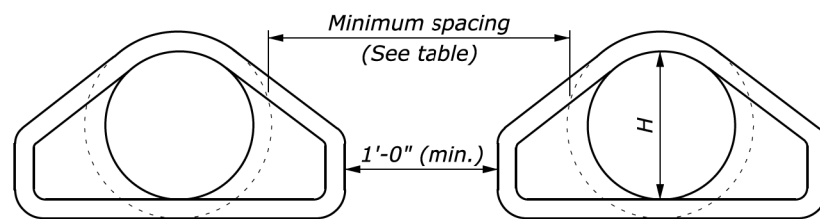
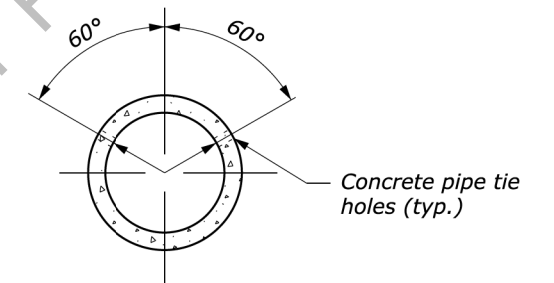


TRENCH INSTALLATION



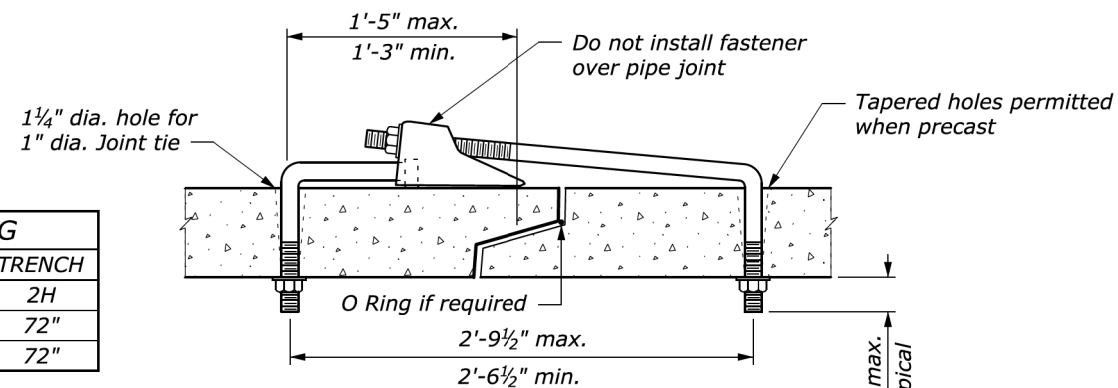
Construct a piping plug of impermeable backfill material at the pipe inlet where granular material is used for backfill. Width may be adjusted to tie into impervious material.

PIPING PLUG



MULTIPLE ROUND PIPE INSTALLATION

MINIMUM SPACING		
DIAMETER	EMBANKMENT	TRENCH
12"-36"	15"	2H
36"-96"	0.5H	72"
OVER 96"	48"	72"



SUPPLEMENTAL CONCRETE PIPE TIE

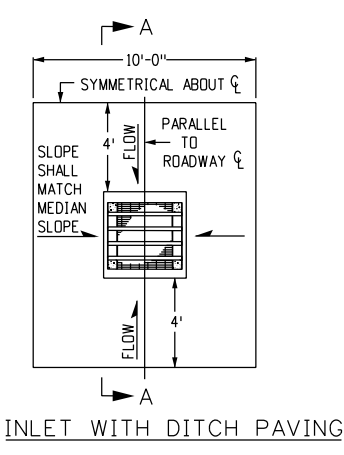
NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY OFFICE

U.S. CUSTOMARY STANDARD CONCRETE PIPE CULVERT INSTALLATION

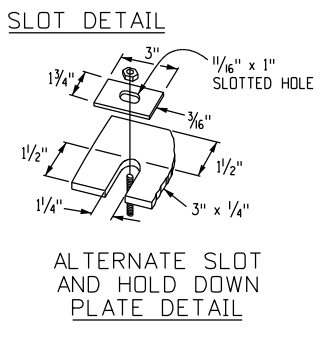
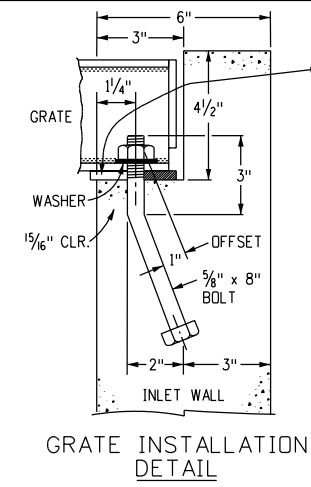
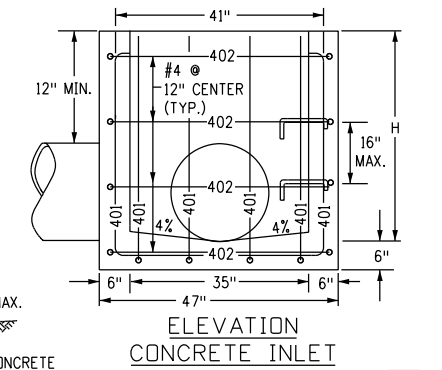
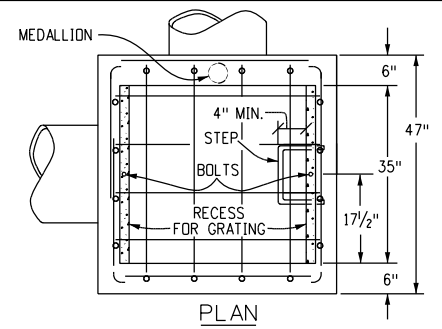
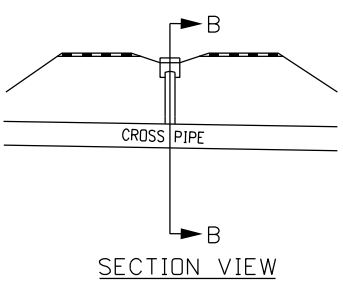
STANDARD
602-7

User: amy.finseth
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 1/26/2022
 p:\aecom-na-pw.bentley.com\AECOM_DSO1_NA\Documents\60332740-Estes Park\1900-Work\1910_CAD\02-SHEETS\T-6001-T-023 Inlet Type C Standards



STEEL GRATE QUANTITIES

NO. PIECES	DESCRIPTION	LENGTH	LBS PER FT.	WEIGHT (LBS.)
4	S4 x 7.7 BEAM	40"	7.70	103
2	3 1/2" x 1/4" FLAT	26 5/8"	2.98	13
2	3" x 1/4" FLAT	26 5/8"	2.55	12
				TOTAL LBS. - 128



QUANTITIES FOR ONE INLET

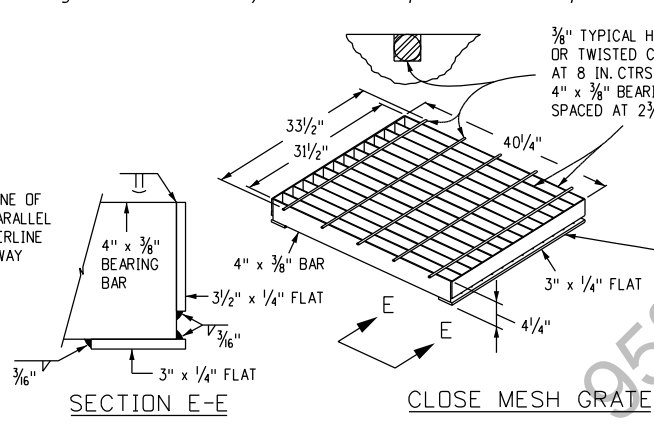
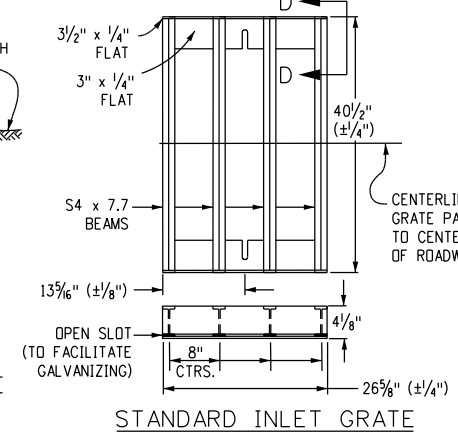
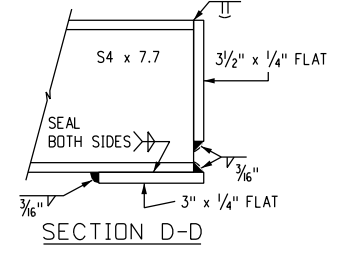
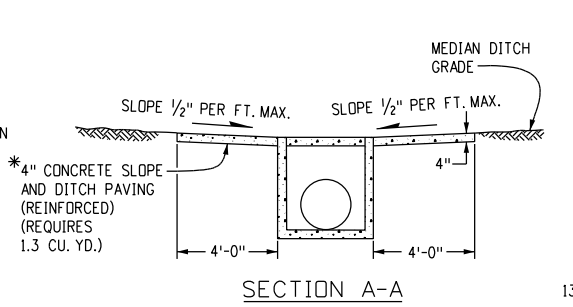
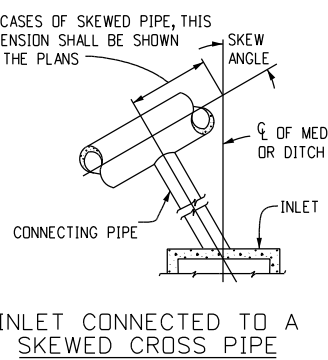
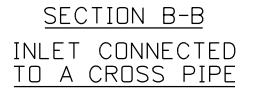
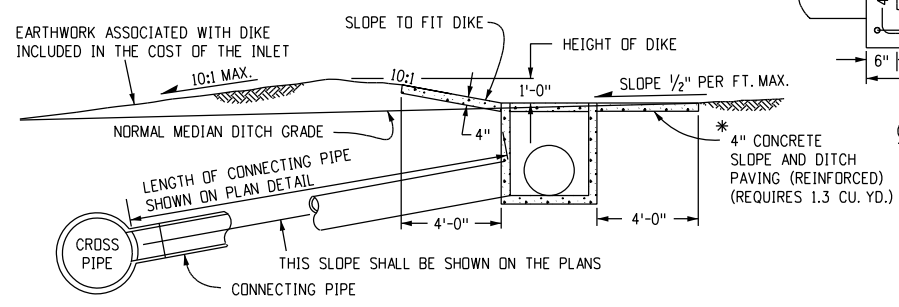
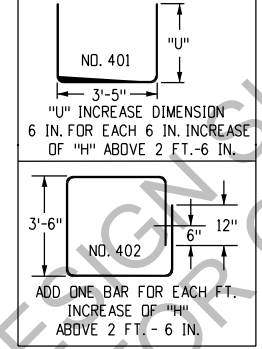
H	CONCRETE (CU. YDS.)	STEEL (LBS.)	NO. STEPS REQ'D.
2'-6"	0.9	75	0
3'-0"	1.0	80	0
3'-6"	1.2	96	0
4'-0"	1.3	101	1
4'-6"	1.4	116	2
5'-0"	1.5	122	2
5'-6"	1.7	137	2
6'-0"	1.8	142	3
6'-6"	1.9	158	3
7'-0"	2.0	163	3
7'-6"	2.2	179	4
8'-0"	2.3	184	4
8'-6"	2.4	199	4
9'-0"	2.5	205	5
9'-6"	2.7	220	5
10'-0"	3.0	235	6
11'-6"	3.4	251	6

General Notes

- Inlet Type C is not HS-20 rated and shall not be placed in paved roadways. This inlet shall be used only outside paved roadways.
- Concrete shall be per Section 601. Inlet may be cast-in-place or precast.
- Reinforcing bars shall be epoxy coated and deformed #4, and shall have a minimum 2 inch clearance. Cut or bend around pipes as required.
- Concrete slope and ditch paving shall be in accordance with Section 616. Reinforcement for concrete slope paving shall be 6 x 6 - W1.4 x W1.4 or 6 x 6 - W2.1 x W2.1.
- Structural steel for grates and grate installation hardware shall be galvanized, and shall be in accordance with Subsection 725.10.
- The standard inlet grates shall be used on all Type C Inlets unless close mesh grates are specified on the plans.
- Close mesh grates are recommended where foot traffic or bicycle routes are in close proximity to grate. This grate is not ADA compliant or bicycle friendly and shall not be placed directly in sidewalks crosswalks or bike paths.
- Steps shall be provided when inlet dimension "H" is equal to or greater than 3 ft 6 in, and shall conform to AASHTO M 199.
- See standard plan 604-B, for reinforcement around the pipe opening.
- All inlets shall have a 4 in. dia. metal edallion with a "NO DUMPING DRAINS TO STREAM" message on it, the medallion shall have a fish symbol with a blue background. It shall be firmly attached to the top of the inlet with a permanent fastener.

BAR LIST FOR H = 2 FT.-6 IN. AND BENDING DIAGRAM

MARK	NO. REQ'D.	HEIGHT	LENGTH
401	2	2'-3"	7'-11"
401	6	2'-7"	8'-7"
402	3	"U"	15'-0"



Computer File Information

Creation Date: 07/04/12	Initials: DD
Last Modification Date: 07/04/12	Initials: LTA
Full Path: www.coloradodot.info/business/designsupport	
Drawing File Name: 6040100101.dgn	
CAD Ver.: MicroStation V8	Scale: Not to Scale Units: English

Sheet Revisions

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

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 Project Development Branch DD/LTA

INLET, TYPE C
 Issued By: Project Development Branch July 4, 2012

STANDARD PLAN NO.
M-604-10
Sheet No. 1 of 1

Adopted from CDOT Standard M-604-10

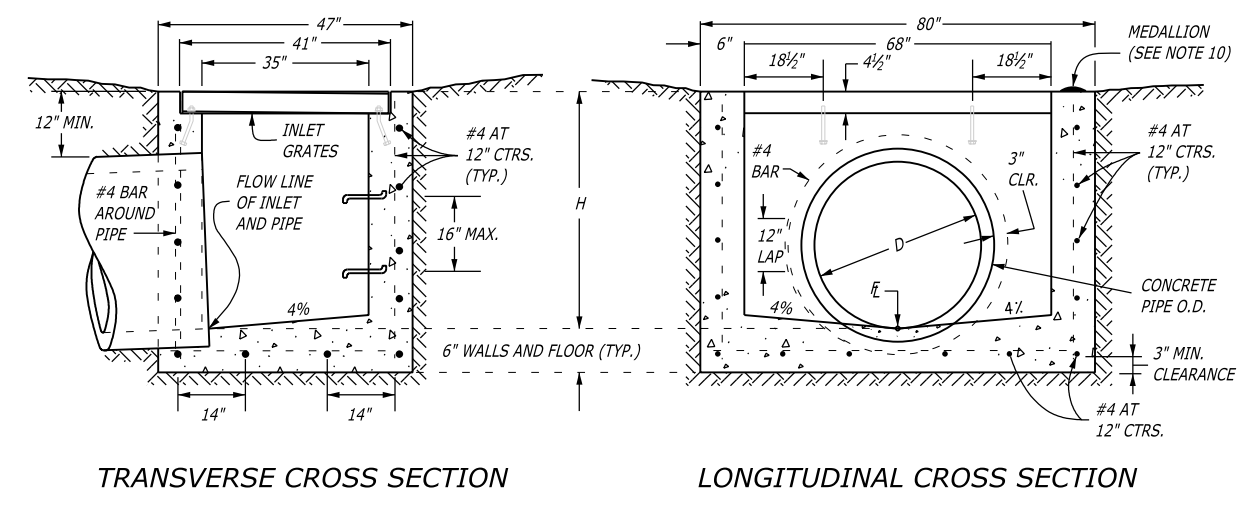
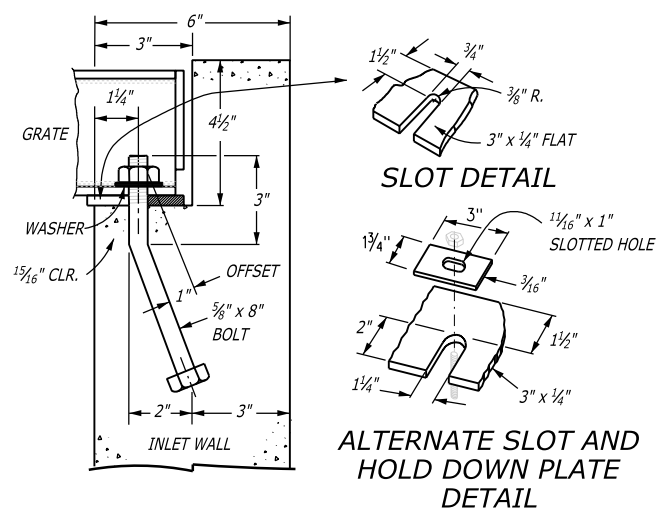
U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL
INLET (TYPE C)

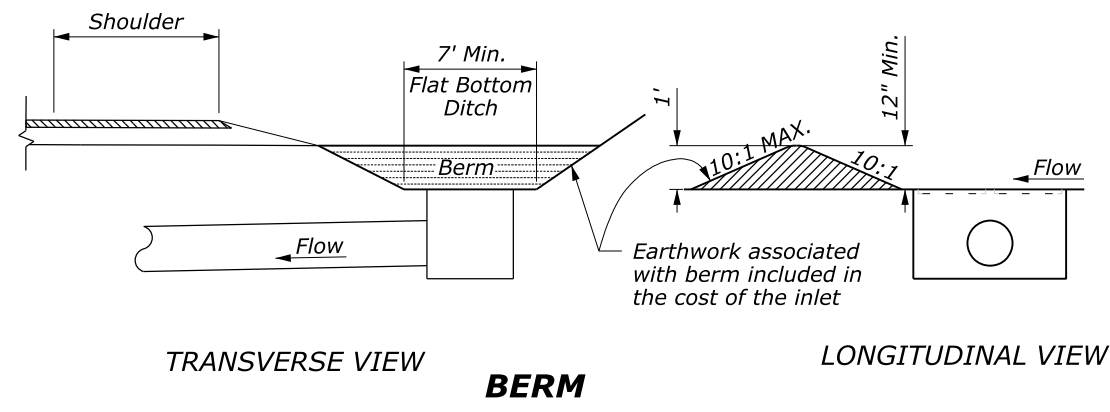
SPECIAL
 604-A

NOTE:

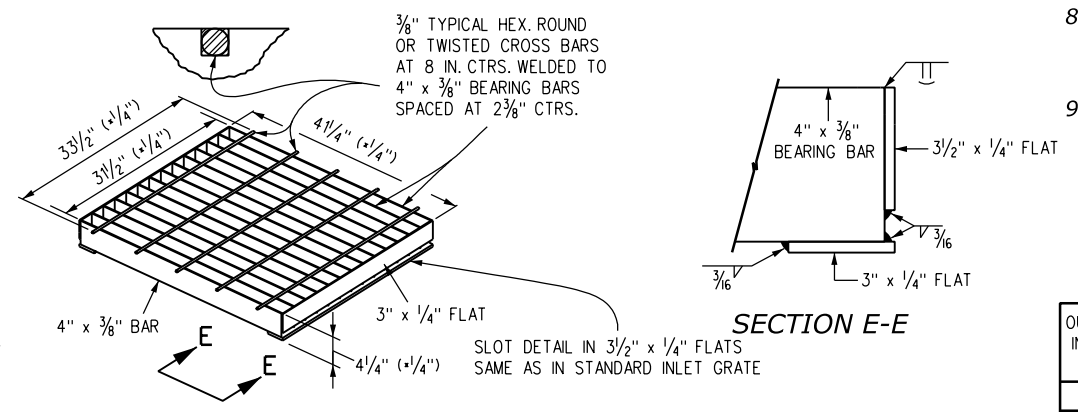
- Inlet type D is not HS-20 rated and shall not be placed in paved roadways. This inlet shall be used only outside Paved roadways.
- Concrete shall conform to Section 601. Inlet may be cast-in-place or precast.
- See plans and cross sections for size and location of pipe.
- Structural steel for grates and grate installation hardware shall be galvanized and shall be in accordance with subsection 725.10.
- Close mesh grates shall be used on all type D inlets unless specified on the plans.
- Close mesh grates are recommended where foot traffic or bicycle routes are in close proximity to grate. This grate is not ADA compliant or bicycle friendly and shall not be placed directly in sidewalks, crosswalks or bike paths.
- Provide steps when inlet dimension "H" is equal to or greater than 3 ft. - 6 in. and shall conform with AASHTO M 199.
- Reinforcing bars shall be epoxy coated and deformed #4, and shall have a 2 in. minimum clearance. Cut or bend bars around pipe as required.
- Place a 4 in. dia. metal medallion with a "No Dumping Drains To Stream" on all inlets. The medallion shall have a fish symbol with a blue background. It shall be firmly attached to the inlet's surface with a permanent fastener. Medallion is incidental to inlet.



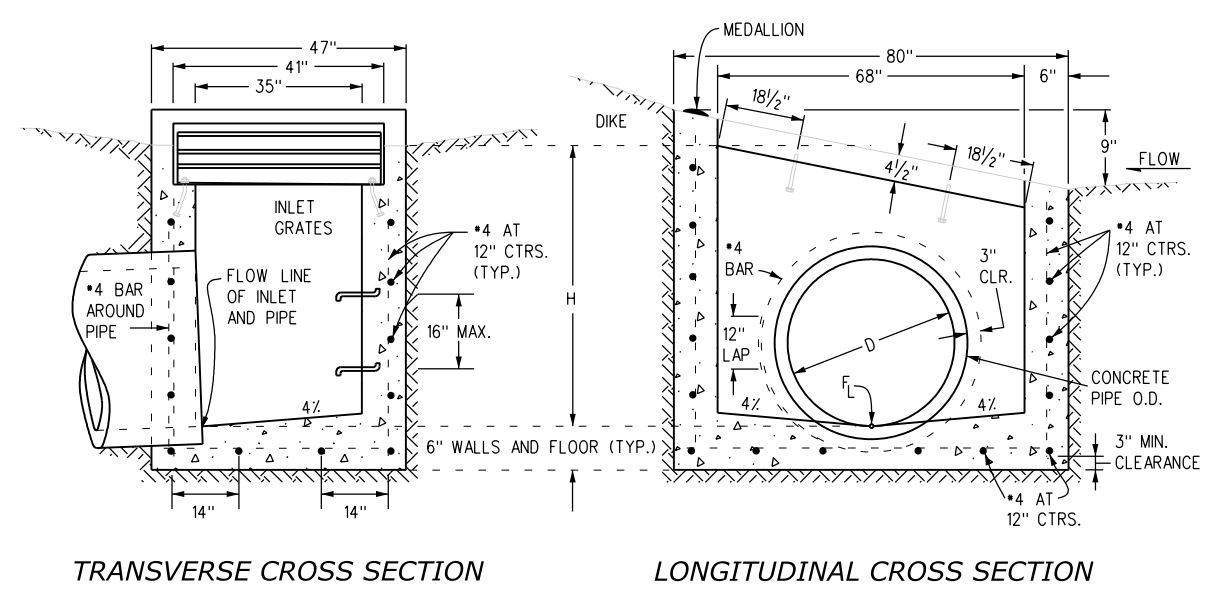
LEVEL GRATE INSTALLATION



BERM



CLOSE MESH GRATE

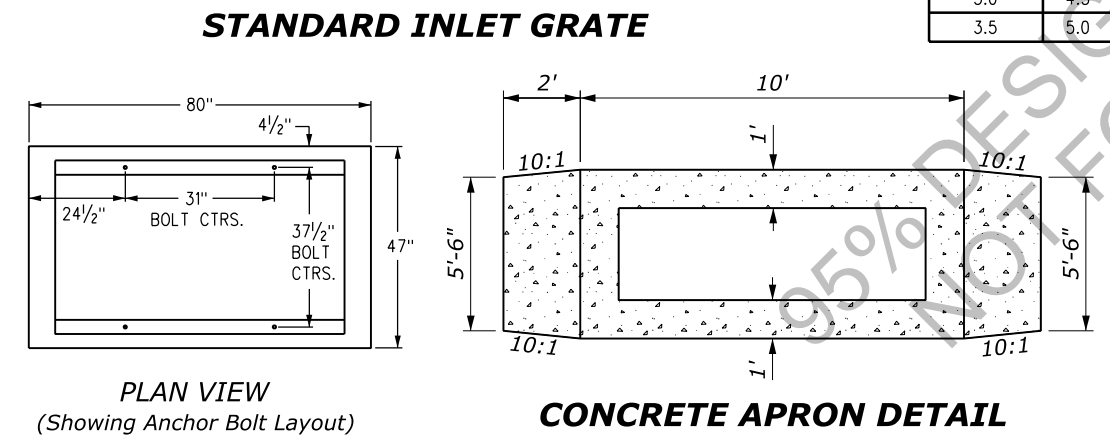


SLOPING GRATE INSTALLATION

TWO STEEL GRATE PER INLET QUANTITIES

NO. PIECES	DESCRIPTION	LENGTH	LBS PER FT.	WEIGHT (LBS.)
8	S4 x 7.7 BEAM	40"	7.70	206
4	3 1/2" x 1/4" FLAT	26 5/8"	2.98	26
4	3" x 1/4" FLAT	26 5/8"	2.55	24

Total lbs. - 256



STANDARD INLET GRATE

OUTLET PIPE INSIDE DIA. FT. - "D"	MIN. "H" FT.
1.5	3.0
2.0	3.5
2.5	4.0
3.0	4.5
3.5	5.0

"H" FT.	CONCRETE CU. YDS.	STEEL LBS.	CIRCULAR PIPE RANGE INSIDE DIA., IN. - "D"
3.0	1.5	127	18
3.5	1.7	149	18-24
4.0	1.9	157	18-30
4.5	2.0	179	18-36
5.0	2.2	187	18-42
5.5	2.4	208	18-42
6.0	2.6	215	18-42
6.5	2.8	236	18-42
7.0	2.9	243	18-42
7.5	3.1	264	18-42
8.0	3.3	271	18-42
8.5	3.5	292	18-42
9.0	3.6	299	18-42
9.5	3.8	320	18-42
10.0	4.0	327	18-42

Concrete and steel quantities are for one entire inlet before deduction for volume occupied by pipe. weight of steel includes a ring for the maximum pipe diameter.

QUANTITIES FOR ONE INLET

Adopted from CDOT Standard M-604-11

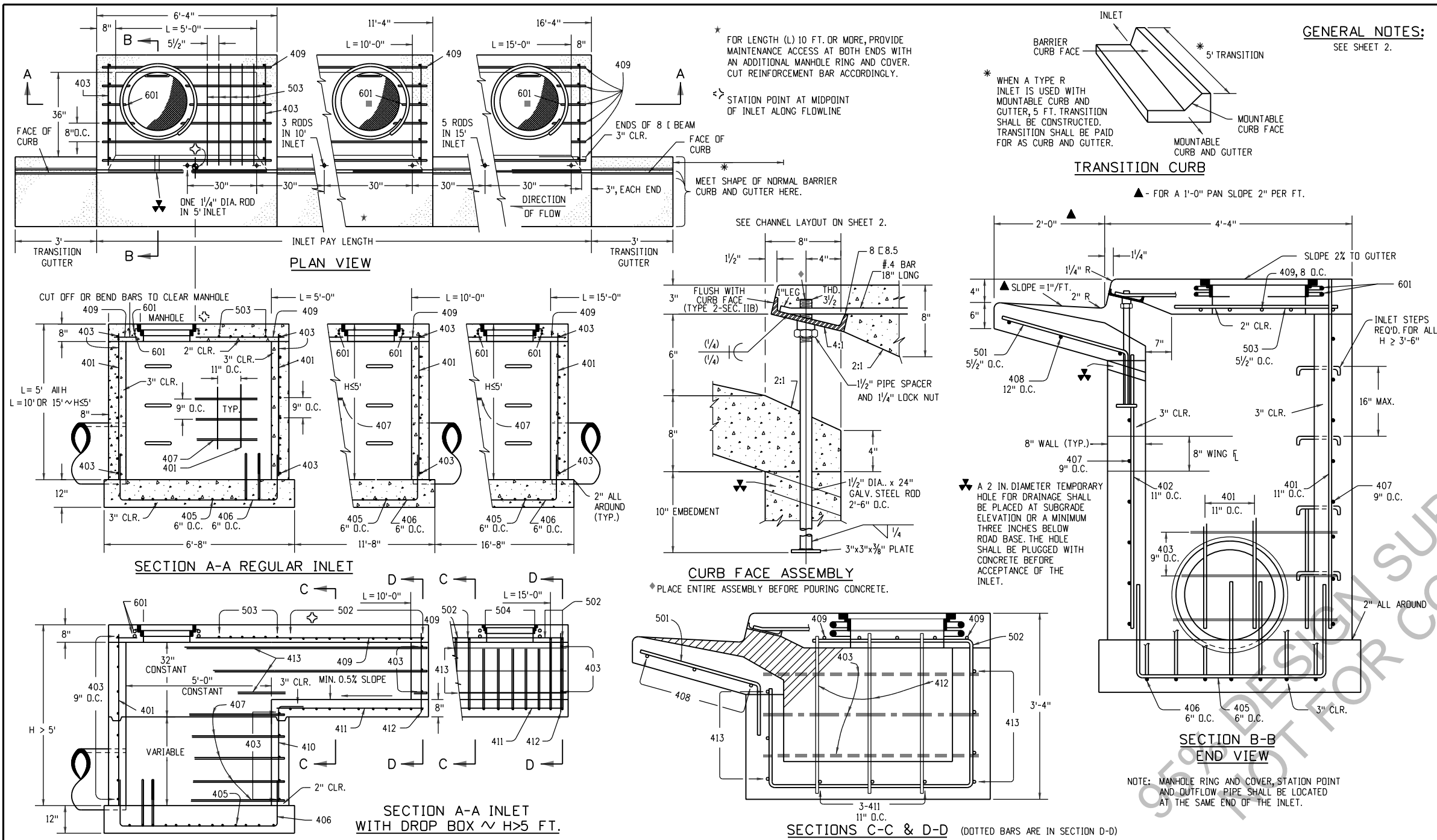
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL

INLET (TYPE D)

SPECIAL 604-B

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-25



Computer File Information	
Creation Date: 07/04/12	Initials: DD
Last Modification Date: 07/04/12	Initials: LTA
Full Path: www.coloradodot.info/business/designsupport	
Drawing File Name: 6040120102.dgn	
CAD Ver.: MicroStation V8	Scale: Not to Scale Units: English

Sheet Revisions	
Date:	Comments

Colorado Department of Transportation

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 Project Development Branch DD/LTA

CURB INLET TYPE R
 Issued By: Project Development Branch July 4, 2012

STANDARD PLAN NO.
M-604-12
Sheet No. 1 of 2

Adopted from CDOT Standard M-604-12

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL
INLET (TYPE R)
 Sheet 1 of 2

SPECIAL
 604-C

1/26/2022 3:59:28 PM p:\na-pw.bentley.com\AECOM_DSO1_NA\Documents\60332740-Estes Park\1900-Work\1910_CAD\02-SHEETS\T-6001-T-025 Curb Inlet Type R Standards User: amy.finseth

MARK	BAR # OR SIZE	O.C. SPACING	TYPE	ALL INLETS				INLETS: H ≤ 5 FT.				INLETS: H > 5 FT.			
				L = 5 FT.		L = 10 FT.		L = 15 FT.		L = 10 FT.		L = 15 FT.			
				NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH		
401	4	11"	II	15	*	21	*	26	*	11	*	11	*		
402	4	11"	II	7	*	13	*	18	*	7	*	7	*		
403	4	9"	II	*	4'-0"	*	4'-0"	*	4'-0"	*	4'-0"	*	4'-0"		
405	4	6"	VI	11	6'-10"	21	6'-10"	31	6'-10"	11	6'-10"	11	6'-10"		
406	4	6"	VIII	7	8'-10"	7	13'-10"	7	18'-10"	7	8'-10"	7	8'-10"		
407	4	9"	II	*	5'-10"	*	10'-10"	*	15'-10"	*	5'-10"	*	5'-10"		
408	4	12"	II	3	6'-10"	3	11'-10"	3	16'-0"	3	11'-10"	3	16'-0"		
409	4	8"	II	6	5'-10"	6	10'-10"	6	15'-10"	6	10'-10"	6	15'-10"		
410	4	11"	VII							3		3	*		
411	4	11"	II							3	5'-2"	3	10'-2"		
412	4	11"	II							3	2'-9"	3	2'-9"		
413	4	9"	II							7	10'-10"	7	15'-10"		
501	5	5/2"	IV	11	3'-4"	22	3'-4"	33	3'-4"	22	3'-4"	33	3'-4"		
502	5	5/2"	III							11	11'-5"	17	11'-5"		
503	5	5/2"	II	5	3'-6"	16	3'-6"	27	3'-6"	6	3'-6"	6	3'-6"		
504	5	5/2"	IX									5	8'-4"		
601	6	2/2"	V	2	8'-10"	2	8'-10"	2	8'-10"	2	8'-10"	4	8'-10"		
8(8.5)				1	5'-10"	1	10'-10"	1	15'-10"	1	10'-10"	1	15'-10"		
				2 BARS, 1 RODS		4 BARS, 3 RODS		8 BARS, 5 RODS		4 BARS, 3 RODS		8 BARS, 5 RODS			

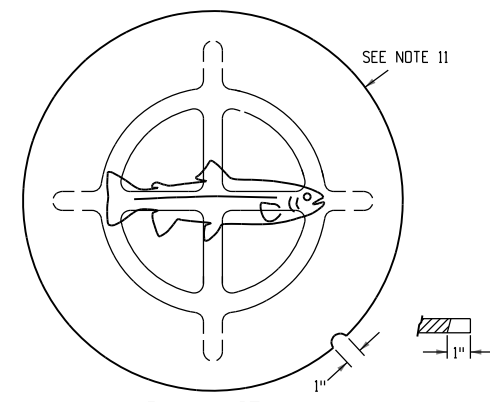
* VARIABLE REFER TO TABLE TWO.
 ■ INCLUDE #4, 18 IN. BARS (SEE CHANNEL LAYOUT).

TABLE ONE ~ BAR LIST FOR CURB INLETS, TYPE "R"

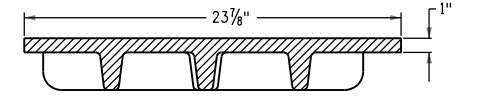
"H"	LENGTH			NO. REQ'D.		NO. REQ'D.		L = 5 FT.		L = 10 FT.		L = 15 FT.	
	401	402	410	REGULAR		DROP BOX		CONC. CU. YDS.		CONC. CU. YDS.		CONC. CU. YDS.	
	403	407	403	407	CONC.	STEEL	CONC.	STEEL	CONC.	STEEL	CONC.	STEEL	
3'-0"	2'-8"	1'-8"		10	7			3.2	285	5.3	497	7.4	706
3'-6"	3'-2"	2'-2"		10	7			3.4	305	5.7	528	7.9	747
4'-0"	3'-8"	2'-8"		12	9			3.7	326	6.0	559	8.4	786
4'-6"	4'-2"	3'-2"		12	9			3.9	334	6.4	571	8.8	803
5'-0"	4'-8"	3'-8"		14	11			4.1	354	6.7	602	9.3	844
5'-6"	5'-2"	4'-2"	3'-5"	16	13	15	6	4.4	375	6.0	607	7.4	850
6'-0"	5'-8"	4'-8"	3'-11"	16	13	16	6	4.6	382	6.2	616	7.6	860
6'-6"	6'-2"	5'-2"	4'-5"	18	15	18	8	4.8	402	6.4	637	7.8	880
7'-0"	6'-8"	5'-8"	4'-11"	20	17	19	10	5.0	423	6.6	654	8.0	897
7'-6"	7'-2"	6'-2"	5'-5"	20	17	20	10	5.3	430	6.9	664	8.3	907
8'-0"	7'-8"	6'-8"	5'-11"	22	19	22	12	5.5	451	7.1	684	8.5	927
8'-6"	8'-2"	7'-2"	6'-5"	24	21	23	14	5.7	471	7.3	702	8.7	944
9'-0"	8'-8"	7'-8"	6'-11"	24	21	24	14	6.0	479	7.6	711	9.0	954
9'-6"	9'-2"	8'-2"	7'-5"	26	23	26	16	6.2	499	7.8	732	9.2	974
10'-0"	9'-8"	8'-8"	7'-11"	28	25	27	18	6.4	520	8.0	749	9.4	992
10'-6"	10'-2"	9'-2"	8'-5"	28	25	28	18	6.7	527	8.3	759	9.7	1001
11'-0"	10'-8"	9'-8"	8'-11"	30	27	30	20	6.9	547	8.5	779	9.9	1022

NOTES: FOR L = 5 FT., L = 10 FT., AND L = 15 FT.
 REGULAR INLETS: TOTAL QUANTITIES NEEDED ARE OUTSIDE THE HEAVY BLACK LINE.
 DROP BOX INLETS: TOTAL QUANTITIES NEEDED ARE INSIDE THE HEAVY BLACK LINE.
 STEEL WEIGHTS DO NOT INCLUDE STRUCTURAL STEEL CHANNEL.

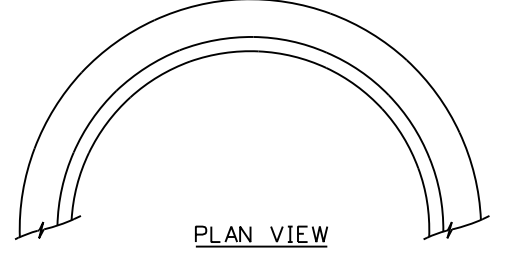
TABLE TWO ~ BARS AND QUANTITIES VARIABLE WITH "H"



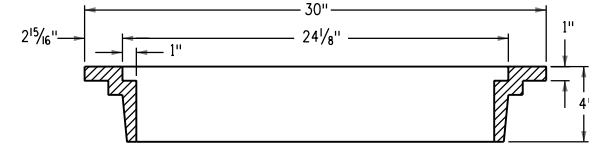
PLAN VIEW



ELEVATION VIEW
MANHOLE COVER (TYP.)

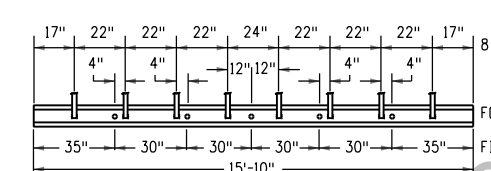
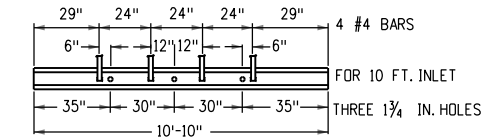
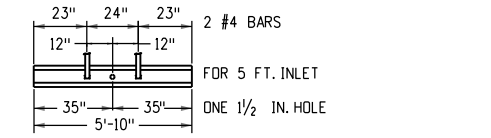


PLAN VIEW

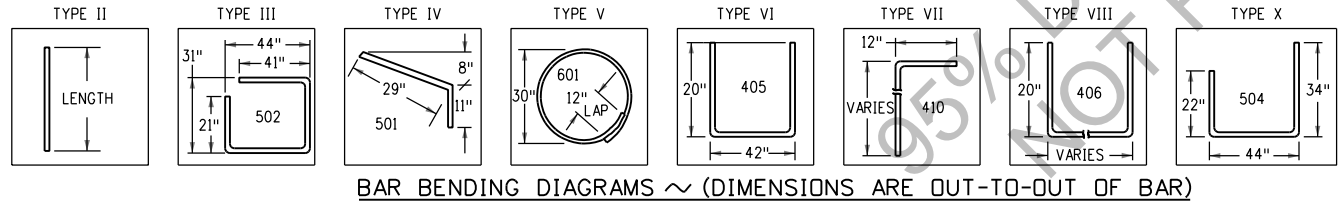
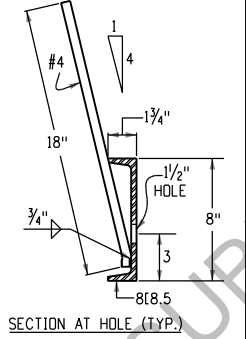


ELEVATION VIEW
MANHOLE RING (TYP.)

- General Notes**
- Concrete shall be per Section 601, inlet may be cast-in-place or precast.
 - Concrete walls shall be formed on both sides and shall be 8 in. thick.
 - Inlet steps shall be in conformance with AASHTO M 199.
 - Curb face assembly shall be galvanized after welding.
 - Exposed concrete corners shall be chamfered 3/4 in. curb and gutter corners shall be finished to match the existing curb and gutter beyond the transition gutter.
 - Reinforcing bars shall be deformed and shall have a 2 in. minimum clearance. All reinforcing bars shall be epoxy coated.
 - Dimensions and weights of typical manhole ring and cover are nominal.
 - Material for manhole rings and covers shall be gray or ductile cast iron in accordance with subsection 725.10.
 - Since pipe entries into the inlet are variable, the dimensions shown are typical. Actual dimensions and quantities for concrete and reinforcement shall be as required in the work. Quantities include volumes occupied by pipes.
 - Structural steel shall be galvanized and shall be in accordance with subsection 709.01.
 - All manhole covers shall be cast with a "NO DUMPING DRAINS TO STREAM" message and a fish symbol. The surface of the manhole cover shall have a non-slip pattern.



CHANNEL LAYOUT DETAILS
SEE CURB FACE ASSEMBLY ON SHEET 1.



Computer File Information

Creation Date: 07/04/12	Initials: DD
Last Modification Date: 07/04/12	Initials: LTA
Full Path: www.coloradodot.info/business/designsupport	
Drawing File Name: 6040120202.dgn	
CAD Ver.: MicroStation V8	Scale: Not to Scale
Units: English	

Sheet Revisions

Date:	Comments:

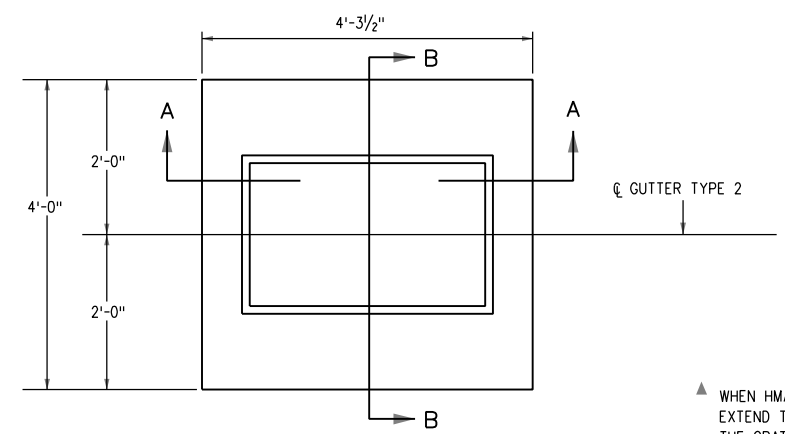
Colorado Department of Transportation
 4201 East Arkansas Avenue
 Denver, Colorado 80222
 Phone: (303) 757-9083
 Fax: (303) 757-9820
 Project Development Branch DD/LTA

CURB INLET TYPE R
 Issued By: Project Development Branch July 4, 2012

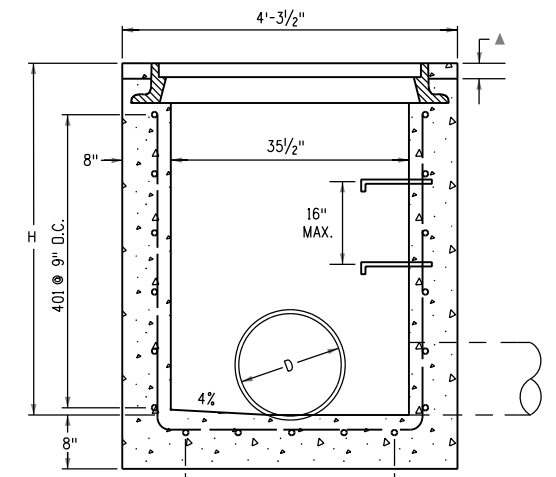
STANDARD PLAN NO.
M-604-12
Sheet No. 2 of 2

Adopted from CDOT Standard M-604-12
 U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION
 U.S. CUSTOMARY SPECIAL
INLET (TYPE R)
 Sheet 2 of 2
 SPECIAL 604-C

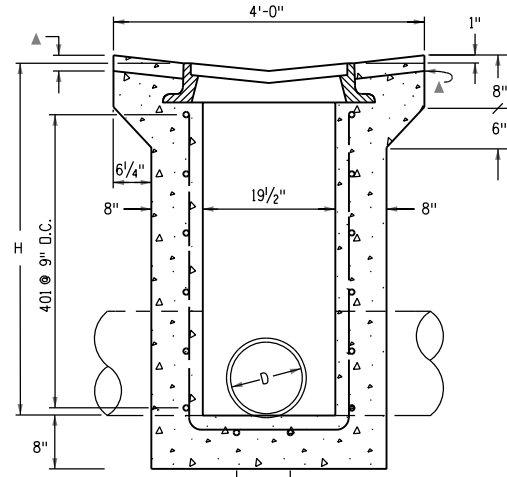
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 p:\a\com-na-pw.bentley.com\AECOM_DSO1_NA\Documents\60332740-Estes Park\1900-Work\1910_CAD\02-SHEETS\T-6001T-026 Curb Inlet Type R Standards



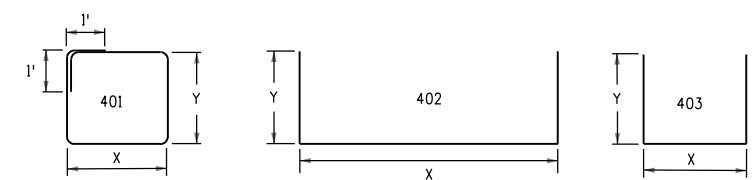
PLAN VIEW
TYPE 13 INLET FOR GUTTER TYPE 2



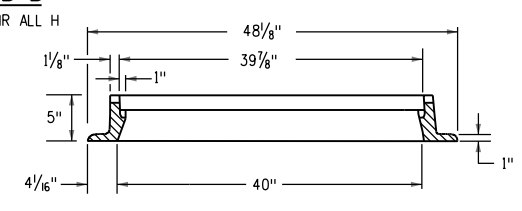
SECTION A-A
D MAX = 30 IN. FOR H > 4 FT.



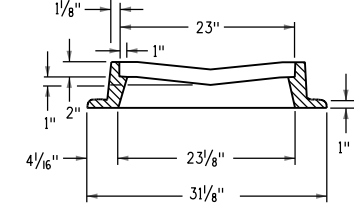
SECTION B-B
D MAX = 18 IN. FOR ALL H



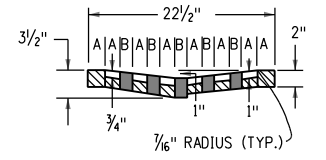
BENDING DIAGRAMS
ALL DIMENSIONS ARE OUT-TO-OUT OF BAR.



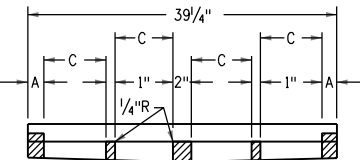
SECTION E-E
APPROXIMATE WEIGHT = 590 LBS.



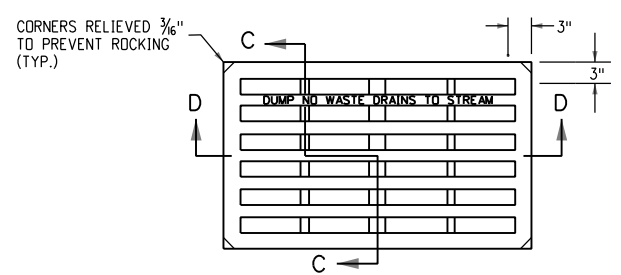
SECTION F-F



SECTION C-C
A = 1 3/4\"/>
B = 1 1/16\"/>
C = 7 1/16\"/>



SECTION D-D



NO. 13 GRATE

CORNERS RELIEVED 3/16\"/>

General Notes

- Concrete shall be per Section 601. Inlet may be cast-in-place or precast.
- Cast-in-place concrete walls shall be formed on both sides.
- Exposed concrete corners shall be chamfered 3/4 in.
- Reinforcing bars shall be deformed #4 and shall have a 2 in. minimum clearance. All reinforcing bars shall be epoxy coated.
- Steps shall be provided when inlet dimension "H" is equal to or greater than 3 ft 6 in, and shall conform to AASHTO M 199.
- All grates and frames shall be gray or ductile cast iron in accordance with subsection 725.10.
- Grates and frames shall be designed in withstand HS 20 loading.
- Station point is at the center of the inlet.
- Grate shall have "NO DUMPING DRAINS TO STREAM" message cast on surface.

H	CONCRETE	REINFORCING STEEL	NO. OF 401 BARS REQ'D.	MAXIMUM PIPE I.D.	
	CU. YDS.	Ø LB.		SEC. A-A	SEC. B-B
3'-0"	1.3	72	4	18	18
3'-6"	1.5	76	4	24	18
4'-0"	1.6	90	5	30	18
4'-6"	1.8	104	6	30	18
5'-0"	1.9	109	6	30	18
5'-6"	2.1	122	7	30	18
6'-0"	2.2	136	8	30	18
6'-6"	2.4	141	8	30	18
7'-0"	2.5	154	9	30	18
7'-6"	2.7	168	10	30	18
8'-0"	2.8	173	10	30	18
8'-6"	3.0	187	11	30	18
9'-0"	3.1	200	12	30	18
9'-6"	3.3	205	12	30	18
10'-0"	3.4	219	13	30	18

Ø INCLUDES 1% FOR OVERRUN.
NOTE: CONCRETE QUANTITIES INCLUDE VOLUME OCCUPIED BY PIPE.

QUANTITIES FOR ONE INLET

MARK	NO. REQ'D.	DIMENSIONS		LENGTH
		X	Y	
401	4	3'-6"	2'-2"	13'-4"
402	2	3'-4 1/2"	* 2'-6 1/2"	8'-5 1/2"
403	5	2'-1 1/2"	* 2'-7"	7'-2 1/2"

* ADD 6 IN. TO THIS DIMENSION FOR EACH 6 IN. INCREASE OF "H" OVER 3 FT.-0 IN.

BAR LIST FOR H = 3 FT.-0 IN.

Computer File Information	
Creation Date: 07/04/12	Initials: DD
Last Modification Date: 07/04/12	Initials: LTA
Full Path: www.coloradodot.info/business/designsupport	
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Sheet Revisions	
Date:	Comments:

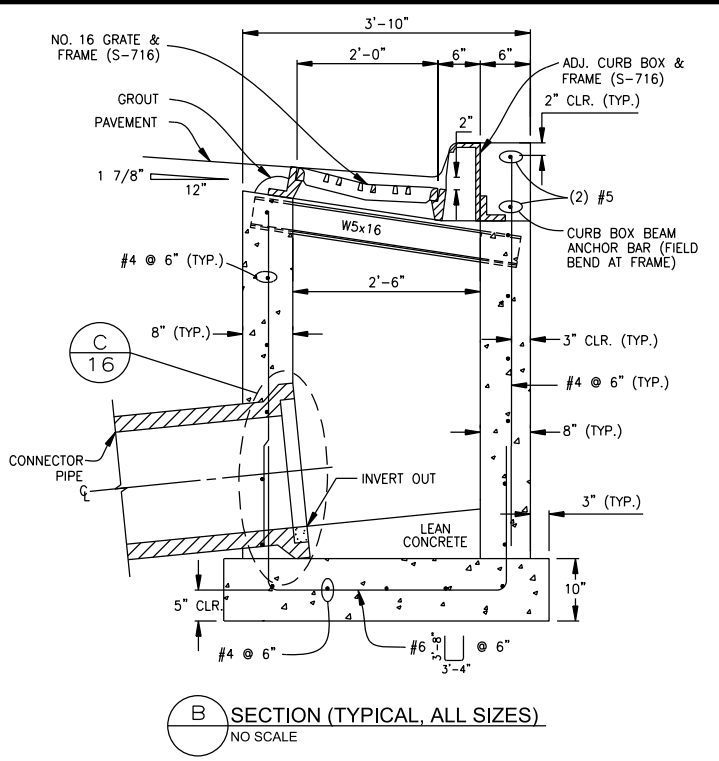
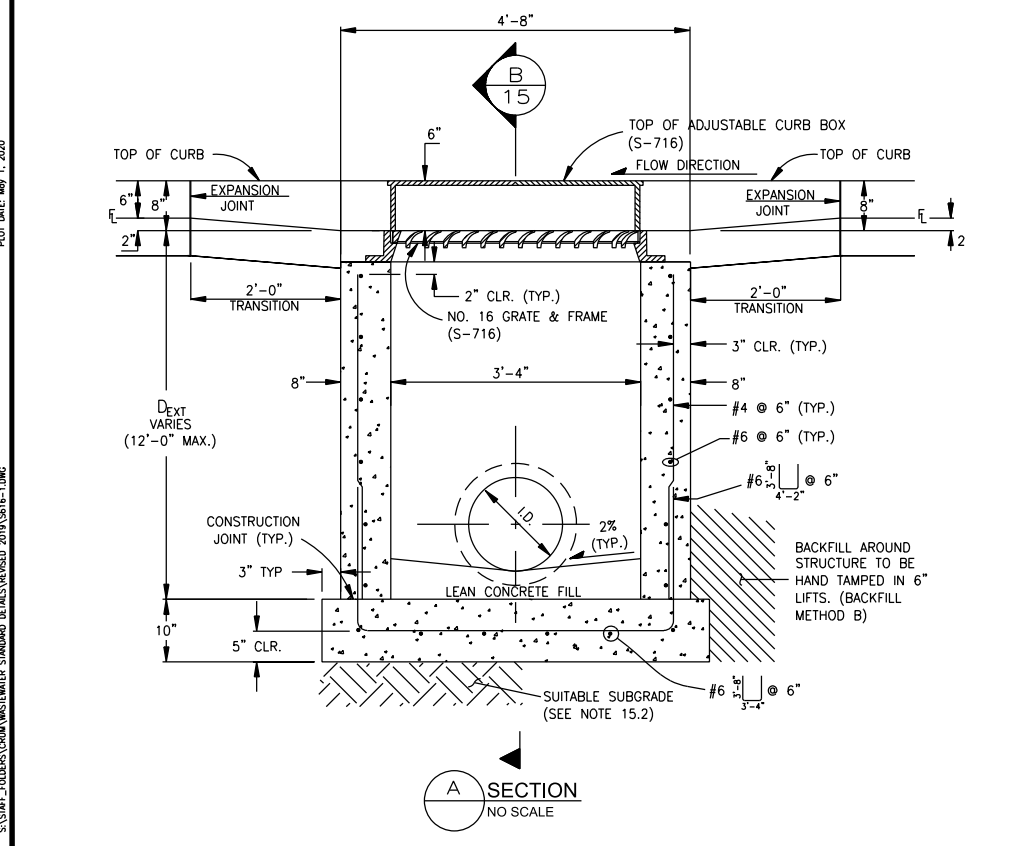
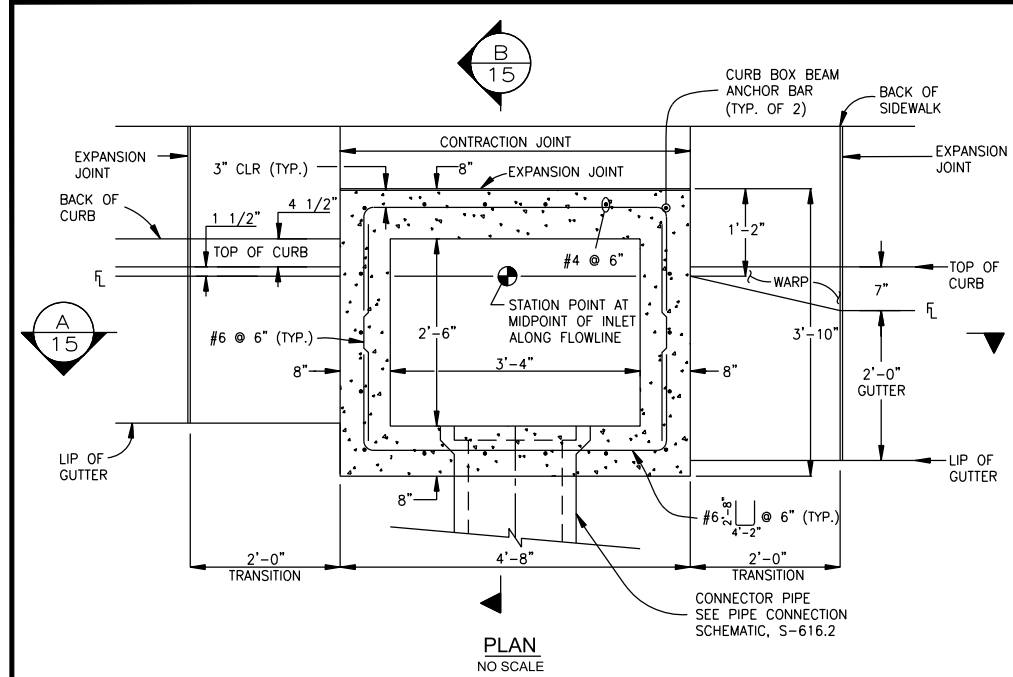
Colorado Department of Transportation
4201 East Arkansas Avenue
Denver, Colorado 80222
Phone: (303) 757-9083
Fax: (303) 757-9820
Project Development Branch DD/LTA

**CONCRETE INLET
TYPE 13**
Issued By: Project Development Branch July 4, 2012

**STANDARD PLAN NO.
M-604-13**
Sheet No. 1 of 1

Adopted from CDOT Standard M-604-13
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION
**U.S. CUSTOMARY SPECIAL
INLET
(TYPE 13)**
Sheet 1 of 1
SPECIAL
604-D

1/26/2022 3:59:39 PM p:\aecom-na-pw\entley.com\AECOM_DS01_NA\Documents\60332740-Estes Park\1900-Work\1910_CAD\02-SHEETS\T-6001-T-027 Concrete Inlet Type 13 Standards User: amy.finseth



Single Number 16 Inlet Notes:

- For payment purposes, inlet structures shall also include 2'-0" curb and gutter transition section at each end of inlet plus sidewalk sections where required behind inlet structure and transition sections.
- Sub-grade shall be 6-12" of Class B bedding compacted per Section 209, on suitable, undisturbed material. If subgrade is unsuitable, the subgrade shall be over excavated and stabilized with Class B bedding per Section 209.
- Floor slope may be poured monolithic with base.
- Sc = slope of connector = 2% min.
- Unless otherwise specified on the drawings or otherwise approved, all No. 16 Inlets shall be constructed with an adjustable cast iron curb box.
- Design conditions for inlet allows depths of 12'-0" (max.). For inlets more than 12'-0" in depth, shop drawings and design analysis shall be submitted for approval.
- All reinforcing steel shall be ASTM, A-615, grade 60 deformed bars. Diameter of bend measured on the inside of the bar shall be a minimum of 6 bar diameter. Refer to Section 709.1.
- All shall conform to AASHTO LRFD bridge design specifications, 8th edition, 2017.
- No formwork shall remain inside structure when complete.
- All concrete shall meet requirements for sulfate resistance in accordance with Section 701 on streets where magnesium chloride chemical deicers are applied. Refer to Section 701 for requirements for sulfate resistance in concrete exposed to earth.
- Splicing of reinforcing steel shall be permitted only where detailed in drawings.
- Inlet walls shall be formed both inside and outside. Casting of sidewalls against earth is not permitted.
- Lean concrete fill to be F'C = 2000 psi. Inlet structure, lid, street curb and gutter, and pavement to be F'C = 4,500 psi, max w/cm = 0.45 and air entrained 5% to 8%. F'C = 28 days compressive strength requirement for mix design, field acceptance.
- For through structures, benches must come to top of pipe.
- No corner penetration on structure.
- See Section 604 for more information. Use of this detail without specifications shall be considered non-compliant.
- See detail this sheet for rebar placement at wall penetration detail.
- Refer to Sections 500, 609 and 615 for adjacent roadway and sidewalk design criteria.

DATE	
DISCUSSION OF REVISIONS	
NO.	
CITY AND COUNTY OF DENVER 2000 W. 3RD AVE - DENVER, CO 80223 www.denvergov.org	
STANDARD DETAILS SINGLE NUMBER 16 INLET S-616.1	
DRAWN BY:	
DESIGNED BY:	ASP/JDMT
APPROVED BY:	
DRAWING NAME:	S616-1.dwg
DATE:	JUNE 2020
SHEET NO.:	15

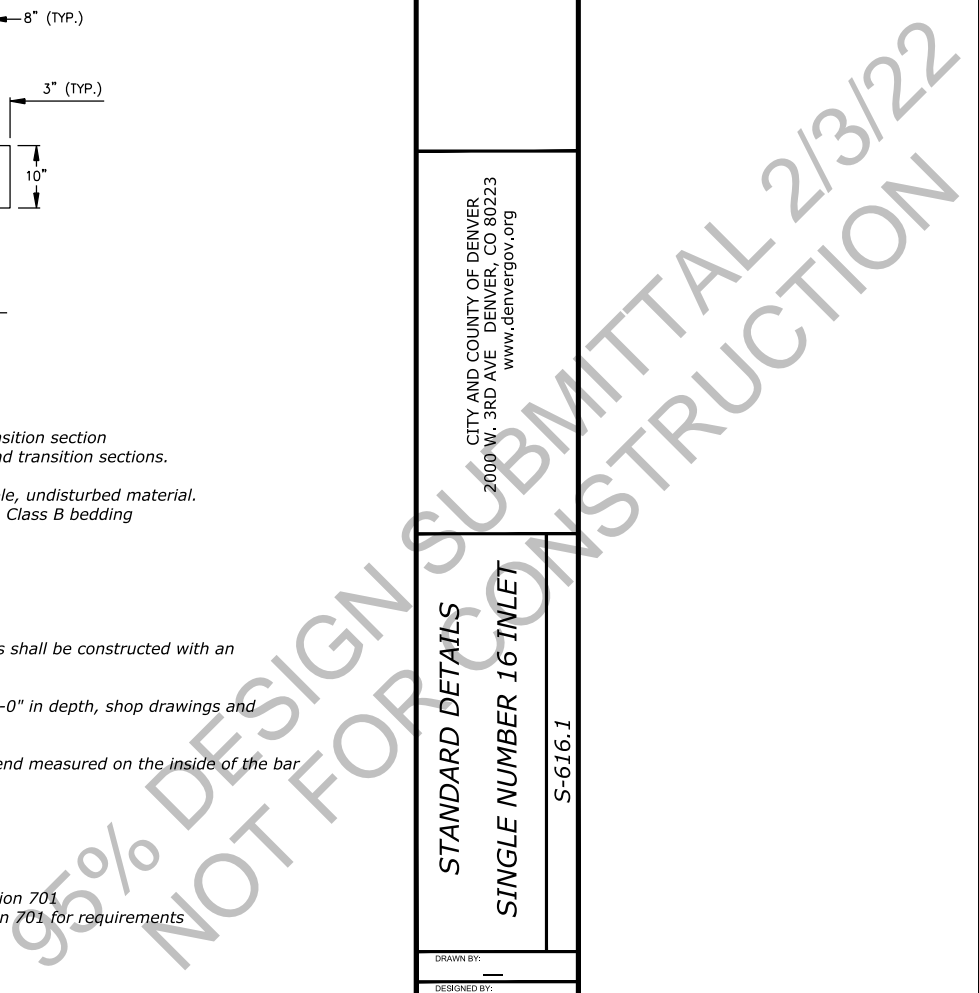
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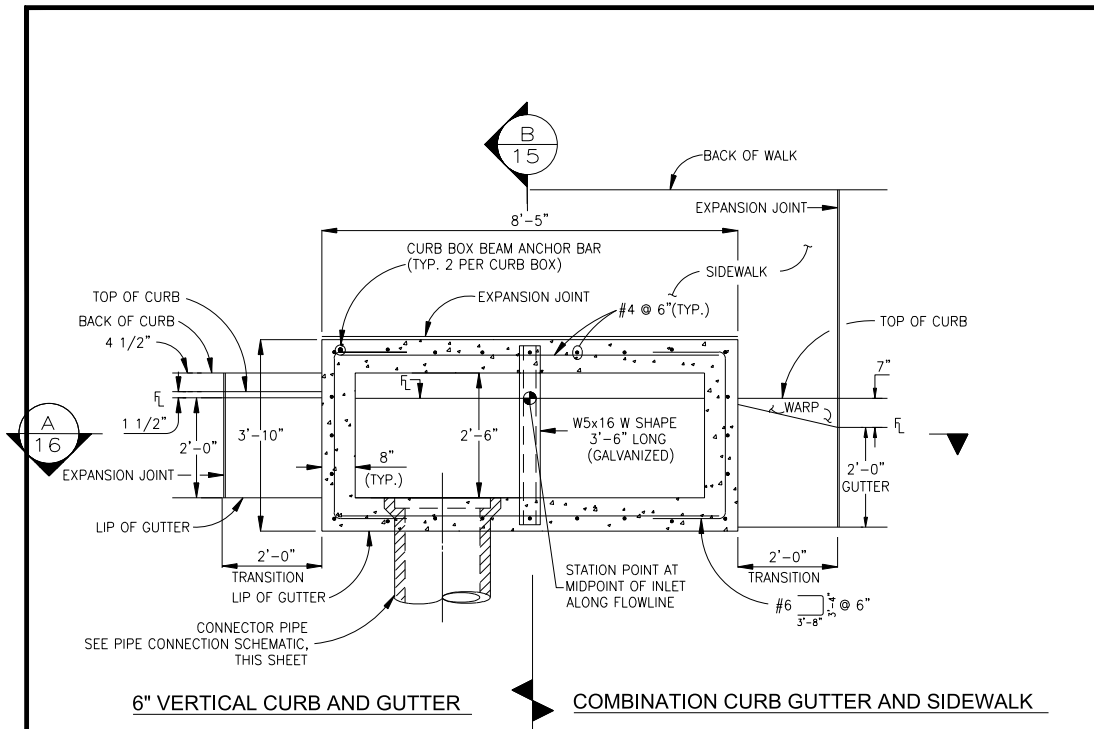
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL
**INLET
(TYPE 16)**

SPECIAL
604-E

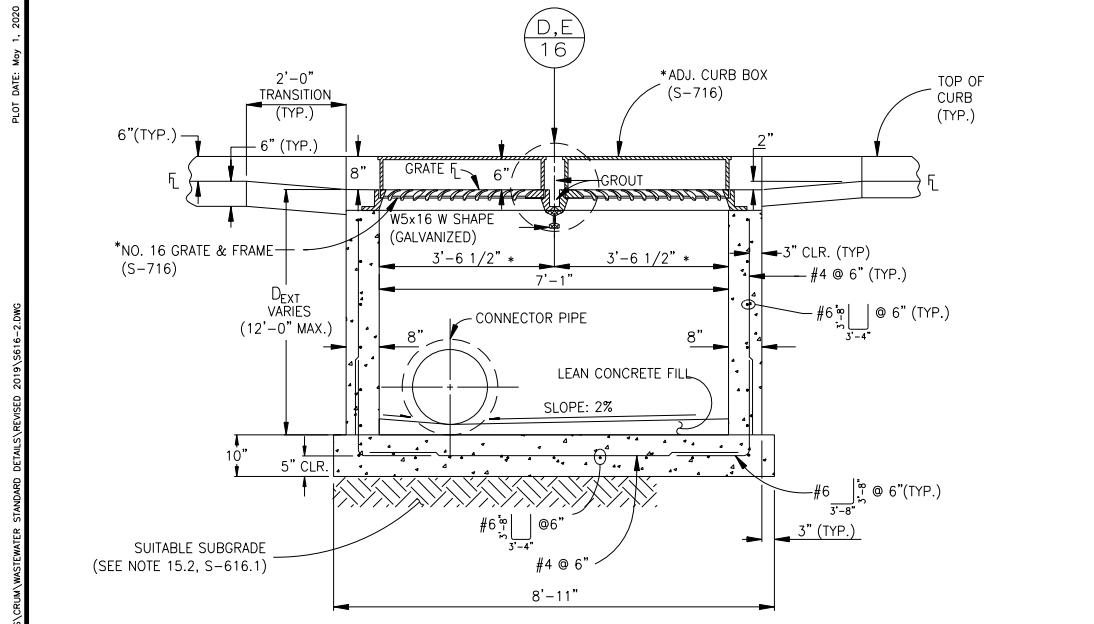
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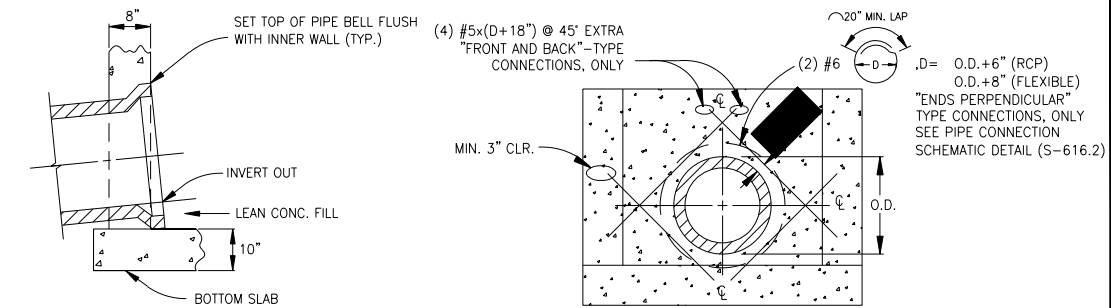


6" VERTICAL CURB AND GUTTER **COMBINATION CURB GUTTER AND SIDEWALK**

PLAN
NO SCALE

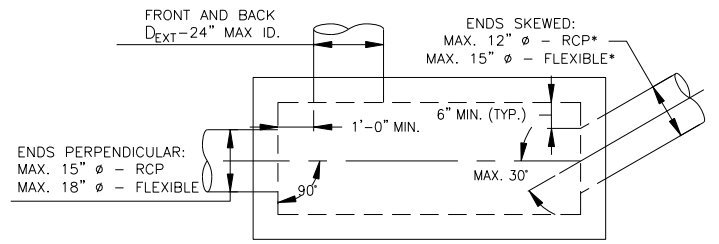


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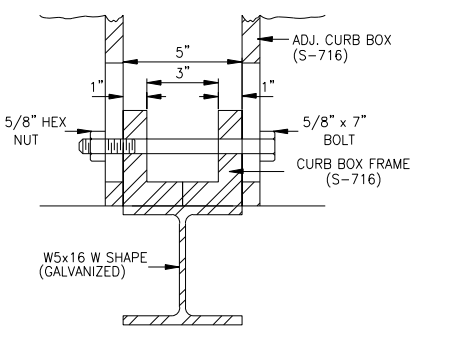


C DETAIL - CONNECTOR OUTLET
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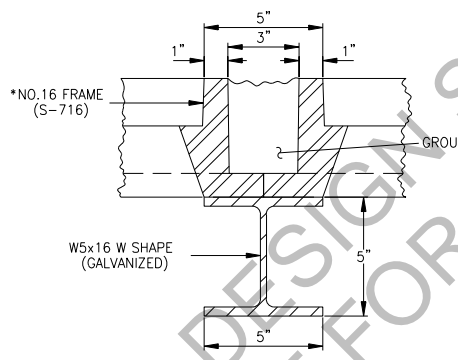
E DETAIL - REBAR PLACEMENT AROUND CONNECTOR PIPE
NO SCALE



PIPE CONNECTION SCHEMATIC (NO. 16 INLET)
THIS DIAGRAM IS PROVIDED FOR GENERAL GUIDANCE ONLY. THE DESIGNER IS RESPONSIBLE FOR VERIFYING PROJECT SPECIFIC GEOMETRY.



D DETAIL - PLACEMENT OF ADJ. CURB BOX ON SUPPORT RAIL (TYP.)
NO SCALE



E DETAIL - FRAME PLACEMENT ON SUPPORT RAIL (TYP.)
NO SCALE

Double Number 16 Inlet Notes:

1. See Section 604 for additional information.
2. See general notes on 604-E
3. Expansion joint material shall be placed full depth of the curb and gutter, sidewalk, concrete pavement, as applicable. The top portion of the joint shall be sealed with silicone sealant.
4. See 604-E for rebar placement at wall penetration detail.

DATE	
DESCRIPTION OF REVISIONS	
NO.	
CITY AND COUNTY OF DENVER 2000 W. 3RD AVE. DENVER, CO 80223 www.denvergov.org	
STANDARD DETAILS	
DOUBLE NUMBER 16 INLET	
S-616.2	
DRAWN BY:	
DESIGNED BY:	ASP/JDMT
APPROVED BY:	
DRAWING NUMBER:	S616-2.dwg
DATE:	JUNE 2020
SHEET NO.:	16

Adopted from CCD Drawing S616-2

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

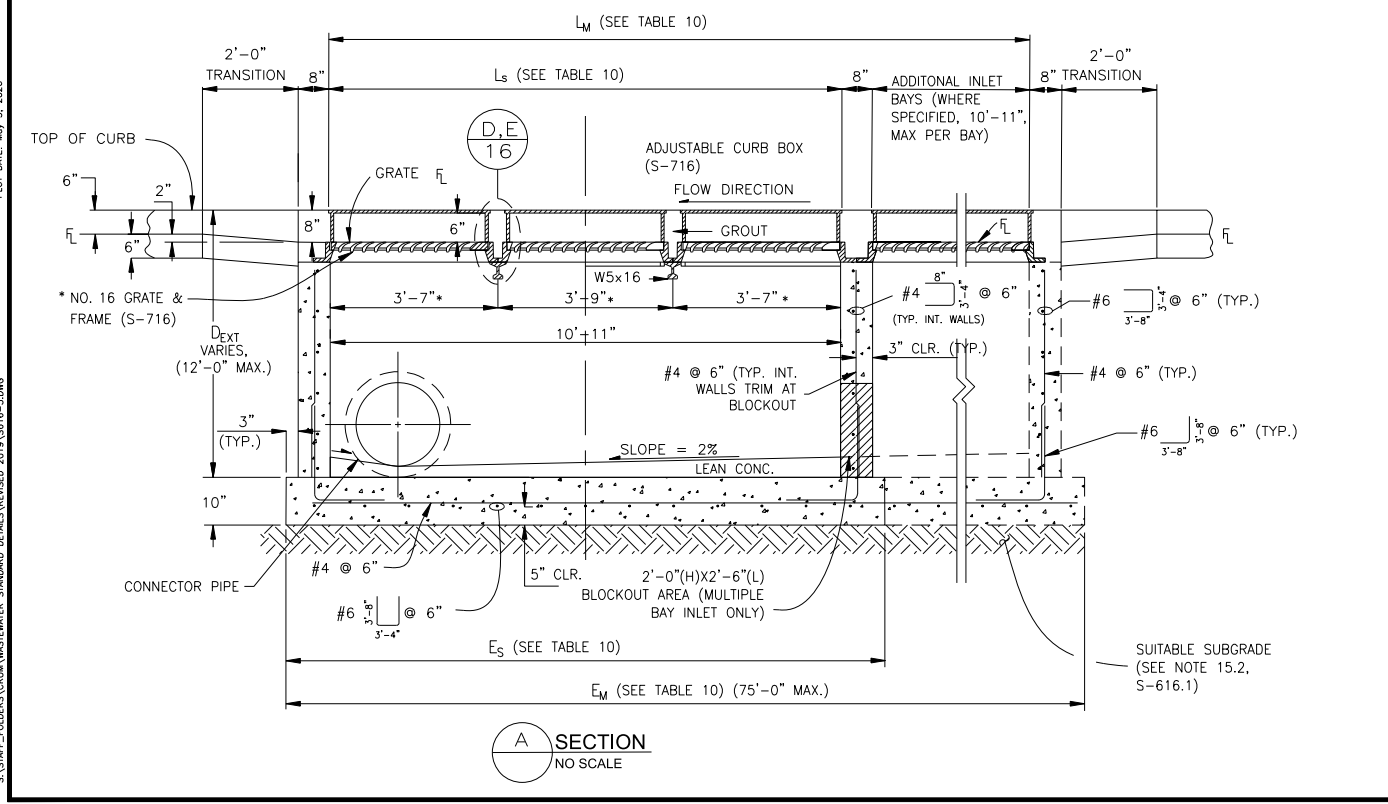
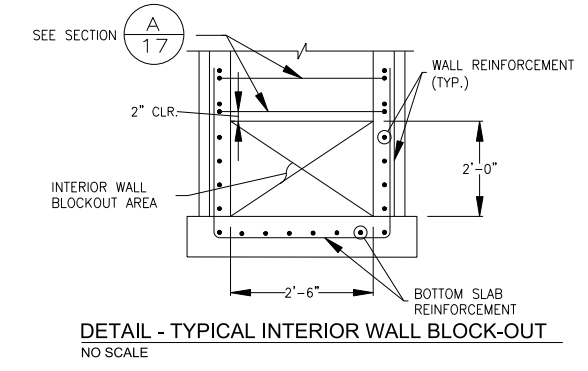
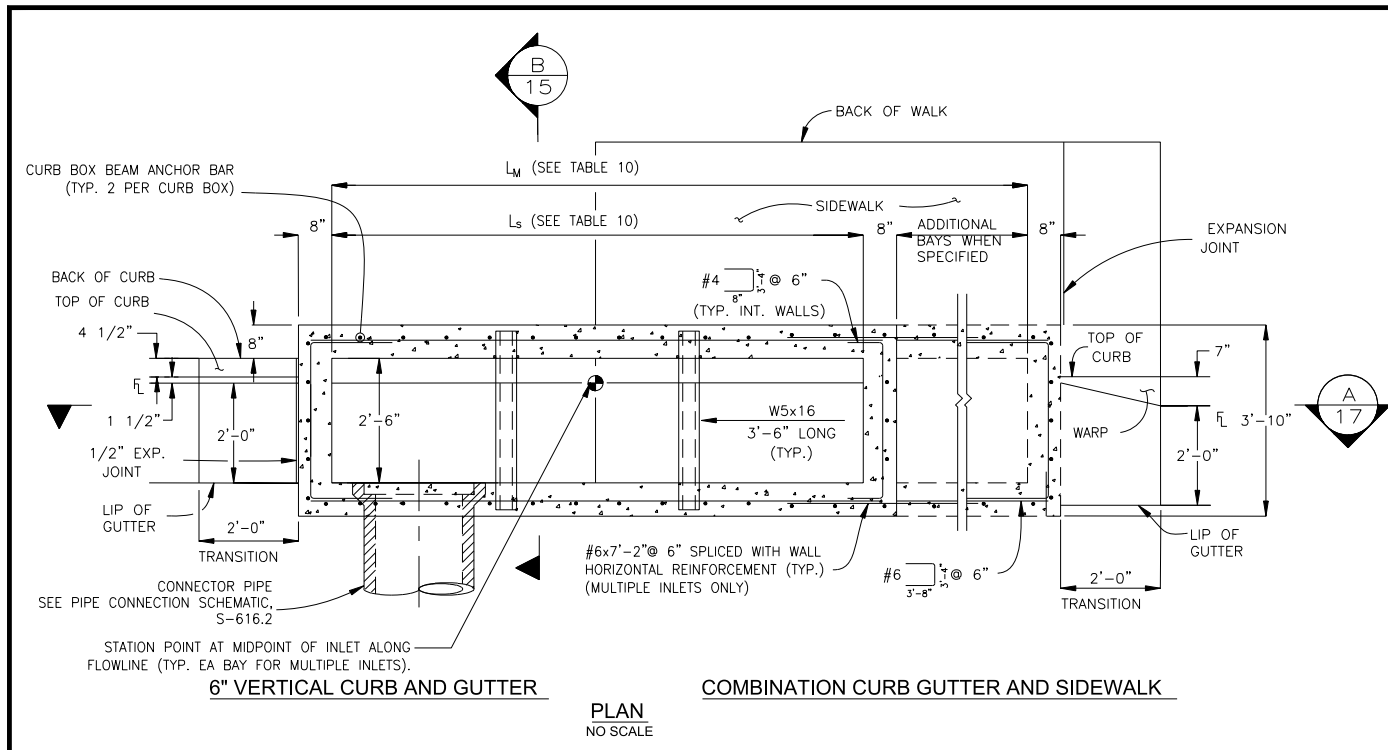
U.S. CUSTOMARY SPECIAL

**INLET
(TYPE 16)
(DOUBLE)**

SPECIAL
604-F

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S:\STATE_FOLDERS\CIVIL\WATER\STANDARD DETAILS\REVISED 2019\S616-2.DWG PLOT DATE: May 1, 2020



Triple Number 16 Inlet Notes:

1. See Section 604 for additional information.
2. See general notes on 604-E
3. Expansion joint material shall be placed full depth of the curb and gutter, sidewalk, concrete pavement, as applicable. The top portion of the joint shall be sealed with silicone sealant.
4. See 604-F for rebar placement around connector pipe.

INLET CONFIGURATION	L _s OR L _m INLET LENGTH	E _s OR E _m TOTAL BOTTOM SLAB LENGTH
TRIPLE NO. 16	10'-11"	12'-9"
NO. 16 3-3-2 (EXAMPLE CONFIGURATION)	10'-11", 10'-11", 7'-1"	32'-1"
NO. 16 --- (CONFIGURATION TEMPLATE)	L _s , L _s , L _s	= 3" + 8" + L _s + 8" + L _s + 8" + L _s + 8" + 3"

■ MAX. BOTTOM SLAB LENGTH = 75'-0"

STANDARD DETAILS
 TRIPLE NUMBER 16 INLET
 S-616.3

CITY AND COUNTY OF DENVER
 2002 W. 160 AVE. DENVER, CO 80202
 www.denvergov.org

DRAWN BY: _____
 DESIGNED BY: ASP/JDMT
 APPROVED BY: _____
 DRAWING NUMBER: S616-3.dwg
 DATE: JUNE 2020
 SHEET NO.: 17

Adopted from CCD Drawing S616-3

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

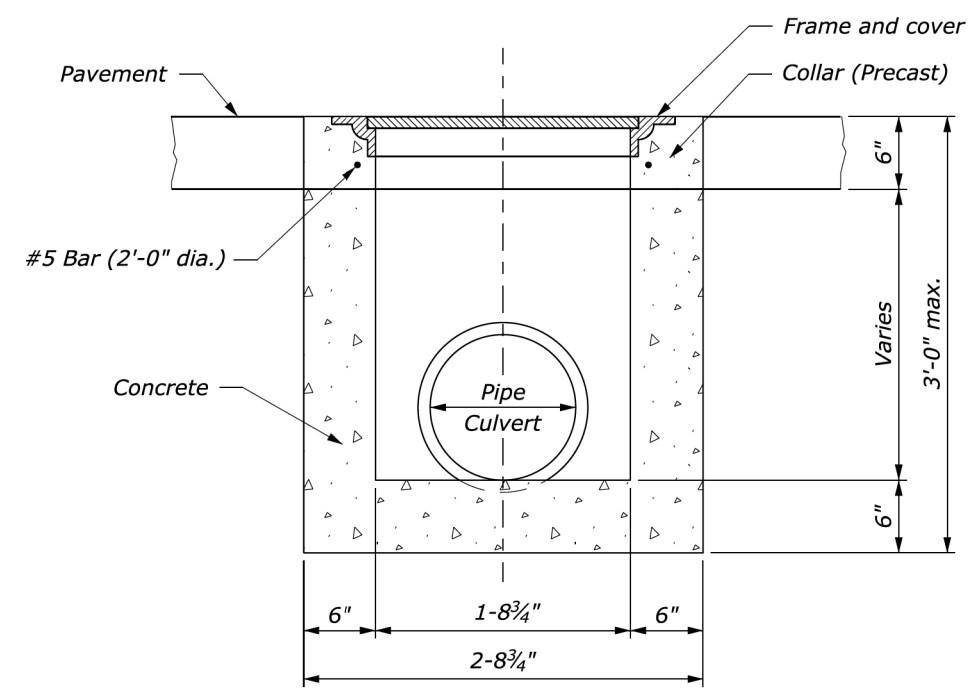
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**INLET
 (TYPE 16)
 (TRIPLE)**

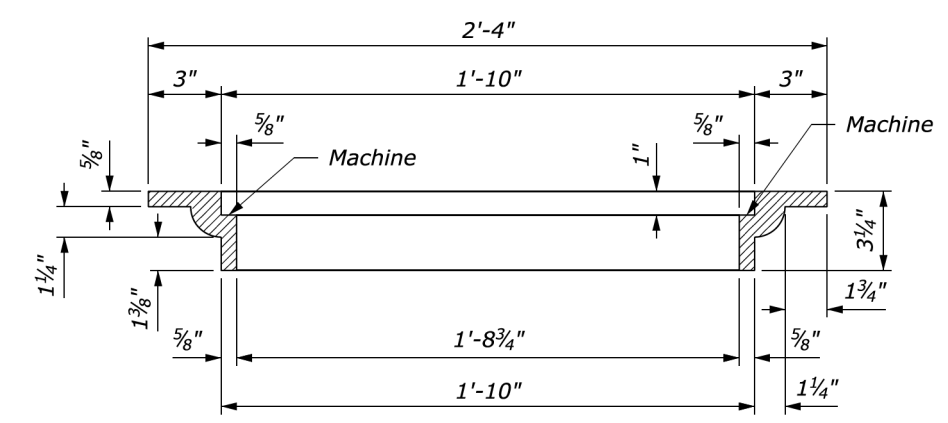
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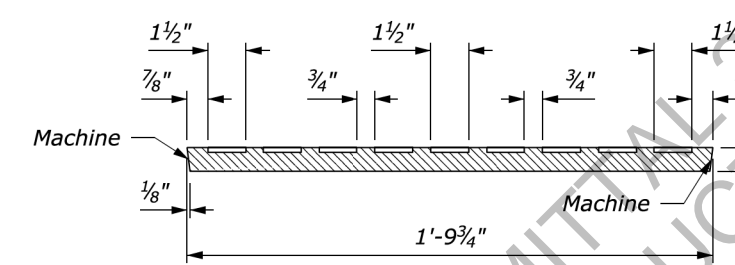
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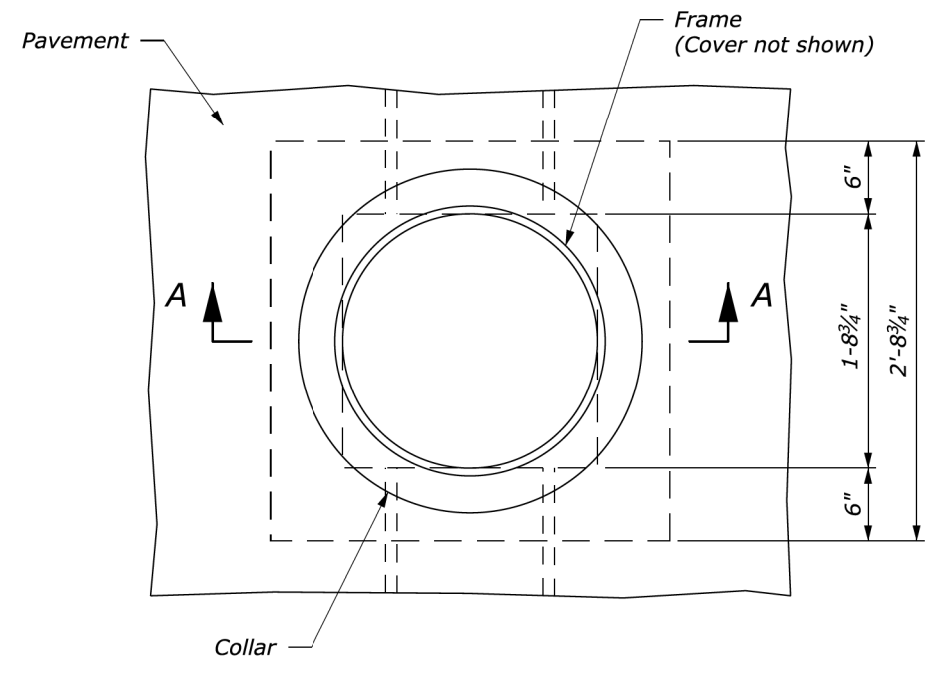
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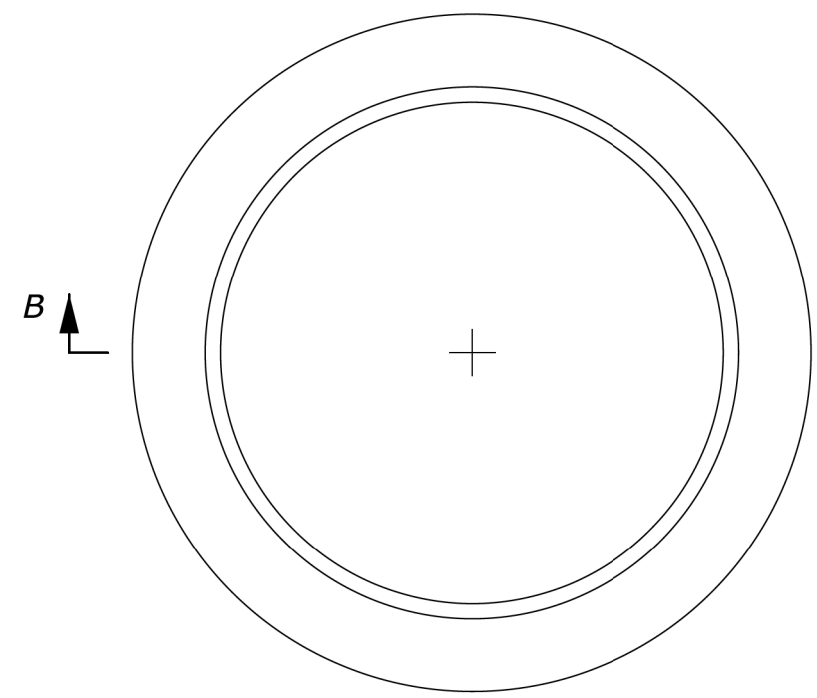
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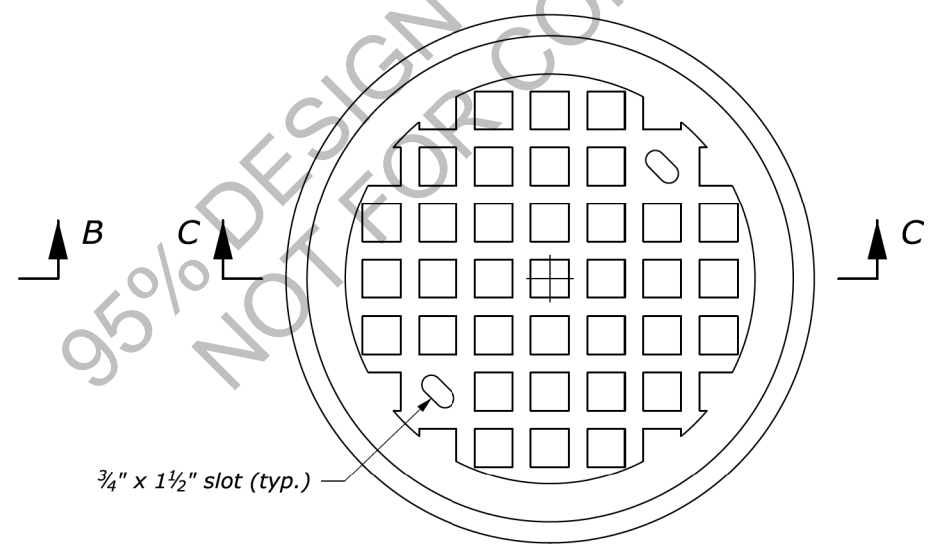
SECTION C-C



PLAN



FRAME



COVER

NOTE:

1. Frame and cover dimensions may vary slightly to allow manufacturer's standards.
2. MASS: (Approximate, cast iron)
 Frame - 86 ± 4 lb
 Cover - 83 ± 4 lb
3. All reinforcing bars are #5 placed a minimum 1 1/2 inch clear from face of concrete. In floors, place bars on 6 inch center each way. In walls, place horizontal bars on 6 inch centers and vertical bars on 12 inch centers.

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 FEDERAL LANDS HIGHWAY OFFICE

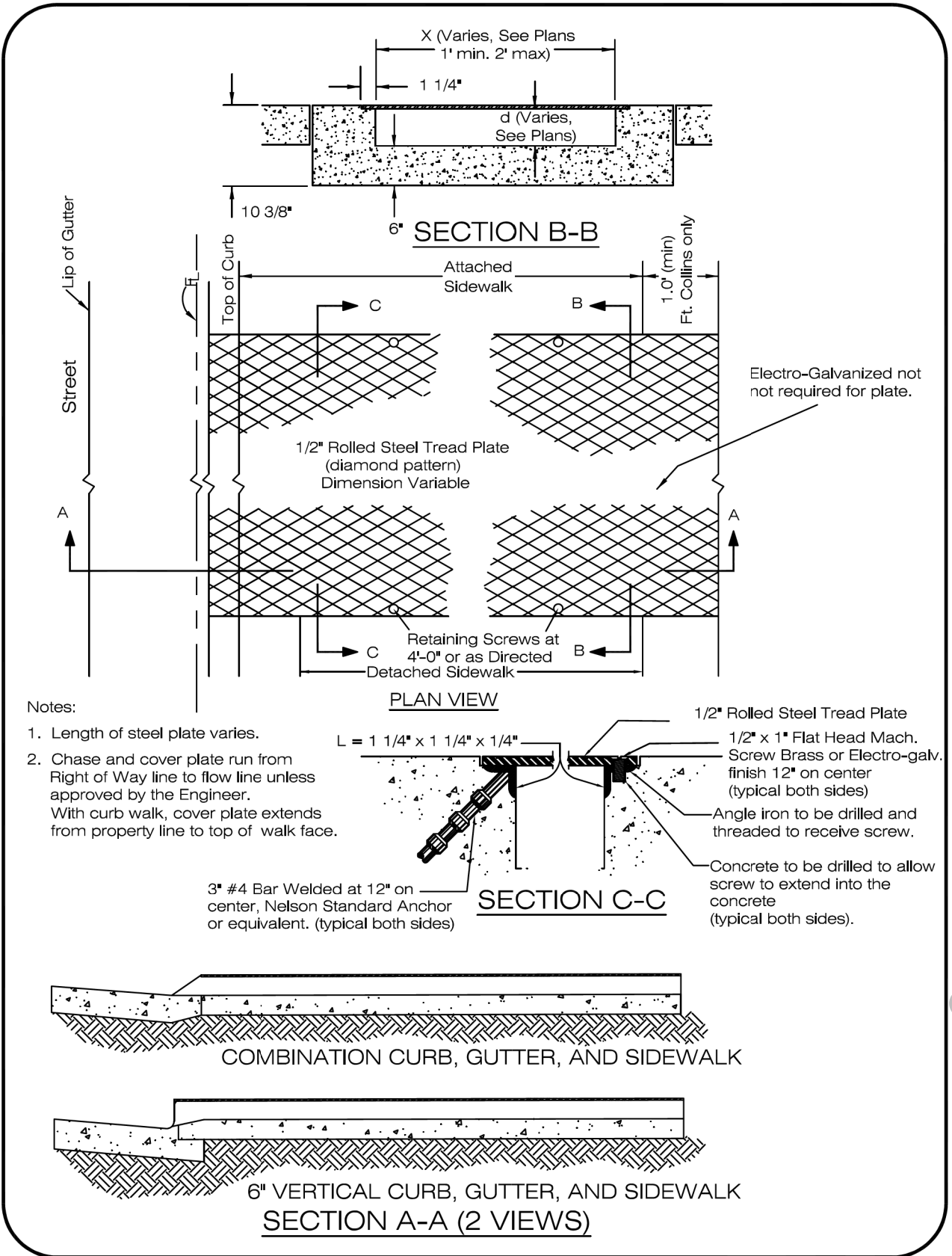
U.S. CUSTOMARY STANDARD

MANHOLE

NO SCALE

STANDARD
 604-9

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-30



- Notes:
- Length of steel plate varies.
 - Chase and cover plate run from Right of Way line to flow line unless approved by the Engineer. With curb walk, cover plate extends from property line to top of walk face.

NOTE:
1. Construct drainage chase per Section 605.

95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

STANDARD DETAILS FOR DRAINAGE UNDER SIDEWALK

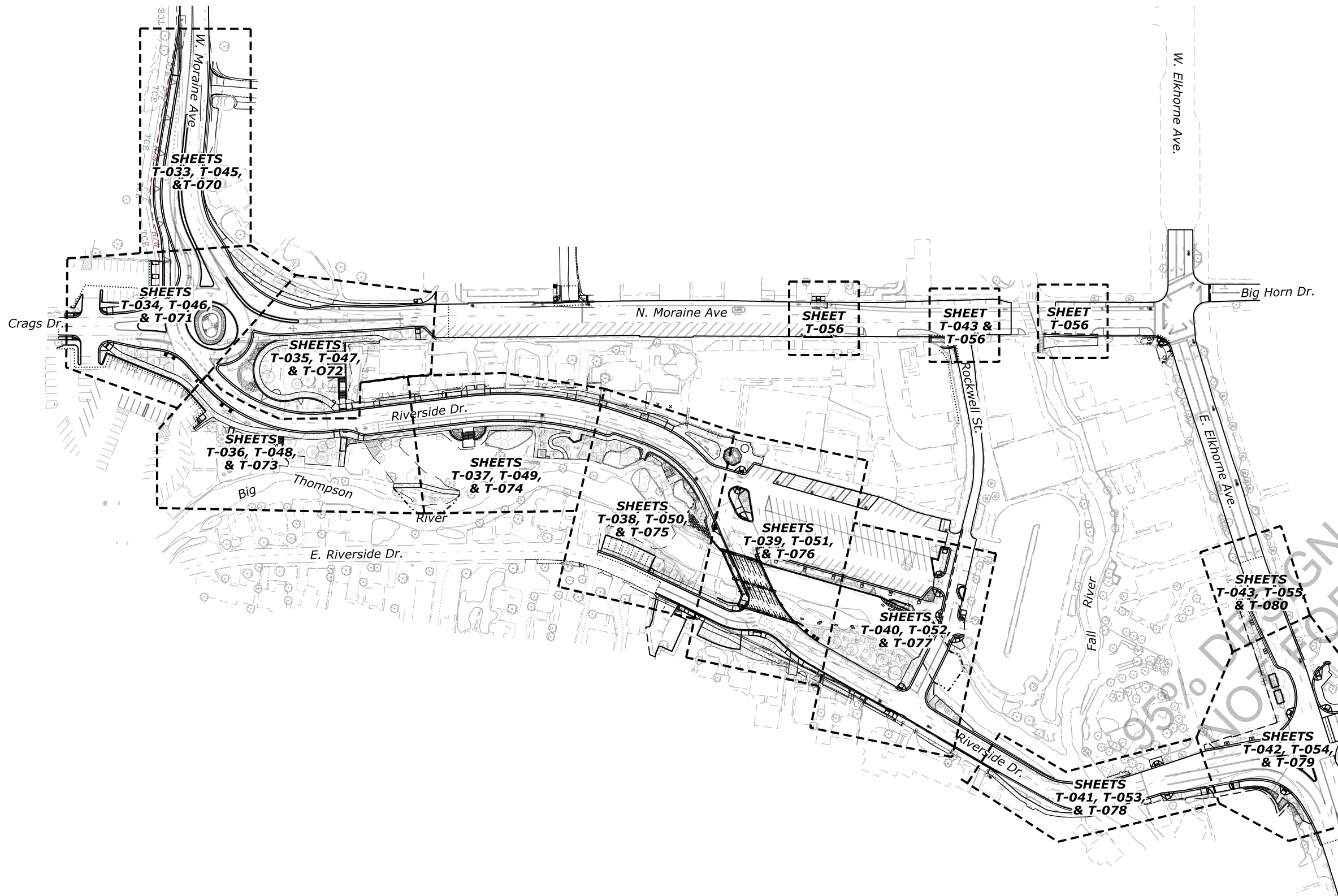
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		DATE: 08/01/21	

Adopted from Larimer County Drawing 709

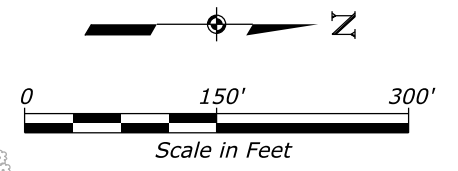
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U.S. CUSTOMARY SPECIAL	
DRAINAGE CHASE	
	SPECIAL 605-A

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-031



95% DESIGN SUBMITTAL 2/3/22 FOR CONSTRUCTION



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**LANDSCAPE PLAN
KEY MAP**
SHEET 1 OF 1

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PLANTING SCHEDULE

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-032

TREES						
QTY	SYM	SCIENTIFIC NAME	COMMON NAME	SIZE	CONDITION	COMMENTS
3	AB CO	ABIES CONCOLOR	WHITE FUR	6' HT.	B&B	SPACING AS PER PLAN
4	AC GL	ACER GLABRUM	ROCKY MOUNTAIN MAPLE	1" CAL.	B&B	SPACING AS PER PLAN
6	AC NE	ACER NEGUNDO 'SENSTATION'	SENSATION MAPLE	1" CAL.	B&B	SPACING AS PER PLAN
11	AC XF	ACER X FREEMANII 'AUTUMN BLAZE'	AUTUMN BLAZE RED MAPLE	1" CAL.	B&B	SPACING AS PER PLAN
7	BE FO	BETULA FONTINALIS	ROCKY MOUNTAIN BIRCH	6' HT.	B&B	CLUMP FORM; SPACING AS PER PLAN
2	CE CO	CELTIS OCCIDENTALIS	HACKBERRY	1" CAL.	B&B	SPACING AS PER PLAN
16	PI PB	PICEA PUNGENS 'BABY BLUE EYES'	BABY BLUE EYES SPRUCE	6' HT.	B&B	SPACING AS PER PLAN
4	PI FL	PINUS FLEXILIS	LIMBER PINE	6' HT.	B&B	SPACING AS PER PLAN
46	PO TR	POPULUS TREMULOIDES	QUAKING ASPEN	1" CAL.	B&B	SPACING AS PER PLAN
9	PO XA	POPULUS X ACUMINATE	LANCELEAF COTTONLESS COTTONWOOD	1" CAL.	B&B	SPACING AS PER PLAN
2	UL AP	ULMUS AMERICANA 'PRINCETON'	PRINCETON ELM	1" CAL.	B&B	SPACING AS PER PLAN

ORNAMENTAL TREES						
QTY	SYM	SCIENTIFIC NAME	COMMON NAME	SIZE	CONDITION	COMMENTS
7	AL TE	ALNUS TENUIFOLIA	THINLEAF ALDER	6' HT.	NO. 5 CONT.	CLUMP FORM; SPACING AS PER PLAN
8	AM AL	AMELANCIER ALNIFOLIA	SASKATOON SERVICEBERRY	6' HT.	B&B	CLUMP FORM; SPACING AS PER PLAN
2	MA PR	MALUS 'PRAIRIE FIRE'	PRAIRIE FIRE CRABAPPLE	6' HT.	B&B	SINGLE STEM; SPACING AS PER PLAN
7	PR VI	PRUNUS X VIRGINIANA 'P002s'	SUCKER PUNCH CANADA RED CHOKEBERRY	1" CAL.	B&B	SPACING AS PER PLAN










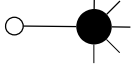
SHRUBS						
QTY	SYM	SCIENTIFIC NAME	COMMON NAME	SIZE	CONDITION	COMMENTS
28	AR CA	ARTEMISIA CANA	SILVER SAGE	NO. 5	CONT.	SPACING AS PER PLAN
22	CH NA	CHRYSOTHAMNUS NAUSEOSUS VAR. NAUSEOSUS	DWARF BLUE RABBITBRUSH	NO. 5	CONT.	SPACING AS PER PLAN
8	FA PA	FALLUGIA PARADOXA	APACHE PLUME	NO. 5	CONT.	SPACING AS PER PLAN
56	JU CO	JUNIPERUS COMMUNIS	COMMON SPREADING JUNIPER	NO. 5	CONT.	SPACING AS PER PLAN
21	PH MO	PHYSOCARPUS MONOGYNUS	ROCKY MOUNTAIN NINEBARK	NO. 5	CONT.	SPACING AS PER PLAN
18	PO FK	POTENTILLA FRUTICOS 'KATHERINE DYKES'	KATHERINE DYKES POTENTILLA	NO. 5	CONT.	SPACING AS PER PLAN
7	PO FM	POTENTILLA FRUTICOS 'MCKAY'S WHITE'	MCKAY'S WHITE POTENTILLA	NO. 5	CONT.	SPACING AS PER PLAN
19	PR BP	PRUNUS BESSEYI PAWNEE BUTTES	PAWNEE BUTTES SAND CHERRY	NO. 5	CONT.	SPACING AS PER PLAN
19	RH TG	RHUS TRILOBATA 'GRO-LOW'	GRO-LOW THREE LEAF SUMAC	NO. 5	CONT.	SPACING AS PER PLAN
13	RI AU	RIBES AUREUM	GOLDEN CURRANT	NO. 5	CONT.	SPACING AS PER PLAN
20	SA EX	SALIX EXIGUA	SANDBAR WILLOW	NO. 5	CONT.	SPACING AS PER PLAN
20	SY OR	SYMPHORICARPOS OREOPHILUS	ROCKY MOUNTAIN SNOWBERRY	NO. 5	CONT.	SPACING AS PER PLAN

PERENNIALS						
QTY	SYM	SCIENTIFIC NAME	COMMON NAME	SIZE	CONDITION	COMMENTS
13	AQ CA	AQUILEGIA CAERULEA	ROCKY MOUNTAIN COLUMBINE	NO. 2	CONT.	SPACING AS PER PLAN; 2 FT. O.C.
26	AR FR	ARTEMISIA FRIGIDA	FRINDGED SAGE	NO. 2	CONT.	SPACING AS PER PLAN; 2 FT. O.C.
51	GA AR	GAILLARDIA ARISTATA	BLANKET FLOWER	NO. 2	CONT.	SPACING AS PER PLAN; 2 FT. O.C.
13	HE MU	HELIOMERIS MULTIFLORA	SHOWY GOLDENEYE	NO. 2	CONT.	SPACING AS PER PLAN; 2 FT. O.C.
32	LI PU	LIATRIS PUNCTATA	DOTTED BLAZING STAR	NO. 2	CONT.	SPACING AS PER PLAN; 2 FT. O.C.
5	LU AR	LUPINUS ARGENTEUS	SILVER LUPINE	NO. 2	CONT.	SPACING AS PER PLAN; 2 FT. O.C.
91	NP FA	NEPETA X FAASSENII 'WALKER'S LOW'	WALKERS LOW CATMINT	NO. 2	CONT.	SPACING AS PER PLAN; 2 FT. O.C.
53	RA CP	RATIBIDA COLUMNIFERA FORMA PULCHERRIMA	MEXICAN HAT CONEFLOWER	NO. 2	CONT.	SPACING AS PER PLAN; 2 FT. O.C.
61	RU HI	RUDBECKIA HIRTA	BLACK-EYED SUSAN	NO. 2	CONT.	SPACING AS PER PLAN; 2 FT. O.C.
10	SA PR	SALVIA PRATENSIS	MEADOW SAGE	NO. 2	CONT.	SPACING AS PER PLAN; 2 FT. O.C.

GRASSES						
QTY	SYM	SCIENTIFIC NAME	COMMON NAME	SIZE	CONDITION	COMMENTS
59	BO GB	BOUPELOUA GRACILIS 'BLONDE AMBITION'	BLONDE AMBITION GRAMA GRASS	NO. 2	CONT.	SPACING AS PER PLAN; 2 FT. O.C.
58	CA AC	CALAMAGROSTIS ACUTIFLORA 'KARL FOERSTER'	KARL FOERSTER FEATHER REED GRASS	NO. 2	CONT.	SPACING AS PER PLAN; 2 FT. O.C.
18	PA VI	PANICUM VIRGATUM 'HEAVY METAL'	HEAVY METAL SWITCH GRASS	NO. 2	CONT.	SPACING AS PER PLAN; 2 FT. O.C.
25	SC SP	SCHIZACHYRIUM SCOPARIUM 'PRAIRIE BLUES'	PRAIRIE BLUES LITTLE BLUESTEM GRASS	NO. 2	CONT.	SPACING AS PER PLAN; 2 FT. O.C.

LIVE STAKES						
QTY	SYM	SCIENTIFIC NAME	COMMON NAME	SIZE	CONDITION	COMMENTS
132	SA MO	SALIX MONTICOLA	ROCKY MOUNTAIN WILLOW	4-5' LONG	LIVE STAKE	SPACING 2 FT. O.C.
132	SA EX	SALIX EXIGUA	SANDBAR WILLOW	4-5' LONG	LIVE STAKE	SPACING 2 FT. O.C.
132	CO AM	CORNUS AMOMUM	SILKY DOGWOOD	4-5' LONG	LIVE STAKE	SPACING 2 FT. O.C.

PLANTING PLAN LEGEND

-  Limits of Disturbance
-  Sod
-  Native Seeding
-  Low Grow Native Grass Seeding
-  Live Stake Planting
-  Rockery (Dry Stacked Sloped Boulder Wall)
-  River Shoreline Treatment, See Civil and Hydrolic Plans
-  Boulders (24" & 36" Dia.)
See Plans for Size.
-  Pedestrian Street Light, See Electrical Plans
-  Street Light, See Electrical Plans

PLANTING NOTES

1. SEE PLANTING PLANS ON T-033 TO T-043.
2. SEE SPECIFICATIONS FOR PLANTING REQUIREMENTS.
3. SEE LANDSCAPE LAYOUT AND SCORING PLANS ON T-044 TO T-056 FOR HARDSCAPE TREATMENTS, SCORING PATTERNS, AND SITE ELEMENTS.
4. SEE IRRIGATION PLANS AND DETAILS ON T-066 TO T-084.
5. SEE LANDSCAPE & SITE DETAILS ON T-057 TO T-065.
6. SEE BIG THOMPSON RIVER TYPICAL SECTIONS ON D-05 FOR SHORELINE TREATMENT LIVE STAKE PLANTING DETAIL.
7. ALL EX. BOULDERS AND ROCKS WITHIN PROJECT TO BE SALVAGED AND RESET ON SITE WHERE INDICATED, SEE LANDSCAPE AND SCORING LAYOUT PLANS. ANY BOULDERS NOT SPECIFIED FOR REUSE SHALL BE PROVIDED TO CITY FOR STORAGE.

SOD		
QTY	UNITS	TYPE
17815	SF	SOD (LAWN)

SEEDING		
QTY	UNITS	TYPE
14232	SF	LOW GROW NATIVE GRASS SEED
12366	SF	NATIVE SEEDING

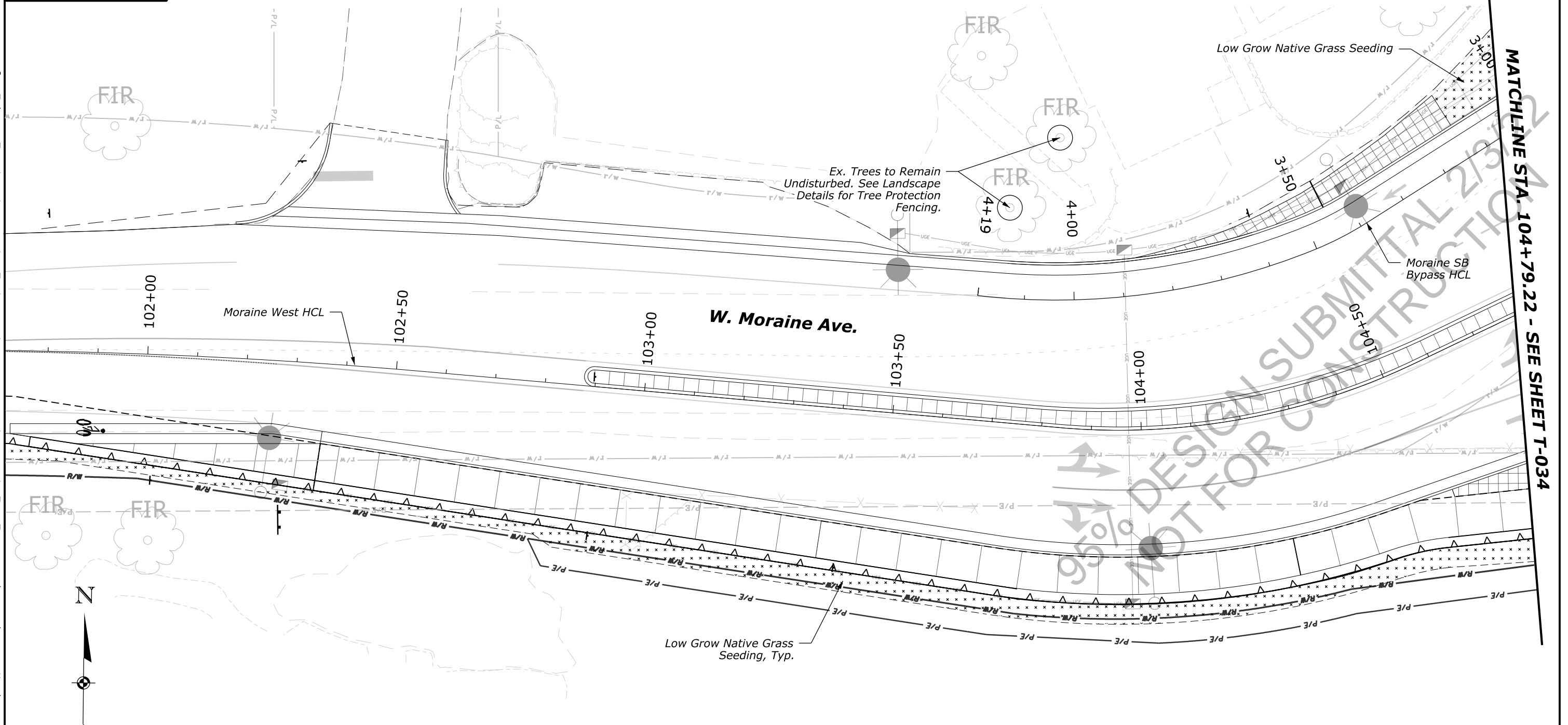
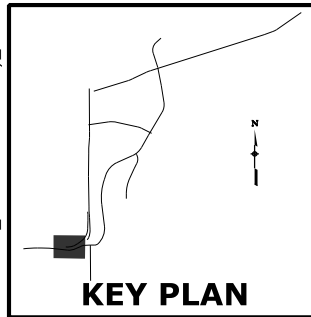
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

PLANTING PLANS SCHEDULE & NOTES

SHEET 1 OF 12

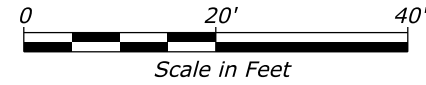
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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-033



MATCHLINE STA. 104+79.22 - SEE SHEET T-034

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1. SEE SHEETS T-032 FOR GENERAL NOTES AND PLANTING SCHEDULE.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

PLANTING PLANS

SHEET 2 OF 12

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-034

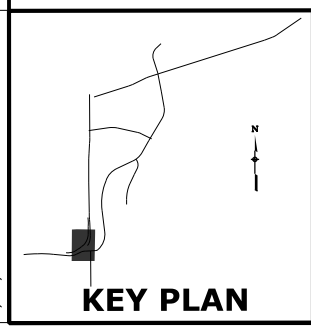
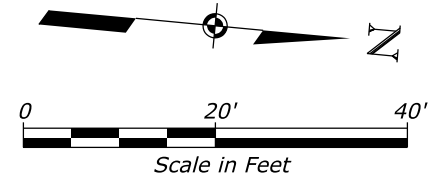
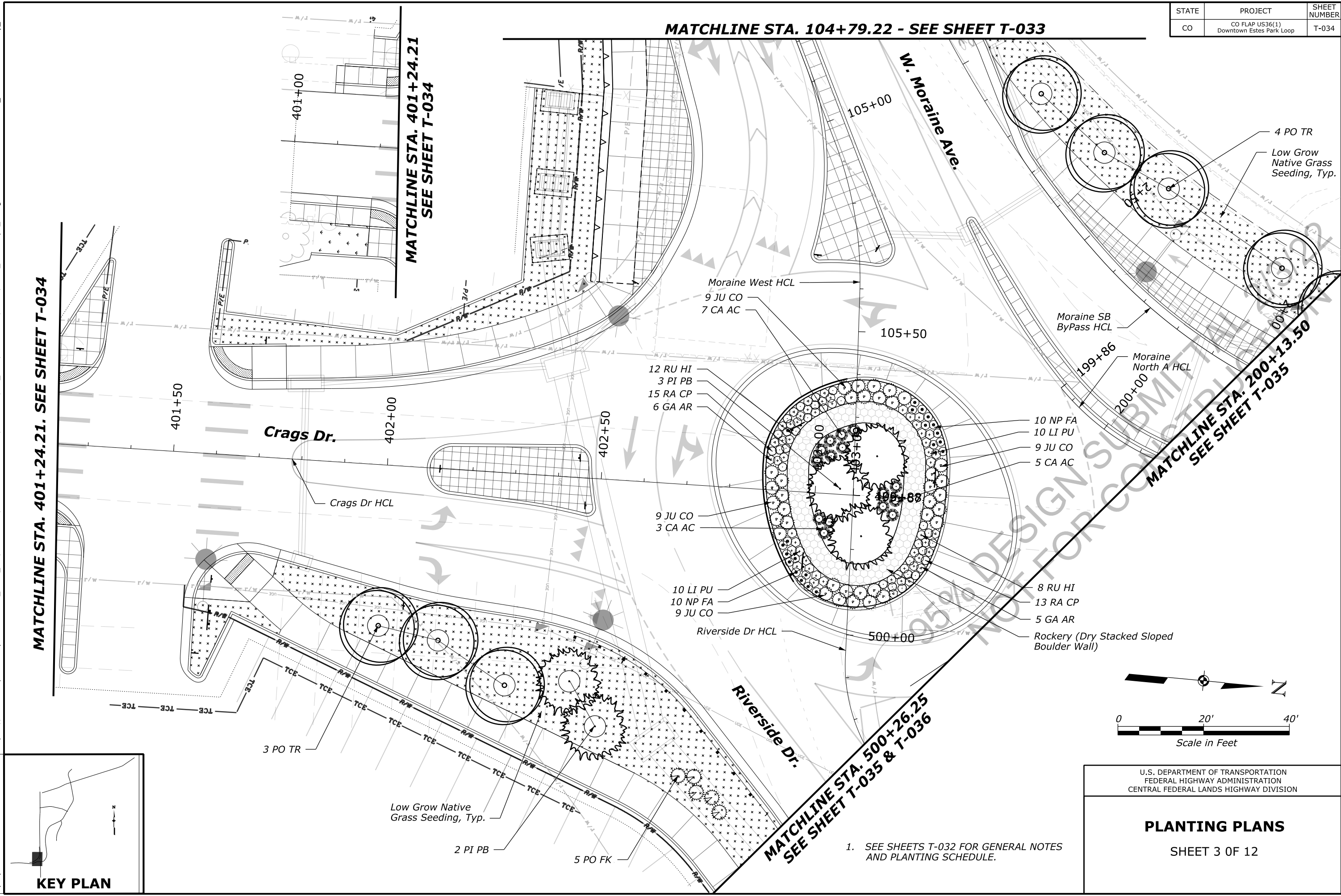
MATCHLINE STA. 104+79.22 - SEE SHEET T-033

MATCHLINE STA. 401+24.21. SEE SHEET T-034

**MATCHLINE STA. 401+24.21
SEE SHEET T-034**

**MATCHLINE STA. 200+13.50
SEE SHEET T-035**

**MATCHLINE STA. 500+26.25
SEE SHEET T-035 & T-036**



1. SEE SHEETS T-032 FOR GENERAL NOTES AND PLANTING SCHEDULE.

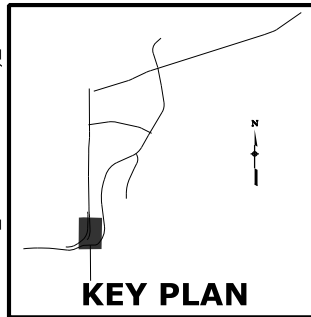
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

PLANTING PLANS

SHEET 3 OF 12

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-035



1. SEE SHEETS T-032 FOR GENERAL NOTES AND PLANTING SCHEDULE.

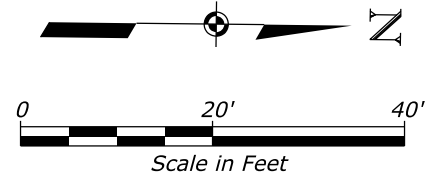
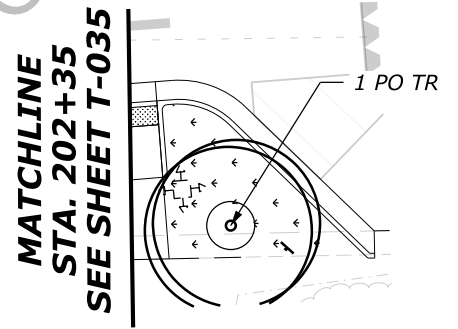
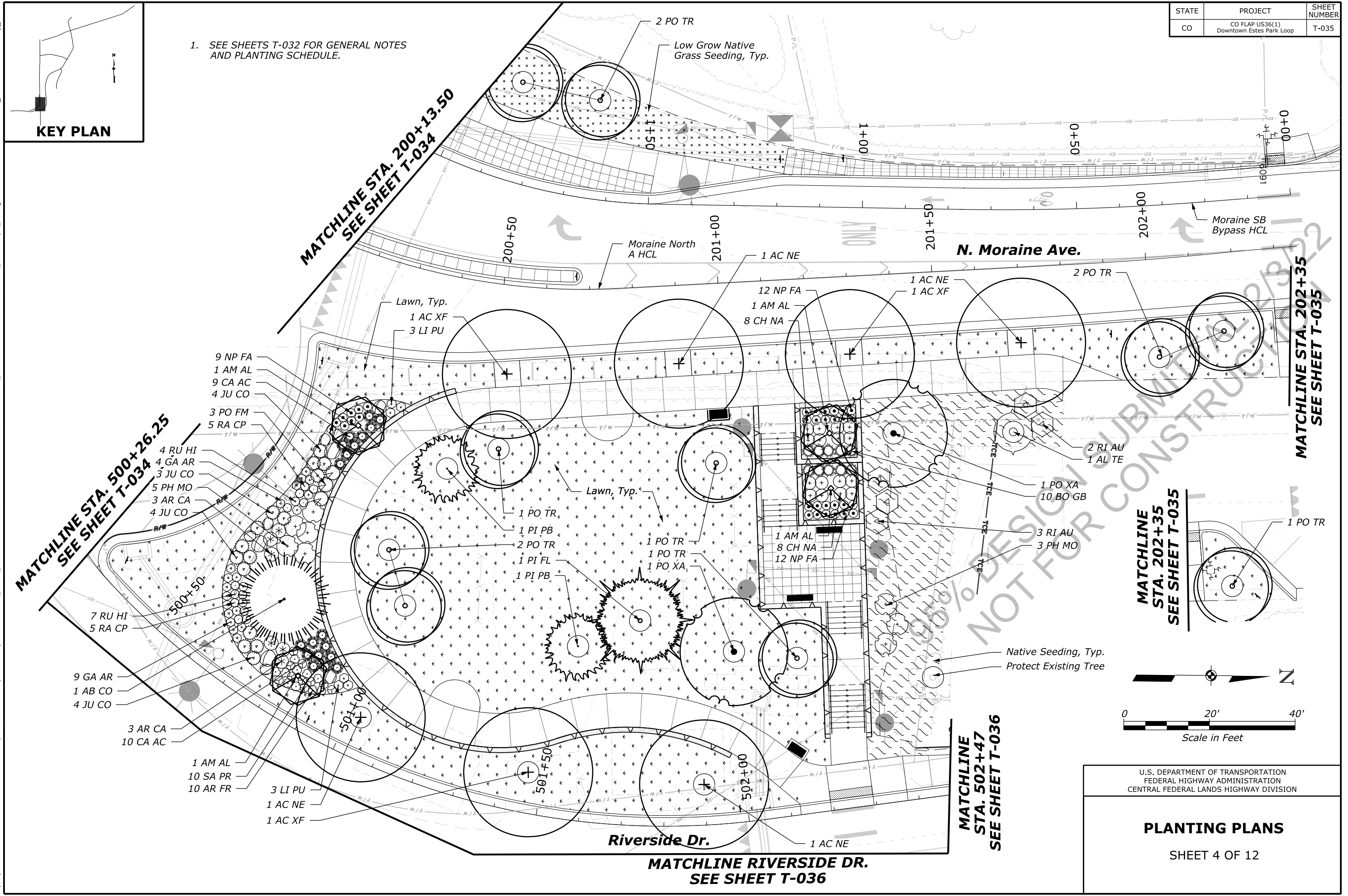
MATCHLINE STA. 200+13.50
SEE SHEET T-034

MATCHLINE STA. 202+35
SEE SHEET T-035

MATCHLINE STA. 500+26.25
SEE SHEET T-034

MATCHLINE STA. 502+47
SEE SHEET T-036

MATCHLINE RIVERSIDE DR.
SEE SHEET T-036



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CENTRAL FEDERAL LANDS HIGHWAY DIVISION

PLANTING PLANS

SHEET 4 OF 12

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STATE	PROJECT	SHEET NUMBER
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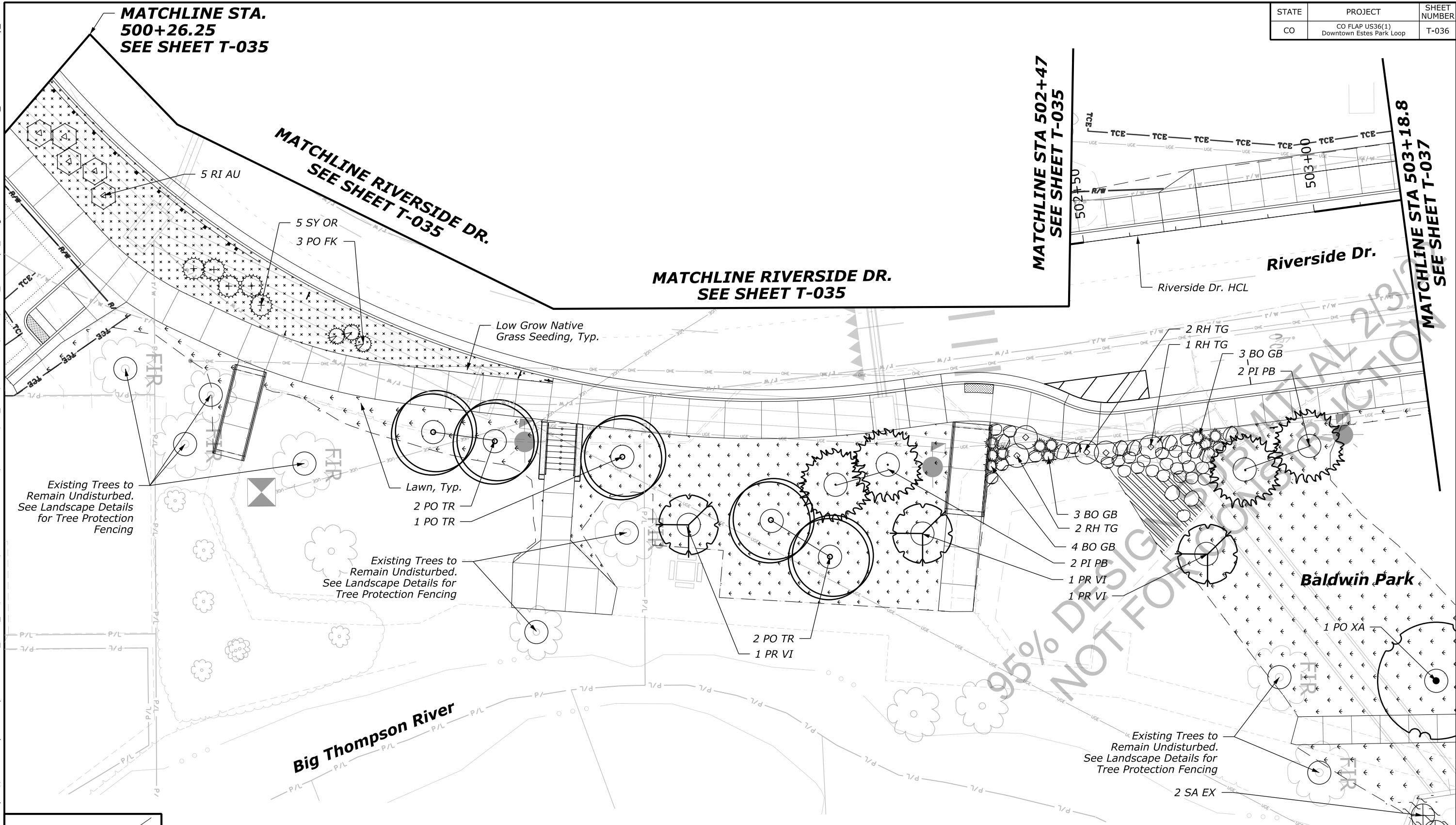
**MATCHLINE STA. 500+26.25
SEE SHEET T-035**

**MATCHLINE RIVERSIDE DR.
SEE SHEET T-035**

**MATCHLINE RIVERSIDE DR.
SEE SHEET T-035**

**MATCHLINE STA 502+47
SEE SHEET T-035**

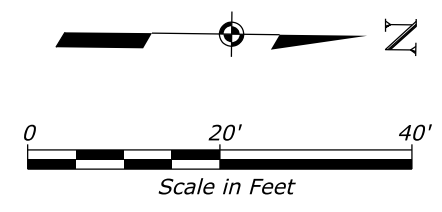
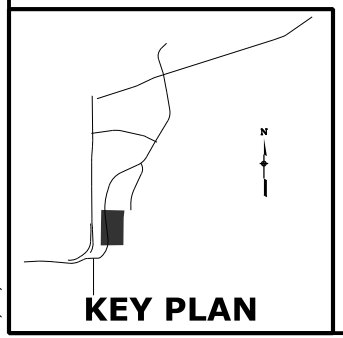
**MATCHLINE STA 503+18.8
SEE SHEET T-037**



Existing Trees to Remain Undisturbed. See Landscape Details for Tree Protection Fencing

Existing Trees to Remain Undisturbed. See Landscape Details for Tree Protection Fencing

Existing Trees to Remain Undisturbed. See Landscape Details for Tree Protection Fencing



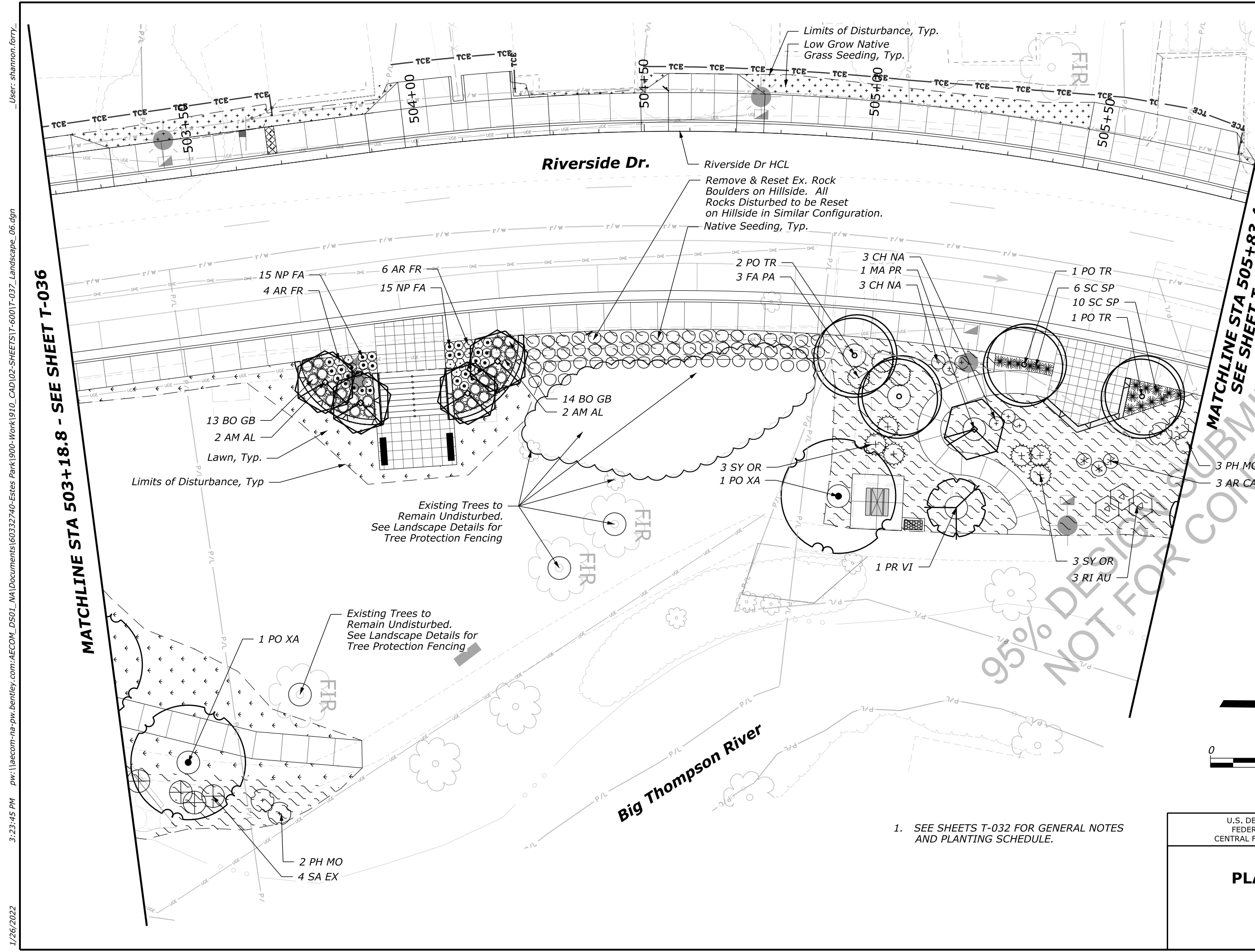
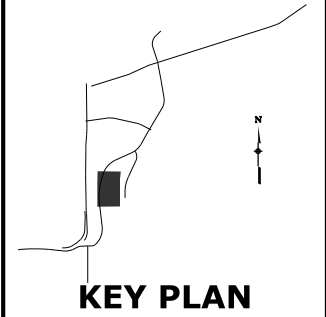
1. SEE SHEETS T-032 FOR GENERAL NOTES AND PLANTING SCHEDULE.

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FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

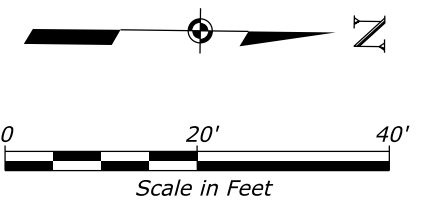
PLANTING PLANS

SHEET 5 OF 12

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-037



95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION



1. SEE SHEETS T-032 FOR GENERAL NOTES AND PLANTING SCHEDULE.

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PLANTING PLANS

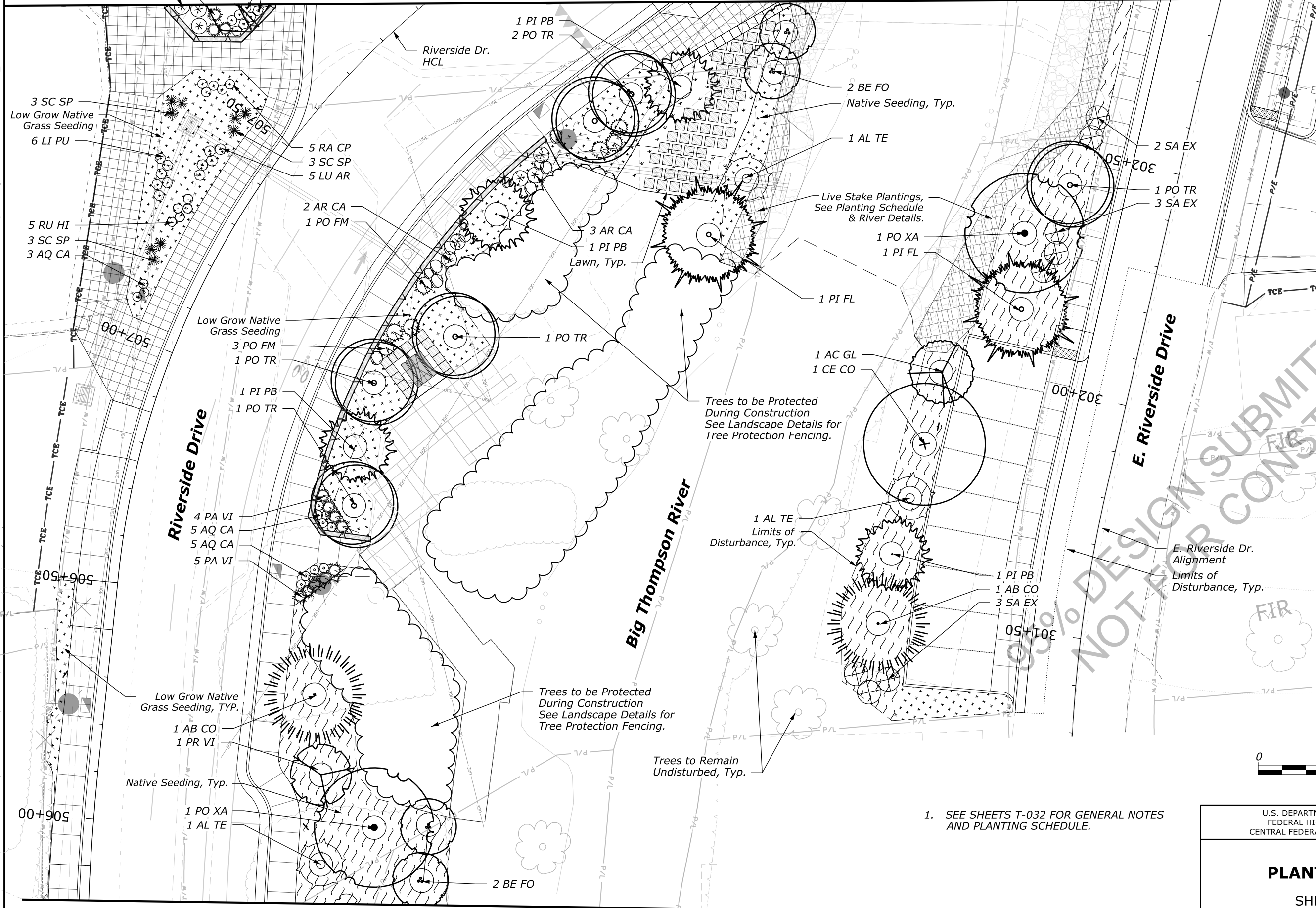
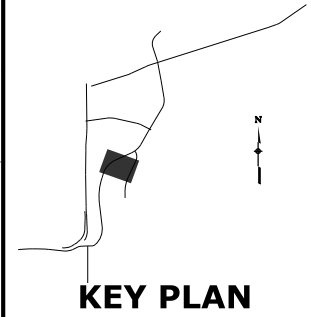
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MATCHLINE STA 507+92.14 @-49° - SEE SHEET T-039

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-038



MATCHLINE STA 505+83.4 - SEE SHEET T-037

1. SEE SHEETS T-032 FOR GENERAL NOTES AND PLANTING SCHEDULE.



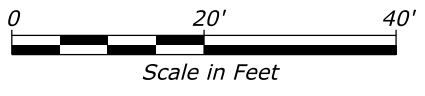
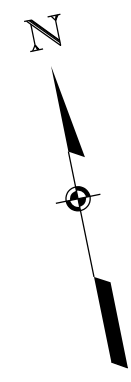
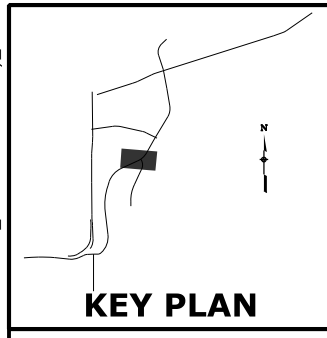
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CENTRAL FEDERAL LANDS HIGHWAY DIVISION

PLANTING PLANS

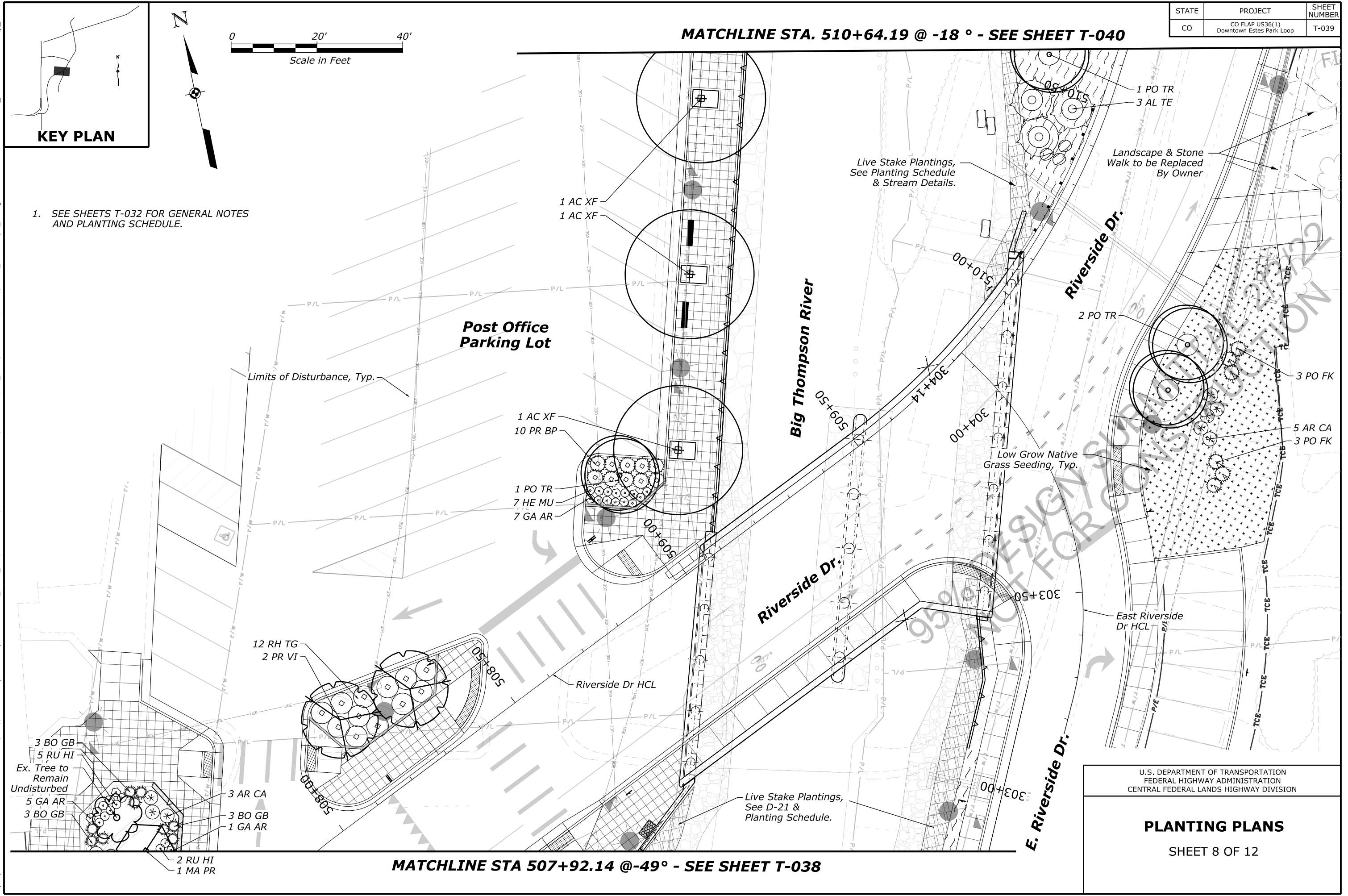
SHEET 7 OF 12

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-039

MATCHLINE STA. 510+64.19 @ -18 ° - SEE SHEET T-040



1. SEE SHEETS T-032 FOR GENERAL NOTES AND PLANTING SCHEDULE.



MATCHLINE STA 507+92.14 @ -49° - SEE SHEET T-038

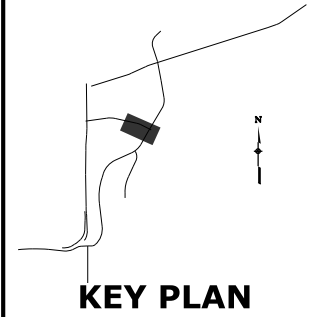
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PLANTING PLANS

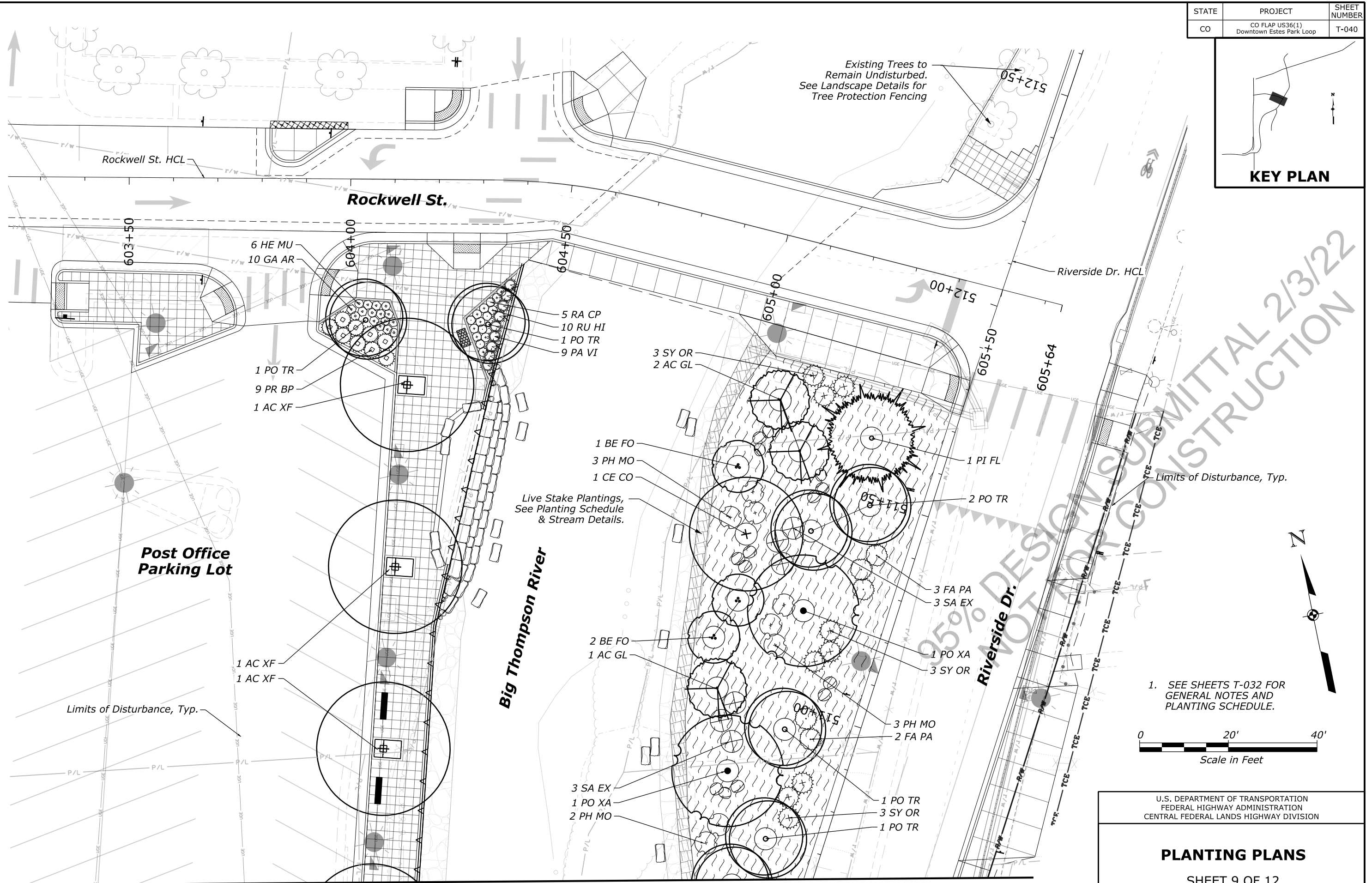
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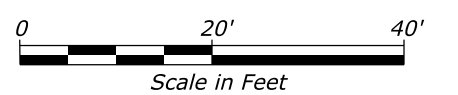
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-040



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1. SEE SHEETS T-032 FOR GENERAL NOTES AND PLANTING SCHEDULE.



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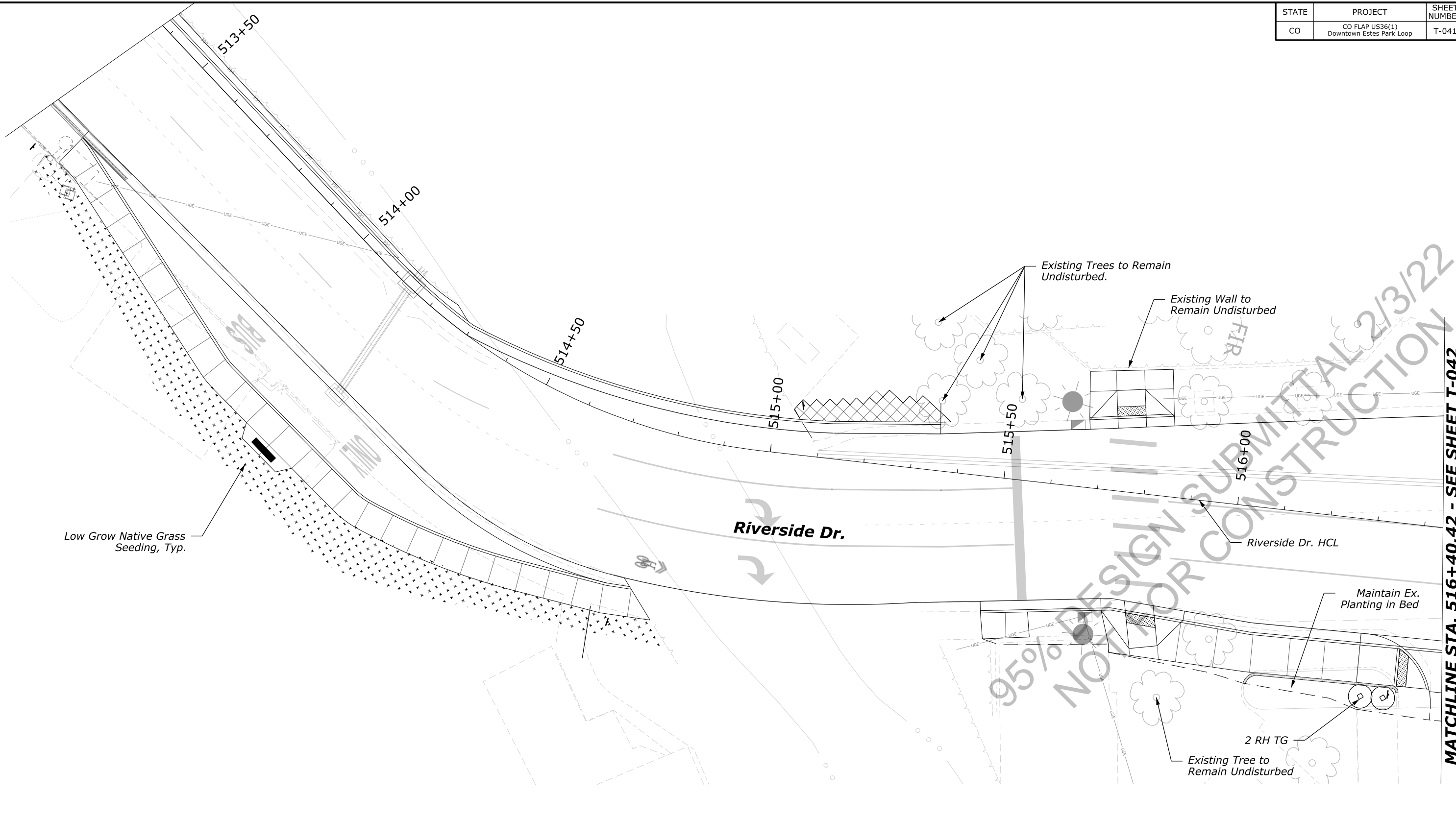
PLANTING PLANS

SHEET 9 OF 12

MATCHLINE STA. 510+64.19 @ -18 ° - SEE SHEET T-039

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-041

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Low Grow Native Grass Seeding, Typ.

Existing Trees to Remain Undisturbed.

Existing Wall to Remain Undisturbed

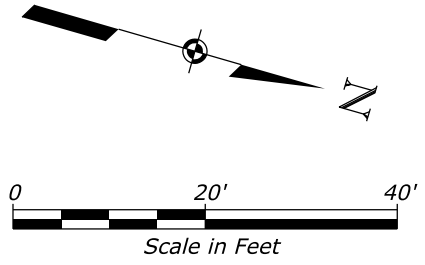
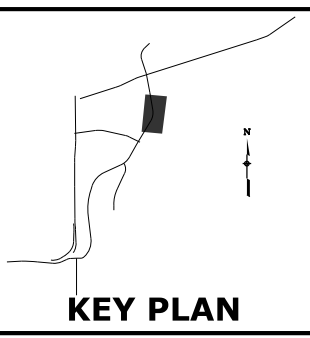
Riverside Dr.

Riverside Dr. HCL

Maintain Ex. Planting in Bed

2 RH TG

Existing Tree to Remain Undisturbed



1. SEE SHEETS T-032 FOR GENERAL NOTES AND PLANTING SCHEDULE.

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PLANTING PLANS

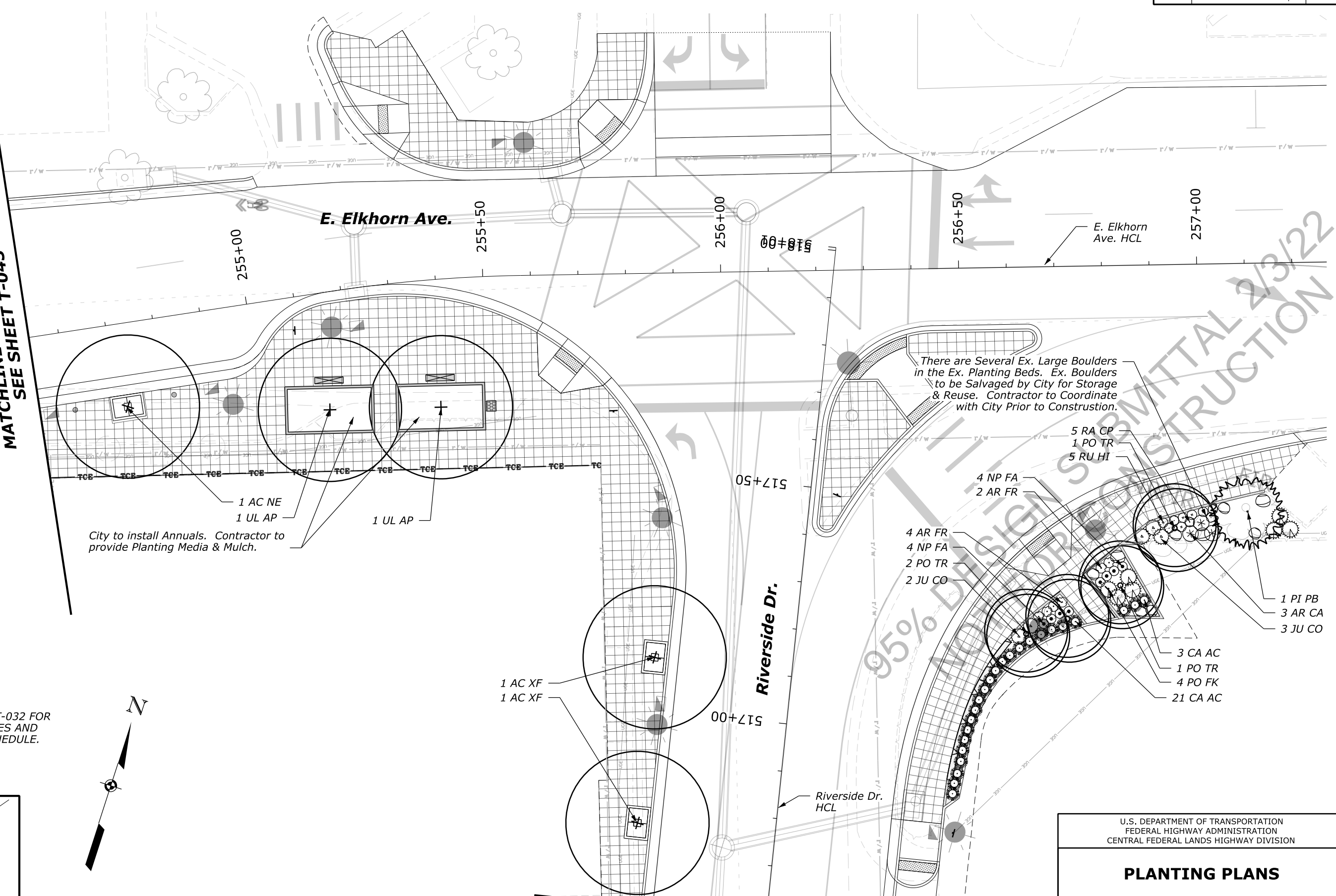
SHEET 10 OF 12

MATCHLINE STA. 516+40.42 - SEE SHEET T-042

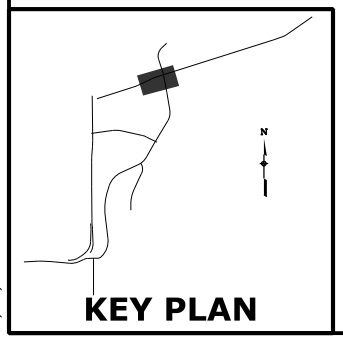
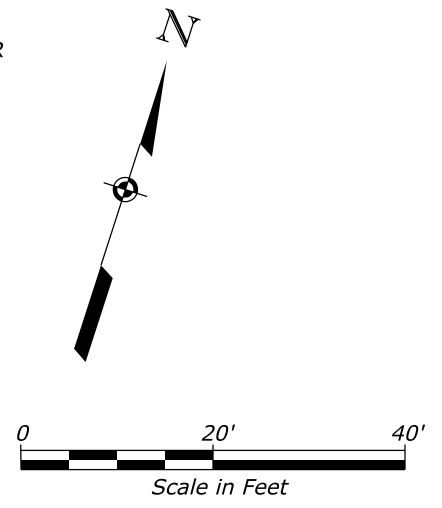
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-042

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**MATCHLINE STA 254+53.70
SEE SHEET T-043**



1. SEE SHEETS T-032 FOR GENERAL NOTES AND PLANTING SCHEDULE.



**MATCHLINE STA 516+40.42
SEE SHEET T-041**

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

PLANTING PLANS

SHEET 11 OF 12

STATION SCHEDULE

SHEET T-045			
MORAINES SB BYPASS HCL			
POINT #	STATION	OFFSET	DESCRIPTION
1	3+13.94	14.57	EDGE OF STAMPED COLORED CONCRETE
2	3+13.94	7.50	EDGE OF STAMPED COLORED CONCRETE
MORAINES WEST HCL			
3	104+53.47	26.10	EDGE OF STAMPED COLORED CONCRETE
4	104+53.35	27.76	EDGE OF STAMPED COLORED CONCRETE
SHEET T-046			
MORAINES WEST HCL			
1	104+77.94	36.59	EDGE OF STAMPED COLORED CONCRETE
2	105+43.13	52.97	EDGE OF STAMPED COLORED CONCRETE
MORAINES SB BYPASS HCL			
3	2+59.16	2.50	EDGE OF STAMPED COLORED CONCRETE
4	2+59.60	5.64	EDGE OF STAMPED COLORED CONCRETE
SHEET T-047			
MORAINES SB BYPASS HCL			
1	1+17.52	12.93	EDGE OF STAMPED COLORED CONCRETE
2	1+18.54	7.63	EDGE OF STAMPED COLORED CONCRETE
3	1+48.92	6.51	EDGE OF STAMPED COLORED CONCRETE
4	1+49.61	2.53	EDGE OF STAMPED COLORED CONCRETE
5	1+87.84	-56.74	PLANTING BED EDGE
6	1+55.67	-49.75	RADIUS CENTER OF CONCRETE PAD FOR ART
T1	1+32.81	-48.70	CENTER OF FIXTURE, TRASH RECEPTACLE (TYPE 1), OFCI
RIVERSIDE DR HCL			
7	500+98.97	-15.65	PLANTING BED EDGE
8	501+23.75	-20.22	RADIUS CENTER OF CONCRETE PAD FOR ART
BH1	502+27.47	-65.08	CENTER OF FIXTURE, BENCH (6 FOOT WITH BACK)
BH2	502+18.60	-50.22	CENTER OF FIXTURE, BENCH (6 FOOT WITH BACK)
T2	502+13.20	-15.16	CENTER OF FIXTURE, TRASH RECEPTACLE (TYPE 1), OFCI
SHEET T-049			
RIVERSIDE DR HCL			
1	503+85.49	37.50	END OF STAMPED COLORED CONCRETE
2	503+85.11	43.50	END OF STAMPED COLORED CONCRETE
3	504+01.24	37.50	END OF STAMPED COLORED CONCRETE
4	504+00.95	43.50	END OF STAMPED COLORED CONCRETE
5	505+48.54	37.50	END OF STAMPED COLORED CONCRETE
6	505+48.28	46.33	END OF STAMPED COLORED CONCRETE
7	505+65.84	37.50	END OF STAMPED COLORED CONCRETE
8	505+65.89	43.51	END OF STAMPED COLORED CONCRETE
9	505+82.58	43.50	PLANTING BED EDGE
BH3	503+83.87	65.53	CENTER OF FIXTURE, BENCH (6 FOOT BACKLESS)
BH4	503+99.58	66.41	CENTER OF FIXTURE, BENCH (6 FOOT BACKLESS)
P1	505+09.39	79.20	CENTER OF FIXTURE, PICNIC TABLE
T3	505+19.46	83.32	CENTER OF RESET TRASH RECEPTACLE (TYPE 1)
SHEET T-050			
RIVERSIDE DR HCL			
1	508+21.66	31.50	END OF STAMPED COLORED CONCRETE
2	508+21.66	37.50	END OF STAMPED COLORED CONCRETE
3	506+86.69	-8.50	END OF STAMPED COLORED CONCRETE
4	506+86.69	-2.50	END OF STAMPED COLORED CONCRETE
5	506+97.52	-21.30	END OF STAMPED COLORED CONCRETE, FIELD VERIFY BLDG. CORNER
P2	507+21.53	48.74	CENTER OF FIXTURE, PICNIC TABLE
SHEET T-051			
RIVERSIDE DR HCL			
1	507+84.26	-53.55	END OF STAMPED COLORED CONCRETE, FIELD VERIFY EDGE OF EX. PAVERS
2	507+79.22	-60.09	END OF STAMPED COLORED CONCRETE
3	507+83.66	-70.39	END OF CONCRETE, FIELD VERIFY EDGE OF EX. PAVERS
4	507+90.12	-61.74	END OF CONCRETE
5	510+35.04	-26.46	CENTER OF RIVER SANDSTONE BOULDER
6	510+34.37	-23.90	CENTER OF RIVER SANDSTONE BOULDER
7	510+10.09	-13.36	CENTER OF RIVER SANDSTONE BOULDER
BH5	509+35.92	-48.90	CENTER OF FIXTURE, BENCH (6 FOOT WITH BACK)
BH6	509+48.33	-63.45	CENTER OF FIXTURE, BENCH (6 FOOT WITH BACK)
T4	508+57.11	42.09	CENTER OF RESET TRASH RECEPTACLE (TYPE 1)
G1	509+15.78	-24.51	CENTER OF FIXTURE (TREE GRATE -TYPE 1)
G2	509+42.46	-55.80	CENTER OF FIXTURE (TREE GRATE -TYPE 1)
G3	509+88.68	-84.89	CENTER OF FIXTURE (TREE GRATE -TYPE 1)

SHEET T-052			
RIVERSIDE DR HCL			
POINT #	STATION	OFFSET	DESCRIPTION
1	511+42.39	-105.71	CENTER OF STONE SEATING SANDSTONE BOULDER
2	511+40.69	-107.07	EDGE OF STEP CURB
3	511+38.18	-108.75	EDGE OF STEP CURB
4	511+36.16	-109.45	CENTER OF STONE SEATING SANDSTONE BOULDER
5	511+32.21	-108.70	CENTER OF STONE SEATING SANDSTONE BOULDER
6	511+30.40	-107.64	EDGE OF STEP CURB
7	511+13.28	-104.44	EDGE OF STEP CURB
8	511+11.17	-104.34	CENTER OF STONE SEATING SANDSTONE BOULDER
9	511+07.57	-102.58	CENTER OF STONE SEATING SANDSTONE BOULDER
10	511+53.84	-103.24	EDGE OF RIVER ACCESS STONE STEP
11	511+46.86	-95.27	CENTER OF RIVER SANDSTONE BOULDER
12	511+40.62	-93.18	CENTER OF RIVER SANDSTONE BOULDER
13	511+17.97	-91.98	CENTER OF RIVER SANDSTONE BOULDER
14	511+12.74	-90.55	CENTER OF RIVER SANDSTONE BOULDER
15	511+01.81	-90.94	CENTER OF RIVER SANDSTONE BOULDER
16	510+93.68	-98.45	EDGE OF RIVER ACCESS STONE STEP
17	511+54.34	-59.31	CENTER OF RIVER SANDSTONE BOULDER
18	511+53.02	-57.19	CENTER OF RIVER SANDSTONE BOULDER
19	511+29.14	-52.62	CENTER OF RIVER SANDSTONE BOULDER
20	511+05.46	-48.47	CENTER OF RIVER SANDSTONE BOULDER
21	510+81.81	-43.00	CENTER OF RIVER SANDSTONE BOULDER
22	510+79.19	-44.43	CENTER OF RIVER SANDSTONE BOULDER
23	510+59.36	-34.55	CENTER OF RIVER SANDSTONE BOULDER
BH7	510+50.61	-99.46	CENTER OF FIXTURE, BENCH (6 FOOT WITH BACK)
BH8	510+72.08	-104.10	CENTER OF FIXTURE, BENCH (6 FOOT WITH BACK)
G4	510+62.85	-101.30	CENTER OF FIXTURE (TREE GRATE -TYPE 1)
G5	511+02.77	-111.20	CENTER OF FIXTURE (TREE GRATE -TYPE 1)
G6	511+42.69	-121.10	CENTER OF FIXTURE (TREE GRATE -TYPE 1)
T5	511+56.66	-112.15	CENTER OF RESET TRASH RECEPTACLE (TYPE 1)
SHEET T-053			
RIVERSIDE DR HCL			
1	514+10.09	44.75	EDGE OF CONCRETE BUMPOUT
2	514+11.36	47.79	EDGE OF CONCRETE BUMPOUT
3	514+18.72	48.37	EDGE OF CONCRETE BUMPOUT
4	514+20.23	45.56	EDGE OF CONCRETE BUMPOUT
BH9	514+15.11	46.52	CENTER OF FIXTURE, BENCH (6 FOOT WITH BACK)
SHEET T-054			
RIVERSIDE DR HCL			
1	516+44.40	-26.50	END OF STAMPED COLORED CONCRETE
2	516+44.33	-30.88	END OF STAMPED COLORED CONCRETE
G8	516+76.06	-29.00	CENTER OF FIXTURE, (TREE GRATE -TYPE 2)
G9	517+11.04	-29.00	CENTER OF FIXTURE, (TREE GRATE -TYPE 2)
E. ELKHORN DR HCL			
3	257+13.44	47.70	END OF STAMPED COLORED CONCRETE
4	257+22.75	37.89	END OF STAMPED COLORED CONCRETE
5	255+84.81	-50.53	END OF STAMPED COLORED CONCRETE
6	255+74.86	-50.54	END OF STAMPED COLORED CONCRETE
7	255+40.78	-45.44	END OF STAMPED COLORED CONCRETE
8	255+37.55	-52.72	END OF STAMPED COLORED CONCRETE
B1	254+61.08	16.50	CENTER OF BOLLARD POST
B2	254+82.08	16.50	CENTER OF BOLLARD POST
BH10	255+14.71	18.45	CENTER OF FIXTURE, BENCH (6 FOOT WITH BACK)
BH11	255+39.40	20.68	CENTER OF FIXTURE, BENCH (6 FOOT WITH BACK)
G10	254+72.11	17.50	CENTER OF FIXTURE, (TREE GRATE -TYPE 2)
T6	255+50.69	27.24	CENTER OF RESET TRASH RECEPTACLE (TYPE 2)
SHEET T-055			
E. ELKHORN DR HCL			
1	253+94.42	15.54	END OF STAMPED COLORED CONCRETE
2	253+93.32	24.08	END OF STAMPED COLORED CONCRETE, ALIGN WITH BLDG. CORNER, CONTRACTOR TO FIELD VERIFY
B3	254+40.08	16.50	CENTER OF BOLLARD POST
B4	254+19.08	16.50	CENTER OF BOLLARD POST
G11	254+28.43	17.50	CENTER OF FIXTURE (TREE GRATE -TYPE 2)
T7	254+00.14	15.09	CENTER OF RESET TRASH RECEPTACLE (TYPE 2)
SHEET T-056			
MORAINES NORTH HCL			
1	211+73.85	25.32	END OF STAMPED COLORED CONCRETE
2	211+73.78	36.03	END OF STAMPED COLORED CONCRETE
T8	210+98.99	41.68	CENTER OF RESET TRASH RECEPTACLE (TYPE 2)

LANDSCAPE LAYOUT & SCORING NOTES

- SEE SHEETS T-057 TO T-065 FOR ALL LANDSCAPE DETAILS INCLUDING BOULDERS, ROCKERY, STAIRS, HARDSCAPE, PLANTER CURBS, FENCING, AND FIXTURES.
- SEE G SHEETS FOR ALL REINFORCED CONCRETE RETAINING WALL PLANS, PROFILES, AND DETAILS.
- SEE PLANS AND SPECIFICATIONS FOR CONCRETE TYPE, TREATMENT, AND FINISHES FOR ALL SIDEWALK PAVEMENT AREAS.
- SEE PAVEMENT PLANS FOR ADDITIONAL KEY SIDEWALK STATION AND OFFSET POINTS.
- SCORING JOINTS TO BE LOCATED AS SHOWN ON PLANS. CONTROL JOINTS TO BE SAW CUT JOINTS. ALL CONTROL JOINTS TO ALIGN WITH EDGE OF PAVEMENTS, CORNERS, OR OTHER KEY ELEMENTS, SEE PLANS. SEE SPECIFICATIONS.
- SIDEWALK EXPANSION JOINTS TO OCCUR AT MIN. 30 FT. SPACING AS INDICATED ON PLANS. CONTRACTOR TO PROVIDE EXPANSION JOINTS WHERE PAVEMENT ABUTS VERTICAL ELEMENTS INCLUDING, BUT NOT LIMITED, TO STAIRS, WALLS, CURBS, STRUCTURES, AND FOUNDATIONS. CONTRACTOR TO ALSO PROVIDE EXPANSION JOINTS WHERE NEW WALKS MEET EXISTING WALKS AND BETWEEN CONCRETE TYPE VARIATIONS. SEE SPECIFICATIONS.
- ALL EX. BOULDERS AND ROCKS WITHIN PROJECT TO BE SALVAGED AND RESET ON SITE WHERE INDICATED, SEE LANDSCAPE AND SCORING LAYOUT PLANS. ANY BOULDERS NOT SPECIFIED FOR REUSE SHALL BE PROVIDED TO CITY FOR STORAGE.

LEGEND

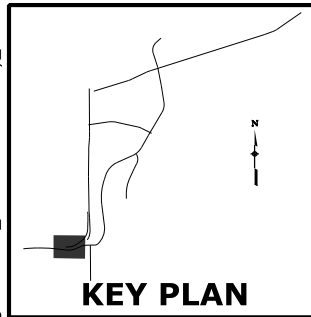
- Limits of Disturbance
- Sidewalk, Concrete
- Sidewalk, Colored Concrete (Stamped)
- Vehicular Colored Concrete, See Specs for Color & Roadway Plans for Detail
- Concrete Driveway Apron, See Roadway Plans for Locations & Details.
- Rockery (Dry Stacked Sloped Boulder Wall)
- Minor Concrete Structures (ADA Ramp) with Fixture, Handrails
- Minor Concrete Structures (Stairs) with Fixture, Handrails
- Bollard Post
- Sidewalk, Stone (Salvaged Sandstone Paver)
- Fixture, Picnic Table
- Boulder, 24" & 36" Diameter See Plans for Size & Locations.
- Fixture, Trash Receptacle (Type 1). (City Furnished, Contractor Installed)
- Remove & Reset Trash Receptacle Type 1
- Remove & Reset Trash Receptacle Type 2
- Rockery (Sandstone River Access)
- River or Seating -4'L X 2'W X 2'H Rough Cut Sandstone
- Fixture, Bench (6 foot With Back or Backless), See Plans for Type Locations.
- Remove & Reset Bench
- Reinforced Concrete Retaining Wall (Stone Cap, Type 1A & 1B)
- Reinforced Concrete Retaining Wall (Stone Cap, Type 2)
- Reinforced Concrete Retaining Wall (Stone Cap, Type 3)
- Reinforced Concrete Retaining Wall (Brick Coping)
- Curb, Concrete, 18 inch (Concrete Planting Bed Curb)
- Curb, Stone, 18 Inches (Sandstone Planting Bed Curb)
- Expansion Joint
- RipRap, See Civil or Hydraulic Plans
- Pedestrian Street Light, See Electrical Plans
- Street Light, See Electrical Plans
- Traffic Signage, See Traffic Plans.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

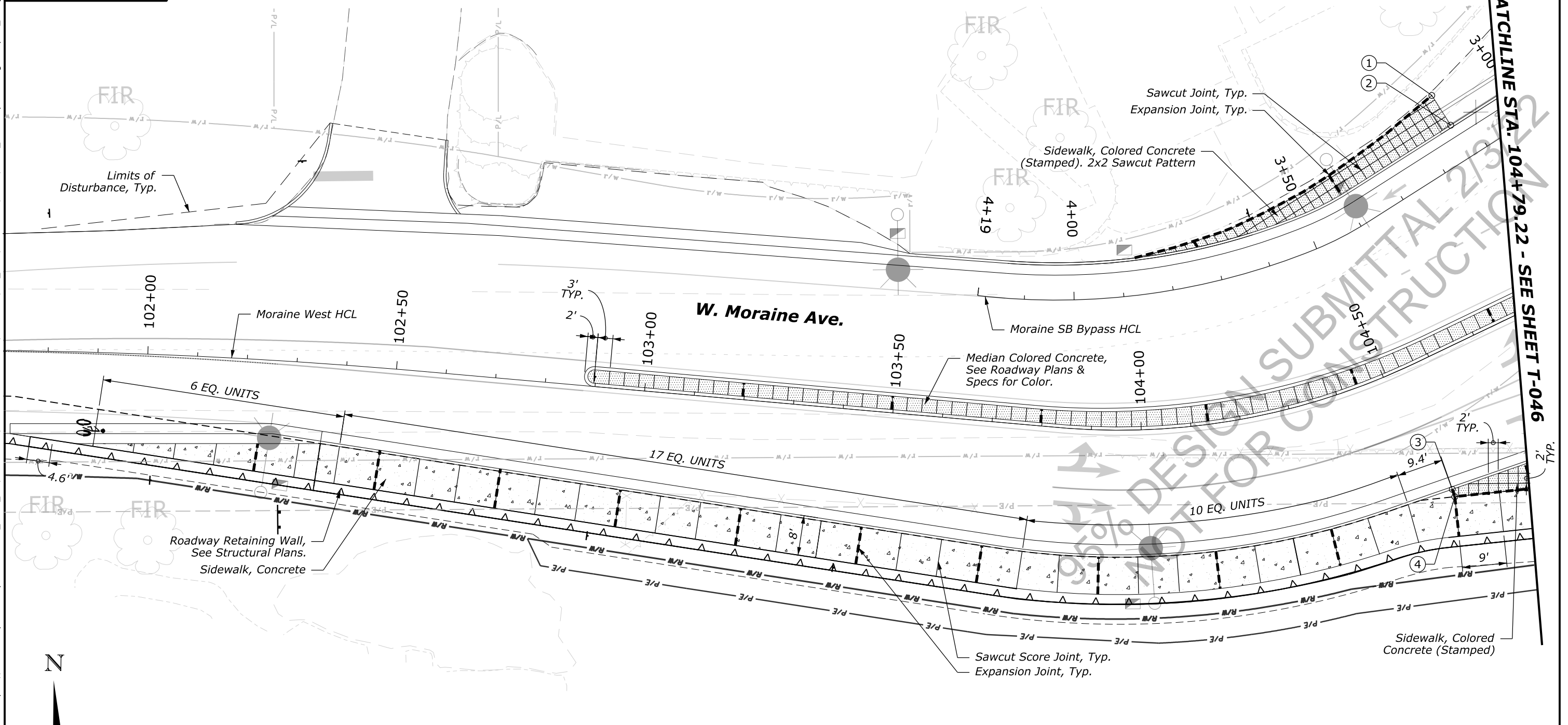
LANDSCAPE LAYOUT & SCORING PLAN NOTES
SHEET 1 OF 13

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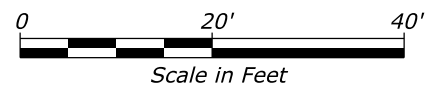
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-045



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1. SEE SHEETS T-044 FOR GENERAL NOTES AND STATION TABLES.



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**LANDSCAPE LAYOUT
& SCORING PLANS**

SHEET 2 OF 13

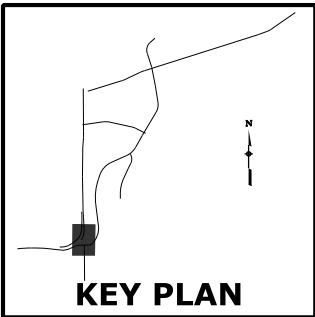
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MATCHLINE STA. 104+79.22 - SEE SHEET T-046

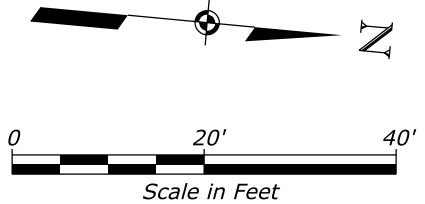
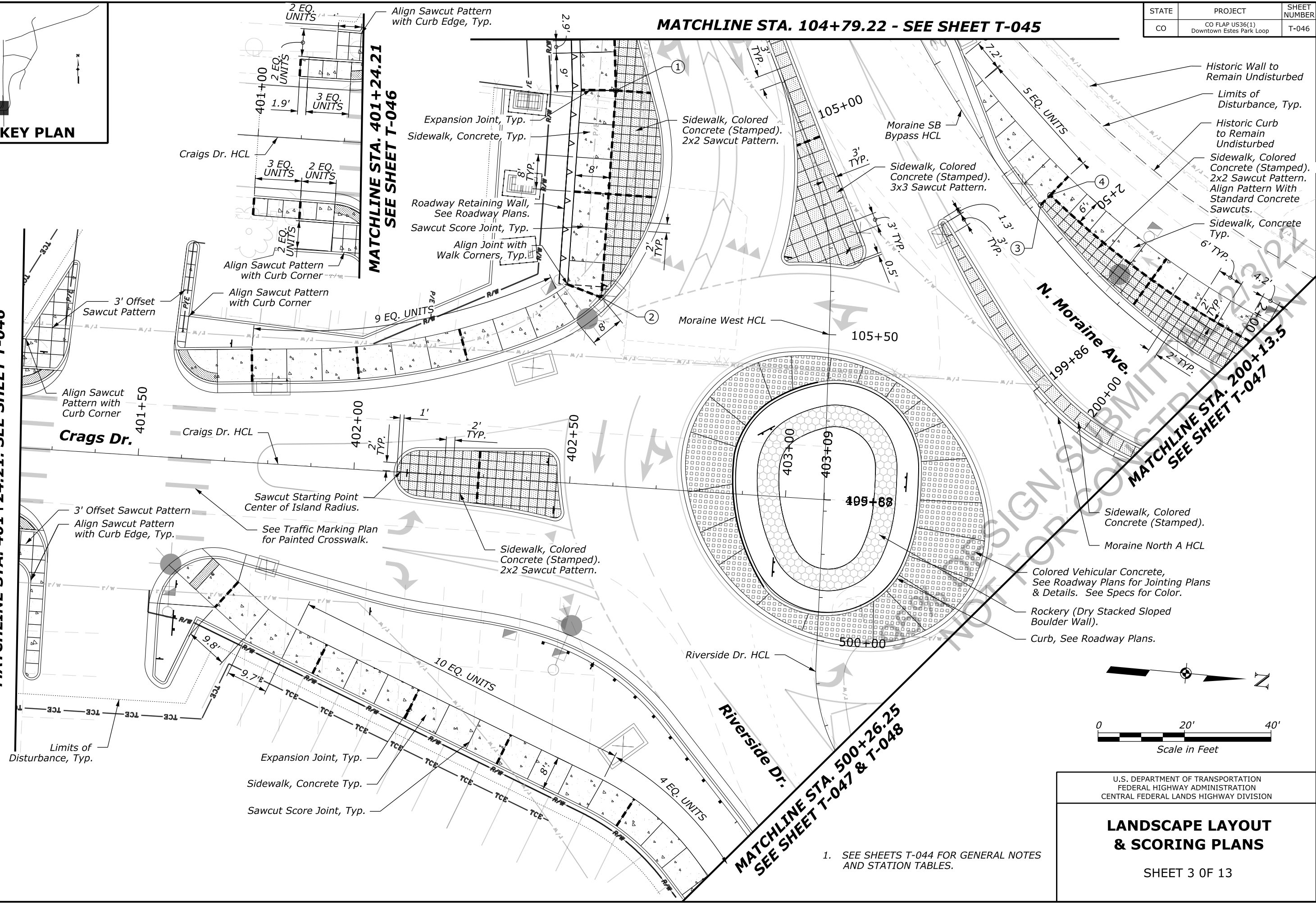
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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-046

MATCHLINE STA. 104+79.22 - SEE SHEET T-045



MATCHLINE STA. 401+24.21. SEE SHEET T-046



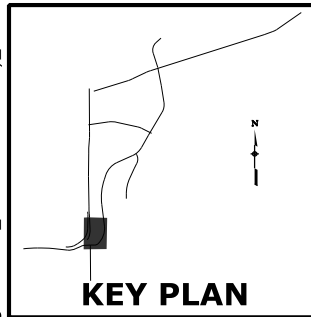
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**LANDSCAPE LAYOUT
& SCORING PLANS**

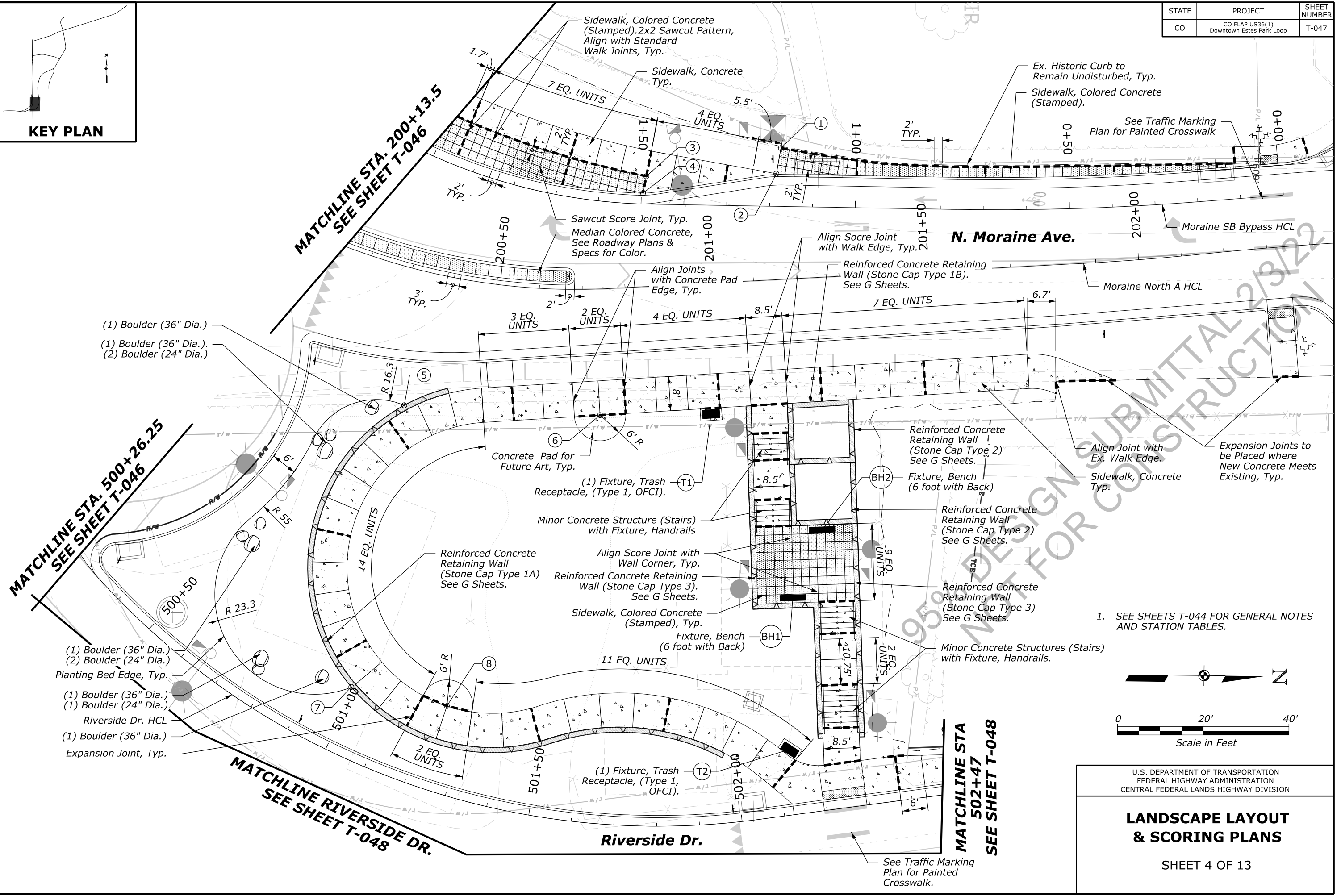
SHEET 3 OF 13

1. SEE SHEETS T-044 FOR GENERAL NOTES AND STATION TABLES.

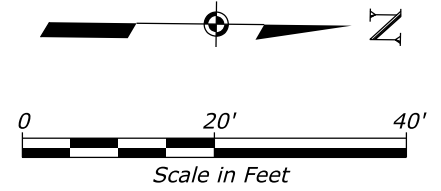
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CO	CO FLAP US36(1) Downtown Estes Park Loop	T-047



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1. SEE SHEETS T-044 FOR GENERAL NOTES AND STATION TABLES.



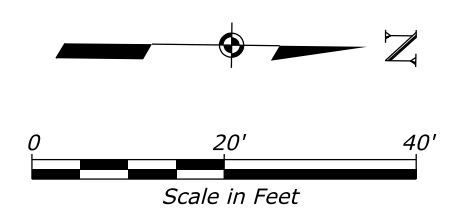
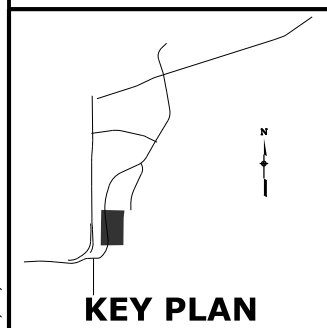
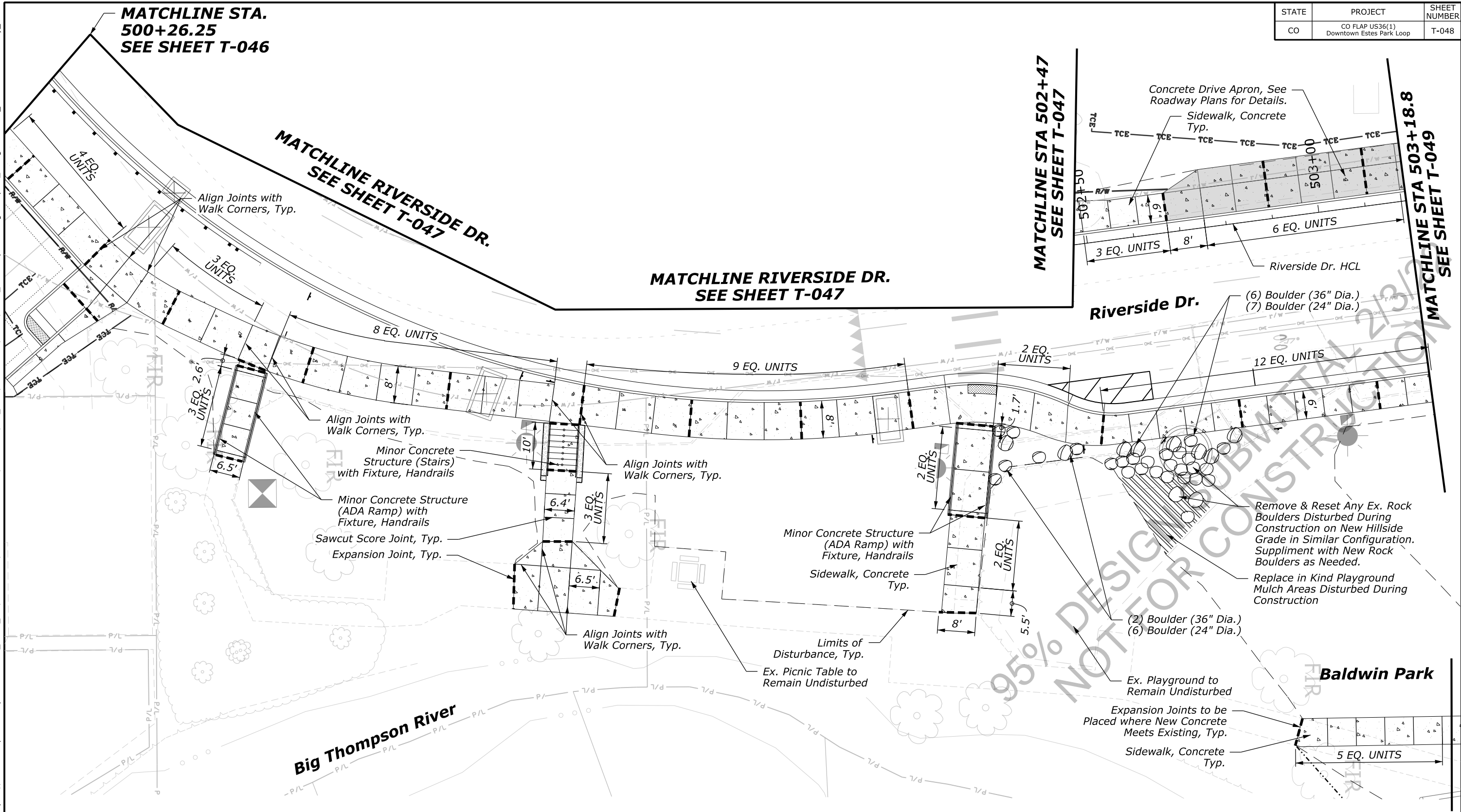
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**LANDSCAPE LAYOUT
& SCORING PLANS**

SHEET 4 OF 13

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-048

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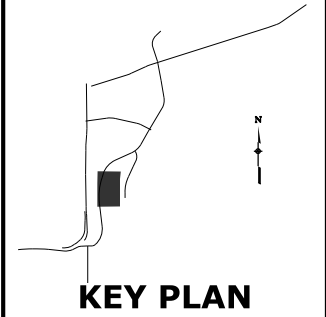
1. SEE SHEETS T-044 FOR GENERAL NOTES AND STATION TABLES.

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

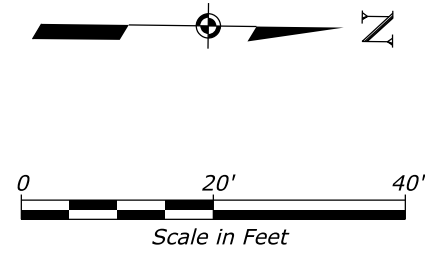
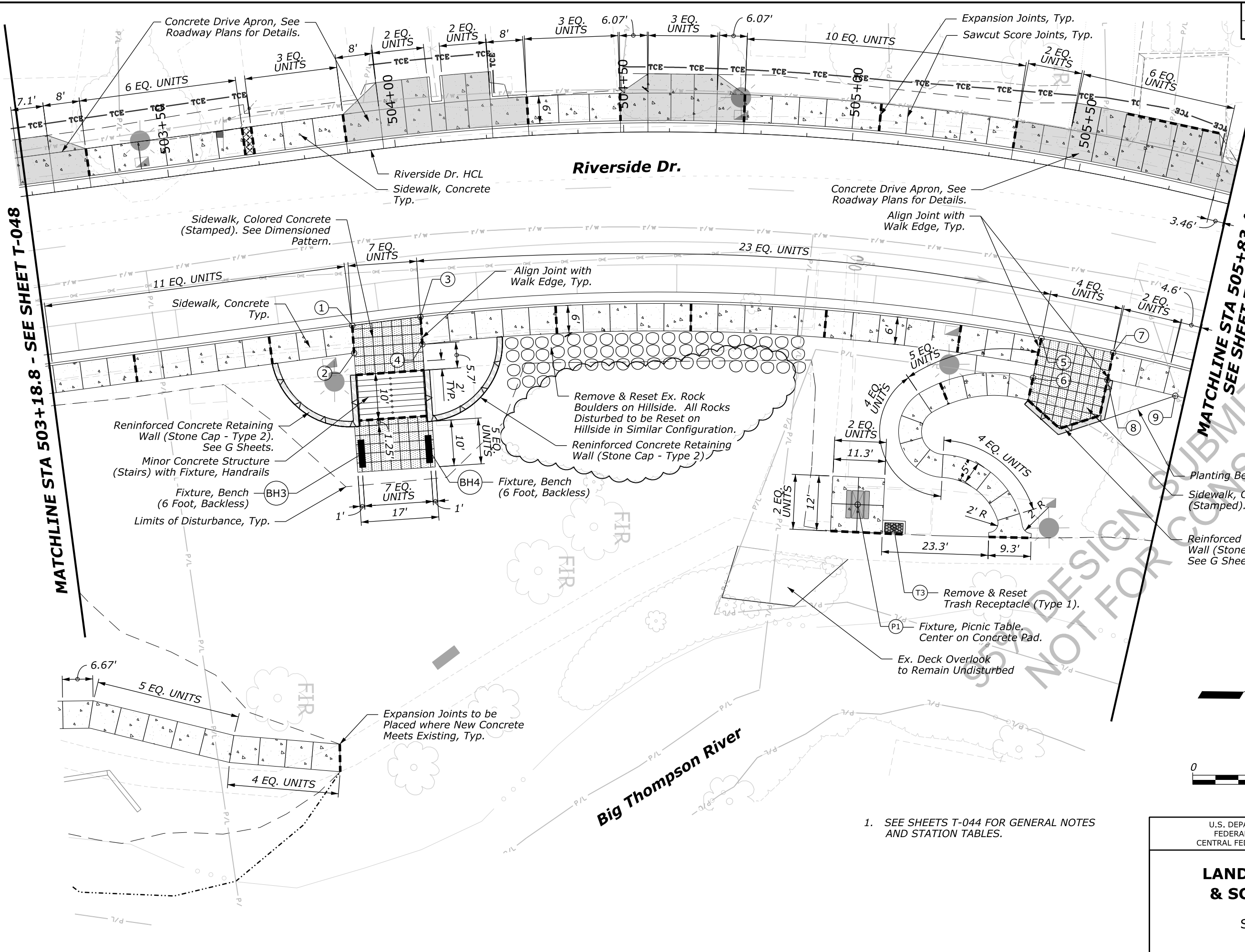
**LANDSCAPE LAYOUT
 & SCORING PLANS**

SHEET 5 OF 13

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-049



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1. SEE SHEETS T-044 FOR GENERAL NOTES AND STATION TABLES.

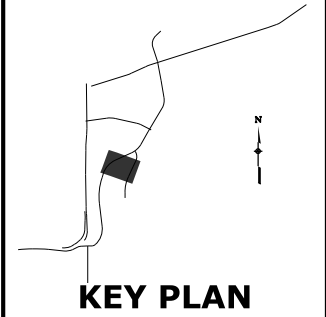
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**LANDSCAPE LAYOUT
& SCORING PLANS**

SHEET 6 OF 13

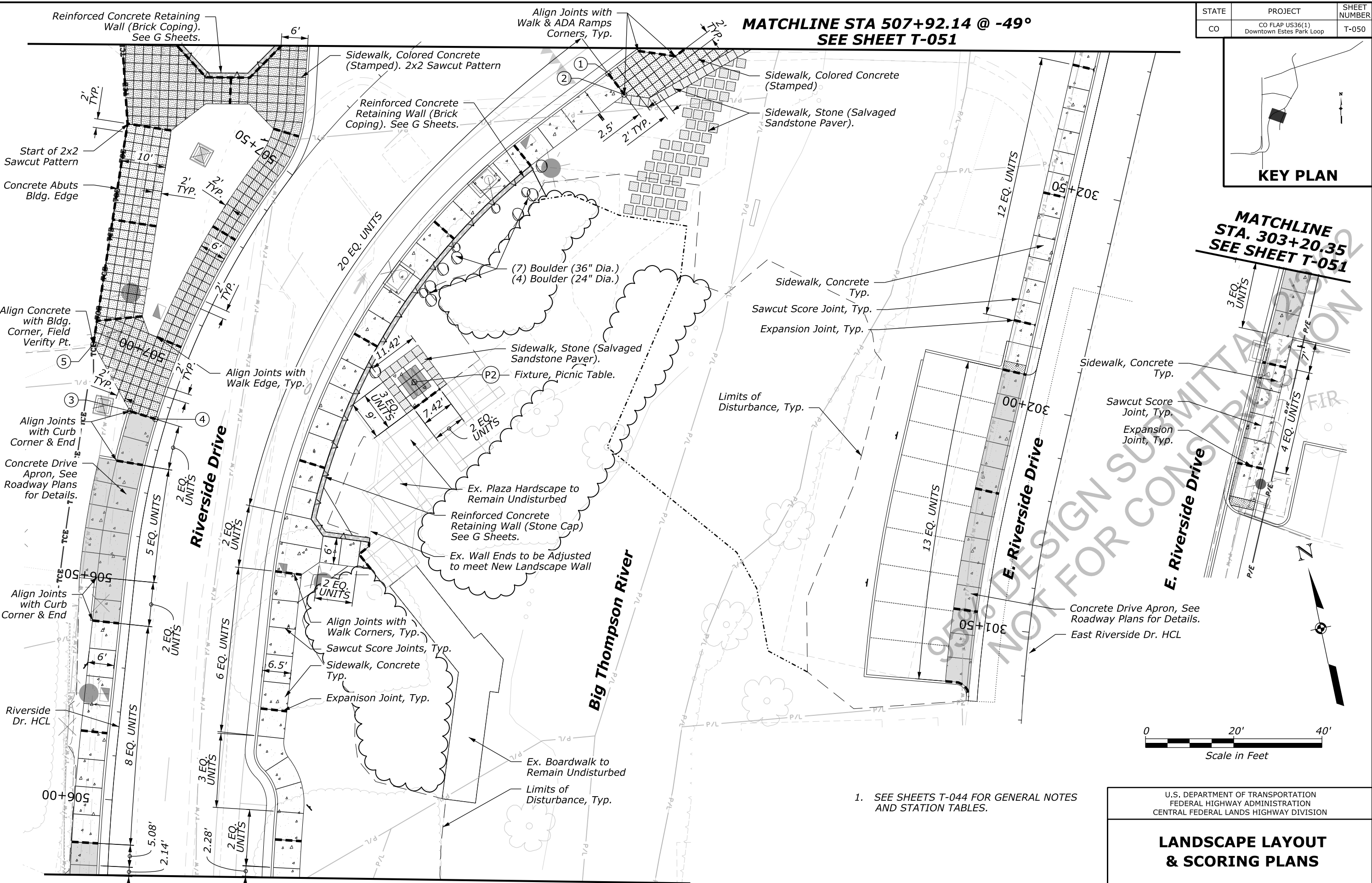
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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-050



MATCHLINE STA 507+92.14 @ -49°
SEE SHEET T-051

MATCHLINE STA. 303+20.35
SEE SHEET T-051



MATCHLINE STA 505+83.4 - SEE SHEET T-049

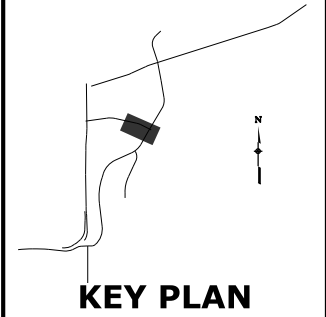
1. SEE SHEETS T-044 FOR GENERAL NOTES AND STATION TABLES.

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CENTRAL FEDERAL LANDS HIGHWAY DIVISION

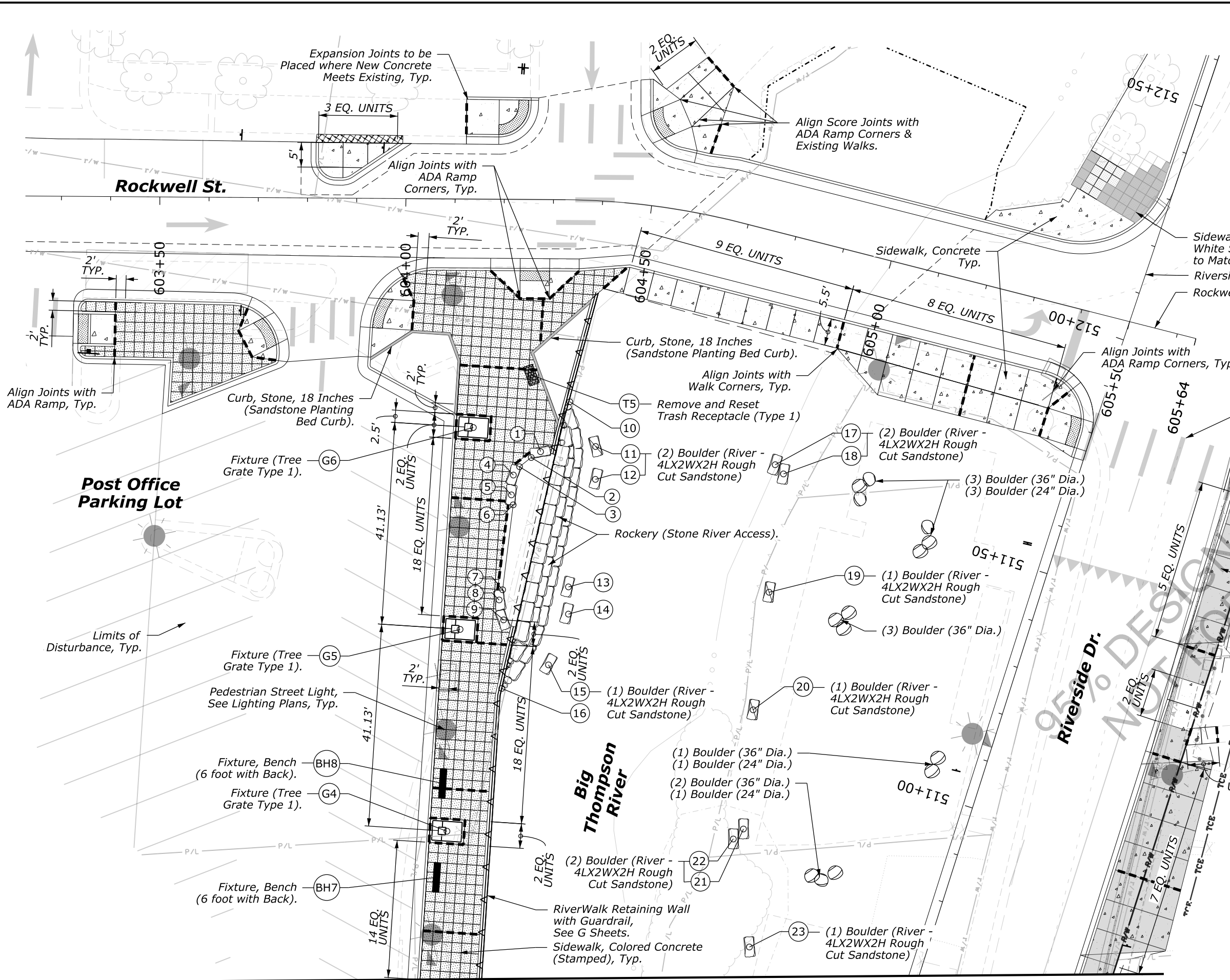
LANDSCAPE LAYOUT & SCORING PLANS

SHEET 7 OF 13

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-052



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1. SEE SHEETS T-044 FOR GENERAL NOTES AND STATION TABLES.



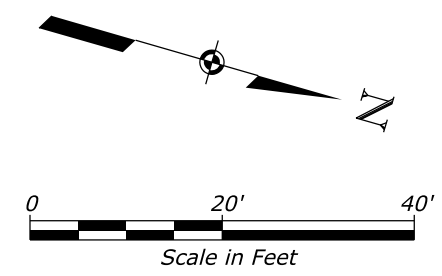
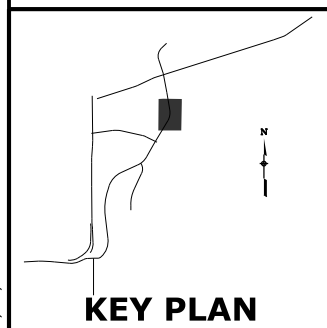
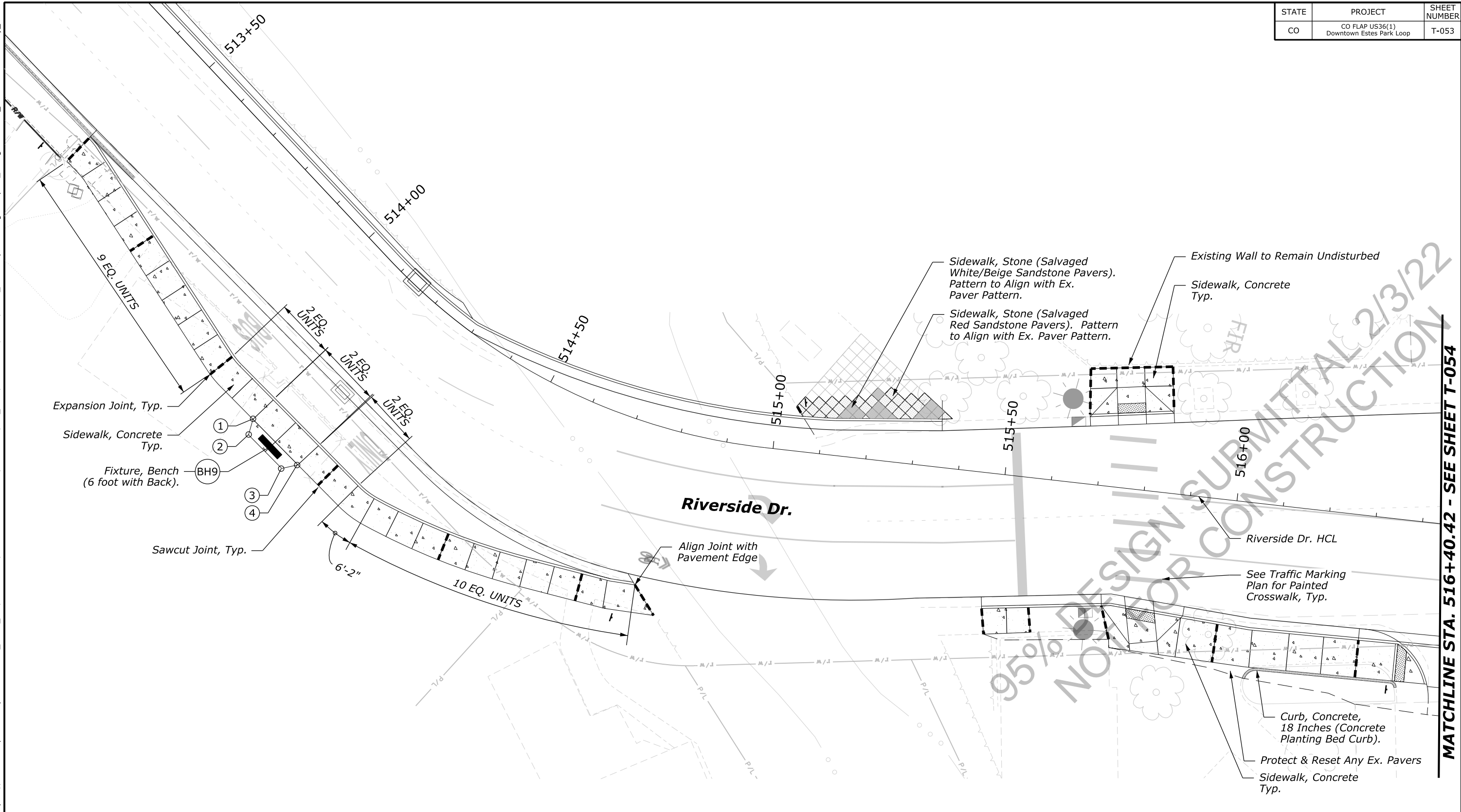
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**LANDSCAPE LAYOUT
& SCORING PLANS**

MATCHLINE STA. 510+64.19 @ -18° - SEE SHEET T-051

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-053

1/25/2022 6:51:39 PM p:\aecom-na-pw\shannon\shannon\1910-CAD\102-SHEETS\T-600\T-053_Landscape Scoring & Layout_09.dgn User: shannon.forry



1. SEE SHEETS T-044 FOR GENERAL NOTES AND STATION TABLES.

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**LANDSCAPE LAYOUT
 & SCORING PLANS**

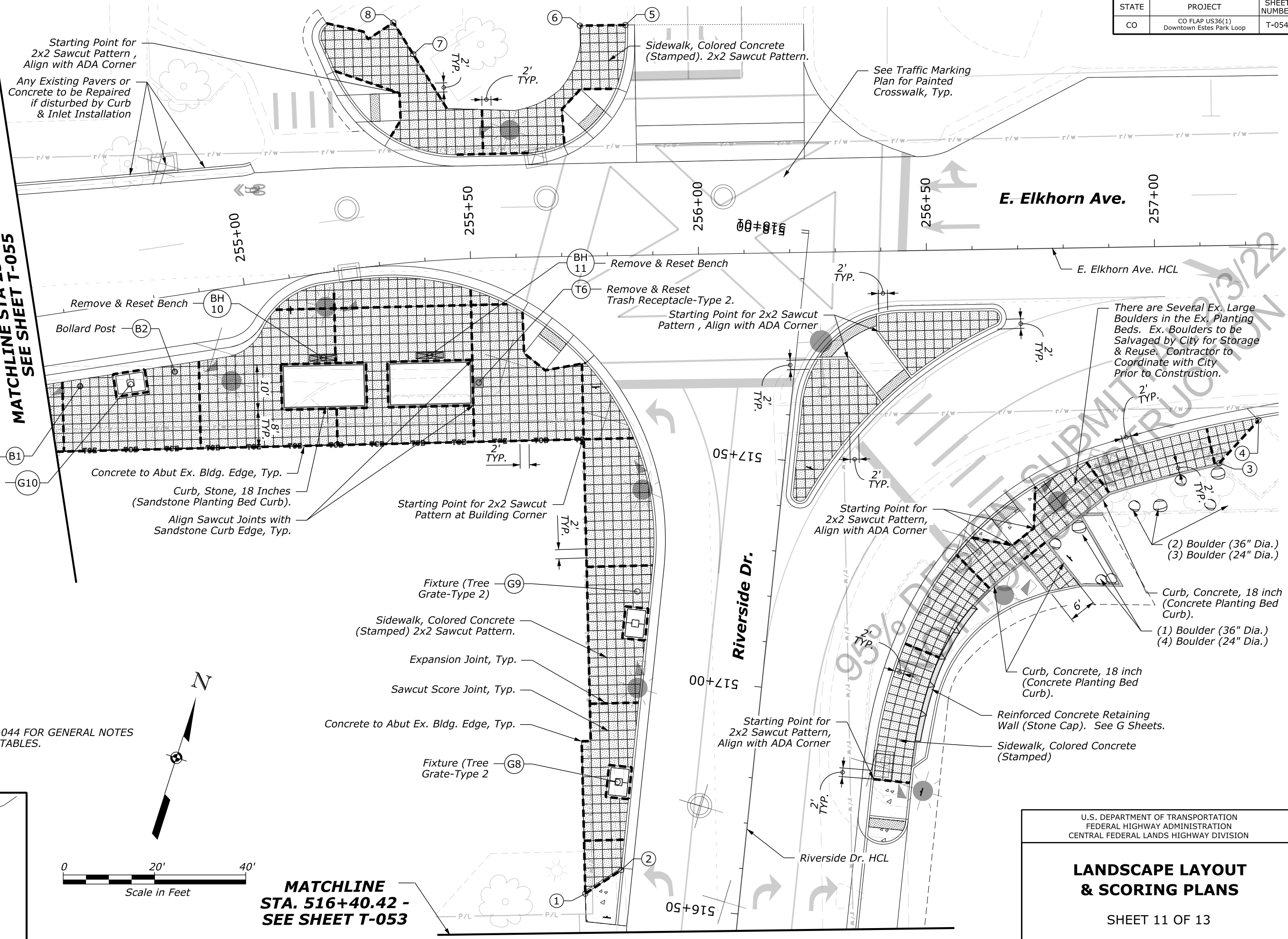
SHEET 10 OF 13

95% DESIGN SUBMITTAL 2/13/22
 NOT FOR CONSTRUCTION
 MATCHLINE STA. 516+40.42 - SEE SHEET T-054

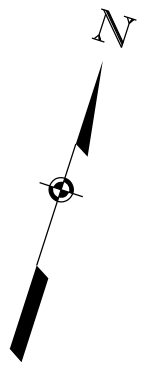
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-054

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**MATCHLINE STA 254+53.70
SEE SHEET T-055**

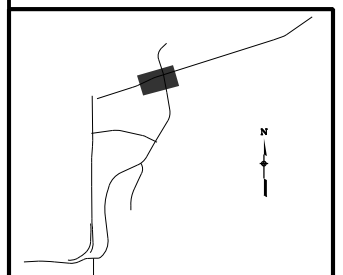


1. SEE SHEETS T-044 FOR GENERAL NOTES AND STATION TABLES.



**MATCHLINE
STA. 516+40.42 -
SEE SHEET T-053**

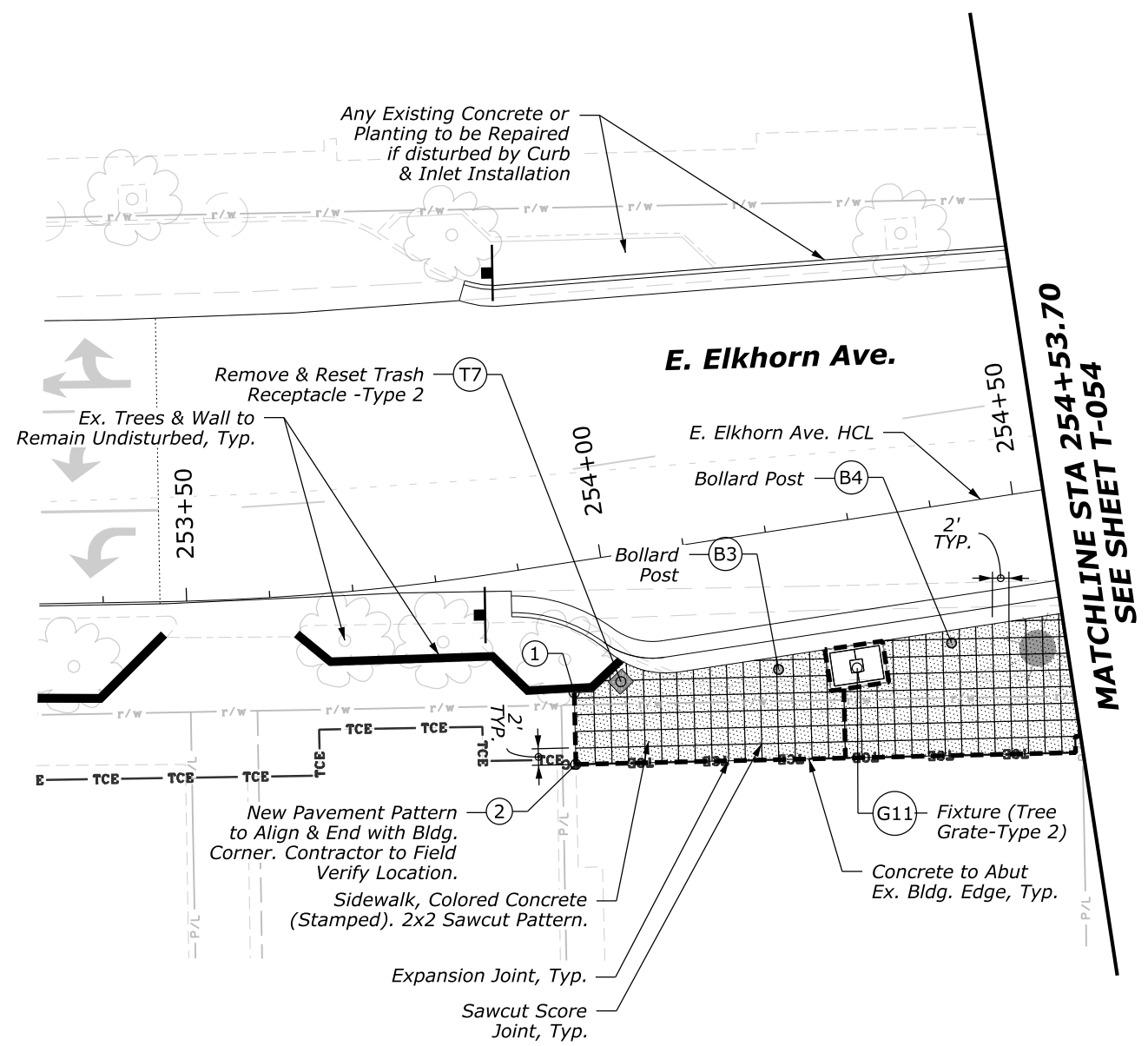
KEY PLAN



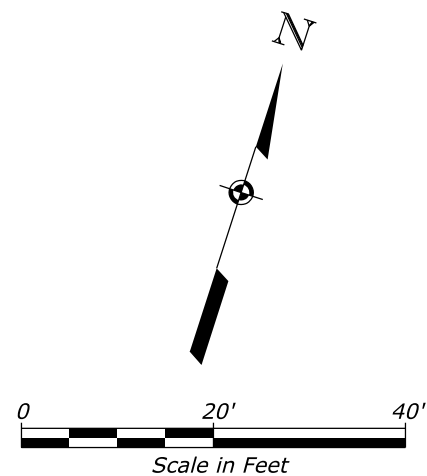
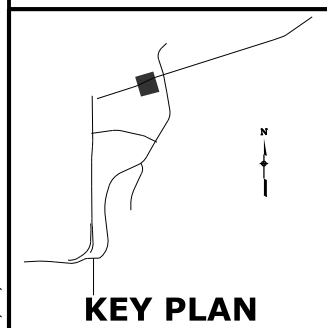
U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION
**LANDSCAPE LAYOUT
& SCORING PLANS**
 SHEET 11 OF 13

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-055

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95% DESIGN SUBMITTAL 2/3/22
 NOT FOR CONSTRUCTION



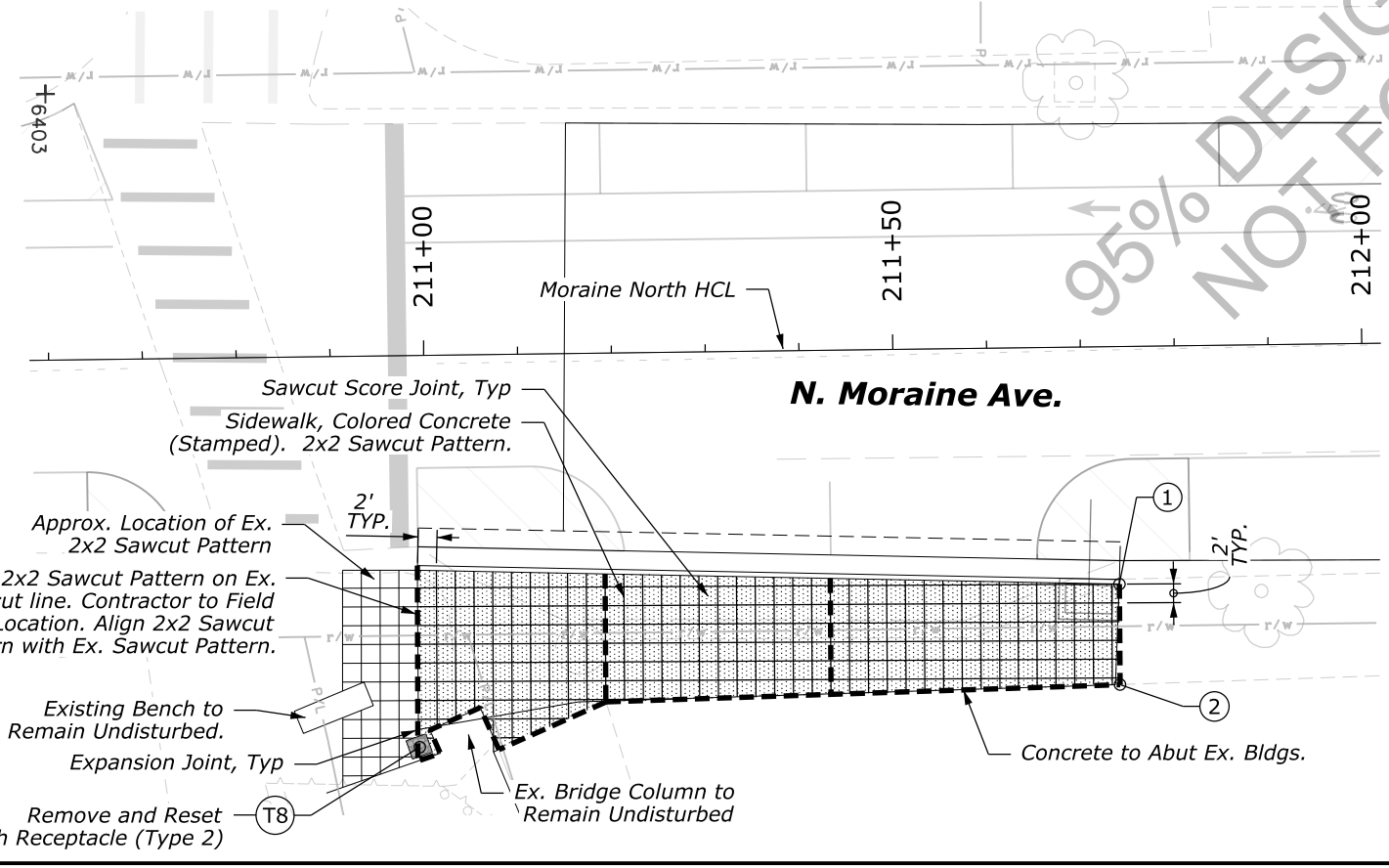
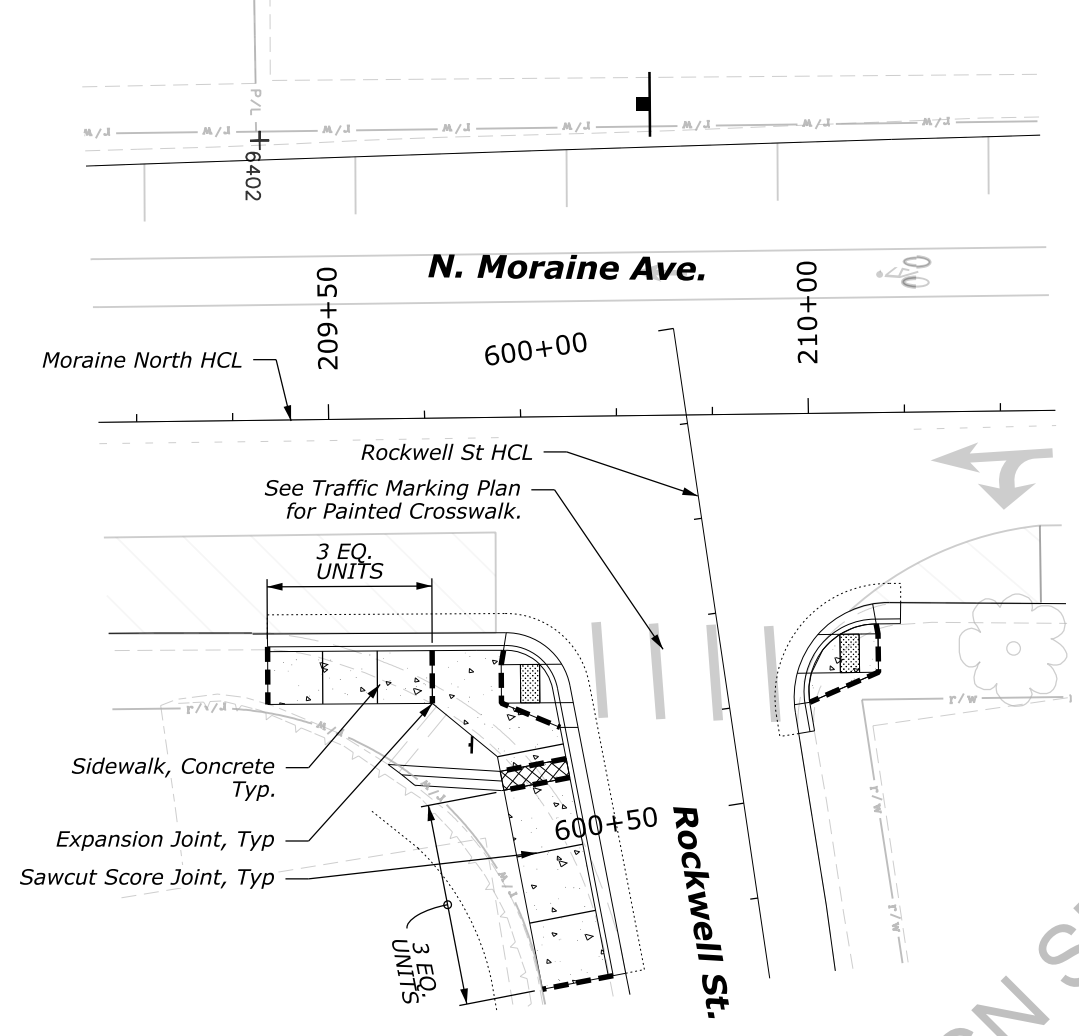
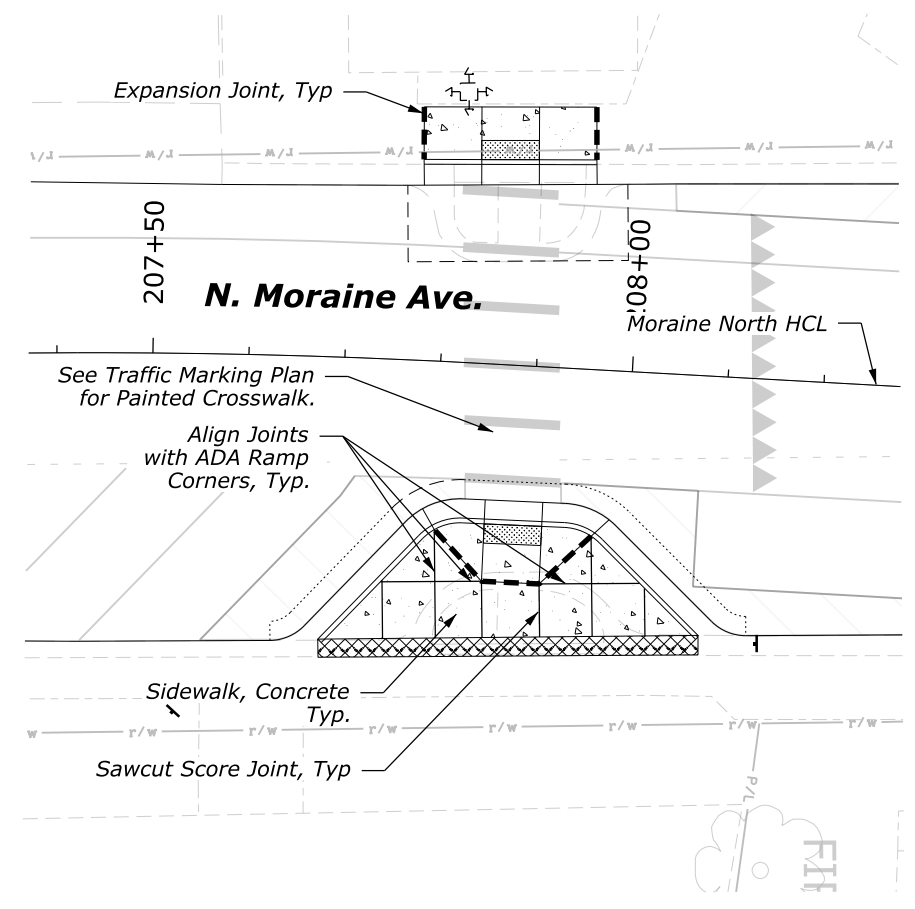
1. SEE SHEETS T-044 FOR GENERAL NOTES AND STATION TABLES.

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

LANDSCAPE LAYOUT
 & SCORING PLANS

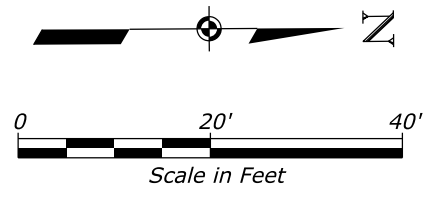
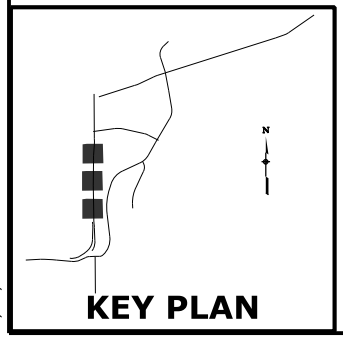
SHEET 12 OF 13

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95% DESIGN SUBMITTAL 2/3/22
 NOT FOR CONSTRUCTION

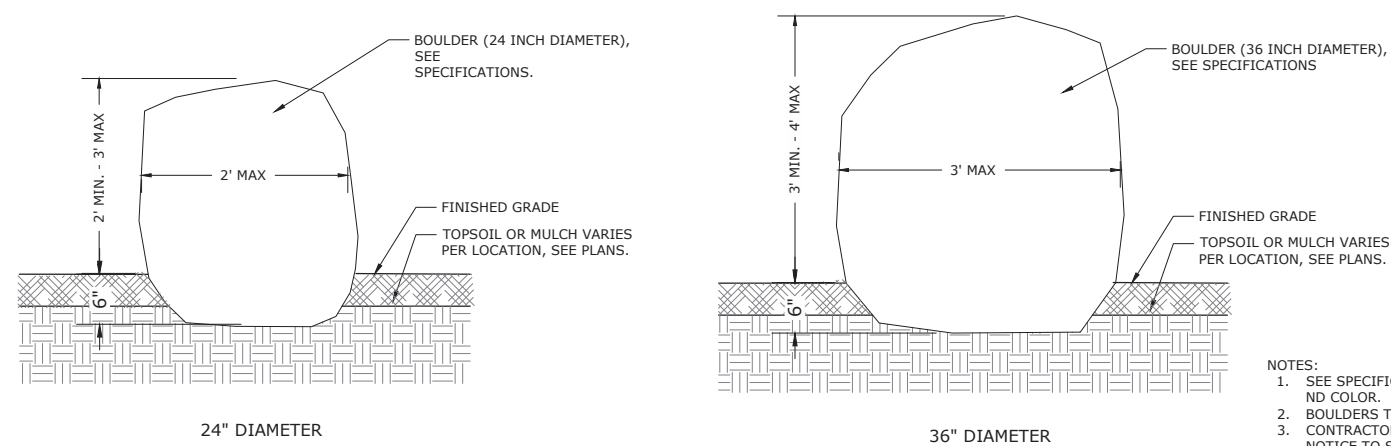
1. SEE SHEETS T-044 FOR GENERAL NOTES AND STATION TABLES.



U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

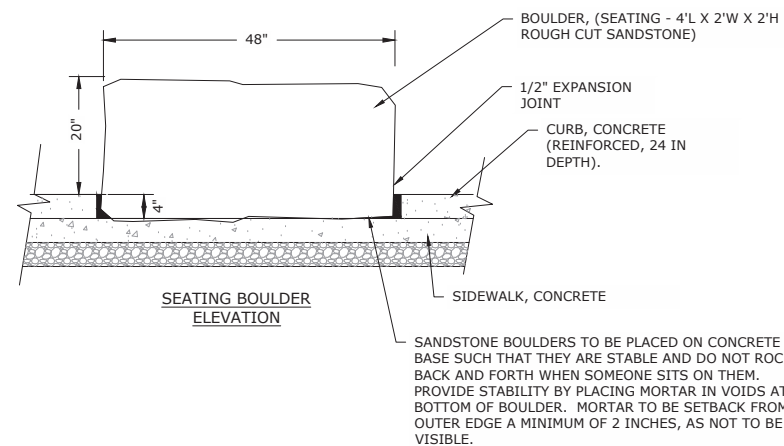
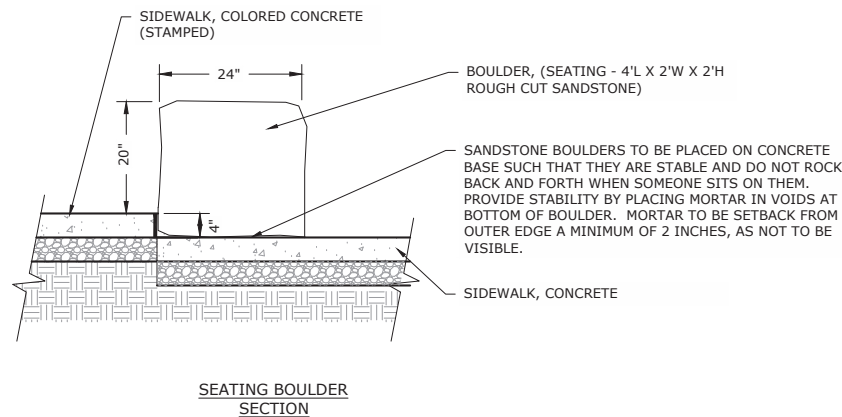
LANDSCAPE LAYOUT
 & SCORING PLANS

SHEET 13 OF 13

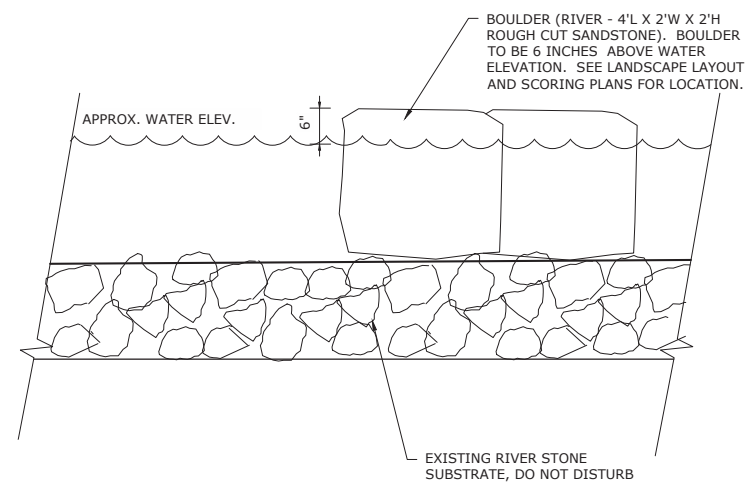


- NOTES:
1. SEE SPECIFICATIONS FOR LANDSCAPE BOULDER REQUIREMENTS AND COLOR.
 2. BOULDERS TO BE SELECTED BY OWNER'S REPRESENTATIVE.
 3. CONTRACTOR TO PROVIDE OWNERS REPRESENTATIVE ONE WEEKS NOTICE TO SELECT FROM SUPPLIERS STOCK.
 4. SUBGRADE TO BE COMPACTED PER SPECIFICATIONS.

1 BOULDER (24 INCH DIAMETER & 36 INCH DIAMETER)
SCALE: N.T.S.



2 BOULDER (SEATING- 4'L X 2'W X 2'H ROUGH CUT SANDSTONE)
SCALE: N.T.S.



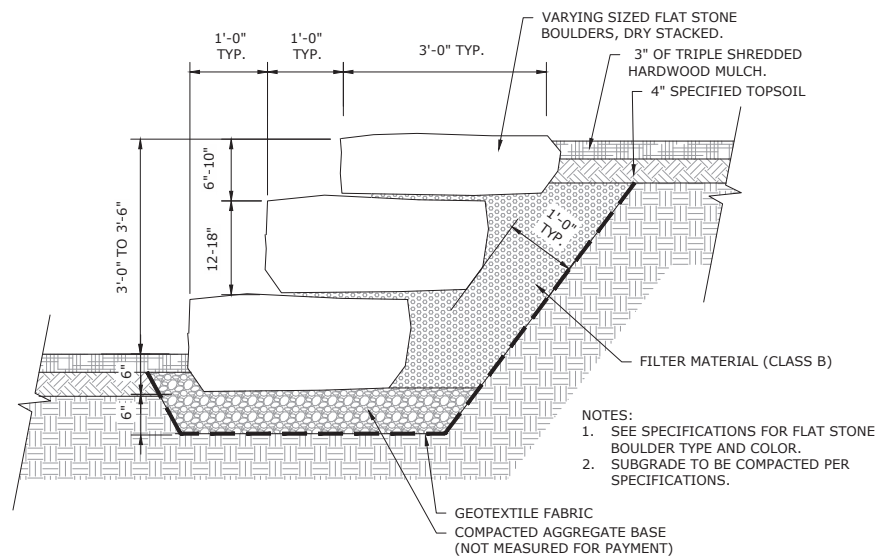
3 BOULDER (RIVER- 4'L X 2'W X 2'H ROUGH CUT SANDSTONE)
SCALE: N.T.S.

95% DESIGN SUBMITTAL 2/13/22
NOT FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

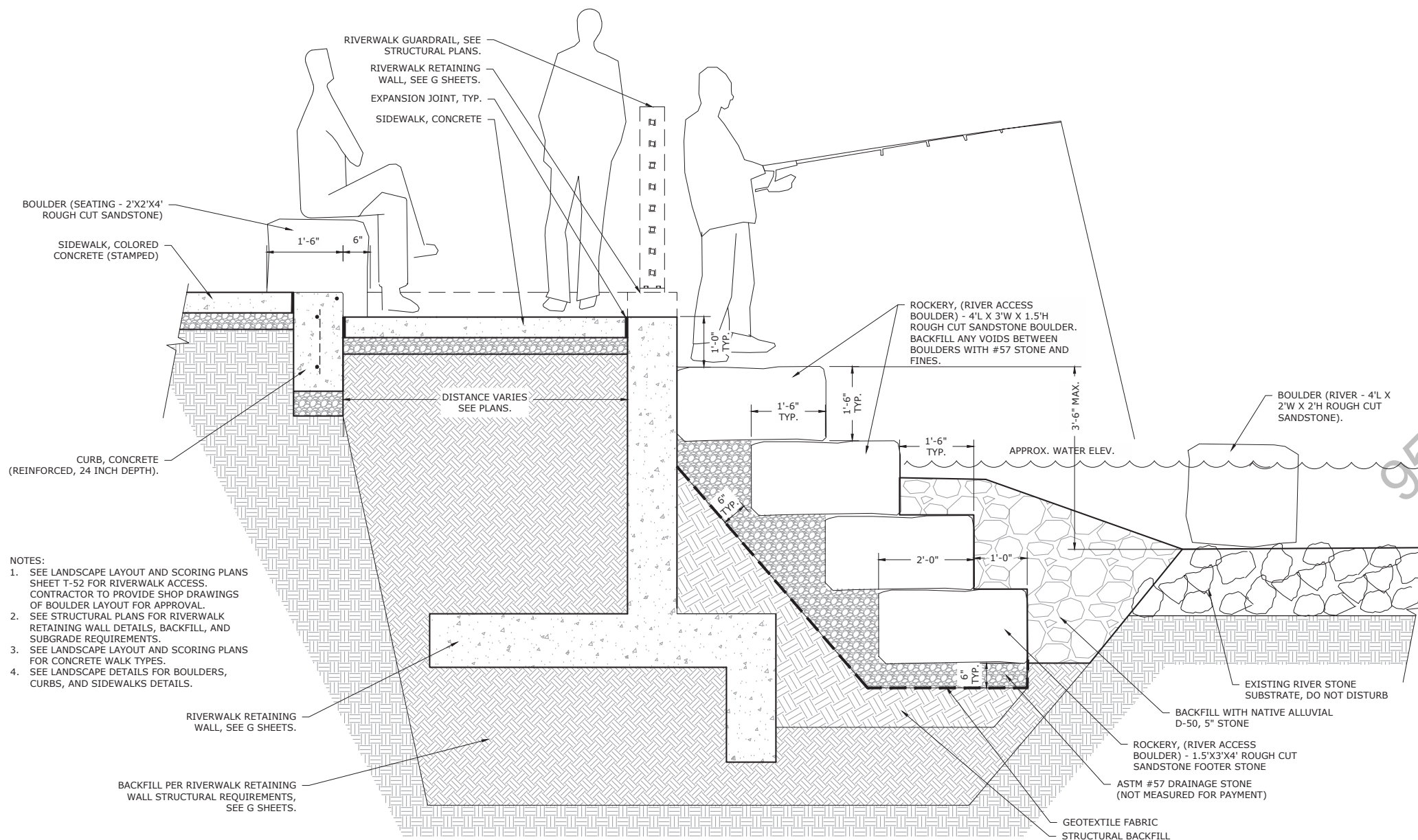
U.S. CUSTOMARY DETAIL
LANDSCAPE DETAILS
BOULDERS
SHEET 1 OF 1

SPECIAL
251



- NOTES:
1. SEE SPECIFICATIONS FOR FLAT STONE BOULDER TYPE AND COLOR.
 2. SUBGRADE TO BE COMPACTED PER SPECIFICATIONS.

1 ROCKERY (DRY STACKED SLOPED BOULDER WALL)
SCALE: 3/4"=1'-0"



- NOTES:
1. SEE LANDSCAPE LAYOUT AND SCORING PLANS SHEET T-52 FOR RIVERWALK ACCESS. CONTRACTOR TO PROVIDE SHOP DRAWINGS OF BOULDER LAYOUT FOR APPROVAL.
 2. SEE STRUCTURAL PLANS FOR RIVERWALK RETAINING WALL DETAILS, BACKFILL, AND SUBGRADE REQUIREMENTS.
 3. SEE LANDSCAPE LAYOUT AND SCORING PLANS FOR CONCRETE WALK TYPES.
 4. SEE LANDSCAPE DETAILS FOR BOULDERS, CURBS, AND SIDEWALKS DETAILS.

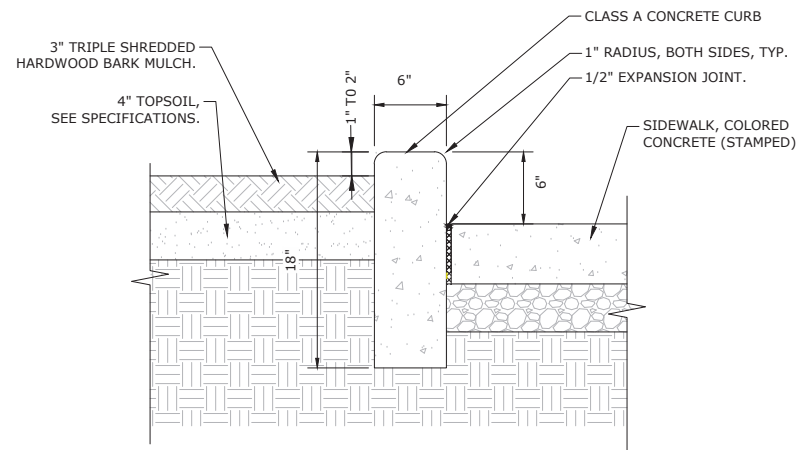
2 ROCKERY (SANDSTONE RIVER ACCESS)
SCALE: 3/4"=1'-0"

95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

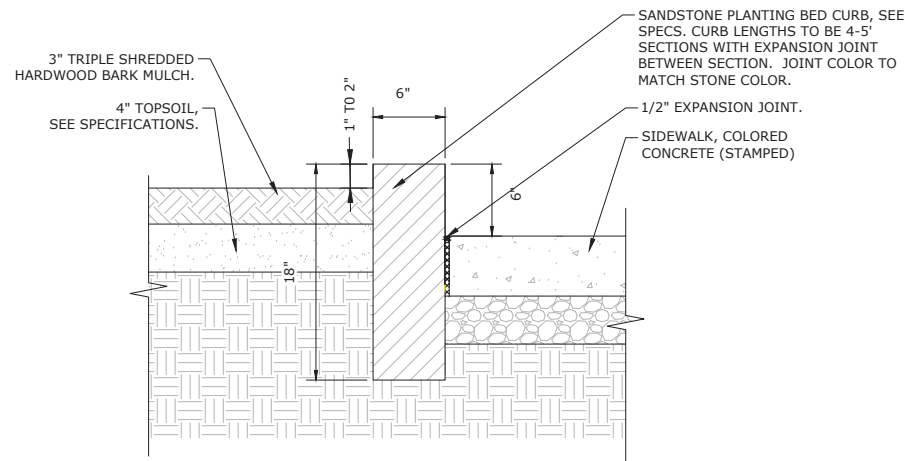
U.S. CUSTOMARY DETAIL
LANDSCAPE DETAILS
ROCKERY
SHEET 1 OF 1

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP36(1) Downtown Estes Park Loop	T-059



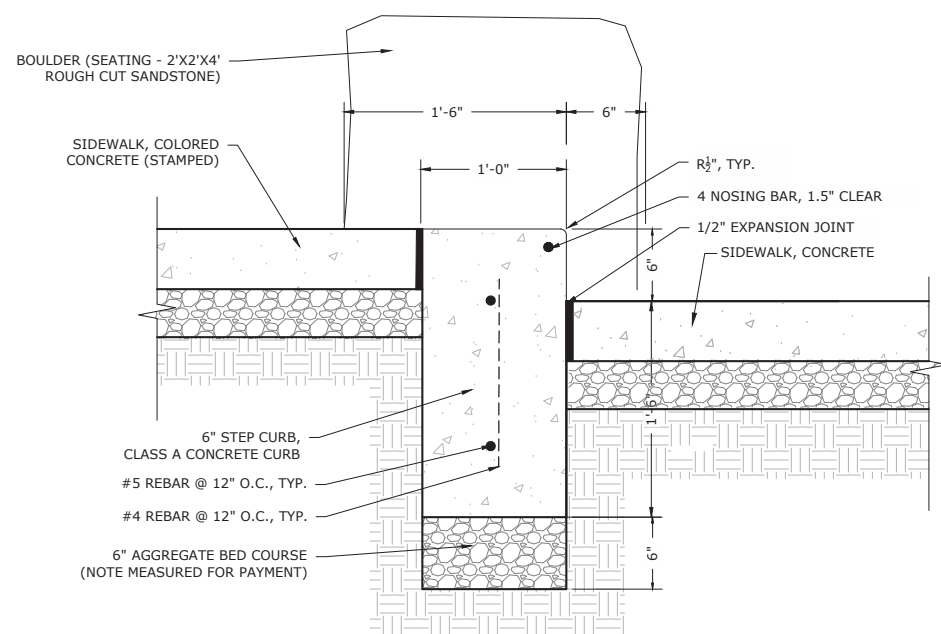
- NOTES:
1. SEE ROADWAY PLANS FOR CURB STATION AND OFFSET POINTS.
 2. SEE LANDSCAPE LAYOUT AND SCORING PLANS FOR CURB TYPE.

1 CURB, CONCRETE, 18 INCH (CONCRETE PLANTING BED CURB)
SCALE: 1 1/2"=1'-0"



- NOTES:
1. SEE ROADWAY PLANS FOR CURB STATION AND OFFSET POINTS.
 2. SEE LANDSCAPE LAYOUT AND SCORING PLANS FOR CURB TYPE.

2 CURB, STONE, TYPE 1, 18 INCH
(SANDSTONE LANDSCAPE PLANTING BED CURB)
SCALE: 1 1/2"=1'-0"



3 CURB, CONCRETE, (REINFORCED, 24 INCH DEPTH)
SCALE: 1 1/2"=1'-0"

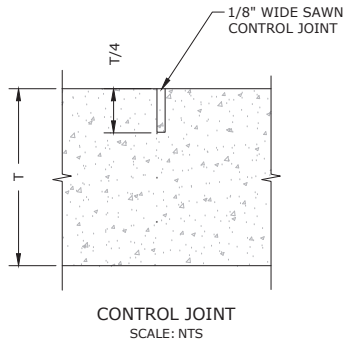
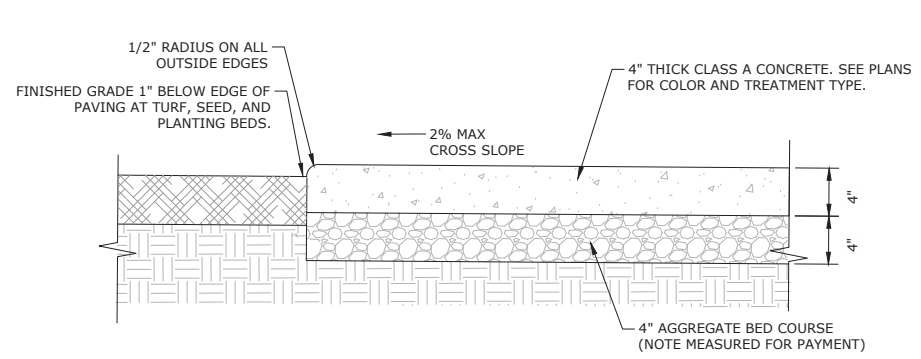
95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

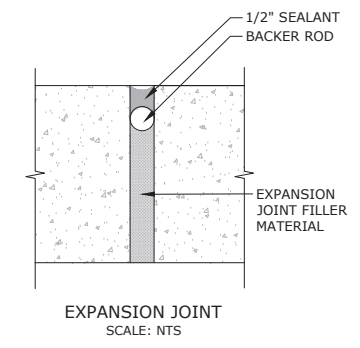
U.S. CUSTOMARY DETAIL
LANDSCAPE DETAILS
CURBS

SHEET 1 OF 1

SPECIAL
609

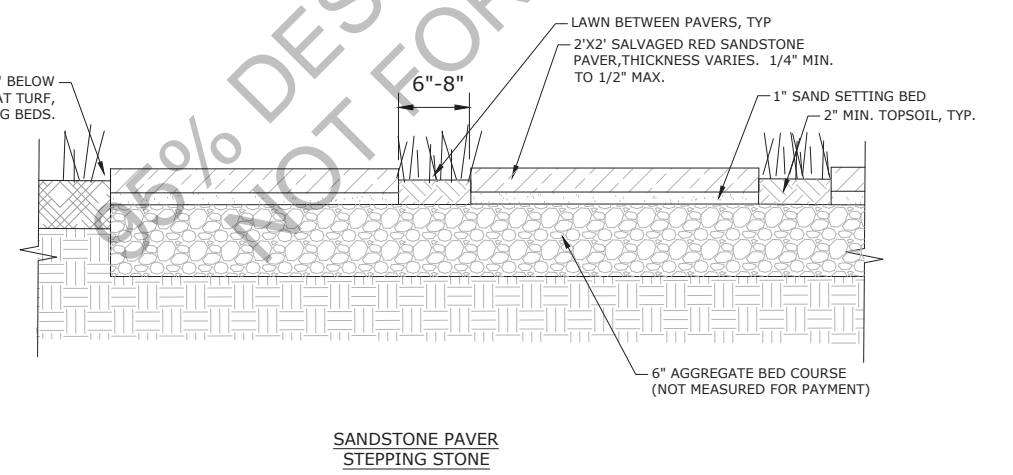
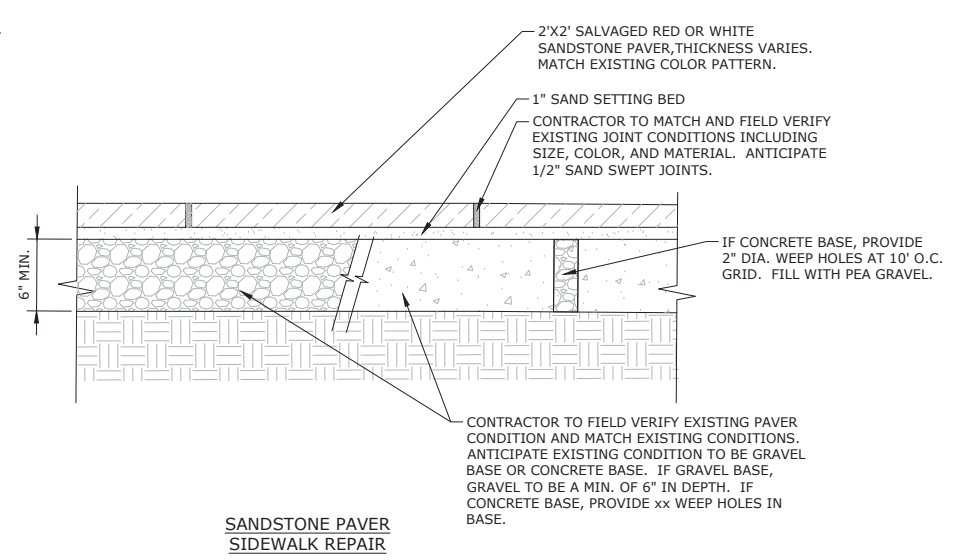
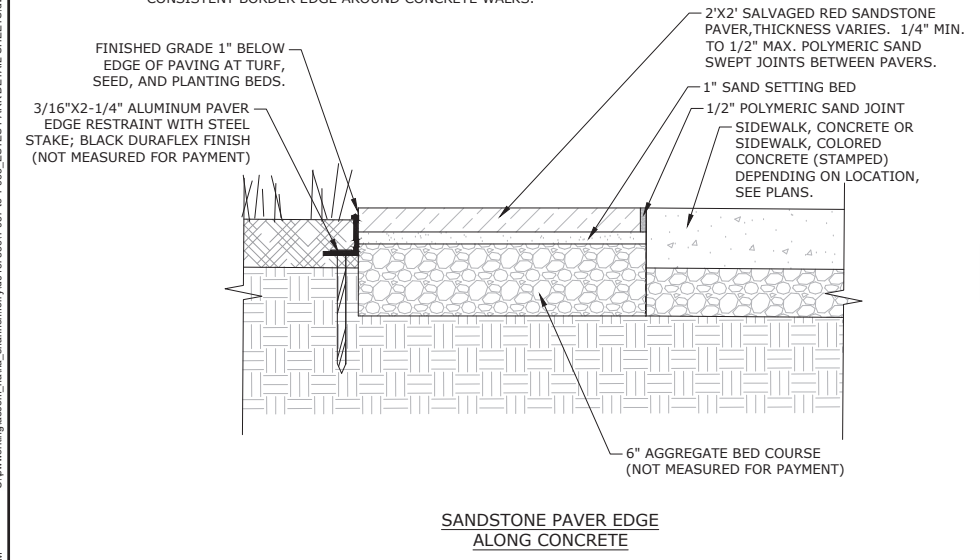


- NOTES:
- SEE LANDSCAPE LAYOUT AND SCORING PLANS FOR CONCRETE TYPE AND SCORING PATTERNS.
 - SEE SPECIFICATION FOR COLORED CONCRETE AND STAMP PATTERN REQUIREMENTS.
 - FOR ALL VEHICULAR COLORED CONCRETE, SEE ROADWAY PLANS FOR DETAILS. COLOR TO BE SAME AS COLORED CONCRETE SIDEWALK.
 - ALL STANDARD CONCRETE AND STAMPED COLORED CONCRETE TO HAVE MEDIUM BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAVEL.
 - ALL COLORED CONCRETE TO BE STAMPED WITH SEAMLESS STONE PATTERN AND SHALL HAVE A 2X2 SCORING PATTERN. SCORING PATTERN TO BEGIN AS SHOWN ON LANDSCAPE LAYOUT AND SCORING PLANS. SEE SPECIFICATIONS FOR STAMP PATTERN AND COLOR.
 - SCORING JOINTS TO BE LOCATED AS SHOWN ON PLANS. CONTROL JOINTS TO BE SAW CUT JOINTS. ALL CONTROL JOINTS TO ALIGN WITH EDGE OF PAVEMENTS, CORNERS OR OTHER KEY ELEMENTS, SEE PLANS. EXPANSION JOINTS TO OCCUR AT MIN. 30 FT. SPACING AS INDICATED ON PLANS. SEE SPECIFICATIONS FOR EXPANSION JOINT REQUIREMENTS. CONTRACTOR TO PROVIDE EXPANSION JOINTS WHERE PAVEMENT ABUTS VERTICAL ELEMENTS INCLUDING, BUT NOT LIMITED, TO STAIRS, WALLS, CURBS, STRUCTURES, AND FOUNDATIONS. CONTRACTOR TO ALSO PROVIDE EXPANSION JOINTS WHERE NEW WALKS MEET EXISTING WALKS AND BETWEEN CONCRETE TYPE VARIATIONS.
 - EXPANSION JOINTS TO BE LOCATED AS SHOWN ON PLANS. CONTROL JOINTS TO BE SAW CUT JOINTS. ALL CONTROL JOINTS TO ALIGN WITH EDGE OF PAVEMENTS, CORNERS OR OTHER KEY ELEMENTS, SEE PLANS. EXPANSION JOINTS TO OCCUR AT MIN. 30 FT. SPACING AS INDICATED ON PLANS. SEE SPECIFICATIONS FOR EXPANSION JOINT REQUIREMENTS. CONTRACTOR TO PROVIDE EXPANSION JOINTS WHERE PAVEMENT ABUTS VERTICAL ELEMENTS INCLUDING, BUT NOT LIMITED, TO STAIRS, WALLS, CURBS, STRUCTURES, AND FOUNDATIONS. CONTRACTOR TO ALSO PROVIDE EXPANSION JOINTS WHERE NEW WALKS MEET EXISTING WALKS AND BETWEEN CONCRETE TYPE VARIATIONS.



1 SIDEWALK, CONCRETE;
SIDEWALK, COLORED CONCRETE (STAMPED)
SCALE: 1 1/2"=1'-0"

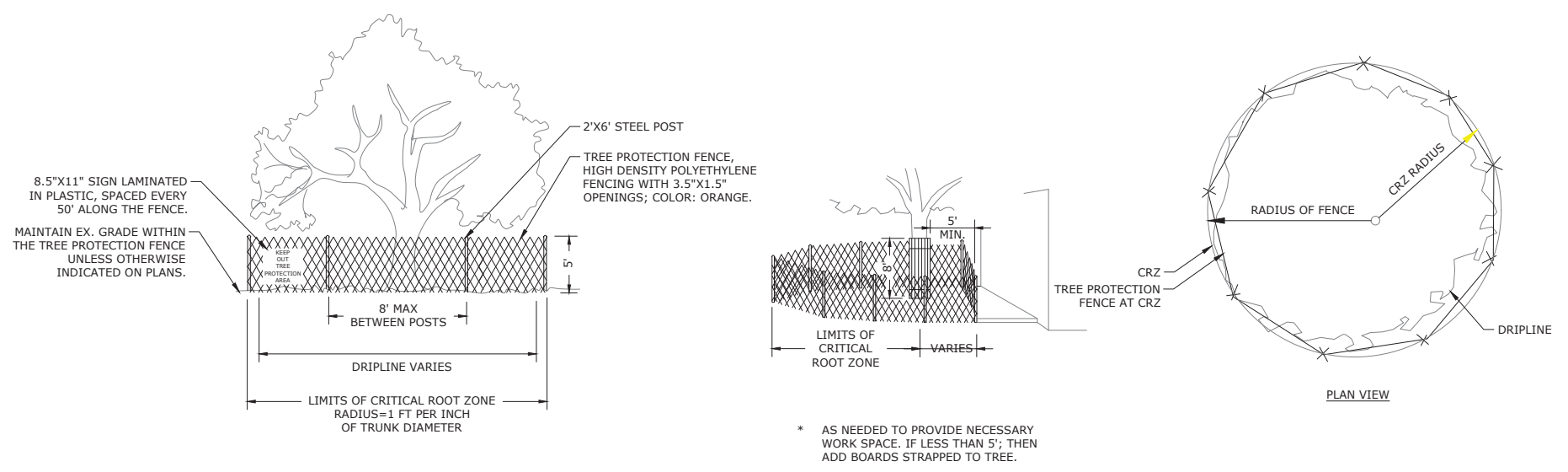
- NOTES:
- SEE SPECIFICATIONS FOR SALVAGE SANDSTONE PAVER REQUIREMENTS.
 - SANDSTONE PAVERS TO BE SALVAGED FROM EXISTING SANDSTONE PAVERS IN ALL DEMOLITION AREAS. ALL PAVERS TO BE STORED AND PROTECTED DURING CONSTRUCTION. CLEAN PAVERS OF DEBRIS AND DIRT PRIOR TO INSTALLATION.
 - ANY SALVAGED PAVERS NOT REUSED SHALL BE PROVIDED TO THE CITY.
 - SEE LANDSCAPE LAYOUT AND SCORING PLANS FOR LOCATION OF SALVAGED SANDSTONE PAVERS EDGING, STEPPING STONES, AND PAVER SIDEWALK.
 - SALVAGED SANDSTONE PAVERS TO BE CUT WHERE NEEDED FOR CONSISTENT BORDER EDGE AROUND CONCRETE WALKS.



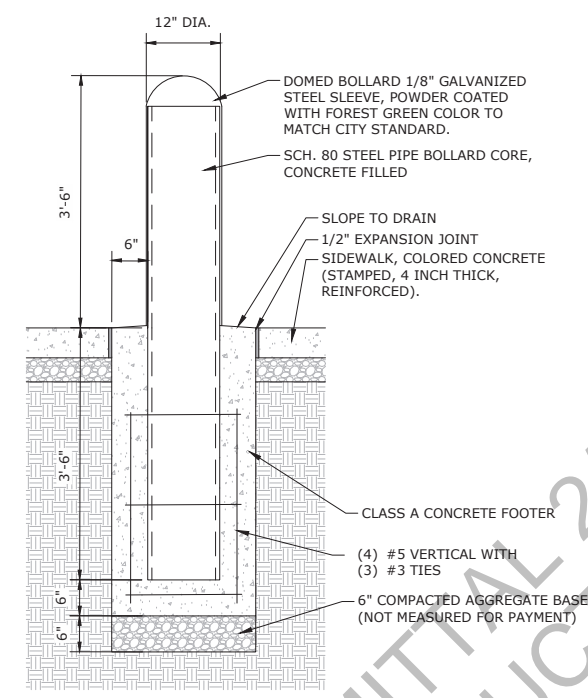
2 SIDEWALK, STONE (SALVAGED SANDSTONE PAVER)
SCALE: 1 1/2"=1'-0"

12/13/2018 3:16:11 PM C:\pwworking\dwgcom_narua_sharon.tony01278361-057 to T-065_ESTES PARK DETAIL SHEETS.dwg

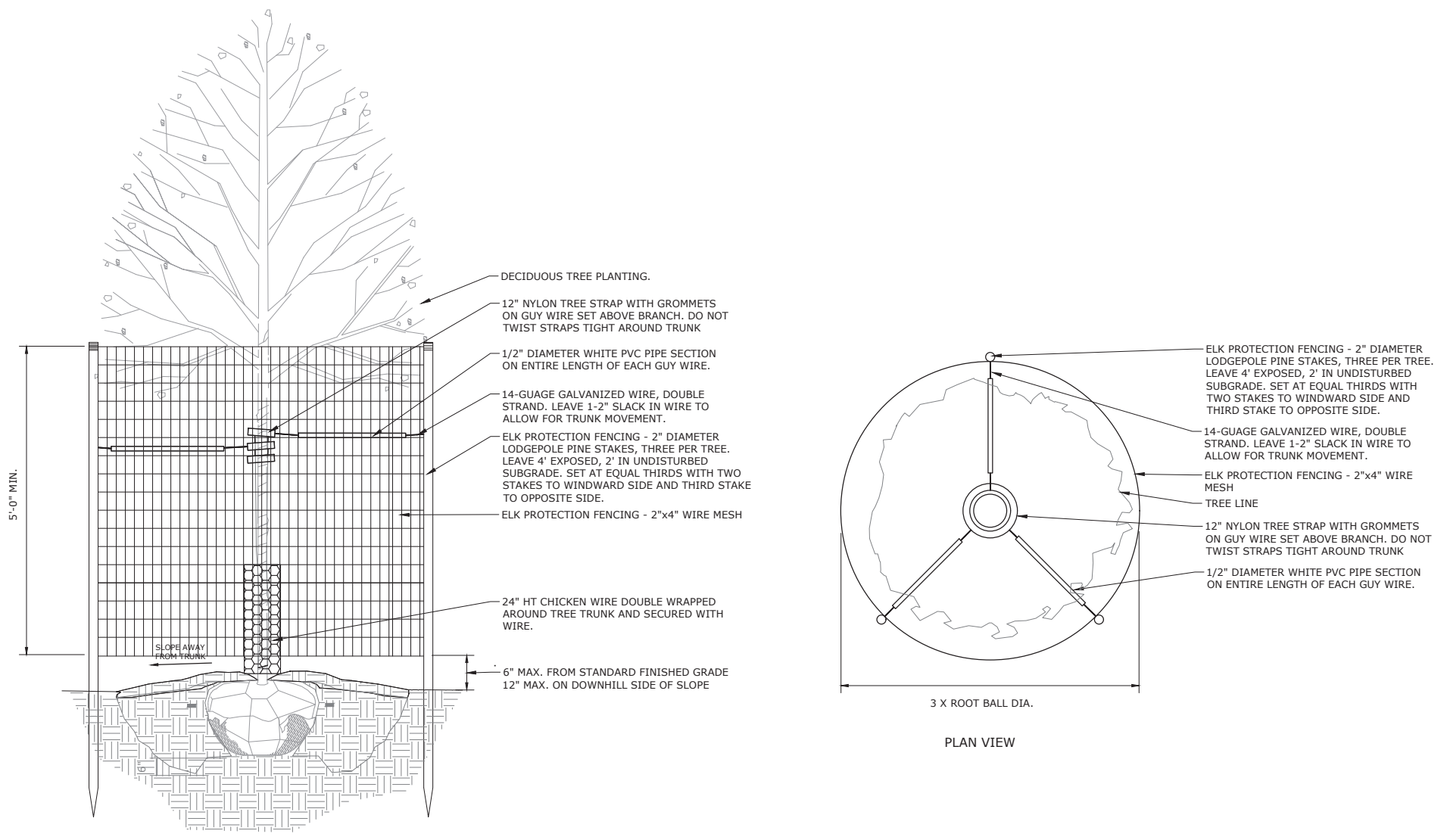
95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION



1 FENCE (TREE PROTECTION)
 SCALE: N.T.S.



2 BOLLARD POST
 SCALE: 3/4"=1'-0"

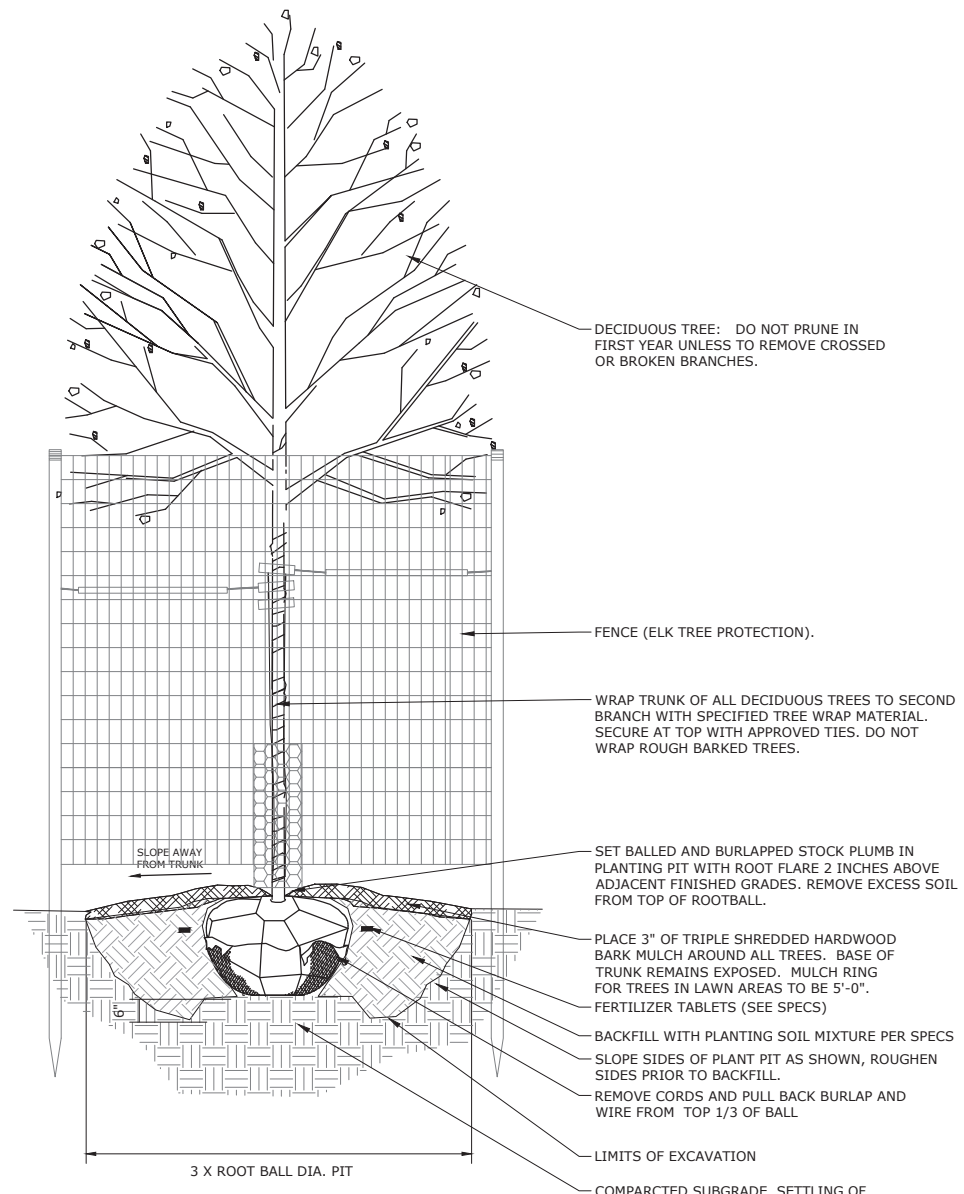


3 FENCE (ELK TREE PROTECTION)
 SCALE: N.T.S.

95% DESIGN SUBMITTAL 2/13/22
 NOT FOR CONSTRUCTION

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP36(1) Downtown Estes Park Loop	T-062



DECIDUOUS TREE: DO NOT PRUNE IN FIRST YEAR UNLESS TO REMOVE CROSSED OR BROKEN BRANCHES.

FENCE (ELK TREE PROTECTION).

WRAP TRUNK OF ALL DECIDUOUS TREES TO SECOND BRANCH WITH SPECIFIED TREE WRAP MATERIAL. SECURE AT TOP WITH APPROVED TIES. DO NOT WRAP ROUGH BARKED TREES.

SET BALLED AND BURLAPPED STOCK PLUMB IN PLANTING PIT WITH ROOT FLARE 2 INCHES ABOVE ADJACENT FINISHED GRADES. REMOVE EXCESS SOIL FROM TOP OF ROOTBALL.

PLACE 3" OF TRIPLE SHREDDED HARDWOOD BARK MULCH AROUND ALL TREES. BASE OF TRUNK REMAINS EXPOSED. MULCH RING FOR TREES IN LAWN AREAS TO BE 5'-0".

FERTILIZER TABLETS (SEE SPECS)

BACKFILL WITH PLANTING SOIL MIXTURE PER SPECS

SLOPE SIDES OF PLANT PIT AS SHOWN, ROUGHEN SIDES PRIOR TO BACKFILL.

REMOVE CORDS AND PULL BACK BURLAP AND WIRE FROM TOP 1/3 OF BALL

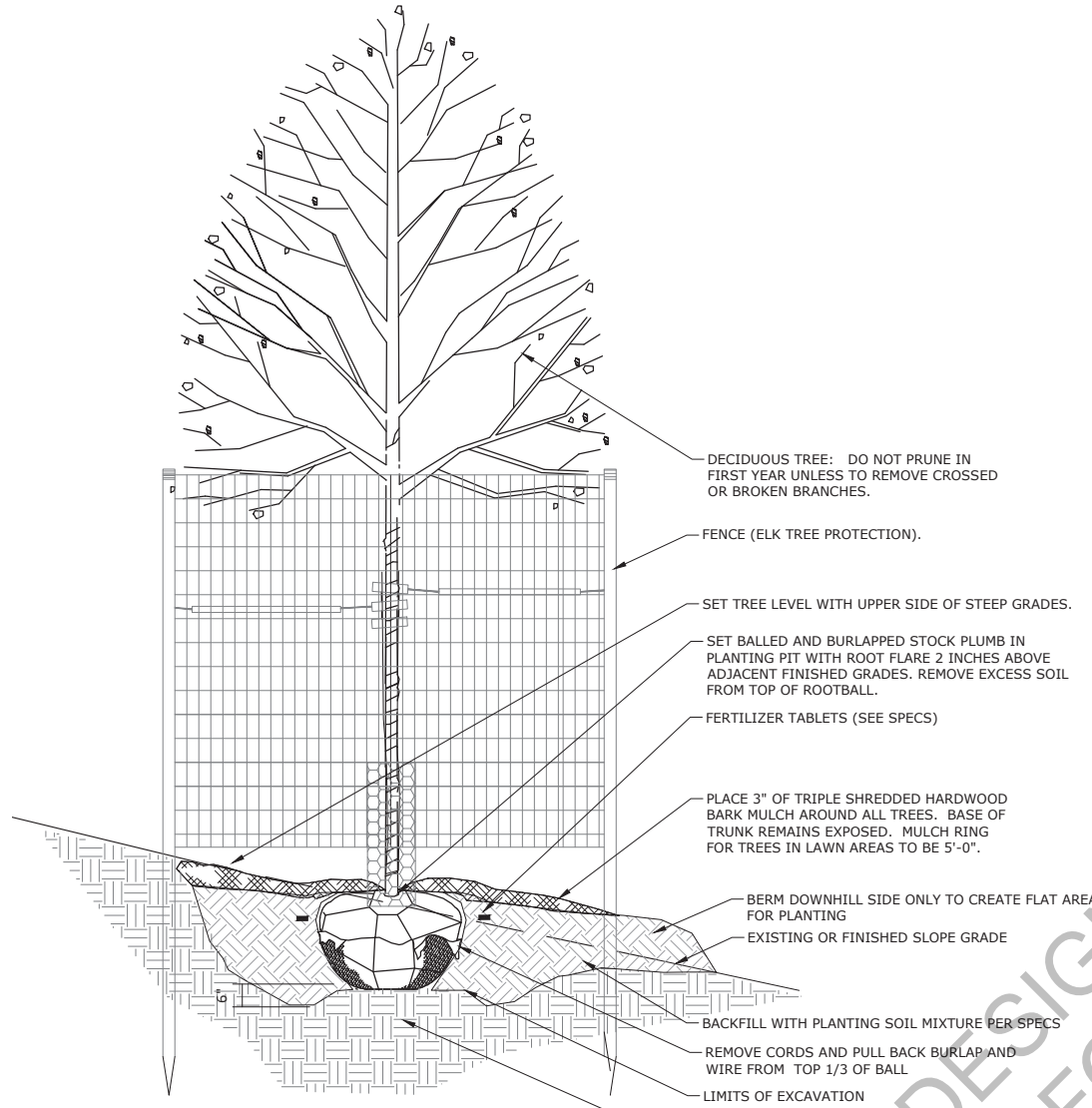
LIMITS OF EXCAVATION

COMPARCTED SUBGRADE. SETTLING OF ROOTBALL SHALL BE CAUSE FOR REJECTION.

3 X ROOT BALL DIA. PIT

NOTES:
1) ANY BROKEN, CRUMBLING, OR OTHERWISE DAMAGED ROOTBALL SHALL BE REJECTED. DO NOT DAMAGE DURING PLANTING.

1 DECIDUOUS TREE PLANTING
SCALE: N.T.S.



DECIDUOUS TREE: DO NOT PRUNE IN FIRST YEAR UNLESS TO REMOVE CROSSED OR BROKEN BRANCHES.

FENCE (ELK TREE PROTECTION).

SET TREE LEVEL WITH UPPER SIDE OF STEEP GRADES.

SET BALLED AND BURLAPPED STOCK PLUMB IN PLANTING PIT WITH ROOT FLARE 2 INCHES ABOVE ADJACENT FINISHED GRADES. REMOVE EXCESS SOIL FROM TOP OF ROOTBALL.

FERTILIZER TABLETS (SEE SPECS)

PLACE 3" OF TRIPLE SHREDDED HARDWOOD BARK MULCH AROUND ALL TREES. BASE OF TRUNK REMAINS EXPOSED. MULCH RING FOR TREES IN LAWN AREAS TO BE 5'-0".

BERM DOWNHILL SIDE ONLY TO CREATE FLAT AREA FOR PLANTING

EXISTING OR FINISHED SLOPE GRADE

BACKFILL WITH PLANTING SOIL MIXTURE PER SPECS

REMOVE CORDS AND PULL BACK BURLAP AND WIRE FROM TOP 1/3 OF BALL

LIMITS OF EXCAVATION

COMPARCTED SUBGRADE. SETTLING OF ROOTBALL SHALL BE CAUSE FOR REJECTION.

NOTES:
1) ANY BROKEN, CRUMBLING, OR OTHERWISE DAMAGED ROOTBALL SHALL BE REJECTED. DO NOT DAMAGE DURING PLANTING.

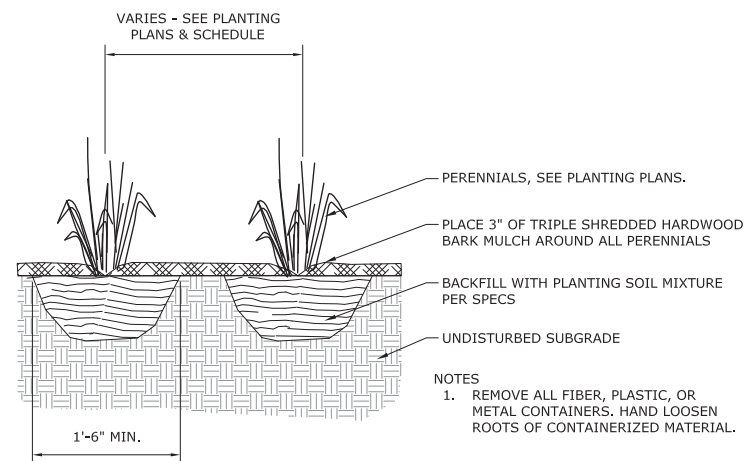
2 TREE PLANTING ON SLOPE
SCALE: N.T.S.

95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

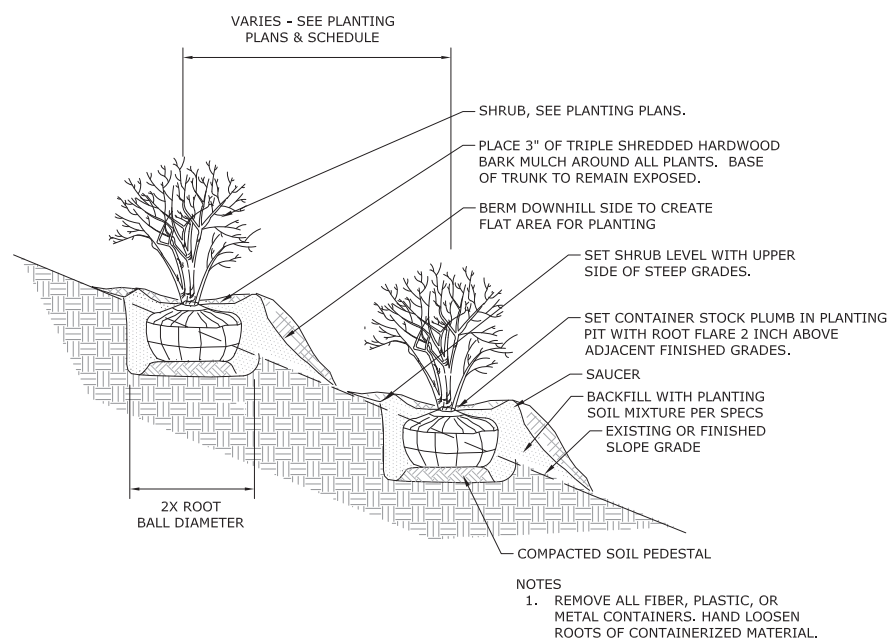
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL
**LANDSCAPE DETAILS
PLANTING**
SHEET 1 OF 2

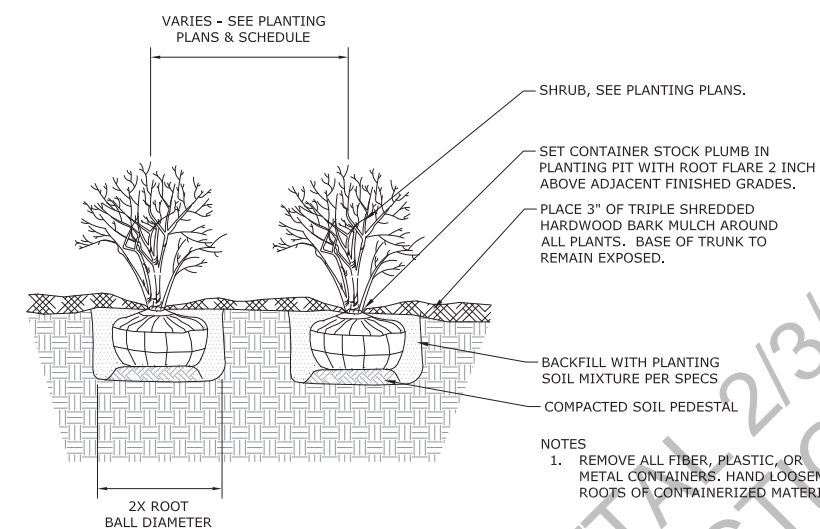
SPECIAL
626



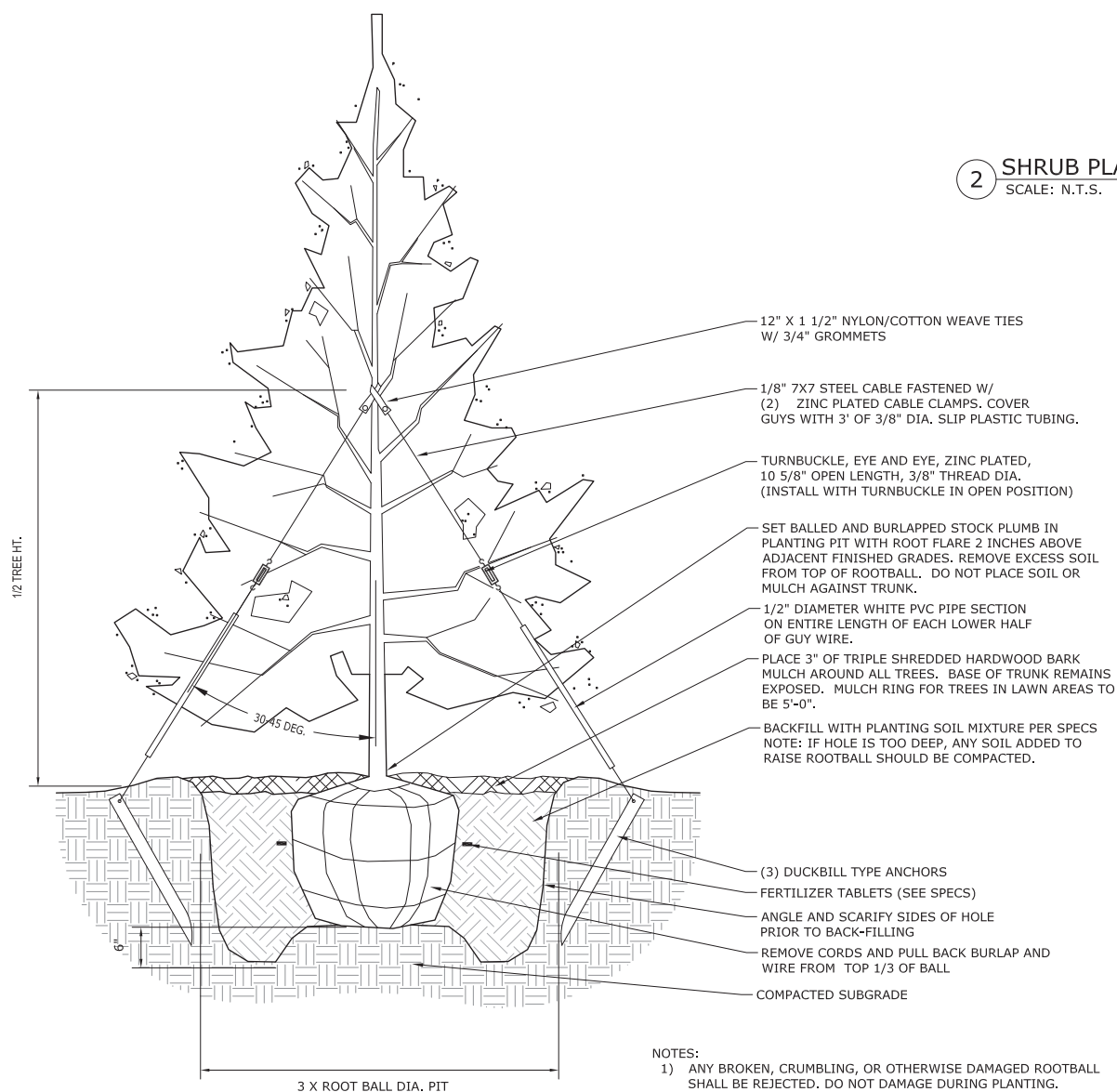
1 PERENNIAL PLANTING
SCALE: N.T.S.



2 SHRUB PLANTING ON SLOPE
SCALE: N.T.S.



3 SHRUB PLANTING
SCALE: N.T.S.



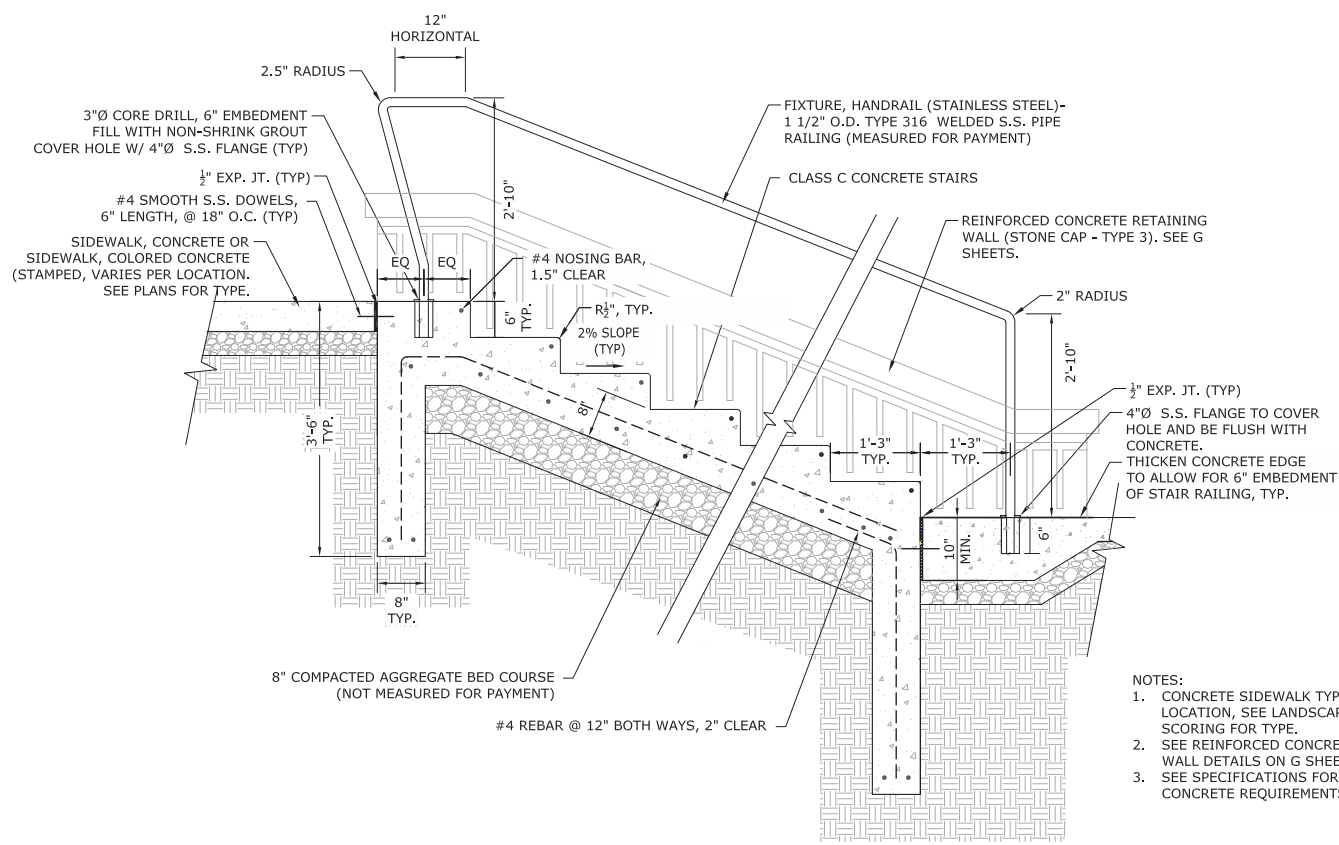
4 EVERGREEN TREE PLANTING
SCALE: N.T.S.

95% DESIGN SUBMITTED 2/13/22
NOT FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

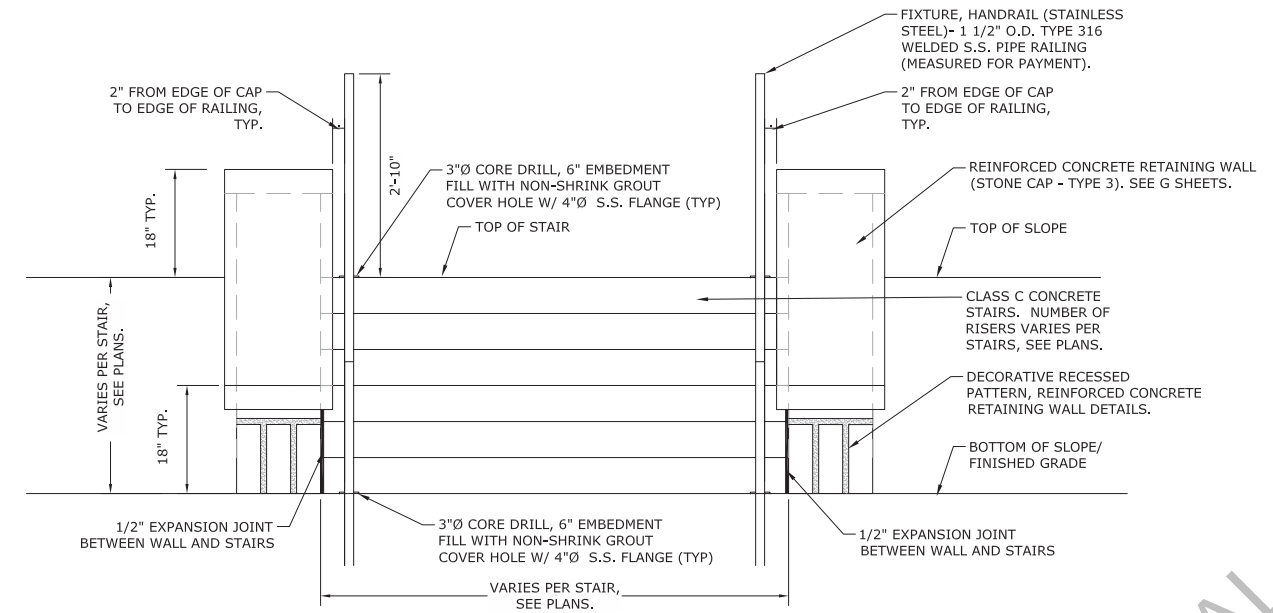
U.S. CUSTOMARY DETAIL
LANDSCAPE DETAILS
PLANTING
SHEET 2 OF 2

SPECIAL
626



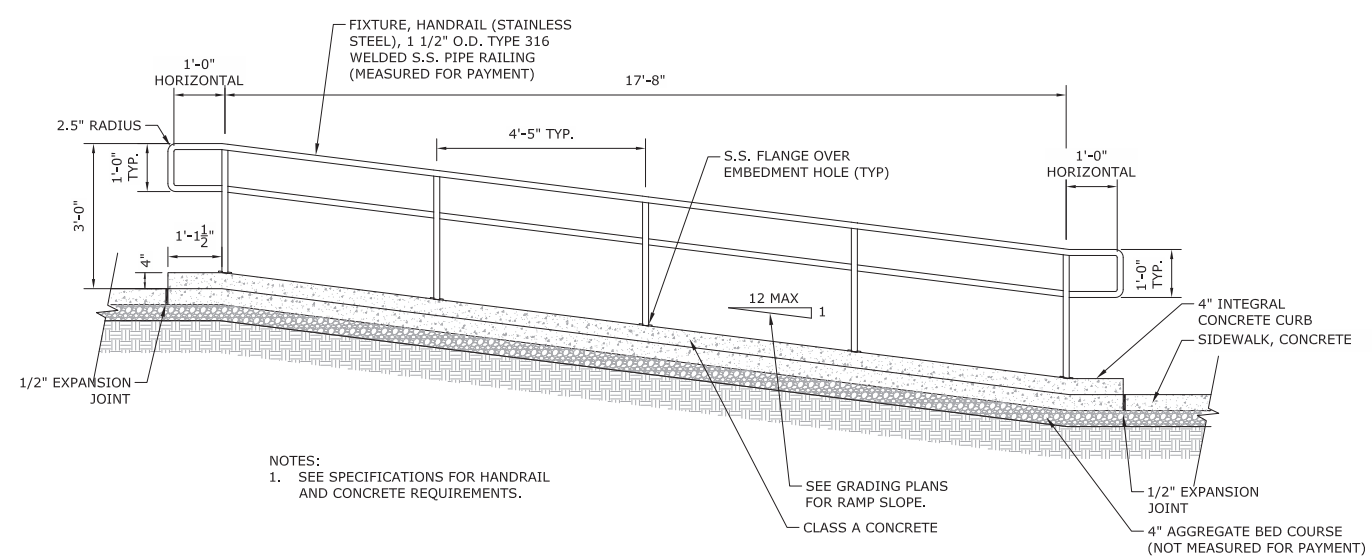
- NOTES:
1. CONCRETE SIDEWALK TYPE VARIES PER LOCATION, SEE LANDSCAPE LAYOUT AND SCORING FOR TYPE.
 2. SEE REINFORCED CONCRETE RETAINING WALL DETAILS ON G SHEETS.
 3. SEE SPECIFICATIONS FOR HANDRAIL AND CONCRETE REQUIREMENTS.

SECTION

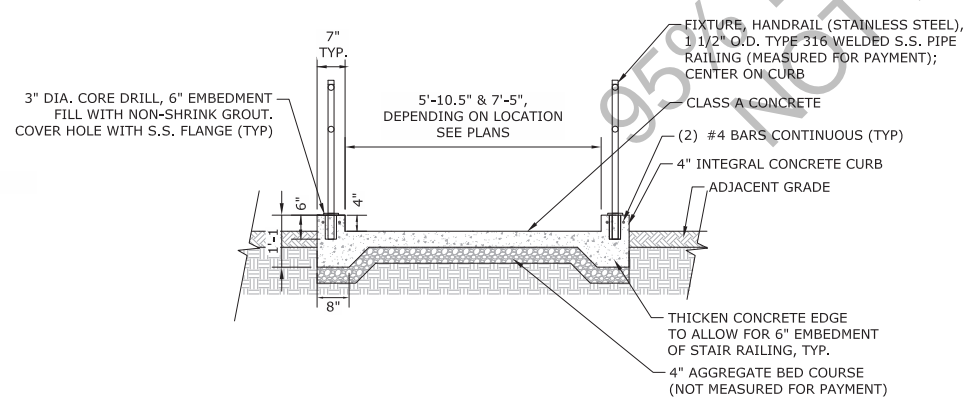


ELEVATION

1 MINOR CONCRETE STRUCTURES (STAIRS) & FIXTURE, HANDRAILS (STAINLESS STEEL)
SCALE: 3/4"=1'-0"



SECTION



CROSS SECTION

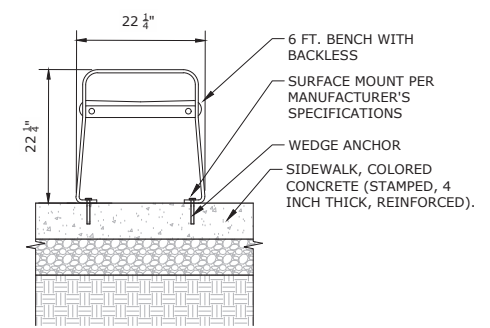
2 MINOR CONCRETE STRUCTURES (ADA RAMP) & FIXTURE, HANDRAILS (STAINLESS STEEL)
SCALE: 1/2"=1'-0"

U.S. DEPARTMENT OF TRANSPORTATION
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CENTRAL FEDERAL LANDS HIGHWAY DIVISION

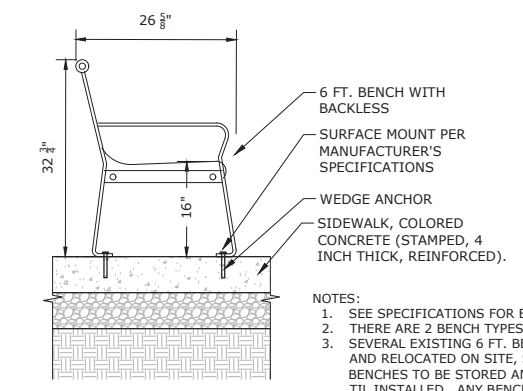
U.S. CUSTOMARY DETAIL
LANDSCAPE DETAILS
MINOR CONC. & HANDRAILS
SHEET 1 OF 1

SPECIAL
601 & 646

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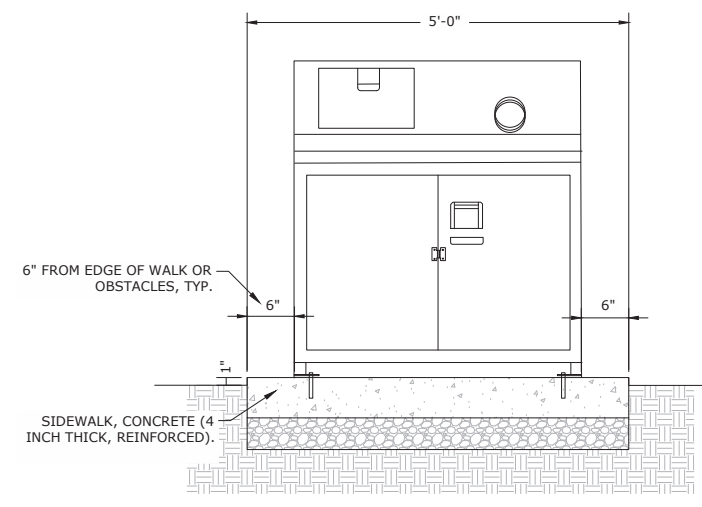
BACKLESS



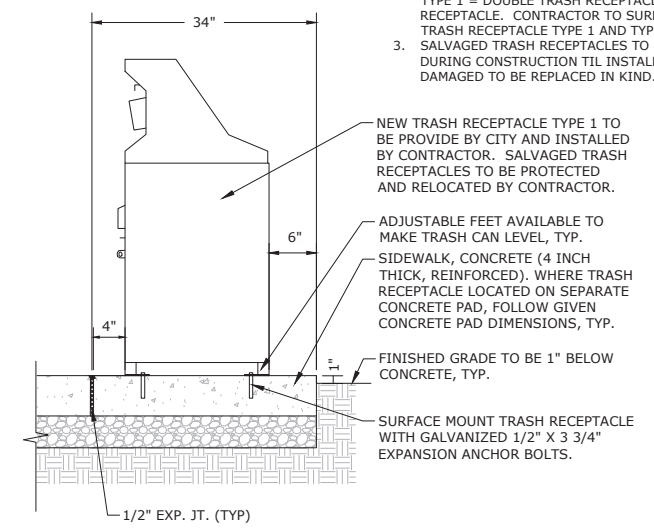
WITH BACK

- NOTES:
1. SEE SPECIFICATIONS FOR BENCH REQUIREMENTS.
 2. THERE ARE 2 BENCH TYPES, SEE PLANS FOR LOCATIONS.
 3. SEVERAL EXISTING 6 FT. BENCHES WITH BACKS TO BE SALVAGED AND RELOCATED ON SITE, SEE PLANS FOR LOCATIONS. SALVAGED BENCHES TO BE STORED AND PROTECTED DURING CONSTRUCTION TIL INSTALLED. ANY BENCHES DAMAGED TO BE REPLACED IN KIND.

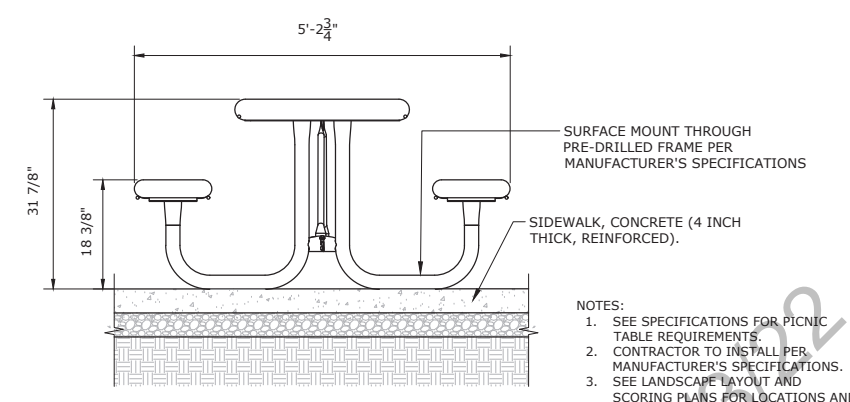
1 FIXTURE, BENCH (6 FOOT, WITH BACK & BACKLESS)
SCALE: N.T.S.



2 FIXTURE, TRASH RECEPTACLE (TYPE 1, OFCI)
SCALE: N.T.S.

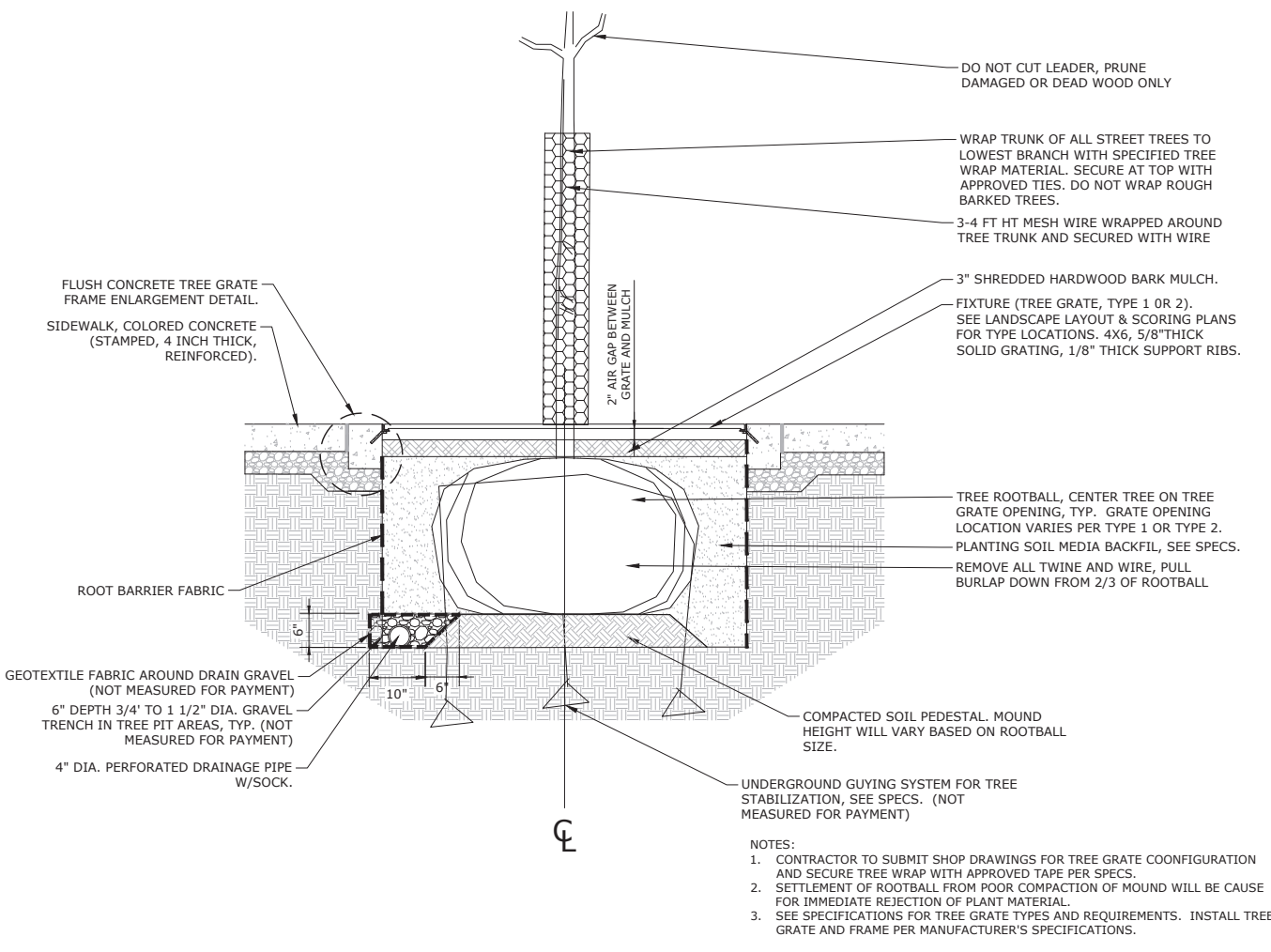


- NOTES:
1. SEE SPECIFICATIONS FOR TRASH RECEPTACLE REQUIREMENTS.
 2. SEVERAL EXISTING TRASH RECEPTACLES TYPE 1 AND TYPE 2 TO BE SALVAGED AND RELOCATED ON SITE, SEE PLANS FOR LOCATIONS. TYPE 1 = DOUBLE TRASH RECEPTACLE AND TYPE 2 = SINGLE TRASH RECEPTACLE. CONTRACTOR TO SURFACE MOUNT ANY SALVAGED TRASH RECEPTACLE TYPE 1 AND TYPE 2 PER DETAIL.
 3. SALVAGED TRASH RECEPTACLES TO BE STORED AND PROTECTED DURING CONSTRUCTION TIL INSTALLED. ANY TRASH RECEPTACLES DAMAGED TO BE REPLACED IN KIND.



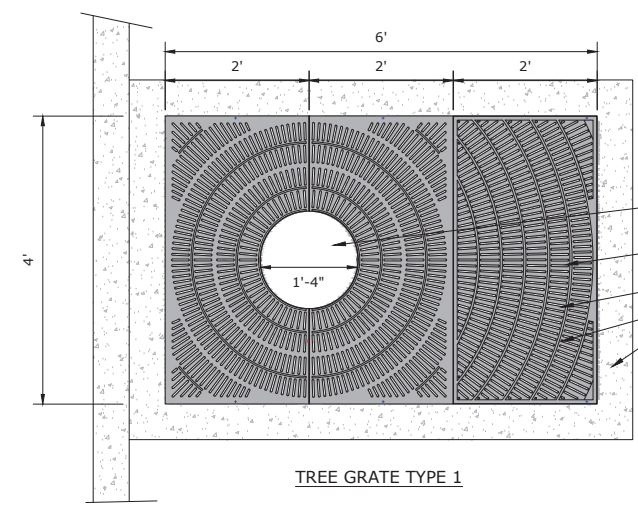
- NOTES:
1. SEE SPECIFICATIONS FOR PICNIC TABLE REQUIREMENTS.
 2. CONTRACTOR TO INSTALL PER MANUFACTURER'S SPECIFICATIONS.
 3. SEE LANDSCAPE LAYOUT AND SCORING PLANS FOR LOCATIONS AND SIZES.

3 FIXTURE, PICNIC TABLE
SCALE: N.T.S.

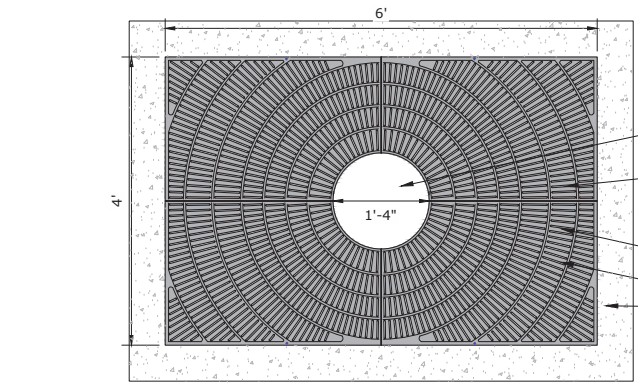


- NOTES:
1. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR TREE GRATE COONFIGURATION AND SECURE TREE WRAP WITH APPROVED TAPE PER SPECS.
 2. SETTLEMENT OF ROOTBALL FROM POOR COMPACTION OF MOUND WILL BE CAUSE FOR IMMEDIATE REJECTION OF PLANT MATERIAL.
 3. SEE SPECIFICATIONS FOR TREE GRATE TYPES AND REQUIREMENTS. INSTALL TREE GRATE AND FRAME PER MANUFACTURER'S SPECIFICATIONS.

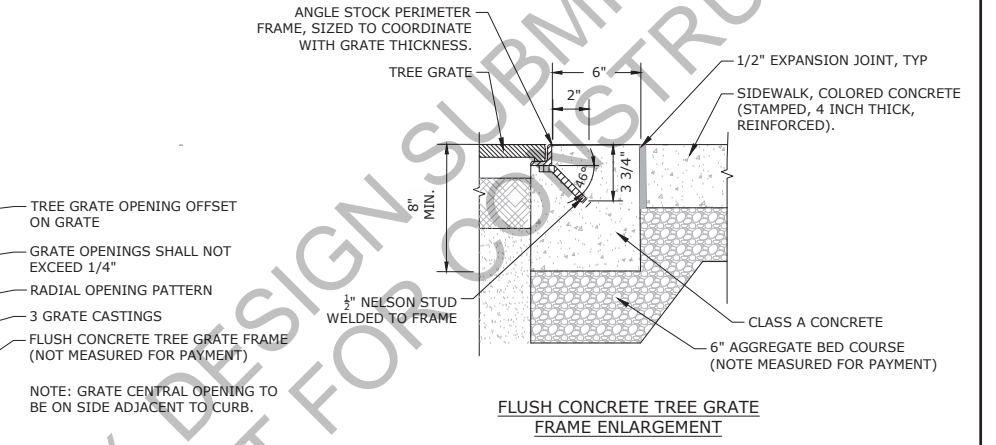
4 FIXTURE (TREE GRATE TYPE 1) & FIXTURE (TREE GRATE TYPE 2)
SCALE: N.T.S.



TREE GRATE TYPE 1



TREE GRATE TYPE 2



FLUSH CONCRETE TREE GRATE FRAME ENLARGEMENT

95% DESIGN SUBMITTAL NOT FOR CONSTRUCTION

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GENERAL IRRIGATION NOTES

1. THE IRRIGATION CONTRACTOR SHALL BECOME THOROUGHLY FAMILIAR WITH THE SPECIFICATIONS FOR THIS AND RELATED WORK PRIOR TO CONSTRUCTION, AND SHALL BECOME FAMILIAR WITH EQUIPMENT MANUFACTURERS' PUBLISHED INSTRUCTIONS AND SPECIFICATIONS.
2. IRRIGATION SYSTEM DESIGN IS BASED ON MINIMUM OPERATING PRESSURE AND MAXIMUM FLOW DEMAND SHOWN ON IRRIGATION DRAWINGS AT THE POINT-OF-CONNECTION. VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION. REPORT DIFFERENCES BETWEEN WATER PRESSURE INDICATED ON DRAWINGS AND ACTUAL PRESSURE READING AT IRRIGATION POINT-OF-CONNECTION TO OWNER'S AUTHORIZED REPRESENTATIVE. IN THE EVENT PRESSURE DIFFERENCES ARE NOT REPORTED PRIOR TO START OF CONSTRUCTION, CONTRACTOR ASSUMES RESPONSIBILITY FOR REVISIONS.
3. MAKE FINAL ELECTRICAL CONNECTION TO AUTOMATIC CONTROLLER. ALL WORK TO BE COMPLETED IN ACCORDANCE WITH APPLICABLE ELECTRIC CODES. ELECTRICAL POWER OUTLET AT THE CONTROLLER WILL BE PROVIDED BY GENERAL CONTRACTOR.
4. THIS PLAN IS DIAGRAMMATIC. PIPING, VALVES, ETC. MAY BE SHOWN OUT OF PLANTED AREAS OR WITHIN PAVED AREAS FOR DESIGN CLARIFICATION ONLY AND SHALL BE INSTALLED IN PLANTING AREAS PER DESIGN INTENT. AVOID CONFLICTS BETWEEN IRRIGATION SYSTEM AND PLANTING AND ARCHITECTURAL FEATURES.
5. AVOID PLACING VALVE BOXES WITHIN ACTIVE AREAS. EXACT CLEAR DISTANCE REQUIRED FROM ACTIVE AREAS SHALL BE VERIFIED PRIOR TO CONSTRUCTION. DO NOT PLACE VALVE BOXES IN LOW AREAS.
6. DO NOT WILLFULLY INSTALL IRRIGATION SYSTEM AS INDICATED ON DRAWINGS WHEN IT IS OBVIOUS IN FIELD THAT OBSTRUCTIONS, GRADE DIFFERENCES OR AREA DIMENSIONS EXIST THAT MIGHT NOT HAVE BEEN CONSIDERED DURING DESIGN. BRING SUCH OBSTRUCTIONS OR DIFFERENCES TO THE ATTENTION OF OWNER'S AUTHORIZED REPRESENTATIVE. IN EVENT THIS NOTIFICATION IS NOT PERFORMED, CONTRACTOR ASSUMES RESPONSIBILITY FOR REVISIONS.
7. INSTALL PIPE MATERIALS AND EQUIPMENT AS SHOWN IN DETAILS. USE TEFLON TAPE ON ALL PVC MALE PIPE THREADS.
8. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME FAMILIAR WITH GRADE DIFFERENCES, AND LOCATION OF WALLS, RETAINING WALLS, ETC. COORDINATE WORK WITH GENERAL CONTRACTOR AND OTHER SUB-CONTRACTORS FOR LOCATION AND INSTALLATION OF PIPE SLEEVES THROUGH WALLS, UNDER ROADWAYS, PAVING, STRUCTURES, ETC.
9. IN ADDITION TO SLEEVES SHOWN ON THE DRAWINGS, CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF PIPE SLEEVING AND SEPARATE CONTROL WIRE SLEEVES OF SUFFICIENT SIZE AT ALL PAVED AREA CROSSINGS.
10. THE FOLLOWING SHOULD BE NOTED REGARDING PIPE SIZING: IF A SECTION OF UNSIZED LATERAL IS LOCATED BETWEEN TWO IDENTICALLY SIZED SECTIONS THE UNSIZED SECTION SHALL BE OF THE SAME SIZE. IN NO CASE SHALL A SECTION OF PIPE BE SMALLER THAN ANY DOWNSTREAM SECTION LOCATED ON THE SAME LATERAL RUN.
11. THE IRRIGATION CONTRACTOR SHALL TURN OVER ALL OPERATING KEYS AND SERVICING TOOLS NEEDED FOR COMPLETE ACCESS, ADJUSTMENT, AND REPAIR OF ALL IRRIGATION SYSTEM COMPONENTS TO THE OWNER, AS STATED IN SPECIFICATIONS.

DRIP IRRIGATION NOTES

1. PROVIDE DRIP TUBING TO ALL PLANT MATERIAL SERVED BY DRIP IRRIGATION SYSTEM IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES. BECOME THOROUGHLY FAMILIAR WITH DRIP TUBING MANUFACTURER'S DESIGN GUIDE AND SPECIFICATIONS.
2. VERIFICATION OF PLANT MATERIAL QUANTITIES AND NUMBER OF EMITTERS PER VALVE STATION IS THE RESPONSIBILITY OF THE CONTRACTOR.

DRIP IRRIGATION NOTES CONINUED

3. DRIP IRRIGATION LINES MAY BE SHOWN WITHIN HARDSCAPE FOR CLARITY. INSTALL ALL PIPING IN LANDSCAPE PLANTING AREAS PER DESIGN INTENT.
4. INSTALL ALL DRIP TUBE AND PIPE WITHIN PVC SLEEVE WHEN ROUTING UNDER PAVED SURFACES OR THROUGH PLANTER WALLS.
5. REFER TO PLANTING LEGEND FOR PLANT MATERIAL NAMES, ABBREVIATIONS, SPECIFIC SIZES, ON-CENTER SPACING AND ADDITIONAL INFORMATION.
6. PROVIDE ONE (1) FLUSH/TEST-VALVE ASSEMBLY IN EACH PLANTER OR DRIP SECTION AS RECOMMENDED BY TUBING MANUFACTURER. LOCATE FLUSH/TEST-VALVE ASSEMBLY BOXES ADJACENT TO PLANTING BORDERS OR PAVING EDGES FOR MAINTENANCE CONVENIENCE IF POSSIBLE.
7. THE MAXIMUM VELOCITY THROUGH LATERAL PIPE & DRIPLINE MUST NOT EXCEED 5 FEET PER SECOND. DUE TO THE SCHEMATIC NATURE OF THE DRIP IRRIGATION LAYOUT THE CONTRACTOR IS RESPONSIBLE TO VERIFY FLOWS THROUGH ALL DRIP ZONE LATERALS AND VALVES.
8. A SINGLE DRIPLINE TUBE, OR COMBINATION OF SEVERAL DRIPLINE TUBES ORIGINATING FROM ONE DRIPLINE TUBE, MUST NOT EXCEED THE MANUFACTURER'S SPECIFIED LENGTH FOR THE SPECIFIC DRIPLINE MODEL USED.
9. THOROUGHLY FLUSH LATERALS BEFORE MAKING CONNECTIONS. FLUSH DRIPLINE TUBING DURING CONNECTION OF FITTINGS. FLUSH THROUGH FLUSH VALVE AFTER MAKING CONNECTIONS, FOLLOWING MANUFACTURER'S RECOMMENDATIONS.
10. EXHAUST HEADERS MADE OF DRIPLINE MAY BE SUBSTITUTED FOR PVC HEADERS PROVIDED THE WATER DEMAND SERVED BY THE HEADER IS LESS THAN 5 GPM.
11. AFTER INSTALLATION OBSERVE AND RECORD OPERATING PRESSURE AT EACH FLUSH/TEST VALVE.
12. FOR ALL SUBSURFACE DRIP APPLICATION, USE ONLY DRIPLINE WITH EMITTERS DESIGNED SPECIFICALLY FOR BELOW GRADE INSTALLATION.

SPRINKLER IRRIGATION NOTES

1. INSTALL POP-UP TYPE SPRINKLERS IN PLANTING AREAS WITH THE TOP OF SPRINKLER AT LEAST 1/4" LOWER THAN ADJACENT SIDEWALK OR CURB.
2. SET SPRINKLERS FLUSH WITH, AND PERPENDICULAR TO, FINISH GRADE OF AREA TO BE IRRIGATED UNLESS OTHERWISE INDICATED ON DRAWINGS.
3. WHEN VERTICAL OBSTRUCTIONS (FIRE HYDRANTS, TREES, LIGHTS, ETC.) INTERFERE WITH SPRAY PATTERN OF SPRINKLER HEADS SO AS TO PREVENT PROPER COVERAGE, ADJUST SPRINKLER SYSTEM BY INSTALLING A SPRINKLER HEAD ON EACH SIDE OF OBSTRUCTION AND ADJUST ARC SO AS TO PROVIDE PROPER COVERAGE. PERFORM ADJUSTMENTS AT NO COST TO OWNERS AUTHORIZED REPRESENTATIVE.
4. FLUSH AND ADJUST SPRINKLERS FOR OPTIMUM PERFORMANCE AND TO PREVENT OVER-SPRAY ONTO WALKS, ROADWAYS, AND BUILDINGS. THIS INCLUDES SELECTING THE BEST DEGREE OF ARC TO FIT SITE CONDITIONS AND TO ADJUST PRESSURE REGULATOR AND FLOW CONTROL AT EACH VALVE TO OBTAIN OPTIMUM PRESSURE FOR EACH SYSTEM. SEE IRRIGATION SCHEDULE.
5. DO NOT ADJUST ROTOR HEADS TO LESS THAN MAXIMUM THROW UNLESS SUCH ADJUSTMENT IS NEEDED TO AVOID OVERSPRAY ONTO BUILDINGS OR HARDSCAPE.
6. INSTALL SPRINKLERS AS SHOWN ON DETAILS. USE TEFLON TAPE ON PVC MALE PIPE THREADS.

HYDRAULIC CALCS CRITICAL ANALYSIS POC 1

Generated:2021-11-21

P.O.C. NUMBER: 01
Water Source Information:

FLOW AVAILABLE
Point of Connection Size: 1-1/2"
Flow Available: 40.32 GPM

PRESSURE AVAILABLE
Static Pressure at POC: 100.00 PSI
Pressure Available: 100.00 PSI

DESIGN ANALYSIS
Maximum Station Flow: 35.47 GPM
Flow Available at POC: 40.32 GPM
Residual Flow Available: 4.85 GPM

Critical Station: 1-10
Design Pressure: 40.00 PSI
Friction Loss: 1.3 PSI
Fittings Loss: 0.14 PSI
Elevation Loss: 0.00 PSI
Loss through Valve: 7.11 PSI

Pressure Req. at Critical Station: 48.55 PSI
Loss for Fittings: 0.00 PSI
Loss for Main Line: 0.04 PSI
Loss for POC to Valve Elevation: 1.73 PSI
Loss for Backflow: 12.00 PSI
Loss for Master Valve: 0.25 PSI
Critical Station Pressure at POC: 62.57 PSI
Pressure Available: 100.00 PSI
Residual Pressure Available: 37.43 PSI

HYDRAULIC CALCS CRITICAL ANALYSIS POC 2

Generated:2021-11-21

P.O.C. NUMBER: 02
Loss for POC to Valve Elevation: 0.00 PSI
Loss for Backflow: 12.00 PSI
Loss for Master Valve: 0.24 PSI
Critical Station Pressure at POC: 63.08 PSI
Pressure Available: 100.00 PSI
Residual Pressure Available: 36.92 PSI

Loss through Valve: Loss for Main Line: 0.06 PSI 6.93 PSI
Pressure Req. at Critical Station: 50.77 PSI Loss for Fittings: 0.01 PSI
Water Source Information:

FLOW AVAILABLE
Point of Connection Size: 1-1/2"
Flow Available: 38.17 GPM

PRESSURE AVAILABLE
Static Pressure at POC: 100.00 PSI
Pressure Available: 100.00 PSI

DESIGN ANALYSIS
Maximum Station Flow: 37.42 GPM
Flow Available at POC: 38.17 GPM
Residual Flow Available: 0.75 GPM

Critical Station: 2-6
Design Pressure: 40.00 PSI
Friction Loss: 1.53 PSI
Fittings Loss: 0.15 PSI
Elevation Loss: 2.17 PSI

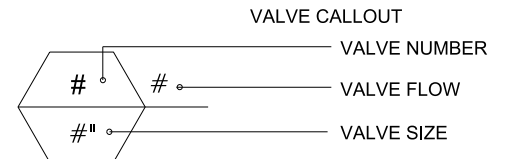
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CENTRAL FEDERAL LANDS HIGHWAY DIVISION

IRRIGATION PLAN SCHEDULE & NOTES

SHEET 1 OF 15

POC 1 IRRIGATION EQUIPMENT SCHEDULE

SYMBOL	MANUFACTURER/MODEL	QTY	PSI	SYMBOL	MANUFACTURER/MODEL	QTY
	RAIN BIRD RD180 SPRINKLERS, 6" & 12" POP-UP 30 PSI PRESSURE, REGULATION, CHECK VALVE, FLOW SHIELD:				RAIN BIRD PEB-PRS-D REMOTE CONTROL VALVES, GLOBE CONFIGURATION. WITH PRESSURE REGULATOR MODULE.	14
	RAIN BIRD RD-06-S-P30-F-U SQ SERIES	66	30		RAIN BIRD 44-LRC 1" BRASS QUICK-COUPLING VALVE, STAINLESS STEEL SPRING, LOCKING RUBBER COVER, AND 2-PIECE BODY.	3
	RAIN BIRD RD-06-S-P30-F-U 15 STRIP SERIES	4	30		MATCO-NORCA 10RSN 2" TO 4" CAST IRON GATE ISOLATION VALVE, THREADED ENDS. RESILIENT WEDGE WITH EPOXY COATING AND OPERATING NUT. SAME SIZE AS MAINLINE PIPE.	4
	RAIN BIRD RD-06-S-P30-F-U U8 SERIES	1	30		HYDRO POINT WTF3-150-PD-NC 1.5" WEATHERTRAK FLOW3 HYDROMETER WITH POWER SUPPLY.	1
	RAIN BIRD RD-06-S-P30-F-U U10 SERIES	16	30		AIR RELIEF VALVE	1
	RAIN BIRD RD-06-S-P30-F-U U12 SERIES	8	30		DRAIN VALVE	1
	RAIN BIRD RD-06-S-P30-F-U U15 SERIES	4	30		PRESSURE REDUCING VALVE PRESSURE DOWNSTREAM REQUIRED IS 554.67 PSI PRESSURE REDUCTION FROM 150 PSI TO 100 PSI	1
	RAIN BIRD RD-06-S-P30-F-ADJ ARC ADJ	102	30		ZURN 375 1-1/2" REDUCED PRESSURE PRINCIPLE ASSEMBLY, 1-1/2"	1
	RAIN BIRD RD-12-S-P30-F-U HE-VAN SERIES	25	30		BASELINE BL-5315 SENSOR SOIL MOISTURE SENSOR	1
	RAIN BIRD RD-12-S-P30-F 5 SERIES MPR	6	30		BASELINE BL-5315 SENSOR SOIL MOISTURE SENSOR	1
	RAIN BIRD RD-12-S-P30-F 8 SERIES MPR	4	30		BASELINE BL-5315 SENSOR SOIL MOISTURE SENSOR	1
	RAIN BIRD RD-12-S-P30-F 10 SERIES MPR	6	30		BASELINE BL-5315 SENSOR SOIL MOISTURE SENSOR	1
	RAIN BIRD RD-12-S-P30-F ADJ	12	30		BASELINE BL-SUBSTN-P-R24 16 GAUGE, 304-GRADE STAINLESS STEEL PEDESTAL ENCLOSURE.	1
	RAIN BIRD RD-12-S-P30-F HE-VAN SERIES	6	30		IRRIGATION LATERAL LINE: POLYETHYLENE PIPE SDR-7	4,420 L.F.
	HUNTER MP ROTATOR MULTI-STREAM SPRINKLER, 6" & 12" POP-UP, PRS 40 BODY, PRESSURE REGULATION, CHECK VALVE, FLOGUARD:				IRRIGATION LATERAL LINE: PVC SCHEDULE 40	560 L.F.
	HUNTER MP CORNER PROS-06-PRS40-CV-F, 8' - 15'	40	40		IRRIGATION MAINLINE: PVC SCHEDULE 40	460 L.F.
	HUNTER MP1000 PROS-06-PRS40-CV-F, 8' - 15'	40	40		PIPE SLEEVE: PVC CLASS 200 SDR 21	375 L.F.
	HUNTER MP2000 PROS-06-PRS40-CV-F, 13' - 21'	40	40			
	HUNTER MP1000 PROS-12-PRS40-CV, 8' - 15'	40	40			
	HUNTER MP2000 PROS-12-PRS40-CV, 13' - 21'	40	40			
	HUNTER MP3000 PROS-12-PRS40-CV, 22' - 30'	40	40			
	RAIN BIRD XCZ-100-PRB-COM 2 DRIP CONTROL KIT, 1" BALL VALVE, 1" PESB VALVE AND 1" PRESSURE REGULATING 40PSI BASKET FILTER. 0.3GPM TO 20GPM.					
	FLUSH VALVE 1/2" MANUAL FLUSH VALVE, BARBED INSERT. INSTALL IN 10" BOX.	8				
	INDICATES AREA TO RECEIVE DRIPLINE RAIN BIRD XFS-06-12 XFS SUB-SURFACE PRESSURE COMPENSATING DRIPLINE W/COPPER SHIELD TECHNOLOGY. 0.6 GPH EMITTERS AT 12" O.C. LATERALS SPACED AT 18" APART, INSERT FITTINGS BY TUBING MANUFACTURER.	1,830 L.F.				



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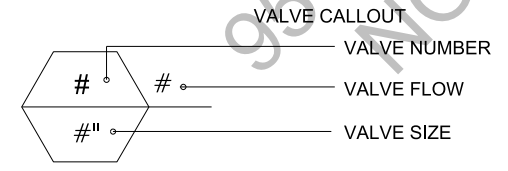
**IRRIGATION PLAN
SCHEDULE & NOTES**

SHEET 2 OF 15

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POC 2 IRRIGATION EQUIPMENT SCHEDULE

SYMBOL	MANUFACTURER/MODEL	QTY	PSI	SYMBOL	MANUFACTURER/MODEL	QTY
	RAIN BIRD RD1800 SPRINKLERS, 6" & 12" POP-UP, 30 PSI PRESSURE REGULATION, CHECK VALVE, FLOW SHIELD:				MATCO-NORCA 10RSN 2" TO 4" CAST IRON GATE ISOLATION VALVE, THREADED ENDS, RESILIENT WEDGE WITH EPOXY COATING AND OPERATING NUT. SAME SIZE AS MAINLINE PIPE.	4
	RAIN BIRD RD-06-S-P30-F-U SQ SERIES	78	30		HYDRO POINT WTF3-150-PD-NC 1.5" WEATHERTRAK FLOW3 HYDROMETER WITH POWER SUPPLY.	1
	RAIN BIRD RD-12-S-P30-F-U HE-VAN SERIES	95	30		AIR RELIEF VALVE	1
	RAIN BIRD RD-12-S-P30-F 15 STRIP SERIES	3	30		PRESSURE REDUCING VALVE PRESSURE DOWNSTREAM REQUIRED IS 62.87 PSI PRESSURE REDUCTION FROM 150 PSI TO 100PSI	1
	RAIN BIRD RD-12-S-P30-F ADJ	15	30		ZURN 375 1-1/2" REDUCED PRESSURE PRINCIPLE ASSEMBLY. 1-1/2"	1
	RAIN BIRD RWS-M-B-C-SOCK 1401 MINI ROOT WATERING SYSTEM WITH 4.0" DIAMETER X 18.0" LONG WITH LOCKING GRATE, SEMI-RIGID MESH TUBE AND RAIN BIRD 1401 0.25 GPM OR 1402 0.5 GPM BUBBLER AS INDICATED, CHECK VALVE, SAND SOCK.	12	30		BASELINE BL-5315 SENSOR SOIL MOISTURE SENSOR	1
	RAIN BIRD RWS-M-B-C-SOCK 1402				BASELINE BL-5315 SENSOR SOIL MOISTURE SENSOR	1
	RAIN BIRD XZC-100-PRB-COM DRIP CONTROL KIT, 1" BALL VALVE, 1" PESB VALVE AND 1" PRESSURE REGULATING 40PSI BASKET FILTER. 0.3GPM TO 20GPM.	1			BASELINE BL-5315 SENSOR SOIL MOISTURE SENSOR	1
	FLUSH VALVE 1/2" MANUAL FLUSH VALVE, BARBED INSERT. INSTALL IN 10" BOX.	9			BASELINE BL-SUBSTN-P-R24 16 GAUGE, 304-GRADE STAINLESS STEEL PEDESTAL ENCLOSURE.	1
	INDICATES AREA TO RECEIVE DRIPLINE RAIN BIRD XFS-06-12 XFS SUB-SURFACE PRESSURE COMPENSATING DRIPLINE W/COPPER SHIELD TECHNOLOGY. 0.6 GPH EMITTERS AT 12" O.C. LATERALS SPACED AT 18" APART, INSERT FITTINGS BY TUBING MANUFACTURER.	950 L.F.			IRRIGATION LATERAL LINE: POLYETHYLENE PIPE SDR-7	2,900 L.F.
	RAIN BIRD PEB-PRS-D REMOTE CONTROL VALVES, GLOBE CONFIGURATION. WITH PRESSURE REGULATOR MODULE.	8			IRRIGATION LATERAL LINE: PVC SCHEDULE 40	160 L.F.
	RAIN BIRD 44-LRC 1" BRASS QUICK-COUPLING VALVE, STAINLESS STEEL SPRING, LOCKING RUBBER COVER, AND 2-PIECE BODY.	5			IRRIGATION MAINLINE: PVC SCHEDULE 40	500 L.F.
					PIPE SLEEVE: PVC CLASS 200 SDR 21	1040 L.F.



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BALDWIN EX. IRRIGATION SYSTEM REPLACEMENT COMPONENTS

SYMBOL	MANUFACTURER/MODEL	QTY	PSI	SYMBOL	MANUFACTURER/MODEL	QTY
	RAIN BIRD RD-06-S-P30-F-U SQ SERIES	26	30		IRRIGATION LATERAL LINE: POLYETHYLENE PIPE SDR-7	1340 L.F.
	RAIN BIRD RD-06-S-P30-F-U HE-VAN SERIES	13	30		IRRIGATION LATERAL LINE: PVC SCHEDULE 40	75 L.F.
	HUNTER MP CORNER PROS-06-PRS40-CV-F, 8 - 15'	2	30		IRRIGATION MAINLINE: PVC SCHEDULE 40	325 L.F.
	HUNTER MP STRIP PROS-06-PRS40-CV-F, 5X15', 5 X 30'	3	40		PIPE SLEEVE: PVC CLASS 200 SDR 21	40 L.F.
	HUNTER MP1000 PROS-06-PRS40-CV-F, 8' - 15'	7	40			
	HUNTER MP2000 PROS-06-PRS40-CV-F, 13' - 21'	14	40			
	HUNTER MP2000 PROS-12-PRS40-CV, 13' - 21'	12	40			
	RAIN BIRD XCZ-100-PRB-COM DRIP CONTROL KIT, 1" BALL VALVE, 1" PESB VALVE AND 1" PRESSURE REGULATING 40PSI BASKET FILTER. 0.3GPM TO 20GPM.	1				
	FLUSH VALVE 1/2" MANUAL FLUSH VALVE, BARBED INSERT. INSTALL IN 10" BOX.	3				
	AREA TO RECEIVE DRIPLINE RAIN BIRD XFS-06-12 XFS SUB-SURFACE PRESSURE COMPENSATING DRIPLINE W/COPPER SHIELD TECHNOLOGY. 0.6 GPH EMITTERS AT 12" O.C. LATERALS SPACED AT 18" APART, INSERT FITTINGS BY TUBING MANUFACTURER.	431.6 L.F.				
	RAIN BIRD PEB-PRS-D REMOTE CONTROL VALVES, GLOBE CONFIGURATION. WITH PRESSURE REGULATOR MODULE.	3				

ELKHORN AVE EX. IRRIGATION SYSTEM REPLACEMENT COMPONENTS

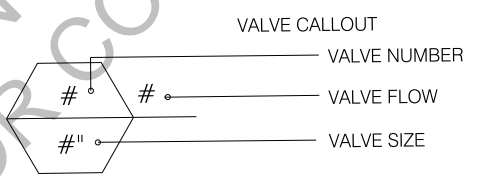
SYMBOL	MANUFACTURER/MODEL	QTY	PSI
	RAIN BIRD RD-06-S-P30-F-U SQ SERIES	8	30
	RAIN BIRD RD-12-S-P30-F ADJ	16	30
	FLUSH VALVE 1/2" MANUAL FLUSH VALVE, BARBED INSERT. INSTALL IN 10" BOX.	4	
	AREA TO RECEIVE DRIPLINE RAIN BIRD XFS-06-12 XFS SUB-SURFACE PRESSURE COMPENSATING DRIPLINE W/COPPER SHIELD TECHNOLOGY. 0.6 GPH EMITTERS AT 12" O.C. LATERALS SPACED AT 18" APART, INSERT FITTINGS BY TUBING MANUFACTURER.	399.0 L.F.	
	IRRIGATION LATERAL LINE: POLYETHYLENE PIPE SDR-7	670 L.F.	
	PIPE SLEEVE: PVC CLASS 200 SDR 21	385 L.F.	

NOTE:

POC 1 VALVE SCHEDULE

NUMBER	MODEL	SIZE	TYPE	GPM	PSI	PRECIP	POC 1 SOIL MOISTURE SENSORS
1-1	RAIN BIRD XCZ-100-PRB-COM	1"	AREA FOR DRIPLINE	8.58	47.51	0.64 in/h	
1-2	RAIN BIRD PEB-PRS-D	1"	SHRUB ROTARY	10.48	42.76	0.51 in/h	
1-3	RAIN BIRD PEB-PRS-D	1-1/2"	SHRUB SPRAY	35.47	35.71	1.78 in/h	
1-4	RAIN BIRD PEB-PRS-D	1"	TURF SPRAY	17.60	35.63	0.63 in/h	
1-5	RAIN BIRD PEB-PRS-D	1-1/2"	TURF SPRAY	31.32	34.80	2.07 in/h	
1-6	RAIN BIRD PEB-PRS-D	1-1/2"	TURF SPRAY	32.53	35.82	3.05 in/h	
1-7	RAIN BIRD PEB-PRS-D	1"	TURF SPRAY	15.20	34.73	0.67 in/h	
1-8	RAIN BIRD PEB-PRS-D	1"	SHRUB ROTARY	13.09	43.66	0.60 in/h	
1-9	RAIN BIRD PEB-PRS-D	1"	TURF ROTARY	21.23	44.78	0.40 in/h	
1-10	RAIN BIRD XCZ-100-PRB-COM	1"	AREA FOR DRIPLINE	9.71	48.54	0.64 in/h	
1-11	RAIN BIRD PEB-PRS-D	1"	TURF SPRAY	12.31	43.05	0.38 in/h	
1-12	RAIN BIRD PEB-PRS-D	1-1/2"	TURF SPRAY	31.75	34.19	3.23 in/h	
1-13	RAIN BIRD PEB-PRS-D	1-1/2"	TURF SPRAY	27.89	35.67	2.10 in/h	
1-14	RAIN BIRD PEB-PRS-D	1"	SHRUB SPRAY	14.51	33.81	1.76 in/h	
1-15	RAIN BIRD PEB-PRS-D	1"	TURF SPRAY	4.80	31.81	0.65 in/h	
1-16	RAIN BIRD PEB-PRS-D	1"	SHRUB ROTARY	7.18	41.92	0.47 in/h	

- SHRUBS/ GROUND COVER, DRIPLINE
- TURF LOWER ELEVATION
- NATIVE SEED HIGHER ELEVATION
- TURF HIGHER ELEVATION NEAR PAVEMENT



POC 2 VALVE SCHEDULE

NUMBER	MODEL	SIZE	TYPE	GPM	PSI	PRECIP	POC 1 SOIL MOISTURE SENSORS
2-1	RAIN BIRD PEB-PRS-D	1"	SHRUB SPRAY	17.19	34.81	1.59 in/h	
2-2	RAIN BIRD PEB-PRS-D	1-1/2"	SHRUB SPRAY	37.42	35.24	1.57 in/h	
2-3	RAIN BIRD PEB-PRS-D	1"	TURF SPRAY	16.80	36.14	0.68 in/h	
2-4	RAIN BIRD PEB-PRS-D	1"	SHRUB SPRAY	18.92	33.64	2.20 in/h	
2-5	RAIN BIRD PEB-PRS-D	1"	SHRUB SPRAY	9.38	32.15	1.37 in/h	
2-6	RAIN BIRD XCZ-100-PRB-COM	1"	AREA FOR DRIPLINE	9.44	48.70	0.64 in/h	
2-7	RAIN BIRD PEB-PRS-D	1"	TURF SPRAY	1.60	31.46	0.70 in/h	
2-8	RAIN BIRD PEB-PRS-D	1"	BUBBLER	3.00	32.05	0.88 in/h	
2-9	RAIN BIRD PEB-PRS-D	1"	SHRUB SPRAY	16.51	34.06	2.24 in/h	

- NATIVE SEED SLOPE NEAR RIVER
- NATIVE SEED NEAR PAVEMENT
- SHRUBS/GROUND COVER, DRIPLINE

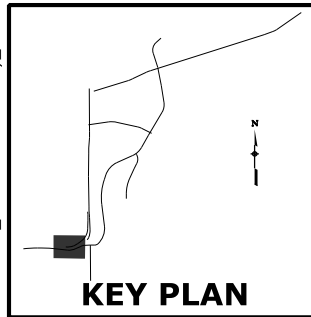
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

IRRIGATION PLAN SCHEDULE & NOTES

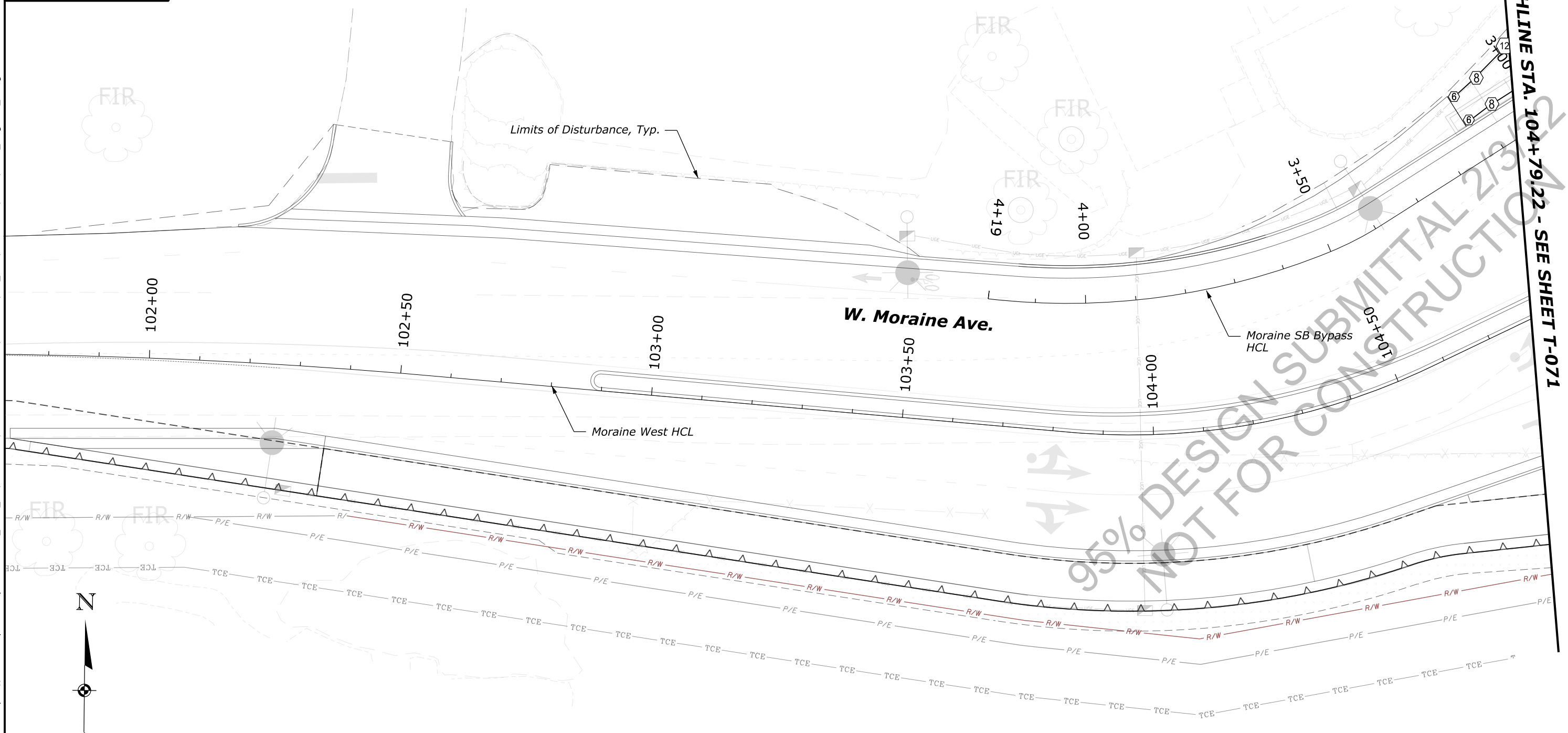
SHEET 4 OF 15

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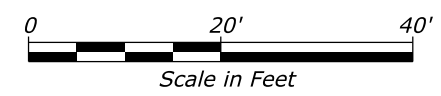


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95% DESIGN SUBMITTAL 2/13/22
 NOT FOR CONSTRUCTION

MATCHLINE STA. 104+79.22 - SEE SHEET T-071



1. SEE SHEETS T-066 TO T-069 FOR GENERAL NOTES AND IRRIGATION SCHEDULE.
2. SEE SHEETS T-081 TO T-084 FOR IRRIGATION DETAILS.

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

IRRIGATION PLANS

SHEET 5 OF 15

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-071

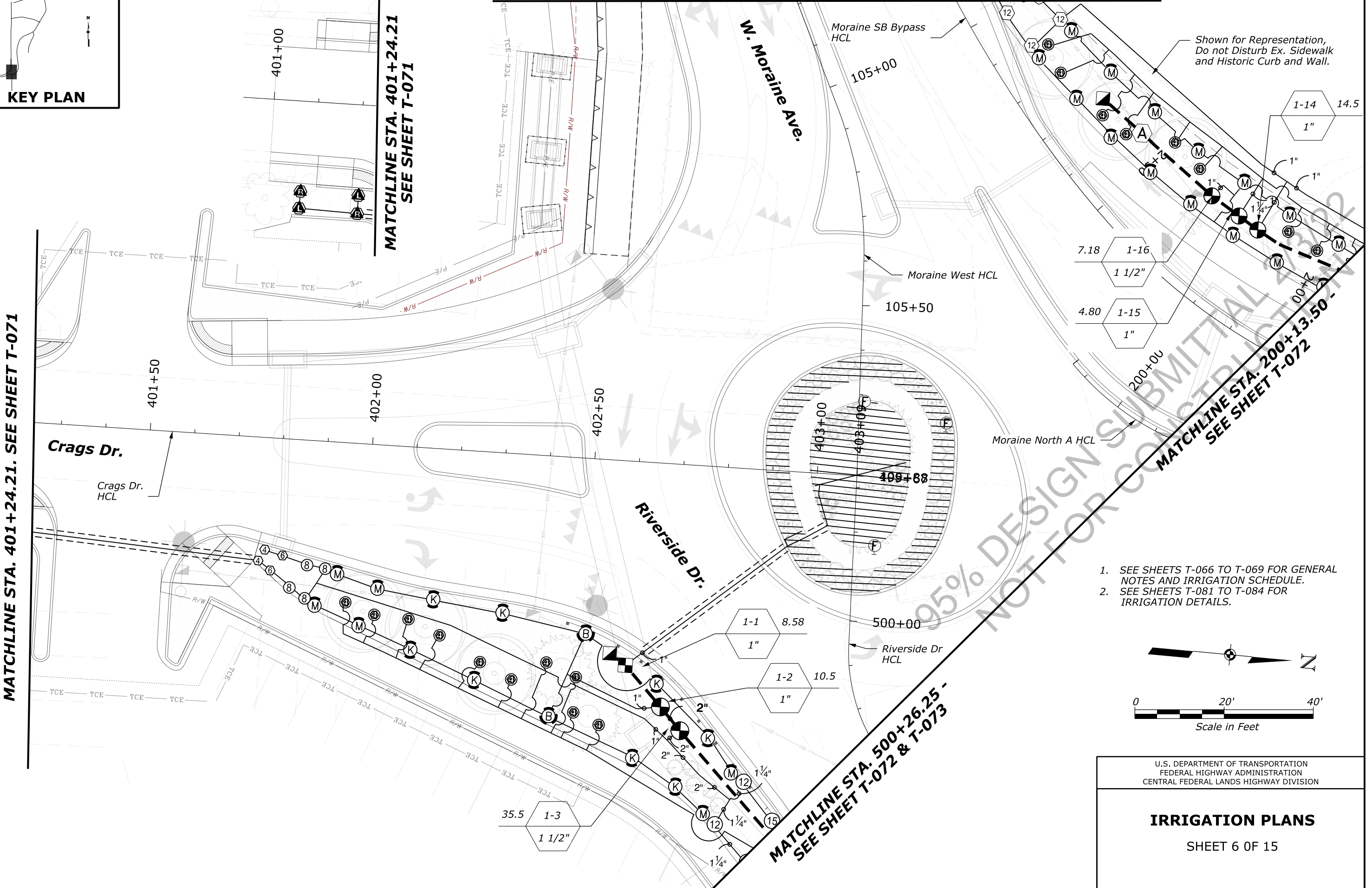
MATCHLINE STA. 104+79.22 - SEE SHEET T-070

KEY PLAN

MATCHLINE STA. 401+24.21. SEE SHEET T-071

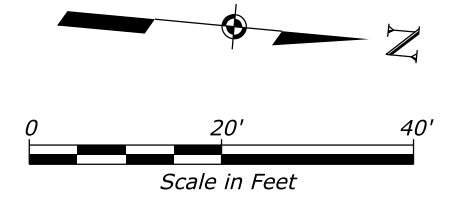
MATCHLINE STA. 401+24.21
SEE SHEET T-071

Shown for Representation,
Do not Disturb Ex. Sidewalk
and Historic Curb and Wall.



MATCHLINE STA. 500+26.25 -
SEE SHEET T-072 & T-073

1. SEE SHEETS T-066 TO T-069 FOR GENERAL NOTES AND IRRIGATION SCHEDULE.
2. SEE SHEETS T-081 TO T-084 FOR IRRIGATION DETAILS.

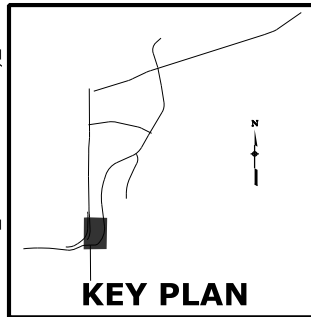


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CENTRAL FEDERAL LANDS HIGHWAY DIVISION

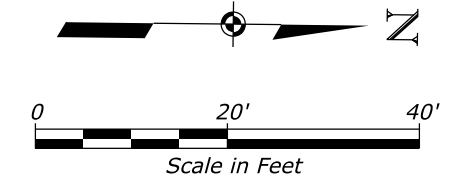
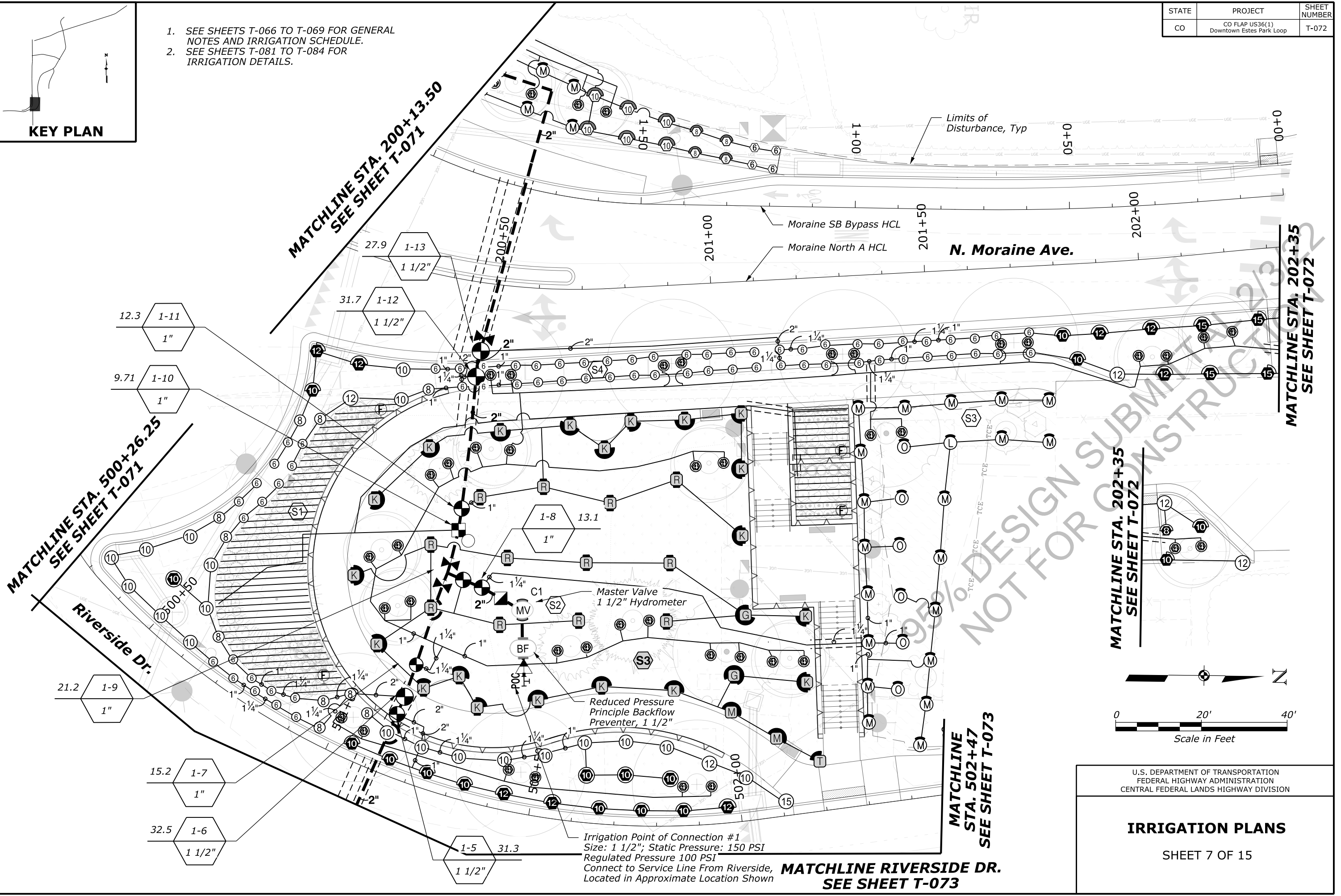
IRRIGATION PLANS

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-072

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- SEE SHEETS T-081 TO T-084 FOR IRRIGATION DETAILS.



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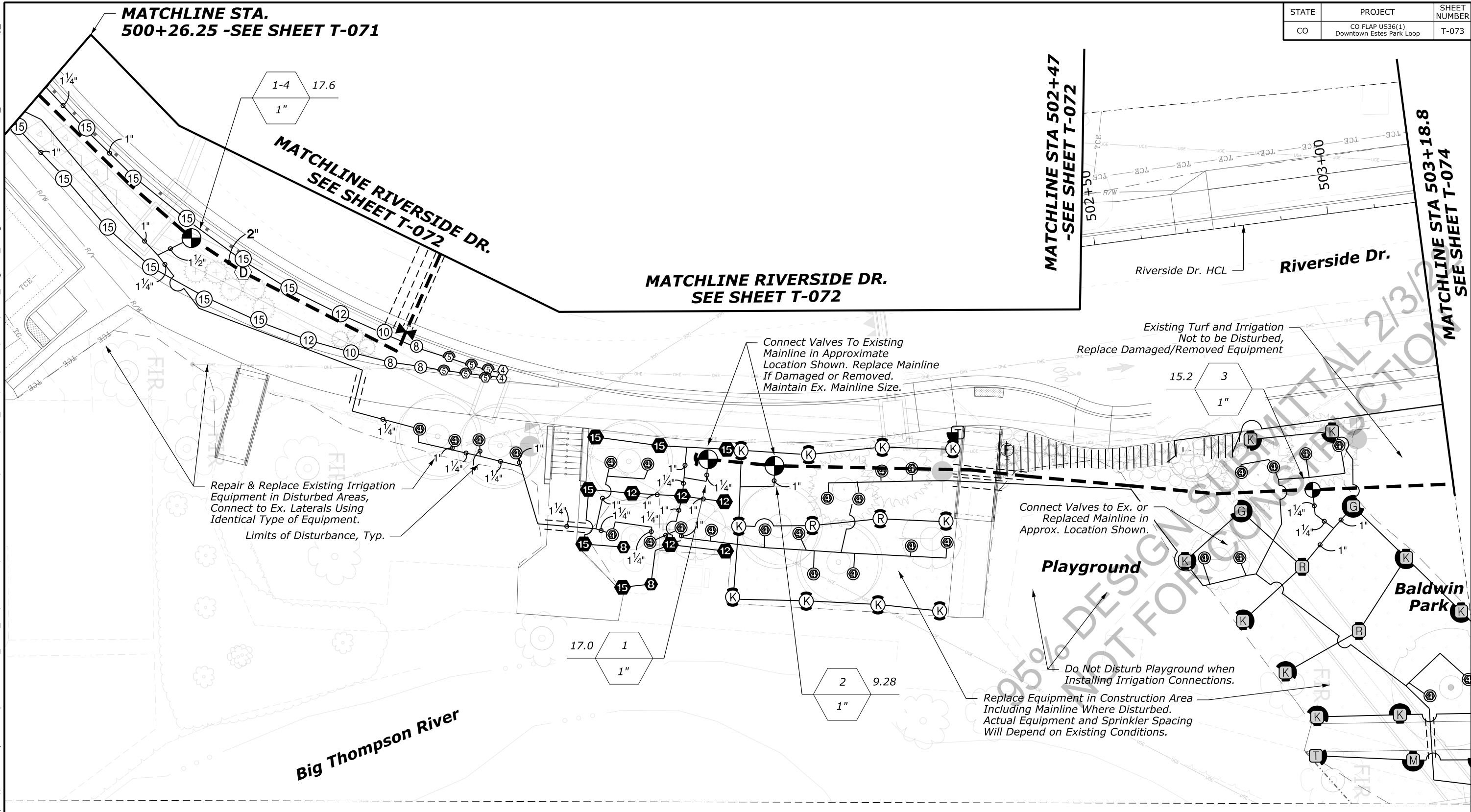
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

IRRIGATION PLANS

SHEET 7 OF 15

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-073

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MATCHLINE STA. 500+26.25 -SEE SHEET T-071

MATCHLINE RIVERSIDE DR. SEE SHEET T-072

MATCHLINE RIVERSIDE DR. SEE SHEET T-072

MATCHLINE STA 502+47 -SEE SHEET T-072

MATCHLINE STA 503+18.8 SEE SHEET T-074

Repair & Replace Existing Irrigation Equipment in Disturbed Areas, Connect to Ex. Laterals Using Identical Type of Equipment.
Limits of Disturbance, Typ.

Connect Valves To Existing Mainline in Approximate Location Shown. Replace Mainline If Damaged or Removed. Maintain Ex. Mainline Size.

Existing Turf and Irrigation Not to be Disturbed, Replace Damaged/Removed Equipment

Connect Valves to Ex. or Replaced Mainline in Approx. Location Shown.

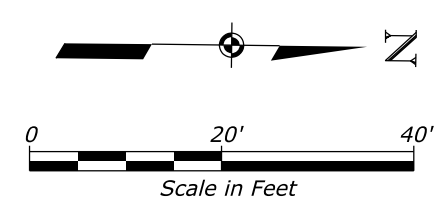
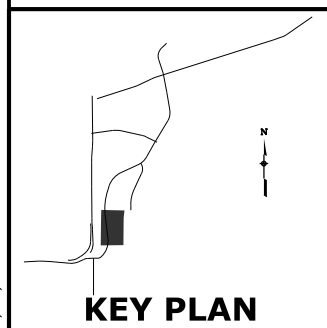
Playground

Do Not Disturb Playground when Installing Irrigation Connections.

Replace Equipment in Construction Area Including Mainline Where Disturbed. Actual Equipment and Sprinkler Spacing Will Depend on Existing Conditions.

Big Thompson River

Baldwin Park

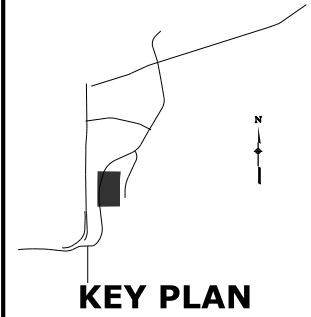


1. SEE SHEETS T-066 TO T-069 FOR GENERAL NOTES AND IRRIGATION SCHEDULE.
2. SEE SHEETS T-081 TO T-084 FOR IRRIGATION DETAILS.

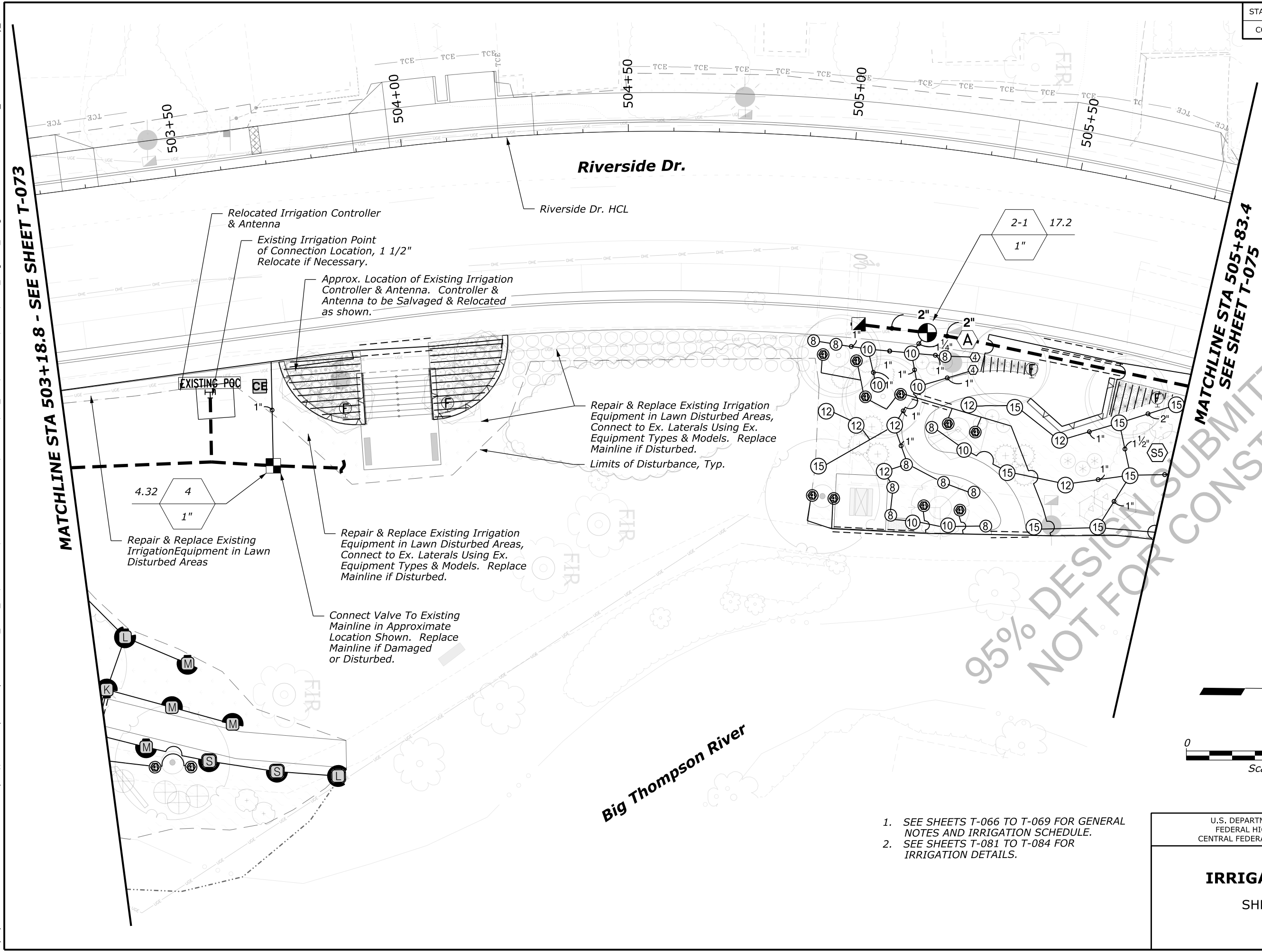
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

IRRIGATION PLANS

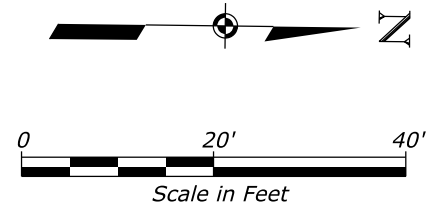
SHEET 8 OF 15



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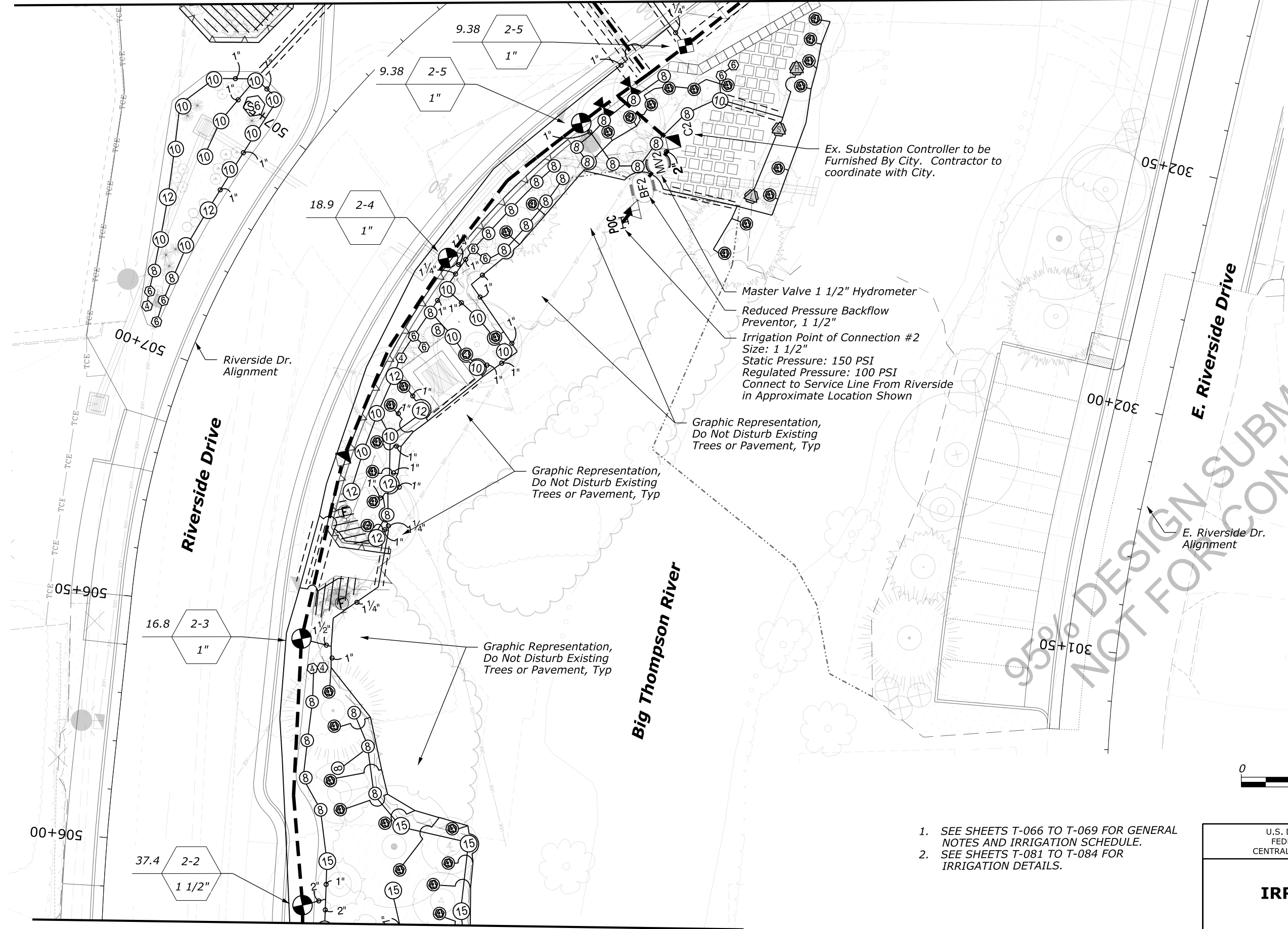
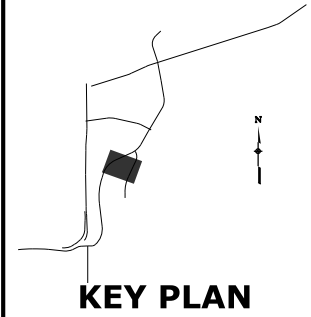
1. SEE SHEETS T-066 TO T-069 FOR GENERAL NOTES AND IRRIGATION SCHEDULE.
2. SEE SHEETS T-081 TO T-084 FOR IRRIGATION DETAILS.

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION
IRRIGATION PLANS
 SHEET 9 OF 15

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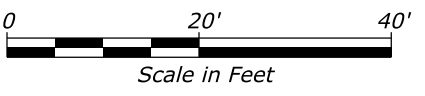
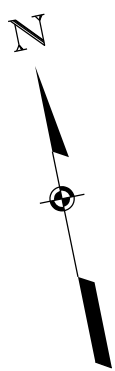
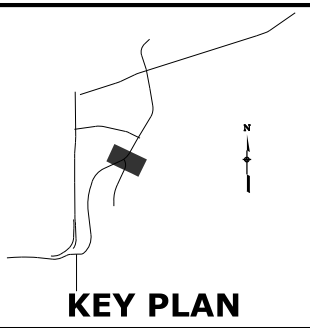
MATCHLINE STA 507+92.14 @ -49° - SEE SHEET T-076

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-075



STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-076

MATCHLINE STA. 510+64.19 @ -18° - SEE SHEET T-077



- SEE SHEETS T-066 TO T-069 FOR GENERAL NOTES AND IRRIGATION SCHEDULE.
- SEE SHEETS T-081 TO T-084 FOR IRRIGATION DETAILS.

Post Office Parking Lot

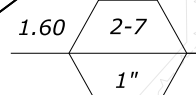
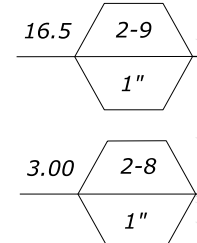
Big Thompson River

Riverside Dr.

Riverside Dr. HCL
E. Riverside Dr. HCL

Riverside Dr.

E. Riverside Dr.



Irrigation Mainline Connection Attached Below Bridge, See Structural Plans.

Install ControlWire in Schedule 40 PVC Conduit, 1" Min., where Exposed and Attached to Bridge.

Irrigation Mainline to Transition to 2" K Copper where it Attaches to Bridge, See Detail.

MATCHLINE STA. 507+92.14 @ -49° - SEE SHEET T-075

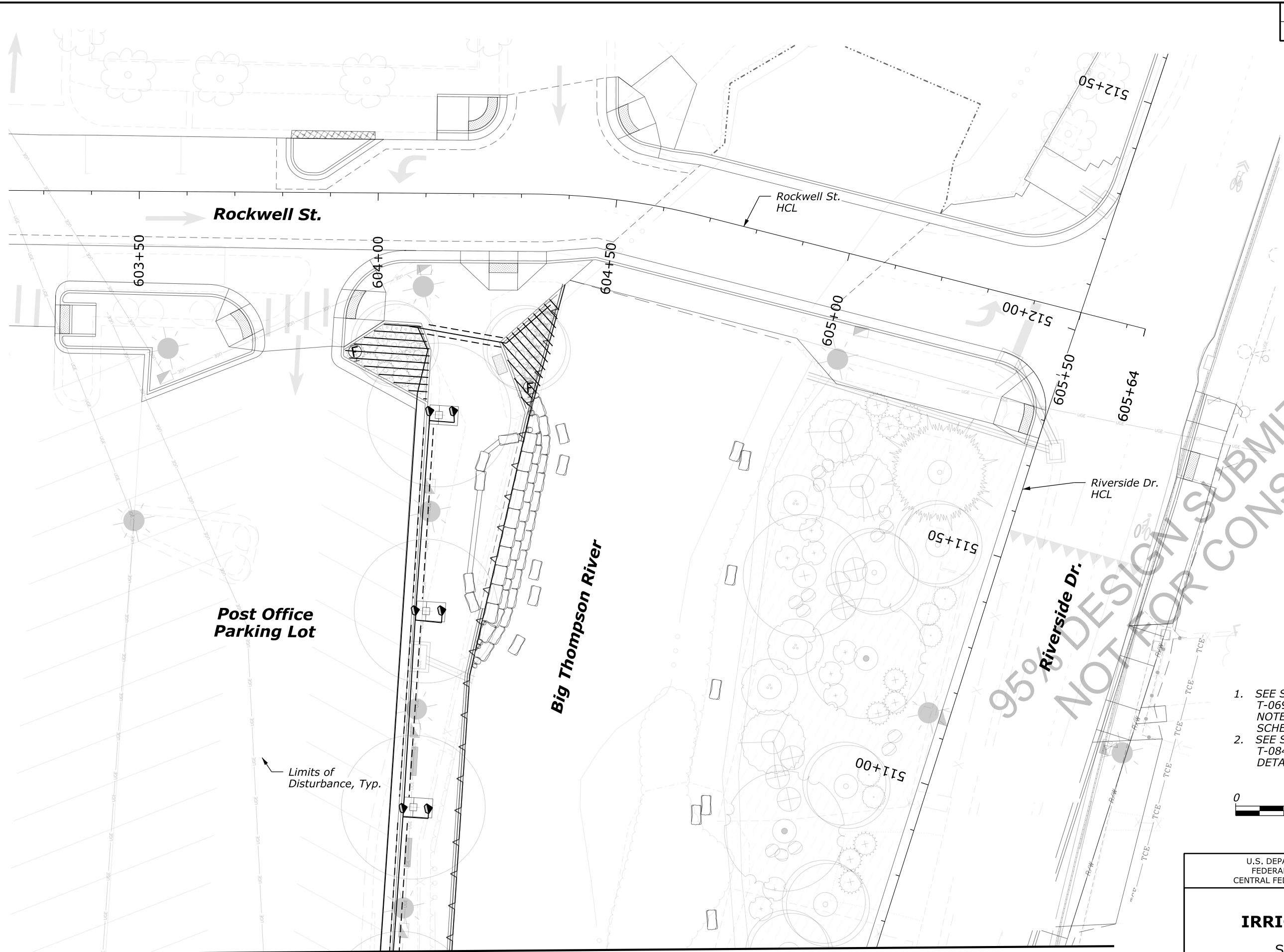
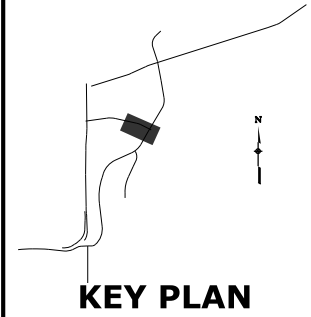
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

IRRIGATION PLANS

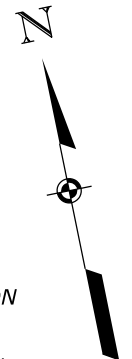
SHEET 11 OF 15

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-077



1. SEE SHEETS T-066 TO T-069 FOR GENERAL NOTES AND IRRIGATION SCHEDULE.
2. SEE SHEETS T-081 TO T-084 FOR IRRIGATION DETAILS.



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

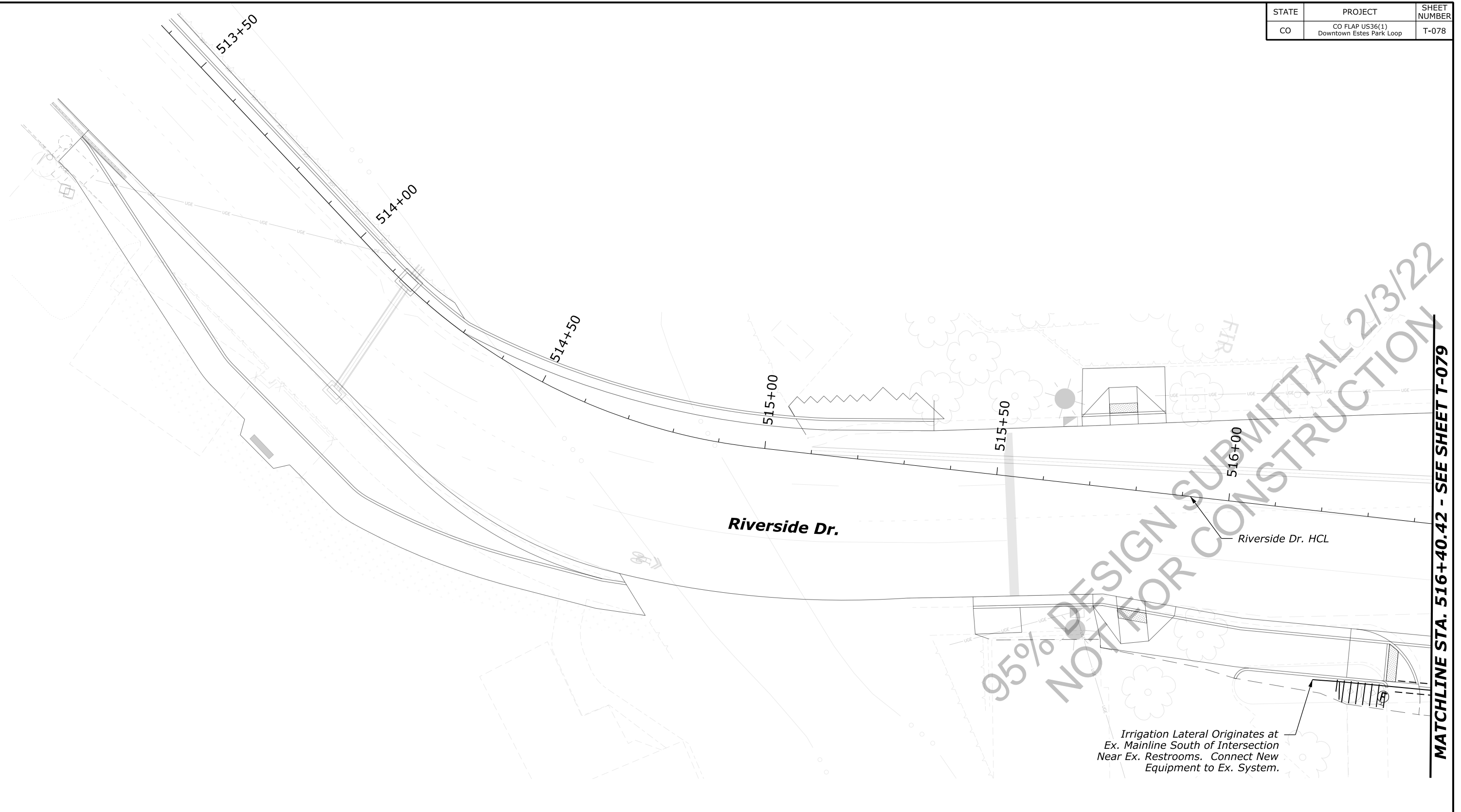
IRRIGATION PLANS

SHEET 12 OF 15

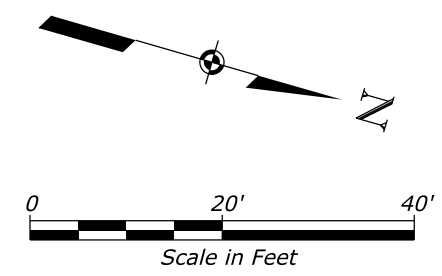
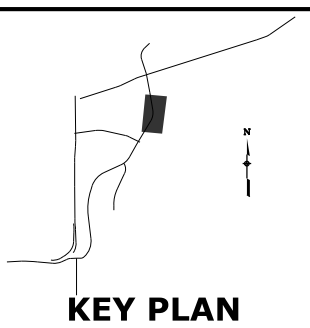
MATCHLINE STA. 510+64.19 @ -18° - SEE SHEET T-076

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-078

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Irrigation Lateral Originates at Ex. Mainline South of Intersection Near Ex. Restrooms. Connect New Equipment to Ex. System.



1. SEE SHEETS T-066 TO T-069 FOR GENERAL NOTES AND IRRIGATION SCHEDULE.
2. SEE SHEETS T-081 TO T-084 FOR IRRIGATION DETAILS.

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

IRRIGATION PLANS

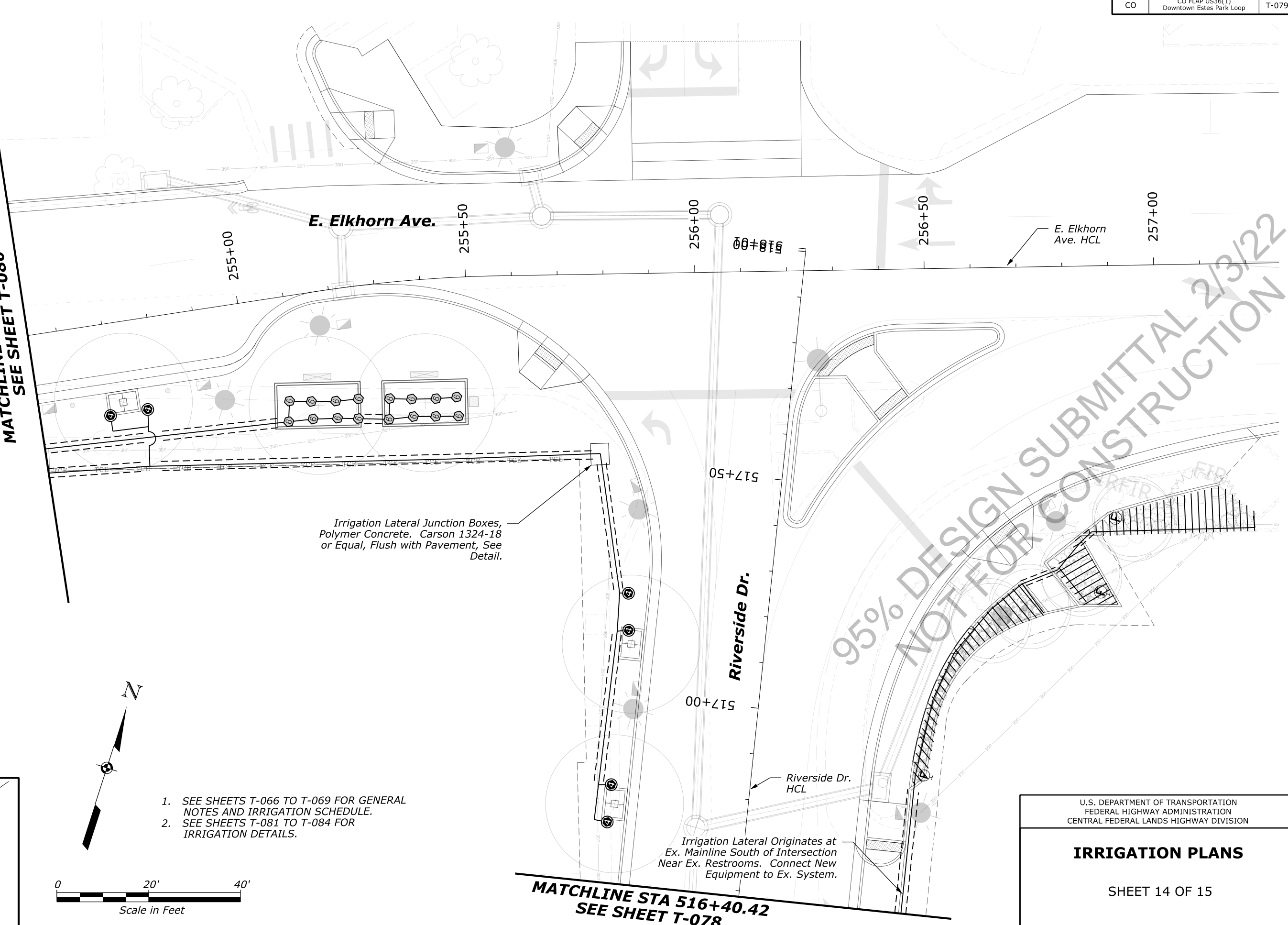
SHEET 13 OF 15

MATCHLINE STA. 516+40.42 - SEE SHEET T-079

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-079

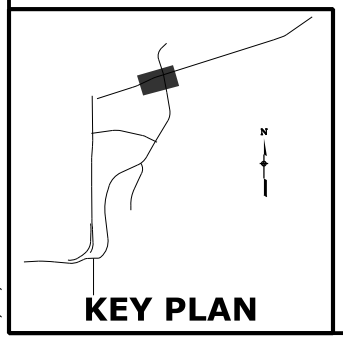
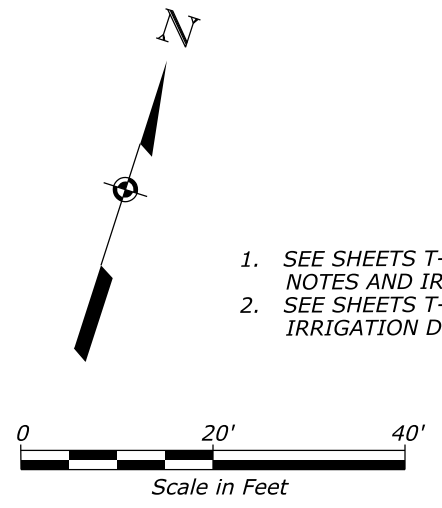
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**MATCHLINE STA 254+53.70
SEE SHEET T-080**



95% DESIGN SUBMITTAL 2/3/22
 NOT FOR CONSTRUCTION

- SEE SHEETS T-066 TO T-069 FOR GENERAL NOTES AND IRRIGATION SCHEDULE.
- SEE SHEETS T-081 TO T-084 FOR IRRIGATION DETAILS.



**MATCHLINE STA 516+40.42
SEE SHEET T-078**

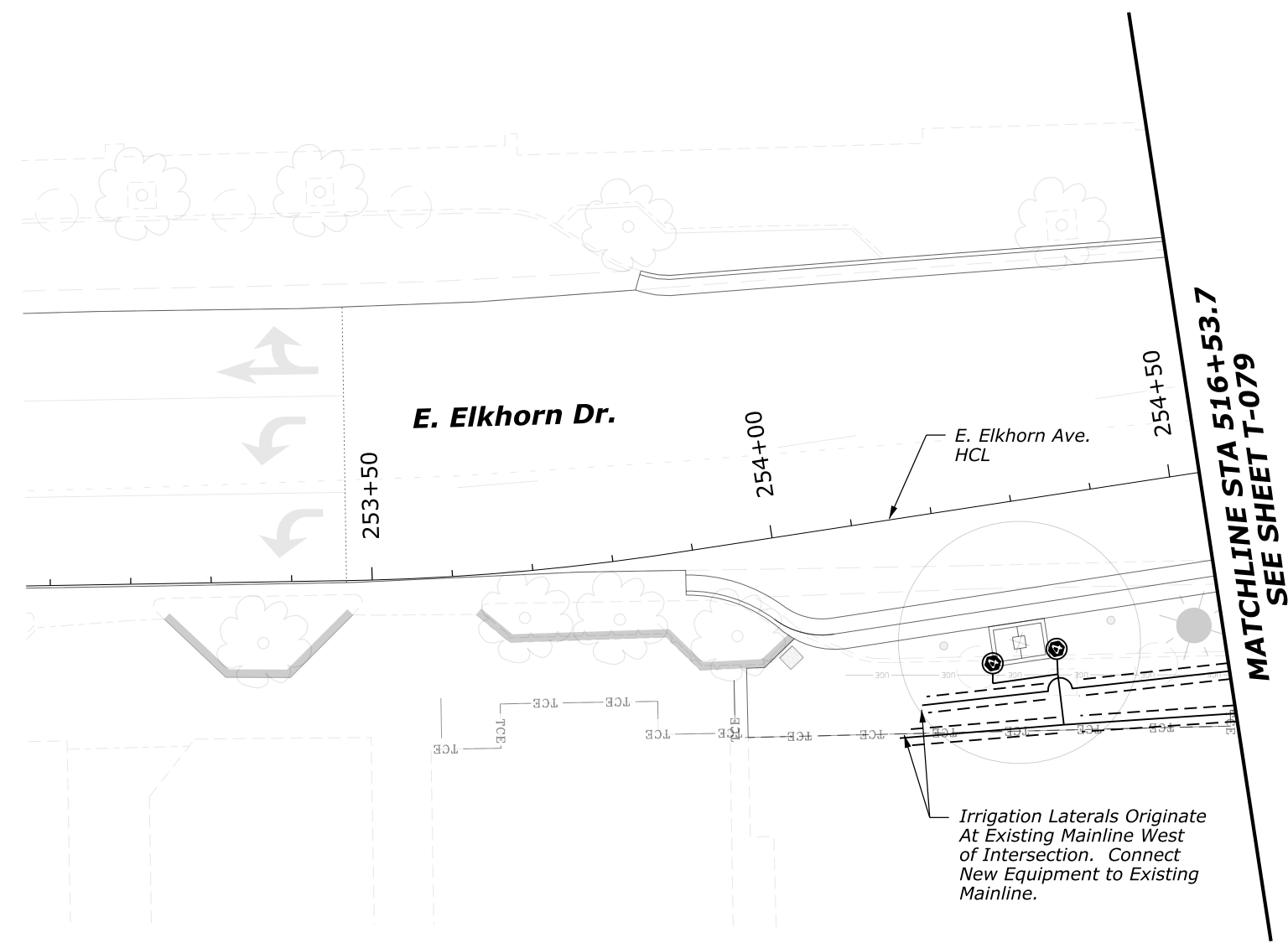
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

IRRIGATION PLANS

SHEET 14 OF 15

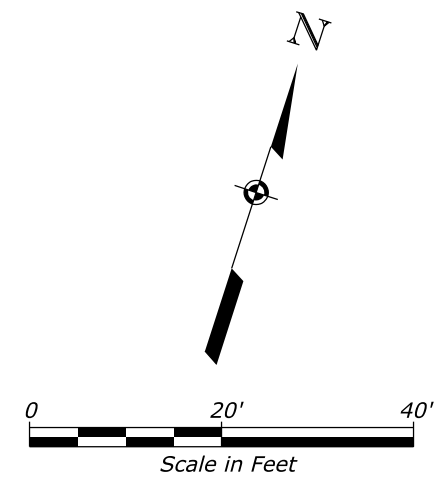
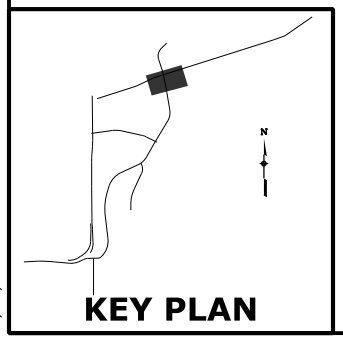
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CO	CO FLAP US36(1) Downtown Estes Park Loop	T-080

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**MATCHLINE STA 516+53.7
SEE SHEET T-079**

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 NOT FOR CONSTRUCTION

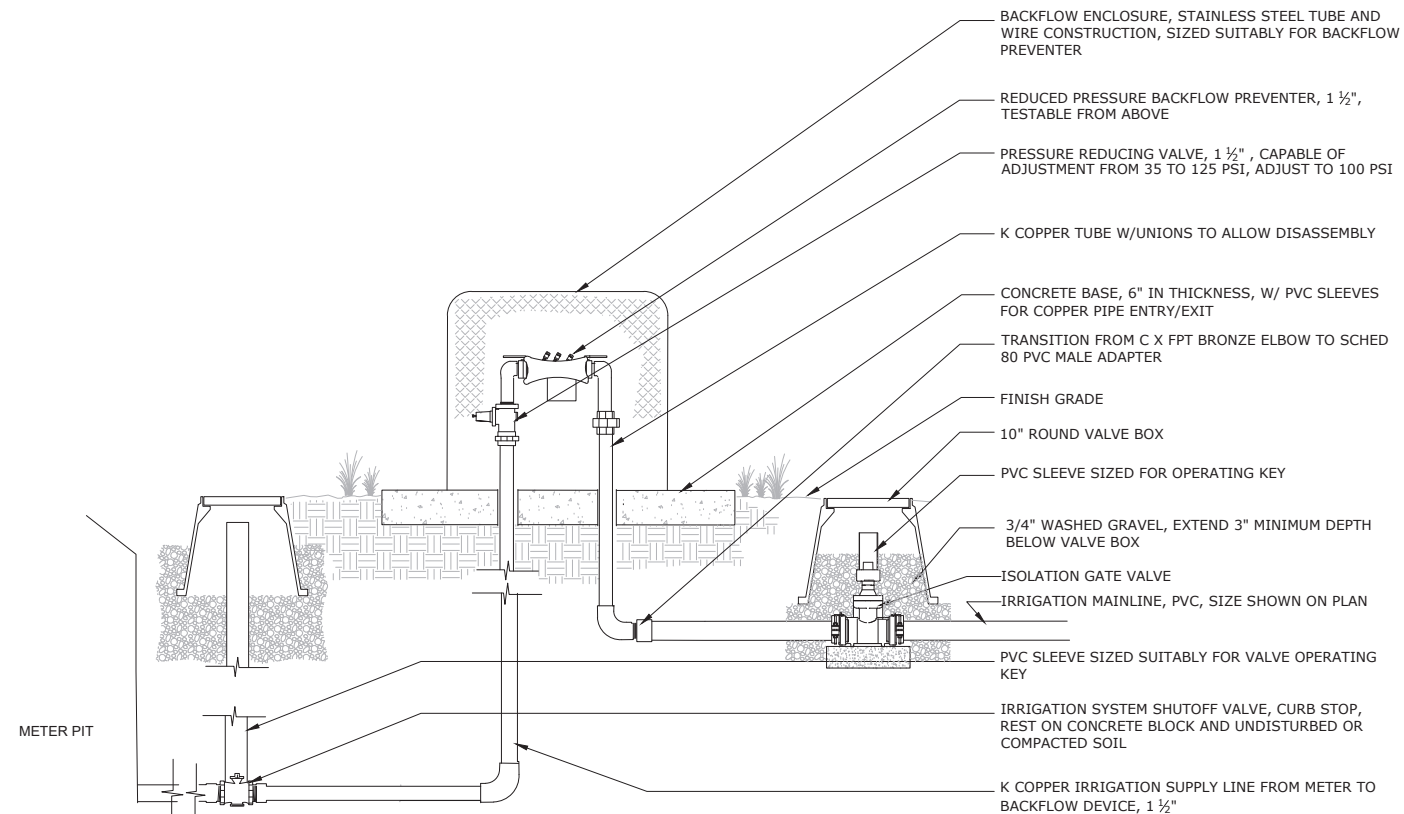


1. SEE SHEETS T-066 TO T-069 FOR GENERAL NOTES AND IRRIGATION SCHEDULE.
2. SEE SHEETS T-081 TO T-084 FOR IRRIGATION DETAILS.

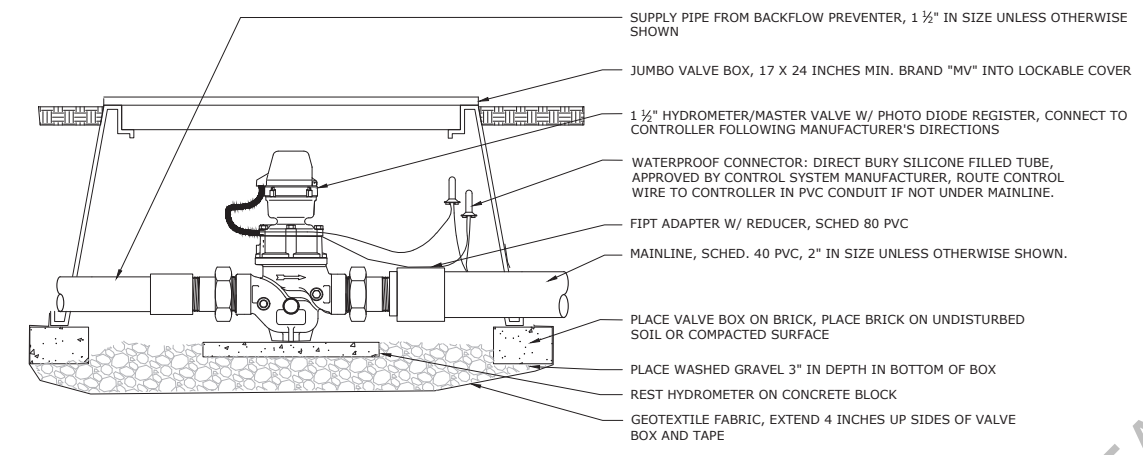
U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

IRRIGATION PLANS

SHEET 15 OF 15

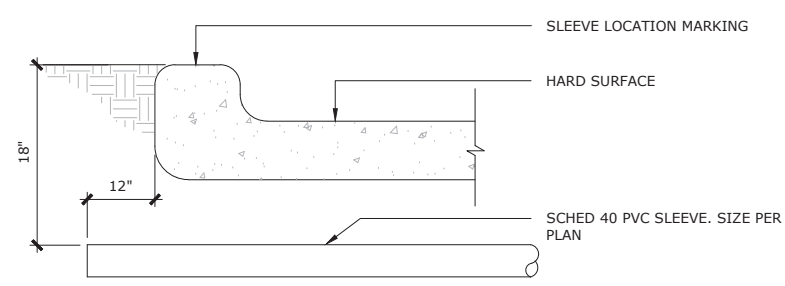


1 IRRIGATION POINT OF CONNECTION
SCALE: N.T.S.



NOTES:
1. ENCASE CONTROL WIRE IN POLY SLEEVE IF NOT PROTECTED UNDER MAINLINE.
2. LOCATE AT LEAST 12" FROM, AND ALIGN WITH, ADJACENT WALLS OR PAVED EDGES.

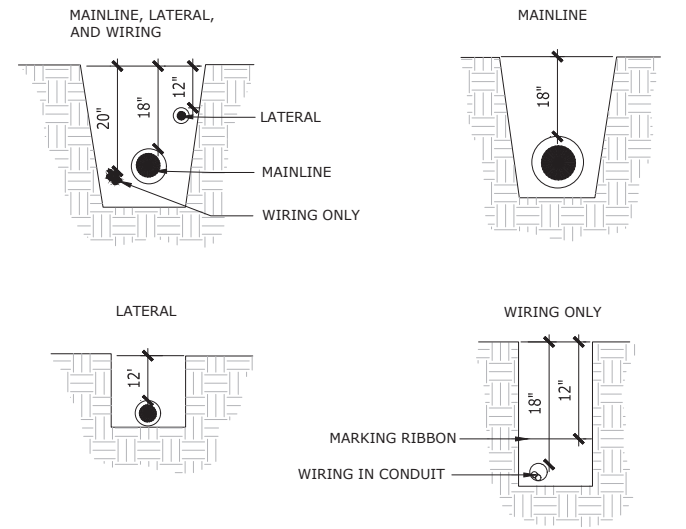
2 MASTER VALVE HYDROMETER INSTALLATION
SCALE: N.T.S.



PIPE SIZE OR WIRE	SLEEVE SIZE REQUIRED
3/4" - 1 1/4" PIPE	2"
1 1/2" - 2" PIPE	4"
2 1/2" - 3" PIPE	6"
4" PIPE	8"
6" PIPE	12"
1-25 CONTROL WIRES	2"
26-75 CONTROL WIRES	3"

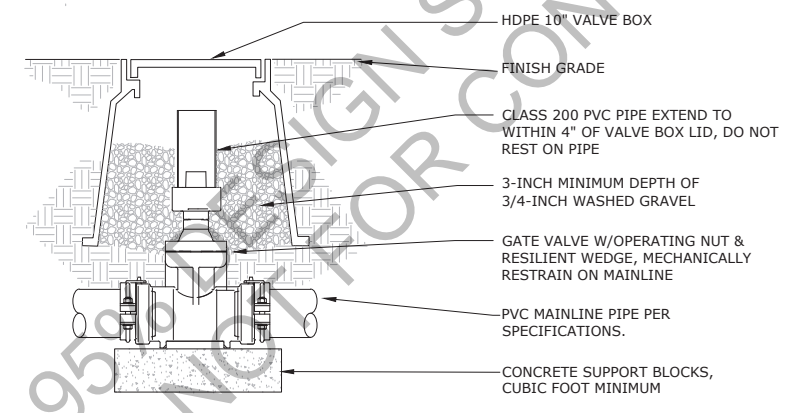
NOTE:
1. EACH LENGTH OF SLEEVED PIPE SHOWN SHALL BE ROUTED THROUGH A SEPARATE SLEEVE.
2. MAXIMUM ALLOWABLE SLEEVE DEPTH (BOTTOM OF PIPE) IS 18-INCHES.

3 SLEEVE INSTALLATION
SCALE: N.T.S.



NOTES:
1. ALL MAINLINE PIPING TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION SPECIFICATIONS.
2. ROUTE TRENCH MINIMUM 6 FEET FROM ANY TREE PLANTING OR EXCAVATE CAREFULLY BY HAND.
3. TIE A 20-INCH LOOP IN ALL WIRING AT CHANGES OF DIRECTIONS GREATER THAN 30 DEGREES. UNTIE AFTER ALL CONNECTIONS HAVE BEEN MADE.
4. BACK FILL MATERIAL TO BE FREE OF ALL DEBRIS AND ROCKS LARGER THAN 3/4" IN DIAMETER.

4 TRENCHING & PIPE/WIRING INSTALLATION
SCALE: N.T.S.



NOTES:
1. NOMINAL SIZE OF GATE VALVE TO MATCH NOMINAL SIZE OF MAINLINE PIPE.
2. GATE VALVE SHALL BE AN IRON BODY GATE VALVE, WITH STAINLESS STEEL NON-RISING STEM, MECHANICAL JOINT ENDS, AND A RESILIENT SEAT.

5 ISOLATION VALVE INSTALLATION
SCALE: N.T.S.

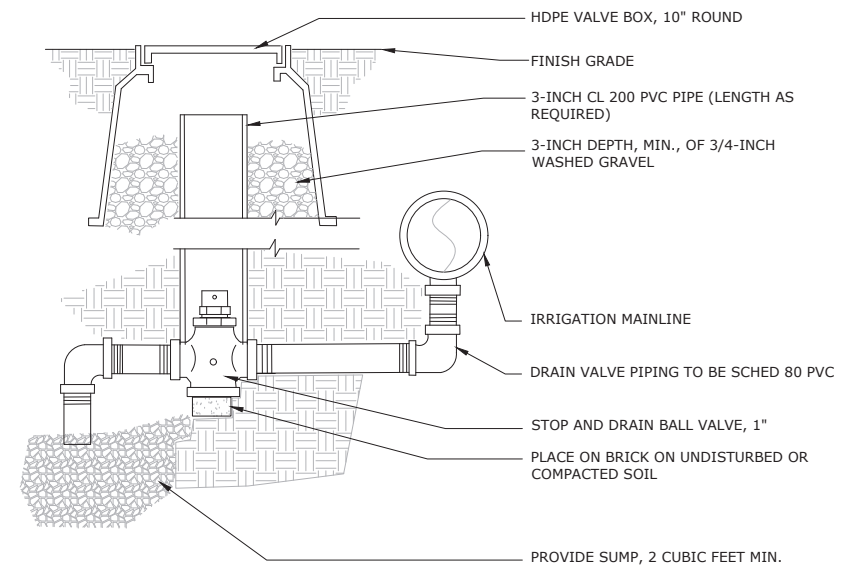
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL
IRRIGATION DETAILS

SHEET 1 OF 4

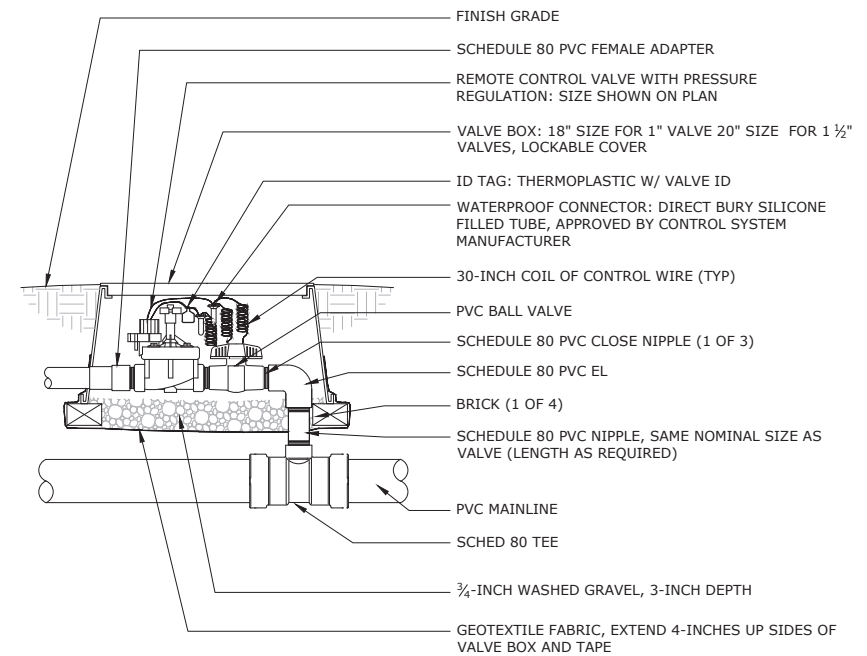
SPECIAL
611

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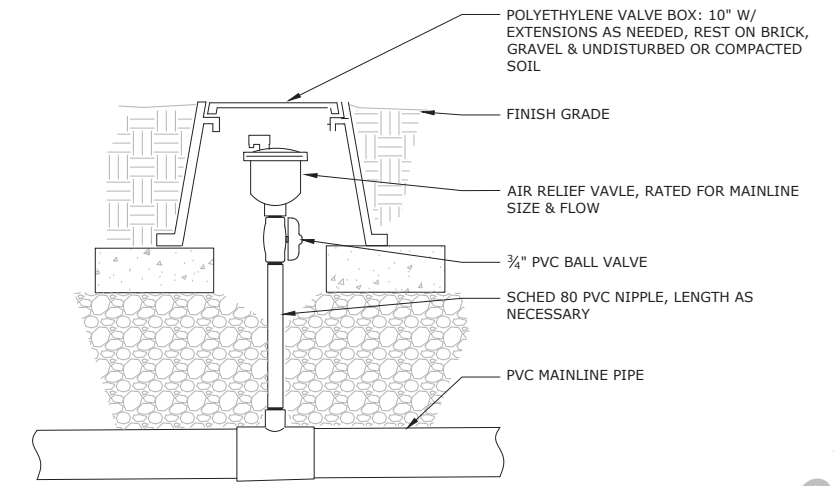
NOTES:
1. PLACE DRAIN VALVE WHERE SHOWN & AT ALL LOW POINTS ALONG MAINLINE

1 MANUAL DRAIN VALVE
SCALE: N.T.S.



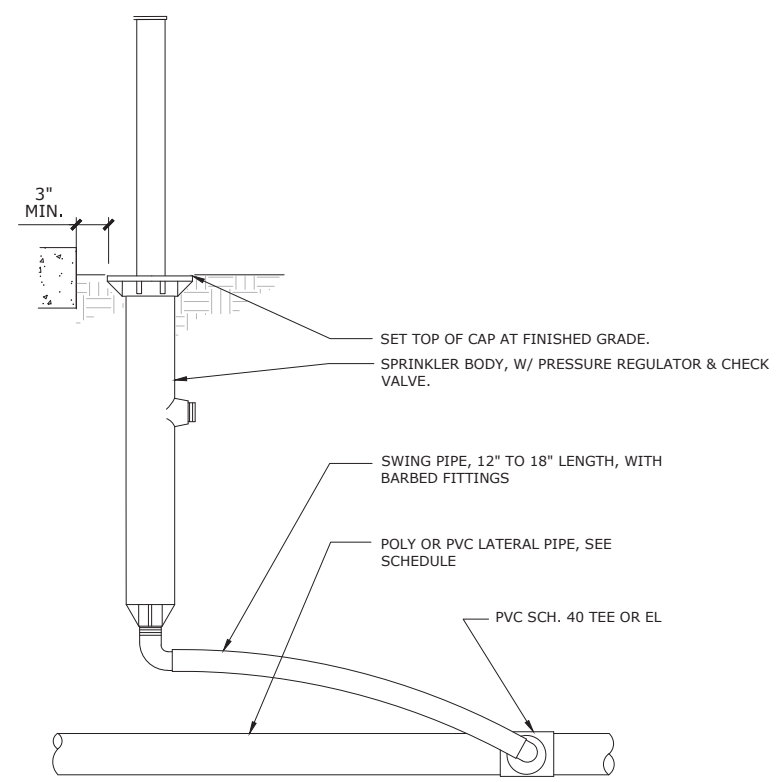
NOTES:
1. FITTINGS SHALL BE SIZED IDENTICALLY WITH NOMINAL VALVE SIZE.
2. LOCATE VALVE BOX AT LEAST 12" FROM, AND ALIGN WITH NEARBY WALLS OR EDGES OF PAVED AREAS. GROUP RCV ASSEMBLIES TOGETHER WHERE PRACTICAL. ARRANGE GROUPED BOXES IN RECTANGULAR PATTERN.
3. BRAND CONTROLLER AND STATION NUMBER INTO LID OF EACH VALVE BOX IN 3" LETTERS.

2 REMOTE CONTROL VALVE ASSEMBLY
SCALE: N.T.S.



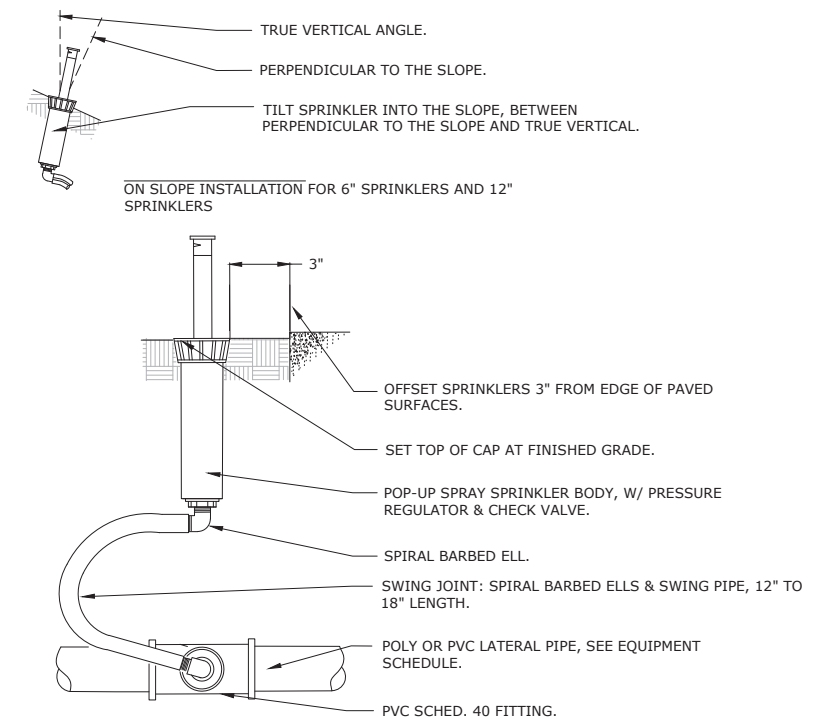
NOTES:
1. LOCATE AIR RELIEF VALVE AT EACH HIGH POINT IN ELEVATION ALONG MAINLINE AND WHERE SHOWN ON PLAN.

3 AIR RELIEF VALVE
SCALE: N.T.S.



NOTES:
1. SET SPRINKLER LEVEL WITH FINISHED GRADE.
2. USE 30 PSI REGULATED SPRINKLER BODY WITH SPRAY NOZZLES.
3. USE 40 PSI REGULATED SPRINKLER BODY WITH ROTARY NOZZLES.
4. REFER TO SPECIFICATIONS FOR ALL MATERIALS CALLED OUT IN DETAIL.

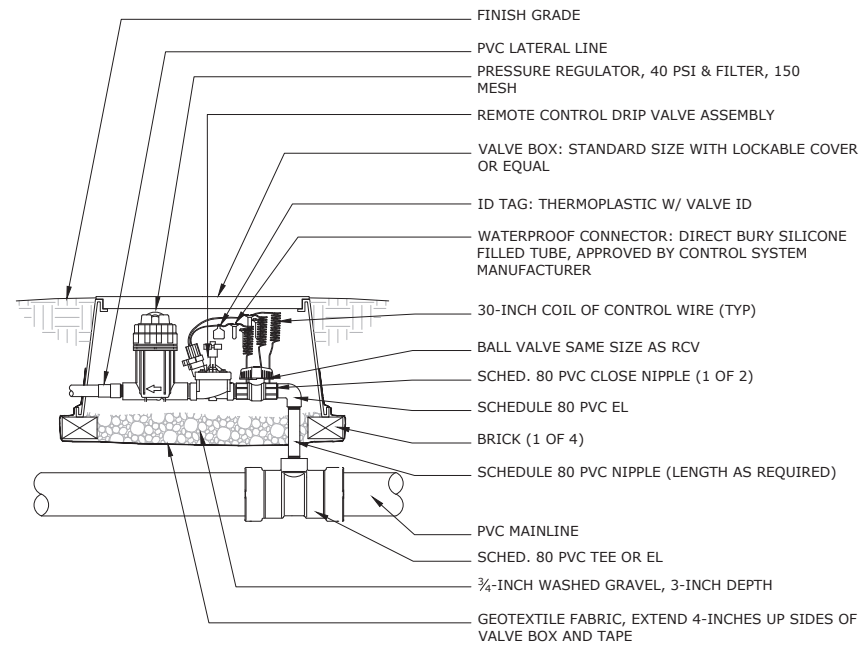
4 12" POP-UP SPRAY & ROTARY SPRINKLER
SCALE: N.T.S.



NOTES:
1. SET SPRINKLER LEVEL WITH FINISHED GRADE.
2. USE 30 PSI REGULATED SPRINKLER BODY WITH SPRAY NOZZLES.
3. USE 40 PSI REGULATED SPRINKLER BODY WITH ROTARY NOZZLES.
4. REFER TO SPECIFICATIONS FOR ALL MATERIALS CALLED OUT IN DETAIL.

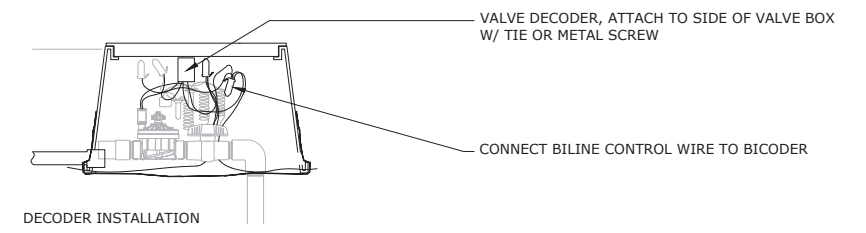
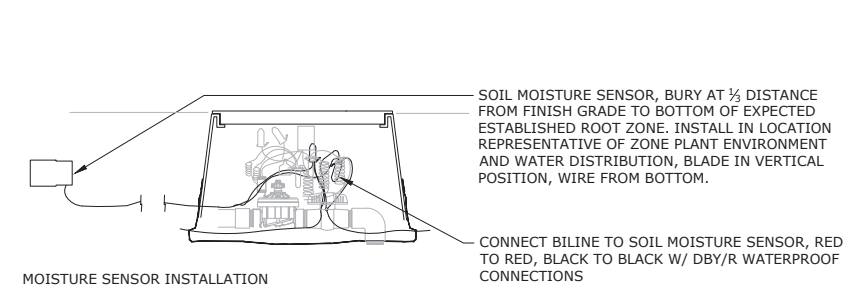
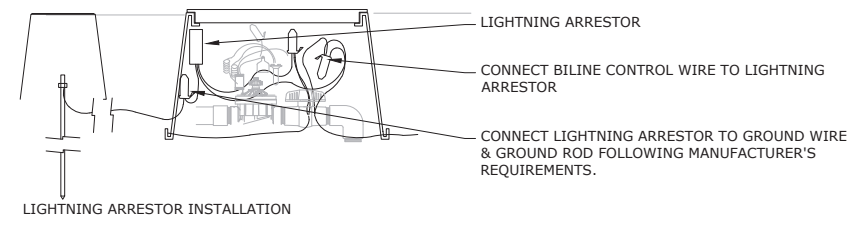
5 6" POP-UP SPRAY & ROTARY SPRINKLER
SCALE: N.T.S.

95% DESIGN SUBMITTAL 2/13/22
NOT FOR CONSTRUCTION

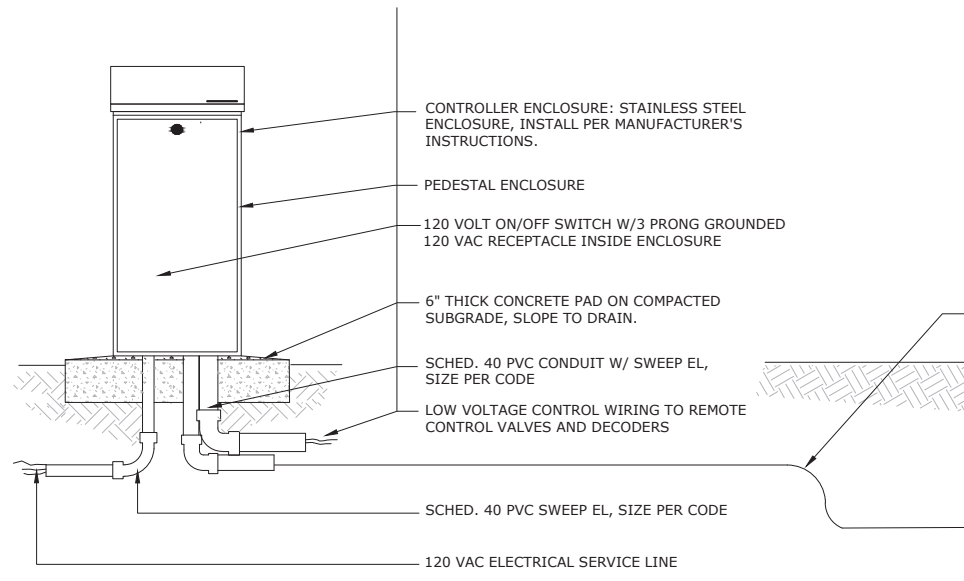


NOTES:
 1. FITTINGS SHALL BE SIZED IDENTICALLY WITH NOMINAL VALVE SIZE.
 2. BRAND CONTROLLER AND STATION NUMBER INTO LID OF EACH VALVE BOX IN 3" LETTERS.

1 REMOTE CONTROL DRIP VALVE ASSEMBLY, MEDIUM & LOW FLOW
 SCALE: N.T.S.

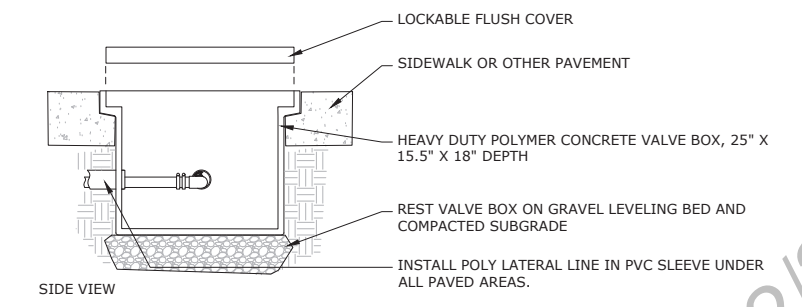
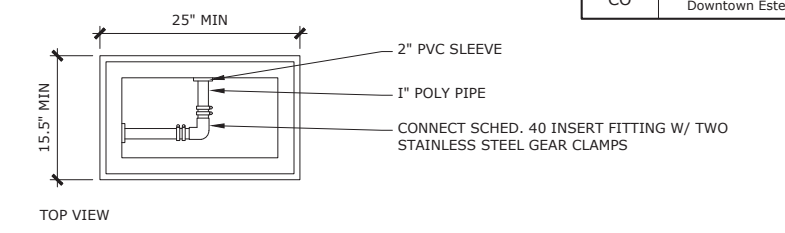


2 TWO-WIRE COMPONENT INSTALLATION
 SCALE: N.T.S.

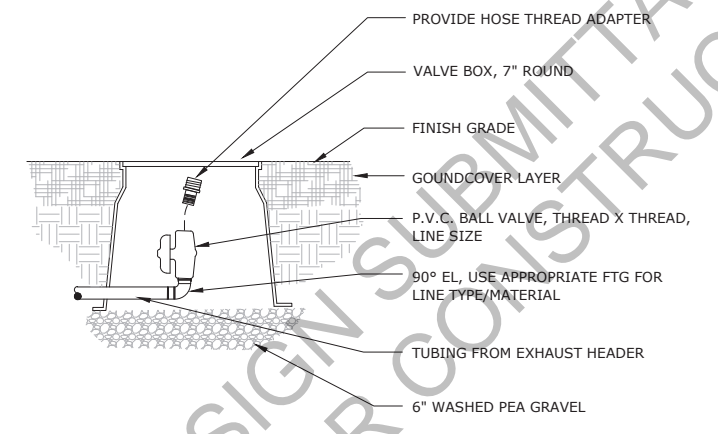


NOTES:
 1. CONTROLLER SATELLITE TO BE EQUIPPED FOR REMOTE COMMUNICATION WITH EXISTING SYSTEM.
 2. ADDITIONAL CONDUITS MAY BE REQUIRED FOR GROUNDING AND COMMUNICATION CABLES.
 3. PROPER GROUNDING IS REQUIRED TO ACHIEVE GROUND RESISTANCE OF 10 OHMS OR LESS.
 4. SEE MOUNTING TEMPLATE INSTRUCTIONS FOR PROPER PLACEMENT AND MOUNTING OF THE PEDESTAL TO THE CONCRETE.
 5. GROUNDING ROD MAY BE USED WITH LIGHTNING ARRESTOR IN FIELD WIRING.

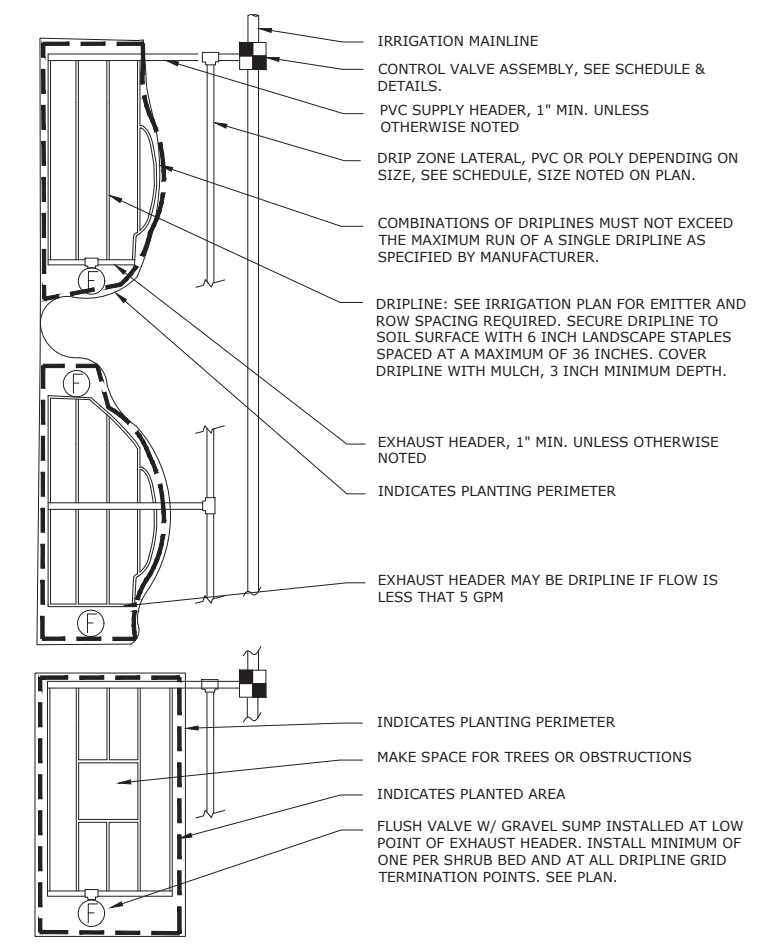
6 IRRIGATION CONTROLLER SATELLITE INSTALLATION
 SCALE: N.T.S.



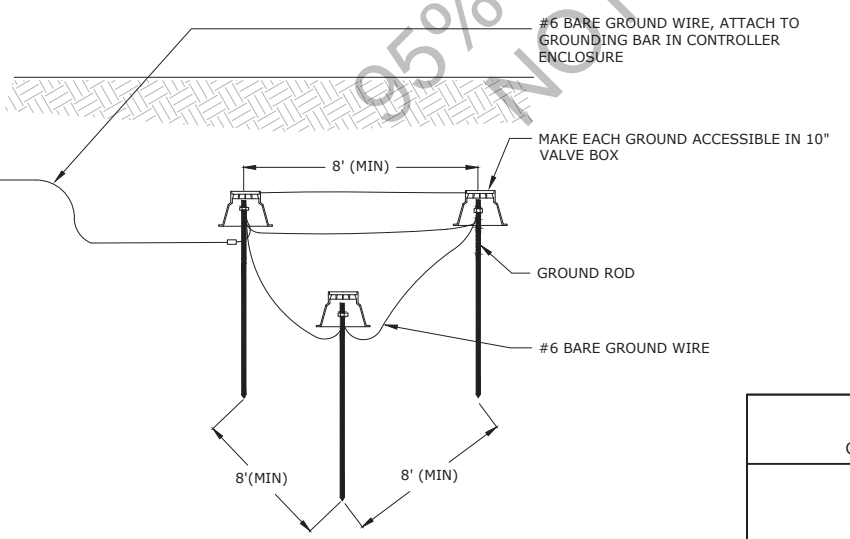
3 POLY PIPE JUNCTIONS UNDER PAVEMENT
 SCALE: N.T.S.



4 FLUSH VALVE ASSEMBLY
 SCALE: N.T.S.



5 DRIPLINE INSTALLATION SCHEMATIC
 SCALE: N.T.S.



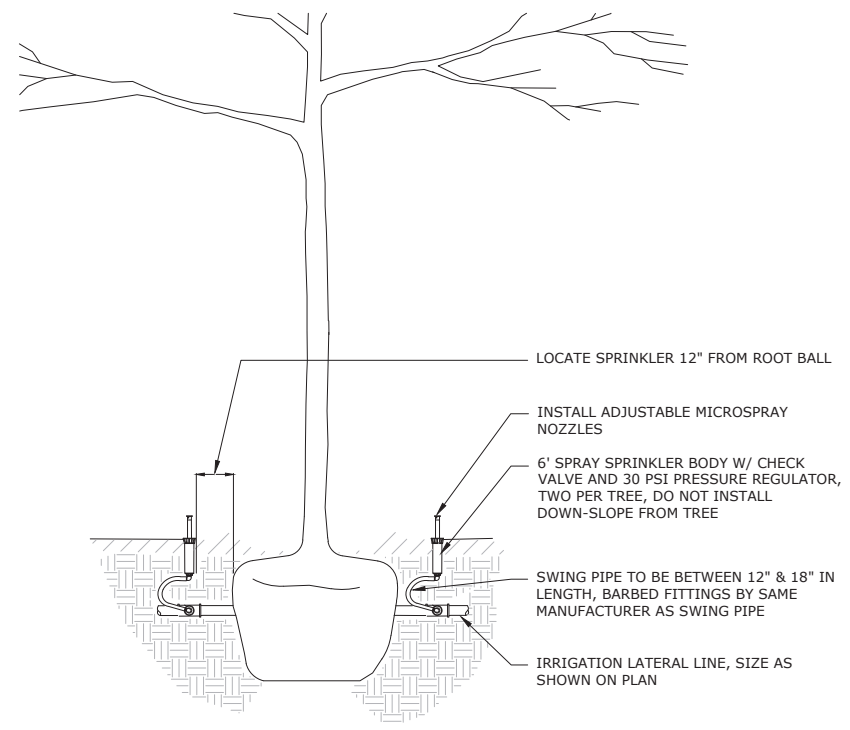
U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL
IRRIGATION DETAILS

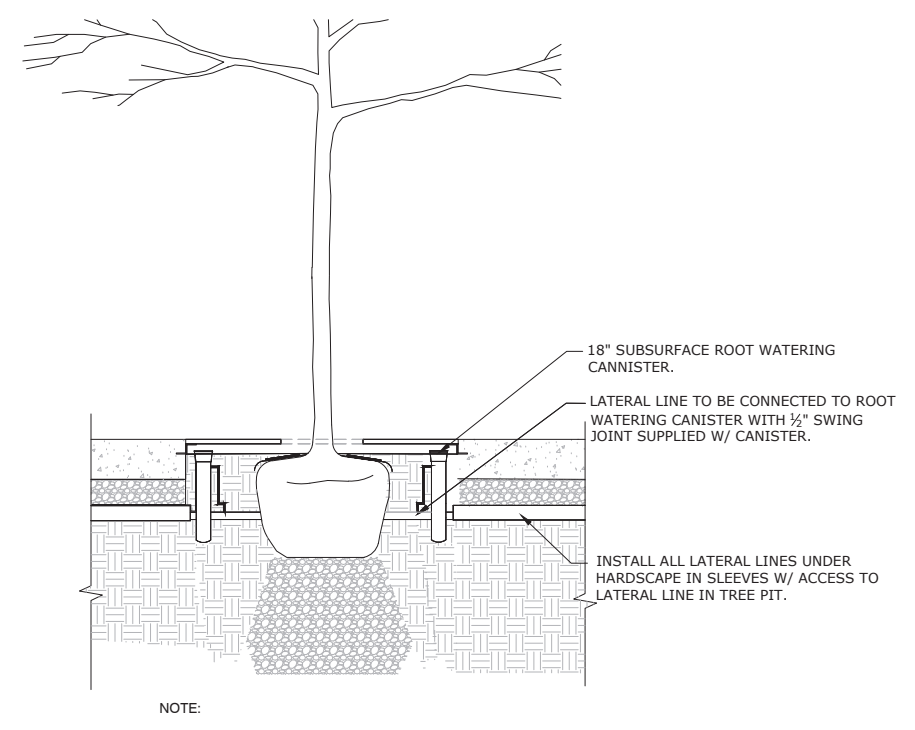
SHEET 3 OF 4

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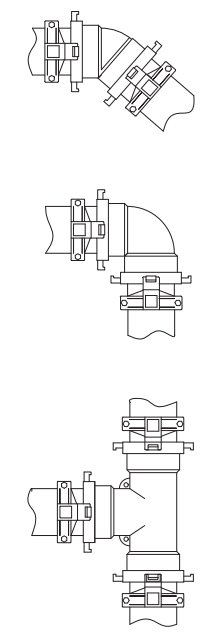
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP36(1) Downtown Estes Park Loop	T-084



1 TREE IRRIGATION, POP-UP BUBBLER
SCALE: N.T.S.



2 TREE IRRIGATION IN HARDSCAPE
SCALE: N.T.S.



- NOTE:
1. USE EPOXY COATED IRON FITTINGS ON 90 DEGREE, 45 DEGREE & 22 DEGREE ELBOWS AND TEES.
 2. LEEMCO, HARCO, OR EQUAL. STRICTLY FOLLOW ALL MANUFACTURER'S INSTALLATION INSTRUCTIONS.
 3. RESTRAIN ISOLATION VALVES, SEE DETAIL.

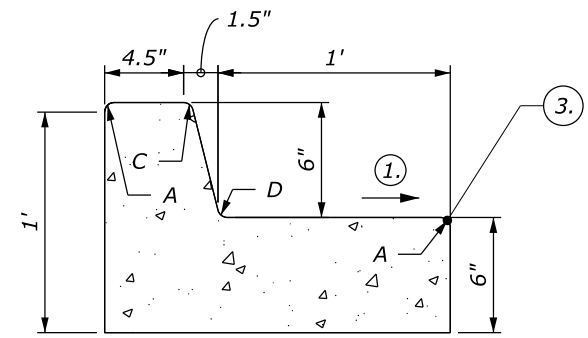
3 MAINLINE JOINT RESTRAINT INSTALLATION
SCALE: N.T.S.

95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

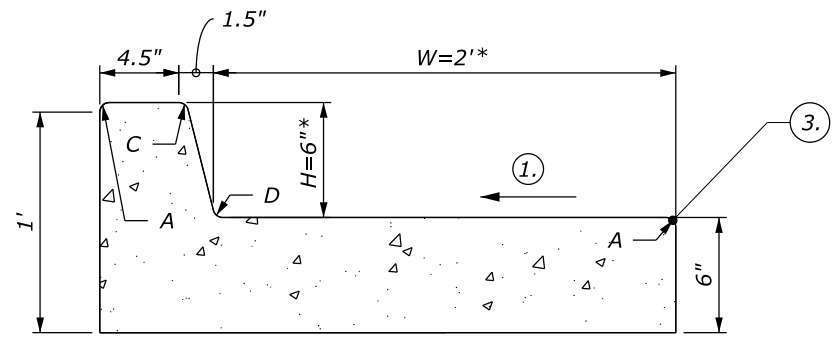
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U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY DETAIL IRRIGATION DETAILS SHEET 4 OF 4	
	SPECIAL 611

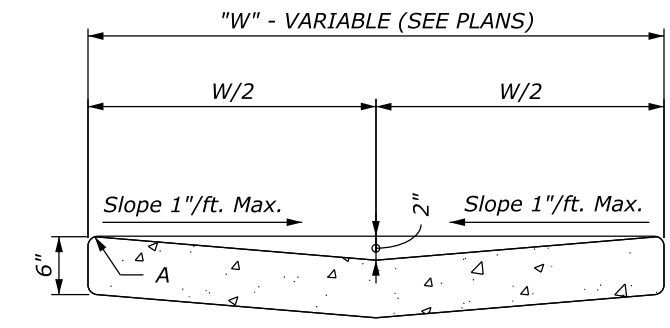
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CO	CO FLAP US36(1) Downtown Estes Park Loop	T-085



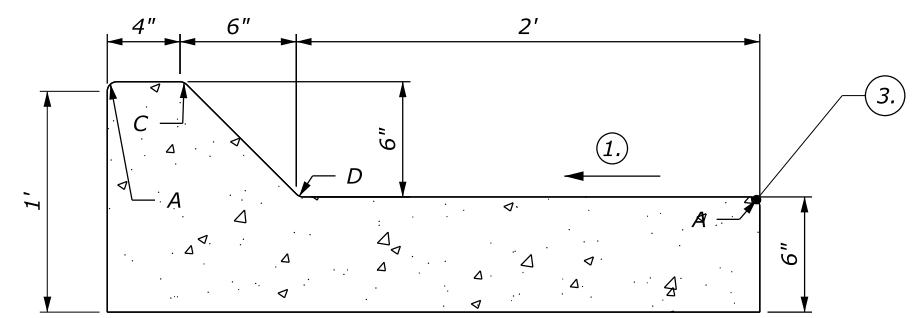
CURB AND GUTTER TYPE 2
(SECTION IB)
(6 IN. BARRIER - 1 FT. GUTTER)



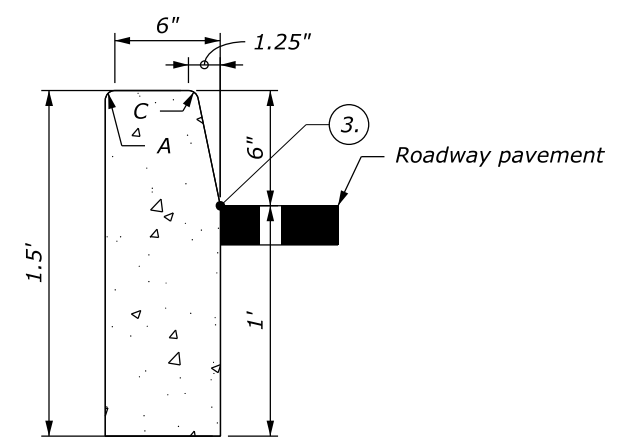
CURB AND GUTTER TYPE 2
(SECTION IIB)
(6 IN. BARRIER - 2 FT. GUTTER)
*W = 2' except where noted on plans
H = 6' except where noted on plans



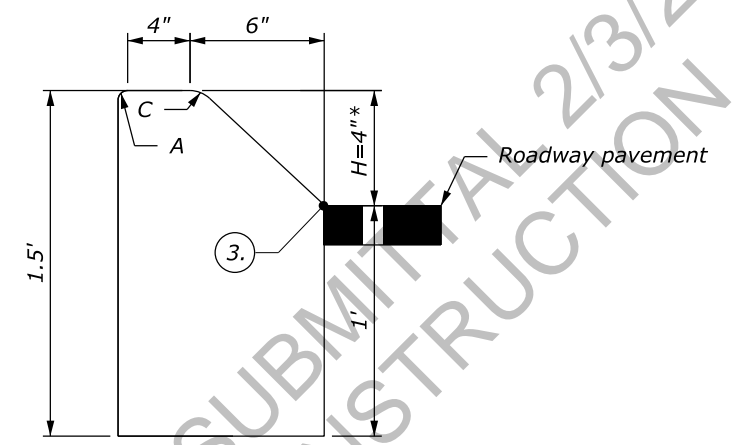
GUTTER TYPE 2



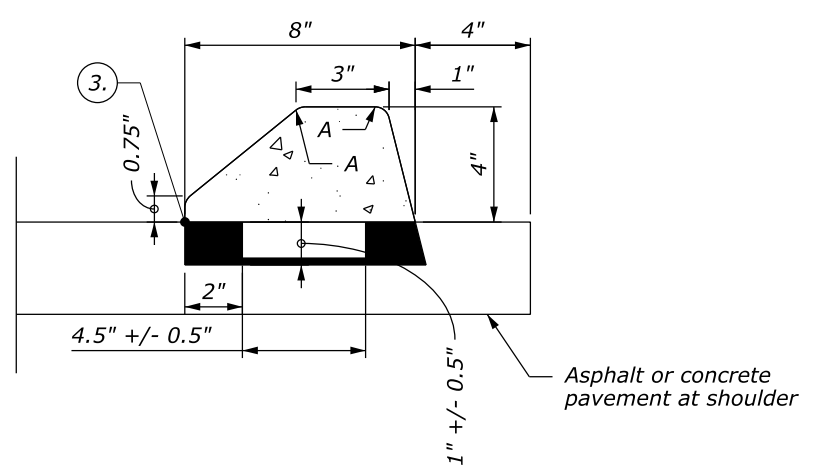
CURB AND GUTTER TYPE 2
(SECTION IIM)
(6 IN. MOUNTABLE - 2 FT. GUTTER)



CURB TYPE 2
(SECTION B)
6 IN. BARRIER



CURB TYPE 2
(SECTION M)
4 IN. BARRIER



CURB TYPE 6
(SECTION M)
4 IN. MOUNTABLE

LEGEND FOR RADII	
A	= 1/8" TO 1/4"
B	= 1"
C	= 1 1/2"
D	= 1 1/2" TO 2"

Notes:

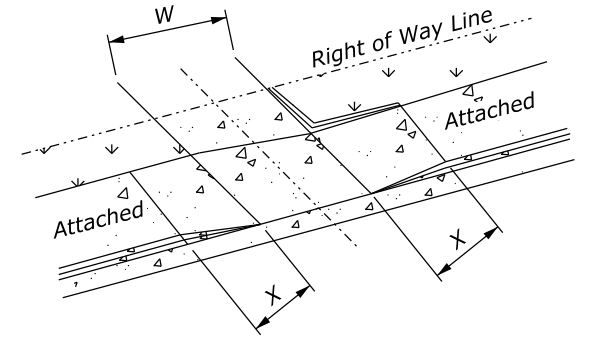
- Gutter cross-slopes shall be 1/2 in./ft. when draining away from curb and 1 in./ft. when draining towards curb. Cross-slopes shown on these details shall be followed for all curbs unless specifically callout in Pavement Plans as "catch" or "spill". "Catch" would indicate flow towards curb, "spill" would indicate flow away from curb.
- See Pavement Plans in K sheets for all curb types.
- PGL location where geometry is provided. See Curb Return Geometry sheets.

(Adapted from CDOT M-609-1)

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY SPECIAL CURB AND GUTTER SPECIALS	
SPECIAL 609-A	

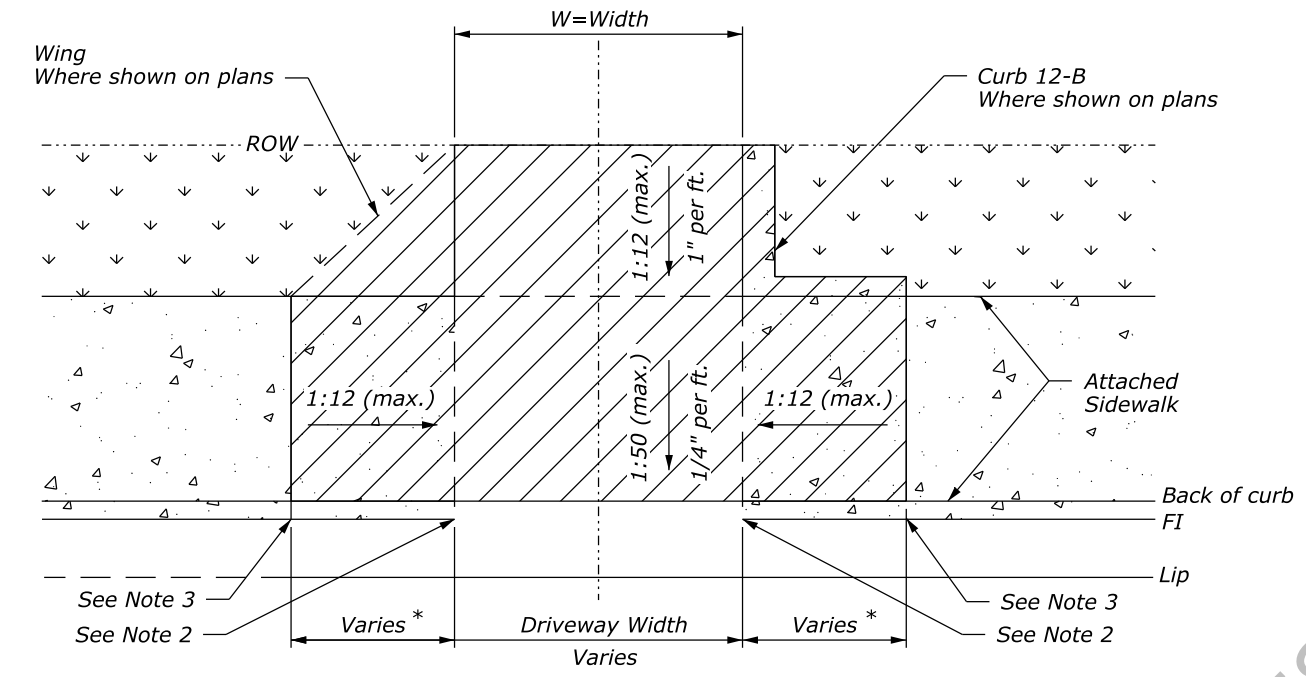
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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-086

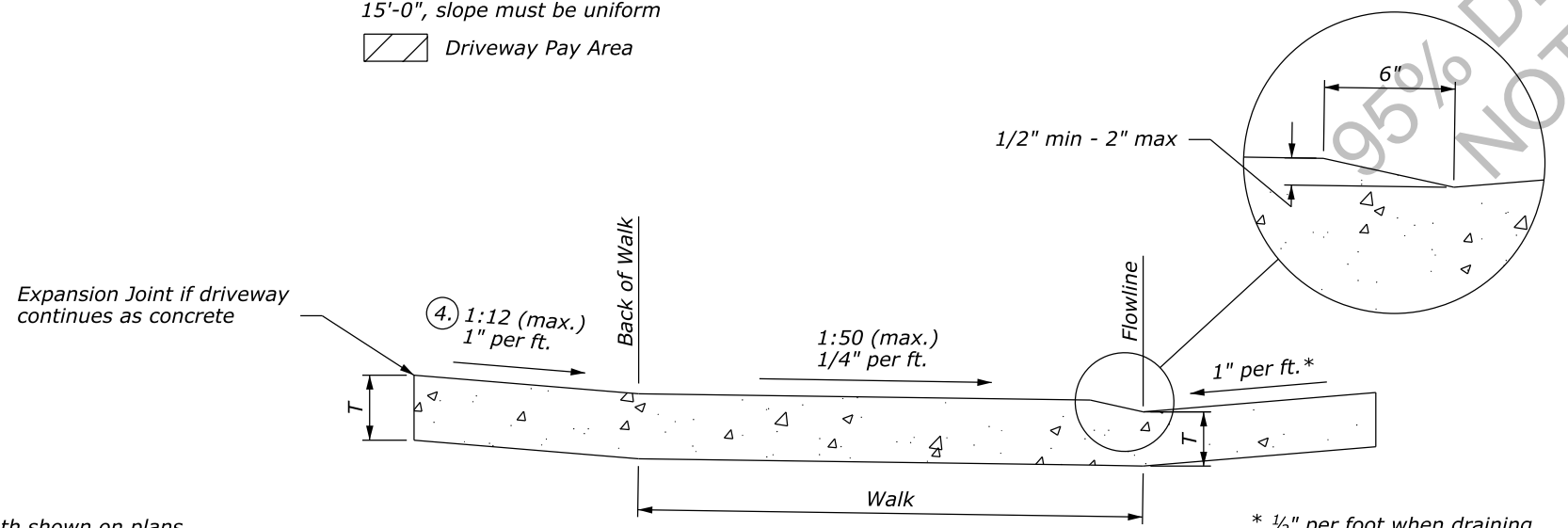


X = Curb Transition Length, varies*
W = Driveway Width
T = Concrete Thickness - 6" Residential, 8" Commercial

PERSPECTIVE



* Ramp length not to exceed 15'-0", slope must be uniform
 Driveway Pay Area



SECTION A-A
N.T.S.

NOTES:

- Concrete driveway shall be constructed to length shown on plans.
- 2" Curb Height, See Section A-A
- Full Curb and Gutter, See Pavement Plans.
- Same maximum slopes may apply when driveway drains away from curb.

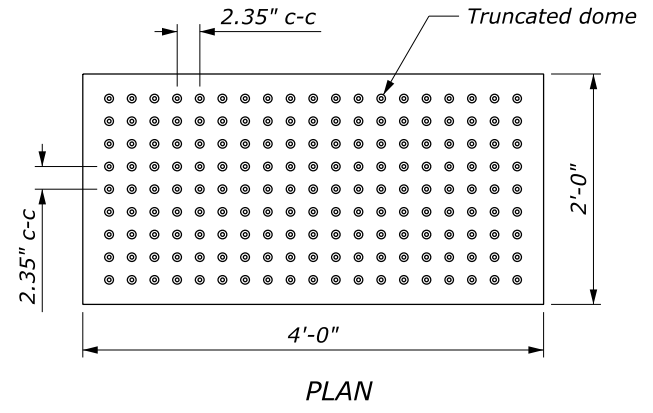
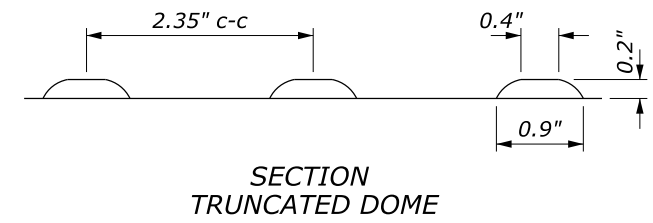
(Adapted from Larimer County Urban Area Street Standards - Drawing 706.2)

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY SPECIAL DRIVEWAY SPECIAL	
SPECIAL 609-B	

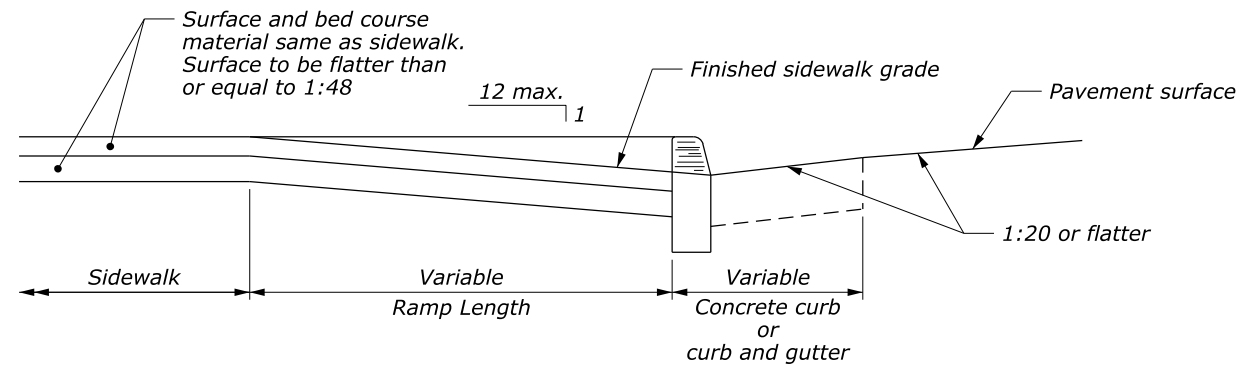
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1/27/2022
User: isabel.butler

95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

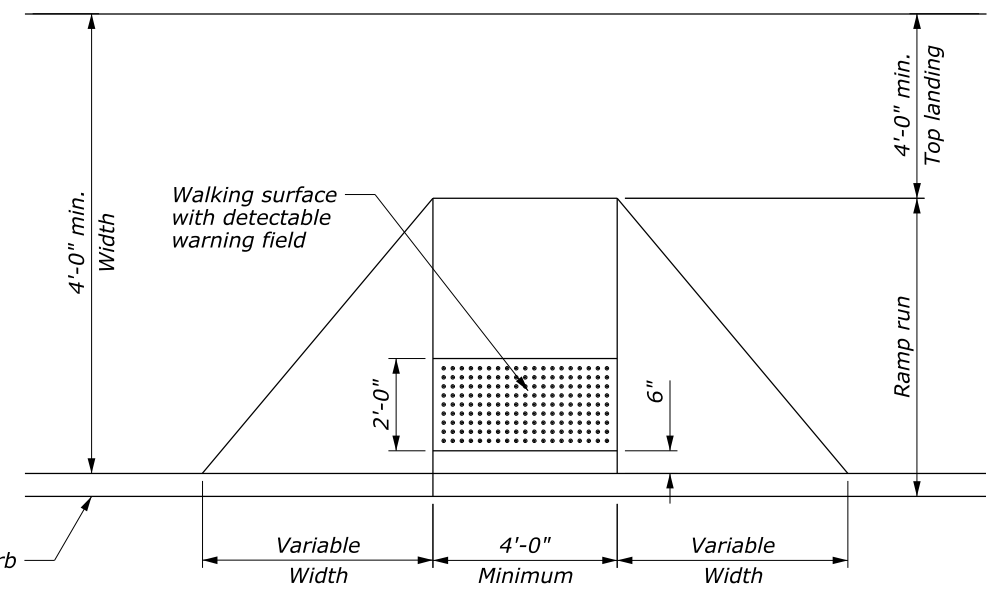
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-087



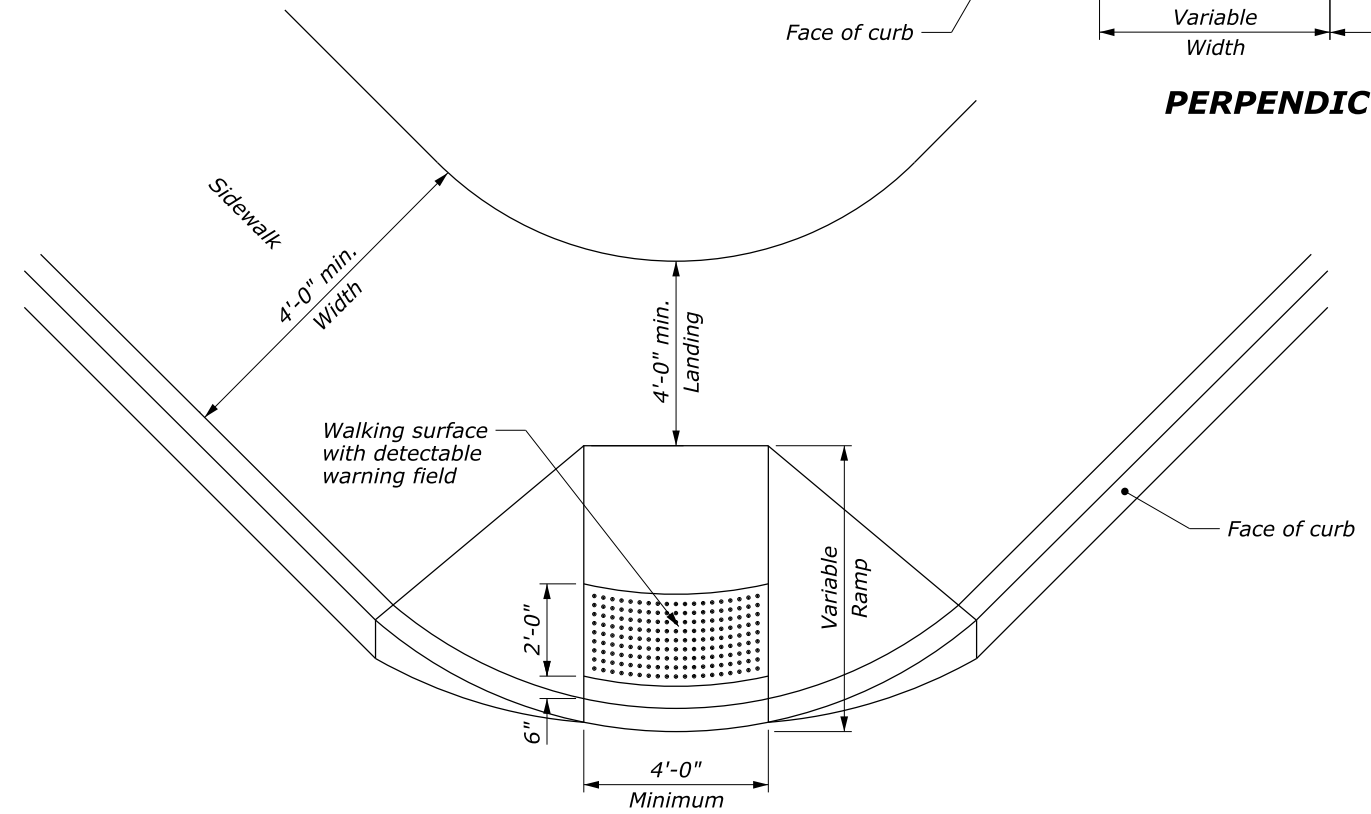
DETECTABLE WARNING FIELD WITH TRUNCATED DOMES



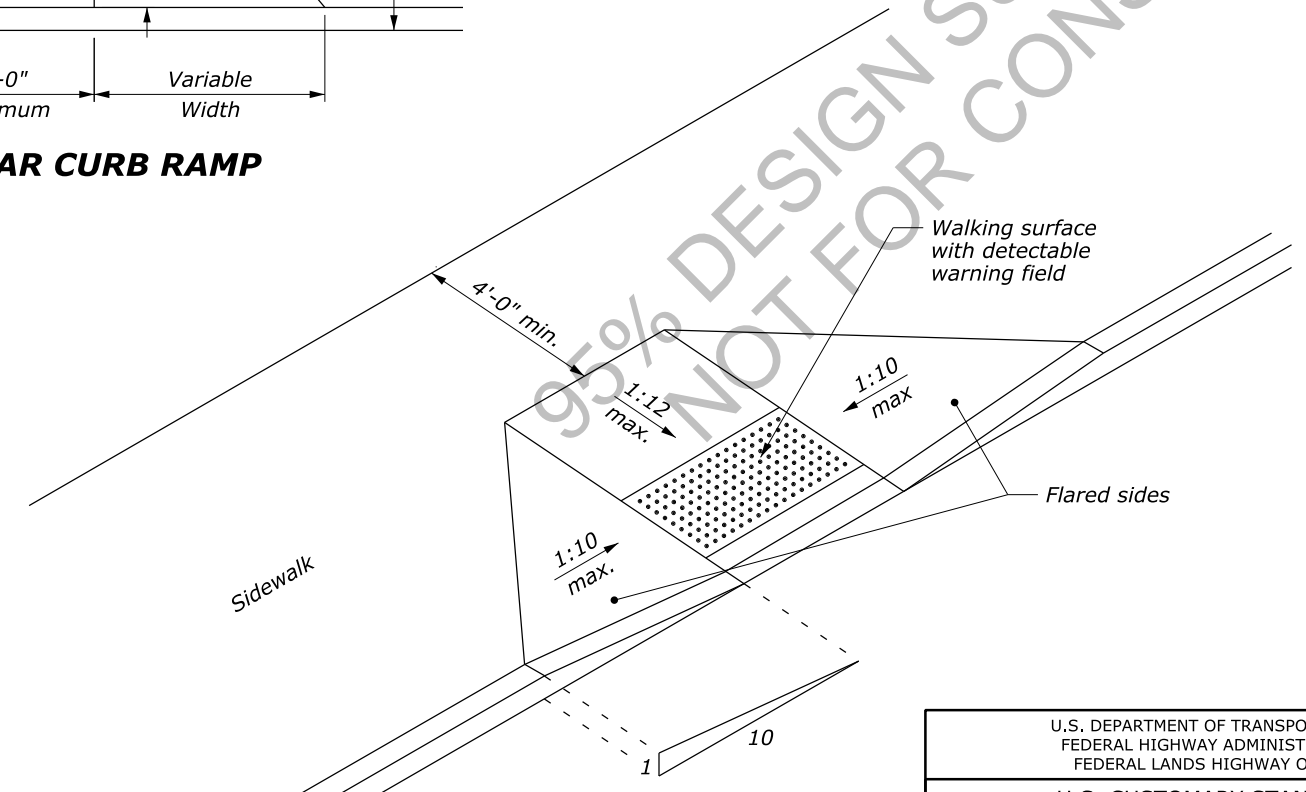
RAMP - TYPICAL SECTION



PERPENDICULAR CURB RAMP



DIAGONAL CURB RAMP



RAMP - ISOMETRIC

NOTE:

1. The maximum cross slopes of ramps must not exceed 2% in any direction.
2. Use a coarse broom finish running perpendicular to the slope to create a slip resistant surface on concrete ramp surfaces, exclusive of the detectable warning fields.
3. Construct curb ramp perpendicular to the curb. Avoid skewing the ramp face.
4. Construct ramp transitions between walks, gutters, or streets that are flush and free of abrupt vertical changes not to exceed 2.5 inches.
5. Locate drainage inlets and manholes outside of ramp walking surfaces or landings.

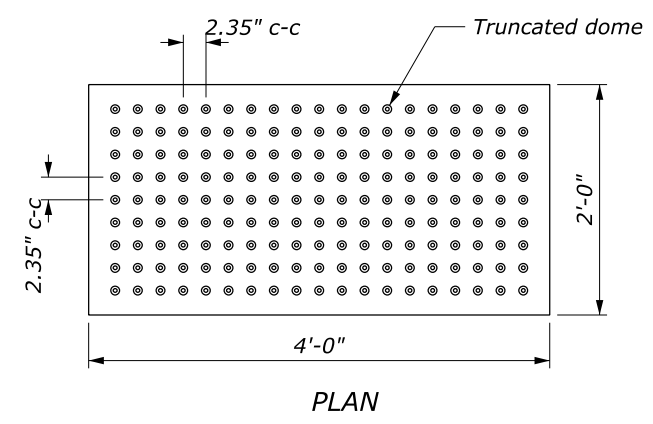
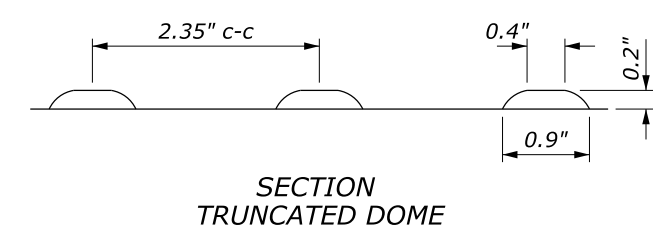
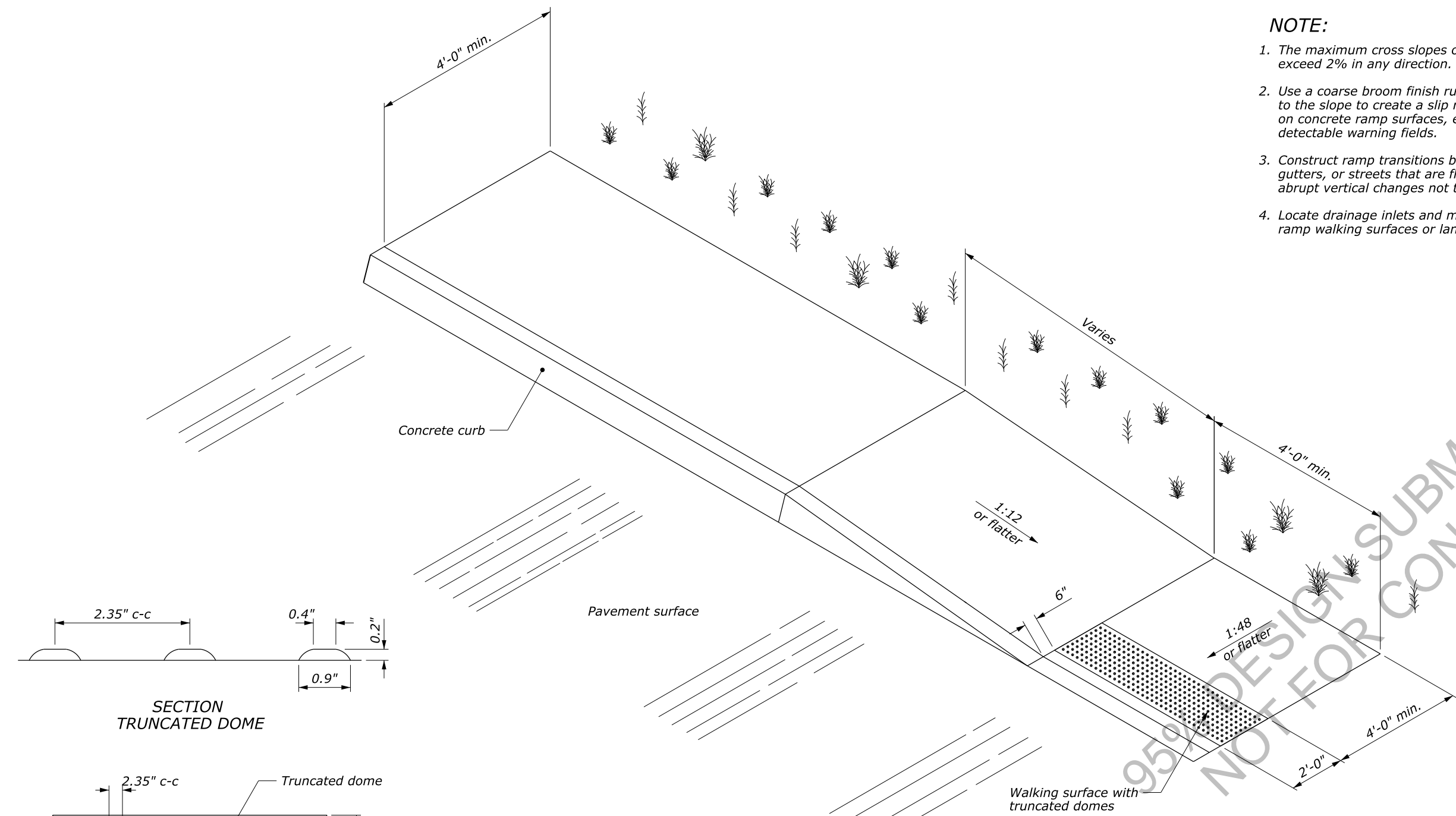
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION FEDERAL LANDS HIGHWAY OFFICE	
U.S. CUSTOMARY STANDARD WHEELCHAIR RAMP CURB CUT	
STANDARD	615-1

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 User: isabel.butler_ 1/27/2022

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-088

NOTE:

1. The maximum cross slopes of ramps must not exceed 2% in any direction.
2. Use a coarse broom finish running perpendicular to the slope to create a slip resistant surface on concrete ramp surfaces, exclusive of the detectable warning fields.
3. Construct ramp transitions between walks, gutters, or streets that are flush and free of abrupt vertical changes not to exceed 63 mm.
4. Locate drainage inlets and manholes outside of ramp walking surfaces or landings.



DETECTABLE WARNING FIELD WITH TRUNCATED DOMES

PARALLEL CURB RAMP

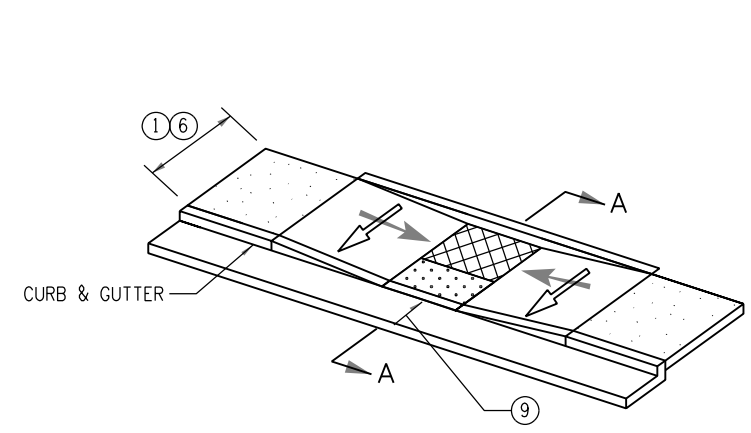
95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION FEDERAL LANDS HIGHWAY OFFICE	
U.S. CUSTOMARY STANDARD WHEELCHAIR RAMP CURB TAPER	
	STANDARD 615-2

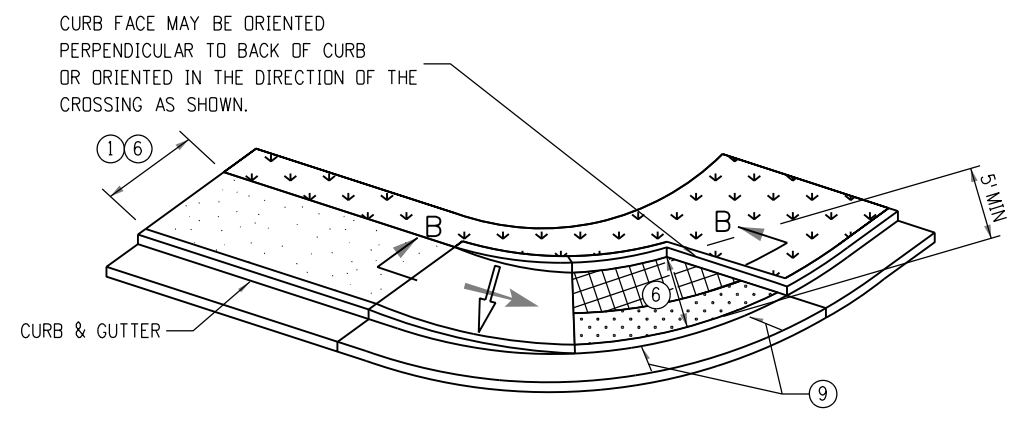
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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-089

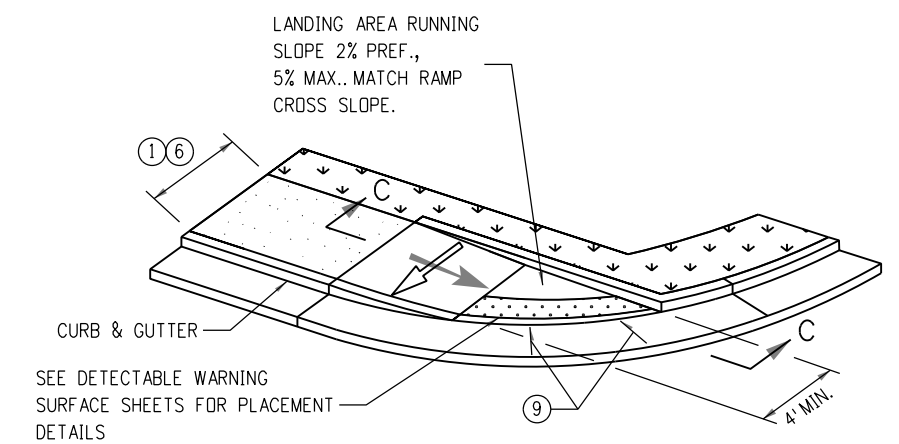
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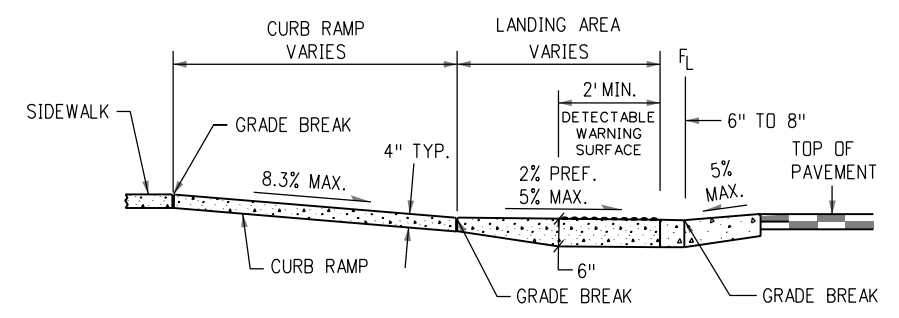
PARALLEL RAMP
TYPE 2A



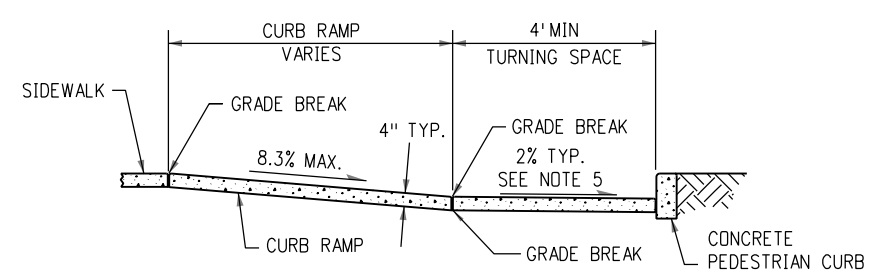
PARALLEL RAMP
TYPE 2B



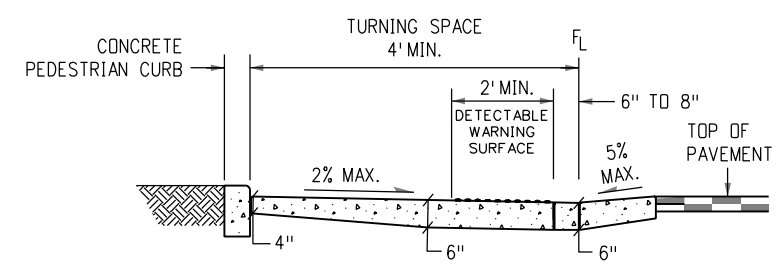
PARALLEL RAMP
TYPE 2C



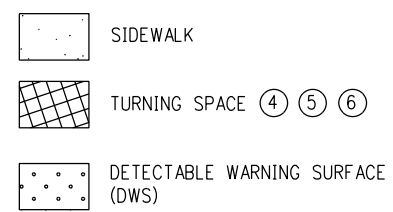
SECTION C-C



SECTION B-B



SECTION A-A



PARALLEL RAMP NOTES

- ① RAMP WIDTH - PROVIDE A RAMP WIDTH EQUAL TO THE ADJOINING SIDEWALK, PROVIDE 4 FT. WIDTH MINIMUM. RAMPS SERVICING SHARED USE PATHS SHALL MATCH THE WIDTH OF THE PATH.
- ② RAMP RUNNING SLOPE - 8.3% MAX.
- ③ RAMP CROSS SLOPE - 2.0% MAX.
- ④ TURNING SPACE RUNNING SLOPE - 2.0% MAX. TURNING SPACE RUNNING SLOPE IS MEASURED PERPENDICULAR TO THE BACK OF CURB.
- ⑤ TURNING SPACE CROSS SLOPE - 2.0% TYPICAL, AT CROSSINGS WITHOUT YIELD OR STOP CONTROL, OR WITH A SIGNAL WHERE VEHICLES CAN PROCEED THROUGH THE INTERSECTION WITHOUT SLOWING OR STOPPING, THE CROSS SLOPE OF THE TURNING SPACE MAY EQUAL THE HIGHWAY GRADE. AT MIDDLEBLOCK PEDESTRIAN STREET CROSSINGS THE TURNING SPACE CROSS SLOPE MAY EQUAL THE HIGHWAY GRADE. TURNING SPACE CROSS SLOPE IS MEASURED IN THE DIRECTION OF THE RAMP RUN.
- ⑥ TURNING SPACE DIMENSIONS - PROVIDE A TURNING SPACE AT THE BOTTOM OF PARALLEL RAMPS WITH A WIDTH EQUAL TO THE WIDTH OF THE CURB RAMP. PROVIDE 4 FT. MINIMUM, MEASURED IN THE DIRECTION OF THE RAMP RUN. IF THE TURNING SPACE IS CONSTRAINED ON TWO SIDES, PROVIDE 5 FT. MEASURED IN THE DIRECTION OF PEDESTRIAN STREET CROSSING. THE TURNING SPACE MAY CONTAIN THE DETECTABLE WARNING SURFACE.
- ⑦ RAMP ALIGNMENT - RAMPS SHALL BE ALIGNED SO THE TURNING SPACE IS FULLY CONTAINED WITHIN THE CROSSWALK OR STREET CROSSING THEY SERVE. PROVIDE ONE RAMP FOR EACH STREET CROSSING DIRECTION. IN ALTERATIONS, WHERE EXISTING PHYSICAL CONSTRAINTS PREVENT PROVIDING ONE CURB RAMP FOR EACH CROSSING DIRECTION, A SINGLE DIAGONAL CURB RAMP (ON THE APEX OF A CORNER) SHALL BE PERMITTED TO SERVE BOTH PEDESTRIAN STREET CROSSINGS. DIAGONAL RAMPS ARE NOT ACCEPTABLE IN NEW CONSTRUCTION, OR FULL-DEPTH RECONSTRUCTION.
- ⑧ RAMP LENGTH - PARALLEL RAMP LENGTH IS DEPENDENT UPON THE RAMP SLOPE AND THE CHANGE OF ELEVATION FROM THE TURNING SPACE TO THE SIDEWALK. WHERE TERRAIN IS SLOPING A RAMP IS NOT REQUIRED TO CHASE GRADE MORE THAN 15 FT. REGARDLESS OF THE RESULTING RAMP SLOPE.
- ⑨ GUTTER COUNTER SLOPE - 5.0% MAX.

TYPE 2 PARALLEL CURB RAMPS

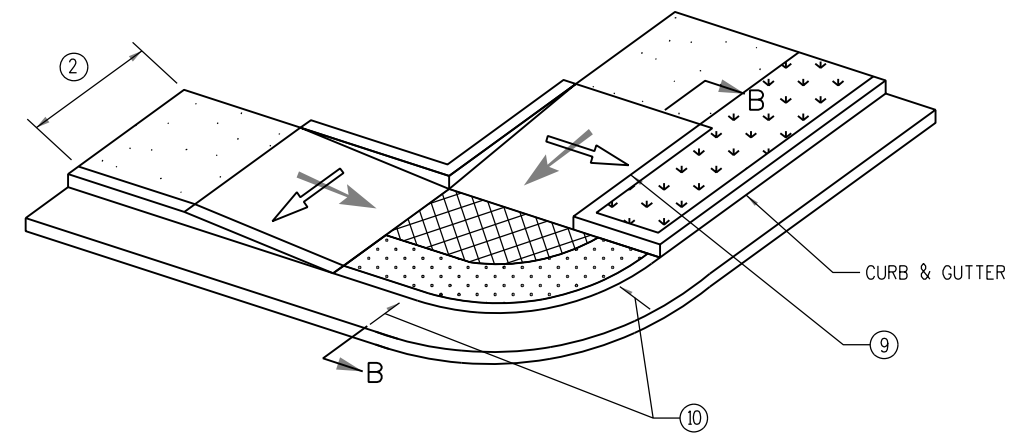
DESIGN SUBMITTAL 2/3/22
 NOT FOR CONSTRUCTION

(Adapted from CDOT M-608-1)

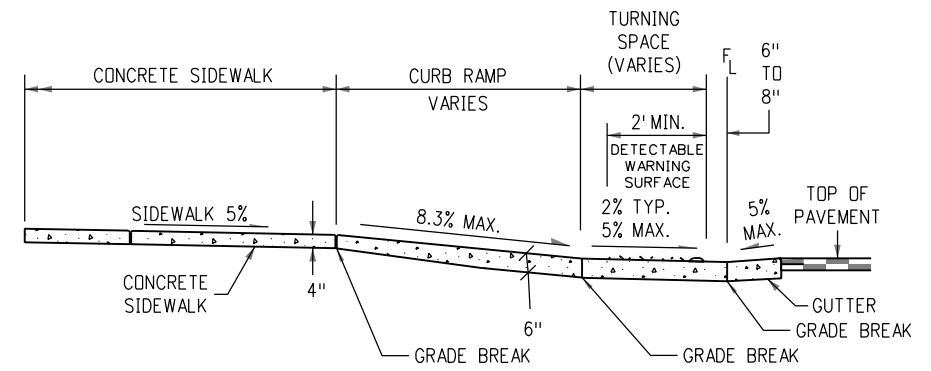
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY SPECIAL CURB RAMP SPECIALS	
SPECIAL 615-A	

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-090

DETECTABLE WARNING SURFACE (DWS)

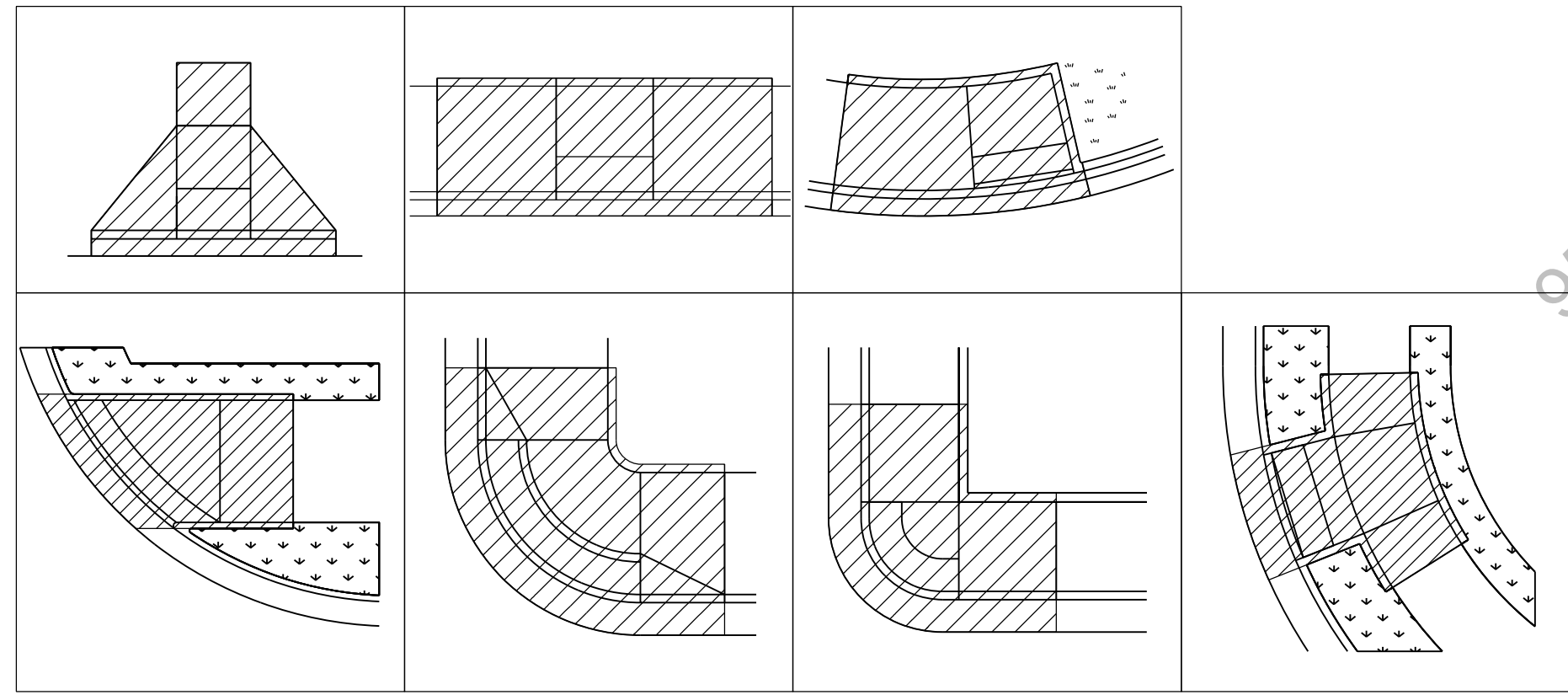


DEPRESSED CORNER



SECTION B-B

CURB RAMP PAY AREAS



DEPRESSED CORNER NOTES

- ① PERPENDICULAR AND PARALLEL RAMP CONFIGURATIONS ARE PREFERRED. DEPRESSED CORNERS SHOULD ONLY BE USED WHERE SITE CONDITIONS MAKE THEM A MORE APPROPRIATE OPTION, OR WHERE PERPENDICULAR OR PARALLEL RAMPS CANNOT BE INSTALLED DUE TO A PHYSICAL SITE CONSTRAINT.
- ② RAMP WIDTH - PROVIDE 5 FT. OR GREATER WHERE POSSIBLE. IF SITE CONSTRAINTS DO NOT PERMIT, PROVIDE 4 FT. WIDTH MINIMUM. RAMPS SERVICING SHARED USE PATHS SHALL MATCH THE WIDTH OF THE PATH.
- ③ RAMP RUNNING SLOPE - 8.3% MAX.
- ④ RAMP AND TURNING SPACE CROSS SLOPE - 2.0% TYPICAL. AT CROSSINGS WITHOUT YIELD OR STOP CONTROL, OR WITH A SIGNAL WHERE VEHICLES CAN PROCEED THROUGH THE INTERSECTION WITHOUT SLOWING OR STOPPING, THE CROSS SLOPE OF RAMPS AND TURNING SPACES MAY EQUAL THE HIGHWAY GRADE.
- ⑤ TURNING SPACE DIMENSIONS - PROVIDE A 4 FT. X 4 FT. MIN. TURNING SPACE AT THE BOTTOM OF RAMP RUNS. THE TURNING SPACE MAY CONTAIN THE DETECTABLE WARNING SURFACES.
- ⑥ RAMP ALIGNMENT - TURNING SPACE SHALL BE ALIGNED TO BE FULLY CONTAINED WITHIN THE CROSSWALK OR STREET CROSSING(S) THEY SERVE.
- ⑦ RAMP LENGTH - RAMP LENGTH IS DEPENDENT UPON THE RAMP SLOPE AND THE CHANGE OF ELEVATION FROM THE TURNING SPACE TO THE SIDEWALK. WHERE TERRAIN IS SLOPING A RAMP IS NOT REQUIRED TO CHASE GRADE MORE THAN 15 FT. REGARDLESS OF THE RESULTING RAMP SLOPE.
- ⑧ RAMP FLARES - WHERE A RAMP EDGE ABUTS A WALKABLE SURFACE, A FLARED SIDE MUST BE PROVIDED. RAMP FLARE SLOPES SHALL NOT EXCEED 10.0%.
- ⑨ VERTICAL CURB RETURNS - VERTICAL CURB RETURNS MAY BE USED ONLY WHERE A RAMP ABUTS A NON-WALKABLE SURFACE, OR WHERE A RAMP IS PROTECTED FROM PEDESTRIAN CROSS TRAFFIC (FOR EXAMPLE BY A SIGNAL CABINET OR UTILITY POLE WHICH BLOCKS PASSAGE).
- ⑩ GUTTER COUNTER SLOPE - 5.0% MAX.
- ⑪ DWS PLACEMENT - DWS SHALL BE PLACED AROUND THE RADIUS AND LOCATED AT THE BACK OF CURB ON DEPRESSED CORNER RAMPS.

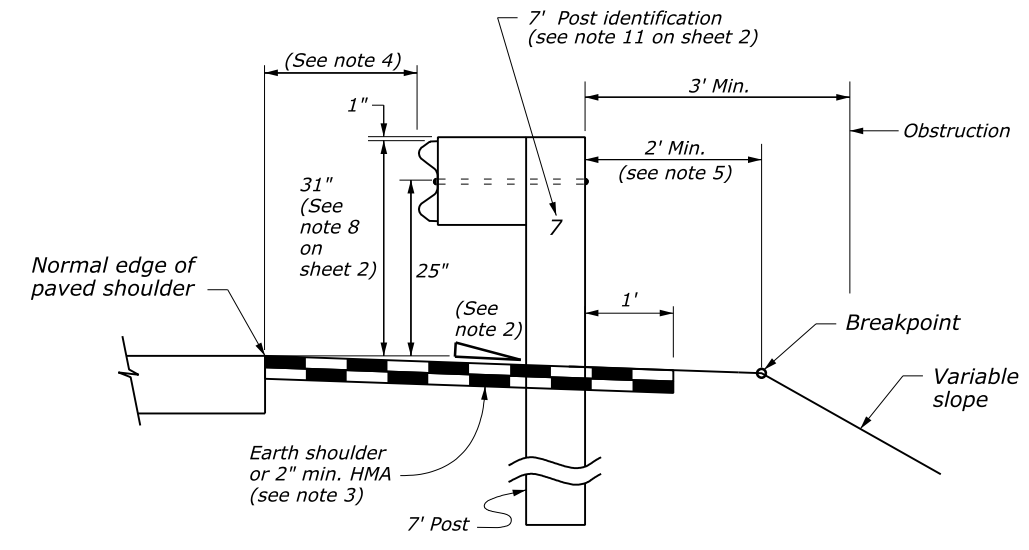
95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

(Adapted from CDOT M-608-1)

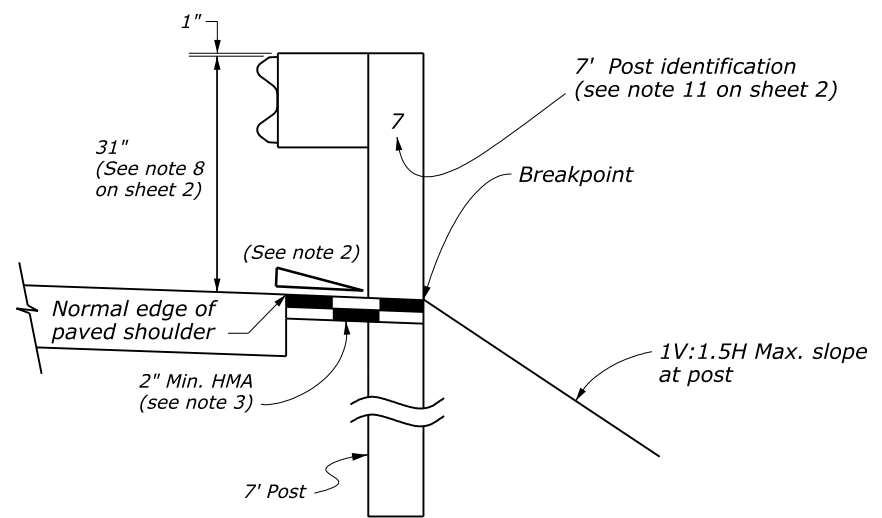
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U.S. CUSTOMARY SPECIAL CURB RAMP SPECIALS	
	SPECIAL 615-A

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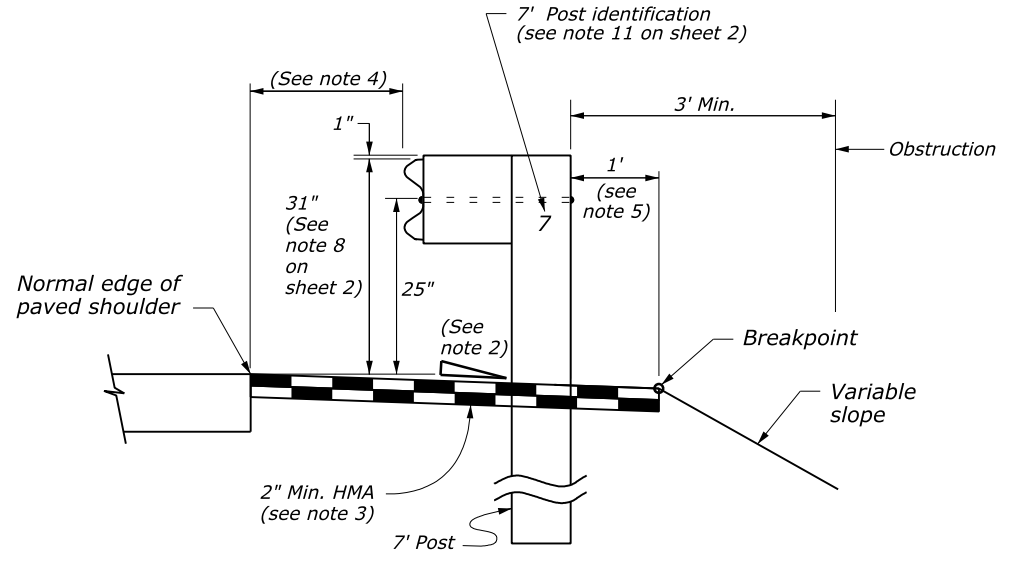
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 1/27/2022



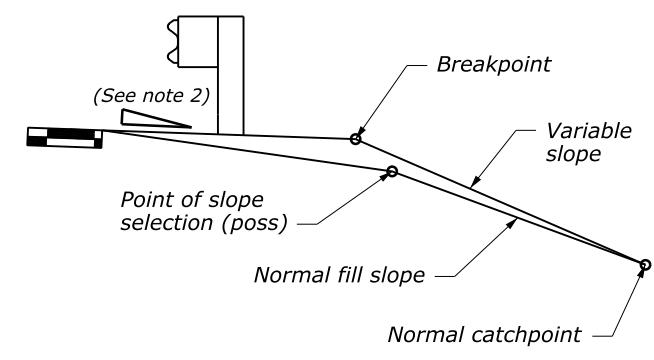
NORMAL ROADSIDE INSTALLATION WITH 7 FOOT GUARDRAIL POSTS
(See note 5)



RESTRICTIVE ROADSIDE INSTALLATION WITH 7 FOOT GUARDRAIL POSTS AT HINGE POINT
(See note 5)



RESTRICTIVE ROADSIDE INSTALLATION WITH 7 FOOT GUARDRAIL POSTS AT 1' FROM HINGE POINT
(See note 5)



EMBANKMENT WITH GUARDRAIL
(Note: The catchpoint remains the same as that for "normal" fill slope. for the wider "z" distances, the variable slope may "catch" at the poss.)

NOTES (Continued on T-111):

- Tolerance for top of guardrail beam is 1 in.
- Rate of slope depends on guardrail location:
 - A. For guardrail face 2 ft. or less from the normal edge of paved shoulder, continue the rate of slope of the normal paved shoulder to the breakpoint.
 - B. For guardrail face more than 2 ft. from the normal edge of paved shoulder, the slope shall be 1:10 or flatter.
- When specified on the plans, extend a 2 in. minimum thickness paved surface to 1 ft. behind the guardrail posts or to the erosion control curb as shown on plans. Asphalt cutting & patching or other approved method shall be used to minimize damage to all paved surfaces under guardrail installations. All repairs to the paved area will not be measured and paid for separately but shall be included in the cost of the work. A minimum 3 in. thick fiber reinforced concrete pavement may also be used for paving beneath the guardrail. Install the post in a 1/2 in. oversized formed hole for guardrail runs and terminals as directed. Payment for this paved surface will be made under the 40101-5600 pay item.
- The minimum guardrail offset from paved inside shoulder edge shall be:
 - 0 ft. for shoulders 8ft. or wider
 - 2 ft. for shoulders 6 ft. or less

The guardrail offset from paved inside shoulder edge of a divided highway shall be:
 0 ft. minimum for shoulders 6 ft. or wider
 2 ft. desirable for 4 ft. shoulders

The above 2 ft. guardrail to shoulder offset is desirable but not required for:

 - A. For an existing highway with a design speed less than 50 MPH. The minimum offset is 4 ft. from the traveled way.
 - B. For a one-way one-lane ramp, and where one or more of the following are true:
 - (1) The non-offset guardrail begins at least 100 ft. beyond ramp nose.
 - (2) The non-offset guardrail is not located on the ramp exit or entrance curve connection to the major highway.
 - (3) The ramp shoulders are 4 ft. or wider.

Use of greater than minimum offset dimensions is encouraged to meet the desirable goal of placing the guardrail as far back as possible from the travel way, even for short distances, while providing a smooth change in guardrail alignment.
- Scenarios shown on this sheet are typical for the project, refer to the cross sections for proposed distances behind the guardrail.
- When specified on the plans, install 4 in. high concrete curb with its face at or behind the rail face. As an alternative when specified on the plans, install a 2 in. x 6 in. treated (AASHTO M 133) wood curb. Fasten with a 4 in. lag bolt and washer at each wood post, or with a 1/4 in. dia. bolt with washer and nut at each steel post. If the 2 in. x 6 in. wood curb is specified, it will be included in the cost of the guardrail. If approved by the CO, a 2 in. by 4 in. treated wood curb may be substituted for the 2 in. by 6 in. curb and set on top of pavement surface and attached as described above. No splicing shall be allowed in wood curbs. Adjacent boards shall be butted together and bolted at a post location. Joints shall be located at the posts.

(Adapted from CDOT M-606-1)

LOCATION	SPACING
All locations except bridge rail locations	6'-3"
Bridge or structure approach	See sheet 8

NORMAL CENTER-TO-CENTER POST SPACING

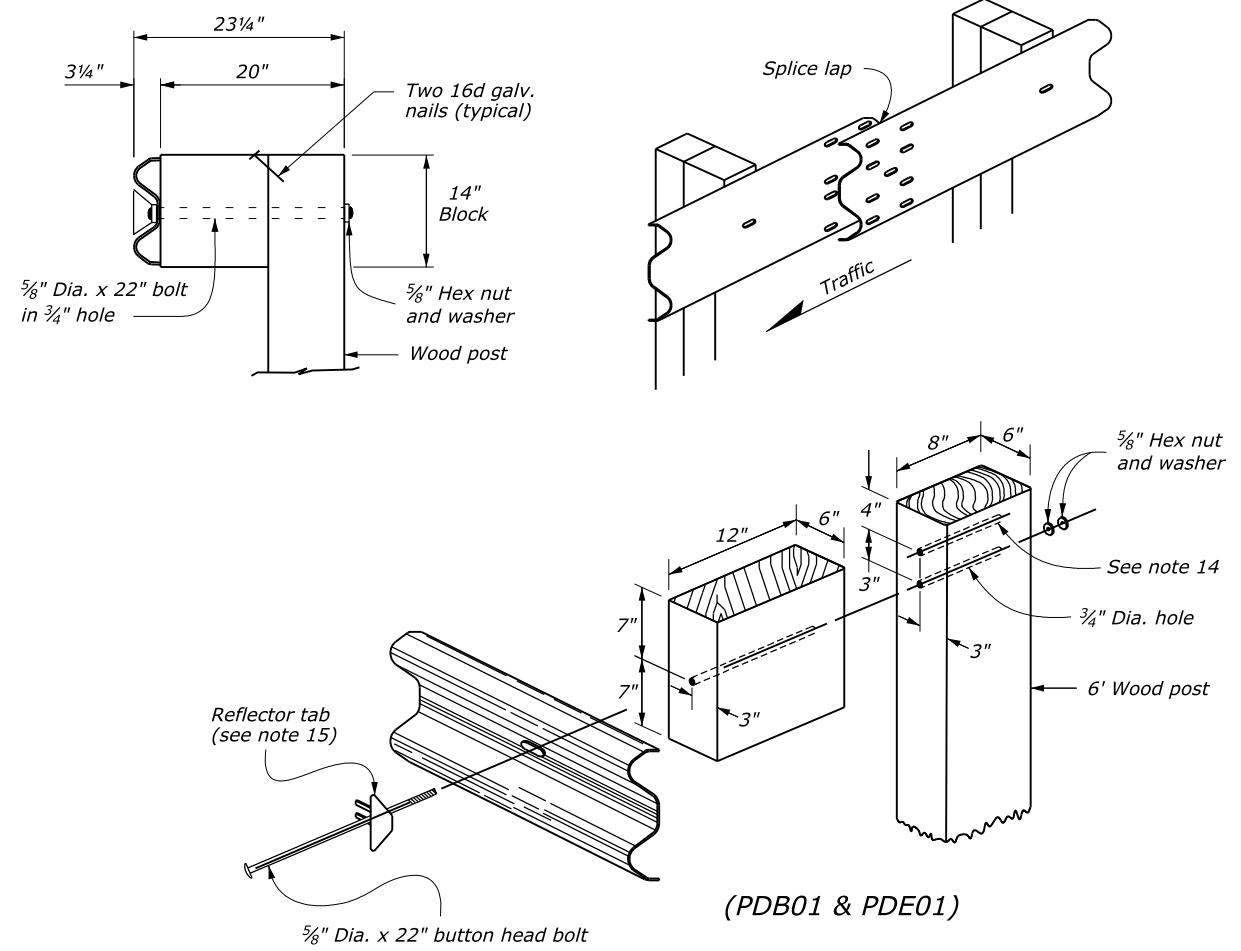
U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL
**MIDWEST GUARDRAIL SYSTEM
 TYPE 3 W-BEAM 31 INCHES**

SPECIAL
 617-A

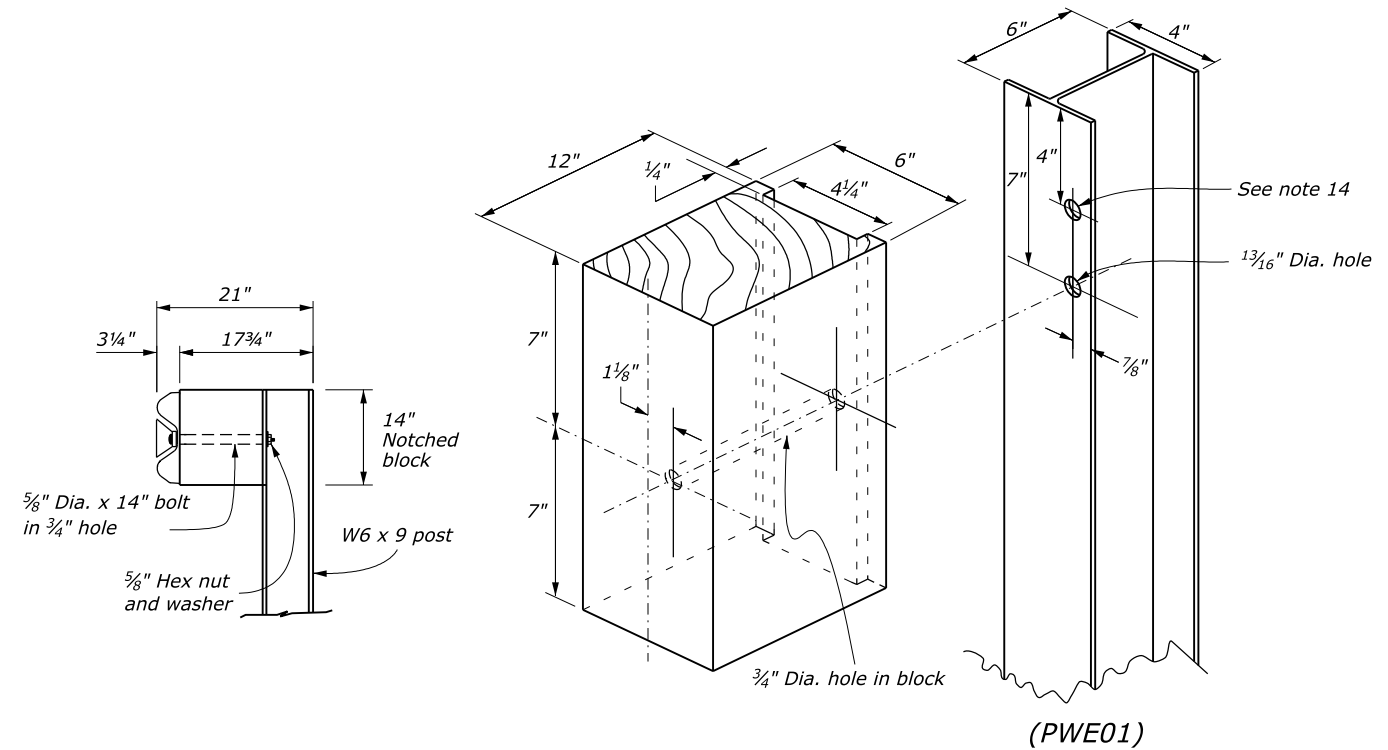
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-092

User: isabel.butler
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 1/27/2022



WOOD POST & BLOCK
(Nominal dimensions are shown for the posts & blocks)

(PDB01 & PDE01)



STEEL POST & NOTCHED BLOCK
(Nominal dimensions are shown for the posts & blocks)

(PWE01)

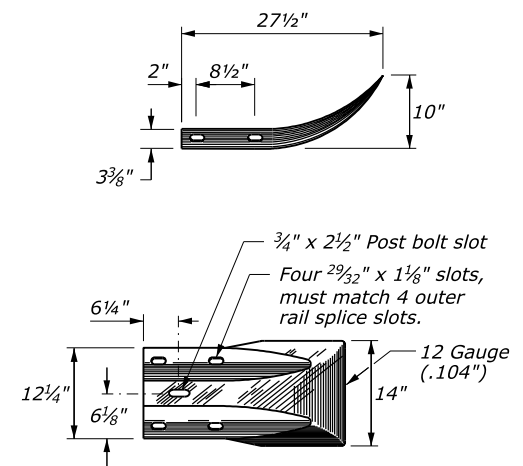
NOTES (Continued from T-110):

7. Note intentionally left blank.
8. If this dimension will be less than 31 inches, reset guardrail height to 31 inches or above.
9. All w-beam splices, and splices of terminal connectors to w-beam shall be lapped in the direction of traffic unless otherwise noted.
10. Material type and shape of posts and blocks shall be the same throughout the project except when specific posts and blocks are specified, i.e. at end anchorages and box culverts.
11. When specified in the contract, 7 ft. posts shall be installed instead of the standard 6 ft. posts. The 7 ft. posts shall be marked with the number 7 to ensure permanent identification. Steel posts shall be stamped prior to galvanizing. The number 7 shall be a minimum 2 in. tall and located as shown on the elevation view on sheet 1.
12. The standard 3 in. x 1 1/4 in. x 3/16 in. rectangular washer used under post bolt heads in the past may remain in existing installations but shall not be used in new construction, repairs, or resetting of rail, except when specifically identified on the standard plan.
13. Standard galvanized round steel washers shall be used under all nuts in contact with wood posts.
14. An additional hole shall be provided in the posts to facilitate future raising of the rail elements and blocks for overlays.
15. Retroreflector tabs shall be installed at 25 ft. intervals (see sheets 6 and 8 for exceptions). Retroreflector tabs will not be paid for separately but shall be included in the work. The tabs shall be mounted so the bolt slot faces away from traffic, and the retroreflector surface faces the approaching traffic for one-way roads. For two-way roads, both sides of the tabs shall be retroreflective, so that delineation is provided for both directions of travel. The retroreflective sheeting color shall match the color of the adjacent travel way edge line. See the retroreflector tab detail on sheet 3.
16. At the time of installation, wood posts or blocks with seasoning checks greater than 1/4 in. shall not be used when the check extends the full length of the piece.
17. Wood blocks shall be cut from the same cross-section, species, and grade, and shall receive the same preservative treatment as the posts when wood posts are used.
18. References such as "PDB01", "PDE01", and "PWE01" in this standard plan specify hardware details from "A Guide To Standardized Highway Barrier Hardware" prepared by the AASHTO-AGC-ARTBA joint cooperative committee.
19. Notched rail blocks manufactured from synthetic material will be accepted as alternatives to wood notched blocks for use with steel posts provided that the blocks have received FHWA approval and are certified as identical to the specimens used for testing and approval.
20. Wood posts shall be made of timber with an extreme fiber stress in bending of 1200 psi stress grading and post dimensions shall conform with the rules of the west coast inspection bureau, or the southern pine bureau, or the western wood products association. Timber for posts shall be either rough sawn (unplaned) or S4S (surfaced four sides) with nominal dimensions indicated. Only one type of surface finish shall be used for posts and blocks in any one continuous length of guardrail.
21. Glulam posts and blocks will be accepted as alternatives provided that the supplied materials have received fhwa approval and are certified as identical to the specimens used for testing and approval.
22. Pressure treatment of posts and blocks shall conform to AASHTO M 133 except that blocks need not be incised. Preservation Assay Retention reports shall be submitted to the CO. The contractor shall certify that the species and grade meet the requirements of the contract.
23. W-beam and thrie-beam guardrail posts shall be manufactured using AASHTO M 270 (ASTM A 709) grade 36 steel unless corrosion resistant steel is required, in which case the post shall be manufactured from AASHTO M 270 (ASTM A 709) grade 50W steel. The dimensions of the cross-section shall conform to a W6 x 9 section as defined in AASHTO M 160 (ASTM A 6). W6 x 8.5 wide flange steel posts are an acceptable alternative to the w6 x 9.
24. After the section is cut and all holes are drilled or punched the component shall be zinc-coated conforming to AASHTO M 111 (ASTM A 123) unless corrosion-resistant steel is used. When corrosion-resistant steel is used the portion of the post to be embedded in soil shall be zinc-coated conforming to AASHTO M 111 (ASTM A 123) and the portion above the soil shall not be zinc-coated, painted or otherwise treated.
25. Field modification to rail elements only is allowed by sawing and drilling of holes. Flame cutting is not permitted. Posts shall not be modified. Components on which the spelter coating has been damaged shall be either regalvanized or recoated in conformance with AASHTO M 36, or painted with one full brush coat of zinc rich paint conforming to military specification DOD-P-21035A.

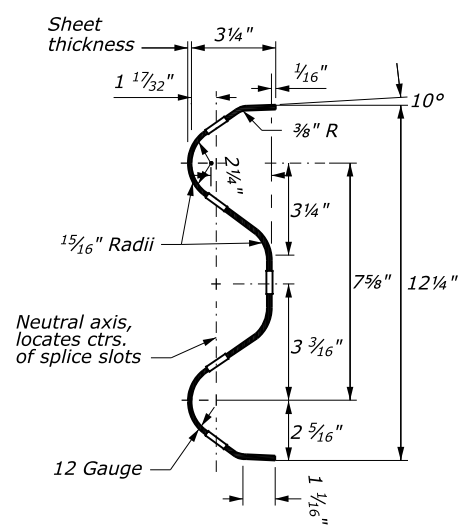
95% DESIGN COMPLETE
 NOT FOR CONSTRUCTION

(Adapted from CDOT M-606-1)

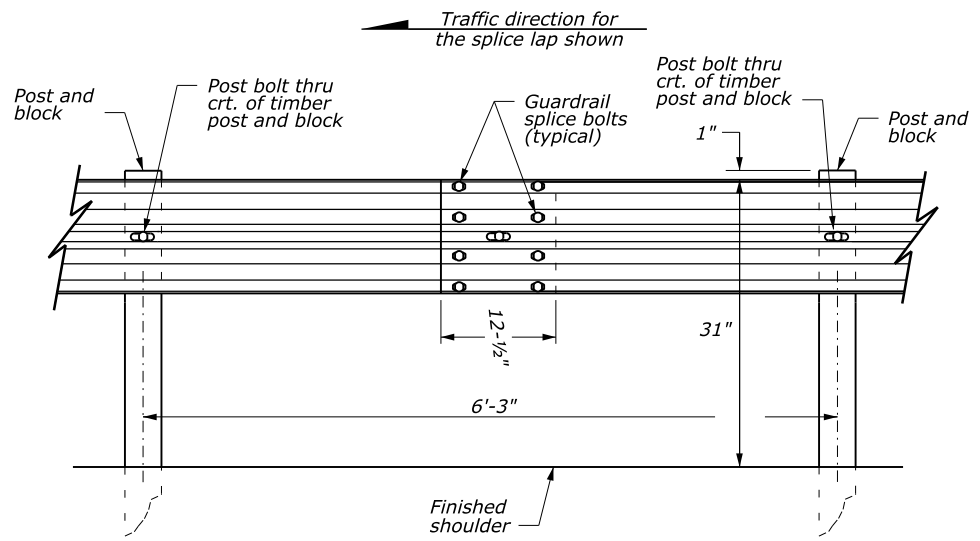
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U.S. CUSTOMARY SPECIAL MIDWEST GUARDRAIL SYSTEM TYPE 3 W-BEAM 31 INCHES	
	SPECIAL 617-A



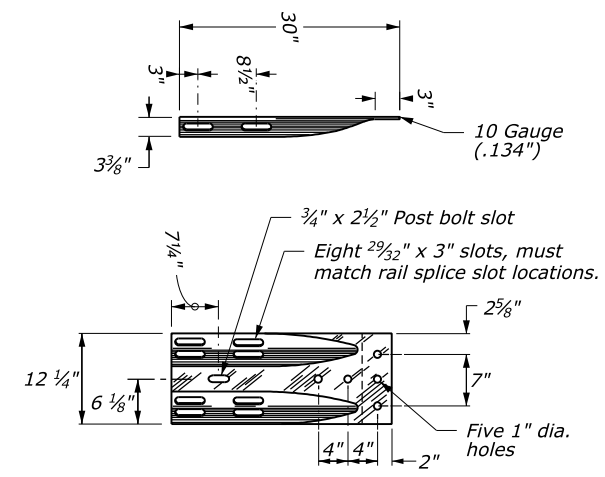
(RWE01a)
TERMINAL SECTION (FLARED)



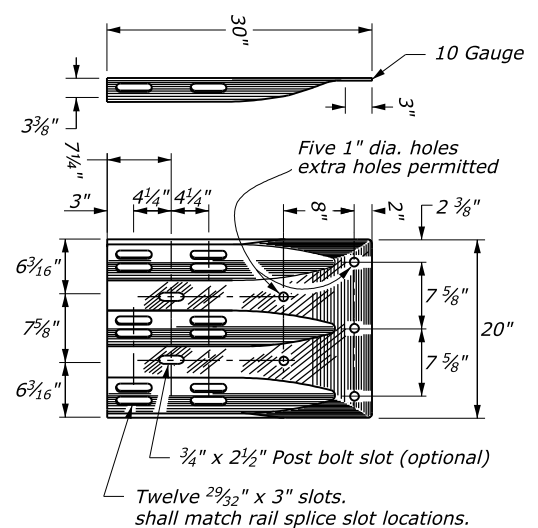
(RWM02a)
W-BEAM RAIL SECTION



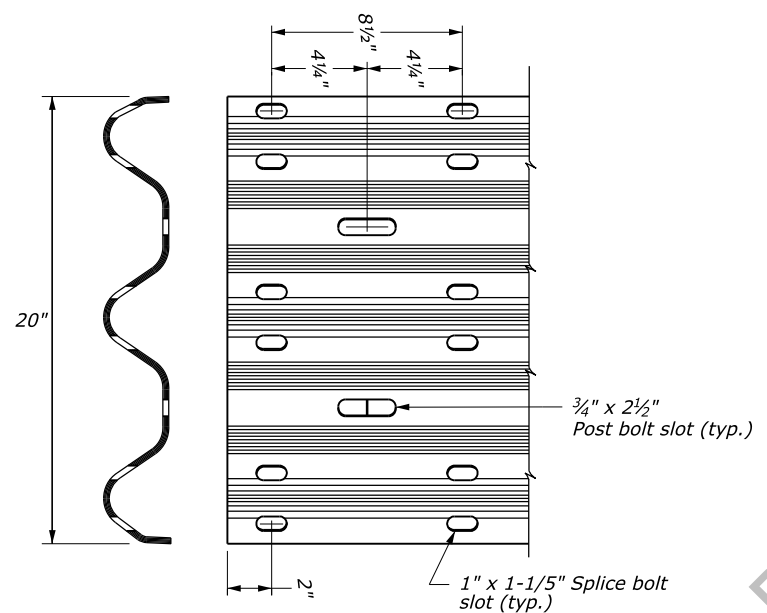
W-BEAM RAIL SPLICE



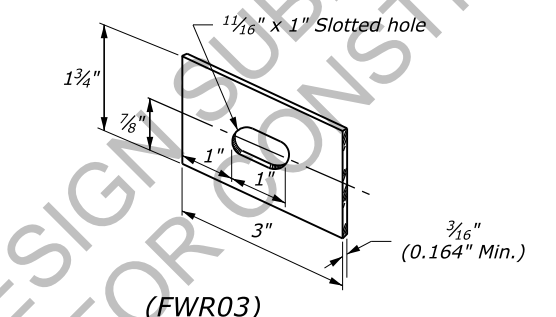
TERMINAL SECTION (CONNECTOR)



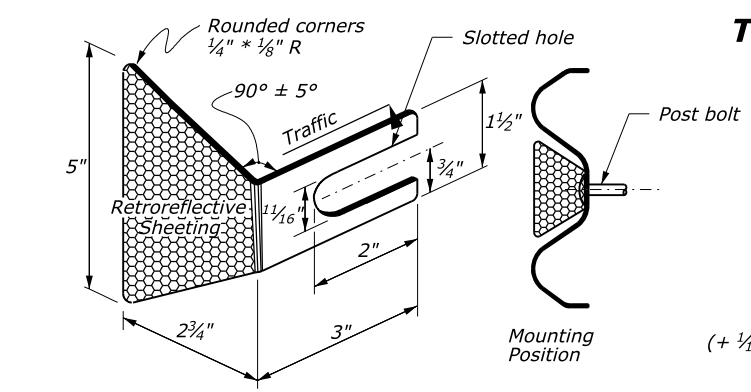
THRIE BEAM TERMINAL SECTION (CONNECTOR)



THRIE BEAM DETAIL

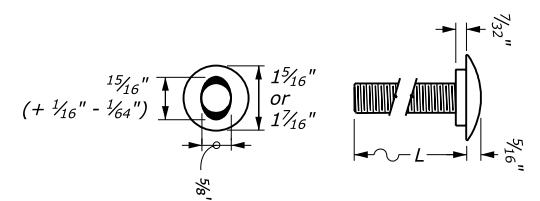


(FWR03)
RECTANGULAR WASHER
(To be used only where specified.)

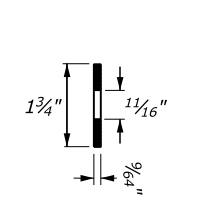


RETROREFLECTOR TAB

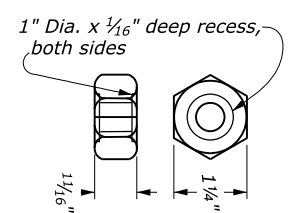
Note: Retroreflector tabs shall be manufactured from 12 to 14 gauge steel and shall conform to the requirements of special 633-G.



BUTTON HEAD BOLT WITH OVAL SHOULDER



WASHER



HEX NUT

Diameter & Type (Inches)	12" Blocks L = Length (Inches)	Thread Length (Inches)	Intended Use	AASHTO-AGC-ARTBA Standard Number	No. Bolts, Nuts & Washers
5/8	1 1/4	Full (1 1/32)	All Rail Splices	FBB01	8 Per splice*
Buttonhead Oval Shldr.	22	Min. 2 1/2	Single Block & Post (Timber)	FBB04	1 Per post
	33	Min. 2	Double Block & Post (Timber)	FBB05	1 Per post
	14	Min. 2	Fasten Notched Block To Steel Post	FBB03	1 Per block

Washers not used at rail splices

(Adapted from CDOT M-606-1)

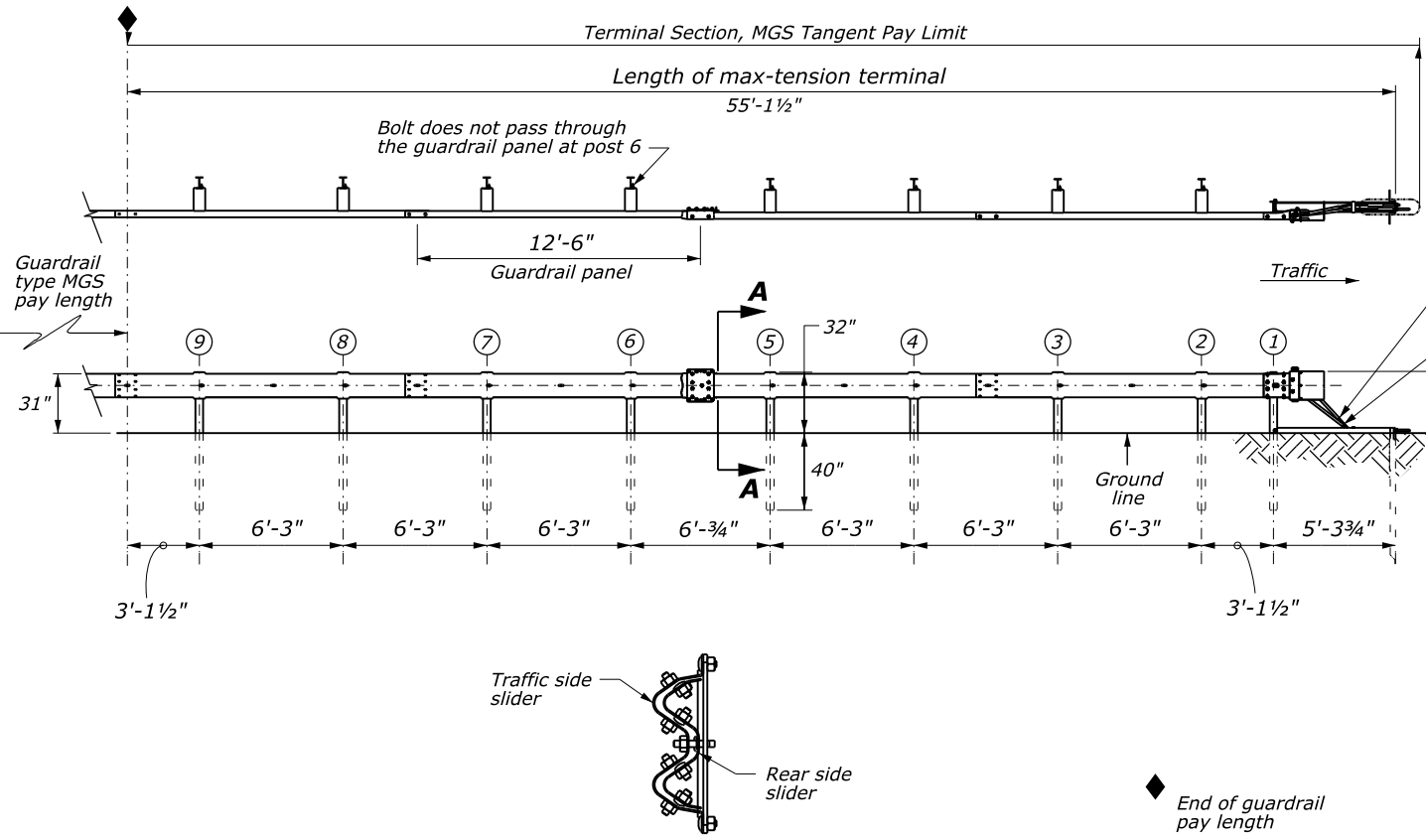
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL
MIDWEST GUARDRAIL SYSTEM
TYPE 3 W-BEAM 31 INCHES
Sheet 3 of 11

SPECIAL
617-A

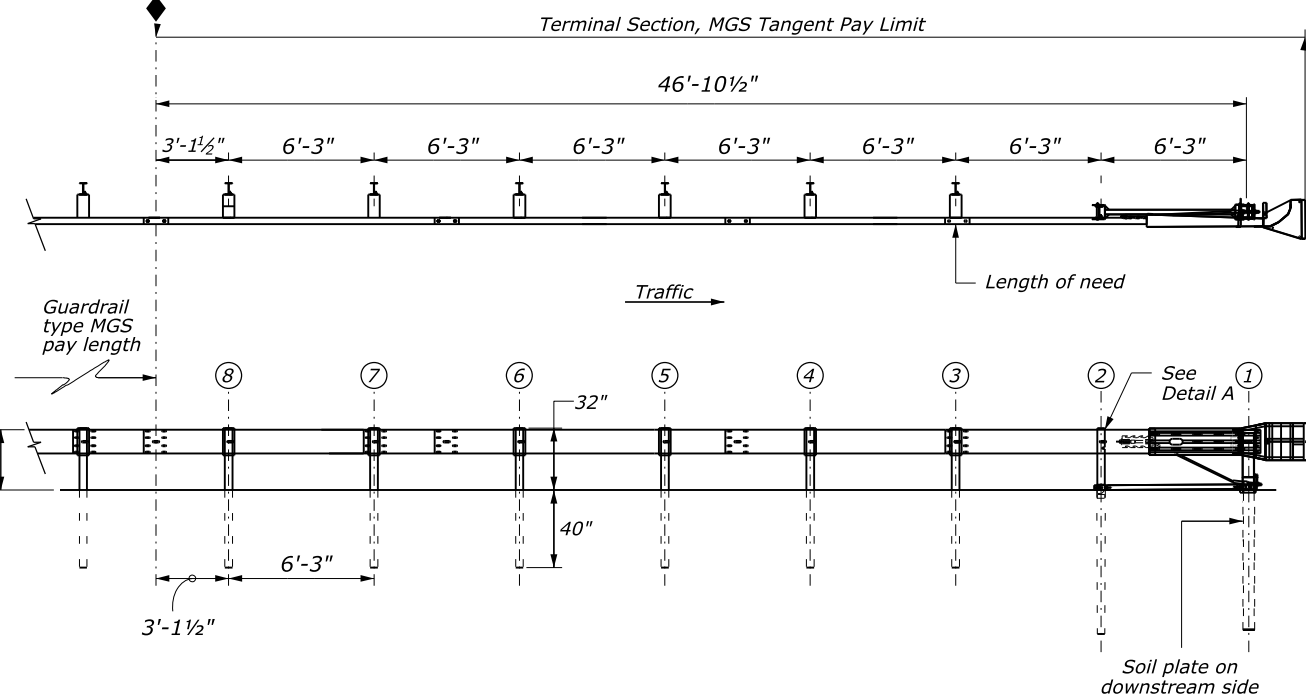
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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-094



SECTION A-A

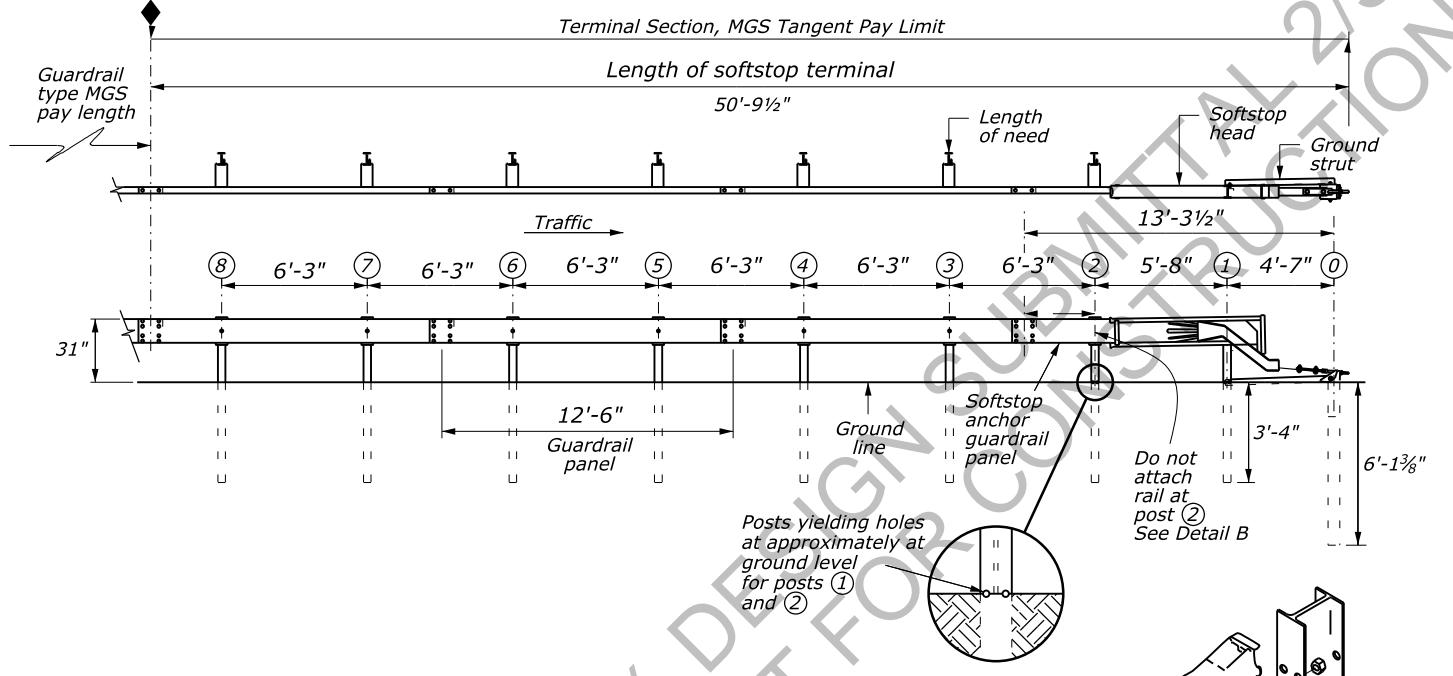
MAX-TENSION TERMINAL END ANCHORAGE (NONFLARED)
(Mash certified)



MSKT TERMINAL END ANCHORAGE (NONFLARED)
(Mash certified)

NOTES:

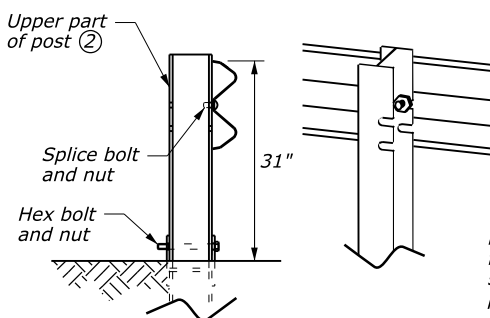
1. The end anchorage (nonflared) shall either be the softstop as manufactured by Trinity Industries, Inc. (tel. #: 800-772-7976), or the Max-Tension as manufactured by Lindsay Transportation Solutions (tel. #: 402-829-6800), or the MSKT as manufactured by Road Systems, Inc. (tel. #: 432-263-2435). The end anchorage (nonflared) shall include all post, rail, and hardware items required for a complete unit. The end anchorage (nonflared) shall be installed conforming to the manufacturer's recommendations. The contractor shall provide a copy of the manufacturer's installation instructions and parts list to the CO prior to the installation of the device.
2. Do not attach these end anchorages directly to a rigid barrier (ex. concrete barrier, steel barrier, concrete structure) without a proper transition.
3. Connections to W-beams where the splice is not at mid-span but at a post can be made using a 3'-1 1/2", 9'-4 1/2", or 15'-7 1/2" W-beam panel downstream of traffic.
4. For MSKT end anchorages (nonflared), use the manufacturer's specified steel foundation tubes for posts ① and ②.
5. Hinged break away (HBA) steel posts may be used conforming to the manufacturer's instructions.
6. Retroreflector tabs shall not be used on end anchorage posts.
7. Delineation shall be applied to the end piece and is included in the cost of the work. See special 633-G.



DETAIL B

SOFTSTOP TERMINAL END ANCHORAGE (NONFLARED)
(Mash certified)

(Adapted from CDOT M-606-1)



DETAIL A

There are two sets of open-ended slots in the upper part of post ②. These are for 28" and 31" rail heights. Use the top slot for the 31" mskt terminal. Install post ② with the slots facing post ①.

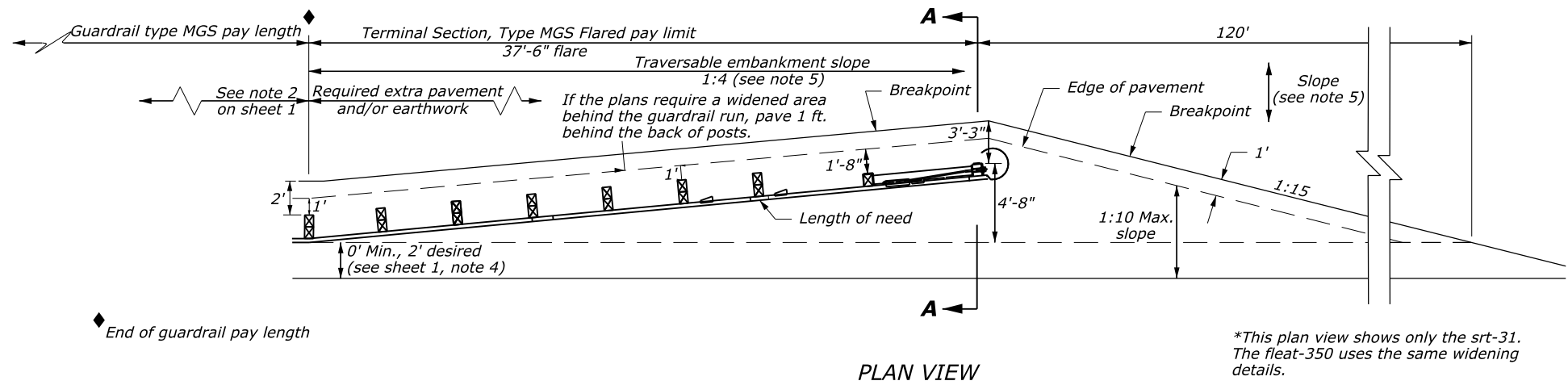
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL
**MIDWEST GUARDRAIL SYSTEM
TYPE 3 W-BEAM 31 INCHES**

SPECIAL
617-A

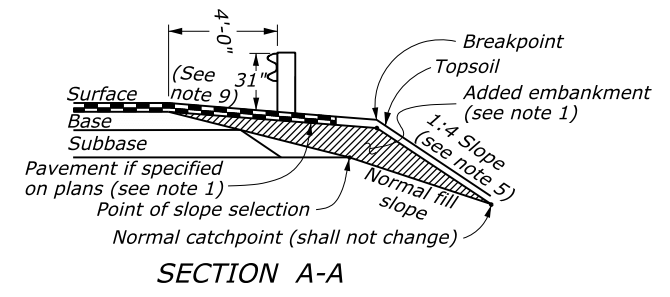
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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-095

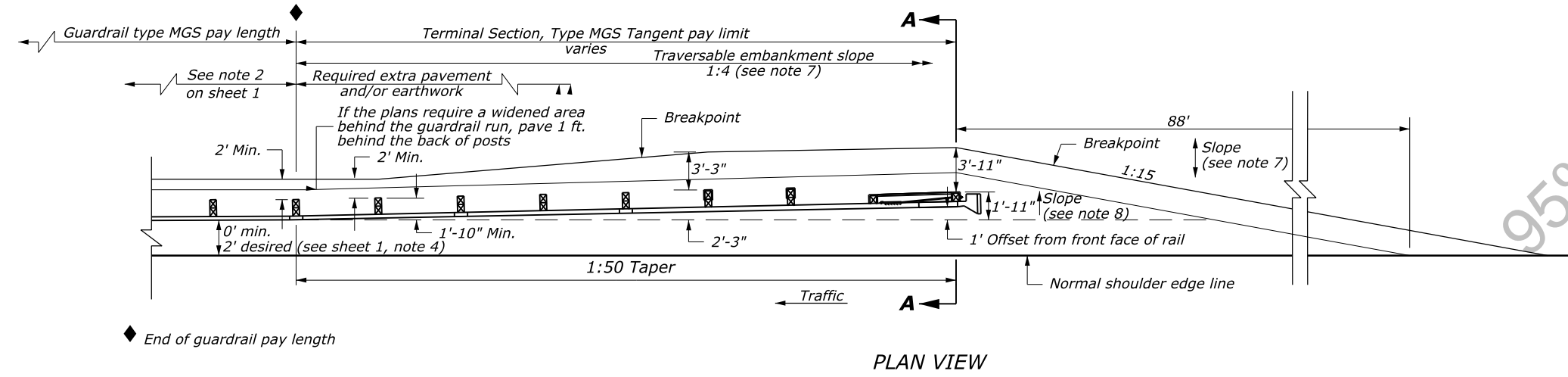


WIDENING FOR END ANCHORAGE (FLARED)*

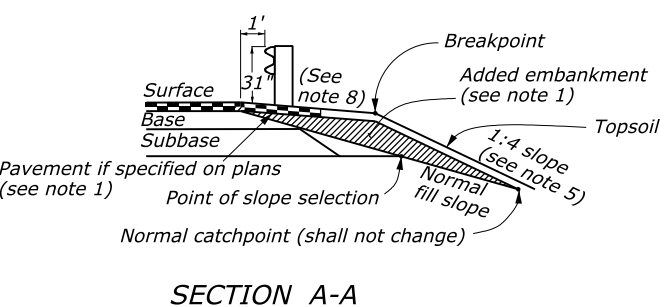
- NOTES FOR FLARED:**
1. Payment for the added embankment (approximately 45 cu. yds.) for the flare shall be under pay item 20401-0000: Roadway Excavation.
 2. When the widened area is paved, payment for the pavement (approx. 70 sq. yds.) shall be under pay item 40101-5600: Asphalt Concrete Pavement.
 3. When overlay paving, the finished surface at each post shall not be above the top breakaway hole or strut assembly. The widened area at the flared end anchorage should not be overlaid unless pavement conditions warrant it being overlaid. Any overlay pavement abutting the flared end anchorage shall be tapered to prevent a drop in the paved surface below the rail.
 4. See sheets 1, 2, 3, and 5 for standard type 3 guardrail installation details.
 5. 1:4 or flatter slopes in the traversable area shall be used behind the end anchorage, and in advance of post ①. If this is not possible, a minimum 1:3 slope may be used if approved by the CO.
 6. The widened area, except for curb option a, shall have the same grading as the adjacent guardrail: 1:10 or flatter if more than 2 ft. from shoulder or slope equal to roadway slope if 2 ft. or less from shoulder.
 7. Widening for end anchorages shall be paved on interstates and freeways. For other highways, paving shall be as shown on the plans.



- NOTES FOR NONFLARED:**
1. Payment for the added embankment (approximately 25 cu. yds.) for the flare shall be under pay item 20401-0000: Roadway Excavation.
 2. When the widened area is paved, payment for the pavement (approx. 39 sq. yds.) shall be under pay item 40101-5600: Asphalt Concrete Pavement.
 3. When overlay paving, the finished surface at each post shall not be above the top breakaway hole or strut assembly. The widened area at the end anchorage (nonflared) shall not be overlaid unless pavement conditions warrant it being overlaid. Any overlay pavement abutting the end anchorage (nonflared) shall be tapered to prevent a drop in the paved surface below the rail.
 4. See sheets 1, 2, 3, and 5 for standard type 3 guardrail installation details.
 5. 1:4 or flatter slopes in the traversable area shall be used behind the end anchorage area, and in advance of post ①. If this is not possible a minimum 1:3 slope may be used if approved by the engineer.
 6. The widened area, except for curb option A, shall have the same grading as beneath the adjacent guardrail: 1:10 or flatter if more than 2 ft. from shoulder, or slope equal to roadway slope if 2 ft. or less from shoulder.
 7. Widening for end anchorages shall be paved on interstates and freeways. For other highways, paving shall be as shown on the plans.
 8. Hinged Break Away (HBA) steel posts may be used. see manufacturer's details.



WIDENED AREA FOR END ANCHORAGE (NONFLARED)



(Adapted from CDOT M-606-1)

U.S. DEPARTMENT OF TRANSPORTATION
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CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL
**MIDWEST GUARDRAIL SYSTEM
TYPE 3 W-BEAM 31 INCHES**

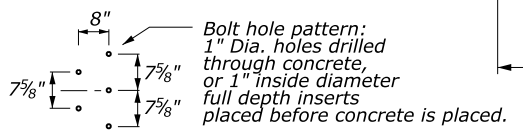
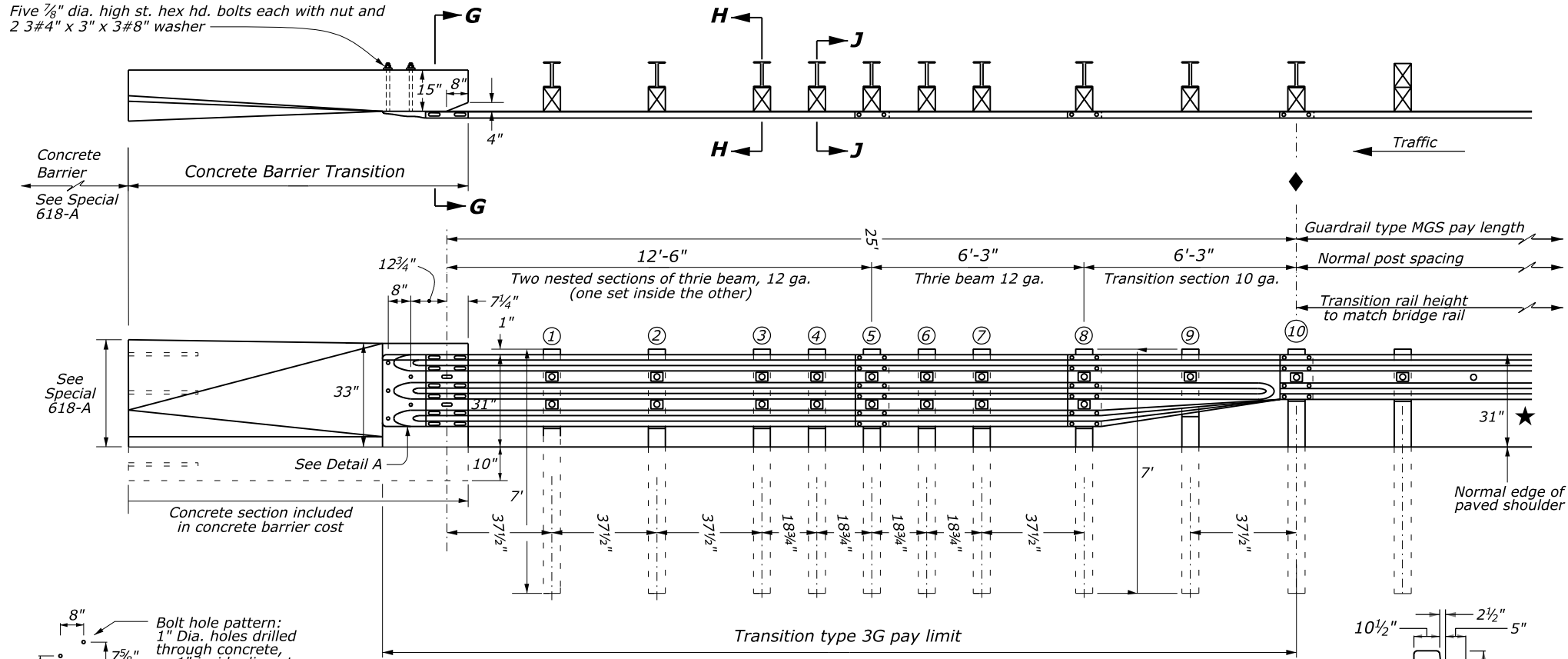
SPECIAL
617-A

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NOTES:

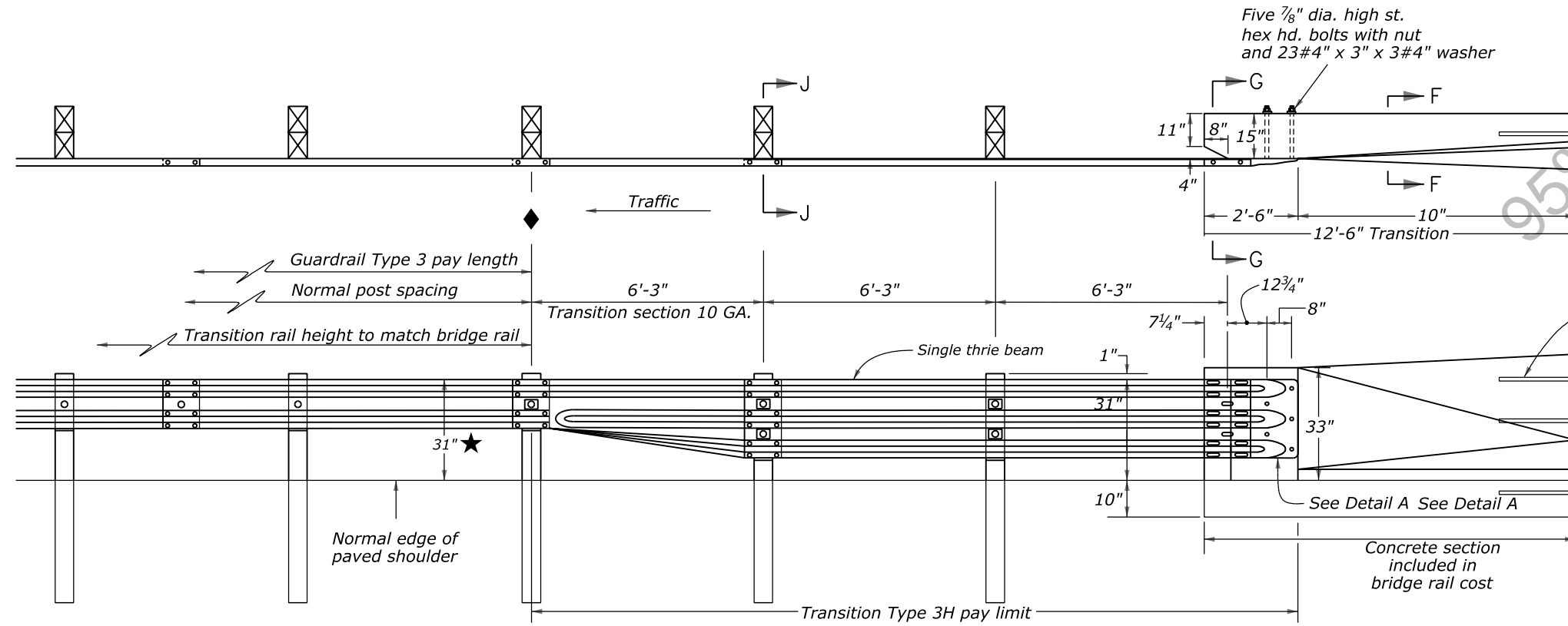
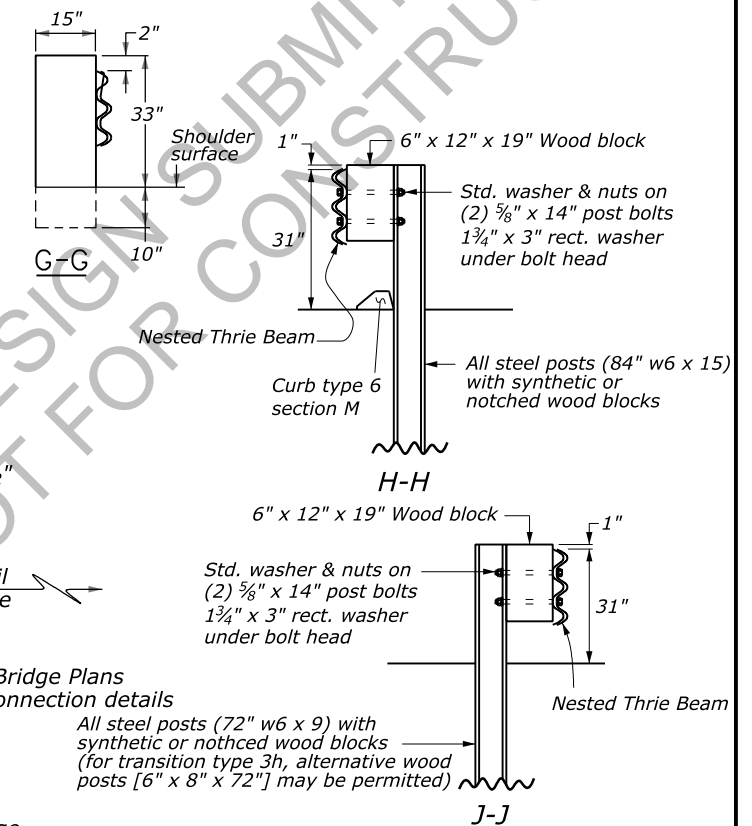
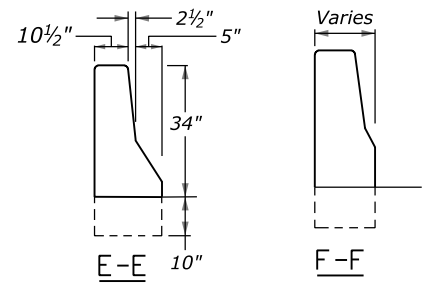
1. Transition type 3G is for use at both ends of Type 9, single slope barrier.
2. Transition type 3S is for use at both ends of bridge.
3. The Thrie Beam section in transitions types 3G and 3S may be shop bent to fit curves that are greater than or equal to a 10 ft. radius. However, the 6 ft.-3 in. transition section shall not be bent.
4. A concrete transition is required between the type 3G and the type 9 single slope barrier. See Special 618-A for the transition between the MGS guardrail and concrete barrier.
5. Backup plate is not required at posts on type 3G.
6. This symbol in the elevation drawings shows the locations where a rectangular washer is required under the post bolt head.
7. For type 3G, all posts are 7 ft. long. All other posts shall be a 7 ft. long unless otherwise specified in the contract.
8. All posts are steel, all posts shall be 7 ft. long.
9. Notched rail blocks manufactured from synthetic material will be accepted as alternatives to wood notched blocks for use with steel posts provided that the blocks have received FHWA approval and are certified as identical to the specimens used for testing and approval. Steel blocks are not allowed.

3G Transition Post / Block Sizing		
Post #	Steel Post Size	Blockout Size
1 - 3	84" W6 x 15	6" x 12" x 19"
4 - 9	72" W6 x 9	6" x 12" x 19"
10	72" W6 x 9	6" x 12" x 14"



TRANSITION TYPE 3G
All posts shall be steel

- ★ Determined by Bridge Plans
- ◆ End of guardrail pay length



TRANSITION TYPE 3H

(Adapted from CDOT M-606-1)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

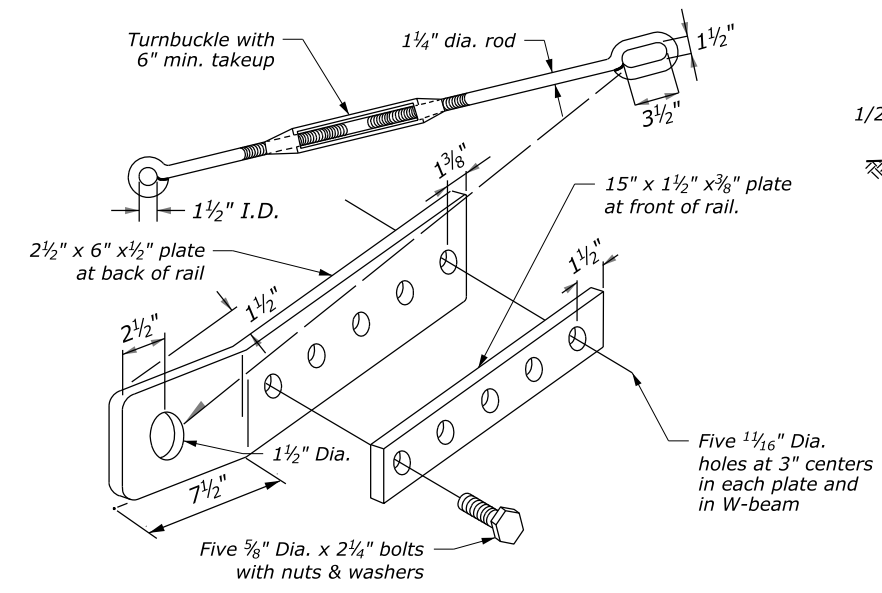
U.S. CUSTOMARY SPECIAL
**MIDWEST GUARDRAIL SYSTEM
TYPE 3 W-BEAM 31 INCHES**

SPECIAL
617-A

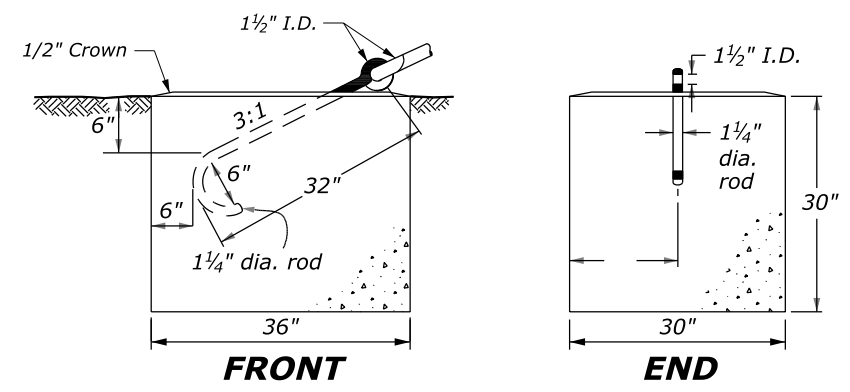
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 1/31/2022

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	T-098

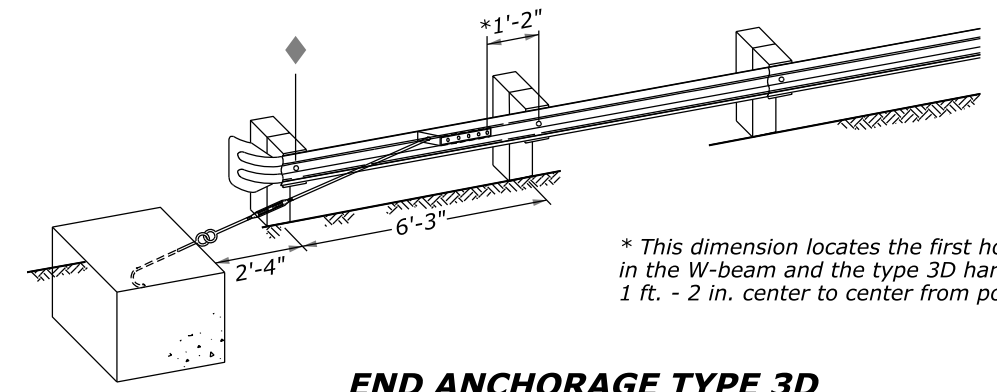
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TYPE 3D HARDWARE DETAILS
Note: All parts shall be galvanized

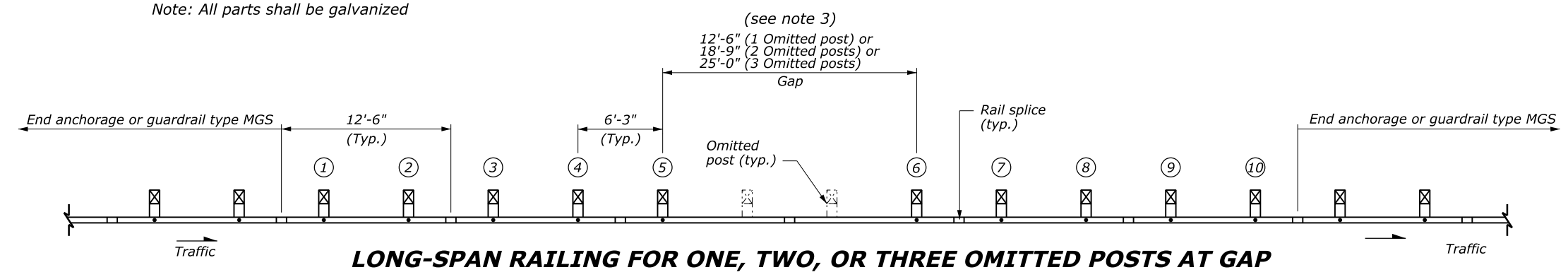


TYPE 3D ANCHOR BLOCK DETAIL



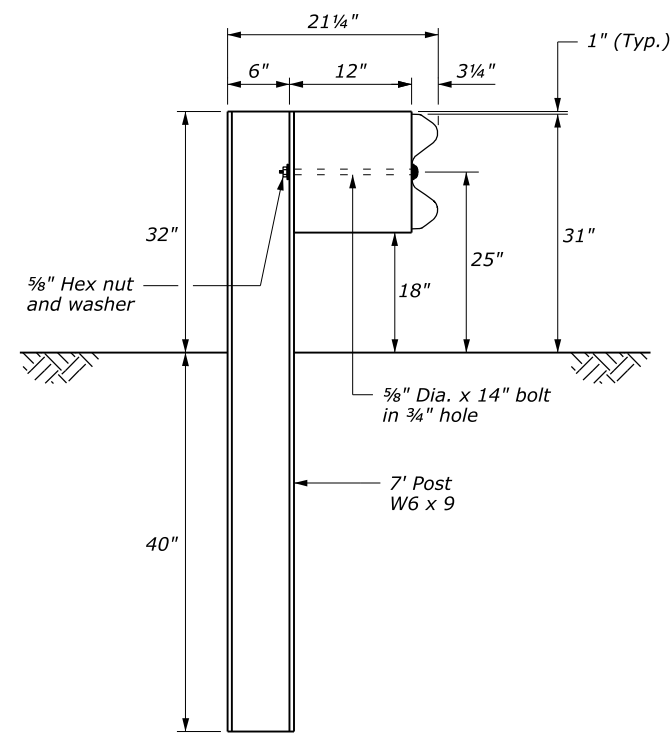
END ANCHORAGE TYPE 3D DEPARTURE TERMINAL

* This dimension locates the first hole in the W-beam and the type 3D hardware. 1 ft. - 2 in. center to center from post bolt hole.

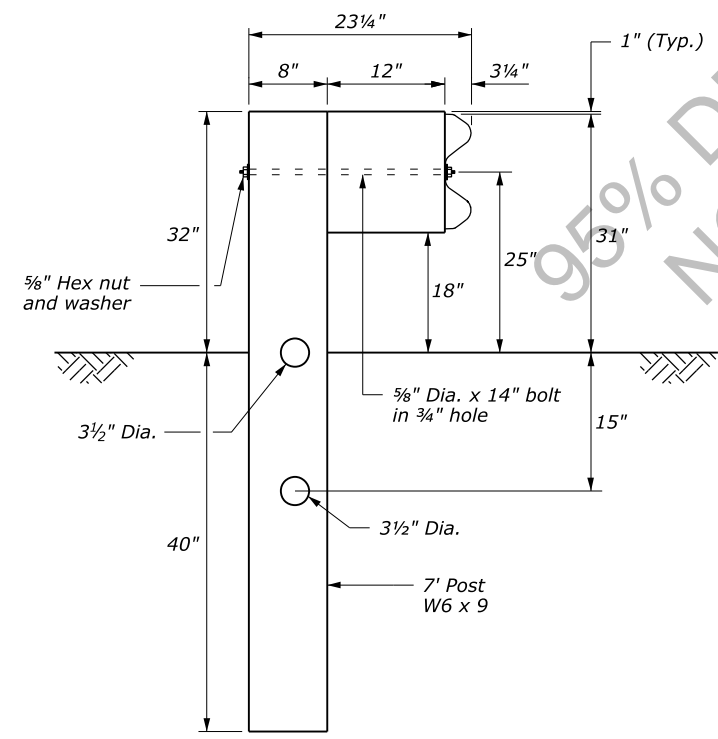


LONG-SPAN RAILING FOR ONE, TWO, OR THREE OMITTED POSTS AT GAP

- NOTES:**
- Posts ①, ②, ⑨, and ⑩ will be steel.
 - The number of omitted posts is dependent on the length of the gap.
 - One post may be omitted without any modification to the guardrail run.



STEEL POST
Posts ①-② and ⑨-⑩
(see note 1)

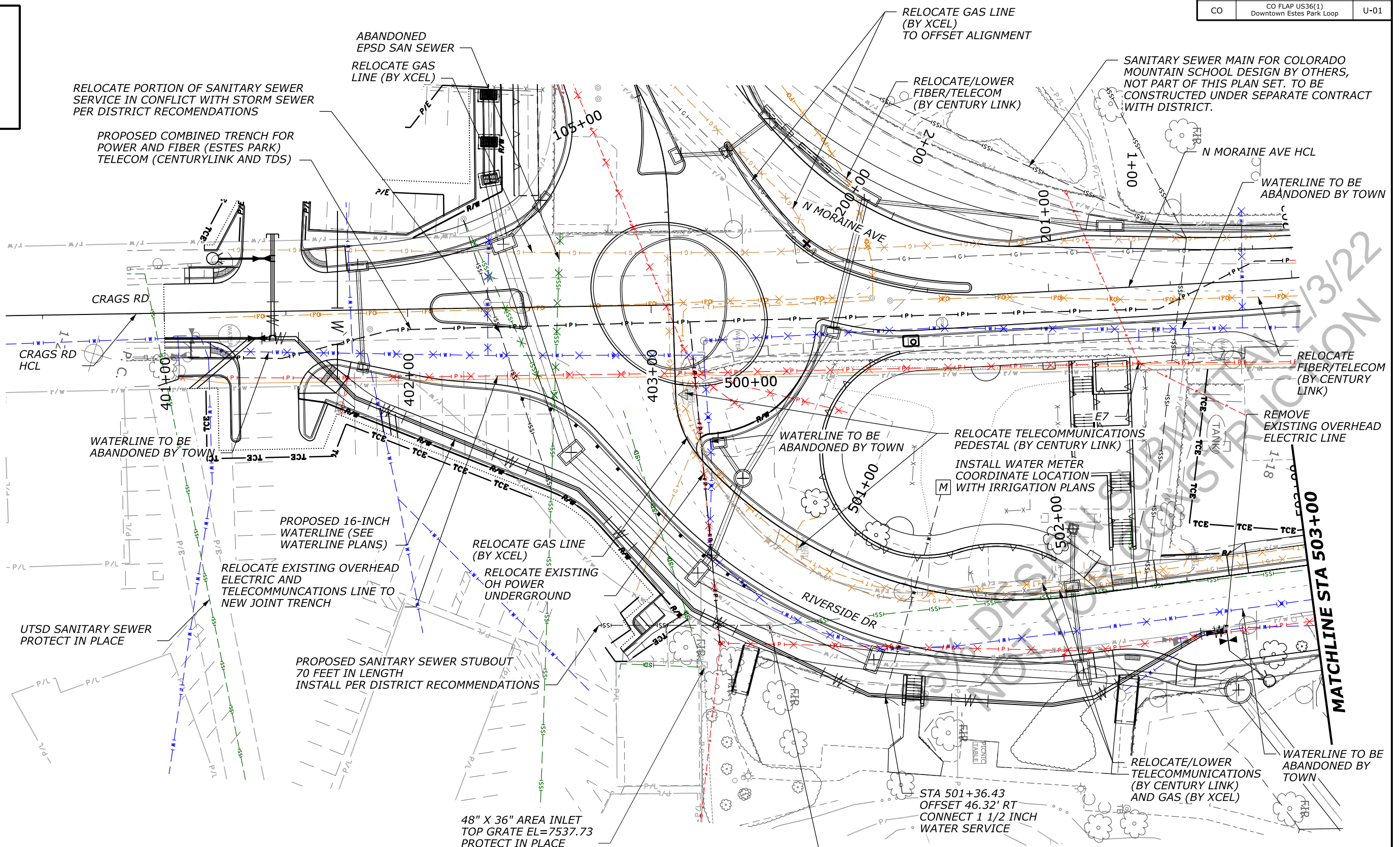
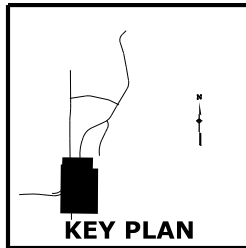


BREAKWAY TIMBER POST
Posts ③-⑧

(Adapted from CDOT M-606-1)

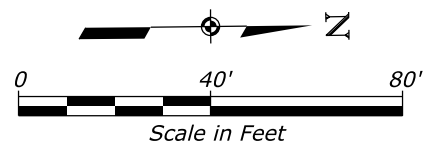
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SPECIAL 617-A	

STATE	PROJECT	SHEET NUMBER
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- Notes:
- See Waterline Plans for new 16" waterline.
 - See Lighting Plans for new lighting.

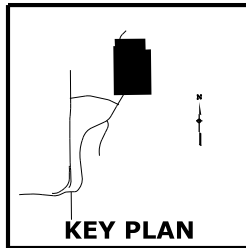


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 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

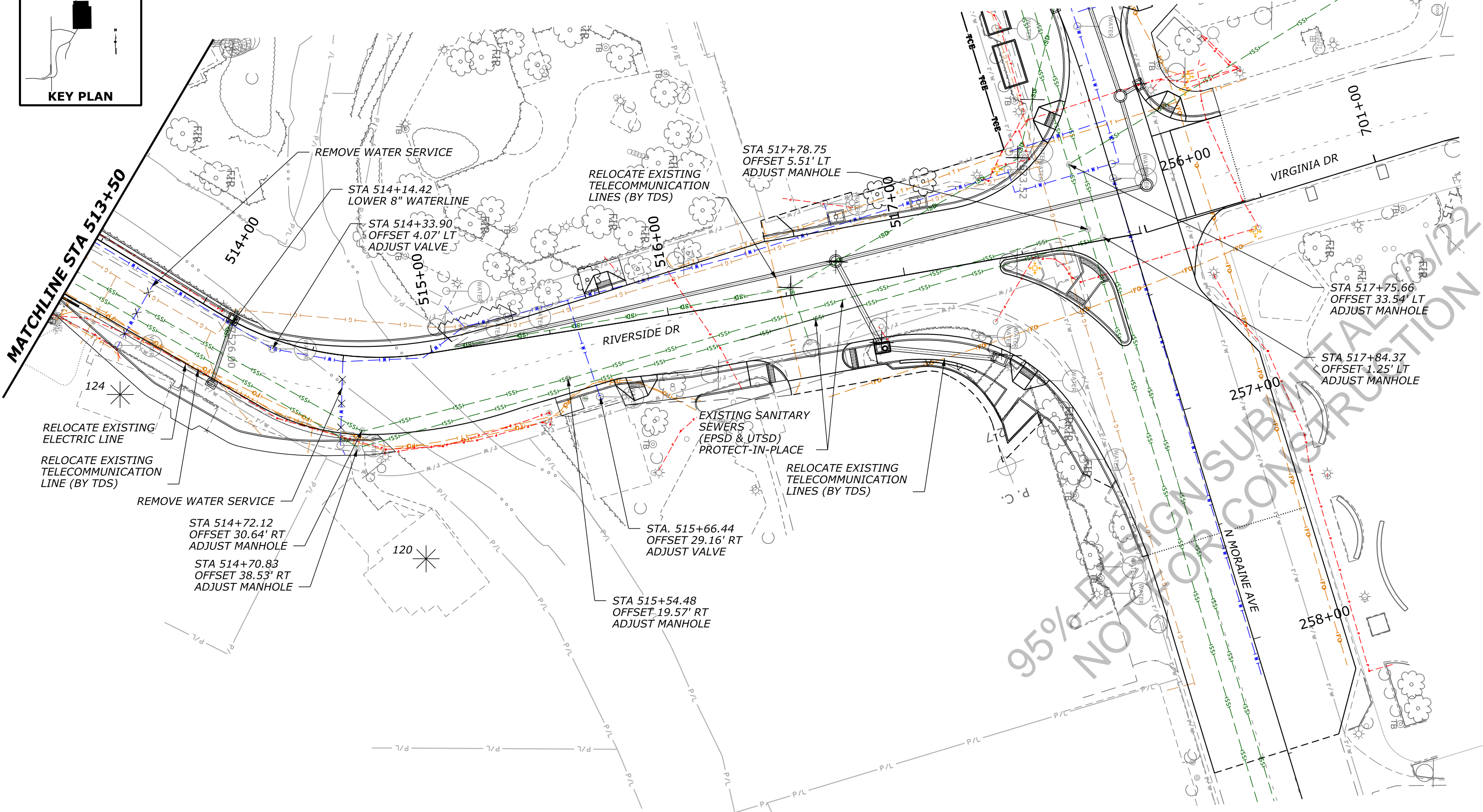
UTILITY PLANS
 CRAGS RD & RIVERSIDE DR

SHEET 1 OF 10

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	U-04



MATCHLINE STA 513+50



RELOCATE EXISTING ELECTRIC LINE
RELOCATE EXISTING TELECOMMUNICATION LINE (BY TDS)

REMOVE WATER SERVICE
STA 514+72.12
OFFSET 30.64' RT
ADJUST MANHOLE
STA 514+70.83
OFFSET 38.53' RT
ADJUST MANHOLE

REMOVE WATER SERVICE
STA 514+14.42
LOWER 8" WATERLINE
STA 514+33.90
OFFSET 4.07' LT
ADJUST VALVE

RELOCATE EXISTING TELECOMMUNICATION LINES (BY TDS)

STA. 515+66.44
OFFSET 29.16' RT
ADJUST VALVE

STA 515+54.48
OFFSET 19.57' RT
ADJUST MANHOLE

EXISTING SANITARY SEWERS (EPSD & UTSD)
PROTECT-IN-PLACE

RELOCATE EXISTING TELECOMMUNICATION LINES (BY TDS)

STA 517+78.75
OFFSET 5.51' LT
ADJUST MANHOLE

STA 517+75.66
OFFSET 33.54' LT
ADJUST MANHOLE

STA 517+84.37
OFFSET 1.25' LT
ADJUST MANHOLE



✱ Remove Service Connections To Demolished Buildings: Water, Sewer, Electric, Telecommunications, and Gas (By Others)

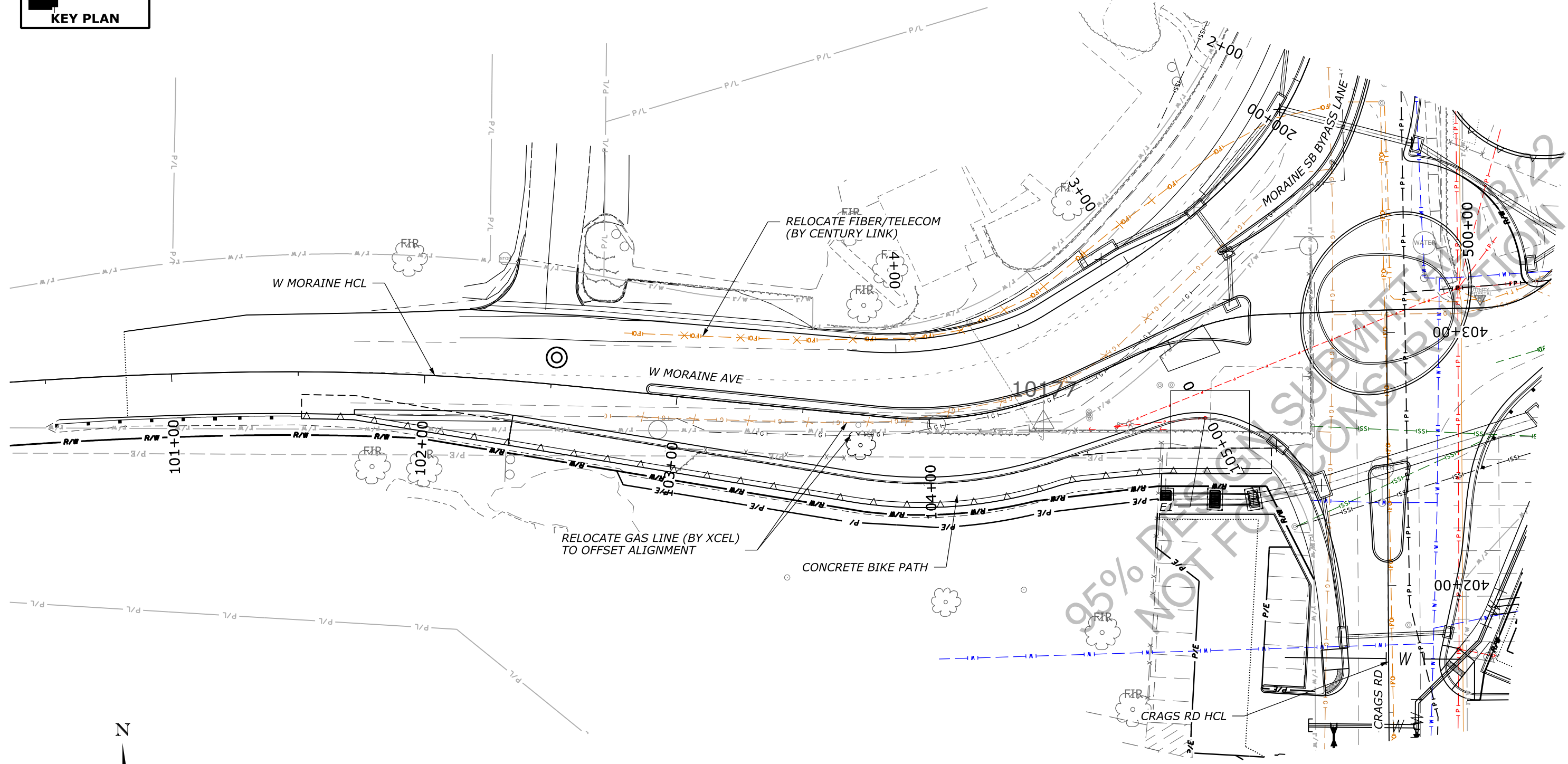
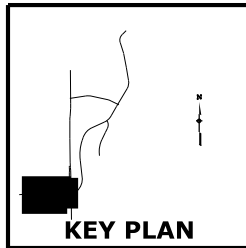
95% DESIGN NOT FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION
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CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**UTILITY PLANS
RIVERSIDE DR**
SHEET 4 OF 10

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STATE	PROJECT	SHEET NUMBER
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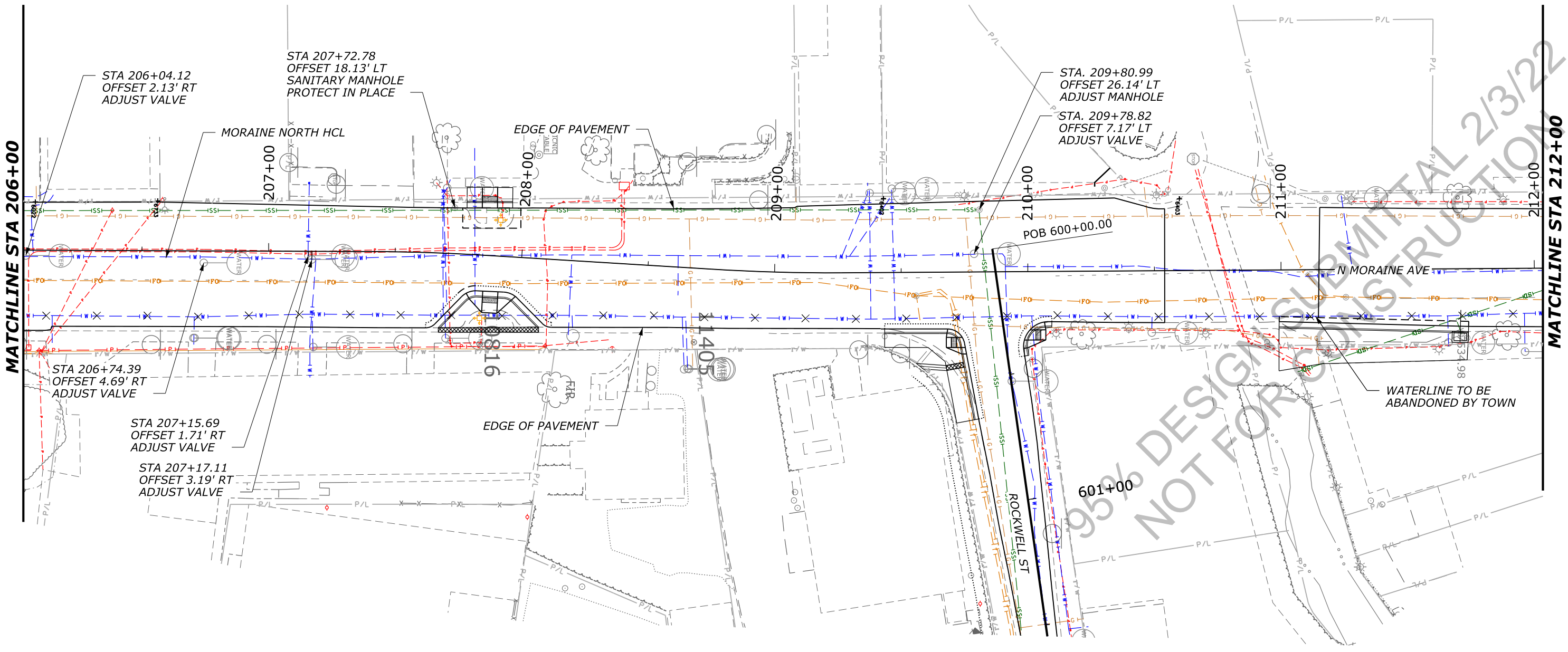
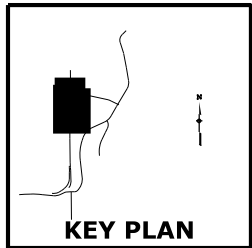
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 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**UTILITY PLANS
 W MORaine AVE**

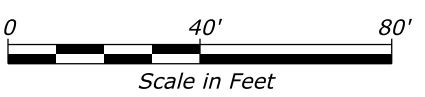
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STATE	PROJECT	SHEET NUMBER
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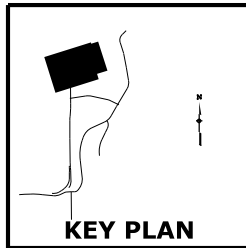
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**UTILITY PLANS
N MORaine AVE**

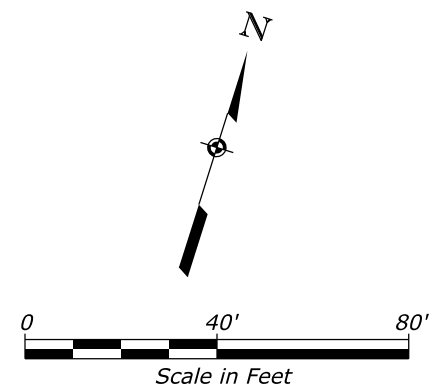
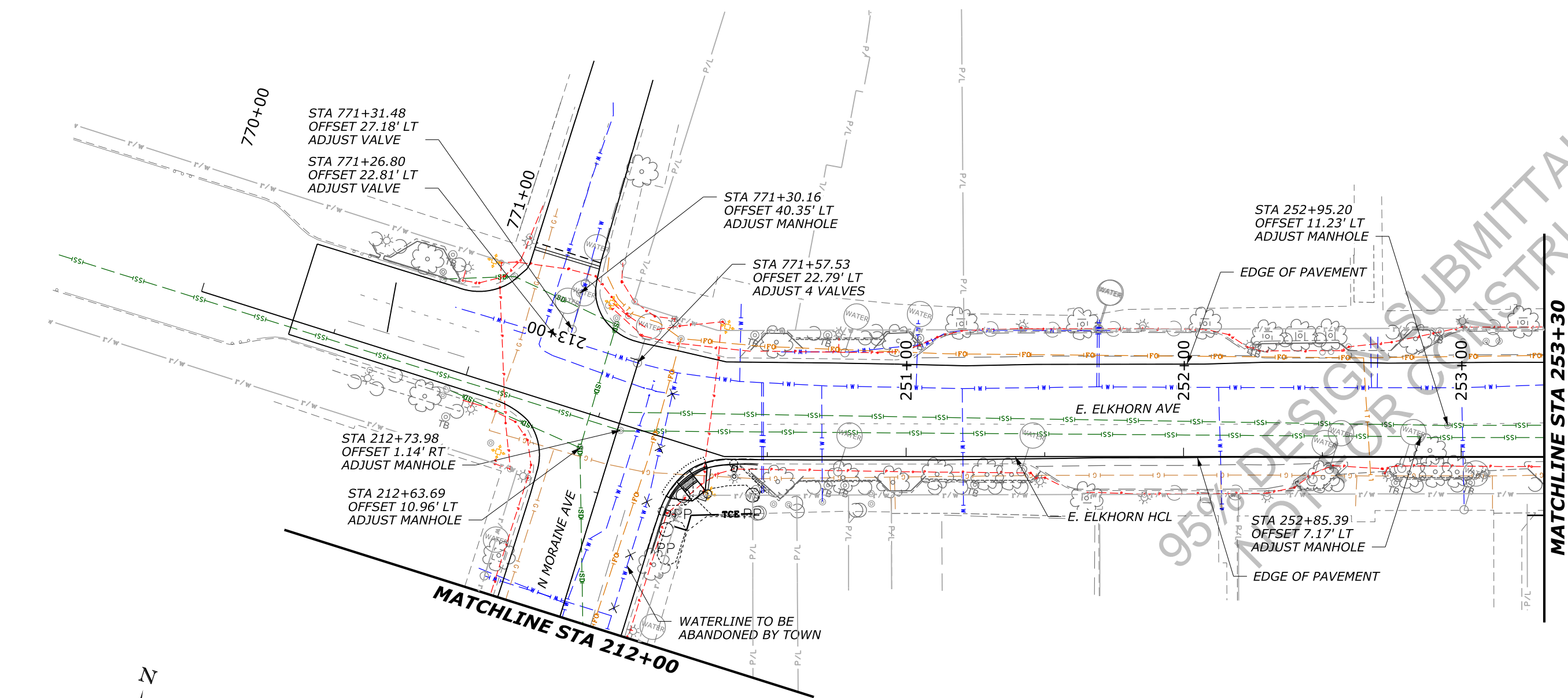
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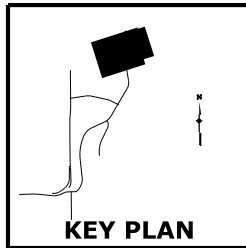


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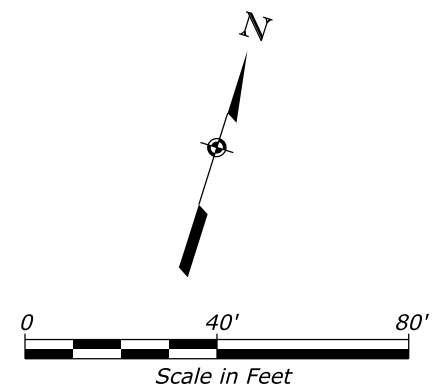
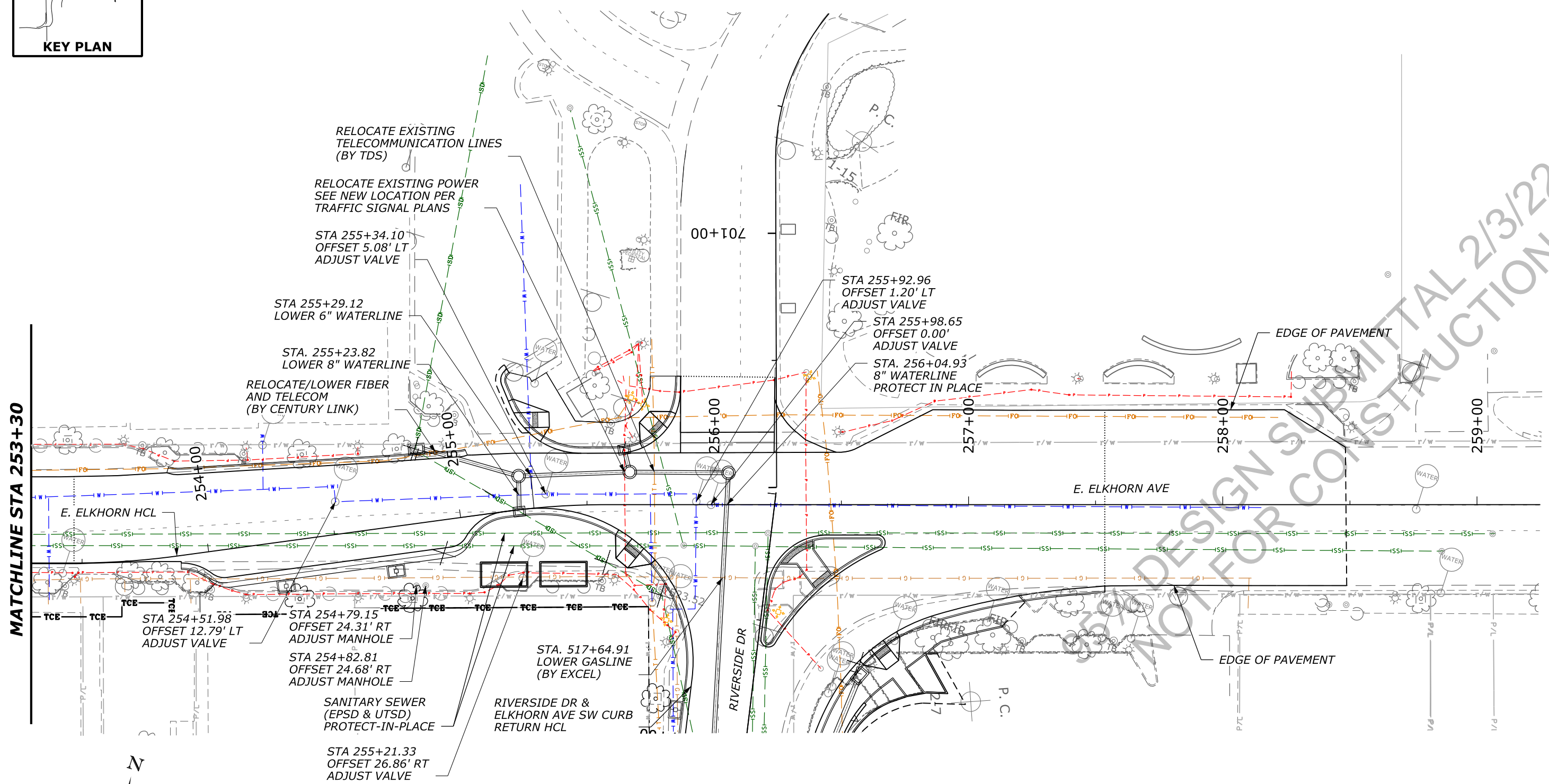
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 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**UTILITY PLANS
 ELKHORN AVE**
 SHEET 8 OF 10

STATE	PROJECT	SHEET NUMBER
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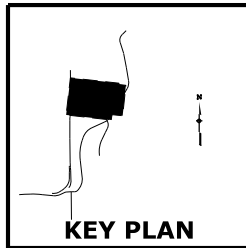


U.S. DEPARTMENT OF TRANSPORTATION
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CENTRAL FEDERAL LANDS HIGHWAY DIVISION

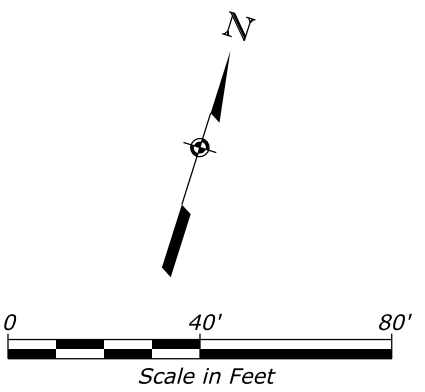
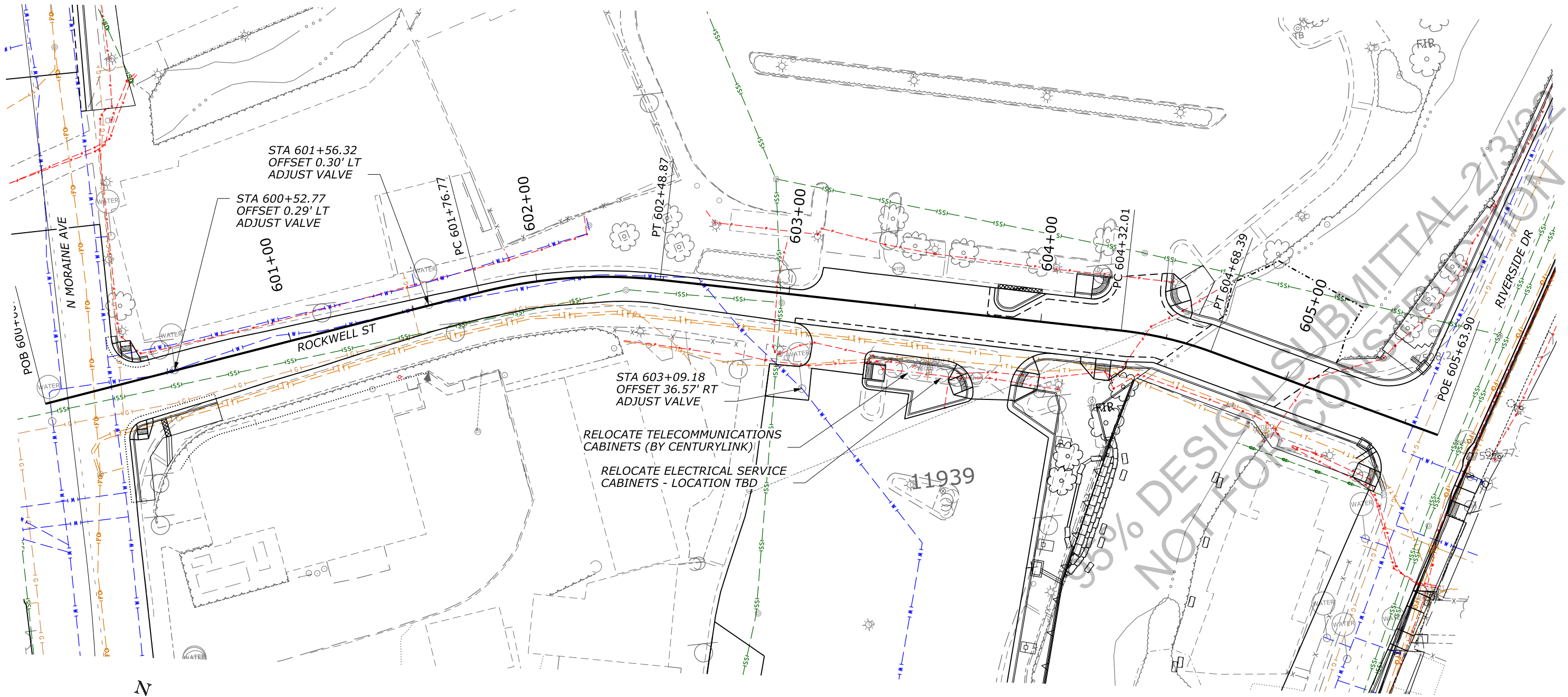
**UTILITY PLANS
ELKHORN AVE**

SHEET 9 OF 10

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	U-10

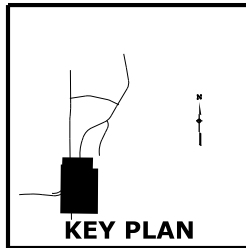


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U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

UTILITY PLANS
ROCKWELL ST
 SHEET 10 OF 10



Concrete Reverse Anchor Assembly (CRA) (See Detail 10, Sheet U-17)

16" x 6" Swivel tee w/ 6" GV, KB & FH assembly (See Detail 1, Sheet U-13)

Connect to existing 8" cast iron line by cutting the existing line and installing a Restrained Coupling (See note 1)

Sta: 1+03.78
16"-45° Bend
N 66567.70
E 41848.40

Sta: 1+28.14
New tap to 375 MORAINE connect to existing service (See Detail 9, Sheet U-17)

Existing 8" CI waterline (Located in bridge) See Section A, Sheet U-12

Remove existing Guardrail

Remove and dispose existing Hydrant

Sta: 0+84.42
New tap to 460-464 W RIVERSIDE (See Detail 9, Sheet U-17)

Sta: 0+87.42
New tap to 386/390 W RIVERSIDE connect to existing service (See Detail 9, Sheet U-17)

-P 460, 462, 464
W Riverside Dr

16" X 8" MJ RDCR
16" X 16" TEE W/ KB
See Sheet U-15
Abandon Waterline

Sta: 1+38.38
16"-22.5° Bend
N 66591.94
E 41873.09

Sta: 1+49.61
New tap to 350 W RIVERSIDE connect to existing service (See Detail 9, Sheet U-17)

Sta: 1+53.05
New tap to 334 W RIVERSIDE (See Detail 9, Sheet U-17)

Sta: 1+56.10
New tap to 338 W RIVERSIDE (See Detail 9, Sheet U-17)

386 / 390 W Riverside Dr (Rock Cut)

Sta: 2+37.60
16"-22.5° Bend
N 66683.27
E 41911.88

Proposed 16-Inch Waterline
Install Only, Materials To Be Provided By Town

Sta: 3+05.72
16"-22.5° Bend
N 66729.72
E 41961.70

350 W Riverside Dr (Liquor Store)

338 W Riverside Dr (Fly Shop) (Currently On 4" In Riverside)

334 W Riverside Dr (Fly Shop) (Currently On 4" In Riverside)

Sta: 3+85.98
16"-22.5° Bend
N 66801.53
E 41997.53

Sta: 4+61.40
16"-11.25° Bend
N 66876.80
E 42002.36

Sta: 4+78.96
16"-22.5° Bend
N 66894.12
E 41999.52

Sta: 5+40.62
Off: 8.48' Rt
16"-45° Bend
N 66949.94
E 41980.95

Remove existing 16" DIP to new connection point. Reuse existing 16"x6" Swivel Tee, 6" Gate Valve, and FH assembly. Connect Tee to existing 16" DIP with Restrained Joint. See Detail 6, Sheet U-15

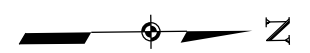
Relocate existing 16" GV

Sta: 5+30.62
16"-22.5° Bend
N 66938.94
E 41973.82

Existing 16" DI Waterline

NOTES:

- All Waterline Installation Shall Be Restrained And Installed Per Estes Standards Included In The Specifications and Detail Sheets U-13 through U-17.
- Contractor To Field Verify The Elevation Of The Existing Pipe At Both Tie Ins.
- All DIP And Appurtenances To Be Supplied By The Owner.
- Contractor to run copper services to edge of ROW per Detail 9, Sheet U-17.
- New copper service to be tied into existing 350 W RIVERSIDE service prior to installation of 16".
- Contractor to end service stubs at edge of work boundary or beyond any concrete work.
- See Sheet U-01 for additional Utility abandonment and relocation information.
- Existing Utilities, including potable water, shall remain in service until relocated utilities are complete.
- 16 Inch Waterline Extension to be measured and paid for under Item 61101-0000 Water System (Lump Sum).
- Waterline to be inspected by Town of Estes Park and CO prior to final acceptance.



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

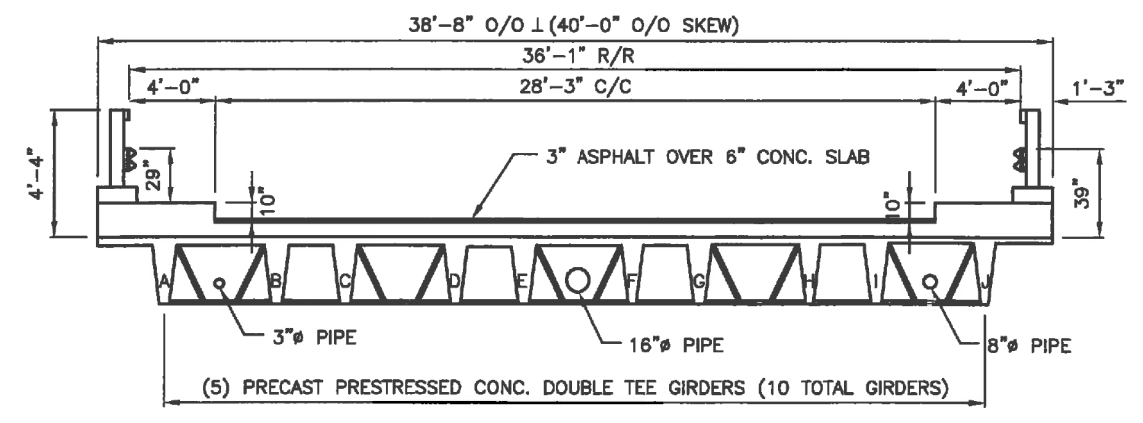
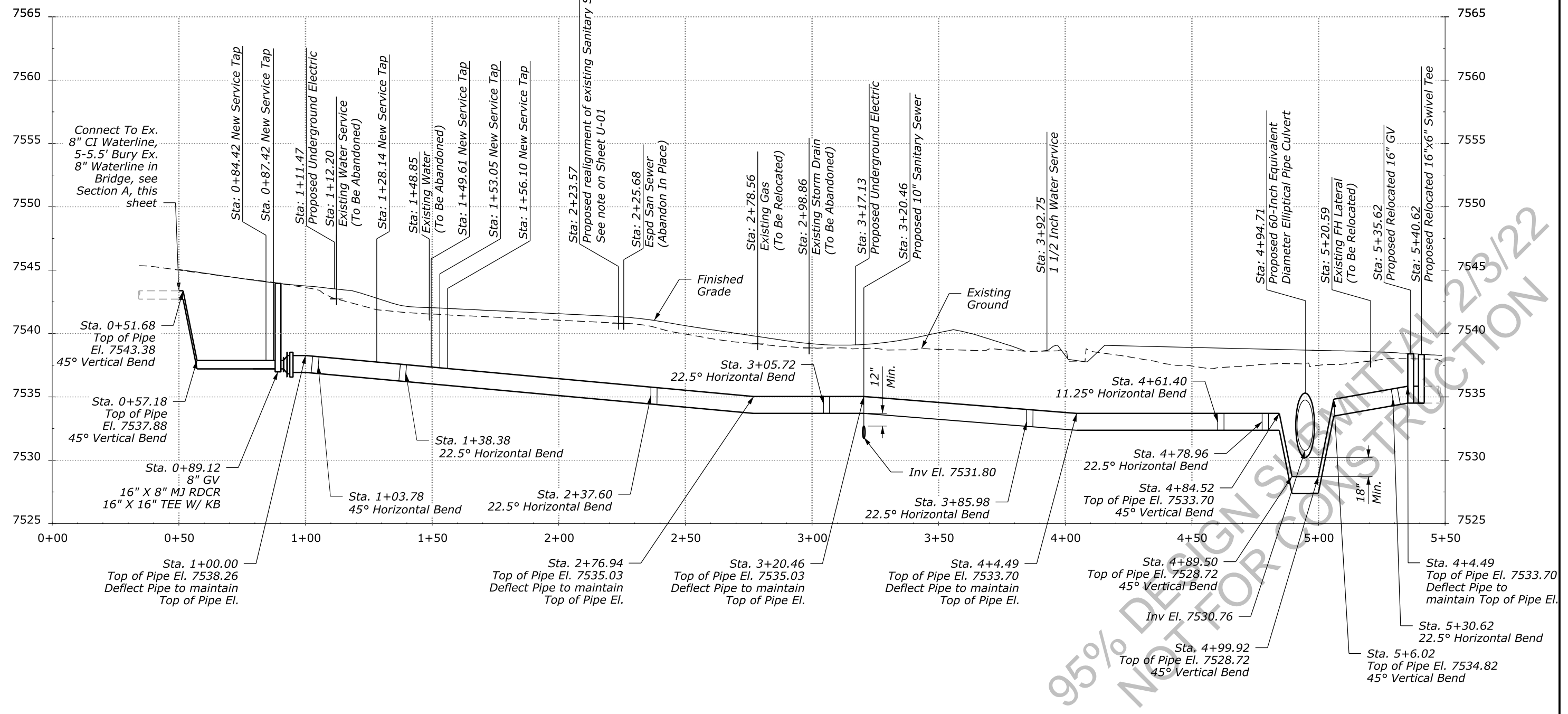
**16-IN WATERLINE EXTENSION
AT INTERSECTION OF
CRAGS RD & RIVERSIDE DR**

SHEET 1 OF 7

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 1/31/2022

STATE	PROJECT	SHEET NUMBER
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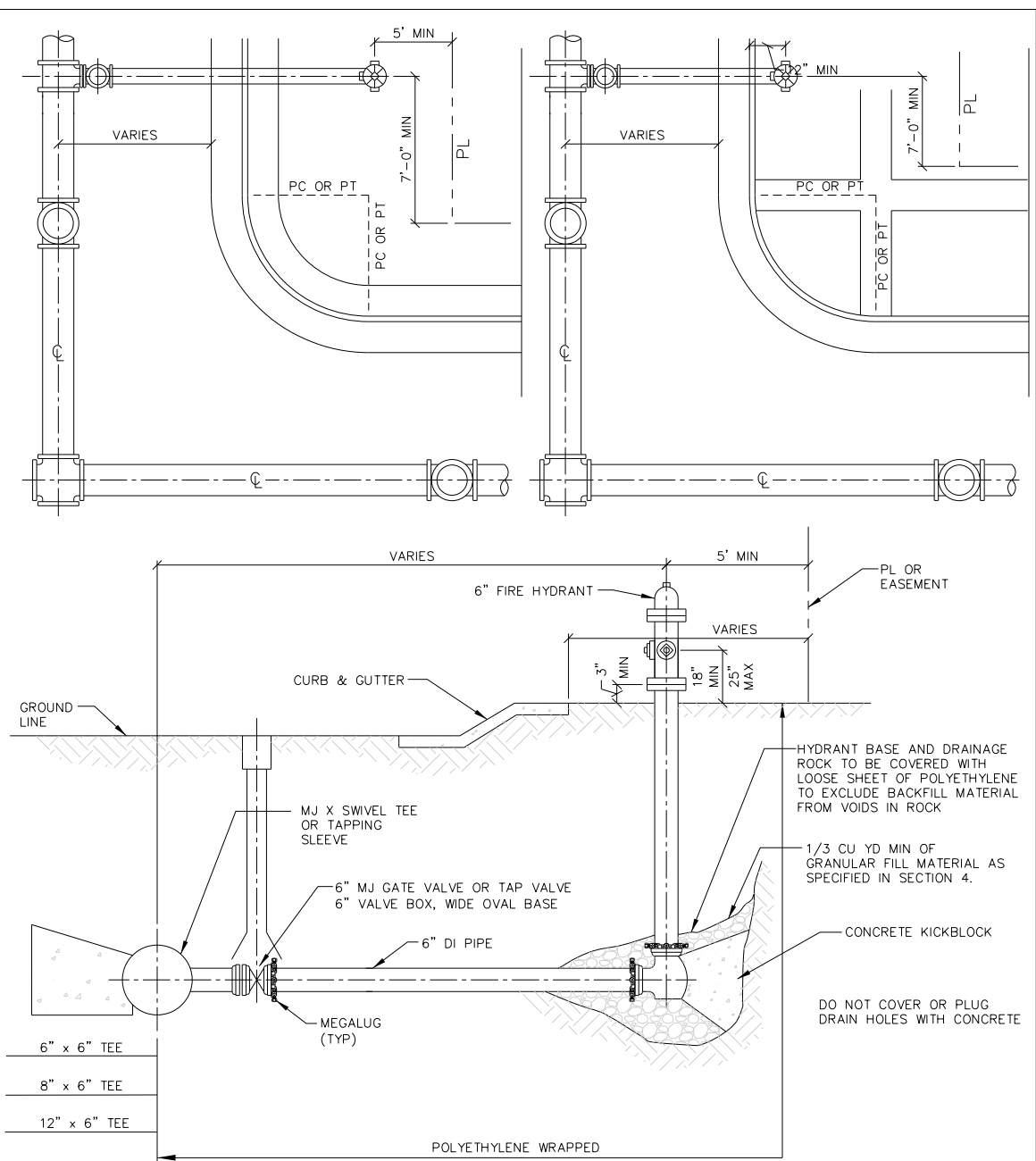
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- NOTES:**
- See Sheet U-01 for additional Utility abandonment and relocation information.
 - Existing Utilities, including potable water, shall remain in service until relocated utilities are complete.

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION
**16-IN WATERLINE EXTENSION
 AT INTERSECTION OF
 CRAGS RD & RIVERSIDE DR**
 SHEET 2 OF 7

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 1/26/2022



NOTE:
NO HORIZONTAL OR VERTICAL BENDS ARE ALLOWED IN FIRE HYDRANT BRANCH OR SPRINKLER LINES.

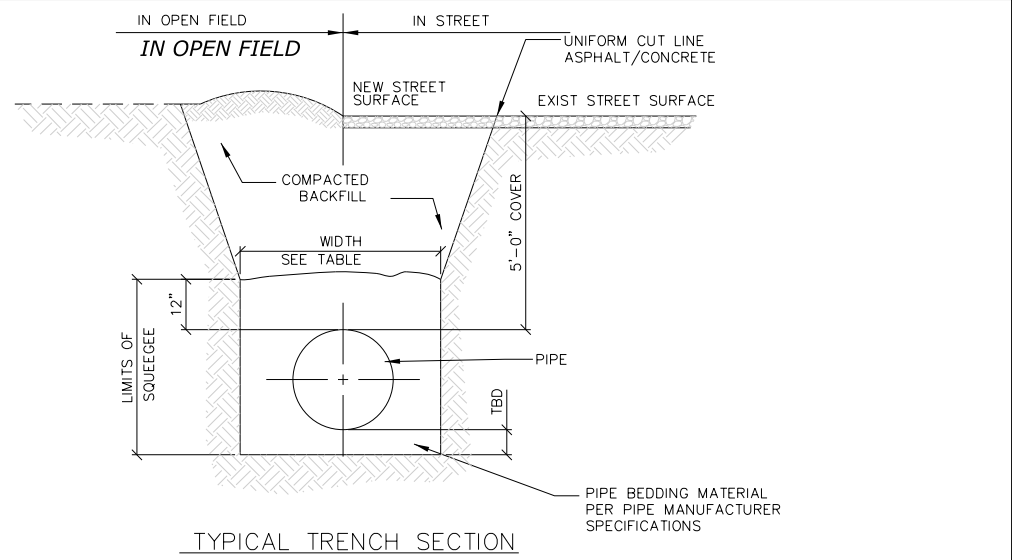


ESTES PARK
COLORADO

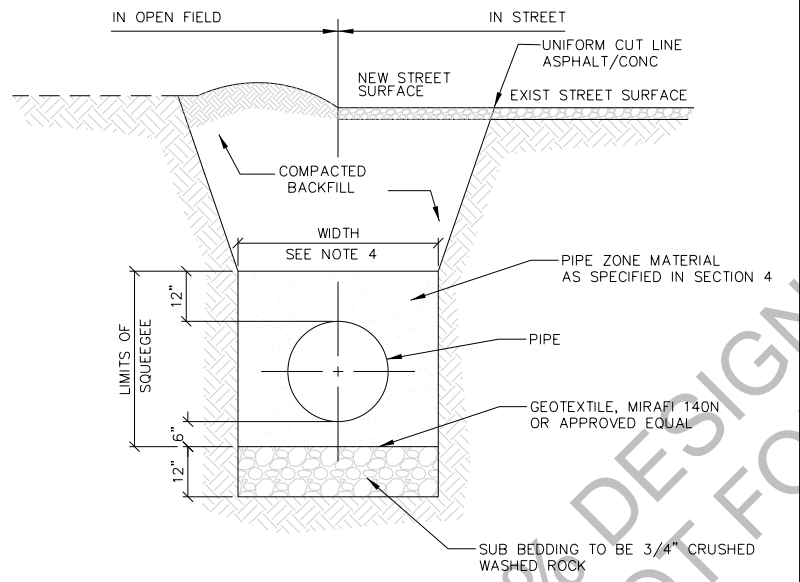
PLAN, PROFILE & LOCATIONS FOR
FIRE HYDRANTS, MAINS & VALVES

Scale: NONE	Date: JUNE 2010
Approved:	Rev. DEC 2015

DETAIL 1




PIPE ϕ	MIN WIDTH	MAX WIDTH
4"	1'-4"	3'-0"
6"	1'-6"	3'-0"
8"	1'-8"	3'-0"
12"	2'-0"	3'-0"
16"	2'-4"	3'-4"
20"	2'-8"	3'-8"
24"	4'-0"	5'-0"



NOTES:

1. MIN COVER TO BE 5.0' BELOW OFFICIAL STREET GRADE.
2. TRENCH WALLS TO BE SUPPORTED AS REQUIRED BY OSHA.
3. PIPE SHALL BE BEDDED WITH SQUEEGEE FROM 3" BELOW THE BOTTOM OF THE BELL OF THE PIPE TO 12" ABOVE THE TOP OF THE PIPE.
4. TRENCH WIDTH SHALL NOT BE MORE THAN 16" NOR LESS THAN 12" WIDER THAN THE LARGEST OD OF PIPE.
5. COMPACTION SHALL BE IN ACCORDANCE WITH THESE AND LOCAL AUTHORITY STANDARDS.
6. NEW STREET SURFACE AND PATCHING CUT BACK SHALL COMPLY WITH LOCAL AUTHORITY JURISDICTION.



ESTES PARK
COLORADO

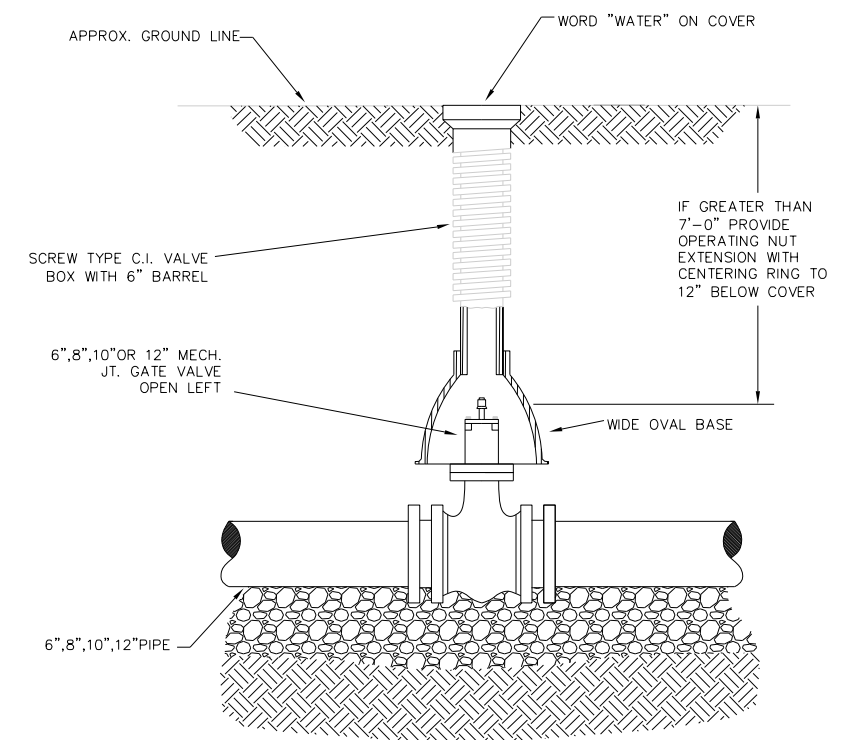
TYPICAL TRENCH SECTION
PIPE PROTECTION

Scale: NONE	Date: JUNE 2010
Approved:	Rev. APR 2020

DETAIL 2

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6-INCH VALVE BOXES

MATERIALS:
VALVE BOX PARTS SHALL BE MADE FROM GRAY CAST IRON, ASTM A48 CLASS 20A. USE OF AN ALUMINUM ALLOY AS A CASTING MATERIAL IS NOT ACCEPTABLE.

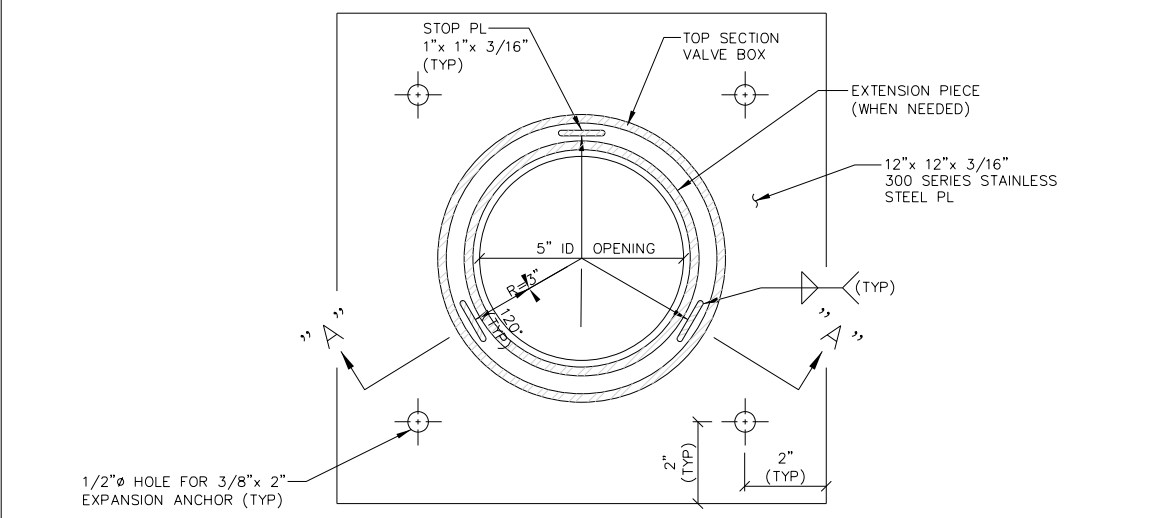
APPROVED PATTERNS:
VALVE BOXES SHALL BE THE THREE-PIECE ADJUSTABLE SCREW TYPE AND THE FOLLOWING TWO PATTERNS ARE ACCEPTABLE.

1. TYLER SCREW-TYPE 6-INCH CAST IRON VALVE BOX ASSEMBLY SERIES 6860 WITH NO. 160 LARGE OVAL BASE.
2. CLAY AND BAILEY SCREW-TYPE 6-INCH CAST IRON VALVE BOX ASSEMBLY NO. P-108 WITH NO. 160 LARGE OVAL BASE.

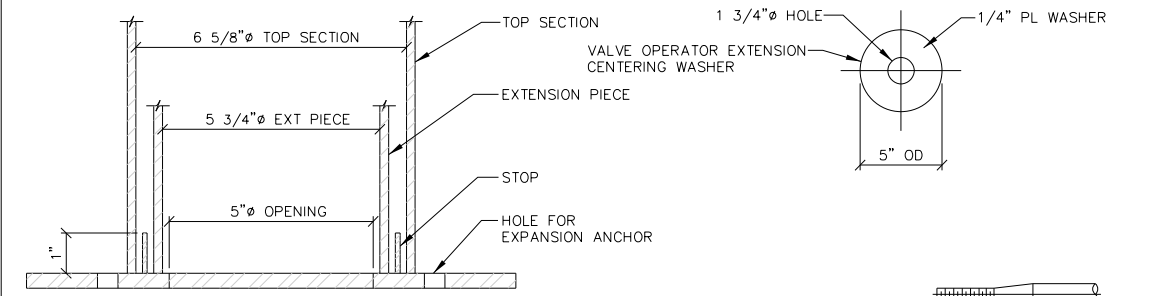
NOTES:
1. WHEN IN FLOWFILL, VALVE BOX SHALL BE WRAPPED WITH 8 MIL. MIN. THICKNESS POLYETHYLENE.
2. VALVE NUT SHALL BE CENTERED.
3. VALVE BOX SHALL BE PLUMB.

 ESTES PARK COLORADO	
VALVE BOX DETAIL	
Scale: NONE	Date: JUNE 2010
Approved:	Rev. APR 2020

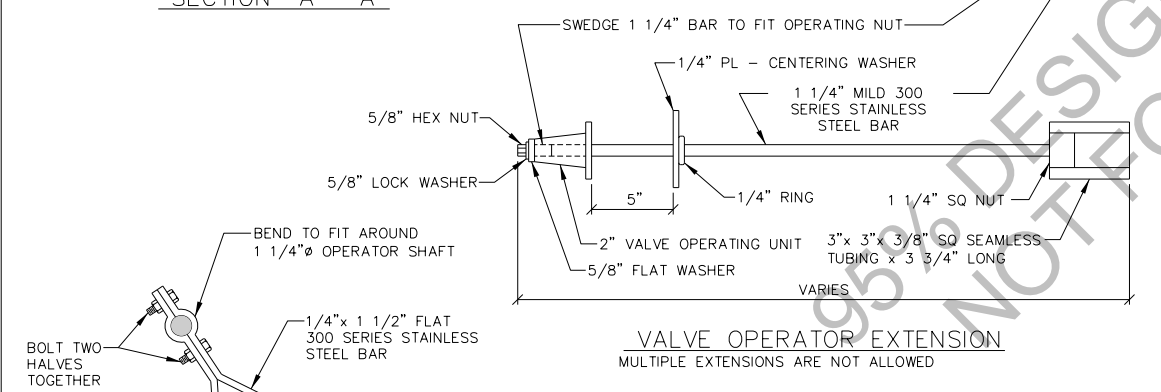
DETAIL 3



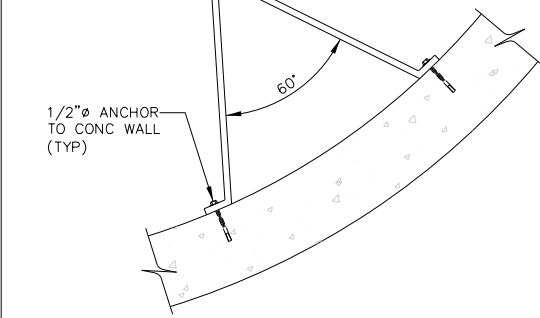
PLAN




SECTION "A"-"A"



VALVE OPERATOR EXTENSION
MULTIPLE EXTENSIONS ARE NOT ALLOWED



EXTENSION GUIDE

 ESTES PARK COLORADO	
VALVE BOX SUPPORT PLATE AND VALVE OPERATOR EXTENSION GUIDE	
Scale: NONE	Date: JUNE 2010
Approved:	Rev. DEC 2015

DETAIL 4

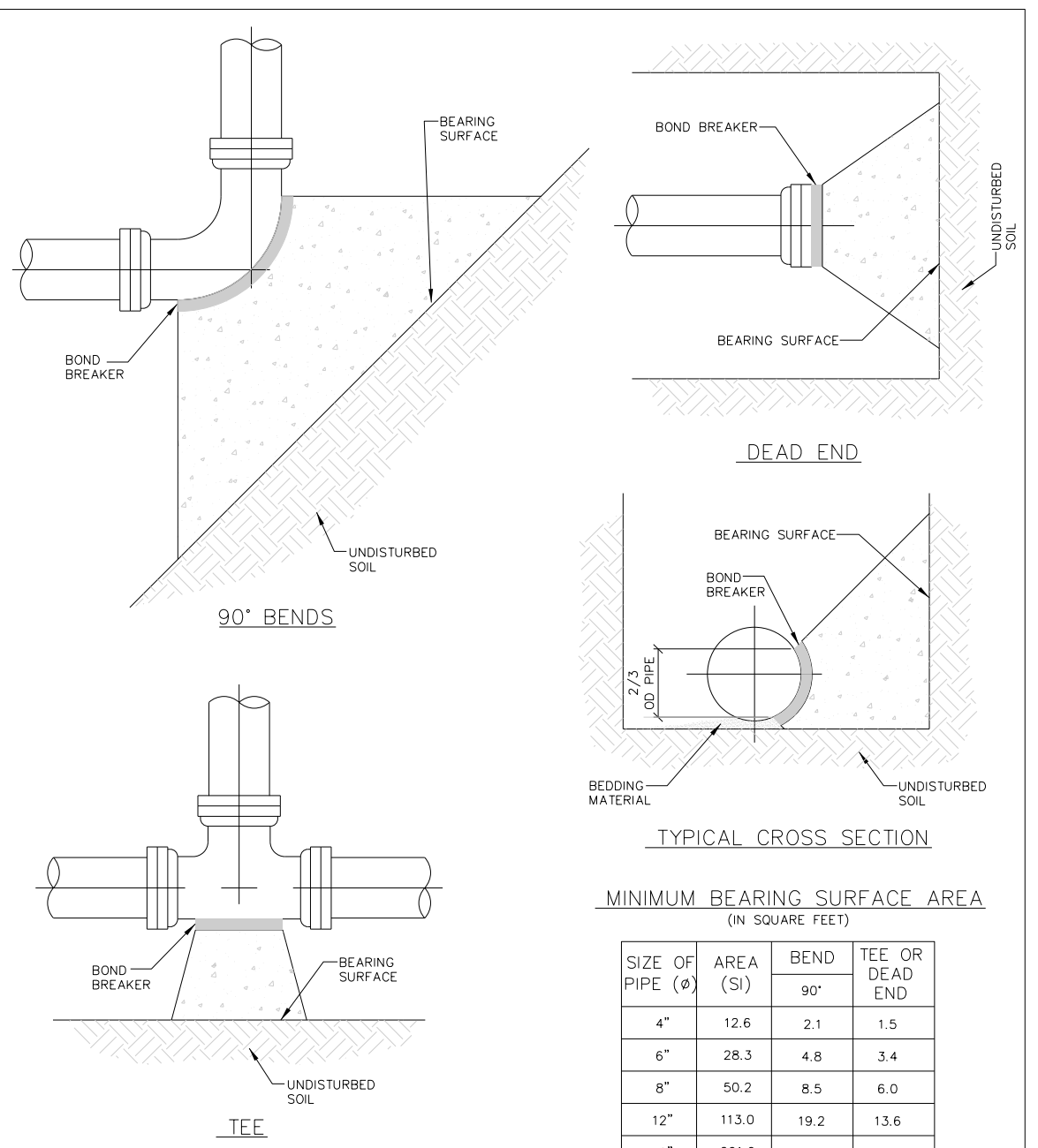
DESIGN SUBMITTAL 2/3/22 NOT FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**16-IN WATERLINE EXTENSION
AT INTERSECTION OF
CRAGS RD & RIVERSIDE DR**

SHEET 4 OF 7

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 User: Donna.Strong



MINIMUM BEARING SURFACE AREA (IN SQUARE FEET)

SIZE OF PIPE (Ø)	AREA (SI)	BEND		TEE OR DEAD END
		90°		
4"	12.6	2.1	1.5	
6"	28.3	4.8	3.4	
8"	50.2	8.5	6.0	
12"	113.0	19.2	13.6	
16"	201.0	30.3	21.4	
20"	314.0	47.4	33.5	
24"	452.2	68.2	48.2	

- NOTES:**
- BEARING SURFACES SHOWN IN CHART ARE MIN.
 - BASED ON 250 PSI INTERNAL PIPE PRESSURE PLUS WATER HAMMER.
4", 6", 8" AND 12" WATER HAMMER = 110 PSI
16", 20" AND 24" WATER HAMMER = 70 PSI
 - BASED ON 3,000 PSF SOIL BEARING CAPACITY.
 - ALL PIPE SHALL BE FULLY RESTRAINED WITH MECHANICALLY RESTRAINED JOINTS. KICKBLOCKS ARE INSTALLED AS AN ADDITIONAL RESTRAINING MEASURE FOR HYDRANTS, TEES, DEAD ENDS AND 90° BENDS.

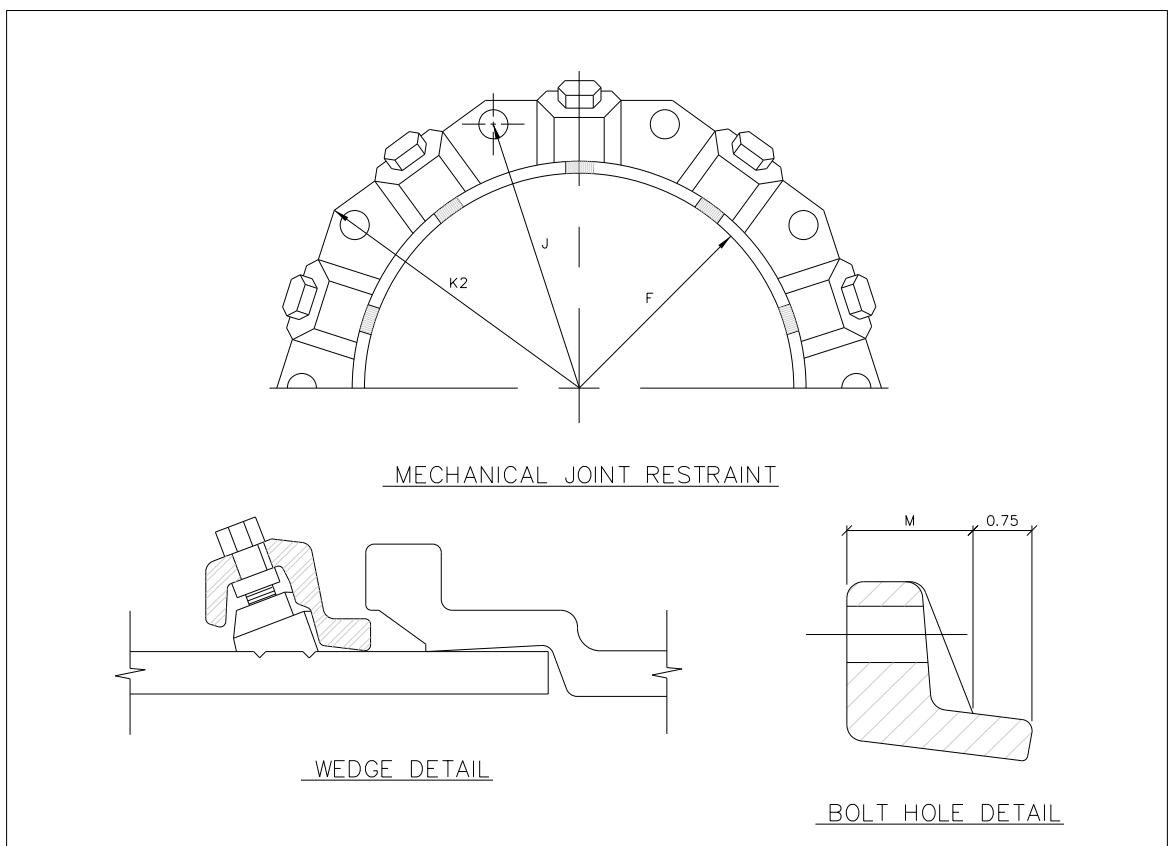

ESTES PARK COLORADO

CONCRETE KICKBLOCKS BEARING SURFACES & INSTALLATION

Scale: *NONE* Date: *JUNE 2010*

Approved: _____ Rev. *APR 2020*


DETAIL 5



DIMENSIONS

	NOMINAL PIPE SIZE	NO OF BOLTS	NO OF WEDGES	K2 INCHES	J INCHES	F INCHES	M INCHES
D I	4"	4	2				
	6"	6	3	11.12	9.50	7.00	0.88
	8"	6	4	13.37	11.75	9.15	1.00
	10"	8	6	15.62	14.00	11.20	1.00
	16"	12	12	22.50	21.00	17.54	1.56
	20"	14	14	27.00	25.50	21.74	1.69

NOTE:
OTHER MECHANICAL JOINT RESTRAINT DEVICES MUST BE APPROVED BEFORE INSTALLATION.


ESTES PARK COLORADO

MECHANICAL JOINT RESTRAINT DETAILS

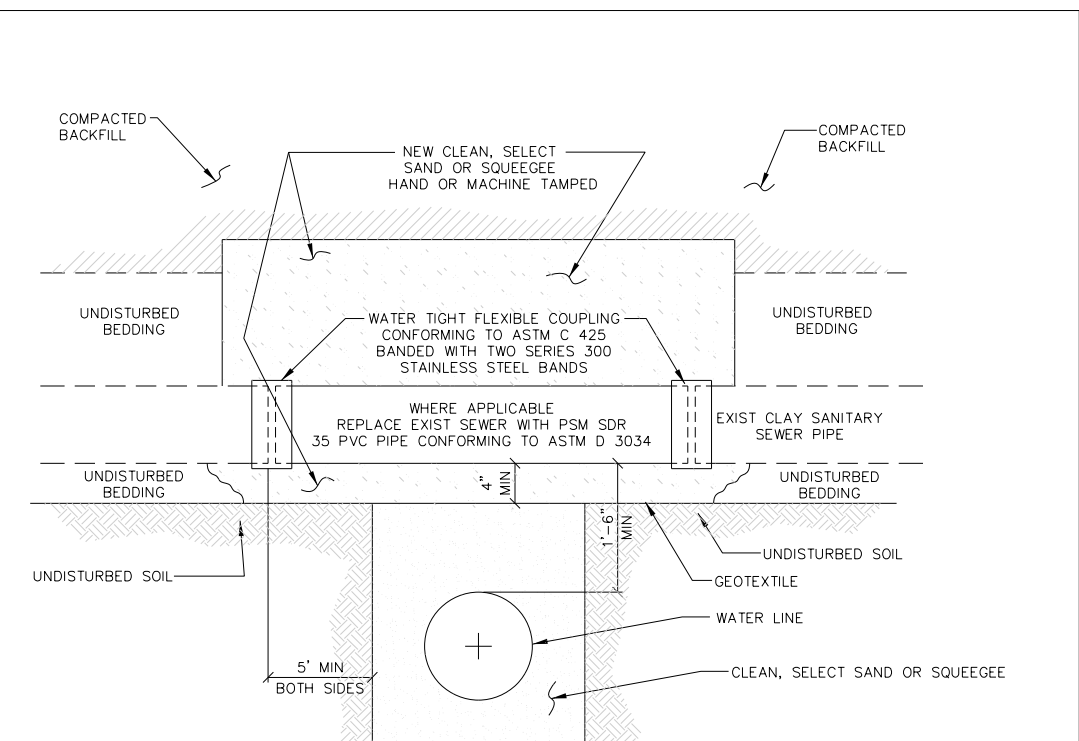
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Approved: _____ Rev. _____

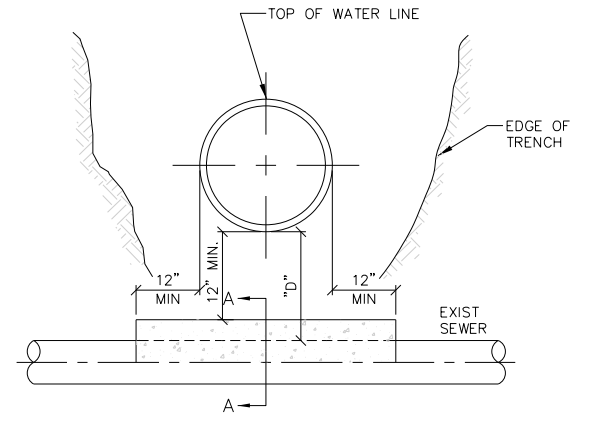
DETAIL 6

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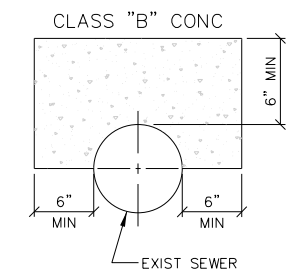
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 User: Donna.Strong
 1/26/2022



NOTE:
ANY SUBDRAIN UNDER THE SEWER SHALL BE REPLACED SUCH THAT NO FLOW SHALL ENTER THE WATER LINE TRENCH.



SEWER CROSSING UNDER
SEE NOTE

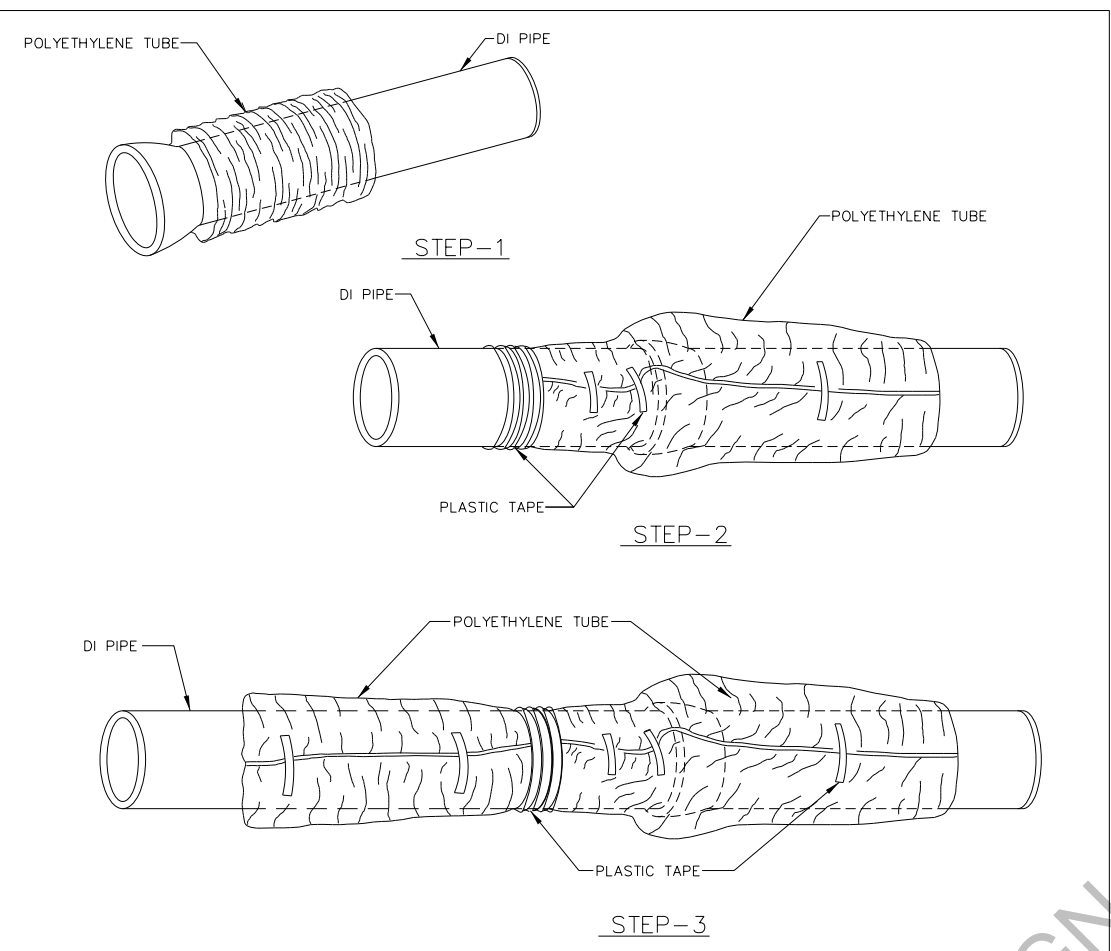


SECTION A-A

NOTE:
ALL EXISTING SEWER DAMAGED DURING INSTALLATION MUST BE REPLACED WITH PVC PIPE.
CONTACT APPROPRIATE SANITATION DISTRICT FOR APPROVAL ON CONCRETE ENCASEMENTS AND/OR CAPPING.

 ESTES PARK COLORADO	
CROSSING STORM AND SANITARY SEWERS	
Scale: NONE	Date: JUNE 2010
Approved:	Rev. APR 2020

DETAIL 7



FIELD INSTALLATION-POLYETHYLENE WRAP

- STEP-1 PLACE TUBE OF POLYETHYLENE MATERIAL AROUND PIPE PRIOR TO LOWERING PIPE INTO TRENCH.
 - STEP-2 PULL THE TUBE OVER THE LENGTH OF THE PIPE. TAPE TUBE TO PIPE AT JOINT. FOLD MATERIAL AROUND THE ADJACENT SPIGOT END AND WRAP WITH THREE CIRCUMFERENTIAL TURNS OF TWO-INCH WIDE PLASTIC TAPE TO HOLD PLASTIC TUBE AROUND SPIGOT END.
 - STEP-3 ADJACENT TUBE OVERLAPS FIRST TUBE AND IS SECURED WITH PLASTIC ADHESIVE TAPE. THE POLYETHYLENE TUBE MATERIAL COVERING THE PIPE WILL BE LOOSE. EXCESS MATERIAL SHALL BE NEATLY DRAWN UP AROUND THE PIPE BARREL, FOLDED INTO AN OVERLAP ON TOP OF THE PIPE AND HELD IN PLACE BY MEANS OF PIECES OF THE PLASTIC TAPE AT APPROXIMATELY THREE TO FIVE FT INTERVALS.
- ALL FITTINGS, VALVES, AND BELL JOINT RESTRAINTS TO BE POLYETHYLENE WRAPPED.

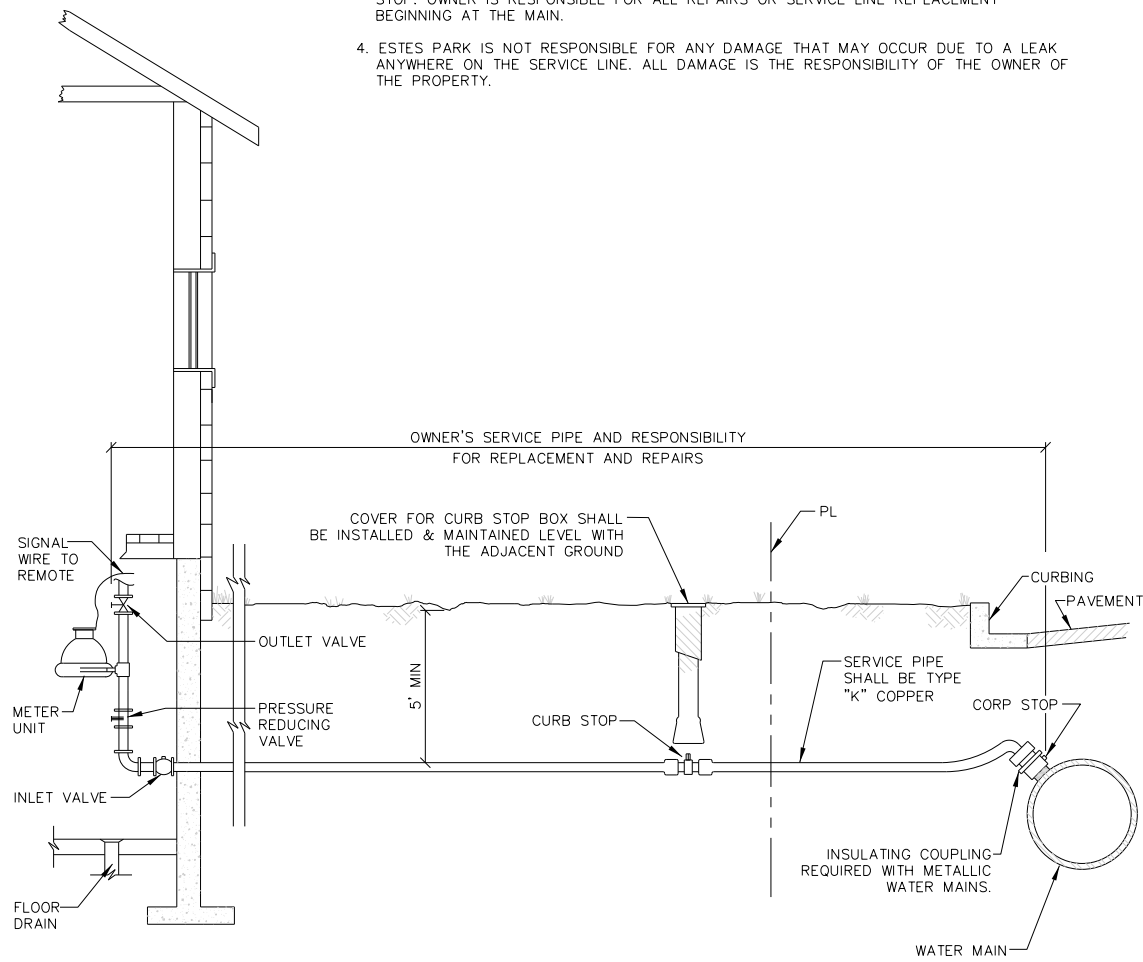
 ESTES PARK COLORADO	
POLYETHYLENE WRAP	
Scale: NONE	Date: JUNE 2010
Approved:	Rev.

DETAIL 8

95% DESIGN SUBMITTAL 2/3/22
 NOT FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION
16-IN WATERLINE EXTENSION AT INTERSECTION OF CRAGS RD & RIVERSIDE DR
SHEET 6 OF 7

- NOTES:
- INDOOR METER SHALL BE PLACED IN BASEMENT WITH FLOOR DRAIN NEARBY.
 - NO BENDS, FITTINGS, CONNECTIONS, OR CHANGES IN PIPE SIZE PERMITTED ON TAP AND METER OUTLET VALVE, EXCEPT AS SHOWN.
 - PROPERTY OWNER OWNS ENTIRE SERVICE LINE FROM CORP STOP AT STREET MAIN. OWNER IS RESPONSIBLE FOR REPAIRING LEAKS BEGINNING AND INCLUDING THE CORP STOP. OWNER IS RESPONSIBLE FOR ALL REPAIRS OR SERVICE LINE REPLACEMENT BEGINNING AT THE MAIN.
 - ESTES PARK IS NOT RESPONSIBLE FOR ANY DAMAGE THAT MAY OCCUR DUE TO A LEAK ANYWHERE ON THE SERVICE LINE. ALL DAMAGE IS THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY.



ANY VARIATION FROM THIS STANDARD REQUIRES APPROVAL PRIOR TO INSTALLATION FROM THE WATER DEPARTMENT.

1. OWNER RESPONSIBLE FOR REPAIRS TO THE FOLLOWING:
- CORP STOP
 - SERVICE LINE
 - CURB STOP
 - INLET VALVE
 - PRESSURE REDUCING VALVE
 - METER SETTER
 - OUTLET VALVE

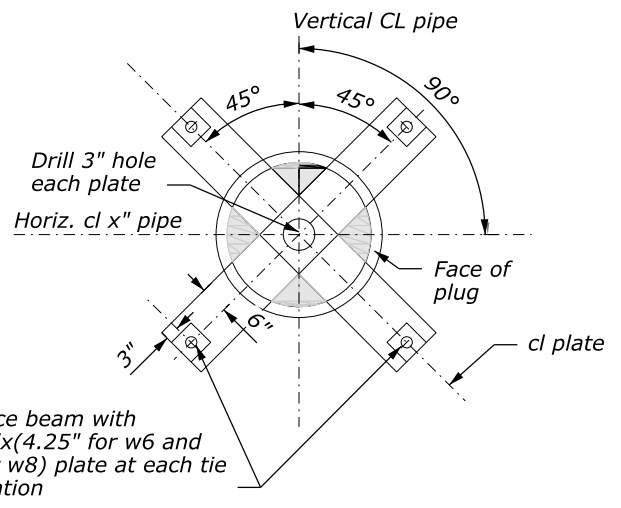
ESTES PARK COLORADO

SERVICE LINE, STOP BOX AND INSIDE METER INSTALLATION FOR 3/4" AND 1" METERS

Scale: NONE Date: JUNE 2010

Approved: _____ Rev. APR 2020

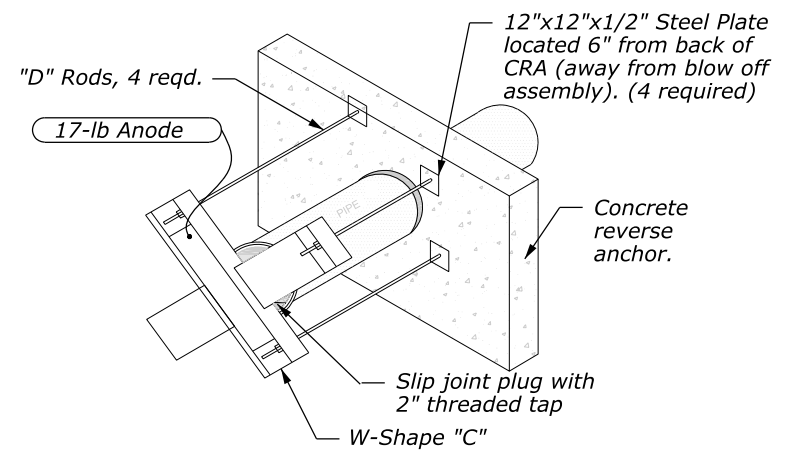
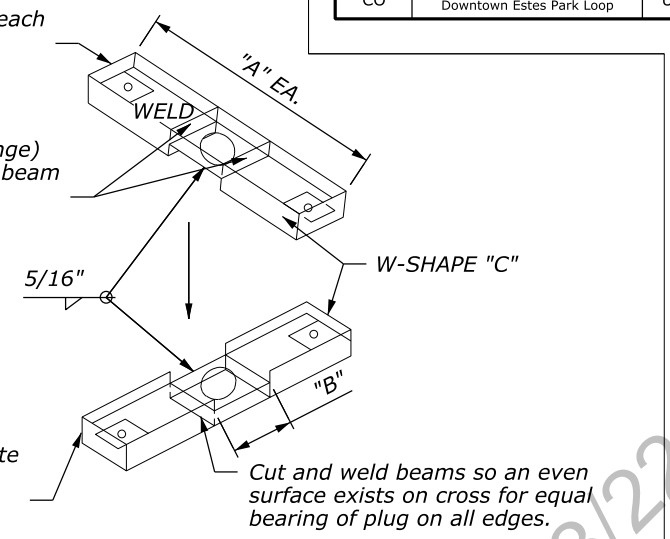
DETAIL 9



Reinforce beam with 1/4"x6"x(4.25" for w6 and 5.5" for w8) plate at each tie rod location

Weld 3/8" thick plate x "b" each end (4 req.) width of beam

Weld web stiffeners pl x (thickness of flange) on each side of each beam adjacent to cut

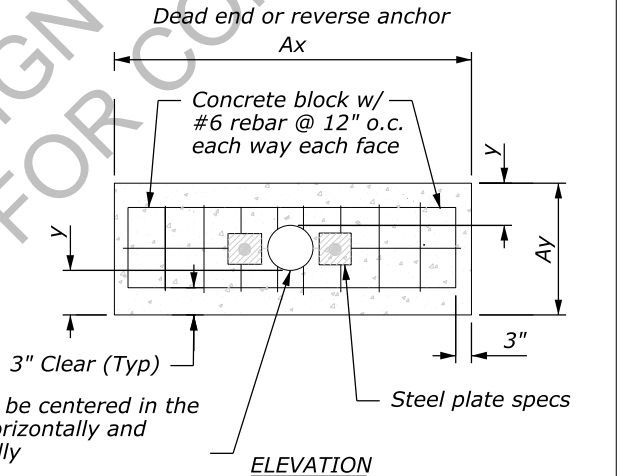
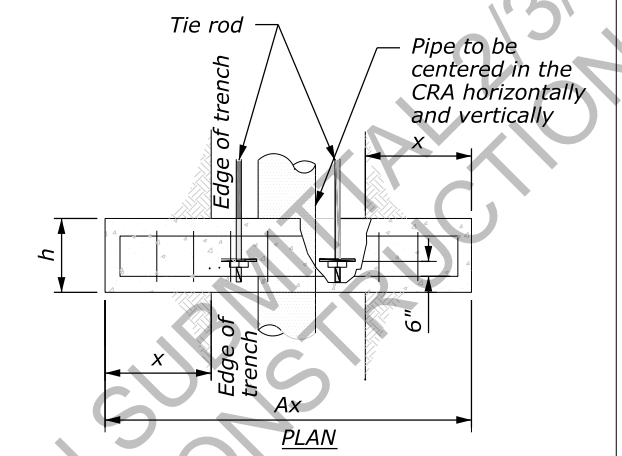


Notes:

- Completed concrete reverse anchor shall be inspected by the town of Estes Park prior to backfill.
- Coat tie rods, beams and galvanized steel pipe.
- All holes in steel shall be oversized holes.
- There shall be no service lines connected between the last isolation valve and the CRA.
- The minimum bearing surface areas shown are based on a max static pipe pressure of 170/250 pounds per square inch plus a safety factor of 1.5, and an allowable soil bearing capacity of 1500 pounds per square foot. reference AWWA M-23 and M-41.
- The minimum lateral bearing surface area (AB) and approximate volume of concrete (vol) shall be shown on the construction plans for all concrete reverse anchors.
- The approximate volumes shown are based on the minimum dimensions in the table. approximate volume is rounded up to the nearest 0.25 cubic yards.
- A trench width of 4 feet and 6" bedding under the pipe are assumed for bearing calculations, (Ax, Ay, x and y).
- Ductile iron fittings and pipe shall be wrapped in polyethylene tubing where adjacent to concrete.

CONCRETE REVERSE ANCHOR ASSEMBLY

DETAIL 10



DIAMETER (in)	PRESSURE (psi)	x (in)	Ax (in)	y (in)	Ay (in)	Ab (sf)	h (in)	Vol (cy)
16	250	60	168	24	65.40	60.50	36	4.0

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

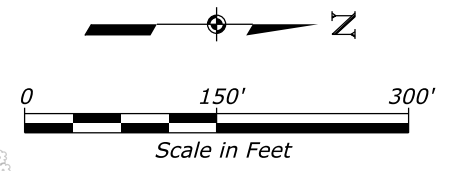
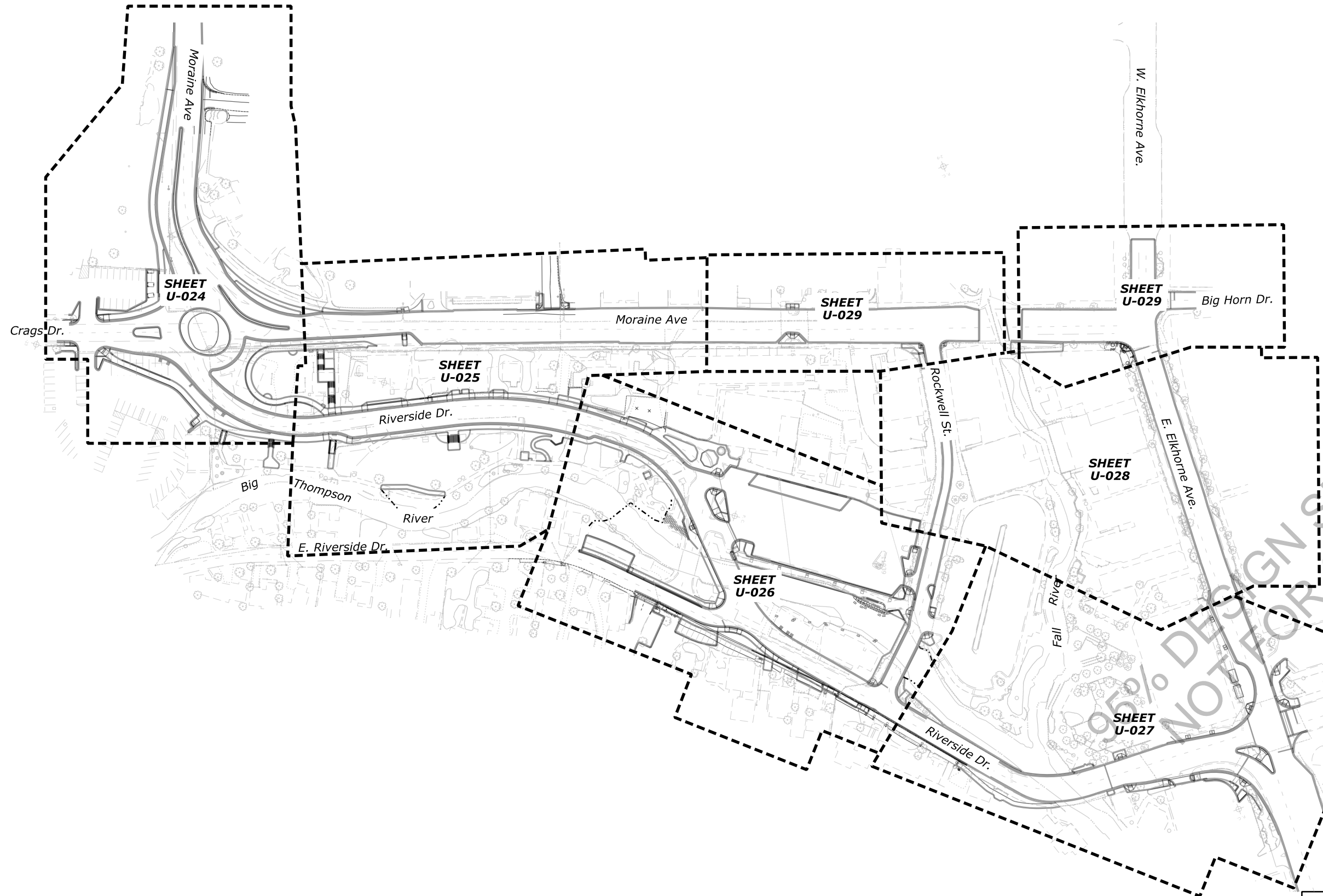
16-IN WATERLINE EXTENSION AT INTERSECTION OF CRAGS RD & RIVERSIDE DR

SHEET 7 OF 7

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	U-18

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U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

1 OVERALL LIGHTING PLAN
 SCALE: 1" = 150'-0"

LIGHTING PLANS
KEY MAP
 SHEET 1 OF 12

ABBREVIATIONS	
NOT ALL ABBREVIATIONS LISTED BELOW ARE USED	
A	AMPERES
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AMPERES INTERRUPTING CAPACITY
AWG	AMERICAN WIRE GAUGE
BC	BARE COPPER
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CU	COPPER
DEG	DEGREE
E	EXISTING
EA	EACH
FT	FEET
G	GROUND OR GND
HH	HAND HOLE
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT-AMPERE
KW	KILOWATT
KVA	KILOVOLT-AMPERE
LED	LIGHT EMITTING DIODE
LF	LINEAR FOOT
LS	LOT SIZE
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MIN	MINIMUM
MLO	MAIN LUGS ONLY
N	NEW
N/A	NOT APPLICABLE OR NA
NEU	NEUTRAL
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OHE	OVERHEAD ELECTRICAL
PB	PULL BOX
R	REMOVE
RRFB	RECTANGULAR RAPID FLASHING BEACON
SOW	SCOPE OF WORK
SPD	SURGE PROTECTIVE DEVICE
T	TRANSFORMER
TOEP	TOWN OF ESTES PARK
TYP	TYPICAL
UGE	UNDERGROUND ELECTRICAL
UL	UNDERWRITERS LABORATORIES
V	VOLTS
W	WATT
XFMR	TRANSFORMER

LEGEND AND SYMBOLS	
NOT ALL SYMBOLS LISTED BELOW ARE USED	
	SERVICE PEDESTAL
	PULL BOX (SPlice BOX)
	ROADWAY POLE AND LUMINAIRE - NEW
	POLE UTILITY - EXISTING
	POLE UTILITY
	TRANSFORMER - PAD MOUNTED
	ROADWAY POLE AND LUMINAIRE - REMOVE AND SALVAGE
	CABLE/CONDUCTOR IN CONDUIT
	LIGHT STANDARD EXISTING - TO BE REMOVED & SALVAGED
	PEDESTRIAN POLE/LUMINAIRE ESTES PARK STANDARD - AMERILUX NEW OR REUSED FROM SALVAGED UNIT
	PEDESTRIAN POLE/LUMINAIRE ESTES PARK STANDARD - AMERILUX EXISTING
	TOWN OF ESTES PARK STANDARD PEDESTRIAN POLE/LUMINAIRE - AMERILUX
	LIGHT POLE - TEMPORARY
	LUMINAIRE WALL MOUNTED UNDERBRIDGE - EXISTING
	LUMINAIRE WALL MOUNTED UNDERBRIDGE
	TOWER LIGHTING UNIT - EXISTING
	TOWER LIGHTING UNIT
	CIRCUIT BREAKER
	COILED WIRE
	FUSE
	FUSE SWITCH
	GROUND
	ILLUMINATED CASE SIGN
	METER
	SERVICE DISCONNECT
	SIGNAL HEAD

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NOT FOR CONSTRUCTION

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	U-20

GENERAL NOTES

1. PLANS REPRESENT THE ELECTRICAL LIGHTING AND POWER DESIGN INTENT. SOME ITEMS NECESSARY FOR THE COMPLETE EXECUTION AND INSTALLATION OF LIGHTING AND EQUIPMENT MAY NOT BE SHOWN ON THE PLANS FOR CLARITY OR DESIGN PREFERENCE. PROVIDE ALL LABOR AND MATERIALS NECESSARY FOR A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM.
2. COMPLY WITH CDOT STANDARDS AND SPECIFICATIONS FOR ROADWAY LIGHTING SHOWN IN AND AROUND THE ROUNDABOUT FOR MORRAINE, CRAGS, AND RIVERSIDE. COMPLY WITH CDOT STANDARDS AS MODIFIED BY THE TOWN OF ESTES PARK FOR PEDESTRIAN LIGHTING. COORDINATE WITH THE CO AND THE TOWN OF ESTES PARK FOR PEDESTRIAN LIGHTING REQUIREMENTS AND AS NOTED UNDER GENERAL REQUIREMENT NOTES FOR ESTES PARK.
3. PROVIDE TRENCHING, BACKFILLING, CONCRETE BASES, BRACKETS, SUPPORTS, SLEEVES, BORINGS, JUNCTION BOXES, PULL BOXES, AND OTHER APPURTENANCES REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. PROVIDE ALL NEW EQUIPMENT AND MATERIALS, UNLESS ITEMS ARE NOTED FOR RE-USE. PROVIDE LISTED AND LABEL EQUIPMENT AND MATERIALS.
4. INFORMATION ON THE DRAWINGS IS DIAGRAMMATIC ONLY. DO NOT SCALE FROM THE DRAWINGS.
5. COORDINATE WITH THE CO AND WHERE APPLICABLE THE TOWN OF ESTES PARK. COORDINATE ENERGIZING AND DE-ENERGIZING OF TRANSFORMERS, LOCATION AND INSTALLATION OF METERS AND PEDESTALS, AND FINAL CONNECTIONS.
6. STAKE THE LIGHTING STANDARD LOCATIONS AND WALK THROUGH WITH THE CO AND WHERE APPLICABLE THE TOWN OF ESTES PARK. ESTABLISH THE POLE NUMBERING SCHEME AND LABEL APPROPRIATELY.
7. COMPLY WITH FEDERAL, STATE, AND LOCAL CODES, REGULATIONS, AND ORDINANCES. COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE (NFPA70) OR THE EDITION RECOGNIZED BY THE LOCAL AUTHORITY HAVING JURISDICTION. PROVIDE EQUIPMENT AND MATERIAL IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND MANUFACTURER'S INSTRUCTIONS.
8. DELIVER EQUIPMENT SUBMITTALS TO THE CO.
9. UTILITY LINES SHOWN ARE FROM THE BEST INFORMATION AVAILABLE. VERIFY EXISTING FIELD CONDITIONS AND PROTECT EXISTING UTILITIES IN THE AREA OF WORK. VERIFY EXISTING CONDITIONS PRIOR TO BID.
10. CONTACT THE TOWN OF ESTES PARK AND THE UTILITY NOTIFICATION CENTER OF COLORADO FOR LOCATES. CONTACT NUMBER IS 811. LOCATE UTILITIES A MINIMUM OF THREE DAYS PRIOR TO ANY EXCAVATION OR TRENCHING. REPAIR ANY DAMAGED UTILITIES TO THE SATISFACTION OF THE UTILITY OWNER.
11. AT LIGHT STANDARD LOCATIONS, NEW OR EXISTING UTILITIES, OR CLOSE PROXIMITY TO UTILITIES, POT-HOLE AND LOCATE UTILITIES.
12. PRIOR TO BACK-FILLING OPEN TRENCHES AND EXCAVATIONS, CALL FOR AND COORDINATE INSPECTIONS WITH AUTHORITIES HAVING JURISDICTION, INCLUDING BUT NOT LIMITED TO THE TOWN OF ESTES PARK AND CDOT.
13. PROVIDE GROUND RODS AT EACH LIGHT STANDARD. COORDINATE WITH THE CO AND WHERE APPLICABLE THE TOWN OF ESTES PARK FOR PEDESTRIAN POLE BASE GROUNDING REQUIREMENTS.
14. QUANTITY AND LOCATION OF HAND HOLES AND PULL BOXES ARE PER DESIGN BASIS AND FOR INFORMATION ONLY. PROVIDE HAND HOLES AND PULL BOXES TO SUPPORT THE LIGHTING AND PANEL LAYOUT. PROVIDE A HAND HOLE AT EACH LIGHT STANDARD.
15. PROVIDE DISTRIBUTION BLOCKS FOR PARALLEL CIRCUITS AND WHERE CONDUCTOR SIZES ARE DIFFERENT THAN THE DEVICE OR EQUIPMENT LUGS WILL ACCEPT.
16. LIGHT STANDARDS SHALL FOLLOW THE 30 FT. TO 40 FT. DETAIL ON CDOT STANDARD S-613-1.
17. ALL BASES SHALL BE BREAKWAY AND CONFORM TO CDOT STANDARD S-613-1.
18. THERE SHALL BE A SPLICE BOX PLACED AT EACH LIGHT STANDARD IN ACCORDANCE WITH CDOT STANDARD S-613-1.
19. LIGHTING CONTROL PEDESTALS SHALL MEET THE REQUIREMENTS OF CDOT STANDARD S-613-1.

ESTES PARK GENERAL NOTES

1. PROVIDE THE TOWN OF ESTES PARK (TOEP) PEDESTRIAN STANDARD AMERILUX. COORDINATE WITH THE CO AND THE TOEP WITH REGARD TO POLE AND LUMINAIRE TYPE, LAMPING, AND WITH REGARD TO AVAILABILITY OF THE POLES AND LUMINAIRES.
2. COORDINATE WITH THE CO AND THE TOEP FOR POLE BASE DEPTH AND BOLT PATTERN. GROUND EACH POLE WITH A MINIMUM #6 TOEP. COORDINATE WITH THE CO AND THE TOEP FOR GROUNDING REQUIREMENTS PRIOR TO ROUGH IN. COORDINATE WITH THE TOEP FOR POLE BASE DETAIL.
3. COORDINATE WITH THE CO AND THE TOEP ON THE LOCATION OF THE PEDESTRIAN POLES PRIOR TO ROUGH IN. AVOID LANDSCAPING, CONCRETE PATTERNS, CURBING, UNDERGROUND UTILITIES, AND STORM SEWER FEATURES. COORDINATE WITH THE CO AND THE TOEP ON FINAL LOCATIONS OF PEDESTRIAN POLES.
4. COORDINATE WITH THE CO AND THE TOEP FOR EXISTING PEDESTRIAN POLE CIRCUITING. ADD OR EXTEND CIRCUITS FOR RELOCATED AND NEW PEDESTRIAN POLES. COMPLY WITH THE TOEP FOR CONDUIT REQUIREMENTS, DEPTH OF BURIAL, CONCRETE ENCASEMENT, AND CONDUIT SWEEPS. PROVIDE FUSING AND HAND HOLES AS REQUIRED BY THE TOEP. SIZE CONDUCTORS AT A MINIMUM TO COMPLY WITH THE NEC REQUIREMENTS FOR VOLTAGE DROP.
5. COMPLY WITH THE TOEP WITH REGARD TO PULL BOX TYPE AND SIZES. PROVIDE A PULL BOX WITH EACH POLE. LOCATE AS SHOWN. COORDINATE WITH THE CO AND THE TOEP ON FINAL LOCATION PRIOR TO ROUGH IN.

95% DESIGN COMPLETE
NOT FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**LIGHTING PLANS
GENERAL NOTES**
SHEET 3 OF 12

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LUMINAIRE SCHEDULE												
KEY	SOURCE TYPE	CCT (K)	INITIAL LUMENS	CRI	DIST. TYPE	WATTS	VOLT (V)	DESCRIPTION	FINISH	IP RATING	MANUFACTURER*	NUMBER*
L-XX	LED	4000	13400	70	2	133W	120	LED ROADWAY UL LISTED, AND SUITABLE FOR USE IN WET LOCATIONS LUMINAIRE, TYPE 2 DISTRIBUTION 700 mA DRIVE CURRENT, WITH MULTICONTACT TWIST LOCK PHOTOCEL AND ANSI C136.10 RECEPTACLE.	GRAY	IP66	LEOTEK	GCI-60F-MV-NW2GY-700-PCR7-WL
STANDARD								ROUND TAPERED GALVANIZED STEEL POLE, 11GA. WITH 10 FOOT TAPERD RISER ARM. POLE LENGTH 35'-4" FOR AN OVERALL POLE AND ARM HEIGHT OF 38'-7"			WJM	PTS9001140-G-110PL-SBP WITH RA-1-10-120-2-G-PL
SA	LED	3000	7142	70	SO	68W	120V	LED PEDESTRIAN LUMINAIRE AND POLE. CLEAR ACRYLIC LENS, STREET OPTIC DISTRIBUTION, 3000K CCT, FINISH AND ACCESSORIES PER OWNER REQUIREMENTS AND TO MATCH POLE. POLE BY MOUNTAIN STATES #10SRA-4.5-TT/3X3-FRANK(NN)-RAL6028		N/A	AMERLUX	D624-CA-AV12-U-SO-30-1200M

*OR EQUIVALENT AS APPROVED BY THE ENGINEER
 **PEDESTRIAN LIGHTING IS TOWN OF ESTES PARK AND DESIGNATED AS "SA"
 ***L-XX - WHERE "XX" IS LUMINAIRE NUMBER

LUMINAIRE ALIGNMENT				
LUMINAIRE NUMBER	ALIGNMENT	STATION	OFFSET	SIDE
L-01	MORaine BYPASS	1+41.93	12.97'	RT
L-02	MORaine BYPASS	2+35.70	16.52'	RT
L-03	MORaine BYPASS	3+28.16	15.60'	RT
L-04	MORaine WEST	103+47.41	39.74'	LT
L-05	ROUNDABOUT_CENTRAL ISLAND	1+27.76	29.74'	RT
L-06	RIVERSIDE DR	500+51.32	29.60'	RT
L-07	ROUNDABOUT_CENTRAL ISLAND	0+63.48	44.26'	RT
L-08	CRAGS RD	401+59.14	35.73'	RT
L-09	ROUNDABOUT_CENTRAL ISLAND	0+21.82	43.11'	RT
L-10	MORaine NORTH	203+15.02	33.26'	LT
L-11	MORaine WEST	104+01.27	34.86'	RT
L-12	MORaine WEST	102+24.27	26.60'	RT

TABULATION OF APPROXIMATE QUANTITIES IS FOR INFORMATION ONLY. MEASUREMENT AND PAYMENT SHALL BE MADE UNDER ITEM 63601-2000, SYSTEM INSTALLATION, LIGHTING, LUMP SUM.

TABULATION OF APPROXIMATE LIGHTING QUANTITIES NEAR ROUNDABOUT		
DESCRIPTION	UNITS	PROJECT TOTAL
REMOVE EXISTING OVERHEAD LIGHT AND WOOD POLE	EA	4
2" PVC ELECTRICAL CONDUIT	LF	1235
WIRING	LS	1
LUMINAIRE (LED) SPECIAL	EA	12
LIGHT STANDARD METAL (35 FOOT, UP TO 40 FOOT)	EA	12
LIGHT STANDARD FOUNDATION	EA	12
SECONDARY SERVICE PEDESTAL	EA	1
PULL BOX (16"x16"x6")	EA	12
PULL BOX (18"x12"x8")	EA	5

NOTE: THESE QUANTITIES ARE APPROXIMATE FOR THE ROUNDABOUT AREA ONLY. THESE DO NOT COVER THE PEDESTRIAN LIGHT FIXTURE REQUIREMENTS.

TABULATION OF APPROXIMATE TOWN OF ESTES PARK PEDESTRIAN LIGHTING QUANTITIES		
DESCRIPTION	UNITS	PROJECT TOTAL
RESET LIGHT STANDARD	EA	28
LIGHT STANDARD AND LUMINAIRE (DECORATIVE)	EA	19
LIGHT STANDARD FOUNDATION SPECIAL	EA	47
2" PVC CONDUIT - VERIFY CIRCUITRY WITH TOWN OF ESTES PARK	LF	4489
WIRING	LS	1

NOTE: THESE QUANTITIES ARE APPROXIMATE FOR THE TOWN OF ESTES PARK PEDESTRIAN LIGHTING ONLY.

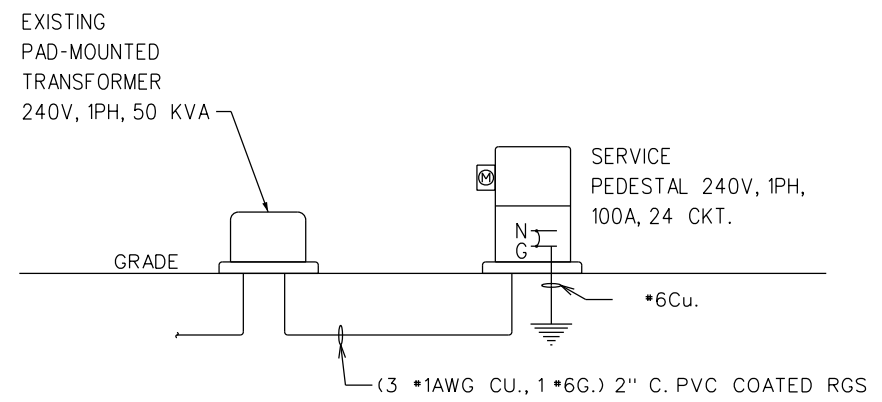
U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**LIGHTING PLANS
 LUMINAIRE SCHEDULES**

SHEET 4 OF 12

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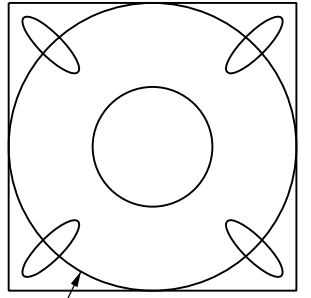
1 SERVICE PEDESTAL RISER DIAGRAM
SCALE: NO SCALE

NEMA 3R				PANEL 201				Voltage 240/120V, 1PH, 3W			
LOCATED STATION 201				100A COPPER BUS				100A MAIN CIRCUIT BREAKER			
22 KAIC, SURFACE MOUNTED				LOADS (VA)		LOADS (VA)					
CIRCUIT DESCRIPTION	T Y P E	B K R	C I R	PH A	PH B	PH A	PH B	C I R	B K R	T Y P E	CIRCUIT DESCRIPTION
MORaine	L	20A	1	399				2			SPACE
MORaine		20A	3					4			SPACE
ROUNDABOUT	L	20A	5	399	266			6			SPACE
ROUNDABOUT/CRAGS		20A	7					8			SPACE
SPARE	L	20A	9		266			10			SPACE
WEST MORaine		20A	11					12			SPACE
SPACE	L	20A	13					14			SPACE
SPACE		20A	15					16			SPACE
SPACE	L	20A	17					18			SPACE
SPARE		20A	19					20			SPACE
SPACE	L	20A	21					22			SPACE
SPACE		20A	23					24			SPACE
TOTAL VOLT-AMPERES				798	798	0	0				
TOTAL CONNECTED LOAD (AMPS) =				1596	VA / 240	1596	VA / 240	= 6.7			
	TYPE	CONN	F.F.	LOAD							
LIGHTING LOADS	L	1330	1.25	1663							
RECEPTACLE LOADS (1st 10KVA)	R	0	1.00	0							
RECEPTACLE LOADS (BALANCE)	R	0	0.50	0							
MOTOR LOADS	M	0	1.00	0							
LARGEST MOTOR	ML	0	1.25	0							
OTHER LOADS	O	0	1.00	0							
SPARE LOADS	S	0	1.00	0							
FEEDER LOAD (AMPS) =				1663	VA / 240	0	VA / 240	= * 6.9			

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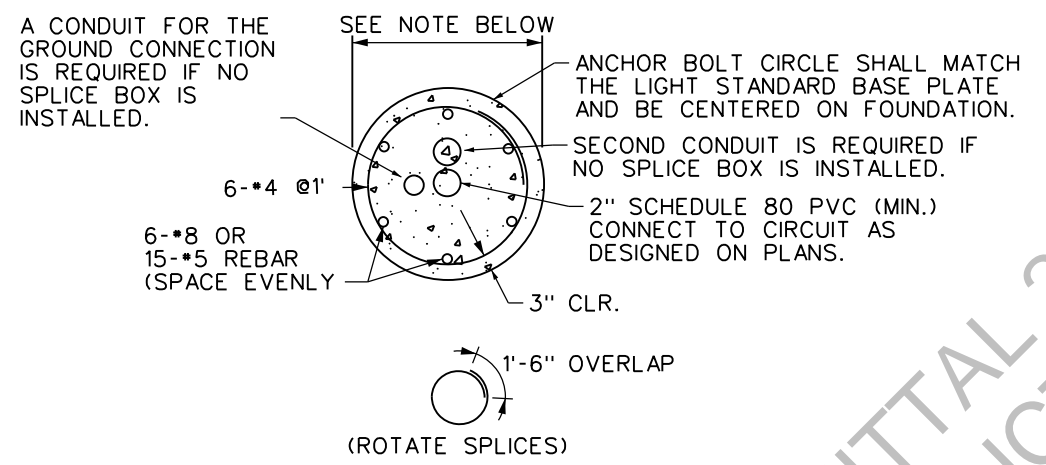
**LIGHTING PLANS
PANEL SCHEDULE**
SHEET 5 OF 12

4 BOLTS AT 90°
3/4" DIA X 18" LONG X 3" HOOK
BOLTS TO HAVE A 3.5" PROJECTION
OUT OF THE CONCRETE



ANCHOR BASE DETAIL
11-12" BOLT CIRCLE
1/18" WIDE X 2" HOLES
TO ACCOMIDATE UP TO
3/4" DIA BOLT

1 ANCHOR BOLT DIAGRAM
SCALE: NO SCALE



2 PEDESTRIAN FOUNDATION SECTION
SCALE: NO SCALE

- PEDESTRIAN FOUNDATION SECTION NOTES:
1. COMPLY WITH CDOT STANDARD DETAILS S-613. MODIFY THE STANDARDS AS NOTED. COORDINATE WITH THE TOWN OF ESTES PARK ON MATERIAL, PLACEMENT, AND INSTALLATION PRIOR TO ROUGH IN.
 2. FOR A 17" DIAMETER POLE BASE, PROVIDE AN 18" DIAMETER FOUNDATION, EXCEPT IN PARKING LOTS PROVIDE A 24" DIAMETER FOUNDATION.
 3. ON SIDEWALKS ,AND IN HARDSCAPE, LANDSCAPE AREAS, PROVIDE A 2" TOP OF FOUNDATION FROM THE FINISHED SURFACE BASE.
 4. IN PARKING AREAS AND LOTS, PROVIDE A 30" TOP OF FOUNDATION TO FINISHED SURFACE BASE. PROVIDE A OCTAGON SHAPED FOUNDATION ABOVE GRADE WITH DETAILING TO MATCH EXISTING POLE BASES. VERIFY DETAILING WITH THE TOWN OF ESTES PARK PRIOR TO ROUGH IN.

FEEDER SCHEDULE							
KEY	PANEL	CIRCUIT	VOLTAGE/PHASE	CONDUCTOR	CONDUIT	VOLT DROP	CONDUIT FILL
P-001	201	1	120-HOT-NEU	2#10 THWN CU	2" PVC	1.2%	10.9%
		3	120-HOT-NEU	2#10 THWN CU		1.5%	
		5	120-HOT-NEU	2#8 THWN CU		2.6%	
		7	120-HOT-NEU	2#8 THWN CU		2.1%	
		11	120-HOT-NEU	2#10 THWN CU		1.9%	
		GND	240/120 GND	1#8 THWN CU	N/A		
P-002	201	1	120-HOT-NEU	2#10 THWN CU	2" PVC	1.2%	4.1%
		3	120-HOT-NEU	2#10 THWN CU		1.5%	
		11	120-HOT-NEU	2#10 THWN CU		1.9%	
				GND		240/120 GND	
P-003	201	3	120-HOT-NEU	2#10 THWN CU	2" PVC	0.7%	2.9%
		11	120-HOT-NEU	2#10 THWN CU		1.9%	
				GND		240/120 GND	
P-004	201	5	120-HOT-NEU	2#8 THWN CU	2" PVC	2.6%	6.3%
		7	120-HOT-NEU	2#8 THWN CU		2.1%	
				GND		240/120 GND	
P-005	201	5	120-HOT-NEU	2#8 THWN CU	2" PVC	1.7%	3.8%
				GND		240/120 GND	
P-006	201	7	120-HOT-NEU	2#8 THWN CU	2" PVC	1.7%	3.8%
				GND		240/120 GND	
P-007	201	1	120-HOT-NEU	2#10 THWN CU	2" PVC	0.7%	2.4%
				GND		240/120 GND	
P-008	201	11	120-HOT-NEU	2#10 THWN CU	2" PVC	1.9%	2.4%
				GND		240/120 GND	
P-009	201	3	120-HOT-NEU	2#10 THWN CU	2" PVC	0.7%	2.2%
				GND		240/120 GND	

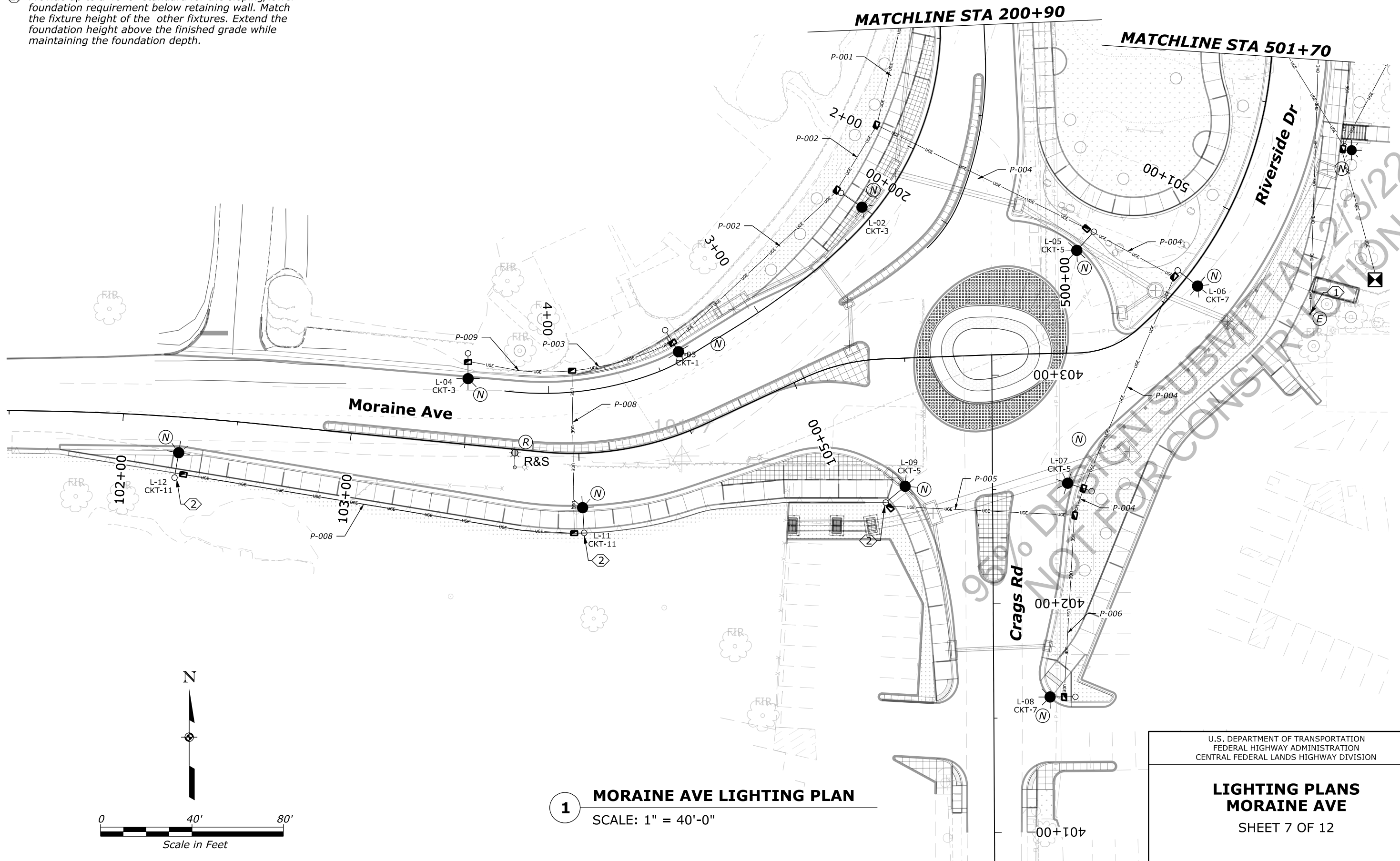
*NOTE: PROVIDE FEEDERS FOR TOWN OF ESTES PARK PEDESTRIAN FIXTURES. COORDINATE WITH TOWN OF ESTES PARK FOR EXISTING CIRCUITRY.

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	U-24

KEYED NOTES:

- ① Disconnect existing overhead electric line from existing pole and make safe. Remove overhead line and dispose.
- ② Provide up to a 40' 0" standard for the sloping/lower foundation requirement below retaining wall. Match the fixture height of the other fixtures. Extend the foundation height above the finished grade while maintaining the foundation depth.



1 MORaine AVE LIGHTING PLAN
SCALE: 1" = 40'-0"

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

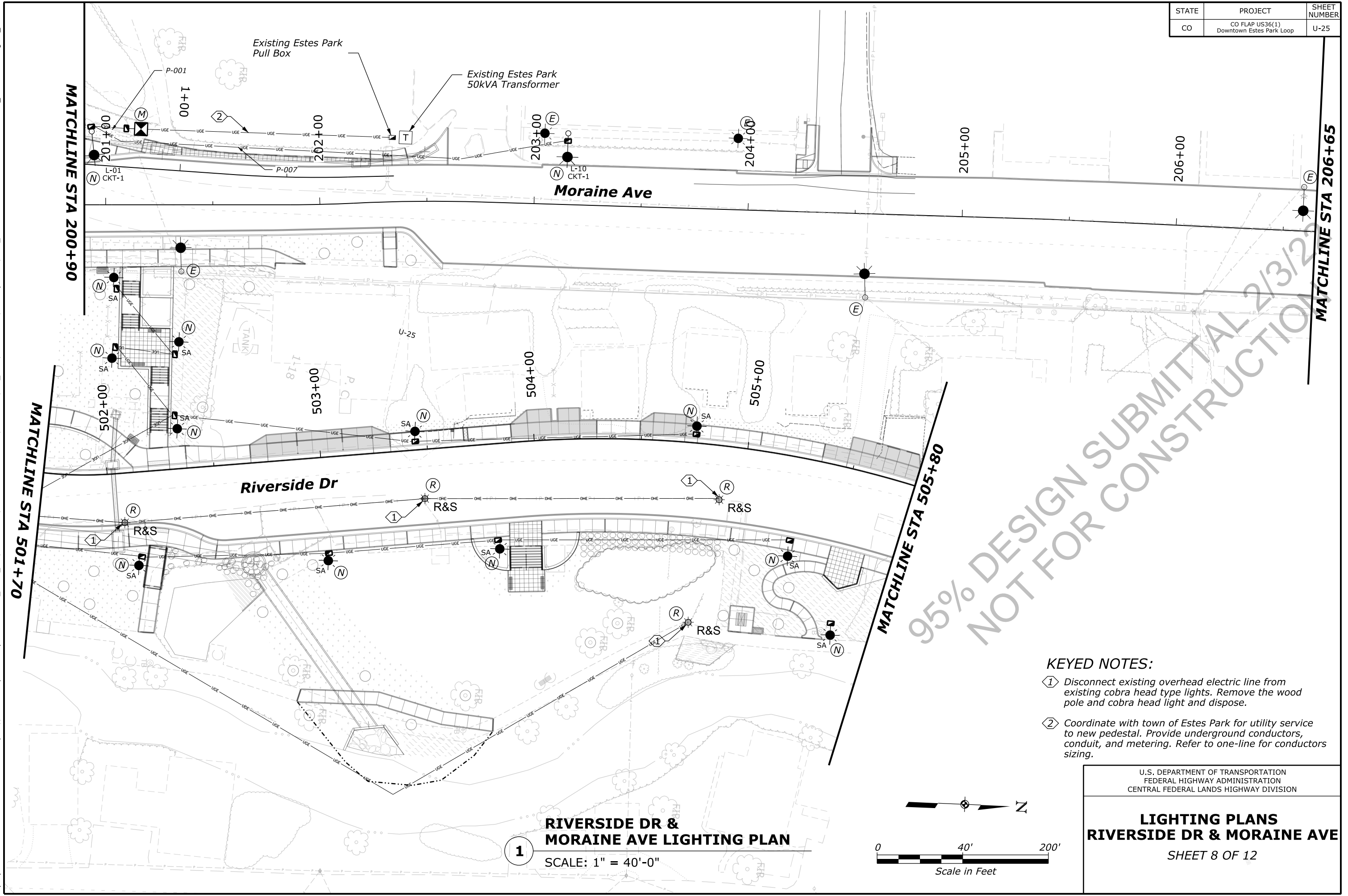
**LIGHTING PLANS
MORaine AVE**

SHEET 7 OF 12

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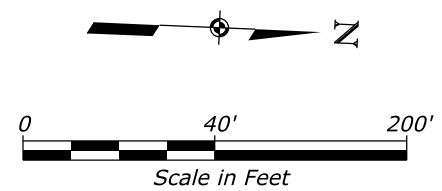
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	U-25

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- KEYED NOTES:**
- ① Disconnect existing overhead electric line from existing cobra head type lights. Remove the wood pole and cobra head light and dispose.
 - ② Coordinate with town of Estes Park for utility service to new pedestal. Provide underground conductors, conduit, and metering. Refer to one-line for conductors sizing.

1 RIVERSIDE DR & MORaine Ave LIGHTING PLAN
SCALE: 1" = 40'-0"



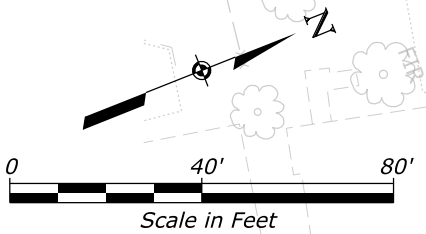
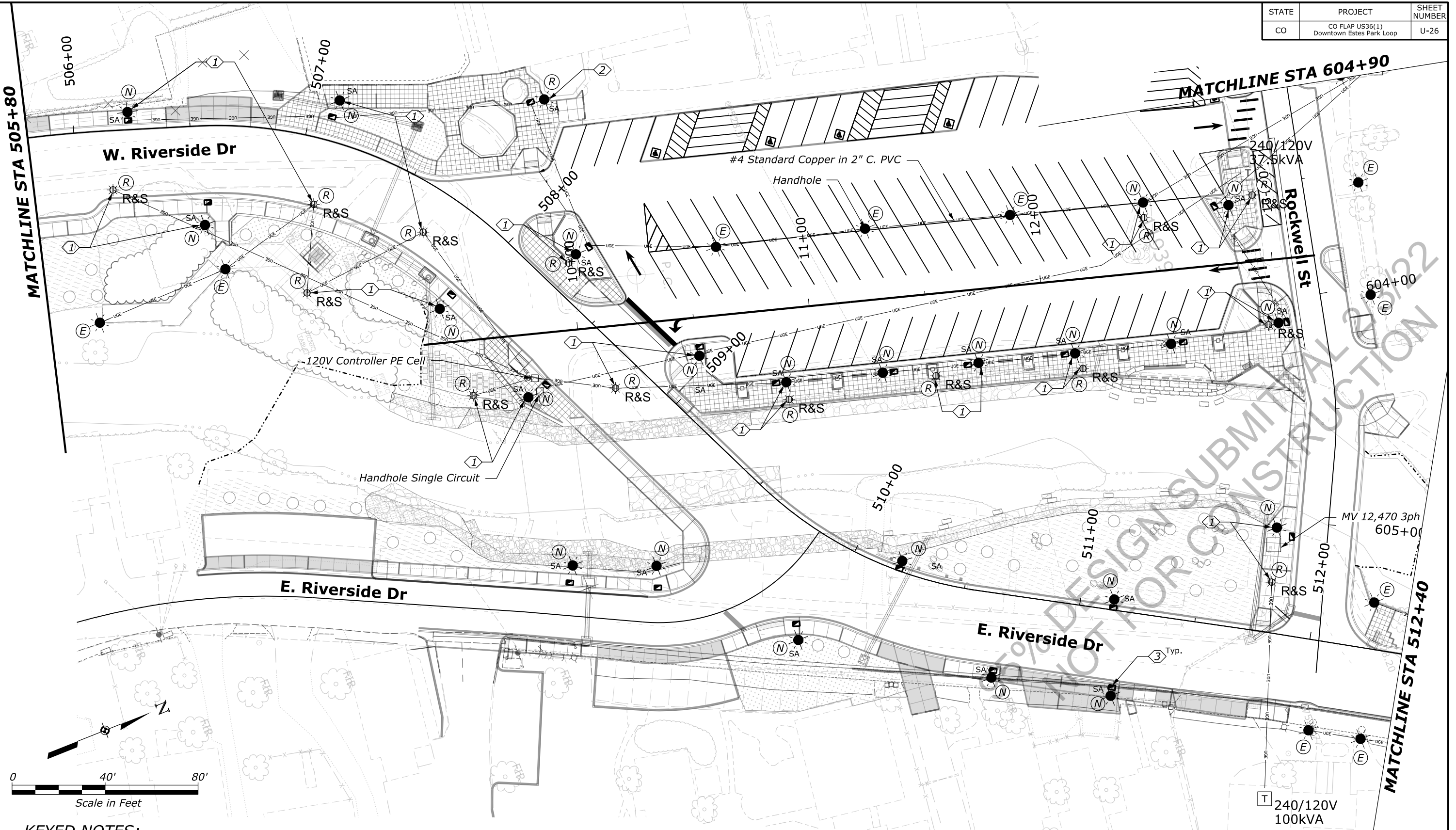
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**LIGHTING PLANS
RIVERSIDE DR & MORaine Ave**

SHEET 8 OF 12

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	U-26

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1/28/2022



KEYED NOTES:

- ① Remove light, pole, and base. Move to adjacent position shown. Clean, re-ballast, and set in new location on new base. Provide a new pull box. Connect to existing circuit.
- ② Remove light and pole. Clean, re-ballast, re-lamp and reset on existing base. Connect to existing circuit.
- ③ Coordinate with the CO and the TOEP for pedestrian lighting removal and replacement, to install new storm sewer grating and conduits. Coordinating removal and replacement of pedestrian lighting to install new curb and gutters. Disconnect and reconnect lighting branch circuitry. Provide new boxes. Typical for storm sewer and curb and gutter.

1 RIVERSIDE DR LIGHTING PLAN
SCALE: 1" = 40'-0"

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

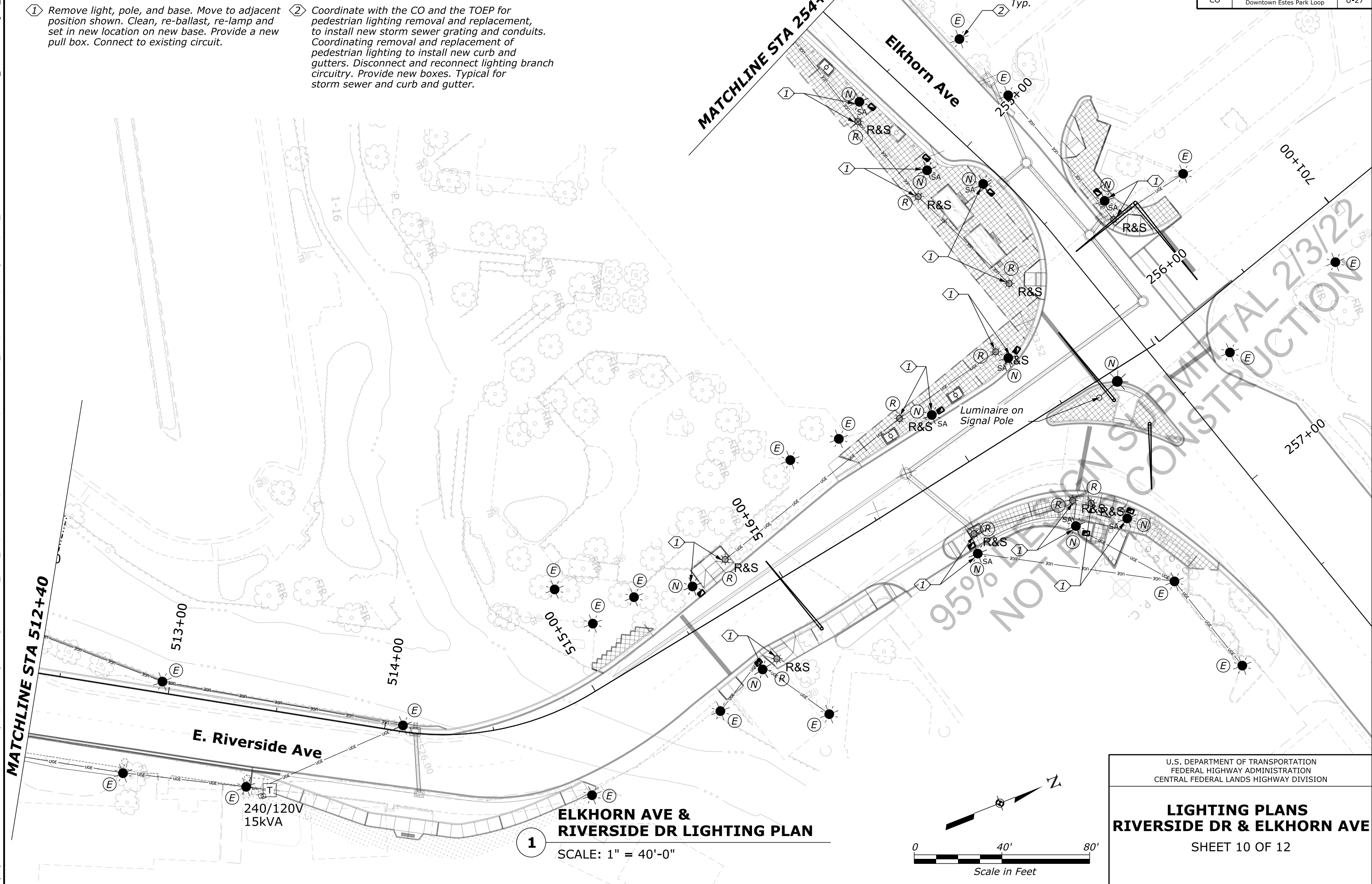
**LIGHTING PLANS
RIVERSIDE DR**

SHEET 9 OF 12

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	U-27

KEYED NOTES:

- ① Remove light, pole, and base. Move to adjacent position shown. Clean, re-ballast, re-lamp and set in new location on new base. Provide a new pull box. Connect to existing circuit.
- ② Coordinate with the CO and the TOEP for pedestrian lighting removal and replacement, to install new storm sewer grating and conduits. Coordinating removal and replacement of pedestrian lighting to install new curb and gutters. Disconnect and reconnect lighting branch circuitry. Provide new boxes. Typical for storm sewer and curb and gutter.



ELKHORN AVE & RIVERSIDE DR LIGHTING PLAN

SCALE: 1" = 40'-0"

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

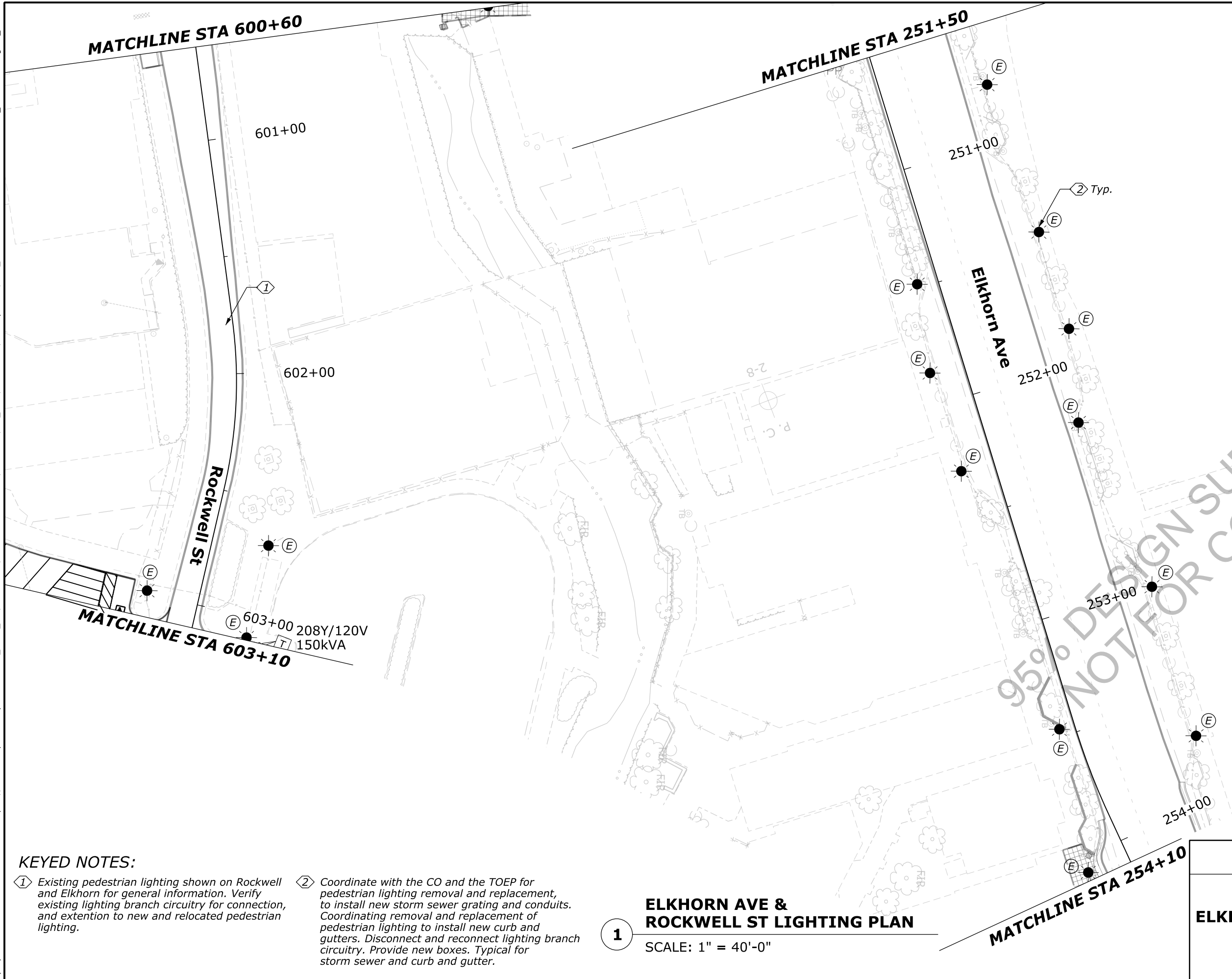
LIGHTING PLANS
RIVERSIDE DR & ELKHORN AVE

SHEET 10 OF 12

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	U-28

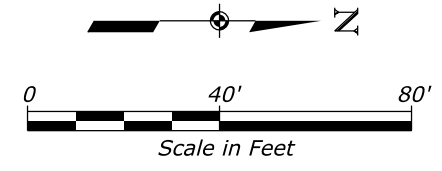
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1/28/2022



KEYED NOTES:

- ① Existing pedestrian lighting shown on Rockwell and Elkhorn for general information. Verify existing lighting branch circuitry for connection, and extension to new and relocated pedestrian lighting.
- ② Coordinate with the CO and the TOEP for pedestrian lighting removal and replacement, to install new storm sewer grating and conduits. Coordinating removal and replacement of pedestrian lighting to install new curb and gutters. Disconnect and reconnect lighting branch circuitry. Provide new boxes. Typical for storm sewer and curb and gutter.

ELKHORN AVE & ROCKWELL ST LIGHTING PLAN
SCALE: 1" = 40'-0"



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
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**LIGHTING PLANS
ELKHORN AVE & ROCKWELL ST**

SHEET 11 OF 12

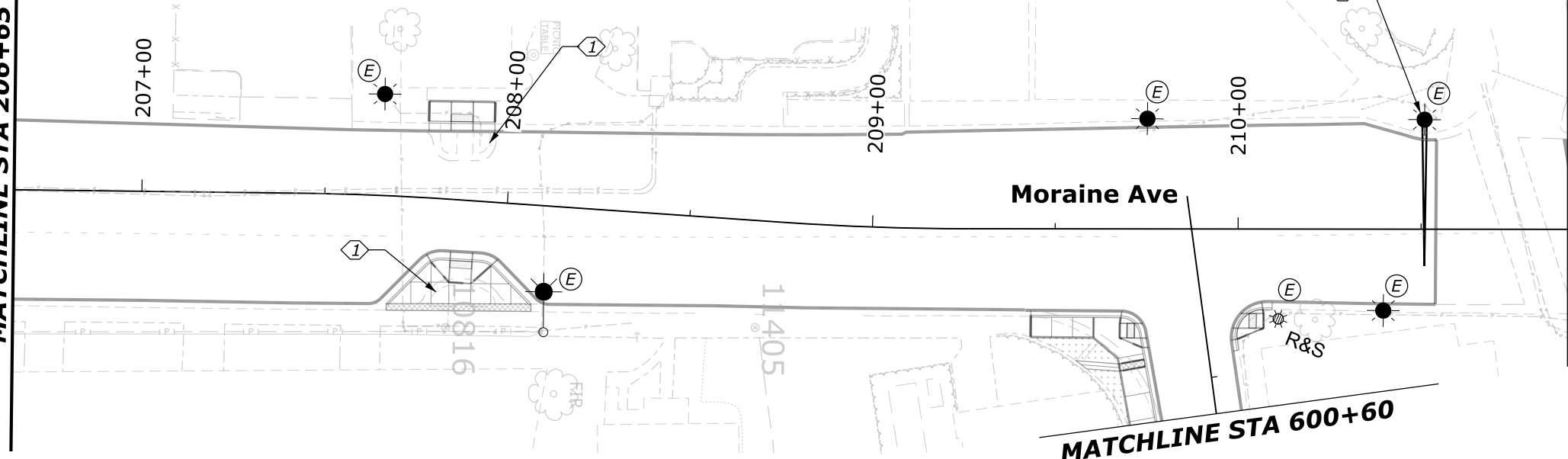
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	U-29

KEYED NOTES:

- ① Coordinate with the CO and the TOEP to remove and install RRFB signs. Adjust, repull, and reconnect. Provide new pull boxes.
- ② Coordinate with the CO and the TOEP to relocate underground conductors and boxes as required to locate new signage.
- ③ Coordinate with the CO and the TOEP to remove and reconnect signal lighting, signal pole area lighting, and controllers.

MATCHLINE STA 206+65

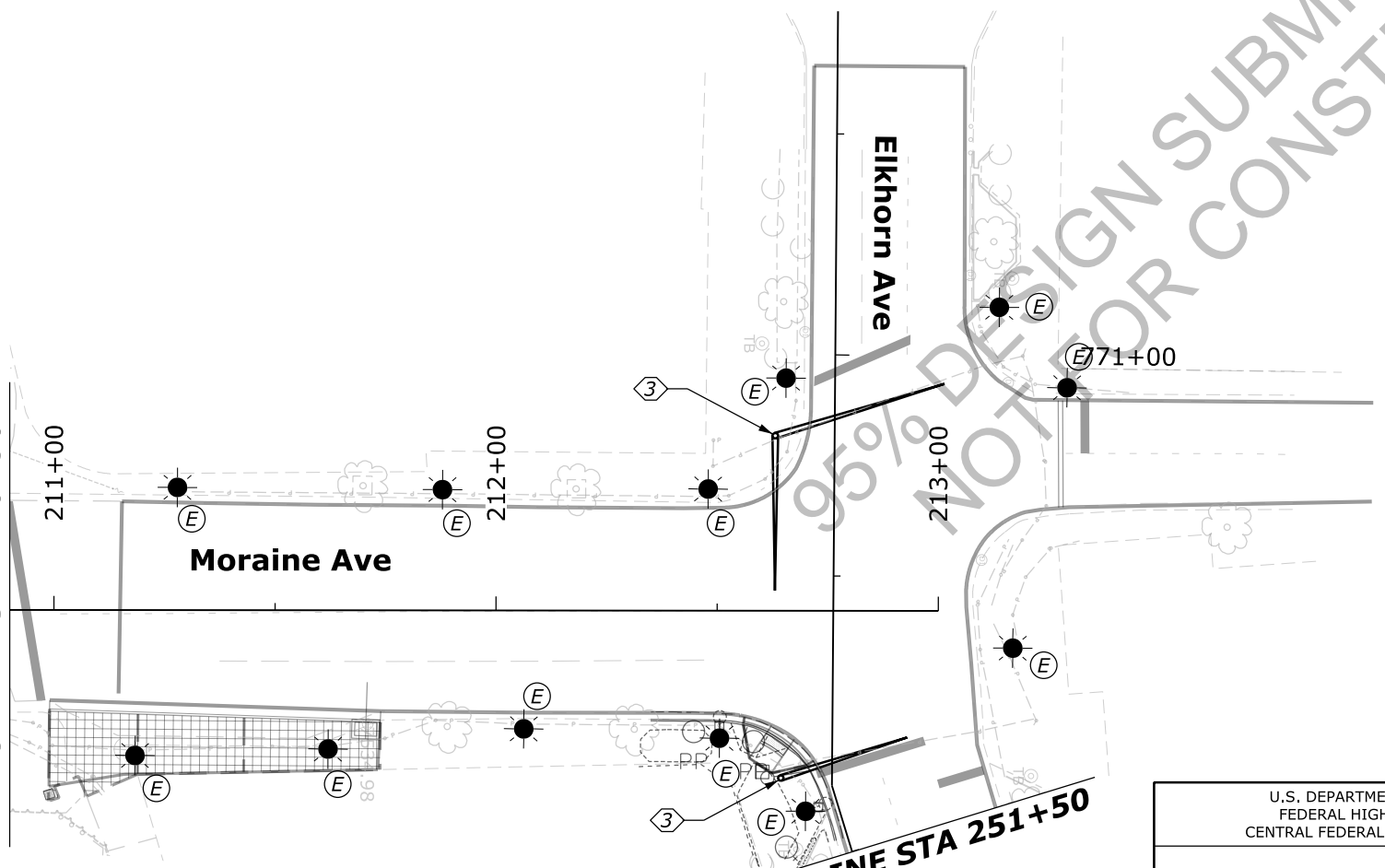
MATCHLINE STA 210+90



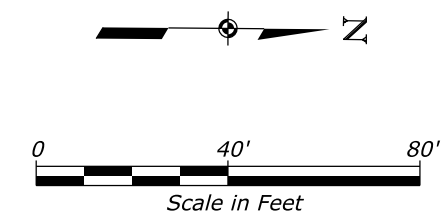
1 MORaine Ave LIGHTING PLAN
SCALE: 1" = 40'-0"

MATCHLINE STA 210+90

MATCHLINE STA 251+50



2 N. MORaine Ave LIGHTING PLAN
SCALE: 1" = 40'-0"



95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

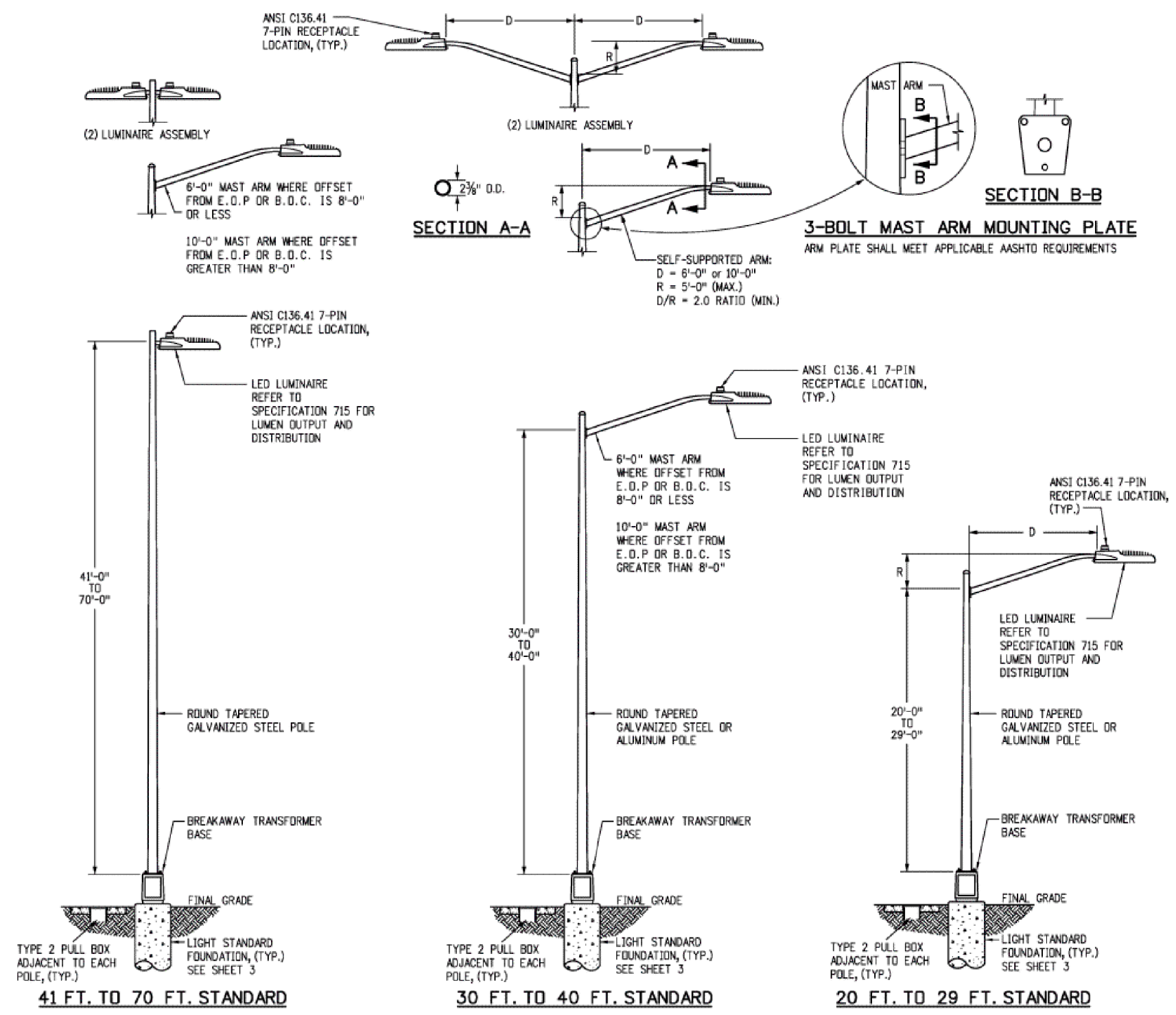
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CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**LIGHTING PLANS
MORaine Ave**

SHEET 12 OF 12

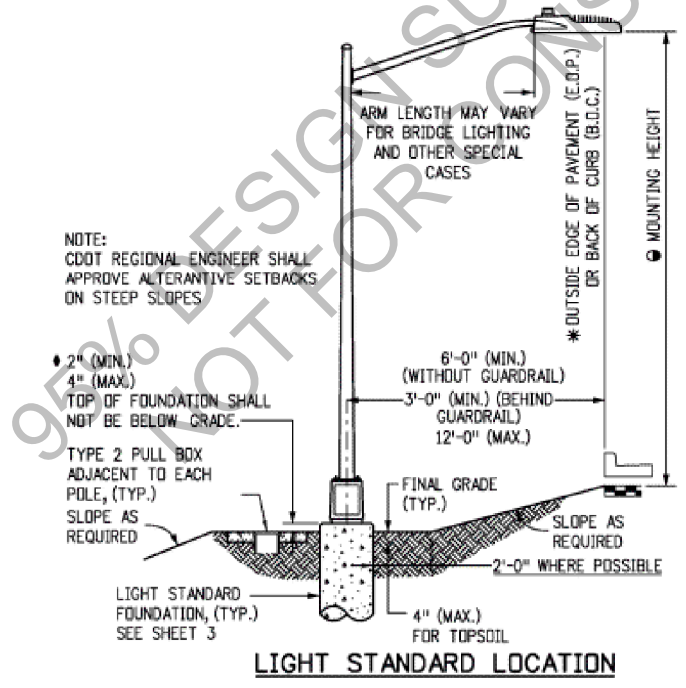
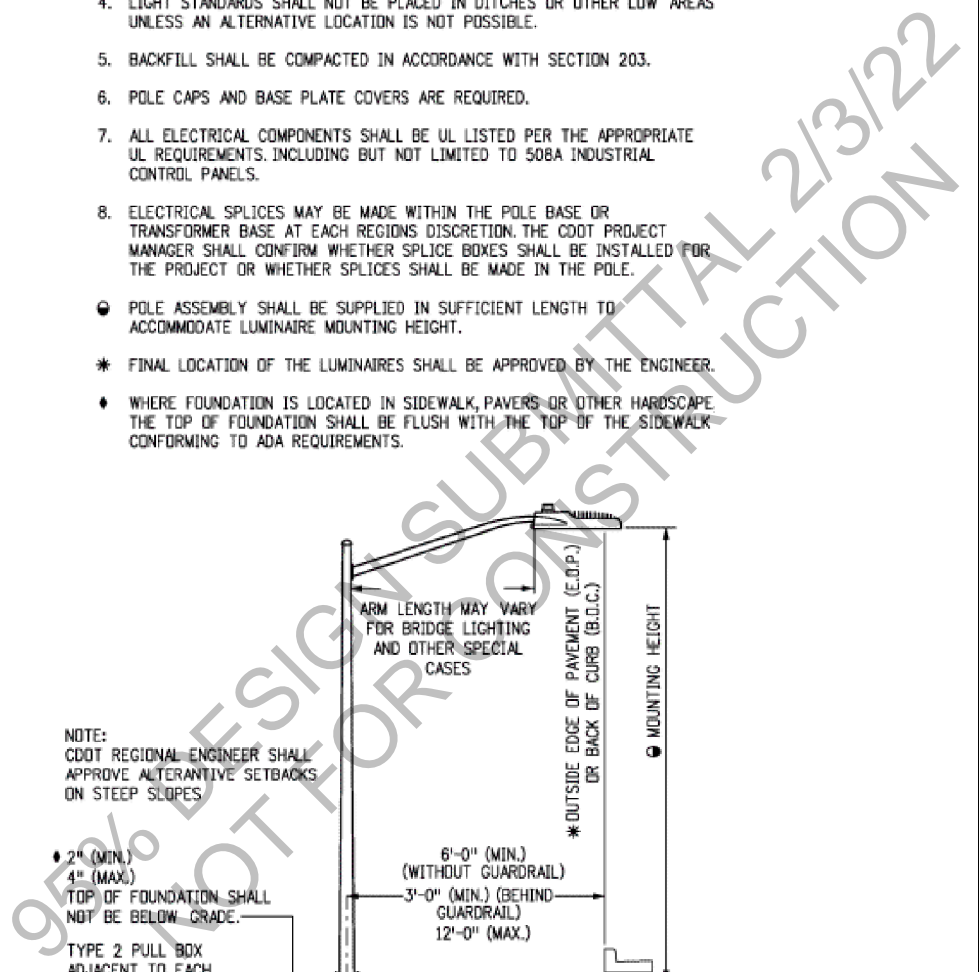
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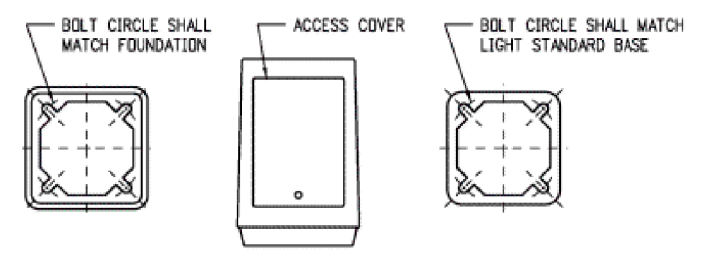
LUMINAIRE AND LIGHT STANDARD NOTES:

- LUMINAIRE WITH LIGHT SOURCES RATED MORE THAN 3200 LUMENS SHALL HAVE NO UPLIGHT (00 RATING) PER IES TM-15-11 AND MOUNTED LEVEL AND PLUMB.
- ALL LUMINAIRE SHALL BE EQUIPPED WITH AN ANSI C136.41 7-PIN RECEPTACLE AND SHORTING CAP FOR WIRELESS CONTROL NODE.
- ALL LED LUMINAIRE 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 LUMINAIRE 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 CDDT 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 LUMINAIRE 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.



(Adapted from CDOT Standard S-613-1)

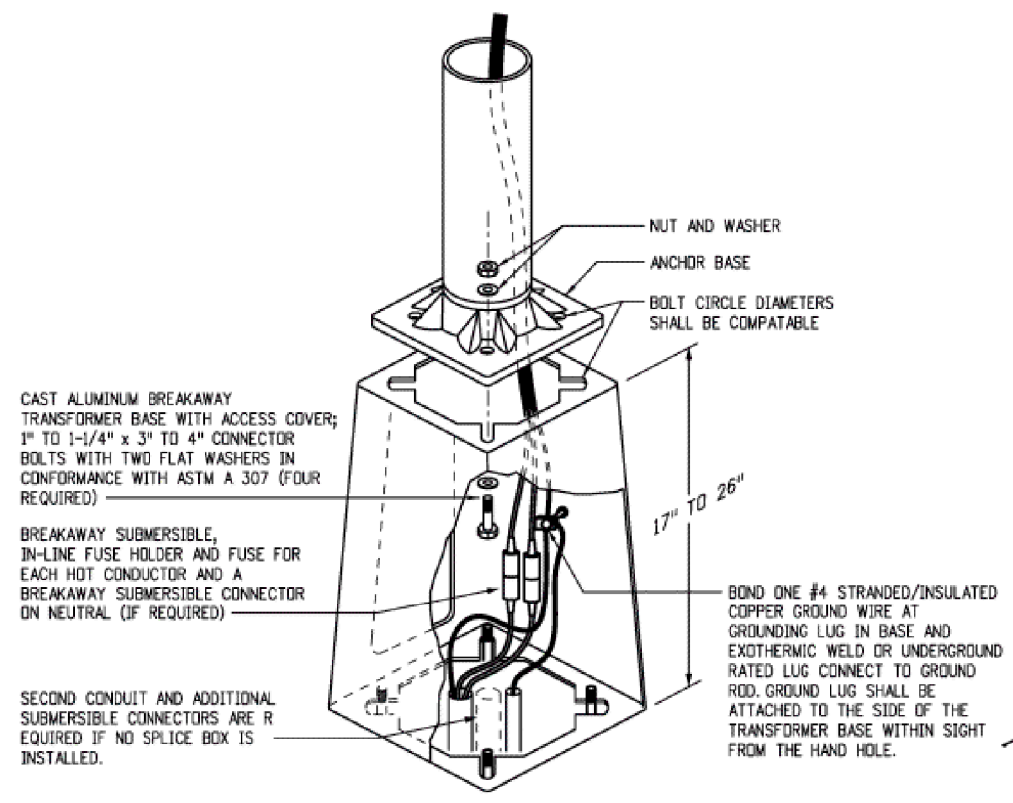
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 1/28/2022



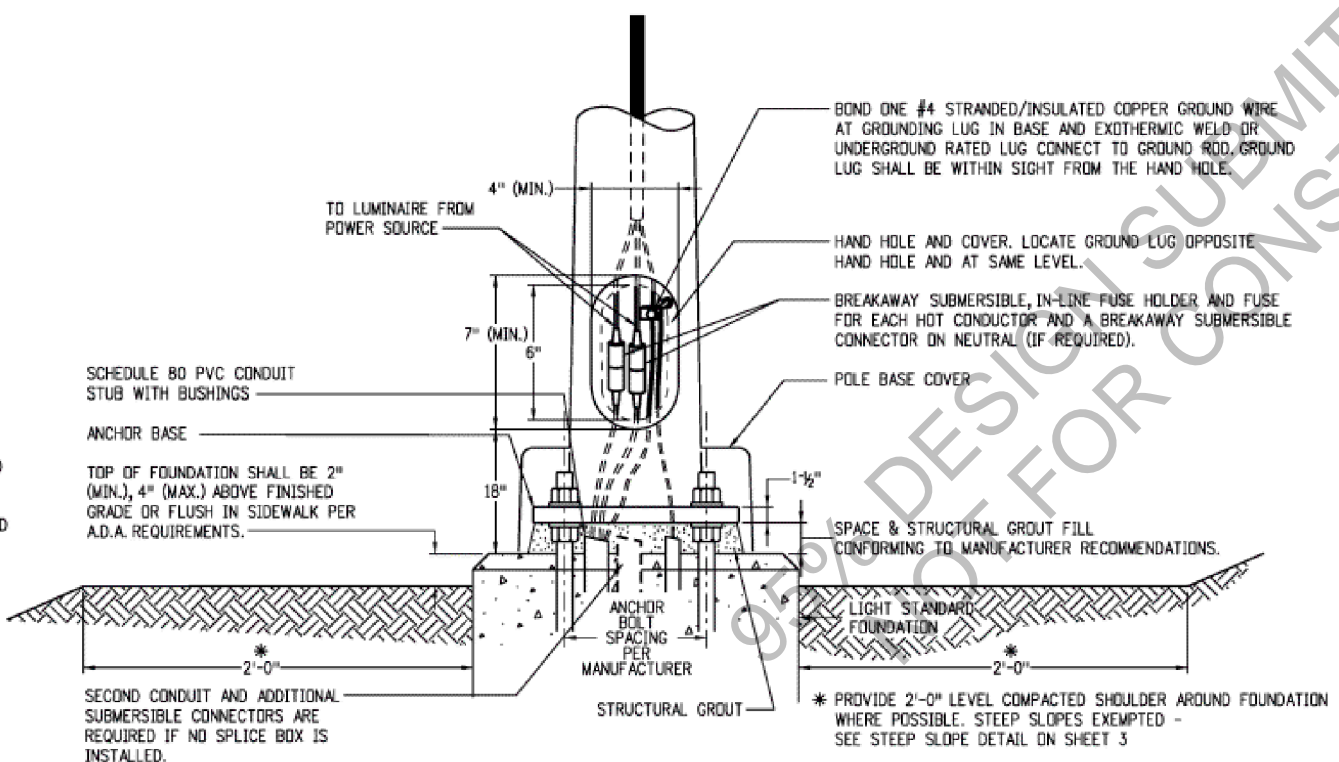
BOTTOM PLATE FRONT VIEW TOP PLATE
 NOTE: MATCH EXISTING BREAKAWAY TRANSFORMER BASE AS CLOSELY AS POSSIBLE.

DETAIL NOTES:

1. ALL BREAKAWAY TRANSFORMER BASES SHALL CONFORM TO AASHTO "LRFD SPECIFICATION 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".



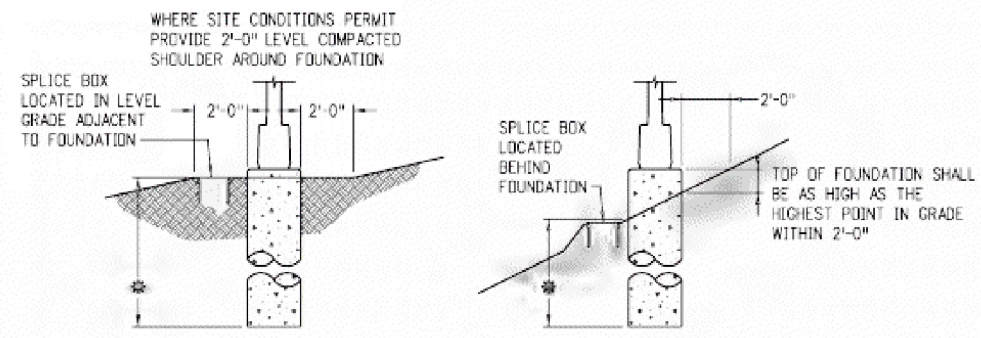
TYPICAL BREAKAWAY TYPE TRANSFORMER BASE DETAIL



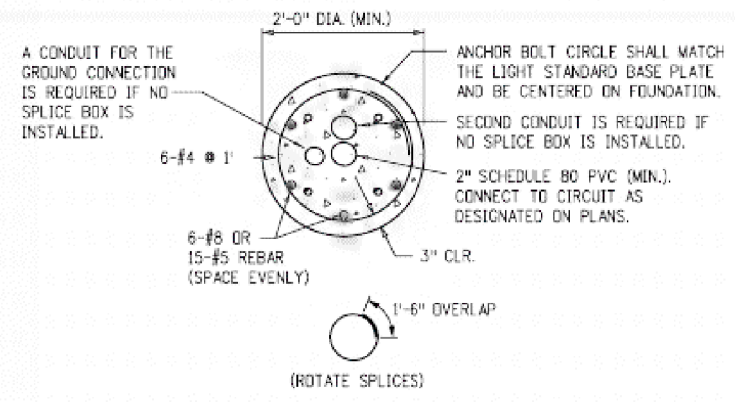
TYPICAL NON-BREAKAWAY BASE DETAIL

(Adapted from CDOT Standard S-613-1)

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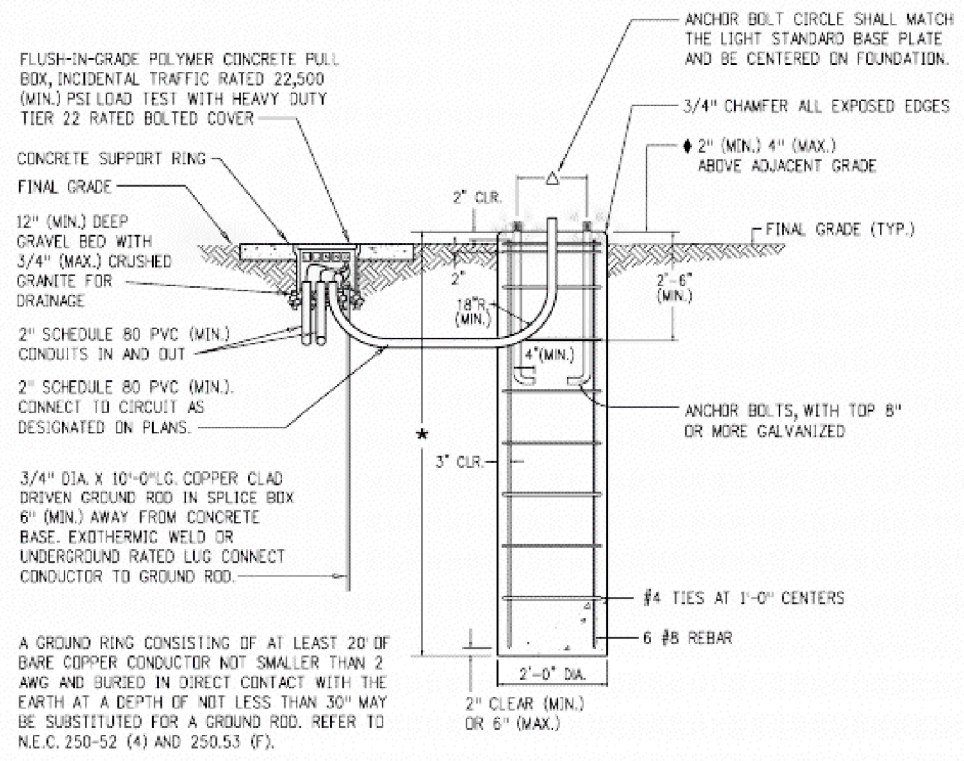
FOUNDATION REQUIREMENTS FOR STEEP SLOPES



TYPICAL FOUNDATION SECTION

NOTES:

- 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.
- CONCRETE SHALL BE AIR ENTRAINED CLASS B2 AND SHALL CONFORM TO SECTION 601 FOR CONCRETE AND SECTION 602 FOR REINFORCING STEEL.
- 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.
- BOND (1) #4 STRANDED/INSULATED COPPER TO GROUND ROD IN FULL BOX / SPLICE BOX AND GROUNDING LUG IN POLE BASE HAND HOLE.
- 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.
- ALL PVC CONDUIT ENDS SHALL HAVE END BELLS OR MALE ADAPTOR, THREADED TERMINAL ENDS WITH SCREW ON BUSHING.
- 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.



TYPICAL CONCRETE LIGHT STANDARD FOUNDATION

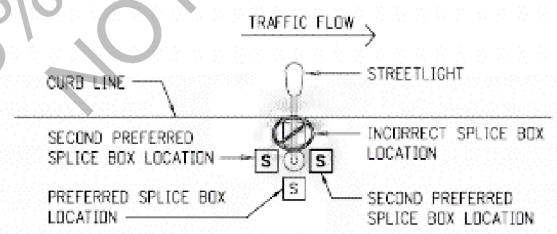
LIGHT STANDARD FOUNDATION SHALL BE CAST-IN-PLACE CONCRETE. A COMPLETE FOUNDATION INCLUDES THE CLASS B2 CONCRETE, REINFORCING STEEL, PVC STUB OUT(S), GROUNDING ELECTRODE(S), ANCHOR BOLTS AND CONNECTOR BOLTS (FOR BREAKAWAY TYPE TRANSFORMER BASES).

FOUNDATION SCHEDULE

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.

P.S.E. (PER STRUCTURAL ENGINEER)
FOUNDATION DESIGN DATA:
BROMS METHOD USING AASHTO LRFD LTS 1ST, 2015 WITH 2018 INTERIMS.

THE DESIGN ASSUMES FOLLOWING SOIL PARAMETERS:
SOIL DENSITY = 110 LB/CF
SOIL COHESION = 750 LB/SOFT FOR MEDIUM STIFF COHESIVE SOIL
SOIL ANGLE = 30° FOR MEDIUM DENSE COHESIONLESS SOIL
RESISTANCE FACTOR = 0.4 FOR FLEXURE.



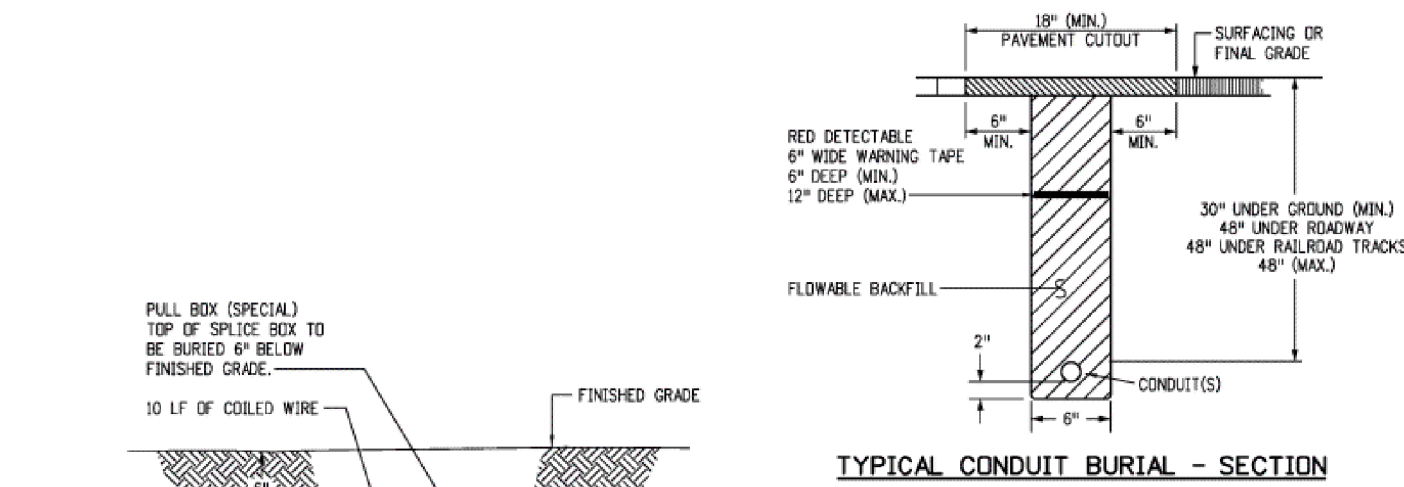
TYPICAL STREET LIGHT SPLICE BOX PLACEMENT

(Adapted from CDOT Standard S-613-2)

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY SPECIAL ROADWAY LIGHTING DETAILS Sheet 3 of 6	
	SPECIAL 626-A

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	U-33

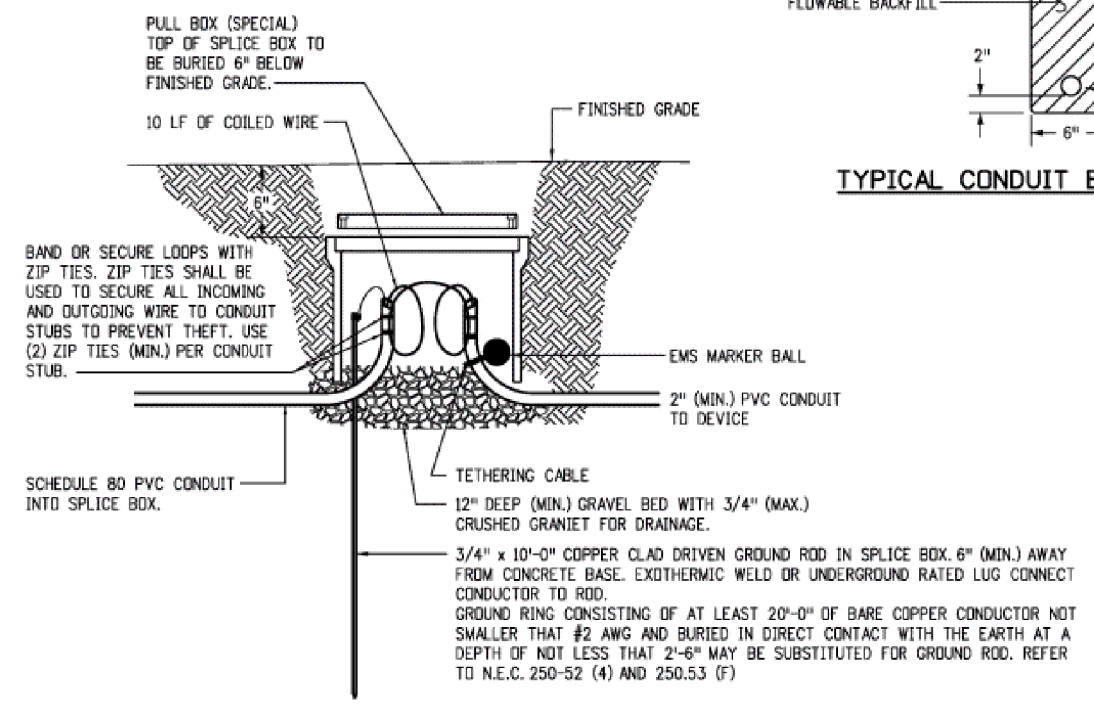
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TYPICAL CONDUIT BURIAL - SECTION

CONDUIT BURIAL NOTES

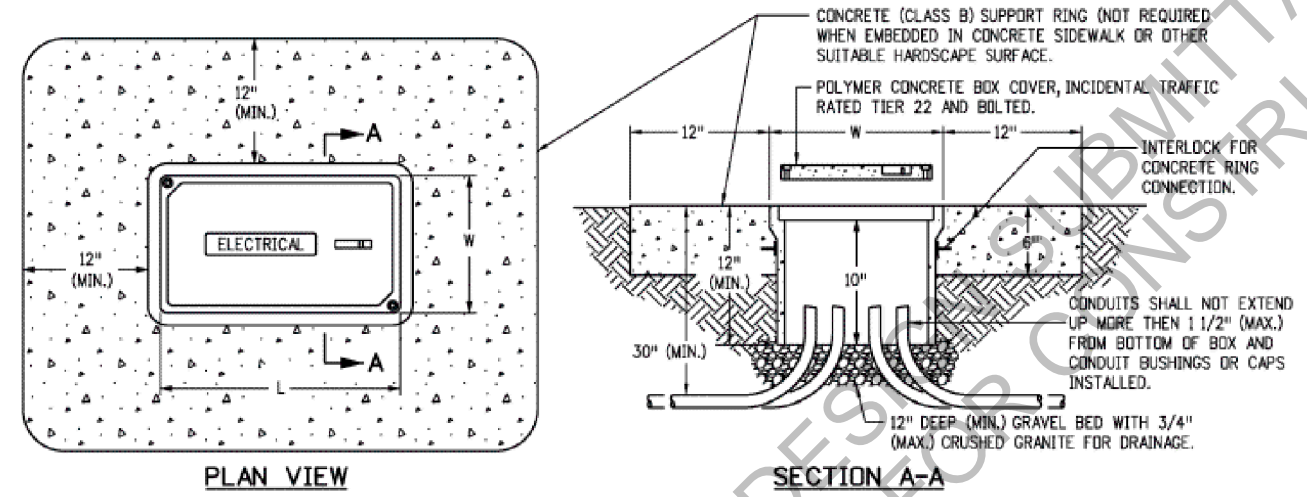
1. CONTRACTOR SHALL COORDINATE TRENCHING WITH OTHER UNDERGROUND UTILITIES, RAMP METERING AND IRRIGATION. CONTRACTOR SHALL USE COMMON TRENCHES AT ALL ROAD CROSSINGS WHERE POSSIBLE.
2. ONE CONDUIT PER BUNDLE SHALL HAVE ONE #12 AWG LOCATE WIRE AND A NYLON OR POLYESTER PULL TAPE WITH 1,250 LBS TEST STRENGTH 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.



BURIED SPLICE BOX WITH EMS MARKER BALL

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 CDOT 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 CDOT 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.



PLAN VIEW

SECTION A-A

TYPICAL PULL OR SPLICE BOX

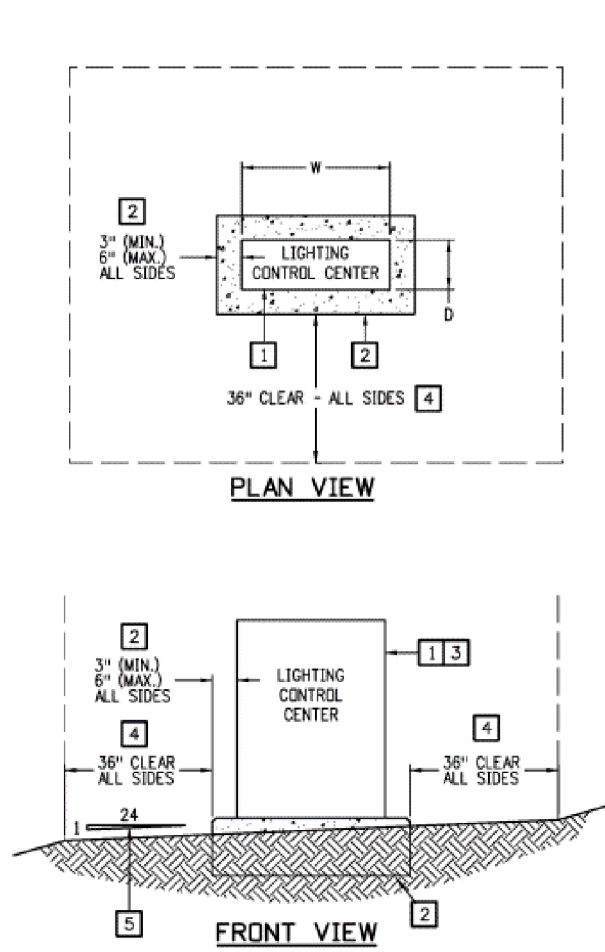
SPLICE BOX NOTES

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 CDOT 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 CDOT 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 CDOT 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.

(Adapted from CDOT Standard S-613-2)

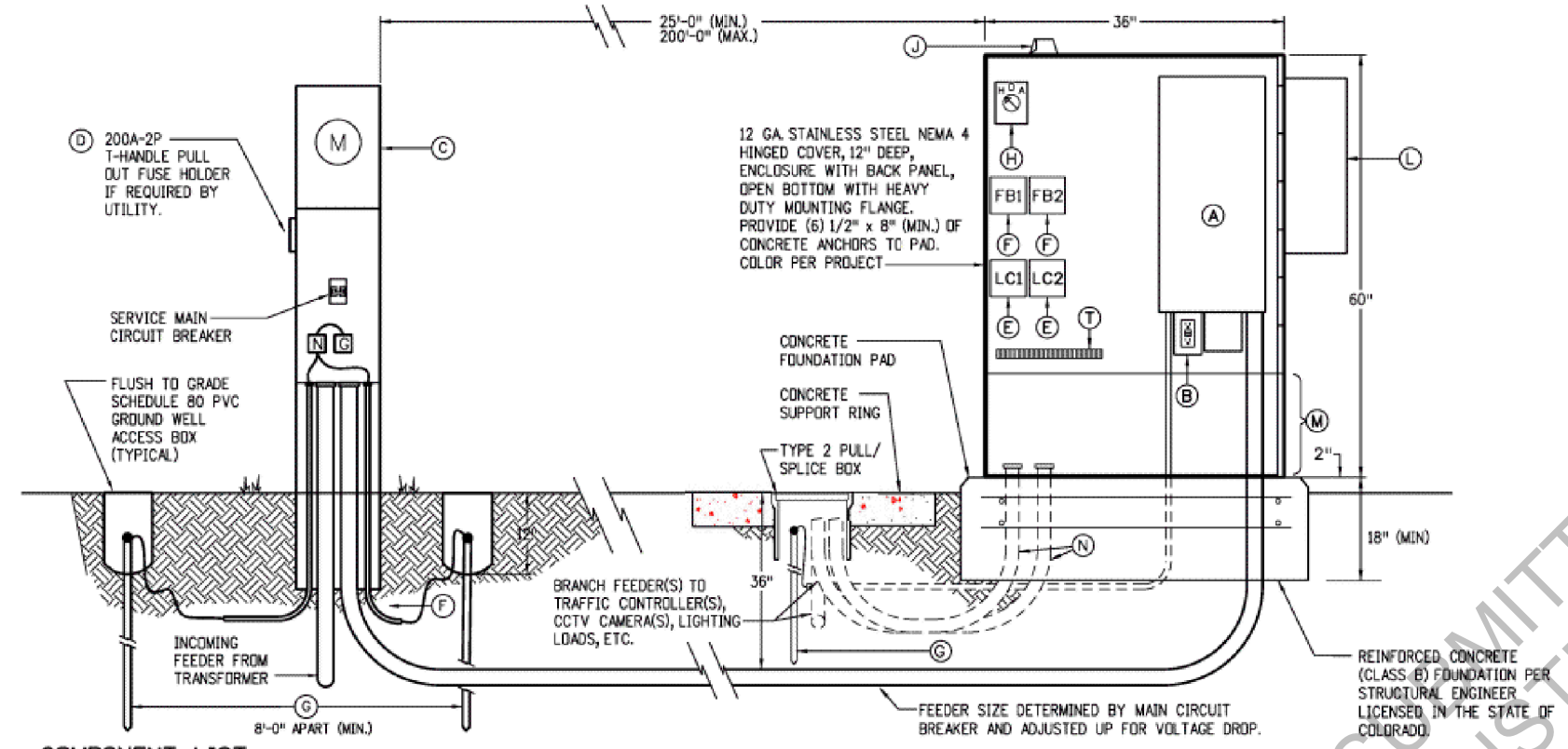
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY SPECIAL ROADWAY LIGHTING DETAILS Sheet 4 of 6	
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LIGHTING CONTROL CENTER PLACEMENT

- DETAIL NOTES**
- PREBUILT NEMA 3R LIGHTING CONTROL CENTER CABINET (LCC). REFER TO LIGHTING CONTROL CENTER DETAILS FOR MORE INFORMATION.
 - 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.
 - THE LCC SHALL NOT BE LOCATED IN ANY INTERSECTION SIGHT TRIANGLES. PLACEMENT SHALL CONFORM TO ALLOWABLE ENCROACHMENTS IN THE PUBLIC ROW.
 - 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.
 - 1:24 SLOPE (MAXIMUM) IN CLEAR ZONE AREA.



COMPONENT LIST

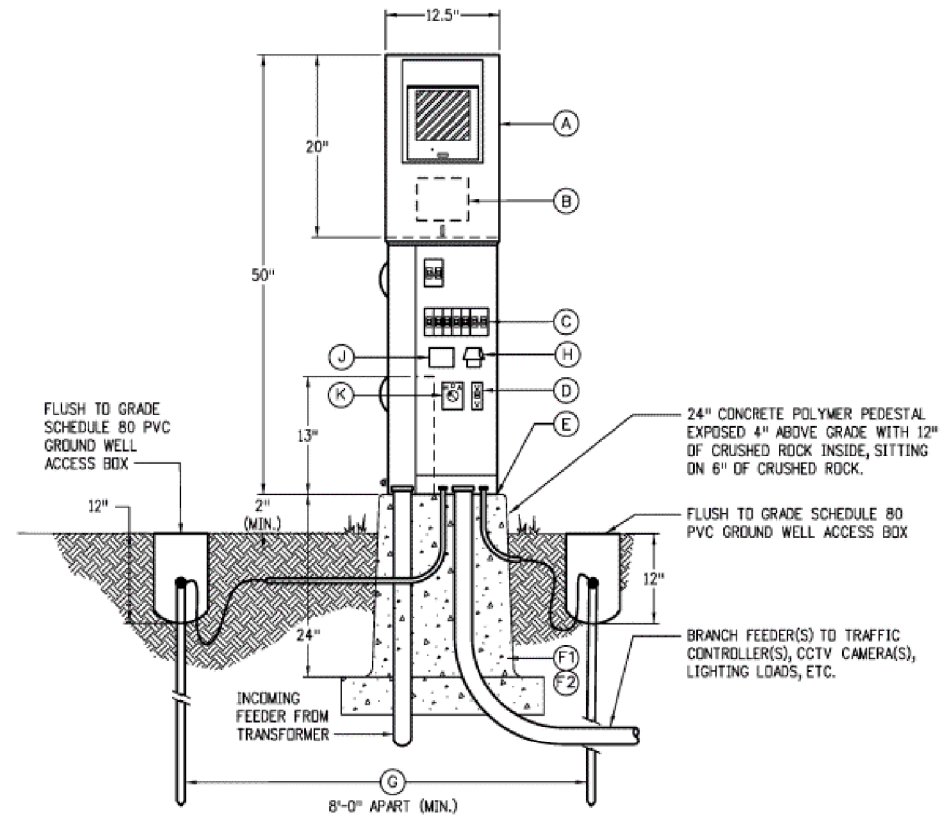
- (A) NEMA 1, SERVICE ENTRANCE RATED, SINGLE PHASE LOAD CENTERS. (SEE PANEL SCHEDULE FOR QUANTITY AND SIZE OF MAIN AND BRANCH BREAKERS). MOUNTED INSIDE NEMA 4 ENCLOSURE.
 - (B) GFCI MAINTENANCE RECEPTACLE IN A 1-GANG BACK BOX WITH COVER.
 - (C) 200A, 1 PH., NEMA 3R, DIRECT BURY METER PEDESTAL SERVICE 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 HOT 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.
- * ONLY REQUIRED FOR LOADS NOT CONTROLLED BY LOCAL NODES.

RECOMMENDED CABINET TYPE LIGHTING CONTROL CENTER DETAIL

(Adapted from CDOT Standard S-613-2)

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
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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.

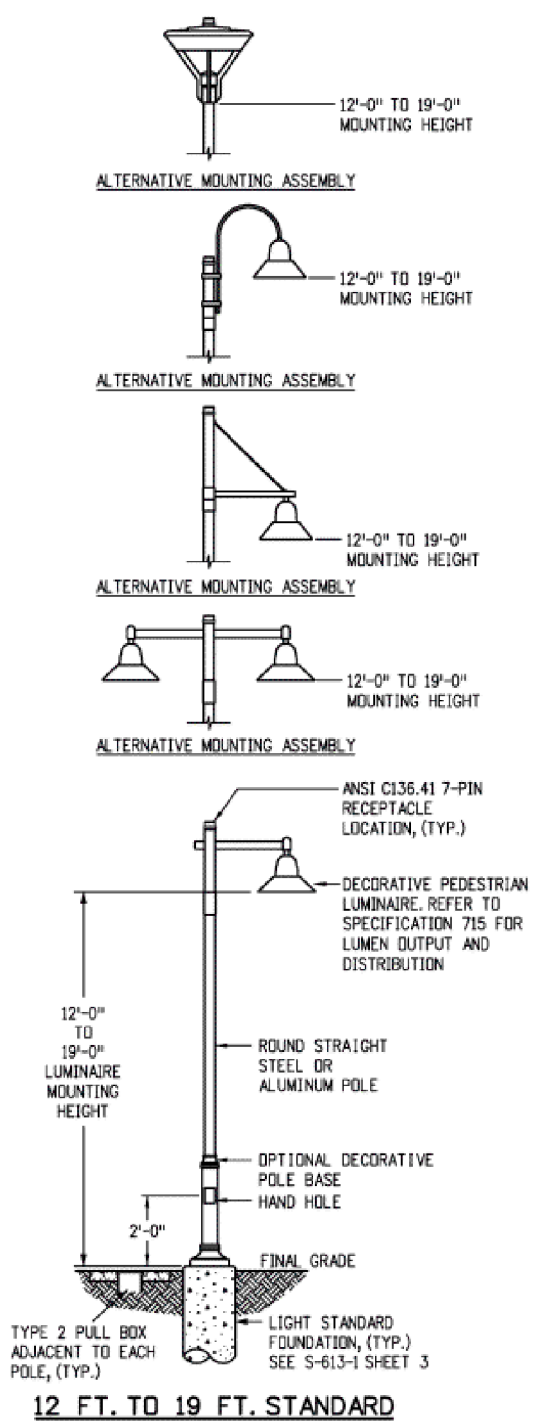
NOTE: ALL COMPONENTS LISTED SHALL BE INCLUDED IN THE LIGHTING CONTROL CENTER PAY ITEM. ALL ELECTRICAL COMPONENTS SHALL BE UL LISTED PER THE APPROPRIATE UL REQUIREMENTS. INCLUDING BUT NOT LIMITED TO 508A INDUSTRIAL CONTROL CENTER.

95% DESIGN SUBMITTAL 2/3/22 NOT FOR CONSTRUCTION

(Adapted from CDOT Standard S-613-2)

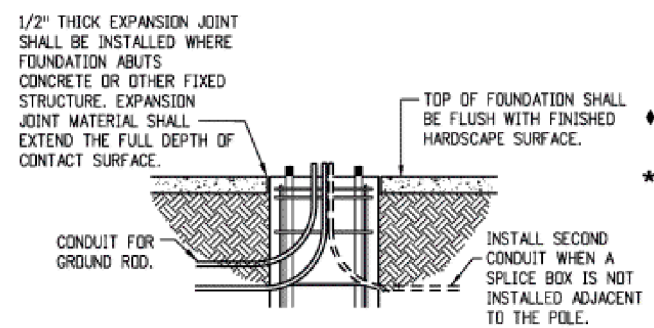
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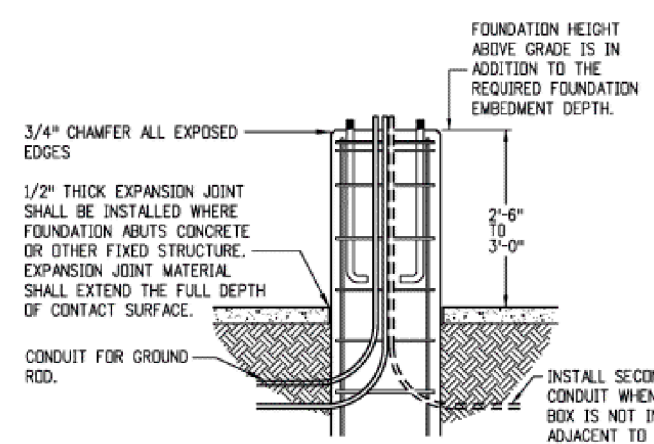


LUMINAIRE AND LIGHT STANDARD NOTES:

- LUMINAIRES WITH LIGHT SOURCES RATED MORE THAN 3200 LUMENS SHALL HAVE NO UPLIGHT (U0 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 (OR OPTIONAL NUT 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 CDDT 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.



***LIGHT STANDARD FOUNDATION IN HARDSCAPE**



LIGHT STANDARD FOUNDATION IN PARKING LOT

WHERE LIGHT STANDARD FOUNDATIONS OCCUR IN OR AROUND PARKING AREAS AND ARE LOCATED LESS THAN 2'-0" BEHIND CURB, OR WHERE UNPROTECTED BY CURBS, THE FOUNDATION SHOULD BE EXTENDED A MINIMUM OF 2'-6" VERTICALLY, IN ADDITION TO FOUNDATION DEPTH LISTED IN THE FOUNDATION SCHEDULE, TO PROTECT THE LIGHT STANDARD FROM DAMAGE AND/OR KNOCK-DOWN DUE TO VEHICLE CONTACT.

LIGHT STANDARD FOUNDATION NOTES:

- 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.
- CONCRETE SHALL BE AIR ENTRAINED CLASS BZ AND SHALL CONFORM TO SECTION 601 FOR CONCRETE AND SECTION 602 FOR REINFORCING STEEL.
- 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 CDDT APPROVAL.
- BOND (1) #4 STRANDED/INSULATED COPPER TO GROUND ROD IN PULL BOX / SPLICE BOX AND GROUNDING LUG IN POLE BASE HAND HOLE.
- PROVIDE 4-TERMINAL SUBMERSIBLE UNDERGROUND RATED LUG CONNECTIONS TO FIT #12 AWG - #350 AWG COPPER WIRE.
- ALL PVC CONDUIT ENDS SHALL HAVE END BELLS OR MALE ADAPTOR, THREADED TERMINAL ENDS WITH SCREW ON BUSHING.
- 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.

FOUNDATION SCHEDULE

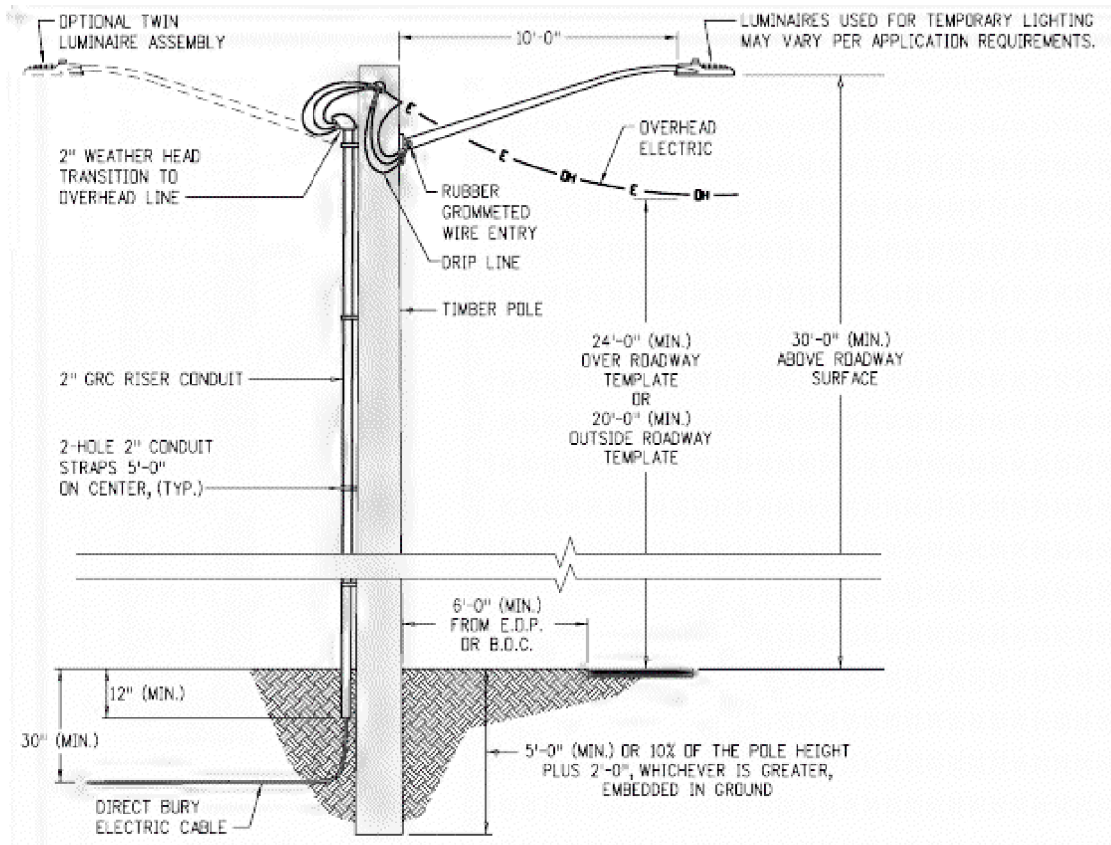
POLE HEIGHT	FOUNDATION DEPTH	FOUNDATION DIAMETER
< 20'	8'-0"	24"
20' - < 30'	9'-0"	24"
30' - 50'	12'-0"	24"
> 50'	P.S.E.	P.S.E.

P.S.E. (PER STRUCTURAL ENGINEER)
 FOUNDATION DESIGN DATA:
 BROWNS METHOD USING AASHTO LRFD LTS 1ST, 2015 WITH 2018 INTERIMS.
 THE DESIGN ASSUMES FOLLOWING SOIL PARAMETERS:
 SOIL DENSITY = 110 LB/CF
 SOIL COHESION = 750 LB/SQFT FOR MEDIUM STIFF COHESIVE SOIL
 SOIL ANGLE = 30° FOR MEDIUM DENSE COHESIONLESS SOIL
 RESISTANCE FACTOR = 0.4 FOR FLEXURE.

PARKING LOT AND DECORATIVE LIGHTING STANDARDS

(Adapted from CDOT Standard S-613-2)

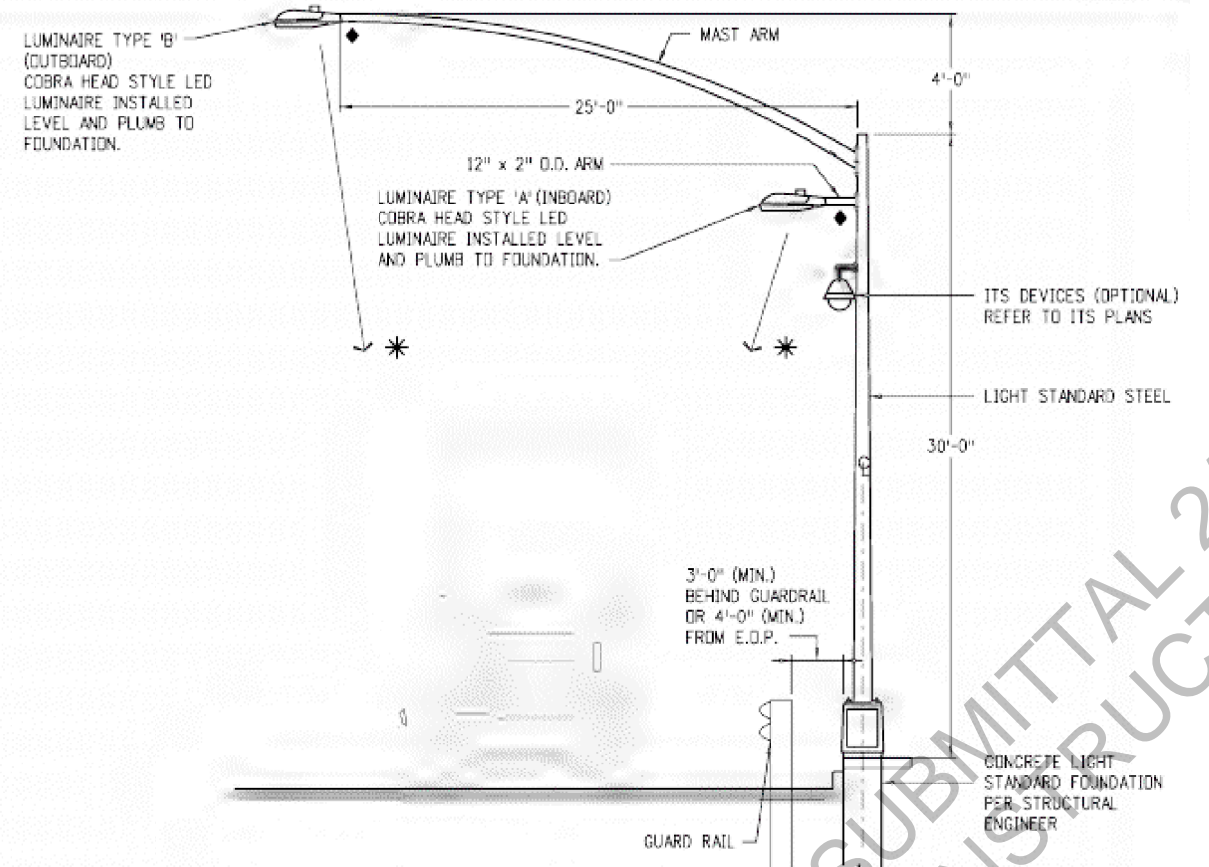
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
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TEMPORARY LIGHTING NOTES

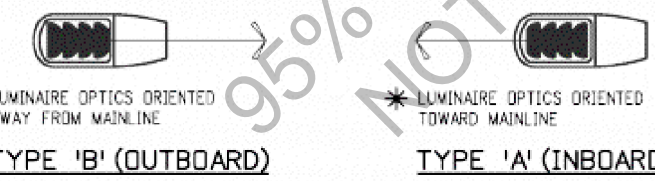
1. THE CONTRACTOR SHALL PROVIDE INSTALLATION, MAINTENANCE, AND REMOVAL OF ALL TEMPORARY LIGHTING EQUIPMENT, LUMINAIRES, CONDUIT, AND POWER SOURCES.
2. TEMPORARY LIGHT STANDARD SHALL BE PROTECTED. PROTECTION SHALL MEET THE RECOMMENDATIONS OF THE AASHTO ROADWAY DESIGN GUIDE.
SPEED LIMIT LESS THEN 40MPH:
- LOCATED 6 FEET (MINIMUM) FROM THE FRONT FACE OF CURB.
- MOUNTED ON BARRIER.
- LOCATED BEHIND BARRIER OR APPROPRIATE IMPACT ATTENUATOR.
SPEED LIMITS OF 40MPH OR GREATER:
- MOUNTED ON BARRIER.
- LOCATED BEHIND BARRIER.
3. TEMPORARY LIGHTING DESIGN SHALL PROVIDE LIGHTING LEVELS EQUAL TO OR EXCEEDING THE EXISTING LIGHTING LEVELS AND QUANTITY.
4. EXISTING LUMINAIRES WHICH ARE BEING REMOVED MAY BE USED FOR TEMPORARY LIGHTING.
5. THE TEMPORARY LIGHT STANDARDS AND LUMINAIRES SHOULD BE LOCATED ALONG TRAFFIC DETOUR ROUTES WITH THE LUMINAIRES POSITIONED OVER THE EDGE OF THE TRAVEL LANE.
6. OVERHEAD ELECTRICAL CONDUCTORS SUPPLYING POWER TO THE LUMINAIRES SHALL MAINTAIN 24 FEET (MINIMUM) CLEARANCE OVER THE ROADWAY TEMPLATE AND 20 FEET (MINIMUM) OUTSIDE THE ROADWAY TEMPLATE. OVERHEAD ELECTRICAL SHALL NOT BE MOUNTED ON BREAKAWAY POLES.
7. THE POWER FOR TEMPORARY LIGHTING SHALL BE METERED. ALL UTILITY BILLS FOR TEMPORARY LIGHTING SHALL BE PAID FOR BY THE CONTRACTOR.
8. TEMPORARY LIGHTING SYSTEM SHALL BE PAID FOR ON A LUMP SUM BASIS WHICH INCLUDES THE LUMINAIRE, ARM, LIGHT STANDARD AND ALL NECESSARY ELECTRICAL FOR A COMPLETE AND OPERATIONAL LIGHTING SYSTEM.

LIGHT STANDARD TIMBER (TEMPORARY)



CHAIN STATION LIGHTING NOTES

1. LIGHT STANDARD SETBACK WILL VARY PER SITE CONDITIONS. TWIN LUMINAIRES ON MAST ARM ARE INTENDED TO BE CENTERED OVER TRUCK PARKING LANE BELOW AND SPACED A MINIMUM OF 120 FEET APART. PARKING LANE SHALL BE DETERMINED BY STRIPING AND VERIFIED BY FIELD ENGINEER.
2. LIGHT STANDARD SHALL BE A MINIMUM OF 4'-0" BEHIND EDGE OF PAVEMENT WHEN INSTALLED ON A BREAKAWAY BASE AND NOT INSTALLED BEHIND GUARDRAIL.



- ◆ PROVIDE LUMINAIRE WITH HORIZONTAL SLIP FITTER FOR USE WITH 2 INCHES OUTER DIAMETER PIPE TENON.
- * LUMINAIRE OPTICS SHALL BE AIMED TOWARDS TRUCK.

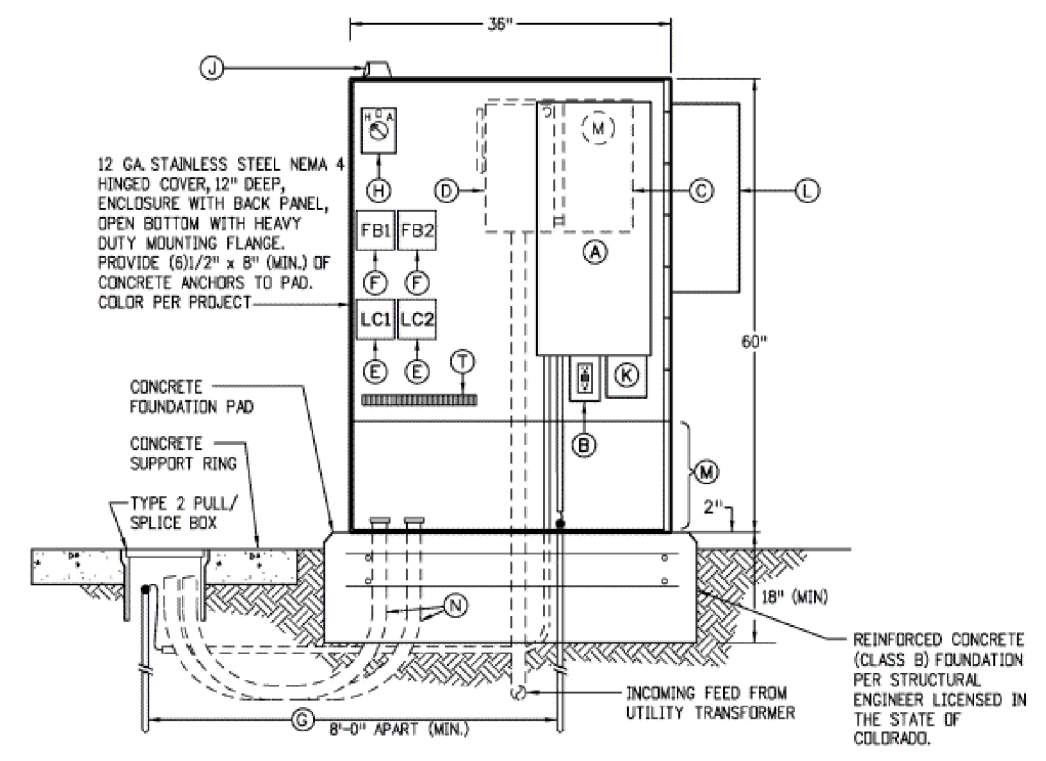
LIGHT STANDARD METAL (30-FOOT) (2 ARM) (SPEC)

(Adapted from CDOT Standard S-613-2)

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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, METER HOUSING MOUNTED ON BACK SIDE OF NEMA 4 ENCLOSURE WITH LEVER BYPASS TO UTILITY COMPANY SPECIFICATIONS.
 - (D) 100A (MINIMUM AMPERAGE), 2 POLE, 250V, HEAVY DUTY, NEMA 3R, FUSED METER DISCONNECT, UL LISTED FOR SERVICE EQUIPMENT AND FRN-R FUSES AS SHOWN ON ONE-LINE DIAGRAM WITH NEUTRAL & GROUND BARS. MOUNTED ON BACK SIDE OF NEMA 4 ENCLOSURE. PAINT TO MATCH NEMA 4 ENCLOSURE. MAY BE OMITTED BY UTILITY COMPANY SPECIFICATIONS HOT 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, FRN-R 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.
 - * (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.
 - (K) SURGE PROTECTION DEVICE-10KA, 120/240VAC SINGLE PHASE, 3W+G 200KAIC, PROTECTION MODES L-G, N-G, L-N OR L-L. STANDARD OPTIONS (RED & GREEN LED'S, AUDIBLE ALARM WITH ENABLE/DISABLE FEATURE) LEA #B70-00-7000 INTERNATIONAL OR APPROVED EQUAL.
 - (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.

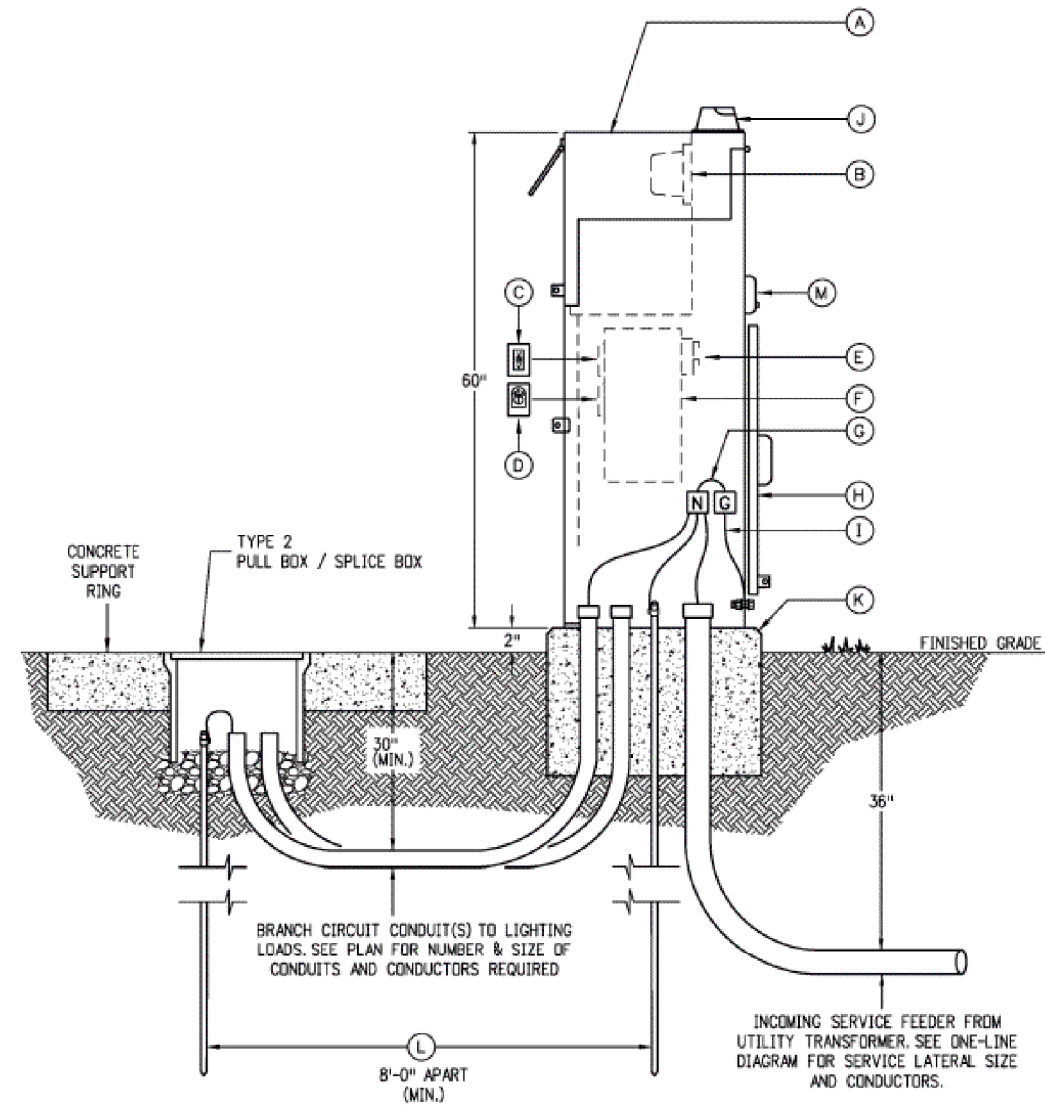
LIGHTING CONTROL CENTER

(Adapted from CDOT Standard S-613-2)

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
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CABINET COMPONENT LIST

- (A) FULLY HINGED METER/TEST SECTION LOCKABLE COVER WITH HOLD OPEN ARM TO KEEP COVER FROM BLOWING SHUT PER UTILITY SPECIFICATION. COMBINATION ALL-IN-ONE COMMERCIAL METER POWER PEDESTAL IN A NEMA 3R STAINLESS STEEL ENCLOSURE. PAINT COLOR PER PROJECT.
- (B) UTILITY METER INSIDE NEMA 3R ENCLOSURE. METER SHALL HAVE LEVER BYPASS AND INTERNAL LOCKING TAB ON METER COVER PER LOCAL UTILITY COMPANY SPECIFICATIONS.
- (C) GFCI MAINTENANCE RECEPTACLE FLUSH MOUNTED IN PANEL DEAD FRONT INSIDE OF THE NEMA 3R ENCLOSURE.
- (D) HAND-OFF-AUTO SWITCH - 15A-2P, H.O.A. SWITCH WITH LEGEND FLUSH MOUNTED IN PANEL DEAD FRONT INSIDE OF THE NEMA 3R ENCLOSURE.
- (E) UTILITY TERMINATION LANDING LUGS.
- (F) LOAD CENTERS WITH SERVICE MAIN AND BRANCH BREAKERS. ENGINEER SHALL PROVIDE PANEL SCHEDULE FOR BREAKERS REQUIRED.
- (G) PROVIDE NEUTRAL TO GROUND BONDING JUMPER.
- (H) LIFT OFF SERVICE COVER WITH PAD LOCK HASP.
- (I) CABINET GROUND BOND #6 BARE COPPER CONDUCTOR.
- (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.
- (K) REINFORCED CONCRETE (CLASS B) FOUNDATION PER STRUCTURAL ENGINEER LICENSED IN THE STATE OF COLORADO. 2 INCH (MINIMUM) ABOVE GRADE, 3/4 INCH CHAMFER ALL EXPOSED EDGES, 3 INCH (MINIMUM), 6 INCH (MAXIMUM) OVERLAP ON ALL SIDES.
- (L) 3/4 INCH X 10 FEET LONG, COPPER CLAD DRIVEN GROUND ROD. EXOTHERMIC WELD OR UNDERGROUND RATED LUG CONNECT CONDUCTOR TO GROUND ROD. (2) REQUIRED - 8 FEET APART (MINIMUM).
- (M) T-HANDLE, PULL-OUT FUSE HOLDER WITH FRN-R FUSES, METER DISCONNECT FOR METER PROTECTION PER UTILITY SPECIFICATION, COLD SEQUENCE METER AND WEATHERPROOF COVER WITH TAB LOCKABLE. THIS ITEM MAY BE OMITTED BY LOCAL UTILITY COMPANY SPECIFICATIONS HOT SEQUENCE REQUIREMENTS.



TYPICAL CABINET REQUIREMENTS:

200AMP MCB, 120/240V-1Ph-3W SERVICE ENTRANCE RATED STAINLESS STEEL, NEMA 3R, METER/ POWER PEDESTAL WITH SEPARATE SEALABLE AND LOCKABLE CUSTOMER SECTION WITH:

1. LOAD CENTER (ENGINEER SHALL PROVIDE SCHEDULE FOR # OF CIRCUITS) FOR "ALWAYS ON" LOADS THAT INCLUDE: (APPLIES TO STREETLIGHTS AND PEDESTRIAN LIGHTS)
 - SERVICE ENTRANCE M.C.B. - ENGINEER TO PROVIDE SIZE ON THE PANEL SCHEDULE.
 - CONTROL POWER CIRCUIT BREAKER - ENGINEER TO PROVIDE SIZE ON THE PANEL SCHEDULE.
 - SWITCHED LOAD CENTER MAIN BREAKER - ENGINEER TO PROVIDE ON THE PANEL SCHEDULE.
 - BRANCH BREAKERS AS SHOWN - ENGINEER TO PROVIDE SIZE AND QUANTITY ON THE PANEL SCHEDULE.
 - CIRCUIT DIRECTORY TO DOCUMENT CONFIGURATION IN POCKET ON HINGED DOOR.
 - MAINTENANCE RECEPTACLE FLUSH MOUNTED IN DEAD FRONT INSIDE ENCLOSURE.
2. CONTROL CIRCUIT INCLUDING: (ONLY APPLIES TO PEDESTRIAN LIGHTS OR OTHER LIGHTS THAT DO NOT HAVE INDIVIDUAL ANSI 7-PIN RECEPTACLES.)
 - PHOTOCELL RECEPTACLE, MOUNTED EXTERNALLY ON NEMA-3R ENCLOSURE.
 - ONE HAND-OFF-AUTO (H.O.A.) SWITCH FLUSH MOUNTED IN DEAD FRONT.
 - ONE LIGHTING CONTACTOR CONTROLLING ONE LOAD CENTER IN THIS SECTION.
 - ONE 12-CIRCUIT LOAD CENTER PHOTOCELL ON/OFF CONTROLLED.
 - A CIRCUIT DIRECTORY TO DOCUMENT CONFIGURATION IN POCKET ON HINGED DOOR.

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.

LIGHTING CONTROL CENTER (SPECIAL)

(Adapted from CDOT Standard S-613-2)

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-1

TRAFFIC SIGNAL NOTES:

1. COMPLY WITH THE "STATE OF COLORADO STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", PLAN DETAILS 635-A THROUGH 635-M, THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES", THE "NATIONAL ELECTRIC CODE" (LATEST EDITION), AND ALL LOCAL ORDINANCES AND REGULATIONS THAT APPLY, EXCEPT AS NOTED ON THE PLANS OR SCR, FOR TRAFFIC SIGNAL MATERIALS AND INSTALLATION.
2. THE CO MUST PRE-APPROVE THE LOCATION AND QUANTITY OF PEDESTRIAN PUSH BUTTON POST ASSEMBLIES PRIOR TO THE CONTRACTOR ORDERING SUCH DEVICES. PERFORM LOCATES FOR THIS PAY ITEM IN CONJUNCTION WITH THE SIGNAL POLE LOCATES.
3. ALL VEHICLE AND PEDESTRIAN INDICATIONS SHALL BE APPROVED SOLID STATE LED TYPE. ALL VEHICLE AND PEDESTRIAN HEAD HOUSINGS SHALL BE YELLOW IN COLOR. FURNISH ALL TRAFFIC SIGNAL HEADS MOUNTED ON A MAST ARM WITH MOUNTING BRACKET AND BLACK LOUVERED BACKING PLATES. MAST ARMS SHALL BE OF SUFFICIENT LENGTH TO ALLOW ALL SIGNAL HEADS TO BE CENTERED OVER OUTBOUND LANES. THE LOUVERS WILL NOT BE PAID FOR SEPARATELY AND WILL BE INCLUDED IN THE COST OF TRAFFIC SIGNAL FACE.
4. PROVIDE A 2 INCH WIDE BORDER OF YELLOW TYPE XI MATERIAL PER THE LATEST FHWA SIGN SHEETING REFERENCE GUIDE ALONG EACH OF THE HORIZONTAL AND VERTICAL COMPONENTS OF EACH BACKPLATE FOR ALL TRAFFIC SIGNAL HEADS. THE 2 INCH YELLOW REFLECTIVE BORDER SHALL BE INSTALLED BY THE MANUFACTURER. TYPE XI MATERIALS WILL NOT BE PAID FOR SEPARATELY AND WILL BE INCLUDED IN THE COST OF TRAFFIC SIGNAL FACE.
5. DO NOT PLACE THE SIGNAL IN FLASH MODE OR MADE FULLY OPERATIONAL UNTIL THE CO HAS INSPECTED AND APPROVED THE INSTALLATION AND ALL REGULATORY SIGNING AND PAVEMENT MARKINGS ARE IN PLACE.
6. APPLY A 1/2-INCH PREFORMED JOINT MATERIAL AROUND THE 6 INCHES OF LEVELING CONCRETE BENEATH SIGNAL POLES WHEN THE SIGNAL POLE IS INSTALLED IN EXISTING CONCRETE. THIS IS CONSIDERED INCIDENTAL TO THE WORK AND SHALL NOT BE PAID FOR SEPARATELY.
7. UNLESS OTHERWISE SPECIFIED IN THE PLANS OR CONTRACT, ALL USED OR EXCESS SIGNAL EQUIPMENT REMAINS THE PROPERTY OF CDOT. DELIVER ALL USED OR EXCESS SIGNAL EQUIPMENT TO THE CDOT REGION 4 SIGNAL SHOP.
8. CONTRACTOR'S SIGNAL ELECTRICIAN IS REQUIRED TO BE ON SITE, AT A MINIMUM, DURING AM & PM PEAK HOURS FOLLOWING THE NEXT DAY A SIGNAL IS TURNED ON TO OBSERVE OPERATION AND MAKE ADJUSTMENTS AS NEEDED. THE CO MAY REQUIRE THE SIGNAL ELECTRICIAN TO BE ON SITE FOR ADDITIONAL HOURS AS DIRECTED. THIS APPLIES TO BOTH PERMANENT AND TEMPORARY INSTALLATIONS. SEE PROJECT SPECIAL PROVISION 105 CONTROL OF WORK FOR REQUIREMENTS OF THE TRAFFIC SIGNAL MAINTENANCE PLAN.
9. ADHERE TO THE FOLLOWING REQUIREMENTS REGARDING TRAFFIC SIGNAL CONSTRUCTION AND MAINTENANCE PERSONNEL. SUBMIT CURRENT CERTIFICATES SHOWING QUALIFICATIONS AT THE PRE-CONSTRUCTION MEETING.
 - (1) A LICENSED JOURNEYMAN ELECTRICIAN SHALL BE ON SITE AT ALL TIMES THAT SIGNALIZATION WORK IS TAKING PLACE TO ENSURE PROPER CONSTRUCTION. THIS SHALL INCLUDE CONDUIT AND CAISSON INSTALLATION.
 - (2) FOR WORK INSIDE THE TRAFFIC SIGNAL CABINET, SIGNAL AND SIGNAL BENCH TECHNICIANS SHALL BE MINIMUM INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION (IMSA) LEVEL II CERTIFIED. THIS INCLUDES THE COMPLETION OF TRAINING IN CONSTRUCTION, CORRECTIVE MAINTENANCE, AND SIGNAL TURN-ON.
 - (3) FOR ALL WORK EXTERNAL TO THE SIGNAL CABINET, A MINIMUM IMSA LEVEL I TRAFFIC SIGNAL FIELD TECHNICIAN/ELECTRICIAN, OR TRAFFIC SIGNAL BENCH TECHNICIAN/SIGNAL TECHNICIAN, IS REQUIRED. A JOURNEYMAN ELECTRICIAN AND AN IMSA LEVEL II TRAFFIC SIGNAL ELECTRICIAN SHALL BE ON THE JOB SITE AT ALL TIMES THAT THE SIGNALIZATION WORK IS TAKING PLACE TO ENSURE PROPER CONSTRUCTION. FOR EACH JOURNEYMAN ELECTRICIAN PRESENT, A MAXIMUM OF 3 APPRENTICE ELECTRICIANS WILL BE ALLOWED FOR WORK.
10. ALL NECESSARY WIRING WORK, NOT OTHERWISE INCLUDED IN AN INDIVIDUAL PAY ITEM, WILL BE INCLUDED IN PAY ITEMS 63602-1000 SYSEM INSTALLATION TRAFFIC SIGNAL, 63602-6000 SYSTEM INSTALLATION TRAFFIC DETECTOR SYSTEM (PTZ CAMERA), AND 63640-0200 RELOCATION SIGNAL SYSTEM. ALL WIRING WORK FOR SIGNALS, PEDESTRIAN PUSH BUTTONS, LIGHTING, AND ITS WILL BE COMPLETE AND THE SYSTEMS SHALL BE FULLY FUNCTIONAL BEFORE ITEM IS PAID.
11. ALL SIGNAL EQUIPMENT REMOVALS IN THIS PROJECT ARE INCLUDED IN PAY ITEM 63640-0200, RELOCATE SIGNAL SYSTEM (REMOVE) (1 LUMP SUM).

12. THE REMOVAL OF TRAFFIC SIGNAL EQUIPMENT INCLUDES ALL BASES TO BELOW THE FINISHED GRADE PER CDOT SPECIFICATIONS, THE EXISTING CONTROLLER CABINET AND BASE, POLES, MAST ARMS, SIGNAL FACES, PEDESTRIAN PUSHBUTTONS, PEDESTRIAN POLES, PULL BOXES, AND ANY OTHER DEVICES THAT WERE UTILIZED IN THE EXISTING SIGNAL SYSTEM. THIS INCLUDES THE REMOVAL OF EXISTING CONDUIT THAT MAY INTERFERE WITH THE NEW SIGNAL INSTALLATION. ALL EQUIPMENT, LABOR, AND/OR MATERIALS USED TO COMPLETE THIS WORK SHALL BE INCLUDED IN THE LUMP SUM PAY ITEM RELOCATE SIGNAL SYSTEM (REMOVE). ALL EXISTING SALVAGEABLE SIGNAL EQUIPMENT REMAINS THE PROPERTY OF CDOT AND SHALL BE RETURNED TO CDOT REGION 4 SIGNAL SHOP.
13. CONTACT XXX, CDOT REGION 4 TRAFFIC OPERATIONS, (XXX-XXX-XXXX) AND XXXX, TOWN OF ESTES PARK TRANSPORTATION ENGINEERING SIGNAL MAINTENANCE SUPERVISOR (XXX-XXX-XXXX) A MINIMUM OF 48 HOURS AND A MAXIMUM OF 96 HOURS PRIOR TO STARTING ANY TRAFFIC SIGNAL WORK INCLUDING, BUT NOT LIMITED TO SIGNAL HEADS REMOVAL, REPLACEMENT, OR ADJUSTMENT.
14. UTILIZE UNIFORMED TRAFFIC CONTROL WHILE MODIFYING OPERATIONS AT A SIGNALIZED INTERSECTION.
15. SUBMIT TEMPORARY PHASING AND TIMING SIGNAL PLANS TO THE CO FOR APPROVAL TWO OR MORE WEEKS PRIOR TO THE START OF CONSTRUCTION.
16. PROVIDE THE CO AND CDOT WITH AT LEAST FOUR (4) SETS OF EQUIPMENT SPECIFICATIONS/ DESCRIPTIONS AND OBTAIN APPROVALS PRIOR TO ORDERING THE EQUIPMENT.
17. PROVIDE ALL MANUALS, INSTALLATION GUIDES AND ASSOCIATED EQUIPMENT SHALL TO THE CO AT TIME OF INSPECTION.
18. PROVIDE ITEM UNINTERRUPTIBLE POWER SUPPLY (UPS) TO RUN THE SIGNAL FOR 2 HOURS IN ALL PHASES, AND FLASH FOR FOUR ADDITIONAL HOURS.
19. A MINIMUM OF 17'-0" CLEARANCE FROM THE BOTTOM OF THE TRAFFIC SIGNAL HEADS TO THE FINISHED GRADE IS REQUIRED. TRAFFIC SIGNAL POLES SHALL BE HOT DIP GALVANIZED.
20. ADA PEDESTRIAN SIGNS AND HARDWARE TO FACILITATE SIGN CONNECTION IS INCLUDED IN THE COST OF SYSTEM INSTALLATION, TRAFFIC SIGNAL. ORIENT PEDESTRIAN PUSH BUTTON SIGNS, R10-3, TO ASSIST WITH THE CROSSING DIRECTION, CONFORMING TO THE LATEST MUTCD GUIDANCE AND REQUIREMENTS FOR PEDESTRIAN SIGNS AND PLAQUES.
21. SIGNAL POLES, CONTROLLER CABINET, PULL BOXES AND DETECTOR LOCATIONS ARE APPROXIMATE AS SHOWN IN THE PLANS. EXACT LOCATIONS SHALL BE DETERMINED BY CDOT AND TOWN OF ESTES PARK TRANSPORTATION SIGNAL MAINTENANCE SUPERVISOR IN THE FIELD. DO NOT ORDER TRAFFIC SIGNAL POLES AND MAST ARMS UNTIL THE EXACT LOCATION OF POLE BASES ARE FIELD VERIFIED.
22. MOUNT THE CONTROLLER CABINET ON A PREFORMED FIBERGLASS OR CONCRETE BASE. LOAD SWITCHES SHALL INDICATE INPUT AND OUTPUT.
23. BRACKETS REQUIRED FOR ACCESSIBLE PEDESTRIAN SIGNALS (APS) PLACED ON PEDESTAL POLES SHALL BE INCLUDED IN THE COST AND NOT PAID FOR SEPERATELY.
24. DELIVER THE SIGNAL CONTROLLER TO THE CDOT SIGNAL SHOP FOR PROGRAMING BEFORE INSTALLATION. INCLUDE THE FOLLOWING ITEMS WITH EACH CONTROLLER AFTER VERIFICATION WITH CDOT:
 - HD4 MBX 5G MODEM PRODUCT CODE MAX-HD4-MBX-SGD-T
 - peplink SFD SWITCH RUGGED, 16-PORT
 - airFIBER 5 GHz CARRIER RADIO MODEL AF-5XHD

95% DESIGN SUBMITTAL 2/13/22
NOT FOR CONSTRUCTION

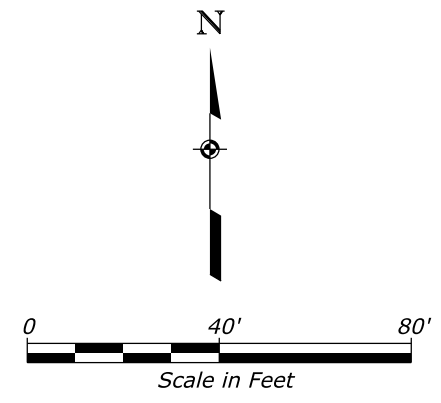
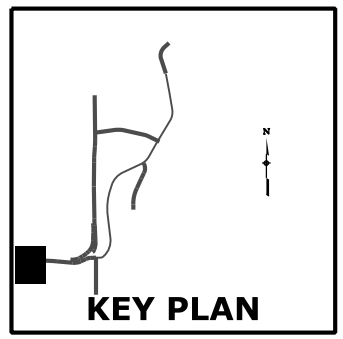
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

TRAFFIC SIGNAL NOTES

1 OF 1

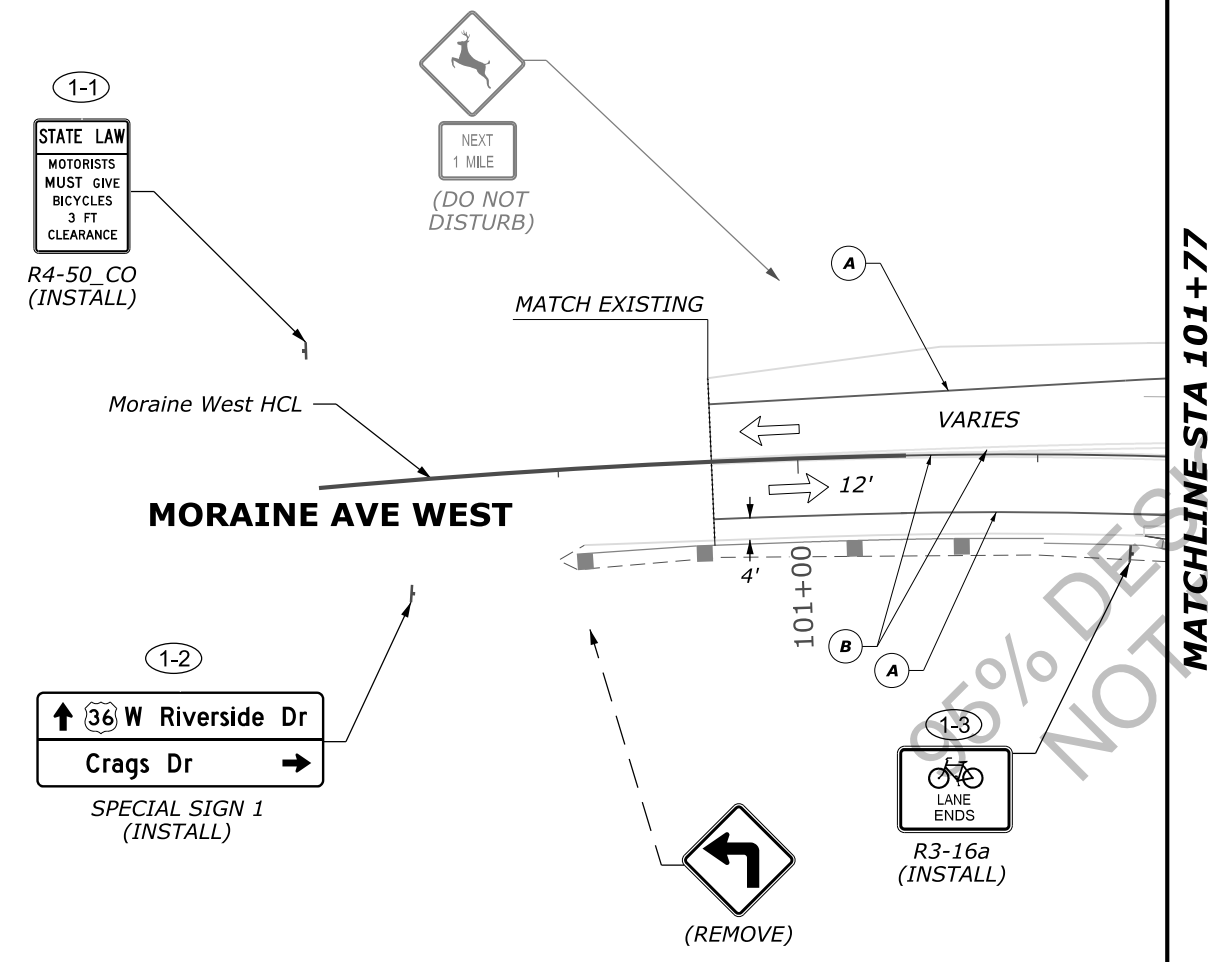
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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-2



STRIPING LEGEND:

- (A) Edge Line White, Solid, 6" Wide
- (B) Center Lines Double Yellow, Solid, 4" Wide
- (C) Edge Line Yellow, Solid, 6" Wide
- (D) Crosswalk Bar White, Solid, 1' x 10'
- (E) Center Lines Broken & Solid Yellow, 4" Wide, 10' Segment - 30' Gap
- (F) Stop Line White, Solid, 24" Wide
- (G) Channelizing Lines White, Solid, 8" Wide
- (H) Lane Lines White, 4" Wide, 10' Segment - 30' Gap
- (I) Dotted Extension Lines White, 8" Wide, 2' Segment - 4' Gap
- (J) Extension Lines White, 8" Wide, 2' Segment - 1' Gap
- (K) Dotted Extension Lines White, 6" Wide, 2' Segment - 4' Gap
- (L) Lane Lines White, 8" Wide, 6' Segment - 3' Gap
- (M) Bike Lane with Arrow Pavement Marking
- (N) Arrow Pavement Marking
- (O) Parking Line White, Solid, 3" Wide
- (P) Yield Triangle White, 3' x 2'
- (Q) Word Pavement Marking
- (R) Sharrow Bike Pavement Marking
- ← Directional Flow Arrow

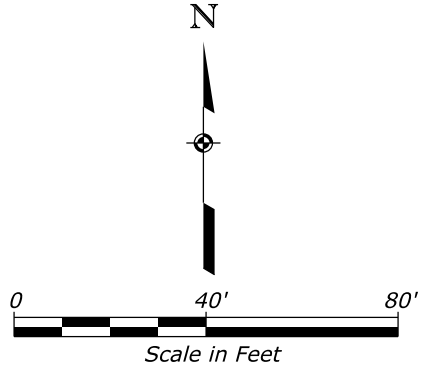
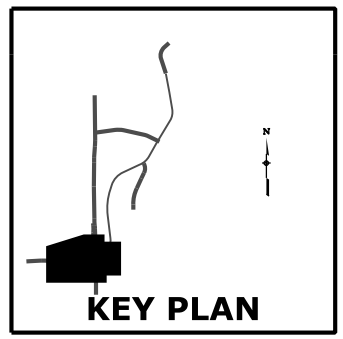


U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

SIGNING AND PAVEMENT MARKING PLAN
1 OF 12

1/24/2022 11:58:06 AM pw:\lacom-na-pw.bentley.com\AECOM_DSO1_NA\Documents\60332740-Estes Park\1900-Work\1910_CAD\02-SHEETS\IV-Traffic\002_Moraine before Riverside _User: Candelaria_

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-3

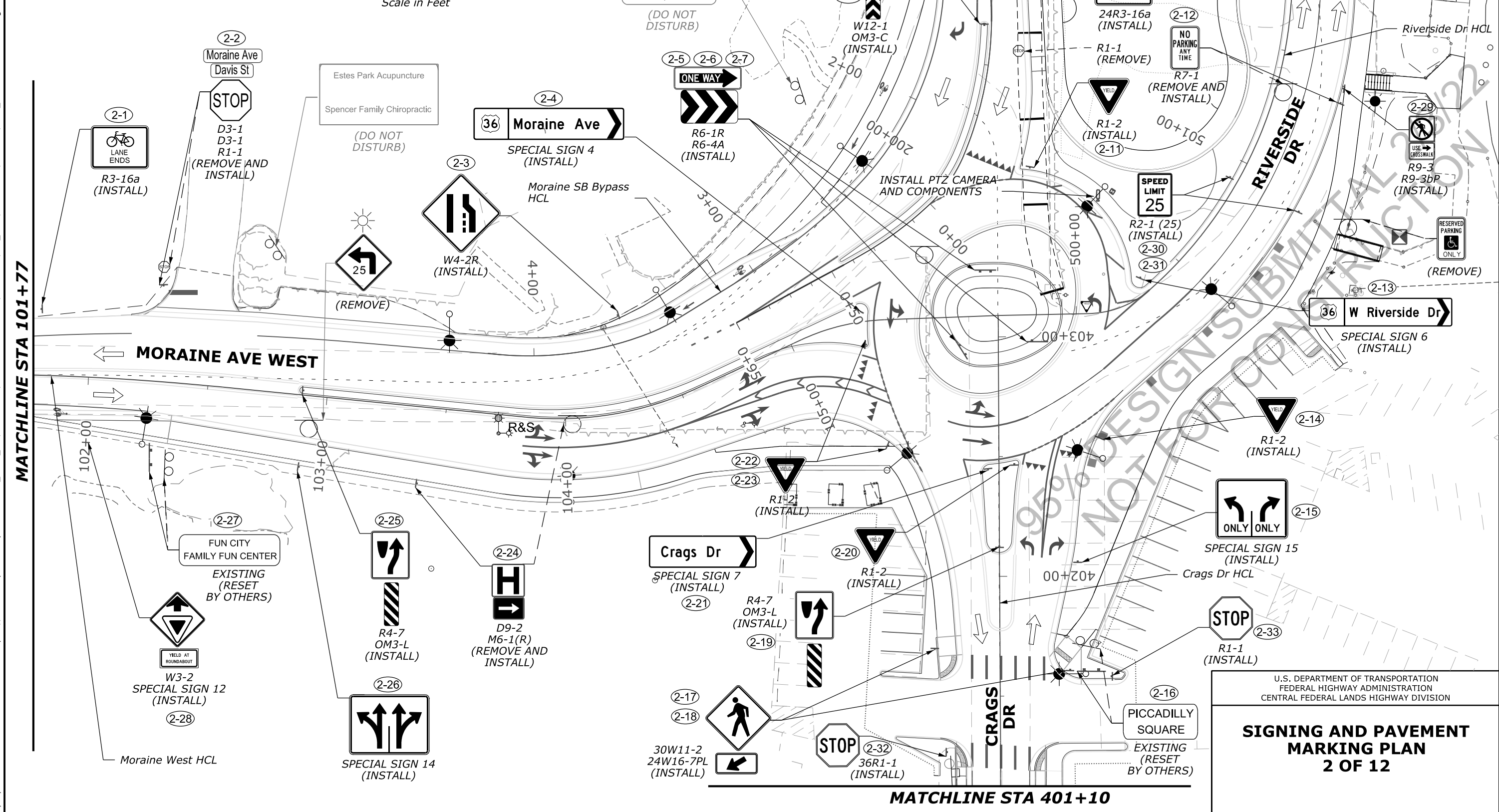


MATCHLINE STA 201+39

MATCHLINE STA 501+74

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MATCHLINE STA 401+10

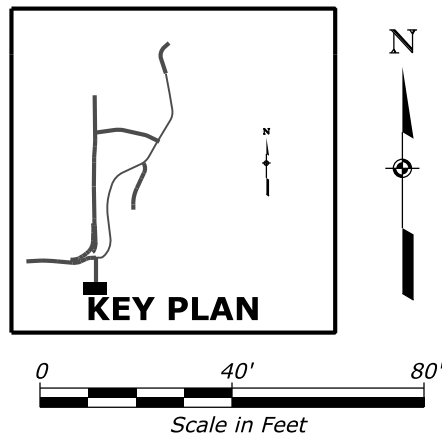


U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

SIGNING AND PAVEMENT MARKING PLAN
2 OF 12

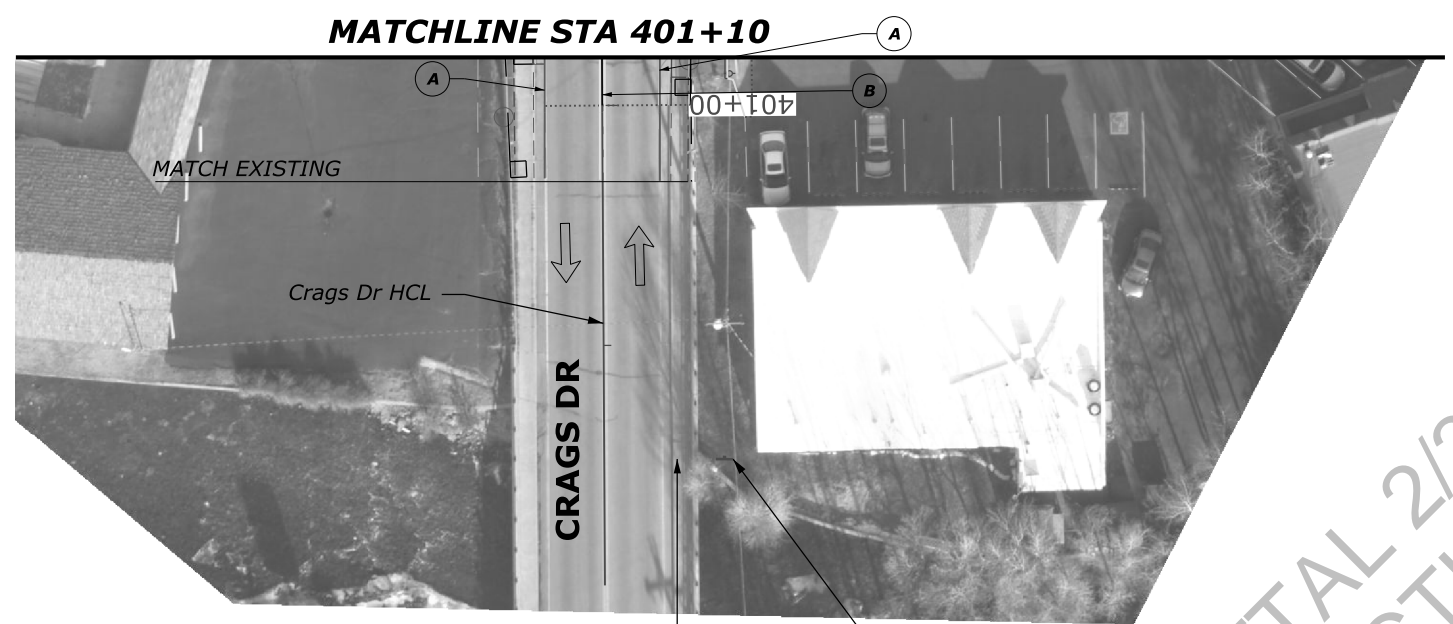
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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-5

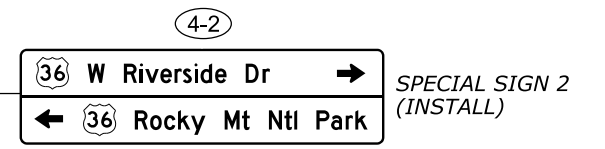


STRIPING LEGEND:

- (A) Edge Line White, Solid, 6" Wide
- (B) Center Lines Double Yellow, Solid, 4" Wide
- (C) Edge Line Yellow, Solid, 6" Wide
- (D) Crosswalk Bar White, Solid, 1' x 10'
- (E) Center Lines Broken & Solid Yellow, 4" Wide, 10' Segment - 30' Gap
- (F) Stop Line White, Solid, 24" Wide
- (G) Channelizing Lines White, Solid, 8" Wide
- (H) Lane Lines White, 4" Wide, 10' Segment - 30' Gap
- (I) Dotted Extension Lines White, 8" Wide, 2' Segment - 4' Gap
- (J) Extension Lines White, 8" Wide, 2' Segment - 1' Gap
- (K) Dotted Extension Lines White, 6" Wide, 2' Segment - 4' Gap
- (L) Lane Lines White, 8" Wide, 6' Segment - 3' Gap
- (M) Bike Lane with Arrow Pavement Marking
- (N) Arrow Pavement Marking
- (O) Parking Line White, Solid, 3" Wide
- (P) Yield Triangle White, 3' x 2'
- (Q) Word Pavement Marking
- (R) Sharrow Bike Pavement Marking
- ← Directional Flow Arrow



95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

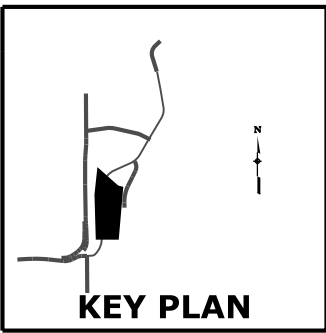
SIGNING AND PAVEMENT MARKING PLAN
4 OF 12

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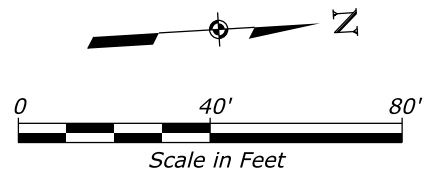
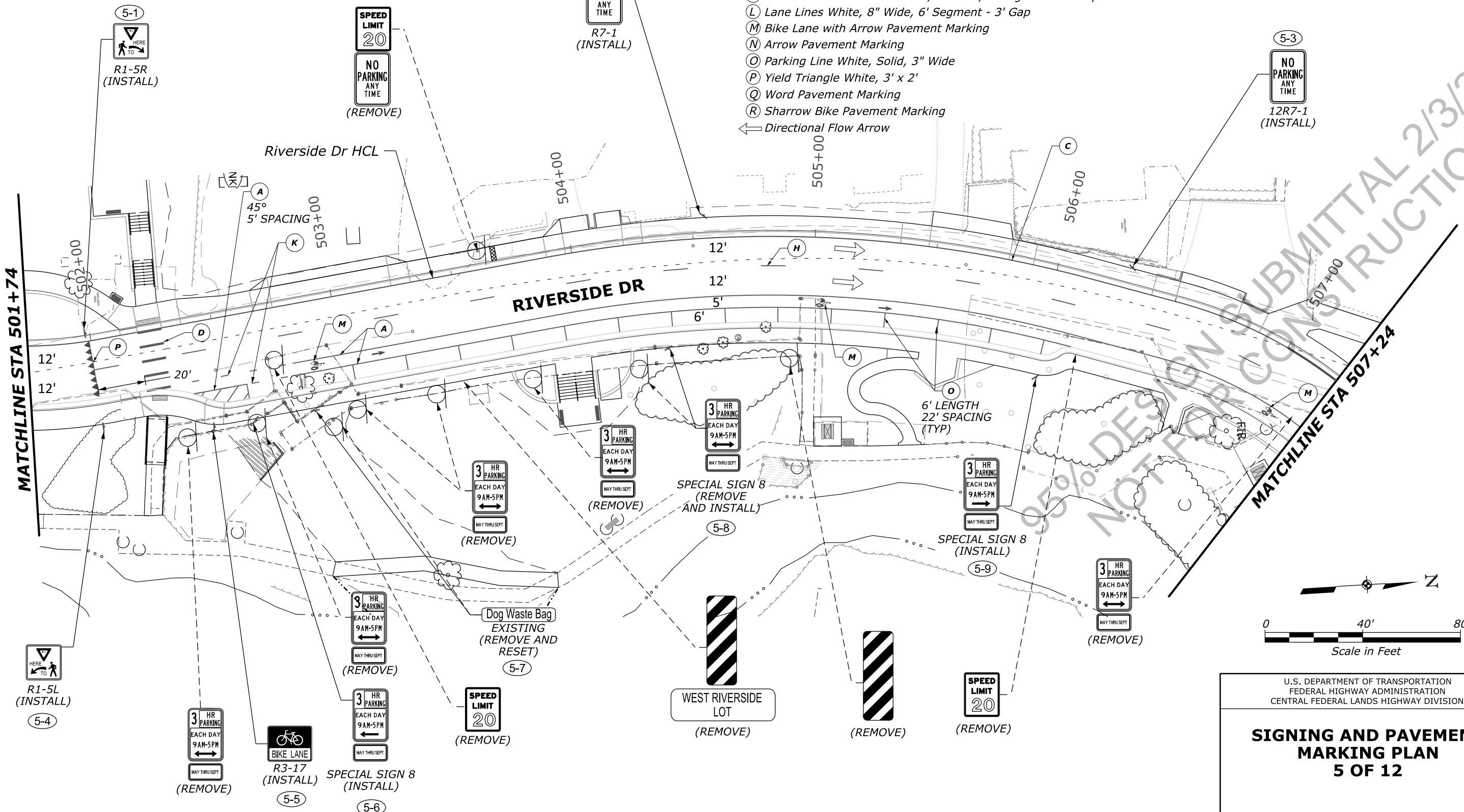
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-6

STRIPING LEGEND:

- (A) Edge Line White, Solid, 6" Wide
 - (B) Center Lines Double Yellow, Solid, 4" Wide
 - (C) Edge Line Yellow, Solid, 6" Wide
 - (D) Crosswalk Bar White, Solid, 1' x 10'
 - (E) Center Lines Broken & Solid Yellow, 4" Wide, 10' Segment - 30' Gap
 - (F) Stop Line White, Solid, 24" Wide
 - (G) Channelizing Lines White, Solid, 8" Wide
 - (H) Lane Lines White, 4" Wide, 10' Segment - 30' Gap
 - (I) Dotted Extension Lines White, 8" Wide, 2' Segment - 4' Gap
 - (J) Extension Lines White, 8" Wide, 2' Segment - 1' Gap
 - (K) Dotted Extension Lines White, 6" Wide, 2' Segment - 4' Gap
 - (L) Lane Lines White, 8" Wide, 6' Segment - 3' Gap
 - (M) Bike Lane with Arrow Pavement Marking
 - (N) Arrow Pavement Marking
 - (O) Parking Line White, Solid, 3" Wide
 - (P) Yield Triangle White, 3' x 2'
 - (Q) Word Pavement Marking
 - (R) Sharrow Bike Pavement Marking
- ← Directional Flow Arrow



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U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

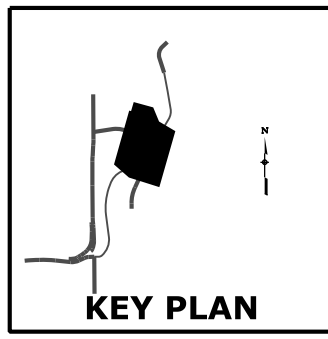
SIGNING AND PAVEMENT MARKING PLAN
5 OF 12

95% DESIGN SUBMITTAL 2/3/22
 NOT FOR CONSTRUCTION

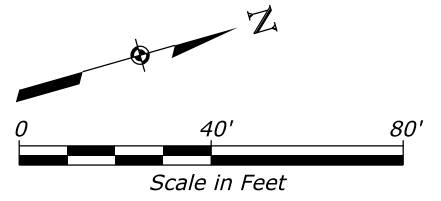
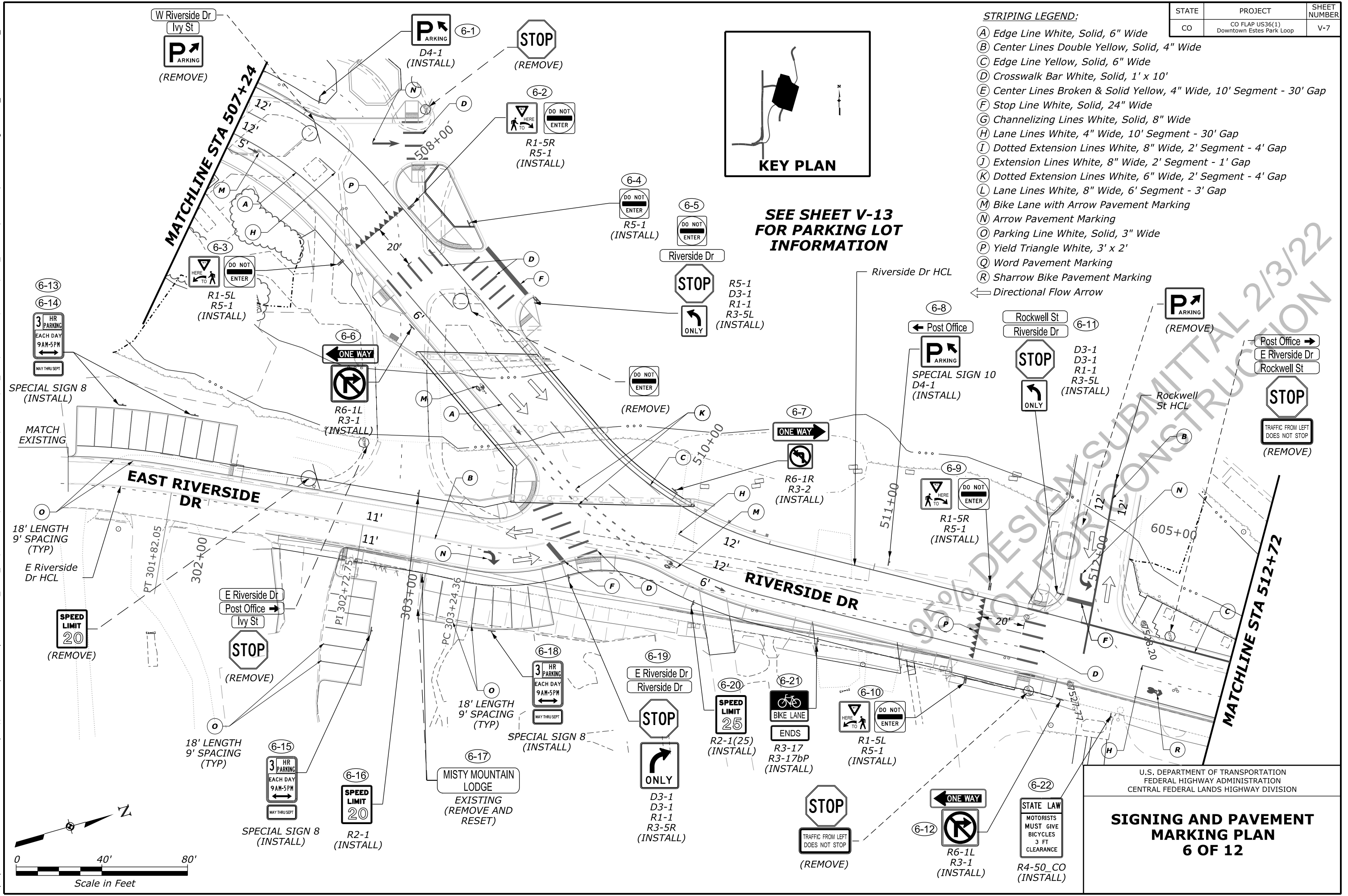
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-7

STRIPING LEGEND:

- (A) Edge Line White, Solid, 6" Wide
 - (B) Center Lines Double Yellow, Solid, 4" Wide
 - (C) Edge Line Yellow, Solid, 6" Wide
 - (D) Crosswalk Bar White, Solid, 1' x 10'
 - (E) Center Lines Broken & Solid Yellow, 4" Wide, 10' Segment - 30' Gap
 - (F) Stop Line White, Solid, 24" Wide
 - (G) Channelizing Lines White, Solid, 8" Wide
 - (H) Lane Lines White, 4" Wide, 10' Segment - 30' Gap
 - (I) Dotted Extension Lines White, 8" Wide, 2' Segment - 4' Gap
 - (J) Extension Lines White, 8" Wide, 2' Segment - 1' Gap
 - (K) Dotted Extension Lines White, 6" Wide, 2' Segment - 4' Gap
 - (L) Lane Lines White, 8" Wide, 6' Segment - 3' Gap
 - (M) Bike Lane with Arrow Pavement Marking
 - (N) Arrow Pavement Marking
 - (O) Parking Line White, Solid, 3" Wide
 - (P) Yield Triangle White, 3' x 2'
 - (Q) Word Pavement Marking
 - (R) Sharrow Bike Pavement Marking
- ↔ Directional Flow Arrow



**SEE SHEET V-13
FOR PARKING LOT
INFORMATION**



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

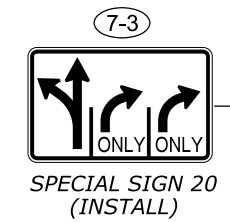
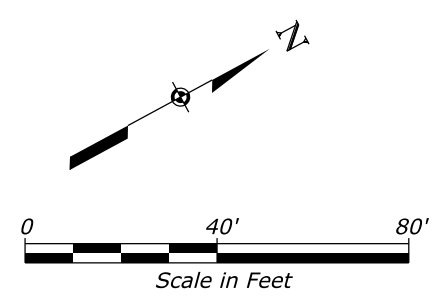
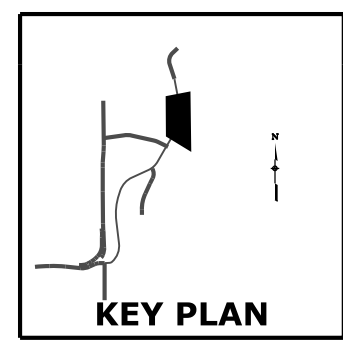
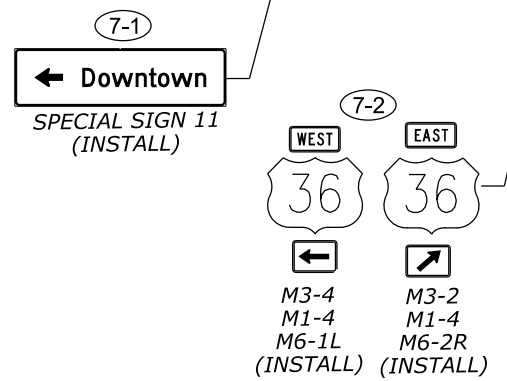
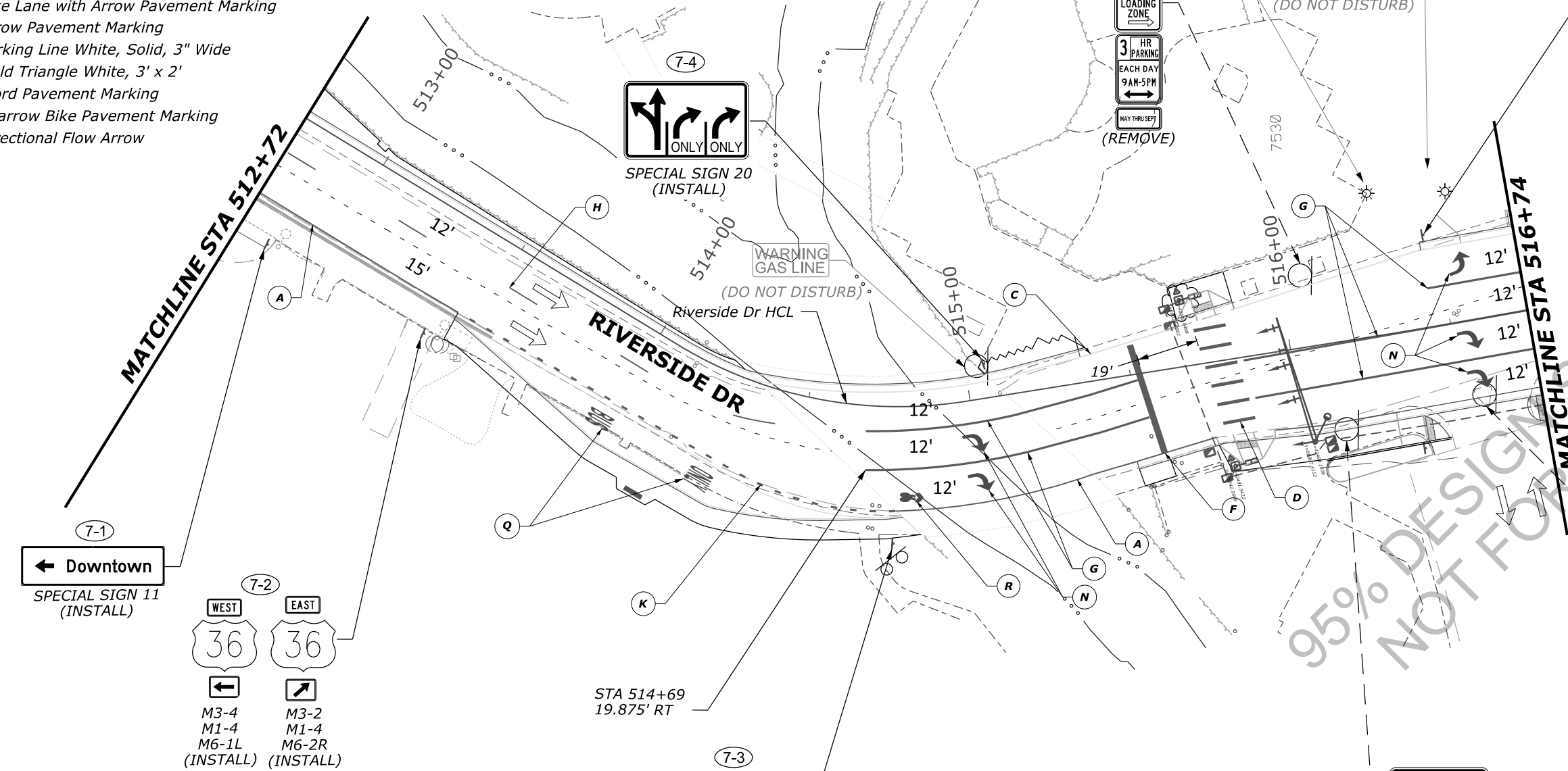
SIGNING AND PAVEMENT MARKING PLAN
6 OF 12

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-8

STRIPING LEGEND:

- (A) Edge Line White, Solid, 6" Wide
- (B) Center Lines Double Yellow, Solid, 4" Wide
- (C) Edge Line Yellow, Solid, 6" Wide
- (D) Crosswalk Bar White, Solid, 1' x 10'
- (E) Center Lines Broken & Solid Yellow, 4" Wide, 10' Segment - 30' Gap
- (F) Stop Line White, Solid, 24" Wide
- (G) Channelizing Lines White, Solid, 8" Wide
- (H) Lane Lines White, 4" Wide, 10' Segment - 30' Gap
- (I) Dotted Extension Lines White, 8" Wide, 2' Segment - 4' Gap
- (J) Extension Lines White, 8" Wide, 2' Segment - 1' Gap
- (K) Dotted Extension Lines White, 6" Wide, 2' Segment - 4' Gap
- (L) Lane Lines White, 8" Wide, 6' Segment - 3' Gap
- (M) Bike Lane with Arrow Pavement Marking
- (N) Arrow Pavement Marking
- (O) Parking Line White, Solid, 3" Wide
- (P) Yield Triangle White, 3' x 2'
- (Q) Word Pavement Marking
- (R) Sharrow Bike Pavement Marking
- ↔ Directional Flow Arrow



Note:
1. See Traffic Signal Plans for details for the Pedestrian Signal.

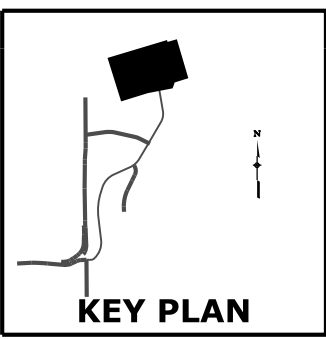
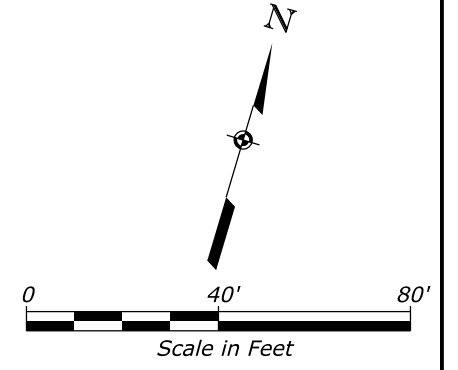
95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

SIGNING AND PAVEMENT MARKING PLAN
7 OF 12

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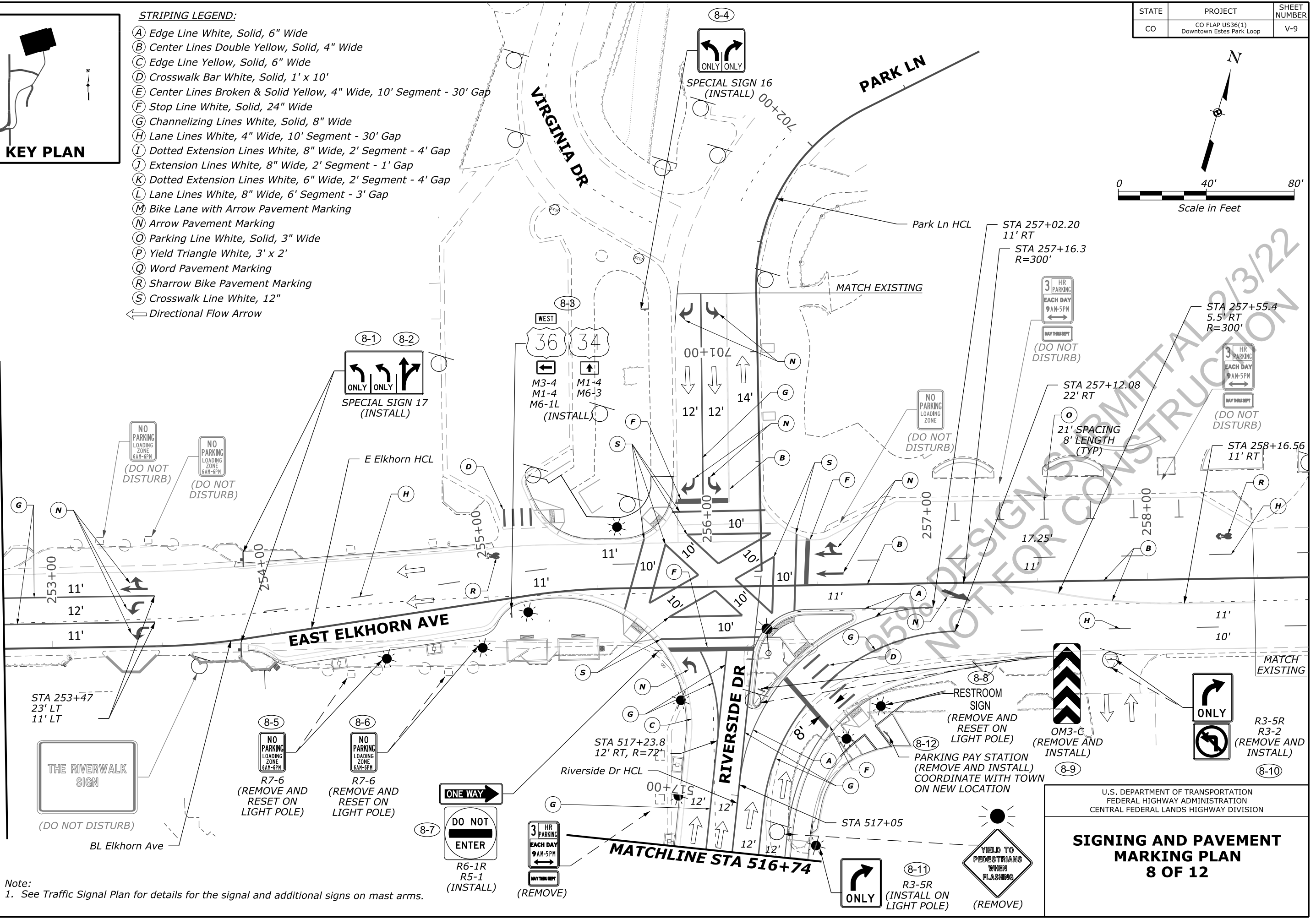
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-9



- STRIPING LEGEND:**
- (A) Edge Line White, Solid, 6" Wide
 - (B) Center Lines Double Yellow, Solid, 4" Wide
 - (C) Edge Line Yellow, Solid, 6" Wide
 - (D) Crosswalk Bar White, Solid, 1' x 10'
 - (E) Center Lines Broken & Solid Yellow, 4" Wide, 10' Segment - 30' Gap
 - (F) Stop Line White, Solid, 24" Wide
 - (G) Channelizing Lines White, Solid, 8" Wide
 - (H) Lane Lines White, 4" Wide, 10' Segment - 30' Gap
 - (I) Dotted Extension Lines White, 8" Wide, 2' Segment - 4' Gap
 - (J) Extension Lines White, 8" Wide, 2' Segment - 1' Gap
 - (K) Dotted Extension Lines White, 6" Wide, 2' Segment - 4' Gap
 - (L) Lane Lines White, 8" Wide, 6' Segment - 3' Gap
 - (M) Bike Lane with Arrow Pavement Marking
 - (N) Arrow Pavement Marking
 - (O) Parking Line White, Solid, 3" Wide
 - (P) Yield Triangle White, 3' x 2'
 - (Q) Word Pavement Marking
 - (R) Sharrow Bike Pavement Marking
 - (S) Crosswalk Line White, 12"
- ← Directional Flow Arrow

MATCHLINE STA 252+78

MATCHLINE STA 516+74



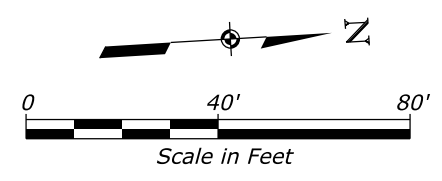
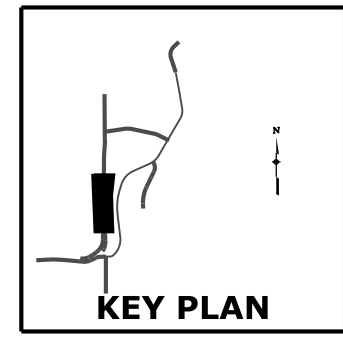
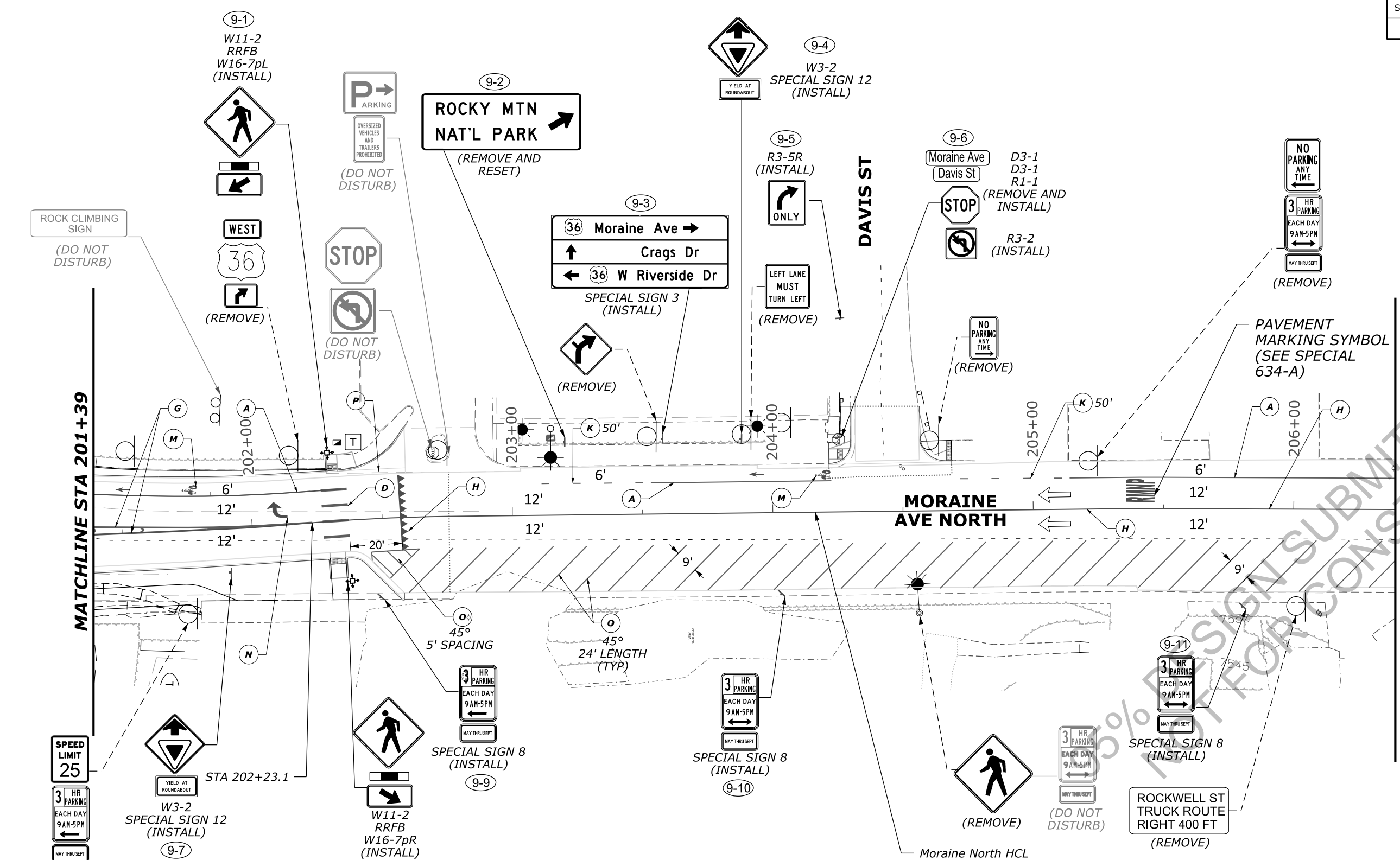
Note:
1. See Traffic Signal Plan for details for the signal and additional signs on mast arms.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

SIGNING AND PAVEMENT MARKING PLAN
8 OF 12

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STRIPING LEGEND:

- (A) Edge Line White, Solid, 6" Wide
- (B) Center Lines Double Yellow, Solid, 4" Wide
- (C) Edge Line Yellow, Solid, 6" Wide
- (D) Crosswalk Bar White, Solid, 1' x 10'
- (E) Center Lines Broken & Solid Yellow, 4" Wide, 10' Segment - 30' Gap
- (F) Stop Line White, Solid, 24" Wide
- (G) Channelizing Lines White, Solid, 8" Wide
- (H) Lane Lines White, 4" Wide, 10' Segment - 30' Gap
- (I) Dotted Extension Lines White, 8" Wide, 2' Segment - 4' Gap
- Rectangular Rapid Flashing Beacon (RRFB)

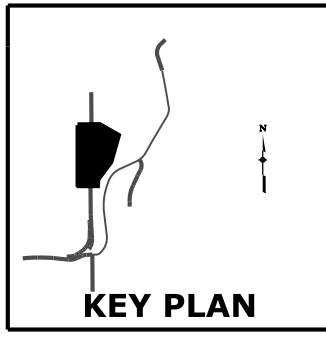
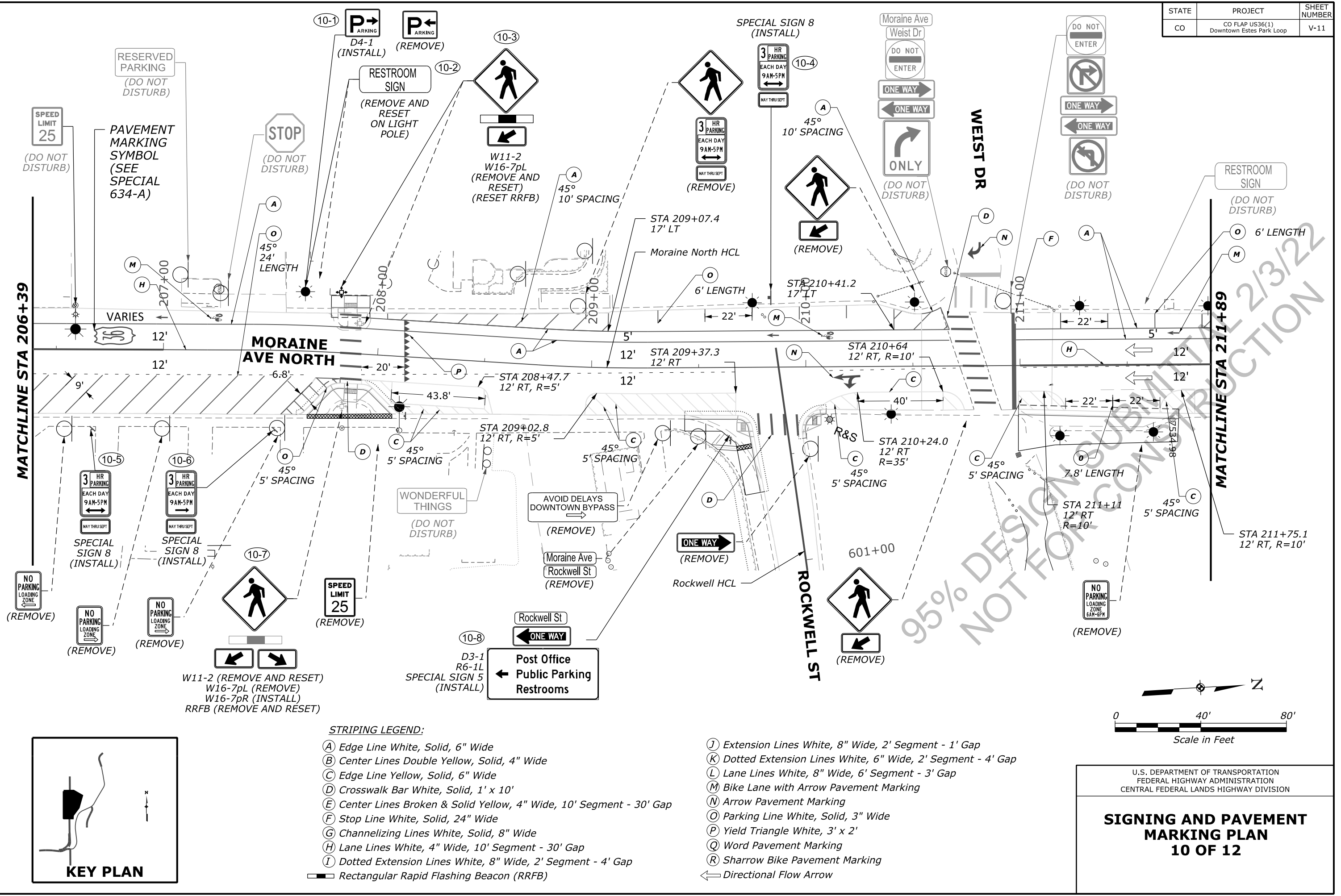
- (J) Extension Lines White, 8" Wide, 2' Segment - 1' Gap
- (K) Dotted Extension Lines White, 6" Wide, 2' Segment - 4' Gap
- (L) Lane Lines White, 8" Wide, 6' Segment - 3' Gap
- (M) Bike Lane with Arrow Pavement Marking
- (N) Arrow Pavement Marking
- (O) Parking Line White, Solid, 3" Wide
- (P) Yield Triangle White, 3' x 2'
- (Q) Word Pavement Marking
- (R) Sharrow Bike Pavement Marking
- Directional Flow Arrow

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

SIGNING AND PAVEMENT MARKING PLAN
 9 OF 12

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-11

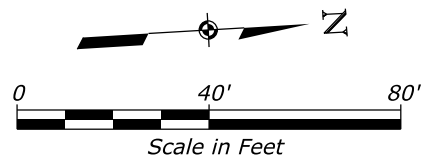
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STRIPING LEGEND:

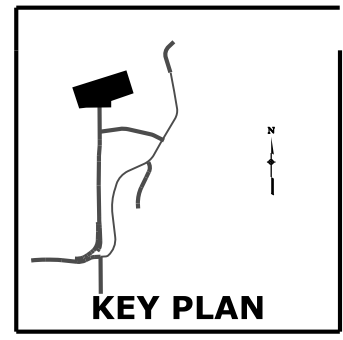
- (A) Edge Line White, Solid, 6" Wide
- (B) Center Lines Double Yellow, Solid, 4" Wide
- (C) Edge Line Yellow, Solid, 6" Wide
- (D) Crosswalk Bar White, Solid, 1' x 10'
- (E) Center Lines Broken & Solid Yellow, 4" Wide, 10' Segment - 30' Gap
- (F) Stop Line White, Solid, 24" Wide
- (G) Channelizing Lines White, Solid, 8" Wide
- (H) Lane Lines White, 4" Wide, 10' Segment - 30' Gap
- (I) Dotted Extension Lines White, 8" Wide, 2' Segment - 4' Gap
- Rectangular Rapid Flashing Beacon (RRFB)

- (J) Extension Lines White, 8" Wide, 2' Segment - 1' Gap
- (K) Dotted Extension Lines White, 6" Wide, 2' Segment - 4' Gap
- (L) Lane Lines White, 8" Wide, 6' Segment - 3' Gap
- (M) Bike Lane with Arrow Pavement Marking
- (N) Arrow Pavement Marking
- (O) Parking Line White, Solid, 3" Wide
- (P) Yield Triangle White, 3' x 2'
- (Q) Word Pavement Marking
- (R) Sharrow Bike Pavement Marking
- Directional Flow Arrow



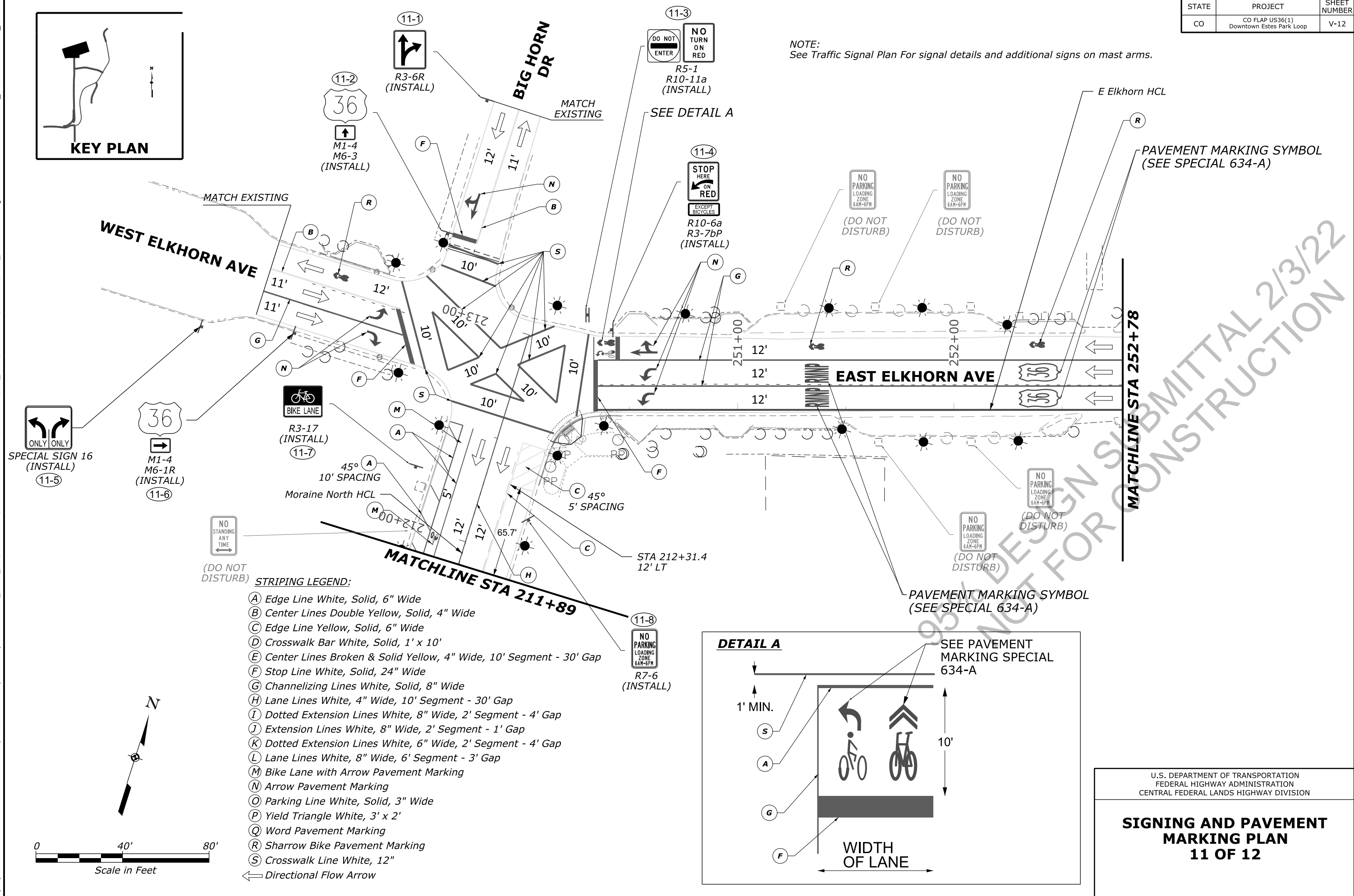
U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION
SIGNING AND PAVEMENT MARKING PLAN
10 OF 12

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-12



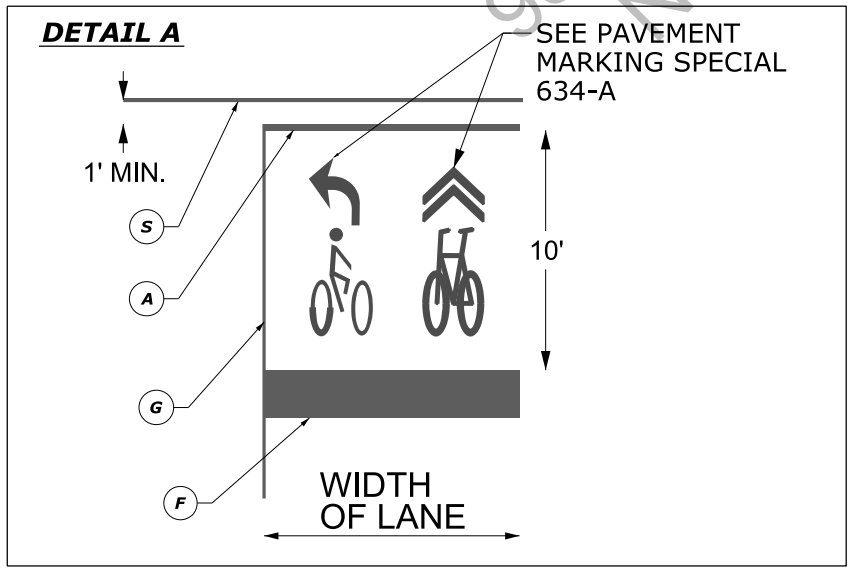
NOTE:
See Traffic Signal Plan For signal details and additional signs on mast arms.

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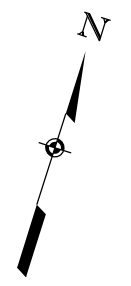
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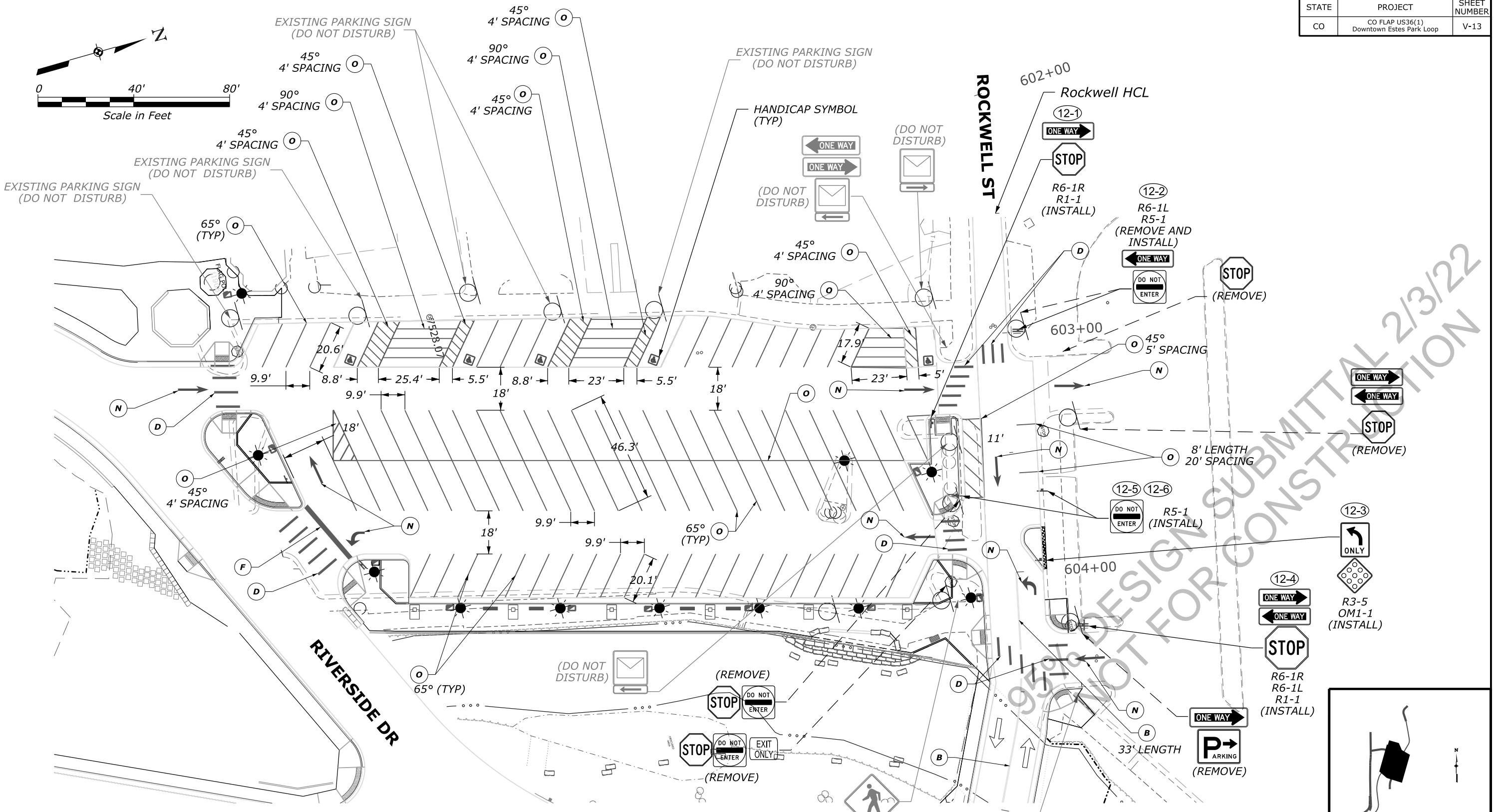
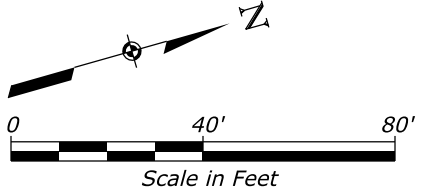
- (A) Edge Line White, Solid, 6" Wide
- (B) Center Lines Double Yellow, Solid, 4" Wide
- (C) Edge Line Yellow, Solid, 6" Wide
- (D) Crosswalk Bar White, Solid, 1' x 10'
- (E) Center Lines Broken & Solid Yellow, 4" Wide, 10' Segment - 30' Gap
- (F) Stop Line White, Solid, 24" Wide
- (G) Channelizing Lines White, Solid, 8" Wide
- (H) Lane Lines White, 4" Wide, 10' Segment - 30' Gap
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- (L) Lane Lines White, 8" Wide, 6' Segment - 3' Gap
- (M) Bike Lane with Arrow Pavement Marking
- (N) Arrow Pavement Marking
- (O) Parking Line White, Solid, 3" Wide
- (P) Yield Triangle White, 3' x 2'
- (Q) Word Pavement Marking
- (R) Sharrow Bike Pavement Marking
- (S) Crosswalk Line White, 12"
- ← Directional Flow Arrow



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

SIGNING AND PAVEMENT MARKING PLAN
11 OF 12





STRIPING LEGEND:

- (A) Edge Line White, Solid, 6" Wide
- (B) Center Lines Double Yellow, Solid, 4" Wide
- (C) Edge Line Yellow, Solid, 6" Wide
- (D) Crosswalk Bar White, Solid, 1' x 10'
- (E) Center Lines Broken & Solid Yellow, 4" Wide, 10' Segment - 30' Gap
- (F) Stop Line White, Solid, 24" Wide
- (G) Channelizing Lines White, Solid, 8" Wide
- (H) Lane Lines White, 4" Wide, 10' Segment - 30' Gap
- (I) Dotted Extension Lines White, 8" Wide, 2' Segment - 4' Gap

- (J) Extension Lines White, 8" Wide, 2' Segment - 1' Gap
- (K) Dotted Extension Lines White, 6" Wide, 2' Segment - 4' Gap
- (L) Lane Lines White, 8" Wide, 6' Segment - 3' Gap
- (M) Bike Lane with Arrow Pavement Marking
- (N) Arrow Pavement Marking
- (O) Parking Line White, Solid, 3" Wide
- (P) Yield Triangle White, 3' x 2'
- (Q) Word Pavement Marking
- (R) Sharrow Bike Pavement Marking
- ← Directional Flow Arrow



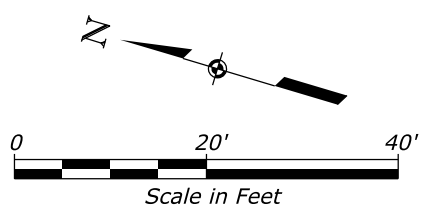
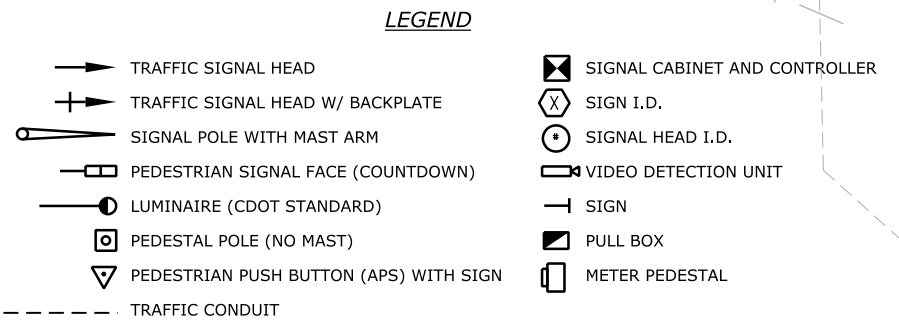
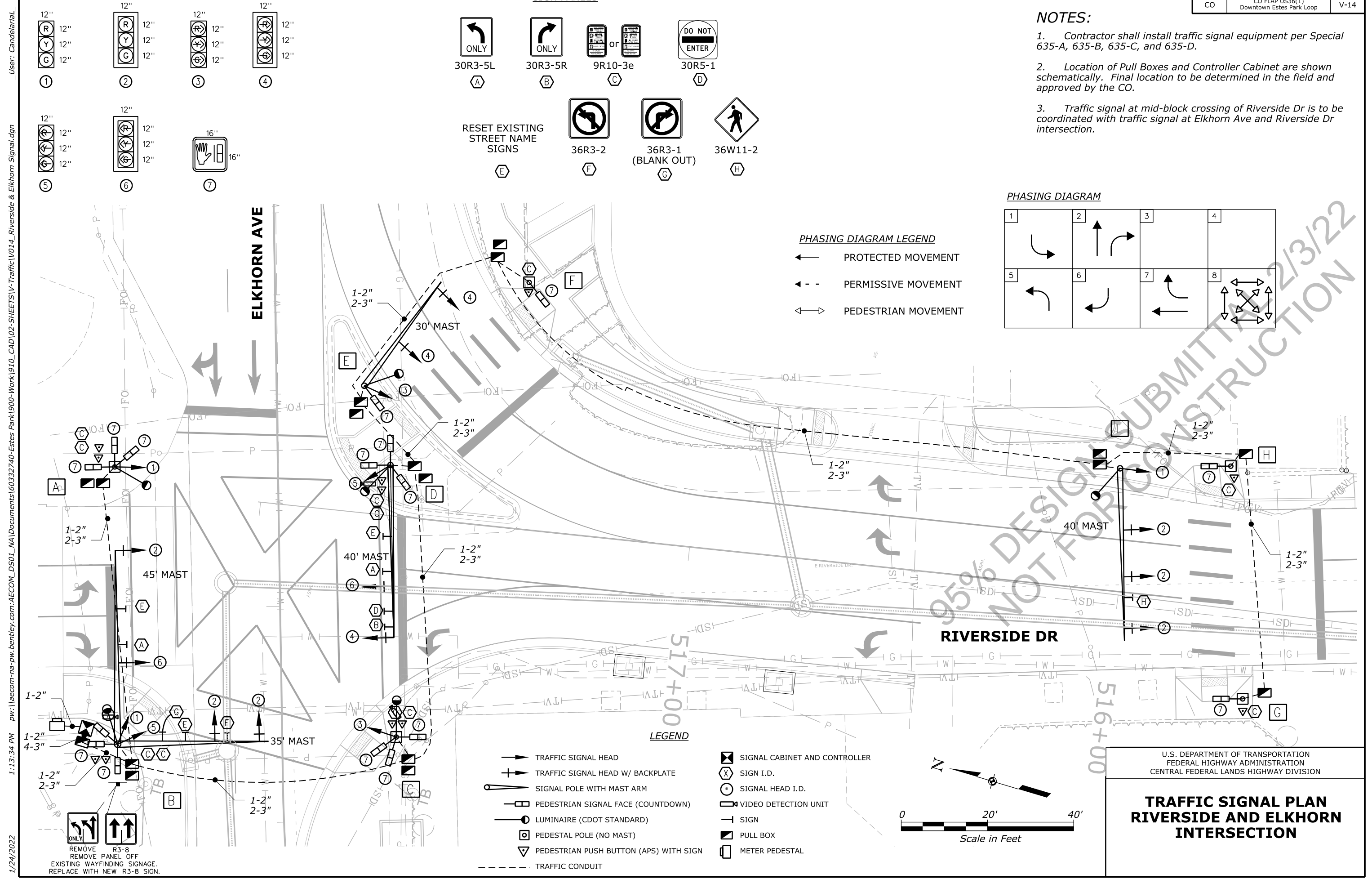
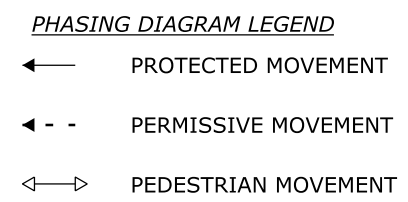
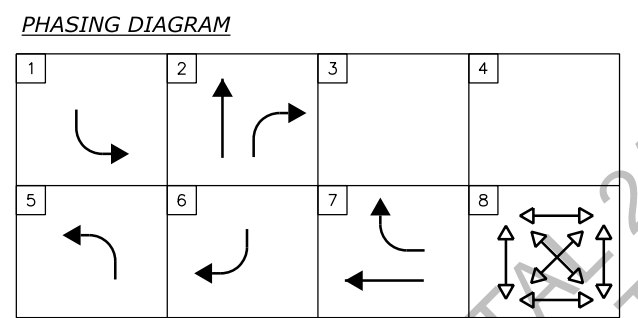
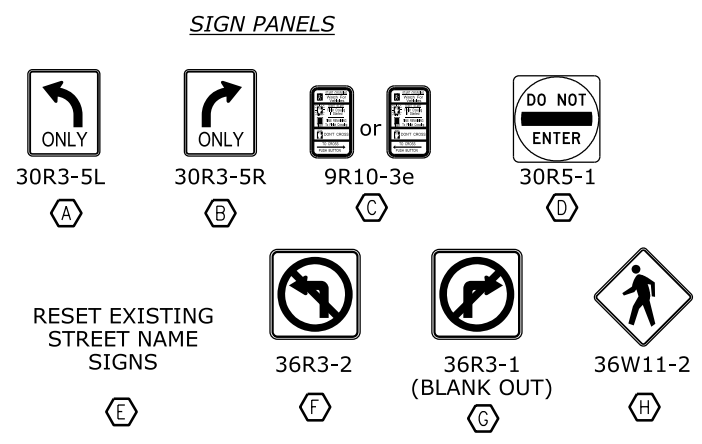
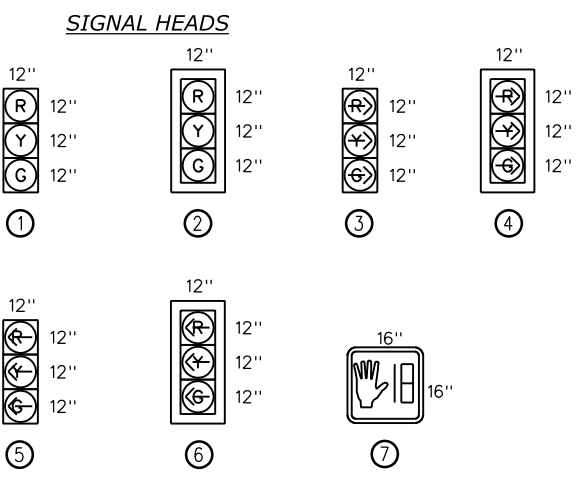
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

SIGNING AND PAVEMENT MARKING PLAN
12 OF 12

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 User: Candalaria...
 1/24/2022

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-14

- NOTES:**
- Contractor shall install traffic signal equipment per Special 635-A, 635-B, 635-C, and 635-D.
 - Location of Pull Boxes and Controller Cabinet are shown schematically. Final location to be determined in the field and approved by the CO.
 - Traffic signal at mid-block crossing of Riverside Dr is to be coordinated with traffic signal at Elkhorn Ave and Riverside Dr intersection.



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

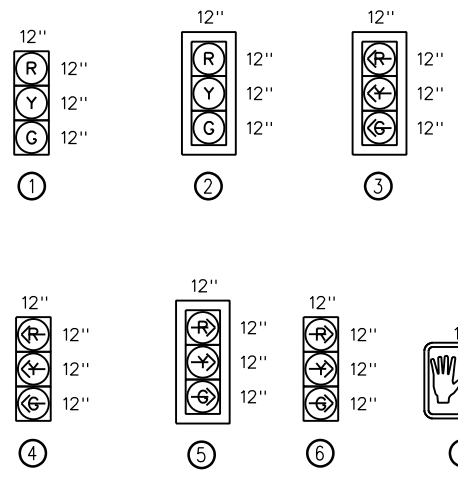
**TRAFFIC SIGNAL PLAN
RIVERSIDE AND ELKHORN
INTERSECTION**

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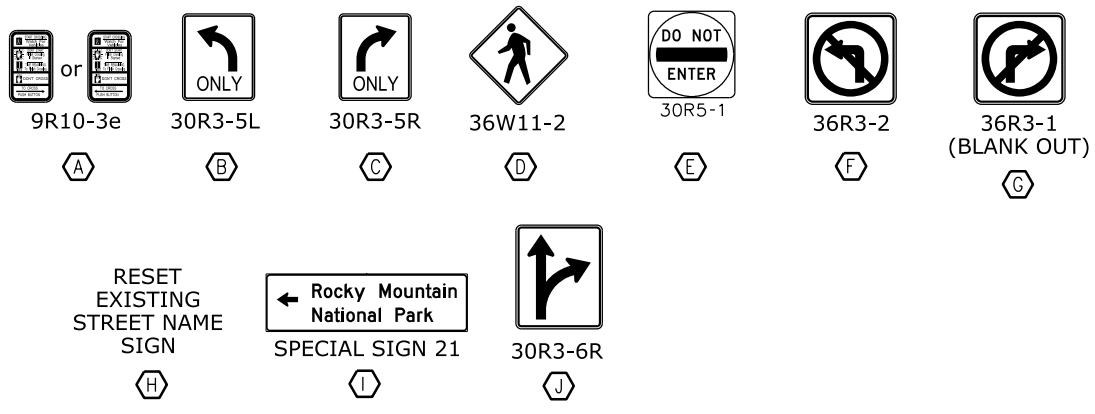
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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-15

SIGNAL HEADS



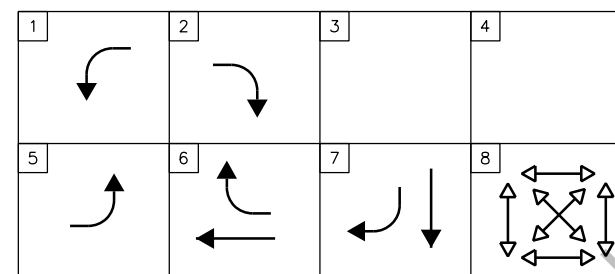
SIGNS



NOTES:

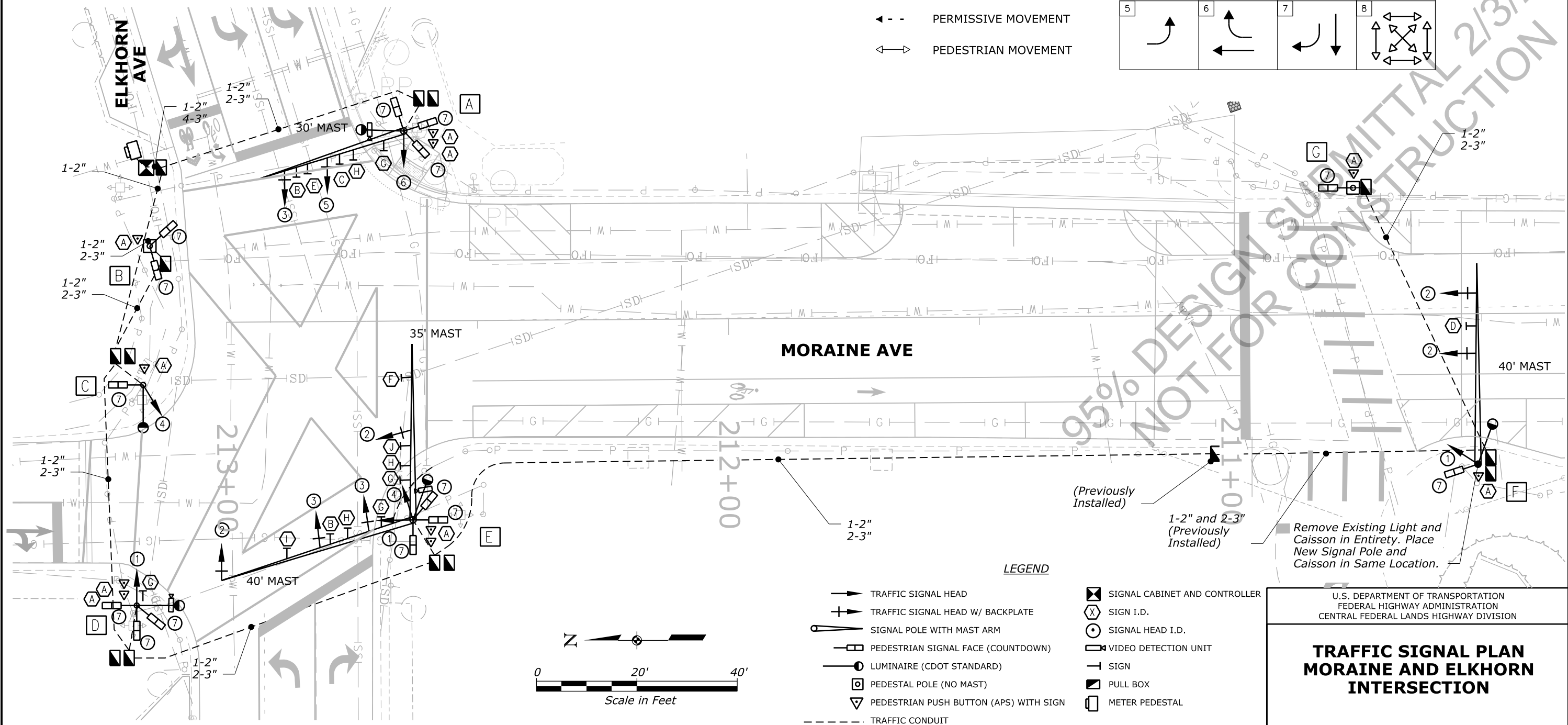
- Contractor shall install traffic signal equipment per Special 635-A, 635-B, 635-C and 635-D.
- Location of Pull Boxes and Controller Cabinet are shown schematically. Final location to be determined in the field and approved by the CO.
- The midblock crossing of Moraine Ave is to be coordinated with the traffic signal at Elkhorn Ave and Moraine Ave intersection.

PHASING DIAGRAM



PHASING DIAGRAM LEGEND

- ← PROTECTED MOVEMENT
- ← - - PERMISSIVE MOVEMENT
- ↔ PEDESTRIAN MOVEMENT



LEGEND

- TRAFFIC SIGNAL HEAD
- + → TRAFFIC SIGNAL HEAD W/ BACKPLATE
- |— SIGNAL POLE WITH MAST ARM
- |— PEDESTRIAN SIGNAL FACE (COUNTDOWN)
- |— LUMINAIRE (CDOT STANDARD)
- |— PEDESTAL POLE (NO MAST)
- |— PEDESTRIAN PUSH BUTTON (APS) WITH SIGN
- - - - TRAFFIC CONDUIT
- ⊠ SIGNAL CABINET AND CONTROLLER
- ⊗ SIGN I.D.
- ⊙ SIGNAL HEAD I.D.
- ⊠ VIDEO DETECTION UNIT
- |— SIGN
- ⊠ PULL BOX
- ⊠ METER PEDESTAL

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**TRAFFIC SIGNAL PLAN
MORaine AND ELKHORN
INTERSECTION**

RIVERSIDE DR AND ELKHORN AVE INTERSECTION

MORaine AVE AND ELKHORN AVE INTERSECTION

TRAFFIC SIGNAL ITEMS: RIVERSIDE DR & ELKHORN AVE, MID-BLOCK CROSSING		
ITEM DESCRIPTION	UNIT	QTY
REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	LS	0.5
REMOVAL OF SIGN PANEL	EA	1
DRILLED SHAFT (18 INCH)	LF	15
DRILLED SHAFT (36 INCH)	LF	69
DRILLED SHAFT (42 INCH)	LF	17
TYPE THREE PULL BOX	EA	15
PULL BOX (24"x36"x18")	EA	2
2 INCH ELECTRICAL CONDUIT	LF	780
3 INCH ELECTRICAL CONDUIT	LF	1550
LUMINAIRE (LED)	EA	6
METER POWER PEDESTAL	EA	1
TRAFFIC SIGNAL FACE (12-12-12)	EA	18
PEDESTRIAN SIGNAL FACE (16)(COUNTDOWN)	EA	16
PEDESTRIAN PUSH BUTTON (APS) WITH SIGN	EA	11
TRAFFIC SIGNAL LIGHT POLE STEEL (NO MAST ARM)	EA	2
TRAFFIC SIGNAL LIGHT POLE STEEL (1-30 FOOT MAST ARM)	EA	1
TRAFFIC SIGNAL LIGHT POLE STEEL (1-40 FOOT MAST ARM)	EA	2
TRAFFIC SIGNAL LIGHT POLE STEEL (2 MAST ARM) (45' & 35')	EA	1
TRAFFIC SIGNAL PEDESTAL POLE STEEL	EA	3
TELEMETRY (FIELD)	EA	1
UNITERRUPTED POWER SUPPLY	EA	1
RESET TRAFFIC SIGNAL CONTROLLER AND CABINET	EA	1
BLANK OUT SIGN(LED)(SINGLE FACED)	EA	1
ITERIS CAMERA DETECTOR	EA	3
SIGN PANEL	SF	64.6

TRAFFIC SIGNAL ITEMS: MORaine AVE & ELKHORN AVE & MID-BLOCK CROSSING		
ITEM DESCRIPTION	UNIT	QTY
REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	LS	0.5
DRILLED SHAFT (18 INCH)	LF	10
DRILLED SHAFT (36 INCH)	LF	69
TYPE THREE PULL BOX	EA	10
PULL BOX (24"x36"x18")	EA	2
2 INCH ELECTRICAL CONDUIT	LF	430
3 INCH ELECTRICAL CONDUIT	LF	860
LUMINAIRE (LED)	EA	5
METER POWER PEDESTAL	EA	1
TRAFFIC SIGNAL FACE (12-12-12)	EA	14
PEDESTRIAN SIGNAL FACE (16)(COUNTDOWN)	EA	14
PEDESTRIAN PUSH BUTTON (APS) WITH SIGN	EA	10
TRAFFIC SIGNAL LIGHT POLE STEEL (NO MAST ARM)	EA	2
TRAFFIC SIGNAL LIGHT POLE STEEL (1-30 FOOT MAST ARM)	EA	1
TRAFFIC SIGNAL LIGHT POLE STEEL (1-40 FOOT MAST ARM)	EA	1
TRAFFIC SIGNAL LIGHT POLE STEEL (2 MAST ARM) (40' & 35')	EA	1
TRAFFIC SIGNAL PEDESTAL POLE STEEL	EA	2
TELEMETRY (FIELD)	EA	1
UNITERRUPTED POWER SUPPLY	EA	1
RESET TRAFFIC SIGNAL CONTROLLER AND CABINET	EA	1
BLANK OUT SIGN(LED)(SINGLE FACED)	EA	3
ITERIS CAMERA DETECTOR	EA	3
SIGN PANEL	SF	56.1

NOTES:

1. Traffic Signal Item quantities are for information only. All traffic signal components for the project are to be paid for under 63601-1000 System Installation, Traffic Signal (Lump Sum).

TRAFFIC SIGNAL POLE SCHEDULE

POLE NUMBER	A	B	C	D	E	F	G	H	I
LOCATION	Elkhorn Ave/ Riverside Dr Intersection				Riverside Dr Right Turn		Riverside Dr Midblock		
	NE CORNER	NW CORNER	SE CORNER	SW CORNER	WEST SIDE	EAST SIDE	WEST SIDE	EAST SIDE	EAST SIDE
NORTHING	68290.86	68271.85	68210.41	68229.72	68240.80	68211.01	68024.89	68042.95	68067.41
EASTING	42417.79	42356.41	42376.48	42436.49	42452.36	42486.25	42441.05	42491.94	42484.12
DIA./DEPTH	36" / 12.5'	42" / 16.5'	36" / 12.5'	36" / 14.5'	36" / 12.5'	18" / 4.67'	18" / 4.67'	18" / 4.67'	36" / 14.5'
MAST ARM LENGTH	N/A	45' & 35'	N/A	40'	30'	N/A	N/A	N/A	40'

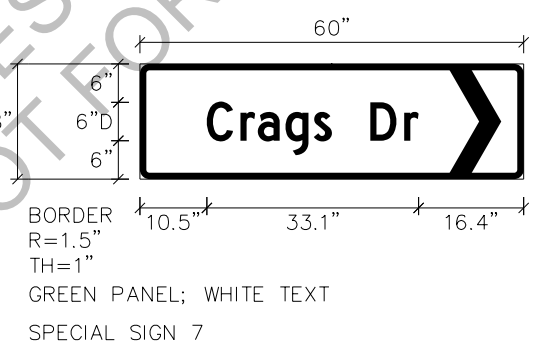
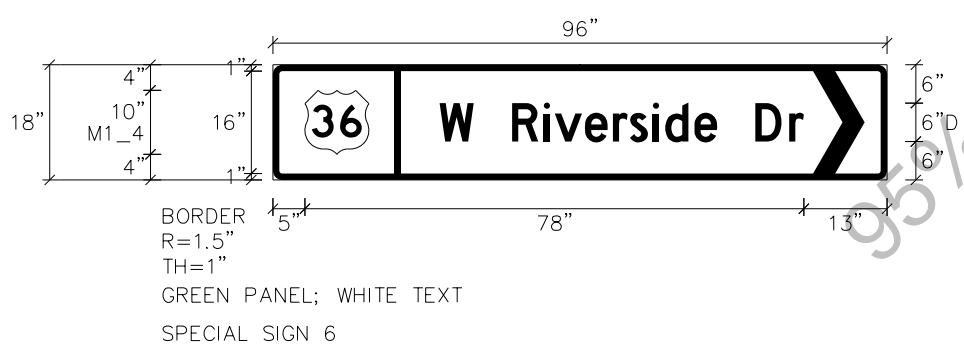
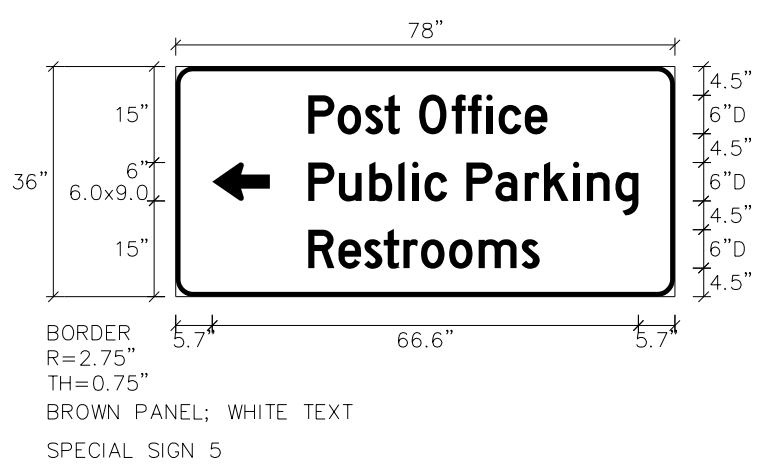
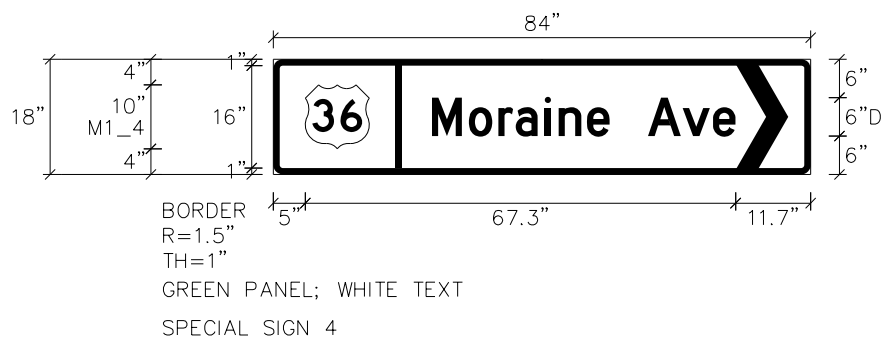
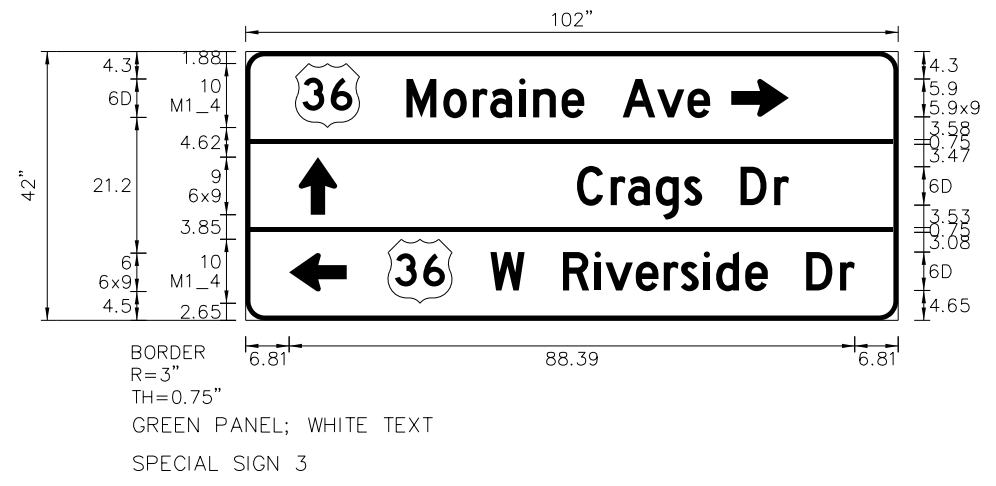
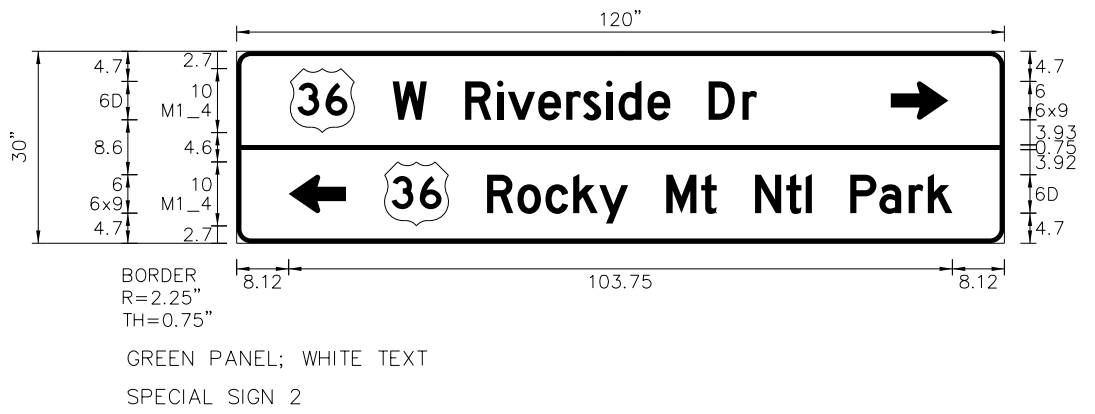
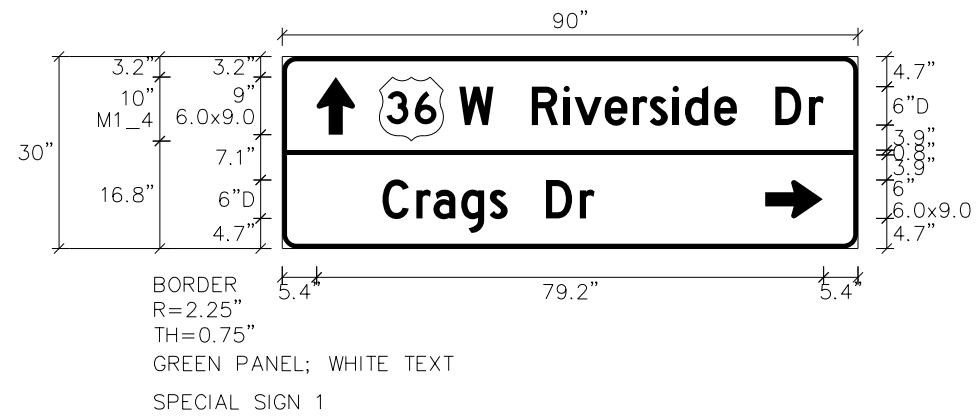
TRAFFIC SIGNAL POLE SCHEDULE

POLE NUMBER	A	B	C	D	E	F	G
LOCATION	Elkhorn Ave/ Moraine Ave Intersection				Moraine Ave Midblock		
	SE CORNER	NORTH	NE CORNER	NW CORNER	SW CORNER	WEST SIDE	EAST SIDE
NORTHING	68041.41	68091.99	68093.31	68094.57	68039.55	67827.45	67852.34
EASTING	41865.13	41842.24	41814.59	41770.67	41787.72	41798.82	41853.81
DIA./DEPTH	36" / 12.5'	18" / 4.67'	36" / 12.5'	36" / 12.5'	36" / 14.5'	36" / 14.5'	18" / 4.67'
MAST ARM LENGTH	30'	N/A	N/A	N/A	35' & 40'	40'	N/A

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**TRAFFIC SIGNAL PLAN
POLE SCHEDULE &
SUMMARY**

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-17

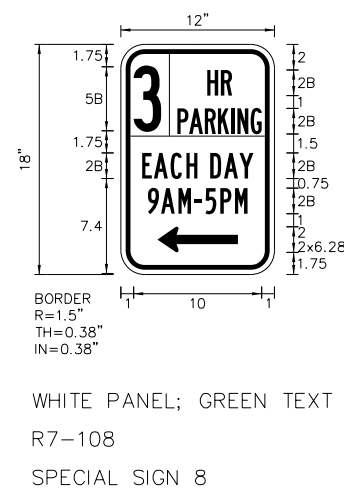
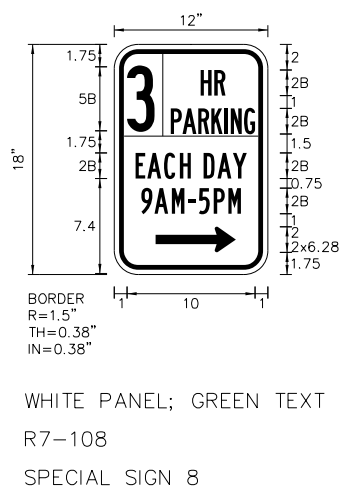
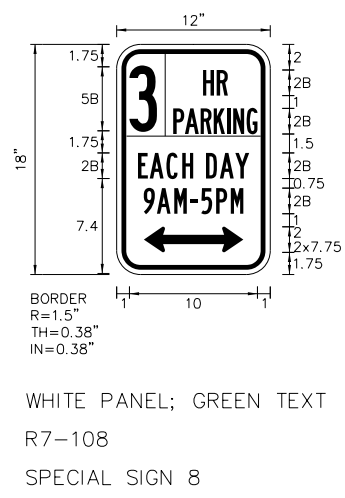
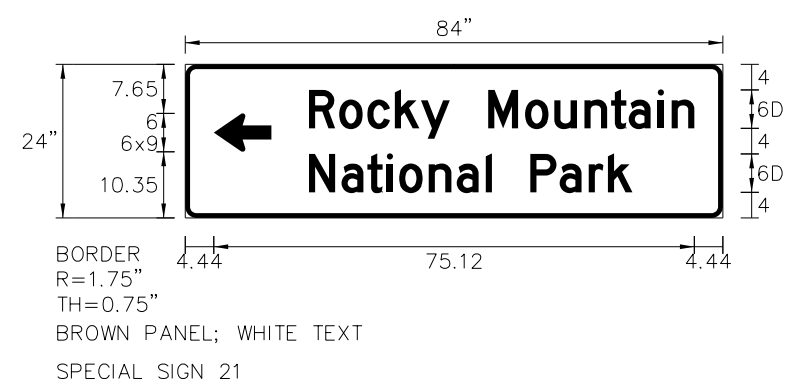
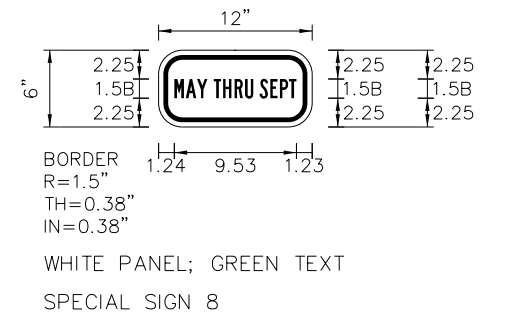
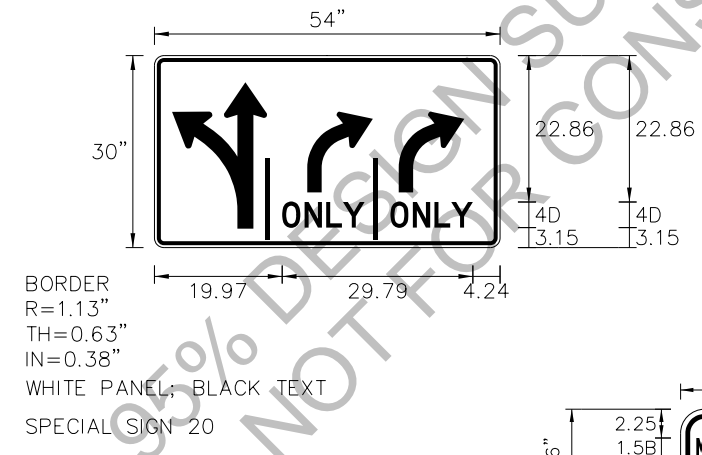
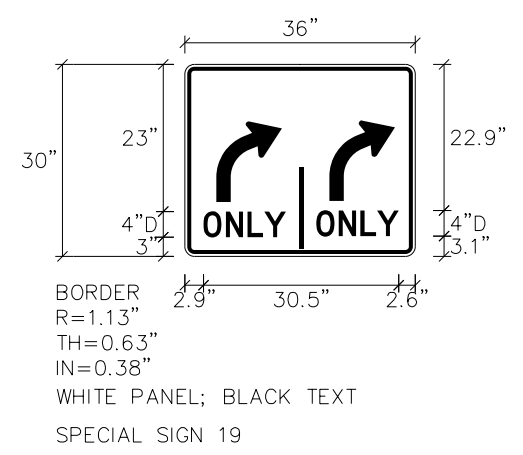
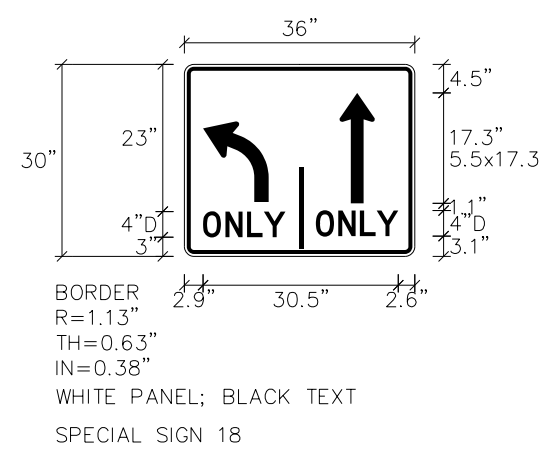
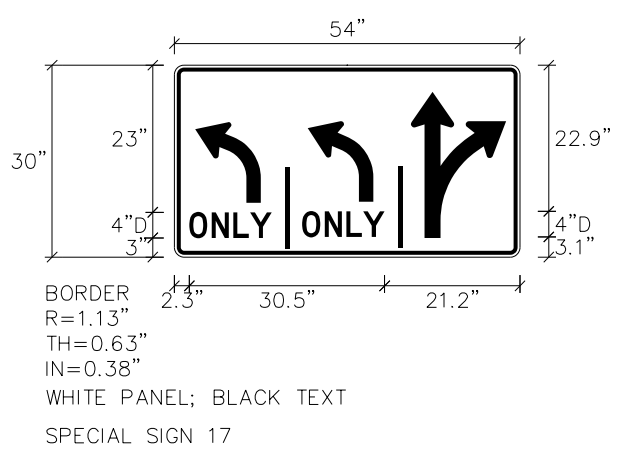
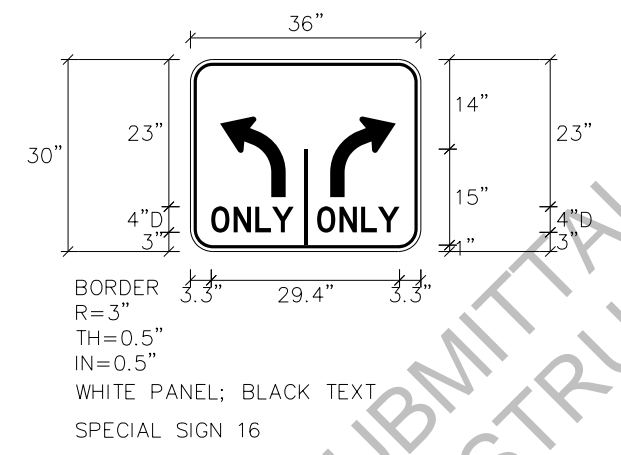
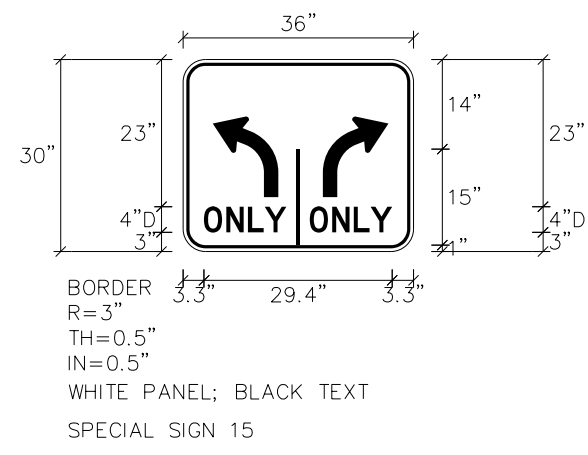
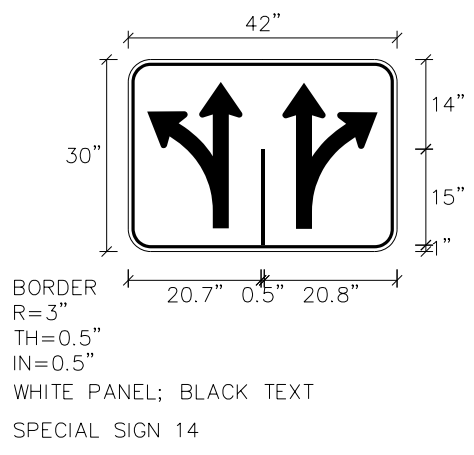
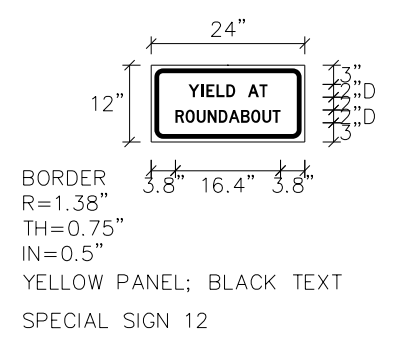
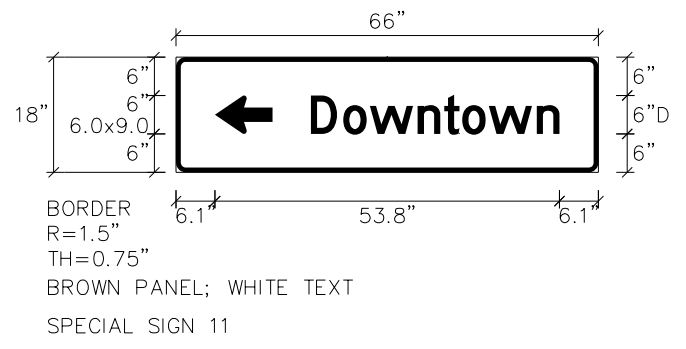
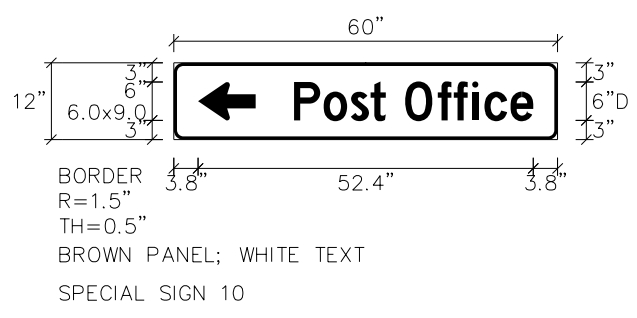


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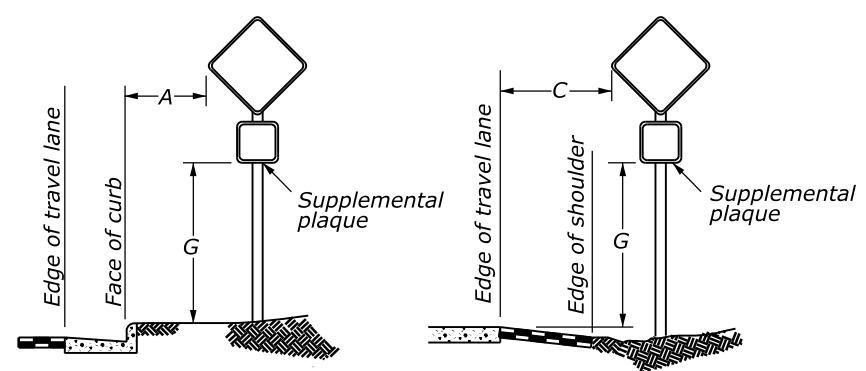
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U.S. CUSTOMARY SPECIAL	
SIGN PANEL DETAILS	
SHEET 1 OF 2	
	SPECIAL 633-A

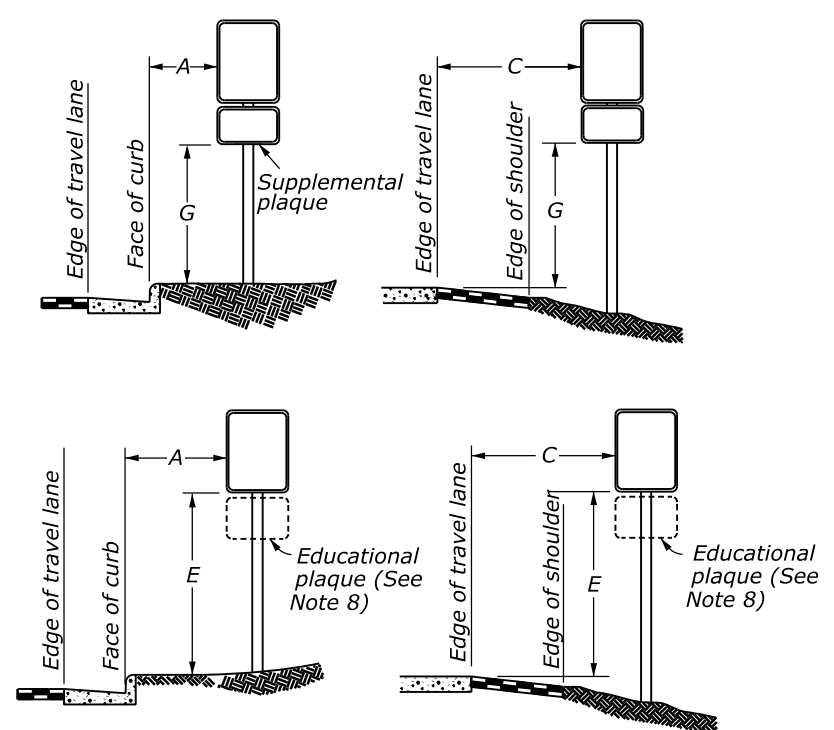
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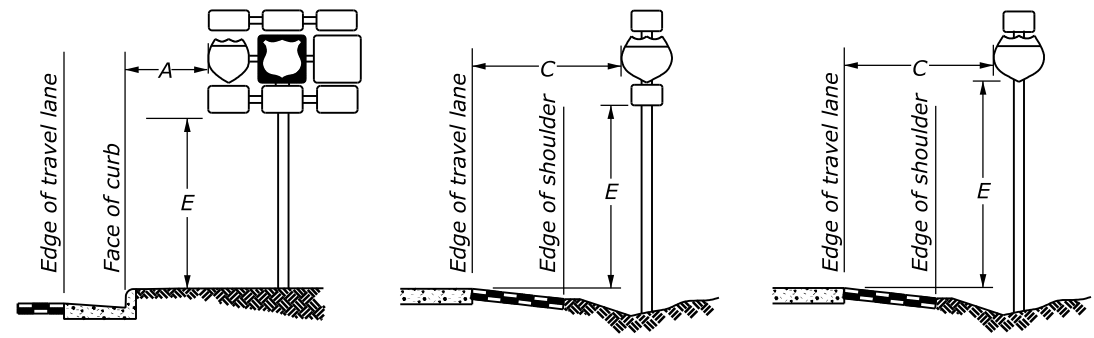
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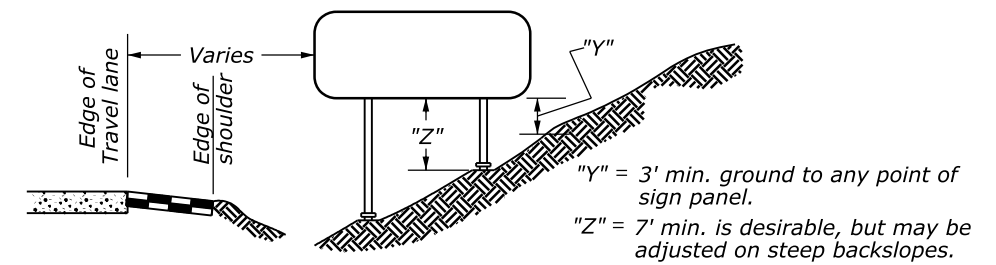
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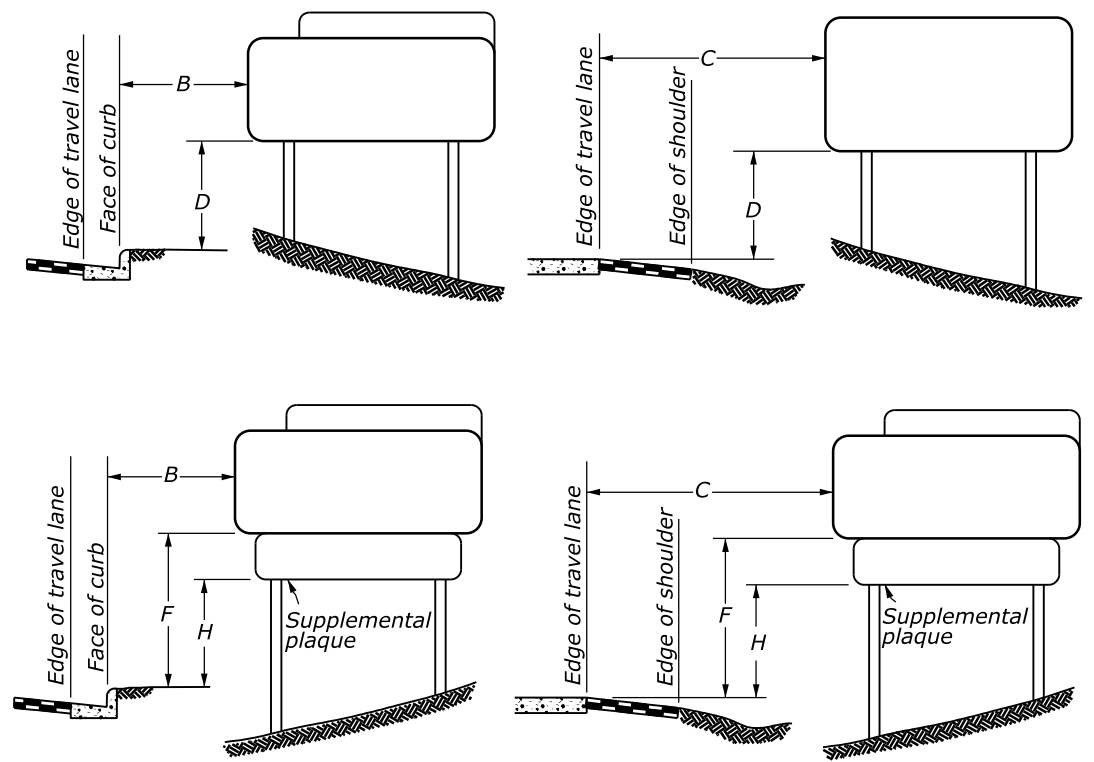
REGULATORY, RECREATIONAL AND CULTURAL INFORMATION SIGN PLACEMENT



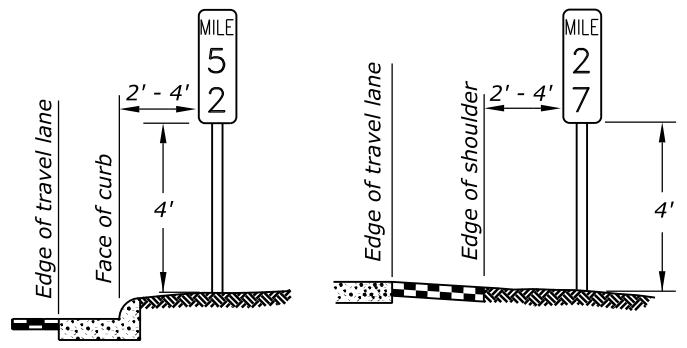
ROUTE MARKER ASSEMBLY PLACEMENT



CLASS III SIGNS, PANEL GROUND CLEARANCE



CLASS III SIGN PLACEMENT



NOTE: Mile markers shall be located in line with delineator posts.

MILE MARKER PLACEMENT

NOTE:

- Refer to the signing summary and signing and pavement marking plan sheets for sign types and locations.
- Special care shall be taken in sign location to ensure an unobstructed view of each sign.
- Embed posts a minimum of 3 ft. for U-2 posts and 4 in. x 4 in. timber posts, and 5 ft. for 6 in. x 6 in. timber posts. For footing depth, see the applicable standard.
- If a shoulder is wider than 6 feet, the minimum lateral offset distance should be 6 feet from edge of shoulder, except for mile marker signs. See Figure 2A-2(B) of the 2009 MUTCD.
- Normal lateral placement is measured from the edge of travel lane.
- In urban areas, a lateral clearance of 1 ft. from the curb face is permissible where sidewalk width is limited or where existing poles are close to the curb.
- Typical post mounting heights from ground to bottom of sign panel are 7, or 8 feet. Other heights may be required when signs are mounted on steeper fill or cut slopes.
- "Educational Plaques" for symbol signs will not be considered when determining vertical placement. For information of educational plaque, Section 2M.06 of the 2009 MUTCD.
- When lateral placement is 30 ft. or more for signs without a supplemental plaque, vertical placement D may be reduced to 5 ft. When lateral placement is 30 ft. or more, for signs with a supplemental panel, vertical placement E does not apply - use only vertical placement H.
- Normal angular placement is 0 deg. signs closer than 30 ft. should be turned slightly away to minimize specular reflection. Signs placed 30 ft. or more should generally be turned toward the road.
- The exit panel is mounted on the right hand side for right hand exits and the left side for left hand exits.
- Post shall be installed plumb, vertical deviation shall not exceed 1/2 in. in 10 ft.
- On all two-lane, undivided highways, the mile marker and post shall be installed on the right shoulder in the ascending direction, with the mile marker panels displayed on the front and back side of the post.
- Vertical spacing between sign panels shall be 1 to 1 1/2 in., typical.

PLACEMENT TABLES

LATERAL PLACEMENT			VERTICAL PLACEMENT						
KEY	ALL CLASSES OF STREETS AND HIGHWAYS		FREEWAYS AND EXPRESSWAYS		CONVENTIONAL STREETS AND HIGHWAYS				
	MINIMUM	NORMAL	MIN.	MAX.	URBAN MIN.	URBAN MAX.	RURAL MIN.	RURAL MAX.	
A	2'-0"	15'-0" plus curb	7'-0" or Note No. 9	12'-0"	7'-0"	8'-0"	5'-0"	8'-0"	
B	2'-0"	30'-0" or more includes curb	7'-0"	8'-0"	7'-0"	8'-0"	5'-0"	8'-0"	
C	2'-0"	6'-0" plus edge of 6'+ wide shoulder. If none, 15'-0" from edge of travel lane.	8'-0" or Note No. 9	12'-0"	8'-0"	9'-0"	5'-0"	9'-0"	
			G	6'-0"	7'-0"	6'-0"	7'-0"	4'-0"	7'-0"
			H	5'-0"	10'-0"	6'-0"	7'-0"	4'-0"	7'-0"

NO SCALE
ADAPTED FROM
CDOT S-614-1

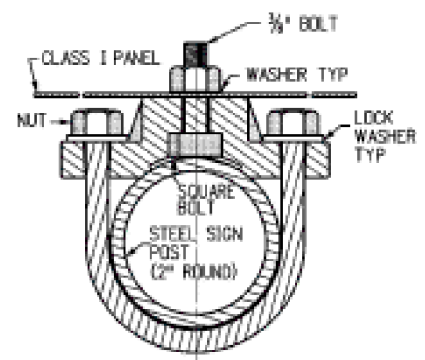
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FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL

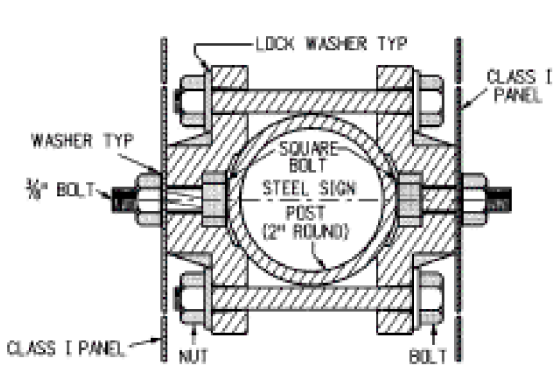
GROUND SIGN PLACEMENT

SPECIAL
633-B

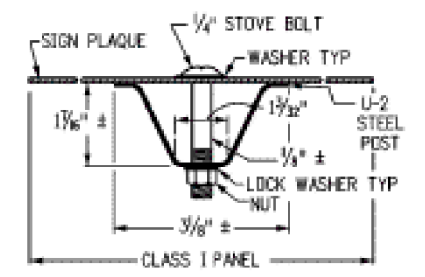
TYPICAL SINGLE BRACKET



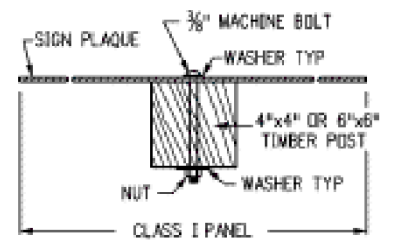
TYPICAL BACK TO BACK



TYPICAL ROUND STEEL POLE SECTION



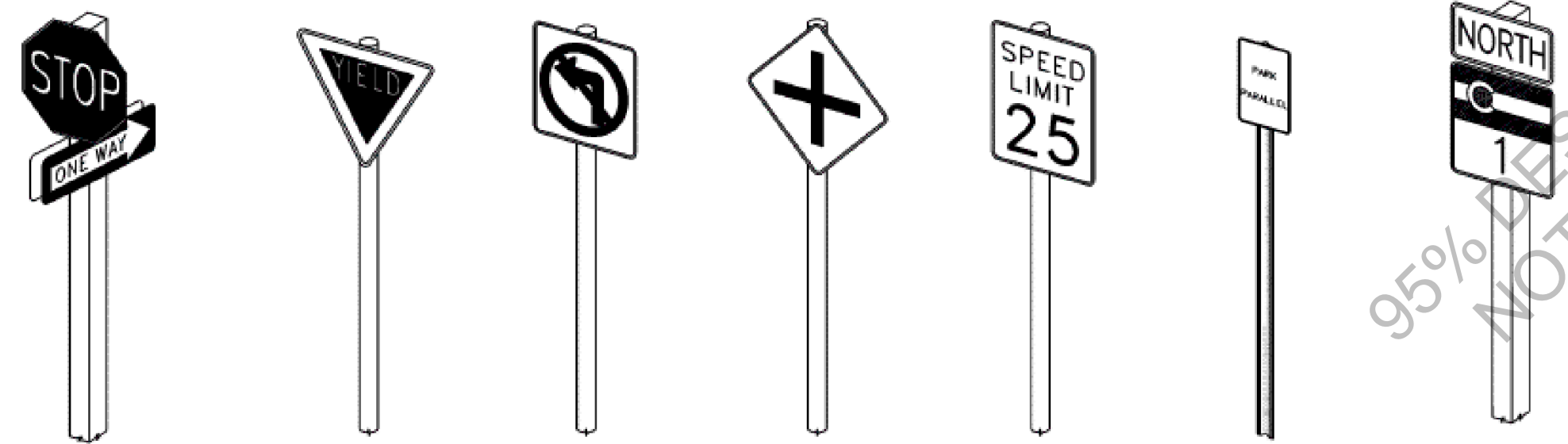
TYPICAL U-2 POST SECTION



TYPICAL TIMBER POST SECTION

GENERAL NOTES

1. TIMBER SIGN POSTS MAY ONLY BE USED FOR TEMPORARY SIGNAGE DURING CONSTRUCTION. TUBULAR STEEL SHALL BE USED FOR PERMANENT INSTALLATIONS.
2. CLASS I SIGN PANELS ARE ALL THOSE THAT DO NOT REQUIRE BACKING ZEES. CLASS I PANELS SHALL GENERALLY BE 0.100" MINIMUM THICKNESS SINGLE SHEET ALUMINUM, BUT 0.080" THICKNESS MAY BE USED FOR SIGN PANELS WHERE BOTH THE HORIZONTAL AND VERTICAL DIMENSIONS ARE LESS THAN 36 IN.
3. CLASS I SIGN PANELS SHALL BE FASTENED TO THE U-2 POST WITH 2- IN. STOVE BOLTS AND TO TIMBER POSTS WITH 2- IN. MACHINE BOLTS. SEE STANDARD PLANS S-614-20 AND S-614-22 FOR EXCEPTIONS.
4. A WASHER SHALL BE PLACED BETWEEN THE BOLT HEAD AND THE FACE OF THE SIGN PANEL. A 1 IN. DIA. WASHER SHALL BE PLACED UNDER THE NUT ON THE BACK OF THE TIMBER POST.
5. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED OR CADMIUM PLATED.
6. ALL SIGNS SHALL BE FABRICATED USING RETROREFLECTIVE SHEETING CONFORMING TO ASTM D4958. THE TYPE SHALL BE AS DESCRIBED IN THE CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SECTION 630.02 AND/OR AS SHOWN ON THE PLANS.
7. FOR SIGN PLACEMENT SEE STANDARD PLAN S-614-1.
8. U-2 POSTS MAY ONLY BE USED FOR DELINEATORS, MILE MARKERS AND STRUCTURE NUMBER PLAQUES. "U" SHAPE STEEL POSTS SHALL BE A UNIFORM FLANGED CHANNEL SECTION MADE FROM HOT ROLLED STRUCTURAL STEEL, RE-ROLLED RAIL STEEL, OR NEW BILLET STEEL HAVING A MINIMUM YIELD STRENGTH OF AT LEAST 30,000 PSI, AND A MINIMUM TENSILE STRENGTH OF AT LEAST 50,000 PSI. "U" SHAPE POSTS SHALL WEIGH 2 LBS/FT, EXCEPT THAT A MILL TOLERANCE OF MINUS 3 % OF THE WEIGHT OF ANY ONE POST WILL BE ALLOWED. "U" SHAPE POSTS SHALL HAVE 1/2 IN. HOLES DRILLED OR PUNCHED ON 1 IN. OR 2 IN. CENTERS FOR THE TOP 4 FEET OF THE POST AS A MINIMUM, WITH THE FIRST HOLE 1 IN. FROM THE TOP OF THE POST. COLOR OF POSTS SHALL BE INTERSTATE GREEN.
9. VERTICAL SPACING BETWEEN PANELS ON THE SAME POST SHALL BE 1 IN. TO 1 IN.



TYPICAL CLASS I GROUND SIGNS

95% DESIGN SUBMITTAL 2/13/22
NOT FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY SPECIAL	
SIGN SYSTEM (CLASS I SIGNS)	
NO SCALE ADAPTED FROM CDOT S-614-2	
	SPECIAL 633-C

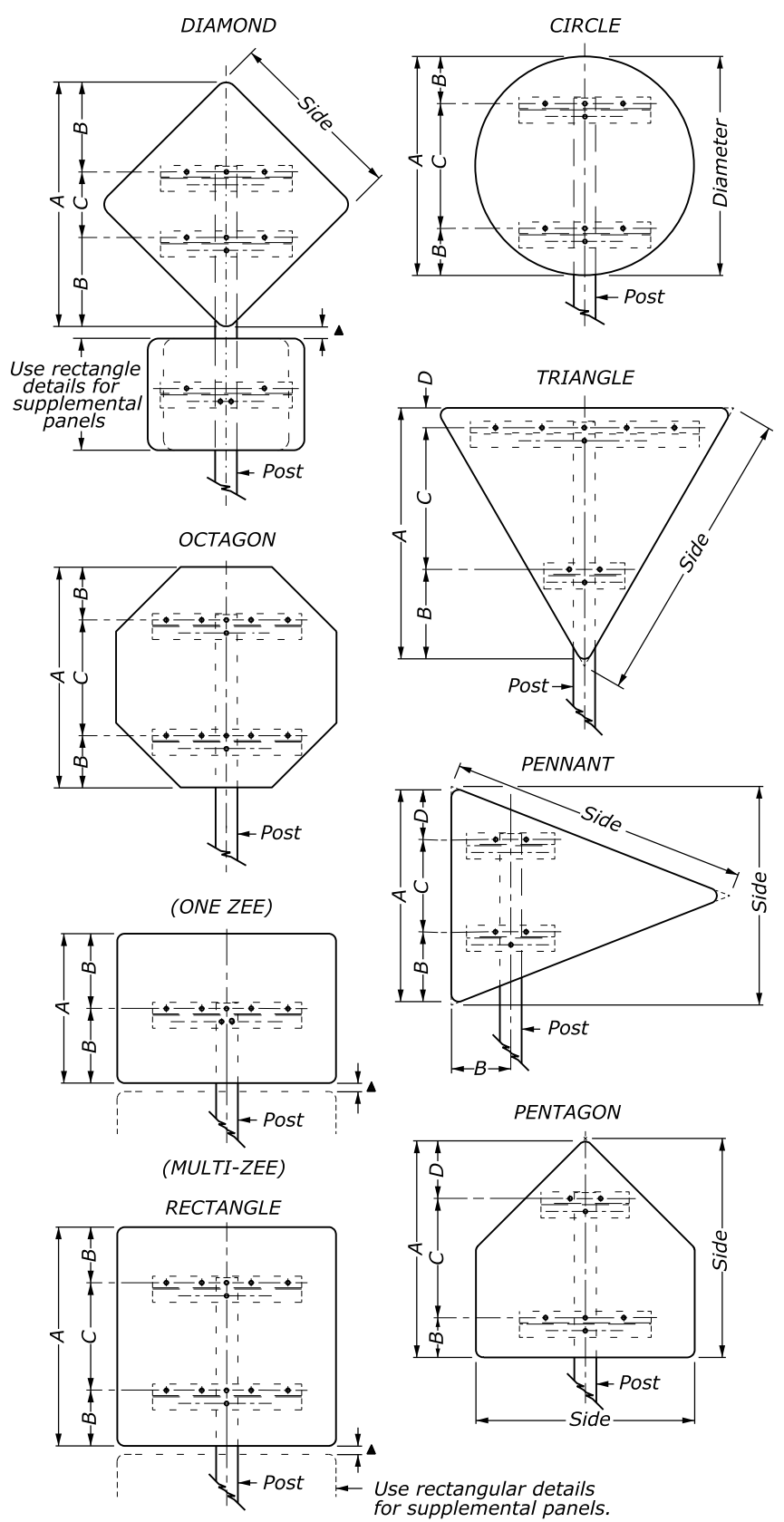
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NOTE:

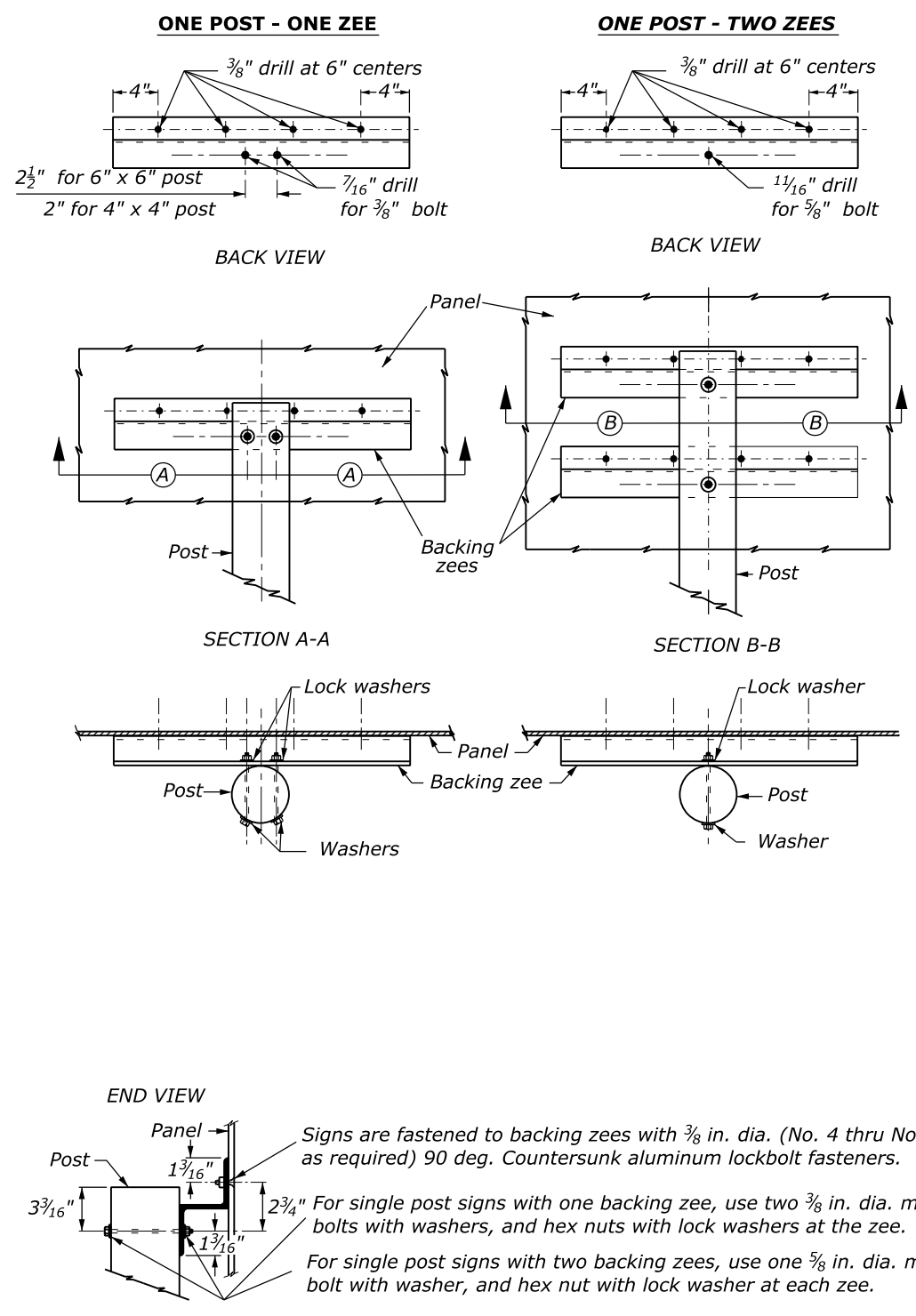
- Class II sign panels are those that require at least one, but no more than two backing zeos (these will be sign panels that are less than 72 in. in height) unless they are attached to a Class III assembly. All Class II panels have a 0.100 in. minimum thickness single sheet aluminum.
- Z-Bar length shall be 3 in. ($\pm 1/2$ in.) short of the edge of the sign on both sides.
- For tubular steel post information, see Special 633-E (CDOT standard plan 614-8).
- Backing zeos are 3 in. x $2\frac{1}{16}$ in. x 2.33, 6061-T6 aluminum alloy weighing 2.33 lbs. per foot.
- For sign placement, see Special 633-B.
- Fabricate all signs using retroreflective sheeting conforming to ASTM D4956. The type shall be as described in the standard specifications and/or as shown on the plans.
- Bolts, nuts and metal washers are galvanized or cadmium plated.
- Vertical spacing between panels is 1 in. to $1\frac{1}{2}$ in.

CLASS II PANEL MOUNTING DATA (*TIMBER POSTS)					
SIGN TYPE	A	B	C	D	POST SIZE
DIAMOND, 36" SIDES	49 $\frac{1}{16}$ "	14 $\frac{1}{32}$ "	21"	—	6" x 6"
48" SIDES	65 $\frac{3}{8}$ "	20 $\frac{3}{16}$ "	25"	—	6" x 6"
60" SIDES	81 $\frac{1}{2}$ "	25 $\frac{3}{4}$ "	30"	—	6" x 6"
TRIANGLE, 36" SIDES	29 $\frac{3}{16}$ "	14 $\frac{3}{16}$ "	9"	6"	4" x 4"
48" SIDES	38 $\frac{1}{16}$ "	14 $\frac{3}{16}$ "	18"	6"	4" x 4"
60" SIDES	48"	20"	22"	6"	6" x 6"
OCTAGON, 36" x 36"	36"	9"	18"	—	6" x 6"
48" x 48"	48"	12"	24"	—	6" x 6"
CIRCLE, 36" DIAMETER	36"	8"	20"	—	6" x 6"
PENNANT, 48" x 36" SIDES	34"	10 $\frac{3}{4}$ "	15"	8 $\frac{1}{4}$ "	4" x 4"
64" x 48" SIDES	45"	12 $\frac{1}{2}$ "	21 $\frac{1}{2}$ "	11"	6" x 6"
PENTAGON, 36" SIDES	35"	6"	20"	9"	4" x 4"
48" SIDES	46 $\frac{3}{4}$ "	9"	25 $\frac{3}{4}$ "	12"	6" x 6"
RECTANGLE					
WIDTH	HEIGHT				
36"	24"	24"	12"	—	4" x 4"
48"	24"	24"	12"	—	6" x 6"
36" to 60"	30"	30"	9"	12"	6" x 6"
36" to 60"	36"	36"	9"	18"	6" x 6"
36" to 60"	42"	42"	9"	24"	6" x 6"
36" to 60"	48"	48"	12"	24"	6" x 6"
48"	54"	54"	12"	30"	6" x 6"
48" to 60"	60"	60"	12"	36"	6" x 6"
SUPPLEMENTAL PANELS					
RECTANGLE, 24" x 18"	18"	9"	—	—	4" x 4" or 6" x 6"
48" x 18"	18"	9"	—	—	6" x 6"
24" x 24"	24"	12"	—	—	6" x 6"
36" x 24"	24"	12"	—	—	6" x 6"
48" x 36"	36"	9"	18"	—	6" x 6"

*For additional Class II sizes that utilize steel posts, See Special 633-D (CDOT 614-8).



TYPICAL PANEL DETAILS



TYPICAL BACKING ZEES

Signs are fastened to backing zeos with $\frac{3}{8}$ in. dia. (No. 4 thru No. 10, as required) 90 deg. Countersunk aluminum lockbolt fasteners.

For single post signs with one backing zee, use two $\frac{3}{8}$ in. dia. machine bolts with washers, and hex nuts with lock washers at the zee.

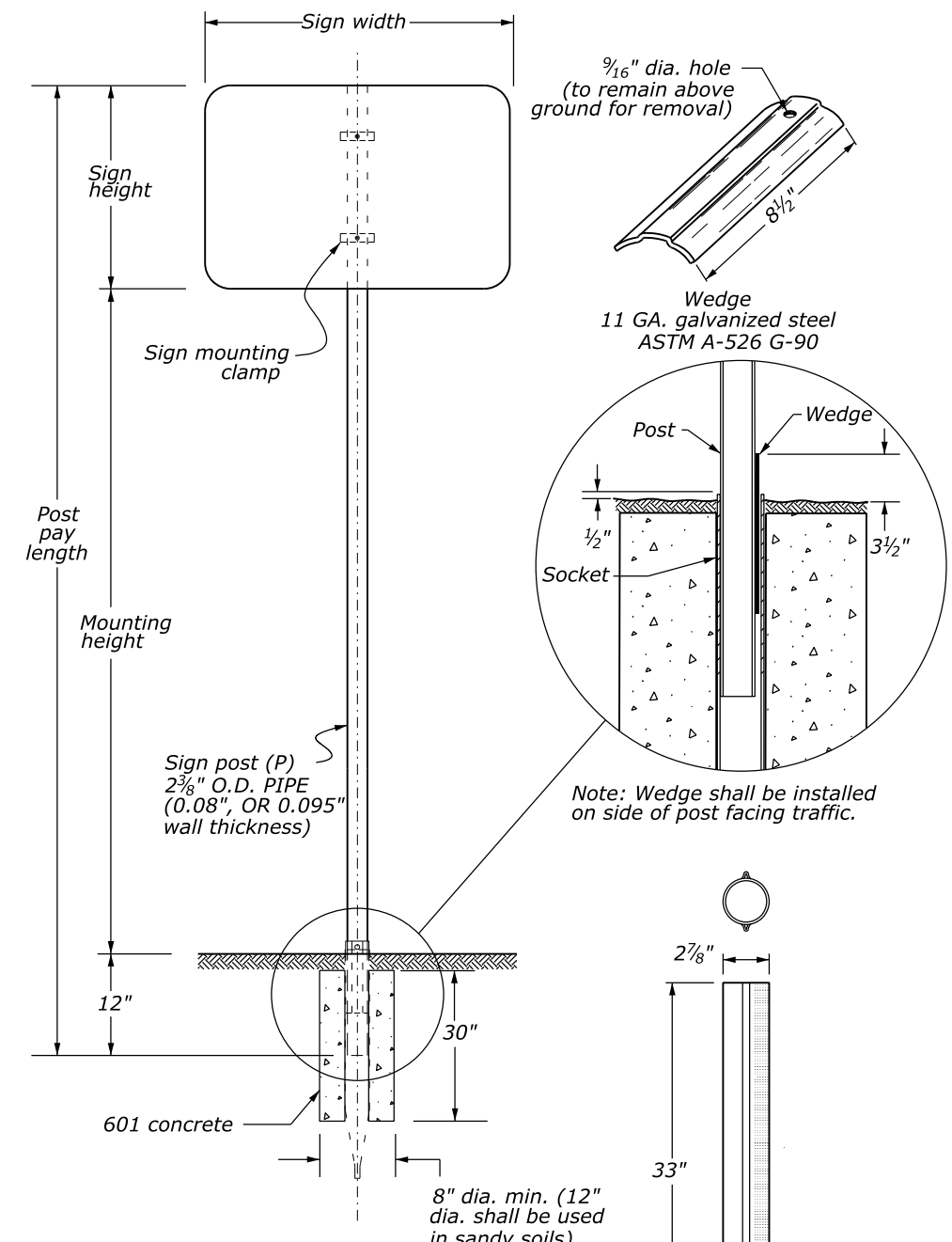
For single post signs with two backing zeos, use one $\frac{5}{8}$ in. dia. machine bolt with washer, and hex nut with lock washer at each zee.

NO SCALE
ADAPTED FROM
CDOT S-614-3

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY SPECIAL	
SIGN SYSTEM (CLASS II SIGNS)	
SPECIAL 633-D	

SIGNPOST SELECTION GUIDE (90 MPH WIND LOAD DESIGN)
(FOR SOCKET SYSTEM AND SLIPBASE INSTALLATIONS USING P, P1 OR P2 POSTS)

TUBULAR STEEL POSTS (SOCKET SYSTEM) (FOR USE WITH ALL P-POST INSTALLATIONS)
(SEE SHEET 2 FOR P1 AND P2 POST INSTALLATIONS)



POST NOTES

The post may be pre-punched with 3/8" dia. holes and the sign mounted directly to the post, or an approved mounting clamp may be used to mount the sign to the post. If the post is pre-punched, the holes shall be spaced the following distances from the top:

- 1", 3", 10", 16", 21", 23", 24", 27", 33", 37", 39", and 45"

Tubular concrete footing
12 GA. galvanized steel ASTM - 787

SIGN HEIGHT (FT)	7' MOUNTING HEIGHT									8' MOUNTING HEIGHT									9' MOUNTING HEIGHT											
	SIGN WIDTH (FT)									SIGN WIDTH (FT)									SIGN WIDTH (FT)											
	1	2	2.5	3	4	5	6	7	8	9	1	2	2.5	3	4	5	6	7	8	9	1	2	2.5	3	4	5	6	7	8	9
1	P	P	P	P	P	P1	SIZES NOT USED			1	P	P	P	P	P	P1	SIZES NOT USED			1	P	P	P	P	P	P1	SIZES NOT USED			
2	P	P	P	P	P	P1	SIZES NOT USED			2	P	P	P	P	P1	P1	SIZES NOT USED			2	P	P	P	P	P1	P1	SIZES NOT USED			
2.5	P	P	P	P	P1	P1	SIZES NOT USED			2.5	P	P	P	P1	P1	P1	SIZES NOT USED			2.5	P	P	P	P1	P1	P1	SIZES NOT USED			
3	P	P	P	P1	P1	P1	SIZES NOT USED			3	P	P	P1	P1	P1	P1	SIZES NOT USED			3	P	P	P1	P1	P1	P1	SIZES NOT USED			
4	P	P1	P1	P1	P1	P1	SIZES NOT USED			4	P	P1	P1	P1	P1	P1	SIZES NOT USED			4	P	P1	P1	P1	P1	P1	SIZES NOT USED			
5	SIZES NOT USED		P1	P1	P1	P1	SIZES NOT USED			5	SIZES NOT USED		P1	P1	P1	▼P2	SIZES NOT USED			5	SIZES NOT USED		P1	P1	P1	▼P2	SIZES NOT USED			
6	SIZES NOT USED		P1	P1	P1	▼P2	SIZES NOT USED			6	SIZES NOT USED		P1	P1	P1	▼P2	SIZES NOT USED			6	SIZES NOT USED		P1	P1	▼P2	TWO P1'S	TWO P2'S		SIZES NOT USED	
7	SIZES NOT USED		P1	P1	▼P2	TWO P1'S	TWO P2'S		SIZES NOT USED	7	SIZES NOT USED		P1	P1	TWO P1'S	TWO P2'S	SIZES NOT USED		7	SIZES NOT USED		P1	P2	TWO P1'S	TWO P2'S	SIZES NOT USED		SIZES NOT USED		

▼ See CHART NOTE 4.

POST SPECIFICATIONS

POST SIZE	OUTSIDE DIAMETER	WALL THICKNESS	MATERIAL	** COATING	MAX ALLOW MOMENT	PAID FOR AS:
P	2.375"	.080"	ASTM-513	ASTM A-653 G-210 with 3.0 MIL	1.47 kip ft	Sign System
P1	2.875"	.160"	ASTM-513	Polymer coating per ASTM A123 clear coating	4.02 kip ft	Sign System
P2	2.875"	.276"	ASTM-500	GC hot dipped per ASTM-123	5.13 kip ft	Sign System

**Color powder coating may be added according to manufacturer specifications for special locations when shown on the plans.

CHART NOTES:

- Typical post mounting heights from ground to bottom of sign panel are 7, 8 or 9 feet. Other heights may be required when signs are mounted on steeper fill or cut slopes.
- For signs mounted on two posts, the minimum distance between posts is 2 feet and the maximum distance is 8 feet. Distance from post to edge of sign panel(s) is 0 to 4 inches. When backing zeos are used, install posts with a minimum of 2 inches to the edge of the backing zee.
- Mount all sign panels greater than 60 inches in width on two posts to prevent turning.
- The post sizes shown are the minimum sizes required. Two P1 posts may be substituted where one P2 post is indicated. P2 posts may be substituted for P1 posts when shown or as directed by the CO.

GENERAL NOTES:

- Signs between 37 in. and 60 in. width with one post installation require a T or U sign support bracket in addition to the backing zee requirements. When shown or directed by the CO, sign panels less than 48 in. width may be attached directly to T or U brackets without zeos.
- U-brackets may be used for multiple sign installations.
- For backing zee requirements and details, see Special 633-D (CDOT S-614-3).

NO SCALE
**ADAPTED FROM
CDOT S-614-8**

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL

**TUBULAR STEEL SIGN
SUPPORT DETAILS**

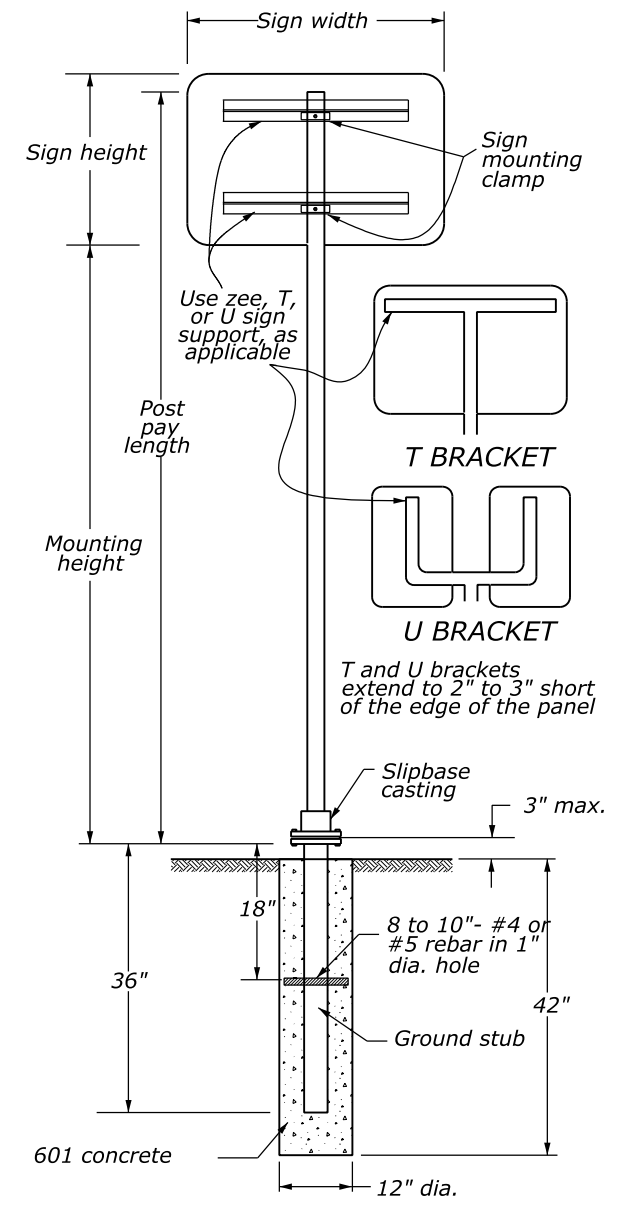
SHEET 1 OF 7

SPECIAL
633-E

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**DIMENSIONS FOR MOUNTING CLAMP
(ALL DIMENSION ARE IN INCHES)**

STANDARD PIPE SIZE	A	B	C	D	E	F	G	K	L	R ₁	R ₂
2	3 ³ / ₄	2 ³ / ₄	1 ¹ / ₂	1 ¹ / ₈	1/2	3/16	1	2 ¹ / ₁₆	1 ⁷ / ₃₂	1 ¹ / ₄	1 ³ / ₁₆
2 ¹ / ₂	4 ¹ / ₄	3 ¹ / ₄	2	1 ¹ / ₄	1/2	1/4	1	3 ³ / ₁₆	1 ⁵ / ₃₂	1 ¹ / ₂	1 ⁷ / ₁₆

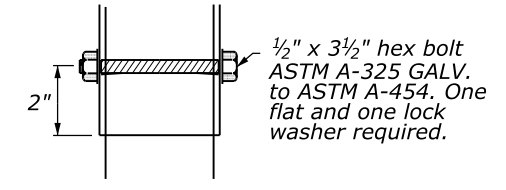


**TUBULAR STEEL POST
(WITH SLIPBASE)
(FOR USE WITH ALL P1 AND P2 POST INSTALLATIONS)
(SEE SHEET 1 FOR P-POST INSTALLATIONS)**

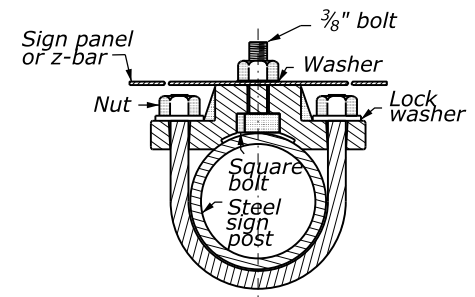
GENERAL NOTE

Install the posts per the manufacturer's recommendations without additional compensation.

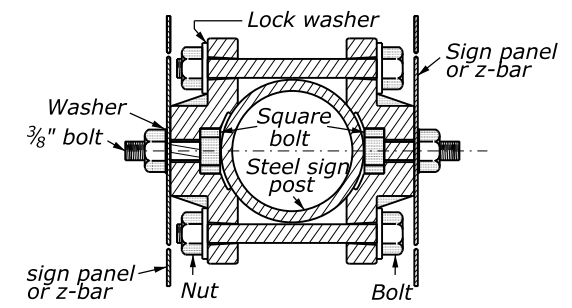
T AND U BRACKET ATTACHMENT



TYPICAL SINGLE BRACKET



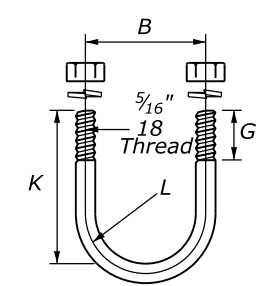
TYPICAL BACK TO BACK



DETAILS FOR SIGN PANEL ATTACHMENT

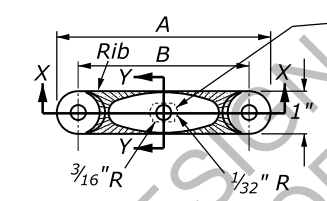
PIPE CLAMP CASTING

Pipe clamp casting shall be ASTM B26 or B108 aluminum alloy A444.0-T4 or 356.0-F. All sign mounting clamp parts not made from aluminum shall be galvanized steel in conformance with ASTM A153 or stainless steel.

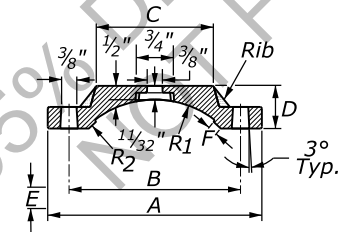


U-bolt to be made in accordance with standard manufacturing procedure. 1/4" or 5/16" diameter stock is permissible. American standard regular semi-finished hex nuts and spring lockwashers.

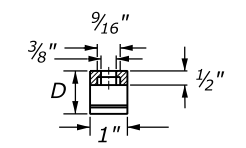
U-BOLT



Slot to hold head of 3/8" hex head bolt. The bolt shall be 1 1/4" long, with full threads, a medium washer, and galvanized steel or aluminum self-locking hex head nut. The bolt head must not turn in the slot.



SECTION X-X



SECTION Y-Y

MOUNTING CLAMP FOR SOCKET OR SLIPBASE

NO SCALE
**ADAPTED FROM
CDOT S-614-8**

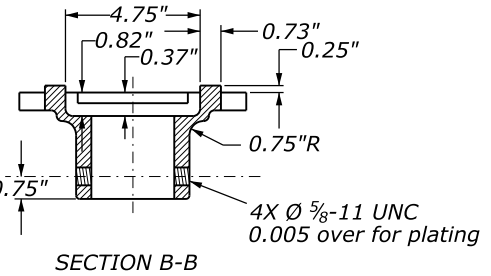
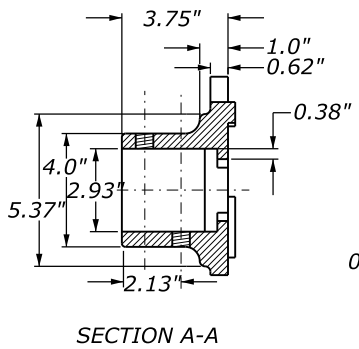
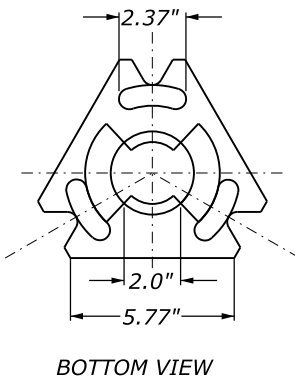
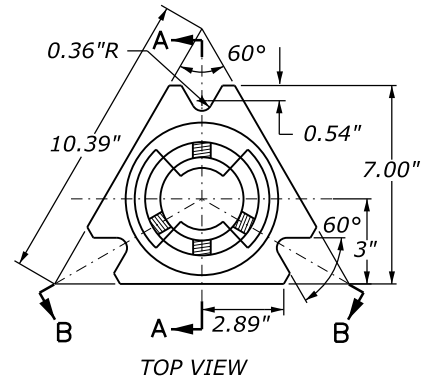
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL
**TUBULAR STEEL SIGN
SUPPORT DETAILS**

SHEET 2 OF 7

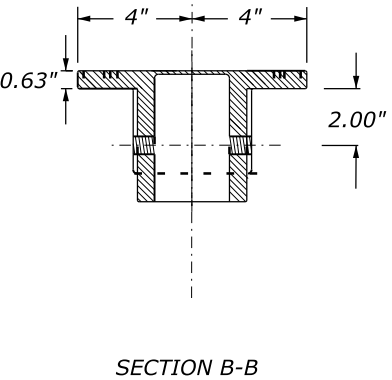
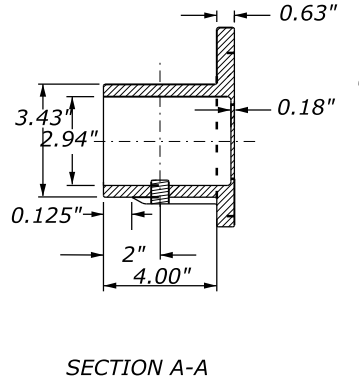
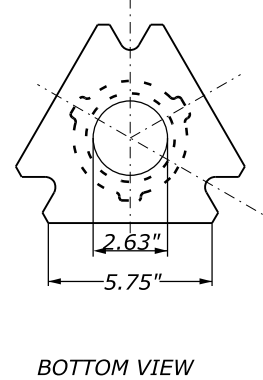
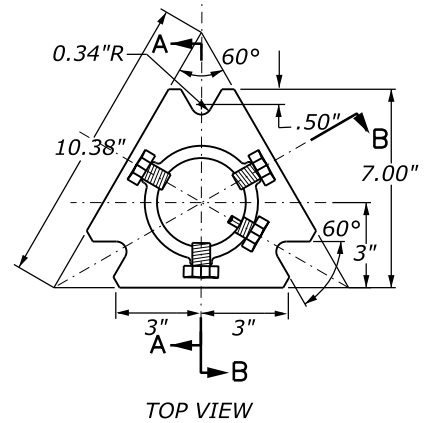
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633-E

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SLIPBASE CASTING 1

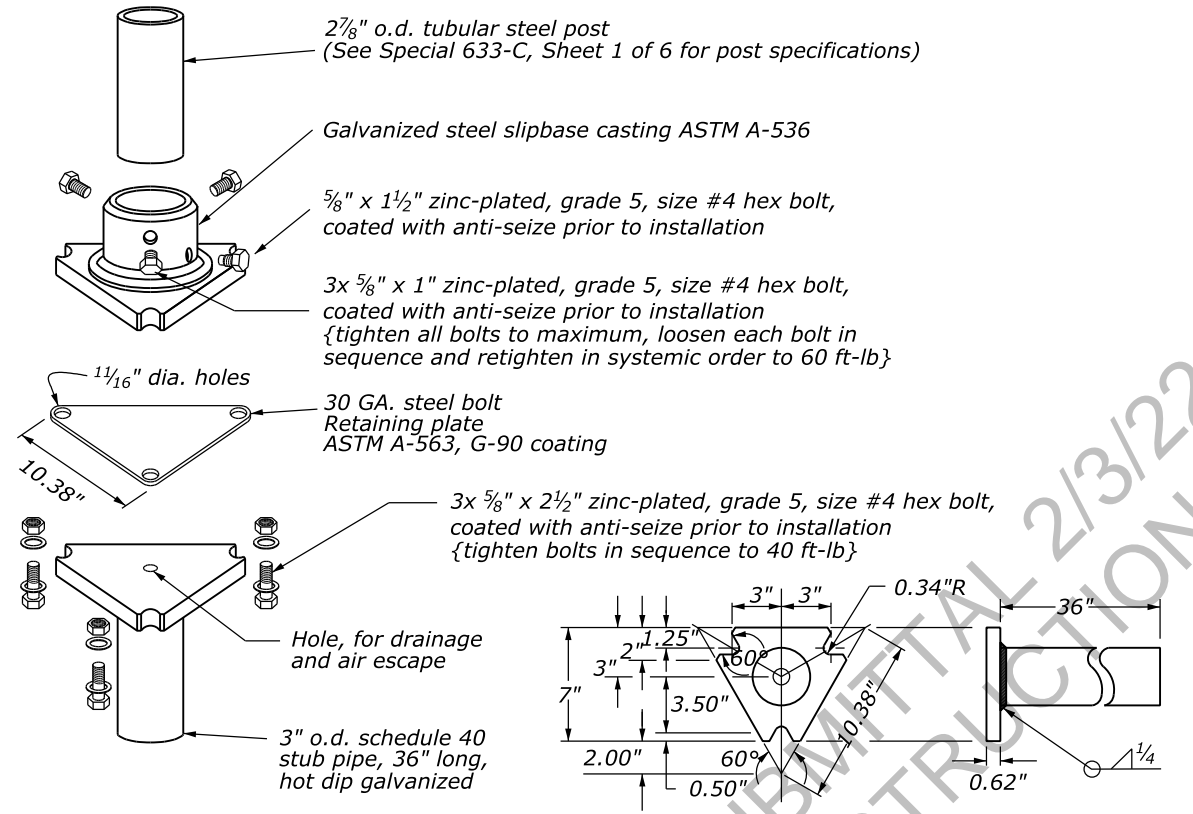
Direction of travel



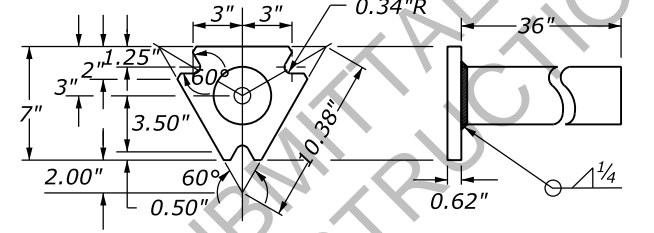
SLIPBASE CASTING 2

Direction of travel

STEEL SIGN SUPPORT SLIPBASE INSTALLATION



TYPICAL ASSEMBLY



SLIPBASE STUB BASE

SLIPBASE CASTING REQUIREMENTS

- For 2-7/8 inch posts (P1 or P2 posts)
galvanized steel slipbase casting ASTM-536
- Mounting Hardware
 - 3 - Each 5/8 x 2 1/2 inch long hex bolt
 - 3 - Each 5/8 x 1 inch long zinc-plated, grade 5 size #4 hex bolt
 - 1 - Each 5/8 x 1 1/2 inch long zinc-plated, grade 5 size #4 hex bolt
 - 1 - Each 30 gauge steel bolt retaining plate ASTM A563, G90 coating
- All hardware will be galvanized or zinc plated.
- All hex bolts shall be coated with anti-seize prior to installation

TUBULAR STEEL SIGN SUPPORT SLIPBASE NOTES

1. Refer to signing plans for sign locations.
2. Minimum allowable tension capacity for wedge anchors = 3000 lbs.
3. Maximum allowable moment for sign base = 5.13 kip-ft.

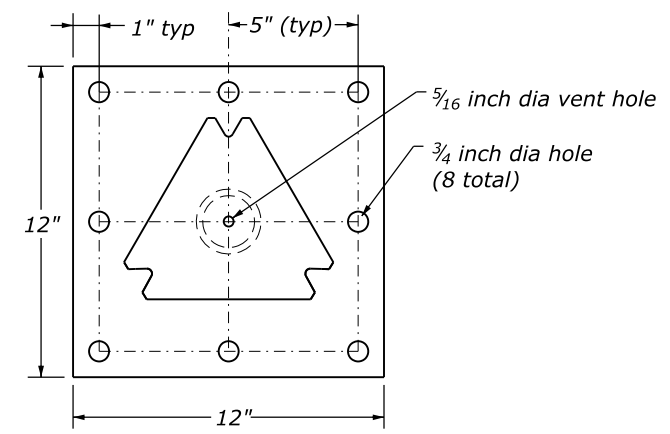
NO SCALE
ADAPTED FROM
CDOT S-614-8

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY SPECIAL TUBULAR STEEL SIGN SUPPORT DETAILS	
SHEET 3 OF 7	
	SPECIAL 633-E

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-25

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SURFACE MOUNT SLIPBASE BASE PLATE FABRICATION REQUIREMENTS

Base Plate: 3/4 inch ASTM A 36 plate steel
 Pipe Stub: 3 inch nominal schedule 80, ASTM A 500 GR B
 Top Plate: Must be compatible with slipbase casting from Special 633-E, SHEET 3.
 Meet ASTM A 123 galvanizing after fabrication is completed.

SURFACE MOUNT SLIPBASE TUBULAR STEEL SIGN BASE REQUIREMENTS

For 2-7/8 inch posts (P1 or P2 posts)
 For concrete surfaces greater than 7 inches thick
 For concrete surfaces greater than 12 inches in width

Mounting Hardware

- 8 - Each 5/8 x 5 1/2 inch long "HILTI KWIK HUS-EZ screw anchors
- 16 - Each 5/8 inch flat washers
- 8 - Each 5/8 inch lock washers
- 8 - Each 5/8 inch nuts

Installation Requirements:

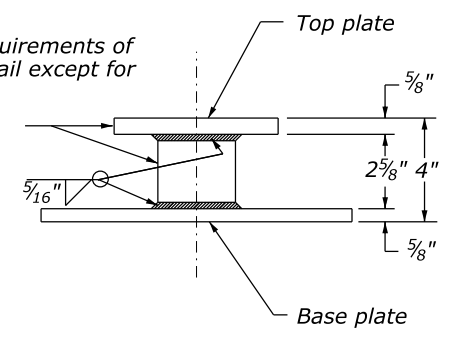
Drill: (8) - 5/8 inch holes 6 inch deep, clean hole prior to installing anchors
 Use additional washers for shimming to level base plate.

All hardware will be galvanized or zinc plated.

TUBULAR STEEL SIGN SUPPORT SURFACE MOUNT SLIPBASE NOTES

1. Refer to signing plans for sign locations.
2. Refer to Special 633-F for slipbase casting information
3. Minimum allowable tension capacity for wedge anchors = 3000 lbs.
4. Maximum allowable moment for sign base = 5.13 kip-ft.

Slipbase will meet requirements of slipbase stub post detail except for overall height.

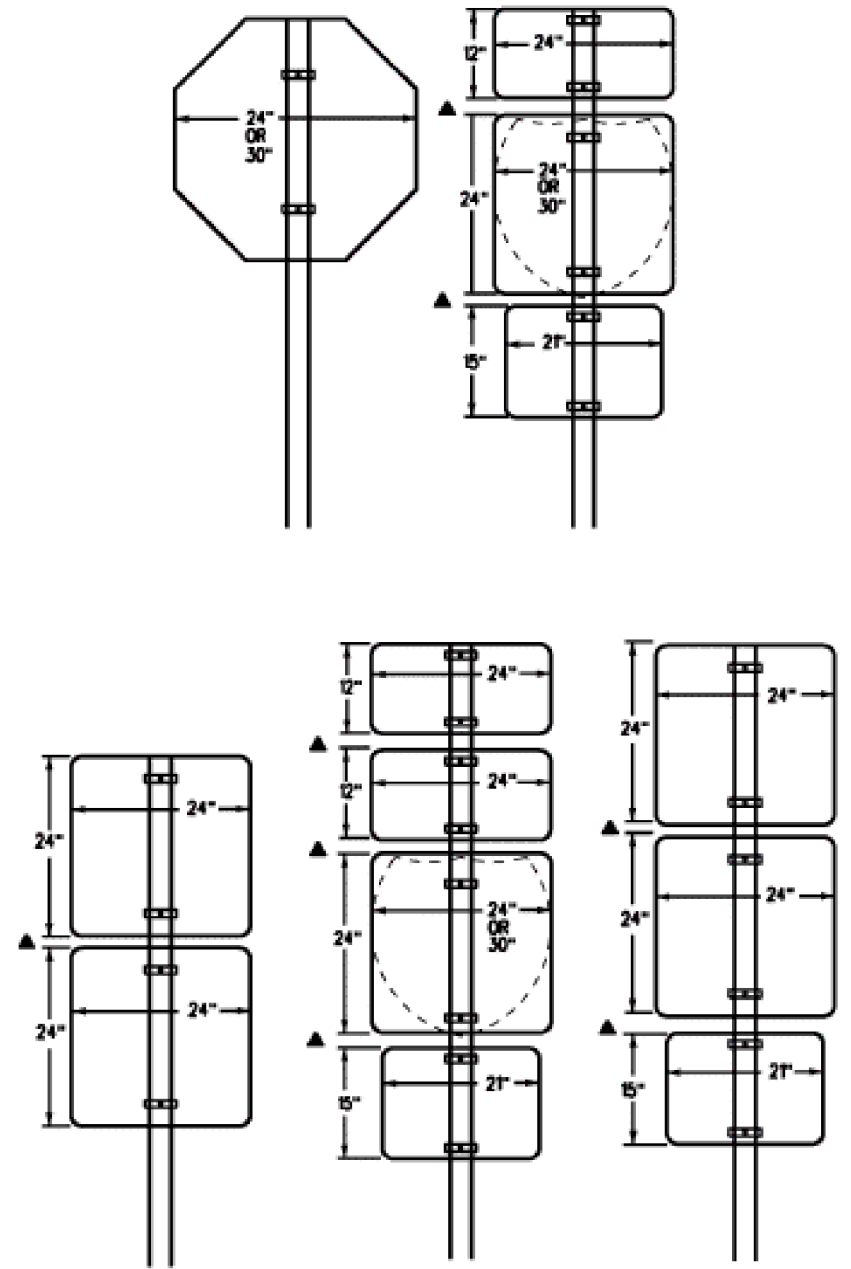


SURFACE MOUNT SLIPBASE BASE PLATE

NO SCALE
 ADAPTED FROM
 CDOT S-614-8

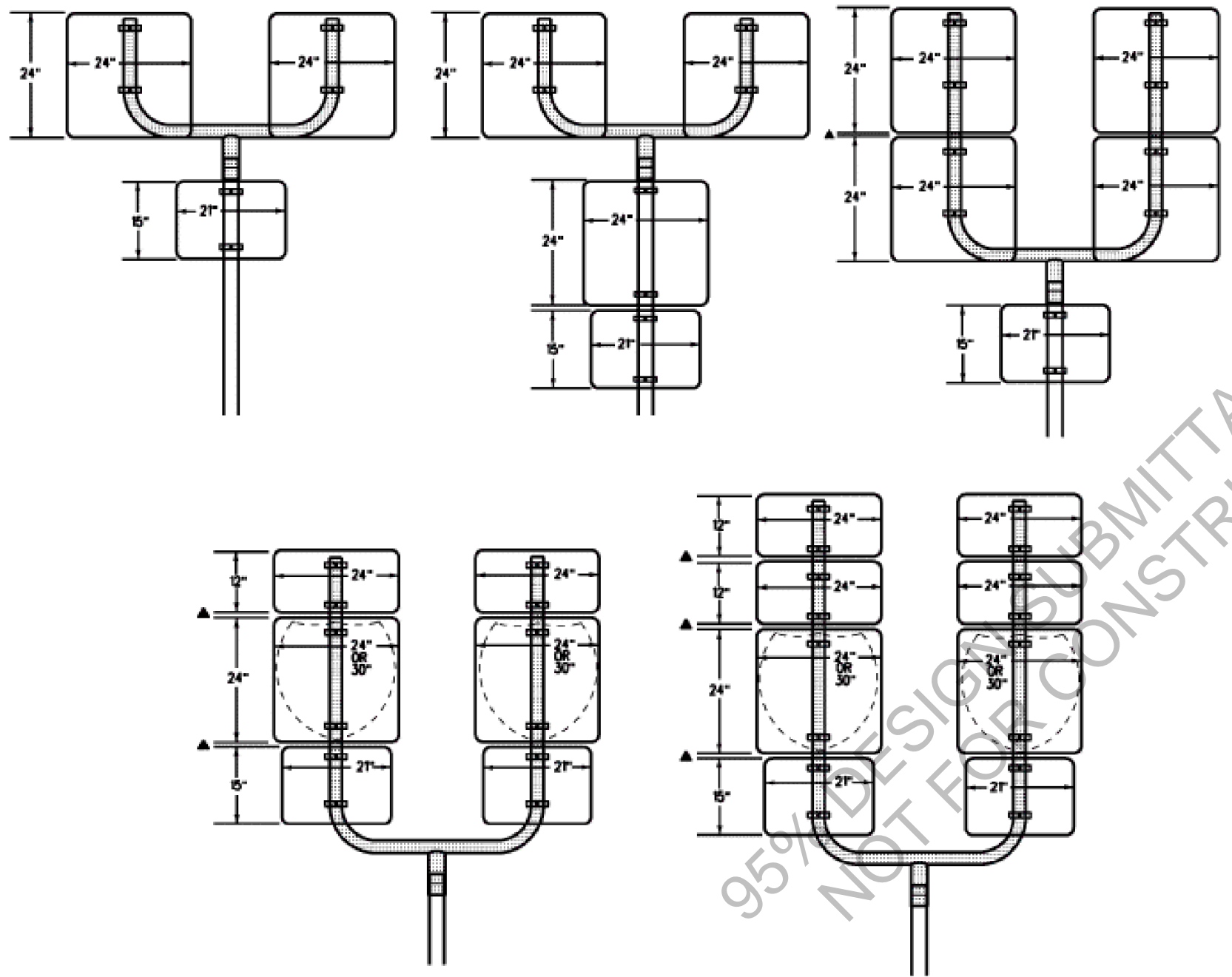
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY SPECIAL TUBULAR STEEL SIGN SUPPORT DETAILS	
SHEET 4 OF 7	
SPECIAL 633-E	

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CLASS I SIGN COMBINATIONS (DIRECT ATTACHMENT)

▲ SEE NOTE 6 ON SHEET 5



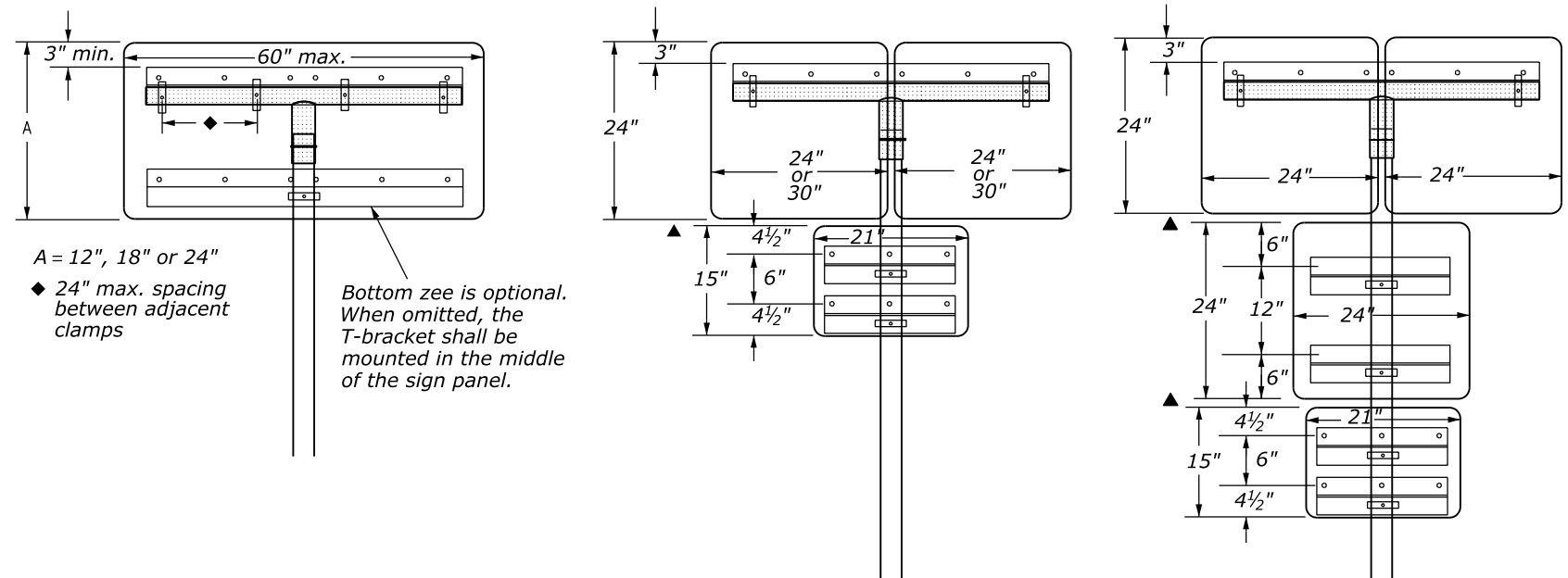
CLASS I SIGN COMBINATIONS USING U-BRACKETS

NO SCALE
ADAPTED FROM
CDOT S-614-8

95% DESIGN SUBMITTAL 2/3/22
 NOT FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY SPECIAL TUBULAR STEEL SIGN SUPPORT DETAILS	
SHEET 5 OF 7	
SPECIAL 633-E	

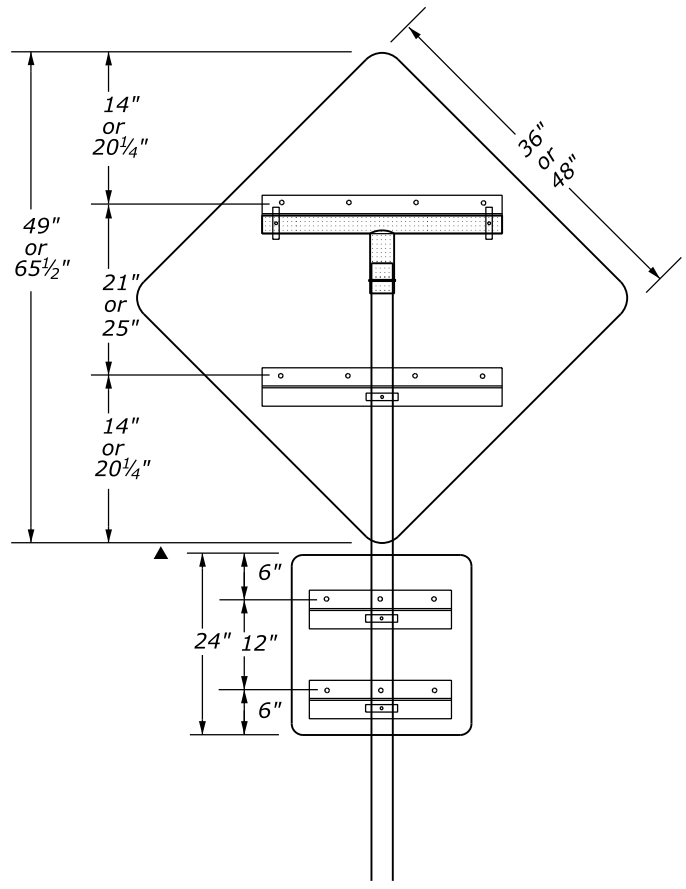
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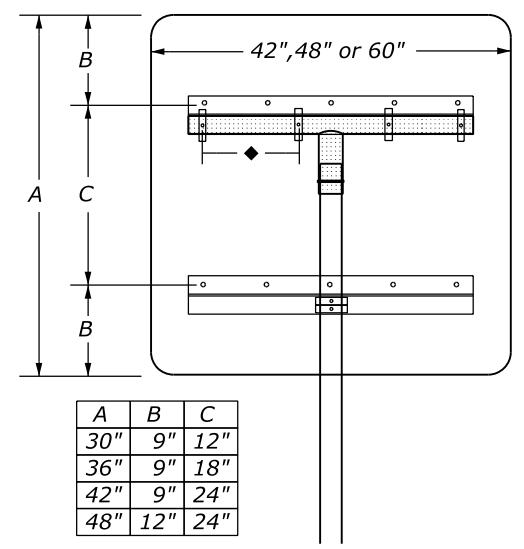
A = 12", 18" or 24"
 ♦ 24" max. spacing between adjacent clamps
 Bottom zee is optional. When omitted, the T-bracket shall be mounted in the middle of the sign panel.

PANEL WIDTHS	ZEE LENGTH
21"	15"
24"	18"
30"	24"
36"	30"
42"	36"
45"	39"
48"	42"
54"	48"
60"	54"
36" diamond	22"
48" diamond	36"
24" & 24"	43"
24" & 30"	49"
30" & 30"	55"
36" & 36"	67"
45" & 36"	76"
24" & 24" & 24"	68"
24" & 24" & 30"	74"
24" & 30" & 24"	74"
30" & 24" & 30"	80"
24" & 30" & 30"	80"
30" & 30" & 30"	86"

- GENERAL NOTES:**
- Z-bar length is 3 in. ($\pm 1/2$ in.) short of the edge of the sign or row of signs on both sides. The accompanying table gives the Z-bar length for most typical panel combinations.
 - First and last holes shall be 2 in. from edge of Z-bar. The holes in between shall be 6 in. to 8 in. apart.
 - T and U brackets shall terminate 2 in. to 3 in. from edge of sign panel. When a zee is connected to a T-bracket, they shall be the same length except when the zee must extend beyond the maximum length of a T-bracket.
 - Two mounting clamps are required on zeos where there is only one zee for the panel and the zee is attached to only one post.
 - Attach Zeos to T-brackets and U-brackets with U-bolts or mounting clamps.
 - Vertical spacing between sign panels is 1 in. to 1 in. typical.
 - In special cases U-brackets may be used to mount signs that face different directions. The CO may determine the orientation of the sign panels and verify that the maximum allowable wind loads for the post are not exceeded.

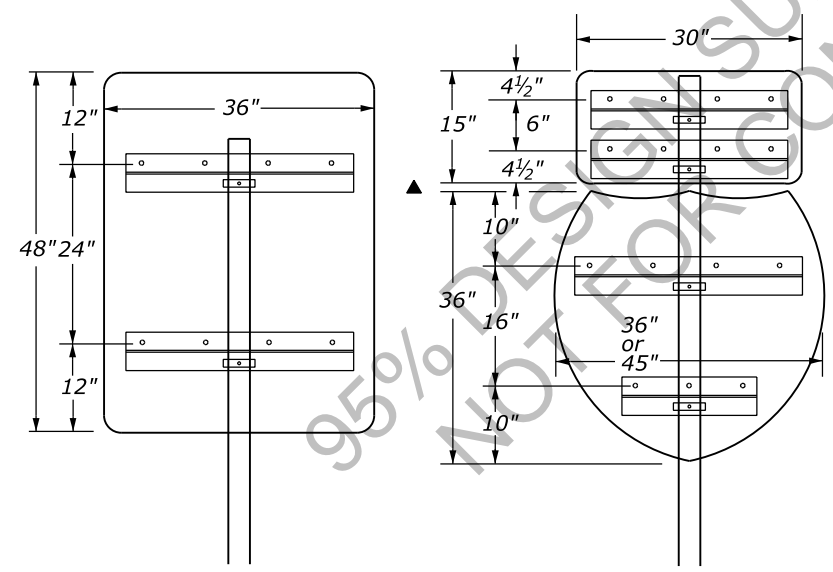


CLASS II SIGN COMBINATIONS USING T-BRACKETS WITH Z-BAR



A	B	C
30"	9"	12"
36"	9"	18"
42"	9"	24"
48"	12"	24"

♦ 24" max. spacing between adjacent clamps

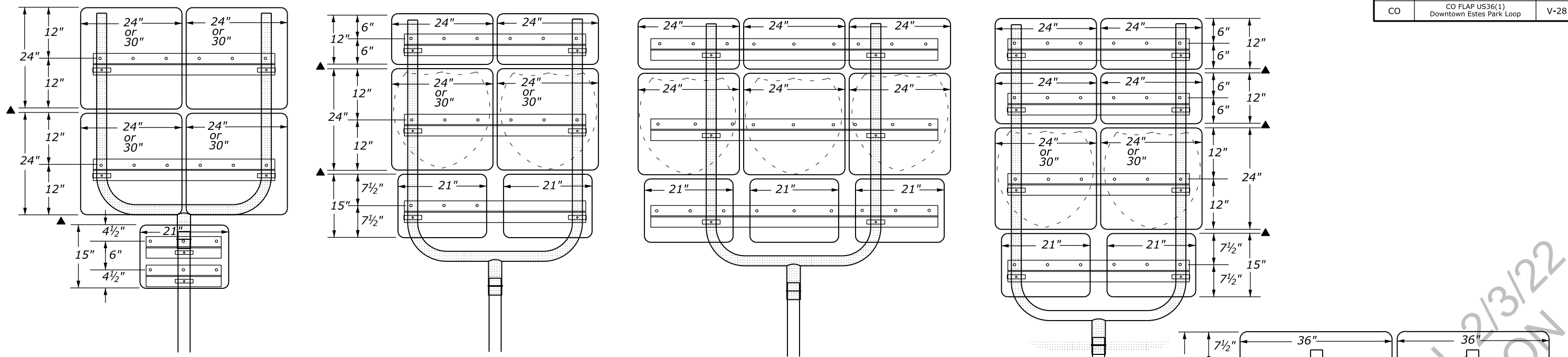


SINGLE POST CLASS II SIGNS USING Z-BAR

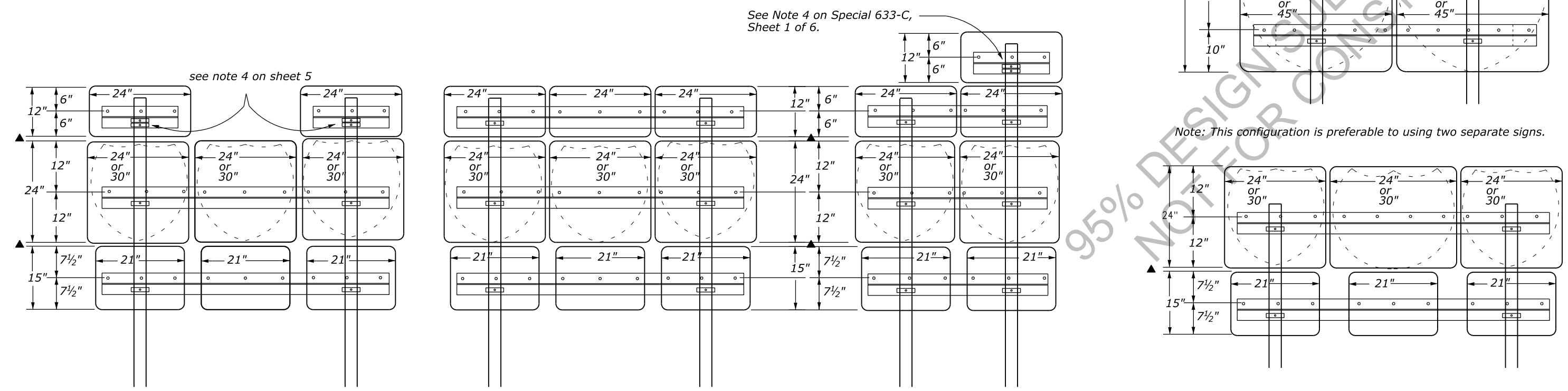
NO SCALE
 ADAPTED FROM
 CDOT S-614-8

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION
 U.S. CUSTOMARY SPECIAL
TUBULAR STEEL SIGN SUPPORT DETAILS
 SHEET 6 OF 7
 SPECIAL
 633-E

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CLASS II SIGN COMBINATIONS USING U-BRACKETS



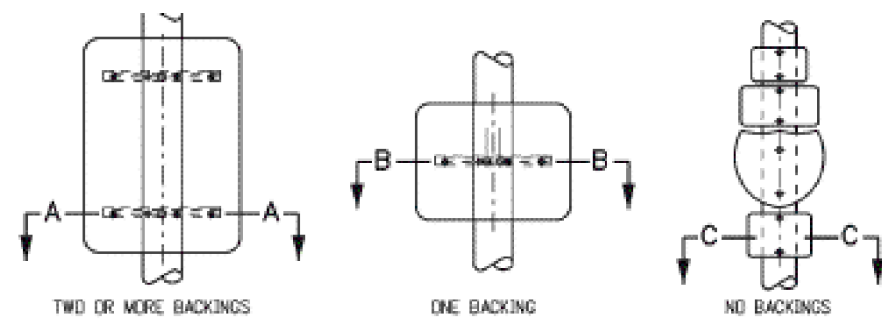
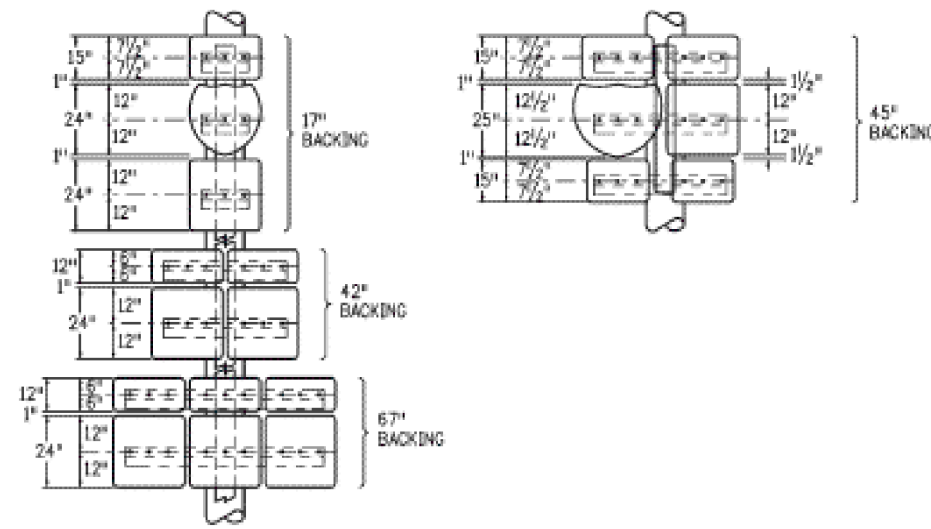
CLASS II SIGN COMBINATIONS USING TWO POSTS

GENERAL NOTES:

- ▲ 1. Vertical spacing between sign panels is 1 in. typical.

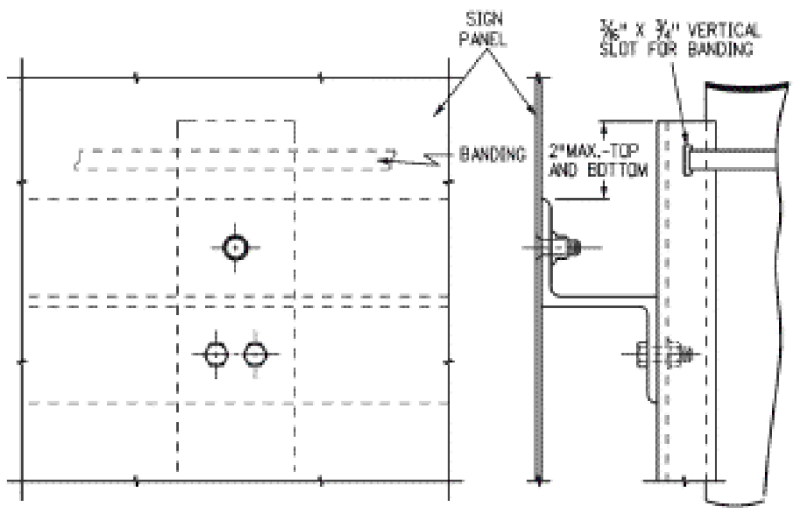
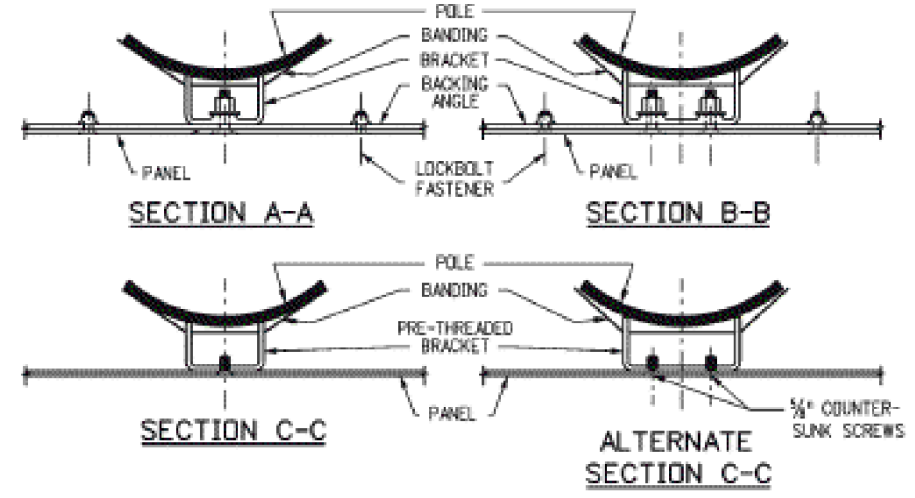
NO SCALE
ADAPTED FROM
CDOT S-614-8

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY SPECIAL TUBULAR STEEL SIGN SUPPORT DETAILS	
SHEET 7 OF 7	
SPECIAL 633-E	



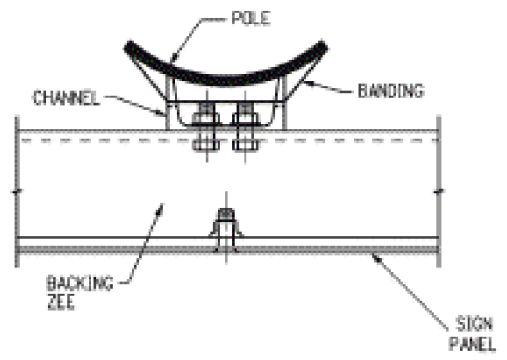
GENERAL NOTES

1. 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.
2. BRAND-NAME ATTACHMENT HARDWARE AND BANDING MATERIAL TO BE APPROVED BY THE ENGINEER.
3. FOR SIGN PANEL FABRICATION, MOUNTING HEIGHT AND HOLE SPACING FOR BACKING ZEES, SEE APPLICABLE STANDARDS.
4. ALL BOLTS, NUTS AND METAL WASHERS, UNLESS MADE OF STAINLESS STEEL, SHALL BE GALVANIZED OR CADMIUM PLATED.
5. ALL HOLES SHALL BE DRILLED OR PUNCHED.
6. 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.
7. 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).

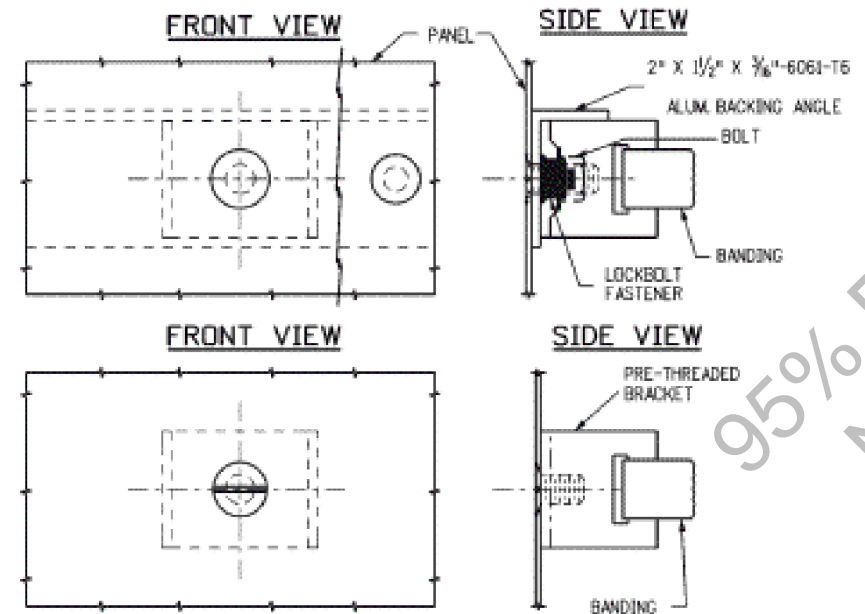


CLASS II MARKER ASSEMBLY FABRICATION NOTES

1. HORIZONTAL AND VERTICAL MEMBERS TO BE THE SAME MATERIAL AS THE SIGN PANEL.
2. VERTICAL MEMBER TO BE 3 IN. X 1.420 LBS. 6061-T6 ALUMINUM CHANNEL BONDED TO THE POLE WITH A MINIMUM OF TWO BANDS.
3. HORIZONTAL MEMBERS TO BE 3 IN. X 2 IN. 2.33 IN. BACKING ZEES, FASTENED TO VERTICAL MEMBER WITH 3/8 IN. MACHINE BOLTS WITH HEX NUT.
4. SIGN PANELS TO BE FASTENED TO HORIZONTAL MEMBERS WITH 3/8 IN. - 90 COUNTERSUNK LOCKBOLT FASTENERS.
5. 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

CLASS I AND II SIGN ASSEMBLY FABRICATION NOTES

1. SHAPES OTHER THAN THE BRACKETS OR BACKING ANGLE SHOWN MAY BE USED.
2. MAXIMUM SPACING BETWEEN PANELS IN ONE ASSEMBLY SHALL BE 1 IN.
3. PANELS MAY BE INSTALLED BACK-TO-BACK ON THE SAME BANDS.
4. IN NO CASE SHALL BOLTS OF LESS THAN 3/8 IN. DIA. BE USED FOR ANY PORTION OF THE ASSEMBLY.
5. ONLY FIBER WASHERS MAY BE USED ON THE FACE OF THE SIGN PANEL.

95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

NO SCALE
**ADAPTED FROM
CDOT S-614-20**

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GENERAL NOTES

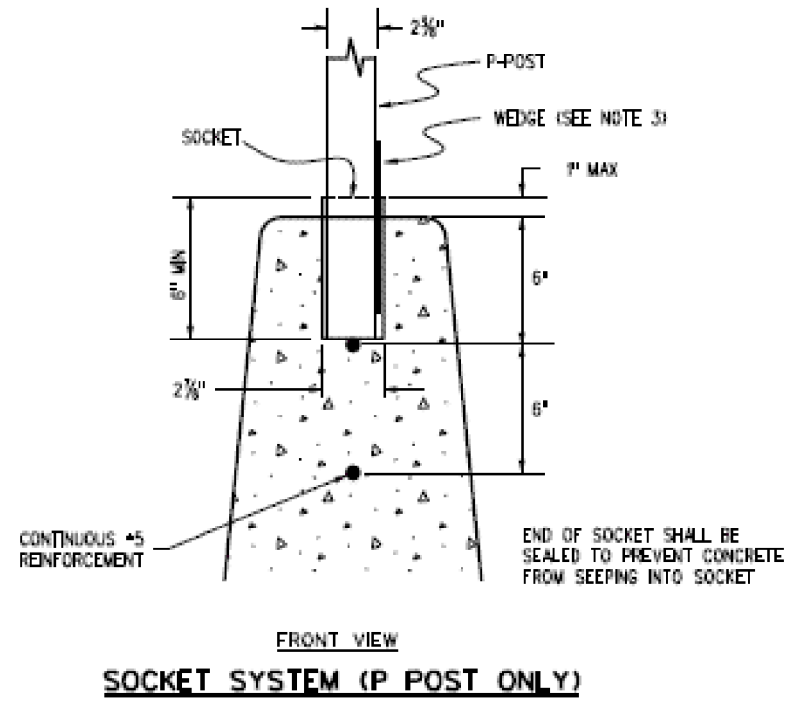
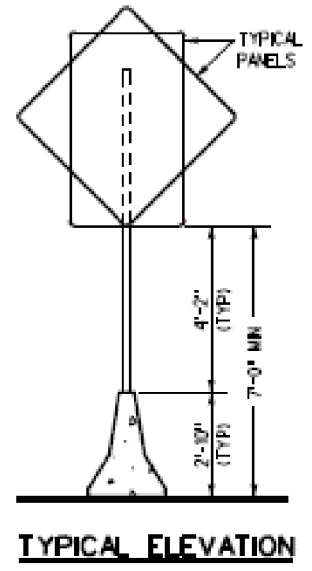
- FOR DETAILS OF CONCRETE BARRIER (CAST-IN-PLACE AND/OR PRECAST), SEE STANDARD PLANS M-606-13, M-606-M, AND M-606-15.
- FOR SIGN PANEL FABRICATION DETAILS, SEE STANDARD PLANS S-614-2, S-614-3, AND S-614-4.
- SOCKET SYSTEMS AND SLIP BASES SHALL BE ASSEMBLED ACCORDING TO STANDARD PLAN S-614-B.
- BARRIER WALLS SHALL BE SUPPORTED TO PREVENT DEFORMATION DURING PLACEMENT OF SLIPBASE STUD OR SOCKET ON CAST-IN-PLACE INSTALLATIONS.
- THE ENGINEER SHALL ESTABLISH LOCATIONS FOR ALL SIGN POSTS IN ACCORDANCE WITH DETAILS SHOWN ON THE PLANS.
- ALL SIGN POSTS SHALL BE MOUNTED PLUMB.
- BOLTS, NUTS, WASHERS AND ANCHOR BOLTS SHALL CONFORM TO ASTM A307. THEY SHALL ALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 OR ASTM A164.
- ALL STEEL CUTS SHALL PREFERABLY BE SAW CUTS; HOWEVER, FLAME CUTTING WILL BE PERMITTED PROVIDED ALL EDGES ARE GRIND.
- MOUNTING SYSTEM FOR EACH SIGN LOCATION SHALL BE AS SHOWN ON THE PLANS.
- ALL WELDING IS TO BE IN ACCORDANCE WITH AWS SPECIFICATIONS OF CURRENT ISSUE AND SHALL BE CONTINUOUS.
- ANCHOR BOLTS FOR RETRO-FIT INSTALLATION SHALL BE HILTI/MIK HUS-E2 SCREW ANCHORS AND SHALL BE DRILLED AND FILLED WITH APPROVED EPOXY GROUT IN 2 INCH HOLES FOR 3/8-INCH BOLTS AND 1 1/2 INCH HOLES FOR 1/2-INCH BOLTS.
- RETRO-FIT INSTALLATION PROCEDURE SHALL NOT BE USED ON NEW CONSTRUCTION WITHOUT APPROVAL OF THE ENGINEER.
- SIGN PANELS, MOUNTED ON CONCRETE BARRIER, SHALL NOT ENCRoACH THE TRAVEL LANE.

**POST SELECTION TABLE
(90 MPH WIND LOAD DESIGN)**

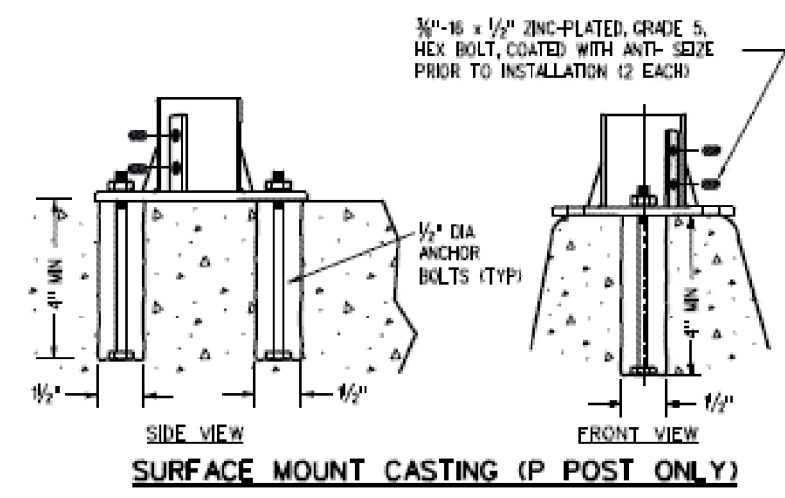
SIGN PANEL HEIGHT	SIGN PANEL WIDTH						
	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"
1'-6"	P	P	P	P	P	P	P1
2'-0"	P	P	P	P	P	P	P1
2'-6"	P	P	P	P	P1	P1	P1
3'-0"	P	P	P	P	P1	P1	P1
3'-6"	P	P	P1	P1	P1	P1	P1
4'-0"	P	P	P1	P1	P1	P1	P1
5'-0"	P1	P1	P1	P1	P1	P1	P1
6'-0"	P1	P1	P1	P1	P1	P1	P1
7'-0"	P1	P1	P1	P1	P1	P1	P2
8'-0"	P1	P1	P1	P1	P2	P2	P2

DIAMOND PANELS (30°, 36° AND 48° SIDES) - P1

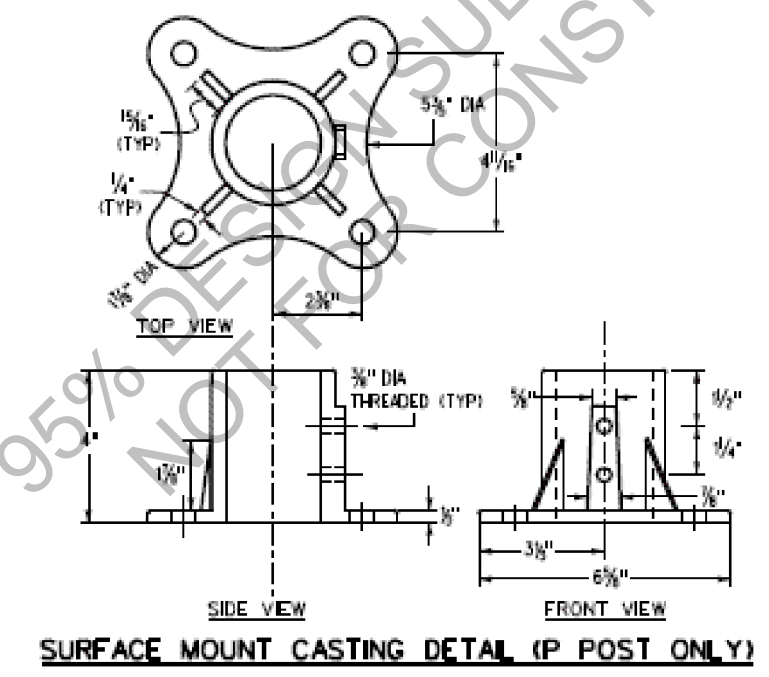
POST TYPE	P	P1	P2	FOR DETAILED POST SPECIFICATIONS SEE STANDARD PLAN S-614-8
OUTSIDE DIAMETER	2.375"	2.875"	2.875"	
WALL THICKNESS	0.080"	0.160"	0.276"	



CAST-IN-PLACE CONCRETE BARRIER INSTALLATION



RETRO-FIT CONCRETE BARRIER INSTALLATION



NO SCALE
ADAPTED FROM
CDOT S-614-21

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL
**CONCRETE BARRIER SIGN
POST INSTALLATIONS**

SHEET 1 OF 2

SPECIAL
633-G

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-31

SURFACE MOUNT SLIPBASE TUBULAR STEEL SIGN BASE REQUIREMENTS

FOR 2 1/2" INCH POSTS (P1 OR P2 POSTS)
FOR CONCRETE SURFACES GREATER THAN 7 INCHES THICK
FOR CONCRETE SURFACES GREATER THAN 12 INCHES IN WIDTH

MOUNTING HARDWARE

- 8 - EACH 3/8" x 5 1/2" INCH LONG HILTIKWK HUS-EZ' SCREW ANCHORS
- 16 - EACH 3/8" INCH FLAT WASHERS
- 8 - EACH 3/8" INCH LOCK WASHERS
- 8 - EACH 3/8" INCH NUTS

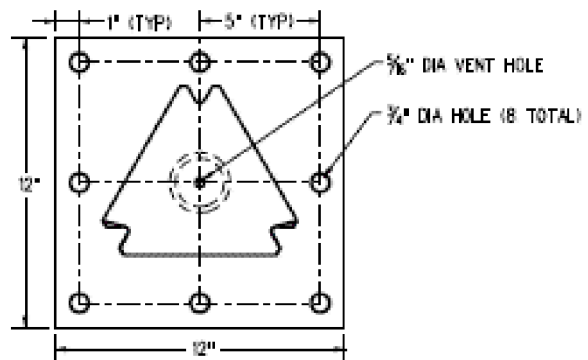
INSTALLATION REQUIREMENTS:

DRILL (8) - 3/8" INCH HOLES 6 INCH DEEP, CLEAN HOLE PRIOR TO INSTALLING ANCHORS
USE ADDITIONAL WASHERS FOR SHIMMING TO LEVEL BASE PLATE.

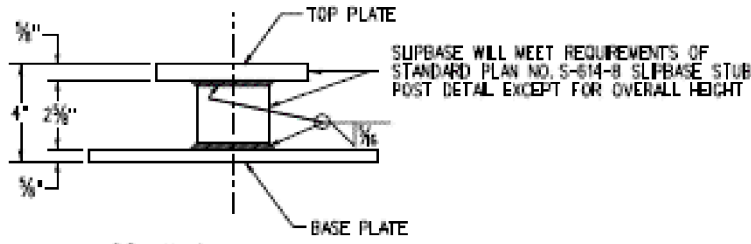
ALL HARDWARE WILL BE GALVANIZED OR ZINC PLATED.

SURFACE MOUNT SLIPBASE TUBULAR STEEL SIGN BASE NOTES

1. REFER TO SIGNING PLANS FOR SIGN LOCATIONS AND HEIGHT
2. MINIMUM ALLOWABLE TENSION CAPACITY FOR WEDGE ANCHORS = 3000 LBS.
3. MAXIMUM ALLOWABLE MOMENT FOR SIGN BASE = 5.13 kip-ft.

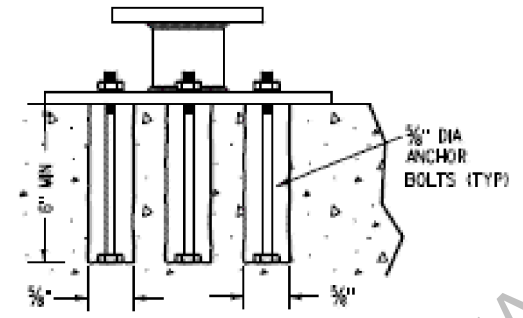


TOP VIEW



SIDE VIEW

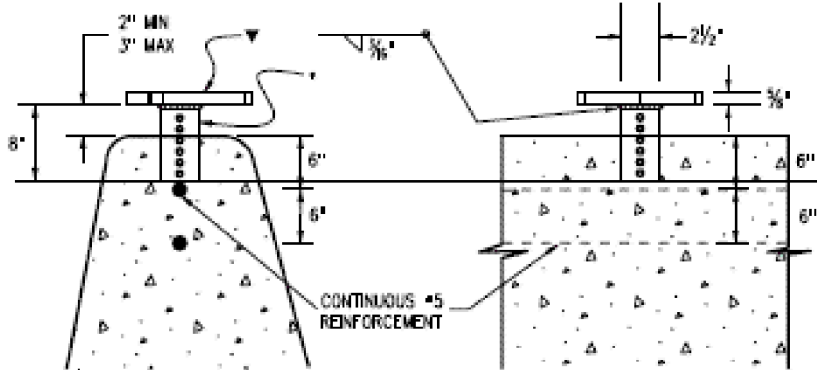
BASE PLATE FABRICATION REQUIREMENTS:
BASE PLATE: 3/8" INCH ASTM A 36 PLATE STEEL
PIPE STUB: 3 INCH NOMINAL SCHEDULE 80, ASTM A 500 GR B
TOP PLATE: MUST BE COMPATIBLE WITH SLIPBASE CASTING FROM STANDARD PLAN NO. S-614-8
MEET ASTM A 123 GALVANIZING AFTER FABRICATION IS COMPLETED.



SIDE VIEW

SURFACE MOUNT CASTING DETAIL (P1 & P2 POSTS)

SURFACE MOUNT CASTING (P1 & P2 POSTS)



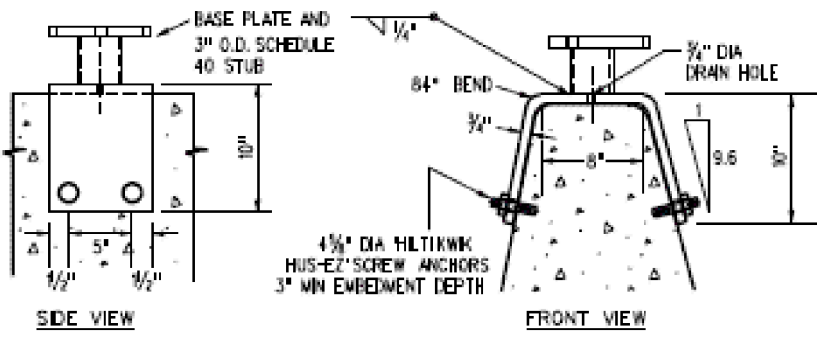
FRONT VIEW

SIDE VIEW

- BASE PLATE SHALL BE 3/8" ASTM A-36, 411 OR 572 STEEL PLATE. SEE STANDARD PLAN S-614-8 FOR DIMENSIONS.
- BASE STUB SHALL BE 2 1/2" SQUARE 10 GAGE PERFORATED TUBING, FABRICATED AND GALVANIZED CONFORMING TO ASTM A-153

SLIPBASE BARRIER STUB (P1 & P2 POSTS)

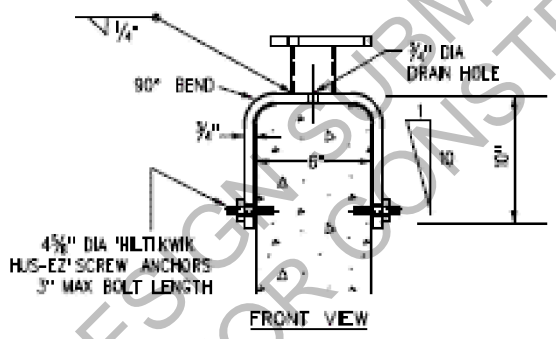
CAST-IN-PLACE CONCRETE BARRIER INSTALLATION



SIDE VIEW

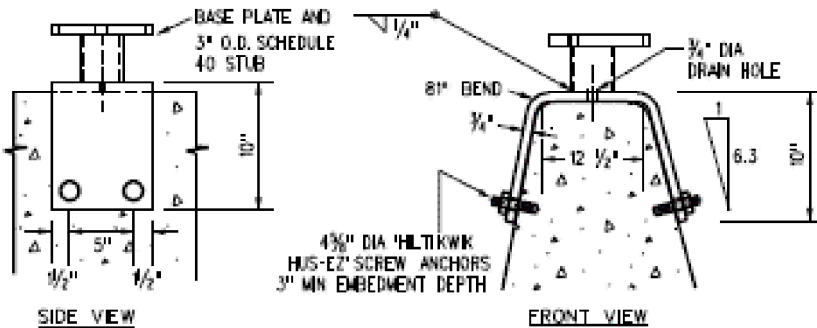
FRONT VIEW

TYPE 7 INSTALLATION



FRONT VIEW

CONCRETE GLARE SCREEN INSTALLATION



SIDE VIEW

FRONT VIEW

TYPE 9 INSTALLATION

SADDLE BRACKET (P1 & P2 POSTS)

RETRO-FIT CONCRETE BARRIER INSTALLATION

NO SCALE
ADAPTED FROM
CDOT S-614-21

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY SPECIAL CONCRETE BARRIER SIGN POST INSTALLATIONS	
SHEET 2 OF 2	
	SPECIAL 633-G

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GENERAL NOTES

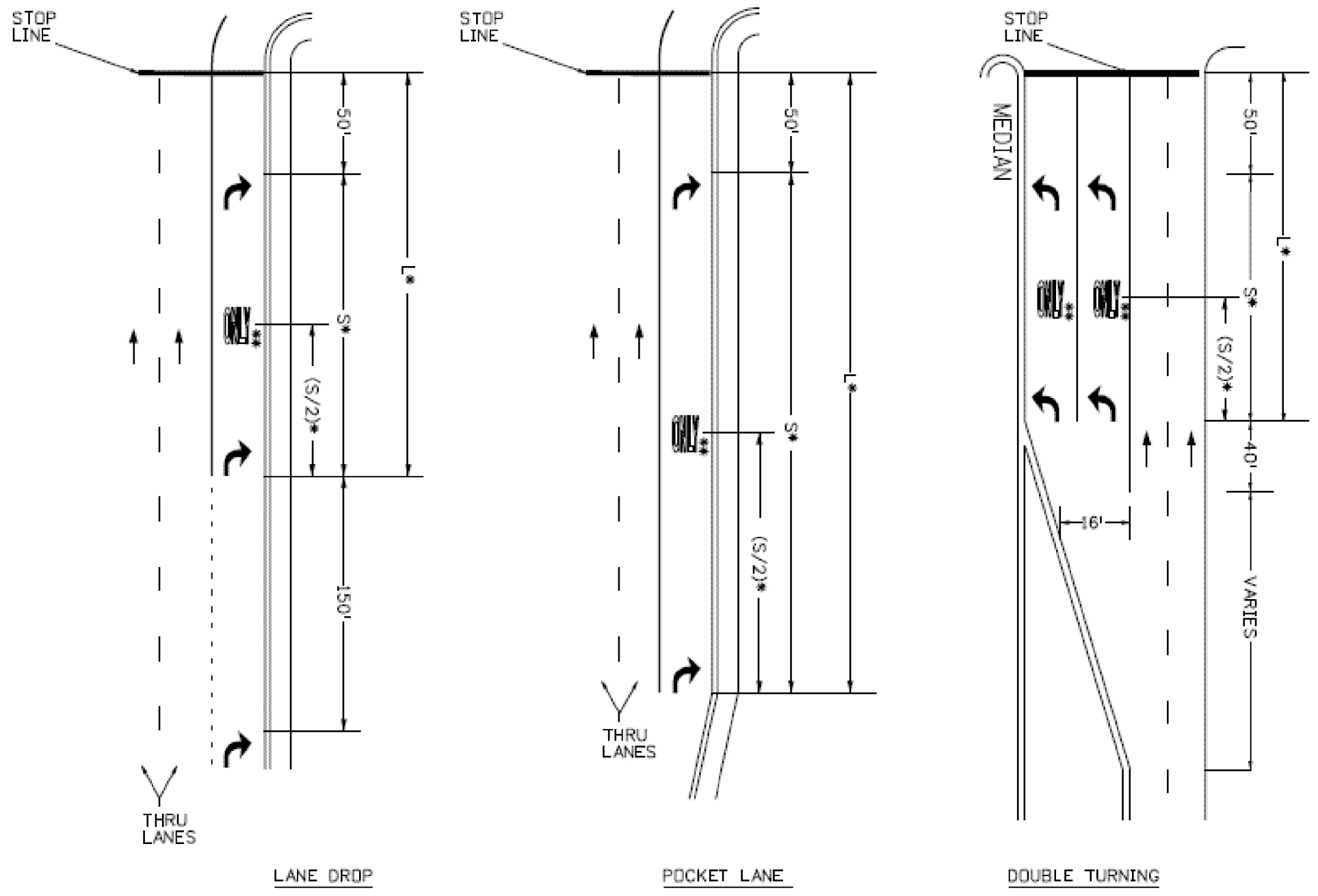
1. THE SPACING, IN THE TABLE APPLIES TO LEFT & RIGHT TURN LANES.
2. ** 'ONLY' MARKING IS OPTIONAL. CONTACT REGION TRAFFIC ENGINEER FOR DIRECTION.
3. WHEN ONE (1) ARROW IS USED, IT SHALL BE PLACED AT THE BEGINNING OF THE FULL WIDTH TURN LANE, OTHERWISE USE THE TABLE BELOW FOR ARROW PLACEMENT.

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



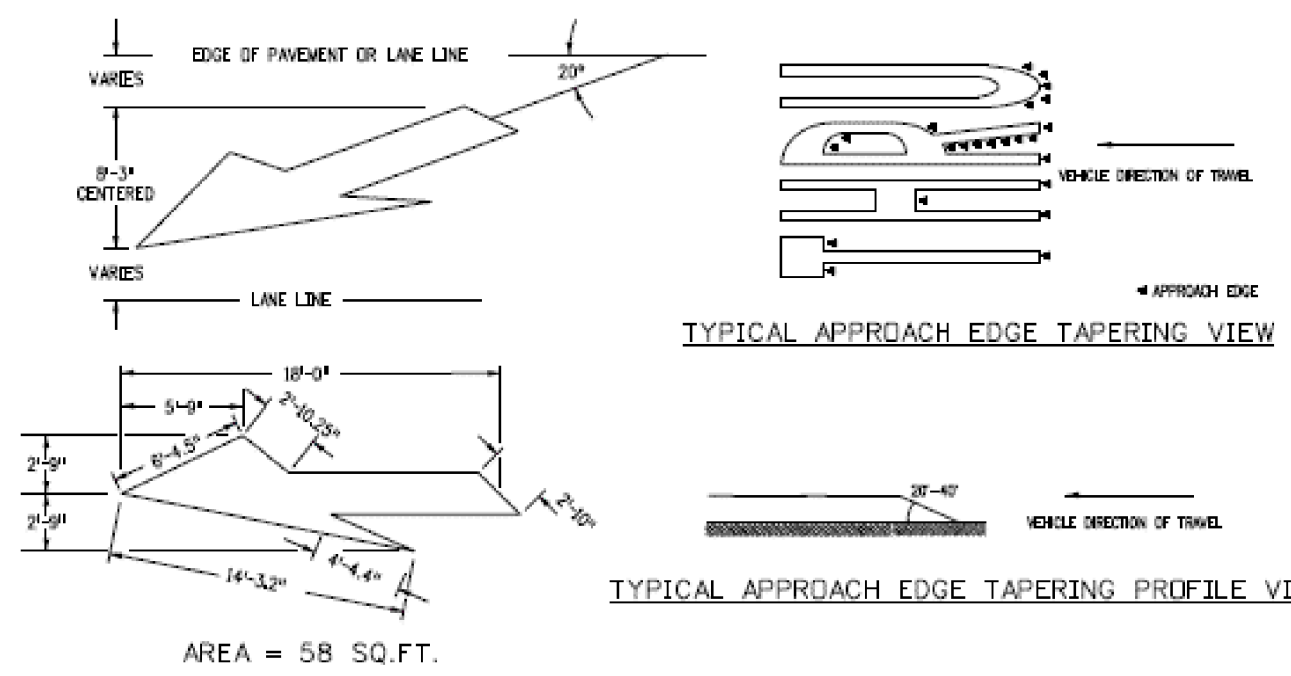
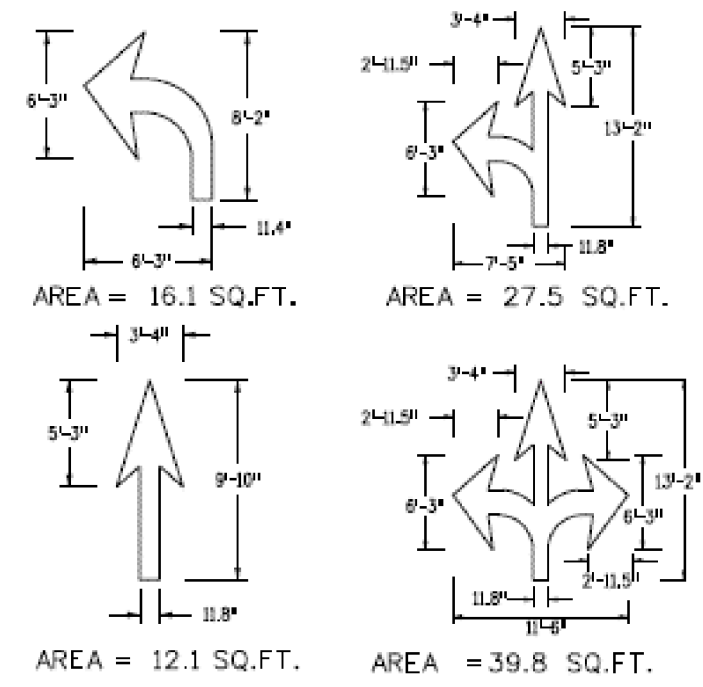
ARROW PLACEMENTS AT INTERSECTIONS

NO SCALE
ADAPTED FROM
CDOT S-627-1

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY SPECIAL	
PAVEMENT MARKINGS	
SHEET 2 OF 4	
	SPECIAL 634-A

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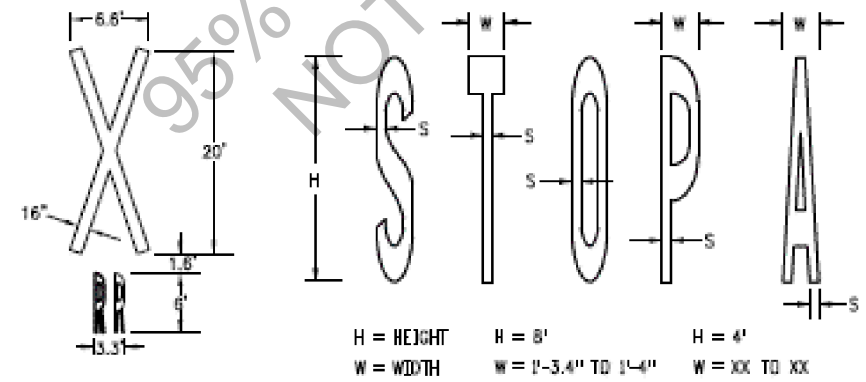
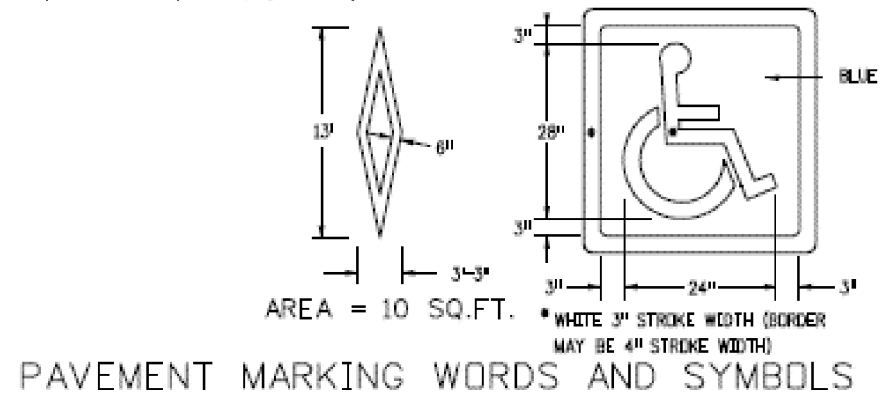
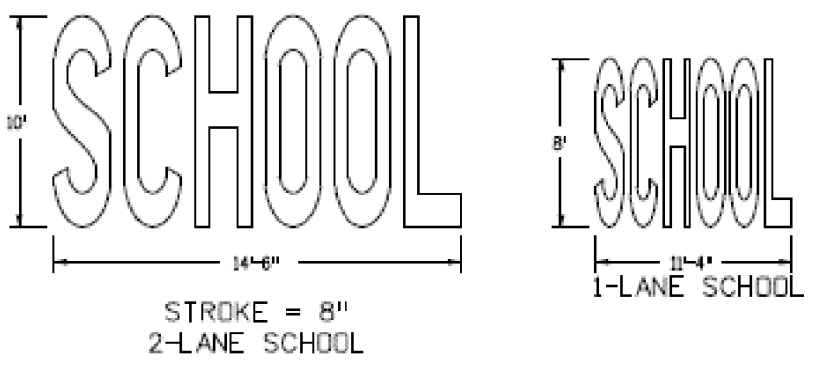
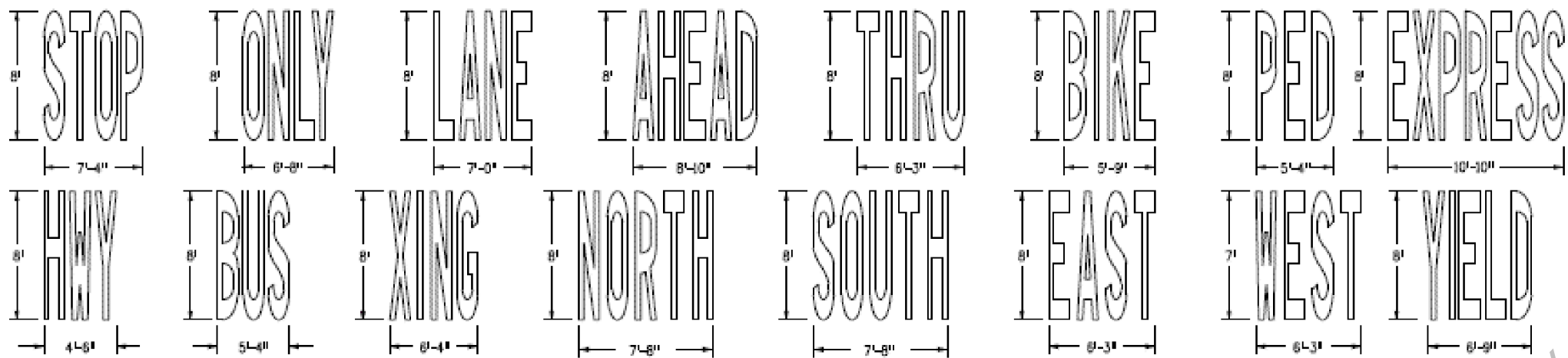
- WORD AND SYMBOL NOTES**
- IF HEIGHT IS INCREASED OR DECREASED THEN ALL MEASUREMENTS CHANGE PROPORTIONATELY. EXAMPLE: "H" MEASUREMENT FOR STOP IS REDUCED TO 4 FT. FROM 8 FT. THEN SQUARE FEET 5.75 (1/4 OF 23.0 SQ.FT.).
 - PAVEMENT WORD AND SYMBOL MARKINGS, TRANSVERSE AND LONGITUDINAL (CONTINENTAL) CROSSWALK LINES, AND STOP LINES WILL BE PAID FOR IN SQUARE FEET USING THEIR SPECIFIC BID ITEMS.
 - LETTER SPACING SHALL BE 8 ON, EXCEPT FOR THE LETTER "A" WHICH IS 6 IN.
 - USE THE MARKING WORD "BIKE" IF 6 FT. TO 8 FT. BIKE LANES ARE INSTALLED.

- TAPERING NOTES**
- 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:

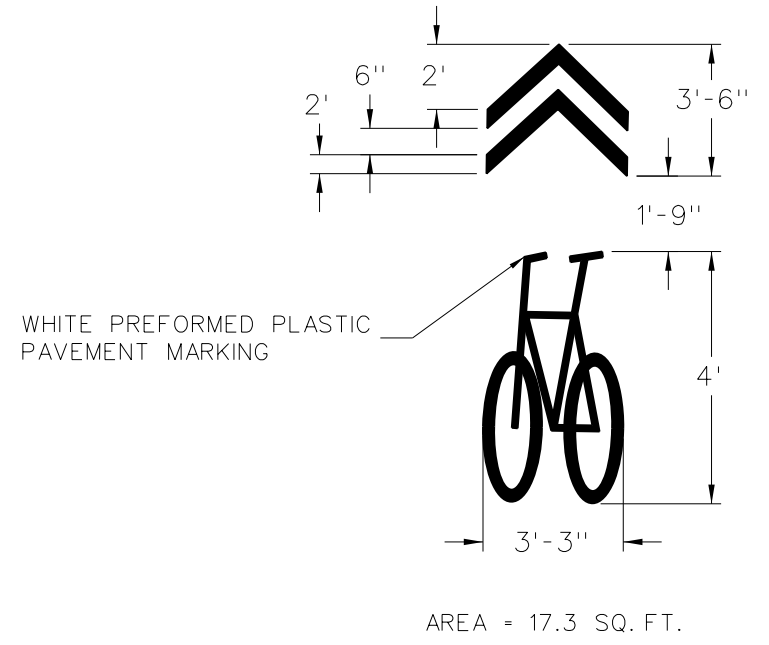
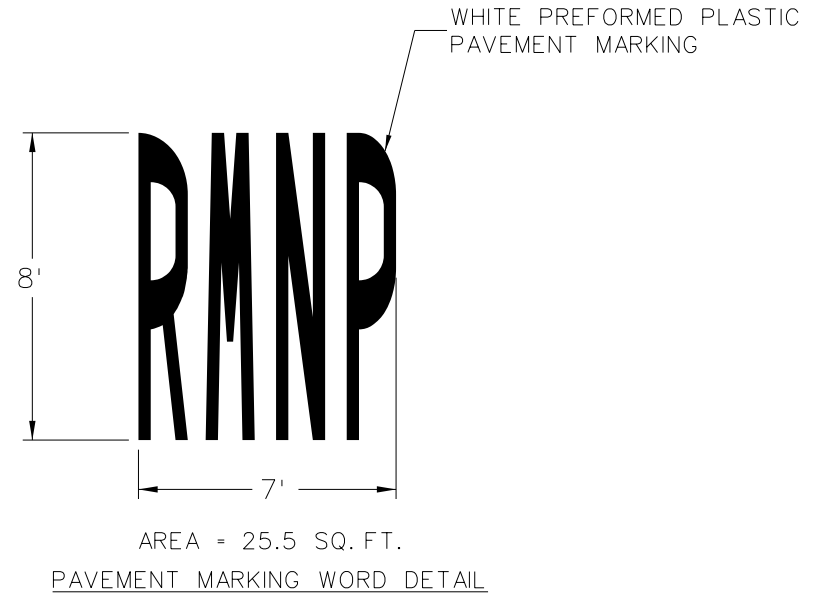
H = 4' WORDS	
BIKE - 5.5 SQ.FT.	LANE - 6.0 SQ.FT.
ONLY - 6.0 SQ.FT.	XING - 5.0 SQ.FT.
H = 8' WORDS	
STOP - 23.0 SQ.FT.	XING - 20.0 SQ.FT.
ONLY - 22.5 SQ.FT.	LANE - 22.5 SQ.FT.
AHEAD - 29.0 SQ.FT.	BIKE - 21.0 SQ.FT.
BUS - 18.5 SQ.FT.	HWY - 16.5 SQ.FT.
SCHOOL(1L) - 33.0 SQ.FT.	THRU - 22.0 SQ.FT.
SCHOOL(2L) - 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 - 69.0 SQ.FT.	EXPRESS - 41 SQ.FT.
YIELD - 23 SQ.FT.	



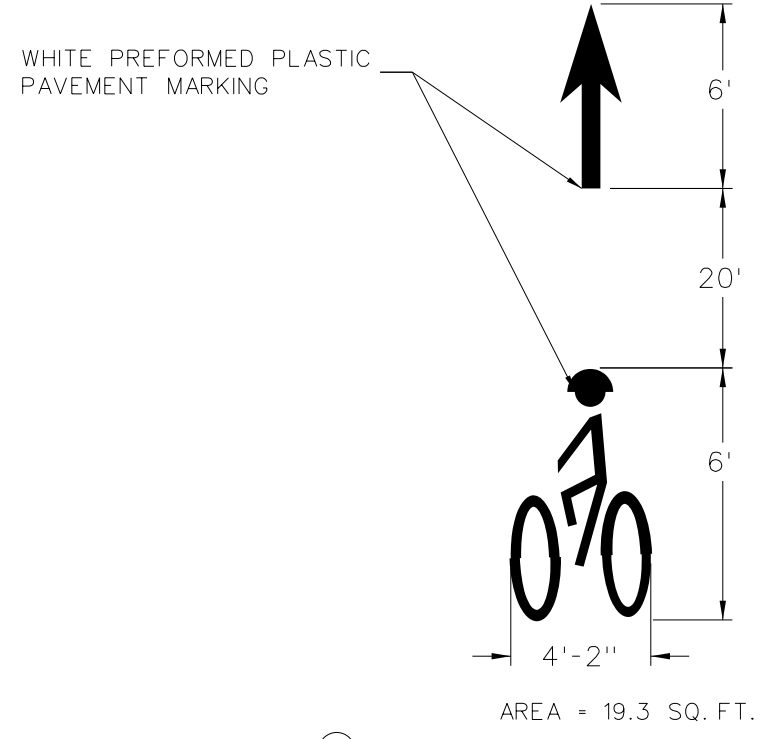
NO SCALE
ADAPTED FROM
CDOT S-627-1

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-35

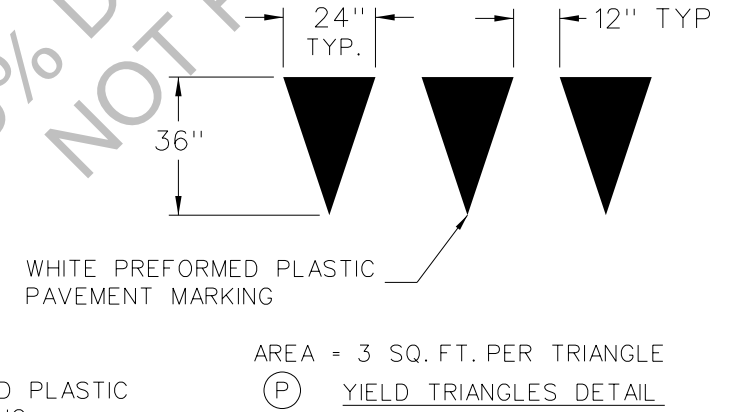
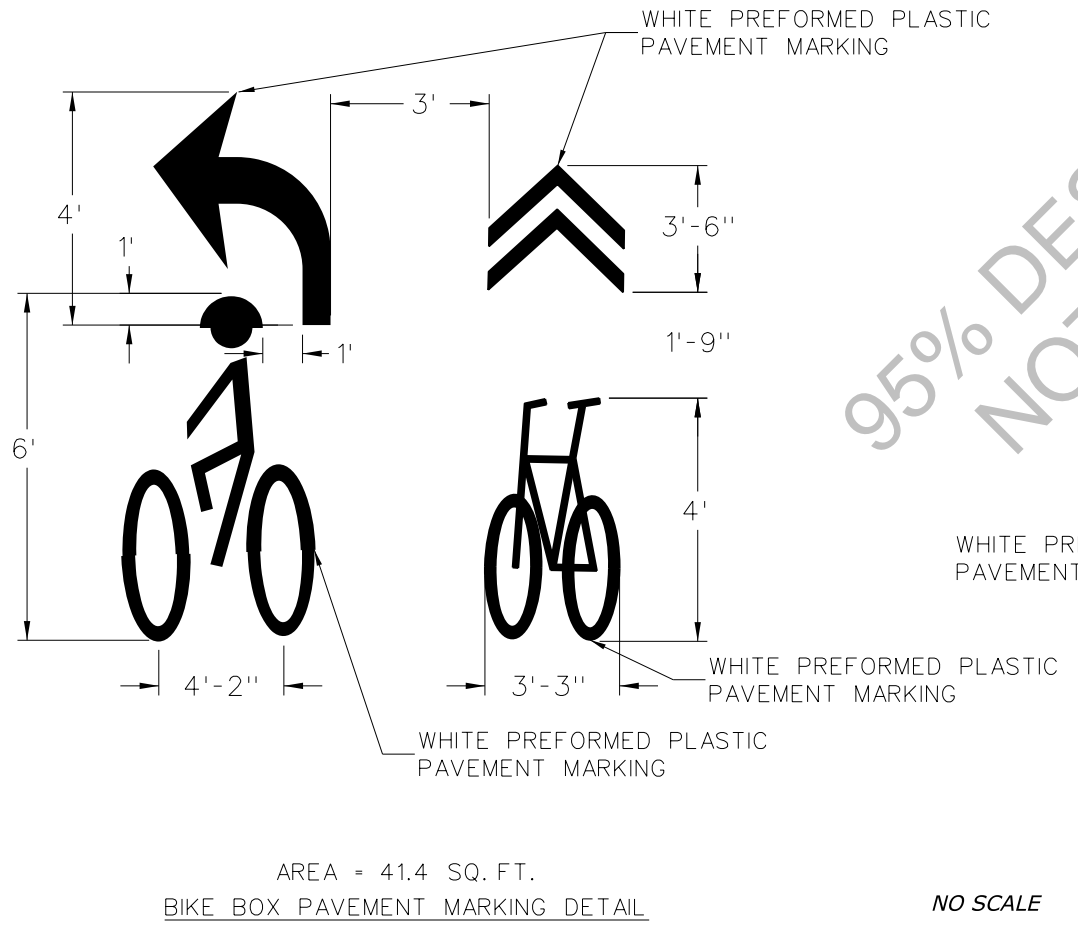
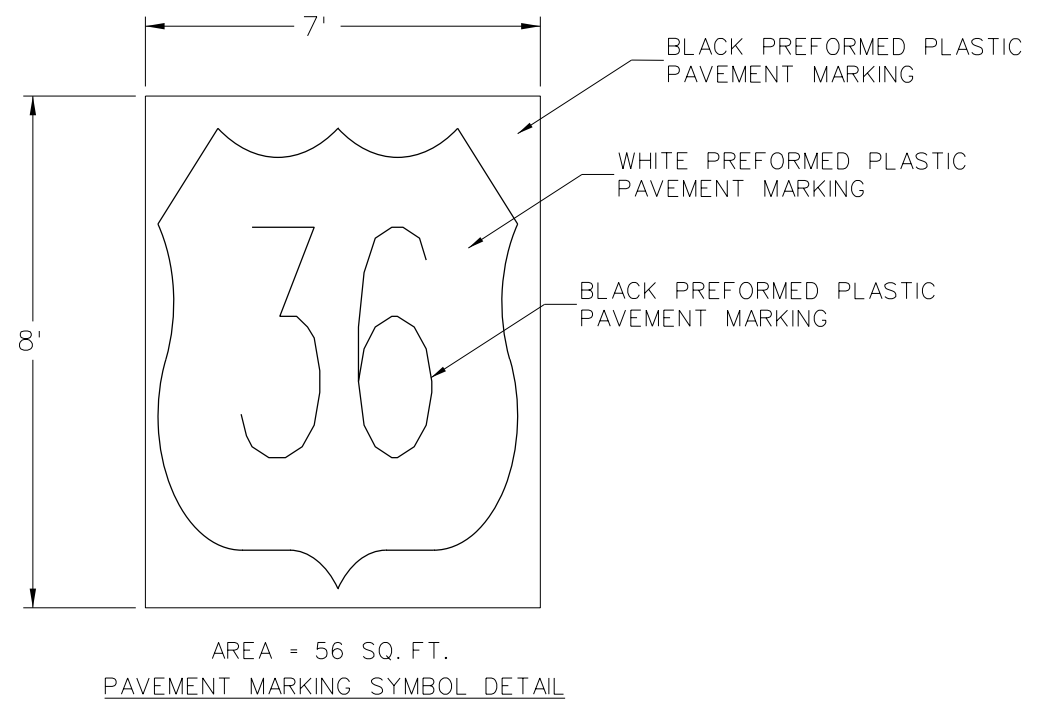
PAVEMENT MARKING DETAILS



(R) SHARROW BIKE PAVEMENT MARKING DETAIL



(M) BIKE LANE PAVEMENT MARKING WITH ARROW DETAIL



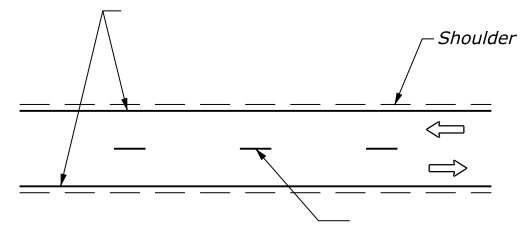
(P) YIELD TRIANGLES DETAIL

95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

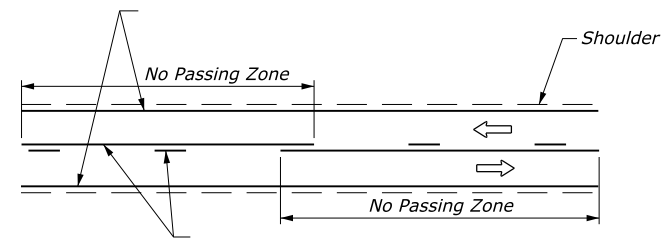
NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY SPECIAL PAVEMENT MARKINGS	
SHEET 4 OF 4	
	SPECIAL 634-A

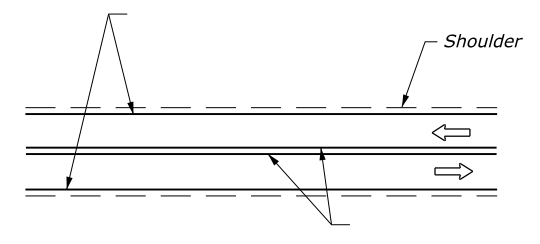
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DETAIL A
Passing zone both directions
Two-way traffic



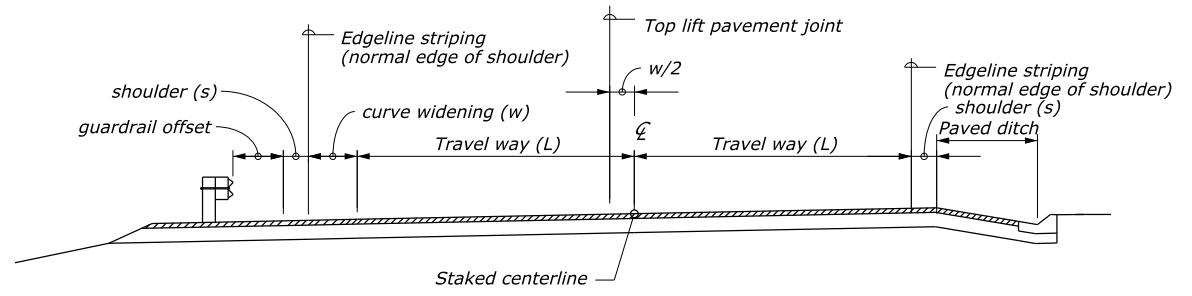
DETAIL B
No passing zone single lane direction
Two-way traffic



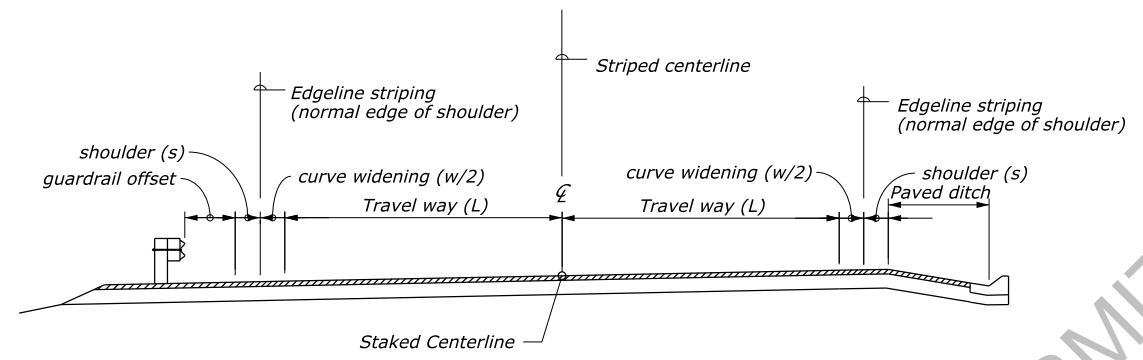
DETAIL C
No passing zone both directions
Two-way traffic

NOTE:

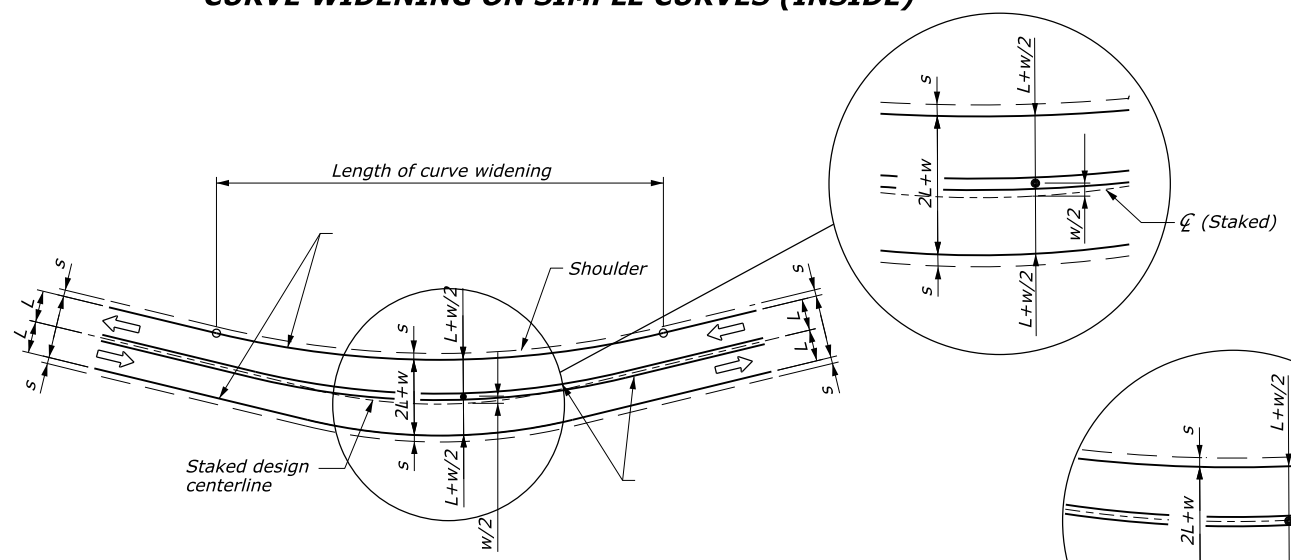
1. See Summary for tables showing station ranges and quantities for pavement markings.
 2. Paint centerline striping on curves with curve widening to achieve equal lane widths within the traveled way. Shoulder widths remain constant throughout the curve widening.
 3. Centerline offset striping is only applicable to curve widening on simple curves.
- ④ 4" or as required by the state.



CURVE WIDENING ON SIMPLE CURVES (INSIDE)

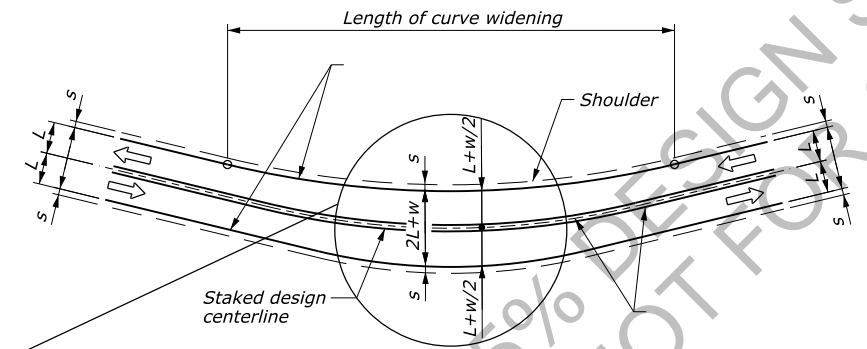


CURVE WIDENING ON SPIRAL CURVES



CURVE STRIPING DETAIL ON SIMPLE CURVES

To be used on curves where curve widening is applied. See note 2



STRIPING DETAIL ON SPIRAL CURVES

To be used on curves where curve widening is applied. See note 2

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY SPECIAL CENTERLINE STRIPING AND TOP LIFT PAVEMENT JOINT	
	SPECIAL 634-B

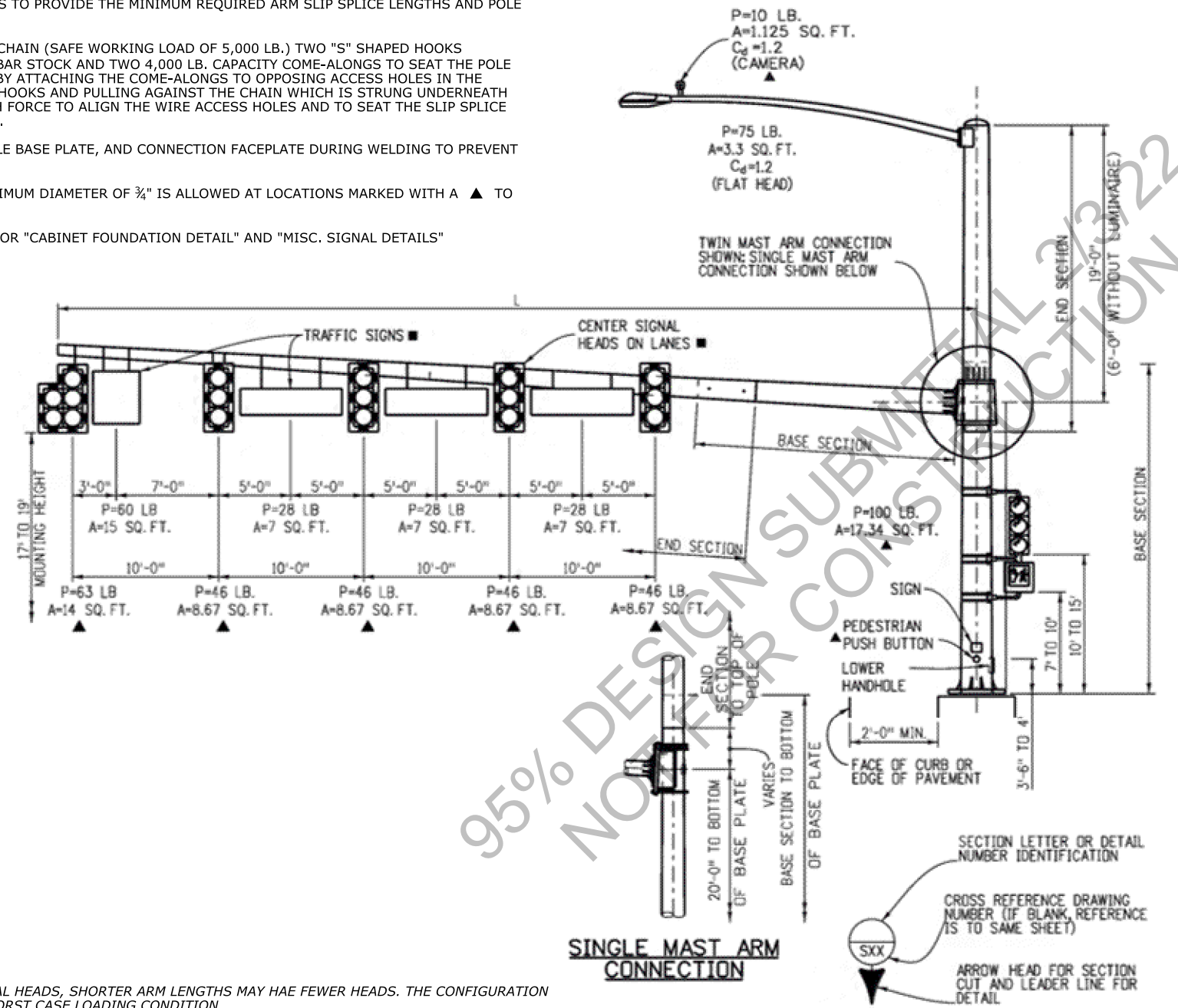
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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-37

GENERAL NOTES:

- REFER TO TRAFFIC SIGNAL PLANS FOR THE ACTUAL CONFIGURATION AND LOCATION OF TRAFFIC SIGNAL HEADS AND SIGNS MARKED WITH A ■.
- FABRICATE ALL POLES AND ARMS 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.
- ALL POLES AND ARMS SHALL COMPLY WITH THE DIMENSIONAL TOLERANCES SPECIFIED IN ASTM A500, A501, OR A595.
- ALL POLES AND ARMS SHALL BE ROUND DR DODECAGONAL (12 SIDED) TUBES WITH A 0.14 IN/FT TAPER.
- HARDENED WASHERS SHALL CONFORM TO ASTM F436.
- 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.
- POLE AND MAST ARM SPLICES SHALL BE MECHANICALLY FORCED TOGETHER FOR A SNUG FIT.
- 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 THE CO AND CDOT STAFF BRIDGE.
- ALL MAST ARMS MORE THAN 40 FT IN LENGTH SHALL BE TWO PIECE CONSTRUCTION TO LIMIT ARM WEIGHTS.
- GALVANIZED ASTM A325 H.S. BOLTS SHALL BE USED FOR ATTACHING LUMINAIRE AND MAST ARMS. A LUBRICATED TIGHTENING TORQUE OF 178 FT-LBS FOR 3/4" DIAMETER BOLTS, 395 FT-LBS FOR 1" DIAMETER BOLTS AND 1300 FT-LBS FOR 1 1/2" 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.
- CAST POLE END CAP TO BE SECURED IN PLACE WITH 3 SET SCREWS.
- ALL SIGNAL HEADS, SIGNS, AND HARDWARE SHALL BE FIELD POSITIONED.
- ACCESSORIES TO BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A153.
- FABRICATE ALL PLATES AND STIFFENERS WITH AASHTO M270 (ASTM A709) GRADE 36 STEEL AND SHALL COMPLY WITH THE DIMENSIONAL TOLERANCES SPECIFIED IN ASTM A6. FABRICATE ALL HANDHOLES WITH ASTM A572 GRADE 42 STEEL.
- LEVELING CONCRETE SHALL BE 3000 PSI AIR ENTRAINED CONCRETE VIBRATED IN PLACE BELOW THE POLE BASE PLATE.
- THE DESIGNS HEREIN ASSUME THAT SIGNALS ARE INSTALLED WITHIN THE ROADWAY EARTHWORK PRISM WITH THE FOLLOWING SOIL PARAMETERS:
SOIL DENSITY $\gamma = 110$ 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
- CONTACT THE CO 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.
- PLACE CAISSONS AGAINST UNDISTURBED EARTH. BACKFILL WET OR CAVING HOLES WITH FLOW-FILL AND REDRILLED AFTER A THREE DAY CURING PERIOD WITHOUT THE USE OF A CASING.
- CONSTRUCT CAISSONS WITH AIR ENTRAINED CLASS BZ CONCRETE IN ACCORDANCE WITH SECTION 601 OF THE STANDARD SPECIFICATIONS (FP-14). REINFORCING STEEL SHALL BE GRADE 60 IN ACCORDANCE WITH SECTION 709 OF THE STANDARD SPECIFICATIONS (FP-14).
- CAISSON CONCRETE MUST HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,700 PSI BEFORE INSTALLING THE SIGNAL STRUCTURE; VERIFY CONCRETE STRENGTH WITH MATURITY METER.
- U-BOLTS AND ANCHOR BOLTS SHALL BE FABRICATED WITH AASHTO M314-90 GRADE 55 STEEL.
- ANCHOR BOLTS SHALL BE FABRICATED WITH HEAVY HEX NUTS AND FLAT WASHERS, AND EXTENDED A MINIMUM OF 3/4" ABOVE THE NUT AFTER COMPLETING THE TIGHTING 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. SET ANCHOR BOLTS WITH A STEEL TEMPLATE UNTIL THE CONCRETE HAS CURED AT LEAST TWO DAYS. TIGHTEN THE ANCHOR BOLTS USING THE TURN-OF-NUT METHOD. FIRST TIGHTEN THE BOLTS 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 1/2 TURN (30°± 5°) WITH A SLUGGING, HYDRAULIC OR AIR IMPACT WRENCH.
- 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. 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.
- ALL ELECTRICAL CONNECTIONS TO THE SIGNALS SHALL BE GROUNDED IN ACCORDANCE WITH APPLICABLE ELECTRICAL CODES.
- 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.
- 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.

- CERTIFIED MILL TEST REPORTS INCLUDING CHARPY V-NOTCH TEST RESULT, WELD INSPECTION REPORTS AND ENHANCED MAGNETIC PARTICLE TEST REPORTS SHALL BE SUBMITTED TO THE CO AND CDOT STAFF BRIDGE, 4201 E. ARKANSAS AVE. DENVER, COLORADO 80222 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).
- SHOP DRAWINGS SHALL BE SUBMITTED TO THE CO FOR REVIEW IN ACCORDANCE WITH SUBSECTION 104.03 OF THE STANDARD SPECIFICATIONS (FP-14).
- DEFINITIONS:
U.O.N. = UNLESS OTHERWISE NOTED
W.P. = WORK POINT
- TRAFFIC SIGNALS MOUNTED ON MAST ARMS SHALL BE FURNISHED WITH SKY-TYPE MOUNTING BRACKETS.
- 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.
- USE 35' OF 3/8" 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.
- SECURE ARM FLANGE PLATE, POLE BASE PLATE, AND CONNECTION FACEPLATE DURING WELDING TO PREVENT DISTORTION.
- ONE DRILLED HOLE WITH A MAXIMUM DIAMETER OF 3/4" IS ALLOWED AT LOCATIONS MARKED WITH A ▲ TO ACCOMMODATE ELECTRICAL WIRING.
- SEE SPECIAL 635-B AND 635-C FOR "CABINET FOUNDATION DETAIL" AND "MISC. SIGNAL DETAILS" CONNECTION SHOWN BELOW.



DESIGN DATA

1. DRAWING SHOWN HAS 5 SIGNAL HEADS, SHORTER ARM LENGTHS MAY HAE FEWER HEADS. THE CONFIGURATION IS INTENDED TO REPRESENT A WORST CASE LOADING CONDITON.

70', (75')	55', 60', (65')	45', (50')	35', (40')	25', (30')
5 SIGNAL HEADS	5 SIGNAL HEADS	4 SIGNAL HEADS	3 SIGNAL HEADS	2 SIGNAL HEADS

THE DESIGN LENGTH "L" FOR EACH SERIES IS SHOW 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.

NO SCALE
**ADAPTED FROM
CDOT S-614-40**

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL

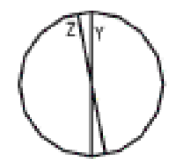
**TYPICAL TRAFFIC SIGNAL
INSTALLATION DETAILS**

SHEET 1 OF 5

SPECIAL
635-A

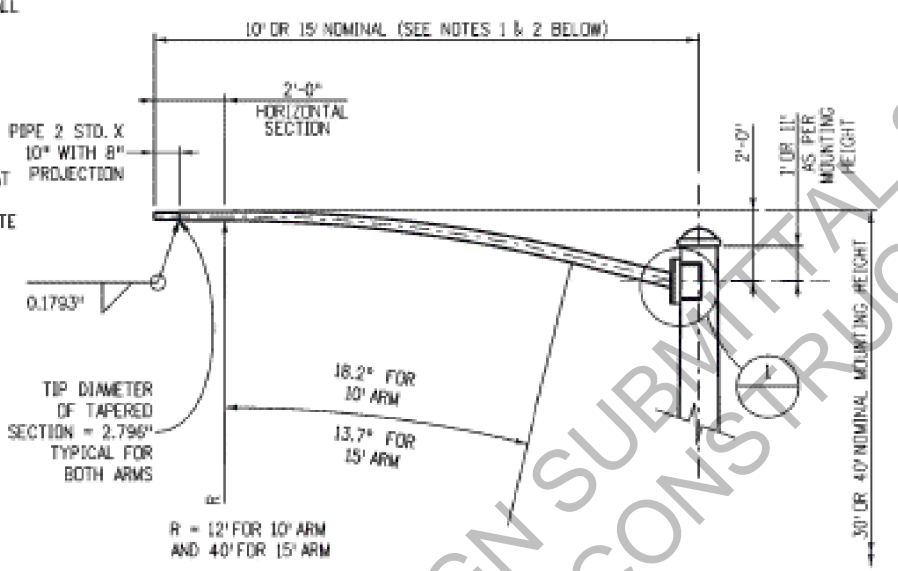
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MAST ARM LENGTH (L) (FT.)	MAST ARM DATA								MAST ARM CONNECTION DATA															
	BASE SECTION *				END SECTION *				STIFFENER				FLANGE				BOLT							
	LENGTH (FT.)	TIP Ø (IN.)	TRUNK Ø (IN.)	THK. (IN.)	LENGTH (FT.)	TIP Ø (IN.)	TRUNK Ø (IN.)	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°



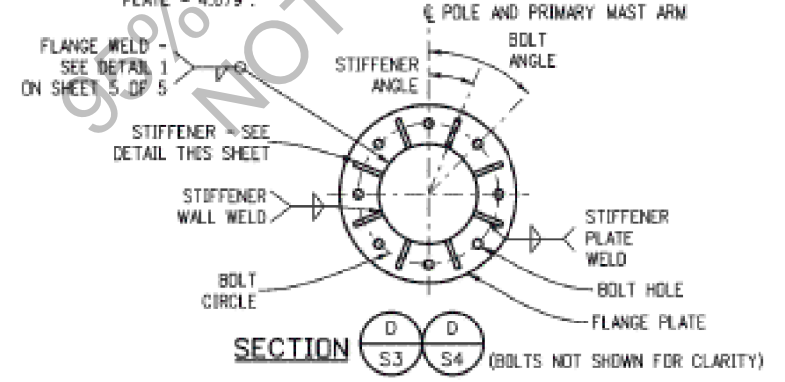
Y = DIAMETER OF A ROUND TUBE.
Z = PERPENDICULAR DISTANCE BETWEEN FLATS.
Y AND Z ARE OUTSIDE DIAMETER DIMENSIONS.
Z/Y RATIO MUST BE .98 MINIMUM.

OPTIONAL MULTI-SIDED POLE OR MAST ARM

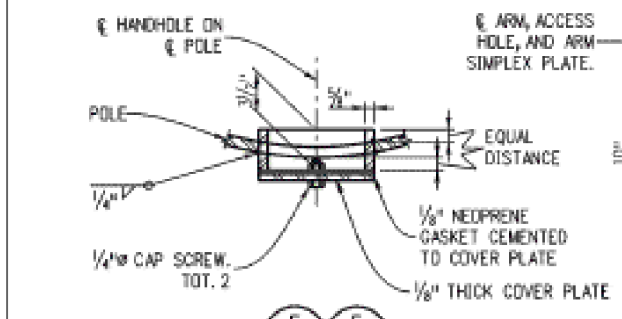


LUMINAIRE ARM NOTES

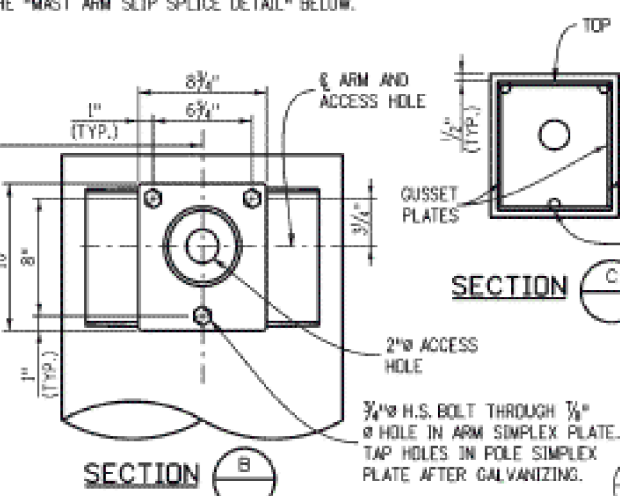
- 10' LUMINAIRE ARM SHAFT: WALL THICKNESS = 0.1793"; LINEAR TAPER = 0.14 IN./FT.; DIAMETER AT ARM SIMPLEX PLATE = 4.066"
- 15' LUMINAIRE ARM SHAFT: WALL THICKNESS = 0.1793"; LINEAR TAPER = 0.14 IN./FT.; DIAMETER AT ARM SIMPLEX PLATE = 4.679"



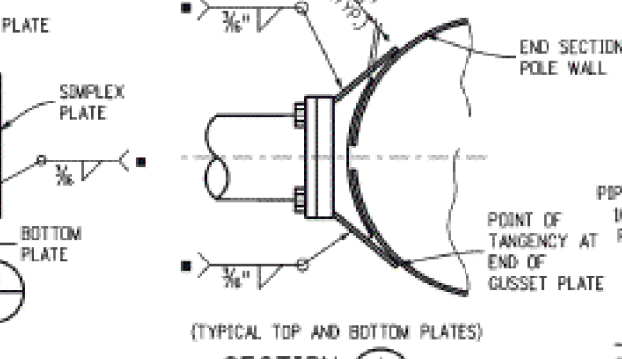
- * BASE SECTION LENGTH INCLUDES THE SPLICE LENGTH AS PER THE "MAST ARM SLIP SPLICE DETAIL" BELOW.
- SEE GENERAL NOTE 31 ON SHEET 1 OF 5.
- STOP ALL WELDS 1/2" SHORT OF PLATE EDGES AND BOLT HOLES.
- 3/4" FOR 30' ARM UPPER HANDHOLE.



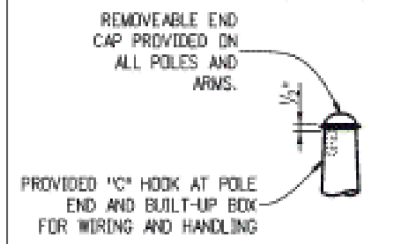
SECTION E



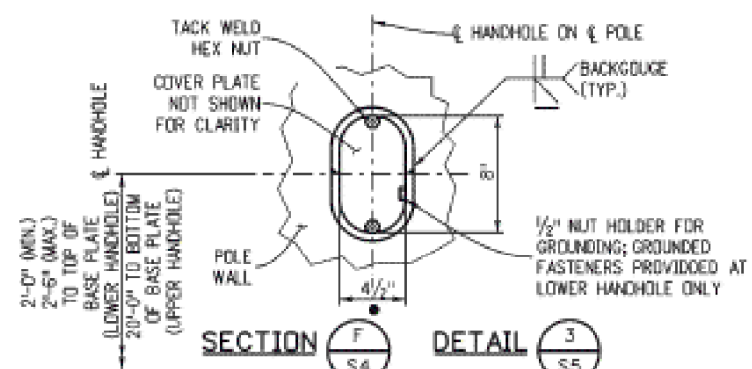
SECTION B



SECTION A

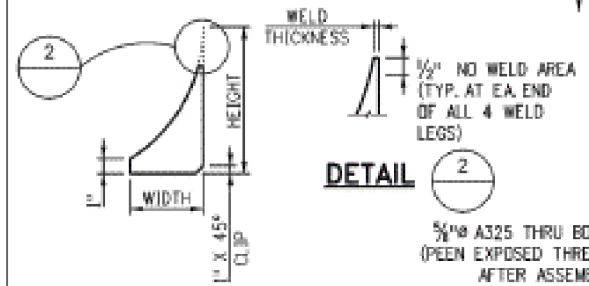


END CAP DETAIL

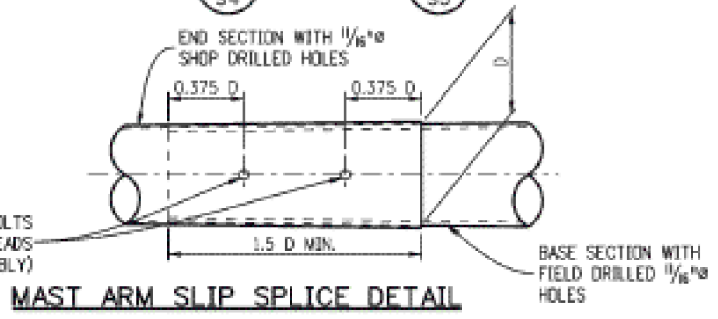


SECTION F

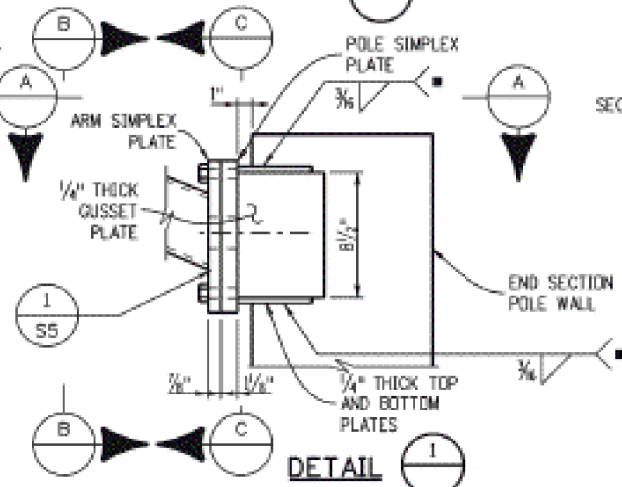
DETAIL 3



STIFFENER DETAIL



MAST ARM SLIP SPLICE DETAIL



DETAIL 1

"C" HOOK DETAIL

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**TYPICAL TRAFFIC SIGNAL
INSTALLATION DETAILS**

SHEET 2 OF 5

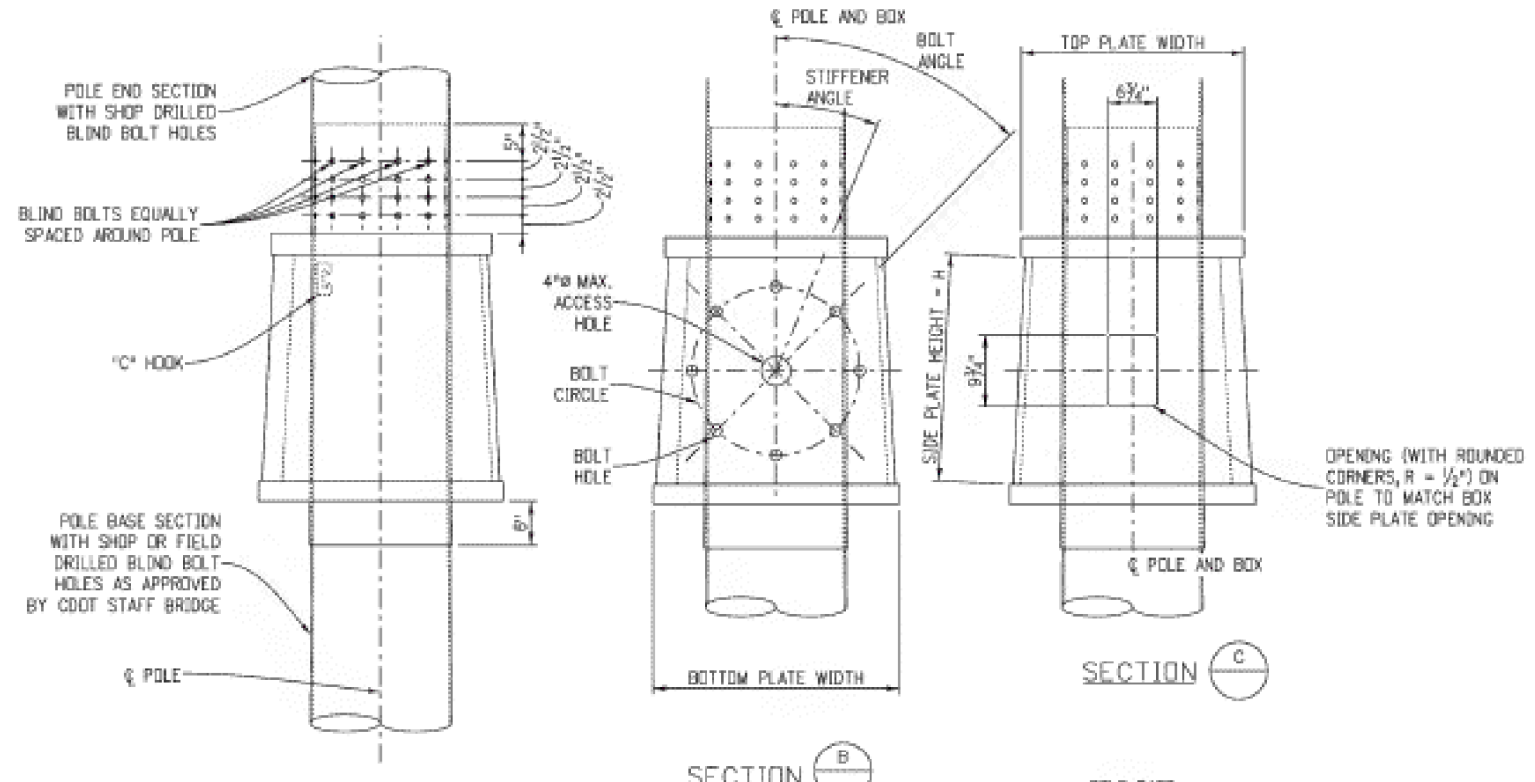
SPECIAL
635-A

NO SCALE
**ADAPTED FROM
CDOT S-614-40**

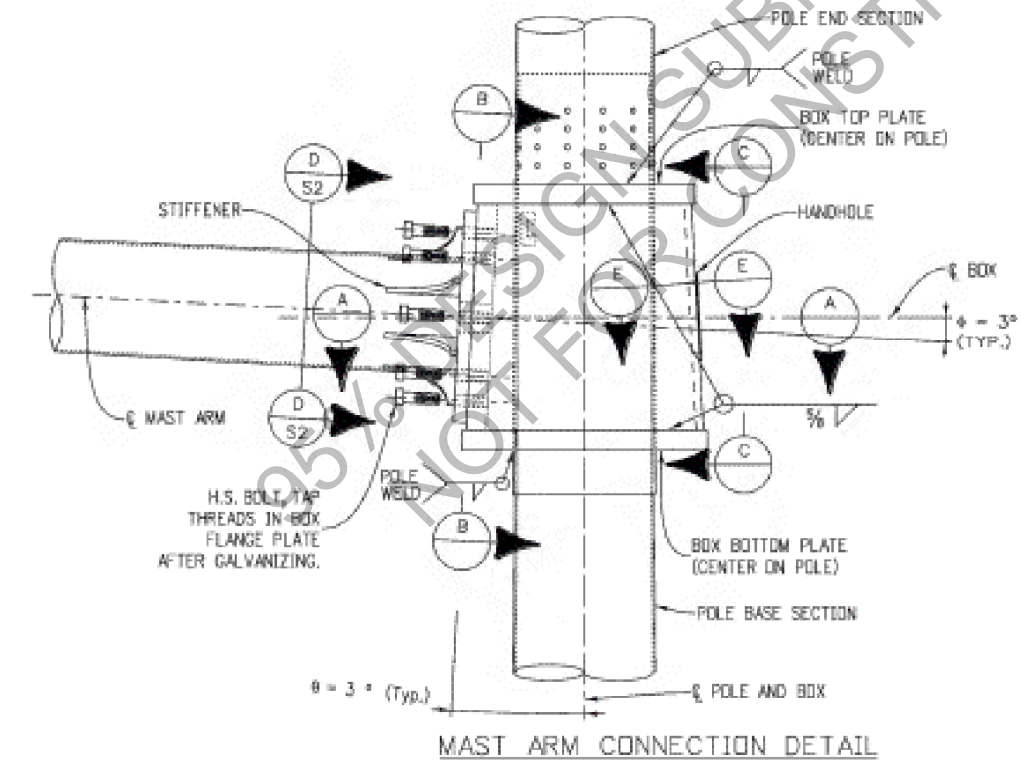
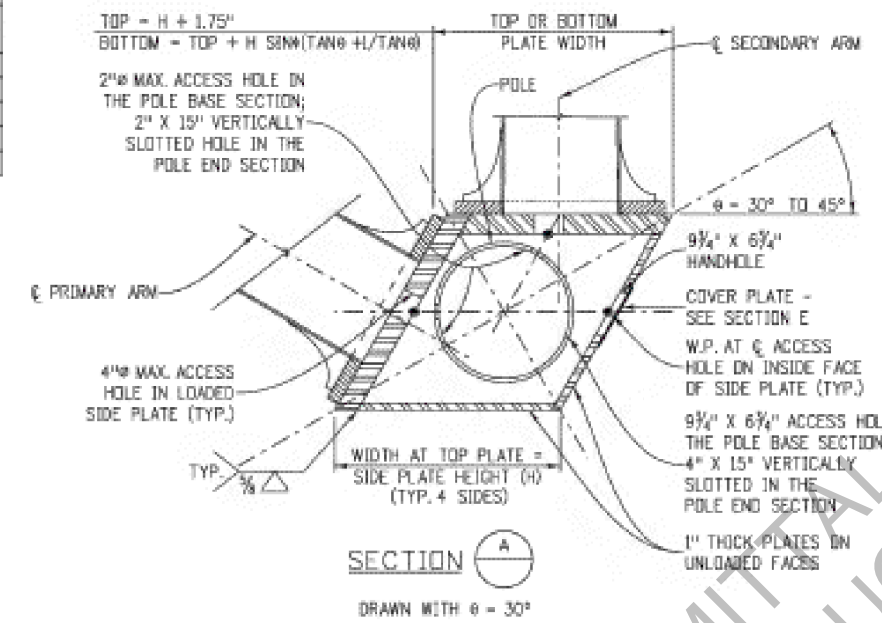
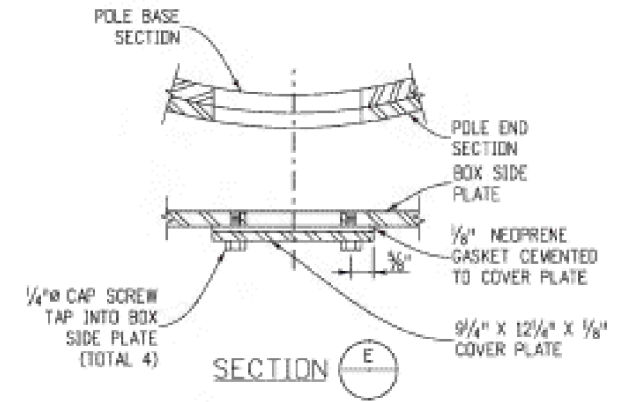
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MAST ARM LENGTH (FT.)	BLIND BOLT DATA				BUILT-UP BOX DATA *					POLE DATA							
	NO. OF	DIA. (IN.)	BOLTS PER ROW	NO. OF ROWS	THICKNESS OF BOX PLATES U.O.N. (IN.)	POLE WELD (IN.)	SIDE PLATE	TOP PLATE	BOTTOM PLATE	BASE SECTION				END SECTION WITH LUMINAIRE			
							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	10.33	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	18.00	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



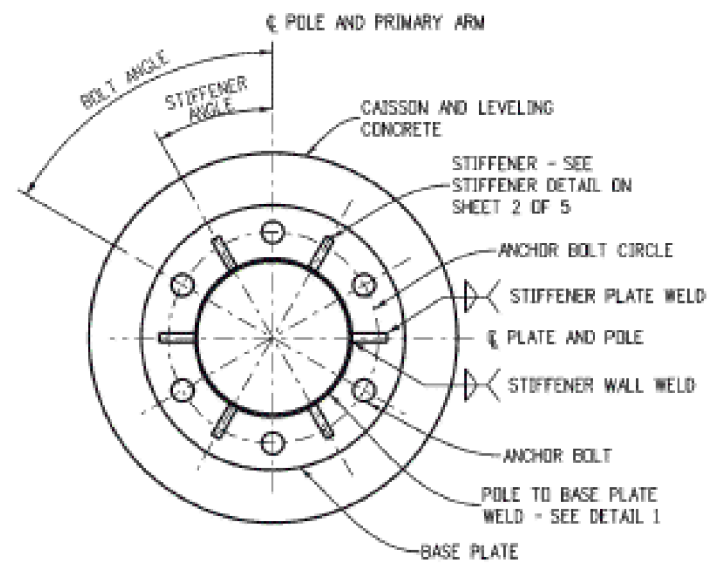
FOR 8 BOLTS AND $\theta < 45^\circ$, ROTATE FLANGE FOR SECONDARY ARM 22.5° TO AVOID BOLT INTERFERENCE PROBLEMS.



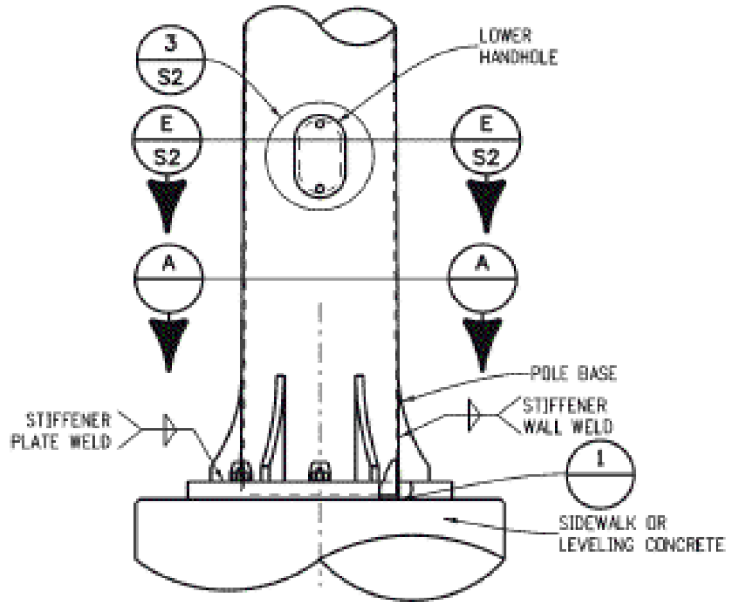
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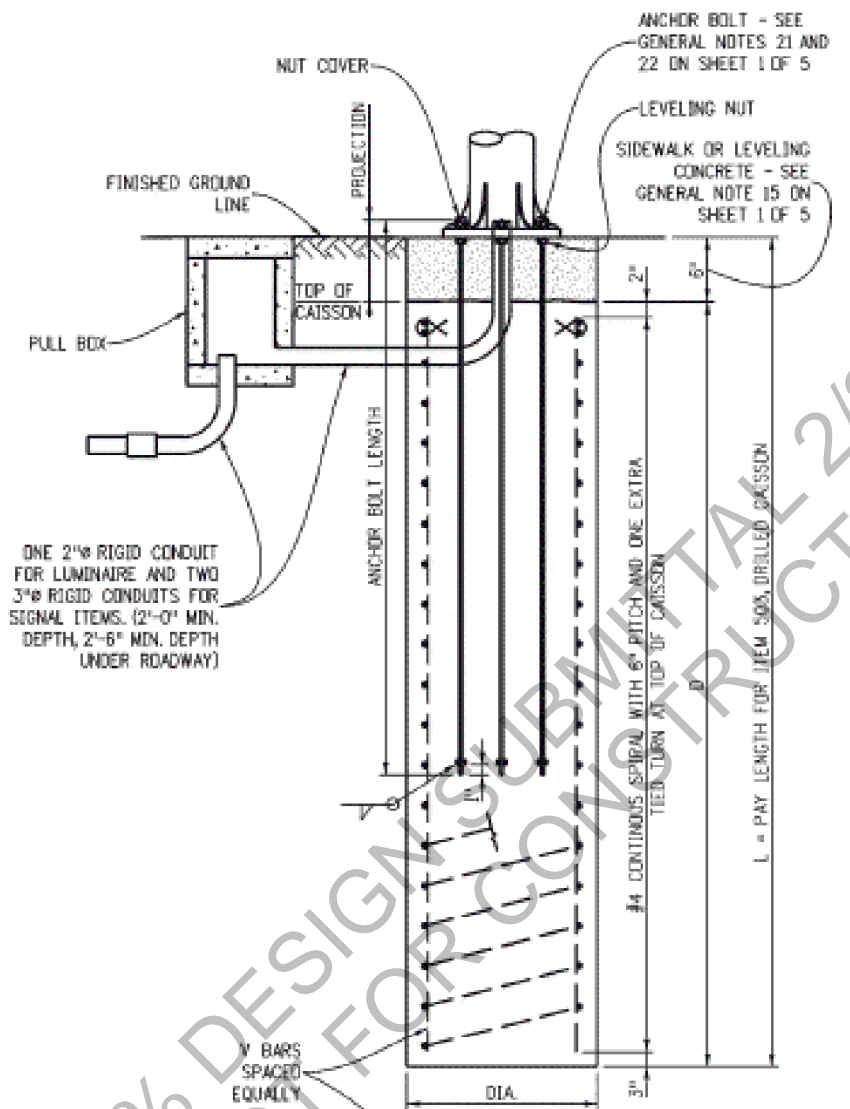
MAST ARM LENGTH (FT.)	POLE BASE CONNECTION DATA															CAISSON DATA (FOR SINGLE AND DOUBLE ARM INSTALLATIONS)						
	STIFFENER					BASE PLATE		ANCHOR BOLT								DIA. (IN.)	DEPTH (FT.)	PAY LENGTH (L) (FT.)	V BARS			
	NO. OF	THK. (IN.)	WIDTH (IN.)	HEIGHT (IN.)	RADIUS (IN.)	ANGLE	WALL WELD (IN.)	PLATE WELD (IN.)	DIA. (IN.)	THK. (IN.)	NO. OF	DIA. (IN.)	LENGTH (IN.)	CIRCLE DIA. (IN.)	HOLE DIA. (IN.)				ANGLE	PROJECTION (IN.)	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



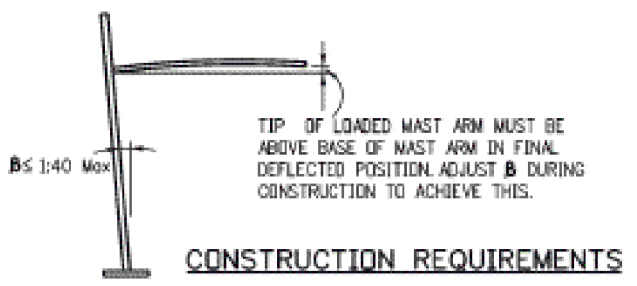
SECTION A



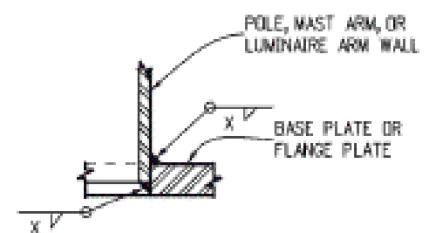
BASE PLATE DETAIL



TRAFFIC SIGNAL POLE CAISSON

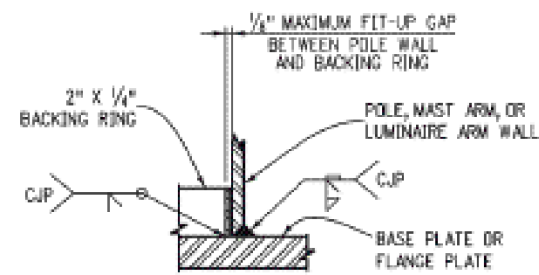


CONSTRUCTION REQUIREMENTS



SOCKET WELD

X = 3/8" FOR LUMINAIRE ARMS AND 1/4" FOR POLES. SEE TABLE ON SHEET 2 OF 5 FOR MAST ARMS.



BACKING RING WELD

DETAIL 1 S2

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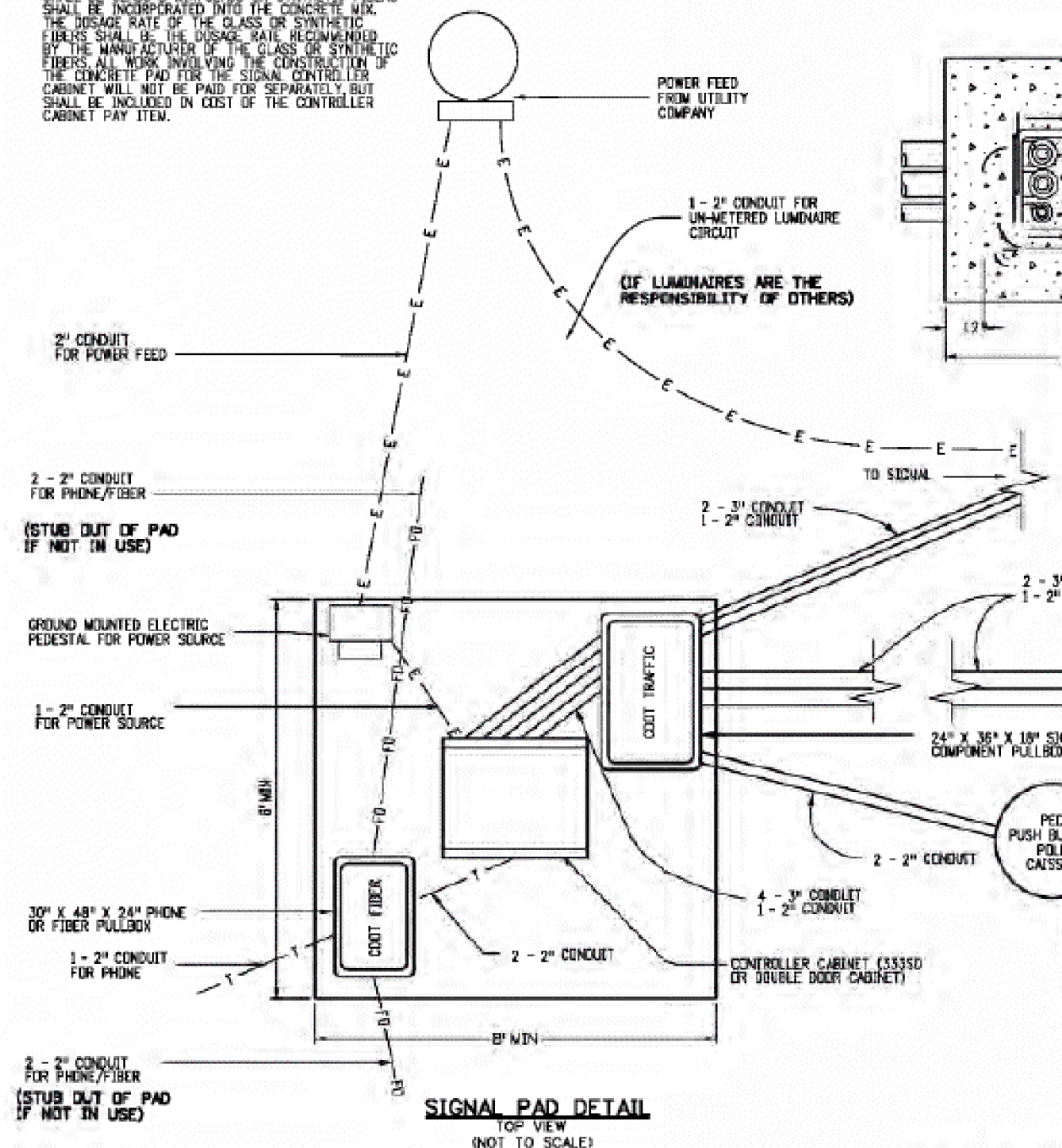
U.S. CUSTOMARY SPECIAL
**TYPICAL TRAFFIC SIGNAL
INSTALLATION DETAILS**

SHEET 5 OF 5

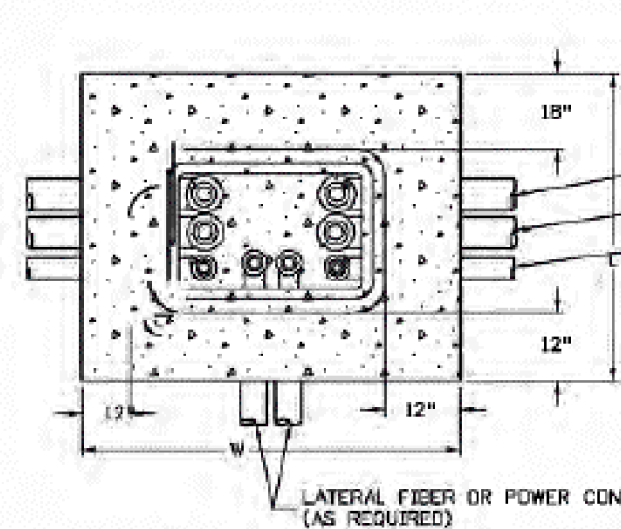
SPECIAL
635-A

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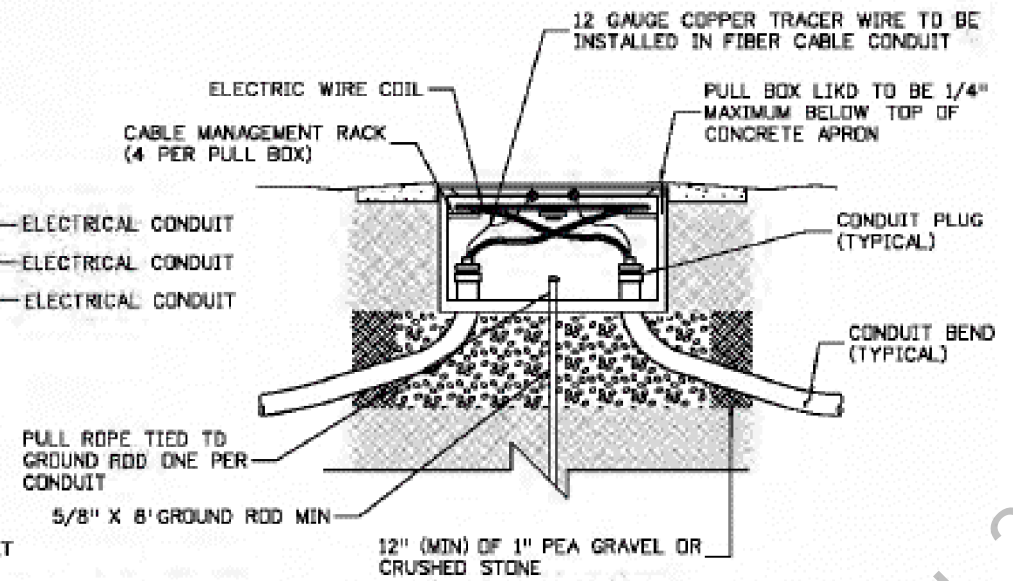
THE CONCRETE PAD SURROUNDING THE CABINET BASE SHALL BE CLASS B MIX CLASS OR SYNTHETIC FIBERS SHALL BE INCORPORATED INTO THE CONCRETE MIX. THE DOSAGE RATE OF THE GLASS OR SYNTHETIC FIBERS SHALL BE THE DOSAGE RATE RECOMMENDED BY THE MANUFACTURER OF THE GLASS OR SYNTHETIC FIBERS. ALL WORK INVOLVING THE 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.



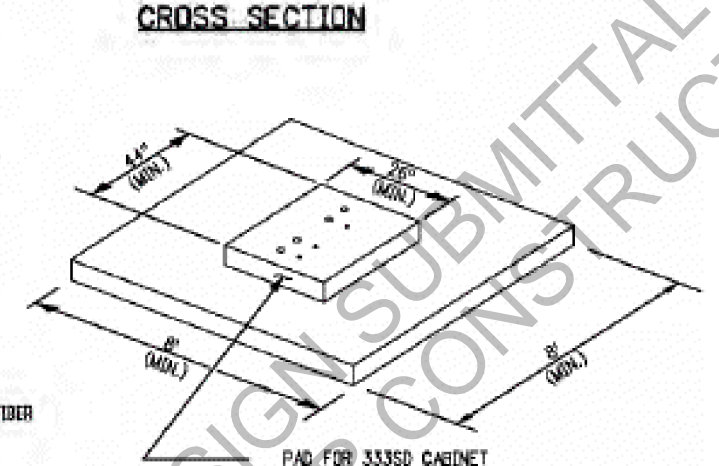
SIGNAL PAD DETAIL
TOP VIEW
(NOT TO SCALE)



PULL BOX DETAIL
TOP VIEW
(NOT TO SCALE)

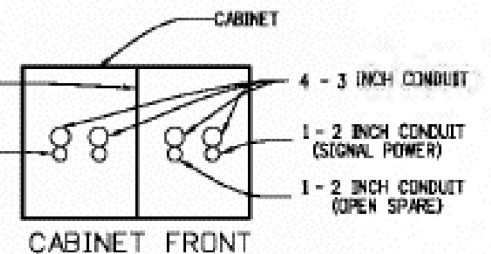


PULL BOX DETAIL
(NOT TO SCALE)

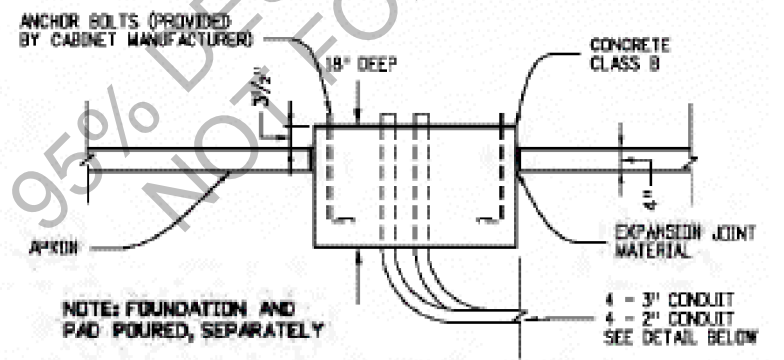


PAD FOR 333SD CABINET

- PULL BOX NOTES**
1. CONDUIT CENTERLINE SHALL BE ALIGNED TO TOP EDGE OF PULL BOX TO FACILITATE CABLE PULLING.
 2. SET 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 "NOOT TRAFFIC", "NOOT FIBER", OR "NOOT COMP" PHYSICALLY IMPRESSED ON ITS TOP.
 5. CONDUIT BEND NOTES:
 - A. RADII MUST NOT BE LESS THAN 48" FOR CONDUIT CONTAINING FIBER
 - B. SWEEP MUST NOT BE GREATER THAN 45 DEGREES



CONDUIT DETAIL
CROSS SECTION
(NOT TO SCALE)



FOUNDATION CROSS SECTION
(NOT TO SCALE)

CAST-IN-PLACE FOUNDATION

NO SCALE
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CDOT S-614-42

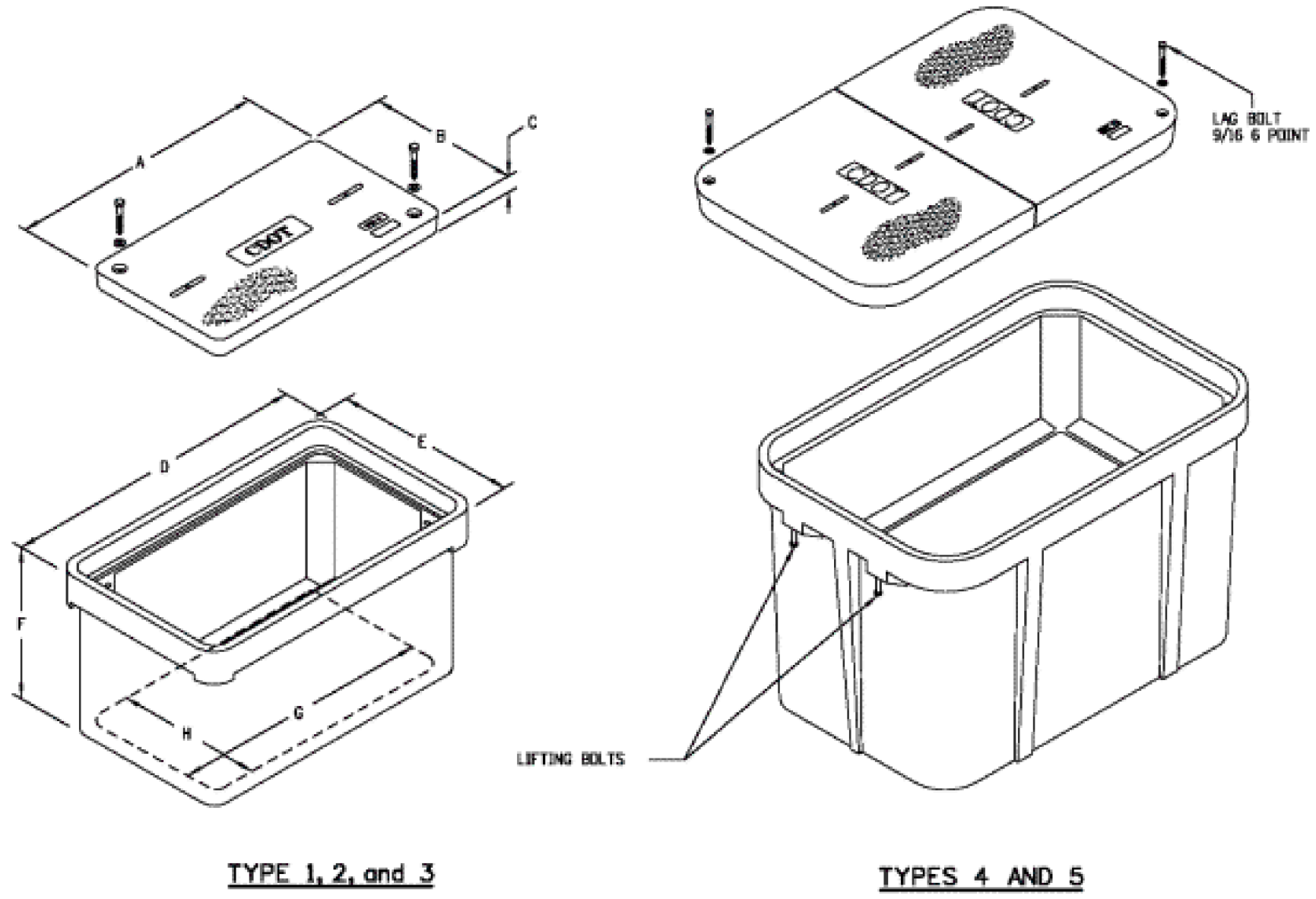
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL
CABINET FOUNDATION
DETAIL

SPECIAL
635-B

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 1/24/2022



NOTES:

- 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 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.
- PULL SLOTS SHALL BE RATED FOR A MINIMUM PULL OUT OF 3,000 POUNDS.
- TYPE 4 AND 5 PULL BOX COVERS SHALL BE A TWO-PIECE COVER.
- MAGNESIUM CHLORIDE TESTS SHOULD BE PERFORMED IN ACCORDANCE WITH THE LATEST ANSI/SCTE 77 SPECIFICATION FOR UNDERGROUND ENCLOSURE INTEGRITY, TIER 22 RATING.
- 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.

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 NOT FOR CONSTRUCTION

TABLE OF DIMENSIONS (MINIMUMS)

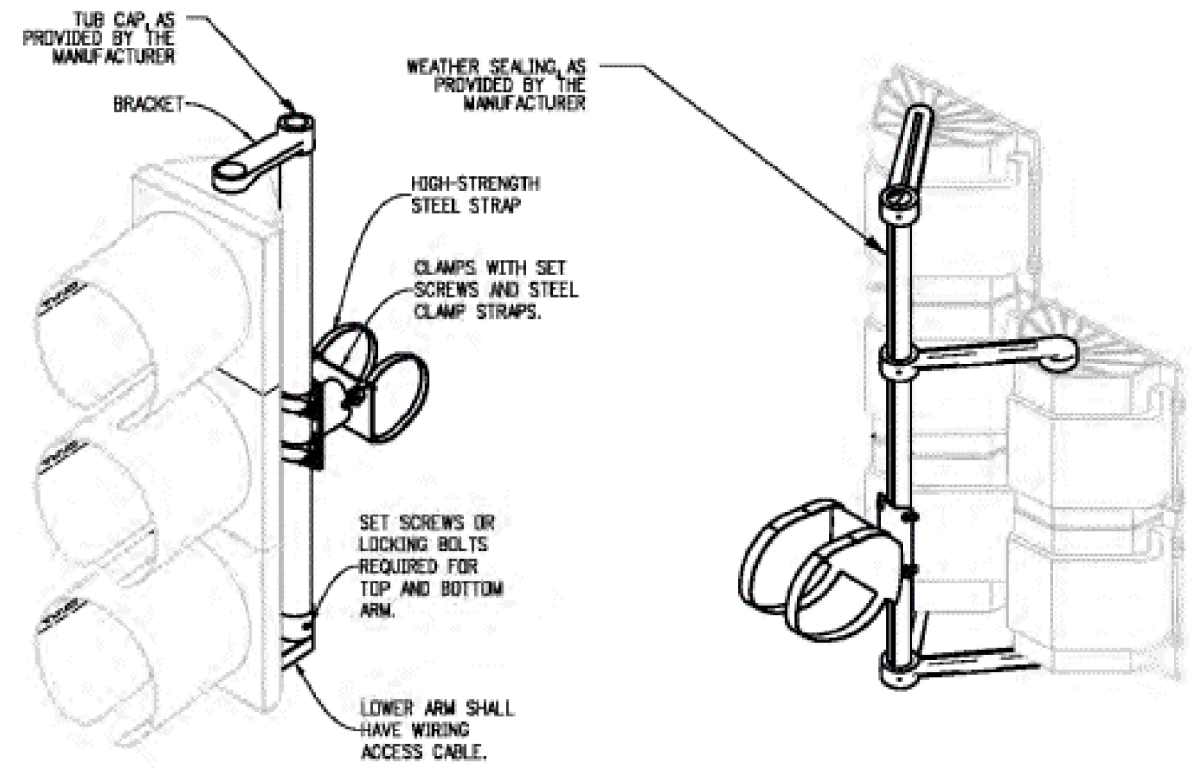
TYPE	DESCRIPTION	DIMENSIONS (IN.)							
		A	B	C	D	E	F	G	H
1	PULL BOX - (11" X 18" X 12")	18 ³ / ₈	11 ¹ / ₄	1 ³ / ₄	20 ¹ / ₄	13 ³ / ₈	12	15 ³ / ₄	8 ⁷ / ₈
2	PULL BOX - (13" X 24" X 12")	23 ³ / ₄	13 ³ / ₄	2	25	15 ¹ / ₂	12	19 ¹ / ₄	9 ³ / ₄
3	PULL BOX - (17" X 30" X 12")	30 ¹ / ₂	17 ¹ / ₂	2	32 ¹ / ₄	19 ¹ / ₄	12	26 ¹ / ₂	13 ¹ / ₂
4	PULL BOX - (24" X 36" X 24")	35 ⁵ / ₈	24	3	37 ⁵ / ₈	26	24	30 ⁵ / ₈	18 ¹ / ₂
5	PULL BOX - (30" X 48" X 24")	47 ⁵ / ₈	30	3	49 ⁵ / ₈	32 ¹ / ₈	24	45 ⁵ / ₈	28 ¹ / ₈

STANDARD PULL BOXES

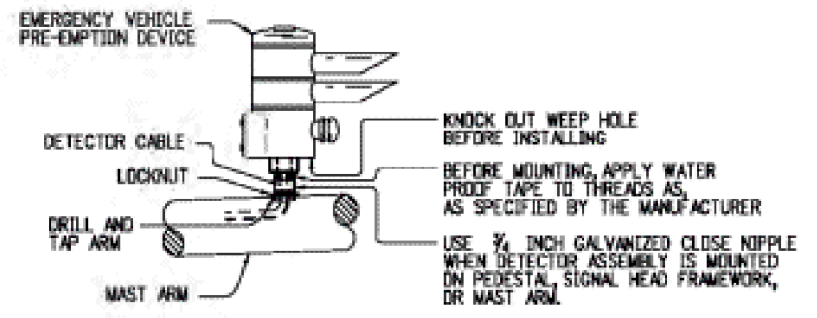
NO SCALE
**ADAPTED FROM
 CDOT S-614-43**

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY SPECIAL MISCELLANEOUS SIGNAL DETAILS	
SHEET 1 OF 2	
	SPECIAL 635-C

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ASTRO-TYPE MOUNTING BRACKET



EMERGENCY VEHICLE PRE-EMPTION DEVICE MOUNTING DETAIL

MAST-ARM MOUNTING BRACKETS

NOTES:

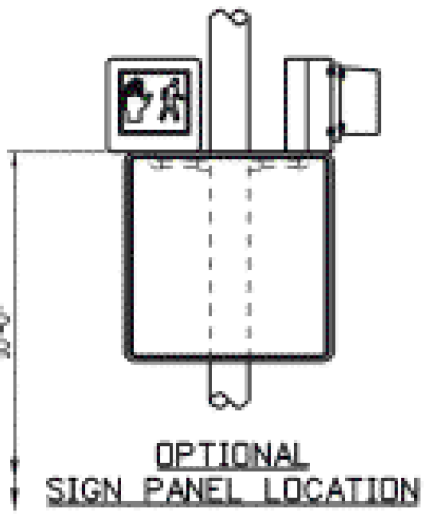
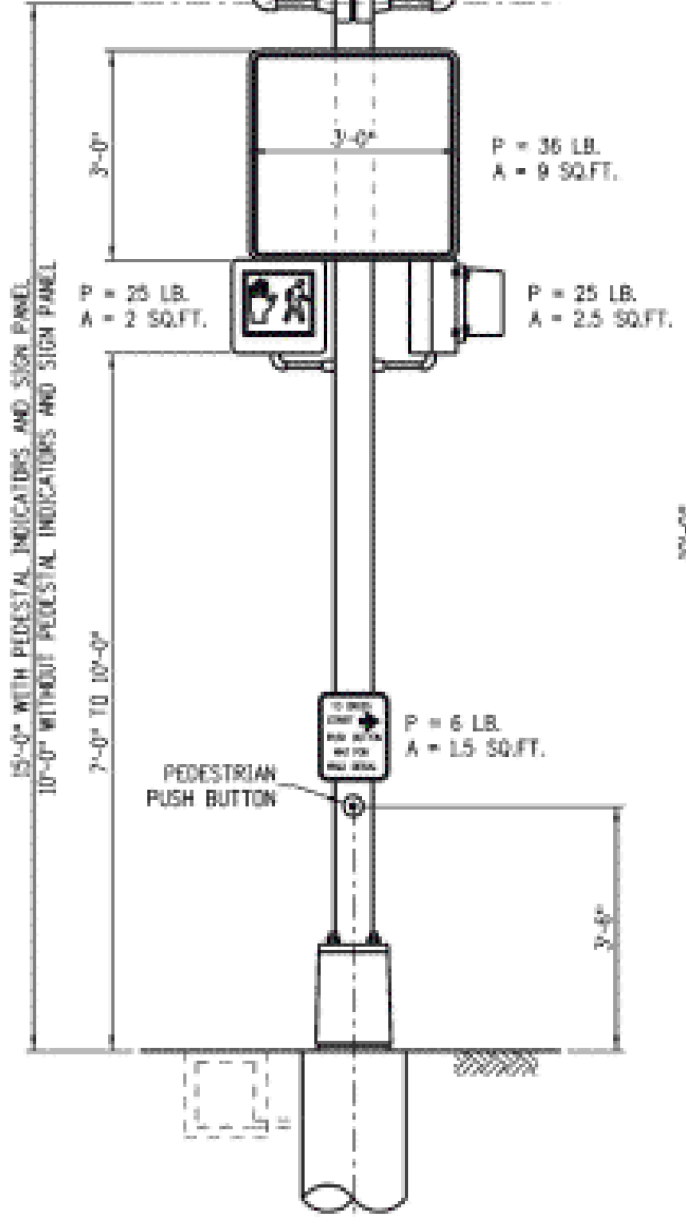
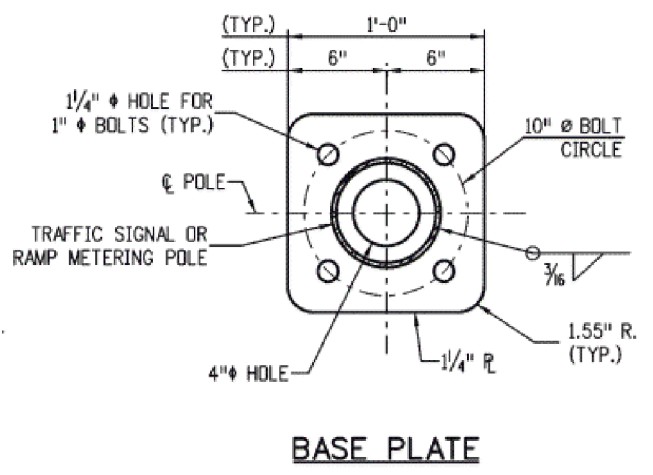
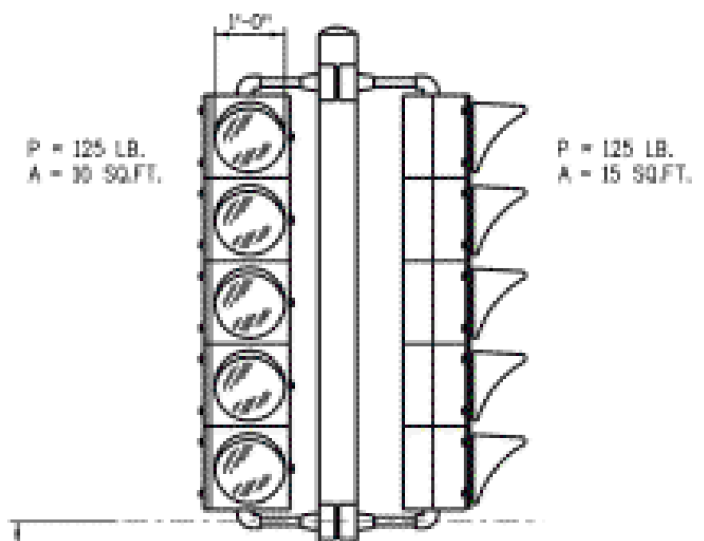
1. Signal head configurations shall be as shown on plans.
2. Install mounting brackets according to the manufacturer's instructions.
3. Use sky-type mounting brackets for mounting except for lighted signs, on mast arms, see Special 633-F, using 3/4 inch wide banding.
4. The gasket inside the top head mount should be inside the head.
5. The inside of the visor is to be powder coated black mounting brackets overhead signs.
6. Cable support bracket and safety cable from mast arm to head shall be provided.

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 NOT FOR CONSTRUCTION

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**ADAPTED FROM
 CDOT S-614-43**

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY SPECIAL MISCELLANEOUS SIGNAL DETAILS	
SHEET 2 OF 2	
	SPECIAL 635-C

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GENERAL NOTES:

1. ALL PEDESTAL POLE STEEL SHALL BE ASTM A53 GRB AND SHALL BE HOT DIP GALVANIZED INSIDE AND OUTSIDE ACCORDING TO ASTM A123.
2. MOUNTING HARDWARE FOR EACH TRAFFIC SIGNAL WILL BE FURNISHED BY THE MANUFACTURER, INCLUDING POLE PLATES FOR SIDE POLE MOUNTING.
3. PEDESTAL POLES SHALL HAVE A FRANGIBLE BASE: AKRON FOUNDRY TB2-17 OR APPROVED EQUAL.
4. ALL POLES, PEDESTALS AND CABINETS SHALL BE PLACED A MINIMUM OF 2 FEET OFF THE ROADWAY MEASURED FROM THE EDGE OF SHOULDER OR FACE OF CURB.
5. ALL SIGNAL HEADS SHALL BE APPROVED LED TYPE.
9. IF THE PLACEMENT OF A PEDESTRIAN PUSH BUTTON ASSEMBLY ON A TRAFFIC SIGNAL MAST POLE WILL NOT BE WITHIN EASY REACH BY PEDESTRIANS (10" OR LESS AND UNOBSTRUCTED IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT), THEN A SEPARATE PEDESTRIAN PUSH BUTTON POST ASSEMBLY (PPBPA) SHALL BE INSTALLED WITHIN EASY REACH. THE PPBPA SHALL MEET THE PROVISIONS FOUND "SECTION 4E.08 THROUGH 4E.13 - PEDESTRIAN DETECTORS" IN THE 2009 MUTCD WITH REVISION 2.

POLE AND CAISSON INFORMATION

MEMBER	ATTRIBUTES AND LOADS	TRAFFIC SIGNAL POLE
POLE	SIZE	6" Ø SCH 40
	SERVICE MOUNT	14.72 k.ft.
	SERVICE SHEAR	0.97 kip
CAISSON	SIZE	18" Ø
	ULT. MOMENT	20.55 k.ft.
	ULT. SHEAR	1.36 kip

TRAFFIC SIGNAL PEDESTAL POLE DETAIL

NO SCALE
ADAPTED FROM CDOT S-614-44

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL

PEDESTAL POLE SIGNALS

SHEET 1 OF 2

SPECIAL 635-D

FOUNDATION NOTES:

1. CONSTRUCT CONCRETE FOOTINGS IN ACCORDANCE TO SECTION 601.
2. REINFORCING STEEL SHALL BE GRADE 60 IN ACCORDANCE TO SECTION 709.
3. ALL REINFORCING STEEL SHALL BE NON COATED.
4. CAISSON CONCRETE MUST HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,700 PSI BEFORE INSTALLING THE PEDESTAL POLE; VERIFY CONCRETE STRENGTH WITH MATURITY METER.
5. CAISSONS SHALL BE PLACED AGAINST UNDISTURBED EARTH.

DESIGN DATA:

CAISSON CONCRETE:
 CLASS BZ CONCRETE: $f'_c = 4,000$ psi
 REINFORCING STEEL: $f_y = 60,000$ psi

DESIGN WIND SPEED = 90 mph

THE DESIGNS HEREIN ASSUME THAT THE PEDESTAL POLES ARE INSTALLED WITHIN THE ROADWAY PRISM WITH THE FOLLOWING PARAMETERS:

MEDIUM DENSE COHESIONLESS SOIL:
 SOIL DENSITY, $\gamma = 110$ pcf
 SOIL ϕ ANGLE = 30°
 SF = 1.25 FOR FLEXURAL RESISTANCE

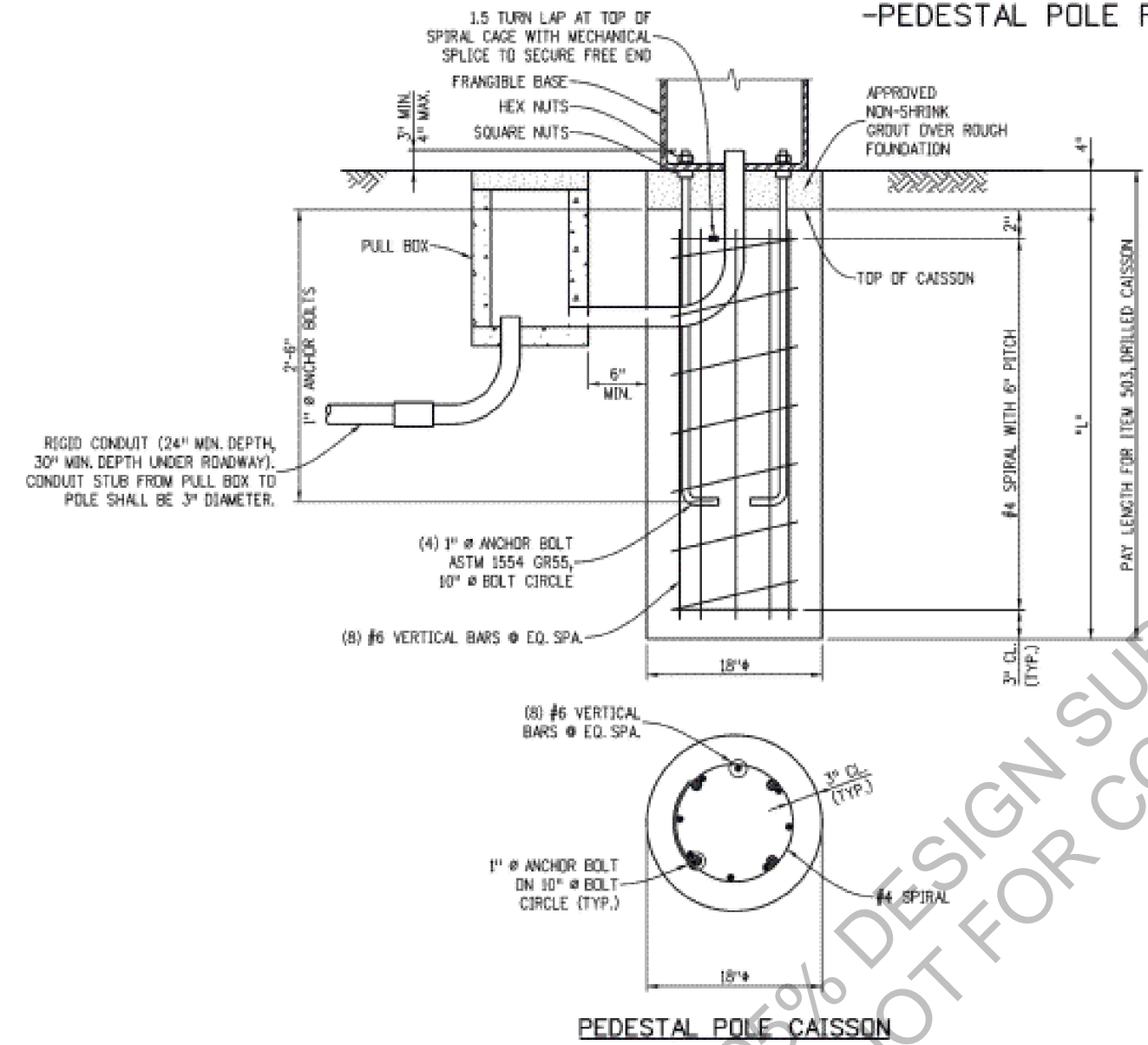
MEDIUM STIFF COHESIVE SOIL:
 SOIL DENSITY, $\gamma = 110$ pcf
 SOIL COHESION = 750 psf
 SF = 1.25 FOR FLEXURAL RESISTANCE

CONTACT THE ENGINEER IF ANY OF THE FOLLOWING SOIL CONDITIONS ARE ENCOUNTERED DURING DRILLING:

- (A) SIGNALS WILL NOT BE INSTALLED WITHIN THE ROADWAY 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.

UNFACTORED GROUP LOAD II COMBINATION LOADS FOR THE DESIGN OF POLES WERE GENERATED WITH THE STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 5TH EDITION INCLUDING THE 2010 & 2011 INTERIMS.
 LOAD FACTORS FOR GENERATING ULTIMATE CAISSON LOADS ARE FOR THE STRENGTH III LOAD COMBINATION AS SPECIFIED IN THE 6TH EDITION OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

-PEDESTAL POLE FOUNDATION DETAILS-



CAISSON DATA TABLE

	TRAFFIC SIGNAL PEDESTAL POLE CAISSON
"L"	4'-8"
PAY LENGTH	5'-0"

NO SCALE
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 CDOT S-614-44**

U.S. DEPARTMENT OF TRANSPORTATION
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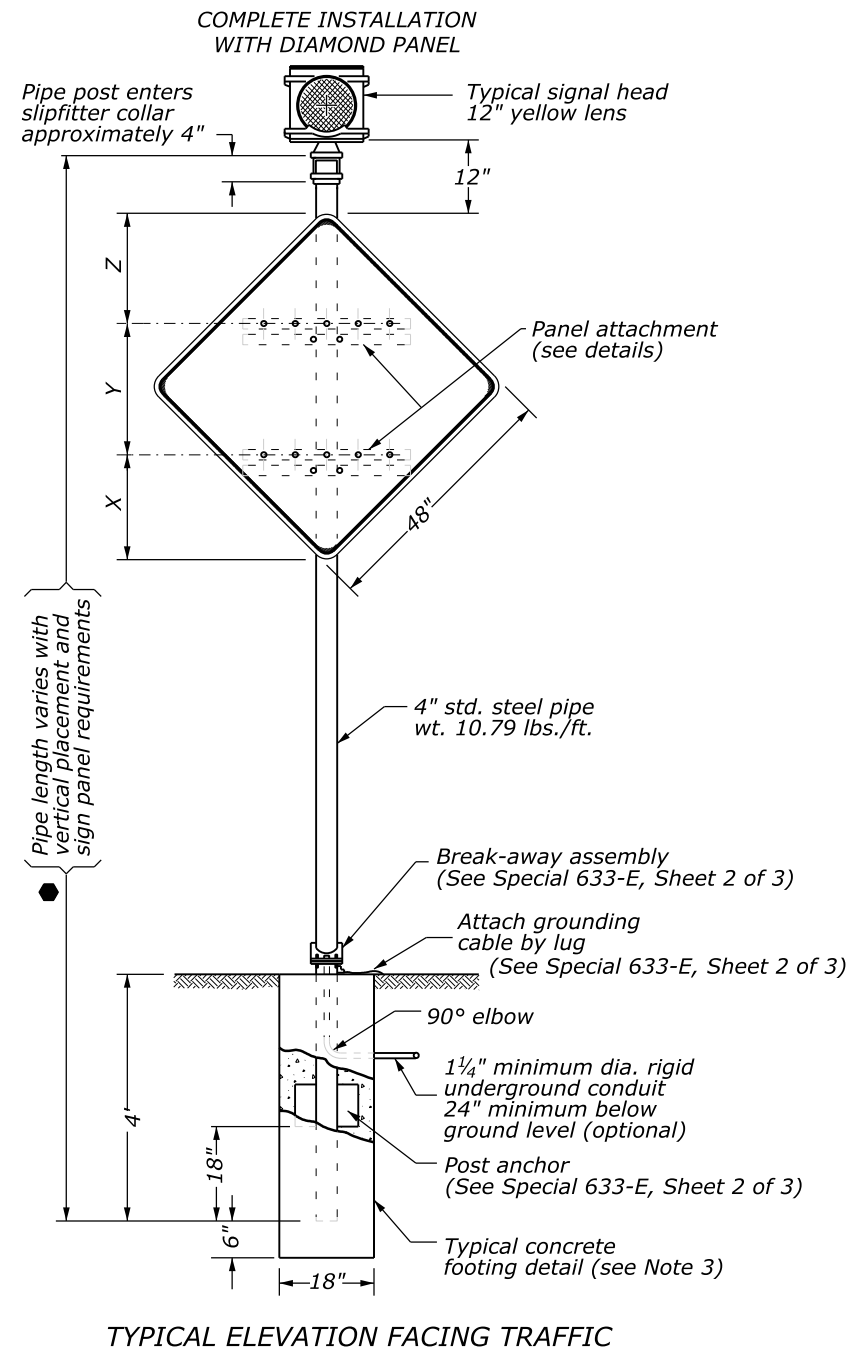
U.S. CUSTOMARY SPECIAL

PEDESTAL POLE SIGNALS

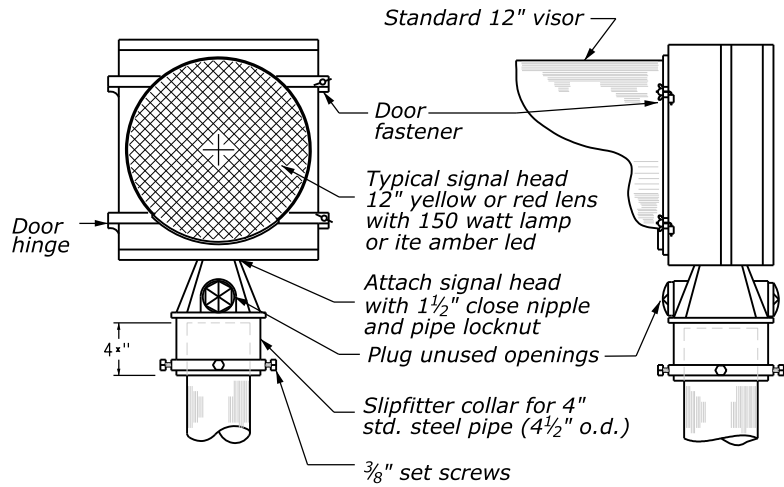
SHEET 2 OF 2

SPECIAL
 635-D

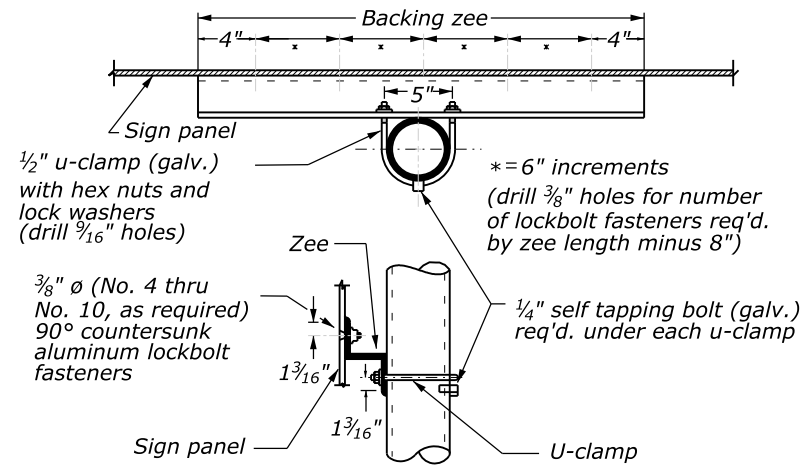
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TYPICAL ELEVATION FACING TRAFFIC



TYPICAL SIGNAL HEAD - 12 INCH LENS



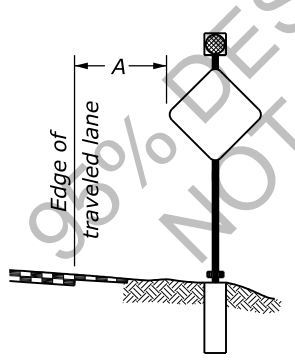
TYPICAL PANEL ATTACHMENT DETAILS

DESCRIPTION	DIMENSIONS (IN.)			LENS TYPE	BACKING ZEES
	X	Y	Z		
36" diameter circle panel (●)	8	20	8	12" yellow	20"
48" diameter circle panel (●)	10 1/2	27	10 1/2	12" yellow	20"
36" pentagon panel (◆)	9	20	9	12" yellow	20"
48" pentagon panel (◆)	12	25 3/4	9	12" yellow	20"
48" octagon panel (●)	12	24	12	12" red	20"
24" x 48" rectangle panel (■)	12	24	12	12" yellow	20"

GENERAL NOTES

- All sign panels used on flashing beacons are Class II. Fabricate in accordance with:
 - Panels shall be single sheet aluminum 0.100 minimum thickness.
 - Backing zeos are 3 in. x 2 in. 2.33 lbs. per ft. aluminum.
 - All signs shall be fabricated using retroreflective sheeting conforming to ASTM D4956. The type shall be described in the standard specifications and/or as shown on the plans.
 - Bolts, u-clamps, nuts and metal washers shall be galvanized or cadmium plated.
- Installation design conforms with AASHTO "Standard Specifications For Structural Supports For Highway Signs, Luminaires And Traffic Signals" and shall be fabricated in accordance with:
 - Steel pipe, post anchor plates and break-away plates shall conform to AASHTO M270 (ASTM A709) grade 36.
 - High strength bolts, nuts and washers shall conform to ASTM-A325 and shall be galvanized or cadmium plated.
 - Holes shall be drilled and cuts shall preferably be saw cuts; however, flame cutting will be permitted provided all edges are ground. Metal shall not project beyond the plane of the plate face on break-away plates.
 - All welding is to be continuous and in accordance with current AWS specifications.
 - A "keeper plate" of thin (28 gage) galvanized sheet metal, fabricated to match break-away plate dimensions but with Holes rather than slots, shall be used to restrain bolt loosening due to wind vibration.
 - Pipe length varies with vertical placement, minimum ground clearance (7 ft. +) and the sign panel required. It will be as shown on the plans, or as determined by cross-section, or as directed by the engineer for each location (maximum length is approximately 20 ft.-10 in. and minimum length is approximately 15 ft.-4 in. If length is not specified supply maximum - may require field cut to conform to typical sign placement details).
- Construct concrete footings according to Section 601.

General notes continued on Sheet 2.

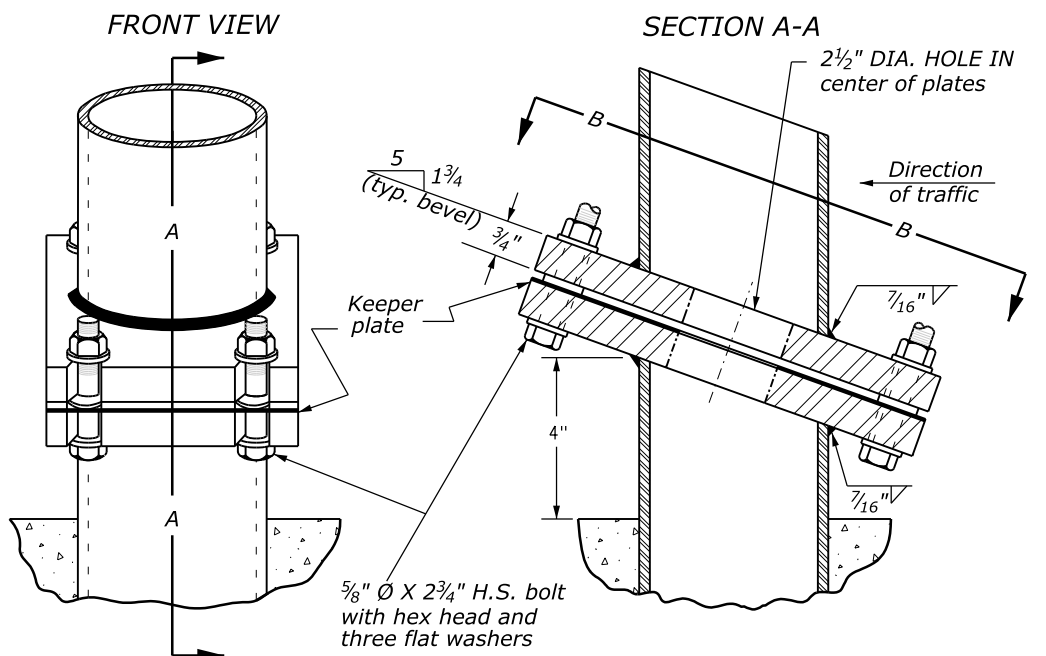


TYPICAL SIGN PLACEMENT

LATERAL PLACEMENT ("A")
Normal lateral placement "A" for warning signs is 12' plus curb or shoulder width.
Normal lateral placement "A" for regulatory signs is 6' plus curb or shoulder width, or if none 12' from edge of pavement.
2' shall be considered minimum except that in urban areas 1' from the curb face is permissible where sidewalk width is limited or where existing poles are close to the curb.
Refer to Special 633-B (CDOT S-614-1) for vertical placement requirements.

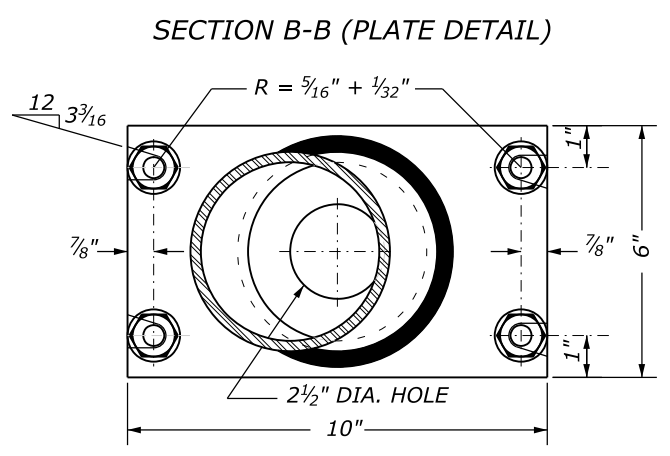
NO SCALE
**ADAPTED FROM
CDOT S-614-14**

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User: Candalaria
1/24/2022

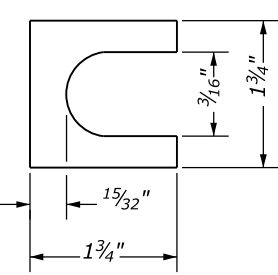


BREAK-AWAY ASSEMBLY BOLTING PROCEDURE:

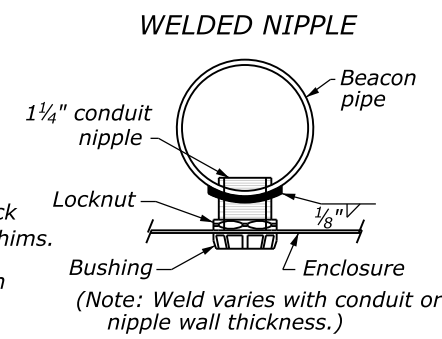
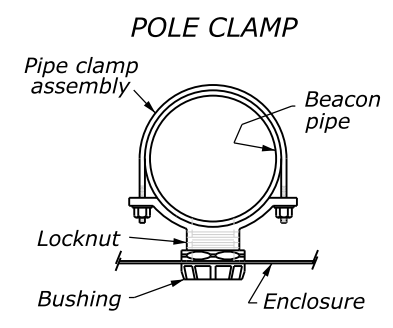
1. Assemble post to footing with bolts- one flat washer on each bolt top and bottom, and one flat washer and the keeper plate between the break-away plates. use brass shims to plumb the post.
2. Tighten all bolts to maximum possible with a 12 to 15 inch pipe wrench to bed washers and shims to clean bolt threads, then loosen each bolt in turn and retighten in a systematic order to 450 inch-pounds torque.
3. Burr threads at junction with nut using a center punch to prevent nut loosening.



SHIM DETAIL



Furnish two (2) .012 in. ± thick and two (2) .032 in. ± thick shims.
Shims shall be fabricated from brass shims stock or strip conforming to ASTM-B 36.

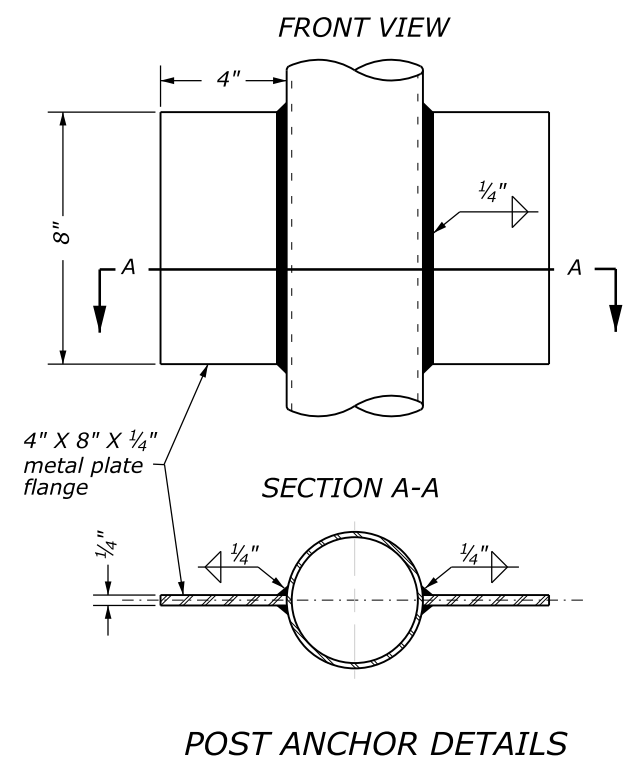


TYPICAL PIPE ATTACHMENTS

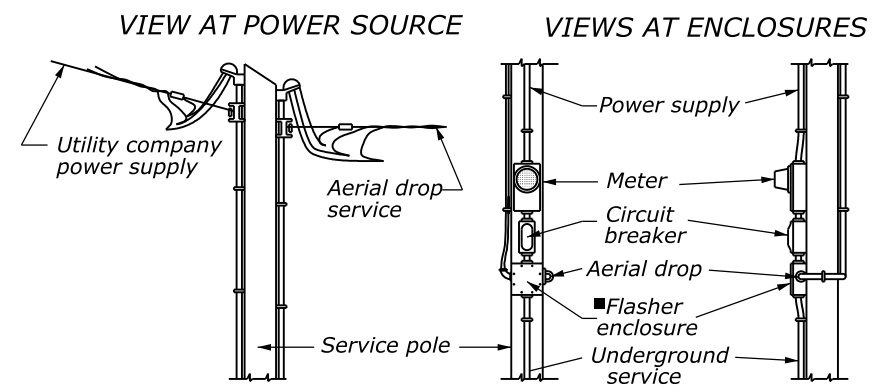
GENERAL NOTES:

4. All electrical materials and workmanship shall conform to the latest requirements of the NEC, NEMA, UL or EIA wherever applicable; the Colorado PUC and any local codes or ordinances which may apply; and the following:
 - A. The contractor is to provide all necessary wiring within the beacon and from there to the power source provided by the utility company. The utility company will make the connection with the contractor's wiring.
 - B. The electrical service between the power source and the flashing beacon shall be underground unless an aerial drop is authorized by the CO. All wiring excluding the aerial drop wire shall be in conduit.
 - C. The "flasher" shall be housed in a suitable enclosure on the utility pole at the power source unless the engineer directs that the enclosure be mounted on the beacon pipe or that the device may be contained within the signal head itself.
 - D. A suitable enclosure for the flasher shall be in accordance with "a rain tight junction box or can, approximately 8 in. x 8 in. x 4 in., surface mount, with a flanged screw attached cover, and fabricated from not less than 16 gage galvanized steel".
 - E. A built-in radio interference suppression device and a photocell sensor type signal lamp dimmer shall be provided for each flashing beacon.
 - F. Beacons shall flash at a rate of not less than 50 and not more than 60 times per minute.
5. When specified in the plans, a pedestal base installation (as detailed on Special 635-E, sheet 4) may be used in place of the breakaway base shown on this sheet.

TYPICAL BREAK-AWAY ASSEMBLY DETAILS

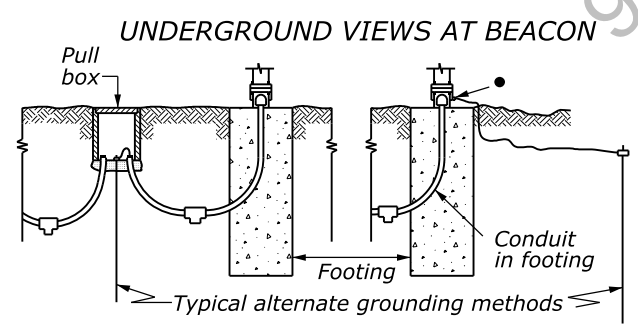
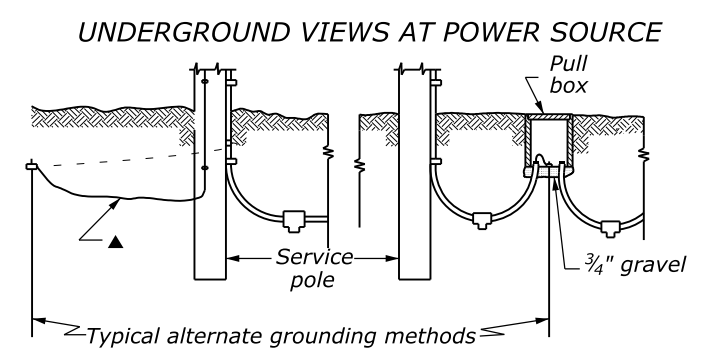


POST ANCHOR DETAILS

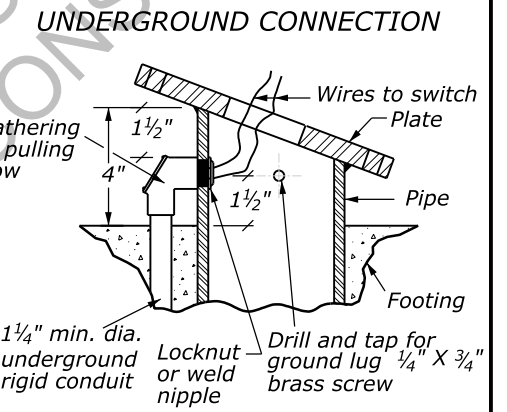
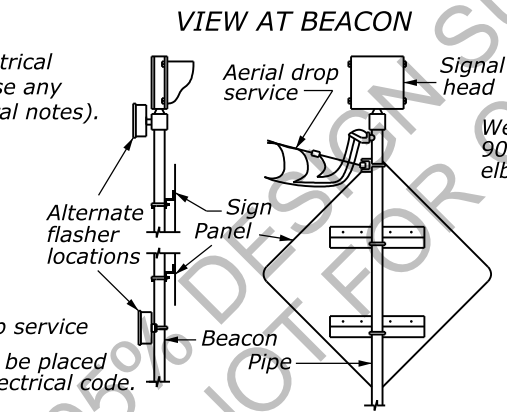


NOTES:

- Location and configuration of electrical equipment is diagrammatic only (use any method complying with the general notes).
- ▲ Existing ground at service pole; otherwise pull thru conduit or attach to conduit and tap off underground.
 - Drill and tap pipe for 1/4 inch round round head brass screw, 3/4 inch long, for ground lug.
 - Provide weep hole with aerial drop service
 - Bedding material for conduit shall be placed in accordance with the national electrical code.



TYPICAL ELECTRICAL SERVICE DETAIL

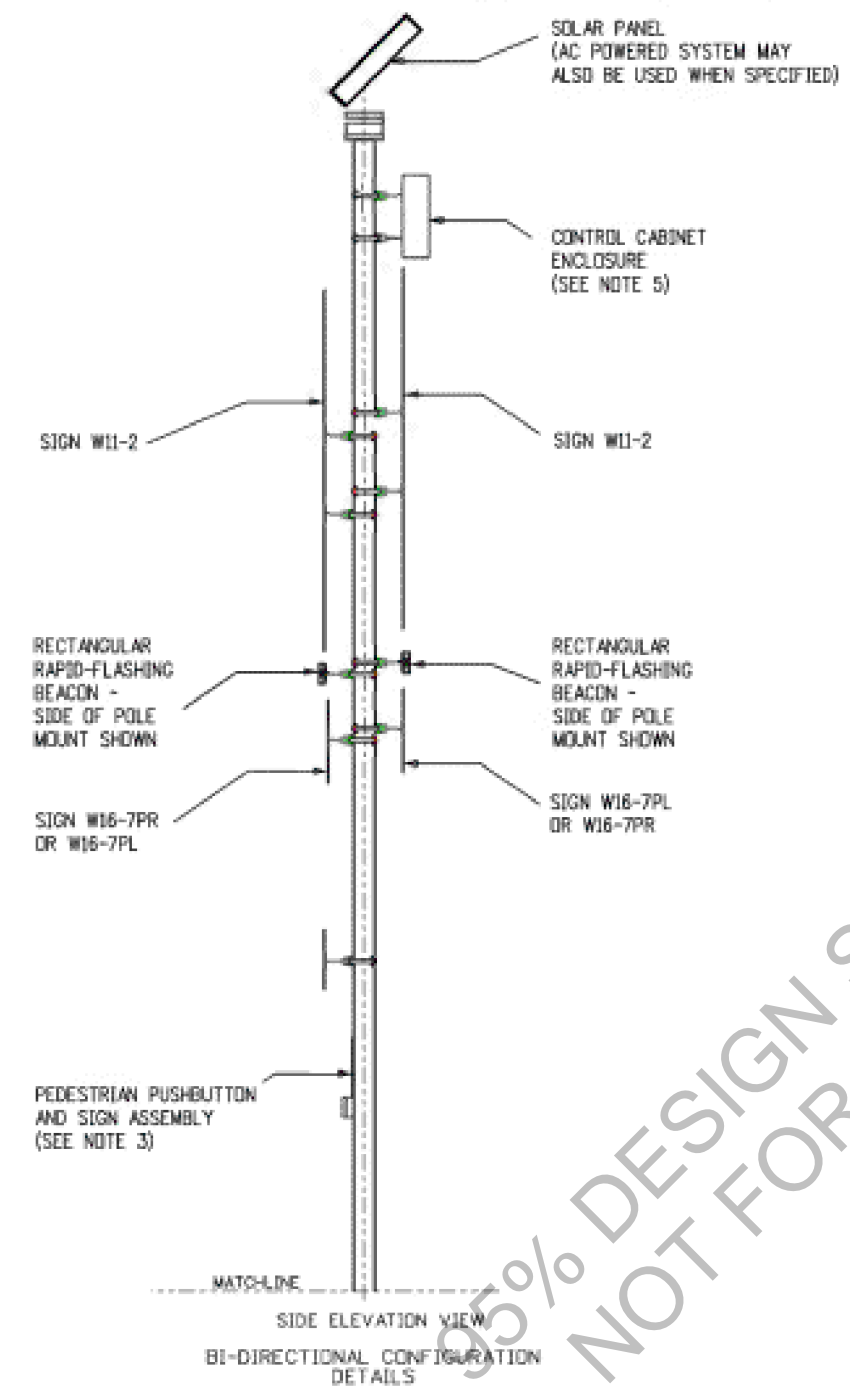
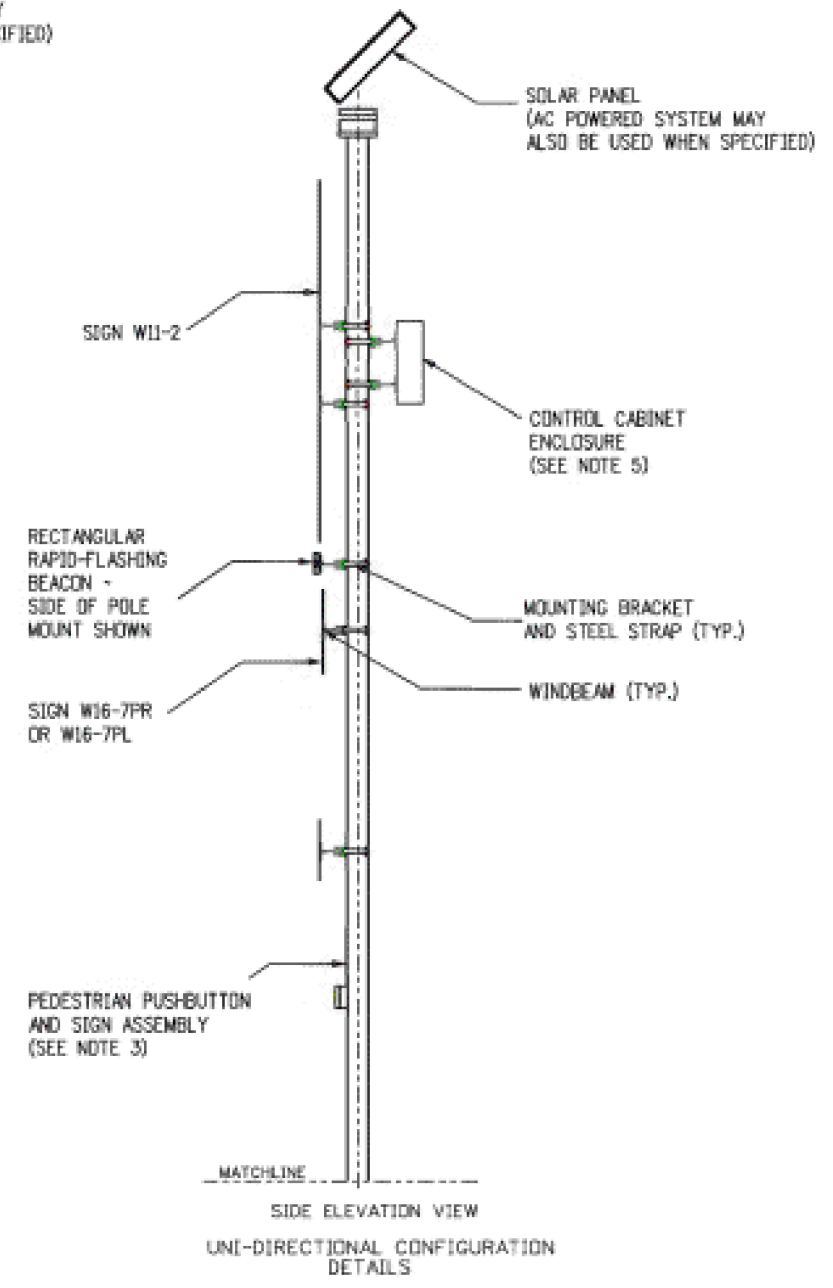
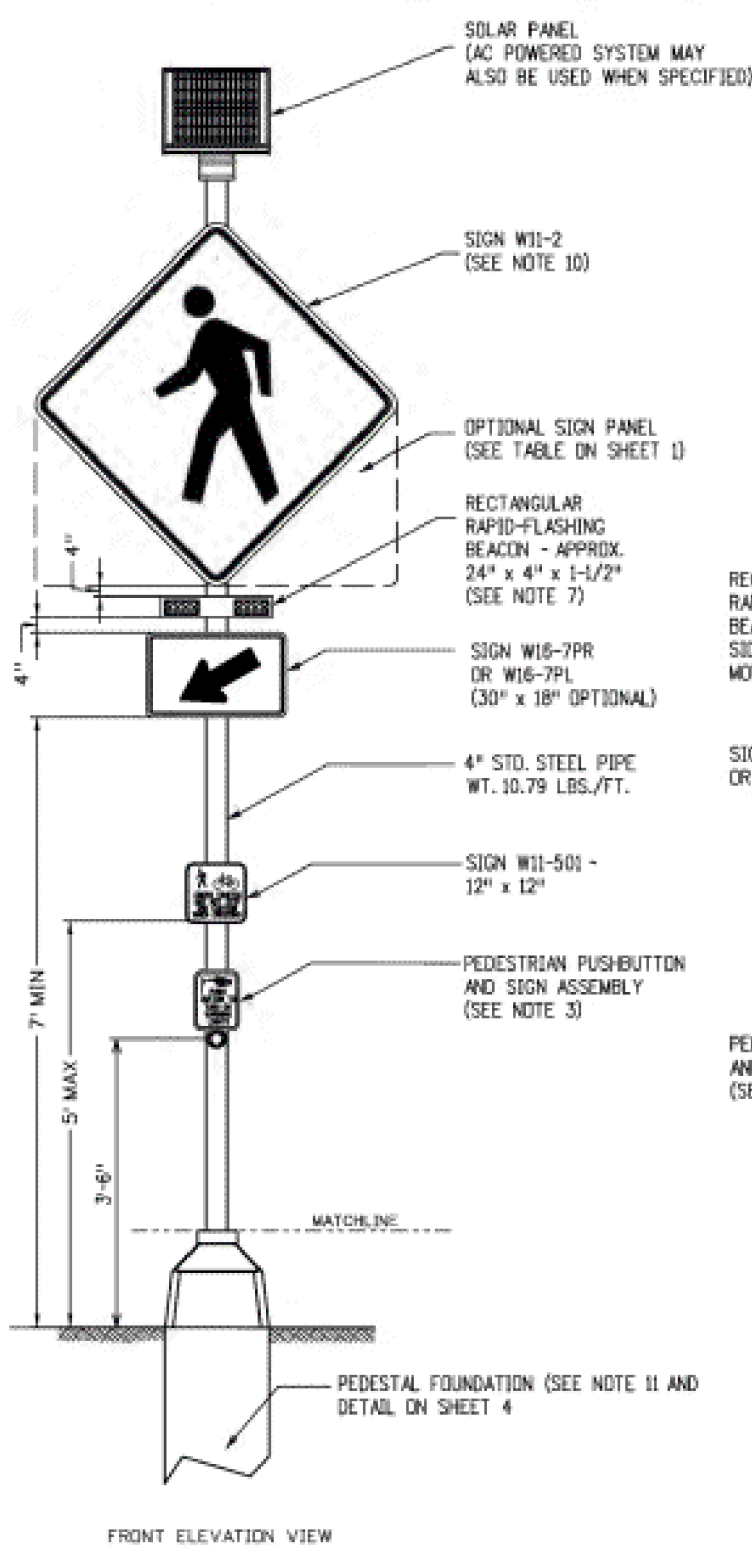


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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-49

GENERAL NOTES:

1. THE RRFB SYSTEM SHALL ADHERE TO ALL ASPECTS OF THE FEDERAL HIGHWAY ADMINISTRATION, INTERIM APPROVAL 21-RECTANGULAR RAPID-FLASHING BEACONS AT UNCONTROLLED MARKED CROSSWALKS (FHWA IA-21).
2. AN RRFB SHALL ONLY BE USED TO SUPPLEMENT A POST-MOUNTED W11-2 SIGN WITH W16-7P PLAQUE, LOCATED IMMEDIATELY ADJACENT TO AN UNCONTROLLED MARKED CROSSWALK.
3. PEDESTRIAN PUSHBUTTON AND SIGN ASSEMBLY MAY BE SEPARATE PARTS. USE R10-25 (9" X 12") SIGN IN ACCORDANCE WITH 2009 MUTCD. SIGN MAY INCLUDE INTEGRATED WARNING LIGHTS.
4. TERMINATE RRFB CONNECTIONS PER MANUFACTURER'S RECOMMENDATION.
5. CONTROL CABINET ENCLOSURE SHALL BE SIZED BY THE RRFB MANUFACTURER.
6. BEACON ASSEMBLY MAY BE MOUNTED ON THE SIDE OF THE POLE AS SHOWN OR ON THE TOP OF THE POLE IF SPECIFIED.
7. RRFB DISPLAYS SHALL BE LED TYPE MEETING THE INTENSITY REQUIREMENTS OF SAE J595 FOR CLASS 1 YELLOW, BUT SHALL NOT EXCEED 1000 CANDELAS DURING DAYLIGHT AND 500 CANDELAS AFTER DARK.
8. SEE SPECIAL 635-E, SHEET 1, 2 AND 4 FOR STANDARD BASE AND FOUNDATIONS DETAILS.
9. WHEN SPECIFIED IN THE PLANS, AC POWER SYSTEM (AS SHOWN ON SPECIAL 635-E SHEET 1) MAY BE USED IN PLACE OF SOLAR POWERED SYSTEM SHOWN ON THIS SHEET.
10. FOR POSTED SPEEDS OF 35 MPH OR LOWER, THE W11-2 SIGNS SHALL BE 36" X 36". FOR POSTED SPEEDS OF 40 MPH OR HIGHER, THE W11-2 SIGNS SHALL BE 48" X 48".
11. PEDESTAL FOUNDATION MAY BE USED FOR BOTH UNI-DIRECTIONAL AND BI-DIRECTIONAL CONFIGURATIONS. BREAKAWAY BASE INSTALLATION (AS SHOWN ON SPECIAL 635-E, SHEET 1) SHALL BE USED FOR UNI-DIRECTIONAL CONFIGURATION ONLY.



RECTAGULAR RAPID-FLASHING BEACON (RRFB)

NO SCALE
ADAPTED FROM
CDOT S-614-14

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY SPECIAL FLASHING BEACON AND SIGN INSTALLATIONS	
SHEET 3 OF 4	
	SPECIAL 635-E

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GENERAL NOTES

1. Pole and pedestal must be designed to meet the requirements outlined in the "Standard Specifications For Structural Supports For Highway Signs, Luminaires And Traffic Signals", published by AASHTO, for a wind velocity of 100 mph. Submit sets of drawings, signed and sealed by a Professional Engineer registered in the State of Colorado, in accordance with Section 104.03 of the FP-14.

DESIGN DATA

The designs herein assume that flashing beacons are installed within the roadway prism with the following soil parameters:
 soil density $\gamma = 110 \text{ lb./cu.ft.}$
 soil cohesion = 750 lb./sq.ft. for medium stiff cohesive soil
 soil ϕ angle = 30 deg. for medium dense cohesionless soil
 $sf = 3.0$ for flexural resistance

Contact the CO. if the flashing beacon will not be installed within the roadway prism or if any of the following soil conditions are encountered during drilling:

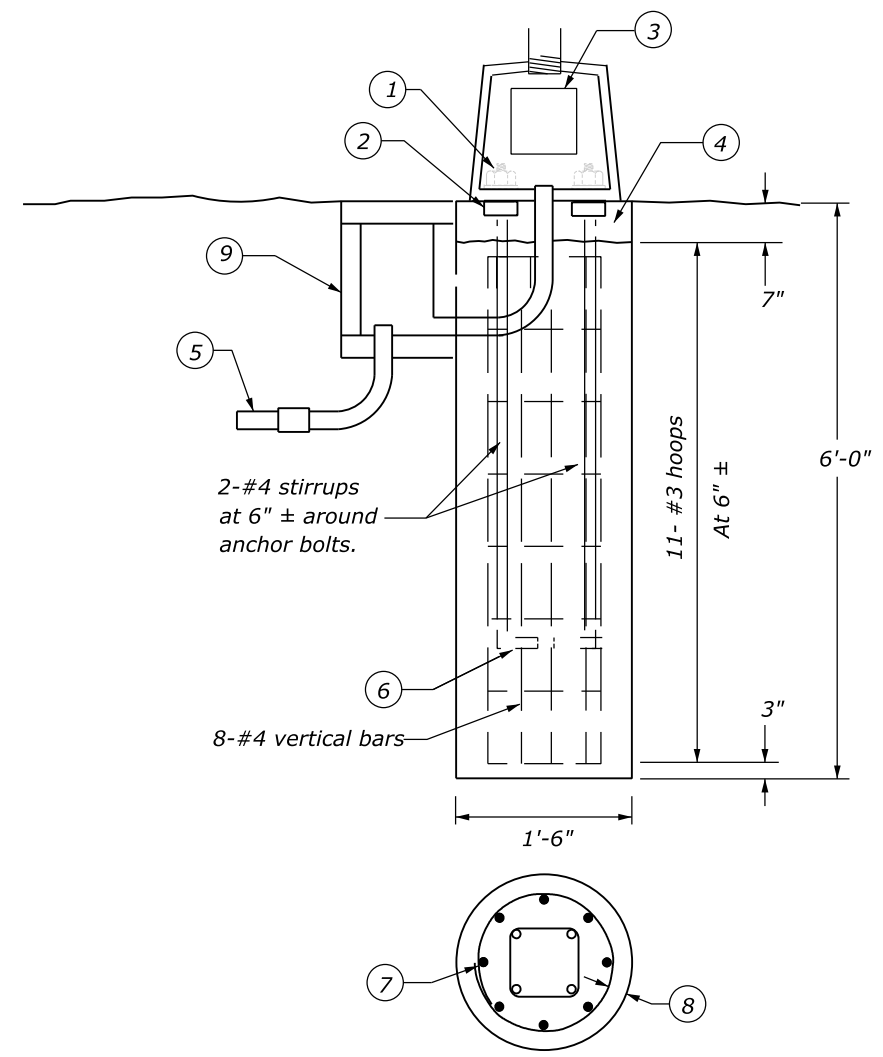
- a) The soil has a high organic content or consists of saturated silt and clay.
- b) The site won't support the weight of the drilling rig.
- c) The foundation soils are not homogenous.
- d) Firm bedrock is encountered.
- e) A high groundwater table is encountered.
- f) Large boulders are encountered.

Footing design is based on 100 mph wind load on a 48 in. x 48 in. diamond sign panel mounted 9 ft. above the ground, with a 24 in. x 24 in. rectangular plaque underneath and a flashing beacon 12 in. above. If a sign configuration is proposed that exceeds these dimensions, the footing design must be engineered and signed and sealed by a Professional Engineer registered in the State of Colorado.

FOOTING NOTES

- 1 Hex nuts
- 2 Square nuts
- 3 Hand hole shall be provided.
- 4 4 in. min. non-shrinkable Grout over rough foundation
- 5 Schedule 80 pvc (24 in. min. depth, 30 in. min. depth under roadway) conduit stub from pull box to pole shall be 2" min. diameter.
- 6 Install anchor bolts (furnished with pole) per manufacturer's template print (furnished with order)
- 7 Minimum overlap of 12 in.
- 8 1-1/2 in. clearance for hoops
- 9 Pull box

Caisson designs require that the caisson be founded in compact sand, clay or sandy clay. If, by visual inspection of the hole, other material is present, the caisson design shall be modified as determined by the CO.



ALTERNATE PEDESTAL BASE INSTALLATION

NO SCALE
**ADAPTED FROM
 CDOT S-614-14**

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY SPECIAL FLASHING BEACON AND SIGN INSTALLATIONS	
SHEET 4 OF 4	
	SPECIAL 635-E

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-51

PHASE 1 NOTES:

General Notes

1. Begin Construction of Ivy Street Bridge.
2. Construct RW-01, and portion of Storm Drainage System.
3. Staging may occur in vacant lots as described in SCRs.

Timing Restrictions

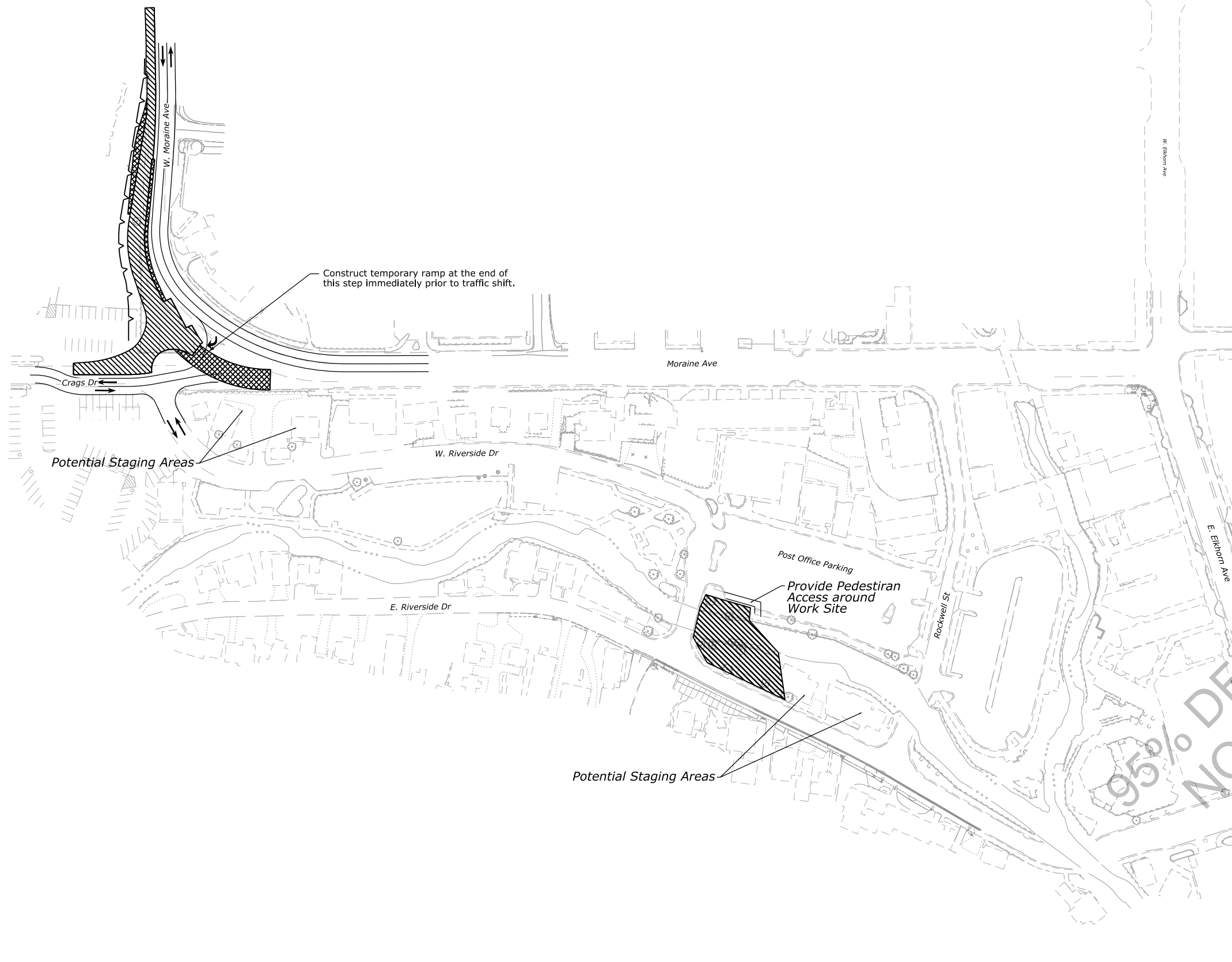
1. Refer to SCRs.

Traffic Shifts/Closures/Detours

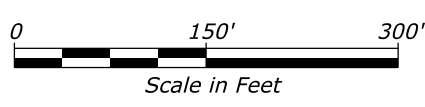
1. No temporary closures or changes to any existing traffic conditions.

Access and Parking

1. Slight shift of Craggs Dr alignment in Phase 2.
2. Fence work areas on all sides.



95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION



- Pavement Construction this phase
- Temporary Construction this phase
- Previously completed pavement
- Detour Route this phase

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

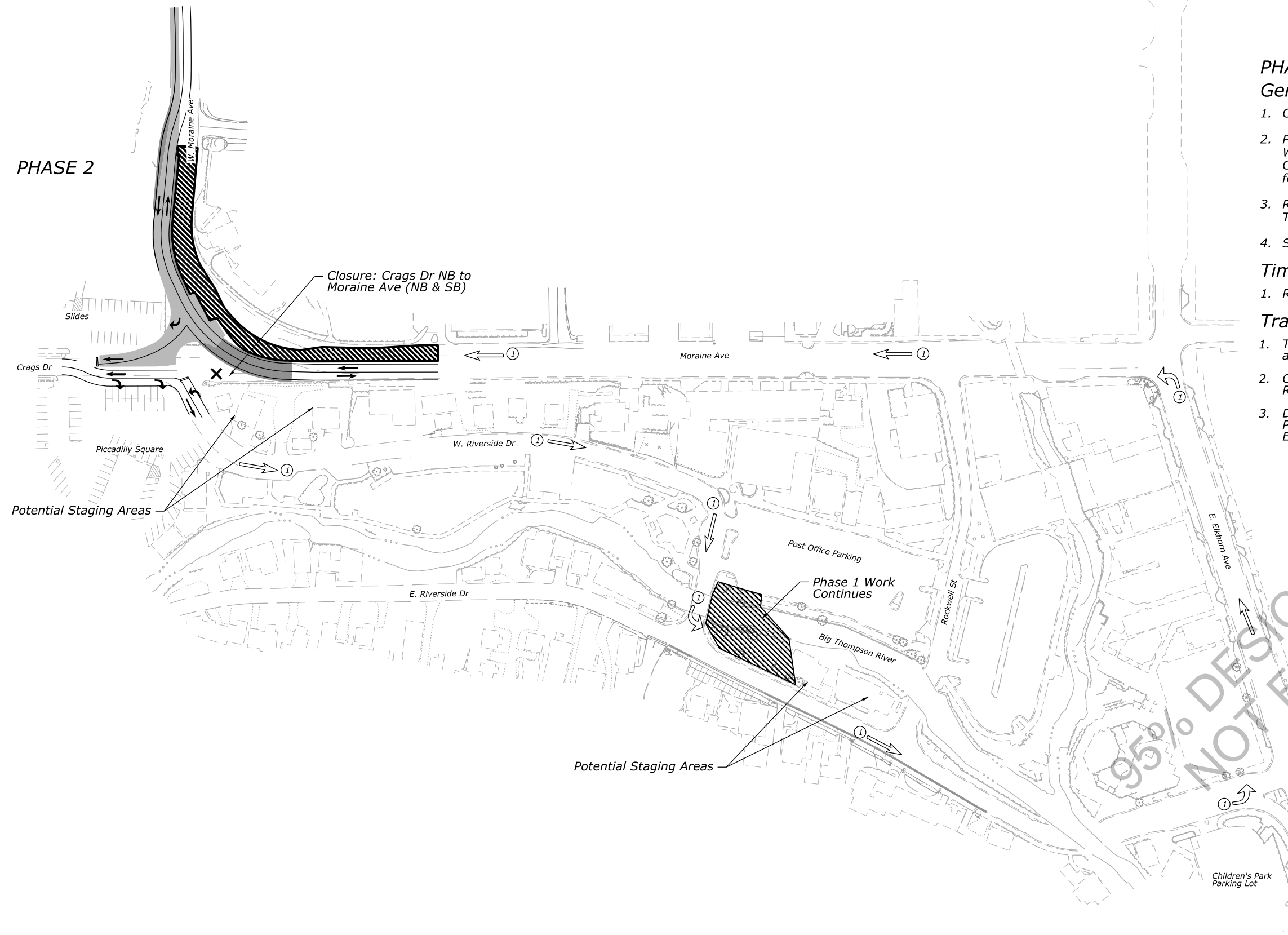
TEMPORARY TRAFFIC CONTROL PLAN - PHASE 1

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1/25/2022

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-52

PHASE 2



**PHASE 2 NOTES:
General Notes**

1. Continue Construction of Ivy Street Bridge.
2. Phase 2: Construct most of southbound Moraine Ave to W Moraine Ave (US36 to Rocky Mt Natl Park) alignment. Construct 4' detour pavement along inside of bypass for future phasing.
3. Relocate Utilities to complete Phase 2 work (Gas - Xcel and Telecommunications - Century Link).
4. Staging may occur in vacant lots as described in SCRs.

Timing Restrictions

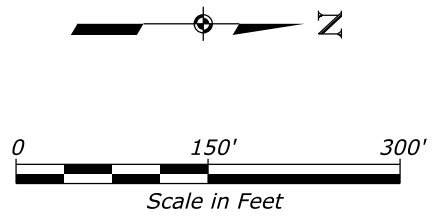
1. Refer to SCRs.

Traffic Shifts/Closures/Detours

1. Temporary realignment of Moraine Avenue to detour alignment for Phase 2.
2. Closure: Phase 2 Crags Drive northbound between W. Riverside Drive and Moraine Ave.
3. Detours:
Phase 2 - W. Riverside Dr to Ivy St to E. Riverside Dr. to Elkhorn Ave to Moraine Ave. ①

Access and Parking

1. Fence Work area long Slides parking lot
2. Delineate and maintain access at all times into and out of Piccadilly Square parking lot



- Pavement Construction this phase
- Temporary Construction this phase
- Previously completed pavement
- Detour Route this phase

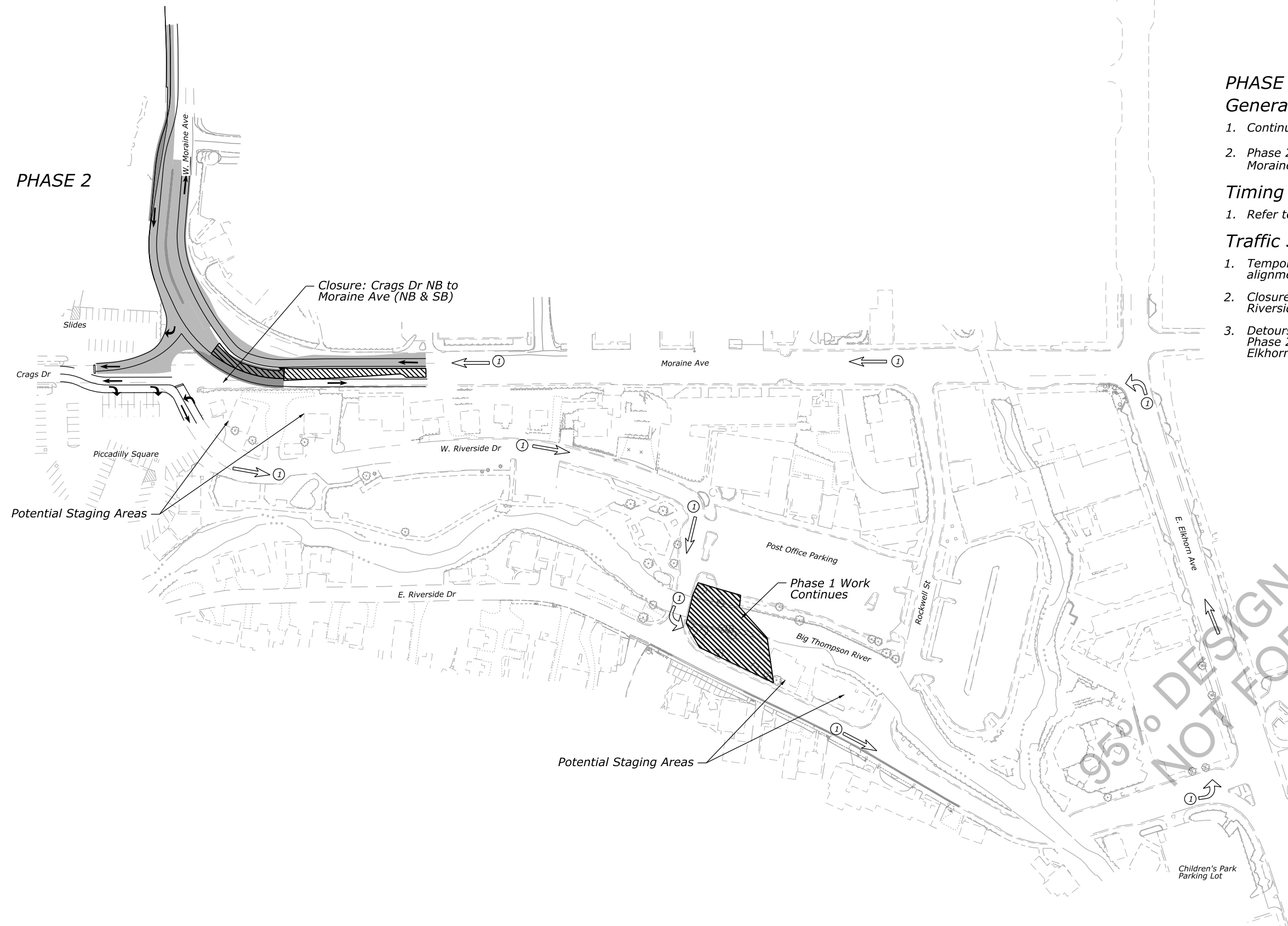
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

TEMPORARY TRAFFIC CONTROL PLAN - PHASE 2.1

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-53

PHASE 2



PHASE 2 NOTES:

General Notes

1. Continue Construction of Ivy Street Bridge.
2. Phase 2.2: Construct the remaining portion of Moraine Ave North.

Timing Restrictions




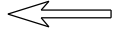
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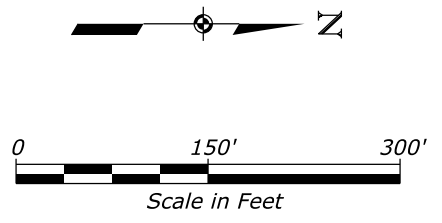
Traffic Shifts/Closures/Detours

1. Temporary realignment of Moraine Avenue to detour alignment for Phase 2.
2. Closure: Phase 2 Crags Drive northbound between W. Riverside Drive and Moraine Ave.
3. Detours: Phase 2 - W. Riverside Dr to Ivy St to E. Riverside Dr. to Elkhorn Ave to Moraine Ave. ①

Access and Parking

1. Fence Work area long Slides parking lot
2. Delineate and maintain access at all times into and out of Piccadilly Square parking lot

-  - Pavement Construction this phase
-  - Temporary Construction this phase
-  - Previously completed pavement
-  - Detour Route this phase



95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

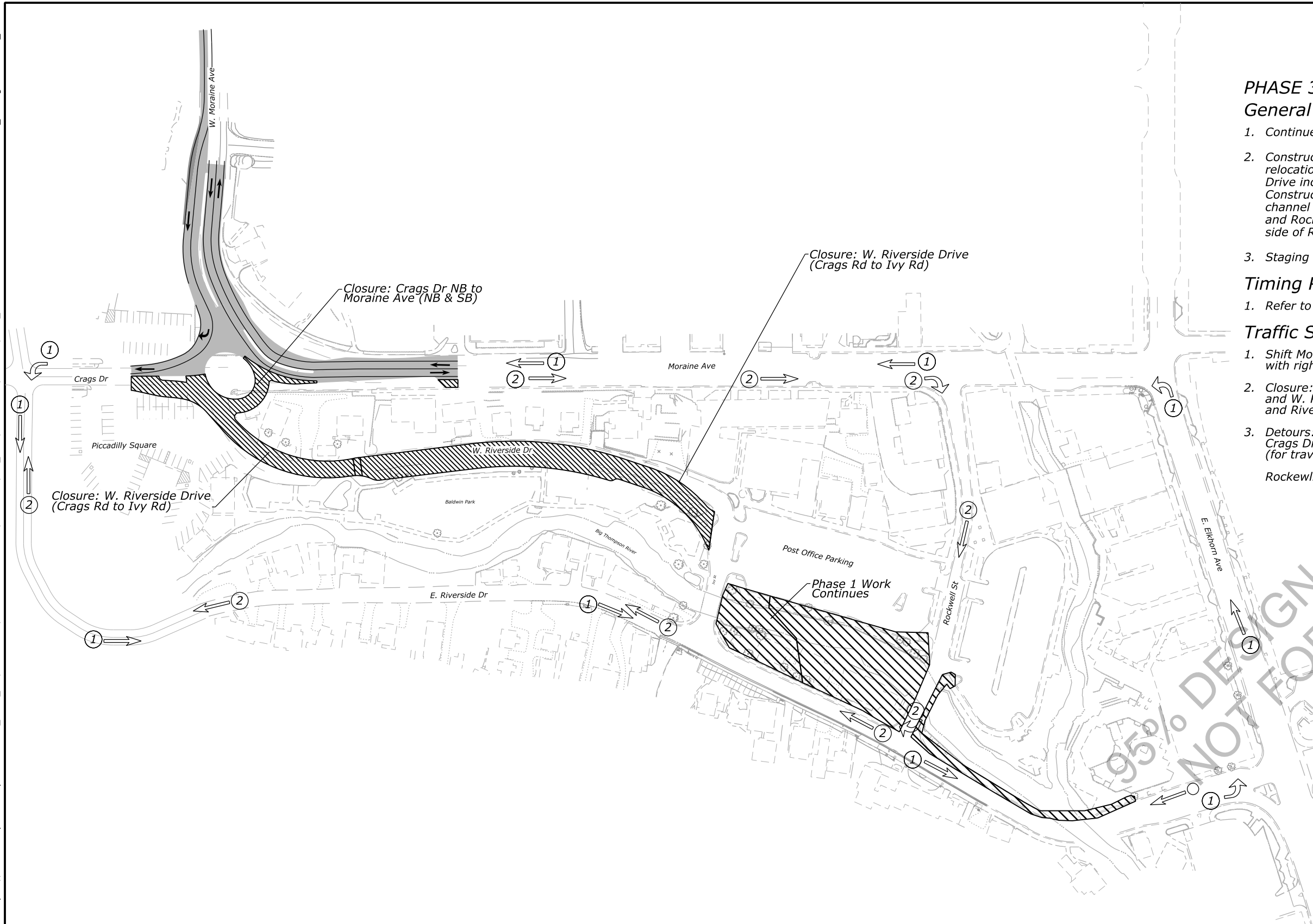
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

TEMPORARY TRAFFIC CONTROL PLAN - PHASE 2.2

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-54

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PHASE 3 NOTES:
General Notes

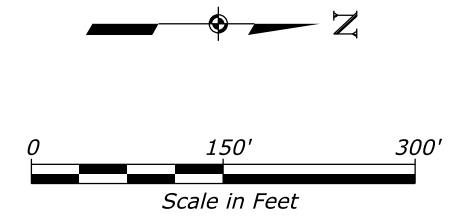
1. Continue Construction of Ivy Street Bridge.
2. Construct remaining parts of Roundabout including all utility relocations and drainage systems. Reconstruct W. Riverside Drive including all utility relocations and drainage systems. Construct improvements to Baldwin Park. Construct channel improvements and RW-04 between new Bridge and Rockwell Street. Construct curb and gutter along north side of Rockwell and north along E. Riverside.
3. Staging may occur in vacant lots as described in SCRs.

Timing Restrictions

1. Refer to SCRs.

Traffic Shifts/Closures/Detours

1. Shift Moraine Ave traffic to recently constructed bypass ramp, with right turn lane to Craggs Dr southbound along RW-01.
2. Closure: Craggs Dr between W. Riverside Dr and Moraine Ave, and W. Riverside Craggs Dr to Ivy St. Portions of Baldwin Park and Riverwalk closed.
3. Detours:
Craggs Dr to E. Riverside Dr to Elkhorn Ave to Moraine Ave (1) (for travels to WB Moraine Ave and from Craggs Dr).
Rockwell St to E. Riverside Dr (for travel to Craggs Dr). (2)



Access and Parking

1. Delineate Work area along Piccadilly Square parking lot
2. Provide local access to W. Riverside Dr Properties
3. Entire east strip of parking spaces in Post Office parking lot may be used

- Pavement Construction this phase
- Temporary Construction this phase
- Previously completed pavement
- Detour Route this phase

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

TEMPORARY TRAFFIC CONTROL PLAN - PHASE 3

95% DESIGN SUBMITTED 1/23/22
NOT FOR CONSTRUCTION

STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-55

General Notes

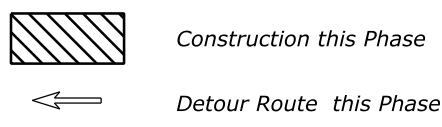
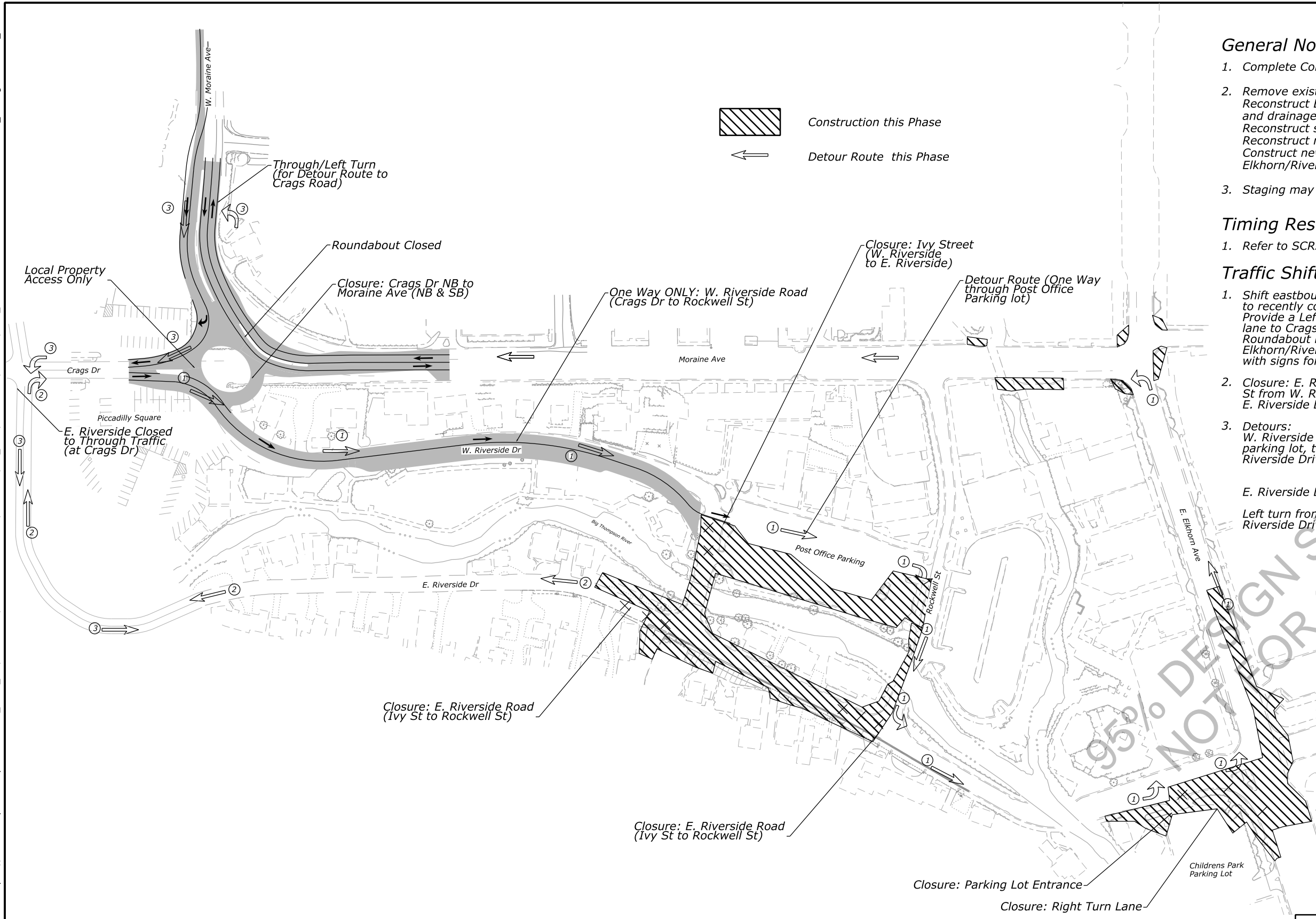
1. Complete Construction of Ivy Street Bridge.
2. Remove existing Ivy Bridge and construct Pedestrian Bridge. Reconstruct E. Riverside Drive including all utility relocations and drainage improvements. Complete channel improvements. Reconstruct southeast portion of Post Office parking lot. Reconstruct right turn lanes from Riverside to Elkhorn. Construct new signal systems at Moraine/Elkhorn and Elkhorn/Riverside.
3. Staging may occur in vacant lots as described in SCRs.

Timing Restrictions

1. Refer to SCRs.

Traffic Shifts/Closures/Detours

1. Shift eastbound detour traffic heading from Craggs Dr area to recently constructed W. Riverside Dr (one-way east). Provide a Left turn from WB Moraine Ave to the right turn lane to Craggs Dr southbound along RW-01. Full Roundabout remains closed. Elkhorn/Moraine and Elkhorn/Riverside may be operated as all way stop controlled with signs for up to 4-weeks.
2. Closure: E. Riverside Dr from Ivy St. to Rockwell St., and Ivy St from W. Riverside to E. Riverside Dr. Right Turn lane from E. Riverside Dr. to Elkhorn Ave.
3. Detours:
W. Riverside Dr from Piccadilly Square area to Post Office parking lot, through parking lot to Rockwell St. East to E. Riverside Drive. ①
E. Riverside Drive south to Craggs Dr, to Detour 1. ②
Left turn from Moraine Ave to Craggs Dr southbound to E. Riverside Drive. ③



Local Property Access Only

Through/Left Turn (for Detour Route to Craggs Road)

Roundabout Closed

Closure: Craggs Dr NB to Moraine Ave (NB & SB)

One Way ONLY: W. Riverside Road (Craggs Dr to Rockwell St)

Closure: Ivy Street (W. Riverside to E. Riverside)

Detour Route (One Way through Post Office Parking lot)

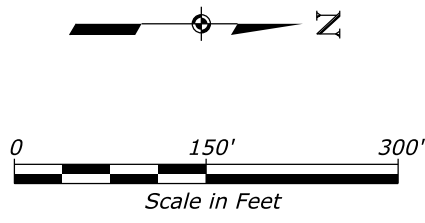
E. Riverside Closed to Through Traffic (at Craggs Dr)

Closure: E. Riverside Road (Ivy St to Rockwell St)

Closure: E. Riverside Road (Ivy St to Rockwell St)

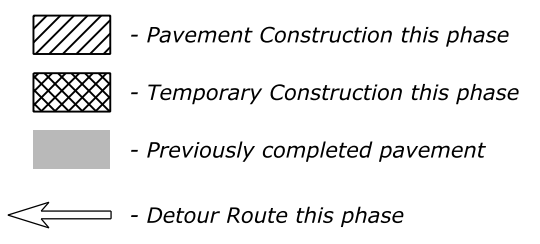
Closure: Parking Lot Entrance

Closure: Right Turn Lane



Access and Parking

1. Provide local access to W. Riverside Dr Properties
2. Provide local access to E. Riverside Dr Properties



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

TEMPORARY TRAFFIC CONTROL PLAN - PHASE 4

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STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-56

PHASE 5 NOTES:

General Notes

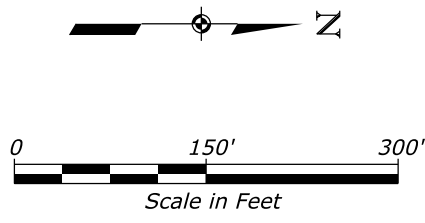
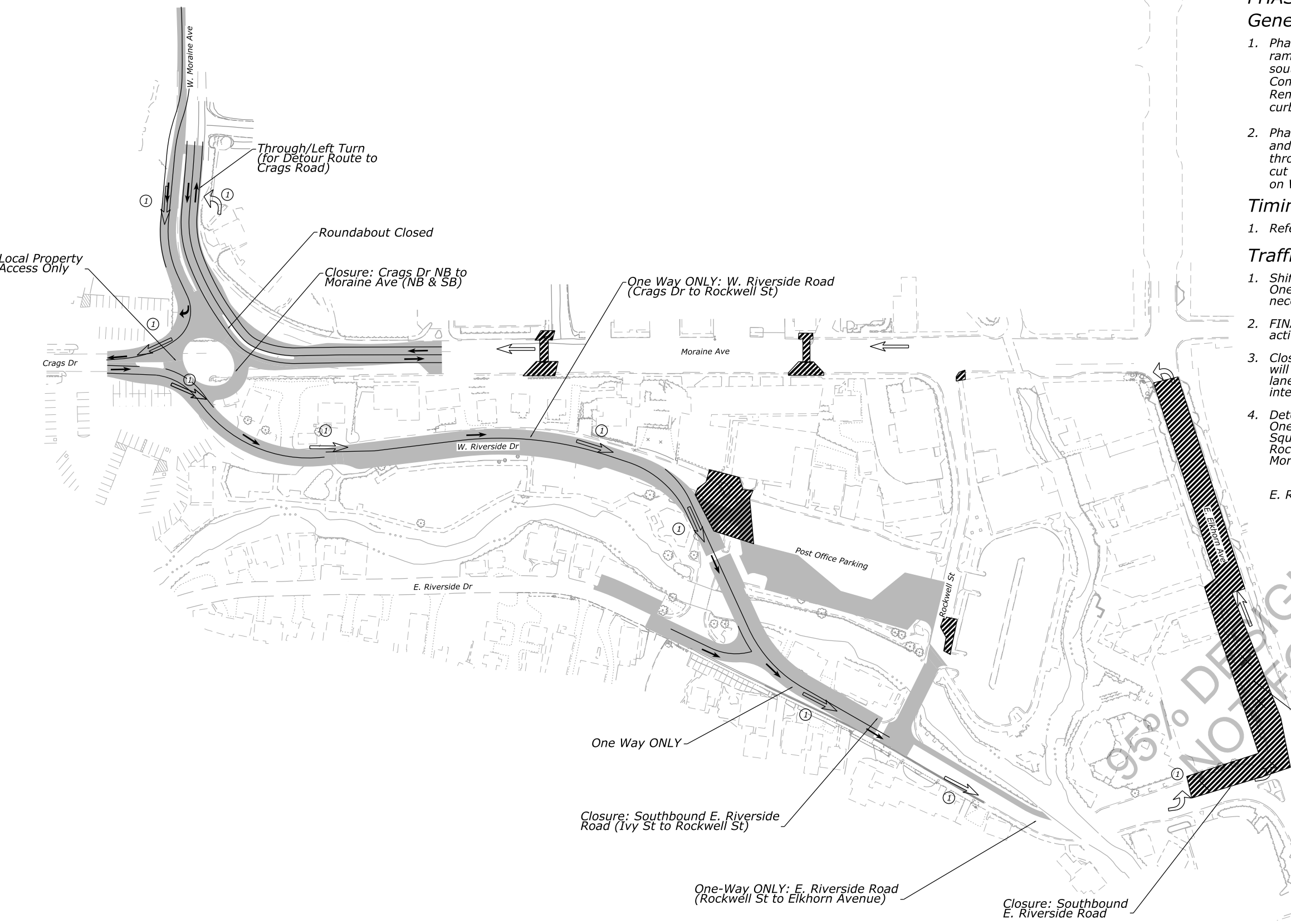
1. Phase 5A: Complete final remaining curb and gutter, ADA ramps and sidewalk work including reconstructing the southwest corner of Elkhorn and E. Riverside Dr. Complete south entrance to Post Office parking lot. Remove detour pavement and construct final curb and gutter on inside of bypass lane.
2. Phase 5B: Complete mill and overlay pavement on Elkhorn and Moraine Ave. Complete final lift of asphalt pavement throughout project. Install final signing and striping and cut over to new traffic signals. Complete mill and overlay on W. Elkhorn Avenue.

Timing Restrictions

1. Refer to SCRs.

Traffic Shifts/Closures/Detours

1. Shift detour traffic to reconstructed W. and E. Riverside Dr in One-way (EB) configuration. Use single lane closures as necessary to complete final work and paving.
2. FINAL SHIFT: Switch traffic to final one-way configuration, activate new signals and open full Roundabout.
3. Closure: E. Riverside Dr from Rockwell to Elkhorn will be closed to two way traffic (one-way EB Only). Single lane closures on E. Riverside and Elkhorn Ave for final intersection work.
4. Detours: One-way configuration on W. Riverside Dr from Piccadilly Square area to Rockwell St. One-way configuration from Rockwell to Elkhorn Ave. Previous detour southbound from Moraine Ave to Craggs remains in place.



Access and Parking

1. Provide local access to W. Riverside Dr Properties
2. Provide local access to E. Riverside Dr Properties
3. Coordinate final paving and parking with Piccadilly Square. Provide access at all times.

- Pavement Construction this phase
- Temporary Construction this phase
- Previously completed pavement
- Detour Route this phase

95% DESIGN SUBMITTED FOR CONSTRUCTION

E. Riverside Dr to Downtown Loop (One-way configuration) ②

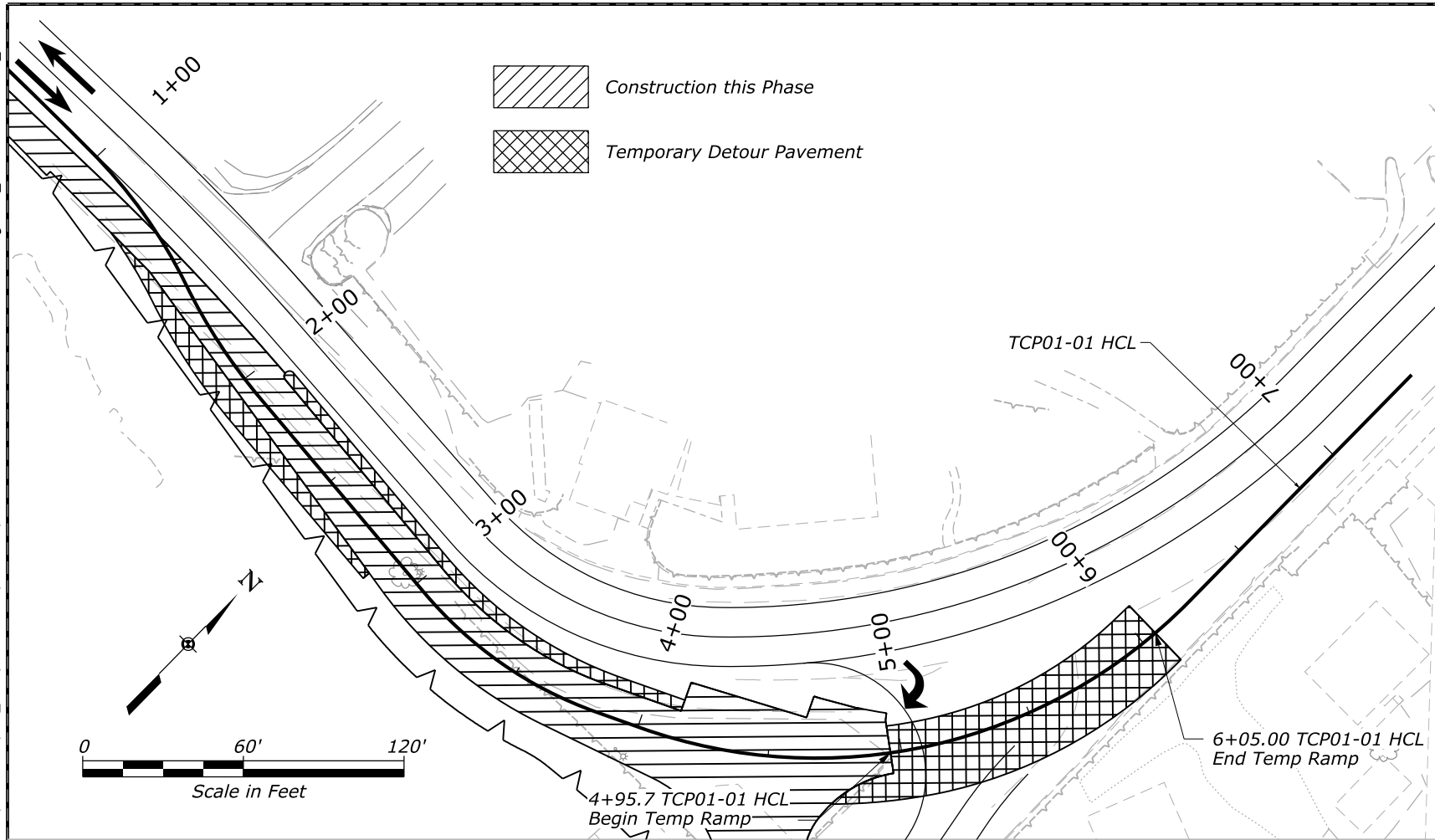
Closure: One Westbound Lane on Elkhorn Avenue (Provide one lane each direction)

Closure: Southbound Left Turn to E. Riverside Rd

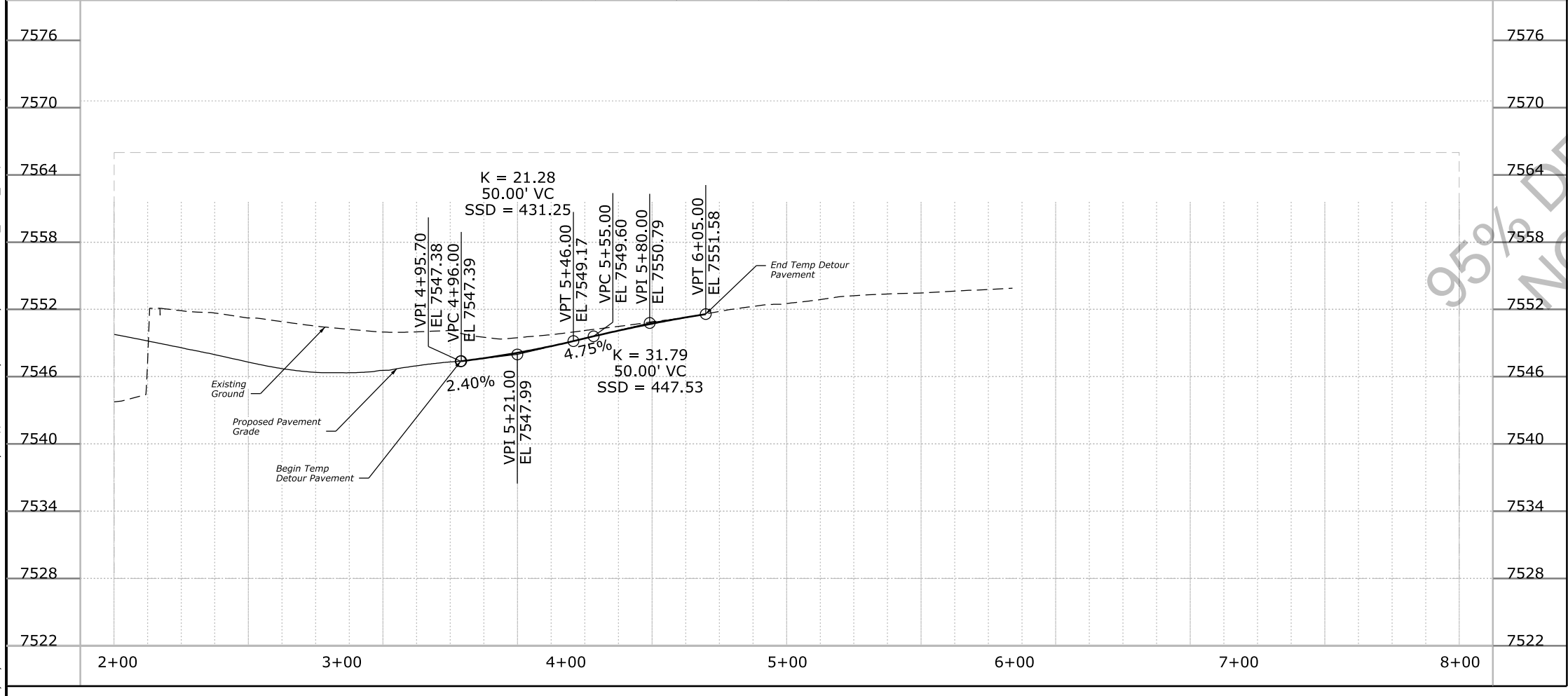
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

TEMPORARY TRAFFIC CONTROL PLAN - PHASE 5

1/25/2022 7:35:01 AM pw:\aecom-na-pw\entlev.com\AECOM_DSO1_NA\Documents\60332740-Estes Park\1900-Work\1910_CAD\02-SHEETS\IV-Traffic\057 - DETOUR ALIGNMENTS - PHASE 1.dgn _User: isabel.butler_



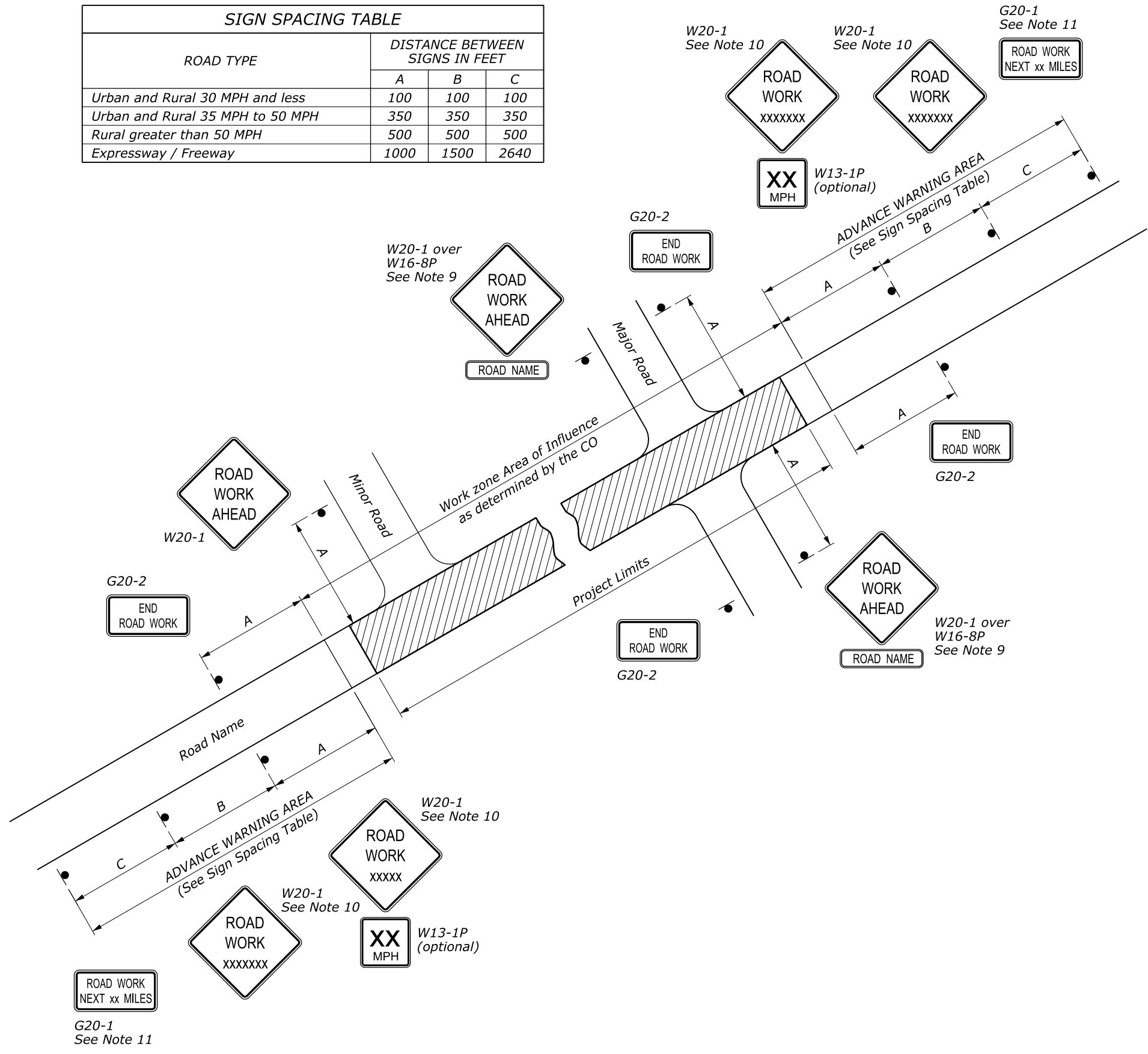
TCP01-01 HCL									
POINT	STATION	NORTHING	EASTING	ELEMENT	LENGTH	WCB (0°00'00") (STRAIGHT)	WCB (0°00'00")		
							(R=STARTING ANGLE)	(R=END ANGLE)	
PC	0+00.00	66698.07	41337.26						
				R = +433.66	19.02		N 86°12'01" E	N 88°42'47" E	
POC	0+19.02	66698.91	41356.26						
				R = +2404.38	77.81		N 88°42'47" E	S 89°25'58" E	
POC	0+96.83	66699.4	41434.06						
				R = +189.00	61.49		S 89°25'58" E	S 70°47'28" E	
PRC	1+58.32	66688.89	41494.37						
				R = -211.00	51.32		S 70°47'28" E	S 84°43'34" E	
PT	2+09.64	66678.03	41544.4						
				STRAIGHT	94.1	S 84°43'34" E			
PC	3+03.74	66669.38	41638.1						
				R = -149.00	79.61		S 84°20'50" E	N 65°02'27" E	
PT	3+83.35	66682.57	41715.66						
				STRAIGHT	17.9	N 65°02'27" E			
PC	4+01.25	66690.12	41731.88						
				R = -195.00	221.69		N 65°02'27" E	N 0°05'53" W	
PT	6+22.94	66867.25	41844.6						
				STRAIGHT	118.9	N 0°05'53" W			
POE	7+41.84	66986.15	41844.39						



U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**DETOUR ALIGNMENTS
 PHASE 1**

ROAD TYPE	DISTANCE BETWEEN SIGNS IN FEET		
	A	B	C
Urban and Rural 30 MPH and less	100	100	100
Urban and Rural 35 MPH to 50 MPH	350	350	350
Rural greater than 50 MPH	500	500	500
Expressway / Freeway	1000	1500	2640



NOTE:

- Erect all project advance warning signs before starting construction work.
- Not all details shown on the temporary traffic control sheets may be applicable to this project. The Contractor may add or delete information and details in this traffic control plan as necessary to accommodate actual operations.
- Where advance warning signs, placed as shown, interfere with permanent signs, locate the warning signs as determined by the CO for best results. Vary messages as required.
- Additional or different message signs may be required to fit the actual construction conditions.
- Install advisory speed plates under the W20 series warning signs as needed to indicate a maximum recommended speed through the construction area.
- Ensure all sign supports exposed to impact by traffic meet the requirements of NCHRP-350 or MASH for crashworthiness.
- Maintain two-way traffic during all non-work hours except as approved by the CO.
- Do not store traffic control devices along the roadway when not in use. Cover post-mounted signs when not applicable.
- If W20-1 is placed on a roadway other than that on which the actual construction work occurs, include a supplementary plaque indicating the name of the road on which the construction does occur (applies to major roads only).
- The message on the W20-1 signs may be "ROAD WORK AHEAD" or may specify the distance to the work area in feet or in miles. Install an additional W20-1 sign when approach speeds exceed 50 MPH. When used place the two W20-1 signs "B" feet apart according to the Sign Spacing Table.
- For work zones that are 2 miles or more in length, install G20-1 signs at each end of the project. Show the distance on the G20-1 sign to the nearest whole mile.
- If signing on a roadway under a jurisdiction other than the client agency, verify that an encroachment permit has been obtained.
- State standards may be used as an alternative if approved by the CO.
- Refer to the Section 635 of the Special Contract Requirements for allowable retroreflective sheeting types.

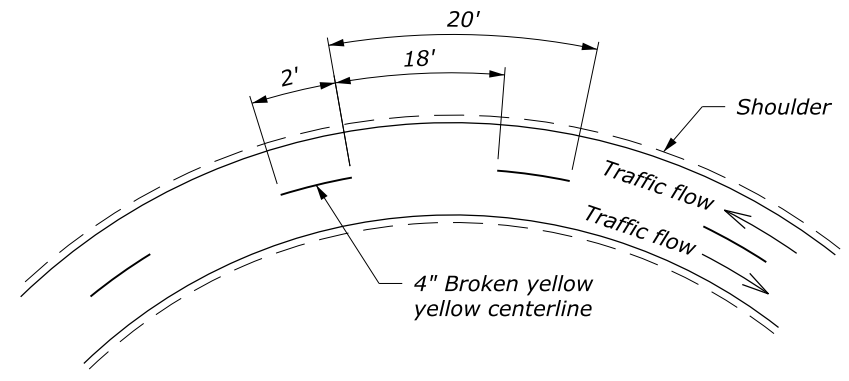
(Adapted from CDOT S-630-1)

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY DETAIL TEMPORARY TRAFFIC CONTROL ADVANCE SIGNING	
DETAIL APPROVED FOR USE	DETAIL
REVISED:	636-A

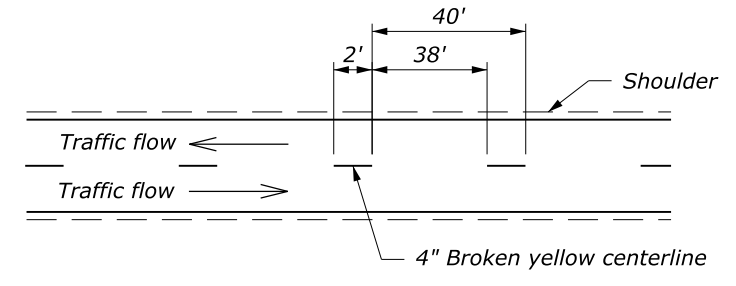
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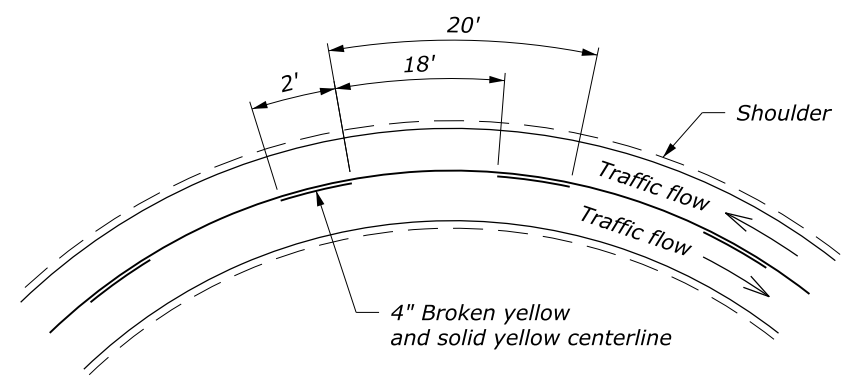
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-59



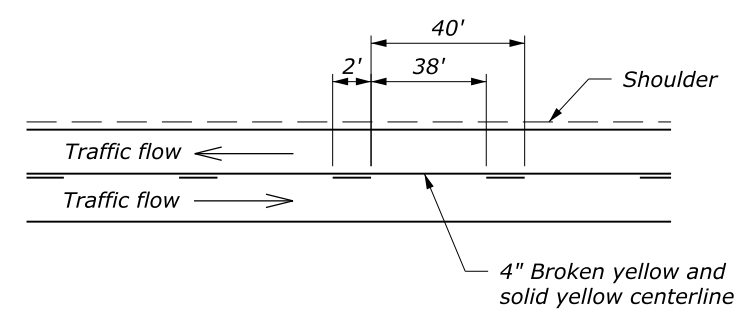
DETAIL A1
Passing zone both directions
Two-way traffic



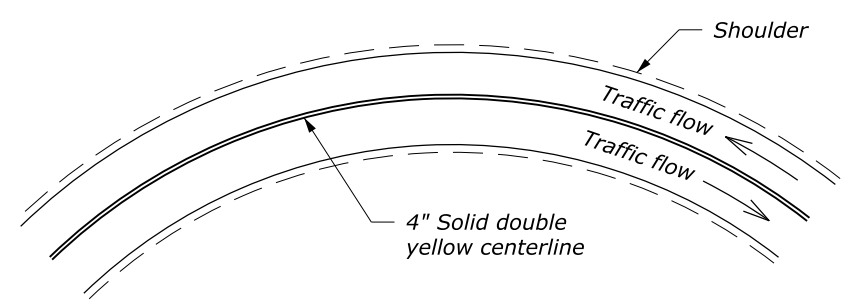
DETAIL B1
Passing zone both directions
Two-way traffic



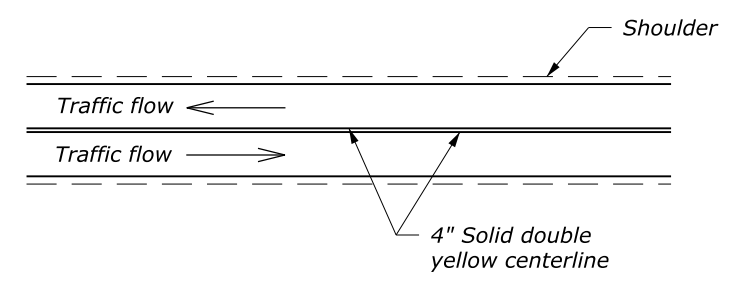
DETAIL A2
No passing zone one direction
Two-way traffic



DETAIL B2
No Passing zone one direction
Two-way traffic



DETAIL A3
No passing zone both directions
Two-way traffic



DETAIL B3
No Passing zone both directions
Two-way traffic

DETAIL A
Curves < 500' Radius

DETAIL B
Tangents or Curves ≥ 500' Radius

NOTE:

- To substitute raised pavement markers for lines, use the following patterns:
 2' broken line: two pavement markers spaced 2' apart allowed by the gap shown based on curvature.
 Single solid line: pavement markers spaced on 10' centers.
 Double solid line: two pavement markers, side by side, spaced on 10' centers.
- On two- or three-lane roads, signs may be used instead of temporary pavement markings as shown on Standard 635-3.

95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

(Adapted from CDOT S-630-1)

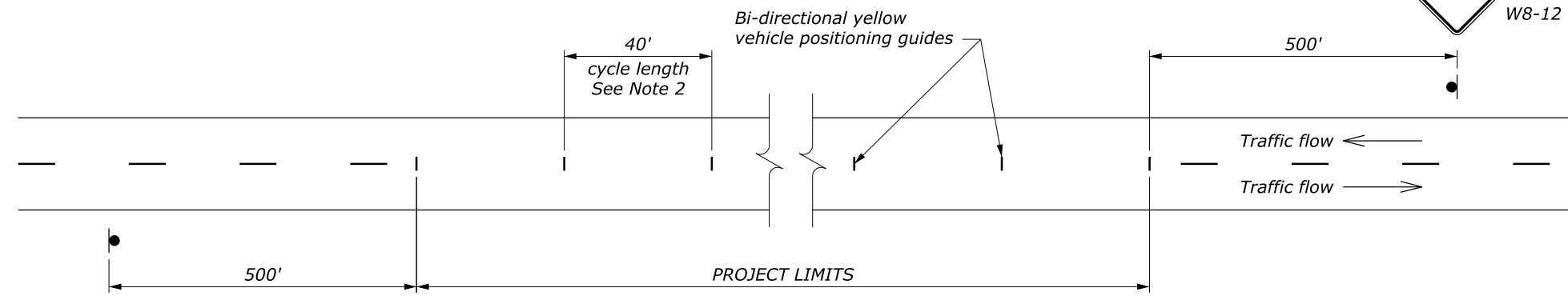
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY DETAIL	
TEMPORARY PAVEMENT MARKINGS	
DETAIL APPROVED FOR USE	DETAIL
REVISED:	636-B

7:35:18 AM 1/25/2022 p:\aecom-na-pw\benley.com\AECOM_DS01_NA\Documents\60332740-Estes Park\1900-Work\1910_CAD\02-SHEETS\IV-Traffic\059_636-B_Temporary Pavement Markings.dgn User: isabel.butler

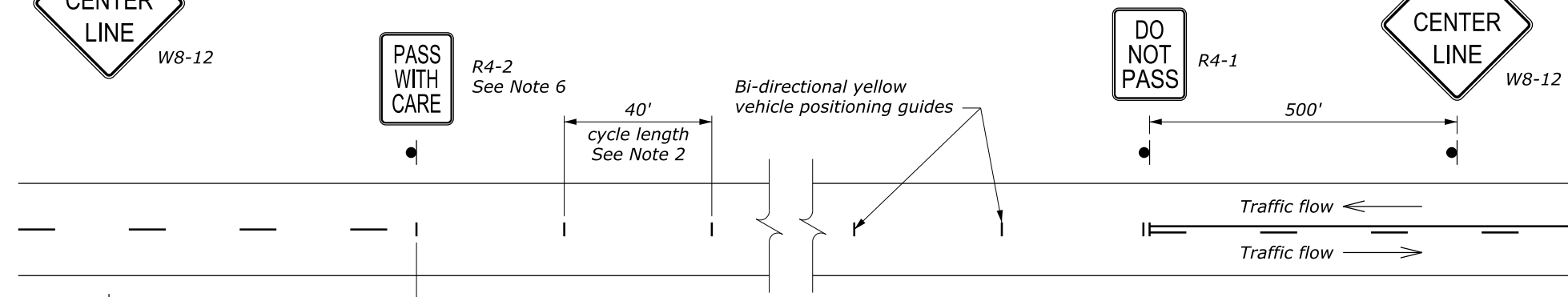
STATE	PROJECT	SHEET NUMBER
CO	CO FLAP US36(1) Downtown Estes Park Loop	V-60

NOTE:

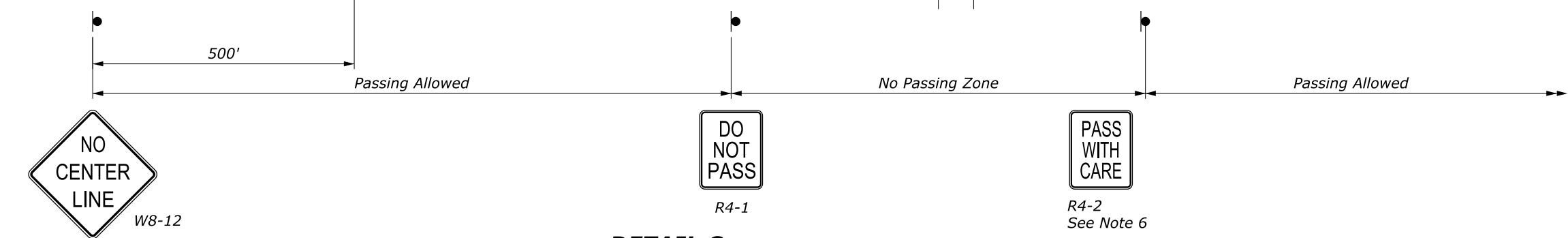
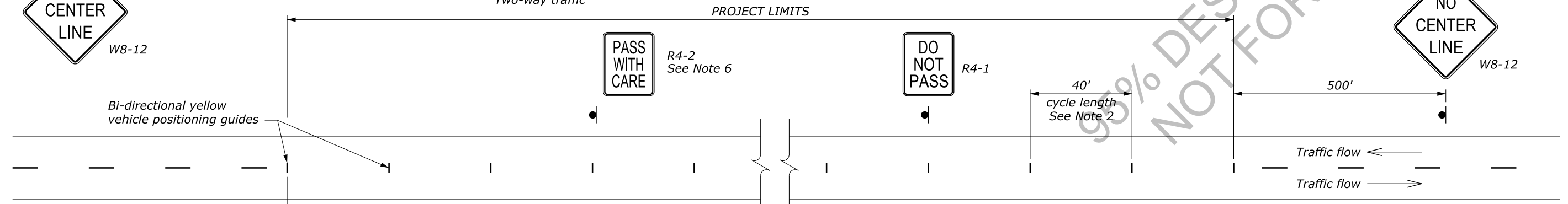
1. The pavement on two- or three-lane roads may remain unmarked up to 14 days when providing signs according to this standard. Optionally use the vehicle positioning guides to provide additional delineation.
2. On curves with radius less than 500', reduce cycle length to 20'.
3. Use permanent markings plan to determine no passing zones for each direction of travel.
4. Repeat R4-1 at 1 mile intervals.
5. Repeat W8-12 after each major intersection and every 2 miles for temporary traffic control zones greater than 3 miles long.
6. Use the "PASS WITH CARE" (R4-2) sign at the downstream end of a no-passing zone only if a "DO NOT PASS" (R4-1) sign has been installed at the upstream end of the zone.



DETAIL A
Passing zone both directions
Two-way traffic



DETAIL B
No Passing zone one direction
Two-way traffic



DETAIL C
No Passing zone both directions
Two-way traffic

NO SCALE

(Adapted from CDOT S-630-1)

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY DETAIL	
DELINEATION AND SIGNING FOR UNMARKED PAVEMENTS	
DETAIL APPROVED FOR USE	DETAIL
REVISED:	636-C

1/25/2022 7:35:26 AM pw:\lacom-na-pw.bentley.com\AECOM_DSO1_NA\Documents\60332740-Estes Park\1900-Work\1910_CAD\02-SHEETS\IV-Traffic\060_636-C_Temp_Unmarked Pmnt Signs.dgn _User: isabel.butler_

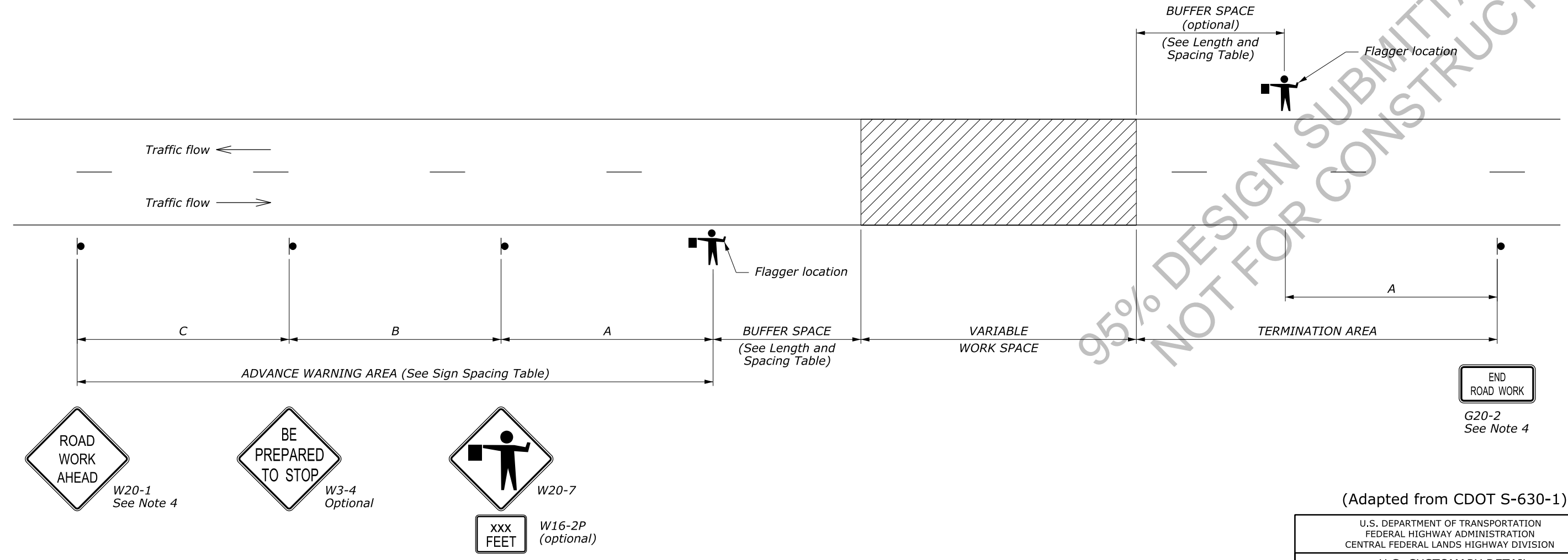
LENGTH AND SPACING TABLE	
APPROACH SPEED*	BUFFER SPACE LENGTH
MPH	FEET
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730

* Approach speed based on the regulatory posted speed, not the advisory speed.

SIGN SPACING TABLE			
ROAD TYPE	DISTANCE BETWEEN SIGNS IN FEET		
	A	B	C
Urban and Rural 30 MPH and less	100	100	100
Urban and Rural 35 MPH to 50 MPH	350	350	350
Rural greater than 50 MPH	500	500	500
Expressway / Freeway	1000	1500	2640

NOTE:

1. Signs are shown for one direction of travel only. Place devices similar to those depicted for the opposite direction of travel.
2. Final location and spacing of signs and devices may be changed to fit field conditions as approved by the CO.
3. For pilot car operation, mount the "PILOT CAR FOLLOW ME" (G20-4) sign at a conspicuous location on the rear of vehicle. Prominently display the name of the Contractor on the pilot car.
4. If closure is completely within the project limits, eliminate the "ROAD WORK AHEAD" (W20-1) and "END ROAD WORK" (G20-2) signs.
5. For night time flagging operation, provide floodlighting at flagger stations.
6. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.



95% DESIGN SUBMITTAL 2/3/22
NOT FOR CONSTRUCTION

(Adapted from CDOT S-630-1)

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY DETAIL TEMPORARY TRAFFIC CONTROL ROAD CLOSURE LAYOUT (WITH FLAGGERS)	
REVISIONS:	DETAIL 636-E

NO SCALE

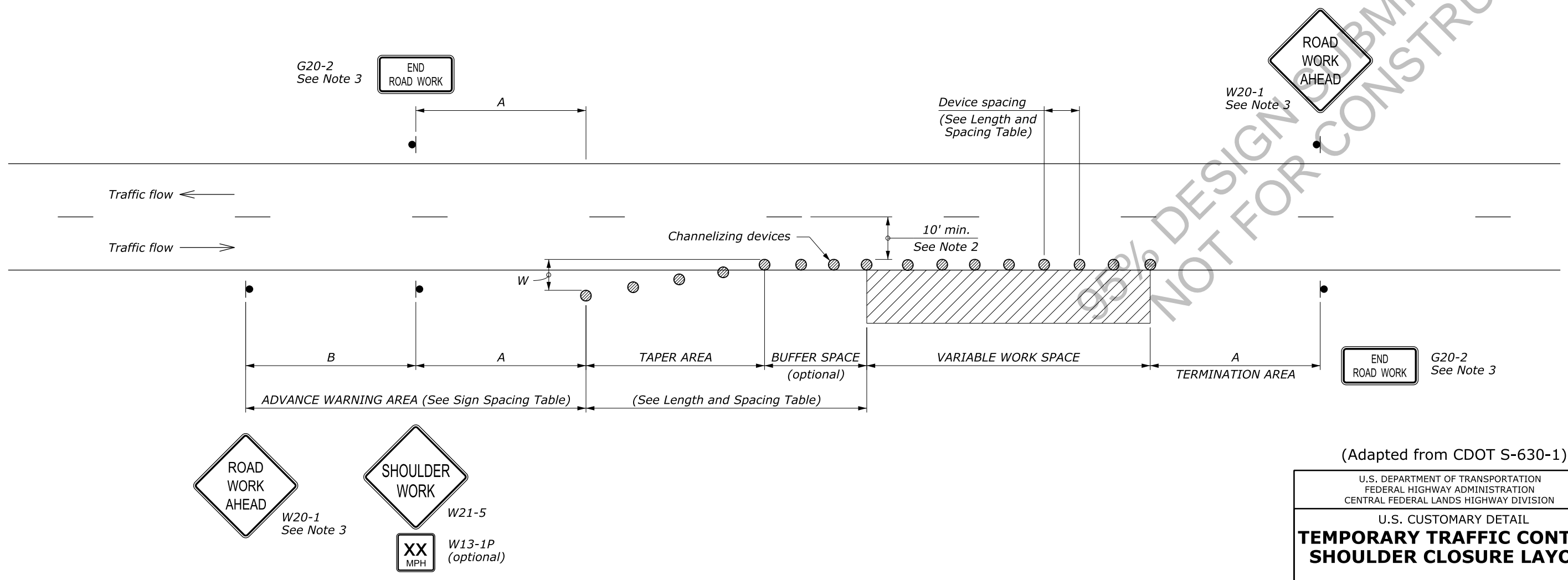
User: isabel.butler..._Temp_Close w Flags.dgn... 2022. 1:36 PM 7:35:39

LENGTH AND SPACING TABLE					
APPROACH SPEED*	MINIMUM TAPER LENGTH**	BUFFER SPACE LENGTH	CHANNELIZING DEVICE		
			TAPER AREA	BUFFER SPACE	WORK SPACE
MPH	FEET	FEET	SPACING IN FEET		
20	Shoulder taper formula: $L = \frac{WS^2}{180}$ for $S \leq 40$ MPH	115	20	40	40
25		155	25	50	50
30		200	30	60	60
35	$L = \frac{WS}{3}$ for $S \geq 45$ MPH	250	35	70	70
40		305	40	80	80
45		360	45	90	90
50		425	50	100	100
55	495	55	110	110	
60	570	60	120	120	
65	645	65	130	130	
70	730	70	140	140	

SIGN SPACING TABLE			
ROAD TYPE	DISTANCE BETWEEN SIGNS IN FEET		
	A	B	C
Urban and Rural 30 MPH and less	100	100	100
Urban and Rural 35 MPH to 50 MPH	350	350	350
Rural greater than 50 MPH	500	500	500
Expressway / Freeway	1000	1500	2640

- NOTE:**
- Final location and spacing of signs and devices may be changed to fit field conditions as approved by the CO.
 - For project specific minimum width, refer to Special Contract Requirements, Section 156.
 - If shoulder closure is completely within the project limits, eliminate the "ROAD WORK AHEAD" (W20-1) and "END ROAD WORK" (G20-2) signs.
 - Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.

* Approach speed based on the regulatory posted speed, not the advisory speed.
 ** Lengthen taper as needed to provide minimum of three channelizing devices in taper at required spacing.



(Adapted from CDOT S-630-1)

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL
**TEMPORARY TRAFFIC CONTROL
 SHOULDER CLOSURE LAYOUT**

REVISIONS:	DETAIL APPROVED FOR USE	DETAIL
		636-F

NO SCALE

2/25/2022 1:37 PM 7:35:47 AM pw@whiting-detroit.com 11/16/2021 10:05:47 AM 1910_CAD102-SHEETS\IV-Traffic\003_636-F_Shoulder Closure Layout.dgn User: isabel.butler

