RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS
SECTION 24, TOWNSHIP 6 SOUTH, RANGE 67 WEST, 6TH P.M., CITY OF LONE TREE, DOUGLAS COUNTY

THIS AND ANY OTHER ELECTRONIC MEDIA COUNTERPART IS AN INSTRUMENT OF SERVICE PREPARED BY MERRICK AND COMPANY FOR A DEFINED PROJECT. IT IS NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR REUSE IN WHOLE OR IN PART ON EXTENSIONS OF THE PROJECT OR ON ANY OTHER PROJECT. REUSE OR MODIFICATION, OF ANY UTILIZATION IF NOT A FINISHED INSTRUMENT, WITHOUT THE PRIOR EXPRESS WRITTEN CONSENT OF MERRICK AND COMPANY SHALL BE AT THE SOLE RISK FOR THE UNAUTHORIZED USER WITHOUT LIABILITY OR LOSS EXPOSURE TO MERRICK AND COMPANY.

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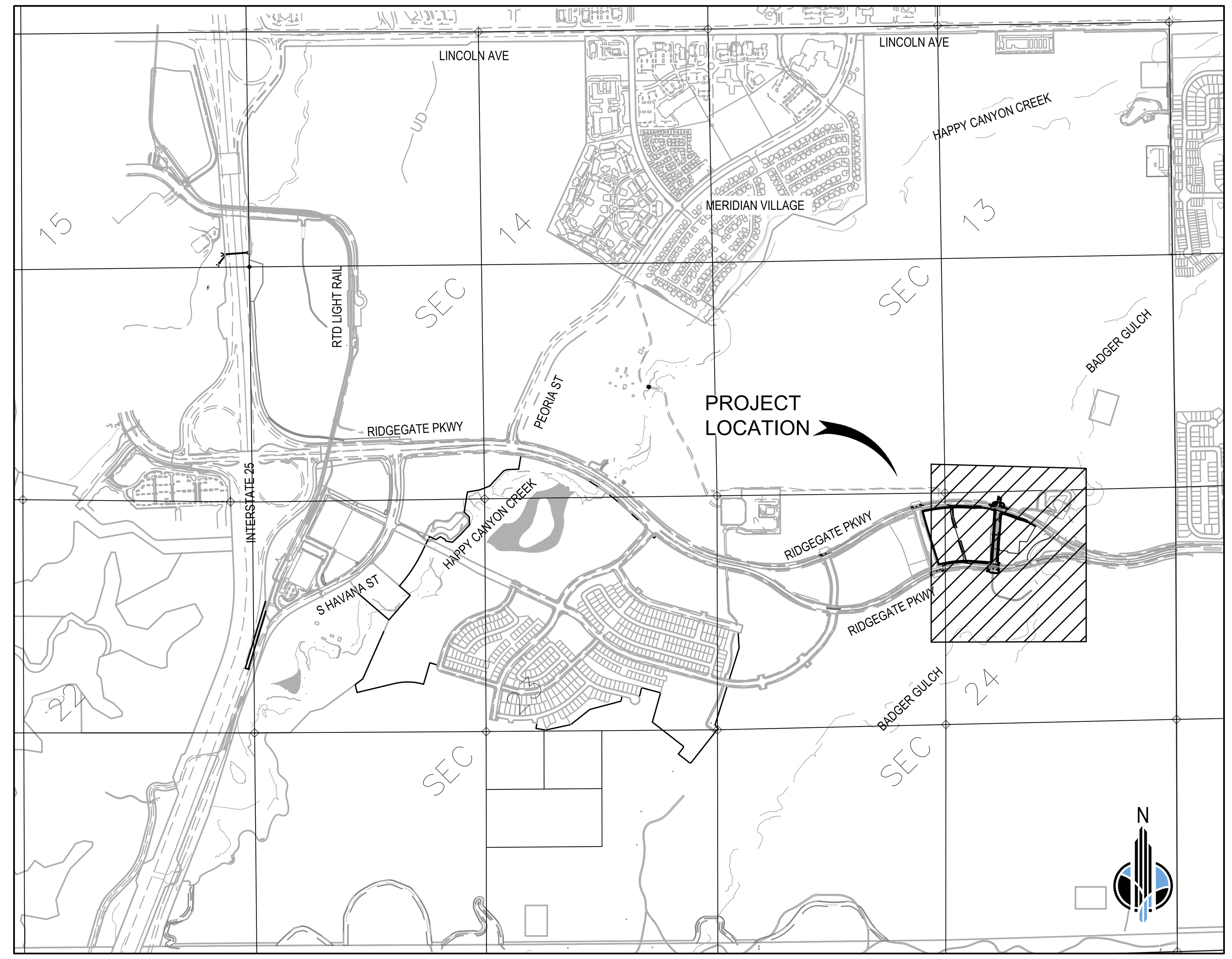
ABBREVIATION LEGEND

AB	AS-BUILT
BFE	BASE FLOOD ELEVATION
BFV	BUTTERFLY VALVE
BMP	BEST MANAGEMENT PRACTICE
BOP	BOTTOM OF PIPE
BOW	FINISHED GRADE AT BOTTOM OF WALL
BVCE	BEGIN VERTICAL CURVE ELEVATION
BVCS	BEGIN VERTICAL CURVE STATION
C&G	CURB & GUTTER
CL	CENTERLINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONT	CONTINUOUS
CR	CURB RETURN
DIA, Ø	DIAMETER
DIP	DUCTILE IRON PIPE
DTL	DETAIL
E	EASTING, EAST
EA	EACH
ECC	ECCENTRIC
EL, ELEV	ELEVATION
EOA	EDGE OF ASPHALT
EOW	EDGE OF WALK
ESMT	EASEMENT
EURV	EXCESS URBAN RUNOFF VOLUME
EVCE	END VERTICAL CURVE ELEVATION
EVCS	END VERTICAL CURVE STATION
EX	EXISTING
FH	FIRE HYDRANT
FES	FLARED END SECTION
FG	FINISHED GRADE
FL	FLOWLINE
FO	FIBER OPTIC
FT	FEET
FLG	FLANGE
GB	GRADE BREAK
GESC	GRADING, EROSION, AND SEDIMENT CONTROL
GPM	GALLONS PER MINUTE
GV	GATE VALVE
HDPE	HIGH DENSITY POLYETHYLENE
HGL	HYDRAULIC GRADE LINE
HOA	HOME OWNERS' ASSOCIATION
HP	HIGH POINT
IN	INCH
INV	INVERT
K	RATE OF CURVATURE
KB	KICK BLOCK
L.F.	LINEAR FEET
LP	LOW POINT
LT	LEFT
LVC	LENGTH OF VERTICAL CURVE
MAX	MAXIMUM
MFR	MANUFACTURER
MHFD	MILE HIGH FLOOD DISTRICT
MIN	MINIMUM
MH	MANHOLE
MJ	MECHANICAL JOINT
NAVD	NORTH AMERICAN VERTICAL DATUM
N	NORTHING, NORTH
n	MANNING'S ROUGHNESS COEFFICIENT
NTS	NOT TO SCALE
O.C.	ON CENTER
OHE	OVERHEAD ELECTRIC LINE(S)
P&P	PLAN & PROFILE
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PCR	POINT OF CURB RETURN
PI	POINT OF INTERSECTION
PRC	POINT OF REVERSE CURVE
PSCO	PUBLIC SERVICE COMPANY OF COLORADO (XCEL)
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVE, POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
PVT	POINT OF VERTICAL TANGENT
PWSD	PARKER WATER AND SANITATION DISTRICT
Q80	DISCHARGE AT 80% CAPACITY
R	RADIUS
RT	RIGHT
REC	RECEPTION
RCP	REINFORCED CONCRETE PIPE
RGI	RIDGEGATE INVESTMENTS INC.
RRMD	RAMPART RANGE METROPOLITAN DISTRICT
RT	RIGHT
S	SOUTH
SDMH	STORM DRAIN MANHOLE
SS	SANITARY SEWER
STA	STATION
STM	STORM
SY	SQUARE YARD
TBC	TOP BACK OF CURB
TBR	TO BE REMOVED
TOC	TOP OF CONCRETE
TOP	TOP OF PIPE
TOW	FINISHED GRADE AT TOP OF WALL
TYP	TYPICAL
VERT	VERTICAL
VC	VERTICAL CURVE
VTC	VEHICLE TRACKING CONTROL
W	WEST
W/	WITH
WSEL	WATER SURFACE ELEVATION
XING	CROSSING

LEGEND

EXISTING 1' INTERVAL CONTOUR
EXISTING 5' INTERVAL CONTOUR
100-YEAR FLOODPLAIN
EXISTING RIGHT-OF-WAY
EXISTING CURB & GUTTER
EXISTING EDGE OF PAVEMENT
EXISTING EASEMENT
EXISTING FENCE
EXISTING WATER MAIN, FIRE HYDRANT & GATE VALVE
EXISTING WATER METER, BUTTERFLY VALVE, REDUCER & BLOWOFF VALVE
EXISTING WATER WELL & AIR RELEASE VALVE
EXISTING WATER BENDS/FITTINGS
EXISTING IRRIGATION
EXISTING IRRIGATION BOX
EXISTING SANITARY SEWER & MANHOLE
EXISTING STORM SEWER, INLET, MANHOLE, FLARED END SECTION & RIPRAP
EXISTING OVERHEAD ELECTRIC LINE(S) & POLE
EXISTING UNDERGROUND ELECTRIC LINE
EXISTING ELECTRIC BOX, ELECTRIC METER, TRANSFORMER & SWITCH CABINET
EXISTING GAS LINE
EXISTING GAS LINE
EXISTING TELEPHONE PEDESTAL & MANHOLE
EXISTING FIBER OPTIC
EXISTING TRENCHDRAIN
EXISTING ELECTRIC, GAS & TELEPHONE MARKER POST
EXISTING ROADWAY SIGN, STREET LIGHT & TRAFFIC LIGHT
EXISTING TRAFFIC CONTROL BOX
EXISTING DRY UTILITY VAULT
PROPOSED 1' INTERVAL CONTOUR
PROPOSED 5' INTERVAL CONTOUR
PROPERTY BOUNDARY
PROPOSED LOT LINE
PROPOSED RIGHT-OF-WAY
PROPOSED ROADWAY CENTERLINE
PROPOSED ROADWAY CURB & GUTTER
PROPOSED EDGE OF PAVEMENT
PROPOSED EASEMENT
PROPOSED WATER MAIN, GATE VALVE, TEE, & FIRE HYDRANT ASSEMBLY
PROPOSED WATER METER, BUTTERFLY VALVE, REDUCER & BLOWOFF VALVE
PROPOSED WATER WELL & AIR RELEASE VALVE
PROPOSED WATER BENDS/FITTINGS
PROPOSED IRRIGATION BOX
PROPOSED CONDUIT TRENCH
PROPOSED SANITARY SEWER
PROPOSED STORM SEWER, INLET, MANHOLE & FLARED END SECTION
PROPOSED UNDERGROUND ELECTRIC LINE
PROPOSED ELECTRIC BOX, ELECTRIC METER, TRANSFORMER & SWITCH CABINET
PROPOSED GAS LINE
PROPOSED TELEPHONE PEDESTAL & MANHOLE
PROPOSED FIBER OPTIC
PROPOSED TRENCHDRAIN
PROPOSED ROADWAY SIGN, STREET LIGHT & TRAFFIC LIGHT
PROPOSED TRAFFIC CONTROL BOX
PROPOSED DRY UTILITY VAULT
TEST HOLE LOCATION
WETLANDS AREA
SIGHT TRIANGLE
BOTTOM OF SWALE



VICINITY MAP
1" = 1,200'

AGENCY LIST

PROPERTY OWNER
RIDGEGATE INVESTMENTS, INC.
70 E 55TH ST, 11TH FLOOR
NEW YORK, NY 10022
PH: (212) 752-6164
ATTN: BOB ASSELBERGS

DEVELOPER
COVENTRY DEVELOPMENT CORPORATION
9878 SCHWAB WAY, SUITE 415
LONE TREE, CO 80124
PH: (720) 279-2581
ATTN: JOHN CONNELLY, PE

CITY ENGINEER
CITY OF LONE TREE
PUBLIC WORKS DEPARTMENT
9220 KIMMER DR, SUITE 100
LONE TREE, CO 80124
PH: (720) 509-1240
ATTN: JACOB JAMES, PE

METRO DISTRICT
RAMPART RANGE METROPOLITAN DISTRICT NO. 5
8390 E CRESCENT PARKWAY, SUITE 300
GREENWOOD VILLAGE, CO 80111
PH: (303) 779-4525
ATTN: DENISE DENSLOW

CIVIL ENGINEER
MERRICK & COMPANY
5970 GREENWOOD PLAZA BLVD
GREENWOOD VILLAGE, CO 80111
PH: (303) 751-0741
ATTN: CARSON BESGROVE, PE

FIRE
SOUTH METRO FIRE RESCUE
9195 E MINERAL AVENUE
CENTENNIAL, CO 80112
PH: (720) 989-2249
ATTN: SCOTT STENE

COUNTY
DOUGLAS COUNTY
100 THIRD ST
CASTLE ROCK, CO 80104
PH: (303) 660-7490
ATTN: MATT WILLIAMS, PE

UTILITIES
AT&T
619 W BANNOCK ST, ROOM 342
BOISE, ID 83702
PH: (208) 841-5093
ATTN: JT ANDREWS

CENTURYLINK
7759 S. WHEELING CT.
ENGLEWOOD, CO 80112
PH: (720) 578-5291
ATTN: TRAVIS YOUNG

PARKER WATER & SANITATION DISTRICT
18100 WOODMAN DR
PARKER, CO 80134
PH: (303) 841-2058
ATTN: JAROD BAYLIE

VERIZON
10000 PARK MEADOWS DR
LONE TREE, CO 80124
PH: (303) 390-2466
ATTN: LANE GRADY

XCEL ENERGY
1800 LARIMER ST
DENVER, CO 80202
PH: (303) 628-2708
ATTN: TONY PIETRAS

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ROADWAY DESIGN DATA

ROADWAY NAME	RIDGEGATE PKWY	CROSSFIELD ST
ROADWAY CLASSIFICATION	COUPLET	RESIDENTIAL COLLECTOR
DESIGN SPEED (MPH)	45	35
POSTED SPEED LIMIT (MPH)	35-45	30
DESIGN VEHICLE	SU-40	SU-40
TRAFFIC VOLUME (ADT)		
MINIMUM CENTERLINE CURVE RADIUS (FT)	1100	510
MAXIMUM GRADE	6%	6%
MINIMUM GRADE	1%	1%
MIN. K-VALUE CREST VERT. CURVE	61	29
MIN. K-VALUE SAG VERT. CURVE	79	49

BENCHMARK

PROJECT BENCHMARK IS RIDGEGATE BM 1, A 3.25" DIAMETER BRASS CAP SET ON THE NORTHWEST BRIDGE ABUTMENT OF RIDGEGATE PARKWAY STAMPED "RIDGEGATE BM 1 2021" AND IS APPROXIMATELY 0.7 MILES EAST ON RIDGEGATE PARKWAY FROM THE INTERSECTION OF I-25 AND RIDGEGATE PARKWAY IN LONE TREE, COLORADO. THE BENCHMARK IS 1 FOOT FROM THE WEST EDGE OF THE ABUTMENT, 3 FEET NORTH OF THE BACK OF WALK, AND 31 FEET NORTH OF THE WEST BOUND CENTERLINE OF RIDGEGATE PARKWAY. ELEVATION IS 5983.40 U.S. SURVEY FEET, NAVD 88 DOUGLAS COUNTY DATUM.

PROJECT COORDINATES ARE MODIFIED COLORADO STATE PLANE CENTRAL ZONE COORDINATES. THE COMBINED FACTOR USED TO MODIFY COORDINATES WAS 1.00032591873.

City of Lone Tree

These construction plans have been reviewed by the City of Lone Tree for street and drainage improvements only.

Engineering Division Acceptance Block

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REV	REVISION DESCRIPTION	DATE	DRWN	CHKD	APPR

DESIGN BY:	CD
DRAWN BY:	NB
CHECKED BY:	CB
APPROVED BY:	CB

RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS

COVER SHEET

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 09/29/2023
SHEET: 1 OF 48

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GENERAL CONSTRUCTION NOTES

1. ALL CONTRACTOR AND SUBCONTRACTORS SHALL HAVE A SET OF APPROVED CONSTRUCTION DOCUMENTS, THE APPROPRIATE EDITION OF THE GOVERNING JURISDICTION DESIGN AND CONSTRUCTION STANDARDS, THE STORM WATER MANAGEMENT PLAN, AND ALL REQUIRED PERMITS ON SITE AT ALL TIMES.
2. ALL (SANITARY SEWER, STORM SEWER, UNDERDRAIN, WATER LINE, OR STREET) CONSTRUCTION SHALL CONFORM TO THE APPROPRIATE EDITION OF THE GOVERNING JURISDICTION STANDARDS AND SPECIFICATIONS.
3. THE ENGINEER MAKES NO REPRESENTATION OR GUARANTEE REGARDING EARTHWORK QUANTITIES OR THAT THE EARTHWORK FOR THIS PROJECT WILL BALANCE DUE TO VARIOUS FIELD CONDITIONS, CHANGING SOIL TYPES, ALLOWABLE CONSTRUCTION TOLERANCES, AND CONSTRUCTION METHODS THAT ARE BEYOND THE CONTROL OF THE ENGINEER.
4. MERRICK & COMPANY IS NOT RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, SAFETY PRECAUTIONS, OR PROGRAMS UTILIZED IN CONNECTION WITH THE WORK. MERRICK WILL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
5. THE CONTRACTOR SHALL CALL THE NATIONWIDE UTILITY CONTACT NUMBER (811) OR LOCAL UTILITY LOCATE SERVICE, TO REQUEST LOCATES OF ALL UNDERGROUND UTILITIES AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF ANY LAND DISTURBING ACTIVITY.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES, INCLUDING DEPTH. UTILITY LOCATIONS ARE APPROXIMATE ONLY AND ARE NOT RELIABLE FOR CONSTRUCTION PURPOSES. THE UTILITIES SHOWN ON THE PLANS ARE FROM THE BEST AVAILABLE INFORMATION AND MAY NOT INCLUDE ALL UTILITIES THAT EXIST ON THE PROJECT SITE. THE CONTRACTOR SHALL PARTICIPATE IN THE RESOLUTION OF ANY CONFLICTS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
7. THE CONTRACTOR SHALL VERIFY SITE CONDITIONS, EXISTING TOPOGRAPHIC DATA, AND LOCATIONS OF ALL UTILITIES PRIOR TO INITIATING CONSTRUCTION. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES ON THE PROJECT SITE. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN OR NOT ON THE PROJECT PLANS, SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE AND NO ADDITIONAL COST TO THE OWNER. NOTIFY ENGINEER AND OWNER OF ANY DISCREPANCIES FOUND PRIOR TO INITIATING ANY WORK.
8. THE CONTRACTOR SHALL OBTAIN ALL PERMITS NECESSARY TO COMPLETE THE WORK AND SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS. A COPY OF ALL PERMITS SHALL BE MAINTAINED ON-SITE AT ALL TIMES.
9. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT LISTED BELOW:
   "GEOTECHNICAL EVALUATION RIDGEGATE PARKWAY COUPLET ROADS PAVEMENT SECTIONS LONE TREE, COLORADO REVISED, DATED JANUARY 24, 2023.
   "GEOTECHNICAL EVALUATION RIDGEGATE EAST INFRASTRUCTURE IMPROVEMENTS RIDGEGATE PARKWAY WIDENING PAVEMENTS LONE TREE, COLORADO" BY GROUND ENGINEERING, DATED JANUARY 9, 2018.
10. THE CONTRACTOR IS RESPONSIBLE FOR SAFETY OF ALL PERSONNEL AND EQUIPMENT ON THE PROJECT SITE AT ALL TIMES, AND IS NOT LIMITED TO NORMAL WORKING HOURS. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH REGULATIONS.
11. TRAFFIC CONTROL STANDARDS FOR THIS PROJECT SHALL COMPLY WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION. A TRAFFIC CONTROL PLAN APPROVED BY OWNER FOR ON-SITE ACTIVITY AND/OR THE LOCAL ENTITY EXERCISING JURISDICTION OVER PUBLIC RIGHTS OF WAY SHALL BE OBTAINED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
12. THERE SHALL BE NO WORK PERFORMED ON WEEKENDS OR HOLIDAYS, UNLESS ACCEPTED AND APPROVED IN WRITING AND IN ADVANCE BY THE OWNER, ENGINEER, AND LOCAL JURISDICTION.
13. ALL WASTE MATERIALS SHALL BE PROPERLY DISPOSED OF IN AN APPROVED LANDFILL PERMITTED TO ACCEPT THAT PARTICULAR TYPE OF WASTE.
14. DEVIATIONS FROM THESE PLANS AND SPECIFICATIONS WITHOUT PRIOR WRITTEN APPROVAL OF THE OWNER OR HIS DESIGNATED REPRESENTATIVE MAY CAUSE THE WORK TO BE DEEMED UNACCEPTABLE.
15. INSTALL INITIAL SEDIMENTATION AND EROSION CONTROL MEASURES PRIOR TO INITIATING ANY WORK ON THE PROJECT SITE. MAINTAIN ALL EROSION CONTROL MEASURES UNTIL FINAL STABILIZATION AND REVEGETATION IS APPROVED BY THE COUNTY AND/OR CITY.
16. THE PROJECT PLANS AND SPECIFICATIONS ARE INTENDED TO PROVIDE THE COMPLETED PROJECT IN A COMPLETE AND OPERABLE CONDITION. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS AND PROVIDE ALL LABOR NECESSARY TO COMPLETE THE PROJECT IN A NEAT AND WORKMANLIKE MANNER, INCLUDING ALL INCIDENTALS NECESSARY TO COMPLETE THE WORK, WITHOUT ADDITIONAL COST TO THE OWNER.
17. NOTIFY INSPECTORS OF ALL WORK ACTIVITY AT LEAST 24 HOURS IN ADVANCE.
18. ANY INSPECTION BY THE GOVERNING AGENCY OR THE ENGINEER, SHALL NOT, IN ANY WAY, RELIEVE THE CONTRACTOR FROM ANY OBLIGATION TO PERFORM THE WORK IN STRICT COMPLIANCE WITH THE APPLICABLE CODES AND AGENCY REQUIREMENTS.
19. ANY DISRUPTION IN UTILITIES SHALL BE COORDINATED AT LEAST 24 HOURS IN ADVANCE WITH THE UTILITY OWNER, PROJECT OWNER, EMERGENCY PROVIDERS, ALL IMPACTED LOCAL RESIDENTS, AND IMPACTED BUSINESS OWNERS. METHOD OF NOTIFICATION SHALL BE SUBJECT TO APPROVAL OF THE PROJECT OWNER AND AFFECTED UTILITY OWNER.
20. MAINTAIN EMERGENCY VEHICLE ACCESS TO AND THROUGH THE PROJECT SITE AT ALL TIMES.
21. THE CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF EXISTING UTILITIES AND SURFACE CONDITIONS DISTURBED BY CONSTRUCTION ACTIVITIES TO THE SATISFACTION OF THE OWNER, PROPERTY OWNER, AFFECTED UTILITY, OR LOCAL JURISDICTION. ALL SURFACE AND UTILITY RESTORATION SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER. ALL SURFACE RESTORATION SHALL BE REPLACED WITH LIKE KIND, SIZE, AND TYPE OF IMPROVEMENT THAT EXISTED PRIOR TO INITIATING CONSTRUCTION.
22. THE PROJECT PLANS AND SPECIFICATIONS AS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER, FOR AND ON BEHALF OF MERRICK AND COMPANY, REPRESENT THE FINAL CONSTRUCTION DOCUMENTS FOR THIS PROJECT. THE USE OF ANY ELECTRONIC OR OTHER MEDIA PURPORTING TO REPRESENT THE FINAL CONSTRUCTION DOCUMENTS FOR THIS PROJECT SHALL NOT BE RELIED UPON AS FINAL CONSTRUCTION DOCUMENTS. SHOULD THERE BE A CONFLICT BETWEEN SEALED DRAWINGS AND ELECTRONIC OR OTHER MEDIA FILES, THE SEALED DRAWINGS SHALL GOVERN. EACH USER OF ANY ELECTRONIC OR OTHER MEDIA WAIVES AND RELEASES MERRICK FROM ALL ACTIONS, CLAIMS, DAMAGES, ACTIONS, OBLIGATIONS, AND LIABILITIES OF ANY KIND OR NATURE WITH RESPECT TO THE ELECTRONIC OR OTHER MEDIA FILES.
23. NOTHING CONTAINED IN THE CONTRACT DOCUMENTS SHALL CREATE, NOR SHALL BE CONSTRUED TO CREATE, ANY CONTRACTUAL RELATIONSHIP BETWEEN THE ENGINEER AND THE CONTRACTOR OR ANY SUBCONTRACTOR.
24. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROMPTLY NOTIFYING THE ENGINEER OF ANY PROBLEMS OR POTENTIAL PROBLEMS IN CONFORMANCE TO THE DESIGN LINE AND GRADE FOR ANY ELEMENT OF THE CONSTRUCTION. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROMPTLY NOTIFYING THE ENGINEER OF SITE CONDITIONS THAT DIFFER FROM THOSE SHOWN ON THE APPROVED PLANS.
25. IN THE EVENT THE CONTRACTOR ALLOWS, AUTHORIZES, APPROVES OR CONSTRUCTS ITEMS THAT DIFFER FROM THE APPROVED PLAN, SPECIFICATIONS, OR OTHER CONTRACT DOCUMENTS, WITHOUT WRITTEN APPROVAL BY THE ENGINEER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY LIABILITY ARISING FROM SUCH CHANGES.

CITY OF LONE TREE GENERAL NOTES

1. THE CITY OF LONE TREE ENGINEER'S SIGNATURE AFFIXED TO THIS DOCUMENT INDICATES THE ENGINEERING DIVISION HAS REVIEWED THE DOCUMENT AND FOUND IT IN GENERAL CONFORMANCE WITH THE CITY OF LONE TREE SUBDIVISION RESOLUTION OR APPROVED VARIANCES TO THOSE REGULATIONS. THE CITY OF LONE TREE ENGINEER, THROUGH ACCEPTANCE OF THIS DOCUMENT, ASSUMES NO RESPONSIBILITY, OTHER THAN STATED ABOVE, FOR THE COMPLETENESS AND/OR ACCURACY OF THESE DOCUMENTS. THE OWNER AND ENGINEER UNDERSTAND THAT THE RESPONSIBILITY FOR THE ENGINEERING ADEQUACY OF THE FACILITIES DEPICTED IN THIS DOCUMENT LIES SOLELY WITH THE REGISTERED PROFESSIONAL ENGINEER WHOSE STAMP AND SIGNATURE IS AFFIXED TO THIS DOCUMENT.
2. ALL ROADWAY CONSTRUCTION SHALL CONFORM TO CURRENT DOUGLAS COUNTY ROADWAY DESIGN AND CONSTRUCTION STANDARDS.
3. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY THE CITY OF LONE TREE ENGINEERING DIVISION. THE CITY RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO ITS STANDARDS AND SPECIFICATIONS.
4. THE CONTRACTOR SHALL NOTIFY THE CITY OF LONE TREE PUBLIC WORKS, INSPECTION SECTION, (303) 662-8112, A MINIMUM OF 48 HOURS AND A MAXIMUM OF 96 HOURS PRIOR TO STARTING CONSTRUCTION, AND/OR BEFORE RESTARTING CONSTRUCTION AFTER A SHUTDOWN OF MORE THAN TEN (10) DAYS.
5. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ACTUAL CONSTRUCTION. FOR INFORMATION, CONTACT: UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT (800) 922-1987 OR 811.
6. THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY (SIGNED BY BOTH DESIGN ENGINEER AND CITY OF LONE TREE) OF THE CONSTRUCTION PLANS AND GESC REPORT AND PLAN, AND ONE (1) COPY OF THE DOUGLAS COUNTY ROADWAY DESIGN AND CONSTRUCTION STANDARDS AT THE JOB SITE AT ALL TIMES.
7. ALL PROPOSED STREET CUTS TO EXISTING PAVEMENTS FOR UTILITIES, STORM SEWER, OR OTHER PURPOSES ARE LISTED AND REFERENCED BELOW:

   RIDGEGATE PARKWAY

8. A ROW/CONSTRUCTION PERMIT MUST BE OBTAINED BEFORE ANY WORK WITHIN EXISTING OR PROPOSED PUBLIC ROW. THE PERMIT APPLICATION MUST BE SUBMITTED TO THE CITY OF LONE TREE ENGINEER FOR REVIEW/PROCESSING A MINIMUM OF SEVEN (7) DAYS PRIOR TO REQUESTED START FOR THE WORK IN THE ROW.
9. A PLAN FOR TRAFFIC CONTROL DURING CONSTRUCTION SHALL BE SUBMITTED TO THE CITY OF LONE TREE ENGINEER FOR ACCEPTANCE WITH THE PERMIT APPLICATION. AN EXCAVATION OR PUBLIC IMPROVEMENTS CONSTRUCTION PERMIT WILL NOT BE ISSUED WITHOUT AN APPROVED TRAFFIC CONTROL PLAN FOR TRAFFIC CONTROL DURING CONSTRUCTION.
10. THE CONSTRUCTION PLANS SHALL BE CONSIDERED VALID FOR TWO (2) YEARS FROM THE DATE OF CITY OF LONE TREE ACCEPTANCE/APPROVAL. IF APPLICABLE CONSTRUCTION PERMITS HAVE NOT BEEN OBTAINED, AND CONSTRUCTION STARTED WITHIN THAT TIME, THESE PLANS SHALL BE VOID AND WILL BE SUBJECT TO RE-REVIEW AND RE-ACCEPTANCE BY THE CITY OF LONE TREE.
11. CONTRACTOR SHALL NOTIFY THE CITY OF LONE TREE ENGINEER INSPECTOR WHEN WORKING OUTSIDE OF THE PUBLIC RIGHT-OF-WAY ON ANY FACILITY WHICH WILL BE CONVEYED TO THE CITY, MILE HIGH FLOOD DISTRICT, OR OTHER SPECIAL DISTRICT FOR MAINTENANCE (STORM SEWER, ENERGY DISSIPATERS, DETENTION OUTLET STRUCTURES, OR OTHER DRAINAGE INFRASTRUCTURES). FAILURE TO NOTIFY ENGINEERING INSPECTOR TO ALLOW THEM TO INSPECT THE CONSTRUCTION MAY RESULT IN NON-ACCEPTANCE OF THE FACILITIES/INFRASTRUCTURE BY CITY AND/OR MILE HIGH FLOOD DISTRICT.

CITY OF LONE TREE SIGNAGE AND STRIPING NOTES

1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT VERSION OF THE FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE "COLORADO SUPPLEMENTAL MUTCD" AND THE DOUGLAS COUNTY "ROAD AND CONSTRUCTION STANDARDS MANUAL". FURTHER SPECIFICATIONS AND ILLUSTRATIONS ARE LOCATED IN THE COLORADO DIVISION OF HIGHWAYS "M AND S STANDARDS".
2. DELINEATION OF ROADWAYS SHALL BE AS SPECIFIED IN THE COLORADO "M AND S MANUAL."
3. SPECIAL CARE SHALL BE TAKEN IN SIGN LOCATION TO ENSURE AN UNOBSTRUCTED VIEW OF EACH SIGN. STREET NAME SIGNS SHALL BE MOUNTED SO THAT THEY CAN BE SEEN FROM ALL DIRECTIONS OF TRAVEL.
4. INSTALLATION OF SIGNS SHALL CONFORM TO THE MUTCD MOUNTING HEIGHT REQUIREMENTS, INCLUDING A 7-FOOT MINIMUM HEIGHT FROM THE BOTTOM OF THE LOWEST SIGN PANEL TO THE TOP GRADE OF SIDEWALK.
5. ALL NEWLY INSTALLED TRAFFIC SIGNS SHALL MEET THE MINIMUM RETRO-REFLECTIVITY AND ILLUMINATION STANDARDS AS SET FORTH BY THE MUTCD (LATEST EDITION). THESE MINIMUM REQUIREMENTS SHALL FALL UNDER THE REQUIREMENTS OF THE TWO (2) YEAR WARRANTY PERIOD FOR NEW CONSTRUCTION.
6. DIAMOND GRADE MATERIAL SHALL BE USED ON ALL STOP SIGNS.
7. THE CONTRACTOR INSTALLING SIGNS IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL UNDERGROUND UTILITIES. LONE TREE PUBLIC WORKS SHALL BE CONTACTED A MINIMUM OF 72 HOURS PRIOR TO INSTALLATION AT 303-662-8112.
8. FOLLOWING INSTALLATION, THE CONTRACTOR SHALL NOTIFY THE CITY OF LONE TREE PUBLIC WORKS DEPARTMENT, 303-662-8112. A FIELD INSPECTION OF LOCATION AND INSTALLATION OF ALL SIGNS SHALL BE PERFORMED BY PUBLIC WORKS. ALL DISCREPANCIES IDENTIFIED DURING THE FIELD INSPECTION MUST BE CORRECTED BEFORE THE TWO-YEAR WARRANTY PERIOD WILL BEGIN.
9. SIGNAGE AND STRIPING HAS BEEN DETERMINED BY INFORMATION AVAILABLE AT THE TIME OF REVIEW. PRIOR TO INITIATION OF THE WARRANTY PERIOD, LONE TREE RESERVES THE RIGHT TO REQUIRE MODIFICATIONS TO EXISTING OR INSTALLATION OF ADDITIONAL SIGNAGE AND/OR STRIPING IF THEY DETERMINE THAT AN UNFORESEEN CONDITION WARRANTS SUCH MODIFICATION ACCORDING TO THE MUTCD OR THE CDOT M AND S STANDARDS. ALL SIGNAGE AND STRIPING SHALL FALL UNDER THE REQUIREMENTS OF THE TWO (2) YEAR WARRANTY PERIOD FOR NEW CONSTRUCTION.
10. FINAL STRIPING AND CROSSWALK LAYOUT TO BE APPROVED BY THE CITY OF LONE TREE PRIOR TO INSTALLATION. LONE TREE PUBLIC WORKS SHALL BE CONTACTED A MINIMUM OF 72 HOURS PRIOR TO INSTALLATION AT 303-662-8112.
11. CROSSWALKS SHALL: BE CONSTRUCTED USING 125 MIL PREFORMED THERMOPLASTIC, LINE UP WITH THE CURB RAMPS AT BOTH ENDS, AND BE CENTERED ON LANE LINES SO AS TO BE STRADDLED BY VEHICLES.
12. ALL PAVEMENT MARKINGS SHALL BE AS FOLLOWS:

    FOR CONCRETE SURFACE: METHYL METHACRYLATE OR EPOXY PAINT

    FOR ASPHALT SURFACE: PAINT, 125 MIL (PER CDOT SPECIFICATIONS) PREFORMED THERMOPLASTIC, INLAID MARKING TAPE, METHYL METHACRYLATE, OR EPOXY PAINT

    TURN ARROWS AND ONLYS: 125 MIL PREFORMED THERMOPLASTIC
13. ALL PAVEMENT MARKING SHALL BE PRECEDED BY THE APPROPRIATE SURFACE PREPARATION.
14. ANY SIGNAGE AND/OR OTHER TRAFFIC CONTROL DEVICES REMOVED SHALL BE RETURNED TO THE CITY OF LONE TREE.
15. TYPE III LIGHTED BARRICADES SHALL BE SET AT ENDS OF ROADWAYS, SEPARATING FINISHED AND UNFINISHED CONSTRUCTION AREAS AND WILL BE MAINTAINED BY THE CONTRACTOR/DEVELOPER.
16. SEE CITY OF LONE TREE "STREET SIGN DETAILS" FOR ADDITIONAL INTERSECTION STREET SIGNAGE REQUIREMENTS.

STORM SEWER NOTES

1. THE CONTRACTOR MUST KEEP ALL POLLUTANTS, INCLUDING TRENCH BACKFILL MATERIAL, OIL/GREASE, ETC. FROM WASHING INTO THE STORM SEWER SYSTEM.
2. THE BACKFILL OF ALL TRENCHES SHALL BE COMPACTED TO THE APPLICABLE SPECIFICATIONS AND ALL COMPACTION TEST RESULTS SHALL BE SUBMITTED TO THE OWNER FOR FINAL ACCEPTANCE.
3. ALL MAINLINE STORM AND SANITARY SEWER PIPES SHALL BE INSTALLED WITH BEDDING AS SPECIFIED ON STANDARD DETAILS.
4. ALL STORM SEWER PIPE, AT A MINIMUM, SHALL BE CLASS III REINFORCED CONCRETE PIPE, ASTM C76 WITH PREMIUM GASKETED JOINTS CONFORMING TO ASTM C443 AS SPECIFIED ON THE PLAN AND PROFILE SHEETS OR UNLESS NOTED OTHERWISE.
5. CONTRACTOR SHALL BE AWARE THAT IF DEBRIS IS DROPPED INTO MANHOLES AND OTHER STRUCTURES, IT SHALL BE IMMEDIATELY REMOVED TO ELIMINATE THE POSSIBILITY OF PROPERTY DAMAGE DUE TO THE DEBRIS CAUSING BACK-UP INTO PRIVATE PROPERTIES. IF AND WHEN IT IS DETERMINED THAT DEBRIS CAUSED A BACKUP, THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR DAMAGES.
6. ALL MANHOLES AND OTHER STRUCTURES SHALL BE BUILT TO FINISHED GRADE.
7. MARKER POSTS SHALL BE INSTALLED WITH ALL MANHOLES LOCATED OUTSIDE OF PAVED SURFACES.

ROADWAY NOTES

1. WHERE EXISTING ASPHALT PAVEMENT IS TO BE REMOVED (FROM PAVEMENT CUTS AND/OR WHERE NEW PAVEMENT IS TO BE EXTENDED FROM EXISTING PAVEMENT), THE CONTRACTOR SHALL STRAIGHT SAW CUT OR BLADE CUT THE EXISTING ASPHALT PAVEMENT TO PROVIDE A CLEAN EDGE. SEE THE CITY OF LONE TREE ASPHALT PAVEMENT PATCHBACK DETAIL FOR ADDITIONAL INFORMATION.
2. ALL CONSTRUCTION WITHIN THE CITY OF LONE TREE RIGHT-OF-WAY REQUIRES THAT THE CONTRACTOR OBTAIN THE PROPER PERMITS FROM THE CITY.
3. THE CONTRACTOR SHALL SUBMIT HIS OWN CONSTRUCTION SEQUENCE AND TRAFFIC CONTROL PLAN FOR REVIEW AND ACCEPTANCE BY THE OWNER AND CITY OF LONE TREE.
4. THE CONTRACTOR SHALL CONTACT THE CITY OF LONE TREE, (303)622-8112, PUBLIC WORKS DEPARTMENT BEFORE STARTING ANY WORK TO COORDINATE LANE CLOSURES AND SIGNING REQUIREMENTS.

EXISTING SUBSURFACE UTILITY NOTES

1. THE EXISTING SUBSURFACE UTILITIES DEPICTED IN THESE PLANS ARE IN ACCORDANCE WITH THEIR ACHIEVED QUALITY LEVELS AS DEFINED BY THE AMERICAN SOCIETY OF CIVIL ENGINEERS STANDARD 38-02, "STANDARD GUIDELINE FOR COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."
2. THE SUBSURFACE UTILITY ENGINEERING NOTIFICATION AND INVESTIGATION WAS PERFORMED DURING MARCH AND APRIL 2023. MERRICK WILL NOT BE HELD LIABLE FOR ANY CHANGES IN FIELD CONDITIONS BEYOND THE DATES IN WHICH THE SUBSURFACE UTILITY INVESTIGATION WAS COMPLETED.
3. THE FOLLOWING UTILITIES WERE NOT INCLUDED AS PART OF THE SUBSURFACE UTILITY ENGINEERING INVESTIGATION; LANDSCAPE IRRIGATION SYSTEMS, UTILITY SERVICES TO RESIDENCES OR BUSINESSES, UNDERGROUND STORAGE TANKS, SEPTIC TANKS, WELLS, AND TRAFFIC DETECTION DEVICES.
4. THE CONTRACTOR SHALL COMPLY WITH ARTICLE 1.5 OF TITLE 9, CRS ("EXCAVATION REQUIREMENTS") WHEN EXCAVATING OR GRADING IS PLANNED IN THE AREA OF UNDERGROUND UTILITY FACILITIES. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED UTILITIES AT LEAST TWO (2) BUSINESS DAYS, NOT INCLUDING THE ACTUAL DAY OF NOTICE, PRIOR TO COMMENCING SUCH OPERATIONS. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT PHONE NO. 811, TO HAVE LOCATIONS OF UNCC REGISTERED LINES MARKED BY MEMBER COMPANIES. ALL OTHER UNDERGROUND FACILITIES SHALL BE LOCATED BY CONTACTING THE RESPECTIVE OWNER. UTILITY SERVICE LATERALS SHALL ALSO BE LOCATED PRIOR TO BEGINNING EXCAVATION OR GRADING. THE CONTRACTOR SHALL LOCATE NON-MEMBER UTILITIES, SUCH AS STORM SEWER AND DITCH FACILITIES, AS NECESSARY TO PREVENT DAMAGE THERETO.
5. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL LOCATIONS OF EXISTING STRUCTURES AND UTILITIES SHOWN ON THE PLANS AND TO ASCERTAIN WHETHER ANY OTHER STRUCTURES AND UTILITIES MAY EXIST. THE CONTRACTOR ASSUMES RESPONSIBILITY FOR THE PROTECTION OF ALL UTILITIES DURING THE WORK. REPAIR OF DAMAGE TO EXISTING UTILITIES DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

SUBSURFACE UTILITY ENGINEERING TEST HOLES

TEST HOLE ID	UTILITY OWNER	UTILITY TYPE	SIZE (INCH)	UTILITY MATERIAL	NORTHING	EASTING	GROUND ELEVATION	DEPTH (FT)	TOP OF PIPE ELEVATION
101	COLT	STORM SEWER	30	RCP	1615358.297	3186095.370	6031.89	6.5	6025.39
102	PWSD	WATER	12	PVC	1615365.419	3186105.496	6032.16	4	6028.16
103	INTENTIONALLY OMITTED								
104	PWSD	WATER	12	PVC	1615350.277	3186110.773	6032.06	3.7	6028.36
105	INTENTIONALLY OMITTED								
106	PWSD	WATER	12	PVC	1615891.917	3187144.901	6022.66	6.3	6016.36
107	XCEL	ELECTRIC	1	DIRECT BURY	1615720.044	3187128.149	6023.78	9.6	6014.18
108	XCEL	ELECTRIC	1	DIRECT BURY	1615522.913	3187190.961	6027.66	4.3	6023.36
109	XCEL	ELECTRIC	1	DIRECT BURY	1615262.926	3187227.597	6034.57	4.3	6030.27
110	PWSD	WATER	12	PVC	1615327.028	3187623.758	6023.94	4.9	6019.04
111	COLT	ELECTRIC	1.5	PVC	1616045.011	3187498.332	6021.61	4	6017.61
112	COLT	ELECTRIC	1.5	PVC	1615928.204	3188232.413	5991.94	3.5	5988.44

City of Lone Tree

These construction plans have been reviewed by the City of Lone Tree for street and drainage improvements only.

Engineering Division Acceptance Block

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REV	REVISION DESCRIPTION	DATE	DRWN	CHKD	APPR

DESIGN BY: CD
DRAWN BY: NB
CHECKED BY: CB
APPROVED BY: CB

RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS

GENERAL NOTES

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 09/29/2023
SHEET: 2 OF 48

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DOUGLAS COUNTY ROADWAY DESIGN AND CONSTRUCTION STANDARDS

	DETAIL NUMBER	DRAWING NAME
☐	SP.1	CUL-DE-SAC & URBAN LOCAL TYPE I
☐	SP.2	URBAN LOCAL TYPE II
☐	SP.3	ENTRY STREET, SCHOOL ACCESS & COMMERCIAL AND INDUSTRIAL
☐	SP.3a	ENTRY STREET WITH MEDIAN
☐	SP.4	URBAN COLLECTOR
☐	SP.5	MINOR ARTERIAL
☐	SP.6	MAJOR ARTERIAL - 4 LANE
☐	SP.7	MAJOR ARTERIAL - 6 LANE
☐	SP.8	RURAL LOCAL ROAD TYPE I (GRAVEL SHOULDERS)
☐	SP.9	RURAL LOCAL ROAD TYPE II (MOUNTABLE CURB AND GUTTER)
☐	SP.10	RURAL LOCAL ROAD TYPE III
☐	SP.11	RURAL LOCAL ROAD TYPE IV
☐	SP.12	RURAL COLLECTOR (NO PRIVATE DRIVE ACCESS)
☐	SP.13	RURAL ARTERIAL - 2 LANE (NO PRIVATE DRIVE ACCESS)
☐	SP.14	RURAL ARTERIAL - 4 LANE (NO PRIVATE DRIVE ACCESS)
☐	SP.15	35-ACRE PRIVATE RURAL ROAD
■	SP.16	ROADWAY NOTES
■	SP.17	CURB & GUTTERS AND SIDEWALKS
■	SP.18a	CURB RAMP & DETECTABLE WARNING AREA NOTES
■	SP.18b	CURB RAMP WITH PANEL DETECTABLE WARNING AREA INSTALLATION
☐	SP.18c, SP.18d	CURB RAMP WITH PAVER DETECTABLE WARNING AREA INSTALLATION
☐	SP.19a	DIAGONAL CURB RAMP FOR CURB RETURN RADIUS OF 20' TO 30'
☐	SP.19b	PERPENDICULAR CURB RAMP FOR CURB RETURN RADIUS OF 35' TO 50'
☐	SP.20	MID-BLOCK CURB RAMP
■	SP.21	CROSSPAN
■	SP.22	CURB OPENING
■	SP.23a	TRENCH DRAIN
☐	SP.23b	TRENCH DRAIN WITH TRAFFIC SIGNAL CONDUIT
■	SP.23c	TRAFFIC SIGNAL CONDUIT
■	SP.24	TRENCH DRAIN CLEANOUT
■	SP.25	TRENCH DRAIN 90° CORNER
■	SP.26	BACK TO BACK TRENCH DRAIN CLEANOUTS
☐	SP.27	MEDIAN PLANTER LAYOUT
☐	SP.28	MEDIAN PLANTER DETAILS
☐	SP.29	MEDIAN COVER MATERIAL
☐	SP.30	MEDIAN NOSE DETAIL
☐	SP.31	CONCRETE JOINTS
☐	SP.32	CONCRETE JOINTS
☐	SP.33a, SP.33b, SP.33c, SP.33d	TYPICAL CONCRETE JOINT LAYOUT
■	SP.34a, SP.34b, SP.34c, SP.34d	CURB INLET - TYPE R (5', 10', OR 15' IN LENGTH)
☐	SP.35a, SP.35b, SP.35c	INLET - TYPE C
■	SP.36a, SP.36b, SP.36c	INLET - TYPE D
☐	SP.37a, SP.37b	GRATED INLET TYPE 13
☐	SP.38a, SP.38b	COMBINATION INLET TYPE 13/DENVER TYPE 16- SINGLE NO. 16 OPEN THROAT INLET ADJUSTABLE CURB BOX
☐	SP.39a, SP.39b	COMBINATION INLET TYPE 13/DENVER TYPE 16- DOUBLE NO. 16 OPEN THROAT INLET ADJUSTABLE CURB BOX
☐	SP.40a, SP.40b	COMBINATION INLET TYPE 13/DENVER TYPE 16- TRIPLE NO. 16 OPEN THROAT INLET ADJUSTABLE CURB BOX
☐	SP.41a, SP.41b	COMBINATION INLET TYPE 13/DENVER TYPE 16- SINGLE, DOUBLE & TRIPLE NO. 16 INLET VALLEY
☐	SP.42a, SP.42b	COMBINATION INLET TYPE 13/DENVER TYPE 16- NO. 16 INLET GRATE & FRAME AND ADJUSTABLE CURB BOX
■	SP.43a, SP.43b, SP.43c, SP.43d, SP.43e, SP.43f	MANHOLES
☐	SP.44a, SP.44b, SP.44c, SP.44d	TYPE "P" MANHOLE
■	SP.45	MANHOLE AND INLET STEPS
■	SP.46a, SP.46b	PIPE INSTALLATION IN TRENCH
☐	SP.47a, SP.47b	PIPE INSTALLATION IN TRENCH FOR STREET CUT
☐	SP.48	ROADSIDE DITCH SECTION
☐	SP.49	URBAN ROADSIDE SWALE
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☐	SP.51a, SP.51b, SP.51c	WINGWALLS
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☐	SP.53a, SP.53b	RESIDENTIAL SIDEWALK CURB CHASE
☐	SP.54	RANGE BOX
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☐	SP.56	EMERGENCY OVERFLOW CHANNEL (IN DRAINAGE TRACT)
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☐	SP.59	CURB CUT
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■	SP.61	TRENCH DRAIN CONNECTION TO INLET OR MANHOLE
■	SP.62	ASPHALT STREET CUT/PATCHING

CITY OF LONE TREE STANDARD DETAILS

	DETAIL NUMBER	DRAWING NAME
☐	N/A	MEDIAN NOSE DETAIL
☐	N/A	MEDIAN NOSE SIGNAGE
☐	N/A	CURB RETURN DETAIL
■	N/A	STREET CUT AND PATCH SPECIFICATION
☐	ST-02	STREET CUT CONCRETE PAVEMENT
■	ST-01	STREET CUT ASPHALT
■	SN-01	STREET NAME SIGN DETAILS
■	SN-02	STREET NAME SIGN DETAILS
■	SN-03	STREET NAME SIGN DETAILS
■	MH-1	MANHOLE LID COVER

CITY AND COUNTY OF DENVER TRANSPORTATION STANDARDS AND DETAILS

	DETAIL NUMBER	DRAWING NAME
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■	7.2a / b	CURB RAMP TYPE 2
■	7.3	CURB RAMP TYPE 3
■	7.4	CURB RAMP TYPE 4
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■	7.7	CURB RAMP TYPICAL SECTION
■	7.8	TYPICAL SIDEWALK TRANSITIONS TO CURB RAMP LANDING

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STANDARD DRAWINGS APPLICABLE TO THIS PROJECT ARE INDICATED BY A MARKED BOX. ■

City of Lone Tree

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RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS

DETAIL SHEET

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 09/29/2023
SHEET: 3 OF 48

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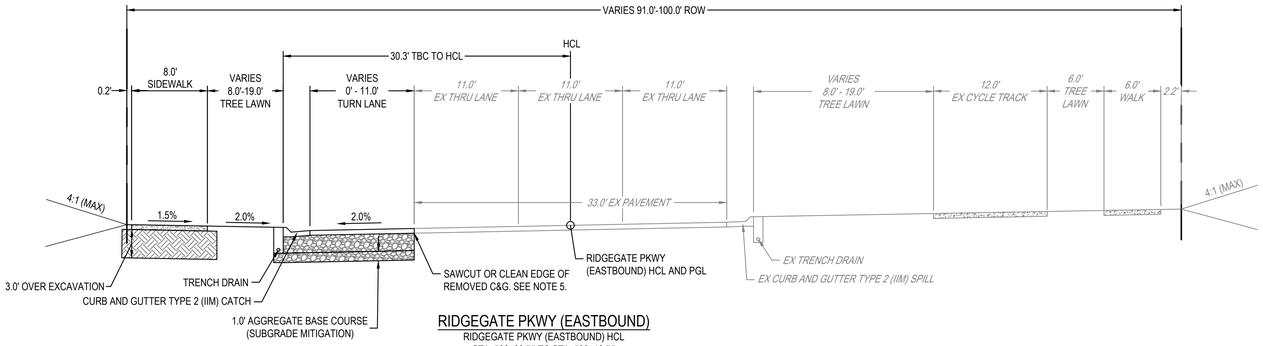
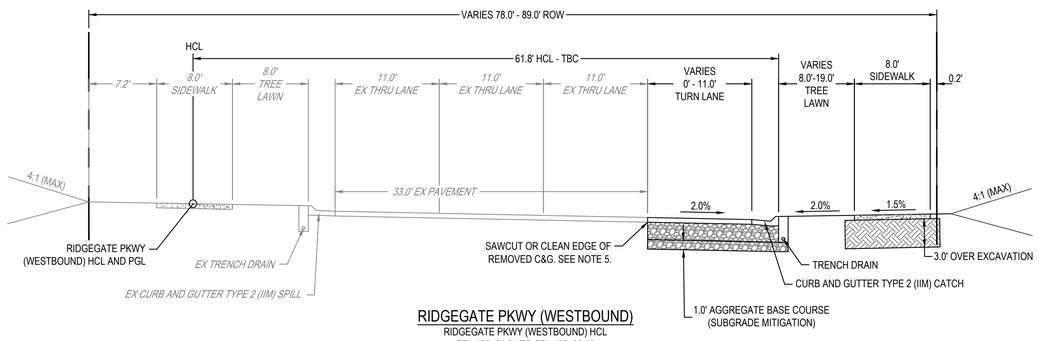
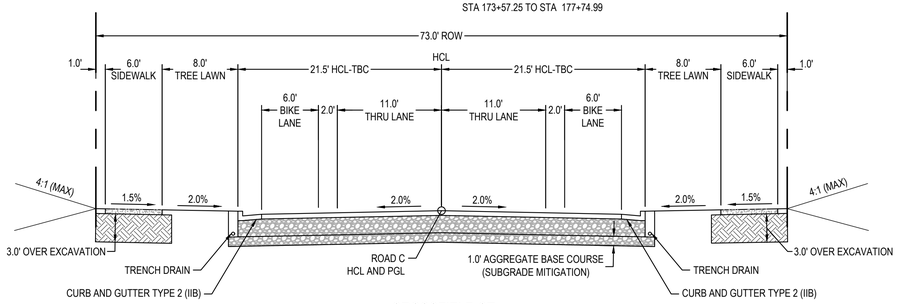


RIDGEGATE PKWY (EASTBOUND)
RIDGEGATE PKWY (EASTBOUND) HCL
STA. 526+60.75 TO STA. 533+18.75



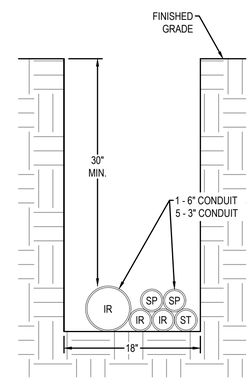
RIDGEGATE PKWY (WESTBOUND)
RIDGEGATE PKWY (WESTBOUND) HCL
STA 168+04.84 TO STA 172+02.73
STA 173+57.25 TO STA 177+74.99



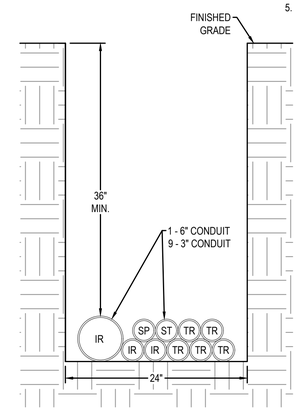
CROSSFIELD ST

TYPICAL SECTION NOTES:

1. TYPICAL SECTIONS ARE NOT INTENDED TO PROVIDE DETAILED CONSTRUCTION INFORMATION. SEE REMAINDER OF THESE PLANS FOR ACTUAL DIMENSIONS, LOCATIONS, AND ELEVATIONS.
2. TYPICAL ROADWAY CROSS SLOPE IS 2.0%. SEE ROADWAY PLANS FOR ADDITIONAL CROSS SLOPE INFORMATION.
3. TYPICAL SECTIONS ARE SHOWN IN THE DIRECTION OF ASCENDING STATIONING.
4. SUBGRADE MITIGATION LIMITS (OVER-EXCAVATION OR CLASS 6 AGGREGATE BASE COURSE) SHALL EXTEND 1 FOOT BEYOND THE BACK OF CURB AND 1 FOOT BEYOND EACH EDGE OF SIDEWALK.
5. SEE DOUGLAS COUNTY DETAIL SP.62 FOR TIE-IN OF NEW DEPTH ASPHALT PAVEMENT.



CONDUIT TRENCH DETAIL A
NTS



CONDUIT TRENCH DETAIL B
NTS

CONDUIT TRENCH NOTES:

1. ALL CONDUIT SHALL BE SCHEDULE 40 PVC.
2. INSTALL 2" PVC PIPE MARKER AT CONDUIT ENDS AT LEAST 3' ABOVE GRADE.
3. INSTALL #14 AWG LOCATE WIRE AND A NYLON PULL STRING IN EACH CONDUIT.
4. BACKFILL WITH NATIVE MATERIAL AND COMPACT TO A MINIMUM 95 PERCENT OF THE MAXIMUM DRY DENSITY AT MOISTURE CONTENTS WITHIN 2 PERCENT OF OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D1557.

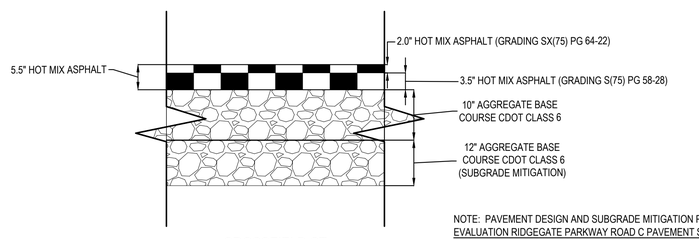
CONDUIT LEGEND:

IR = IRRIGATION

SP = SPARE

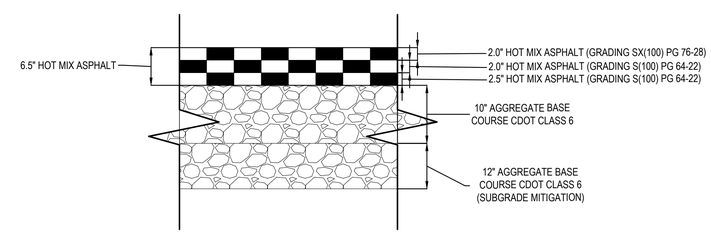
ST = STREET LIGHTING

TR = TRAFFIC SIGNAL



CROSSFIELD ST
TYPICAL PAVEMENT SECTION
NTS

NOTE: PAVEMENT DESIGN AND SUBGRADE MITIGATION PER GEOTECHNICAL EVALUATION RIDGEGATE PARKWAY ROAD C PAVEMENT SECTIONS, PREPARED BY GROUND ENGINEERING CONSULTANTS SEPTEMBER 6, 2023.



RIDGEGATE PARKWAY
TYPICAL PAVEMENT SECTION
NTS

NOTE: PAVEMENT DESIGN AND SUBGRADE MITIGATION PER GEOTECHNICAL EVALUATION RIDGEGATE PARKWAY STATION ROADS, PREPARED BY GROUND ENGINEERING CONSULTANTS DECEMBER 20, 2019 AND THE LETTER BY GROUND ENGINEERING CONSULTANTS DATED MARCH 21, 2023. SUBJECT: CONTINUED APPLICABILITY OF 2019 GROUND REPORT TO HIGH NOTE AVENUE EAST OF HAVANA STREET, RIDGEGATE PARKWAY STATION ROADS, LONE TREE, COLORADO.

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RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS

TYPICAL SECTIONS

ISSUED FOR REVIEW
FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 09/29/2023
SHEET: 4 OF 48

File Location: Q:\DEN\Projects\5087-02-RRMD Overall East\Projects\1240-Couplet Roadway Design\Design\CDs\Civil\FILING 4\ROAD AND STORM\1240- TYPICAL SECTIONS-F4.dwg Plot Date:10/3/2023 2:40 PM Last Saved By: NBROWN

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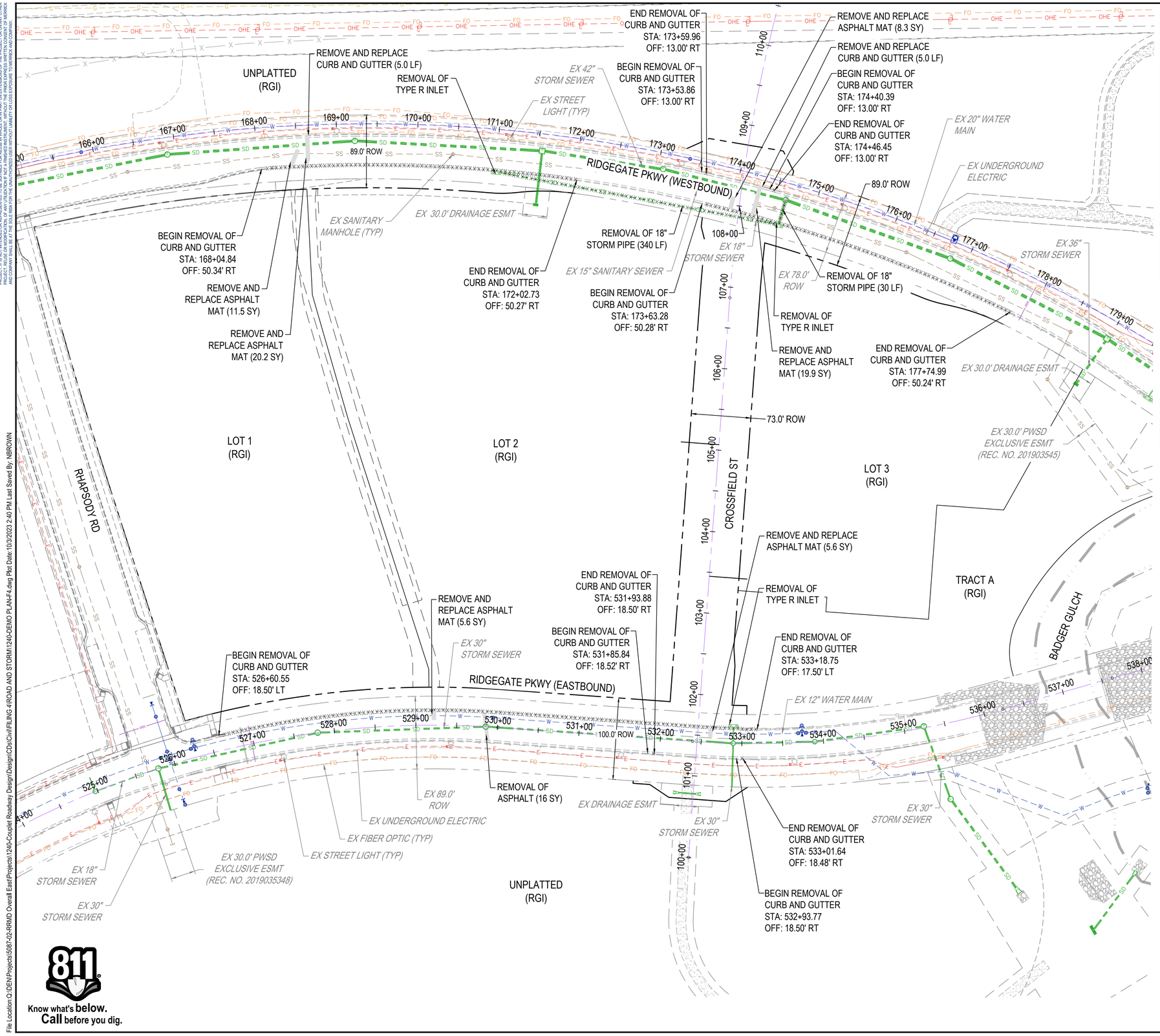

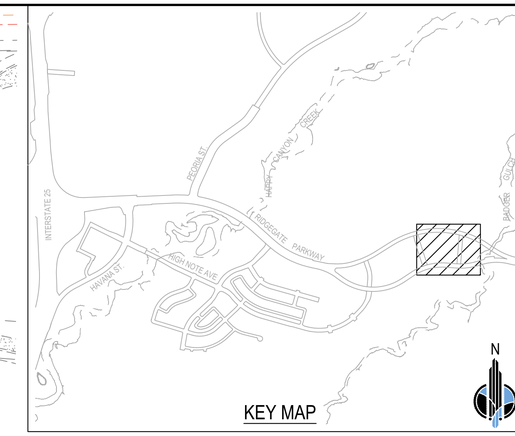

DEMOLITION NOTES:

1. REMOVAL OF FENCE OR RESET FENCE TO BE DONE BY OTHERS PRIOR TO START OF CONSTRUCTION.
2. REMOVAL OF SIGNAGE AND STRIPING TO BE FOUND ON SIGNAGE AND STRIPING SHEETS.

DEMO LEGEND

REMOVAL OF ASPHALT PAVEMENT

XXXXXXXXXX REMOVAL OF CURB AND GUTTER AND PIPE

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RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS

DEMO PLAN

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 09/29/2023
SHEET: 5 OF 48

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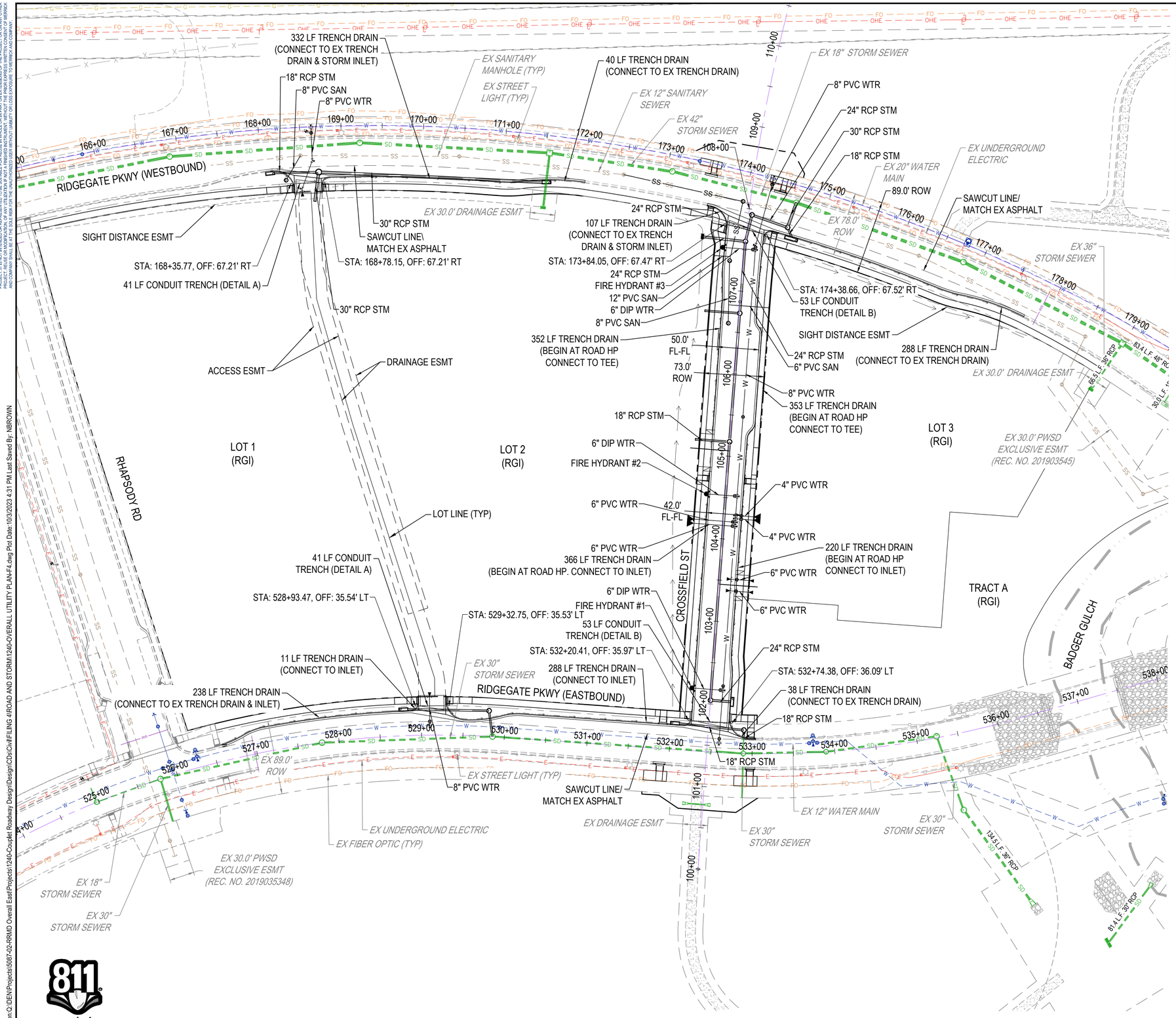

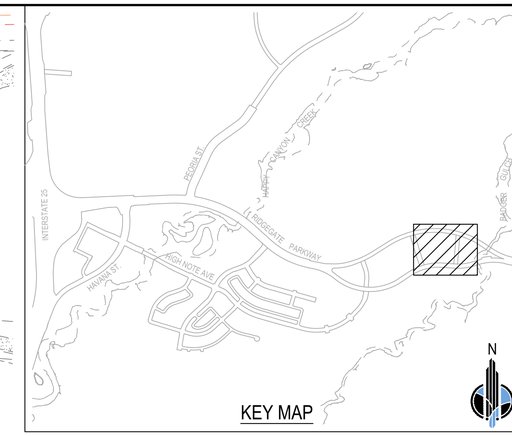

KEY MAP

EXISTING SUBSURFACE UTILITY NOTES:

1. "QUALITY LEVEL A" DATA POINTS INDICATED BY SYMBOL
2. ALL "QUALITY LEVEL A" ELEVATIONS ARE TO THE TOP OF UTILITY UNLESS OTHERWISE NOTED.
3. THE SANITARY SEWER AND STORM DRAINAGE FACILITIES ARE "QUALITY LEVEL C". ALL OTHER SUBSURFACE UTILITIES DEPICTED AT ASCE 38 "QUALITY LEVEL B" UNLESS OTHERWISE NOTED.
4. THE FOLLOWING UTILITIES WERE NOT INCLUDED AS PART OF THE SUBSURFACE UTILITY ENGINEERING INVESTIGATION; LANDSCAPE IRRIGATION SYSTEMS, UTILITY SERVICES TO RESIDENCES OR BUSINESSES, UNDERGROUND STORAGE TANKS, SEPTIC TANKS, WELLS, AND TRAFFIC DETECTION DEVICES.

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RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS

OVERALL UTILITY PLAN

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 09/29/2023
SHEET: 6 OF 48

File Location: Q:\DEN\Projects\5087-02-RRMD Overall East\Projects\1240-Couplet Roadway Design\Design\CDs\Civil\FILING 4\ROAD AND STORM\1240-OVERALL UTILITY PLAN-F4.dwg Plot Date: 10/3/2023 4:31 PM Last Saved By: NBROWN

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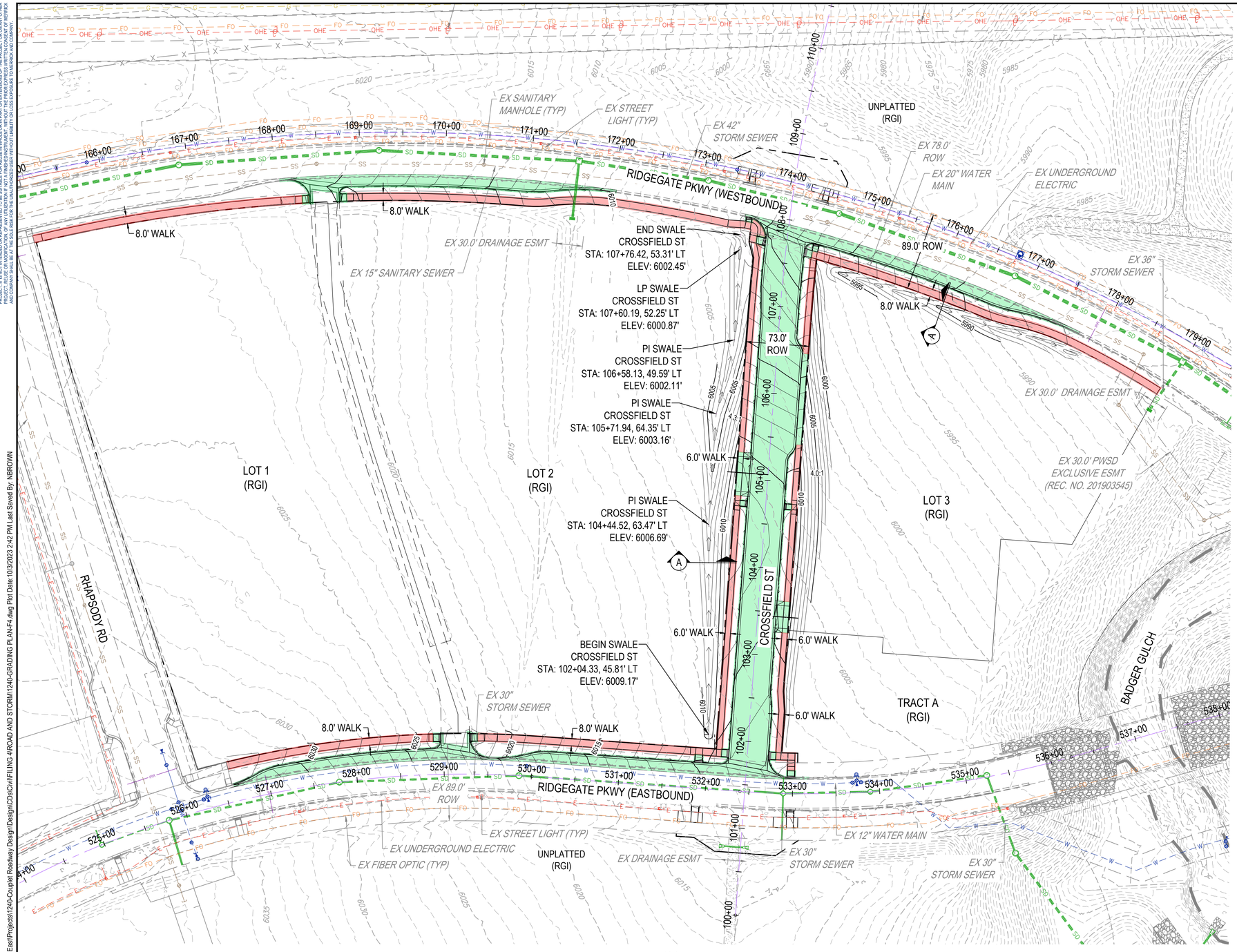
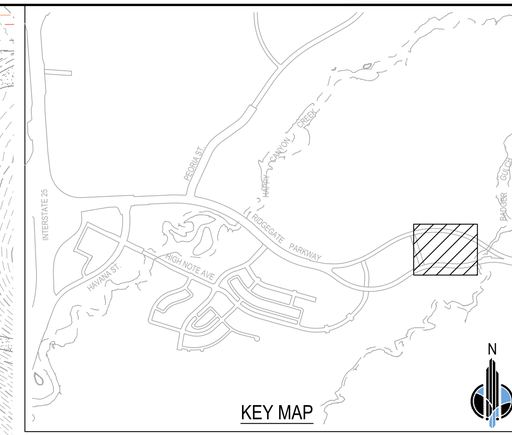
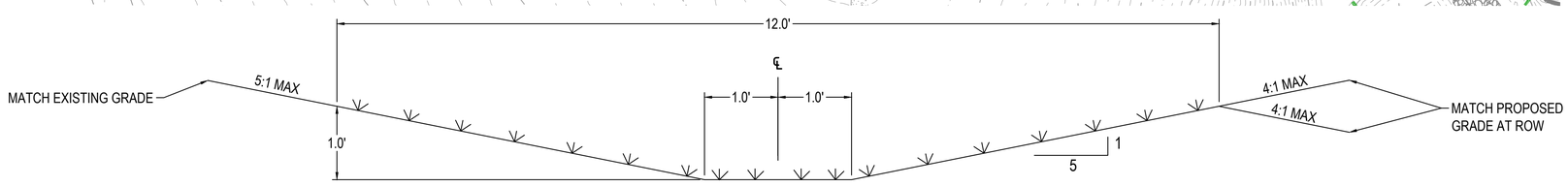




KEY MAP

GRADING NOTES:

1. SPOT ELEVATIONS ARE TO FINISHED GRADE.



SWALE DETAIL SECTION A-A
(NTS)

SUBGRADE PREPARATION LEGEND

- AGGREGATE BASE COURSE LIMIT
- OVER-EXCAVATION LIMITS

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RIDGEGATE EAST FILING NO. 3
STREET AND STORM SEWER PLANS

OVERALL GRADING PLAN

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JOB NO.: 65121240
DATE: 10/3/2023
SHEET: 7 OF 48

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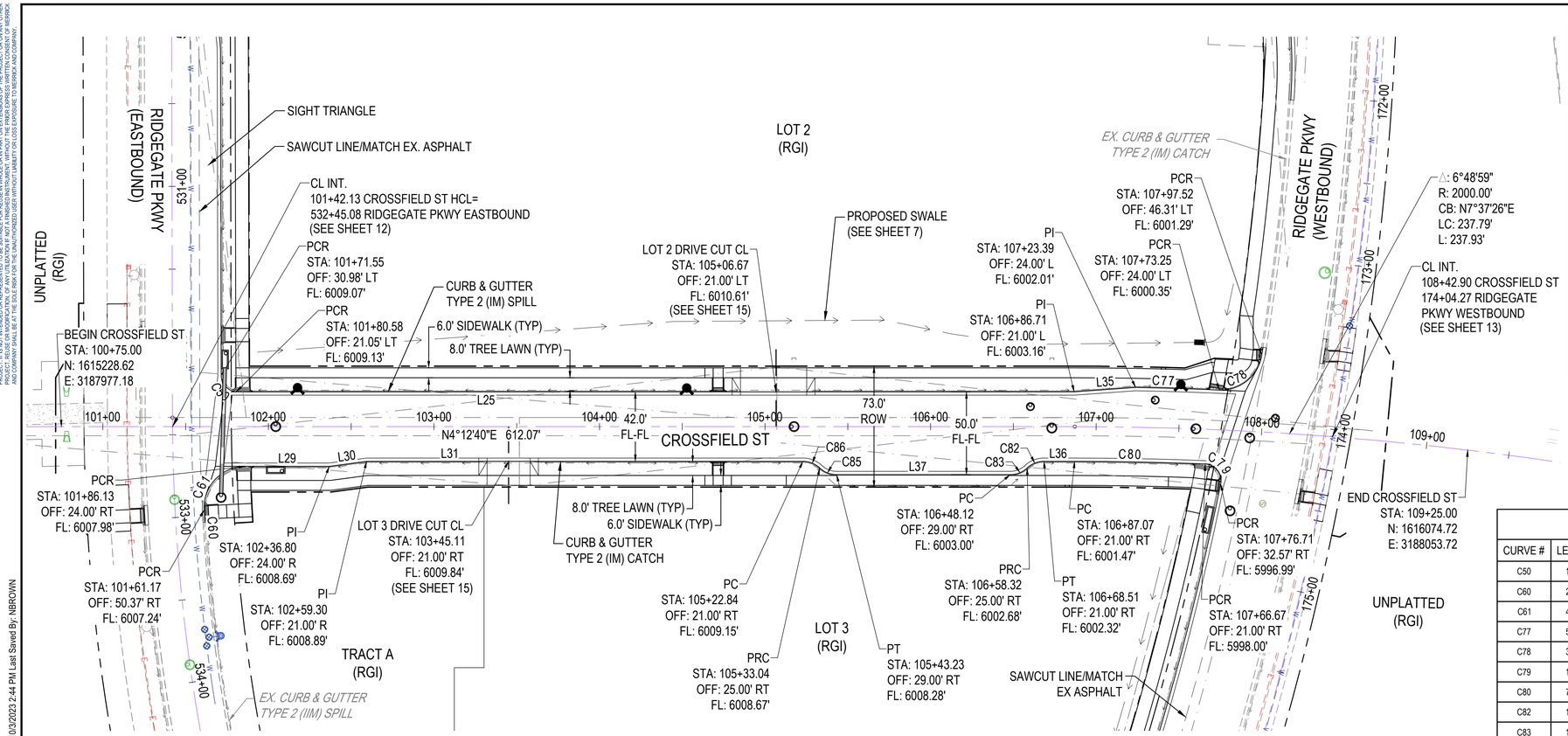
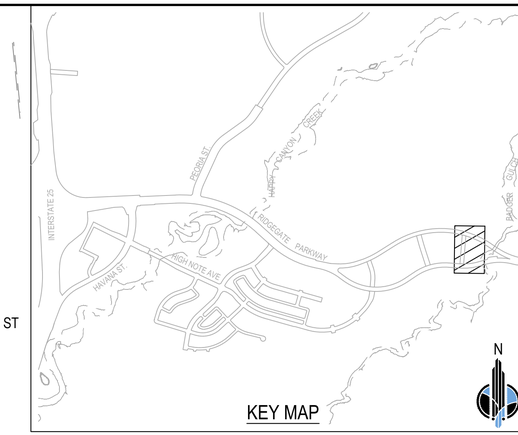
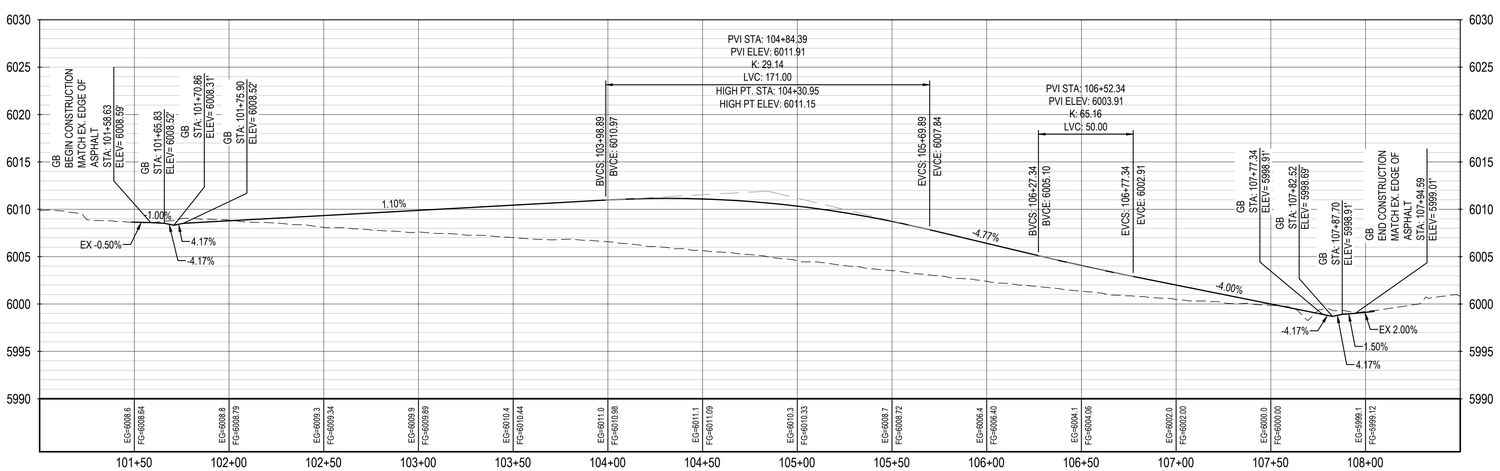




KEY MAP

CURVE TABLE					
CURVE #	LENGTH	DELTA	RADIUS	CRD LENGTH	CRD RADIUS
C50	14.72'	84° 20' 04"	10.00'	13.43	N51° 55' 00"E
C60	22.00'	0° 59' 51"	1263.40'	22.00	N89° 27' 13"W
C61	40.65'	93° 11' 53"	24.99'	36.31	N42° 21' 21"W
C77	50.45'	1° 25' 42"	2024.00'	50.45	N5° 58' 14"E
C78	36.43'	83° 29' 10"	25.00'	33.29	N35° 03' 30"W
C79	17.31'	99° 09' 10"	10.00'	15.23	N56° 04' 21"E
C80	78.77'	2° 16' 50"	1979.00'	78.76	N5° 21' 22"E
C82	11.21'	42° 50' 00"	15.00'	10.95	N17° 12' 03"W
C83	11.21'	42° 50' 00"	15.00'	10.95	N17° 12' 03"W
C85	11.21'	42° 50' 00"	15.00'	10.95	N25° 37' 57"E
C86	11.21'	42° 50' 00"	15.00'	10.95	N25° 37' 57"E

LINE TABLE		
LINE #	BEARING	LENGTH
L25	N4° 13' 29"E	302.07'
L29	N4° 12' 57"E	50.66'
L30	N3° 22' 44"W	22.70'
L31	N4° 12' 57"E	99.99'
L35	N0° 06' 27"E	37.22'
L36	N4° 12' 57"E	18.55'
L37	N4° 12' 57"E	104.88'



PROFILE LEGEND

- - - - EXISTING GROUND AT HCL

——— PROPOSED GRADE AT HCL

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0 40' 80'

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APPROVED BY: CB

RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER
PLANS

CROSSFIELD ST PLAN & PROFILE

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 09/29/2023
SHEET: 8 OF 48

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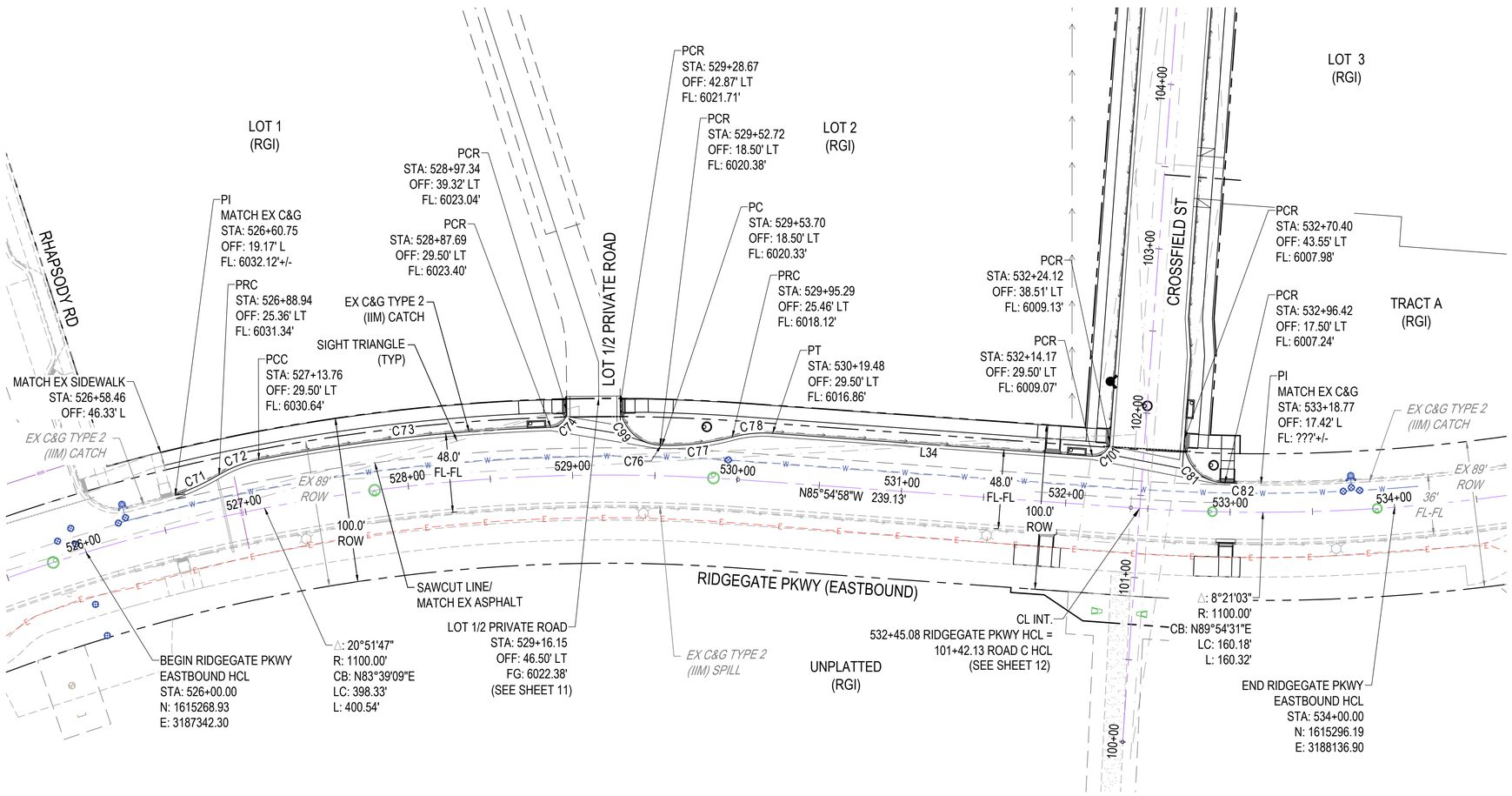

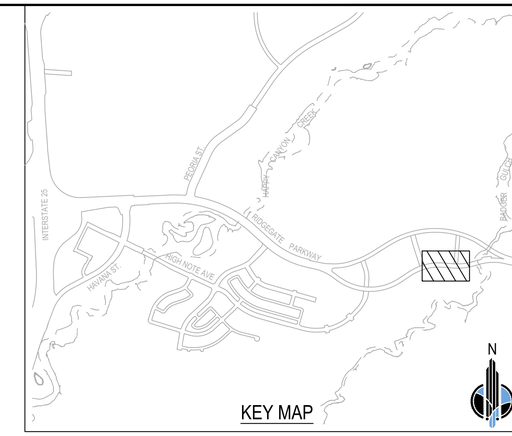

ROADWAY NOTES:

1. ALL STATIONS, OFFSETS, AND ELEVATIONS ARE TO FLOWLINE UNLESS OTHERWISE NOTED.
2. ALL LINE AND CURVE TABLE DATA REFERENCES FLOWLINE AT CURB AND GUTTER AND EDGE OF ASPHALT WHERE CURB AND GUTTER IS NOT PROPOSED.

CURVE TABLE

CURVE #	LENGTH	DELTA	RADIUS	CRD LENGTH	CRD RADIUS
C71	29.47'	11° 15' 19"	150.00'	29.42	N64° 58' 59"E
C72	25.91'	19° 47' 27"	75.00'	25.78	N69° 15' 03"E
C73	178.59'	9° 03' 34"	1129.50'	178.41	N83° 40' 34"E
C74	15.48'	88° 41' 21"	10.00'	13.98	N43° 51' 40"E
C76	1.00'	0° 03' 04"	1118.46'	1.00	S88° 22' 53"E
C77	43.13'	16° 28' 31"	150.00'	42.98	N83° 24' 24"E
C78	24.76'	18° 54' 54"	75.00'	24.65	N84° 37' 35"E
C81	40.64'	93° 08' 28"	25.00'	36.31	S42° 21' 21"E
C82	22.00'	1° 03' 16"	1195.27'	22.00	S89° 27' 13"E
C99	38.36'	87° 55' 25"	25.00'	34.71	S44° 26' 43"E
C101	14.72'	84° 20' 04"	10.00'	13.43	N51° 55' 00"E

LINE TABLE

LINE #	BEARING	LENGTH
L34	S85° 54' 58"E	194.69'

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DRAWN BY: NB
CHECKED BY: CB
APPROVED BY: CB

RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER
PLANS

CROSSFIELD ST-RIDGEGATE
EASTBOUND TURN LANES

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

N

0 40' 80'

City of Lone Tree

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Engineering Division Acceptance Block

JOB NO.: 65121240
DATE: 09/29/2023
SHEET: 9 OF 48

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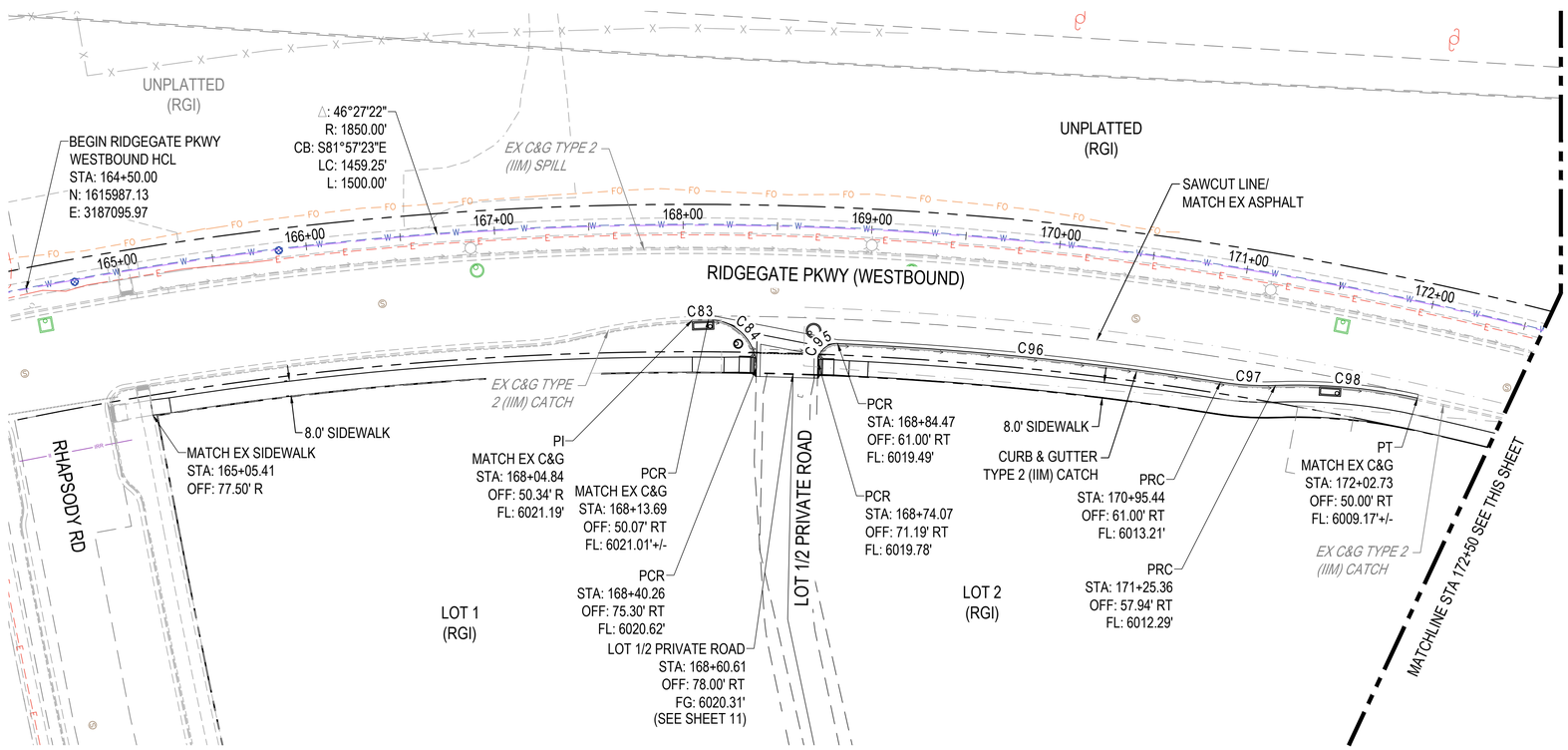
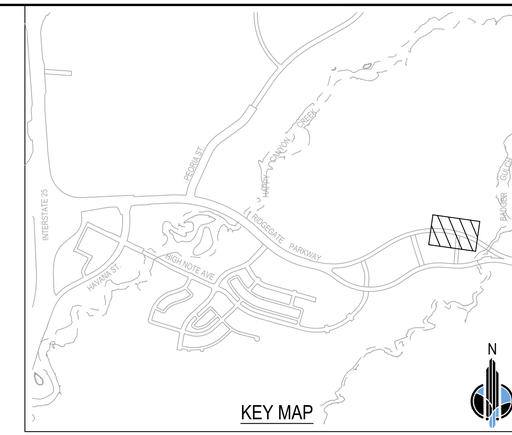
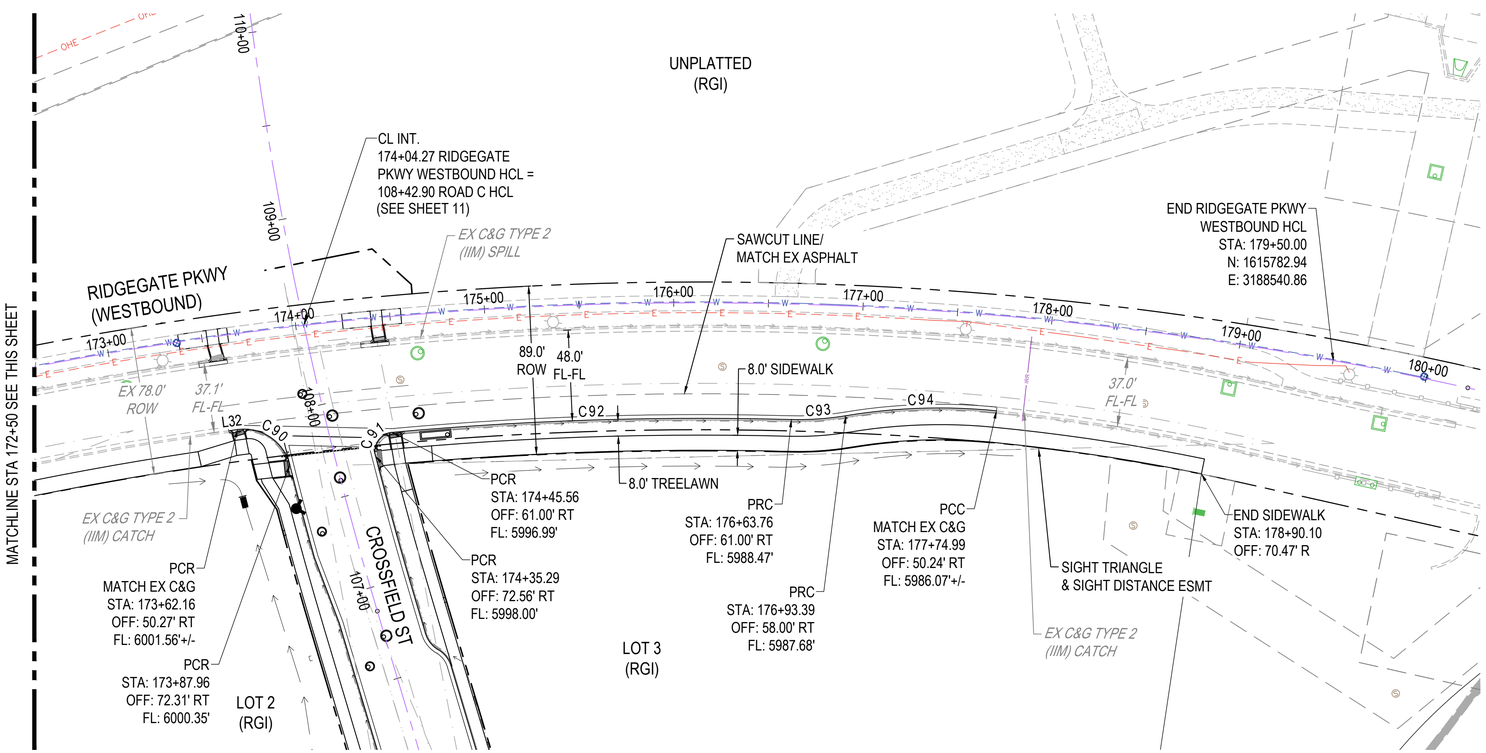




ROADWAY NOTES:

1. ALL STATIONS, OFFSETS, AND ELEVATIONS ARE TO FLOWLINE UNLESS OTHERWISE NOTED.
2. ALL LINE AND CURVE TABLE DATA REFERENCES FLOWLINE AT CURB AND GUTTER AND EDGE OF ASPHALT WHERE CURB AND GUTTER IS NOT PROPOSED.



CURVE TABLE					
CURVE #	LENGTH	DELTA	RADIUS	CRD LENGTH	CRD RADIUS
C83	8.61'	1° 38' 40"	300.00'	8.61	N84° 07' 26"E
C84	40.19'	92° 06' 05"	25.00'	36.00	S49° 00' 11"E
C90	36.43'	83° 29' 11"	25.00'	33.29	S35° 03' 30"E
C91	17.31'	99° 09' 10"	10.00'	15.23	N56° 04' 21"E
C92	211.00'	6° 45' 27"	1789.00'	210.88	S70° 58' 20"E
C93	28.88'	11° 01' 54"	150.00'	28.84	S73° 06' 34"E
C94	79.82'	15° 14' 38"	300.00'	79.58	S71° 00' 12"E
C95	15.92'	91° 13' 26"	10.00'	14.29	N42° 39' 34"E
C96	204.01'	6° 32' 02"	1789.00'	203.90	S88° 27' 41"E
C97	29.16'	11° 08' 23"	150.00'	29.12	N89° 14' 08"E
C98	75.72'	14° 27' 45"	300.00'	75.52	S89° 06' 11"E

LINE TABLE		
LINE #	BEARING	LENGTH
L32	S76° 48' 05"E	4.78'

N

0 40' 80'

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RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER
PLANS

CROSSFIELD ST-RIDGEGATE
WESTBOUND TURN LANES

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 09/29/2023
SHEET: 10 OF 48

File Location: Q:\DEN\Projects\5087-02\RRMD Overall East\Projects\1240-Couplet Roadway Design\Design\CDs\Civil\FILING 4\ROAD AND STORM\1240-TURN LANE PLAN-F4.dwg Plot Date: 10/3/2023 2:46 PM Last Saved By: NBROWN

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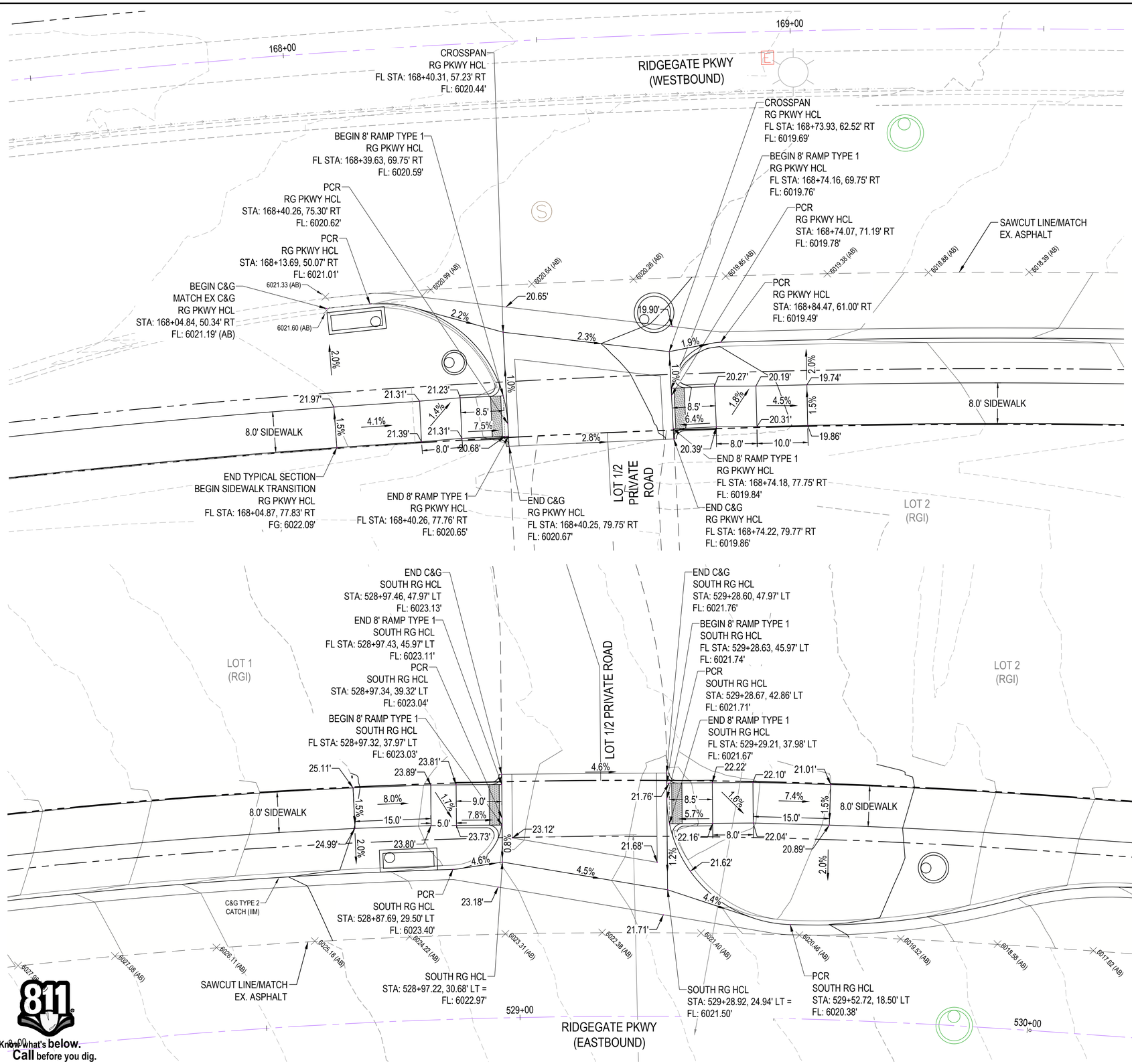

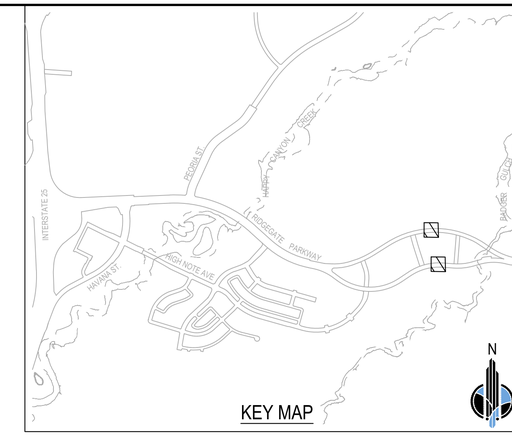

KEY MAP

INTERSECTION NOTES:

1. ALL STATIONS AND OFFSETS ARE TO CURB AND GUTTER FLOWLINE UNLESS OTHERWISE NOTED.
2. THE FLOWLINE ELEVATION AT TYPE R INLETS REPRESENTS THE ELEVATION AT THE MIDPOINT OF THE INLET AT FLOWLINE. THE FLOWLINE ELEVATION DOES NOT ACCOUNT FOR THE LOCAL DEPRESSION AT THE INLET.
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7. PROPOSED CURB RAMPS SHALL BE CENTERED AND PARALLEL WHEN ALIGNING WITH AN EXISTING CURB RAMP.
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RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER
PLANS

RIDGEGATE PKWY & LOT 1 & 2 PRIVATE
ROAD INTERSECTION DETAILS

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 09/29/2023
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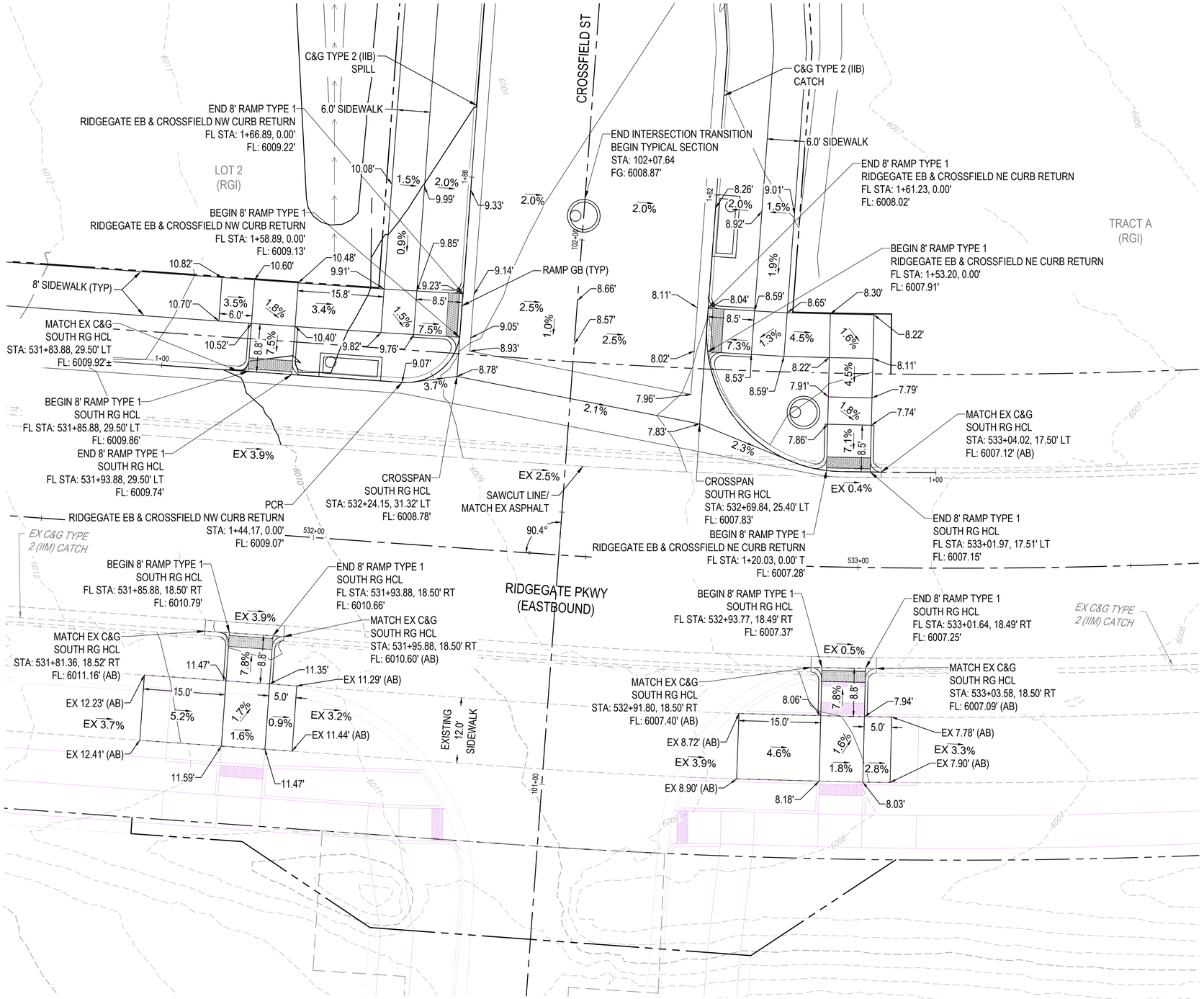

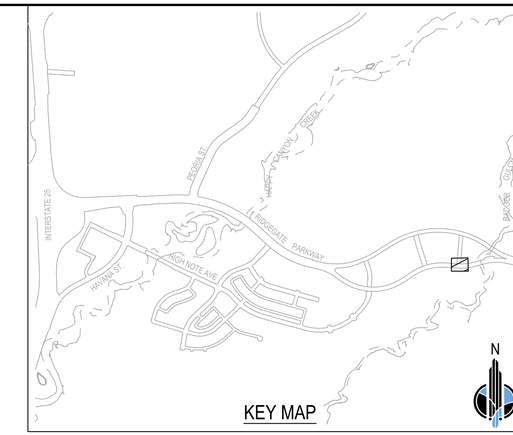

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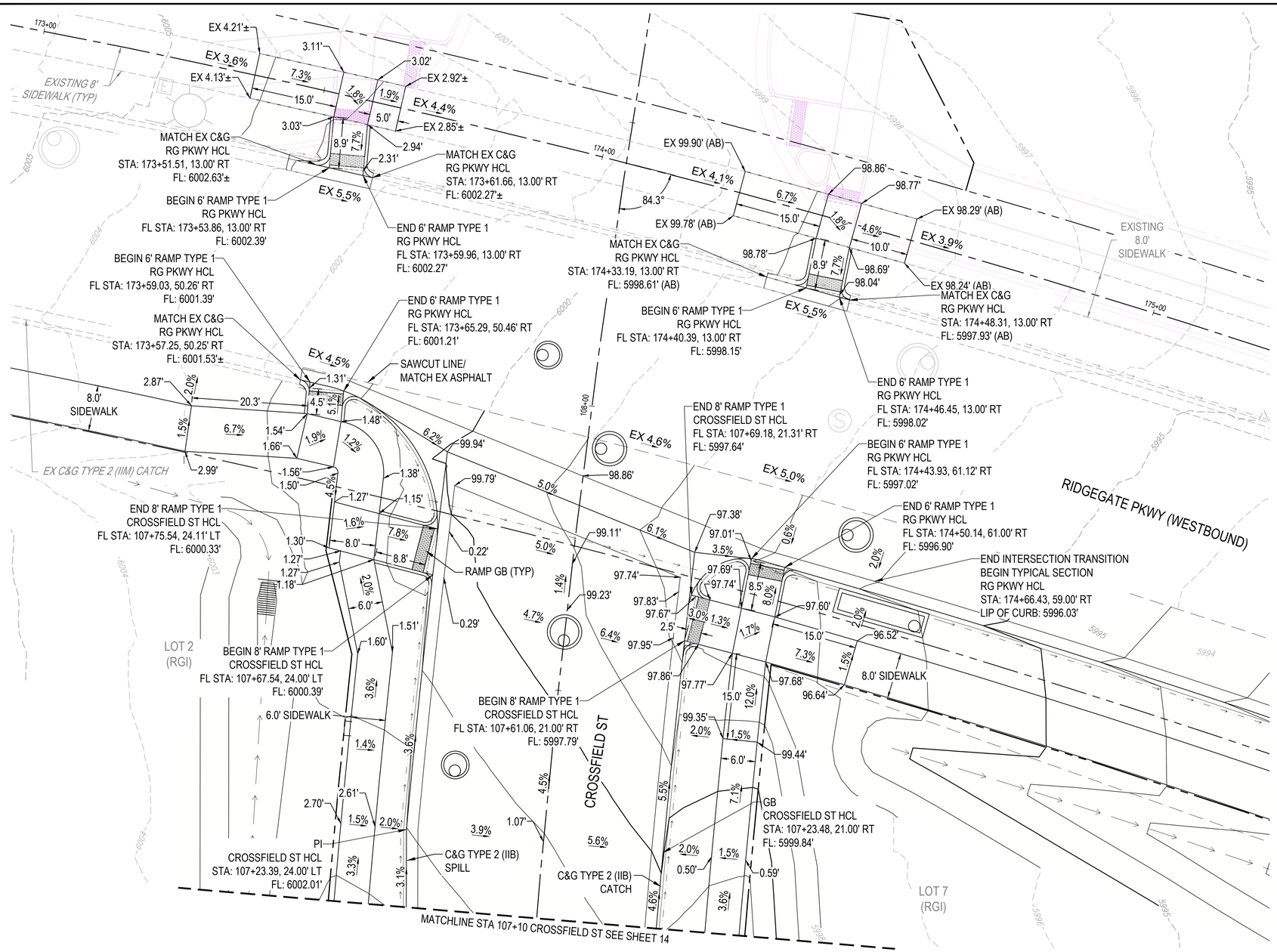
RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS

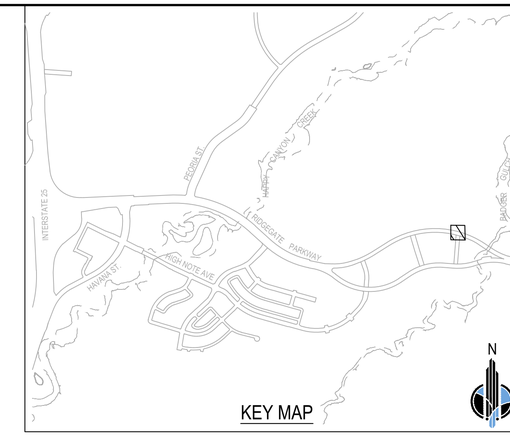
RIDGEGATE PKWY (EASTBOUND) & CROSSFIELD ST INTERSECTION DETAIL

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 09/29/2023
SHEET: 12 OF 48





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RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER
PLANS

RIDGEGATE PKWY (WESTBOUND) & CROSSFIELD ST INTERSECTION DETAIL

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JOB NO.: 65121240
DATE: 09/29/2023
SHEET: 13 OF 48

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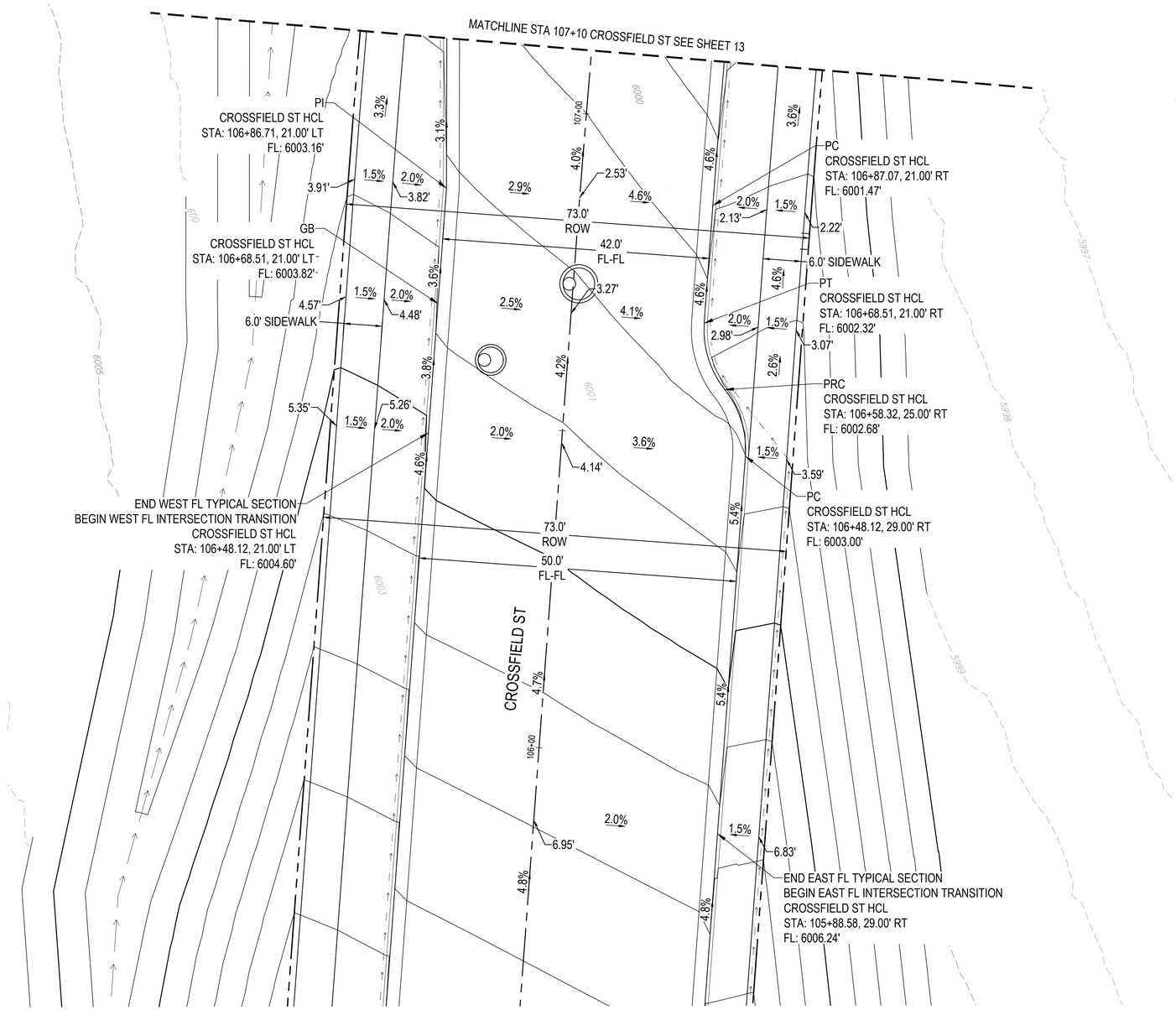

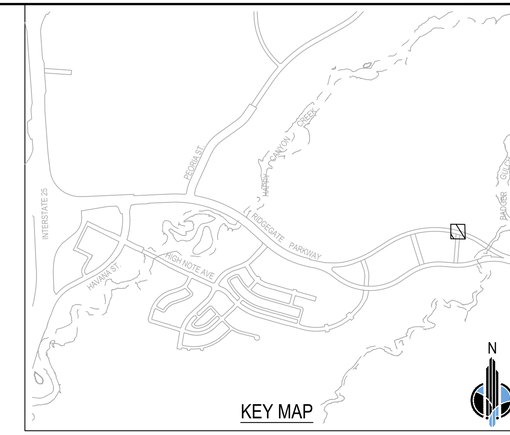

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RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS

RIDGEGATE PKWY (WESTBOUND) & CROSSFIELD ST INTERSECTION DETAIL

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

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DATE: 09/29/2023
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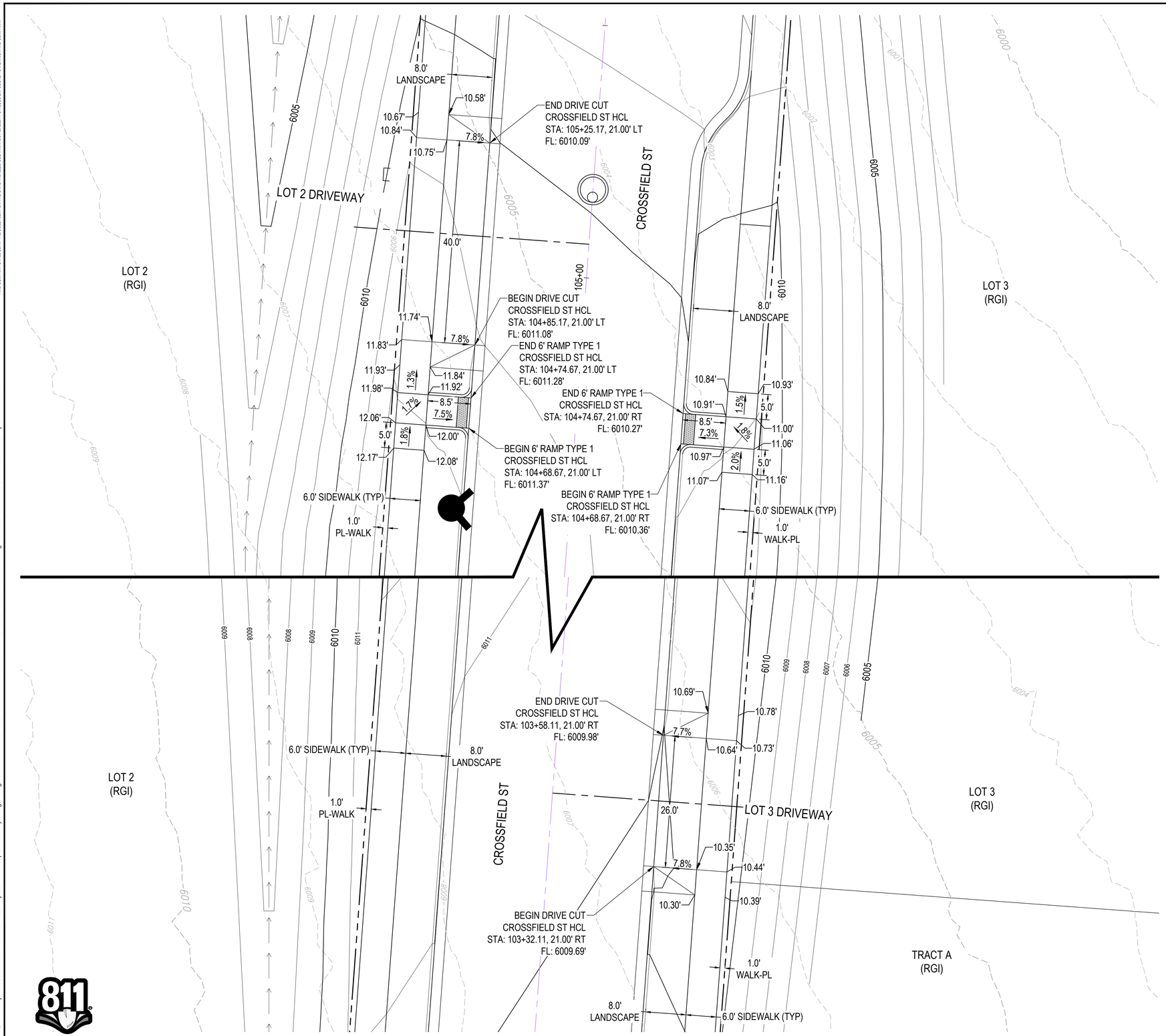

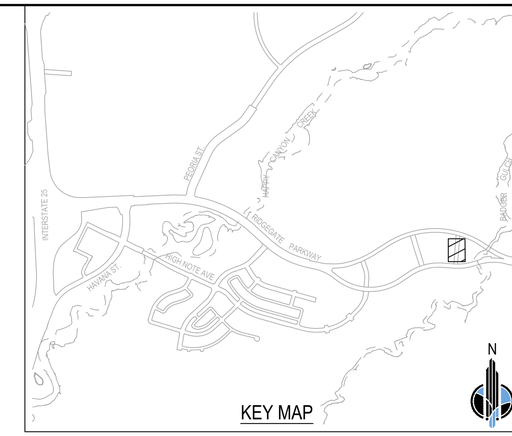

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RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS

CROSSFIELD ST DRIVEWAY
INTERSECTION DETAILS

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FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
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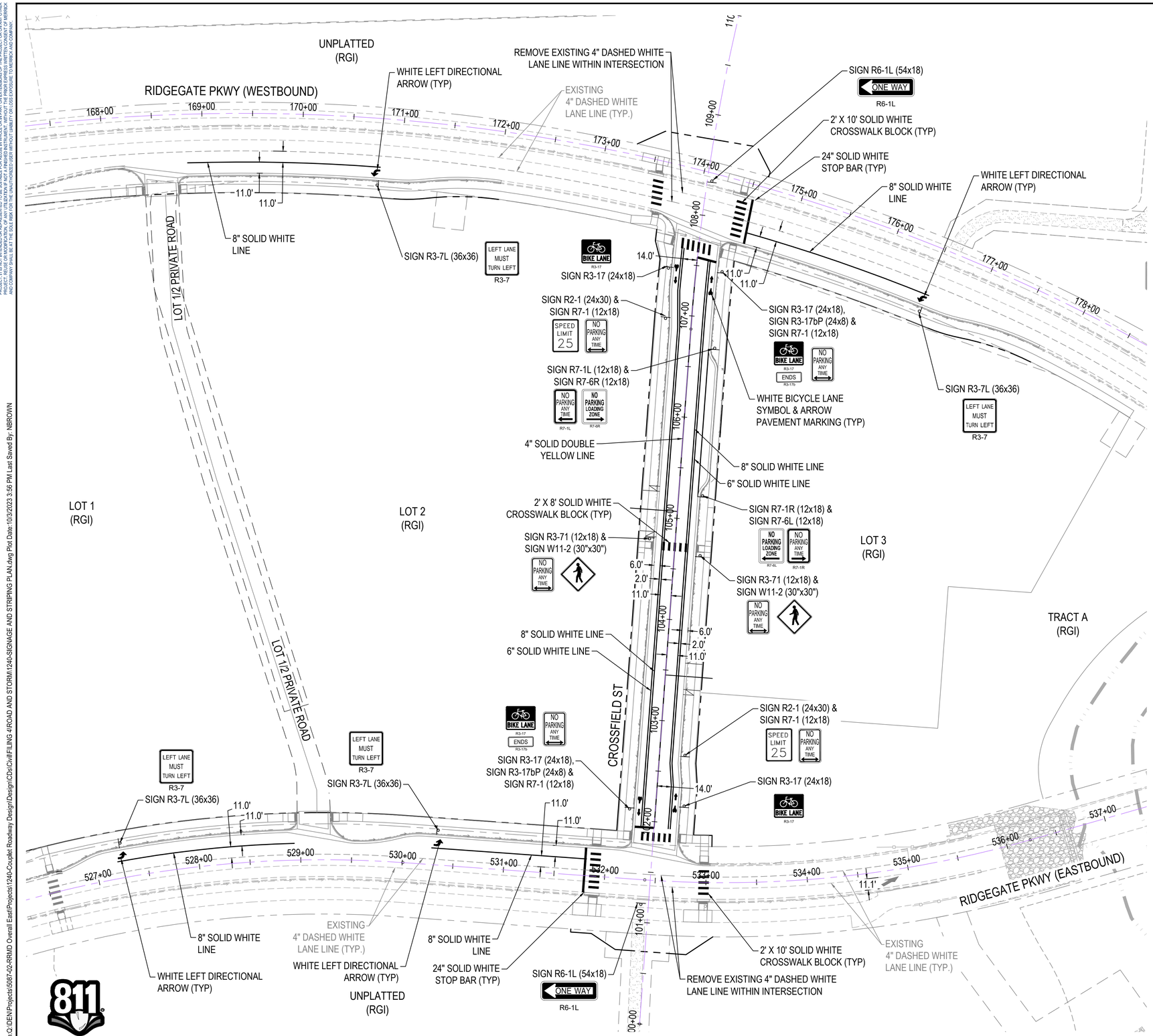

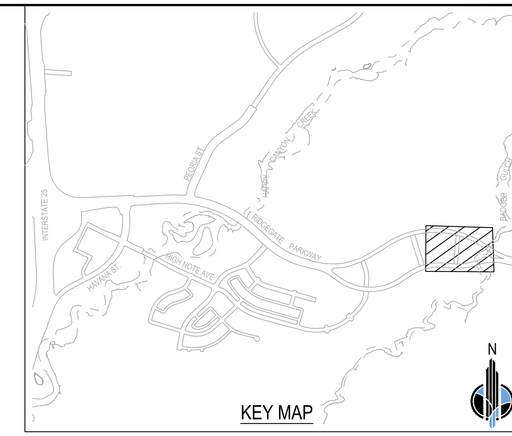

SIGNAGE AND STRIPING NOTES:

1. STRIPING PLAN TO BE COORDINATED WITH, AND APPROVED BY, THE CITY OF LONE TREE AND DOUGLAS COUNTY PRIOR TO PLACEMENT OF PAVEMENT MARKINGS.

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DESIGN BY:	CD
DRAWN BY:	NB
CHECKED BY:	CB
APPROVED BY:	CB

RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS

SIGNAGE & STRIPING PLAN

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

City of Lone Tree

These construction plans have been reviewed by the City of Lone Tree for street and drainage improvements only.

Engineering Division Acceptance Block

JOB NO.: 65121240
DATE: 09/29/2023
SHEET: 16 OF 48

Know what's **below.**
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File Location:Q:\DEN\Projects\5087-02-RRMD Overall East\Projects\1240-Couplet Roadway Design\Design\CDs\Civil\FILING 4\ROAD AND STORM\1240-SIGNAGE AND STRIPING PLAN.dwg Plot Date:10/3/2023 3:56 PM Last Saved By: NBROWN

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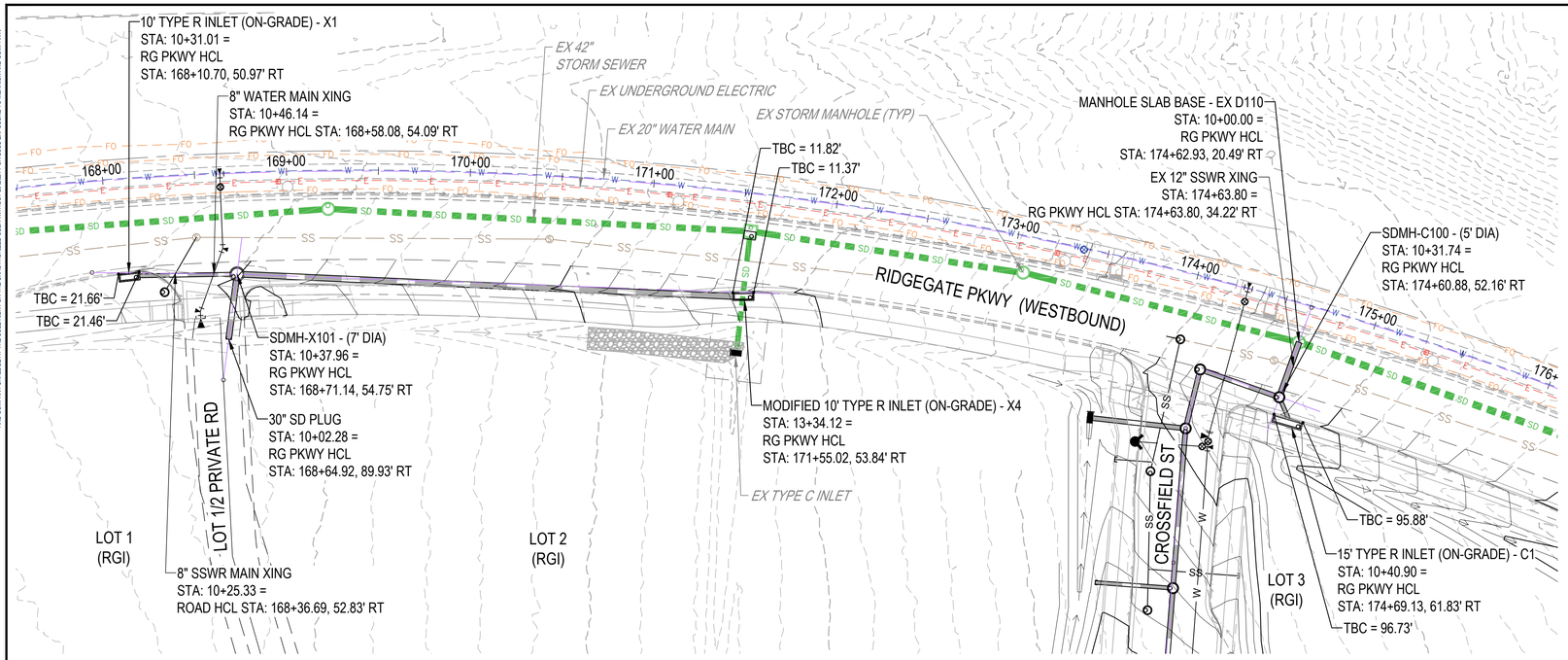

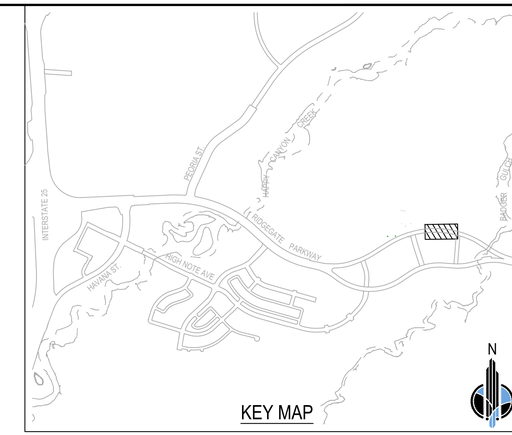

KEY MAP

STORM SEWER NOTES:

1. CONTRACTOR TO VERIFY LOCATION AND ELEVATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
2. REFER TO DETAILS FOR ADDITIONAL INFORMATION.
3. ALL PIPE LENGTHS ARE CALCULATED FROM THE MIDPOINT OF MANHOLES AND THE MIDPOINT OF INLETS AT FLOWLINE.
4. ALL STORM SEWER STATIONING IS AT PIPE CENTERLINE UNLESS STATED OTHERWISE.
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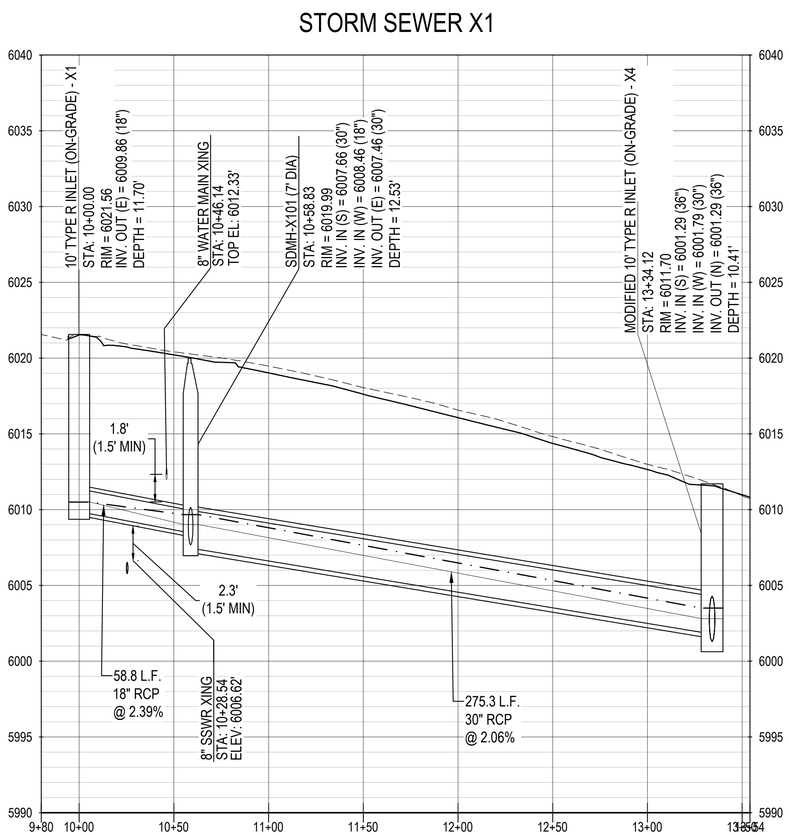

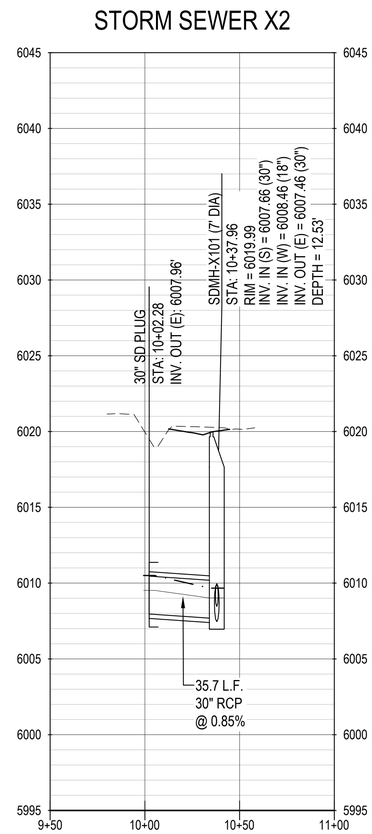

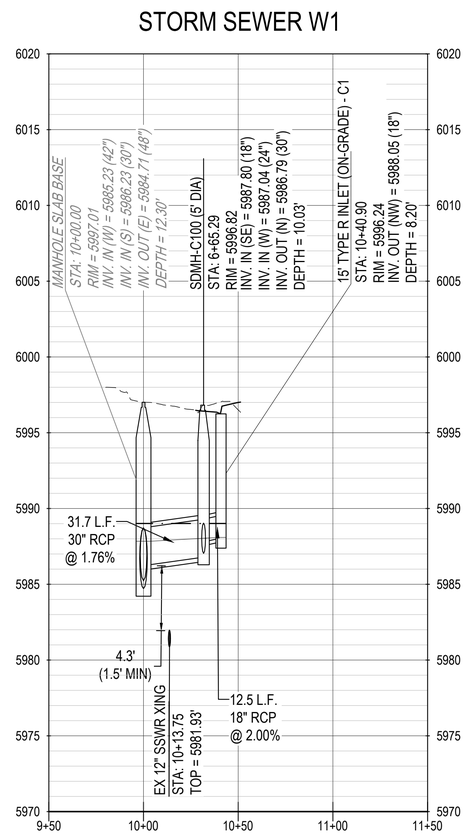

MODIFIED TYPE R INLET INTERIOR DIMENSIONS		
INLET	WIDTH	LENGTH
X4	4'-2"	10'-0"

PROFILE LEGEND

- EXISTING GROUND AT PIPE CENTERLINE
- PROPOSED GRADE AT PIPE CENTERLINE
- 100-YR HGL
- 5-YR HGL

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RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS

STORM PLAN & PROFILE

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240

DATE: 09/29/2023

SHEET: 17 OF 48

File Location:Q:\DEN\Projects\5087-02-RRMD Overall East\Projects\1240-Couplet Roadway Design\Design\CDs\Civil\FILING 4\ROAD AND STORM\1240-STRM P&P-F4.dwg Plot Date:10/3/2023 2:56 PM Last Saved By: NBROWN

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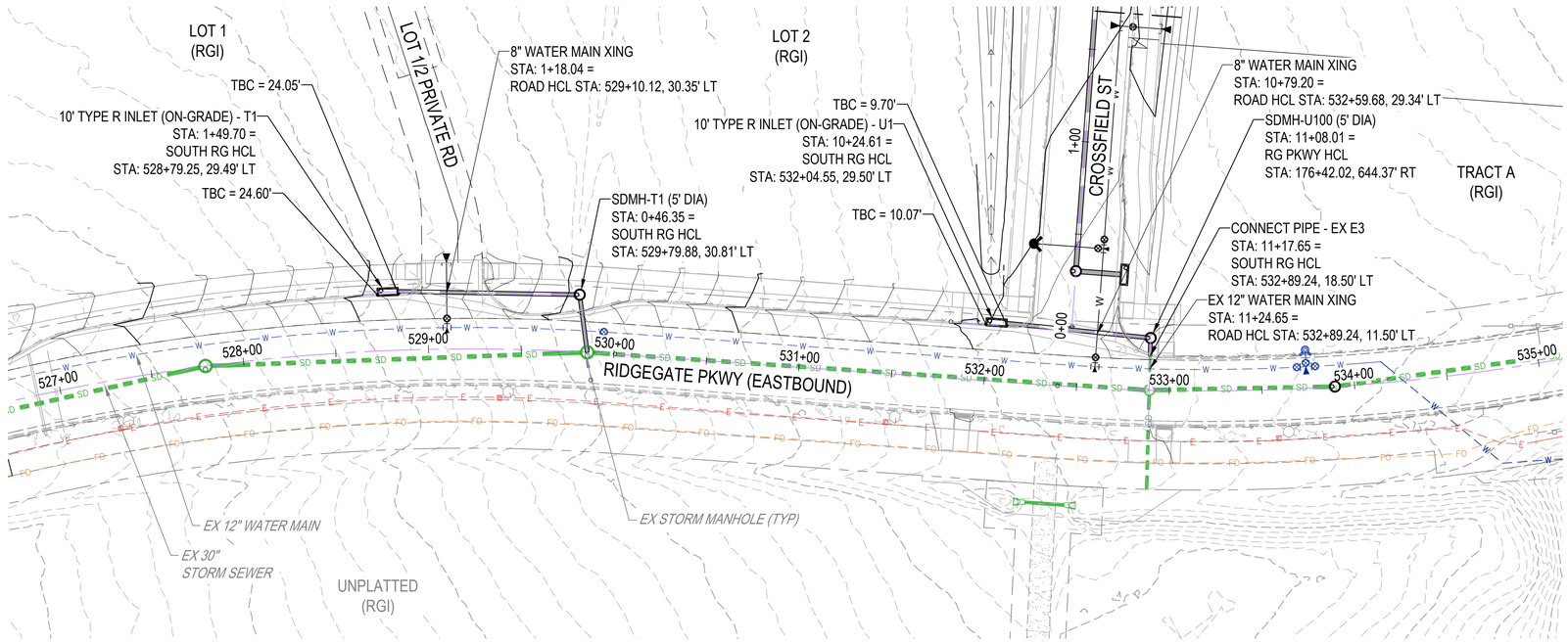

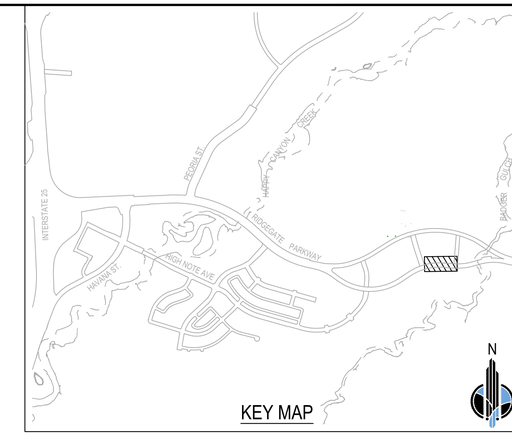

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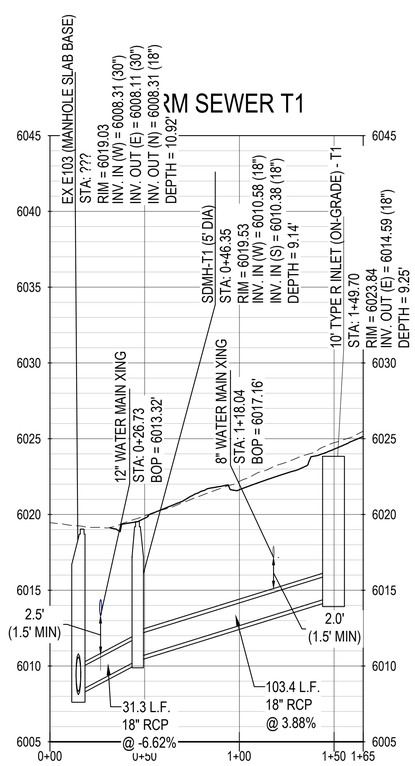

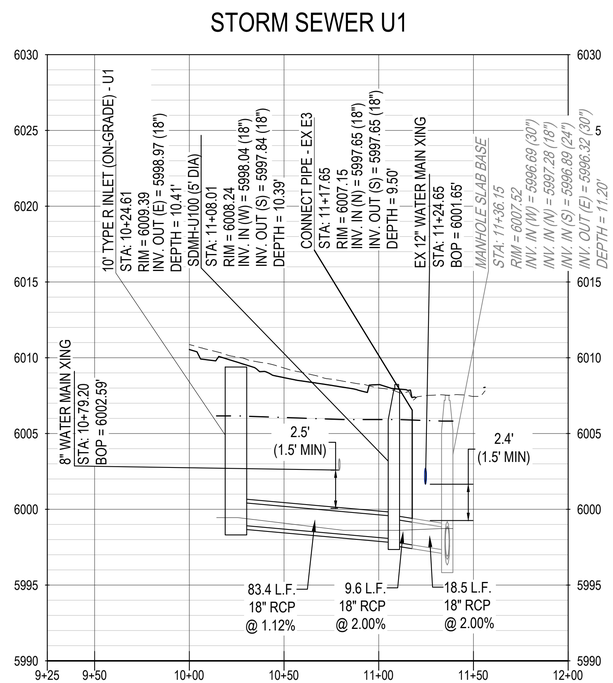

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RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER
PLANS

STORM 2 PLAN AND PROFILE

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 09/29/2023
SHEET: 18 OF 48

File Location:Q:\DEN\Projects\5087-02-RRMD Overall East\Projects\1240-Couplet Roadway Design\Design\CDs\Civil\FILING 4\ROAD AND STORM\1240-STRM P&P-F4.dwg Plot Date:10/3/2023 2:56 PM Last Saved By: NBROWN

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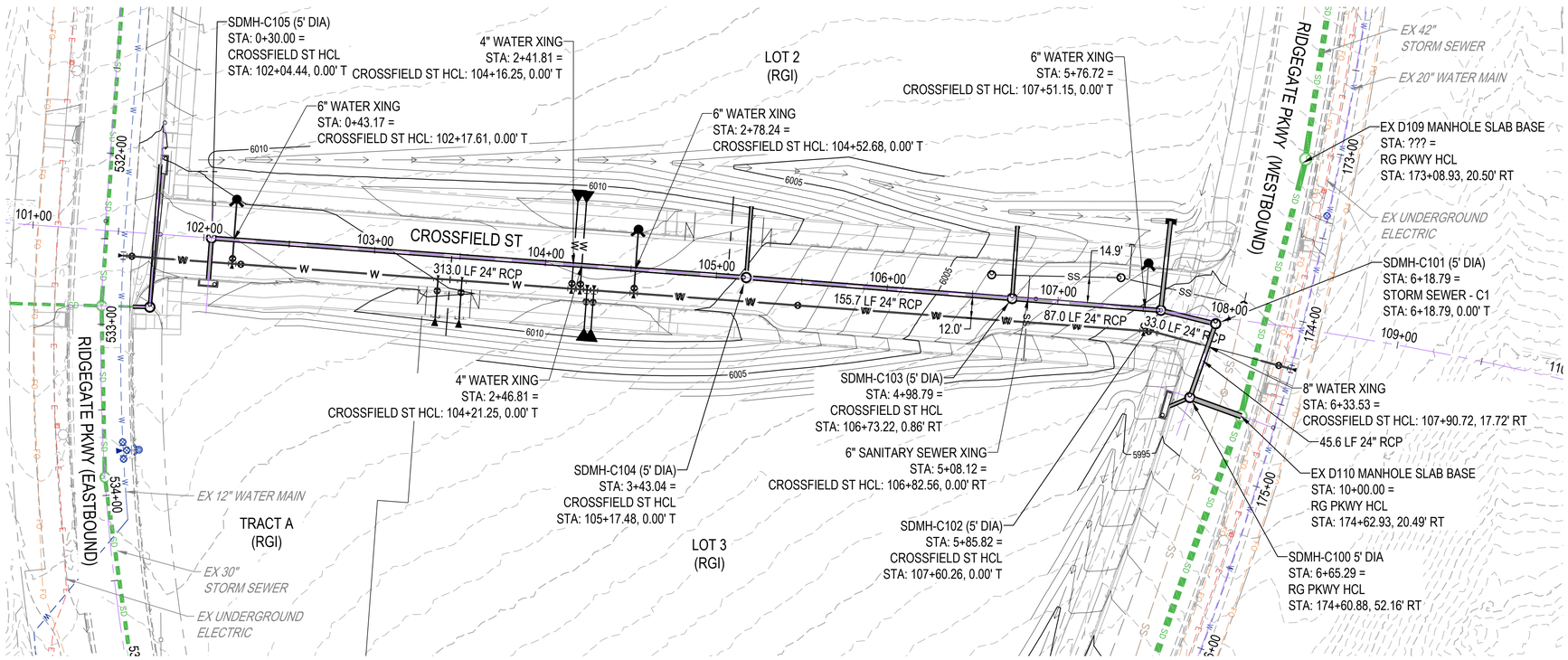

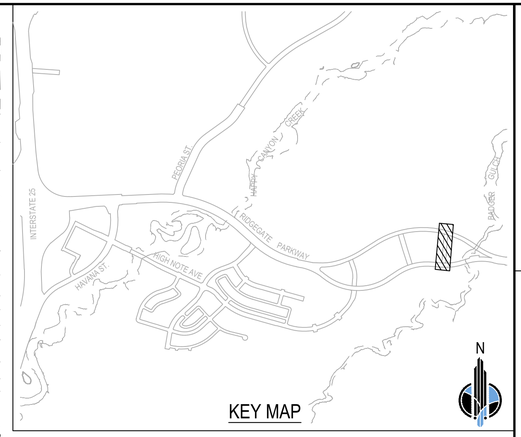

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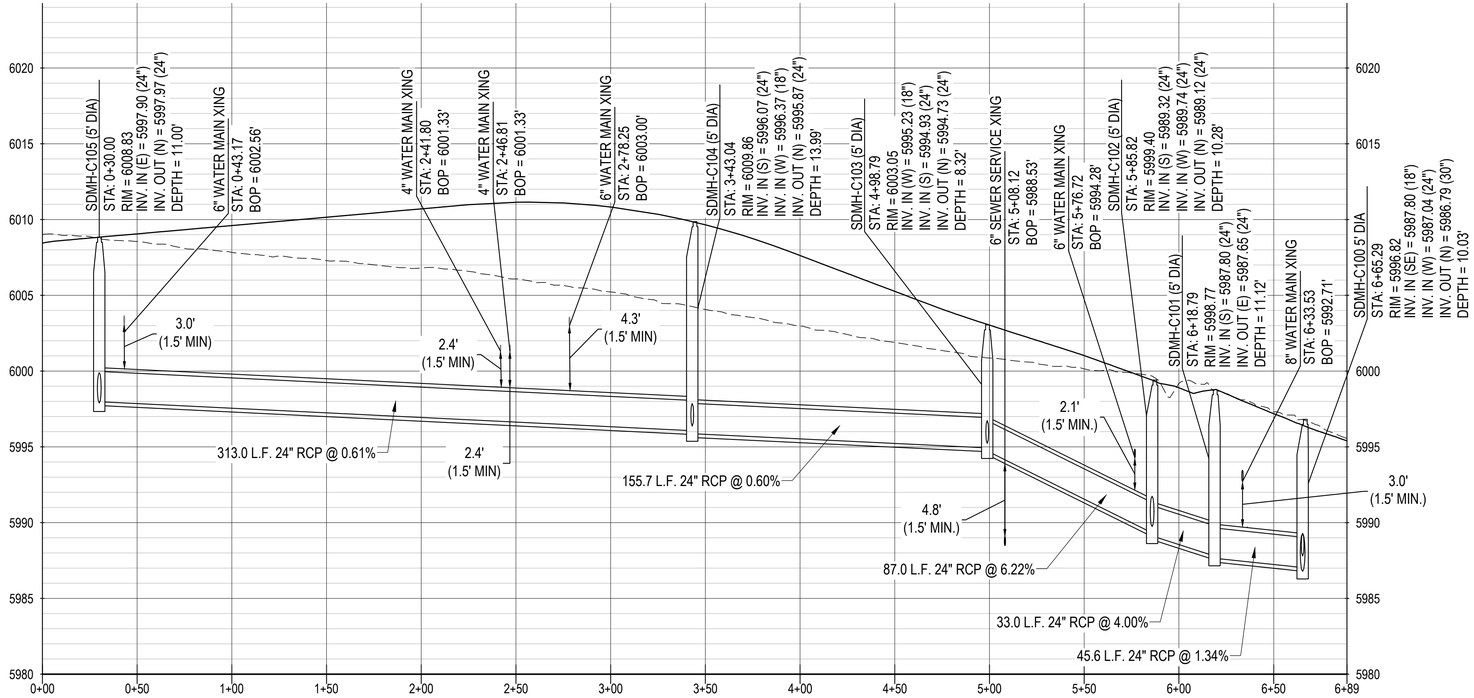

PROFILE LEGEND

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RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS

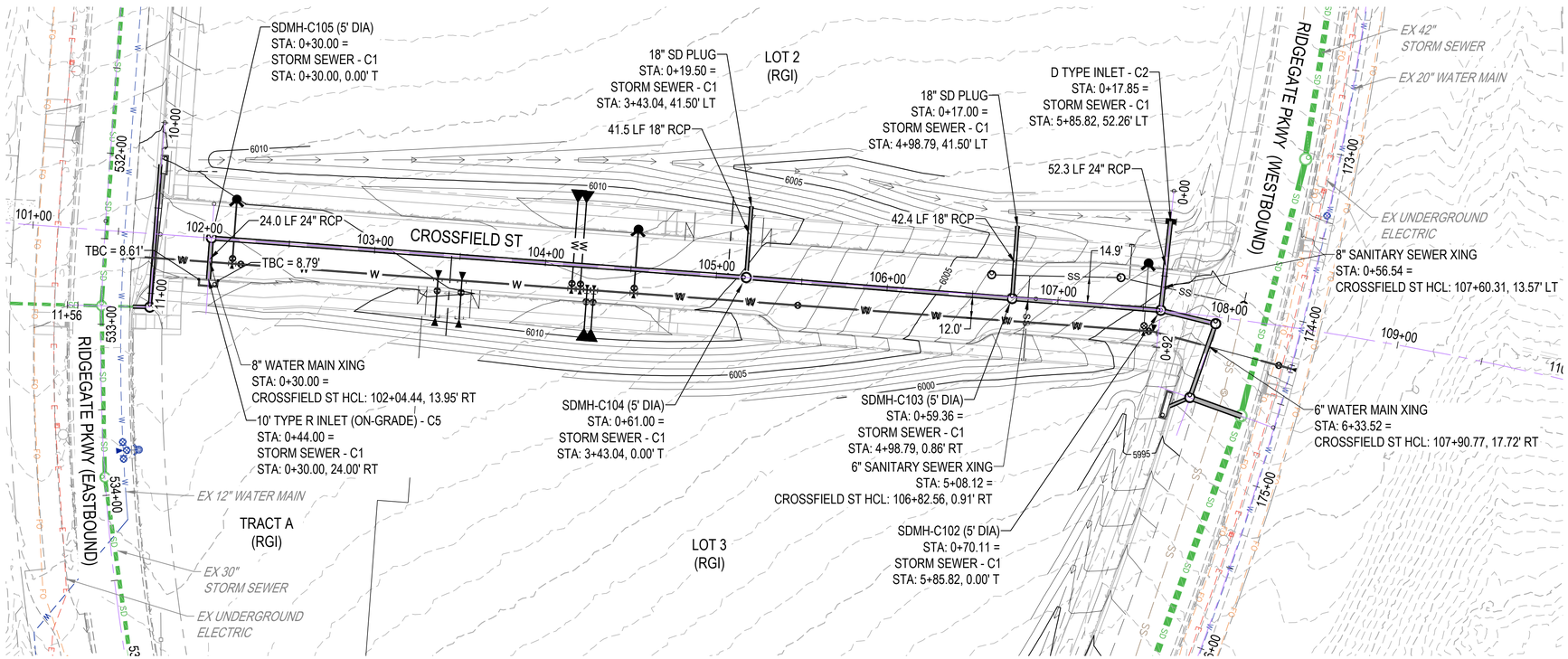
CROSSFIELD ST STORM

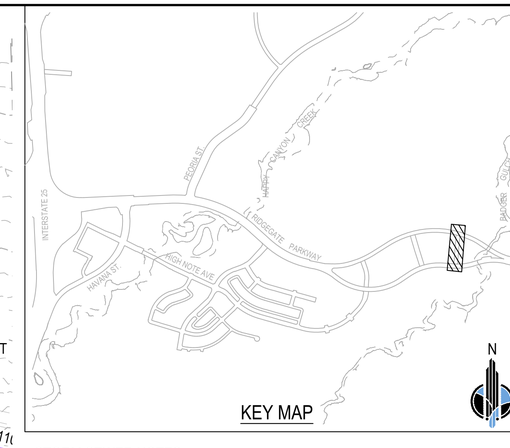
ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 09/29/2023
SHEET: 19 OF 48

File Location:Q:\DEN\Projects\5087-02-RRMD Overall East\Projects\1240-Couplet Roadway Design\Design\CDs\Civil\FILING 4\ROAD AND STORM\1240-STRM P&P CROSSFIELD ST-F4.dwg Plot Date:10/4/2023 8:20 AM Last Saved By: BRIAN.BERN





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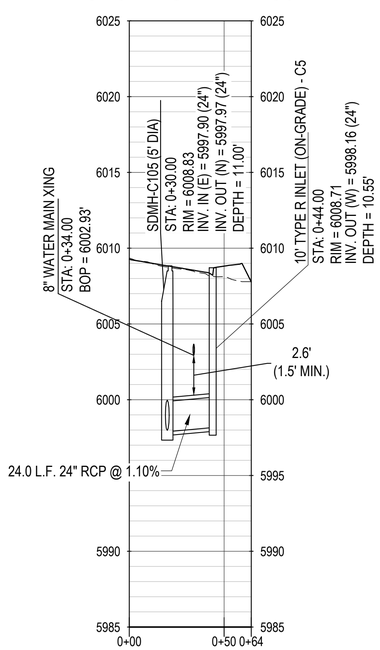
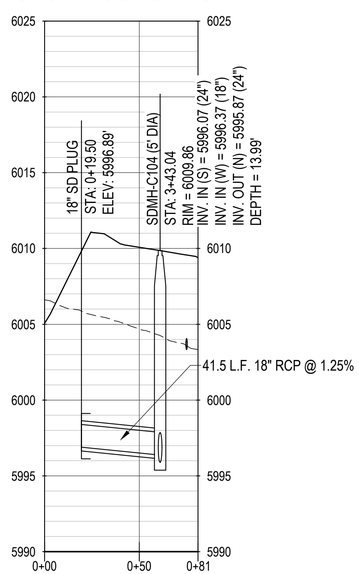
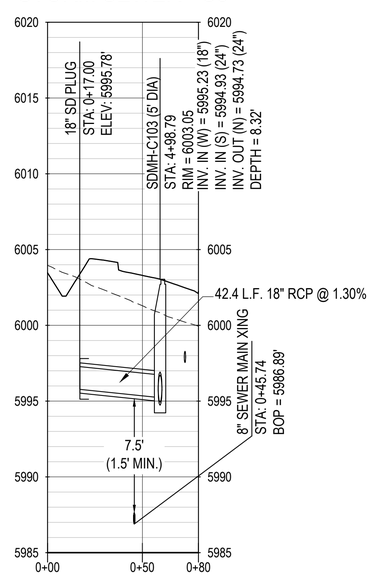
STORM SEWER - C5



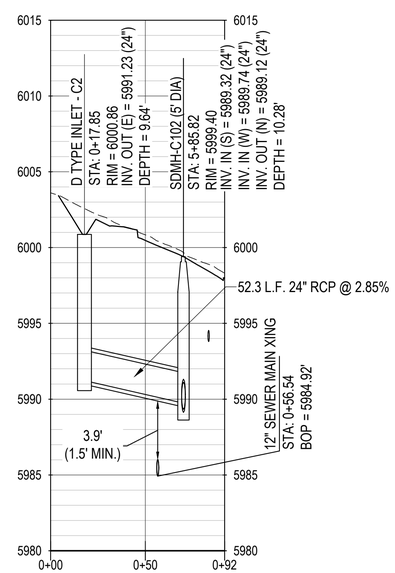
STORM SEWER - C4



STORM SEWER - C3



STORM SEWER - C2



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RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS

CROSSFIELD ST STORM X1 - X4

ISSUED FOR REVIEW

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THE FOLLOWING NOTES ARE APPLICABLE TO ALL ROADWAY SECTIONS IDENTIFIED ON THE PREVIOUS PAGES (LOCALS, COLLECTORS, ARTERIALS AND RURAL ROADWAYS), UNLESS MODIFICATIONS ARE APPROVED IN WRITING BY THE DIRECTOR OF PUBLIC WORKS.

NOTES:

1. GUTTERS SHALL BE AT LEAST 6" THICK.
2. ALL CURBS SHALL USE THE CATCH SECTION UNLESS OTHERWISE NOTED.
3. ALL COMBINATION CURB, GUTTER AND SIDEWALKS TO BE 6" THICK (MIN.). SIDEWALKS WITH VERTICAL CURB AND GUTTER TO BE 6" THICK (MIN.).
4. NON-LANDSCAPED MEDIAN ISLANDS SHALL BE COVERED WITH AN ACCEPTABLE IMPERMEABLE SURFACE.
5. IF ANY SECTION OF A DETACHED SIDEWALK IS TO BE PLACED OUTSIDE OF THE ROAD RIGHT-OF-WAY, THEN A SIDEWALK EASEMENT SHALL BE REQUIRED TO MAINTAIN PUBLIC USE.
6. TOTAL PAVEMENT THICKNESS TO BE DETERMINED BY PAVEMENT DESIGN PROCEDURES IN CHAPTER 5.

PLACEMENT, MOISTURE AND DENSITY CONTROL FOR SUBGRADE, SUBBASE, AND SURFACING MATERIALS SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS OF CHAPTER 8.

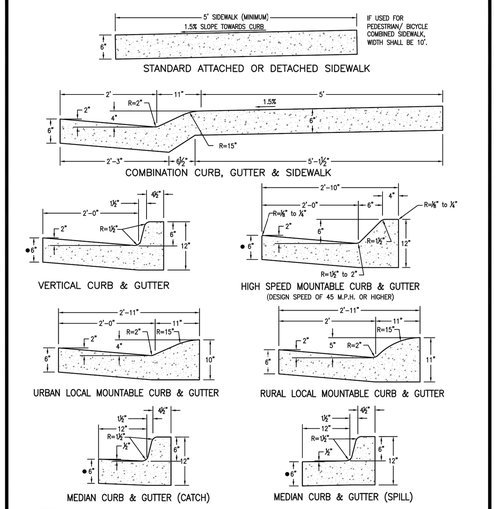
8. GUTTER THICKNESS SHALL BE INCREASED TO MATCH CONCRETE PAVEMENT THICKNESS.

APPROVED BY DOUGLAS COUNTY
Janet Herman
JANET HERMAN, P.E.
DIRECTOR OF PUBLIC WORKS ENGINEERING
DATE 10/1/2021

ROADWAY NOTES

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised: 10/2021
Drawing No. **SP.16**



NOTES:
1. A SIDEWALK IS PLACED BEHIND THE CURB BUT IS NOT PLACED MONOLITHICALLY, EXPANSION JOINT MATERIAL AND A SILICONE BASE SEALER MUST BE APPLIED BETWEEN THE SIDEWALK AND THE CURB.
2. SEE DRAWING NUMBER SP.23a and SP.23b FOR TRENCH DRAIN.
3. SEE DRAWING NUMBER SP.31 AND SP.32 FOR CONCRETE JOINTS.
- GUTTER THICKNESS SHALL BE INCREASED TO MATCH CONCRETE PAVEMENT THICKNESS

APPROVED BY DOUGLAS COUNTY
Janet Herman
JANET HERMAN, P.E.
DIRECTOR OF PUBLIC WORKS ENGINEERING
DATE 10/1/2021

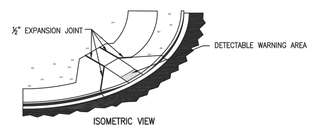
CURB & GUTTERS AND SIDEWALKS

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised: 10/2021
Drawing No. **SP.17**

CURB RAMP GENERAL NOTES:

1. IN ACCORDANCE WITH CRS43-2-1073(2), ADA COMPLIANT CURB RAMPS SHALL BE PROVIDED AT ALL PEDESTRIAN CROSSINGS AND AT PUBLIC TRANSPORTATION STOPS WHERE WALKWAYS INTERSECT A CURB. THESE LOCATIONS USUALLY INCLUDE, BUT ARE NOT LIMITED TO STREET CROSSINGS AT INTERSECTIONS AND AT DESIGNATED MID-BLOCK LOCATIONS.
2. THE FOLLOWING CURB RAMP TYPES ARE GENERAL REPRESENTATIONS. COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) M-STANDARD PLANS, LATEST EDITION PROVIDE ADDITIONAL ACCEPTABLE DETAILS. SEE DETAILED RAMP LAYOUTS ON THE PLANS FOR CONSTRUCTION.
3. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF DOUGLAS COUNTY.
4. SIDEWALKS SHALL BE RAMPED WHERE A DRIVEWAY IS EXTENDED ACROSS THE WALK.
5. DETAILS SHOWN IN THE PLAN SHALL APPLY TO ALL CONSTRUCTION OR RECONSTRUCTION OF STREETS, CURBS OR SIDEWALKS PER CURB RAMP DETAILS.
6. IN NEW CONSTRUCTION, RAMP AND CURB MAY BE POURED MONOLITHICALLY.
7. RAMP AND WINGS SHALL BE POURED MONOLITHICALLY.
8. MINIMUM WIDTH OF RAMPS SHALL BE 4 FEET AND RAMP SLOPES SHALL NOT BE STEEPER THAN 7.5%.
9. MAINTAIN BACK OF WALK ELEVATION AT 1.5% SLOPE FROM TOP OF CURB.
10. CONCRETE FOR SIDEWALK RAMPS SHALL BE CLASS "D".
11. A ½" EXPANSION JOINT SHALL BE REQUIRED WHERE THE CONCRETE RAMP JOINS ANY RIGID PAVEMENT OR STRUCTURE.
12. DRAINAGE STRUCTURES SHALL NOT BE PLACED IN LINE WITH RAMPS. LOCATION OF THE RAMP SHALL TAKE PRECEDENCE OVER LOCATION OF THE DRAINAGE STRUCTURE.



DETECTABLE WARNING AREA NOTES

1. DETECTABLE WARNING AREAS SHALL BE INSTALLED WITHIN CURB RAMPS AT ALL SIDEWALK/STREET TRANSITIONS, AS DESCRIBED BY THE AMERICAN'S WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG), LATEST REVISION.
2. DETECTABLE WARNING DEVICES SHALL BE TRUNCATED DOME WARNING DEVICES. COLOR SHALL BE BRICK RED, TILE RED, OR OTHER EQUIVALENT COLOR TO PROVIDE COLOR CONTRAST WITH ADJACENT SURFACES, AS REQUIRED BY ADAAG SECTION 4.29.2. THE COUNTY ENGINEER MUST APPROVE THE TRUNCATED DOME WARNING AREA COLOR PRIOR TO CONSTRUCTION.
3. CONTRASTING COLOR REQUIREMENT SHALL BE MET BY TRUNCATED DOME SECTIONS AND NOT BY USE OF COLORED CONCRETE.
4. DETECTABLE WARNING SHALL BE ON CDOT'S APPROVED MATERIALS LIST. A SAMPLE OF THE DETECTABLE WARNING (TRUNCATED DOMES) TO BE USED ON THE PROJECT SHALL BE SUBMITTED TO AND ACCEPTED BY THE COUNTY ENGINEER PRIOR TO CONSTRUCTION.
5. ALL DETECTABLE WARNING AREAS SHALL START A MINIMUM OF 6 INCHES AND A MAXIMUM OF 5 FEET FROM THE FLOW LINE OF THE CURB UNLESS INSTALLED AT CUT-THROUGH REFUGE ISLANDS, IN WHICH CASE THE DWA WILL START AT THE EDGE OF THE ISLAND. ALL DETECTABLE WARNING AREAS SHALL BE 24 INCHES IN LENGTH AND COVER THE COMPLETE WIDTH OF THE RAMP AREA ONLY.
6. SURFACE APPLIED TRUNCATED DOME PANELS ARE ONLY ALLOWED ON PRE-EXISTING CURB RAMPS AND ARE NOT ALLOWED IN NEW CONSTRUCTION.

APPROVED BY DOUGLAS COUNTY
Janet Herman
JANET HERMAN, P.E.
DIRECTOR OF PUBLIC WORKS ENGINEERING
DATE 06/18/2021

CURB RAMP & DETECTABLE WARNING AREA NOTES

DOUGLAS COUNTY COLORADO

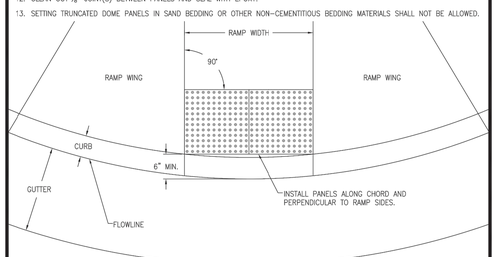
Issued: 05/2013
Revised: 05/2021
Drawing No. **SP.18a**

Panel Installation Notes:

1. DETECTABLE WARNING PANELS, 24" X 24" OR 24" X 30" IN SIZE, SHALL BE PREFABRICATED REDDISH WITH TRUNCATED DOMES AND COMPLY WITH ADA REQUIREMENTS. ONLY FULL PANELS SHALL BE USED TO OBTAIN SPECIFIC RAMP THROAT WIDTH, (I.E. TWO 24" PANELS FOR A 4' RAMP, TWO 30" PANELS FOR A 5' RAMP, ETC.)
2. PRIOR TO START OF WORK, CONTRACTOR SHALL SUBMIT, TO DOUGLAS COUNTY FOR APPROVAL, A SAMPLE PANEL AND DOCUMENTATION FROM THE MANUFACTURER. PANEL SURFACE SHALL HAVE A MINIMUM OF 70% LIGHT REFLECTIVITY CONTRAST WITH THE ADJOINING SURFACE. PANELS SHALL ONLY BE SELECTED FROM THE APPROVED PRODUCT LIST BELOW:

PRODUCT NAME	MANUFACTURER	PRODUCER SUPPLIER CODE
CAST-OWD	Pioneer Detectable, LLC	GEN130004
Cast-In-Place Tactile	ADA Solutions, Inc.	GEN100123
DURALAST	EJ USA, Inc.	GEN130020
Detectable Warning Paving Slab	StoneBilt Concepts	GEN100341
TekWay Dome-Tiles	StrongGo LLC	GEN100343
TufTile Cast Iron Tile/Radius-Wedge (CIP)	TufTile, Inc.	GEN150058

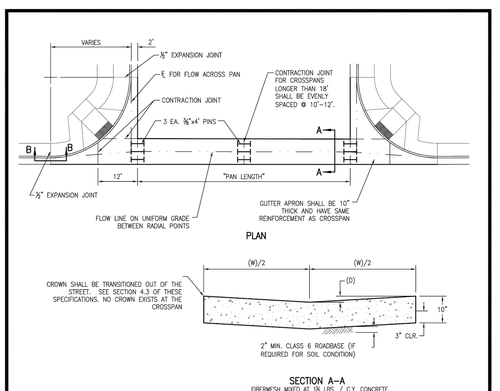
3. PANELS SHALL BE PLACED AS SHOWN, WITH DOME PATTERN IN A SQUARE GRID AND ALIGNED IN THE DIRECTION OF TRAVEL. A STEEL TEMPLATE SHALL BE USED TO ENSURE PROPER ALIGNMENT AND UNIFORM GRADE.
4. REMOVE THE PROPER AMOUNT OF CONCRETE WITHIN THE TEMPLATE FOR AN ACCURATE INSTALLATION. ONCE TO THE PROPER DEPTH, FLOAT THE AREA TO RECEIVE THE PANELS UNTIL A SMOOTH PASTE HAS DEVELOPED.
5. WET THE BACK SIDE OF EACH PANEL AND TROWEL SOME CONCRETE PASTE OR APPROVED BONDING AGENT OVER THE WET SURFACE FOR BETTER ADHERENCE.
6. SET THE FIRST PANEL ON THE FRESHLY PREPARED SURFACE. DO NOT PRESS DOWN HARD ON THE PANEL, BUT PREFERABLY TWIST FROM SIDE TO SIDE. SET PANEL WITH RUBBER MALLET TO PROPER DEPTH SO THAT THE BASE OF THE TRUNCATED DOME IS AT THE SAME ELEVATION AS THE ADJOINING RAMP SURFACE.
7. SET SUCCESSIVE PANELS WITH A TIGHT BUTT JOINT AGAINST THE PREVIOUSLY SET PANEL. PROVIDE A ⅛" GAP BETWEEN PANELS.
8. FLOAT FRESH CONCRETE AROUND PANELS. FINISH AND BROOM SURROUNDING CONCRETE AS SPECIFIED. CLEAN ANY CONCRETE OFF PANELS WITH A SPONGE.
9. PROVIDE 1" DEEP TOOL JOINTS AT CORNERS OF DETECTABLE WARNING AREA, AND TOOL AROUND PANELS WITH ½" RADIUS EDGER.
10. WHEN CUT PANELS ARE REQUIRED, CUT SECTIONS SHALL NOT SIGNIFCANTLY IMPACT OVERALL TRUNCATED DOMES PATTERN AND CUT DOMES SHALL BE BEVELED AT A 45-DEGREE ANGLE TO CREATE A SMOOTH TRANSITION.
11. ANY PANELS THAT ARE DAMAGED DURING TRANSPORT OR INSTALLATION WILL BE REJECTED AND SHALL NOT BE INSTALLED.
12. CLEAN OUT ⅛" JOINT(S) BETWEEN PANELS AND SEAL WITH EPOXY.
13. SETTING TRUNCATED DOME PANELS IN SAND BEDDING OR OTHER NON-CEMENTITIOUS BEDDING MATERIALS SHALL NOT BE ALLOWED.



CURB RAMP WITH PANEL DETECTABLE WARNING AREA INSTALLATION

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised: 09/2017
Drawing No. **SP.18b**



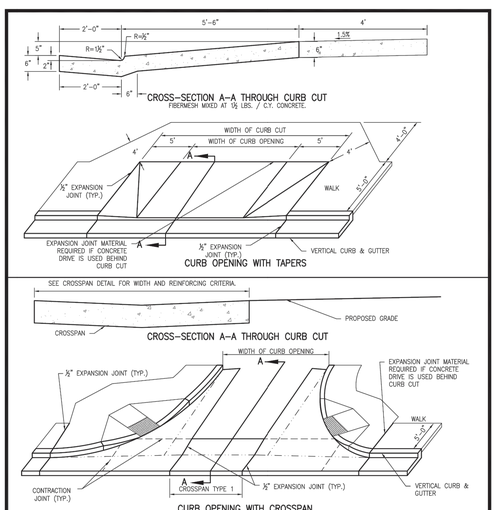
WIDTH (W)	DEPTH (D)	THICKNESS (T)
8'	2"	10"
10'	2½"	10"

NOTE: LOCAL STREET INTERSECTIONS REQUIRE AN 8' CROSSPAN. COLLECTOR STREET INTERSECTIONS REQUIRE AN 10' CROSSPAN. CROSSPANS ARE NOT ALLOWED AT ANY ARTERIAL STREET INTERSECTIONS.

CROSSPAN

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised: 09/2017
Drawing No. **SP.21**



NOTES:
1. BACK OF CURB CUT EXTENDS TO BACK OF WALK OR BACK OF BICYCLE PATH. IF NO WALK IS PRESENT, EXTEND BACK OF CURB CUT TO 5'-6" BEHIND FLOWLINE OR TO R.O.W. LINE, WHICHEVER IS GREATER.
2. COUNTY SHALL APPROVE LOCATION OF CURB CUT BEFORE CONSTRUCTION.
3. CURB OPENINGS OF 30' OR MORE MUST BE CONSTRUCTED WITH A MINIMUM 20' RADIUS CURB RETURN.
4. DESIGN ENGINEER MUST DEMONSTRATE THAT STREET DRAINGE STAYS WITHIN THE STREET RIGHT-OF-WAY.

CURB OPENING

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised: 09/2017
Drawing No. **SP.22**

City of Lone Tree

These construction plans have been reviewed by the City of Lone Tree for street and drainage improvements only.

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REV	REVISION DESCRIPTION	DATE	DRWN	CHKD	APPR

DESIGN BY: CD
DRAWN BY: NB
CHECKED BY: CB
APPROVED BY: CB

RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS

DOUGLAS COUNTY DETAIL 1

ISSUED FOR REVIEW
FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 09/29/2023
SHEET: 21 OF 48

File Location:Q:\DEN\Projects\5087-02-RRMD Overall East\Projects\12410-Couplet Roadway Design\Design\CDs\Civil\FILING 4\ROAD AND STORM\12410- DETAILS.dwg Plot Date:10/3/2023 2:59 PM Last Saved By: NBROWN

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Squeegee	
Sieve Size	Total Percentage Passing by Weight
3/8 – inch	100
No. 50	0 to 10
No. 100	0 to 5
No. 200	0 to 3

4" SDR 35 PVC PERFORATED DRAIN PIPE SPECS:
- ⅜"-⅜" OPENINGS (2" LONG SLOTS ACCEPTABLE)
- 5" O.C. HOLE SPACING.
- JOINT TYPE: RUBBER GASKET OR GLUE ALLOWED. (PER MANUFACTURERS RECOMMENDATIONS)

NOTES:
1. 4" PVC PERFORATED PIPE MUST BE SDR 35 (NO FLEX-PIPE) TO MAINTAIN POSITIVE SLOPE, AND MINIMIZE LOW POINTS AND PONDING.
2. THE 4" DRAIN PIPE SHALL BE CONNECTED TO A STORM DRAINAGE INLET OR MANHOLE. IF AN INLET OR MANHOLE IS NOT ACCESSIBLE, THE OUTLET MUST BE CONSTRUCTED PER SECTION 4.6.4 OF THE ROADWAY STANDARDS.
3. IF TRENCH DRAIN IS TO BE PLACED UNDER PAVEMENT, THE TRENCH DRAIN NEEDS TO BE SCHEDULE 80 SOLID WALL PIPE WITH CLEANOUTS INSTALLED ON BOTH SIDES OF THE PAVEMENT.

APPROVED BY DOUGLAS COUNTY
Janet Herman
JANET HERMAN, P.E.
DIRECTOR OF PUBLIC WORKS ENGINEERING
DATE 06/18/2021

TRENCH DRAIN

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised: 05/2021
Drawing No. **SP.23a**

Squeegee	
Sieve Size	Total Percentage Passing by Weight
3/8 – inch	100
No. 50	0 to 10
No. 100	0 to 5
No. 200	0 to 3

4" SDR 35 PVC PERFORATED DRAIN PIPE SPECS:
- ⅜"-⅜" OPENINGS (2" LONG SLOTS ACCEPTABLE)
- 5" O.C. HOLE SPACING.
- JOINT TYPE: RUBBER GASKET OR GLUE ALLOWED. (PER MANUFACTURERS RECOMMENDATIONS)

NOTES:
1. 4" PVC PERFORATED PIPE MUST BE SDR 35 (NO FLEX-PIPE) TO MAINTAIN POSITIVE SLOPE, AND MINIMIZE LOW POINTS AND PONDING.
2. THE 4" DRAIN PIPE SHALL BE CONNECTED TO A STORM DRAINAGE INLET OR MANHOLE. IF AN INLET OR MANHOLE IS NOT ACCESSIBLE, THE OUTLET MUST BE CONSTRUCTED PER SECTION 4.6.4 OF THE ROADWAY STANDARDS.
3. IF TRENCH DRAIN IS TO BE PLACED UNDER PAVEMENT, THE TRENCH DRAIN NEEDS TO BE SCHEDULE 80 SOLID WALL PIPE WITH CLEANOUTS INSTALLED ON BOTH SIDES OF THE PAVEMENT.

APPROVED BY DOUGLAS COUNTY
Janet Herman
JANET HERMAN, P.E.
DIRECTOR OF PUBLIC WORKS ENGINEERING
DATE 05/2021

TRENCH DRAIN WITH SIDEWALK

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised: 05/2021
Drawing No. **SP.23c**

NOTES:
1. OUTSIDE DIAMETER OF CONCRETE COLLAR SHALL BE LARGE ENOUGH TO ALLOW FOR 2" CLEAR SPACE BETWEEN CONCRETE COLLAR AND OUTSIDE OF PIPE FITTING. CONCRETE COLLAR SHALL BE REMOVED AND REPLACED AS INTENDED.
2. 4" PVC PERFORATED PIPE MUST BE SDR 35 (NO FLEX-PIPE) TO MAINTAIN POSITIVE SLOPE, AND MINIMIZE LOW POINTS AND PONDING.
3. MAX. SPACING 200'

APPROVED BY DOUGLAS COUNTY
Janet Herman
JANET HERMAN, P.E.
DIRECTOR OF PUBLIC WORKS ENGINEERING
DATE 06/18/2021

TRENCH DRAIN CLEANOUT

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised: 05/2021
Drawing No. **SP.24**

TRENCH DRAIN 90° CORNER

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised: 09/2017
Drawing No. **SP.25**

NOTES
1. OUTSIDE DIAMETER OF CONCRETE COLLAR SHALL BE LARGE ENOUGH TO ALLOW FOR 2" CLEAR SPACE BETWEEN CONCRETE COLLAR AND OUTSIDE OF PIPE FITTING. CONCRETE COLLAR SHALL BE REMOVED AND REPLACED AS INTENDED.
2. 4" PVC PERFORATED PIPE MUST BE SDR 35 (NO FLEX-PIPE) TO MAINTAIN POSITIVE SLOPE, AND MINIMIZE LOW POINTS AND PONDING.

BACK TO BACK TRENCH DRAIN CLEANOUTS

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised: 09/2017
Drawing No. **SP.26**

REFERENCE:
CDOT M & S STANDARDS
M-604-12

CURB INLET - TYPE R (5', 10' OR 15' IN LENGTH)

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised:
Drawing No. **SP.34a**

City of Lone Tree

These construction plans have been reviewed by the City of Lone Tree for street and drainage improvements only.

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REV	REVISION DESCRIPTION	DATE	DRWN	CHKD	APPR

DESIGN BY: CD
DRAWN BY: NB
CHECKED BY: CB
APPROVED BY: CB

RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS

DOUGLAS COUNTY DETAIL 2

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 09/29/2023
SHEET: 22 OF 48

File Location:Q:\DEN\Projects\5087-02-RRMD Overall East\Projects\1240-Couplet Roadway Design\Design\CDs\Civil\FILING 4\ROAD AND STORM\1240- DETAILS.dwg Plot Date:10/3/2023 2:59 PM Last Saved By: NBROWN

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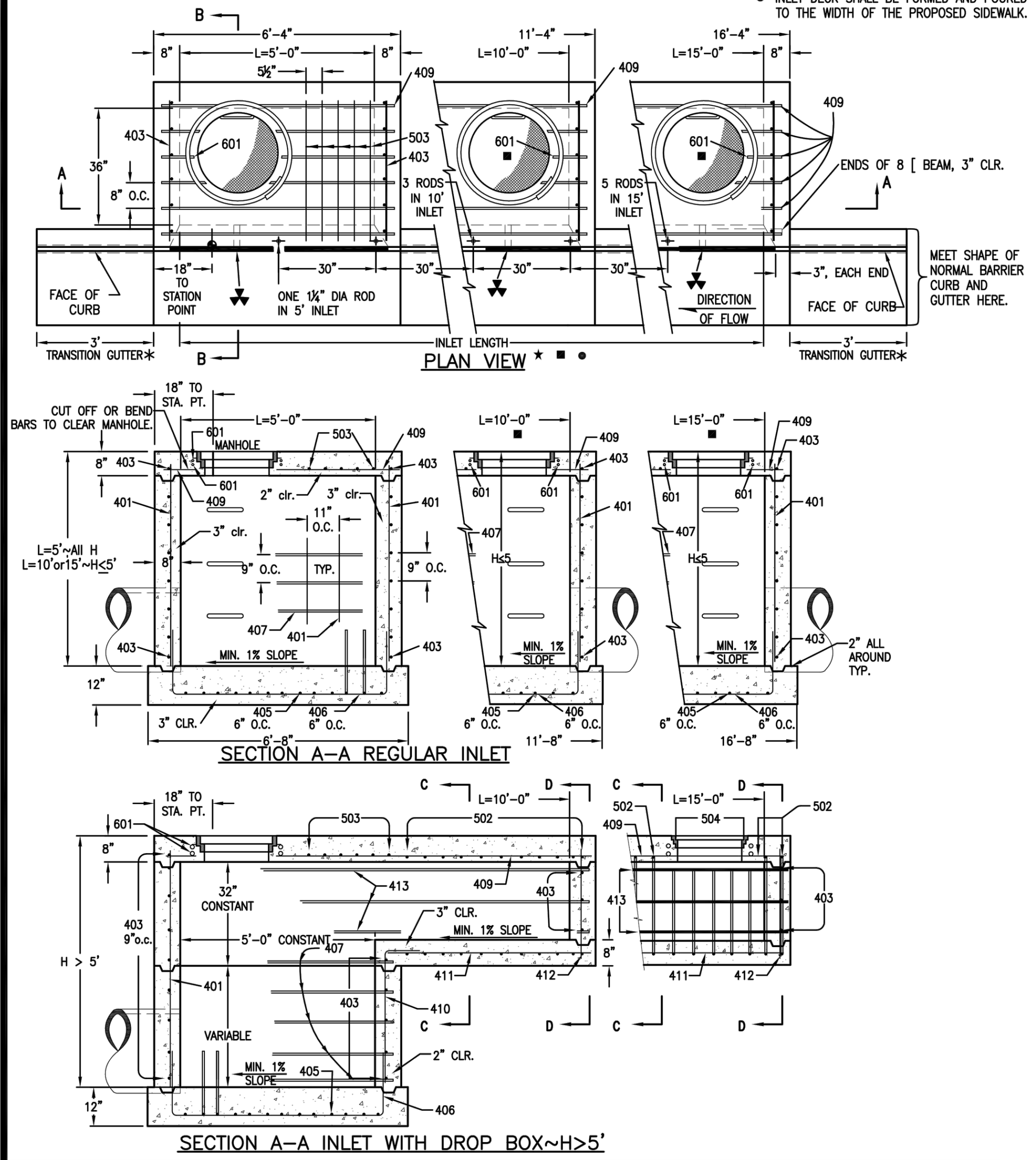
★ FOR LENGTH (L) GREATER THAN 5 FT. PROVIDE MAINTENANCE ACCESS AT BOTH ENDS.

■ ADDITIONAL MANHOLE RING AND COVER REQUIRED WHEN L=10 FT. OR MORE. CUT REINFORCEMENT BAR ACCORDINGLY.

● INLET DECK SHALL BE FORMED AND POURED TO THE WIDTH OF THE PROPOSED SIDEWALK.



REFERENCE:

CDOT M & S STANDARDS
M-604-12

CURB INLET - TYPE R (5', 10' OR 15' IN LENGTH)

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised:
Drawing No. **SP.34b**

MARK	BAR # OR SIZE	O.C. SPACING	TYPE	ALL INLETS L = 5 FT. NO. REQ'D.	LENGTH	INLETS: H ≤ 5 FT. L = 10 FT. NO. REQ'D.	LENGTH	L = 15 FT. NO. REQ'D.	LENGTH	INLETS: H > 5 FT. L = 10 FT. NO. REQ'D.	LENGTH	L = 15 FT. 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 1/2"	IV	11	3'–4"	22	3'–4"	33	3'–4"	22	3'–4"	33	3'–4"
502	5	5 1/2"	III							11	11'–5"	17	11'–5"
503	5	5 1/2"	II	5	3'–6"	16	3'–6"	27	3'–6"	6	3'–6"	6	3'–6"
504	5	5 1/2"	IX									5	8'–4"
601	6	2 1/2"	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 ROD	——	4 BARS, 3 RODS	——	8 BARS, 5 RODS	——	4 BARS, 3 RODS	——	8 BARS, 5 RODS	——

* VARIABLE, REFER TO TABLE TWO.

■ INCLUDE #4, 18 IN. BARS (SEE CHANNEL LAYOUT).

REGULAR INLETS (INLETS: H ≤ 5 FT.) DROP BOX INLETS (INLETS: H > 5 FT.)

TABLE ONE ~ BAR LIST FOR CURB INLETS, TYPE "R"

'H'	LENGTH 401	402	410	NO. REQ'D. REGULAR 403	407	NO. REQ'D. DROP BOX 403	407	L=5' CONC. CU. YDS.	STEEL LBS.	L=10' CONC. CU. YDS.	STEEL LBS.	L=15' CONC. CU. YDS.	STEEL LBS.
3'–0"	2'–8"	1'–8"		10	7			3.2	285	5.3	497	7.4	706
3'–6"	3'–2"	2'–2"		10	7			3.4	305	5.7	528	7.9	747
4'–0"	3'–8"	2'–8"		12	9			3.7	326	6.0	559	8.4	786
4'–6"	4'–2"	3'–2"		12	9			3.9	334	6.4	571	8.8	803
5'–0"	4'–8"	3'–8"		14	11			4.1	354	6.7	602	9.3	844
5'–6"	5'–2"	4'–2"	3'–5"	16	13	15	6	4.4	375	6.0	607	7.4	850
6'–0"	5'–8"	4'–8"	3'–11"	16	13	16	6	4.6	382	6.2	616	7.6	860
6'–6"	6'–2"	5'–2"	4'–5"	18	15	18	8	4.8	402	6.4	637	7.8	880
7'–0"	6'–8"	5'–8"	4'–11"	20	17	19	10	5.0	423	6.6	654	8.0	897
7'–6"	7'–2"	6'–2"	5'–5"	20	17	20	10	5.3	430	6.9	664	8.3	907
8'–0"	7'–8"	6'–8"	5'–11"	22	19	22	12	5.5	451	7.1	684	8.5	927
8'–6"	8'–2"	7'–2"	6'–5"	24	21	23	14	5.7	471	7.3	702	8.7	944
9'–0"	8'–8"	7'–8"	6'–11"	24	21	24	14	6.0	479	7.6	711	9.0	954
9'–6"	9'–2"	8'–2"	7'–5"	26	23	26	16	6.2	499	7.8	732	9.2	974
10'–0"	9'–8"	8'–8"	7'–11"	28	25	27	18	6.4	520	8.0	749	9.4	992
10'–6"	10'–2"	9'–2"	8'–5"	28	25	28	18	6.7	527	8.3	759	9.7	1001
11'–0"	10'–8"	9'–8"	8'–11"	30	27	30	20	6.9	547	8.5	779	9.9	1022

NOTES: FOR L=5 FT., L=10 FT., AND L=15 FT.
REGULAR INLETS: TOTAL QUANTITIES NEEDED ARE OUTSIDE THE HEAVY BLACK LINE.
DROP BOX INLETS: TOTAL QUANTITIES NEEDED ARE INSIDE THE HEAVY BLACK LINE.

STEEL WEIGHTS DO NOT INCLUDE STRUCTURAL STEEL CHANNEL.

TABLE TWO ~ BARS AND QUANTITIES VARIABLE WITH "H"

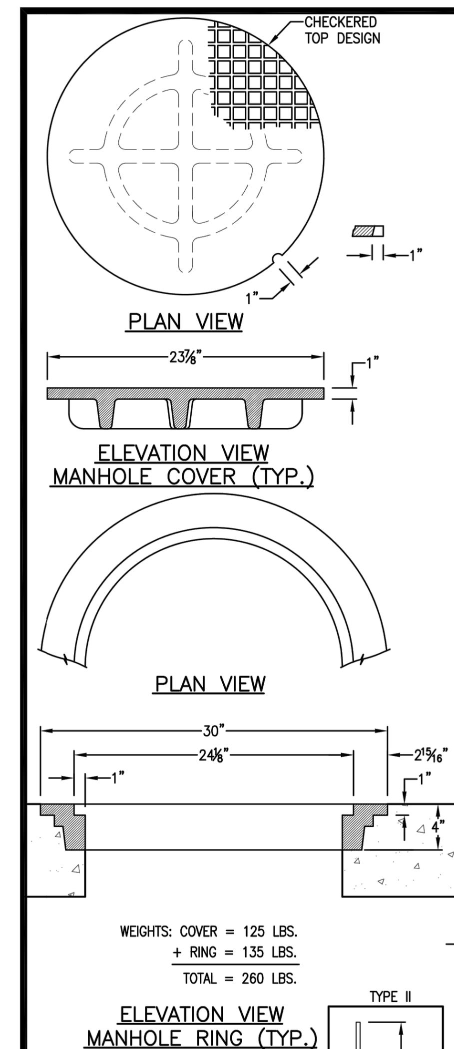
REFERENCE:

CDOT M & S STANDARDS
M-604-12

CURB INLET - TYPE R (5', 10' OR 15' IN LENGTH)

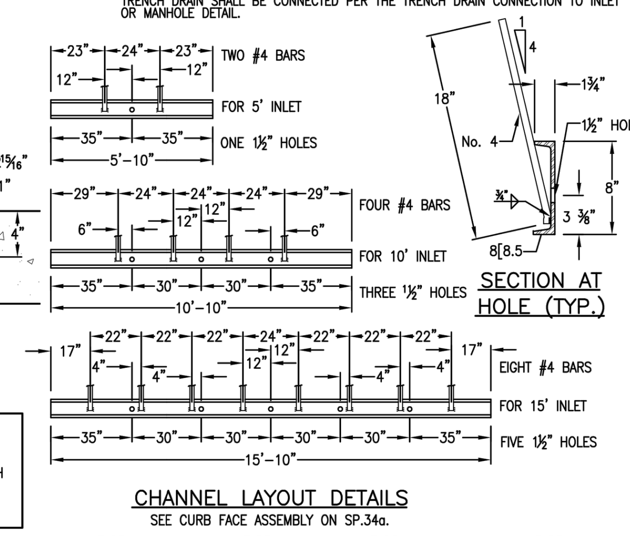
DOUGLAS COUNTY COLORADO

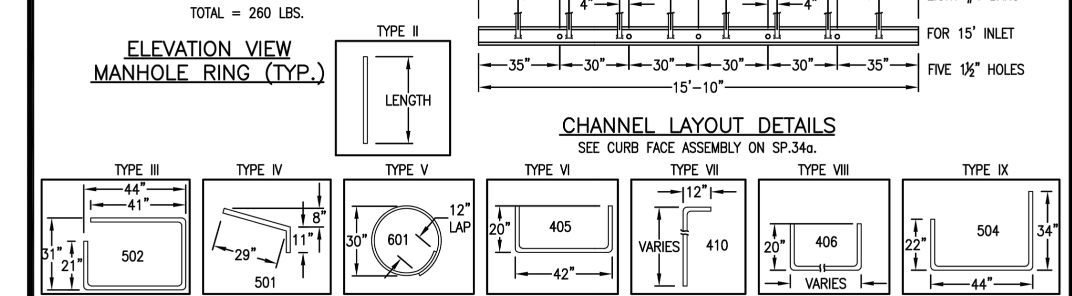
Issued: 05/2013
Revised:
Drawing No. **SP.34c**



GENERAL NOTES

1. ALL CONCRETE SHALL BE CLASS D. INLET SHALL BE CAST-IN-PLACE.
2. CONCRETE WALLS SHALL BE FORMED ON BOTH SIDES AND SHALL BE 8" THICK.
3. INLET STEPS SHALL BE IN CONFORMANCE WITH AASHTO M 199.
4. CURB FACE ASSEMBLY SHALL BE GALVANIZED AFTER WELDING.
5. EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED ¾". CURB AND GUTTER CORNERS SHALL BE FINISHED TO MATCH THE EXISTING CURB AND GUTTER BEYOND THE TRANSITION GUTTER.
6. REINFORCING BARS SHALL BE DEFORMED AND SHALL HAVE A 2" MINIMUM CLEARANCE. ALL REINFORCING BARS SHALL BE EPOXY COATED.
7. DIMENSIONS AND WEIGHTS OF TYPICAL MANHOLE RING AND COVER ARE NOMINAL.
8. MATERIAL FOR MANHOLE RINGS AND COVERS SHALL BE GRAY OR DUCTILE CAST IRON IN ACCORDANCE WITH CDOT STANDARD SPECIFICATIONS, SUBSECTION 712.06.
9. SINCE PIPE ENTRIES INTO THE INLET ARE VARIABLE, THE DIMENSIONS SHOWN ARE TYPICAL. ACTUAL DIMENSIONS AND QUANTITIES FOR CONCRETE AND REINFORCEMENT SHALL BE AS REQUIRED IN THE WORK. QUANTITIES INCLUDE VOLUMES OCCUPIED BY PIPES.
10. STRUCTURAL STEEL SHALL BE GALVANIZED AND SHALL BE IN ACCORDANCE WITH CDOT STANDARD SPECIFICATIONS, SUBSECTION 712.06.
11. THE OUTSIDE WALL OF ANY PIPE THAT ENTERS OR EXITS THE INLET UNDER THE GUTTER SECTION NEEDS TO BE BELOW THE CURB FACE ASSEMBLY.
12. IF ANY REBAR HAS TO BE CUT ON THE JOB SITE, THE EXPOSED BARE STEEL SHALL BE IMMEDIATELY COVERED WITH A MANUFACTURE APPROVED EPOXY PAINT PRIOR TO POUR.
13. EXPANSION JOINT MATERIAL NEEDS TO BE PLACED BETWEEN THE OUTSIDE WALL OF THE INLET AND ANY SIDEWALK TO BE POURED NEXT TO THE INLET.
14. INLET LID SHALL MATCH ROADWAY SLOPE.
15. IF INLET FLOOR IS NOT SLOPED 1% TO OUTLET, CORRECTIVE MEASURES WILL NEED TO BE COMPLETED PER INSPECTIONS DIVISION.
16. IF TRENCH DRAIN IS INSTALLED WITH THE ROADWAY/DRAINAGE IMPROVEMENTS, THE TRENCH DRAIN SHALL BE CONNECTED PER THE TRENCH DRAIN CONNECTION TO INLET OR MANHOLE DETAIL.





BAR BENDING DIAGRAMS ~ (Dimensions are Out–to–Out of bar)

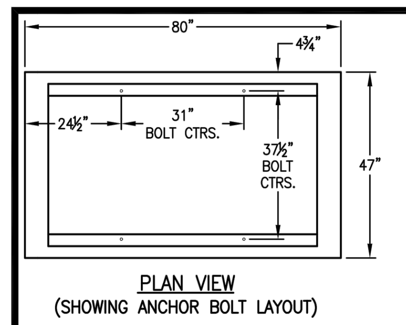
REFERENCE:

CDOT M & S STANDARDS
M-604-12

CURB INLET - TYPE R (5', 10' OR 15' IN LENGTH)

DOUGLAS COUNTY COLORADO

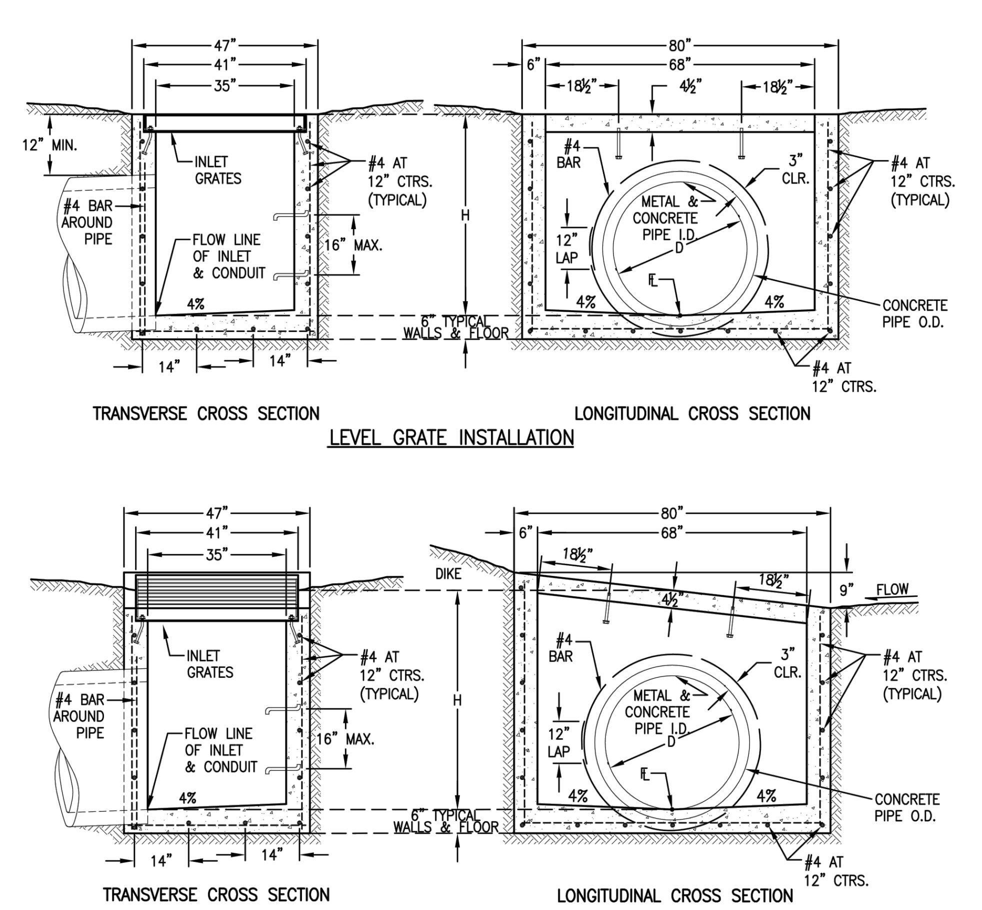
Issued: 05/2013
Revised:
Drawing No. **SP.34d**



OUTLET PIPE INSIDE DIA. IN. – "D"	MIN. "H" FT.
18	3.0
24	3.5
30	4.0
36	4.5
42	5.0

GENERAL NOTES

1. CONCRETE SHALL BE CLASS D INLET. INLET SHALL BE CAST- IN-PLACE.
2. STRUCTURAL STEEL FOR GRATES AND GRATE INSTALLATION HARDWARE SHALL BE GALVANIZED AND SHALL BE IN ACCORDANCE WITH COLORADO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION 712.06.
3. STANDARD INLET GRATES SHALL BE USED ON ALL TYPE D INLETS UNLESS CLOSE MESH GRATES ARE ACCEPTED BY DOUGLAS COUNTY THROUGH WRITTEN VARIANCE.
4. STEPS SHALL BE PROVIDED WHEN INLET DIMENSION "H" EXCEEDS 3'-6" AND SHALL BE IN ACCORDANCE WITH AASHTO M 199.
5. REINFORCING BARS SHALL BE EPOXY COATED, AND DEFORMED, AND SHALL HAVE A 2" MINIMUM CLEARANCE. IF ANY REBAR HAS TO BE CUT ON THE JOB SITE, THE EXPOSED BARE STEEL SHALL BE IMMEDIATELY COVERED WITH A MANUFACTURE APPROVED EPOXY PAINT PRIOR TO POUR.



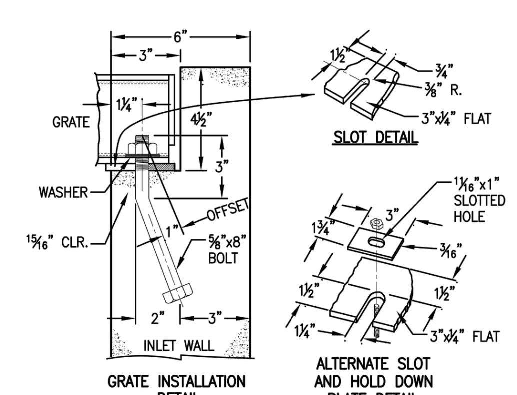
REFERENCE:

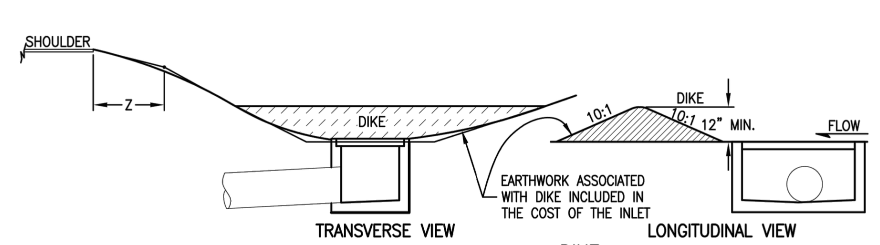
CDOT M & S STANDARDS
M-604-11

INLET TYPE D

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised:
Drawing No. **SP.36a**





QUANTITIES FOR ONE INLET

H FT.	CONCRETE ▽ CU. YD.	STEEL ▽ LB.	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.

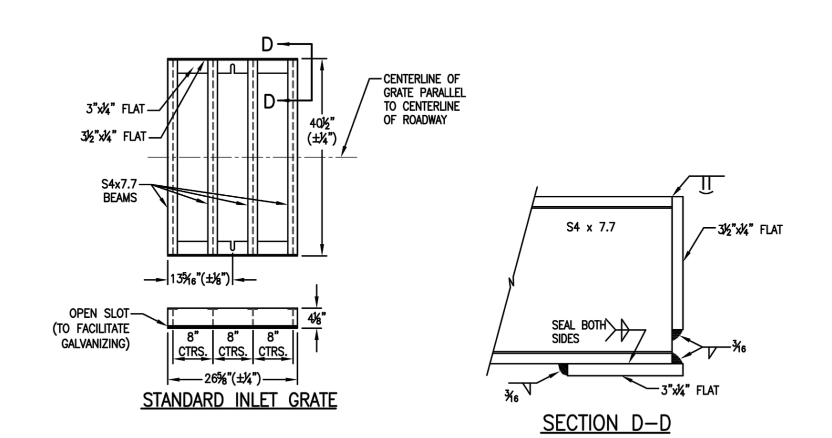
REFERENCE:

CDOT M & S STANDARDS
M-604-11

INLET TYPE D

DOUGLAS COUNTY COLORADO

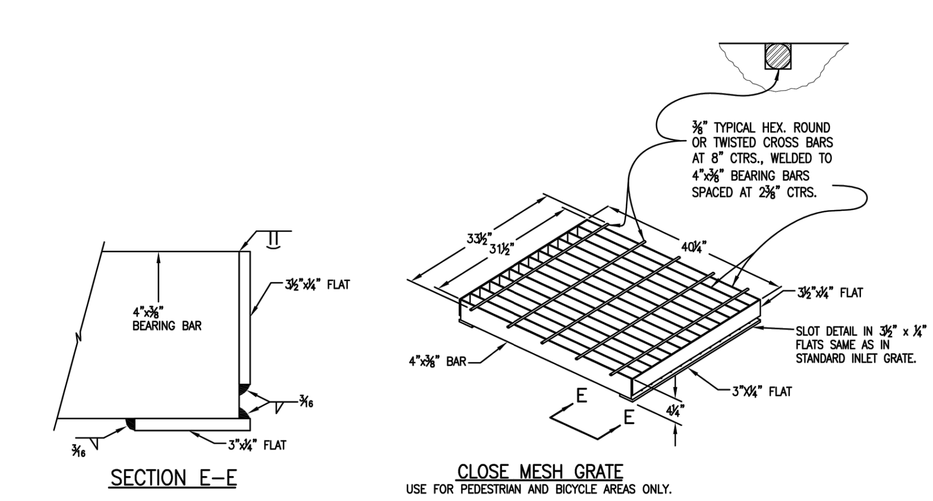
Issued: 05/2013
Revised:
Drawing No. **SP.36b**



QUANTITIES: 2 STEEL GRATES PER INLET

NO. PIECES	DESCRIPTION	LENGTH	LB. PER FT.	WEIGHT (LBS.)
8	S4x7.7 BEAM	40"	7.70	206
4	3½"x½" FLAT	26⅝"	2.98	26
4	3"x½" FLAT	26⅝"	2.55	24

TOTAL 256 LBS.



REFERENCE:

CDOT M & S STANDARDS
M-604-11

INLET TYPE D

DOUGLAS COUNTY COLORADO

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Revised:
Drawing No. **SP.36c**

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REV	REVISION DESCRIPTION	DATE	DRWN	CHKD	APPR

DESIGN BY: CD
DRAWN BY: NB
CHECKED BY: CB
APPROVED BY: CB

RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS

DOUGLAS COUNTY DETAIL 3

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

City of Lone Tree

These construction plans have been reviewed by the City of Lone Tree for street and drainage improvements only.

Engineering Division Acceptance Block

JOB NO.: 65121240
DATE: 09/29/2023

File Location:Q:\DEN\Projects\5087-02-RRMD Overall East\Projects\1240-Couplet Roadway Design\Design\CDs\Civil\FILING 4\ROAD AND STORM\1240- DETAILS.dwg Plot Date:10/3/2023 2:59 PM Last Saved By: NBROWN

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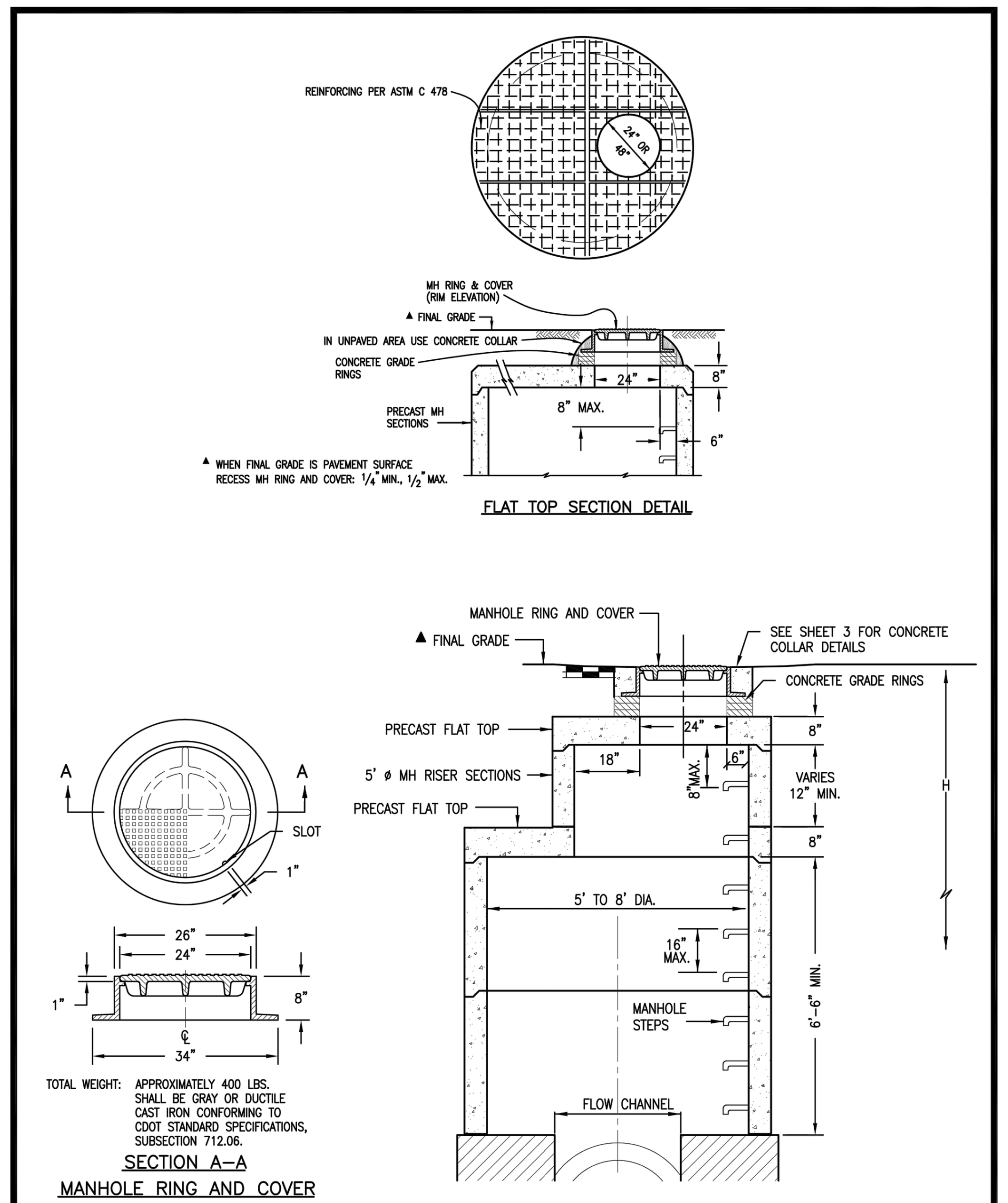
File Location:Q:\DEN\Projects\5087-02-RRMD Overall East\Projects\1240-Couplet Roadway Design\Design\CDs\Civil\FILING 4\ROAD AND STORM\1240- DETAILS.dwg Plot Date:10/3/2023 2:59 PM Last Saved By: NBROWN

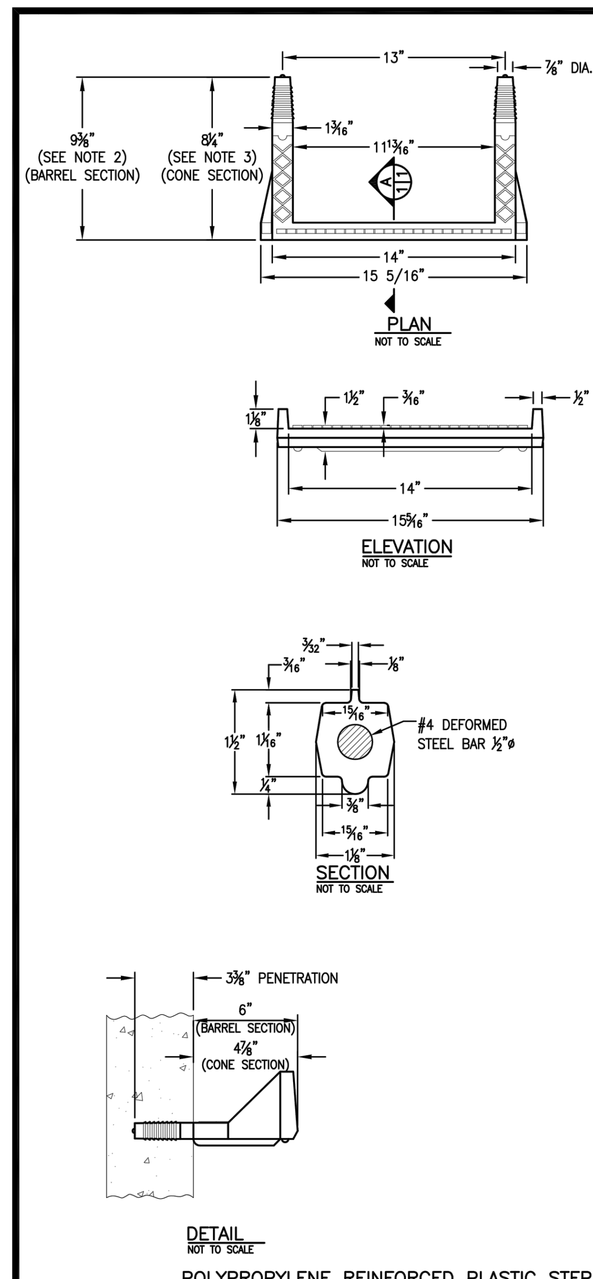


REFERENCE: CDOT M & S STANDARDS M-604-20

MANHOLES

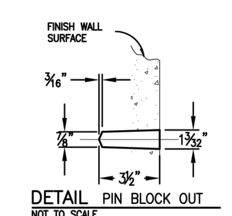
DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised:
Drawing No. **SP.43e**



GENERAL NOTES

1. ASTM SPECIFICATIONS:
   A. ASTM C-478
   B. ASTM A-615 GRADE 60 (STEEL REBAR).
   C. ASTM 2146-69, TYPE III, GRADE 16906 (POLYPROPYLENE).
2. STEPS INSTALLED IN MANHOLE BARREL SECTIONS OR VERTICAL WALLS OF STRUCTURES SHALL HAVE A 9⅜" LEG AND SHALL PROJECT FROM THE WALL 6".
3. STEPS INSTALLED IN MANHOLE CONE SECTIONS SHALL HAVE AN 8¼" LEG AND SHALL PROJECT FROM THE WALL 4⅞".
4. ALL STEPS SHALL HAVE A PENETRATION DEPTH INTO THE WALL OF 3⅜".
5. STEPS SHALL BE INSTALLED BY THE "PRESS-FIT" METHOD UTILIZING A SPECIALLY TAPERED PIN TO FORM THE INSERT HOLE AS SHOWN, FOLLOWING MANUFACTURER'S RECOMMENDED PROCEDURE AND SHALL NOT BE GROUTED IN PLACE.
6. INSTALLED STEPS SHALL BE CAPABLE OF WITHSTANDING A PULL OUT FORCE OF 2500 LB. PER LEG FOR A MINIMUM PERIOD OF TWO MINUTES.
7. PINS MUST BE SMOOTH AND CONTINUOUSLY TAPERED. DIMENSIONS OF THE PIN AND THE INSERTED PORTION OF THE MANHOLE STEP ARE TYPICAL ONLY. DOUGLAS COUNTY INSTALLATIONS REQUIRE A MATCHED COMBINATION OF A TAPERED INSERT PIN AND MANHOLE STEP, AS RECOMMENDED OR REQUIRED BY SPECIFIC MANUFACTURER OF THE STEP TO BE USED.
8. THIS STEP CAN ALSO BE USED IN TOE POCKET INSTALLATIONS PROVIDED 5" TOE CLEARANCE IS ALLOWED.



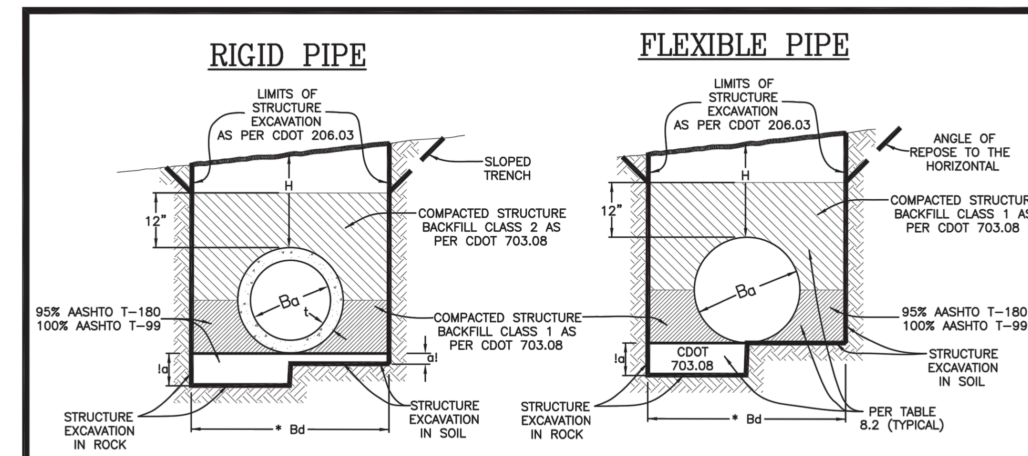
POLYPROPYLENE REINFORCED PLASTIC STEP

REFERENCE: CITY AND COUNTY OF DENVER DRAWING NUMBER S-750

MANHOLE AND INLET STEPS

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised:
Drawing No. **SP.45**



MAXIMUM HEIGHT OF FILL OVER TOP OF PIPE IN FEET

REINFORCED CONCRETE

Ba in.	Min. Bd in. **	.01 INCH CRACK D-LOAD 1350 / PIPE CLASS III	2000 / IV	3000 / V
18	35	19	28	43
24	42	18	28	42
30	50	18	28	42
36	59	18	27	41
42	68	18	27	41
48	78	18	27	41
54	89	17	26	40
60	98	17	26	40
66	108	17	26	40
72	117	17	26	40
78	125	17	26	40
84	135	17	26	40
90	154	17	26	40
96	163	17	26	40
108	173	17	26	40
120	191	17	26	40
132	208	17	26	40
144	224	17	26	40

** Based on Bd=1.33(Ba+2t). Wall thickness can vary between manufacturers.

STEEL – 2 2/3" x 1/2" CORRUGATIONS

Ba in.	Bd ft.	H ABOVE TOP OF PIPE IN FEET 1–15	16–20	21–25	26–30	31–35	36–40
		THICKNESS IN INCHES					
18–48	4–7	.064	.064	.064	.064	.064	.064
54	7.50	.079	.079	.079	.079	.079	.079
60	8.00	.079	.079	.079	.079	.109	.109
66	8.50	.079	.079	.109	.109	.138	.138
72	9.00	.079	.109	.109	.138	.168	.168
78	9.50	.109	.138	.138	.168		
84	10.00	.109	.138	.168			

LEGEND

H = Height of fill over top of pipe
Ba = inside diameter (I.D.) of pipe
* Bd = Trench Width
t = Wall thickness of pipe
CLSM = Controlled Low Strength Material
a = Loose granular bedding, as follows:
a=0" for Flexible Culverts in Soil.
a=3" for RCP Culvert in Soil.
a=12" for Culvert in Rock.

* TRENCH WIDTHS
RCP: Bd = Min. of 1.33(Ba+2t), or (Ba+2t)+12" (Per AASHTO Section 17)
CSP: Bd = Min. of Ba+4' (Per AASHTO Section 12)

! Bedding material for SOIL shall be Structural Backfill Class 1 or 2.
! Bedding material for ROCK shall be Structural Backfill Class 1.

GENERAL NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS APPLICABLE TO THE PROJECT.
2. ALL TRENCH INSTALLATIONS SHALL BE IN ACCORDANCE WITH OSHA AND COLORADO DEPARTMENT OF TRANSPORTATION REGULATIONS.
3. THE USE OF NON-REINFORCED CONCRETE PIPE WILL NOT BE ALLOWED IN DOUGLAS COUNTY.

RCP DESIGN CRITERIA

Safety Factor = Per ASTM C76
Soil Weight = 120 lb. per cu. ft.
Bedding = Type 2

CSP DESIGN CRITERIA

(3"x1" CORRUGATIONS: 60 TO 84 Pipe shall be .064" thick (16 gauge) to H=40 ft.)

Soil Weight = 120 lb. per cu. ft.
Safety Factor for Seam Strength = 2.00
Bucking Stress Level = 1/2 Yield Strength
Load Factor (Backfill) = 95% Standard Density, AASHTO-T 99 (K=0.86)

ALL UTILITY REPAIRS MUST BE BACKFILLED WITH CLSM. SEE DOUGLAS COUNTY ROADWAY DESIGN AND CONSTRUCTION STANDARDS MANUAL FOR SPECIFIC DETAILS.

NOTE: All trenching shall comply with all State, Federal and O.S.H.A. safety requirements. It will be the responsibility of the Contractor to meet all safety requirements.

TO BE USED IN OPEN FIELDS OR PRIOR TO PAVING ROADS

APPROVED BY DOUGLAS COUNTY
Janet Herman
JANET HERMAN, P.E.
DIRECTOR OF PUBLIC WORKS ENGINEERING
DATE 06/18/2021

PIPE INSTALLATION IN TRENCH

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised: 05/2021
Drawing No. **SP.46a**

NOTES:

1. This trench backfill detail specifies requirements in addition to those specified in the latest edition of the Colorado Department of Transportation's Standard Specifications for Road and Bridge Construction.
2. A construction traffic control plan shall be submitted to and approved by Douglas County prior to issuance of construction permits in the County right-of-way.
3. Trench shall be braced or shored as necessary for the safety of the workers and protection of other utilities or structures in accordance with applicable local, state and federal safety regulations.
4. The trench width shall be confined to those minimum dimensions, which will permit proper installation and acceptable pipe loading, as established by current local, state and federal Safety regulations.
5. Backfill compaction requirements: Minimum density will be determined in accordance with AASHTO T 99 or T 180 as defined by CDOT Standard Specifications Section 203.07 and CDOT 703.03. Except for CLSM.
6. Pavement edges shall be saw-cut. Edges shall be tack coated prior to patching.
7. All storm sewers shall be constructed so that a minimum cover is maintained to withstand AASHTO HS-20 loading on the pipe. The minimum cover to withstand live loading depends upon the pipe size, type and class, and soil bedding condition, but shall be not less than 1-foot at any point along the pipe. Other factors that affect the depth of the pipe are hydraulic grade line elevations, inlet depths, adjacent utilities or utility crossings, including water and sewer services lines along residential streets, and connections to existing storm sewer systems. The roadway subgrade, which supports the pavement section is typically plowed to a certain depth, moisture treated and compacted prior to the placement of the sub-base, base course, and surfacing. There are also instances where the subgrade material must be excavated and replaced or treated to a certain depth to mitigate swelling soils. These efforts can impact the storm sewer system if it has not been designed with adequate depth. The design engineer shall use the best information available, including pavement design or soils reports (if available) to ensure that storm sewer pipes have adequate depth.
8. Changes in design criteria will require compensating change in pipe design.
9. When pipe sewer is to be extended or replaced with pipe of different material, the connections shall conform to the detail shown on plans or be approved through Douglas County Engineering.
10. When two or more conduits are laid side-by-side, they shall be placed so that they are ½ outside diameter, or ½ outside span, or 3' apart, whichever is less. However, if end sections are used, the minimum spacing shall be 1' between the outside edge of end sections.
11. TRENCH INSTALLATION (per OSHA Standards):
    a. Trenches over 5 feet in depth shall be either shored or the trench walls shall be sloped no steeper than 3:1 to the angle of repose. If sloped, the bottom of the slope shall be a minimum of 1 foot above the top of the pipe.
    b. Shoring will be required when the bottom of the slope is more than 3 feet above the bottom of the trench.
    c. All sheeting or shoring to be removed.
12. CLSM may be used in place of Structural Backfill.
13. CLSM shall not exceed a strength over 100 p.s.i.

REFERENCE: Douglas County Drainage Manual and Colorado Department of Transportation "M" Standards.

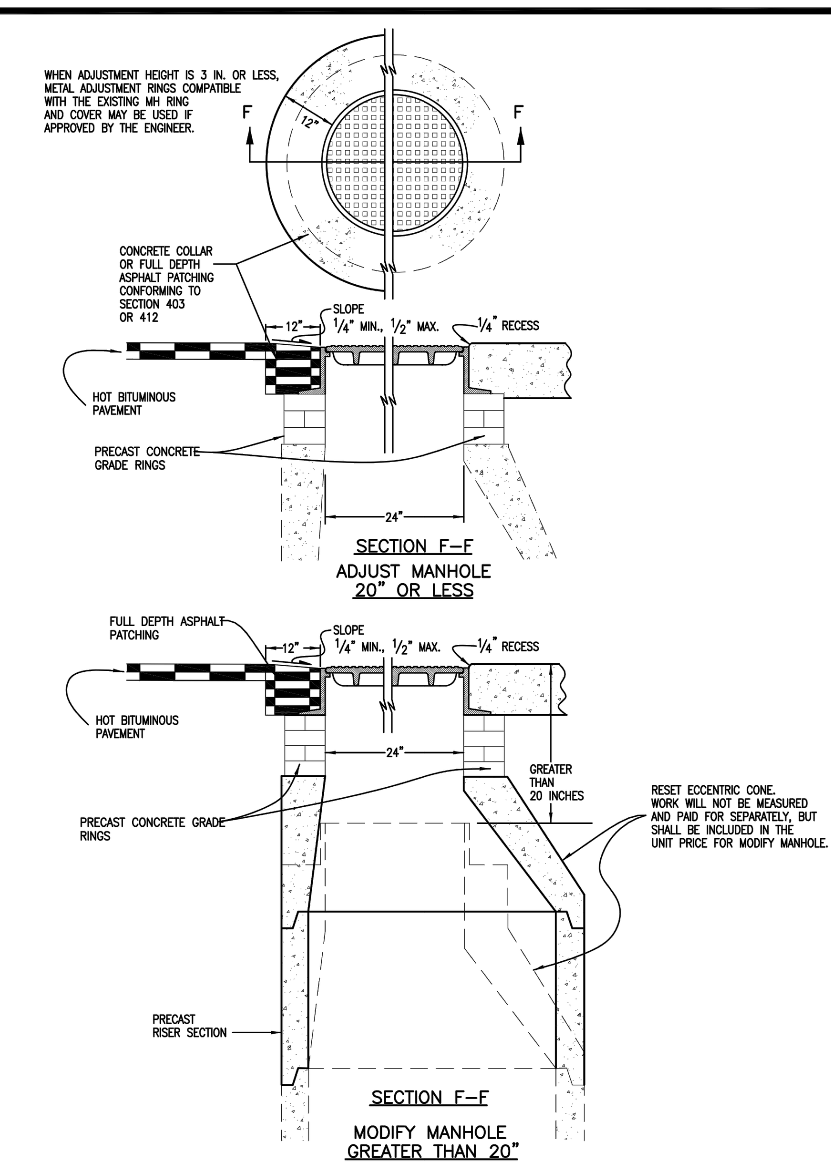
TO BE USED IN OPEN FIELDS OR PRIOR TO PAVING ROADS

APPROVED BY DOUGLAS COUNTY
Janet Herman
JANET HERMAN, P.E.
DIRECTOR OF PUBLIC WORKS ENGINEERING
DATE 06/18/2021

PIPE INSTALLATION IN TRENCH NOTES

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised: 05/2021
Drawing No. **SP.46b**



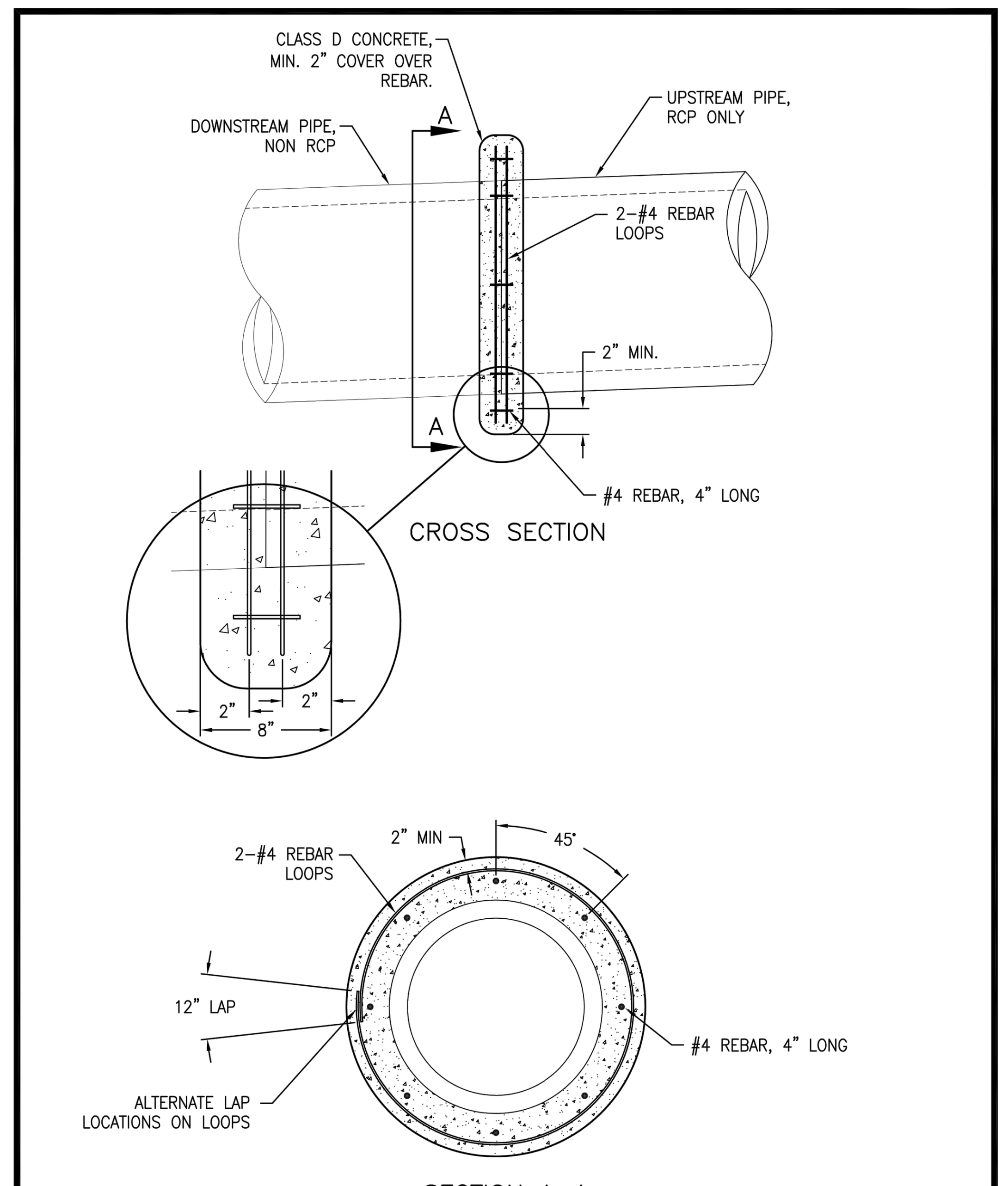
NOTES:

1. ADEQUATE BARRICADES SHALL BE PLACED AND MAINTAINED UNTIL THE COLLAR ATTAINS A COMPRESSIVE STRENGTH OF 4500 PSI.
2. MANHOLES SHALL NOT BE LOCATED IN CROSSPANS OR GUTTERS.
3. MANHOLE RIM AND COVER SHALL MATCH ROADWAY SLOPE.

MANHOLE RING AND COVER ADJUSTMENT

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised:
Drawing No. **SP.57**



PIPE CONNECTION DETAIL TO EXISTING PIPE

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised:
Drawing No. **SP.60a**

City of Lone Tree

These construction plans have been reviewed by the City of Lone Tree for street and drainage improvements only.

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REV	REVISION DESCRIPTION	DATE	DRWN	CHKD	APPR

DESIGN BY: CD
DRAWN BY: NB
CHECKED BY: CB
APPROVED BY: CB

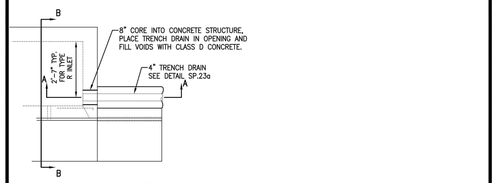
RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS

DOUGLAS COUNTY DETAIL 4

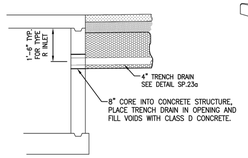
ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

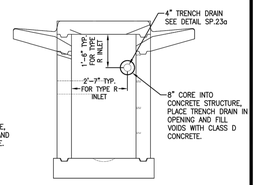
JOB NO.: 65121240
DATE: 09/29/2023



PLAN VIEW



SECTION A–A

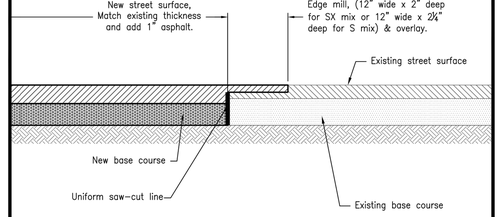


SECTION B–B
END VIEW

TRENCH DRAIN CONNECTION TO INLET OR MANHOLE

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised:
Drawing No. **SP.61**



NOTES:

1. This Street Cut/Patching detail specifies requirements in addition to those specified in the latest edition of the Colorado Department of Transportation's Standard Specifications for Road and Bridge Construction.
2. A Construction Traffic Control Plan shall be submitted to and approved by Douglas County prior to issuance of Construction Permits in the County Right-Of-Way.
3. Pavement edges shall be saw-cut and kept to a neat vertical edge prior to paving.
4. Edges shall be tack coated prior to patching.
5. A "tee" trench is required on all road surface cuts. The contractor shall carefully saw-cut and mill a minimum of 12" back from the edge of the saw cut line of the top mat of asphalt (2" deep for grade "SX" asphalt & 2¼" deep for grade "S" asphalt).ed
6. A temporary cold-mix asphalt patch, 6" minimum depth (see Section 9.6) is required for all street cuts if a permanent hot-mix asphalt patch cannot be applied for any reason, after construction is completed. A permanent hot-mix patch shall be installed no later than 5 days after the cold-mix patch installation.

ASPHALT STREET CUT/PATCHING

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised:
Drawing No. **SP.62**

City of Lone Tree

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REV	REVISION DESCRIPTION	DATE	DRWN	CHKD	APPR

DESIGN BY: CD
DRAWN BY: NB
CHECKED BY: CB
APPROVED BY: CB

RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS

DOUGLAS COUNTY DETAIL 5

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 09/29/2023
SHEET: 25 OF 48

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File Location: Q:\DEN\Projects\5087-02-RRMD Overall East\Projects\1240-Couplet Roadway Design\Design\CDs\Civil\FILING 4\ROAD AND STORM\1240- DETAILS.dwg Plot Date:10/3/2023 2:59 PM Last Saved By: NBROWN

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File Location: Q:\DEN\Projects\5087-02-RRMD Overall East\Projects\1240-Couplet Roadway Design\Design\CDs\Civil\FILING 4\ROAD AND STORM\1240- DETAILS.dwg Plot Date:10/3/2023 2:59 PM Last Saved By: NBROWN

CITY OF LONE TREE
PAVEMENT UTILITY CUT AND PATCH SPECIFICATIONS

1. General

These specifications are intended to provide guidelines for the removal and replacement of pavement in order to permit placement and repair of utilities in existing roadways, sidewalks, bike paths, driveways, curbs, gutters and other surfaces.

Any improvements in the right-of-way or on private property damaged during construction shall be repaired prior to placement of the permanent pavement patch. Damaged sections of concrete sidewalk curb and/or gutter shall be removed and replaced to the nearest control joint. Replacement of less than a 10-foot length of curb and gutter or sidewalk will not be permitted. Integral curb, gutters, and/or sidewalk shall be replaced in their entirety. Private improvements shall be replaced to equal or better standards.

Cuts over twelve feet (12') in width and two-hundred feet (200') in length shall require the use of a self-propelled paver. All other cuts in asphalt streets shall require the use of a paving box.

Cuts will not be allowed on streets that have been paved, overlaid or sealcoated within 2 years, except for emergency repair of existing facilities or when approved by the City Engineer. When reviewing a request for a street cut on a recently resurfaced street, the City Engineer shall consider factors such as:

a. Whether the applicant considered the City's anticipated resurfacing schedule prior to planning the proposed street cut,

b. Alternatives that eliminate the need for the street cut,

c. Whether the proposed street cut is needed to provide new service to a new customer, and

d. Additional restoration requirements, beyond the permanent patch requirements of these regulations, may be required to restore ride quality and anticipated pavement life. Additional requirements may include resurfacing an area larger than the street cut, replacing or using paving fabric or other materials, a longer warranty, payment to the City equal to the anticipated restoration remedy, or a reasonable combination thereof.

Cuts of over two-hundred feet (200') in length on streets that have been overlaid within 8 years will require milling and a minimum three inch (3") H.B.P. grading SX overlay (and use of

reinforcement mat per the Asphalt Pavement Patchback Detail) placed with a self propelled paver from the gutter or edge of asphalt to the center line of the street on residential streets, and to adjacent lane lines on collector and arterial streets.

Cuts of over two-hundred feet (200') in length on streets that have been sealcoated within 3 years will require re-sealcoating of the entire street width for the length of the cut.

In lieu of performing the overlaying or sealcoating described above, the Permittee may be allowed to pay the City the cost of overlay or sealcoat of the required street sections using contract unit prices from the City's current year overlay and sealcoating programs, plus an administrative fee of 10% of the cost. The work will then be completed by the City as part of the following year's overlay and sealcoating programs.

Upon completion of the permanent patch, the surface shall be thoroughly compacted, smooth, and free from ruts, humps, depressions, or irregularities and shall not separate from pre-existing adjacent pavement. When a straightedge ten feet (10') long is laid across the permanent patch both parallel to the centerline of the street and in a direction perpendicular to the centerline, the surface shall not vary more than 3/16 inch from the lower edge of the straight edge. Patches exhibiting deviations greater than 3/16 inch shall be replaced prior to acceptance of the patch. Patches separating from pre-existing adjacent pavement more than 3/16 inch shall be replaced or sealed as directed by the City. Patches shall have a cross slope consistent with the design of the existing roadway.

2. Cutting Streets

The Public Works Department shall be notified 24 hours in advance and shall inspect utility cuts whenever they are made in the public rights-of-way. All cuts within the City's right-of-way require a ROW/Construction Permit and approved Traffic Control Plan.

All streets shall be kept open to traffic by the Permittee unless otherwise approved by the City Engineer. Prior to beginning work, a traffic control plan must be submitted to and approved by the Engineering Division. All barricading and traffic control devices shall be in compliance with the approved traffic control plan.

Existing pavements may be removed by jack hammering, line cutting, or saw cutting to straight lines parallel and perpendicular to the flow of traffic. Prior to final patching, asphalt and concrete pavements shall be cut to clean, straight lines. Angled and irregular shaped patches will not be allowed and the edges of patches shall not fall within two feet (2') of existing wheelpaths. Patches shall not leave strips of existing pavement less than three feet (3') in width from the edge of the new patch to the lip of the gutter, edge of paved roadway surface, or edges of existing patches. Patches on all streets shall be four sided, with sides either parallel or perpendicular to the direction of traffic.

Patches on concrete streets shall not be less then five feet (5') in any dimension, and patches shall not leave strips of existing concrete pavement of less then five feet (5') in width from the edge of the new patch to the lip of the gutter, edge of paved roadway surface or adjacent concrete construction joints. Patches within existing patches will not be accepted. Boundaries of the

patches will coincide.

Asphalt and concrete pavements shall be removed by saw cutting prior to final patching (asphalt pavements may also be rotomilled). Care shall be taken to avoid breaking away the edges of the existing pavement or damaging the remaining pavement with heavy construction equipment. Any overbreak or separation outside the original cut shall be re-cut and squared off.

3. Trench Backfill

Excavation, including the manner of supporting excavation and provisions for access to trenches, shall comply with current OSHA regulations for trench safety.

Trench backfill shall consist of a flowable backfill. On-site structural excavated material or approved imported fill may only be used with the approval of the City Engineer and if the trench width is greater than eight feet (8') and a full-size, self-propelled compactor can be utilized to achieve the required compaction.

In areas where lime treated sub-base, cement modified sub-base, soil cement, or similar materials have been used, the Permittee shall replace the material in kind, or provide flowable backfill up to sixteen inches (16") below finished grade.

Flowable backfill shall consist of a controlled low strength, self-leveling concrete material composed of a mixture of cement, fly ash, aggregate, water, and chemical admixtures. Flowable backfill shall have a design compressive strength of between 50 and 150 psi at 28 days when tested in accordance with ASTM D 4832. The mix should have a design slump between 6 and 10 inches.

Flowable backfill shall be discharged directly from the truck into the space to be filled, or by other methods approved by the City. The mix may be placed partial or full depth. When used as backfill in the pipe zone, care should be taken to prevent flotation or misalignment of the pipe by means of straps, soil anchors or other approved means of restraint. Material may be placed in stages with initially less flowability, to prevent movement or flotation of pipe. Compaction of flowable backfill will not be required.

Placement of pavement materials or vehicle traffic shall not be allowed until the flowable backfill has achieved a penetration resistance of at least 600 psi using a hand-held penetrometer, in accordance with ASTM C 403. This penetration resistance shall be considered achieved when a person weighing at least 150 pounds, using their body weight, cannot penetrate the flowable backfill with the square cut end of a No. 4 steel reinforcing bar. A traffic plate or barricading of the patch area will be required until temporary or permanent patching is completed, as per the approved traffic control plan. Traffic will not be allowed directly on the flowable backfill material.

The alternative to the use of flowable backfill is the use of structural on-site excavated material or approved imported fill. On-site excavated material or imported fill used for backfill shall be compacted to the density and moisture content outlined below:

Backfill Compaction and Moisture Requirements

AASHTO CLASSIFICATION	REQUIRED COMPACTION	MOISTURE CONTENT TOLERANCE FROM OPTIMUM
A-1, A-2-5, A-2-7, A-3 A-4, A-5	Min. 95% of AASHTO T180	-3 to +3
A-2-4, A-2-6, A-6, A-7	Min 95% of AASHTO T 99	0 to +3

Backfill material must be placed and compacted in maximum eight inch (8") loose lifts, unless compaction equipment is used that allows larger lift thickness, as approved by the inspector.

The Permittee shall be responsible for testing of trench backfill. Testing shall be done under the direction of a professional engineer licensed in the State of Colorado and practicing in this field. Minimum testing frequency shall be one density test for each two vertical feet of backfill for each one-hundred lineal-feet (100 l.f.) or five-hundred square-feet (500 s.f.) In no case shall there be less than three tests in any trench with the tests distributed from two feet above the utility line to the subgrade. Test results shall be provided to the City prior to placement of the asphalt or concrete pavement. Failure to provide timely documentation of testing will result in removal and replacement of the backfill and pavement at the Permittee's expense or in-place testing at the Permittee's expense.

4. Temporary Patch

Temporary patches will not be allowed without prior approval by the City Engineer.

Whenever permanent pavement patches are not constructed immediately following utility cut backfilling operations, temporary pavement patches consisting of minimum of three inches (3") of hot or cold mix asphalt may be utilized to provide the required number of paved travel lanes. Temporary pavement patches may be left in place for a maximum of 14 calendar days, unless otherwise required by the City Engineer, following completion of backfilling operations. Temporary patches must be inspected daily by the Permittee and maintained by the Permittee to the following tolerances at all times.

When a ten foot (10') straight edge is laid across the temporary patch both parallel to the centerline of the street and in a direction perpendicular to the centerline, a rut, hump, or depression of more than one-half inch (1/2") shall not be present. Deteriorated temporary patches exhibiting ruts, humps, or depressions in excess of one-half inch (1/2") shall be repaired or replaced immediately by the Permittee upon notification from the City.

5. Permanent Patch

The Engineering Division shall be notified 24 hours in advance of placement of a permanent patch.

Prior to placing a permanent patch, the existing pavement shall be sawcut or rotomilled to a neat straight line.

Asphalt pavement shall be sawcut or rotomilled as indicated in the Asphalt Pavement Patchback Detail.

Concrete pavement must be sawcut full depth.

Pavement shall be replaced at the minimum thickness shown below.

Minimum Pavement Patch Thickness

Roadway Classification	Asphalt Pavement	Concrete Pavement
Arterial	9"	9"
Collector	7"	7"
Local	5"	5"
In no case shall the patch thickness be less than existing adjacent pavement.		

6. Asphalt Streets

Asphalt pavement shall be neatly sawn or rotomilled and removed as indicated in the Asphalt Pavement Patchback Detail.. Asphalt pavement shall meet CDOT specifications for grading S or SX hot bituminous pavement. Binder material shall be PG 58-28 or 64-22. Compaction shall be between 92 and 96 percent of the maximum specific gravity, CP-51. Average compaction of less than 92 percent will be cause for rejection. A tack coat shall be applied to all edges of the existing pavement prior to final patching. Maximum lift thickness on asphalt patches is three inches (3"). The Permittee shall be responsible for compaction testing on asphalt patching for trenches. A minimum testing frequency shall be one compaction test on each lift placed, for each two-hundred lineal-feet (200 l.f.) or five-hundred square-feet (500 s.f.) of patch. In all cases there shall be at least one test on each lift for any patch that exceeds the size limits shown above.

7. Concrete Streets

Concrete pavement shall be neatly sawn and removed five feet (5') back from each side of the excavation. If a construction, contraction, or expansion joint is less than five feet (5') from the edge of the saw cut, the surface shall be removed back to the joint. All cuts shall be four sided.

All concrete patches shall be doweled into the existing pavement with #5 rebar at 18" O.C. around the perimeter of the patch. The dowels shall be 24" in length with 12" doweled and epoxied into the existing pavement.

Concrete for patching shall meet the specifications for CDOT Class P concrete.

The Permittee shall be responsible for testing of all concrete patching. Testing shall include air content, temperature, slump and 7, 14, and 28 day compressive strength testing on every concrete delivery truck.

Where concrete improvements are removed and replaced adjacent to an asphalt paved surface, a minimum width of two feet (2') of the asphalt paved surface shall be removed and replaced in a manner meeting the permanent patch requirements.

8. Concrete Sidewalks, Bikepaths, Driveway, Curbs and Gutters, and Other Structures

Whenever an excavation cuts a concrete sidewalk, bikepath, driveway, curb and gutter, or other structure, a neat saw cut shall be made one foot (1') back from each side of the excavation to undisturbed soil; the concrete shall be removed to the nearest joint. All broken material shall be removed. Once the excavation is backfilled and subgrade compacted to 95% compaction, the structure shall be replaced with concrete meeting CDOT specifications for Class B concrete.

9. Pavement Markings and Loop Detectors

All traffic control devices removed or disturbed during construction must be replaced upon completion of the permanent patch including but not limited to signs, paint, thermoplastic or pre-formed plastic pavement markings, and traffic signal detector loops. Temporary lane lines and other markings used during construction shall be permanently removed, to the satisfaction of the Engineering Division, prior to placing the new traffic stripes or markings.

10. Other Unpaved Surfaces

If a permit for work in the public way creates any excavations that lie within unpaved areas, the excavated soil shall be carefully deposited and satisfactorily tamped in uniform layers not greater than eight inches (8") in thickness until the backfill reaches the top of the substructure. The remainder of the excavation shall be backfilled in uniform layers not exceeding twelve inches (12") in thickness, and satisfactorily tamped to within one foot (1') of the surface. The backfilling operation shall continue with soil until the backfill remains slightly above the ground level. Excess material shall be disposed of. Granular backfill may also be used; however, topsoil shall be used for the final one foot (1') of backfill.

City of Lone Tree

These construction plans have been reviewed by the City of Lone Tree for street and drainage improvements only.

Engineering Division Acceptance Block

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REV	REVISION DESCRIPTION	DATE	DRWN	CHKD	APPR

DESIGN BY: CD
DRAWN BY: NB
CHECKED BY: CB
APPROVED BY: CB

RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER
PLANS

CITY OF LONE TREE DETAIL 1

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 09/29/2023
SHEET: 26 OF 48

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Excavations will require restoration of the area to original condition, including irrigation system repair, topsoil placement, seeding, sodding and/or replacement of plant materials. It is the responsibility of the Permittee to establish a good stand of grass. The area shall be left free from debris and clods. On steep embankments or upon request of the City Engineer, sod or other erosion control techniques shall be used for restoration. (Erosion control blankets per City GESC requirements shall be installed on all slopes greater that 4:1).

11. Gravel Streets

Excavations in gravel streets and alleys shall be backfilled in the same manner as excavations in paved streets. The final surface shall be six inches (6") of compacted CDOT Class 6 aggregate base course material. Recycled concrete or asphalt will be considered on a case-by-case basis.

12. Warranty

All cuts shall be warranted for two years. During the warranty period, the Permittee shall be required to repair any defects in the final asphalt or concrete patch including, but not limited to:

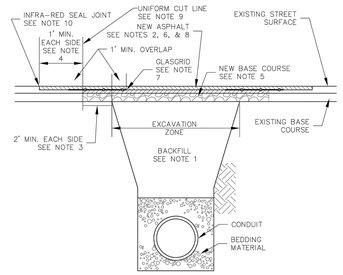
Asphalt
- Alligator cracking of the asphalt surface
- Excessive stripping of the asphalt surface
- Potholes in the asphalt surface
- Settlement of the asphalt surface greater than or equal to one-half of an inch (1/2")
- Separation of the patch from the existing pavement of more than one-quarter of an inch (1/4")

Concrete
- Any cracking outside of a control joint
- Any scaling or spalling
- Surface damage
- Settlement of the concrete surface greater than or equal to one-quarter of an inch (1/4")

Gravel Streets and Other Unpaved Surfaces
- Settlement of the surface greater than or equal to one-half of an inch (1/2")

13. Erosion and Sedimentation Control

Appropriate erosion and sedimentation control best management practices meeting or exceeding City GESC requirements shall be installed and maintained. In most cases, a full City GESC Permit will not be required for utility repair/street cut work, however, the proposed on-site specific GESC management must be approved by the City Engineering/Public Works GESC Inspector or City Engineer.



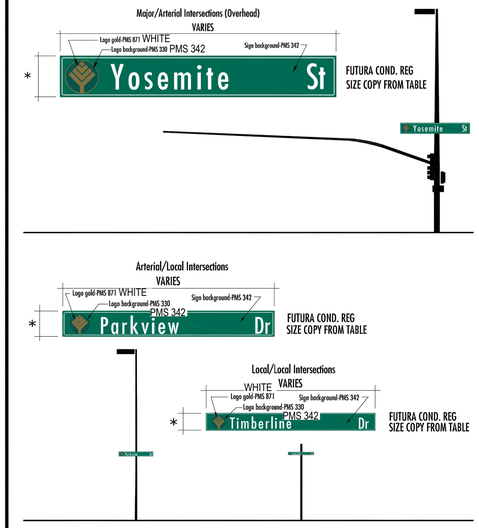
TYPICAL TRENCH SECTION

ROADWAY CLASSIFICATION	MIN. PAVEMENT PATCH THICKNESS
ARTERIAL	9 IN.
COLLECTOR	7 IN.
LOCAL	5 IN.

NOTES:

1. ALL PUBLIC STREET CUTS SHALL BE BACKFILLED WITH CLSM UNLESS THE TRENCH IS WIDE ENOUGH FOR A FULL-SIZED, SELF-PROPELLED COMPACTOR TO DRIVE THROUGH.
2. PAVEMENT PATCH THICKNESS SHALL NOT BE LESS THAN THE EXISTING SECTION.
3. SAW CUT AND REMOVE PAVEMENT AND BASE A MINIMUM OF 2' BACK FROM EXCAVATION ZONE OR LIMITS OF UNDISTURBED SUB-BASE, WHICHEVER IS GREATER.
4. ROTOMILL ASPHALT (2" DEPTH MINIMUM) A MINIMUM OF 1' BEYOND THE FULL DEPTH SAW CUT AND REMOVAL.
5. INSTALL 8 INCHES OF CDOT CLASS 6 ROAD BASE OR RECYCLED ASPHALT, COMPACTED IN PLACE TO MINIMUM 95% MODIFIED PROCTOR MAXIMUM DENSITY (ASTM D 1557).
6. INSTALL AND PROPERLY COMPACT REQUIRED DEPTH OF BASE COURSE ASPHALTIC CONCRETE (CDOT GRADING S).
7. INSTALL REINFORCEMENT MAT (TENSAR GLASGRID 8511, OR APPROVED EQUAL) PER MANUFACTURERS RECOMMENDATIONS. (MINIMUM 5 FOOT WIDTH)
8. INSTALL AND PROPERLY COMPACT ASPHALTIC CONCRETE TOP COURSE (CDOT GRADING SX).
9. ALL CUTS TO BE SQUARED OFF PRIOR TO RESTORATION. SAW CUT OR ROTOMILL.
10. THE JOINT BETWEEN THE NEW TOP COURSE ASPHALT AND THE EXISTING ASPHALT SHALL BE SEALED USING INFRARED JOINTING PROCESS.
11. ARTERIAL STREETS AND MAJOR COLLECTORS MUST BE PATCHED THE SAME DAY THE CUT OCCURS, UNLESS OTHERWISE AUTHORIZED BY THE ENGINEERING/PUBLIC WORKS DEPARTMENT.
12. ANY PAVEMENT MARKING (LANE LINES, TURN ARROWS, ETC.) DAMAGED BY THE STREET CUT AND REPAIR OPERATIONS SHALL BE REPLACED IN CONFORMANCE WITH CITY SIGNAGE AND STRIPING STANDARDS, AS DIRECTED BY THE ENGINEERING/PUBLIC WORKS DEPARTMENT.

CITY OF LONE TREE PUBLIC WORKS	ASPHALT PAVEMENT PATCHBACK	DETAIL NUMBER
DATE: 9/24/13 BY: GAW	DRAWING NO.: ST-01	1



*NOTE: SIGN HEIGHT SHALL BE 4" GREATER THAN RECOMMENDED MINIMUM UPPER-CASE LETTER HEIGHT PER TABLE, SHEET 3. CITY LOGO DIAMETER SHALL EQUAL UPPER-CASE LETTER HEIGHT.

CITY OF LONE TREE PUBLIC WORKS	INTERSECTION STREET NAME SIGNAGE	SHEET
DATE: 08/28/13 BY: GRW	DRAWING NO.: SN-01	1 OF 3

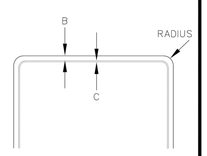
INTERSECTION STREET NAME SIGNAGE NOTES

1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT VERSION OF THE FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE "COLORADO SUPPLEMENTAL MUTCD" AND THE DOUGLAS COUNTY "ROAD AND CONSTRUCTION STANDARDS MANUAL". FURTHER SPECIFICATIONS AND ILLUSTRATIONS ARE LOCATED IN THE COLORADO DIVISION OF HIGHWAYS "M AND S STANDARDS".
2. DELINEATION OF ROADWAYS SHALL BE AS SPECIFIED IN THE COLORADO "M AND S MANUAL".
3. STREET NAME SIGNS SHALL BE MOUNTED SO THAT THEY CAN BE SEEN FROM ALL DIRECTIONS OF TRAVEL.
4. INSTALLATION OF SIGNS SHALL CONFORM TO THE MUTCD MOUNTING HEIGHT REQUIREMENTS, INCLUDING A 7-FOOT MINIMUM HEIGHT FROM THE BOTTOM OF THE LOWEST SIGN PANEL TO THE TOP GRADE OF SIDEWALK.
5. ALL NEWLY INSTALLED TRAFFIC SIGNS SHALL MEET THE MINIMUM RETRO-REFLECTIVITY AND ILLUMINATION STANDARDS AS SET FORTH BY THE MUTCD (LATEST EDITION). THESE MINIMUM REQUIREMENTS SHALL FALL UNDER THE REQUIREMENTS OF THE TWO (2) YEAR WARRANTY PERIOD FOR NEW CONSTRUCTION.
6. NON ILLUMINATED SIGNS SHALL BE USED AT MAJOR/MAJOR AND MAJOR/ARTERIAL INTERSECTIONS. THEY SHALL BE MOUNTED TO THE SIGNAL POLE WITH ASTRO-BRACS ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
7. THE CONTRACTOR INSTALLING SIGNS IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL UNDERGROUND UTILITIES. LONE TREE PUBLIC WORKS SHALL BE CONTACTED A MINIMUM OF 72 HOURS PRIOR TO INSTALLATION AT 303-662-8112.
8. FOLLOWING INSTALLATION, THE CONTRACTOR SHALL NOTIFY THE CITY OF LONE TREE PUBLIC WORKS DEPARTMENT, 303-662-8112. A FIELD INSPECTION OF LOCATION AND INSTALLATION OF ALL SIGNS SHALL BE PERFORMED BY PUBLIC WORKS. ALL DISCREPANCIES IDENTIFIED DURING THE FIELD INSPECTION MUST BE CORRECTED BEFORE THE TWO-YEAR WARRANTY PERIOD WILL BEGIN.
9. SIGNAGE AND STRIPING HAS BEEN DETERMINED BY INFORMATION AVAILABLE AT THE TIME OF REVIEW. PRIOR TO INITIATION OF THE WARRANTY PERIOD, LONE TREE RESERVES THE RIGHT TO REQUIRE MODIFICATIONS TO EXISTING OR INSTALLATION OF ADDITIONAL SIGNAGE AND/OR STRIPING IF THEY DETERMINE THAT AN UNFORESEEN CONDITION WARRANTS SUCH MODIFICATION ACCORDING TO THE MUTCD OR THE CDOT M AND S STANDARDS. ALL SIGNAGE AND STRIPING SHALL FALL UNDER THE REQUIREMENTS OF THE TWO (2) YEAR WARRANTY PERIOD FOR NEW CONSTRUCTION.
10. ANY INTERSECTION STREET NAME SIGNAGE REMOVED SHALL BE RETURNED TO THE CITY OF LONE TREE.

CITY OF LONE TREE PUBLIC WORKS	INTERSECTION STREET NAME SIGNAGE	SHEET
DATE: 04/19/12 BY: GRW	DRAWING NO.: SN-02	2 OF 3

STANDARD SIGN BORDER SPECIFICATIONS

SIGN SIZE	BORDER WIDTHS (INCH) A	B	C	RADIUS (INCH)
< 12"	N/A	.375	.375	1
≥ 12"	N/A	.375	.438	1.5



MINIMUM LETTER HEIGHTS ON STREET NAME SIGNS

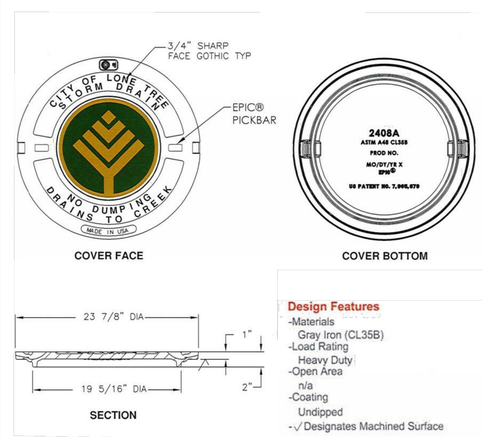
(MUTCD 2009 EDITION-TABLE 2D-2)

TYPE OF MOUNTING	TYPE OF STREET OR HIGHWAY	SPEED LIMIT	RECOMMENDED MINIMUM LETTER HEIGHT ** INITIAL UPPER-CASE	LOWER-CASE
OVERHEAD	ALL TYPES	ALL SPEED LIMITS	12 INCHES	9 INCHES
POST-MOUNTED	MULTI-LANE	MORE THAN 40 MPH	8 INCHES	6 INCHES
POST-MOUNTED	MULTI-LANE	40 MPH OR LESS	6 INCHES	4.5INCHES
POST-MOUNTED	2-LANE	ALL SPEED LIMITS	6 INCHES*	4.5 INCHES*

*ON LOCAL 2-LANE STREETS W/SPEED LIMITS OF 25 MPH OR LESS, 4" INITIAL UPPER-CASE LETTERS WITH 3" LOWER CASE LETTERS MAY BE USED.

** SUPPLEMENTARY LETTERING (E.G. ST., DR., LN., & NUMBERING) SHALL BE A MINIMUM OF ½ THE APPLICABLE RECOMMENDED MINIMUM LETTER HEIGHT PER ABOVE TABLE

CITY OF LONE TREE PUBLIC WORKS	INTERSECTION STREET NAME SIGNAGE	SHEET
DATE: 04/19/12 BY: GRW	DRAWING NO.: SN-03	3 OF 3



CITY OF LONE TREE PUBLIC WORKS	MANHOLE LID COVER	DETAIL NUMBER
DATE: 06/05/2020 BY: J. KRELL	DRAWING NO.:	MH-1

City of Lone Tree

These construction plans have been reviewed by the City of Lone Tree for street and drainage improvements only.

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REV	REVISION DESCRIPTION	DATE	DRWN	CHKD	APPR

DESIGN BY: CD
DRAWN BY: NB
CHECKED BY: CB
APPROVED BY: CB

RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS

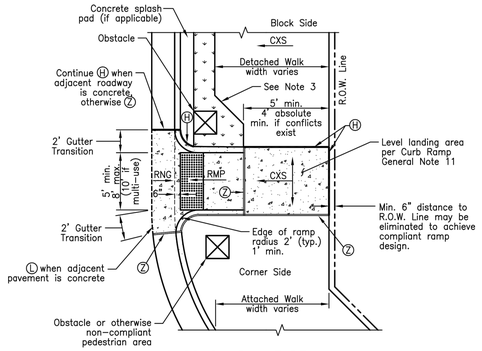
CITY OF LONE TREE DETAIL 2

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 09/29/2023
SHEET: 27 OF 48

File Location: Q:\DEN\Projects\5087-02-RRMD Overall East\Projects\1240-Couplet Roadway Design\Design\CDs\Civil\FILING 4\ROAD AND STORM\1240-DETAILS.dwg Plot Date:10/3/2023 2:59 PM Last Saved By: NBROWN

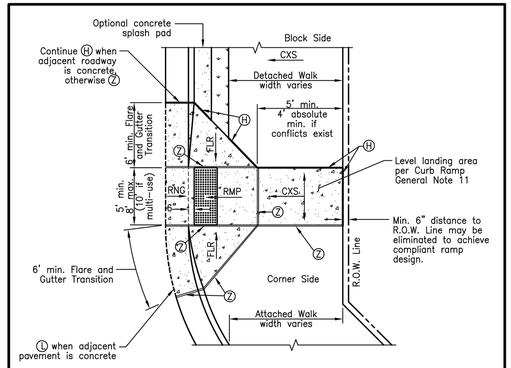


CURB RAMP – TYPE 1

Notes:
1. Type 1 Ramps shall be used where there is insufficient room for FLR slopes on both sides of the ramp.
2. Typical Curb Ramp installations shall consist of two ramps at each corner, each positioned to cross its leg of the intersection to a receiving ramp. A single ramp placed diagonally may not be used in new construction.
3. Adjacent landscaping/planted strips should transition to the back of Type 1 Curb Ramps. Alternatively, the ramp may be shortened such that its back matches the width of the landscaping, but not so much that a 12:1 maximum slope is exceeded.
4. Contact Office of City Forester at (720)913–0651 prior to performing any work within the drip line of existing R.O.W. trees.

FLR	Accessible Flare Slope = 9.5% (10.0% max)
RMP	Accessible Ramp Slope = 7.8% (8.3% max)
CXS	Accessible Cross Slope = 1.5% (2.0% max)
RNG	Accessible Running Slope = 5.0% max

DENVER PUBLIC WORKS	City and County of Denver Transportation Standards & Details	Date: 04/17
	Curb Ramp Type 1	Std. Dwg. 7.1

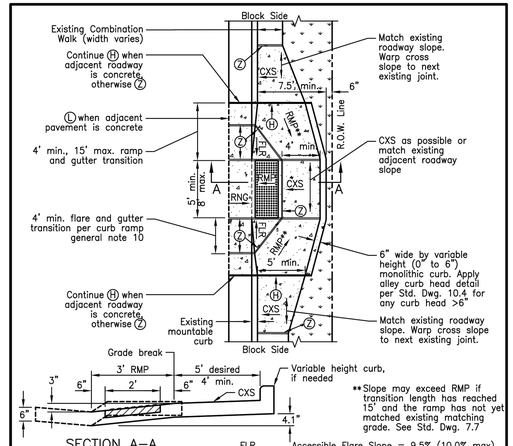


CURB RAMP – TYPE 2

Notes:
1. A Type 2 Curb Ramp shall be used where there is sufficient room for FLR slopes as depicted on this Std. Dwg., on both sides of the ramp.
2. Typical Curb Ramp installations shall consist of two ramps at each corner, each positioned to cross its leg of the intersection to a receiving ramp. A single ramp placed diagonally should not be used in new construction.
3. Contact Office of City Forester at (720)913–0651 prior to performing any work within the drip line of existing R.O.W. trees.

FLR	Accessible Flare Slope = 9.5% (10.0% max)
RMP	Accessible Ramp Slope = 7.8% (8.3% max)
CXS	Accessible Cross Slope = 1.5% (2.0% max)
RNG	Accessible Running Slope = 5.0% max

DENVER PUBLIC WORKS	City and County of Denver Transportation Standards & Details	Date: 04/17
	Curb Ramp Type 2	Std. Dwg. 7.2a

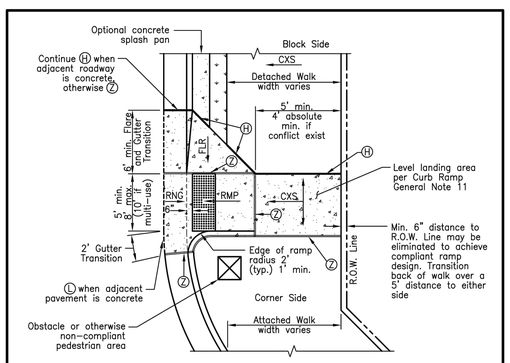


SECTION A–A

FLR	Accessible Flare Slope = 9.5% (10.0% max)
RMP	Accessible Ramp Slope = 7.8% (8.3% max)
CXS	Accessible Cross Slope = 1.5% (2.0% max)
RNG	Accessible Running Slope = 5.0% max

Notes:
1. A Modified Curb Ramp may be used in retrofit situations wherever there are existing obstructions or inadequate R.O.W. width at the intersection of existing residential streets to provide a Type 1, 2, or 3 Curb Ramp. It may also be used at mid block locations when allowed.
2. Typical Curb Ramp installations shall consist of two ramps at each corner, each positioned to cross its leg of the intersection to a receiving ramp. A single ramp placed diagonally should not be used in new construction.
3. Contact Office of City Forester at (720)913–0651 prior to performing any work within the drip line of existing R.O.W. trees.
4. All grade breaks should be aligned with Ⓗ or Ⓩ joints.

DENVER PUBLIC WORKS	City and County of Denver Transportation Standards & Details	Date: 04/17
	Curb Ramp Type 2 Modified (For Combination Curb, Gutter and Sidewalk	Std. Dwg. 7.2b

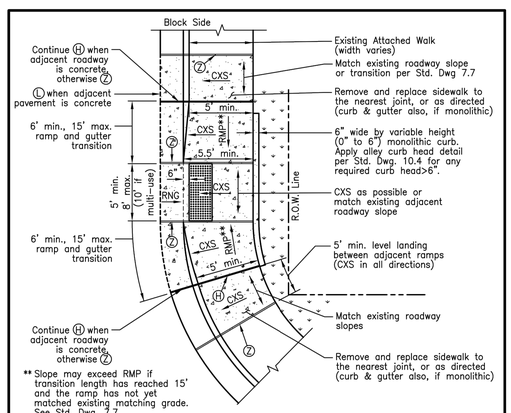


CURB RAMP – TYPE 3

Notes:
1. A Type 3 Curb Ramp shall be used where there is insufficient room for a compliant flare on one side of the ramp.
2. Typical Curb Ramp installations shall consist of two ramps at each corner, each positioned to cross its leg of the intersection to a receiving ramp. A single ramp placed diagonally may not be used in new construction.
3. Contact Office of City Forester at (720)913–0651 prior to performing any work within the drip line of existing R.O.W. trees.

FLR	Accessible Flare Slope = 9.5% (10.0% max)
RMP	Accessible Ramp Slope = 7.8% (8.3% max)
CXS	Accessible Cross Slope = 1.5% (2.0% max)
RNG	Accessible Running Slope = 5.0% max

DENVER PUBLIC WORKS	City and County of Denver Transportation Standards & Details	Date: 04/17
	Curb Ramp Type 3	Std. Dwg. 7.3

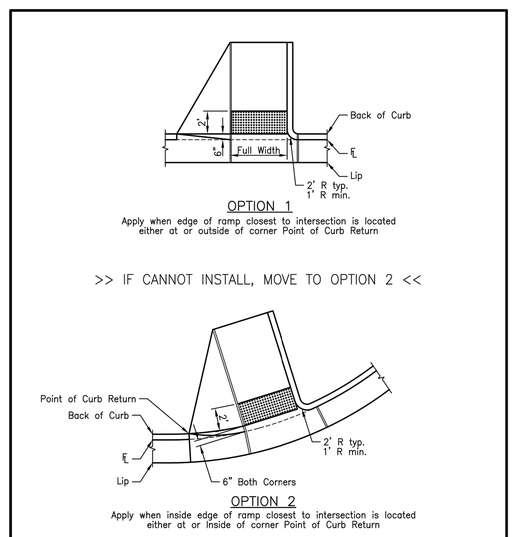


CURB RAMP – TYPE 4

Notes:
1. A Type 4 Curb Ramp may be used in retrofit situations wherever there are existing obstructions or inadequate R.O.W. width at the intersection of existing residential streets to provide a Type 1, 2, or 3 Curb Ramp.
2. Typical Curb Ramp installations shall consist of two ramps at each corner, each positioned to cross its leg of the intersection to a receiving ramp.
3. Any proposed single ramp placed diagonally at a corner will only be considered in retrofit situations at the intersection of existing residential streets, and must specifically be approved by PW in writing.
4. Contact Office of City Forester at (720)913–0651 prior to performing any work within the drip line of existing R.O.W. trees.

FLR	Accessible Flare Slope = 9.5% (10.0% max)
RMP	Accessible Ramp Slope = 7.8% (8.3% max)
CXS	Accessible Cross Slope = 1.5% (2.0% max)
RNG	Accessible Running Slope = 5.0% max

DENVER PUBLIC WORKS	City and County of Denver Transportation Standards & Details	Date: 04/17
	Curb Ramp Type 4	Std. Dwg. 7.4



DENVER PUBLIC WORKS	City and County of Denver Transportation Standards & Details	Date: 04/17
	Curb Ramp Truncated Dome Placement Options	Std. Dwg. 7.6a

City of Lone Tree

These construction plans have been reviewed by the City of Lone Tree for street and drainage improvements only.

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REV	REVISION DESCRIPTION	DATE	DRWN	CHKD	APPR

DESIGN BY:	CD
DRAWN BY:	NB
CHECKED BY:	CB
APPROVED BY:	CB

RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS

CITY OF DENVER DETAIL 1

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 09/29/2023
SHEET: 28 OF 48

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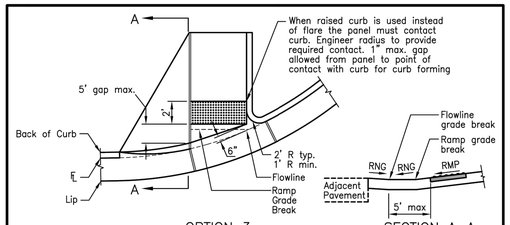
File Location: Q:\DEN\Projects\5087-02-RRMD Overall East\Projects\1240-Couplet Roadway Design\Design\CDs\Civil\FILING 4\ROAD AND STORM\1240- DETAILS.dwg Plot Date:10/3/2023 2:59 PM Last Saved By: NBROWN

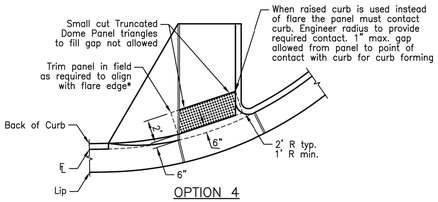


OPTION 3

Ramp Dome Placement when ramp is not aligned perpendicular to curb/flowline

SECTION A–A

>> IF CANNOT INSTALL, MOVE TO OPTION 4 <<

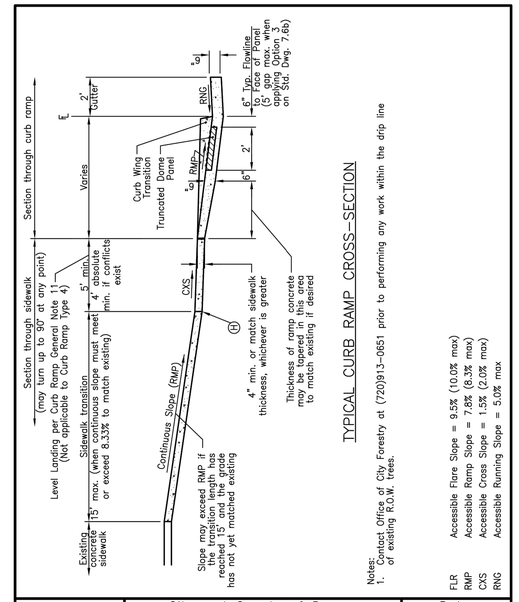


OPTION 4

Ramp Dome Placement when ramp is not aligned perpendicular to curb/flowline

*Refer to note 16 on Std. Dwg. 7.0b

DENVER PUBLIC WORKS	City and County of Denver Transportation Standards & Details	Date: 04/17
	Curb Ramp Truncated Dome Placement Options	Std. Dwg. 7.6b

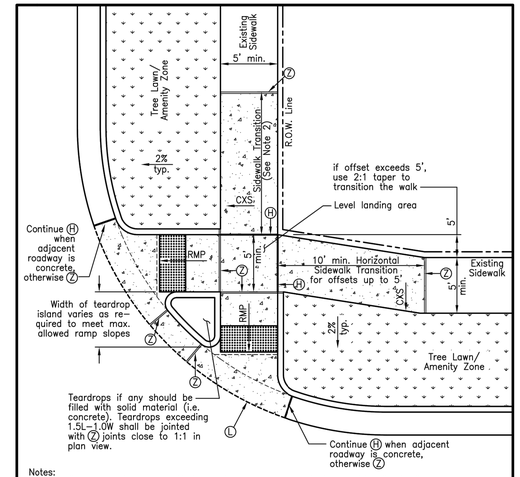


TYPICAL CURB RAMP CROSS–SECTION

Notes:
1. Contact Office of City Forestry at (720)913–0851 prior to performing any work within the drip line of existing R.O.W. trees.

FLR	Accessible Flare Slope = 9.5% (10.0% max)
RMP	Accessible Ramp Slope = 7.8% (8.3% max)
CXS	Accessible Cross Slope = 1.5% (2.0% max)
RNG	Accessible Running Slope = 5.0% max

DENVER PUBLIC WORKS	City and County of Denver Transportation Standards & Details	Date: 04/17
	Curb Ramp Typical Section	Std. Dwg. 7.7



Notes:
1. To allow required ramp length to meet maximum allowed slopes, sidewalks leading up to curb ramps may be offset as shown.
2. Sidewalk transition length need not exceed 15', but long slope must be uniform. See Std. Dwg. 7.7 for additional information.
3. Complete jointing details are not included on this drawing.
4. Ramps and landing area must be poured monolithically.

FLR	Accessible Flare Slope = 9.5% (10.0% max)
RMP	Accessible Ramp Slope = 7.8% (8.3% max)
CXS	Accessible Cross Slope = 1.5% (2.0% max)
RNG	Accessible Running Slope = 5.0% max

DENVER PUBLIC WORKS	City and County of Denver Transportation Standards & Details	Date: 04/17
	Typical Sidewalk Transitions to Curb Ramp Landing	Std. Dwg. 7.8

City of Lone Tree

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Engineering Division Acceptance Block

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www.merrick.com

REV	REVISION DESCRIPTION	DATE	DRWN	CHKD	APPR

DESIGN BY:	CD
DRAWN BY:	NB
CHECKED BY:	CB
APPROVED BY:	CB

RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS

CITY OF DENVER DETAIL 2

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 09/29/2023
SHEET: 29 OF 48

File Location: Q:\DEN\Projects\5087-02-RRMD Overall East\Projects\1240-Couplet Roadway Design\Design\CDs\Civil\FILING 4\ROAD AND STORM\1240- DETAILS.dwg Plot Date:10/3/2023 2:59 PM Last Saved By: NBROWN

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LIGHTING AND ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	NEW TYPE 'LP' LED POST TOP PEDESTRIAN LUMINAIRE ON 12' LIGHT STANDARD 30-WATT PEDESTRIAN LIGHT. REFER TO LIGHTING DETAILS FOR ADDITIONAL INFORMATION.
	EXISTING ROADWAY LIGHT TO REMAIN.
	EXISTING PEDESTRIAN LIGHTS TO REMAIN.
S1 S2	NEW HEAVY DUTY POLYMER CONCRETE SPLICE BOX WITH INCIDENTAL TRAFFIC RATED TIER 22 BOLTED COVER. S1= 11" x 18" x 12" Dp. S2= 13" x 24" x 12" Dp.
	HOME RUN CIRCUIT. NUMBER OF ARROWS INDICATES THE NUMBER OF CIRCUITS.
	ELECTRICAL CONDUIT. SEE FEEDER SCHEDULE FOR SIZE AND WIRING QUANTITIES.
	3" HDPE BORED CONDUIT
T	NEW PROPOSED PAD MOUNTED TRANSFORMER
T	EXISTING PAD MOUNTED TRANSFORMER
LCC LCC	EXISTING LIGHTING CONTROL CENTER "LCC#".

GENERAL NOTES

1. UNLESS OTHERWISE NOTED, THE WORK DESCRIBED ON THE PLANS SHALL INCLUDE PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR COMPLETE AND OPERATIONAL ELECTRICAL SYSTEMS. FURNISH ALL REQUIRED ITEMS WHETHER SUCH ARE SPECIFICALLY SHOWN OR NOT.

2. INFORMATION SHOWN ON THE DRAWINGS IS DIAGRAMMATIC ONLY AND SHALL NOT BE SCALED. OBTAIN AND VERIFY EXACT LOCATIONS, MEASUREMENTS, LEVELS, SPACE REQUIREMENTS, POTENTIAL CONFLICTS AMONG TRADES, ETC. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES AND FOR ADJUSTING THE WORK AS REQUIRED BY THE ACTUAL CONDITIONS OF THE PROJECT.

3. COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES, REGULATIONS AND ORDINANCES, AND THE LATEST APPLICABLE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) OF THE NATIONAL FIRE PREVENTION ASSOCIATION AS INTERPRETED BY THE LOCAL INSPECTION AUTHORITY HAVING JURISDICTION.

4. SECURE AND PAY FOR ALL PERMITS, FEES, TAXES, LICENSES AND INSPECTIONS IN CONNECTION WITH THE ELECTRICAL WORK INCLUDING ANY CONNECTION FEES OR SERVICE MODIFICATION COSTS BY LOCAL UTILITIES. 5. INSTRUCTIONS SUCH AS "PROVIDE..." SHALL MEAN, "CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING COMPLETE IN EVERY RESPECT."

6. MAINTAIN A COMPLETE SET OF ELECTRICAL DRAWINGS AT THE JOB SITE WITH ALL CHANGES OR VARIATIONS IN THE WORK MARKED IN AN OBVIOUS MANNER. A COMPLETE AS-BUILT SET OF DRAWINGS INCORPORATING ALL MARK-UPS OF THE WORK SHALL BE DELIVERED TO THE OWNER UPON THE COMPLETION OF THE PROJECT.

7. SCHEDULE THE WORK TO CONFORM TO THE PROGRESS OF THE OTHER TRADES. COORDINATE ALL ELECTRICAL INSTALLATION AND ROUGH-IN AS REQUIRED.

8. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH INFORMATION INDICATED ON THE DRAWINGS AND IN FULL ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

9. PROVIDE ALL CUTTING, CHANNELING, CHASING, DRILLING, AND OTHER OPERATIONS AS MAY BE REQUIRED FOR THE ELECTRICAL WORK. ALL PATCHING AND FINISHING SHALL BE DONE BY THE CONTRACTOR.

10. PROVIDE POWER AND LIGHTING FOR THE CONSTRUCTION WORK AS REQUIRED. ALL TEMPORARY POWER AND LIGHTING SHALL COMPLY WITH NEC AND OSHA REQUIREMENTS.

11. GUARANTEE ALL MATERIALS, LABOR, WORKMANSHIP AND THE SUCCESSFUL OPERATION OF ALL EQUIPMENT INSTALLED UNDER THIS CONTRACT FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE. REPAIR OR REPLACE, AT NO EXPENSE TO THE OWNER, ALL DEFECTS WHICH MAY ARISE DURING THIS TIME DUE TO INFERIOR OR DEFECTIVE MATERIALS, EQUIPMENT OR WORKMANSHIP.

12. POWER OUTAGES, WHEN NECESSARY, SHALL BE SCHEDULED SUFFICIENTLY IN ADVANCE WITH THE OWNER. POWER SHALL BE INTERRUPTED ONLY AT OWNER APPROVED TIMES.

13. ALL MATERIALS SHALL BE NEW, SHALL BE SUITABLE FOR THE PURPOSE, AND SHALL BEAR THE UL LABEL. DAMAGED OR DEFECTIVE MATERIALS SHALL BE REPLACED.

14. PROVIDE FUSIBLE AND NONFUSIBLE HEAVY DUTY TYPE DISCONNECT SWITCHES WHERE SHOWN AND REQUIRED. SWITCHES SHALL BE HORSEPOWER RATED, QUICK-MAKE, QUICK-BREAK. FUSIBLE SWITCHES UP TO 600A SHALL BE EQUIPPED WITH REJECTION CLIPS FOR CLASS "R" FUSES.

15. ENCLOSURES SHALL BE SUITABLE FOR THE ENVIRONMENT OF THE INSTALLATION.

16. CONDUITS SHALL BE PROVIDED FOR ALL WIRING AS SHOWN, UNLESS OTHERWISE NOTED. EMT AND FLEXIBLE METALLIC CONDUIT SHALL BE USED ABOVE GRADE. GALVANIZED RIGID OR PVC CONDUIT SHALL BE USED IN SLABS OR BELOW GRADE. PROVIDE APPROVED COUPLINGS AND CONNECTORS FOR ALL CONNECTIONS. FINAL CONNECTIONS TO MOTORS AND OTHER VIBRATING OR ROTATING EQUIPMENT SHALL BE MADE IN FLEXIBLE METALLIC CONDUIT. CONDUIT SHALL BE ROUTED CONCEALED IN FINISHED SPACES. WHERE USED, EXPOSED CONDUIT SHALL BE ROUTED TO FOLLOW BUILDING LINES AS CLOSELY AS POSSIBLE.

17. ALL CONDUCTORS SHALL BE RATED 600 VOLTS, AND SHALL BE OF SIZES AND TYPES AS INDICATED OR AS REQUIRED BY THE NEC. ALL CONDUCTORS SHALL BE COPPER, THWN-2 OR XHHW INSULATION, MINIMUM #12 AWG WIRE SIZE. CONDUCTORS SHALL BE CONTINUOUS BETWEEN OUTLETS OR JUNCTION BOXES. SPLICES SHALL BE IN READILY ACCESSIBLE PULL BOXES, JUNCTION BOXES, OR OUTLET BOXES AND MADE IN AN ACCEPTABLE MANNER.

18. BOXES SHALL BE GALVANIZED STEEL OR CAST WATERPROOF TYPES OR POLYMER CONCRETE TYPE FOR IN-GRADE BOXES. PROVIDE BOXES OF PROPER SIZE AND TYPE SUITABLE FOR THE DEVICE TO BE INSTALLED.

19. SWITCHES: HEAVY-DUTY SPECIFICATION GRADE, IVORY, 20A, 120-277 V AC, OR AS SHOWN ON THE DRAWINGS.
20. RECEPTACLES: HEAVY-DUTY SPECIFICATION GRADE, IVORY, 20A, 120V AC, OR AS SHOWN ON THE DRAWINGS.

21. GROUND THE ENTIRE ELECTRICAL SYSTEM IN COMPLIANCE WITH THE NEC AND LOCAL REQUIREMENTS. ALL GROUNDING AND BONDING CONDUCTORS SHALL BE COPPER. THE USE OF CONDUIT AS A GROUNDING CONDUCTOR SHALL NOT BE PERMITTED.

22. INSTALL AND WIRE ALL EQUIPMENT SUCH AS MAGNETIC STARTERS, SPEED CONTROLLERS, RELAYS, LINE VOLTAGE THERMOSTATS, SWITCHES, ETC., FURNISHED BY OTHERS, WHICH CONTROL LINE VOLTAGE OR THE RUNNING CURRENT OF ELECTRICALLY POWERED EQUIPMENT.

23. PROVIDE HORSEPOWER RATED, FUSIBLE DISCONNECT SWITCHES FOR ALL MOTORS OR AS INDICATED. PROVIDE HORSEPOWER RATED, THERMAL OVERLOAD SWITCHES FOR EACH MOTOR FURNISHED SINGLE PHASE, 120 VOLTS AND WITHOUT ANY OTHER OVERLOAD DEVICE.

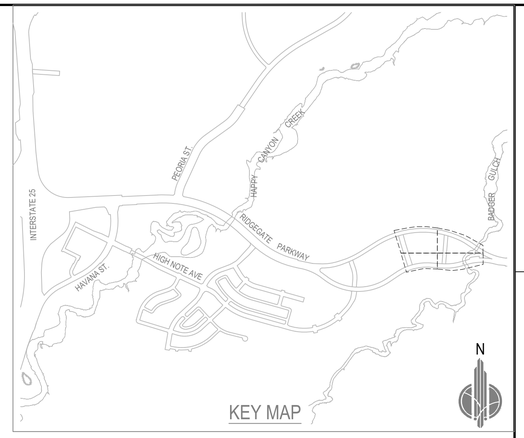
24. UPON COMPLETION OF THE WORK, AT A TIME TO BE ACCEPTABLE WITH THE OWNER, THE CONTRACTOR SHALL DEMONSTRATE THE OPERATION OF THE ENTIRE ELECTRICAL INSTALLATION TO THE OWNER. PROVIDE INSTRUCTION MANUALS FOR ALL EQUIPMENT AS APPLICABLE.

25. UPON COMPLETION OF THE PROJECT, CLEAN ALL ELECTRICAL EQUIPMENT AND DEVICES OF ALL FOREIGN MATTER. REMOVE ALL TEMPORARY WIRING, WORK OUTLETS, ETC.

SCHEDULE OF LIGHTING DEVICES

LONG DESCRIPTION			LUMINAIRE (LED) (SPECIAL)	LIGHT STANDARD ALUMINUM (12 FOOT)	LIGHT STANDARD FOUNDATION	NOTES
PLAN LABELS			**'LP'**	**'LP'**	**'LP'**	
UNITS			**EACH**	**EACH**	**EACH**	
SHEET No.	I.D. No.	BASELINE				
	LP2-16	RIDGEGATE PKWY EB	1	1	1	
	LP2-17	RIDGEGATE PKWY EB	1	1	1	
	LP2-18	RIDGEGATE PKWY EB	1	1	1	
	LP2-19	RIDGEGATE PKWY EB	1	1	1	
	LP2-20	RIDGEGATE PKWY EB	1	1	1	
	LP2-42	RIDGEGATE PKWY WB	1	1	1	
	LP2-43	RIDGEGATE PKWY WB	1	1	1	
	LP2-44	RIDGEGATE PKWY WB	1	1	1	
	LP2-45	RIDGEGATE PKWY WB	1	1	1	
	LP2-46	NOT USED				
	LP2-47	RIDGEGATE PKWY WB	1	1	1	
	LP2-48	RIDGEGATE PKWY WB	1	1	1	
	LP2-49	RIDGEGATE PKWY WB	1	1	1	
	LP2-50	RIDGEGATE PKWY WB	1	1	1	
	LP2-51	RIDGEGATE PKWY WB	1	1	1	
	LP2-78	NOT USED				
	LP2-79	Road C	1	1	1	
	LP2-80	Road C	1	1	1	
	LP2-81	Road C	1	1	1	
	LP2-82	NOT USED				
	LP2-83	NOT USED				
	LP2-84	Road C	1	1	1	
	LP2-85	Road C	1	1	1	
	LP2-86	Road C	1	1	1	
	LP2-87	Road C	1	1	1	
	LP2-88	Road C	1	1	1	
	LP2-89	Road C	1	1	1	
	LP2-90	Road C	1	1	1	
	LCC2	RIDGEGATE PKWY WB				
LE1.3	LCC3	RIDGEGATE PKWY WB				
LE1.5	LCC4	RIDGEGATE PKWY EB				
TOTALS			24	24	24	

NOTES:
1.



CLANTON & ASSOCIATES
LIGHTING DESIGN AND ENGINEERING
4699 NAUTILUS COURT SOUTH STE. 102
BOULDER, CO 80301
303-530-7229

City of Lone Tree

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REV	REVISION DESCRIPTION	DATE	DRWN	CHKD	APPR

DESIGN BY: TB
DRAWN BY: ES
CHECKED BY: GF
APPROVED BY: DS

RIDGEGATE EAST FILING NO. 4
LIGHTING AND ELECTRICAL PLANS

LIGHTING COVERSHEET

ISSUED FOR REVIEW
FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 9/29/2023
SHEET: 30 OF 48

File Location:Z:\21100 Ridgegate Phase 1 Streetscapes\CAD\Filing 4\Filing 4_Coupet Lighting_SHEETS.dwg Plot Date:9/29/2023 1:13 PM Last Saved By: TRAVIS

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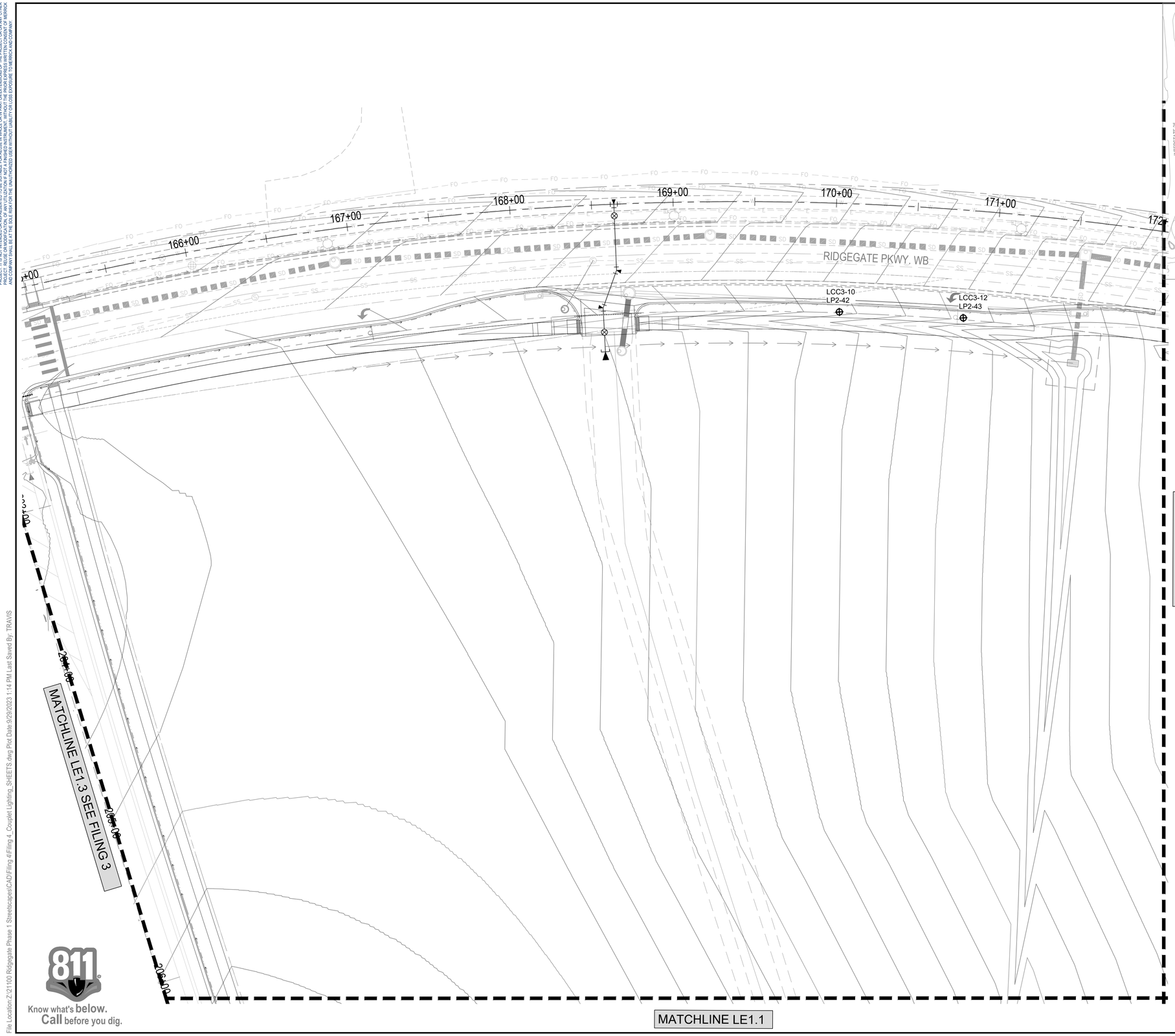

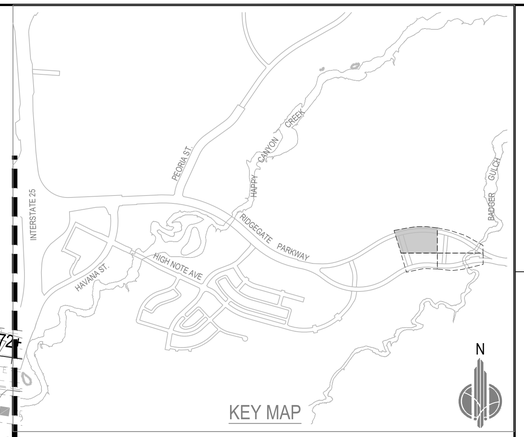

KEY MAP

0 15 30 60
SCALE: 1" = 30'-0"
NORTH

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City of Lone Tree

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DRAWN BY:	ES
CHECKED BY:	GF
APPROVED BY:	DS

RIDGEGATE EAST FILING NO. 4
LIGHTING AND ELECTRICAL PLANS

LIGHTING PLANS

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 9/29/2023
SHEET: 31 OF 48

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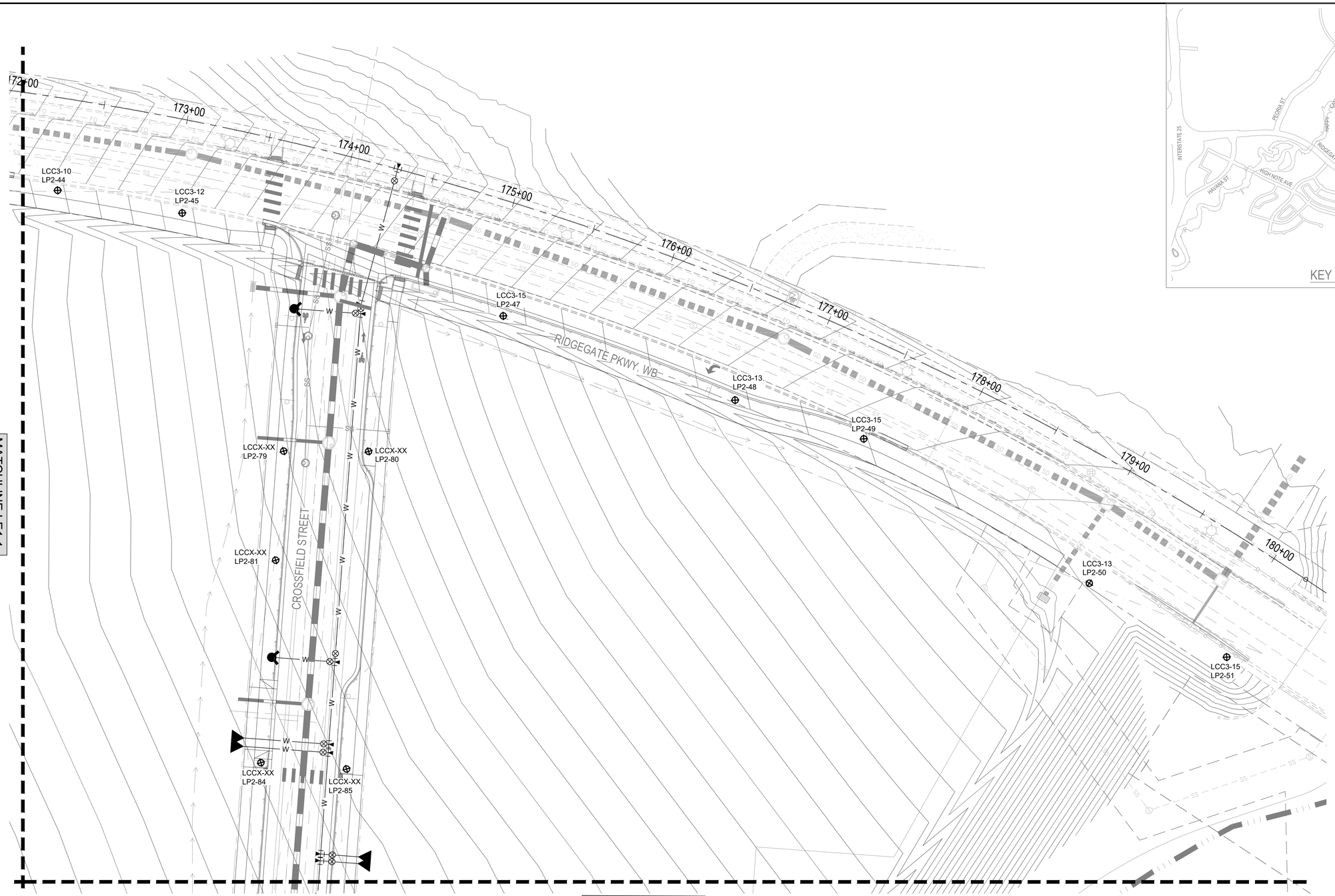

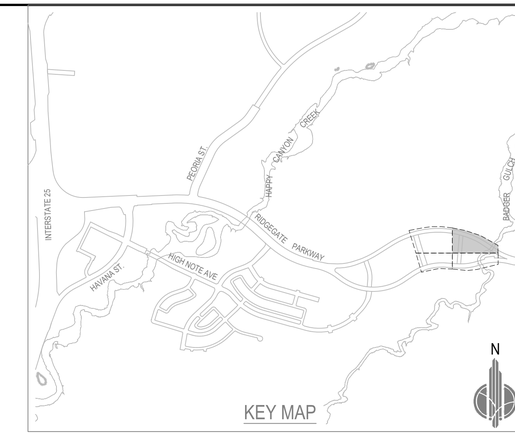

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JOB NO.: 65121240
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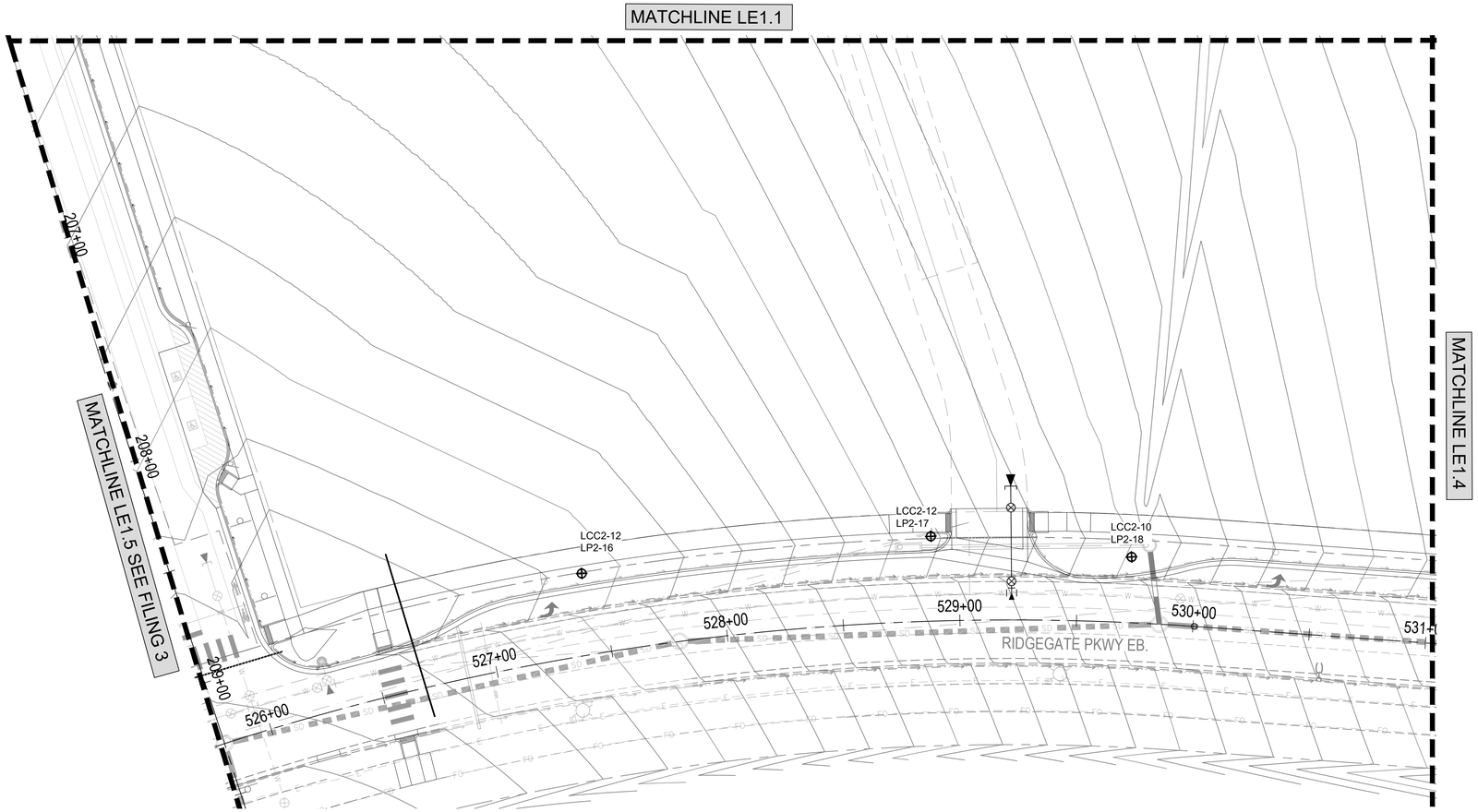

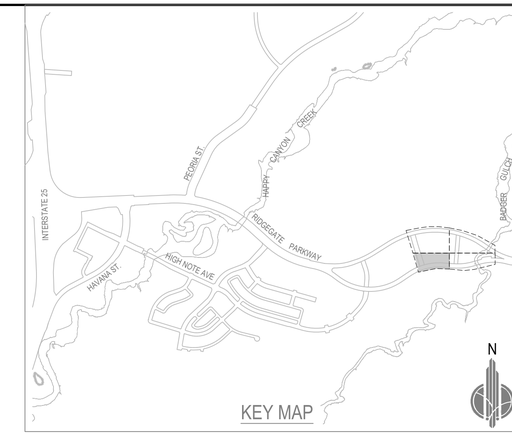

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RIDGEGATE EAST FILING NO. 4
LIGHTING AND ELECTRICAL PLANS

LIGHTING PLANS

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FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
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SHEET: 33 OF 48

File Location: Z:\21100 Ridgegate Phase 1 Streetscapes\CAD\Filing 4\Filing 4_Couplet Lighting_SHEETS.dwg Plot Date:9/29/2023 1:14 PM Last Saved By: TRAVIS

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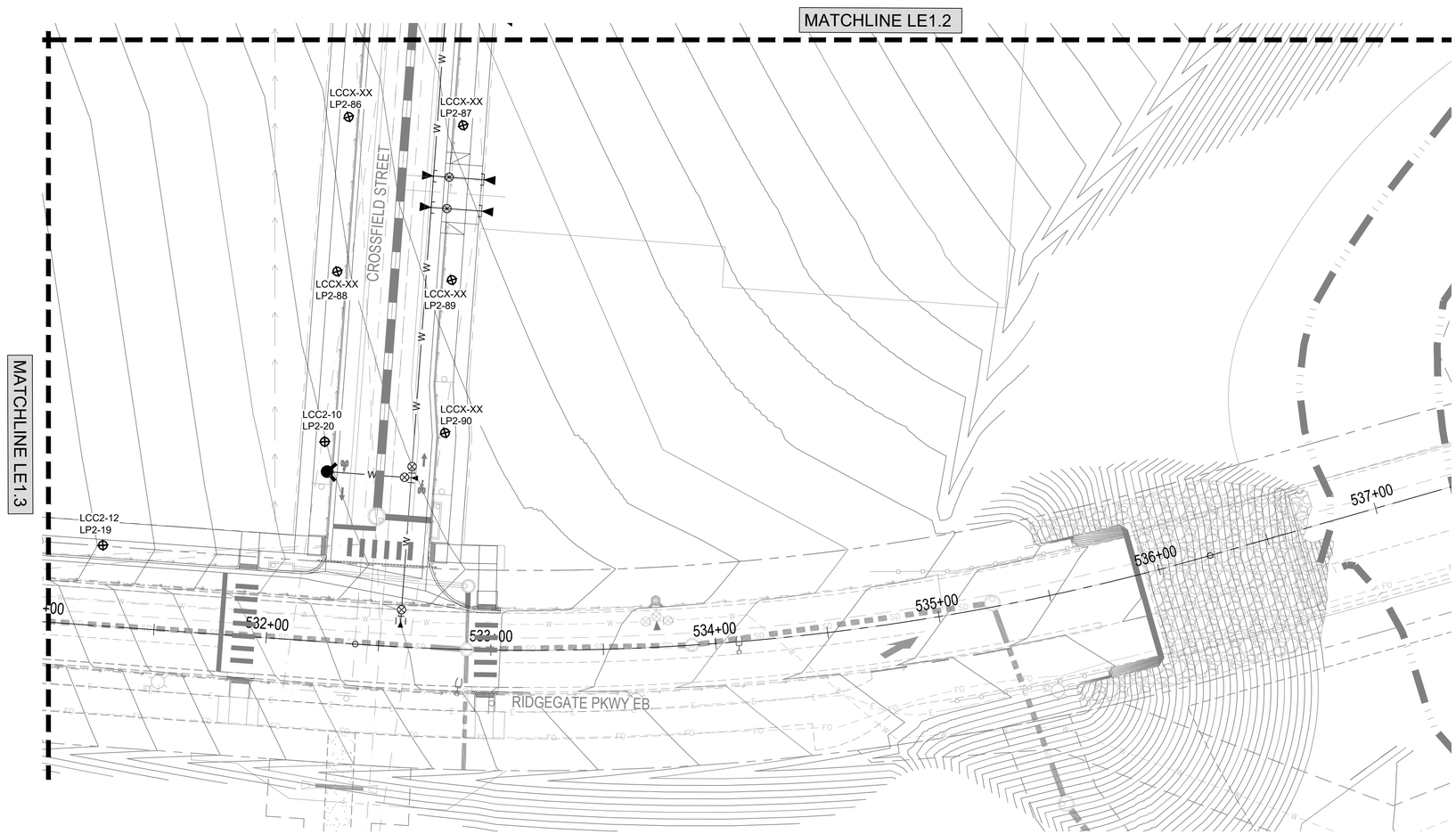

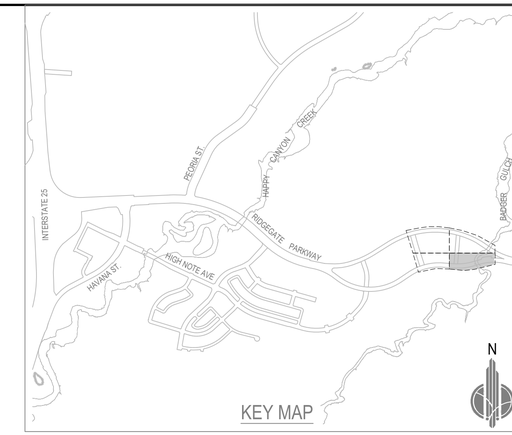

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SHEET: 34 OF 48

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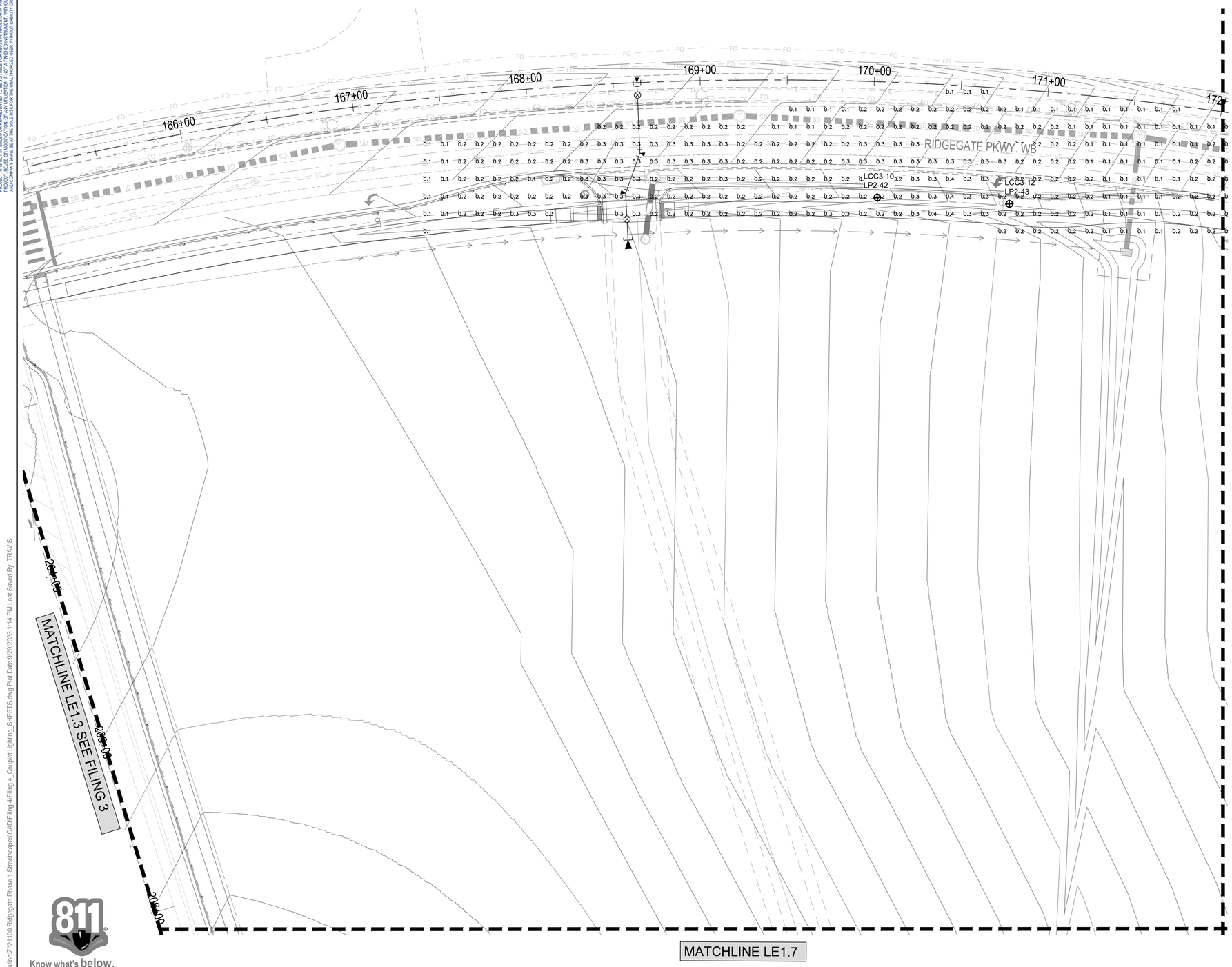
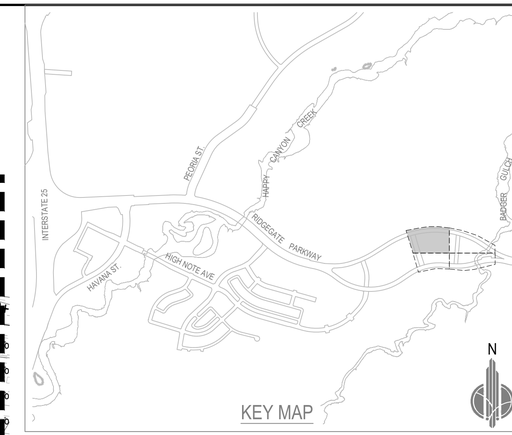
Luminaire Schedule					
Label	Arrangement	Description	Tag	LLF	Luminaire Lumens
PPT-196L-650-CW-G2-5-UNV	SINGLE	PPT-196L-650-CW-G2-5-UNV		1	3347

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Ridgegate Parkway	Illuminance	Fc	0.35	1.7	0.1	3.5	17





0 15 30 60
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RIDGEGATE EAST FILING NO. 4
LIGHTING AND ELECTRICAL PLANS

PHOTOMETRIC PLANS

ISSUED FOR REVIEW
FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 9/29/2023
SHEET: 35 OF 48

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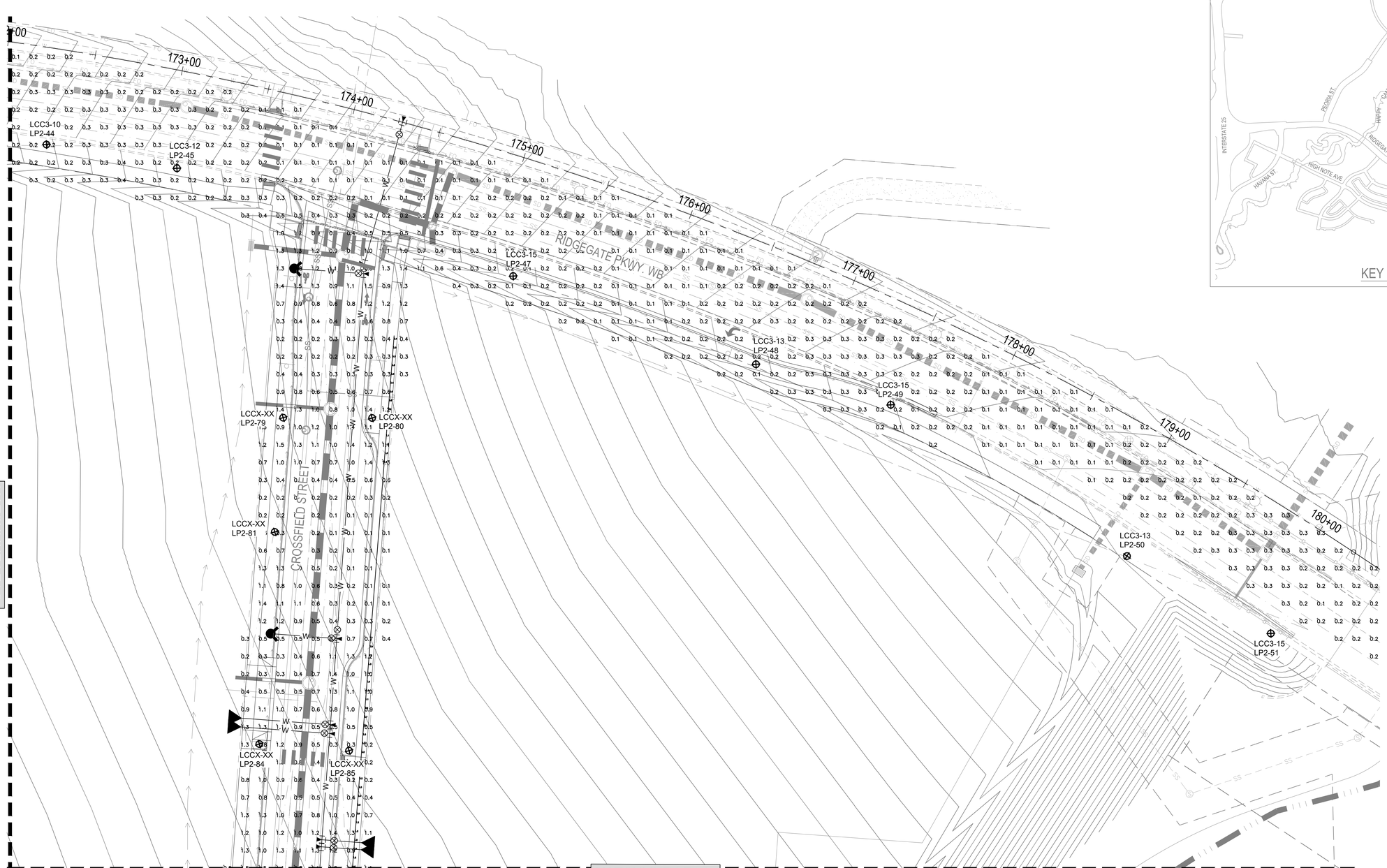

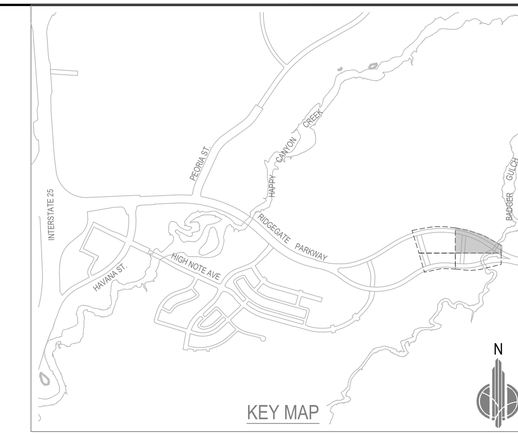

Luminaire Schedule					
Label	Arrangement	Description	Tag	LLF	Luminaire Lumens
PPT-196L-650-CW-G2-5-UNV	SINGLE	PPT-196L-650-CW-G2-5-UNV		1	3347

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Ridgegate Parkway	Illuminance	Fc	0.35	1.7	0.1	3.5	17

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RIDGEGATE EAST FILING NO. 4 LIGHTING AND ELECTRICAL PLANS

PHOTOMETRIC PLANS

ISSUED FOR REVIEW

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JOB NO.: 65121240
DATE: 9/29/2023
SHEET: 36 OF 48

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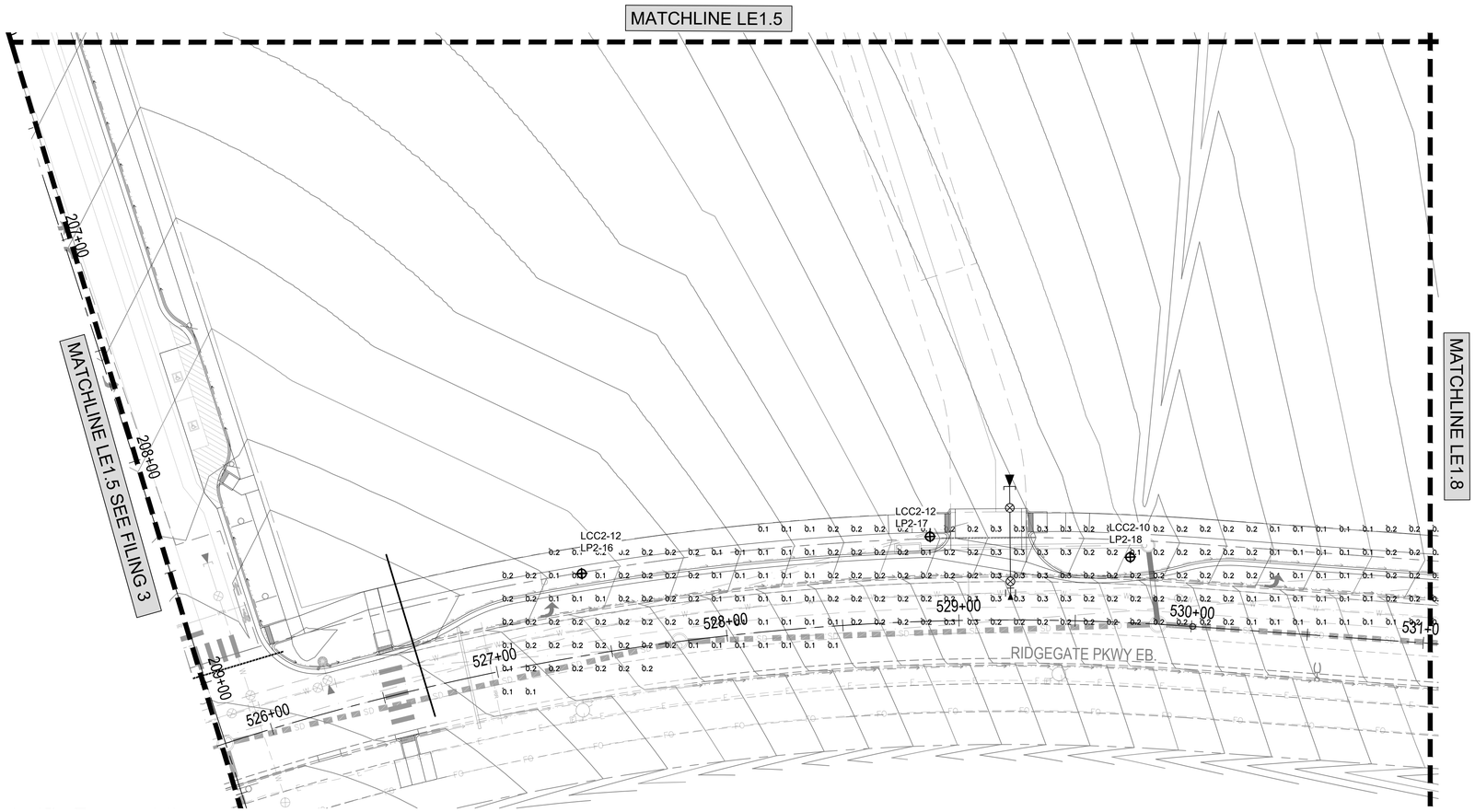

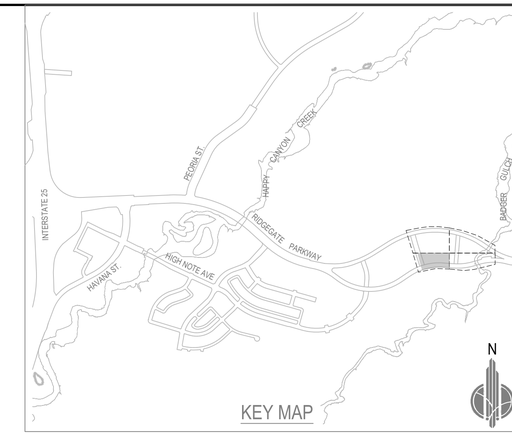

Luminaire Schedule					
Label	Arrangement	Description	Tag	LLF	Luminaire Lumens
PPT-196L-650-CW-G2-5-UNV	SINGLE	PPT-196L-650-CW-G2-5-UNV		1	3347

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Ridgegate Parkway	Illuminance	Fc	0.35	1.7	0.1	3.5	17

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RIDGEGATE EAST FILING NO. 4
LIGHTING AND ELECTRICAL PLANS

PHOTOMETRIC PLANS

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
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SHEET: 37 OF 48

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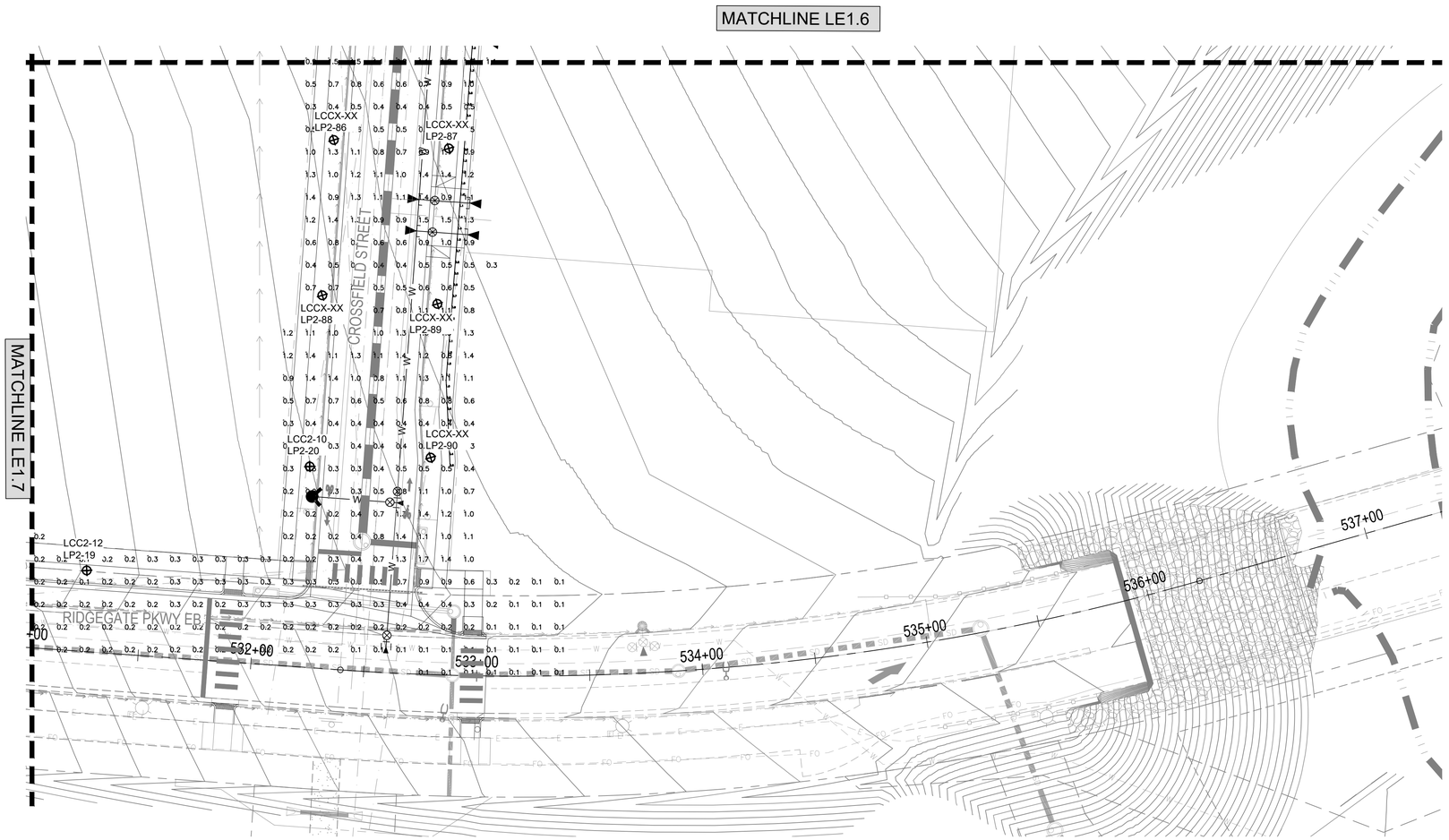

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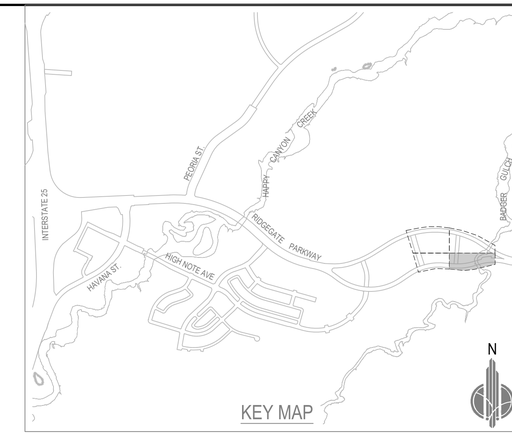
SCALE: 1" = 30'-0"
NORTH

Luminaire Schedule					
Label	Arrangement	Description	Tag	LLF	Luminaire Lumens
PPT-196L-650-CW-G2-5-UNV	SINGLE	PPT-196L-650-CW-G2-5-UNV		1	3347

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Ridgegate Parkway	Illuminance	Fc	0.35	1.7	0.1	3.5	17



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LIGHTING AND ELECTRICAL PLANS

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TRAFFIC SIGNAL – GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF LONE TREE AND DOUGLAS COUNTY SPECIFICATIONS, "STATE DEPARTMENT OF TRANSPORTATION – STATE OF COLORADO – STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2022", THE LATEST EDITION OF THE MUTCD, AND THE PROJECT DRAWINGS AND SPECIFICATIONS INCLUDED HEREIN. SINCE THE CITY WILL MAINTAIN THE TRAFFIC CONTROL DEVICES ON PUBLIC RIGHTS-OF-WAY, ALL TRAFFIC CONTROL DEVICES SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH CITY OF LONE TREE STANDARDS.

2. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY THE CITY OF LONE TREE ENGINEERING DIVISION. THE CITY RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO ITS STANDARDS AND SPECIFICATIONS. THE CONTRACTOR SHALL NOTIFY THE CITY OF LONE TREE PUBLIC WORKS INSPECTION SECTION, (303) 662-8112, A MINIMUM OF 48 HOURS AND A MAXIMUM OF 96 HOURS PRIOR TO STARTING CONSTRUCTION, AND/OR BEFORE RESTARTING CONSTRUCTION AFTER A SHUTDOWN OF MORE THAN 10 DAYS.

3. A ROW/CONSTRUCTION PERMIT MUST BE OBTAINED BEFORE ANY WORK WITHIN EXISTING OR PROPOSED PUBLIC ROW. THE PERMIT APPLICATION MUST BE SUBMITTED TO THE CITY OF LONE TREE ENGINEER FOR REVIEW/PROCESSING A MINIMUM OF 7 DAYS PRIOR TO REQUESTED START FOR THE WORK IN THE ROW.

4. A PLAN FOR TRAFFIC CONTROL DURING CONSTRUCTION SHALL BE SUBMITTED TO THE CITY OF LONE TREE ENGINEER FOR ACCEPTANCE WITH THE PERMIT APPLICATION. AN EXCAVATION OR PUBLIC IMPROVEMENTS CONSTRUCTION PERMIT WILL NOT BE ISSUED WITHOUT AN APPROVED TRAFFIC CONTROL PLAN FOR TRAFFIC CONTROL DURING CONSTRUCTION.

5. THE BID QUANTITIES FOR THE PROJECT ARE THE RESULT OF A CAREFUL QUANTITY TAKEOFF. THE CONTRACTOR SHALL, HOWEVER, SATISFY HIMSELF AS TO THE ACCURACY OF ALL QUANTITIES AND BRING ANY DISCREPANCIES TO THE ATTENTION OF THE CITY, IN WRITING, AT THE EARLIEST OPPORTUNITY.

6. THE PHYSICAL FEATURES WITHIN THE LIMITS OF THE PROJECT HAVE BEEN SHOWN BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL FEATURES, INCLUDING ALL UNDERGROUND AND ABOVE GROUND UTILITIES, PRIOR TO BEGINNING ANY WORK. SEE "CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", SUBSECTION 105.11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD LOCATING AND VERIFYING ALL UTILITY INFORMATION. FOR UTILITY CONSTRUCTION COORDINATION, THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER FOR COLORADO AT 1-800-922-1987, 303-232-1991, or 811.

7. THE CONTRACTOR SHALL USE BEST MANAGEMENT PRACTICES (BMP) TO CONTAIN AND PREVENT MATERIALS/DEBRIS CAUSED BY PROJECT WORK FROM FLOWING INTO STATE WATERS.

8. ALL ITEM LOCATIONS ARE APPROXIMATE AND ARE TO BE FIELD LOCATED BY THE CONTRACTOR AND APPROVED BY THE CITY OF LONE TREE, INCLUDING BUT NOT LIMITED TO CAISSONS, SIGNAL HEADS, PULL BOXES AND CONTROLLER CABINET.

9. UPON COMPLETION OF THE WORK, CONTRACTOR SHALL SUPPLY RECORD DRAWINGS, CORRECTED PLANS AND ANY OTHER ADDITIONAL DATA REQUIRED BY THE CITY OF LONE TREE.

10. CONSTRUCTION SHALL NOT BEGIN UNTIL GESC, ELECTRICAL AND CONSTRUCTION PERMITS HAVE BEEN ISSUED. IF A CITY OF LONE TREE ENGINEERING INSPECTOR IS NOT AVAILABLE AFTER PROPER NOTICE OF CONSTRUCTION ACTIVITY HAS BEEN PROVIDED, THE PERMITTED MAY COMMENCE WORK IN THE INSPECTOR'S ABSENCE. HOWEVER, THE CITY RESERVES THE RIGHT NOT TO ACCEPT THE IMPROVEMENT IF SUBSEQUENT TESTING REVEALS AN IMPROPER INSTALLATION.

11. THE CITY OF LONE TREE RESERVES THE RIGHT TO REQUIRE ADDITIONAL SIGNAGE IF THEY DETERMINE THAT AN UNFORESEEN CONDITION WARRANTS SUCH SIGNAGE ACCORDING TO THE MUTCD OR CDOT M & S STANDARDS.

12. SEE CITY OF LONE TREE STANDARD SIGNAL DETAILS FOR CONSTRUCTION/INSTALLATION DETAILS NOT SHOWN ON THESE PLANS.

13. THE TRAFFIC SIGNAL CONTROLLER CABINET SHALL BE A 332D CABINET AND SHALL INCLUDE AN UNINTERRUPTED POWER SOURCE (MEYERS POWERPACK 2000 E). TRAFFIC SIGNAL CONTROLLER SHALL BE A 2070 LITE. SEE CITY OF LONE TREE SPECIFICATIONS FOR FURTHER INFORMATION ON CONTROLLER AND CABINET REQUIREMENTS.

14. THE TRAFFIC SIGNAL CABINET SHALL BE DELIVERED TO THE CITY OF LONE TREE PUBLIC WORKS DEPARTMENT OR SUBCONTRACTOR AT THE LOCATION SPECIFIED BY THE CITY, A MINIMUM OF THIRTY (30) WORKING DAYS PRIOR TO INSTALLATION DATE FOR PROGRAMMING AND TESTING. COORDINATE WITH THE CITY OF LONE TREE FIELD MANAGER (STEVE FLETCHER, 303-386-2198). THE CONTRACTOR IS RESPONSIBLE FOR DELIVERING TO AND PICKING UP FROM CITY OF LONE TREE PUBLIC WORKS FACILITY. ANY MALFUNCTIONS OR PROBLEMS WITH THE PROGRAMMING AND TESTING WILL BE REPORTED TO THE CONTRACTOR FOR IMMEDIATE REPAIR. THE TIME LOSS WILL BE EXCLUDED FROM THE TESTING PERIOD.

15. ALL SIGNAL CABLE IS CONTINUOUS FROM CONNECTIONS MADE IN THE HANDHOLE COMPARTMENT OF THE SIGNAL POLE BASE TO THE TERMINAL COMPARTMENT IN THE CONTROLLER CABINET. SPLICING SHALL NOT BE PERMITTED UNLESS SPECIFICALLY APPROVED BY THE CITY OF LONE TREE. ANY WIRING SHALL BE CONSIDERED INCIDENTAL TO THE INSTALLATION COST.

16. BICYCLE DETECTION SHALL BE SMARTSENSOR MATRIX.

17. EACH VEHICLE SIGNAL HEAD ON MAST ARMS SHALL HAVE A LOUVERED ALUMINUM BACKPLATE BLACK IN COLOR WITH 2 INCH FLUORESCENT YELLOW DIAMOND GRADE REFLECTIVE BORDER.

18. ALL POLES SHALL BE INSTALLED A MINIMUM OF 3 FEET FROM THE EDGE OF THE POLE TO THE FACE OF CURB.

19. ALL ELECTRICAL SYSTEMS SHALL BE PROPERLY GROUNDED WITH GROUND WIRE IN ACCORDANCE WITH THE SPECIFICATIONS. A GROUND ROD SHALL BE INSTALLED FOR EACH POLE AND CONTROLLER CABINET FOUNDATION.

20. MAST ARMS AND POLES SHALL BE SEMI-GLOSS BLACK IN COLOR.

21. THE PLANS DETAIL MAST ARMS THAT ARE APPROXIMATELY 5' LONGER THAN REQUIRED. THIS INCREASE IS TO ALLOW FLEXIBILITY IN THE FOUNDATION PLACEMENT. THE CONTRACTOR, AT THE DIRECTION OF LONE TREE, SHALL ANTICIPATE CUTTING THIS "EXTRA" MAST ARM LENGTH. THE "CUT" END SHALL HAVE 2 COATS OF COLD-GALVANIZING SPRAY PAINT APPLIED BEFORE INSTALLATION OF THE MAST ARM END CAP.

22. THE CONTRACTOR SHALL NOTIFY THE CITY OF LONE TREE AT 303-662-8112 48 HOURS PRIOR TO MAST ARM INSTALLATION AND MODIFICATIONS SO STAFF CAN BE PRESENT DURING THE INSTALLATION.

23. CONTRACTOR SHALL INSTALL CITY-PROVIDED DELINEATORS ON ALL PULL BOXES INCIDENTAL TO THE WORK.

24. THE CONTRACTOR IS REQUIRED TO PROVIDE 20 DAYS OF CONTINUOUS SATISFACTORY SIGNAL OPERATION PRIOR TO THE START OF THE ONE YEAR WARRANTY.

25. WHEN DIRECTED BY THE CITY, ALL SIGNAL MAST ARMS, POLES AND/OR EQUIPMENT SHALL BE DELIVERED TO THE LONE TREE PUBLIC WORKS FACILITY LOCATED AT 10151 FIRST STREET, LONE TREE COLORADO, 80134. THE TRAFFIC SIGNAL MAST ARMS IDENTIFIED AS "FUTURE" ON SHEETS ISIG-01, ISIG-03, AND ISIG-07 SHALL NOT BE INSTALLED AS PART OF THIS PROJECT, BUT SHALL REMAIN AT THE LONE TREE PUBLIC WORKS FACILITY. THESE MAST ARMS SHALL BE PAID FOR AS TRAFFIC SIGNAL MAST ARM (FUTURE 25' OR 30' ARM) (FURNISH ONLY).

26. ALL HAND HOLE SPLICES SHALL BE BUCHANAN TYPE USING THE PRES-SURE-TOOL #C-24 CRIMPING TOOL.

27. ALL SIGNAL POLES SHALL BE EQUIPPED WITH POLE EXTENSIONS AND LUMINAIRE DAVITS.

28. THE CITY OF LONE TREE REQUIRES THAT THE CONTRACTOR PROVIDE SCHEMATICS ON ALL ELECTRONIC EQUIPMENT.

29. CONTRACTOR SHALL USE FLAT AND LOCKING WASHERS WHEN MOUNTING ANY SIGNS OVERHEAD.

30. ADA TYPE PEDESTRIAN PUSH BUTTONS SHALL BE USED.

31. STREET NAME SIGNS SHALL BE ALUMINUM AND CONFORM TO CITY OF LONE TREE STANDARDS. SIGNS SHALL BE INSTALLED USING ASTRO-BRAC OR SKY-BRACKET MOUNTING BRACKETS. CONTRACTOR SHALL USE FLAT AND LOCKING WASHERS WHEN MOUNTING ANY SIGN OVERHEAD.

32. FIBER OPTIC TERMINATION PANEL SHALL BE MODULAR AND RUGGED IN DESIGN, HAVE 12 UPC-SC TYPE CONNECTORS, AND BE FACTORY TERMINATED TO A 12 STRAND SINGLE MODE PIGTAIL LATERAL FIBER OPTIC CABLE. THE LATERAL FIBER OPTIC CABLE SHALL BE OF SIGNIFICANT LENGTH TO CONNECT FROM SIGNAL CONTROLLER CABINET TO THE SPLICE LOCATION WITH REQUIRED COILS IN THE CABINET AND PULL BOXES. MATERIALS AND WORK DESCRIBED SHALL BE PAID FOR AS FIBER OPTIC CABLE (SINGLE MODE) (12 FIBER).

33. THE POWER SOURCE SHALL BE 120/240 VOLT 60 AMP METERED SERVICE. IT SHALL INCLDE A WEATHERPROOF METERED CIRCUIT DISCONNECT BOX AND MEDIUM PULL BOX. LOCATION OF METERED CIRCUIT DISCONNECT BOX TO BE DETERMINED BY THE CITY OF LONE TREE AND SHALL NOT BE PLACED FURTHER THAN 75 FEET FROM THE SIGNAL CABINET.

CIRCUIT SCHEDULE NOTES

1. WHENEVER MULTIPLE CABLES FEED EQUIPMENT ON A SINGLE POLE EACH CABLE SHALL CONTAIN A NEUTRAL WIRE.

2. THE SIGNAL SYSTEM SHALL BE WIRED FOR AN 8-PHASE OPERATION.

CONDUITS

1. ALL CONDUITS SHALL HAVE A PULL ROPE AND #14 AWG LOCATE WIRE LEFT IN THEM WHEN CONSTRUCTION IS COMPLETED.

2. CONDUITS SHALL BE A MINIMUM OF 30 INCHES BELOW FINISHED GRADE.

OPERATIONS

1. 3M OPTICOM PRIORITY CONTROL SYSTEM AND CABLE SHALL BE PROVIDED.

COLOR CODING

1. ALL CONDUCTORS SHALL BE COLOR-CODED AND PERMANENTLY TAGGED PER THE FOLLOWING SCHEDULE: KEY-PHASE: COLOR OF SIGNAL LOAD CONDUCTOR, "CODE" (ON TAG AT EACH END OF CONDUCTOR).

   1. NORTHBOUND LEFT TURN: RED/WHITE, "X-NBLT"
   2. NORTHBOUND: RED, "X-NB"
   3. SOUTHBOUND LEFT TURN: GREEN/WHITE, "X-SBLT"
   4. SOUTHBOUND: GREEN, "X-SB"
   5. EASTBOUND LEFT TURN: ORANGE/WHITE, "X-EBLT"
   6. EASTBOUND: ORANGE, "X-EB"
   7. WESTBOUND LEFT TURN: BLUE/WHITE, "X-WBLT"
   8. WESTBOUND: BLUE, "X-WB"
   9. PEDESTRIAN: YELLOW, "X-PED"

   X= PHASE NUMBER

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APPROVED BY: KB

RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS

TRAFFIC SIGNAL GENERAL NOTES

ISSUED FOR REVIEW
FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 9/27/2023
SHEET: 39 OF 48

File Location:I:\122093-01 RidgeGate Couplet Signal Designs\CADD\Traffic_ITS\Drawings\Third Road\T122093-01GNR01.dwg Plot Date:9/27/2023 8:57 AM Last Saved By: THOMAS.BRIGHTWELL

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TABULATION OF TRAFFIC SIGNAL ITEMS

LONE TREE ITEM NO.	ITEM DESCRIPTION	UNITS	INTERIM OR COMPLETE CONDITION		TOTALS- INTERIM	FINAL CONDITION		TOTALS- FINAL	COMMENTS
			WESTBOUND RIDGEGATE PARKWAY & CROSSFIELD STREET	EASTBOUND RIDGEGATE PARKWAY & CROSSFIELD STREET		WESTBOUND RIDGEGATE PARKWAY & CROSSFIELD STREET	EASTBOUND RIDGEGATE PARKWAY & CROSSFIELD STREET		
1	REMOVAL OF PULL BOX	EACH				1	1	2	
2	REMOVAL OF SIGN PANEL	EACH				1	1	2	
3	POTHOLING	HOUR	8	8	16				
4	RESET PEDESTRIAN SIGNAL HEAD	EACH				1	1	2	
5	RESET PEDESTAL POLE	EACH				1	1	2	INCLUDES REMOVAL OF CONCRETE FOOTING
6	RESET PEDESTRIAN OR BICYCLIST PUSH BUTTION STATION	EACH				2	2	4	
7	RESET OF PEDESTRIAN PUSH BUTTON POST ASSEMBLY	EACH				1		1	INCLUDES REMOVAL OF CONCRETE FOOTING
8	PVC CONDUIT (2" - TRENCHED)	LF	490	650	1140	45		45	
9	PVC CONDUIT (2" - BORED)	LF	160	185	345				
10	PVC CONDUIT (3" - TRENCHED)	LF	415	635	1050	20		20	
11	PVC CONDUIT (3" - BORED)	LF	160	185	345				
12	PULL BOX (TYPE MEDIUM)	EACH	3	4	7	1		1	(13"X24"X12")
13	PULL BOX (TYPE LARGE)	EACH	6	7	13				(17"X30"X12")
14	PULL BOX (TYPE VAULT)	EACH	1	1	2				(30"X48"X18")
15	LUMINAIRE (LED) (16,000 LUMENS)	EACH	5	5	10				
16	SERVICE METER CABINET	EACH	1	1	2				
17	DRILLED SHAFT (36 INCH)	LF	60	60	120				
18	DRILLED SHAFT (42 INCH)	LF	16.5	16.5	33				
19	SIGN PANEL (CLASS I)	SF	101.75	101.75	203.5	46	73	119	
20	PEDESTRIAN SIGNAL FACE (16)(COUNTDOWN)	EACH	6	6	12	2	2	4	
21	TRAFFIC SIGNAL FACE (12-12-12)	EACH	8	8	16	3	7	10	INCLUDES BACKPLATES WITH YELLOW REFLECTIVE TAPE; SEE SIGNAL EQUIPMENT GENERAL NOTE NO.17
22	BLANK OUT SIGN (LED) (SINGLE FACED)	EACH					1	1	
23	FIRE PREEMPTION UNIT AND TIMER	EACH	2	2	4	1	1	2	
24	PEDESTRIAN OR BICYCLIST PUSH BUTTON STATION	EACH	6	6	12	2	5	7	AUDIBLE ADA TYPE; INCLUDES PUSH BUTTON SIGNS
25	PEDESTRIAN PUSH BUTTON POST ASSEMBLY	EACH	1	1	2		1	1	
26	VEHICLE/BICYCLE/PEDESTRIAN DETECTION CAMERA	EACH	3	3	6				GRIDSMART (4 DOME CAMERAS - PRESENCE DETECTION, 2 TRADITIONAL CAMERAS - ADVANCE DETECTION)
27	TRAFFIC SIGNAL CONTROLLER AND CABINET	EACH	1	1	2				INCLUDES UNINTERRUPTED POWER SUPPLY; SEE SIGNAL EQUIPMENT GENERAL NOTE NO.13
28	TRAFFIC SIGNAL PEDESTAL POLE	EACH	2	2	4	1	1	2	STRAIGHT ARM TYPE
29	TRAFFIC SIGNAL-LIGHT POLE STEEL (35' MAST ARM)	EACH		1	1				
30	TRAFFIC SIGNAL-LIGHT POLE STEEL (40' MAST ARM)	EACH	1		1				
31	TRAFFIC SIGNAL-LIGHT POLE STEEL (50' MAST ARM)	EACH	1		1				
32	TRAFFIC SIGNAL-LIGHT POLE STEEL (55' MAST ARM)	EACH		1	1				
33	TRAFFIC SIGNAL-LIGHT POLE STEEL (NO MAST ARM)	EACH	2	2	4				
34	TRAFFIC SIGNAL MAST ARM (INSTALL ONLY)	EACH				1	1	2	30' AND 35' MAST ARMS
35	TRAFFIC SIGNAL-LIGHT POLE STEEL (FUTURE MAST ARM)	EACH	1	1	2				
36	TRAFFIC SIGNAL MAST ARM (FUTURE 30' ARM) (FURNISH ONLY)	EACH		1	1				STRAIGHT ARM TYPE
37	TRAFFIC SIGNAL MAST ARM (FUTURE 35' ARM) (FURNISH ONLY)	EACH	1		1				

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RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS

TABULATION OF TRAFFIC SIGNAL ITEMS

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 9/27/2023
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INTERIM MAST ARM AND SIGNAL POLE DATA

ARM REF. NO.	LENGTH	LUMINAIRE EXTENSION	POLE STANDARD	LUMINAIRE ARM LENGTH	LOCATION (STREET AND APPROACH DIRECTION)	STATION AND OFFSET	ELEVATION	NOTES:
MA1	40'	YES	DOUG 101	20'	WESTBOUND RIDGEGATE PARKWAY & CROSSFIELD STREET - NORTHEAST CORNER	STA 174+35.80 OFF 21.07' LT		
MA2	0'	YES	DOUG 101	20'	WESTBOUND RIDGEGATE PARKWAY & CROSSFIELD STREET - SOUTHEAST CORNER	STA 174+53.04 OFF 68.07 RT		STANDARD TRAFFIC SIGNAL POLE WITH LUMINAIRE ARM; NO MAST ARM
MA3	35' FUTURE	YES	DOUG 101	20'	WESTBOUND RIDGEGATE PARKWAY & CROSSFIELD STREET - SOUTHWEST CORNER	STA 173+80.85 OFF 80.18 RT		TRAFFIC SIGNAL MAST ARM IS NOT TO BE INSTALLED DURING INTERIM CONSTRUCTION
MA4	50'	YES	DOUG 201	20'	WESTBOUND RIDGEGATE PARKWAY & CROSSFIELD STREET - SOUTHWEST CORNER	STA 173+57.26 OFF 54.34 RT		
MA5	0'	YES	DOUG 101	20'	WESTBOUND RIDGEGATE PARKWAY & CROSSFIELD STREET - NORTHWEST CORNER	STA 173+49.15 OFF 12.09 LT		STANDARD TRAFFIC SIGNAL POLE WITH LUMINAIRE ARM; NO MAST ARM
MA6	30' FUTURE	YES	DOUG 101	20'	EASTBOUND RIDGEGATE PARKWAY & CROSSFIELD STREET- NORTHEAST CORNER	STA 532+76.63 OFF 48.22 LT		TRAFFIC SIGNAL MAST ARM IS NOT TO BE INSTALLED DURING INTERIM CONSTRUCTION
MA7	55'	YES	DOUG 201	20'	EASTBOUND RIDGEGATE PARKWAY & CROSSFIELD STREET- NORTHEAST CORNER	STA 533+03.86 OFF 27.67 LT		
MA8	0'	YES	DOUG 101	20'	EASTBOUND RIDGEGATE PARKWAY & CROSSFIELD STREET- SOUTHEAST CORNER	STA 533+03.60 OFF 41.57RT		STANDARD TRAFFIC SIGNAL POLE WITH LUMINAIRE ARM; NO MAST ARM
MA9	35'	YES	DOUG 101	20'	EASTBOUND RIDGEGATE PARKWAY & CROSSFIELD STREET- SOUTHWEST CORNER	STA 532+21.29 OFF 56.78 RT		
MA10	0'	YES	DOUG 101	20'	EASTBOUND RIDGEGATE PARKWAY & CROSSFIELD STREET- NORTHWEST CORNER	STA 531+83.61 OFF 36.58 LT		STANDARD TRAFFIC SIGNAL POLE WITH LUMINAIRE ARM; NO MAST ARM

FINAL MAST ARM AND SIGNAL POLE DATA

ARM REF. NO.	LENGTH	LUMINAIRE EXTENSION	POLE STANDARD	LUMINAIRE ARM LENGTH	LOCATION (STREET AND APPROACH DIRECTION)	STATION AND OFFSET	ELEVATION	NOTES:
MA3	35'	YES	DOUG 101	20'	WESTBOUND RIDGEGATE PARKWAY & CROSSFIELD STREET - SOUTHWEST CORNER	STA 173+80.85 OFF 80.18 RT		INSTALL WHEN 4TH LEGS OF INTERSECTIONS ARE CONSTRUCTED.
MA6	30'	YES	DOUG 101	20'	EASTBOUND RIDGEGATE PARKWAY & CROSSFIELD STREET - NORTHEAST CORNER	STA 532+76.63 OFF 48.22 LT		

NOTE: FUTURE MAST ARMS (MA3 & MA5) SHALL BE DELIVERED TO THE CITY OF LONE TREE PUBLIC WORKS FACILITY AT 10151 FIRST STREET, LONE TREE, COLORADO 80154 FOR INSTALLATION WHEN FUTURE 4TH LEGS OF INTERSECTIONS ARE CONSTRUCTED.

NOTES:

1. REFER TO TRAFFIC SIGNAL PLAN SHEETS FOR HEAD PLACEMENT LOCATIONS.
2. ALL NEW MAST ARMS SHALL BE STRAIGHT TYPE.
3. SIGNAL POLE MANUFACTURER SHALL VERIFY TRAFFIC SIGNAL POLE AND MAST ARM STRUCTURAL DESIGN TO SUPPORT PROPOSED LOADINGS.

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RIDGEGATE EAST FILING NO. 4
STREET AND STORM SEWER PLANS

TABULATION OF TRAFFIC SIGNAL ITEMS

ISSUED FOR REVIEW

FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
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INTERIM PROPOSED INDICATIONS AND BRACKETING

DIRECTION OF TRAVEL	SIGNAL FACE MOUNT	FACE NO.	SIGNAL PHASE	INDICATION SIZE AND TYPE (ALL LED)										
				CIRCULAR			ARROW				BIKE			PEDESTRIAN
				R	Y	G	R	Y	FY	G	R	Y	G	HAND/MAN
WESTBOUND RIDGEGATE PARKWAY AT CROSSFIELD STREET	MA1 (NE)	1	8	12"	12"	12"								
	POLE (NE)	2	8	12"	12"	12"								
	PED. POLE (NE)	3	8P											16"X16"
	POLE (SE)	4	8P											16"X16"
	PED. POLE (SE)	5	6P											16"X16"
	POLE (SW)	6	6P											16"X16"
	POLE (SW)	7	8P											16"X16"
	MA4 (SW)	8	6	12"	12"	12"								
	MA4 (SW)	9	6	12"	12"	12"								
	MA4 (SW)	10	6	12"	12"	12"								
	MA4 (SW)	11	6	12"	12"	12"								
	POLE (NW)	12	8	12"	12"	12"								
	POLE (NW)	13	8P											16"X16"
	POLE (NW)	14	6	12"	12"	12"								

DIRECTION OF TRAVEL	SIGNAL FACE MOUNT	FACE NO.	SIGNAL PHASE	INDICATION SIZE AND TYPE (ALL LED)										
				CIRCULAR			ARROW				BIKE			PEDESTRIAN
				R	Y	G	R	Y	FY	G	R	Y	G	HAND/MAN
EASTBOUND RIDGEGATE PARKWAY AT CROSSFIELD STREET	POLE (NE)	1	2P											16"X16"
	POLE (NE)	2	4P											16"X16"
	MA7 (NE)	3	2	12"	12"	12"								
	MA7 (NE)	4	2	12"	12"	12"								
	MA7 (NE)	5	2	12"	12"	12"								
	MA7 (NE)	6	2	12"	12"	12"								
	POLE (SE)	7	4	12"	12"	12"								
	POLE (SE)	8	2	12"	12"	12"								
	POLE (SE)	9	4P											16"X16"
	MA9 (SW)	10	4	12"	12"	12"								
	POLE (SW)	11	4	12"	12"	12"								
	PED. POLE (SW)	12	4P											16"X16"
	POLE (NW)	13	4P											16"X16"
	PED. POLE (NW)	14	2P											16"X16"

FINAL PROPOSED INDICATIONS AND BRACKETING

DIRECTION OF TRAVEL	SIGNAL FACE MOUNT	FACE NO.	SIGNAL PHASE	INDICATION SIZE AND TYPE (ALL LED)										
				CIRCULAR			ARROW				BIKE			PEDESTRIAN
				R	Y	G	R	Y	FY	G	R	Y	G	HAND/MAN
WESTBOUND RIDGEGATE PARKWAY AT CROSSFIELD STREET	POLE (NE)	20	6P											16"X16"
	MA3 (SW)	21	4	12"	12"	12"								
	POLE (SW)	22	4	12"	12"	12"								
	MA4 (SW)	23	6	12"	12"	12"								
	PED. POLE (NW)	24	6P											16"X16"

DIRECTION OF TRAVEL	SIGNAL FACE MOUNT	FACE NO.	SIGNAL PHASE	INDICATION SIZE AND TYPE (ALL LED)										
				CIRCULAR			ARROW				BIKE			PEDESTRIAN
				R	Y	G	R	Y	FY	G	R	Y	G	HAND/MAN
EASTBOUND RIDGEGATE PARKWAY AT CROSSFIELD STREET	MA6 (NE)	20	8	12"	12"	12"								
	POLE (NE)	21	8	12"	12"	12"								
	MA7 (NE)	22	OLA				12"	12"		12"				
	POLE (SE)	23	2B								12"	12"	12"	
	PED. POLE (SE)	24	2B								12"	12"	12"	
	PED. POLE (SE)	25	2P											16"X16"
	POLE (SW)	26	2P											16"X16"
	PED. POLE (SW)	27	2B								12"	12"	12"	
	PED. POLE (SW)	28	2B								12"	12"	12"	

NOTES:

1. REFER TO TRAFFIC SIGNAL PLAN SHEETS FOR HEAD PLACEMENT LOCATIONS.
2. ALL NEW MAST ARMS SHALL BE STRAIGHT TYPE.
3. SIGNAL POLE MANUFACTURER SHALL VERIFY TRAFFIC SIGNAL POLE AND MAST ARM STRUCTURAL DESIGN TO SUPPORT PROPOSED LOADINGS.

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TABULATION OF TRAFFIC SIGNAL ITEMS

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SHEET: 42 OF 48

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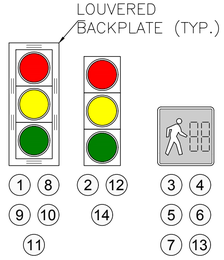
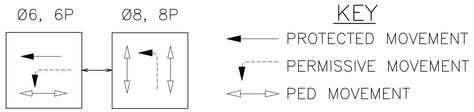
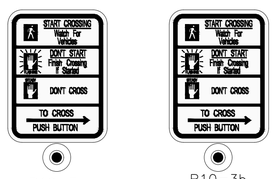
TRAFFIC SIGNAL HEADS



SIGNAL PHASING DIAGRAM



PEDESTRIAN PUSH BUTTON STATIONS



R10–3b
9"X15"
3 – RIGHT ARROW
2 – LEFT ARROW

R10–3b
5"x7–3/4" FOR PEDESTRIAN PUSH BUTTON POST ASSEMBLY
1 – LEFT ARROW

TRAFFIC SIGNAL SYMBOLS

- TRAFFIC SIGNAL POLE AND MAST ARM
- FUTURE TRAFFIC SIGNAL MAST ARM
- PEDESTRIAN PUSH BUTTON POST ASSEMBLY
- TRAFFIC SIGNAL PEDESTAL POLE
- LUMINAIRE
- TRAFFIC SIGNAL HEAD
- TRAFFIC SIGNAL HEAD & BACKPLATE
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON & SIGN
- TRAFFIC SIGN
- TRAFFIC SIGNAL CONTROLLER CABINET
- PULL BOX (SIZE AS SPECIFIED)
- TRAFFIC SIGNAL CONDUIT(S)
- FIRE PREEMPTION UNIT
- GRIDSMART ADVANCED DETECTION CAMERA
- GRIDSMART DOME CAMERA
- VEHICLE AND BICYCLE DETECTION ZONES
- SERVICE METER CABINET

Know what's **below.**
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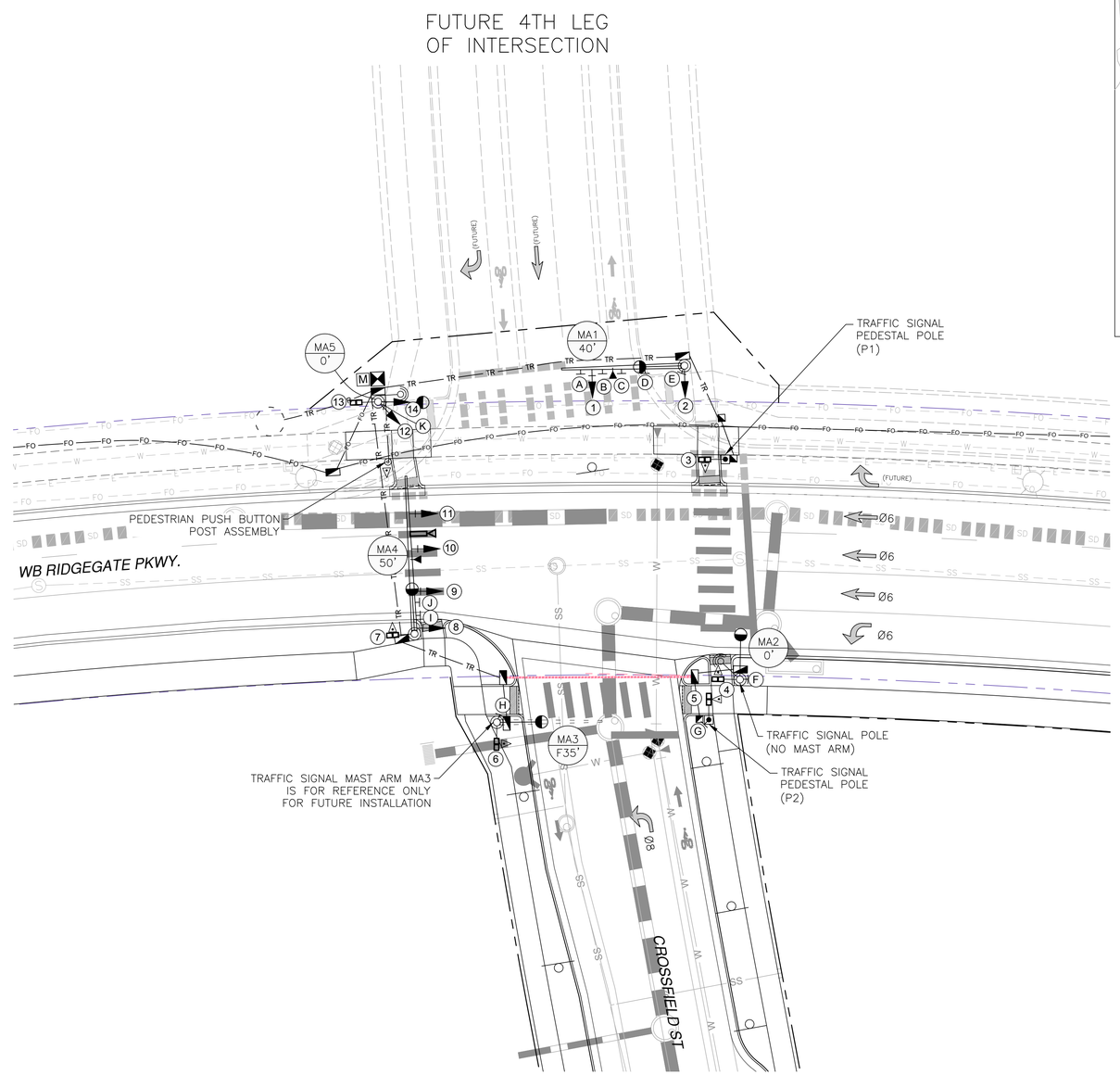
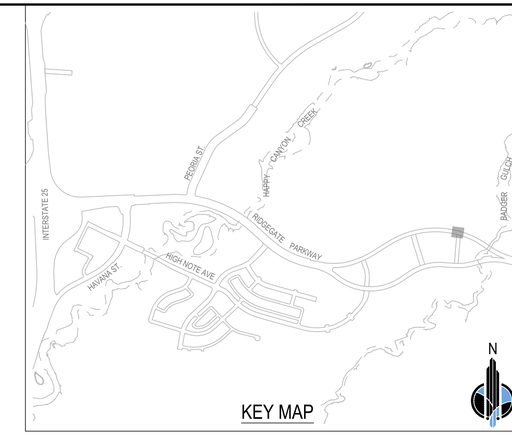
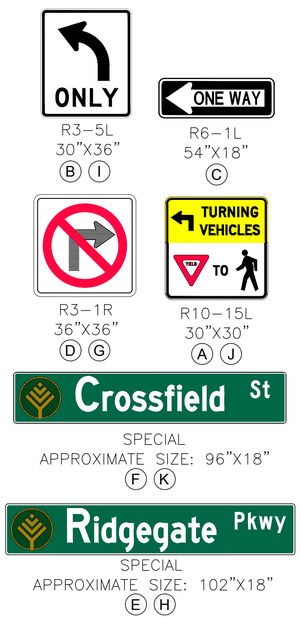
LANE USE ARROWS ARE SHOWN FOR INFORMATION ONLY





TRAFFIC SIGNS



R3–5L
30"X36"
(B) (I)

R6–1L
54"X18"
(C)

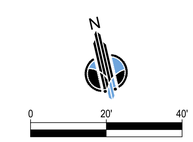
R3–1R
36"X36"
(D) (G)

R10–15L
30"X30"
(A) (J)

SPECIAL
APPROXIMATE SIZE: 96"X18"
(F) (K)

SPECIAL
APPROXIMATE SIZE: 102"X18"
(E) (H)

ISIG-1



City of Lone Tree

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Engineering Division Acceptance Block

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Greenwood Village, CO 80111
Phone: 303.721.1440
www.FHUENG.com

REV	REVISION DESCRIPTION	DATE	DRWN	CHKD	APPR

DESIGN BY:	RRF
DRAWN BY:	TCB
CHECKED BY:	XX
APPROVED BY:	XX

RIDGEGATE EAST FILING NO. 3
STREET AND STORM SEWER PLANS

INTERIM TRAFFIC SIGNAL PLANS

ISSUED FOR REVIEW
FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 9/27/2023
SHEET: 43 OF 48

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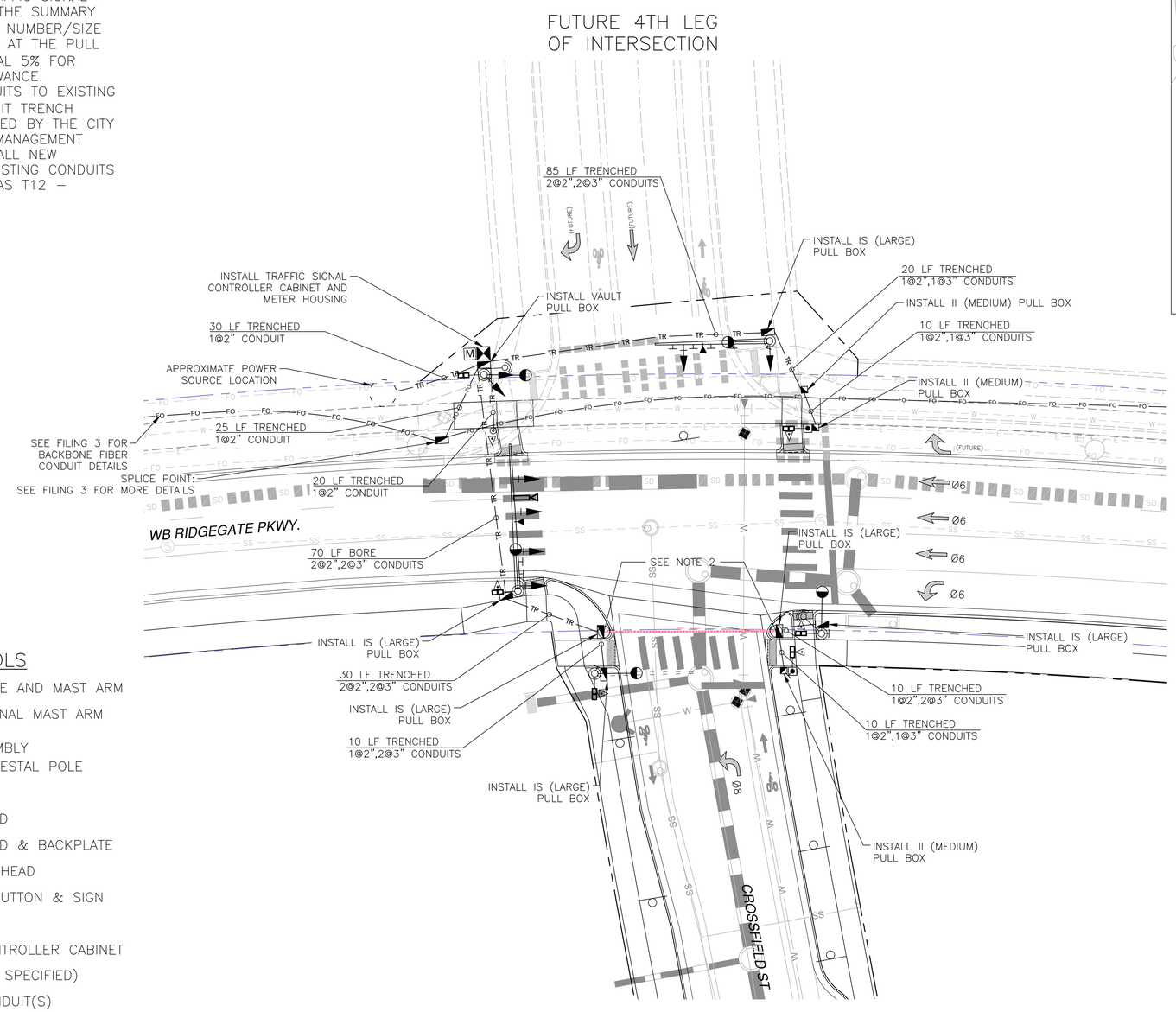
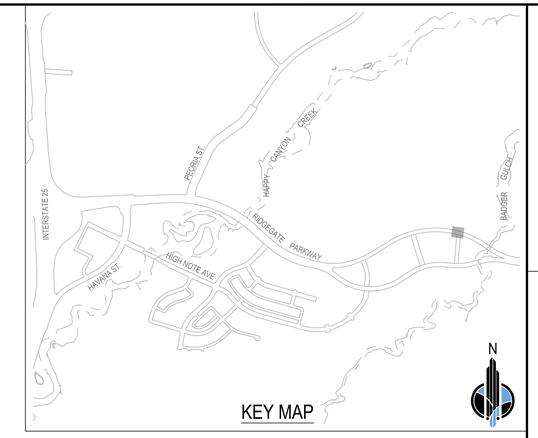
2. CONTRACTOR SHALL CONNECT NEW CONDUITS TO EXISTING CONDUITS IDENTIFIED IN MERRICK'S CONDUIT TRENCH DETAIL B VIA A SLEEVING METHOD APPROVED BY THE CITY OF LONE TREE OR THEIR CONSTRUCTION MANAGEMENT REPRESENTATIVE. CONTRACTOR SHALL INSTALL NEW TRAFFIC SIGNAL CABLES THROUGH THE EXISTING CONDUITS IDENTIFIED IN CONDUIT TRENCH DETAIL B AS T12 – TRAFFIC SIGNAL





TRAFFIC SIGNAL SYMBOLS

- TRAFFIC SIGNAL POLE AND MAST ARM
- FUTURE TRAFFIC SIGNAL MAST ARM
- PEDESTRIAN PUSH BUTTON POST ASSEMBLY
- TRAFFIC SIGNAL PEDESTAL POLE
- LUMINAIRE
- TRAFFIC SIGNAL HEAD
- TRAFFIC SIGNAL HEAD & BACKPLATE
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON & SIGN
- TRAFFIC SIGN
- TRAFFIC SIGNAL CONTROLLER CABINET
- PULL BOX (SIZE AS SPECIFIED)
- TRAFFIC SIGNAL CONDUIT(S)
- FIRE PREEMPTION UNIT
- GRIDSMART ADVANCED DETECTION CAMERA
- GRIDSMART DOME CAMERA
- ØX — VEHICLE AND BICYCLE DETECTION ZONES
- M — SERVICE METER CABINET

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LANE USE ARROWS ARE SHOWN FOR INFORMATION ONLY

N

0 20' 40'

ISIG-2

City of Lone Tree

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DESIGN BY: RRF
DRAWN BY: TCB
CHECKED BY: XX
APPROVED BY: XX

RIDGEGATE EAST FILING NO. 3
STREET AND STORM SEWER PLANS

INTERIM TRAFFIC SIGNAL PLANS

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JOB NO.: 65121240
DATE: 9/27/2023
SHEET: 44 OF 48

File Location:I:\122093-01 RidgeGate Couplet Signal Designs\CADD\Traffic_ITS\Drawings\Third Road\122093-01FASIG 22x34.dwg Plot Date:9/27/2023 8:58 AM Last Saved By: THOMAS.BRIGHTWELL

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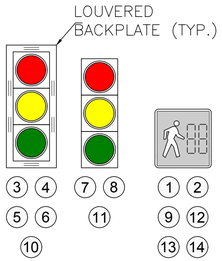
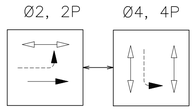
TRAFFIC SIGNAL HEADS

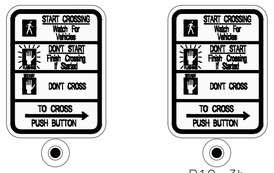


SIGNAL PHASING DIAGRAM



KEY
- PROTECTED MOVEMENT
- PERMISSIVE MOVEMENT
- PED MOVEMENT

PEDESTRIAN PUSH BUTTON STATIONS



R10-3b
9"X15"
3 – RIGHT ARROW
2 – LEFT ARROW

R10-3b
5"x7-3/4" FOR PEDESTRIAN PUSH BUTTON POST ASSEMBLY
1 – LEFT ARROW

TRAFFIC SIGNAL SYMBOLS

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- TRAFFIC SIGN
- TRAFFIC SIGNAL CONTROLLER CABINET
- PULL BOX (SIZE AS SPECIFIED)
- TRAFFIC SIGNAL CONDUIT(S)
- FIRE PREEMPTION UNIT
- GRIDSMART ADVANCED DETECTION CAMERA
- GRIDSMART DOME CAMERA
- VEHICLE AND BICYCLE DETECTION ZONES
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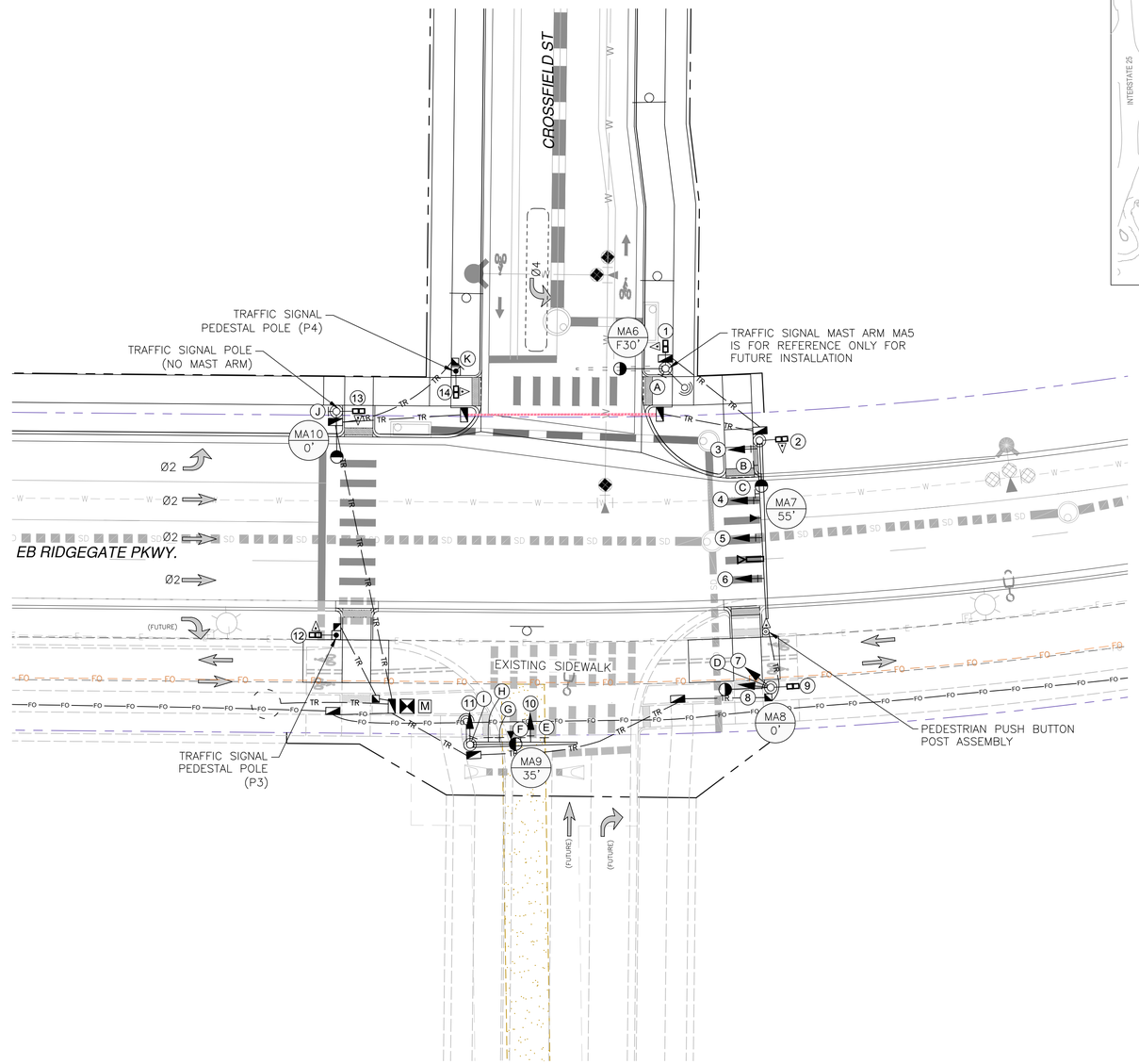
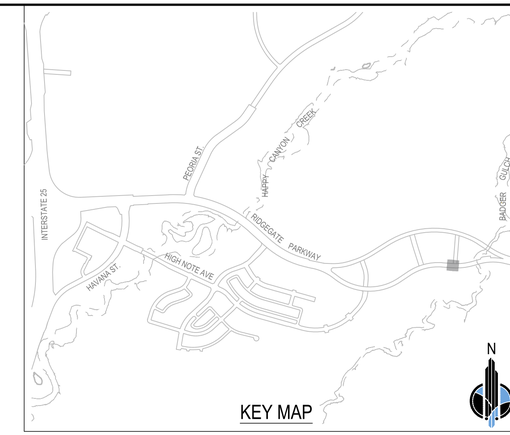
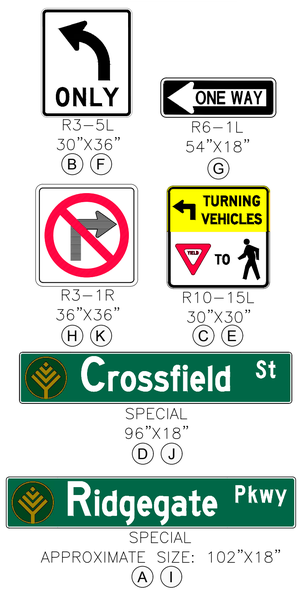


FUTURE 4TH LEG OF INTERSECTION



KEY MAP

TRAFFIC SIGNS



R3-5L
30"X36"
B F

R6-1L
54"X18"
G

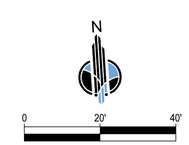
R3-1R
36"X36"
H K

R10-15L
30"X30"
C E

SPECIAL
96"X18"
D J

SPECIAL
APPROXIMATE SIZE: 102"X18"
A I

ISIG-3



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DESIGN BY:	RRF
DRAWN BY:	TCB
CHECKED BY:	XX
APPROVED BY:	XX

RIDGEGATE EAST FILING NO. 3
STREET AND STORM SEWER PLANS

INTERIM TRAFFIC SIGNAL PLANS

ISSUED FOR REVIEW
FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 9/27/2023
SHEET: 45 OF 48

File Location:I:\122093-01 RidgeGate Couplet Signal Designs\CADD\Traffic_ITS\Drawings\Third Road\122093-01FHSIG 22x34.dwg Plot Date:9/27/2023 8:58 AM Last Saved By: THOMAS.BRIGHTWELL

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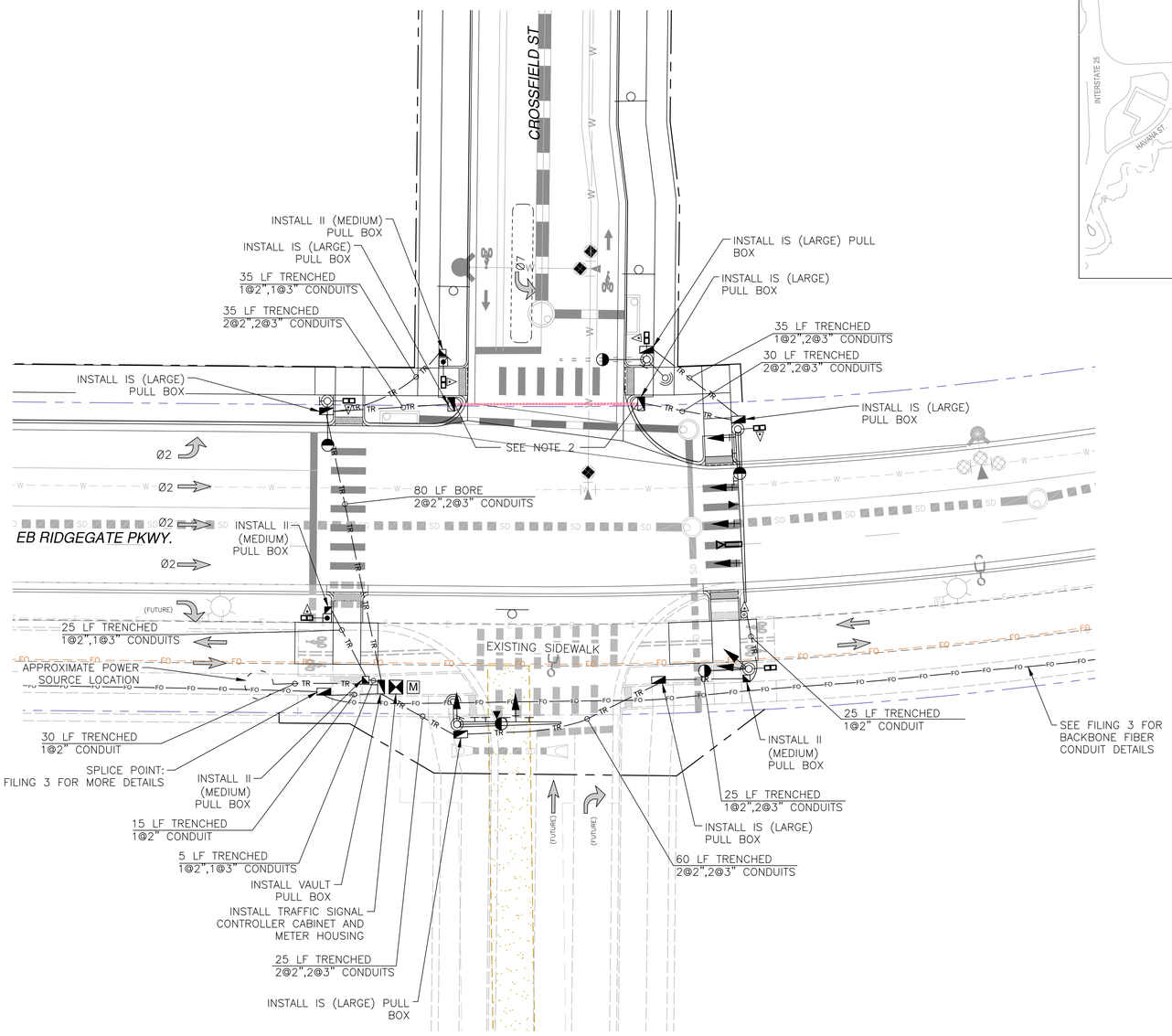
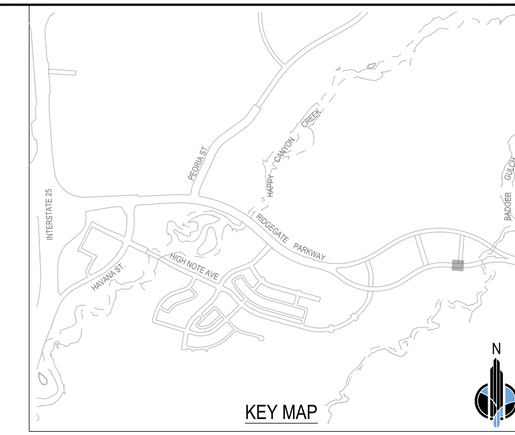


FUTURE 4TH LEG OF INTERSECTION



KEY MAP

TRAFFIC SIGNAL SYMBOLS

- TRAFFIC SIGNAL POLE AND MAST ARM
- FUTURE TRAFFIC SIGNAL MAST ARM
- PEDESTRIAN PUSH BUTTON POST ASSEMBLY
- TRAFFIC SIGNAL PEDESTAL POLE
- LUMINAIRE
- TRAFFIC SIGNAL HEAD
- TRAFFIC SIGNAL HEAD & BACKPLATE
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON & SIGN
- TRAFFIC SIGN
- TRAFFIC SIGNAL CONTROLLER CABINET
- PULL BOX (SIZE AS SPECIFIED)
- TRAFFIC SIGNAL CONDUIT(S)
- FIRE PREEMPTION UNIT
- GRIDSMART ADVANCED DETECTION CAMERA
- GRIDSMART DOME CAMERA
- VEHICLE AND BICYCLE DETECTION ZONES
- SERVICE METER CABINET

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ISIG-4

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REV	REVISION DESCRIPTION	DATE	DRWN	CHKD	APPR

DESIGN BY: RRF
DRAWN BY: TCB
CHECKED BY: XX
APPROVED BY: XX

RIDGEGATE EAST FILING NO. 3
STREET AND STORM SEWER PLANS

INTERIM TRAFFIC SIGNAL PLANS

ISSUED FOR REVIEW
FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 9/27/2023
SHEET: 46 OF 48

File Location:I:\122093-01 Ridge\Gate Couplet Signal Designs\CADD\Traffic_ITS\Drawings\Third Road\122093-01F4SIG 22x34.dwg Plot Date:9/27/2023 8:59 AM Last Saved By: THOMAS.BRIGHTWELL

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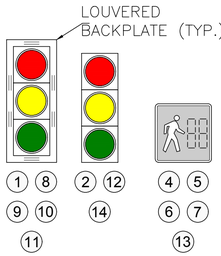
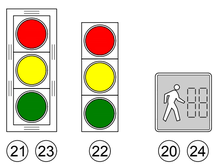
EXISTING TRAFFIC SIGNAL HEADS TO REMAIN



EXISTING TRAFFIC SIGNAL HEADS TO BE REMOVED OR RESET

RESET

NEW TRAFFIC SIGNAL HEADS



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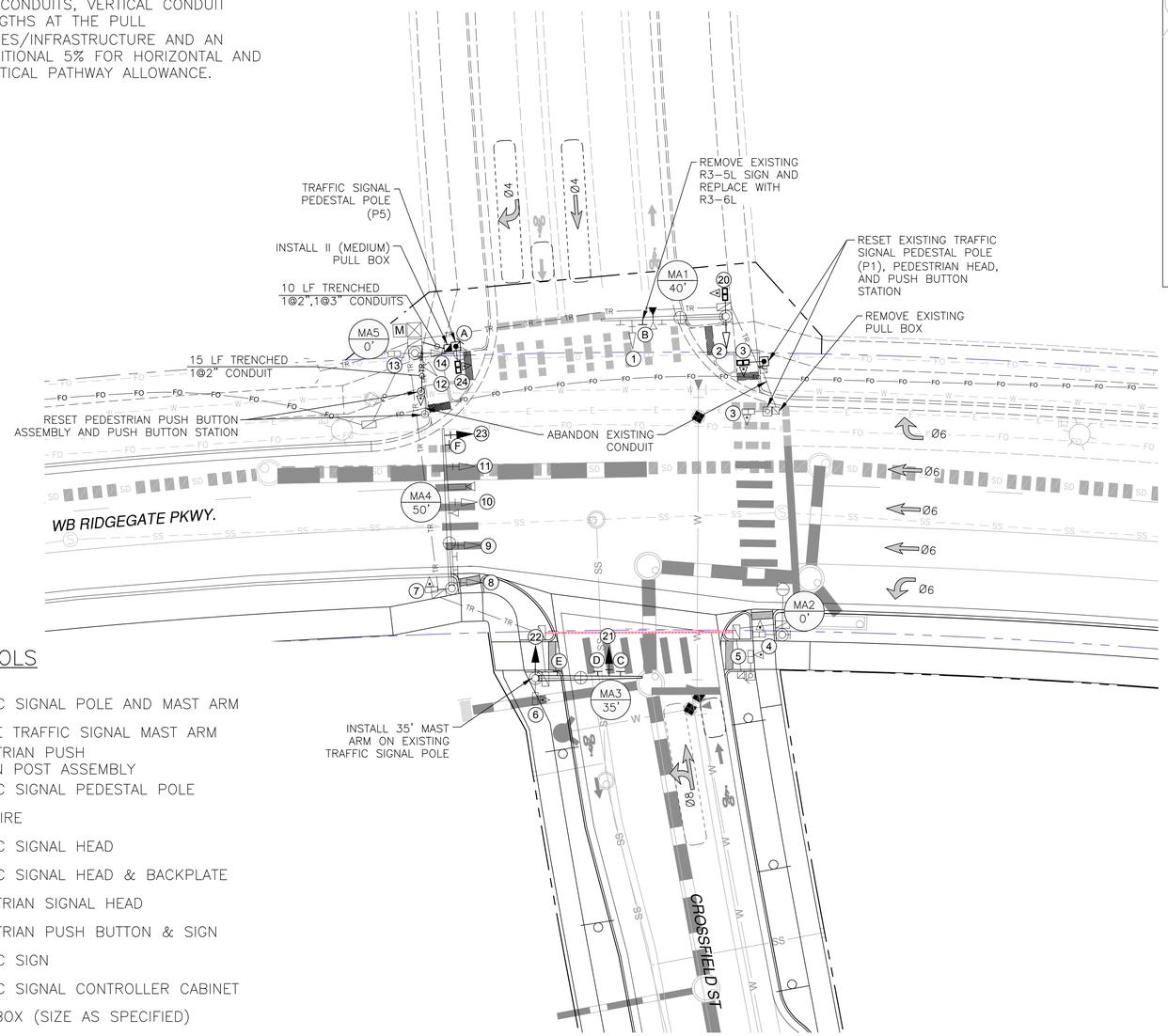
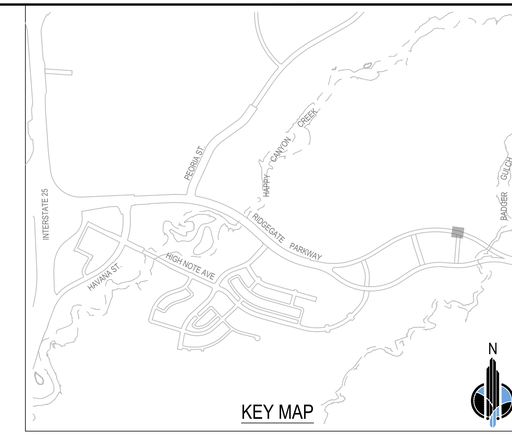
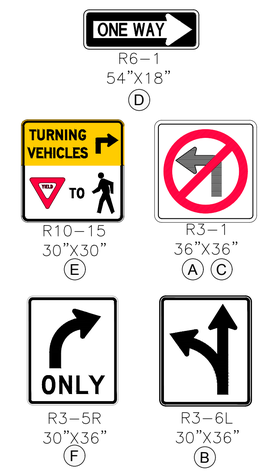




KEY MAP

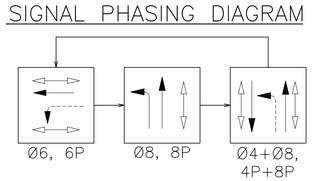
TRAFFIC SIGNS



TRAFFIC SIGNAL SYMBOLS

EXISTING	PROPOSED	
		TRAFFIC SIGNAL POLE AND MAST ARM
		FUTURE TRAFFIC SIGNAL MAST ARM
		PEDESTRIAN PUSH BUTTON POST ASSEMBLY
		TRAFFIC SIGNAL PEDESTAL POLE
		LUMINAIRE
X	X	TRAFFIC SIGNAL HEAD
X	X	TRAFFIC SIGNAL HEAD & BACKPLATE
X	X	PEDESTRIAN SIGNAL HEAD
		PEDESTRIAN PUSH BUTTON & SIGN
X	X	TRAFFIC SIGN
		TRAFFIC SIGNAL CONTROLLER CABINET
		PULL BOX (SIZE AS SPECIFIED)
TR TR TR TR	TR TR TR TR	TRAFFIC SIGNAL CONDUIT(S)
		FIRE PREEMPTION UNIT
		GRIDSMART ADVANCED DETECTION CAMERA
		GRIDSMART DOME CAMERA
ØX ØX	ØX ØX	VEHICLE AND BICYCLE DETECTION ZONES
M	M	SERVICE METER CABINET

SIGNAL PHASING DIAGRAM



KEY

- PROTECTED MOVEMENT
- PERMISSIVE MOVEMENT
- PED MOVEMENT

PEDESTRIAN PUSH BUTTON STATIONS

R10-3b
9"X12"
1 – RIGHT ARROW
1 – LEFT ARROW

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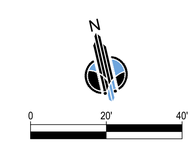

City of Lone Tree

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Engineering Division Acceptance Block

FSIG-1

FELSBURG HOLT & ULLEVIG
6400 South Fiddlers Green Circle, Suite 1500
Greenwood Village, CO 80111
Phone: 303.721.1440
www.FHUENG.com

REV	REVISION DESCRIPTION	DATE	DRWN	CHKD	APPR

DESIGN BY: RRF
DRAWN BY: TCB
CHECKED BY: XX
APPROVED BY: XX

RIDGEGATE EAST FILING NO. 3
STREET AND STORM SEWER PLANS

FINAL TRAFFIC SIGNAL PLANS

ISSUED FOR REVIEW
FOR AND ON BEHALF OF MERRICK & COMPANY

JOB NO.: 65121240
DATE: 9/27/2023
SHEET: 47 OF 48

File Location:I:\122093-01 RidgeGate Couplet Signal Designs\CADD\Traffic_ITS\Drawings\Third Road\122093-01F-SIG 22x34.dwg Plot Date:9/27/2023 8:59 AM Last Saved By: THOMAS.BRIGHTWELL

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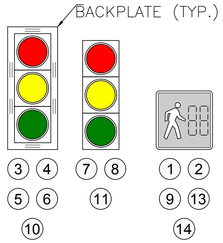
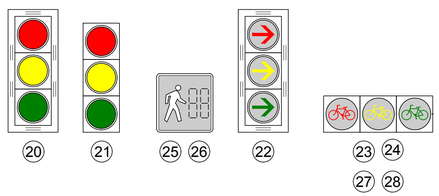
EXISTING TRAFFIC SIGNAL HEADS TO REMAIN

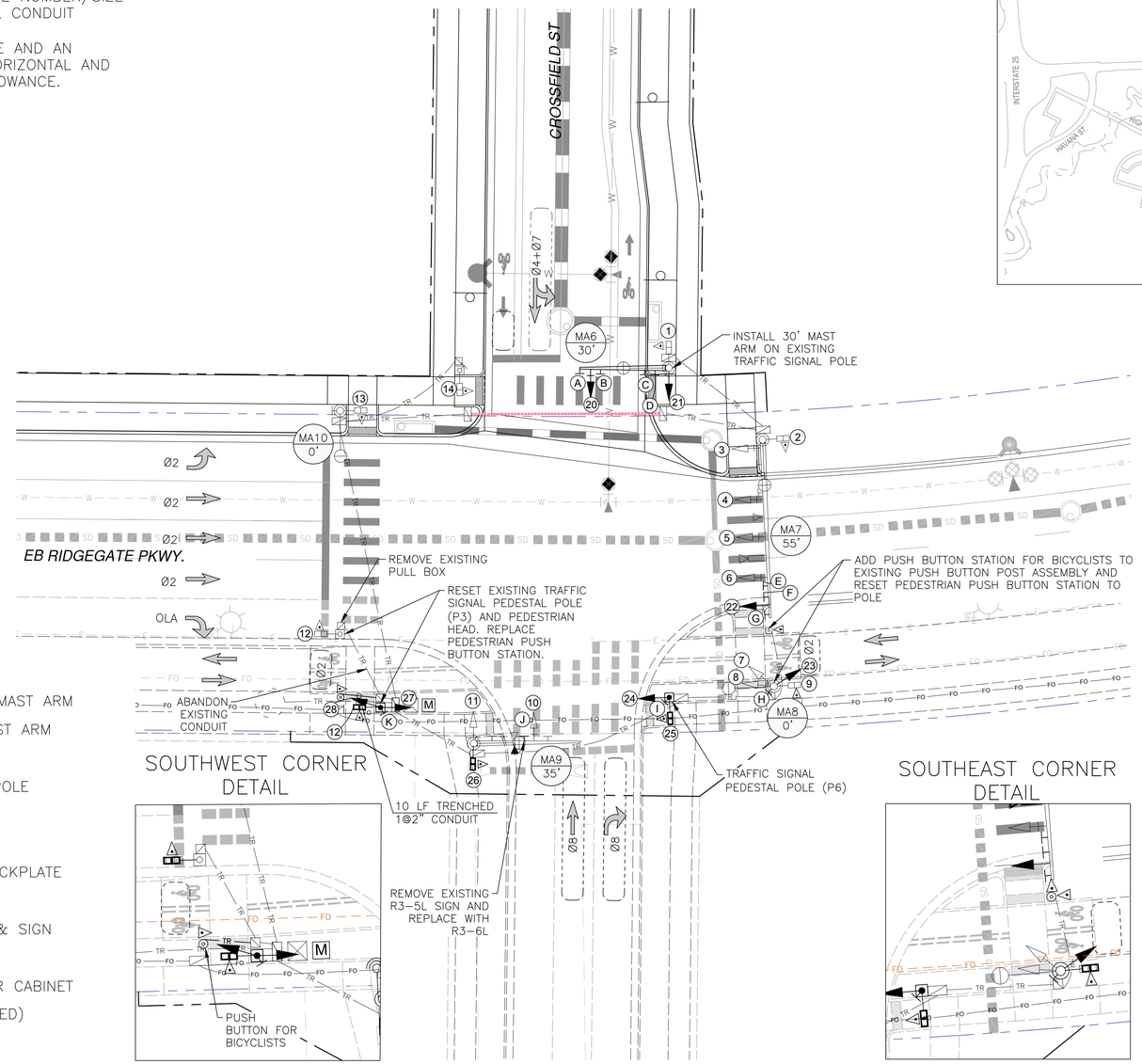


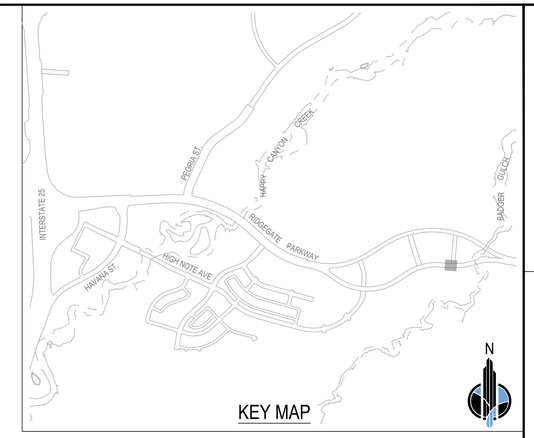
EXISTING TRAFFIC SIGNAL HEADS TO BE REMOVED OR RESET

NEW TRAFFIC SIGNAL HEADS



NOTE: CONDUIT LENGTHS REPRESENT THE HORIZONTAL DISTANCE BETWEEN PULL BOXES AND/OR OTHER TRAFFIC SIGNAL INFRASTRUCTURE. QUANTITY ESTIMATES IN THE SUMMARY OF APPROXIMATE QUANTITIES INCLUDE THE NUMBER/SIZE OF CONDUITS, VERTICAL CONDUIT LENGTHS AT THE PULL BOXES/INFRASTRUCTURE AND AN ADDITIONAL 5% FOR HORIZONTAL AND VERTICAL PATHWAY ALLOWANCE.

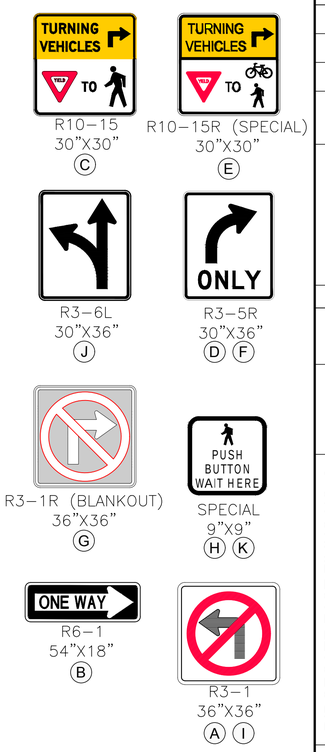




SOUTHWEST CORNER DETAIL

SOUTHEAST CORNER DETAIL

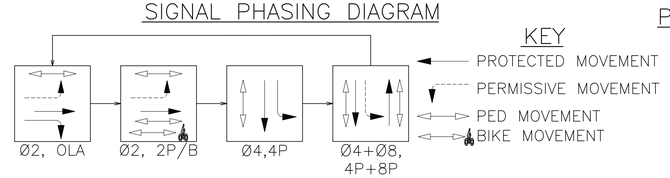
SIGN LEGEND



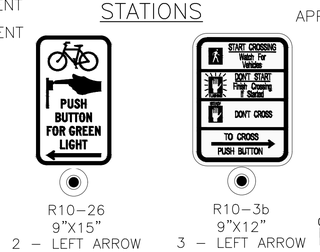
TRAFFIC SIGNAL SYMBOLS

EXISTING	PROPOSED	
		TRAFFIC SIGNAL POLE AND MAST ARM
		FUTURE TRAFFIC SIGNAL MAST ARM
		PEDESTRIAN PUSH BUTTON POST ASSEMBLY
		TRAFFIC SIGNAL PEDESTAL POLE
		LUMINAIRE
X	X	TRAFFIC SIGNAL HEAD
X	X	TRAFFIC SIGNAL HEAD & BACKPLATE
X	X	PEDESTRIAN SIGNAL HEAD
		PEDESTRIAN PUSH BUTTON & SIGN
X	X	TRAFFIC SIGN
		TRAFFIC SIGNAL CONTROLLER CABINET
		PULL BOX (SIZE AS SPECIFIED)
TR TR TR TR	TR TR TR TR	TRAFFIC SIGNAL CONDUIT(S)
		FIRE PREEMPTION UNIT
		GRIDSMART ADVANCED DETECTION CAMERA
		GRIDSMART DOME CAMERA
ØX / ØX	ØX / ØX	VEHICLE AND BICYCLE DETECTION ZONES
M	M	SERVICE METER CABINET

SIGNAL PHASING DIAGRAM



PEDESTRIAN/BICYCLIST PUSH BUTTON STATIONS



R10-26
9"X15"
2 – LEFT ARROW

R10-3b
9"X12"
3 – LEFT ARROW

BIKE SIGNAL
SPECIAL
APPROXIMATE SIZE: 36"X12"
23 24
27 28

N

0 20' 40'

FSIG-2

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