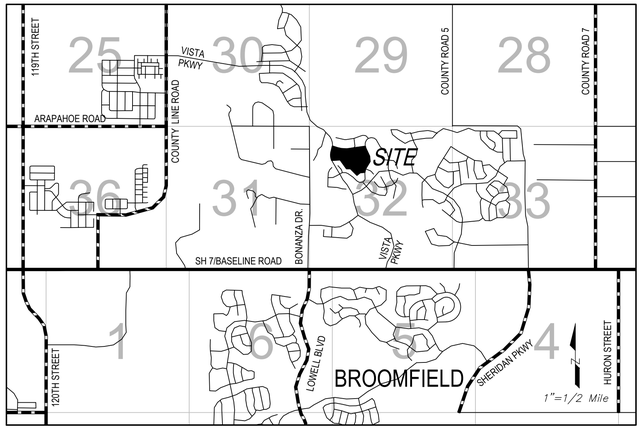
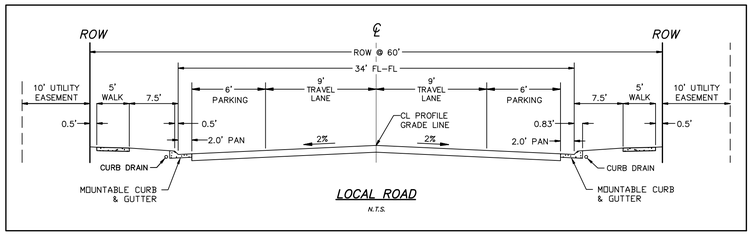
VISTA RESERVE

PRELIMINARY CONSTRUCTION PLANS

LOCATED IN THE NORTHWEST QUARTER OF SECTION 32, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH P.M., TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO

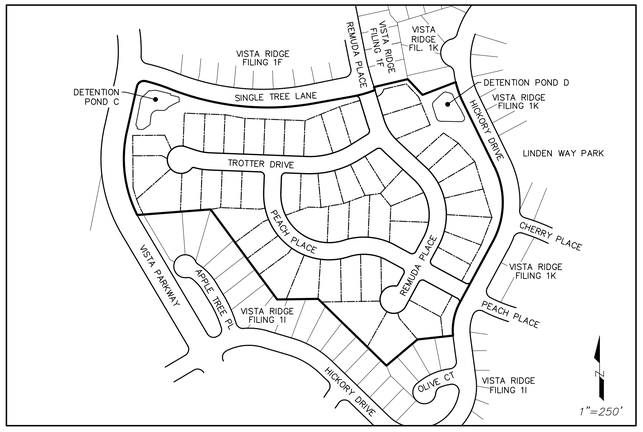


VICINITY MAP



LOCAL ROAD

N.T.S.



KEY MAP

APPLICANT/DEVELOPER
AFFINITY HOLDINGS, LLC
13330 RED DEER TRAIL
BROOMFIELD, CO 80020
303)246-6799

ENGINEER/SURVEYOR:
HURST & ASSOCIATES, INC.
1265 S. PUBLIC ROAD, SUITE B
LAFAYETTE, CO 80026
(303)449-9105

PLANNER & LANDSCAPE ARCHITECT:
PCS GROUP
200 KALAMATH STREET
DENVER, CO 80223
(303)531-4905

Sheet Index

1. COVER SHEET
2. SITE PLAN
3. EXISTING CONDITIONS & DEMOLITION PLAN
4. UTILITY PLAN
5. OVERLOT GRADING PLAN
6. OVERLOT GRADING NOTES AND DETAILS
7. DRAINAGE PLAN - NORTH
8. DRAINAGE PLAN - SOUTH
9. PRIVATE/PUBLIC SCM PLAN
10. INITIAL EROSION CONTROL PLAN
11. INTERIM EROSION CONTROL PLAN
12. FINAL EROSION CONTROL PLAN
13. SIGNING PLAN
14. DETENTION POND PLANS
15. REMUDA PLACE PLAN & PROFILE STA 3+25-7+50
16. REMUDA PLACE PLAN & PROFILE STA 7+50 - 12+10
17. PEACH PLACE PLAN & PROFILE STA 1+00 - 4+50
18. PEACH PLACE PLAN & PROFILE STA 4+50 - 9+00
19. PEACH PLACE PLAN & PROFILE STA 9+00 - 10+65
20. TROTTER DRIVE PLAN & PROFILE STA 1+00 - 4+75
21. TROTTER DRIVE PLAN & PROFILE STA 4+75 - 8+25

LEGAL DESCRIPTION :

PARCEL A:

PARCELS 8A AND 8B, VISTA RIDGE, MASTER FINAL PLAT RECORDED NOVEMBER 28, 2001 UNDER RECEPTION NO. 2903870, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO.

PARCEL B:

TRACT 20, VISTA RIDGE, MASTER FINAL PLAT RECORDED NOVEMBER 28, 2001 UNDER RECEPTION NO. 2903870, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO.

NOTES :

1. BENCHMARK : NGS BENCH MARK "JR 53 5026"
LOCATED AT PERRY STREET AT A RAILROAD TRACK CROSSING AT THE NORTHEAST CORNER OF THE INTERSECTION.
ELEVATION = 5028.0 FEET (NAVD 1988)

2. FLOOD ZONE DESIGNATION : BY SCALED MAP LOCATION AND GRAPHIC PLOTTING ONLY, THIS PROPERTY LIES IN ZONE X OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NUMBER 08013C0444J AND DATED DECEMBER 18, 2012 & COMMUNITY PANEL NUMBER 08013C0443K AND DATED AUGUST 15, 2019 – SUBJECT PROPERTY IS NOT IN A SPECIAL FLOOD HAZARD AREA.

72 HOURS BEFORE YOU DIG
CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC)
811
GAS, ELECTRIC, TELEPHONE, CATV, AND PANHANDLE EASTERN PIPELINE LOCATIONS

NO.	REVISIONS	DATE

NOT FOR CONSTRUCTION

HURST & ASSOCIATES, INC.
1265 S. Public Road, Suite B
Lafayette, CO 80026
303.449.9105

HURST
CIVIL ENGINEERING
PLANNING
SURVEYING

VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
COVER SHEET

PREPARED FOR:
AFFINITY HOLDINGS

JOB NUMBER:	2718-1
DRAWN BY:	TA
DESIGNED BY:	TA
DATE:	05/28/2026
SCALE:	N/A
SHEET NO:	1 OF 21

LAST SAVED: 5/28/2026 5:22 PM

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VISTA RESERVE
50 SINGLE-FAMILY LOTS
SUB2025-00012

NOT FOR CONSTRUCTION

72 HOURS BEFORE YOU DIG
CALL THE UTILITY NOTIFICATION
CENTER OF COLORADO (U.N.C.C.)
811

NO.	REVISIONS	DATE

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CIVIL ENGINEERING
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SURVEYING

HURST & ASSOCIATES, INC.
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Lafayette, CO 80026
303.449.9105

VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
SITE PLAN
PREPARED FOR:
AFFINITY HOLDINGS

JOB NUMBER:	2718-1
DRAWN BY:	TA
DESIGNED BY:	TA
DATE:	05/28/2026
SCALE:	1"=60'
SHEET NO:	2 OF 21

LAST SAVED: 6/3/2026 8:22 AM
G:\2718\1\Prelim Const\2718-1-SITE.dwg

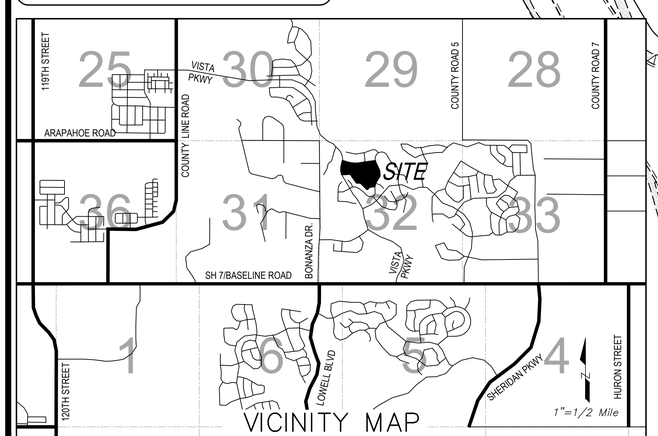
EASEMENT NOTES:

ALL RESIDENTIAL LOTS HAVE THE FOLLOWING EASEMENTS:

- 10' UTILITY ALONG RIGHTS OF WAY
- 8' DRAINAGE & UTILITY ALONG REAR LOT LINE
- 6' UTILITY ALONG LOT LINES ADJACENT TO TRACTS
- 6' DRAINAGE & UTILITY ALONG SIDE LOT LINES ADJACENT TO REARS OF ADJACENT LOTS
- TRACTS A, B, & C SHALL HAVE BLANKET PUBLIC ACCESS EASEMENTS AND BLANKET DRAINAGE AND DRY UTILITY EASEMENTS
- BUILDING SETBACKS
  FRONT YARD = 20 FEET
  REAR YARD = 25 FEET
  SIDE YARD = 5 FEET

LEGEND

- BUILDING SETBACK LINES
- BUILDING ENVELOPE (60'x70') 34 LOTS
- BUILDING ENVELOPE (50'x70') 16 LOTS



SCALE: 1" = 60'

VISTA RESERVE
EXISTING CONDITIONS & DEMOLITION PLAN

OWNER: JOHNSTON LINDA JANE LIVING TRUST
1401 HICKORY DRIVE

SINGLE TREE LANE
REMUDA PLACE
VISTA PARKWAY
HICKORY DRIVE
APPLE TREE PLACE
CHERRY PLACE
PEACH PLACE
OLIVE COURT
LINDEN WAY PARK

VISTA RIDGE FILING 1F BLOCK 2
VISTA RIDGE FILING 1F BLOCK 3
VISTA RIDGE FILING 1K 1
VISTA RIDGE FILING 1K 16
VISTA RIDGE FILING 1K 17
VISTA RIDGE FILING 1K 37
VISTA RIDGE FILING 1K 38
VISTA RIDGE FILING 1K 48
VISTA RIDGE FILING 1K 50
VISTA RIDGE FILING 1I 8
VISTA RIDGE FILING 1I 49

EX. 8" S/L
EX. 8" W/L
EX. 18" RCP
EX. 21" RCP
EX. 12" W/L
EX. 24" RCP
EX. F.H. & 6" W/L
EX. 5' TYPE 'R' INLET
EX. 10' TYPE 'R' INLET
EX. 15" RCP
EX. 5' WALK
EX. SOUTH 8" S/L (TO BE PLUGGED AT MH)
EX. 8" S/L STUB
EX. 8" W/L STUB
EX. MAILBOXES
EX. DRIVE CUT (TO BE REMOVED)
EX. GAS LINE
EX. WOOD FENCE (TO BE REMOVED)
EX. FENCE (TO BE REMOVED)
EX. CORRAL (TO BE REMOVED)
EX. HORSE BARN (TO BE REMOVED)
EX. BARN (TO BE REMOVED)
EX. GRAVEL DRIVE (TO BE REMOVED)
EX. GAZEBO (TO BE REMOVED)
EX. ASPHALT DRIVE (TO BE REMOVED)
EXISTING RESIDENCE (TO BE REMOVED)
EX. DRY UTILITIES (TO BE REMOVED)
EXISTING CURB (TO BE REMOVED)
EXISTING LAMPPOST
P&A WELL SETBACK
50.0'
100.0'
EX. 20.0' UTILITY ESMT (TO BE VACATED)
VISTA RIDGE DEVELOPMENT PLAN PARCEL LINE (NOT AN OWNERSHIP LINE)
EX. SAN MH & 8" S/L (TO BE REMOVED)
EX. NW 8" S/L (TO BE PLUGGED AT MH)
EX. ROCK WALL

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

LEGEND

- Existing Waterline
- Existing Sewerline
- Stormline
- Existing Gas Line
- Ex. Underground Electric
- Ex. Overhead Electric
- Existing Fiber Optic
- Existing Telephone Line
- Existing Cable TV Line
- Thrust Block
- Water Valve
- Fire Hydrant
- Plug
- Manhole
- Type 'R' Inlet
- Existing Contours

811 — 72 HOURS BEFORE YOU DIG — CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (U.N.C.C.)

REVISIONS

NO.	DATE
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1265 S. Public Road, Suite B
Lafayette, CO 80026
303.449.9105

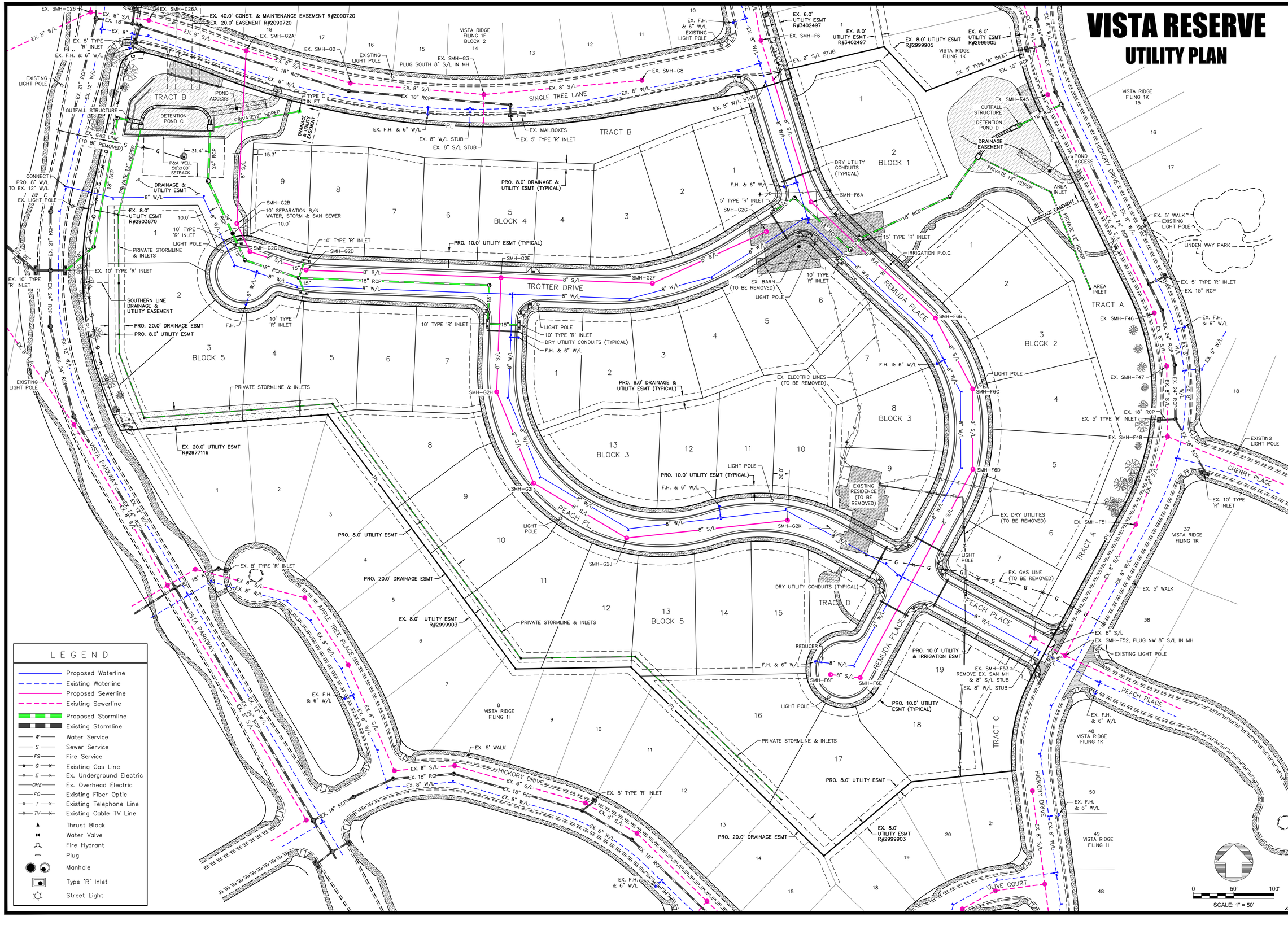
VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
EXISTING CONDITIONS PLAN

PREPARED FOR:
AFFINITY HOLDINGS

JOB NUMBER:	2718-1
DRAWN BY:	TA
DESIGNED BY:	TA
DATE:	05/28/2026
SCALE:	1" = 50'
SHEET NO:	3 OF 21

LAST SAVED: 2/17/2026 3:11 PM
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VISTA RESERVE
UTILITY PLAN



LEGEND

- Proposed Waterline
- Existing Waterline
- Proposed Sewerline
- Existing Sewerline
- Proposed Stormline
- Existing Stormline
- W — Water Service
- S — Sewer Service
- FS — Fire Service
- G — Existing Gas Line
- E — Ex. Underground Electric
- OHE — Ex. Overhead Electric
- FO — Existing Fiber Optic
- T — Existing Telephone Line
- TV — Existing Cable TV Line
- Thrust Block
- Water Valve
- Fire Hydrant
- Plug
- Manhole
- Type 'R' Inlet
- Street Light

811 — 72 HOURS BEFORE YOU DIG — CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (U.N.C.C.)

NO.	REVISIONS	DATE

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SURVEYING

VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
UTILITY PLAN

PREPARED FOR:
AFFINITY HOLDINGS

JOB NUMBER:	2718-1
DRAWN BY:	TA
DESIGNED BY:	TA
DATE:	05/28/2026
SCALE:	1"=50'
SHEET NO:	4 OF 21

LAST SAVED: 6/3/2026 8:22 AM
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VISTA RESERVE
OVERLOT GRADING PLAN

811
72 HOURS BEFORE YOU DIG
CALL THE UTILITY NOTIFICATION
CENTER OF COLORADO (U.N.C.C.)

NO.	REVISIONS	DATE
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HURST
CIVIL ENGINEERING
PLANNING
SURVEYING

VISTA RESERVE
ERIE, CO - SUB2025-00012
PREPARED FOR:
AFFINITY HOLDINGS
PRELIMINARY CONSTRUCTION PLANS
OVERLOT GRADING PLAN

JOB NUMBER:	2718-1
DRAWN BY:	TA
DESIGNED BY:	TA
DATE:	05/28/2026
SCALE:	1"=50'
SHEET NO:	5 OF 21

LAST SAVED: 6/2/2026 2:15 PM

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

LEGEND

- LOT LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- STORMLINE
- (A) "A" LOT – DRAINS BACK TO FRONT
- (B) "B" LOT – HIGH SPOT MIDDLE OF LOT
- (WO) WALKOUT LOT
- 5150 PROPOSED LONG ELEVATION
- 50 PROPOSED SHORT ELEVATION
- 5150 EXISTING LONG ELEVATION
- 50 EXISTING SHORT ELEVATION

EARTHWORK GENERAL NOTES:

1. ALL STRUCTURES, CONCRETE, TRESS, BRUSH AND RUBBISH SHALL BE REMOVED AND ACCEPTABLY DISPOSED OF.

2. ALL ORGANIC MATTER SHALL BE REMOVED FROM FILL AREAS.

3. ALL FILL AREAS SHALL BE COMPACTED IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.

4. ALL DISTURBED AREAS SHALL BE TREATED WITH SEED AND MULCH.

5. EROSION CONTROL BALES OR SILT FENCE SHALL BE PLACED AT THE TOE AND DRAINAGE OUTFALL POINTS OF ALL SLOPES TO PREVENT SILTATION ON STREETS. REFER TO STORMWATER MANAGEMENT PLAN FOR DETAIL AND LOCATION OF EROSION CONTROL MEASURES.

6. CONTRACTOR SHALL COMPLY WITH ALL LOCAL, COUNTY AND STATE REGULATIONS PERTAINING TO GRADING, DUST AND EROSION.

7. NATURAL VEGETATION SHALL BE RETAINED AND PROTECTED WHEREVER POSSIBLE. EXPOSURE OF SOIL TO EROSION BY REMOVAL OR DISTURBANCE OF VEGETATION SHALL BE LIMITED TO THE SHORTEST PRACTICAL PERIOD OF TIME.

8. TOPSOIL SHALL BE STOCKPILED TO THE EXTENT PRACTICABLE ON THE SITE FOR USE ON AREAS TO BE REVEGETATED. ANY AND ALL STOCKPILES SHALL BE LOCATED AND PROTECTED FROM EROSIVE ELEMENTS.

9. AT ALL TIMES, THE PROPERTY SHALL BE MAINTAINED AND/OR WATERED TO PREVENT WIND-CAUSED EROSION. EARTHWORK OPERATIONS SHALL BE DISCONTINUED WHEN FUGITIVE DUST SIGNIFICANTLY IMPACTS ADJACENT PROPERTY. IF EARTHWORK IS COMPLETE OR DISCONTINUED AND DUST FROM THE SITE CONTINUES TO CREATE PROBLEMS, THE OWNER/DEVELOPER SHALL IMMEDIATELY INSTITUTE MITIGATIVE MEASURES AND SHALL CORRECT DAMAGE TO ADJACENT PROPERTY.

GENERAL OVERLOT GRADING NOTES:

1. THIS PLAN IS TO ESTABLISH ROUGH GRADING (±.2') ONLY. THIS IS NOT A FINAL GRADING PLAN.

2. REFER TO APPROVED SOILS REPORT FOR EXCAVATION AND FILL PLACEMENT RECOMMENDATIONS.

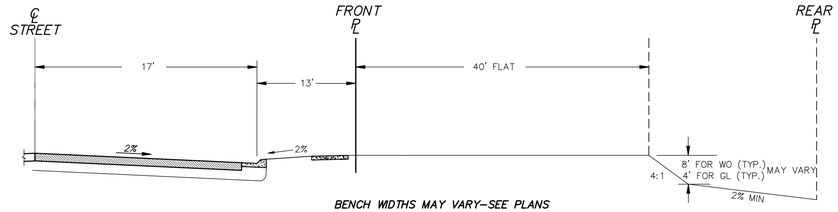
3. LOT CORNER SPOT ELEVATIONS ARE FOR ROUGH GRADING ONLY. CORNER ELEVATIONS MAY VARY +/- .2'. LOT CORNER ELEVATIONS MAY NEED TO BE ADJUSTED TO PROVIDE ADEQUATE DRAINAGE FOR BUILDING FOUNDATION AND SITE PLANS.

4. AS-BUILTS OF OVERLOT GRADING WILL BE NECESSARY BY THE INDIVIDUALS OR FIRMS PREPARING THE INDIVIDUAL LOT SITE AND GRADING PLANS.

5. OVERLOT CONTOURS ARE TO ESTABLISH THE TYPICAL ROUGH GRADE LOT TEMPLATES AND <u>DO NOT</u> REPRESENT FINISHED LOT GRADING.

COLLIERS
TYPICAL OVERLOT GRADING TEMPLATE

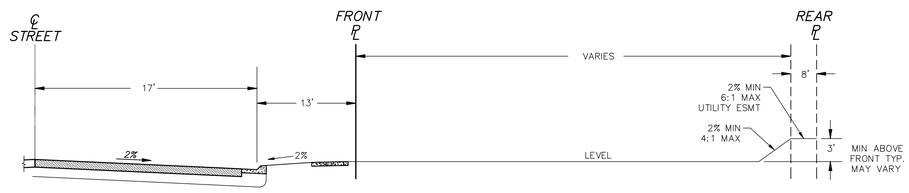
TYPICAL WALKOUT "WO" OR GARDEN LEVEL "GL" LOT
OVERLOT GRADING TEMPLATE



BENCH WIDTHS MAY VARY-SEE PLANS
N.T.S.

COLLIERS
TYPICAL OVERLOT GRADING TEMPLATE

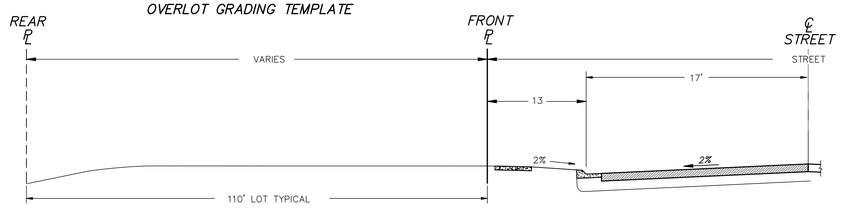
TYPICAL "A" LOT
OVERLOT GRADING TEMPLATE



BENCH WIDTHS MAY VARY-SEE PLANS
N.T.S.

COLLIERS
TYPICAL OVERLOT GRADING TEMPLATE

TYPICAL "B" LOT
OVERLOT GRADING TEMPLATE



BENCH WIDTHS MAY VARY-SEE PLANS
N.T.S.

811
72 HOURS BEFORE YOU DIG
CALL THE UTILITY NOTIFICATION
CENTER OF COLORADO (U.N.C.C.)

NO.	REVISIONS	DATE
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NOT FOR CONSTRUCTION

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HURST & ASSOCIATES, INC.
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Lafayette, CO 80026
303.449.9105

VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
OVERLOT GRADING NOTES & TEMPLATES

PREPARED FOR:
AFFINITY HOLDINGS

JOB NUMBER: 2718-1
DRAWN BY: TA
DESIGNED BY: TA
DATE: 05/28/2026
SCALE: N/A
SHEET NO: 6 OF 21

LAST SAVED: 2/27/2025 9:53 AM
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VISTA RESERVE
DRAINAGE PLAN

811 — 72 HOURS BEFORE YOU DIG — CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (U.N.C.C.)

NO.	REVISIONS	DATE
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NOT FOR CONSTRUCTION

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED STORMLINE
- EXISTING STORMLINE
- BASIN BOUNDARY
- SUB-BASIN BOUNDARY
- MAJOR BASIN BOUNDARY
- 5150 — PROPOSED LONG ELEVATION
- 50 — PROPOSED SHORT ELEVATION
- 5150 — EXISTING LONG ELEVATION
- 50 — EXISTING SHORT ELEVATION
- FLOW ARROW
- B2 — DRAINAGE BASIN DESIGNATION
- B4-10 — DRAINAGE SUB-BASIN DESIGNATION

CATALPA PLACE
REMUDA PLACE
SINGLE TREE LANE
TROTTER PLACE
TROTTER DRIVE
PEACH PLACE
CHERRY PLACE
HICKORY DRIVE
VISTA PARKWAY
LINDEN WAY PARK
EX. POCKET PARK
DETENTION POND C
DETENTION POND D
OUTFALL STRUCTURE
SPILLWAY
FOREBAY
AREA INLET
MATCH LINE
VISTA RIDGE FILING 1F BLOCK 2
VISTA RIDGE FILING 1F BLOCK 3
VISTA RIDGE FILING 1K
VISTA RIDGE 1F DRAINAGE REPORT FLOWS=6.39 CFS CURRENT STANDARDS=3.28 CFS

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

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Lafayette, CO 80026
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VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
DRAINAGE PLAN-NORTH

PREPARED FOR:
AFFINITY HOLDINGS

JOB NUMBER:	2718-1
DRAWN BY:	TA
DESIGNED BY:	TA
DATE:	05/28/2026
SCALE:	1"=50'
SHEET NO:	7 OF 21

LAST SAVED: 6/2/2026 7:48 PM
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VISTA RESERVE
DRAINAGE PLAN

MATCH LINE

TROTTER PLACE
TROTTER DRIVE
REMUDA PLACE
PEACH PLACE
CHERRY PLACE
VISTA PARKWAY
APPLE TREE PLACE
HICKORY DRIVE
PLUM COURT
OLIVE COURT
MOUNTAIN VIEW BLVD
APRICOT PL

SB-15A, SB-20G, SB-20K, SB-20H, SB-20I, SB-20L, SB-20J, SB-20M, SB-20N, SB-13, SB-15, SB-14, SB-25, SB-26, SB-27A, SB-27, SB-28, SB-37B, SB-38, SB-37A, SB-37, SB-40, SB-39, SB-41, SB-48, SB-46, SB-47, SB-42, SB-43, SB-44, SB-45, SA-83G, SA-83H, SA-83J, SA-83E, SA-84A, SA-86, SA-87, SA-88, SA-89

AI-2, AI-3, AI-4, AI-5, AI-6, AI-7, AI-8, AI-9, AI-10, AI-11, AI-12, AI-13, AI-14, AI-15

B4-12(A), B4-12(B), B4-10, B4-11, B4-8, B4-9, A21-4(A), A21-3(B), A21-3, A21-3(A)

C2, C3B, C4, C5, C6, C7, C8, C9

D2, D4, D5, D7, D8

EX. 10' TYPE 'R' INLET
EX. 5' TYPE 'R' INLET
EX. 18" RCP
EX. 21" RCP
EX. 24" RCP
10' TYPE 'R' INLET
AREA INLET

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

8 VISTA RIDGE FILING 1I
37 VISTA RIDGE FILING 1K
38
46 47 48 49 50 VISTA RIDGE FILING 1I / 1K

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED STORMLINE
- EXISTING STORMLINE
- BASIN BOUNDARY
- SUB-BASIN BOUNDARY
- MAJOR BASIN BOUNDARY
- 5150 PROPOSED LONG ELEVATION
- 50 PROPOSED SHORT ELEVATION
- 5150 EXISTING LONG ELEVATION
- 50 EXISTING SHORT ELEVATION
- FLOW ARROW
- B2 DRAINAGE BASIN DESIGNATION
- B4-10 DRAINAGE SUB-BASIN DESIGNATION

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

LAST SAVED: 6/2/2026 7:46 PM
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811 — 72 HOURS BEFORE YOU DIG — CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (U.N.C.C.)

NO.	REVISIONS	DATE

NOT FOR CONSTRUCTION

HURST & ASSOCIATES, INC.
1265 S. Public Road, Suite B
Lafayette, CO 80026
303.449.9105

HURST
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PLANNING
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VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
DRAINAGE PLAN-SOUTH

PREPARED FOR:
AFFINITY HOLDINGS

JOB NUMBER:	2718-1
DRAWN BY:	TA
DESIGNED BY:	TA
DATE:	05/28/2026
SCALE:	1"=50'
SHEET NO:	8 OF 21

VISTA RESERVE

PUBLIC/PRIVATE SCM PLAN

POND C INFORMATION
WQ CAPTURE VOL = 0.169 AC-FT WQCV W.S.E. = 5132.13 EURV VOL = 0.430 AC-FT EURV W.S.E. = 5134.26 100-YEAR VOL = 0.937 AC-FT 100-YEAR W.S.E. = 5136.93 Q100 RELEASE = 14.70 CFS

POND D INFORMATION
WQ CAPTURE VOL = 0.073 AC-FT WQCV W.S.E. = 5150.26 EURV VOL = 0.184 AC-FT EURV W.S.E. = 5151.20 100-YEAR VOL = 0.520 AC-FT 100-YEAR W.S.E. = 5153.26 Q100 RELEASE = 3.87 CFS

NOTES:

VISTA RESERVE DOES NOT LIE WITHIN THE 100-YEAR FLOODPLAIN PER FIRM MAP 08013C0443K DATED AUGUST 15, 2019.

THERE ARE NO WATERCOURSES WITHIN THE LIMITS OF THIS MAP.

REFER TO SUBMITTED LANDSCAPE PLANS BY PCS GROUP.

EASEMENT NOTES:

ALL RESIDENTIAL LOTS HAVE THE FOLLOWING EASEMENTS:
- -10' UTILITY ALONG RIGHTS OF WAY
- -8' DRAINAGE & UTILITY ALONG REAR LOT LINE
- -6' UTILITY ALONG LOT LINES ADJACENT TO TRACTS
- -6' DRAINAGE & UTILITY ALONG SIDE LOT LINES ADJACENT TO REARS OF ADJACENT LOTS
- -TRACTS A, B, & C SHALL HAVE BLANKET PUBLIC ACCESS EASEMENTS AND BLANKET DRAINAGE AND DRY UTILITY EASEMENTS

VICINITY MAP

1"=1/2 Mile

SCALE: 1" = 50'

LEGEND

- PROPOSED WATERLINE
- EXISTING WATERLINE
- PROPOSED SEWERLINE
- EXISTING SEWERLINE
- PROPERTY BOUNDARY
- WATER VALVE
- FIRE HYDRANT
- PLUG
- MANHOLE
- TYPE 'R' INLET
- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED STORMLINE
- EXISTING STORMLINE
- 5150 PROPOSED LONG ELEVATION
- 50 PROPOSED SHORT ELEVATION
- 5150 EXISTING LONG ELEVATION
- 50 EXISTING SHORT ELEVATION
- FLOW ARROW

NOT FOR CONSTRUCTION

HURST & ASSOCIATES, INC.
1265 S. Public Road, Suite B
Lafayette, CO 80026
303.449.9105

HURST
CIVIL ENGINEERING
PLANNING
SURVEYING

72 HOURS BEFORE YOU DIG
CALL THE UTILITY NOTIFICATION
CENTER OF COLORADO (U.N.C.C.)
811

REVISIONS

NO.	DATE
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VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
PUBLIC/PRIVATE SCM PLAN

PREPARED FOR:
AFFINITY HOLDINGS

JOB NUMBER:	2718-1
DRAWN BY:	TA
DESIGNED BY:	TA
DATE:	05/28/2026
SCALE:	1"=50'
SHEET NO:	9 OF 21

LAST SAVED: 6/2/2026 3:20 PM

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VISTA RESERVE
INITIAL EROSION CONTROL PLAN

EX. POCKET PARK
VISTA RIDGE FILING 1F BLOCK 2
SINGLE TREE LANE
REMUDA PLACE
VISTA RIDGE FILING 1K
HICKORY DRIVE
LINDEN WAY P
PEACH PLACE
APPLE TREE PLACE
HICKORY DRIVE
OUTLOT A
VISTA RIDGE FILING 1I
VISTA RIDGE FILING 1K

PRELIMINARY SEDIMENT BASIN VOLUME = 1.07 AC FT
PRELIMINARY SEDIMENT BASIN VOLUME = 0.40 AC FT
SWALE TO DIVERT RUNOFF TO SEDIMENT BASIN
EX. BARN (TO BE REMOVED)
EX. RESIDENCE (TO BE REMOVED)

GENERAL NOTES :

1. Vista Reserve is a single family subdivision located in the Northwest Quarter of Section 32, Township 1 North, Range 68 West, Sixth Principal Meridian, Town of Erie, Weld County, Colorado.
2. Approximate Area of Disturbance = 19.4 acres +/-.
3. Existing storm runoff from the site sheet flows across the site to the surrounding streets of the Vista Ridge development. The ultimate receiving water for runoff is Coal Creek.
4. Overlot grading of the development site shall be performed as indicated on these plans.
5. Existing ground cover consists primarily of native grasses.
6. No existing (pre-construction) on-site sources of pollution are known to exist. Post-construction, no potential sources of pollution are expected to exist on the site. During construction, typical construction activities may produce pollutants. These pollutants will be intercepted by erosion control measures/BMPs before entering the existing detention pond.
7. Post-development runoff will be intercepted by storm sewers, conveyed to proposed on-site detention ponds and released to existing and adjacent storm sewers.
8. All structures, concrete, trees, brush and rubbish shall be removed and acceptably disposed of.
9. All organic matter shall be removed from fill areas.
10. All fill areas shall be compacted in accordance with the geotechnical engineer's recommendations.
11. Silt fence shall be placed near the toe and erosion control bales shall be placed near drainage outfall points of all slopes 4:1 or steeper to prevent siltation and sediment transport.
12. Contractor shall comply with all Local, County, and State regulations pertaining to grading, dust, and erosion.
13. Natural vegetation shall be retained and protected wherever possible. Exposure of soil to erosion by removal or disturbance of vegetation shall be limited to the area required for immediate construction operations and for the shortest practical period of time.
14. Topsoil shall be stockpiled to the extent practicable on the site for use on areas to be revegetated. Any and all stockpiles shall be located and protected from erosive elements.
15. At all times, the property shall be maintained and/or watered to prevent wind-caused erosion. Earthwork operations shall be discontinued when fugitive dust significantly impacts adjacent property. If earthwork is complete or discontinued and dust from the site continues to create problems, the owner/developer shall immediately institute mitigative measures and shall correct damage to adjacent property.
16. Temporary cut/fill slopes shall not exceed a steepness of 2:1 (H:V). Permanent slopes shall not exceed 4:1 (H:V).
17. Utility construction is not approved under this plan unless specifically noted hereon.
18. The Owner/Developer shall provide any additional dust abatement and erosion control measures deemed necessary by the Town Engineer, should conditions necessitate them. Failure to provide these measures in a timely manner commensurate with the degree of apparent erosive impacts shall constitute a violation of the Municipal Code. The Owner/Developer shall in those cases be subject to fines or the costs of remedies performed by others on his behalf.
19. Construction Sequence
    1. Overlot/Rough Grade Entire Site
    2. Wet Utility Installation
    3. Concrete/Paving Construction
    4. Dry Utility Installation
    5. Temporary Seeding
20. A maintenance program with periodic inspections will be provided by contractor or developer. Additions and revisions to this plan may be required during construction.
21. Temporary and/or permanent stabilization shall be acheived if disturbed areas are not worked on within 14 days.
22. If landscaping is not scheduled within 14 days of end of land disturbing activities, temporary and/or permanent stabilization must be implemented.

Temporary Vegetation – Dry Land Seeding Rates:

SPECIES	SCIENTIFIC NAME	VARIETY	SEEDS/LBS	%	SOURCE*	PLS LBS
CRESTED WHEATGRASS	AGROPYYRON CRISTATUM	FAIRWAY	200,000	50	AVS	25#/AC
WESTERN WHEATGRASS	PASCOPYRUM SMITHII	BARTON	110,000	50	AVS	25#/AC

* – ARKANSAS VALLEY SEED

LEGEND

- Surface Flow Direction
- Existing Contours
- Stormline
- Limits of Construction
- SF — Silt Fence
- VTC — Vehicle Tracking Control
- SA — Staging Area
- GH — Good Housekeeping
- SS — Street Sweeping
- IP — Inlet Protection
- CWA — Inlet Protection
- SB — Sediment Basin
- CB — Compact Blanket & Filter Berm

LAND DEVELOPMENT NOTES:

1. LAND DEVELOPMENT BMPs MUST BE RELIED UPON UNTIL ALL UPSLOPE AREAS HAVE REACHED FINAL STABILIZATION AND/OR UNTIL VERTICAL CONSTRUCTION APPLIES FOR SEPARATE PERMITS (IF APPLICABLE).
2. REFER TO SWMP BOOK AND THE ACTIVE SITE MAP FOR CURRENT SITE CONDITIONS.
3. SEQUENCING OF THE PROJECT WILL BE DETERMINED DURING CONSTRUCTION AND UPDATES CAN BE OBTAINED FROM SITE SUPERINTENDENT.
4. CONSTRUCTION AND DISTURBANCE OF THE GROUND WILL BE CONFINED TO THE LIMITS OF CONSTRUCTION AND THE LOTS WITHIN THE PERMITTED AREA. ANY UNEXPECTED DISTURBANCE OUTSIDE OF PERMITTED AREA WILL REQUIRE STABILIZATION AND POSSIBLE MODIFICATION OF THE PERMIT.
5. CONTRACTORS SHALL BE RESPONSIBLE FOR SWEEPING AND CLEAN UP OF ANY TRACKED SEDIMENT OR OTHER MATERIALS DISCHARGED ONTO PAVED ROADWAYS PRIOR TO ANY STORM EVENT. ADDITIONAL GOOD HOUSEKEEPING PRACTICES (PORTABLE TOILETS, DUMPSTERS) WILL BE IMPLEMENTED THROUGHOUT CONSTRUCTION AND WILL BE REFLECTED ON THE ACTIVE SITE MAP.
6. DEPLOYMENT AND/OR REMOVAL OF THE ABOVE BMPs ARE DEPENDENT OF WORK SEQUENCING AND PROXIMITY TO EACH DISTURBANCE AREA. ADDITIONAL BMPs MAY BE REQUIRED PER THE DETAILS OR NARRATIVE.
7. IT IS THE PERMITTEE'S RESPONSIBILITY TO ADJUST OR REMOVE INLET PROTECTIONS AS NECESSARY PRIOR TO LARGE RAIN EVENTS THAT MAY EXCEED THE NORMAL CAPACITY OF THE INLET PROTECTION TO PREVENT FLOODING AND POTENTIAL PROPERTY DAMAGE.
8. TEMPORARY STABILIZATION IS REQUIRED IF CONSTRUCTION ACTIVITIES HAVE CEASED FOR 14 DAYS.

SCALE: 1" = 50'

811 — 72 HOURS BEFORE YOU DIG — CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (U.N.C.C.)

REVISIONS

NO.	DATE
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VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
INITIAL EROSION CONTROL PLAN

PREPARED FOR:
AFFINITY HOLDINGS

JOB NUMBER: 2718-1
DRAWN BY: TA
DESIGNED BY: TA
DATE: 05/28/2026
SCALE: 1"=50'
SHEET NO: 10 OF 21

LAST SAVED: 6/3/2026 8:36 AM
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VISTA RESERVE
INTERIM EROSION CONTROL PLAN

EX. POCKET PARK
VISTA RIDGE FILING 1F BLOCK 2
SINGLE TREE LANE
REMUDA PLACE
VISTA RIDGE FILING 1K
HICKORY DRIVE
LINDEN WAY PARK
EX. BARN (TO BE REMOVED)
EX. RESIDENCE (TO BE REMOVED)
VISTA PARKWAY
APPLE TREE PLACE
OUTLOT A
PEACH PLACE
HICKORY DRIVE
37 VISTA RIDGE FILING 1K
48 VISTA RIDGE FILING 1K
49 VISTA RIDGE FILING 1I
9 VISTA RIDGE FILING 1I

LAND DEVELOPMENT NOTES:

1. *LAND DEVELOPMENT BMPs MUST BE RELIED UPON UNTIL ALL UPSLOPE AREAS HAVE REACHED FINAL STABLIZATION AND/OR UNTIL VERTICAL CONSTRUCTION APPLIES FOR SEPARATE PERMITS (IF APPLICABLE).*
2. *REFER TO SWMP BOOK AND THE ACTIVE SITE MAP FOR CURRENT SITE CONDITIONS.*
3. *SEQUENCING OF THE PROJECT WILL BE DETERMINED DURING CONSTRUCTION AND UPDATES CAN BE OBTAINED FROM SITE SUPERINTENDENT.*
4. *CONSTRUCTION AND DISTURBANCE OF THE GROUND WILL BE CONFINED TO THE LIMITS OF CONSTRUCTION AND THE LOTS WITHIN THE PERMITTED AREA. ANY UNEXPECTED DISTURBANCE OUTSIDE OF PERMITTED AREA WILL REQUIRE STABILIZATION AND POSSIBLE MODIFICATION OF THE PERMIT.*
5. *SOILS FROM FOUNDATION EXCAVATION WILL BE STORED UTILIZING SOUND STOCKPILE MANAGEMENT TECHNIQUES.*
6. *CWA LOCATION WILL BE DETERMINED IN FIELD. THE CONCRETE WASHOUTS NEED TO BE INSTALLED PRIOR TO PLACING ANY CONCRETE ON SITE. ADEQUATE SIGNAGE SHALL BE PLACED AROUND THE PROJECT TO IDENTIFY THE LOCATION OF THE CONCRETE WASHOUT AREA.*
7. *CONTRACTORS SHALL BE RESPONSIBLE FOR SWEEPING AND CLEAN UP OF ANY TRACKED SEDIMENT OR OTHER MATERIALS DISCHARGED ONTO PAVED ROADWAYS PRIOR TO ANY STORM EVENT. ADDITIONAL GOOD HOUSEKEEPING PRACTICES (PORTABLE TOILETS, DUMPSTERS) WILL BE IMPLEMENTED THROUGHOUT CONSTRUCTION AND WILL BE REFLECTED ON THE ACTIVE SITE MAP.*
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9. *IT IS THE PERMITTEE'S RESPONSIBILITY TO ADJUST OR REMOVE INLET PROTECTIONS AS NECESSARY PRIOR TO LARGE RAIN EVENTS THAT MAY EXCEED THE NORMAL CAPACITY OF THE INLET PROTECTION TO PREVENT FLOODING AND POTENTIAL PROPERTY DAMAGE.*
10. *IF LOADING AND UNLOADING OPERATIONS; OUTDOOR STORAGE OF CONSTRUCTION SITE MATERIALS, BUILDING MATERIALS, FERTILIZERS, AND CHEMICALS; BULK STORAGE OF MATERIALS; AND LOCATIONS OF VEHICLE AND EQUIPMENT MAINTENANCE AND FUELING OCCURS OUTSIDE OF THE DESIGNATED STORAGE AREA, ENSURE THAT ITEMS ARE ADEQUATELY CONTAINED VIA CONTROL MEASURES AND ACCURATELY DEPICTED ON THE ACTIVE SITE MAP.*
11. *MOISTURE CONDITION SOIL AND/OR CEASE SOIL DISTURBING OPERATIONS DURING HIGH WINDS. DURING LAND DEVELOPMENT ANOTHER OPTION IS TO SLOW DOWN SCRAPER OR CONSTRUCTION TRAFFIC SPEEDS TO REDUCE DUST GENERATION.*
12. *EACH LOT WILL NEED TO BE LEFT LOW AT LEAST 4 INCHES IN A 30'x30' AREA TO REDUCE STORMWATER RUNOFF. ALTERNATIVELY, A SEDIMENT TRAP MAY BE PLACED IN THE LOW POINT OF EACH BLOCK TO ACCOMODATE RUNOFF FROM LOTS. ENSURE SEDIMENT TRAPS, IF USED, ARE SIZED APPROPRIATELY TO ACCOMODATE BLOCK FLOW.*
13. *TEMPORARY STABILIZATION IS REQUIRED IF CONSTRUCTION ACTIVITIES HAVE CEASED FOR 14 DAYS.*

LEGEND

	Surface Flow Direction	SS	Street Sweeping
	Existing Contours	SBB	Straw Bale Barrier
	Stormline	IP	Inlet Protection
	Limits of Construction	CD	Check Dam
SF	Silt Fence	RCS	Rough Cut Street Controls
	VTC Vehicle Tracking Control	CWA	Concrete Washout Area
	SA Staging Area	SR	Surface Roughening
	CB Good Housekeeping	SB	Sediment Basin
	CB Good Housekeeping		

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

811 — 72 HOURS BEFORE YOU DIG — CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (U.N.C.C.)

NO.	REVISIONS	DATE
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Lafayette, CO 80026
303.449.9105

VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
INTERIM EROSION CONTROL PLAN
PREPARED FOR:
AFFINITY HOLDINGS

JOB NUMBER:	2718-1
DRAWN BY:	TA
DESIGNED BY:	TA
DATE:	05/28/2026
SCALE:	1"=50'
SHEET NO:	11 OF 21

LAST SAVED: 6/3/2026 10:03 AM
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VISTA RESERVE
FINAL EROSION CONTROL PLAN

EX. POCKET PARK
VISTA RIDGE FILING 1F BLOCK 2
SINGLE TREE LANE
REMUDA PLACE
VISTA RIDGE FILING 1K 1
VISTA RIDGE FILING 1K 15
HICKORY DRIVE
LINDEN WAY P
EX. BARN (TO BE REMOVED)
EX. RESIDENCE (TO BE REMOVED)
OUTLOT A
37 VISTA RIDGE FILING 1K
38
PEACH PLACE
48 VISTA RIDGE FILING 1K
49 VISTA RIDGE FILING 1I
50
VISTA PARKWAY
APPLE TREE PLACE
9 VISTA RIDGE FILING 1I
HICKORY DRIVE

LAND DEVELOPMENT NOTES:

1. LAND DEVELOPMENT BMPs MUST BE RELIED UPON UNTIL ALL UPSLOPE AREAS HAVE REACHED FINAL STABILIZATION AND/OR UNTIL VERTICAL CONSTRUCTION APPLIES FOR SEPARATE PERMITS (IF APPLICABLE).

2. REFER TO SWMP BOOK AND THE ACTIVE SITE MAP FOR CURRENT SITE CONDITIONS.

3. SEQUENCING OF THE PROJECT WILL BE DETERMINED DURING CONSTRUCTION AND UPDATES CAN BE OBTAINED FROM SITE SUPERINTENDENT.

4. CONSTRUCTION AND DISTURBANCE OF THE GROUND WILL BE CONFINED TO THE LIMITS OF CONSTRUCTION AND THE LOTS WITHIN THE PERMITTED AREA. ANY UNEXPECTED DISTURBANCE OUTSIDE OF PERMITTED AREA WILL REQUIRE STABILIZATION AND POSSIBLE MODIFICATION OF THE PERMIT.

5. SOILS FROM FOUNDATION EXCAVATION WILL BE STORED UTILIZING SOUND STOCKPILE MANAGEMENT TECHNIQUES.

6. CWA LOCATION WILL BE DETERMINED IN FIELD. THE CONCRETE WASHOUTS NEED TO BE INSTALLED PRIOR TO PLACING ANY CONCRETE ON SITE. ADEQUATE SIGNAGE SHALL BE PLACED AROUND THE PROJECT TO IDENTIFY THE LOCATION OF THE CONCRETE WASHOUT AREA.

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8. DEPLOYMENT AND/OR REMOVAL OF THE ABOVE BMPs ARE DEPENDENT OF WORK SEQUENCING AND PROXIMITY TO EACH DISTURBANCE AREA. ADDITIONAL BMPs MAY BE REQUIRED PER THE DETAILS OR NARRATIVE.

9. REMOVE CHECK DAMS FROM ALL SWALES AND TRICKLE CHANNELS ONCE THE GROUND HAS BEEN FULLY STABILIZED.

10. IT IS THE PERMITTEE'S RESPONSIBILITY TO ADJUST OR REMOVE INLET PROTECTIONS AS NECESSARY PRIOR TO LARGE RAIN EVENTS THAT MAY EXCEED THE NORMAL CAPACITY OF THE INLET PROTECTION TO PREVENT FLOODING AND POTENTIAL PROPERTY DAMAGE.

11. IF LOADING AND UNLOADING OPERATIONS; OUTDOOR STORAGE OF CONSTRUCTION SITE MATERIALS, BUILDING MATERIALS, FERTILIZERS, AND CHEMICALS; BULK STORAGE OF MATERIALS; AND LOCATIONS OF VEHICLE AND EQUIPMENT MAINTENANCE AND FUELING OCCURS OUTSIDE OF THE DESIGNATED STORAGE AREA, ENSURE THAT ITEMS ARE ADEQUATELY CONTAINED VIA CONTROL MEASURES AND ACCURATELY DEPICTED ON THE ACTIVE SITE MAP.

12. MOISTURE CONDITION SOIL AND/OR CEASE SOIL DISTURBING OPERATIONS DURING HIGH WINDS. DURING LAND DEVELOPMENT ANOTHER OPTION IS TO SLOW DOWN SCRAPER OR CONSTRUCTION TRAFFIC SPEEDS TO REDUCE DUST GENERATION.

13. EACH LOT WILL NEED TO BE LEFT LOW AT LEAST 4 INCHES IN A 30'x30' AREA TO REDUCE STORMWATER RUNOFF. ALTERNATIVELY, A SEDIMENT TRAP MAY BE PLACED IN THE LOW POINT OF EACH BLOCK TO ACCOMODATE RUNOFF FROM LOTS. ENSURE SEDIMENT TRAPS, IF USED, ARE SIZED APPROPRIATELY TO ACCOMODATE BLOCK FLOW.

14. TEMPORARY STABILIZATION IS REQUIRED IF CONSTRUCTION ACTIVIES HAVE CEASED FOR 14 DAYS.

LEGEND

- Surface Flow Direction
- Existing Contours
- Stormline
- Limits of Construction
- SF — Silt Fence
- VTC — Vehicle Tracking Control
- SA — Staging Area
- SM — Seeding & Mulching Area
- CB — Good Housekeeping
- SS — Street Sweeping
- SBB — Straw Bale Barrier
- IP — Inlet Protection
- CD — Check Dam
- RCS — Rough Cut Street Controls
- CWA — Concrete Washout Area
- SR — Surface Roughening
- SB — Sediment Basin

SCALE: 1" = 50'

811 — 72 HOURS BEFORE YOU DIG CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (U.N.C.C.)

REVISIONS

NO.	DATE
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NOT FOR CONSTRUCTION

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HURST & ASSOCIATES, INC.
1265 S. Public Road, Suite B
Lafayette, CO 80026
303.449.9105

VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
FINAL EROSION CONTROL PLAN
PREPARED FOR:
AFFINITY HOLDINGS

JOB NUMBER: 2718-1
DRAWN BY: TA
DESIGNED BY: TA
DATE: 05/28/2026
SCALE: 1"=50'
SHEET NO: 12 OF 21

LAST SAVED: 6/3/2026 8:30 AM
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VISTA RESERVE
SIGNING PLAN

EX. POCKET PARK
EXISTING STOP SIGN
INSTALL STOP BAR
ADA RAMP TO BE ANALYZED WITH FINAL PLAT & MODIFIED IF NECESSARY
EXISTING LIGHT POLE
PRO. 5' WALK
EX. 8' WALK
SINGLE TREE LANE
PL
EXISTING MAILBOXES
TRACT B
5' WALK
VISTA PARKWAY
TROTTER DRIVE
BLOCK 4
BLOCK 5
LIGHT POLE
STOP
REMOVE EXISTING RAMP
NO EXISTING STOP SIGNS AT INTERSECTION
INSTALL NEW RECEIVING RAMP
A PLACE
VISTA RIDGE FILING 1F BLOCK 2
VISTA RIDGE FILING 1K
TRACT A
BLOCK 1
BLOCK 2
BLOCK 3
REMUDA PLACE
PEACH PLACE
HICKORY DRIVE
LINDEN WAY PARK
EX. 5' WALK
TRACT C
TRACT D
APPLE TREE PLACE
VISTA RIDGE FILING 1I
CHERRY PLACE
OLIVE COURT
ADA RAMPS WILL NOT BE ANALYZED WITH FINAL PLAT. WE ARE NOT PROPOSING ANY DIRECT CONNECTIONS.

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

811 — 72 HOURS BEFORE YOU DIG — CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (U.N.C.C.)

REVISIONS

NO.	DATE
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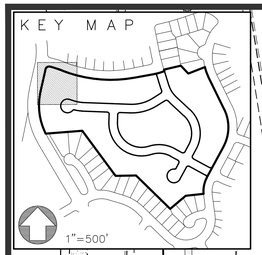
HURST
CIVIL ENGINEERING
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HURST & ASSOCIATES, INC.
1265 S. Public Road, Suite B
Lafayette, CO 80026
303.449.9105

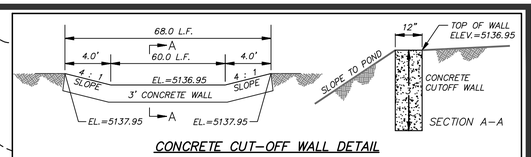
VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
SIGNING PLAN
PREPARED FOR:
AFFINITY HOLDINGS

JOB NUMBER:	2718-1
DRAWN BY:	TA
DESIGNED BY:	TA
DATE:	05/28/2026
SCALE:	1"=50'
SHEET NO:	13 OF 21

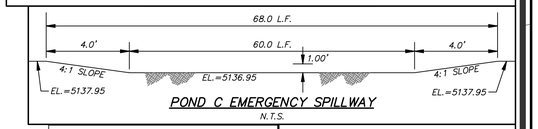
LAST SAVED: 6/3/2026 8:37 AM
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DETENTION POND C





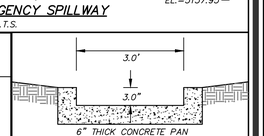
CONCRETE CUT-OFF WALL DETAIL



POND C EMERGENCY SPILLWAY

N.T.S.

POND C CHARACTERISTICS
WQ CAPTURE VOL = 0.169 AC-FT
WQCV W.S.E. = 5132.13
EURV VOL = 0.430 AC-FT
EURV W.S.E. = 5134.26
100-YEAR VOL = 0.937 AC-FT
100-YEAR W.S.E. = 5136.93
Q100 RELEASE = 14.70 CFS



NOTE: INSTALL EXPANSION JOINTS W/ MAX SPACING OF 10 FEET. REFER TO TOWN OF ERIE DETAIL SW1.

Concrete Trickle Channel

N.T.S.

0 20' 40'

SCALE: 1" = 20'

EX. POCKET PARK

VISTA PARKWAY

SINGLE TREE LANE

TRACT B

DETENTION POND C

SB-15 EX. 10' TYPE 'R' INLET INV IN=5124.40

SB-15A INV IN=5125.40 INV OUT=5125.30

144.95 LF 18" RCP @ 2.0%

SB-15B INV IN=5128.69 INV OUT=5128.59

13.00 LF 18" RCP @ 2.0%

SB-15C OUTFALL STRUCTURE INV OUT=5128.95

SB-15D CONCRETE FOREBAY INV IN=5129.56 INV OUT=5129.46

SB-17 EX. 5' TYPE 'R' INLET

SB-18

SB-19

SB-20

SB-21 EX. 5' TYPE 'R' INLET

SB-20C CONCRETE FOREBAY INV IN=5130.09 INV OUT=5129.99

SB-20E TYPE 13 INLET

SB-20F

SB-20G 10' TYPE 'R' INLET

EX. DRIVE CUT (TO BE REMOVED)

EX. GAS LINE (TO BE REMOVED)

P&A WELL 50'x100' SETBACK

AREA INLET

60.0' EMERGENCY SPILLWAY INV.=5136.95

PRO. 5 FT WALK

EX. CURB

CONC. MAINT. ACCESS

10' WIDE MAINT. ACCESS

3 FT CONCRETE TRICKLE CHANNEL

3.5 FT WALL

2.75 FT WALL

5 FT WALK

MICROPOOL

152.01 LF 18" RCP @ 2.0%

EX. 8" S/L

EX. 18" RCP

EX. 21" RCP

EX. 12" W/L

EX. 8" W/L

12" HDPEP

24" RCP

LEGEND

	PROPOSED WATERLINE
	EXISTING WATERLINE
	PROPOSED SEWERLINE
	EXISTING SEWERLINE
	PROPOSED STORMLINE
	EXISTING STORMLINE
W	WATER SERVICE
S	SEWER SERVICE
FS	FIRE SERVICE
G	EXISTING GAS LINE
E	EX. UNDERGROUND ELECTRIC
OHE	EX. OVERHEAD ELECTRIC
FO	EXISTING FIBER OPTIC
T	EXISTING TELEPHONE LINE
TV	EXISTING CABLE TV LINE
	THRUST BLOCK
	WATER VALVE
	FIRE HYDRANT
	Plug
	MANHOLE
	TYPE 'R' INLET
	STREET LIGHT
	EXISTING CONTOURS
	PROPOSED CONTOURS
5150	PROPOSED LONG ELEVATION
50	PROPOSED SHORT ELEVATION
5150	EXISTING LONG ELEVATION
50	EXISTING SHORT ELEVATION
	FLOW ARROW
ToW	TOP OF WALL ELEVATION
BoW	BOTTOM OF WALL AT GROUND ELEVATION

PROJECT NOTES

2.0 GENERAL FACILITY DESCRIPTION

- THIS FACILITY CONSISTS OF A DETENTION POND THAT RECEIVES INFLOWS FROM ON-SITE RUNOFF. THE FACILITY PROVIDES WATER QUALITY AND 100-YR STORM DETENTION. POND C RELEASES THROUGH STORM PIPES TO THE EXISTING STORM SYSTEM IN SINGLE TREE LANE.

2.1 MAINTENANCE NOTES

- MAINTENANCE FREQUENCY:
  ROUTINE MAINTENANCE TASKS, INCLUDING MOWING AND DEBRIS REMOVAL, SHOULD BE PERFORMED ON AN AS-NEEDED BASIS. DEBRIS REMOVAL SHOULD BE DONE BEFORE THE SUMMER SEASON AND FOLLOWING ANY SIGNIFICANT RAINFALL EVENTS. THE PROPERTY OWNER SHOULD DO ANNUAL SITE INSPECTION TO EVALUATE THE NEED FOR ADDITIONAL MAINTENANCE, INCLUDING SEDIMENT REMOVAL, REVEGETATION, EROSION CONTROL, AND STRUCTURAL REPAIRS.
- EQUIPMENT AND SPECIAL TOOLS REQUIRED:
  -RAKE AND BROOM
  -WHEELBARROW
  -LAWN MOWER
  -SHOVEL

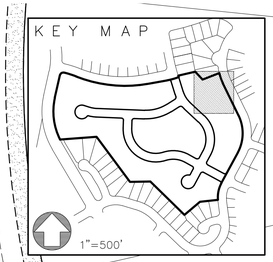
2.2 MAINTENANCE PROCEDURE

- SEDIMENT REMOVAL:
  ALL SEDIMENT MUST BE REMOVED FROM THE TRICKLE CHANNEL, MICROPOOL AND FOREBAY.
- DEBRIS REMOVAL:
  DEBRIS BUILDUP IS EXPECTED AT THE OUTLET STRUCTURE TRASH RACK AND FOREBAY. ALL DEBRIS SHOULD BE COLLECTED AND DISPOSED OF OFFSITE. A BROOM OR RAKE WILL BE NECESSARY TO CLEAN THE TRASH RACK AND A SHOVEL FOR THE FOREBAY.
- WATER QUALITY:
  IN THE OUTLET STRUCTURE THE WATER QUALITY ORIFICES IN THE STEEL PLATE MUST ALL BE CLEARED OF DEBRIS & SEDIMENT. ALL DEBRIS SHOULD BE COLLECTED AND DISPOSED OF OFFSITE.
- RIPRAP:
  INSPECT RIPRAP FOR DISPLACED ROCK AND REPLACE.
- MOW AREA:
  GENERAL MOW AREA TO BE THE BOTTOM OF THE POND AND INTERIOR SIDES. GRASS SHOULD BE MAINTAINED AT A HEIGHT OF 4-6 INCHES UNTIL NATIVE VEGETATION IS ESTABLISHED.
- WEED PREVENTION:
  MONITOR FOR WEEDS ON A PERIODIC BASIS (I.E. THE SPRING & FALL). IF NOXIOUS WEEDS ARE FOUND, MOWING AND/OR CHEMICAL TREAT TO PREVENT SPREAD.
- SITE INSPECTION:
  THE FOLLOWING ITEMS SHOULD BE INSPECTED A MINIMUM OF ONCE PER YEAR AND MAINTAINED AS NEEDED:
  -CONCRETE TRICKLE CHANNELS
  -RETAINING WALLS
  -VEGETATION
  -OUTLET STRUCTURES
  -ORIFICE PLATES
  -STORM PIPE & FLARED END SECTIONS
  -INSPECT FOR EVIDENCE OF EROSION
  -MANHOLES
  -RIPRAP SPILLWAY
  -FOREBAY
- POST-MAINTENANCE CONSIDERATIONS:
  FOLLOWING COMPLETION OF MAINTENANCE ACTIVITIES, ALL DEBRIS, TRASH, AND EXCAVATED SEDIMENT MUST BE REMOVED AND DISPOSED OF OFFSITE.

VISTA RESERVE

DETENTION POND D

POND D CHARACTERISTICS
WQ CAPTURE VOL = 0.073 AC-FT
WQCV W.S.E. = 5150.26
EURV VOL = 0.184 AC-FT
EURV W.S.E. = 5151.20
100-YEAR VOL = 0.520 AC-FT
100-YEAR W.S.E. = 5153.26
Q100 RELEASE = 3.87 CFS



VISTA RIDGE FILING 1K 1

VISTA RIDGE FILING 1K 15

14

2 BLOCK 2

1 BLOCK 2

DETENTION POND D

SA-80A

SA-81

SA-82 EX. 5' TYPE 'R' INLET

SA-83

SA-83A PRO. INV IN=5148.23 (SW) 'EX. INV OUT=5148.03 (NW)

SA-83B OUTFALL STRUCTURE INV. IN=5149.00 INV. OUT=5148.80

SA-83C CONCRETE FOREBAY INV.=5149.50

27.0 LF EMERGENCY SPILLWAY INV.=55.40

56.10 LF 18" RCP @ 1.02%

3 FT CONCRETE TRICKLE CHANNEL

MICROPOOL

10' WIDE MAINT. ACCESS

PRO. 5 FT WALK

EX. CURB

CONC. MAINT. ACCESS

TRACT A

AREA INLET

HICKORY DRIVE

EX. 24" RCP

EX. 15" RCP

EX. 8" S/L

EX. 8" W/L

12" HDPEP

18" RCP

SLOPE 4:1

3.5 FT WALK

PROJECT NOTES

2.0 GENERAL FACILITY DESCRIPTION

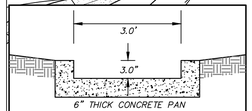
- THIS FACILITY CONSISTS OF A DETENTION POND THAT RECEIVES INFLOWS FROM ON-SITE RUNOFF. THE FACILITY PROVIDES WATER QUALITY AND 100-YR STORM DETENTION. POND D RELEASES THROUGH STORM PIPES TO THE EXISTING STORM SYSTEM IN HICKORY DRIVE.

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- MAINTENANCE FREQUENCY:
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  -RAKE AND BROOM
  -WHEELBARROW
  -LAWN MOWER
  -SHOVEL

2.2 MAINTENANCE PROCEDURE

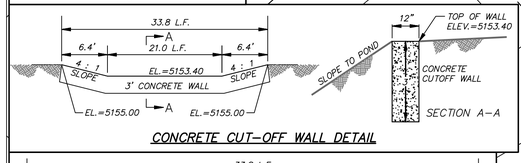
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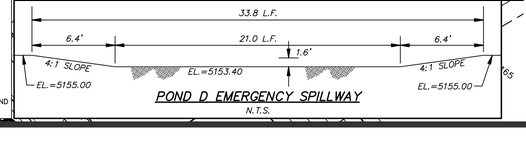
NOTE: INSTALL EXPANSION JOINTS W/ MAX SPACING OF 10 FEET. REFER TO TOWN OF ERIE DETAIL SW1.

Concrete Trickle Channel

N.T.S.



CONCRETE CUT-OFF WALL DETAIL



POND D EMERGENCY SPILLWAY

N.T.S.

0 20' 40'

SCALE: 1" = 20'

811 72 HOURS BEFORE YOU DIG CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (U.N.C.C.)

REVISIONS

NO.	DATE
----	----

NOT FOR CONSTRUCTION

HURST

CIVIL ENGINEERING
PLANNING
SURVEYING

HURST & ASSOCIATES, INC.
1265 S. Public Road, Suite B
Lafayette, CO 80026
303.449.9105

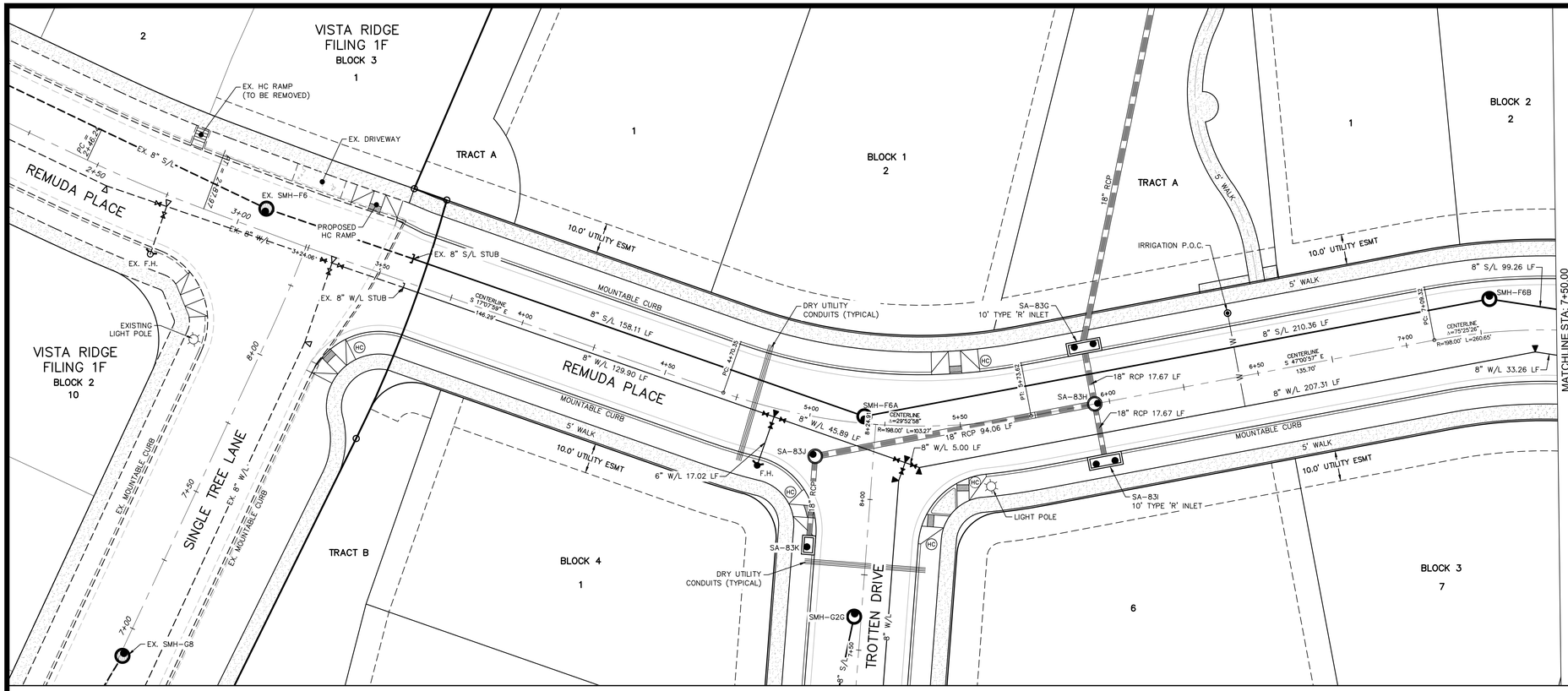
VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
DETENTION POND PLANS

PREPARED FOR:
AFFINITY HOLDINGS

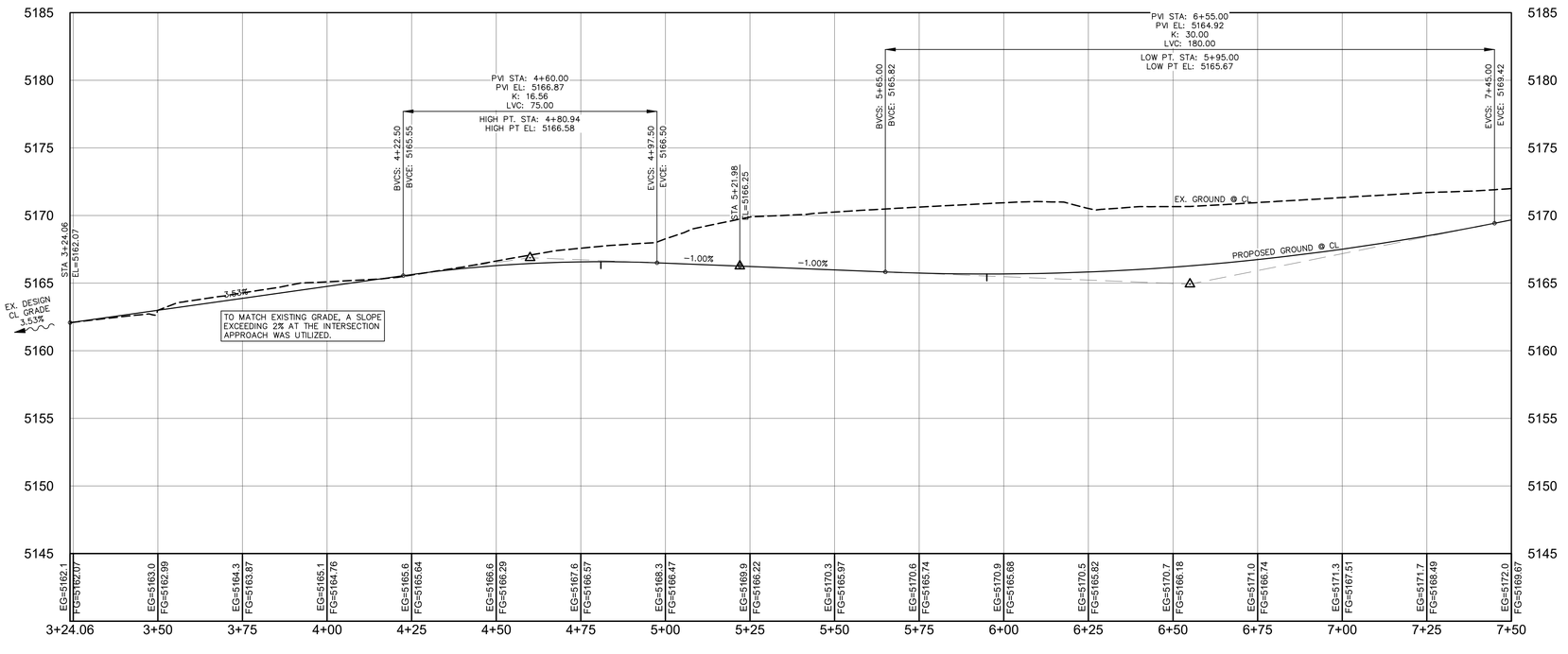
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DRAWN BY:	TA
DESIGNED BY:	TA
DATE:	05/28/2026
SCALE:	1"=20'
SHEET NO:	14 OF 21

LAST SAVED: 6/2/2026 3:38 PM

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Alignment - REMUDA PLACE PROFILE
SCALE: (H) 1" = 20' (V) 1" = 5'
START STA: 3+24.06, END STA: 7+50.00



LEGEND

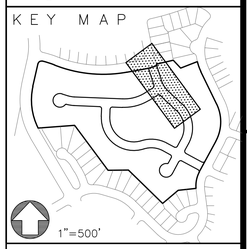
- Proposed Waterline
- Existing Waterline
- Proposed Sewerline
- Existing Sewerline
- Stormline
- W — Water Service
- S — Sewer Service
- FS — Fire Service
- G — Existing Gas Line
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- T — Existing Telephone Line
- TV — Existing Cable TV Line
- Thrust Block
- Water Valve
- Fire Hydrant
- Plug
- Manhole
- Type 'R' Inlet
- Existing Contours
- Proposed Contours
- Street Light
- (HC) Install Handicap Ramp

72 HOURS BEFORE YOU DIG CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (U.N.C.C.) 811

REVISIONS

NO.	DATE

KEY MAP



NOT FOR CONSTRUCTION

LOCAL STREET PROPERTIES

ROW = 60.0 FEET
FL-FL = 34.0 FEET

MOUNTABLE CURB & GUTTER
PAN = 2.0'
FL-BoC = 0.83'
BoC-WALK = 6.67'
BoW-ROW = 0.5'

*SEE CONSTRUCTION DETAILS

HURST
CIVIL ENGINEERING
PLANNING
SURVEYING
HURST & ASSOCIATES, INC.
1265 S. Public Road, Suite B
Lafayette, CO 80026
303.449.9105

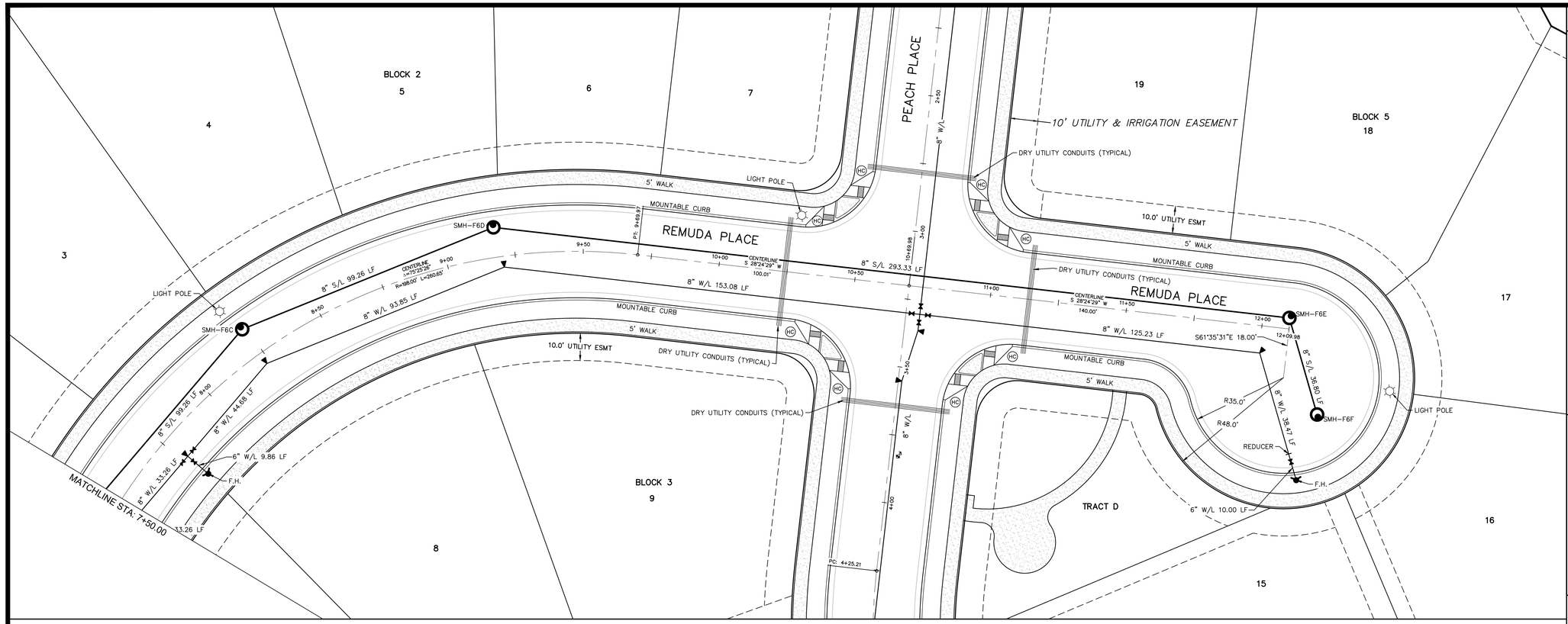
VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
REMUDA PLACE PLAN & PROFILE STA 3+25 - 7+50

PREPARED FOR:
AFFINITY HOLDINGS

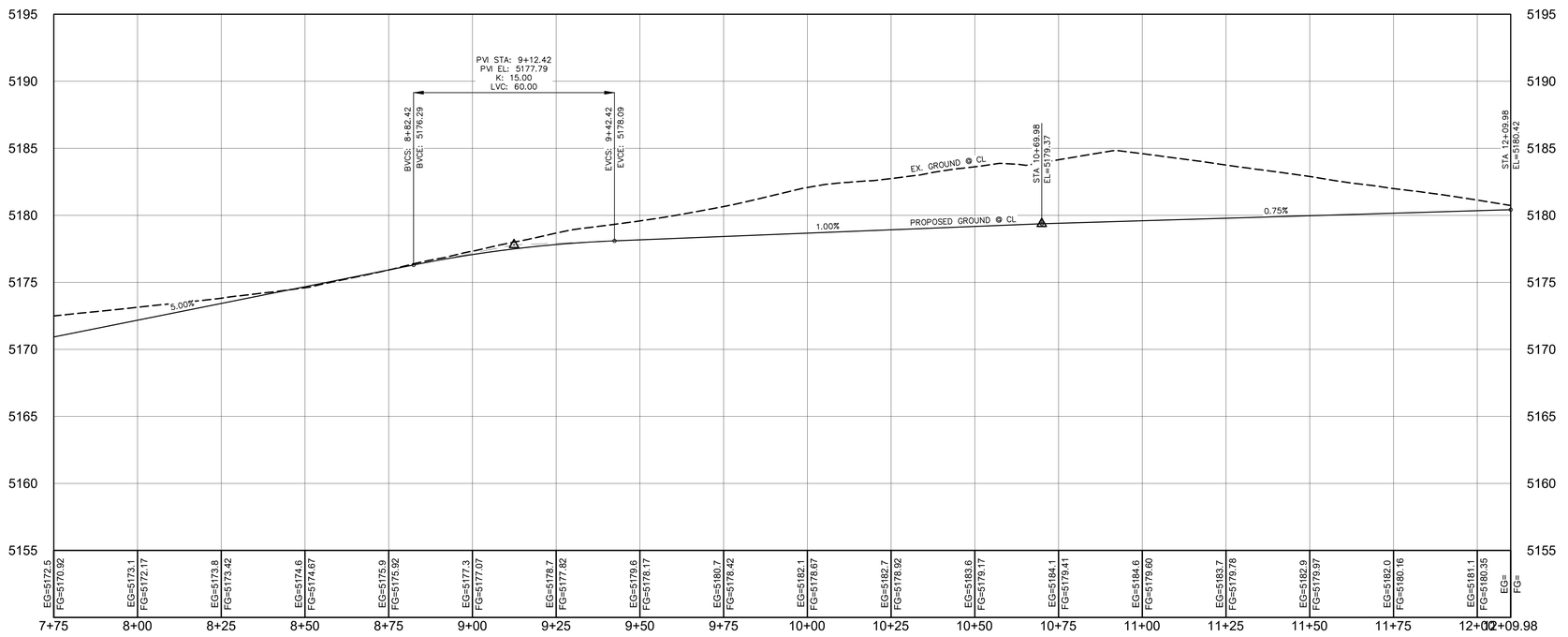
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DRAWN BY:	TA
DESIGNED BY:	TA
DATE:	05/28/2026
SCALE:	1"=20'
SHEET NO:	15 OF 21

0 20' 40'
SCALE: 1" = 20'

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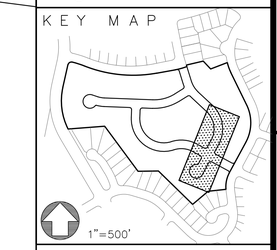
Alignment - REMUDA PLACE PROFILE
SCALE: (H) 1" = 20' (V) 1" = 5'
START STA: 7+75.00, END STA: 12+09.98



LEGEND

- Proposed Waterline
- Existing Waterline
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- Water Valve
- Fire Hydrant
- Plug
- Manhole
- Type 'R' Inlet
- Existing Contours
- Proposed Contours
- Street Light
- HC — Install Handicap Ramp

KEY MAP

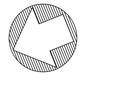


LOCAL STREET PROPERTIES

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BoC-WALK = 6.67'
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*SEE CONSTRUCTION DETAILS



72 HOURS BEFORE YOU DIG
CALL THE UTILITY NOTIFICATION
CENTER OF COLORADO (U.N.C.C.)
811

REVISIONS

NO.	DATE

NOT FOR CONSTRUCTION

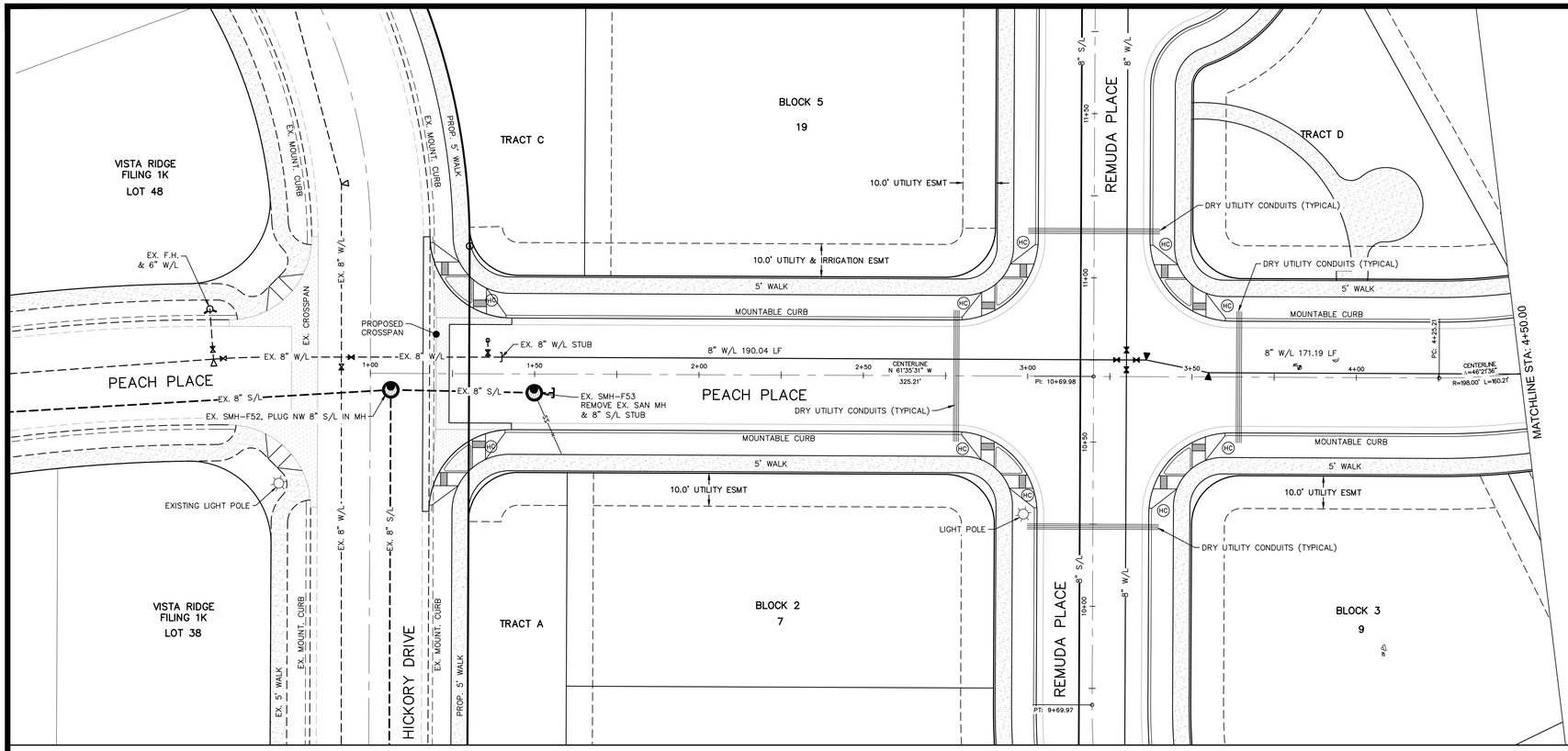
HURST
CIVIL ENGINEERING
PLANNING
SURVEYING
HURST & ASSOCIATES, INC.
1265 S. Public Road, Suite B
Lafayette, CO 80026
303.449.9105

VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
REMUDA PLACE PLAN & PROFILE STA 7+50 - 12+09.98

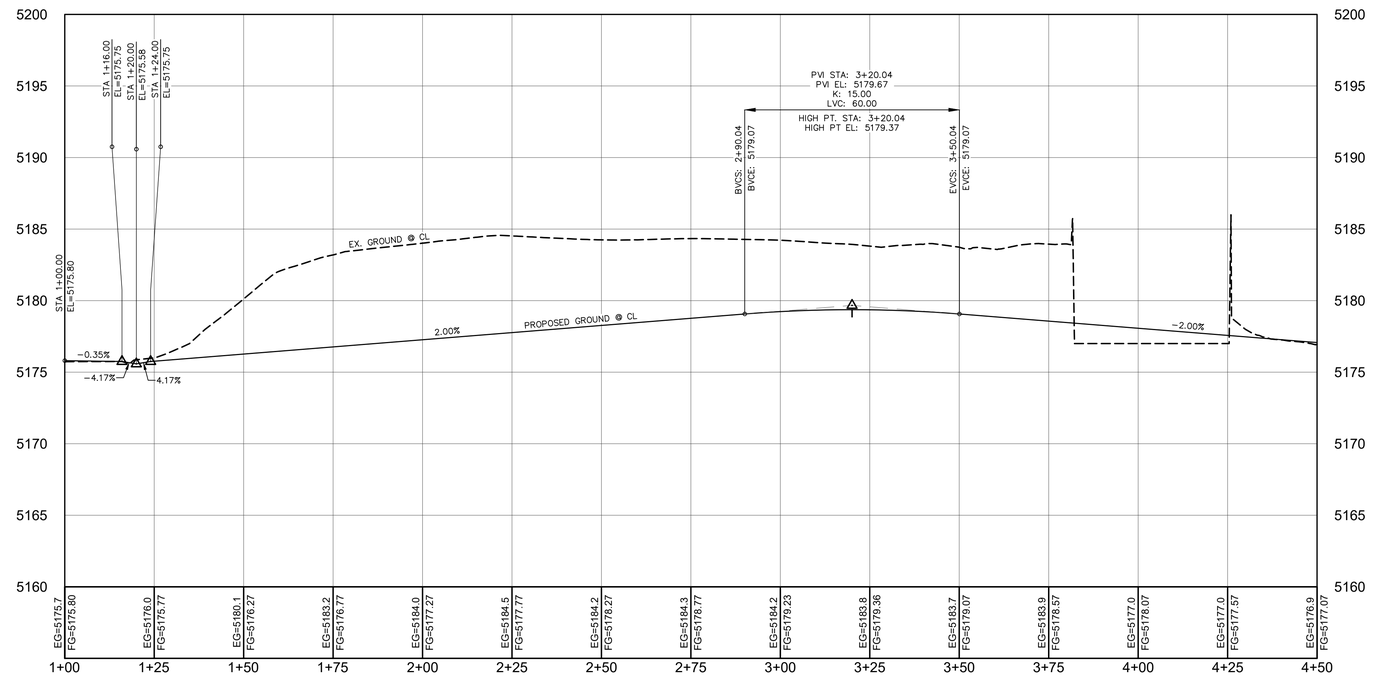
PREPARED FOR:
AFFINITY HOLDINGS

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DESIGNED BY:	TA
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SHEET NO:	16 OF 21

LAST SAVED: 6/1/2026 4:53 PM
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Alignment - PEACH PLACE PROFILE
SCALE: (H) 1" = 20' (V) 1" = 5'
START STA: 1+00.00, END STA: 4+50.00



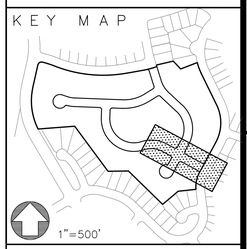
LEGEND

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72 HOURS BEFORE YOU DIG
CALL THE UTILITY NOTIFICATION
CENTER OF COLORADO (U.N.C.C.)
811

NO.	REVISIONS	DATE

KEY MAP



NOT FOR CONSTRUCTION

LOCAL STREET PROPERTIES

ROW = 60.0 FEET
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MOUNTABLE CURB & GUTTER
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*SEE CONSTRUCTION DETAILS

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PLANNING
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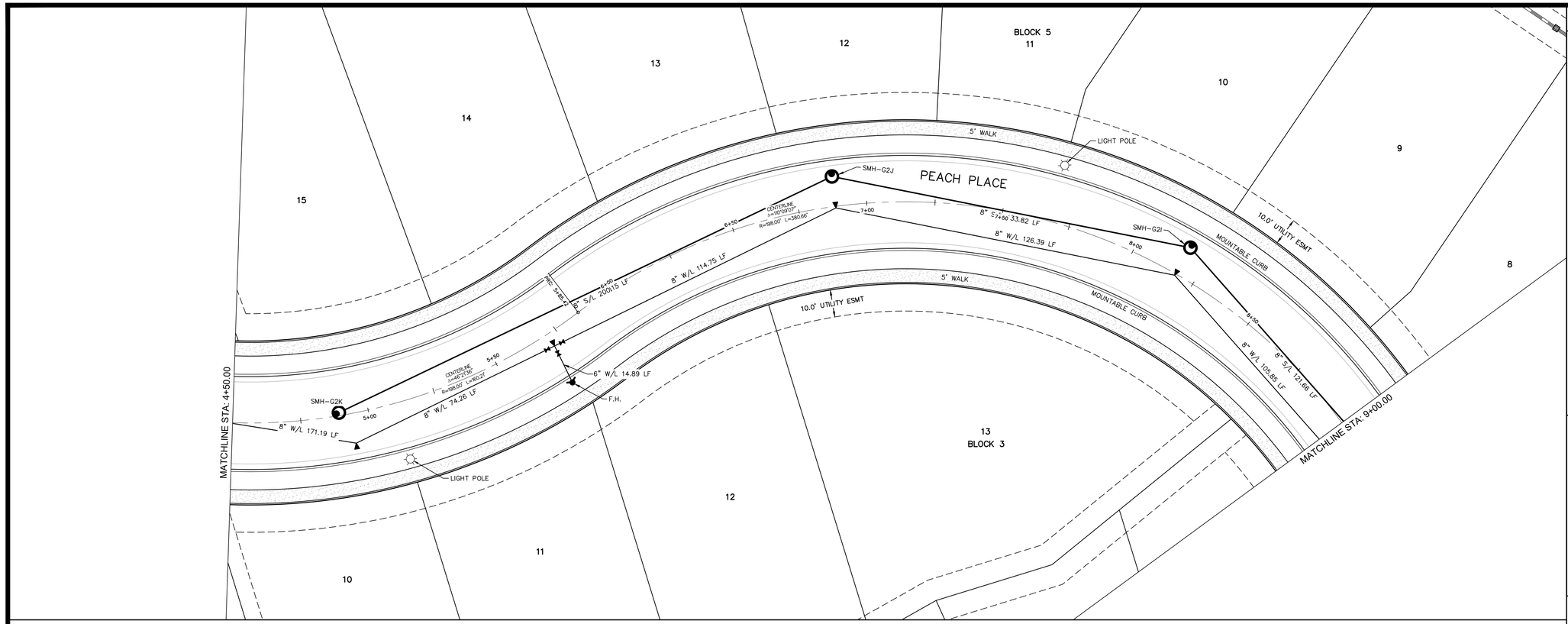
VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
PEACH PLACE PLAN & PROFILE STA 1+00 - 4+50

PREPARED FOR:
AFFINITY HOLDINGS

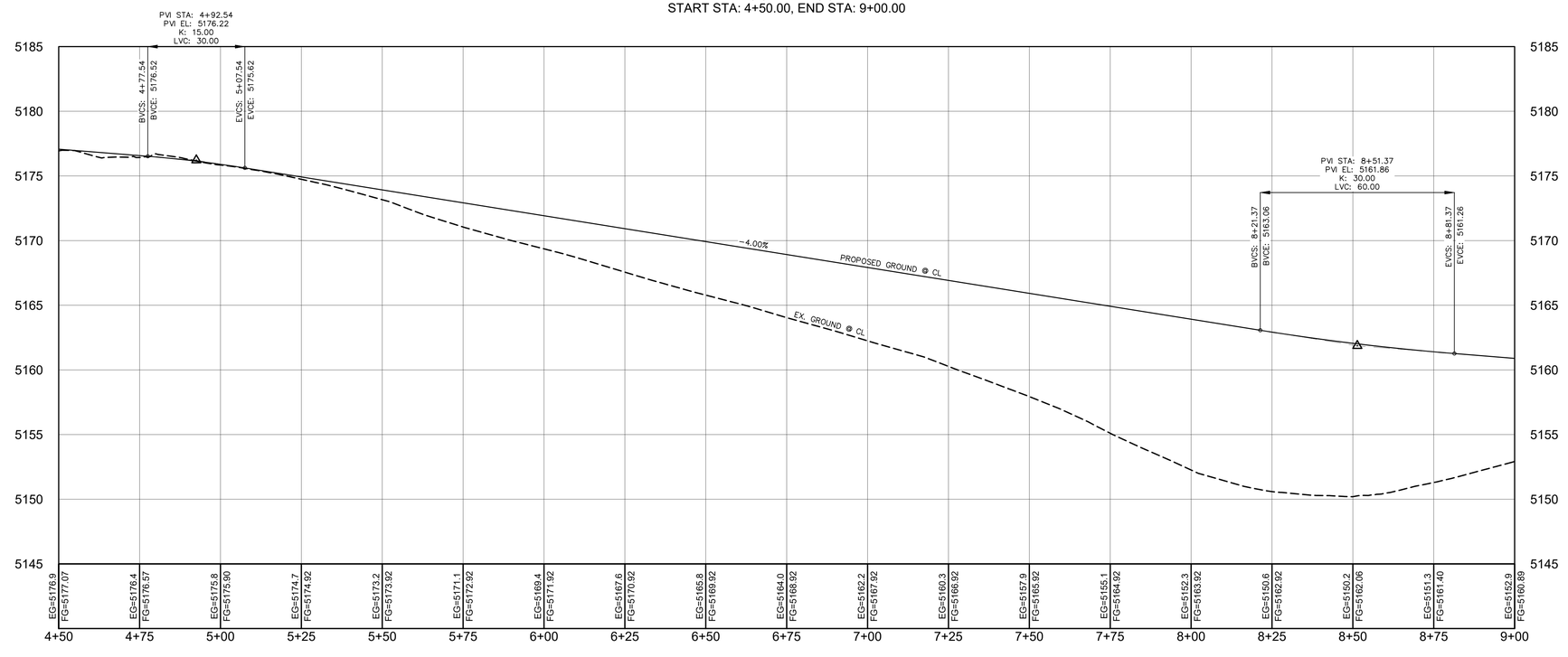
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DRAWN BY:	TA
DESIGNED BY:	TA
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SCALE:	1"=20'
SHEET NO:	17 OF 21

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SCALE: 1" = 20'

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Alignment - PEACH PLACE PROFILE
SCALE: (H) 1" = 20' (V) 1" = 5'
START STA: 4+50.00, END STA: 9+00.00



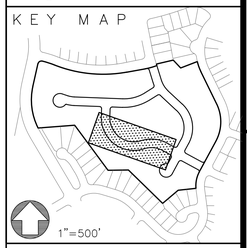
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- Manhole
- Type 'R' Inlet
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- (HC) Install Handicap Ramp

72 HOURS BEFORE YOU DIG
CALL THE UTILITY NOTIFICATION
CENTER OF COLORADO (U.N.C.C.)
811

DATE
REVISIONS
NO.

KEY MAP



1"=500'

NOT FOR CONSTRUCTION

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*SEE CONSTRUCTION DETAILS

HURST
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PLANNING
SURVEYING
HURST & ASSOCIATES, INC.
1265 S. Public Road, Suite B
Lafayette, CO 80026
303.449.9105

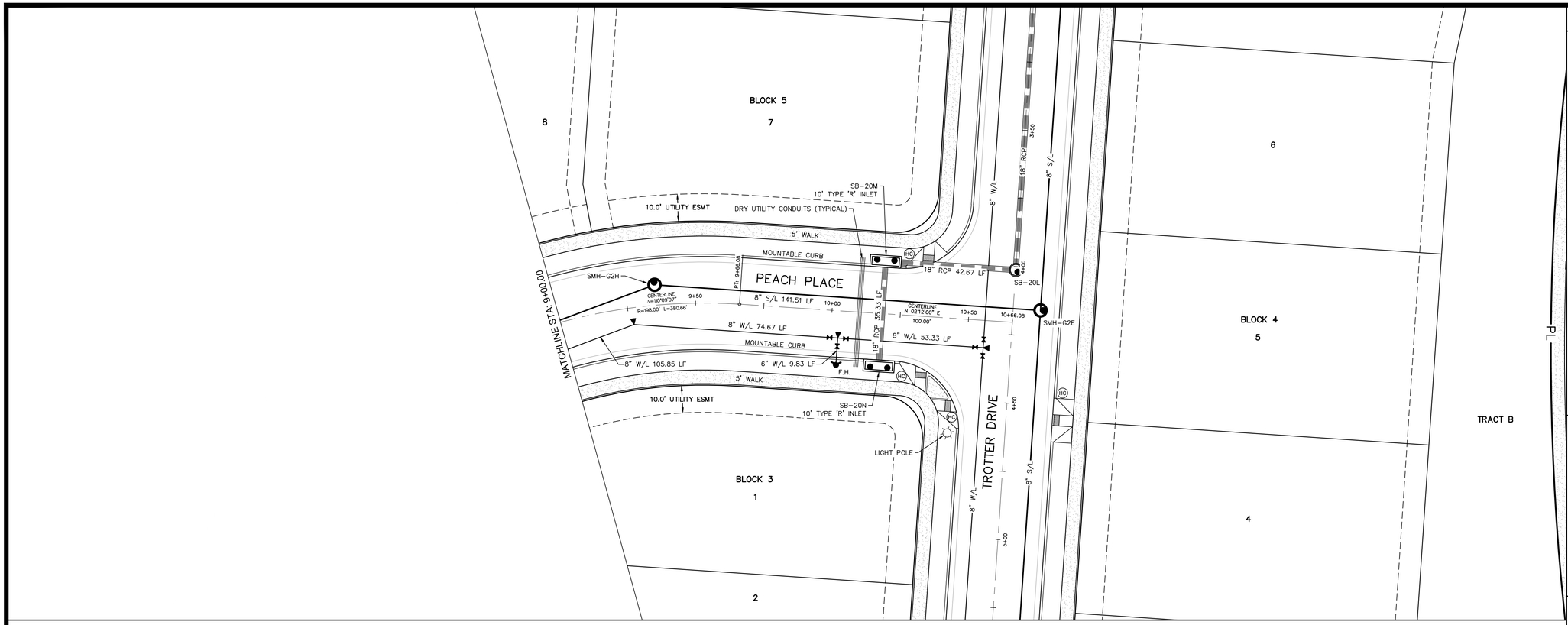
VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
PEACH PLACE PLAN & PROFILE STA 4+50 - 9+00

PREPARED FOR:
AFFINITY HOLDINGS

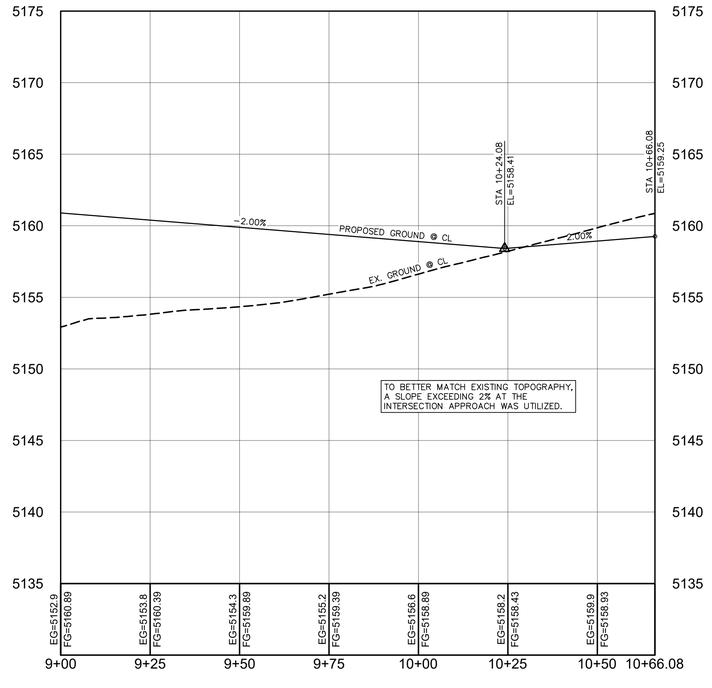
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DESIGNED BY: TA
DATE: 05/28/2026
SCALE: 1"=20'
SHEET NO: 18 OF 21

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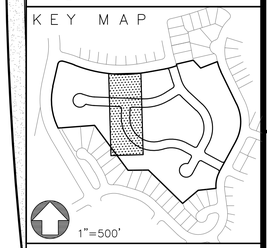
Alignment - PEACH PLACE PROFILE
SCALE: (H) 1" = 20' (V) 1" = 5'
START STA: 9+00.00, END STA: 10+66.08



LEGEND

- Proposed Waterline
- Existing Waterline
- Proposed Sewerline
- Existing Sewerline
- Stormline
- W — Water Service
- S — Sewer Service
- FS — Fire Service
- G — Existing Gas Line
- E — Ex. Underground Electric
- OHE — Ex. Overhead Electric
- FO — Existing Fiber Optic
- T — Existing Telephone Line
- TV — Existing Cable TV Line
- Thrust Block
- Water Valve
- Fire Hydrant
- Plug
- Manhole
- Type 'R' Inlet
- Existing Contours
- Proposed Contours
- Street Light
- HC — Install Handicap Ramp

KEY MAP



1"=500'

LOCAL STREET PROPERTIES

ROW = 60.0 FEET
FL-FL = 34.0 FEET

MOUNTABLE CURB & GUTTER
PAN = 2.0'
FL-BoC = 0.83'
BoC-WALK = 6.67'
BoW-ROW = 0.5'

*SEE CONSTRUCTION DETAILS

0 20' 40'

SCALE: 1" = 20'

811
72 HOURS BEFORE YOU DIG
CALL THE UTILITY NOTIFICATION
CENTER OF COLORADO (U.N.C.C.)

NO.	REVISIONS	DATE
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NOT FOR CONSTRUCTION

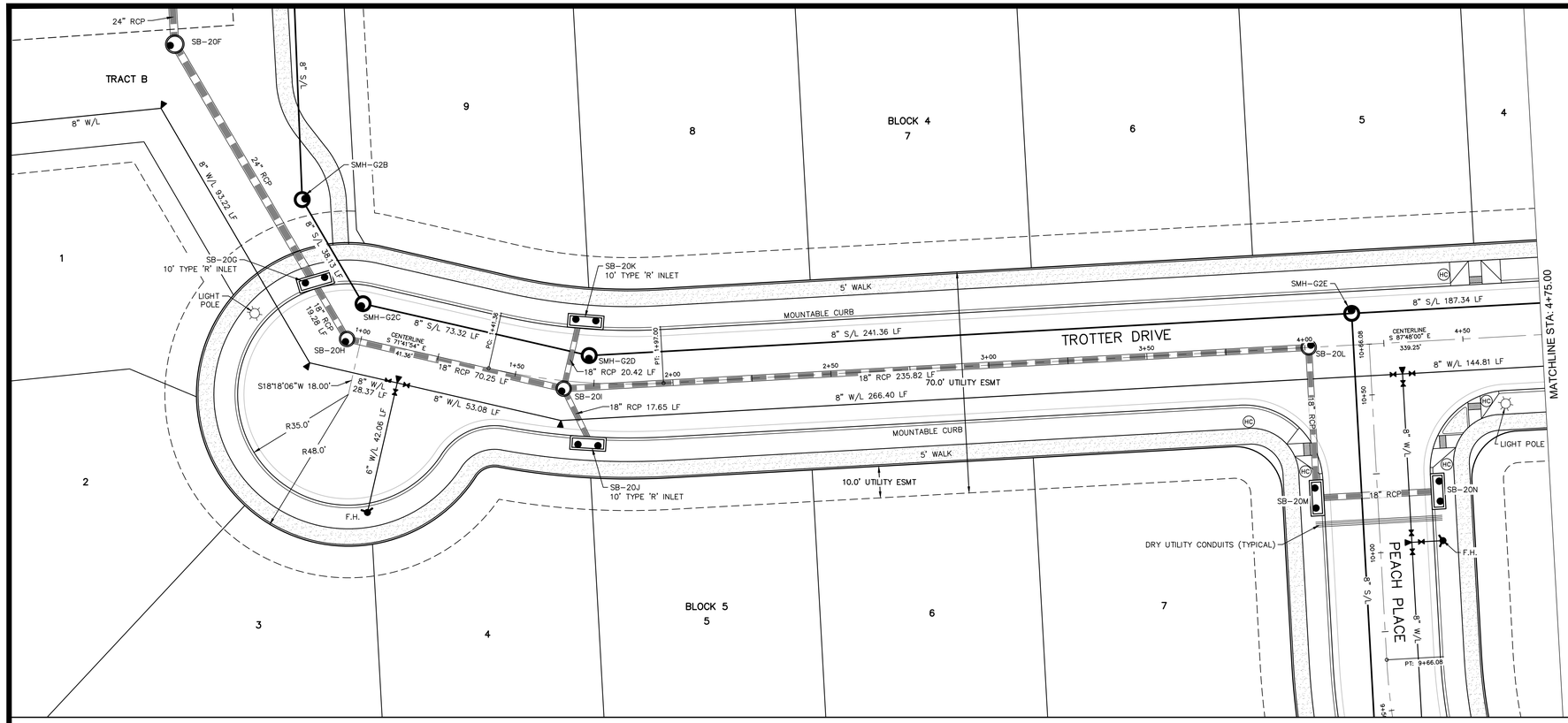
HURST
CIVIL ENGINEERING
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HURST & ASSOCIATES, INC.
1265 S. Public Road, Suite B
Lafayette, CO 80026
303.449.9105

VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
PEACH PLACE PLAN & PROFILE STA 9+00 - 10+66.08

PREPARED FOR:
AFFINITY HOLDINGS

JOB NUMBER:	2718-1
DRAWN BY:	TA
DESIGNED BY:	TA
DATE:	05/28/2026
SCALE:	1"=20'
SHEET NO:	19 OF 21

LAST SAVED: 6/2/2026 7:06 PM
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LEGEND

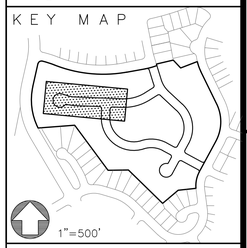
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72 HOURS BEFORE YOU DIG CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (U.N.C.C.) 811

REVISIONS

NO.	DATE

KEY MAP



NOT FOR CONSTRUCTION

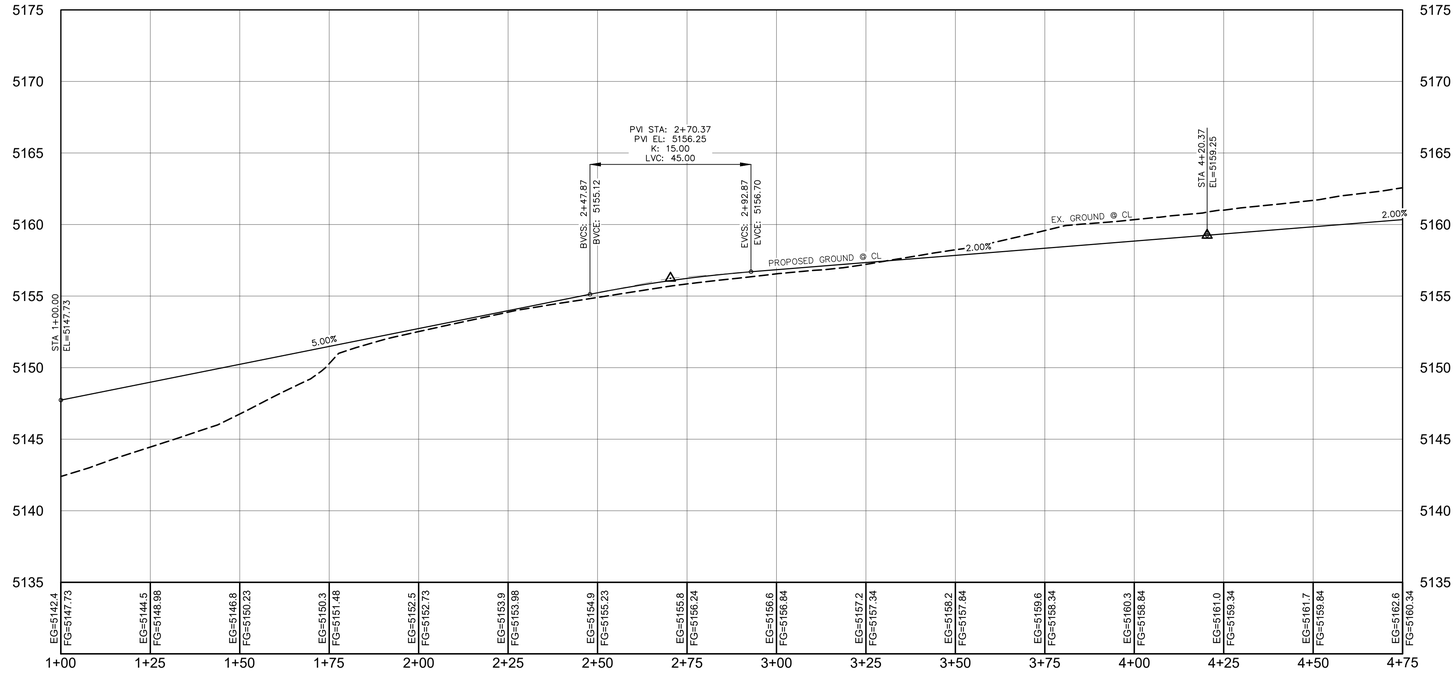
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*SEE CONSTRUCTION DETAILS

Alignment - TROTTER DRIVE PROFILE
SCALE: (H) 1" = 20' (V) 1" = 5'
START STA: 1+00.00, END STA: 4+75.00



0 20' 40'
SCALE: 1" = 20'

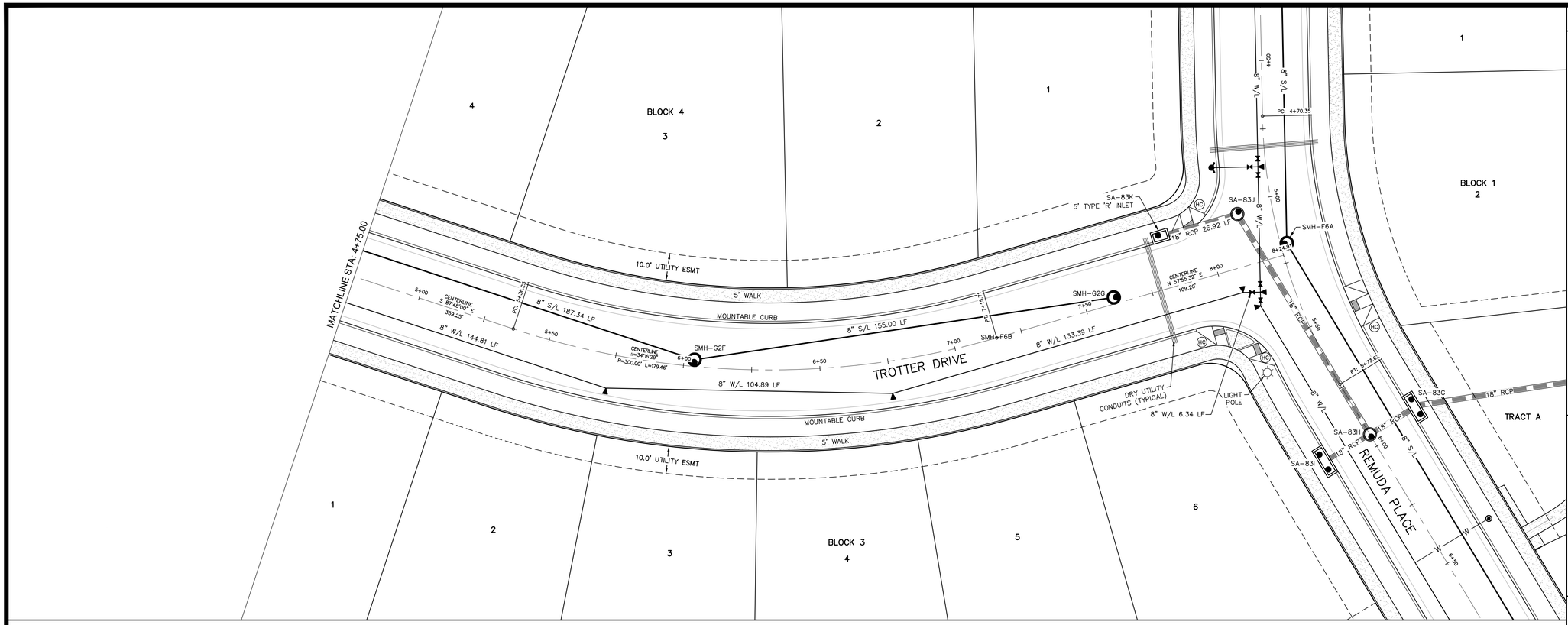
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VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
TROTTER DRIVE PLAN & PROFILE STA 1+00 - 4+75

PREPARED FOR:
AFFINITY HOLDINGS

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DRAWN BY:	TA
DESIGNED BY:	TA
DATE:	05/28/2026
SCALE:	1" = 20'
SHEET NO:	20 OF 21

LAST SAVED: 6/2/2026 7:01 PM
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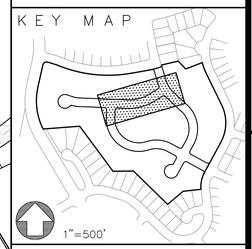


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KEY MAP



1"=500'

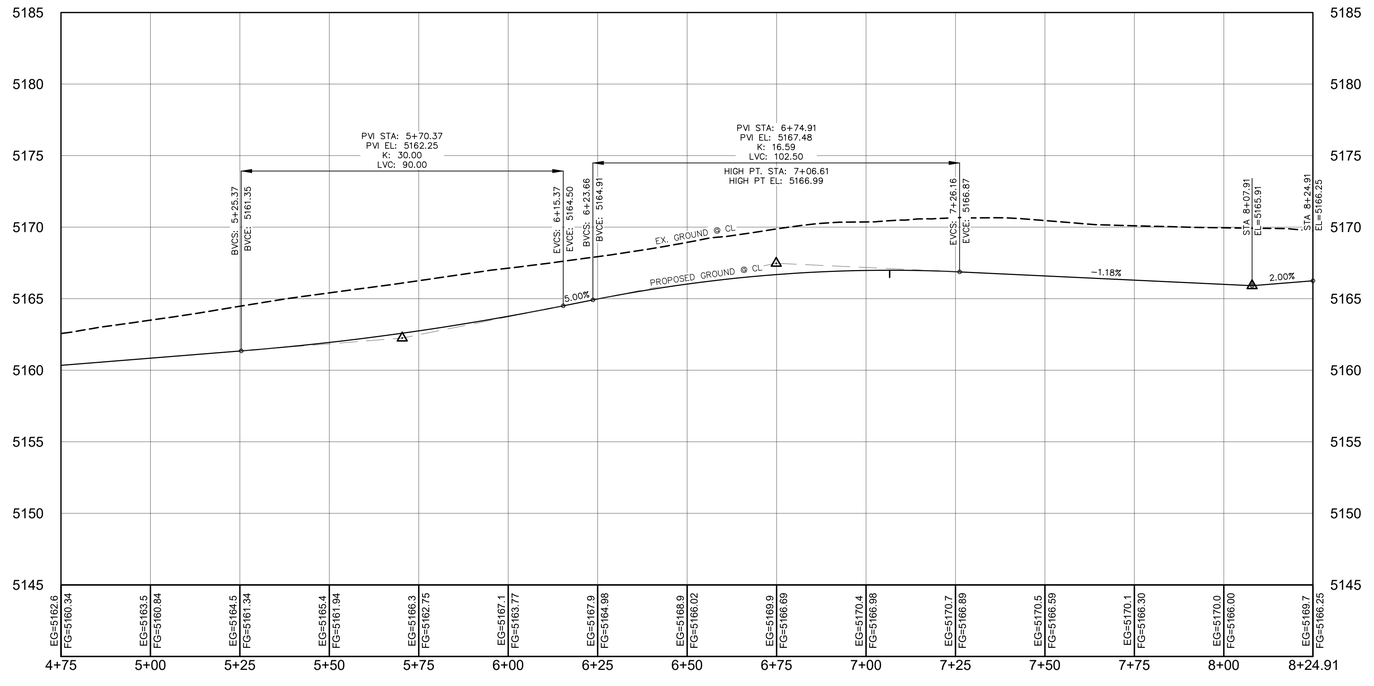
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*SEE CONSTRUCTION DETAILS

Alignment - TROTTER DRIVE PROFILE
SCALE: (H) 1" = 20' (V) 1" = 5'
START STA: 4+75.00, END STA: 8+24.91





0 20' 40'

SCALE: 1" = 20'

NO.	REVISIONS	DATE

NOT FOR CONSTRUCTION

HURST & ASSOCIATES, INC.
1265 S. Public Road, Suite B
Lafayette, CO 80026
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HURST
CIVIL ENGINEERING
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VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
TROTTER DRIVE PLAN & PROFILE STA 4+75 - 8+24.91

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LAST SAVED: 6/2/2026 7:01 PM
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VISTA RESERVE
PRELIMINARY CONSTRUCTION PLANS
LOCATED IN THE NORTHWEST QUARTER OF SECTION 32, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH P.M., TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO

GENERAL NOTES

1. THESE PLANS SHALL NOT BE UTILIZED FOR CONSTRUCTION OR PERMITTING UNTIL FINAL APPROVAL BY THE TOWN OF ERIE AND STATED FOR SUCH USE IN THE TITLE BLOCK.
2. DRAWINGS ARE INTENDED TO BE PRINTED ON 24" X 36" PAPER. PRINTING THESE DRAWINGS AT A DIFFERENT SIZE WILL IMPACT THE SCALE. VERIFY THE GRAPHIC SCALE BEFORE REFERENCING ANY MEASUREMENTS ON THESE SHEETS. THE RECIPIENT OF THESE DRAWINGS SHALL BE RESPONSIBLE FOR ANY ERRORS RESULTING FROM INCORRECT PRINTING, COPYING, OR ANY OTHER CHANGES THAT ALTER THE SCALE OF THE DRAWINGS.
3. VERIFY ALL PLAN DIMENSIONS PRIOR TO START OF CONSTRUCTION. NOTIFY THE OWNER'S REPRESENTATIVE TO ADDRESS ANY QUESTIONS OR CLARIFY ANY DISCREPANCIES.
4. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS.
5. SUBMIT A CHANGE ORDER FOR APPROVAL FOR ANY CHANGES TO WORK SCOPE RESULTING FROM FIELD CONDITIONS OR DIRECTION BY OWNER'S REPRESENTATIVE WHICH REQUIRE ADDITIONAL COST TO THE OWNER PRIOR TO PERFORMANCE OF WORK.
6. THE CONTRACTOR SHALL PROVIDE A STAKED LAYOUT OF ALL SITE IMPROVEMENTS FOR INSPECTION BY THE OWNER'S REPRESENTATIVE AND MAKE MODIFICATIONS AS REQUIRED. ALL LAYOUT INFORMATION IS AVAILABLE IN DIGITAL FORMAT FOR USE BY THE CONTRACTOR.
7. IF A GEOTECHNICAL SOILS REPORT IS NOT AVAILABLE AT THE TIME OF CONSTRUCTION, PCS GROUP, INC. RECOMMENDS A REPORT BE AUTHORIZED BY THE OWNER AND THAT ALL RECOMMENDATIONS OF THE REPORT ARE FOLLOWED DURING CONSTRUCTION. THE CONTRACTOR SHALL USE THESE CONTRACT DOCUMENTS AS A BASIS FOR THE BID. IF THE OWNER ELECTS TO PROVIDE A GEOTECHNICAL REPORT, THE CONTRACTOR SHALL REVIEW THE REPORT AND SUBMIT AN APPROPRIATE CHANGE ORDER TO THE OWNER'S REPRESENTATIVE IF ADDITIONAL COSTS ARE REQUESTED.
8. CONTRACTOR SHALL CONFIRM THAT SITE CONDITIONS ARE SIMILAR TO THE PLANS, WITHIN TOLERANCES STATED IN THE CONTRACT DOCUMENTS, AND SATISFACTORY TO THE CONTRACTOR PRIOR TO START OF WORK. SHOULD SITE CONDITIONS BE DIFFERENT THAN REPRESENTED ON THE PLANS OR UNSATISFACTORY TO THE CONTRACTOR, THE CONTRACTOR SHALL CONTACT THE OWNER'S REPRESENTATIVE FOR CLARIFICATION AND FURTHER DIRECTION.
9. CONTRACTOR IS RESPONSIBLE TO PAY FOR, AND OBTAIN, ANY REQUIRED APPLICATIONS, PERMITTING, LICENSES, INSPECTIONS AND METERS ASSOCIATED WITH WORK.
10. THE CONTRACTOR SHALL BE BE RESPONSIBLE FOR ANY FINES OR PENALTIES ASSESSED TO THE OWNER RELATING TO ANY VIOLATIONS OR NON-CONFORMANCE WITH THE PLANS, SPECIFICATIONS, CONTRACT DOCUMENTS, JURISDICTIONAL CODES AND REGULATORY AGENCIES.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL UTILITY LOCATES PRIOR TO ANY EXCAVATION. REFER TO ENGINEERING UTILITY PLANS FOR ALL PROPOSED UTILITY PLAN LOCATIONS AND DETAILS. NOTIFY OWNER'S REPRESENTATIVE IF EXISTING OR PROPOSED UTILITIES INTERFERE WITH THE ABILITY TO PERFORM THE WORK.
12. THE CONTRACTOR IS RESPONSIBLE FOR THE COST TO REPAIR UTILITIES, ADJACENT OR EXISTING LANDSCAPE, ADJACENT OR EXISTING PAVING, OR ANY PUBLIC AND PRIVATE PROPERTY THAT IS DAMAGED BY THE CONTRACTOR OR THEIR SUBCONTRACTOR'S OPERATIONS DURING INSTALLATION, ESTABLISHMENT OR DURING THE SPECIFIED MAINTENANCE PERIOD. ALL DAMAGES SHALL BE REPAIRED TO PRE-CONSTRUCTION CONDITIONS AS DETERMINED BY THE OWNER'S REPRESENTATIVE. CONTRACTOR SHALL BE RESPONSIBLE FOR LOGGING ANY DAMAGES PRIOR TO START OF CONSTRUCTION AND DURING THE CONTRACT PERIOD.
13. ALL WORK SHALL BE CONFINED TO THE AREA WITHIN THE CONSTRUCTION LIMITS AS SHOWN ON THE PLANS. ANY AREAS OR IMPROVEMENTS DISTURBED OUTSIDE THESE LIMITS SHALL BE RETURNED TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE. IN THE EVENT THE CONTRACTOR REQUIRES A MODIFICATION TO THE CONSTRUCTION LIMITS, WRITTEN PERMISSION MUST BE OBTAINED FROM THE OWNER'S REPRESENTATIVE PRIOR TO ANY DISTURBANCE OUTSIDE OF THE LIMITS OF WORK.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY OF THEIR TRENCHES OR EXCAVATIONS THAT SETTLE.
15. THE CONTRACTOR SHALL BE RESPONSIBLE TO PREPARE AND SUBMIT A TRAFFIC CONTROL PLAN TO THE APPROPRIATE JURISDICTIONAL AGENCIES AND THE OWNER'S REPRESENTATIVE IF THEIR WORK AND OPERATIONS AFFECT OR IMPACT THE PUBLIC RIGHTS.OF-WAY. OBTAIN APPROVAL PRIOR TO ANY WORK WHICH AFFECTS OR IMPACTS THE PUBLIC RIGHTS-OF-WAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES OR PENALTIES ASSESSED TO THE OWNER RELATING TO THIS REQUIREMENT DURING THE CONTRACT PERIOD.
16. SIGHT TRIANGLES AND SIGHT LINES SHALL REMAIN UNOBSTRUCTED BY EQUIPMENT, CONSTRUCTION MATERIALS, PLANT MATERIAL OR ANY OTHER VISUAL OBSTACLE DURING THE CONTRACT PERIOD AND AT MATURITY OF PLANTS PER LOCAL JURISDICTIONAL REQUIREMENTS. NO PLANT MATERIAL OTHER THAN GROUND COVER IS ALLOWED TO BE PLANTED ADJACENT TO FIRE HYDRANTS AS STIPULATED BY JURISDICTIONAL REQUIREMENTS.
17. COORDINATE SITE ACCESS, STAGING, STORAGE AND CLEANOUT AREAS WITH OWNER'S REPRESENTATIVE.
18. CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY SAFETY FENCING AND BARRIERS AROUND ALL IMPROVEMENTS SUCH AS WALLS, PLAY STRUCTURES, EXCAVATIONS, ETC. ASSOCIATED WITH THEIR WORK UNTIL SUCH FACILITIES ARE COMPLETELY INSTALLED PER THE PLANS, SPECIFICATIONS AND MANUFACTURER'S RECOMMENDATIONS.
19. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF THEIR MATERIAL STOCK PILES AND WORK FROM VANDALISM, EROSION OR UNINTENDED DISTURBANCE DURING THE CONSTRUCTION PERIOD AND UNTIL FINAL ACCEPTANCE IS ISSUED.
20. THE CONTRACTOR SHALL KNOW, UNDERSTAND AND ABIDE BY ANY STORM WATER POLLUTION PREVENTION PLAN (SWPPP) ASSOCIATED WITH THE SITE. IF A STORM WATER POLLUTION PREVENTION PLAN IS NOT PROVIDED BY THE OWNER'S REPRESENTATIVE, REQUEST A COPY BEFORE PERFORMANCE OF ANY SITE WORK.
21. MAINTAIN ANY STORM WATER MANAGEMENT FACILITIES THAT EXIST ON SITE FOR FULL FUNCTIONALITY. THE CONTRACTOR SHALL INSTALL AND MAINTAIN ANY NEW STORM WATER MANAGEMENT FACILITIES THAT ARE IDENTIFIED IN THE SCOPE OF WORK TO FULL FUNCTIONALITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES OR PENALTIES ASSESSED TO THE OWNER FOR FAILURE TO MAINTAIN STORM WATER MANAGEMENT FACILITIES DURING THE CONTRACT PERIOD.
22. THE CONTRACTOR SHALL PREVENT SEDIMENT, DEBRIS AND ALL OTHER POLLUTANTS FROM EXITING THE SITE OR ENTERING THE STORM SEWER SYSTEM DURING ALL DEMOLITION OR CONSTRUCTION OPERATIONS THAT ARE PART OF THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES OR PENALTIES ASSESSED TO THE OWNER RELATING TO THESE REQUIREMENTS DURING THEIR CONTRACTED COURSE OF WORK.
23. THE CONTRACTOR SHALL BE RESPONSIBLE TO PREVENT ANY IMPACTS TO ADJACENT WATERWAYS, WETLANDS, OR OTHER ENVIRONMENTALLY SENSITIVE AREAS RESULTING FROM WORK DONE AS PART OF THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES OR PENALTIES ASSESSED TO THE OWNER RELATING TO THESE STANDARDS DURING THEIR CONTRACTED COURSE OF WORK.
24. THE CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL INSURE THAT ALL LOADS OF CONSTRUCTION MATERIAL IMPORTED TO OR EXPORTED FROM THE PROJECT SITE SHALL BE PROPERLY COVERED TO PREVENT LOSS OF MATERIAL DURING TRANSPORT. TRANSPORTATION METHODS ON PUBLIC RIGHT.OF WAYS SHALL CONFORM TO JURISDICTIONAL REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES OR PENALTIES ASSESSED TO THE OWNER RELATING TO THESE REQUIREMENTS.
25. THE CLEANING OF EQUIPMENT IS PROHIBITED AT THE JOB SITE UNLESS AUTHORIZED BY THE OWNER'S REPRESENTATIVE IN A DESIGNATED AREA. THE DISCHARGE OF WATER, WASTE CONCRETE, POLLUTANTS, OR OTHER MATERIALS SHALL ONLY OCCUR IN AREAS DESIGNED FOR SUCH USE AND APPROVED BY THE OWNER'S REPRESENTATIVE.
26. THE DISCHARGE OF WATER CONTAINING WASTE CONCRETE IN THE STORM SEWER IS PROHIBITED.
27. OPEN SPACE SWALES: IF SWALES ARE EXISTING ON SITE AND ARE NOT INTENDED TO BE MODIFIED AS PART OF THE PLANS, THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN THE CONVEYANCE OF WATER WITHIN THE SWALES DURING THE CONTRACT PERIOD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DIVERSION OR PUMPING OF WATER IF REQUIRED TO COMPLETE WORK. ANY SWALES DISTURBED BY THE CONTRACTOR SHALL BE REPAIRED/RESTORED TO THEIR ORIGINAL CONDITION. IF THE SWALE NEEDS TO BE DISTURBED OR MODIFIED FOR ANY REASON, THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO DISTURBANCE.
28. DETENTION AND WATER QUALITY PONDS: IF DETENTION PONDS AND WATER QUALITY PONDS ARE EXISTING ON SITE AND ARE NOT INTENDED TO BE MODIFIED AS PART OF THE PLANS, THE CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE PONDS, DRAINAGE STRUCTURES AND SPILLWAYS DURING CONSTRUCTION. ALL PONDS DRAINAGE STRUCTURES AND SPILLWAYS SHALL BE MAINTAINED IN OPERABLE CONDITIONS AT ALL TIMES. ANY POND OR SPILLWAY AREAS DISTURBED BY THE CONTRACTOR SHALL BE REPAIRED/RESTORED TO THEIR ORIGINAL CONDITION. IF THE POND NEEDS TO BE DISTURBED OR MODIFIED FOR ANY REASON, THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO DISTURBANCE.
29. MAINTENANCE ACCESS BENCHES: IF MAINTENANCE BENCHES OR ACCESS ROADS EXIST ON SITE AND ARE NOT INTENDED TO BE MODIFIED AS PART OF THE PLANS, THE CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE BENCHES OR ACCESS ROADS DURING CONSTRUCTION. ANY BENCHES OR ACCESS ROADS DISTURBED BY THE CONTRACTOR SHALL BE REPAIRED/RESTORED TO THEIR ORIGINAL CONDITION. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING BENCHES AND ACCESS ROADS DURING THE CONSTRUCTION PERIOD. IF ACCESS NEEDS TO BE BLOCKED FOR ANY REASON, THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO INTERRUPTION OF ACCESS.
30. LOCAL, STATE AND FEDERAL JURISDICTIONAL REQUIREMENTS, RESTRICTIONS OR PROCEDURES SHALL SUPERSEDE THESE PLANS, NOTES AND SPECIFICATIONS WHEN MORE STRINGENT. NOTIFY THE OWNER'S REPRESENTATIVE IF CONFLICTS OCCUR.
31. SPECIFICATIONS ARE SHOWN TO INDICATE THE DESIGN INTENT. SUBSTITUTES FOR ALL MATERIALS AND FINISHES MAY BE CONSIDERED IF THEY MATCH THE APPEARANCE, QUALITY, AND GENERAL SPECIFICATIONS AS PRODUCTS SHOWN ON THIS SHEET AND SUBSEQUENT DETAILS. ALL MATERIALS AND FINISHES WILL REQUIRE A SAMPLE (OR DATA SHEET) TO BE SUBMITTED FOR FINAL REVIEW AND APPROVAL BY THE OWNER'S REPRESENTATIVE, PRIOR TO INSTALLATION. SUBSTITUTIONS WILL BE CONSIDERED.
32. PROPOSED GRADING IS BASED ON EXISTING TOPOGRAPHY BASE FILES PROVIDED BY OTHERS. PCS GROUP ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE GRADING INFORMATION OR AS-BUILT CONDITIONS. THE CONTRACTOR SHALL ACCEPT FINAL GRADING PRIOR TO COMMENCING WORK AND SHALL NOTIFY THE OWNER AND LANDSCAPE ARCHITECT OF ANY DISCREPANCIES BETWEEN THE ACTUAL GRADING CONDITIONS AND PROPOSED DESIGN PRIOR TO BEGINNING WORK.

PLANT SCHEDULE

CODE	QTY	UNIT	BOTANICAL NAME	COMMON NAME	ROOT	CALIPER/HT.	HEIGHT WIDTH
CANOPY TREE							
HAC	25	ea	CELTIS OCCIDENTALIS	COMMON HACKBERRY	B & B	2"CAL	50` X 30`
GS	21	ea	GLEDITSIA TRIACANTHOS INERMIS `SHADEMASTER` TM	SHADEMASTER LOCUST	B & B	2"CAL	45` X 50`
GK	27	ea	GYMNOCLADUS DIOICA `ESPRESSO`	KENTUCKY COFFEE TREE	B & B	2"CAL	50` X 35`
QM	28	ea	QUERCUS MACROCARPA	BURR OAK	B & B	2"CAL	75` X 50`
TG	19	ea	TILIA CORDATA `GLENLEVEN`	GLENLEVEN LITTLELEAF LINDEN	B & B	2"CAL	45` X 30`
UA	28	ea	ULMUS X `ACCOLADE`	ACCOLADE ELM	B & B	2"CAL	60` X 35`
TOTAL	**148**	**ea**			B & B		
ORNAMENTAL TREE							
AS	20	ea	ACER GRANDIDENTATUM `SCHMIDT`	ROCKY MOUNTAIN GLOW MAPLE	B & B	1.5"CAL	25` X 25`
TOTAL	**20**	**ea**					
EVERGREEN TREES							
PB	12	ea	PINUS ARISTATA	BRISTLECONE PINE	B & B	6` HT.	30` X 15`
PP	17	ea	PINUS EDULIS	PINON PINE	B & B	6` -8` HT	25` X 20`
PL	13	ea	PINUS LEUCODERMIS	BOSNIAN PINE	B & B	6` HT	30` X 15`
PN	13	ea	PINUS NIGRA	AUSTRIAN BLACK PINE	B & B	6` -8` HT	50` X 30`
PP2	7	ea	PINUS PONDEROSA	PONDEROSA PINE	B & B	6` HT	60` X 30`
TOTAL	**62**	**ea**					
DECIDUOUS SHRUBS							
AA	48	ea	AMELANCHIER ALNIFOLIA `REGENT`	SASKATOON SERVICEBERRY	CONT.	5 GAL	12` X 6`
CN	22	ea	CHRYSOTHAMNUS NAUSEOSUS NAUSEOSUS	DWARF BLUE RABBITBRUSH	CONT.	5 GAL	2` X 3`
CC	61	ea	COTONEASTER APICULATUS	CORAL BEAUTY COTONEASTER	CONT.	5 GAL	2` X 6`
FS	45	ea	FORSYTHIA X `SUNRISE`	SUNRISE FORSYTHIA	CONT.	5 GAL	4` X 4`
PA	32	ea	PEROVSKIA ATRIPLICIFOLIA	RUSSIAN SAGE	CONT.	5 GAL	4` X 4`
PO	12	ea	PHYSOCARPUS OPULIFOLIUS `DART`S GOLD`	DART`S GOLD NINEBARK	CONT.	5 GAL	4` X 4`
SCH	19	ea	PRUNUS BESSEYI 'PAWNEE BUTTES'	PAWNEE BUTTES SAND CHERRY	CONT.	5 GAL	18" X 5`
RHU	74	ea	RHUS AROMATICA `GRO-LOW`	GRO-LOW FRAGRANT SUMAC	CONT.	5 GAL	3` X 8`
SF2	27	ea	SPIRAEA X BUMALDA 'FROEBELII'	FROBEL SPIREA	CONT.	5 GAL	4` X 4`
SM	62	ea	SYRINGA PATULA 'MISS KIM'	MISS KIM KOREAN LILAC	CONT.	5 GAL	5` X 5`
VS	33	ea	VIBURNUM TRILOBUM 'SPRING GREEN'	SPRIUNG GREEN COMPACT CRANBERRYBUSH	CONT.	5 GAL	5` X 4`
TOTAL	**435**	**ea**					
EVERGREEN SHRUB							
AP2	20	ea	ARCTOSTAPHYLOS X COLORADENSIS 'PANCHITO'	PANCHITO MANZANITA	CONT.	5 GAL	2`X4`
JB	28	ea	JUNIPERUS HORIZONTALIS `BLUE CHIP`	BLUE CHIP JUNIPER	CONT.	5 GAL	8" X 7`
JB3	17	ea	JUNIPERUS SABINA `BUFFALO`	BUFFALO JUNIPER	CONT.	5 GAL	1` X 6`
JM	38	ea	JUNIPERUS SCOPULORUM `MOONGLOW`	MOONGLOW JUNIPER	CONT.	10 GAL	15` X 5`
JS	63	ea	JUNIPERUS X MEDIA `SEA GREEN`	SEA GREEN JUNIPER	CONT.	5 GAL	5` X 6`
PN5	42	ea	PICEA ABIES `NIDIFORMIS`	NEST SPRUCE	CONT.	5 GAL	3` X 6`
PC3	10	ea	PICEA GLAUCA 'CONICA'	DWARF ALBERTA SPRUCE	CONT.	5 GAL	8`X4`
PM	13	ea	PINUS MUGO PALOUSE	PALOUSE MUGO PINE	CONT.	5 GAL	4` X 4`
TOTAL	**231**	**ea**					
ORNAMENTAL GRASS							
BB3	70	ea	BOUTELOUA GRACILIS 'BLONDE AMBITION'	BLONDE AMBITION BLUE GRAMA	CONT.	1 GAL	2` X 2`
CK	58	ea	CALAMAGROSTIS X ACUTIFLORA `KARL FOERSTER`	FEATHER REED GRASS	CONT.	1 GAL	4.5`X2`
HS	16	ea	HELICTOTRICHON SEMPERVIRENS	BLUE OAT GRASS	CONT.	1 GAL	2.5` X 2.5`
MV	89	ea	MISCANTHUS SINENSIS `VARIEGATUS`	VARIEGATED MAIDEN GRASS	CONT.	1 GAL	5` X 3`
PB3	17	ea	PENNISETUM ALOPECUROIDES 'LITTLE BUNNY'	LITTLE BUNNY FOUNTAIN GRASS	CONT.	1 GAL	1` X 2`
TOTAL	**250**	**ea**					
PERENNIAL							
AM3	73	ea	ASTER X FRIKARTII `MONCH`	MONCH ASTER	CONT.	1 GAL	2` X 2`
CR2	21	ea	CENTRANTHUS RUBER	RED VALERIAN	CONT.	1 GAL	3` X 2`
HR2	39	ea	HEMEROCALLIS X 'ROCKET CITY'	ROCKET CITY DAYLILY	CONT.	1 GAL	2` X 2`
KU	58	ea	KNIPHOFIA UVARIA	RED HOT POKER	CONT.	1 GAL	2` X 2`
LA	16	ea	LAVANDULA ANGUSTIFOLIA 'NIKO'	PHENOMENA ENGLISH LAVENDER	CONT.	1 GAL	1.5` X 1.5`
SM3	73	ea	SALVIA NEMOROSA 'MAINACHT'	MAYNIGHT MEADOW SAGE	CONT.	1 GAL	2.5` X 2`
TOTAL	**280**	**ea**					

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Lafayette, CO 80026
303.449.9105

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CIVIL ENGINEERING
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VISTA RESERVE
PRELIMINARY CONSTRUCTION PLAN
GENERAL NOTES AND PLANT SCHEDULE

PREPARED FOR:
AFFINITY HOLDINGS, LLC

JOB NUMBER:
DRAWN BY: BTN
DESIGNED BY: BTN
DATE: 02.24.2026
SCALE:
SHEET NO: 1 OF 10

LAST SAVED: 6/6/2025 3:42 PM
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VISTA RESERVE
PRELIMINARY CONSTRUCTION PLANS
LOCATED IN THE NORTHWEST QUARTER OF SECTION 32,
TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH P.M.,
TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO

NATIVE SEED

TABLE 2. SHORTGRASS PRAIRIE NATIVE SEED MIX

FOR USE IN OPEN SPACE NATIVE SEEDING LESS THAN 25 FEET FROM ROAD AND TRAIL EDGES, OR WITHIN THE TOP OF SLOPE ABOVE ROADWAY/TRAIL AND INSIDE THE TOE OF SLOPE BELOW ROADWAY/TRAIL IF SLOPED AREAS ARE PRESENT ADJACENT TO ROADWAY OR TRAIL. THIS MIXTURE IS FOR SPECIFIC USAGE NEAR TRAILS OR WHERE SHORTER GRASSES ARE DESIRED (SUCH AS SMALL PARK SITES). BEST FOR USE ALONG ROADS AND TRAILS AND IN SMALLER NATIVE SEEDED PARK AREAS. BE SURE TO OVER SEED ANY SWALES OR MOIST AREAS WITHIN THIS SEEDING TYPE WITH THE MOIST SWALE SEED MIXTURE (TABLE 3). WHILE SEEDING IS PREFERRED BEGINNING TO LATE WINTER (AFTER FEBRUARY 1ST), THIS MIXTURE MAY BE USED BETWEEN OCTOBER 30TH AND APRIL 30TH ONLY WITHOUT SUPPLEMENTAL IRRIGATION. IF ADEQUATE SUPPLEMENTAL IRRIGATION IS IN PLACE, THIS MIXTURE MAY BE SEEDED THROUGH JUNE 15TH.

COMMON NAME	SCIENTIFIC NAME	VARIETY	PLS LBS/ACRE
BUFFALO GRASS	BUCHLOE DACTYLOIDES	NATIVE, BISON OR TEXOKA	10.0
BLUE GRAMA	CHONDROSUM GRACILE	LOVINGTON, ALMA, NATIVE OR HACHITA	8.0
SAND DROPSEED	SPOROBOLUS CRYPTANDRUS	COMMON	4.0
PRAIRIE JUNEGRASS	LOELERIA MACRANTHA	COMMON	4.0
HARD FESCUS	FESTUCA BREVIPILA	DURAR	4.0
SEEDING RATE POUNGS PLS/ACRE			30.0

MAINTENANCE CHART

LANDSCAPING SHALL BE PLANTED AND MAINTAINED IN A NEAT, CLEAN AND HEALTHY CONDITION BY FOUR CORNERS BUSINESS IMPROVEMENT DISTRICT. THIS SHALL INCLUDE PROPER PRUNING, MOWING AND AERATION OF LAWNS, REPLACEMENT OF MULCH, WEEDING, REMOVAL OF LITTER AND THE REGULAR WATERING OF ALL PLANTINGS. IRRIGATION SHALL BE MAINTAINED TO MAXIMIZE WATER CONSUMPTION. SHOULD ANY PLANT MATERIAL DIE, THE OWNER, SUCCESSOR, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF PLANT(S) WITHIN ONE PLANTING SEASON. REPLACEMENT OF PLANT MATERIALS SHALL OCCUR AT THE FOLLOWING RATE:

TYPE	PLANT REPLACEMTN WITHIN 1 YEAR	2+ YEARS
TREE - DECIDUOUS	INCREASE CALIPER BY 1 INCH	INCREASE CALIPER BY 1.5 INCH
TREE - EVERGREEN	INCREASE CHEIGHT BY 1.5 FOOT	INCREASE CHEIGHT BY 2 FEET
SHRUB	REPLACE WITH PLANTS OF AT LEAS 1/2 MATURE SIZE	REPLACE WITH PLANTS OF AT LEAS 1/2 MATURE SIZE

TOWN OF ERIE NOTES

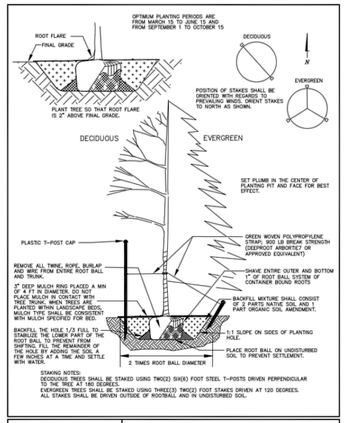
1. ALL HOA / DISTRICT MAINTAINED LANDSCAPING TO BE INSPECTED BY A COLORADO LANDSCAPE ARCHITECT IN GOOD STANDING AND PAID FOR BY THE DEVELOPER.
2. ALL TOWN OF ERIE LANDSCAPE ACCEPTANCE PROCEDURES FOR HOA / DISTRICT MAINTAINED TRACTS SHALL BE FOLLOWED.
3. UPON COMPLETION OF THE PROJECT, DEVELOPER / LANDSCAPE ARCHITECT / CONTRACTOR TO PROVIDE TOWN OF ERIE A FULL SET OF AS-BUILT DRAWINGS OF ALL LANDSCAPE AND IRRIGATION, ON A CD SET INCLUDING LATEST VERSION OF PDF AND AUTO-CAD. IN ADDITION, A SIGNED LANDSCAPE / IRRIGATION COMPLIANCE STATEMENT SHALL BE PROVIDED TO THE TOWN.
4. ALL STREET TREE SPECIES AND THEIR LOCATIONS SHALL BE APPROVED BY PARKS AND RECREATION DIRECTOR OR DESIGNEE FOR TREES PLANTED ADJACENT TO RESIDENTIAL HOMES, WHETHER THEY BE INSTALLED BY THE DEVELOPER / CONTRACTOR OR INDIVIDUAL OWNER. ASH TREES SHALL NOT BE PLANTED UNDER ANY CIRCUMSTANCES.

TOWN OF ERIE GENERAL LANDSCAPE STANDARDS AND SPECIFICATIONS

1. ALL WORK SHALL CONFORM TO TOWN OF ERIE STANDARDS AND SPECIFICATIONS AND WITH THE ACCEPTED PLANS. REFER TO THESE STANDARDS FOR ADDITIONAL INFORMATION AS NEEDED. A COPY OF THESE SPECIFICATIONS SHALL BE AVAILABLE ON THE WORK SITE AT ALL TIMES.
2. THE DEVELOPER/ARCHITECT SHALL ENSURE THAT THE IRRIGATION PLAN IS COORDINATED WITH PLANS DONE BY OTHERS SO THE PROPOSED GRADING, DRAINAGE WORK, OR OTHER CONSTRUCTION DOES NOT CONFLICT NOR PRECLUDE INSTALLATION AND MAINTENANCE OF LANDSCAPE ELEMENTS ON THIS PLAN.
3. STORM WATER BEST MANAGEMENT PRACTICES SHALL CONFORM TO STATE OF COLORADO REQUIREMENTS. ALL STORM WATER REPORTS AND REQUIRED PAPERWORK SHALL ADHERE TO ALL STATE OF COLORADO REQUIREMENTS.
4. THE CONTRACTOR SHALL CERTIFY THAT THE GRADE IS WITHIN PLUS OR MINUS ONE-TENTH (1/10TH) OF THE FINAL GRADING PLAN PRIOR TO COMMENCEMENT OF ANY LANDSCAPE OR IRRIGATION WORK.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITS, FEES, AND LICENSES ASSOCIATED WITH THE WORK AS SHOWN ON THE PLANS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR UTILITY LOCATIONS PRIOR TO ANY EXCAVATION.
7. ANY REVISION TO THE IRRIGATION PLAN SHALL BE REVIEWED AND APPROVED BY THE PARKS & RECREATION DIRECTOR OR DESIGNEE PRIOR TO IMPLEMENTATION.
8. THE CONTRACTOR SHALL HAVE ACCEPTED SET OF PLANS, AND MUST HAVE HELD A PRE-CONSTRUCTION MEETING WITH THE TOWN OF ERIE PARKS DIVISION, PRIOR TO THE COMMENCEMENT OF ANY AND ALL WORK.
9. THE CONTRACTOR SHALL WARRANTY THE WORKMANSHIP AND IRRIGATION SYSTEM FOR A PERIOD OF TWO YEARS.
10. DO NOT DISTURB PAVING, LIGHTING, LANDSCAPE OR IRRIGATION THAT EXISTS ADJACENT TO THE SITE UNLESS OTHERWISE NOTED ON PLANS.
11. THE CONTRACTOR SHALL IDENTIFY, VERIFY AND PROTECT CONTROL POINT. CONTRACTOR SHALL VERIFY LOCATION OF CONTROL POINT WEEKLY AND THE ORIGINAL CONDITION OF CONTROL POINT PIN SHALL BE MAINTAINED THROUGHOUT ENTIRE PROJECT. LOCATION AND G.P.S. COORDINATES OF THE CONTROL POINT SHALL BE IDENTIFIED ON ALL PLANS AND AS-BUILTS.
12. GRAPHIC SYMBOLS SHALL PRESIDE OVER WRITTEN PLANT QUANTITIES.
13. ALL TREE SPECIES SHALL BE FROM THE TOWN OF ERIE APPROVED TREE LIST.
14. NATIVE PLANTS SHALL BE USED IN NATIVE SEED AREAS. REFER TO STANDARDS AND SPECIFICATIONS FOR COMPLETE SPECIES LIST.

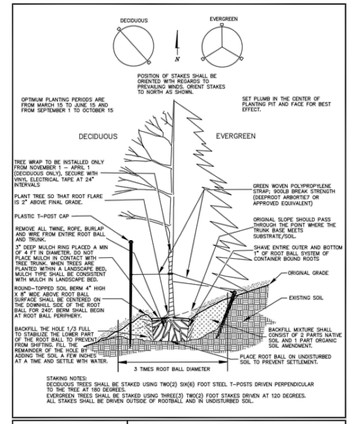
GENERAL LANDSCAPE NOTES

1. GROUND MOUNTED, ABOVE-GRADE MECHANICAL EQUIPMENT OR UTILITY BOXES SHALL BE LOCATED AT THE REAR OF BUILDINGS OR SCREENED FROM VIEW, TO THE EXTENT PRACTICAL TO SCREEN 80% OF THE IMPROVEMENT BY ONE OR MORE OF THE FOLLOWING METHODS: LANDSCAPE BERMING, ORNAMENTAL FENCING, SCREENING ENCLOSURES, TREES, SHRUBS, SIGNAGE OR ARCHITECTURAL ELEMENTS. FOR MECHANICAL EQUIPMENT OR UTILITY BOXES THAT ARE PAINTED TO BLEND WITH A DIRECTLY ADJACENT BUILDING OR ARE PAINTED WITH A MURAL TO ENHANCE THE SENSE OF PLACE, THE SCREEN REQUIREMENT SHALL BE REDUCED TO 25%.
2. IF TRANSFORMERS, GROUND MOUNTED HVAC EQUIPMENT, UTILITY PEDESTALS, ETC. ARE NOT SHOWN ON THE SITE IMPROVEMENT PLAN, ADDITIONAL LANDSCAPE/SCREENING MAY BE REQUIRED BASED UPON FIELD CONDITIONS DISCOVERED VIA THE SITE INSPECTION BY STAFF, MADE PRIOR TO THE ISSUANCE OF THE CERTIFICATE OF OCCUPANCY, OR FINAL INSPECTION AS APPLICABLE.
3. ALL WORK SHALL CONFORM TO THE TOWN OF ERIE CODES. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES, LINES AND STRUCTURES PRIOR TO EXCAVATION OR TRENCHING. DAMAGE TO THESE UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER, OWNER'S REPRESENTATIVE, OR LANDSCAPE ARCHITECT.
4. PLANT QUANTITIES TO BE BASED ON CONTRACTOR'S ESTIMATE ACCORDING TO PLANS, WHICH ARE SUBJECT TO APPROVAL BY LANDSCAPE ARCHITECT.
5. GRAPHIC SYMBOLS PRESIDE OVER WRITTEN PLANT QUANTITIES.
6. ALL TREE AND SHRUB LOCATIONS ON PRIVATE PROPERTY SHALL BE STAKED BY THE CONTRACTOR AND APPROVED BY THE OWNER, OWNER'S REPRESENTATIVE, OR LANDSCAPE ARCHITECT.
7. ALL TAHOMA 31 - BERMUDA GRASS AREAS TO BE SPRAY IRRIGATED. ALL SHRUB BEDS TO BE DRIP IRRIGATED. ALL PERENNIAL AREAS TO BE IRRIGATED WITH 12" POP-UP SPRAY HEADS. TREES AND SHRUBS MUST BE IRRIGATED BY A SEPARATE ZONE THAN SOD/GRASS; THIS INCLUDES TREES PLANTED IN SOD/GRASS AREA. THIS SYSTEM IS AN UNDERGROUND AUTOMATIC IRRIGATION SYSTEM.
8. PLANT SUBSTITUTIONS WILL NOT BE PERMITTED WITHOUT APPROVAL BY THE OWNER, OWNER'S REPRESENTATIVE, OR LANDSCAPE ARCHITECT.
9. WINTER PROTECTION AND WATERING OF TREES SHALL BE PROVIDED WHEN NECESSARY TO MAINTAIN THE HEALTH AND SURVIVAL OF PLANT MATERIAL.
10. WOOD MULCH TO BE SHREDDED BARK MULCH TO A DEPTH OF 3 INCHES MINIMUM WITHOUT LANDSCAPE FABRIC.
11. ROCK MULCH TO BE 1"-2" RIVER ROCK OR APPROVED EQUAL TO DEPTH OF 4 INCHES MINIMUM WITH LANDSCAPE FABRIC. REFER TO DECORATIVE LANDSCAPE ROCK.
12. SOD TO BE TAHOMA 31 - BERMUDA GRASS.
13. ALL TREE RINGS TO BE MULCHED WITH WOOD MULCH TO A DEPTH OF 4 INCHES MINIMUM WITH NO LANDSCAPE FABRIC.
14. FOR TREES IN TAHOMA 31 - BERMUDA GRASS OR NATIVE GRASS, ALLOW A 3' DIAMETER BED WITHOUT ENVIRO TURF AROUND ROOT COLLAR. APPLY 3" DEPTH OF WOOD MULCH OVER 3' DIAMETER BED FOLLOWING ENVIRO TURF INSTALLATION.
15. THE TOWN STANDARD DETAILS AND MANUFACTURE DETAILS DEPICTED IN THESE DRAWINGS SHOULD BE USED AS REFERENCE. THE CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ALL PERTINENT CONSTRUCTION & INSTALLATION INFORMATION AT TIME OF CONSTRUCTION.
16. ALL SHRUB BEDS AND TAHOMA 31 - BERMUDA GRASS AREAS SHALL RECEIVED THE FOLLOWING SOIL AMENDMENTS PER 1000 S.F.: 4 CUBIC YARDS "SUPREME ORGANICS" COMPOST (50% COW MANURE, 50% WOOD FINES) OR APPROVED EQUAL, PLUS 15 LBS. OF 20-10-5 COMMERCIAL FERTILIZER. ROT-TILL TO A MINIMUM DEPTH OF 6".
17. PLANTS SHALL BE INSTALLED IMMEDIATELY UPON DELIVERY TO SITE. IF THIS IS NOT POSSIBLE, PLANTS SHALL BE HEELED IN AND WATERED TO PREVENT DEHYDRATION.
18. PLANTING PITS SHALL BE EXCAVATED TO A MINIMUM OF TWICE THE WIDTH OF THE ROOTBALL. DO NOT DISTURB SOIL AT THE BOTTOM OF PIT BUT SCARIFY SIDES TO PREVENT GLAZING.
19. PLANTS SHOULD BE THOROUGHLY WATERED IMMEDIATELY AFTER PLANTING, ALLOWING WATER TO SOAK DOWN AND FILL REMAINDER OF HOLE WITH LOOSE SOIL. WITHOUT FURTHER PACKING, A MOUND OF SOIL SHALL BE FORMED AROUND THE EDGE OF EACH TREE PIT TO FORM A SHALLOW SAUCER.
20. AFTER PLANT INSTALLATION, ALL PLANT MATERIAL SHALL BE PLACED WITH THEIR ROOT COLLARS SLIGHTLY HIGHER THAN FINISH GRADE. (3" HIGHER FOR TREES.)
21. ALL LANDSCAPE SHOWN ON THESE PLANS SHALL BE MAINTAINED IN A NEAT AND ADEQUATE MANNER. REQUIRED MAINTENANCE ACTIVITIES SHALL INCLUDE, BUT NOT BE LIMITED TO TRIMMING OF HEDGES, ADEQUATE IRRIGATION, REPLACEMENT OF DEAD, DISEASED OR UNSIGHTLY LANDSCAPING, REMOVAL OF WEEDS FROM PLANTING AREAS, AND APPROPRIATE PRUNING OF PLANT MATERIALS.
22. THE CONTRACTOR SHALL STAKE OUT ALL KEY AREAS INCLUDING BUT NOT LIMITED TO SIDE WALKS, STEEL EDGING, PLANT BEDS, TREE AND SHRUB LOCATIONS AND OBTAIN APPROVAL BY THE LANDSCAPE ARCHITECT OR OWNER (MAKING MODIFICATIONS AS MAY BE REQUIRED AT NO ADDITIONAL COST), PRIOR TO PROCEEDING WITH THE CONSTRUCTION.
23. SOIL BACKFILL MIXTURE FOR ALL PERENNIAL BEDS SHALL BE 1/3 COW MANURE, 1/3 IMPORTED TOPSOIL, AND 1/3 ON-SITE SOIL.
24. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND BASE HIS BID ON ACTUAL ON-SITE CONDITIONS AND MEASUREMENTS. ANY DISCREPANCIES, ERRORS OR OMISSIONS ON THE CONSTRUCTION DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL REVISIONS DUE TO FAILURE TO GIVE SUCH NOTICE.
25. THE CONTRACTOR SHALL RESTORE ANY AND ALL DAMAGE DUE TO HIS CONSTRUCTION OPERATIONS TO THEIR ORIGINAL STATE AT HIS EXPENSE.
26. LANDSCAPE EDGER TO BE PERFORATED, GALVANIZED ROLL TOP STEEL EDGER. STEEL EDGER IS TO BE USED WHEREVER THERE IS A CHANGE IN SURFACING TYPE - SEE PLANT LEGEND.
27. STREET TREES LOCATED WITHIN SIGHT TRIANGLES ARE TO BE LIMBED UP TO 8'. PRUNING SHALL OCCUR IN THE APPROPRIATE MANNER AT THE NURSERY. SUBSTANTIAL PRUNING WILL NOT BE ALLOWED ON-SITE.



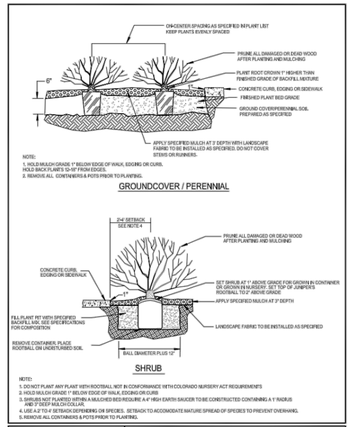
The Town of ERIE COLORADO

DRAWING TITLE: TREE PLANTING DETAIL
DRAWING NUMBER: P28
DRAWN BY: R. GROSS APPROVED BY: P. HAMMER DATE: 09/2023



The Town of ERIE COLORADO

DRAWING TITLE: TREE ON SLOPE DETAIL
DRAWING NUMBER: P29
DRAWN BY: R. GROSS APPROVED BY: P. HAMMER DATE: 09/2023



The Town of ERIE COLORADO

DRAWING TITLE: SHRUB & GROUNDCOVER/ PERENNIAL PLANTING DETAIL
DRAWING NUMBER: P30
DRAWN BY: R. GROSS APPROVED BY: P. HAMMER DATE: 09/2023

LANDSCAPE CHARTS

LAND SUMMARY CHART		
TYPE	AREA	% OF TOTAL AREA
Residential Lots (SFD)	12.30 AC	64.6%
Tracts	3.22 AC	16.9%
Public ROW	3.52 AC	18.5%
TOTAL	**19.05 AC**	**100.0%**

TRACT SUMMARY CHART				
TRACT	AREA	USE	OWNERSHIP	MAINTENANCE
A	1.43 AC	Landscaping, Detention, Monument Sign	Vista Ridge H.O.A.	H.O.A./Metro District
B	1.53 AC	Landscaping, Detention, Utilities	Vista Ridge H.O.A.	H.O.A./Metro District
C	0.12 AC	Landscaping	Vista Ridge H.O.A.	H.O.A./Metro District
D	0.14 AC	Landscaping	Vista Ridge H.O.A.	H.O.A./Metro District

OPEN SPACE AND PARK CHART		
Public Dedications	**Required by UDC (acres)[1]**	**Proposed for Final Plat (acres)**
Pocket Park (.5 ac/1000 res)	0.07 AC	N/A
Neighborhood Park (3 ac/1000 res)	0.43 AC	N/A
Community Park (5 ac/1000 res)	0.72 AC	N/A
Open Space (17 ac per 1000 res)	2.50 AC	N/A

[1]Note - All required open space and park dedication requirements were previously fulfilled within the approved Vista Ridge Development Plan.

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VISTA RESERVE
PRELIMINARY CONSTRUCTION PLAN
LANDSCAPE NOTES AND DETAILS

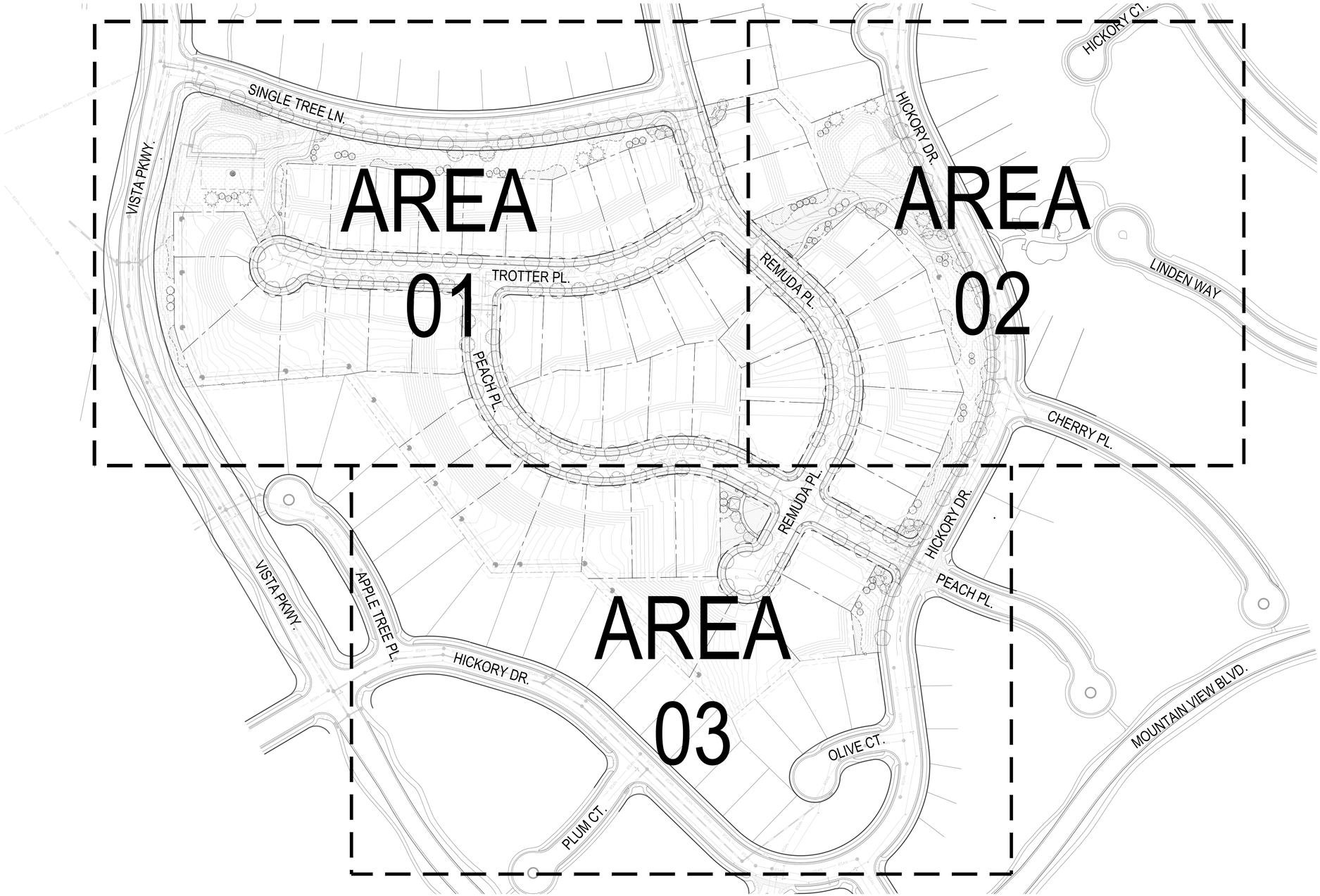
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AFFINITY HOLDINGS, LLC

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VISTA RESERVE
PRELIMINARY CONSTRUCTION PLANS
LOCATED IN THE NORTHWEST QUARTER OF SECTION 32,
TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH P.M.,
TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO

NOTE:
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1 MASTER LANDSCAPE PLAN

SCALE: 1" = 80'

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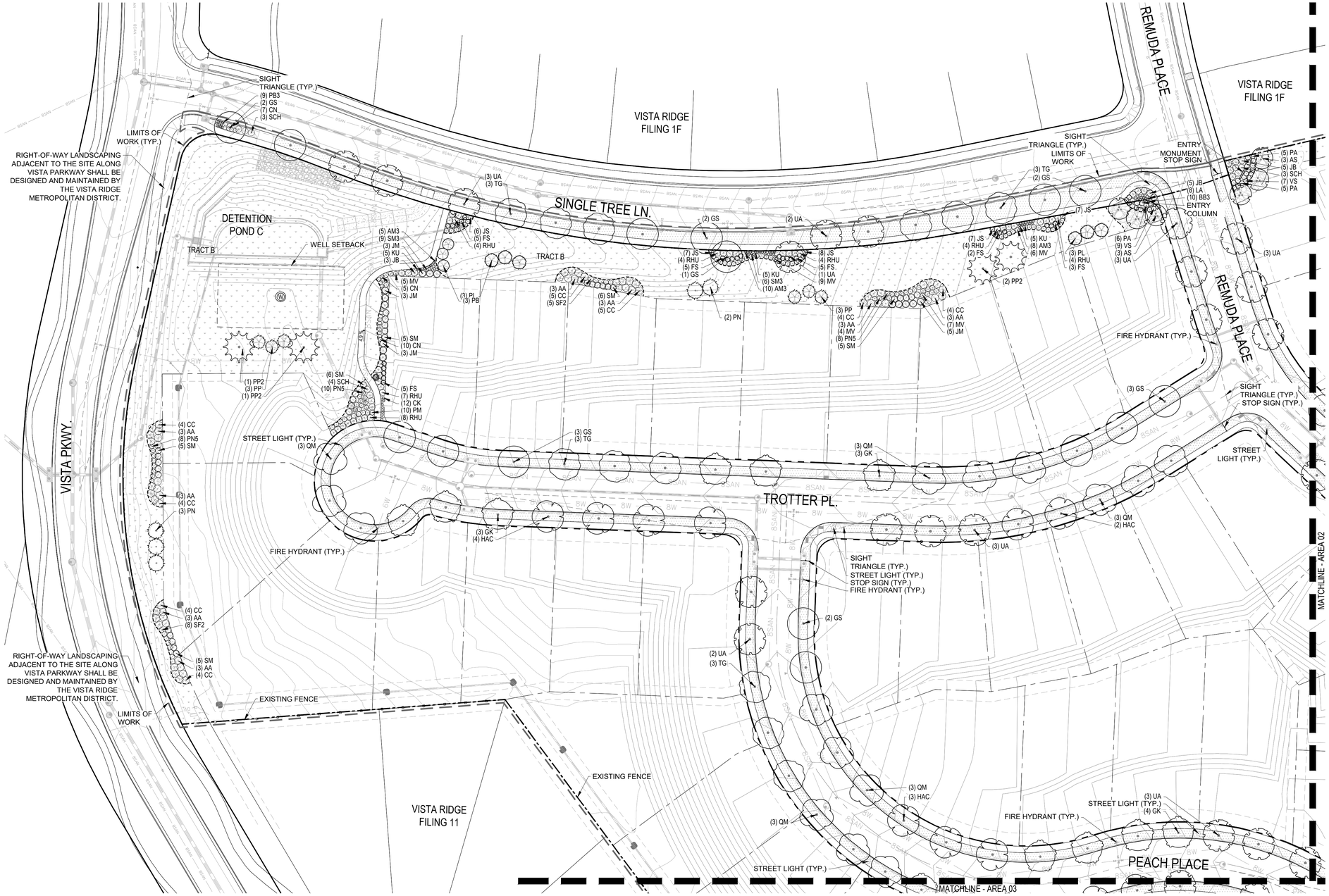
VISTA RESERVE
PRELIMINARY CONSTRUCTION PLAN
MASTER LANDSCAPE PLAN

PREPARED FOR:
AFFINITY HOLDINGS, LLC

JOB NUMBER:	
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DESIGNED BY:	BTN
DATE:	02.24.2026
SCALE:	1" = 80'- 0"
SHEET NO:	3 OF 10

VISTA RESERVE
PRELIMINARY CONSTRUCTION PLANS
LOCATED IN THE NORTHWEST QUARTER OF SECTION 32, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH P.M., TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO

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1 LANDSCAPE PLAN AREA 1

SCALE: 1" = 40'

KEY MAP
SCALE: NTS



LEGEND
- CANOPY TREES
- EVERGREEN TREES
- ORNAMENTAL TREES
- DECIDUOUS SHRUBS
- EVERGREEN SHRUBS
- ORNAMENTAL GRASSES
- PERENNIALS
- WOOD MULCH
- ROCK MULCH
- TAHOMA 31 BERMUDA GRASS
- NATIVE SEED
- STEEL EDGER
- EXISTING FENCE
- SITE BOUNDARY
- SIGHT TRIANGLE

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VISTA RESERVE
PRELIMINARY CONSTRUCTION PLAN
LANDSCAPE PLAN

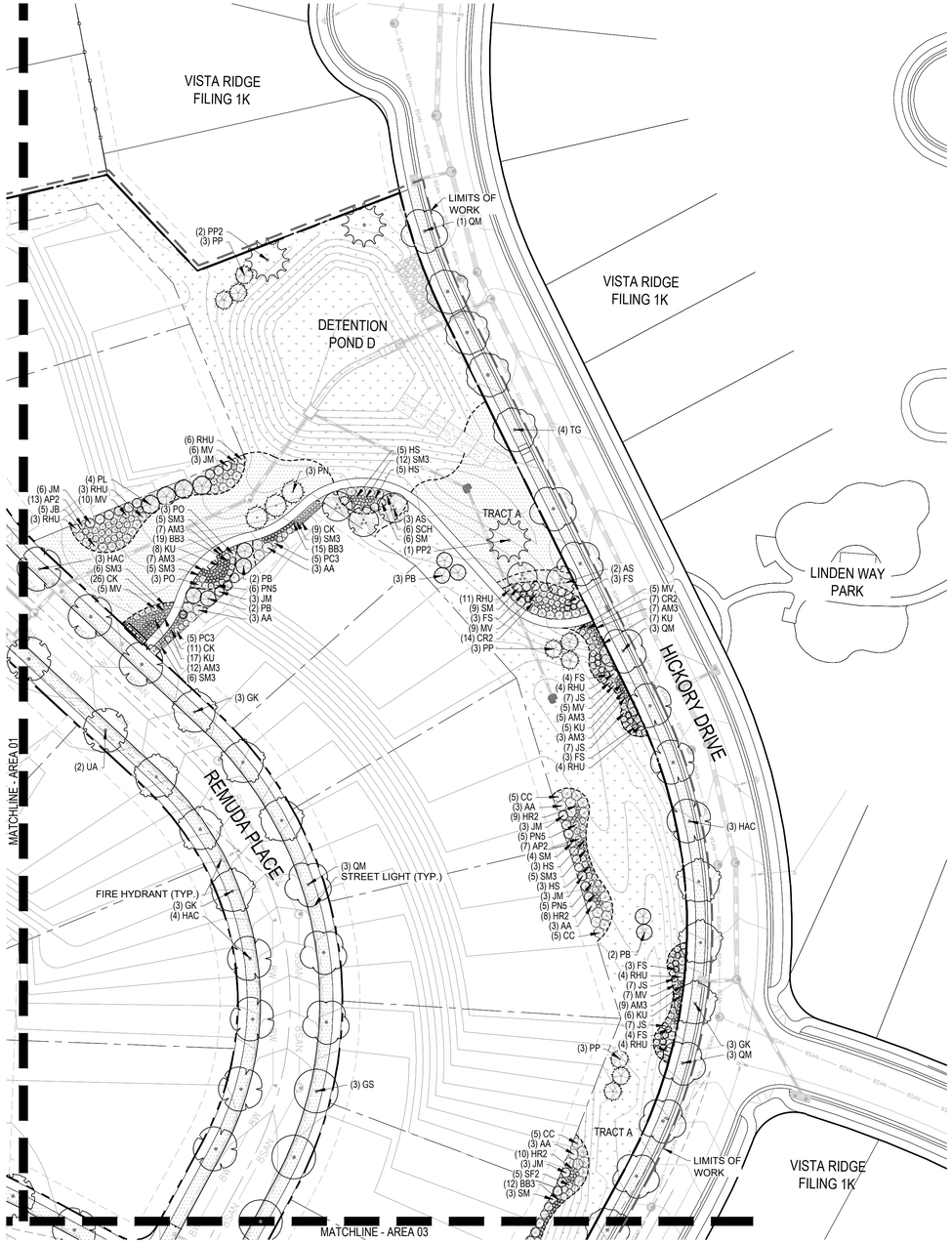
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1 LANDSCAPE PLAN AREA 2

KEY MAP
SCALE: NTS



LEGEND

- CANOPY TREES
- EVERGREEN TREES
- ORNAMENTAL TREES
- DECIDUOUS SHRUBS
- EVERGREEN SHRUBS
- ORNAMENTAL GRASSES
- PERENNIALS
- WOOD MULCH
- ROCK MULCH
- TAHOMA 31 BERMUDA GRASS
- NATIVE SEED
- STEEL EDGER
- EXISTING FENCE
- SITE BOUNDARY
- SIGHT TRIANGLE

SCALE: 1" = 40'

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VISTA RESERVE
PRELIMINARY CONSTRUCTION PLAN
LANDSCAPE PLAN

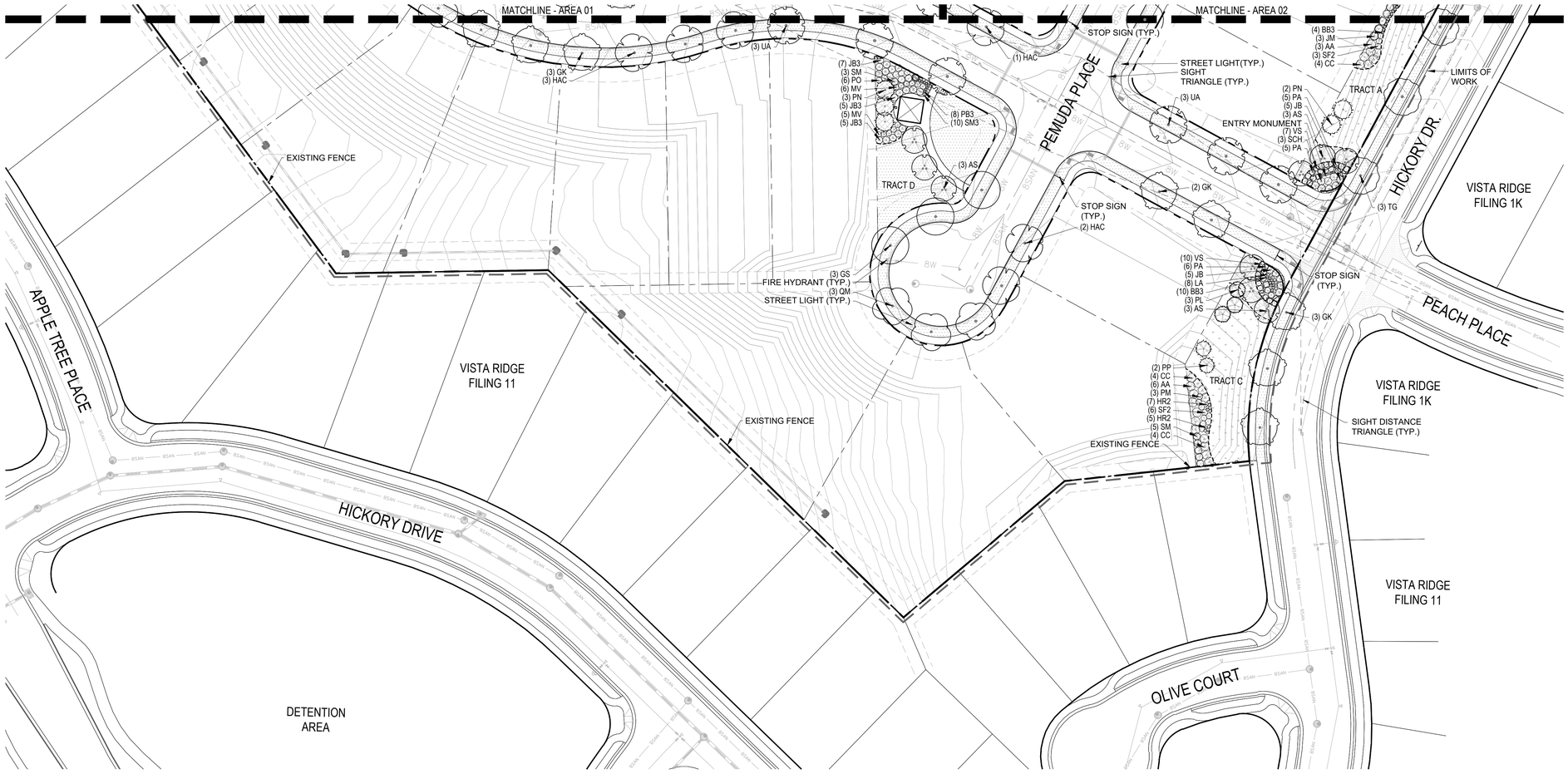
PREPARED FOR:
AFFINITY HOLDINGS, LLC

JOB NUMBER:
DRAWN BY: BTN
DESIGNED BY: BTN
DATE: 02.24.2026
SCALE: 1" = 40'- 0"
SHEET NO: 5 OF 10

LAST SAVED: 6/6/2025 3:42 PM
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VISTA RESERVE
PRELIMINARY CONSTRUCTION PLANS
LOCATED IN THE NORTHWEST QUARTER OF SECTION 32,
TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH P.M.,
TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO

NOTE:
LANDSCAPING WITHIN THE ROW ADJACENT TO FEE SIMPLE LOTS IS CONCEPTUAL IN NATURE. DRIVEWAY LOCATIONS ARE NOT SHOWN AS FINAL LOCATIONS WILL BE DETERMINED WITH INDIVIDUAL LOT AND BUILDING PLANS. FINAL DESIGN SHALL MAINTAIN THE ORIGINAL DESIGN INTENT AND REQUIRED PLANT QUANTITIES TO MEET TOWN OF ERIE UDC REQUIREMENTS. FINAL LANDSCAPE AND DRIVEWAY DESIGN SHALL BE REVIEWED AND APPROVED WITH BUILDING PERMITS. IMPROVEMENTS SHALL BE INSTALLED BY THE HOMEBUILDER UNDER SEPARATE BUILDING PERMITS IN ACCORDANCE WITH APPLICABLE TOWN OF ERIE REQUIREMENTS.



1 LANDSCAPE AREA 3

KEY MAP
SCALE: NTS



LEGEND

- CANOPY TREES
- EVERGREEN TREES
- ORNAMENTAL TREES
- DECIDUOUS SHRUBS
- EVERGREEN SHRUBS
- ORNAMENTAL GRASSES
- PERENNIALS
- WOOD MULCH
- ROCK MULCH
- TAHOMA 31 BERMUDA GRASS
- NATIVE SEED
- STEEL EDGER
- EXISTING FENCE
- SITE BOUNDARY
- SIGHT TRIANGLE

SCALE: 1" = 40'

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811

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303.449.9105

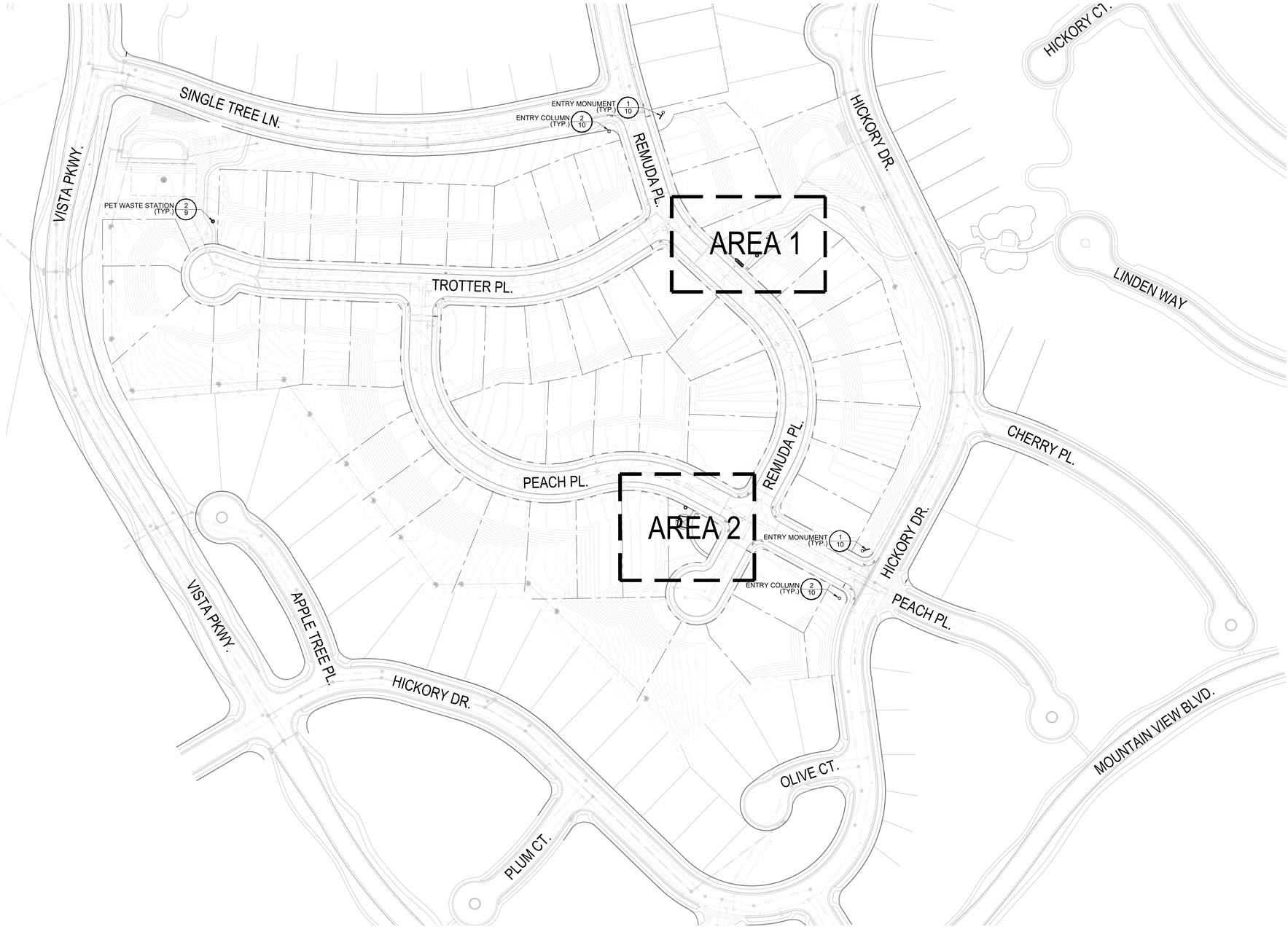
VISTA RESERVE
PRELIMINARY CONSTRUCTION PLAN
LANDSCAPE PLAN

PREPARED FOR:
AFFINITY HOLDINGS, LLC

JOB NUMBER:
DRAWN BY: BTN
DESIGNED BY: BTN
DATE: 02.24.2026
SCALE: 1" = 40'- 0"
SHEET NO: 6 OF 10

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VISTA RESERVE
PRELIMINARY CONSTRUCTION PLANS
LOCATED IN THE NORTHWEST QUARTER OF SECTION 32,
TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH P.M.,
TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO



1 MASTER AMENITY PLAN

SCALE: 1" = 80'

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VISTA RESERVE
PRELIMINARY CONSTRUCTION PLAN

MASTER AMENITY PLAN

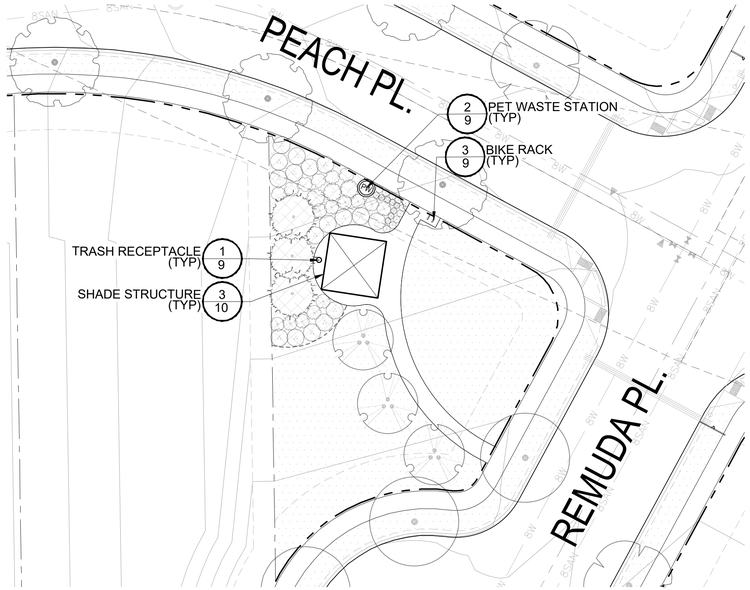
PREPARED FOR:
AFFINITY HOLDINGS, LLC

JOB NUMBER:	
DRAWN BY:	BTN
DESIGNED BY:	BTN
DATE:	02.24.2026
SCALE:	1" = 80'- 0"
SHEET NO:	7 OF 10

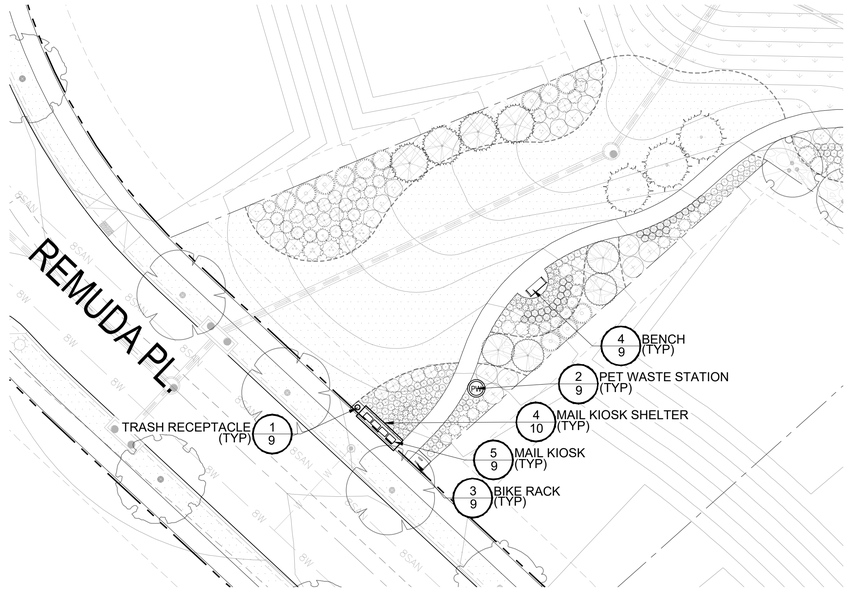
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VISTA RESERVE
PRELIMINARY CONSTRUCTION PLANS
LOCATED IN THE NORTHWEST QUARTER OF SECTION 32,
TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH P.M.,
TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO

NOTE:
LANDSCAPE PLANTING SHOWN FOR REFERENCE ONLY. REFER TO LANDSCAPE PLANS FOR MORE INFORMATION ON EXACT PLANTING MATERIALS AND QUANTITIES.

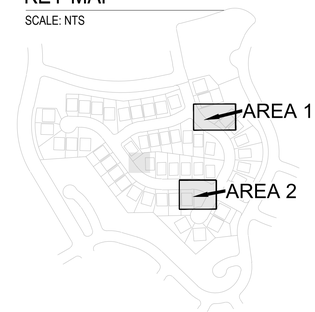


1 AMENITY PLAN - AREA 1



2 AMENITY PLAN - AREA 2

KEY MAP
SCALE: NTS



SCALE: 1" = 20'

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Lafayette, CO 80026
303.449.9105

VISTA RESERVE
PRELIMINARY CONSTRUCTION PLAN
AMENITY PLAN

PREPARED FOR:
AFFINITY HOLDINGS, LLC

JOB NUMBER:	
DRAWN BY:	BTN
DESIGNED BY:	BTN
DATE:	02.24.2026
SCALE:	1" = 20'- 0"
SHEET NO:	8 OF 10

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VISTA RESERVE
PRELIMINARY CONSTRUCTION PLANS
LOCATED IN THE NORTHWEST QUARTER OF SECTION 32,
TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH P.M.,
TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO



TRASH RECEPTACLE BY LANDSCAPE FORMS
MODEL: POE LITTER
COLOR: OBSIDIAN
INSTALLATION: SURFACE MOUNT
OR APPROVED EQUAL
INSTALL PER MANUFACTURER'S SPECS

CONTACT: LANDSCAPE FORMS
PHONE:719.338.7953
WWW.LANDSCAPEFORMS.COM

1 TRASH RECEPTACLE
Scale: NTS



SUPPLIER: GYMS FOR DOGS
WWW.GYMSFORDOGS.COM
(800) 931-1562

MODEL: THE PET WASTE STATION IN-GROUND
COLOR: BLACK
NOTE: INSTALL PER MANUFACTURER'S SPECS
OR APPROVED EQUAL.

2 PET WASTE STATION
Scale: NTS



BICYCLE RACK BY MADRAX
MODEL: U24-IG-P
COLOR: BLACK
OR APPROVED EQUAL
INSTALL PER MANUFACTURER'S SPECS

CONTACT: CHURCHICH RECREATON
HEATHER HEASLEY
PHONE: 303.530.4414 X14
WWW.CHURCHICHRECREATION.NET

3 BIKE RACK
Scale: NTS



MAGLIN
P: 800-716-5506
W: MAGLIN.COM

MODEL: 800 SERIES 870 BACKED BENCH OR APPROVED EQUAL
MATERIAL: METAL
COLOR: TITANIUM, MATTE FINISH
INSTALLATION: SURFACE MOUNT
NOTE: INSTALL PER MANUFACTURER'S SPECS
OR APPROVED EQUAL.

4 BENCH
Scale: NTS

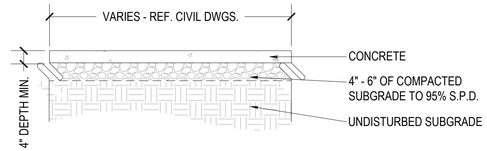


MAIL KIOSK
W: WWW.MAILBOXES.COM
P: 800-624-5269

MODELS:
CLUSTER BOX UNITS: 4X13A SIZE DOOR

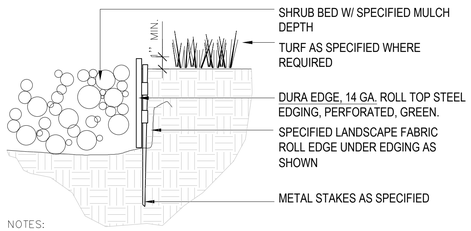
ATTACHMENT: SURFACE MOUNT
INSTALL PER MANUFACTURER'S SPECS.
OR APPROVED EQUAL.

5 MAIL KIOSK
Scale: NTS



NOTES:
1. EXPANSION JOINTS TO BE EVERY 50' ALONG SIDEWALK AND AS ILLUSTRATED ON PLANS AND DETAILS.
2. CONTROL JOINTS TO BE EVERY 4' ALONG SIDEWALK, UNLESS ILLUSTRATED ON PLANS,
3. CONCRETE - COLOR: UNCOLORED
4. FINISH: MEDIUM BROOM.
5. REFERENCE GEOTECH REPORT FOR FURTHER SPECIFICS FOR APPROVED CONCRETE MIX, THICKNESS/DEPTH OF CONCRETE, AND THICKNESS/ DEPTH OF COMPACTED SUBGRADE.
6. DETAIL FOR REFERENCE ONLY.

6 CONCRETE
Scale: 1/2" = 1'- 0"



NOTES:
1. SET ALL EDGING 1" ABOVE FINISH GRADE AS SHOWN.
2. EDGING SHALL ABUT ALL CONCRETE CURBS AND WALKS PERPENDICULAR, AND FLUSH W/ GRADES OF CONCRETE.
3. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
4. FOR PRODUCT ORDERING, DIVIDE NUMBER OF FEET NEEDED BY 9.33 TO OBTAIN THE NUMBER OF 10' PIECES NEEDED.

7 STEEL EDGER
Scale: 1/2" = 1'- 0"

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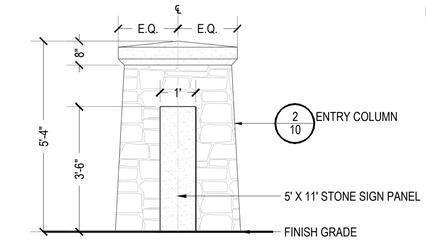
VISTA RESERVE
PRELIMINARY CONSTRUCTION PLAN
SITE DETAILS

PREPARED FOR:
AFFINITY HOLDINGS, LLC

JOB NUMBER:
DRAWN BY: BTN
DESIGNED BY: BTN
DATE: 02.24.2026
SCALE:
SHEET NO: 9 OF 10

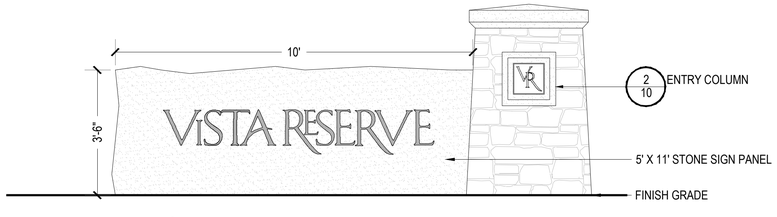
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VISTA RESERVE
PRELIMINARY CONSTRUCTION PLANS
LOCATED IN THE NORTHWEST QUARTER OF SECTION 32,
TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH P.M.,
TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO



SECTION

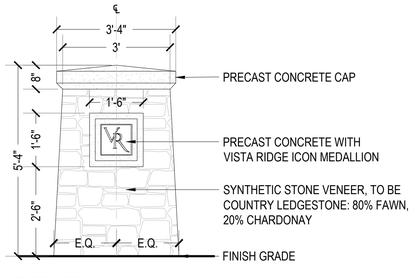
NOTES:
1. DETAIL IS CONCEPTUAL IN NATURE AND FOR REFERENCE OF DESIGN INTENT ONLY.
2. CONTRACTOR TO SUBMIT SHOP DRAWINGS TO OWNER'S REP. FOR REVIEW AND APPROVAL. SHOP DRAWINGS TO INCLUDE STRUCTURAL ENGINEERING AND ASSOCIATED FOOTINGS.
3. "VISTA RESERVE" TEXT ON SIGN PANEL IS FOR ILLUSTRATIVE PURPOSES ONLY. FINAL NEIGHBORHOOD NAME, FONT SIZE, STYLE, LAYOUT, AND SPACING SHALL BE DETERMINED AND APPROVED BY THE OWNER AND DEVELOPER.
4. ENTRY MONUMENT SHALL BE REVIEWED UNDER A SEPARATE BUILDING PERMIT AND SHALL COMPLY WITH THE UDC. NOT APPROVED AS PART OF THE PRELIMINARY PLAT.



ELEVATION

1 ENTRY MONUMENT
Scale: NTS

NOTES:
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ELEVATION

2 ENTRY COLUMN
Scale: NTS

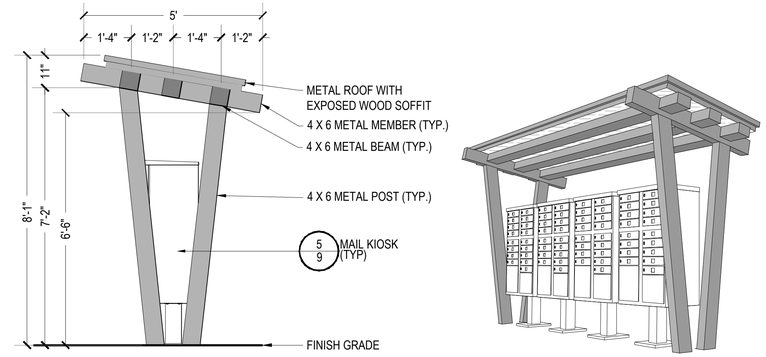


SHADE STRUCTURE BY SHELTER SPECIALIST LLC.
MODEL: TS-SS2020-02-TG-Z
INSTALL PER MANUFACTURER'S SPECS
OR APPROVED EQUAL

CONTACT: SHADE SPECIALIST LLC.
PHONE: 303-530-5319
WWW.SHELTERSPECIALIST.COM
IMAGE SHOWN FOR REFERENCE ONLY.

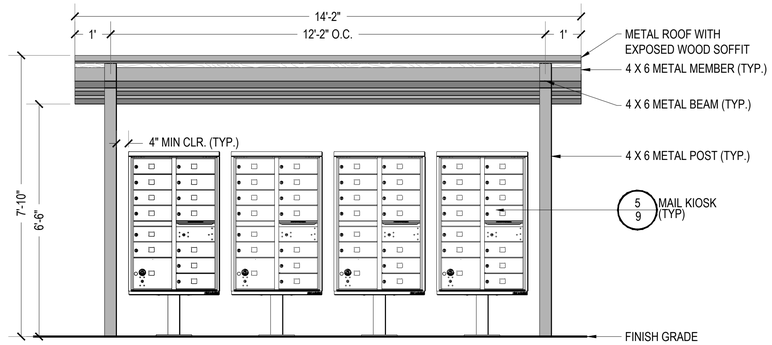
3 SHADE STRUCTURE
Scale: NTS

NOTES:
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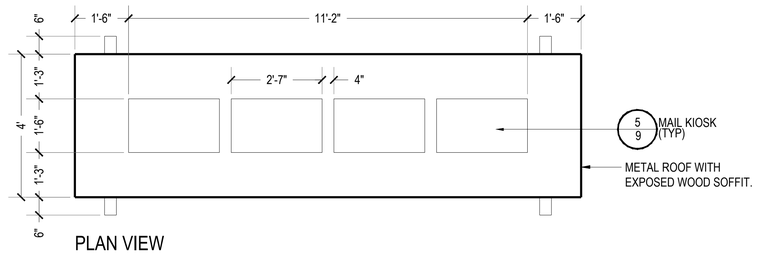


ELEVATION B

PERSPECTIVE



ELEVATION A



PLAN VIEW

4 MAIL KIOSK STRUCTURE
Scale: NTS

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VISTA RESERVE
PRELIMINARY CONSTRUCTION PLAN
SITE DETAILS

PREPARED FOR:
AFFINITY HOLDINGS, LLC

JOB NUMBER:
DRAWN BY: BTN
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SHEET NO: 10 OF 10

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LSC TRANSPORTATION CONSULTANTS, INC.

1889 York Street
Denver, CO 80206
(303) 333-1105
FAX (303) 333-1107
E-mail: lscdenver@lsctrans.com

June 4, 2025

Mr. Cayd Bader
Affinity Holdings
caydb@affinholdings.com

Re: Vista Reserve at Vista Ridge
Erie, CO
LSC #250240

Dear Mr. Bader:

In response to your request, LSC Transportation Consultants, Inc. has prepared this traffic impact analysis for the proposed Vista Reserve at Vista Ridge residential development. As shown on Figure 1, the site is located south of Single Tree Lane and east of Vista Parkway in Erie, Colorado.

REPORT CONTENTS

The report contains the following: the existing roadway and traffic conditions in the vicinity of the site including the lane geometries, traffic controls, posted speed limits, etc.; the existing weekday peak-hour traffic volumes; the typical weekday site-generated traffic volume projections for the site; the assignment of the projected traffic volumes to the area roadways; the projected background and resulting total traffic volumes on the area roadways; the site's projected traffic impacts; and any recommended roadway improvements to mitigate growth in background traffic or from the impact of the site.

LAND USE AND ACCESS

The site currently is proposed to include about 50 single-family detached dwelling units. Access is proposed from Single Tree Lane and Hickory Drive as shown in the conceptual site plan in Figure 2.

ROADWAY AND TRAFFIC CONDITIONS

Area Roadways

The major roadways in the site's vicinity are shown on Figure 1 and are described below.

- **Vista Parkway** is a north-south, two-lane major collector roadway west of the site. The intersections with Single Tree Lane, Hickory Way/Hickory Drive, and Sunset Drive are stop-

sign controlled and the intersection with Mountain View Boulevard is roundabout controlled. The posted speed limit in the vicinity of the site is 35 mph.

- **Mountain View Boulevard** is an east-west, two-lane major collector roadway south of the site. The intersection with Vista Parkway is roundabout controlled and the intersections with Hickory Drive and Vale Way are stop-sign controlled. The posted speed limit in the vicinity of the site is 35 mph.

- **Single Tree Lane** is an east-west, two-lane roadway north of the site. The intersection with Vista Parkway is stop-sign controlled.

- **Hickory Drive/Hickory Way** is an east-west, two-lane roadway north of the site. The intersections with Vista Parkway and Mountain View Boulevard are stop-sign controlled.

Existing Traffic Conditions

Figure 3 shows the existing traffic volumes, existing traffic control, and lane geometry in the site's vicinity on a typical weekday. The weekday peak-hour traffic volumes and daily traffic counts are from the attached traffic counts conducted by Counter Measures in August and September, 2024 and April, 2025.

2028 and 2045 Background Traffic

Figure 4 shows the estimated 2028 background traffic and Figure 5 shows the estimated 2045 background traffic. The background traffic assumes growth at an annual rate of 2.8 percent on Vista Parkway and one percent on Mountain View Boulevard plus trips from the planned Vista Ridge PA 2-8, 2-11 & 2-12. The 2.8 percent growth rate is based on the existing 2024 traffic volume of 5,430 vpd in Figure 3 with the projected 2050 volume of 11,160 vpd (11,336 vpd from Erie TMP less 205 site-generated trips) over a 26-year period. A lower growth rate of one percent was assumed on Mountain View Boulevard because the adjacent land is primarily built out.

The Town of Erie is currently planning to conduct a traffic calming/road dieting study on Vista Parkway. The findings and implementation details could lower the currently estimated 2045 traffic volumes in Figure 5.

Existing, 2028, and 2045 Background Levels of Service

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection. Level of service is indicated on a scale from "A" to "F." LOS A is indicative of little congestion or delay and LOS F is indicative of a high level of congestion or delay. Attached are specific level of service definitions for unsignalized intersections.

The intersections in the study area were analyzed as appropriate to determine the existing, 2028, and 2045 background levels of service using Synchro. Table 1 shows the level of service analysis results. The level of service reports are attached.

1. **Vista Parkway/Single Tree Lane:** All movements at this unsignalized intersection currently operate at LOS "B" or better during both morning and afternoon peak-hours and are expected to do so through 2028. All movements are expected to operate at LOS "C" or better during both morning and afternoon peak-hours through 2045.

2. **Vista Parkway/Hickory Way/Hickory Drive:** All movements at this unsignalized intersection currently operate at LOS "B" or better during both morning and afternoon peak-hours and are expected to operate at LOS "C" or better or through 2045.

3. **Mountain View Boulevard/Hickory Drive:** All movements at this unsignalized intersection currently operate at LOS "B" or better during both morning and afternoon peak-hours and are expected to operate at LOS "C" or better through 2045.

4. **Mountain View Boulevard/Vale Way:** All movements at this unsignalized intersection currently operate at LOS "B" or better during both morning and afternoon peak-hours and are expected to do so through 2028. All movements are expected to operate at LOS "C" or better during both morning and afternoon peak-hours through 2045.

5. **Vista Parkway/Mountain View Boulevard:** This roundabout controlled intersection currently operates at an overall LOS "A" during both morning and afternoon peak-hours and is expected to do so through 2045.

6. **Vista Parkway/Sunset Drive:** All movements at this unsignalized intersection currently operate at LOS "B" or better during both morning and afternoon peak-hours and are expected to operate at LOS "D" or better through 2045.

TRIP GENERATION

Table 2 shows the estimated average weekday, morning peak-hour, and afternoon peak-hour trip generation for the proposed site based on the rates from *Trip Generation, 11th Edition, 2021* by the Institute of Transportation Engineers (ITE). Table 2 also shows the trip generation potential assumed in the Original Development Plan (ODP) Amendment and the Preliminary Plat.

The site is projected to generate about 360 vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 6 vehicles would enter and about 18 vehicles would exit the site. During the afternoon peak-hour, which generally occurs for one hour between 4:00 and 6:00 p.m., about 17 vehicles would enter and about 12 vehicles would exit. These volumes are 86 percent to 91 percent of the volumes assumed in the ODP.

TRIP DISTRIBUTION

Figure 6 shows the estimated directional distribution of the site-generated traffic volumes on the area roadways. The estimates were based on the location of the site with respect to the regional population, employment, and activity centers; and the site's proposed land use.

TRIP ASSIGNMENT

Figure 7 shows the site-generated traffic volumes which are the directional distribution percentages (from Figure 6) applied to the trip generation estimate (from Table 2).

2028 AND 2045 TOTAL TRAFFIC

Figure 8 shows the 2028 total traffic which is the sum of the 2028 background traffic volumes (from Figure 4) and the site-generated traffic volumes (from Figure 7). Figure 8 also shows the 2028 total traffic lane geometry and traffic control.

Figure 9 shows the 2045 total traffic which is the sum of the 2045 background traffic volumes (from Figure 5) and the site-generated traffic volumes (from Figure 7). Figure 9 also shows the 2045 total traffic lane geometry and traffic control.

PROJECTED LEVELS OF SERVICE

The intersections in the study area were analyzed to determine the 2028 and 2045 total levels of service. Table 1 shows the level of service analysis results for each movement or lane group. The level of service reports are attached.

1. **Vista Parkway/Single Tree Lane:** All movements at this unsignalized intersection are expected to operate at LOS "C" or better during both morning and afternoon peak-hours through 2045.

2. **Vista Parkway/Hickory Way/Hickory Drive:** All movements at this unsignalized intersection are expected to operate at LOS "C" or better during both morning and afternoon peak-hours through 2045.

3. **Mountain View Boulevard/Hickory Drive:** All movements at this unsignalized intersection are expected to operate at LOS "C" or better during both morning and afternoon peak-hours through 2045.

4. **Mountain View Boulevard/Vale Way:** All movements at this unsignalized intersection are expected to operate at LOS "C" or better during both morning and afternoon peak-hours through 2045.

5. **Vista Parkway/Mountain View Boulevard:** This roundabout controlled intersection is expected to operate at an overall LOS "A" during both morning and afternoon peak-hours through 2045.

6. **Vista Parkway/Sunset Drive:** All movements at this unsignalized intersection are expected to operate at LOS "D" or better during both morning and afternoon peak-hours through 2045.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

1. The site is projected to generate about 360 vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, about 6 vehicles would enter and about 18 vehicles would exit the site. During the afternoon peak-hour, about 17 vehicles would enter and about 12 vehicles would exit. These volumes are 86 percent to 91 percent of the trip generation potential assumed in the ODP.

Projected Levels of Service

2. The roundabout-controlled Vista Parkway/Mountain View Boulevard intersection is expected to operate at an overall LOS "A" through 2045.

3. All movements at the unsignalized intersections analyzed are expected to operate at LOS "D" or better during both morning and afternoon peak-hours through 2045.

4. The intersection of Vista Parkway/Sunset Drive (#6) is expected to operate at close to capacity by 2045 if the traffic growth assumed in the *Erie Transportation Mobility Plan* are realized. Enhanced traffic could be needed beyond 2045 if the 2050 projections are reached.

Conclusions

5. The impact of the Vista Reserve at Vista Ridge residential development can be accommodated by the existing and planned roadway network with the following recommendations.

6. The Town of Erie is currently planning to conduct a traffic calming/road dieting study on Vista Parkway. The findings and implementation details could lower the currently estimated 2045 traffic volumes by the Town of Erie *Transportation Mobility Plan* (TMP).

Recommendations

7. The site access approach to Single Tree Lane should operate freely with the Single Tree Lane approach being stop-sign controlled. The site access approach to Hickory Drive should be stop-sign controlled. There are no recommended off-site improvements.

* * * * *

We trust our findings will assist you in gaining approval of the proposed Vista Reserve at Vista Ridge residential development . Please contact me if you have any questions or need further assistance.

Respectfully submitted,

LSC Transportation Consultants, Inc.



By: _____
Christopher S. McGranahan, P.E.
Principal/President

CSM/wc

6-4-25

Enclosures: Tables 1 and 2
Figures 1 - 9
Traffic Count Reports
Level of Service Definitions
Level of Service Reports

G:\Shared drives\Denver Projects 2021-2030\2025\250240-VistaReseve@VistaRidge\Report\VistaReserve@VistaRidge-060425.wpd

Table 1
Intersection Levels of Service Analysis
Vista Reserve at Vista Ridge
Erie, CO
LSC #250240; June, 2025

Intersection No. & Location	Traffic Control	Existing Traffic Level of Service AM	Existing Traffic Level of Service PM	2028 Background Level of Service AM	2028 Background Level of Service PM	2028 Total Level of Service AM	2028 Total Level of Service PM	2045 Background Level of Service AM	2045 Background Level of Service PM	2045 Total Level of Service AM	2045 Total Level of Service PM
1) Vista Parkway/Single Tree Lane	TWSC										
WB Approach		B	B	B	B	B	B	C	C	C	C
SB Left		A	A	A	A	A	A	A	A	A	A
Critical Movement Delay		12.7	13.6	13.3	14.4	13.5	14.8	17.2	19.6	17.7	20.4
2) Vista Parkway/Hickory Way/Hickory Drive	TWSC										
NB Left		A	A	A	A	A	A	A	A	A	A
EB Approach		B	B	B	B	B	B	C	C	C	C
WB Approach		B	B	B	C	B	C	C	C	C	C
SB Left		A	A	A	A	A	A	A	A	A	A
Critical Movement Delay		13.2	14.7	13.9	16.4	13.8	16.0	18.8	24.1	18.5	23.3
3) Mountain View Boulevard/Hickory Drive	TWSC										
NB Approach		B	B	B	B	B	B	B	B	B	B
EB Left		A	A	A	A	A	A	A	A	A	A
WB Left		A	A	A	A	A	A	A	A	A	A
SB Approach		B	B	B	B	B	B	C	C	C	C
Critical Movement Delay		12.1	13.6	12.4	14.3	12.5	14.3	15.3	18.7	15.4	18.8
4) Mountain View Boulevard/Vale Way	TWSC										
NB Approach		B	B	B	B	B	B	B	C	B	C
EB Left		A	A	A	A	A	A	A	A	A	A
WB Left		A	A	A	A	A	A	A	A	A	A
SB Approach		B	B	B	B	B	B	B	C	B	C
Critical Movement Delay		11.5	12.4	11.8	12.9	11.9	13.2	14.1	16.4	14.3	16.9
5) Vista Parkway/Mountain View Boulevard	Roundabout										
EB Approach		--	--	A	A	A	A	A	A	A	A
WB Approach		A	A	A	A	A	A	A	A	A	A
NB Approach		A	A	A	A	A	A	A	A	A	A
SB Approach		A	A	A	A	A	A	A	A	A	A
Entire Intersection Delay (sec /veh)		4.7	5.2	5.0	5.7	5.1	5.7	6.4	7.9	6.5	7.9
Entire Intersection LOS		A	A	A	A	A	A	A	A	A	A
6) Vista Parkway/Sunset Drive	TWSC										
NB Left		A	A	A	A	A	A	A	A	A	A
EB Left		B	B	B	C	B	C	C	D	C	D
EB Right		A	A	A	A	A	A	B	B	B	B
Critical Movement Delay		12.2	14.2	12.8	16.2	13.0	16.7	18.1	30.4	18.5	32.1

Table 2
ESTIMATED TRAFFIC GENERATION
Vista Reserve at Vista Ridge
Erie, CO
LSC #250240; June, 2025

		Trip Generation Rates [1]					Total Trips Generated				
		Average	AM Peak-Hour		PM Peak-Hour		Average	AM Peak-Hour		PM Peak-Hour	
Trip Generating Category	Quantity	Weekday	In	Out	In	Out	Weekday	In	Out	In	Out
Original Development Plan Amendment											
Single Family Attached Housing [2]	57 DU [3]	7.20	0.120	0.360	0.336	0.234	410	7	21	19	13
Currently Proposed Land Use											
Single Family Attached Housing [2]	50 DU [3]	7.20	0.120	0.360	0.336	0.234	360	6	18	17	12
					Adjustment from ODP Trip Potential =		-50	AM = -4		PM = -3	
							(88%)	(86%)		(91%)	

Notes:
(1) Source: *Trip Generation*, Institute of Transportation Engineers, 11th Edition, 2021.
(2) ITE Land Use No. 215 - Single-Family Attached Housing
(3) DU = dwelling units



Figure 1

Vicinity Map

Vista Reserve at Vista Ridge (LSC #250240)

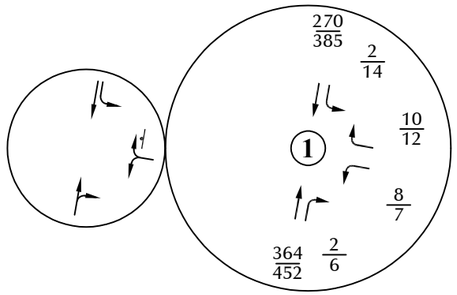


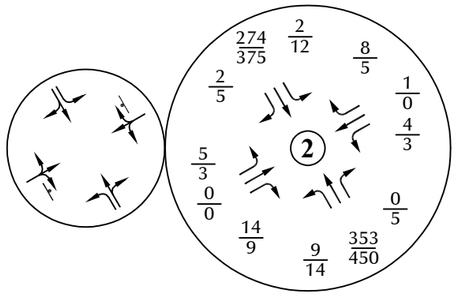
Approximate Scale
Scale: NTS

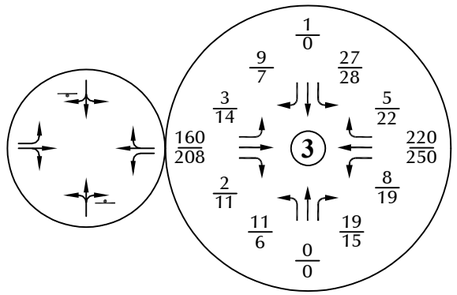
Figure 2

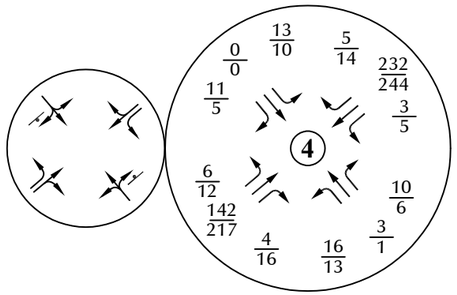
Site Plan

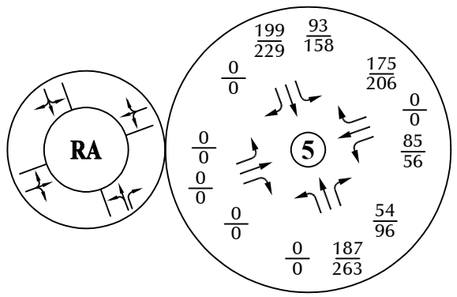
Vista Reserve at Vista Ridge (LSC #250240)

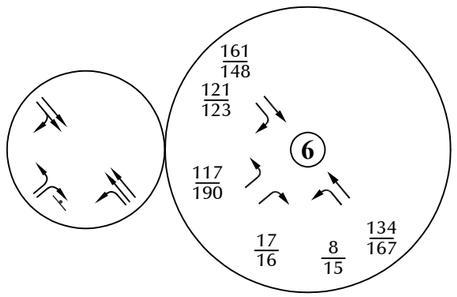












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LEGEND:

= Stop Sign

= Traffic Signal

= Speed Limit

$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

1,000 = Average Daily Traffic

Approximate Scale
Scale: 1"=600'

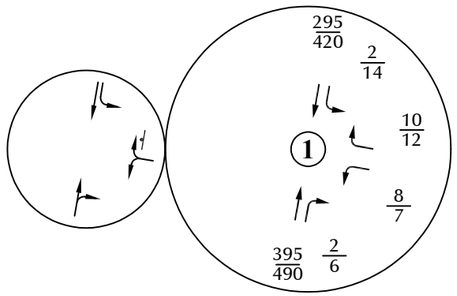


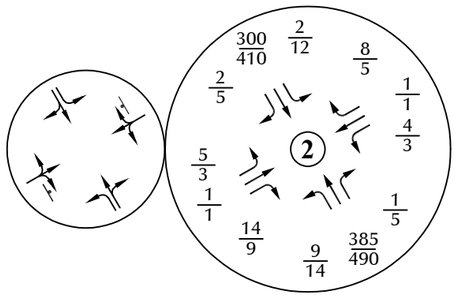
Figure 3

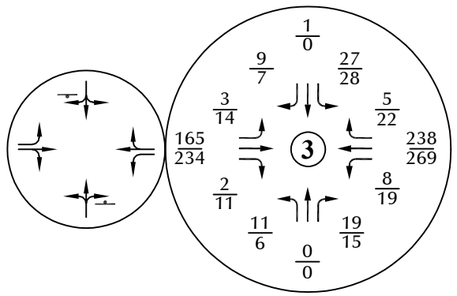
Existing Traffic, Lane Geometry and Traffic Control

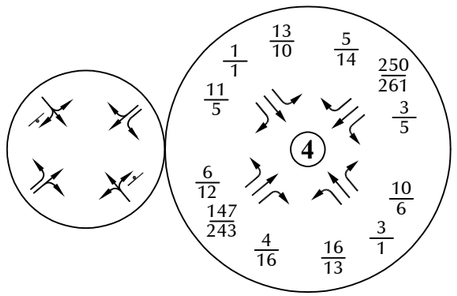
Vista Reserve at Vista Ridge (LSC #250240)

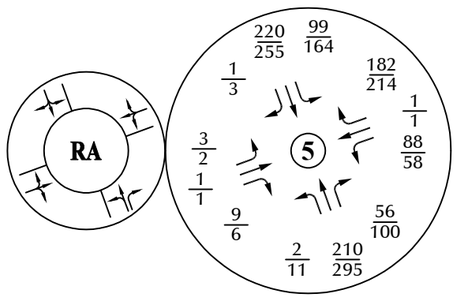
LSC TRANSPORTATION CONSULTANTS, INC.

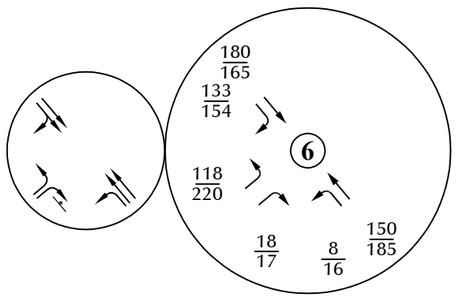












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LEGEND:

= Stop Sign

= Traffic Signal

26/35 = AM Peak Hour Traffic / PM Peak Hour Traffic

1,000 = Average Daily Traffic

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Approximate Scale
Scale: 1"=600'



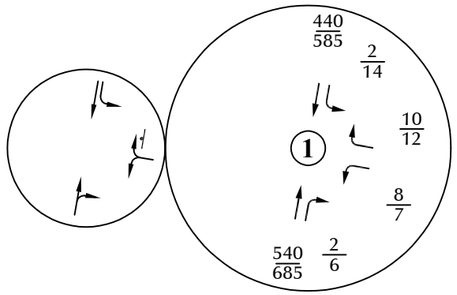
Note: The existing daily traffic volume on Vista Parkway of 5,430vpd in September, 2024 and the Erie TMP projected 2050 daily traffic volume of 11,160vpd (11,336 minus 205 site-generated trips) results in an annual growth rate of about 2.8 percent. This estimate includes trips from the planned Vista Ridge PA 2-8, 2-11 & 2-12. An annual growth rate of one percent was assumed on Mountain View Boulevard because the land use along Mountain View Boulevard is primarily built out.

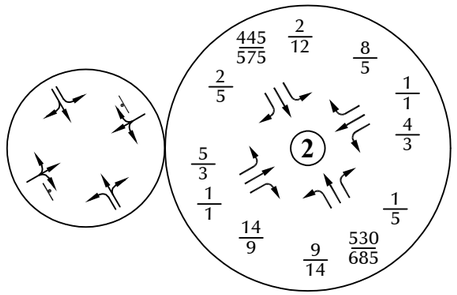
Figure 4

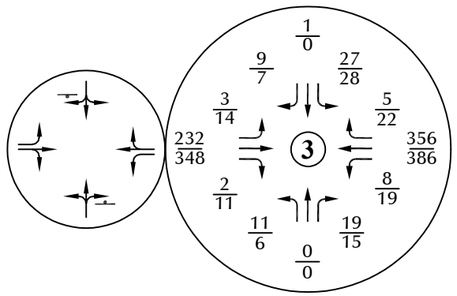
Year 2028 Background Traffic, Lane Geometry and Traffic Control

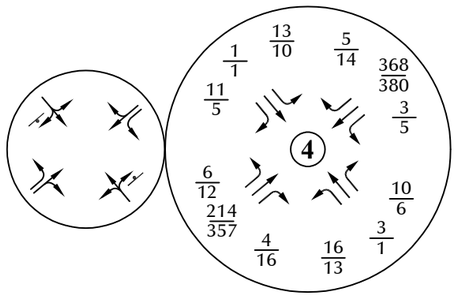
Vista Reserve at Vista Ridge (LSC #250240)

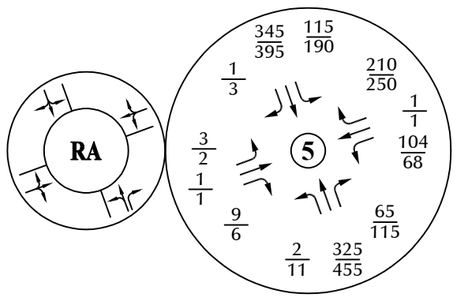
TRANSPORTATION CONSULTANTS, INC.

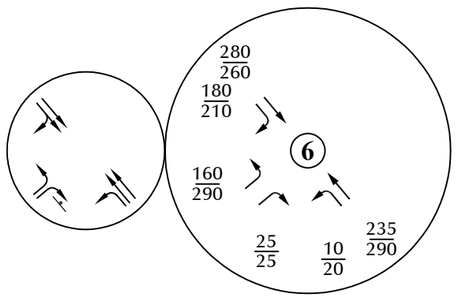












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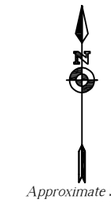
LEGEND:

= Stop Sign

= Traffic Signal

26/35 = AM Peak Hour Traffic / PM Peak Hour Traffic

1,000 = Average Daily Traffic



Approximate Scale
Scale: 1"=600'



Notes:

1. The existing daily traffic volume on Vista Parkway of 5,430vpd in September, 2024 and the Erie TMP projected 2050 daily traffic volume of 11,160vpd (11,336 minus 205 site-generated trips) results in an annual growth rate of about 2.8 percent. This estimate includes trips from the planned Vista Ridge PA 2-8, 2-11 & 2-12. An annual growth rate of one percent was assumed on Mountain View Boulevard because the land use along Mountain View Boulevard is primarily built out.
2. The Town of Erie is currently planning to conduct a traffic calming/road dieting study on Vista Parkway. The findings and implementation details could lower the currently estimated 2045 traffic volume noted in this figure.

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Figure 5

Year 2045 Background Traffic, Lane Geometry and Traffic Control

Vista Reserve at Vista Ridge (LSC #250240)



Approximate Scale
Scale: 1"=2,000'

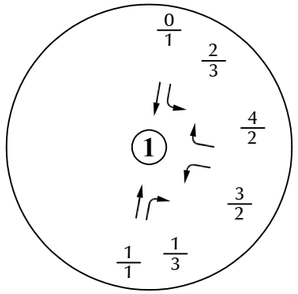
LEGEND:

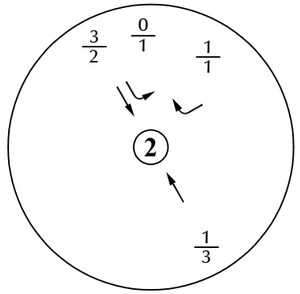
65% = Percent Directional Distribution

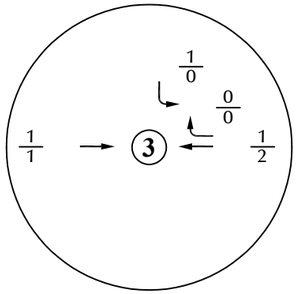
Figure 6

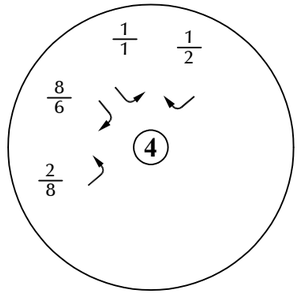
Directional Distribution of Site-Generated Traffic

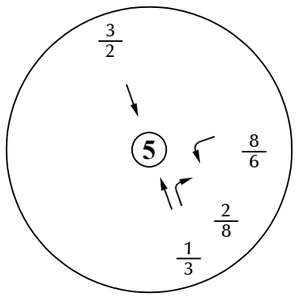
Vista Reserve at Vista Ridge (LSC #250240)

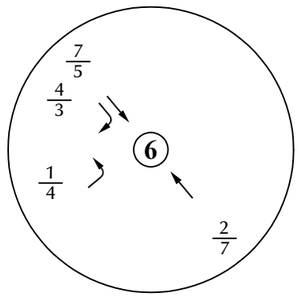


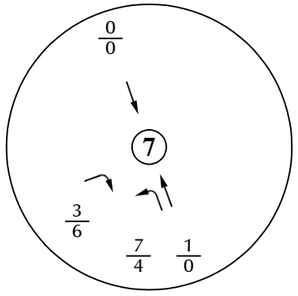


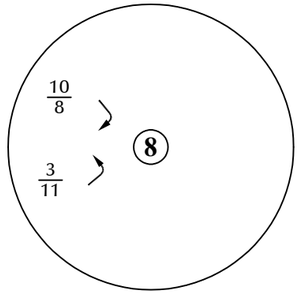












LEGEND:

$\frac{26}{35}$ = AM Peak Hour Traffic / PM Peak Hour Traffic

1,000 = Average Daily Traffic

Approximate Scale
Scale: 1"=600'

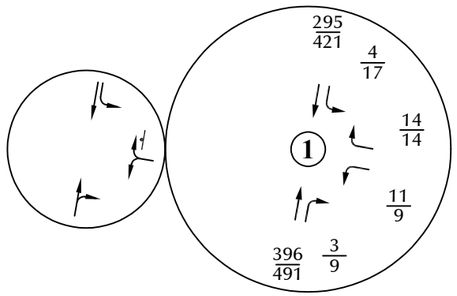


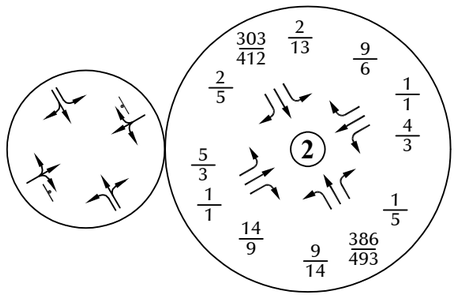
Figure 7

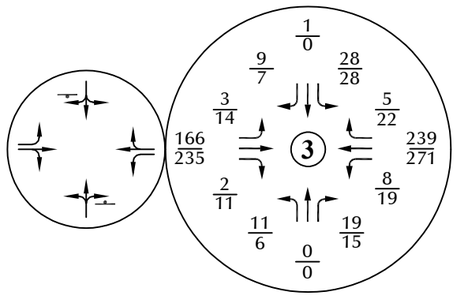
Assignment of Site-Generated Traffic

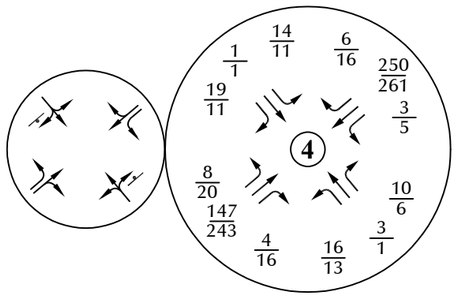
Vista Reserve at Vista Ridge (LSC #250240)

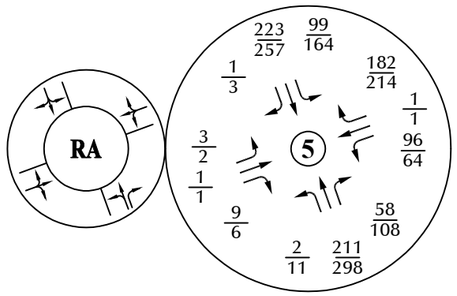
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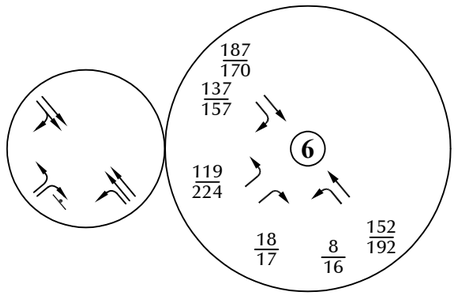












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Note: These volumes are the sum of the volumes in Figures 4 and 7.

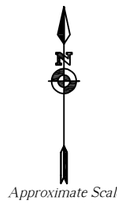
LEGEND:

= Stop Sign

= Traffic Signal

26/35 = AM Peak Hour Traffic / PM Peak Hour Traffic

1,000 = Average Daily Traffic



Approximate Scale
Scale: 1"=600'

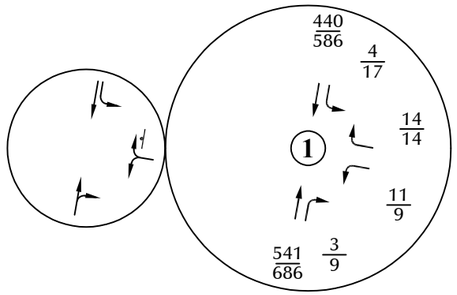


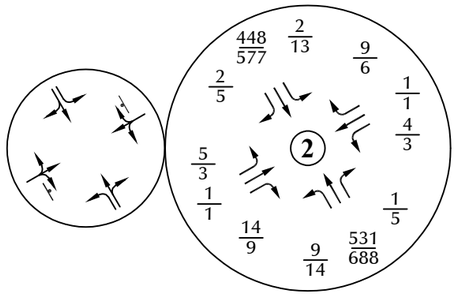
Figure 8

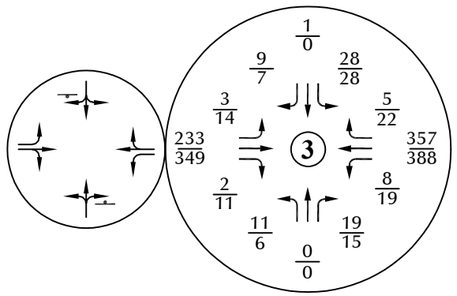
Year 2028 Total Traffic, Lane Geometry and Traffic Control

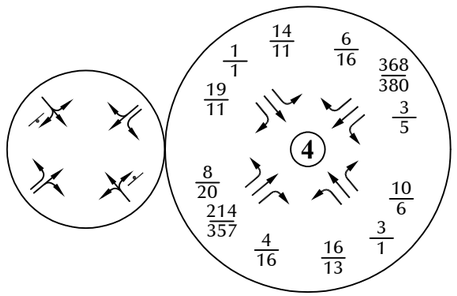
Vista Reserve at Vista Ridge (LSC #250240)

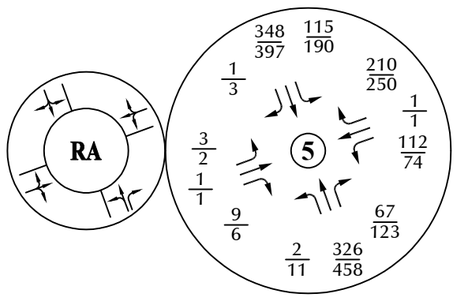
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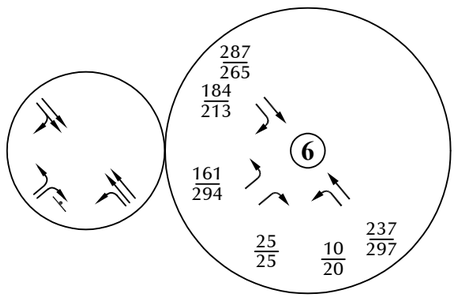












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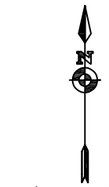
LEGEND:

= Stop Sign

= Traffic Signal

26/35 = AM Peak Hour Traffic / PM Peak Hour Traffic

1,000 = Average Daily Traffic



Approximate Scale
Scale: 1"=600'



Notes:
1. These volumes are the sum of the volumes in Figures 5 and 7.
2. The Town of Erie is currently planning to conduct a traffic calming/road dieting study on Vista Parkway. The findings and implementation details could lower the currently estimated 2045 traffic volume noted in this figure.

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 9

Year 2045 Total Traffic, Lane Geometry and Traffic Control

Vista Reserve at Vista Ridge (LSC #250240)

COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: VISTA PKWY
E/W STREET: MOUNTAIN VIEW BLVD
CITY: ERIE
COUNTY: ADAMS

File Name : VISTMTNVIEWSCHOOL
Site Code : 00000025
Start Date : 9/11/2024
Page No : 1

Groups Printed- VEHICLES

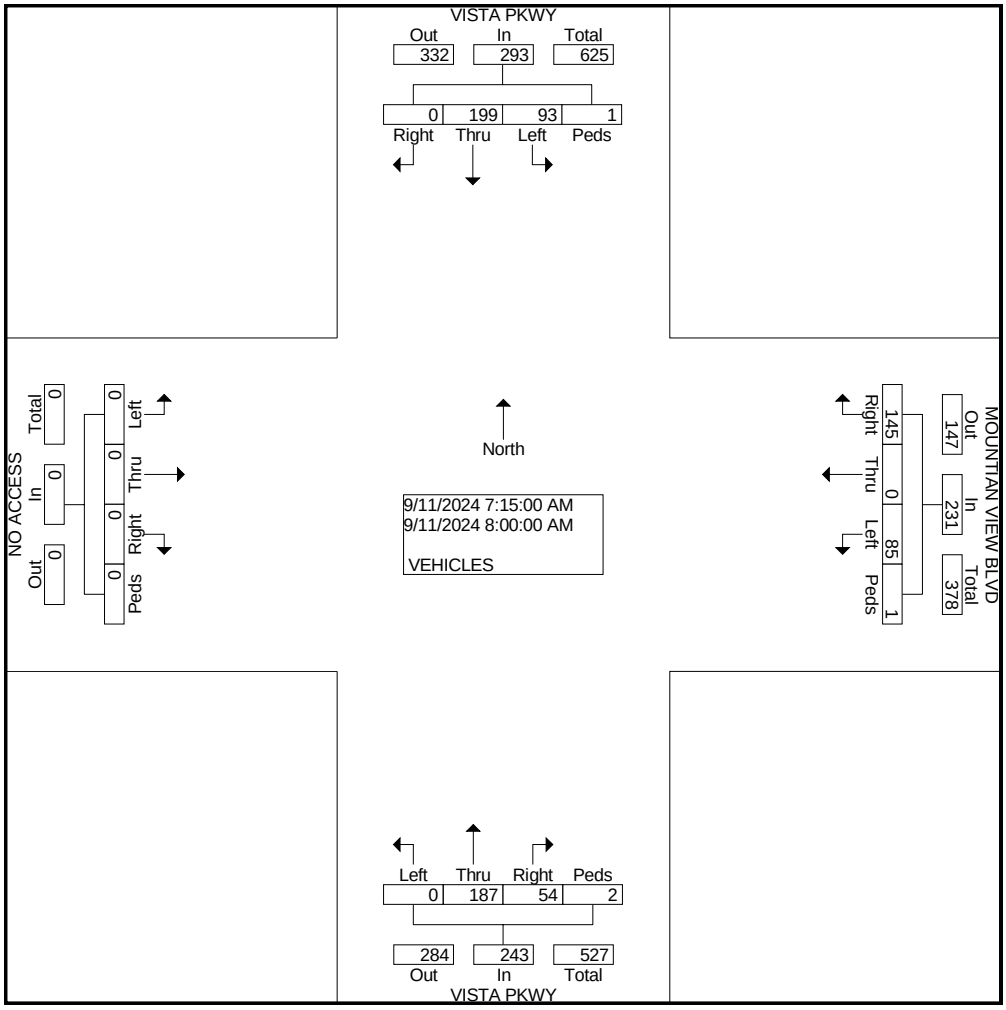
	VISTA PKWY Southbound				MOUNTIAN VIEW BLVD Westbound				VISTA PKWY Northbound				NO ACCESS Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	5	23	0	2	4	0	11	1	0	15	2	1	0	0	0	0	64
06:45 AM	13	19	0	1	10	0	15	0	0	24	9	0	0	0	0	0	91
Total	18	42	0	3	14	0	26	1	0	39	11	1	0	0	0	0	155
07:00 AM	8	29	0	0	13	0	18	0	0	32	12	1	0	0	0	0	113
07:15 AM	23	48	0	0	18	0	30	0	0	39	23	0	0	0	0	0	181
07:30 AM	19	53	0	0	22	0	46	0	0	38	9	0	0	0	0	0	187
07:45 AM	22	51	0	1	31	0	31	1	0	55	8	1	0	0	0	0	201
Total	72	181	0	1	84	0	125	1	0	164	52	2	0	0	0	0	682
08:00 AM	29	47	0	0	14	0	38	0	0	55	14	1	0	0	0	0	198
08:15 AM	27	41	0	0	14	0	29	0	0	43	11	0	0	0	0	0	165
Total	56	88	0	0	28	0	67	0	0	98	25	1	0	0	0	0	363
04:00 PM	44	41	0	0	10	0	43	0	0	54	32	0	0	0	0	0	224
04:15 PM	31	59	0	0	20	0	35	0	0	61	19	0	0	0	0	0	225
04:30 PM	53	47	0	0	11	0	48	0	0	67	25	0	0	0	0	0	251
04:45 PM	47	49	0	0	12	0	53	0	0	77	22	1	0	0	0	0	261
Total	175	196	0	0	53	0	179	0	0	259	98	1	0	0	0	0	961
05:00 PM	40	61	0	0	8	0	52	0	0	67	29	0	0	0	0	0	257
05:15 PM	36	49	0	0	19	0	52	0	0	62	18	0	0	0	0	0	236
05:30 PM	35	70	0	3	17	0	49	0	0	57	24	0	0	0	0	0	255
05:45 PM	45	56	0	1	11	0	31	0	0	64	19	1	0	0	0	0	228
Total	156	236	0	4	55	0	184	0	0	250	90	1	0	0	0	0	976
Grand Total	477	743	0	8	234	0	581	2	0	810	276	6	0	0	0	0	3137
Apprch %	38.8	60.5	0.0	0.7	28.6	0.0	71.1	0.2	0.0	74.2	25.3	0.5	0.0	0.0	0.0	0.0	
Total %	15.2	23.7	0.0	0.3	7.5	0.0	18.5	0.1	0.0	25.8	8.8	0.2	0.0	0.0	0.0	0.0	

COUNTER MEASURES INC.
1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: VISTA PKWY
E/W STREET: MOUNTAIN VIEW BLVD
CITY: ERIE
COUNTY: ADAMS

File Name : VISTMTNVIEWSCHOOL
Site Code : 00000025
Start Date : 9/11/2024

	VISTA PKWY Southbound					MOUNTIAN VIEW BLVD Westbound					VISTA PKWY Northbound					NO ACCESS Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	07:15 AM																				
Volume	93	199	0	1	293	85	0	145	1	231	0	187	54	2	243	0	0	0	0	0	767
Percent	31.7	67.9	0.0	0.3		36.8	0.0	62.8	0.4		0.0	77.0	22.2	0.8		0.0	0.0	0.0	0.0		
07:45 Volume	22	51	0	1	74	31	0	31	1	63	0	55	8	1	64	0	0	0	0	0	201
Peak Factor																					0.954
High Int.	08:00 AM					07:30 AM					08:00 AM					6:15:00 AM					
Volume	29	47	0	0	76	22	0	46	0	68	0	55	14	1	70						
Peak Factor					0.964					0.849					0.868						



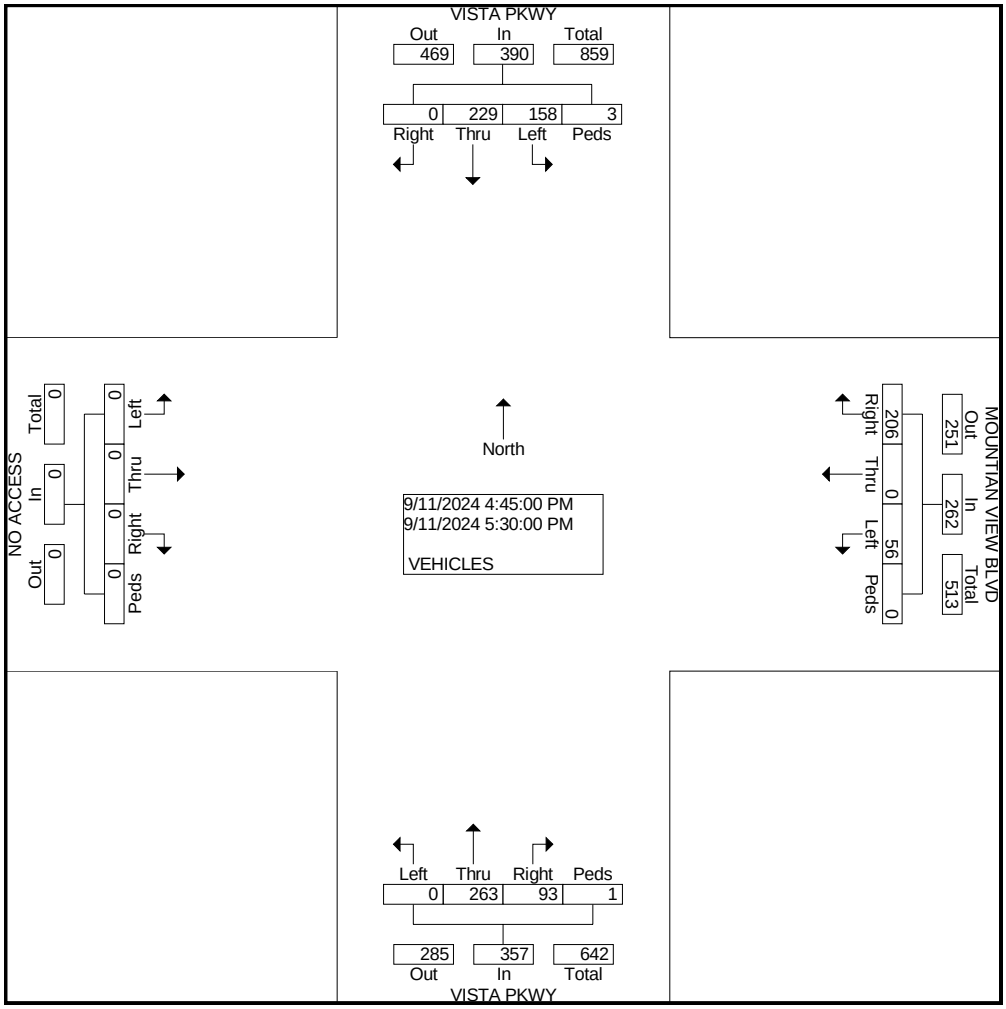
COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: VISTA PKWY
E/W STREET: MOUNTAIN VIEW BLVD
CITY: ERIE
COUNTY: ADAMS

File Name : VISTMTNVIEWSCHOOL
Site Code : 00000025
Start Date : 9/11/2024

	VISTA PKWY Southbound					MOUNTIAN VIEW BLVD Westbound					VISTA PKWY Northbound					NO ACCESS Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Intersection	04:45 PM																				
Volume	158	229	0	3	390	56	0	206	0	262	0	263	93	1	357	0	0	0	0	0	1009
Percent	40.5	58.7	0.0	0.8		21.4	0.0	78.6	0.0		0.0	73.7	26.1	0.3		0.0	0.0	0.0	0.0		
04:45 Volume	47	49	0	0	96	12	0	53	0	65	0	77	22	1	100	0	0	0	0	0	261
Peak Factor																					0.966
High Int.	05:30 PM					05:15 PM					04:45 PM										
Volume	35	70	0	3	108	19	0	52	0	71	0	77	22	1	100						
Peak Factor					0.903					0.923					0.893						



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: VISTA PKWY
E/W STREET: SUNSET DR
CITY: ERIE
COUNTY: ADAMS

File Name : VISTSUNSETSCHOOL
Site Code : 00000025
Start Date : 9/11/2024
Page No : 1

Groups Printed- VEHICLES

	VISTA PKWY Southbound				NO ACCESS Westbound				VISTA PKWY Northbound				SUNSET DR Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	20	7	4	0	0	0	0	0	13	1	1	5	0	6	3	60
06:45 AM	0	18	11	0	0	0	0	0	1	19	0	1	15	0	7	0	72
Total	0	38	18	4	0	0	0	0	1	32	1	2	20	0	13	3	132
07:00 AM	0	20	24	1	0	0	0	0	2	27	0	8	26	0	4	0	112
07:15 AM	0	34	28	0	0	0	1	0	3	34	0	0	33	2	5	0	140
07:30 AM	0	40	33	0	0	0	0	0	0	28	0	2	23	2	1	0	129
07:45 AM	0	52	33	3	0	0	0	0	1	31	0	1	32	0	6	0	159
Total	0	146	118	4	0	0	1	0	6	120	0	11	114	4	16	0	540
08:00 AM	0	35	27	0	0	0	0	0	4	41	0	1	29	0	5	2	144
08:15 AM	0	31	26	1	0	0	0	0	3	22	0	4	31	0	8	1	127
Total	0	66	53	1	0	0	0	0	7	63	0	5	60	0	13	3	271
04:00 PM	0	30	22	0	0	0	0	1	4	41	0	0	48	0	6	1	153
04:15 PM	0	38	41	0	0	0	0	0	0	43	0	3	47	0	3	2	177
04:30 PM	0	33	31	0	0	0	0	0	7	59	0	1	39	0	5	2	177
04:45 PM	0	35	29	1	0	0	0	0	4	49	0	0	51	0	2	1	172
Total	0	136	123	1	0	0	0	1	15	192	0	4	185	0	16	6	679
05:00 PM	0	41	28	0	0	0	0	0	5	48	0	0	56	0	3	0	181
05:15 PM	0	31	28	1	0	0	0	0	1	32	0	4	45	0	6	1	149
05:30 PM	0	41	38	0	0	0	0	2	5	38	0	1	38	0	5	1	169
05:45 PM	0	28	34	1	0	0	0	0	6	34	0	4	51	0	3	0	161
Total	0	141	128	2	0	0	0	2	17	152	0	9	190	0	17	2	660
Grand Total	0	527	440	12	0	0	1	3	46	559	1	31	569	4	75	14	2282
Apprch %	0.0	53.8	44.9	1.2	0.0	0.0	25.0	75.0	7.2	87.8	0.2	4.9	86.0	0.6	11.3	2.1	
Total %	0.0	23.1	19.3	0.5	0.0	0.0	0.0	0.1	2.0	24.5	0.0	1.4	24.9	0.2	3.3	0.6	

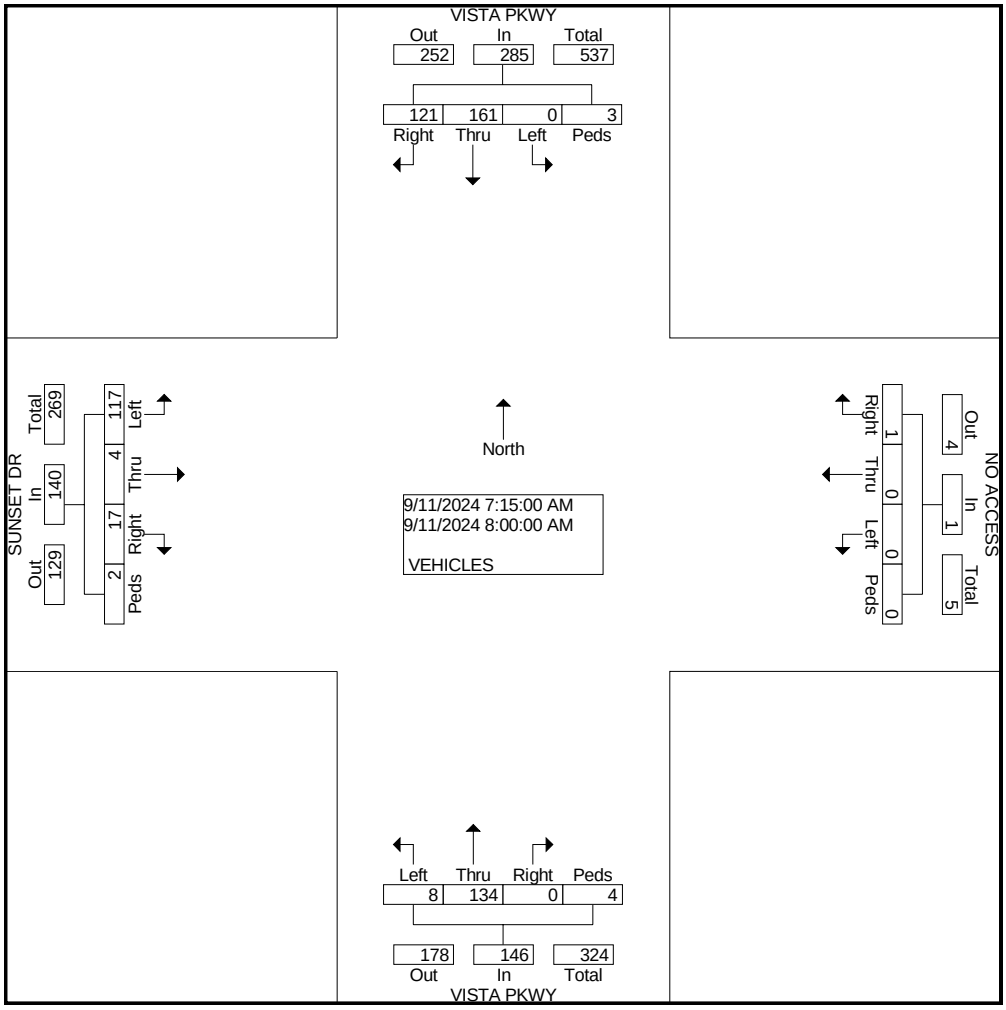
COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: VISTA PKWY
E/W STREET: SUNSET DR
CITY: ERIE
COUNTY: ADAMS

File Name : VISTSUNSETSCHOOL
Site Code : 00000025
Start Date : 9/11/2024
Page No : 2

	VISTA PKWY Southbound					NO ACCESS Westbound					VISTA PKWY Northbound					SUNSET DR Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Intersection	07:15 AM																				
Volume	0	161	121	3	285	0	0	1	0	1	8	134	0	4	146	117	4	17	2	140	572
Percent	0.0	56.5	42.5	1.1		0.0	0.0	100.0	0.0		5.5	91.8	0.0	2.7		83.6	2.9	12.1	1.4		
07:45 Volume	0	52	33	3	88	0	0	0	0	0	1	31	0	1	33	32	0	6	0	38	159
Peak Factor																					0.899
High Int.	07:45 AM					07:15 AM					08:00 AM					07:15 AM					
Volume	0	52	33	3	88	0	0	1	0	1	4	41	0	1	46	33	2	5	0	40	
Peak Factor					0.810					0.250					0.793					0.875	



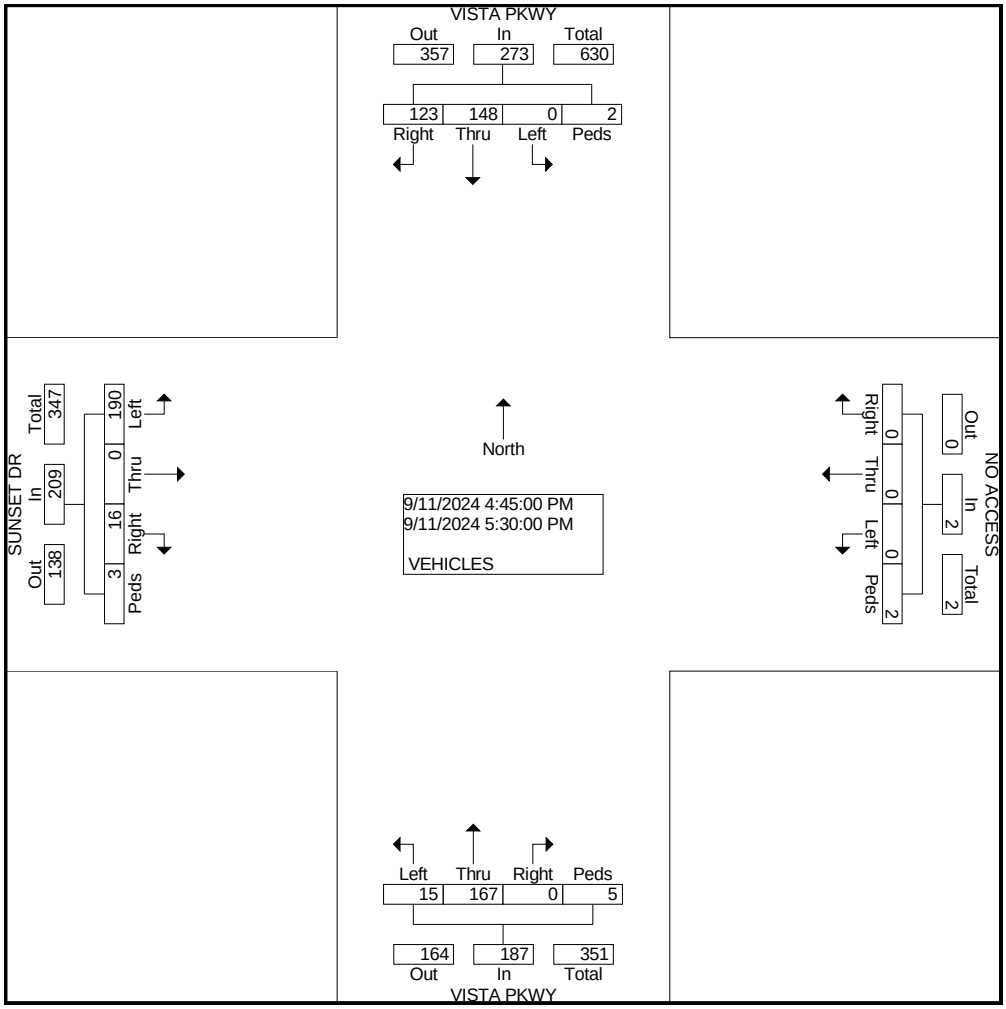
COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: VISTA PKWY
E/W STREET: SUNSET DR
CITY: ERIE
COUNTY: ADAMS

File Name : VISTSUNSETSCHOOL
Site Code : 00000025
Start Date : 9/11/2024
Page No : 3

	VISTA PKWY Southbound					NO ACCESS Westbound					VISTA PKWY Northbound					SUNSET DR Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:45 PM to 05:30 PM - Peak 1 of 1																					
Intersection	04:45 PM																				
Volume	0	148	123	2	273	0	0	0	2	2	15	167	0	5	187	190	0	16	3	209	671
Percent	0.0	54.2	45.1	0.7		0.0	0.0	0.0	100.0		8.0	89.3	0.0	2.7		90.9	0.0	7.7	1.4		
05:00 Volume	0	41	28	0	69	0	0	0	0	0	5	48	0	0	53	56	0	3	0	59	181
Peak Factor																					0.927
High Int.	05:30 PM					05:30 PM					04:45 PM					05:00 PM					
Volume	0	41	38	0	79	0	0	0	2	2	4	49	0	0	53	56	0	3	0	59	
Peak Factor					0.864					0.250					0.882					0.886	



COUNTER MEASURES INC

1889 YORK ST
DENVER COLORADO
303-333-7409

N/S STREET: HICKORY DR
E/W STREET: MOUNTAIN VIEW BLVD
CITY: ERIE
COUNTY: WELD

File Name : HICKORY DR MOUNTAIN VIEW BLVD
Site Code : 00000025
Start Date : 4/15/2025
Page No : 1

Groups Printed- Unshifted

	HICKORY DR SOUTHBOUND				MOUNTAIN VIEW BLVD WESTBOUND				HICKORY DR NORTHBOUND				MOUNTAIN VIEW BLVD EASTBOUND				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30 AM	2	0	2	0	1	11	2	1	0	0	5	0	0	12	0	0	36
06:45 AM	3	0	1	0	1	19	2	0	0	0	5	0	1	15	1	0	48
Total	5	0	3	0	2	30	4	1	0	0	10	0	1	27	1	0	84
07:00 AM	4	0	3	1	0	24	0	0	2	0	1	0	0	26	0	0	61
07:15 AM	9	1	1	0	2	38	0	0	1	0	6	1	2	23	0	0	84
07:30 AM	4	0	6	0	1	54	1	2	6	0	2	0	0	25	0	0	101
07:45 AM	6	0	2	0	2	45	0	0	4	0	6	0	0	45	1	0	111
Total	23	1	12	1	5	161	1	2	13	0	15	1	2	119	1	0	357
08:00 AM	8	0	0	0	3	52	4	0	0	0	5	0	1	40	1	0	114
08:15 AM	8	0	4	0	0	46	2	2	2	1	5	0	0	37	1	0	108
Total	16	0	4	0	3	98	6	2	2	1	10	0	1	77	2	0	222
04:00 PM	7	0	3	0	3	43	8	2	3	0	2	0	2	50	3	3	129
04:15 PM	7	1	2	0	8	68	2	0	0	0	1	0	2	46	2	4	143
04:30 PM	3	0	2	0	8	56	4	3	2	0	13	0	6	51	2	2	152
04:45 PM	5	0	0	1	7	58	6	2	1	0	7	0	5	47	1	1	141
Total	22	1	7	1	26	225	20	7	6	0	23	0	15	194	8	10	565
05:00 PM	5	0	5	0	4	48	2	0	1	0	4	0	2	55	4	2	132
05:15 PM	9	0	2	0	3	60	8	0	3	0	2	0	3	53	3	1	147
05:30 PM	9	0	0	0	5	53	6	3	1	0	2	3	4	48	3	5	142
05:45 PM	3	0	5	3	6	41	7	1	3	0	2	2	2	43	3	6	127
Total	26	0	12	3	18	202	23	4	8	0	10	5	11	199	13	14	548
Grand Total	92	2	38	5	54	716	54	16	29	1	68	6	30	616	25	24	1776
Apprch %	67.2	1.5	27.7	3.6	6.4	85.2	6.4	1.9	27.9	1	65.4	5.8	4.3	88.6	3.6	3.5	
Total %	5.2	0.1	2.1	0.3	3	40.3	3	0.9	1.6	0.1	3.8	0.3	1.7	34.7	1.4	1.4	

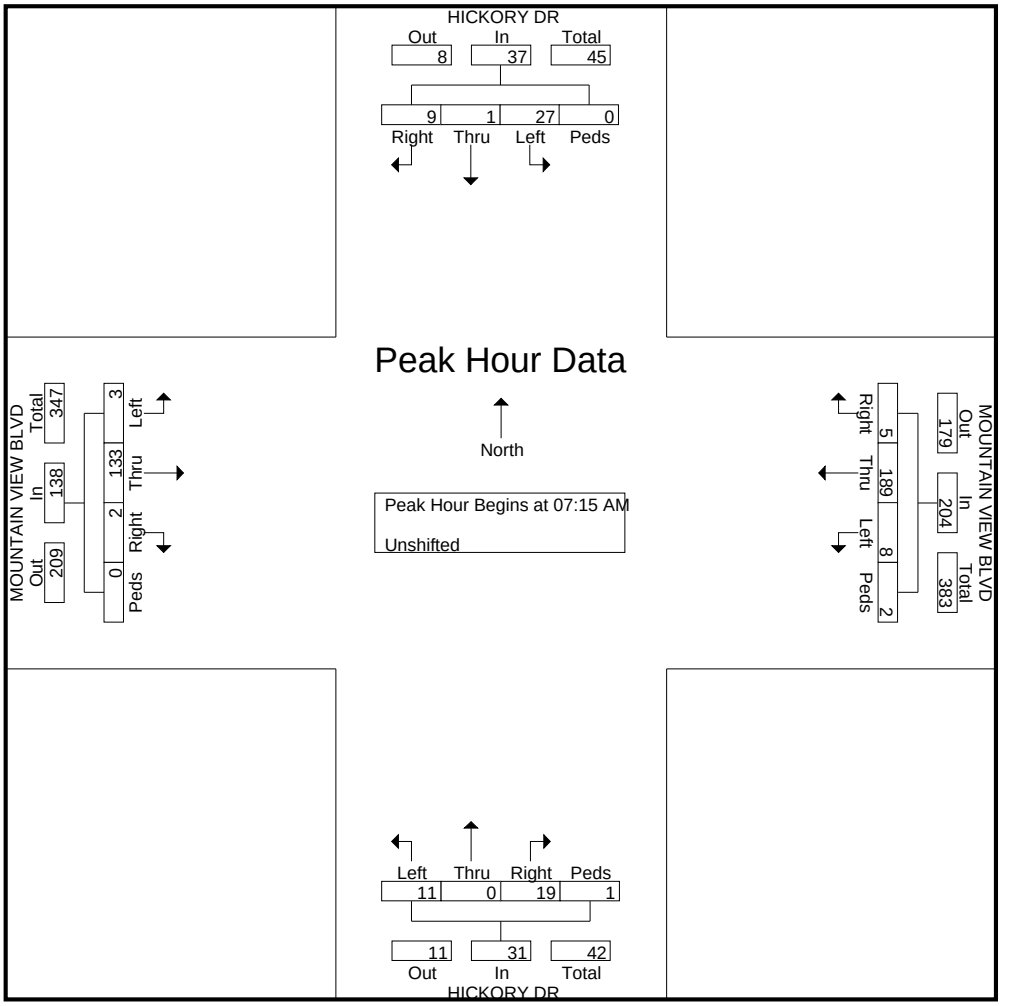
COUNTER MEASURES INC

1889 YORK ST
DENVER COLORADO
303-333-7409

N/S STREET: HICKORY DR
E/W STREET: MOUNTAIN VIEW BLVD
CITY: ERIE
COUNTY: WELD

File Name : HICKORY DR MOUNTAIN VIEW BLVD
Site Code : 00000025
Start Date : 4/15/2025
Page No : 2

	HICKORY DR SOUTHBOUND					MOUNTAIN VIEW BLVD WESTBOUND					HICKORY DR NORTHBOUND					MOUNTAIN VIEW BLVD EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	**9**	**1**	1	0	**11**	2	38	0	0	40	1	0	**6**	**1**	8	**2**	23	0	0	25	84
07:30 AM	4	0	**6**	0	10	1	**54**	1	**2**	58	**6**	0	2	0	8	0	25	0	0	25	101
07:45 AM	6	0	2	0	8	2	45	0	0	47	4	0	6	0	**10**	0	**45**	**1**	0	**46**	111
08:00 AM	8	0	0	0	8	**3**	52	**4**	0	**59**	0	0	5	0	5	1	40	1	0	42	**114**
Total Volume	27	1	9	0	37	8	189	5	2	204	11	0	19	1	31	3	133	2	0	138	410
% App. Total	73	2.7	24.3	0		3.9	92.6	2.5	1		35.5	0	61.3	3.2		2.2	96.4	1.4	0		
PHF	.750	.250	.375	.000	.841	.667	.875	.313	.250	.864	.458	.000	.792	.250	.775	.375	.739	.500	.000	.750	.899



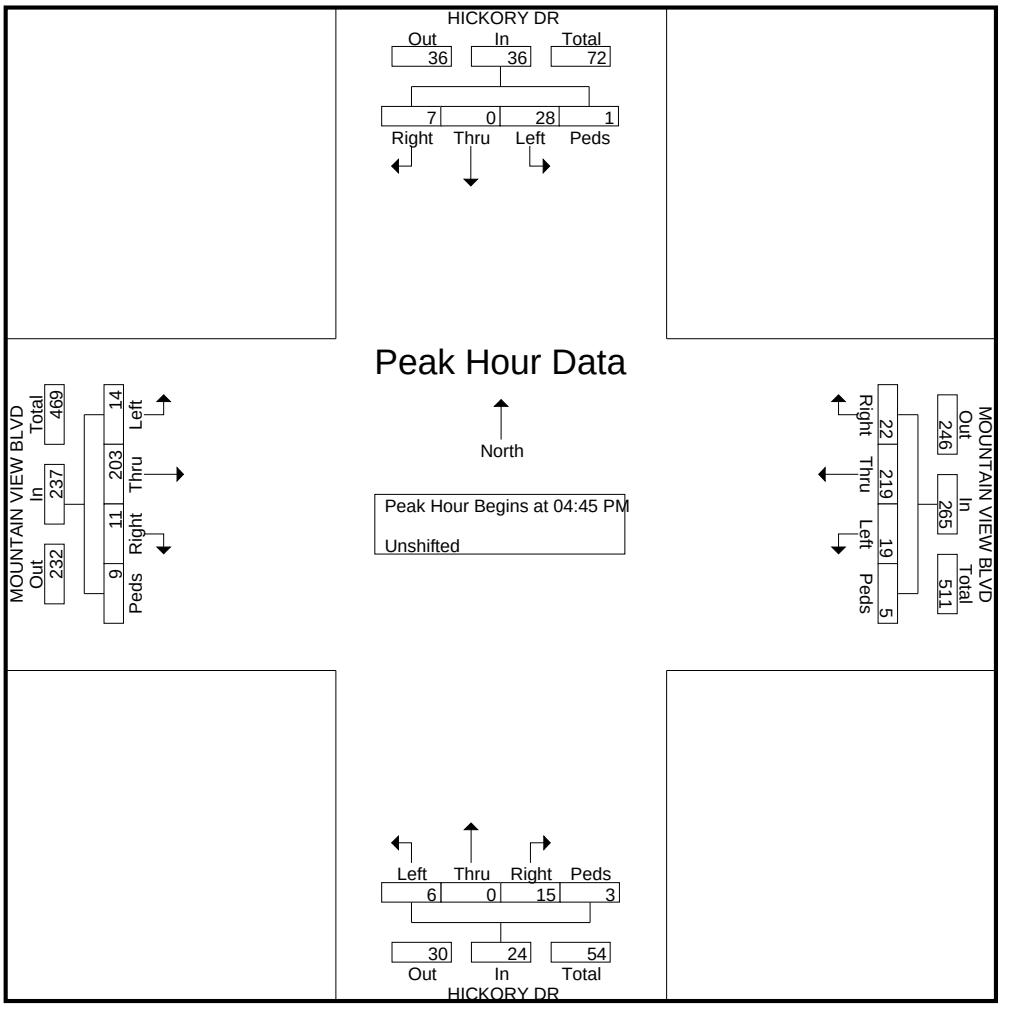
COUNTER MEASURES INC

1889 YORK ST
DENVER COLORADO
303-333-7409

N/S STREET: HICKORY DR
E/W STREET: MOUNTAIN VIEW BLVD
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File Name : HICKORY DR MOUNTAIN VIEW BLVD
Site Code : 00000025
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Page No : 3

	HICKORY DR SOUTHBOUND					MOUNTAIN VIEW BLVD WESTBOUND					HICKORY DR NORTHBOUND					MOUNTAIN VIEW BLVD EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	5	0	0	**1**	6	**7**	58	6	2	**73**	1	0	**7**	0	**8**	**5**	47	1	1	54	141
05:00 PM	5	0	**5**	0	10	4	48	2	0	54	1	0	4	0	5	2	**55**	**4**	2	**63**	132
05:15 PM	**9**	0	2	0	**11**	3	**60**	**8**	0	71	**3**	0	2	0	5	3	53	3	1	60	**147**
05:30 PM	9	0	0	0	9	5	53	6	**3**	67	1	0	2	**3**	6	4	48	3	**5**	60	142
Total Volume	28	0	7	1	36	19	219	22	5	265	6	0	15	3	24	14	203	11	9	237	562
% App. Total	77.8	0	19.4	2.8		7.2	82.6	8.3	1.9		25	0	62.5	12.5		5.9	85.7	4.6	3.8		
PHF	.778	.000	.350	.250	.818	.679	.913	.688	.417	.908	.500	.000	.536	.250	.750	.700	.923	.688	.450	.940	.956



COUNTER MEASURES INC

1889 YORK ST
DENVER COLORADO
303-333-7409

N/S STREET: VALE WAY
E/W STREET: MOUNTAIN VIEW BLVD
CITY: ERIE
COUNTY: WELD

File Name : VALE WAY MOUTAIN VIEW BLVD
Site Code : 00000025
Start Date : 4/10/2025
Page No : 1

Groups Printed- Unshifted

	VALE WAY SOUTHBOUND				MOUNTAIN VIEW BLVD WESTBOUND				VALE WAY NORTHBOUND				MOUNTAIN VIEW BLVD EASTBOUND				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30 AM	1	0	0	0	1	16	0	2	1	0	1	0	0	11	1	2	36
06:45 AM	2	0	2	0	0	23	2	0	3	0	0	0	1	10	3	2	48
Total	3	0	2	0	1	39	2	2	4	0	1	0	1	21	4	4	84
07:00 AM	8	0	4	0	0	24	1	0	3	0	1	0	1	21	1	1	65
07:15 AM	2	0	4	0	0	45	3	0	3	1	6	0	2	31	0	1	98
07:30 AM	4	0	3	0	1	64	0	0	4	1	1	0	0	26	2	1	107
07:45 AM	3	0	2	0	0	63	1	1	2	0	2	0	2	37	1	1	115
Total	17	0	13	0	1	196	5	1	12	2	10	0	5	115	4	4	385
08:00 AM	4	0	2	0	2	60	1	0	7	1	1	0	2	48	1	1	130
08:15 AM	2	0	2	0	2	44	0	0	1	0	1	1	1	33	1	1	89
Total	6	0	4	0	4	104	1	0	8	1	2	1	3	81	2	2	219
04:00 PM	3	0	1	0	0	37	1	0	1	1	0	0	5	46	7	1	103
04:15 PM	2	0	0	0	0	42	3	2	10	0	1	0	3	46	4	1	114
04:30 PM	0	0	2	0	0	57	2	2	2	0	1	0	1	51	4	1	123
04:45 PM	1	0	3	1	2	46	4	0	1	1	3	1	2	62	3	0	130
Total	6	0	6	1	2	182	10	4	14	2	5	1	11	205	18	3	470
05:00 PM	5	0	0	0	1	48	4	1	2	0	1	0	4	43	5	0	114
05:15 PM	4	0	0	0	2	40	4	2	8	0	1	0	5	61	4	2	133
05:30 PM	3	0	1	0	2	40	2	4	5	0	0	0	1	54	4	0	116
05:45 PM	5	0	4	1	1	36	1	1	1	0	1	0	5	42	2	0	100
Total	17	0	5	1	6	164	11	8	16	0	3	0	15	200	15	2	463
Grand Total	49	0	30	2	14	685	29	15	54	5	21	2	35	622	43	15	1621
Apprch %	60.5	0	37	2.5	1.9	92.2	3.9	2	65.9	6.1	25.6	2.4	4.9	87	6	2.1	
Total %	3	0	1.9	0.1	0.9	42.3	1.8	0.9	3.3	0.3	1.3	0.1	2.2	38.4	2.7	0.9	

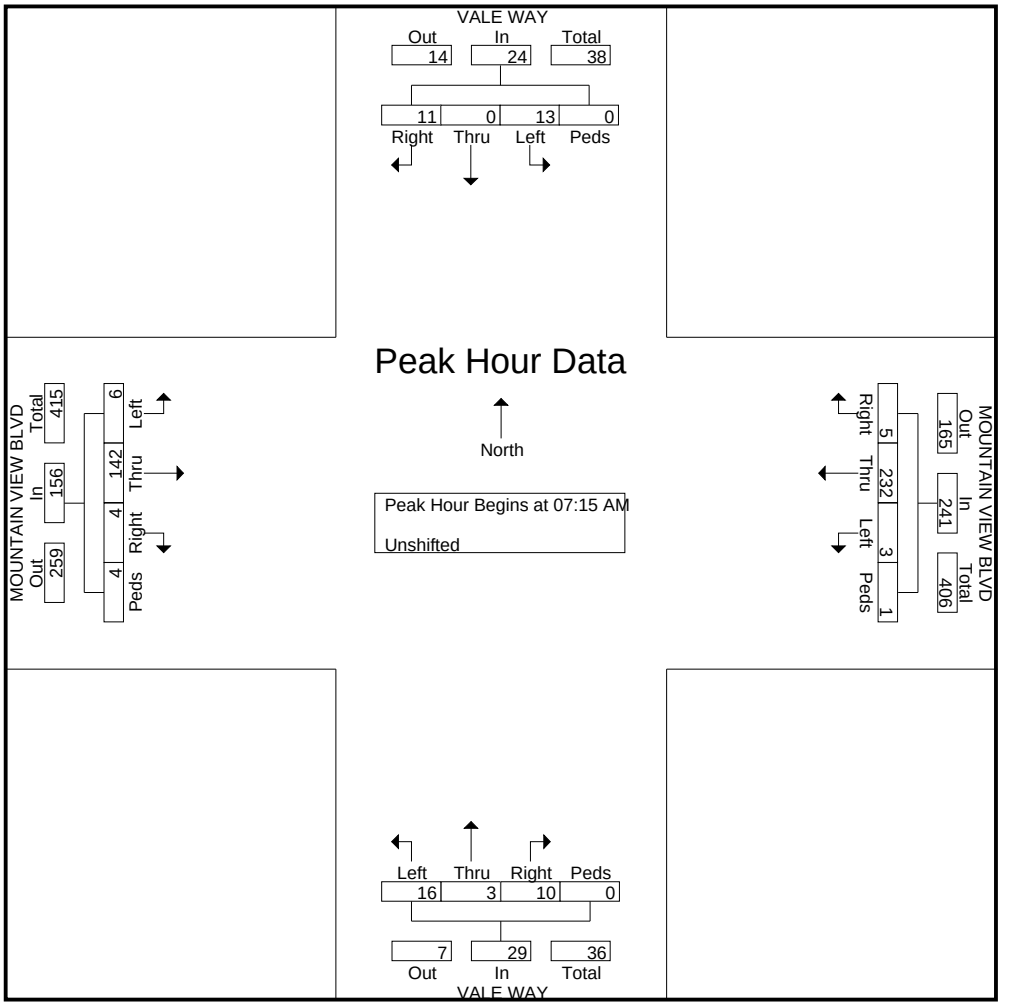
COUNTER MEASURES INC

1889 YORK ST
DENVER COLORADO
303-333-7409

N/S STREET: VALE WAY
E/W STREET: MOUNTAIN VIEW BLVD
CITY: ERIE
COUNTY: WELD

File Name : VALE WAY MOUTAIN VIEW BLVD
Site Code : 00000025
Start Date : 4/10/2025
Page No : 2

	VALE WAY SOUTHBOUND					MOUNTAIN VIEW BLVD WESTBOUND					VALE WAY NORTHBOUND					MOUNTAIN VIEW BLVD EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	2	0	**4**	0	6	0	45	**3**	0	48	3	**1**	**6**	0	**10**	**2**	31	0	**1**	34	98
07:30 AM	**4**	0	3	0	**7**	1	**64**	0	0	**65**	4	1	1	0	6	0	26	**2**	1	29	107
07:45 AM	3	0	2	0	5	0	63	1	**1**	65	2	0	2	0	4	2	37	1	1	41	115
08:00 AM	4	0	2	0	6	**2**	60	1	0	63	**7**	1	1	0	9	2	**48**	1	1	**52**	**130**
Total Volume	13	0	11	0	24	3	232	5	1	241	16	3	10	0	29	6	142	4	4	156	450
% App. Total	54.2	0	45.8	0		1.2	96.3	2.1	0.4		55.2	10.3	34.5	0		3.8	91	2.6	2.6		
PHF	.813	.000	.688	.000	.857	.375	.906	.417	.250	.927	.571	.750	.417	.000	.725	.750	.740	.500	1.00	.750	.865



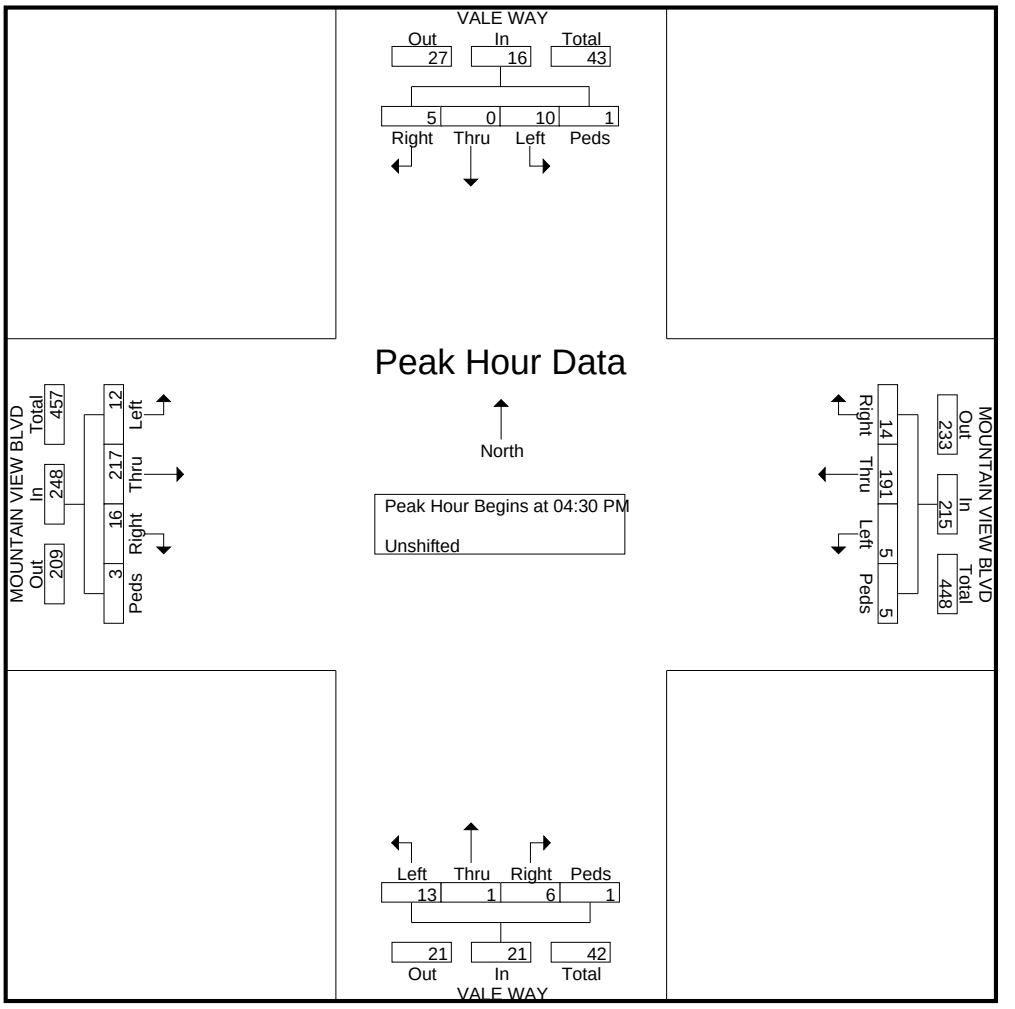
COUNTER MEASURES INC

1889 YORK ST
DENVER COLORADO
303-333-7409

N/S STREET: VALE WAY
E/W STREET: MOUNTAIN VIEW BLVD
CITY: ERIE
COUNTY: WELD

File Name : VALE WAY MOUTAIN VIEW BLVD
Site Code : 00000025
Start Date : 4/10/2025
Page No : 3

	VALE WAY SOUTHBOUND					MOUNTAIN VIEW BLVD WESTBOUND					VALE WAY NORTHBOUND					MOUNTAIN VIEW BLVD EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	2	0	2	0	**57**	2	**2**	**61**	2	0	1	0	3	1	51	4	1	57	123
04:45 PM	1	0	**3**	**1**	**5**	**2**	46	**4**	0	52	1	**1**	**3**	**1**	6	2	**62**	3	0	67	130
05:00 PM	**5**	0	0	0	5	1	48	4	1	54	2	0	1	0	3	4	43	**5**	0	52	114
05:15 PM	4	0	0	0	4	2	40	4	2	48	**8**	0	1	0	**9**	**5**	61	4	**2**	**72**	**133**
Total Volume	10	0	5	1	16	5	191	14	5	215	13	1	6	1	21	12	217	16	3	248	500
% App. Total	62.5	0	31.2	6.2		2.3	88.8	6.5	2.3		61.9	4.8	28.6	4.8		4.8	87.5	6.5	1.2		
PHF	.500	.000	.417	.250	.800	.625	.838	.875	.625	.881	.406	.250	.500	.250	.583	.600	.875	.800	.375	.861	.940



COUNTER MEASURES INC

1889 YORK ST
DENVER COLORADO
303-333-7409

N/S STREET: VISTA PKWY
E/W STREET: HICKORY DR
CITY: ERIE
COUNTY: WELD

File Name : VISTA PKWY HICKORY DR
Site Code : 00000016
Start Date : 4/10/2025
Page No : 1

Groups Printed- Unshifted

	VISTA PKWY SOUTHBOUND				HICKORY DR WESTBOUND				VISTA PKWY NORTHBOUND				HICKORY DR EASTBOUND				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30 AM	0	34	0	0	0	0	0	0	0	23	0	0	0	0	2	0	59
06:45 AM	0	34	1	0	0	0	2	0	2	29	0	0	1	0	2	0	71
Total	0	68	1	0	0	0	2	0	2	52	0	0	1	0	4	0	130
07:00 AM	2	37	0	0	3	0	3	0	0	39	0	0	0	0	2	0	86
07:15 AM	0	57	0	0	2	0	0	0	2	57	0	0	1	0	3	0	122
07:30 AM	0	58	0	0	2	1	4	1	1	76	0	0	1	0	4	0	148
07:45 AM	1	56	0	0	0	0	3	0	3	86	0	1	2	0	3	0	155
Total	3	208	0	0	7	1	10	1	6	258	0	1	4	0	12	0	511
08:00 AM	1	84	2	1	0	0	1	0	3	80	0	0	1	0	4	0	177
08:15 AM	0	52	0	0	0	0	0	0	1	58	1	0	0	1	2	0	115
Total	1	136	2	1	0	0	1	0	4	138	1	0	1	1	6	0	292
04:00 PM	1	82	1	0	0	0	2	0	0	62	0	0	1	0	1	0	150
04:15 PM	1	71	2	2	1	0	2	0	2	85	0	2	0	0	3	0	171
04:30 PM	3	93	3	0	0	0	2	0	5	99	1	0	1	0	1	0	208
04:45 PM	4	98	1	0	2	0	0	0	3	85	1	1	1	0	1	0	197
Total	9	344	7	2	3	0	6	0	10	331	2	3	3	0	6	0	726
05:00 PM	2	79	0	2	0	0	2	0	2	88	2	0	0	0	3	0	180
05:15 PM	3	86	1	2	1	0	1	1	4	99	1	1	1	0	4	0	205
05:30 PM	2	89	0	5	0	0	1	0	7	80	1	1	1	0	2	0	189
05:45 PM	1	88	1	4	3	0	0	0	4	59	1	1	0	0	1	0	163
Total	8	342	2	13	4	0	4	1	17	326	5	3	2	0	10	0	737
Grand Total	21	1098	12	16	14	1	23	2	39	1105	8	7	11	1	38	0	2396
Apprch %	1.8	95.7	1	1.4	35	2.5	57.5	5	3.4	95.3	0.7	0.6	22	2	76	0	
Total %	0.9	45.8	0.5	0.7	0.6	0	1	0.1	1.6	46.1	0.3	0.3	0.5	0	1.6	0	

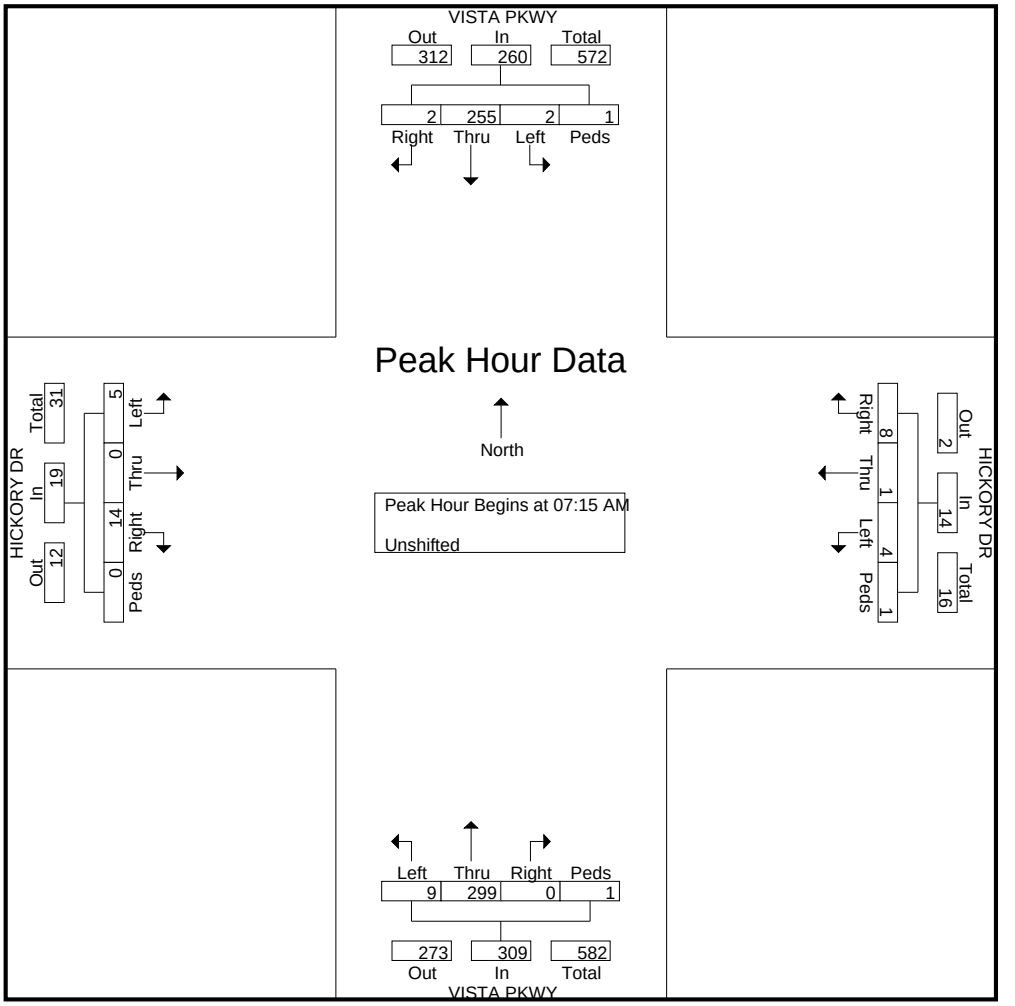
COUNTER MEASURES INC

1889 YORK ST
DENVER COLORADO
303-333-7409

N/S STREET: VISTA PKWY
E/W STREET: HICKORY DR
CITY: ERIE
COUNTY: WELD

File Name : VISTA PKWY HICKORY DR
Site Code : 00000016
Start Date : 4/10/2025
Page No : 2

	VISTA PKWY SOUTHBOUND					HICKORY DR WESTBOUND					VISTA PKWY NORTHBOUND					HICKORY DR EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	57	0	0	57	**2**	0	0	0	2	2	57	0	0	59	1	0	3	0	4	122
07:30 AM	0	58	0	0	58	2	**1**	**4**	**1**	**8**	1	76	0	0	77	1	0	**4**	0	**5**	148
07:45 AM	**1**	56	0	0	57	0	0	3	0	3	**3**	**86**	0	**1**	**90**	**2**	0	3	0	5	155
08:00 AM	1	**84**	**2**	**1**	**88**	0	0	1	0	1	3	80	0	0	83	1	0	4	0	5	**177**
Total Volume	2	255	2	1	260	4	1	8	1	14	9	299	0	1	309	5	0	14	0	19	602
% App. Total	0.8	98.1	0.8	0.4		28.6	7.1	57.1	7.1		2.9	96.8	0	0.3		26.3	0	73.7	0		
PHF	.500	.759	.250	.250	.739	.500	.250	.500	.250	.438	.750	.869	.000	.250	.858	.625	.000	.875	.000	.950	.850



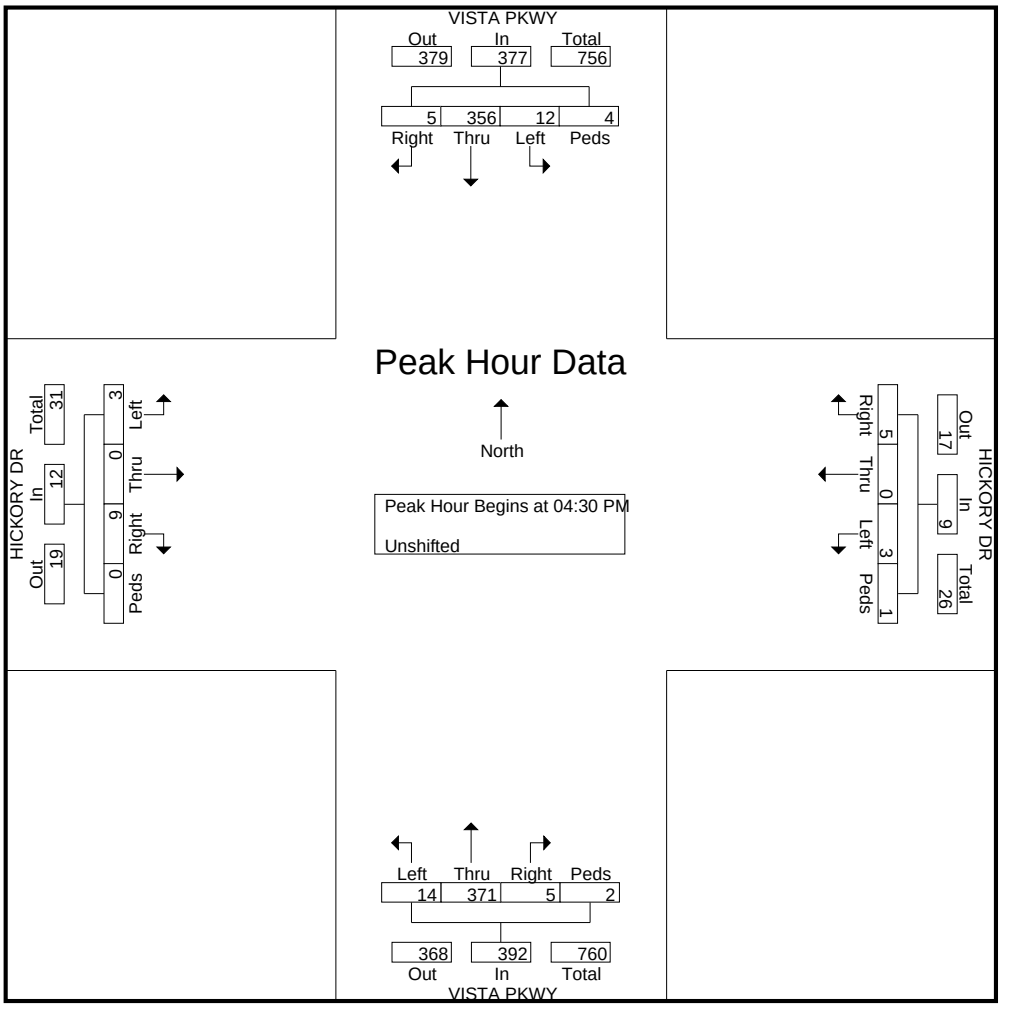
COUNTER MEASURES INC

1889 YORK ST
DENVER COLORADO
303-333-7409

N/S STREET: VISTA PKWY
E/W STREET: HICKORY DR
CITY: ERIE
COUNTY: WELD

File Name : VISTA PKWY HICKORY DR
Site Code : 00000016
Start Date : 4/10/2025
Page No : 3

	VISTA PKWY SOUTHBOUND					HICKORY DR WESTBOUND					VISTA PKWY NORTHBOUND					HICKORY DR EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	3	93	**3**	0	99	0	0	**2**	0	2	**5**	**99**	1	0	**105**	**1**	0	1	0	2	**208**
04:45 PM	**4**	**98**	1	0	**103**	**2**	0	0	0	2	3	85	1	**1**	90	1	0	1	0	2	197
05:00 PM	2	79	0	**2**	83	0	0	2	0	2	2	88	**2**	0	92	0	0	3	0	3	180
05:15 PM	3	86	1	2	92	1	0	1	**1**	**3**	4	99	1	1	105	1	0	**4**	0	**5**	205
Total Volume	12	356	5	4	377	3	0	5	1	9	14	371	5	2	392	3	0	9	0	12	790
% App. Total	3.2	94.4	1.3	1.1		33.3	0	55.6	11.1		3.6	94.6	1.3	0.5		25	0	75	0		
PHF	.750	.908	.417	.500	.915	.375	.000	.625	.250	.750	.700	.937	.625	.500	.933	.750	.000	.563	.000	.600	.950



COUNTER MEASURES INC

1889 YORK ST
DENVER COLORADO
303-333-7409

N/S STREET: VISTA PKWY
E/W STREET: SINGLE TREE LN
CITY: ERIE
COUNTY: WELD

File Name : vista pkwy single tree ln
Site Code : 00000008
Start Date : 4/9/2025
Page No : 1

Groups Printed- Unshifted

	VISTA PKWY SOUTHBOUND				SINGLE TREE LN WESTBOUND				VISTA PKWY NORTHBOUND				NO ACCESS EASTBOUND				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30 AM	1	30	0	1	0	0	3	0	0	20	0	1	0	0	0	0	56
06:45 AM	0	38	0	1	1	0	0	0	0	28	0	1	0	0	0	0	69
Total	1	68	0	2	1	0	3	0	0	48	0	2	0	0	0	0	125
07:00 AM	0	43	0	0	1	0	2	0	0	39	0	1	0	0	0	0	86
07:15 AM	0	64	0	0	1	0	3	0	0	54	0	4	0	0	0	0	126
07:30 AM	1	50	0	0	3	0	2	0	0	77	0	1	0	0	0	0	134
07:45 AM	1	79	0	0	2	0	1	0	0	84	0	2	0	0	0	0	169
Total	2	236	0	0	7	0	8	0	0	254	0	8	0	0	0	0	515
08:00 AM	0	74	0	0	2	0	4	0	0	73	2	0	0	0	0	0	155
08:15 AM	1	65	0	1	1	0	5	0	0	63	3	2	0	0	0	0	141
Total	1	139	0	1	3	0	9	0	0	136	5	2	0	0	0	0	296
04:00 PM	2	76	0	0	1	0	0	0	0	64	2	1	0	0	0	0	146
04:15 PM	3	81	0	0	1	0	1	0	0	65	6	0	0	0	1	1	159
04:30 PM	2	86	0	1	3	0	4	0	0	77	0	0	0	0	0	0	173
04:45 PM	4	74	0	0	3	0	5	0	0	94	1	0	0	0	0	0	181
Total	11	317	0	1	8	0	10	0	0	300	9	1	0	0	1	1	659
05:00 PM	4	110	0	1	0	0	0	0	0	74	1	1	0	0	0	0	191
05:15 PM	4	87	0	0	1	0	3	0	0	87	4	1	0	0	0	0	187
05:30 PM	2	79	0	0	2	0	4	0	0	88	1	0	0	0	0	0	176
05:45 PM	4	72	0	0	4	0	2	0	0	74	2	0	0	0	0	0	158
Total	14	348	0	1	7	0	9	0	0	323	8	2	0	0	0	0	712
Grand Total	29	1108	0	5	26	0	39	0	0	1061	22	15	0	0	1	1	2307
Apprch %	2.5	97	0	0.4	40	0	60	0	0	96.6	2	1.4	0	0	50	50	
Total %	1.3	48	0	0.2	1.1	0	1.7	0	0	46	1	0.7	0	0	0	0	

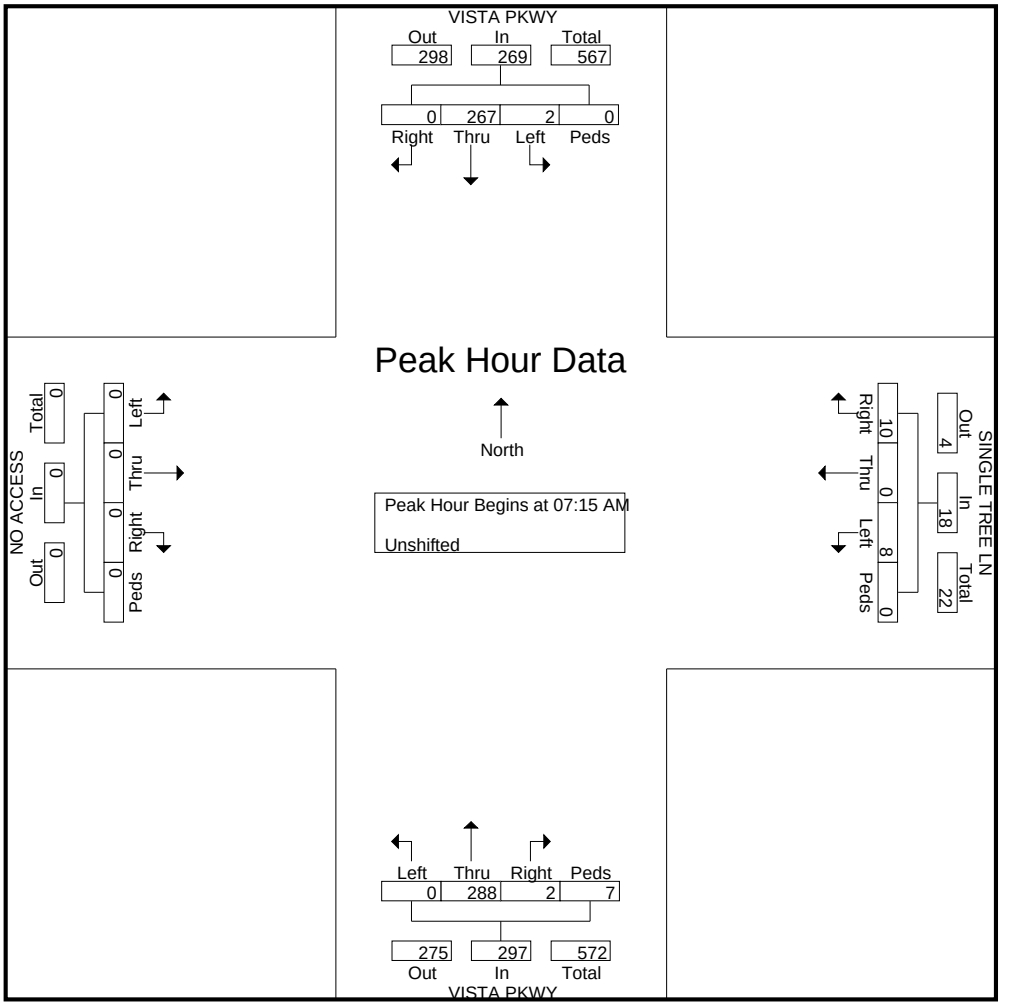
COUNTER MEASURES INC

1889 YORK ST
DENVER COLORADO
303-333-7409

N/S STREET: VISTA PKWY
E/W STREET: SINGLE TREE LN
CITY: ERIE
COUNTY: WELD

File Name : vista pkwy single tree ln
Site Code : 00000008
Start Date : 4/9/2025
Page No : 2

	VISTA PKWY SOUTHBOUND					SINGLE TREE LN WESTBOUND					VISTA PKWY NORTHBOUND					NO ACCESS EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	64	0	0	64	1	0	3	0	4	0	54	0	**4**	58	0	0	0	0	0	126
07:30 AM	**1**	50	0	0	51	**3**	0	2	0	5	0	77	0	1	78	0	0	0	0	0	134
07:45 AM	1	**79**	0	0	**80**	2	0	1	0	3	0	**84**	0	2	**86**	0	0	0	0	0	**169**
08:00 AM	0	74	0	0	74	2	0	**4**	0	**6**	0	73	**2**	0	75	0	0	0	0	0	155
Total Volume	2	267	0	0	269	8	0	10	0	18	0	288	2	7	297	0	0	0	0	0	584
% App. Total	0.7	99.3	0	0		44.4	0	55.6	0		0	97	0.7	2.4		0	0	0	0		
PHF	.500	.845	.000	.000	.841	.667	.000	.625	.000	.750	.000	.857	.250	.438	.863	.000	.000	.000	.000	.000	.864



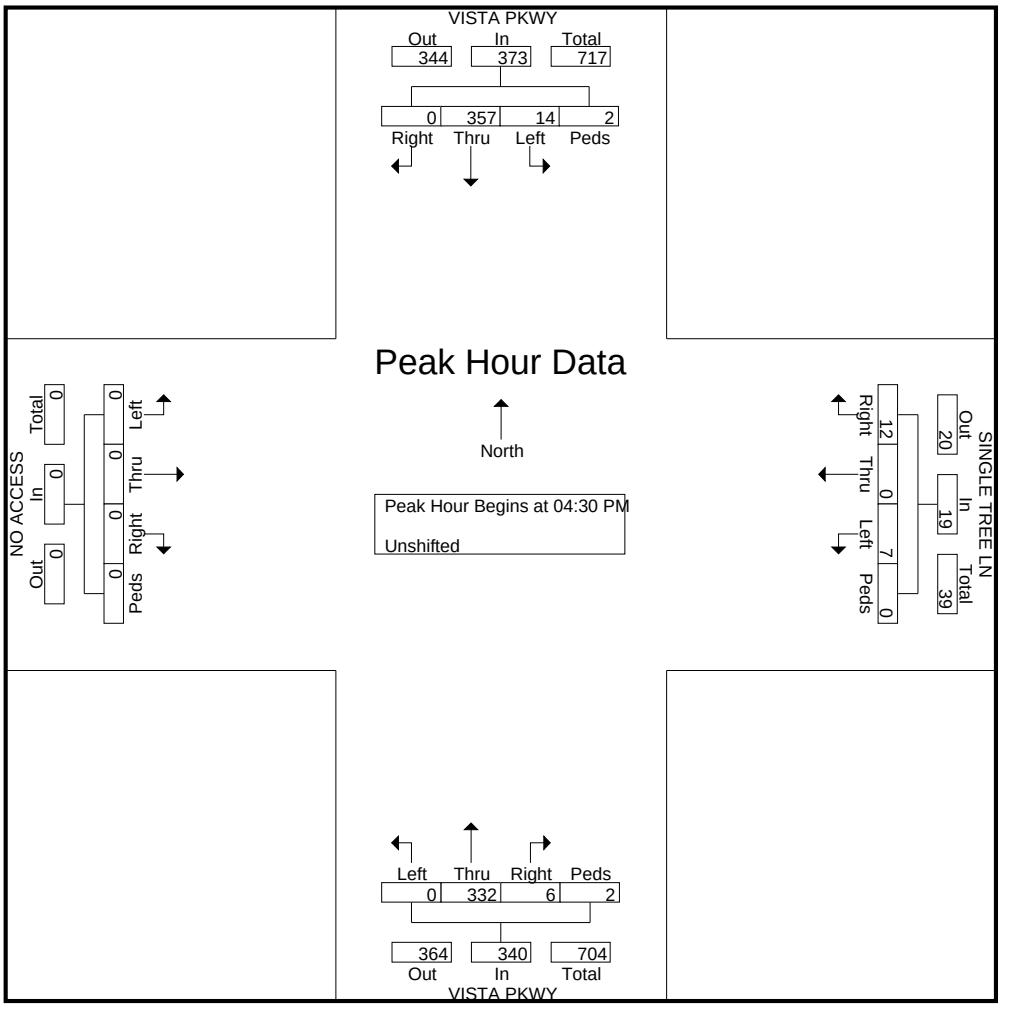
COUNTER MEASURES INC

1889 YORK ST
DENVER COLORADO
303-333-7409

N/S STREET: VISTA PKWY
E/W STREET: SINGLE TREE LN
CITY: ERIE
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File Name : vista pkwy single tree ln
Site Code : 00000008
Start Date : 4/9/2025
Page No : 3

	VISTA PKWY SOUTHBOUND					SINGLE TREE LN WESTBOUND					VISTA PKWY NORTHBOUND					NO ACCESS EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	2	86	0	**1**	89	**3**	0	4	0	7	0	77	0	0	77	0	0	0	0	0	173
04:45 PM	**4**	74	0	0	78	3	0	**5**	0	**8**	0	**94**	1	0	**95**	0	0	0	0	0	181
05:00 PM	4	**110**	0	1	**115**	0	0	0	0	0	0	74	1	**1**	76	0	0	0	0	0	**191**
05:15 PM	4	87	0	0	91	1	0	3	0	4	0	87	**4**	1	92	0	0	0	0	0	187
Total Volume	14	357	0	2	373	7	0	12	0	19	0	332	6	2	340	0	0	0	0	0	732
% App. Total	3.8	95.7	0	0.5		36.8	0	63.2	0		0	97.6	1.8	0.6		0	0	0	0		
PHF	.875	.811	.000	.500	.811	.583	.000	.600	.000	.594	.000	.883	.375	.500	.895	.000	.000	.000	.000	.000	.958



COUNTER MEASURES INC.
1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

Location: VISTA PKWY N-O SUNSET DR
City: ERIE
County: ADAMS
Direction: NORTH/SOUTH

Site Code: 241120
Station ID: 241120

Start Time	11-Sep-24 Wed	NORTH	SOUTH							Total
12:00 AM		*	*							*
01:00		*	*							*
02:00		*	*							*
03:00		*	*							*
04:00		*	*							*
05:00		*	*							*
06:00		*	*							*
07:00		*	*							*
08:00		*	*							*
09:00		**175**	**191**							**366**
10:00		97	151							248
11:00		79	139							218
12:00 PM		89	128							217
01:00		103	136							239
02:00		131	146							277
03:00		198	186							384
04:00		286	212							498
05:00		**364**	253							617
06:00		344	**291**							**635**
07:00		174	141							315
08:00		77	96							173
09:00		51	34							85
10:00		31	19							50
11:00		14	13							27
Total		2213	2136							4349
Percent		50.9%	49.1%							
AM Peak	-	09:00	09:00	-	-	-	-	-	-	09:00
Vol.	-	175	191	-	-	-	-	-	-	366
PM Peak	-	17:00	18:00	-	-	-	-	-	-	18:00
Vol.	-	364	291	-	-	-	-	-	-	635

Location: VISTA PKWY N-O SUNSET DR
City: ERIE
County: ADAMS
Direction: NORTH/SOUTH

COUNTER MEASURES INC.
1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

Site Code: 241120
Station ID: 241120

Start Time	12-Sep-24 Thu	NORTH	SOUTH							Total
12:00 AM		11	9							20
01:00		6	7							13
02:00		8	6							14
03:00		7	8							15
04:00		10	24							34
05:00		31	39							70
06:00		50	75							125
07:00		141	161							302
08:00		**219**	**269**							**488**
09:00		*	*							*
10:00		*	*							*
11:00		*	*							*
12:00 PM		*	*							*
01:00		*	*							*
02:00		*	*							*
03:00		*	*							*
04:00		*	*							*
05:00		*	*							*
06:00		*	*							*
07:00		*	*							*
08:00		*	*							*
09:00		*	*							*
10:00		*	*							*
11:00		*	*							*
Total		483	598							1081
Percent		44.7%	55.3%							
AM Peak	-	08:00	08:00	-	-	-	-	-	-	08:00
Vol.	-	219	269	-	-	-	-	-	-	488
PM Peak	-	-	-	-	-	-	-	-	-	-
Vol.	-	-	-	-	-	-	-	-	-	-
Grand Total		2696	2734							5430
Percent		49.7%	50.3%							
ADT		ADT 682		AADT 682						

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	10	364	2	2	270
Future Vol, veh/h	8	10	364	2	2	270
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	35	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	12	423	2	2	314

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	742	424	0	0	425	0
Stage 1	424	-	-	-	-	-
Stage 2	318	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	383	630	-	-	1134	-
Stage 1	660	-	-	-	-	-
Stage 2	738	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	382	630	-	-	1134	-
Mov Cap-2 Maneuver	382	-	-	-	-	-
Stage 1	660	-	-	-	-	-
Stage 2	737	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.7	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	489	1134	-
HCM Lane V/C Ratio	-	-	0.043	0.002	-
HCM Control Delay (s)	-	-	12.7	8.2	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	14	4	1	8	9	353	0	2	274	2
Future Vol, veh/h	5	0	14	4	1	8	9	353	0	2	274	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	25	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	0	16	5	1	9	11	415	0	2	322	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	769	764	323	772	765	415	324	0	0	415	0	0
Stage 1	327	327	-	437	437	-	-	-	-	-	-	-
Stage 2	442	437	-	335	328	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	318	334	718	317	333	637	1236	-	-	1144	-	-
Stage 1	686	648	-	598	579	-	-	-	-	-	-	-
Stage 2	594	579	-	679	647	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	310	330	718	307	329	637	1236	-	-	1144	-	-
Mov Cap-2 Maneuver	310	330	-	307	329	-	-	-	-	-	-	-
Stage 1	680	647	-	593	574	-	-	-	-	-	-	-
Stage 2	579	574	-	662	646	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.1	13.2	0.2	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1236	-	-	533	454	1144	-	-
HCM Lane V/C Ratio	0.009	-	-	0.042	0.034	0.002	-	-
HCM Control Delay (s)	7.9	-	-	12.1	13.2	8.2	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	160	2	8	220	5	11	0	19	27	1	9
Future Vol, veh/h	3	160	2	8	220	5	11	0	19	27	1	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	30	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	178	2	9	244	6	12	0	21	30	1	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	250	0	0	180	0	0	456	453	179	461	451	247
Stage 1	-	-	-	-	-	-	185	185	-	265	265	-
Stage 2	-	-	-	-	-	-	271	268	-	196	186	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1316	-	-	1396	-	-	515	503	864	511	504	792
Stage 1	-	-	-	-	-	-	817	747	-	740	689	-
Stage 2	-	-	-	-	-	-	735	687	-	806	746	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1316	-	-	1396	-	-	504	499	864	495	500	792
Mov Cap-2 Maneuver	-	-	-	-	-	-	504	499	-	495	500	-
Stage 1	-	-	-	-	-	-	815	746	-	739	685	-
Stage 2	-	-	-	-	-	-	720	683	-	785	745	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.3	10.5	12.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	685	1316	-	-	1396	-	-	545
HCM Lane V/C Ratio	0.049	0.003	-	-	0.006	-	-	0.075
HCM Control Delay (s)	10.5	7.7	-	-	7.6	-	-	12.1
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	142	4	3	232	5	16	3	10	13	0	11
Future Vol, veh/h	6	142	4	3	232	5	16	3	10	13	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	35	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	163	5	3	267	6	18	3	11	15	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	273	0	0	168	0	0	463	459	166	463	458	270
Stage 1	-	-	-	-	-	-	180	180	-	276	276	-
Stage 2	-	-	-	-	-	-	283	279	-	187	182	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1290	-	-	1410	-	-	509	499	878	509	499	769
Stage 1	-	-	-	-	-	-	822	750	-	730	682	-
Stage 2	-	-	-	-	-	-	724	680	-	815	749	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1290	-	-	1410	-	-	498	496	878	497	496	769
Mov Cap-2 Maneuver	-	-	-	-	-	-	498	496	-	497	496	-
Stage 1	-	-	-	-	-	-	818	746	-	726	681	-
Stage 2	-	-	-	-	-	-	711	679	-	796	745	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.1	11.5	11.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	585	1290	-	-	1410	-	-	593
HCM Lane V/C Ratio	0.057	0.005	-	-	0.002	-	-	0.047
HCM Control Delay (s)	11.5	7.8	-	-	7.6	-	-	11.4
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

Intersection	
Intersection Delay, s/veh	4.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	0	273	254	307
Demand Flow Rate, veh/h	0	279	259	313
Vehicles Circulating, veh/h	404	201	100	91
Vehicles Exiting, veh/h	0	100	304	389
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	5.6	3.4	5.1
Approach LOS	-	A	A	A

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT	R	LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976	58	4.976
Entry Flow, veh/h	0	279	201	1938	313
Cap Entry Lane, veh/h	914	1124	1246	0.980	1258
Entry HV Adj Factor	1.000	0.978	0.980	57	0.980
Flow Entry, veh/h	0	273	197	1900	307
Cap Entry, veh/h	914	1100	1222	0.030	1233
V/C Ratio	0.000	0.248	0.161	0.0	0.249
Control Delay, s/veh	3.9	5.6	4.3	A	5.1
LOS	A	A	A	0	A
95th %tile Queue, veh	0	1	1		1

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	117	17	8	134	161	121
Future Vol, veh/h	117	17	8	134	161	121
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	140	0	146	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	130	19	9	149	179	134

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	339	157	313	0	-	0
Stage 1	246	-	-	-	-	-
Stage 2	93	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	631	861	1244	-	-	-
Stage 1	772	-	-	-	-	-
Stage 2	920	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	627	861	1244	-	-	-
Mov Cap-2 Maneuver	627	-	-	-	-	-
Stage 1	767	-	-	-	-	-
Stage 2	920	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.8	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1244	-	627	861	-	-
HCM Lane V/C Ratio	0.007	-	0.207	0.022	-	-
HCM Control Delay (s)	7.9	-	12.2	9.3	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.8	0.1	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	12	452	6	14	385
Future Vol, veh/h	7	12	452	6	14	385
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	35	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	13	471	6	15	401

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	905	474	0	0	477	0
Stage 1	474	-	-	-	-	-
Stage 2	431	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	307	590	-	-	1085	-
Stage 1	626	-	-	-	-	-
Stage 2	655	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	303	590	-	-	1085	-
Mov Cap-2 Maneuver	303	-	-	-	-	-
Stage 1	626	-	-	-	-	-
Stage 2	646	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.6	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	437	1085	-
HCM Lane V/C Ratio	-	-	0.045	0.013	-
HCM Control Delay (s)	-	-	13.6	8.4	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	9	3	0	5	14	450	5	12	375	5
Future Vol, veh/h	3	0	9	3	0	5	14	450	5	12	375	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	25	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	9	3	0	5	15	474	5	13	395	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	933	933	398	935	933	477	400	0	0	479	0	0
Stage 1	424	424	-	507	507	-	-	-	-	-	-	-
Stage 2	509	509	-	428	426	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	246	266	652	246	266	588	1159	-	-	1083	-	-
Stage 1	608	587	-	548	539	-	-	-	-	-	-	-
Stage 2	547	538	-	605	586	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	239	259	652	238	259	588	1159	-	-	1083	-	-
Mov Cap-2 Maneuver	239	259	-	238	259	-	-	-	-	-	-	-
Stage 1	600	580	-	541	532	-	-	-	-	-	-	-
Stage 2	535	531	-	589	579	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.1	14.7	0.2	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1159	-	-	455	379	1083	-	-
HCM Lane V/C Ratio	0.013	-	-	0.028	0.022	0.012	-	-
HCM Control Delay (s)	8.1	-	-	13.1	14.7	8.4	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	208	11	19	250	22	6	0	15	28	0	7
Future Vol, veh/h	14	208	11	19	250	22	6	0	15	28	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	30	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	217	11	20	260	23	6	0	16	29	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	283	0	0	228	0	0	568	576	223	573	570	272
Stage 1	-	-	-	-	-	-	253	253	-	312	312	-
Stage 2	-	-	-	-	-	-	315	323	-	261	258	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1279	-	-	1340	-	-	434	428	817	430	431	767
Stage 1	-	-	-	-	-	-	751	698	-	699	658	-
Stage 2	-	-	-	-	-	-	696	650	-	744	694	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1279	-	-	1340	-	-	421	416	817	413	419	767
Mov Cap-2 Maneuver	-	-	-	-	-	-	421	416	-	413	419	-
Stage 1	-	-	-	-	-	-	742	690	-	691	648	-
Stage 2	-	-	-	-	-	-	679	640	-	721	686	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.5	10.8	13.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	644	1279	-	-	1340	-	-	455
HCM Lane V/C Ratio	0.034	0.011	-	-	0.015	-	-	0.08
HCM Control Delay (s)	10.8	7.8	-	-	7.7	-	-	13.6
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	217	16	5	244	14	13	1	6	10	0	5
Future Vol, veh/h	12	217	16	5	244	14	13	1	6	10	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	35	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	231	17	5	260	15	14	1	6	11	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	275	0	0	248	0	0	546	551	240	547	552	268
Stage 1	-	-	-	-	-	-	266	266	-	278	278	-
Stage 2	-	-	-	-	-	-	280	285	-	269	274	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1288	-	-	1318	-	-	448	442	799	448	442	771
Stage 1	-	-	-	-	-	-	739	689	-	728	680	-
Stage 2	-	-	-	-	-	-	727	676	-	737	683	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1288	-	-	1318	-	-	440	436	799	439	436	771
Mov Cap-2 Maneuver	-	-	-	-	-	-	440	436	-	439	436	-
Stage 1	-	-	-	-	-	-	732	682	-	721	677	-
Stage 2	-	-	-	-	-	-	719	673	-	723	676	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.1	12.4	12.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	508	1288	-	-	1318	-	-	513
HCM Lane V/C Ratio	0.042	0.01	-	-	0.004	-	-	0.031
HCM Control Delay (s)	12.4	7.8	-	-	7.7	-	-	12.2
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Intersection Delay, s/veh	5.2
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	0	276	378	407
Demand Flow Rate, veh/h	0	281	386	415
Vehicles Circulating, veh/h	475	283	169	60
Vehicles Exiting, veh/h	0	169	306	504
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	6.2	4.0	5.7
Approach LOS	-	A	A	A

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT	R	LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976	103	4.976
Entry Flow, veh/h	0	281	283	1938	415
Cap Entry Lane, veh/h	850	1034	1161	0.980	1298
Entry HV Adj Factor	1.000	0.982	0.980	101	0.981
Flow Entry, veh/h	0	276	277	1900	407
Cap Entry, veh/h	850	1016	1139	0.053	1273
V/C Ratio	0.000	0.272	0.244	0.0	0.320
Control Delay, s/veh	4.2	6.2	5.4	A	5.7
LOS	A	A	A	0	A
95th %tile Queue, veh	0	1	1		1

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	190	16	15	167	148	123
Future Vol, veh/h	190	16	15	167	148	123
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	140	0	146	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	211	18	17	186	164	137

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	360	151	301	0	-	0
Stage 1	233	-	-	-	-	-
Stage 2	127	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	612	868	1257	-	-	-
Stage 1	784	-	-	-	-	-
Stage 2	885	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	603	868	1257	-	-	-
Mov Cap-2 Maneuver	603	-	-	-	-	-
Stage 1	773	-	-	-	-	-
Stage 2	885	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.8	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1257	-	603	868	-	-
HCM Lane V/C Ratio	0.013	-	0.35	0.02	-	-
HCM Control Delay (s)	7.9	-	14.2	9.2	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	1.6	0.1	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	10	395	2	2	295
Future Vol, veh/h	8	10	395	2	2	295
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	35	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	12	459	2	2	343

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	807	460	0	0	461	0
Stage 1	460	-	-	-	-	-
Stage 2	347	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	351	601	-	-	1100	-
Stage 1	636	-	-	-	-	-
Stage 2	716	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	350	601	-	-	1100	-
Mov Cap-2 Maneuver	350	-	-	-	-	-
Stage 1	636	-	-	-	-	-
Stage 2	715	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.3	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	456	1100	-
HCM Lane V/C Ratio	-	-	0.046	0.002	-
HCM Control Delay (s)	-	-	13.3	8.3	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	14	4	1	8	9	385	1	2	300	2
Future Vol, veh/h	5	1	14	4	1	8	9	385	1	2	300	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	25	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	1	16	5	1	9	11	453	1	2	353	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	839	834	354	843	835	454	355	0	0	454	0	0
Stage 1	358	358	-	476	476	-	-	-	-	-	-	-
Stage 2	481	476	-	367	359	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	285	304	690	284	304	606	1204	-	-	1107	-	-
Stage 1	660	628	-	570	557	-	-	-	-	-	-	-
Stage 2	566	557	-	653	627	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	277	301	690	274	301	606	1204	-	-	1107	-	-
Mov Cap-2 Maneuver	277	301	-	274	301	-	-	-	-	-	-	-
Stage 1	654	627	-	565	552	-	-	-	-	-	-	-
Stage 2	551	552	-	635	626	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.9	13.9	0.2	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1204	-	-	480	418	1107	-	-
HCM Lane V/C Ratio	0.009	-	-	0.049	0.037	0.002	-	-
HCM Control Delay (s)	8	-	-	12.9	13.9	8.3	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	165	2	8	238	5	11	0	19	27	1	9
Future Vol, veh/h	3	165	2	8	238	5	11	0	19	27	1	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	30	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	183	2	9	264	6	12	0	21	30	1	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	270	0	0	185	0	0	481	478	184	486	476	267
Stage 1	-	-	-	-	-	-	190	190	-	285	285	-
Stage 2	-	-	-	-	-	-	291	288	-	201	191	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1293	-	-	1390	-	-	495	486	858	492	488	772
Stage 1	-	-	-	-	-	-	812	743	-	722	676	-
Stage 2	-	-	-	-	-	-	717	674	-	801	742	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1293	-	-	1390	-	-	485	482	858	477	484	772
Mov Cap-2 Maneuver	-	-	-	-	-	-	485	482	-	477	484	-
Stage 1	-	-	-	-	-	-	810	742	-	721	672	-
Stage 2	-	-	-	-	-	-	702	670	-	779	741	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.2	10.7	12.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	669	1293	-	-	1390	-	-	526
HCM Lane V/C Ratio	0.05	0.003	-	-	0.006	-	-	0.078
HCM Control Delay (s)	10.7	7.8	-	-	7.6	-	-	12.4
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	147	4	3	250	5	16	3	10	13	1	11
Future Vol, veh/h	6	147	4	3	250	5	16	3	10	13	1	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	35	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	169	5	3	287	6	18	3	11	15	1	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	293	0	0	174	0	0	489	485	172	489	484	290
Stage 1	-	-	-	-	-	-	186	186	-	296	296	-
Stage 2	-	-	-	-	-	-	303	299	-	193	188	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1269	-	-	1403	-	-	489	482	872	489	483	749
Stage 1	-	-	-	-	-	-	816	746	-	712	668	-
Stage 2	-	-	-	-	-	-	706	666	-	809	745	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1269	-	-	1403	-	-	477	478	872	477	479	749
Mov Cap-2 Maneuver	-	-	-	-	-	-	477	478	-	477	479	-
Stage 1	-	-	-	-	-	-	811	742	-	708	667	-
Stage 2	-	-	-	-	-	-	691	665	-	790	741	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.1	11.8	11.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	565	1269	-	-	1403	-	-	568
HCM Lane V/C Ratio	0.059	0.005	-	-	0.002	-	-	0.051
HCM Control Delay (s)	11.8	7.9	-	-	7.6	-	-	11.7
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.2

Intersection	
Intersection Delay, s/veh	5.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	13	286	282	337
Demand Flow Rate, veh/h	13	292	287	344
Vehicles Circulating, veh/h	438	230	110	98
Vehicles Exiting, veh/h	4	107	341	424
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.2	5.9	3.6	5.4
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT	R	LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976	60	4.976
Entry Flow, veh/h	13	292	227	1938	344
Cap Entry Lane, veh/h	883	1091	1233	0.980	1249
Entry HV Adj Factor	0.998	0.979	0.981	59	0.981
Flow Entry, veh/h	13	286	223	1900	337
Cap Entry, veh/h	881	1069	1209	0.031	1224
V/C Ratio	0.015	0.268	0.184	0.0	0.276
Control Delay, s/veh	4.2	5.9	4.6	A	5.4
LOS	A	A	A	0	A
95th %tile Queue, veh	0	1	1		1

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	118	18	8	150	180	133
Future Vol, veh/h	118	18	8	150	180	133
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	140	0	146	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	131	20	9	167	200	148

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	376	174	348	0	-	0
Stage 1	274	-	-	-	-	-
Stage 2	102	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	598	839	1208	-	-	-
Stage 1	747	-	-	-	-	-
Stage 2	911	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	594	839	1208	-	-	-
Mov Cap-2 Maneuver	594	-	-	-	-	-
Stage 1	742	-	-	-	-	-
Stage 2	911	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.4	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1208	-	594	839	-	-
HCM Lane V/C Ratio	0.007	-	0.221	0.024	-	-
HCM Control Delay (s)	8	-	12.8	9.4	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.8	0.1	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	12	490	6	14	420
Future Vol, veh/h	7	12	490	6	14	420
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	35	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	13	510	6	15	438

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	981	513	0	0	516	0
Stage 1	513	-	-	-	-	-
Stage 2	468	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	277	561	-	-	1050	-
Stage 1	601	-	-	-	-	-
Stage 2	630	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	273	561	-	-	1050	-
Mov Cap-2 Maneuver	273	-	-	-	-	-
Stage 1	601	-	-	-	-	-
Stage 2	621	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.4	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	404	1050	-
HCM Lane V/C Ratio	-	-	0.049	0.014	-
HCM Control Delay (s)	-	-	14.4	8.5	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	9	3	1	5	14	490	5	12	410	5
Future Vol, veh/h	3	1	9	3	1	5	14	490	5	12	410	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	25	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	9	3	1	5	15	516	5	13	432	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1013	1012	435	1015	1012	519	437	0	0	521	0	0
Stage 1	461	461	-	549	549	-	-	-	-	-	-	-
Stage 2	552	551	-	466	463	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	217	239	621	217	239	557	1123	-	-	1045	-	-
Stage 1	581	565	-	520	516	-	-	-	-	-	-	-
Stage 2	518	515	-	577	564	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	210	233	621	209	233	557	1123	-	-	1045	-	-
Mov Cap-2 Maneuver	210	233	-	209	233	-	-	-	-	-	-	-
Stage 1	573	558	-	513	509	-	-	-	-	-	-	-
Stage 2	505	508	-	560	557	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.5	16.4	0.2	0.2
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1123	-	-	393	326	1045	-	-
HCM Lane V/C Ratio	0.013	-	-	0.035	0.029	0.012	-	-
HCM Control Delay (s)	8.2	-	-	14.5	16.4	8.5	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	234	11	19	269	22	6	0	15	28	0	7
Future Vol, veh/h	14	234	11	19	269	22	6	0	15	28	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	30	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	244	11	20	280	23	6	0	16	29	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	303	0	0	255	0	0	615	623	250	620	617	292
Stage 1	-	-	-	-	-	-	280	280	-	332	332	-
Stage 2	-	-	-	-	-	-	335	343	-	288	285	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1258	-	-	1310	-	-	403	402	789	400	405	747
Stage 1	-	-	-	-	-	-	727	679	-	681	644	-
Stage 2	-	-	-	-	-	-	679	637	-	720	676	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1258	-	-	1310	-	-	391	391	789	384	394	747
Mov Cap-2 Maneuver	-	-	-	-	-	-	391	391	-	384	394	-
Stage 1	-	-	-	-	-	-	718	671	-	673	634	-
Stage 2	-	-	-	-	-	-	662	627	-	697	668	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.5	11.1	14.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	611	1258	-	-	1310	-	-	425
HCM Lane V/C Ratio	0.036	0.012	-	-	0.015	-	-	0.086
HCM Control Delay (s)	11.1	7.9	-	-	7.8	-	-	14.3
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	243	16	5	261	14	13	1	6	10	1	5
Future Vol, veh/h	12	243	16	5	261	14	13	1	6	10	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	35	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	259	17	5	278	15	14	1	6	11	1	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	293	0	0	276	0	0	593	597	268	593	598	286
Stage 1	-	-	-	-	-	-	294	294	-	296	296	-
Stage 2	-	-	-	-	-	-	299	303	-	297	302	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1269	-	-	1287	-	-	417	416	771	417	416	753
Stage 1	-	-	-	-	-	-	714	670	-	712	668	-
Stage 2	-	-	-	-	-	-	710	664	-	712	664	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1269	-	-	1287	-	-	409	410	771	408	410	753
Mov Cap-2 Maneuver	-	-	-	-	-	-	409	410	-	408	410	-
Stage 1	-	-	-	-	-	-	707	663	-	705	665	-
Stage 2	-	-	-	-	-	-	701	661	-	698	657	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.1	12.9	12.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	476	1269	-	-	1287	-	-	476
HCM Lane V/C Ratio	0.045	0.01	-	-	0.004	-	-	0.036
HCM Control Delay (s)	12.9	7.9	-	-	7.8	-	-	12.8
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Intersection Delay, s/veh	5.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	9	287	428	444
Demand Flow Rate, veh/h	9	293	436	452
Vehicles Circulating, veh/h	511	331	179	75
Vehicles Exiting, veh/h	16	177	341	548
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.5	6.8	4.4	6.2
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT	R	LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976	107	4.976
Entry Flow, veh/h	9	293	329	1938	452
Cap Entry Lane, veh/h	819	985	1150	0.980	1278
Entry HV Adj Factor	0.998	0.979	0.981	105	0.982
Flow Entry, veh/h	9	287	323	1900	444
Cap Entry, veh/h	818	964	1128	0.055	1255
V/C Ratio	0.011	0.298	0.286	0.0	0.354
Control Delay, s/veh	4.5	6.8	5.9	A	6.2
LOS	A	A	A	0	A
95th %tile Queue, veh	0	1	1		2

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	220	17	16	185	165	154
Future Vol, veh/h	220	17	16	185	165	154
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	140	0	146	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	244	19	18	206	183	171

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	408	177	354	0	-	0
Stage 1	269	-	-	-	-	-
Stage 2	139	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	571	835	1201	-	-	-
Stage 1	752	-	-	-	-	-
Stage 2	873	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	562	835	1201	-	-	-
Mov Cap-2 Maneuver	562	-	-	-	-	-
Stage 1	741	-	-	-	-	-
Stage 2	873	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.7	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1201	-	562	835	-	-
HCM Lane V/C Ratio	0.015	-	0.435	0.023	-	-
HCM Control Delay (s)	8	-	16.2	9.4	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0	-	2.2	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	14	396	3	4	295
Future Vol, veh/h	11	14	396	3	4	295
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	35	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	16	460	3	5	343

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	815	462	0	0	463	0
Stage 1	462	-	-	-	-	-
Stage 2	353	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	347	600	-	-	1098	-
Stage 1	634	-	-	-	-	-
Stage 2	711	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	345	600	-	-	1098	-
Mov Cap-2 Maneuver	345	-	-	-	-	-
Stage 1	634	-	-	-	-	-
Stage 2	707	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.5	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	453	1098	-
HCM Lane V/C Ratio	-	-	0.064	0.004	-
HCM Control Delay (s)	-	-	13.5	8.3	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	14	4	1	9	9	386	1	2	303	2
Future Vol, veh/h	5	1	14	4	1	9	9	386	1	2	303	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	25	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	1	16	5	1	11	11	454	1	2	356	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	844	838	357	847	839	455	358	0	0	455	0	0
Stage 1	361	361	-	477	477	-	-	-	-	-	-	-
Stage 2	483	477	-	370	362	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	283	302	687	282	302	605	1201	-	-	1106	-	-
Stage 1	657	626	-	569	556	-	-	-	-	-	-	-
Stage 2	565	556	-	650	625	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	275	299	687	272	299	605	1201	-	-	1106	-	-
Mov Cap-2 Maneuver	275	299	-	272	299	-	-	-	-	-	-	-
Stage 1	651	625	-	564	551	-	-	-	-	-	-	-
Stage 2	549	551	-	632	624	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.9	13.8	0.2	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1201	-	-	477	425	1106	-	-
HCM Lane V/C Ratio	0.009	-	-	0.049	0.039	0.002	-	-
HCM Control Delay (s)	8	-	-	12.9	13.8	8.3	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	166	2	8	239	5	11	0	19	28	1	9
Future Vol, veh/h	3	166	2	8	239	5	11	0	19	28	1	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	30	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	184	2	9	266	6	12	0	21	31	1	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	272	0	0	186	0	0	484	481	185	489	479	269
Stage 1	-	-	-	-	-	-	191	191	-	287	287	-
Stage 2	-	-	-	-	-	-	293	290	-	202	192	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1291	-	-	1388	-	-	493	485	857	489	486	770
Stage 1	-	-	-	-	-	-	811	742	-	720	674	-
Stage 2	-	-	-	-	-	-	715	672	-	800	742	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1291	-	-	1388	-	-	483	481	857	474	482	770
Mov Cap-2 Maneuver	-	-	-	-	-	-	483	481	-	474	482	-
Stage 1	-	-	-	-	-	-	809	741	-	719	670	-
Stage 2	-	-	-	-	-	-	700	668	-	778	741	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.2	10.7	12.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	667	1291	-	-	1388	-	-	522
HCM Lane V/C Ratio	0.05	0.003	-	-	0.006	-	-	0.081
HCM Control Delay (s)	10.7	7.8	-	-	7.6	-	-	12.5
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	147	4	3	250	6	16	3	10	14	1	19
Future Vol, veh/h	8	147	4	3	250	6	16	3	10	14	1	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	35	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	169	5	3	287	7	18	3	11	16	1	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	294	0	0	174	0	0	498	490	172	494	489	291
Stage 1	-	-	-	-	-	-	190	190	-	297	297	-
Stage 2	-	-	-	-	-	-	308	300	-	197	192	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1268	-	-	1403	-	-	483	479	872	486	480	748
Stage 1	-	-	-	-	-	-	812	743	-	712	668	-
Stage 2	-	-	-	-	-	-	702	666	-	805	742	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1268	-	-	1403	-	-	465	475	872	473	476	748
Mov Cap-2 Maneuver	-	-	-	-	-	-	465	475	-	473	476	-
Stage 1	-	-	-	-	-	-	806	738	-	707	667	-
Stage 2	-	-	-	-	-	-	679	665	-	785	737	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.1	11.9	11.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	556	1268	-	-	1403	-	-	595
HCM Lane V/C Ratio	0.06	0.007	-	-	0.002	-	-	0.066
HCM Control Delay (s)	11.9	7.9	-	-	7.6	-	-	11.5
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.2

Intersection	
Intersection Delay, s/veh	5.1
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	13	294	285	340
Demand Flow Rate, veh/h	13	300	290	347
Vehicles Circulating, veh/h	449	231	110	106
Vehicles Exiting, veh/h	4	107	352	425
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.3	6.0	3.6	5.5
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT	R	LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976	62	4.976
Entry Flow, veh/h	13	300	228	1938	347
Cap Entry Lane, veh/h	873	1090	1233	0.980	1238
Entry HV Adj Factor	0.998	0.980	0.981	61	0.981
Flow Entry, veh/h	13	294	224	1900	340
Cap Entry, veh/h	872	1068	1209	0.032	1215
V/C Ratio	0.015	0.275	0.185	0.0	0.280
Control Delay, s/veh	4.3	6.0	4.6	A	5.5
LOS	A	A	A	0	A
95th %tile Queue, veh	0	1	1		1

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	119	18	8	152	187	137
Future Vol, veh/h	119	18	8	152	187	137
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	140	0	146	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	132	20	9	169	208	152

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	387	180	360	0	-	0
Stage 1	284	-	-	-	-	-
Stage 2	103	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	589	832	1195	-	-	-
Stage 1	739	-	-	-	-	-
Stage 2	910	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	584	832	1195	-	-	-
Mov Cap-2 Maneuver	584	-	-	-	-	-
Stage 1	733	-	-	-	-	-
Stage 2	910	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.5	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1195	-	584	832	-	-
HCM Lane V/C Ratio	0.007	-	0.226	0.024	-	-
HCM Control Delay (s)	8	-	13	9.4	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.9	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	14	491	9	17	421
Future Vol, veh/h	9	14	491	9	17	421
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	35	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	15	511	9	18	439

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	991	516	0	0	520	0
Stage 1	516	-	-	-	-	-
Stage 2	475	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	273	559	-	-	1046	-
Stage 1	599	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	268	559	-	-	1046	-
Mov Cap-2 Maneuver	268	-	-	-	-	-
Stage 1	599	-	-	-	-	-
Stage 2	615	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.8	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	392	1046	-
HCM Lane V/C Ratio	-	-	0.061	0.017	-
HCM Control Delay (s)	-	-	14.8	8.5	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱		↰	↱	
Traffic Vol, veh/h	3	1	9	3	1	6	14	493	5	13	412	5
Future Vol, veh/h	3	1	9	3	1	6	14	493	5	13	412	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	25	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	9	3	1	6	15	519	5	14	434	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1020	1019	437	1022	1019	522	439	0	0	524	0	0
Stage 1	465	465	-	552	552	-	-	-	-	-	-	-
Stage 2	555	554	-	470	467	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	215	237	620	214	237	555	1121	-	-	1043	-	-
Stage 1	578	563	-	518	515	-	-	-	-	-	-	-
Stage 2	516	514	-	574	562	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	207	231	620	206	231	555	1121	-	-	1043	-	-
Mov Cap-2 Maneuver	207	231	-	206	231	-	-	-	-	-	-	-
Stage 1	570	556	-	511	508	-	-	-	-	-	-	-
Stage 2	502	507	-	557	555	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.6	16	0.2	0.3
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1121	-	-	390	337	1043	-	-
HCM Lane V/C Ratio	0.013	-	-	0.035	0.031	0.013	-	-
HCM Control Delay (s)	8.3	-	-	14.6	16	8.5	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	235	11	19	271	22	6	0	15	28	0	7
Future Vol, veh/h	14	235	11	19	271	22	6	0	15	28	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	30	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	245	11	20	282	23	6	0	16	29	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	305	0	0	256	0	0	618	626	251	623	620	294
Stage 1	-	-	-	-	-	-	281	281	-	334	334	-
Stage 2	-	-	-	-	-	-	337	345	-	289	286	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1256	-	-	1309	-	-	402	401	788	398	404	745
Stage 1	-	-	-	-	-	-	726	678	-	680	643	-
Stage 2	-	-	-	-	-	-	677	636	-	719	675	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1256	-	-	1309	-	-	390	390	788	382	393	745
Mov Cap-2 Maneuver	-	-	-	-	-	-	390	390	-	382	393	-
Stage 1	-	-	-	-	-	-	717	670	-	672	633	-
Stage 2	-	-	-	-	-	-	660	626	-	696	667	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.5	11.1	14.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	610	1256	-	-	1309	-	-	423
HCM Lane V/C Ratio	0.036	0.012	-	-	0.015	-	-	0.086
HCM Control Delay (s)	11.1	7.9	-	-	7.8	-	-	14.3
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	243	16	5	261	16	13	1	6	11	1	11
Future Vol, veh/h	20	243	16	5	261	16	13	1	6	11	1	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	35	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	259	17	5	278	17	14	1	6	12	1	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	295	0	0	276	0	0	613	615	268	610	615	287
Stage 1	-	-	-	-	-	-	310	310	-	297	297	-
Stage 2	-	-	-	-	-	-	303	305	-	313	318	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1266	-	-	1287	-	-	405	407	771	407	407	752
Stage 1	-	-	-	-	-	-	700	659	-	712	668	-
Stage 2	-	-	-	-	-	-	706	662	-	698	654	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1266	-	-	1287	-	-	392	398	771	396	398	752
Mov Cap-2 Maneuver	-	-	-	-	-	-	392	398	-	396	398	-
Stage 1	-	-	-	-	-	-	688	648	-	700	665	-
Stage 2	-	-	-	-	-	-	691	659	-	680	643	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	13.2	12.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	460	1266	-	-	1287	-	-	512
HCM Lane V/C Ratio	0.046	0.017	-	-	0.004	-	-	0.048
HCM Control Delay (s)	13.2	7.9	-	-	7.8	-	-	12.4
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.1

Intersection	
Intersection Delay, s/veh	5.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	9	293	440	447
Demand Flow Rate, veh/h	9	299	448	455
Vehicles Circulating, veh/h	520	334	179	81
Vehicles Exiting, veh/h	16	177	350	551
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.5	6.9	4.4	6.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT	R	LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976	116	4.976
Entry Flow, veh/h	9	299	332	1938	455
Cap Entry Lane, veh/h	812	982	1150	0.980	1270
Entry HV Adj Factor	0.998	0.980	0.981	114	0.982
Flow Entry, veh/h	9	293	326	1900	447
Cap Entry, veh/h	810	962	1128	0.060	1247
V/C Ratio	0.011	0.305	0.289	0.0	0.358
Control Delay, s/veh	4.5	6.9	5.9	A	6.3
LOS	A	A	A	0	A
95th %tile Queue, veh	0	1	1		2

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	224	17	16	192	170	157
Future Vol, veh/h	224	17	16	192	170	157
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	140	0	146	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	249	19	18	213	189	174

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	419	182	363	0	-	0
Stage 1	276	-	-	-	-	-
Stage 2	143	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	562	829	1192	-	-	-
Stage 1	746	-	-	-	-	-
Stage 2	869	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	554	829	1192	-	-	-
Mov Cap-2 Maneuver	554	-	-	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	869	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.2	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1192	-	554	829	-	-
HCM Lane V/C Ratio	0.015	-	0.449	0.023	-	-
HCM Control Delay (s)	8.1	-	16.7	9.4	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0	-	2.3	0.1	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	10	540	2	2	440
Future Vol, veh/h	8	10	540	2	2	440
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	35	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	12	628	2	2	512

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1145	629	0	0	630	0
Stage 1	629	-	-	-	-	-
Stage 2	516	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	221	482	-	-	952	-
Stage 1	531	-	-	-	-	-
Stage 2	599	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	221	482	-	-	952	-
Mov Cap-2 Maneuver	221	-	-	-	-	-
Stage 1	531	-	-	-	-	-
Stage 2	598	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	316	952	-
HCM Lane V/C Ratio	-	-	0.066	0.002	-
HCM Control Delay (s)	-	-	17.2	8.8	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↑		↰	↑	
Traffic Vol, veh/h	5	1	14	4	1	8	9	530	1	2	445	2
Future Vol, veh/h	5	1	14	4	1	8	9	530	1	2	445	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	25	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	1	16	5	1	9	11	624	1	2	524	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1181	1176	525	1185	1177	625	526	0	0	625	0	0
Stage 1	529	529	-	647	647	-	-	-	-	-	-	-
Stage 2	652	647	-	538	530	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	167	191	552	166	191	485	1041	-	-	956	-	-
Stage 1	533	527	-	460	467	-	-	-	-	-	-	-
Stage 2	457	467	-	527	527	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	161	189	552	159	189	485	1041	-	-	956	-	-
Mov Cap-2 Maneuver	161	189	-	159	189	-	-	-	-	-	-	-
Stage 1	527	526	-	455	462	-	-	-	-	-	-	-
Stage 2	442	462	-	509	526	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17	18.8	0.1	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1041	-	-	324	277	956	-	-
HCM Lane V/C Ratio	0.01	-	-	0.073	0.055	0.002	-	-
HCM Control Delay (s)	8.5	-	-	17	18.8	8.8	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	232	2	8	356	5	11	0	19	27	1	9
Future Vol, veh/h	3	232	2	8	356	5	11	0	19	27	1	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	30	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	258	2	9	396	6	12	0	21	30	1	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	402	0	0	260	0	0	688	685	259	693	683	399
Stage 1	-	-	-	-	-	-	265	265	-	417	417	-
Stage 2	-	-	-	-	-	-	423	420	-	276	266	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1157	-	-	1304	-	-	360	371	780	358	372	651
Stage 1	-	-	-	-	-	-	740	689	-	613	591	-
Stage 2	-	-	-	-	-	-	609	589	-	730	689	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1157	-	-	1304	-	-	351	367	780	346	368	651
Mov Cap-2 Maneuver	-	-	-	-	-	-	351	367	-	346	368	-
Stage 1	-	-	-	-	-	-	738	687	-	611	587	-
Stage 2	-	-	-	-	-	-	594	585	-	708	687	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.2	12.1	15.3
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	539	1157	-	-	1304	-	-	391
HCM Lane V/C Ratio	0.062	0.003	-	-	0.007	-	-	0.105
HCM Control Delay (s)	12.1	8.1	-	-	7.8	-	-	15.3
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	214	4	3	368	5	16	3	10	13	1	11
Future Vol, veh/h	6	214	4	3	368	5	16	3	10	13	1	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	35	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	246	5	3	423	6	18	3	11	15	1	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	429	0	0	251	0	0	702	698	249	702	697	426
Stage 1	-	-	-	-	-	-	263	263	-	432	432	-
Stage 2	-	-	-	-	-	-	439	435	-	270	265	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1130	-	-	1314	-	-	353	364	790	353	365	628
Stage 1	-	-	-	-	-	-	742	691	-	602	582	-
Stage 2	-	-	-	-	-	-	597	580	-	736	689	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1130	-	-	1314	-	-	343	361	790	343	362	628
Mov Cap-2 Maneuver	-	-	-	-	-	-	343	361	-	343	362	-
Stage 1	-	-	-	-	-	-	738	687	-	598	581	-
Stage 2	-	-	-	-	-	-	582	579	-	717	685	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	14.1	14
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	429	1130	-	-	1314	-	-	430
HCM Lane V/C Ratio	0.078	0.006	-	-	0.003	-	-	0.067
HCM Control Delay (s)	14.1	8.2	-	-	7.7	-	-	14
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.2

Intersection	
Intersection Delay, s/veh	6.4
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	13	331	412	485
Demand Flow Rate, veh/h	13	337	420	494
Vehicles Circulating, veh/h	604	354	127	114
Vehicles Exiting, veh/h	4	124	490	577
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.0	7.6	4.8	7.0
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT	R	LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976	69	4.976
Entry Flow, veh/h	13	337	351	1938	494
Cap Entry Lane, veh/h	745	962	1212	0.980	1228
Entry HV Adj Factor	0.998	0.982	0.981	68	0.981
Flow Entry, veh/h	13	331	344	1900	485
Cap Entry, veh/h	744	945	1189	0.036	1205
V/C Ratio	0.017	0.350	0.290	0.0	0.402
Control Delay, s/veh	5.0	7.6	5.7	A	7.0
LOS	A	A	A	0	A
95th %tile Queue, veh	0	2	1		2

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	160	25	10	235	280	180
Future Vol, veh/h	160	25	10	235	280	180
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	140	0	146	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	178	28	11	261	311	200

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	564	256	511	0	-	0
Stage 1	411	-	-	-	-	-
Stage 2	153	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	456	743	1050	-	-	-
Stage 1	638	-	-	-	-	-
Stage 2	859	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	451	743	1050	-	-	-
Mov Cap-2 Maneuver	451	-	-	-	-	-
Stage 1	632	-	-	-	-	-
Stage 2	859	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1050	-	451	743	-	-
HCM Lane V/C Ratio	0.011	-	0.394	0.037	-	-
HCM Control Delay (s)	8.5	-	18.1	10	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	1.9	0.1	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	12	685	6	14	585
Future Vol, veh/h	7	12	685	6	14	585
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	35	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	13	714	6	15	609

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1356	717	0	0	720	0
Stage 1	717	-	-	-	-	-
Stage 2	639	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	165	430	-	-	882	-
Stage 1	484	-	-	-	-	-
Stage 2	526	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	162	430	-	-	882	-
Mov Cap-2 Maneuver	162	-	-	-	-	-
Stage 1	484	-	-	-	-	-
Stage 2	517	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.6	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	267	882	-
HCM Lane V/C Ratio	-	-	0.074	0.017	-
HCM Control Delay (s)	-	-	19.6	9.2	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	9	3	1	5	14	685	5	12	575	5
Future Vol, veh/h	3	1	9	3	1	5	14	685	5	12	575	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	25	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	9	3	1	5	15	721	5	13	605	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1391	1390	608	1393	1390	724	610	0	0	726	0	0
Stage 1	634	634	-	754	754	-	-	-	-	-	-	-
Stage 2	757	756	-	639	636	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	120	142	496	119	142	426	969	-	-	877	-	-
Stage 1	467	473	-	401	417	-	-	-	-	-	-	-
Stage 2	400	416	-	464	472	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	115	138	496	113	138	426	969	-	-	877	-	-
Mov Cap-2 Maneuver	115	138	-	113	138	-	-	-	-	-	-	-
Stage 1	460	466	-	395	411	-	-	-	-	-	-	-
Stage 2	388	410	-	447	465	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20	24.1	0.2	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	969	-	-	253	198	877	-	-
HCM Lane V/C Ratio	0.015	-	-	0.054	0.048	0.014	-	-
HCM Control Delay (s)	8.8	-	-	20	24.1	9.2	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	348	11	19	386	22	6	0	15	28	0	7
Future Vol, veh/h	14	348	11	19	386	22	6	0	15	28	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	30	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	363	11	20	402	23	6	0	16	29	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	425	0	0	374	0	0	856	864	369	861	858	414
Stage 1	-	-	-	-	-	-	399	399	-	454	454	-
Stage 2	-	-	-	-	-	-	457	465	-	407	404	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1134	-	-	1184	-	-	278	292	677	276	294	638
Stage 1	-	-	-	-	-	-	627	602	-	586	569	-
Stage 2	-	-	-	-	-	-	583	563	-	621	599	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1134	-	-	1184	-	-	269	283	677	264	285	638
Mov Cap-2 Maneuver	-	-	-	-	-	-	269	283	-	264	285	-
Stage 1	-	-	-	-	-	-	619	594	-	578	559	-
Stage 2	-	-	-	-	-	-	567	553	-	599	591	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.4	13	18.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	472	1134	-	-	1184	-	-	299
HCM Lane V/C Ratio	0.046	0.013	-	-	0.017	-	-	0.122
HCM Control Delay (s)	13	8.2	-	-	8.1	-	-	18.7
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0.4

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	357	16	5	380	14	13	1	6	10	1	5
Future Vol, veh/h	12	357	16	5	380	14	13	1	6	10	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	35	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	380	17	5	404	15	14	1	6	11	1	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	419	0	0	397	0	0	840	844	389	840	845	412
Stage 1	-	-	-	-	-	-	415	415	-	422	422	-
Stage 2	-	-	-	-	-	-	425	429	-	418	423	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1140	-	-	1162	-	-	285	300	659	285	300	640
Stage 1	-	-	-	-	-	-	615	592	-	609	588	-
Stage 2	-	-	-	-	-	-	607	584	-	612	588	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1140	-	-	1162	-	-	278	296	659	278	296	640
Mov Cap-2 Maneuver	-	-	-	-	-	-	278	296	-	278	296	-
Stage 1	-	-	-	-	-	-	608	585	-	602	586	-
Stage 2	-	-	-	-	-	-	598	582	-	598	582	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.1	16.4	16.2
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	338	1140	-	-	1162	-	-	339
HCM Lane V/C Ratio	0.063	0.011	-	-	0.005	-	-	0.05
HCM Control Delay (s)	16.4	8.2	-	-	8.1	-	-	16.2
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.2

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	9	336	612	619
Demand Flow Rate, veh/h	9	342	624	631
Vehicles Circulating, veh/h	701	503	207	86
Vehicles Exiting, veh/h	16	205	503	759
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.5	9.6	6.6	8.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT	R	LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976	123	4.976
Entry Flow, veh/h	9	342	501	1938	631
Cap Entry Lane, veh/h	675	826	1117	0.980	1264
Entry HV Adj Factor	0.998	0.982	0.981	121	0.980
Flow Entry, veh/h	9	336	491	1900	619
Cap Entry, veh/h	674	812	1096	0.064	1239
V/C Ratio	0.013	0.414	0.448	0.0	0.499
Control Delay, s/veh	5.5	9.6	8.2	A	8.3
LOS	A	A	A	0	A
95th %tile Queue, veh	0	2	2		3

Intersection	
Int Delay, s/veh	8.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	290	25	20	290	260	210
Future Vol, veh/h	290	25	20	290	260	210
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	140	0	146	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	305	26	21	305	274	221

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	580	248	495	0	-	0
Stage 1	385	-	-	-	-	-
Stage 2	195	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	445	752	1065	-	-	-
Stage 1	657	-	-	-	-	-
Stage 2	819	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	436	752	1065	-	-	-
Mov Cap-2 Maneuver	436	-	-	-	-	-
Stage 1	644	-	-	-	-	-
Stage 2	819	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28.8	0.5	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1065	-	436	752	-	-
HCM Lane V/C Ratio	0.02	-	0.7	0.035	-	-
HCM Control Delay (s)	8.4	-	30.4	10	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	5.3	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	14	541	3	4	440
Future Vol, veh/h	11	14	541	3	4	440
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	35	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	16	629	3	5	512

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1153	631	0	0	632	0
Stage 1	631	-	-	-	-	-
Stage 2	522	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	218	481	-	-	951	-
Stage 1	530	-	-	-	-	-
Stage 2	595	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	217	481	-	-	951	-
Mov Cap-2 Maneuver	217	-	-	-	-	-
Stage 1	530	-	-	-	-	-
Stage 2	592	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.7	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	313	951	-
HCM Lane V/C Ratio	-	-	0.093	0.005	-
HCM Control Delay (s)	-	-	17.7	8.8	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	14	4	1	9	9	531	1	2	448	2
Future Vol, veh/h	5	1	14	4	1	9	9	531	1	2	448	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	25	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	1	16	5	1	11	11	625	1	2	527	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1186	1180	528	1189	1181	626	529	0	0	626	0	0
Stage 1	532	532	-	648	648	-	-	-	-	-	-	-
Stage 2	654	648	-	541	533	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	166	190	550	165	190	484	1038	-	-	956	-	-
Stage 1	531	526	-	459	466	-	-	-	-	-	-	-
Stage 2	456	466	-	525	525	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	160	188	550	158	188	484	1038	-	-	956	-	-
Mov Cap-2 Maneuver	160	188	-	158	188	-	-	-	-	-	-	-
Stage 1	525	525	-	454	461	-	-	-	-	-	-	-
Stage 2	440	461	-	507	524	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.1	18.5	0.1	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1038	-	-	322	284	956	-	-
HCM Lane V/C Ratio	0.01	-	-	0.073	0.058	0.002	-	-
HCM Control Delay (s)	8.5	-	-	17.1	18.5	8.8	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	233	2	8	357	5	11	0	19	28	1	9
Future Vol, veh/h	3	233	2	8	357	5	11	0	19	28	1	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	30	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	259	2	9	397	6	12	0	21	31	1	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	403	0	0	261	0	0	690	687	260	695	685	400
Stage 1	-	-	-	-	-	-	266	266	-	418	418	-
Stage 2	-	-	-	-	-	-	424	421	-	277	267	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1156	-	-	1303	-	-	359	370	779	357	371	650
Stage 1	-	-	-	-	-	-	739	689	-	612	591	-
Stage 2	-	-	-	-	-	-	608	589	-	729	688	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1156	-	-	1303	-	-	350	366	779	345	367	650
Mov Cap-2 Maneuver	-	-	-	-	-	-	350	366	-	345	367	-
Stage 1	-	-	-	-	-	-	737	687	-	610	587	-
Stage 2	-	-	-	-	-	-	593	585	-	707	686	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.2	12.1	15.4
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	537	1156	-	-	1303	-	-	389
HCM Lane V/C Ratio	0.062	0.003	-	-	0.007	-	-	0.109
HCM Control Delay (s)	12.1	8.1	-	-	7.8	-	-	15.4
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.4

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	214	4	3	368	6	16	3	10	14	1	19
Future Vol, veh/h	8	214	4	3	368	6	16	3	10	14	1	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	35	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	246	5	3	423	7	18	3	11	16	1	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	430	0	0	251	0	0	711	703	249	707	702	427
Stage 1	-	-	-	-	-	-	267	267	-	433	433	-
Stage 2	-	-	-	-	-	-	444	436	-	274	269	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1129	-	-	1314	-	-	348	362	790	350	362	628
Stage 1	-	-	-	-	-	-	738	688	-	601	582	-
Stage 2	-	-	-	-	-	-	593	580	-	732	687	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1129	-	-	1314	-	-	332	358	790	340	358	628
Mov Cap-2 Maneuver	-	-	-	-	-	-	332	358	-	340	358	-
Stage 1	-	-	-	-	-	-	732	682	-	596	581	-
Stage 2	-	-	-	-	-	-	570	579	-	712	682	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.1	14.3	13.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	419	1129	-	-	1314	-	-	458
HCM Lane V/C Ratio	0.08	0.008	-	-	0.003	-	-	0.085
HCM Control Delay (s)	14.3	8.2	-	-	7.7	-	-	13.6
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.3

Intersection	
Intersection Delay, s/veh	6.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	13	340	416	488
Demand Flow Rate, veh/h	13	346	424	497
Vehicles Circulating, veh/h	616	355	127	123
Vehicles Exiting, veh/h	4	124	502	578
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.1	7.7	4.7	7.1
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT	R	LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976	72	4.976
Entry Flow, veh/h	13	346	352	1938	497
Cap Entry Lane, veh/h	736	961	1212	0.980	1217
Entry HV Adj Factor	0.998	0.983	0.981	71	0.981
Flow Entry, veh/h	13	340	345	1900	488
Cap Entry, veh/h	735	944	1189	0.037	1194
V/C Ratio	0.018	0.360	0.290	0.0	0.408
Control Delay, s/veh	5.1	7.7	5.7	A	7.1
LOS	A	A	A	0	A
95th %tile Queue, veh	0	2	1		2

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	161	25	10	237	287	184
Future Vol, veh/h	161	25	10	237	287	184
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	140	0	146	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	179	28	11	263	319	204

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	575	262	523	0	-	0
Stage 1	421	-	-	-	-	-
Stage 2	154	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	448	737	1040	-	-	-
Stage 1	630	-	-	-	-	-
Stage 2	858	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	443	737	1040	-	-	-
Mov Cap-2 Maneuver	443	-	-	-	-	-
Stage 1	623	-	-	-	-	-
Stage 2	858	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.4	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1040	-	443	737	-	-
HCM Lane V/C Ratio	0.011	-	0.404	0.038	-	-
HCM Control Delay (s)	8.5	-	18.5	10.1	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	1.9	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	14	686	9	17	586
Future Vol, veh/h	9	14	686	9	17	586
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	35	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	15	715	9	18	610

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1366	720	0	0	724	0
Stage 1	720	-	-	-	-	-
Stage 2	646	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	162	428	-	-	879	-
Stage 1	482	-	-	-	-	-
Stage 2	522	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	159	428	-	-	879	-
Mov Cap-2 Maneuver	159	-	-	-	-	-
Stage 1	482	-	-	-	-	-
Stage 2	512	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.4	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	258	879	-
HCM Lane V/C Ratio	-	-	0.093	0.02	-
HCM Control Delay (s)	-	-	20.4	9.2	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	9	3	1	6	14	688	5	13	577	5
Future Vol, veh/h	3	1	9	3	1	6	14	688	5	13	577	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	25	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	9	3	1	6	15	724	5	14	607	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1398	1397	610	1400	1397	727	612	0	0	729	0	0
Stage 1	638	638	-	757	757	-	-	-	-	-	-	-
Stage 2	760	759	-	643	640	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	118	141	494	118	141	424	967	-	-	875	-	-
Stage 1	465	471	-	400	416	-	-	-	-	-	-	-
Stage 2	398	415	-	462	470	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	113	136	494	112	136	424	967	-	-	875	-	-
Mov Cap-2 Maneuver	113	136	-	112	136	-	-	-	-	-	-	-
Stage 1	458	463	-	394	409	-	-	-	-	-	-	-
Stage 2	385	408	-	445	462	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.3	23.3	0.2	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	967	-	-	249	207	875	-	-
HCM Lane V/C Ratio	0.015	-	-	0.055	0.051	0.016	-	-
HCM Control Delay (s)	8.8	-	-	20.3	23.3	9.2	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	349	11	19	388	22	6	0	15	28	0	7
Future Vol, veh/h	14	349	11	19	388	22	6	0	15	28	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	30	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	364	11	20	404	23	6	0	16	29	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	427	0	0	375	0	0	859	867	370	864	861	416
Stage 1	-	-	-	-	-	-	400	400	-	456	456	-
Stage 2	-	-	-	-	-	-	459	467	-	408	405	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1132	-	-	1183	-	-	277	291	676	274	293	637
Stage 1	-	-	-	-	-	-	626	602	-	584	568	-
Stage 2	-	-	-	-	-	-	582	562	-	620	598	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1132	-	-	1183	-	-	268	282	676	262	284	637
Mov Cap-2 Maneuver	-	-	-	-	-	-	268	282	-	262	284	-
Stage 1	-	-	-	-	-	-	618	594	-	576	558	-
Stage 2	-	-	-	-	-	-	566	552	-	598	590	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.4	13	18.8
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	471	1132	-	-	1183	-	-	297
HCM Lane V/C Ratio	0.046	0.013	-	-	0.017	-	-	0.123
HCM Control Delay (s)	13	8.2	-	-	8.1	-	-	18.8
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0.4

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	357	16	5	380	16	13	1	6	11	1	11
Future Vol, veh/h	20	357	16	5	380	16	13	1	6	11	1	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	35	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	380	17	5	404	17	14	1	6	12	1	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	421	0	0	397	0	0	860	862	389	857	862	413
Stage 1	-	-	-	-	-	-	431	431	-	423	423	-
Stage 2	-	-	-	-	-	-	429	431	-	434	439	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1138	-	-	1162	-	-	276	293	659	277	293	639
Stage 1	-	-	-	-	-	-	603	583	-	609	588	-
Stage 2	-	-	-	-	-	-	604	583	-	600	578	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1138	-	-	1162	-	-	266	287	659	269	287	639
Mov Cap-2 Maneuver	-	-	-	-	-	-	266	287	-	269	287	-
Stage 1	-	-	-	-	-	-	592	573	-	598	586	-
Stage 2	-	-	-	-	-	-	589	581	-	582	568	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.1	16.9	15.3
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	325	1138	-	-	1162	-	-	373
HCM Lane V/C Ratio	0.065	0.019	-	-	0.005	-	-	0.066
HCM Control Delay (s)	16.9	8.2	-	-	8.1	-	-	15.3
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.2

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	9	342	623	621
Demand Flow Rate, veh/h	9	349	636	633
Vehicles Circulating, veh/h	710	506	207	93
Vehicles Exiting, veh/h	16	205	512	762
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.5	9.8	6.5	8.4
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT	R	LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976	132	4.976
Entry Flow, veh/h	9	349	504	1938	633
Cap Entry Lane, veh/h	669	824	1117	0.980	1255
Entry HV Adj Factor	0.998	0.980	0.981	129	0.980
Flow Entry, veh/h	9	342	494	1900	621
Cap Entry, veh/h	667	807	1096	0.068	1230
V/C Ratio	0.013	0.424	0.451	0.0	0.504
Control Delay, s/veh	5.5	9.8	8.2	A	8.4
LOS	A	A	A	0	A
95th %tile Queue, veh	0	2	2		3

Intersection	
Int Delay, s/veh	8.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	294	25	20	297	265	213
Future Vol, veh/h	294	25	20	297	265	213
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	140	0	146	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	309	26	21	313	279	224

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	590	252	503	0	-	0
Stage 1	391	-	-	-	-	-
Stage 2	199	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	439	748	1058	-	-	-
Stage 1	653	-	-	-	-	-
Stage 2	815	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	430	748	1058	-	-	-
Mov Cap-2 Maneuver	430	-	-	-	-	-
Stage 1	640	-	-	-	-	-
Stage 2	815	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	30.4	0.5	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1058	-	430	748	-	-
HCM Lane V/C Ratio	0.02	-	0.72	0.035	-	-
HCM Control Delay (s)	8.5	-	32.1	10	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	5.6	0.1	-	-

PHASE II DRAINAGE REPORT
VISTA RESERVE
ERIE, COLORADO

Prepared For:
Affinity Holdings, LLC
13330 Red Deer Trail
Broomfield, CO 80020

Prepared By:
Hurst and Associates, Inc.
1265 S. Public Rd., Suite B
Lafayette, CO 80026

Job Number 2718-1
May 28, 2026

ENGINEER'S CERTIFICATION

I hereby certify that this Phase II drainage report for the design of Vista Reserve was prepared by me (or under my direct supervision) in accordance with the provisions of the *Town of Erie Standards and Specifications* for the owners thereof. I understand that the Town of Erie does not and will not assume liability for drainage facilities designed by others, including the designs presented in this report.

_____
Thomas Ackerman, P.E.
Registered Professional Engineer
State of Colorado No. 41133



TOWN ACCEPTANCE

This report has been reviewed and found to be in general compliance with the *Town of Erie Standards and Specifications for Design and Construction* and other Town requirements. **THE ACCURACY AND VALIDITY OF THE ENGINEERING DESIGN, DETAILS, DIMENSIONS, QUANTITIES, AND CONCEPTS IN THIS REPORT REMAINS THE SOLE RESPONSIBILITY OF THE PROFESSIONAL ENGINEER WHOSE STAMP AND SIGNATURE APPEAR HEREON**.

Accepted by: _____ _____
Town Engineer Date

I. GENERAL LOCATION AND DESCRIPTION

Vista Reserve is a planned 19-acre, 50 lot single-family residential community located within the Vista Ridge development of Erie, Colorado. Vista Ridge is an existing 935-acre mixed use residential, commercial and golf course community. The project site is located at the southeast corner of Vista Parkway and Single Tree Lane and within the northwest quarter of Section 32, Township 1 North, Range 68 West of the 6th Principal Meridian. The site contains a single residence with outbuildings and horse corrals. The residence is centrally located on the high point of the property.

The project site is defined by Planning Areas 2-6 and 2-10 of the Vista Ridge Development Plan (VRDP). With the updated VRDP Amendment, the land use of Planning Area 2-10 is being changed from golf course maintenance area to low density single family detached and merged into Planning Area 2-6. The total allowable residential units for Planning Area 2-6 will remain unchanged at 50.

This drainage report analyzes the drainage facilities required for Vista Reserve. This report analyzes the impact of storm events only and is not intended to analyze effects of future irrigation, final lot grading or ground water conditions.

II. DRAINAGE BASINS

Vista Reserve lies within the Coal Creek Drainage Basin. Vista Reserve does not lie within the 100-year floodplain per FIRM Maps 08013C0443K dated August 15, 2019. There are no designated wetlands within the proposed development. All on-site soils are hydrological soil group C/D soils. See the soil map in Appendix J.

The eastern one-third of the site slopes to the northeast at an average slope near 5%. This area is defined by a 5.4-acre basin named H2 on the Existing Drainage Exhibit in Appendix J and has a 2-year runoff rate of 0.5 cfs and a 100-year runoff rate of 14.7 cfs. Storm runoff from the eastern one-third drains to the curb line of Hickory Drive, then northerly to existing curb inlets, and outfalls into existing Detention Pond A20 of the *Vista Ridge Golf Course Development Master Drainage Report* as prepared by Hurst and Associates, Inc. and dated July 30, 2001. Refer to Appendix J for Vista Ridge master drainage report excerpts. The eastern one-third is within Basin 217 of the Town of Erie Outfall Systems Plan (East of Coal Creek) as prepared by Merrick and dated January 2020.

The western two-thirds of the site slope to the west and northwest predominantly at slopes between 5% and 10%. This area is defined by a 13.6-acre basin named H1 on the Existing Drainage Exhibit in Appendix J and has a 2-year runoff rate of 0.9 cfs and a 100-year runoff rate of 32.1 cfs. Storm runoff from the western two-thirds drains to the curb lines of Single Tree Lane, Apple Tree Place and Vista Parkway. This runoff collects at existing low point in Vista Parkway adjacent to the western boundary of

the project site and then is conveyed by storm pipes or overland to existing Detention Pond B7 of said *Vista Ridge Golf Course Development Master Drainage Report*. The western two-thirds is within Basin 234 of said Town of Erie Outfall Systems Plan.

The existing storm sewer system of Vista Ridge including the detention ponds were designed to accommodate single-family residential development on the project site. The storm sewer system of Vista Ridge was designed to convey the minor storm flows with the excess 100-year flows conveyed overland to the detention ponds. Detention ponds on the project site were not anticipated. The existing ponds release storm flows at controlled rates northerly and ultimately into Coal Creek. These existing ponds were designed by Hurst and Associates, Inc. with the *Vista Ridge Golf Course Development Master Drainage Report*, Revised date July 30, 2001. Refer to Appendix J for master drainage report excerpts.

III. DRAINAGE DESIGN CRITERIA

The Rational Method was used to determine the storm runoff from the Vista Reserve drainage basins. **See Appendix A**. The Rational Method is presented in *The Urban Drainage and Flood Control Criteria Manual* and *Town of Erie Design Standards*. The onsite streets, storm pipes, inlets, and detention ponds will be designed considering a 2-year minor storm event and a 100-year major storm event and in accordance with Town of Erie's current *Standards and Specifications for Design and Construction of Public Improvements*, and the Mile High Flood District's Urban Storm Drainage Criteria Manuals. The proposed detention pond Water Quality Capture Volume (WQCV), Excessive Urban Runoff Volume (EURV), and 100-Year volumes will be calculated using the UD-Detention excel workbooks v4.06.

IV. DRAINAGE FACILITY DESIGN

Existing Drainage Facilities

The existing pipe systems within Hickory Drive and Vista Parkway were designed to convey the 2-year storm event. During 100-year storm events, runoff would overtop the inlets and travel overland to the regional detention ponds. Existing inlets are reanalyzed in **Appendix C** and existing pipes are reanalyzed in **Appendix D**.

The design of existing regional detention ponds A20 and B7 included water quality capture volumes. These regional ponds were designed assuming a land use of low density single-family residential for the project site.

Proposed Drainage Facilities

The drainage facility design concept is to convey the on-site developed flows to one of two proposed detention ponds. The storm sewer system of Vista Ridge was designed to accommodate the

project site being developed with low density single-family residences without on-site detention. To lessen the impact of the project onto the existing storm sewer system, two on-site detention ponds will be constructed. These extended detention basins will be designed to include WQCV, EURV, and 100-Year Volumes. The ponds will also include forebays, trickle channels, micropools, emergency spillways and outlet structures with trash racks and orifice plates to control release rates.

The western two-thirds of Vista Reserve will drain to proposed Detention Pond C. Detention Pond C is located at the northwest corner of the site and at the southeast corner of Vista Parkway and Single Tree Lane. Detention Pond C will release developed flows through a proposed 18-inch reinforced concrete pipe to the existing storm system at the low point in Vista Parkway. These flows will be conveyed by storm pipes or overland to existing regional pond B7 located northwest of the site along the eastern side of Bonanza Drive. The total 100-year flow rate from the western two-thirds of the site found by summing the 100-year release rate of Pond C and the western undetained on-site basins is less than the undeveloped historic flow rate from the western two-thirds of the site. In the event that the pond is overtopped the emergency spillway will direct the water onto Single Tree Lane. The flow is then directed down Vista Parkway to the low point where it will overtop Inlet SB-13 and flow overland through an existing drainage swale across Driver Lane and into existing detention pond B7.

Western 2/3 Project Site	**Q_{100}** cfs
Onsite Undetained Basin B4-12A	1.27
Onsite Undetained Basin B4-13A	0.58
Onsite Undetained Basin B4-13C	0.74
Onsite Undetained Basin B4-17A	4.69
Pond C Release	14.70
Total Developed On-Site Flows:	**21.97**
Historic On-Site Flows (H1) =	**32.14**

Detention Pond C Characteristics

WQCV = 0.169 ac-ft

EURV = 0.430 ac-ft

100-Yr = 0.937 ac-ft

Design 100-year release rate = 14.7 cfs

Developed Percent Imperviousness = 42.33%

OSP Anticipated Percent Imperviousness = 46%

The approximate eastern one-third of Vista Reserve will drain to proposed Detention Pond D. Detention Pond D is located at the northeast corner of the site along Hickory Drive. Detention Pond D will

release developed flow through a proposed 18-inch reinforced concrete pipe to the existing storm system within Hickory Drive. These developed flows will be conveyed by storm pipes or overland to the existing regional pond A20 located northeast of the site. To keep the total developed flows from the eastern one-third of the site equal to the undeveloped historic flow rate (Basin H2), Detention Pond D will over-detain in the 100-year storm event. In the event that the pond overtops the emergency spillway will direct the flow onto Hickory Drive. It will flow down the street around the corner to the low point where it overtops the existing inlet and flows across the golf course to existing pond A20.

Eastern 1/3 Project Site	Q_{100} cfs
Onsite Undetained Basin A21-3A	9.92
Onsite Undetained Basin A21-4A	0.60
Onsite Undetained Basin A21-4C	0.25
Pond D Release	3.87
Total Developed On-Site Flows:	**14.64**
Historic On-Site Flows (H2) =	**14.65**

Detention Pond D Characteristics

WQCV = 0.073 ac-ft

EURV = 0.184 ac-ft

100-Yr = 0.520 ac-ft

Design 100-year release rate = 3.87 cfs

Developed Percent Imperviousness = 41.49%

OSP Anticipated Percent Imperviousness = 40%

The proposed streets have adequate capacity to convey the minor and major storm flows. **See Appendix B**. The proposed inlets are analyzed and sized to capture the major storm which prevents any overflow at the low points into the proposed ponds. The proposed storm pipes are analyzed to convey the 100-year inlet capacities. See **Appendix D**. Existing inlets have been reanalyzed with developed conditions to compare the original design to proposed. Refer to **Appendix C**. Streets downstream of the proposed emergency spillways have been analyzed to ensure they have the capacity to handle flows leaving both proposed ponds. See **Appendix F**.

V. ERIE OUTFALL SYSTEMS PLAN (EAST OF COAL CREEK)

The *Town of Erie Outfall Systems Plan (East of Coal Creek)* as prepared by Merrick and dated January 2020 analyzes the existing and future drainage facilities of Erie. The site of Vista Reserve is split with the eastern portion part of basin 217 and the western portion part of basin 234. No OSP improvements are proposed for the drainage facilities in this area. The proposed drainage facilities will conform to said outfall systems plan. See **Appendix G** for maps and excerpts from the referenced report.

VI. SUMMARY

The Vista Reserve drainage facilities are designed to capture the developed runoff and convey flows to two proposed detention ponds. The developed 100-year runoff rates from the project site are less than the undeveloped historic 100-year runoff rates. The ponds will release flows into the existing adjacent storm sewer systems. The proposed drainage facilities will conform to the Town of Erie's current *Standards and Specifications for Design and Construction of Public Improvements* and the Mile High Flood District's Urban Storm Drainage Criteria Manuals. This report presents a preliminary design of the proposed drainage facilities of Vista Reserve. A more detailed design will be presented with a Phase III drainage report.

VII. REFERENCES

1. Town of Erie, Colorado. 2019. *Standards and Specifications for Design and Construction of Public Improvements.*
2. Mile High Flood District. *Urban Storm Drainage Criteria Manual Volumes 1 and 2.* Updated January 2016.
3. Mile High Flood District. *Urban Storm Drainage Criteria Manual Volume 3, Best Management Practices. Updated November 2010.*
4. Hurst & Associates, Inc. *Vista Ridge Golf Course Development Master Drainage Report.* July 30, 2001.
5. Merrick. January 2020. *Town of Erie Outfall Systems Plan (East of Coal Creek).*

VIII. APPENDICES

Rational Method Runoff Analysis ..... **Appendix A**
Street Capacity Analysis ..... **Appendix B**
Inlet Analysis ..... **Appendix C**
Preliminary Storm Pipe Sizing ..... **Appendix D**
100-Year Street Overflow Analysis ..... **Appendix E**
Detention Pond Design ..... **Appendix F**
Excerpts from Erie Outfall Systems Plan ..... **Appendix G**
Existing Runoff Analysis ..... **Appendix H**
Stormwater Post Construction Design Standards ..... **Appendix I**
Operations and Maintenance Plan ..... **Appendix J**
Maps ..... **Appendix K**

1. Vicinity Map
2. FIRM Map
3. Soil Map
4. Vista Reserve Drainage Plan
5. Detention Pond Plans
6. Existing Drainage Exhibit
7. Excerpts from Vista Ridge Construction Plans

APPENDIX A
RATIONAL METHOD
RUNOFF ANALYSIS

Runoff Coefficients

Vista Reserve
Job Number: 2718-1

Pond C Basins

Basin	Area (ac.)	% Imperviousness Calculations						NRCS Soil Groups			2-Year			5-Year			10-Year			100-Year			Runoff Coefficients			
		SFR Rural (35%) (acres)	Disturbed Soil (20%) (acres)	Roadways & Paved Streets (95%) (acres)	Gravel (80%) (acres)	Extended Detention Pond (25%) (acres)	% Imp.	% A	% B	% C/D	C_A	C_B	$C_{C/D}$	C_A	C_B	$C_{C/D}$	C_A	C_B	$C_{C/D}$	C_A	C_B	$C_{C/D}$	C_2	C_5	C_{10}	C_{100}
C1	0.62	0.05	0.33	0.02	0	0.22	**25.2**			100	0.14	0.17	0.18	0.00	0.19	0.24	0.16	0.26	0.32	0.31	0.54	0.59	**0.18**	**0.18**	**0.32**	**0.59**
C2	0.51	0.37	0.03	0.11	0	0	**47.5**			100	0.32	0.35	0.36	0.33	0.38	0.42	0.35	0.44	0.48	0.48	0.65	0.68	**0.36**	**0.42**	**0.48**	**0.68**
C3A	0.15	0.09	0.01	0.04	0	0	**51.6**			100	0.35	0.39	0.40	0.37	0.41	0.46	0.39	0.47	0.51	0.51	0.67	0.69	**0.40**	**0.46**	**0.51**	**0.69**
C3B	1.06	0.69	0.08	0.28	0	0	**49.9**			100	0.34	0.37	0.38	0.35	0.40	0.44	0.37	0.46	0.50	0.50	0.66	0.69	**0.38**	**0.44**	**0.50**	**0.69**
C4	0.47	0.28	0.04	0.15	0	0	**53.0**			100	0.37	0.40	0.41	0.38	0.42	0.47	0.40	0.48	0.52	0.52	0.67	0.70	**0.41**	**0.47**	**0.52**	**0.70**
C5	1.91	1.28	0.14	0.48	0	0	**49.1**			100	0.33	0.36	0.38	0.35	0.39	0.44	0.36	0.45	0.49	0.49	0.65	0.69	**0.38**	**0.44**	**0.49**	**0.69**
C6	1.17	0.71	0.10	0.35	0	0	**52.0**			100	0.36	0.39	0.40	0.37	0.41	0.46	0.39	0.48	0.51	0.51	0.67	0.70	**0.40**	**0.46**	**0.51**	**0.70**
C7	1.46	1.25	0.05	0.17	0	0	**41.5**			100	0.27	0.30	0.31	0.28	0.32	0.37	0.30	0.39	0.44	0.43	0.62	0.65	**0.31**	**0.37**	**0.44**	**0.65**
C8	1.93	1.93	0	0	0	0	**35.0**			100	0.21	0.24	0.26	0.23	0.27	0.32	0.24	0.34	0.39	0.38	0.59	0.63	**0.26**	**0.32**	**0.39**	**0.63**
C9	0.98	0.98	0	0	0	0	**35.0**			100	0.21	0.24	0.26	0.23	0.27	0.32	0.24	0.34	0.39	0.38	0.59	0.63	**0.26**	**0.32**	**0.39**	**0.63**
C10	0.64	0.41	0.23	0	0	0	**29.5**			100	0.17	0.20	0.21	0.18	0.22	0.28	0.19	0.30	0.35	0.34	0.56	0.60	**0.21**	**0.28**	**0.35**	**0.60**
TOTAL	10.89	8.04	1.02	1.62	0	0.22	**42.3**																			

Pond D Basins

Basin	Area (ac.)	% Imperviousness Calculations						NRCS Soil Groups			2-Year			5-Year			10-Year			100-Year			Runoff Coefficients			
		SFR Rural (35%) (acres)	Disturbed Soil (20%) (acres)	Roadways & Paved Streets (95%) (acres)	Gravel (80%) (acres)	Extended Detention Pond (25%) (acres)	% Imp.	% A	% B	% C/D	C_A	C_B	$C_{C/D}$	C_A	C_B	$C_{C/D}$	C_A	C_B	$C_{C/D}$	C_A	C_B	$C_{C/D}$	C_2	C_5	C_{10}	C_{100}
D1	0.97	0.48	0.21	0.02	0	0.25	**30.4**			100	0.18	0.21	0.22	0.19	0.23	0.28	0.20	0.30	0.36	0.35	0.57	0.61	**0.22**	**0.22**	**0.36**	**0.61**
D2	1.06	0.73	0.08	0.25	0	0	**48.3**			100	0.33	0.36	0.37	0.34	0.38	0.43	0.36	0.45	0.49	0.49	0.65	0.68	**0.37**	**0.43**	**0.49**	**0.68**
D3	0.16	0.08	0.01	0.06	0	0	**56.3**			100	0.40	0.43	0.44	0.41	0.45	0.49	0.43	0.51	0.55	0.55	0.69	0.71	**0.44**	**0.49**	**0.55**	**0.71**
D4	1.03	0.72	0.07	0.24	0	0	**47.8**			100	0.32	0.35	0.36	0.34	0.38	0.42	0.35	0.44	0.48	0.48	0.65	0.68	**0.36**	**0.42**	**0.48**	**0.68**
D5	0.34	0.23	0.02	0.09	0	0	**50.5**			100	0.35	0.38	0.39	0.36	0.40	0.45	0.38	0.46	0.50	0.50	0.66	0.69	**0.39**	**0.45**	**0.50**	**0.69**
D6	0.22	0.12	0.02	0.07	0	0	**54.4**			100	0.38	0.41	0.42	0.40	0.44	0.48	0.41	0.50	0.53	0.53	0.68	0.71	**0.42**	**0.48**	**0.53**	**0.71**
D7	0.57	0.38	0.18	0	0	0	**30.1**			100	0.18	0.21	0.22	0.19	0.23	0.28	0.20	0.30	0.35	0.34	0.57	0.61	**0.22**	**0.28**	**0.35**	**0.61**
D8	0.43	0.22	0.19	0.02	0	0	**30.6**			100	0.18	0.21	0.22	0.19	0.23	0.28	0.20	0.30	0.36	0.35	0.57	0.61	**0.22**	**0.28**	**0.36**	**0.61**
TOTAL	4.77	2.98	0.78	0.75	0	0.25	**41.5**																			

Offsite/Existing Basins

Basin	Area (ac.)	% Imperviousness Calculations						NRCS Soil Groups			2-Year			5-Year			10-Year			100-Year			Runoff Coefficients			
		SFR Rural (35%) (acres)	Disturbed Soil (20%) (acres)	Roadways & Paved Streets (95%) (acres)	Gravel (80%) (acres)	Extended Detention Pond (25%) (acres)	% Imp.	% A	% B	% C/D	C_A	C_B	$C_{C/D}$	C_A	C_B	$C_{C/D}$	C_A	C_B	$C_{C/D}$	C_A	C_B	$C_{C/D}$	C_2	C_5	C_{10}	C_{100}
A21-3*	2.13	0.97	0.48	0.68	0	0	**50.8**			100	0.35	0.38	0.39	0.36	0.40	0.45	0.38	0.47	0.51	0.51	0.66	0.69	**0.39**	**0.39**	**0.51**	**0.69**
A21-3(A)	1.66	0.97	0.38	0.31	0	0	**42.7**			100	0.28	0.31	0.32	0.29	0.33	0.38	0.31	0.40	0.45	0.44	0.62	0.66	**0.32**	**0.32**	**0.45**	**0.66**
A21-3(B)	0.47	0	0.10	0.37	0	0	**79.2**			100	0.62	0.64	0.64	0.64	0.66	0.68	0.66	0.70	0.71	0.73	0.79	0.81	**0.64**	**0.65**	**0.71**	**0.81**
A21-4*	0.51	0	0.23	0.28	0	0	**61.5**			100	0.45	0.47	0.48	0.46	0.50	0.54	0.48	0.55	0.58	0.59	0.71	0.74	**0.48**	**0.49**	**0.58**	**0.74**
A21-4(A)	0.12	0	0.12	0	0	0	**20.0**			100	0.10	0.13	0.14	0.11	0.14	0.20	0.12	0.22	0.28	0.27	0.52	0.57	**0.14**	**0.14**	**0.28**	**0.57**
A21-4(B)	0.34	0	0.06	0.28	0	0	**81.7**			100	0.65	0.66	0.67	0.67	0.69	0.70	0.68	0.72	0.73	0.75	0.81	0.82	**0.67**	**0.67**	**0.73**	**0.82**
A21-4(C)	0.05	0	0.05	0	0	0	**20.0**			100	0.10	0.13	0.14	0.11	0.14	0.20	0.12	0.22	0.28	0.27	0.52	0.57	**0.14**	**0.14**	**0.28**	**0.57**
A21-5*	3.02	2.00	0.19	0.82	0	0	**50.5**			100	0.34	0.38	0.39	0.36	0.40	0.45	0.38	0.46	0.50	0.50	0.66	0.69	**0.39**	**0.39**	**0.50**	**0.69**
A21-5(A)	0.25	0.17	0.02	0.06	0	0	**48.3**			100	0.33	0.36	0.37	0.34	0.38	0.43	0.36	0.45	0.49	0.49	0.65	0.68	**0.37**	**0.37**	**0.49**	**0.68**
A21-5(B)	2.76	1.83	0.17	0.76	0	0	**50.6**			100	0.35	0.38	0.39	0.36	0.40	0.45	0.38	0.47	0.50	0.50	0.66	0.69	**0.39**	**0.39**	**0.50**	**0.69**
A21-6	1.78	1.48	0.05	0.25	0	0	**43.0**			100	0.28	0.31	0.32	0.29	0.34	0.39	0.31	0.40	0.45	0.45	0.63	0.66	**0.32**	**0.32**	**0.45**	**0.66**
B4-8	2.01	1.57	0.08	0.36	0	0	**45.2**			100	0.30	0.33	0.34	0.31	0.35	0.40	0.33	0.42	0.46	0.46	0.64	0.67	**0.34**	**0.34**	**0.46**	**0.67**
B4-9	1.00	0.63	0.05	0.33	0	0	**53.9**			100	0.38	0.41	0.42	0.39	0.43	0.47	0.41	0.49	0.53	0.53	0.68	0.70	**0.42**	**0.42**	**0.53**	**0.70**
B4-10	2.58	2.17	0.06	0.34	0	0	**42.6**			100	0.28	0.31	0.32	0.29	0.33	0.38	0.31	0.40	0.45	0.44	0.62	0.66	**0.32**	**0.32**	**0.45**	**0.66**
B4-11	0.38	0	0.20	0.18	0	0	**55.8**			100	0.39	0.42	0.43	0.41	0.45	0.49	0.43	0.51	0.54	0.54	0.69	0.71	**0.43**	**0.44**	**0.54**	**0.71**
B4-12*	1.72	0.27	0.77	0.69	0	0	**52.2**			100	0.36	0.39	0.40	0.38	0.42	0.46	0.39	0.48	0.52	0.52	0.67	0.70	**0.40**	**0.40**	**0.52**	**0.70**
B4-12(A)	0.25	0	0.25	0	0	0	**20.0**			100	0.10	0.13	0.14	0.11	0.14	0.20	0.12	0.22	0.28	0.27	0.52	0.57	**0.14**	**0.14**	**0.28**	**0.57**
B4-12(B)	1.48	0.27	0.52	0.69	0	0	**57.6**			100	0.41	0.44	0.45	0.43	0.46	0.50	0.44	0.52	0.56	0.56	0.69	0.72	**0.45**	**0.45**	**0.56**	**0.72**
B4-13*	0.59	0.09	0.24	0.26	0	0	**55.7**			100	0.39	0.42	0.43	0.41	0.45	0.49	0.42	0.51	0.54	0.54	0.69	0.71	**0.43**	**0.43**	**0.54**	**0.71**
B4-13(A)	0.11	0	0.11	0	0	0	**20.0**			100	0.10	0.13	0.14	0.11	0.14	0.20	0.12	0.22	0.28	0.27	0.52	0.57	**0.14**	**0.14**	**0.28**	**0.57**
B4-13(B)	0.34	0.00	0.08	0.26	0	0	**77.9**			100	0.61	0.62	0.63	0.63	0.65	0.67	0.64	0.69	0.70	0.72	0.79	0.80	**0.63**	**0.63**	**0.70**	**0.80**
B4-13(C)	0.13	0.09	0.05	0	0	0	**29.9**			100	0.17	0.20	0.22	0.18	0.22	0.28	0.20	0.30	0.35	0.34	0.57	0.61	**0.22**	**0.22**	**0.35**	**0.61**
B4-17*	1.10	0.49	0.37	0.25	0	0	**43.4**			100	0.28	0.31	0.33	0.30	0.34	0.39	0.31	0.41	0.45	0.45	0.63	0.66	**0.33**	**0.33**	**0.45**	**0.66**
B4-17(A)	0.83	0.49	0.27	0.06	0	0	**34.5**			100	0.21	0.24	0.25	0.22	0.26	0.32	0.24	0.34	0.39	0.38	0.59	0.63	**0.25**	**0.25**	**0.39**	**0.63**
B4-17(B)	0.28	0	0.09	0.18	0	0	**69.9**			100	0.53	0.55	0.56	0.55	0.58	0.60	0.56	0.62	0.65	0.65	0.75	0.77	**0.56**	**0.56**	**0.65**	**0.77**

***Basins draining offsite are broken into onsite and offsite basins. Basins without letters are the summation of their sub-basins.**

Times of Concentration

Vista Reserve

Job Number: 2718-1

Pond C Basins

Basin	% Imperv-iousness	C_5	Overland Flow			Channelized Flow					T_c Eqn. 6-2 (min.)	Length (ft)	Slope (ft)	T_c Eqn. 6-5 (min.)	Design T_c (min.)
			Length (ft)	Slope (ft/ft)	T_i Eqn. 6-3 (mins)	Length (ft)	Slope (ft/ft)	K	Note	T_t Eqn. 6-4 (mins)					
C1	0.25	0.18	20	0.150	3.0	192	0.078	20	Pond	0.6	5.0	192	0.078	22.6	**5.0**
C2	0.47	0.42	76	0.020	8.5	157	0.019	20	Curb	0.9	9.4	157	0.019	19.1	**9.4**
C3A	0.52	0.46	73	0.020	7.9	60	0.040	20	Curb	0.3	8.2	60	0.040	17.5	**8.2**
C3B	0.50	0.44	73	0.020	8.1	522	0.030	20	Curb	2.5	10.6	522	0.030	20.7	**10.6**
C4	0.53	0.47	73	0.020	7.8	158	0.038	20	Curb	0.7	8.4	158	0.038	17.8	**8.4**
C5	0.49	0.44	73	0.020	8.2	859	0.027	20	Curb	4.4	12.5	859	0.027	23.1	**12.5**
C6	0.52	0.46	46	0.020	6.2	613	0.031	20	Curb	2.9	9.2	613	0.031	20.7	**9.2**
C7	0.42	0.37	262	0.020	16.9	285	0.028	20	Curb	1.4	18.3	285	0.028	20.9	**18.3**
C8	0.35	0.32	75	0.200	4.5	670	0.027	15	Grass	4.5	9.1	670	0.027	24.9	**9.1**
C9	0.35	0.32	136	0.100	7.7	511	0.018	15	Grass	4.2	11.9	511	0.018	24.6	**11.9**
C10	0.30	0.28	90	0.110	6.4	205	0.039	15	Grass	1.2	7.6	205	0.039	22.3	**7.6**

Pond D Basins

Basin	% Imperv-iousness	C_5	Overland Flow			Channelized Flow					T_c Eqn. 6-2 (min.)	Length (ft)	Slope (ft)	T_c Eqn. 6-5 (min.)	Design T_c (min.)
			Length (ft)	Slope (ft/ft)	T_i Eqn. 6-3 (mins)	Length (ft)	Slope (ft/ft)	K	Note	T_t Eqn. 6-4 (mins)					
D1	0.30	0.22	25	0.020	6.3	229	0.066	15	Pond	1.0	7.3	229	0.066	22.0	**7.3**
D2	0.48	0.43	83	0.020	8.8	447	0.029	20	Curb	2.2	11.0	447	0.029	20.6	**11.0**
D3	0.56	0.49	73	0.020	7.4	94	0.010	20	Curb	0.8	8.2	94	0.010	17.4	**8.2**
D4	0.48	0.42	44	0.020	6.4	384	0.030	20	Curb	1.8	8.3	384	0.030	20.2	**8.3**
D5	0.51	0.45	152	0.020	11.6	135	0.010	20	Curb	1.1	12.7	135	0.010	18.8	**12.7**
D6	0.54	0.48	73	0.020	7.6	67	0.008	20	Curb	0.6	8.2	67	0.008	17.5	**8.2**
D7	0.30	0.28	105	0.086	7.5	200	0.025	15	Grass	1.4	8.9	200	0.025	22.5	**8.9**
D8	0.31	0.28	132	0.100	7.9	77	0.025	15	Grass	0.5	8.5	77	0.025	21.4	**8.5**

Offsite/Existing Basins

Basin	% Imperv-iousness	C_5	Overland Flow			Channelized Flow					T_c Eqn. 6-2 (min.)	Length (ft)	Slope (ft)	T_c Eqn. 6-5 (min.)	Design T_c (min.)
			Length (ft)	Slope (ft/ft)	T_i Eqn. 6-3 (mins)	Length (ft)	Slope (ft/ft)	K	Note	T_t Eqn. 6-4 (mins)					
A21-3*	0.51	0.39	73	0.020	8.7	700	0.024	20	Curb	3.8	12.5	700	0.024	22.1	**12.5**
A21-3(A)	0.43	0.32	*Sub-basins are analyzed using 5-minute time of concentration												**5.0**
A21-3(B)	0.79	0.65	*Sub-basins are analyzed using 5-minute time of concentration												**5.0**
A21-4*	0.62	0.49	30	0.020	4.8	490	0.022	20	Curb	2.8	7.6	490	0.022	18.7	**7.6**
A21-4(A)	0.20	0.14	*Sub-basins are analyzed using 5-minute time of concentration												**5.0**
A21-4(B)	0.82	0.67	*Sub-basins are analyzed using 5-minute time of concentration												**5.0**
A21-4(C)	0.20	0.14	*Sub-basins are analyzed using 5-minute time of concentration												**5.0**
A21-5*	0.50	0.39	73	0.020	8.7	997	0.024	20	Curb	5.4	14.1	997	0.024	24.1	**14.1**
A21-5(A)	0.48	0.37	*Sub-basins are analyzed using 5-minute time of concentration												**5.0**
A21-5(B)	0.51	0.39	*Sub-basins are analyzed using 5-minute time of concentration												**5.0**
A21-6	0.43	0.32	139	0.036	10.8	351	0.019	20	Curb	2.1	12.9	351	0.019	21.5	**12.9**
B4-8	0.45	0.34	176	0.026	13.2	413	0.039	20	Curb	1.7	15.0	413	0.039	20.6	**15.0**
B4-9	0.54	0.42	18	0.020	4.2	268	0.015	20	Curb	1.8	6.0	268	0.015	19.0	**6.0**
B4-10	0.43	0.32	171	0.049	10.9	604	0.026	20	Curb	3.1	14.0	604	0.026	22.9	**14.0**
B4-11	0.56	0.44	38	0.020	5.9	284	0.029	20	Curb	1.4	7.3	284	0.029	18.2	**7.3**
B4-12*	0.52	0.40	47	0.040	5.5	690	0.030	20	Curb	3.3	8.8	690	0.030	21.2	**8.8**
B4-12(A)	0.20	0.14	*Sub-basins are analyzed using 5-minute time of concentration												**5.0**
B4-12(B)	0.58	0.45	*Sub-basins are analyzed using 5-minute time of concentration												**5.0**
B4-13*	0.56	0.43	16	0.020	3.8	470	0.036	20	Curb	2.1	5.9	470	0.036	19.0	**5.9**
B4-13(A)	0.20	0.14	*Sub-basins are analyzed using 5-minute time of concentration												**5.0**
B4-13(B)	0.78	0.63	*Sub-basins are analyzed using 5-minute time of concentration												**5.0**
B4-13(C)	0.30	0.22	*Sub-basins are analyzed using 5-minute time of concentration												**5.0**
B4-17*	0.43	0.33	13	0.020	4.0	430	0.042	20	Curb	1.7	5.7	430	0.042	20.9	**5.7**
B4-17(A)	0.35	0.25	*Sub-basins are analyzed using 5-minute time of concentration												**5.0**
B4-17(B)	0.70	0.56	*Sub-basins are analyzed using 5-minute time of concentration												**5.0**

Basin Runoff Rates

Vista Reserve
Job Number: 2718-1

Pond C Basins

Basin	Area (acres)	C_2	C_{10}	C_{100}	T_c (mins)	I_2 (in/hr)	I_{10} (in/hr)	I_{100} (in/hr)	Q_2 (cfs)	Q_{10} (cfs)	Q_{100} (cfs)
C1	0.62	0.18	0.32	0.59	5.0	*2.75*	*4.71*	*9.09*	**0.30**	**0.92**	**3.28**
C2	0.51	0.36	0.48	0.68	9.4	*2.24*	*3.85*	*7.41*	**0.42**	**0.95**	**2.58**
C3A	0.15	0.40	0.51	0.69	8.2	*2.36*	*4.06*	*7.82*	**0.14**	**0.31**	**0.81**
C3B	1.06	0.38	0.50	0.69	10.6	*2.14*	*3.68*	*7.09*	**0.87**	**1.94**	**5.16**
C4	0.47	0.41	0.52	0.70	8.4	*2.34*	*4.01*	*7.73*	**0.45**	**0.98**	**2.53**
C5	1.91	0.38	0.49	0.69	12.5	*2.00*	*3.43*	*6.61*	**1.43**	**3.22**	**8.62**
C6	1.17	0.40	0.51	0.70	9.2	*2.27*	*3.89*	*7.50*	**1.06**	**2.33**	**6.09**
C7	1.46	0.31	0.44	0.65	18.3	*1.67*	*2.86*	*5.52*	**0.76**	**1.83**	**5.28**
C8	1.93	0.26	0.39	0.63	9.1	*2.28*	*3.90*	*7.53*	**1.13**	**2.94**	**9.13**
C9	0.98	0.26	0.39	0.63	11.9	*2.04*	*3.50*	*6.75*	**0.51**	**1.33**	**4.15**
C10	0.64	0.21	0.35	0.60	7.6	*2.43*	*4.17*	*8.03*	**0.33**	**0.93**	**3.11**

Pond D Basins

Basin	Area (acres)	C_2	C_{10}	C_{100}	T_c (mins)	I_2 (in/hr)	I_{10} (in/hr)	I_{100} (in/hr)	Q_2 (cfs)	Q_{10} (cfs)	Q_{100} (cfs)
D1	0.97	0.22	0.36	0.61	7.3	*2.45*	*4.21*	*8.12*	**0.52**	**1.46**	**4.80**
D2	1.06	0.49	0.65	0.68	11.0	*2.11*	*3.62*	*6.99*	**1.09**	**2.50**	**5.04**
D3	0.16	0.55	0.69	0.71	8.2	*2.36*	*4.05*	*7.80*	**0.20**	**0.43**	**0.87**
D4	1.03	0.48	0.65	0.68	8.3	*2.35*	*4.04*	*7.78*	**1.17**	**2.69**	**5.43**
D5	0.34	0.50	0.66	0.69	12.7	*1.98*	*3.40*	*6.56*	**0.34**	**0.77**	**1.55**
D6	0.22	0.53	0.68	0.71	8.2	*2.36*	*4.04*	*7.80*	**0.27**	**0.60**	**1.20**
D7	0.57	0.34	0.57	0.61	8.9	*2.30*	*3.94*	*7.59*	**0.45**	**1.26**	**2.62**
D8	0.43	0.35	0.57	0.61	8.5	*2.33*	*4.01*	*7.72*	**0.35**	**0.97**	**2.00**

Intensity = $28.5 * P_1 / ((10 + T_C)^{0.786})$

Erie One-Hour Rainfall Depths

2-Year = 0.81

10-Year = 1.39

100-Year = 2.68

P_1 = 1-hour point rainfall depth

T_c = Time of Concentration

Adjacent/Existing Basins

Basin	Area (acres)	C_2	C_{10}	C_{100}	T_c (mins)	I_2 (in/hr)	I_{10} (in/hr)	I_{100} (in/hr)	Q_2 (cfs)	Q_{10} (cfs)	Q_{100} (cfs)
A21-3*	2.13	0.39	0.51	0.69	12.5	*2.00*	*3.43*	*6.61*	**1.66**	**3.69**	**9.73**
A21-3(A)	1.66	0.32	0.45	0.66	5.0	*2.75*	*4.71*	*9.09*	1.46	3.48	9.92
A21-3(B)	0.47	0.64	0.71	0.81	5.0	*2.75*	*4.71*	*9.09*	0.83	1.58	3.45
A21-4*	0.51	0.48	0.58	0.74	7.6	*2.42*	*4.16*	*8.02*	**0.59**	**1.23**	**2.99**
A21-4(A)	0.12	0.14	0.28	0.57	5.0	*2.75*	*4.71*	*9.09*	0.04	0.15	0.60
A21-4(B)	0.34	0.67	0.73	0.82	5.0	*2.75*	*4.71*	*9.09*	0.62	1.18	2.53
A21-4(C)	0.05	0.14	0.28	0.57	5.0	*2.75*	*4.71*	*9.09*	0.02	0.06	0.25
A21-5*	3.02	0.39	0.50	0.69	14.1	*1.89*	*3.24*	*6.26*	**2.21**	**4.92**	**13.03**
A21-5(A)	0.25	0.37	0.49	0.68	5.0	*2.75*	*4.71*	*9.09*	0.26	0.58	1.57
A21-5(B)	2.76	0.39	0.50	0.69	5.0	*2.75*	*4.71*	*9.09*	2.95	6.57	17.36
A21-6	1.78	0.32	0.45	0.66	12.9	*1.97*	*3.38*	*6.51*	**1.13**	**2.69**	**7.65**
B4-8	2.01	0.34	0.46	0.67	15.0	*1.84*	*3.16*	*6.09*	**1.26**	**2.95**	**8.19**
B4-9	1.00	0.42	0.53	0.70	6.0	*2.61*	*4.49*	*8.65*	**1.09**	**2.37**	**6.10**
B4-10	2.58	0.32	0.45	0.66	14.0	*1.90*	*3.26*	*6.28*	**1.57**	**3.74**	**10.65**
B4-11	0.38	0.43	0.54	0.71	7.3	*2.46*	*4.22*	*8.14*	**0.40**	**0.87**	**2.20**
B4-12*	1.72	0.40	0.52	0.70	8.8	*2.30*	*3.95*	*7.62*	**1.60**	**3.51**	**9.16**
B4-12(A)	0.25	0.14	0.28	0.57	5.0	*2.75*	*4.71*	*9.09*	0.09	0.32	1.27
B4-12(B)	1.48	0.45	0.56	0.72	5.0	*2.75*	*4.71*	*9.09*	1.82	3.87	9.66
B4-13*	0.59	0.43	0.54	0.71	5.9	*2.63*	*4.51*	*8.69*	**0.67**	**1.43**	**3.62**
B4-13(A)	0.11	0.14	0.28	0.57	5.0	*2.75*	*4.71*	*9.09*	0.04	0.15	0.58
B4-13(B)	0.34	0.63	0.70	0.80	5.0	*2.75*	*4.71*	*9.09*	0.59	1.12	2.47
B4-13(C)	0.13	0.22	0.35	0.61	5.0	*2.75*	*4.71*	*9.09*	0.08	0.22	0.74
B4-17*	1.10	0.33	0.45	0.66	5.7	*2.64*	*4.54*	*8.75*	**0.95**	**2.26**	**6.38**
B4-17(A)	0.83	0.25	0.39	0.63	5.0	*2.75*	*4.71*	*9.09*	0.57	1.50	4.69
B4-17(B)	0.28	0.56	0.65	0.77	5.0	*2.75*	*4.71*	*9.09*	0.43	0.84	1.94

existence or function of a ditch. If a variance is requested to the Town Engineer for use of a ditch as an outfall, it is the design engineer's responsibility to complete all studies and designs deemed necessary by the Town Engineer to support the use of the ditch as well as a secondary drainage design should the ditch cease to exist.

Expressed written approval must be obtained from the managing organization for irrigation ditches being considered for crossing or easements.

813.00 Design Methods

813.01 Initial and Major Design Storms

Every urban area has two separate and distinct drainage systems whether or not they are actually planned for and designed. One is the initial system corresponding to the initial (or ordinary) storm recurring at regular intervals. The other is the major system corresponding to the major (or extraordinary storm), which is unlikely to occur more often than once in 100 or more years. Since the effects and routing of storm waters for the major storm may not be the same as for the initial storm, all storm drainage plans submitted for acceptance will detail two separate systems; one indicating the effects of the initial storm and the other showing the effects of the major storm.

A. *Initial storm provisions:* The objectives of such drainage system planning are to minimize inconvenience, to protect against recurring minor damage, to reduce rising maintenance costs, and to create an orderly drainage system. The initial storm drainage system may include such facilities as curb and gutter, storm sewer, swales, and other open drainageways and detention facilities.

B. *Major storm provisions:* The major storm will be considered the 100-year storm. The objectives of the major storm planning are to eliminate substantial property damage or loss of life and will be as directed and accepted by the Town Engineer. Major drainage systems may include storm sewers, open drainageways and detention facilities. The correlation between the initial and major storm system will be analyzed to insure a well-coordinated drainage system.

813.02 Storm Return Periods

The initial and major storm design return periods will not be less than those found in Table 800-1:

TABLE 800-1
DESIGN STORM RETURN PERIODS

Land Use or Zoning	Design Storm Return Period	
	Initial Storm	Major Storm
Residential	2-year	100-year
Commercial and Business	5-year	100-year
Public Building Areas	5-year	100-year
Parks, Greenbelts, etc.	2-year	100-year

813.03 Runoff Computations, Colorado Urban Hydrograph Procedure (CUHP)

The CUHP method is generally applicable to drainage basins greater than 90 acres. However, the CUHP is required for watershed areas larger than 160-acres. The procedures for the CUHP, as explained in the Urban Storm Drainage Criteria Manual, shall be followed in the preparation of drainage reports and storm drainage facility designs in the Town. The CUHP program requires the input of a design storm, either as a detailed hyetograph or as a 1-hour rainfall depth. The program for the latter using the 2-hour storm distribution recommended in the Urban Storm Drainage Criteria Manual generates a detailed hyetograph distribution. The 1-hour rainfall depths for the Town of Erie are presented in Table 800-2.

Table 800-2
TOWN OF ERIE
ONE-HOUR RAINFALL DEPTH

Design Storm	Rainfall Depth (in.)
2-Year	0.81
5-Year	1.11
10-Year	1.39
25-Year	1.84
50-Year	2.24
100-Year	2.68
500-Year	3.89

The hydrograph from the CUHP program must be routed through any proposed conveyance facility using the Storm Water Management Model (SWMM) or a similar method approved by the Town Engineer.

813.04 Runoff Computations, Rational Method

The Rational Method will be utilized for sizing storm sewers and for determining runoff magnitude from un-sewered areas. The limit of application of the Rational Method is approximately 160 acres. When the drainage basin exceeds 160 acres, the CUHP method shall be used.
The procedures for the Rational Method, as explained in the Urban Storm Drainage Criteria Manual, shall be followed in the preparation of drainage reports in the Town.

813.05 Runoff Coefficients

Rational method runoff coefficients: The runoff coefficient (C) to be used in conjunction with the Rational Method will be calculated using the percent imperviousness shown in Table 800-3 as explained in the Urban Storm Drainage Criteria Manual.

TABLE 800-3
PERCENT IMPERVIOUS FOR RATIONAL METHOD

LAND USE OR SURFACE CHARACTERISTICS	PERCENT IMPERVIOUS
Business	
Commercial Areas	95
Neighborhood Areas	75
Residential Lots (Lot Area Only):	
Single-Family	
2.5 Acres or Larger	12
0.75 – 2.49 Acres	20
0.25 – 0.74 Acres	30
0.24 Acres or Less	45
Apartments	75
Industrial:	
Light Areas	80
Heavy Areas	90
Parks, Cemeteries	10
Playgrounds	25
Schools	55
Railroad Yard Areas	50
Undeveloped Areas:	
Historic Flow Analysis	2
Greenbelts, Agricultural	2
Offsite Flow Analysis (when land use not defined)	45
Streets:	
Paved	100
Gravel (Packed)	40
Drives and Walks	90
Roofs	90
Lawns, Sandy Soil	2
Lawns, Clay Soil	2

Note: These Rational Method coefficients may not be valid for large basins.

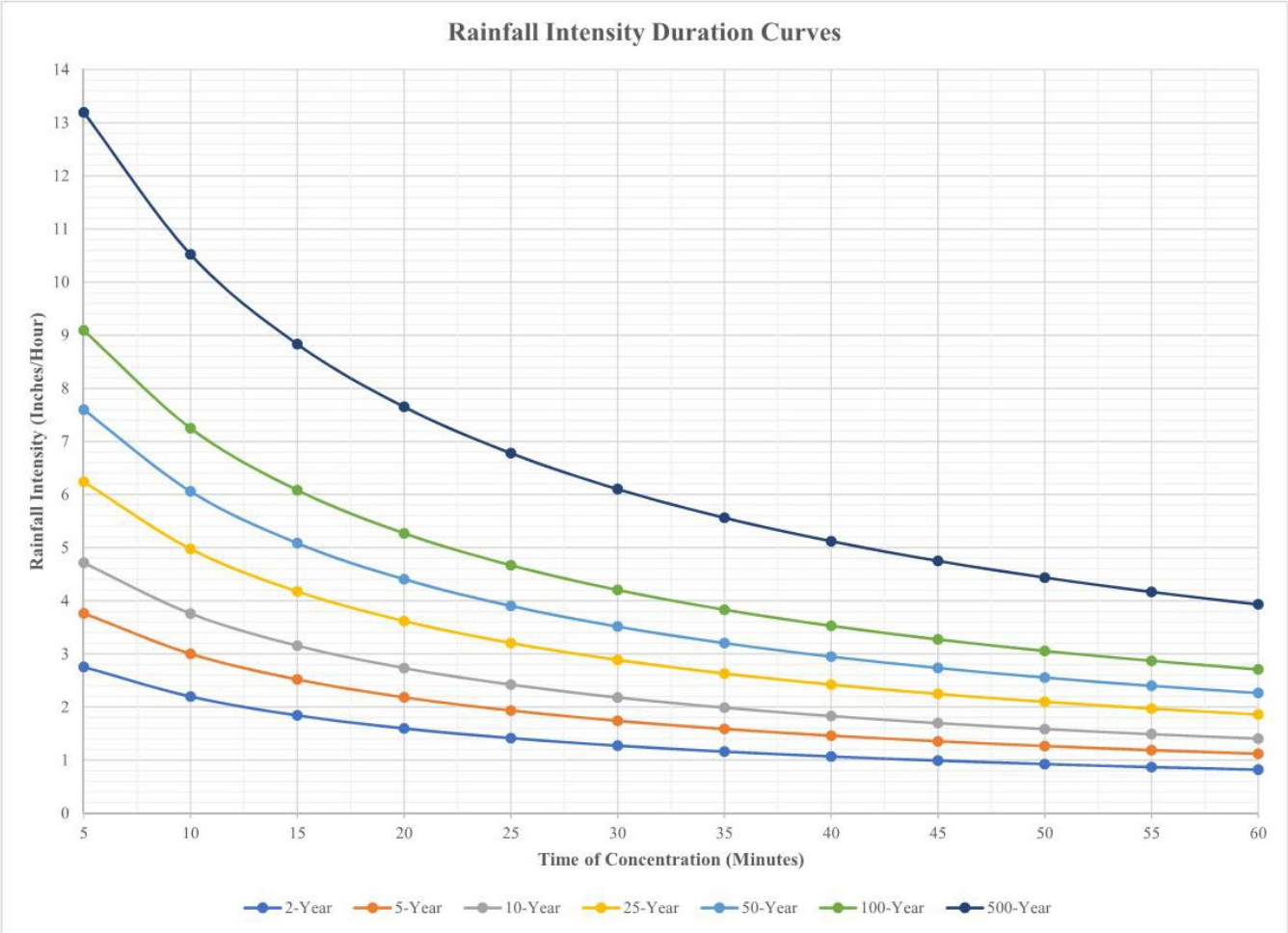
813.06 Rainfall Intensities

The rainfall intensities to be used in the computation of runoff using the Rational Method shall be obtained from the Rainfall Intensity Duration Curves for the Town of Erie, included in these STANDARDS AND SPECIFICATIONS, or can be computed using the following equation.

$$I = \frac{28.5\ P_1}{(10 + T_d)^{0.786}}$$

Where:

I = rainfall intensity (inches per hour)
P_1 = 1-hour point rainfall depth (inches)
T_d = storm duration (minutes)



814.00 Detention

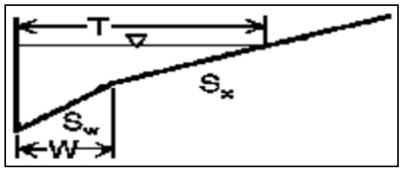
814.01 General

Onsite detention is required for all new development, expansion, and redevelopment. The required minimum detention volume and maximum release rates at these volumes shall be determined in accordance with the procedure and data set forth in these criteria.

For lands where the Town has adopted a Master Drainage Plan or Outfall Systems Plan, detention facilities identified in the Master Drainage Plan or Outfall Systems Plan shall be constructed. For lands where there is no Master Drainage Plan or Outfall Systems Plan, detention is required for all

APPENDIX B
STREET CAPACITY ANALYSIS

Minor Storm Gutter Capacities



$Q = Q_S / (1 - E_0)$

$E_0 = (1 + [(S_W / S_X) / ([1 + (S_W / S_X) / (T / W - 1)]^{8/3} - 1)])^{-1}$

$Q_S = (0.56 / n) * S_X^{5/3} * S_L^{1/2} * T_S^{8/3}$

$T_S = (T - W)$

Vista Reserve

Job Number: 2718-1

Local Streets - No curb overtopping. Flow may spread to crown of street

Basin	Basin Q_2 (cfs)	2-Yr. Upstream By-Pass Flows (cfs)	Design Q_2 (cfs)	Characteristics		Inputs							Calculations		
				FL-CL Width (ft)	Curb Type	S_X (ft/ft)	S_W (ft/ft)	Allowable Spread T (ft)	W (ft)	S_L (ft/ft)	n	Reduction Factor	E_0	Q_S (cfs)	Allowable Gutter Capacity (cfs)
C2	0.42	0	**0.42**	17.0	Mountable	0.020	0.083	**10.33**	2.00	**0.0190**	0.016	1.00	0.562	2.03	**4.63**
C3A	0.14	0	**0.14**	17.0	Mountable	0.020	0.083	**10.33**	2.00	**0.0400**	0.016	0.50	0.562	2.94	**3.36**
C3B	0.87	0	**0.87**	17.0	Mountable	0.020	0.083	**10.33**	2.00	**0.0300**	0.016	0.50	0.562	2.55	**2.91**
C4	0.45	0	**0.45**	17.0	Mountable	0.020	0.083	**10.33**	2.00	**0.0380**	0.016	0.50	0.562	2.87	**3.27**
C5	1.43	0	**1.43**	17.0	Mountable	0.020	0.083	**10.33**	2.00	**0.0270**	0.016	0.79	0.562	2.42	**4.36**
C6	1.06	0	**1.06**	17.0	Mountable	0.020	0.083	**10.33**	2.00	**0.0310**	0.016	0.72	0.562	2.59	**4.26**
C7	0.76	0	**0.76**	17.0	Mountable	0.020	0.083	**10.33**	2.00	**0.0280**	0.016	0.78	0.562	2.46	**4.39**
D2	1.09	0	**1.09**	17.0	Mountable	0.020	0.083	**10.33**	2.00	**0.0293**	0.016	0.77	0.562	2.52	**4.43**
D3	0.20	0	**0.20**	17.0	Mountable	0.020	0.083	**10.33**	2.00	**0.0100**	0.016	1.00	0.562	1.47	**3.36**
D4	1.17	0	**1.17**	17.0	Mountable	0.020	0.083	**10.33**	2.00	**0.0300**	0.016	0.74	0.562	2.55	**4.31**
D5	0.34	0	**0.34**	17.0	Mountable	0.020	0.083	**10.33**	2.00	**0.0100**	0.016	1.00	0.562	1.47	**3.36**
D6	0.27	0	**0.27**	17.0	Mountable	0.020	0.083	**10.33**	2.00	**0.0083**	0.016	1.00	0.562	1.34	**3.06**

100-Year Street Analysis - Downstream End of Basins C2 & C3A

Location :	NW Side of Trotter Place Cul-de-sac	
Contributing Basins :	C2 - C7	
Total Contributing Area :	6.72	acres
C_{100} :	0.57	
Time of Concentration :	16.2	min
100-Year One-Hour Rainfall Depth :	2.68	in
I_{100} :	5.87	in/hr
Q_{100} :	22.61	cfs
Summation of 100-Yr Inlet Capacities:	31.46	cfs
100-Year Street Flows at Downstream End of Basins C2 & C3 =	**0.00**	**cfs**

100-Year Street Capacity at the Downstream End of Basins C2 & C3 = 41.34 cfs

Time of Concentration

% Imperv-iousness	C_5	Overland Flow			Channelized Flow					T_c Eqn. 6-2 (min.)	Length (ft)	Slope (ft/ft)	T_c Eqn. 6-5 (min.)	Design T_c (min.)
		Length (ft)	Slope (ft/ft)	T_i Eqn. 6-3 (mins)	Length (ft)	Slope (ft/ft)	K	Note	T_t Eqn. 6-4 (mins)					
0.40	0.36	73	0.020	9.1	192	0.009	20	Curb	1.7	16.2	1295	0.026	28.2	**16.2**
					1103	0.029	20	Curb	5.4					

100-Year Street Capacity Calculations

Local Road - 60 foot Right-of-Way, 34.0 feet FL to FL, Mountable Curbs

$Q = (1.486 / n) * Area * (Area / Wetted Perimeter)^{2/3} * Slope^{1/2} * Reduction Factor$

Area 1 =	0.918	s.f.
Wetted Perimeter 1 =	9.59	ft
n =	0.035	
$(1.486 / n) * Area * (Area / Wetted Perimeter)^{2/3}$ =	8.16	
Area 2 =	10.259	s.f.
Wetted Perimeter 2 =	37.308	ft
n =	0.016	
$(1.486 / n) * Area * (Area / Wetted Perimeter)^{2/3}$ =	402.91	
Area 3 =	0.918	s.f.
Wetted Perimeter 3 =	9.59	ft
n =	0.035	
$(1.486 / n) * Area * (Area / Wetted Perimeter)^{2/3}$ =	8.16	
Total $(1.486 / n) * Area * (Area / Wetted Perimeter)^{2/3}$ =	419.23	

100-Year Street Capcacity = 419.23 * $Slope^{1/2}$ * Reduction Factor

Analyzed Section - Downstream End of C2

Slope =	0.0360	
Reduction Factor =	0.52	
100-Year Street Capcacity =	**41.34**	**cfs**

100-Year Street Analysis - Downstream End of Basins D2 & D3

Location :	NE Side of Remuda Place	
Contributing Basins :	D2 - D6	
Total Contributing Area :	2.80	acres
C_{100} :	0.69	
Time of Concentration :	11.7	min
100-Year One-Hour Rainfall Depth :	2.68	in
I_{100} :	6.81	in/hr
Q_{100} :	13.08	cfs
Summation of 100-Yr Inlet Capacities:	18.30	cfs
100-Year Street Flows at Downstream End of Basins D2 & D3 =	**0.00**	**cfs**

100-Year Street Capacity at the Downstream End of Basins D2 & D3 = 41.25 cfs

Time of Concentration

% Imperv-iousness	C_5	Overland Flow			Channelized Flow					T_c Eqn. 6-2 (min.)	Length (ft)	Slope (ft/ft)	T_c Eqn. 6-5 (min.)	Design T_c (min.)
		Length (ft)	Slope (ft/ft)	T_i Eqn. 6-3 (mins)	Length (ft)	Slope (ft/ft)	K	Note	T_t Eqn. 6-4 (mins)					
0.45	0.40	83	0.020	9.2	85	0.006	20	Curb	0.9	11.7	446	0.030	21.1	**11.7**
					361	0.036	20	Curb	1.6					

100-Year Street Capacity Calculations

Local Road - 60 foot Right-of-Way, 34.0 feet FL to FL, Mountable Curbs

$Q = (1.486 / n) * Area * (Area / Wetted Perimeter)^{2/3} * Slope^{1/2} * Reduction Factor$

Area 1 =	0.918	s.f.
Wetted Perimeter 1 =	9.59	ft
n =	0.035	
$(1.486 / n) * Area * (Area / Wetted Perimeter)^{2/3}$ =	8.16	
Area 2 =	10.259	s.f.
Wetted Perimeter 2 =	37.308	ft
n =	0.016	
$(1.486 / n) * Area * (Area / Wetted Perimeter)^{2/3}$ =	402.91	
Area 3 =	0.918	s.f.
Wetted Perimeter 3 =	9.59	ft
n =	0.035	
$(1.486 / n) * Area * (Area / Wetted Perimeter)^{2/3}$ =	8.16	
Total $(1.486 / n) * Area * (Area / Wetted Perimeter)^{2/3}$ =	419.23	

100-Year Street Capcacity = 419.23 * $Slope^{1/2}$ * Reduction Factor

Analyzed Section - Downstream End of D2

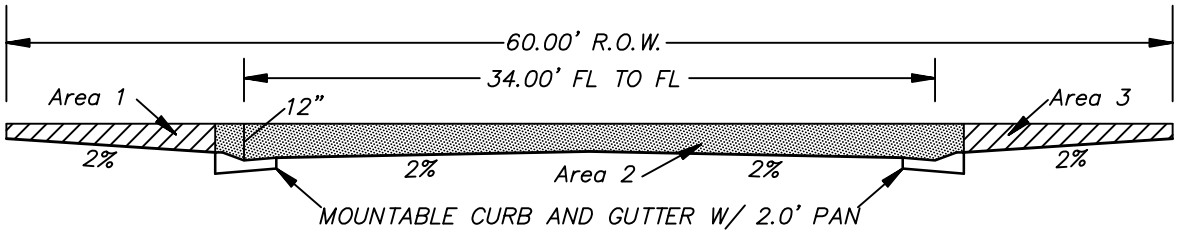
Slope =	0.0500	
Reduction Factor =	0.44	
100-Year Street Capcacity =	**41.25**	**cfs**

HURST & ASSOCIATES, INC.
CONSULTING ENGINEERS
1265 S. PUBLIC ROAD, SUITE B
Lafayette, Colorado 80026 (303) 449-9105

JOB 2718-1, VISTA RESERVE
CALCULATED BY JR DATE 03/17/2025
CHECKED BY _____ DATE _____
SCALE: NTS SHEET NO. _____ OF _____

STREET CAPACITY ANALYSIS: MAJOR STORM EVENT

LOCAL STREET: 60 FOOT R.O.W. (MOUNTABLE CURBS)



Allowable Depth at FL = 12 inches

AREA 1: 6.63 S.F.
WET PERIMETER: 12.17 FEET
n: 0.035

AREA 2: 25.44 S.F.
WET PERIMETER: 35.89 FEET
n: 0.016

AREA 3: 6.63 S.F.
WET PERIMETER: 12.17 FEET
n: 0.035

$$Q_{allow.} = \frac{1.486}{n}(A)\left(\frac{A}{W.P.}\right)^{2/3} S^{1/2} * \text{Reduction Factor}$$

$$Q_{allow.} = 2253.89 * S^{1/2} * \text{Reduction Factor}$$

Street Slope	Reduction Factor	Q_{ALLOW}
0.80%	1.0	201.59 cfs
1.00%	1.0	225.39 cfs
1.20%	1.0	246.90 cfs
1.40%	1.0	266.68 cfs
1.50%	1.0	276.04 cfs
1.70%	1.0	293.87 cfs
1.80%	1.0	302.39 cfs
2.00%	0.84	267.75 cfs
2.30%	0.74	252.95 cfs
2.70%	0.66	244.43 cfs
3.50%	0.54	227.70 cfs
3.80%	0.49	215.29 cfs

that is used for the allowable design flow, decreases as longitudinal slope increases.

It is important for street drainage designs that the allowable street hydraulic capacity be used instead of the calculated gutter-full capacity. Where the accumulated stormwater amount on the street approaches the allowable capacity, a street inlet should be installed.

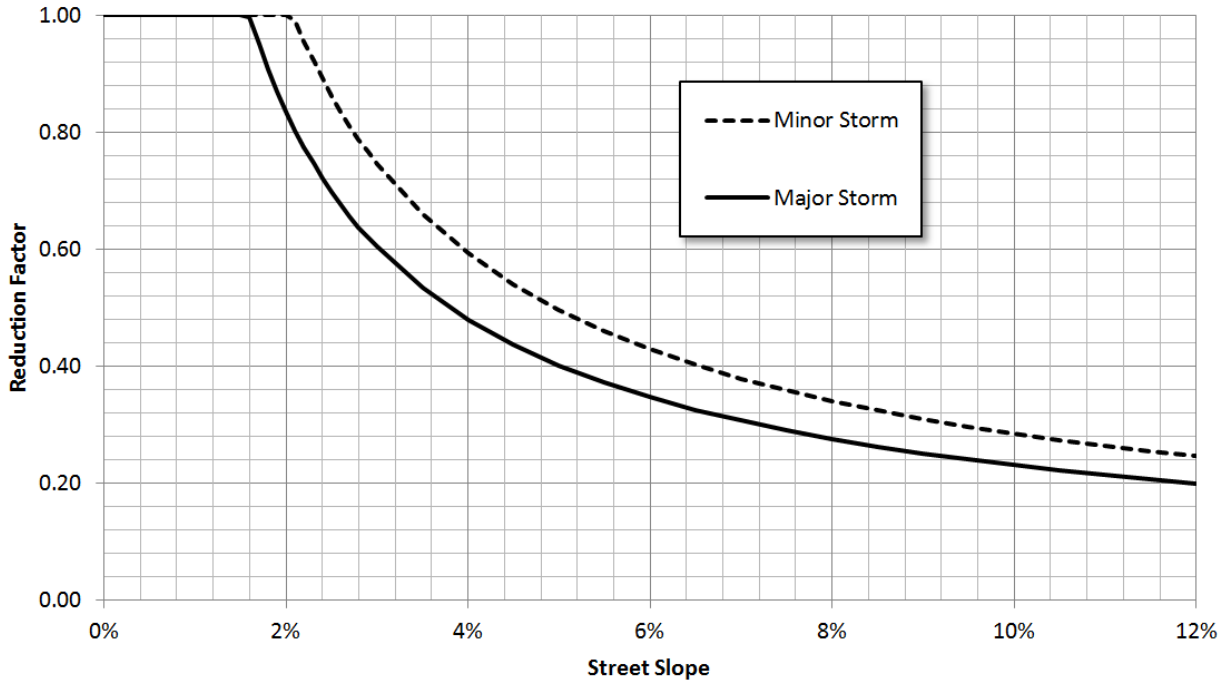


Figure 7-4. Reduction factor for gutter flow (Guo 2000b)

APPENDIX C
INLET ANALYSIS

Proposed Type 'R' Inlet Analysis

Minor Storm - Local Road

Structure Number	Contributing Basins	Area (acres)	Minor C_2	T_C (min.)	I_2 (in/hr)	2-Yr. Flows (cfs)	2-Yr. Upstream By-Pass Flows (cfs)	2-Yr. Design Flow (cfs)	Condition	Grade (%)	Curb Type	Inlet Length	Capacity per UDFCD Xcel 2-YR. (cfs)	2-Yr. By-Pass Flows (cfs)
SA-83G	D2, D3	1.21	0.49	11.0	2.11	**1.27**	0	**1.27**	Sump	-	Mountable	**15 Foot**	**2.79**	0.0
SA-83I	D4, D5	1.37	0.49	12.7	1.98	**1.33**	0	**1.33**	Sump	-	Mountable	**10 Foot**	**2.47**	0.0
SA-83K	D6	0.22	0.53	8.2	2.36	**0.27**	0	**0.27**	Sump	-	Mountable	**5 Foot**	**1.91**	0.0
SB-20G	C2, C3A	0.66	0.37	9.4	2.24	**0.55**	0	**0.55**	Sump	-	Mountable	**10 Foot**	**2.47**	0.0
SB-20J	C4	0.47	0.41	8.4	2.34	**0.45**	0	**0.45**	Cont.	5.0	Mountable	**10 Foot**	**0.45**	0.0
SB-20K	C3B	1.06	0.38	10.6	2.14	**0.87**	0	**0.87**	Cont.	5.0	Mountable	**10 Foot**	**0.87**	0.0
SB-20M	C5	1.91	0.38	12.5	2.00	**1.43**	0	**1.43**	Sump	-	Mountable	**10 Foot**	**2.47**	0.0
SB-20N	C6, C7	2.63	0.35	18.3	1.67	**1.54**	0	**1.54**	Sump	-	Mountable	**10 Foot**	**2.47**	0.0

Major Storm - Local Road

Structure Number	Contributing Basins	Area (acres)	Major C_{100}	T_C (min.)	I_{100} (in/hr)	100-Yr. Flows (cfs)	100-Yr. Upstream By-Pass Flows (cfs)	100-Yr. Design Flow (cfs)	Condition	Grade (%)	Curb Type	Inlet Length	Capacity per UDFCD Xcel 100-YR. (cfs)	100-Yr. By-Pass Flows (cfs)
SA-83G	D2, D3	1.21	0.69	11.0	6.99	**5.82**	0	**5.82**	Sump	-	Mountable	**10 Foot**	**6.86**	**0.0**
SA-83I	D4, D5	1.37	0.68	12.7	6.56	**6.14**	0	**6.14**	Sump	-	Mountable	**10 Foot**	**6.86**	0.0
SA-83K	D6	0.22	0.71	8.2	7.80	**1.20**	0	**1.20**	Sump	-	Mountable	**5 Foot**	**4.58**	0.0
SB-20G	C2, C3A	0.66	0.68	9.4	7.41	**3.35**	0.83	**4.18**	Sump	-	Mountable	**10 Foot**	**6.86**	**0.0**
SB-20J	C4	0.47	0.70	8.4	7.73	**2.53**	4.66	**7.19**	Cont.	5.0	Mountable	**10 Foot**	**6.45**	**0.74**
SB-20K	C3B	1.06	0.69	10.6	7.09	**5.16**	0	**5.16**	Cont.	5.0	Mountable	**10 Foot**	**5.07**	**0.09**
SB-20M	C5	1.91	0.69	12.5	6.61	**8.62**	2.90	**11.52**	Sump	-	Mountable	**10 Foot**	**6.86**	**4.66**
SB-20N	C6, C7	2.63	0.67	18.3	5.52	**9.76**	0	**9.76**	Sump	-	Mountable	**10 Foot**	**6.86**	**2.90**

Intensity = 28.5 * P_1 / ((10 + T_C)$^{0.786}$)

Erie One-Hour Rainfall Depths

2-Year =	0.81
10-Year =	1.39
100-Year =	2.68

P_1 = 1-hour point rainfall depth

T_c = Time of Concentration

Existing/Offsite Type 'R' Inlet Analysis

Job Number: 2718-1

Minor Storm - Local Road

Structure Number	Contributing Basins	Area (acres)	Minor C_2	T_C (min.)	I_2 (in/hr)	2-Yr. Flows (cfs)	2-Yr. Upstream By-Pass Flows (cfs)	2-Yr. Design Flow (cfs)	Condition	Grade (%)	Curb Type	Inlet Length	Capacity per UDFCD Xcel 2-YR. (cfs)	2-Yr. By-Pass Flows (cfs)
SA-88	A21-3	2.13	0.39	12.5	2.00	**1.66**	0	**1.66**	Cont.	2.7	Mountable	**5 Foot**	**1.70**	0.00
SA-82	A21-4	0.51	0.48	5.0	2.75	**0.67**	0.00	**0.67**	Cont.	2.5	Mountable	**5 Foot**	**0.67**	0
SA-78	A21-5, A21-6	4.80	0.36	5.0	2.75	**4.79**	0	**4.79**	Sump	-	Mountable	**10 Foot**	**2.47**	2.32
SB-45	B4-9	1.00	0.42	5.0	2.75	**1.15**	0	**1.15**	Sump	-	Mountable	**5 Foot**	**1.91**	0.0
SB-40	B4-8	2.01	0.34	5.0	2.75	**1.89**	0	**1.89**	Cont.	2.9	Mountable	**5 Foot**	**1.89**	0.0
SB-28	B4-10, B4-11	2.95	0.34	5.0	2.75	**2.72**	0	**2.72**	Sump	-	Mountable	**5 Foot**	**1.91**	0.81
SB-24	B4-17	1.10	0.33	12.9	1.97	**0.71**	0	**0.71**	Cont.	3.2	Mountable	**5 Foot**	**0.71**	0.0
SB-21	B4-13	0.59	0.43	5.0	2.75	**0.70**	0	**0.70**	Sump	-	Mountable	**5 Foot**	**1.91**	0.0
SB-15	B4-12	1.72	0.40	5.0	2.75	**1.90**	0	**1.90**	Sump	-	Vert.	**10 Foot**	**2.81**	0.0

Structure Number	Contributing Basins	Previous Drainge Reports		Current Design Standards		Decrease in Basin Area?	Decrease in Flow Rate?
		Area (acres)	2-Yr Design Flow (cfs)	Area (acres)	2-Yr Design Flow (cfs)		
SA-88	A21-3	2.94	3.39	2.13	1.66	**Yes**	**Yes**
SA-82	A21-4	2.54	3.24	0.51	0.67	**Yes**	**Yes**
SA-78	A21-5, A21-6	6.07	6.39	4.80	4.79	**Yes**	**Yes**
SB-45	B4-9	1.02	1.58	1.00	1.15	**Yes**	**Yes**
SB-40	B4-8	2.93	3.57	2.01	1.89	**Yes**	**Yes**
SB-28	B4-10, B4-11	3.88	4.34	2.95	2.72	**Yes**	**Yes**
SB-24	B4-17	2.06	5.34	1.10	0.71	**Yes**	**Yes**
SB-21	B4-13	4.03	4.87	0.59	0.70	**Yes**	**Yes**

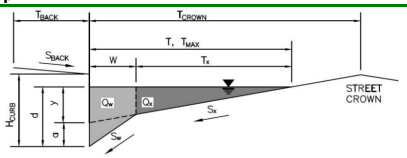
Note: Existing Inlet area and flow rates from Vista Ridge Parcel 10, Filing 1K Drainage Report dated January 7, 2011.

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Vista Reserve

5-ft Local, Mount, Sump



Gutter Geometry:			
Maximum Allowable Width for Spread Behind Curb	T_{BACK} =	12.2	ft
Side Slope Behind Curb (leave blank for no conveyance credit behind curb)	S_{BACK} =	0.020	ft/ft
Manning's Roughness Behind Curb (typically between 0.012 and 0.020)	n_{BACK} =	0.020	
Height of Curb at Gutter Flow Line	H_{CURB} =	4.00	inches
Distance from Curb Face to Street Crown	T_{CROWN} =	17.0	ft
Gutter Width	W =	2.00	ft
Street Transverse Slope	S_X =	0.020	ft/ft
Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)	S_W =	0.083	ft/ft
Street Longitudinal Slope - Enter 0 for sump condition	S_O =	0.000	ft/ft
Manning's Roughness for Street Section (typically between 0.012 and 0.020)	n_{STREET} =	0.016	

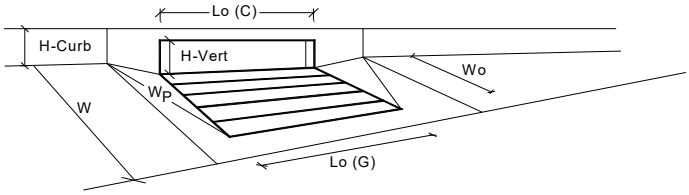
		Minor Storm	Major Storm	
Max. Allowable Spread for Minor & Major Storm	T_{MAX} =	17.0	17.0	ft
Max. Allowable Depth at Gutter Flowline for Minor & Major Storm	d_{MAX} =	4.0	12.0	inches
Check boxes are not applicable in SUMP conditions		☐	☐	

MINOR STORM Allowable Capacity is not applicable to Sump Condition
MAJOR STORM Allowable Capacity is not applicable to Sump Condition

	Minor Storm	Major Storm	
Q_{allow} =	**SUMP**	**SUMP**	**cfs**

INLET IN A SUMP OR SAG LOCATION

MHFD-Inlet, Version 5.03 (August 2023)



Design Information (Input)		MINOR	MAJOR	
Type of Inlet	Type =	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a' from above)	a_{local} =	5.00	5.00	inches
Number of Unit Inlets (Grate or Curb Opening)	No =	1	1	
Water Depth at Flowline (outside of local depression)	Ponding Depth =	4.0	5.6	inches

Grate Information		MINOR	MAJOR	☐ Override Depths
Length of a Unit Grate	L_o (G) =	N/A	N/A	feet
Width of a Unit Grate	W_o =	N/A	N/A	feet
Open Area Ratio for a Grate (typical values 0.15-0.90)	A_{ratio} =	N/A	N/A	
Clogging Factor for a Single Grate (typical value 0.50 - 0.70)	C_f (G) =	N/A	N/A	
Grate Weir Coefficient (typical value 2.15 - 3.60)	C_w (G) =	N/A	N/A	
Grate Orifice Coefficient (typical value 0.60 - 0.80)	C_o (G) =	N/A	N/A	

Curb Opening Information		MINOR	MAJOR	
Length of a Unit Curb Opening	L_o (C) =	5.00	5.00	feet
Height of Vertical Curb Opening in Inches	H_{vert} =	6.00	6.00	inches
Height of Curb Orifice Throat in Inches	H_{throat} =	6.00	6.00	inches
Angle of Throat	Theta =	63.40	63.40	degrees
Side Width for Depression Pan (typically the gutter width of 2 feet)	W_p =	2.00	2.00	feet
Clogging Factor for a Single Curb Opening (typical value 0.10)	C_f (C) =	0.10	0.10	
Curb Opening Weir Coefficient (typical value 2.3-3.7)	C_w (C) =	3.60	3.60	
Curb Opening Orifice Coefficient (typical value 0.60 - 0.70)	C_o (C) =	0.67	0.67	

Low Head Performance Reduction (Calculated)		MINOR	MAJOR	
Depth for Grate Midwidth	d_{Grate} =	N/A	N/A	ft
Depth for Curb Opening Weir Equation	d_{Curb} =	0.17	0.30	ft
Grated Inlet Performance Reduction Factor for Long Inlets	RF_{Grate} =	N/A	N/A	
Curb Opening Performance Reduction Factor for Long Inlets	RF_{Curb} =	1.00	1.00	
Combination Inlet Performance Reduction Factor for Long Inlets	$RF_{Combination}$ =	N/A	N/A	

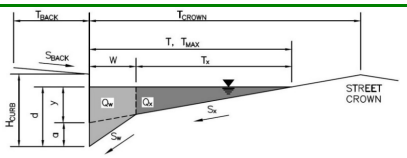
		MINOR	MAJOR	
Total Inlet Interception Capacity (assumes clogged condition)	**Q_a =**	**1.91**	**4.58**	**cfs**
WARNING: Inlet Capacity < Q Peak for Minor and Major Storms	$Q_{PEAK\ REQUIRED}$ =	2.0	5.0	cfs

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Vista Reserve

10-ft, Mount, Sump



Gutter Geometry:			
Maximum Allowable Width for Spread Behind Curb	T_{BACK} =	12.2	ft
Side Slope Behind Curb (leave blank for no conveyance credit behind curb)	S_{BACK} =	0.020	ft/ft
Manning's Roughness Behind Curb (typically between 0.012 and 0.020)	n_{BACK} =	0.020	
Height of Curb at Gutter Flow Line	H_{CURB} =	4.00	inches
Distance from Curb Face to Street Crown	T_{CROWN} =	17.0	ft
Gutter Width	W =	2.00	ft
Street Transverse Slope	S_X =	0.020	ft/ft
Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)	S_W =	0.083	ft/ft
Street Longitudinal Slope - Enter 0 for sump condition	S_O =	0.000	ft/ft
Manning's Roughness for Street Section (typically between 0.012 and 0.020)	n_{STREET} =	0.016	

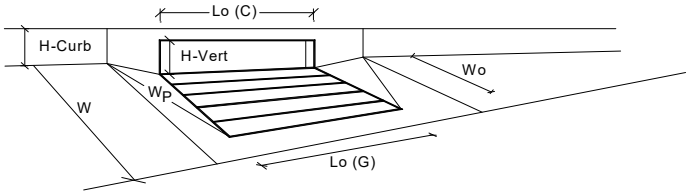
		Minor Storm	Major Storm	
Max. Allowable Spread for Minor & Major Storm	T_{MAX} =	17.0	17.0	ft
Max. Allowable Depth at Gutter Flowline for Minor & Major Storm	d_{MAX} =	4.0	12.0	inches
Check boxes are not applicable in SUMP conditions		☐	☐	

MINOR STORM Allowable Capacity is not applicable to Sump Condition
MAJOR STORM Allowable Capacity is not applicable to Sump Condition

	Minor Storm	Major Storm	
Q_{allow} =	**SUMP**	**SUMP**	**cfs**

INLET IN A SUMP OR SAG LOCATION

MHFD-Inlet, Version 5.03 (August 2023)



Design Information (Input)	CDOT Type R Curb Opening			
Type of Inlet	Type =	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a' from above)	a_{local} =	5.00	5.00	inches
Number of Unit Inlets (Grate or Curb Opening)	No =	1	1	
Water Depth at Flowline (outside of local depression)	Ponding Depth =	4.0	5.6	inches

Grate Information		MINOR	MAJOR	☐ Override Depths
Length of a Unit Grate	L_o (G) =	N/A	N/A	feet
Width of a Unit Grate	W_o =	N/A	N/A	feet
Open Area Ratio for a Grate (typical values 0.15-0.90)	A_{ratio} =	N/A	N/A	
Clogging Factor for a Single Grate (typical value 0.50 - 0.70)	C_f (G) =	N/A	N/A	
Grate Weir Coefficient (typical value 2.15 - 3.60)	C_w (G) =	N/A	N/A	
Grate Orifice Coefficient (typical value 0.60 - 0.80)	C_o (G) =	N/A	N/A	

Curb Opening Information		MINOR	MAJOR	
Length of a Unit Curb Opening	L_o (C) =	10.00	10.00	feet
Height of Vertical Curb Opening in Inches	H_{vert} =	6.00	6.00	inches
Height of Curb Orifice Throat in Inches	H_{throat} =	6.00	6.00	inches
Angle of Throat	Theta =	63.40	63.40	degrees
Side Width for Depression Pan (typically the gutter width of 2 feet)	W_p =	2.00	2.00	feet
Clogging Factor for a Single Curb Opening (typical value 0.10)	C_f (C) =	0.10	0.10	
Curb Opening Weir Coefficient (typical value 2.3-3.7)	C_w (C) =	3.60	3.60	
Curb Opening Orifice Coefficient (typical value 0.60 - 0.70)	C_o (C) =	0.67	0.67	

Low Head Performance Reduction (Calculated)		MINOR	MAJOR	
Depth for Grate Midwidth	d_{Grate} =	N/A	N/A	ft
Depth for Curb Opening Weir Equation	d_{Curb} =	0.17	0.30	ft
Grated Inlet Performance Reduction Factor for Long Inlets	RF_{Grate} =	N/A	N/A	
Curb Opening Performance Reduction Factor for Long Inlets	RF_{Curb} =	0.79	0.91	
Combination Inlet Performance Reduction Factor for Long Inlets	$RF_{Combination}$ =	N/A	N/A	

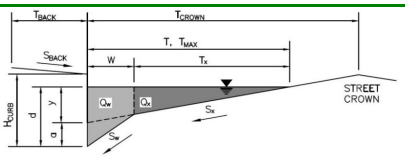
		MINOR	MAJOR	
Total Inlet Interception Capacity (assumes clogged condition)	**Q_a =**	**2.47**	**6.86**	**cfs**
Inlet Capacity IS GOOD for Minor and Major Storms (>Q Peak)	$Q_{PEAK\ REQUIRED}$ =	2.0	5.0	cfs

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Vista Reserve

15-ft, Mount, Sump



Gutter Geometry:			
Maximum Allowable Width for Spread Behind Curb	T_{BACK} =	12.2	ft
Side Slope Behind Curb (leave blank for no conveyance credit behind curb)	S_{BACK} =	0.020	ft/ft
Manning's Roughness Behind Curb (typically between 0.012 and 0.020)	n_{BACK} =	0.020	
Height of Curb at Gutter Flow Line	H_{CURB} =	4.00	inches
Distance from Curb Face to Street Crown	T_{CROWN} =	17.0	ft
Gutter Width	W =	2.00	ft
Street Transverse Slope	S_X =	0.020	ft/ft
Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)	S_W =	0.083	ft/ft
Street Longitudinal Slope - Enter 0 for sump condition	S_O =	0.000	ft/ft
Manning's Roughness for Street Section (typically between 0.012 and 0.020)	n_{STREET} =	0.016	

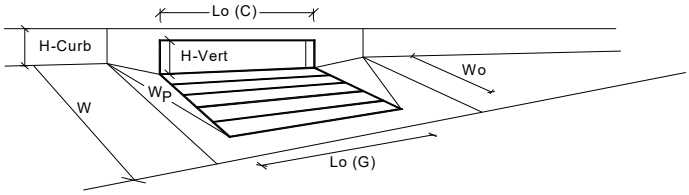
		Minor Storm	Major Storm	
Max. Allowable Spread for Minor & Major Storm	T_{MAX} =	17.0	17.0	ft
Max. Allowable Depth at Gutter Flowline for Minor & Major Storm	d_{MAX} =	4.0	12.0	inches
Check boxes are not applicable in SUMP conditions		☐	☐	

MINOR STORM Allowable Capacity is not applicable to Sump Condition
MAJOR STORM Allowable Capacity is not applicable to Sump Condition

	Minor Storm	Major Storm	
Q_{allow} =	**SUMP**	**SUMP**	**cfs**

INLET IN A SUMP OR SAG LOCATION

MHFD-Inlet, Version 5.03 (August 2023)



Design Information (Input)	CDOT Type R Curb Opening	MINOR	MAJOR	
Type of Inlet	Type =	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a' from above)	a_{local} =	5.00	5.00	inches
Number of Unit Inlets (Grate or Curb Opening)	No =	1	1	
Water Depth at Flowline (outside of local depression)	Ponding Depth =	4.0	5.6	inches

Grate Information		MINOR	MAJOR	☐ Override Depths
Length of a Unit Grate	L_o (G) =	N/A	N/A	feet
Width of a Unit Grate	W_o =	N/A	N/A	feet
Open Area Ratio for a Grate (typical values 0.15-0.90)	A_{ratio} =	N/A	N/A	
Clogging Factor for a Single Grate (typical value 0.50 - 0.70)	C_f (G) =	N/A	N/A	
Grate Weir Coefficient (typical value 2.15 - 3.60)	C_w (G) =	N/A	N/A	
Grate Orifice Coefficient (typical value 0.60 - 0.80)	C_o (G) =	N/A	N/A	

Curb Opening Information		MINOR	MAJOR	
Length of a Unit Curb Opening	L_o (C) =	15.00	15.00	feet
Height of Vertical Curb Opening in Inches	H_{vert} =	6.00	6.00	inches
Height of Curb Orifice Throat in Inches	H_{throat} =	6.00	6.00	inches
Angle of Throat	Theta =	63.40	63.40	degrees
Side Width for Depression Pan (typically the gutter width of 2 feet)	W_p =	2.00	2.00	feet
Clogging Factor for a Single Curb Opening (typical value 0.10)	C_f (C) =	0.10	0.10	
Curb Opening Weir Coefficient (typical value 2.3-3.7)	C_w (C) =	3.60	3.60	
Curb Opening Orifice Coefficient (typical value 0.60 - 0.70)	C_o (C) =	0.67	0.67	

Low Head Performance Reduction (Calculated)		MINOR	MAJOR	
Depth for Grate Midwidth	d_{Grate} =	N/A	N/A	ft
Depth for Curb Opening Weir Equation	d_{Curb} =	0.17	0.30	ft
Grated Inlet Performance Reduction Factor for Long Inlets	RF_{Grate} =	N/A	N/A	
Curb Opening Performance Reduction Factor for Long Inlets	RF_{Curb} =	0.64	0.76	
Combination Inlet Performance Reduction Factor for Long Inlets	$RF_{Combination}$ =	N/A	N/A	

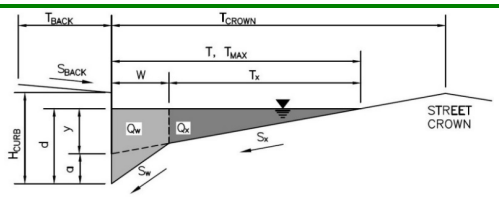
		MINOR	MAJOR	
Total Inlet Interception Capacity (assumes clogged condition)	**Q_a =**	**2.79**	**8.01**	**cfs**
WARNING: Inlet Capacity < Q Peak for Minor and Major Storms	$Q_{PEAK\ REQUIRED}$ =	5.0	10.0	cfs

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Vista Reserve

SB-20J



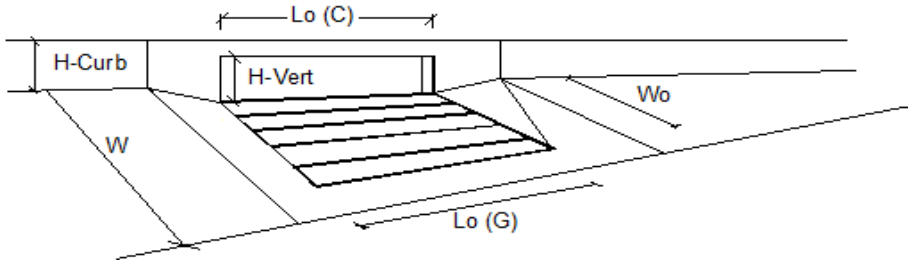
Gutter Geometry:				
Maximum Allowable Width for Spread Behind Curb	T_{BACK} =	12.2		ft
Side Slope Behind Curb (leave blank for no conveyance credit behind curb)	S_{BACK} =	0.020		ft/ft
Manning's Roughness Behind Curb (typically between 0.012 and 0.020)	n_{BACK} =	0.020		
Height of Curb at Gutter Flow Line	H_{CURB} =	4.00		inches
Distance from Curb Face to Street Crown	T_{CROWN} =	17.0		ft
Gutter Width	W =	2.00		ft
Street Transverse Slope	S_X =	0.020		ft/ft
Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)	S_W =	0.083		ft/ft
Street Longitudinal Slope - Enter 0 for sump condition	S_O =	0.050		ft/ft
Manning's Roughness for Street Section (typically between 0.012 and 0.020)	n_{STREET} =	0.016		
		Minor Storm	Major Storm	
Max. Allowable Spread for Minor & Major Storm	T_{MAX} =	17.0	17.0	ft
Max. Allowable Depth at Gutter Flowline for Minor & Major Storm	d_{MAX} =	4.0	12.0	inches
Allow Flow Depth at Street Crown (check box for yes, leave blank for no)		☐	☐	
		Minor Storm	Major Storm	
MINOR STORM Allowable Capacity is based on Depth Criterion MAJOR STORM Allowable Capacity is based on Spread Criterion	**Q_{allow} =**	**7.6**	**25.7**	**cfs**

Minor storm max. allowable capacity GOOD - greater than the design peak flow of 0.45 cfs on sheet 'Inlet Management'

Major storm max. allowable capacity GOOD - greater than the design peak flow of 7.19 cfs on sheet 'Inlet Management'

INLET ON A CONTINUOUS GRADE

MHFD-Inlet, Version 5.03 (August 2023)

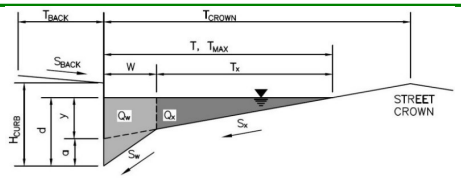


Design Information (Input)		MINOR	MAJOR	
Type of Inlet (CDOT Type R Curb Opening)	Type =	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a')	a_{LOCAL} =	5.0	5.0	inches
Total Number of Units in the Inlet (Grate or Curb Opening)	No =	1	1	
Length of a Single Unit Inlet (Grate or Curb Opening)	L_o =	10.00	10.00	ft
Width of a Unit Grate (cannot be greater than W, Gutter Width)	W_o =	N/A	N/A	ft
Clogging Factor for a Single Unit Grate (typical min. value = 0.5)	C_f (G) =	N/A	N/A	
Clogging Factor for a Single Unit Curb Opening (typical min. value = 0.1)	C_f (C) =	0.10	0.10	
Street Hydraulics: OK - Q < Allowable Street Capacity'		**MINOR**	**MAJOR**	
Total Inlet Interception Capacity	**Q =**	**0.45**	**6.45**	**cfs**
Total Inlet Carry-Over Flow (flow bypassing inlet)	**Q_b =**	**0.0**	**0.7**	**cfs**
Capture Percentage = Q_a/Q_o	**C% =**	**100**	**90**	**%**

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project: **Vista Reserve**
Inlet ID: **SB-20K**

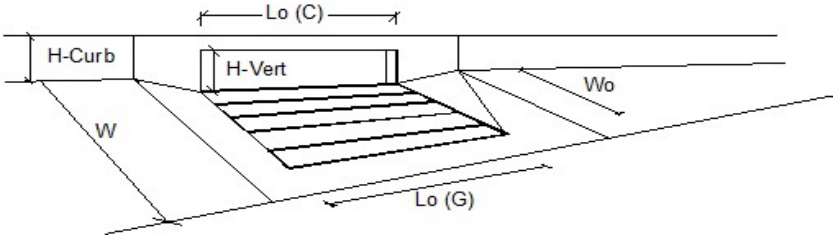


Gutter Geometry:				
Maximum Allowable Width for Spread Behind Curb	T_{BACK} =	12.2		ft
Side Slope Behind Curb (leave blank for no conveyance credit behind curb)	S_{BACK} =	0.020		ft/ft
Manning's Roughness Behind Curb (typically between 0.012 and 0.020)	n_{BACK} =	0.020		
Height of Curb at Gutter Flow Line	H_{CURB} =	4.00		inches
Distance from Curb Face to Street Crown	T_{CROWN} =	17.0		ft
Gutter Width	W =	2.00		ft
Street Transverse Slope	S_X =	0.020		ft/ft
Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)	S_W =	0.083		ft/ft
Street Longitudinal Slope - Enter 0 for sump condition	S_O =	0.050		ft/ft
Manning's Roughness for Street Section (typically between 0.012 and 0.020)	n_{STREET} =	0.016		
		Minor Storm	Major Storm	
Max. Allowable Spread for Minor & Major Storm	T_{MAX} =	17.0	17.0	ft
Max. Allowable Depth at Gutter Flowline for Minor & Major Storm	d_{MAX} =	4.0	12.0	inches
Allow Flow Depth at Street Crown (check box for yes, leave blank for no)		☐	☐	
		Minor Storm	Major Storm	
MINOR STORM Allowable Capacity is based on Depth Criterion				
MAJOR STORM Allowable Capacity is based on Spread Criterion	**Q_{allow} =**	**7.6**	**25.7**	**cfs**

Minor storm max. allowable capacity GOOD - greater than the design peak flow of 0.87 cfs on sheet 'Inlet Management'
Major storm max. allowable capacity GOOD - greater than the design peak flow of 5.16 cfs on sheet 'Inlet Management'

INLET ON A CONTINUOUS GRADE

MHFD-Inlet, Version 5.03 (August 2023)



Design Information (Input)	CDOT Type R Curb Opening			
		MINOR	MAJOR	
Type of Inlet	Type =	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a')	a_{LOCAL} =	5.0	5.0	inches
Total Number of Units in the Inlet (Grate or Curb Opening)	No =	1	1	
Length of a Single Unit Inlet (Grate or Curb Opening)	L_o =	10.00	10.00	ft
Width of a Unit Grate (cannot be greater than W, Gutter Width)	W_o =	N/A	N/A	ft
Clogging Factor for a Single Unit Grate (typical min. value = 0.5)	C_f (G) =	N/A	N/A	
Clogging Factor for a Single Unit Curb Opening (typical min. value = 0.1)	C_f (C) =	0.10	0.10	
Street Hydraulics: OK - Q < Allowable Street Capacity'		MINOR	MAJOR	
Total Inlet Interception Capacity	**Q =**	**0.87**	**5.07**	**cfs**
Total Inlet Carry-Over Flow (flow bypassing inlet)	**Q_b =**	**0.0**	**0.1**	**cfs**
Capture Percentage = Q_a/Q_o	**C% =**	**100**	**98**	**%**

APPENDIX D
PRELIMINARY STORM PIPE SIZING

Storm Pipe Sizing - Minor Storm Event

Vista Reserve
Job Number: 2718-1

Pond C Pipe Analysis

Design Points		Onsite Basins	Area (acres)	Minor	Major	Length (ft)	Routed T_C			T_c (min)	I_2 (in/hr)	I_{100} (in/hr)	2-Year Design Flow (cfs)	100-Year Design Flow (cfs)	Pipe Size (in)	Prelim. Pipe Slope (ft/ft)	Pipe Capacity (cfs)
Upstream	Downstream			C_2	C_{100}		Route	T_i (min)	T_t (min)								
SB-20N	**SB-20M**	C6, C7	2.63	0.35	0.67	35.3	C7	18.3	0.0	18.3	*1.67*	*5.52*	1.54	**9.76**	**18**	0.0200	14.86
SB-20M	**SB-20L**	C5 - C7	4.53	0.36	0.68	42.7	SB-20N	18.3	0.1	18.4	*1.66*	*5.50*	2.72	**16.91**	**18**	0.0200	14.86
SB-20L	**SB-20I**	C5 - C7	4.53	0.36	0.68	236.9	SB-20M	18.4	0.1	18.6	*1.66*	*5.48*	2.71	**16.84**	**18**	0.0340	19.37
SB-20K	**SB-20I**	C3B	1.06	0.38	0.69	20.6	C3B	10.6	0.0	10.6	*2.14*	*7.09*	0.87	**5.16**	**15**	0.0200	9.14
SB-20J	**SB-20I**	C4	0.47	0.41	0.70	15.6	C4	8.4	0.0	8.4	*2.34*	*7.73*	0.45	**2.53**	**15**	0.0200	9.14
SB-20I	**SB-20H**	C3B. C4 - C7	6.06	0.37	0.68	66.0	SB-20L	18.6	0.8	19.4	*1.62*	*5.36*	3.62	**22.14**	**18**	0.0450	22.28
SB-20H	**SB-20G**	C3B. C4 - C7	6.06	0.37	0.68	37.2	SB-20I	19.4	0.2	19.6	*1.61*	*5.33*	3.60	**22.01**	**18**	0.0400	21.01
SB-20G	**SB-20F**	C2 - C7	6.72	0.37	0.68	45.7	SB-20H	19.6	0.1	19.7	*1.61*	*5.31*	3.98	**24.34**	**24**	0.0400	45.24
SB-20F	**SB-20C**	C2 - C7	6.72	0.37	0.68	62.7	SB-20G	19.7	0.2	19.9	*1.60*	*5.29*	3.96	**24.24**	**24**	0.0400	45.24
SB-20E	**SB-20C**	C10	0.64	0.21	0.60	104.8	C10	7.6	0.0	7.6	*2.43*	*8.03*	0.33	**3.11**	**12**	0.0100	3.56
SB-15C	**SB-15B**	Pond C Release	-	-	-	13.0	-	-	-	-	-	-	0.12	**14.70**	**18**	0.0200	14.86
SB-15B	**SB-15A**		-	-	-	117.4	-	-	-	-	-	-	0.12	**14.70**	**18**	0.0200	14.86
SB-15A	**SB-15**		-	-	-	45.0	-	-	-	-	-	-	0.12	**14.70**	**18**	0.0200	14.86
SB-15	**SB-14**	Existing Storm System [2]	-	-	-	45.0	-	-	-	-	-	-	0.12	**-**	**18**	0.0449	22.26

Pond D Pipe Analysis

Design Points		Onsite Basins	Area (acres)	Minor	Major	Length (ft)	Routed T_C			T_c (min)	I_2 (in/hr)	I_{100} (in/hr)	2-Year Design Flow (cfs)	100-Year Design Flow (cfs)	Pipe Size (in)	Prelim. Pipe Slope (ft/ft)	Pipe Capacity (cfs)
Upstream	Downstream			C_2	C_{100}		Route	T_i (min)	T_t (min)								
SA-83K	**SA-83J**	D6	0.22	0.42	0.71	26.9	D6	8.2	0.0	8.2	*2.36*	*7.80*	0.22	**1.20**	**15**	0.0200	9.14
SA-83J	**SA-83H**	D6	0.22	0.42	0.71	94.0	SA-83K	8.2	0.1	8.3	*2.35*	*7.77*	0.21	**1.19**	**18**	0.0200	14.86
SA-83I	**SA-83H**	D4, D5	1.37	0.37	0.68	17.7	D5	12.7	0.0	12.7	*1.98*	*6.56*	1.01	**6.14**	**18**	0.0200	14.86
SA-83H	**SA-83G**	D4 - D6	1.59	0.38	0.69	17.7	SA-83I	12.7	0.1	12.8	*1.98*	*6.55*	1.19	**7.13**	**18**	0.0200	14.86
SA-83G	**SA-83F**	D2 - D6	2.80	0.38	0.69	120.0	SA-83H	12.8	0.1	12.8	*1.98*	*6.54*	2.09	**12.56**	**18**	0.0500	23.49
SA-83F	**SA-83C**	D2 - D6	2.80	0.38	0.69	58.0	SA-83G	12.8	0.4	13.2	*1.95*	*6.45*	2.06	**12.39**	**18**	0.0500	23.49
SA-83E	**SA-83D**	D7	0.57	0.22	0.61	129.9	D7	8.9	0.0	8.9	*2.30*	*7.59*	0.28	**2.62**	**12**	0.0100	3.56
SA-83D	**SA-83C**	D7, D8	0.99	0.22	0.60	97.3	SA-83E	8.9	0.4	9.3	*2.25*	*7.46*	0.49	**4.47**	**12**	0.0100	3.56
SA-83B	**SA-83A**	Pond D Release	-	-	-	56.1	-	-	-	-	-	-	0.05	**3.87**	**18**	0.0100	10.50
EX. SA-84	**EX. SA-83**	Existing Storm System [2]	-	-	-	264.6							11.90	**-**	**24**	0.0216	33.25

Notes:
1. Manning's Equation was used to determine pipe capacities.
2. Existing storm system flow rates are from Vista Ridge Filing 1K Drainage report & Vista Parkway Construction plans.

Intensity = $28.5 * P_1 / ((10 + T_C)^{0.786})$

Erie One-Hour Rainfall Depths

2-Year =	0.81	
10-Year =	1.39	P_1 = 1-hour point rainfall depth
100-Year =	2.68	T_c = Time of Concentration

Storm Pipe Sizing - Major Storm Event

Vista Reserve

Job Number: 2718-1

Pond C Pipe Analysis

Design Points		Additional Contributing Inlet	100-Year Inlet Capacity (cfs)	Basin Q100 (cfs)	100-Year Design Flow (cfs)	Pipe Size (in)	Prelim. Pipe Slope (ft/ft)	Pipe Capacity (cfs)
Upstream	Downstream							
SB-20N	**SB-20M**	SB-20N	6.86	-	**6.86**	**18**	0.0200	14.86
SB-20M	**SB-20L**	SB-20M	6.86	-	**13.72**	**18**	0.0200	14.86
SB-20L	**SB-20I**	-	-	-	**13.72**	**18**	0.0360	19.92
SB-20K	**SB-20I**	SB-20K	5.07	-	**5.07**	**15**	0.0200	9.14
SB-20J	**SB-20I**	SB-20J	6.45	-	**6.45**	**15**	0.0200	9.14
SB-20I	**SB-20H**	-	-	-	**25.24**	**18**	0.0500	23.49
SB-20H	**SB-20G**	-	-	-	**25.24**	**18**	0.0500	23.49
SB-20G	**SB-20F**	SB-20G	-	4.18	**29.42**	**24**	0.0400	45.24
SB-20F	**SB-20C**	-	-	0	**29.42**	**24**	0.0400	45.24
SB-20E	**SB-20C**		-	3.11	**3.11**	**12**	0.0200	5.04
SB-15C	**SB-15B**	Pond C 100-YR Release	-	-	**14.70**	**18**	0.0200	14.86
SB-15B	**SB-15A**		-	-	**14.70**	**18**	0.0200	14.86
SB-15A	**SB-15**		-	-	**14.70**	**18**	0.0200	14.86
SB-15	**SB-14**	Ex. SB-15	6.08	-	**20.78**	**18**	0.0449	22.26

Pond D Pipe Analysis

Design Points		Additional Contributing Inlet	100-Year Inlet Capacity (cfs)	Basin Q100 (cfs)	100-Year Design Flow (cfs)	Pipe Size (in)	Prelim. Pipe Slope (ft/ft)	Pipe Capacity (cfs)
Upstream	Downstream							
SA-83K	**SA-83J**	SA-83K	-	1.20	**1.20**	**18**	0.0200	14.86
SA-83J	**SA-83H**	-	-	-	**1.20**	**18**	0.0200	14.86
SA-83I	**SA-83H**	SA-83I	-	6.14	**6.14**	**18**	0.0200	14.86
SA-83H	**SA-83G**	-	-	-	**7.33**	**18**	0.0200	14.86
SA-83G	**SA-83F**	SA-83G	-	5.82	**13.15**	**18**	0.0400	21.01
SA-83F	**SA-83C**	-	-	-	**13.15**	**18**	0.0400	21.01
SA-83E	**SA-83D**	SA-83E	-	2.62	**2.62**	**12**	0.0100	3.56
SA-83D	**SA-83C**	SA-83D	-	2.00	**4.62**	**12**	0.0200	5.04
SA-83B	**SA-83A**	Pond D 100-YR Release	-	-	**3.87**	**18**	0.0100	10.50

Notes:

1. Manning's Equation was used to determine pipe capacities.

Intensity = 28.5 * P_1 / ((10 + T_C)$^{0.786}$)

Erie One-Hour Rainfall Depths

2-Year =	0.81
10-Year =	1.39
100-Year =	2.68

P_1 = 1-hour point rainfall depth

T_c = Time of Concentration

APPENDIX E
100-YEAR STREET OVERFLOW ANALYSIS

100-Year Storm Overflow at SA-83G

Contributing Basins :	D2 - D6
Contributing Area :	2.80 acres
C_{100} :	0.69
I_{100} :	6.81
Q_{100} :	13.08 cfs
Summation of 100-Yr Inlet Capacities:	18.30 cfs
100-Year Flows Overtopping SA-83G :	**0.00 cfs**

Times of Concentration

% Imperv-iousness	C_5	Overland Flow			Channelized Flow					T_c Eqn. 6-2 (min.)	Length (ft)	Slope (ft/ft)	T_c Eqn. 6-5 (min.)	Design T_c (min.)
		Length (ft)	Slope (ft/ft)	T_i Eqn. 6-3 (mins)	Length (ft)	Slope (ft/ft)	K	Note	T_t Eqn. 6-4 (mins)					
0.45	0.40	83	0.020	9.2	85	0.006	20	Curb	0.9	11.7	446	0.030	21.1	**11.7**
					361	0.036	20	Curb	1.6					

No 100-Year overflow at SA-83G. All 100-Year flows are conveyed through pipes.

100-Year Storm Overflow at SB-20G

Contributing Basins :	C2 - C7
Contributing Area :	6.72 acres
C_{100} :	0.57
I_{100} :	5.87
Q_{100} :	22.61 cfs
Summation of 100-Yr Inlet Capacities:	31.46 cfs
100-Year Flows Overtopping SA-83G :	**0.00 cfs**

Times of Concentration

% Imperv-iousness	C_5	Overland Flow			Channelized Flow					T_c Eqn. 6-2 (min.)	Length (ft)	Slope (ft/ft)	T_c Eqn. 6-5 (min.)	Design T_c (min.)
		Length (ft)	Slope (ft/ft)	T_i Eqn. 6-3 (mins)	Length (ft)	Slope (ft/ft)	K	Note	T_t Eqn. 6-4 (mins)					
0.40	0.36	73	0.020	9.1	210	0.0090	20	Curb	1.8	15.8	1239	0.027	27.7	**15.8**
					1029	0.031	20	Curb	4.9					

No 100-Year overflow at SB-20G. All 100-Year flows are conveyed through pipes.

APPENDIX F
DETENTION POND DESIGN

Detention Pond C Calculations

Vista Reserve
Job Number: 2718-1

Contributing Basins :	C1 - C10	
Area =	10.89	acres
% Imperviousness =	42.33	%
% Type A Hydrologic Soils =	0.0	%
% Type B Hydrologic Soils =	0.0	%
% Type C/D Hydrologic Soils =	100.0	%

Water Quality Capture Volume

WQCV =	**0.169**	**ac-ft**

**From MHFD Detention Worksheet*

WQVC Drain Time =	40	hours
WQCV Release Rate =	0.05	cfs

Exess Urban Runoff Volume

EURV =	**0.430**	**ac-ft**

**From MHFD Detention Worksheet*

EURV Drain Time =	72	hours
Maximum EURV Release Rate =	0.07	cfs

100-Year Volume

V_{100} =	**0.937**	**ac-ft**

**From MHFD Detention Worksheet*

Proposed 100-Yr Release Rate = 14.70 cfs

**From MHFD Detention Worksheet*

Design Stage-Storage Relationship

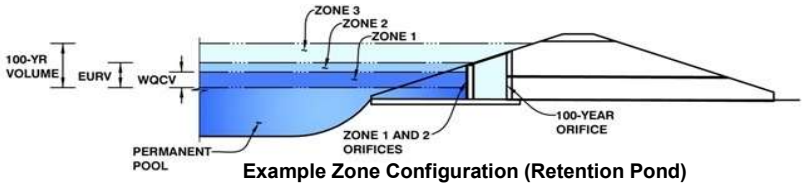
Pond Elevation	Depth (ft)	Area (s.f.)	Inc. Vol. (c.f.)	Vol. (c.f.)	Vol. (ac-ft)	Note
5129.45	0.00	0	0	0	0.000	***Bottom of Pond**
5130.00	0.55	1,347	0	0	0.000	
5131.00	1.55	3,895	2,621	2,621	0.060	
5132.00	2.55	4,427	4,161	6,782	0.156	
5132.13	**2.68**	**4,508**	**580**	**7,362**	**0.169**	**WQCV W.S.E.**
5133.00	3.55	5,049	4,738	11,520	0.264	
5134.00	4.55	6,075	5,562	17,082	0.392	
5134.26	**4.81**	**6,509**	**1,649**	**18,731**	**0.430**	**EURV W.S.E.**
5135.00	5.55	7,732	6,903	23,985	0.551	
5136.00	6.55	8,648	8,190	32,175	0.739	
5136.93	**7.48**	**9,850**	**8,641**	**40,816**	**0.937**	***100-Year W.S.E.**
5136.95	**7.50**	**9,870**	**156**	**40,971**	**0.941**	**Spillway Inv.**
5137.00	7.55	9,934	9,291	41,466	0.952	
5137.95	8.50					**Top of Pond**

DETENTION BASIN STAGE-STORAGE TABLE BUILDER

MHFD-Detention, Version 4.06 (July 2022)

Project: **Vista Reserve**

Basin ID: **Pond C**



Example Zone Configuration (Retention Pond)

Watershed Information

Selected BMP Type =	**EDB**	
Watershed Area =	10.89	acres
Watershed Length =	1,250	ft
Watershed Length to Centroid =	565	ft
Watershed Slope =	0.033	ft/ft
Watershed Imperviousness =	42.30%	percent
Percentage Hydrologic Soil Group A =	0.0%	percent
Percentage Hydrologic Soil Group B =	0.0%	percent
Percentage Hydrologic Soil Groups C/D =	100.0%	percent
Target WQCV Drain Time =	40.0	hours
Location for 1-hr Rainfall Depths =	Erie	

After providing required inputs above including 1-hour rainfall depths, click 'Run CUHP' to generate runoff hydrographs using the embedded Colorado Urban Hydrograph Procedure.

			Optional User Overrides	
Water Quality Capture Volume (WQCV) =	0.169	acre-feet		acre-feet
Excess Urban Runoff Volume (EURV) =	0.430	acre-feet		acre-feet
2-yr Runoff Volume (P1 = 0.81 in.) =	0.270	acre-feet		inches
5-yr Runoff Volume (P1 = 1.11 in.) =	0.444	acre-feet		inches
10-yr Runoff Volume (P1 = 1.39 in.) =	0.664	acre-feet		inches
25-yr Runoff Volume (P1 = 1.84 in.) =	1.108	acre-feet		inches
50-yr Runoff Volume (P1 = 2.24 in.) =	1.476	acre-feet		inches
100-yr Runoff Volume (P1 = 2.68 in.) =	1.924	acre-feet		inches
500-yr Runoff Volume (P1 = 3.89 in.) =	3.082	acre-feet		inches
Approximate 2-yr Detention Volume =	0.257	acre-feet		
Approximate 5-yr Detention Volume =	0.430	acre-feet		
Approximate 10-yr Detention Volume =	0.527	acre-feet		
Approximate 25-yr Detention Volume =	0.668	acre-feet		
Approximate 50-yr Detention Volume =	0.752	acre-feet		
Approximate 100-yr Detention Volume =	0.937	acre-feet		

Define Zones and Basin Geometry

Zone 1 Volume (WQCV) =	0.169	acre-feet
Zone 2 Volume (EURV - Zone 1) =	0.261	acre-feet
Zone 3 Volume (100-year - Zones 1 & 2) =	0.507	acre-feet
Total Detention Basin Volume =	0.937	acre-feet

Depth Increment = ft

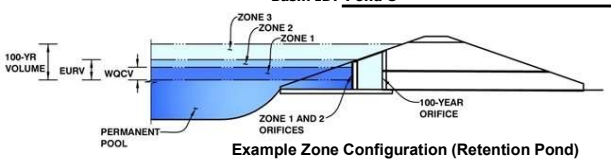
Stage - Storage Description	Stage (ft)	Optional Override Stage (ft)	Length (ft)	Width (ft)	Area (ft^2)	Optional Override Area (ft^2)	Area (acre)	Volume (ft^3)	Volume (ac-ft)
Top of Micropool	--	0.00	--	--	--	0	0.000		
	--	0.55	--	--	--	1,347	0.031	370	0.009
	--	1.55	--	--	--	3,895	0.089	2,991	0.069
	--	2.55	--	--	--	4,427	0.102	7,152	0.164
WQCV	--	2.68	--	--	--	4,508	0.103	7,688	0.176
	--	3.55	--	--	--	5,049	0.116	11,890	0.273
	--	4.55	--	--	--	6,075	0.139	17,452	0.401
EURV	--	4.81	--	--	--	6,509	0.149	19,088	0.438
	--	5.55	--	--	--	7,732	0.178	24,358	0.559
	--	6.55	--	--	--	8,648	0.199	32,548	0.747
100-YR	--	7.48	--	--	--	9,850	0.226	41,149	0.945
Spillway	--	7.50	--	--	--	9,870	0.227	41,346	0.949
	--	7.55	--	--	--	9,934	0.228	41,841	0.961
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DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-Detention, Version 4.06 (July 2022)

Project: **Vista Reserve**

Basin ID: **Pond C**



Example Zone Configuration (Retention Pond)

	Estimated Stage (ft)	Estimated Volume (ac-ft)	Outlet Type
Zone 1 (WQCV)	2.60	0.169	Orifice Plate
Zone 2 (EURV)	4.76	0.261	Orifice Plate
Zone 3 (100-year)	7.45	0.507	Weir&Pipe (Restrict)
Total (all zones)		0.937	

User Input: Orifice at Underdrain Outlet (typically used to drain WQCV in a Filtration BMP)

			Calculated Parameters for Underdrain		
Underdrain Orifice Invert Depth =	N/A	ft (distance below the filtration media surface)	Underdrain Orifice Area =	N/A	ft^2
Underdrain Orifice Diameter =	N/A	inches	Underdrain Orifice Centroid =	N/A	feet

User Input: Orifice Plate with one or more orifices or Elliptical Slot Weir (typically used to drain WQCV and/or EURV in a sedimentation BMP)

			Calculated Parameters for Plate		
Centroid of Lowest Orifice =	0.00	ft (relative to basin bottom at Stage = 0 ft)	WQ Orifice Area per Row =	6.944E-03	ft^2
Depth at top of Zone using Orifice Plate =	4.60	ft (relative to basin bottom at Stage = 0 ft)	Elliptical Half-Width =	N/A	feet
Orifice Plate: Orifice Vertical Spacing =	17.00	inches	Elliptical Slot Centroid =	N/A	feet
Orifice Plate: Orifice Area per Row =	1.00	sq. inches (diameter = 1-1/8 inches)	Elliptical Slot Area =	N/A	ft^2

User Input: Stage and Total Area of Each Orifice Row (numbered from lowest to highest)

	Row 1 (required)	Row 2 (optional)	Row 3 (optional)	Row 4 (optional)	Row 5 (optional)	Row 6 (optional)	Row 7 (optional)	Row 8 (optional)
Stage of Orifice Centroid (ft)	0.00	1.53	3.07					
Orifice Area (sq. inches)	1.00	1.00	1.00					

	Row 9 (optional)	Row 10 (optional)	Row 11 (optional)	Row 12 (optional)	Row 13 (optional)	Row 14 (optional)	Row 15 (optional)	Row 16 (optional)
Stage of Orifice Centroid (ft)								
Orifice Area (sq. inches)								

User Input: Vertical Orifice (Circular or Rectangular)

	Not Selected	Not Selected		Calculated Parameters for Vertical Orifice	Not Selected	Not Selected	
Invert of Vertical Orifice =	N/A	N/A	ft (relative to basin bottom at Stage = 0 ft)	Vertical Orifice Area =	N/A	N/A	ft^2
Depth at top of Zone using Vertical Orifice =	N/A	N/A	ft (relative to basin bottom at Stage = 0 ft)	Vertical Orifice Centroid =	N/A	N/A	feet
Vertical Orifice Diameter =	N/A	N/A	inches				

User Input: Overflow Weir (Dropbox with Flat or Sloped Grate and Outlet Pipe OR Rectangular/Trapezoidal Weir and No Outlet Pipe)

	Zone 3 Weir	Not Selected		Calculated Parameters for Overflow Weir	Zone 3 Weir	Not Selected	
Overflow Weir Front Edge Height, Ho =	4.60	N/A	ft (relative to basin bottom at Stage = 0 ft)	Height of Grate Upper Edge, H_t =	4.60	N/A	feet
Overflow Weir Front Edge Length =	4.00	N/A	feet	Overflow Weir Slope Length =	4.00	N/A	feet
Overflow Weir Grate Slope =	0.00	N/A	H:V	Grate Open Area / 100-yr Orifice Area =	9.63	N/A	
Horiz. Length of Weir Sides =	4.00	N/A	feet	Overflow Grate Open Area w/o Debris =	11.14	N/A	ft^2
Overflow Grate Type =	Type C Grate	N/A		Overflow Grate Open Area w/ Debris =	11.14	N/A	ft^2
Debris Clogging % =	0%	N/A	%				

User Input: Outlet Pipe w/ Flow Restriction Plate (Circular Orifice, Restrictor Plate, or Rectangular Orifice)

	Zone 3 Restrictor	Not Selected		Calculated Parameters for Outlet Pipe w/ Flow Restriction Plate	Zone 3 Restrictor	Not Selected	
Depth to Invert of Outlet Pipe =	0.82	N/A	ft (distance below basin bottom at Stage = 0 ft)	Outlet Orifice Area =	1.16	N/A	ft^2
Outlet Pipe Diameter =	18.00	N/A	inches	Outlet Orifice Centroid =	0.53	N/A	feet
Restrictor Plate Height Above Pipe Invert =	11.20		inches	Half-Central Angle of Restrictor Plate on Pipe =	1.82	N/A	radians

User Input: Emergency Spillway (Rectangular or Trapezoidal)

			Calculated Parameters for Spillway		
Spillway Invert Stage=	7.50	ft (relative to basin bottom at Stage = 0 ft)	Spillway Design Flow Depth=	0.28	feet
Spillway Crest Length =	60.00	feet	Stage at Top of Freeboard =	8.78	feet
Spillway End Slopes =	4.00	H:V	Basin Area at Top of Freeboard =	0.23	acres
Freeboard above Max Water Surface =	1.00	feet	Basin Volume at Top of Freeboard =	0.96	acre-ft

Routed Hydrograph Results

The user can override the default CUHP hydrographs and runoff volumes by entering new values in the Inflow Hydrographs table (Columns W through AF).

Design Storm Return Period =	WQCV	EURV	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year	500 Year
One-Hour Rainfall Depth (in) =	N/A	N/A	0.81	1.11	1.39	1.84	2.24	2.68	3.89
CUHP Runoff Volume (acre-ft) =	0.169	0.430	0.270	0.444	0.664	1.108	1.476	1.924	3.082
Inflow Hydrograph Volume (acre-ft) =	N/A	N/A	0.270	0.444	0.664	1.108	1.476	1.924	3.082
CUHP Predevelopment Peak Q (cfs) =	N/A	N/A	0.1	1.1	3.1	8.1	11.6	16.2	27.0
OPTIONAL Override Predevelopment Peak Q (cfs) =	N/A	N/A							
Predevelopment Unit Peak Flow, q (cfs/acre) =	N/A	N/A	0.01	0.10	0.29	0.75	1.07	1.49	2.48
Peak Inflow Q (cfs) =	N/A	N/A	3.6	6.1	9.3	16.0	21.2	27.5	43.4
Peak Outflow Q (cfs) =	0.1	2.0	0.12	0.4	4.0	12.8	13.5	14.70	17.6
Ratio Peak Outflow to Predevelopment Q =	N/A	N/A	N/A	0.3	1.3	1.6	1.2	0.9	0.7
Structure Controlling Flow =	Plate	Overflow Weir 1	Plate	Overflow Weir 1	Overflow Weir 1	Outlet Plate 1	Outlet Plate 1	Outlet Plate 1	N/A
Max Velocity through Grate 1 (fps) =	N/A	0.30	N/A	0.0	0.4	1.1	1.2	1.3	1.4
Max Velocity through Grate 2 (fps) =	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time to Drain 97% of Inflow Volume (hours) =	40	59	51	61	59	54	50	46	38
Time to Drain 99% of Inflow Volume (hours) =	**42**	63	54	66	65	63	61	59	55
Maximum Ponding Depth (ft) =	2.60	4.76	3.35	4.62	4.78	5.00	5.62	6.69	7.55
Area at Maximum Ponding Depth (acres) =	0.10	0.15	0.11	0.14	0.15	0.16	0.18	0.20	0.23
Maximum Volume Stored (acre-ft) =	0.169	0.431	0.250	0.411	0.432	0.466	0.570	0.773	0.961

SB-20C Forebay Sizing (Detention Pond C)

Contributing Basins =	C2 - C7, C10	
Contributing Area =	7.36	acres
Q100 =	32.53	cfs
% Imperviousness =	39.49	%
Impervious Acres =	2.91	acres

Water Quality Capture Volume

WQCV = a * ($0.91i^3 - 1.19i^2 + 0.78i$)

Drain Time =	40	hours
a =	1.0	
i (Imperviousness) =	0.395	
WQCV =	0.178	watershed inches
WQ VOL = (WQCV / 12) * A =	0.110	ac-ft

Note: Forebay is sized to capture 2% of the WQCV Per Table EDB-4, EDB Component Criteria of USDCM Vol. 3.

2% of WQCV =	0.0022	ac-ft
2% of WQCV (Req. Volume) =	**95**	**c.f.**
Forebay Depth =	1.5	feet
Forebay Area (8' x 8') =	64	s.f.
Forebay Volume (Prop. Volume) =	**96**	**c.f.**

Notch Sizing

Broad-Crested Weir Equation: $Q = 3.0 * L * H^{3/2}$

2% of Q100 =	0.65	cfs
Front Wall Height =	18	inches
Wall Notch Width Size =	**1.42**	**inches**

Use a Notch Width of 1.42 inches.

Vista Reserve
Job Number: 2718-1

Emergency Spillway Calculations

Weir Equation: $Q = C * L * H^{3/2}$
Sloping Weir Equation: $Q = 2/5 * C * Z * H^{2.5}$
$Q_1 = 2/5 * Z_1 * C * H^{5/2}$
$Q_2 = 2/5 * Z_2 * C * H^{5/2}$
$Q_3 = C * L * H^{3/2}$
$Q_{TOTAL} = Q_1 + Q_2 + Q_3$

Z_1 =	4.0	Horiz:Vert
Z_2 =	4.0	Horiz:Vert
C =	3.0	
Spillway Invert =	5136.95	
Top of Berm =	5137.95	
Design Spillway Length =	60.0	ft
Analyzed Emergency Overflow W.S.E. =	5137.23	
Analyzed Depth of Flow above Spillway Invert, H =	0.28	ft
Cross-Sectional Flow Area Over Spillway =	17.3	ft^2
Q_1 =	0.20	cfs
Q_2 =	0.20	cfs
Q_3 =	27.09	cfs
Total Spillway Release at Analyzed Flow Depth =	**27.50**	**cfs**
Spillway Velocity =	1.6	fps
Freeboard above analyzed overflow W.S.E.=	0.72	ft

Sizing Spillway Flows

100-Year In-Flows to Pond =	**27.50**	**cfs**

*Peak In-flow from MHFD-Detention OS sheet

Capacity of Full Spillway =	**189.60**	**cfs**

Spillway Rip Rap Sizing

Unit Discharge during 100-Year Event =	0.46	cfs/ft

From Figure 12-21 Type 'L' Rip Rap is allowable but type 'M' will be used.

Emergency Spillway Downstream Street Capacity Calculations

Collector Road - 80 foot Right-of-Way, 32.0 feet FL to FL, Vertical Curbs

$Q = (1.486 / n) * Area * (Area / Wetted Perimeter)^{2/3} * Slope^{1/2} * Reduction Factor$

Area 1 =	6.23	s.f.
Wetted Perimeter 1 =	23.50	ft
n =	0.035	
$(1.486 / n) * Area * (Area / Wetted Perimeter)^{2/3}$ =	109.16	
Area 2 =	23.64	s.f.
Wetted Perimeter 2 =	33.67	ft
n =	0.016	
$(1.486 / n) * Area * (Area / Wetted Perimeter)^{2/3}$ =	1734.40	
Area 3 =	6.23	s.f.
Wetted Perimeter 3 =	23.50	ft
n =	0.035	
$(1.486 / n) * Area * (Area / Wetted Perimeter)^{2/3}$ =	109.16	
Total $(1.486 / n) * Area * (Area / Wetted Perimeter)^{2/3}$ =	1952.71	

100-Year Street Capcacity =
1952.71 * $Slope^{1/2}$ * Reduction Factor

Analyzed Section - Vista Parkway

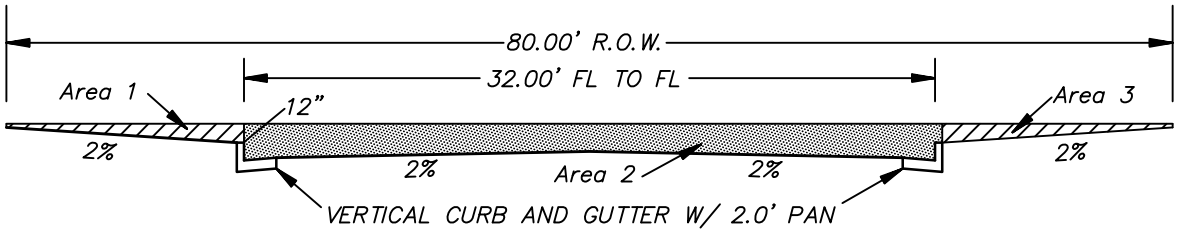
Slope =	0.0122	
Reduction Factor =	1.00	
100-Year Street Capcacity =	**215.68**	**cfs**

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JOB 2718-1, Vista Reserve
CALCULATED BY JR DATE 02/10/2026
CHECKED BY _____ DATE _____
SCALE: NTS SHEET NO. _____ OF _____

STREET CAPACITY ANALYSIS: MAJOR STORM EVENT

COLLECTOR STREET: 80 FOOT R.O.W. (VERTICAL CURBS)



Allowable Depth at FL = 12 inches

AREA 1:	6.23 S.F.
WET PERIMETER:	23.50 FEET
n:	0.035
AREA 2:	23.64 S.F.
WET PERIMETER:	33.67 FEET
n:	0.016
AREA 3:	6.23 S.F.
WET PERIMETER:	23.50 FEET
n:	0.035

$$Q_{allow.} = \frac{1.486}{n}(A)\left(\frac{A}{W.P.}\right)^{2/3} S^{1/2} * \text{Reduction Factor}$$

$$Q_{allow.} = 1952.71 * S^{1/2} * \text{Reduction Factor}$$

Street Slope	Reduction Factor	Q_{ALLOW}
1.22%	1.0	112.16 cfs

Detention Pond D Calculations

Vista Reserve
Job Number: 2718-1

Contributing Basins :	D1 - D8	
Area =	4.77	acres
% Imperviousness =	41.49	%
% Type A Hydrologic Soils =	0.0	%
% Type B Hydrologic Soils =	0.0	%
% Type C/D Hydrologic Soils =	100.0	%

Water Quality Capture Volume

WQCV =	**0.073**	**ac-ft**

**From MHFD Detention Worksheet*

WQVC Drain Time =	40	hours
WQCV Release Rate =	0.02	cfs

Exess Urban Runoff Volume

EURV =	**0.184**	**ac-ft**

**From MHFD Detention Worksheet*

EURV Drain Time =	72	hours
Maximum EURV Release Rate =	0.03	cfs

100-Year Volume

V_{100} =	**0.520**	**acre-feet**

**From MHFD Detention OS Worksheet*

Proposed 100-Yr Release Rate = **3.87 cfs**

**From MHFD Detention Worksheet*

Note: Pond D will be overdetained to limit the 100-year release rate to less than historic.

Design Stage-Storage Relationship

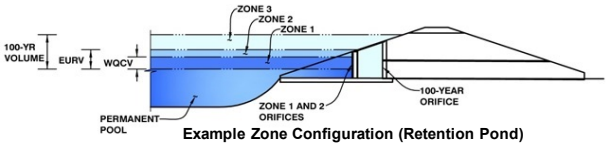
Pond Elevation	Depth (ft)	Area (s.f.)	Inc. Vol. (c.f.)	Vol. (c.f.)	Vol. (ac-ft)	Note
5149.00	0.00	0	0	0	0.000	***Bottom of Pond**
5150.00	1.00	4,139	2,070	2,070	0.048	
5150.26	**1.26**	**4,504**	**1,124**	**3,193**	**0.073**	**WQCV W.S.E.**
5151.00	2.00	5,543	4,841	6,911	0.159	
5151.20	**2.20**	**5,783**	**1,109**	**8,019**	**0.184**	**EURV W.S.E.**
5152.00	3.00	6,769	6,156	13,067	0.300	
5153.00	4.00	8,097	7,433	20,500	0.471	
5153.26	**4.26**	**8,469**	**2,154**	**22,653**	**0.520**	***100-Year W.S.E.**
5153.40	**4.40**	**8,669**	**10,806**	**23,873**	**0.548**	**Spillway Inv.**
5154.00	5.00	9,526	5,458	29,331	0.673	
5155.00	6.00	11,055	10,291	39,622	0.910	**Top of Pond**

DETENTION BASIN STAGE-STORAGE TABLE BUILDER

MHFD-Detention, Version 4.06 (July 2022)

Project: Vista Reserve

Basin ID: Pond D



Example Zone Configuration (Retention Pond)

Watershed Information

Selected BMP Type =	EDB	
Watershed Area =	4.77	acres
Watershed Length =	575	ft
Watershed Length to Centroid =	245	ft
Watershed Slope =	0.050	ft/ft
Watershed Imperviousness =	41.49%	percent
Percentage Hydrologic Soil Group A =	0.0%	percent
Percentage Hydrologic Soil Group B =	0.0%	percent
Percentage Hydrologic Soil Groups C/D =	100.0%	percent
Target WQCV Drain Time =	40.0	hours
Location for 1-hr Rainfall Depths =	Erie	

After providing required inputs above including 1-hour rainfall depths, click 'Run CUHP' to generate runoff hydrographs using the embedded Colorado Urban Hydrograph Procedure.

			Optional User Overrides
Water Quality Capture Volume (WQCV) =	0.073	acre-feet	acre-feet
Excess Urban Runoff Volume (EURV) =	0.184	acre-feet	acre-feet
2-yr Runoff Volume (P1 = 0.81 in.) =	0.111	acre-feet	inches
5-yr Runoff Volume (P1 = 1.11 in.) =	0.182	acre-feet	inches
10-yr Runoff Volume (P1 = 1.39 in.) =	0.274	acre-feet	inches
25-yr Runoff Volume (P1 = 1.84 in.) =	0.459	acre-feet	inches
50-yr Runoff Volume (P1 = 2.24 in.) =	0.613	acre-feet	inches
100-yr Runoff Volume (P1 = 2.68 in.) =	0.800	acre-feet	inches
500-yr Runoff Volume (P1 = 3.89 in.) =	1.284	acre-feet	inches
Approximate 2-yr Detention Volume =	0.110	acre-feet	
Approximate 5-yr Detention Volume =	0.185	acre-feet	
Approximate 10-yr Detention Volume =	0.227	acre-feet	
Approximate 25-yr Detention Volume =	0.288	acre-feet	
Approximate 50-yr Detention Volume =	0.324	acre-feet	
Approximate 100-yr Detention Volume =	0.405	acre-feet	

Define Zones and Basin Geometry

Zone 1 Volume (WQCV) =	0.073	acre-feet
Zone 2 Volume (EURV - Zone 1) =	0.111	acre-feet
Zone 3 Volume (User Defined - Zones 1 & 2) =	0.336	acre-feet
Total Detention Basin Volume =	0.520	acre-feet

Depth Increment = ft

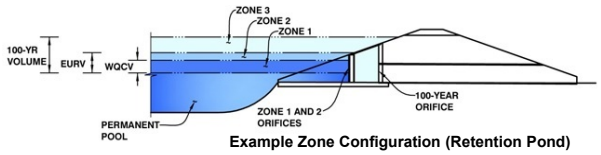
Stage - Storage Description	Stage (ft)	Optional Override Stage (ft)	Length (ft)	Width (ft)	Area (ft^2)	Optional Override Area (ft^2)	Area (acre)	Volume (ft^3)	Volume (ac-ft)
Top of Micropool	--	0.00	--	--	--	0	0.000		
	--	1.00	--	--	--	4,139	0.095	2,069	0.048
WQCV	--	1.26	--	--	--	4,504	0.103	3,193	0.073
	--	2.00	--	--	--	5,543	0.127	6,910	0.159
EURV	--	2.20	--	--	--	5,783	0.133	8,043	0.185
	--	3.00	--	--	--	6,769	0.155	13,064	0.300
	--	4.00	--	--	--	8,097	0.186	20,497	0.471
100-YR	--	4.26	--	--	--	8,469	0.194	22,650	0.520
SPILLWAY	--	4.40	--	--	--	8,669	0.199	23,850	0.548
	--	5.00	--	--	--	9,526	0.219	29,308	0.673
	--	6.00	--	--	--	11,055	0.254	39,599	0.909
	--		--	--	--				
	--		--	--	--				
	--		--	--	--			

DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-Detention, Version 4.06 (July 2022)

Project: Vista Reserve

Basin ID: Pond D



Example Zone Configuration (Retention Pond)

	Estimated Stage (ft)	Estimated Volume (ac-ft)	Outlet Type
Zone 1 (WQCV)	1.26	0.073	Orifice Plate
Zone 2 (EURV)	2.20	0.111	Orifice Plate
Zone 3 (User)	4.27	0.336	Weir&Pipe (Restrict)
Total (all zones)		0.520	

User Input: Orifice at Underdrain Outlet (typically used to drain WQCV in a Filtration BMP)

			Calculated Parameters for Underdrain		
Underdrain Orifice Invert Depth =	N/A	ft (distance below the filtration media surface)	Underdrain Orifice Area =	N/A	ft²
Underdrain Orifice Diameter =	N/A	inches	Underdrain Orifice Centroid =	N/A	feet

User Input: Orifice Plate with one or more orifices or Elliptical Slot Weir (typically used to drain WQCV and/or EURV in a sedimentation BMP)

			Calculated Parameters for Plate		
Centroid of Lowest Orifice =	0.00	ft (relative to basin bottom at Stage = 0 ft)	WQ Orifice Area per Row =	4.306E-03	ft²
Depth at top of Zone using Orifice Plate =	2.20	ft (relative to basin bottom at Stage = 0 ft)	Elliptical Half-Width =	N/A	feet
Orifice Plate: Orifice Vertical Spacing =	8.80	inches	Elliptical Slot Centroid =	N/A	feet
Orifice Plate: Orifice Area per Row =	0.62	sq. inches (diameter = 7/8 inch)	Elliptical Slot Area =	N/A	ft²

User Input: Stage and Total Area of Each Orifice Row (numbered from lowest to highest)

	Row 1 (required)	Row 2 (optional)	Row 3 (optional)	Row 4 (optional)	Row 5 (optional)	Row 6 (optional)	Row 7 (optional)	Row 8 (optional)
Stage of Orifice Centroid (ft)	0.00	0.73	1.47					
Orifice Area (sq. inches)	0.62	0.62	0.62					

	Row 9 (optional)	Row 10 (optional)	Row 11 (optional)	Row 12 (optional)	Row 13 (optional)	Row 14 (optional)	Row 15 (optional)	Row 16 (optional)
Stage of Orifice Centroid (ft)								
Orifice Area (sq. inches)								

User Input: Vertical Orifice (Circular or Rectangular)

	Not Selected	Not Selected		Calculated Parameters for Vertical Orifice	Not Selected	Not Selected	
Invert of Vertical Orifice =	N/A	N/A	ft (relative to basin bottom at Stage = 0 ft)	Vertical Orifice Area =	N/A	N/A	ft²
Depth at top of Zone using Vertical Orifice =	N/A	N/A	ft (relative to basin bottom at Stage = 0 ft)	Vertical Orifice Centroid =	N/A	N/A	feet
Vertical Orifice Diameter =	N/A	N/A	inches				

User Input: Overflow Weir (Dropbox with Flat or Sloped Grate and Outlet Pipe OR Rectangular/Trapezoidal Weir and No Outlet Pipe)

	Zone 3 Weir	Not Selected		Calculated Parameters for Overflow Weir	Zone 3 Weir	Not Selected	
Overflow Weir Front Edge Height, Ho =	2.20	N/A	ft (relative to basin bottom at Stage = 0 ft)	Height of Grate Upper Edge, H_t =	3.20	N/A	feet
Overflow Weir Front Edge Length =	4.00	N/A	feet	Overflow Weir Slope Length =	4.12	N/A	feet
Overflow Weir Grate Slope =	4.00	N/A	H:V	Grate Open Area / 100-yr Orifice Area =	29.31	N/A	
Horiz. Length of Weir Sides =	4.00	N/A	feet	Overflow Grate Open Area w/o Debris =	11.48	N/A	ft²
Overflow Grate Type =	Type C Grate	N/A		Overflow Grate Open Area w/ Debris =	11.48	N/A	ft²
Debris Clogging % =	0%	N/A	%				

User Input: Outlet Pipe w/ Flow Restriction Plate (Circular Orifice, Restrictor Plate, or Rectangular Orifice)

	Zone 3 Restrictor	Not Selected		Calculated Parameters for Outlet Pipe w/ Flow Restriction Plate	Zone 3 Restrictor	Not Selected	
Depth to Invert of Outlet Pipe =	0.20	N/A	ft (distance below basin bottom at Stage = 0 ft)	Outlet Orifice Area =	0.39	N/A	ft²
Outlet Pipe Diameter =	18.00	N/A	inches	Outlet Orifice Centroid =	0.24	N/A	feet
Restrictor Plate Height Above Pipe Invert =	4.92		inches	Half-Central Angle of Restrictor Plate on Pipe =	1.10	N/A	radians

User Input: Emergency Spillway (Rectangular or Trapezoidal)

			Calculated Parameters for Spillway		
Spillway Invert Stage=	4.40	ft (relative to basin bottom at Stage = 0 ft)	Spillway Design Flow Depth=	0.38	feet
Spillway Crest Length =	21.00	feet	Stage at Top of Freeboard =	5.78	feet
Spillway End Slopes =	4.00	H:V	Basin Area at Top of Freeboard =	0.25	acres
Freeboard above Max Water Surface =	1.00	feet	Basin Volume at Top of Freeboard =	0.85	acre-ft

Routed Hydrograph Results

The user can override the default CUHP hydrographs and runoff volumes by entering new values in the Inflow Hydrographs table (Columns W through AF).

Design Storm Return Period =	WQCV	EURV	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year	500 Year
One-Hour Rainfall Depth (in) =	N/A	N/A	0.81	1.11	1.39	1.84	2.24	2.68	3.89
CUHP Runoff Volume (acre-ft) =	0.073	0.184	0.111	0.182	0.274	0.459	0.613	0.800	1.284
Inflow Hydrograph Volume (acre-ft) =	N/A	N/A	0.111	0.182	0.274	0.459	0.613	0.800	1.284
CUHP Predevelopment Peak Q (cfs) =	N/A	N/A	0.1	0.7	2.0	5.1	7.2	9.8	16.3
OPTIONAL Override Predevelopment Peak Q (cfs) =	N/A	N/A							
Predevelopment Unit Peak Flow, q (cfs/acre) =	N/A	N/A	0.01	0.15	0.42	1.06	1.51	2.05	3.41
Peak Inflow Q (cfs) =	N/A	N/A	2.1	3.5	5.4	9.1	12.0	15.7	24.5
Peak Outflow Q (cfs) =	0.0	0.1	0.05	0.1	0.9	3.2	3.5	3.87	16.3
Ratio Peak Outflow to Predevelopment Q =	N/A	N/A	N/A	0.1	0.4	0.6	0.5	0.4	1.0
Structure Controlling Flow =	Plate	Overflow Weir 1	Plate	Plate	Overflow Weir 1	Outlet Plate 1	Outlet Plate 1	Outlet Plate 1	Spillway
Max Velocity through Grate 1 (fps) =	N/A	N/A	N/A	N/A	0.1	0.3	0.3	0.3	0.3
Max Velocity through Grate 2 (fps) =	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time to Drain 97% of Inflow Volume (hours) =	38	59	48	60	60	56	52	49	41
Time to Drain 99% of Inflow Volume (hours) =	**41**	63	51	64	66	64	62	61	57
Maximum Ponding Depth (ft) =	1.26	2.20	1.54	2.10	2.41	2.88	3.46	4.26	4.72
Area at Maximum Ponding Depth (acres) =	0.10	0.13	0.11	0.13	0.14	0.15	0.17	0.19	0.21
Maximum Volume Stored (acre-ft) =	0.073	0.185	0.104	0.172	0.213	0.281	0.373	0.518	0.613

Vista Reserve
Job Number: 2718-1

SA-83C Forebay Sizing (Detention Pond D)

Contributing Basins =	D2 - D8	
Contributing Area =	3.79	acres
Q100 =	17.77	cfs
% Imperviousness =	44.34	%
Impervious Acres =	1.68	acres

Water Quality Capture Volume

WQCV = a * ($0.91i^3 - 1.19i^2 + 0.78i$)

Drain Time =	40	hours
a =	1.0	
i (Imperviousness) =	0.443	
WQCV =	0.191	watershed inches
WQ VOL = (WQCV / 12) * A =	0.060	ac-ft

Note: Forebay is sized to capture 1% of the WQCV Per Table EDB-4, EDB Component Criteria of USDCM Vol. 3.

1% of WQCV =	0.0006	ac-ft
1% of WQCV (Req. Volume) =	**26**	**c.f.**
Forebay Depth =	1	feet
Forebay Area (5' x 6') =	30	s.f.
Forebay Volume (Prop. Volume) =	**30**	**c.f.**

Notch Sizing

Broad-Crested Weir Equation: $Q = 3.0 * L * H^{3/2}$

2% of Q100 =	0.36	cfs
Front Wall Height =	12	inches
Wall Notch Width Size =	**1.42**	**inches**

Use a Notch Width of 1.42 inches.

Vista Reserve
Job Number: 2718-1

Emergency Spillway Calculations

Weir Equation: $Q = C * L * H^{3/2}$
Sloping Weir Equation: $Q = 2/5 * C * Z * H^{2.5}$
$Q_1 = 2/5 * Z_1 * C * H^{5/2}$
$Q_2 = 2/5 * Z_2 * C * H^{5/2}$
$Q_3 = C * L * H^{3/2}$
$Q_{TOTAL} = Q_1 + Q_2 + Q_3$

Z_1 =	4.0	Horiz:Vert
Z_2 =	4.0	Horiz:Vert
C =	3.0	
Spillway Invert =	5153.40	
Top of Berm =	5155.00	
Design Spillway Length =	21.0	ft
Analyzed Emergency Overflow W.S.E. =	5153.78	
Analyzed Depth of Flow above Spillway Invert, H =	0.38	ft
Cross-Sectional Flow Area Over Spillway =	8.6	ft^2
Q_1 =	0.43	cfs
Q_2 =	0.43	cfs
Q_3 =	14.84	cfs
Total Spillway Release at Analyzed Flow Depth =	**15.70**	**cfs**
Spillway Velocity =	1.8	fps
Freeboard above analyzed overflow W.S.E.=	1.22	ft

Sizing Spillway Flows

100-Year In-Flows to Pond =	**15.70**	**cfs**
Capacity of Full Spillway =	**158.59**	**cfs**

Spillway Rip Rap Sizing

Unit Discharge during 100-Year Event = 0.75 cfs/ft

From Figure 12-21 Type 'L' Rip Rap is allowable but type 'M' will be used.

Emergency Spillway Downstream Street Capacity Calculations

Local Road - 60 foot Right-of-Way, 36.0 feet FL to FL, Mountable Curbs

$Q = (1.486 / n) * Area * (Area / Wetted Perimeter)^{2/3} * Slope^{1/2} * Reduction Factor$

Area 1 =	6.20	s.f.
Wetted Perimeter 1 =	11.17	ft
n =	0.035	
$(1.486 / n) * Area * (Area / Wetted Perimeter)^{2/3}$ =	177.79	
Area 2 =	26.491	s.f.
Wetted Perimeter 2 =	37.89	ft
n =	0.016	
$(1.486 / n) * Area * (Area / Wetted Perimeter)^{2/3}$ =	1938.12	
Area 3 =	6.20	s.f.
Wetted Perimeter 3 =	11.17	ft
n =	0.035	
$(1.486 / n) * Area * (Area / Wetted Perimeter)^{2/3}$ =	177.79	
Total $(1.486 / n) * Area * (Area / Wetted Perimeter)^{2/3}$ =	2293.69	

100-Year Street Capcacity =
2293.69 * $Slope^{1/2}$ * Reduction Factor

Analyzed Section - Hickory Drive

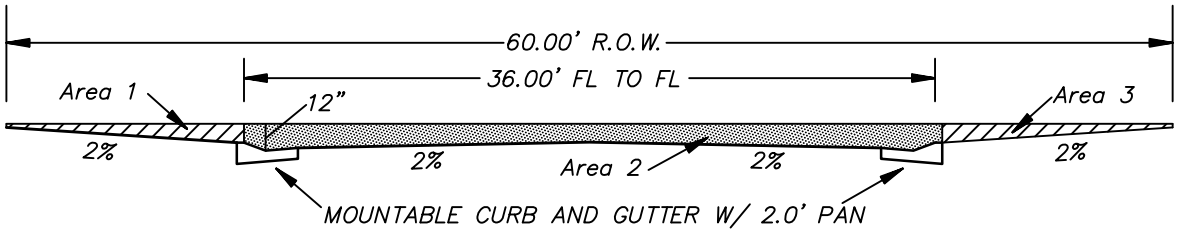
Slope =	0.0235	
Reduction Factor =	0.92	
100-Year Street Capcacity =	**323.49**	**cfs**

HURST & ASSOCIATES, INC.
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JOB 2718-1, Vista Reserve
CALCULATED BY JR DATE 02/10/2026
CHECKED BY _____ DATE _____
SCALE: NTS SHEET NO. _____ OF _____

STREET CAPACITY ANALYSIS: MAJOR STORM EVENT

LOCAL STREET: 60 FOOT R.O.W. (MOUNTABLE CURBS)



Allowable Depth at FL = 12 inches

AREA 1: 6.20 S.F.
WET PERIMETER: 11.17 FEET
n: 0.035

AREA 2: 26.49 S.F.
WET PERIMETER: 37.89 FEET
n: 0.016

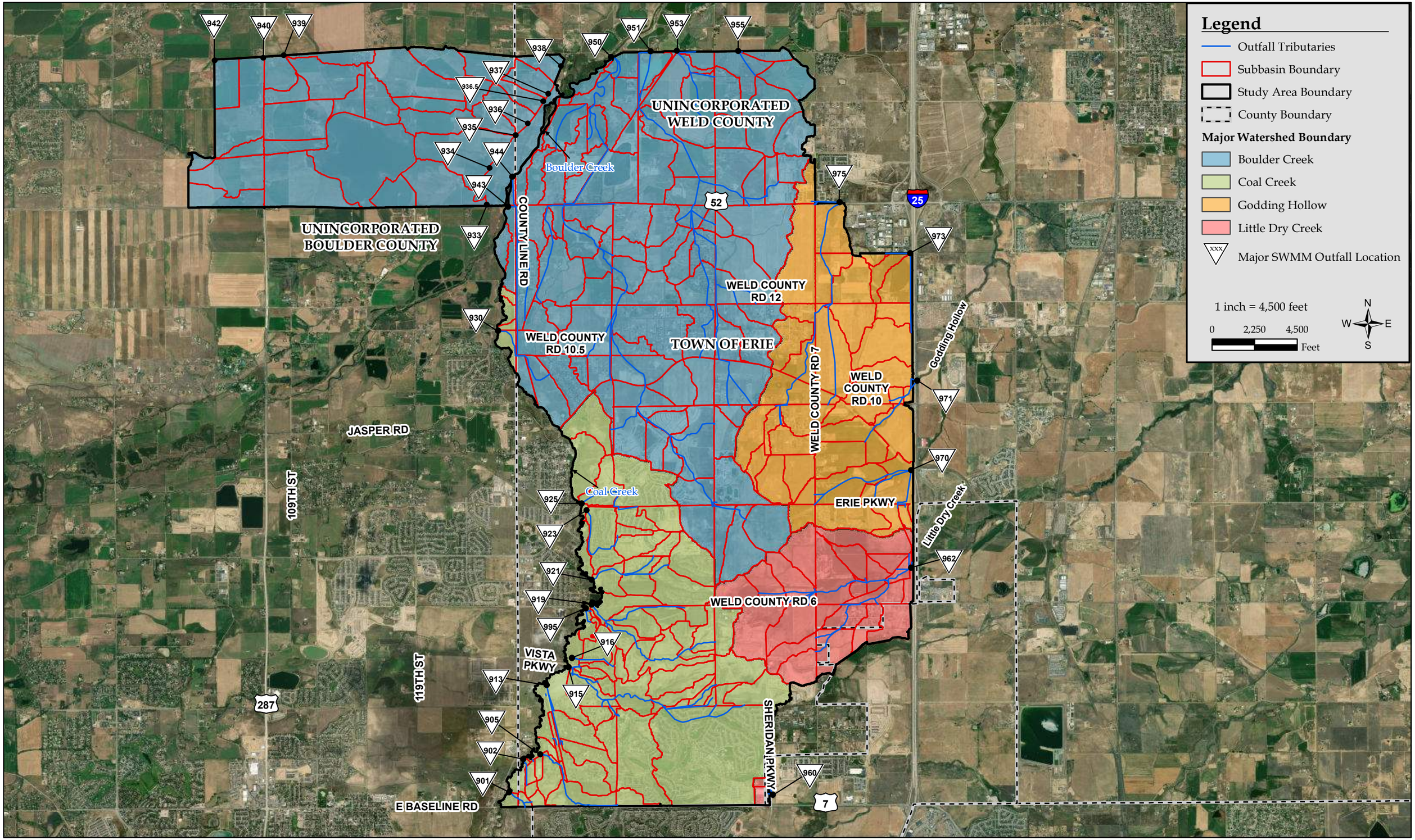
AREA 3: 6.20 S.F.
WET PERIMETER: 11.17 FEET
n: 0.035

$$Q_{allow.} = \frac{1.486}{n}(A)\left(\frac{A}{W.P.}\right)^{2/3} S^{1/2} * \text{Reduction Factor}$$

$$Q_{allow.} = 2293.69 * S^{1/2} * \text{Reduction Factor}$$

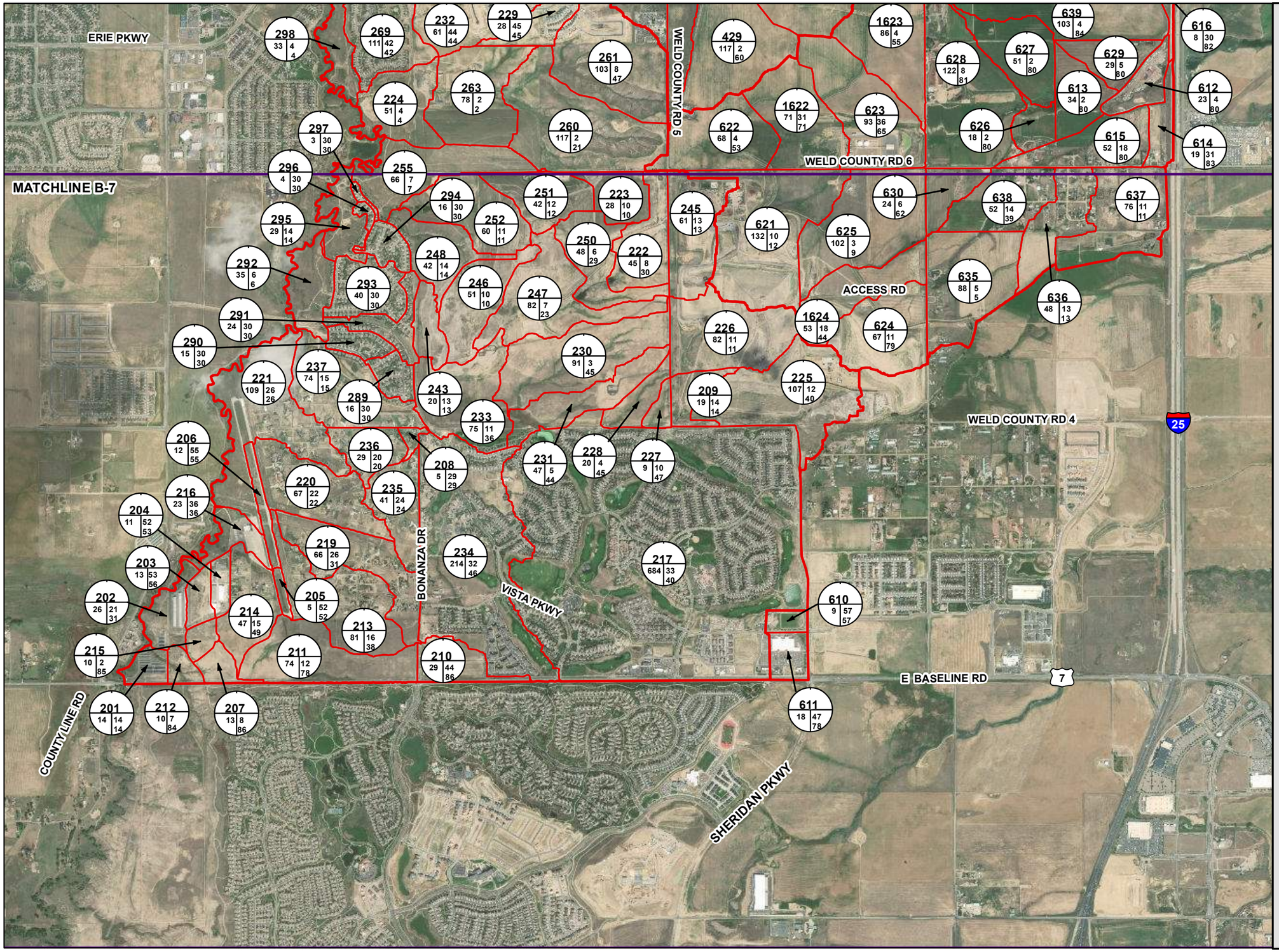
Street Slope	Reduction Factor	Q_{ALLOW}
2.35%	0.92	323.49 cfs

APPENDIX G
EXCERPTS FROM ERIE OUTFALL SYSTEM PLAN



MERRICK®
Merrick and Company
2480 W 26th Ave, Unit B225
Denver, CO 80211
Phone: 303-964-3333
Fax: 303-964-3355

TOWN OF ERIE	TOWN OF ERIE OUTFALL SYSTEMS PLAN (EAST OF COAL CREEK)	OUTFALL SYSTEMS MAP	FIGURE B-5

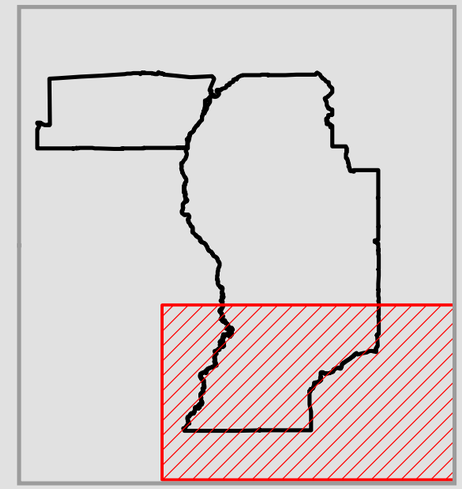


Legend

- Study Area Boundary
- Subbasin Boundary

XXX — Subbasin ID
XX | X — % Impervious (Existing Land Use)
X — % Impervious (Future Land Use)
Area (Acres)

KEY MAP



N
W E
S

1 inch = 2,000 feet

0 1,000 2,000

Feet

MERRICK®

Merrick and Company
2480 W 26th Ave, Unit B225
Denver, CO 80211
Phone: 303-964-3333
Fax: 303-964-3355

TOWN OF ERIE

TOWN OF ERIE OUTFALL SYSTEMS PLAN
(EAST OF COAL CREEK)

SUBBASIN MAP

FIGURE
B-8

LEGEND

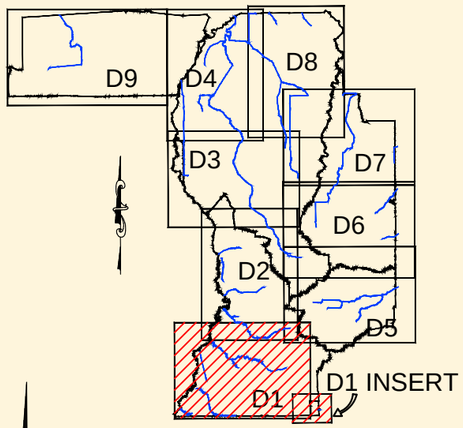
- ERIE MAJOR WATERSHED BOUNDARY
- WATERSHED BOUNDARY
- EXISTING DETENTION POND
- OUTFALL TRIBUTARY ALIGNMENT (> 130 ACRES)
- 915 TRIBUTARY OUTFALL

ALTERNATIVES

- PROPOSED DETENTION POND
- PROPOSED CHANNEL (LABELED "H")
- MAJOR DRAINAGE PRESERVATION
- CULVERT IMPROVEMENTS (LABELED "C")

NOTES:

- UNLESS OTHERWISE SPECIFIED, ALL VOLUMES AND FLOW ARE 100-YEAR DEVELOPED CONDITION.
- PROPOSED DETENTION FACILITIES MAY BE DIVIDED INTO MULTIPLE DETENTION FACILITIES PROVIDED THE ALTERNATIVE OFFERS THE EQUIVALENT INTENT OF THE PLAN INCLUDING HYDRAULIC CAPACITY AND WATER QUALITY FUNCTIONS.
- ELEVATIONS SHOWN ARE ON NAVD88 VERTICAL DATUM
- TOWN GIS DATA AS OF DECEMBER 2017



KEY MAP

0 1000' 2000'

1" = 1000'

915

VISTA POINTE

OUTFALL 915 - REACH 1
6. NO IMPROVEMENTS

REACH 1

OUTFALL 915 - REACH 2
1. 100-YR DETENTION
V= 17.1 AC-FT
Q_{IN} = 405 CFS, Q_{OUT} = 246 CFS
4. MAJOR DRAINAGEWAY PRESERVATION

REACH 2

OUTFALL 915 - REACH 3
6. NO IMPROVEMENTS

REACH 3

WELD CR. 5

913

COUNTY LINE ROAD

COAL CREEK

REACH 1

WELD CR. 4

ERIE AIRPARK

OUTFALL 913 - REACH 1
6. NO IMPROVEMENTS

REACH 4

OUTLET PIPE

OUTFALL 915 - REACH 4
4. MAJOR DRAINAGEWAY PRESERVATION

WELD CR. 3

VISTA RIDGE

905

C1

C2

OUTFALL 905 - REACH 1
4. MAJOR DRAINAGEWAY PRESERVATION
5. CULVERT IMPROVEMENTS
C1 - Q = 557 CFS: 8'X6' RCBC
U/S INV = 5085.29, S = 1.04%
C2 - Q = 545 CFS: 9'X4' RCBC
U/S INV = 5092.64, S = 4.23%

REACH 1

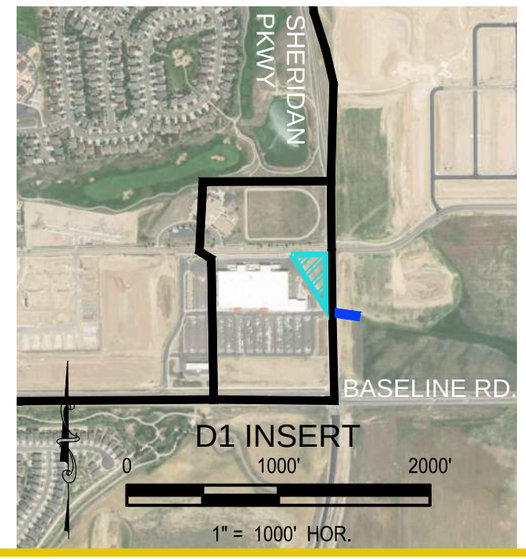
VISTA RIDGE

901

OUTFALL 901 - REACH 1
4. MAJOR DRAINAGEWAY PRESERVATION
5. CULVERT IMPROVEMENTS
Q = 475 CFS: 2 - 8' X 6' RCBC
U/S INV = 5101.5, S = 0.14%

REACH 1

BASELINE RD.



TOWN OF ERIE	TOWN OF ERIE OUTFALL SYSTEMS PLAN (EAST OF COAL CREEK)	RECOMMENDED PLANS	JANUARY 2020	MERRICK 2480 W. 26th Ave. Suite B225 Denver, CO 80211 T303.964.3333 F303.964.3355	FIGURE D1

APPENDIX H
EXISTING RUNOFF ANALYSIS

Vista Reserve

Existing Runoff Coefficients

Job Number: 2718-1

Basin	Area (ac.)	% Imperviousness Calculations						% NRCS Soil Group C/D	2-Yr $C_{C/D}$	5-Yr $C_{C/D}$	10-Yr $C_{C/D}$	100-Yr $C_{C/D}$	Runoff Coefficients			
		SFR Rural (35%) (acres)	Undist-urbed Soil (5%) (acres)	Roadways & Paved Streets (95%) (acres)	Gravel (80%) (acres)	Roofs (95%) (acres)	% Imp.						C_2	C_5	C_{10}	C_{100}
H1	13.61	0	13.08	0.01	0.35	0.17	**8.1**	100	0.05	0.10	0.19	0.52	**0.05**	**0.10**	**0.19**	**0.52**
H2	5.44	0	5.18	0.12	0	0.14	**9.3**	100	0.06	0.11	0.20	0.52	**0.06**	**0.11**	**0.20**	**0.52**

Existing Times of Concentration

Basin	% Imperv-iousness	C_5	Overland Flow			Channelized Flow					T_c Eqn. 6-2 (min.)			T_c Eqn. 6-5 (min.)	Design T_c (min.)
			Length (ft)	Slope (ft/ft)	T_i Eqn. 6-3 (mins)	Length (ft)	Slope (ft/ft)	K	Note	T_t Eqn. 6-4 (mins)		Length (ft)	Slope (ft)		
H1	0.08	0.10	500	0.056	22.8	210	0.048	5	Field	3.2	26.0	210	0.048	26.2	**26.0**
H2	0.09	0.11	430	0.058	20.7	10	0.058	5	Field	0.1	20.9	10	0.058	24.5	**20.9**

Existing Runoff Rates

Basin	Area (acres)	C_2	C_5	C_{10}	C_{100}	T_c (mins)	I_2 (in/hr)	I_5 (in/hr)	I_{10} (in/hr)	I_{100} (in/hr)	Q_2 (cfs)	Q_5 (cfs)	Q_{10} (cfs)	Q_{100} (cfs)
H1	13.61	0.05	0.10	0.19	0.52	26.0	*1.38*	*1.89*	*2.37*	*4.56*	0.94	2.62	6.19	**32.14**
H2	5.44	0.06	0.11	0.20	0.52	20.9	*1.56*	*2.14*	*2.67*	*5.16*	0.49	1.29	2.92	**14.65**

Intensity = 28.5 * P_1 / ((10 + T_C)$^{0.786}$)

Erie One-Hour Rainfall Depths

2-Year = 0.81

5-Year = 1.11

10-Year = 1.39

100-Year = 2.68

P_1 = 1-hour point rainfall depth

T_c = Time of Concentration

On-Site Historical vs Developed Flow Rates

Western 2/3 Basins	Q_{100} (cfs)
B4-12A	1.27
B4-13A	0.58
B4-13C	0.74
B4-17A	4.69
Pond C Release	14.70
Total Developed On-Site Flows:	**21.97**
Historic On-Site Flows (H1) =	**32.14**

Eastern 1/3 Basins	Q_{100} (cfs)
A21-3A	9.92
A21-4A	0.60
A21-4C	0.25
Pond D Release	3.87
Total Developed On-Site Flows:	**14.64**
Historic On-Site Flows (H2) =	**14.65**

APPENDIX I

STORMWATER POST CONSTRUCTION DESIGN STANDARDS

PROJECT SHEET *BASE DESIGN STANDARDS*

Complete one Project Sheet for each project that includes Stormwater Quality Control Measures. Please email stormwater@erieco.gov with any questions. This document acceptance shall not be construed to relieve any requirement to conform to the Standards and Specifications not specifically addressed in this form. The engineering design and concept remains the responsibility of the professional engineer.

SITE INFORMATION

Project Name: **Vista Reserve**			
Project Location: Vista Ridge Development, southeast of Vista Parkway and Single Tree Lane intersection in Erie, Colorado			
Submitted Date: 2/17/2026		Submitted By: Hurst & Associates	
Applicant Email: caydb@affinholdings.com		Applicant Phone: 303-246-6799	
Applicant Organization: Affinity Holdings			
Acreage Disturbed: 19.05			
Existing Impervious: 8.5%		New Net Impervious: 41.3%	
Review Date:		Reviewed By:	
✓ Preparer	Requirements		
	Design Details are included for all Control Measures (CM)		
	List or include a description of any Source CMs (i.e. preventing pollutants from contacting stormwater) or other non-structural CMs:		
	Does project overlap multiple MS4 Jurisdictions?	Yes	No **X**
	If project overlaps jurisdictions, provide written agreement designating responsibility for CM requirements, review, inspections **Proposed Detention Pond C is located on-site at the northwest corner of Vista Reserve. It is located within Erie's jurisdiction and outfalls into the existing regional drainage pond part of the Vista Ridge Development. This existing regional pond ultimately releases flows into Coal Creek.** **Proposed Detention Pond D is location on-site at the northeast corner of Vista Reserve. It is located within Erie's jurisdiction and outfalls into the existing regional drainage pond part of the Vista Ridge Development. This existing regional pond ultimately releases flows into Coal Creek.** **Any required written agreements designating responsibility for CM requirements, review and inspections will be supplied with final construction plans.**		

DESIGN STANDARDS

Design Standards may be used in combination, as necessary, to meet the requirements. Additional design methods may be considered if they comply with the MS4 Permit. Evaluation of suitability of Stormwater Quality Control Measures (CMs) is based on pollutant removal, flood attenuation and long-term maintenance. CMs must be designed in accordance with the most current version of USDCM vol. 3, Chapter 4 "Treatment BMPs" and the Town of Erie's Standards and Specifications. CMs must also meet the specific requirements for each Design Standard used. Design Standard requirements can be found on the MS4 general permit here: COR90000

1. Indicate below, which Design Standards will be used for the project, and

2. Complete a separate, corresponding Design Standards checklist for each CM (e.g., WQCV, etc.)

Design Standard	*# CMs*	*Location/Identifying information*
WQCV	**2**	**Detention Pond C will be an extended detention basin with water quality capture. Located on-site and to the northwest of Vista Reserve.** **Detention Pond D will be an extended detention basin with water quality capture. Located at the northeast corner of Vista Reserve.**
Pollutant Removal		
Runoff Reduction		
Regional WQCV Control Measure	**2**	**Existing Vista Ridge Regional Ponds B7 and A20**
Regional WQCV Facility		

CHECKLIST WQCV Standard

WQCV STANDARD Criteria

Control measure(s) must be designed to provide treatment and/or infiltration of the Water Quality Capture Volume (WQCV) for 100% of the site.

Complete checklist if using the WQCV Standard to meet Design Standard requirements.

Project Name: **Vista Reserve**		
Preparer	Requirements	
No	Control measure(s) provide treatment and/or infiltration of the WQCV for 100% of the site	
	% of site treated: **82.2% will be treated by two proposed on-site detention ponds. The remaining 17.8% of the site drains offsite to existing storm systems and is treated in the existing regional ponds.**	
	CM type: **Extended Detention Basins**	CM ID/location **Proposed Detention Ponds C & D**
	See Drainage Report section: **Appendix F & J**	

If less than 100% of the site is treated, complete the following:

Preparer	Requirements	
	% of site not treated by control measures (not to exceed 20% or 1 acre):	
		Size: **17.8% (3.39 Acres)**
	Provide explanation that the excluded area is impractical to treat: **The area that drains off-site is treated by regional ponds downstream of the existing storm system.**	
	Provide explanation that another CM is not practicable for the untreated area: **The areas draining off site are along existing roadways and generally lower than the proposed ponds. Grading does not allow for draining to the proposed ponds, although these areas will be treated by the existing regional ponds.**	

CHECKLIST Regional WQCV Control Measure Standard

REGIONAL WQCV CONTROL MEASURE STANDARD Criteria

Control Measure(s) must be designed to accept the drainage from the applicable development site. Stormwater from the site must not discharge to a water of the state before being discharged to the Regional WQCV Control Measure. The Regional WQCV Control Measure must be designed to provide treatment and/or infiltration of the WQCV for 100% of the applicable development site.

Complete checklist if using the Regional WQCV Control Measure Standard to meet Design Standard requirements.

Project Name: Vista Reserve	
Preparer	Requirements
Yes	Control Measure(s) are designed to accept the drainage from the site
Yes	Stormwater from the site must not discharge to a water of the state before being discharged to the Regional WQCV Control Measure
Yes	The Regional WQCV Control Measure is designed to provide treatment and/or infiltration of the WQCV for 100% of the site
	CM ID/location: **Existing Regional Pond A20 & B7 of Vista Ridge.**
	See Drainage Report section: **Appendix J**

If less than 100% of the site is treated, complete the following:

Preparer	Requirements
	% of site not treated by control measures (not to exceed 20% or 1 acre):
	Provide explanation that the excluded area is impractical to treat:
	Provide explanation that another CM is not practicable for the untreated area:

APPENDIX J
OPERATIONS AND MAINTENANCE PLAN

Operations and Maintenance Plan

Vista Reserve
Erie, Co

This plan denotes the long-term observation, maintenance and operation of Detention Ponds C & D at Vista Reserve.

2.0 GENERAL FACILITY DESCRIPTION & PROJECT NOTES:
This facility consists of 2 detention ponds that receives inflows from on-site runoff. The facility provides water quality and 100-yr storm detention. Pond C releases to the existing regional pond B7. Pond D releases to the existing regional pond A20. Both ponds utilize forebays, trickle channels and micropools at the outlet structure to control drainage.

2.1 MAINTENANCE NOTES:
·MAINTENANCE FREQUENCY
Routine maintenance tasks, including mowing and debris removal, should be performed on an as-needed basis. Debris removal should be done before the summer season and following any significant rainfall events. The property owner should do annual site inspection to evaluate the need for additional maintenance, including sediment removal, revegetation, erosion control, and structural repairs.

·EQUIPMENT AND SPECIAL TOOLS REQUIRED
Rake or Broom
Wheelbarrow
Lawn Mower
Shovel

2.2 MAINTENANCE PROCEDURE:
·SEDIMENT REMOVAL
All sediment must be removed from the trickle channel, impact stilling basin and forebay.

·DEBRIS REMOVAL
Debris buildup is expected at the outlet structure trash rack, impact stilling basin and forebay. All debris should be collected and disposed of offsite. A broom or rake will be necessary to clean the trash rack and a shovel for the impact stilling basin and forebay.

·WATER QUALITY
In the outlet structure the water quality orifices in the steel plate must all be cleared of debris & sediment. All debris should be collected and disposed of offsite.
·RIPRAP
Inspect riprap for displaced rock and replace.

·MOW AREA

General mow area to be the bottom of the pond and interior sides. Grass should be maintained at a height of 4-6 inches until native vegetation is established.

·WEED PREVENTION

Monitor for weeds on a periodic basis (i.e. the spring & fall). If noxious weeds are found, mowing and/or chemical treat to prevent spread.

·SITE INSPECTION

The following items should be inspected a minimum of once per year and maintained as needed.

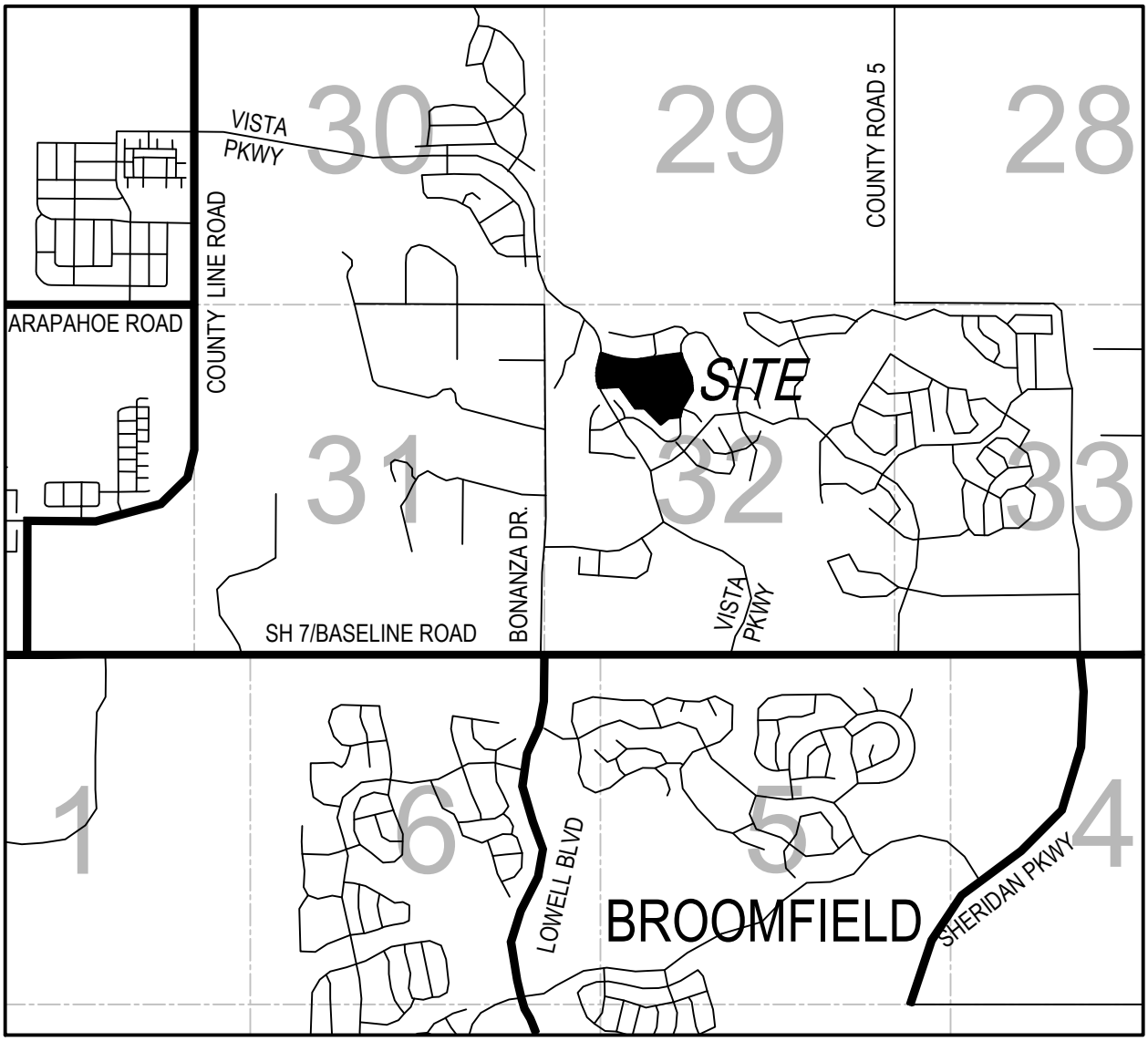
General:

- Concrete Trickle Channels
- Retaining Walls
- Vegetation
- Outlet Structures
- Orifice Plates
- Storm Pipe & Flared End Sections
- Inspect for evidence of erosion
- Manholes
- Riprap Spillway
- Impact Stilling Basin with Forebay

·POST-MAINTENANCE CONSIDERATIONS

Following completion of maintenance activities, all debris, trash, and excavated sediment must be removed offsite.

APPENDIX K
MAPS



VICINITY MAP

1"=1/2 Mile

THE REVISED WATER SURFACE ELEVATIONS, STREAM DISTANCES AND FLOODWAY WIDTH AT THIS LOCATION MAY NOT EXACTLY TIE-IN WITH THE EFFECTIVE DATA BECAUSE OF THE NEW DETAILED ANALYSES RESULTED FROM THIS REVISION. THE DOWNSTREAM PORTION OF THIS REACH WILL BE REVISED AT A FUTURE DATE AND ONCE UPDATED, WATER SURFACE ELEVATIONS, STREAM DISTANCES AND FLOODWAY WILL TIE-IN APPROPRIATELY. THIS PANEL WILL BE UPDATED AT A LATER DATE TO REFLECT THE RESULTS OF THE DOWNSTREAM REVISION

105°03'45" 40°01'52.5" 3125000 FT 3130000 FT 105°01'52.5" 40°01'52.5"

1800000 FT 1795000 FT 1790000 FT 40°00'00"

R. 69 W. R. 68 W. T. 1 N. T. 1 S.

Town of Erie 080181 | Boulder County Unincorporated Areas 080023 | Weld County Unincorporated Areas 080266 | City of Lafayette 080026

MATHEWS WAY, GRAHAM CIR, CARBON CT, BONNELL AVE, JONES CT, MASON ST, KOSS ST, MIRCOS ST, EICHHORN DR, PETRAS ST, ZODO AVE, LASNIK ST, OTEGA CT, RIVERA CT

ZONE AE | ZONE A | Coal Creek | Bridge | Culvert

5051.1 | 5052.7 R | 5058.3 S | 5061.6 | 5069.0 T | 5069.5 U | 5073.1 V | 5072.1 | 5078.4 | 5081.9 | 5085.4 | 5088.0 W | 5093.4 | 5098.5 X | 5100.4 | 5101.0 Y | 5103.4 Z | 5103.8 AA | 5105.6 AB

COLUMBINE CT, COLUMBINE WAY, SERENE CT, LAWSON WAY, LAWSON AVE, CLAYTON WAY, RELIANCE PL, RELIANCE CT, SERENE DR, LAWSON CT, JACQUES WAY, RELIANCE DR, VISTA PKWY, EATON ST, N PARKDALE CIR, PARKDALE PL, S PARKDALE CIR, QUINTANA LN, TAYLOR LN, PARKDALE CT

EAST COUNTY LINE RD, COMPASS PKWY, MARQUETTE DR, BURKE DR, GILPIN CIR, QUEST DR, WRIGHT DR, GRENVILLE CIR, CARTIER PL, GRENVILLE CIR, ARAPAHOE RD, STEARMAN CT, COMMANDER CIR, COMMANDER DR, BELLANCA CT, BEECH CT, VIKING CT, GREENS PL, DRIVER LN, VISTA PKWY, APPLE TREE PL, LINKS PL, HICKORY WAY, LINKS CT, S MAIN ST, CESSNA DR, BONANZA DR, MOONEY PL, PIPER DR, CHEROKEE CT, SKYLANE DR, BARON CT, AIRPORT DR, SUNSET DR, SUNSET ST, SUNSET PL, SUNSET WAY, BLUE SKY CIR, BLUE SKY WAY, BASELINE RD

FLOOD HAZARD INFORMATION WITHIN THE UNINCORPORATED AREA OF WELD COUNTY IS SHOWN FOR INFORMATION ONLY. FOR FLOOD INSURANCE, REFER TO THE SEPARATELY PRINTED FLOOD INSURANCE RATE MAP FOR THE UNINCORPORATED AREAS OF WELD COUNTY.

FLOOD HAZARD INFORMATION WITHIN THE UNINCORPORATED AREA OF WELD COUNTY IS SHOWN FOR INFORMATION ONLY. FOR FLOOD INSURANCE, REFER TO THE SEPARATELY PRINTED FLOOD INSURANCE RATE MAP FOR THE UNINCORPORATED AREAS OF WELD COUNTY.

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTPS://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) Zone A,V, A99
	With BFE or Depth Zone AE, AO, AH, VE, AR
	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
	Future Conditions 1% Annual Chance Flood Hazard Zone X
	Area with Reduced Flood Risk due to Levee See Notes. Zone X
	Area with Flood Risk due to Levee Zone D
OTHER AREAS	NO SCREEN Area of Minimal Flood Hazard Zone X
	Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
	Levee, Dike, or Floodwall
	E 18.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
	8 Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	513 Base Flood Elevation Line (BFE)
OTHER FEATURES	Limit of Study
	Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Base map information shown on the FIRM was provided by the FEMA Map Service Center, the Bureau of Land Management and Boulder County.

SCALE

N

Map Projection:
Universal Transverse Mercator Zone 13 North, Meters;
North American Datum 1983; Vertical Datum: NAVD 88

1 inch = 500 feet 1:6,000

0 250 500 750 1,000 2,000 feet

0 125 250 500 meters

PANEL LOCATOR



*PANEL NOT PRINTED

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

BOULDER COUNTY, COLORADO and Incorporated Areas

PANEL 443 OF 615

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
BOULDER COUNTY	080023	0443	K
ERIE, CITY OF	080181	0443	K
LAFAYETTE, CITY OF	080026	0443	K
WELD COUNTY	080266	0443	K

Notice: This map was reissued on 8/26/2019 to make a correctio
This version replaces any previous versions. See the Notice-to-Us
Letter that accompanied this correction for details.

VERSION NUMBER
2.3.3.0

MAP NUMBER
08013C0443K

MAP REVISED
AUGUST 15, 2019

Hydrologic Soil Group—Weld County, Colorado, Southern Part
(Vista Reserve - Erie, CO)



Map Scale: 1:2,550 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
36	Midway-Shingle complex, 5 to 20 percent slopes	D	8.4	45.2%
57	Renohill clay loam, 3 to 9 percent slopes	D	3.0	16.1%
67	Ulm clay loam, 3 to 5 percent slopes	C	7.2	38.7%
Totals for Area of Interest			**18.7**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

VISTA RESERVE
EXISTING DRAINAGE EXHIBIT

OWNER: JOHNSTON LINDA JANE LIVING TRUST
1401 HICKORY DRIVE

Basin	Area (acres)	C2	C5	C10	C100	Tc (mins)	I2 (in/hr)	I5 (in/hr)	I10 (in/hr)	I100 (in/hr)	Q2 (cfs)	Q5 (cfs)	Q10 (cfs)	Q100 (cfs)
H1	13.61	0.05	0.10	0.19	0.52	26.0	*1.38*	*1.89*	*2.37*	*4.56*	0.94	2.62	6.19	32.14
H2	5.44	0.06	0.11	0.20	0.52	20.9	*1.56*	*2.14*	*2.67*	*5.16*	0.49	1.29	2.92	14.65

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

LEGEND
- EXISTING CONTOURS
- EXISTING STORMLINE
- BASIN BOUNDARY
- 5150 EXISTING LONG ELEVATION
- 50 EXISTING SHORT ELEVATION
- FLOW ARROW
- (B2) DRAINAGE BASIN DESIGNATION

72.8 PROPOSED SPOT ELEVATION

811 72 HOURS BEFORE YOU DIG CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (U.N.C.C.)

REVISIONS

NO.	DATE
----	----

NOT FOR CONSTRUCTION

HURST & ASSOCIATES, INC.
1265 S. Public Road, Suite B
Lafayette, CO 80026
303.449.9105
HURST
CIVIL ENGINEERING
PLANNING
SURVEYING

VISTA RESERVE
ERIE, CO
EXISTING DRAINAGE EXHIBIT

PREPARED FOR:
AFFINITY HOLDINGS

JOB NUMBER:	2718-1
DRAWN BY:	TA
DESIGNED BY:	TA
DATE:	4/25/2025
SCALE:	1" = 50'
SHEET NO:	1 OF 1

LAST SAVED: 4/25/2025 11:08 AM
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VISTA RESERVE
DRAINAGE PLAN

811 — 72 HOURS BEFORE YOU DIG — CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (U.N.C.C.)

REVISIONS

NO.	DATE
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NOT FOR CONSTRUCTION

HURST & ASSOCIATES, INC.
1265 S. Public Road, Suite B
Lafayette, CO 80026
303.449.9105

HURST
CIVIL ENGINEERING
PLANNING
SURVEYING

VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
DRAINAGE PLAN-NORTH

PREPARED FOR:
AFFINITY HOLDINGS

JOB NUMBER:	2718-1
DRAWN BY:	TA
DESIGNED BY:	TA
DATE:	05/28/2026
SCALE:	1"=50'
SHEET NO:	7 OF 21

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED STORMLINE
- EXISTING STORMLINE
- BASIN BOUNDARY
- SUB-BASIN BOUNDARY
- MAJOR BASIN BOUNDARY
- 5150 PROPOSED LONG ELEVATION
- 50 PROPOSED SHORT ELEVATION
- 5150 EXISTING LONG ELEVATION
- 50 EXISTING SHORT ELEVATION
- FLOW ARROW
- B2 DRAINAGE BASIN DESIGNATION
- B4-10 DRAINAGE SUB-BASIN DESIGNATION

SCALE: 1" = 50'

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VISTA RESERVE
DRAINAGE PLAN

MATCH LINE

TROTTER PLACE
TROTTER DRIVE
REMUDA PLACE
PEACH PLACE
CHERRY PLACE
HICKORY DRIVE
APPLE TREE PLACE
VISTA PARKWAY
PLUM COURT
OLIVE COURT
APRICOT PL
MOUNTAIN VIEW BLVD

SB-15A
SB-15
SB-13
SB-14
SB-25
SB-26
SB-27
SB-27A
SB-28
SB-20G
SB-20K
SB-20H
SB-20I
SB-20J
SB-20L
SB-20M
SB-20N
SB-37A
SB-37B
SB-38
SB-39
SB-40
SB-41
SB-42
SB-43
SB-44
SB-45
SB-46
SB-47
SB-48
SA-83G
SA-83H
SA-83J
SA-83E
SA-84A
SA-86
SA-87
SA-88
SA-89
AI-2
AI-3
AI-4
AI-5
AI-6
AI-7
AI-8
AI-9
AI-10
AI-11
AI-12
AI-13
AI-14
AI-15
B4-12(A)
B4-12(B)
A21-4(A)
A21-3(B)
A21-3
A21-3(A)

C2 C3B C4 C5 C6 C7 C8 C9
D2 D4 D5 D7 D8
B4-8 B4-9 B4-10 B4-11

EX. 10' TYPE 'R' INLET
EX. 5' TYPE 'R' INLET
EX. 18" RCP
EX. 24" RCP
EX. 21" RCP
EX. 15" RCP
AREA INLET
PED. CROSSPAN

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 37 38 46 47 48 49 50

8 VISTA RIDGE FILING 1I
37 VISTA RIDGE FILING 1K
48 VISTA RIDGE FILING 1K
49 VISTA RIDGE FILING 1I

NOT FOR CONSTRUCTION

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED STORMLINE
- EXISTING STORMLINE
- BASIN BOUNDARY
- SUB-BASIN BOUNDARY
- MAJOR BASIN BOUNDARY
- 5150 PROPOSED LONG ELEVATION
- 50 PROPOSED SHORT ELEVATION
- 5150 EXISTING LONG ELEVATION
- 50 EXISTING SHORT ELEVATION
- FLOW ARROW
- B2 DRAINAGE BASIN DESIGNATION
- B4-10 DRAINAGE SUB-BASIN DESIGNATION

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

811 72 HOURS BEFORE YOU DIG CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (U.N.C.C.)

REVISIONS

NO.	DATE
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HURST
CIVIL ENGINEERING
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VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
DRAINAGE PLAN-SOUTH

PREPARED FOR:
AFFINITY HOLDINGS

JOB NUMBER:	2718-1
DRAWN BY:	TA
DESIGNED BY:	TA
DATE:	05/28/2026
SCALE:	1"=50'
SHEET NO:	8 OF 21

LAST SAVED: 6/2/2026 7:46 PM
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VISTA RESERVE

PUBLIC/PRIVATE SCM PLAN

POND C INFORMATION
WQ CAPTURE VOL = 0.169 AC-FT WQCV W.S.E. = 5132.13 EURV VOL = 0.430 AC-FT EURV W.S.E. = 5134.26 100-YEAR VOL = 0.937 AC-FT 100-YEAR W.S.E. = 5136.93 Q100 RELEASE = 14.70 CFS

POND D INFORMATION
WQ CAPTURE VOL = 0.073 AC-FT WQCV W.S.E. = 5150.26 EURV VOL = 0.184 AC-FT EURV W.S.E. = 5151.20 100-YEAR VOL = 0.520 AC-FT 100-YEAR W.S.E. = 5153.26 Q100 RELEASE = 3.87 CFS

NOTES:

VISTA RESERVE DOES NOT LIE WITHIN THE 100-YEAR FLOODPLAIN PER FIRM MAP 08013C0443K DATED AUGUST 15, 2019.

THERE ARE NO WATERCOURSES WITHIN THE LIMITS OF THIS MAP.

REFER TO SUBMITTED LANDSCAPE PLANS BY PCS GROUP.

EASEMENT NOTES:

ALL RESIDENTIAL LOTS HAVE THE FOLLOWING EASEMENTS:

- 10' UTILITY ALONG RIGHTS OF WAY
- 8' DRAINAGE & UTILITY ALONG REAR LOT LINE
- 6' UTILITY ALONG LOT LINES ADJACENT TO TRACTS
- 6' DRAINAGE & UTILITY ALONG SIDE LOT LINES ADJACENT TO REARS OF ADJACENT LOTS
- TRACTS A, B, & C SHALL HAVE BLANKET PUBLIC ACCESS EASEMENTS AND BLANKET DRAINAGE AND DRY UTILITY EASEMENTS

VICINITY MAP

1"=1/2 Mile

SCALE: 1" = 50'

LEGEND

- PROPOSED WATERLINE
- EXISTING WATERLINE
- PROPOSED SEWERLINE
- EXISTING SEWERLINE
- PROPERTY BOUNDARY
- WATER VALVE
- FIRE HYDRANT
- PLUG
- MANHOLE
- TYPE 'R' INLET
- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED STORMLINE
- EXISTING STORMLINE
- 5150 PROPOSED LONG ELEVATION
- 50 PROPOSED SHORT ELEVATION
- 5150 EXISTING LONG ELEVATION
- 50 EXISTING SHORT ELEVATION
- FLOW ARROW

811 — 72 HOURS BEFORE YOU DIG CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (U.N.C.C.)

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HURST

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HURST & ASSOCIATES, INC.
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Lafayette, CO 80026
303.449.9105

VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
PUBLIC/PRIVATE SCM PLAN

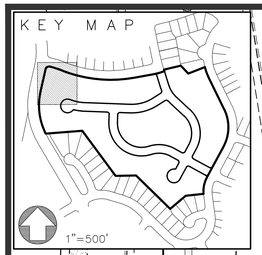
PREPARED FOR:
AFFINITY HOLDINGS

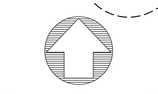
JOB NUMBER:	2718-1
DRAWN BY:	TA
DESIGNED BY:	TA
DATE:	05/28/2026
SCALE:	1"=50'
SHEET NO:	9 OF 21

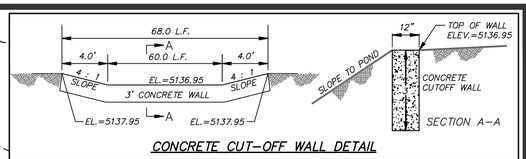
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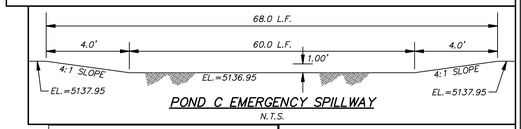
DETENTION POND C







CONCRETE CUT-OFF WALL DETAIL

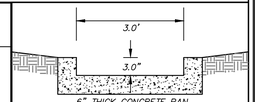


POND C EMERGENCY SPILLWAY

N.T.S.

POND C CHARACTERISTICS

WQ CAPTURE VOL	= 0.169 AC-FT
WQCV W.S.E.	= 5132.13
EURV VOL	= 0.430 AC-FT
EURV W.S.E.	= 5134.26
100-YEAR VOL	= 0.937 AC-FT
100-YEAR W.S.E.	= 5136.93
Q100 RELEASE	= 14.70 CFS



NOTE: INSTALL EXPANSION JOINTS W/ MAX SPACING OF 10 FEET. REFER TO TOWN OF ERIE DETAIL SW1.

Concrete Trickle Channel

N.T.S.

EX. POCKET PARK

EX. 8" S/L
EX. 18" RCP
EX. 12" W/L
EX. 21" RCP
EX. 5' TYPE 'R' INLET
SB-19
SB-17
SB-18
SB-20
SB-21
EX. 5' TYPE 'R' INLET
EX. DRIVE CUT (TO BE REMOVED)
SINGLE TREE LANE
EX. 8" W/L
CONC. MAINT. ACCESS
EX. CURB
PRO. 5 FT WALK
60.0' EMERGENCY SPILLWAY INV.=5136.95
VISTA PARKWAY
OUTFALL STRUCTURE INV OUT=5128.95
SB-15C
13.00 LF 18" RCP @ 2.0%
SB-15B
INV IN=5128.69
INV OUT=5128.59
MICROPOOL
DETENTION POND C
SB-20C
CONCRETE FOREBAY
INV IN=5130.09
INV OUT=5129.99
3 FT CONCRETE TRICKLE CHANNEL
10' WIDE MAINT. ACCESS
TRACT B
SB-20E
TYPE 13 INLET
12" HDPEP
3.5 FT WALL
2.75 FT WALL
5 FT WALK
SB-15D
CONCRETE FOREBAY
INV IN=5129.56
INV OUT=5129.46
EX. GAS LINE (TO BE REMOVED)
P&A WELL 50'x100' SETBACK
24" RCP
SB-20F
SB-20G
10' TYPE 'R' INLET
AREA INLET
152.01 LF 18" RCP @ 2.0%
SB-15A
INV IN=5125.40
INV OUT=5125.30
144.95 LF 18" RCP @ 2.0%
EX. 18" RCP
SB-15
EX. 10' TYPE 'R' INLET
INV IN=5124.40

ToW=5137.75 BoW=5135.00
ToW=5133.5 BoW=5133.0
ToW=5133.5 BoW=5131.0
ToW=5133.7 BoW=5130.2
ToW=5131.0 BoW=5130.2
ToW=5133.7 BoW=5130.2
ToW=5137.0 BoW=5135.0
FL29.61
FL29.83
FL29.47
FL29.45
FL29.99
0.50%
2.0%
10.0%

PROJECT NOTES

2.0 GENERAL FACILITY DESCRIPTION

- THIS FACILITY CONSISTS OF A DETENTION POND THAT RECEIVES INFLOWS FROM ON-SITE RUNOFF. THE FACILITY PROVIDES WATER QUALITY AND 100-YR STORM DETENTION. POND C RELEASES THROUGH STORM PIPES TO THE EXISTING STORM SYSTEM IN SINGLE TREE LANE.

2.1 MAINTENANCE NOTES

- MAINTENANCE FREQUENCY:
  ROUTINE MAINTENANCE TASKS, INCLUDING MOWING AND DEBRIS REMOVAL, SHOULD BE PERFORMED ON AN AS-NEEDED BASIS. DEBRIS REMOVAL SHOULD BE DONE BEFORE THE SUMMER SEASON AND FOLLOWING ANY SIGNIFICANT RAINFALL EVENTS. THE PROPERTY OWNER SHOULD DO ANNUAL SITE INSPECTION TO EVALUATE THE NEED FOR ADDITIONAL MAINTENANCE, INCLUDING SEDIMENT REMOVAL, REVEGETATION, EROSION CONTROL, AND STRUCTURAL REPAIRS.
- EQUIPMENT AND SPECIAL TOOLS REQUIRED:
  - RAKE AND BROOM
  - WHEELBARROW
  - LAWN MOWER
  - SHOVEL

2.2 MAINTENANCE PROCEDURE

- SEDIMENT REMOVAL:
  ALL SEDIMENT MUST BE REMOVED FROM THE TRICKLE CHANNEL, MICROPOOL AND FOREBAY.
- DEBRIS REMOVAL:
  DEBRIS BUILDUP IS EXPECTED AT THE OUTLET STRUCTURE TRASH RACK AND FOREBAY. ALL DEBRIS SHOULD BE COLLECTED AND DISPOSED OF OFFSITE. A BROOM OR RAKE WILL BE NECESSARY TO CLEAN THE TRASH RACK AND A SHOVEL FOR THE FOREBAY.
- WATER QUALITY:
  IN THE OUTLET STRUCTURE THE WATER QUALITY ORIFICES IN THE STEEL PLATE MUST ALL BE CLEARED OF DEBRIS & SEDIMENT. ALL DEBRIS SHOULD BE COLLECTED AND DISPOSED OF OFFSITE.
- RIPRAP:
  INSPECT RIPRAP FOR DISPLACED ROCK AND REPLACE.
- MOW AREA:
  GENERAL MOW AREA TO BE THE BOTTOM OF THE POND AND INTERIOR SIDES. GRASS SHOULD BE MAINTAINED AT A HEIGHT OF 4-6 INCHES UNTIL NATIVE VEGETATION IS ESTABLISHED.
- WEED PREVENTION:
  MONITOR FOR WEEDS ON A PERIODIC BASIS (I.E. THE SPRING & FALL). IF NOXIOUS WEEDS ARE FOUND, MOWING AND/OR CHEMICAL TREAT TO PREVENT SPREAD.
- SITE INSPECTION:
  THE FOLLOWING ITEMS SHOULD BE INSPECTED A MINIMUM OF ONCE PER YEAR AND MAINTAINED AS NEEDED:
  - CONCRETE TRICKLE CHANNELS
  - RETAINING WALLS
  - VEGETATION
  - OUTLET STRUCTURES
  - ORIFICE PLATES
  - STORM PIPE & FLARED END SECTIONS
  - INSPECT FOR EVIDENCE OF EROSION
  - MANHOLES
  - RIPRAP SPILLWAY
  - FOREBAY
- POST-MAINTENANCE CONSIDERATIONS:
  FOLLOWING COMPLETION OF MAINTENANCE ACTIVITIES, ALL DEBRIS, TRASH, AND EXCAVATED SEDIMENT MUST BE REMOVED AND DISPOSED OF OFFSITE.

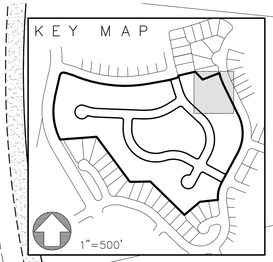
LEGEND

	PROPOSED WATERLINE
	EXISTING WATERLINE
	PROPOSED SEWERLINE
	EXISTING SEWERLINE
	PROPOSED STORMLINE
	EXISTING STORMLINE
W	WATER SERVICE
S	SEWER SERVICE
FS	FIRE SERVICE
G	EXISTING GAS LINE
E	EX. UNDERGROUND ELECTRIC
OHE	EX. OVERHEAD ELECTRIC
FO	EXISTING FIBER OPTIC
T	EXISTING TELEPHONE LINE
TV	EXISTING CABLE TV LINE
	THRUST BLOCK
	WATER VALVE
	FIRE HYDRANT
	Plug
	MANHOLE
	TYPE 'R' INLET
	STREET LIGHT
	EXISTING CONTOURS
	PROPOSED CONTOURS
5150	PROPOSED LONG ELEVATION
50	PROPOSED SHORT ELEVATION
5150	EXISTING LONG ELEVATION
50	EXISTING SHORT ELEVATION
	FLOW ARROW
ToW	TOP OF WALL ELEVATION
BoW	BOTTOM OF WALL AT GROUND ELEVATION

POND D CHARACTERISTICS

WQ CAPTURE VOL	= 0.073 AC-FT
WQCV W.S.E.	= 5150.26
EURV VOL	= 0.184 AC-FT
EURV W.S.E.	= 5151.20
100-YEAR VOL	= 0.520 AC-FT
100-YEAR W.S.E.	= 5153.26
Q100 RELEASE	= 3.87 CFS

VISTA RESERVE
DETENTION POND D



VISTA RIDGE FILING 1K
1
2
BLOCK 2
14
15

EX. 8" S/L
EX. 8" W/L
EX. 24" RCP
EX. 15" RCP
SA-80A
SA-81
SA-82
EX. 5' TYPE 'R' INLET
SA-83
SA-83A
PRO. INV IN=5148.23 (SW)
EX. INV OUT=5148.03 (NW)
56.10 LF 18" RCP @ 1.02%
DETENTION POND D
SA-83B
OUTFALL STRUCTURE
INV. IN=5149.00
INV. OUT=5148.80
MICROPOOL
3 FT CONCRETE TRICKLE CHANNEL
SA-83C
CONCRETE FOREBAY
INV.=5149.50
10' WIDE MAINT. ACCESS
SLOPE 4:1
12" HDPEP
5 FT WALK
EX. CURB
PRO. 5 FT WALK
HICKORY DRIVE
CONC. MAINT. ACCESS
AREA INLET
TRACT A

55.25
55.00
49.40
49.00
3.0%
10.0%

PROJECT NOTES

2.0 GENERAL FACILITY DESCRIPTION

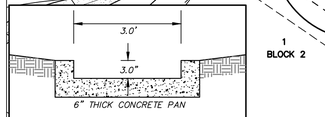
- THIS FACILITY CONSISTS OF A DETENTION POND THAT RECEIVES INFLOWS FROM ON-SITE RUNOFF. THE FACILITY PROVIDES WATER QUALITY AND 100-YR STORM DETENTION. POND D RELEASES THROUGH STORM PIPES TO THE EXISTING STORM SYSTEM IN HICKORY DRIVE.

2.1 MAINTENANCE NOTES

- MAINTENANCE FREQUENCY:
  ROUTINE MAINTENANCE TASKS, INCLUDING MOWING AND DEBRIS REMOVAL, SHOULD BE PERFORMED ON AN AS-NEEDED BASIS. DEBRIS REMOVAL SHOULD BE DONE BEFORE THE SUMMER SEASON AND FOLLOWING ANY SIGNIFICANT RAINFALL EVENTS. THE PROPERTY OWNER SHOULD DO ANNUAL SITE INSPECTION TO EVALUATE THE NEED FOR ADDITIONAL MAINTENANCE, INCLUDING SEDIMENT REMOVAL, REVEGETATION, EROSION CONTROL, AND STRUCTURAL REPAIRS.
- EQUIPMENT AND SPECIAL TOOLS REQUIRED:
  - RAKE AND BROOM
  - WHEELBARROW
  - LAWN MOWER
  - SHOVEL

2.2 MAINTENANCE PROCEDURE

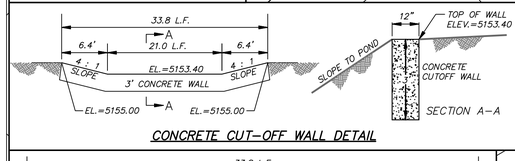
- SEDIMENT REMOVAL:
  ALL SEDIMENT MUST BE REMOVED FROM THE TRICKLE CHANNEL, MICROPOOL AND FOREBAY.
- DEBRIS REMOVAL:
  DEBRIS BUILDUP IS EXPECTED AT THE OUTLET STRUCTURE TRASH RACK AND FOREBAY. ALL DEBRIS SHOULD BE COLLECTED AND DISPOSED OF OFFSITE. A BROOM OR RAKE WILL BE NECESSARY TO CLEAN THE TRASH RACK AND A SHOVEL FOR THE FOREBAY.
- WATER QUALITY:
  IN THE OUTLET STRUCTURE THE WATER QUALITY ORIFICES IN THE STEEL PLATE MUST ALL BE CLEARED OF DEBRIS & SEDIMENT. ALL DEBRIS SHOULD BE COLLECTED AND DISPOSED OF OFFSITE.
- RIPRAP:
  INSPECT RIPRAP FOR DISPLACED ROCK AND REPLACE.
- MOW AREA:
  GENERAL MOW AREA TO BE THE BOTTOM OF THE POND AND INTERIOR SIDES. GRASS SHOULD BE MAINTAINED AT A HEIGHT OF 4-6 INCHES UNTIL NATIVE VEGETATION IS ESTABLISHED.
- WEED PREVENTION:
  MONITOR FOR WEEDS ON A PERIODIC BASIS (I.E. THE SPRING & FALL). IF NOXIOUS WEEDS ARE FOUND, MOWING AND/OR CHEMICAL TREAT TO PREVENT SPREAD.
- SITE INSPECTION:
  THE FOLLOWING ITEMS SHOULD BE INSPECTED A MINIMUM OF ONCE PER YEAR AND MAINTAINED AS NEEDED:
  - CONCRETE TRICKLE CHANNELS
  - RETAINING WALLS
  - VEGETATION
  - OUTLET STRUCTURES
  - ORIFICE PLATES
  - STORM PIPE & FLARED END SECTIONS
  - INSPECT FOR EVIDENCE OF EROSION
  - MANHOLES
  - RIPRAP SPILLWAY
  - FOREBAY
- POST-MAINTENANCE CONSIDERATIONS:
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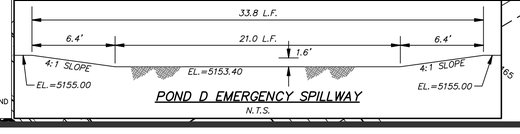
NOTE: INSTALL EXPANSION JOINTS W/ MAX SPACING OF 10 FEET. REFER TO TOWN OF ERIE DETAIL SW1.

Concrete Trickle Channel

N.T.S.

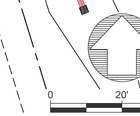


CONCRETE CUT-OFF WALL DETAIL



POND D EMERGENCY SPILLWAY

N.T.S.



811
72 HOURS BEFORE YOU DIG
CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (U.N.C.C.)

NO.	REVISIONS	DATE
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NOT FOR CONSTRUCTION

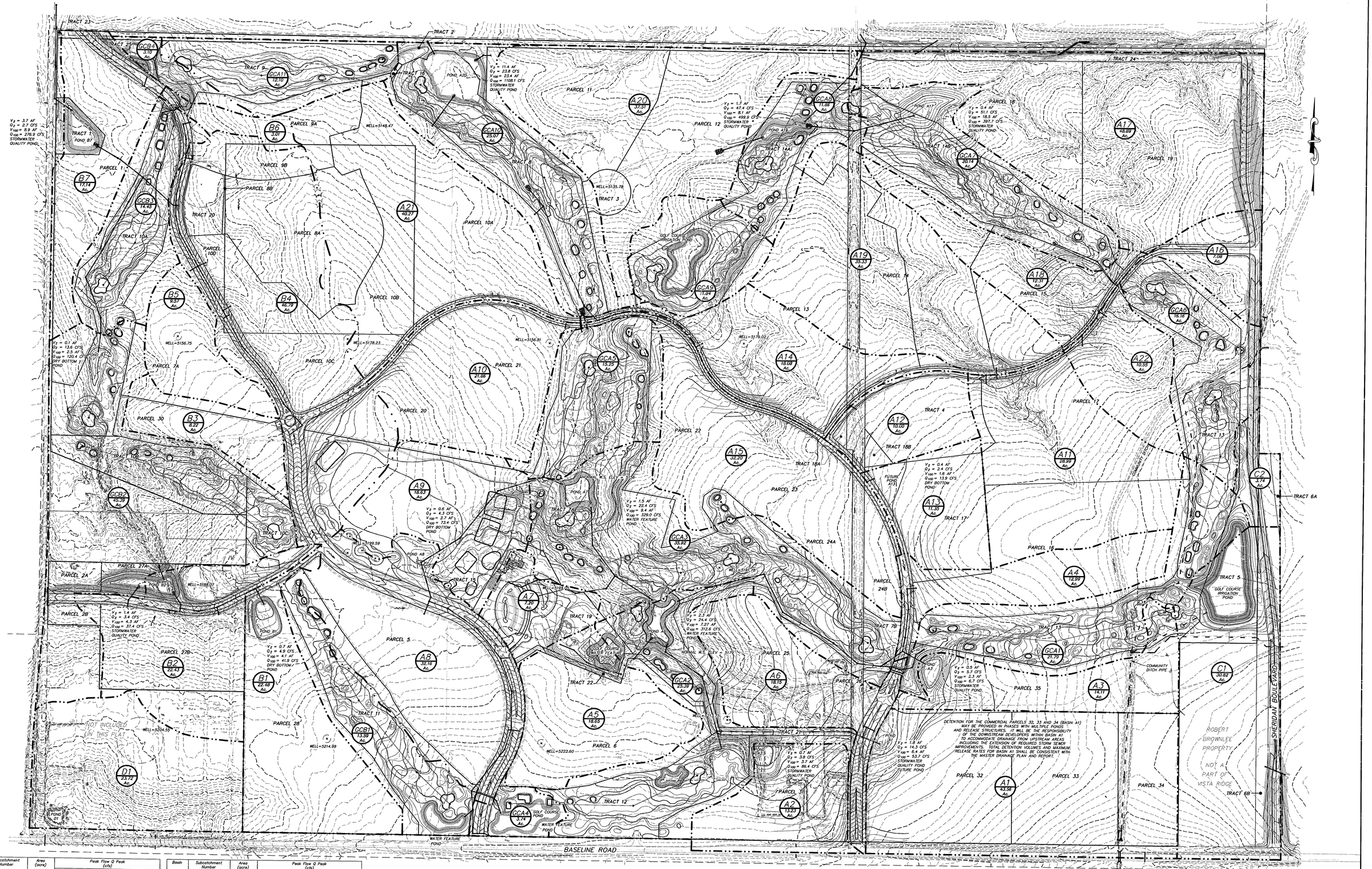
HURST
CIVIL ENGINEERING
PLANNING
SURVEYING
HURST & ASSOCIATES, INC.
1265 S. Public Road, Suite B
Lafayette, CO 80026
303.449.9105

VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
DETENTION POND PLANS

PREPARED FOR:
AFFINITY HOLDINGS

JOB NUMBER:	2718-1
DRAWN BY:	TA
DESIGNED BY:	TA
DATE:	05/28/2026
SCALE:	1"=20'
SHEET NO:	14 OF 21

LAST SAVED: 6/2/2026 3:38 PM
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Basin	Subcatchment Number	Area (acre)	Peak Flow Q Peak (cfs)		
			2 Year	10 Year	100 Year
A1	101	43.56	79.0	134.0	223.0
A2	102	13.23	23.0	39.0	66.0
A3	103	14.11	25.0	42.0	70.0
A4	104	12.99	8.0	22.0	47.0
A5	105	18.85	12.0	33.0	69.0
A6	106	18.15	16.0	38.0	76.0
A7	107	7.2	9.0	18.0	33.0
A8	108	32.16	22.0	60.0	124.0
A9	109	18.83	2.0	16.0	44.0
A10	110	21.86	19.0	47.0	92.0
A11	111	28.99	20.0	54.0	111.0
A12	112	10	1.0	7.0	18.0
A13	113	11.35	14.0	29.0	52.0
A14	114	18.08	12.0	32.0	67.0
A15	115	32.2	29.0	70.0	138.0
A16	116	3.43	2.0	6.0	13.0
A17	117	53.16	38.0	103.0	213.0
A18	118	12.31	8.0	21.0	44.0
A19	119	35.33	24.0	67.0	137.0
A20	120	37.51	26.0	71.0	147.0
A21	121	40.27	28.0	77.0	158.0
A22	122	10.55	7.0	18.0	37.0
GCA1	501	21.79	2.0	16.0	44.0
GCA2	502	25.39	2.0	20.0	54.0
GCA3	503	35.92	3.0	26.0	70.0
GCA4	504	3.74	0.0	4.0	10.0

Basin	Subcatchment Number	Area (acre)	Peak Flow Q Peak (cfs)		
			2 Year	10 Year	100 Year
GCA5	505	15.25	1.0	11.0	30.0
GCA6	506	16.16	1.0	12.0	34.0
GCA7	507	20.14	2.0	15.0	42.0
GCA8	508	11.86	1.0	9.0	26.0
GCA9	509	11.84	1.0	9.0	26.0
GCA10	510	25.07	2.0	19.0	51.0
GCA11	511	12.1	2.0	9.0	23.0
B1	201	22.48	29.0	58.0	105.0
B2	202	22.43	20.0	48.0	94.0
B3	203	8.22	12.0	22.0	39.0
B4	204	46.79	26.0	70.0	141.0
B5	205	9.57	6.0	16.0	34.0
B6	206	3.01	2.0	6.0	12.0
B7	207	17.14	11.0	30.0	63.0
GCB1	601	13.59	1.0	8.0	22.0
GCB2	602	45.39	4.0	37.0	100.0
GCB3	603	14.43	1.0	12.0	33.0
GCB4	604	3.1	0.0	4.0	10.0
C1	301	30.82	3.0	19.0	51.0
C2	302	3.74	2.0	6.0	13.0
D1	401	23.72	2.0	15.0	43.0
O-A1	901	130.9	10.0	104.0	281.0
O-A2	902	42.88	3.0	27.0	74.0
O-A3	903	53.46	4.0	39.0	106.0
O-A4	904	32.1	3.0	27.0	74.0

GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

VISTA RIDGE MASTER DRAINAGE PLAN

SCALE	HOR. 1"=200' VER. N/A
DESIGN/APPR.	JJ
DRAWN BY	ROC
DATE	9/21/01
FILE	G:\21423\423-GRADING

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SHEET 1 OF 1

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VISTA RIDGE
STORMWATER MASTER DRAWING WEST

ERIE AIR PARK SUBDIVISION REPLAT B
ERIE AIR PARK SUBDIVISION REPLAT C
ERIE AIR PARK SUBDIVISION
WELD COUNTY ROAD 3
TRACT 23
GRAPHIC SCALE
(IN FEET)
1 inch = 200 ft.
CITY OF BROOMFIELD
PARCEL 2B
PARCEL 2A
STREET C
PARCEL 4
VISTA RIDGE GOLF COURSE TRACT 10A, B & C
PARCEL 1-1
TRACT 1
POND B7
100 YR. WSEL=5105.38
PARCEL 2-9
PARCEL 2-8
POND B3
100 YR. WSEL=5133.68
POND B2
100 YR. WSEL=5179.22
PARCEL 2-5
TRACT 25
WWD LIMITED LIABILITY PROPERTY
COUNTY ROAD 4
EXISTING 50' GAS EASEMENT
TRACT 20
VISTA RIDGE GOLF COURSE TRACT 9
PARCEL 2-7
EXISTING 30' COUNTY ROAD R.O.W.
EXISTING 10' ELECTRICAL EASEMENT
PARCEL 28
POND B1
100 YR. WSEL=5195.44
PARCEL 30A & B
PARCEL 2-6
TRACT 2
BASELINE ROAD
VISTA RIDGE GOLF COURSE TRACT 11
STREET A
PRACTICE AREA
PARCEL 20
STREET B
PARCEL 2-1/3-1
TRACT 16
PARCEL 2-3
POND A8
100 YR. WSEL=5195.33
PARCEL 21
VISTA RIDGE GOLF COURSE TRACT 8
EXISTING 75' ELECTRIC EASEMENT
POND A20
100 YR. WSEL=5120.67
COLORADO STATE HWY 7
TRACT 19
TRACT 22
PARCEL 2-4
POND A7
100 YR. WSEL=5162.06
VISTA RIDGE GOLF COURSE TRACT 7A
PARCEL 3-2
VISTA RIDGE GOLF COURSE TRACT 12
POND A6
100 YR. WSEL=5183.51
PARCEL 22
TRACT 3
MATCH TO SHEET 6

VICINITY MAP
SCALE: 1"=2000'

VISTA RIDGE BENCH MARK

N 1/4 CORNER SECTION 32
3" ALUMINUM CAP
DATED 1994
ELEV.=5117.77
(NGVD 29 DATUM)

LEGEND

- Manhole
- Existing Manhole
- 5' Type 'R' Inlet
- 10' Type 'R' Inlet
- 15' Type 'R' Inlet
- Flared End Section
- Storm Pipe
- Existing Storm Pipe

NOTE: ALL INLETS ARE 5' TYPE 'R' UNLESS OTHERWISE NOTED.

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1-800-922-1987
GAS, ELECTRIC, TELEPHONE, CATV AND PANHANDLE EASTERN PIPELINE LOCATIONS

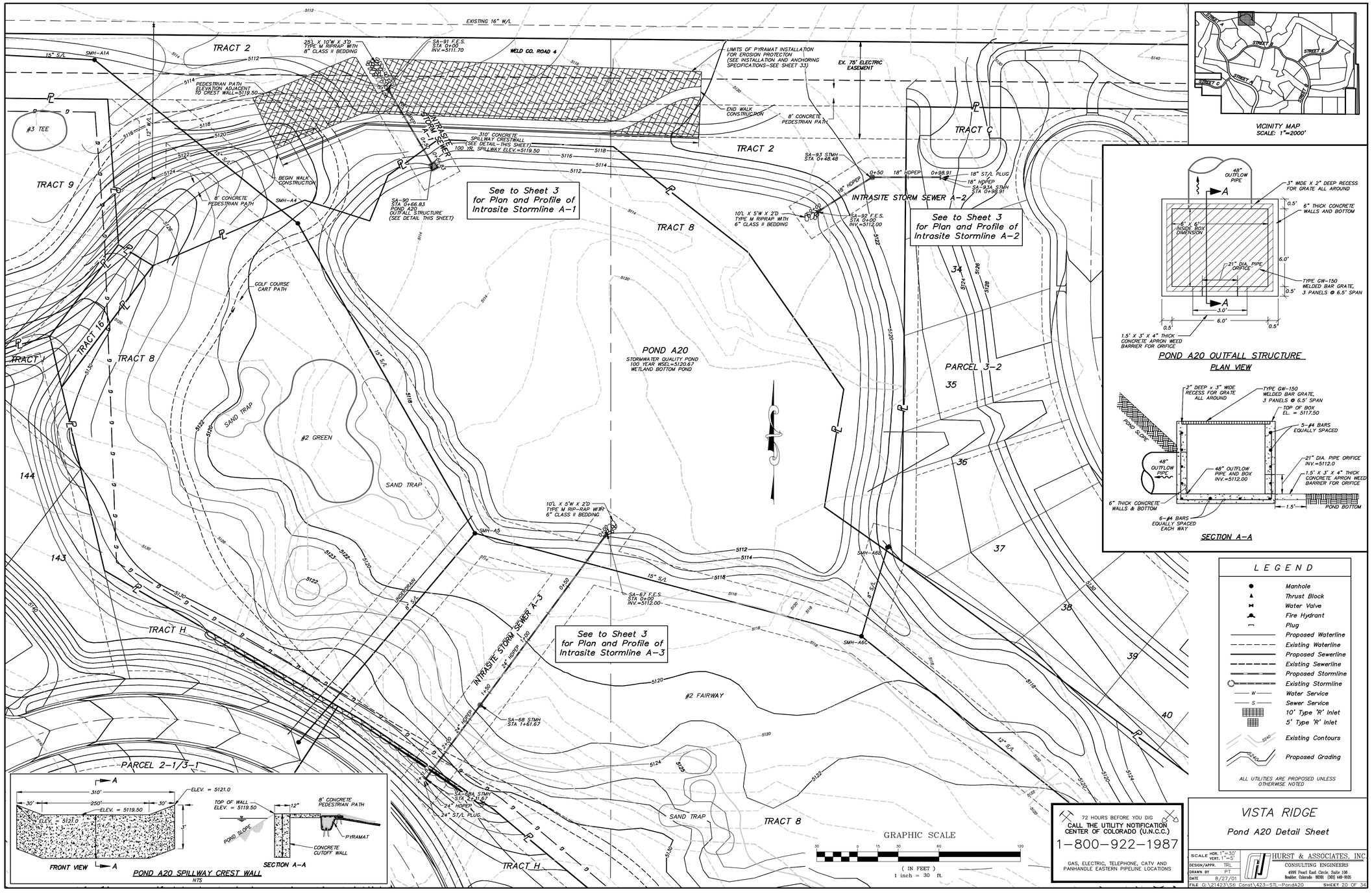
VISTA RIDGE
STREET CONSTRUCTION PLANS
STORMWATER MASTER DRAWING WEST

SCALE	HOR. 1"=200' VERT. N/A
DESIGN/APPR.	JJ
DRAWN BY	ROC
DATE	8/31/01
FILE	G:\21423\ST CONST\423-ST-MD1

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SHEET 5 OF 37

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VISTA RIDGE

Pond A20 Detail Sheet

SCALE HOR. 1"=30' VERT. 1"=5'	
DESIGN/APPR.	TRL
DRAWN BY	PT
DATE	8/27/01

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FILE G:\21423\Stl Const\423-STL-PondA20 SHEET 20 OF 34

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Refer to Sheet 15 for Plan and Profile of Intrasite Stormline B-1

INTRASITE STORM SEWER B-1

WELD COUNTY ROAD NO. 3

EXISTING W/L

30' R.O.W.

S83°50'20"E 92.46 L.F. EXISTING 36" RCP

SB-63 STMH

SB-62 STA 0+00 POND A7 OUTFALL STRUCTURE (SEE DETAIL THIS SHEET)

SB-62 F.E.S. INV. = 5096.00

SB-63 STMH

18" HDPE

5'W X 10'L X 2' THICK TYPE M RIP-RAP WITH 6" CLASS II BEDDING

LIMITS OF PYRAMAT INSTALLATION (SEE SHEET 33 FOR INSTALLATION AND ACHORING SPECIFICATIONS)

108' CONCRETE SPILLWAY CREST WALL (SEE DETAIL THIS SHEET)

100' RIP-RAP (SEE DETAIL THIS SHEET)

ERIE AIR PARK SUBDIVISION

POND B7
STORMWATER QUALITY POND
WETLAND BOTTOM POND
100 YEAR WSEL=5105.38

TRACT C

TRACT D

TRACT 1

PARCEL 1-1

PARCEL 1-1

10'W X 20'L X 2' THICK TYPE M RIP-RAP WITH 6" CLASS II BEDDING

SB-3 F.E.S. STA 0+00 INV. = 5096.00

INTRASITE STORM SEWER B-2

48" HDPE

Refer to Sheet 16 for Plan and Profile of Intrasite Stormline B-2

SB-2 5' TYPE 'R' INLET

SB-3 STMH

SB-4 5' TYPE 'R' INLET

SMH-C5

54" RCP

18" RCP

8" W/L

POND B7 SPILLWAY CREST WALL
NTS

FRONT VIEW

SECTION A-A

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

VICINITY MAP
SCALE: 1"=2000'

POND B7 OUTFALL STRUCTURE

PLAN VIEW

SECTION A-A

SECTION B-B

LEGEND

- Manhole
- Thrust Block
- Water Valve
- Fire Hydrant
- Plug
- Proposed Waterline
- Existing Waterline
- Proposed Sewerline
- Existing Sewerline
- Proposed Stormline
- Existing Stormline
- Water Service
- Sewer Service
- 10' Type 'R' Inlet
- 5' Type 'R' Inlet
- Existing Contours
- Proposed Grading

ALL UTILITIES ARE PROPOSED UNLESS OTHERWISE NOTED

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VISTA RIDGE

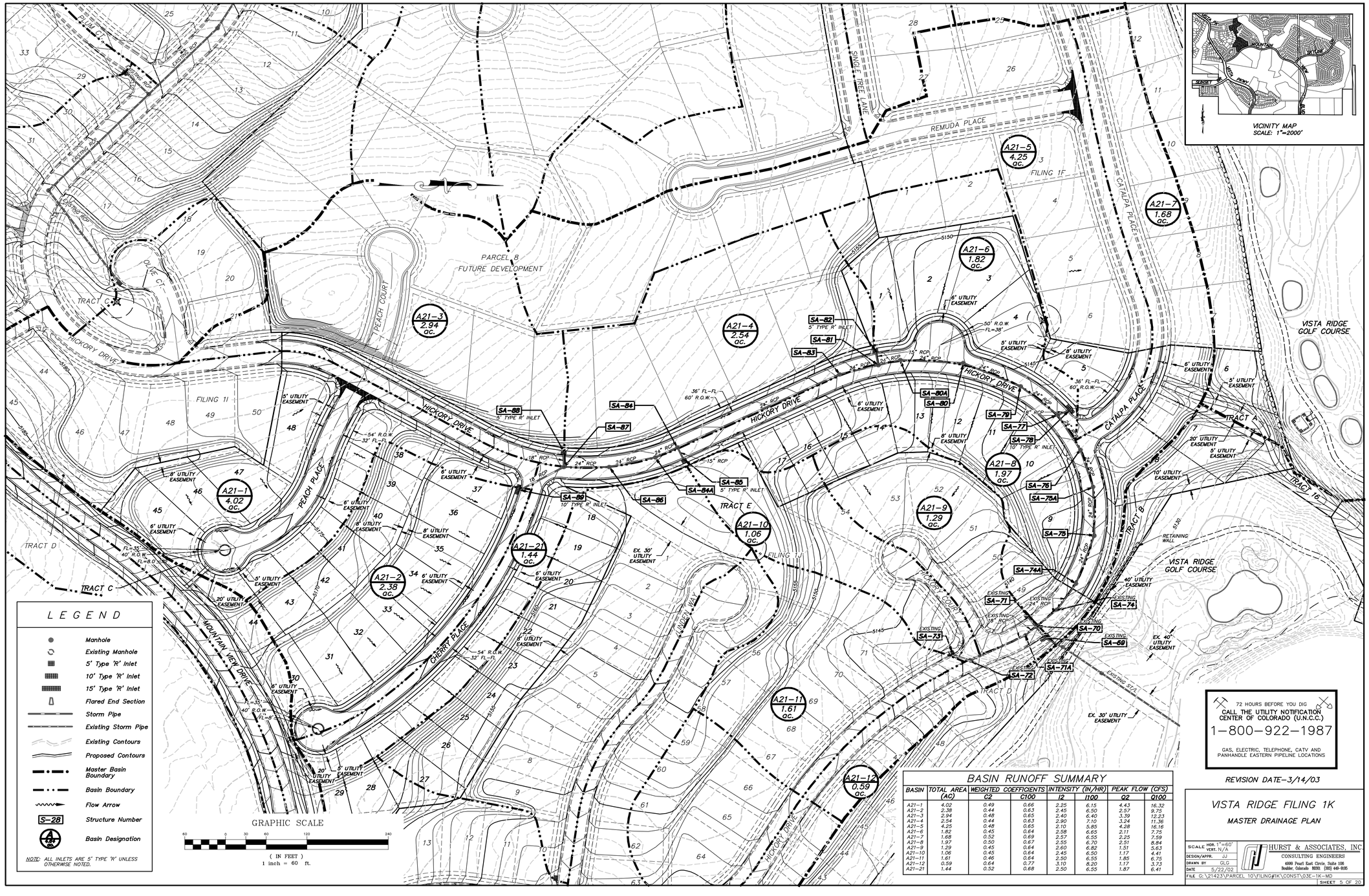
Pond B7 Detail Sheet

SCALE	HOR. 1"=20' VERT. 1"=5'
DESIGN/APPR.	TRL
DRAWN BY	PT
DATE	8/27/01
FILE	G:\21423\Stl Const\423-STL-PondB7

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SHEET 31 OF 34

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LEGEND

- Manhole
- Existing Manhole
- 5' Type 'R' Inlet
- 10' Type 'R' Inlet
- 15' Type 'R' Inlet
- Flared End Section
- Storm Pipe
- Existing Storm Pipe
- Existing Contours
- Proposed Contours
- Master Basin Boundary
- Basin Boundary
- Flow Arrow
- S-28 — Structure Number
- A21 / 4.25 ac. — Basin Designation

NOTE: ALL INLETS ARE 5' TYPE 'R' UNLESS OTHERWISE NOTED.

BASIN RUNOFF SUMMARY

BASIN	TOTAL AREA (AC)	WEIGHTED COEFFICIENTS C2	C100	INTENSITY (IN/HR) I2	I100	PEAK FLOW (CFS) Q2	Q100
A21-1	4.02	0.49	0.66	2.25	6.15	4.43	16.32
A21-2	2.38	0.44	0.63	2.45	6.50	2.57	9.75
A21-3	2.94	0.48	0.65	2.40	6.40	3.39	12.23
A21-4	2.54	0.44	0.63	2.90	7.10	3.24	11.36
A21-5	4.25	0.48	0.65	2.10	5.85	4.28	16.16
A21-6	1.82	0.45	0.64	2.58	6.65	2.11	7.75
A21-7	1.68	0.52	0.69	2.57	6.55	2.25	7.59
A21-8	1.97	0.50	0.67	2.55	6.70	2.51	8.84
A21-9	1.29	0.45	0.64	2.60	6.82	1.51	5.63
A21-10	1.06	0.45	0.64	2.45	6.50	1.17	4.41
A21-11	1.61	0.46	0.64	2.50	6.55	1.85	6.75
A21-12	0.59	0.64	0.77	3.10	8.20	1.17	3.73
A21-21	1.44	0.52	0.68	2.50	6.55	1.87	6.41

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REVISION DATE-3/14/03

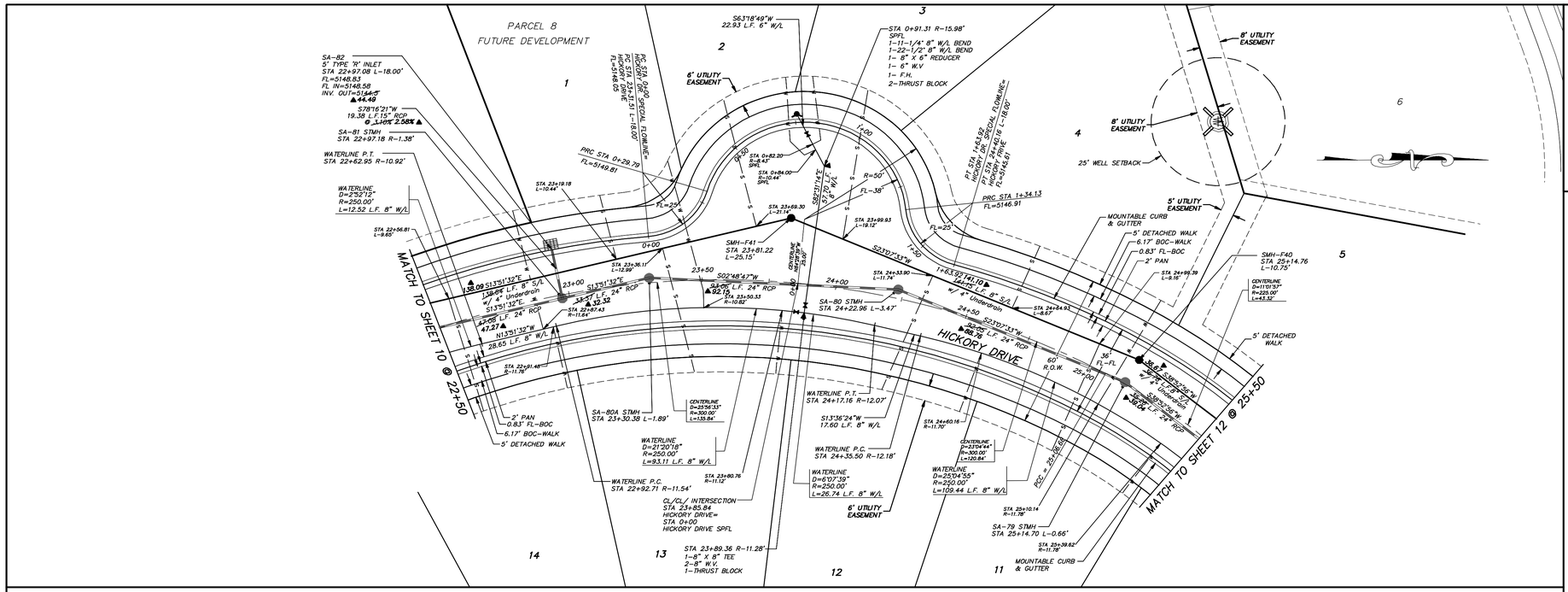
VISTA RIDGE FILING 1K

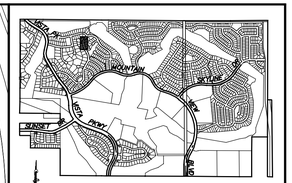
MASTER DRAINAGE PLAN

SCALE HOR.	1"=60'
VERT.	N/A
DESIGN/APPR.	JJ
DRAWN BY	GLG
DATE	5/22/02
FILE	G:\21423\PARCEL 10\FILING#1K\CONST\03E-1K-MD

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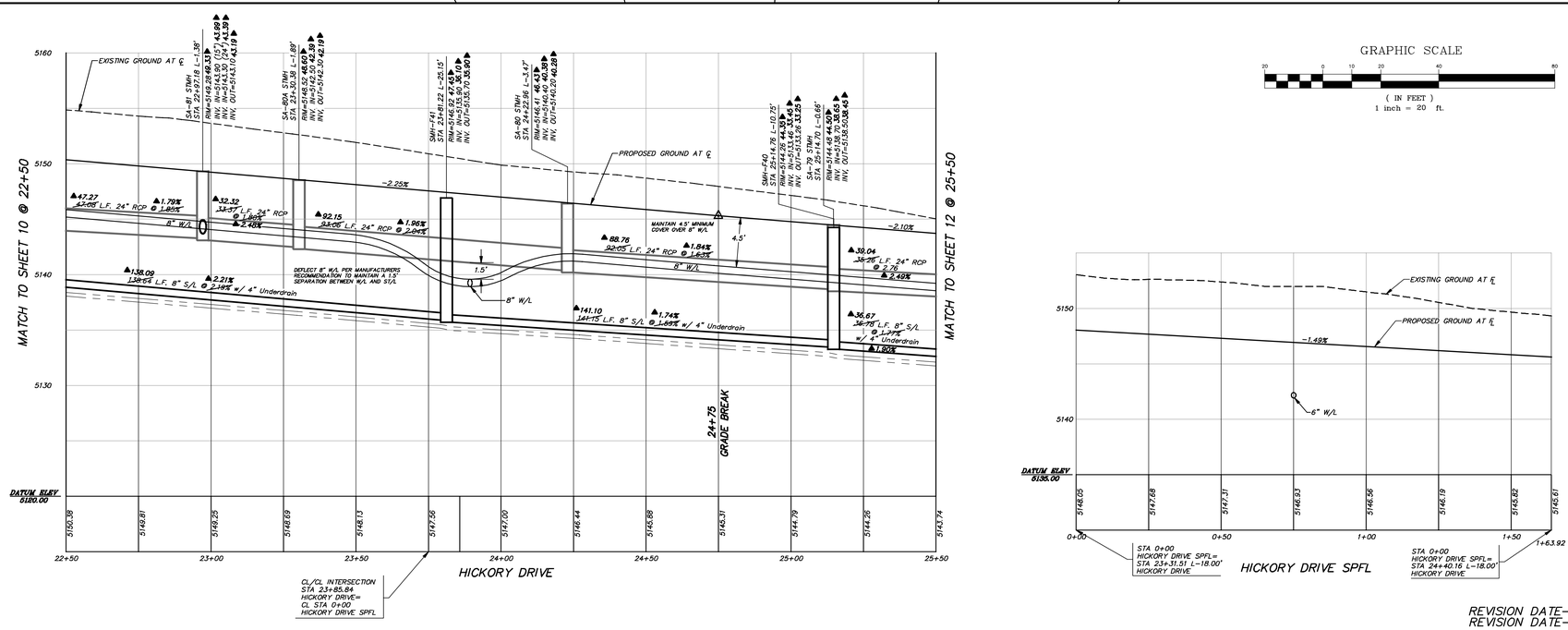




LEGEND

- Manhole
- Thrust Block
- Water Valve
- Fire Hydrant
- Plug
- Proposed Waterline
- Existing Waterline
- Proposed Sewerline
- Existing Sewerline
- Proposed Stormline
- Existing Stormline
- 10' Type 'R' Inlet
- 5' Type 'R' Inlet
- Existing Gas Line To Be Removed
- Relocated Gas Line
- Gas Sales Line
- Well Site To Be Abandoned
- Well Site To Remain

ALL UTILITIES ARE PROPOSED UNLESS OTHERWISE NOTED



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

REVISION DATE-5/20/03
REVISION DATE-3/14/03

▲ AS-BUILT BY
HURST & ASSOCIATES, INC.
CONSULTING ENGINEERS
10/8/03

VISTA RIDGE BENCH MARK

N 1/4 CORNER SECTION 32
3" ALUMINUM CAP
DATED 1994
ELEV.=5117.77
(NGVD 29 DATUM)

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VISTA RIDGE FILING 1K

HICKORY DRIVE
Sta 22+50 - 25+50
HICKORY DRIVE SPECIAL FLOWLINE
Sta 0+00 - 1+63.92

SCALE	HOR. 1"=20' VERT. 1"=5'
DESIGN/APPR.	JJ
DRAWN BY	GLG
DATE	5/22/02
FILE	G:\21423\PARCEL 10\FILING#1K\CONST\03E-1K-PP3

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Match to Sheet 12 of the Vista Ridge Filing 1F Construction Set for Plan and Profile of Catalpa Place @ CL STA 10+93.15

See Sheet 12 & 13 of the Vista Ridge Filing 1F Construction Set for Plan and Profile of Existing Utilities in Catalpa Place & Hickory Drive

Match to Sheet 9 of the Vista Ridge Filing 1J Construction Set for Plan and Profile of Hickory Drive @ CL STA 28+72.75

MATCH TO SHEET 11 @ 25+50

VISTA RIDGE GOLF COURSE

TRACT B

CATALPA PLACE

HICKORY DRIVE

VICINITY MAP
SCALE: 1"=2000'

LEGEND

- Manhole
- Thrust Block
- Water Valve
- Fire Hydrant
- Plug
- Proposed Waterline
- Existing Waterline
- Proposed Sewerline
- Existing Sewerline
- Proposed Stormline
- Existing Stormline
- 10' Type 'R' Inlet
- 5' Type 'R' Inlet
- Existing Gas Line To Be Removed
- Relocated Gas Line
- Gas Sales Line
- Well Site To Be Abandoned
- Well Site To Remain

ALL UTILITIES ARE PROPOSED UNLESS OTHERWISE NOTED

VISTA RIDGE BENCH MARK

N 1/4 CORNER SECTION 32
3" ALUMINUM CAP
DATED 1994
ELEV.=5117.77
(NGVD 29 DATUM)

AS-BUILT BY
HURST & ASSOCIATES, INC.
10/8/03

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

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REVISION DATE-3/14/03

VISTA RIDGE FILING 1K

Plan & Profile of Utilities HICKORY DRIVE

Sta 0+00 - 4+00

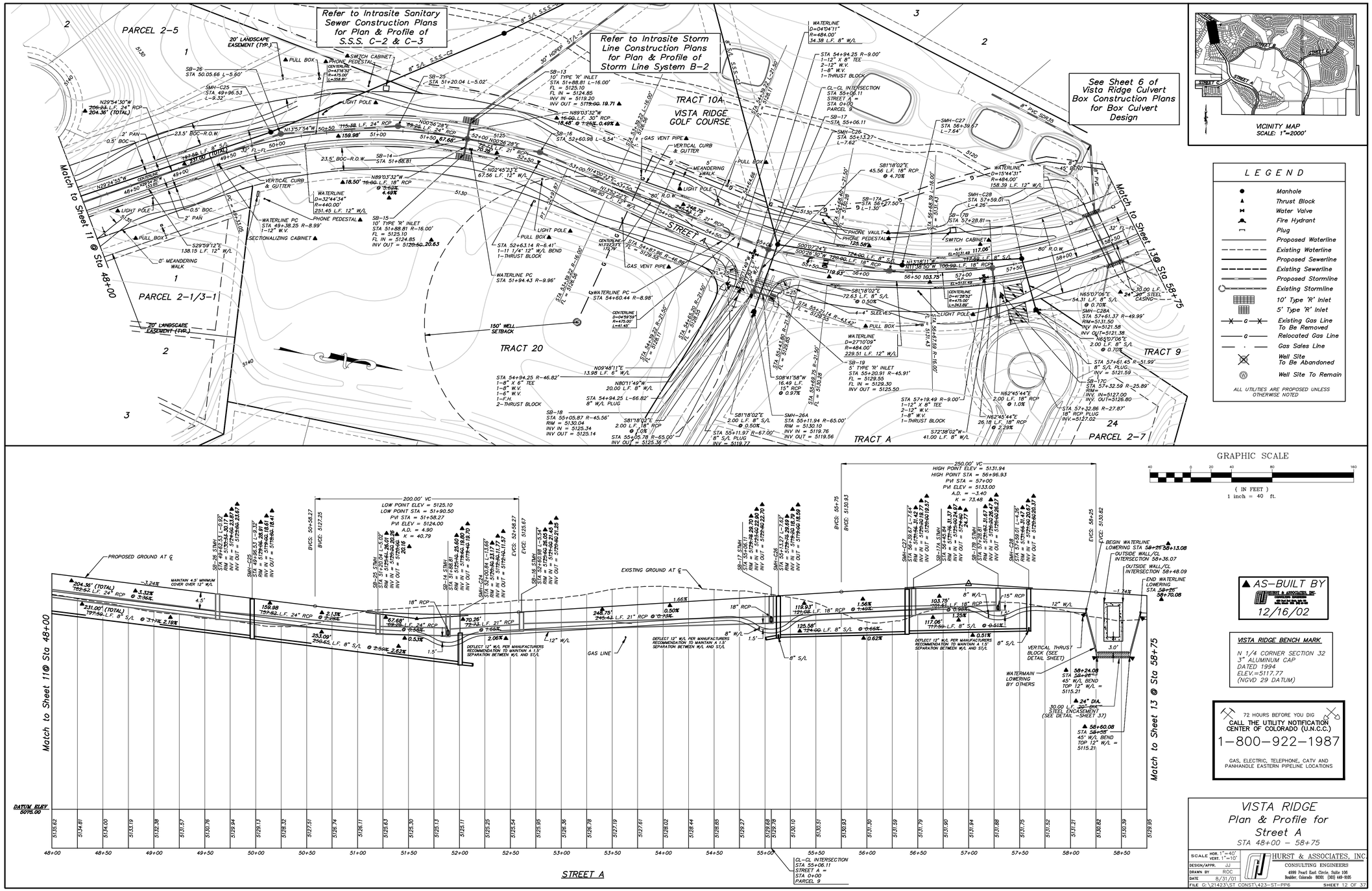
SCALE HOR. 1"=20' VERT. 1"=5'	
DESIGN/APPR.	JJ
DRAWN BY	GLG
DATE	5/22/02

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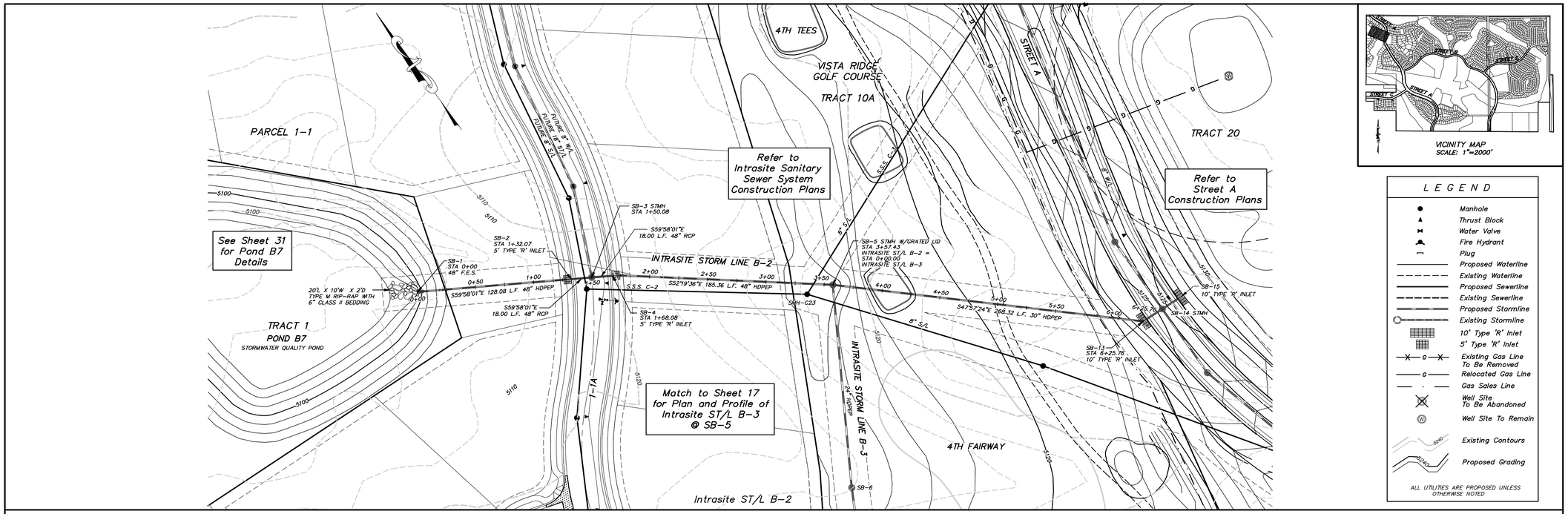
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SHEET 12 OF 20

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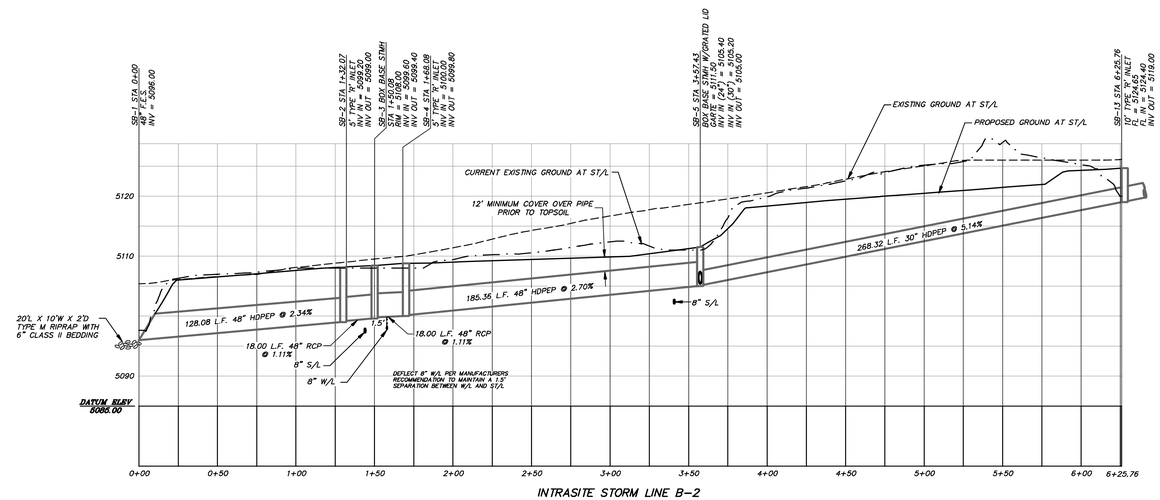
This version of Total CAD Converter is unregistered.



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.



INTRASITE STORM LINE B-2

72 HOURS BEFORE YOU DIG
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GAS, ELECTRIC, TELEPHONE, CATV AND PANHANDLE EASTERN PIPELINE LOCATIONS

VISTA RIDGE
Plan & Profile for Intrasite ST/L B-2
STA 0+00 - 6+25.76

SCALE	HOR. 1"=40' VERT. 1"=10'
DESIGN/APPR.	JJ
DRAWN BY	JLO
DATE	2/26/02
FILE	G:\21423\STL CONST\423-STL-PP13

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CONSULTING ENGINEERS
6399 Pearl East Circle, Suite 106
Boulder, Colorado 80301 (303) 449-9105

PRELIMINARY UTILITY REPORT
VISTA RESERVE
ERIE, COLORADO

Prepared For:
Affinity Holdings, LLC
13330 Red Deer Trail
Broomfield, CO 80020

Prepared By:
Hurst & Associates, Inc.
1265 S. Public Road, Suite B
Lafayette, CO 80026

Job Number 2718-1
May 29, 2026

ENGINEER'S CERTIFICATION

I hereby certify that this Preliminary Utility Report for the design of Vista Reserve was prepared by me (or under my direct supervision) in accordance with the provisions of the *Town of Erie Standards and Specifications* for the owners thereof. I understand that the Town of Erie does not and will not assume liability for drainage facilities designed by others, including the designs presented in this report.

_____

Thomas Ackerman, P.E.
Colorado License #41133



TOWN ACCEPTANCE

This report has been reviewed and found to be in general compliance with the *Town of Erie Standards and Specifications for Design and Construction* and other Town requirements. **THE ACCURACY AND VALIDITY OF THE ENGINEERING DESIGN, DETAILS, DIMENSIONS, QUANTITIES, AND CONCEPTS IN THIS REPORT REMAINS THE SOLE RESPONSIBILITY OF THE PROFESSIONAL ENGINEER WHOSE STAMP AND SIGNATURE APPEAR HEREON**.

Accepted by: _____ _____

Town Engineer Date

TABLE OF CONTENTS

Introduction

Wastewater

Water System

Vicinity Map

Wastewater Calculations ..... Appendix A

Water Calculations ..... Appendix B

EPANET 2 Analysis ..... Appendix C

Map Pocket - 1. Vista Reserve EPANET Water Model Exhibit

2. Vista Reserve Utility Plans (Multiple Sheets)

3. Vista Reserve Wastewater Map

INTRODUCTION

Vista Reserve is a 19-acre residential community located within the northwest quarter of Section 32, Township 1 North, Range 68 West. Vista Reserve is located within the Vista Ridge Development northeast of the State Highway 7 and Bonanza Drive intersection. The overall development has a maximum overall density of 50 residential lots. Vista Reserve will contain 50 single-family residential lots.

WASTEWATER

Wastewater service for Vista Reserve will be provided through the Town of Erie's wastewater system. Vista Reserve will be served by proposed eight-inch sewer mains within the proposed public streets. The western portion of Vista Reserve sewer mains will outfall to the northwest into the existing eight-inch sewer main in Single Tree Lane. The eastern portion of Vista Reserve sewer mains will outfall to the north into the existing eight-inch sewer main in Remuda Place. See **Appendix A** for the wastewater calculations.

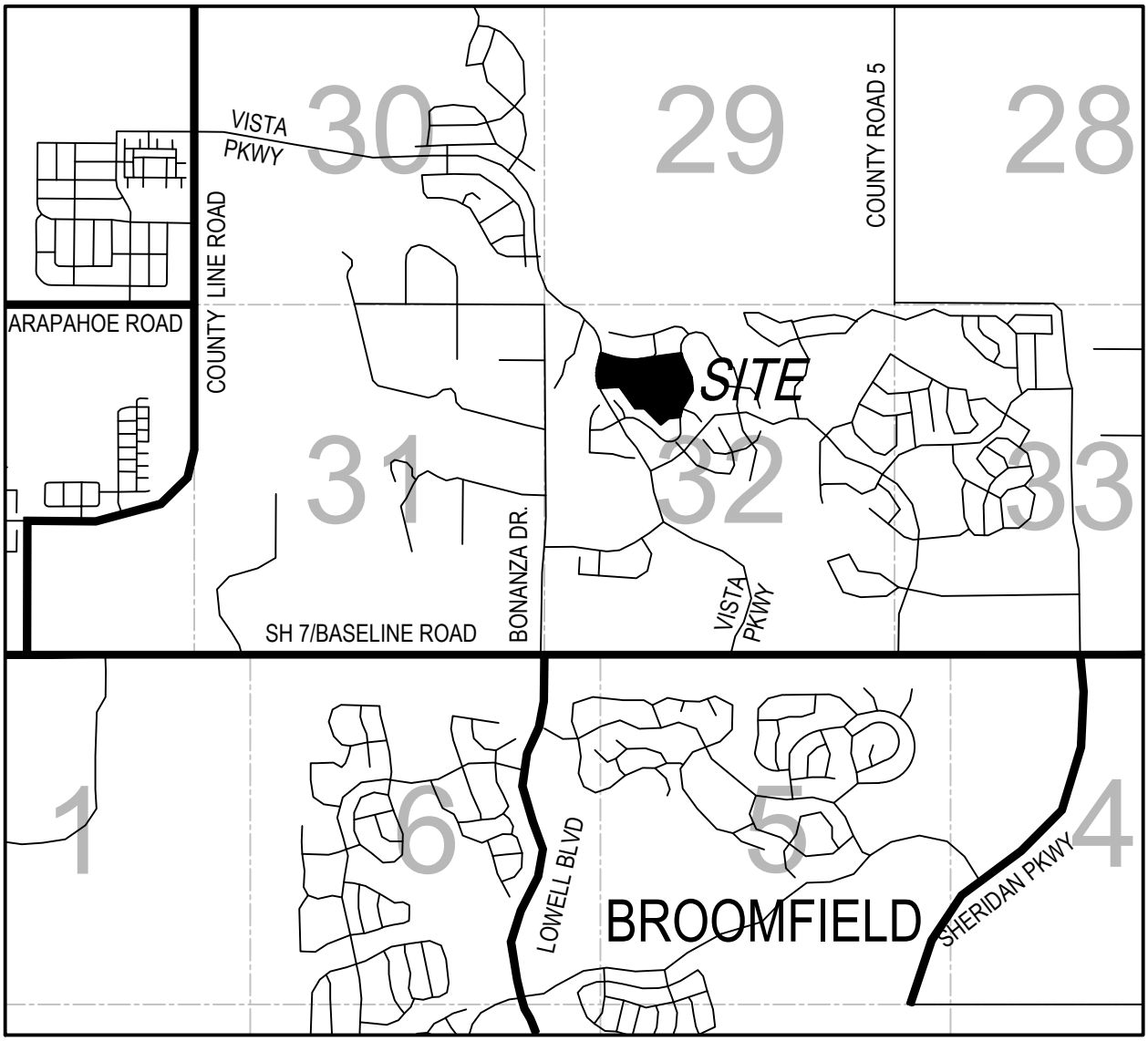
The original design for the site of Vista Reserve was to send wastewater of 13 western lots to the wasterwater mains northwest within Single Tree Lane and the remaining eastern lots to send flows north to the existing system within Remuda Place. The proposed layout of Vista Reserve will send 31 lots to the existing sewer system within Single Tree Lane and 19 lots to the existing sewer system within Remuda Place. Both existing sewer systems receiving flows from the development of Vista Reserve have capacity to handle the additional flows. Refer to Map Pocket for plans.

WATER SYSTEM

Vista Reserve is within Zone 3 of the Town of Erie's Water System Master Plan. An existing eight-inch water main has been stubbed into the site at the intersection of Hickory Drive and Peach Place. A second existing eight-inch water main has been stubbed into the site at the intersection of Single Tree Lane and Remuda Place. Eight-inch water mains will be extended through the proposed public streets and connect to the existing eight-inch stub from Hickory Drive and the existing eight-inch water main in Remuda Place. A third connection will be made by extending the water main out the Cul-De-Sac on Trotter Drive and connecting into the existing

12” water main in Vista Parkway. See **Appendix B** for the water calculations. See **Appendix C** for EPANET 2 analysis of demands for Vista Reserve which includes the max daily flows and fire flows.

The town of Erie has adopted the 2021 International Building Code which requires sprinkler systems on all residential units. Hydraulic modeling includes sprinkler flows in addition to the hydrant flows for fire scenarios. The applicant's fire sprinkler system design consultant shall determine the size of the meters and water services in accordance with section P2903 of the 2021 international residential code (IRC).



VICINITY MAP

1"=1/2 Mile

APPENDIX A
WASTEWATER CALCULATIONS

Wastewater Analysis
Vista Ridge
Job Number: 2718-1

Residential Land Use Population Calculations

Vista Reserve	50	lots	
Persons per Residence =	2.9	people/unit	
Total Residents	145	residents	

Average Daily Demand for the Entire Site

Residential Average Unit Waterwater Flow Rate =	90	gal/capita/day		
Vista Reserve Average Daily Demand =	13,005	gal/day	=	0.02 cfs

Peaking Factor

Peaking Factor = 2.6 * $(Q_{max})^{-0.16}$ or maximum of 4.0 = 4.0

Peak Flow for the Entire Site

Peak Flow = ADF * Peaking Factor =	52,020	gpd
	0.0520	**MGD**

Average Daily Demand for Basin A1

Basin A1	34	lots
Persons per Residence =	2.9	people/unit
Total Residents	98	residents

Average Daily Demand for Basin A1

Residential Average Unit Waterwater Flow Rate =	90	gal/capita/day		
Basin A1 Average Daily Demand =	8,843	gal/day	=	0.01 cfs

Peaking Factor

Peaking Factor = 2.6 * $(Q_{max})^{-0.16}$ or maximum of 4.0 = 4.0

Peak Flow for Basin A1

Peak Flow = ADF * Peaking Factor =	35,374	gpd
	0.0354	**MGD**

Average Daily Demand for Basin A2

Basin A1	16	lots
Persons per Residence =	2.9	people/unit
Total Residents	46	residents

Average Daily Demand for Basin A2

Residential Average Unit Waterwater Flow Rate =	90	gal/capita/day		
Basin A1 Average Daily Demand =	4,162	gal/day	=	0.01 cfs

Peaking Factor

Peaking Factor = 2.6 * $(Q_{max})^{-0.16}$ or maximum of 4.0 = 4.0

Peak Flow for Basin A2

Peak Flow = ADF * Peaking Factor =	16,646	gpd
	0.0166	**MGD**

Full Flow Sanitary Sewer Pipe Capacity

$Q = 1.486 / n * A * (A / WP)^{2/3} * S^{1/2}$

Size	**8**	**inches**
minimum slope	0.0040	ft/ft
Manning's formula n	0.012	
Area	0.349	s.f.
Wetted Perimeter	2.094	feet
Capacity	0.83	cfs
	0.535	**MGD**

8-Inch Line @ 50% Depth Capacity

$Q = 1.486 / n * A * (A / WP)^{2/3} * S^{1/2}$

Size:	**8**	inch
Flow Depth:	0.33	ft.
Area:	0.175	sq. ft.
Wetted Perimeter:	1.047	feet
Minimum Slope:	**0.00400**	ft/ft
Manning's n:	0.012	
Capacity:	0.41	cfs
Capacity:	**0.267**	MGD
50% Depth Velocity:	**2.37**	fps

APPENDIX B
WATER CALCULATIONS

Water Service Analysis
Vista Reserve
Job Number: 2718-1

Unit Water Demands for Future Land Uses

	Average Demand	Max. Day Demand	Peak Hour: Max Day Flow Ratio
Residential	140 GPCD	1,000 gpd/SFE	2

Residential Land Use Population Calculations

Vista Reserve Number of Lots =	50	lots
Persons per Residence =	2.9	people/unit
Total Residents	145	residents

Water Demands

Average Daily Demand =	20,230	gal/day	14.0	gpm
Maximum Daily Demand =	50,000	gal/day	34.7	gpm
Maximum Hourly Demand =	100,000	gal/day	69.4	gpm

Fire Flow Requirements

Minimum Fire Flow Requirements	1,500	gpm
Minimum Sprinkler Fire Flow Requirements	26	gpm

System Design Requirements

Maximum Day + Fire Flow	1,535	gpm
Minimum Residual Pressure	40	psi
Minimum Fire Flow Residual Pressure	20	psi

APPENDIX C
EPANET 2 ANALYSIS

Vista Reserve Water Model Calculations

Connection Point	Zone 3 Hydraulic Grade Line Elevation	Elevation	Pressure (psi)	Head (feet)
R1	5315	5171.00	62.35	144.00
R2	5315	5158.00	67.98	157.00
R3	5315	5124.00	82.70	191.00

Single-Family Residential Minimum Fire Flow = 1,500 gpm
Multi-Family Residential Minimum Fire Flow = 1,500 gpm
Minimum Fire Flow Residual Pressure = 20 psi
Minimum Sprinkler Fire Flow = 26 gpm

EPANET 2 RESULTS

Scenario #1: Maximum Daily Flows No Fire Flows
Minimum Residual Pressure = 60.23 psi (Junction J3)
Maximum Residual Pressure = 79.26 psi (Junction J23)

Scenario #2: Peak Hour Flows No Fire Flows
Minimum Residual Pressure = 60.23 psi (Junction J3)
Maximum Residual Pressure = 79.26 psi (Junction J23)

Scenario #3: 1500 gpm Fire Flow @ J3 w/ sprinkler flows
Minimum Residual Pressure = 55.69 psi (Junction J3)
Maximum Residual Pressure = 79.22 psi (Junction J23)

Scenario #4: 1500 gpm Fire Flow @ J18 w/ sprinkler flows
Minimum Residual Pressure = 59.51 psi (Junction J3)
Maximum Residual Pressure = 79.20 psi (Junction J23)

Scenario #5: 1500 gpm Fire Flow @ J16 w/ sprinkler flows
Minimum Residual Pressure = 56.87 psi (Junction J16)
Maximum Residual Pressure = 78.9 psi (Junction J23)

Scenario #6: 1500 gpm Fire Flow @ J9 w/ sprinkler flows
Minimum Residual Pressure = 59.72 psi (Junction J3)
Maximum Residual Pressure = 79.10 psi (Junction J23)

Scenario #7: 1500 gpm Fire Flow @ J12 w/ sprinkler flows
Minimum Residual Pressure = 60.01 psi (Junction J3)
Maximum Residual Pressure = 78.82 psi (Junction J23)

	EPANet Junction	# of Lots	People per Dwelling Unit	Total # of People	Avg Daily Demand (GPCD)	Avg Daily Demand (gpd)	Max Day	Max Daily Demand (gpd)	Max Daily Demand (gpm)	Peak Hour Demand (gpm)
VISTA RESERVE	**J2**	4	2.89	11.56	140	1,618	1000	4,000	**2.8**	**5.6**
	J6	8	2.89	23.12	140	3,237	1000	8,000	**5.6**	**11.1**
	J7	3	2.89	8.67	140	1,214	1000	3,000	**2.1**	**4.2**
	J9	4	2.89	11.56	140	1,618	1000	4,000	**2.8**	**5.6**
	J11	8	2.89	23.12	140	3,237	1000	8,000	**5.6**	**11.1**
	J13	6	2.89	17.34	140	2,428	1000	6,000	**4.2**	**8.3**
	J14	5	2.89	14.45	140	2,023	1000	5,000	**3.5**	**6.9**
	J16	2	2.89	5.78	140	809	1000	2,000	**1.4**	**2.8**
	J17	3	2.89	8.67	140	1,214	1000	3,000	**2.1**	**4.2**
	J19	7	2.89	20.23	140	2,832	1000	7,000	**4.9**	**9.7**
	Sub-Total	**50**							34.7	69.4

SCENARIO #1
MAXIMUM DAILY FLOWS W/ NO FIRE FLOWS

```
*********************************************************************
*                          E P A N E T                              *
*                   Hydraulic and Water Quality                     *
*                   Analysis for Pipe Networks                      *
*                         Version 2.2                               *
*********************************************************************
```

Input File: 27181-VR-Scenario_1-MDD_No-Fire.net

Vista Reserve, Erie CO

Link - Node Table:

Link ID	Start Node	End Node	Length ft	Diameter in
4	J4	J1	171.19	8
2	J2	J1	125.23	8
22	J20	J1	153.08	8
3	J3	J2	38.47	8
17	J16	R2	129.97	8
13	J13	J10	144.81	8
11	J10	J11	266.40	8
9	J8	J9	74.67	8
10	J9	J10	53.33	8
15	J14	J15	139.73	8
14	J13	J14	104.89	8
18	J17	J15	212.31	8
21	J20	J19	93.85	8
20	J19	J18	44.68	8
19	J18	J17	33.26	8
8	J8	J7	105.85	8
7	J7	J6	126.39	8
6	J6	J5	114.75	8
5	J5	J4	74.26	8
12	J11	J12	53.08	8
1	J1	R1	190.04	8
16	J16	J15	45.89	8
23	J12	J21	28.37	8
24	J21	J22	93.22	8
25	J22	J23	111.18	8
26	J23	R3	60	8

Node Results:

Node ID	Demand GPM	Head ft	Pressure psi	Quality	
J4	0.00	5315.00	62.39	0.00	
J1	0.00	5315.00	60.77	0.00	
J2	2.80	5315.00	60.34	0.00	
J20	0.00	5315.00	61.53	0.00	
J3	0.00	5315.00	60.23	0.00	
J15	0.00	5315.00	66.51	0.00	
J13	4.20	5315.00	68.03	0.00	
J10	0.00	5315.00	69.54	0.00	
J11	5.60	5315.00	73.75	0.00	
J8	0.00	5315.00	69.00	0.00	
J9	2.80	5315.00	69.54	0.00	
J14	3.50	5315.00	66.40	0.00	
J17	2.10	5315.00	65.10	0.00	
J19	4.90	5315.00	63.37	0.00	
J18	0.00	5315.00	64.45	0.00	
J7	2.10	5315.00	67.81	0.00	
J6	5.60	5315.00	65.54	0.00	
J5	0.00	5315.00	63.48	0.00	
J12	0.00	5315.00	74.31	0.00	
J16	1.40	5315.00	66.29	0.00	
J21	0.00	5315.00	74.70	0.00	
J22	0.00	5315.00	77.19	0.00	
J23	0.00	5315.00	79.26	0.00	
R1	-12.15	5315.00	0.00	0.00	Reservoir
R2	-13.01	5315.00	0.00	0.00	Reservoir
R3	-9.84	5315.00	0.00	0.00	Reservoir

Link Results:

Link ID	Flow GPM	Velocity fps	Unit Headloss ft/Kft	Status
4	-5.93	0.04	0.00	Open
2	-2.80	0.02	0.00	Open
22	-3.42	0.02	0.00	Open
3	0.00	0.00	0.00	Open
17	-13.01	0.08	0.01	Open
13	0.33	0.00	0.00	Open
11	-4.24	0.03	0.00	Open
9	-1.77	0.01	0.00	Open
10	-4.57	0.03	0.00	Open
15	-8.03	0.05	0.00	Open
14	-4.53	0.03	0.00	Open
18	-3.58	0.02	0.00	Open
21	3.42	0.02	0.00	Open
20	-1.48	0.01	0.00	Open
19	-1.48	0.01	0.00	Open

Link Results: (continued)

Link ID	Flow GPM	Velocity fps	Unit Headloss ft/Kft	Status
8	1.77	0.01	0.00	Open
7	-0.33	0.00	0.00	Open
6	-5.93	0.04	0.00	Open
5	-5.93	0.04	0.00	Open
12	-9.84	0.06	0.01	Open
1	-12.15	0.08	0.01	Open
16	11.61	0.07	0.00	Open
23	-9.84	0.06	0.00	Open
24	-9.84	0.06	0.01	Open
25	-9.84	0.06	0.00	Open
26	-9.84	0.06	0.00	Open

SCENARIO #2
PEAK HOUR FLOWS W/ NO FIRE FLOWS

```
*********************************************************************
*                          E P A N E T                              *
*                   Hydraulic and Water Quality                     *
*                   Analysis for Pipe Networks                      *
*                         Version 2.2                               *
*********************************************************************
```

Input File: 27181-VR-Scenario_2-PHD_No-Fire.net

Vista Reserve, Erie CO

Link - Node Table:

Link ID	Start Node	End Node	Length ft	Diameter in
4	J4	J1	171.19	8
2	J2	J1	125.23	8
22	J20	J1	153.08	8
3	J3	J2	38.47	8
17	J16	R2	129.97	8
13	J13	J10	144.81	8
11	J10	J11	266.40	8
9	J8	J9	74.67	8
10	J9	J10	53.33	8
15	J14	J15	139.73	8
14	J13	J14	104.89	8
18	J17	J15	212.31	8
21	J20	J19	93.85	8
20	J19	J18	44.68	8
19	J18	J17	33.26	8
8	J8	J7	105.85	8
7	J7	J6	126.39	8
6	J6	J5	114.75	8
5	J5	J4	74.26	8
12	J11	J12	53.08	8
1	J1	R1	190.04	8
16	J16	J15	45.89	8
23	J12	J21	28.37	8
24	J21	J22	93.22	8
25	J22	J23	111.18	8
26	J23	R3	60	8

Node Results:

Node ID	Demand GPM	Head ft	Pressure psi	Quality
J4	0.00	5315.00	62.39	0.00

J1	0.00	5315.00	60.77	0.00	
J2	5.60	5315.00	60.34	0.00	
J20	0.00	5315.00	61.53	0.00	
J3	0.00	5315.00	60.23	0.00	
J15	0.00	5315.00	66.51	0.00	
J13	8.30	5314.99	68.03	0.00	
J10	0.00	5314.99	69.54	0.00	
J11	11.10	5315.00	73.75	0.00	
J8	0.00	5314.99	69.00	0.00	
J9	5.60	5314.99	69.54	0.00	
J14	6.90	5314.99	66.40	0.00	
J17	4.20	5315.00	65.10	0.00	
J19	9.70	5315.00	63.37	0.00	
J18	0.00	5315.00	64.45	0.00	
J7	4.20	5314.99	67.81	0.00	
J6	11.10	5314.99	65.53	0.00	
J5	0.00	5314.99	63.48	0.00	
J12	0.00	5315.00	74.31	0.00	
J16	2.80	5315.00	66.29	0.00	
J21	0.00	5315.00	74.69	0.00	
J22	0.00	5315.00	77.19	0.00	
J23	0.00	5315.00	79.26	0.00	
R1	-24.13	5315.00	0.00	0.00	Reservoir
R2	-25.85	5315.00	0.00	0.00	Reservoir
R3	-19.52	5315.00	0.00	0.00	Reservoir

Link Results:

Link ID	Flow GPM	Velocity fps	Unit Headloss ft/Kft	Status
4	-11.77	0.08	0.01	Open
2	-5.60	0.04	0.00	Open
22	-6.77	0.04	0.00	Open
3	0.00	0.00	0.00	Open
17	-25.85	0.16	0.02	Open
13	0.71	0.00	0.00	Open
11	-8.42	0.05	0.00	Open
9	-3.53	0.02	0.00	Open
10	-9.13	0.06	0.00	Open
15	-15.91	0.10	0.01	Open
14	-9.01	0.06	0.00	Open
18	-7.13	0.05	0.00	Open
21	6.77	0.04	0.00	Open
20	-2.93	0.02	0.00	Open
19	-2.93	0.02	0.00	Open

Link Results: (continued)

Link ID	Flow GPM	Velocity fps	Unit Headloss ft/Kft	Status
8	3.53	0.02	0.00	Open

7	-0.67	0.00	0.00	Open
6	-11.77	0.08	0.01	Open
5	-11.77	0.08	0.01	Open
12	-19.52	0.12	0.01	Open
1	-24.13	0.15	0.02	Open
16	23.05	0.15	0.02	Open
23	-19.52	0.12	0.02	Open
24	-19.52	0.12	0.02	Open
25	-19.52	0.12	0.01	Open
26	-19.52	0.12	0.02	Open

SCENARIO #3
1500 GPM @ JUNCTION J3 w/ SPRINKLER FLOWS

```
*********************************************************************
*                          E P A N E T                              *
*                   Hydraulic and Water Quality                     *
*                   Analysis for Pipe Networks                      *
*                         Version 2.2                               *
*********************************************************************
```

Input File: 27181-VR-Scenario_3-Fire_Flow_J3.net

Vista Reserve, Erie CO

Link - Node Table:

Link ID	Start Node	End Node	Length ft	Diameter in
4	J4	J1	171.19	8
2	J2	J1	125.23	8
22	J20	J1	153.08	8
3	J3	J2	38.47	8
17	J16	R2	129.97	8
13	J13	J10	144.81	8
11	J10	J11	266.40	8
9	J8	J9	74.67	8
10	J9	J10	53.33	8
15	J14	J15	139.73	8
14	J13	J14	104.89	8
18	J17	J15	212.31	8
21	J20	J19	93.85	8
20	J19	J18	44.68	8
19	J18	J17	33.26	8
8	J8	J7	105.85	8
7	J7	J6	126.39	8
6	J6	J5	114.75	8
5	J5	J4	74.26	8
12	J11	J12	53.08	8
1	J1	R1	190.04	8
16	J16	J15	45.89	8
23	J12	J21	28.37	8
24	J21	J22	93.22	8
25	J22	J23	111.18	8
26	J23	R3	60	8

Node Results:

Node ID	Demand GPM	Head ft	Pressure psi	Quality
J4	0.00	5312.57	61.34	0.00

J1	0.00	5312.14	59.53	0.00	
J2	2.80	5306.31	56.57	0.00	
J20	0.00	5312.68	60.52	0.00	
J3	1526.00	5304.53	55.69	0.00	
J15	0.00	5314.07	66.11	0.00	
J13	4.20	5314.01	67.60	0.00	
J10	0.00	5313.99	69.11	0.00	
J11	5.60	5314.42	73.50	0.00	
J8	0.00	5313.65	68.42	0.00	
J9	2.80	5313.84	69.04	0.00	
J14	3.50	5314.04	65.99	0.00	
J17	2.10	5313.29	64.36	0.00	
J19	4.90	5313.01	62.51	0.00	
J18	0.00	5313.17	63.66	0.00	
J7	2.10	5313.37	67.11	0.00	
J6	5.60	5313.04	64.69	0.00	
J5	0.00	5312.75	62.50	0.00	
J12	0.00	5314.51	74.10	0.00	
J16	1.40	5314.31	66.00	0.00	
J21	0.00	5314.55	74.50	0.00	
J22	0.00	5314.71	77.07	0.00	
J23	0.00	5314.90	79.22	0.00	
R1	-832.13	5315.00	0.00	0.00	Reservoir
R2	-474.02	5315.00	0.00	0.00	Reservoir
R3	-254.85	5315.00	0.00	0.00	Reservoir

Link Results:

Link ID	Flow GPM	Velocity fps	Unit Headloss ft/Kft	Status
4	316.42	2.02	2.52	Open
2	-1528.80	9.76	46.50	Open
22	380.25	2.43	3.53	Open
3	-1526.00	9.74	46.34	Open
17	-474.02	3.03	5.32	Open
13	77.67	0.50	0.19	Open
11	-249.25	1.59	1.62	Open
9	-324.12	2.07	2.63	Open
10	-326.92	2.09	2.67	Open
15	-85.37	0.54	0.22	Open
14	-81.87	0.52	0.20	Open
18	-387.25	2.47	3.66	Open
21	-380.25	2.43	3.54	Open
20	-385.15	2.46	3.62	Open
19	-385.15	2.46	3.61	Open

Link Results: (continued)

Link ID	Flow GPM	Velocity fps	Unit Headloss ft/Kft	Status
8	324.12	2.07	2.63	Open

7	322.02	2.06	2.60	Open
6	316.42	2.02	2.51	Open
5	316.42	2.02	2.52	Open
12	-254.85	1.63	1.68	Open
1	-832.13	5.31	15.07	Open
16	472.62	3.02	5.29	Open
23	-254.85	1.63	1.69	Open
24	-254.85	1.63	1.68	Open
25	-254.85	1.63	1.69	Open
26	-254.85	1.63	1.68	Open

SCENARIO #4
1500 GPM @ JUNCTION J18 w/ SPRINKLER FLOWS

```
*********************************************************************
*                          E P A N E T                              *
*                   Hydraulic and Water Quality                     *
*                   Analysis for Pipe Networks                      *
*                         Version 2.2                               *
*********************************************************************
```

Input File: 27181-VR-Scenario_4-Fire_Flow_J18.net

Vista Reserve, Erie CO

Link - Node Table:

Link ID	Start Node	End Node	Length ft	Diameter in
4	J4	J1	171.19	8
2	J2	J1	125.23	8
22	J20	J1	153.08	8
3	J3	J2	38.47	8
17	J16	R2	129.97	8
13	J13	J10	144.81	8
11	J10	J11	266.40	8
9	J8	J9	74.67	8
10	J9	J10	53.33	8
15	J14	J15	139.73	8
14	J13	J14	104.89	8
18	J17	J15	212.31	8
21	J20	J19	93.85	8
20	J19	J18	44.68	8
19	J18	J17	33.26	8
8	J8	J7	105.85	8
7	J7	J6	126.39	8
6	J6	J5	114.75	8
5	J5	J4	74.26	8
12	J11	J12	53.08	8
1	J1	R1	190.04	8
16	J16	J15	45.89	8
23	J12	J21	28.37	8
24	J21	J22	93.22	8
25	J22	J23	111.18	8
26	J23	R3	60	8

Node Results:

Node ID	Demand GPM	Head ft	Pressure psi	Quality
J4	0.00	5313.41	61.71	0.00

J1	0.00	5313.35	60.05	0.00	
J2	2.80	5313.35	59.62	0.00	
J20	0.00	5311.53	60.03	0.00	
J3	0.00	5313.35	59.51	0.00	
J15	0.00	5313.35	65.80	0.00	
J13	4.20	5313.53	67.39	0.00	
J10	0.00	5313.64	68.96	0.00	
J11	5.60	5314.22	73.41	0.00	
J8	0.00	5313.58	68.39	0.00	
J9	2.80	5313.62	68.95	0.00	
J14	3.50	5313.45	65.73	0.00	
J17	2.10	5310.36	63.09	0.00	
J19	4.90	5310.42	61.39	0.00	
J18	1526.00	5309.90	62.24	0.00	
J7	2.10	5313.54	67.18	0.00	
J6	5.60	5313.48	64.88	0.00	
J5	0.00	5313.44	62.80	0.00	
J12	0.00	5314.34	74.02	0.00	
J16	1.40	5313.78	65.77	0.00	
J21	0.00	5314.40	74.44	0.00	
J22	0.00	5314.61	77.03	0.00	
J23	0.00	5314.86	79.20	0.00	
R1	-618.67	5315.00	0.00	0.00	Reservoir
R2	-644.04	5315.00	0.00	0.00	Reservoir
R3	-298.29	5315.00	0.00	0.00	Reservoir

Link Results:

Link ID	Flow GPM	Velocity fps	Unit Headloss ft/Kft	Status
4	114.95	0.73	0.39	Open
2	-2.81	0.02	0.00	Open
22	-730.81	4.66	11.85	Open
3	0.00	0.00	0.00	Open
17	-644.04	4.11	9.38	Open
13	-167.24	1.07	0.77	Open
11	-292.69	1.87	2.18	Open
9	-122.65	0.78	0.44	Open
10	-125.45	0.80	0.45	Open
15	159.54	1.02	0.71	Open
14	163.04	1.04	0.74	Open
18	-802.19	5.12	14.08	Open
21	730.81	4.66	11.85	Open
20	725.91	4.63	11.70	Open
19	-800.09	5.11	14.02	Open

Link Results: (continued)

Link ID	Flow GPM	Velocity fps	Unit Headloss ft/Kft	Status
8	122.65	0.78	0.43	Open

7	120.55	0.77	0.42	Open
6	114.95	0.73	0.38	Open
5	114.95	0.73	0.39	Open
12	-298.29	1.90	2.25	Open
1	-618.67	3.95	8.70	Open
16	642.64	4.10	9.34	Open
23	-298.29	1.90	2.25	Open
24	-298.29	1.90	2.26	Open
25	-298.29	1.90	2.25	Open
26	-298.29	1.90	2.25	Open

SCENARIO #5
1500 GPM @ JUNCTION J16 w/ SPRINKLER FLOWS

```
******************************************************************
*                          E P A N E T                           *
*                   Hydraulic and Water Quality                  *
*                   Analysis for Pipe Networks                   *
*                         Version 2.2                            *
******************************************************************
```

Input File: 27181-VR-Scenario_5-Fire_Flow_J16.net

Vista Reserve, Erie CO

Link - Node Table:

Link ID	Start Node	End Node	Length ft	Diameter in
4	J4	J1	171.19	8
2	J2	J1	125.23	8
22	J20	J1	153.08	8
3	J3	J2	38.47	8
17	J16	R2	129.97	8
13	J13	J10	144.81	8
11	J10	J11	266.40	8
9	J8	J9	74.67	8
10	J9	J10	53.33	8
15	J14	J15	139.73	8
14	J13	J14	104.89	8
18	J17	J15	212.31	8
21	J20	J19	93.85	8
20	J19	J18	44.68	8
19	J18	J17	33.26	8
8	J8	J7	105.85	8
7	J7	J6	126.39	8
6	J6	J5	114.75	8
5	J5	J4	74.26	8
12	J11	J12	53.08	8
1	J1	R1	190.04	8
16	J16	J15	45.89	8
23	J12	J21	28.37	8
24	J21	J22	93.22	8
25	J22	J23	111.18	8
26	J23	R3	60	8

Node Results:

Node ID	Demand GPM	Head ft	Pressure psi	Quality	
J4	0.00	5307.90	59.32	0.00	
J1	0.00	5308.32	57.87	0.00	
J2	2.80	5308.32	57.44	0.00	
J20	0.00	5305.07	57.23	0.00	
J3	0.00	5308.32	57.33	0.00	
J15	0.00	5297.00	58.71	0.00	
J13	4.20	5303.00	62.83	0.00	
J10	0.00	5306.60	65.90	0.00	
J11	5.60	5310.23	71.68	0.00	
J8	0.00	5306.89	65.49	0.00	
J9	2.80	5306.72	65.96	0.00	
J14	3.50	5300.42	60.09	0.00	
J17	2.10	5301.44	59.23	0.00	
J19	4.90	5303.08	58.21	0.00	
J18	0.00	5302.14	58.88	0.00	
J7	2.10	5307.14	64.41	0.00	
J6	5.60	5307.44	62.26	0.00	
J5	0.00	5307.72	60.32	0.00	
J12	0.00	5310.96	72.56	0.00	
J16	5127.40	5293.25	56.87	0.00	
J21	0.00	5311.35	73.12	0.00	
J22	0.00	5312.64	76.17	0.00	
J23	0.00	5314.17	78.90	0.00	
R1	-1314.67	5315.00	0.00	0.00	Reservoir
R2	-3052.83	5315.00	0.00	0.00	Reservoir
R3	-793.51	5315.00	0.00	0.00	Reservoir

Link Results:

Link ID	Flow GPM	Velocity fps	Unit Headloss ft/Kft	Status
4	-311.44	1.99	2.44	Open
2	-2.80	0.02	0.00	Open
22	-1000.43	6.39	21.20	Open
3	0.00	0.00	0.00	Open
17	-3052.83	19.49	167.38	Open
13	-1088.84	6.95	24.80	Open
11	-787.91	5.03	13.62	Open
9	303.74	1.94	2.33	Open
10	300.94	1.92	2.29	Open
15	1081.14	6.90	24.48	Open
14	1084.64	6.92	24.62	Open
18	993.43	6.34	20.93	Open
21	1000.43	6.39	21.20	Open
20	995.53	6.35	21.00	Open
19	995.53	6.35	21.02	Open

Link Results: (continued)

Link ID	Flow GPM	Velocity fps	Unit Headloss ft/Kft	Status
8	-303.74	1.94	2.33	Open
7	-305.84	1.95	2.36	Open
6	-311.44	1.99	2.44	Open
5	-311.44	1.99	2.45	Open
12	-793.51	5.06	13.80	Open
1	-1314.67	8.39	35.16	Open
16	-2074.57	13.24	81.84	Open
23	-793.51	5.06	13.80	Open
24	-793.51	5.06	13.81	Open
25	-793.51	5.06	13.80	Open
26	-793.51	5.06	13.80	Open

SCENARIO #6
1500 GPM @ JUNCTION J9 w/ SPRINKLER FLOWS

```
*********************************************************************
*                          E P A N E T                              *
*                   Hydraulic and Water Quality                     *
*                   Analysis for Pipe Networks                      *
*                         Version 2.2                               *
*********************************************************************
```

Input File: 27181-VR-Scenario_6-Fire_Flow_J9.net

Vista Reserve, Erie CO

Link - Node Table:

Link ID	Start Node	End Node	Length ft	Diameter in
4	J4	J1	171.19	8
2	J2	J1	125.23	8
22	J20	J1	153.08	8
3	J3	J2	38.47	8
17	J16	R2	129.97	8
13	J13	J10	144.81	8
11	J10	J11	266.40	8
9	J8	J9	74.67	8
10	J9	J10	53.33	8
15	J14	J15	139.73	8
14	J13	J14	104.89	8
18	J17	J15	212.31	8
21	J20	J19	93.85	8
20	J19	J18	44.68	8
19	J18	J17	33.26	8
8	J8	J7	105.85	8
7	J7	J6	126.39	8
6	J6	J5	114.75	8
5	J5	J4	74.26	8
12	J11	J12	53.08	8
1	J1	R1	190.04	8
16	J16	J15	45.89	8
23	J12	J21	28.37	8
24	J21	J22	93.22	8
25	J22	J23	111.18	8
26	J23	R3	60	8

Node Results:

Node ID	Demand GPM	Head ft	Pressure psi	Quality	
J4	0.00	5312.85	61.46	0.00	
J1	0.00	5313.84	60.27	0.00	
J2	2.80	5313.84	59.83	0.00	
J20	0.00	5313.83	61.02	0.00	
J3	0.00	5313.84	59.72	0.00	
J15	0.00	5313.83	66.01	0.00	
J13	4.20	5312.19	66.81	0.00	
J10	0.00	5311.24	67.92	0.00	
J11	5.60	5312.86	72.82	0.00	
J8	0.00	5310.44	67.03	0.00	
J9	1528.80	5310.02	67.39	0.00	
J14	3.50	5312.89	65.49	0.00	
J17	2.10	5313.83	64.60	0.00	
J19	4.90	5313.83	62.87	0.00	
J18	0.00	5313.83	63.95	0.00	
J7	2.10	5311.04	66.09	0.00	
J6	5.60	5311.75	64.13	0.00	
J5	0.00	5312.42	62.36	0.00	
J12	0.00	5313.19	73.53	0.00	
J16	1.40	5314.14	65.92	0.00	
J21	0.00	5313.36	73.99	0.00	
J22	0.00	5313.94	76.73	0.00	
J23	0.00	5314.63	79.10	0.00	
R1	-511.71	5315.00	0.00	0.00	Reservoir
R2	-534.50	5315.00	0.00	0.00	Reservoir
R3	-514.79	5315.00	0.00	0.00	Reservoir

Link Results:

Link ID	Flow GPM	Velocity fps	Unit Headloss ft/Kft	Status
4	-495.94	3.17	5.78	Open
2	-2.80	0.02	0.00	Open
22	-12.96	0.08	0.01	Open
3	0.00	0.00	0.00	Open
17	-534.50	3.41	6.64	Open
13	531.37	3.39	6.57	Open
11	-509.19	3.25	6.07	Open
9	488.24	3.12	5.61	Open
10	-1040.56	6.64	22.80	Open
15	-539.07	3.44	6.74	Open
14	-535.57	3.42	6.67	Open
18	5.96	0.04	0.00	Open
21	12.96	0.08	0.01	Open
20	8.06	0.05	0.01	Open
19	8.06	0.05	0.00	Open

Link Results: (continued)

Link ID	Flow GPM	Velocity fps	Unit Headloss ft/Kft	Status
8	-488.24	3.12	5.62	Open
7	-490.34	3.13	5.66	Open
6	-495.94	3.17	5.78	Open
5	-495.94	3.17	5.78	Open
12	-514.79	3.29	6.19	Open
1	-511.71	3.27	6.13	Open
16	533.10	3.40	6.61	Open
23	-514.79	3.29	6.20	Open
24	-514.79	3.29	6.20	Open
25	-514.79	3.29	6.19	Open
26	-514.79	3.29	6.19	Open

SCENARIO #7
1500 GPM @ JUNCTION J12 w/ SPRINKLER FLOWS

```
*********************************************************************
*                          E P A N E T                              *
*                   Hydraulic and Water Quality                     *
*                   Analysis for Pipe Networks                      *
*                         Version 2.2                               *
*********************************************************************
```

Input File: 27181-VR-Scenario_7-Fire_Flow_J12.net

Vista Reserve, Erie CO

Link - Node Table:

Link ID	Start Node	End Node	Length ft	Diameter in
4	J4	J1	171.19	8
2	J2	J1	125.23	8
22	J20	J1	153.08	8
3	J3	J2	38.47	8
17	J16	R2	129.97	8
13	J13	J10	144.81	8
11	J10	J11	266.40	8
9	J8	J9	74.67	8
10	J9	J10	53.33	8
15	J14	J15	139.73	8
14	J13	J14	104.89	8
18	J17	J15	212.31	8
21	J20	J19	93.85	8
20	J19	J18	44.68	8
19	J18	J17	33.26	8
8	J8	J7	105.85	8
7	J7	J6	126.39	8
6	J6	J5	114.75	8
5	J5	J4	74.26	8
12	J11	J12	53.08	8
1	J1	R1	190.04	8
16	J16	J15	45.89	8
23	J12	J21	28.37	8
24	J21	J22	93.22	8
25	J22	J23	111.18	8
26	J23	R3	60	8

Node Results:

Node ID	Demand GPM	Head ft	Pressure psi	Quality	
J4	0.00	5314.15	62.03	0.00	
J1	0.00	5314.49	60.55	0.00	
J2	2.80	5314.49	60.12	0.00	
J20	0.00	5314.48	61.31	0.00	
J3	0.00	5314.49	60.01	0.00	
J15	0.00	5314.47	66.28	0.00	
J13	4.20	5313.59	67.42	0.00	
J10	0.00	5313.08	68.71	0.00	
J11	5.60	5310.56	71.82	0.00	
J8	0.00	5313.32	68.28	0.00	
J9	2.80	5313.18	68.76	0.00	
J14	3.50	5313.96	65.95	0.00	
J17	2.10	5314.48	64.88	0.00	
J19	4.90	5314.48	63.14	0.00	
J18	0.00	5314.48	64.23	0.00	
J7	2.10	5313.53	67.17	0.00	
J6	5.60	5313.77	65.00	0.00	
J5	0.00	5314.00	63.05	0.00	
J12	1526.00	5310.06	72.17	0.00	
J16	1.40	5314.60	66.12	0.00	
J21	0.00	5310.54	72.76	0.00	
J22	0.00	5312.11	75.94	0.00	
J23	0.00	5313.99	78.82	0.00	
R1	-326.14	5315.00	0.00	0.00	Reservoir
R2	-350.76	5315.00	0.00	0.00	Reservoir
R3	-884.10	5315.00	0.00	0.00	Reservoir

Link Results:

Link ID	Flow GPM	Velocity fps	Unit Headloss ft/Kft	Status
4	-280.40	1.79	2.01	Open
2	-2.80	0.02	0.00	Open
22	-42.94	0.27	0.06	Open
3	0.00	0.00	0.00	Open
17	-350.76	2.24	3.04	Open
13	377.60	2.41	3.49	Open
11	647.50	4.13	9.47	Open
9	272.70	1.74	1.91	Open
10	269.90	1.72	1.87	Open
15	-385.30	2.46	3.62	Open
14	-381.80	2.44	3.56	Open
18	35.94	0.23	0.04	Open
21	42.94	0.27	0.06	Open
20	38.04	0.24	0.04	Open
19	38.04	0.24	0.06	Open

Link Results: (continued)

Link ID	Flow GPM	Velocity fps	Unit Headloss ft/Kft	Status
8	-272.70	1.74	1.91	Open
7	-274.80	1.75	1.94	Open
6	-280.40	1.79	2.01	Open
5	-280.40	1.79	2.01	Open
12	641.90	4.10	9.32	Open
1	-326.14	2.08	2.66	Open
16	349.36	2.23	3.02	Open
23	-884.10	5.64	16.87	Open
24	-884.10	5.64	16.86	Open
25	-884.10	5.64	16.86	Open
26	-884.10	5.64	16.86	Open

VISTA RESERVE
EPANET WATER MODEL

LEGEND
- Proposed Waterline
- Existing Waterline
- Fire Hydrant

EPANET 2 RESULTS

SCENARIO #1: MAXIMUM DAILY FLOWS NO FIRE FLOWS
MINIMUM RESIDUAL PRESSURE = 60.23 PSI @ J3
MAXIMUM RESIDUAL PRESSURE = 79.26 PSI @ J23

SCENARIO #2: PEAK HOUR FLOWS NO FIRE FLOWS
MINIMUM RESIDUAL PRESSURE = 60.23 PSI @ J3
MAXIMUM RESIDUAL PRESSURE = 79.26 PSI @ J23

SCENARIO #3: 1500 GPM FIRE FLOW @ J3 w/ SPRINKLER FLOWS
MINIMUM RESIDUAL PRESSURE = 55.69 PSI @ J3
MAXIMUM RESIDUAL PRESSURE = 79.22 PSI @ J23

SCENARIO #4: 1500 GPM FIRE FLOW @ J18 w/ SPRINKLER FLOWS
MINIMUM RESIDUAL PRESSURE = 59.51 PSI @ J3
MAXIMUM RESIDUAL PRESSURE = 79.20 PSI @ J23

SCENARIO #5: 1500 GPM FIRE FLOW @ J16 w/ SPRINKLER FLOWS
MINIMUM RESIDUAL PRESSURE = 56.87 PSI @ J16
MAXIMUM RESIDUAL PRESSURE = 78.90 PSI @ J23

SCENARIO #6: 1500 GPM FIRE FLOW @ J9 w/ SPRINKLER FLOWS
MINIMUM RESIDUAL PRESSURE = 59.72 PSI @ J3
MAXIMUM RESIDUAL PRESSURE = 79.10 PSI @ J23

SCENARIO #7: 1500 GPM FIRE FLOW @ J12 w/ SPRINKLER FLOWS
MINIMUM RESIDUAL PRESSURE = 60.01 PSI @ J3
MAXIMUM RESIDUAL PRESSURE = 78.82 PSI @ J23

	EPANet Junction	# of Lots	People per Dwelling Unit	Total # of People	Avg Daily Demand (GPCD)	Avg Daily Demand (gpd)	Max Day	Max Daily Demand (gpd)	Max Daily Demand (gpm)	Peak Hour Demand (gpm)
VISTA RESERVE	J2	4	2.89	11.56	140	1,618	1000	4,000	2.8	5.6
	J6	8	2.89	23.12	140	3,237	1000	8,000	5.6	11.1
	J7	3	2.89	8.67	140	1,214	1000	3,000	2.1	4.2
	J9	4	2.89	11.56	140	1,618	1000	4,000	2.8	5.6
	J11	8	2.89	23.12	140	3,237	1000	8,000	5.6	11.1
	J13	6	2.89	17.34	140	2,428	1000	6,000	4.2	8.3
	J14	5	2.89	14.45	140	2,023	1000	5,000	3.5	6.9
	J16	2	2.89	5.78	140	809	1000	2,000	1.4	2.8
	J17	3	2.89	8.67	140	1,214	1000	3,000	2.1	4.2
	J19	7	2.89	20.23	140	2,832	1000	7,000	4.9	9.7
	Sub-Total	50							34.7	69.4

811
72 HOURS BEFORE YOU DIG
CALL THE UTILITY NOTIFICATION
CENTER OF COLORADO (U.N.C.C.)

REVISIONS

NO.	DATE
----	----

NOT FOR CONSTRUCTION

HURST
CIVIL ENGINEERING
PLANNING
SURVEYING
HURST & ASSOCIATES, INC.
1265 S. Public Road, Suite B
Lafayette, CO 80026
303.449.9105

VISTA RESERVE
ERIE, CO - SUB2025-00012
EPANET WATER MODEL EXHIBIT

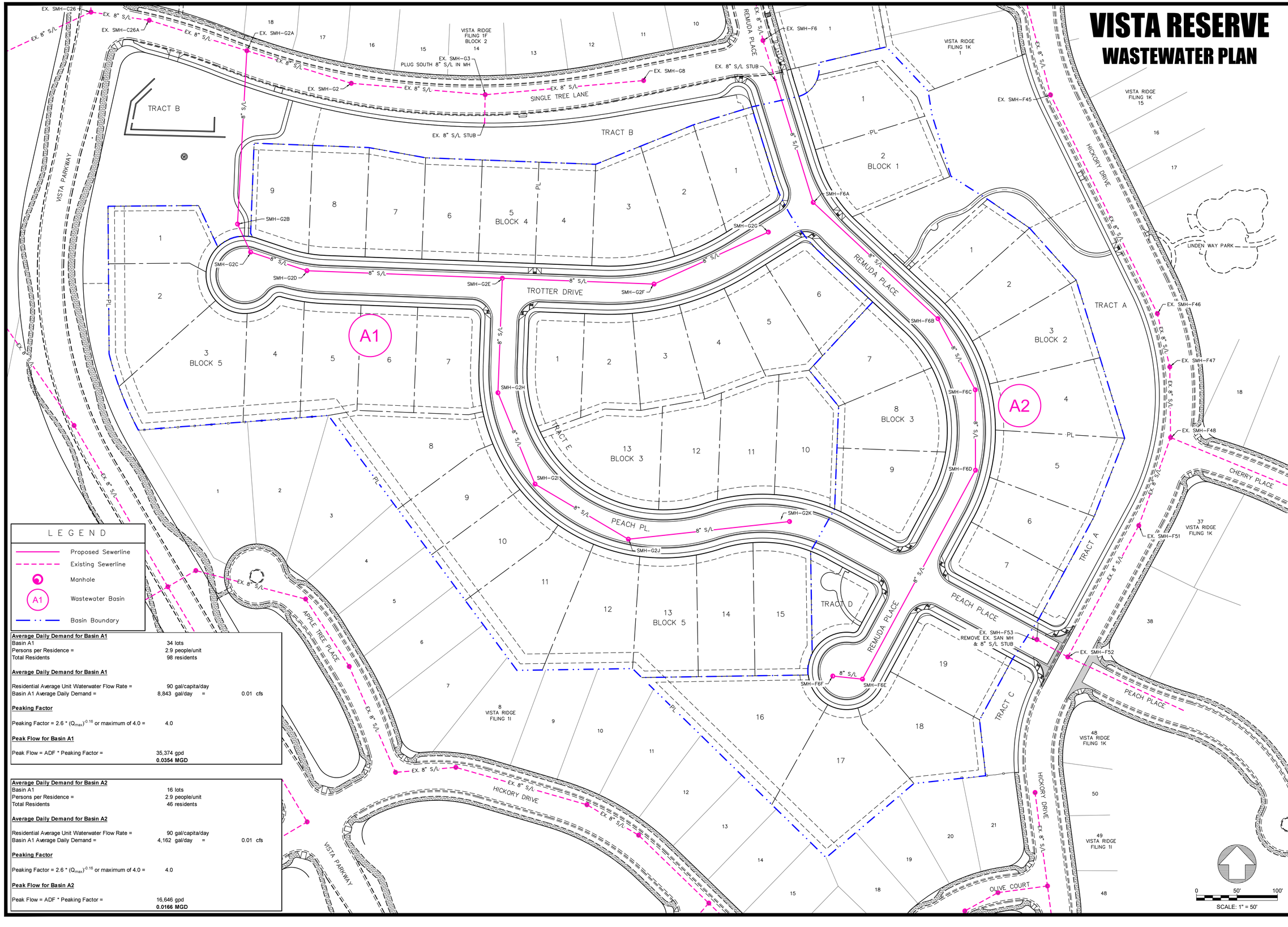
PREPARED FOR:
AFFINITY HOLDINGS

JOB NUMBER:	2718-1
DRAWN BY:	TA
DESIGNED BY:	TA
DATE:	05/29/2026
SCALE:	1"=50'
SHEET NO:	1 OF 1

SCALE: 1" = 50'

LAST SAVED: 6/3/2026 11:25 AM
G:\2718\1\Exhibits\2718-1-EPANET-EXHIBIT.dwg

VISTA RESERVE
WASTEWATER PLAN



LEGEND

- Proposed Sewerline
- Existing Sewerline
- Manhole
- A1 — Wastewater Basin
- Basin Boundary

Average Daily Demand for Basin A1

Basin A1	34 lots		
Persons per Residence =	2.9 people/unit		
Total Residents	98 residents		
Average Daily Demand for Basin A1			
Residential Average Unit Waterwater Flow Rate =	90 gal/capita/day		
Basin A1 Average Daily Demand =	8,843 gal/day	=	0.01 cfs
Peaking Factor			
Peaking Factor = 2.6 * $(Q_{max})^{-0.16}$ or maximum of 4.0 =	4.0		
Peak Flow for Basin A1			
Peak Flow = ADF * Peaking Factor =	35,374 gpd		
	0.0354 MGD		

Average Daily Demand for Basin A2

Basin A1	16 lots		
Persons per Residence =	2.9 people/unit		
Total Residents	46 residents		
Average Daily Demand for Basin A2			
Residential Average Unit Waterwater Flow Rate =	90 gal/capita/day		
Basin A1 Average Daily Demand =	4,162 gal/day	=	0.01 cfs
Peaking Factor			
Peaking Factor = 2.6 * $(Q_{max})^{-0.16}$ or maximum of 4.0 =	4.0		
Peak Flow for Basin A2			
Peak Flow = ADF * Peaking Factor =	16,646 gpd		
	0.0166 MGD		

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

811 — 72 HOURS BEFORE YOU DIG — CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (U.N.C.C.)

NO.	REVISIONS	DATE
----	----	----

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HURST & ASSOCIATES, INC.
1265 S. Public Road, Suite B
Lafayette, CO 80026
303.449.9105

HURST
CIVIL ENGINEERING
PLANNING
SURVEYING

VISTA RESERVE
ERIE, CO - SUB2025-00012

WASTEWATER PLAN

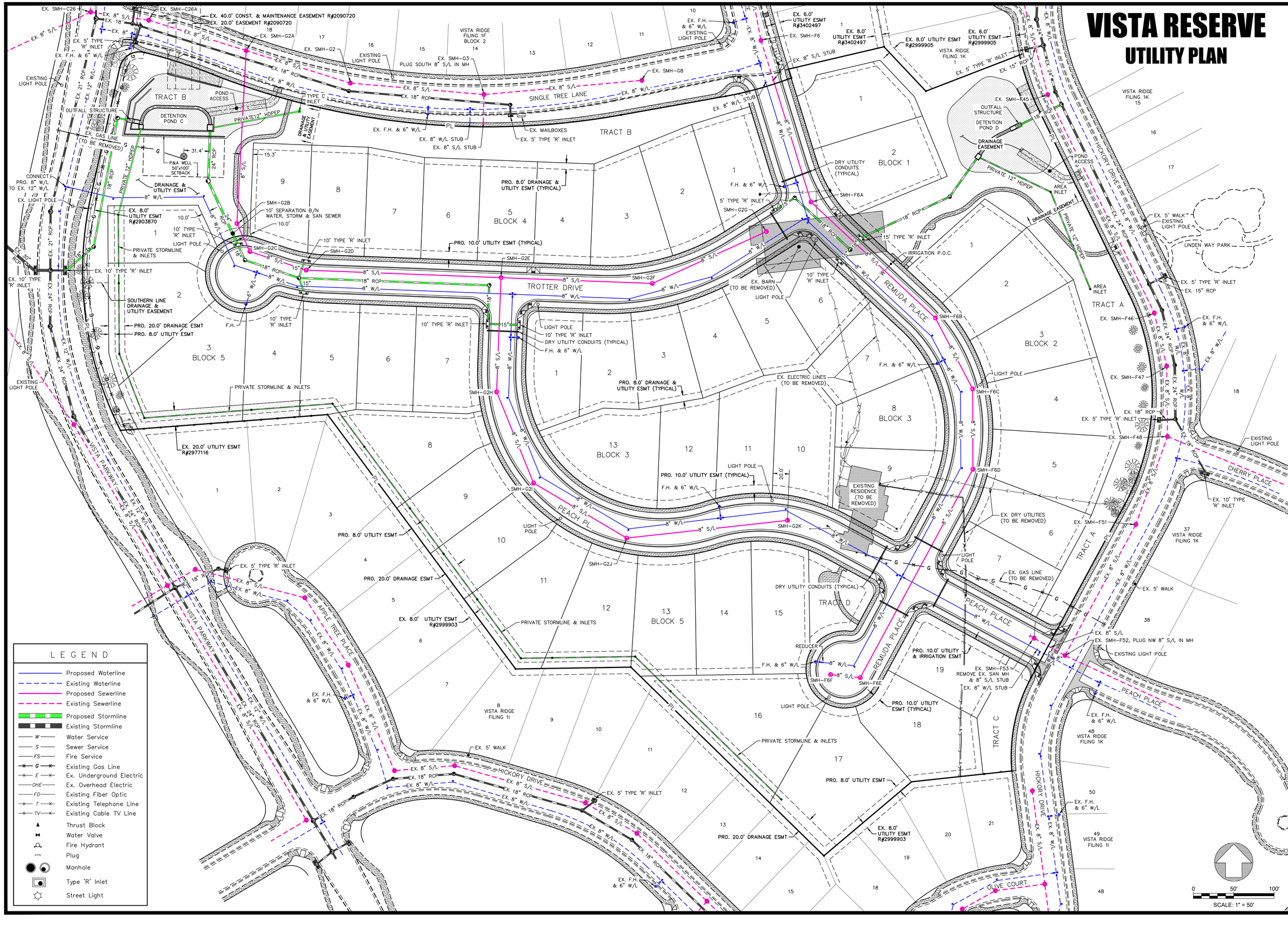
PREPARED FOR:
AFFINITY HOLDINGS

JOB NUMBER:	2718-1
DRAWN BY:	TA
DESIGNED BY:	TA
DATE:	05/28/2026
SCALE:	1"=50'
SHEET NO:	1 OF 1

LAST SAVED: 5/29/2026 7:12 AM

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VISTA RESERVE
UTILITY PLAN



LEGEND

- Proposed Waterline
- Existing Waterline
- Proposed Sewerline
- Existing Sewerline
- Proposed Stormline
- Existing Stormline
- W — Water Service
- S — Sewer Service
- FS — Fire Service
- G — Existing Gas Line
- E — Ex. Underground Electric
- OHE — Ex. Overhead Electric
- FO — Existing Fiber Optic
- T — Existing Telephone Line
- TV — Existing Cable TV Line
- Thrust Block
- Water Valve
- Fire Hydrant
- Plug
- Manhole
- Type 'R' Inlet
- Street Light

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

NOT FOR CONSTRUCTION

HURST & ASSOCIATES, INC.
1265 S. Public Road, Suite B
Lafayette, CO 80026
303.449.9105

HURST
CIVIL ENGINEERING
PLANNING
SURVEYING

VISTA RESERVE
ERIE, CO - SUB2025-00012
PRELIMINARY CONSTRUCTION PLANS
UTILITY PLAN

PREPARED FOR:
AFFINITY HOLDINGS

JOB NUMBER:	2718-1
DRAWN BY:	TA
DESIGNED BY:	TA
DATE:	05/28/2026
SCALE:	1"=50'
SHEET NO:	4 OF 21

REVISIONS

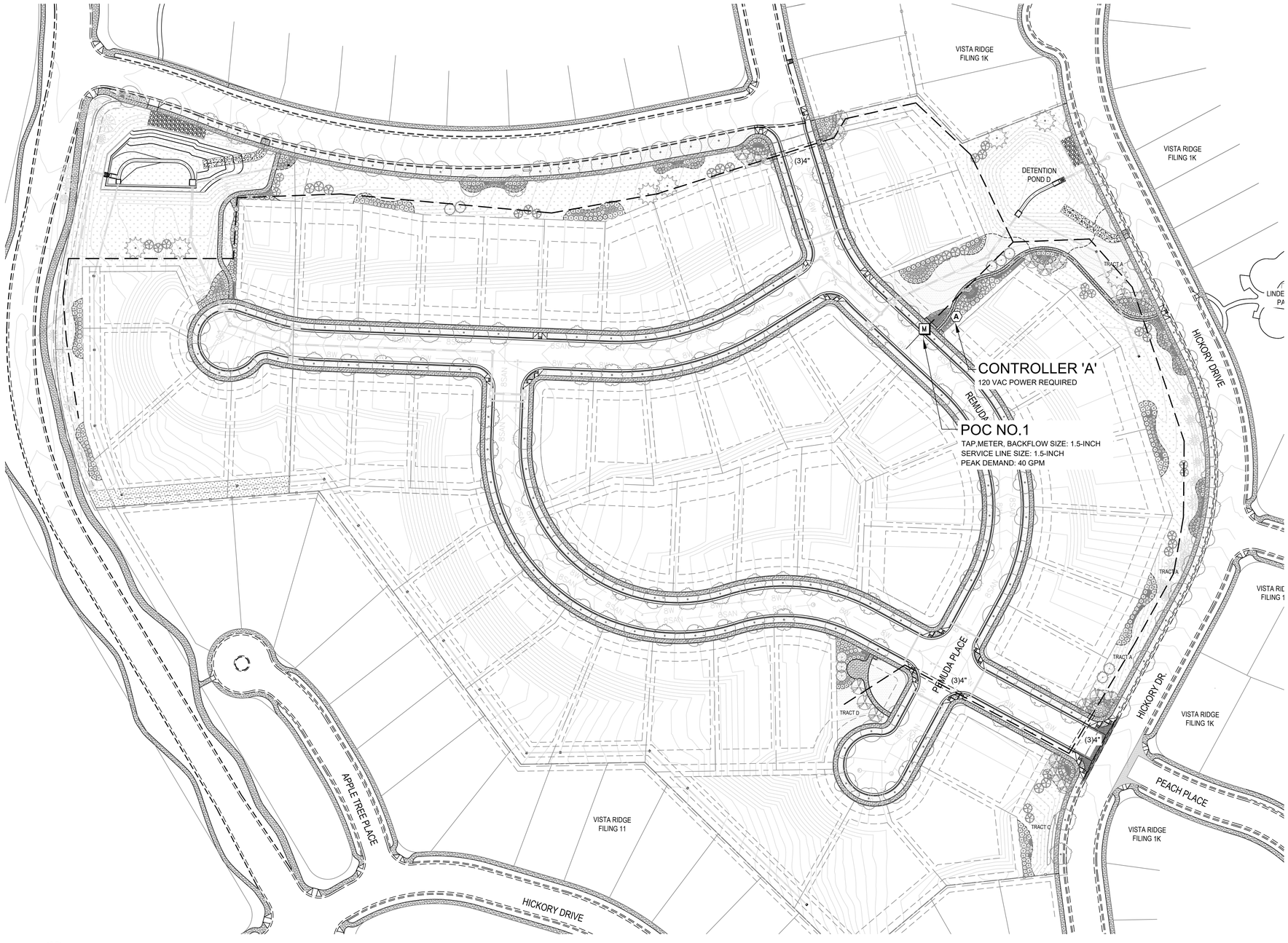
NO.	DATE
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72 HOURS BEFORE YOU DIG
CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (U.N.C.C.)
811

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VISTA RESERVE
PRELIMINARY CONSTRUCTION PLANS

LOCATED IN THE NORTHWEST QUARTER OF SECTION 32,
TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH P.M.,
TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO



1 MASTER IRRIGATION PLAN

SCALE: 1" = 60'

PRELIMINARY NOT FOR BIDDING OR CONSTRUCTION

IRRIGATION_SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
M	IRRIGATION METER: REFER TO UTILITY PLANS SHOWN FOR REFERENCE ONLY
A	PROPOSED IRRIGATION CONTROLLER: REFER TO DETAILED IRRIGATION PLANS FOR MAKE/MODEL
— — —	PROPOSED IRRIGATION MAINLINE: PVC CLASS 200 SDR 21 REFER TO DETAILED IRRIGATION PLANS FOR SIZING
- - - - -	PROPOSED PIPE SLEEVE: PVC SCHEDULE 40 TYPICAL PIPE SLEEVE FOR IRRIGATION PIPE. REFER TO SPECIFCATIONS.
— — —	TAP BOUNDARY LINE

811 — 72 HOURS BEFORE YOU DIG CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (U.N.C.C.)

NO.	REVISIONS	DATE

NOT FOR CONSTRUCTION

MPi Designs
PO BOX 369 • AULT, CO • 80610
970-402-3047
Michelle@MPIDesignsllc.com

VISTA RESERVE
PRELIMINARY CONSTRUCTION PLAN
MASTER IRRIGATION PLAN

PREPARED FOR:
AFFINITY HOLDINGS, LLC

JOB NUMBER:
DRAWN BY: MLP
DESIGNED BY: MLP
DATE: 06.02.2026
SCALE: 1" = 60'- 0"
SHEET NO: MPIR1

LAST SAVED: 6/6/2025 3:42 PM
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